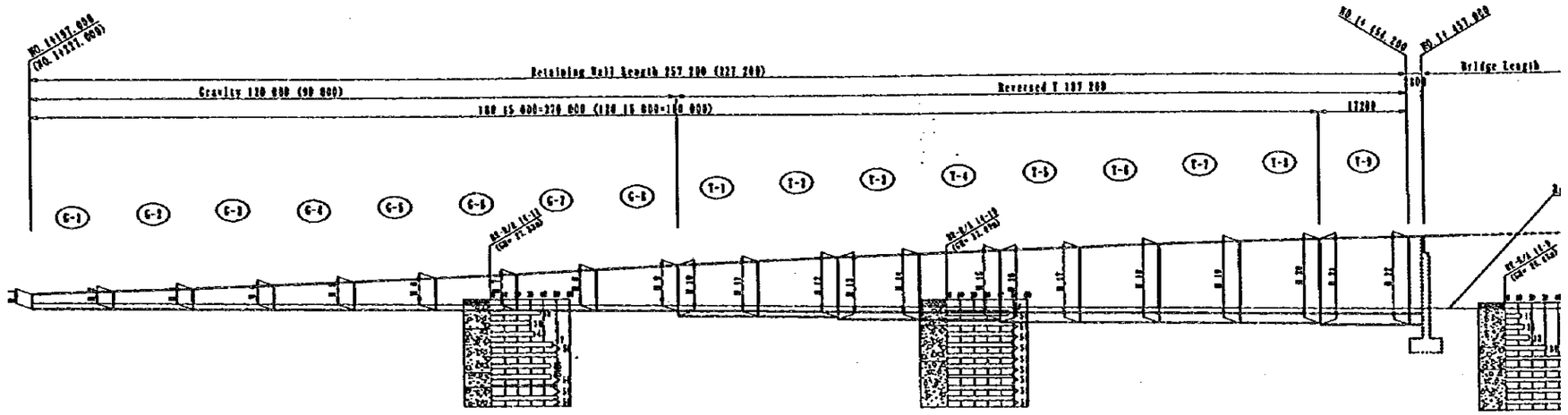
STRUCTURE

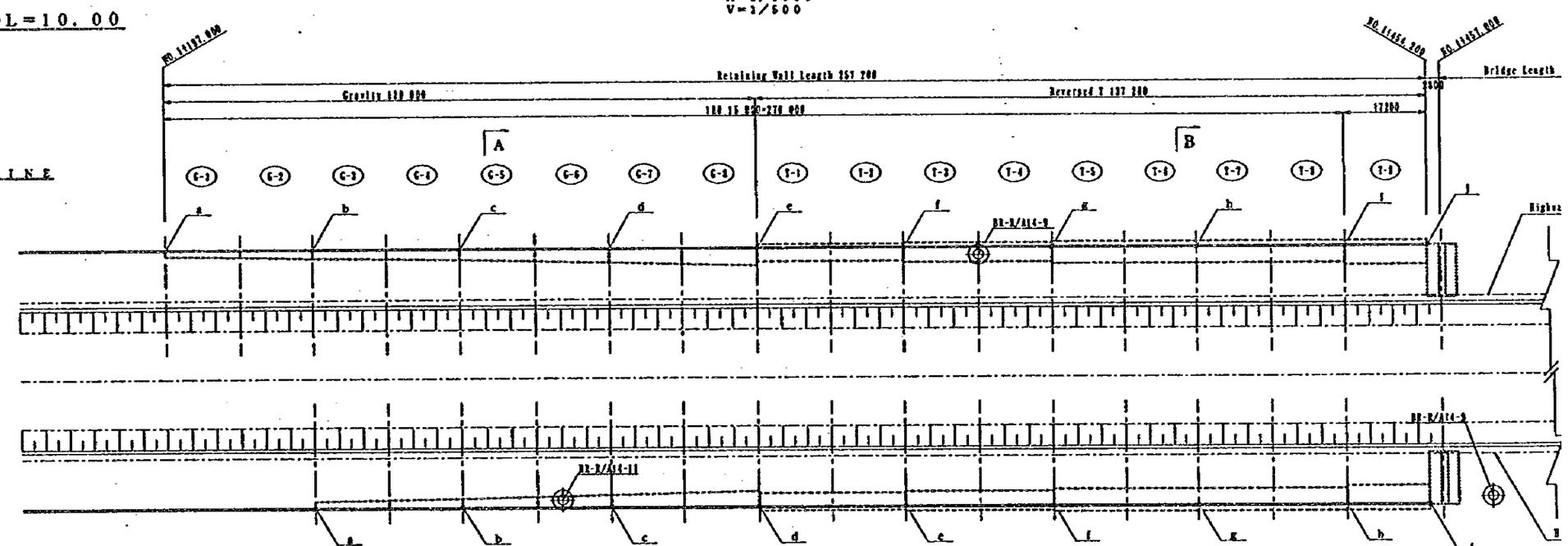
-RETAINING WALL



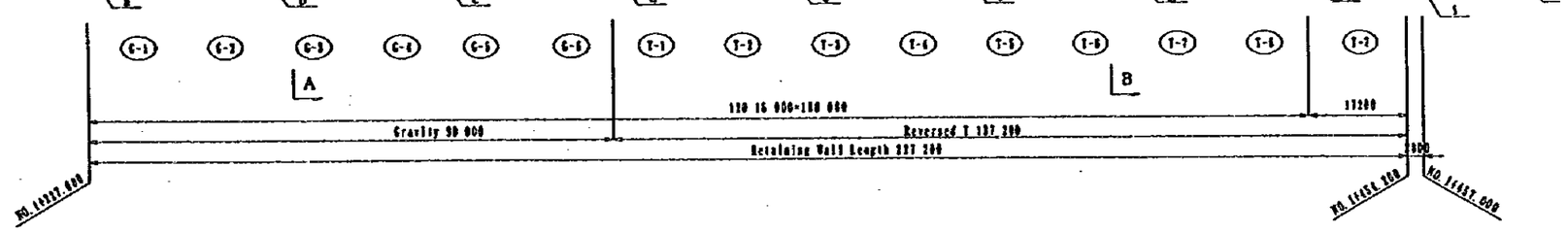
SIDE VIEW
H=1/1000
V=1/500

DL=10.00

A-LINE

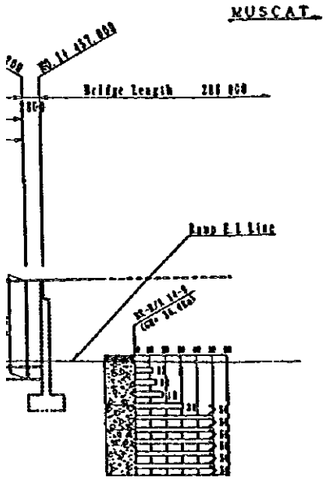


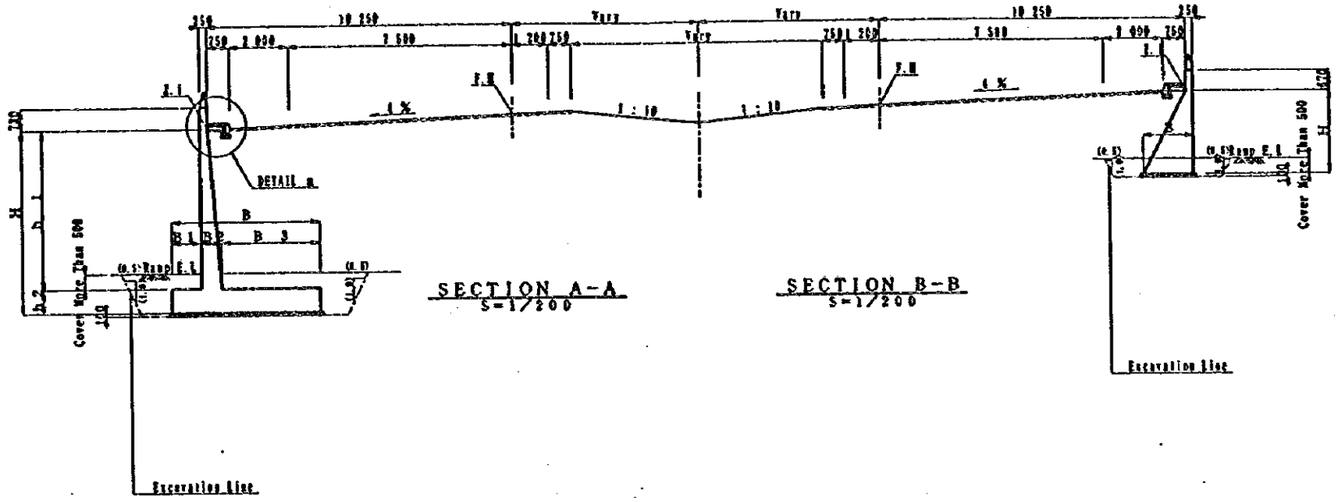
B-LINE



PLAN
S=1/1000

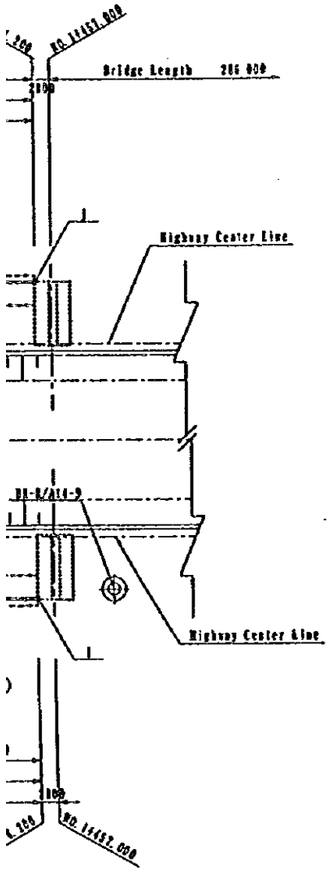
NOTES:





SECTION A-A
S=1/200

SECTION B-B
S=1/200

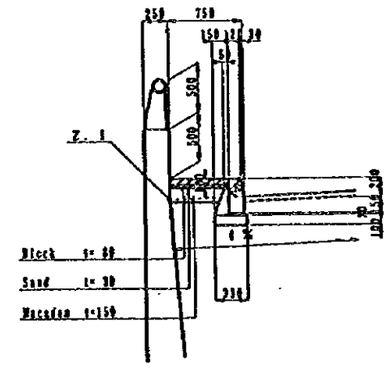


Reversed T

TYPE	MARK	H	h 1	h 2	B	B 1	B 2	B 3
ALINE	T-1	H10+4 280	3 780	500	3 500	600	460	2 440
		11+4 616	4 116				507	2 393
	T-2	11+4 961	4 461				525	2 375
	T-3	13+5 151		700	4 000	800	544	2 656
		14+5 445	4 745				563	2 637
	T-4	15+5 738	5 038				583	2 617
	T-5	15+5 936		900	4 500	1 000	622	2 878
		17+6 190	5 290				640	2 860
	T-6	18+6 441	5 541				659	2 841
	T-7	19+6 551	5 751				674	2 826
	T-8	20+6 861	5 961				690	2 810
	T-9	21+7 184	6 184	1 000	5 000	1 000	736	3264
		22+7 384	6 384				752	3248
BILINE	T-1	H10+4 088	3 588	500	3 500	600	448	2 451
		11+4 415	3 915				469	2 432
	T-2	11+4 741	4 241				485	2 415
	T-3	11+5 028	4 528				549	2 651
		14+5 228	4 814	700	4 000	800	485	2 415
	T-4	15+5 514					502	2 398
	T-5	15+5 760	5 060				549	2 651
	T-6	17+5 960	5 305	900	4 600	1 000	566	2 632
	T-7	18+6 205	5 510				584	2 616
	T-8	19+6 410	5 725				623	2 877
	T-9	20+6 615	6 115	1 000	5 000	1 000	642	2 858
		21+7 115	6 315				657	2 843
		21+7 315					672	2 828
							731	3 269
							746	3 254

Gravity

TYPE	MARK	H	B
ALINE	G-1	H1+1 353	1 062
	G-2	2+1 567	1 190
	G-3	3+1 901	1 391
	G-4	4+2 050	1 480
	G-5	5+2 319	1 641
	G-6	6+2 644	1 836
	G-7	7+2 968	2 031
	G-8	8+3 334	2 250
BILINE	G-1	H1+1 538	1 173
	G-2	2+1 796	1 328
	G-3	3+2 063	1 482
	G-4	4+2 371	1 673
	G-5	5+2 689	1 863
	G-6	6+3 049	2 079
	G-7	7+3 408	2 295



DETAIL a
S=1/50

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 FURUYAMA CONSULTANTS INTERNATIONAL	TITLE :	R/A-14, FALAJ AL QABAIL GENERAL VIEW FOR WALL (I)-1
	DATE	DWG NO. W-1

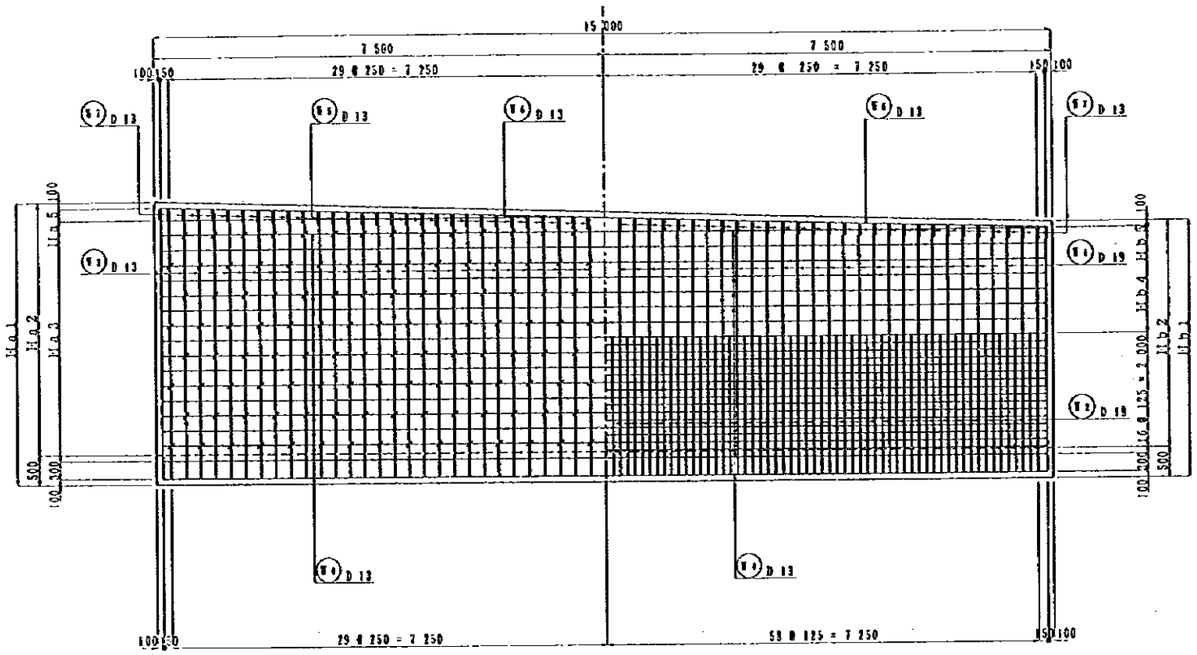
Point		a	b	c	d	e	f	g	h	i	j	k
A LINE	N	+2701608.58884	+2701582.35836	+2701556.50803	+2701531.05469	+2701506.01494	+2701481.40509	+2701457.24119	+2701433.53897	+2701410.31390	+2701387.58111	+2701372.70673
	E	+ 460342.38251	+ 460356.93974	+ 460372.16181	+ 460388.03879	+ 460404.56035	+ 460421.71572	+ 460439.49371	+ 460457.88273	+ 460476.87081	+ 460496.44557	+ 460509.81506
	Z	27.736	28.053	28.481	29.019	29.668	30.400	31.071	31.658	32.161	32.581	32.813
B LINE	N	+2701530.56563	+2701505.22400	+2701480.28801	+2701455.77296	+2701431.69391	+2701408.06565	+2701384.90269	+2701362.21926	+2701347.37027		
	E	+ 460346.24864	+ 460362.30342	+ 460378.98126	+ 460396.27190	+ 460414.16473	+ 460432.64875	+ 460451.71263	+ 460471.34464	+ 460484.74234		
	Z	29.118	29.633	30.269	30.988	31.641	32.214	32.705	33.115	33.343		

NOTES:

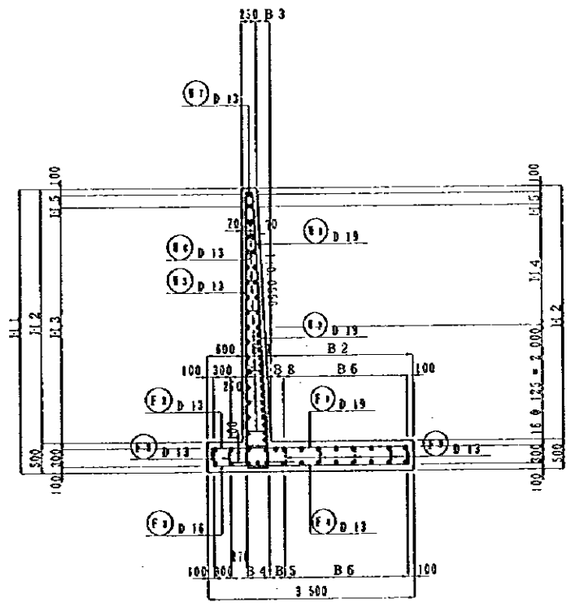
JAPAN INTERNATIONAL COOPERATION AGENCY
(JICA)

JICA STUDY TEAM
PACIFIC CONSULTANTS INTERNATIONAL
FURUYAMA CONSULTANTS INTERNATIONAL

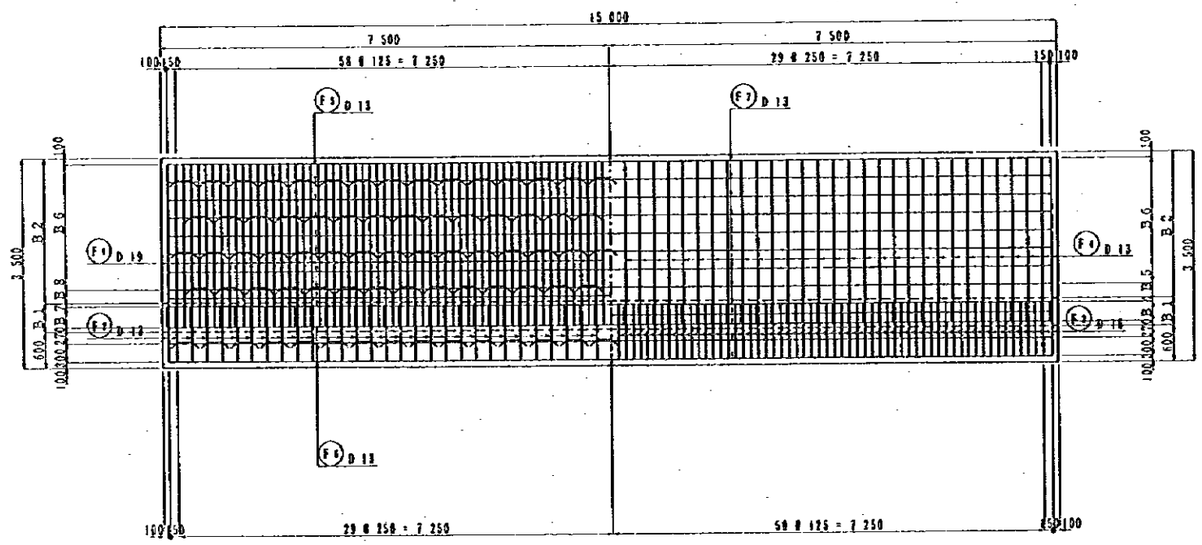
CLIENT : MINISTRY OF COMMUNICATIONS, DIRECTORATE GENERAL OF ROADS
PROJECT : D/D ON ROAD DEVELOPMENT PROJECT ON BATINAH HIGHWAY
TITLE : R/A-14, FALAJ AL QABAIL GENERAL VIEW FOR WALL (1)-2
DATE
DWG NO. W-2



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
FURUYAMA CONSULTANTS INTERNATIONAL

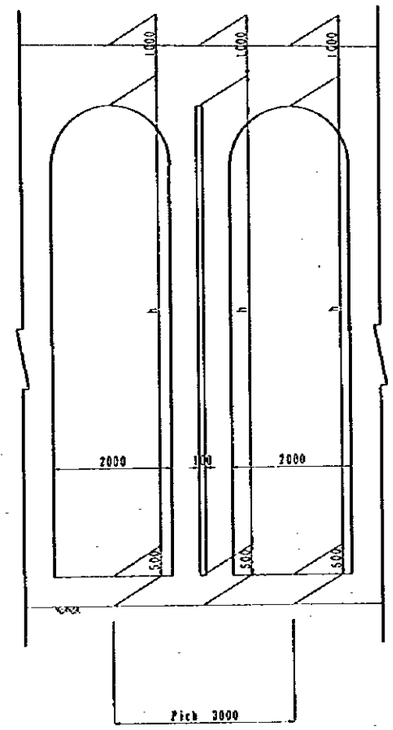
CLIENT :	MINISTRY OF COMMUNICATIONS, DIRECTORATE GENERAL OF ROADS
PROJECT :	D/D ON ROAD DEVELOPMENT PROJECT ON BATINAH HIGHWAY
TITLE :	R/A-14, FALAJ AL QABAIL RE-BAR ARRANGEMENT (1)
DATE	DWG NO. W-3

A LINE

	T-10 a－a		T-10 b－b	T-11 a－a		T-11 b－b
Ha1	4 614	Hb1	4 259	4 259	Hb1	3 894
Hc2	4 114	Hb2	3 759	3 759	Hb2	3 394
Ha3	16@250 = 4 000	Hb3	15@250 = 3 750	14@250 = 3 500	Hb3	13@250 = 3 250
Ha4	8@250 = 2 000	Hb4	7@250 = 1 750	6@250 = 1 500	Hb4	5@250 = 1 250
Ha5	114	Hb5	9	2@129.5 = 259	Hb5	144
Ba1	539	Bb1	459	459	Bb1	439
Ba2	2 361	Bb2	2 441	2 441	Bb2	2 461
Ba3	289	Bb3	209	209	Bb3	189
Ba4	2@210.5 = 421	Bb4	2@170.5 = 341	2@170.5 = 341	Bb4	2@160.5 = 321
Ba5	2@104.5 = 209	Bb5	2@144.5 = 289	2@144.5 = 289	Bb5	2@154.5 = 309
Ba6	7@300 = 2 100	Bb6	7@300 = 2 100	7@300 = 2 100	Bb6	7@300 = 2 100
Ba7	404	Bb7	324	324	Bb7	304
Ba8	2@113 = 226	Bb8	2@153 = 306	2@153 = 306	Bb8	2@163 = 326

B LINE

	T-11 a－a		T-11 b－b	T-12 a－a		T-12 b－b
Ha1	4 517	Hb1	4 409	4 409	Hb1	4 087
Ha2	4 017	Hb2	3 909	3 909	Hb2	3 587
Ha3	15@250 = 3 750	Hb3	15@250 = 3 750	15@250 = 3 750	Hb3	14@250 = 3 500
Ha4	7@250 = 1 750	Hb4	7@250 = 1 750	7@250 = 1 750	Hb4	6@250 = 1 500
Ha5	2@133.5 = 267	Hb5	159	159	Hb5	87
Ba1	473	Bb1	467	467	Bb1	449
Ba2	2 427	Bb2	2 433	2 433	Bb2	2 451
Ba3	223	Bb3	217	217	Bb3	199
Ba4	2@177.5 = 355	Bb4	2@174.5 = 349	2@174.5 = 349	Bb4	2@167.0 = 334
Ba5	2@137.5 = 275	Bb5	2@140.5 = 281	2@140.5 = 281	Bb5	2@148.0 = 296
Ba6	7@300 = 2 100	Bb6	7@300 = 2 100	7@300 = 2 100	Bb6	7@300 = 2 100
Ba7	338	Bb7	332	332	Bb7	317
Ba8	2@146.0 = 292	Bb8	2@149.0 = 298	2@149.0 = 298	Bb8	2@156.5 = 313



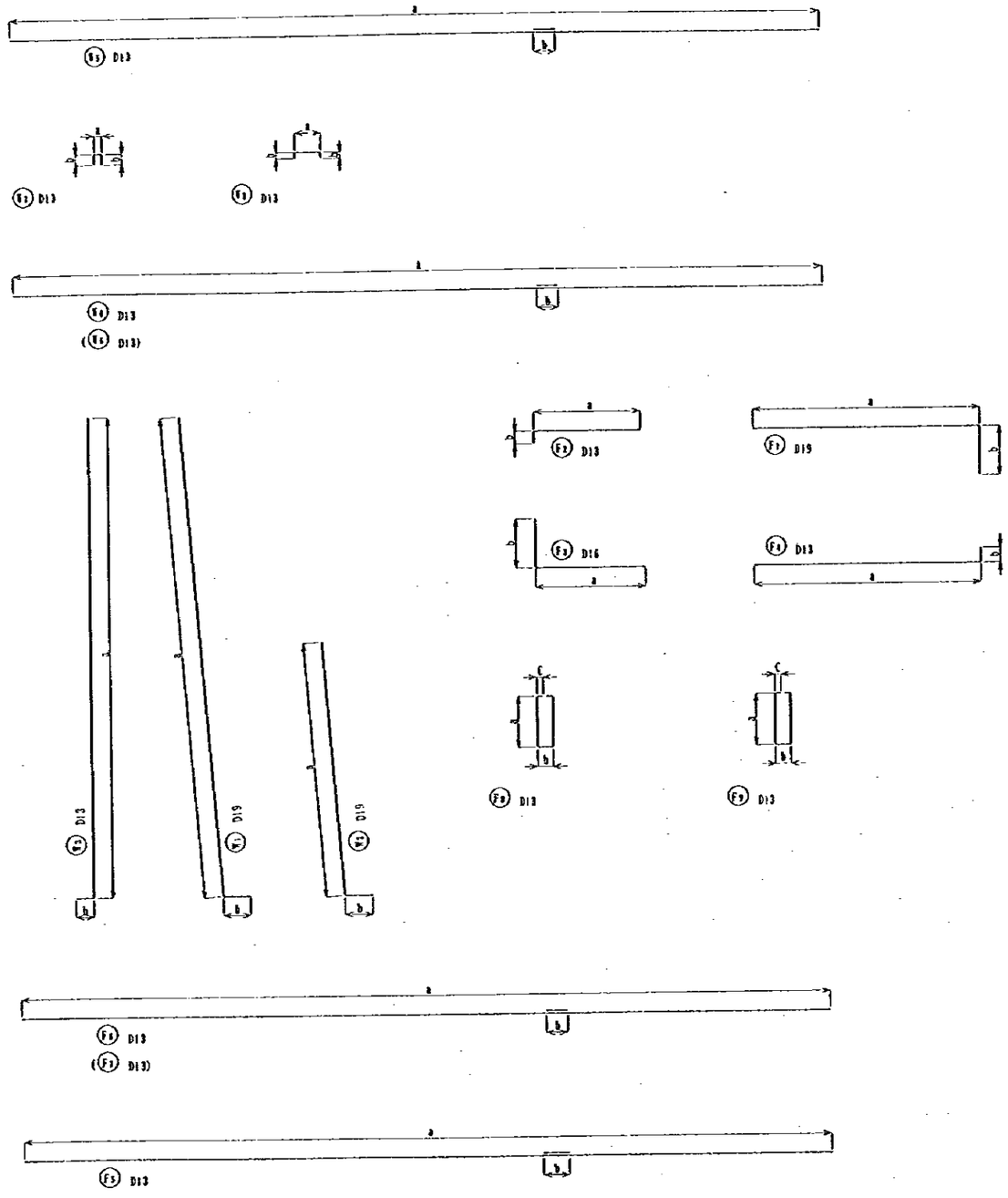
Slit Shape in Front of Wall
(Thickness t=30 mm)

NOTES:

JAPAN INTERNATIONAL COOPERATION AGENCY
(JICA)

JICA STUDY TEAM
PACIFIC CONSULTANTS INTERNATIONAL
FURUYAMA CONSULTANTS INTERNATIONAL

CLIENT : MINISTRY OF COMMUNICATIONS, DIRECTORATE GENERAL OF ROADS
PROJECT : D/D ON ROAD DEVELOPMENT PROJECT ON BATINAH HIGHWAY
TITLE : R/A-14, FALAJ AL QABAIL RE-BAR ARRANGEMENT (2)
DATE
DWG NO. W-4



REIN NO.	φ (mm)	LENGTH (mm)	a	b	c
T 1					
W 1	D 19	4 540	4 423~4 056	285	——
2	〃	2 590	2 304	285	——
3	〃	6 060	4 416~4 086	285	——
4	D 13	15 190	14 800	390	——
5	〃	5 810	5 810	——	——
6	〃	15 200	14 804	390	——
7	〃	500	110	195	——
8	〃	470	348~149	111	——
F 1	D 19	3 260	2 952	300	——
2	D 13	1 110	914	195	——
3	D 16	1 280	980	300	——
4	〃	2 970	2 730	240	——
5	D 13	15 190	14 800	390	——
6	〃	15 190	14 800	390	——
7	〃	15 190	14 800	390	——
8	〃	1 160	328	278	111
9	〃	1 160	331	269	111
T 2					
W 1	D 19	4 680	4 258~4 423	285	——
2	〃	2 590	2 304	285	——
3	〃	4 870	4 251~4 416	285	——
4	D 13	15 190	14 800	390	——
5	〃	8 680	8 680	——	——
6	〃	15 200	14 804	390	——
7	〃	500	110	195	——
8	〃	540	409~214	111	——
F 1	D 19	3 220	2 918	300	——
2	D 13	1 150	946	195	——
3	D 16	1 280	980	300	——
4	〃	3 020	2 771	240	——
5	〃	15 190	14 800	390	——
6	〃	15 190	14 800	390	——
7	〃	15 190	14 800	390	——
8	〃	1 160	328	278	111
9	〃	1 160	331	269	111

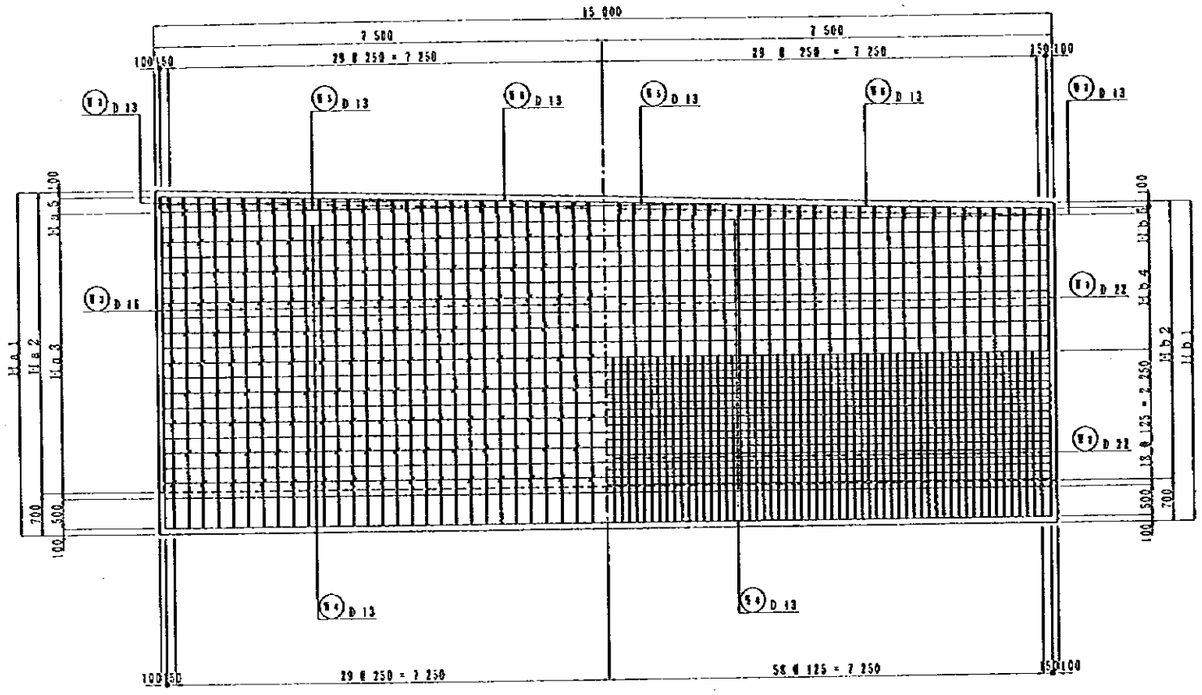
REIN NO.	φ (mm)	LENGTH (mm)	a	b	c
T 1					
W 1	D 19	4 350	4 222~3 894	285	——
2	〃	2 590	2 304	285	——
3	〃	4 340	4 215~3 888	285	——
4	D 13	15 190	14 800	390	——
5	〃	7 470	7 469	——	——
6	〃	15 200	14 806	390	——
7	〃	500	110	195	——
8	〃	500	352~185	111	——
F 1	D 19	3 460	2 304	1 150	——
2	D 13	1 680	1 476	195	——
3	D 16	2 600	1 450	1 150	——
4	〃	2 530	2 330	195	——
5	D 13	15 190	14 800	390	——
6	〃	15 190	14 800	390	——
7	〃	15 190	14 800	390	——
8	〃	1 160	328	278	111
9	〃	1 160	331	269	111
T 2					
W 1	D 19	4 670	4 548~4 222	285	——
2	〃	2 590	2 304	285	——
3	〃	4 670	4 541~4 215	285	——
4	D 13	15 190	14 800	390	——
5	〃	11 340	10 941	390	——
6	〃	15 200	14 806	390	——
7	〃	500	110	195	——
8	〃	500	369~174	111	——
F 1	D 19	3 260	2 959	300	——
2	D 13	1 110	907	195	——
3	D 16	1 280	980	300	——
4	〃	2 970	2 730	240	——
5	D 13	15 190	14 800	390	——
6	〃	15 190	14 800	390	——
7	〃	15 190	14 800	390	——
8	〃	1 160	328	278	111
9	〃	1 160	331	269	111
T 3					
W 1	D 19	4 950	4 835~4 548	285	——
2	〃	2 590	2 304	285	——
3	〃	4 920	4 828~4 541	285	——
4	D 13	15 190	14 800	390	——
5	〃	2 170	2 168	——	——
6	〃	15 200	14 805	390	——
7	〃	500	110	195	——
8	〃	520	386~191	111	——
F 1	D 19	3 250	2 948	300	——
2	D 13	1 120	924	195	——
3	D 16	1 280	550	300	——
4	〃	2 970	2 730	240	——
5	D 13	15 190	14 800	390	——
6	〃	15 190	14 800	390	——
7	〃	15 190	14 800	390	——
8	〃	1 160	328	278	111
9	〃	1 160	331	269	111

NOTES:

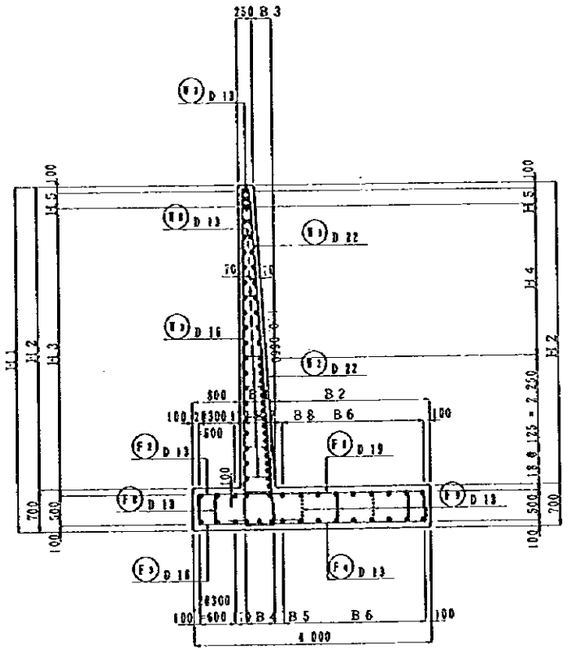
JAPAN INTERNATIONAL COOPERATION AGENCY
(JICA)

JICA STUDY TEAM
PACIFIC CONSULTANTS INTERNATIONAL
FURUYAMA CONSULTANTS INTERNATIONAL

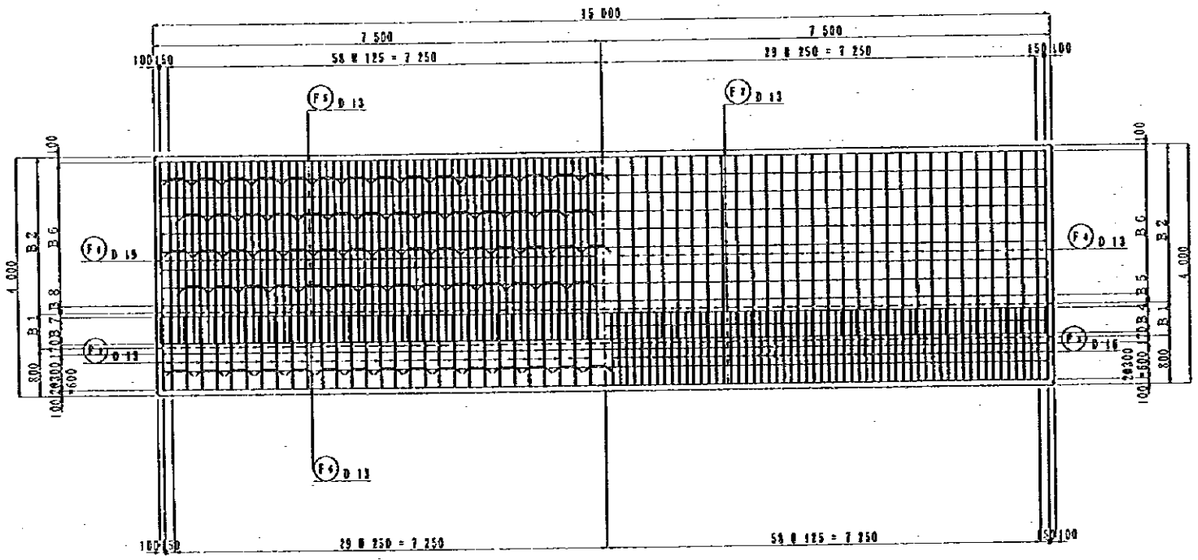
CLIENT : MINISTRY OF COMMUNICATIONS, DIRECTORATE GENERAL OF ROADS
PROJECT : D/D ON ROAD DEVELOPMENT PROJECT ON BATINAH HIGHWAY
TITLE : R/A-14, FALAJ AL QABAIL RE-BAR ARRANGEMENT (3)
DATE
DWG NO. W-5



SIDE VIEW
S=1/100



SECTION
S=1/100



PLAN
S=1/100

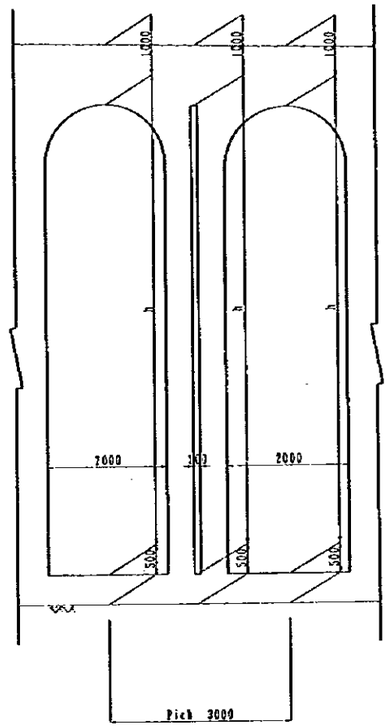
NOTES:		JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)	CLIENT : MINISTRY OF COMMUNICATIONS, DIRECTORATE GENERAL OF ROADS
			PROJECT : D/D ON ROAD DEVELOPMENT PROJECT ON BATINAH HIGHWAY
		JICA STUDY TEAM PACIFIC CONSULTANTS INTERNATIONAL FURUYAMA CONSULTANTS INTERNATIONAL	TITLE : R/A-14, FALAJ AL QABAIL RE-BAR ARRANGEMENT (4)
			DATE / DWG NO. W-6

A LINE

	T-3 a－a		T-3 b－b	T-4 a－a	T-4 b－b
Ha1	5 151	Hb1	5 445	5 445	5 738
Ha2	4 451	Hb2	5 745	5 745	5 038
Ha3	17@250 = 4 250	Hb3	18@250 = 4 500	18@250 = 4 500	19@250 = 4 750
Ha4	8@250 = 2 000	Hb4	9@250 = 2 250	9@250 = 2 250	10@250 = 2 500
Ha5	201	Hb5	245	245	2@144 = 288
Ba1	544	Bb1	563	563	583
Ba2	2 656	Bb2	2 637	2 637	2 617
Ba3	294	Bb3	313	313	333
Ba4	2@221.5 = 443	Bb4	2@231.0 = 462	2@231.0 = 462	2@241.0 = 482
Ba5	187	Bb5	168	168	148
Ba6	8@300 = 2 400	Bb6	8@300 = 2 400	8@300 = 2 400	8@300 = 2 400
Ba7	410	Bb7	429	429	449
Ba8	220	Bb8	201	201	181

B LINE

	T-4 a－a		T-4 b－b	T-5 a－a	T-5 b－b
Ha1	5 228	Hb1	5 514	5 514	5 760
Ha2	4 528	Hb2	4 814	4 814	5 060
Ha3	18@250 = 4 500	Hb3	18@250 = 4 500	19@250 = 4 750	19@250 = 4 750
Ha4	9@250 = 2 250	Hb4	9@250 = 2 250	10@250 = 2 500	10@250 = 2 500
Ha5	28	Hb5	2@157 = 314	64	2@155 = 310
Ba1	549	Bb1	568	568	584
Ba2	2 651	Bb2	2 632	2 632	2 616
Ba3	299	Bb3	318	318	334
Ba4	2@224.0 = 448	Bb4	2@233.5 = 467	2@233.5 = 467	2@241.5 = 483
Ba5	182	Bb5	163	163	147
Ba6	8@300 = 2 400	Bb6	8@300 = 2 400	8@300 = 2 400	8@300 = 2 400
Ba7	415	Bb7	434	434	450
Ba8	215	Bb8	196	196	180



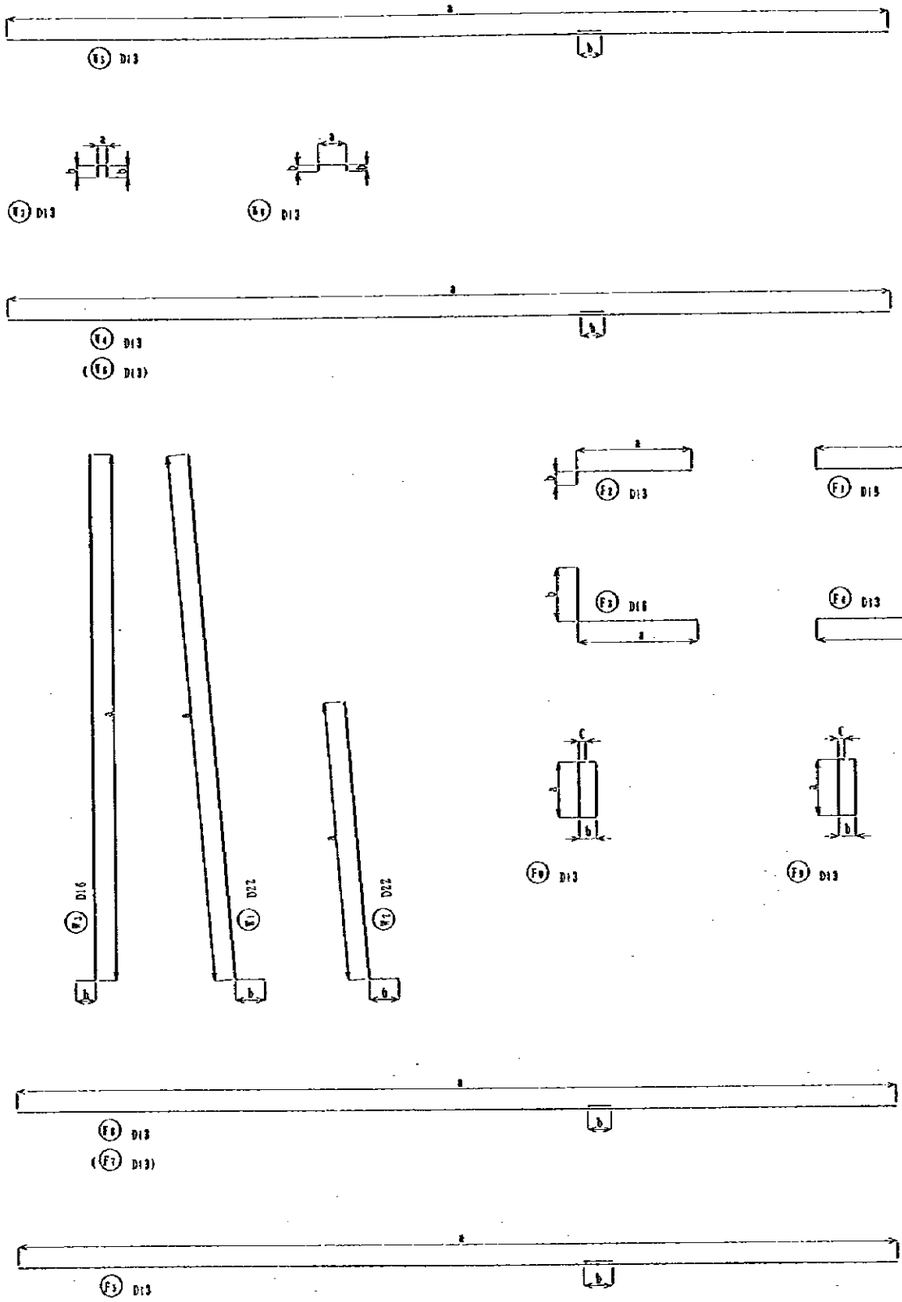
Slil Shape in Front of Wall
(Thickness t=30 mm)

NOTES:

JAPAN INTERNATIONAL COOPERATION AGENCY
(JICA)

JICA STUDY TEAM
PACIFIC CONSULTANTS INTERNATIONAL
FURUYAMA CONSULTANTS INTERNATIONAL

CLIENT : MINISTRY OF COMMUNICATIONS, DIRECTORATE GENERAL OF ROADS
PROJECT : D/D ON ROAD DEVELOPMENT PROJECT ON BATINAH HIGHWAY
TITLE : R/A-14, FALAJ AL QABAIL RE-BAR ARRANGEMENT (5)
DATE
DWG NO. W-7



REIN NO.	ϕ (mm)	LENGTH (mm)	a	b	c
T 3					
W 1	D 22	5 440	5 256~4 962	330	——
2	〃	3 090	2 756	330	——
3	D 16	5 340	5 245~4 958	240	——
4	D 13	15 190	14 800	390	——
5	〃	12 730	12 333	398	——
6	〃	15 200	14 832	390	——
7	〃	500	310	195	——
8	〃	590	485~148	111	——
F 1	D 19	3 690	3 181	500	——
2	D 13	1 380	1 184	195	——
3	D 16	1 650	1 150	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	278	111
9	〃	1 560	529	279	111
T 4					
W 1	D 22	5 740	5 550~5 256	330	——
2	〃	3 090	2 756	330	——
3	D 16	5 640	5 538~5 245	240	——
4	D 13	15 190	14 800	390	——
5	〃	7 280	7 274	——	——
6	〃	15 200	14 803	390	——
7	〃	500	310	195	——
8	〃	540	465~168	111	——
F 1	D 19	3 670	3 161	500	——
2	D 13	1 400	1 203	195	——
3	D 16	1 660	1 160	500	——
4	D 13	3 230	3 030	195	——
5	〃	15 155	14 800	390	——
6	〃	15 190	14 800	390	——
7	〃	15 190	14 809	390	——
8	〃	1 560	528	278	111
9	〃	1 560	523	279	111

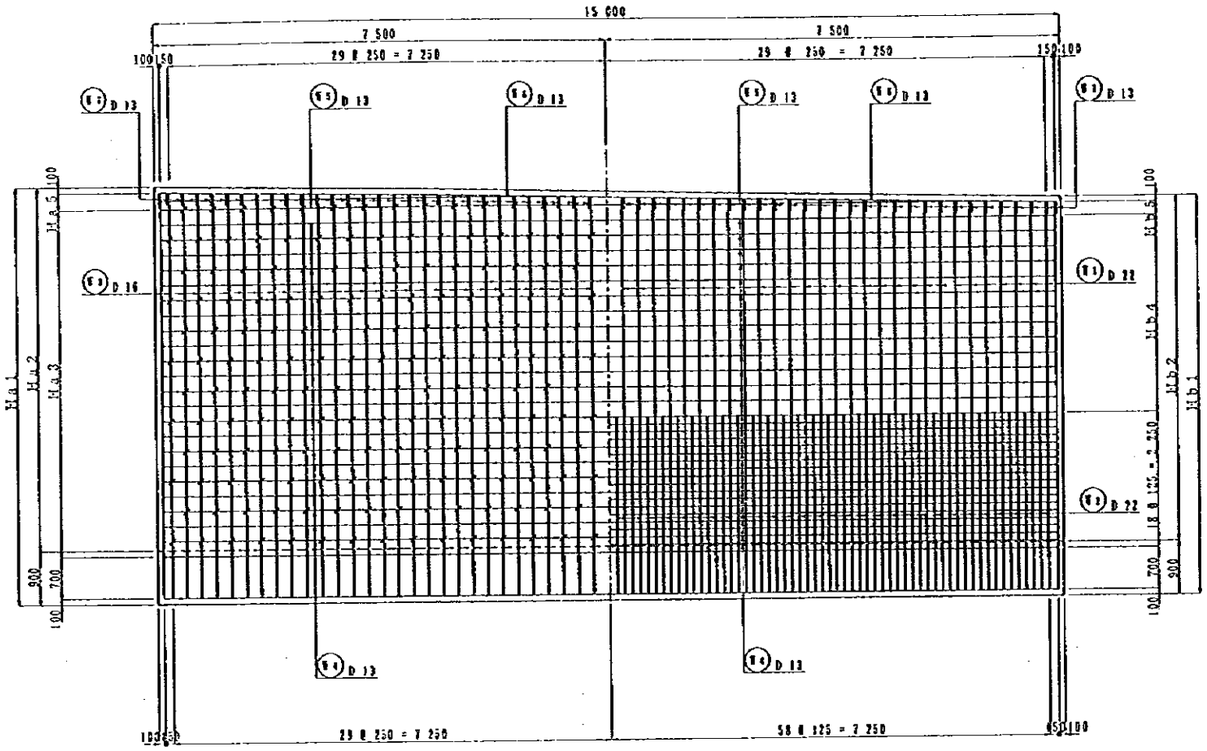
REIN NO.	ϕ (mm)	LENGTH (mm)	a	b	c
T 4					
W 1	D 22	5 520	5 326~5 039	330	——
2	〃	3 050	2 756	330	——
3	D 16	5 490	5 314~5 028	240	——
4	D 13	15 150	14 800	390	——
5	〃	8 130	8 124	——	——
6	〃	15 200	14 805	390	——
7	〃	500	310	195	——
8	〃	530	450~153	111	——
F 1	D 19	3 690	3 176	500	——
2	D 13	1 390	1 189	195	——
3	D 16	1 650	1 150	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	278	111
9	〃	1 560	529	279	111
T 5					
W 1	D 22	5 780	5 572~5 326	330	——
2	〃	3 090	2 756	330	——
3	D 16	5 680	5 560~5 314	240	——
4	D 13	15 190	14 800	390	——
5	〃	9 930	9 325	——	——
6	〃	15 200	14 802	390	——
7	〃	500	310	195	——
8	〃	540	466~169	111	——
F 1	D 19	3 660	3 158	500	——
2	D 13	1 410	1 206	195	——
3	D 16	1 650	1 150	500	——
4	D 13	3 230	3 030	195	——
5	〃	15 190	14 830	350	——
6	〃	15 190	14 800	350	——
7	〃	15 190	14 800	350	——
8	〃	1 560	528	278	111
9	〃	1 560	529	278	111

NOTES:

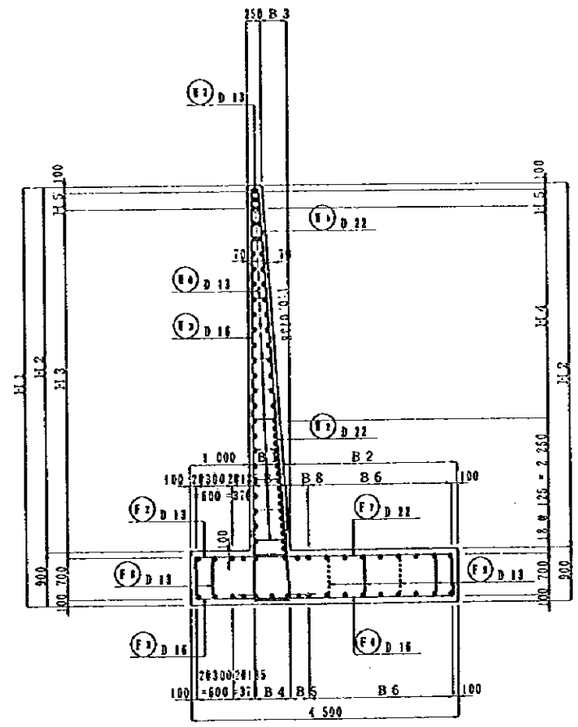
JAPAN INTERNATIONAL COOPERATION AGENCY
(JICA)

JICA STUDY TEAM
PACIFIC CONSULTANTS INTERNATIONAL
FURUYAMA CONSULTANTS INTERNATIONAL

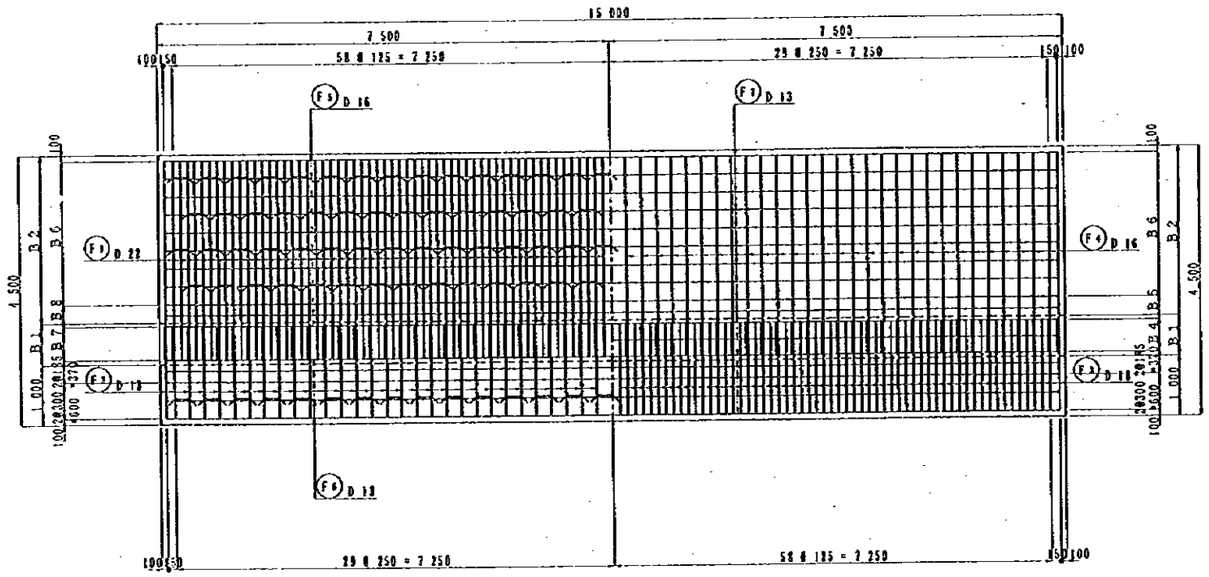
CLIENT : MINISTRY OF COMMUNICATIONS, DIRECTORATE GENERAL OF ROADS
PROJECT : D/D ON ROAD DEVELOPMENT PROJECT ON BATINAH HIGHWAY
TITLE : R/A-14, FALAJ AL QABAIL RE-BAR ARRANGEMENT (6)
DATE
DWG NO. W-8



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-14, FALAJ AL QABAIL RE-BAR ARRANGEMENT (7)

DATE

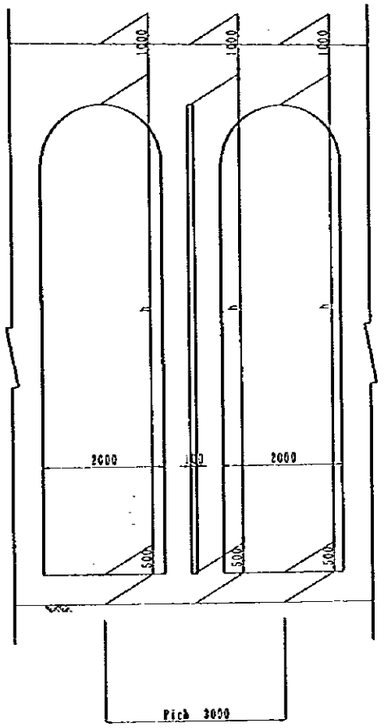
DWG NO. W-9

A LINE

	T-5 a－a		T-5 b－b	T-6 a－a		T-6 b－b	T-7 a－a		T-7 b－b	T-8 a－a		T-8 b－b
Ha1	5 938	Hb1	6 190	6 190	Hb1	6 441	6 441	Hb1	6 551	6 551	Hb1	6 861
Ha2	5 038	Hb2	5 290	5 290	Hb2	5 541	5 541	Hb2	5 751	5 751	Hb2	5 961
Ha3	20@250 = 5 000	Hb3	20@250 = 5 000	21@250 = 5 250	Hb3	21@250 = 5 250	22@250 = 5 500	Hb3	22@250 = 5 500	22@250 = 5 500	Hb3	23@250 = 5 750
Ha4	11@250 = 2 750	Hb4	11@250 = 2 750	12@250 = 3 000	Hb4	12@250 = 3 000	13@250 = 3 250	Hb4	13@250 = 3 250	13@250 = 3 250	Hb4	14@250 = 3 500
Ha5	38	Hb5	2@145 = 290	30	Hb5	2@145.5 = 291	41	Hb5	251	251	Hb5	211
Ba1	622	Bb1	690	690	Bb1	659	659	Bb1	674	674	Bb1	690
Ba2	2 878	Bb2	2860	2860	Bb2	2 841	2 841	Bb2	2 826	2 826	Bb2	2 810
Ba3	372	Bb3	390	390	Bb3	409	409	Bb3	424	424	Bb3	440
Ba4	2@270.5 = 541	Bb4	2@279.5 = 559	2@279.5 = 559	Bb4	2@289.0 = 578	2@289.0 = 578	Bb4	2@296.5 = 593	2@296.5 = 593	Bb4	2@304.5 = 609
Ba5	2@194.5 = 389	Bb5	2@185.5 = 371	2@185.5 = 371	Bb5	2@176.0 = 352	2@176.0 = 352	Bb5	2@176.0 = 352	2@176.0 = 352	Bb5	2@160.5 = 321
Ba6	8@300 = 2 400	Bb6	8@300 = 2 400	8@300 = 2 400	Bb6	8@300 = 2 400	8@300 = 2 400	Bb6	8@300 = 2 400	8@300 = 2 400	Bb6	8@300 = 2 400
Ba7	489	Bb7	507	507	Bb7	526	526	Bb7	541	541	Bb7	557
Ba8	2@220.5 = 441	Bb8	2@211.5 = 423	2@211.5 = 423	Bb8	2@202.0 = 404	2@202.0 = 404	Bb8	2@194.5 = 389	2@194.5 = 389	Bb8	

B LINE

	T-6 a－a		T-6 b－b	T-7 a－a		T-7 b－b	T-8 a－a		T-8 b－b
Ha1	5 960	Hb1	6 205	6 205	Hb1	6 410	6 410	Hb1	6 615
Ha2	5 060	Hb2	5 305	5 305	Hb2	5 510	5 510	Hb2	5 715
Ha3	20@250 = 5 000	Hb3	20@250 = 5 000	21@250 = 5 250	Hb3	21@250 = 5 250	22@250 = 5 500	Hb3	22@250 = 5 500
Ha4	11@250 = 2 750	Hb4	11@250 = 2 750	12@250 = 3 000	Hb4	12@250 = 3 000	13@250 = 3 250	Hb4	13@250 = 3 250
Ha5	60	Hb5	2@152.5 = 305	55	Hb5	2@130 = 260	10	Hb5	215
Ba1	623	Bb1	642	642	Bb1	657	657	Bb1	672
Ba2	2 877	Bb2	2 858	2 858	Bb2	2 843	2 843	Bb2	2 828
Ba3	373	Bb3	392	392	Bb3	407	407	Bb3	422
Ba4	2@271.0 = 542	Bb4	2@280.5 = 561	2@280.5 = 561	Bb4	2@288.0 = 576	2@288.0 = 576	Bb4	2@295.5 = 591
Ba5	2@194.0 = 388	Bb5	2@184.5 = 369	2@184.5 = 369	Bb5	2@177.0 = 354	2@177.0 = 354	Bb5	
Ba6	8@300 = 2 400	Bb6	8@300 = 2 400	8@300 = 2 400	Bb6	8@300 = 2 400	8@300 = 2 400	Bb6	8@300 = 2 400
Ba7	490	Bb7	509	509	Bb7	524	524	Bb7	539
Ba8	2@220.0 = 440	Bb8	2@210.5 = 421	2@210.5 = 421	Bb8	2@203.0 = 406	2@203.0 = 406	Bb8	2@195.5 = 391



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

NOTES:

JAPAN INTERNATIONAL COOPERATION AGENCY
(JICA)

JICA STUDY TEAM
PACIFIC CONSULTANTS INTERNATIONAL
FURUYAMA CONSULTANTS INTERNATIONAL

CLIENT : MINISTRY OF COMMUNICATIONS, DIRECTORATE GENERAL OF ROADS
PROJECT : D/D ON ROAD DEVELOPMENT PROJECT ON BATINAH HIGHWAY
TITLE : R/A-14, FALAJ AL QABAIL RE-BAR ARRANGEMENT (8)
DATE
DWG NO. W-10

REIN NO.	ϕ (mm)	LENGTH (mm)	a	b	c
T 5					
W 1	D 22	6 210	6 006~5 754	330	——
2	"	3 290	2 958	330	——
3	D 16	6 110	5 950~5 738	240	——
4	D 13	15 150	14 800	390	——
5	"	8 520	8 518	——	——
6	"	15 200	14 802	350	——
7	"	500	110	195	——
8	"	550	521~189	111	——
F 1	D 16	3 450	3 492	700	——
2	D 13	1 660	1 461	195	——
3	D 16	2 080	1 380	700	——
4	D 13	3 570	3 330	195	——
5	"	15 190	14 800	390	——
6	"	15 190	14 800	390	——
7	"	15 190	14 800	390	——
8	"	1 960	728	278	111
9	"	1 960	732	282	111
T 6					
W 1	D 22	6 470	6 258~6 006	330	——
2	"	3 290	2 958	330	——
3	D 16	6 350	6 241~5 950	240	——
4	D 13	15 150	14 800	390	——
5	"	8 580	8 579	——	——
6	"	15 200	14 806	390	——
7	"	500	110	195	——
8	"	650	540~210	111	——
F 1	D 16	4 180	3 474	700	——
2	D 13	1 680	1 480	195	——
3	D 16	2 080	1 380	700	——
4	D 13	3 570	3 330	240	——
5	"	15 190	14 800	390	——
6	"	15 190	14 800	390	——
7	"	15 190	14 800	390	——
8	"	1 960	728	278	111
9	"	1 970	732	282	111
T 7					
W 1	D 22	6 650	6 368~6 258	330	——
2	"	3 290	2 958	330	——
3	D 16	6 540	6 351~6 241	240	——
4	D 13	15 190	14 800	390	——
5		欠番			
6	"	15 190	14 800	390	——
7	"	500	110	195	——
8	"	600	555~186	111	——
F 1	D 16	4 160	3 457	700	——
2	D 13	1 700	1 497	195	——
3	D 16	2 080	1 380	700	——
4	D 13	3 580	3 338	240	——
5	"	15 190	14 800	390	——
6	"	15 190	14 800	390	——
7	"	15 190	14 800	390	——
8	"	1 960	728	278	111
9	"	1 970	732	282	111

REIN NO.	ϕ (mm)	LENGTH (mm)	a	b	c
T 8					
W 1	D 22	6 860	6 679~6 368	330	——
2	"	3 290	2 958	330	——
3	D 16	6 750	6 661~6 351	240	——
4	D 13	15 150	14 800	390	——
5	"	10 470	10 074	390	——
6	"	15 200	14 803	390	——
7	"	500	110	195	——
8	"	550	521~165	111	——
F 1	D 22	4 150	3 449	700	——
2	D 13	1 710	1 512	195	——
3	D 16	2 080	1 380	700	——
4	"	3 580	3 338	240	——
5	"	15 190	14 800	390	——
6	D 13	15 190	14 800	390	——
7	"	15 190	14 800	390	——
8	"	1 960	728	278	111
9	"	1 970	732	282	111

REIN NO.	ϕ (mm)	LENGTH (mm)	a	b	c
T 6					
W 1	D 22	6 230	6 021~5 770	330	——
2	"	3 290	2 958	330	——
3	D 16	6 130	6 005~5 760	240	——
4	D 13	15 190	14 800	390	——
5	"	9 220	9 212	——	——
6	"	15 209	14 806	330	——
7	"	500	110	195	——
8	"	580	523~191	111	——
F 1	D 22	4 200	3 491	700	——
2	D 13	1 660	1 463	195	——
3	D 16	2 080	1 380	700	——
4	"	3 538	3 330	195	——
5	"	15 190	14 800	390	——
6	"	15 190	14 800	390	——
7	"	15 190	14 800	390	——
8	"	1 960	728	278	111
9	"	1 970	732	282	111
T 7					
W 1	D 22	6 460	6 227~6 018	330	——
2	"	3 290	2 958	330	——
3	D 16	6 350	6 210~6 005	240	——
4	D 13	15 190	14 800	390	——
5	"	9 390	9 385	——	——
6	"	15 200	14 806	390	——
7	"	500	110	195	——
8	"	660	538~206	111	——
F 1	D 22	4 180	3 474	700	——
2	D 13	1 680	1 479	195	——
3	D 16	2 080	1 380	700	——
4	"	3 570	3 330	240	——
5	"	15 280	14 880	480	——
6	D 13	15 190	14 800	390	——
7	"	15 190	14 800	390	——
8	"	1 960	728	278	111
9	"	1 970	732	282	111
T 8					
W 1	D 22	6 660	6 432~6 222	330	——
2	"	3 290	2 958	330	——
3	D 16	6 560	6 415~6 218	240	——
4	D 13	15 190	14 800	390	——
5	欠番				
6	"	15 190	14 800	390	——
7	"	500	110	195	——
8	"	600	553~186	111	——
F 1	D 22	3 400	2 842	1 150	——
2	D 13	1 740	1 538	195	——
3	D 16	2 600	1 450	1 150	——
4		3 530	3 330	195	——
5	"	15 190	14 800	390	——
6	D 13	15 190	14 800	390	——
7	"	15 190	14 800	390	——
8	"	1 960	728	278	111
9	"	1 970	732	282	111

NOTES:

JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)

JICA STUDY TEAM
PACIFIC CONSULTANTS INTERNATIONAL
FUKUYAMA CONSULTANTS INTERNATIONAL

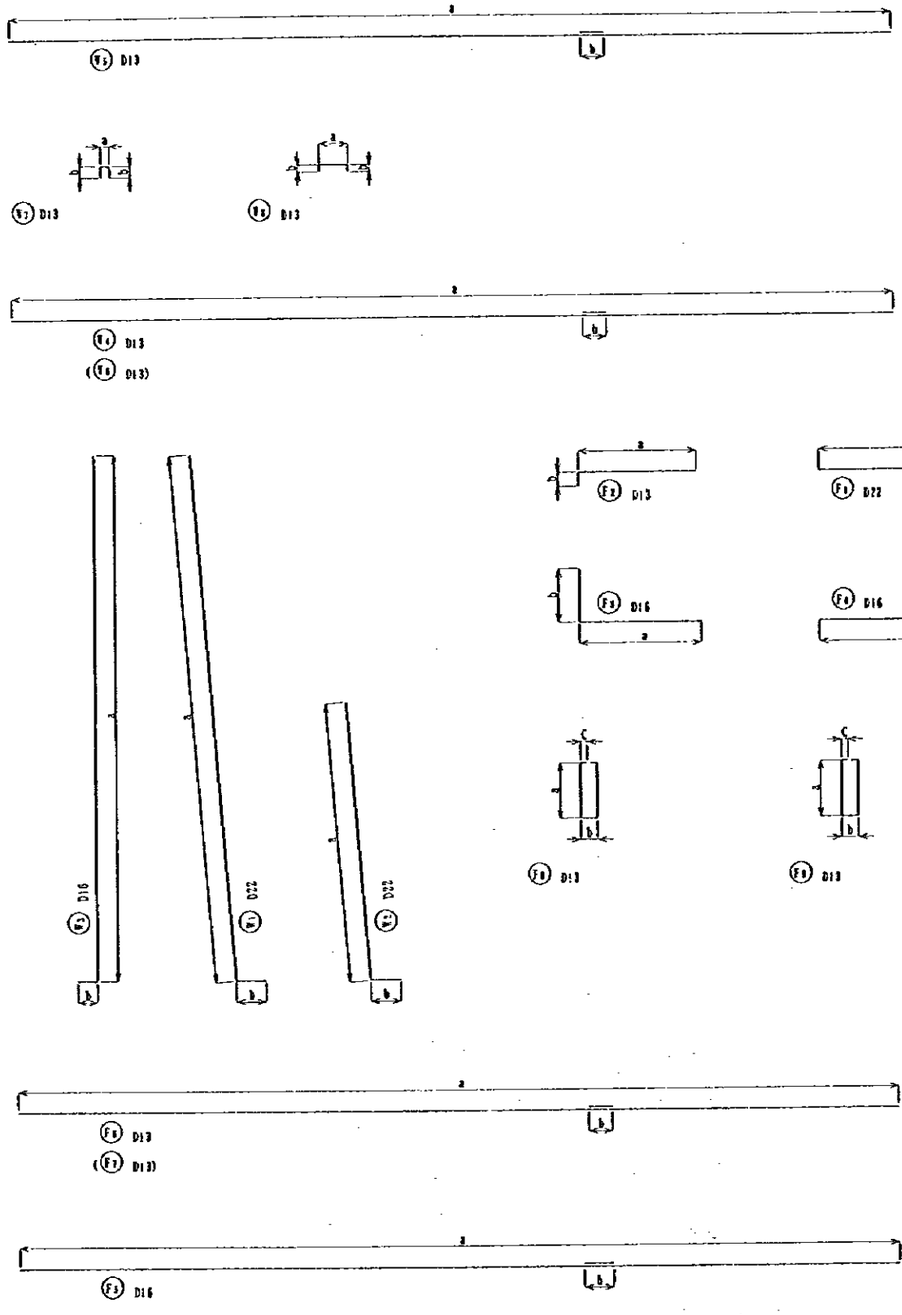
CLIENT : MINISTRY OF COMMUNICATIONS, DIRECTORATE GENERAL OF ROADS

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

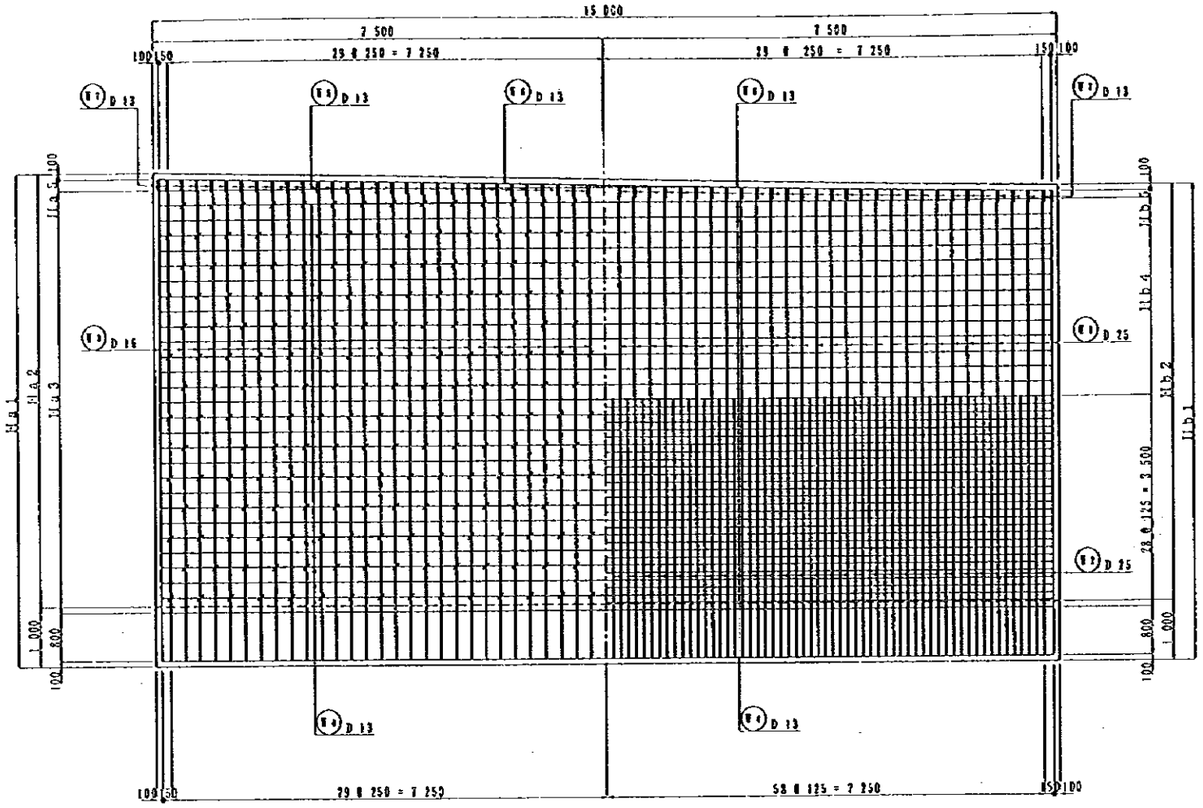
TITLE : R/A-14, FALAJ AL QABAIL RE-BAR ARRANGEMENT (9)

DATE

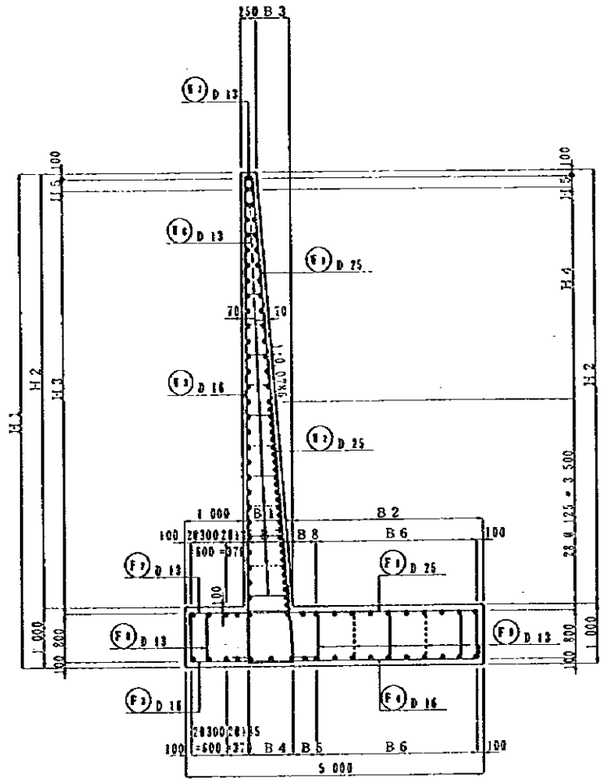
DWG NO. W-11



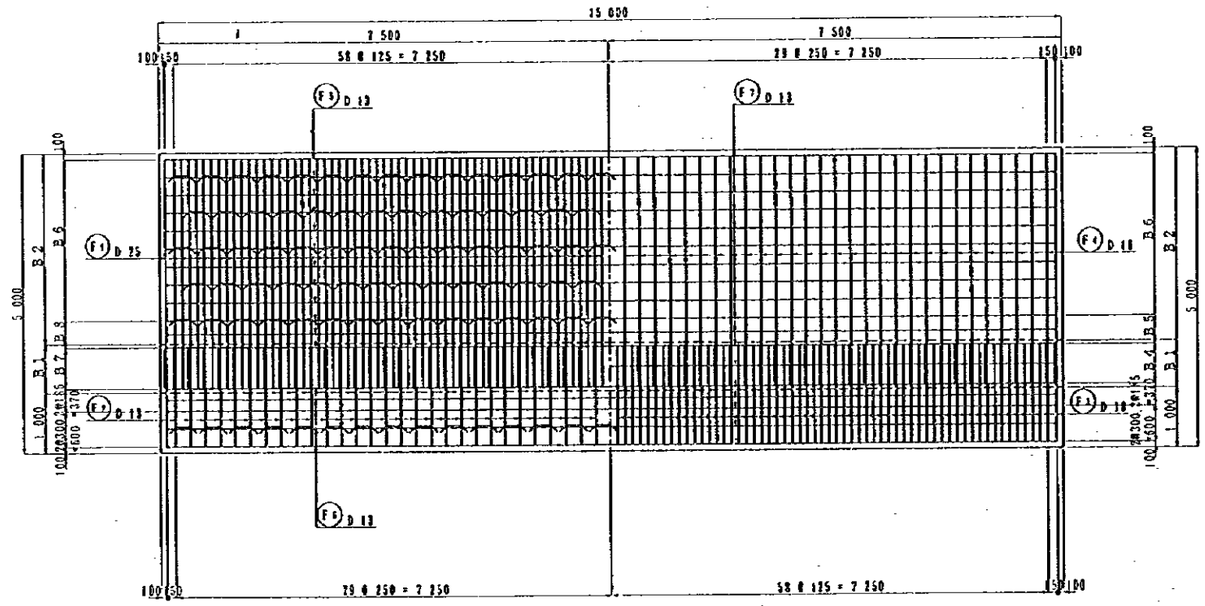
NOTES:		JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)	CLIENT : MINISTRY OF COMMUNICATIONS, DIRECTORATE GENERAL OF ROADS
			PROJECT : D/D ON ROAD DEVELOPMENT PROJECT ON BATINAH HIGHWAY
		JICA STUDY TEAM PACIFIC CONSULTANTS INTERNATIONAL FURUYAMA CONSULTANTS INTERNATIONAL	TITLE : R/A-14, FALAJ AL QABAIL RE-BAR ARRANGEMENT (10)
			DATE DWG NO. W-12



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
FURUYAMA CONSULTANTS INTERNATIONAL

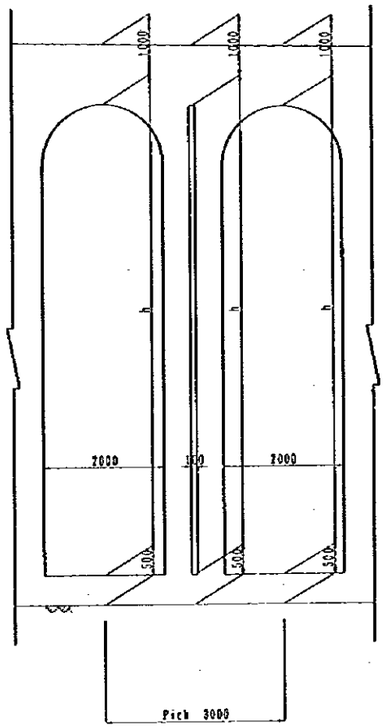
CLIENT : MINISTRY OF COMMUNICATIONS, DIRECTORATE GENERAL OF ROADS
PROJECT : D/D ON ROAD DEVELOPMENT PROJECT ON BATINAH HIGHWAY
TITLE : R/A-14, FALAJ AL QABAIL RE-BAR ARRANGEMENT (II)
DATE
DWG NO. W-13

A LINE

T-9	a – a		b – b
Ha1	7 184	Hb1	7 384
Ha2	6 184	Hb2	6 384
Ha3	24@250 = 6 000	Hb3	25@250 = 6 250
Ha4	10@250 = 2 500	Hb4	11@250 = 2 750
Ha5	184	Hb5	134
Ba1	736	Bb1	752
Ba2	3 264	Bb2	3 248
Ba3	486	Bb3	502
Ba4	2@333.5 = 667	Bb4	2@341.5 = 683
Ba5	2@231.5 = 463	Bb5	2@228.5 = 447
Ba6	9@300 = 2 700	Bb6	9@300 = 2 700
Ba7	604	Bb7	620
Ba8	2@263 = 526	Bb8	2@255 = 510

B LINE

T-9	a – a		b – b
Ha1	7 115	Hb1	7 315
Ha2	6 115	Hb2	6 315
Ha3	24@250 = 6 000	Hb3	24@250 = 6 000
Ha4	10@250 = 2 500	Hb4	10@250 = 2 500
Ha5	115	Hb5	2@157.5 = 315
Ba1	731	Bb1	746
Ba2	3 269	Bb2	3 254
Ba3	481	Bb3	496
Ba4	2@331.0 = 662	Bb4	2@339.5 = 679
Ba5	2@234.0 = 468	Bb5	2@225.5 = 451
Ba6	9@300 = 2 700	Bb6	9@300 = 2 700
Ba7	599	Bb7	614
Ba8	2@265.5 = 531	Bb8	2@258.0 = 516



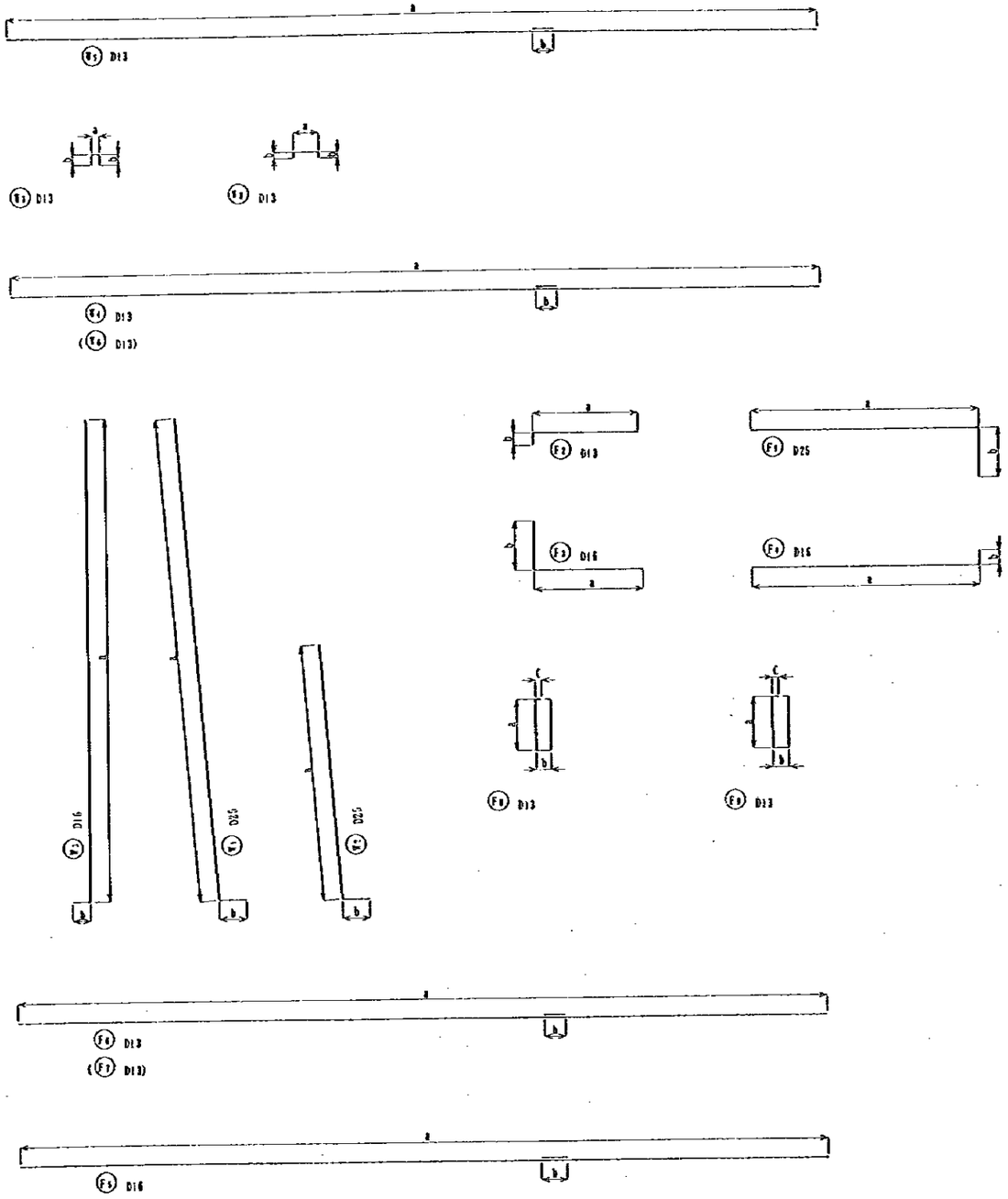
Slit Shape in Front of Wall
(Thickness t=30 mm)

NOTES:

JAPAN INTERNATIONAL COOPERATION AGENCY
(JICA)

JICA STUDY TEAM
PACIFIC CONSULTANTS INTERNATIONAL
FURUYAMA CONSULTANTS INTERNATIONAL

CLIENT : MINISTRY OF COMMUNICATIONS, DIRECTORATE GENERAL OF ROADS
PROJECT : D/D ON ROAD DEVELOPMENT PROJECT ON BATINAH HIGHWAY
TITLE : R/A-14, FALAJ AL QABAIL RE-BAR ARRANGEMENT (12)
DATE
DWG NO. W-14



REIN NO.	φ (mm)	LENGTH (mm)	a	b	c
T 9					
R 1	D 25	7 490	7 208～7 006	375	——
2	〃	4 690	4 313	375	——
3	D 16	7 330	7 184～6 984	195	——
4	D 13	15 150	14 830	390	——
5	〃	9 920	9 920	——	——
6	〃	15 200	14 801	390	——
7	〃	500	110	195	——
8	〃	620	634～162	111	——
F 1	D 25	4 770	3 968	800	——
2	D 13	1 770	1 574	195	——
3	D 16	2 080	1 380	800	——
4	〃	4 070	3 830	240	——
5	D 13	15 190	14 800	390	——
6	〃	15 190	14 800	390	——
7	〃	15 190	14 800	390	——
8	〃	2 160	828	278	111
9	〃	2 160	834	284	111

REIN NO.	φ (mm)	LENGTH (mm)	a	b	c
T 9					
R 1	D 25	5 560	5 050～5 457	285	——
2	〃	3 450	3 159	285	——
3	D 16	5 560	5 471～5 035	195	——
4	D 13	15 190	14 800	390	——
5	欠番				
6	〃	15 200	14 801	390	——
7	〃	500	110	195	——
8	〃	620	638～156	111	——
F 1	D 25	4 780	3 978	800	——
2	D 13	1 780	1 584	195	——
3	D 16	2 080	1 380	800	——
4	〃	4 070	3 830	240	——
5	D 13	15 190	14 800	390	——
6	〃	15 190	14 800	390	——
7	〃	15 190	14 800	390	——
8	〃	2 160	828	278	111
9	〃	2 160	834	284	111

NOTES:

JAPAN INTERNATIONAL COOPERATION AGENCY
(JICA)

JICA STUDY TEAM
PACIFIC CONSULTANTS INTERNATIONAL
FURUYAMA CONSULTANTS INTERNATIONAL

CLIENT : MINISTRY OF COMMUNICATIONS, DIRECTORATE GENERAL OF ROADS
PROJECT : D/D ON ROAD DEVELOPMENT PROJECT ON BATINAH HIGHWAY
TITLE : R/A-14, FALAJ AL QABAIL RE-BAR ARRANGEMENT (13)
DATE
DWG NO. W-15

A-LINE

REIN NO.	ϕ (mm)	LENGTH (mm)	NOMINAL WEIGHT	SUMB	U WEIGHT	WEIGHT	REMARKS
T 1							
W 1	D 19	4 540	2.235	61	10.147	619.0	
2	"	2 550	"	58	5.755	335.8	
3	"	4 540	"	61	10.147	619.0	
4	D 13	15 190	0.994	38	15.099	573.8	
5	"	5 110	"	2	5.079	10.2	
6	"	15 200	"	2	15.109	30.2	
7	"	500	"	61	0.497	30.3	
8	"	470	"	221	0.467	103.2	
F 1	D 19	3 260	2.235	119	7.286	867.0	
2	D 13	1 110	0.994	61	1.103	67.3	
3	D 16	1 280	1.552	119	1.987	236.5	
4	"	2 970	"	61	4.609	281.1	
5	D 13	15 190	0.994	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	
9	"	1 160	"	116	1.153	133.7	
						4 348.2	
T 2							
W 1	D 19	4 880	2.235	61	10.907	665.3	
2	"	2 590	"	58	5.787	353.0	
3	"	4 870	"	61	10.884	663.9	
4	D 13	15 190	0.994	40	15.099	604.0	
5	"	8 880	"	2	8.827	17.7	
6	"	15 200	"	2	15.109	30.2	
7	"	500	"	61	0.497	30.3	
8	"	540	"	221	0.537	118.7	
F 1	D 19	3 220	2.235	119	7.197	856.4	
2	D 13	1 150	0.994	61	1.143	69.7	
3	D 16	1 280	1.552	119	1.987	236.5	
4	"	3 020	"	61	4.687	285.9	
5	D 13	15 190	0.994	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	
9	"	1 160	"	116	1.153	133.7	
						4 506.4	
					D 19	4 979.4	
					D 16	1 040.0	
					D 13	2 835.2	
					TOTAL WEIGHT	8 854.6	

B-LINE

REIN NO.	ϕ (mm)	LENGTH (mm)	NOMINAL WEIGHT	SUMB	U WEIGHT	WEIGHT	REMARKS
T 1							
W 1	D 19	4 350	2.235	61	9.722	593.0	
2	"	2 590	"	58	5.789	335.8	
3	"	4 340	"	61	9.700	591.7	
4	D 13	15 190	0.994	38	15.099	573.8	
5	"	2 470	"	2	2.455	14.5	
6	"	15 200	"	2	15.109	30.2	
7	"	500	"	61	0.497	30.3	
8	"	500	"	192	0.497	95.4	
F 1	D 19	3 280	2.235	119	7.331	872.3	
2	D 13	1 090	0.994	61	1.083	66.1	
3	D 16	1 280	1.552	119	1.987	236.5	
4	"	2 970	"	61	4.609	281.1	
5	D 13	15 190	0.994	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	
9	"	1 160	"	116	1.153	133.7	
						4 265.7	
T 2							
W 1	D 19	4 670	2.235	61	10.437	636.7	
2	"	2 590	"	58	5.789	335.8	
3	"	4 670	"	61	10.437	636.7	
4	D 13	15 190	0.994	38	15.099	573.8	
5	"	11 340	"	2	11.272	22.5	
6	"	15 200	"	2	15.109	30.2	
7	"	500	"	61	0.497	30.3	
8	"	500	"	221	0.497	109.8	
F 1	D 19	3 260	2.235	119	7.286	867.0	
2	D 13	1 110	0.994	61	1.103	67.3	
3	D 16	1 280	1.552	119	1.987	236.5	
4	"	2 970	"	61	4.609	281.1	
5	D 13	15 190	0.994	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	
9	"	1 160	"	116	1.153	133.7	
						4 402.5	
T 3							
W 1	D 19	4 980	3.042	61	11.139	679.5	
2	"	2 590	"	58	5.789	335.8	
3	"	4 970	"	61	11.108	677.6	
4	D 13	15 190	0.994	38	15.099	573.8	
5	"	2 470	"	2	2.122	14.3	
6	"	15 200	"	2	15.109	30.2	
7	"	500	"	61	0.497	30.3	
8	"	520	"	221	0.517	114.3	
F 1	D 19	3 250	2.235	119	7.264	864.4	
2	D 13	1 120	0.994	61	1.113	67.9	
3	D 16	1 280	1.552	119	1.987	236.5	
4	"	2 970	"	61	4.609	281.1	
5	D 13	15 190	0.994	7	15.099	151.0	
6	"	15 190	"	5	15.099	45.3	
7	"	15 190	"	13	15.099	211.4	
8	"	1 160	"	29	1.153	33.4	
9	"	1 160	"	116	1.153	133.7	
						4 479.9	
					D 19	7 425.7	
					D 16	1 552.8	
					D 13	4 165.6	
					TOTAL WEIGHT	13 848.1	

NOTES:

JAPAN INTERNATIONAL COOPERATION AGENCY
(JICA)

JICA STUDY TEAM
PACIFIC CONSULTANTS INTERNATIONAL
FURUYAMA CONSULTANTS INTERNATIONAL

CLIENT : MINISTRY OF COMMUNICATIONS, DIRECTORATE GENERAL OF ROADS
PROJECT : D/D ON ROAD DEVELOPMENT PROJECT ON BATINAH HIGHWAY
TITLE : R/A-14, FALAJ AL QABAIL RE-BAR ARRANGEMENT (14)
DATE
DWG NO. W-16

A-LINE

BEIN NO.	ϕ (mm)	LENGTH (mm)	NOMINAL WEIGHT	NUMB	U WEIGHT	WEIGHT	REMARKS
T 3							
V 1	D 22	5 440	3.042	61	16.548	1 009.4	
2	"	3 090	"	58	9.400	545.2	
3	D 16	5 340	1.552	61	8.283	505.6	
4	D 13	15 190	0.994	44	15.059	664.4	
5	"	12 730	"	2	12.654	25.3	
6	"	15 200	"	2	15.109	30.2	
7	"	500	"	61	0.497	30.3	
8	"	520	"	251	0.517	129.8	
F 1	D 19	3 690	2.235	119	8.247	981.4	
2	D 13	1 360	0.994	61	1.352	83.7	
3	D 16	1 680	1.552	119	2.607	310.2	
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	"	1 560	"	116	1.551	179.9	
						5 174.2	
T 4							
V 1	D 22	5 740	3.042	61	17.461	1 065.1	
2	"	3 090	"	58	9.400	545.2	
3	D 16	5 640	2.235	61	8.753	533.9	
4	D 13	15 190	0.994	45	15.099	679.5	
5	"	7 280	"	2	7.236	14.5	
6	"	15 200	"	2	15.109	30.2	
7	"	500	"	61	0.497	30.3	
8	"	540	"	280	0.537	150.4	
F 1	D 19	3 600	2.235	119	8.202	976.0	
2	D 13	1 400	0.994	61	1.392	84.9	
3	D 16	1 680	1.552	119	2.607	310.2	
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	"	1 560	"	116	1.551	179.9	
						5 278.9	

D 22	3 164.9
D 19	1 957.4
D 16	1 659.9
D 13	3 670.9
TOTAL WEIGHT	10 453.1

B-LINE

BEIN NO.	ϕ (mm)	LENGTH (mm)	NOMINAL WEIGHT	NUMB	U WEIGHT	WEIGHT	REMARKS
T 4							
V 1	D 22	5 520	3.042	61	16.792	1 024.3	
2	"	3 090	"	58	9.400	545.2	
3	D 16	5 420	1.552	61	8.412	513.1	
4	D 13	15 190	0.994	45	15.059	679.5	
5	"	8 130	"	2	8.081	16.2	
6	"	15 200	"	2	15.109	30.2	
7	"	500	"	61	0.497	30.3	
8	"	530	"	251	0.527	132.3	
F 1	D 19	3 650	2.235	119	8.235	978.8	
2	D 13	1 360	0.994	61	1.352	84.3	
3	D 16	1 680	1.552	119	2.607	310.2	
4	D 13	3 230	0.994	61	3.211	195.9	
5	"	15 190	"	10	15.009	150.0	
6	"	15 190	"	4	15.059	60.4	
7	"	15 190	"	15	15.099	226.5	
8	"	1 560	"	29	1.551	45.0	
9	"	1 560	"	116	1.551	179.9	
						5 203.1	
T 5							
V 1	D 22	5 780	3.042	61	17.583	1 072.6	
2	"	3 090	"	58	9.400	545.2	
3	D 16	5 650	1.552	61	8.815	537.7	
4	D 13	15 190	0.994	47	15.059	709.7	
5	"	9 330	"	3	9.274	18.5	
6	"	15 200	"	2	15.109	30.2	
7	"	500	"	61	0.497	30.3	
8	"	540	"	280	0.537	150.4	
F 1	D 19	3 660	2.235	119	8.180	973.4	
2	D 13	1 410	0.536	61	1.403	85.5	
3	D 16	1 680	1.552	119	2.607	310.2	
4	D 13	3 230	0.994	61	3.211	195.9	
5	"	15 190	"	10	15.059	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	"	1 560	"	116	1.551	179.9	
						5 332.4	

D 22	3 187.3
D 19	1 952.2
D 16	1 671.2
D 13	3 714.8
TOTAL WEIGHT	10 525.5

NOTES:

JAPAN INTERNATIONAL COOPERATION AGENCY
(JICA)

JICA STUDY TEAM
PACIFIC CONSULTANTS INTERNATIONAL
FURUYAMA CONSULTANTS INTERNATIONAL

CLIENT : MINISTRY OF COMMUNICATIONS, DIRECTORATE GENERAL OF ROADS

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

TITLE : R/A-14, FALAJ AL QABAIL RE-BAR ARRANGEMENT (15)

DATE

DWG NO. W-17

A－LINE

REIN NO.	ϕ (mm)	LENGTH (mm)	NOMINAL WEIGHT	NUMB	U WEIGHT	WEIGHT	REMARKS
T 5							
W 1	D 22	6 210	3.042	61	18.891	1 152.4	
2	〃	3 290	〃	58	10.008	580.5	
3	D 16	6 110	1.552	61	9.483	578.5	
4	D 13	15 190	0.994	44	15.059	739.9	
5	〃	8 520	〃	2	8.469	16.9	
6	〃	15 200	〃	2	15.109	30.2	
7	〃	500	〃	61	0.497	30.3	
8	〃	580	〃	295	0.577	170.2	
F 1	D 22	4 200	3.042	119	12.776	1520.3	
2	D 13	1 660	0.994	61	1.650	100.7	
3	D 16	2 080	1.552	119	3.228	384.1	
4	〃	3 570	〃	61	5.541	338.0	
5	〃	15 280	〃	11	23.715	260.9	
6	D 13	15 190	0.994	5	15.059	75.5	
7	〃	15 190	〃	17	15.059	256.7	
8	〃	1 960	〃	29	1.948	56.5	
9	〃	1 970	〃	116	1.958	227.1	
						6 518.7	
T 6							
W 1	D 22	6 470	3.042	61	20.047	1 222.9	
2	〃	3 290	〃	58	10.008	705.7	
3	D 16	6 360	1.552	61	10.057	613.5	
4	D 13	15 190	0.994	51	15.059	724.8	
5	〃	8 580	〃	2	7.562	31.8	
6	〃	15 200	〃	2	15.109	30.2	
7	〃	500	〃	61	0.497	30.3	
8	〃	600	〃	295	0.596	175.8	
F 1	D 22	4 180	3.042	119	12.716	1513.2	
2	D 13	1 680	0.994	61	1.670	101.9	
3	D 16	2 080	1.552	119	3.228	384.1	
4	〃	3 570	〃	61	5.541	338.0	
5	〃	15 280	〃	11	23.715	260.9	
6	D 13	15 190	0.994	5	15.059	75.5	
7	〃	15 190	〃	17	15.059	256.7	
8	〃	1 960	〃	29	1.948	56.5	
9	〃	1 970	〃	116	1.958	227.1	
						6 620.5	

REIN NO.	ϕ (mm)	LENGTH (mm)	NOMINAL WEIGHT	NUMB	U WEIGHT	WEIGHT	REMARKS
T 7							
W 1	D 22	6 650	3.042	61	20.225	1 234.0	
2	〃	3 290	〃	58	10.008	580.5	
3	D 16	6 540	1.552	61	10.150	619.2	
4	D 13	15 190	0.994	52	15.039	800.2	
5	——	——	——	——	——	——	
6	〃	15 190	〃	2	15.059	30.2	
7	〃	500	〃	61	0.497	30.3	
8	〃	600	〃	325	0.596	193.7	
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	2 080	1.552	119	3.228	384.1	
4	〃	3 580	〃	61	5.556	338.9	
5	〃	15 280	〃	11	23.715	260.9	
6	D 13	15 190	0.994	5	15.059	75.5	
7	〃	15 190	〃	17	15.059	256.7	
8	〃	1 960	〃	29	1.948	56.7	
9	〃	1 970	〃	116	1.958	227.1	
						6 697.0	
T 8							
W 1	D 22	6 860	3.042	61	20.868	1 272.9	
2	〃	3 290	〃	58	10.008	580.5	
3	D 16	6 750	1.552	61	10.476	639.0	
4	D 13	15 190	0.994	53	15.053	800.2	
5	〃	10 470	〃	2	10.407	20.8	
6	〃	15 200	〃	2	15.109	30.2	
7	〃	500	〃	61	0.497	30.3	
8	〃	590	〃	325	0.586	190.5	
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	2 080	1.552	119	3.228	384.1	
4	〃	3 580	〃	61	5.556	338.9	
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	56.7	
9	〃	1 970	〃	116	1.956	227.1	
						6 770.3	
					D 22	13 223.6	
					D 16	6 372.6	
					D 13	7 010.3	
					TOTAL WEIGHT	26 606.5	

B－LINE

REIN NO.	ϕ (mm)	LENGTH (mm)	NOMINAL WEIGHT	NUMB	U WEIGHT	WEIGHT	REMARKS
T 6							
W 1	D 22	6 230	3.042	61	18.617	1 135.6	
2	〃	3 290	〃	58	10.168	705.7	
3	D 16	6 130	1.552	61	9.328	569.0	
4	D 13	15 190	0.994	44	15.099	664.4	
5	〃	9 220	〃	2	8.698	17.4	
6	〃	15 200	〃	2	15.109	30.2	
7	〃	500	〃	61	0.497	30.3	
8	〃	580	〃	266	0.577	153.5	
F 1	D 22	4 200	3.042	119	12.776	1520.3	
2	D 13	1 660	0.994	61	1.656	100.7	
3	D 16	2 080	1.552	119	3.228	384.1	
4	〃	3 570	〃	61	5.541	338.0	
5	〃	15 280	〃	11	23.715	260.9	
6	D 13	15 190	0.994	5	15.059	75.5	
7	〃	15 190	〃	17	15.099	256.7	
8	〃	1 960	〃	29	1.948	56.5	
9	〃	1 970	〃	116	1.958	227.1	
						6 525.7	
T 7							
W 1	D 22	6 460	3.042	61	19.864	1 211.7	
2	〃	3 290	〃	58	10.168	705.7	
3	D 16	6 350	1.552	61	9.954	607.8	
4	D 13	15 190	0.994	48	15.099	724.8	
5	〃	9 390	〃	2	8.360	16.7	
6	〃	15 200	〃	2	15.109	30.2	
7	〃	500	〃	61	0.497	30.3	
8	〃	600	〃	266	0.616	163.5	
F 1	D 22	4 180	3.042	119	12.716	1 513.2	
2	D 13	1 680	0.994	61	1.670	101.9	
3	D 16	2 080	1.552	119	3.228	384.1	
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	〃	1 970	〃	116	1.958	227.1	
						6 486.3	

REIN NO.	ϕ (mm)	LENGTH (mm)	NOMINAL WEIGHT	NUMB	U WEIGHT	WEIGHT	REMARKS
T 8							
W 1	D 22	6 660	3.042	61	20.260	1 235.9	
2	〃	3 290	〃	58	10.008	580.5	
3	D 16	6 560	1.552	61	10.181	631.0	
4	D 13	15 190	0.994	50	15.093	785.1	
5	——	——	——	——	——	——	
6	〃	15 190	〃	2	15.059	30.2	
7	〃	500	〃	61	0.497	30.3	
8	〃	600	〃	325	0.596	193.7	
F 1	D 22	4 160	3.042	119	12.655	1 505.9	
2	D 13	1 690	0.994	61	1.680	102.5	
3	D 16	2 080	1.552	119	3.228	384.1	
4	〃	3 570	〃	61	5.541	338.0	
5	〃	15 280	〃	11	23.715	260.9	
6	D 13	15 190	0.994	5	15.093	75.5	
7	〃	15 190	〃	17	15.059	256.7	
8	〃	1 960	〃	29	1.948	56.5	
9	〃	1 970	〃	116	1.958	227.1	
						6 683.9	
					D 22	9 871.6	
					D 16	4 751.6	
					D 13	5 072.7	
					TOTAL WEIGHT	19 695.9	

NOTES:

JAPAN INTERNATIONAL COOPERATION AGENCY
(JICA)

JICA STUDY TEAM
PACIFIC CONSULTANTS INTERNATIONAL
FURUYAMA CONSULTANTS INTERNATIONAL

CLIENT : MINISTRY OF COMMUNICATIONS, DIRECTORATE GENERAL OF ROADS
PROJECT : D/D ON ROAD DEVELOPMENT PROJECT ON BATINAH HIGHWAY
TITLE : R/A-14, FALAJ AL QABAIL RE-BAR ARRANGEMENT (16)
DATE
DWG NO. W-18

A－LINE

REIN NO.	ϕ (mm)	LENGTH (m)	NOMINAL WEIGHT	NUMB	U WEIGHT	WEIGHT	REMARKS
T 9							
W 1	D 25	7 490	3.973	61	29.758	1 815.2	
2	〃	4 690	〃	58	18.633	1 080.7	
3	D 16	7 330	1.552	61	11.376	693.9	
4	D 13	15 190	0.994	62	15.099	936.1	
5	〃	9 920	〃	2	9.860	19.7	
6	〃	15 200	〃	2	15.109	30.2	
7	〃	500	〃	61	0.497	30.3	
8	〃	620	〃	369	0.616	227.3	
F 1	D 25	4 720	3.973	119	18.954	2 255.2	
2	D 13	1 770	0.994	61	1.759	107.3	
3	D 16	2 050	1.552	249	3.228	384.1	
4	D 13	4 070	0.994	61	6.317	385.3	
5	〃	15 190	〃	12	15.099	181.2	
6	〃	15 190	〃	5	15.099	75.5	
7	〃	15 190	〃	18	15.099	271.8	
8	〃	2 160	〃	29	2.147	62.3	
9	〃	2 160	〃	145	2.147	311.2	
						8 870.3	

D 25	5 151.1
D 16	1 463.3
D 13	2 255.9
TOTAL WEIGHT	8 870.3

B－LINE

REIN NO.	ϕ (mm)	LENGTH (mm)	NOMINAL WEIGHT	NUMB	U WEIGHT	WEIGHT	REMARKS
T 9							
W 1	D 25	7 420	3.973	61	29.489	1 799.3	
2	〃	4 690	〃	58	18.633	1 080.7	
3	D 16	7 260	1.552	61	11.268	687.3	
4	D 13	15 190	0.994	62	15.099	936.1	
5	——	——	——	——	——	——	
6	D 13	15 200	0.994	3	15.109	30.2	
7	〃	500	〃	61	0.497	30.3	
8	〃	620	〃	354	0.616	218.1	
F 1	D 25	4 780	3.973	119	18.991	2 259.9	
2	D 13	1 780	0.994	61	1.769	107.9	
3	D 16	2 080	1.552	249	3.228	384.1	
4	〃	4 070	〃	61	6.317	385.3	
5	D 13	15 190	0.994	12	15.099	181.2	
6	〃	15 190	〃	5	15.099	75.5	
7	〃	15 190	〃	18	15.099	271.8	
8	〃	2 160	〃	29	2.147	62.3	
9	〃	2 160	〃	145	2.147	311.2	
						8 823.1	

D25	5 138.9
D16	1 456.7
D13	2 227.6
TOTAL WEIGHT	8 823.2

NOTES:

JAPAN INTERNATIONAL COOPERATION AGENCY
(JICA)

JICA STUDY TEAM
PACIFIC CONSULTANTS INTERNATIONAL
FURUYAMA CONSULTANTS INTERNATIONAL

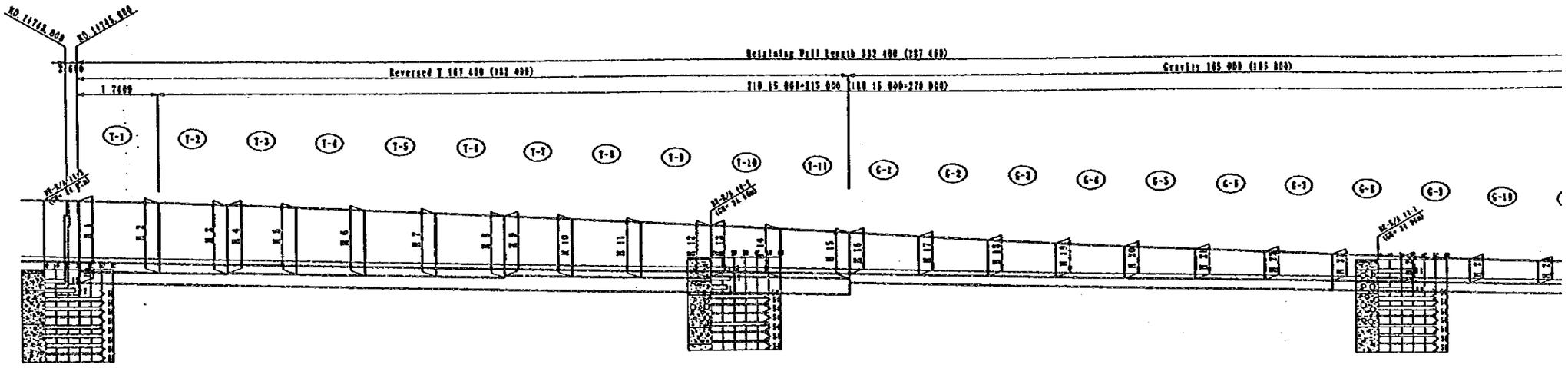
CLIENT : MINISTRY OF COMMUNICATIONS, DIRECTORATE GENERAL OF ROADS

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

TITLE : R/A-14, FALAJ AL QABAIL RE-BAR ARRANGEMENT (17)

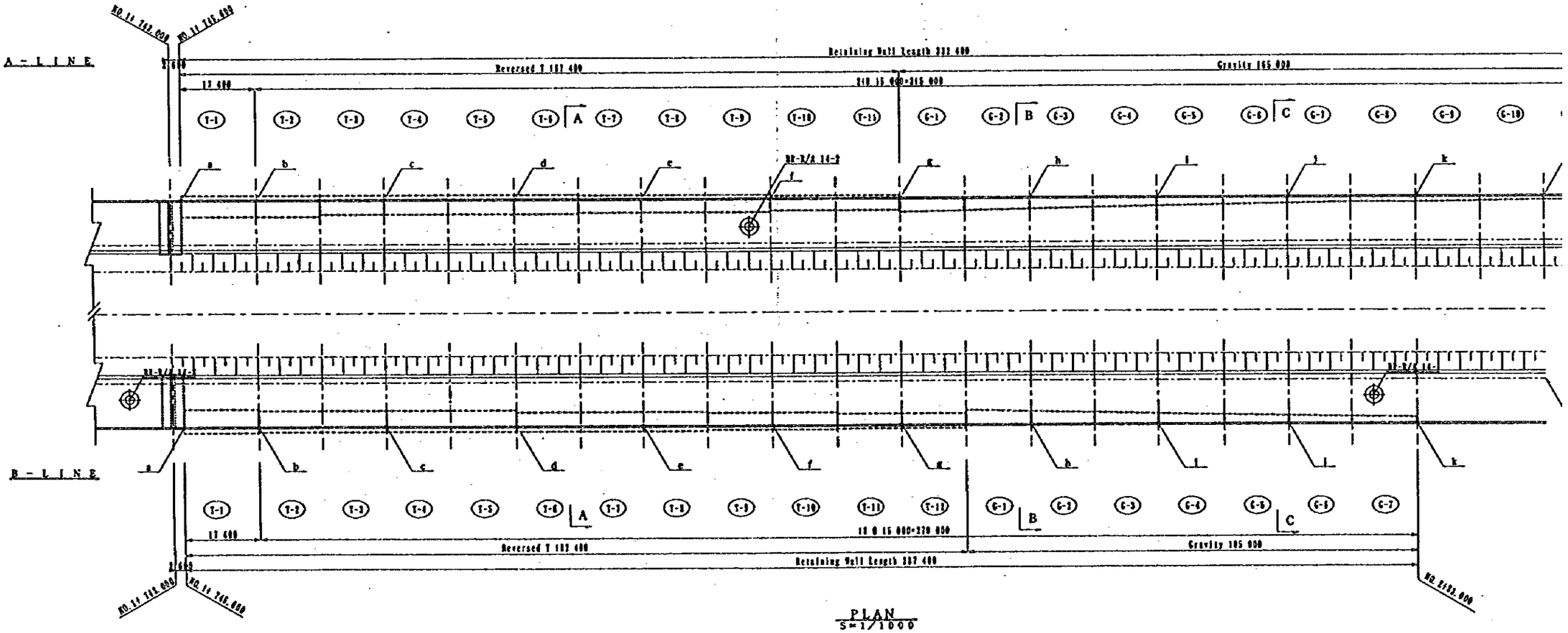
DATE

DWG NO. W-19



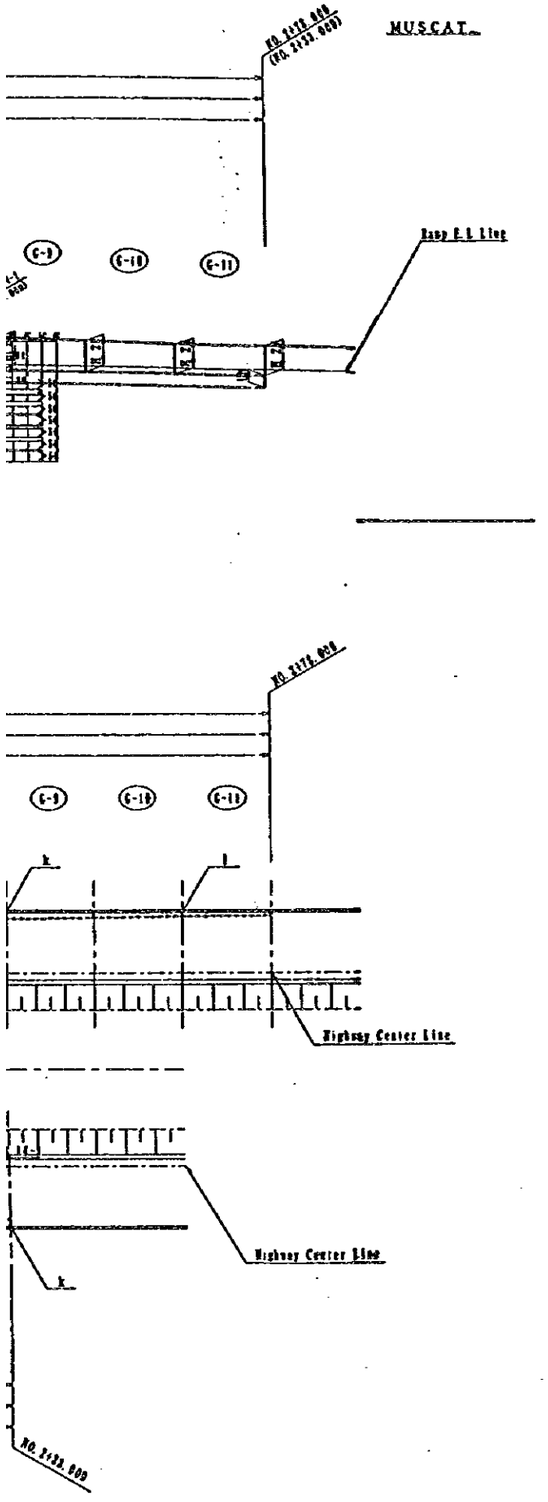
DL=10.00

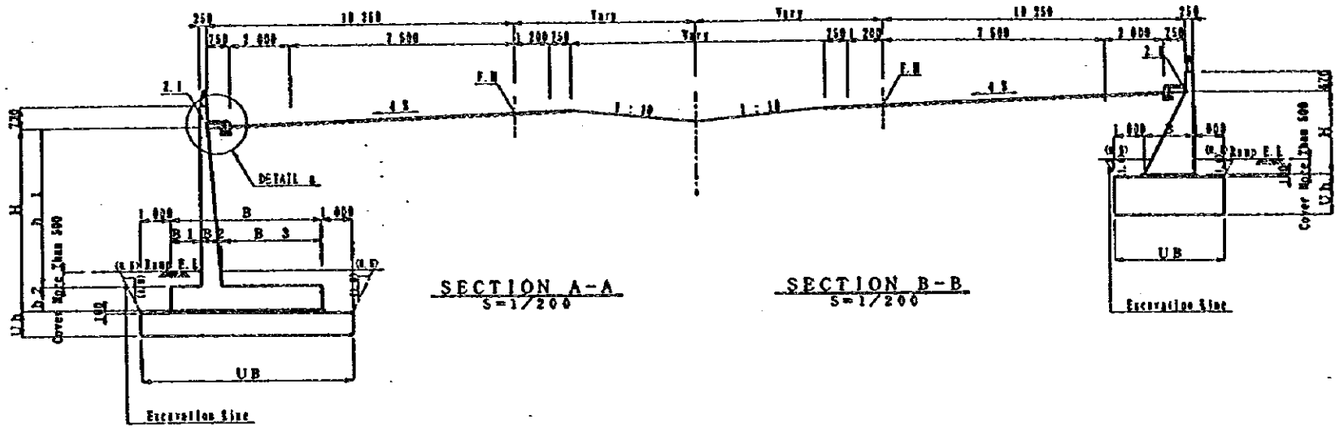
SIDE VIEW
H=1/1000
V=1/500



PLAN
S=1/1000

NOTES:



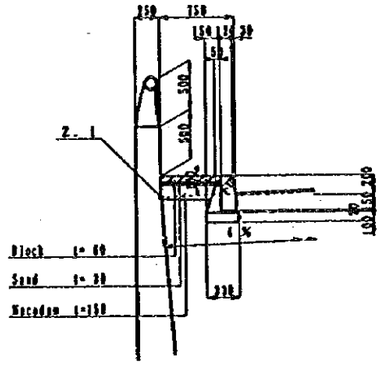


Reversed T

TYPE \ MARK		H	h 1	h 2	B	B 1	B 2	B 3	U h	U B
A LINE	T-1	8 1•7 935	6 935	1 000	5 000	1 000	795	3 205	2 500	7 000
	T-2	9•7 235	6 235				740	3 260		
	T-3	9•7 030	6 030				724	3 276		
	T-4	8•6 930	5 824	900	4 500	1 000	695	2 805	2 600	6 500
	T-5	8•6 724	5 577				680	2 820		
	T-6	8•6 477	5 320				662	2 838		
	T-7	7•6 220	5 040				643	2 857		
	T-8	8•5 940	4 759				622	2 878		
	T-9	9•5 740	4 437	700	4 000	800	583	2 617	2 800	6 000
	T-10	10•5 459	4 214				564	2 636		
	T-11	11•5 137	3 759				543	2 657		
	T-12	11•4 814	3 394				522	2 678		
B LINE	T-1	8 1•8 565	7 465	1 100	5 500	1 200	864	3 436	2 500	7 500
	T-2	9•7 871	6 771				807	3 493		
	T-3	9•7 771	6 672	1 000	5 000	1 000	782	3 218	2 600	7 000
	T-4	8•7 572	6 372				767	3 233		
	T-5	8•7 372	6 132				751	3 249		
	T-6	8•7 132	5 882				732	3 268		
	T-7	7•6 882	5 785				712	3 288		
	T-8	8•6 782	5 687	900	4 500	1 000	684	2 816	2 700	6 500
	T-9	9•6 685	5 368				677	2 823		
	T-10	10•6 587	4 648				670	2 830		
	T-11	11•6 068	4 017				631	2 869		
	T-12	11•5 868	3 909	700	4 000	800	591	2 609	2 800	6 000
	T-13	11•5 348	3 587				557	2 643		
	T-14	10•4 727					515	2 685		
	T-15	10•4 517		500	3 500	600	473	2 427	3 000	6 500
	T-16	10•4 409					467	2 433		
	T-17	11•4 087					449	2 451		

Gravity

TYPE \ MARK		H	B	U h	U B
A LINE	C-1	816•3 394	2 286	2000	4 286
	C-2	17•3 083	2 100		4 100
	C-3	15•2 751	1 901		3 901
	C-4	15•2 435	1 731		3 731
	C-5	20•2 118	1 521		3 521
	C-6	21•1 876	1 376		3 376
	C-7	22•1 633	1 067		3 067
	C-8	23•1 405	1 093		3 093
	C-9	24•1 417	1 100		3 417
	C-10	25•1 224	984		3 224
	C-11	26•1 030	868		3 030
	C-12	27• 892	785		2 785
B LINE	C-1	818•3 587	2 402	2000	4 402
	C-2	15•3 244	1 872		3 872
	C-3	20•2 940	1 720		3 720
	C-4	21•2 635	1 831		3 831
	C-5	22•2 367	1 670		3 670
	C-6	23•2 098	1 509		3 509
	C-7	24•1 867	1 370		3 370
	C-8	25•1 636	1 232		3 232



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 FURUYAMA CONSULTANTS INTERNATIONAL	TITLE :	R/A-14, FALAJ AL QABAIL GENERAL VIEW FOR WALL (2)-1
	DATE	DWG NO. W-20

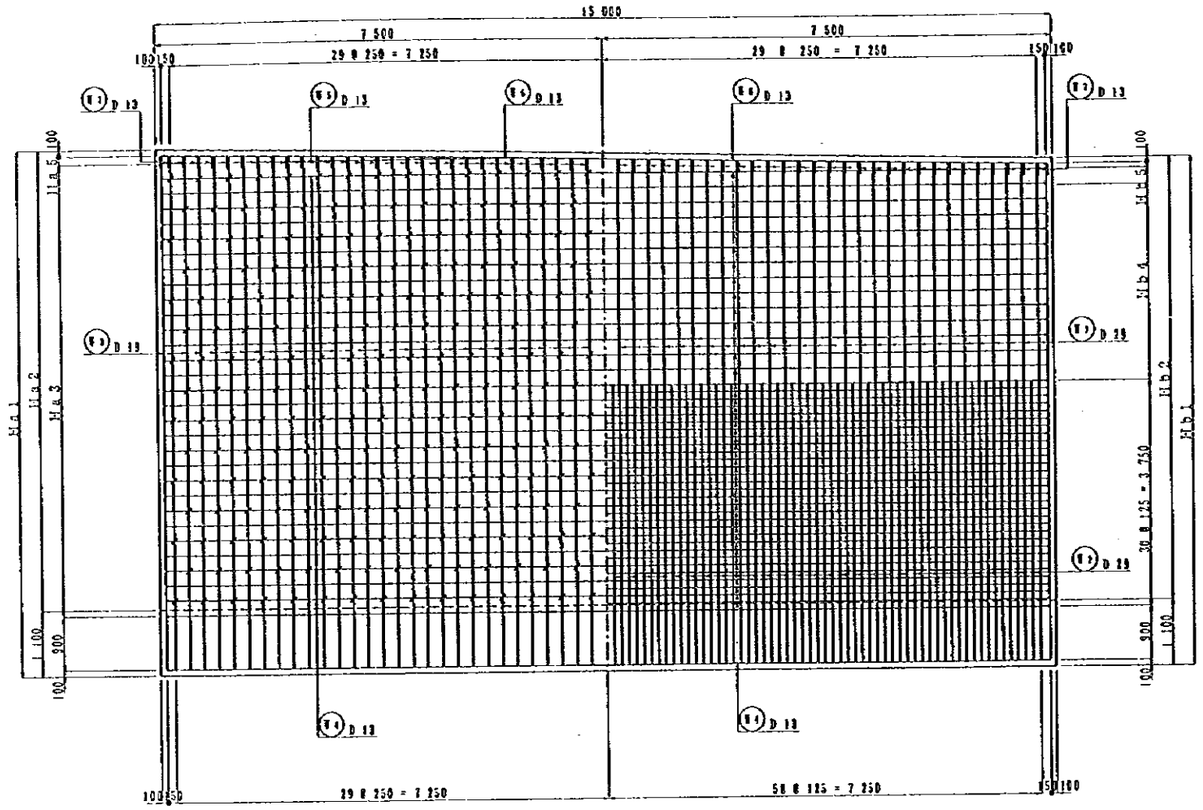
Point		a	b	c	d	e	f	g	h	i	j	k	l
A LINE	N	+2701188.48694	+2701177.52020	+2701161.60775	+2701146.34966	+2701131.74766	+2701117.77411	+2701104.39232	+2701091.56387	+2701079.24886	+2701067.40610	+2701055.99330	+2701044.96727
	E	+ 460724.35590	+ 460741.08076	+ 460766.51194	+ 460792.34100	+ 460818.54755	+ 460845.09449	+ 460871.94458	+ 460899.06341	+ 460926.41922	+ 460953.98276	+ 460981.72709	+ 461009.62739
	Z	32.098	31.765	31.194	30.540	29.819	29.014	28.144	27.321	26.568	25.883	25.267	24.720
B LINE	N	+2701159.91124	+2701146.91951	+2701132.95323	+2701117.62122	+2701110.19581	+2701088.85604	+2701075.36798	+2701062.42915	+2701050.00213	+2701038.04810	+2701026.52705	+2701015.39792
	E	+ 460703.14462	+ 460719.85308	+ 460745.25056	+ 460771.03590	+ 460784.06897	+ 460823.68560	+ 460850.48247	+ 40877.54881	+ 460904.85392	+ 460932.36939	+ 460960.06895	+ 460987.92828
	Z	32.628	32.301	31.742	31.102	30.747	29.548	28.659	27.814	27.045	26.348	25.726	25.179

NOTES:

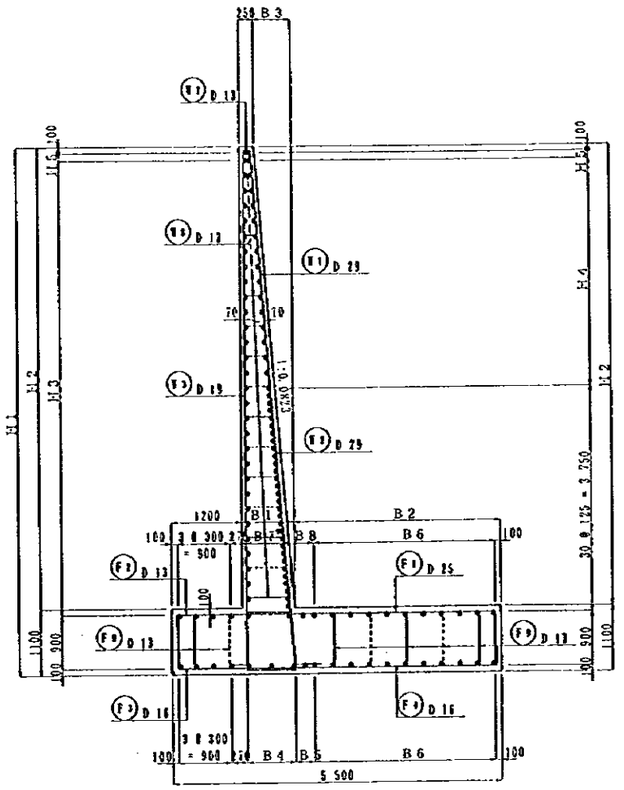
JAPAN INTERNATIONAL COOPERATION AGENCY
(JICA)

JICA STUDY TEAM
PACIFIC CONSULTANTS INTERNATIONAL
FURUYAMA CONSULTANTS INTERNATIONAL

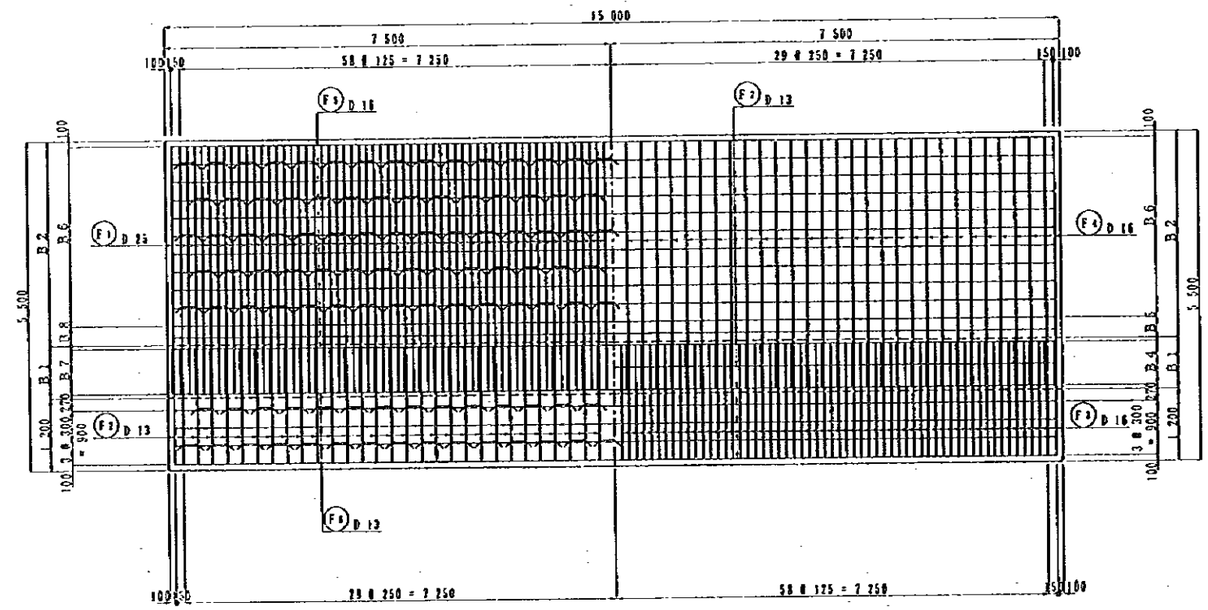
CLIENT : MINISTRY OF COMMUNICATIONS, DIRECTORATE GENERAL OF ROADS
PROJECT : D/D ON ROAD DEVELOPMENT PROJECT ON BATINAH HIGHWAY
TITLE : R/A-14, FALAJ AL QABAIL GENERAL VIEW FOR WALL (2)-2
DATE
DWG NO. W-21



SIDE VIEW
S=1/100



SECTION
S=1/100



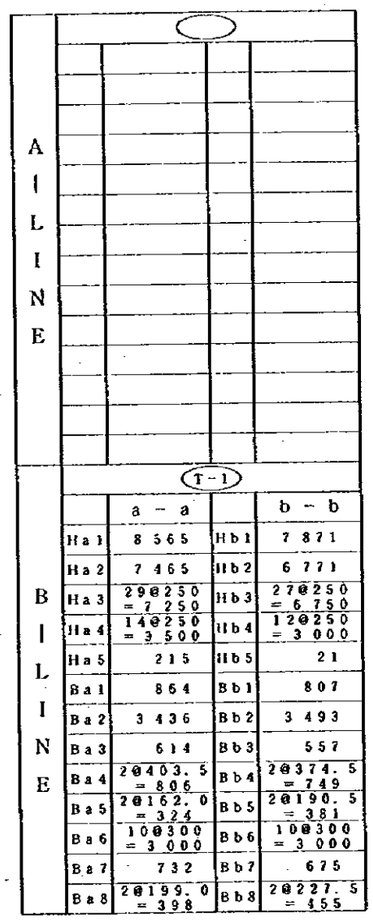
PLAN
S=1/100

NOTES:

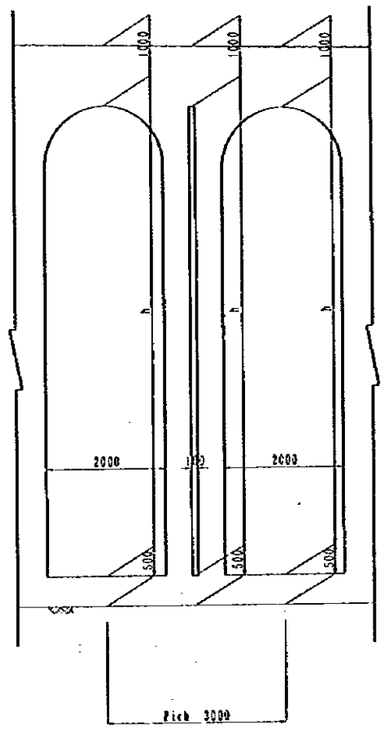
JAPAN INTERNATIONAL COOPERATION AGENCY
(JICA)

JICA STUDY TEAM
PACIFIC CONSULTANTS INTERNATIONAL
FURUYAMA CONSULTANTS INTERNATIONAL

CLIENT :	MINISTRY OF COMMUNICATIONS, DIRECTORATE GENERAL OF ROADS
PROJECT :	D/D ON ROAD DEVELOPMENT PROJECT ON BATINAH HIGHWAY
TITLE :	R/A-14, FALAJ AL QABAIL RE-BAR ARRANGEMENT (1)
DATE	DWG NO. W-22



	a – a		b – b
Ha1	8 565	Hb1	7 871
Ha2	7 465	Hb2	6 771
Ha3	29@250 = 7 250	Hb3	27@250 = 6 750
Ha4	14@250 = 3 500	Hb4	12@250 = 3 000
Ha5	215	Hb5	21
Ba1	864	Bb1	807
Ba2	3 436	Bb2	3 493
Ba3	614	Bb3	557
Ba4	2@403.5 = 806	Bb4	2@374.5 = 749
Ba5	2@162.0 = 324	Bb5	2@190.5 = 381
Ba6	10@300 = 3 000	Bb6	10@300 = 3 000
Ba7	732	Bb7	675
Ba8	2@199.0 = 398	Bb8	2@227.5 = 455



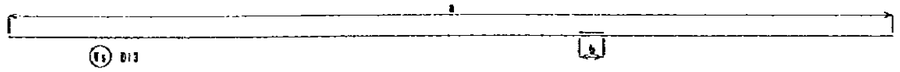
Slit Shape in Front of Wall
(Thickness t=30 mm)

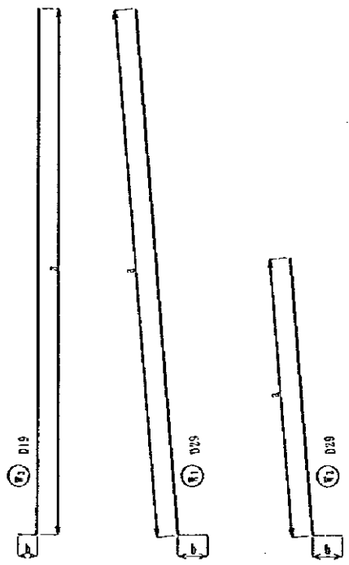
NOTES:

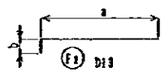
JAPAN INTERNATIONAL COOPERATION AGENCY
(JICA)

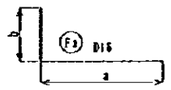
JICA STUDY TEAM
PACIFIC CONSULTANTS INTERNATIONAL
FURUYAMA CONSULTANTS INTERNATIONAL

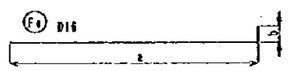
CLIENT : MINISTRY OF COMMUNICATIONS, DIRECTORATE GENERAL OF ROADS
PROJECT : D/D ON ROAD DEVELOPMENT PROJECT ON BATINAH HIGHWAY
TITLE : R/A-14, FALAJ AL QABAIL RE-BAR ARRANGEMENT (2)
DATE
DWG NO. W-23

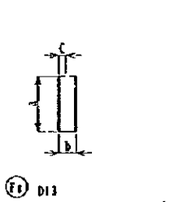


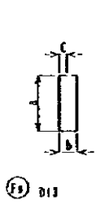


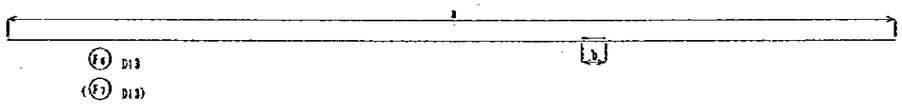


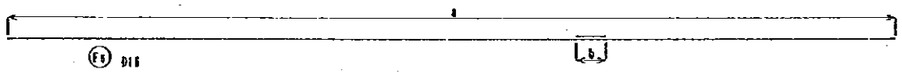












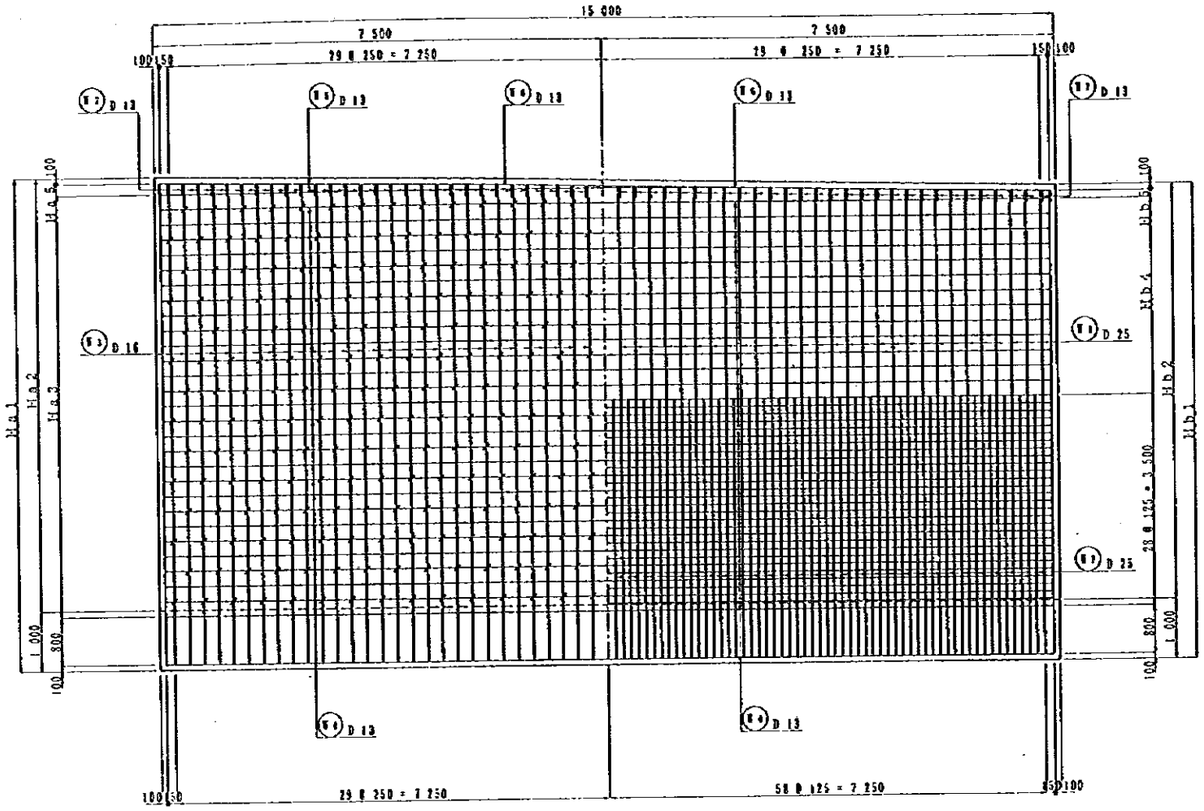
REIS NO.	ϕ (mm)	LENGTH (mm)	a	b	c
I E					
W 1	D 29	8 480	8 397~7 697	435	——
2	〃	5 110	4 866	435	——
3	D 19	8 310	8 365~7 671	285	——
4	D 13	15 150	14 800	350	——
5	〃	7 260	9 916~4 585	——	——
6	〃	15 200	14 816	390	——
7	〃	500	110	195	——
8	〃	710	749~214	111	——
F 1	D 25	5 080	4 177	900	——
2	D 19	2 070	1 866	195	——
3	D 16	2 460	1 560	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	390	——
8	〃	2 360	928	278	111
9	〃	2 330	934	284	111

NOTES:

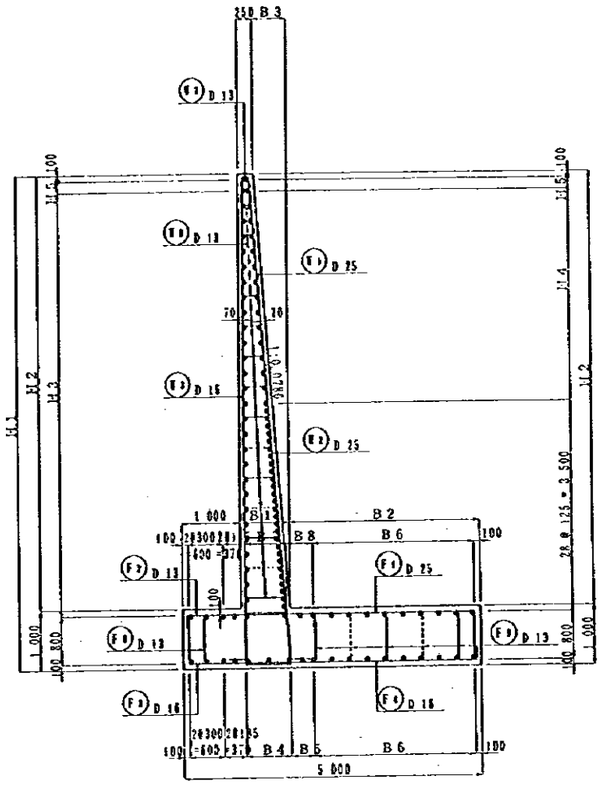
JAPAN INTERNATIONAL COOPERATION AGENCY
(JICA)

JICA STUDY TEAM
PACIFIC CONSULTANTS INTERNATIONAL
FURUYAMA CONSULTANTS INTERNATIONAL

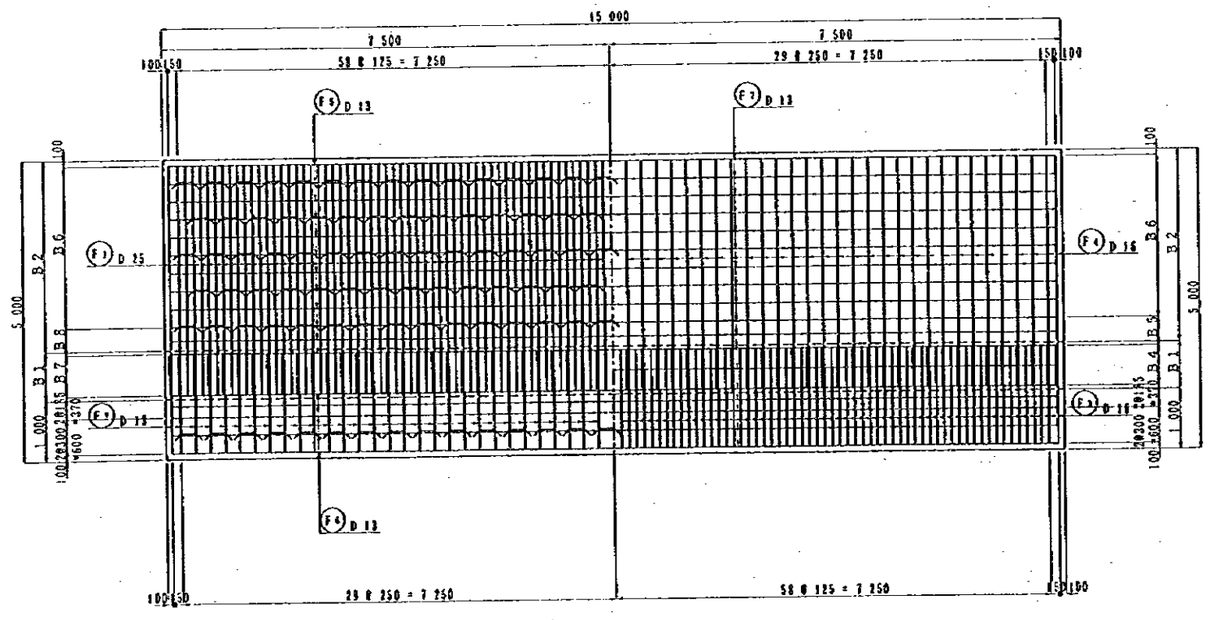
CLIENT : MINISTRY OF COMMUNICATIONS, DIRECTORATE GENERAL OF ROADS
PROJECT : D/D ON ROAD DEVELOPMENT PROJECT ON BATINAH HIGHWAY
TITLE : R/A-14, FALAJ AL QABAIL RE-BAR ARRANGEMENT (3)
DATE
DWG NO. W-24



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
FURUYAMA CONSULTANTS INTERNATIONAL

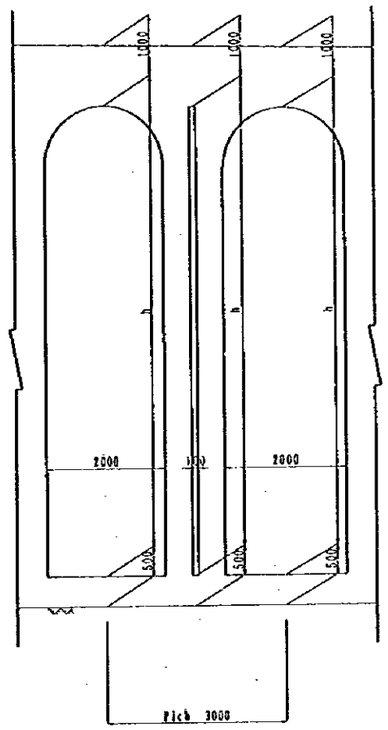
CLIENT :	MINISTRY OF COMMUNICATIONS, DIRECTORATE GENERAL OF ROADS
PROJECT :	D/D ON ROAD DEVELOPMENT PROJECT ON BATINAH HIGHWAY
TITLE :	R/A-14, FALAJ AL QABAIL RE-BAR ARRANGEMENT (4)
DATE	DWG NO. W-25

A LINE

	T-1 a – a		T-1 b – b	T-2 a – a		T-2 b – b
Ha1	7 935	Hb1	7 235	7 235	Hb1	7 030
Ha2	6 935	Hb2	6 235	6 235	Hb2	6 030
Ha3	27@250 = 6 750	Hb3	24@250 = 6 000	24@250 = 6 000	Hb3	24@250 = 6 000
Ha4	13@250 = 3 250	Hb4	10@250 = 2 500	10@250 = 2 500	Hb4	10@250 = 2 500
Ha5	185	Hb5	235	235	Hb5	30
Ba1	795	Bb1	740	740	Bb1	724
Ba2	3 455	Bb2	3 510	3 510	Bb2	3 526
Ba3	545	Bb3	490	490	Bb3	474
Ba4	2@363.0 = 726	Bb4	2@335.5 = 671	2@335.5 = 671	Bb4	2@327.5 = 655
Ba5	2@202.0 = 404	Bb5	2@229.5 = 459	2@229.5 = 459	Bb5	2@237.5 = 475
Ba6	9@300 = 2 700	Bb6	9@300 = 2 700	9@300 = 2 700	Bb6	10@300 = 3 000
Ba7	663	Bb7	608	608	Bb7	592
Ba8	2@233.5 = 467	Bb8	2@261.0 = 522	2@261.0 = 522	Bb8	2@269.0 = 538

B LINE

	T-2 a – a		T-2 b – b	T-3 a – a		T-3 b – b	T-4 a – a		T-4 b – b	T-5 a – a		T-5 b – b
Ha1	7 771	Hb1	7 572	7 572	Hb1	7 372	7 372	Hb1	7 132	7 132	Hb1	6 882
Ha2	6 771	Hb2	6 572	6 572	Hb2	6 372	6 372	Hb2	6 132	6 132	Hb2	5 882
Ha3	26@250 = 6 500	Hb3	26@250 = 6 500	25@250 = 6 250	Hb3	25@250 = 6 250	25@250 = 6 250	Hb3	24@250 = 6 000	24@250 = 6 000	Hb3	23@250 = 5 750
Ha4	12@250 = 3 000	Hb4	12@250 = 3 000	11@250 = 2 750	Hb4	11@250 = 2 750	11@250 = 2 750	Hb4	10@250 = 2 500	10@250 = 2 500	Hb4	9@250 = 2 250
Ha5	2@135.5 = 271	Hb5	72	2@161.0 = 322	Hb5	122	122	Hb5	132	132	Hb5	132
Ba1	782	Bb1	767	767	Bb1	751	751	Bb1	732	732	Bb1	712
Ba2	3 218	Bb2	3 233	3 233	Bb2	3 249	3 249	Bb2	3 268	3 268	Bb2	3 288
Ba3	532	Bb3	517	517	Bb3	501	501	Bb3	482	482	Bb3	462
Ba4	2@356.5 = 713	Bb4	2@349.0 = 698	2@349.0 = 698	Bb4	2@341.0 = 682	2@341.0 = 682	Bb4	2@331.5 = 663	2@331.5 = 663	Bb4	2@321.5 = 643
Ba5	2@208.5 = 417	Bb5	2@216.0 = 432	2@216.0 = 432	Bb5	2@224.0 = 448	2@224.0 = 448	Bb5	2@233.5 = 467	2@233.5 = 467	Bb5	2@243.0 = 487
Ba6	9@300 = 2 700	Bb6	9@300 = 2 700	9@300 = 2 700	Bb6	9@300 = 2 700	9@300 = 2 700	Bb6	9@300 = 2 700	9@300 = 2 700	Bb6	9@300 = 2 700
Ba7	650	Bb7	635	635	Bb7	619	619	Bb7	600	600	Bb7	580
Ba8	2@240.0 = 480	Bb8	2@247.5 = 495	2@247.5 = 495	Bb8	2@255.5 = 511	2@255.5 = 511	Bb8	2@265.0 = 530	2@265.0 = 530	Bb8	2@275.0 = 550



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

NOTES:

JAPAN INTERNATIONAL COOPERATION AGENCY
(JICA)

JICA STUDY TEAM
PACIFIC CONSULTANTS INTERNATIONAL
FURUYAMA CONSULTANTS INTERNATIONAL

CLIENT : MINISTRY OF COMMUNICATIONS, DIRECTORATE GENERAL OF ROADS
PROJECT : D/D ON ROAD DEVELOPMENT PROJECT ON BATINAH HIGHWAY
TITLE : R/A-14, FALAJ AL QABAIL RE-BAR ARRANGEMENT (5)
DATE
DWG NO. W-26

REIN NO.	φ (mm)	LENGTH (mm)	a	b	c
T 1					
W 1	D 25	7 790	7 759~7 057	375	——
2	"	4 690	4 313	375	——
3	D 16	7 630	7 735~7 035	240	——
4	D 13	15 190	14 800	390	——
5	"	9 550	3 911~14 483	390	——
6	"	15 210	14 817	390	——
7	"	500	110	195	——
8	"	650	672~166	111	——
F 1	D 25	4 280	3 550	800	——
2	D 13	1 800	1 598	195	——
3	D 16	2 180	1 350	800	——
4	"	4 070	3 830	240	——
5	D 13	15 190	14 800	390	——
6	"	15 190	14 800	390	——
7	"	15 190	14 800	390	——
8	"	2 160	828	278	111
9	"	2 180	834	284	111
T 2					
W 1	D 25	7 330	3 057~6 851	375	——
2	"	4 690	4 313	375	——
3	D 16	7 180	7 035~6 835	240	——
4	D 13	15 190	14 800	390	——
5	——	——	——	——	——
6	D 13	15 200	14 806	390	——
7	"	500	110	195	——
8	"	630	622~190	111	——
F 1	D 25	4 780	3 980	800	——
2	D 13	1 760	1 562	195	——
3	D 16	2 480	1 380	800	——
4	"	4 070	3 830	240	——
5	D 13	15 190	14 800	390	——
6	"	15 190	14 800	390	——
7	"	15 190	14 800	390	——
8	"	2 860	1 178	279	111
9	"	2 860	1 178	279	111

REIN NO.	φ (mm)	LENGTH (mm)	a	b	c
T 2					
W 1	D 25	7 370	7 594~7 335	375	——
2	"	4 690	4 313	375	——
3	D 16	7 720	7 571~7 395	240	——
4	D 13	15 190	14 800	390	——
5	"	10 670	10 077	390	——
6	"	15 200	14 801	390	——
7	"	500	110	195	——
8	"	650	664~192	111	——
F 1	D 25	4 240	3 938	800	——
2	D 13	1 800	1 605	195	——
3	D 16	2 180	1 380	800	——
4	"	4 070	3 830	240	——
5	D 13	15 190	14 800	390	——
6	"	15 190	14 800	390	——
7	"	15 190	14 800	390	——
8	"	2 160	828	278	111
9	"	2 180	834	284	111
T 3					
W 1	D 25	7 670	7 395~7 154	375	——
2	"	4 690	4 313	375	——
3	D 16	7 520	7 372~7 172	240	——
4	D 13	15 190	14 800	390	——
5	"	12 810	11 914	390	——
6	"	15 200	14 801	390	——
7	"	500	110	195	——
8	"	660	649~177	111	——
F 1	D 25	4 760	3 953	800	——
2	D 13	1 790	1 589	195	——
3	D 16	2 180	1 380	800	——
4	"	4 070	3 830	240	——
5	D 13	15 190	14 800	390	——
6	"	15 190	14 800	390	——
7	"	15 190	14 800	390	——
8	"	2 160	828	278	111
9	"	2 180	834	284	111

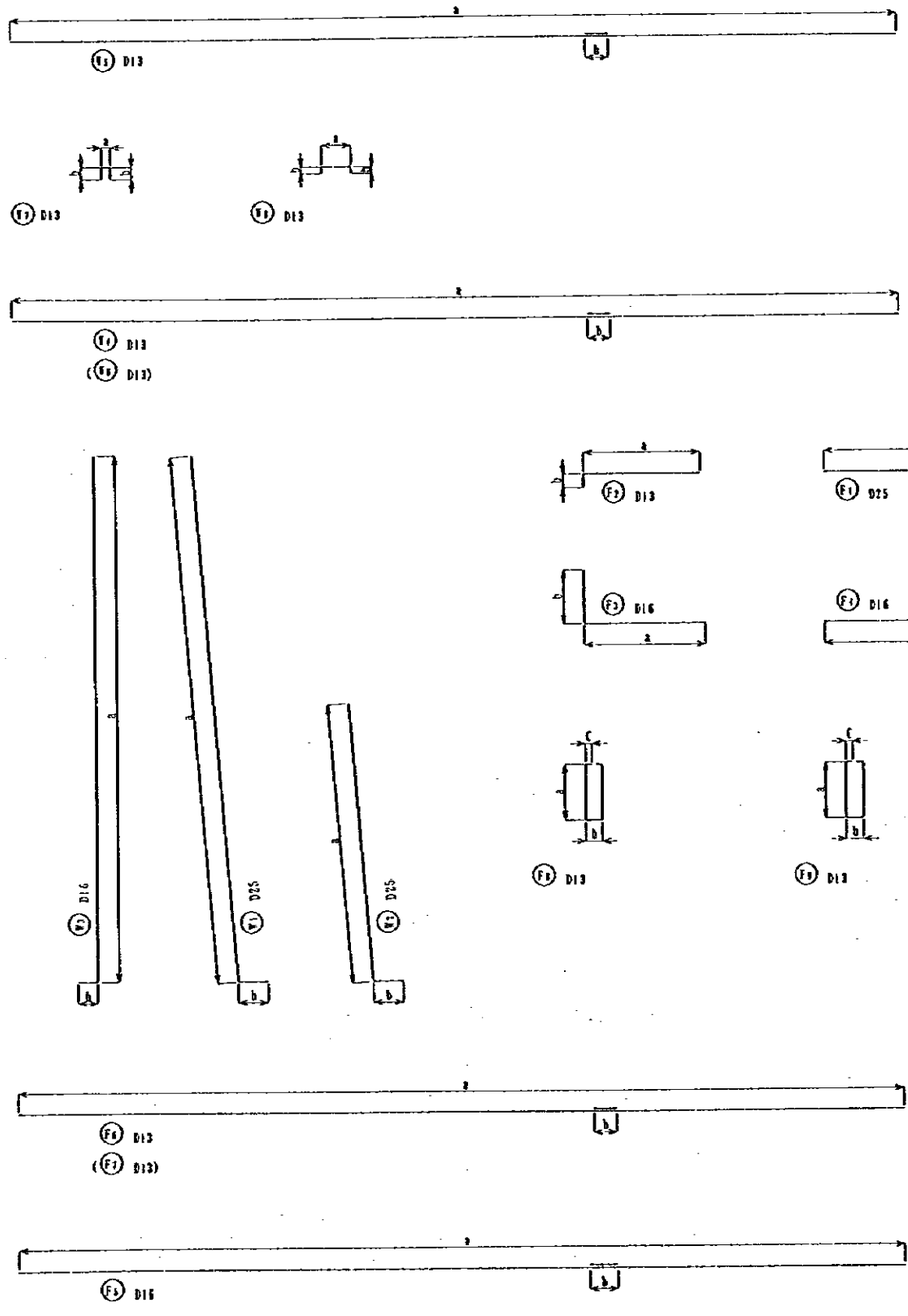
REIN NO.	φ (mm)	LENGTH (mm)	a	b	c
T 4					
W 1	D 25	7 650	7 154~6 953	375	——
2	"	4 690	4 313	375	——
3	D 13	7 300	7 172~6 932	240	——
4	"	15 190	14 800	390	——
5	"	7 530	7 523	——	——
6	"	15 200	14 806	390	——
7	"	500	110	195	——
8	"	620	633~161	111	——
F 1	D 25	4 760	3 971	800	——
2	D 13	1 770	1 572	195	——
3	D 16	2 180	1 380	800	——
4	"	4 070	3 830	240	——
5	D 13	15 190	14 800	390	——
6	"	15 190	14 800	390	——
7	"	15 190	14 800	390	——
8	"	2 160	828	278	111
9	"	2 180	834	284	111
T 5					
W 1	D 25	7 210	6 953~6 703	375	——
2	"	4 690	4 313	375	——
3	D 16	7 050	6 932~6 682	240	——
4	D 13	15 190	14 800	390	——
5	"	7 820	7 814	——	——
6	"	15 200	14 806	390	——
7	"	500	110	195	——
8	"	600	616~142	111	——
F 1	D 25	4 790	3 990	800	——
2	D 13	1 750	1 552	195	——
3	D 16	2 180	1 380	800	——
4	"	4 070	3 830	240	——
5	D 13	15 190	14 800	390	——
6	"	15 190	14 800	390	——
7	"	15 190	14 800	390	——
8	"	2 160	828	278	111
9	"	2 180	834	284	111

NOTES:

JAPAN INTERNATIONAL COOPERATION AGENCY
(JICA)

JICA STUDY TEAM
PACIFIC CONSULTANTS INTERNATIONAL
FURUYAMA CONSULTANTS INTERNATIONAL

CLIENT : MINISTRY OF COMMUNICATIONS, DIRECTORATE GENERAL OF ROADS
PROJECT : D/D ON ROAD DEVELOPMENT PROJECT ON BATINAH HIGHWAY
TITLE : R/A-14, FALAJ AL QABAIL RE-BAR ARRANGEMENT (6)
DATE
DWG NO. W-27

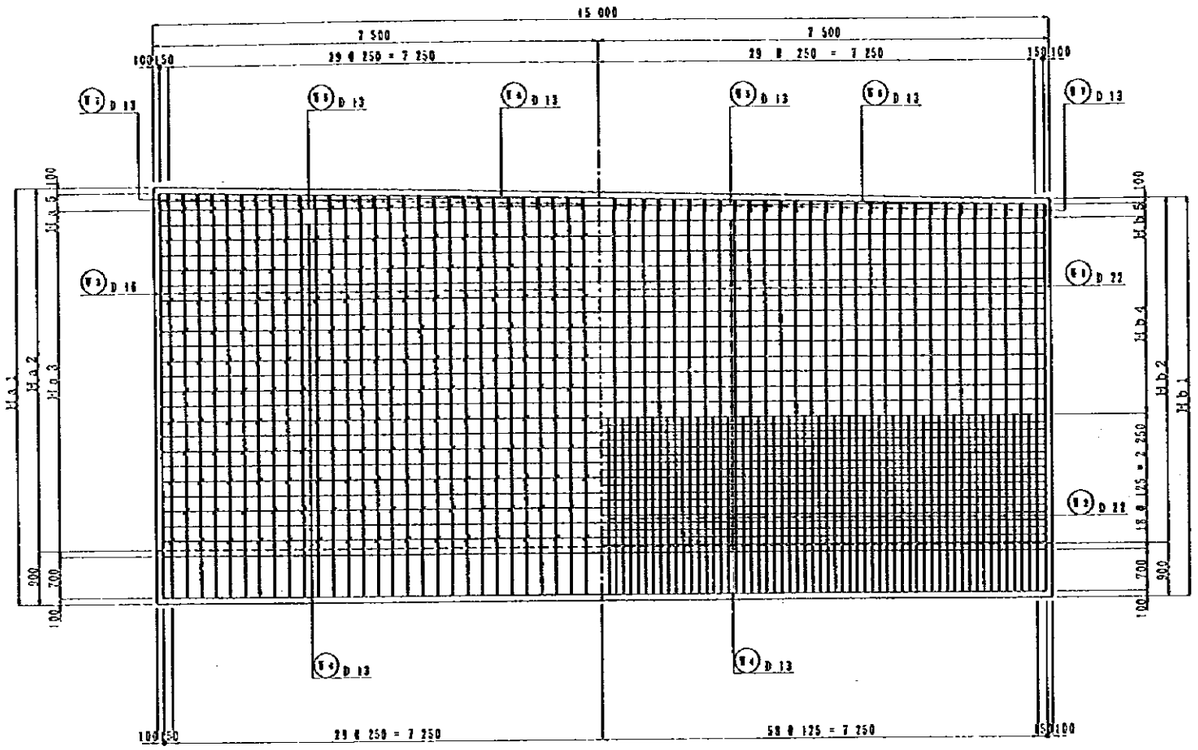


NOTES:

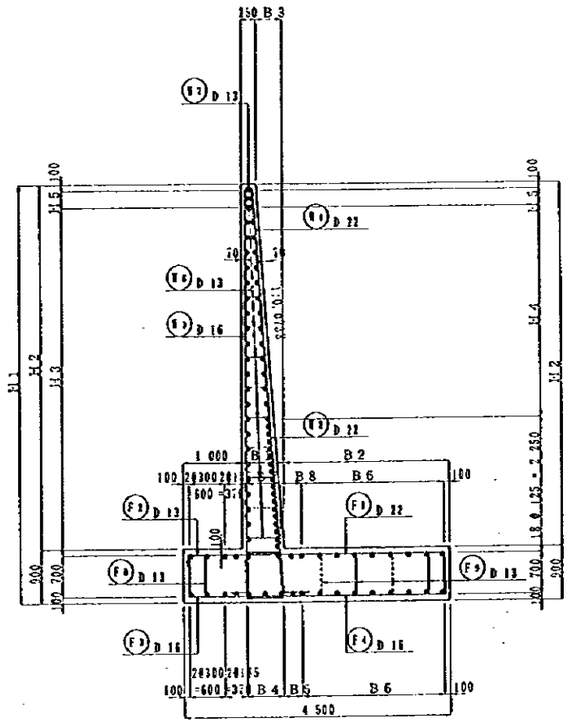
JAPAN INTERNATIONAL COOPERATION AGENCY
(JICA)

JICA STUDY TEAM
PACIFIC CONSULTANTS INTERNATIONAL
FURUYAMA CONSULTANTS INTERNATIONAL

CLIENT :	MINISTRY OF COMMUNICATIONS, DIRECTORATE GENERAL OF ROADS
PROJECT :	D/D ON ROAD DEVELOPMENT PROJECT ON BATINAH HIGHWAY
TITLE :	R/A-14, FALAJ AL QABAIL RE-BAR ARRANGEMENT (7)
DATE	DWG NO. W-28



SIDE VIEW
S=1/100



SECTION
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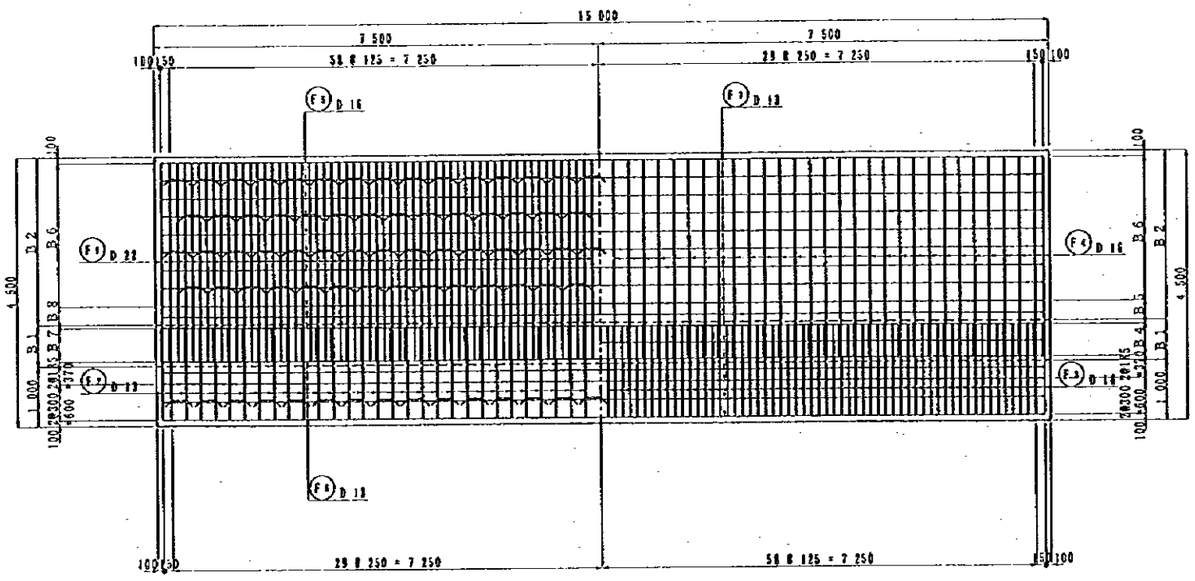


PLAN
S=1/100

NOTES:

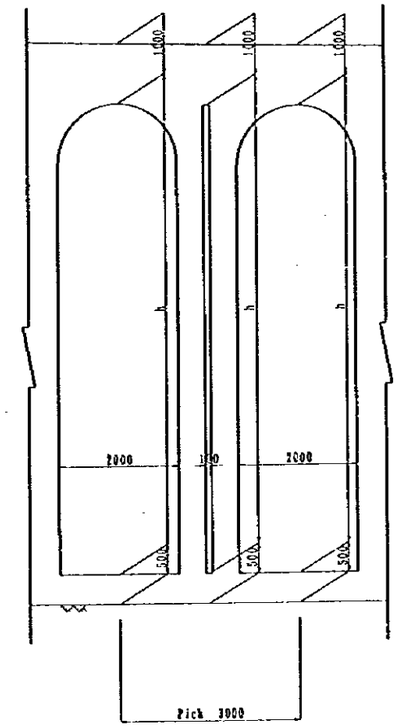
JAPAN INTERNATIONAL COOPERATION AGENCY
(JICA)

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-14, FALAJ AL QABAIL RE-BAR ARRANGEMENT (8)
DATE	DWG NO. W-29

A LINE	T-3 a – a		T-3 b – b	T-4 a – a		T-4 b – b	T-5 a – a		T-5 b – b	T-6 a – a		T-6 b – b
Ha1	6 930	Hb1	6 724	6 724	Hb1	6 477	6 477	Hb1	6 220	6 220	Hb1	5 940
Ha2	6 030	Hb2	5 824	5 824	Hb2	5 577	5 577	Hb2	5 320	5 320	Hb2	5 040
Ha3	23@250 = 5 750	Hb3	23@250 = 5 750	23@250 = 5 750	Hb3	22@250 = 5 500	21@250 = 5 250	Hb3	21@250 = 5 250	20@250 = 5 000	Hb3	20@250 = 5 000
Ha4	14@250 = 3 500	Hb4	14@250 = 3 500	14@250 = 3 500	Hb4	13@250 = 3 250	12@250 = 3 000	Hb4	12@250 = 3 000	11@250 = 2 750	Hb4	11@250 = 2 750
Ha5	2@140.0 = 280	Hb5	104	104	Hb5	77	2@163.5 = 327	Hb5	70	2@160.0 = 320	Hb5	40
Ba1	695	Bb1	680	680 47	Bb1	662	662	Bb1	643	643	Bb1	622
Ba2	2 805	Bb2	2 820	2 829 5	Bb2	2 838	2 838	Bb2	2 857	2 857	Bb2	2 878
Ba3	445	Bb3	430	430	Bb3	412	412	Bb3	393	393	Bb3	372
Ba4	2@307.0 = 614	Bb4	2@299.5 = 599	2@299.5 = 599	Bb4	2@290.5 = 581	2@290.5 = 581	Bb4	2@281.0 = 562	2@281.0 = 562	Bb4	2@270.5 = 541
Ba5	2@158.0 = 316	Bb5	2@191.5 = 383	2@191.5 = 383	Bb5	2@174.5 = 349	2@174.5 = 349	Bb5	2@184.0 = 368	2@184.0 = 368	Bb5	2@194.5 = 389
Ba6	8@300 = 2 400	Bb6	8@300 = 2 400	8@300 = 2 400	Bb6	8@300 = 2 400	8@300 = 2 400	Bb6	8@300 = 2 400	8@300 = 2 400	Bb6	8@300 = 2 400
Ba7	562	Bb7	547	547	Bb7	529	529	Bb7	510	510	Bb7	489
Ba8	2@184.0 = 368	Bb8	2@191.5 = 383	2@191.5 = 383	Bb8	2@200.5 = 401	2@200.5 = 401	Bb8	2@210 = 420	2@210 = 420	Bb8	2@220.5 = 441

B LINE	T-6 a – a		T-6 b – b	T-7 a – a		T-7 b – b	T-8 a – a		T-8 b – b
Ha1	6 782	Hb1	6 685	6 685	Hb1	6 587	6 587	Hb1	6 068
Ha2	5 882	Hb2	5 785	5 785	Hb2	5 687	5 687	Hb2	5 168
Ha3	23@250 = 5 750	Hb3	23@250 = 5 750	22@250 = 5 500	Hb3	22@250 = 5 500	22@250 = 5 500	Hb3	20@250 = 5 000
Ha4	14@250 = 3 500	Hb4	14@250 = 3 500	13@250 = 3 250	Hb4	13@250 = 3 250	13@250 = 3 250	Hb4	11@250 = 2 750
Ha5	132	Hb5	35	2@142.5 = 285	Hb5	187	187	Hb5	168
Ba1	684	Bb1	677	677	Bb1	670	670	Bb1	631
Ba2	2 816	Bb2	2 823	2 823	Bb2	2 830	2 830	Bb2	2 869
Ba3	434	Bb3	427	427	Bb3	420	420	Bb3	381
Ba4	2@301.5 = 603	Bb4	2@298.0 = 596	2@298.0 = 596	Bb4	2@294.5 = 589	2@294.5 = 589	Bb4	2@275.0 = 550
Ba5	2@163.5 = 327	Bb5	2@167.0 = 334	2@167.0 = 334	Bb5	2@170.5 = 341	2@170.5 = 341	Bb5	
Ba6	8@300 = 2 400	Bb6	8@300 = 2 400	8@300 = 2 400	Bb6	8@300 = 2 400	8@300 = 2 400	Bb6	8@300 = 2 400
Ba7	551	Bb7	544	544	Bb7	537	537	Bb7	498
Ba8	2@189.5 = 379	Bb8	2@193.0 = 386	2@193.0 = 386	Bb8	2@196.5 = 393	2@196.5 = 393	Bb8	2@216.0 = 432



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

NOTES:

JAPAN INTERNATIONAL COOPERATION AGENCY
(JICA)

JICA STUDY TEAM
PACIFIC CONSULTANTS INTERNATIONAL
FURUYAMA CONSULTANTS INTERNATIONAL

CLIENT : MINISTRY OF COMMUNICATIONS, DIRECTORATE GENERAL OF ROADS
PROJECT : D/D ON ROAD DEVELOPMENT PROJECT ON BATINAH HIGHWAY
TITLE : R/A-14, FALAJ AL QABAIL RE-BAR ARRANGEMENT (9)
DATE
DWG NO. W-30

REIN NO.	φ (mm)	LENGTH (mm)	a	b	c
T 3					
W 1	D 22	6 930	6 728~6 542	330	——
2	"	3 290	2 958	330	——
3	D 16	6 870	6 730~6 524	240	——
4	D 13	15 190	14 800	390	——
5	"	10 450	10 058	390	——
6	"	15 200	14 803	390	——
7	"	500	110	195	——
8	"	600	576~178	111	——
F 1	D 22	4 140	3 435	700	——
2	D 13	1 720	1 518	195	——
3	D 16	2 080	1 380	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	278	111
9	"	1 970	732	282	111
T 4					
W 1	D 22	6 750	6 547~6 294	330	——
2	"	3 290	2 958	330	——
3	D 16	6 650	6 524~6 277	285	——
4	D 13	15 190	14 800	390	——
5	"	6 240	5 233	——	——
6	"	15 200	14 803	390	——
7	"	500	110	195	——
8	"	600	561~192	111	——
F 1	D 22	4 160	3 452	700	——
2	D 13	2 410	1 501	195	——
3	D 16	3 190	1 380	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	278	111
9	"	1 970	732	282	111
T 5					
W 1	D 22	6 500	6 294~6 036	330	——
2	"	3 290	2 958	330	——
3	D 16	6 390	6 272~6 020	240	——
4	D 13	15 190	14 800	390	——
5	"	9 420	9 416	——	——
6	"	15 200	14 803	390	——
7	"	500	110	195	——
8	"	580	524~192	111	——
F 1	D 22	4 180	3 471	700	——
2	D 13	1 680	1 483	195	——
3	D 16	2 080	1 380	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	278	111
9	"	1 970	732	282	111

REIN NO.	φ (mm)	LENGTH (mm)	a	b	c
T 6					
W 1	D 22	6 230	6 036~5 756	330	——
2	"	3 290	2 958	330	——
3	D 13	6 120	6 020~5 740	240	——
4	D 13	15 190	14 800	390	——
5	"	8 460	8 457	——	——
6	"	15 200	14 803	390	——
7	"	500	110	195	——
8	"	580	524~192	111	——
F 1	D 22	4 200	3 491	700	——
2	D 13	2 440	2 238	195	——
3	D 16	3 190	2 040	700	——
4	"	3 570	3 330	240	——
5	"	15 288	14 800	480	——
6	D 13	15 190	14 800	390	——
7	"	15 190	14 800	390	——
8	"	1 960	728	278	111
9	"	1 970	732	282	111

REIN NO.	φ (mm)	LENGTH (mm)	a	b	c
T 6					
W 1	D 22	6 890	6 600~6 503	330	——
2	"	3 290	2 958	330	——
3	D 13	6 780	6 552~6 455	240	——
4	D 13	15 190	14 800	390	——
5	——	——	——	——	——
6	D 13	15 200	14 803	390	——
7	"	500	110	195	——
8	"	590	585~159	111	——
F 1	D 22	4 150	3 443	700	——
2	D 13	1 710	1 511	195	——
3	D 16	2 080	1 380	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	278	111
9	"	1 970	732	282	111
T 7					
W 1	D 22	6 790	6 503~6 404	330	——
2	"	3 290	2 958	330	——
3	D 16	6 680	6 485~6 387	240	——
4	D 13	15 190	14 800	390	——
5	——	——	——	——	——
6	D 13	15 190	14 804	390	——
7	"	500	110	195	——
8	"	600	558~189	111	——
F 1	D 22	4 150	3 450	700	——
2	D 13	1 700	1 504	195	——
3	D 16	2 080	2 040	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	278	111
9	"	1 970	732	282	111
T 8					
W 1	D 22	6 480	6 404~5 884	330	——
2	"	9 290	2 958	330	——
3	D 13	6 320	6 387~5 868	240	——
4	D 13	15 190	14 800	390	——
5	"	9 250	12 462~5 333	390	——
6	"	15 200	14 804	390	——
7	"	500	110	195	——
8	"	590	551~192	111	——
F 1	D 22	4 130	3 473	700	——
2	D 13	1 680	1 481	195	——
3	D 16	2 080	1 380	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	278	111
9	"	1 970	732	282	111

NOTES:

JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)

JICA STUDY TEAM
PACIFIC CONSULTANTS INTERNATIONAL
FURUYAMA CONSULTANTS INTERNATIONAL

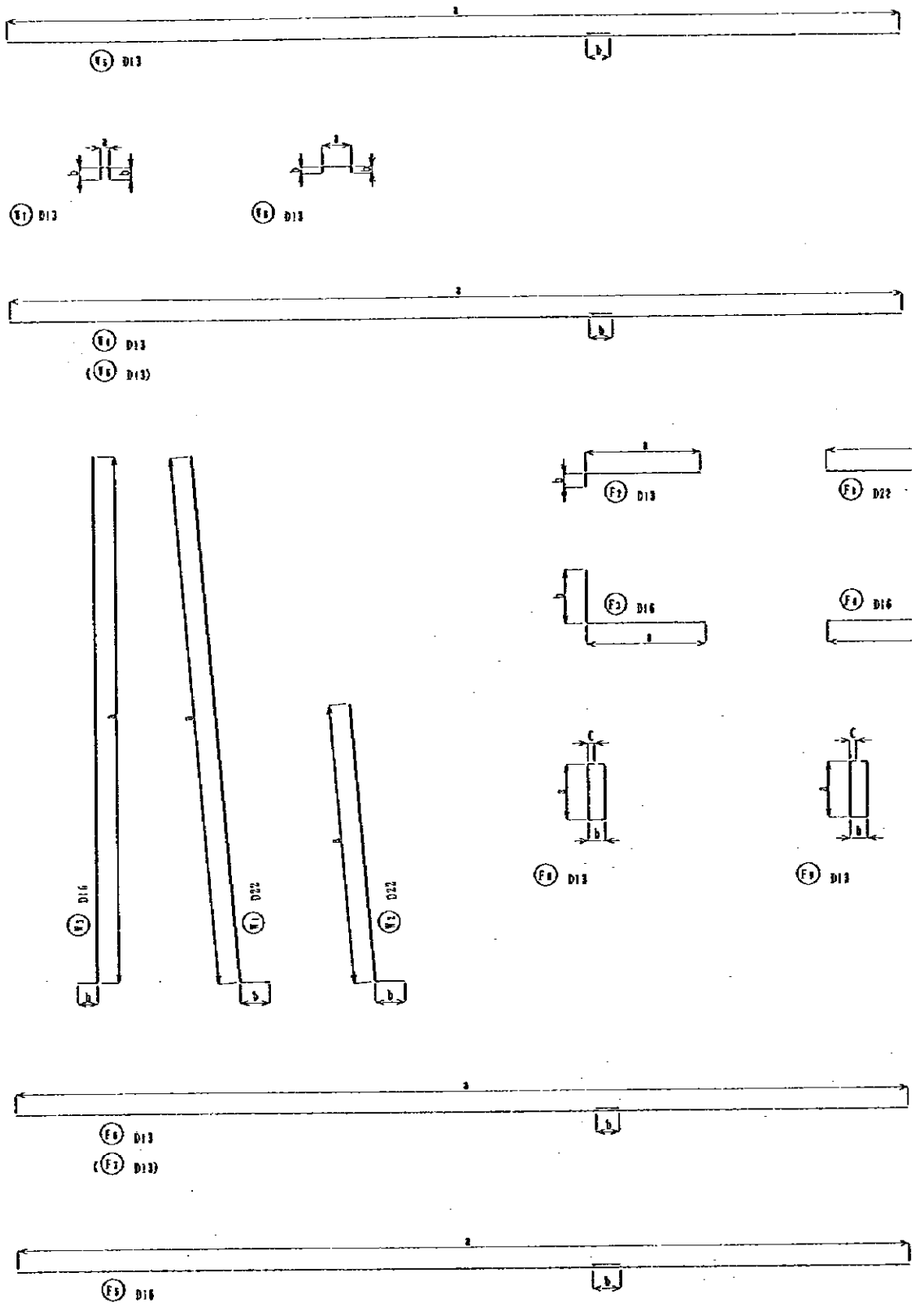
CLIENT : MINISTRY OF COMMUNICATIONS, DIRECTORATE GENERAL OF ROADS

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

TITLE : R/A-14, FALAJ AL QABAIL RE-BAR ARRANGEMENT (10)

DATE

DWG NO. W--31

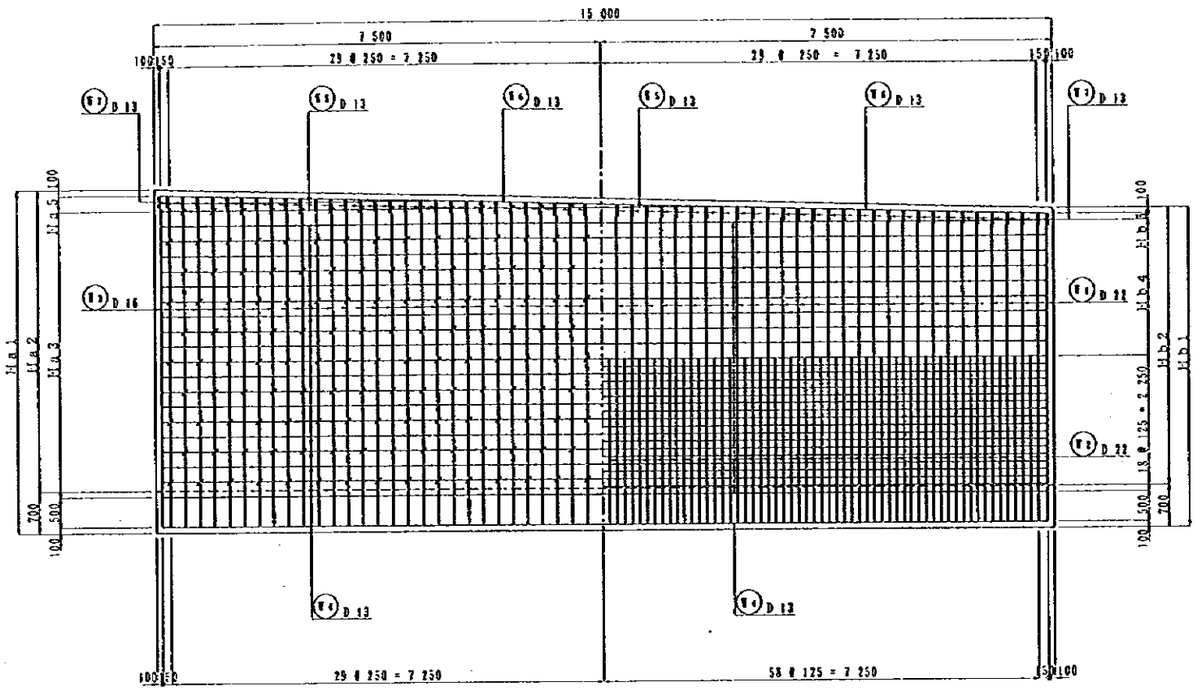


NOTES:

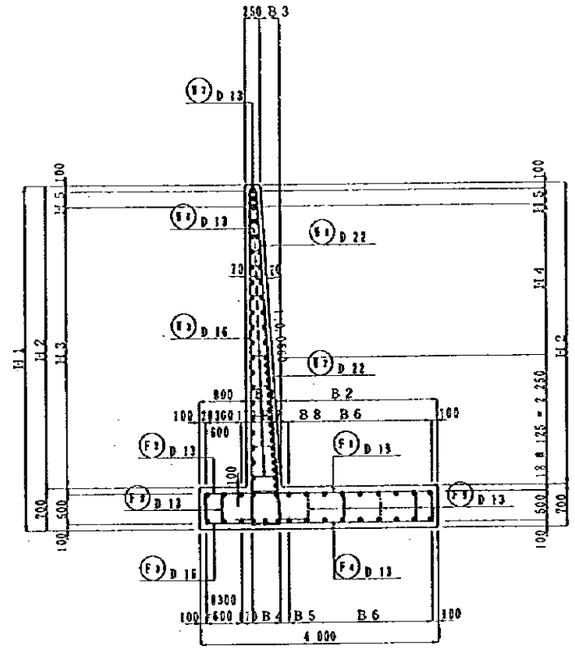
JAPAN INTERNATIONAL COOPERATION AGENCY
(JICA)

JICA STUDY TEAM
PACIFIC CONSULTANTS INTERNATIONAL
FURUYAMA CONSULTANTS INTERNATIONAL

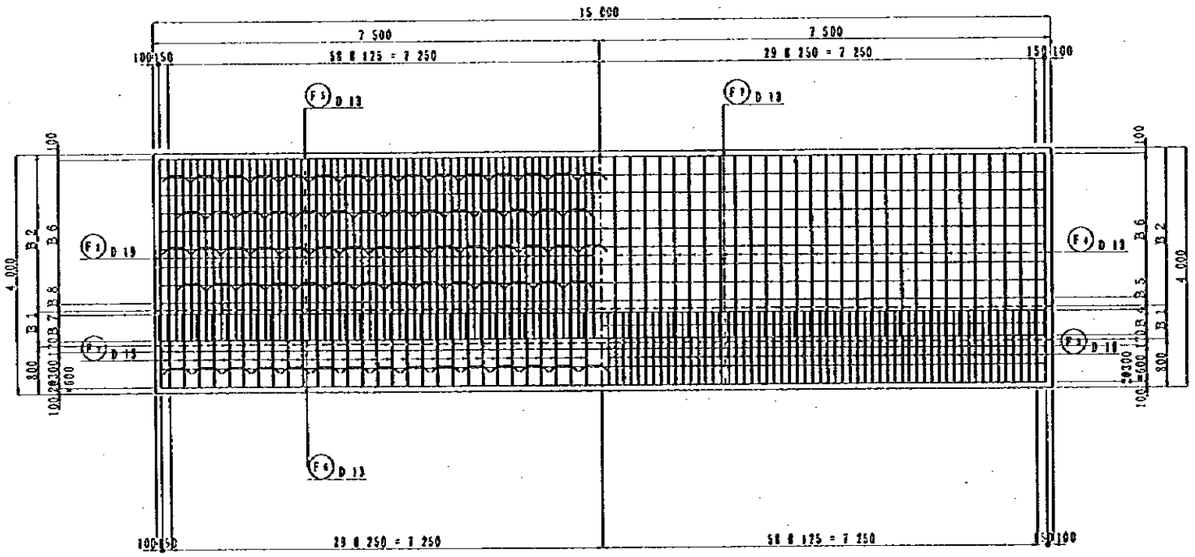
CLIENT :	MINISTRY OF COMMUNICATIONS, DIRECTORATE GENERAL OF ROADS
PROJECT :	D/D ON ROAD DEVELOPMENT PROJECT ON BATINAH HIGHWAY
TITLE :	R/A-14, FALAJ AL QABAIL RE-BAR ARRANGEMENT (II)
DATE	DWG NO. W-32



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
FURUYAMA CONSULTANTS INTERNATIONAL

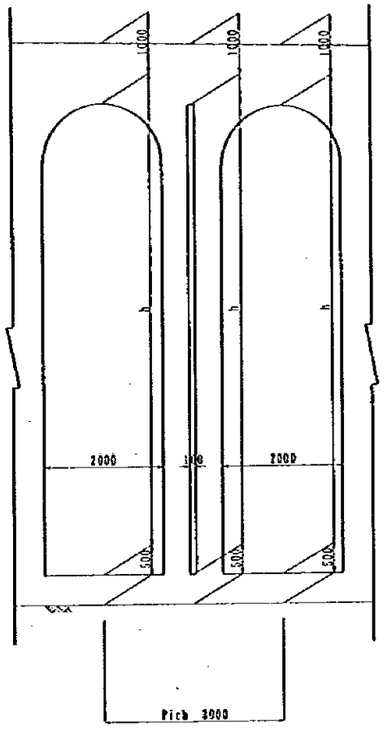
CLIENT :	MINISTRY OF COMMUNICATIONS, DIRECTORATE GENERAL OF ROADS
PROJECT :	D/D ON ROAD DEVELOPMENT PROJECT ON BATINAH HIGHWAY
TITLE :	R/A-14, FALAJ AL QABAIL RE-BAR ARRANGEMENT (12)
DATE	DWG NO. W-33

A LINE

	T-7 a－a		T-7 b－b	T-8 a－a		T-8 b－b	T-9 a－a		T-9 b－b
Ha1	5 740	Hb1	5 459	5 459	Hb1	5 137	5 137	Hb1	4 814
Ha2	5 040	Hb2	4 759	4 759	Hb2	4 437	4 437	Hb2	4 114
Ha3	19@250 = 4 750	Hb3	19@250 = 4 750	18@250 = 4 500	Hb3	17@250 = 4 250	17@250 = 4 250	Hb3	16@250 = 4 000
Ha4	10@250 = 2 500	Hb4	10@250 = 2 500	9@250 = 2 250	Hb4	8@250 = 2 000	8@250 = 2 000	Hb4	7@250 = 1 750
Ha5	2@145.0 = 290	Hb5	9	2@129.5 = 259	Hb5	187	187	Hb5	114
Ba1	583	Bb1	564	564	Bb1	543	543	Bb1	522
Ba2	2 617	Bb2	2 636	2 636	Bb2	2 657	2 657	Bb2	2 678
Ba3	333	Bb3	314	314	Bb3	293	293	Bb3	272
Ba4	2@241.0 = 482	Bb4	2@231.5 = 463	2@231.5 = 463	Bb4	2@221.0 = 442	2@221.0 = 442	Bb4	2@210.5 = 421
Ba5	181	Bb5	167	167	Bb5	188	188	Bb5	209
Ba6	8@300 = 2 400	Bb6	8@300 = 2 400	8@300 = 2 400	Bb6	8@300 = 2 400	8@300 = 2 400	Bb6	8@300 = 2 400
Ba7	449	Bb7	430	430	Bb7	409	409	Bb7	388
Ba8	181	Bb8	200	200	Bb8	221	221	Bb8	242

B LINE

	T-9 a－a		T-9 b－b	T-10 a－a		T-10 b－b			
Ha1	5 868	Hb1	5 348	5 348	Hb1	4 717			
Ha2	5 168	Hb2	4 648	4 648	Hb2	4 017			
Ha3	20@250 = 5 000	Hb3	18@250 = 4 500	18@250 = 4 500	Hb3	16@250 = 4 000			
Ha4	11@250 = 2 750	Hb4	9@250 = 2 250	9@250 = 2 250	Hb4	7@250 = 1 750			
Ha5	168	Hb5	148	148	Hb5	17			
Ba1	591	Bb1	557	557	Bb1	515			
Ba2	2 609	Bb2	2 643	2 643	Bb2	2 658			
Ba3	341	Bb3	307	307	Bb3	265			
Ba4	2@245 = 490	Bb4	2@228 = 456	2@228 = 456	Bb4	2@207 = 414			
Ba5	140	Bb5	174	174	Bb5	216			
Ba6	8@300 = 2 400	Bb6	8@300 = 2 400	8@300 = 2 400	Bb6	8@300 = 2 400			
Ba7	457	Bb7	423	423	Bb7	381			
Ba8	173	Bb8	207	207	Bb8	249			



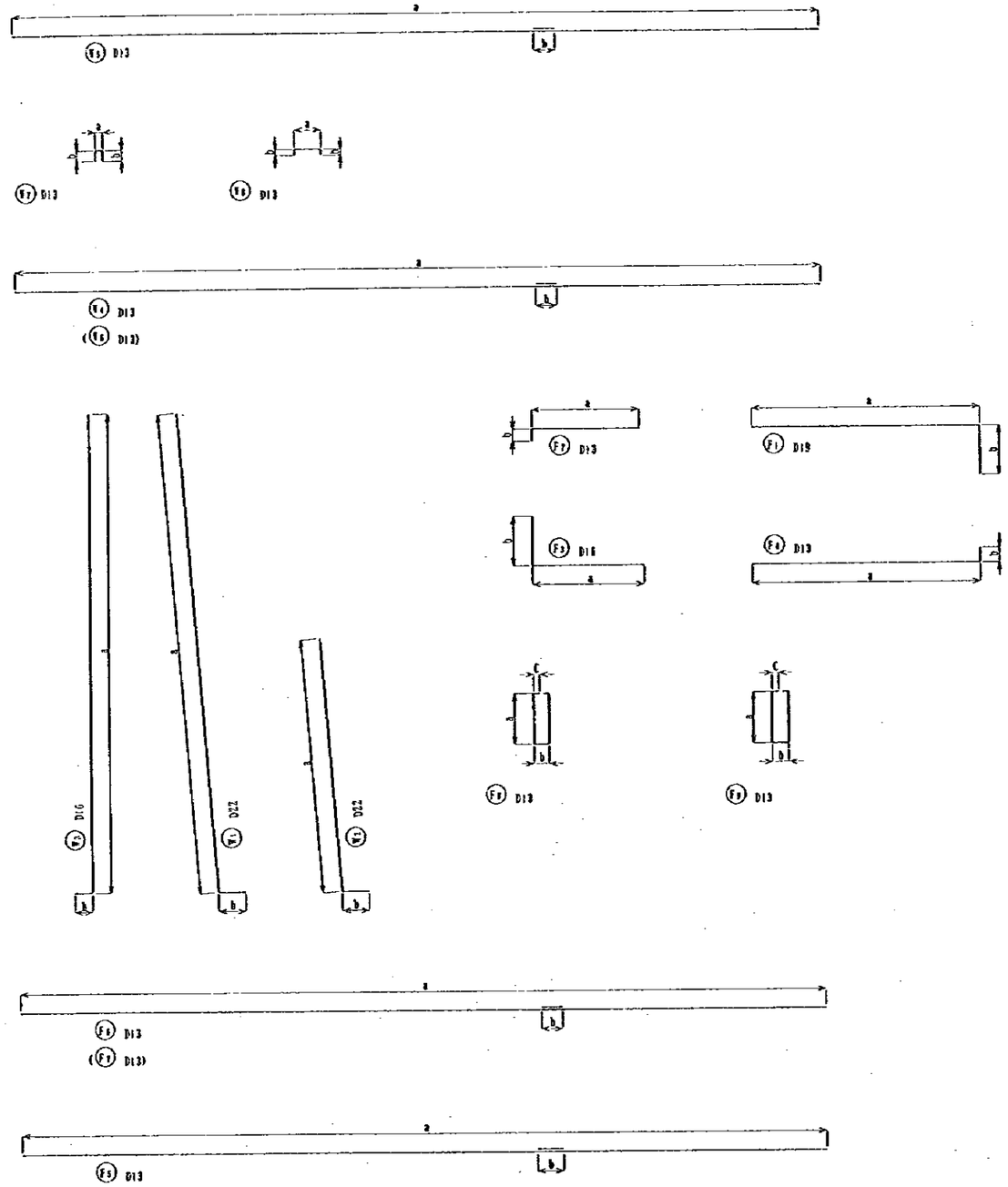
Slit Shape in Front of Wall
(Thickness t=30 mm)

NOTES:

JAPAN INTERNATIONAL COOPERATION AGENCY
(JICA)

JICA STUDY TEAM
PACIFIC CONSULTANTS INTERNATIONAL
FURUYAMA CONSULTANTS INTERNATIONAL

CLIENT : MINISTRY OF COMMUNICATIONS, DIRECTORATE GENERAL OF ROADS
PROJECT : D/D ON ROAD DEVELOPMENT PROJECT ON BATINAH HIGHWAY
TITLE : R/A-14, FALAJ AL QABAIL RE-BAR ARRANGEMENT (13)
DATE
DWG NO. W-34



REIN NO.	φ (mm)	LENGTH (mm)	a	b	c
T 7					
W 1	D 22	5 750	5 552~5 270	330	——
2	"	3 090	2 756	330	——
3	D 16	5 640	5 540~5 259	240	——
4	D 13	15 190	14 800	390	——
5	"	7 840	7 637	——	——
6	"	15 200	14 804	390	——
7	"	500	110	195	——
8	"	540	465~163	111	——
F 1	D 19	3 670	3 161	500	——
2	D 13	1 400	1 204	195	——
3	D 16	1 680	1 180	500	——
4	"	3 250	3 042	195	——
5	D 13	15 190	14 800	390	——
6	"	15 190	14 800	390	——
7	"	15 190	14 800	390	——
8	"	1 560	528	278	111
9	"	1 560	529	279	111
T 8					
W 1	D 22	5 440	5 270~4 947	330	——
2	"	3 090	2 756	330	——
3	D 16	5 340	5 258~4 937	240	——
4	D 13	15 190	14 800	390	——
5	"	9 320	11 504~5 552	390	——
6	"	15 200	14 804	390	——
7	"	500	110	195	——
8	"	520	446~149	111	——
F 1	D 19	3 690	3 181	500	——
2	D 13	1 220	1 184	195	——
3	D 16	1 680	1 180	500	——
4	D 13	3 238	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	278	111
9	"	1 560	529	279	111
T 9					
W 1	D 22	5 120	4 947~4 624	330	——
2	"	3 090	2 756	330	——
3	D 16	5 020	4 937~4 614	240	——
4	D 13	15 190	14 800	390	——
5	"	8 570	8 568	——	——
6	"	15 200	14 805	390	——
7	"	500	110	195	——
8	"	500	425~128	111	——
F 1	D 19	3 710	3 202	500	——
2	D 13	1 360	1 163	195	——
3	D 16	1 680	1 180	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	278	111
9	"	1 560	529	279	111

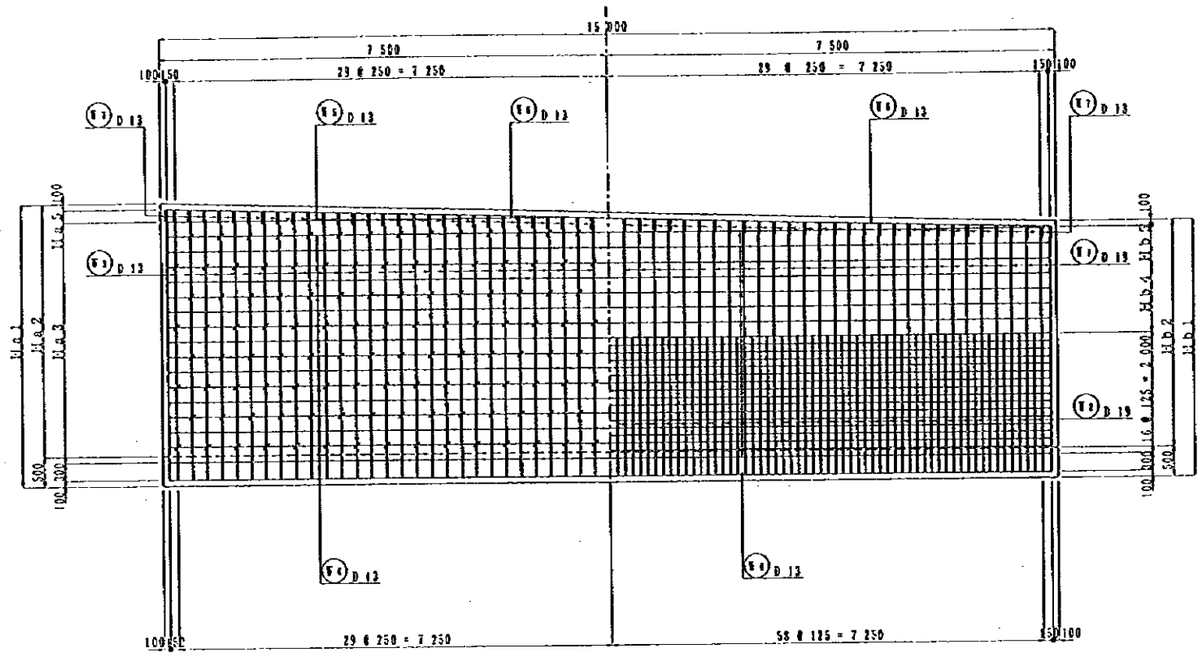
REIN NO.	φ (mm)	LENGTH (mm)	a	b	c
T 9					
W 1	D 22	5 750	5 550~5 153	330	——
2	"	3 090	2 756	330	——
3	D 16	5 850	5 663~5 148	240	——
4	D 13	15 190	14 800	390	——
5	"	8 730	4 782~11 897	——	——
6	"	15 200	14 899	390	——
7	"	500	110	195	——
8	"	550	473~176	111	——
F 1	D 13	3 660	3 160	500	——
2	D 13	1 400	1 204	195	——
3	D 16	1 680	1 180	500	——
4	D 13	3 250	3 030	195	——
5	"	15 200	14 809	480	——
6	"	15 190	14 800	390	——
7	"	15 190	14 800	390	——
8	"	1 560	528	278	111
9	"	1 560	529	279	111
T 10					
W 1	D 22	6 470	5 155~4 527	330	——
2	"	3 090	2 756	330	——
3	D 16	5 050	5 148~4 517	240	——
4	D 13	15 190	14 800	390	——
5	"	6 410	3 471~9 335	390	——
6	"	15 210	14 813	390	——
7	"	500	110	195	——
8	"	550	439~208	111	——
F 1	D 19	3 700	3 198	500	——
2	D 13	1 220	1 166	195	——
3	D 16	1 680	1 180	500	——
4	D 13	3 230	3 030	195	——
5	"	15 190	14 800	480	——
6	"	15 190	14 800	390	——
7	"	15 190	14 800	390	——
8	"	1 560	528	278	111
9	"	1 560	529	279	111

NOTES:

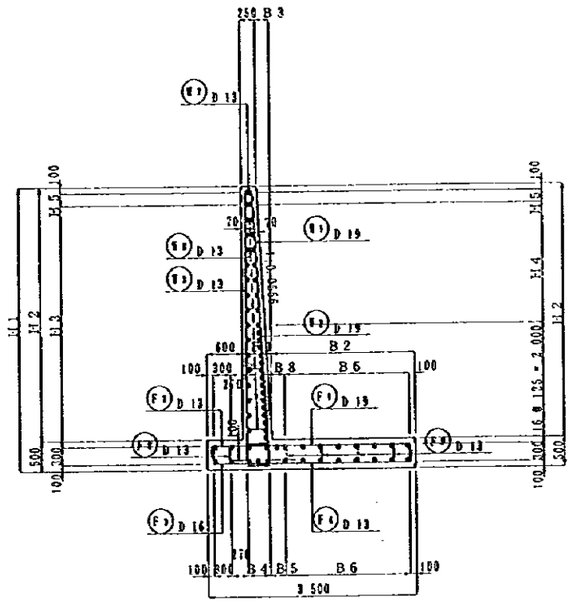
JAPAN INTERNATIONAL COOPERATION AGENCY
(JICA)

JICA STUDY TEAM
PACIFIC CONSULTANTS INTERNATIONAL
FURUYAMA CONSULTANTS INTERNATIONAL

CLIENT : MINISTRY OF COMMUNICATIONS, DIRECTORATE GENERAL OF ROADS
PROJECT : D/D ON ROAD DEVELOPMENT PROJECT ON BATINAH HIGHWAY
TITLE : R/A-14, FALAJ AL QABAIL RE-BAR ARRANGEMENT (14)
DATE
DWG NO. W-35



SIDE VIEW
S=1/100



SECTION
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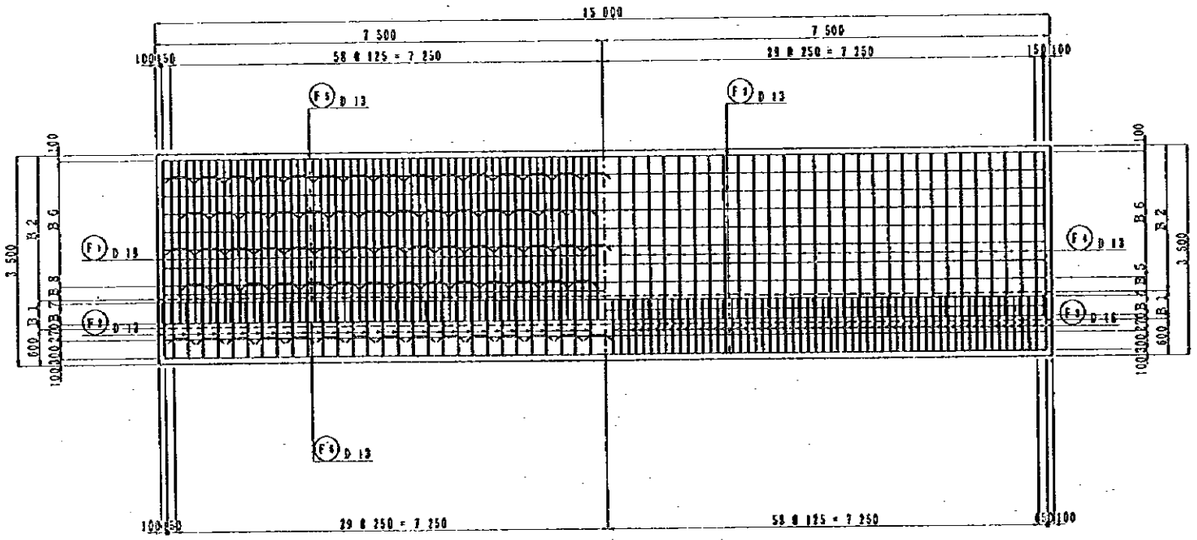


PLAN
S=1/100

NOTES:

JAPAN INTERNATIONAL COOPERATION AGENCY
(JICA)

JICA STUDY TEAM
PACIFIC CONSULTANTS INTERNATIONAL
FURUYAMA CONSULTANTS INTERNATIONAL

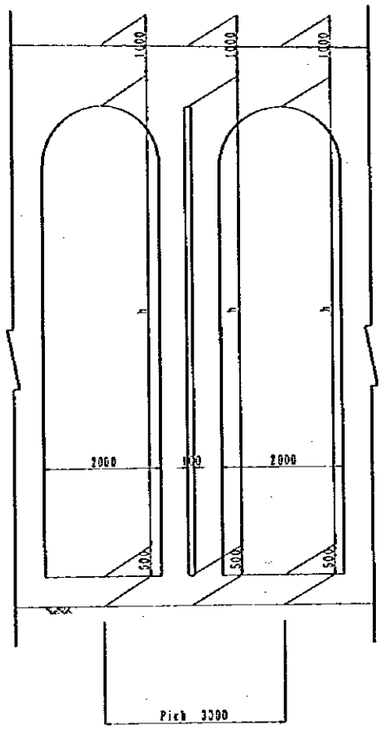
CLIENT :	MINISTRY OF COMMUNICATIONS, DIRECTORATE GENERAL OF ROADS
PROJECT :	D/D ON ROAD DEVELOPMENT PROJECT ON BATINAH HIGHWAY
TITLE :	R/A-14, FALAJ AL QABAIL RE-BAR ARRANGEMENT (15)
DATE	DWG NO. W-36

A LINE

	T-10 a-a		T-10 b-b	T-11 a-a		T-11 b-b
Ha1	4 614	Hb1	4 259	4 259	Hb1	3 894
Ha2	4 114	Hb2	3 759	3 759	Hb2	3 394
Ha3	16@250 = 4 000	Hb3	15@250 = 3 750	14@250 = 3 500	Hb3	13@250 = 3 250
Ha4	8@250 = 2 000	Hb4	7@250 = 1 750	6@250 = 1 500	Hb4	5@250 = 1 250
Ha5	114	Hb5	9	2@129.5 = 259	Hb5	144
Ba1	539	Bb1	459	459	Bb1	439
Ba2	2 361	Bb2	2 441	2 441	Bb2	2 461
Ba3	289	Bb3	209	209	Bb3	189
Ba4	2@210.5 = 421	Bb4	2@170.5 = 341	2@170.5 = 341	Bb4	2@160.5 = 321
Ba5	2@104.5 = 209	Bb5	2@144.5 = 289	2@144.5 = 289	Bb5	2@154.5 = 309
Ba6	7@300 = 2 100	Bb6	7@300 = 2 100	7@300 = 2 100	Bb6	7@300 = 2 100
Ba7	404	Bb7	324	324	Bb7	304
Ba8	2@113 = 226	Bb8	2@153 = 306	2@153 = 306	Bb8	2@163 = 326

B LINE

	T-11 a-a		T-11 b-b	T-12 a-a		T-12 b-b
Ha1	4 517	Hb1	4 409	4 409	Hb1	4 087
Ha2	4 017	Hb2	3 909	3 909	Hb2	3 587
Ha3	15@250 = 3 750	Hb3	15@250 = 3 750	15@250 = 3 750	Hb3	14@250 = 3 500
Ha4	7@250 = 1 750	Hb4	7@250 = 1 750	7@250 = 1 750	Hb4	6@250 = 1 500
Ha5	2@133.5 = 267	Hb5	159	159	Hb5	87
Ba1	473	Bb1	467	467	Bb1	449
Ba2	2 427	Bb2	2 433	2 433	Bb2	2 451
Ba3	223	Bb3	217	217	Bb3	199
Ba4	2@177.5 = 355	Bb4	2@174.5 = 349	2@174.5 = 349	Bb4	2@167.0 = 334
Ba5	2@137.5 = 275	Bb5	2@140.5 = 281	2@140.5 = 281	Bb5	2@148.0 = 296
Ba6	7@300 = 2 100	Bb6	7@300 = 2 100	7@300 = 2 100	Bb6	7@300 = 2 100
Ba7	338	Bb7	332	332	Bb7	317
Ba8	2@146.0 = 292	Bb8	2@149.0 = 298	2@149.0 = 298	Bb8	2@156.5 = 313



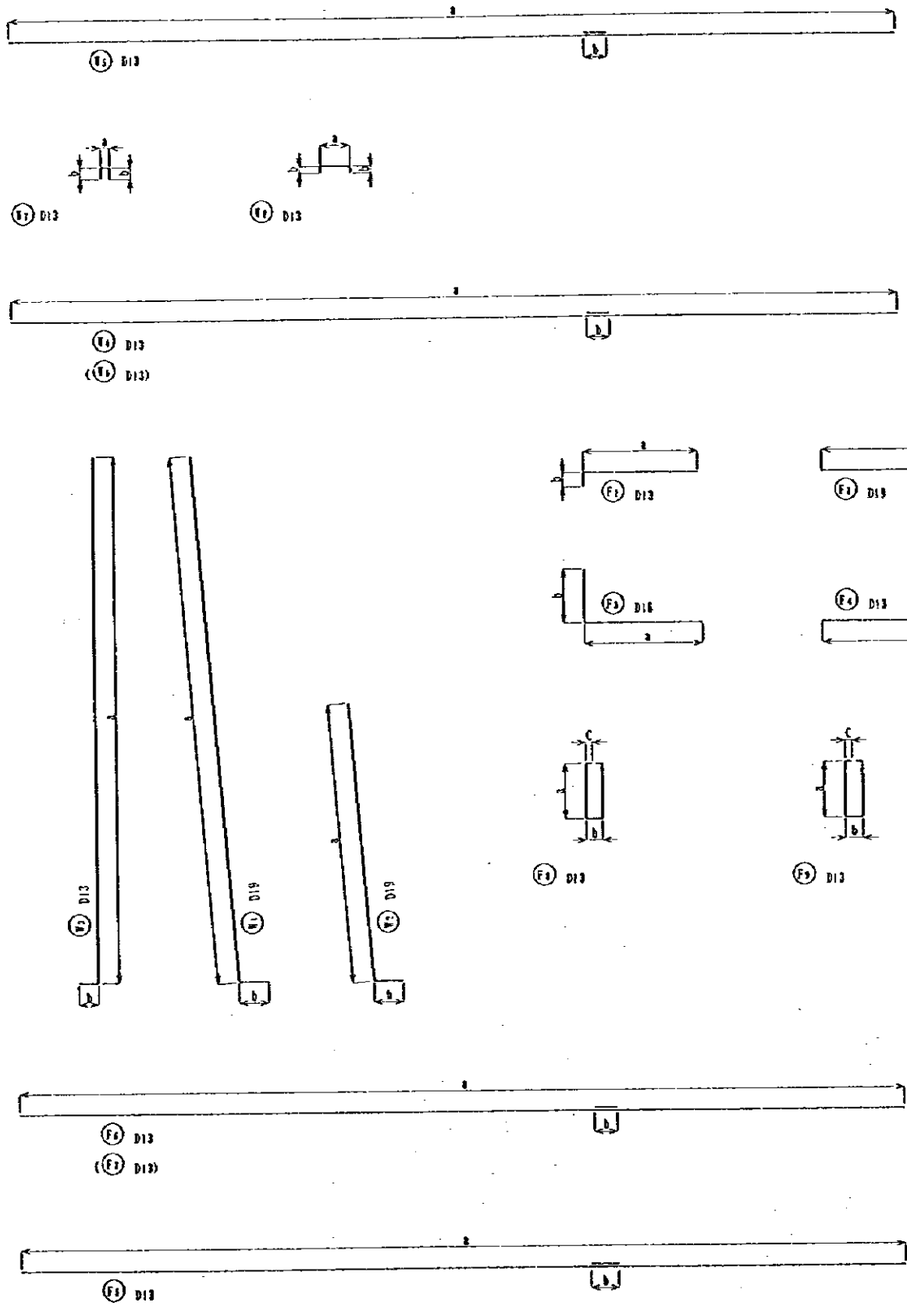
Slit Shape in Front of Wall
(Thickness t=30 mm)

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-14, FALAJ AL QABAIL RE-BAR ARRANGEMENT (16)
DATE
DWG NO. W-37



REIN NO.	ϕ (mm)	LENGTH (mm)	a	b	c
T 10					
N 1	D 19	4 530	4 421~4 065	285	——
2	"	2 590	2 304	285	——
3	"	4 530	4 414~4 059	285	——
4	D 13	15 190	14 800	390	——
5	"	7 470	3 374~10 774	390	——
6	"	15 200	14 808	390	——
7	"	500	110	195	——
8	"	550	423~228	111	——
F 1	D 19	3 240	2 936	300	——
2	D 13	1 130	929	195	——
3	D 16	1 280	980	300	——
4	"	2 970	2 730	240	——
5	D 13	15 190	14 800	390	——
6	"	15 190	14 800	390	——
7	"	15 190	14 800	390	——
8	"	1 160	328	278	111
9	"	1 160	331	281	111
T 11					
N 1	D 19	4 170	4 065~3 709	285	——
2	"	2 590	2 304	285	——
3	"	4 170	4 059~3 694	285	——
4	D 13	15 190	14 800	390	——
5	"	8 270	5 251~10 502	390	——
6	"	15 200	14 806	390	——
7	"	500	110	195	——
8	"	490	343~176	111	——
F 1	D 19	3 290	2 986	300	——
2	D 13	1 080	879	195	——
3	D 16	1 280	980	300	——
4	"	2 970	2 730	240	——
5	D 13	15 190	14 800	390	——
6	"	15 190	14 800	390	——
7	"	15 190	14 800	390	——
8	"	1 160	328	278	111
9	"	1 170	331	281	111

REIN NO.	ϕ (mm)	LENGTH (mm)	a	b	c
T 11					
N 1	D 19	4 560	4 324~4 215	285	——
2		2 590	2 304	285	——
3	D 13	4 550	4 317~4 209	285	——
4	"	15 190	14 800	390	——
5	欠番				
6	D 13	15 200	14 805	390	——
7	"	500	110	195	——
8	"	490	357~162	111	——
F 1	D 19	3 270	2 965	300	——
2	D 13	1 100	900	195	——
3	D 16	1 280	980	300	——
4	"	2 970	2 730	240	——
5	D 13	15 190	14 800	390	——
6	"	15 190	14 800	390	——
7	"	15 190	14 800	390	——
8	"	1 160	328	278	111
9	"	1 170	331	281	111
T 12					
N 1	D 19	4 340	4 215~3 893	285	——
2	"	2 590	2 304	285	——
3	"	4 340	4 209~3 887	285	——
4	D 13	15 190	14 800	390	——
5	"	7 310	7 308	——	——
6	"	15 200	14 804	390	——
7	"	500	110	195	——
8	"	490	351~184	111	——
F 1	D 19	3 280	2 976	300	——
2	D 13	1 280	888	195	——
3	D 16	1 750	980	300	——
4	"	2 970	2 730	240	——
5	D 13	15 190	14 800	390	——
6	"	15 190	14 800	390	——
7	"	15 150	14 800	390	——
8	"	1 160	328	278	111
9	"	1 170	331	281	111

NOTES:

JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)

JICA STUDY TEAM
PACIFIC CONSULTANTS INTERNATIONAL
FURUYAMA CONSULTANTS INTERNATIONAL

CLIENT : MINISTRY OF COMMUNICATIONS, DIRECTORATE GENERAL OF ROADS

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

TITLE : R/A-14, FALAJ AL QABAIL RE-BAR ARRANGEMENT (17)

DATE

DWG NO. W-38

B－L I N E

BEIN NO.	ϕ (mm)	LENGTH (mm)	NOMINAL WEIGHT	NUMB	C WEIGHT	WEIGHT	REMARKS
T 1							
W 1	D 29	8 489	5.059	61	42.900	2 616.9	
2	"	5 110	"	53	25.851	1 439.4	
3	D 19	8 330	2.235	61	18.573	1 133.0	
4	D 13	15 190	0.994	69	15.099	1 041.8	
5	"	7 269	"	4	7.216	28.9	
6	"	15 202	"	1	15.109	30.2	
7	"	500	"	61	0.497	30.3	
8	"	710	"	413	0.706	291.6	
F 1	D 25	5 050	3.973	119	20.183	2 401.8	
2	D 13	2 070	0.994	61	2.058	125.5	
3	D 16	2 490	1.552	119	3.849	339.0	
4	"	4 370	"	61	6.782	413.7	
5	"	15 280	"	13	23.745	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	"	58	2.346	136.1	
9	"	2 380	"	145	2.366	343.1	
						11 102.0	

D 29	4 616.3
D 25	2 401.8
D 19	1 133.0
D 16	1 061.0
D 13	2 389.9
TOTAL WEIGHT	11 102.0

NOTES:

JAPAN INTERNATIONAL COOPERATION AGENCY
(JICA)

JICA STUDY TEAM
PACIFIC CONSULTANTS INTERNATIONAL
FURUYAMA CONSULTANTS INTERNATIONAL

CLIENT : MINISTRY OF COMMUNICATIONS, DIRECTORATE GENERAL OF ROADS
PROJECT : D/D ON ROAD DEVELOPMENT PROJECT ON BATINAH HIGHWAY
TITLE : R/A-14, FALAJ AL QABAIL RE-BAR ARRANGEMENT (18)
DATE
DWG NO. W-39

7

A – L I N E

BEIS NO.	ϕ (mm)	LENGTH (mm)	NOMINAL WEIGHT	NUMB	U WEIGHT	WEIGHT	REMARKS
T 1							
W 1	D 25	7 790	3.973	61	30.959	1 888.0	
2	"	4 690	"	58	18.633	1 080.7	
3	D 16	7 630	1.552	61	11.842	722.4	
4	D 13	15 190	0.994	63	15.095	951.2	
5	"	9 590	"	6	9.532	57.2	
6	"	15 200	"	2	15.109	30.2	
7	"	500	"	61	0.497	30.3	
8	"	650	"	403	0.646	260.8	
F 1	D 25	4 750	1.552	119	18.872	2 245.8	
2	D 13	1 800	0.994	61	1.789	109.1	
3	D 16	2 180	1.552	119	3.725	402.6	
4	"	4 070	"	61	6 314	385.3	
5	D 13	15 190	0.994	12	15.099	181.2	
6	"	15 190	"	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	
						9 074.6	
T 2							
W 1	D 25	7 330	3.973	61	29.122	1 776.4	
2	"	4 690	"	58	18.633	1 080.7	
3	D 16	7 180	1.552	61	11.143	679.7	
4	D 13	15 190	0.994	36	15.099	936.1	
5	——	——	——	——	——	——	
6	D 13	15 200	0.994	2	15.109	30.2	
7	"	500	"	61	0.497	30.3	
8	"	630	"	354	0.626	221.6	
F 1	D 25	4 780	3.973	119	18.991	2 260.0	
2	D 13	1 760	0.994	61	1.749	106.7	
3	D 16	2 180	1.552	119	3.383	402.6	
4	"	4 070	"	61	6.317	385.3	
5	D 13	15 190	0.994	12	15.099	181.2	
6	"	15 190	"	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	
						8 814.6	
					D 25	10 331.6	
					D 16	2 977.9	
					D 13	4 579.7	
					TOTAL WEIGHT	17 889.2	

B – L I N E

BEIS NO.	ϕ (mm)	LENGTH (mm)	NOMINAL WEIGHT	NUMB	U WEIGHT	WEIGHT	REMARKS
T 2							
W 1	D 25	7 870	3.235	61	31.268	1 907.3	
2	"	4 690	"	58	18.633	1 080.7	
3	D 16	7 720	1.552	61	11.981	730.8	
4	D 13	15 190	0.994	66	15.099	996.5	
5	"	10 470	"	4	10.407	41.6	
6	"	15 200	"	2	15.109	30.2	
7	"	500	"	61	0.497	30.3	
8	"	650	"	384	0.646	248.1	
F 1	D 25	4 740	3.973	119	18.832	2 241.0	
2	D 13	1 800	0.994	61	1.789	109.1	
3	D 16	2 180	1.552	119	3.383	402.6	
4	"	4 070	"	61	6.317	385.3	
5	D 13	15 190	0.994	12	15.099	181.2	
6	"	15 190	"	5	15.099	75.5	
7	"	15 190	"	18	15.099	271.8	
8	"	2 160	"	29	2.147	62.3	
9	"	2 160	"	145	2.167	314.2	
						9 108.5	
T 3							
W 1	D 25	7 670	3.973	61	30.473	1 858.9	
2	"	4 690	"	58	18.633	1 080.7	
3	D 16	7 520	1.552	61	11.671	711.9	
4	D 13	15 190	0.994	64	15.099	966.3	
5	"	12 310	"	2	12.236	24.5	
6	"	15 200	"	2	15.109	30.2	
7	"	500	"	61	0.497	30.3	
8	"	660	"	384	0.656	244.2	
F 1	D 25	4 760	3.973	119	18.911	2 250.4	
2	D 13	1 790	0.994	61	1.779	108.5	
3	D 16	2 180	1.552	119	3.383	402.6	
4	"	4 070	"	61	6.317	385.3	
5	D 13	15 190	0.994	12	15.099	181.2	
6	"	15 190	"	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	
						8 998.8	
T 4							
W 1	D 25	7 450	3.973	61	29.599	1 805.5	
2	"	4 690	"	58	18.633	1 080.7	
3	D 16	7 300	1.552	61	11.330	691.1	
4	D 13	15 190	0.994	64	15.099	966.3	
5	"	7 530	"	2	7.485	15.0	
6	"	15 200	"	2	15.109	30.2	
7	"	500	"	61	0.497	30.3	
8	"	620	"	369	0.616	227.3	
F 1	D 25	4 780	1.552	119	18.991	2 259.5	
2	D 13	1 770	0.994	61	1.759	107.3	
3	D 16	2 180	1.552	119	3.383	402.6	
4	"	4 070	"	61	6.317	385.3	
5	D 13	15 190	0.994	12	15.099	181.2	
6	"	15 190	"	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	
						8 906.5	

BEIS NO.	ϕ (mm)	LENGTH (mm)	NOMINAL WEIGHT	NUMB	U WEIGHT	WEIGHT	REMARKS
T 5							
W 1	D 25	7 210	3.973	61	28.645	1 747.3	
2	"	4 690	"	58	18.633	1 080.7	
3	D 16	7 050	1.552	61	10.942	667.5	
4	D 13	15 190	0.994	60	15.099	905.9	
5	"	7 820	"	2	11.807	23.6	
6	"	15 200	"	2	15.109	30.2	
7	"	500	"	61	0.497	30.3	
8	"	600	"	354	0.596	211.0	
F 1	D 25	4 790	3.973	119	19.031	2 264.7	
2	D 13	1 750	0.994	61	1.740	106.1	
3	D 16	2 180	1.552	119	3.383	402.6	
4	"	4 070	"	61	6.317	385.3	
5	D 13	15 190	0.994	12	15.099	181.2	
6	"	15 190	"	5	15.099	75.5	
7	"	15 190	"	18	15.099	271.8	
8	"	2 160	"	29	2.843	62.3	
9	"	2 180	"	145	2.843	314.2	
						8 760.2	
					D 25	20 657.8	
					D 16	5 951.9	
					D 13	9 163.3	
					TOTAL WEIGHT	35 724.0	

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-14, FALAJ AL QABAIL RE-BAR ARRANGEMENT (19)
DATE
DWG NO. W-40

A－LINE

BEIS NO.	◇ (mm)	LENGTH (mm)	NOMINAL WEIGHT	NUMB	U WEIGHT	WEIGHT	REMARKS
T 3							
W 1	D 22	6 990	3.042	61	21.232	1 295.2	
2	〃	3 290	〃	58	10.008	580.5	
3	D 16	6 870	1.552	61	10.662	650.4	
4	D 13	15 190	0.994	55	15.099	830.4	
5	〃	10 450	〃	2	10.387	20.8	
6	〃	15 200	〃	2	15.109	30.2	
7	〃	500	〃	61	0.497	30.3	
8	〃	600	〃	339	0.596	202.0	
F 1	D 22	4 140	3.042	119	12.594	1 498.7	
2	D 13	1 720	0.994	61	1.710	104.3	
3	D 16	2 080	1.552	119	3.228	384.1	
4	〃	3 570	〃	61	5.541	338.0	
5	〃	15 280	〃	11	23.715	260.9	
6	D 13	15 150	0.994	5	15.059	75.5	
7	〃	15 190	〃	17	15.099	256.7	
8	〃	1 960	〃	29	1.948	56.5	
9	〃	1 970	〃	116	1.958	227.1	
						6 841.6	
T 4							
W 1	D 22	6 750	3.042	61	20.534	1 252.6	
2	〃	3 290	〃	58	10.008	580.5	
3	D 16	6 650	1.552	61	10.321	629.6	
4	D 13	15 190	0.994	53	15.099	800.2	
5	〃	6 240	〃	2	6.203	12.4	
6	〃	15 200	〃	2	15.109	30.2	
7	〃	500	〃	61	0.497	30.3	
8	〃	600	〃	325	0.596	193.7	
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	2 080	1.552	119	3.228	384.1	
4	〃	3 570	〃	61	5.541	338.0	
5	〃	15 280	〃	11	23.715	260.9	
6	D 13	15 150	0.994	5	15.059	75.5	
7	〃	15 190	〃	17	15.099	256.7	
8	〃	1 960	〃	29	1.948	56.5	
9	〃	1 970	〃	116	1.958	227.1	
						6 737.3	
T 5							
W 1	D 22	6 500	3.042	61	19.773	1 206.2	
2	〃	3 290	〃	58	10.008	580.5	
3	D 16	6 399	1.552	61	9.917	604.9	
4	D 13	15 199	0.994	51	15.099	770.0	
5	〃	9 420	〃	2	9.363	18.7	
6	〃	15 209	〃	2	15.109	30.2	
7	〃	500	〃	61	0.497	30.3	
8	〃	580	〃	295	0.577	170.2	
F 1	D 22	3 390	3.042	119	12.716	1 513.2	
2	D 13	1 740	0.994	61	1.670	101.9	
3	D 16	2 600	1.552	119	3.228	384.1	
4	〃	2 530	〃	61	5.501	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	〃	2 860	〃	29	1.948	56.5	
9	〃	2 860	〃	116	1.958	227.1	
						6 624.9	

A－LINE

BEIS NO.	◇ (mm)	LENGTH (mm)	NOMINAL WEIGHT	NUMB	U WEIGHT	WEIGHT	REMARKS
T 6							
W 1	D 22	6 330	3.042	61	18.952	1 156.1	
2	〃	3 290	〃	58	10.008	580.5	
3	D 16	6 120	1.552	61	9.498	579.4	
4	D 13	15 190	0.994	44	15.099	739.9	
5	〃	8 460	〃	4	8.409	16.8	
6	〃	15 200	〃	2	15.109	30.2	
7	〃	500	〃	61	0.497	30.3	
8	〃	580	〃	266	0.577	170.2	
F 1	D 22	4 200	3.042	119	12.776	1 520.3	
2	D 13	1 660	0.994	61	1.650	100.7	
3	D 16	2 050	1.552	119	3.228	384.1	
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	〃	13	15.099	256.7	
8	〃	1 960	〃	29	1.948	56.5	
9	〃	1 970	〃	116	1.958	227.1	
						6 523.2	

D 22	13 270.2	
D 16	6 396.3	
D 13	7 060.5	
TOTAL WEIGHT	26 727.0	

B－LINE

BEIS NO.	◇ (mm)	LENGTH (mm)	NOMINAL WEIGHT	NUMB	U WEIGHT	WEIGHT	REMARKS
T 6							
W 1	D 22	6 890	3.042	61	20.959	1 278.5	
2	〃	3 290	〃	58	10.008	580.5	
3	D 16	6 780	1.552	61	10.523	641.9	
4	D 13	15 190	0.994	55	15.099	830.4	
5	——	——	——	——	——	——	
6	D 13	15 150	0.994	2	15.059	30.2	
7	〃	500	〃	61	0.497	30.3	
8	〃	590	〃	339	0.586	198.7	
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	2 080	1.552	119	3.228	384.1	
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	〃	1 970	〃	116	1.958	227.1	
						6 755.3	
T 7							
W 1	D 22	6 750	3.042	61	20.655	1 260.4	
2	〃	3 290	〃	58	10.008	580.5	
3	D 16	6 680	1.552	61	10.367	632.4	
4	D 13	15 190	0.994	53	15.099	800.2	
5	欠番						
6	〃	15 190	0.995	2	15.099	30.2	
7	〃	500	〃	61	0.497	30.3	
8	〃	600	〃	325	0.596	193.7	
F 1	D 22	4 150	3.042	119	12.624	1 502.3	
2	D 13	1 700	0.994	61	1.690	103.1	
3	D 16	2 080	1.552	119	3.228	384.1	
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	〃	1 970	〃	116	1.958	227.1	
						6 731.5	
T 8							
W 1	D 22	6 460	3.042	61	19.712	1 202.4	
2	〃	3 290	〃	58	10.008	580.5	
3	D 16	6 370	1.552	61	9.886	603.0	
4	D 13	15 190	0.994	50	15.099	739.9	
5	〃	9 290	〃	4	9.234	36.9	
6	〃	15 200	〃	2	15.109	30.2	
7	〃	500	〃	61	0.497	30.3	
8	〃	550	〃	310	0.586	181.7	
F 1	D 22	4 180	3.042	119	12.716	1 513.2	
2	D 13	1 680	0.994	61	1.670	101.9	
3	D 16	2 089	1.552	119	3.228	384.1	
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	〃	2 860	〃	29	1.948	56.5	
9	〃	2 860	〃	116	1.958	227.1	
						6 618.8	

D 22	10 000.2
D 16	4 826.3
D 13	5 319.1
TOTAL WEIGHT	20 145.6

NOTES:

JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)

JICA STUDY TEAM
PACIFIC CONSULTANTS INTERNATIONAL
FURUYAMA CONSULTANTS INTERNATIONAL

CLIENT : MINISTRY OF COMMUNICATIONS, DIRECTORATE GENERAL OF ROADS

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

TITLE : R/A-14, FALAJ AL QABAIL RE-BAR ARRANGEMENT (20)

DATE

DWG NO. W-41

A-LINE

REIN NO.	◇ (mm)	LENGTH (mm)	NOMINAL WEIGHT	NUMB	G WEIGHT	WEIGHT	REMARKS
T 7							
W 1	D 22	5 750	3.042	61	17.492	1 067.0	
2	"	3 090	"	58	9.400	545.2	
3	D 16	5 660	1.552	61	8.753	533.9	
4	D 13	15 190	0.994	47	15.099	709.7	
5	"	7 640	"	2	7.594	15.2	
6	"	15 200	"	2	15.109	30.2	
7	"	500	"	61	0.497	30.3	
8	"	560	"	280	0.557	156.4	
F 1	D 19	3 670	2.235	109	8.202	976.0	
2	D 13	1 400	0.994	61	1.392	84.9	
3	D 16	1 680	1.552	119	2.607	310.2	
4	D 13	3 250	0.994	61	3.231	197.1	
5	"	15 150	"	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	"	1 560	"	116	1.551	179.9	
						5 312.9	
T 8							
W 1	D 22	5 440	3.042	61	16.548	1 009.4	
2	"	3 090	"	58	9.400	545.2	
3	D 16	5 040	1.552	61	8.288	505.6	
4	D 13	15 190	0.994	43	15.099	649.3	
5	"	9 320	"	4	9.264	37.1	
6	"	15 200	"	2	15.109	30.2	
7	"	500	"	61	0.497	30.3	
8	"	520	"	251	0.517	129.8	
F 1	D 19	3 690	2.235	119	8.247	981.4	
2	D 13	1 380	0.994	61	1.372	83.7	
3	D 16	1 650	1.552	119	2.607	310.2	
4	D 13	3 230	0.994	61	3.211	195.9	
5	"	15 150	"	10	15.099	151.0	
6	"	15 150	"	4	15.099	60.4	
7	"	15 190	"	15	15.099	226.5	
8	"	1 560	"	29	1.551	45.0	
9	"	1 560	"	116	1.551	179.9	
						5 170.9	
T 9							
W 1	D 22	5 120	3.042	61	15.575	950.1	
2	"	3 090	"	58	9.400	545.2	
3	D 16	5 020	1.552	61	7.791	475.3	
4	D 13	15 150	0.994	41	15.099	619.1	
5	"	8 570	"	2	8.519	17.0	
6	"	15 200	"	2	15.109	30.2	
7	"	500	"	61	0.497	30.3	
8	"	500	"	251	0.497	124.7	
F 1	D 19	3 710	2.235	119	8.292	986.7	
2	D 13	1 360	0.994	61	1.352	82.5	
3	D 16	1 630	1.552	119	2.607	310.2	
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	"	1 560	"	116	1.551	179.9	
						5 030.9	

D 22	4 662.1
D 19	2 944.1
D 16	2 445.4
D 13	5 462.2
TOTAL WEIGHT	15 513.8

B-LINE

REIN NO.	◇ (mm)	LENGTH (mm)	NOMINAL WEIGHT	NUMB	G WEIGHT	WEIGHT	REMARKS
T 9							
W 1	D 22	5 750	3.042	61	17.492	1 067.0	
2	"	3 090	"	58	9.400	545.2	
3	D 16	5 650	2.235	61	8.769	534.9	
4	D 13	15 190	0.994	45	15.099	679.5	
5	"	8 730	"	4	8.678	34.7	
6	"	15 200	"	2	15.109	30.2	
7	"	500	"	61	0.497	30.3	
8	"	559	"	251	0.557	137.3	
F 1	D 19	3 660	2.235	109	8.180	973.4	
2	D 13	1 400	0.994	61	1.392	84.9	
3	D 16	1 680	1.552	119	2.607	310.2	
4	D 13	3 250	0.994	61	3.231	197.1	
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	"	1 560	"	116	1.551	179.9	
						5 287.5	
T 10							
W 1	D 22	5 180	3.042	61	15.758	961.2	
2	"	3 090	"	58	9.400	545.2	
3	D 16	5 080	1.552	61	7.884	480.9	
4	D 13	15 190	0.994	41	15.099	619.1	
5	"	6 410	"	4	6.372	25.5	
6	"	15 210	"	2	15.109	30.2	
7	"	500	"	61	0.497	30.3	
8	"	550	"	236	0.547	129.1	
F 1	D 19	3 700	2.235	109	8.270	984.1	
2	D 13	1 370	0.994	61	1.362	83.1	
3	D 16	1 680	1.552	119	2.607	310.2	
4	D 13	3 230	0.994	61	3.231	197.1	
5	"	15 150	"	10	15.059	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	"	1 560	"	116	1.551	179.9	
						5 058.8	

D 22	3 118.6
D 19	1 957.5
D 16	1 636.2
D 13	3 634.0
TOTAL WEIGHT	10 346.3

NOTES:

JAPAN INTERNATIONAL COOPERATION AGENCY
(JICA)

JICA STUDY TEAM
PACIFIC CONSULTANTS INTERNATIONAL
FURUYAMA CONSULTANTS INTERNATIONAL

CLIENT : MINISTRY OF COMMUNICATIONS, DIRECTORATE GENERAL OF ROADS
PROJECT : D/D ON ROAD DEVELOPMENT PROJECT ON BATINAH HIGHWAY
TITLE : R/A-14, FALAJ AL QABAIL RE-BAR ARRANGEMENT (21)
DATE
DWG NO. W-42

A－LINE

REIS NO.	ϕ (mm)	LENGTH (mm)	NOMINAL WEIGHT	NUMB	U WEIGHT	WEIGHT	REMARKS
T 10							
W 1	D 19	4 530	2.235	61	10.125	617.6	
2	"	2 590	"	58	5.789	335.8	
3	"	4 530	"	61	10.125	617.6	
4	D 13	15 190	0.994	38	15.059	573.8	
5	"	7 470	"	2	7.425	29.7	
6	"	15 200	"	2	15.109	30.2	
7	"	500	"	61	0.497	30.3	
8	"	550	"	251	0.547	137.3	
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	1 260	1.552	119	1.957	236.5	
4	"	2 970	"	61	5.747	350.6	
5	D 13	15 190	0.994	10	15.059	151.0	
6	"	15 190	"	3	15.059	45.3	
7	"	15 190	"	14	15.059	211.4	
8	"	1 160	"	29	1.153	33.4	
9	"	1 170	"	116	1.163	134.9	
						4 485.6	
T 11							
W 1	D 19	4 170	2.235	61	9.320	568.5	
2	"	2 590	"	58	5.789	335.8	
3	"	4 170	"	61	9.320	568.5	
4	D 13	15 190	0.994	34	15.059	513.4	
5	"	8 270	"	4	8.228	32.9	
6	"	15 200	"	2	15.109	30.2	
7	"	500	"	61	0.497	30.3	
8	"	490	"	192	0.487	58.5	
F 1	D 19	3 250	2.235	119	7.263	875.0	
2	D 13	1 080	0.994	61	1.074	65.5	
3	D 16	1 260	1.552	119	1.957	236.5	
4	"	2 970	"	61	5.747	350.6	
5	D 13	15 190	0.994	10	15.059	151.0	
6	"	15 190	"	3	15.059	45.3	
7	"	15 190	"	14	15.059	211.4	
8	"	1 160	"	29	1.153	33.4	
9	"	1 170	"	116	1.163	134.9	
						4 376.2	
					D 19	4 780.5	
					D 16	1 174.2	
					D 13	2 287.6	
					TOTAL WEIGHT	8 242.3	

B－LINE

REIS NO.	ϕ (mm)	LENGTH (mm)	NOMINAL WEIGHT	NUMB	U WEIGHT	WEIGHT	REMARKS
T 11							
W 1	D 19	4 560	2.235	61	10.192	631.7	
2	"	2 590	"	58	5.789	335.8	
3	"	4 550	"	61	10.169	630.3	
4	D 13	15 190	0.994	38	15.059	573.8	
5	—	—	—	—	—	—	
6	D 13	15 450	0.994	2	15.109	30.2	
7	"	500	"	61	0.497	30.3	
8	"	490	"	236	0.487	114.9	
F 1	D 19	3 270	2.235	119	7.308	869.7	
2	D 13	1 100	0.994	61	1.093	66.7	
3	D 16	1 260	1.552	119	1.957	236.5	
4	"	2 970	"	61	5.747	350.6	
5	D 13	15 190	0.994	10	15.059	151.0	
6	"	15 190	"	3	15.059	45.3	
7	"	15 190	"	14	15.059	211.4	
8	"	1 160	"	29	1.153	33.4	
9	"	1 170	"	116	1.163	134.9	
						4 426.5	
T 12							
W 1	D 19	4 340	2.235	61	9.700	591.7	
2	"	2 590	"	58	5.789	335.8	
3	"	4 340	"	61	9.700	591.7	
4	D 13	15 190	0.994	38	15.059	573.8	
5	"	7 310	"	2	7.266	14.5	
6	"	15 200	"	2	15.109	30.2	
7	"	500	"	61	0.497	30.3	
8	"	490	"	192	0.487	93.5	
F 1	D 19	3 280	2.235	119	7.331	872.4	
2	D 13	1 090	0.994	61	1.083	66.1	
3	D 16	1 260	1.552	119	1.957	236.5	
4	"	2 970	"	61	5.747	350.6	
5	D 13	15 190	0.994	10	15.059	151.0	
6	"	15 190	"	3	15.059	45.3	
7	"	15 190	"	14	15.059	211.4	
8	"	1 160	"	29	1.153	33.4	
9	"	1 170	"	116	1.163	134.9	
						4 332.9	
					D 19	4 839.1	
					D 16	1 174.2	
					D 13	2 746.1	
					TOTAL WEIGHT	8 759.4	

NOTES:

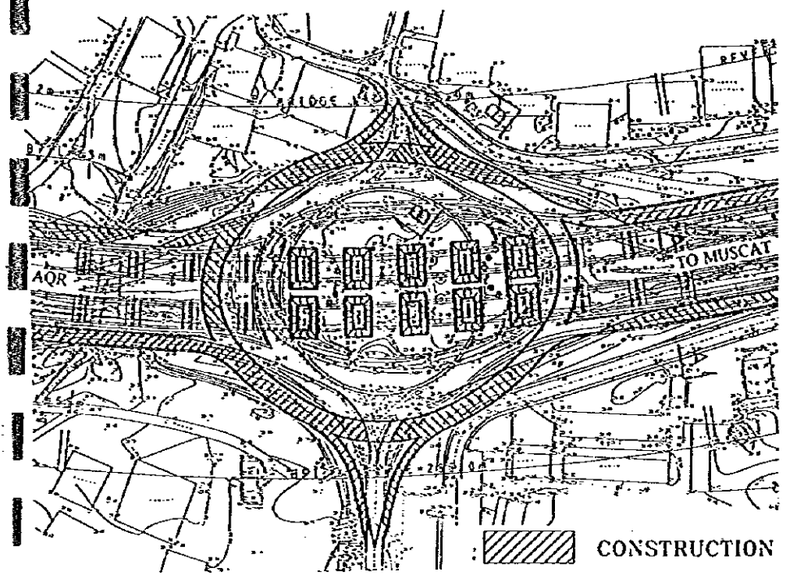
JAPAN INTERNATIONAL COOPERATION AGENCY
(JICA)

JICA STUDY TEAM
PACIFIC CONSULTANTS INTERNATIONAL
FUKUYAMA CONSULTANTS INTERNATIONAL

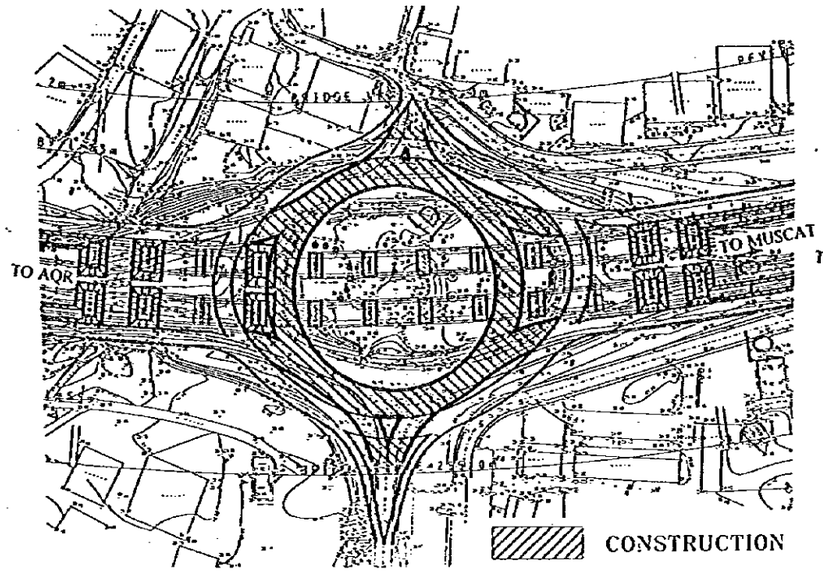
CLIENT : MINISTRY OF COMMUNICATIONS, DIRECTORATE GENERAL OF ROADS
PROJECT : D/D ON ROAD DEVELOPMENT PROJECT ON BATINAH HIGHWAY
TITLE : R/A-14, FALAJ AL QABAIL RE-BAR ARRANGEMENT (22)
DATE
DWG NO. W-43

TEMPORARY WORKS

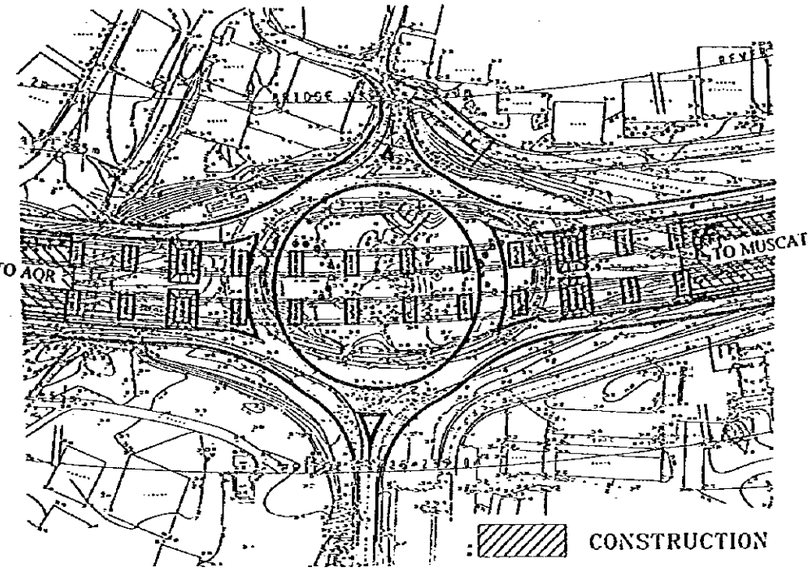
FIRST CONSTRUCTION STAGE

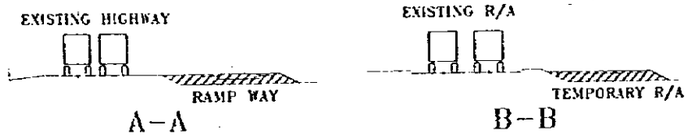


SECOND CONSTRUCTION STAGE



THIRD CONSTRUCTION STAGE





The traffic on the existing highway

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

The traffic detour to ramp way and temporary road

Construction of substructure (External area of temporary R/A)
Construction of retaining wall
Construction for R/A improvement

The traffic detour to improved R/A

Construction of substructure (External area of improved R/A)
Embankment for retaining wall section

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 SEQUENCE OF FALAJ AL QABIL F/O CONSTRUCTION
	DATE / DWG NO. T-1