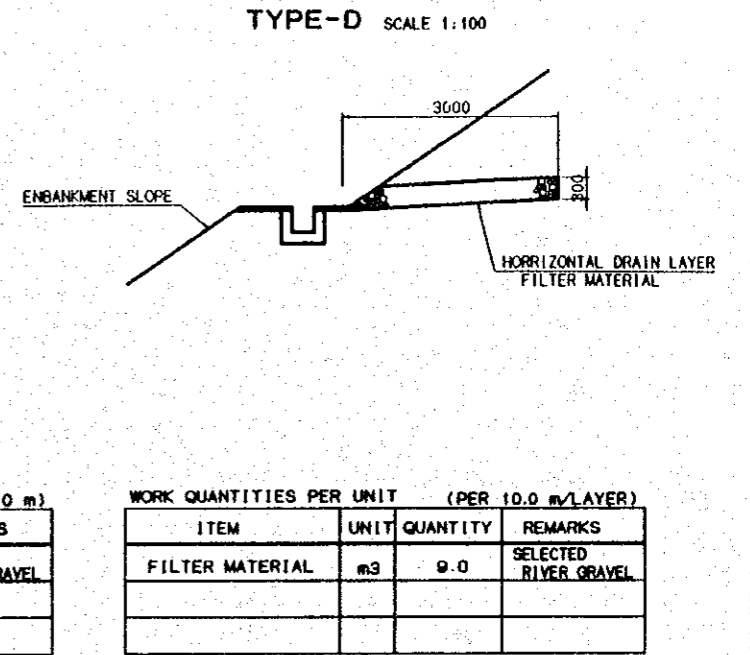
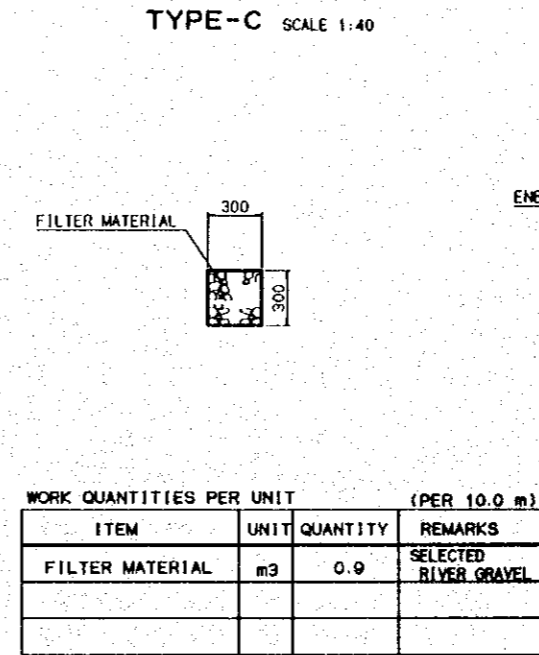
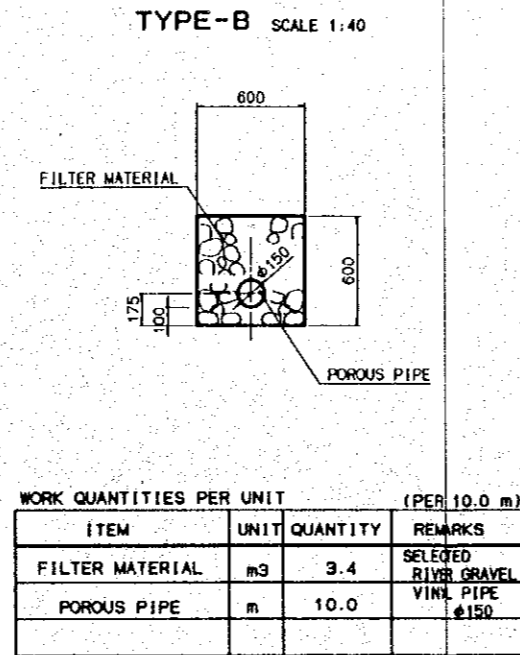
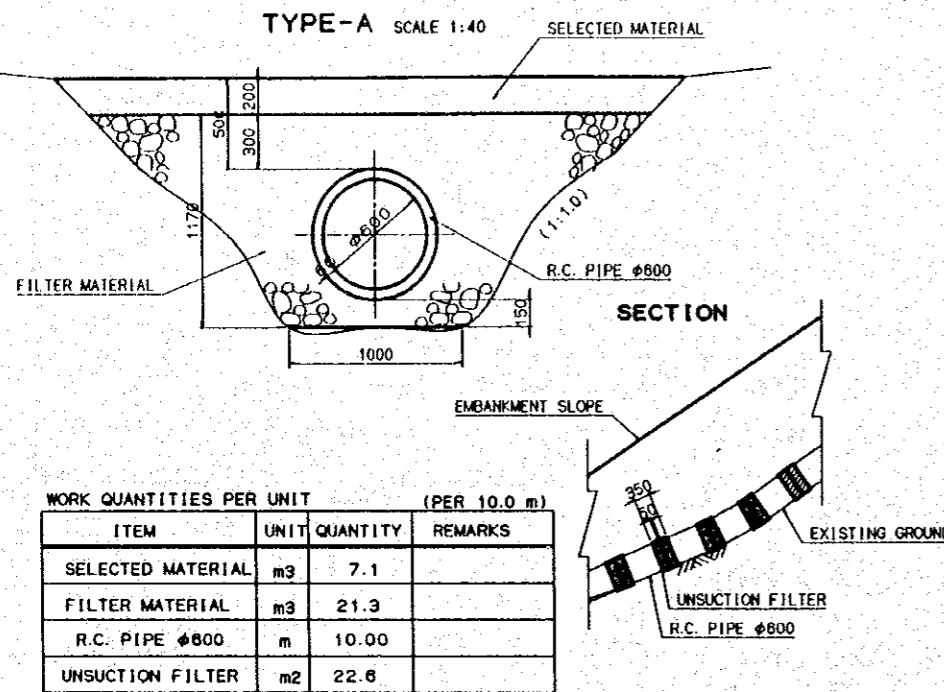


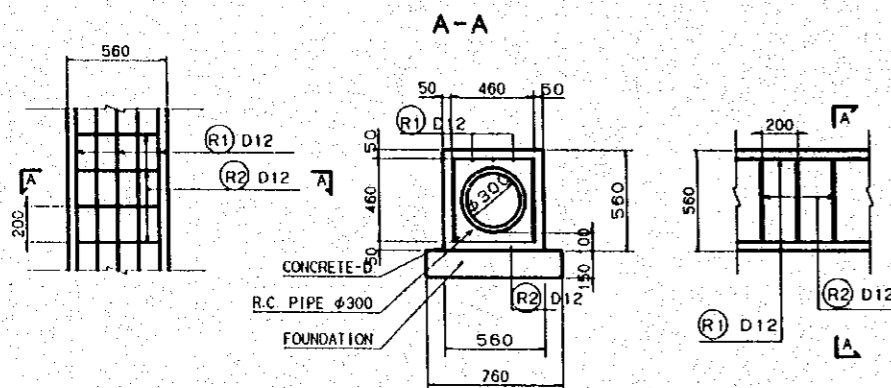
DETAIL OF CROSS DRAIN (2)

A-6-8
DETAIL OF CROSS DRAIN
(2)

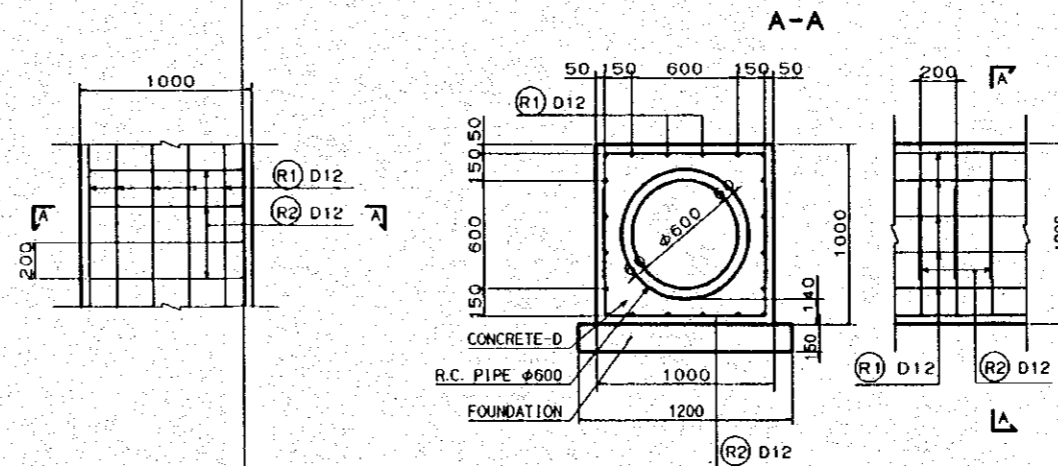
FLENSH DRAIN



PIPE ϕ 300 (CON.360°) SCALE 1:40



PIPE ϕ 600 (CON.360°) SCALE 1:40

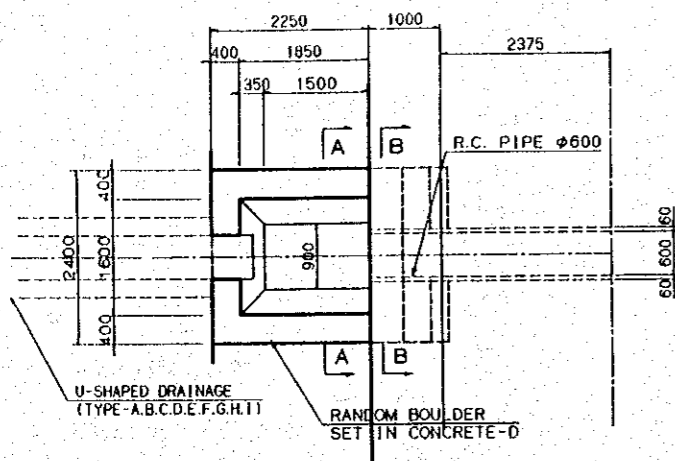


DETAIL OF CROSS DRAIN (3)

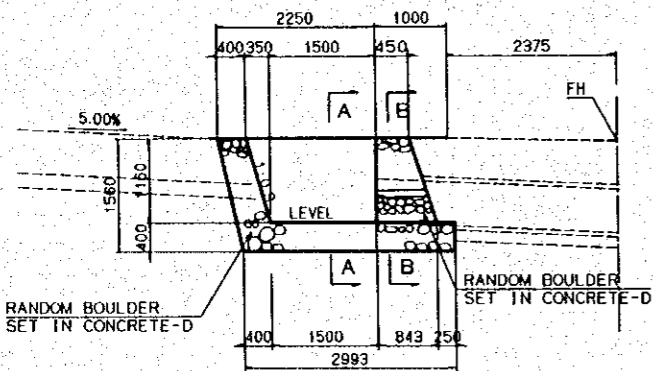
A-6-9
DETAIL OF CROSS DRAIN
(3)

CATCH BASIN TYPE-CB1
(for $\phi 600 \times 1$)

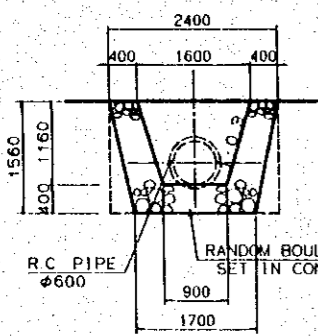
PLAN SCALE 1:100



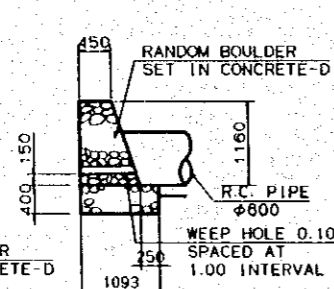
ELEVATION SCALE 1:100



A-A



B-B

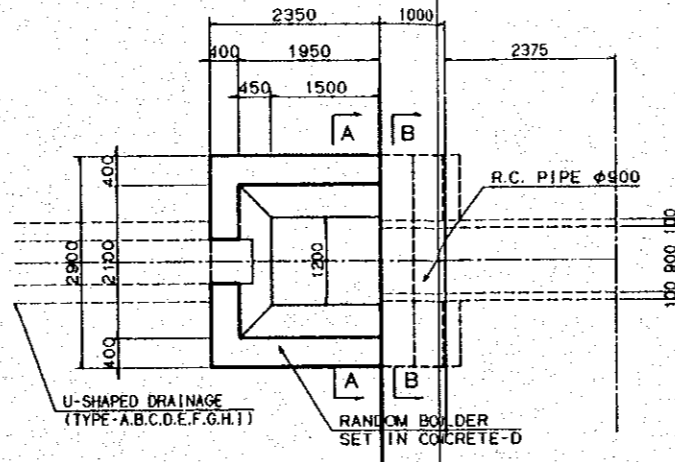


WORK QUANTITIES PER UNIT (PER 1 UNIT)

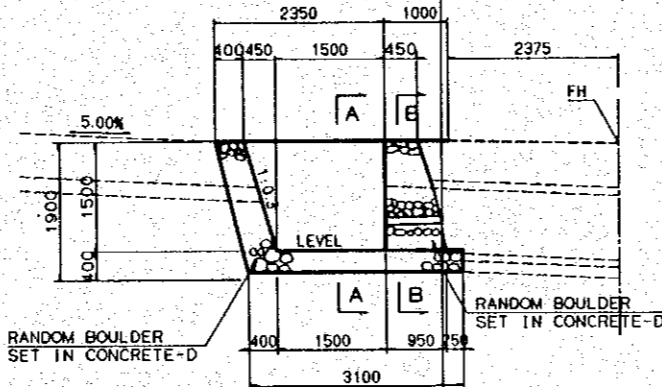
ITEM	UNIT	QUANTITY	REMARKS
RANDOM BOULDER SET IN CONCRETE-D	m ³	0.78	
WEEP DRAIN PIPE	m	1.54	
EXCAVATION	m ³	11.12	

CATCH BASIN TYPE-CB2
(for $\phi 900 \times 1$)

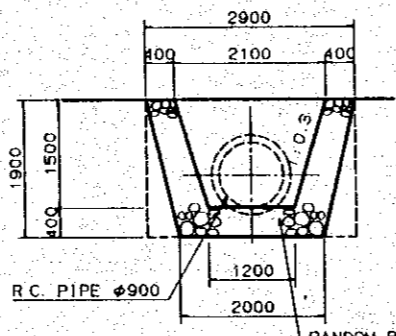
PLAN SCALE 1:100



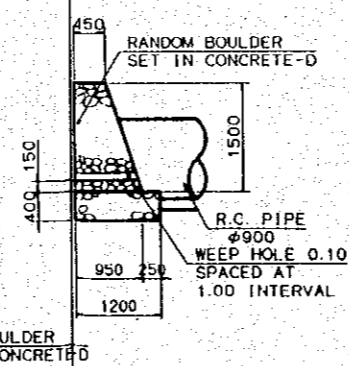
ELEVATION SCALE 1:100



A-A



B-B

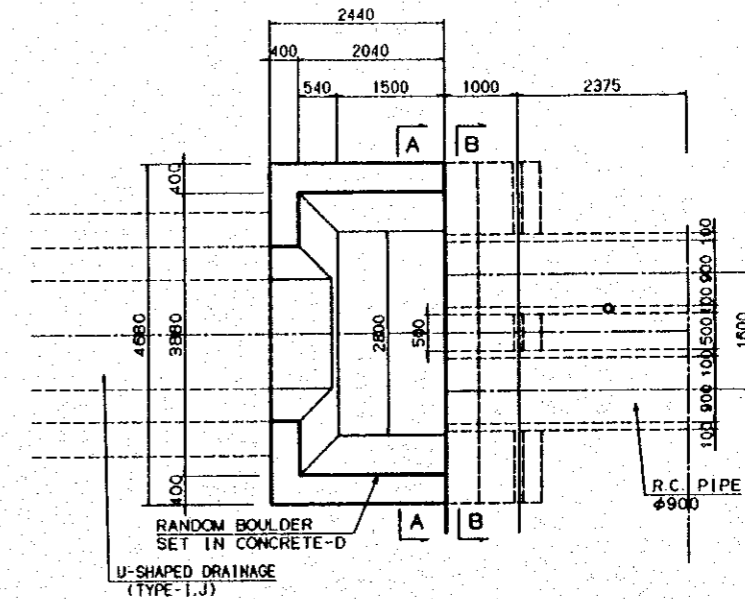


WORK QUANTITIES PER UNIT (PER 1 UNIT)

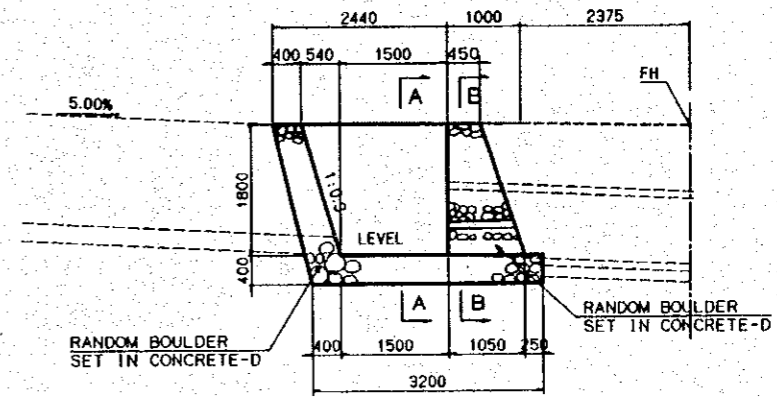
ITEM	UNIT	QUANTITY	REMARKS
RANDOM BOULDER SET IN CONCRETE-D	m ³	9.12	
WEEP DRAIN PIPE	m	1.57	
EXCAVATION	m ³	27.28	

CATCH BASIN TYPE-CB3
(for $\phi 900 \times 2$)

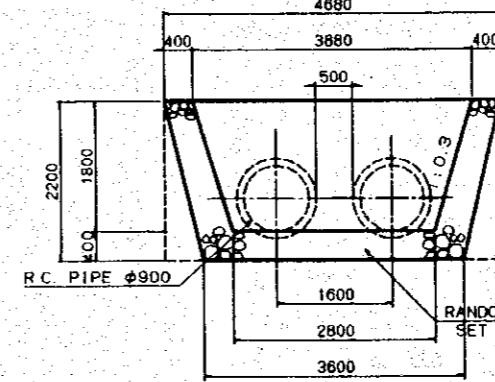
PLAN SCALE 1:100



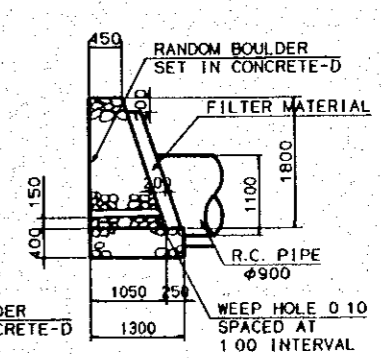
ELEVATION SCALE 1:100



A-A



B-B



WORK QUANTITIES PER UNIT (PER 1 UNIT)

ITEM	UNIT	QUANTITY	REMARKS
RANDOM BOULDER SET IN CONCRETE-D	m ³	15.03	
WEEP DRAIN PIPE	m	2.55	
EXCAVATION	m ³	51.52	

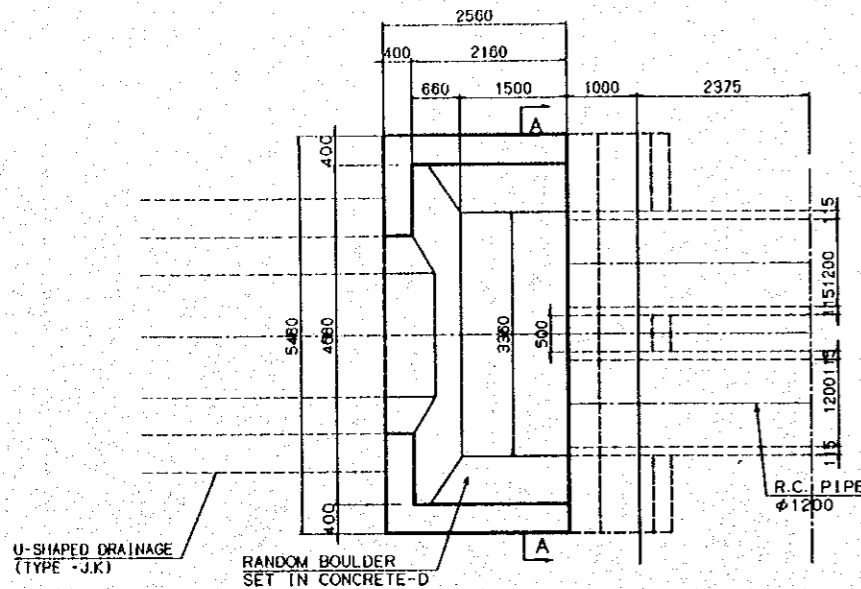
DETAIL OF CROSS DRAIN (4)

A-6-10
DETAIL OF CROSS DRAIN
(4)

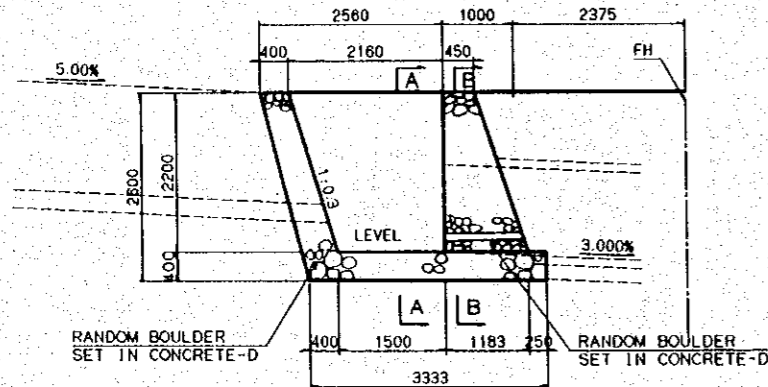
CATCH BASIN TYPE-CB4

(for $\phi 1200 \times 2$)

PLAN SCALE 1:100

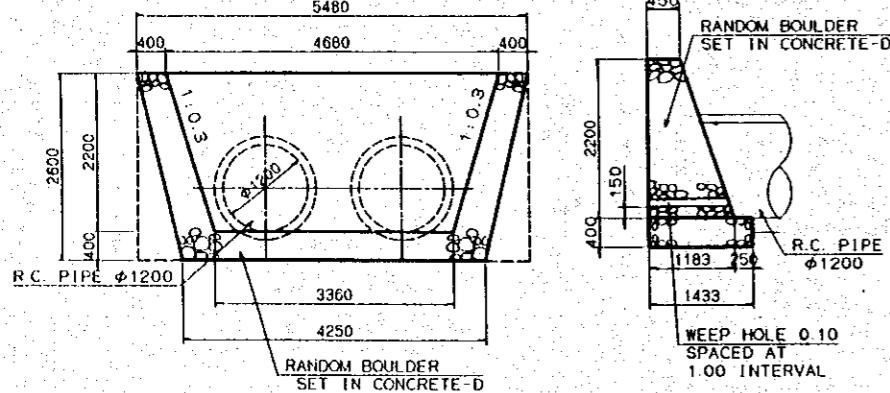


ELEVATION SCALE 1:100



A-A

B-B



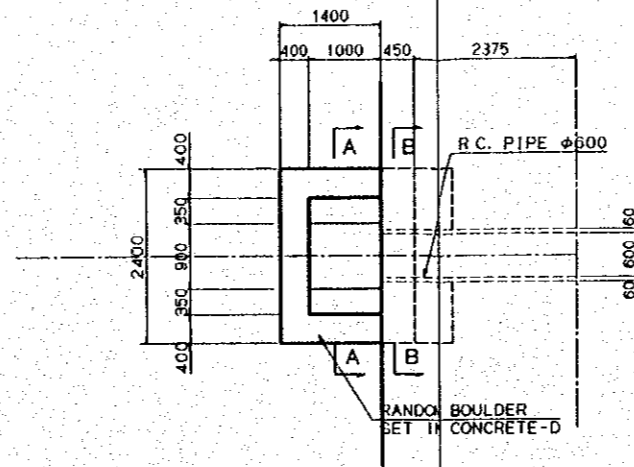
WORK QUANTITIES PER UNIT (PER 1 UNIT)

ITEM	UNIT	QUANTITY	REMARKS
RANDOM BOULDER SET IN CONCRETE-D	m ³	20.57	
WEEP DRAIN PIPE	m	2.95	
EXACVATION	m ³	77.91	

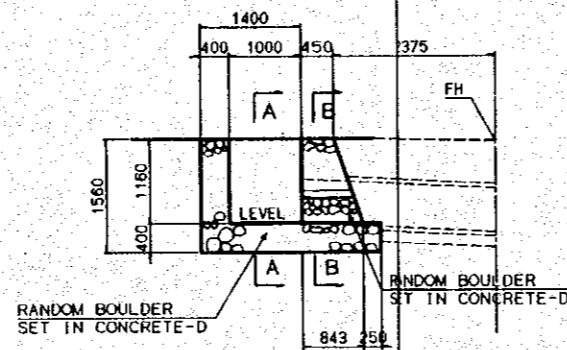
CATCH BASIN TYPE-CB5

(for $\phi 600 \times 1$)

PLAN SCALE 1:100

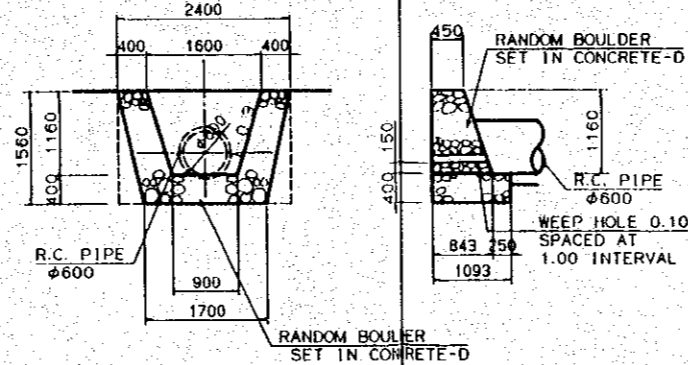


ELEVATION SCALE 1:100



A-A

B-B



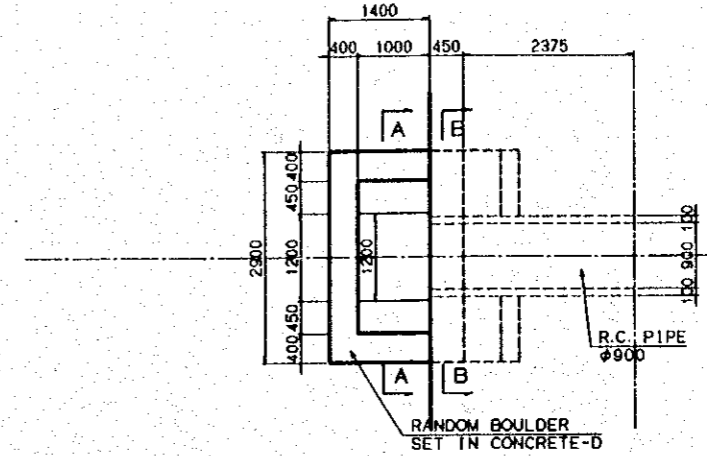
WORK QUANTITIES PER UNIT (PER 1 UNIT)

ITEM	UNIT	QUANTITY	REMARKS
RANDOM BOULDER SET IN CONCRETE-D	m ³	5.78	
WEEP DRAIN PIPE	m	1.54	
EXACVATION	m ³	10.66	

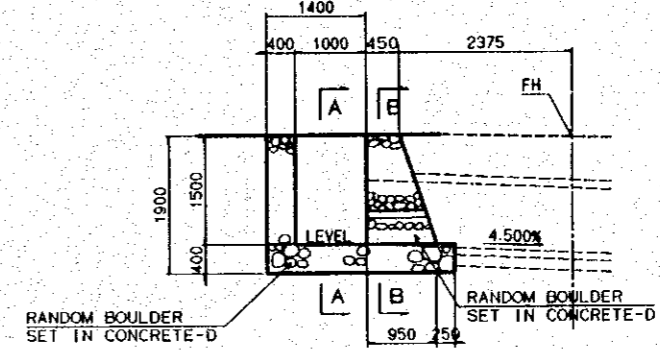
CATCH BASIN TYPE-CB6

(for $\phi 900 \times 1$)

PLAN SCALE 1:100

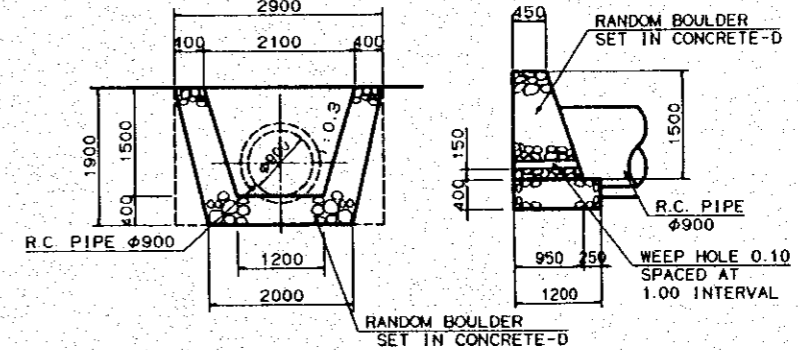


ELEVATION SCALE 1:100



A-A

B-B



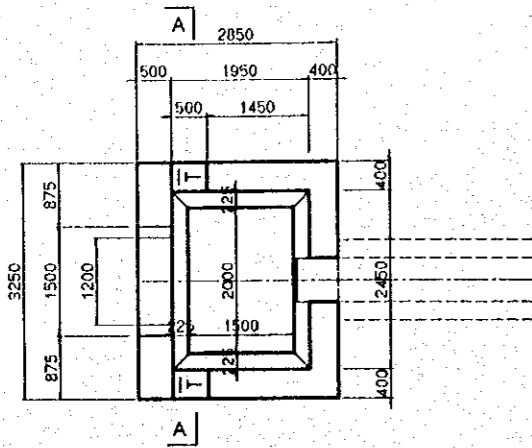
WORK QUANTITIES PER UNIT (PER 1 UNIT)

ITEM	UNIT	QUANTITY	REMARKS
RANDOM BOULDER SET IN CONCRETE-D	m ³	7.50	
WEEP DRAIN PIPE	m	1.57	
EXACVATION	m ³	24.48	

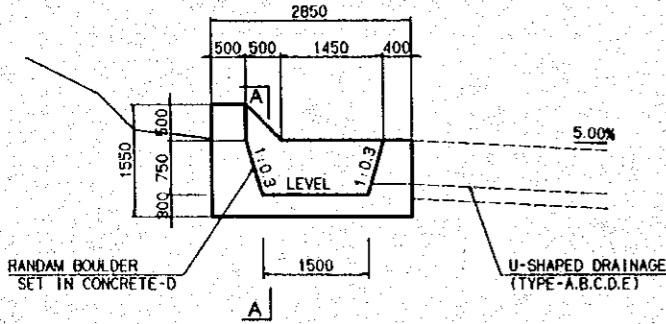
DETAIL OF CROSS DRAIN (5)

A-6-11
DETAIL OF CROSS DRAIN
(5)

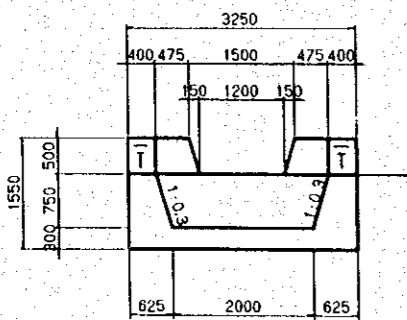
CHECK-DAM TYPE-CD1
PLAN SCALE 1:100



ELEVATION SCALE 1:100

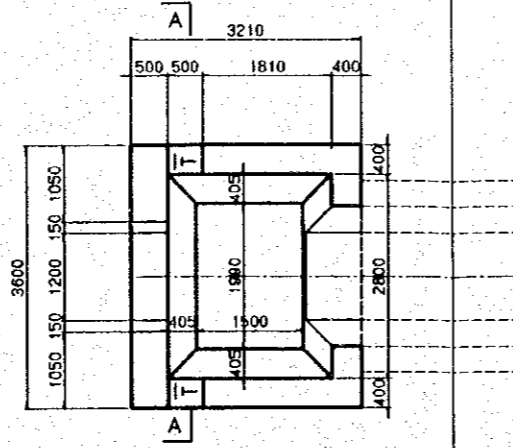


A-A

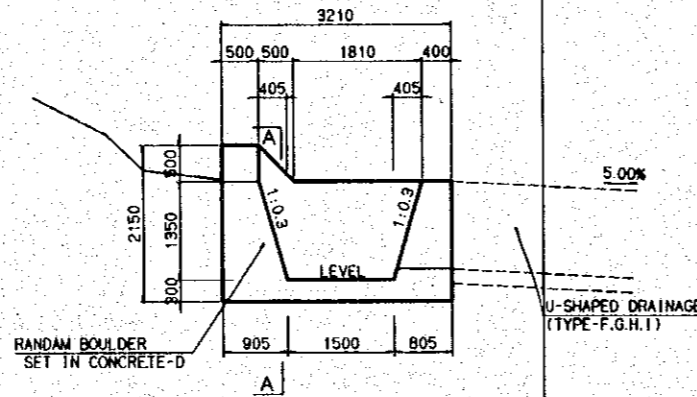


WORK QUANTIES PER UNIT (PER 1 UNIT)			
ITEM	UNIT	QUANTITY	REMARKS
RANDOM BOULDER SET IN CONCRETE-D	m3	7.28	
EXCAVATION	m3	11.95	

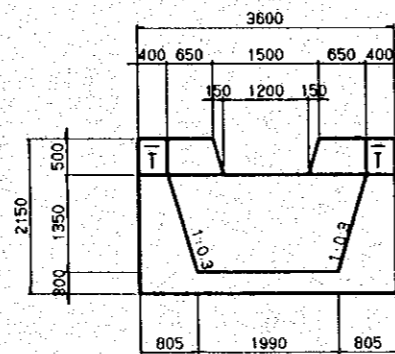
CHECK-DAM TYPE-CD2
PLAN SCALE 1:100



ELEVATION SCALE 1:100

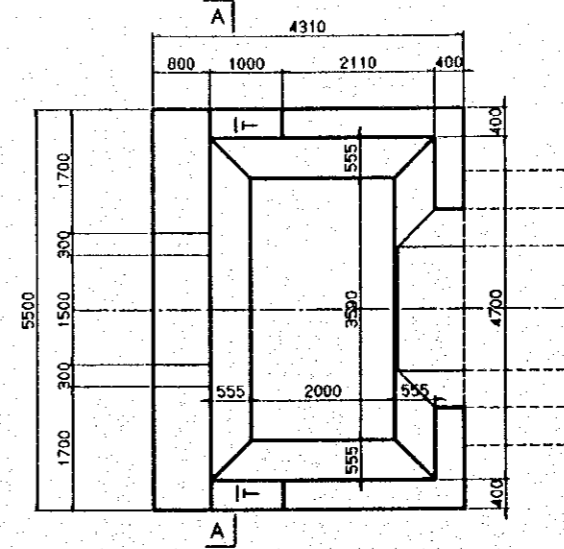


A-A

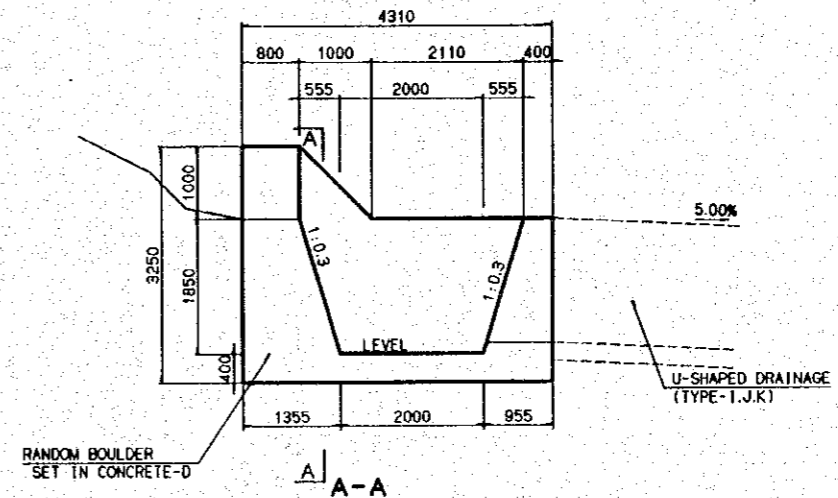


WORK QUANTIES PER UNIT (PER UNIT)			
ITEM	UNIT	QUANTITY	REMARKS
RANDOM BOULDER SET IN CONCRETE-D	m3	12.89	
EXCAVATION	m3	25.44	

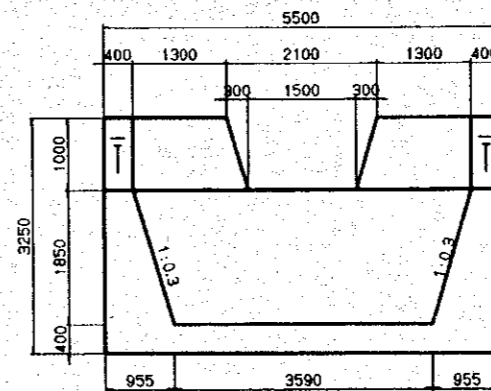
CHECK-DAM TYPE-CD3
PLAN SCALE 1:100



ELEVATION SCALE 1:100



A-A



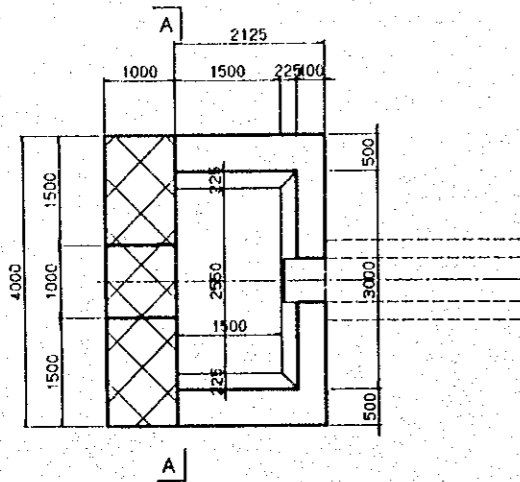
WORK QUANTIES PER UNIT (PER 1 UNIT)			
ITEM	UNIT	QUANTITY	REMARKS
RANDOM BOULDER SET IN CONCRETE-D	m3	40.86	
EXCAVATION	m3	70.29	

DETAIL OF CROSS DRAIN (6)

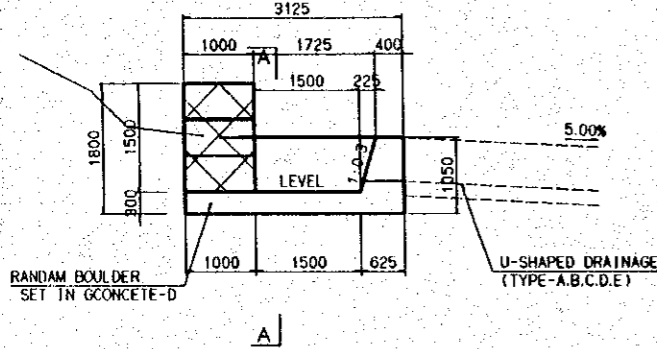
A-6-12
DETAIL OF CROSS DRAIN
(6)

CHECK-DAM TYPE-CD4

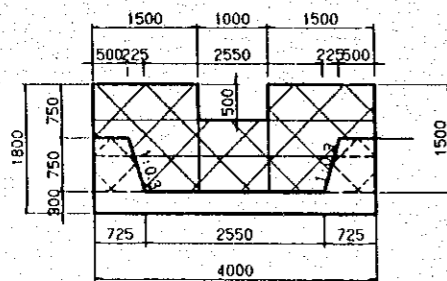
PLAN SCALE 1:100



ELEVATION SCALE 1:100



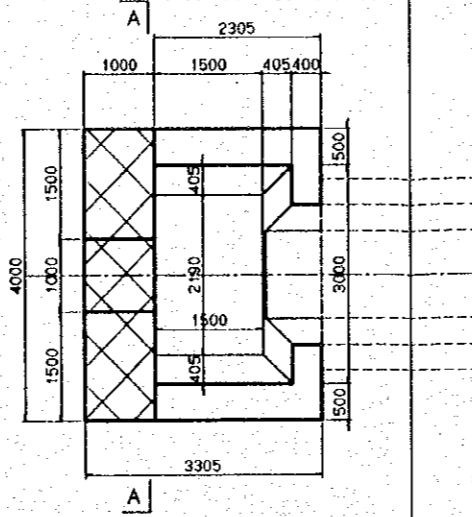
A-A



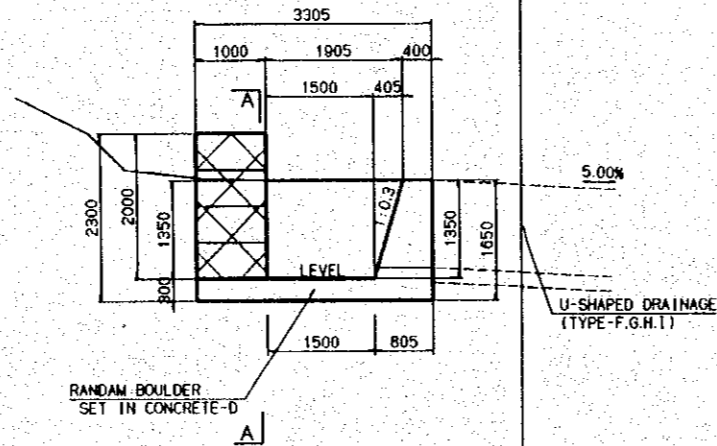
WORK QUANTITIES PER UNIT (PER 1 UNIT)			
ITEM	UNIT	QUANTITY	REMARKS
RANDOM BOULDER SET IN CONCRETE-D	m ³	8.15	
GABION	m ³	5.50	
EXCAVATION	m ³	15.69	

CHECK-DAM TYPE-CD5

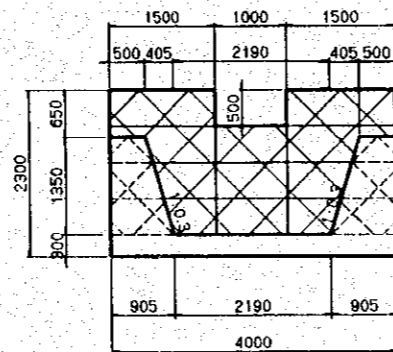
PLAN SCALE 1:100



ELEVATION SCALE 1:100



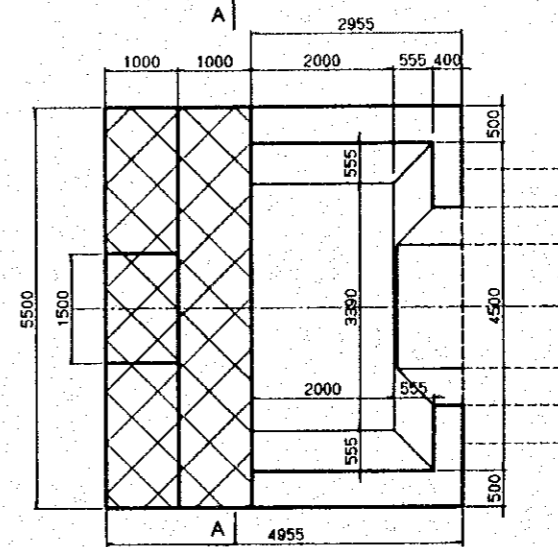
A-A



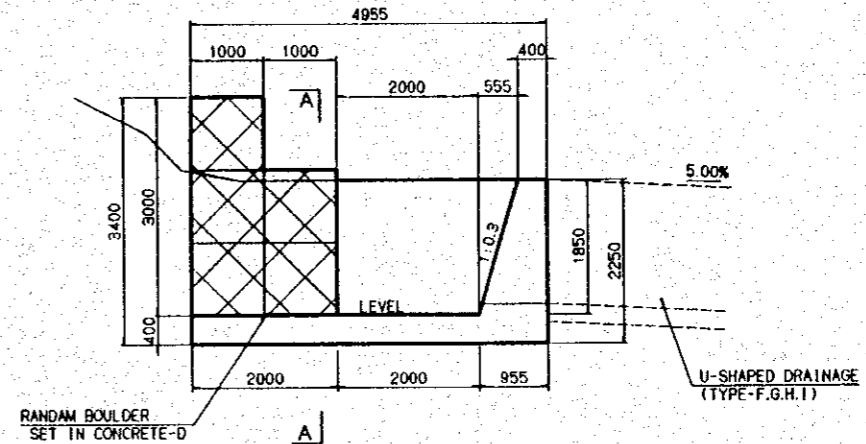
WORK QUANTITIES PER UNIT (PER 1 UNIT)			
ITEM	UNIT	QUANTITY	REMARKS
RANDOM BOULDER SET IN CONCRETE-D	m ³	11.77	
GABION	m ³	7.50	
EXCAVATION	m ³	28.59	

CHECK-DAM TYPE-CD6

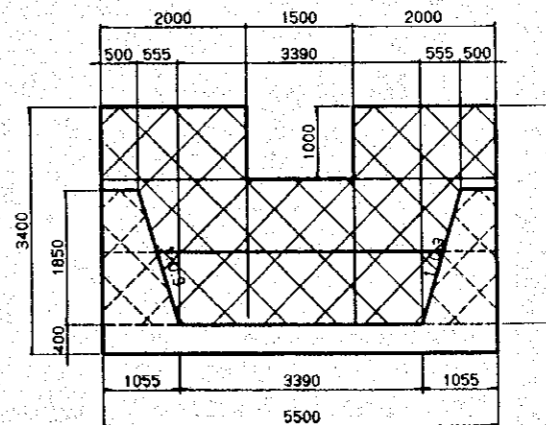
PLAN SCALE 1:100



ELEVATION SCALE 1:100



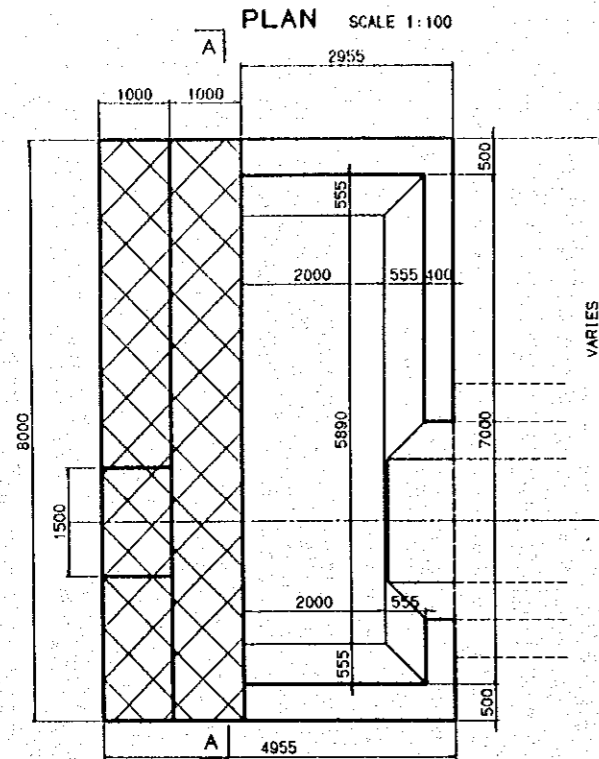
A-A



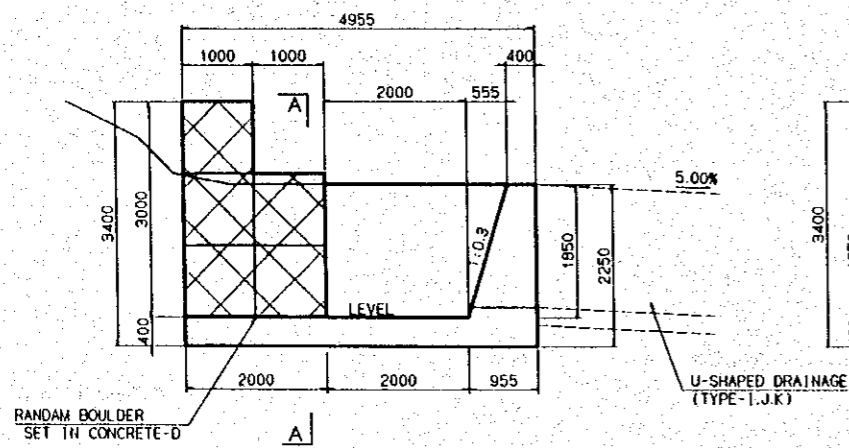
WORK QUANTITIES PER UNIT (PER 1 UNIT)			
ITEM	UNIT	QUANTITY	REMARKS
RANDOM BOULDER SET IN CONCRETE-D	m ³	28.70	
GABION	m ³	26.00	
EXCAVATION	m ³	79.25	

DETAIL OF CROSS DRAIN (7)

CHECK-DAM TYPE-CD7



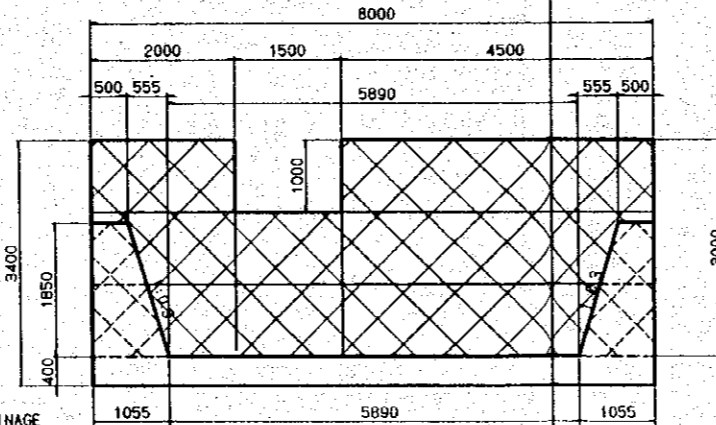
ELEVATION SCALE 1:100



WORK QUANTITIES PER UNIT (PER 1 UNIT)

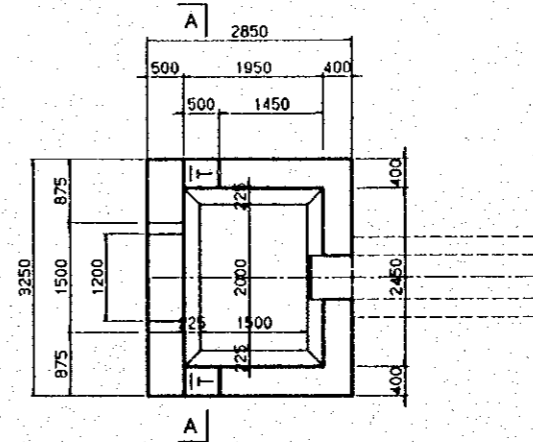
ITEM	UNIT	QUANTITY	REMARKS
RANDOM BOULDER SET IN CONCRETE-D	m ³	38.78	
GABION	m ³	38.50	
EXCAVATION	m ³	110.92	

A-A

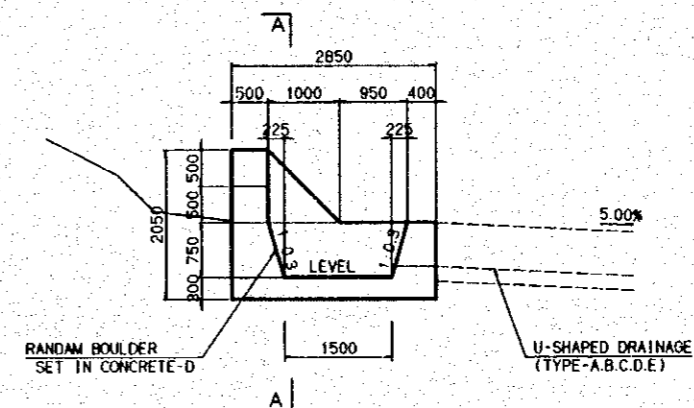


CHECK-DAM TYPE-CD8

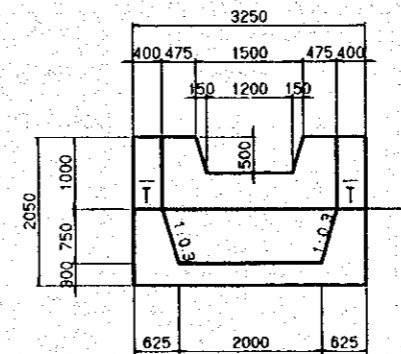
PLAN SCALE 1:100



ELEVATION SCALE 1:100



A-A



WORK QUANTITIES PER UNIT (PER 1 UNIT)

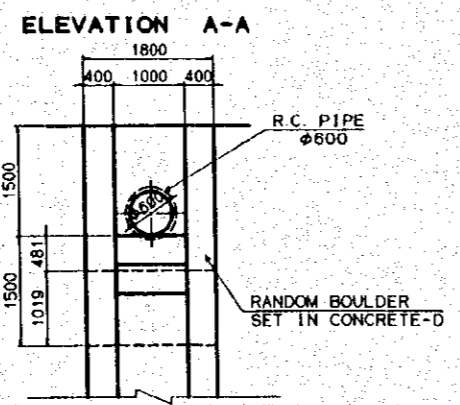
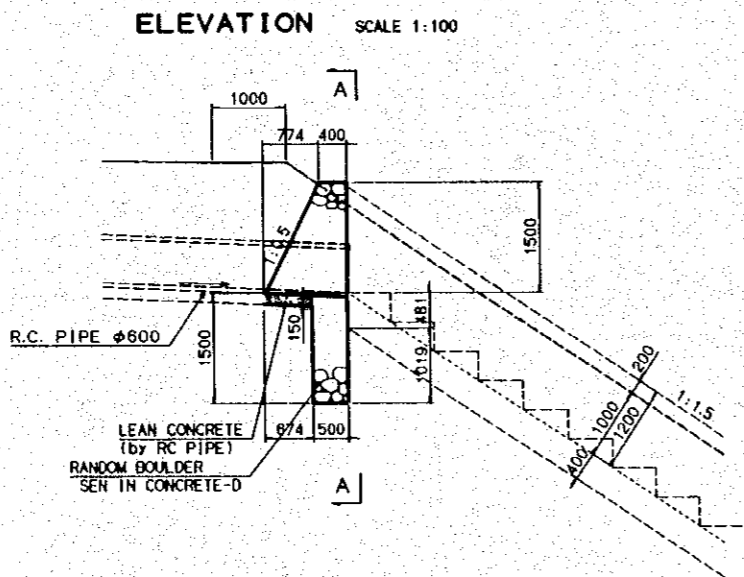
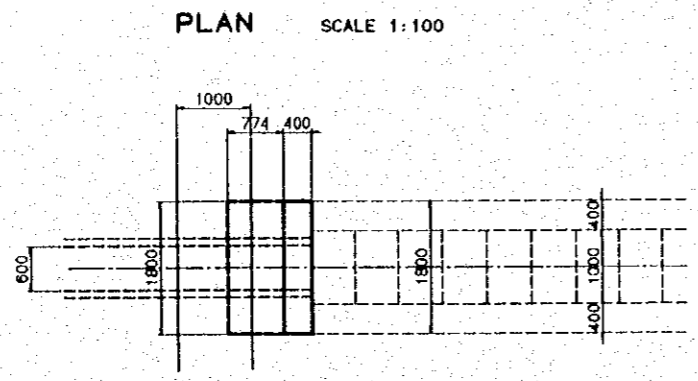
ITEM	UNIT	QUANTITY	REMARKS
RANDOM BOULDER SET IN CONCRETE-D	m ³	8.00	
EXCAVATION	m ³	11.95	

A-6-13
DETAIL OF CROSS DRAIN
(7)

DETAIL OF CROSS DRAIN (8)

A-6-14
DETAIL OF CROSS DRAIN
(8)

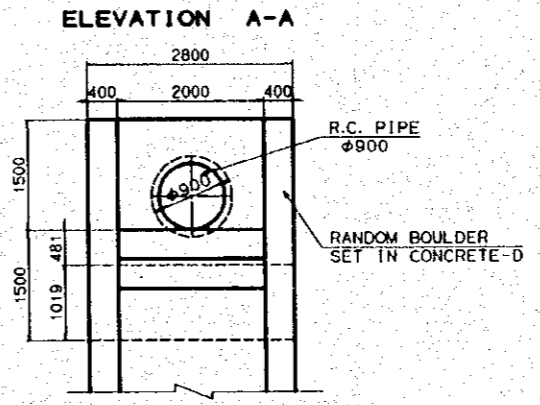
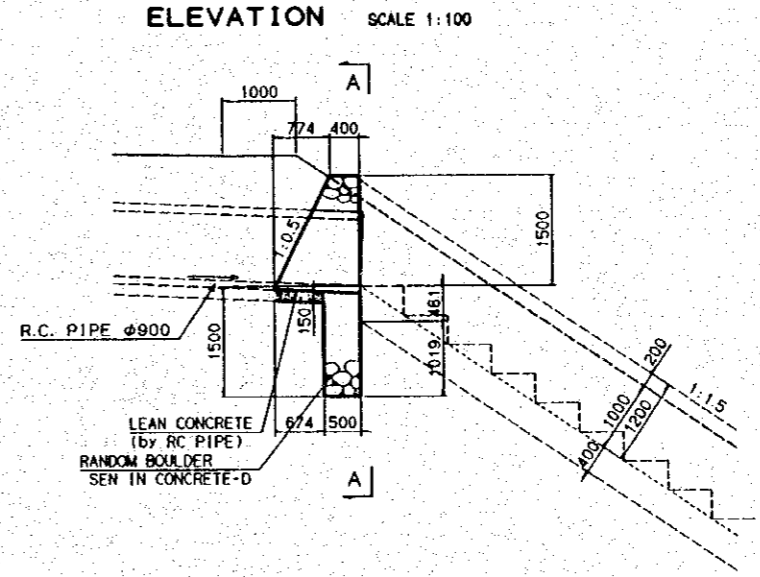
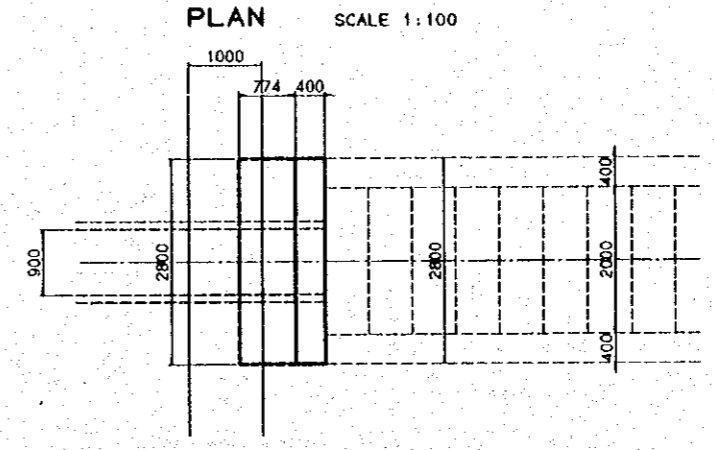
OUTLET TYPE-OL1
(for $\phi 600 \times 1$)



WORK QUANTITIES PER UNIT (PER 1 UNIT)

ITEM	UNIT	QUANTITY	REMARKS
RANDOM BOULDER SET IN CONCRETE-D	m ³	2.60	

OUTLET TYPE-OL2
(for $\phi 900 \times 1$)



WORK QUANTITIES PER UNIT (PER 1 UNIT)

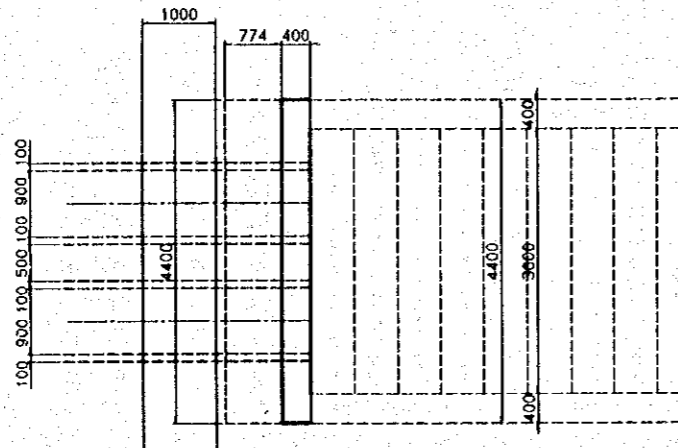
ITEM	UNIT	QUANTITY	REMARKS
RANDOM BOULDER SET IN CONCRETE-D	m ³	4.73	

DETAIL OF CROSS DRAIN (9)

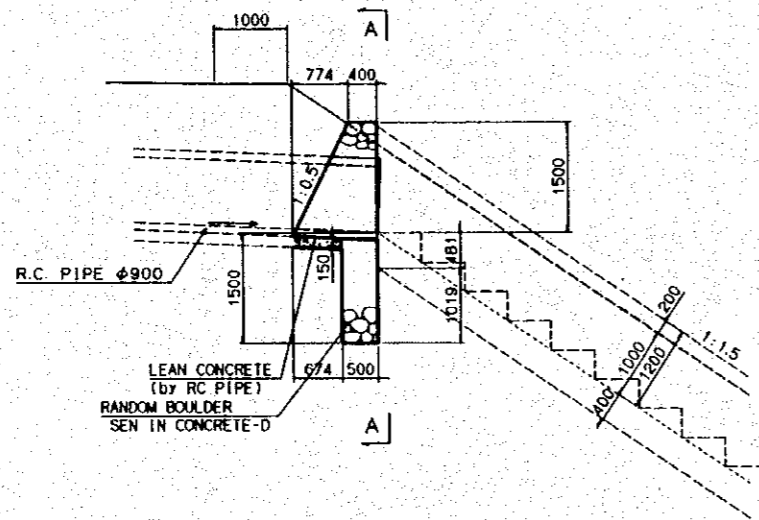
A-6-15
DETAIL OF CROSS DRAIN
(9)

OUTLET TYPE-OL3
(for $\phi 900 \times 2$)

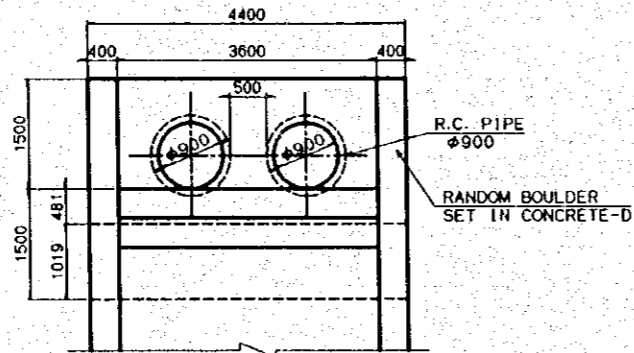
PLAN SCALE 1:100



ELEVATION SCALE 1:100



ELEVATION A-A

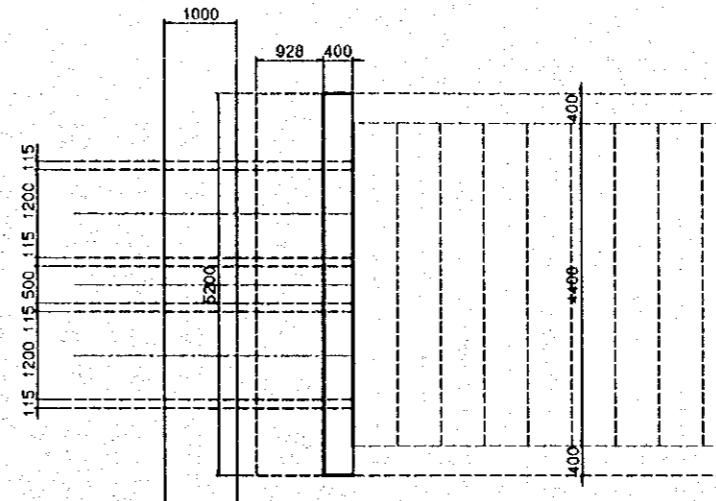


WORK QUANTITIES PER UNIT (PER 1 UNIT)

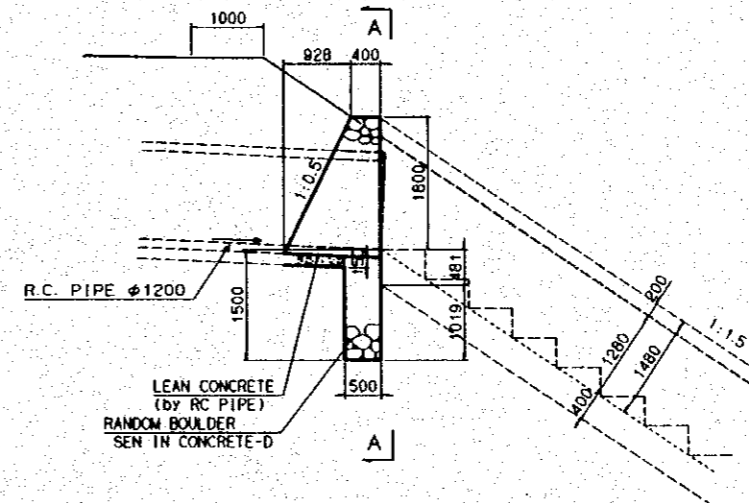
ITEM	UNIT	QUANTITY	REMARKS
RANDOM BOULDER SET IN CONCRETE-D	m ³	7.05	

OUTLET TYPE-OL4
(for $\phi 1200 \times 2$)

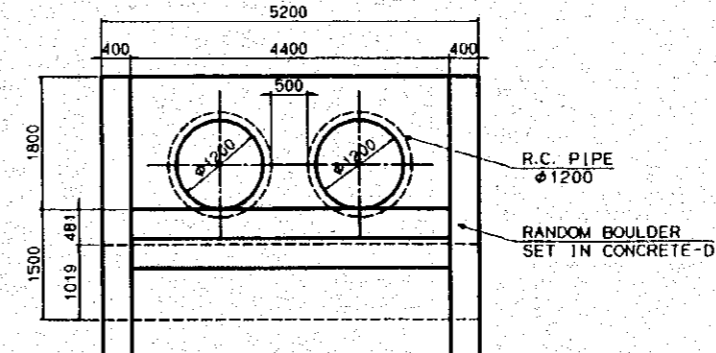
PLAN SCALE 1:100



ELEVATION SCALE 1:100



ELEVATION A-A



WORK QUANTITIES PER UNIT (PER 1 UNIT)

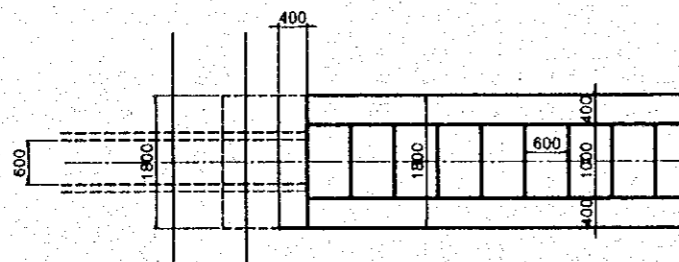
ITEM	UNIT	QUANTITY	REMARKS
RANDOM BOULDER SET IN CONCRETE-D	m ³	9.23	

DETAIL OF CROSS DRAIN (10)

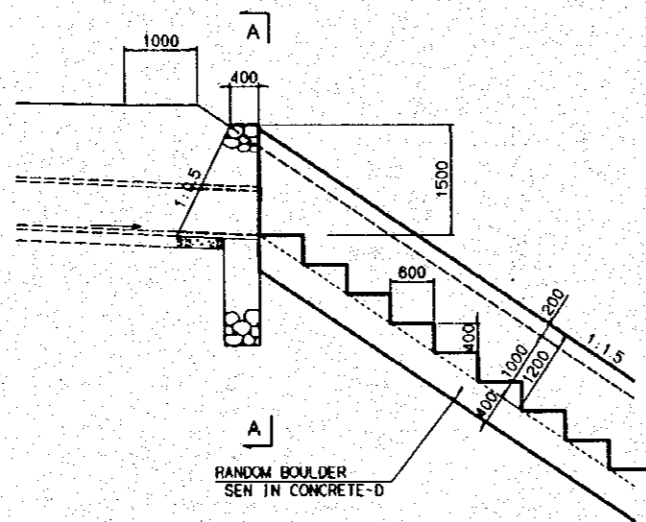
A-6-16
DETAIL OF CROSS DRAIN
(10)

CHUTE TYPE-CH1
(for $\phi 600 \times 1$)

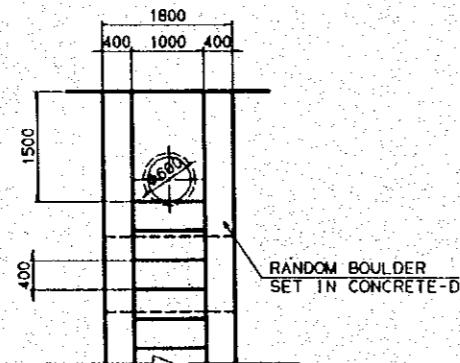
PLAN SCALE 1:100



ELEVATION SCALE 1:100



ELEVATION A-A

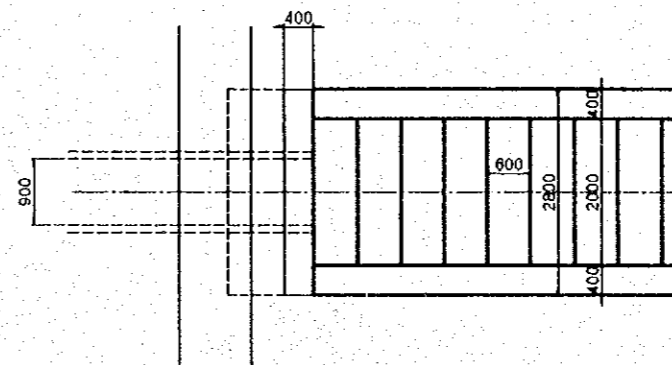


WORK QUANTITIES PER UNIT (PER 1 UNIT)

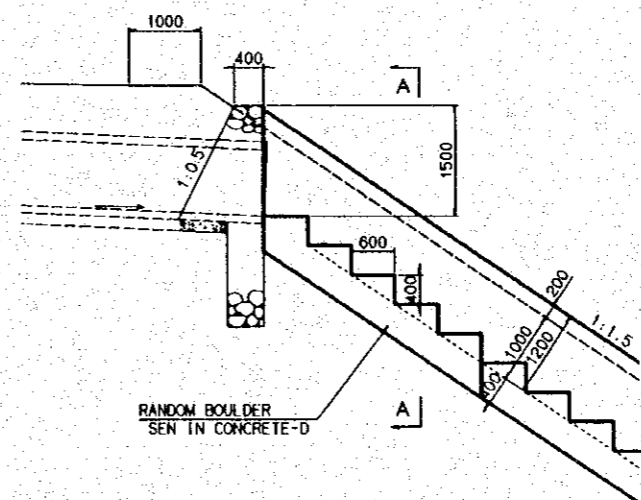
ITEM	UNIT	QUANTITY	REMARKS
RANDOM BOULDER SET IN CONCRETE-D	m ³	18.37	

CHUTE TYPE-CH2
(for $\phi 900 \times 1$)

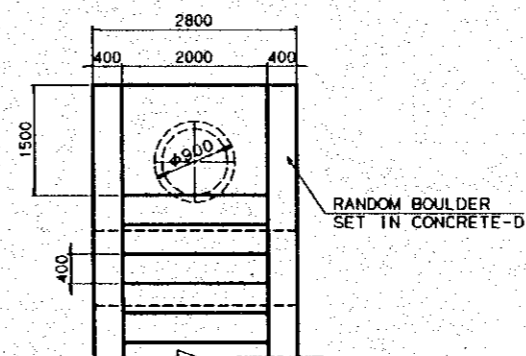
PLAN SCALE 1:100



ELEVATION SCALE 1:100



ELEVATION A-A



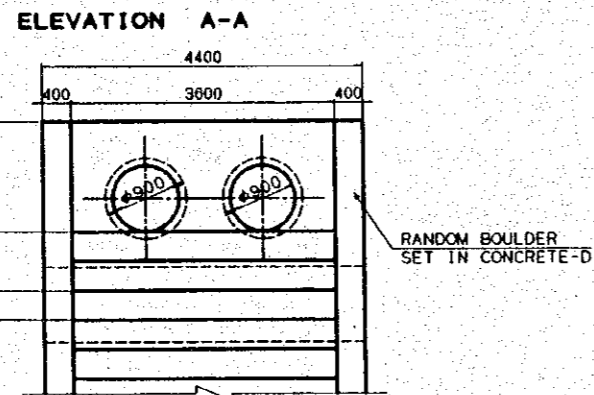
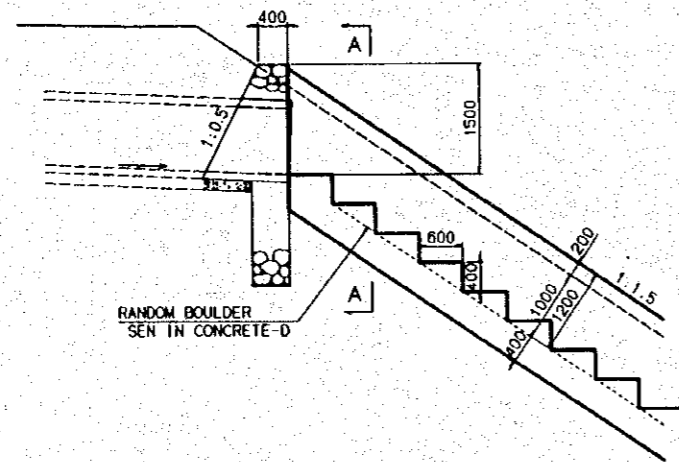
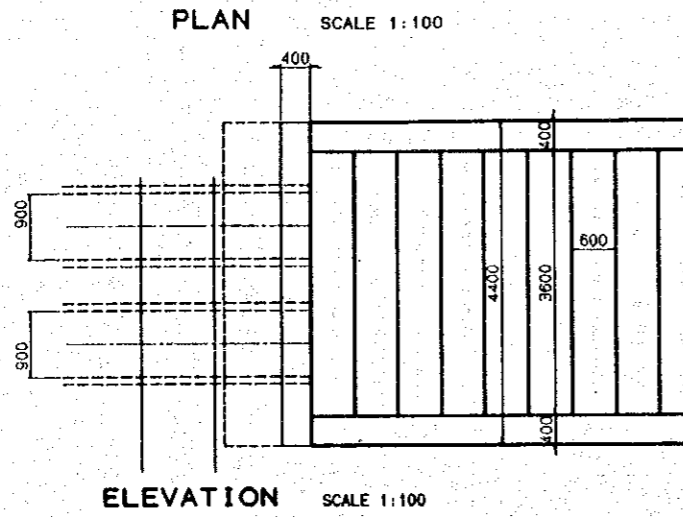
WORK QUANTITIES PER UNIT (PER 10m)

ITEM	UNIT	QUANTITY	REMARKS
RANDOM BOULDER SET IN CONCRETE-D	m ³	25.16	

DETAIL OF CROSS DRAIN (11)

A-6-17
DETAIL OF CROSS DRAIN
(11)

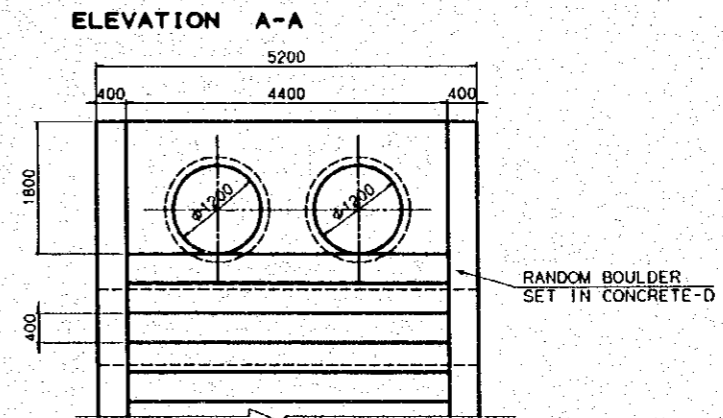
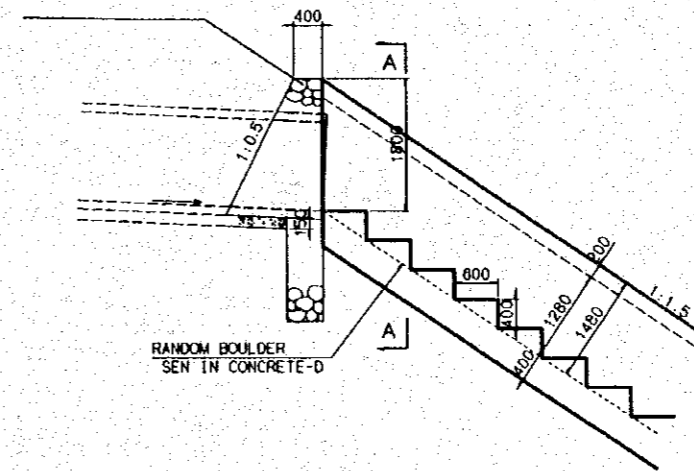
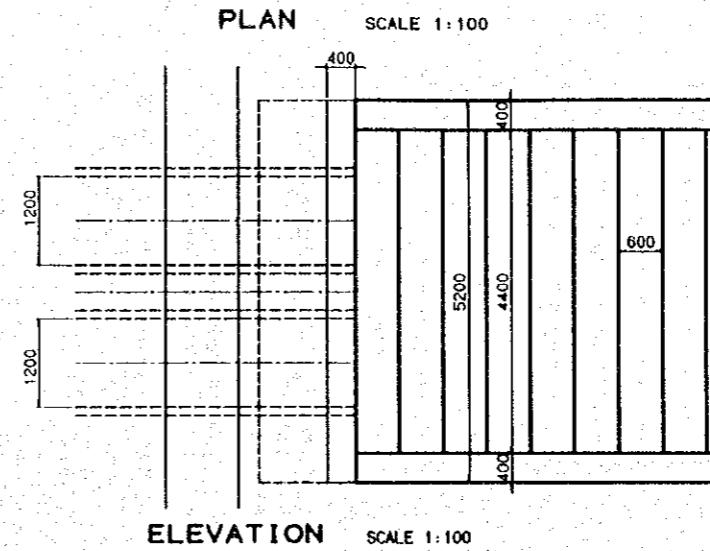
CHUTE TYPE-CH3
(for $\phi 0.900 \times 2$)



WORK QUANTITIES PER UNIT (PER 10m)

ITEM	UNIT	QUANTITY	REMARKS
RANDOM BOULDER SET IN CONCRETE-D	m ³	38.77	

CHUTE TYPE-CH4
(for $\phi 1200 \times 2$)



WORK QUANTITIES PER UNIT (PER 10m)

ITEM	UNIT	QUANTITY	REMARKS
RANDOM BOULDER SET IN CONCRETE-D	m ³	44.19	

DETAIL OF CROSS DRAIN (12)

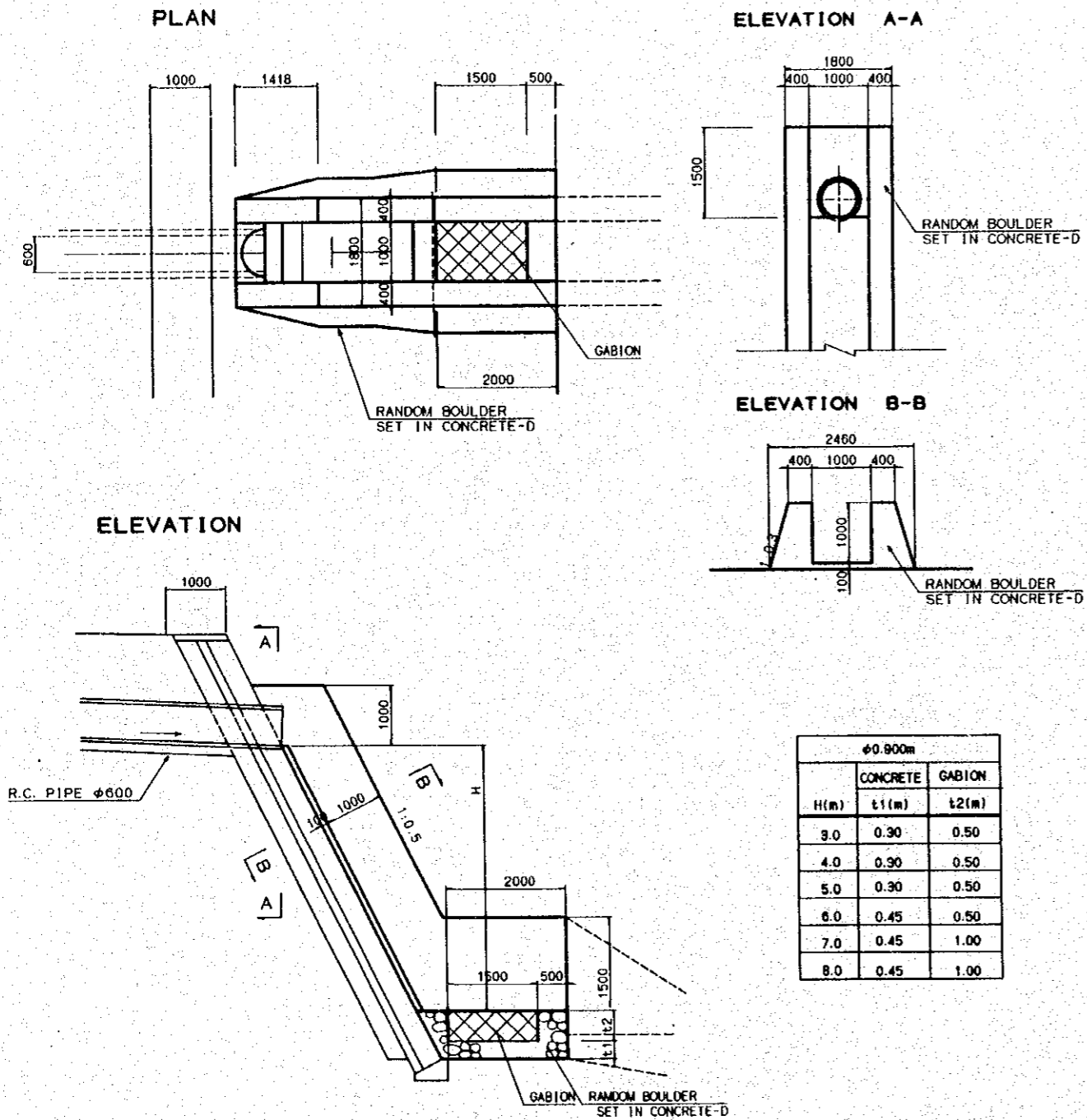
A-6-18
DETAIL OF CROSS DRAIN
(12)

CHUTE TYPE-CH5

(for $\phi 600 \times 1$) SCALE 1:100

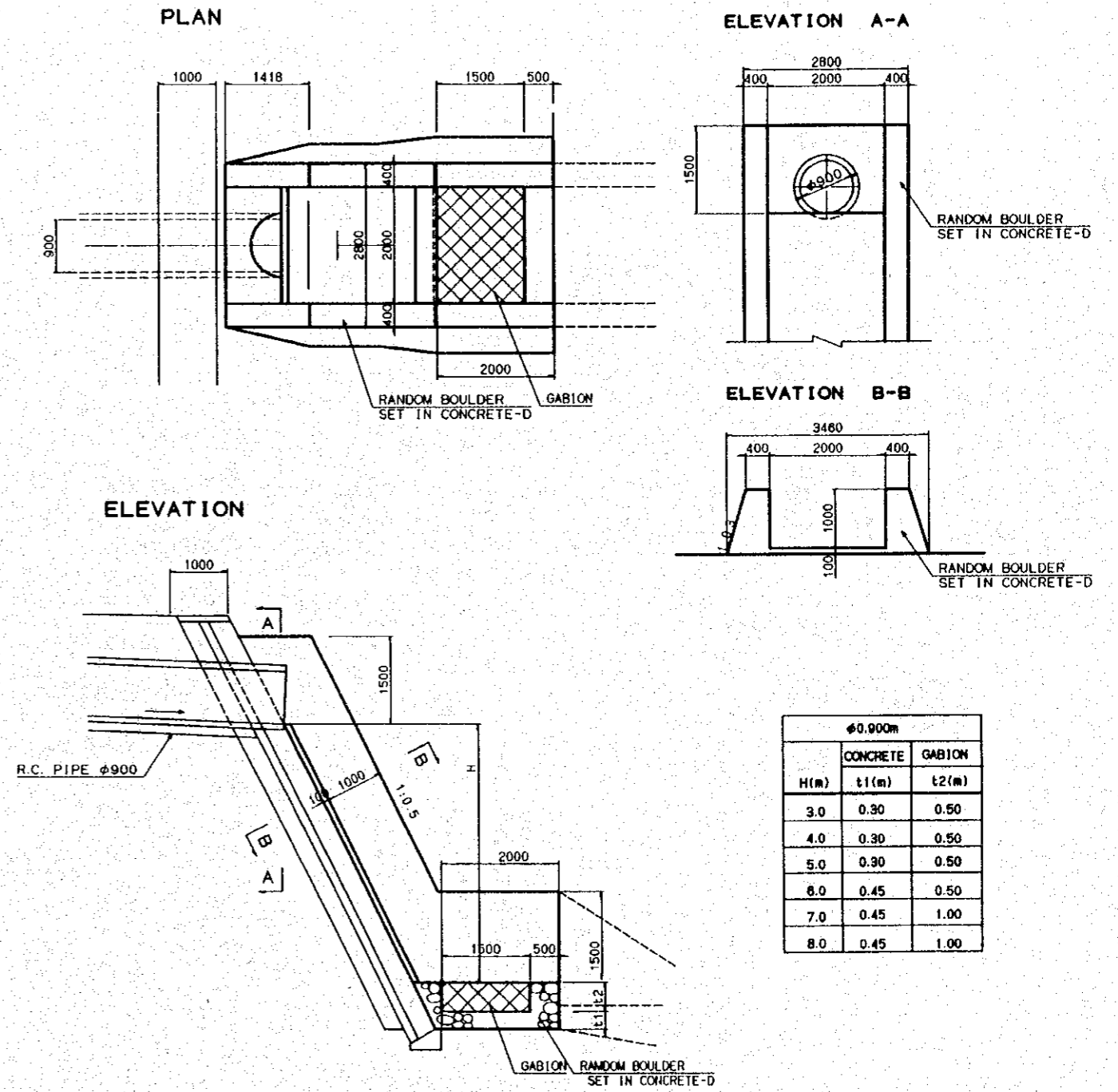
CHUTE TYPE-CH6

(for $\phi 900 \times 1$) SCALE 1:100



WORK QUANTITIES PER UNIT (PER 1 UNIT)

ITEM	UNIT	QUANTITY					
		H=3.0m	H=4.0m	H=5.0m	H=6.0m	H=7.0m	H=8.0m
RANDOM BOULDER SET IN CONCRETE-D	m ³	5.29	6.64	8.00	9.73	12.4	13.8
GABION	m ³	1.50	1.50	1.50	1.50	3.00	3.00



WORK QUANTITIES PER UNIT (PER 1 UNIT)

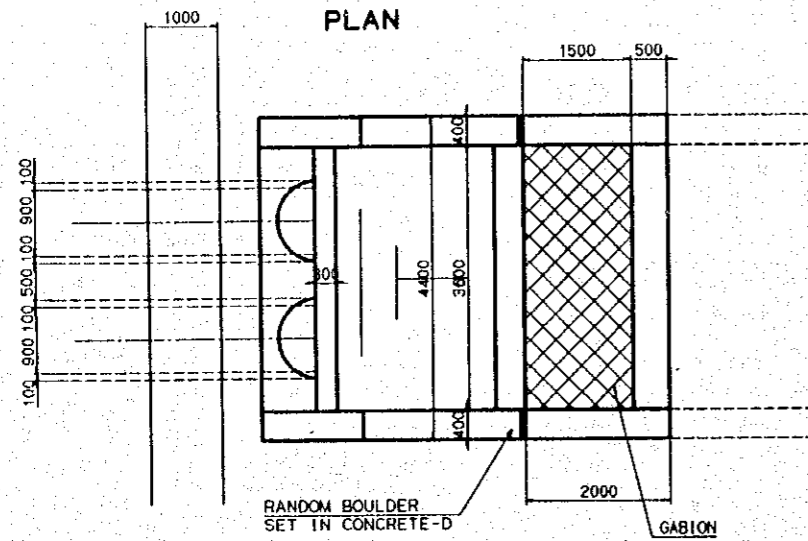
ITEM	UNIT	QUANTITY					
		H=3.0m	H=4.0m	H=5.0m	H=6.0m	H=7.0m	H=8.0m
RANDOM BOULDER SET IN CONCRETE-D	m ³	8.06	9.52	11.0	13.2	17.4	18.8
GABION	m ³	1.50	1.50	1.50	1.50	3.00	3.00

DETAIL OF CROSS DRAIN (13)

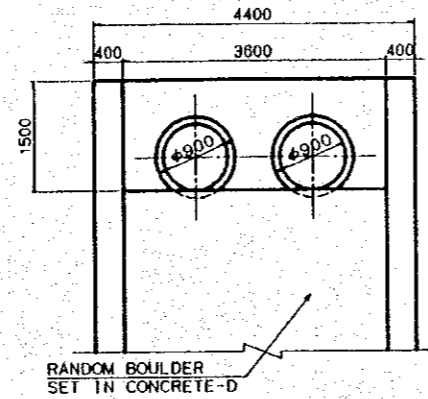
CHUTE TYPE-CH7

(for $\phi 900 \times 2$)

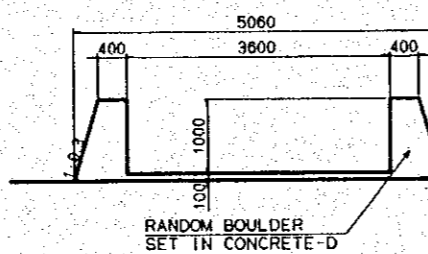
SCALE 1:100



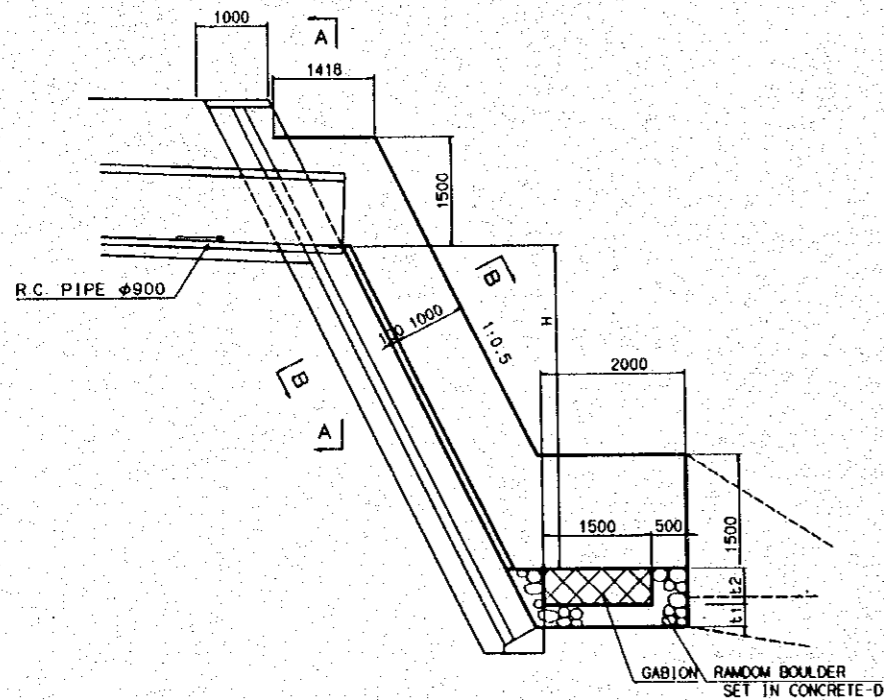
ELEVATION A-A



ELEVATION B-B



ELEVATION



H(m)	$\phi 900m$	
	CONCRETE	GABION
3.0	t1(m) 0.30	t2(m) 0.50
4.0	0.30	0.50
5.0	0.30	0.50
6.0	0.45	0.50
7.0	0.45	1.00
8.0	0.45	1.00

WORK QUANTITIES PER UNIT		(PER 1 UNIT)					
ITEM	UNIT	QUANTITY					
		H=3.0m	H=4.0m	H=5.0m	H=6.0m	H=7.0m	H=8.0m
RANDOM BOULDER SET IN CONCRETE-D	m ³	10.9	12.5	14.1	17.1	23.8	25.2
GABION	m ³	1.50	1.50	1.50	1.50	3.00	3.00

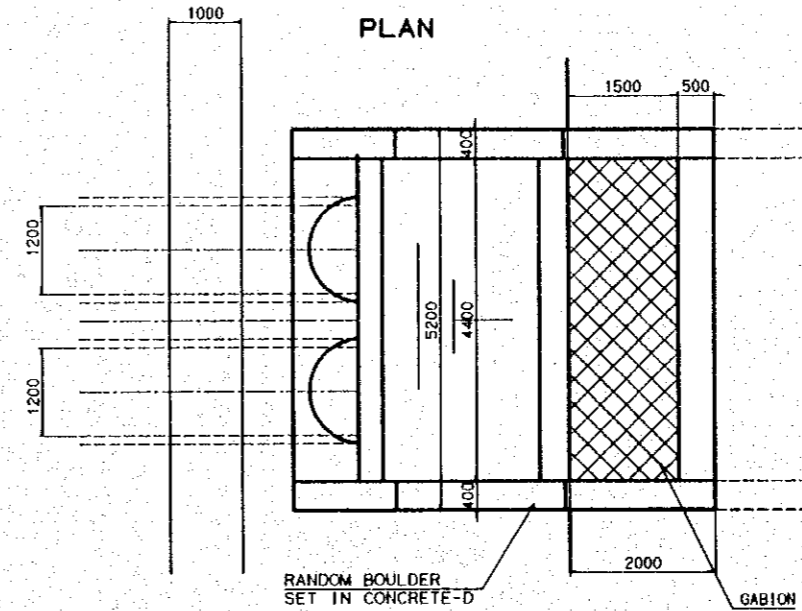
A-6-19

DETAIL OF CROSS DRAIN (13)

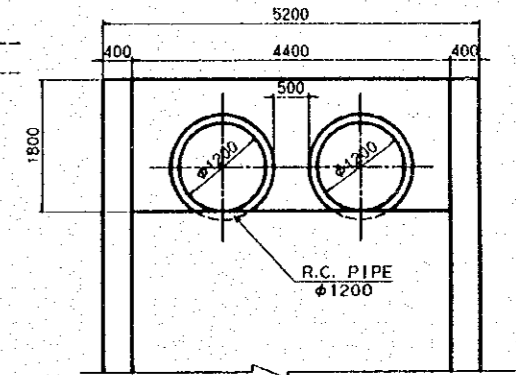
CHUTE TYPE-CH8

(for $\phi 1200 \times 2$)

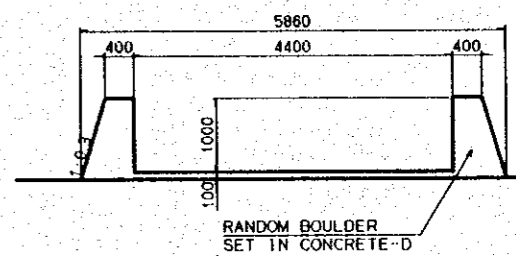
SCALE 1:100



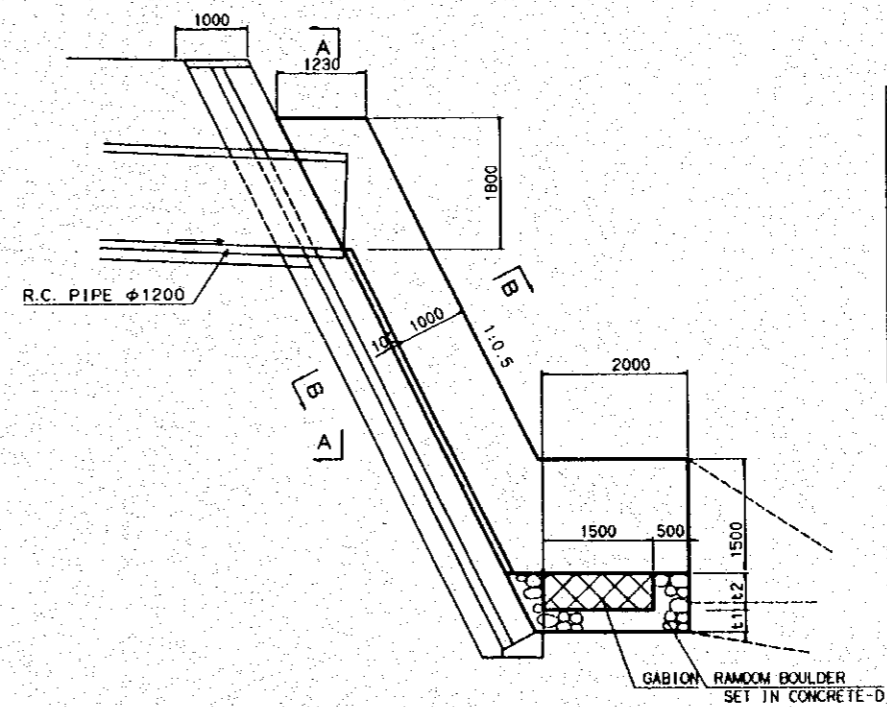
ELEVATION A-A



ELEVATION B-B



ELEVATION



H(m)	$\phi 1200m$	
	CONCRETE	GABION
3.0	t1(m) 0.30	t2(m) 0.50
4.0	0.30	0.50
5.0	0.45	0.50
6.0	0.45	0.50
7.0	0.45	1.00
8.0	0.45	1.00

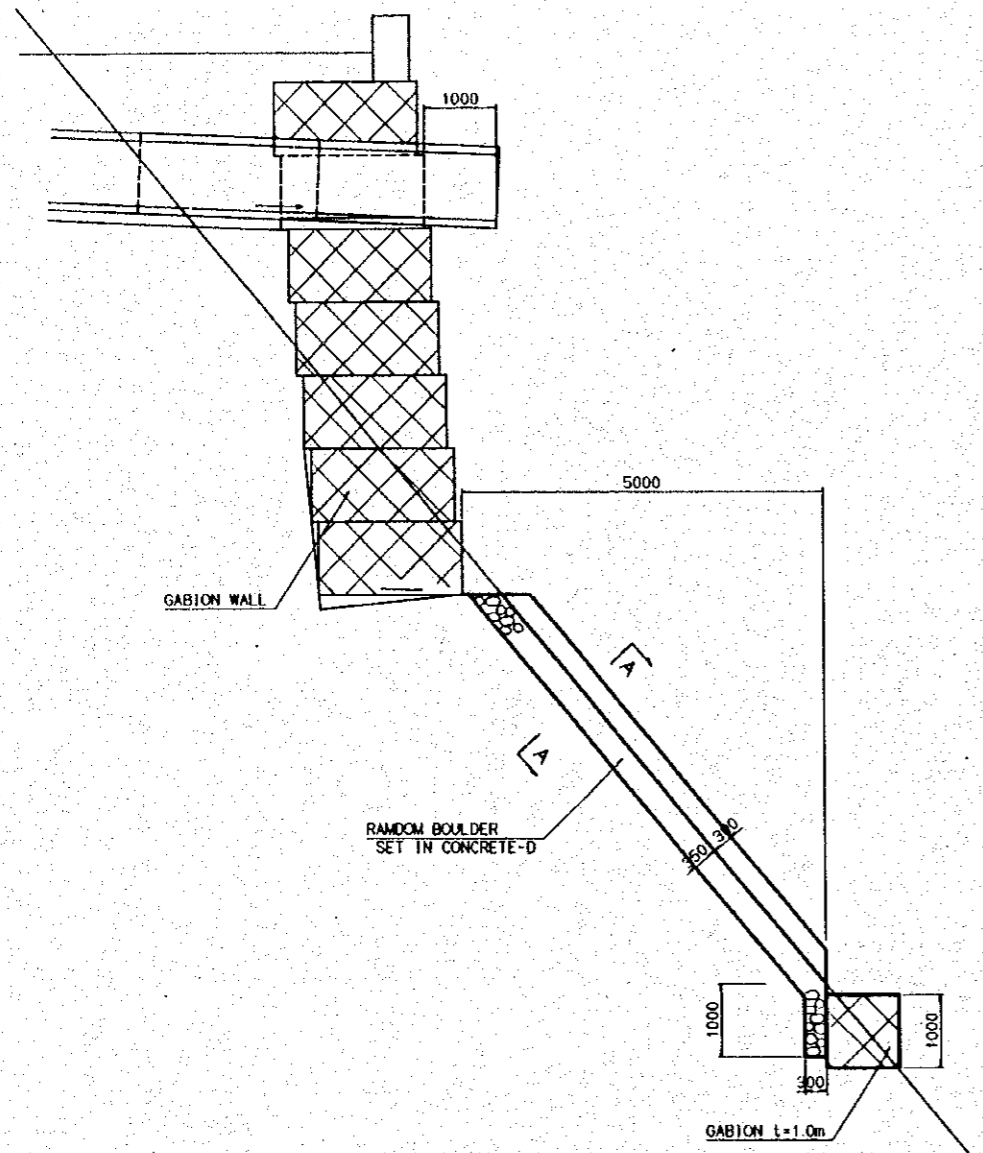
WORK QUANTITIES PER UNIT		(PER 1 UNIT)					
ITEM	UNIT	QUANTITY					
		H=3.0m	H=4.0m	H=5.0m	H=6.0m	H=7.0m	H=8.0m
RANDOM BOULDER SET IN CONCRETE-D	m ³	12.6	14.3	16.0	19.4	27.0	28.7
GABION	m ³	1.50	1.50	1.50	1.50	3.00	3.00

DETAIL OF CROSS DRAIN (14)

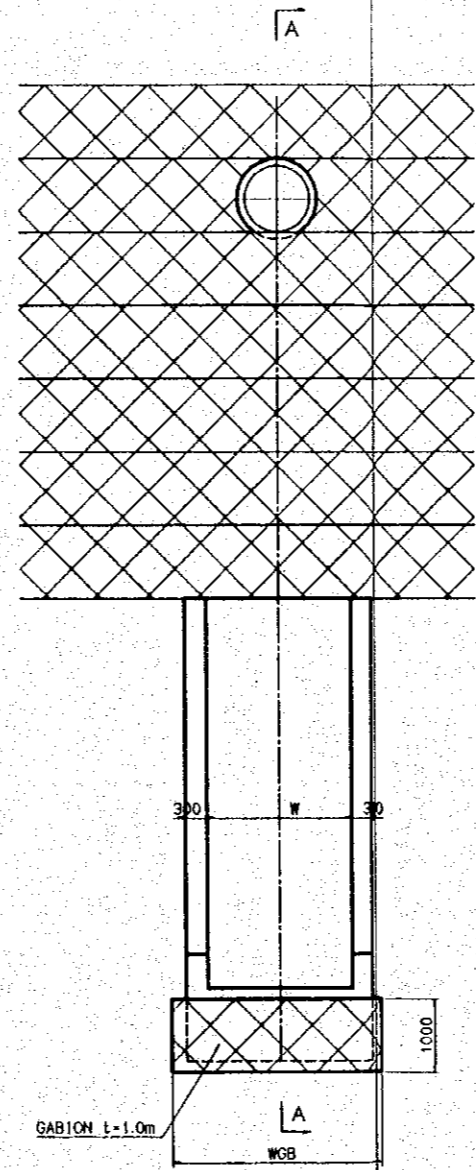
A-6-20
DETAIL OF CROSS DRAIN
(14)

CHUTE TYPE-CH9.10.11.12 SCALE 1:100

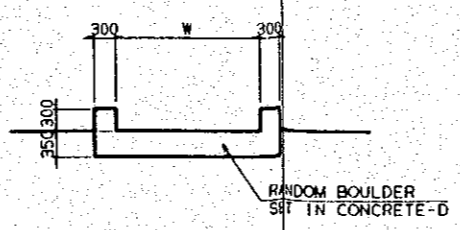
SECTION A-A



ELEVATION



SECTION B-B



TYPE	W	WGB	REMARKS
CH9	1000	2000	φ600x1
CH10	2000	3000	φ900x1
CH11	3800	4000	φ900x2
CH12	4400	5000	φ1200x2

WORK QUANTITIES PER UNIT		(PER nos)				REMARKS
ITEM	UNIT	CH9	CH10	CH11	CH12	
RANDOM BOULDER SET IN CONCRETE-D	m ³	5.43	8.05	12.2	14.3	
EXCAVATION	m ³	4.19	6.81	11.0	19.1	
GABION (t=1.0m)	m ³	2.0	3.0	4.0	5.0	

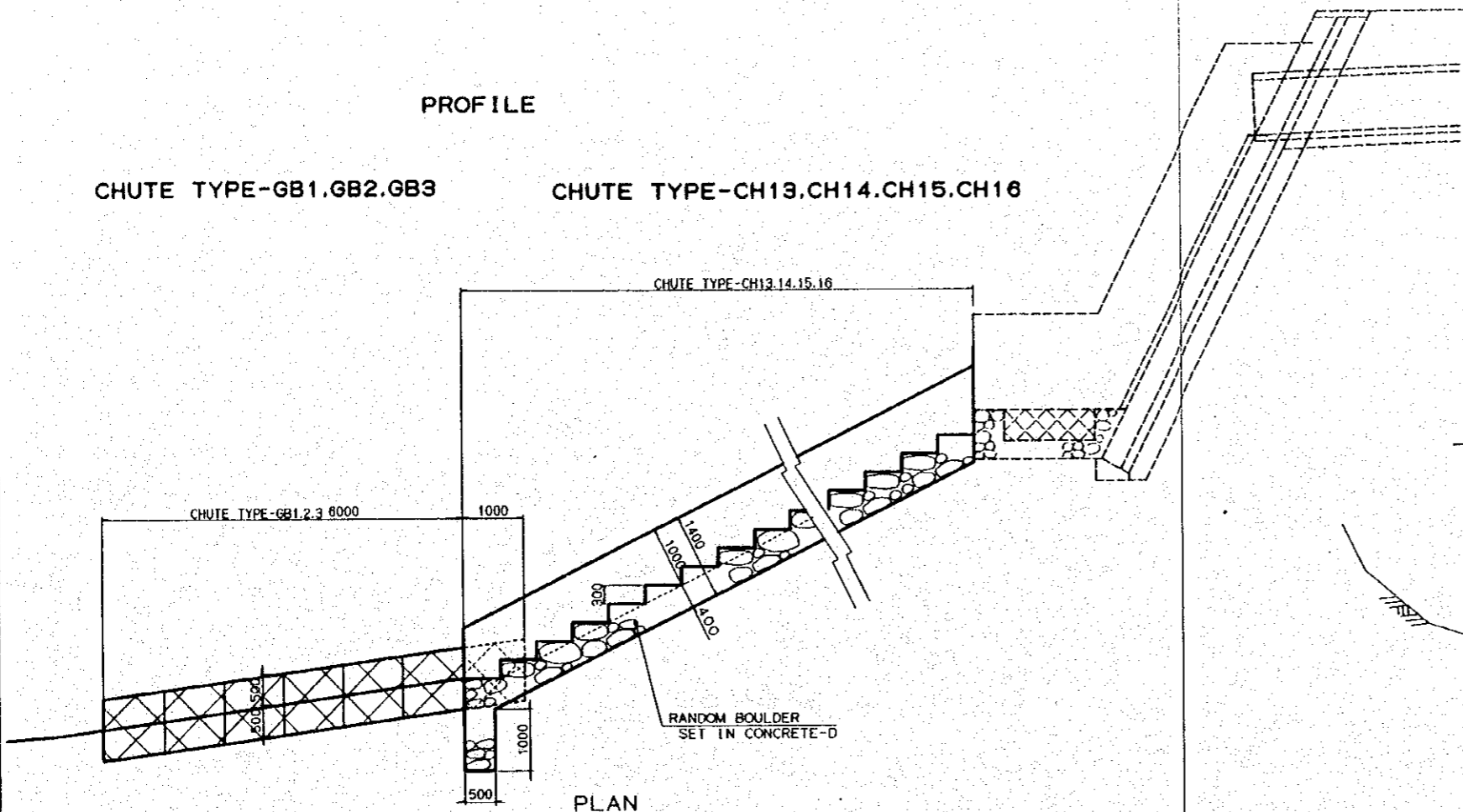
DETAIL OF CROSS DRAIN (15)

A-8-21
DETAIL OF CROSS DRAIN
(15)

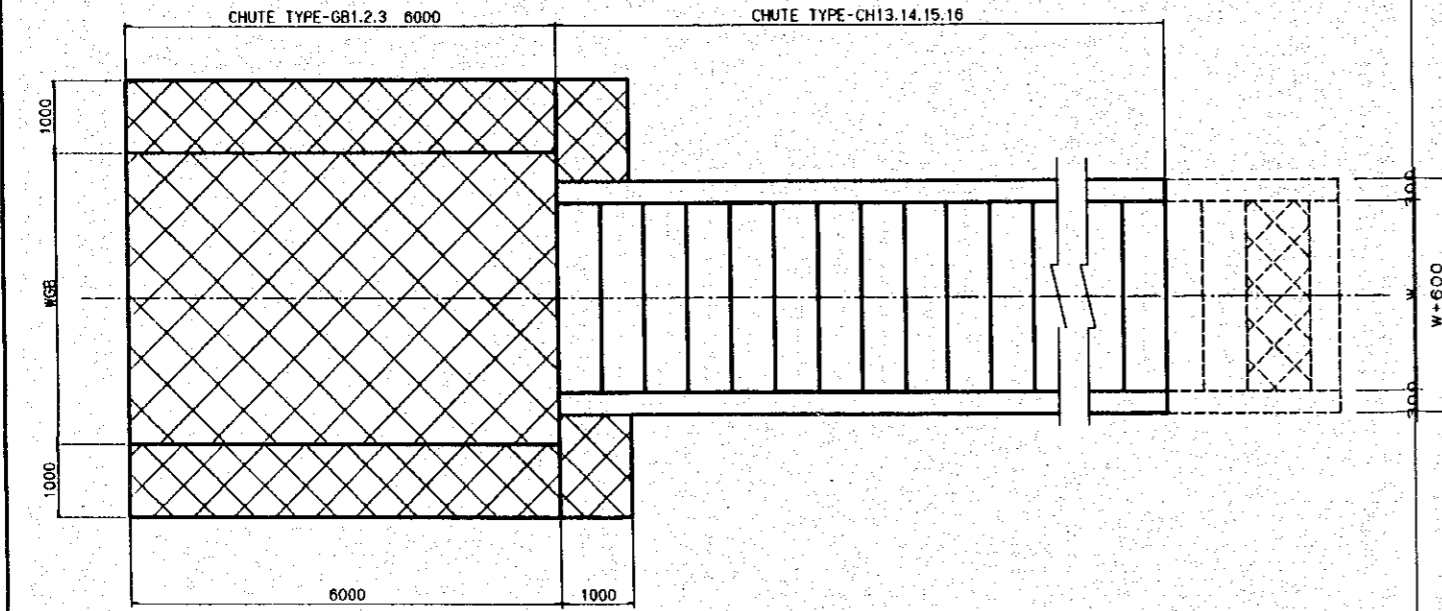
PROFILE

CHUTE TYPE-GB1.GB2.GB3

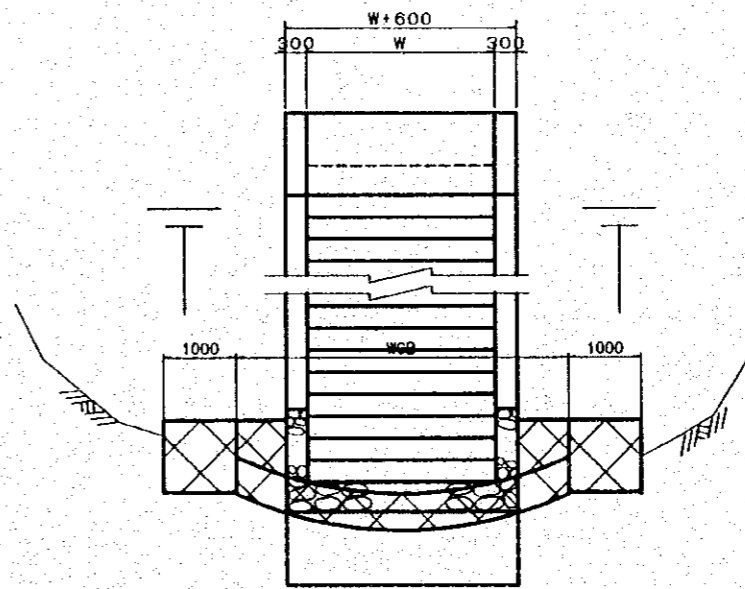
CHUTE TYPE-CH13.CH14.CH15.CH16



PLAN



ELEVATION



CHUTE TYPE-CH7.8.9

TYPE	W
CH13	1000
CH14	2000
CH15	3000
CH16	4400

CHUTE TYPE-GB1.2.3

TYPE	WGB
GB1	2000
GB2	3000
GB3	4000
GB4	5000

WORK QUANTITIES PER UNIT (PER 10.0m)

ITEM	UNIT	QUANTITY				REMARKS
		CH13	CH14	CH15	CH16	
RANDOM BOULDER SET IN CONCRETE-D	m ³	12.5	15.3	19.7	22.0	
EXCAVATION	m ³	7.36	11.4	18.0	21.2	
BACK FILL	m ³	3.84	5.24	7.48	8.80	

WORK QUANTITIES PER UNIT (PER 1nos)

ITEM	UNIT	QUANTITY				REMARKS
		GB1	GB2	GB3	GB4	
GABION (t=1.0m)	m ³	14.0	14.0	14.0	14.0	
GABION (t=0.5m)	m ³	6.0	9.0	12.0	15.0	
EXCAVATION	m ³	13.0	16.0	19.0	22.0	

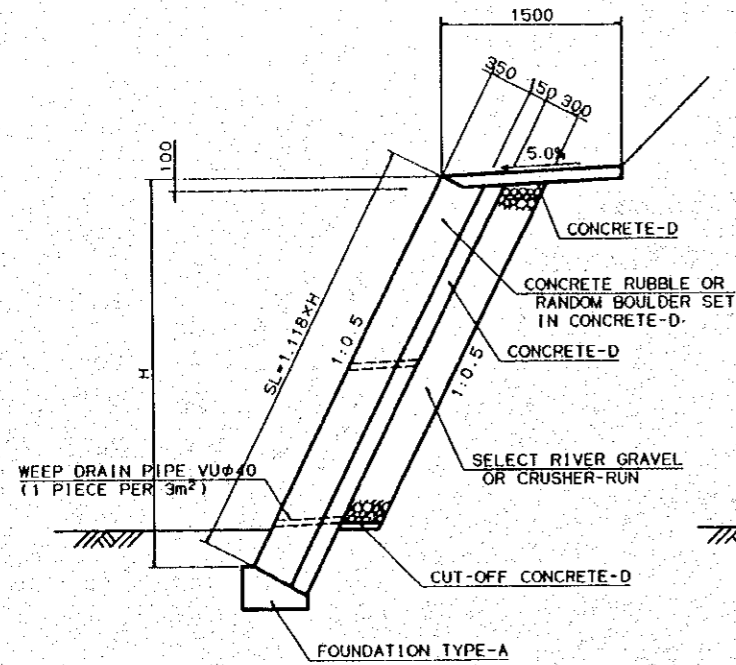
TYPICAL CROSS SECTION OF RETAINING WALLS

SCALE 1:60

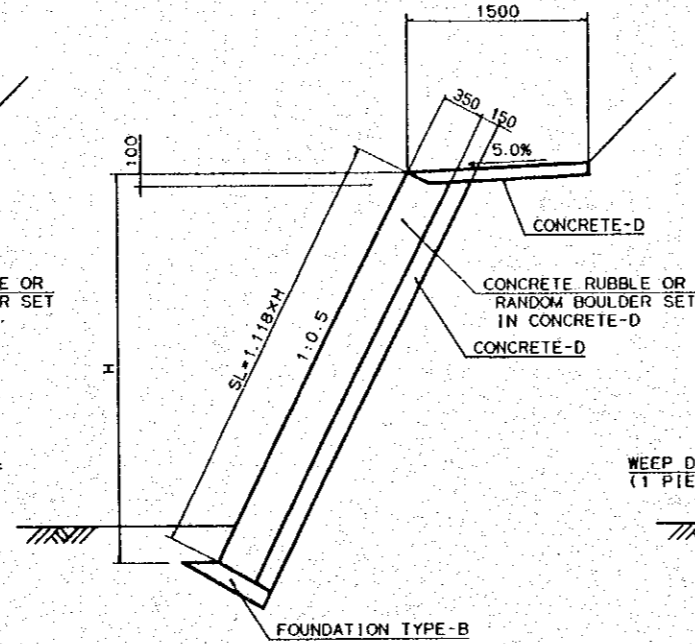
A-7-1

TYPICAL CROSS SECTION OF RETAINING WALLS

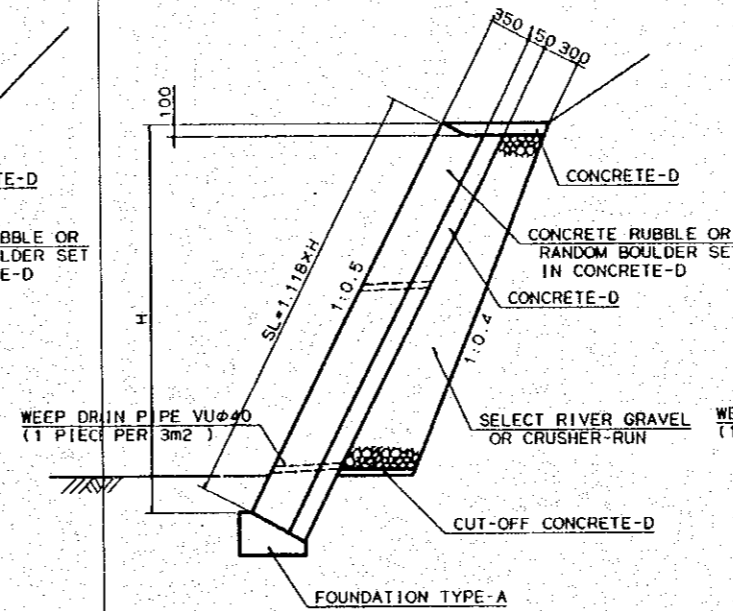
TYPE-A
CUTTING (SOIL SECTION)



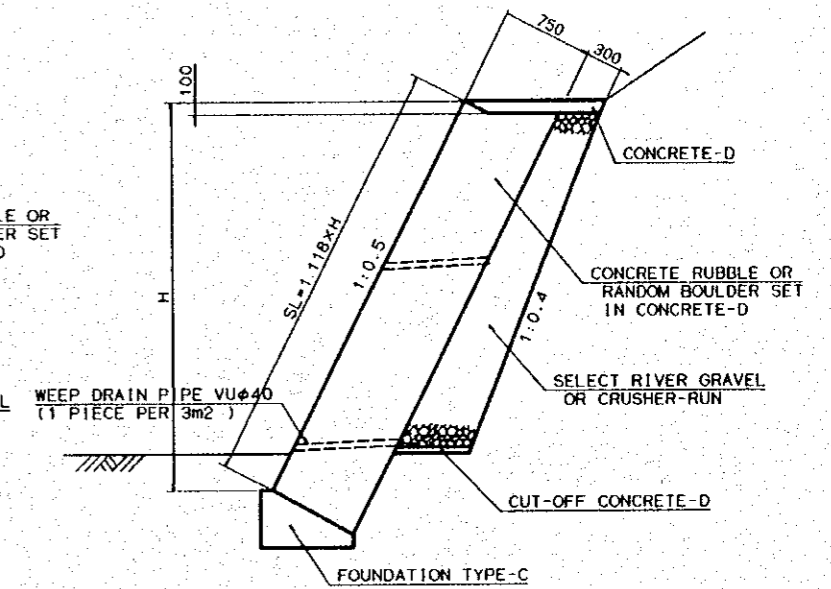
TYPE-B
CUTTING (ROCK SECTION)



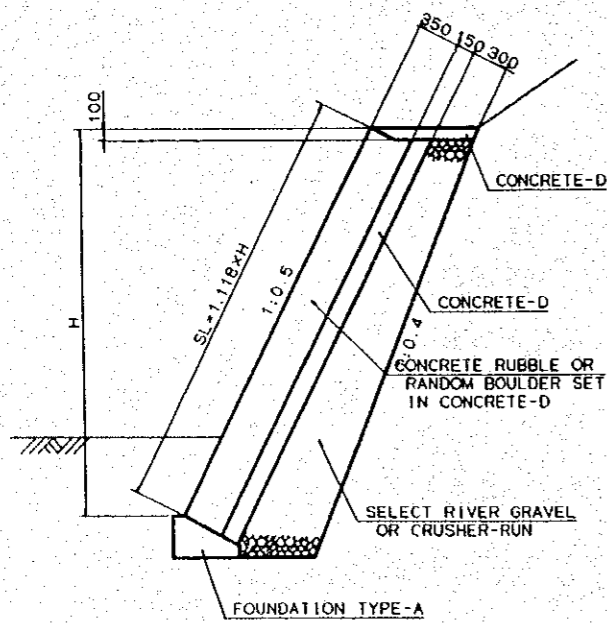
TYPE-C
EMBANKMENT



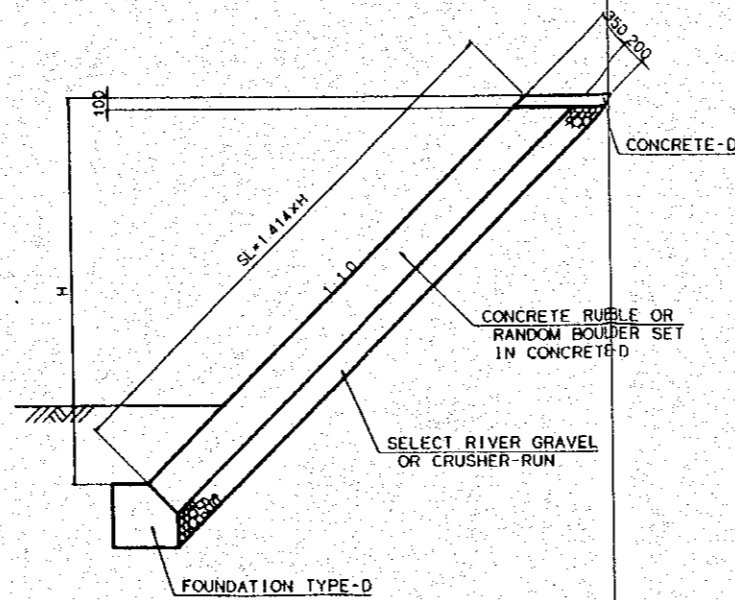
TYPE-D
EMBANKMENT



TYPE-E
REVETMENT

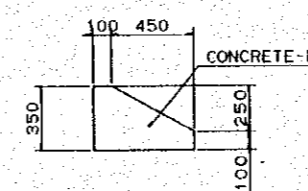


TYPE-F
REVETMENT

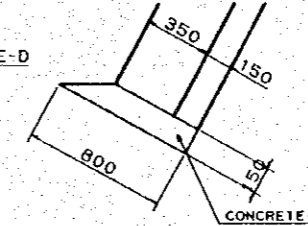


FOUNDATION DETAIL SCALE 1:40

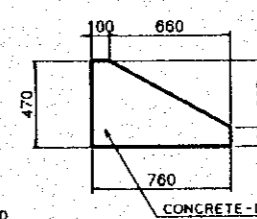
TYPE-A



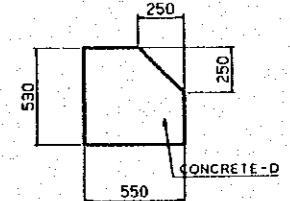
TYPE-B



TYPE-C

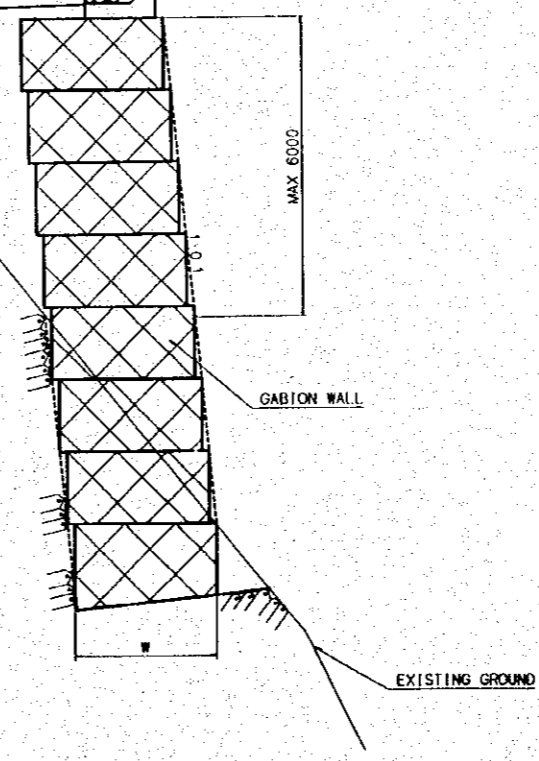
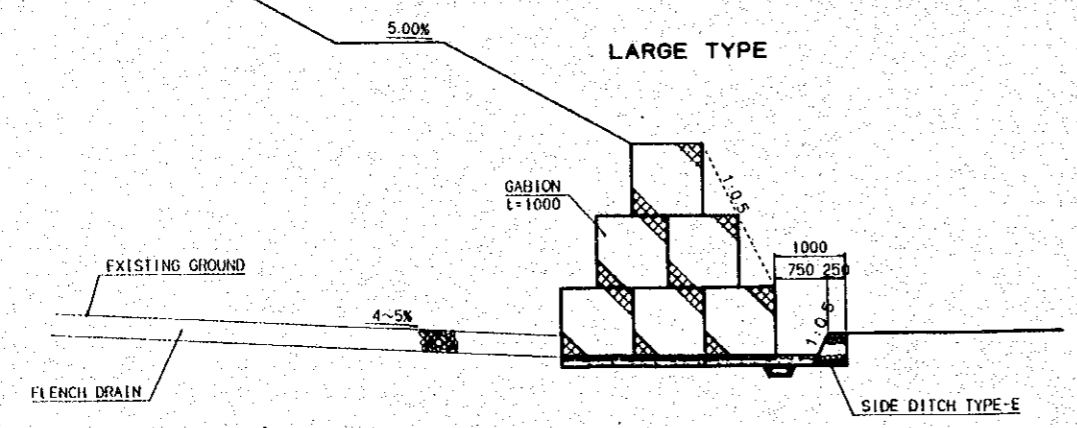
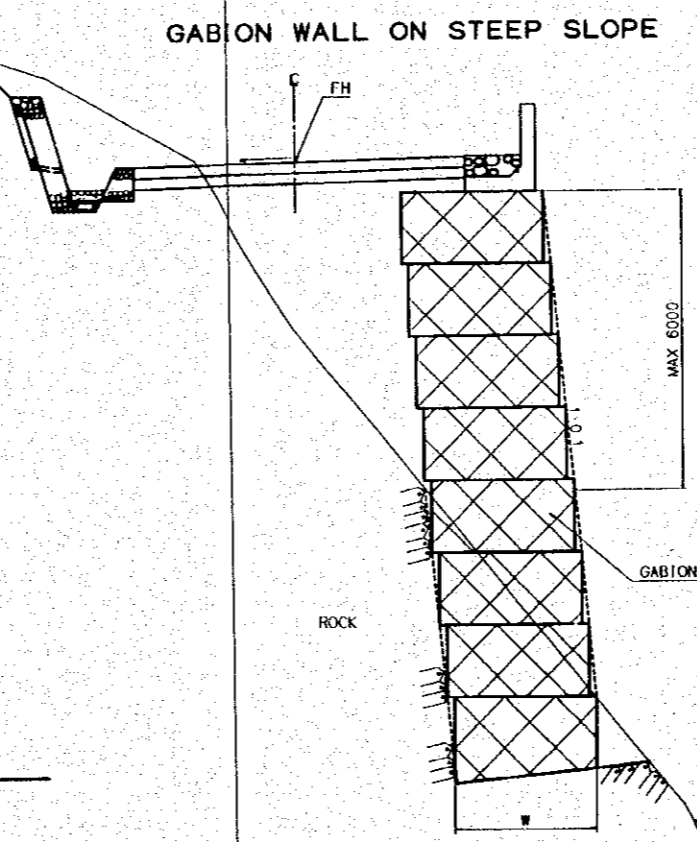
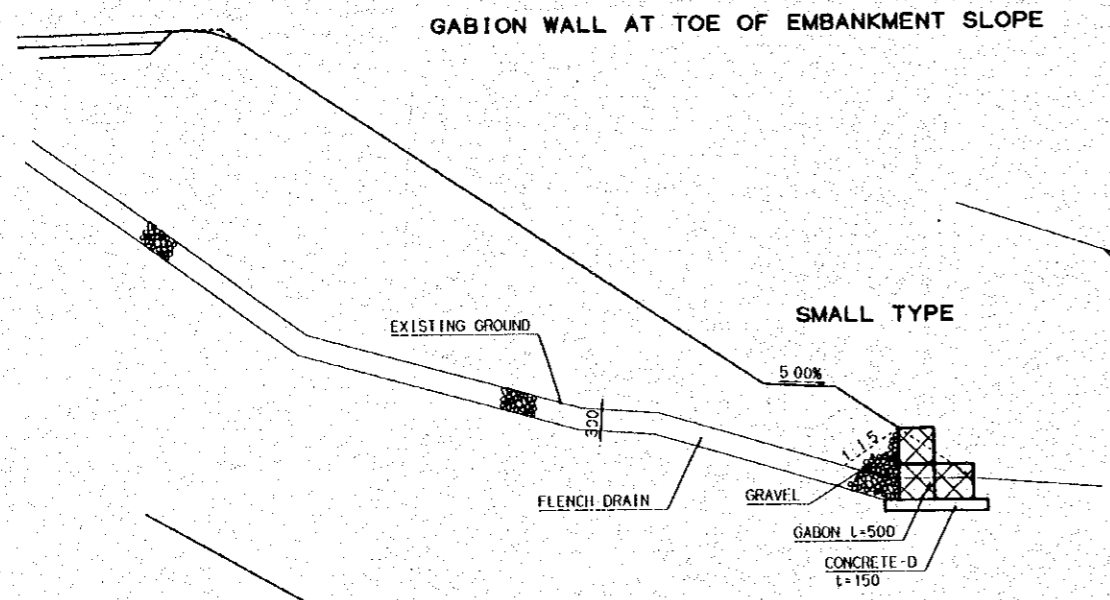
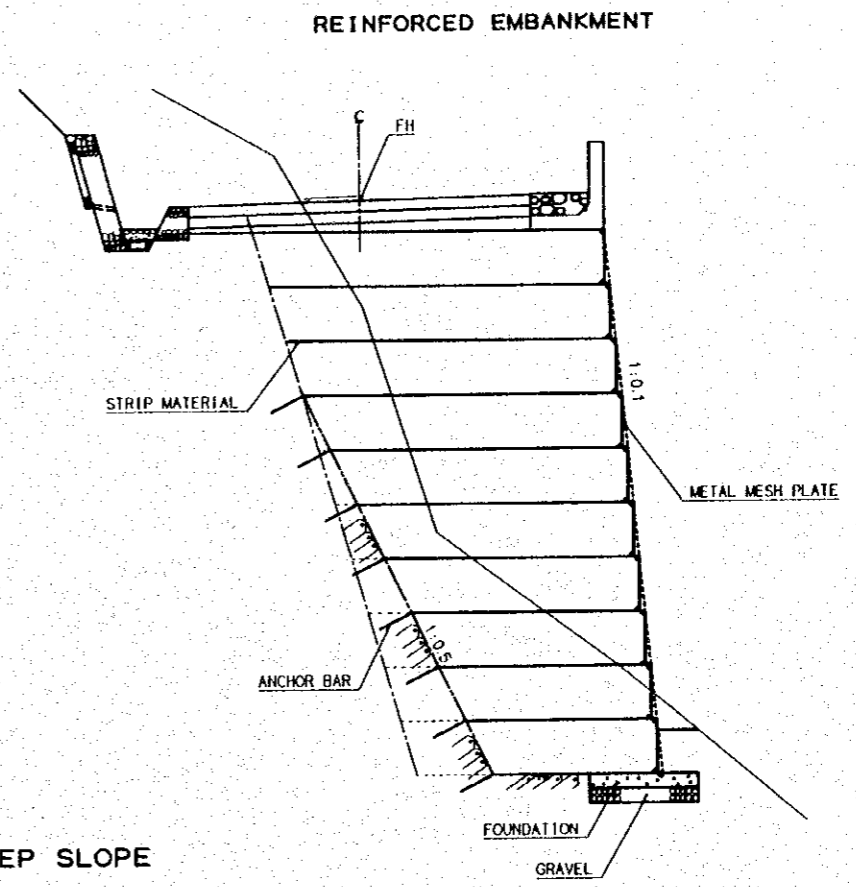
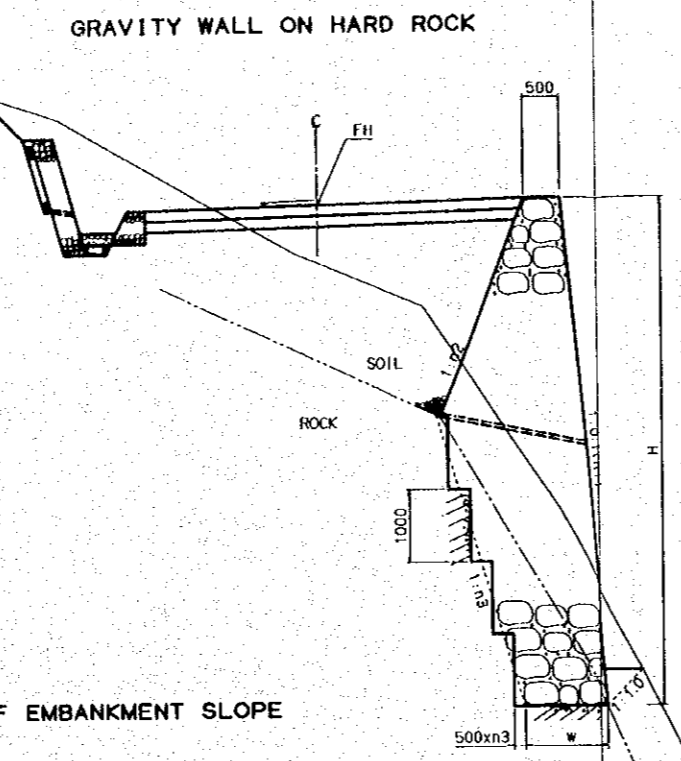
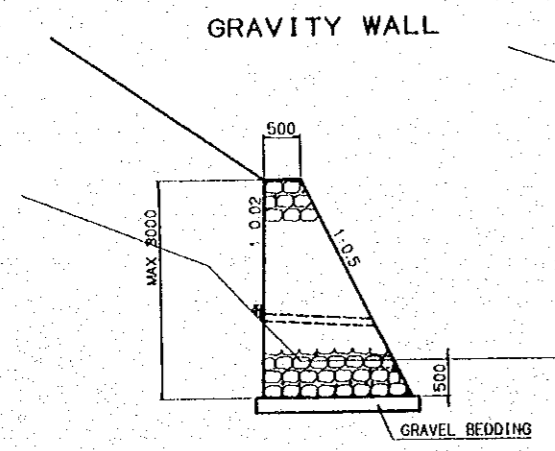


TYPE-D

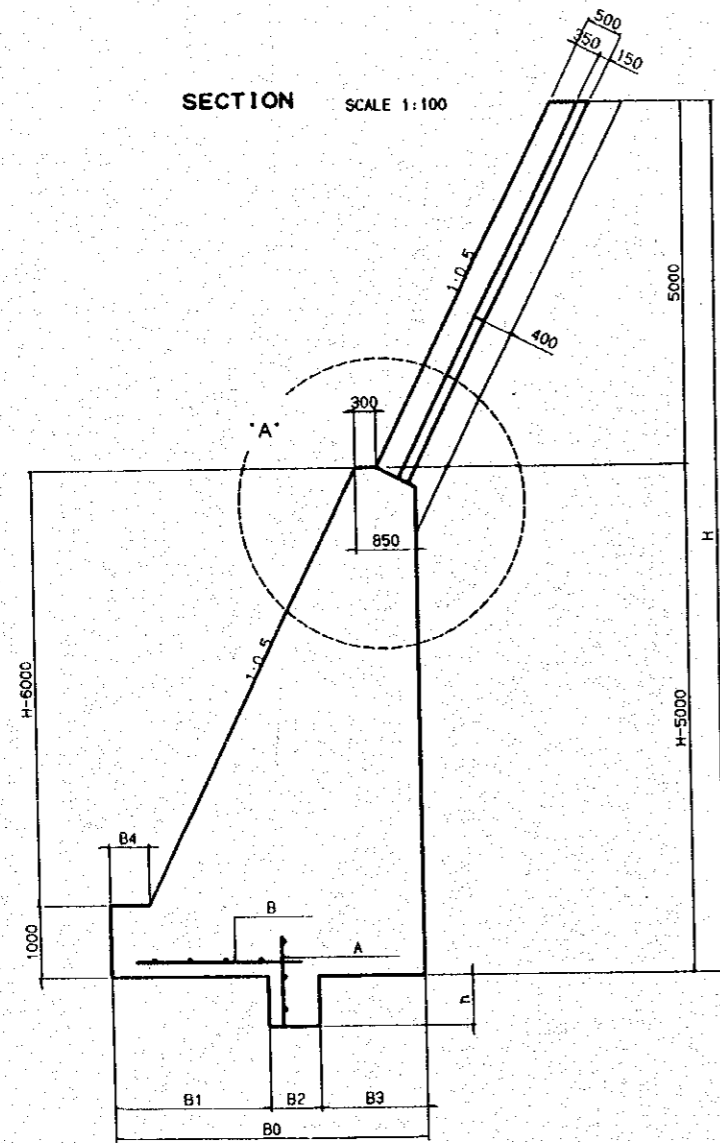


GRAVITY WALL .GABION WALL AND REINFORCED EMBANKMENT

A-7-2
GRAVITY WALL .GABION WALL
AND REINFORCED EMBANKMENT



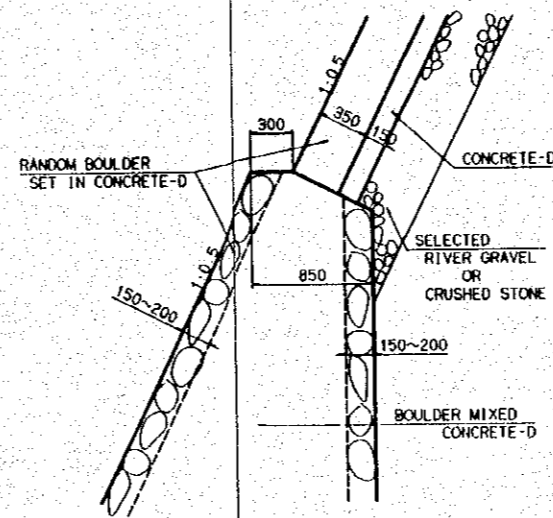
DETAIL OF COMPOUND WALL



DIMENSIONS AND BAR

H	DIMENSIONS							BAR	
	B0 (m)	B1 (m)	B2 (m)	B3 (m)	B4 (m)	h (m)	A	B	
7.0m	1.80	0.95	0.40	0.55	0.55	0.40	D13 #250 L-850	NONE	
8.0m	2.40	1.30	0.40	0.70	0.55	0.40	D13 #250 L-850	NONE	
9.0m	2.90	1.80	0.50	0.80	0.55	0.50	D13 #250 L-950	NONE	
10.0m	3.40	1.80	0.50	1.10	0.55	0.50	D16 #250 L-1050	NONE	
11.0m	3.90	2.00	0.70	1.20	0.55	0.60	D16 #250 L-1150	NONE	
12.0m	4.40	2.20	0.70	1.50	0.55	0.70	D16 #250 L-1250	D13 #250 L-2300	
13.0m	5.00	2.40	0.80	1.80	0.65	0.80	D18 #250 L-1500	D13 #250 L-2500	
14.0m	5.50	2.60	0.90	2.00	0.65	0.90	D18 #250 L-1800	D13 #250 L-2700	
15.0m	6.10	2.80	1.00	2.30	0.75	1.00	D19 #250 L-1700	D16 #250 L-2800	

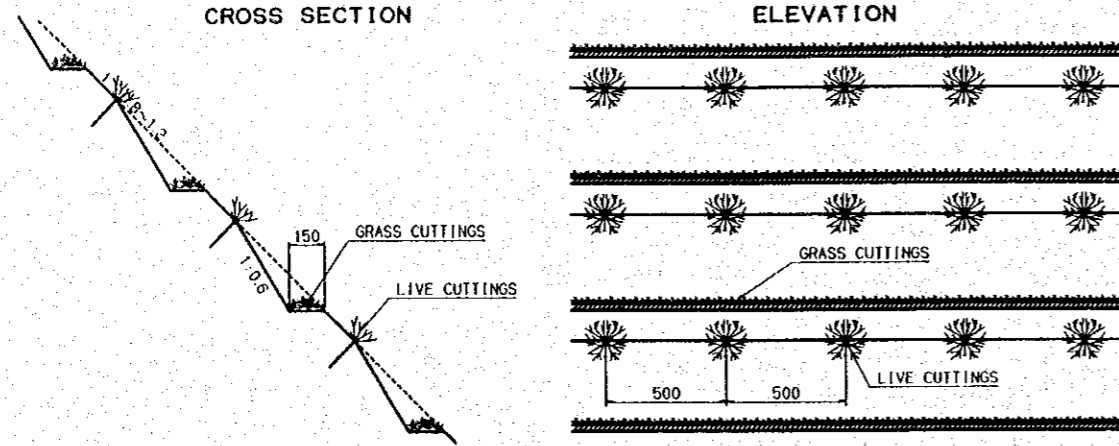
DETAIL OF 'A' SCALE 1:50



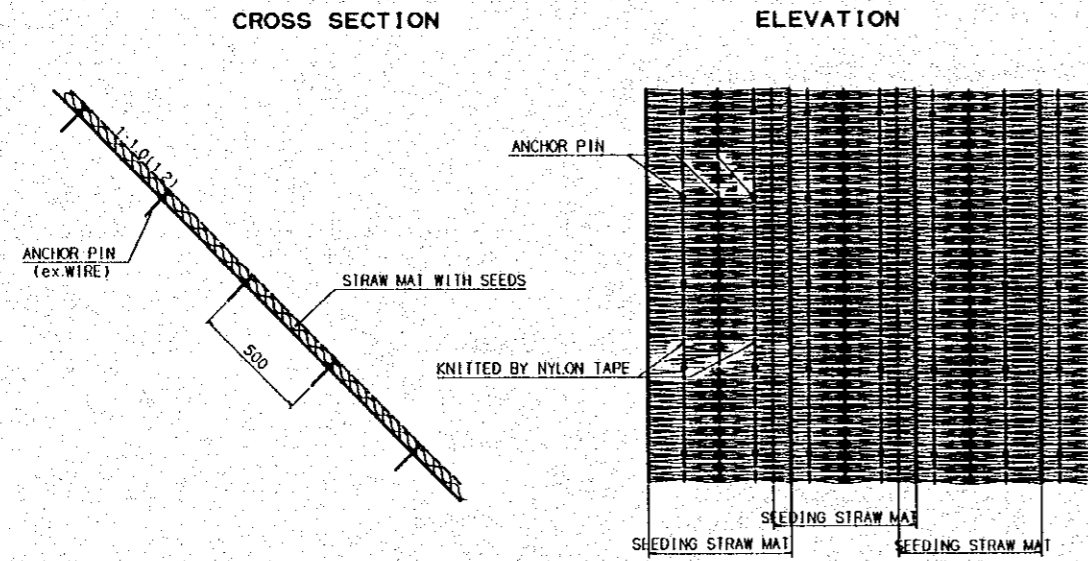
DETAIL OF SLOPE PROTECTION (1)

A-8-1
 DETAIL OF SLOPE PROTECTION
 (1)

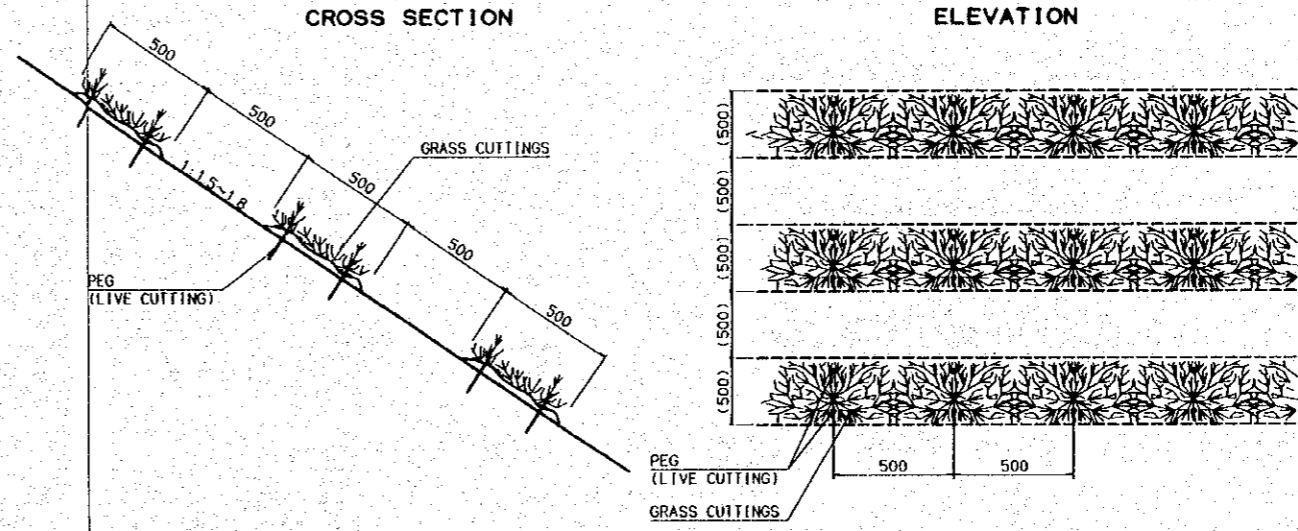
STEPEDED SODDING ON CUT SLOPE SCALE 1:30



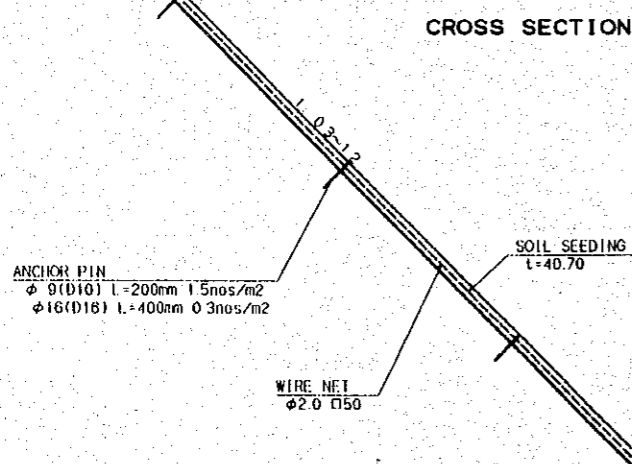
SODDING WITH STRAW MAT ON CUT SLOPE SCALE 1:30



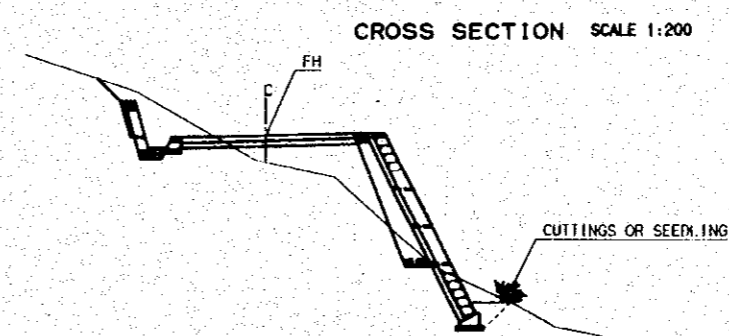
GRASS STRIPS ON EMBANKMENT SLOPE SCALE 1:30



SHUT SOILING ON CUT SLOPE



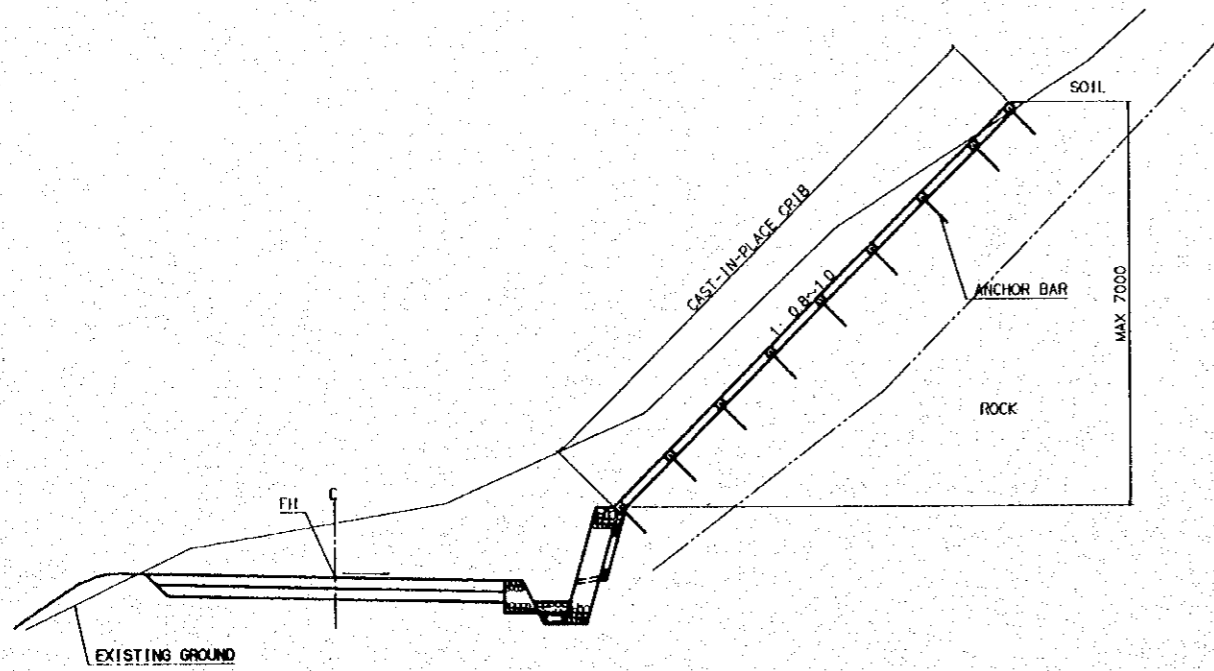
FOOT PROTECTION BY LIVE CUTTINGS AND SEEDLING



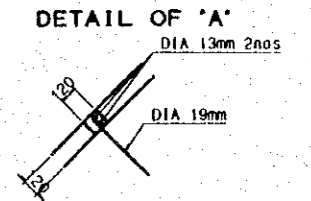
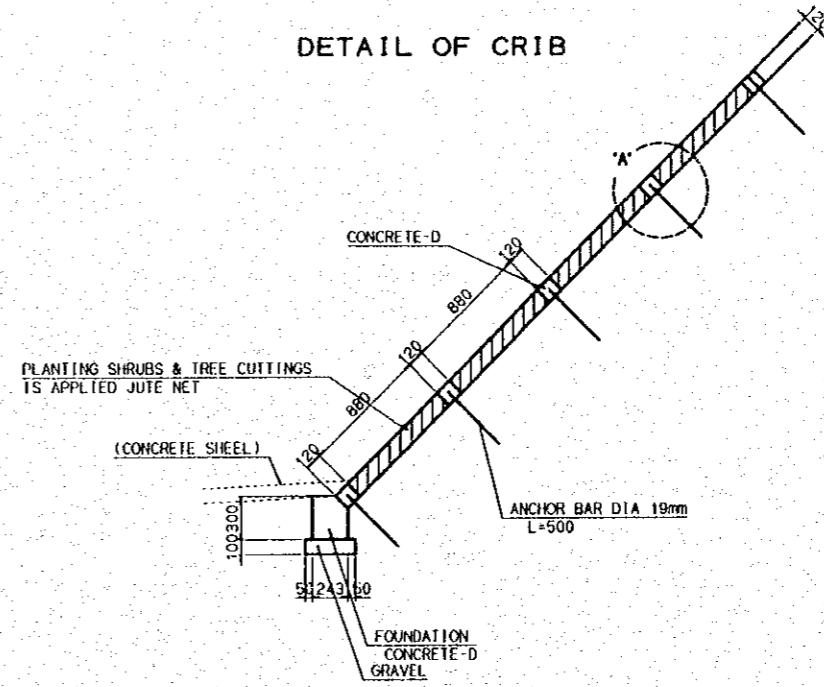
DETAIL OF SLOPE PROTECTION (2)

A-8-2
 DETAIL OF SLOPE PROTECTION
 (2)

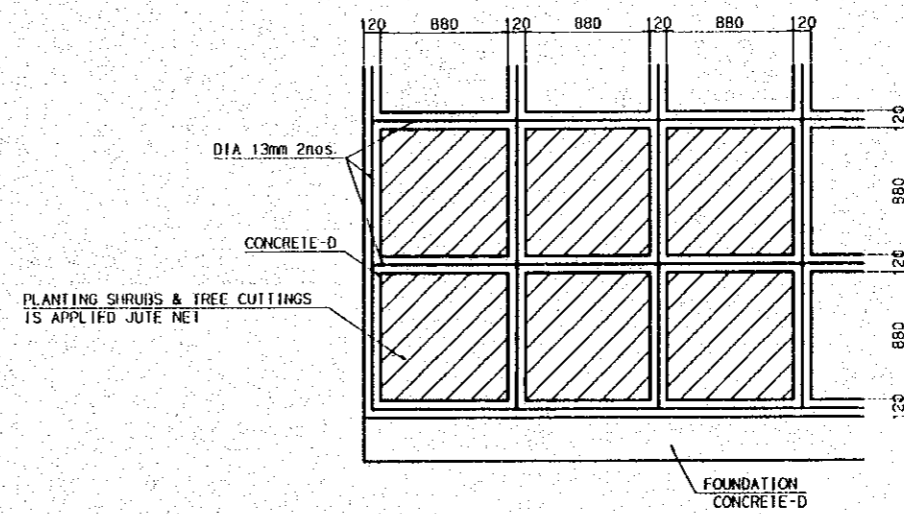
CAST-IN-PLACE CRIB



DETAIL OF CRIB

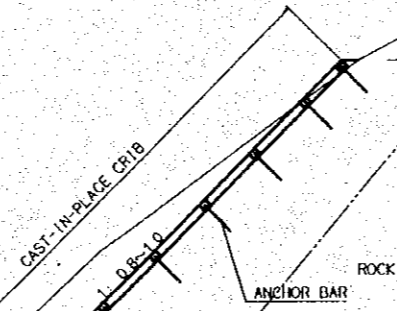


ELEVATION



EXISTING GROUND

SOIL



WET MASONRY

FOUNDATION

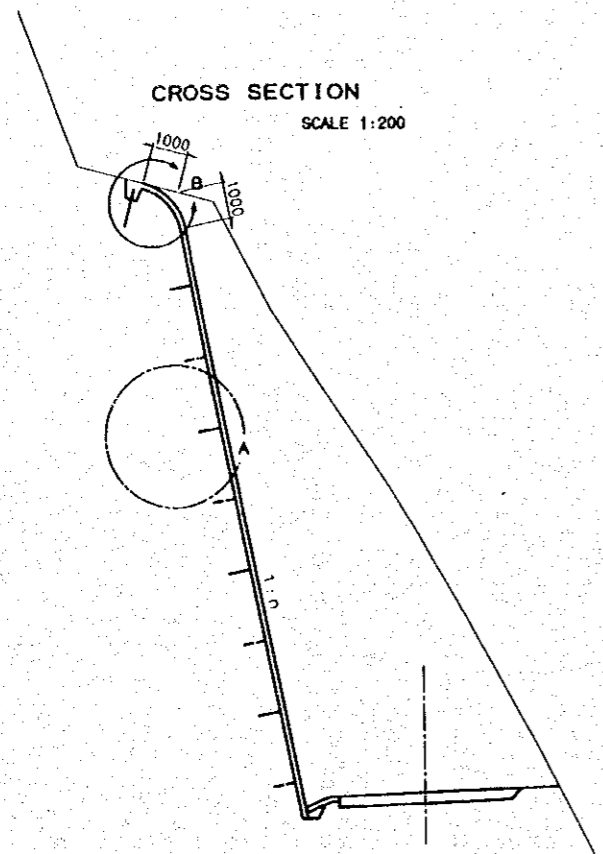
EXISTING GROUND

FOUNDATION CONCRETE-D

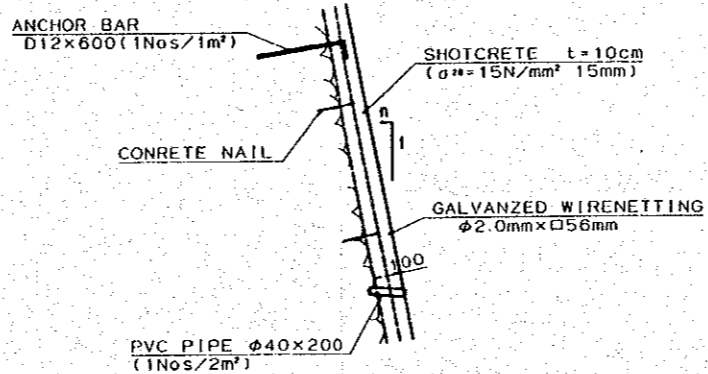
DETAIL OF SLOPE PROTECTION (3)

A-8-3
 DETAIL OF SLOPE PROTECTION
 (3)

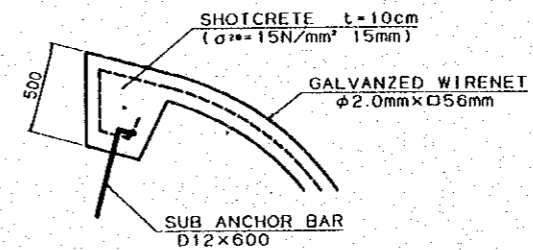
SHOTCRETE



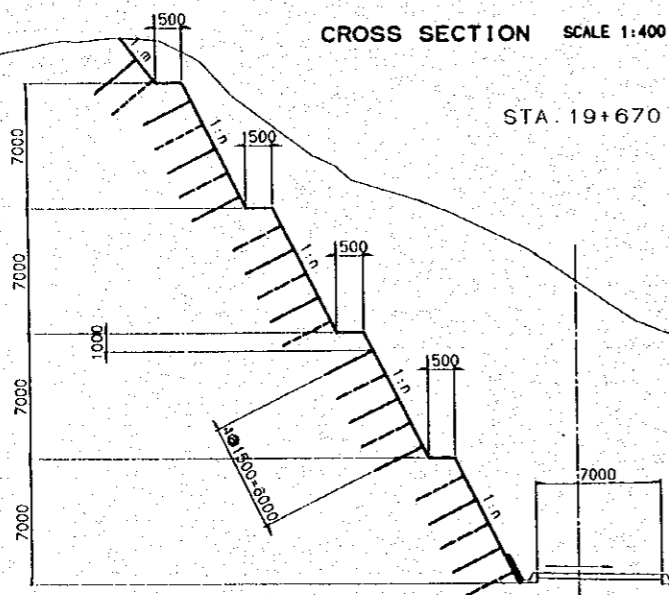
DETAIL OF 'A' SCALE 1:40



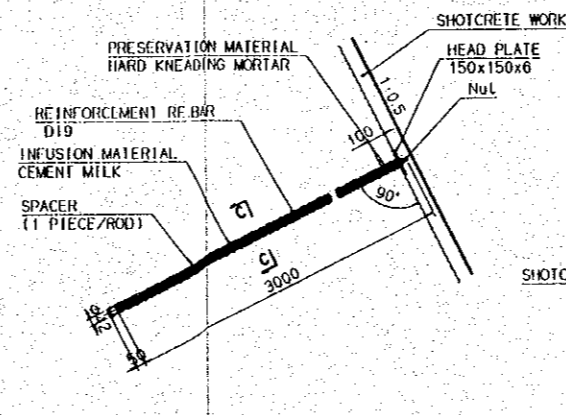
DETAIL OF 'B' SCALE 1:40



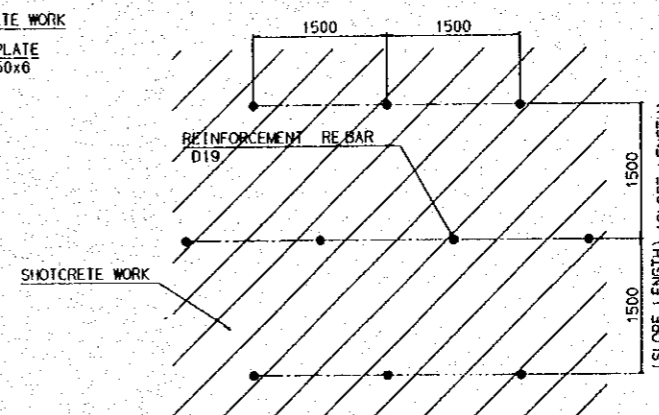
EARTH REINFORCING



DETAILS OF RE.BAR SCALE 1:40



ARRANGEMENT OF RE.BAR SCALE 1:40



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