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MINISTRY OF PUBLIC WORKS

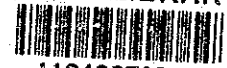
THE NAIROBI BYPASS PROJECT
DETAILED DESIGN STUDY
FINAL REPORT
PART II
VOLUME 7
(DRAWINGS)

SEPTEMBER 1992

JAPAN INTERNATIONAL COOPERATION AGENCY

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MINISTRY OF PUBLIC WORKS

THE NAIROBI BYPASS PROJECT

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FINAL REPORT

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国際協力事業団

24901

CONTENTS

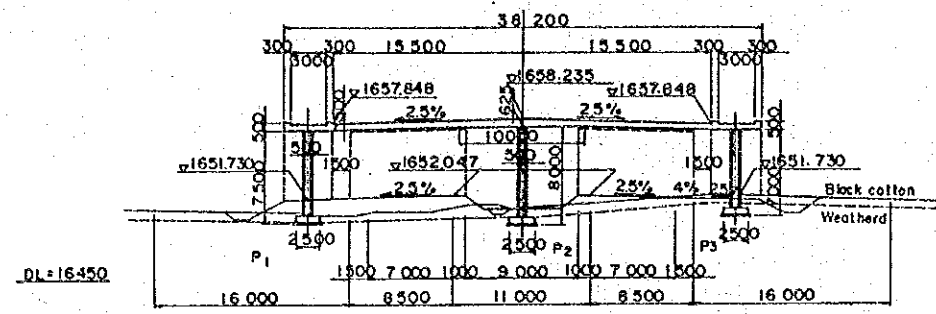
	SHEET NUMBER	DESCRIPTION	SCALE	M. O. P. W NUMBER
STRUCTURES				
	D 1-75	BRIDGES OF MAIN ROAD		
VOLUME 6		KOMBASA ROAD JUNCTION BRIDGE		
	1	GENERAL VIEW (1)	As Shown	
	2-5	SUPERSTRUCTURE (1)~(4)	"	
	6-10	ABUTMENTS (A ₁ , A ₂) (1)~(5)	"	
	11-12	WING WALL (A ₁) (1)~(2)	"	
	13-15	PIERS (P ₁ , P ₂) (1)~(3)	"	
	16-17	WING WALL (A ₂) (1)~(2)	"	
	18	PARAPET (1)	"	
		URURU MONUMENT JUNCTION BRIDGE		
	19	GENERAL VIEW (1)	As Shown	
	20-23	SUPERSTRUCTURE (1)~(4)	"	
	24-28	ABUTMENTS (A ₁ , A ₂) (1)~(5)	"	
	29-30	WING WALL (A ₁) (1)~(2)	"	
	31-33	PIERS (1)~(3)	"	
	34-35	WING WALL (A ₂) (1)~(2)	"	
	36	PARAPET (1)	"	
		RAILWAY BRIDGE		
	37-39	RAILWAY PROFILE (1)~(3)	As Shown	
	40	GENERAL VIEW (1)	"	
	41-44	SUPERSTRUCTURE (1)~(4)	"	
	45-50	ABUTMENTS (A ₁) (1)~(6)	"	
	51-52	WING WALL (A ₁) (1)~(2)	"	
	53-55	PIERS (1)~(3)	"	
	56-60	ABUTMENTS (A ₂) (1)~(5)	"	
	61-64	WING WALL (A ₂) (1)~(4)	"	
	65-74	RETAINING WALL (1)~(10)	"	
	75	PARAPET (1)	"	

	SHEET NUMBER	DESCRIPTION	SCALE	M. O. P. W NUMBER
	P 1-45	OVER BRIDGES		
VOLUME 7		PEDESTRIAN OVER BRIDGE (1), W=3m CH 1Km+180		
	1	GENERAL VIEW (1)	As Shown	
	2-3	SUPERSTRUCTURE (1)~(2)	"	
	4	ABUTMENTS (A ₁ , A ₂) (1)	"	
	5	PIER (1)	"	
	6	PARAPET (1)	"	
		PEDESTRIAN OVER BRIDGE (2), W=6m CH 15Km+980		
	7	GENERAL VIEW (1)	As Shown	
	8-10	SUPERSTRUCTURE (3)	"	
	11	ABUTMENTS (A ₁ , A ₂) (1)	"	
	12	PIER (1)	"	
	13	PARAPET (1)	"	
		OVER BRIDGE (1) W=6m CH 15Km+980		
	14	GENERAL VIEW (1)	As Shown	
	15-17	SUPERSTRUCTURE (1)~(3)	"	
	18-20	ABUTMENTS (A ₁ , A ₂) (1)~(3)	"	
	21-22	WING WALL (A ₁) (1)~(2)	"	
	23-25	PIERS (1)~(3)	"	
	26-27	WING WALL (A ₂) (1)~(2)	"	
	28	PARAPET (1)	"	
		OVER BRIDGE (2) W=10m CH 27Km+920		
	29	GENERAL VIEW (1)	As Shown	
	30-32	SUPERSTRUCTURE (1)~(3)	"	
	33-36	ABUTMENTS (A ₁ , A ₂) (1)~(4)	"	
	37-39	PIERS (1)~(3)	"	
	40-44	RETAINING WALL (1)~(5)	"	
	45	PARAPET (1)	"	

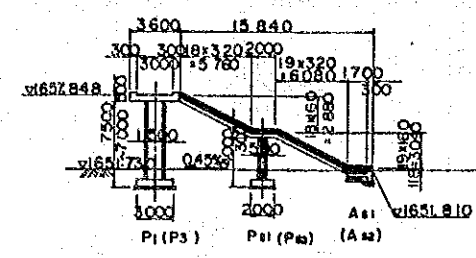
	SHEET NUMBER	DESCRIPTION	SCALE	M. O. P. W NUMBER
	01-183	BOX CULVERTS		
VOLUME 8		VEHICLE BOX CULVERTS		
	1-15	CH 15+516.37 (1)~(9) W=10.00 H=5.80	As Shown	
	16-25	CH 19+500.00 (1)~(10) W= 8.00 H=5.60	"	
	26-52	CH 20+930.04 (1)~(27) W=10.00 H=6.00	"	
	53-62	CH 23+169.41 (1)~(10) W= 8.50 H=5.75	"	
	63-72	CH 23+760.00 (1)~(10) W= 8.50 H=5.60	"	
	73-82	CH 24+980.00 (1)~(10) W= 8.50 H=5.60	"	
	83-106	CH 26+464.00 (1)~(24) W= 8.50 H=5.65	"	
		WATER BOX CULVERTS		
	117-117	CH 13+978.00 (1)~(1) W= 3.00 H=3.00	As Shown	
	118-123	CH 14+934.00 (1)~(6) W= 2.00 H=3.00	"	
	124-133	CH 15+560.00 (1)~(10) W= 3.50 H=3.00	"	
	134-143	CH 15+157.00XGONG J, C B SLIP (1)~(10) W=3.50 H=3.00	"	
	144-161	CH 26+335.00 (1)~(18) W= 3.50 H=3.50	"	
		PEDESTRIAN BOX CULVERTS		
162-168	CH 18+400.00 (1)~(7) W= 3.00 H=3.00	As Shown		
169-172	CH 20+200.00 (1)~(4) W= 3.00 H=3.00	"		
173-176	CH 22+880.00 (1)~(4) W= 3.00 H=3.00	"		
177-183	CH 26+222.00 (1)~(7) W= 3.00 H=3.00	"		

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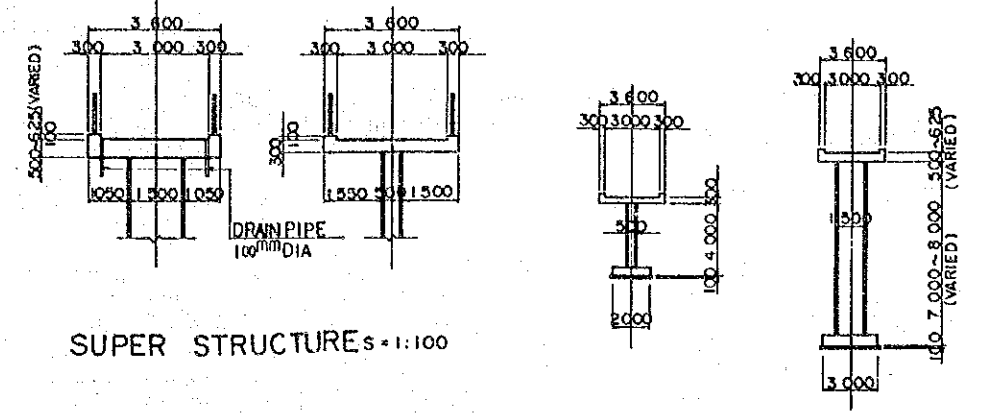
M.O.P.W. ROADS DEPT. DRG. NO.



ELEVATION

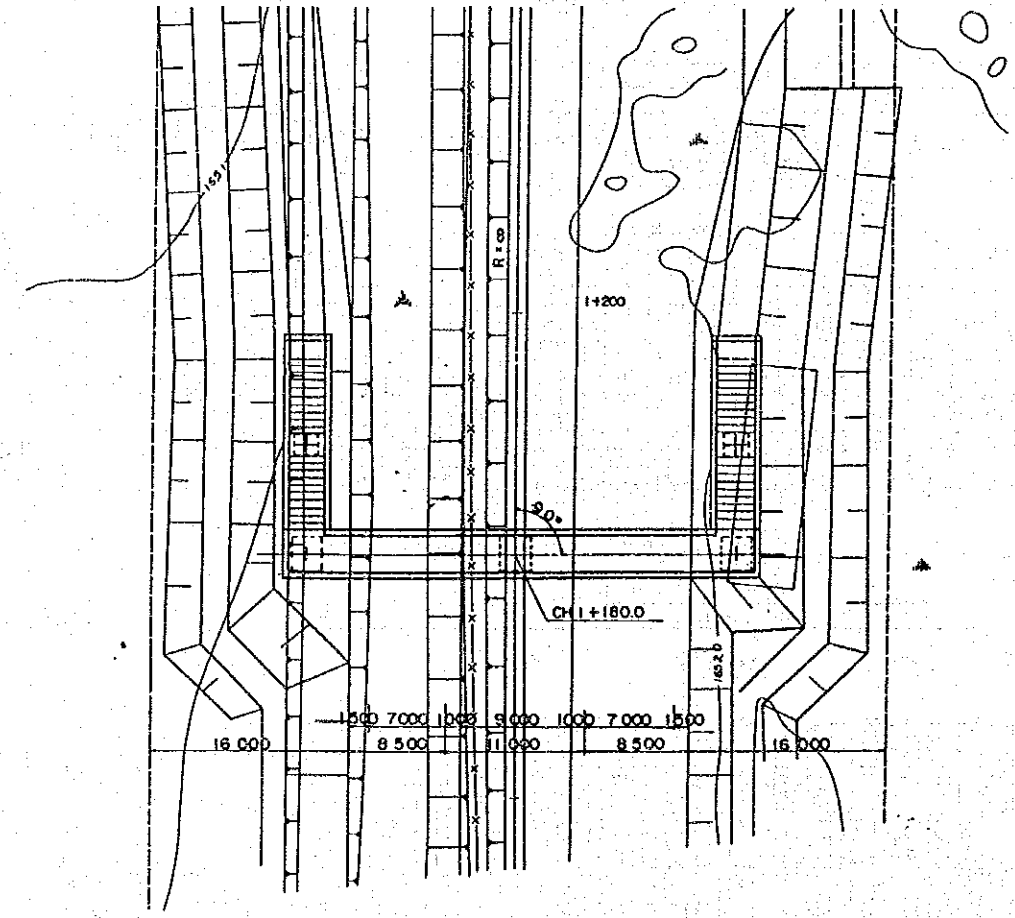


PROFILE s=1:300

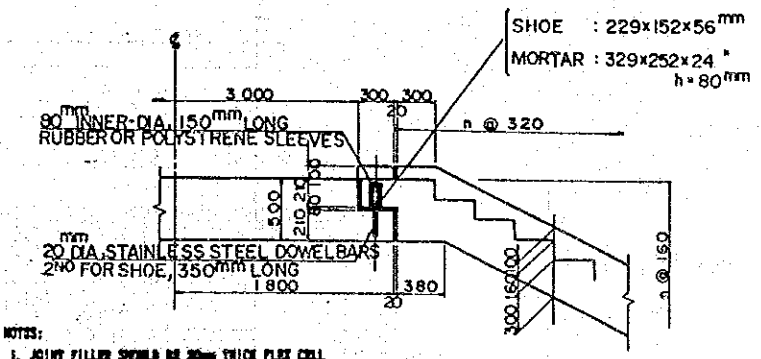


SUPER STRUCTURE s=1:100

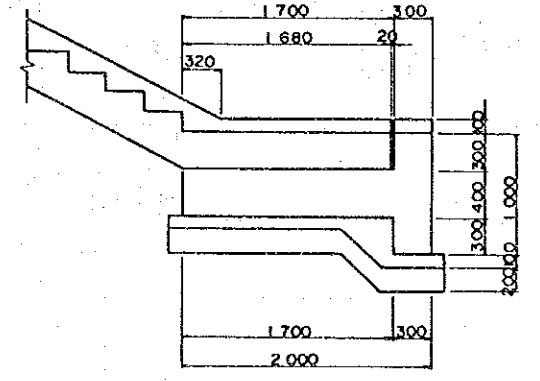
ELEVATION OF PIER s=1:200



PLAN s=1:300



JOINT SECTION



END SECTION

DETAIL OF PEDESTAL s=1:30

- NOTES:
1. JOINT FILLER SHOULD BE 30mm THICK FLEX CELL OR SIMILAR APPROVED LOW COMPRESSION MATERIAL.
 2. JOINT SEALANT SHOULD BE THIOFLEX 900 OR SIMILAR APPROVED POLYISOPRENE.

- NOTES:
- THE FOUR CORNERS OF THE PILLAR SHOULD BE MADE HALF CIRCLES OF 100mm RADIUS.

No ① PEDESTRIAN BRIDGE

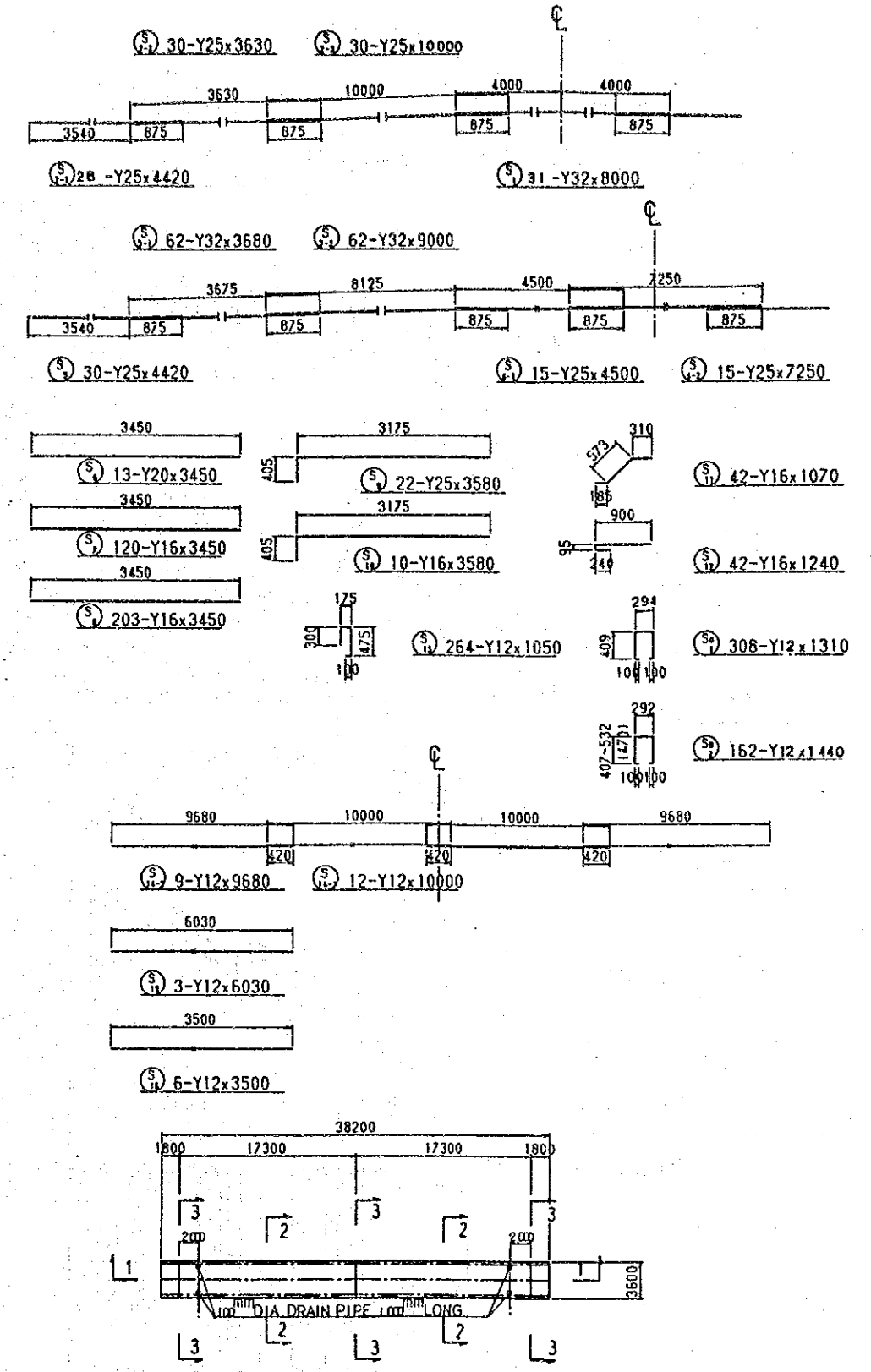
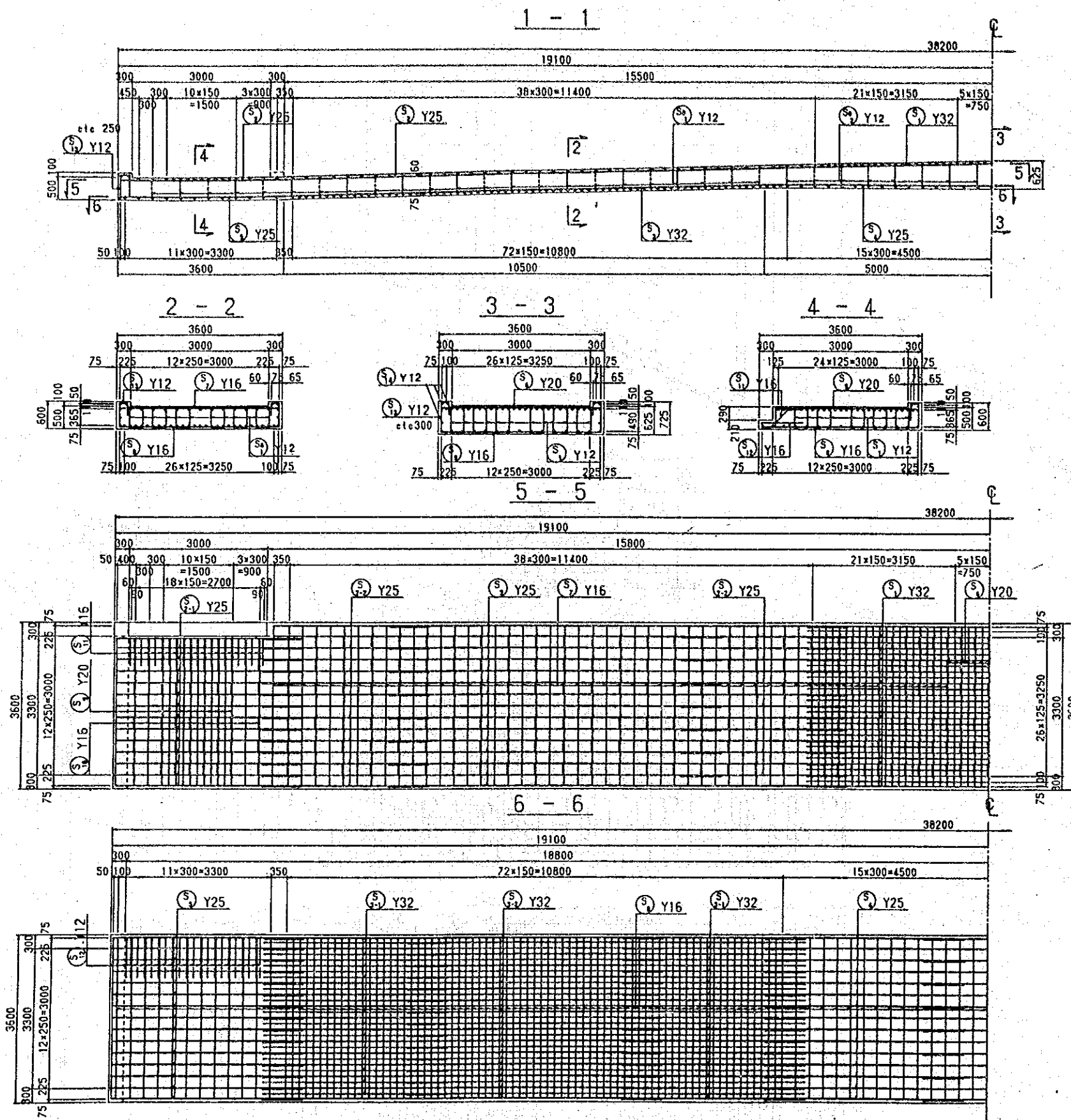
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REVISIONS		JAPAN INTERNATIONAL COOPERATION AGENCY	CHIEF ENGINEER (ROADS)	SEN SUPT. ENG. (DESIGN)	SCALES	NAIROBI BYPASS	P
DESCRIPTION	DATE						
		CHIEF SUPT. ENG. (DESIGN)	SUPT. ENGINEER (DESIGN)	PROJECT ENGINEER	AS SHOWN	PEDESTRIAN OVER BRIDGE (1), U-3a CH 11-140 GENERAL VIEW	SHEET 1 OF 45

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 TRACED BY
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MOPW ROADS DEPT. DRG NO.



REVISIONS	
DESCRIPTION	DATE

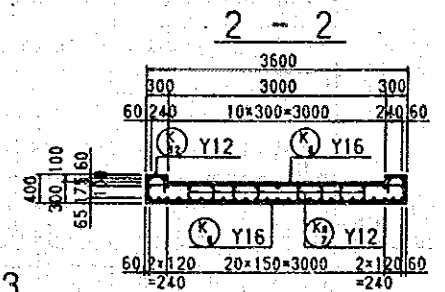
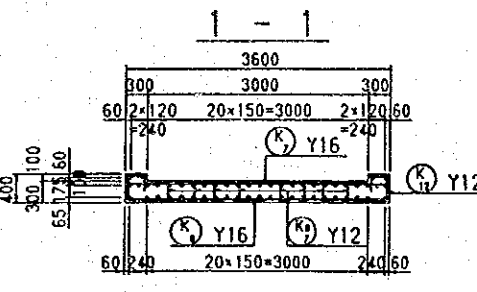
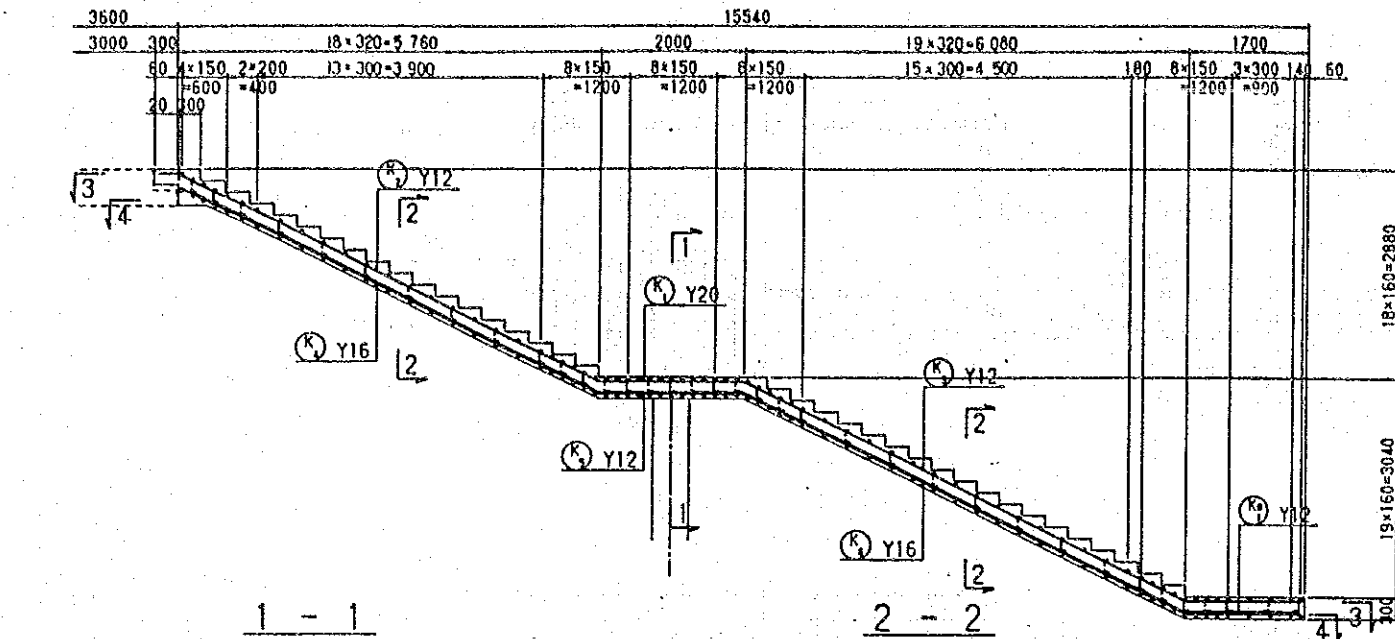
JAPAN INTERNATIONAL COOPERATION AGENCY
 CHIEF ENGINEER (ROADS)
 CHIEF SUPT. ENG. (DESIGN)

SEN SUPT. ENG. (DESIGN)
 SUPT. ENGINEER (DESIGN)
 PROJECT ENGINEER

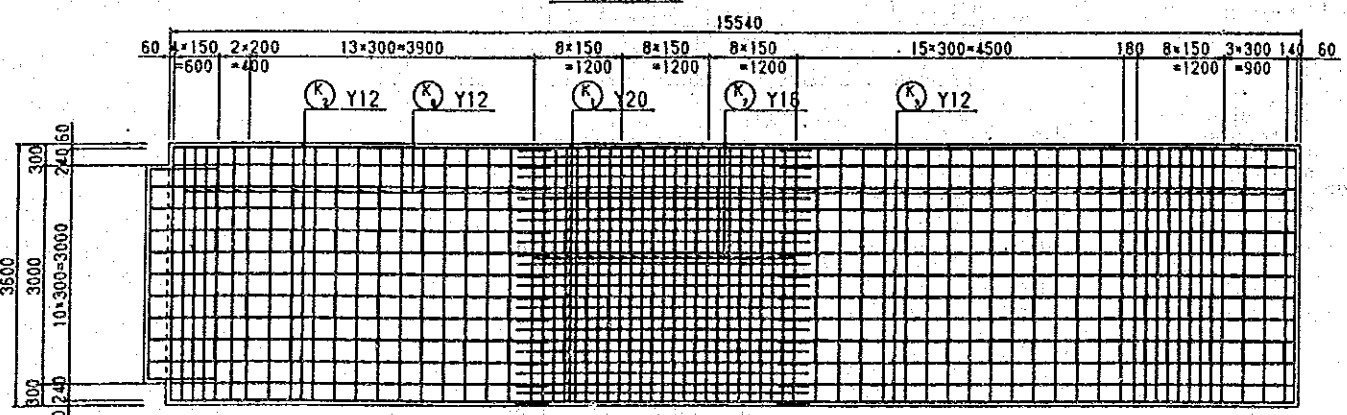
SCALES
 1:50

NAIROBI BYPASS
 PEDESTRIAN OVER BRIDGE (1), W-30 CR 11x110
 SUPERSTRUCTURE (1)

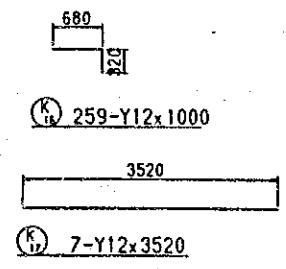
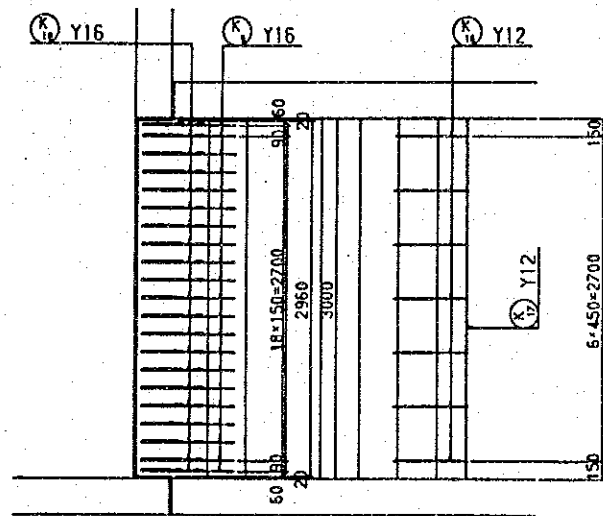
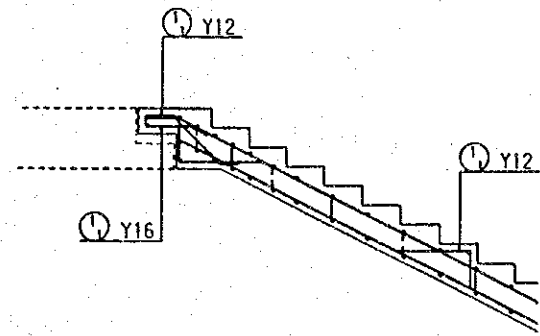
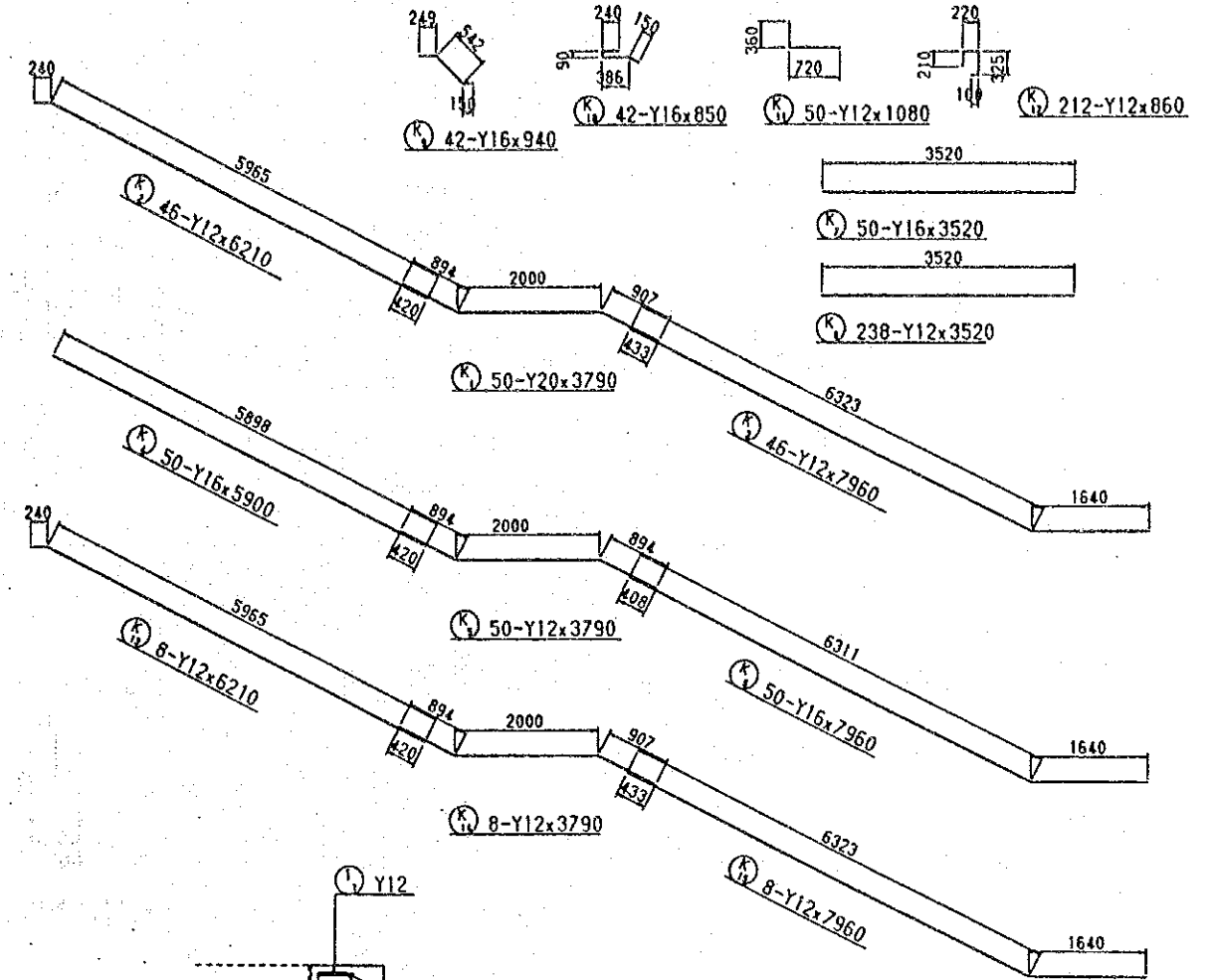
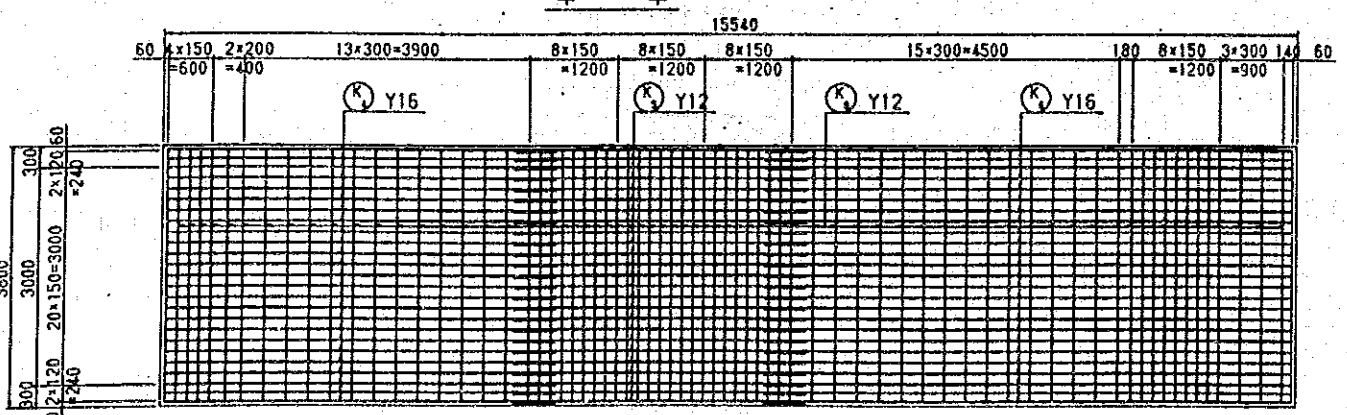
P
 SHEET 2 OF 45



3 - 3



4 - 4



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 MAPPING BY _____ TRACED BY _____
 LOCATION BY _____ CHECKED BY _____
 M.O.P.W. ROADS DEPT DRG NO. _____

REVISIONS	
DESCRIPTION	DATE

JAPAN INTERNATIONAL COOPERATION AGENCY

CHIEF ENGINEER (ROADS)
CHIEF SUPT ENG (DESIGN)

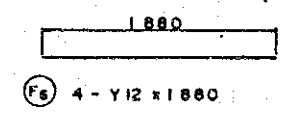
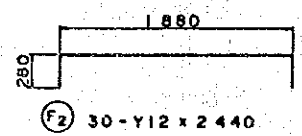
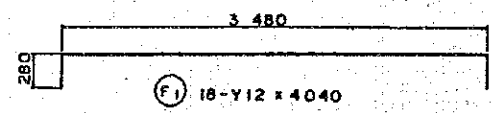
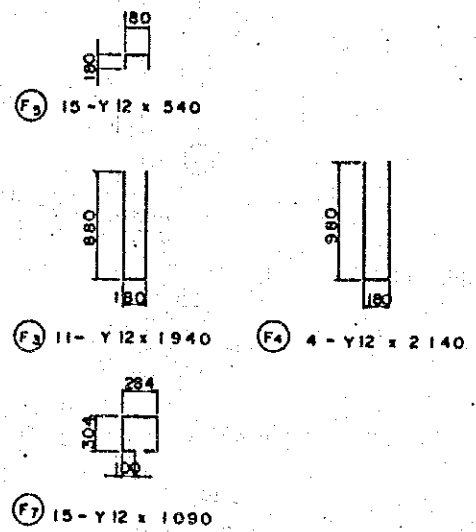
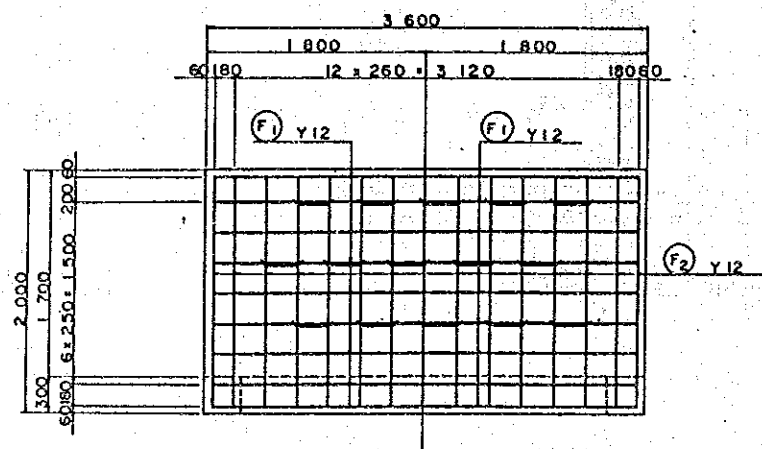
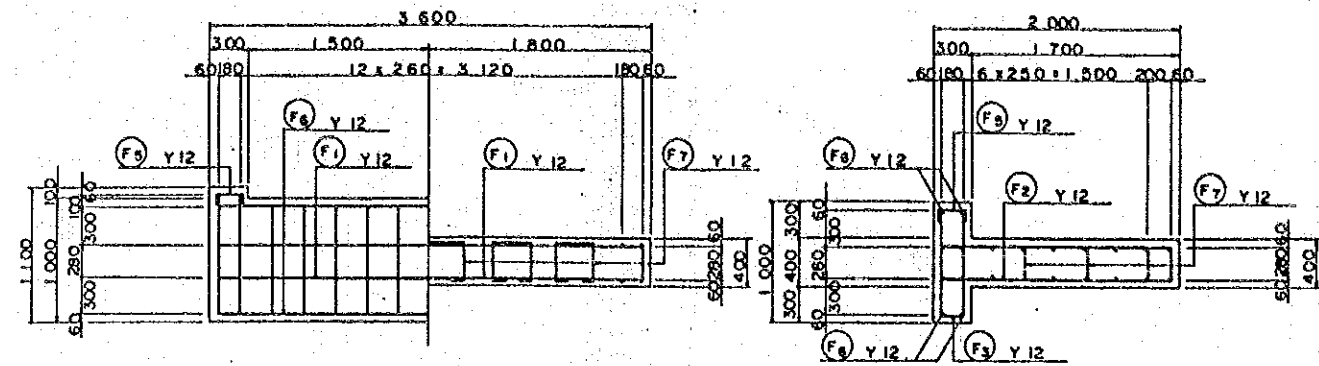
SEN SUPT. ENG. (DESIGN)
SUPT ENGINEER (DESIGN)
PROJECT ENGINEER

SCALES
1:30, 1:50

NAIROBI BYPASS
PEDESTRIAN OVER BRIDGE (1), 0-3m CR 10x100
SUPERSTRUCTURE (2)

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LOCATION BY	CHECKED BY

M.O.P.W. ROADS DEPT. DRG. NO.



AS1, AS2 S=1:30

REVISIONS	
DESCRIPTION	DATE

JAPAN INTERNATIONAL COOPERATION AGENCY

CHIEF ENGINEER (ROADS)
CHIEF SUPT. ENG. (DESIGN)

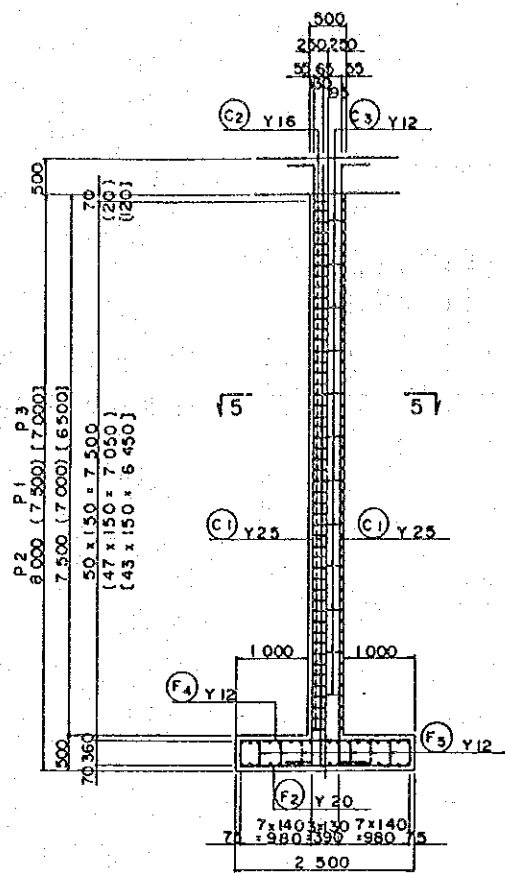
SEN SUPT. ENG. (DESIGN)
SUPT. ENGINEER (DESIGN)
PROJECT ENGINEER

SCALES
1:30

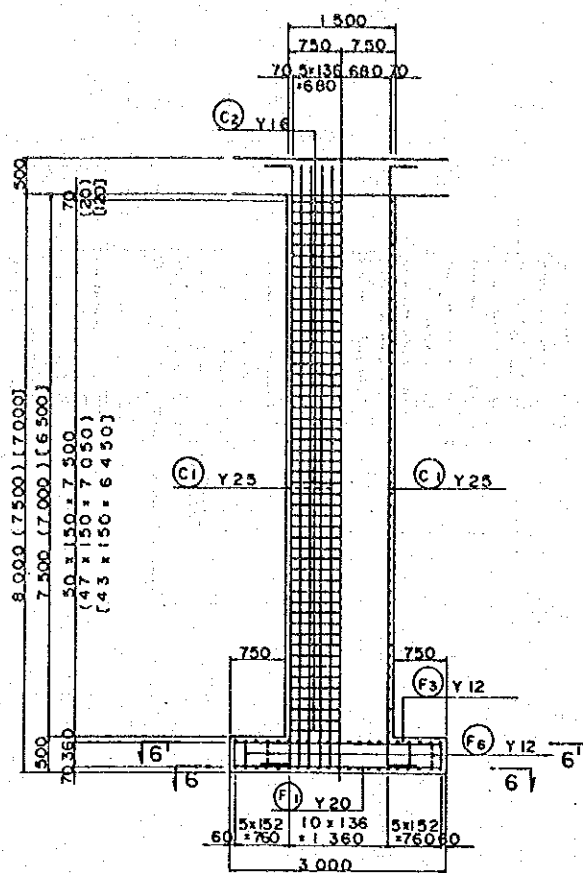
NAIROBI BYPASS
PEDESTRIAN OVER BRIDGE(1), 10+30 CH 10x180
ABUTMENTS (A1, A2)

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 MAPPING BY _____ TRACED BY _____
 LOCATION BY _____ CHECKED BY _____

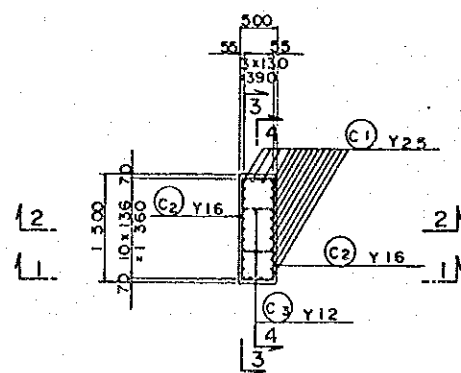
M.O.P.W. ROADS DEPT. DRG. NO. _____



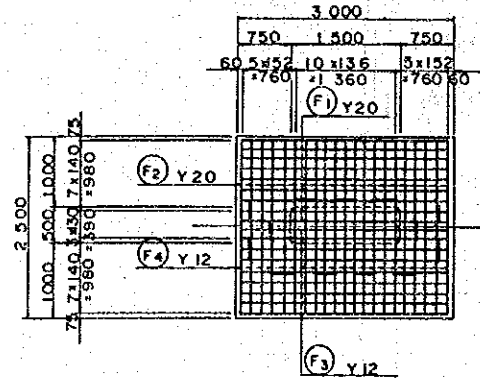
1-1 2-2



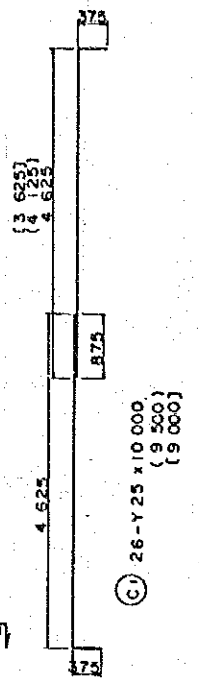
3-3 4-4



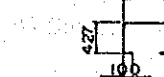
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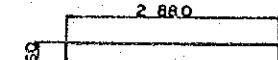
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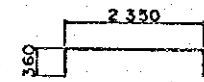
(C2) 100-Y16 x 2 360 (94) (88)



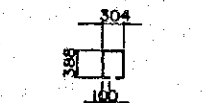
(C3) 12-Y12 x 1 640



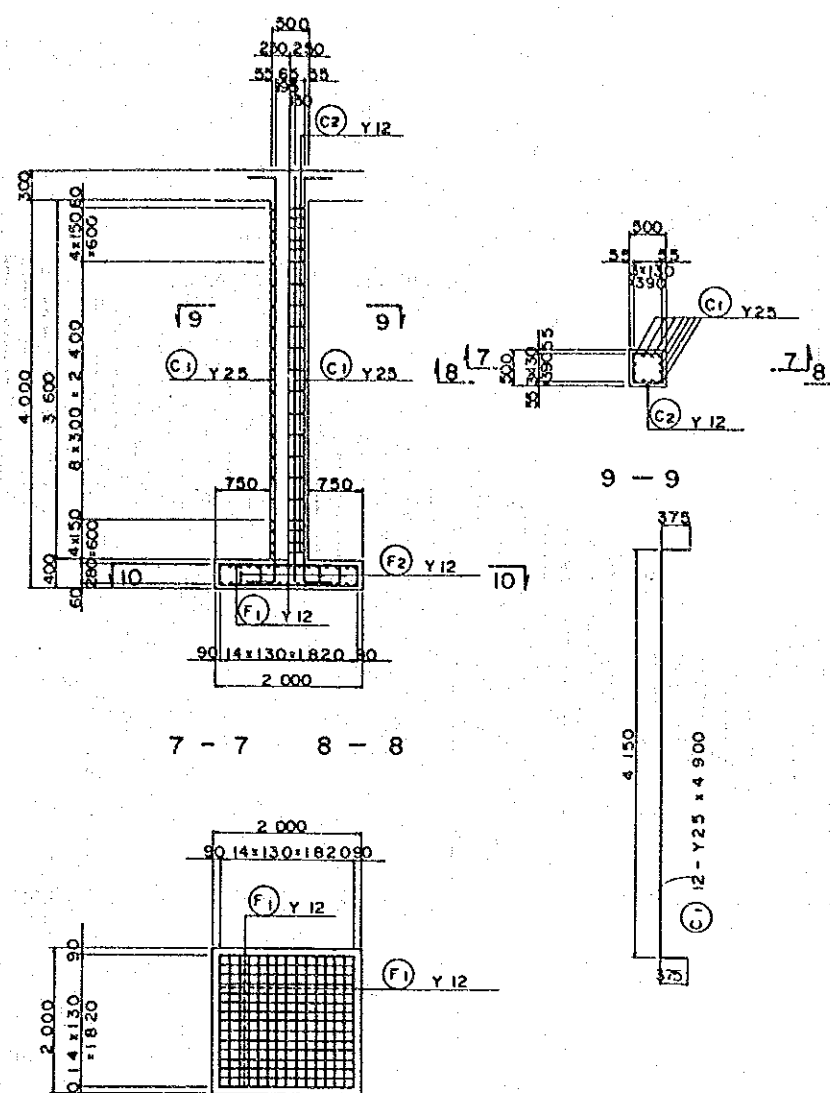
(F1) 18-Y20 x 3 600 (F8) 18-Y12 x 3 600



(F2) 21-Y20 x 3 070 (F4) 21-Y12 x 3 070



(F5) 28-Y12 x 1 280 (F6) 4-Y12 x 1 400



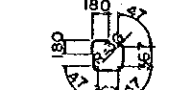
7-7 8-8

9-9

10-10

(F1) 60-Y12 x 2 380

(F2) 12-Y12 x 1 090



(C2) 16-Y12 x 2 000

REVISIONS	
DESCRIPTION	DATE

JAPAN INTERNATIONAL COOPERATION AGENCY	CHIEF ENGINEER (ROADS)	SEN SUPT. ENG (DESIGN)
	CHIEF SUPT. ENG (DESIGN)	SUPT. ENGINEER (DESIGN)
		PROJECT ENGINEER

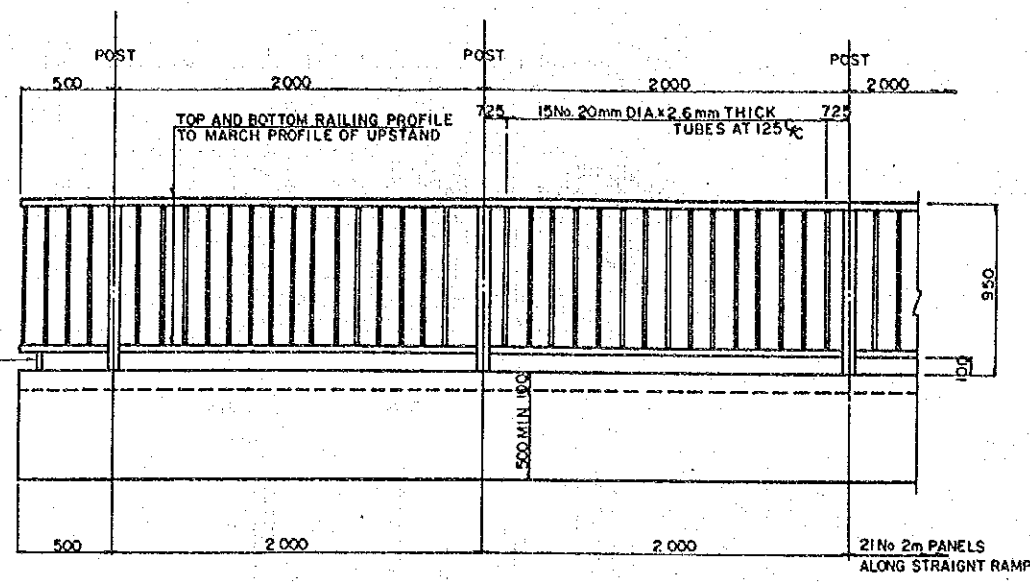
SCALES
1:50

NAIROBI BYPASS
PEDESTRIAN OVER BRIDGE (1), PIER NO. CH 15+100
PIER

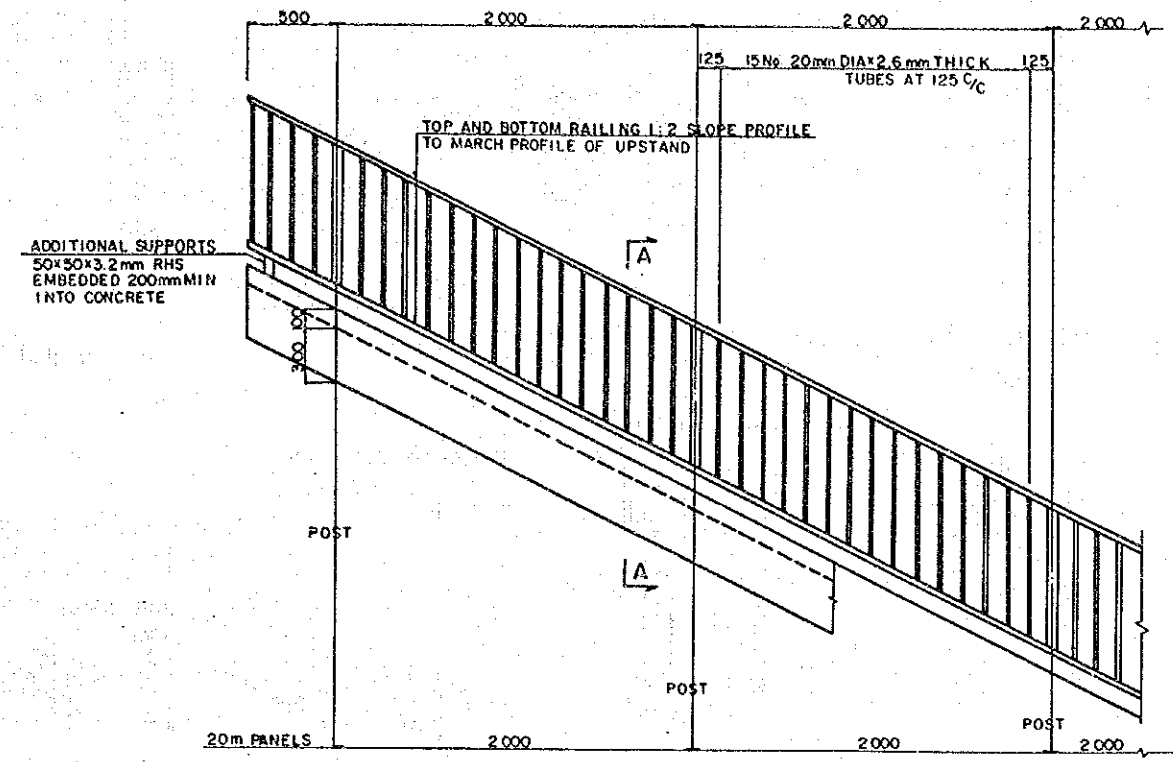
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SHEET 5 OF 45

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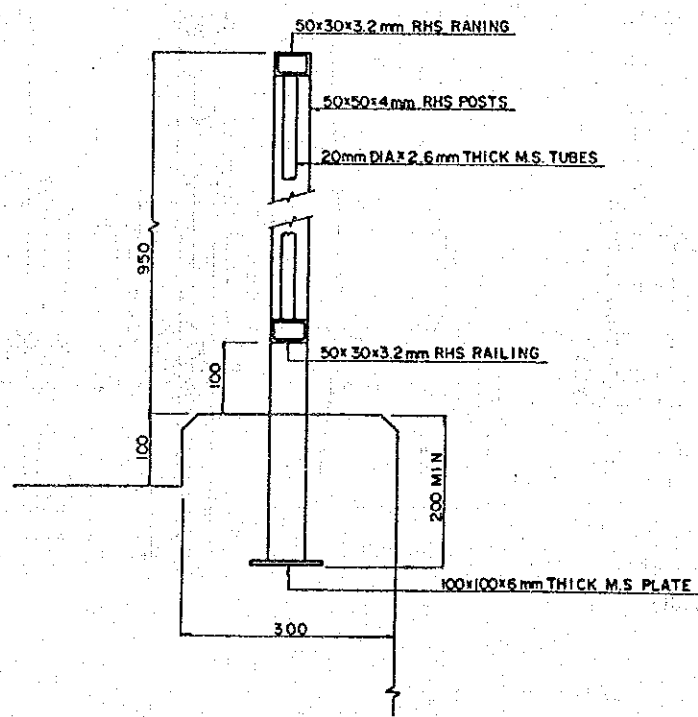
MOPW ROADS DEPT DRG NO



PROFILE SCALE 1:20



PROFILE SCALE 1:20



CROSS SECTION SCALE 1:5

NOTES

1. PEDESTRIAN PARAPET TO MATCH THE SHAPE AND PROFILE OF THE STRAIGHT AND SLOPE.
2. ALL RECTANGULAR HOLLOW SECTIONS (RHS) TO CONFORM TO BS 4848 PART 2 AND BS 1387:1967, IN STEEL TO BS 4360, GRADE 43C.
3. ALL COMPONENTS TO RECEIVE TWO COATS OF RED OXIDE PAINT AND AFTER ERECTION A FINAL COAT OF SILVER/ALUMINIUM PAINT.
4. ALL OPEN ENDS OF RHS TO BE BLOCKED OFF.
5. ALL WELDS TO BE 6mm FILLET FULL WIDTH.

PEDESTRIAN PARAPET

REVISIONS	
DESCRIPTION	DATE

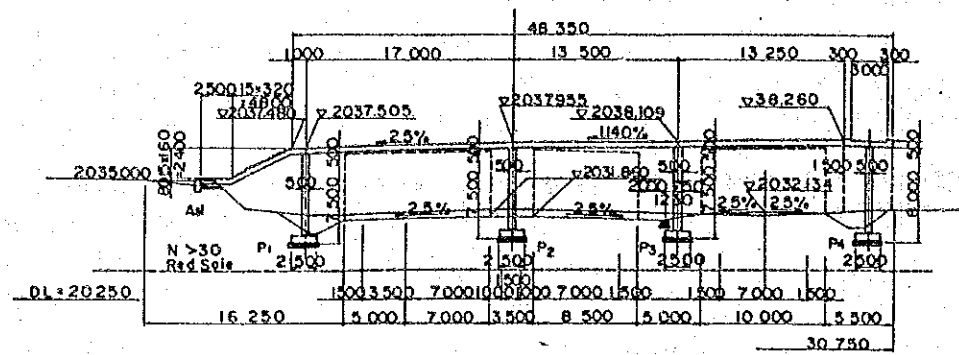
JAPAN INTERNATIONAL COOPERATION AGENCY	CHIEF ENGINEER (ROADS)
	CHIEF SUPT ENG (DESIGN)

SEN SUPT ENG (DESIGN)	
SUPT ENGINEER (DESIGN)	
PROJECT ENGINEER	

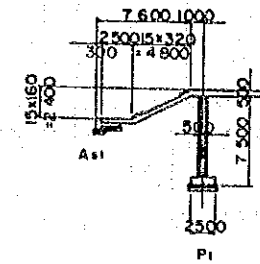
SCALES	
1:5, 1:20	

NAIROBI BYPASS
PEDESTRIAN OVER BRIDGE(1), 0+30 CH 110+100
PARAPET

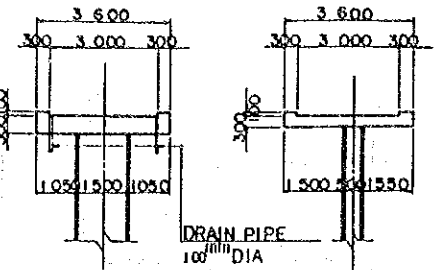
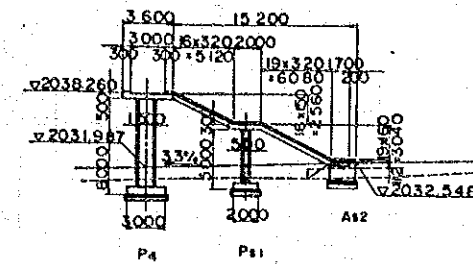
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SHEET 6 OF 45



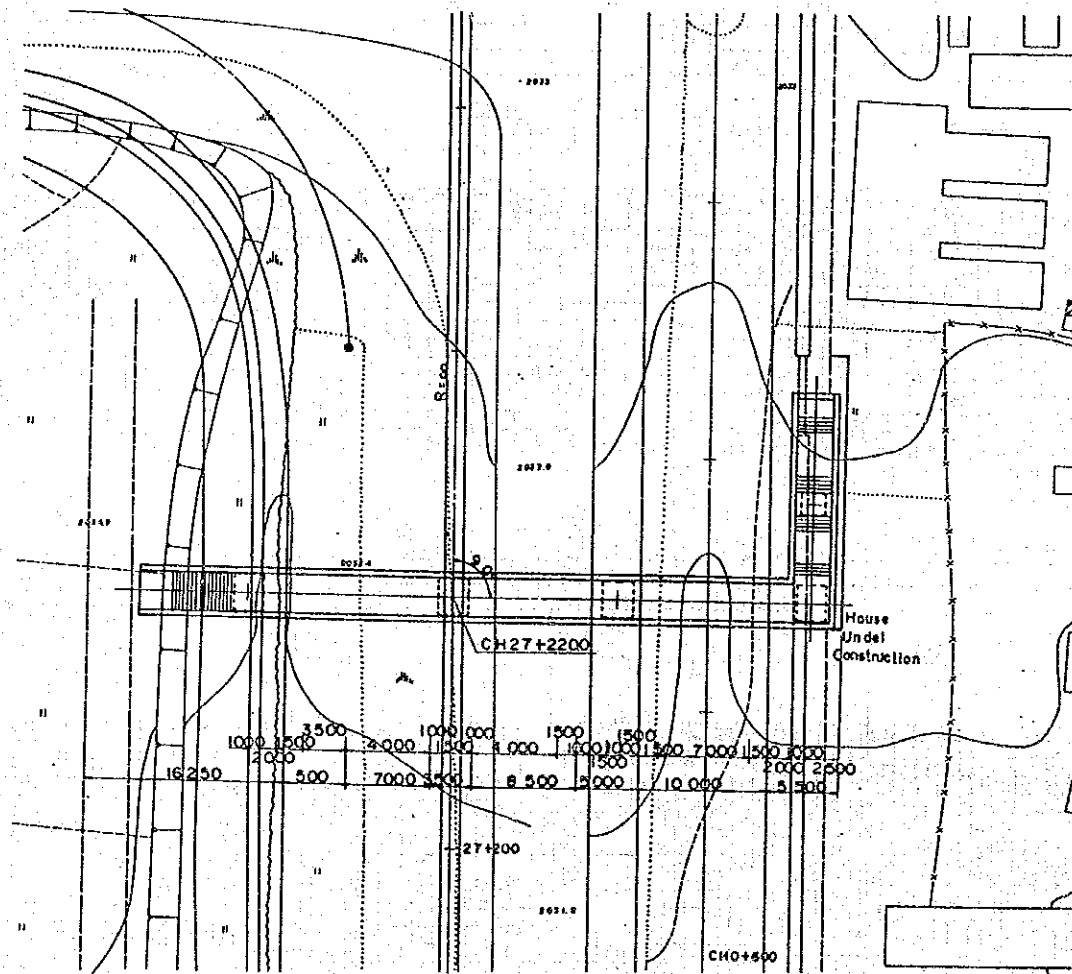
ELEVATION s=1:300



STAIRCASE

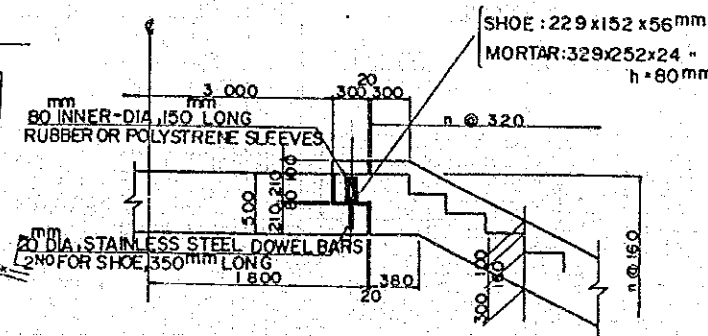


SUPERSTRUCTURE s=1:100

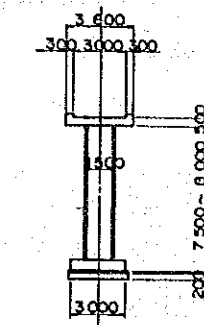


PLAN s=1:300

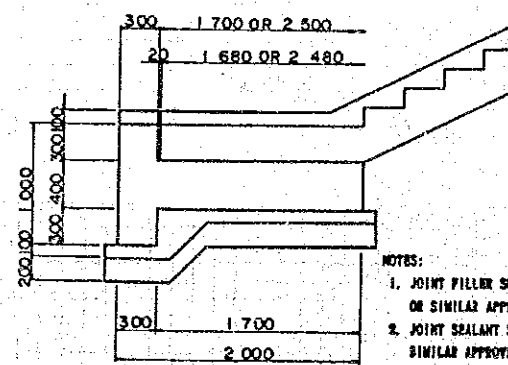
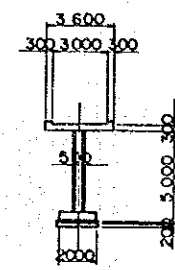
PROFILE s=1:300



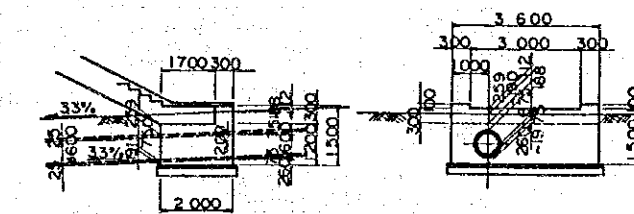
JOINT SECTION s=1:300



ELEVATION OF PIER s=1:200



END SECTION s=1:300 (As1)



END SECTION OF PECLAR s=1:100 (As2)

NOTES:
 1. JOINT FILLER SHOULD BE 20mm THICK PLEX CELL OR SIMILAR APPROVED LOW COMPRESSION MATERIAL.
 2. JOINT SEALANT SHOULD BE THIOFLEX 600 OR SIMILAR APPROVED POLYUREA PHIPD.

DETAIL OF PEDESTAL

NOTES:
 THE FOUR CORNERS OF THE PILLAR SHOULD BE MADE HALF CIRCLES OF 100mm RADIUS.

NO ② PEDESTRIAN BRIDGE

AERIAL PHOTO BY	SURVEYED BY
MAPPING BY	TRACED BY
LOCATION BY	CHECKED BY

MOPW ROADS DEPT DRG NO.

REVISIONS	DESCRIPTION	DATE

JAPAN INTERNATIONAL COOPERATION AGENCY	CHIEF ENGINEER (ROADS)
	CHIEF SUPT ENG (DESIGN)

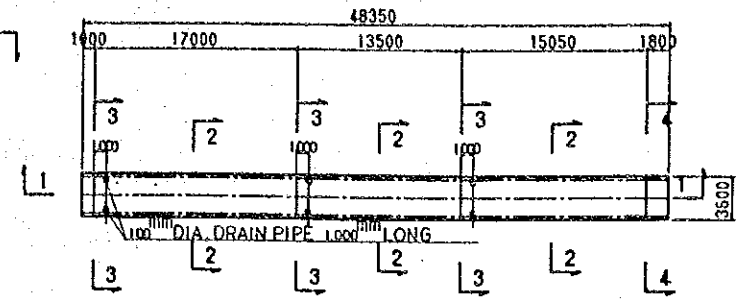
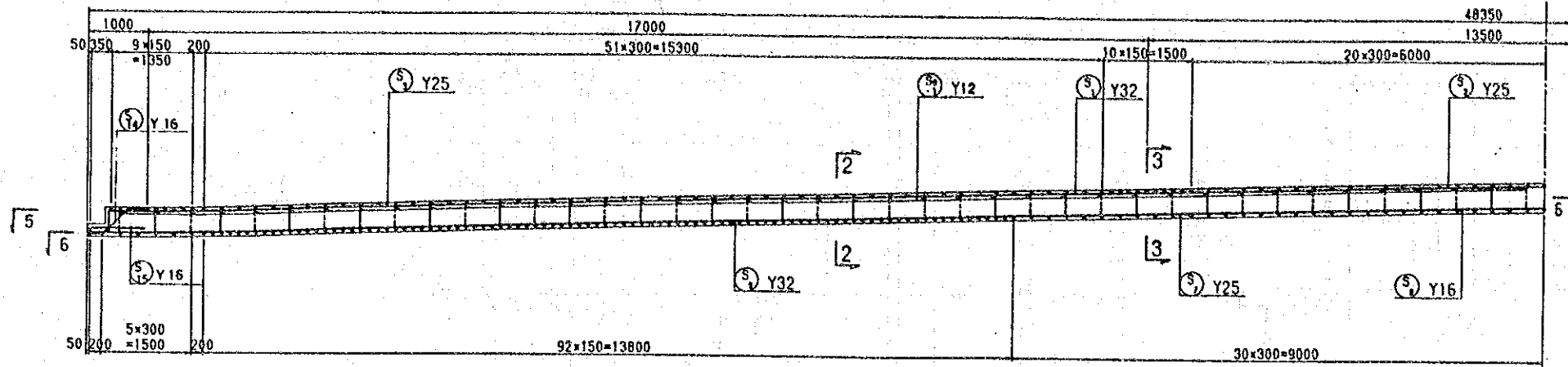
SEN SUPT. ENG (DESIGN)	
SUPT ENGINEER (DESIGN)	
PROJECT ENGINEER	

SCALES	AS SHOWN
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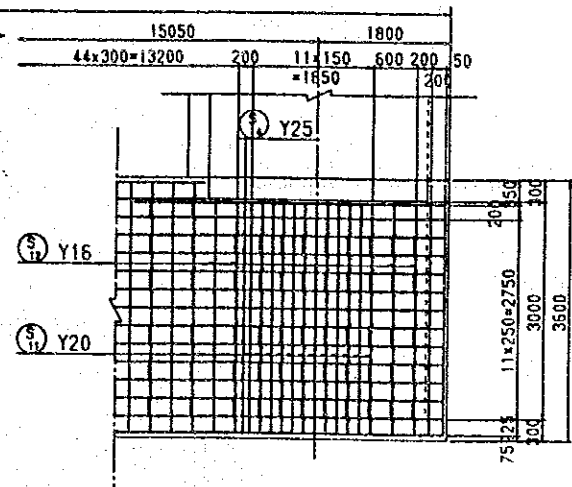
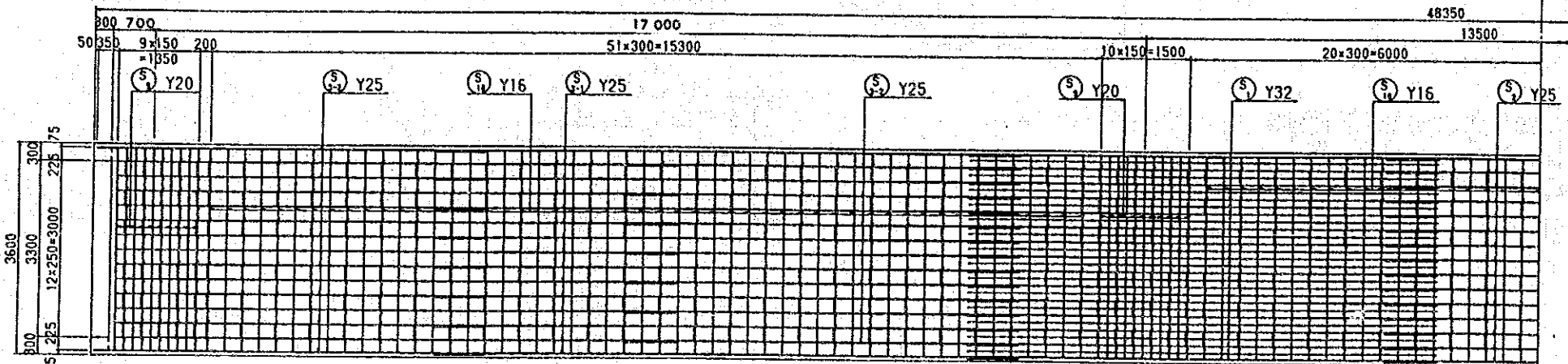
NAIROBI BYPASS	PEDESTRIAN OVER BRIDGE(S), R=2m CC 16mm@200
	GENERAL VIEW

P	SHEET 7 OF 45
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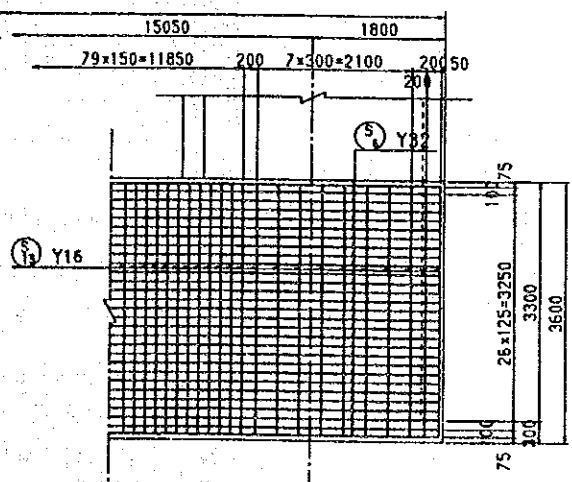
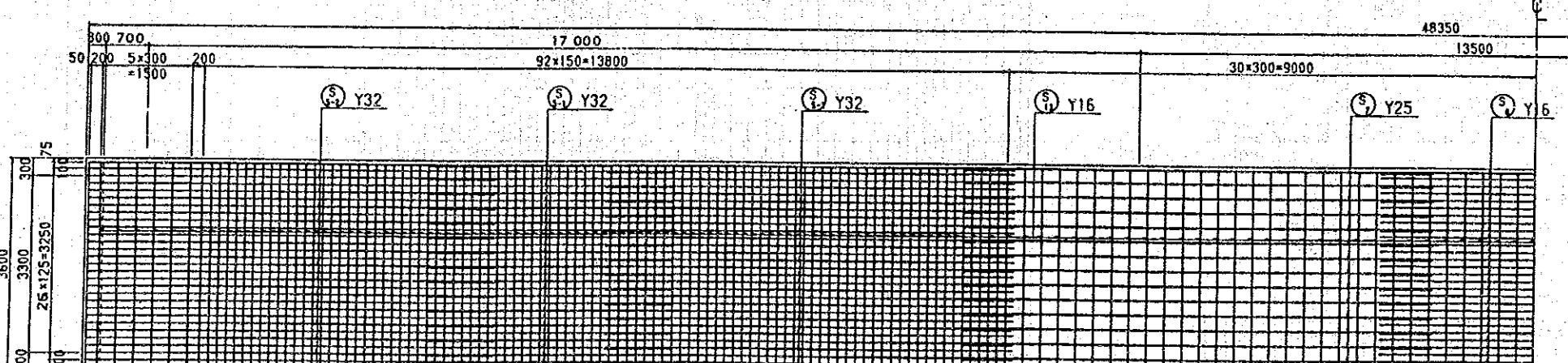
1 - 1



5 - 5



6 - 6



SURVEYED BY
 MAPPING BY
 AERIAL PHOTO BY
 TRACED BY
 LOCATION BY
 CHECKED BY

M.O.P.W. ROADS DEPT DRG NO.

REVISIONS	
DESCRIPTION	DATE

JAPAN INTERNATIONAL COOPERATION AGENCY

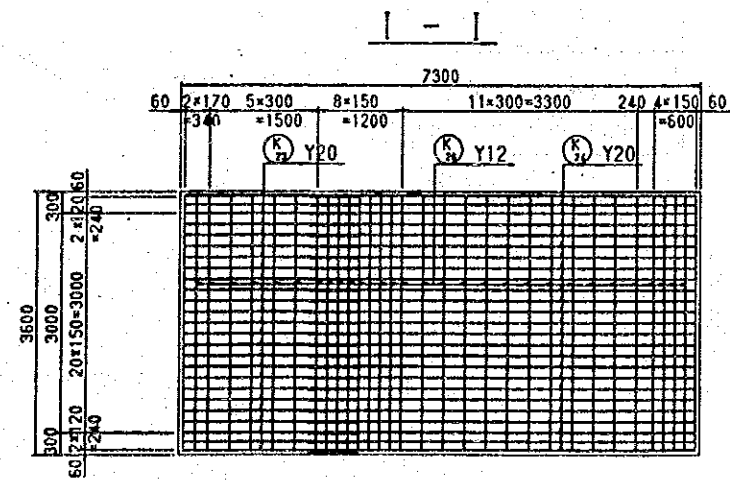
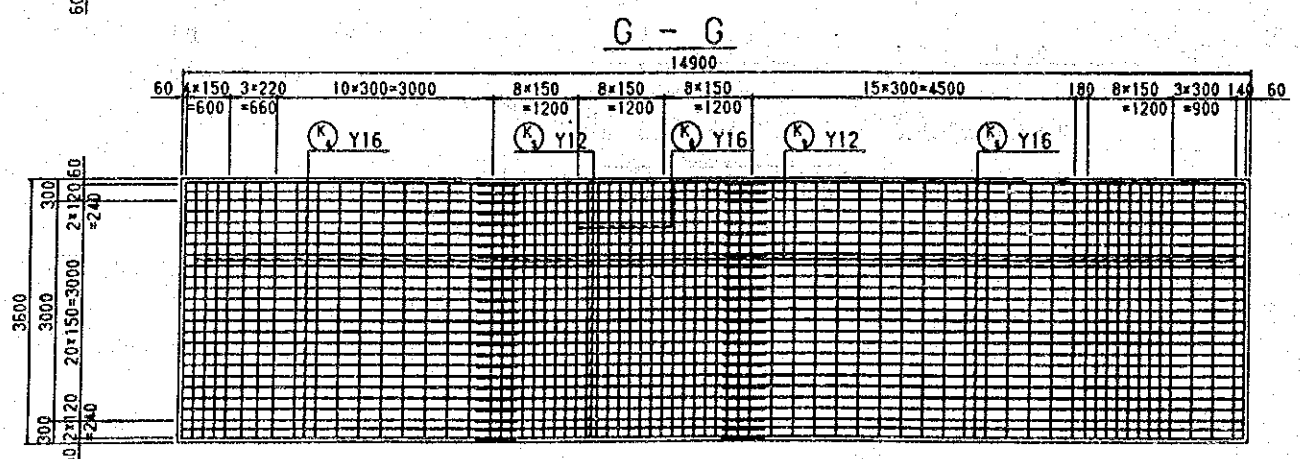
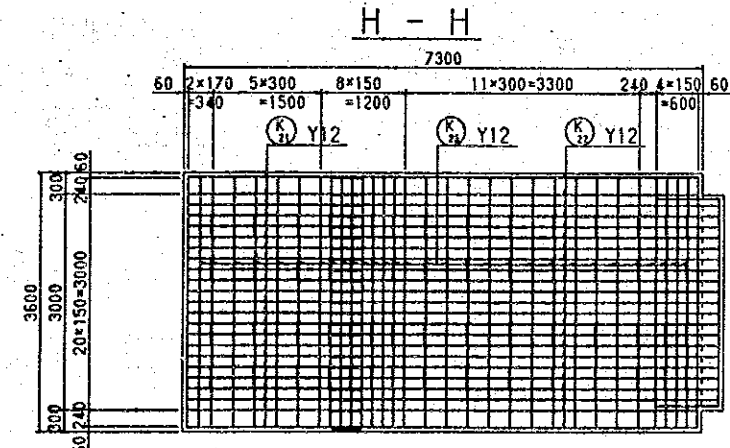
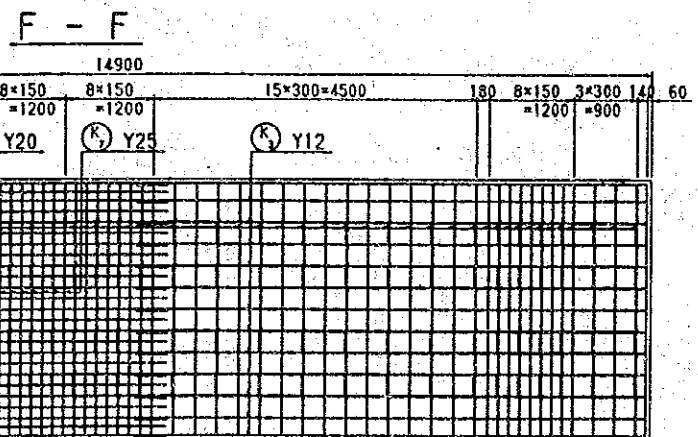
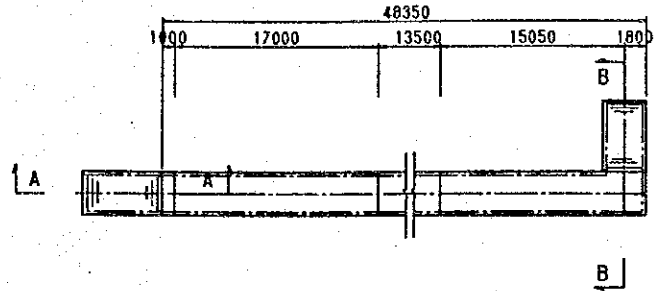
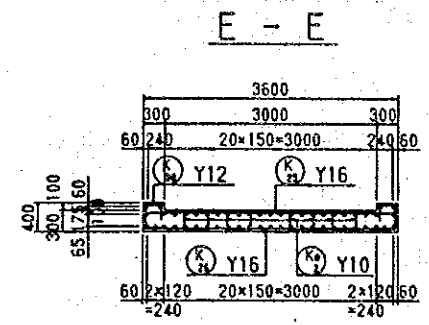
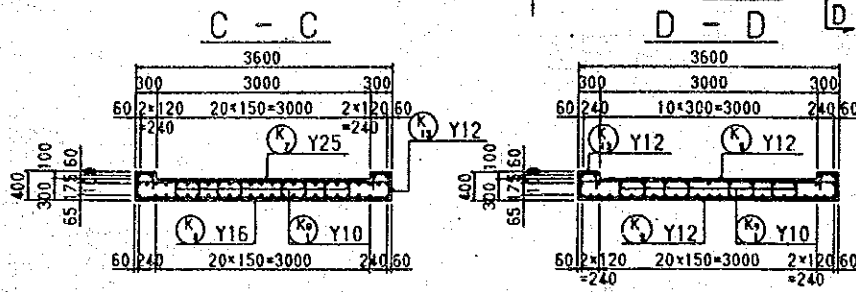
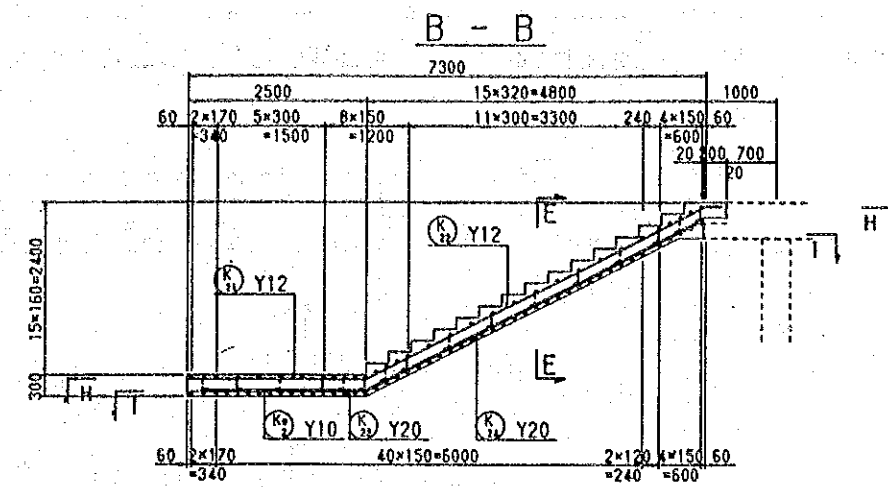
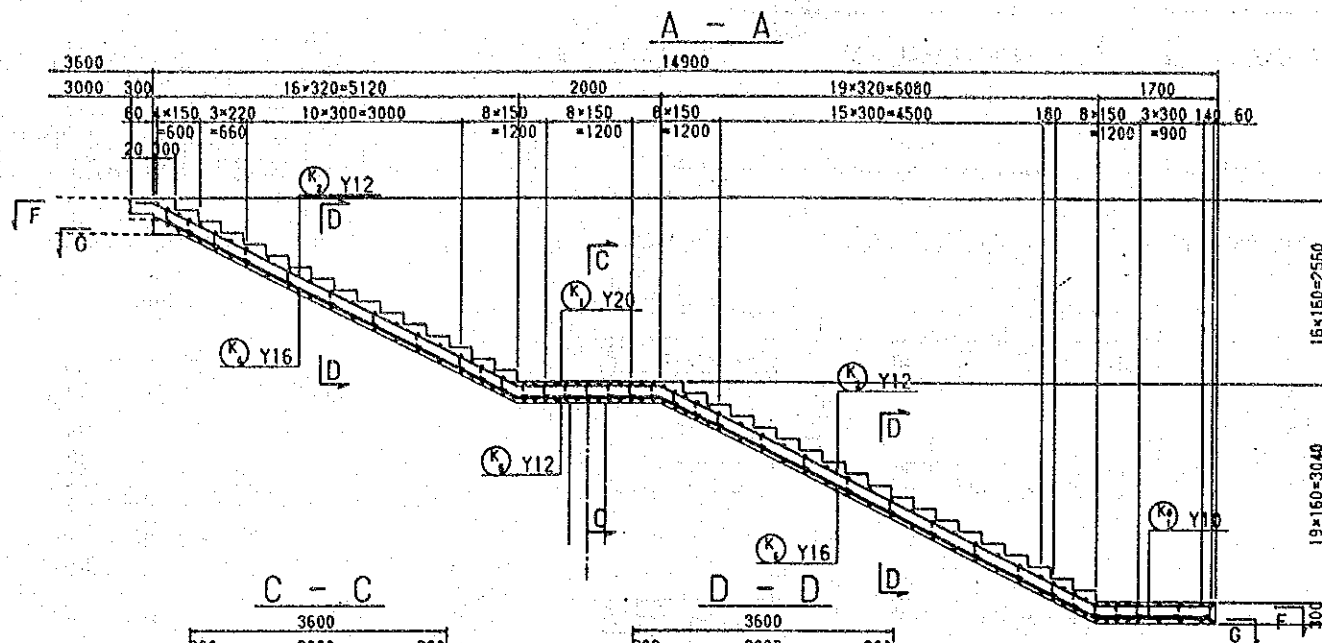
CHIEF ENGINEER (ROADS)
 CHIEF SUPT ENG (DESIGN)

SEN SUPT. ENG (DESIGN)
 SUPT ENGINEER (DESIGN)
 PROJECT ENGINEER

SCALES
 1:50

NAIROBI BYPASS
 PROESTRIAN OVER BRIDGE(2), R-2a CG 1510/990
 SUPERSTRUCTURE (1)

P
 SHEET 6 OF 45



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REVISIONS	
DESCRIPTION	DATE

JAPAN INTERNATIONAL COOPERATION AGENCY

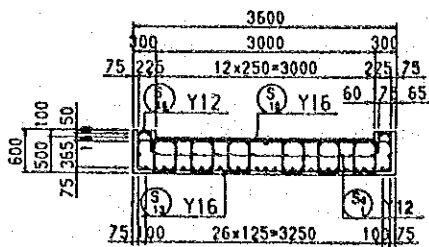
CHIEF ENGINEER (ROADS)
 CHIEF SUPT. ENG. (DESIGN)

SEN SUPT. ENG. (DESIGN)
 SUPT. ENGINEER (DESIGN)
 PROJECT ENGINEER

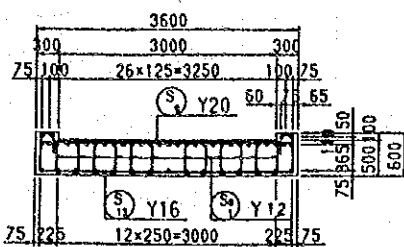
SCALES
 1:50

NAIROBI BYPASS
 'PROESTRIAK OVER BRIDGE(2), 0-6m CR 151+000
 SUPERSTRUCTURE (2)

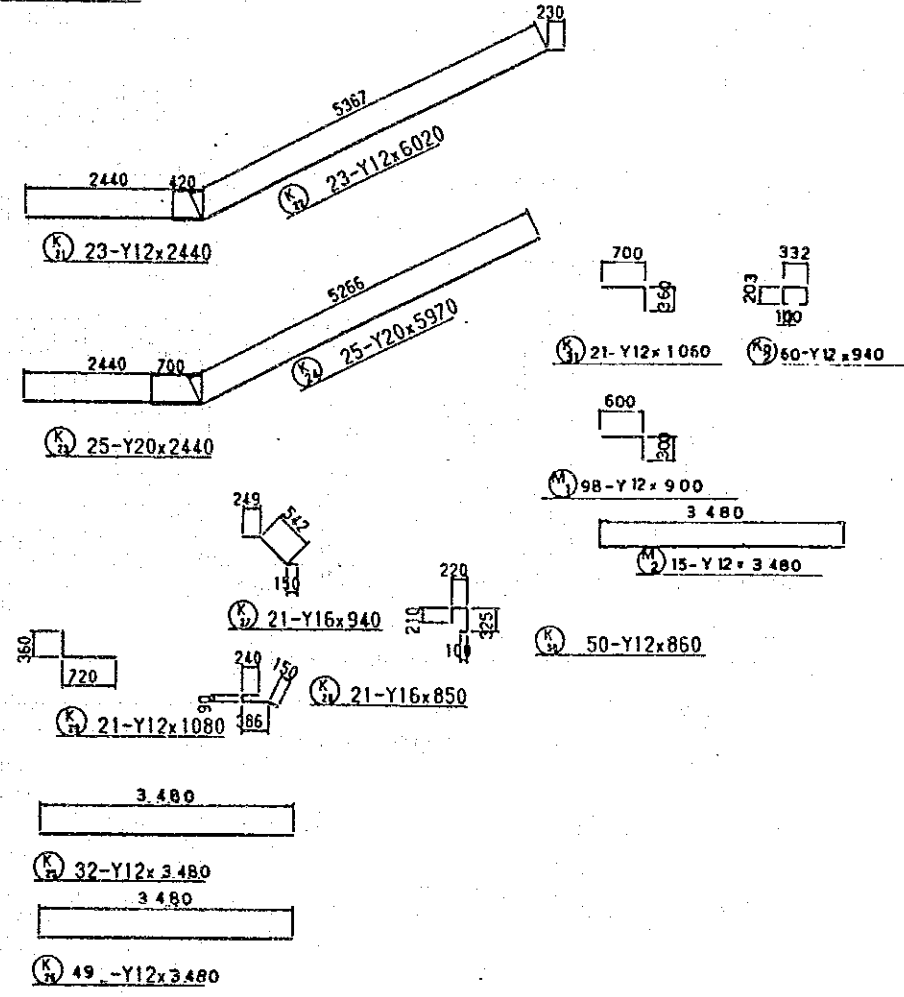
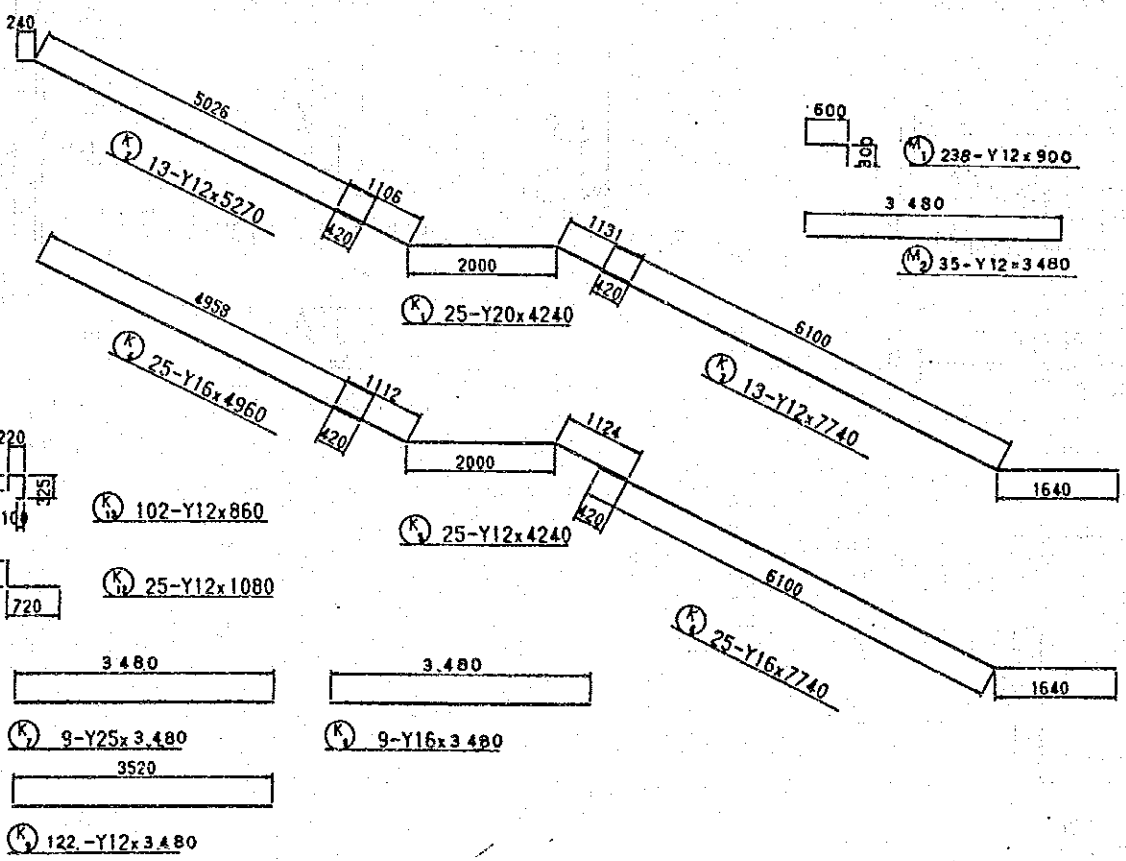
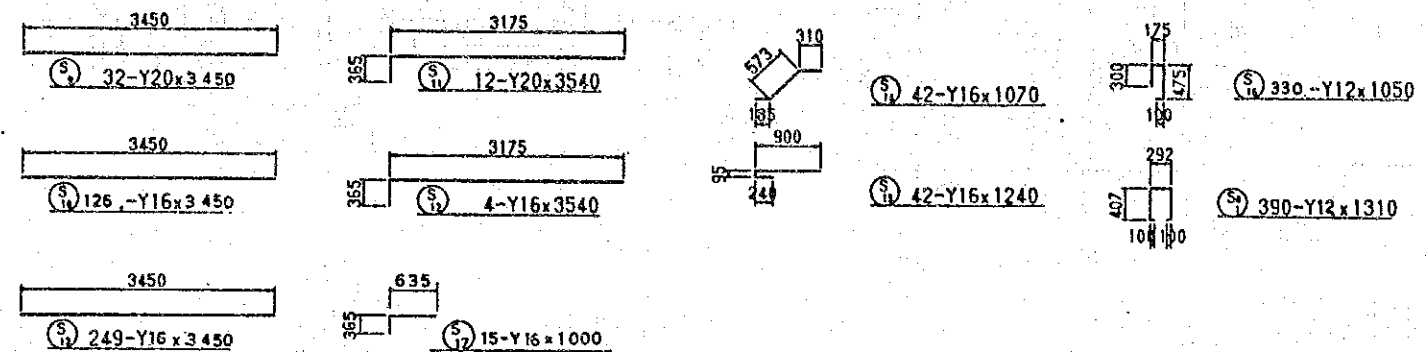
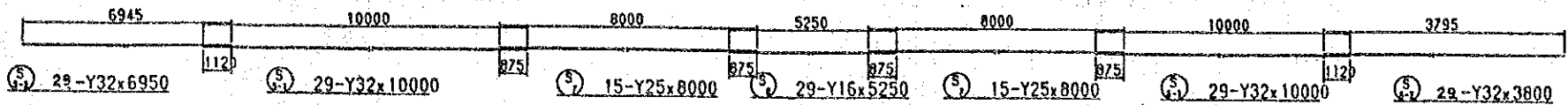
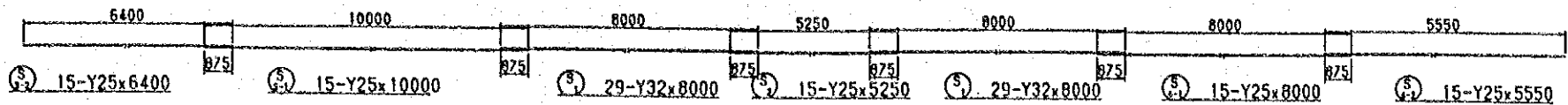
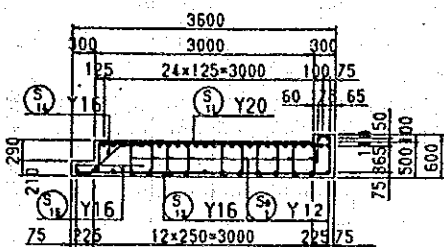
2 - 2



3 - 3



4 - 4



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 M.O.P.W. ROADS DEPT. DRG. NO.

REVISIONS	DESCRIPTION	DATE

JAPAN INTERNATIONAL COOPERATION AGENCY

CHIEF ENGINEER (ROADS)
 CHIEF SUPT. ENG. (DESIGN)

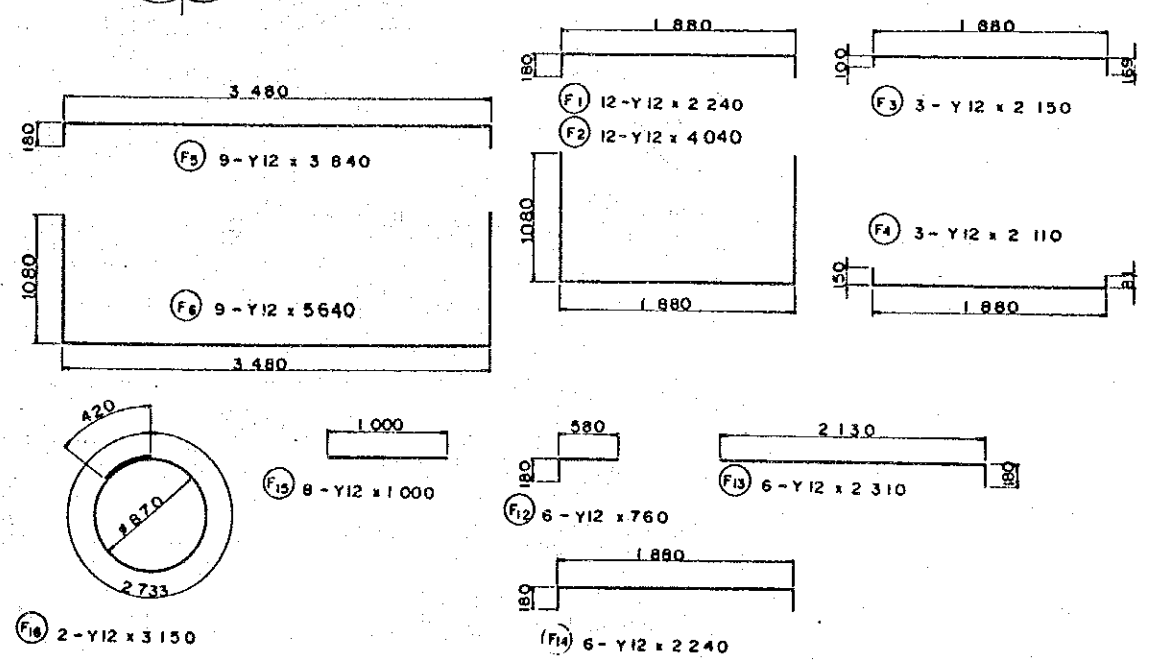
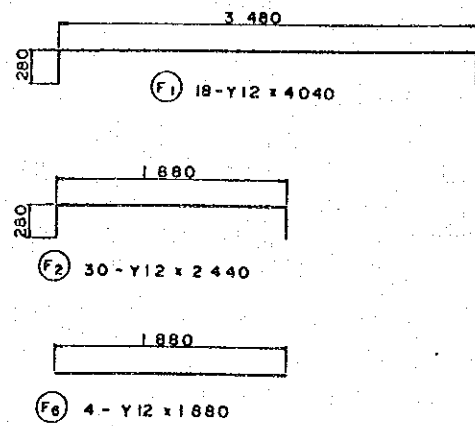
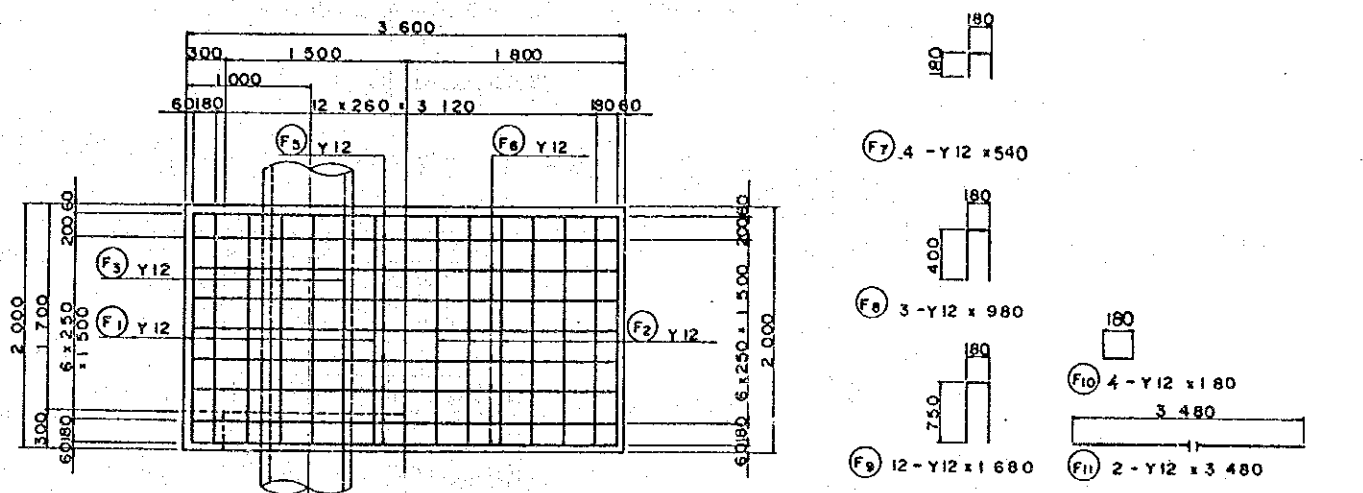
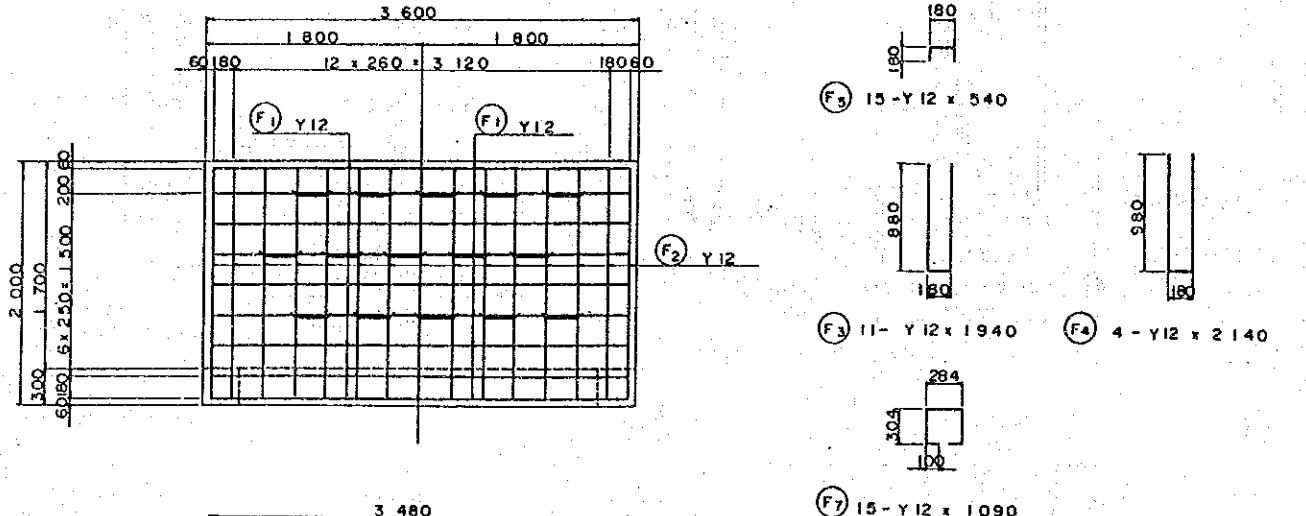
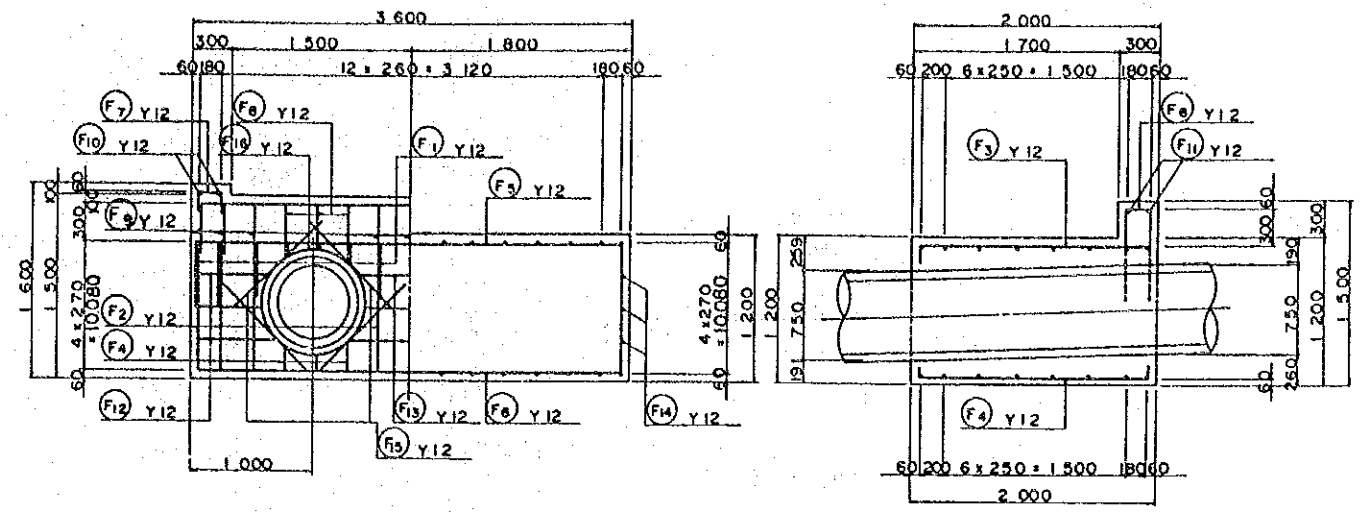
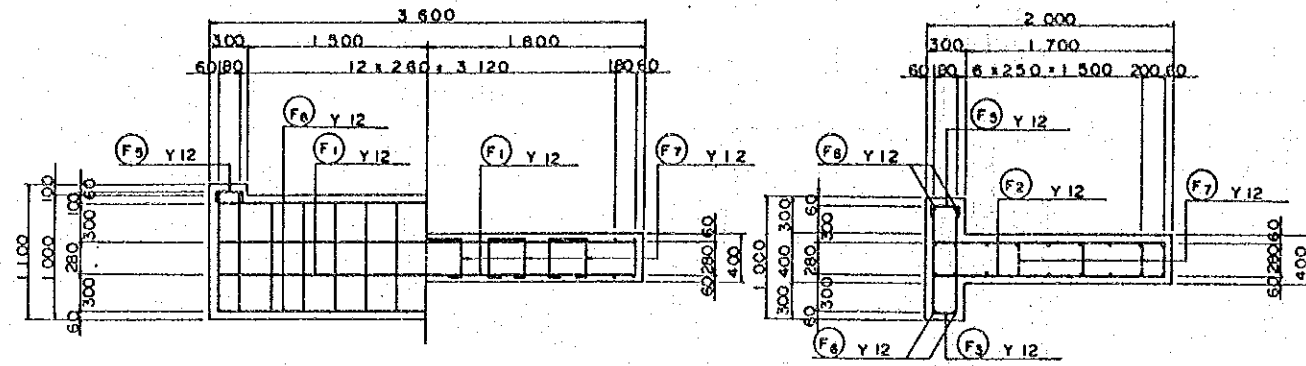
SEN SUPT. ENG. (DESIGN)
 SUPT. ENGINEER (DESIGN)
 PROJECT ENGINEER

SCALES
 1:50

NAIROBI BYPASS
 PEDESTRIAN OVER BRIDGE(S), W-60 CM 161-980
 SUPERSTRUCTURE (S)

P
 SHEET 10 OF 45

AERIAL PHOTO BY _____ SURVEYED BY _____
 MAPPING BY _____ TRACED BY _____
 LOCATION BY _____ CHECKED BY _____
 M.O.P.W. ROADS DEPT. DRG. NO. _____



REVISIONS	
DESCRIPTION	DATE

JAPAN INTERNATIONAL COOPERATION AGENCY	CHIEF ENGINEER (ROADS)
	CHIEF SUPT. ENG. (DESIGN)

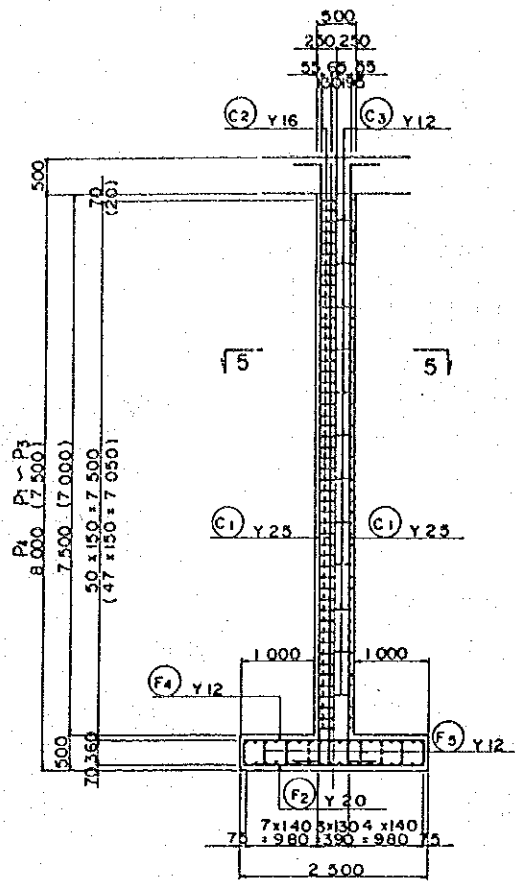
SEN SUPT. ENG. (DESIGN)	
SUPT. ENGINEER (DESIGN)	
PROJECT ENGINEER	

SCALES	
1:30	

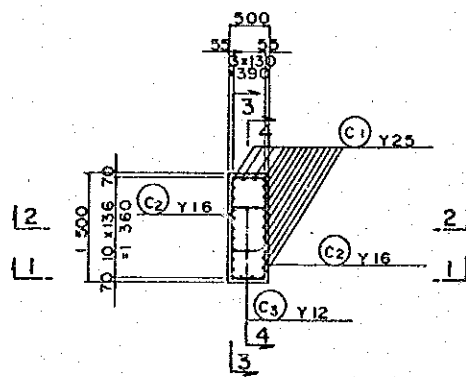
NAIROBI BYPASS
 PEDESTRIAN OVER BRIDGE(1), 9-3m CR 15m+000
 ABUTMENTS (A1, A2)

AERIAL PHOTO BY _____ SURVEYED BY _____
 MAPPING BY _____ TRACED BY _____
 LOCATION BY _____ CHECKED BY _____

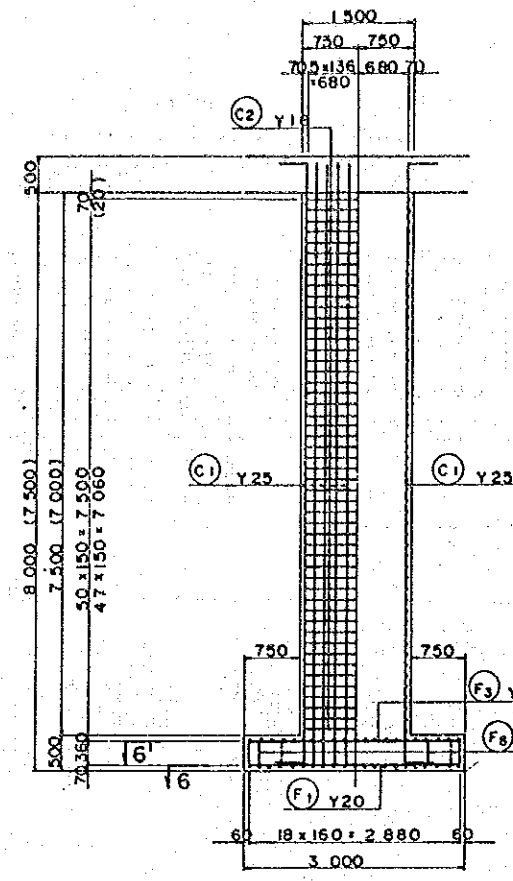
MOPW ROADS DEPT DRG NO.



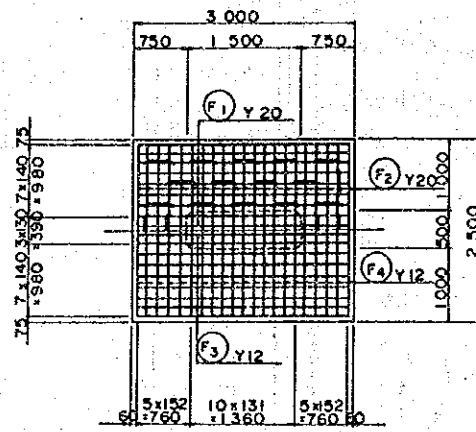
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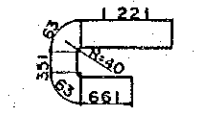
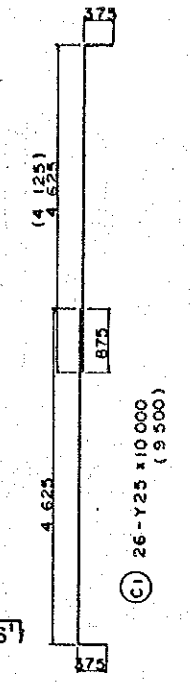
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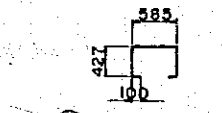
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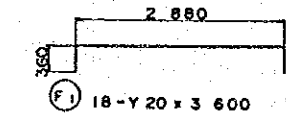
6' - 6'



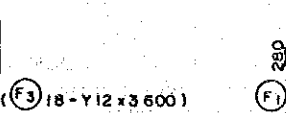
C2 100-Y16 x 2 360 (94)



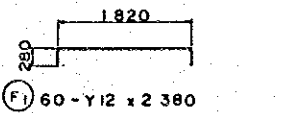
C3 12-Y12 x 1 640



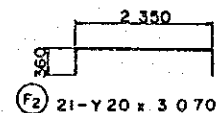
F1 18-Y20 x 3 600



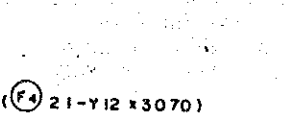
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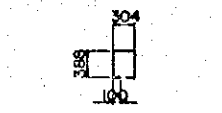
F1 60-Y12 x 2 380



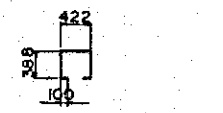
F2 21-Y20 x 3 070



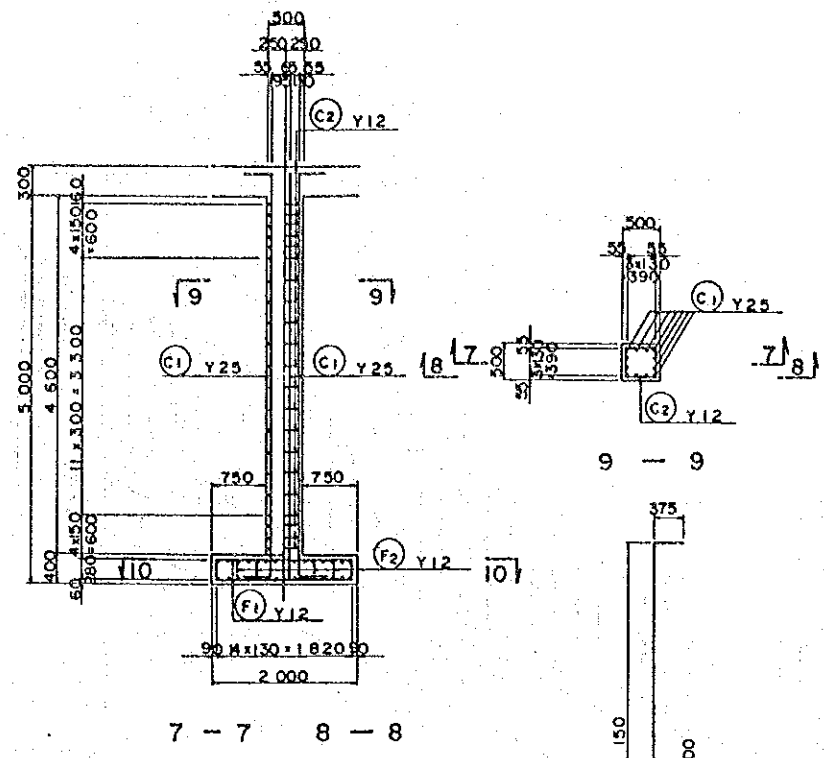
F4 21-Y12 x 3 070



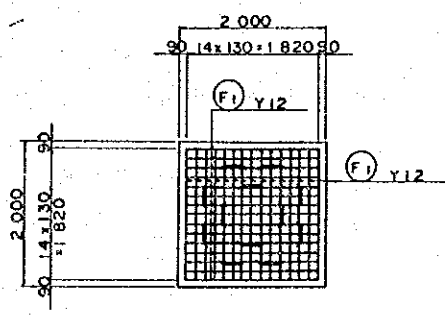
F3 28-Y12 x 1 280



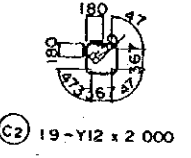
F4 4-Y12 x 1 400



7 - 7 8 - 8



10 - 10



C2 19-Y12 x 2 000

REVISIONS	
DESCRIPTION	DATE

JAPAN INTERNATIONAL COOPERATION AGENCY
 CHIEF ENGINEER (ROADS)
 CHIEF SUPT ENG (DESIGN)

SEN SUPT. ENG (DESIGN)
 SUPT ENGINEER (DESIGN)
 PROJECT ENGINEER

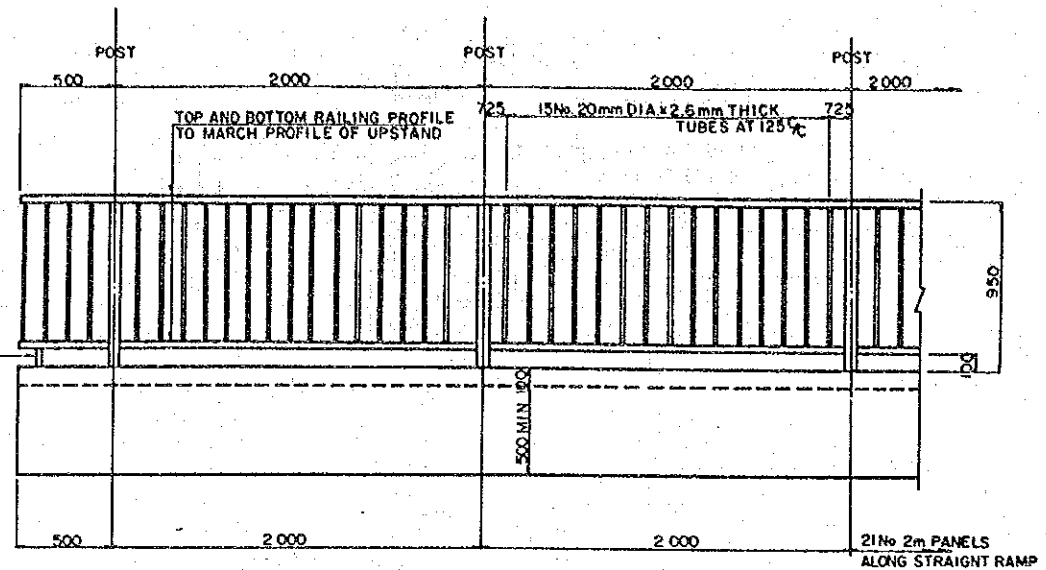
SCALES
 1:50

NAIROBI BYPASS
 PEDESTRIAN OVER BRIDGE(1), V-3a CB 141e+800
 FILE

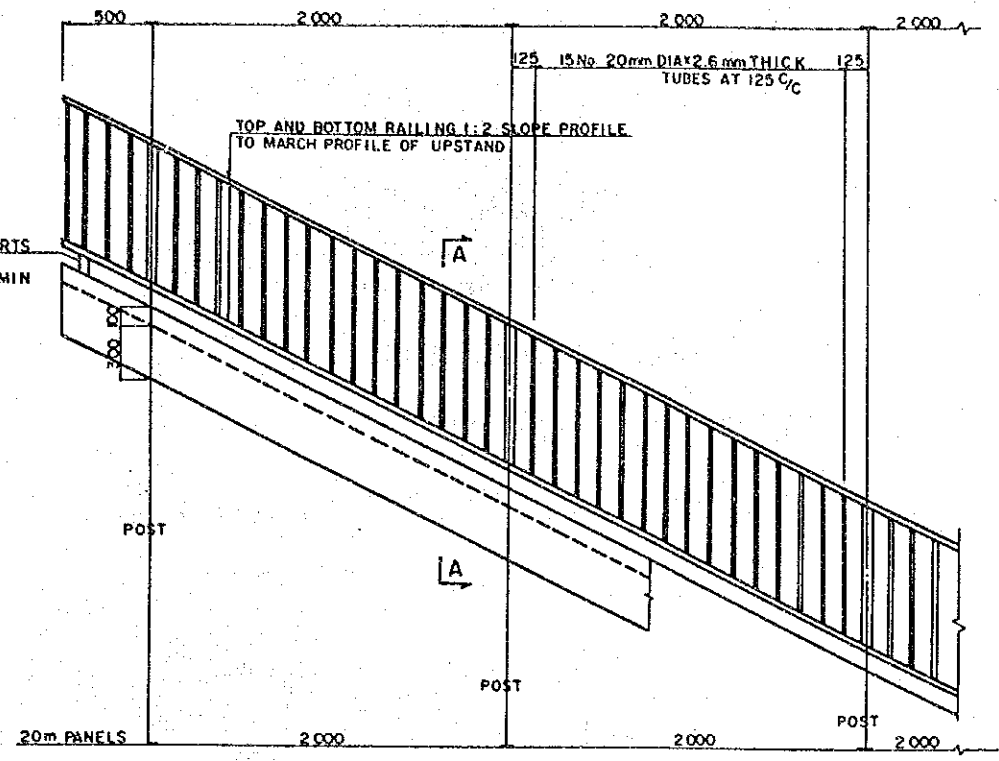
P
 SHEET 12 OF 45

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 MAPPING BY
 LOCATION BY
 TRACED BY
 CHECKED BY

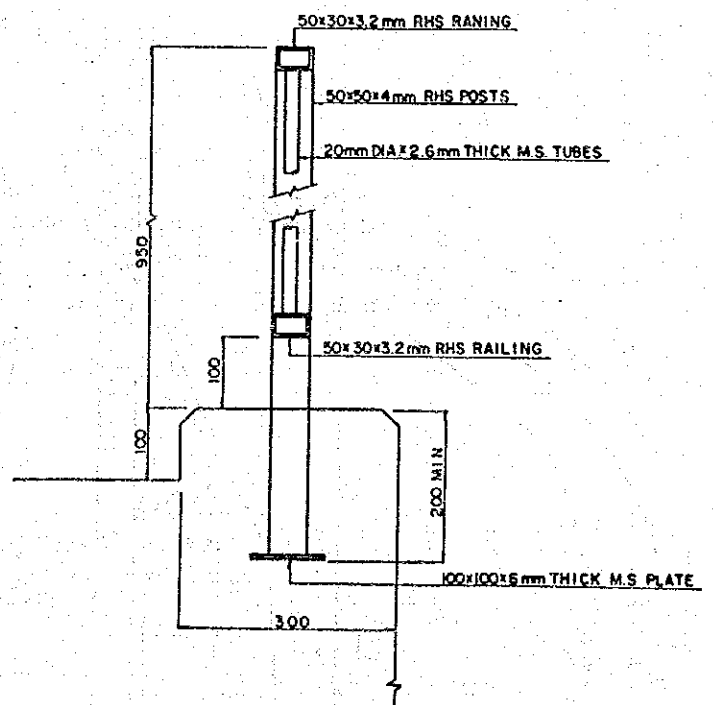
MOPW ROADS DEPT DRG NO.



PROFILE SCALE 1:20



PROFILE SCALE 1:20



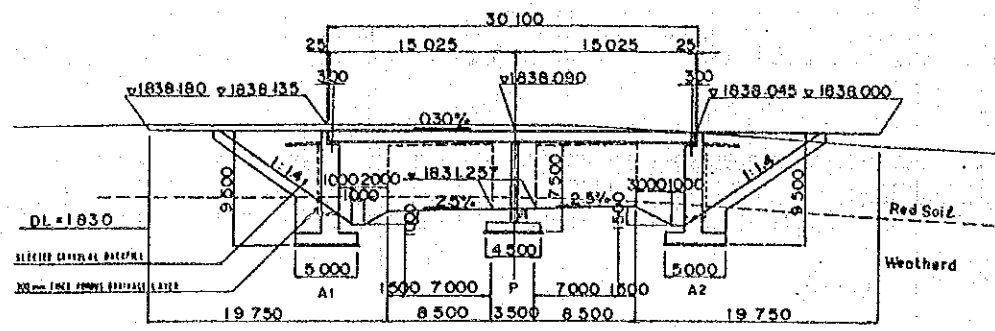
CROSS SECTION SCALE 1:5

NOTES

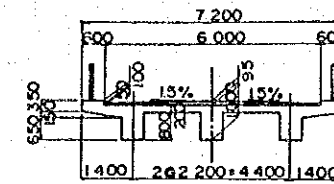
1. PEDESTRIAN PARAPET TO MATCH THE SHAPE AND PROFILE OF THE STRAIGHT AND SLOPE.
2. ALL RECTANGULAR HOLLOW SECTIONS (RHS) TO CONFORM TO BS 4848 PART 2 AND BS 1387:1967, 1IN STEEL TO BS 4360 GRADE 43C.
3. ALL COMPONENTS TO RECEIVE TWO COATS OF RED OXIDE PAINT AND AFTER ERECTION A FINAL COAT OF SILVER/ALUMINIUM PAINT.
4. ALL OPEN ENDS OF RHS TO BE BLOCKED OFF.
5. ALL WELDS TO BE 6mm FILLET FULL WIDTH.

PEDESTRIAN PARAPET

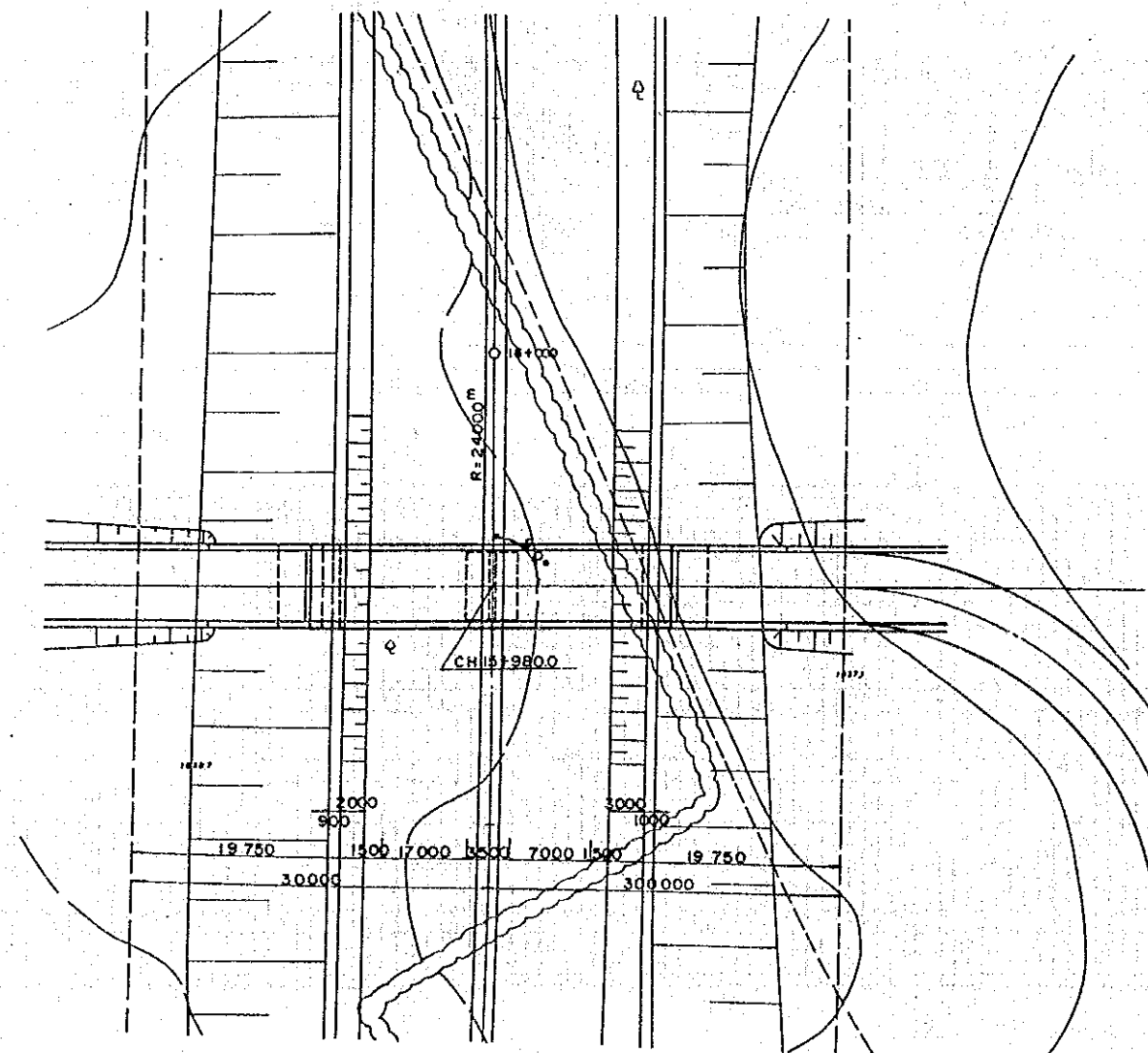
REVISIONS							
DESCRIPTION	DATE						
		JAPAN INTERNATIONAL COOPERATION AGENCY	CHIEF ENGINEER (ROADS)	SEN SUPT. ENG (DESIGN)	SCALES		
			CHIEF SUPT. ENG (DESIGN)	SUPT. ENGINEER (DESIGN)	1:5, 1:20		
				PROJECT ENGINEER	NAIROBI BYPASS		
					PEDESTRIAN OVER BRIDGE(1), W-04 CR 163a+980		
					PARAPET		
					P		
					SHEET 13 OF 45		



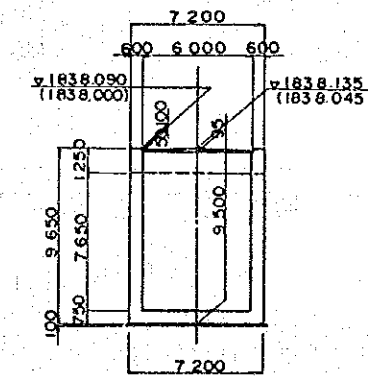
PROFILE SCALE 1:300



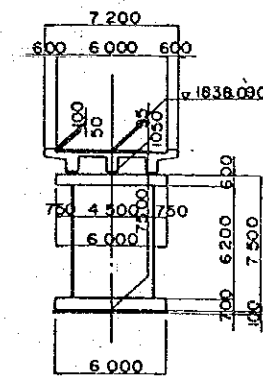
SUPERSTRUCTURE SCALE 1:100



PLAN SCALE 1:300

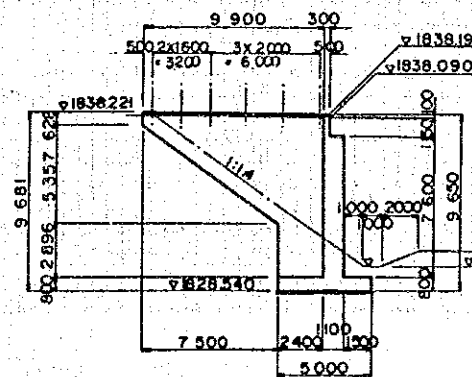


ABUTMENT
A1(A2)

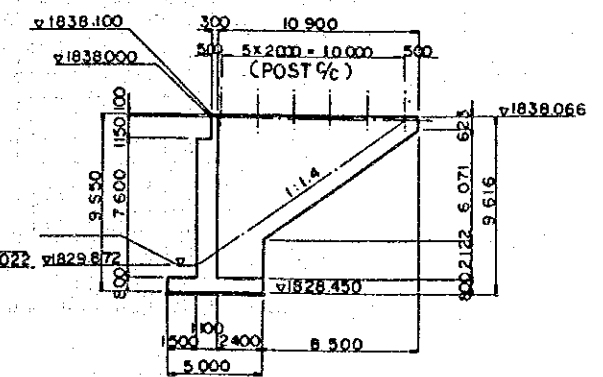


PIER

SUB STRUCTURE SCALE 1:200



A1-WING



A2-WING

NO ① VEHICLE BRIDGE

AERIAL PHOTO BY
MAPPING BY
LOCATION BY

SURVEYED BY
TRACED BY
CHECKED BY

MCPW ROADS DEFT DRG NO

REVISIONS	
DESCRIPTION	DATE

JAPAN INTERNATIONAL
COOPERATION AGENCY

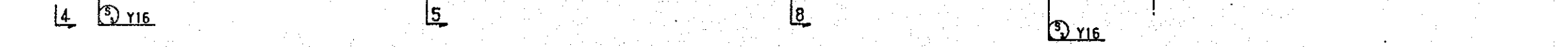
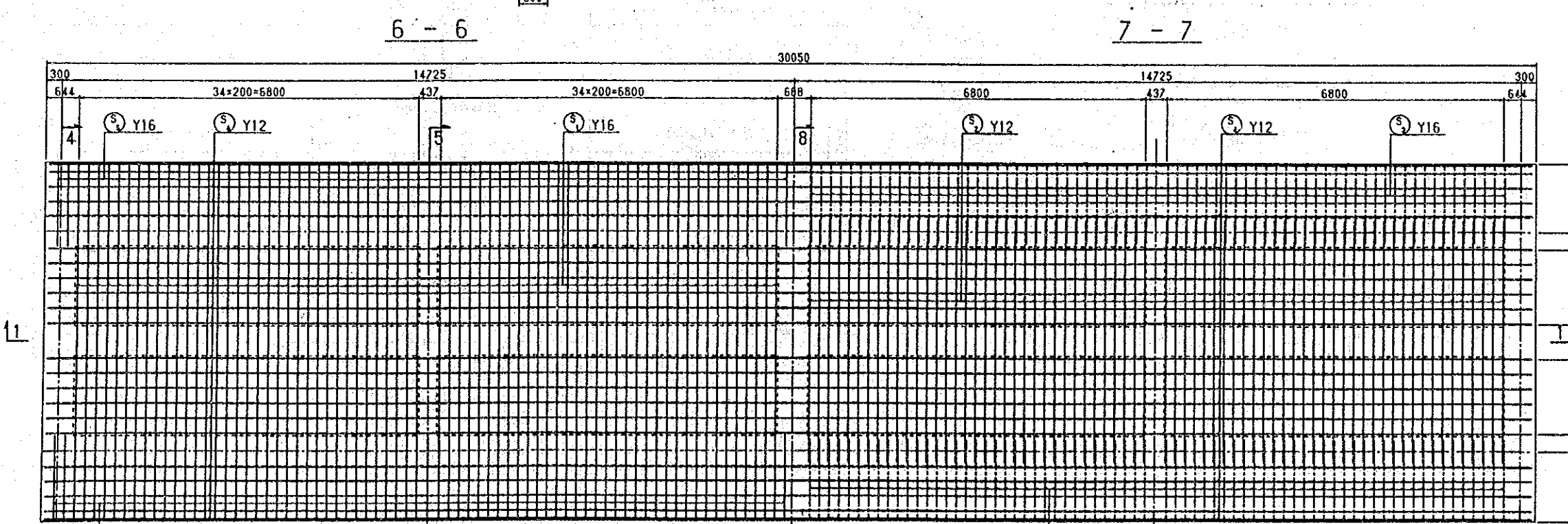
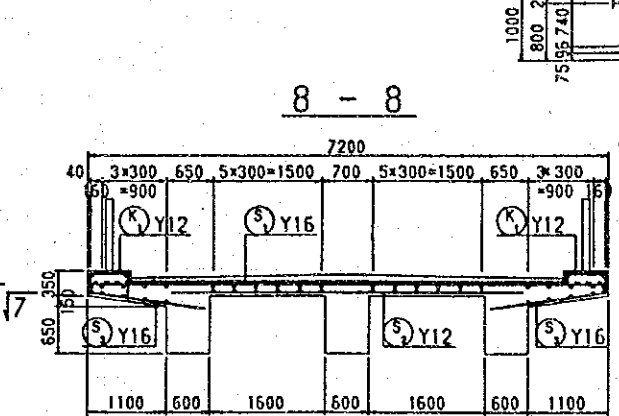
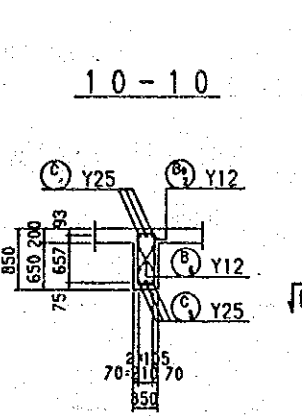
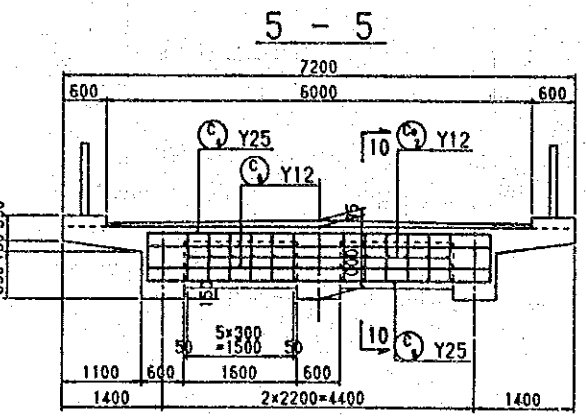
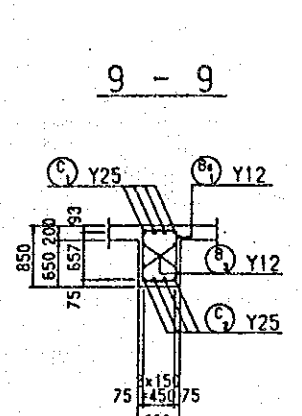
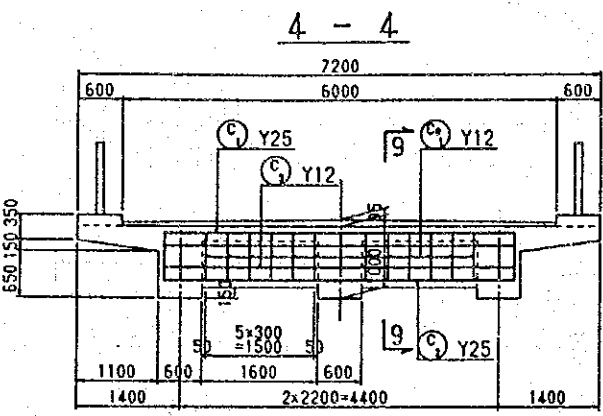
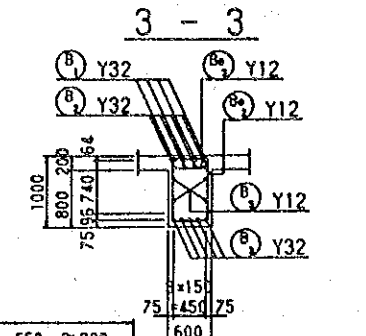
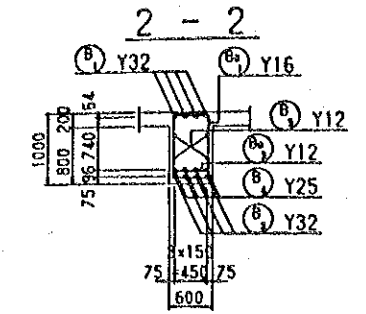
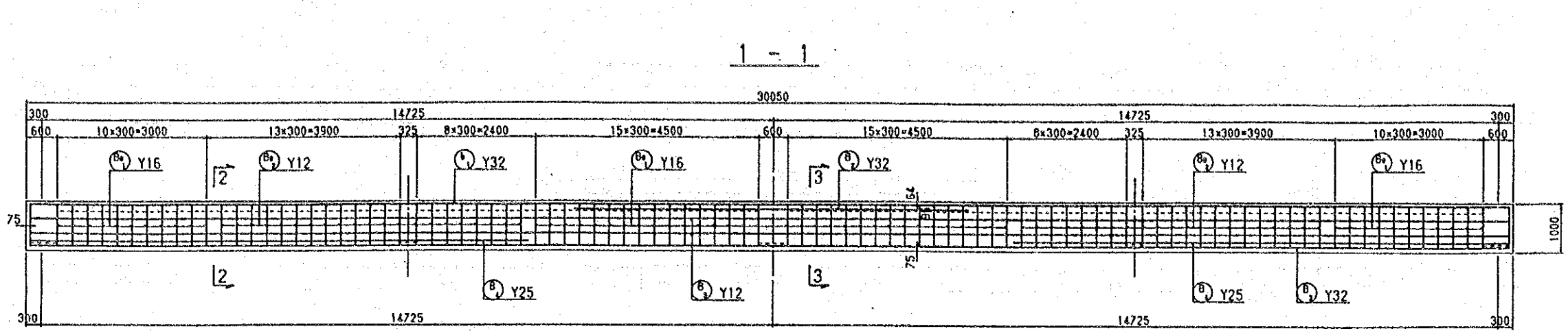
CHIEF ENGINEER (ROADS)
CHIEF SUPT ENG (DESIGN)

SEN SUPT. ENG (DESIGN)
SUPT ENGINEER (DESIGN)
PROJECT ENGINEER

SCALES
AS SHOWN

NAIROBI BYPASS
OVER BRIDGE (1) R-40 CR 1611-980
GENERAL VIEW

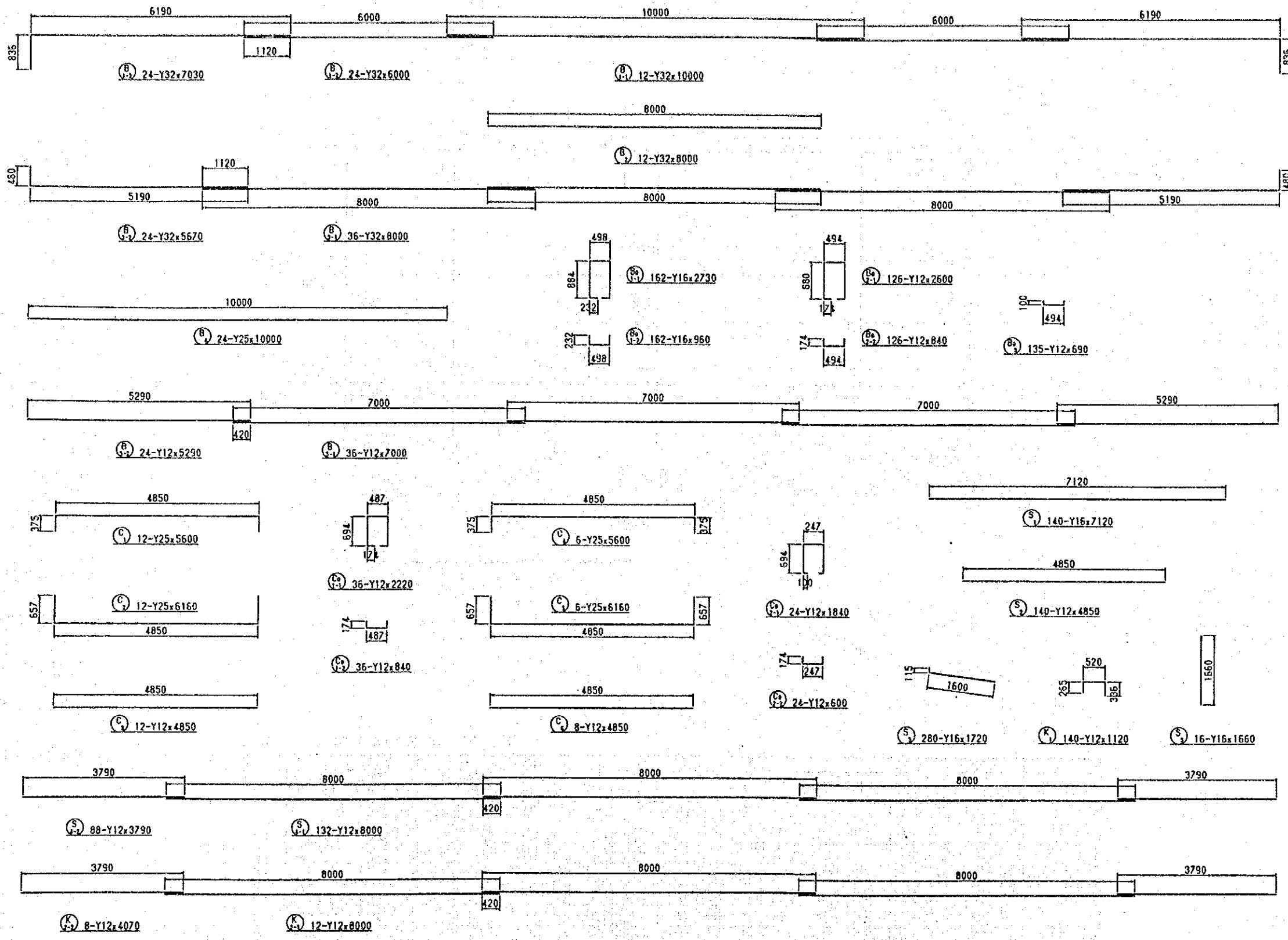
P
SHEET 14 OF 45



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 AERIAL PHOTO BY
 MAPPING BY
 LOCATION BY

M.O.P.W. ROADS DEPT. DRG. NO.

REVISIONS		JAPAN INTERNATIONAL COOPERATION AGENCY	CHIEF ENGINEER (ROADS)	SEN SUPT. ENG. (DESIGN)	SCALES	NAIROBI BYPASS	p
DESCRIPTION	DATE						
			CHIEF SUPT. ENG. (DESIGN)	SUPT. ENGINEER (DESIGN)	1:50	OVER BRIDGE (I) No. 01 155a-990 SUPERSTRUCTURE (I)	SHEET 15 OF 45



AERIAL PHOTO BY _____ SURVEYED BY _____
 MAPPING BY _____ TRACED BY _____
 LOCATION BY _____ CHECKED BY _____

M.O.P.W. ROADS DEPT. DRG. NO. _____

REVISIONS	
DESCRIPTION	DATE

JAPAN INTERNATIONAL
COOPERATION AGENCY

CHIEF ENGINEER (ROADS)
CHIEF SUPT. ENG. (DESIGN)

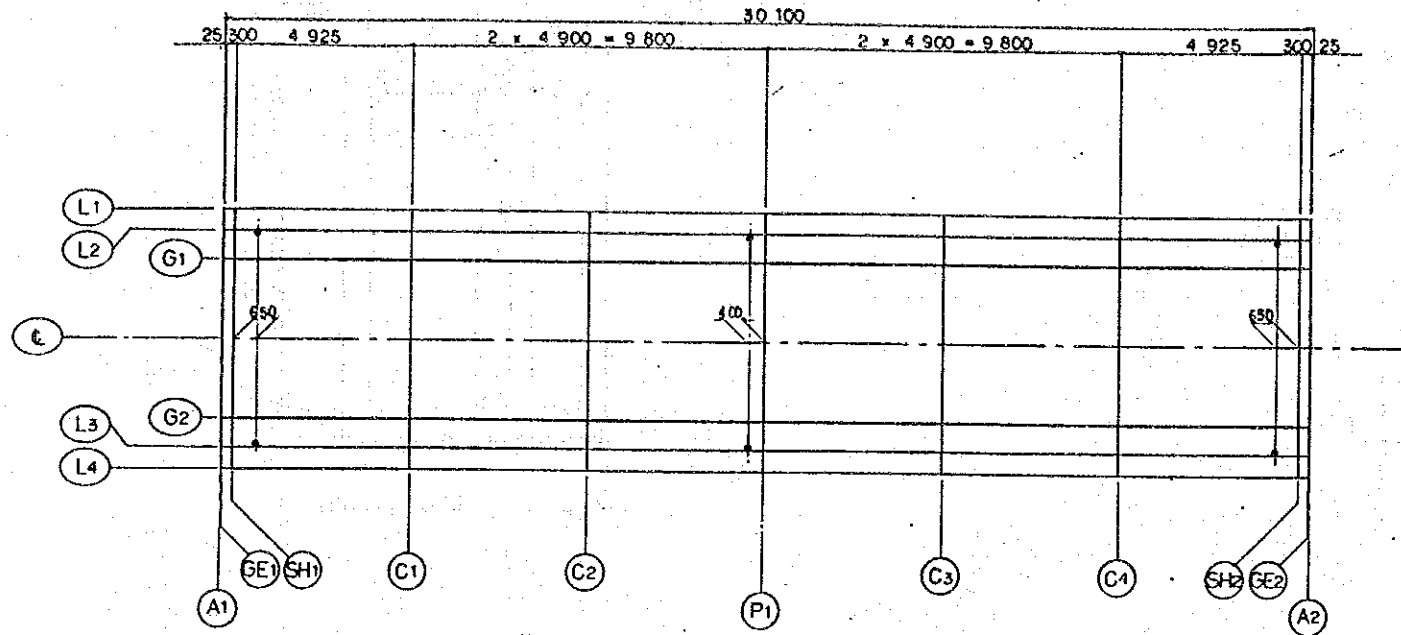
SEN. SUPT. ENG. (DESIGN)
SUPT. ENGINEER (DESIGN)
PROJECT ENGINEER

SCALES
1:50

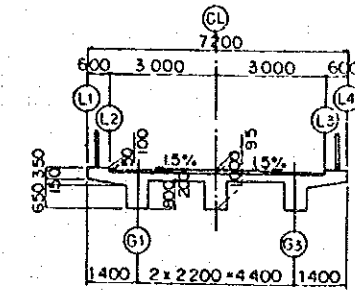
NAIROBI BYPASS
OVER BRIDGE (1) 8+80 CH 155+910
SUPERSTRUCTURE (2)

SURVEYED BY
 MAPPING BY
 TRACED BY
 LOCATION BY
 CHECKED BY

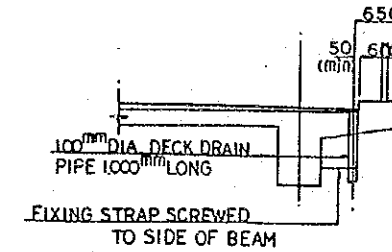
MOPW ROADS DEPT. DRG. NO.



PLAN SCALE 1:100

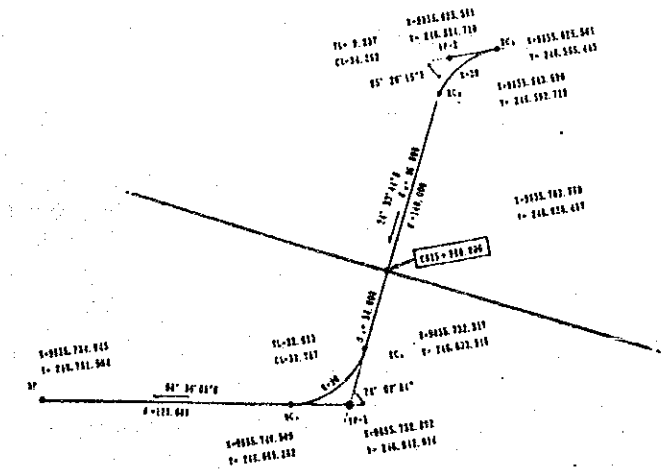


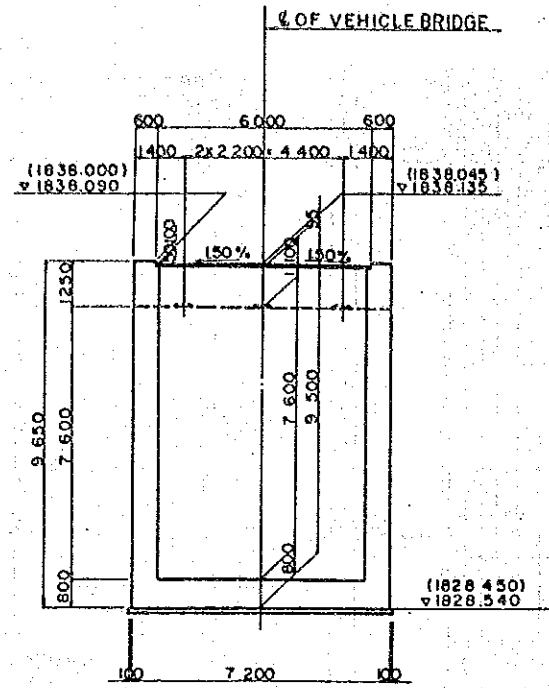
SECTION SCALE 1:100



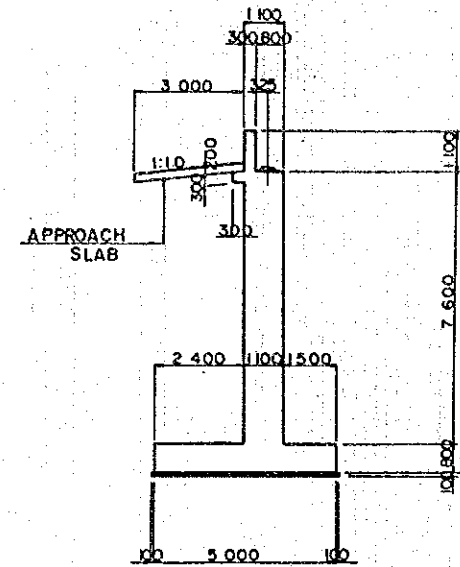
COORDINATES AND PROPORTION HEIGHT

	A1	GE1	SH1	C1	C2	P1	C3	C4	SH2	GE2	A2
L1	X 55672.3955 Y 246798.2955 Z 1838.0902	X 55672.4185 Y 246798.3054 Z 1838.0901	X 55672.6941 Y 246798.4238 Z 1838.0892	X 55677.2190 Y 246800.3683 Z 1838.0744	X 55681.7208 Y 246802.3032 Z 1838.0597	X 55686.2227 Y 246804.2380 Z 1838.0450	X 55690.7245 Y 246806.1728 Z 1838.0303	X 55695.2264 Y 246808.1076 Z 1838.0156	X 55699.7282 Y 246810.0522 Z 1838.0008	X 55700.0268 Y 246810.1707 Z 1837.9999	X 55700.0498 Y 246810.1805 Z 1837.9999
L2	X 55672.1586 Y 246798.8467 Z 1838.0902	X 55672.1816 Y 246798.8566 Z 1838.0901	X 55672.4372 Y 246798.9751 Z 1838.0892	X 55678.9820 Y 246800.9197 Z 1838.0744	X 55681.4839 Y 246802.8545 Z 1838.0597	X 55685.9857 Y 246804.7893 Z 1838.0450	X 55690.4876 Y 246806.7240 Z 1838.0303	X 55694.9894 Y 246808.6588 Z 1838.0156	X 55699.4913 Y 246810.6034 Z 1838.0008	X 55699.7899 Y 246810.7219 Z 1837.9999	X 55699.8128 Y 246810.7318 Z 1837.9999
G1	X 55671.8427 Y 246799.5817 Z 1838.1022	X 55671.8657 Y 246799.5916 Z 1838.1021	X 55672.1413 Y 246799.7101 Z 1838.1012	X 55676.6662 Y 246801.6547 Z 1838.0864	X 55681.1680 Y 246803.5895 Z 1838.0717	X 55685.6699 Y 246805.5243 Z 1838.0570	X 55690.1717 Y 246807.4590 Z 1838.0423	X 55694.6736 Y 246809.3938 Z 1838.0276	X 55699.1764 Y 246811.3384 Z 1838.0128	X 55699.4740 Y 246811.4569 Z 1838.0019	X 55699.4970 Y 246811.4668 Z 1838.0119
CL	X 55670.9741 Y 246801.6030 Z 1838.1352	X 55670.9970 Y 246801.6128 Z 1838.1351	X 55671.2727 Y 246801.7313 Z 1838.1342	X 55675.7975 Y 246803.6750 Z 1838.1194	X 55680.2993 Y 246805.6197 Z 1838.1047	X 55684.8012 Y 246807.5645 Z 1838.0900	X 55689.3030 Y 246809.5092 Z 1838.0753	X 55693.8049 Y 246811.4540 Z 1838.0606	X 55698.3077 Y 246813.3997 Z 1838.0458	X 55698.6053 Y 246813.4781 Z 1838.0449	X 55698.6283 Y 246813.4880 Z 1838.0449
G3	X 55670.1054 Y 246803.6242 Z 1838.1022	X 55670.1284 Y 246803.6341 Z 1838.1021	X 55670.4040 Y 246803.7525 Z 1838.1012	X 55674.9288 Y 246805.6972 Z 1838.0864	X 55679.4307 Y 246807.6320 Z 1838.0717	X 55683.9325 Y 246809.5667 Z 1838.0570	X 55688.4344 Y 246811.5015 Z 1838.0423	X 55692.9363 Y 246813.4363 Z 1838.0276	X 55697.4381 Y 246815.3809 Z 1838.0128	X 55697.7367 Y 246815.4994 Z 1838.0119	X 55697.7596 Y 246815.5093 Z 1838.0119
L3	X 55669.7895 Y 246804.3592 Z 1838.0902	X 55669.8125 Y 246804.3691 Z 1838.0901	X 55670.0881 Y 246804.4875 Z 1838.0892	X 55674.6129 Y 246806.4322 Z 1838.0744	X 55679.1148 Y 246808.3670 Z 1838.0597	X 55683.6166 Y 246810.3017 Z 1838.0450	X 55688.1185 Y 246812.2365 Z 1838.0303	X 55692.6203 Y 246814.1713 Z 1838.0156	X 55697.1231 Y 246816.1159 Z 1838.0008	X 55697.4208 Y 246816.2344 Z 1837.9999	X 55697.4437 Y 246816.2442 Z 1837.9999
L4	X 55669.5526 Y 246804.9105 Z 1838.0902	X 55669.5756 Y 246804.9203 Z 1838.0901	X 55669.8512 Y 246805.0388 Z 1838.0892	X 55674.3760 Y 246806.9834 Z 1838.0744	X 55678.8779 Y 246808.9182 Z 1838.0597	X 55683.3797 Y 246810.8530 Z 1838.0450	X 55687.8816 Y 246812.7877 Z 1838.0303	X 55692.3834 Y 246814.7225 Z 1838.0156	X 55696.8852 Y 246816.6572 Z 1838.0008	X 55697.1839 Y 246816.7856 Z 1837.9999	X 55697.2068 Y 246816.7955 Z 1837.9999

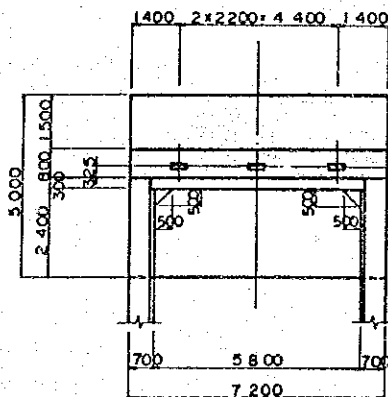




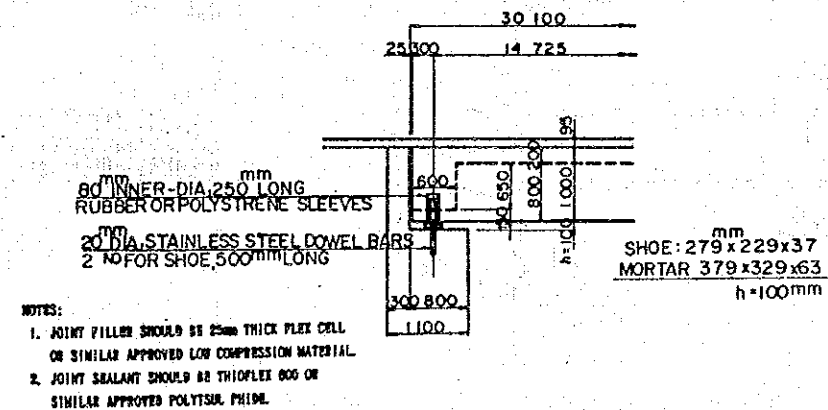
FRONT VIEW



SIDE VIEW



PLAN — ABUTMENT A1 (A2)



ABUTMENT (Mov)

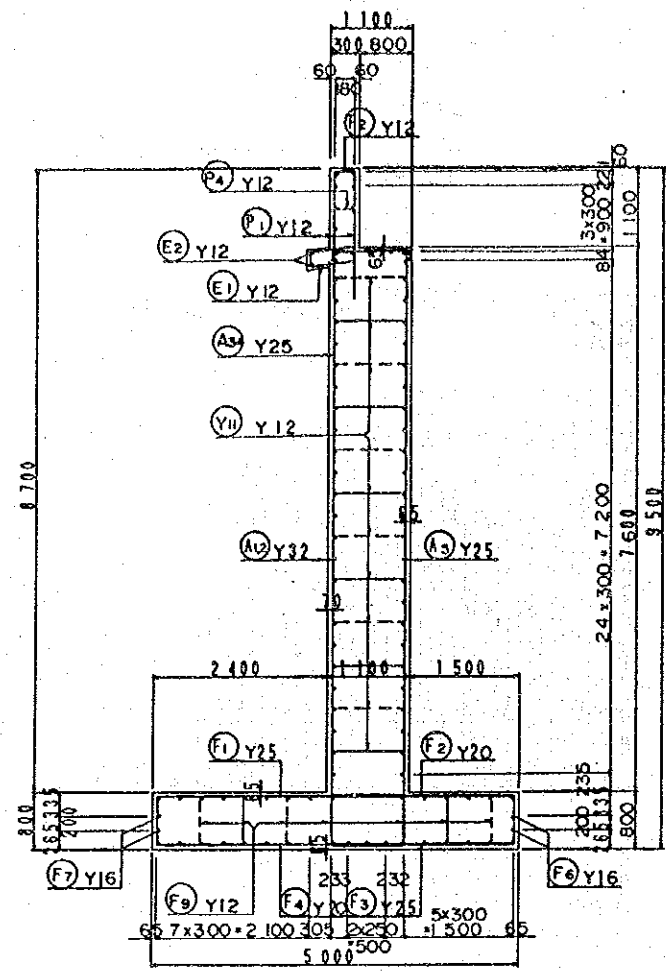
AERIAL PHOTO BY	SURVEYED BY
MAPPING BY	TRACED BY
LOCATION BY	CHECKED BY

M.O.P.W. ROADS DEPT. DRG. NO.

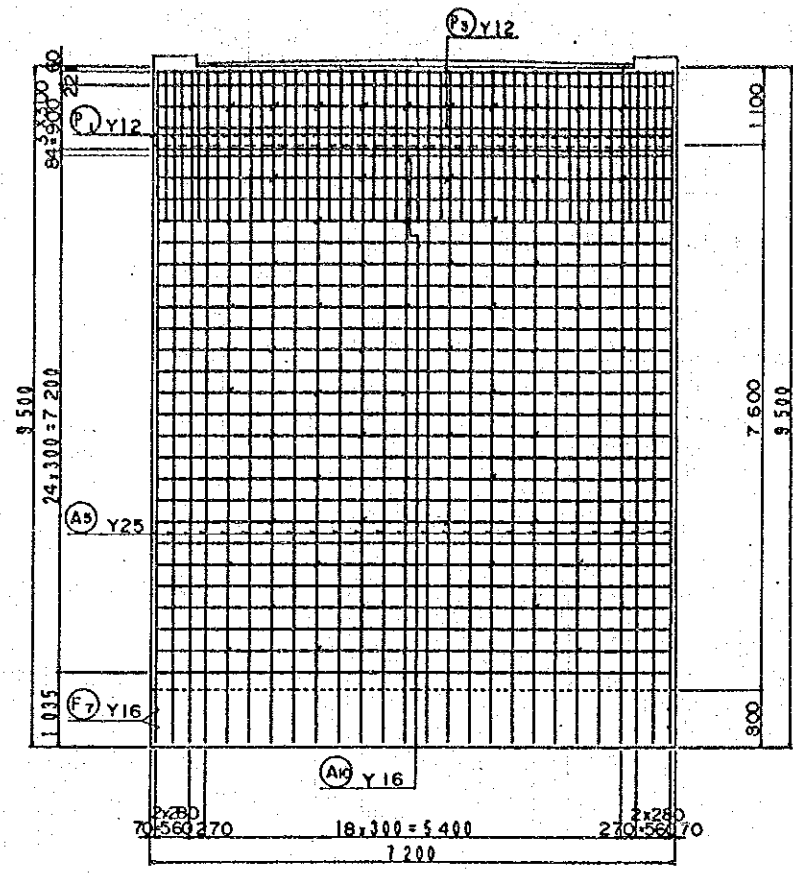
REVISIONS		JAPAN INTERNATIONAL COOPERATION AGENCY	CHIEF ENGINEER (ROADS)	SEN SUPT. ENG (DESIGN)	SCALES	NAIROBI BYPASS	P				
DESCRIPTION	DATE							CHIEF SUPT. ENG (DESIGN)	SUPT. ENGINEER (DESIGN)	1:50, 1:100	OVER AREA(1) 9-8-64 CN 161-490
									PROJECT ENGINEER		ABUTMENTS (A1, A2) (1)

SURVEYED BY
 TRACED BY
 CHECKED BY
 AERIAL PHOTO BY
 MAPPING BY
 LOCATION BY

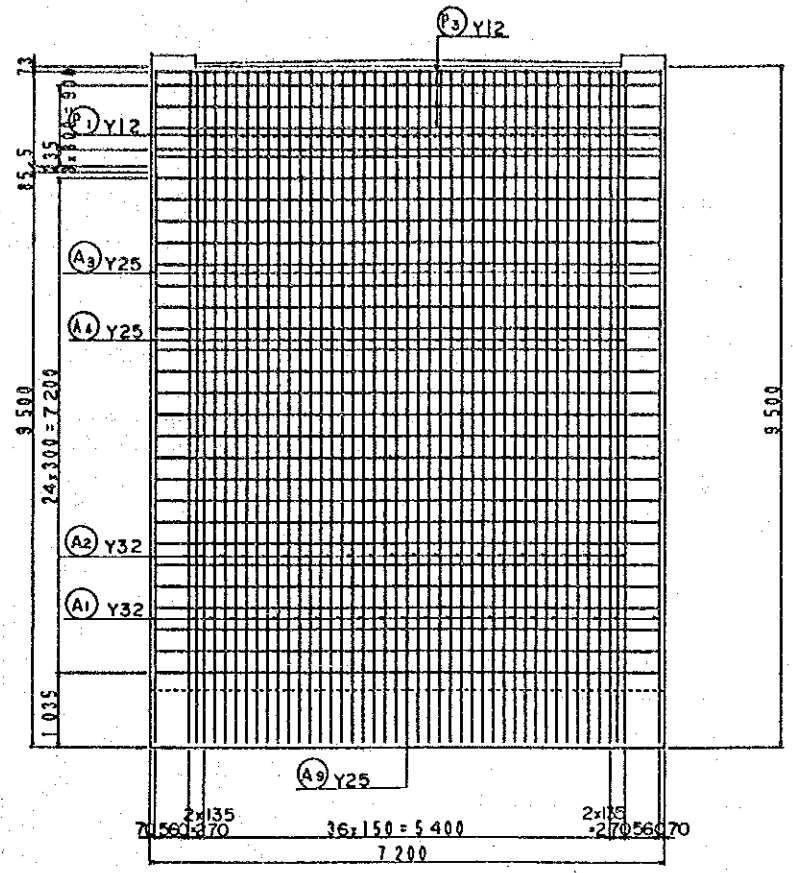
M.O.P.W. ROADS DEPT. DRG. NO.



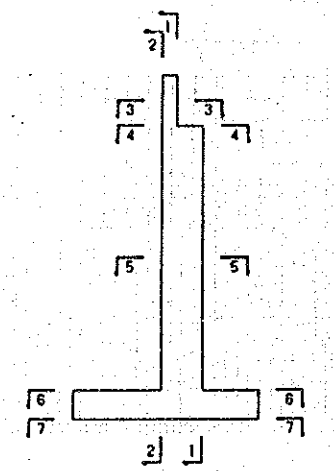
SECTION 1 — 1



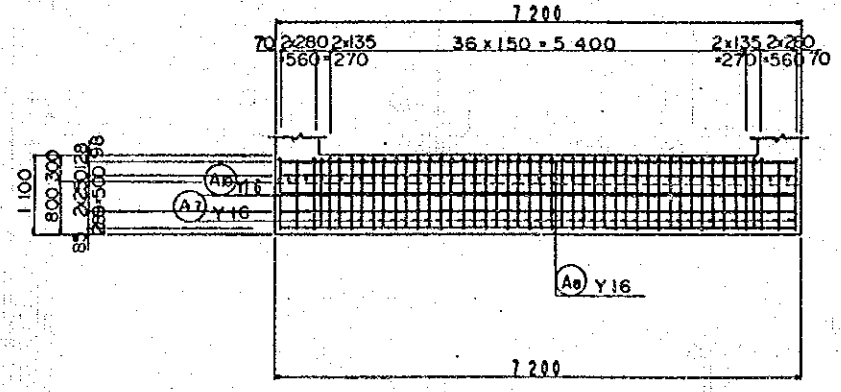
2 — 2



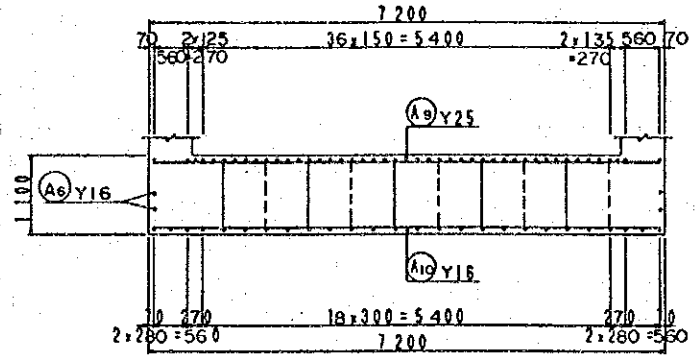
3 — 3



4 — 4



5 — 5



6 — 6

REVISIONS	
DESCRIPTION	DATE

JAPAN INTERNATIONAL COOPERATION AGENCY

CHIEF ENGINEER (ROADS)
 CHIEF SUPT. ENG. (DESIGN)

SEN SUPT. ENG. (DESIGN)
 SUPT. ENGINEER (DESIGN)
 PROJECT ENGINEER

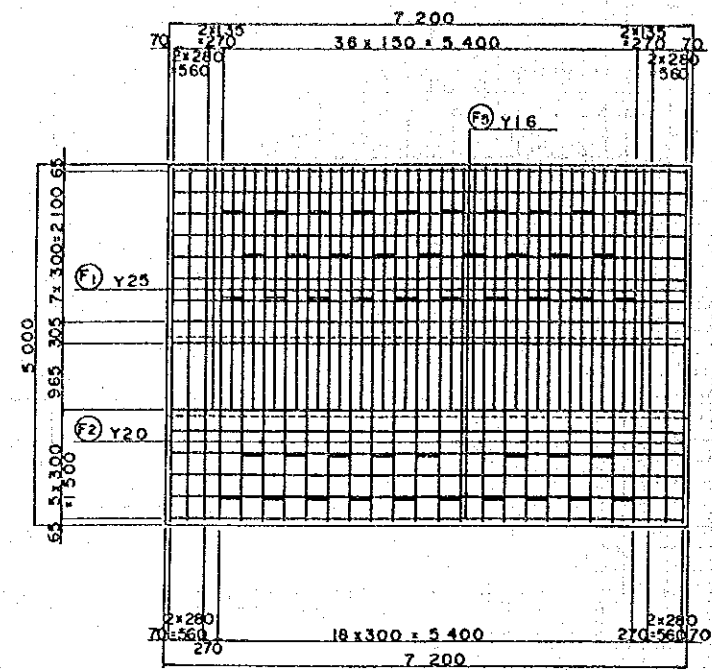
SCALES
 1:50

NAIROBI BYPASS
 OVER BRIDGE(1) R=6m CR 156+980
 ABUTMENTS (A1,A2) (2)

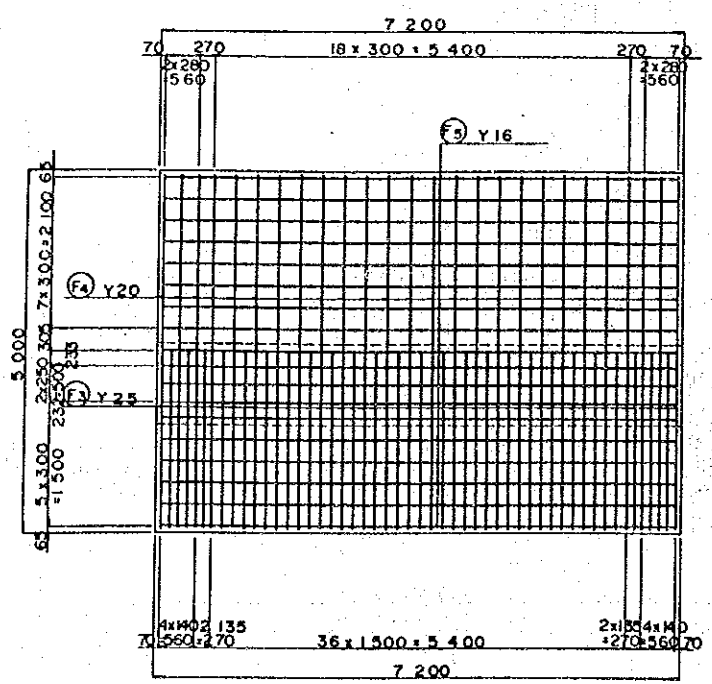
P
 SHEET 19 OF 45

AERIAL PHOTO BY _____ SURVEYED BY _____
 MAPPING BY _____ TRACED BY _____
 LOCATION BY _____ CHECKED BY _____

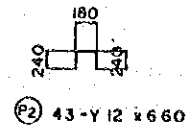
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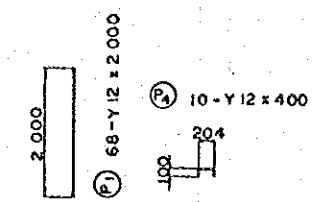
6 - 6



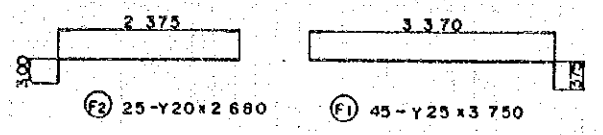
7 - 7



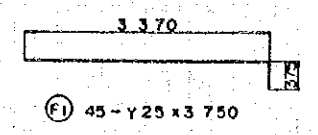
P2 43-Y12 x 660



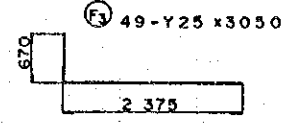
P1 68-Y12 x 2,000



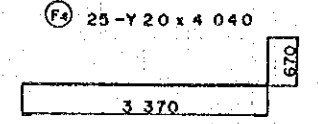
F2 25-Y20 x 2,680



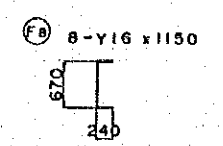
F1 45-Y25 x 3,750



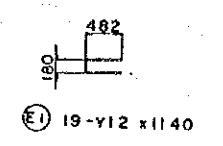
F3 49-Y25 x 3,050



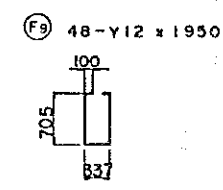
F4 25-Y20 x 4,040



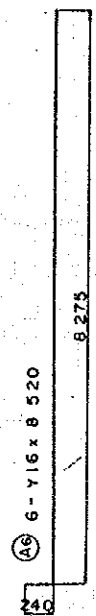
F8 8-Y16 x 1,150



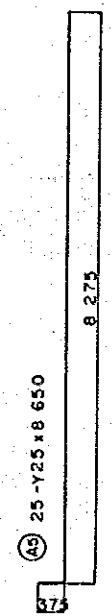
F11 19-Y12 x 1,140



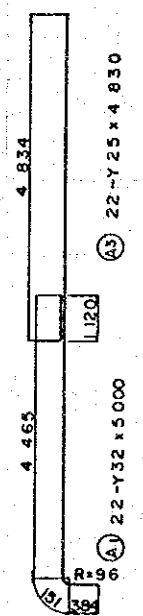
F9 48-Y12 x 1,950



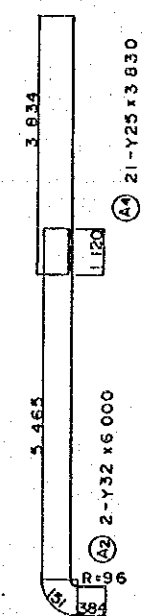
A6 6-Y16 x 8,520



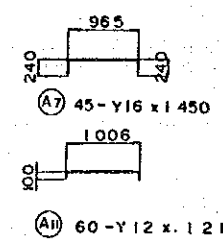
A5 25-Y25 x 8,650



A3 22-Y25 x 4,830

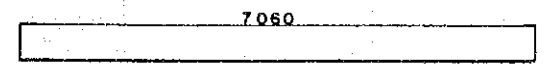


A4 2-Y32 x 6,000

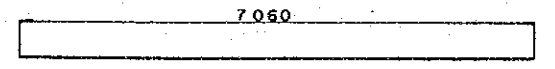


A7 45-Y16 x 1,450

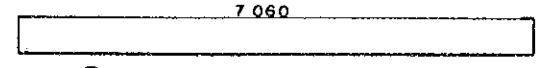
A8 60-Y12 x 1,210



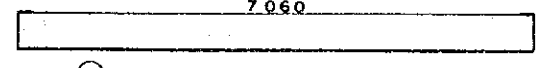
F5 8-Y12 x 7,060



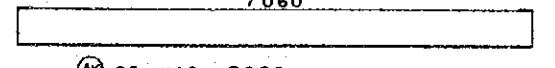
F3 2-Y12 x 7,060



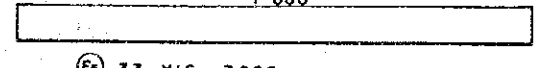
F2 5-Y16 x 7,060



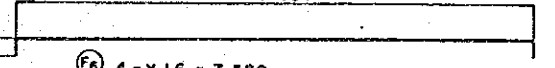
A8 25-Y25 x 7,060



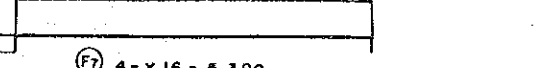
A9 25-Y16 x 7,060



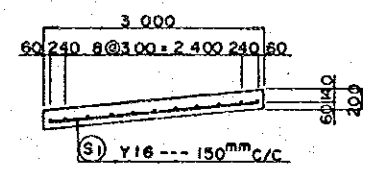
A10 33-Y16 x 7,060



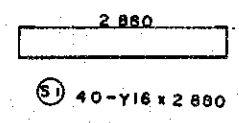
F6 4-Y16 x 7,580



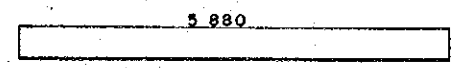
F7 4-Y16 x 5,390



S1 Y16 --- 150mm C/C



S1 40-Y16 x 2,880



S2 11-Y12 x 5,880

REVISIONS	
DESCRIPTION	DATE

JAPAN INTERNATIONAL COOPERATION AGENCY

CHIEF ENGINEER (ROADS)
 CHIEF SUPT. ENG. (DESIGN)

SEN. SUPT. ENG. (DESIGN)
 SUPT. ENGINEER (DESIGN)
 PROJECT ENGINEER

SCALES
 1:50

NAIROBI BYPASS
 OVER BRIDGE (1) W-6a CH 150+300
 ABUTMENTS (A1, A3) (S)

P
 SHEET 20 OF 45