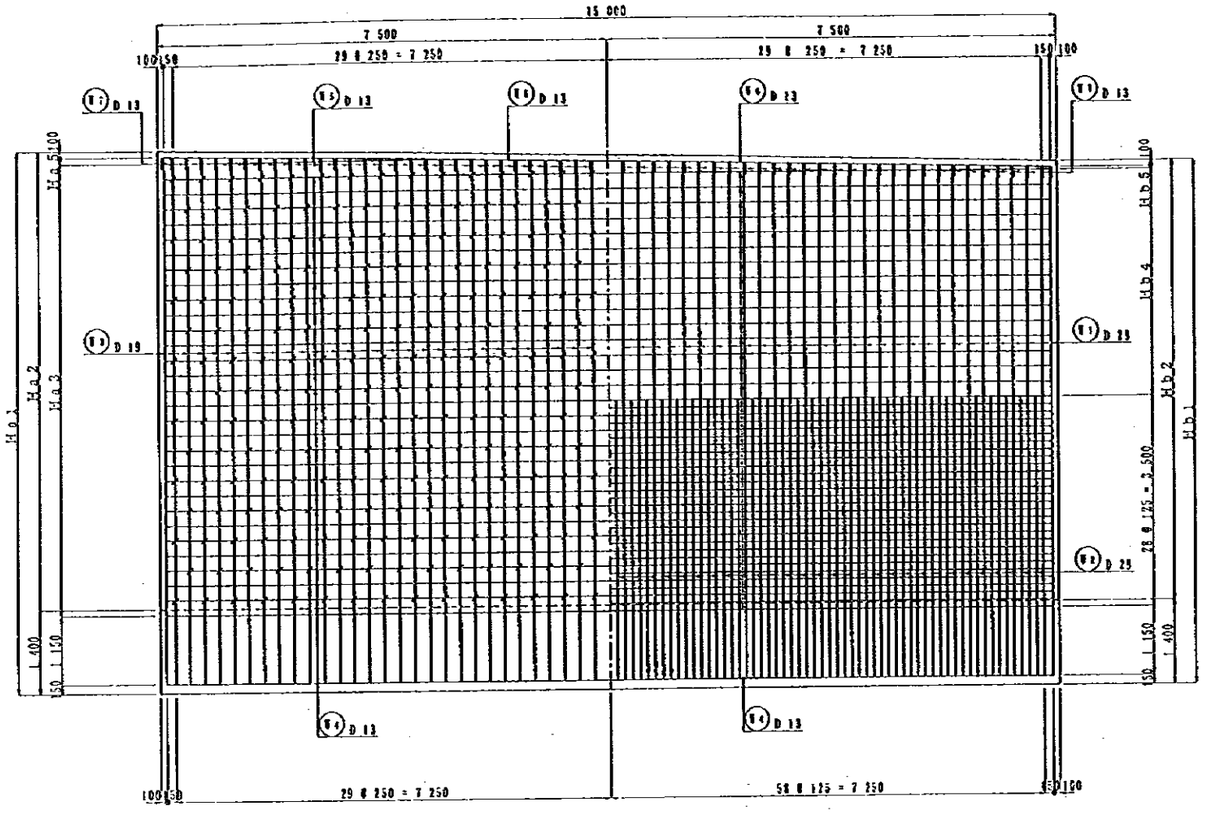
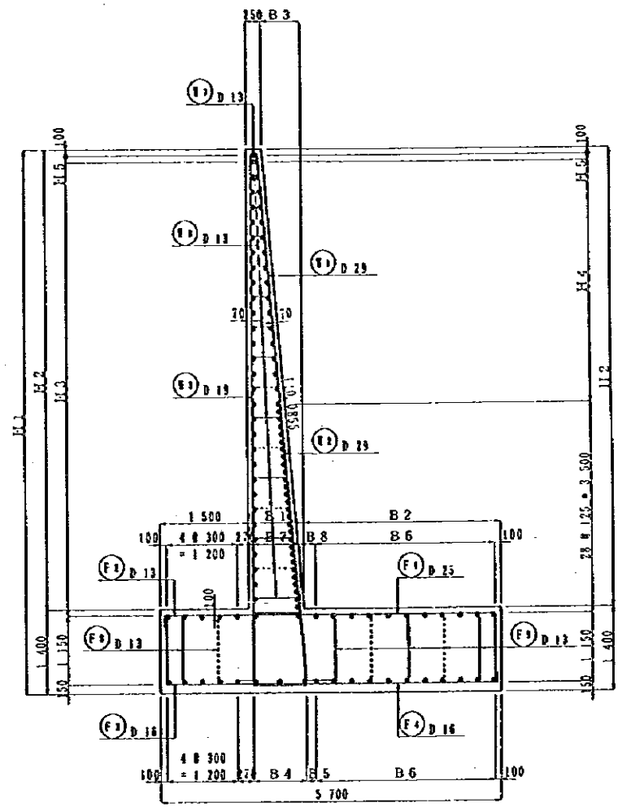
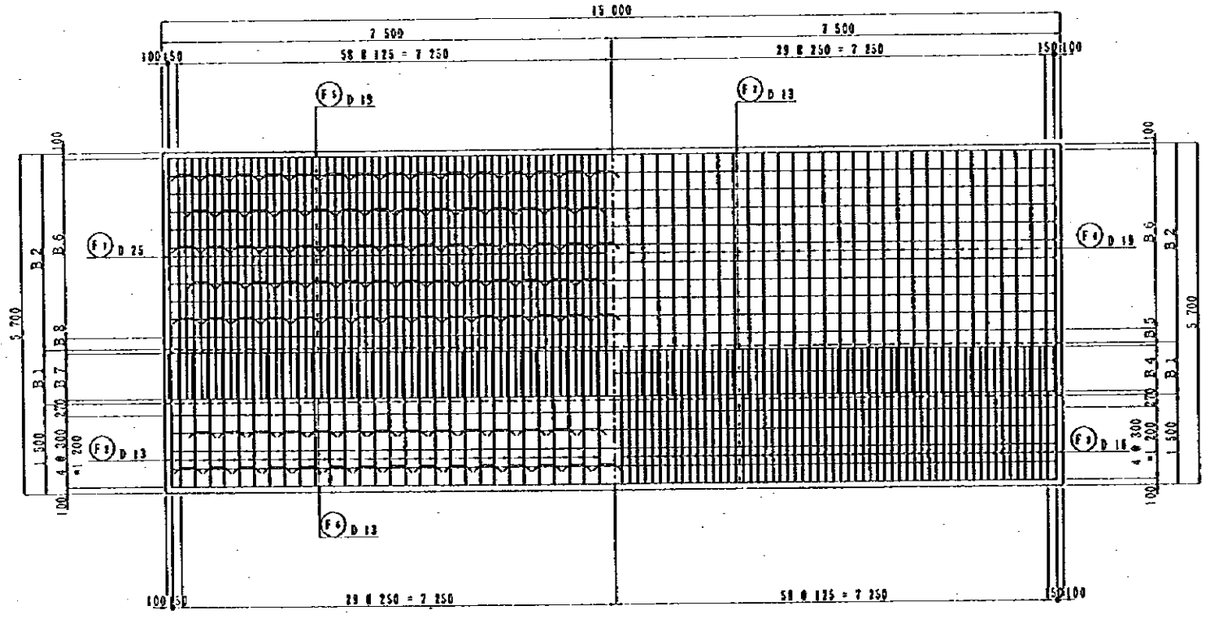


SIDE VIEW
S=1/100



SECTION
S=1/100



PLAN
S=1/100

NOTES:

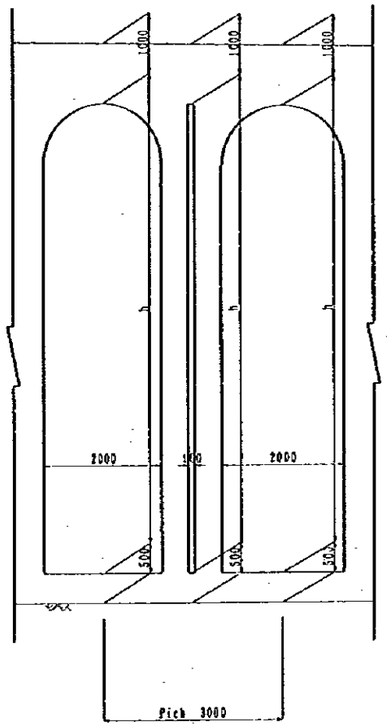
JAPAN INTERNATIONAL COOPERATION AGENCY
(JICA)

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-8, AL KHABURAH RE-BAR ARRANGEMENT (1)
DATE	DWG NO. W-22

A LINE	(T-1)			
		a – a		b – b
	Ha1	8 132	Hb1	7 865
	Ha2	6 732	Hb2	6 465
	Ha3	26@250 = 6 500	Hb3	25@250 = 6 250
	Ha4	12@250 = 3 000	Hb4	11@250 = 2 750
	Ha5	232	Hb5	215
	Ba1	826	Bb1	803
	Ba2	3 374	Bb2	3 397
	Ba3	576	Bb3	553
	Ba4	2@396 = 792	Bb4	2@384.5 = 769
	Ba5	2@119.0 = 238	Bb5	2@130.5 = 261
	Ba6	10@300 = 3 000	Bb6	10@300 = 3 000
	Ba7	694	Bb7	671
	Ba8	2@168.0 = 336	Bb8	2@179.5 = 359

B LINE	(T-1)			
		a – a		b – b
	Ha1	8 132	Hb1	7 865
	Ha2	6 732	Hb2	6 465
	Ha3	26@250 = 6 500	Hb3	25@250 = 6 250
	Ha4	12@250 = 3 000	Hb4	11@250 = 2 750
	Ha5	232	Hb5	215
	Ba1	826	Bb1	803
	Ba2	3 374	Bb2	3 397
	Ba3	576	Bb3	553
	Ba4	2@396 = 792	Bb4	2@384.5 = 769
	Ba5	2@119.0 = 238	Bb5	2@130.5 = 261
	Ba6	10@300 = 3 000	Bb6	10@300 = 3 000
	Ba7	694	Bb7	671
	Ba8	2@168.0 = 336	Bb8	2@179.5 = 359



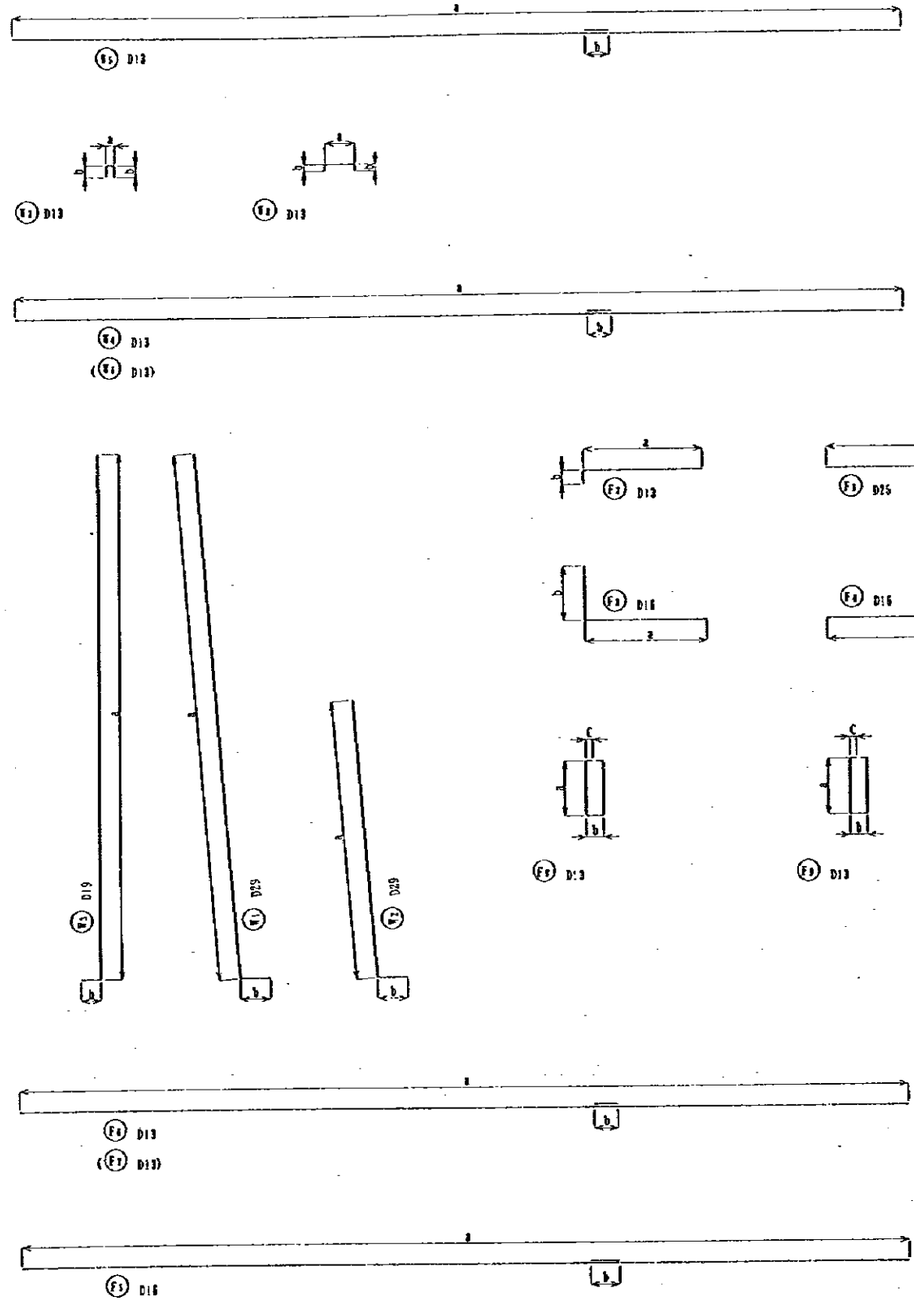
Slit Shape in Front of Wall
(Thickness t=30 mm)

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-8, AL KHABURAH RE-BAR ARRANGEMENT (2)
DATE
DWG NO. W-23



REIN NO.	ϕ (mm)	LENGTH (mm)	a	b	c
T 1					
T 1	D 25	8 220	7 911~7 643	435	——
2	〃	5 110	4 867	435	——
3	D 19	8 040	7 892~7 615	285	——
4	D 13	15 190	14 800	390	——
5	〃	13 250	12 860	390	——
6	〃	15 200	14 806	390	——
7	〃	500	110	195	——
8	〃	670	718~162	111	——
F 1	D 25	5 250	4 098	1 150	——
2	D 13	2 340	2 145	195	——
3	D 16	2 960	1 810	1 150	——
4	〃	4 270	4 030	240	——
5	D 19	15 370	14 800	570	——
6	D 13	15 190	14 800	390	——
7	〃	15 190	14 800	390	——
8	〃	2 860	1 178	228	111
9	〃	2 880	1 184	284	111

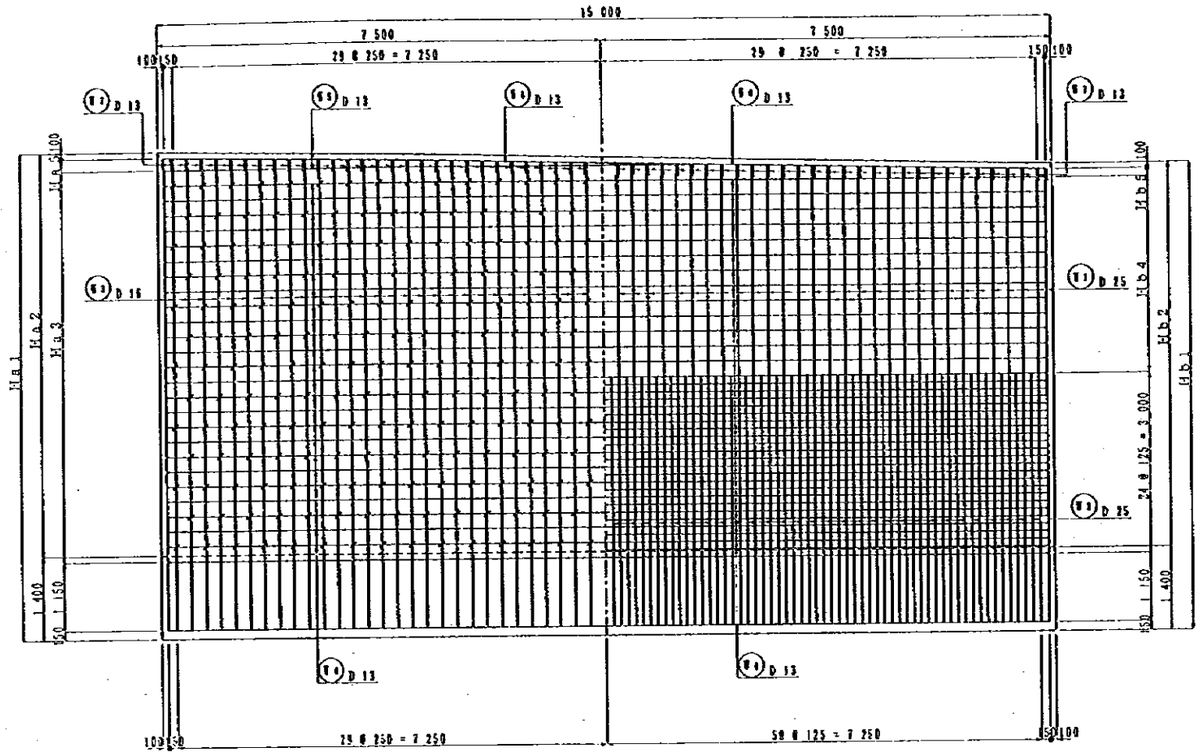
REIN NO.	ϕ (mm)	LENGTH (mm)	a	b	c
T 1					
T 1	D 25	8 220	7 911~7 643	435	——
2	〃	5 110	4 867	435	——
3	D 19	8 040	7 892~7 615	285	——
4	D 13	15 190	14 800	390	——
5	〃	13 250	12 860	390	——
6	〃	15 200	14 806	390	——
7	〃	500	110	195	——
8	〃	670	718~162	111	——
F 1	D 25	5 250	4 098	1 150	——
2	D 13	2 340	2 145	195	——
3	D 16	2 960	1 810	1 150	——
4	〃	4 270	4 030	240	——
5	D 19	15 370	14 800	570	——
6	D 13	15 190	14 800	390	——
7	〃	15 190	14 800	390	——
8	〃	2 860	1 178	228	111
9	〃	2 880	1 184	284	111

NOTES:

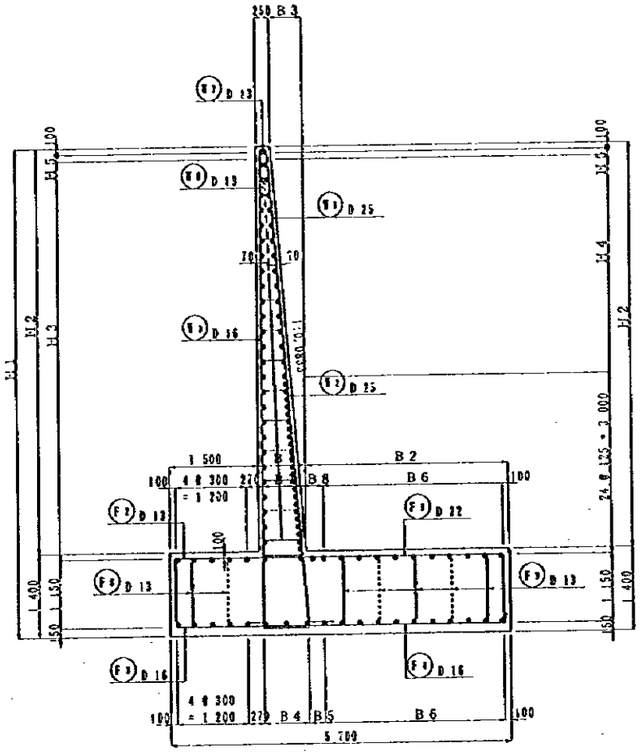
JAPAN INTERNATIONAL COOPERATION AGENCY
(JICA)

JICA STUDY TEAM
PACIFIC CONSULTANTS INTERNATIONAL
FUKUYAMA CONSULTANTS INTERNATIONAL

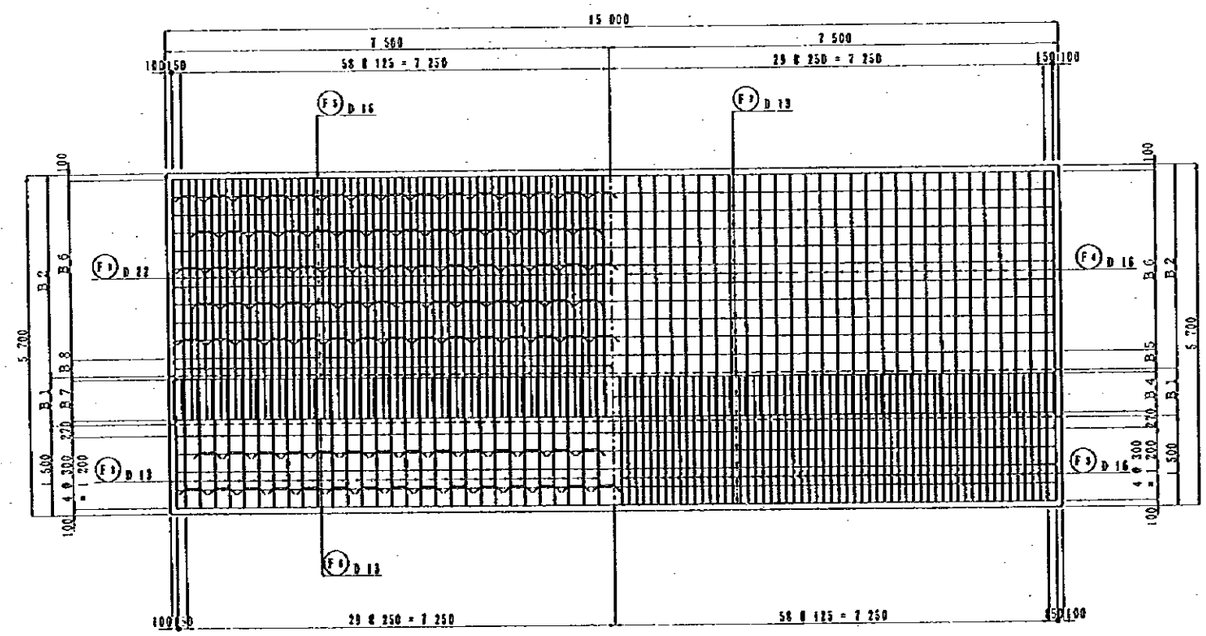
CLIENT : MINISTRY OF COMMUNICATIONS, DIRECTORATE GENERAL OF ROADS
PROJECT : D/D ON ROAD DEVELOPMENT PROJECT ON BATINAH HIGHWAY
TITLE : R/A-8, AL KHABURAH RE-BAR ARRANGEMENT (3)
DATE
DWG NO. W-24



SIDE VIEW
S=1/100



SECTION
S=1/100



PLAN
S=1/100

NOTES:

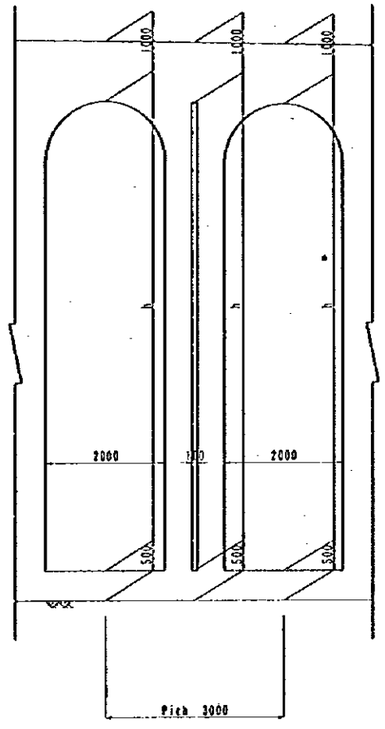
JAPAN INTERNATIONAL COOPERATION AGENCY
(JICA)

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-8, AL KHABURAH RE-BAR ARRANGEMENT (4)
DATE	DWG NO. W-25

A LINE	T-2				T-3				T-4			
		a – a		b – b		a – a		b – b		a – a		b – b
	Ha1	7 865	Hb1	7 598	Ha1	7 598	Hb1	7 331	Ha1	7 331	Hb1	7 018
	Ha2	6 465	Hb2	6 198	Ha2	6 198	Hb2	5 931	Ha2	5 931	Hb2	5 618
	Ha3	25@250 = 6 250	Hb3	24@250 = 6 000	Ha3	24@250 = 6 000	Hb3	23@250 = 5 750	Ha3	23@250 = 5 750	Hb3	22@250 = 5 500
	Ha4	13@250 = 3 250	Hb4	12@250 = 3 000	Ha4	12@250 = 3 000	Hb4	11@250 = 2 750	Ha4	11@250 = 2 750	Hb4	10@250 = 2 500
	Ha5	215	Hb5	198	Ha5	198	Hb5	181	Ha5	181	Hb5	118
	Ba1	789	Bb1	766	Ba1	766	Bb1	774	Ba1	774	Bb1	718
	Ba2	3 411	Bb2	3 434	Ba2	3 434	Bb2	3 456	Ba2	3 456	Bb2	3 482
	Ba3	539	Bb3	516	Ba3	516	Bb3	494	Ba3	494	Bb3	468
	Ba4	2@378.0 = 756	Bb4	2@366.5 = 733	Ba4	2@366.5 = 733	Bb4	2@355.5 = 711	Ba4	2@355.5 = 711	Bb4	2@342.5 = 685
	Ba5	2@137.0 = 274	Bb5	2@148.5 = 297	Ba5	2@148.5 = 297	Bb5	2@159.5 = 319	Ba5	2@159.5 = 319	Bb5	2@172.5 = 345
	Ba6	10@300 = 3 000	Bb6	10@300 = 3 000	Ba6	10@300 = 3 000	Bb6	10@300 = 3 000	Ba6	10@300 = 3 000	Bb6	10@300 = 3 000
	Ba7	660	Bb7	637	Ba7	637	Bb7	615	Ba7	615	Bb7	589
	Ba8	2@185.0 = 370	Bb8	2@196.5 = 393	Ba8	2@196.5 = 393	Bb8	2@207.5 = 415	Ba8	2@207.5 = 415	Bb8	2@220.5 = 441

B LINE	T-2				T-3				T-4			
		a – a		b – b		a – a		b – b		a – a		b – b
	Ha1	7 865	Hb1	7 598	Ha1	7 598	Hb1	7 331	Ha1	7 331	Hb1	7 018
	Ha2	6 465	Hb2	6 198	Ha2	6 198	Hb2	5 931	Ha2	5 931	Hb2	5 618
	Ha3	25@250 = 6 250	Hb3	24@250 = 6 000	Ha3	24@250 = 6 000	Hb3	23@250 = 5 750	Ha3	23@250 = 5 750	Hb3	22@250 = 5 500
	Ha4	13@250 = 3 250	Hb4	12@250 = 3 000	Ha4	12@250 = 3 000	Hb4	11@250 = 2 750	Ha4	11@250 = 2 750	Hb4	10@250 = 2 500
	Ha5	215	Hb5	198	Ha5	198	Hb5	181	Ha5	181	Hb5	118
	Ba1	789	Bb1	766	Ba1	766	Bb1	774	Ba1	774	Bb1	718
	Ba2	3 411	Bb2	3 434	Ba2	3 434	Bb2	3 456	Ba2	3 456	Bb2	3 482
	Ba3	539	Bb3	516	Ba3	516	Bb3	494	Ba3	494	Bb3	468
	Ba4	2@378.0 = 756	Bb4	2@366.5 = 733	Ba4	2@366.5 = 733	Bb4	2@355.5 = 711	Ba4	2@355.5 = 711	Bb4	2@342.5 = 685
	Ba5	2@137.0 = 274	Bb5	2@148.5 = 297	Ba5	2@148.5 = 297	Bb5	2@159.5 = 319	Ba5	2@159.5 = 319	Bb5	2@172.5 = 345
	Ba6	10@300 = 3 000	Bb6	10@300 = 3 000	Ba6	10@300 = 3 000	Bb6	10@300 = 3 000	Ba6	10@300 = 3 000	Bb6	10@300 = 3 000
	Ba7	660	Bb7	637	Ba7	637	Bb7	615	Ba7	615	Bb7	589
	Ba8	2@185.0 = 370	Bb8	2@196.5 = 393	Ba8	2@196.5 = 393	Bb8	2@207.5 = 415	Ba8	2@207.5 = 415	Bb8	2@220.5 = 441



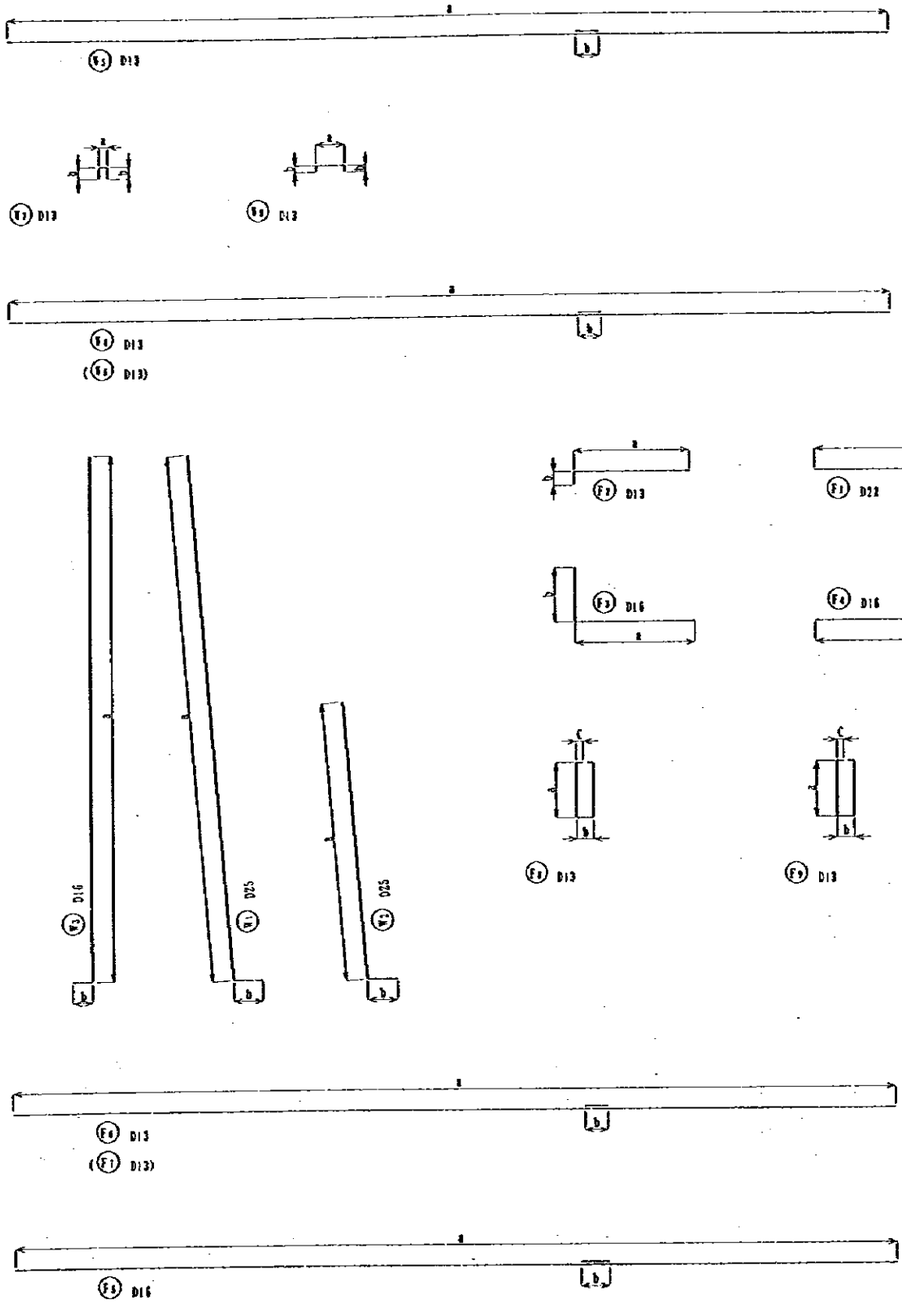
Slit Shape in Front of Wall
(Thickness t=30 mm)

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-8, AL KHABURAH RE-BAR ARRANGEMENT (5)
DATE	DWG NO. W-26



REIN NO.	φ (mm)	LENGTH (mm)	a	b	c
T 2					
V 1	D 25	7 890	7 641~7 373	375	——
2	"	4 540	4 164	375	——
3	D 16	7 730	7 615~7 348	240	——
4	D 13	15 190	14 800	390	——
5	"	12 310	11 918	390	——
6	"	15 200	14 806	390	——
7	"	500	110	195	——
8	"	650	671~171	111	——
F 1	D 22	5 200	4 042	1 150	——
2	D 13	2 310	2 107	195	——
3	D 16	2 960	1 810	1 150	——
4	"	4 270	4 030	195	——
5	"	15 280	14 800	480	——
6	D 13	15 190	14 800	390	——
7	"	15 190	14 800	390	——
8	"	2 860	1 178	278	111
9	"	2 870	1 182	282	111
T 3					
V 1	D 25	7 620	7 373~7 106	375	——
2	"	4 540	4 164	375	——
3	D 16	7 460	7 348~7 081	240	——
4	D 13	15 190	14 890	390	——
5	"	11 370	10 975	390	——
6	"	15 200	14 802	390	——
7	"	500	110	195	——
8	"	620	648~148	111	——
F 1	D 16	5 220	4 064	1 150	——
2	D 13	2 300	2 100	195	——
3	D 16	2 960	1 810	1 150	——
4	"	4 270	4 030	240	——
5	"	15 190	14 800	390	——
6	D 13	15 190	14 800	390	——
7	"	15 190	14 800	390	——
8	"	2 860	1 178	279	111
9	"	2 870	1 182	282	111
T 4					
V 1	D 25	7 330	6 845~6 469	375	——
2	"	4 540	3 662	375	——
3	D 16	7 170	7 081~6 768	240	——
4	D 13	15 190	14 800	390	——
5	"	11 910	14 469~8 558	390	——
6	"	15 200	14 803	390	——
7	"	500	110	195	——
8	"	600	626~126	111	——
F 1	D 22	5 240	4 038	1 150	——
2	D 13	2 290	2 091	195	——
3	D 16	2 560	1 810	1 150	——
4	"	4 270	4 030	240	——
5	"	15 280	14 800	480	——
6	D 13	15 190	14 800	390	——
7	"	15 190	14 800	390	——
8	"	2 860	1 178	278	111
9	"	2 8870	1 182	282	111

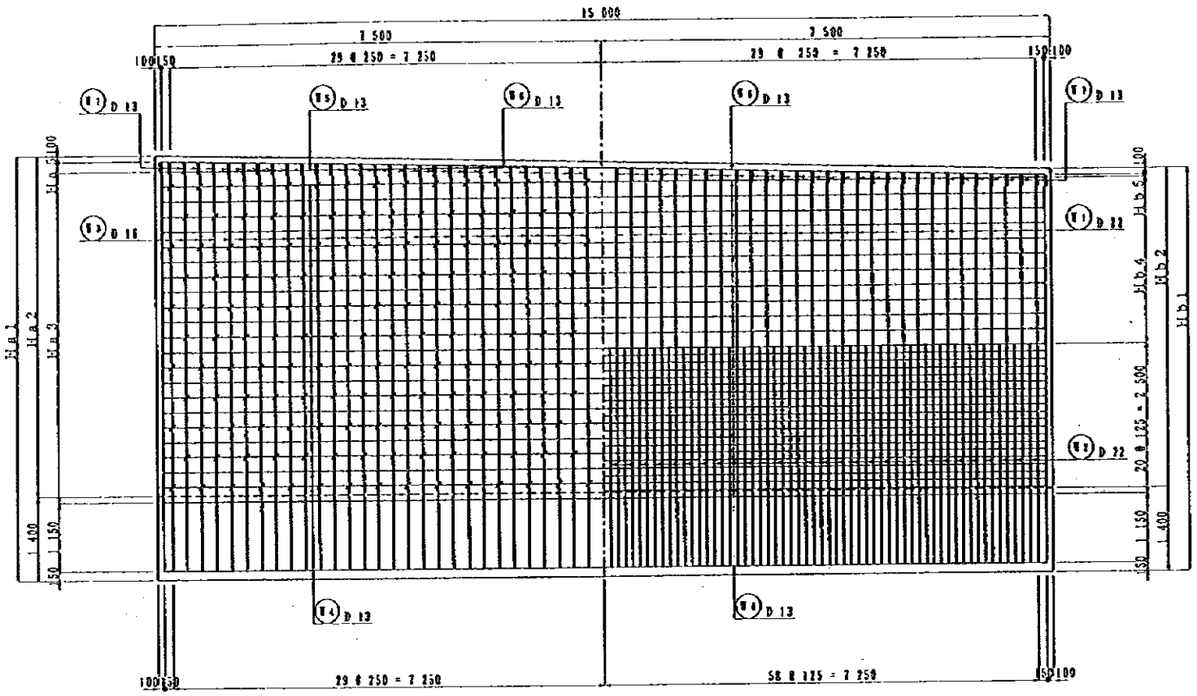
REIN NO.	φ (mm)	LENGTH (mm)	a	b	c
T 2					
V 1	D 25	7 890	7 641~7 373	375	——
2	"	4 540	4 164	375	——
3	D 16	7 730	7 615~7 348	240	——
4	D 13	15 190	14 800	390	——
5	"	12 310	11 918	390	——
6	"	15 200	14 806	390	——
7	"	500	110	195	——
8	"	650	671~171	111	——
F 1	D 22	5 200	4 042	1 150	——
2	D 13	2 310	2 107	195	——
3	D 16	2 960	1 810	1 150	——
4	"	4 270	4 030	195	——
5	"	15 280	14 800	480	——
6	D 13	15 190	14 800	390	——
7	"	15 190	14 800	390	——
8	"	2 860	1 178	278	111
9	"	2 870	1 182	282	111
T 3					
V 1	D 25	7 620	7 373~7 106	375	——
2	"	4 540	4 164	375	——
3	D 16	7 460	7 348~7 081	240	——
4	D 13	15 190	14 800	390	——
5	"	11 370	10 975	390	——
6	"	15 200	14 802	390	——
7	"	500	110	195	——
8	"	620	648~148	111	——
F 1	D 16	5 220	4 064	1 150	——
2	D 13	2 300	2 100	195	——
3	D 16	2 960	1 810	1 150	——
4	"	4 270	4 030	240	——
5	"	15 190	14 800	390	——
6	D 13	15 190	14 800	390	——
7	"	15 190	14 800	390	——
8	"	2 860	1 178	279	111
9	"	2 870	1 182	282	111
T 4					
V 1	D 25	7 330	6 845~6 469	375	——
2	"	4 540	3 662	375	——
3	D 16	7 170	7 081~6 768	240	——
4	D 13	15 190	14 800	390	——
5	"	11 910	14 469~8 558	390	——
6	"	15 200	14 803	390	——
7	"	500	110	195	——
8	"	600	626~126	111	——
F 1	D 22	5 240	4 038	1 150	——
2	D 13	2 250	2 091	195	——
3	D 16	2 960	1 810	1 150	——
4	"	4 270	4 030	240	——
5	"	15 280	14 800	480	——
6	D 13	15 190	14 800	390	——
7	"	15 190	14 800	390	——
8	"	2 860	1 178	278	111
9	"	2 8870	1 182	282	111

NOTES:

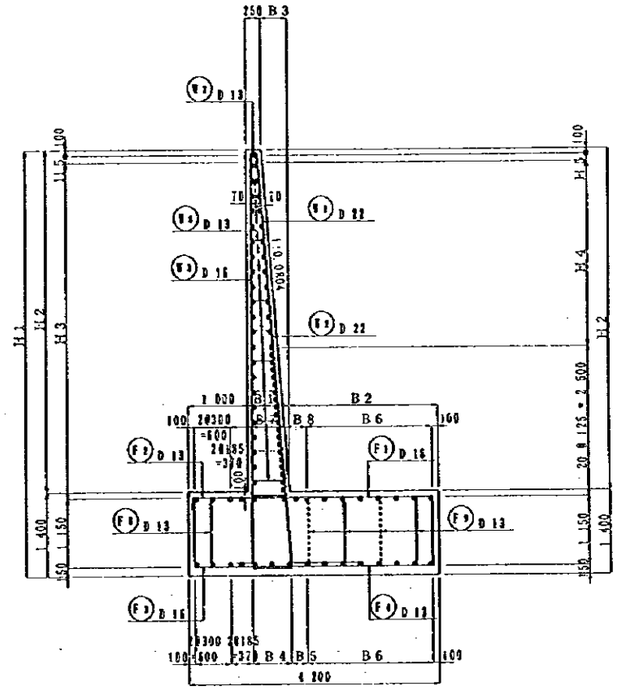
JAPAN INTERNATIONAL COOPERATION AGENCY
(JICA)

JICA STUDY TEAM
PACIFIC CONSULTANTS INTERNATIONAL
FURUYAMA CONSULTANTS INTERNATIONAL

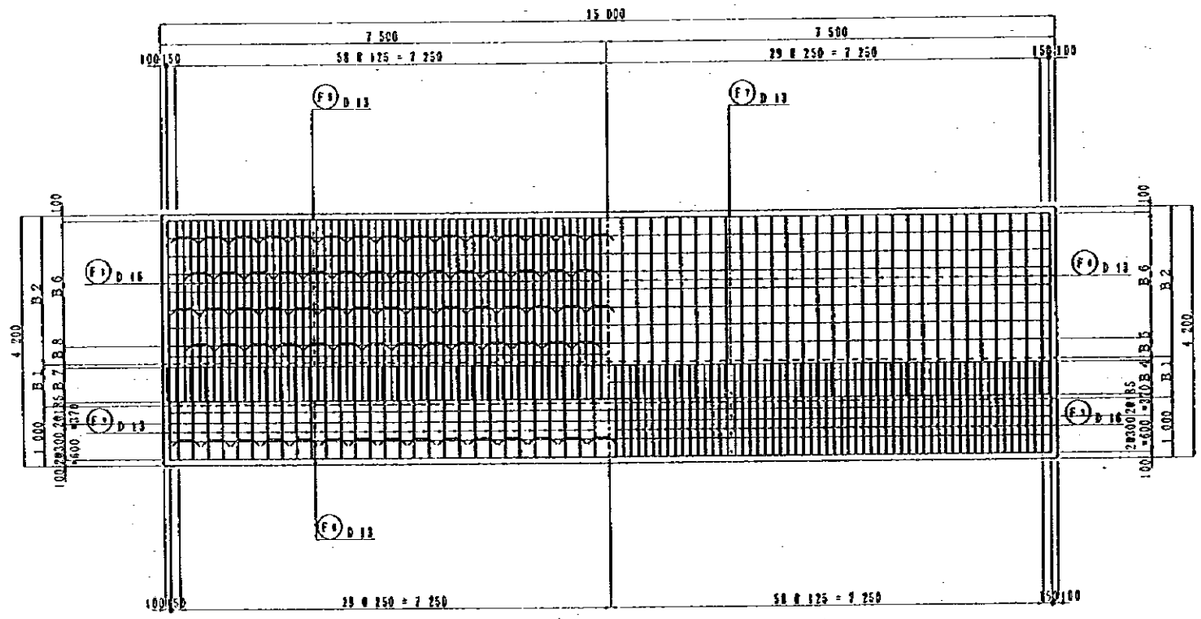
CLIENT : MINISTRY OF COMMUNICATIONS, DIRECTORATE GENERAL OF ROADS
PROJECT : D/D ON ROAD DEVELOPMENT PROJECT ON BATINAH HIGHWAY
TITLE : R/A-8, AL KHABURAH RE-BAR ARRANGEMENT (6)
DATE
DWG NO. W-27



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

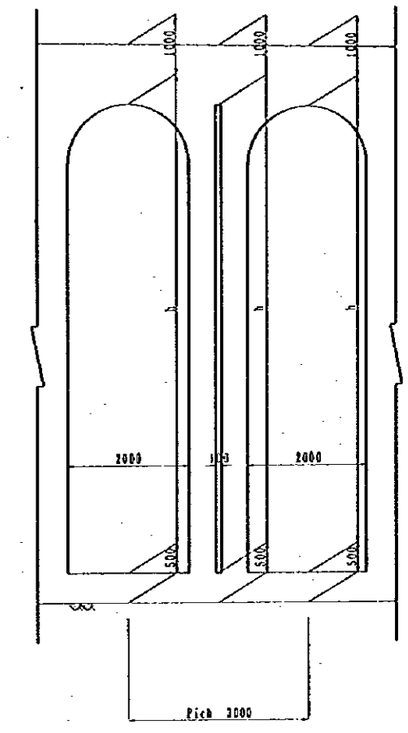
PROJECT : D/D ON ROAD DEVELOPMENT PROJECT ON BATINAH HIGHWAY

TITLE : R/A-8, AL KHABURAH RE-BAR ARRANGEMENT (7)

DATE

DWG NO. W-28

A LINE	T-5				T-6				T-7			
		a – a		b – b		a – a		b – b		a – a		b – b
	Ha1	7 018	Hb1	6 707	Ha1	6 707	Hb1	6 350	Ha1	6 350	Hb1	5 993
	Ha2	5 618	Hb2	5 307	Ha2	5 307	Hb2	4 950	Ha2	4 950	Hb2	4 593
	Ha3	22@250 = 5 500	Hb3	21@250 = 5 250	Ha3	20@250 = 5 000	Hb3	19@250 = 4 750	Ha3	19@250 = 4 750	Hb3	18@250 = 4 500
	Ha4	12@250 = 3 000	Hb4	11@250 = 2 750	Ha4	10@250 = 2 500	Hb4	9@250 = 2 250	Ha4	9@250 = 2 250	Hb4	8@250 = 2 000
	Ha5	118	Hb5	57	Ha5	2@153. 5 = 307	Hb5	200	Ha5	200	Hb5	93
	Ba1	702	Bb1	677	Ba1	677	Bb1	648	Ba1	648	Bb1	619
	Ba2	2 498	Bb2	2 523	Ba2	2 523	Bb2	2 552	Ba2	2 552	Bb2	2 581
	Ba3	452	Bb3	427	Ba3	427	Bb3	398	Ba3	398	Bb3	369
	Ba4	2@331. 5 = 663	Bb4	2@319. 0 = 638	Ba4	2@319. 0 = 638	Bb4	2@304. 5 = 609	Ba4	2@304. 5 = 609	Bb4	2@290 = 580
	Ba5	2@133. 5 = 267	Bb5	2@146. 0 = 292	Ba5	2@146. 0 = 292	Bb5	2@160. 5 = 321	Ba5	2@160. 5 = 321	Bb5	2@175. 0 = 350
	Ba6	7@300 = 2 100	Bb6	7@300 = 2 100	Ba6	7@300 = 2 100	Bb6	7@300 = 2 100	Ba6	7@300 = 2 100	Bb6	7@300 = 2 100
	Ba7	570	Bb7	545	Ba7	545	Bb7	516	Ba7	516	Bb7	487
	Ba8	2@180 = 360	Bb8	2@192. 5 = 385	Ba8	2@192. 5 = 385	Bb8	2@207 = 414	Ba8	2@207 = 414	Bb8	2@221. 5 = 443
B LINE	T-5				T-6				T-7			
		a – a		b – b		a – a		b – b		a – a		b – b
	Ha1	7 018	Hb1	6 707	Ha1	6 707	Hb1	6 350	Ha1	6 350	Hb1	5 993
	Ha2	5 618	Hb2	5 307	Ha2	5 307	Hb2	4 950	Ha2	4 950	Hb2	4 593
	Ha3	22@250 = 5 500	Hb3	21@250 = 5 250	Ha3	20@250 = 5 000	Hb3	19@250 = 4 750	Ha3	19@250 = 4 750	Hb3	18@250 = 4 500
	Ha4	12@250 = 3 000	Hb4	11@250 = 2 750	Ha4	10@250 = 2 500	Hb4	9@250 = 2 250	Ha4	9@250 = 2 250	Hb4	8@250 = 2 000
	Ha5	118	Hb5	57	Ha5	2@153. 5 = 307	Hb5	200	Ha5	200	Hb5	93
	Ba1	702	Bb1	677	Ba1	677	Bb1	648	Ba1	648	Bb1	619
	Ba2	2 498	Bb2	2 523	Ba2	2 523	Bb2	2 552	Ba2	2 552	Bb2	2 581
	Ba3	452	Bb3	427	Ba3	427	Bb3	398	Ba3	398	Bb3	369
	Ba4	2@331. 5 = 663	Bb4	2@319. 0 = 638	Ba4	2@319. 0 = 638	Bb4	2@304. 5 = 609	Ba4	2@304. 5 = 609	Bb4	2@290 = 580
	Ba5	2@133. 5 = 267	Bb5	2@146. 0 = 292	Ba5	2@146. 0 = 292	Bb5	2@160. 5 = 321	Ba5	2@160. 5 = 321	Bb5	2@175. 0 = 350
	Ba6	7@300 = 2 100	Bb6	7@300 = 2 100	Ba6	7@300 = 2 100	Bb6	7@300 = 2 100	Ba6	7@300 = 2 100	Bb6	7@300 = 2 100
	Ba7	570	Bb7	545	Ba7	545	Bb7	516	Ba7	516	Bb7	487
	Ba8	2@180 = 360	Bb8	2@192. 5 = 385	Ba8	2@192. 5 = 385	Bb8	2@207 = 414	Ba8	2@207 = 414	Bb8	2@221. 5 = 443



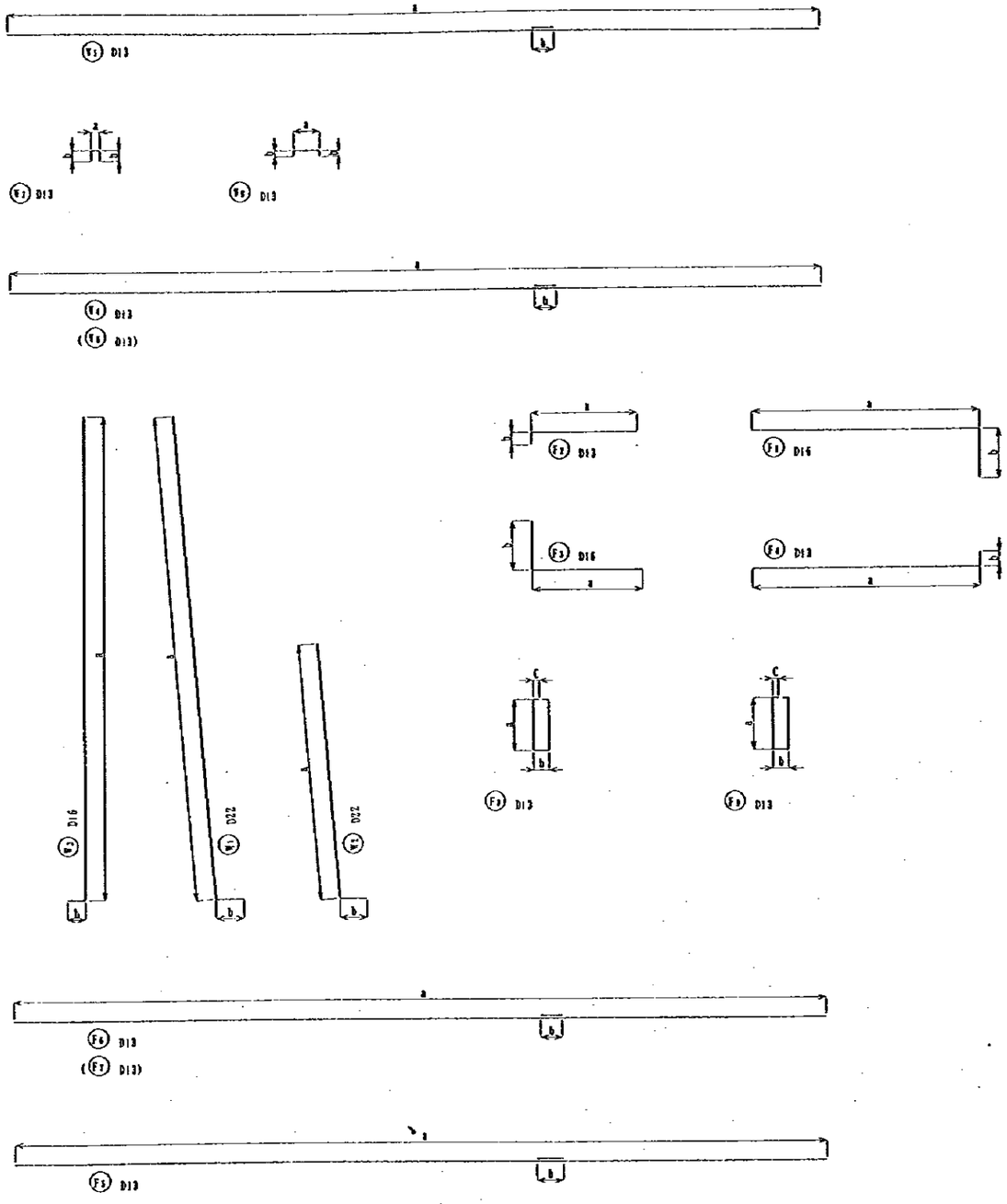
Slit Shape in Front of Wall
(Thickness t=30 mm)

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-8, AL KHABURAH RE-BAR ARRANGEMENT (8)
DATE DWG NO. W-29



REIN NO.	ϕ (mm)	LENGTH (mm)	a	b	c
T 5					
W 1-1	D 22	6 920	6 750~6 478	330	———
1-2	"	5 340	5 456~5 184	———	———
2-1	"	4 000	3 650	330	———
2-2	"	2 440	2 438	———	———
3-1	D 16	6 860	6 768~6 457	240	———
3-2	"	5 330	5 478~5 167	———	———
4	"	15 190	14 800	390	———
5	"	8 580	11 564~5 615	390	———
6	"	14 810	14 803	390	———
7	"	500	110	195	———
8	"	610	582~180	111	———
F 1	D 16	4 110	2 953	1 150	———
2	D 13	1 720	1 520	195	———
3	D 16	2 460	1 310	1 150	———
4	D 13	3 230	3 030	195	———
5-1	"	9 800	9 800	———	———
5-2	"	3 800	3 800	———	———
6-1	"	9 800	9 800	———	———
6-2	"	3 800	3 800	———	———
7-1	D 22	9 800	9 800	330	———
7-2	"	3 800	3 800	330	———
8	D 16	2 860	1 178	278	111
9	D 13	2 860	1 178	278	111
T 6					
W 1	D 22	6 630	6 478~6 128	330	———
2	"	4 000	3 662	330	———
3	D 16	6 520	6 457~6 100	240	———
4	D 13	15 190	14 800	390	———
5	"	9 940	12 727~6 364	390	———
6	"	15 200	14 804	390	———
7	"	500	110	195	———
8	"	600	557~195	111	———
F 1	D 16	4 130	2 980	1 150	———
2	D 13	1 720	1 493	195	———
3	D 16	2 460	1 310	1 150	———
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	"	2 860	1 178	278	111
9	"	2 860	1 178	278	111
T 7					
W 1	D 22	6 280	6 128~5 762	330	———
2	"	4 000	3 662	330	———
3	D 16	6 170	6 100~5 743	240	———
4	D 13	15 190	14 800	390	———
5	"	8 300	8 292	———	———
6	"	15 200	14 804	390	———
7	"	500	110	195	———
8	"	570	528~166	111	———
F 1	D 16	4 160	3 009	1 150	———
2	D 13	1 668	1 464	195	———
3	D 16	2 458	1 310	1 150	———
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	"	2 860	1 178	278	111
9	"	2 860	1 178	278	111

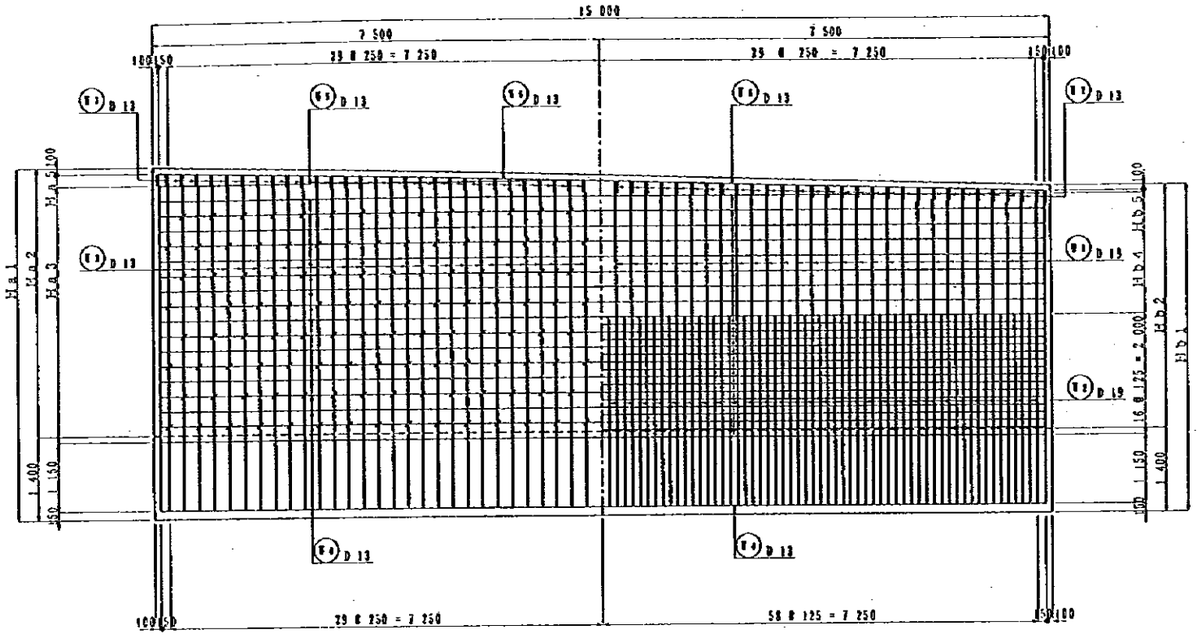
REIN NO.	ϕ (mm)	LENGTH (mm)	a	b	c
T 5					
W 1-1	D 22	6 920	6 750~6 478	330	———
1-2	"	5 340	5 456~5 184	———	———
2-1	"	4 000	3 650	330	———
2-2	"	2 440	2 438	———	———
3-1	D 16	6 860	6 768~6 457	240	———
3-2	"	5 330	5 478~5 167	———	———
4	"	15 190	14 800	390	———
5	"	8 580	11 564~5 615	390	———
6	"	14 810	14 803	390	———
7	"	500	110	195	———
8	"	610	582~180	111	———
F 1	D 16	4 110	2 953	1 150	———
2	D 13	1 720	1 520	195	———
3	D 16	2 460	1 310	1 150	———
4	D 13	3 230	3 030	195	———
5-1	"	9 800	9 800	———	———
5-2	"	3 800	3 800	———	———
6-1	"	9 800	9 800	———	———
6-2	"	3 800	3 800	———	———
7-1	D 22	9 800	9 800	330	———
7-2	"	3 800	3 800	330	———
8	D 16	2 860	1 178	278	111
9	D 13	2 860	1 178	278	111
T 6					
W 1	D 22	6 630	6 478~6 128	330	———
2	"	4 000	3 662	330	———
3	D 16	6 520	6 457~6 100	240	———
4	D 13	15 190	14 800	390	———
5	"	9 940	12 727~6 364	390	———
6	"	15 200	14 804	390	———
7	"	500	110	195	———
8	"	600	557~195	111	———
F 1	D 16	4 130	2 980	1 150	———
2	D 13	1 720	1 493	195	———
3	D 16	2 460	1 310	1 150	———
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	"	2 860	1 178	278	111
9	"	2 860	1 178	278	111
T 7					
W 1	D 22	6 280	6 128~5 762	330	———
2	"	4 000	3 662	330	———
3	D 16	6 170	6 100~5 743	240	———
4	D 13	15 190	14 800	390	———
5	"	8 300	8 292	———	———
6	"	15 200	14 804	390	———
7	"	500	110	195	———
8	"	570	528~166	111	———
F 1	D 16	4 160	3 009	1 150	———
2	D 13	1 668	1 464	195	———
3	D 16	2 458	1 310	1 150	———
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	"	2 860	1 178	278	111
9	"	2 860	1 178	278	111

NOTES:

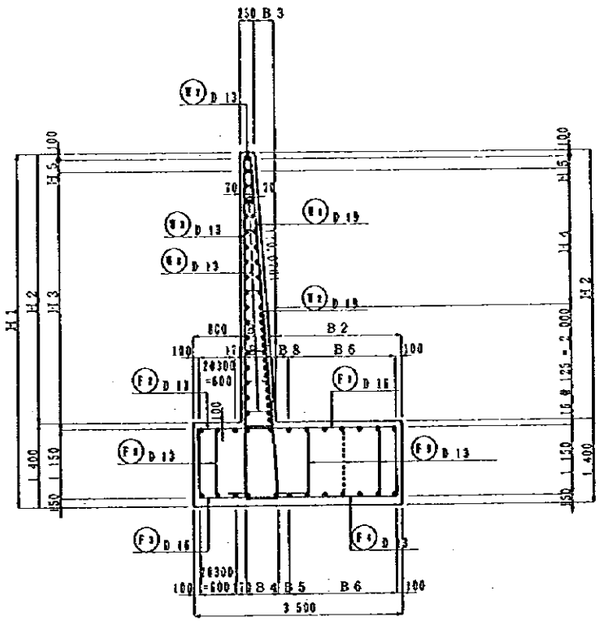
JAPAN INTERNATIONAL COOPERATION AGENCY
(JICA)

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-8, AL KHABURAH RE-BAR ARRANGEMENT (9)
DATE
DWG NO. W-30



SIDE VIEW
S=1/100



SECTION
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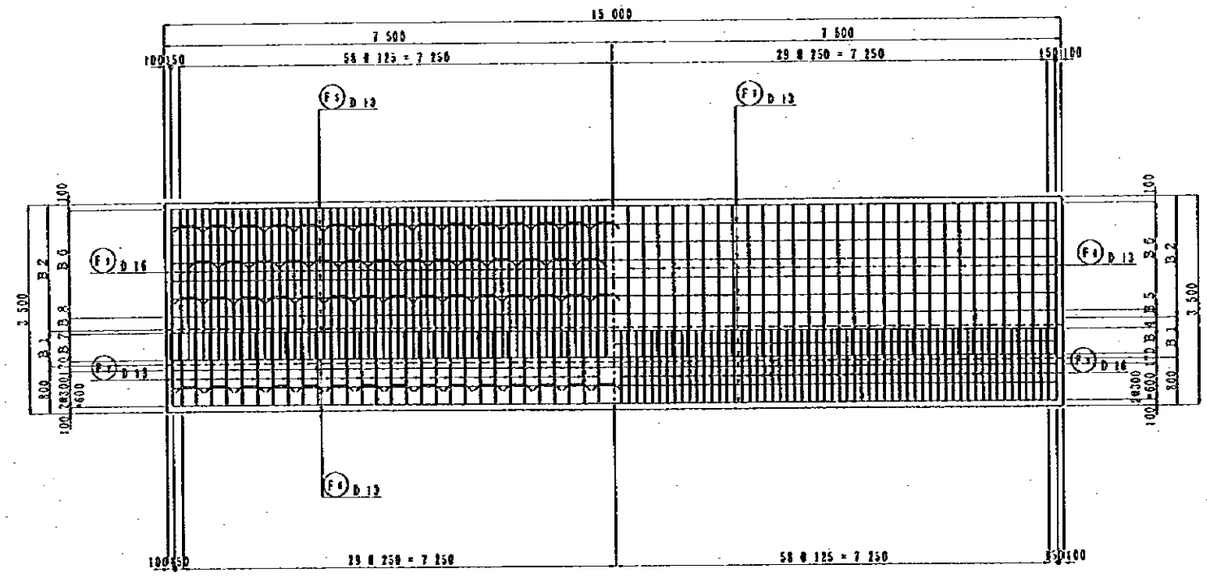


PLAN
S=1/100

NOTES:

JAPAN INTERNATIONAL COOPERATION AGENCY
(JICA)

JICA STUDY TEAM
PACIFIC CONSULTANTS INTERNATIONAL
FURUYAMA CONSULTANTS INTERNATIONAL

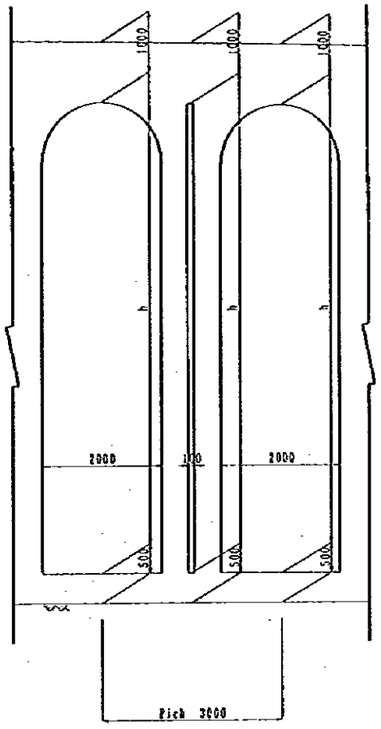
CLIENT :	MINISTRY OF COMMUNICATIONS, DIRECTORATE GENERAL OF ROADS
PROJECT :	D/D ON ROAD DEVELOPMENT PROJECT ON BATINAH HIGHWAY
TITLE :	R/A-8, AL KHABURAH RE-BAR ARRANGEMENT (10)
DATE	DWG NO. W-31

A LINE

	T-8			T-9			T-10		
	a - a		b - b	a - a		b - b	a - a		b - b
Ha1	5 993	Hb1	5 591	5 591	Hb1	5 189	5 189	Hb1	4 753
Ha2	4 593	Hb2	4 191	4 191	Hb2	3 789	3 789	Hb2	3 353
Ha3	17@250 = 4 250	Hb3	16@250 = 4 000	16@250 = 4 000	Hb3	15@250 = 3 750	14@250 = 3 500	Hb3	13@250 = 3 250
Ha4	9@250 = 2 250	Hb4	8@250 = 2 000	8@250 = 2 000	Hb4	7@250 = 1 750	6@250 = 1 500	Hb4	5@250 = 1 250
Ha5	2@171.5 = 343	Hb5	191	191	Hb5	39	2@144.5 = 289	Hb5	103
Ba1	600	Bb1	569	569	Bb1	538	538	Bb1	505
Ba2	2 100	Bb2	2 131	2 131	Bb2	2 162	2 162	Bb2	2 195
Ba3	350	Bb3	319	319	Bb3	288	288	Bb3	255
Ba4	2@277.5 = 555	Bb4	2@262 = 524	2@262 = 524	Bb4	2@246.5 = 493	2@246.5 = 493	Bb4	2@230 = 460
Ba5	175	Bb5	206	206	Bb5	237	237	Bb5	270
Ba6	6@300 = 1 800	Bb6	6@300 = 1 800	6@300 = 1 800	Bb6	6@300 = 1 800	6@300 = 1 800	Bb6	6@300 = 1 800
Ba7	468	Bb7	437	437	Bb7	406	406	Bb7	373
Ba8	2@131.0 = 262	Bb8	2@146.5 = 293	2@146.5 = 293	Bb8	2@162.0 = 324	2@162.0 = 324	Bb8	2@173.5 = 357

B LINE

	T-8			T-9			T-10		
	a - a		b - b	a - a		b - b	a - a		b - b
Ha1	5 993	Hb1	5 591	5 591	Hb1	5 189	5 189	Hb1	4 753
Ha2	4 593	Hb2	4 191	4 191	Hb2	3 789	3 789	Hb2	3 353
Ha3	17@250 = 4 250	Hb3	16@250 = 4 000	16@250 = 4 000	Hb3	15@250 = 3 750	14@250 = 3 500	Hb3	13@250 = 3 250
Ha4	9@250 = 2 250	Hb4	8@250 = 2 000	8@250 = 2 000	Hb4	7@250 = 1 750	6@250 = 1 500	Hb4	5@250 = 1 250
Ha5	2@171.5 = 343	Hb5	191	191	Hb5	39	2@144.5 = 289	Hb5	103
Ba1	600	Bb1	569	569	Bb1	538	538	Bb1	505
Ba2	2 100	Bb2	2 131	2 131	Bb2	2 162	2 162	Bb2	2 195
Ba3	350	Bb3	319	319	Bb3	288	288	Bb3	255
Ba4	2@277.5 = 555	Bb4	2@262 = 524	2@262 = 524	Bb4	2@246.5 = 493	2@246.5 = 493	Bb4	2@230 = 460
Ba5	175	Bb5	206	206	Bb5	237	237	Bb5	270
Ba6	6@300 = 1 800	Bb6	6@300 = 1 800	6@300 = 1 800	Bb6	6@300 = 1 800	6@300 = 1 800	Bb6	6@300 = 1 800
Ba7	468	Bb7	437	437	Bb7	406	406	Bb7	373
Ba8	2@131.0 = 262	Bb8	2@146.5 = 293	2@146.5 = 293	Bb8	2@162.0 = 324	2@162.0 = 324	Bb8	2@178.5 = 357



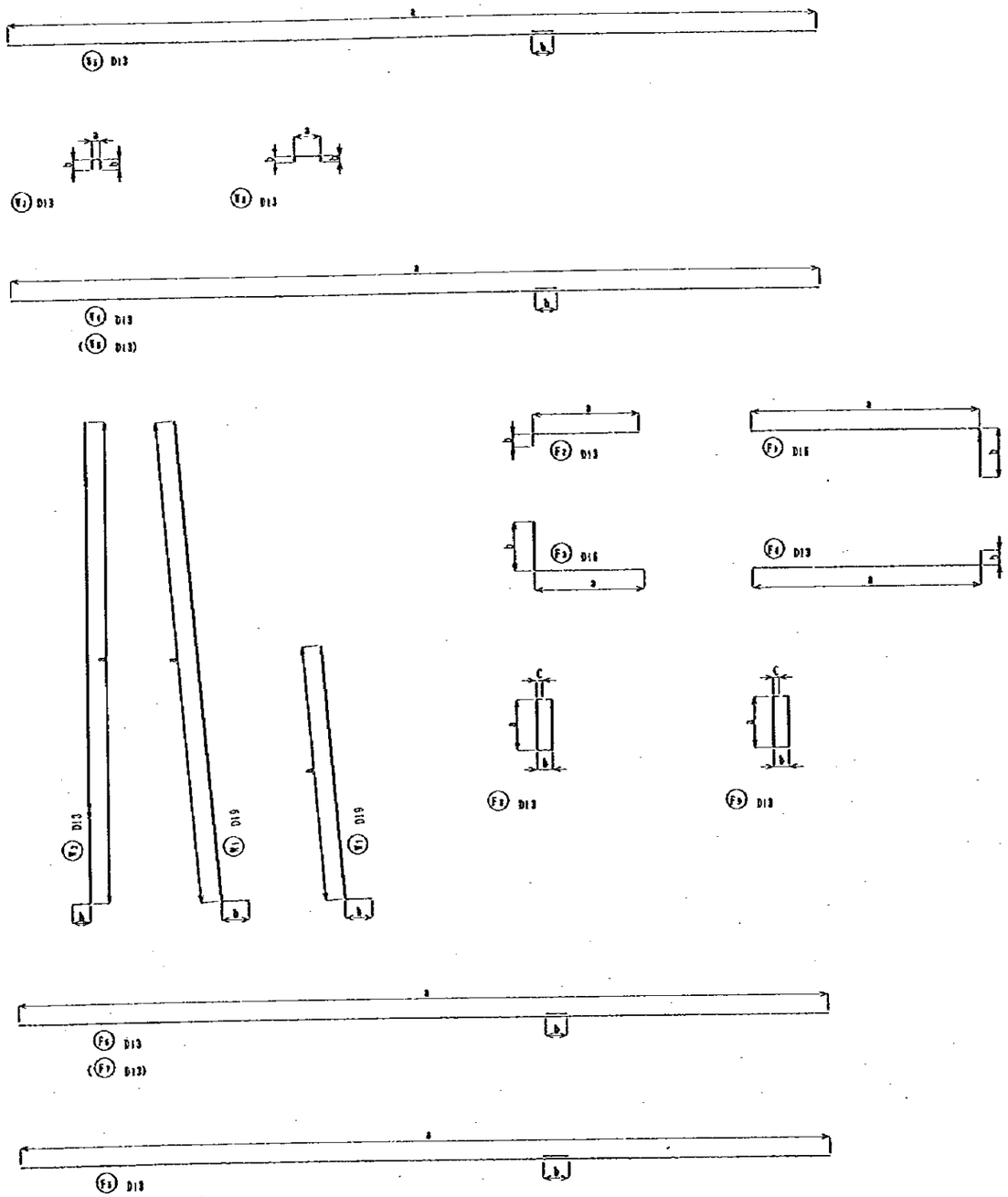
Slit Shape in Front of Wall
(Thickness t=30 mm)

NOTES:

JAPAN INTERNATIONAL COOPERATION AGENCY
(JICA)

JICA STUDY TEAM
PACIFIC CONSULTANTS INTERNATIONAL
FURUYANA CONSULTANTS INTERNATIONAL

CLIENT : MINISTRY OF COMMUNICATIONS, DIRECTORATE GENERAL OF ROADS
PROJECT : D/D ON ROAD DEVELOPMENT PROJECT ON BATINAH HIGHWAY
TITLE R/A-8, AL KHABURAH RE-BAR ARRANGEMENT (11)
DATE DWG NO. W-32



REIN NO.	ϕ (mm)	LENGTH (mm)	a	b	c
T 8					
W 1	D 19	5 850	5 760~5 856	285	——
2	"	3 450	3 159	285	——
3	D 13	5 740	5 743~5 341	195	——
4	"	15 190	14 800	390	——
5	"	9 870	12 628~6 314	390	——
6	"	15 200	14 805	390	——
7	"	500	110	195	——
8	"	570	478~212	111	——
F 1	D 16	3 720	2 568	1 150	——
2	D 13	1 410	1 215	195	——
3	D 16	2 260	1 110	1 150	——
4	D 13	2 730	2 530	195	——
5	"	15 190	14 800	390	——
6	"	15 190	14 800	390	——
7	"	15 190	14 805	390	——
8	"	2 860	1 178	279	111
9	"	2 860	1 178	279	111
T 9					
W 1	D 19	5 440	5 356~4 953	285	——
2	"	3 450	3 159	285	——
3	D 16	5 340	5 341~4 939	195	——
4	D 13	15 190	14 800	390	——
5	"	7 040	7 032	——	——
6	"	15 200	14 805	390	——
7	"	500	110	195	——
8	"	540	447~181	111	——
F 1	D 16	3 740	2 589	1 150	——
2	D 13	1 380	1 184	195	——
3	D 16	2 260	1 110	1 150	——
4	D 13	2 730	2 530	195	——
5	"	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
T 10					
W 1	D 19	5 020	4 953~4 516	285	——
2	"	3 450	3 159	285	——
3	D 13	4 920	4 939~4 503	195	——
4	"	15 190	14 800	390	——
5	"	9 360	9 810~4 505	390	——
6	"	15 200	14 805	390	——
7	"	500	110	195	——
8	"	510	416~150	111	——
F 1	D 16	3 780	2 621	1 150	——
2	D 13	1 350	1 152	195	——
3	D 16	2 260	1 110	1 150	——
4	D 13	2 730	2 530	195	——
5	"	15 190	14 800	390	——
6	"	15 190	14 800	390	——
7	"	15 190	14 800	390	——
8	"	2 860	1 178	278	111
9	"	2 860	1 178	278	111

REIN NO.	ϕ (mm)	LENGTH (mm)	a	b	c
T 8					
W 1	D 19	5 850	5 760~5 856	285	——
2	"	3 450	3 159	285	——
3	D 13	5 740	5 743~5 341	195	——
4	"	15 190	14 800	390	——
5	"	9 870	12 628~6 314	390	——
6	"	15 200	14 805	390	——
7	"	500	110	195	——
8	"	570	478~212	111	——
F 1	D 16	3 720	2 568	1 150	——
2	D 13	1 410	1 215	195	——
3	D 16	2 260	1 110	1 150	——
4	D 13	2 730	2 530	195	——
5	"	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
T 9					
W 1	D 19	5 440	5 356~4 953	285	——
2	"	3 450	3 159	285	——
3	D 16	5 340	5 341~4 939	195	——
4	D 13	15 190	14 800	390	——
5	"	7 040	7 032	——	——
6	"	15 200	14 805	390	——
7	"	500	110	195	——
8	"	540	447~181	111	——
F 1	D 16	3 740	2 589	1 150	——
2	D 13	1 380	1 184	195	——
3	D 16	2 260	1 110	1 150	——
4	D 13	2 730	2 530	195	——
5	"	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
T 10					
W 1	D 19	5 020	4 953~4 516	285	——
2	"	3 450	3 159	285	——
3	D 13	4 920	4 939~4 503	195	——
4	"	15 190	14 800	390	——
5	"	9 360	9 810~4 505	390	——
6	"	15 200	14 805	390	——
7	"	500	110	195	——
8	"	510	416~150	111	——
F 1	D 16	3 780	2 621	1 150	——
2	D 13	1 350	1 152	195	——
3	D 16	2 260	1 110	1 150	——
4	D 13	2 730	2 530	195	——
5	"	15 190	14 800	390	——
6	"	15 190	14 800	390	——
7	"	15 190	14 800	390	——
8	"	2 860	1 178	278	111
9	"	2 860	1 178	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-8, AL KHABURAH RE-BAR ARRANGEMENT (12)

DATE

DWG NO. W-33

A－LINE

REIN NO.	φ (mm)	LENGTH (mm)	NOMINAL WEIGHT	NUMB	U WEIGHT	WEIGHT	REMARKS
T 1							
W 1	D 25	8 220	5.058	61	41.585	2536.7	
2	"	5 110	"	58	25.851	1499.4	
3	D 19	8 040	2.235	61	17.969	1096.1	
4	D 13	15 190	0.994	64	15.099	966.3	
5	"	13 250	"	2	13.171	26.3	
6	"	15 200	"	2	15.109	30.2	
7	"	500	"	61	0.497	30.3	
8	"	670	"	384	0.666	255.7	
F 1	D 25	5 250	3.979	119	20.858	2482.1	
2	D 13	2 340	0.994	61	2.326	141.9	
3	D 16	2 960	1.552	119	4.594	546.7	
4	"	4 270	0.994	61	6.627	404.2	
5	D 19	15 370	2.235	13	34.353	446.6	
6	D 13	15 190	0.994	6	15.099	90.6	
7	"	15 190	"	19	15.099	286.9	
8	"	2 860	"	58	2.843	164.9	
9	"	2 880	"	145	2.863	415.1	
						11420.0	
				D 29		4 036.1	
				D 25		2 482.1	
				D 19		1 542.7	
				D 16		950.9	
				D 13		2 408.2	
			TOTAL WEIGHT			11 420.0	

B－LINE

REIN NO.	φ (mm)	LENGTH (mm)	NOMINAL WEIGHT	NUMB	U WEIGHT	WEIGHT	REMARKS
T 1							
W 1	D 29	8 220	5.059	61	41.585	2536.7	
2	"	5 110	"	58	25.851	1499.4	
3	D 19	8 040	2.235	61	17.969	1096.1	
4	D 13	15 190	0.994	64	15.099	966.3	
5	"	13 250	"	2	13.171	26.3	
6	"	15 200	"	2	15.109	30.2	
7	"	500	"	61	0.497	30.3	
8	"	670	"	384	0.666	255.7	
F 1	D 25	5 250	3.979	119	20.858	2482.1	
2	D 13	2 340	0.994	61	2.326	141.9	
3	D 16	2 960	1.552	119	4.594	546.7	
4	"	4 270	0.994	61	6.627	404.2	
5	D 19	15 370	2.235	13	34.353	446.6	
6	D 13	15 190	0.994	6	15.099	90.6	
7	"	15 190	"	19	15.099	286.9	
8	"	2 860	"	58	2.843	164.9	
9	"	2 880	"	145	2.863	415.1	
						11420.0	
				D 29		4 036.1	
				D 25		2 482.1	
				D 19		1 542.7	
				D 16		950.9	
				D 13		2 408.2	
			TOTAL WEIGHT			11 420.0	

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-8, AL KHABURAH RE-BAR ARRANGEMENT (13)
DATE
DWG NO. W-34

A－LINE

BEIS NO.	φ (mm)	LENGTH (mm)	NOMINAL WEIGHT	NUMB	U WEIGHT	WEIGHT	REMARKS
T 2							
W 1	D 25	7 850	3.973	61	31.342	1 912.2	
2	"	4 540	"	58	18.037	1 046.1	
3	D 16	7 730	1.552	61	11.997	731.8	
4	D 13	15 190	0.994	60	15.095	905.9	
5	"	12 310	"	2	12.236	24.5	
6	"	15 200	"	2	15.109	30.2	
7	"	500	"	61	0.497	30.3	
8	"	650	"	369	0.646	238.4	
F 1	D 22	5 200	3.042	119	15.818	1882.3	
2	D 13	2 310	0.994	61	2.296	140.1	
3	D 16	2 960	1.552	119	4.594	546.7	
4	"	4 270	"	61	6.627	404.2	
5	"	15 280	"	13	23.715	308.3	
6	D 13	15 190	0.994	6	15.099	90.6	
7	"	15 150	"	20	15.099	302.0	
8	"	2 860	"	58	2.843	164.9	
9	"	2 870	"	145	2.853	413.7	
						9 122.2	
T 3							
W 1	D 25	6 550	3.973	61	30.274	1 846.7	
2	"	4 000	"	58	18.037	1 046.1	
3	D 16	6 480	1.552	61	11.578	706.3	
4	D 13	15 190	0.994	58	15.099	875.7	
5	"	8 010	"	2	11.302	22.6	
6	"	15 200	"	2	15.109	30.2	
7	"	500	"	61	0.497	30.3	
8	"	600	"	335	0.616	208.8	
F 1	D 22	5 220	3.042	119	15.879	1889.6	
2	D 13	2 300	0.994	61	2.286	139.4	
3	D 16	2 960	1.552	119	4.594	546.7	
4	"	4 270	"	61	6.627	404.2	
5	"	15 280	"	13	23.715	308.3	
6	D 13	15 190	0.994	6	15.099	90.6	
7	"	15 150	"	20	15.099	302.0	
8	"	2 860	"	58	2.843	164.9	
9	"	2 870	"	145	2.853	413.7	
						5026.1	
T 4							
W 1	D 25	7 330	3.973	61	29.122	1 776.4	
2	"	4 540	"	58	18.037	1 046.1	
3	D 16	7 170	1.552	61	11.128	678.8	
4	D 13	15 190	0.994	58	15.099	845.5	
5	"	11 910	"	4	11.839	47.4	
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	5 240	3.042	119	15.940	1 896.9	
2	D 13	2 290	0.994	61	2.276	138.8	
3	D 16	2 960	1.552	119	4.594	546.7	
4	"	4 270	"	61	6.627	404.2	
5	"	15 280	"	7	23.715	308.3	
6	D 13	15 190	0.994	5	15.099	90.6	
7	"	15 150	"	13	15.099	302.0	
8	"	2 860	"	29	2.843	164.9	
9	"	2 870	"	58	2.853	413.7	
						8 922.8	
					D 25	8 673.6	
					D 22	5 668.8	
					D 16	5 894.5	
					D 13	6 884.2	
					TOTAL WEIGHT	27 121.1	

B－LINE

BEIS NO.	φ (mm)	LENGTH (mm)	NOMINAL WEIGHT	NUMB	U WEIGHT	WEIGHT	REMARKS
T 2							
W 1	D 25	7 850	3.973	61	31.342	1 912.2	
2	"	4 540	"	58	18.037	1 046.1	
3	D 16	7 730	1.552	61	11.997	731.8	
4	D 13	15 190	0.994	60	15.095	905.9	
5	"	12 310	"	2	12.236	24.5	
6	"	15 200	"	2	15.109	30.2	
7	"	500	"	61	0.497	30.3	
8	"	650	"	369	0.646	238.4	
F 1	D 22	5 200	3.042	119	15.818	1882.3	
2	D 13	2 310	0.994	61	2.296	140.1	
3	D 16	2 960	1.552	119	4.594	546.7	
4	"	4 270	"	61	6.627	404.2	
5	"	15 280	"	13	23.715	308.3	
6	D 13	15 190	0.994	6	15.099	90.6	
7	"	15 150	"	20	15.099	302.0	
8	"	2 860	"	58	2.843	164.9	
9	"	2 870	"	145	2.853	413.7	
						9 122.2	
T 3							
W 1	D 25	6 550	3.973	61	30.274	1 846.7	
2	"	4 000	"	58	18.037	1 046.1	
3	D 16	6 480	1.552	61	11.578	706.3	
4	D 13	15 190	0.994	58	15.099	875.7	
5	"	8 010	"	2	11.302	22.6	
6	"	15 200	"	2	15.109	30.2	
7	"	500	"	61	0.497	30.3	
8	"	600	"	335	0.616	208.8	
F 1	D 22	5 220	3.042	119	15.879	1889.6	
2	D 13	2 300	0.994	61	2.286	139.4	
3	D 16	2 960	1.552	119	4.594	546.7	
4	"	4 270	"	61	6.627	404.2	
5	"	15 280	"	13	23.715	308.3	
6	D 13	15 190	0.994	6	15.099	90.6	
7	"	15 150	"	20	15.099	302.0	
8	"	2 860	"	58	2.843	164.9	
9	"	2 870	"	145	2.853	413.7	
						5026.1	
T 4							
W 1	D 25	7 330	3.973	61	29.122	1 776.4	
2	"	4 540	"	58	18.037	1 046.1	
3	D 16	7 170	1.552	61	11.128	678.8	
4	D 13	15 190	0.994	56	15.099	845.5	
5	"	11 910	"	4	11.839	47.4	
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	5 240	3.042	119	15.940	1 896.9	
2	D 13	2 290	0.994	61	2.276	138.8	
3	D 16	2 960	1.552	119	4.594	546.7	
4	"	4 270	"	61	6.627	404.2	
5	"	15 280	"	7	23.715	308.3	
6	D 13	15 190	0.994	5	15.099	90.6	
7	"	15 150	"	13	15.099	302.0	
8	"	2 860	"	29	2.843	164.9	
9	"	2 870	"	58	2.853	413.7	
						8 922.8	
					D 25	8 673.6	
					D 22	5 668.8	
					D 16	5 894.5	
					D 13	6 884.2	
					TOTAL WEIGHT	27 121.1	

NOTES:

JAPAN INTERNATIONAL COOPERATION AGENCY
(JICA)

JICA STUDY TEAM
PACIFIC CONSULTANTS INTERNATIONAL
FURUYANA CONSULTANTS INTERNATIONAL

CLIENT : MINISTRY OF COMMUNICATIONS, DIRECTORATE GENERAL OF ROADS
PROJECT : D/D ON ROAD DEVELOPMENT PROJECT ON BATINAH HIGHWAY
TITLE : R/A-8, AL KHABURAH RE-BAR ARRANGEMENT (14)
DATE
DWG NO. W-35

A－LINE

REIN NO.	ϕ (mm)	LENGTH (mm)	NOMINAL WEIGHT	NUMB	U WEIGHT	WEIGHT	REMARKS
T 5							
V1-1	D 22	6 970	3.042	56	21.203	1 187.4	
1-2	"	5 340	"	5	16.246	81.2	
2-1	"	4 000	"	54	12.168	657.1	
2-2	"	2 440	"	5	7.422	37.1	
3-1	D 16	6 860	1.552	56	10.647	596.2	
3-2	"	5 330	"	5	8.272	41.4	
4	D 13	15 190	0.994	52	15.099	785.1	
5	"	8 980	"	4	8.926	35.7	
6	"	14 810	"	5	14.721	73.6	
7	"	500	"	61	0.497	30.3	
8	"	610	"	310	0.606	187.9	
F 1	D 16	4 110	1.552	110	6.379	701.7	
2	D 13	1 720	0.994	61	1.710	104.3	
3	D 16	2 460	1.552	110	3.818	420.0	
4	D 13	3 230	0.994	61	3.211	195.9	
5-1	"	9 800	"	10	9.741	97.4	
5-2	"	3 800	"	10	3.777	37.8	
6-1	"	9 800	"	5	9.741	48.7	
6-2	"	3 800	"	5	3.777	18.9	
7-1	"	9 800	"	16	9.741	155.9	
7-2	"	3 800	"	16	3.777	60.4	
8	"	2 860	"	27	2.843	76.8	
9	"	2 860	"	112	2.843	318.4	
						5 949.2	
T 6							
V 1	D 22	6 639	3.042	61	20.188	1230.2	
2	"	4 000	"	58	12.168	705.7	
3	D 16	6 520	1.552	61	10.119	617.3	
4	D 13	15 190	0.994	48	15.099	724.8	
5	"	9 940	"	4	9.880	39.5	
6	"	15 200	"	2	15.109	30.2	
7	"	500	"	61	0.497	30.3	
8	"	600	"	280	0.596	166.9	
F 1	D 16	4 130	1.552	110	6.410	705.1	
2	D 13	1 720	0.994	61	1.710	104.3	
3	D 16	2 450	1.552	110	3.806	420.0	
4	D 13	3 230	0.994	61	3.211	195.9	
5	"	15 190	"	10	15.099	151.0	
6	"	15 190	"	5	15.099	75.5	
7	"	15 190	"	16	15.099	241.6	
8	"	2 860	"	29	2.843	82.4	
9	"	2 860	"	116	2.843	329.8	
						5 850.5	

REIN NO.	ϕ (mm)	LENGTH (mm)	NOMINAL WEIGHT	NUMB	U WEIGHT	WEIGHT	REMARKS
T 7							
V 1	D 22	6 280	3.042	61	19.104	1 165.3	
2	"	4 000	"	58	12.168	705.7	
3	D 16	6 170	1.552	61	9.576	584.1	
4	D 13	15 190	0.994	46	15.099	694.6	
5	"	8 300	"	2	8.250	16.5	
6	"	15 200	"	2	15.109	30.2	
7	"	500	"	61	0.497	30.3	
8	"	570	"	251	0.567	142.3	
F 1	D 16	4 160	1.552	110	6.456	710.2	
2	D 13	1 660	0.994	61	1.650	100.7	
3	D 16	2 460	1.552	110	3.818	420.0	
4	D 13	3 230	0.994	61	3.211	195.9	
5	"	15 190	"	10	15.099	151.0	
6	"	15 190	"	5	15.099	75.5	
7	"	15 190	"	16	15.099	241.6	
8	"	2 860	"	29	2.843	82.4	
9	"	2 860	"	116	2.843	329.8	
						5 686.1	

D 22	5 769.7	
D 16	5 226.0	
D 13	6 490.1	
TOTAL WEIGHT	17 485.8	

B－LINE

REIN NO.	ϕ (mm)	LENGTH (mm)	NOMINAL WEIGHT	NUMB	U WEIGHT	WEIGHT	REMARKS
T 5							
V1-1	D 22	6 970	3.042	56	21.203	1 187.4	
1-2	"	5 340	"	5	16.246	81.2	
2-1	"	4 000	"	54	12.168	657.1	
2-2	"	2 440	"	5	7.422	37.1	
3-1	D 16	6 860	1.552	56	10.647	596.2	
3-2	"	5 330	"	5	8.272	41.4	
4	D 13	15 190	0.994	52	15.099	785.1	
5	"	8 980	"	4	8.926	35.7	
6	"	14 810	"	5	14.721	73.6	
7	"	500	"	61	0.497	30.3	
8	"	610	"	310	0.606	187.9	
F 1	D 16	4 110	1.553	110	6.379	701.7	
2	D 13	1 720	0.994	61	1.710	104.3	
3	D 16	2 460	1.552	110	3.818	420.0	
4	D 13	3 230	0.994	61	3.211	195.9	
5-1	"	9 800	"	10	9.741	97.4	
5-2	"	3 800	"	10	3.777	37.8	
6-1	"	9 800	"	5	9.741	48.7	
6-2	"	3 800	"	5	3.777	18.9	
7-1	"	9 800	"	16	9.741	155.9	
7-2	"	3 800	"	16	3.777	60.4	
8	"	2 860	"	27	2.843	76.8	
9	"	2 860	"	112	2.843	318.4	
						5 949.2	
T 6							
V 1	D 22	6 630	3.042	61	20.168	1230.2	
2	"	4 000	"	58	12.168	705.7	
3	D 16	6 520	1.552	61	10.119	617.3	
4	D 13	15 190	0.994	48	15.099	724.8	
5	"	9 940	"	4	9.880	39.5	
6	"	15 200	"	2	15.109	30.2	
7	"	500	"	61	0.497	30.3	
8	"	600	"	280	0.596	166.9	
F 1	D 16	4 130	1.552	110	6.410	705.1	
2	D 13	1 720	0.994	61	1.710	104.3	
3	D 16	2 460	1.552	110	3.818	420.0	
4	D 13	3 230	0.994	61	3.211	195.9	
5	"	15 190	"	10	15.099	151.0	
6	"	15 190	"	5	15.099	75.5	
7	"	15 190	"	16	15.099	241.6	
8	"	2 860	"	29	2.843	82.4	
9	"	2 860	"	116	2.843	329.8	
						5 850.5	

REIN NO.	ϕ (mm)	LENGTH (mm)	NOMINAL WEIGHT	NUMB	U WEIGHT	WEIGHT	REMARKS
T 7							
V 1	D 22	6 280	3.042	61	19.104	1 165.3	
2	"	4 000	"	58	12.168	705.7	
3	D 16	6 170	1.552	61	9.576	584.1	
4	D 13	15 199	0.994	46	15.099	694.6	
5	"	8 300	"	2	8.250	16.5	
6	"	15 200	"	2	15.109	30.2	
7	"	500	"	61	0.497	30.3	
8	"	570	"	251	0.567	142.3	
F 1	D 16	4 160	1.552	110	6.456	710.2	
2	D 13	1 660	0.994	61	1.650	100.7	
3	D 16	2 460	1.552	110	3.818	420.0	
4	D 13	3 230	0.994	61	3.211	195.9	
5	"	15 190	"	10	15.099	151.0	
6	"	15 190	"	5	15.099	75.5	
7	"	15 190	"	16	15.099	241.6	
8	"	2 860	"	29	2.843	82.4	
9	"	2 860	"	116	2.843	329.8	
						5 686.1	

D 22	5 769.7	
D 16	5 226.0	
D 13	6 490.1	
TOTAL WEIGHT	17 485.8	

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-8, AL KHABURAH RE-BAR ARRANGEMENT (15)

DATE

DWG NO. W - 36

A - L I N E

BEIN NO.	ϕ (mm)	LENGTH (mm)	NOMINAL WEIGHT	NUMB	U WEIGHT	WEIGHT	REMARKS
T 8							
W 1	D 19	5 850	2.235	61	13.075	797.6	
2	"	3 450	"	58	7.711	447.2	
3	D 13	5 740	0.994	61	5.706	348.1	
4	"	15 190	"	40	15.099	604.0	
5	"	9 870	"	4	9.811	39.2	
6	"	15 200	"	2	15.109	30.2	
7	"	500	"	61	0.497	30.3	
8	"	570	"	236	0.567	133.8	
F 1	D 16	3 720	1.552	119	5.773	687.0	
2	D 13	1 410	0.994	61	1.402	85.5	
3	D 16	2 260	1.552	119	3.508	417.5	
4	D 13	2 730	0.994	61	2.714	165.6	
5	"	15 190	"	9	15.099	135.9	
6	"	15 190	"	4	15.099	60.4	
7	"	15 190	"	12	15.099	181.2	
8	"	2 860	"	29	2.843	82.4	
9	"	2 860	"	87	2.843	247.3	
						4 493.2	
T 9							
W 1	D 19	5 440	2.235	61	12.158	741.6	
2	"	3 450	"	58	7.711	447.2	
3	D 13	5 340	0.994	61	5.308	328.8	
4	"	15 190	"	38	15.099	573.8	
5	"	7 040	"	2	6.998	14.0	
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 16	3 240	1.552	119	5.804	690.7	
2	D 13	1 350	0.994	61	1.372	83.7	
3	D 16	2 260	1.552	119	3.508	417.5	
4	D 13	2 730	0.994	61	2.714	165.6	
5	"	15 190	"	9	15.099	135.9	
6	"	15 190	"	4	15.099	60.4	
7	"	15 190	"	12	15.099	181.2	
8	"	2 860	"	29	2.843	82.4	
9	"	2 860	"	87	2.843	247.3	
						4 344.3	
T 10							
W 1	D 19	5 020	2.235	61	11.220	684.4	
2	"	3 450	"	58	7.710	447.2	
3	D 13	4 920	0.994	61	4.890	298.3	
4	"	15 199	"	34	15.099	513.4	
5	"	9 360	"	4	9.304	37.2	
6	"	15 200	"	2	15.109	30.2	
7	"	500	"	61	0.497	30.3	
8	"	510	"	192	0.507	97.3	
F 1	D 16	3 780	1.552	119	5.867	698.2	
2	D 13	1 350	0.994	61	1.342	81.9	
3	D 16	2 260	1.552	119	3.508	417.5	
4	D 13	2 730	0.994	61	2.714	165.6	
5	"	15 190	"	9	15.099	135.9	
6	"	15 190	"	4	15.099	60.4	
7	"	15 190	"	12	15.099	181.2	
8	"	2 860	"	29	2.843	82.4	
9	"	2 860	"	87	2.843	247.3	
						4 289.7	
					D 19	3 565.2	
					D 16	3 328.4	
					D 13	6 152.6	
					TOTAL WEIGHT	13 046.2	

B - L I N E

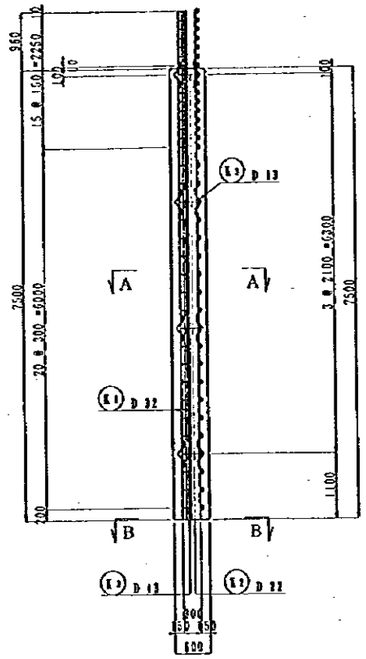
BEIN NO.	ϕ (mm)	LENGTH (mm)	NOMINAL WEIGHT	NUMB	U WEIGHT	WEIGHT	REMARKS
T 8							
W 1	D 19	5 850	2.235	61	13.075	797.6	
2	"	3 450	"	58	7.711	447.2	
3	D 13	5 740	0.994	61	5.706	348.1	
4	"	15 198	"	40	15.099	604.0	
5	"	9 870	"	4	9.811	39.2	
6	"	15 200	"	2	15.109	30.2	
7	"	500	"	61	0.497	30.3	
8	"	570	"	236	0.567	133.8	
F 1	D 16	3 720	1.552	119	5.773	687.0	
2	D 13	1 410	0.994	61	1.402	85.5	
3	D 16	2 260	1.552	119	3.508	417.5	
4	D 13	2 730	0.994	61	2.714	165.6	
5	"	15 190	"	9	15.099	135.9	
6	"	15 190	"	4	15.099	60.4	
7	"	15 190	"	12	15.099	181.2	
8	"	2 860	"	29	2.843	82.4	
9	"	2 860	"	87	2.843	247.3	
						4 493.2	
T 9							
W 1	D 19	5 440	2.235	61	12.158	741.6	
2	"	3 450	"	58	7.711	447.2	
3	D 13	5 340	0.994	61	5.308	328.8	
4	"	15 199	"	38	15.099	573.8	
5	"	7 040	"	2	6.998	14.0	
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 16	3 240	1.552	119	5.804	650.7	
2	D 13	1 350	0.994	61	1.372	83.7	
3	D 16	2 260	1.552	119	3.508	417.5	
4	D 13	2 730	0.994	61	2.714	165.6	
5	"	15 190	"	9	15.099	135.9	
6	"	15 190	"	4	15.099	60.4	
7	"	15 190	"	12	15.099	181.2	
8	"	2 860	"	29	2.843	82.4	
9	"	2 860	"	87	2.843	247.3	
						4 344.3	
T 10							
W 1	D 19	5 020	2.235	61	11.220	684.4	
2	"	3 450	"	58	7.710	447.2	
3	D 13	4 920	0.994	61	4.890	298.3	
4	"	15 199	"	34	15.099	513.4	
5	"	9 360	"	4	9.304	37.2	
6	"	15 200	"	2	15.109	30.2	
7	"	500	"	61	0.497	30.3	
8	"	510	"	192	0.507	97.3	
F 1	D 16	3 780	1.552	119	5.867	698.2	
2	D 13	1 350	0.994	61	1.342	81.9	
3	D 16	2 260	1.552	119	3.508	417.5	
4	D 13	2 730	0.994	61	2.714	165.6	
5	"	15 199	"	9	15.099	135.9	
6	"	15 190	"	4	15.099	60.4	
7	"	15 190	"	12	15.099	181.2	
8	"	2 860	"	29	2.843	82.4	
9	"	2 860	"	87	2.843	247.3	
						4 289.7	
					D 19	3 565.2	
					D 16	3 328.4	
					D 13	6 152.6	
					TOTAL WEIGHT	13 046.2	

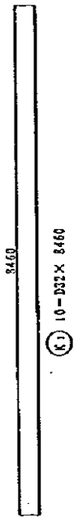
NOTES:

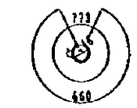
JAPAN INTERNATIONAL COOPERATION AGENCY
(JICA)

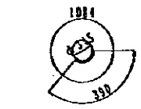
JICA STUDY TEAM
PACIFIC CONSULTANTS INTERNATIONAL
FURUYAMA CONSULTANTS INTERNATIONAL

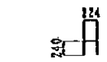
CLIENT : MINISTRY OF COMMUNICATIONS, DIRECTORATE GENERAL OF ROADS
PROJECT : D/D ON ROAD DEVELOPMENT PROJECT ON BATINAH HIGHWAY
TITLE : R/A-8, AL KHABURAH RE-BAR ARRANGEMENT (16)
DATE
DWG NO. W-37



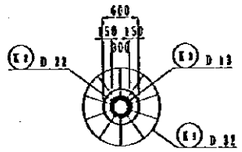




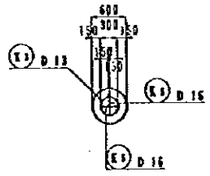




BEIN NO.	φ (mm)	LENGTH (mm)	NOMINAL WEIGHT	NUMB	T WEIGHT	WEIGHT	REMARKS
K 1	D 32	8 460	6.403	10	54.169	541.7	
2	D 22	1 440	3.402	4	4.899	19.6	
3	D 13	1 480	0.994	37	1.471	54.4	
4	"	530	"	16	0.527	8.4	
5	D 16	710	1.552	2	1.102	2.2	
					D 32	541.7	
					D 22	19.6	
					D 16	2.2	
					D 13	62.8	
					TOTAL WEIGHT	626.3	



A－A



B－B

NOTES:

JAPAN INTERNATIONAL COOPERATION AGENCY
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JICA STUDY TEAM
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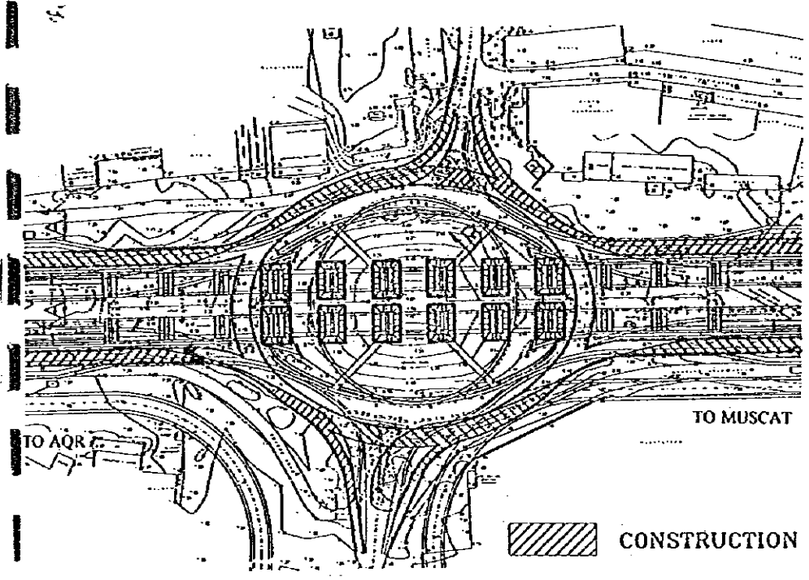
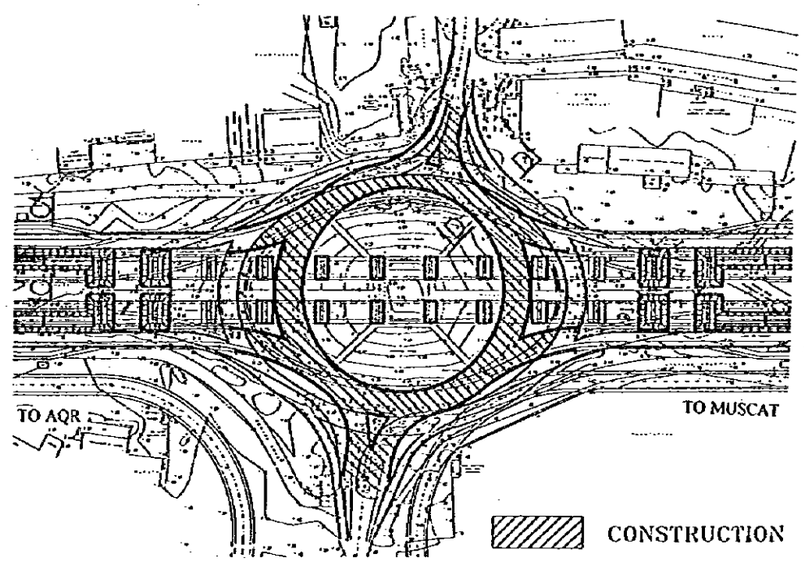
TITLE : R/A-8, AL KHABURAH RE-BAR ARRANGEMENT (17)
DATE
DWG NO. W-38

TEMPORARY WORKS

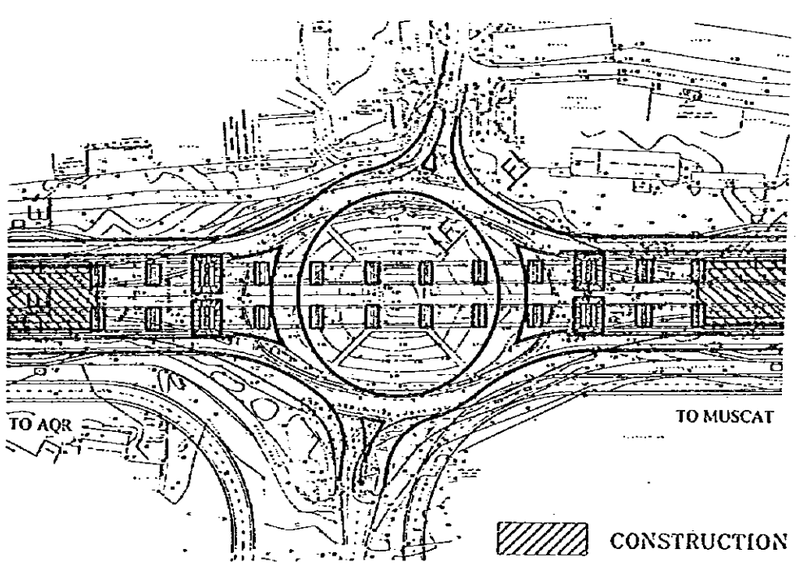
FIRST CONSTRUCTION STAGE

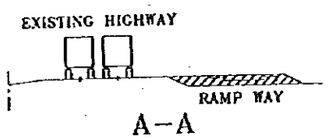


SECOND CONSTRUCTION STAGE

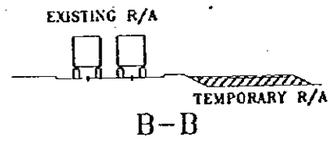


THIRD CONSTRUCTION STAGE

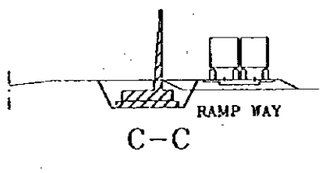




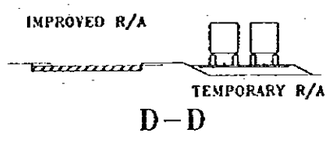
A–A



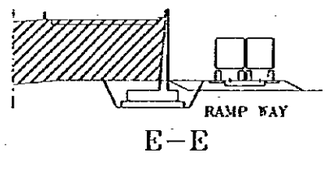
B–B



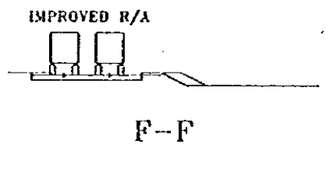
C–C



D–D



E–E



F–F

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:

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	PROJECT: D/D ON ROAD DEVELOPMENT PROJECT ON BATINAH HIGHWAY
JICA STUDY TEAM PACIFIC CONSULTANTS INTERNATIONAL FUKUYAMA CONSULTANTS INTERNATIONAL	TITLE SEQUENCE OF AL KHABURAH F/O CONSTRUCTION
	DATE / DWG NO. T-1