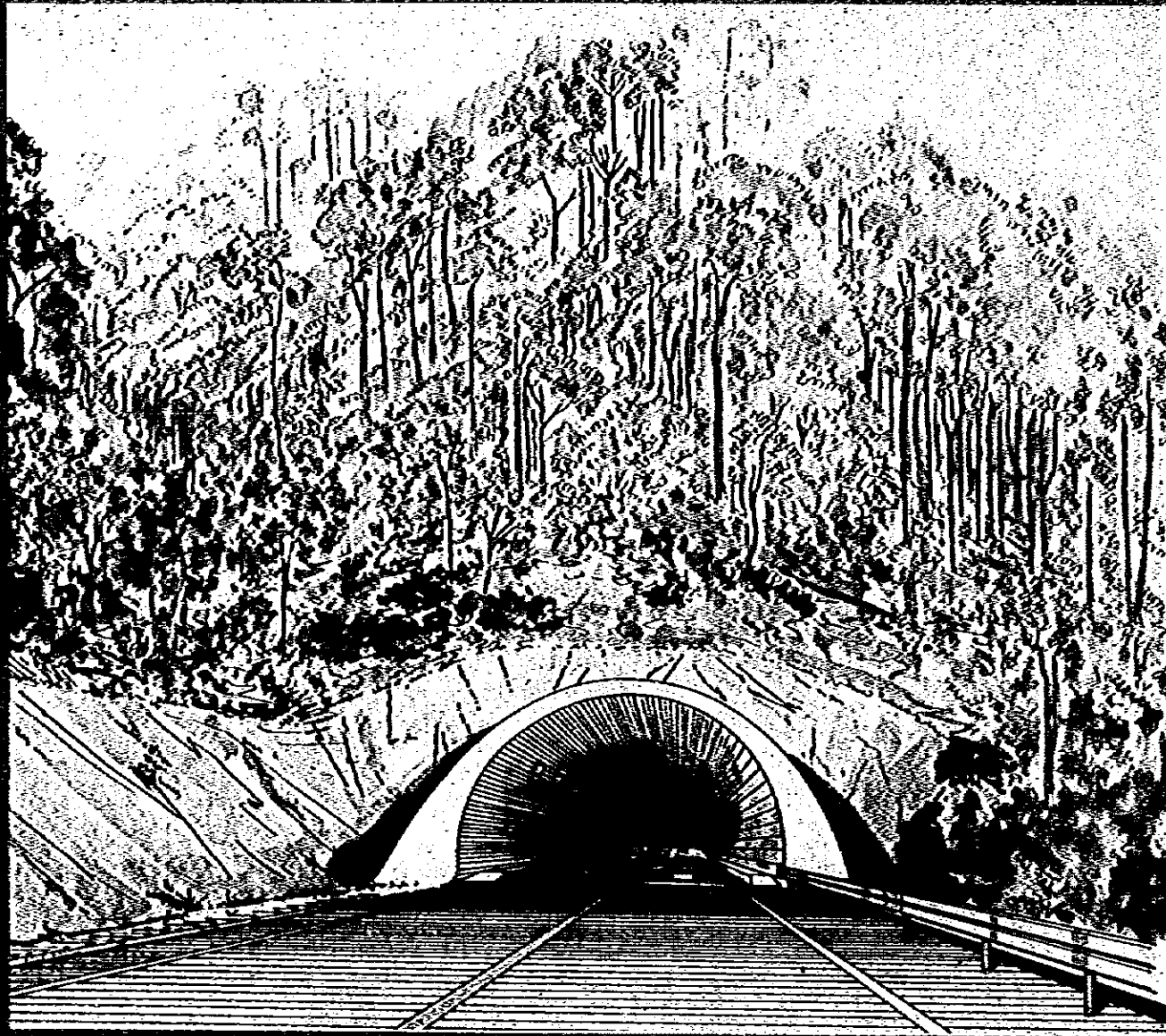


REPUBLIC OF THE PHILIPPINES

No. 8

社会開発協力部報告書

# THE FEASIBILITY STUDY ON DALTON PASS TUNNEL PROJECT



Final Report (Drawings)


March, 1982

Japan International Cooperation Agency

SDF

82-025(33)



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**The Feasibility Study**  
**on**  
**Dalton Pass Tunnel Project**

Final Report (Drawings)

March, 1982

Japan International Cooperation Agency

国際協力事業団	
船 584.19.23	4118
登録No: 59046	73.7 SDF

**THE FEASIBILITY STUDY ON DALTON PASS TUNNEL PROJECT**

**FINAL REPORT (DRAWINGS)**

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**PART 4 GEOLOGY AND GEOTECHNICAL INVESTIGATIONS**

**PART 1  
PROPOSED NEW ROUTE  
(MOST LIKELY ROUTE) IN  
SECTION A**

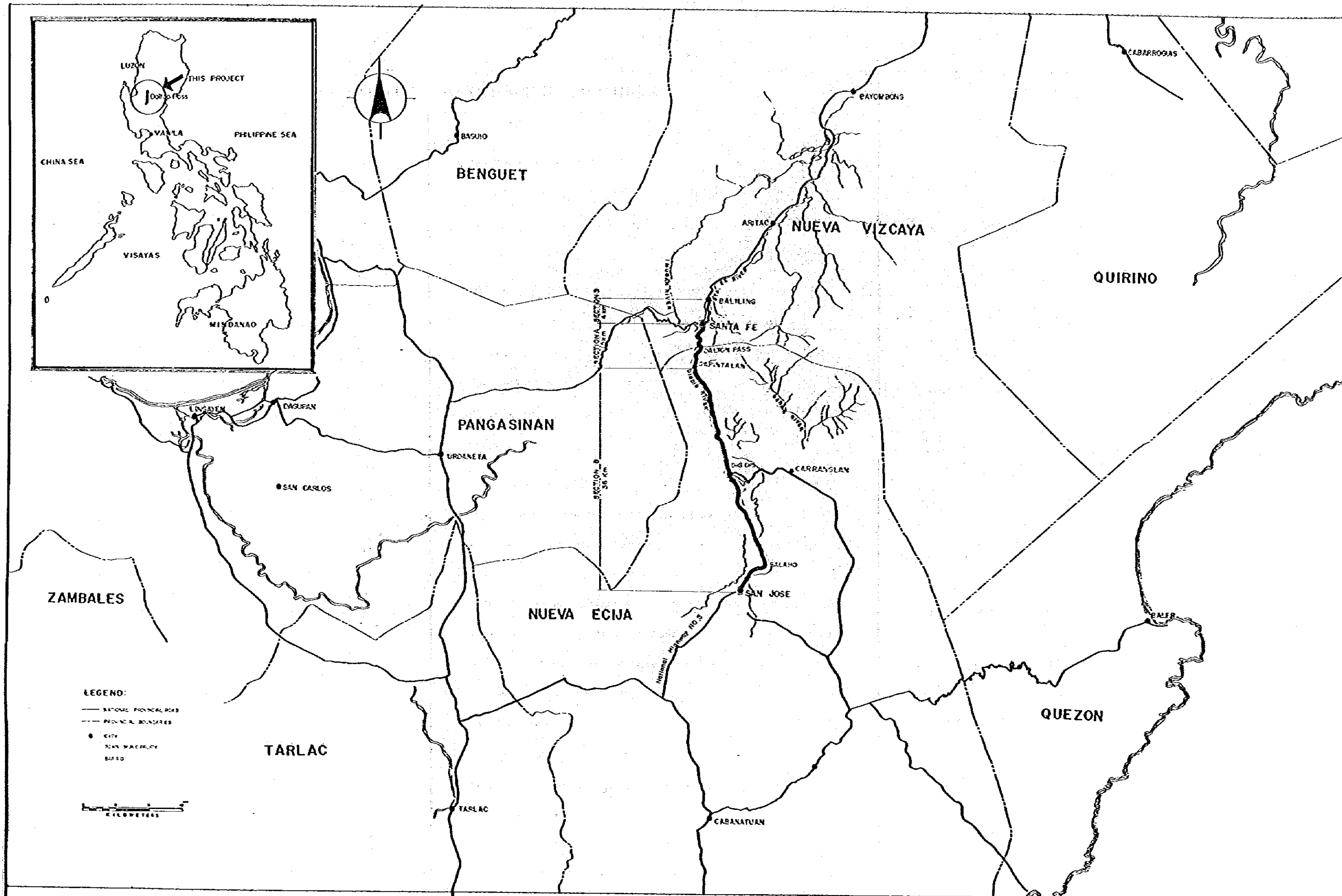
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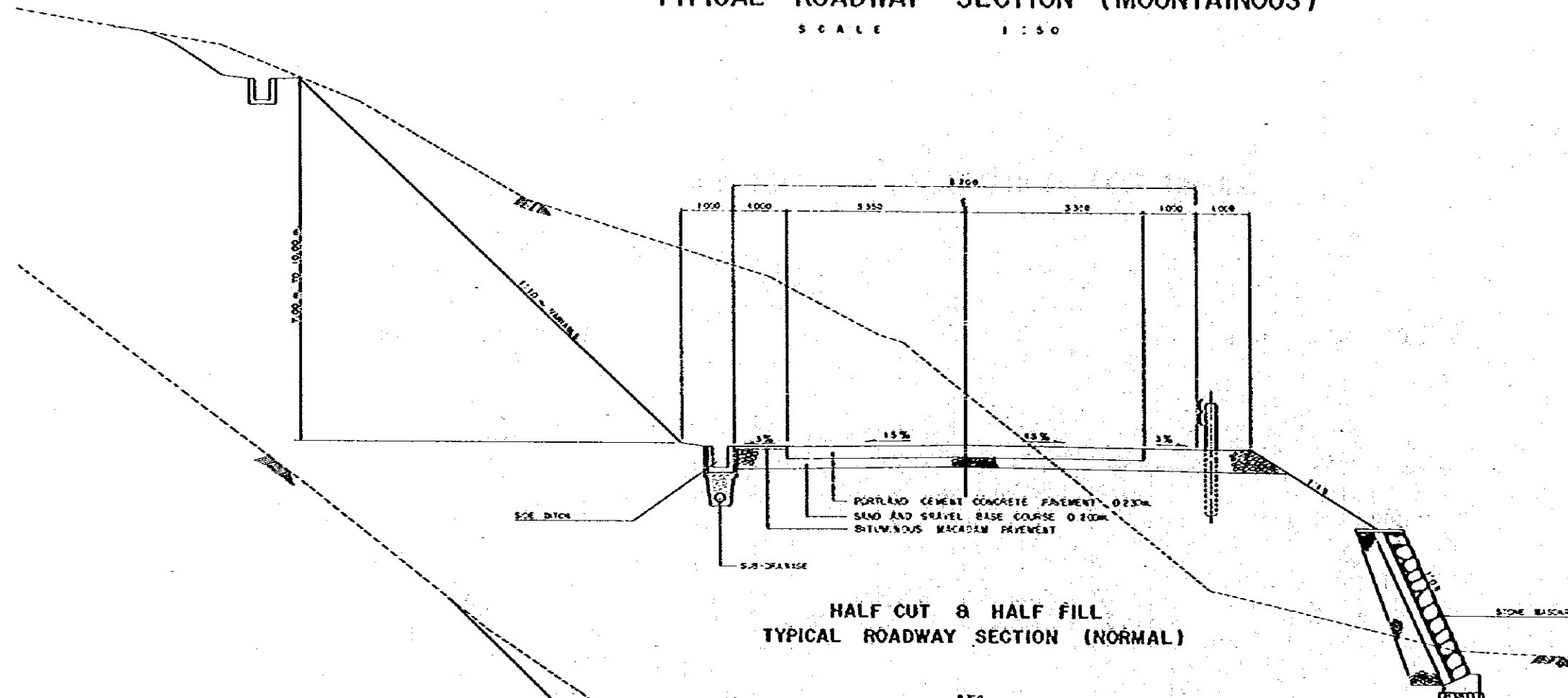
### I.1 EXISTING TOPOGRAPHIC FEATURES

### I.2 NEW DESIGN FEATURES

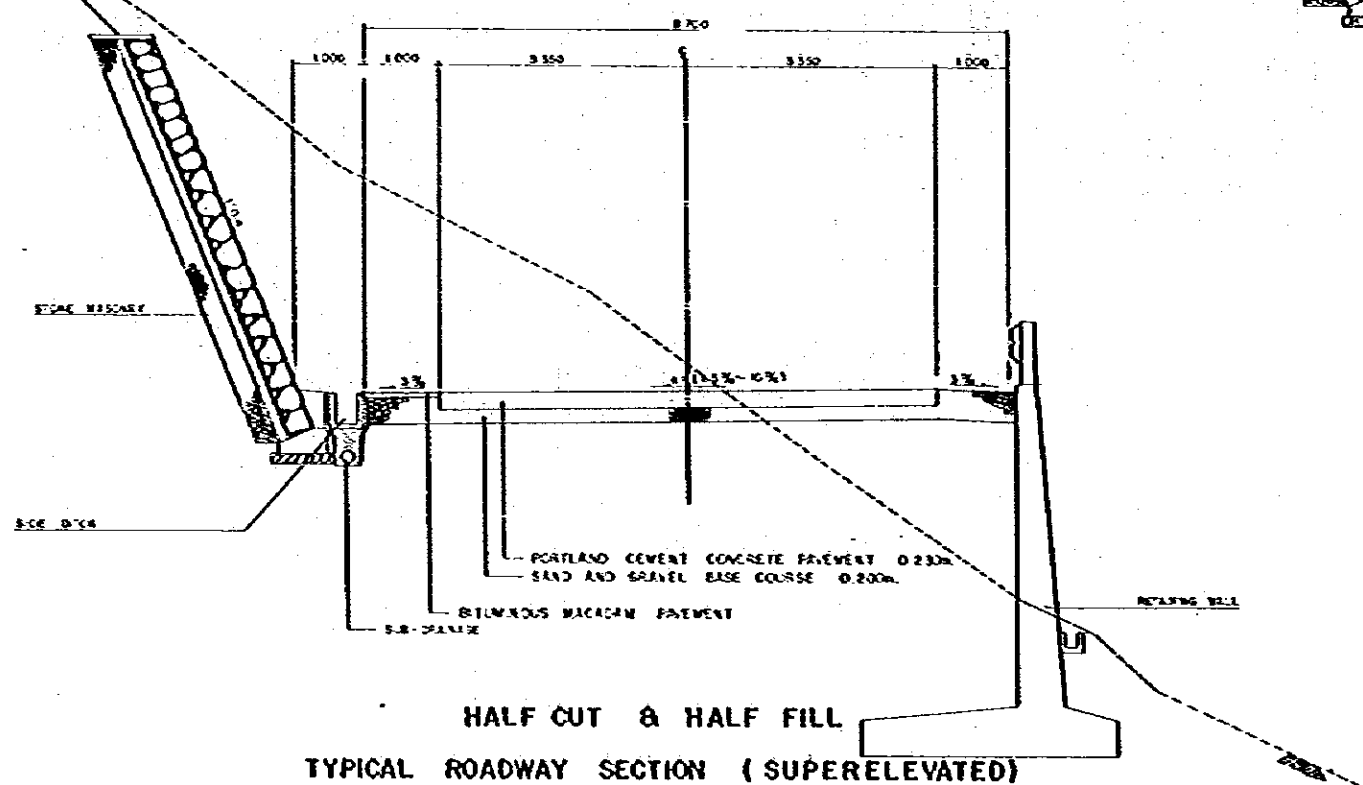
<p>Horizontal and vertical control station</p> <p>Triangulation Station ..... POLA  <math>\Delta</math> 399.9</p> <p>Picture Point Control</p> <p>Horizontal ..... <math>\odot</math> 294.5</p> <p>Spot Heights ..... * 690</p> <p>Rice paddy ..... ■ ■ ■</p> <p>Row of trees in ..... <math>\bullet \bullet \bullet \bullet \bullet</math></p> <p>Rice paddy ..... <math>\bullet \bullet \bullet \bullet \bullet</math></p> <p>Wall ..... <math>\perp</math></p> <p>Fill ..... <math>\parallel</math></p> <p>Levee ..... <math>\parallel</math></p> <p>Cut ..... <math>\nabla</math></p> <p>Levee with road ..... <math>\parallel</math></p> <p>Sand area ..... <math>\text{stippled}</math></p> <p>Perennial streams ..... <math>\text{wavy lines}</math></p> <p>Elevated aqueduct ..... <math>\text{pipe symbol}</math></p> <p>Water well - Spring ..... <math>\circ</math></p> <p>Small rapids ..... <math>\text{H symbol}</math></p> <p>Large rapids ..... <math>\text{H symbol}</math></p> <p>Intermittent lake ..... <math>\text{O symbol}</math></p> <p>Marsh (swamp) ..... <math>\text{O symbol}</math></p> <p>Wooded marsh ..... <math>\bullet \bullet \bullet \bullet \bullet</math></p> <p>Woods or brushwood ..... <math>\bullet \bullet \bullet \bullet \bullet</math></p> <p>Inundation area ..... <math>\text{stippled}</math></p> <p>Submerged marsh ..... <math>\text{stippled}</math></p> <p>Mangrove ..... <math>\circ \circ</math></p> <p>Coconut ..... <math>\bullet \bullet</math></p> <p>BM 890-4</p> <p>Bench Mark ..... <math>\square</math> 39.38</p> <p>Vertical ..... * 94</p> <p>Track Farm</p> <p>Fence ..... <math>\text{---}</math></p> <p>Concrete retaining wall</p> <p>Wash</p> <p>Distorted or broken surface</p> <p>Gravel beach</p> <p>Wharf or pier seawall</p> <p>Intermittent streams</p> <p>Aqueduct tunnel</p> <p>Disappearing stream</p> <p>Small falls</p> <p>Large falls</p> <p>Dry lake</p> <p>Scrub</p> <p>House omission area city park, cemetery, etc.</p> <p>Tropical grass</p> <p>Bamboo</p> <p>Abaco</p> <p>Citrus</p>	<p>Road with width drawn to scale ..... <math>\text{---}</math></p> <p>Foot path ..... <math>\text{---}</math></p> <p>Railroad: single track - multiple track ..... <math>\text{---}</math></p> <p>Bridge: road - railroad ..... <math>\text{---}</math></p> <p>Footbridge ..... <math>\text{---}</math></p> <p>Tunnel: road - railroad ..... <math>\text{---}</math></p> <p>Overpass - Underpass ..... <math>\text{---}</math></p> <p>Important small masonry or earth dam</p> <p>Dam with lock</p> <p>Dam with road</p> <p>Canal with lock</p> <p>School - Church - Cemeteries Shrine or wayside Cross</p> <p>Building (barn, warehouse, etc.)</p> <p>Power transmission line</p> <p>Wells other than water (labeled as type)</p> <p>Tanks: oil, water, etc. (labeled as to type)</p> <p>Labeled or landmark object - Windmill, Watermill</p> <p>Open pit, mine, or quarry - Prospect</p> <p>Build-up Area</p> <p>Horizontal control point on Church</p> <p>Bureau of Lands Location Monument (BLLM)</p> <p>Boundary provincial</p> <p>municipal</p>	<p>Project Road ..... <math>\text{---}</math></p> <p>Fill ..... <math>\text{---}</math></p> <p>Cut ..... <math>\text{---}</math></p> <p>Tunnel ..... <math>\text{---}</math></p> <p>Bridge          P.C.G. (Prestressed Concrete I Section Girder)          R.C.O.G. (Reinforced Concrete T Section Girder)</p> <p>Pipe Culvert</p> <p>Box Culvert</p> <p>Sabo Dam and Deposit Area</p> <p>Channel Work</p> <p>Precast Concrete Frame</p> <p>Retaining Wall</p> <p>Stone Masonry</p>
--	--	--

# TYPICAL ROADWAY SECTION (MOUNTAINOUS)

SCALE 1:50



HALF CUT & HALF FILL  
TYPICAL ROADWAY SECTION (NORMAL)



HALF CUT & HALF FILL  
TYPICAL ROADWAY SECTION (SUPERELEVATED)

JAPAN INTERNATIONAL COOPERATION AGENCY

DALTON PASS TUNNEL PROJECT  
FEASIBILITY STUDY

SECTION A-NEW ALIGNMENT ROUTE  
TYPICAL CROSS SECTION FOR CUT & EMBANKMENT  
FOR MOST LIKELY ROUTE

DATE: MAR'82

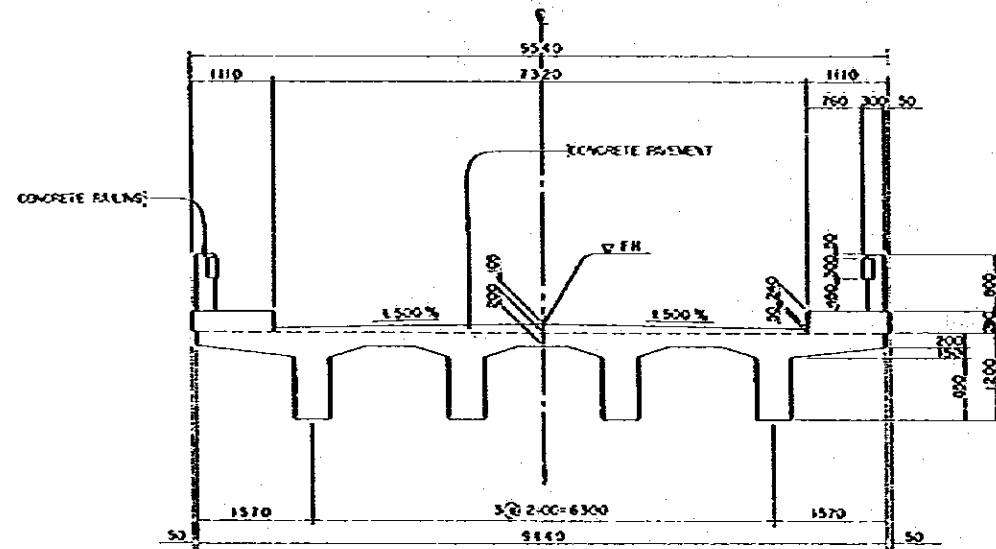
DRAWING NO.

FS-3

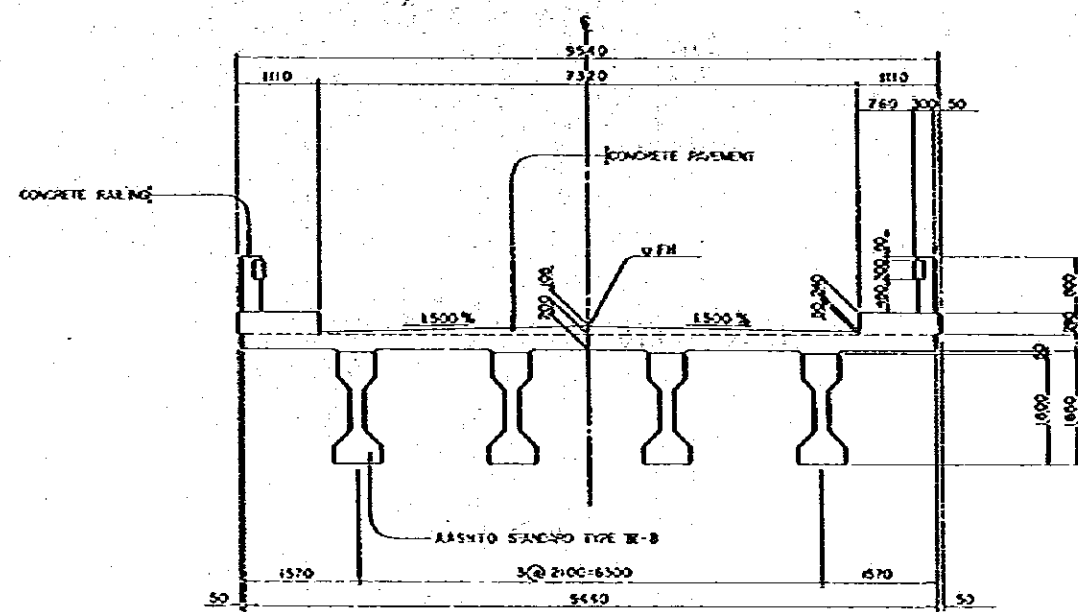
# TYPICAL CROSS SECTION FOR BRIDGE

SCALE 1:50

RCDG SPAN 15.0 M.



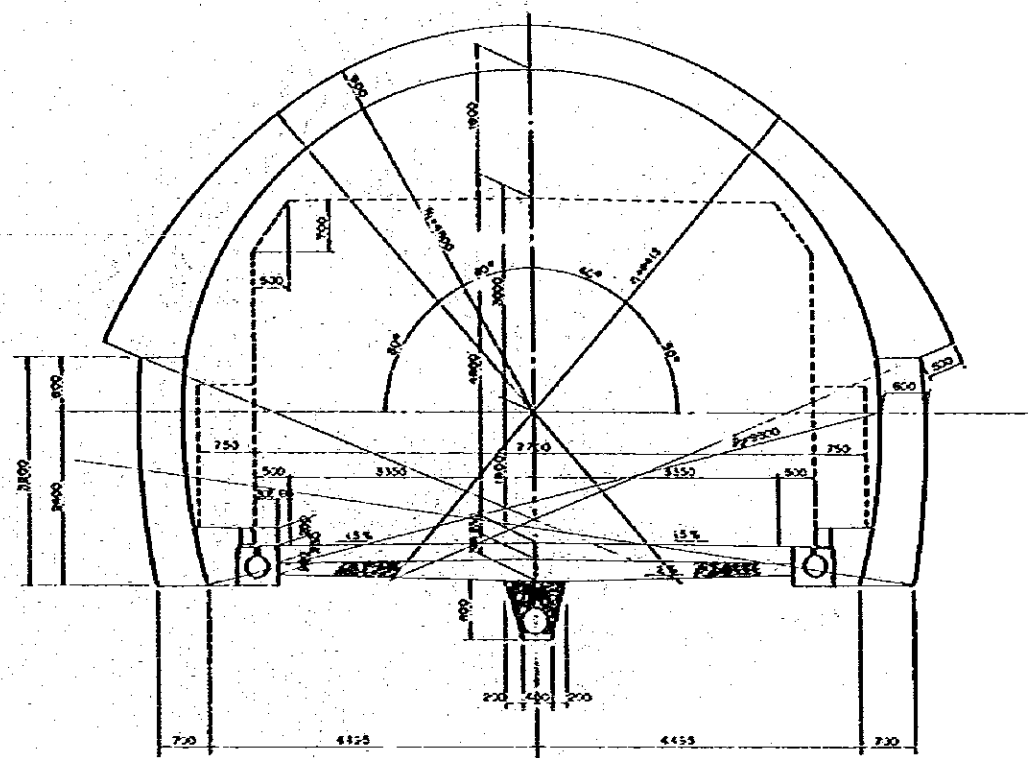
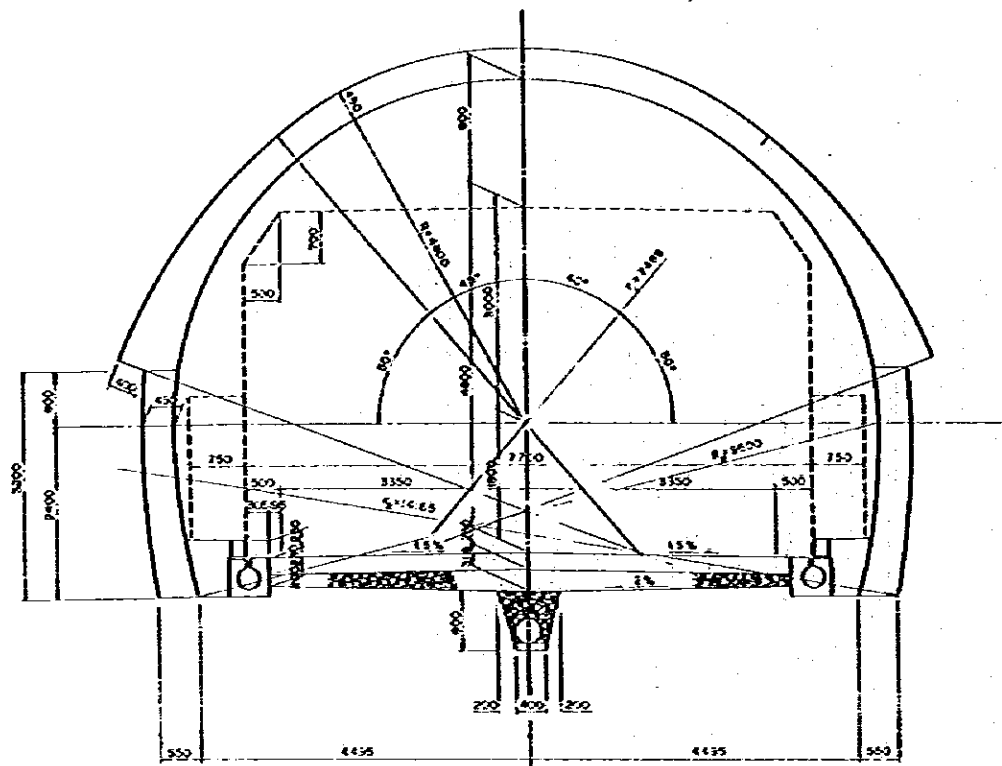
PCG SPAN 30.0 M.



A, B (1=45cm)

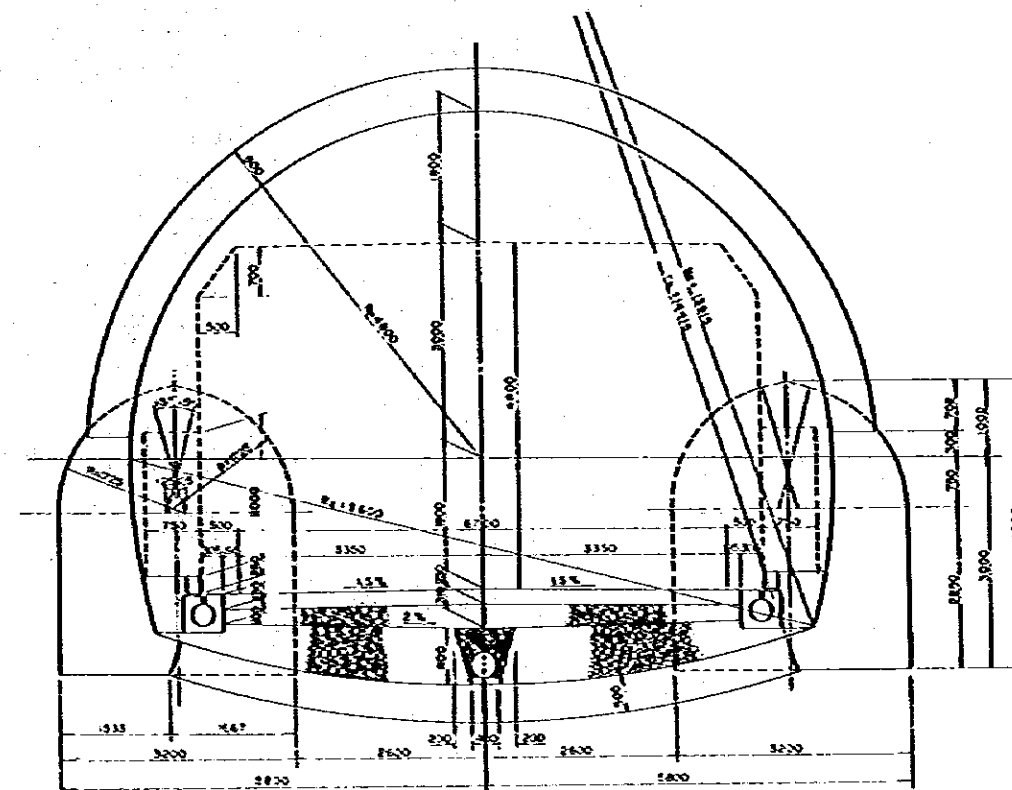
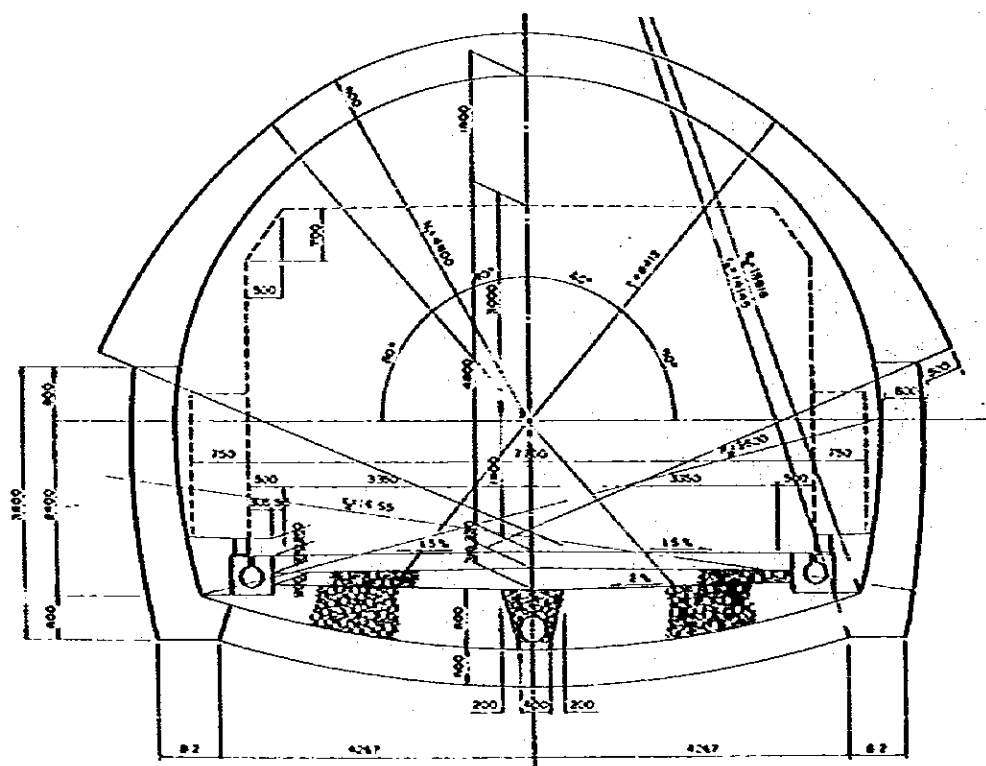
SCALE 1:50

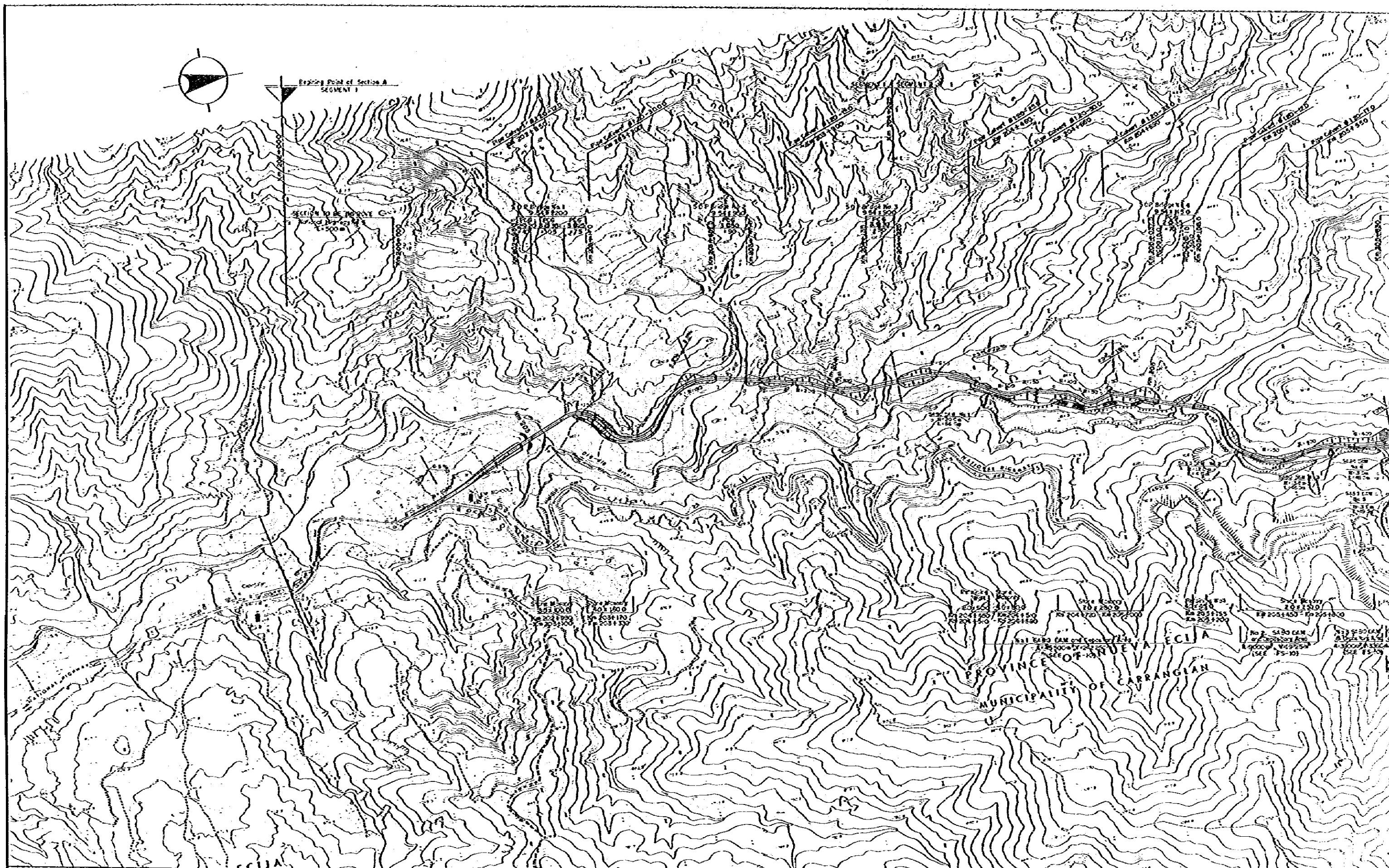
C, D. (1=60cm)



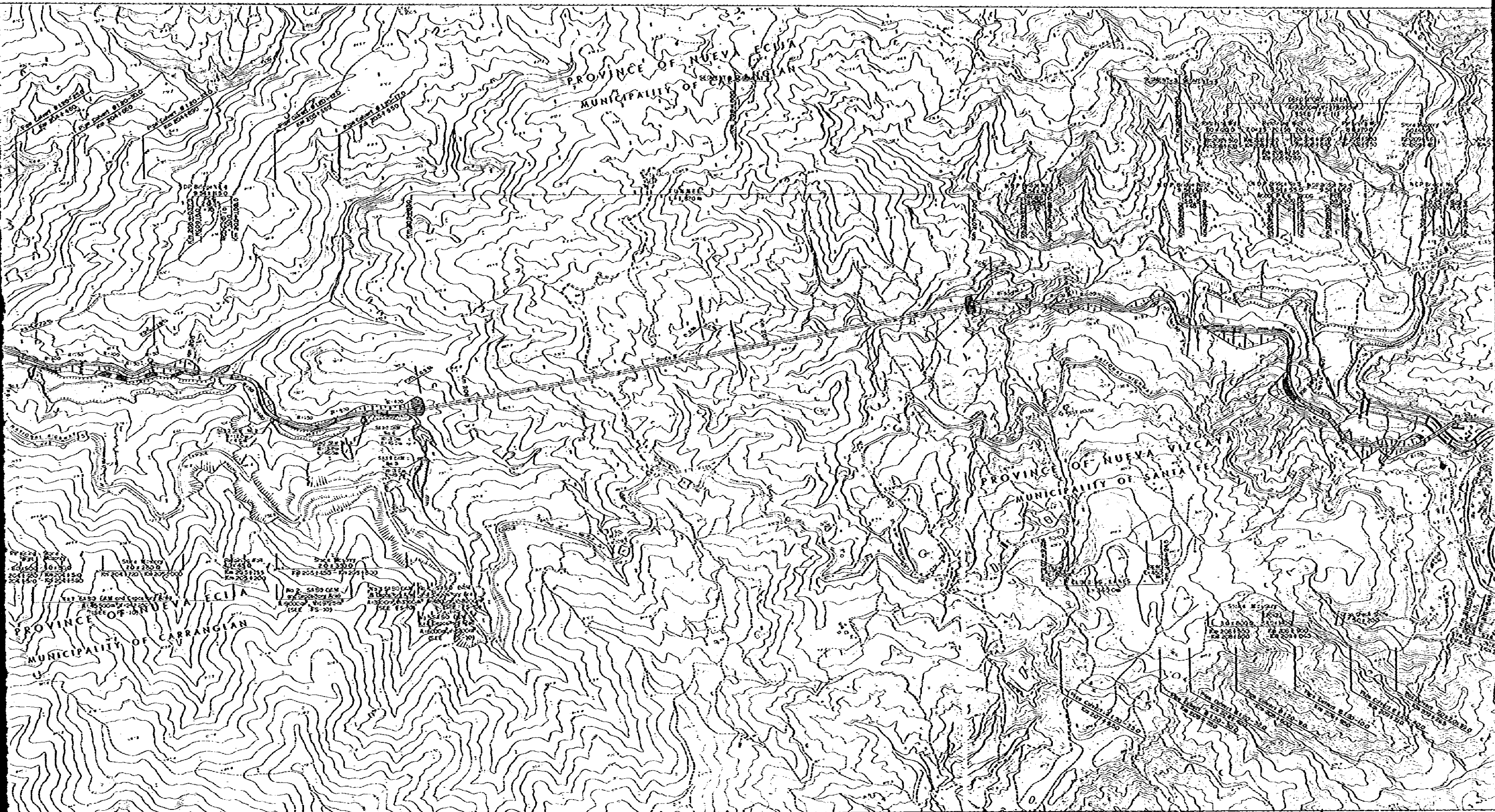
D<sub>1</sub> (1=60cm)

D<sub>2</sub> (1=60cm)

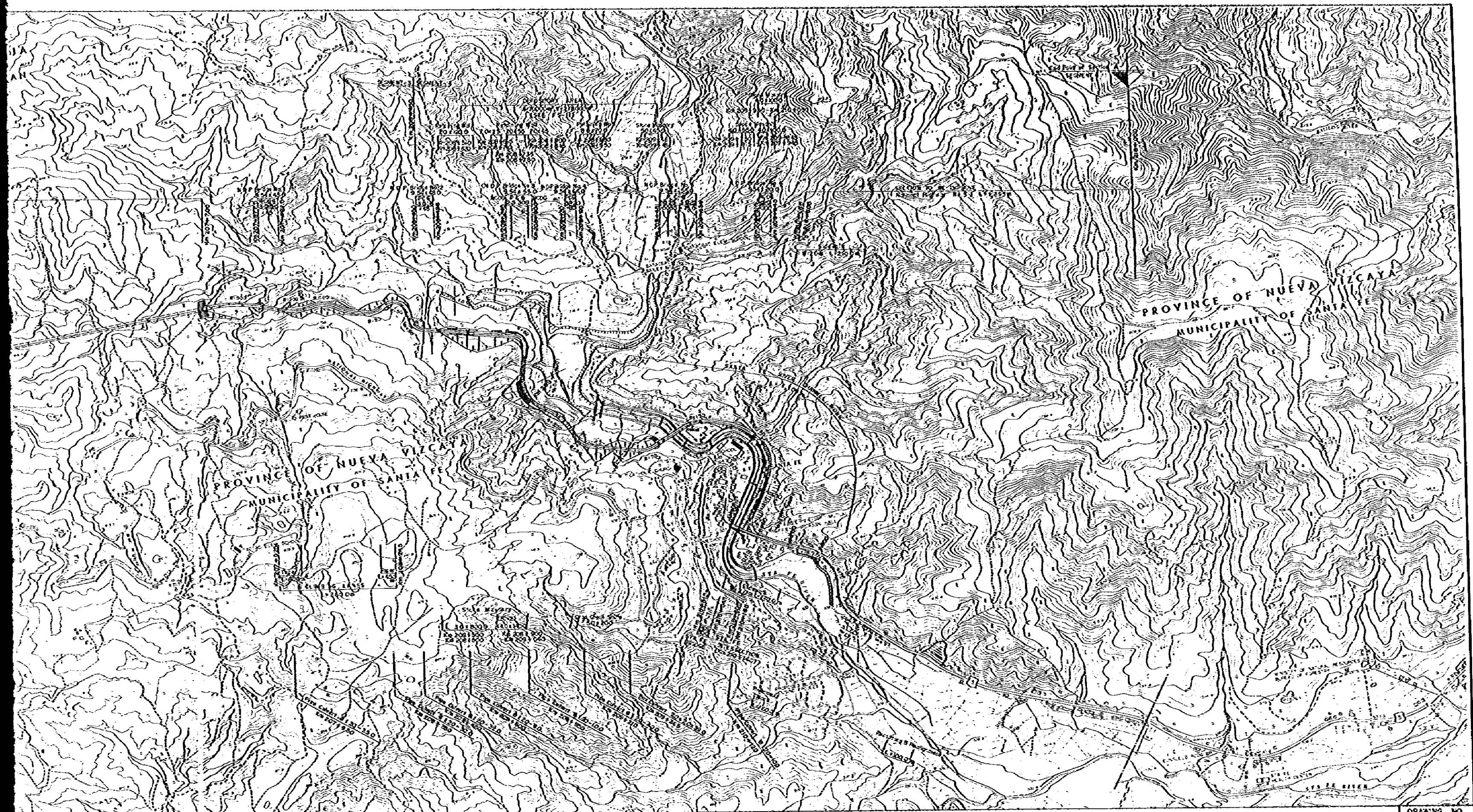




JAPAN INTERNATIONAL COOPERATION AGENCY



DALTON PASS TUNNEL PROJECT  
FEASIBILITY STUDY



SECTION A - NEW ALIGNMENT ROUTE  
 PLAN  
 FOR MOST LIKELY ROUTE

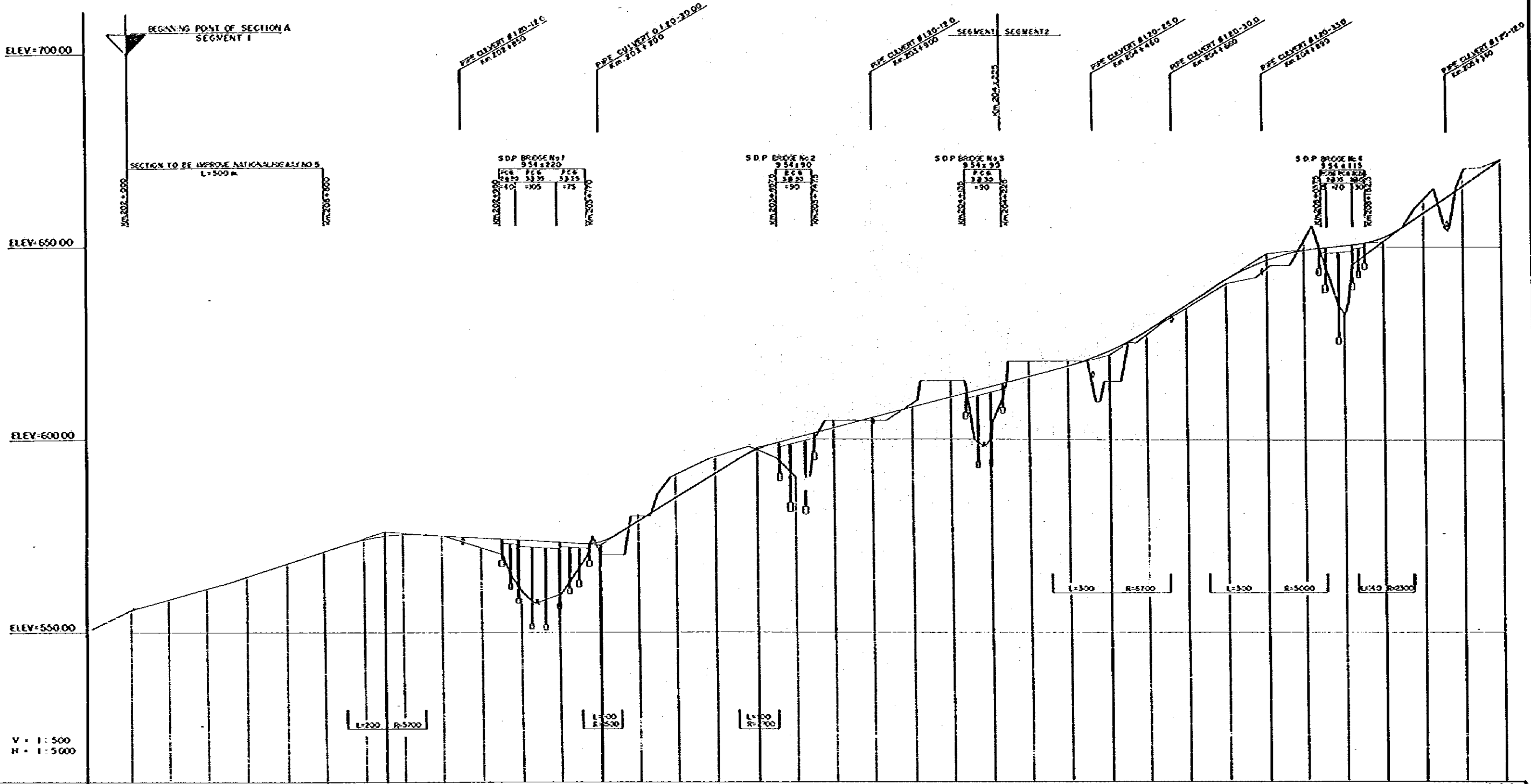
DATE:

DRAWING NO.

FS-6

T





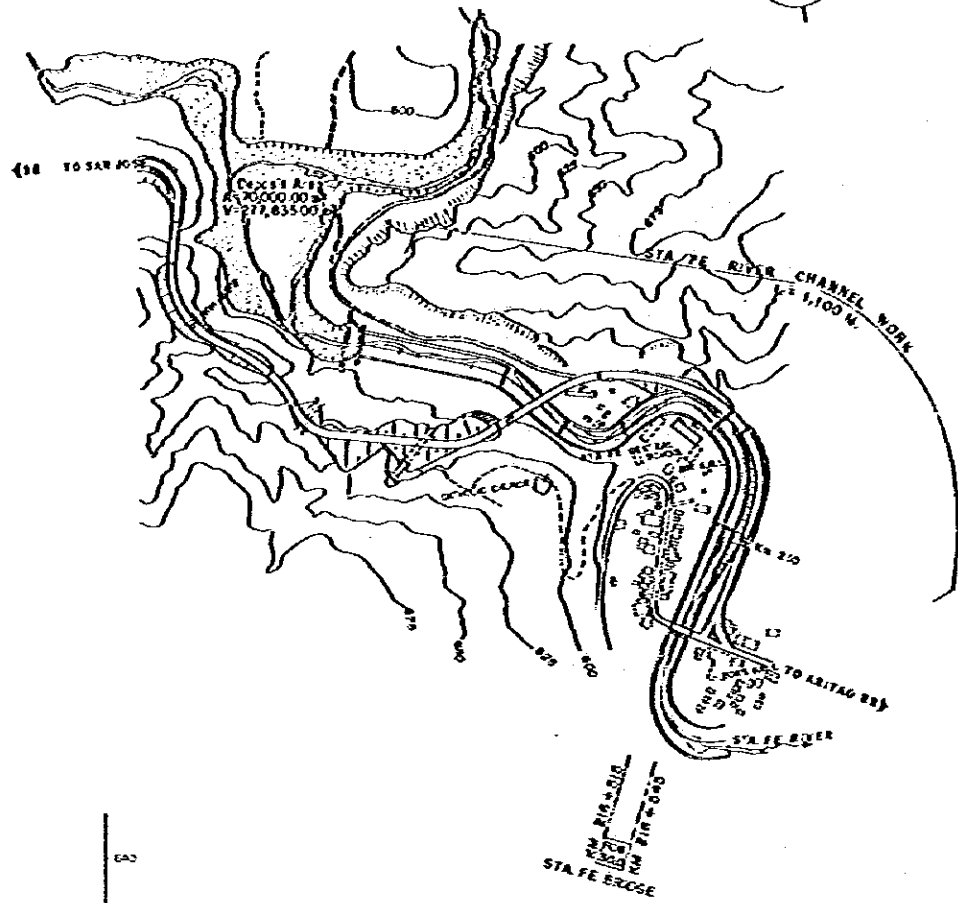
GRADE	NATIONAL HIGHWAY No.5 EXISTING ROAD		571.10	575.00	572.85	597.85	620.15	648.15	651.15																																	
FINISHED GRADE	556.50	571.10	572.80	573.88	574.75	575.15	575.10	574.85	574.50	573.85	573.55	573.10	573.88	574.90	598.90	602.15	602.85	609.15	607.85	610.15	612.85	610.15	610.40	617.84	621.84	627.34	630.85	634.15	640.90	649.90	649.90	650.15	650.45	652.80	658.05	658.15	669.15	672.15				
ORIGINAL GRADE	556.5	571.1	572.5	573.88	574.75	575.15	575.10	574.85	574.50	573.85	573.55	573.10	573.88	574.90	598.90	602.15	602.85	609.15	607.85	610.15	612.85	610.15	610.40	617.84	621.84	627.34	630.85	634.15	640.90	649.90	649.90	650.15	650.45	652.80	658.05	658.15	669.15	672.15				
STATION (SOLICITATION POST)	0+000	0+100	0+200	0+300	0+400	0+500	0+600	0+700	0+800	0+900	0+000	0+100	0+150	0+200	0+250	0+300	0+400	0+500	0+600	0+700	0+800	0+900	0+000	0+100	0+150	0+200	0+250	0+300	0+400	0+500	0+600	0+700	0+800	0+900	0+000	0+100	0+150	0+200	0+270	0+300	0+400	0+600



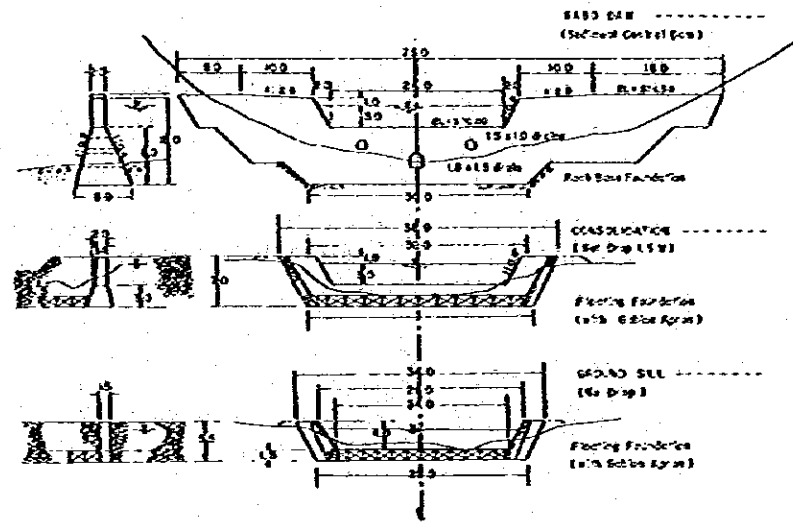




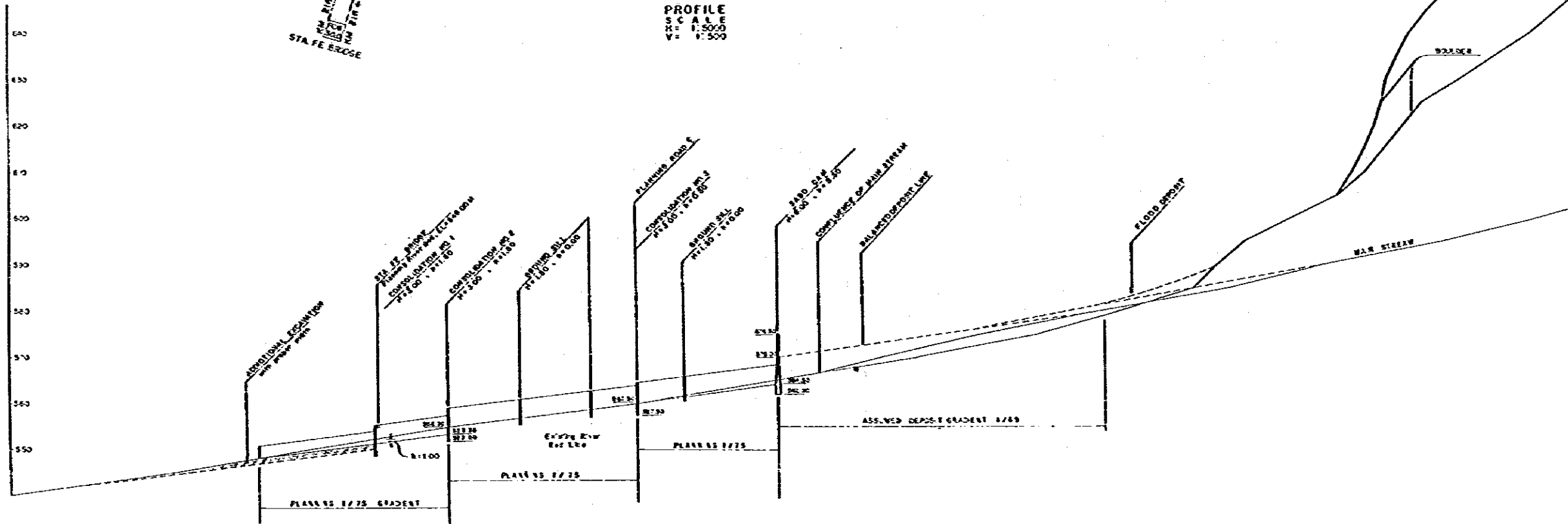
PLAN  
SCALE 1:5000



CROSS SECTION  
SCALE 1:500

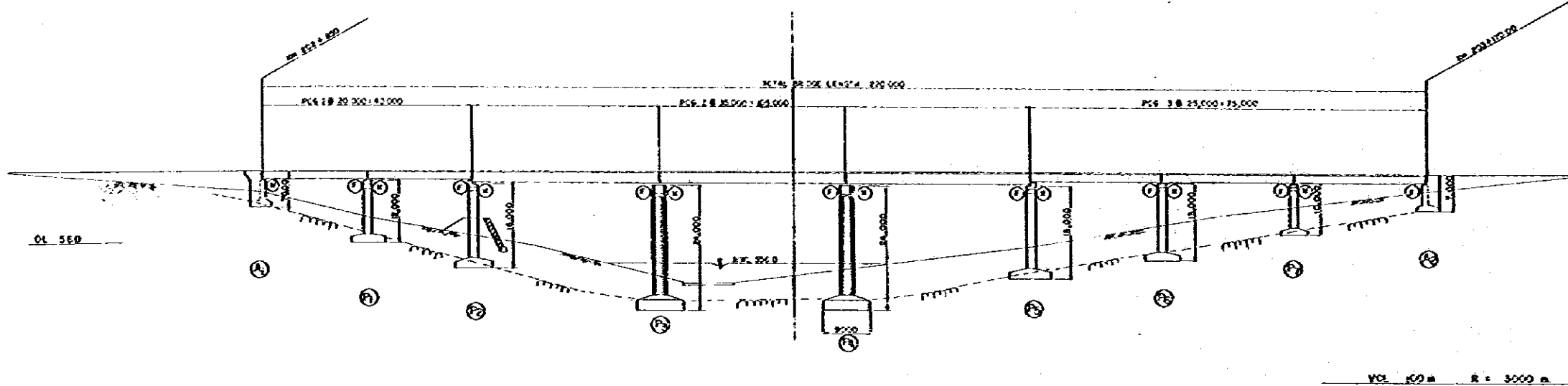


PROFILE  
SCALE  
H: 1:5000  
V: 1:500

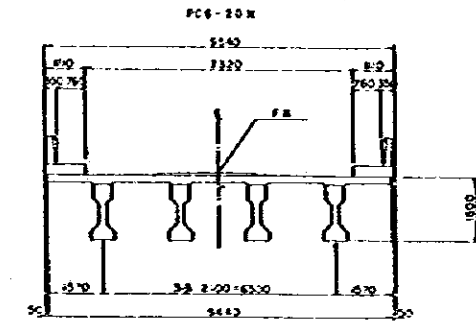




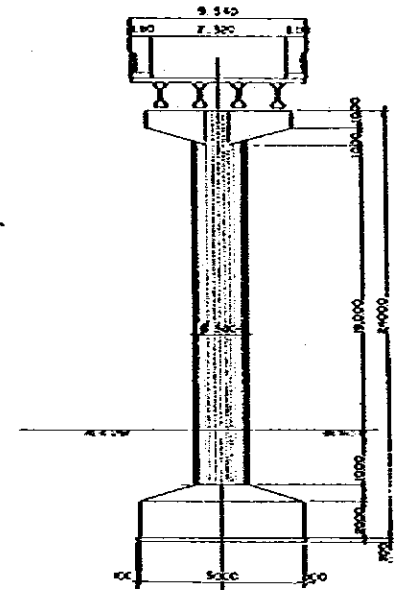
**PROFILE**  
SCALE: 1:500



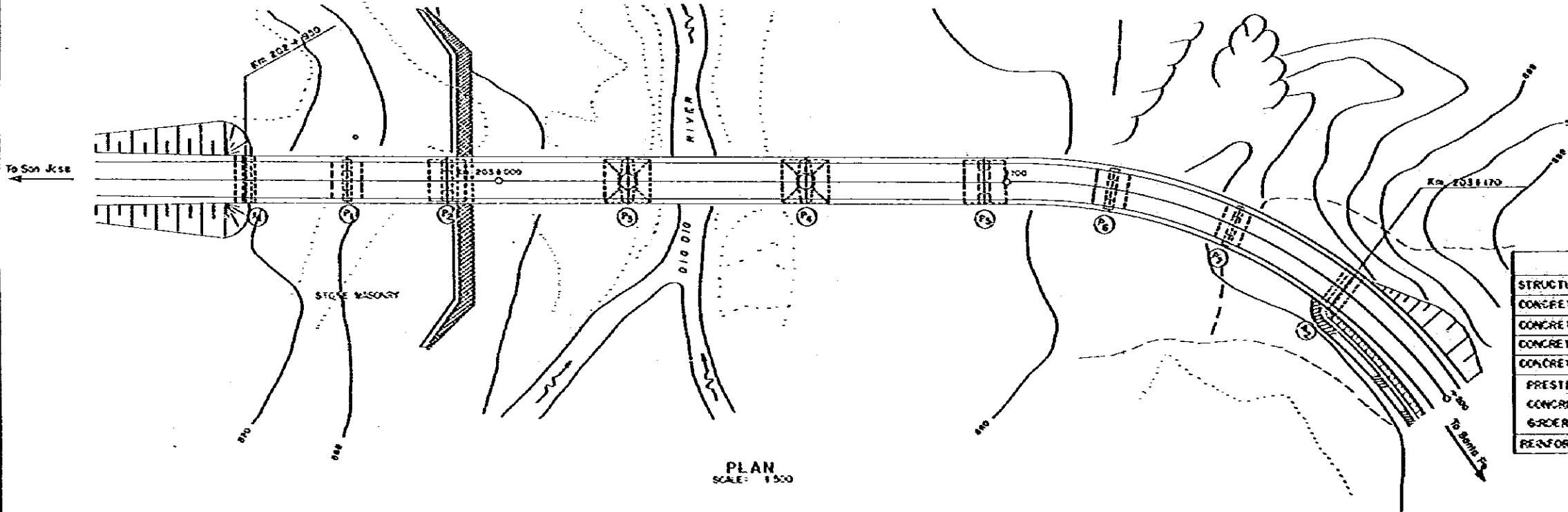
**TYPICAL CROSS SECTION**  
SCALE: 1:100



**CROSS SECTION**  
SCALE: 1:100



GRADE	1:0.50% L=500m													
FISHED GROUND HEIGHT	Km. 202 + 940 074.10	+ 960 074.00	+ 980 073.90	+ 20 073.80	+ 40 073.75	+ 60 073.65	+ 80 073.55	+ 100 073.40	+ 120 073.30	+ 140 073.18	+ 160 073.00	+ 180 073.80		
ORIGINAL GROUND HEIGHT	+ 940 071.0	+ 960 067.5	+ 980 063.3	+ 20 059.0	+ 40 052.5	+ 60 055.0	+ 80 057.0	+ 100 046.3	+ 120 034.0	+ 140 036.7	+ 160 048.0	+ 180 070.0		
STATION (KNO METER)	Km. 202 + 940	+ 960	+ 980	Km. 203 + 000	+ 20	+ 40	+ 60	+ 80	+ 100	+ 120	+ 140	+ 160	+ 180	

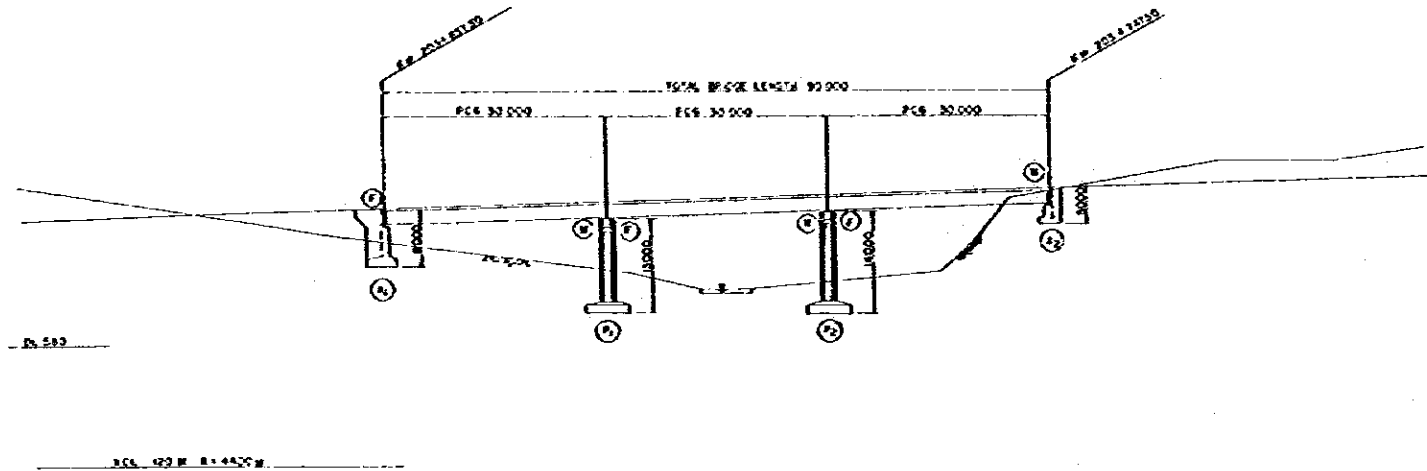


**PLAN**  
SCALE: 1:500

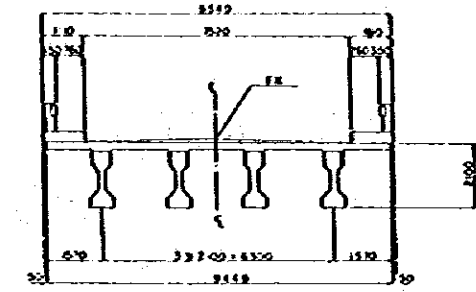
**ESTIMATE OF QUANTITY**

		UNIT	QUANTITIES	REMARKS
STRUCTURE EXCAVATION		CU.M	3180	
CONCRETE RAILING		L.M	440	
CONCRETE FOR SUPERSTRUCTURE		CU.M	703	
CONCRETE FOR ABUTMENT		CU.M	250	
CONCRETE FOR PIER		CU.M	10.5	
PRESTRESSED CONCRETE GIRDER	L = 20 M	Each	8	
	L = 25 M	Each	12	
	L = 30 M	Each	12	
REINFORCING STEEL BAR		Kg	175000	

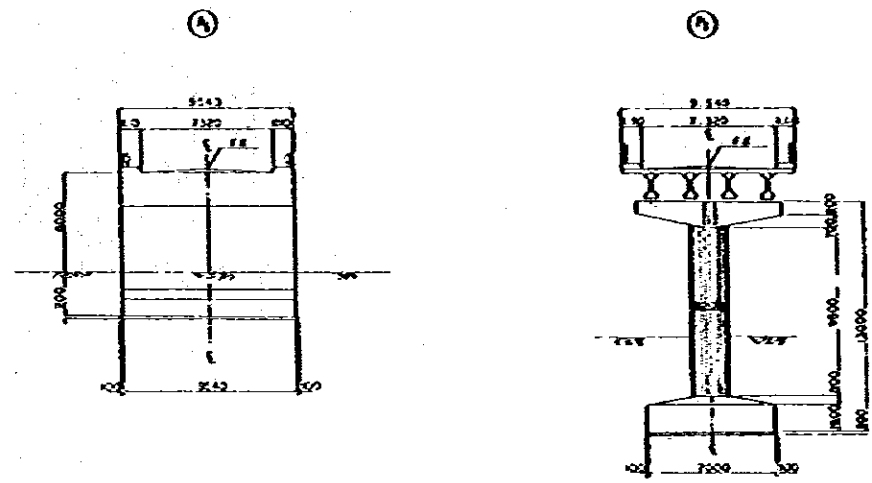
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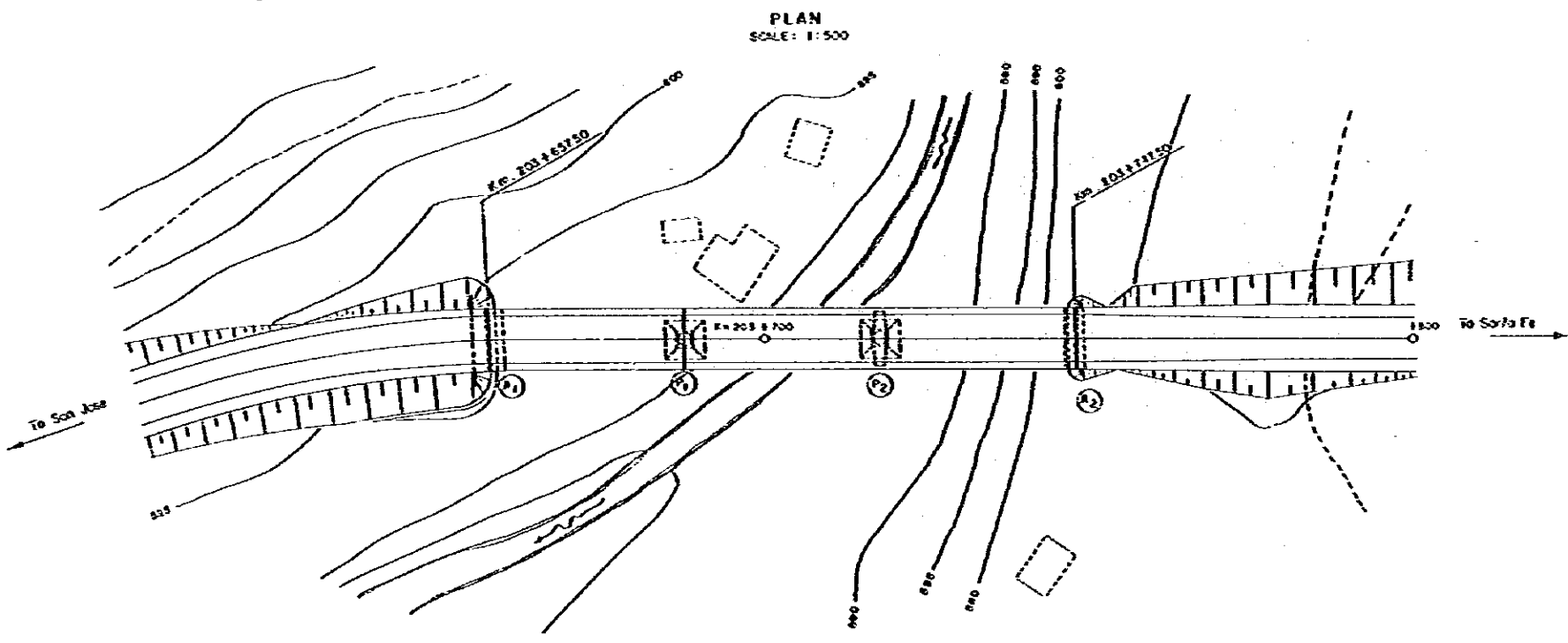
# TYPICAL CROSS SECTION



# CROSS SECTION



GRADE	PLAN SCALE: 1:500									
FINISHED GROUND PERMIT	000.80	001.00	001.10	001.20	001.30	001.40	001.50	001.60	001.70	001.80
ORIGINAL GROUND PERMIT	000.00	000.5	001.0	001.0	001.5	001.0	001.5	001.0	001.5	002.0
STATION KILOMETER	760	764	768	772	776	780	784	788	792	796

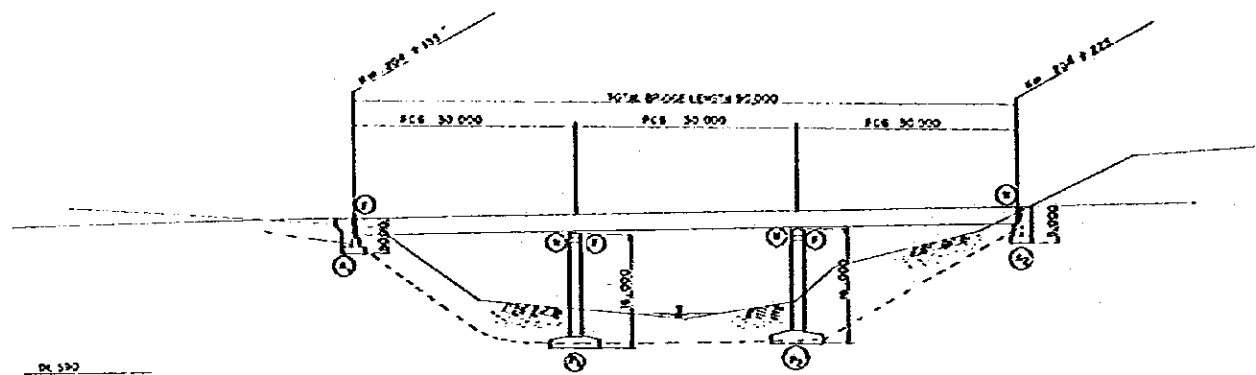


# ESTIMATE OF QUANTITY

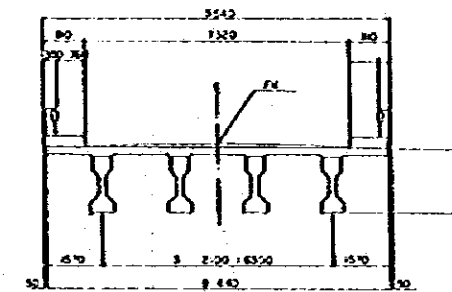
DESCRIPTION	UNIT	QUANTITIES	REMARKS
STRUCTURE EXCAVATION	CUM	930	
CONCRETE FOR SUPERSTRUCTURE	CUM	290	
CONCRETE FOR ABUTMENT	CUM	245	
CONCRETE FOR PIER	CUM	245	
PRESTRESSED CONCRETE GIRDER L = 30	L.M	12	
REINFORCING STEEL BAR	Kg	69300	
CONCRETE RAILING	L.M	190	



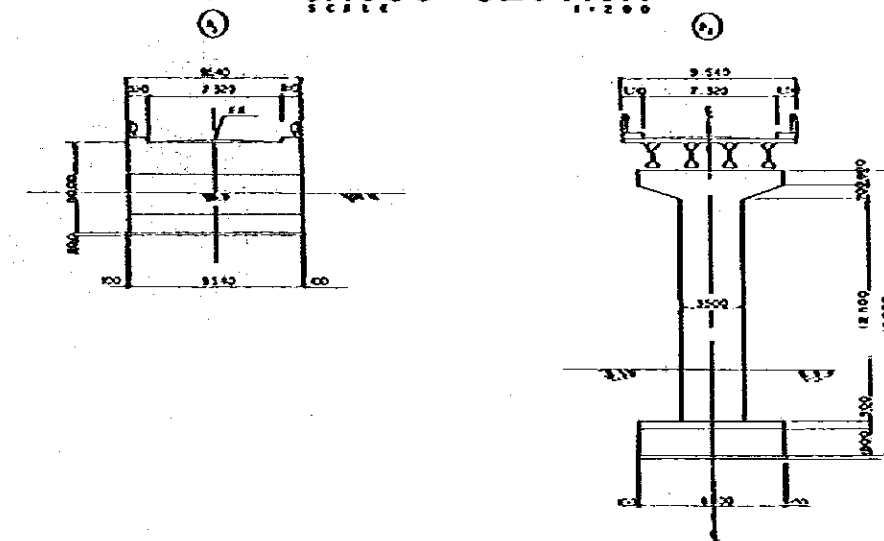
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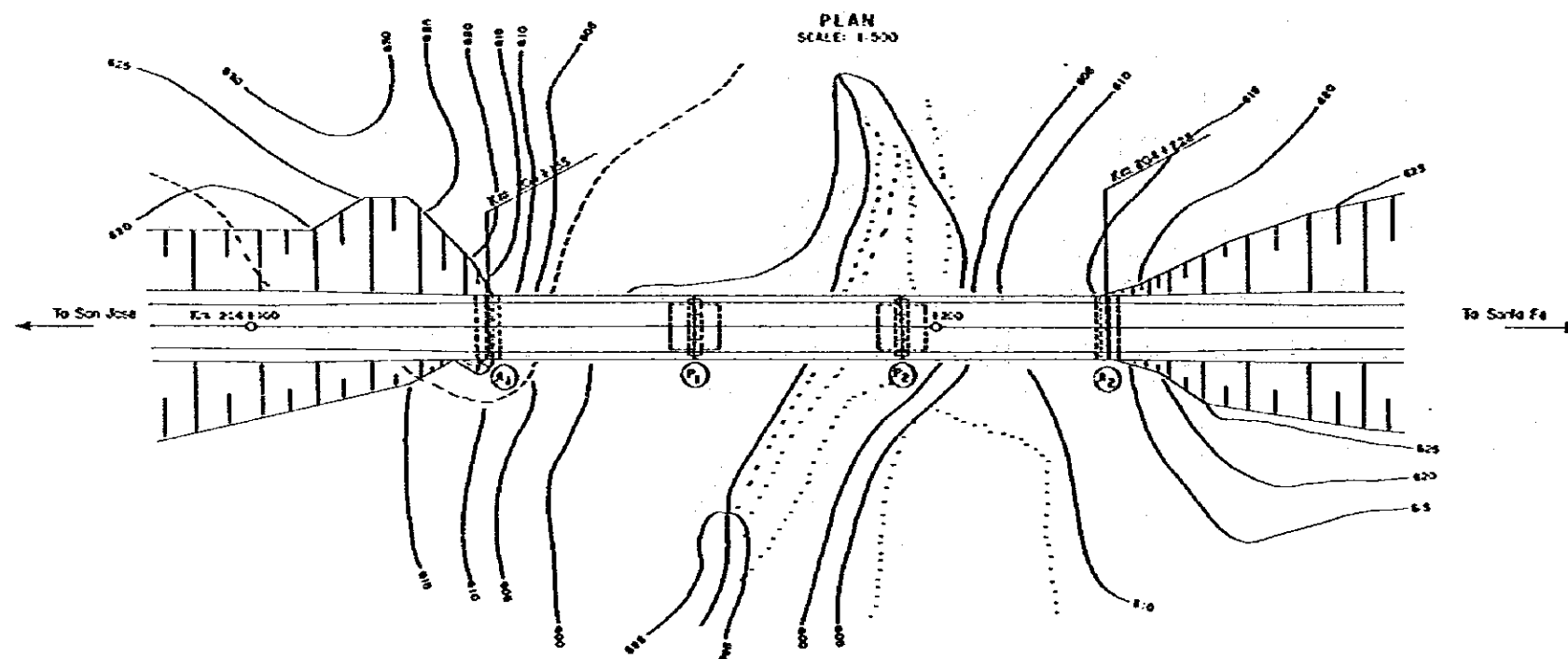
# TYPICAL CROSS SECTION



# CROSS SECTION



GRADE	L = 2,500 L = 900								
FISHED GROUND HEIGHT	+010.15	+010.45	+011.0	+011.45	+012.15	+012.85	+013.15	+013.45	+013.90
ORIGINAL GROUND HEIGHT	+012.5	+011.0	+094.5	+088.5	+077.0	+6.45	+010.0	+020.0	+010.40
STATION K.M. METER	Km 204 +100	+120	+140	+160	+180	+200	+220	+240	

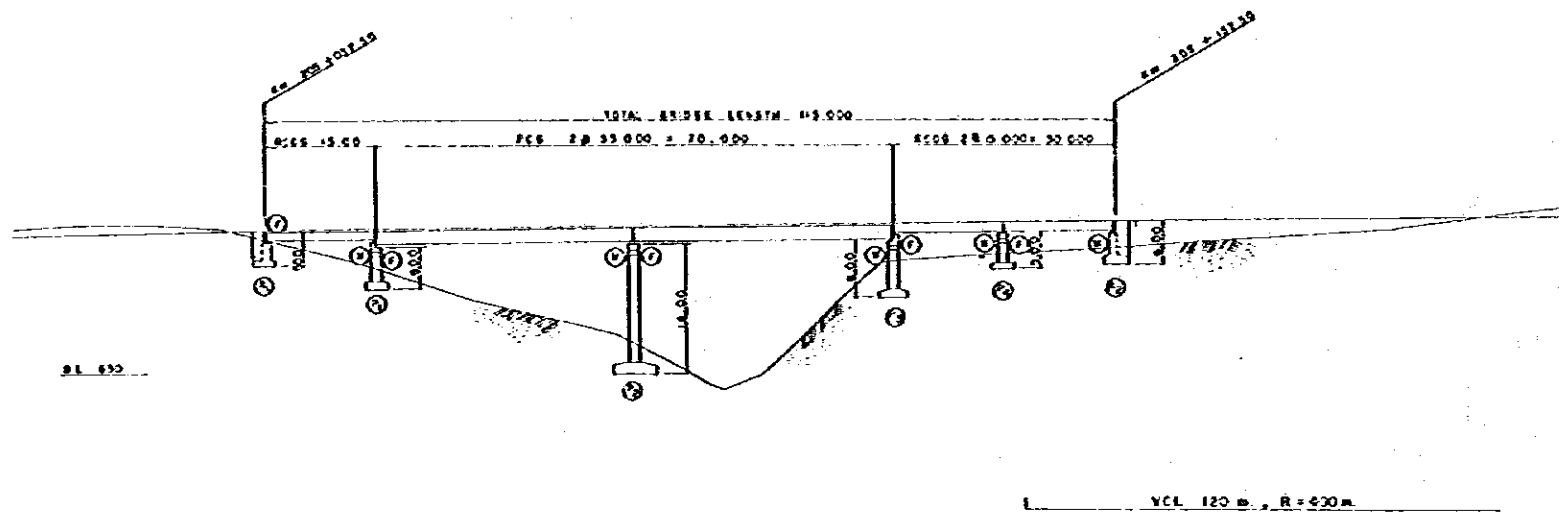


# ESTIMATE OF QUANTITY

DESCRIPTION	UNIT	QUANTITIES	REMARKS
STRUCTURE EXCAVATION	CuM	1180	
CONCRETE RAILINGS	L.M.	180	
CONCRETE FOR SUPERSTRUCTURE	CuM	290	
CONCRETE FOR ABUTMENT	CuM	210	
CONCRETE FOR PIER	CuM	280	
PRESTRESSED CONCRETE GIRDER L=50m	Each	12	
REINFORCING STEEL BAR	Kg.	63500	

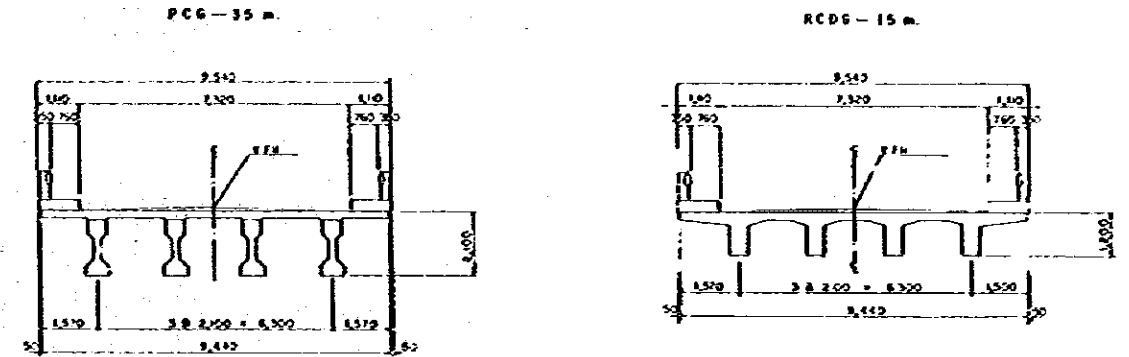
# PROFILE

SCALE 1:500



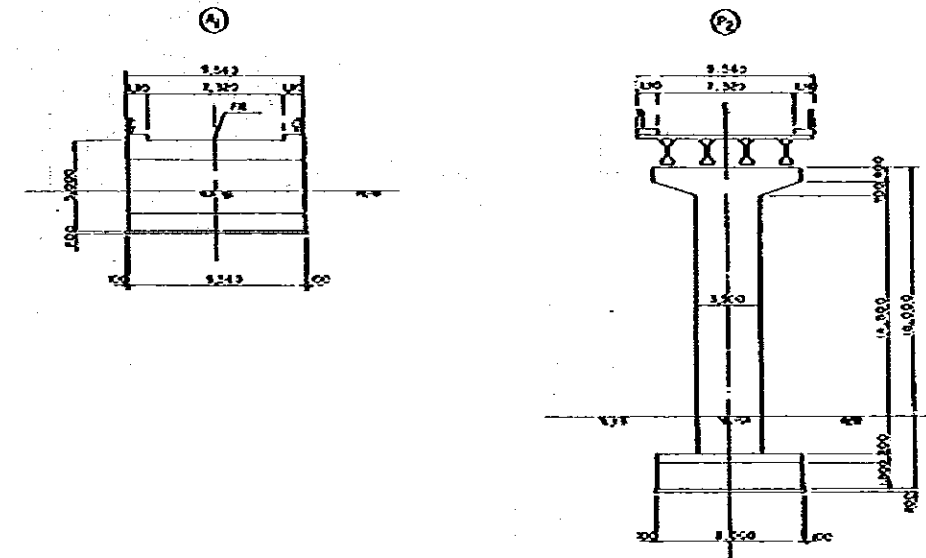
# TYPICAL CROSS SECTION

SCALE 1:100

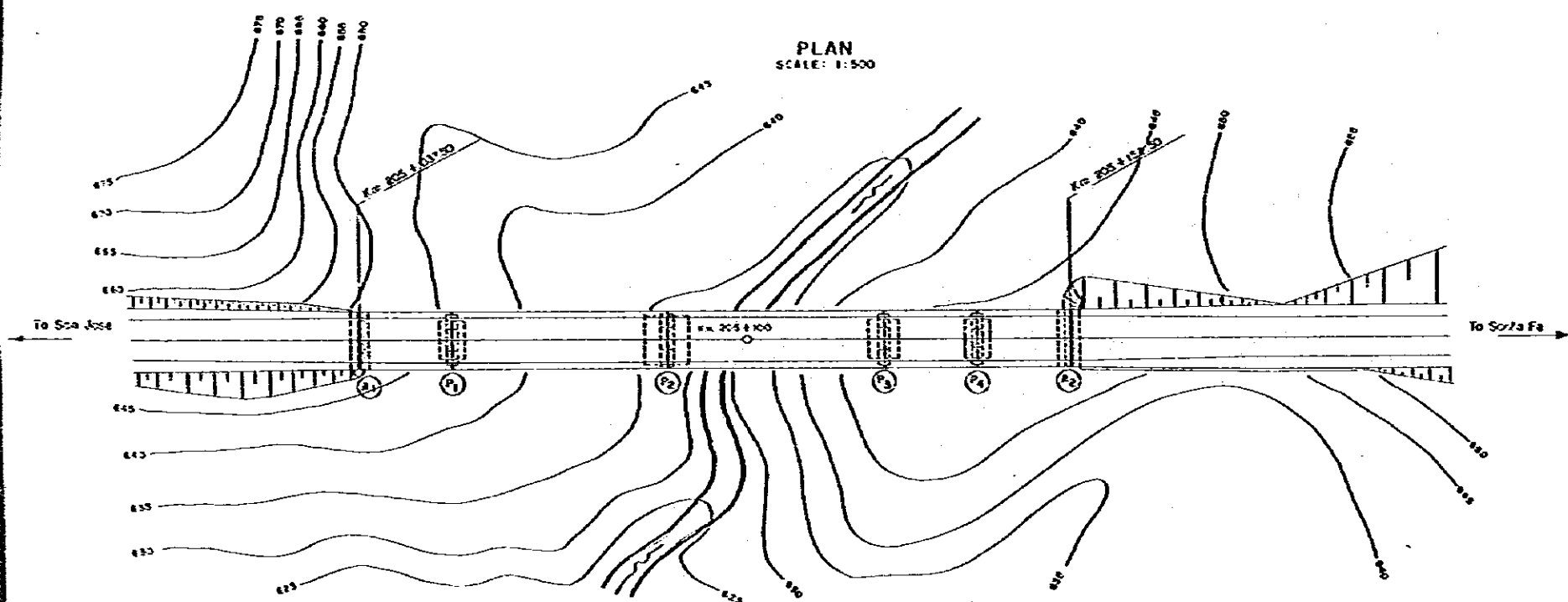


# CROSS SECTION

SCALE 1:200



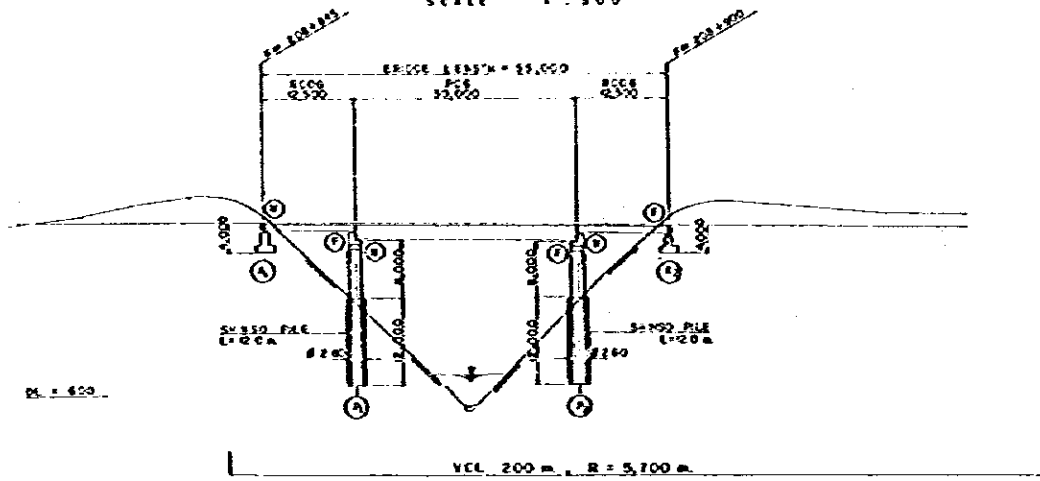
GRADE	1:1000% L=300 m									
FINISHED GROUND HEIGHT	849.30	849.85	849.70	849.90	850.10	850.30	850.00	850.80	851.30	852.00
ORIGINAL GROUND HEIGHT	850.7	847.8	842.0	839.7	827.5	840.0	846.5	847.8	849.0	851.0
STATION (KILO METER)	0+00	0+40	0+60	0+80	1+00	1+20	1+40	1+60	1+80	2+00



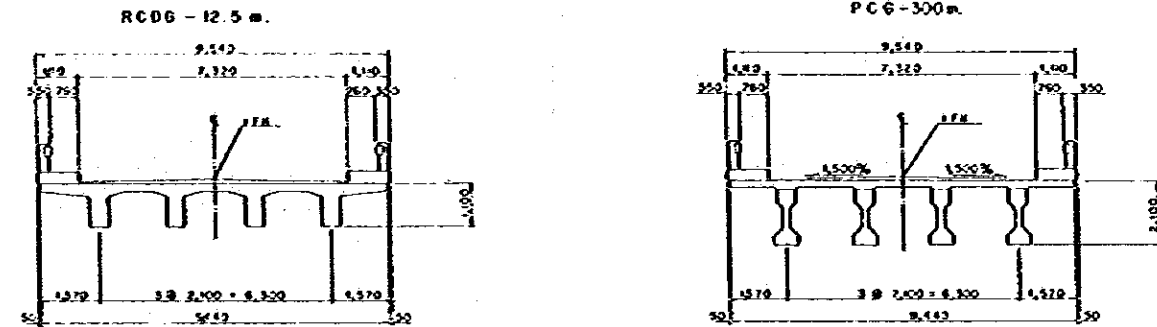
# ESTIMATE OF QUANTITY

DESCRIPTION	UNIT	QUANTITIES	REMARKS
STRUCTURE EXCAVATION	CJ.M	1025	
CONCRETE RAILING	L.M	230	
CONCRETE FOR SUPERSTRUCTURE	CJ.M	462	
CONCRETE FOR ABUTMENT	CJ.M	173	
CONCRETE FOR PIER	CJ.M	345	
PRESTRESSED CONCRETE GIRDER L=33	EACH	8	
REINFORCING STEEL BAR	KG	71500	

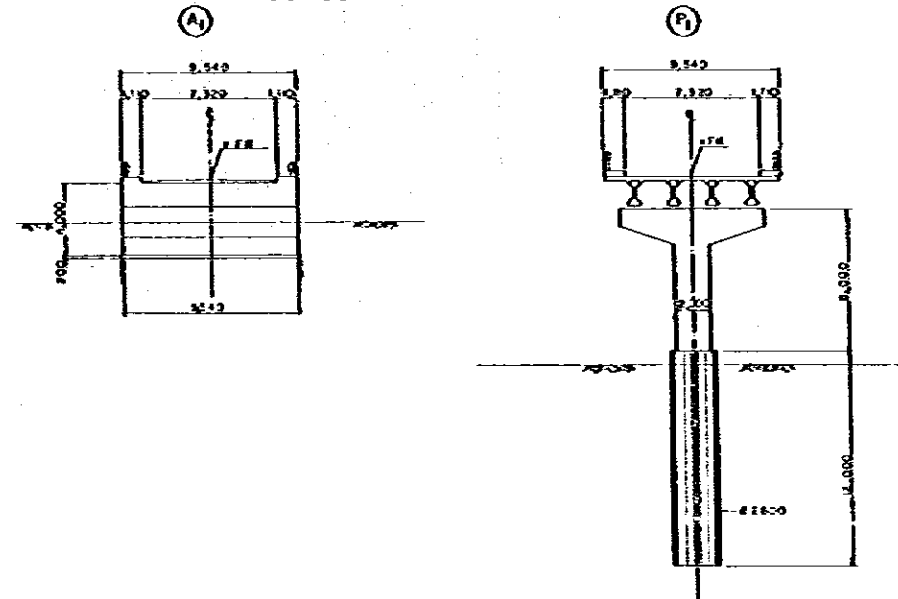
**PROFILE**  
SCALE 1:500



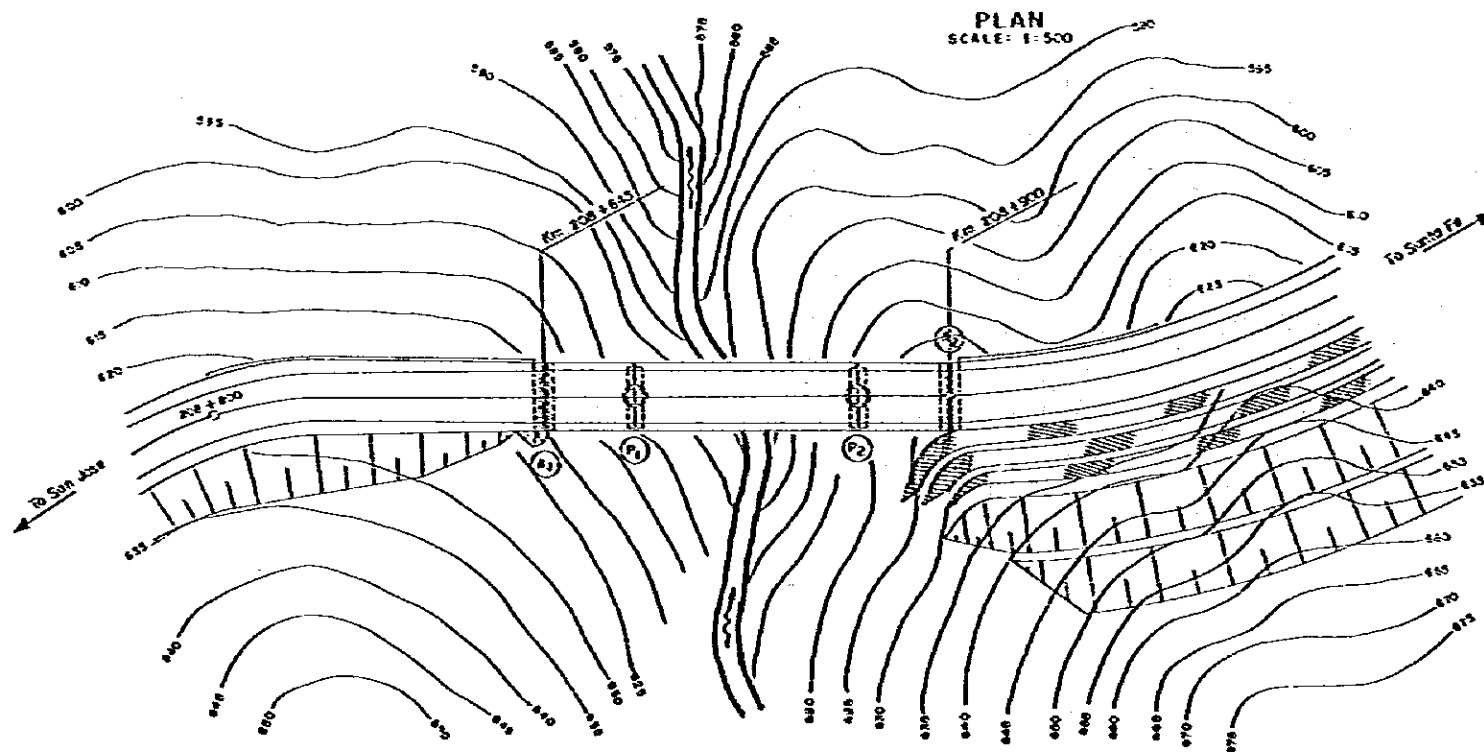
**TYPICAL CROSS SECTION**  
SCALE 1:100



**CROSS SECTION**  
SCALE 1:200



GRADE	I=1000% L=600 m								
FINISHED GROUND HEIGHT	824.00	824.36	824.16	823.90	823.63	823.19	822.63	821.90	821.00
ORIGINAL GROUND HEIGHT	824.2	820.2	827.4	800.5	806.0	820.0	820.5	821.90	821.00
STATION (KILOMETER)	Km. 208 +800	+820	+840	+860	+880	+900	+920	+940	+960



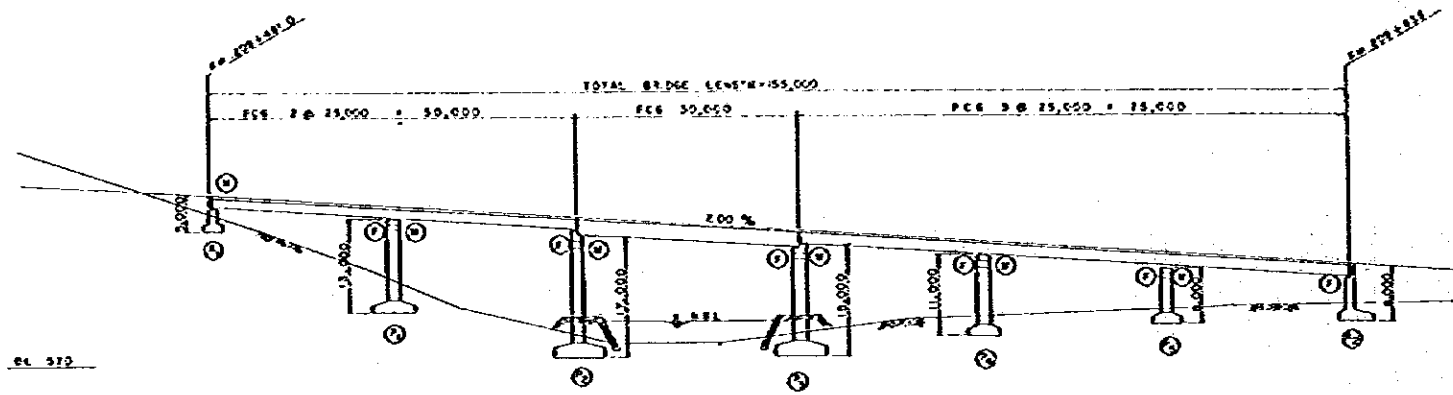
**ESTIMATE OF QUANTITY**

DESCRIPTION	UNIT	QUANTITIES	REMARKS
STRUCTURE EXCAVATION	Cu.M.	240	
CONCRETE RAILINGS	L.M.	110	
CONCRETE FOR SUPERSTRUCTURE	Cu.M.	211	
CONCRETE FOR ABUTMENT	Cu.M.	120	
CONCRETE FOR PIER	Cu.M.	110	
PRESTRESSED CONCRETE GIRDER	Each	4	
REINFORCING STEEL BAR	Kg	41000	
SHINSO PILE (Ø=260 mm)	L.M.	24	

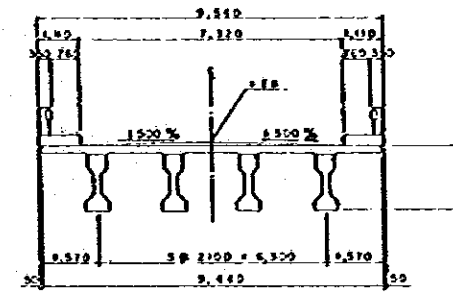


# PROFILE

SCALE 1:500

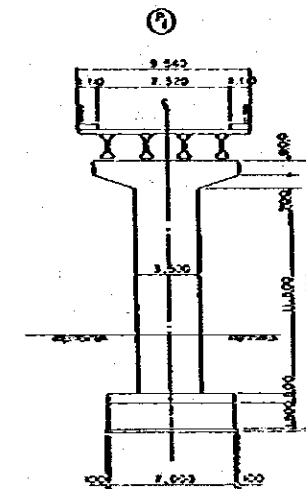


# TYPICAL CROSS SECTION



# CROSS SECTION

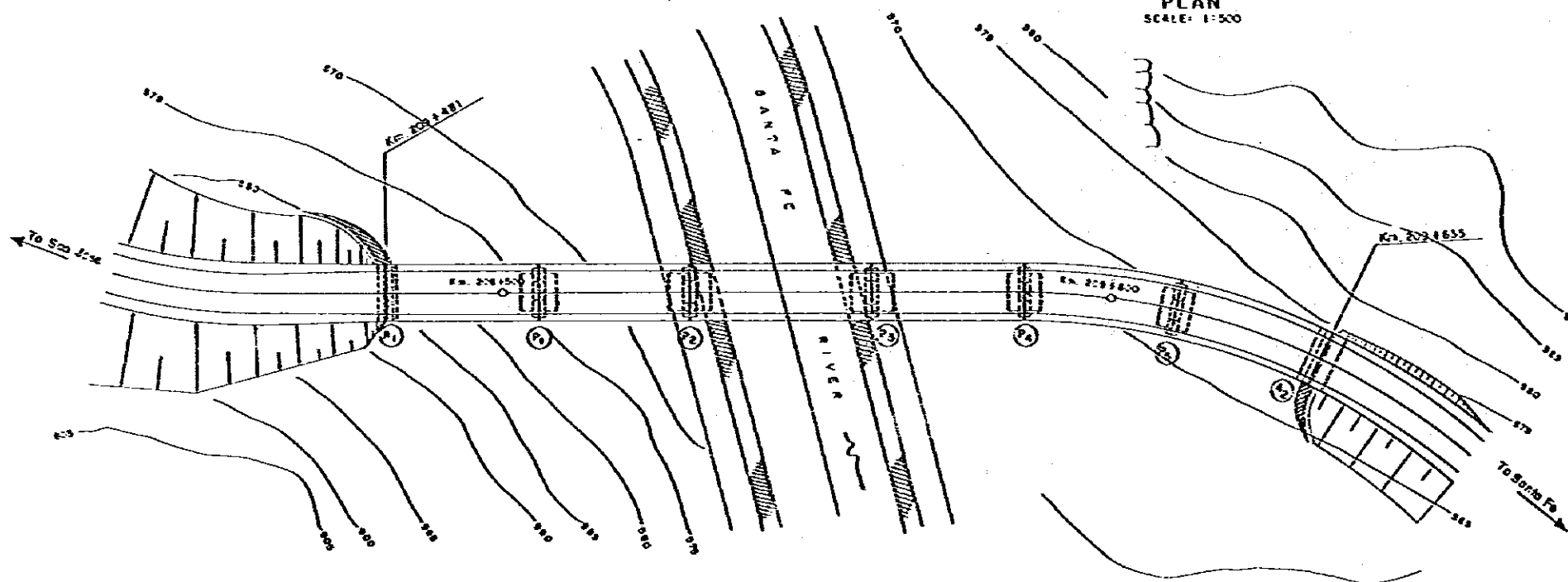
SCALE 1:200



GRADE	I = 2.000% L = 800m										
FINISHED GROUND HEIGHT	-087.30	-088.00	-084.00	-083.16	-081.76	-080.36	-078.96	-077.56	-076.16	-074.76	-073.36
ORIGINAL GROUND HEIGHT	-098.0	-091.1	-084.0	-079.0	-072.0	-073.0	-076.8	-076.2	-077.0	-076.8	-076.9
STATION (KILOMETER)	Km 202+480	Km 202+480	Km 202+500	Km 202+580	Km 202+590	Km 202+600	Km 202+680	Km 202+690	Km 202+700	Km 202+780	Km 202+800

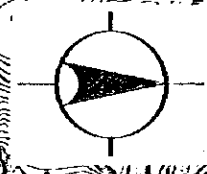
# PLAN

SCALE 1:500



# ESTIMATE OF QUANTITY

DESCRIPTION	UNIT	QUANTITIES	REMARKS
STRUCTURE EXCAVATION	Cu M	1300	
CONCRETE RAILING	L.M	310	
CONCRETE FOR SUPERSTRUCTURE	Cu M	491	
CONCRETE FOR ABUTMENT	Cu M	245	
CONCRETE FOR PIER	Cu M	585	
PRESTRESSED CONCRETE GIRDER	L = 25 m	Each	20
	L = 30 m	Each	4
REINFORCING STEEL BAR	Kg	118,000	



PROVINCE OF NUEVA ECIJA  
MUNICIPALITY OF CARRANGLAN

NUEVA ECIJA  
MUNICIPALITY OF CARRANGLAN

PROVINCE OF NUEVA VIZCAYA  
MUNICIPALITY OF SANTA FE

JAPAN INTERNATIONAL COOPERATION AGENCY

DALTON PASS TUNNEL PROJECT  
FEASIBILITY STUDY

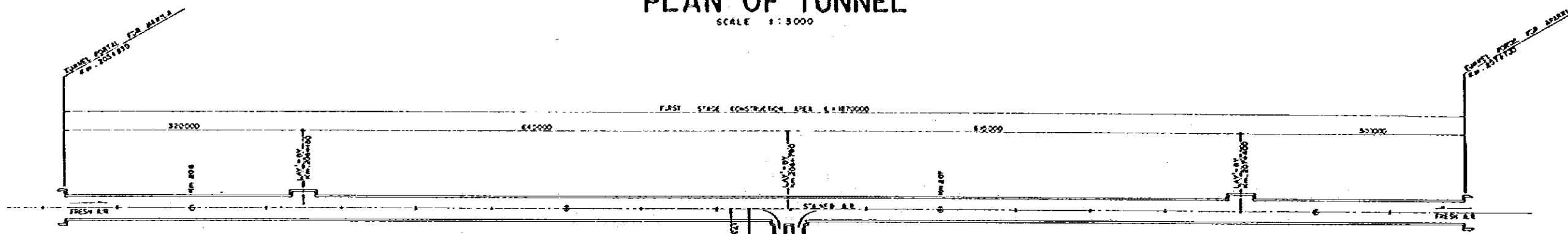
SECTION A - NEW ALIGNMENT ROUTE  
GENERAL PLAN OF TUNNEL SCALE 1:5000  
FOR MOST LIKELY ROUTE DATE: MAR '82

DRAWING NO.

FS-20

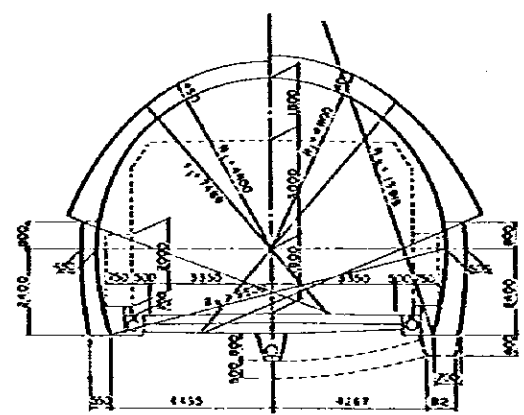
# PLAN OF TUNNEL

SCALE 1:3000



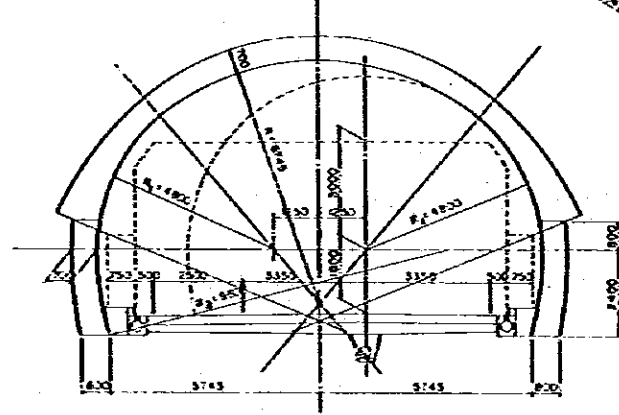
TYPICAL CROSS SECTION OF TUNNEL (1)

SCALE 1:100



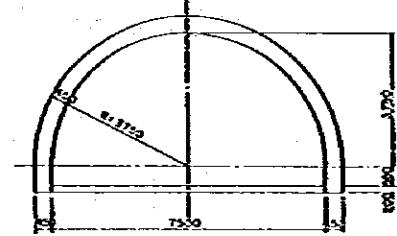
CROSS SECTION OF LAY-BY TUNNEL

SCALE 1:1000



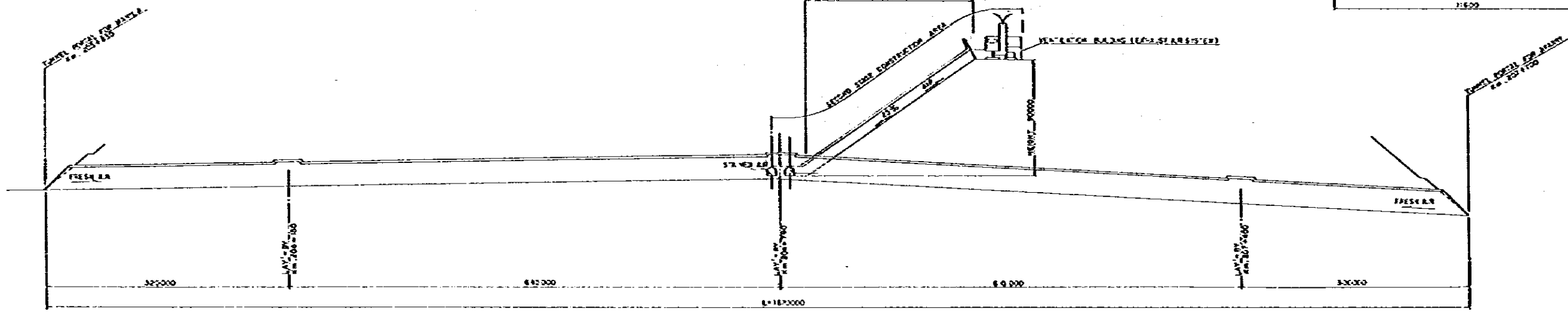
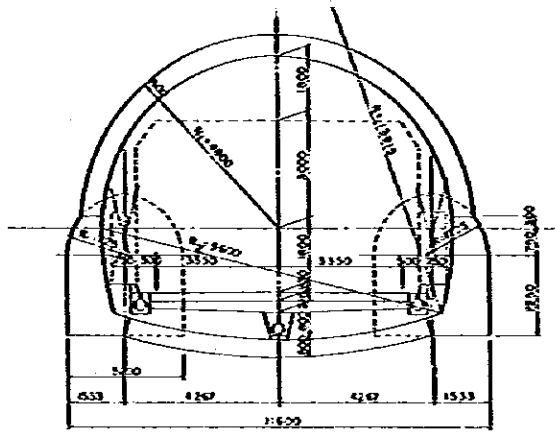
CROSS SECTION OF INCLINED SHAFT

SCALE 1:100



TYPICAL CROSS SECTION OF TUNNEL (2)

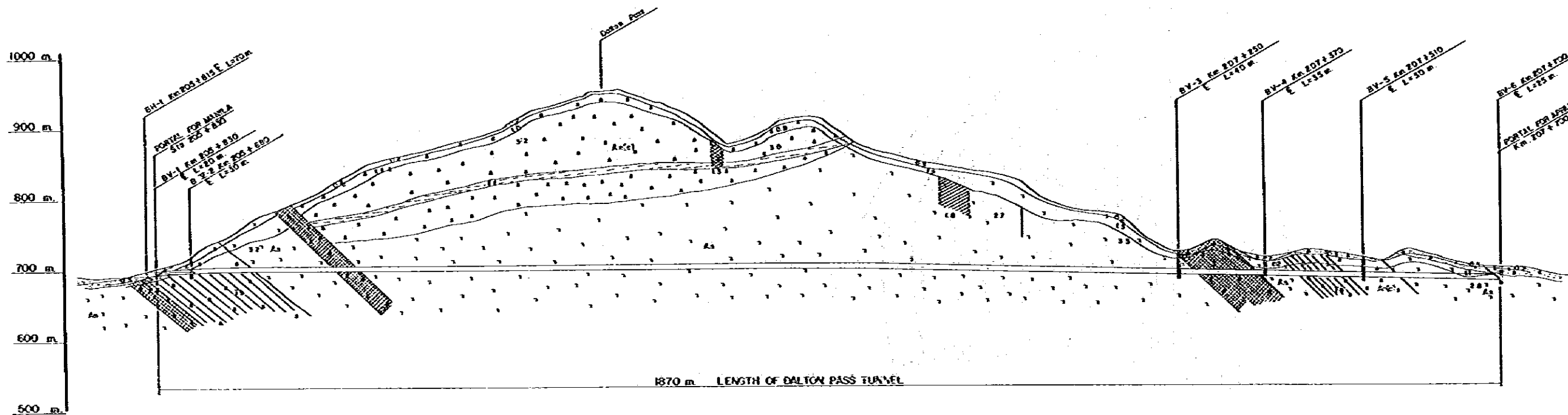
SCALE 1:100



# PROFILE OF TUNNEL

SCALE 1:3000

PROFILE  
SCALE 1:5000



1870 m LENGTH OF DALTON PASS TUNNEL

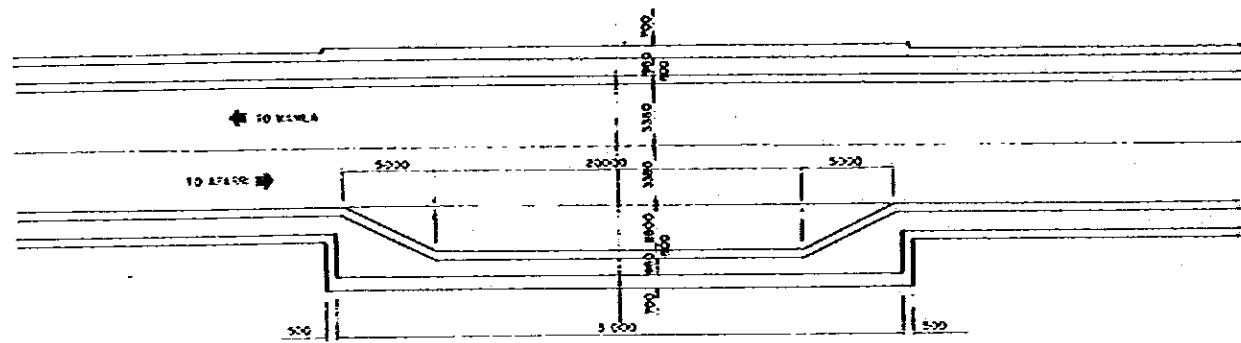
STATION (KILOMETER POST)	805+700	805+600	805+500	805+400	805+300	805+200	805+100	805+000	804+900	804+800	804+700	804+600	804+500	804+400	804+300	804+200	804+100	804+000	803+900	803+800	803+700	803+600	803+500	803+400	803+300	803+200	803+100	803+000	
PROPOSED HEIGHT (m)	688.34	688.07	687.88	687.68	687.48	687.28	687.08	686.88	686.68	686.48	686.28	686.08	685.88	685.68	685.48	685.28	685.08	684.88	684.68	684.48	684.28	684.08	683.88	683.68	683.48	683.28	683.08	682.88	682.68
NAME OF ROCK	ANDESITE		TUFF BRECCIA		ANDESITE																								
SEISMIC VELOCITY (km/s)	2.7		3.2																										
CLASSIFICATION OF ROCK			D (L=140 m)		C (L=100 m)																								
STEEL SUPPORT			H-200 P=0.75 m		H-200 P=0.75 m																								
CONCRETE LINING			PATTERN (I) 1:60 cm		PATTERN (II) 1:60 cm																								
METHOD OF EXCAVATION			INTERMITTENT CUT FOR THE EXCAVATION OF SIDE WALL																										
NOTE			Very soft soil																										



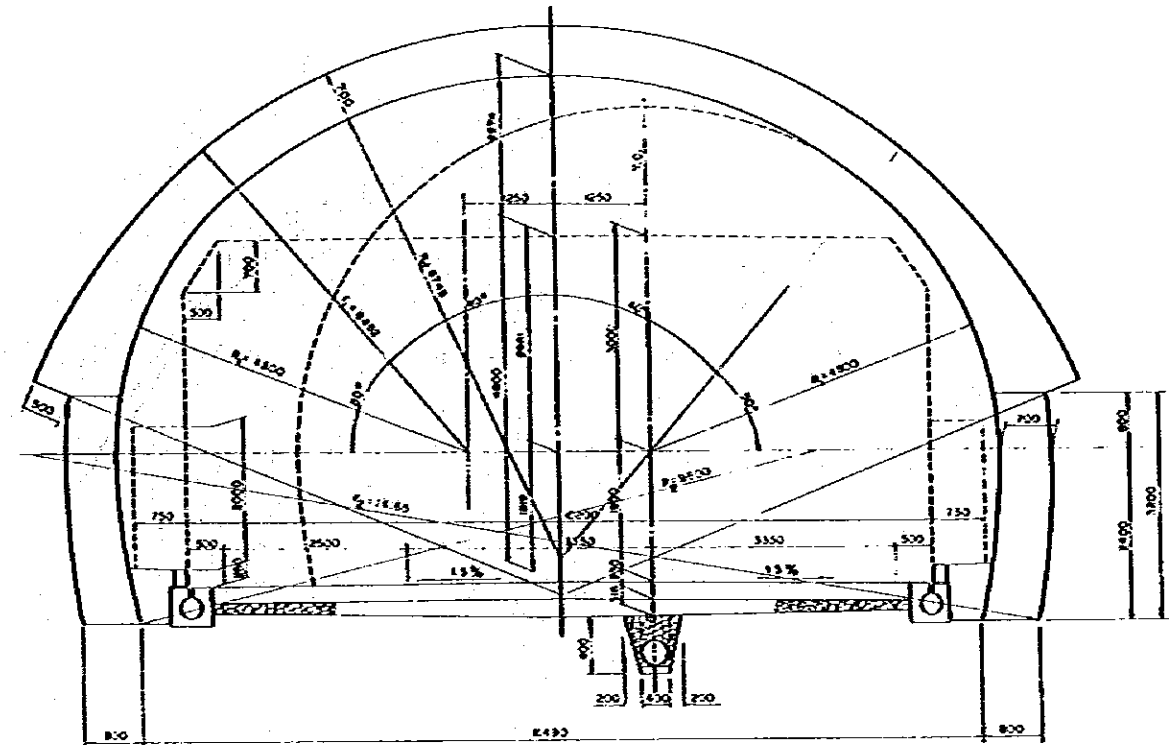
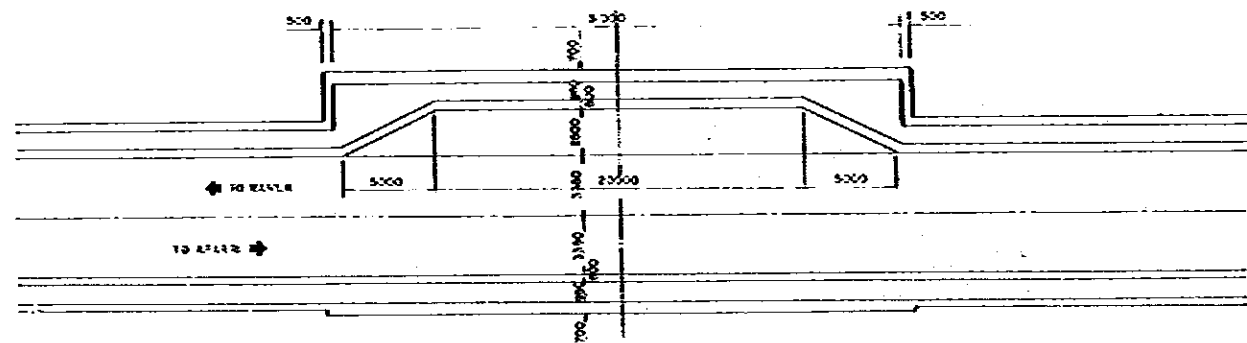
PLAN  
SCALE 1:200

TYPICAL CROSS SECTION  
SCALE 1:50

RIGHT



LEFT



JAPAN INTERNATIONAL COOPERATION AGENCY

DALTON PASS TUNNEL PROJECT  
FEASIBILITY STUDY

SECTION A - NEW ALIGNMENT ROUTE  
EMERGENCY PARKING BAY OF TUNNEL  
FOR MOST LIKELY ROUTE  
DATE: MAR '82

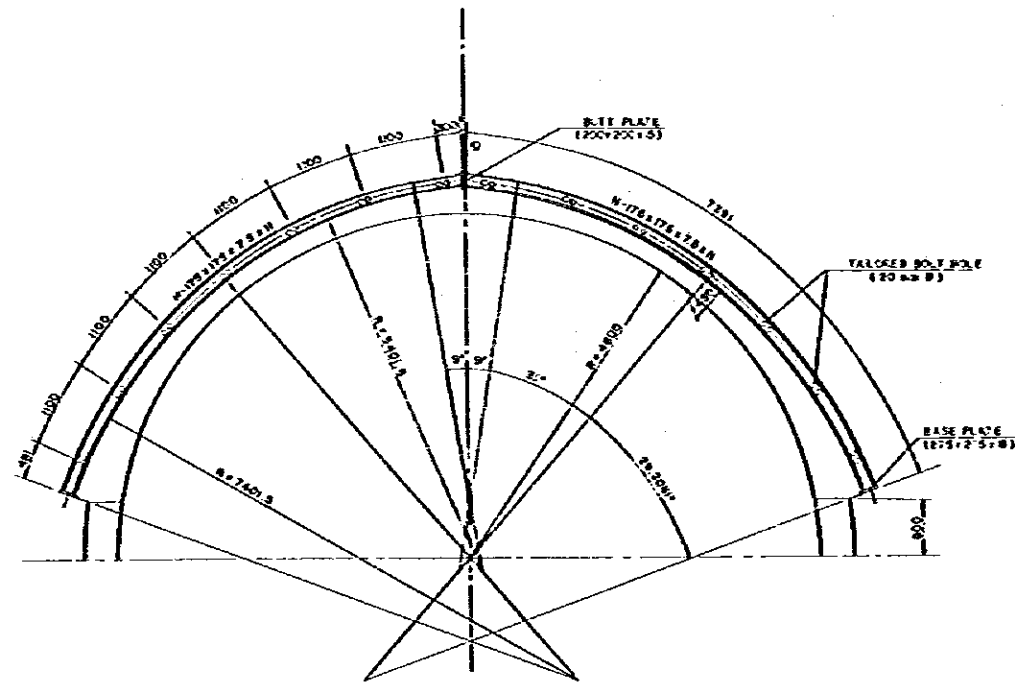
DRAWING NO.

FS-23

SCALE 1:50

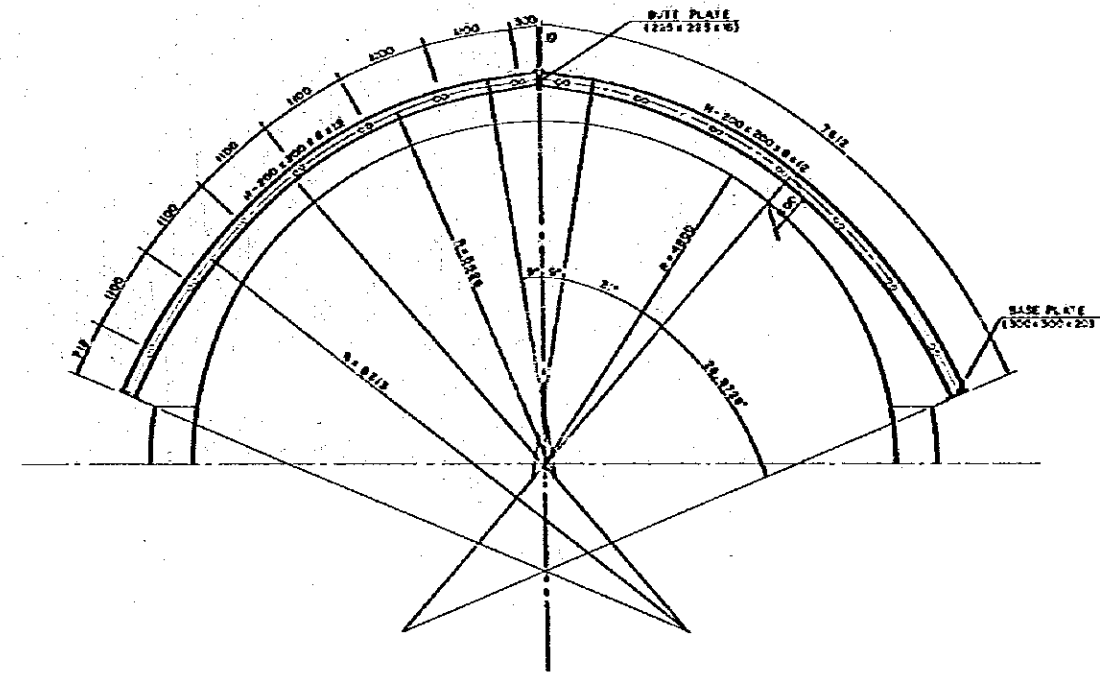
FOR CLASSIFICATION "A" & "B" (ROCK)

PITCH A = 1.50 M  
B = 1.10 M (OR USE K-200; 1.20 M)



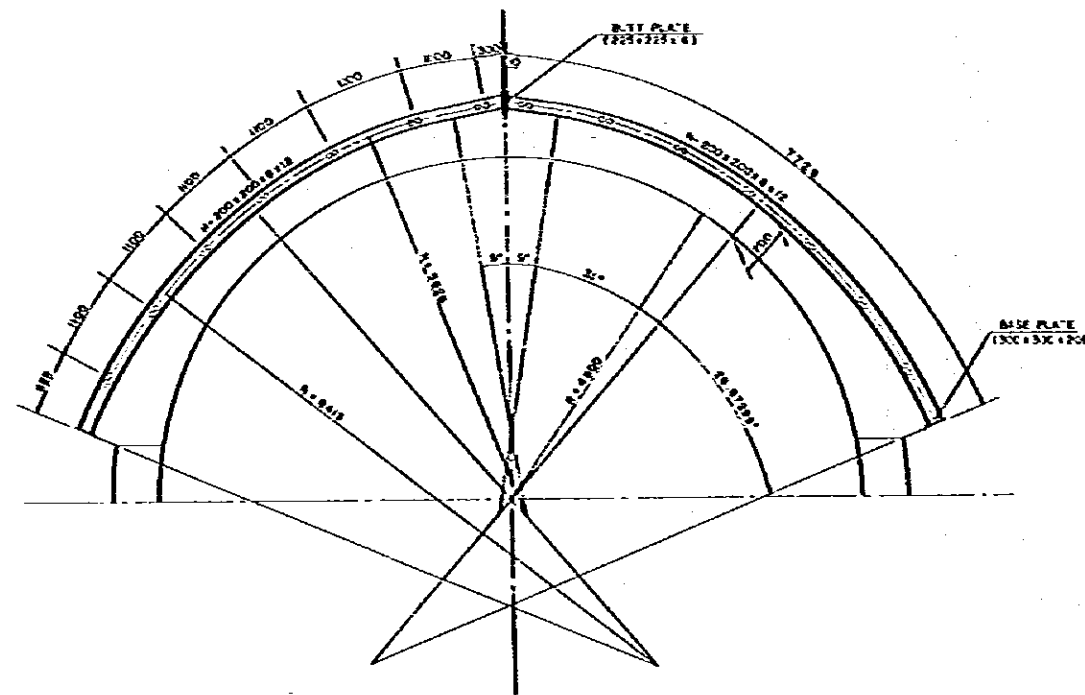
FOR CLASSIFICATION "C" ROCK

PITCH = 1.00 M



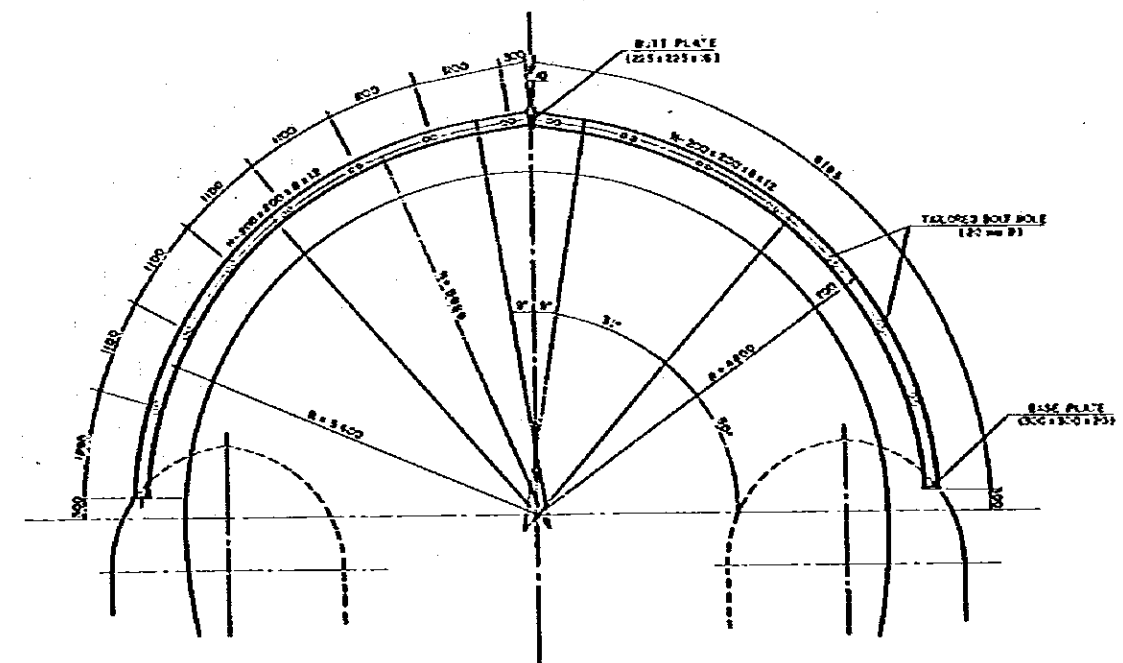
FOR CLASSIFICATION "D1" ROCK

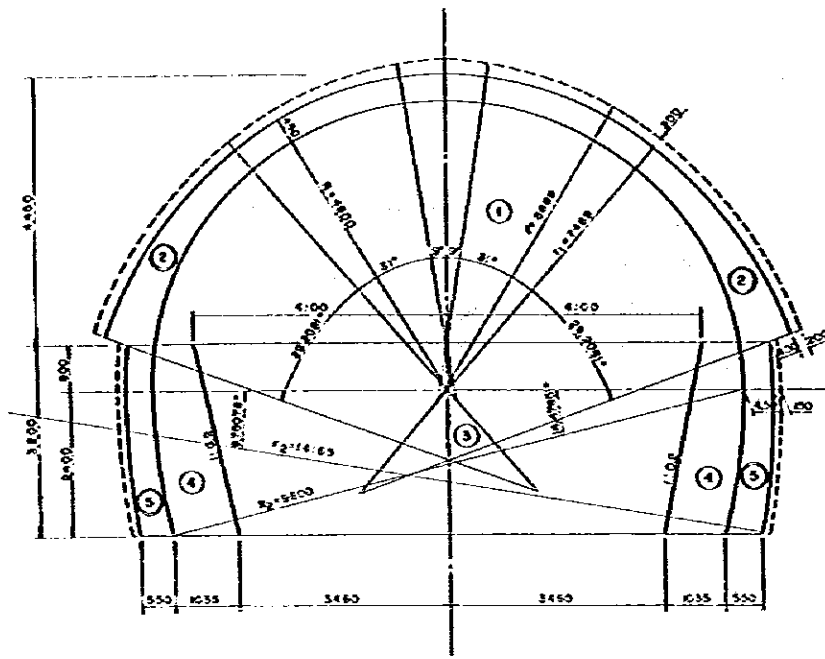
PITCH = 0.75 M



FOR CLASSIFICATION "D2" ROCK

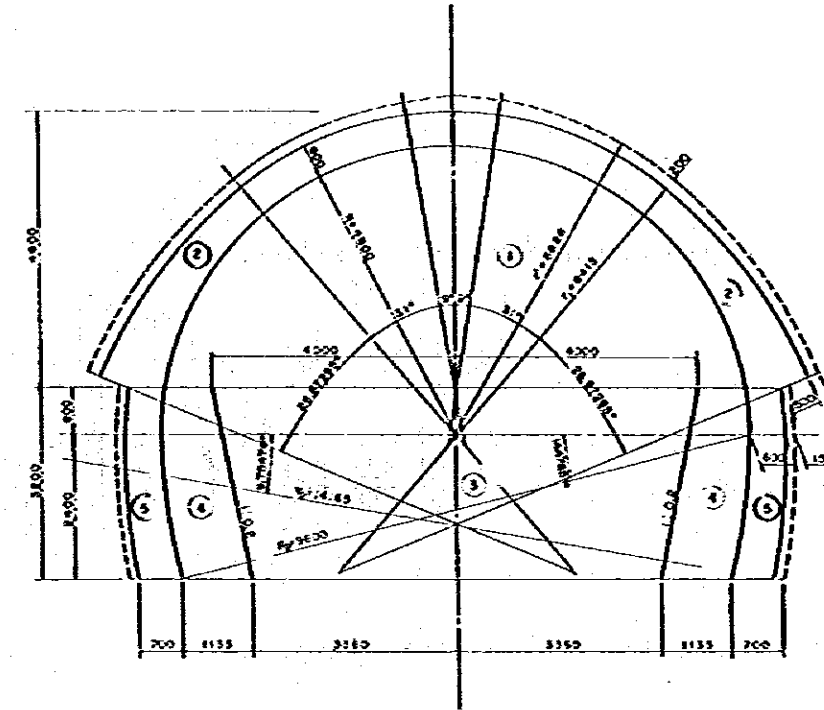
PITCH = 0.75 M





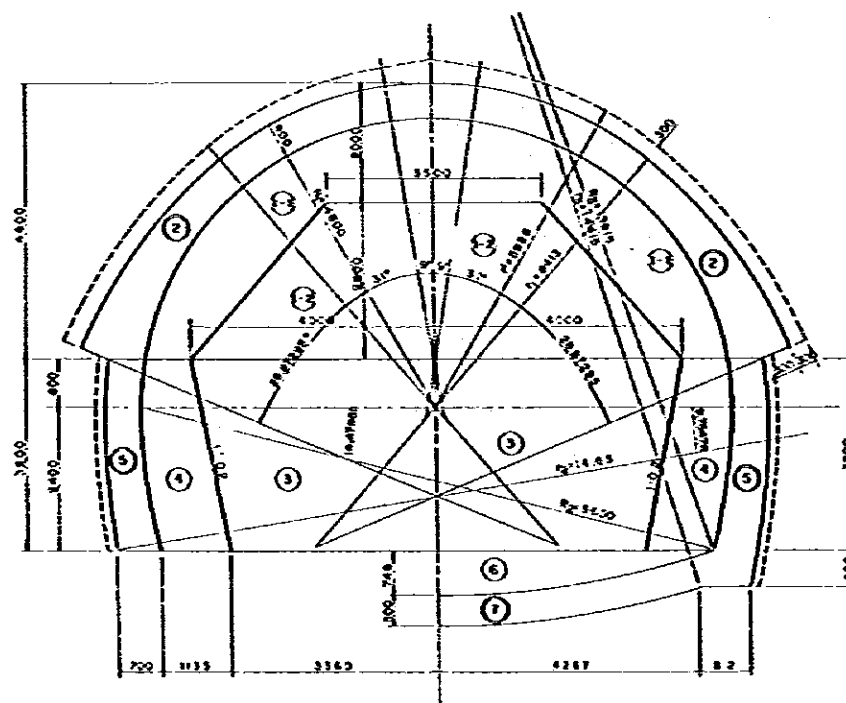
**SECTIONAL AREA OF HEADINGS**

No	Contents of Work	Net Area (m <sup>2</sup> )	Area (m <sup>2</sup> )	Remarks
①	Top of heading	55.9	39.1	
②	Concrete lining of arch	7.4	8.9	
③	Excavation of bench	24.2	24.2	
④	Excavation of wall	9.0	10.0	
⑤	Concrete lining of side wall	3.0	4.0	
EXCAVATION		69.1	73.3	
CONCRETE LINING		10.4	12.9	



**SECTIONAL AREA OF HEADINGS**

No	Contents of Work	Net Area (m <sup>2</sup> )	Area (m <sup>2</sup> )	Remarks
①	Top of heading	39.0	42.3	
②	Concrete lining of arch	10.5	12.1	
③	Excavation of bench	23.6	23.6	
④	Excavation of wall	10.6	11.6	
⑤	Concrete lining of side wall	4.0	5.0	
EXCAVATION		73.2	77.5	
CONCRETE LINING		14.5	17.1	

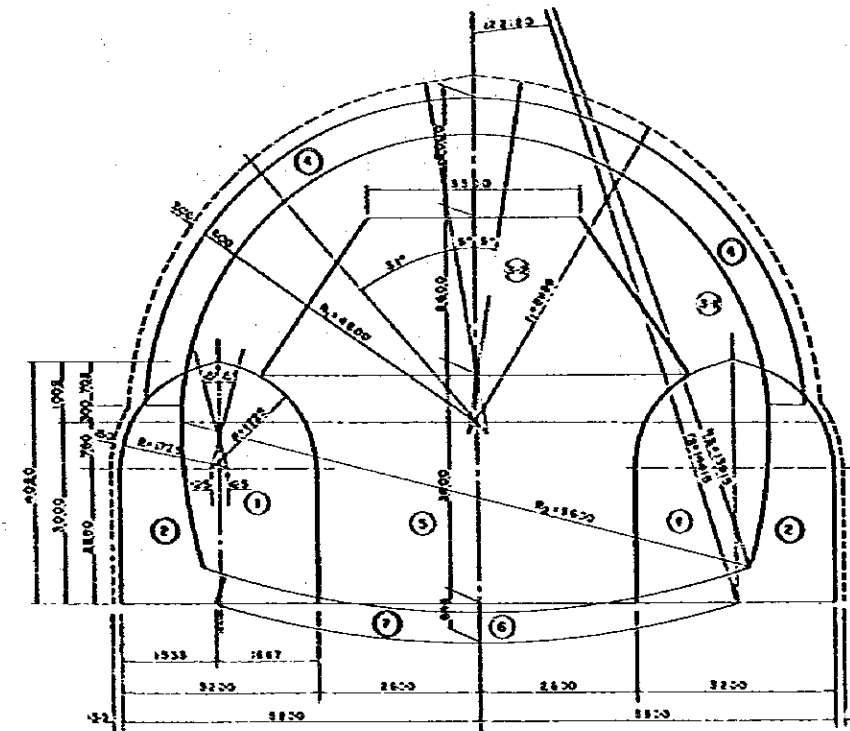


**SECTIONAL AREA OF HEADINGS**

No	Contents of Work	Net Area (m <sup>2</sup> )	Area (m <sup>2</sup> )	Remarks
①	Top of heading	33.0	43.2	Ring of 28.2 m <sup>2</sup> Core 15.0 m <sup>2</sup>
②	Concrete lining of arch	10.5	13.6	
③	Excavation of bench	23.6	23.6	
④	Excavation of wall	10.6	11.6	
⑤	Concrete lining of side wall	4.0	5.0	
EXCAVATION		73.2	78.4	
CONCRETE LINING		14.5	18.6	

**SECTIONAL AREA OF HEADINGS**

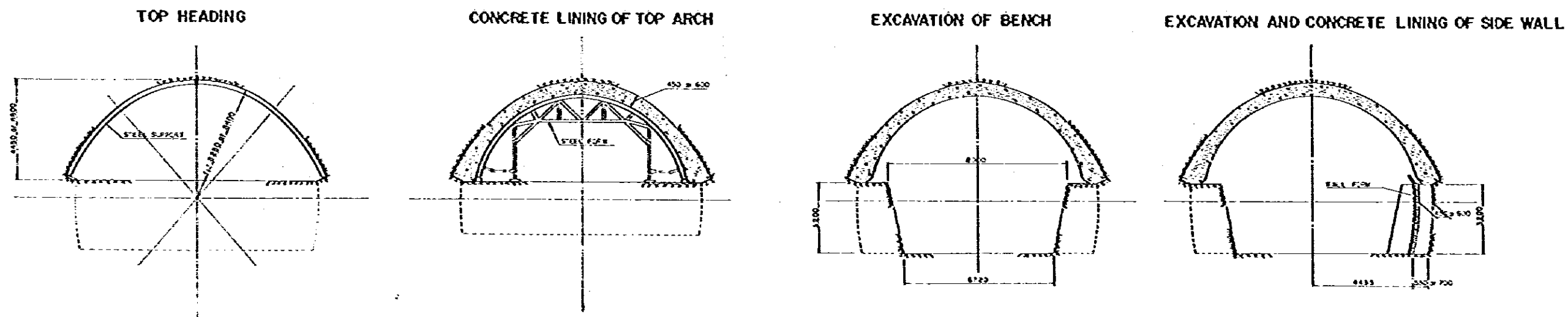
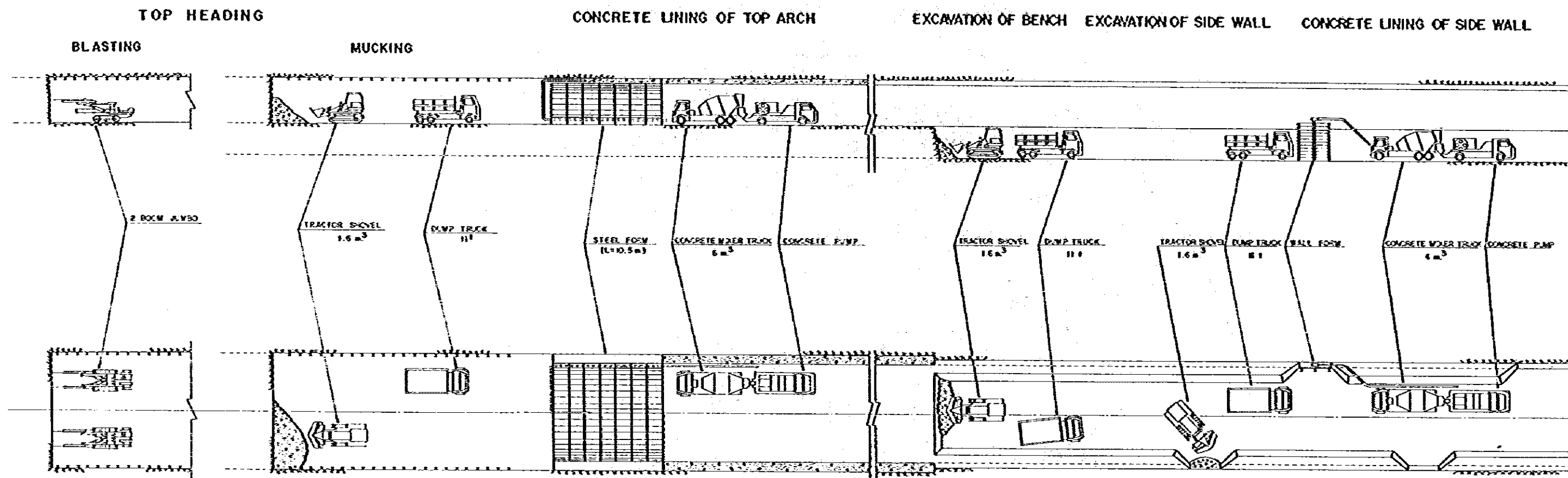
No	Contents of Work	Net Area (m <sup>2</sup> )	Area (m <sup>2</sup> )	Remarks
①	Top of heading	33.0	43.2	Ring of 28.2 m <sup>2</sup> Core 15.0 m <sup>2</sup>
②	Concrete lining of arch	10.5	13.6	
③	Excavation of bench	23.6	23.6	
④	Excavation of wall	11.7	12.9	
⑤	Concrete lining of side wall	5.1	6.2	
⑥	Excavation of invert	8.7	8.7	
⑦	invert concrete	4.3	4.8	
EXCAVATION		83.0	88.4	
CONCRETE LINING		19.9	24.6	

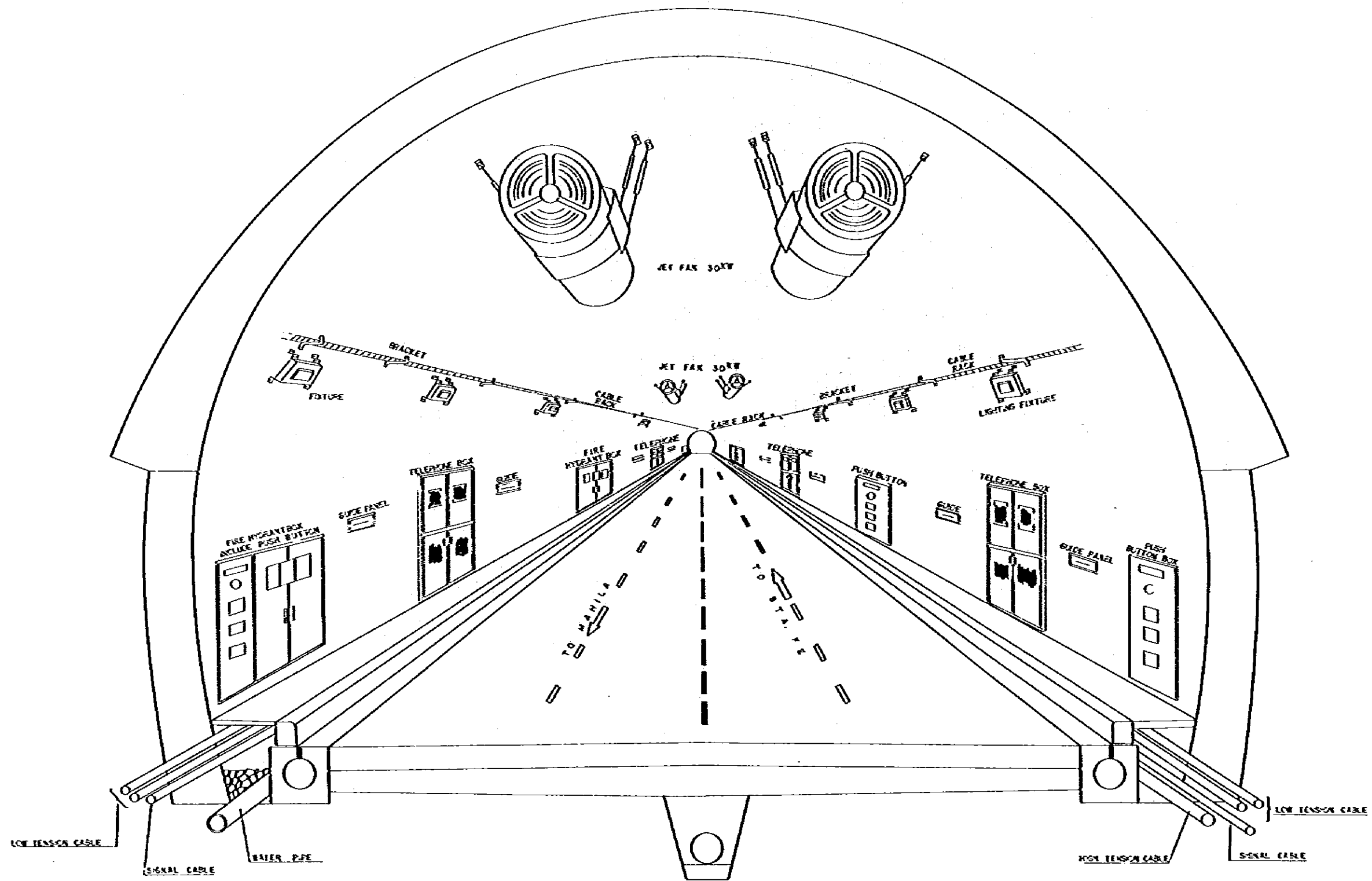


**SECTIONAL AREA OF HEADINGS**

No	Contents of Work	Net Area (m <sup>2</sup> )	Area (m <sup>2</sup> )	Remarks
①	Excavation of side drift	22.9	24.9	
②	Concrete lining of arch	7.9	8.9	
③	Top of heading	37.5	42.8	Ring of 29.0 m <sup>2</sup> Core 13.8 m <sup>2</sup>
④	Concrete lining of arch	9.3	12.6	
⑤	Excavation of bench	20.6	20.6	
⑥	Excavation of invert	3.7	3.7	
⑦	invert concrete	4.3	4.3	
EXCAVATION		84.7	92.0	
CONCRETE LINING		21.5	25.8	

NOTE: The construction of tunnel should be in order according to the number in the table





JAPAN INTERNATIONAL COOPERATION AGENCY

DALTON PASS TUNNEL PROJECT  
FEASIBILITY STUDY

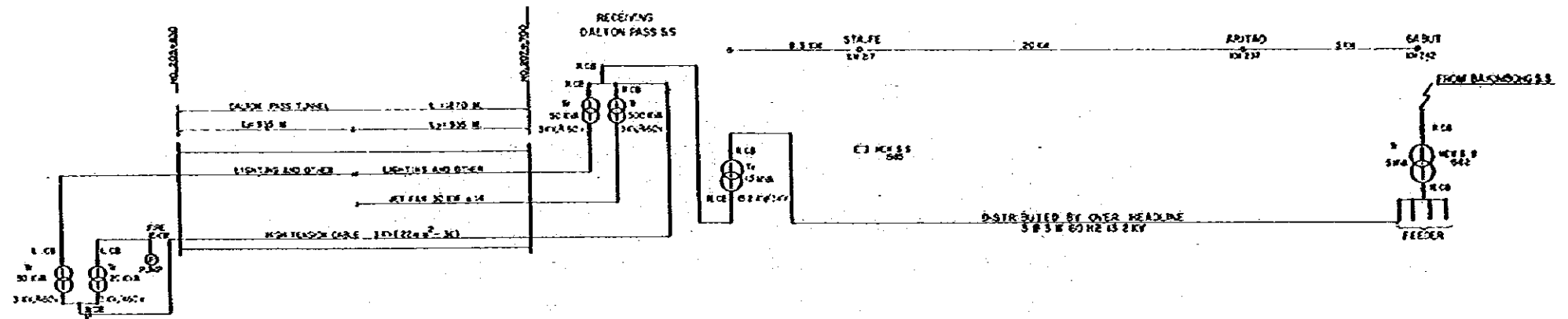
SECTION A - NEW ALIGNMENT ROUTE  
PERSPECTIVE DRAWING OF TUNNEL  
FOR MOST LIKELY ROUTE

DATE: MAR '82

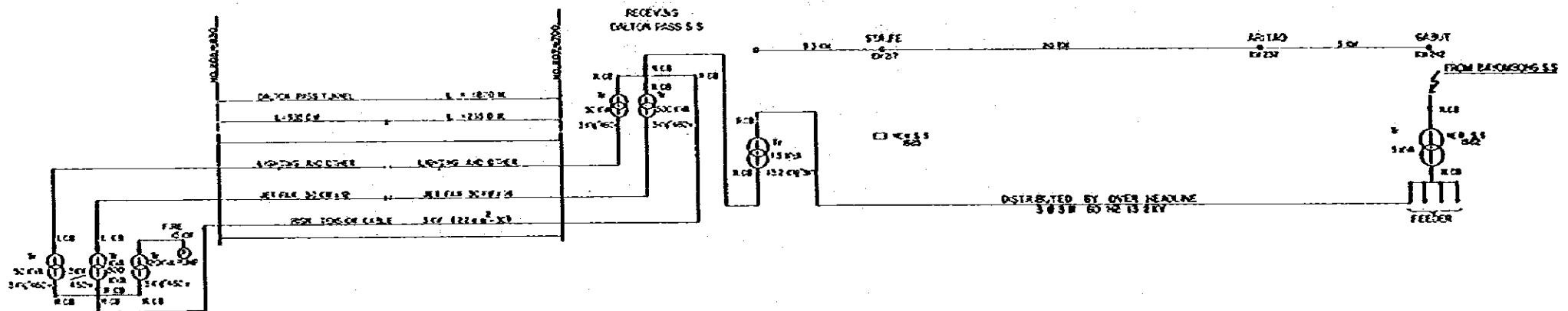
DRAWING NO.

FS-27

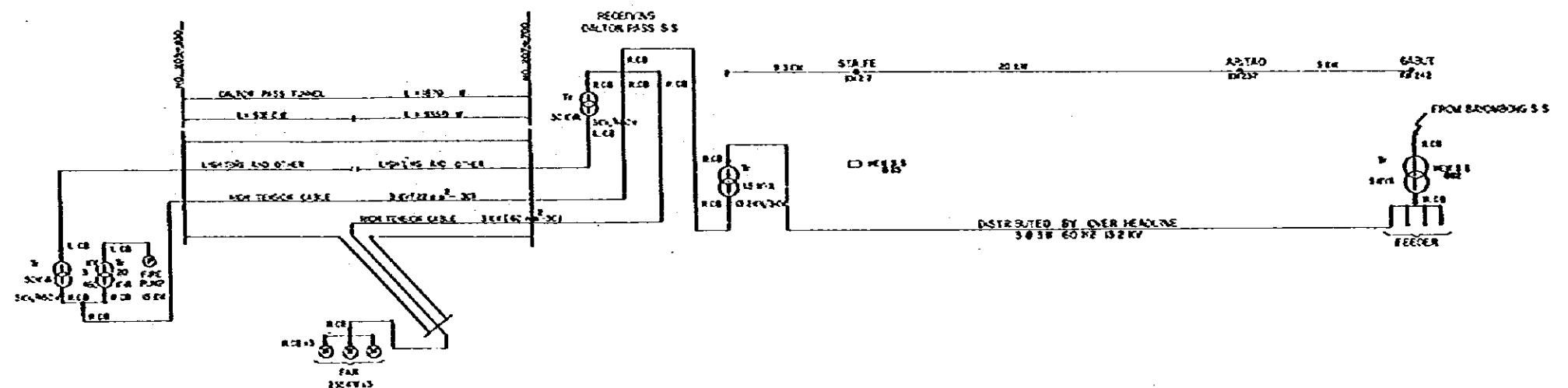
FIRST



SECOND

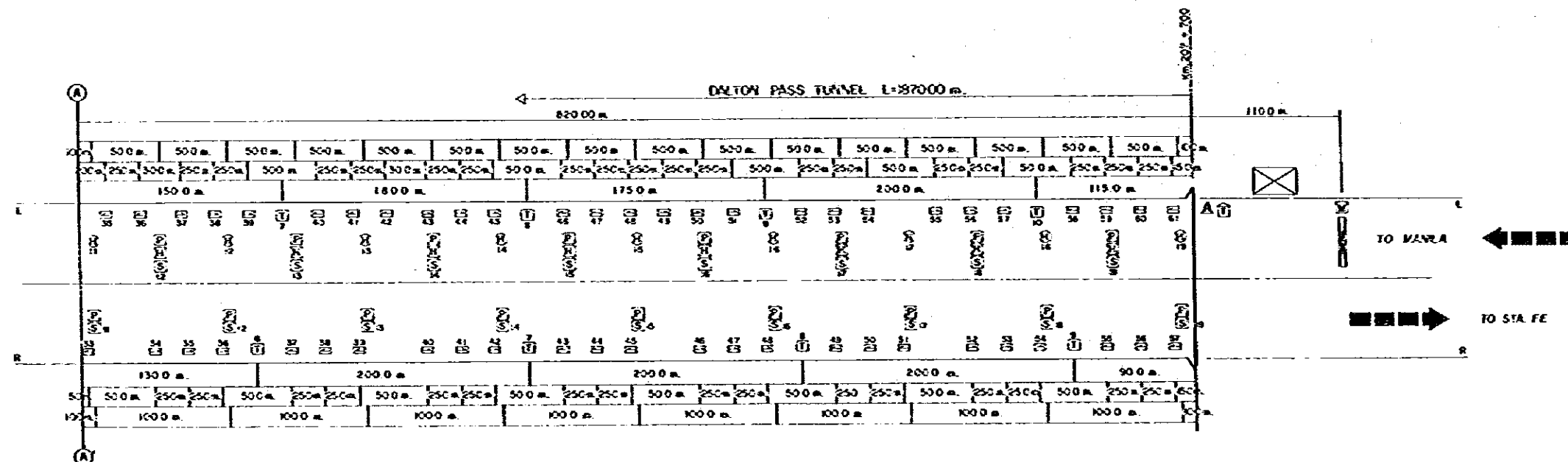
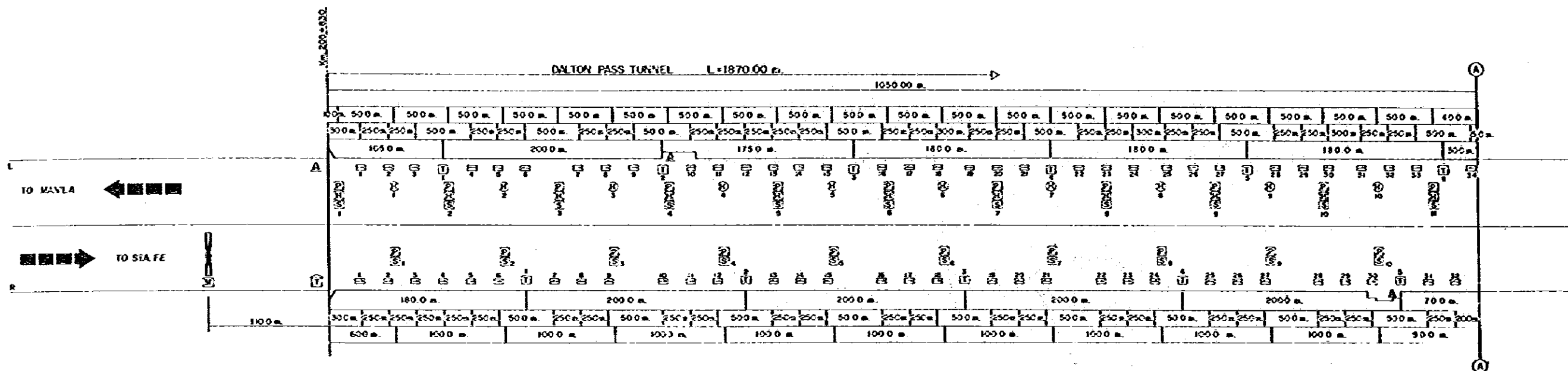


LAST



REFERENCE

SS	SUBSTATION
Tr	TRANSFORMER
MVA	CAPACITY
RCB	HIGH TENSION VOLTAGE CIRCUIT BREAKER
LCB	LOW TENSION VOLTAGE CIRCUIT BREAKER



**LEGEND:**

	TELEPHONE BOX
	GUIDE PANEL
	PUSH BUTTON
	HYDRANTS BOX
	FIRE EXTINGUISHER
	HYDRANTS BOX
	ROAD INFORMATION PANEL
	CONTROL BOX
	WATER SUPPLY BOX
	PUBLIC TELEPHONE BOX
	ELECTRICAL ROOM