

UNITED REPUBLIC OF TANZANIA
MINISTRY OF WORKS, COMMUNICATIONS AND TRANSPORT

THE STUDY
ON
DAR ES SALAAM
ROAD DEVELOPMENT PLAN

FINAL REPORT
FEASIBILITY STUDY

DRAWINGS
MARCH 1995

JAPAN INTERNATIONAL COOPERATION AGENCY

JAPAN ENGINEERING CONSULTANTS CO., LTD.
NIPPON KOEI CO., LTD.

JICA LIBRARY

J 1131526 (4)

SSF
CR (4)
95-030

UNITED REPUBLIC OF TANZANIA
MINISTRY OF WORKS, COMMUNICATIONS AND TRANSPORT

**THE STUDY
ON
DAR ES SALAAM
ROAD DEVELOPMENT PLAN**

**FINAL REPORT
FEASIBILITY STUDY**

DRAWINGS

MARCH 1995

JAPAN INTERNATIONAL COOPERATION AGENCY

JAPAN ENGINEERING CONSULTANTS CO., LTD.
NIPPON KOEI CO., LTD



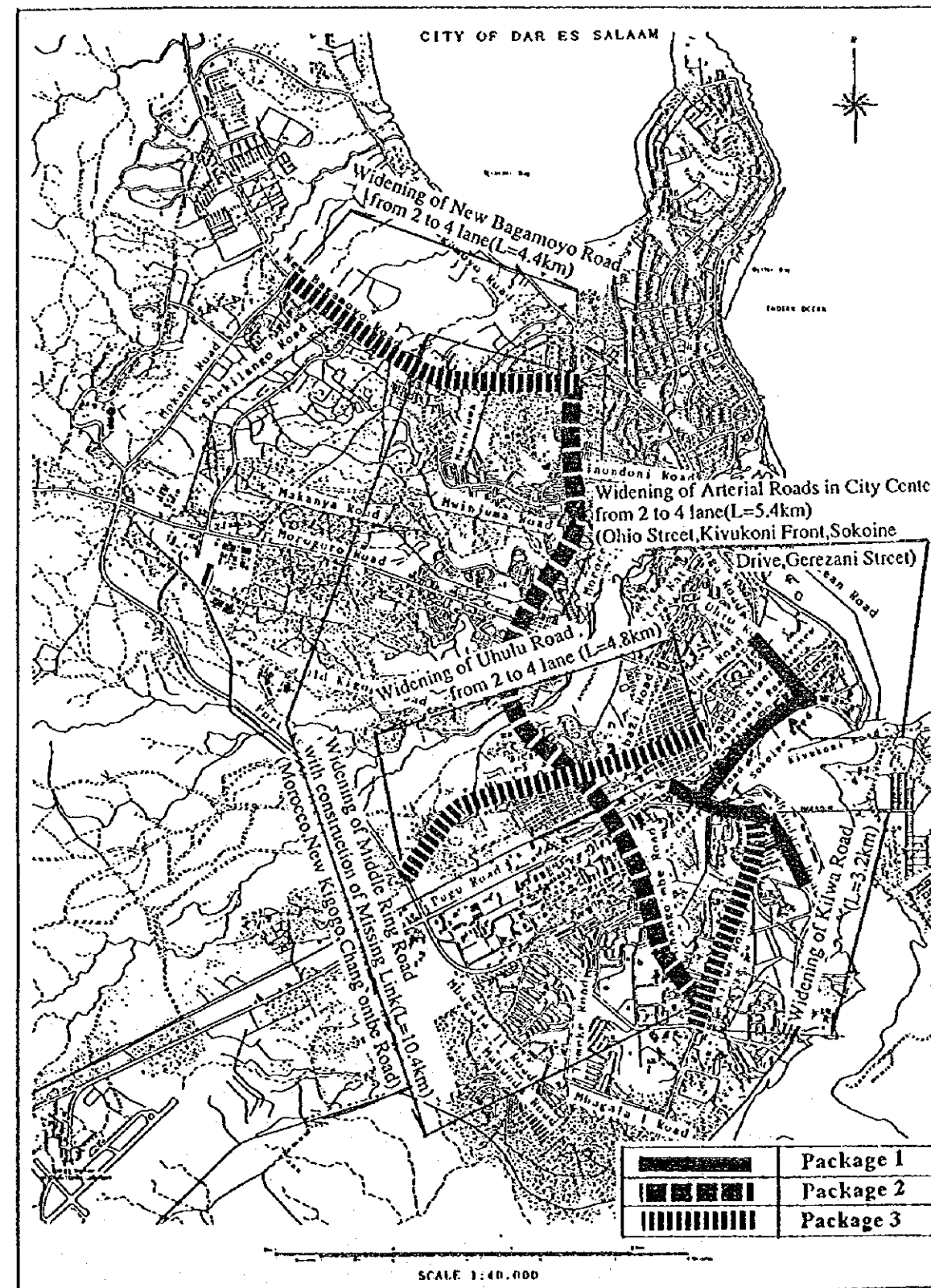
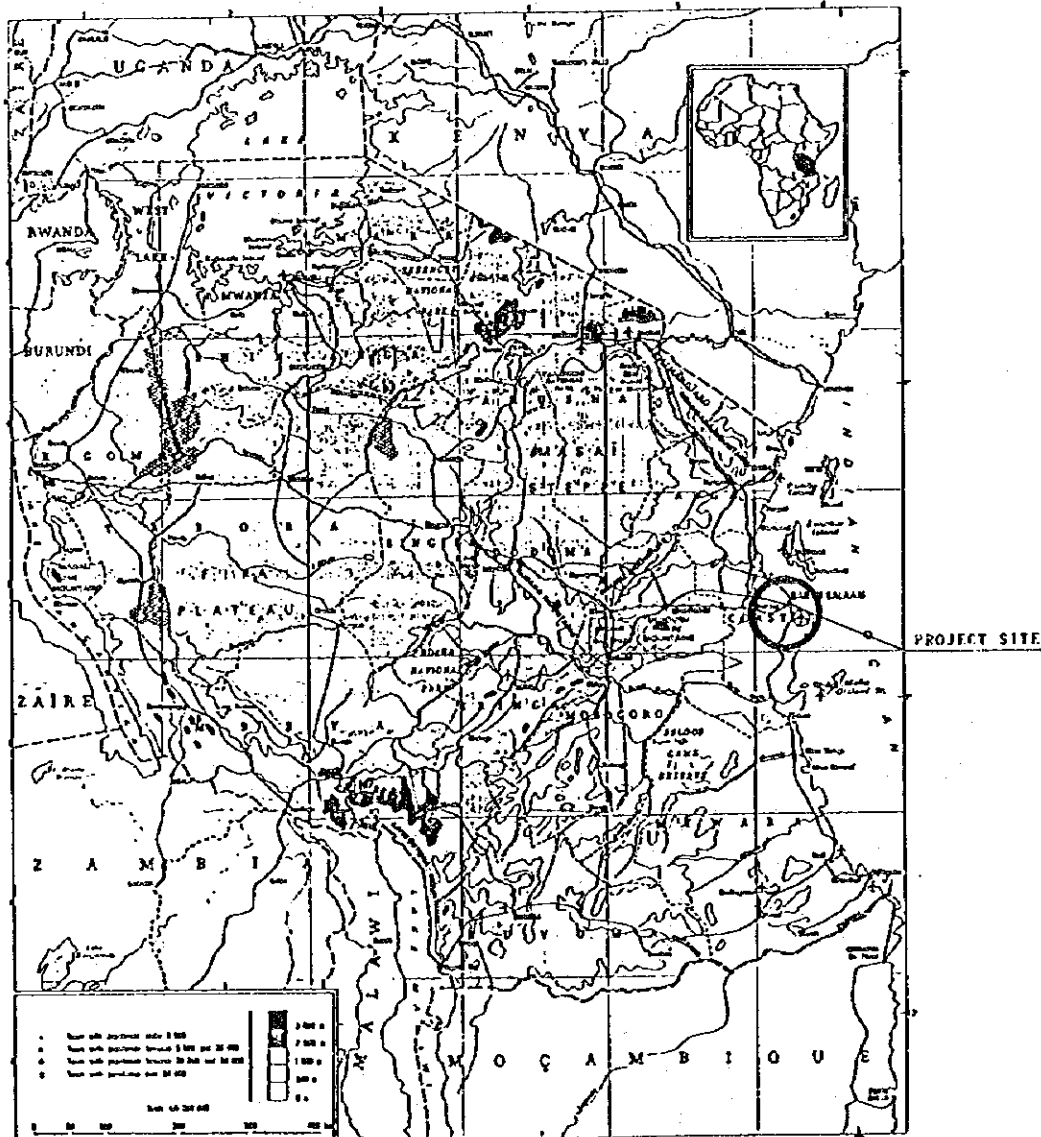
1131526(4)

TITLE	Drawing No.
1. Location Map	1
2. Package 1	
: Widening of Arterial Roads in City Center	
2.1 Ohio Street	2
(1) Plan and Profile	2
(2) Typical Cross Section	3
(3) Cross Section	4
2.2 Kivukoni Front	6
(1) Plan and Profile	6
(2) Typical Cross Section	7
(3) Cross Section	8
2.3 Sokoine Drive	6
(1) Plan and Profile	6
(2) Typical Cross Section	7
(3) Cross Section	9
2.4 Gerezani Street	10
(1) Plan and Profile	10
(2) Typical Cross Section	11
(3) Cross Section	12
2.5 Bandari Road	14
(1) Plan and Profile	14
(2) Typical Cross Section	15
(3) Cross Section	16

TITLE	Drawing No.
2.6 Gerezani Bridge	19
2.7 Bandari Bridge	20
2.8 Seaside Promenade of Kivukoni Front	21
2.9 Retaining Wall of Harbor Access	23
3. Package 2	
: Widening of Middle Ring Road with construction of Missing Link	
3.1 Morocco Road	24
(1) Plan and Profile	24
(2) Typical Cross Section	27
(3) Cross Section	28
3.2 New Kigogo Road	33
(1) Plan and Profile	33
(2) Typical Cross Section	35
(3) Cross Section	36
3.3 Missing Link	40
(1) Plan and Profile	40
(2) Typical Cross Section	41
(3) Cross Section	42
(4) Re-alignment Plan of TRC's Railway Track	44
3.4 Chang'ombe Road	45
(1) Plan and Profile	45
(2) Typical Cross Section	47
(3) Cross Section	48
3.5 Extension Plan of Middle Ring Road	52
3.6 Box Culvert	53

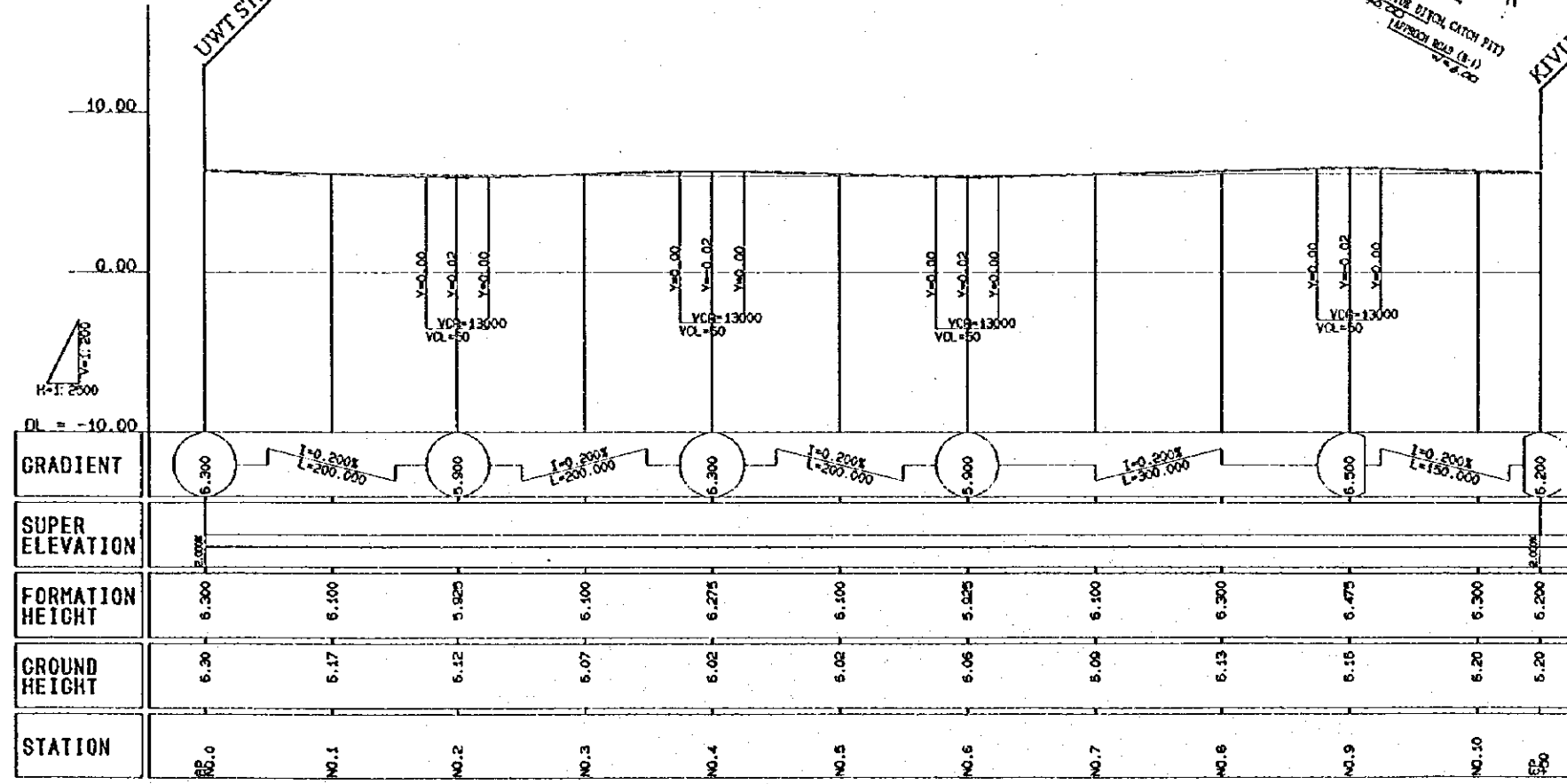
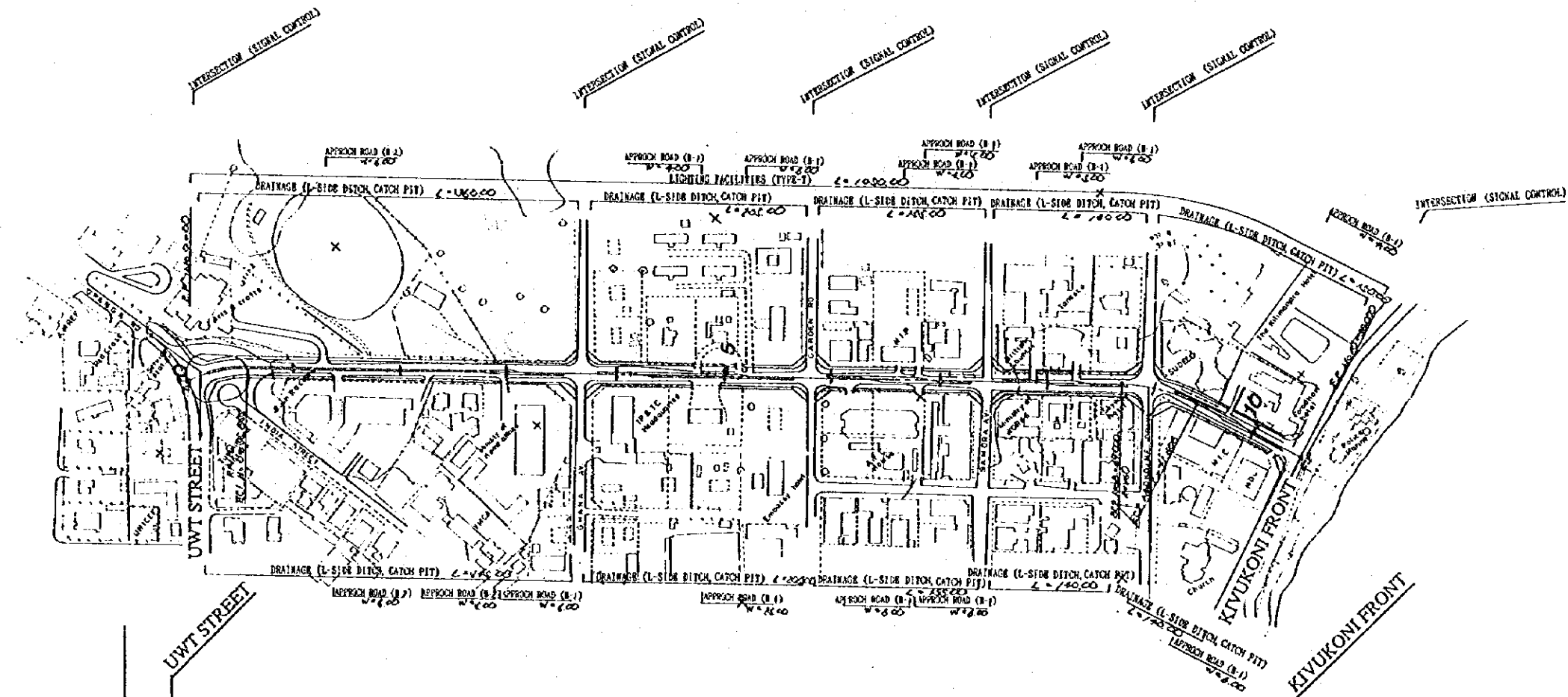
TITLE	Drawing No.
4. Package 3	
: Widening of Radial Trunk Road	
4.1 New Bagamoyo Road	58
(1) Plan and Profile	58
(2) Typical Cross Section	61
(3) Cross Section	62
4.2 Uhuru Road	68
(1) Plan and Profile	68
(2) Typical Cross Section	71
(3) Cross Section	72
4.3 Kilwa Road	79
(1) Plan and Profile	79
(2) Typical Cross Section	81
(3) Cross Section	82
5. Major Intersections	87
6. Grade Separation in Future	90
7. Bus Bay Plan	93
8. Storm Water Drainage Network	94
9. Drainage Structures and Miscellaneous	101
10. Lighting Facilities and Traffic Signal	103
11. Underground Utilities	104
12. Right-of-way Map	116

LOCATION MAP

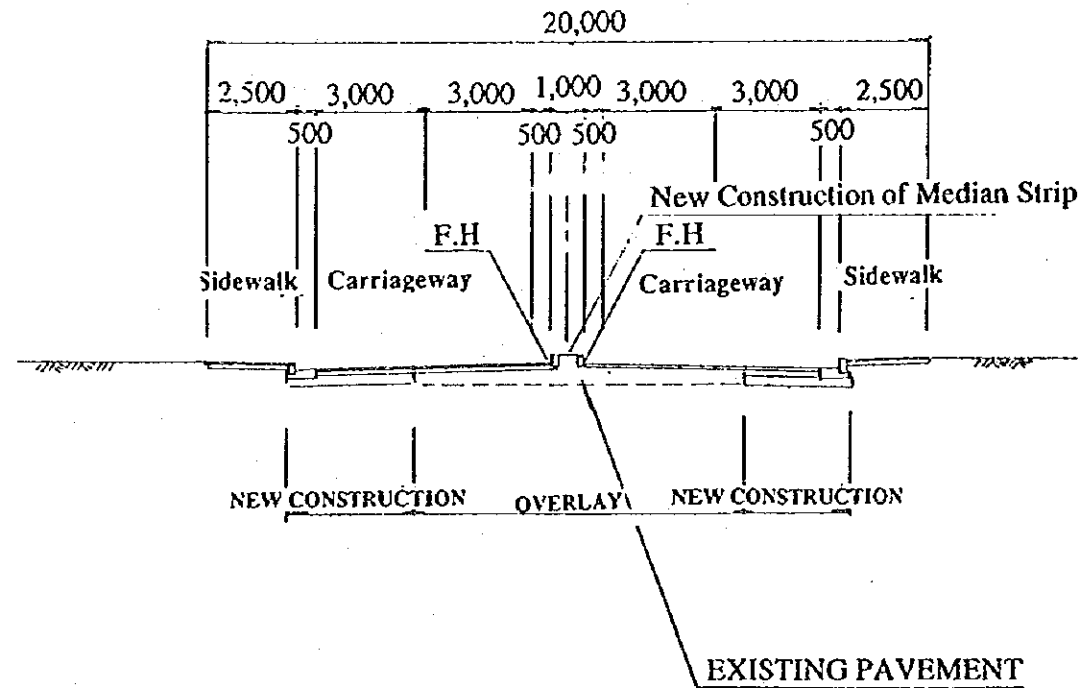


2.Package 1 : Widening of Arterial Roads in City Center

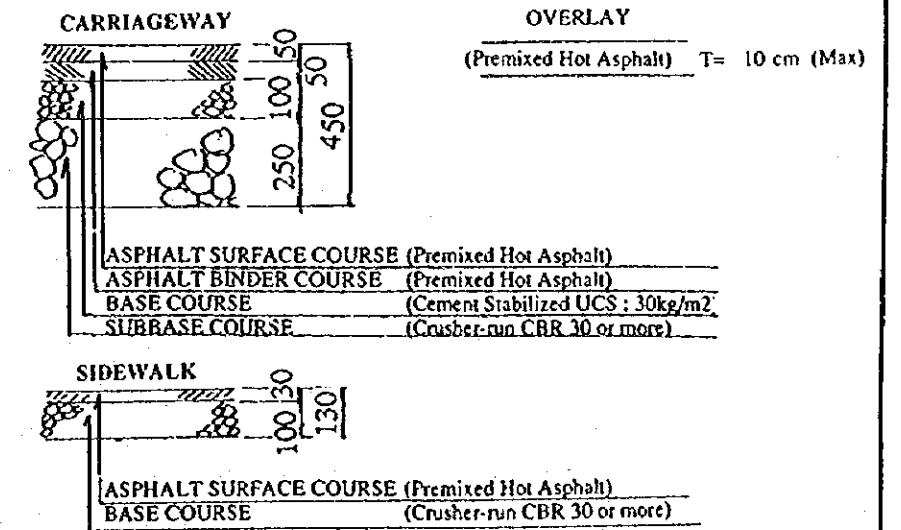
2.1 Ohio Street (1) Plan and Profile



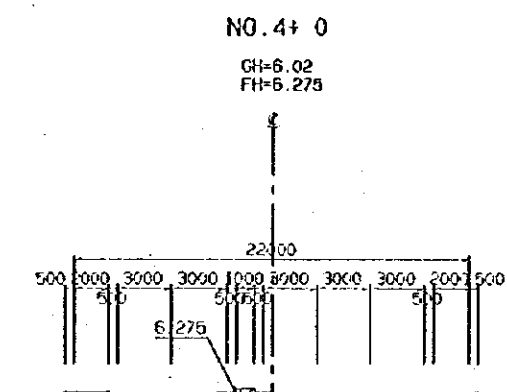
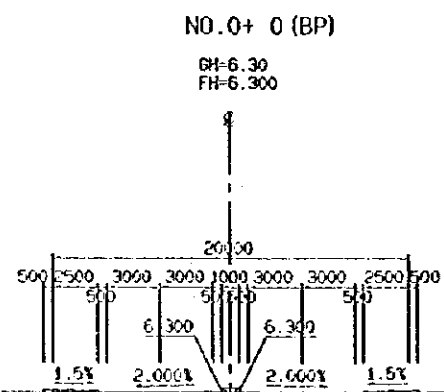
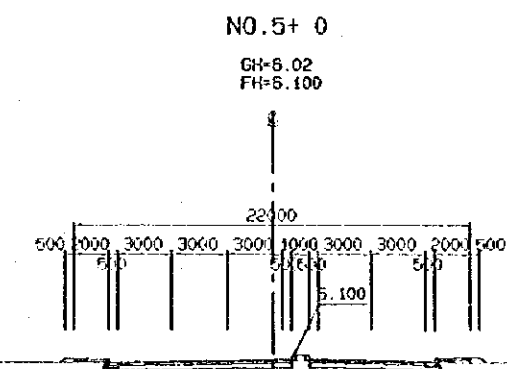
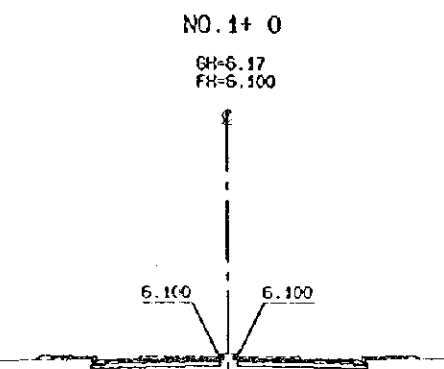
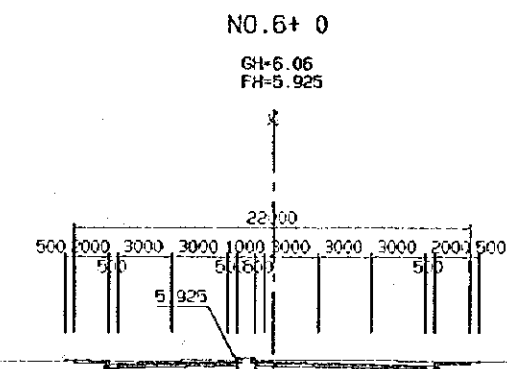
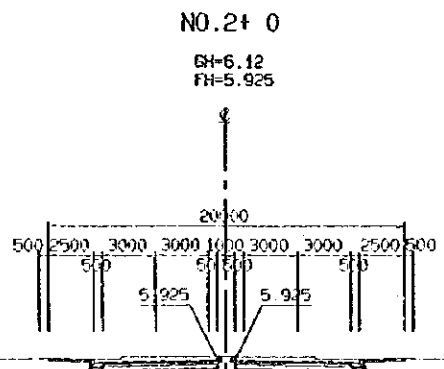
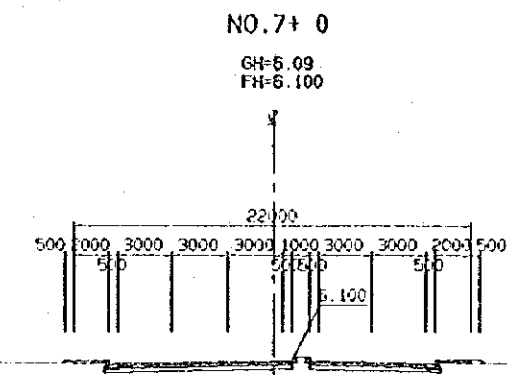
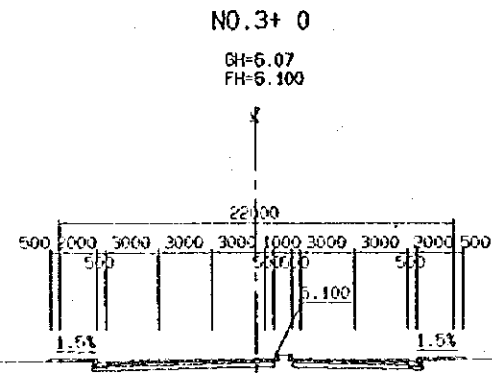
(2) Typical Cross Section of Ohio Street



PAVEMENT STRUCTURE



(3) Cross Section



DL = 0.00

DL = 0.00

DL = 0.00

DL = 0.00

DL = 0.00

DL = 0.00

DL = 0.00

DL = 0.00

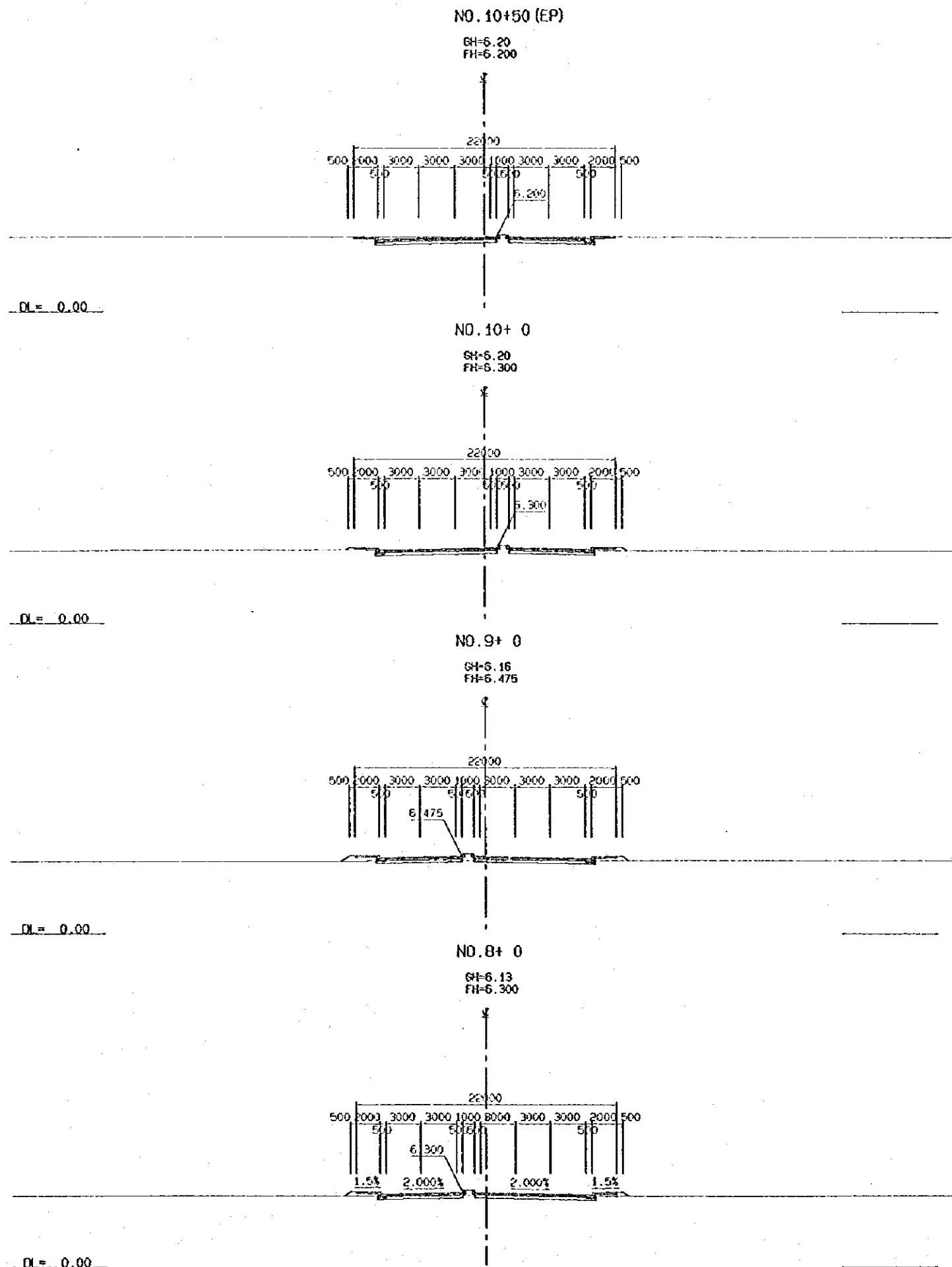
UNITED REPUBLIC OF TANZANIA
MINISTRY OF WORKS,
COMMUNICATIONS AND TRANSPORT

THE STUDY
ON
DAR-ES-SALAAM ROAD DEVELOPEMENT PLAN

JAPAN INTERNATIONAL
COOPERATION AGENCY

OHIO STREET
CROSS SECTION (1)

DATE	SHEET NO
MARCH 1995	4



UNITED REPUBLIC OF TANZANIA
MINISTRY OF WORKS,
COMMUNICATIONS AND TRANSPORT

THE STUDY
ON
DAR-ES-SALAAM ROAD DEVELOPEMENT PLAN

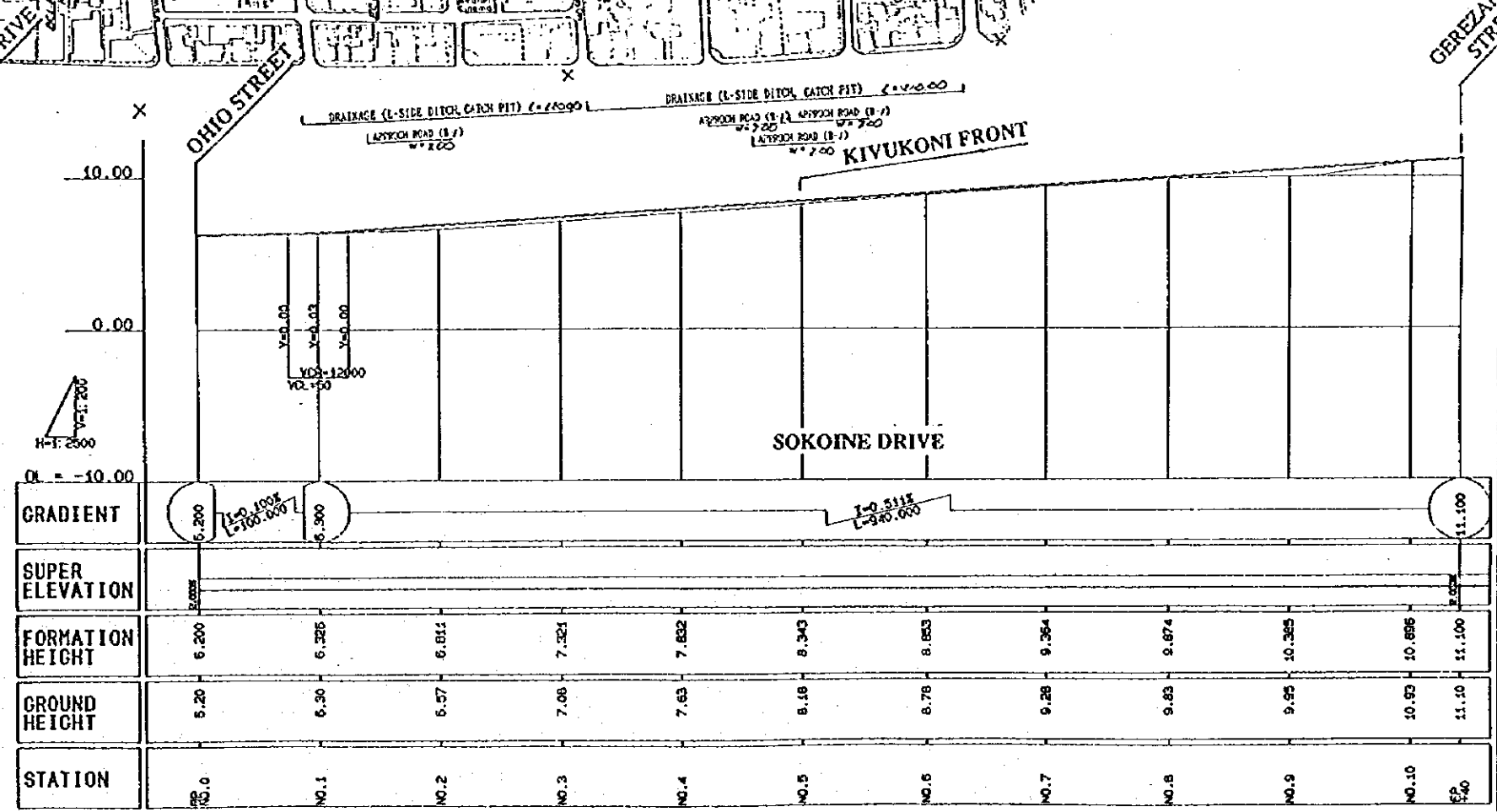
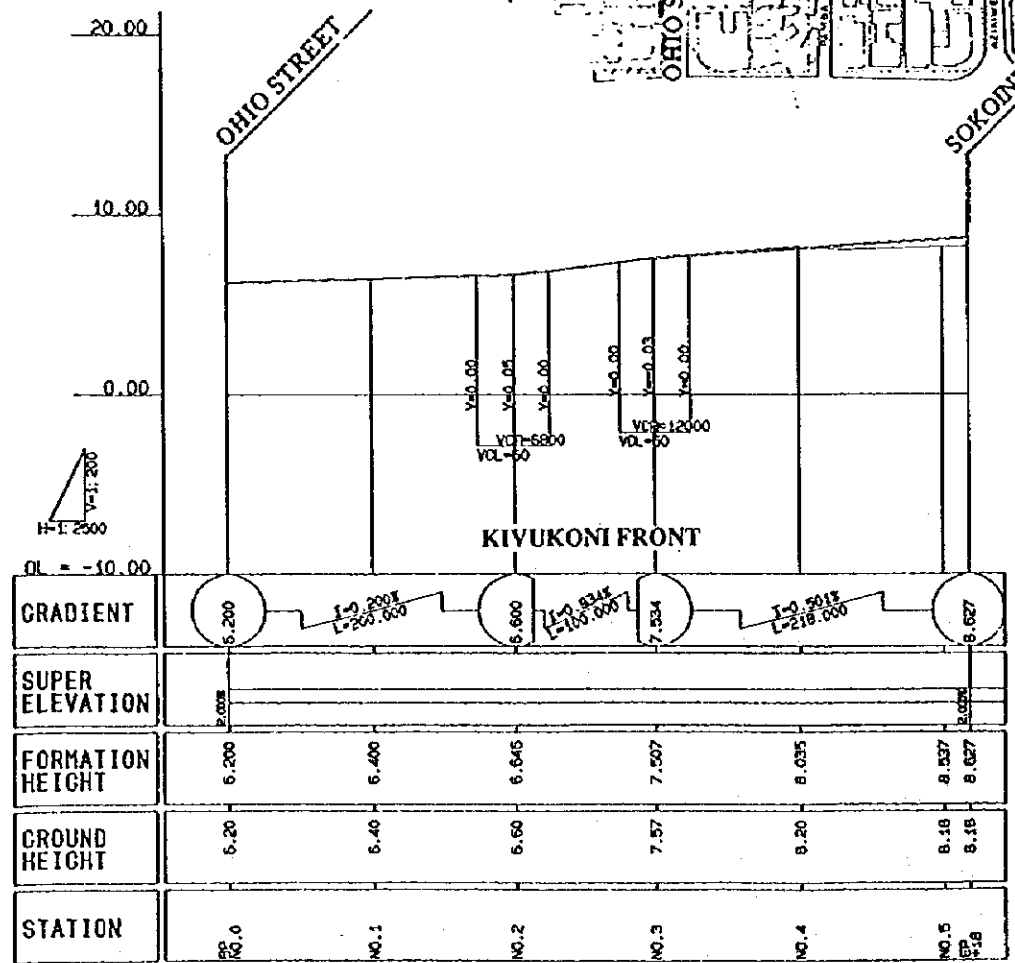
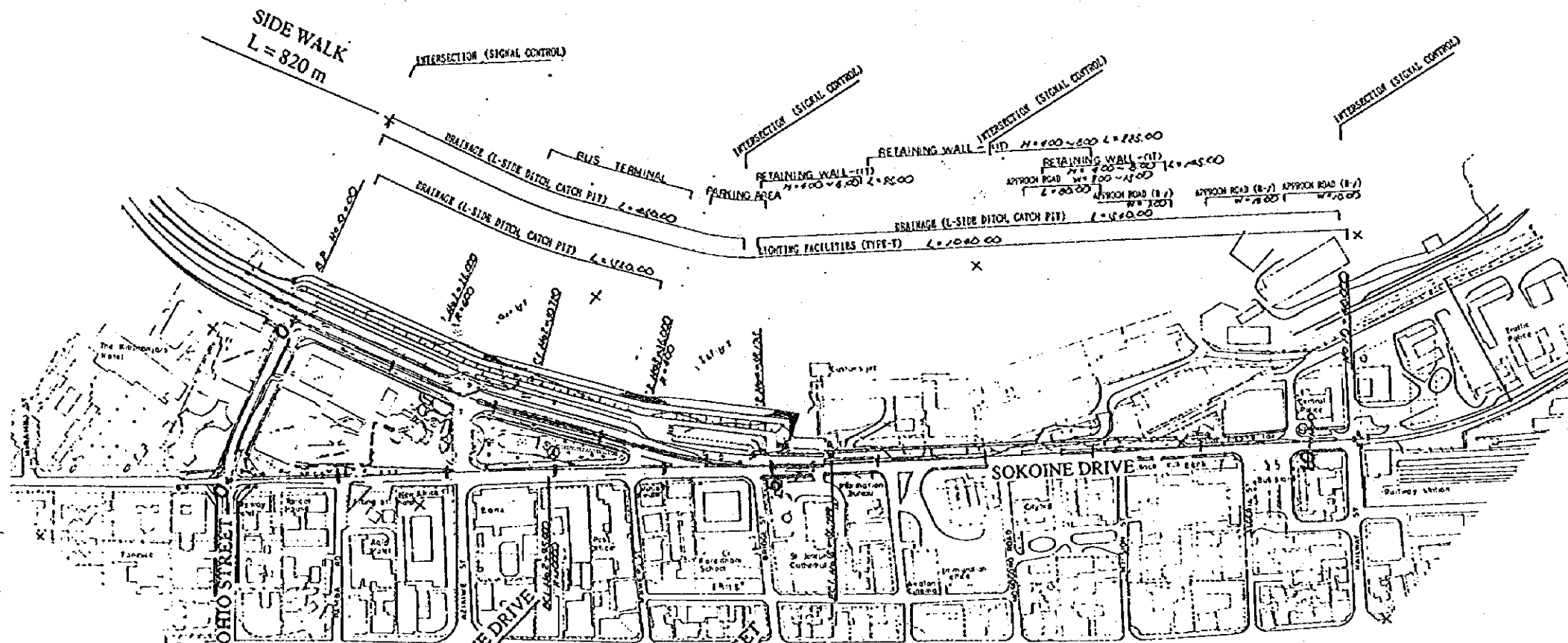
JAPAN INTERNATIONAL
COOPERATION AGENCY

OHIO STREET
CROSS SECTION (2)

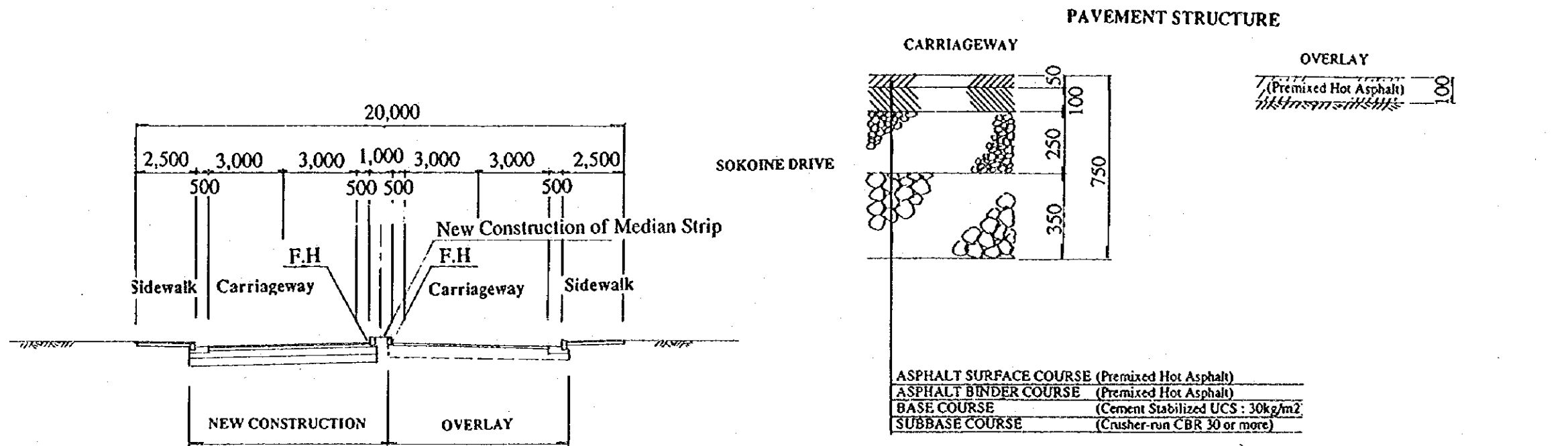
DATE
MARCH 1995

SHEET NO
5

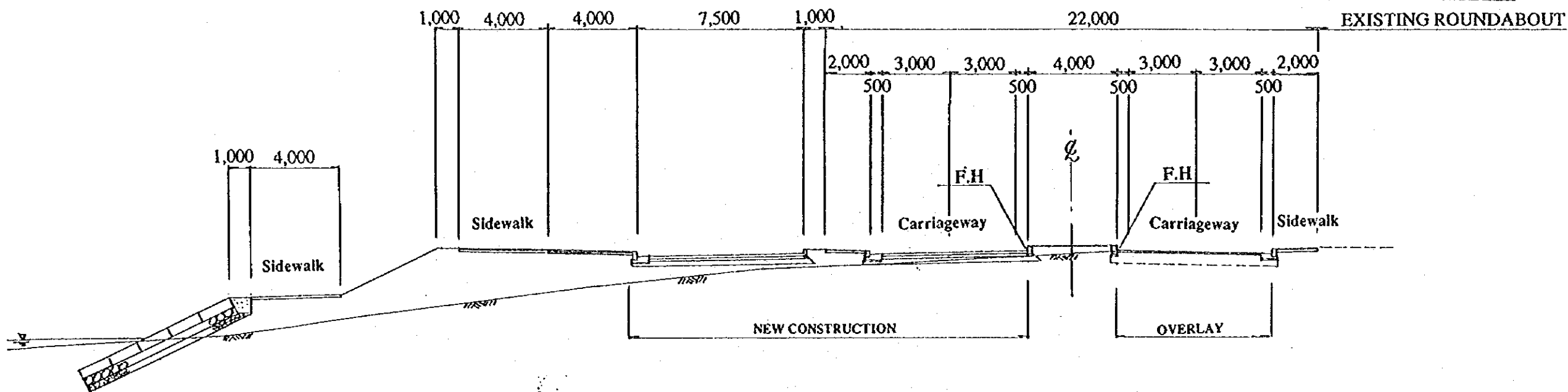
2.2 Kivukoni Front
2.3 Sokoine Drive (1) Plan and Profile



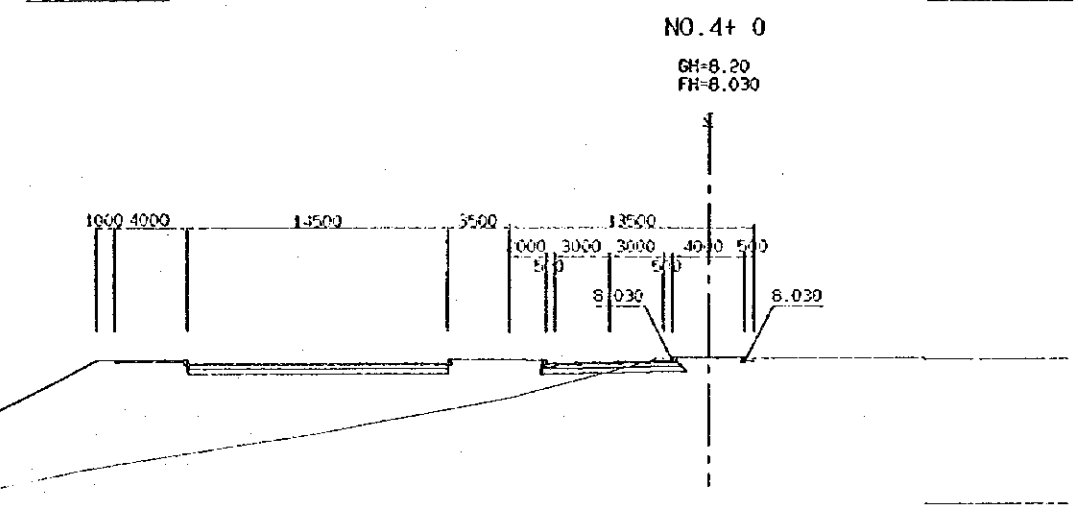
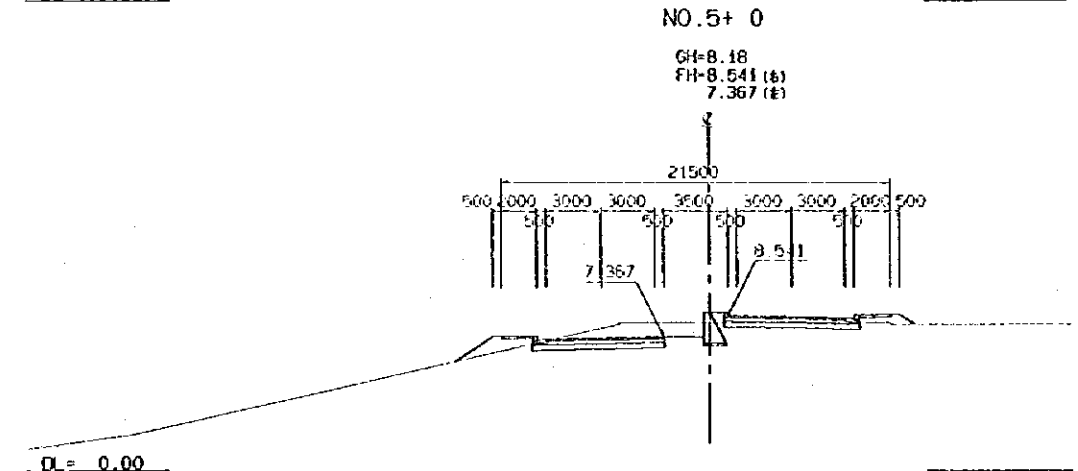
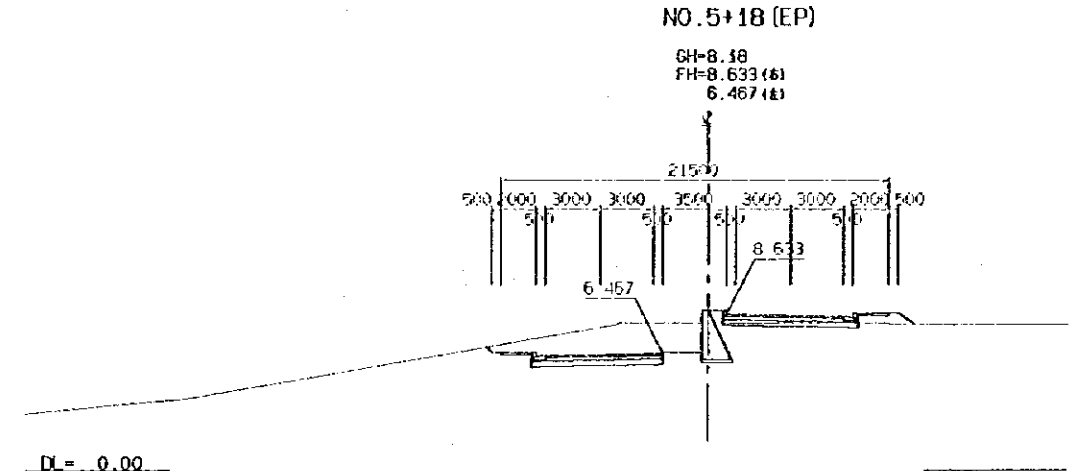
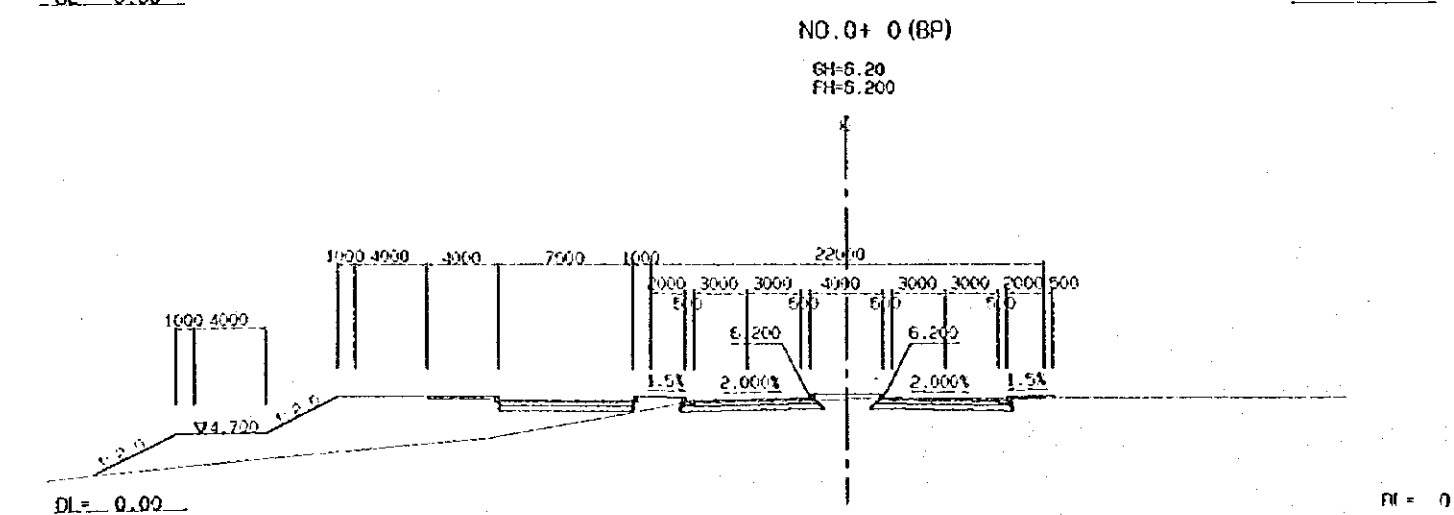
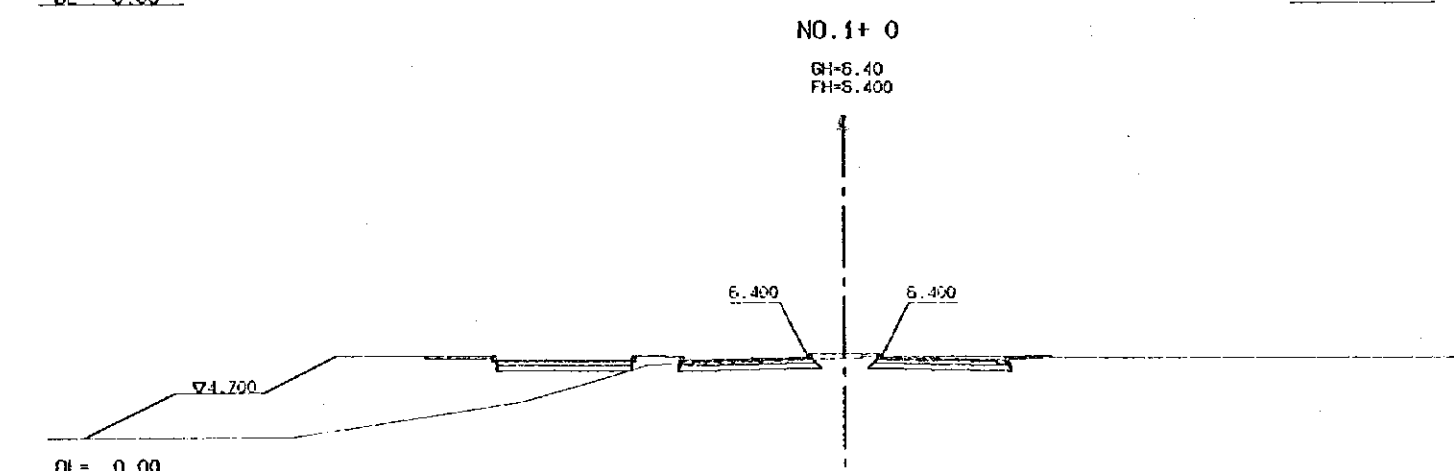
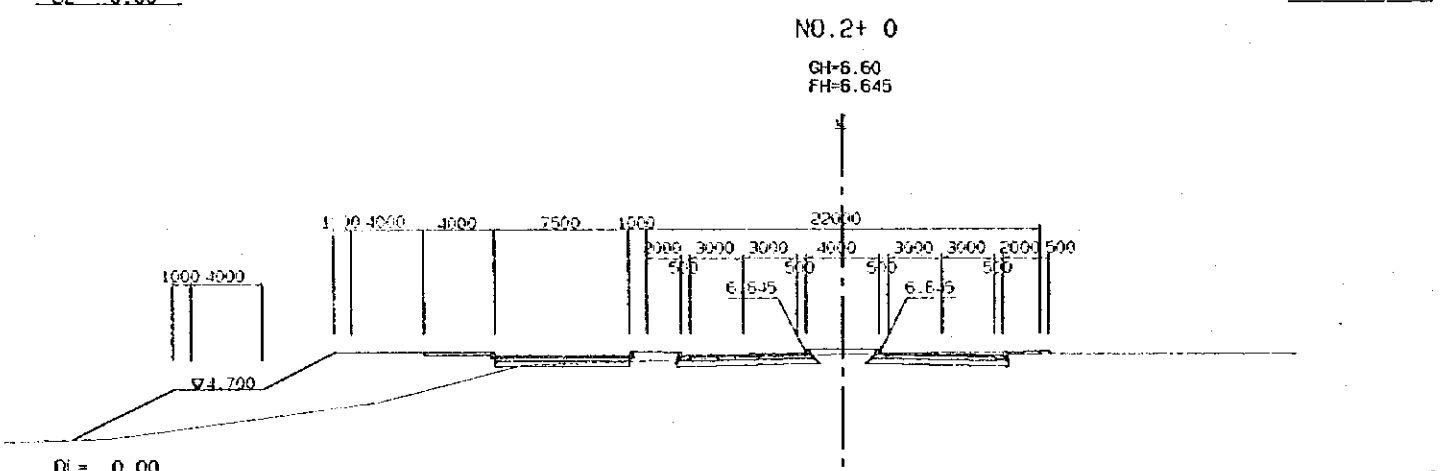
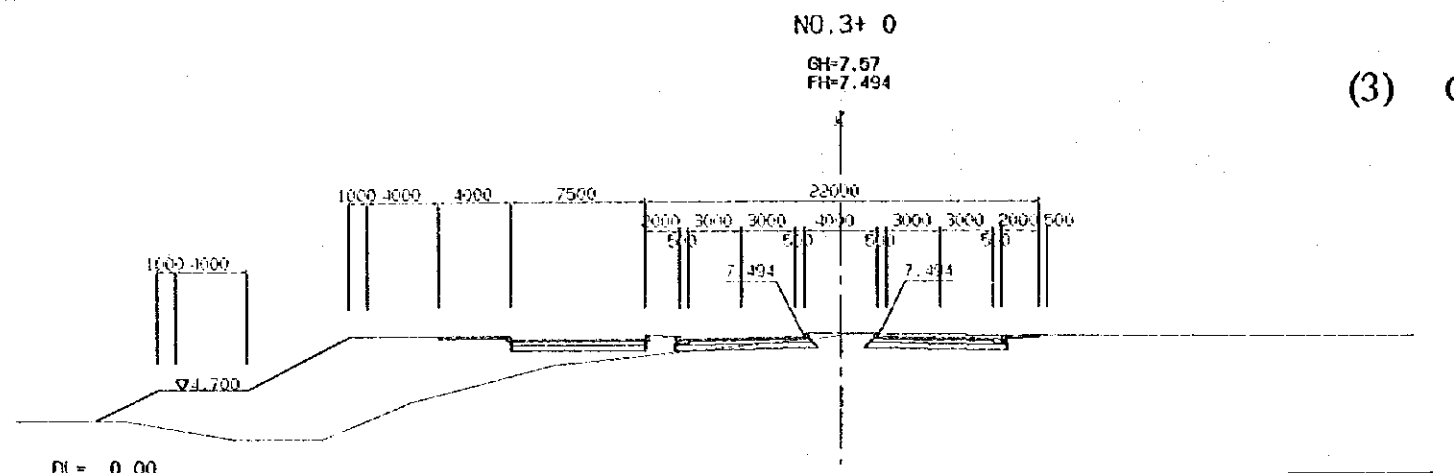
(2) Typical Cross Section of Sokoine Drive



(2) Typical Cross Section of Kivukoni Front

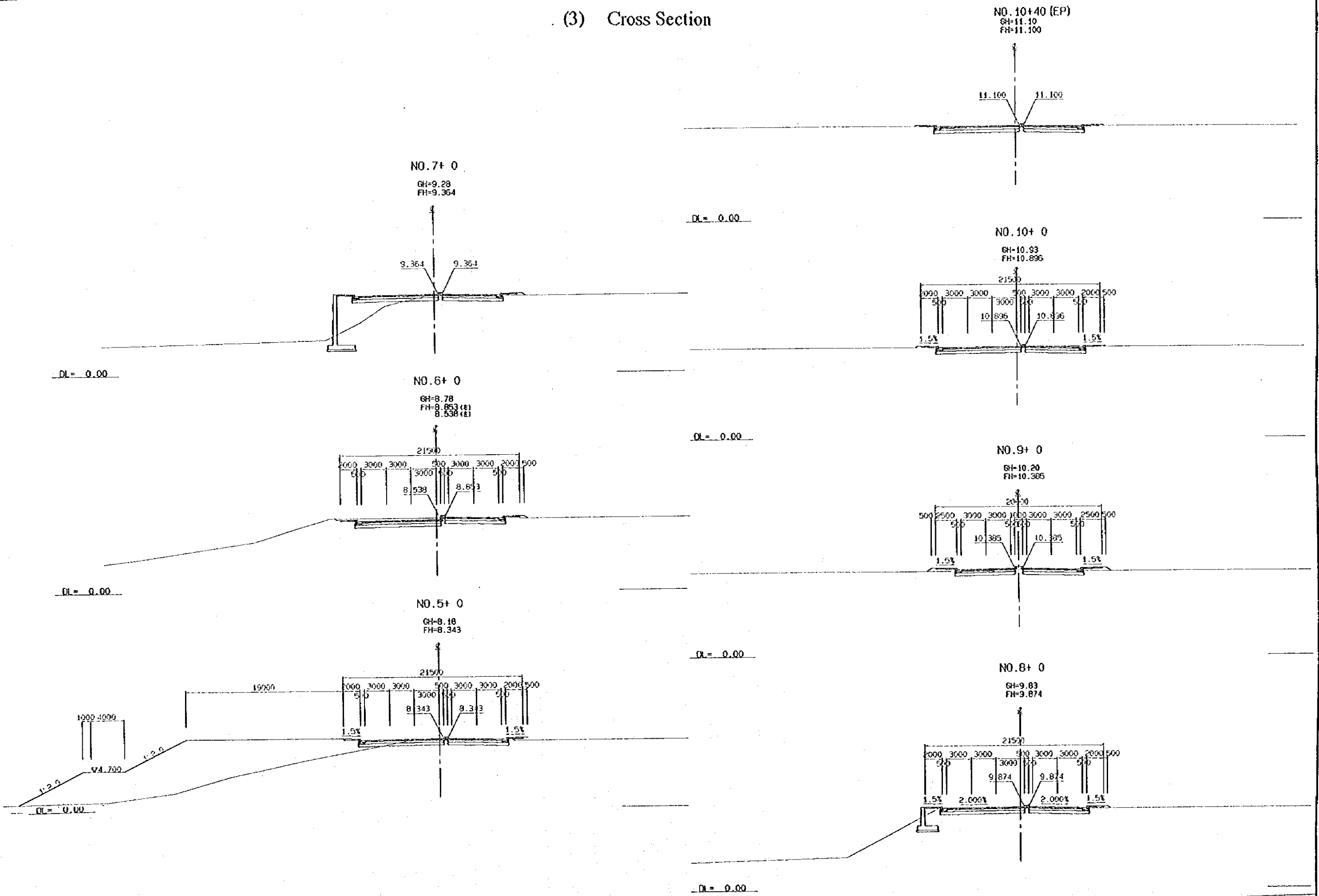


(3) Cross Section



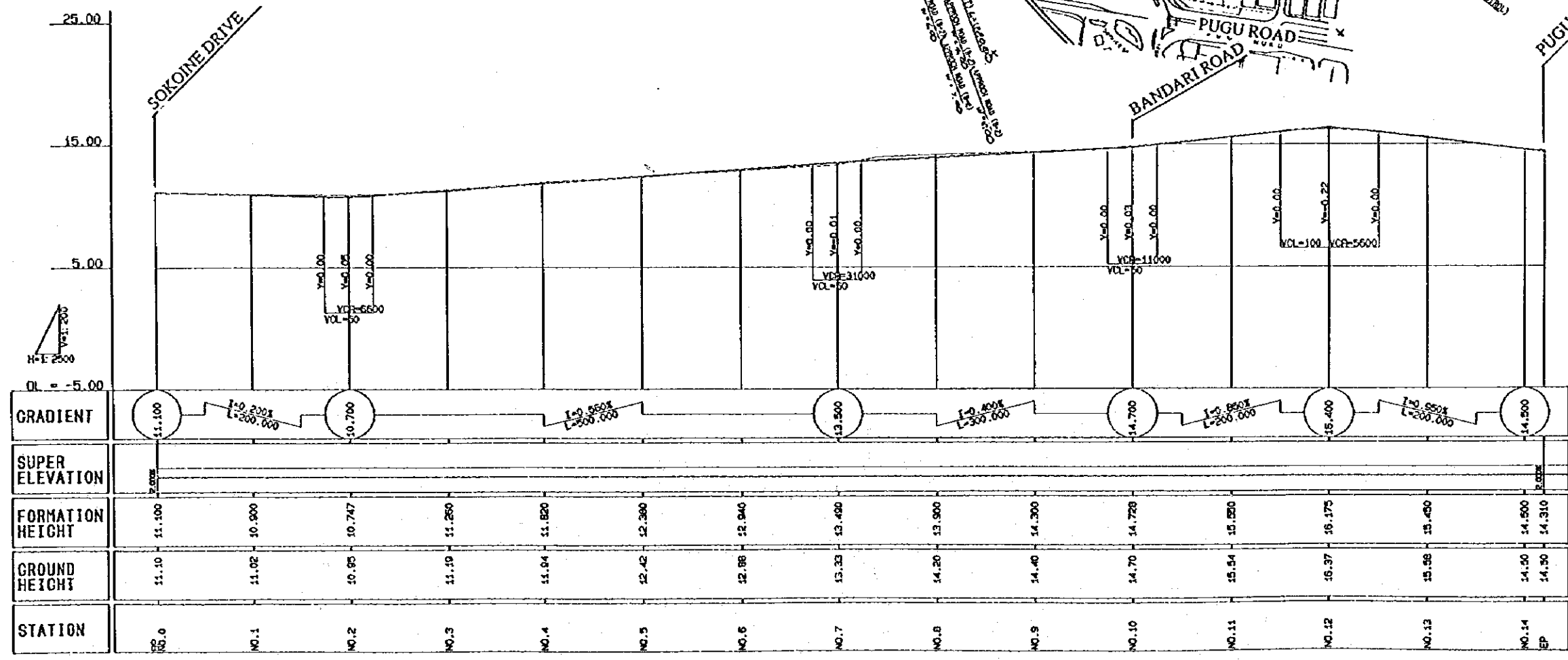
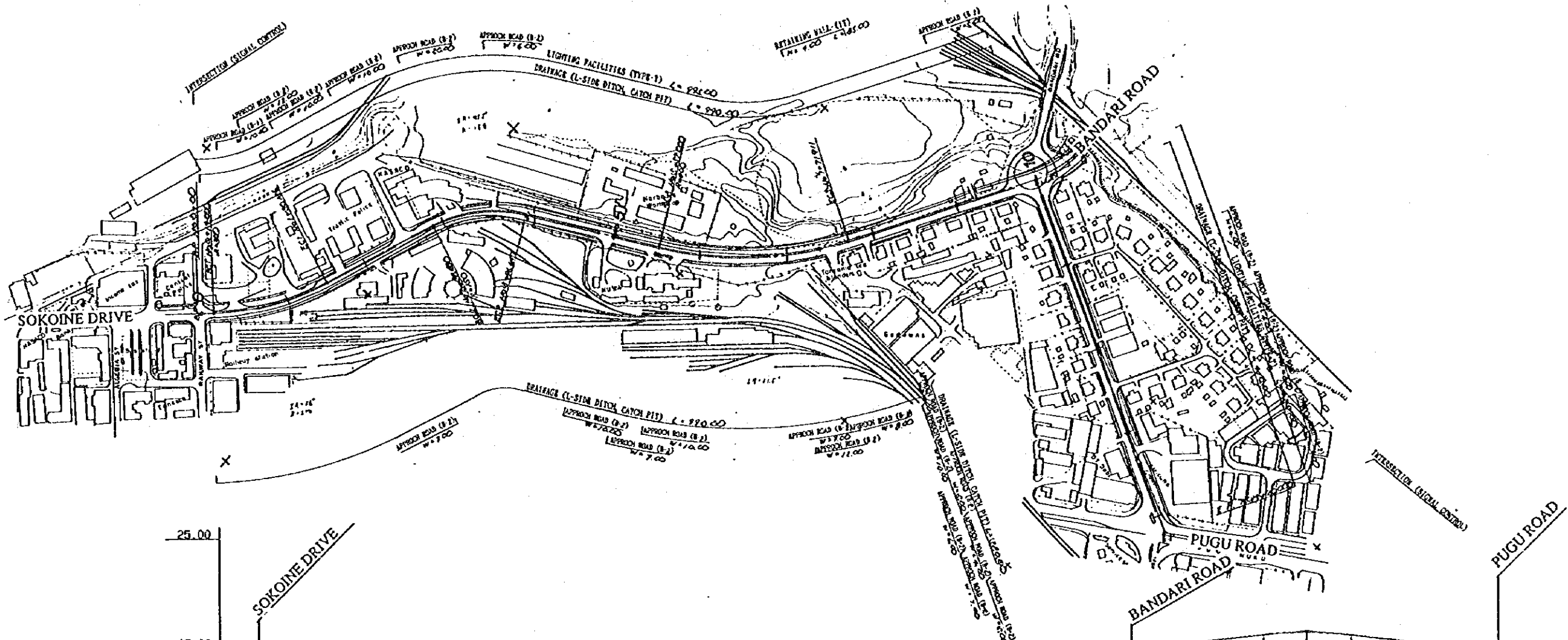
UNITED REPUBLIC OF TANZANIA MINISTRY OF WORKS, COMMUNICATIONS AND TRANSPORT	THE STUDY ON DAR-ES-SALAAM ROAD DEVELOPEMENT PLAN	JAPAN INTERNATIONAL COOPERATION AGENCY	KIVUKONI FRONT CROSS SECTION (I)	DATE MARCH 1995	SHEET NO 8
---	---	---	-------------------------------------	--------------------	---------------

(3) Cross Section

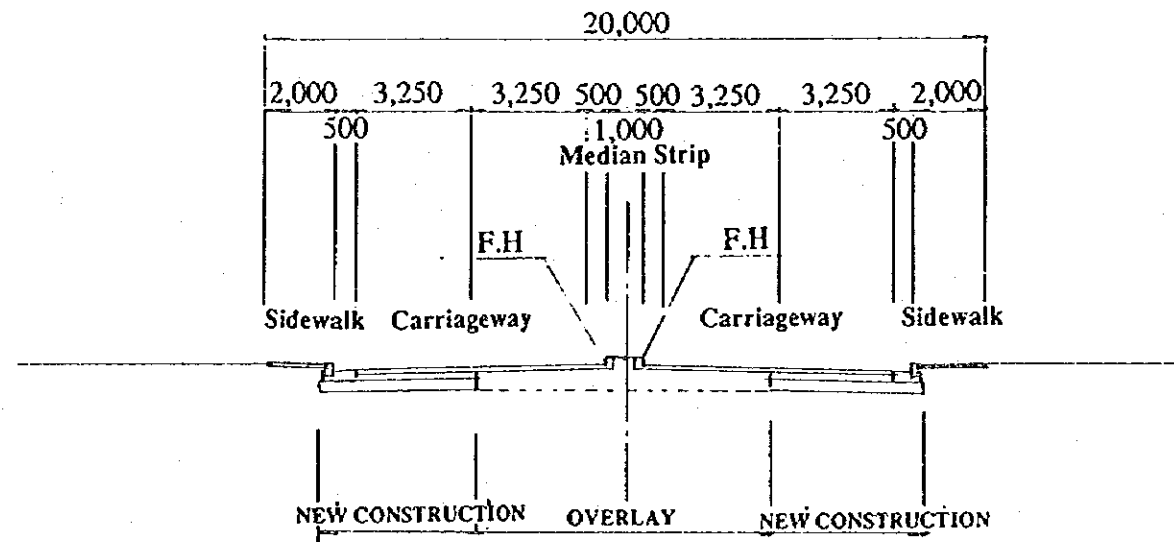


UNITED REPUBLIC OF TANZANIA MINISTRY OF WORKS, COMMUNICATIONS AND TRANSPORT	THE STUDY ON DAR-ES-SALAAM ROAD DEVELOPEMENT PLAN	JAPAN INTERNATIONAL COOPERATION AGENCY	SOKOINE DRIVE CROSS SECTION (2)	DATE MARCH 1995	SHEET NO 9
---	---	---	------------------------------------	--------------------	---------------

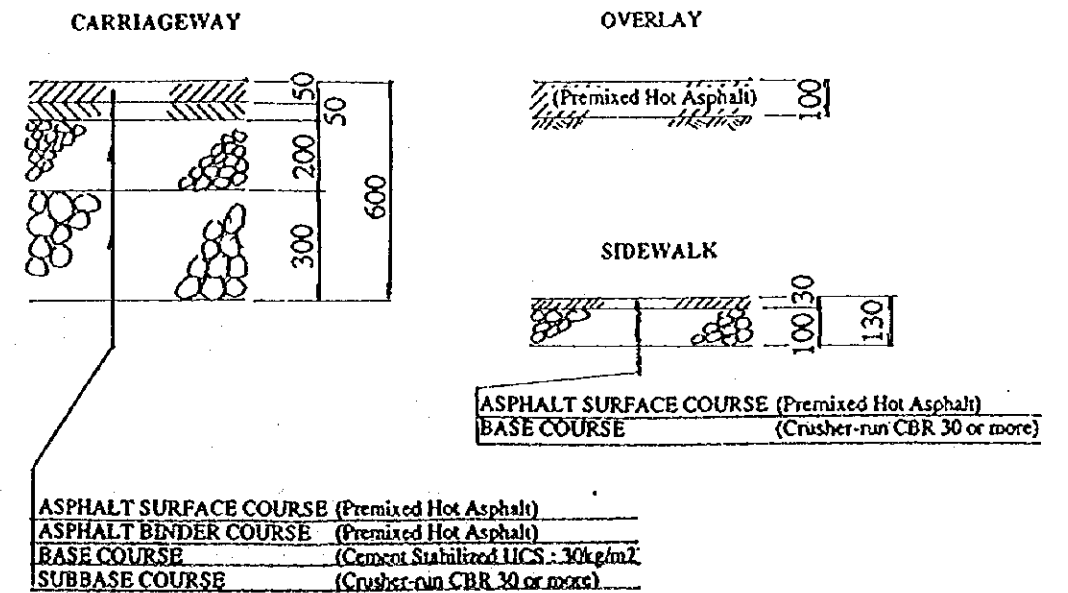
2.4 Gerezani Street (I) Plan and Profile



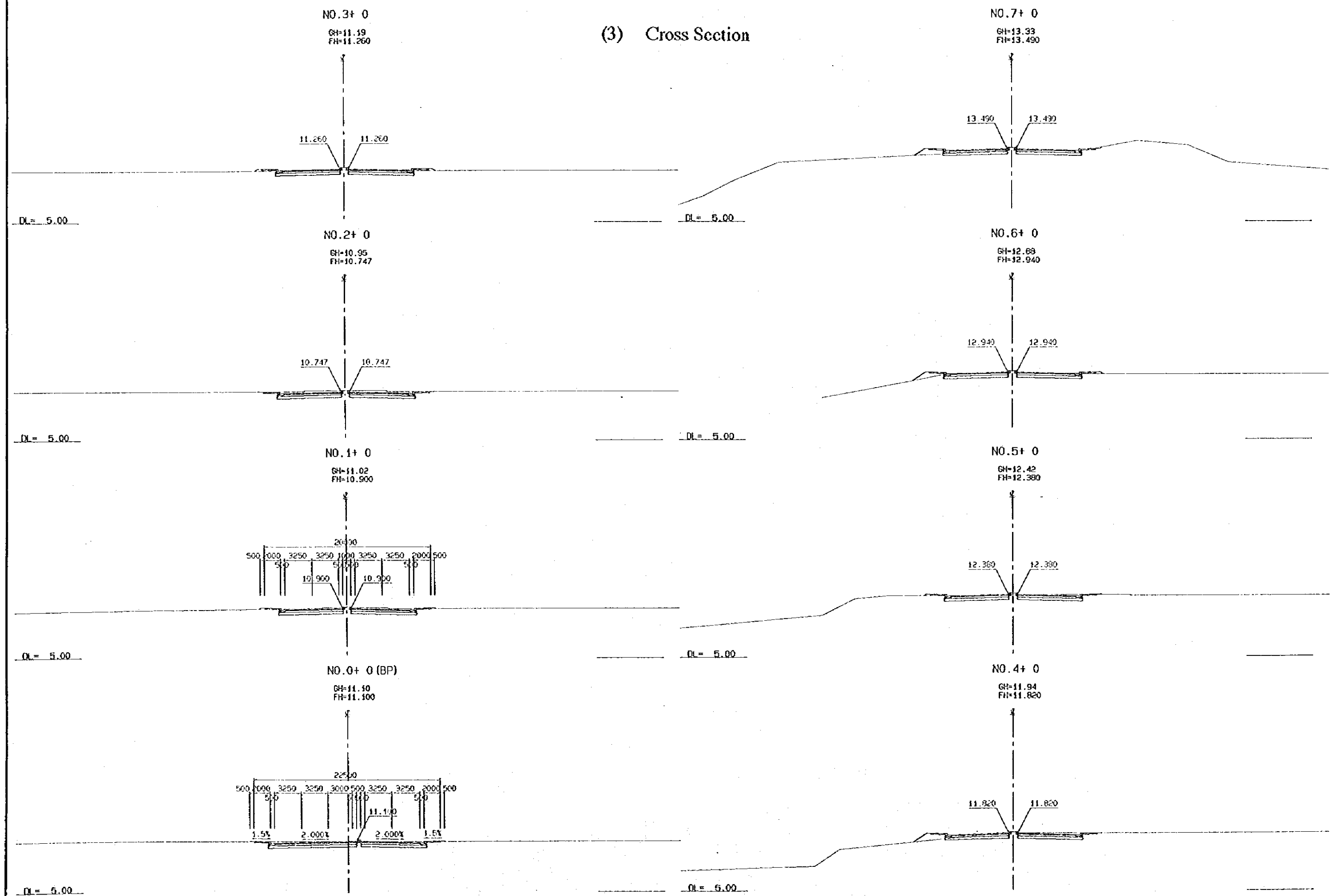
(2) Typical Cross Section of Gerezani Street



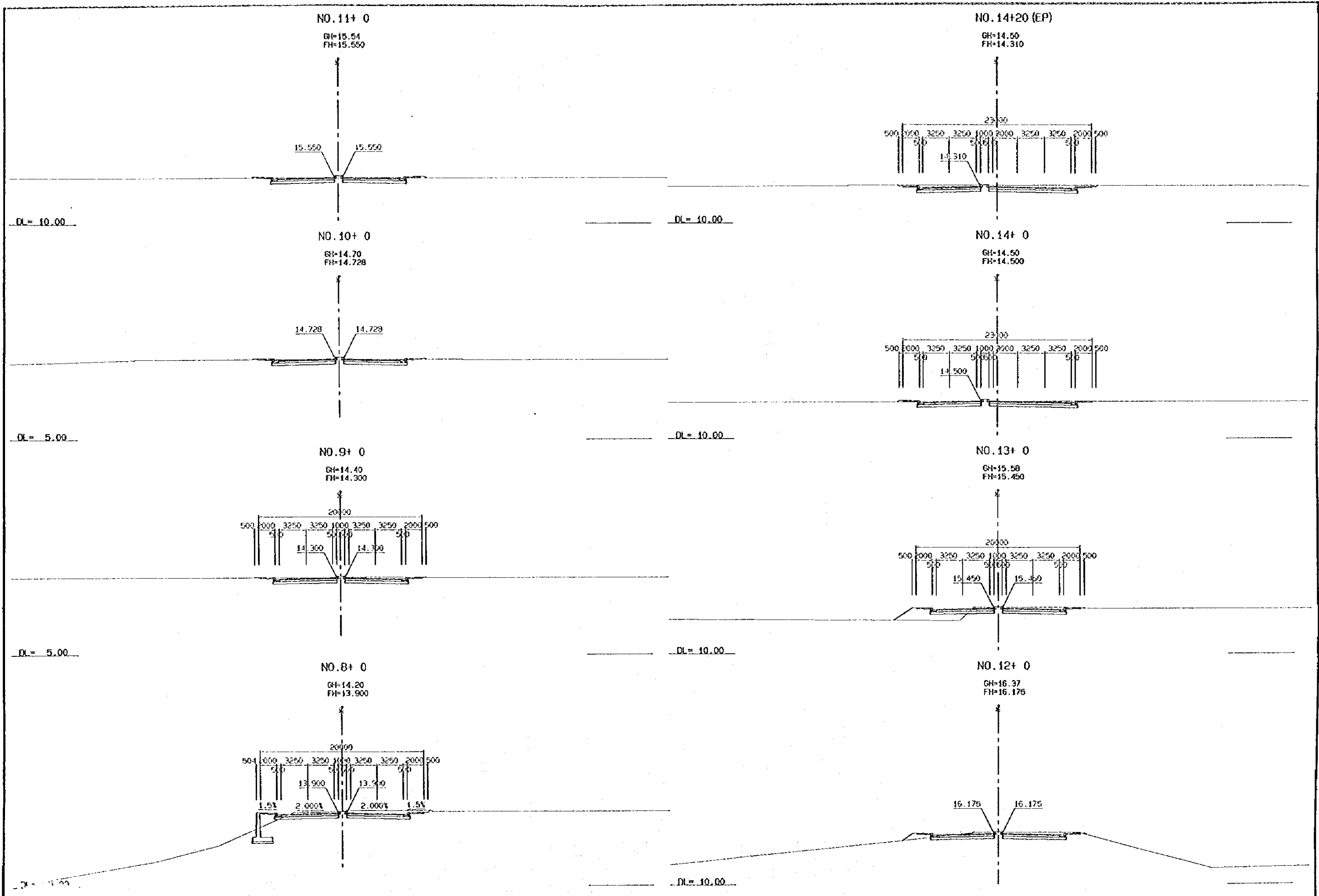
PAVEMENT STRUCTURE



(3) Cross Section



UNITED REPUBLIC OF TANZANIA MINISTRY OF WORKS, COMMUNICATIONS AND TRANSPORT	THE STUDY ON DAR-ES-SALAAM ROAD DEVELOPEMENT PLAN	JAPAN INTERNATIONAL COOPERATION AGENCY	GEREANI STREET CROSS SECTION (1)	DATE MARCH 1995	SHEET NO 12
---	---	---	-------------------------------------	--------------------	----------------



UNITED REPUBLIC OF TANZANIA
MINISTRY OF WORKS,
COMMUNICATIONS AND TRANSPORT

THE STUDY
ON
DAR-ES-SALAAM ROAD DEVELOPEMENT PLAN

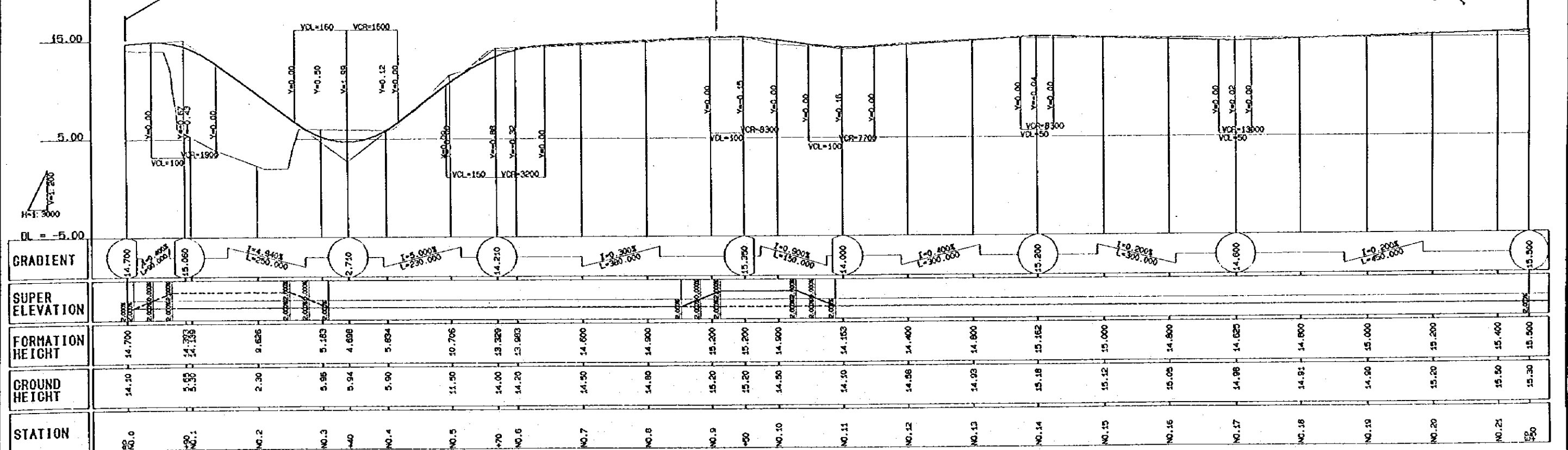
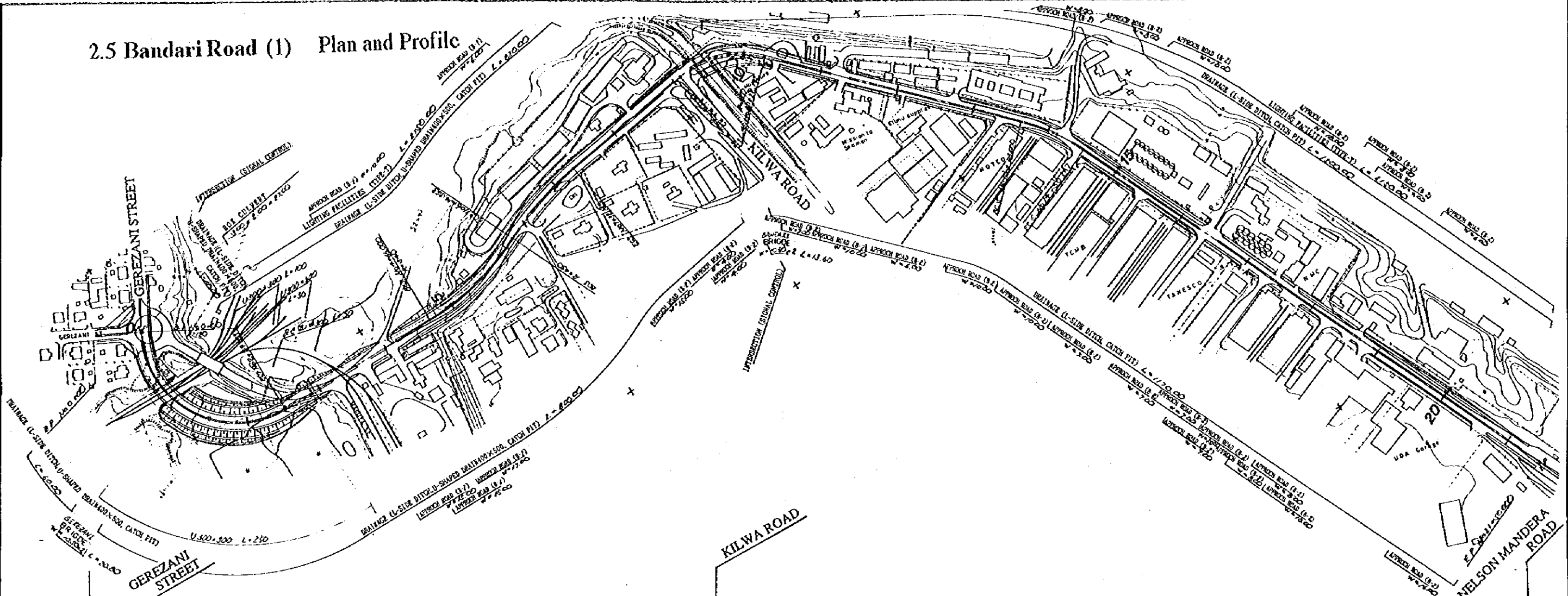
JAPAN INTERNATIONAL
COOPERATION AGENCY

GEREANI STREET
CROSS SECTION (2)

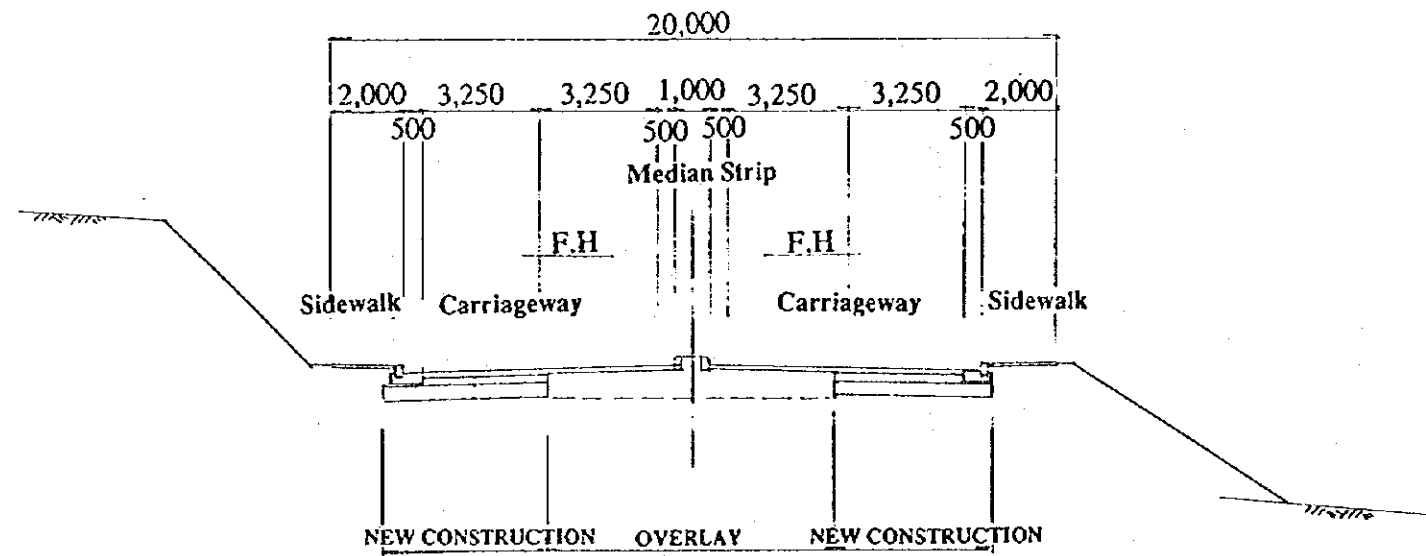
DATE
MARCH 1995

SHEET NO
13

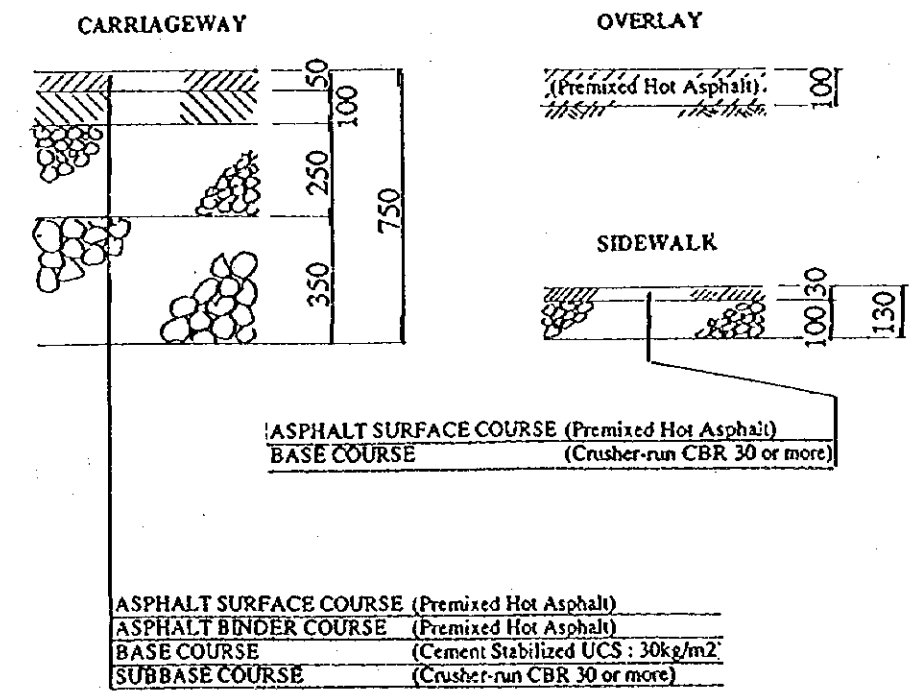
2.5 Bandari Road (1) Plan and Profile



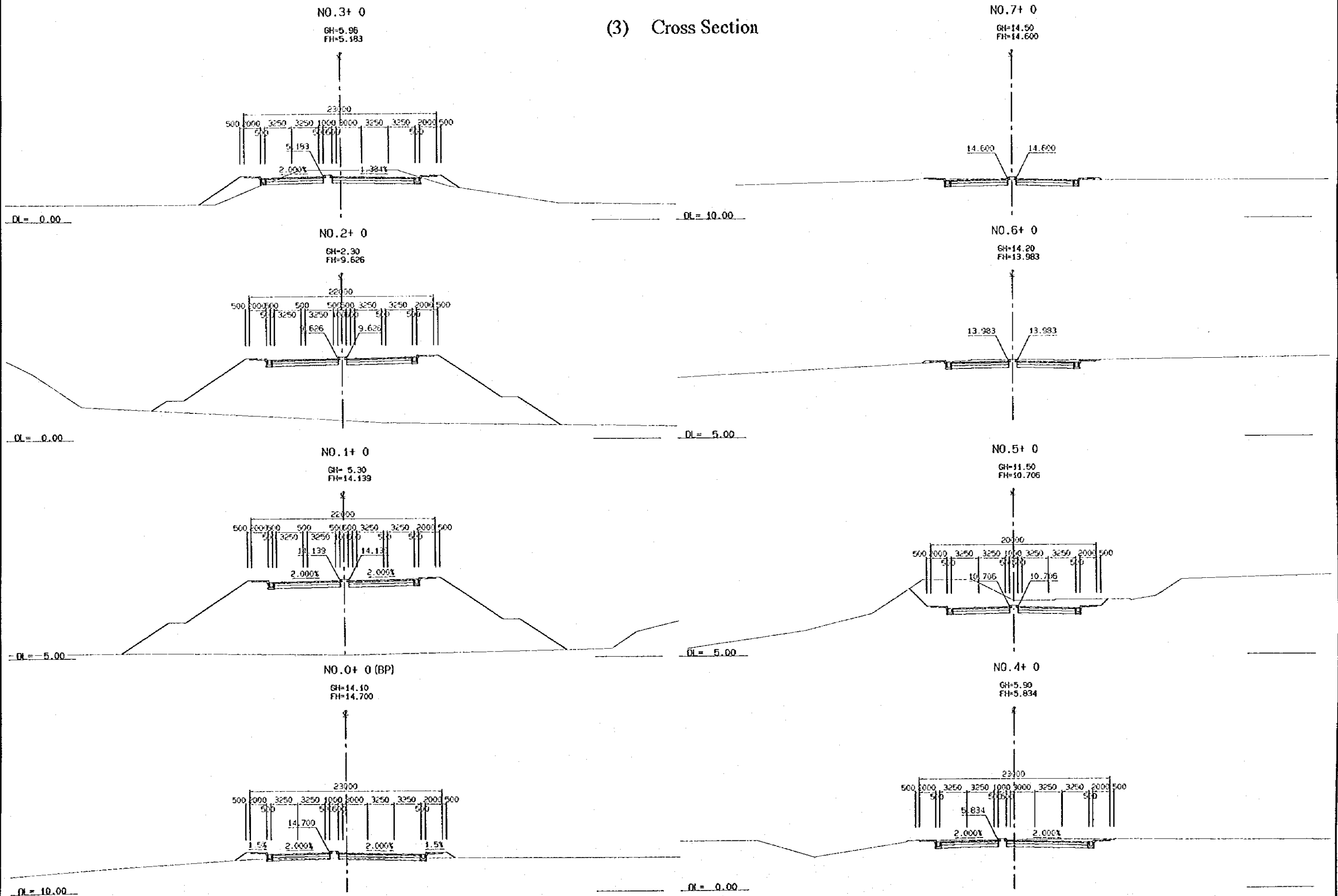
(2) Typical Cross Section of Bandari Road



PAVEMENT STRUCTURE



(3) Cross Section



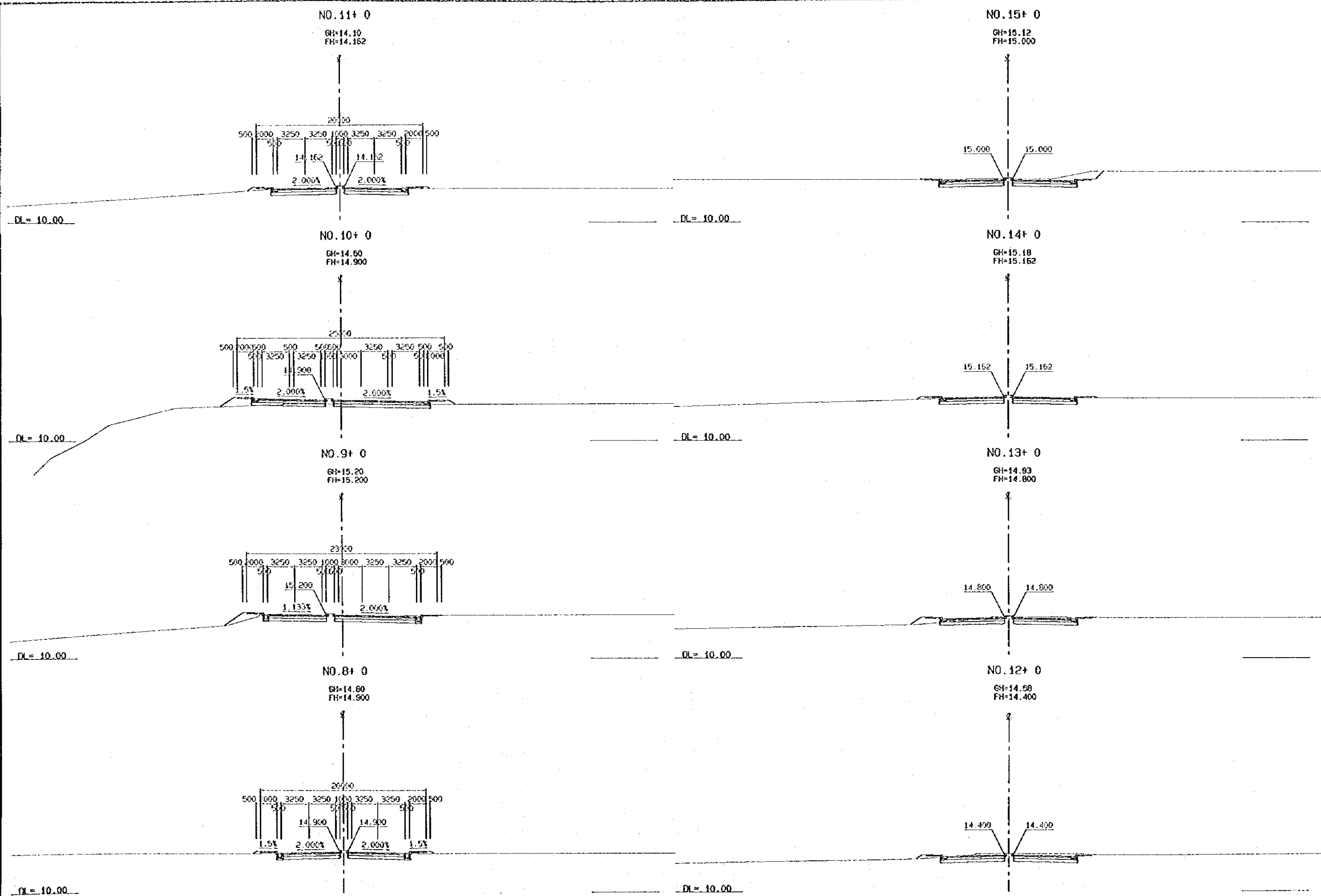
UNITED REPUBLIC OF TANZANIA
MINISTRY OF WORKS,
COMMUNICATIONS AND TRANSPORT

THE STUDY
ON
DAR-ES-SALAAM ROAD DEVELOPEMENT PLAN

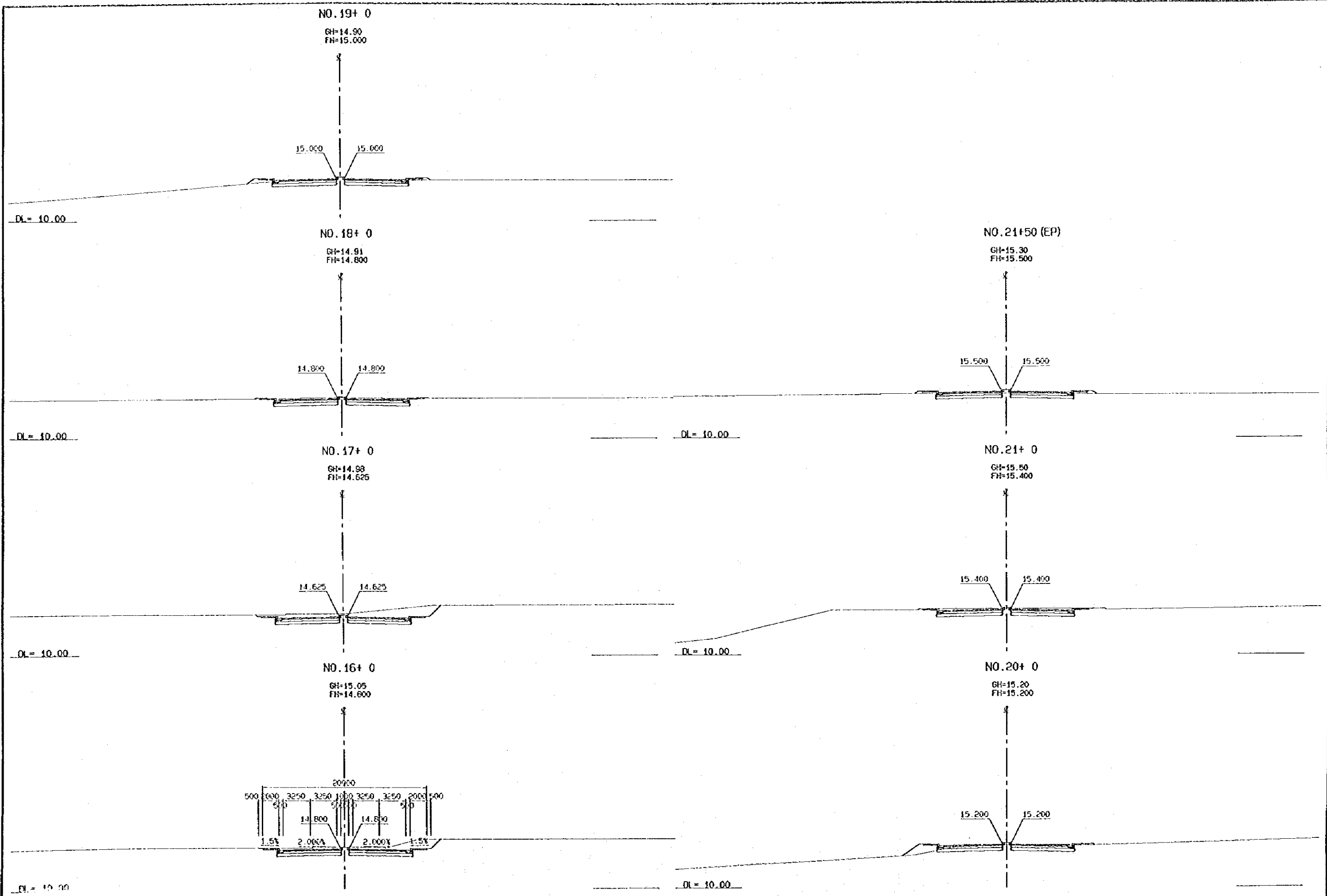
JAPAN INTERNATIONAL
COOPERATION AGENCY

BANDARI ROAD
CROSS SECTION (I)

DATE	SHEET NO
MARCH 1995	16



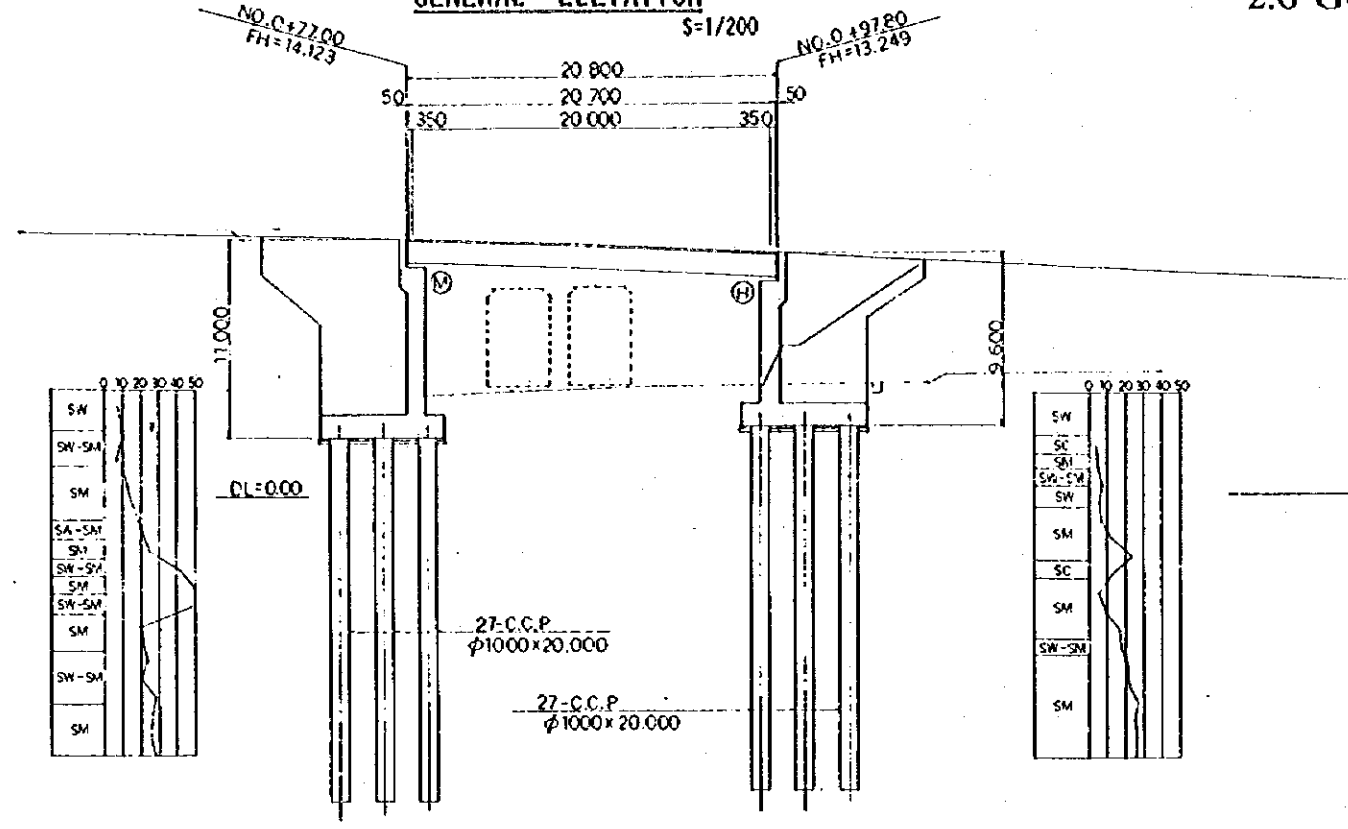
UNITED REPUBLIC OF TANZANIA MINISTRY OF WORKS, COMMUNICATIONS AND TRANSPORT	THE STUDY ON DAR-ES-SALAAM ROAD DEVELOPEMENT PLAN	JAPAN INTERNATIONAL COOPERATION AGENCY	BANDARI ROAD CROSS SECTION (2)	DATE MARCH 1995	SHEET NO 17
---	---	---	-----------------------------------	--------------------	----------------



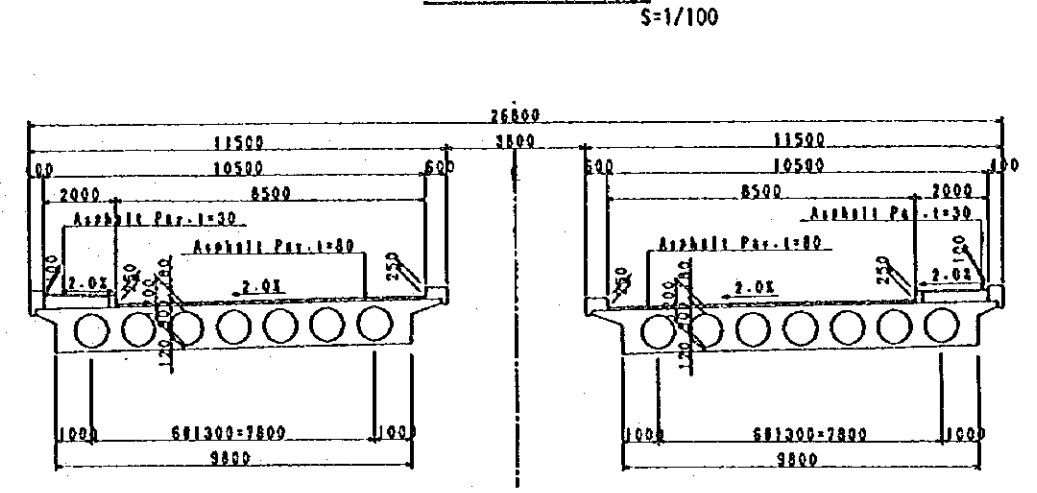
UNITED REPUBLIC OF TANZANIA MINISTRY OF WORKS, COMMUNICATIONS AND TRANSPORT	THE STUDY ON DAR-ES-SALAAM ROAD DEVELOPEMENT PLAN	JAPAN INTERNATIONAL COOPERATION AGENCY	BANDARI ROAD CROSS SECTION (3)	DATE MARCH 1995	SHEET NO 18
---	---	---	-----------------------------------	--------------------	----------------

2.6 Gerezani Bridge

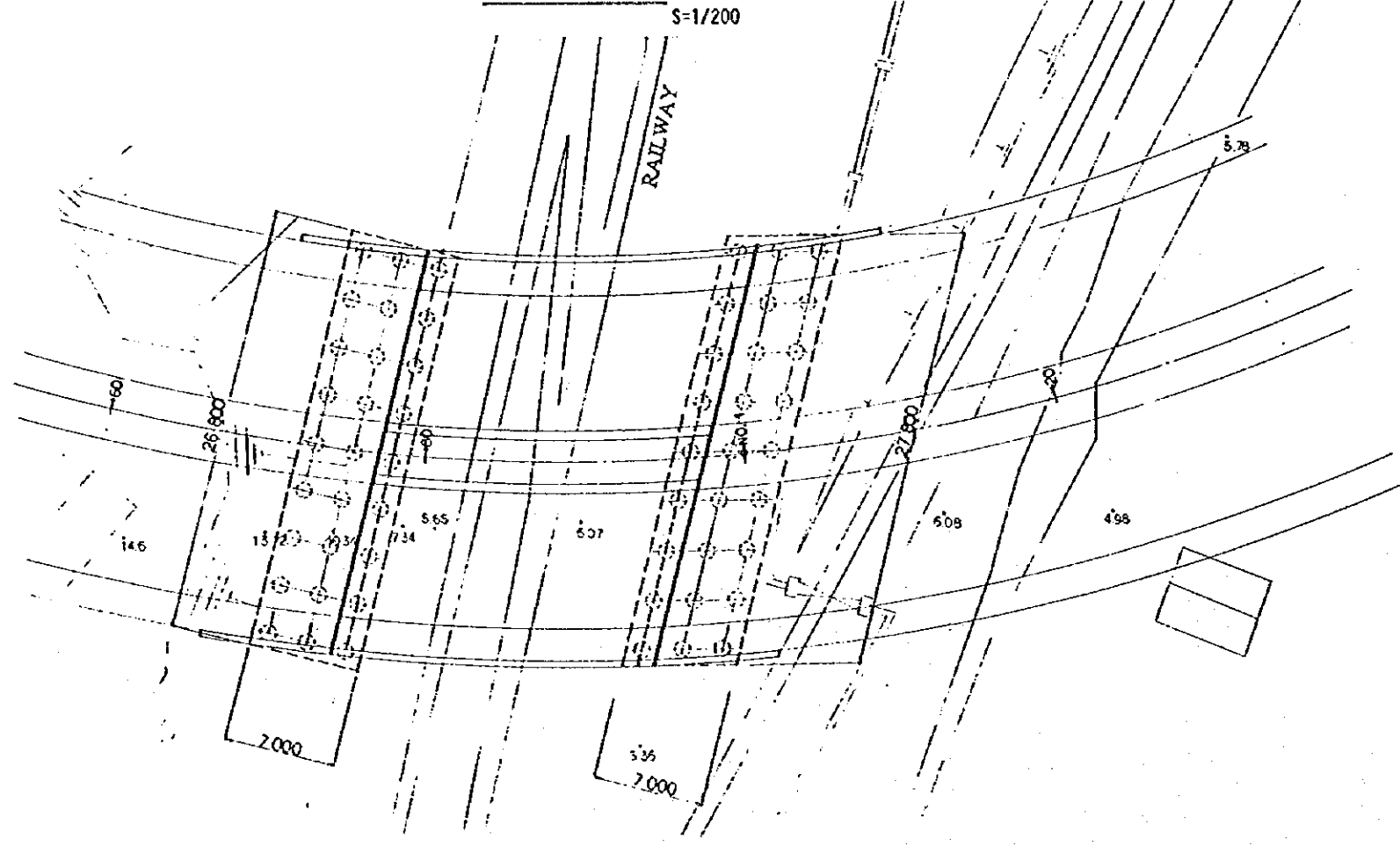
GENERAL ELEVATION



CROSS SECTION



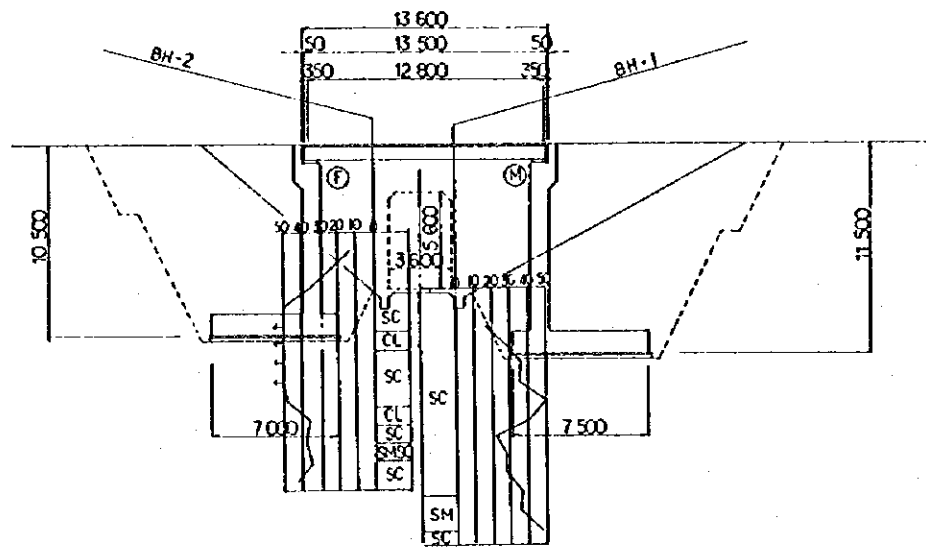
GENERAL PLAN



2.7 Bandari Bridge

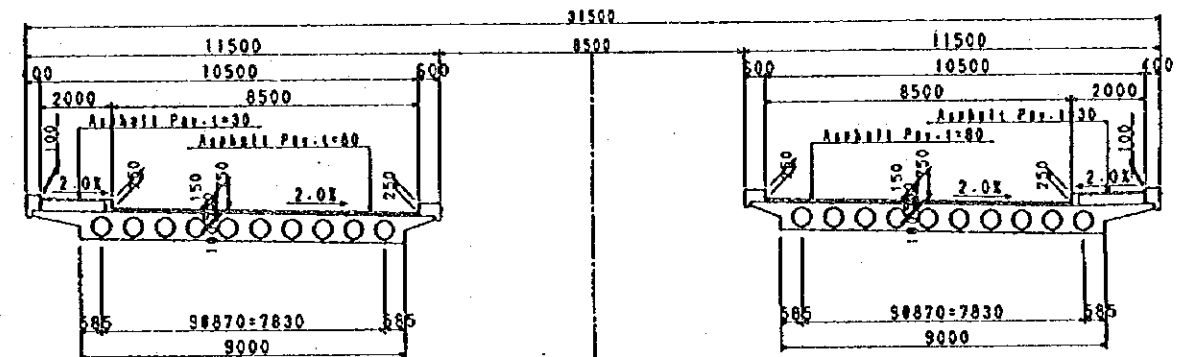
GENERAL ELEVATION

S=1/200



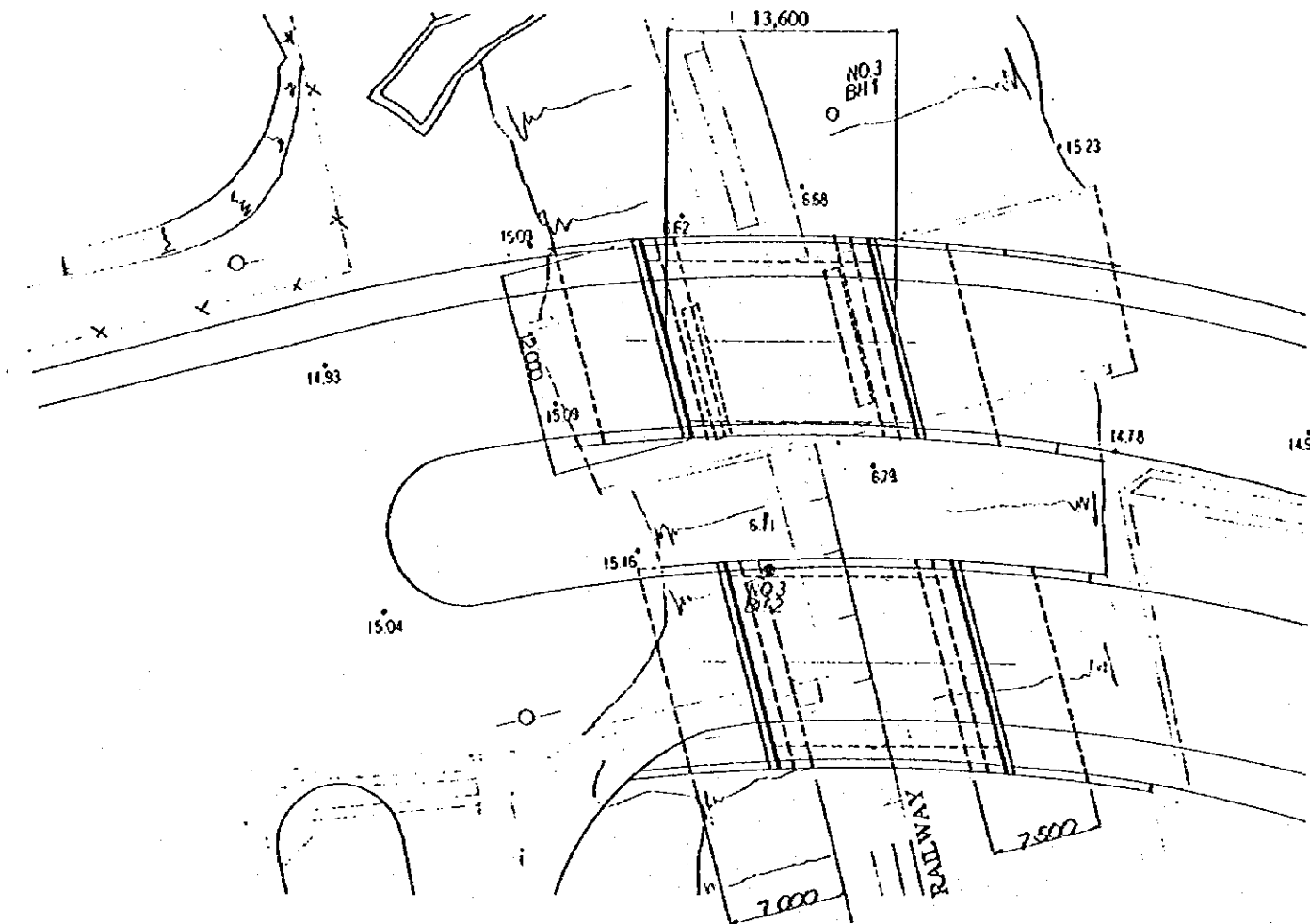
CROSS SECTION

S=1/100

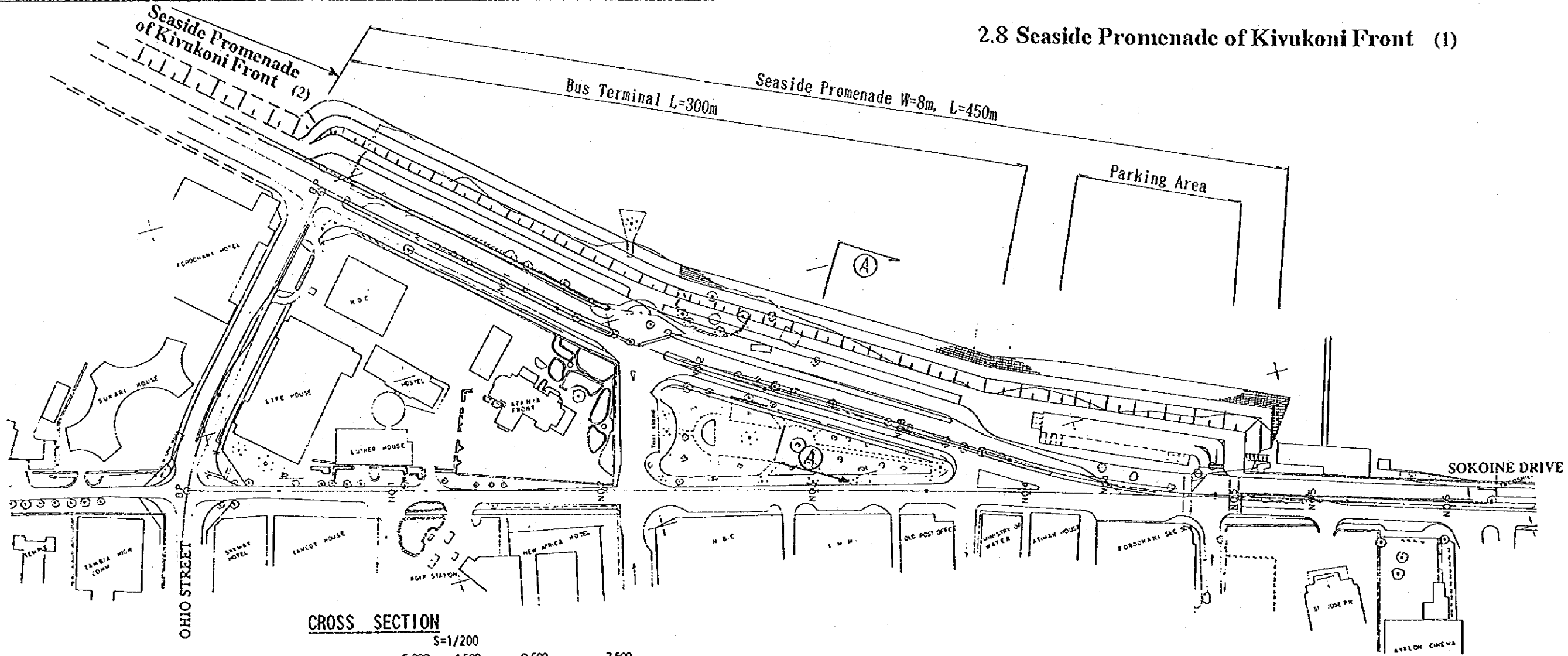


GENERAL PLAN

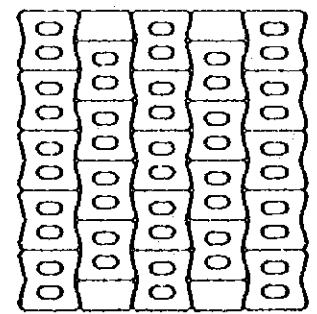
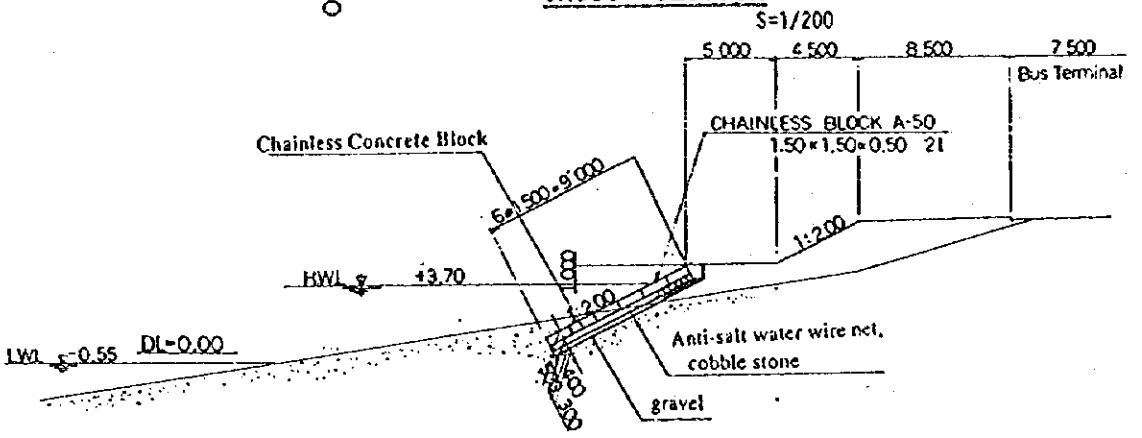
S=1/200



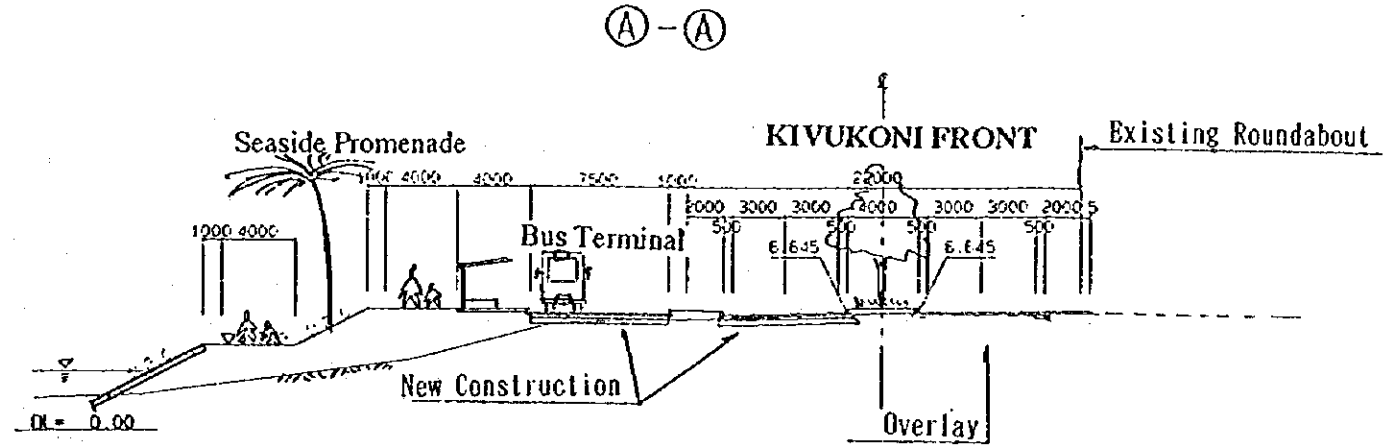
2.8 Seaside Promenade of Kivukoni Front (1)



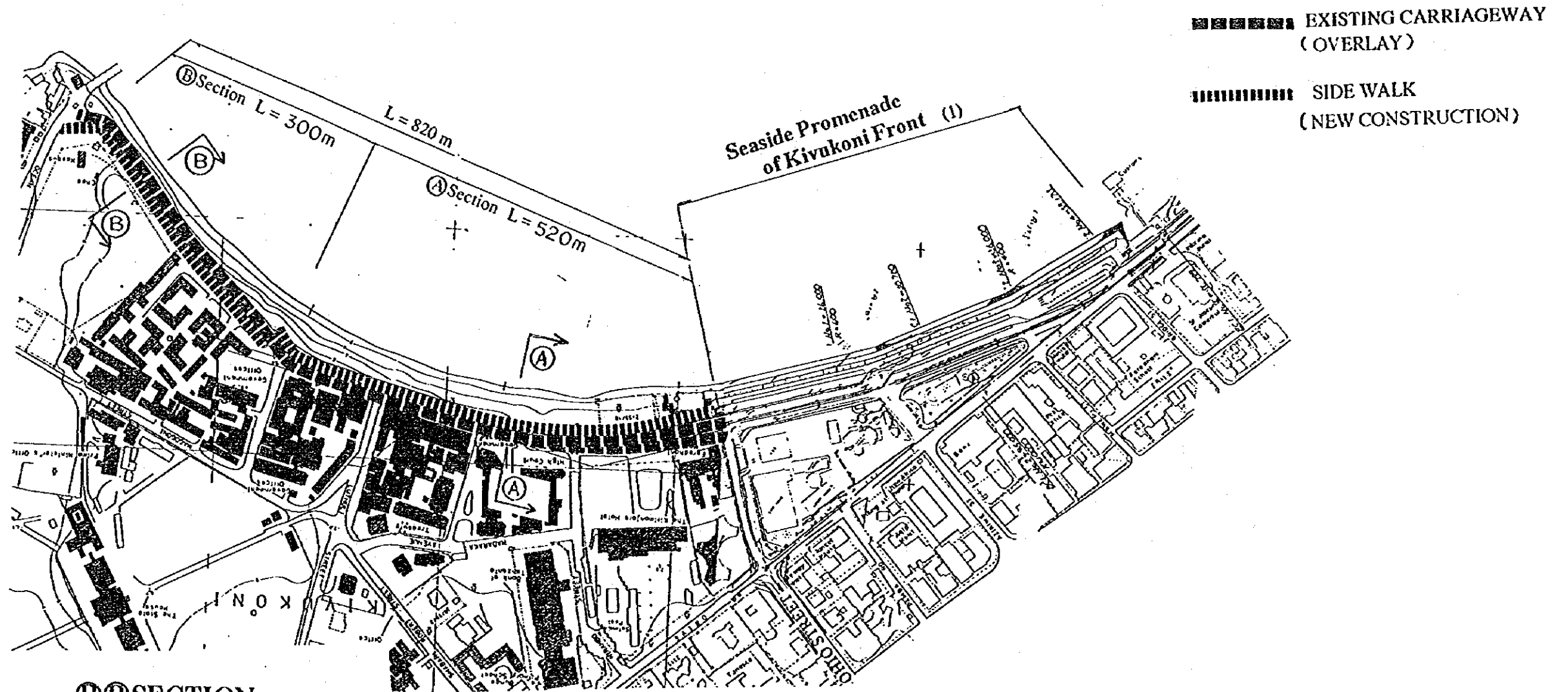
CROSS SECTION



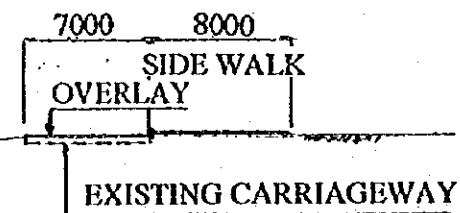
layout of chainless concrete block



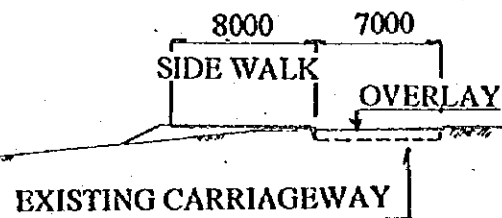
Seaside Promenade of Kivukoni Front (2)



BB SECTION

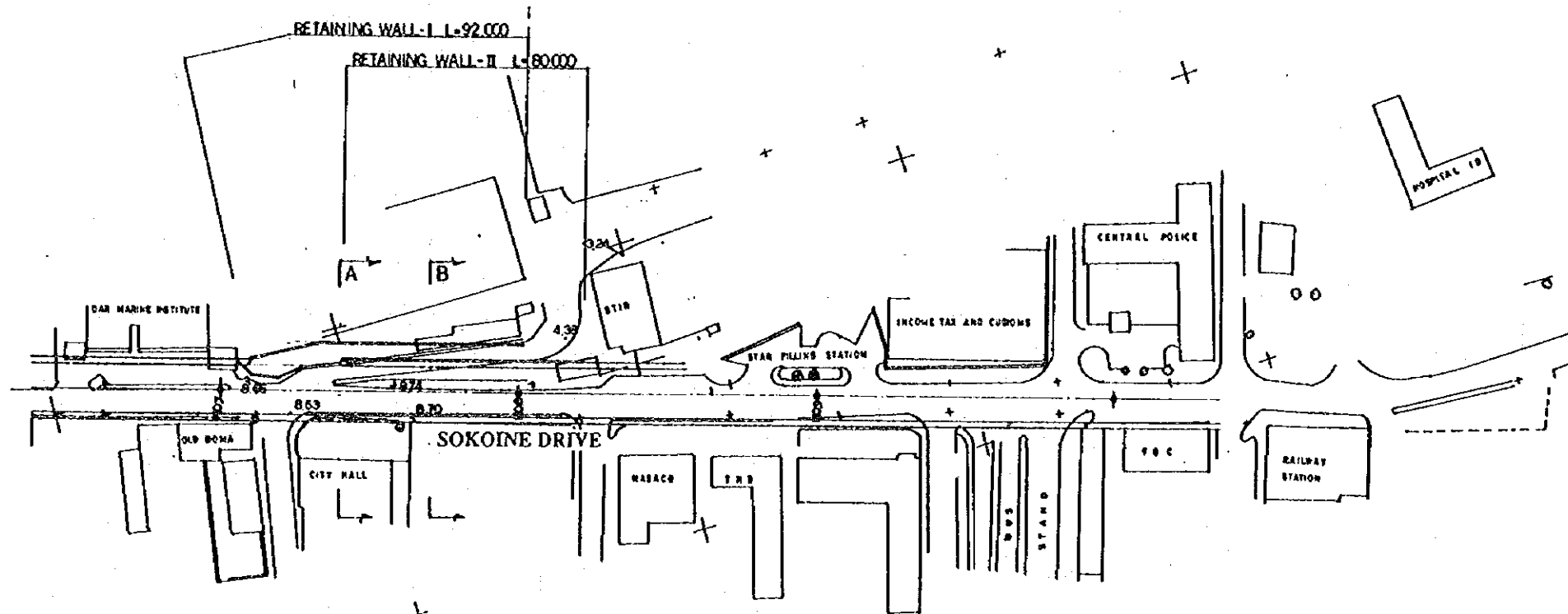


AA SECTION

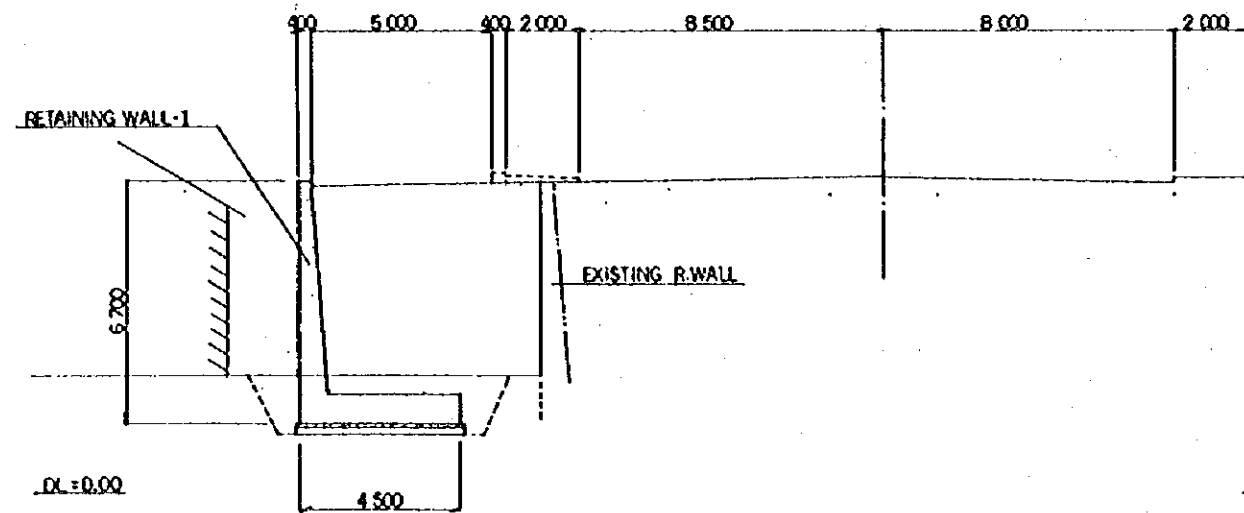


2.9 Retaining Wall of Harbor Access

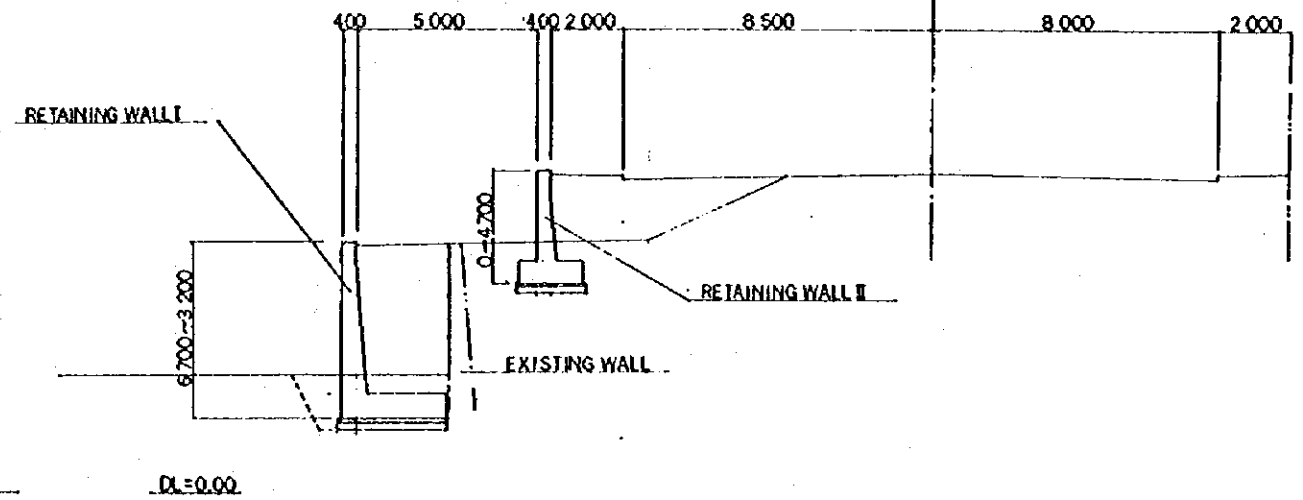
GENERAL PLAN
S=1/1000



CROSS SECTION A
S=1/100

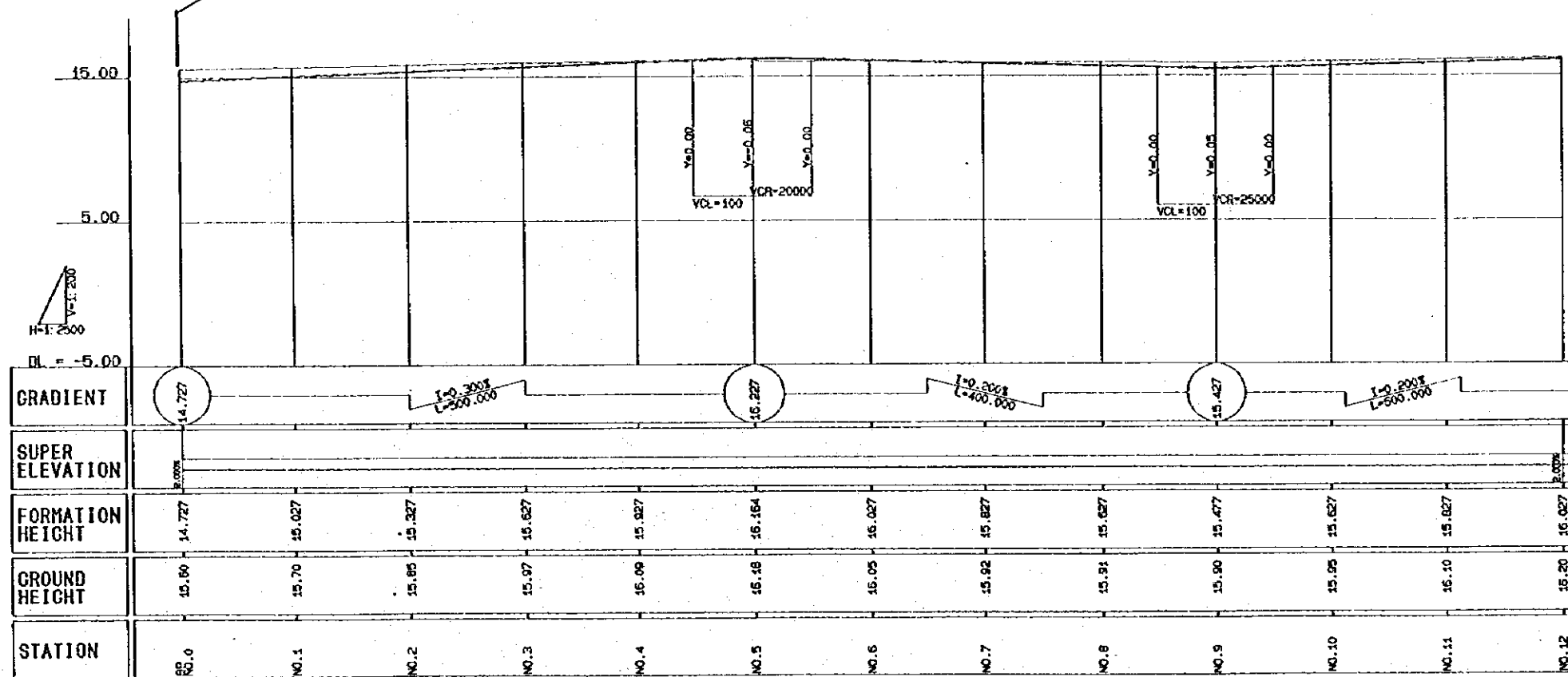
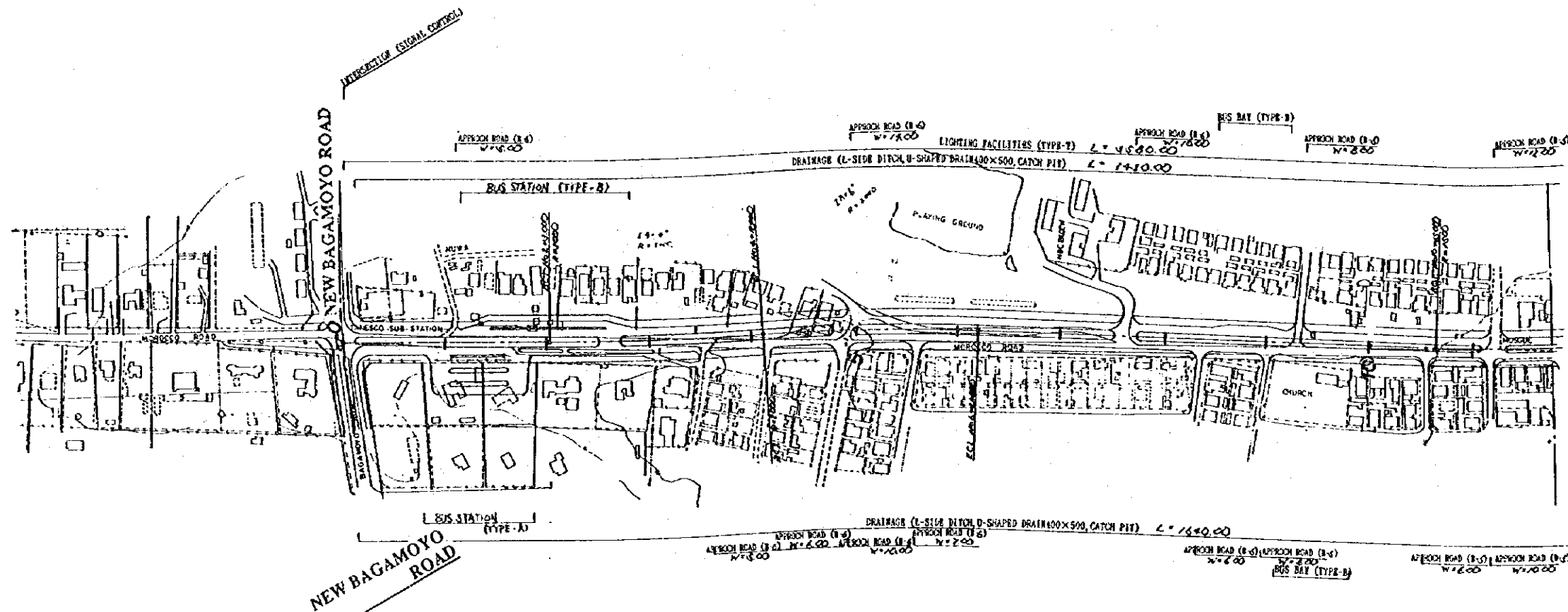


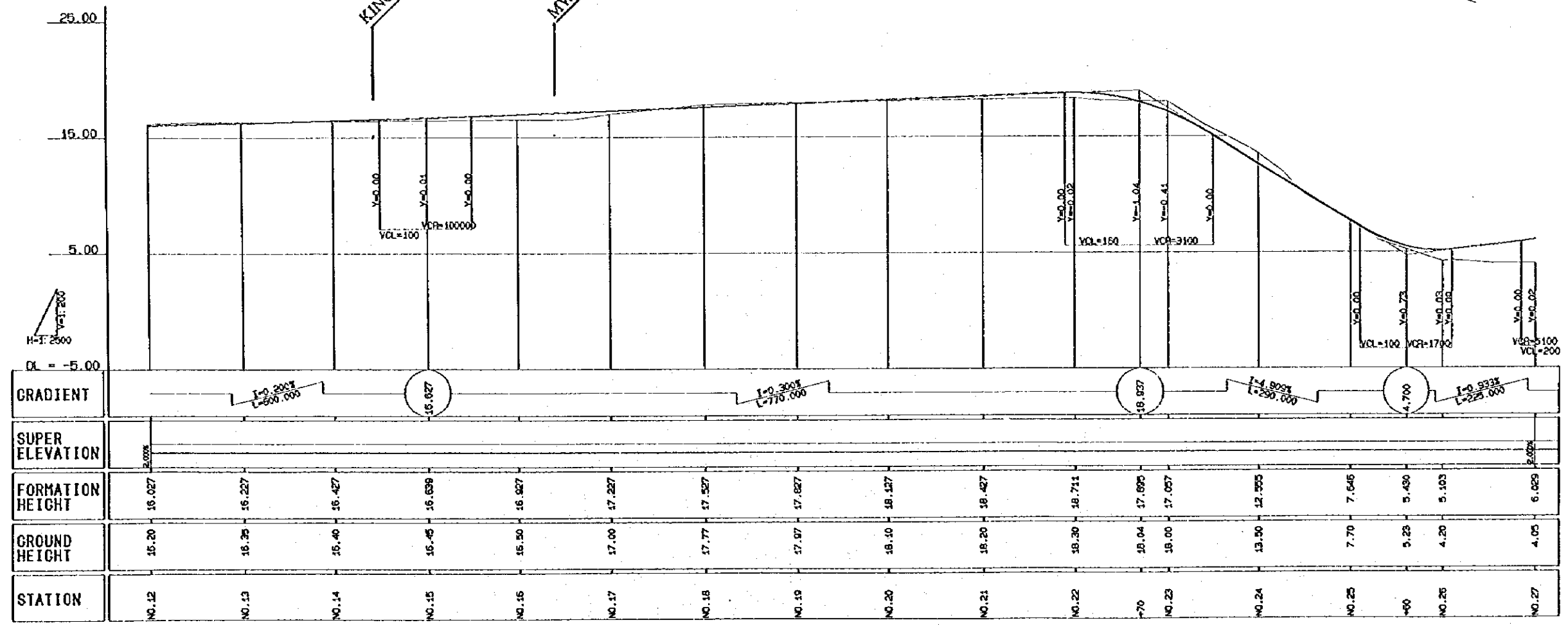
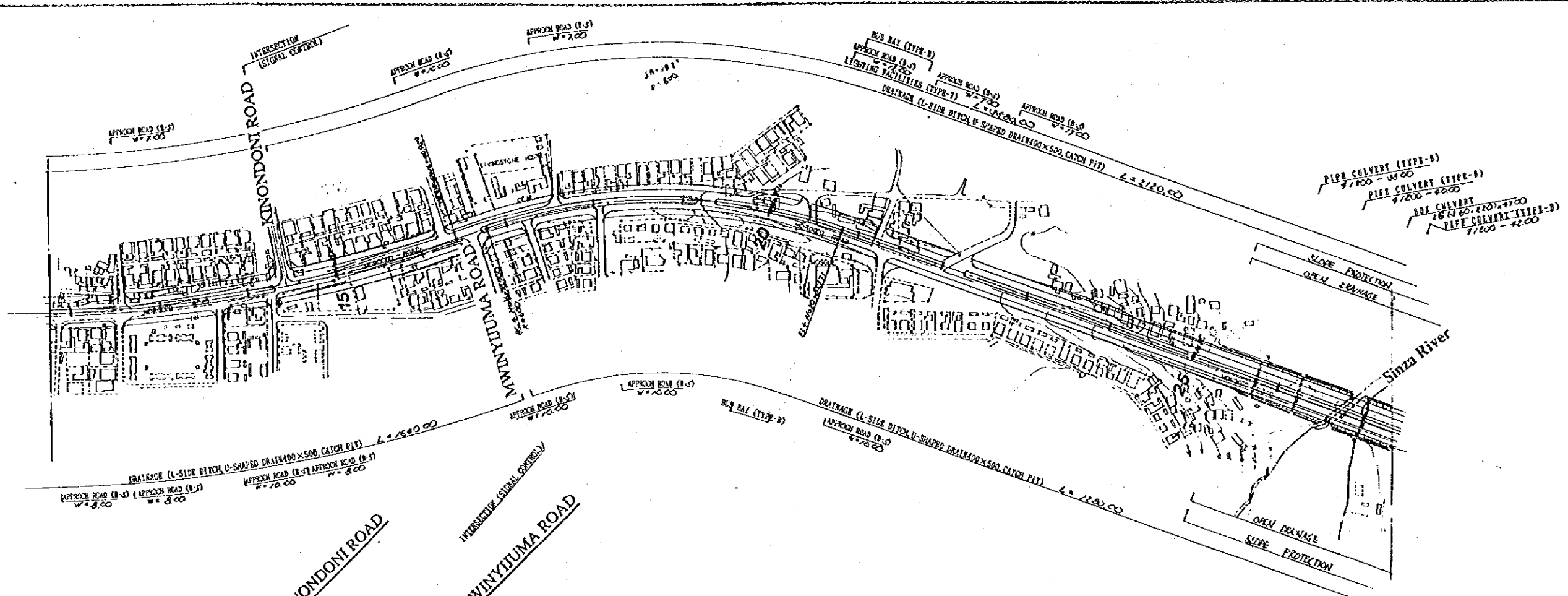
CROSS SECTION B
S=1/100

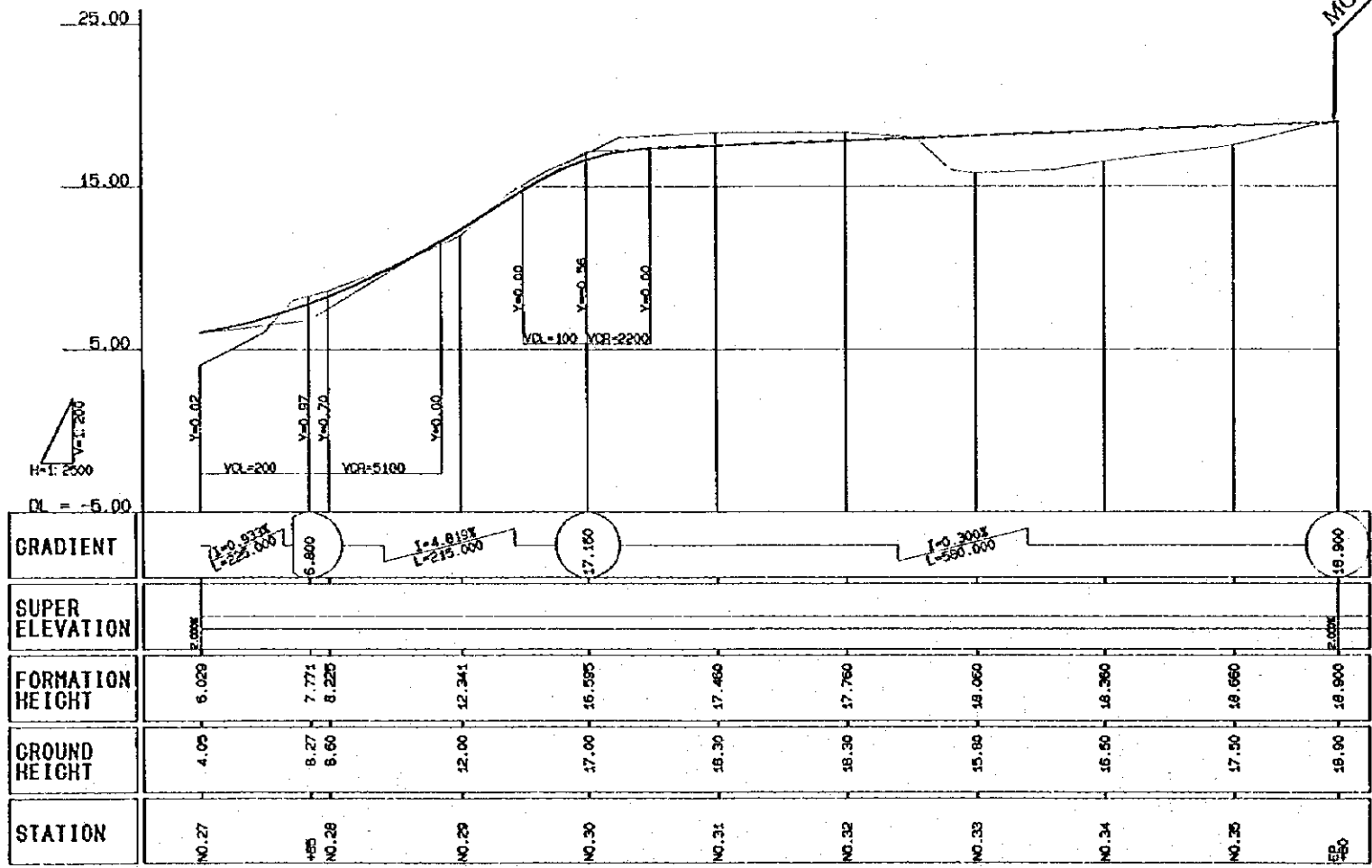
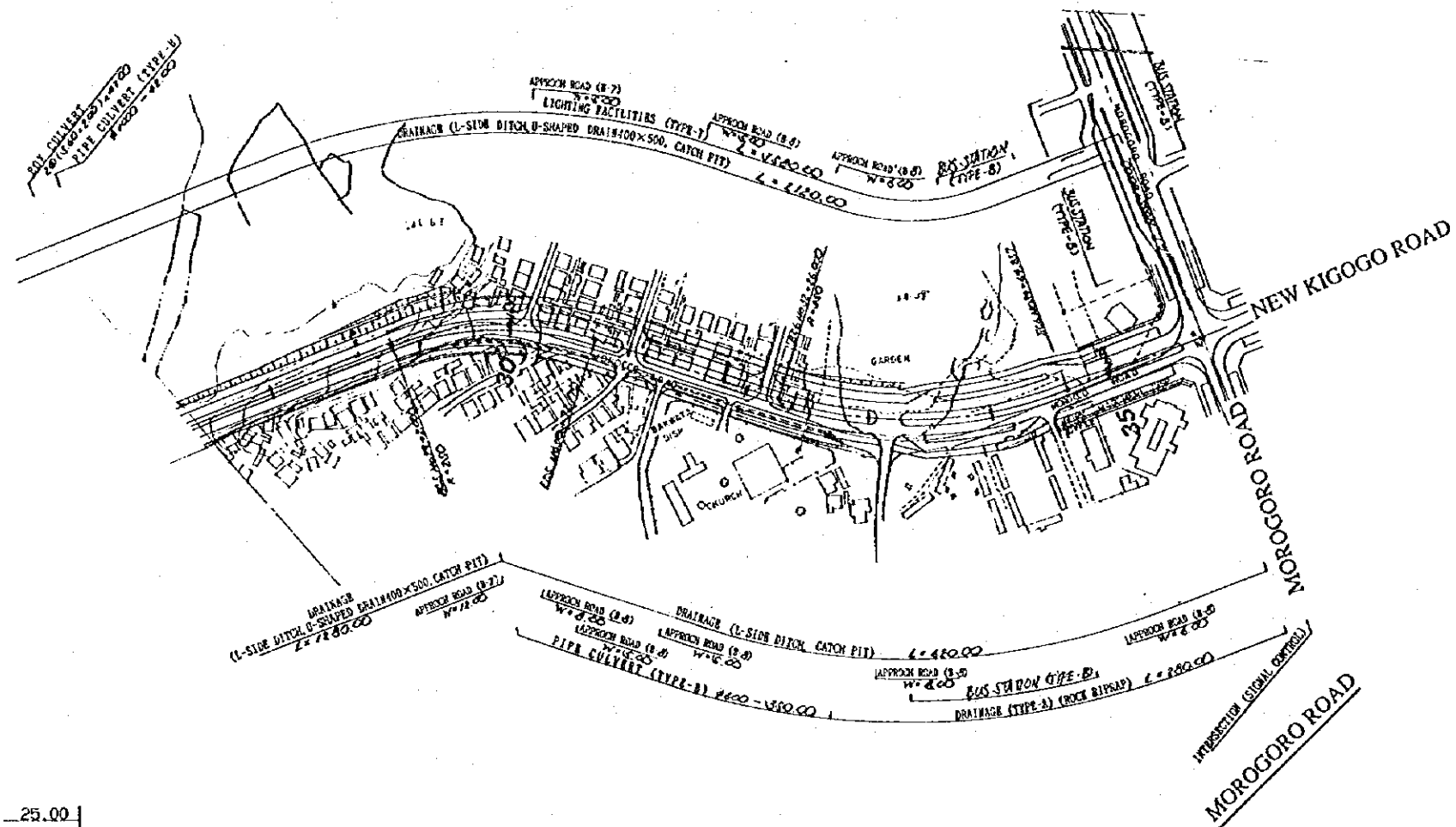


3.Package 2 : Widening of Middle Ring Road with construction of Missing Link

3.1 Morocco Road (1) Plan and Profile







UNITED REPUBLIC OF TANZANIA
MINISTRY OF WORKS,
COMMUNICATIONS AND TRANSPORT

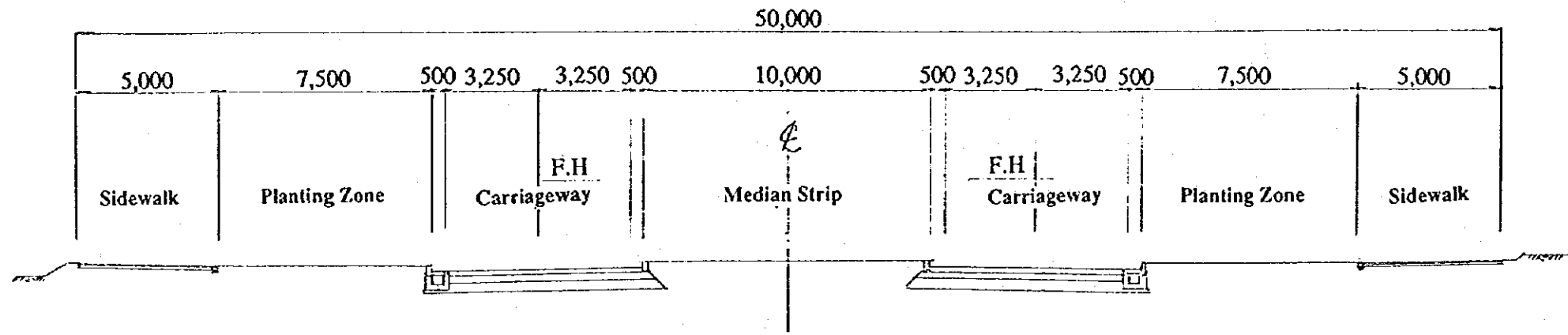
THE STUDY
ON
DAR-ES-SALAAM ROAD DEVELOPEMENT PLAN

JAPAN INTERNATIONAL
COOPERATION AGENCY

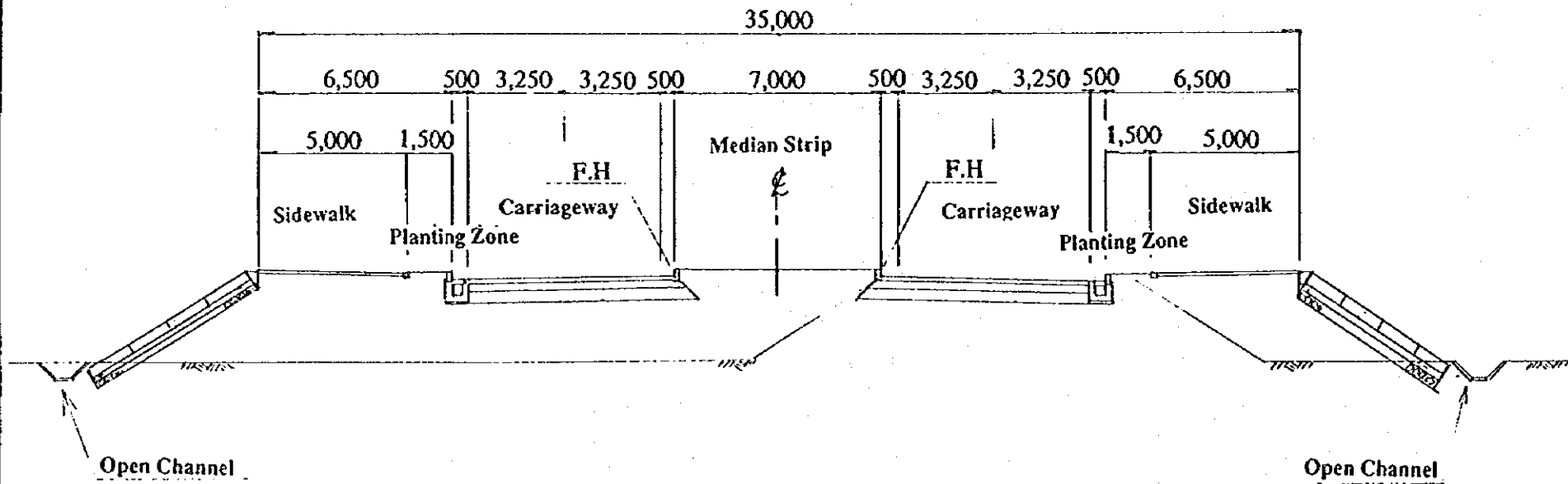
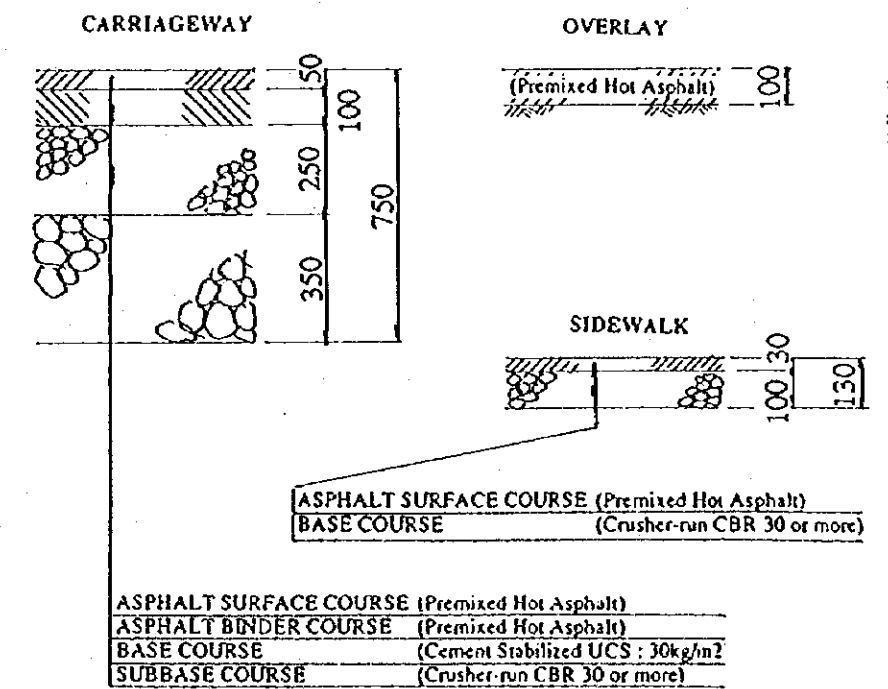
MOROCCO ROAD
PLAN AND PROFILE (3)

DATE SHEET NO
MARCH 1993 26

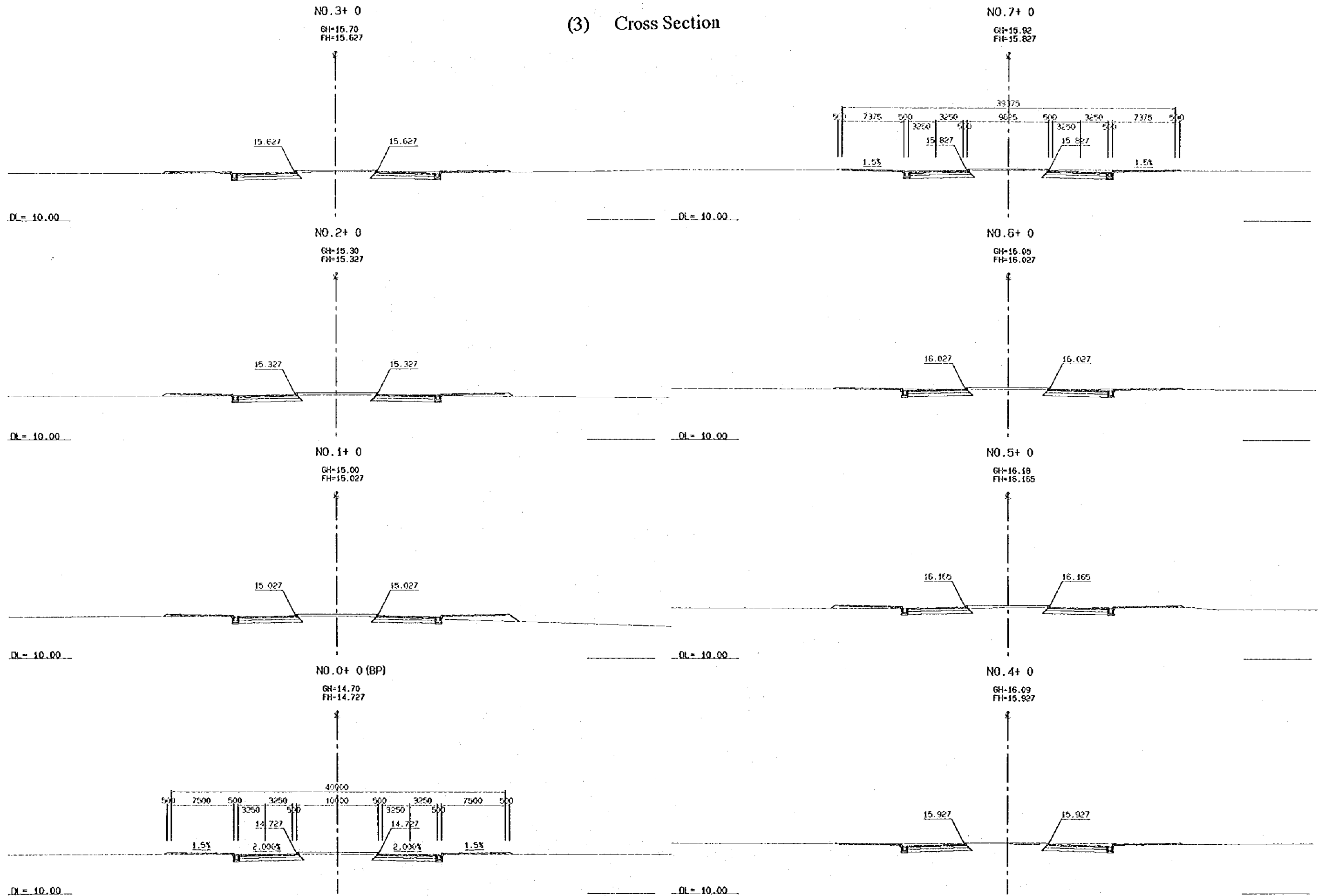
(2) Typical Cross Section of Morocco Road

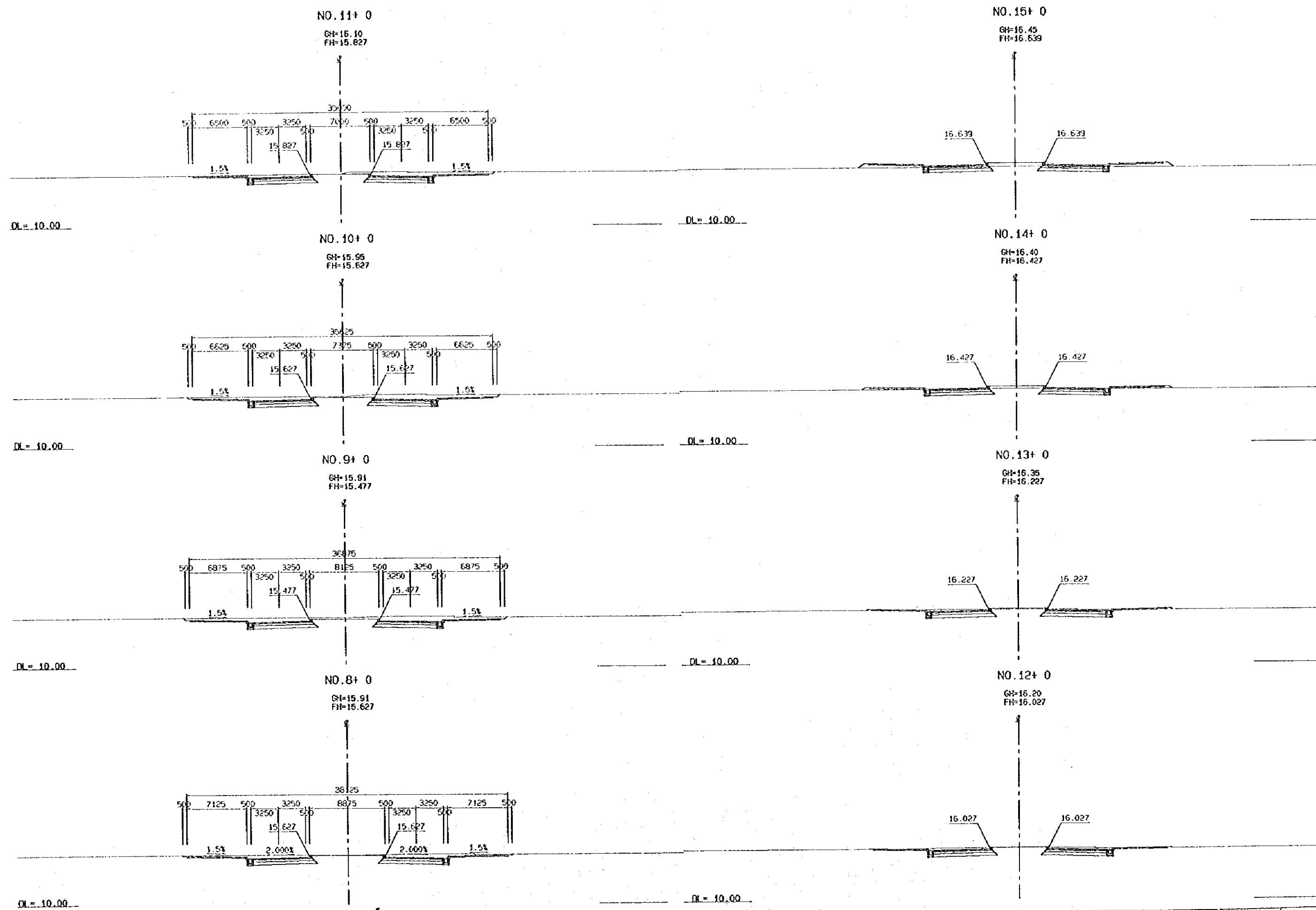


PAVEMENT STRUCTURE



(3) Cross Section





UNITED REPUBLIC OF TANZANIA
MINISTRY OF WORKS,
COMMUNICATIONS AND TRANSPORT

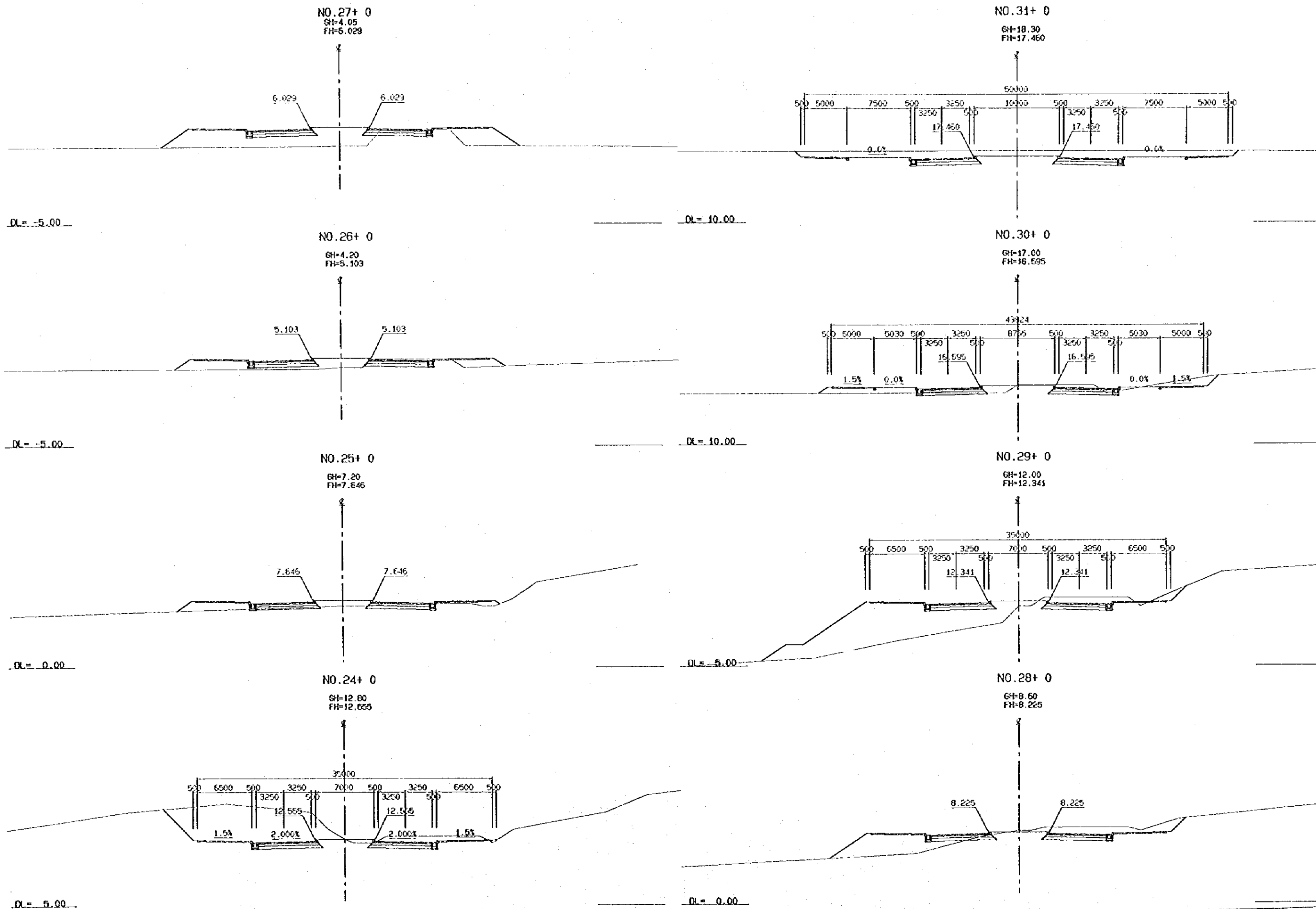
THE STUDY
ON
DAR-ES-SALAAM ROAD DEVELOPEMENT PLAN

JAPAN INTERNATIONAL
COOPERATION AGENCY

MOROCCO ROAD
CROSS SECTION (2)

DATE
MARCH 1995

SHEET NO
29



UNITED REPUBLIC OF TANZANIA
MINISTRY OF WORKS,
COMMUNICATIONS AND TRANSPORT

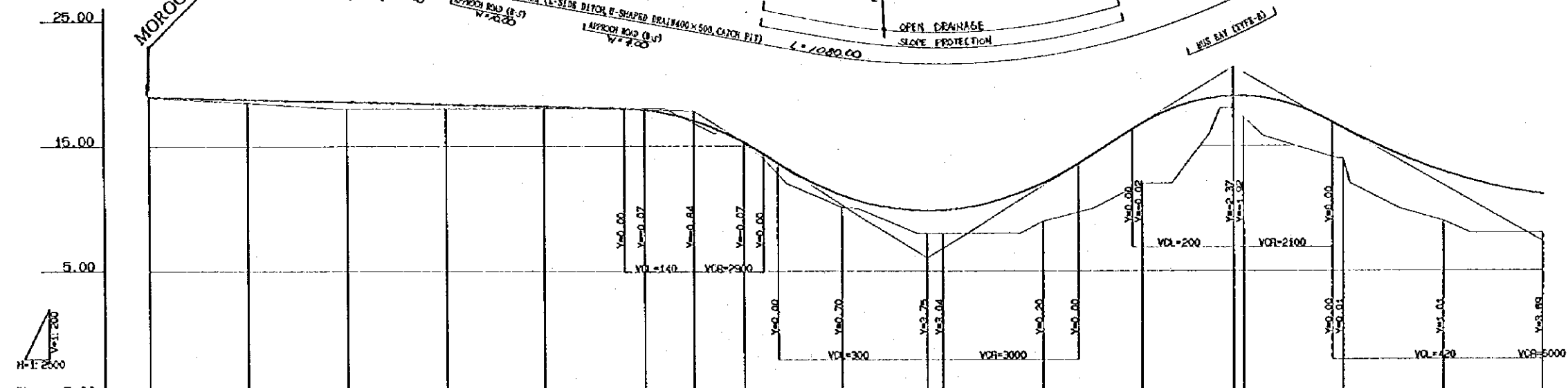
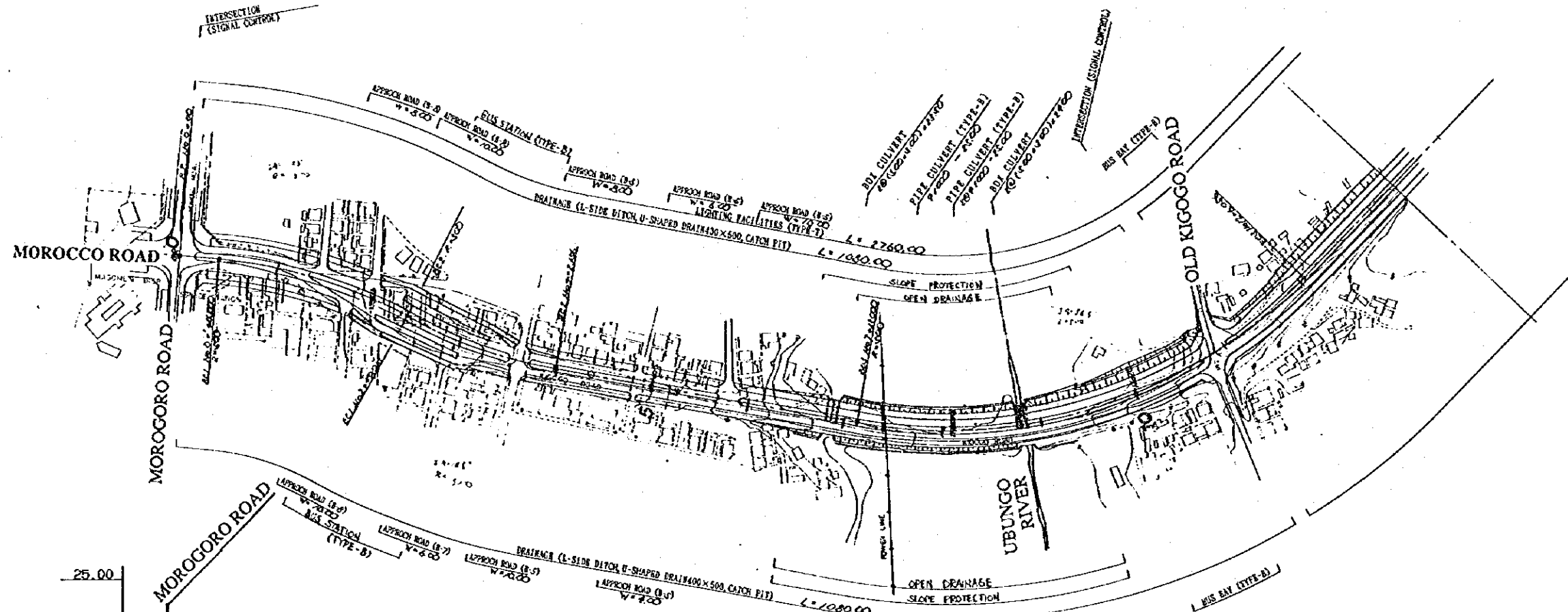
THE STUDY
ON
DAR-ES-SALAAM ROAD DEVELOPEMENT PLAN

JAPAN INTERNATIONAL
COOPERATION AGENCY

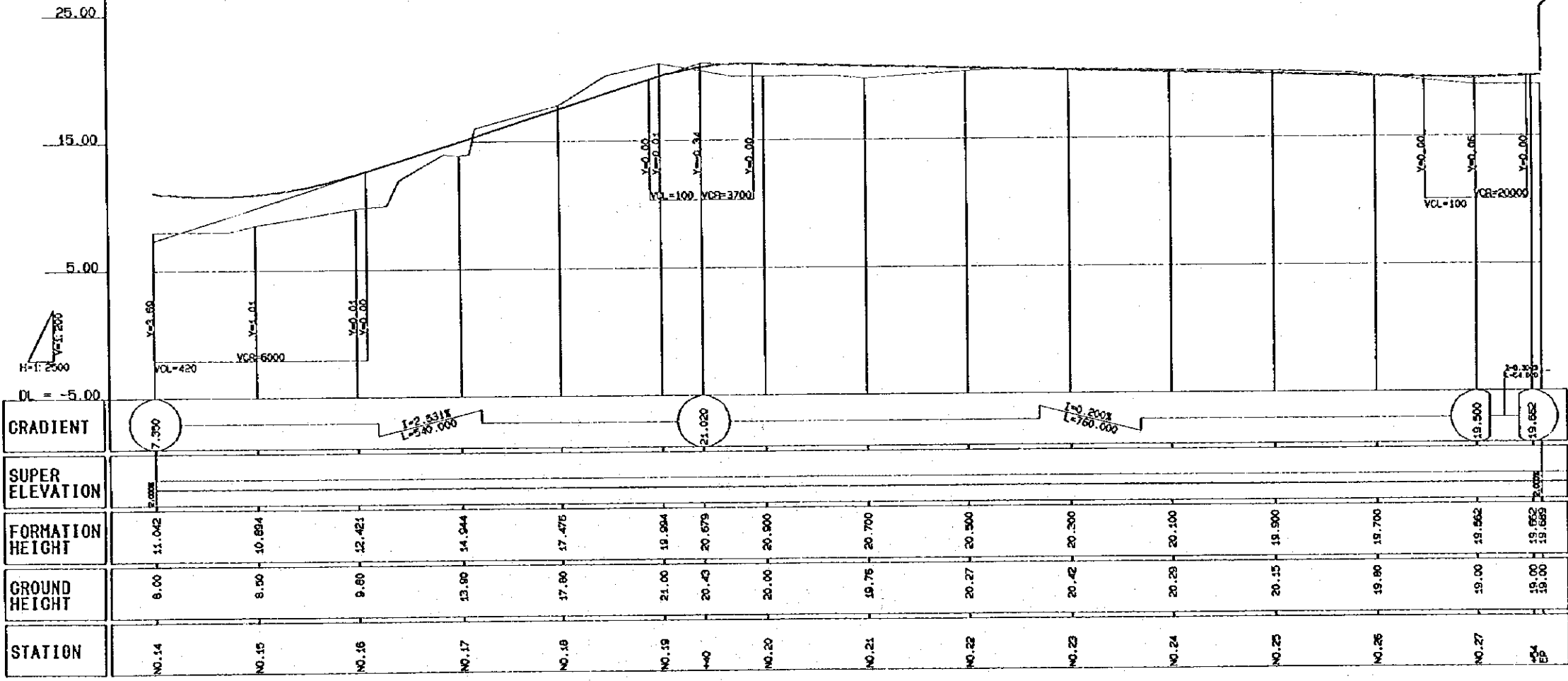
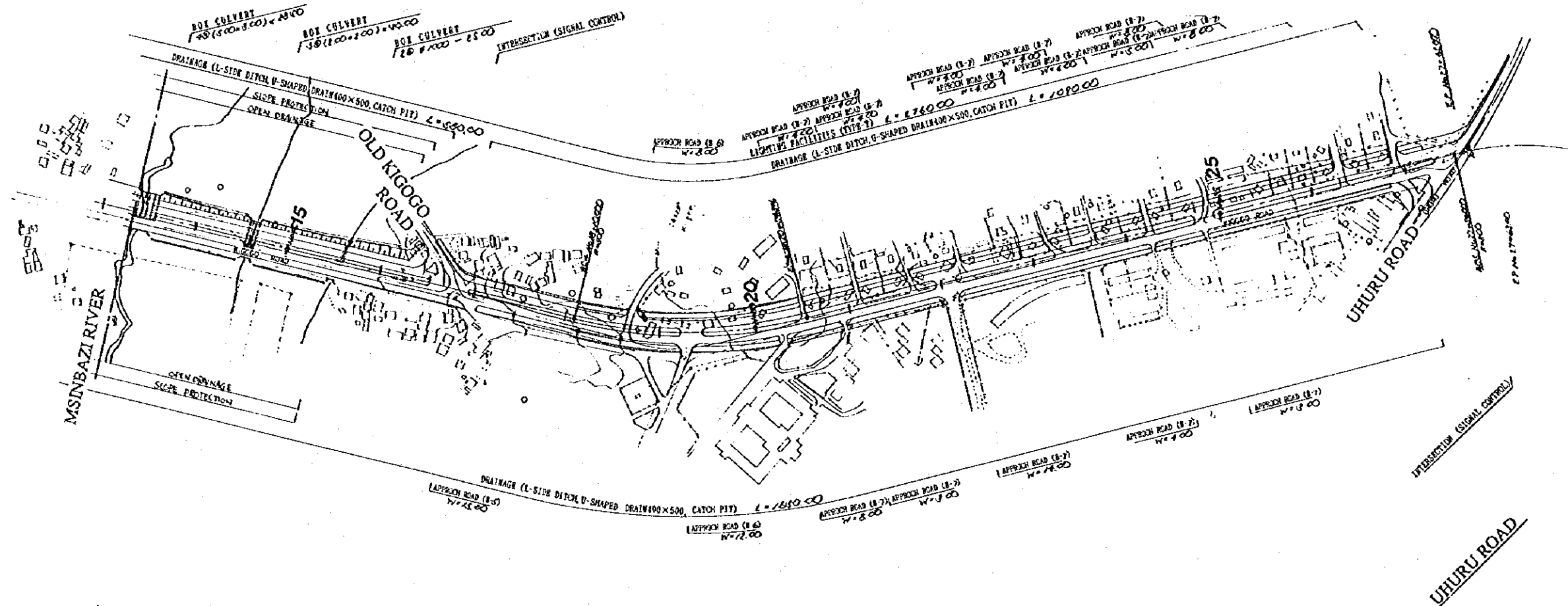
MOROCCO ROAD
CROSS SECTION (4)

DATE	SHEET NO
MARCH 1995	31

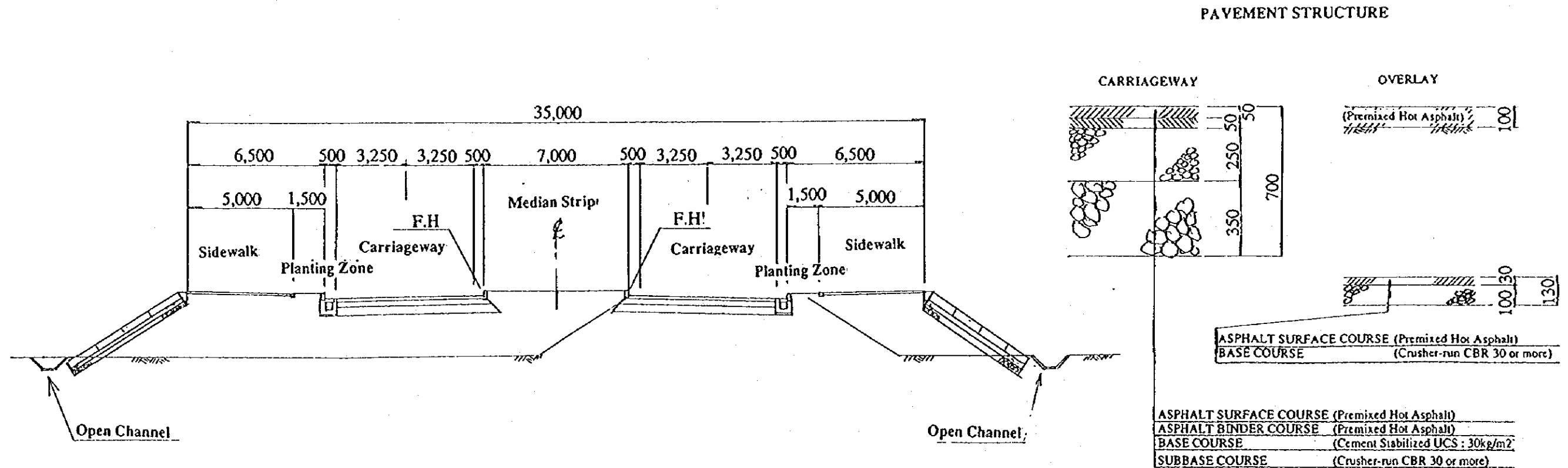
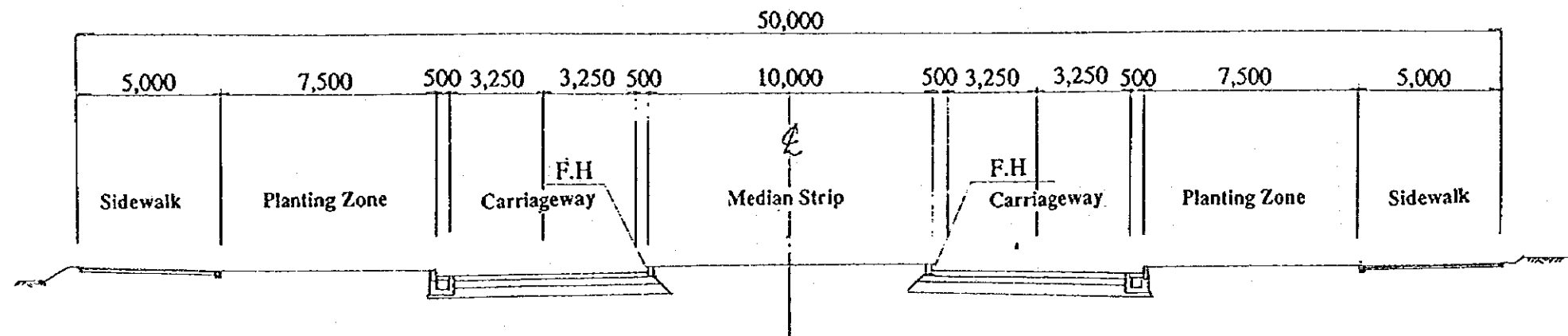
3.2 New Kigogo Road (1) Plan and Profile



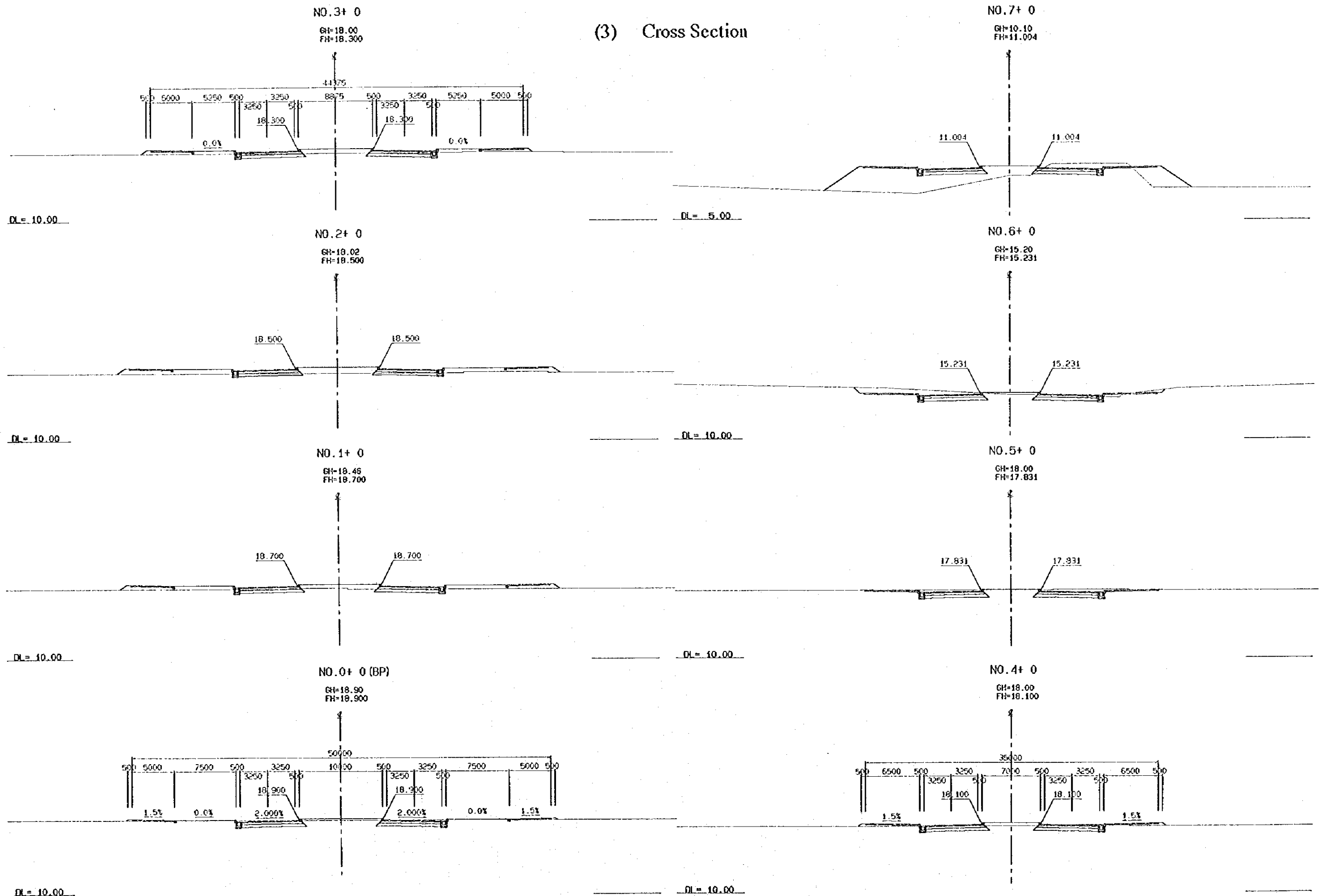
GRADIENT																		
SUPER ELEVATION																		
FORMATION HEIGHT	18.900	18.700	18.500	18.300	18.100	17.881	16.960	15.231	11.004	9.800	9.857	12.004	16.776	16.825	16.960	16.386	12.863	11.042
GROUND HEIGHT	18.90	18.45	18.02	10.00	18.00	18.00	16.60	15.20	10.10	8.00	8.00	9.00	12.00	15.00	17.50	14.00	9.00	6.00
STATION	0+0	0+1	0+2	0+3	0+4	0+5	0+6	0+7	0+8	0+9	0+10	0+11	0+12	0+13	0+14			

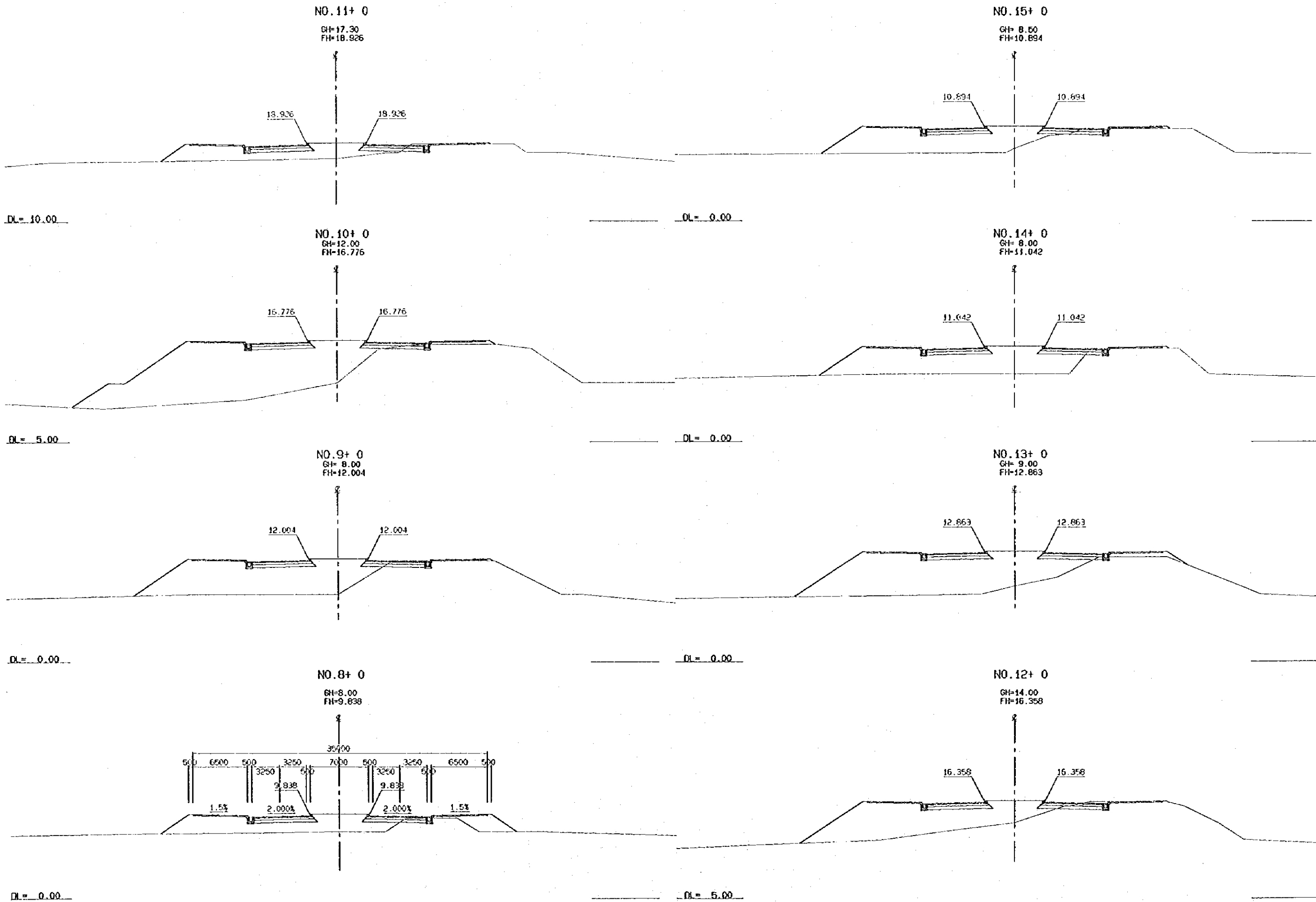


(2) Typical Cross Section of New Kigogo Road

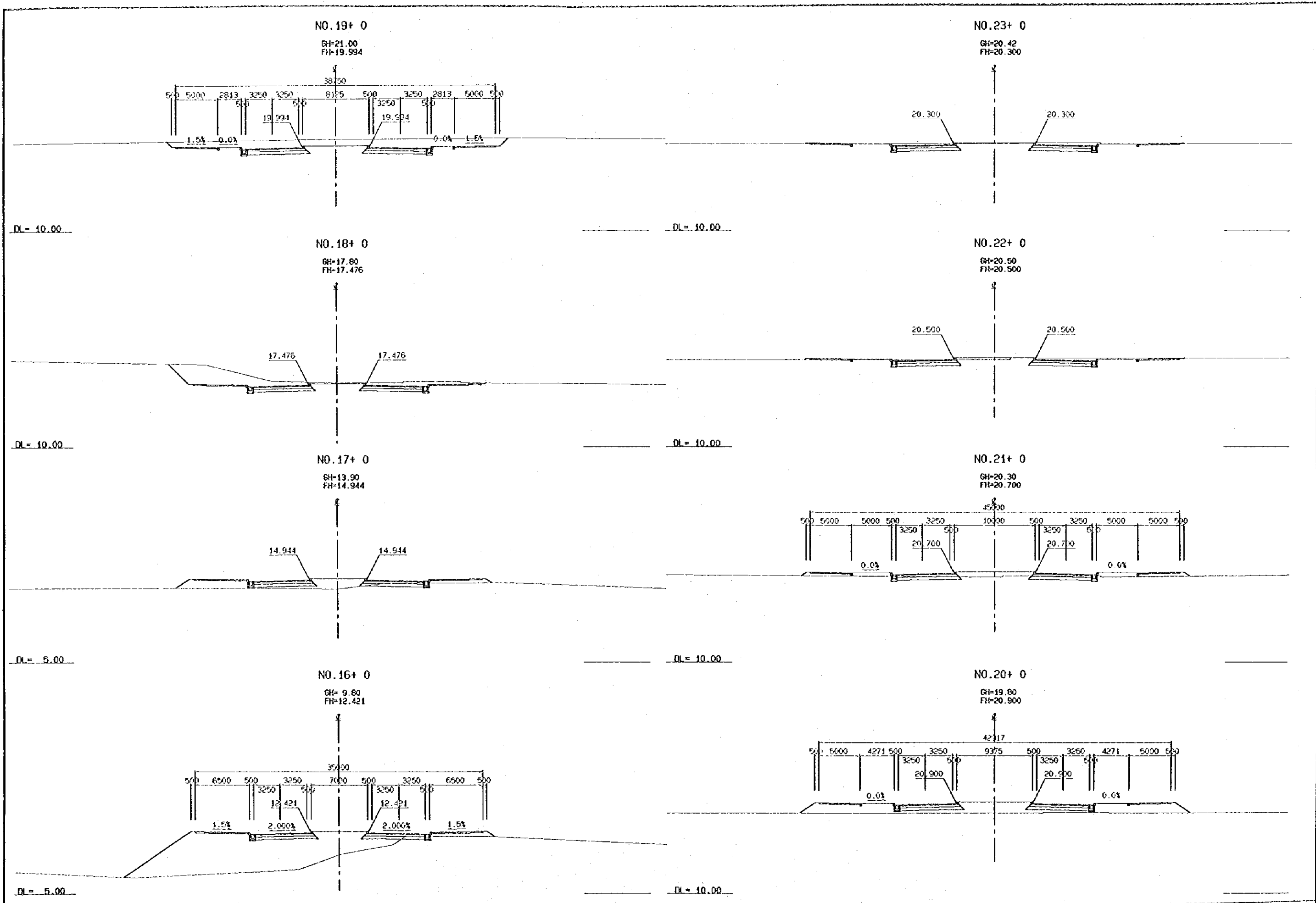


(3) Cross Section

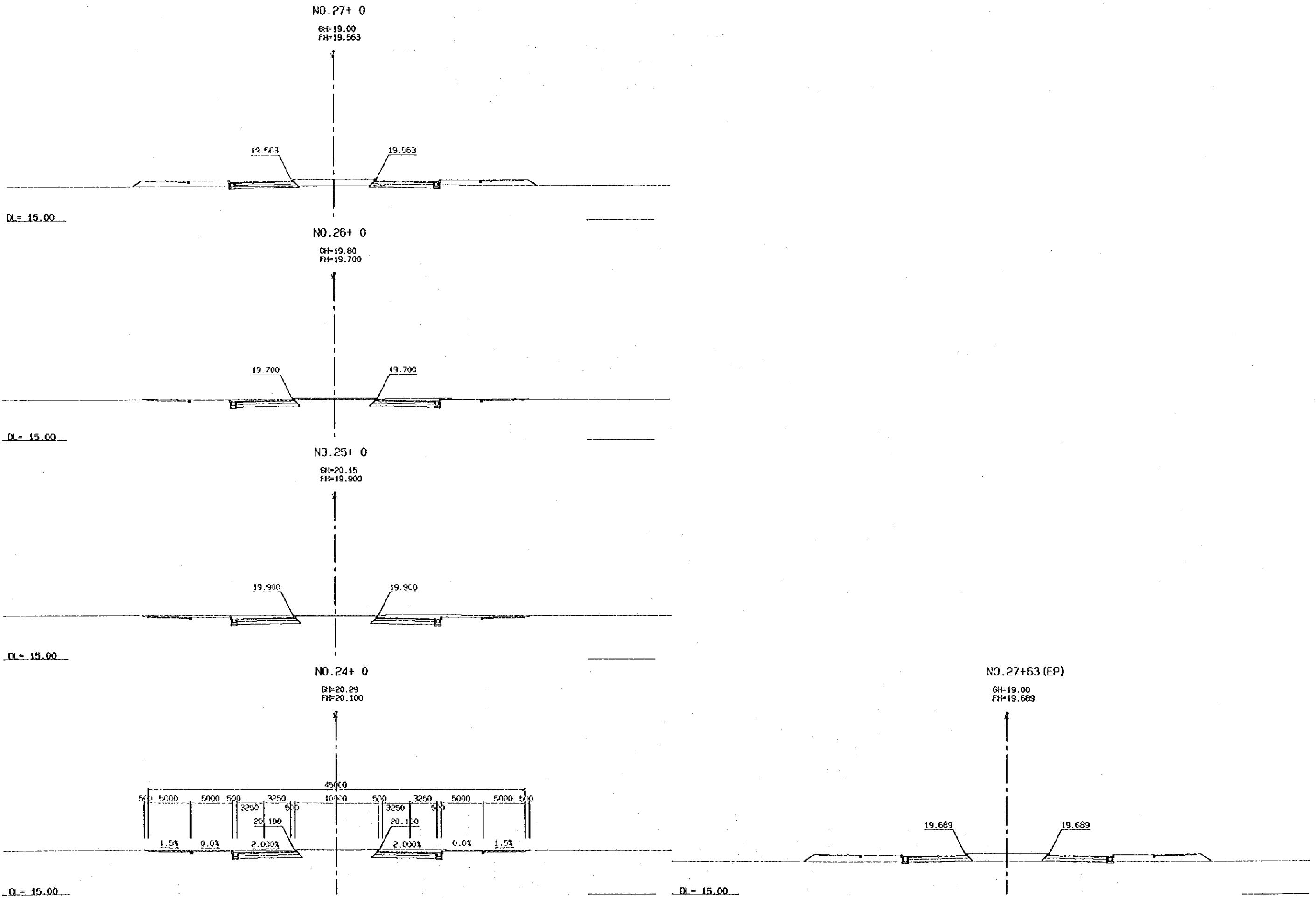




UNITED REPUBLIC OF TANZANIA MINISTRY OF WORKS, COMMUNICATIONS AND TRANSPORT	THE STUDY ON DAR-ES-SALAAM ROAD DEVELOPEMENT PLAN	JAPAN INTERNATIONAL COOPERATION AGENCY	NEW KIGOGO ROAD CROSS SECTION (2)	DATE MARCH 1995	SHEET NO 37
---	---	---	--------------------------------------	--------------------	----------------

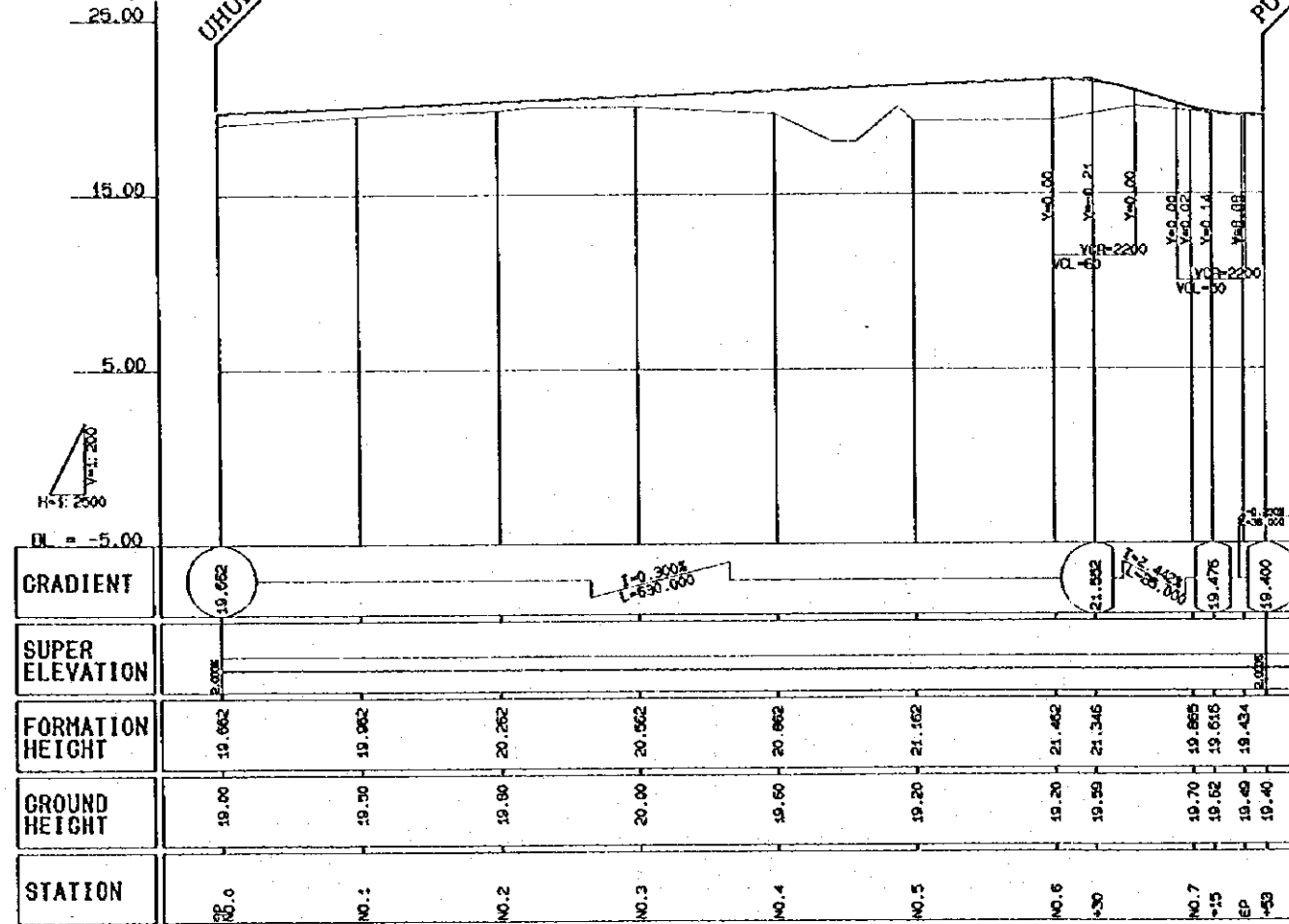
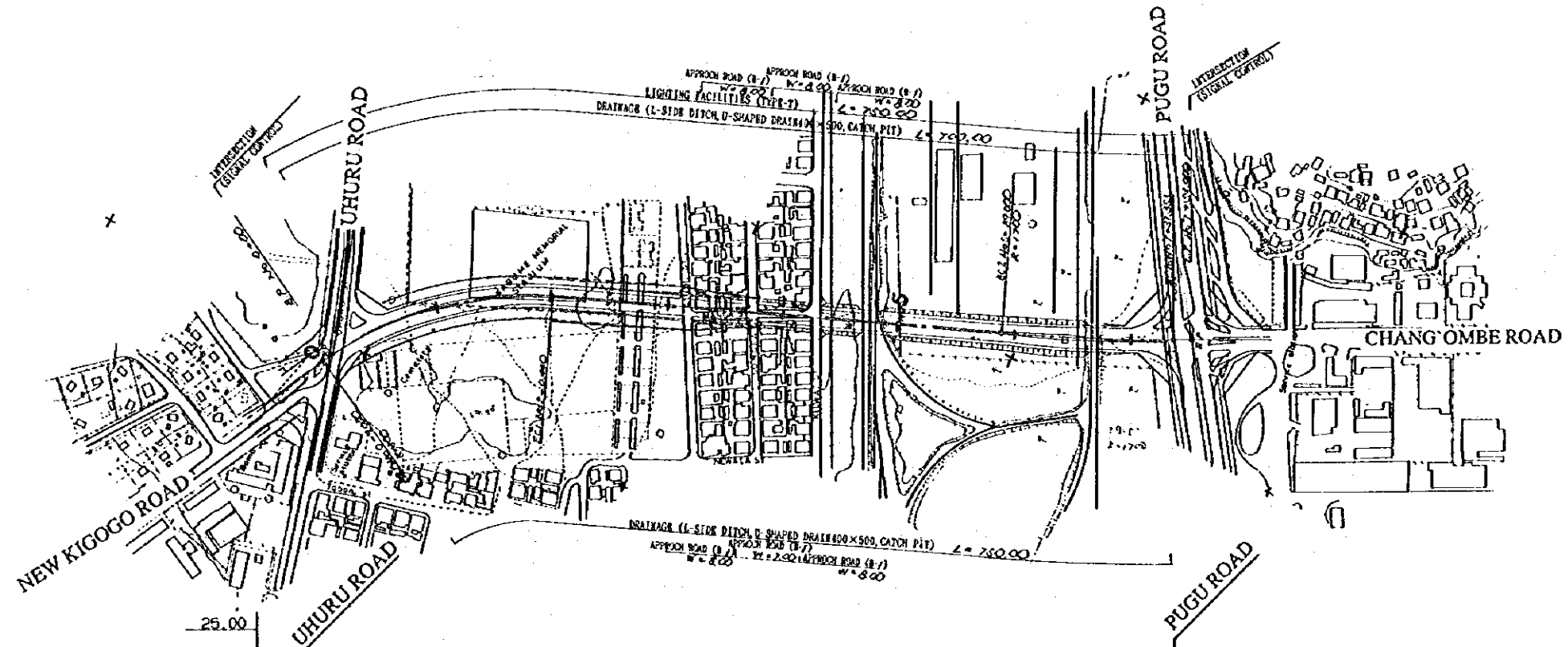


UNITED REPUBLIC OF TANZANIA MINISTRY OF WORKS, COMMUNICATIONS AND TRANSPORT	THE STUDY ON DAR-ES-SALAAM ROAD DEVELOPEMENT PLAN	JAPAN INTERNATIONAL COOPERATION AGENCY	NEW KIGOGO ROAD CROSS SECTION (3)	DATE MARCH 1995	SHEET NO 38
---	---	---	--------------------------------------	--------------------	----------------

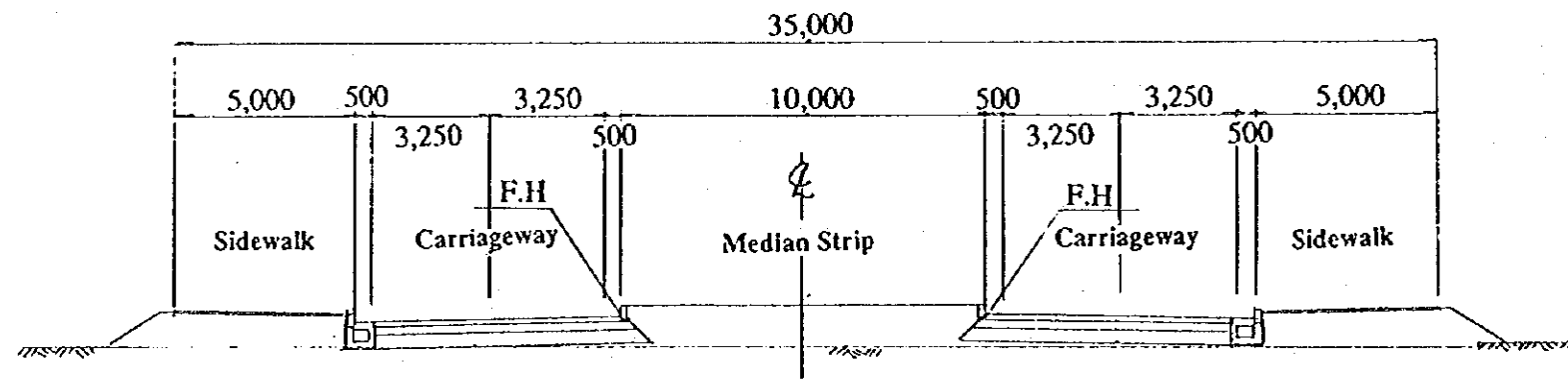


UNITED REPUBLIC OF TANZANIA MINISTRY OF WORKS, COMMUNICATIONS AND TRANSPORT	THE STUDY ON DAR-ES-SALAAM ROAD DEVELOPEMENT PLAN	JAPAN INTERNATIONAL COOPERATION AGENCY	NEW KIGOGO ROAD	DATE	SHEET NO
			CROSS SECTION (4)	MARCH 1995	39

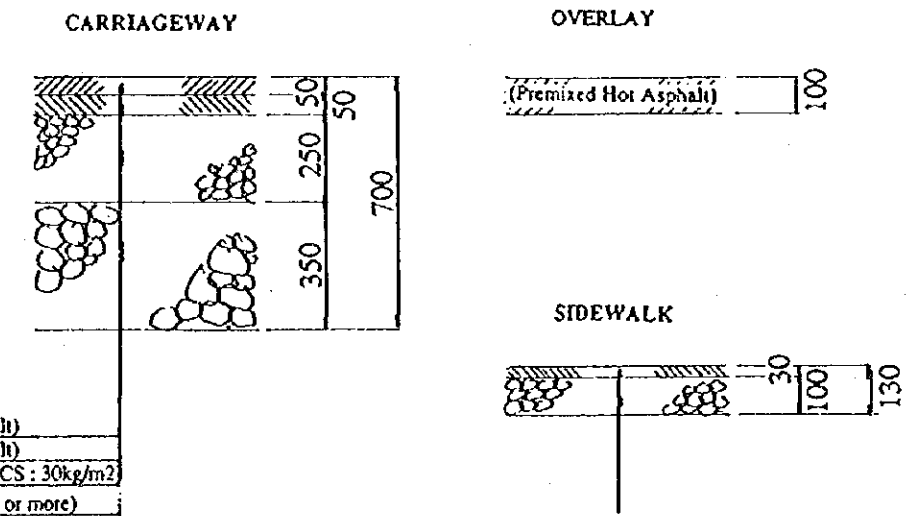
3.3 Missing Link (1) Plan and Profile



(2) Typical Cross Section of Missing Link



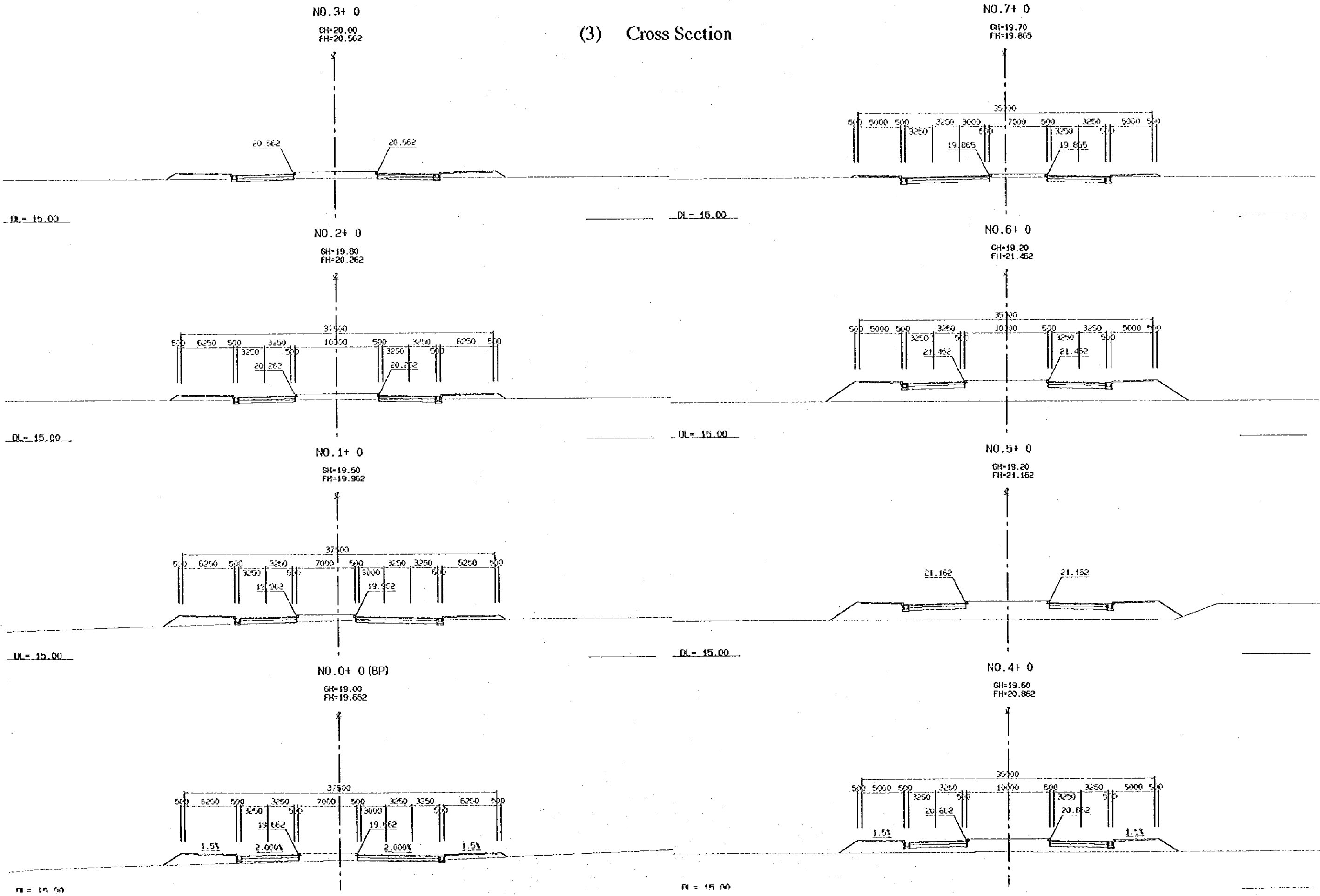
PAVEMENT STRUCTURE



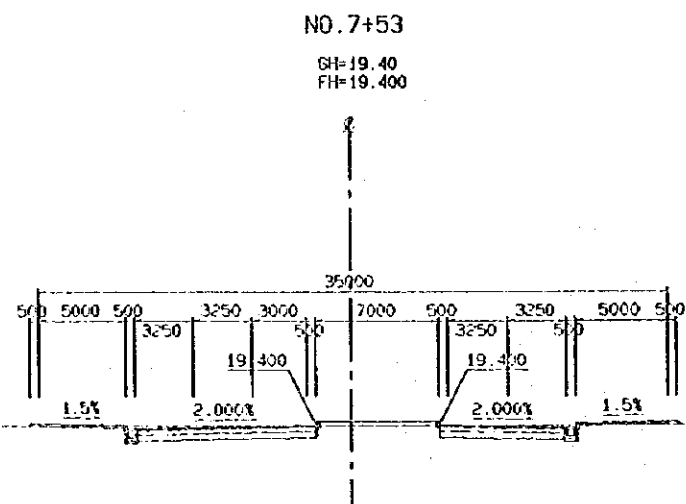
ASPHALT SURFACE COURSE (Premixed Hot Asphalt)
 ASPHALT BINDER COURSE (Premixed Hot Asphalt)
 BASE COURSE (Cement Stabilized UCS : 30kg/m²)
 SUBBASE COURSE (Crusher-run CBR 30 or more)

ASPHALT SURFACE COURSE (Premixed Hot Asphalt)
 BASE COURSE (Crusher-run CBR 30 or more)

(3) Cross Section

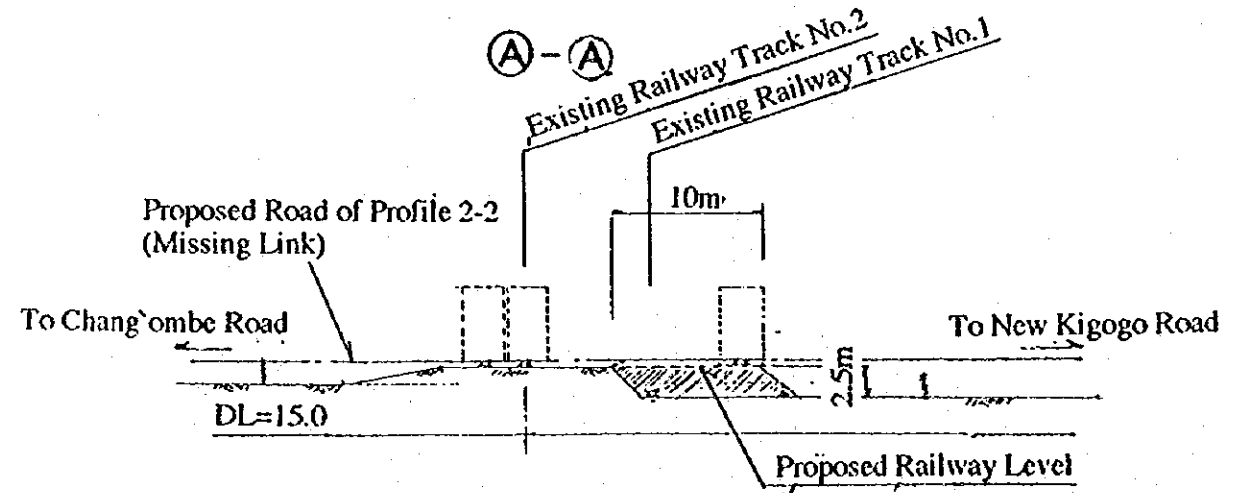
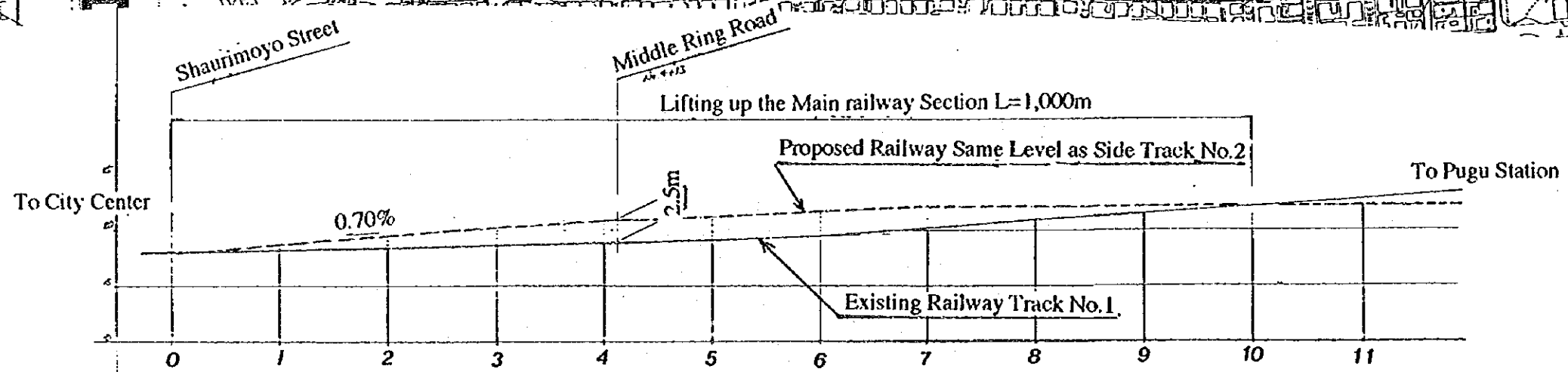
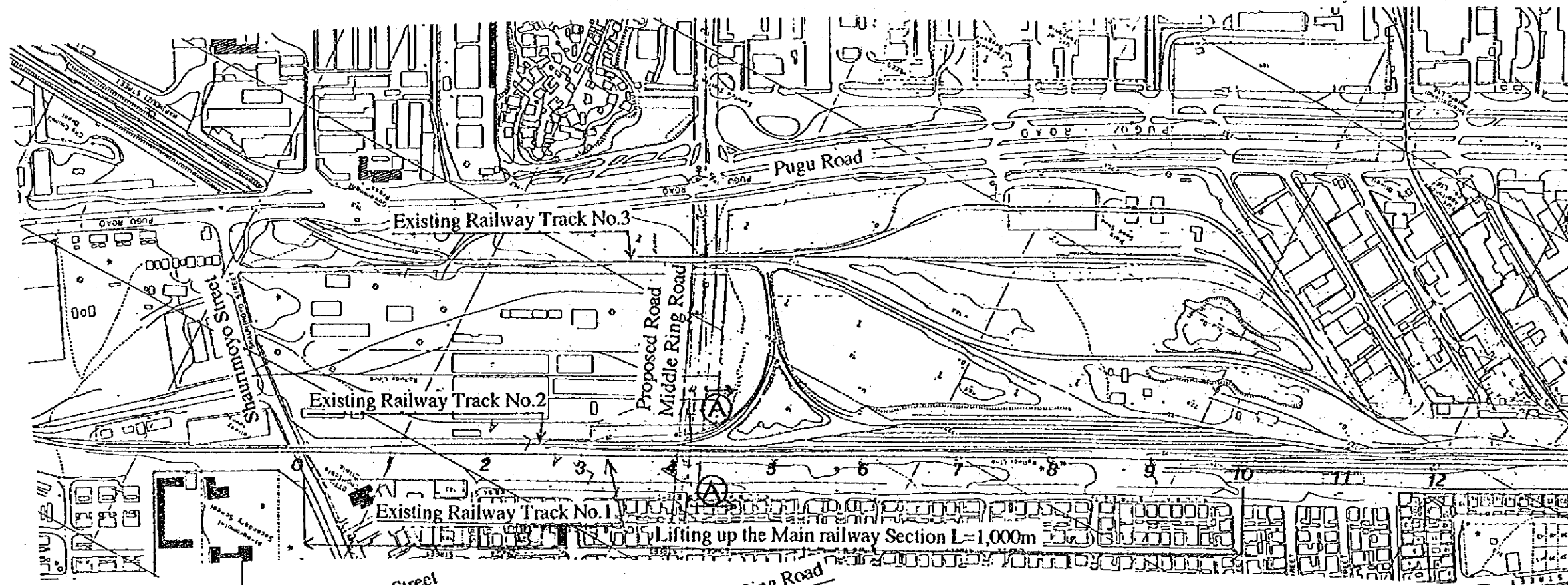


UNITED REPUBLIC OF TANZANIA MINISTRY OF WORKS, COMMUNICATIONS AND TRANSPORT	THE STUDY ON DAR-ES-SALAAM ROAD DEVELOPEMENT PLAN	JAPAN INTERNATIONAL COOPERATION AGENCY	MISSING LINK CROSS SECTION (I)	DATE MARCH 1995	SHEET NO 42
---	---	---	-----------------------------------	--------------------	----------------

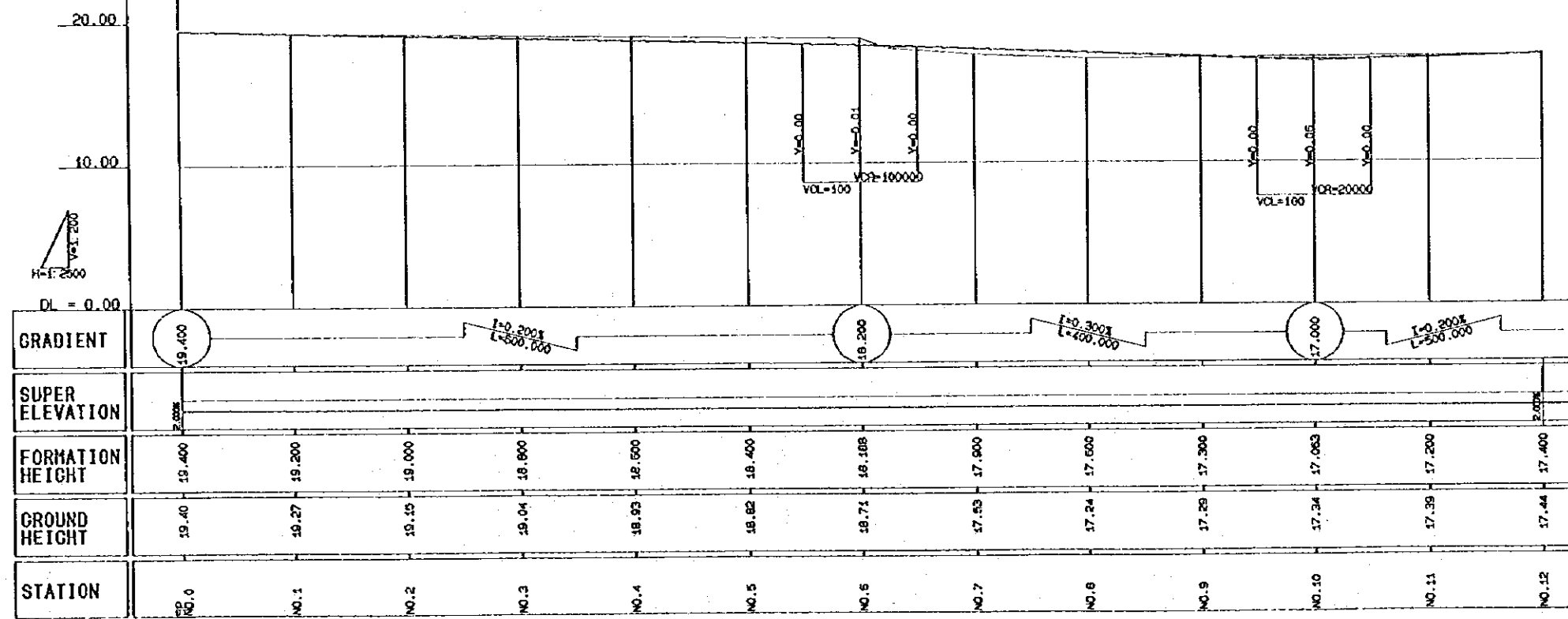
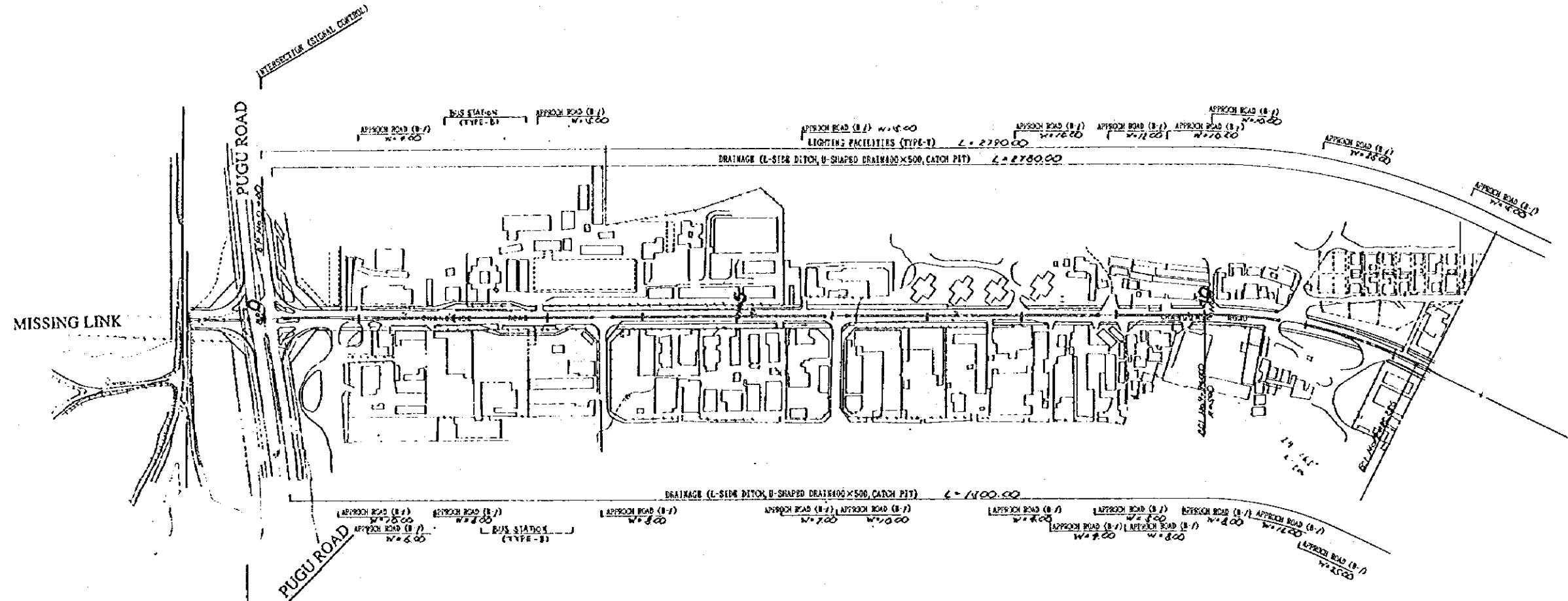


UNITED REPUBLIC OF TANZANIA MINISTRY OF WORKS, COMMUNICATIONS AND TRANSPORT	THE STUDY ON DAR-ES-SALAAM ROAD DEVELOPEMENT PLAN	JAPAN INTERNATIONAL COOPERATION AGENCY	MISSING LINK	DATE	SHEET NO
			CROSS SECTION (2)	MARCH 1995	43

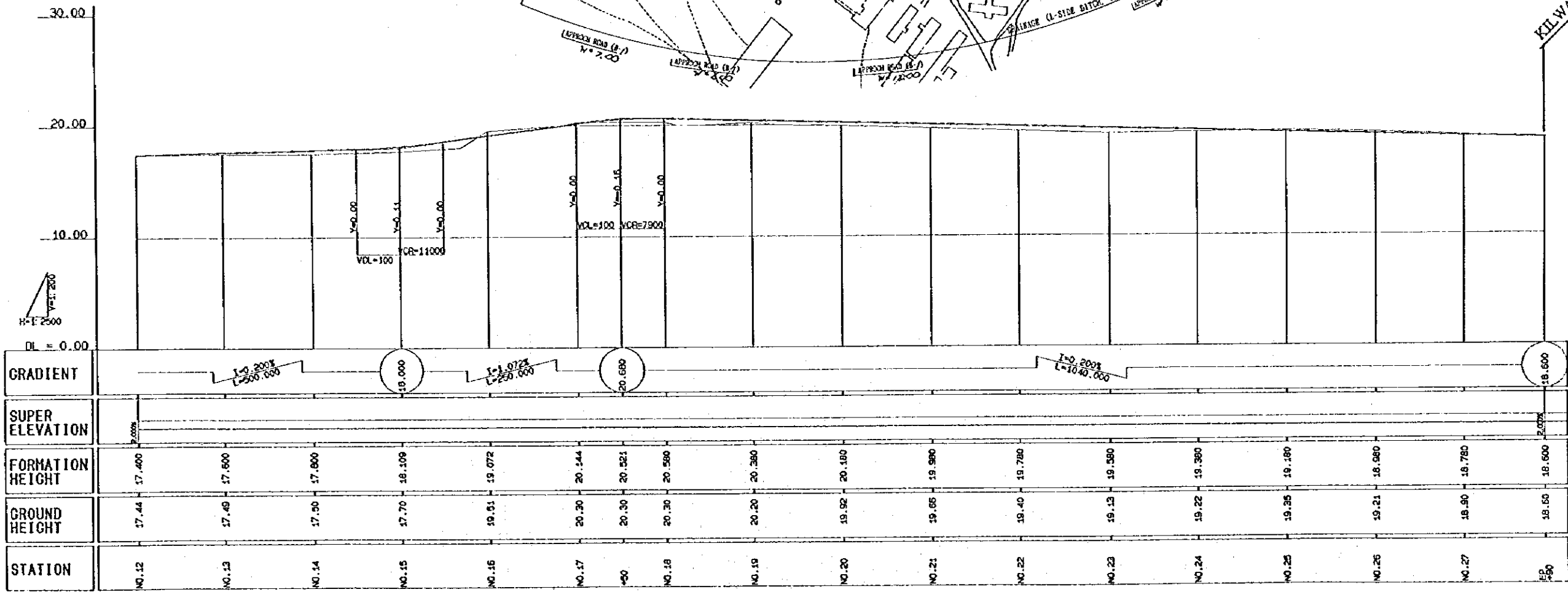
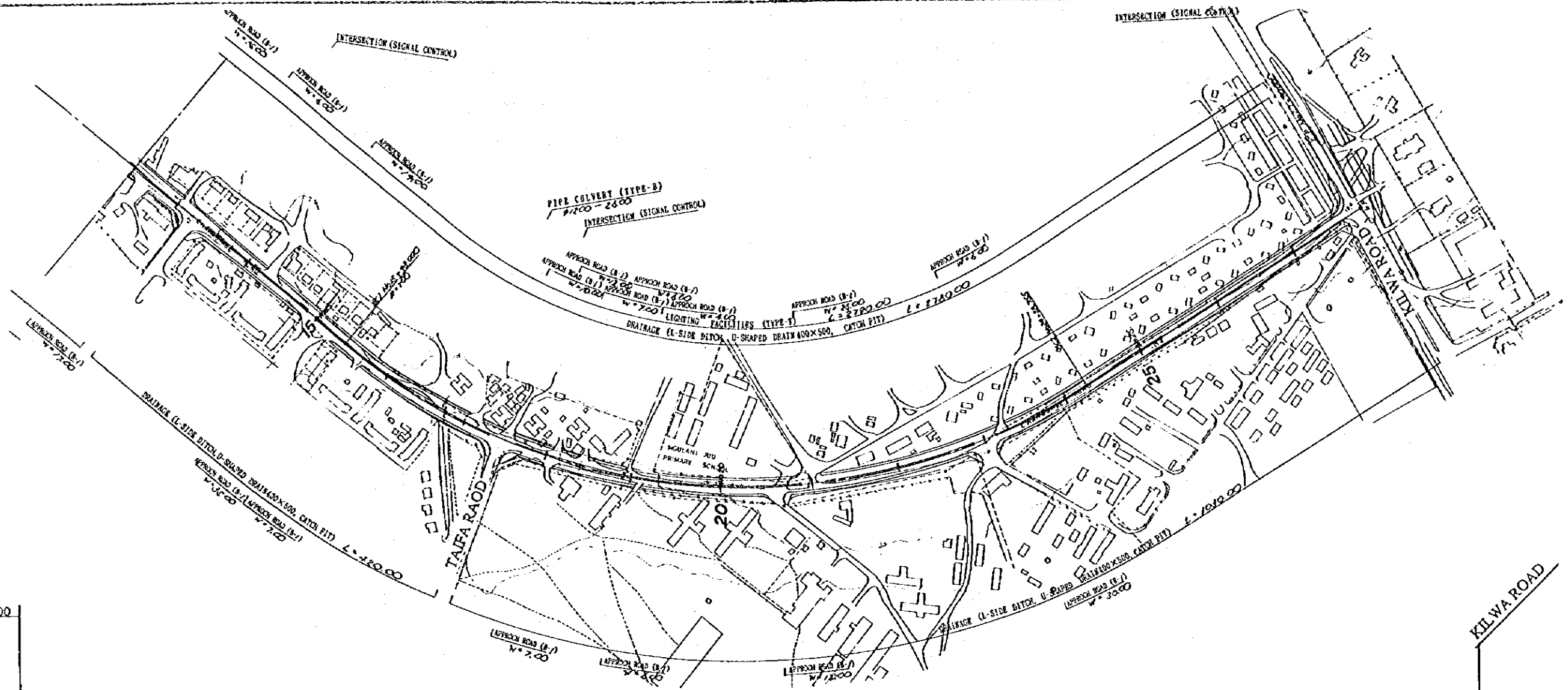
(4) Re-alignment Plan of TRC's Railway Track



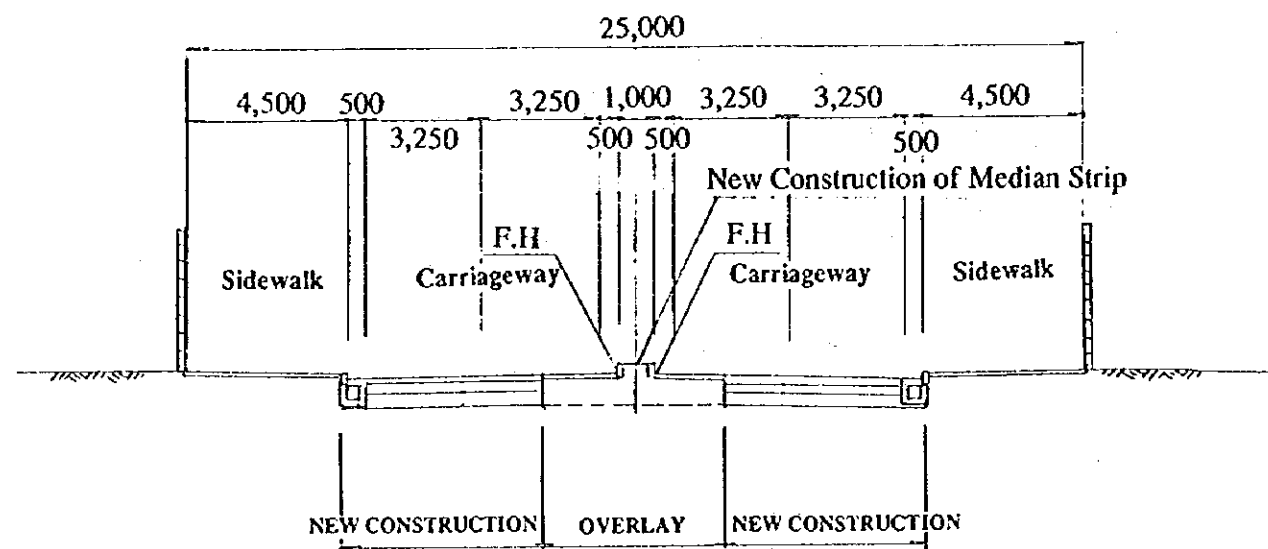
3.4 Chang'ombe Road (1) Plan and Profile



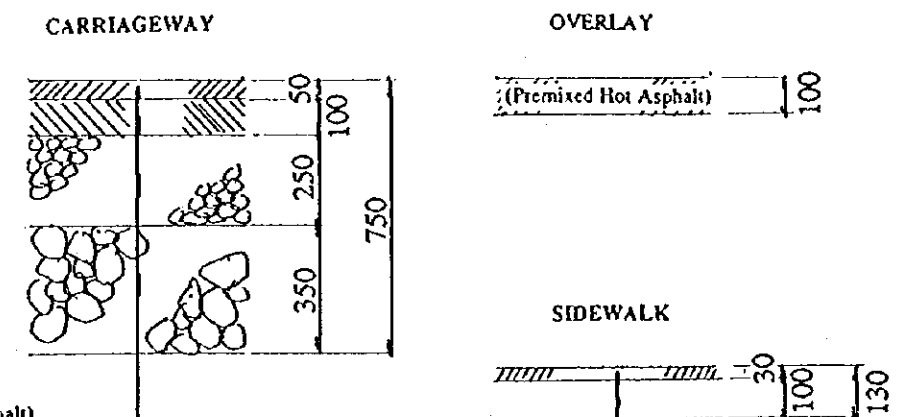
GRADIENT													
SUPER ELEVATION													
FORMATION HEIGHT	19.400	19.200	19.000	18.800	18.600	18.400	18.108	17.900	17.600	17.300	17.063	17.200	17.400
GROUND HEIGHT	19.40	19.27	19.19	19.04	18.93	18.82	18.71	17.93	17.24	17.29	17.34	17.39	17.44
STATION	NO.0	NO.1	NO.2	NO.3	NO.4	NO.5	NO.6	NO.7	NO.8	NO.9	NO.10	NO.11	NO.12



(2) Typical Cross Section of Chang`ombe Road



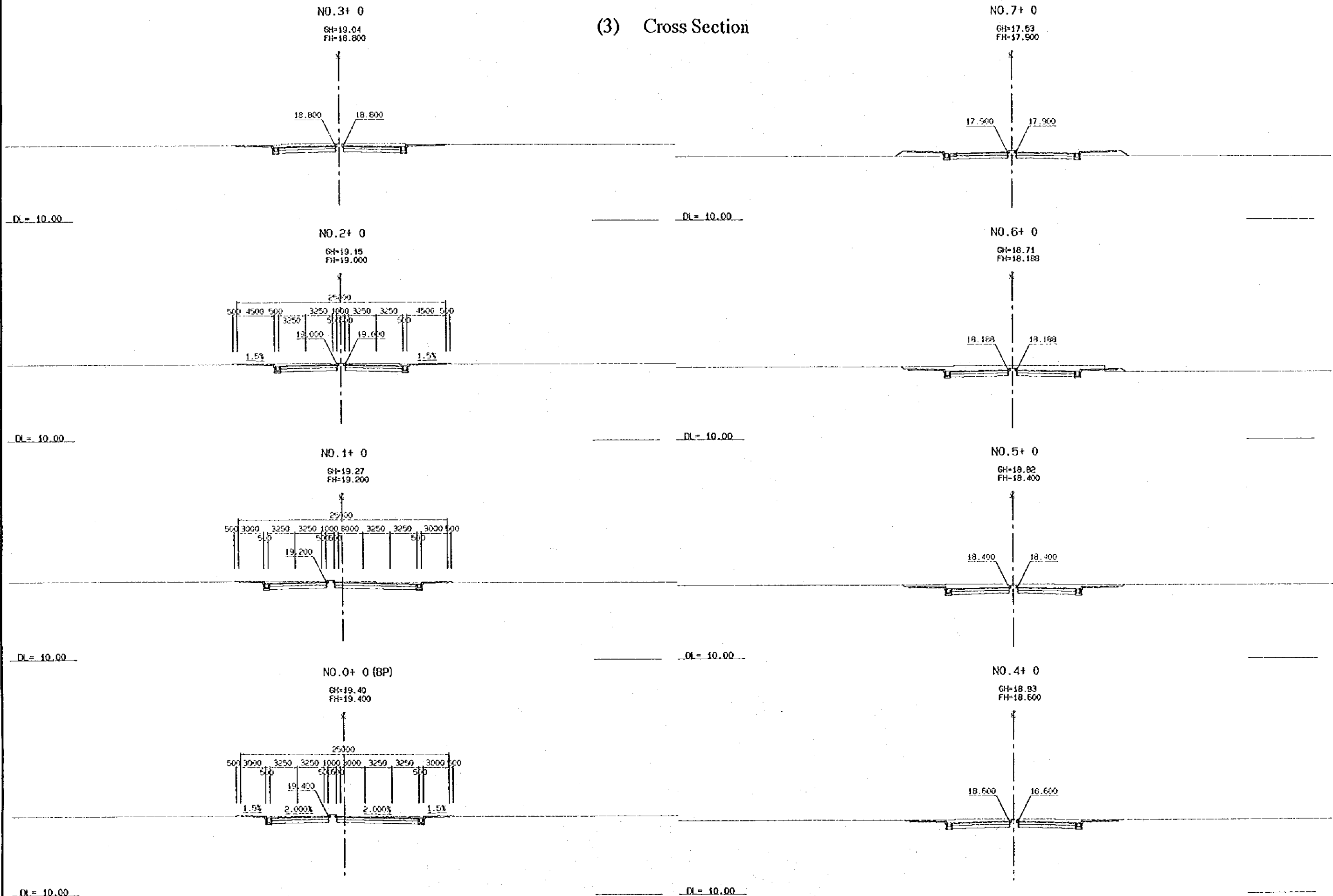
PAVEMENT STRUCTURE



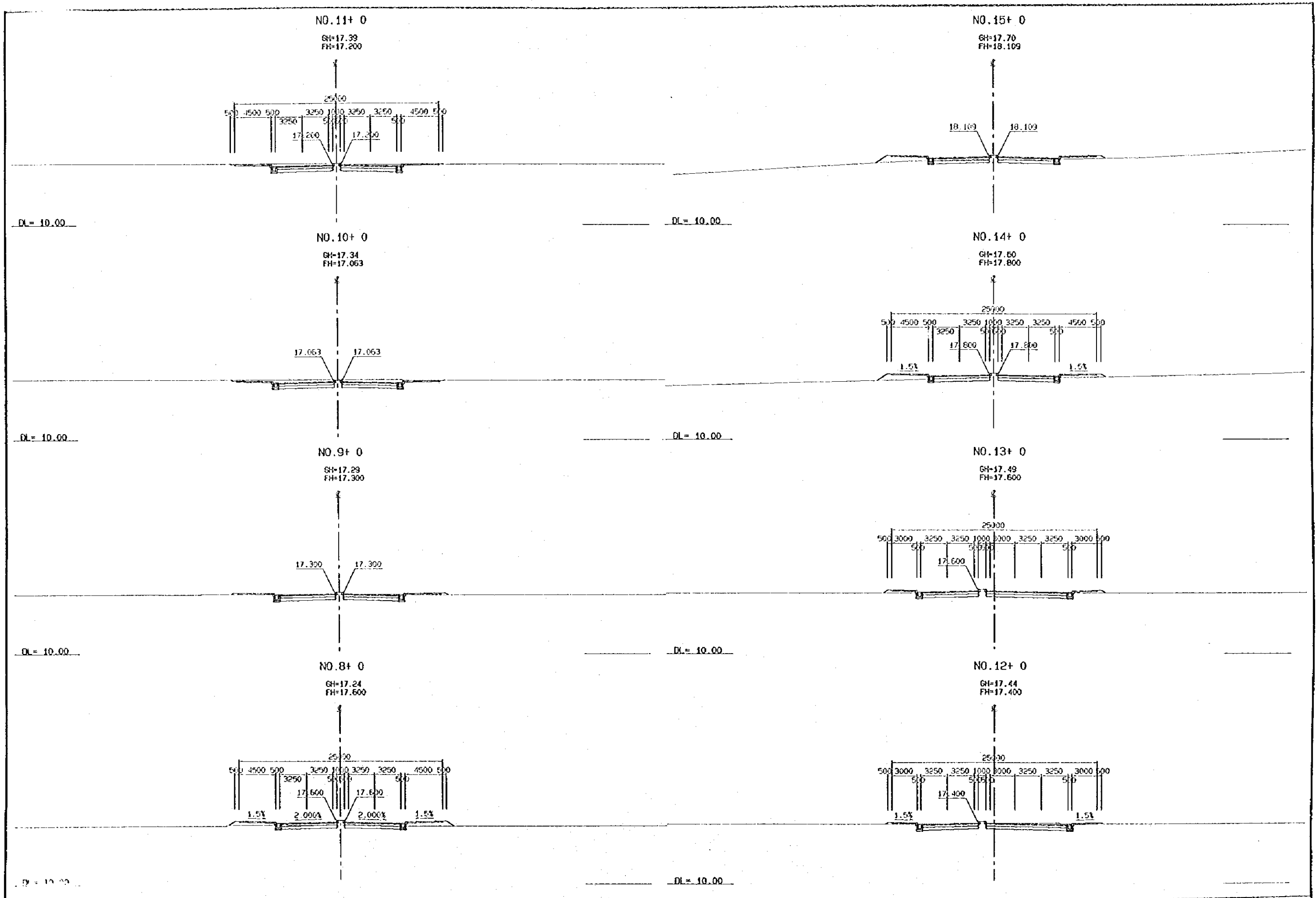
ASPHALT SURFACE COURSE (Premixed Hot Asphalt)
 ASPHALT BINDER COURSE (Premixed Hot Asphalt)
 BASE COURSE (Cement Stabilized UCS : 30kg/m²)
 SUBBASE COURSE (Crusher-run CBR 30 or more)

ASPHALT SURFACE COURSE (Premixed Hot Asphalt)
 BASE COURSE (Crusher-run CBR 30 or more)

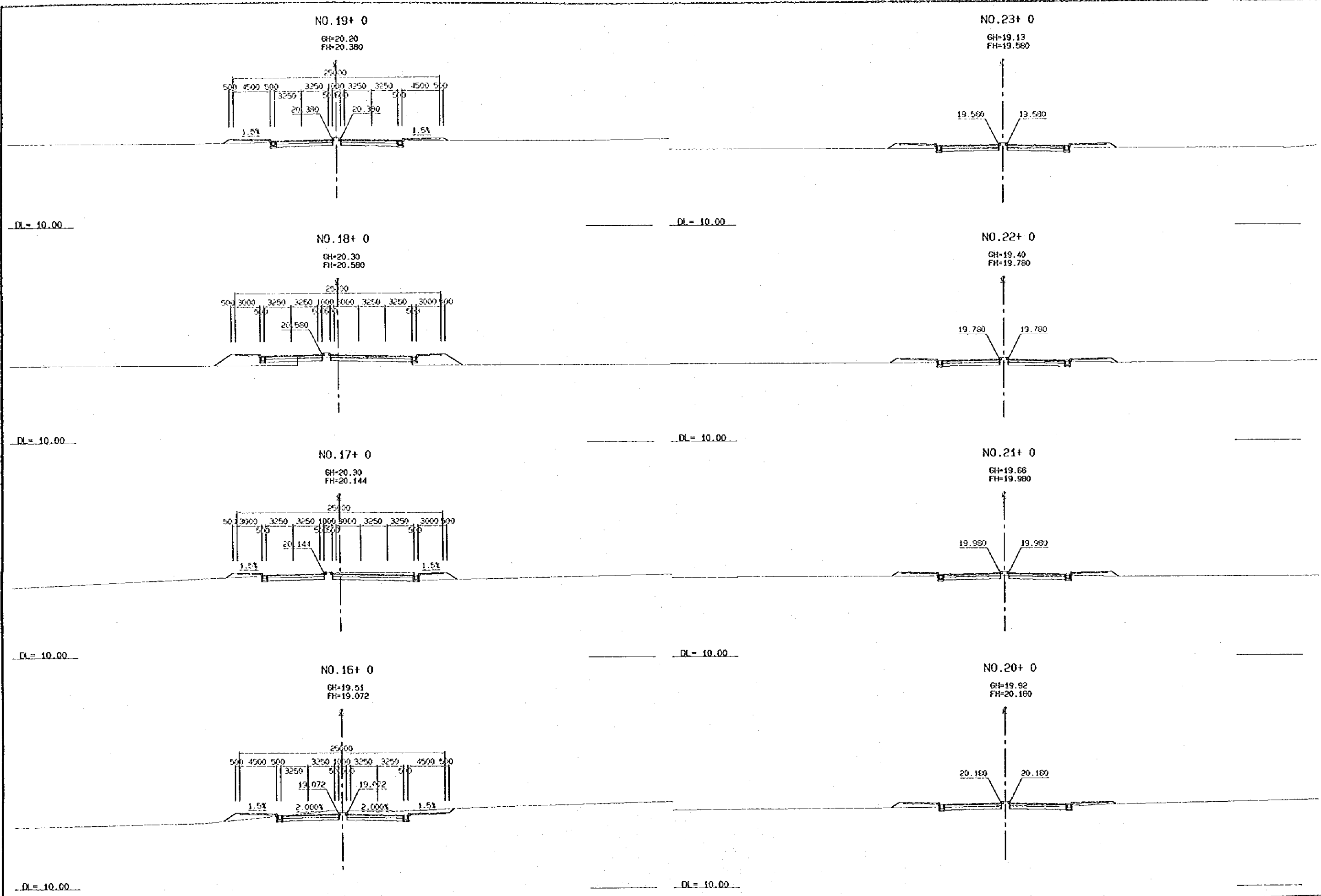
(3) Cross Section



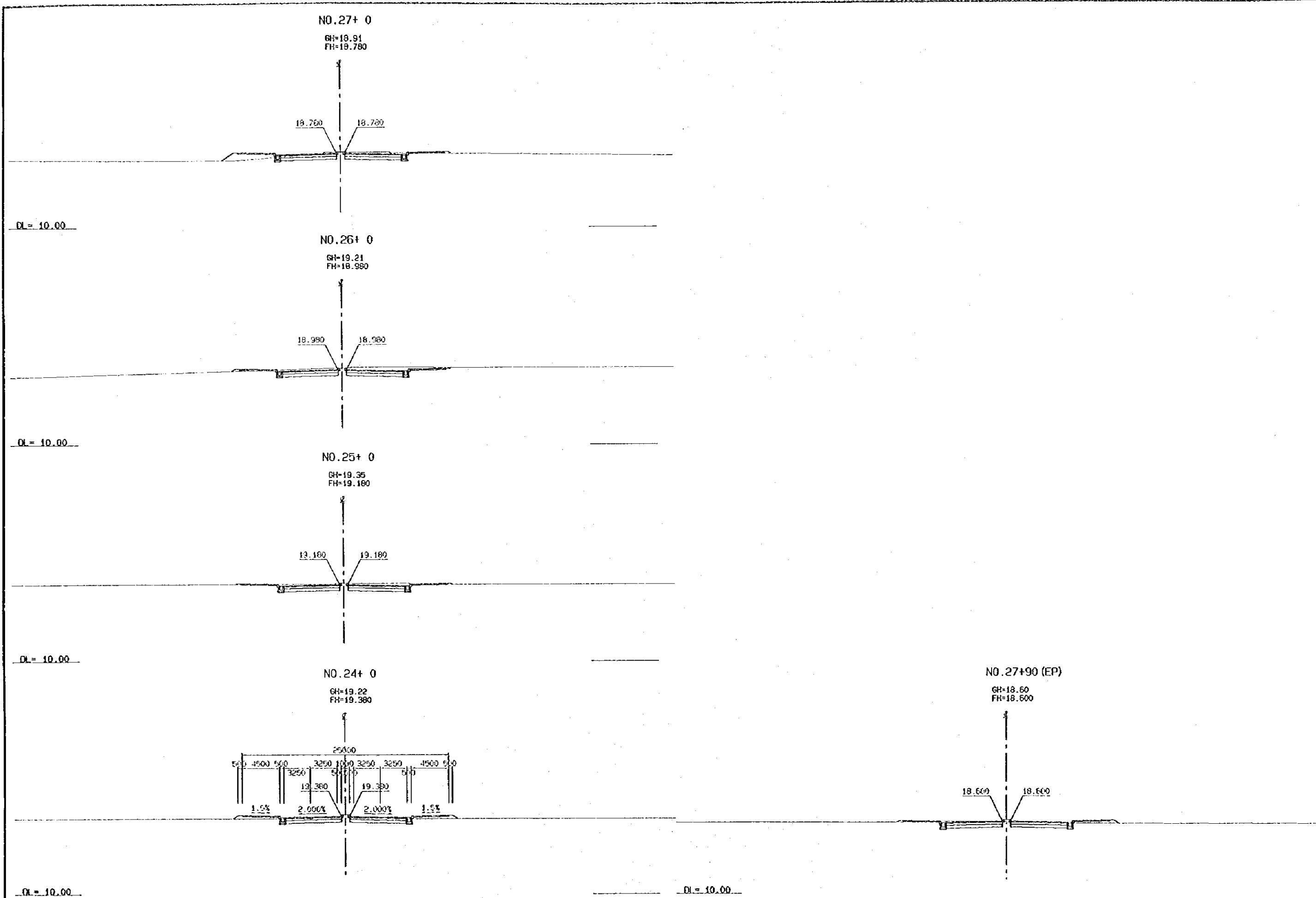
UNITED REPUBLIC OF TANZANIA MINISTRY OF WORKS, COMMUNICATIONS AND TRANSPORT	THE STUDY ON DAR-ES-SALAAM ROAD DEVELOPEMENT PLAN	JAPAN INTERNATIONAL COOPERATION AGENCY	CHANG'OMBE ROAD CROSS SECTION (1)	DATE MARCH 1995	SHEET NO 48
---	---	---	--------------------------------------	--------------------	----------------



UNITED REPUBLIC OF TANZANIA MINISTRY OF WORKS, COMMUNICATIONS AND TRANSPORT	THE STUDY ON DAR-ES-SALAAM ROAD DEVELOPEMENT PLAN	JAPAN INTERNATIONAL COOPERATION AGENCY	CHANG'OMBE ROAD CROSS SECTION (2)	DATE MARCH 1995	SHEET NO 49
---	---	---	--------------------------------------	--------------------	----------------



UNITED REPUBLIC OF TANZANIA MINISTRY OF WORKS, COMMUNICATIONS AND TRANSPORT	THE STUDY ON DAR-ES-SALAAM ROAD DEVELOPEMENT PLAN	JAPAN INTERNATIONAL COOPERATION AGENCY	CHANG'OMBE ROAD	DATE	SHEET NO
			CROSS SECTION (3)	MARCH 1995	50



UNITED REPUBLIC OF TANZANIA MINISTRY OF WORKS, COMMUNICATIONS AND TRANSPORT	THE STUDY ON DAR-ES-SALAAM ROAD DEVELOPEMENT PLAN	JAPAN INTERNATIONAL COOPERATION AGENCY	CHANG'OMBE ROAD CROSS SECTION (4)	DATE MARCH 1995	SHEET NO 51
---	---	---	--------------------------------------	--------------------	----------------

3.5 Extension Plan of Middle Ring Road

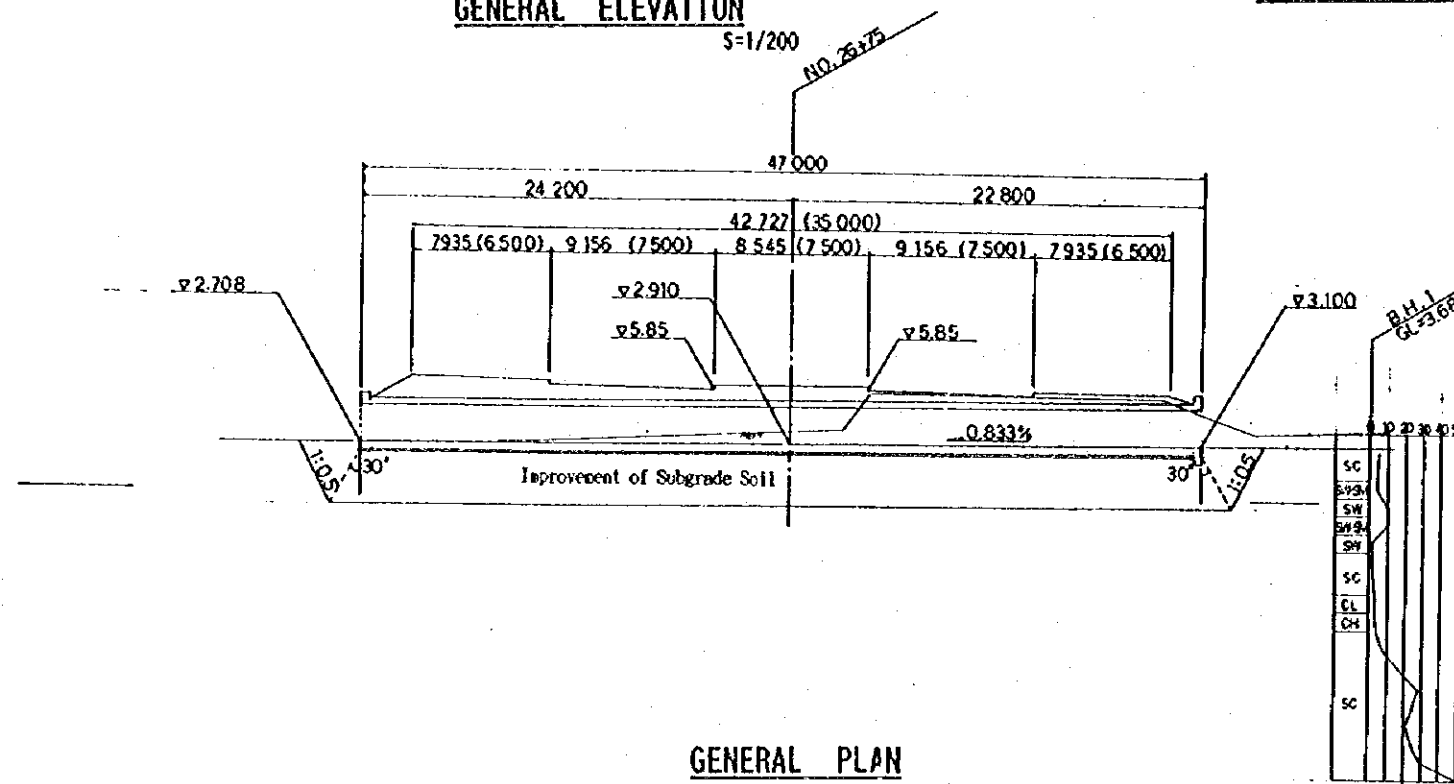
EXTENSION PLAN OF MIDDLE RING ROAD FROM KILWA ROAD UPTO KIGAMBONI BRIDGE



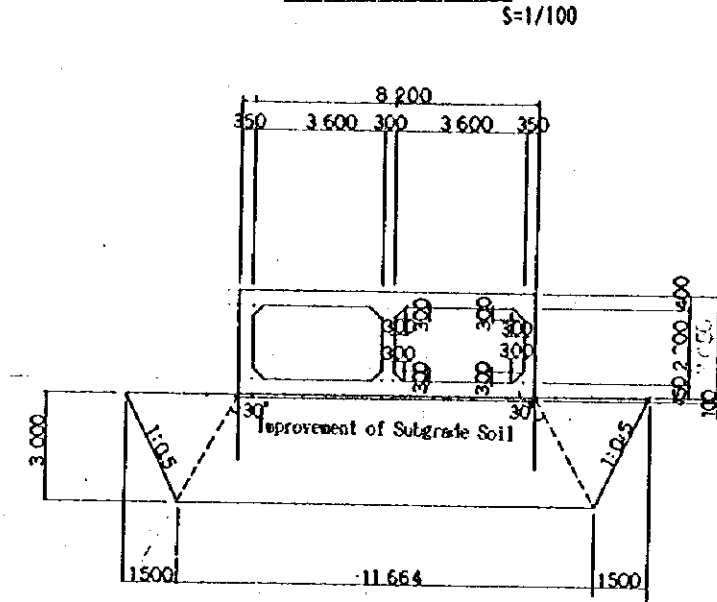
3.6 Box Culvert

SINZA CULVERT-BOX

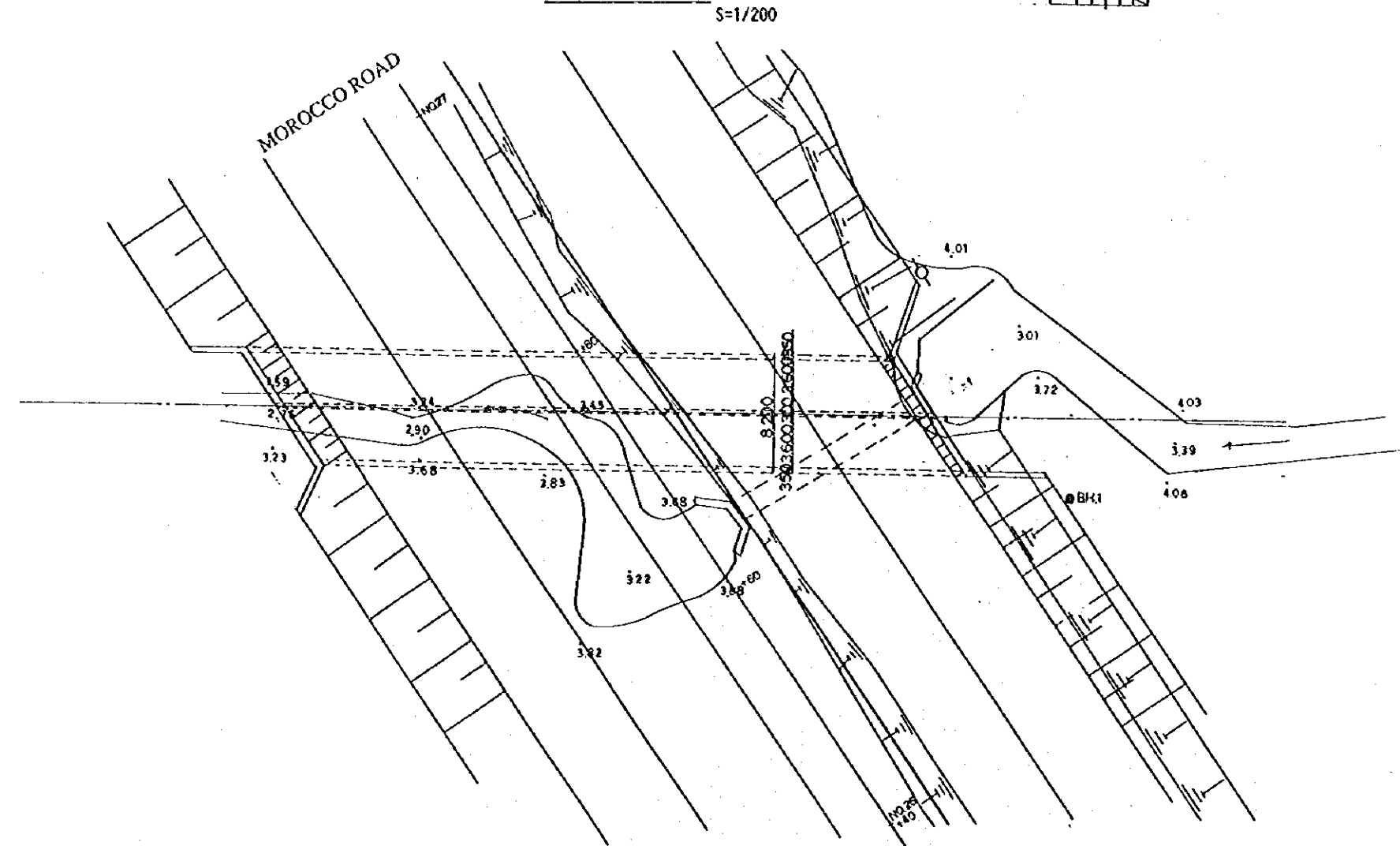
GENERAL ELEVATION



CROSS SECTION



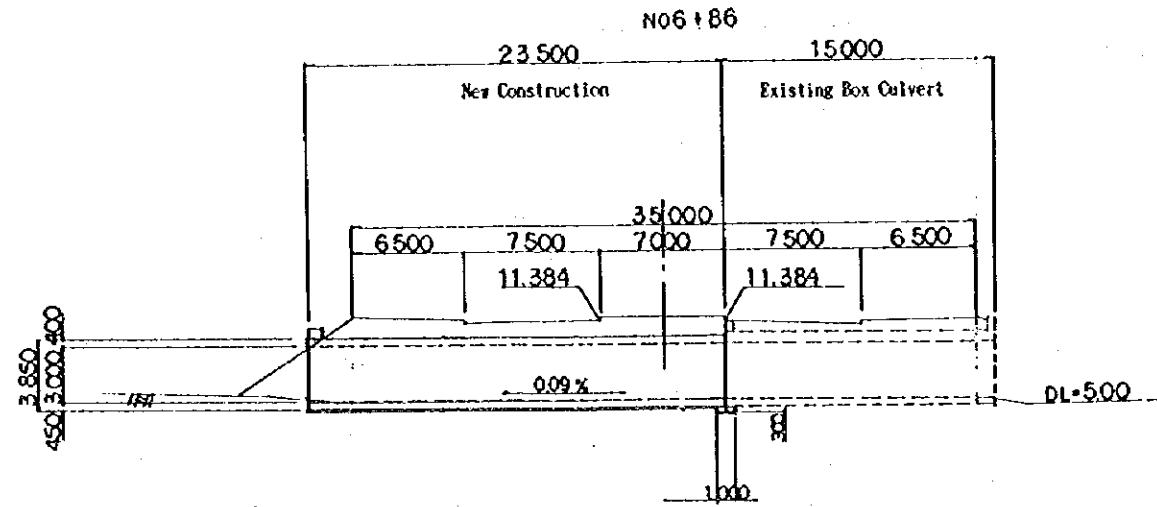
GENERAL PLAN



FIRST UBUNGO CULVERT-BOX

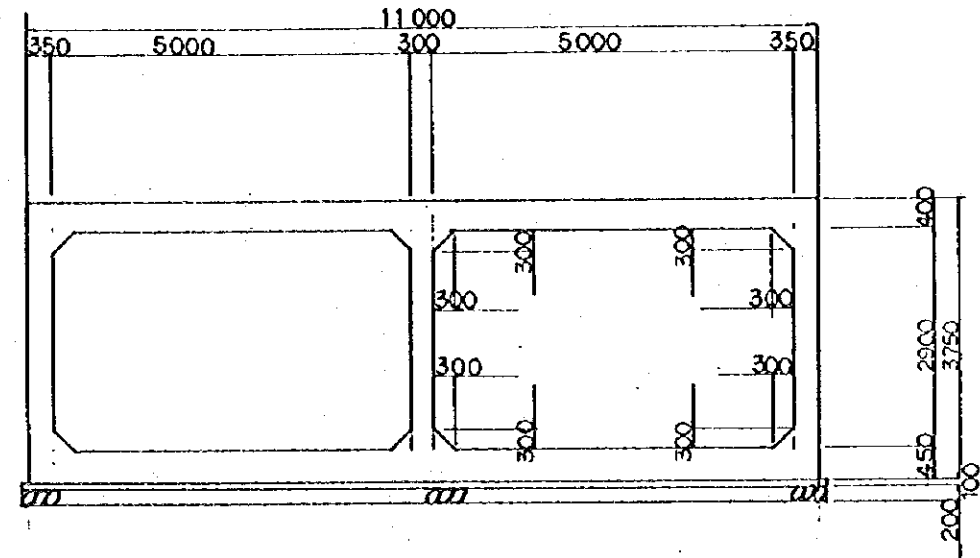
GENERAL ELEVATION

S=1/200



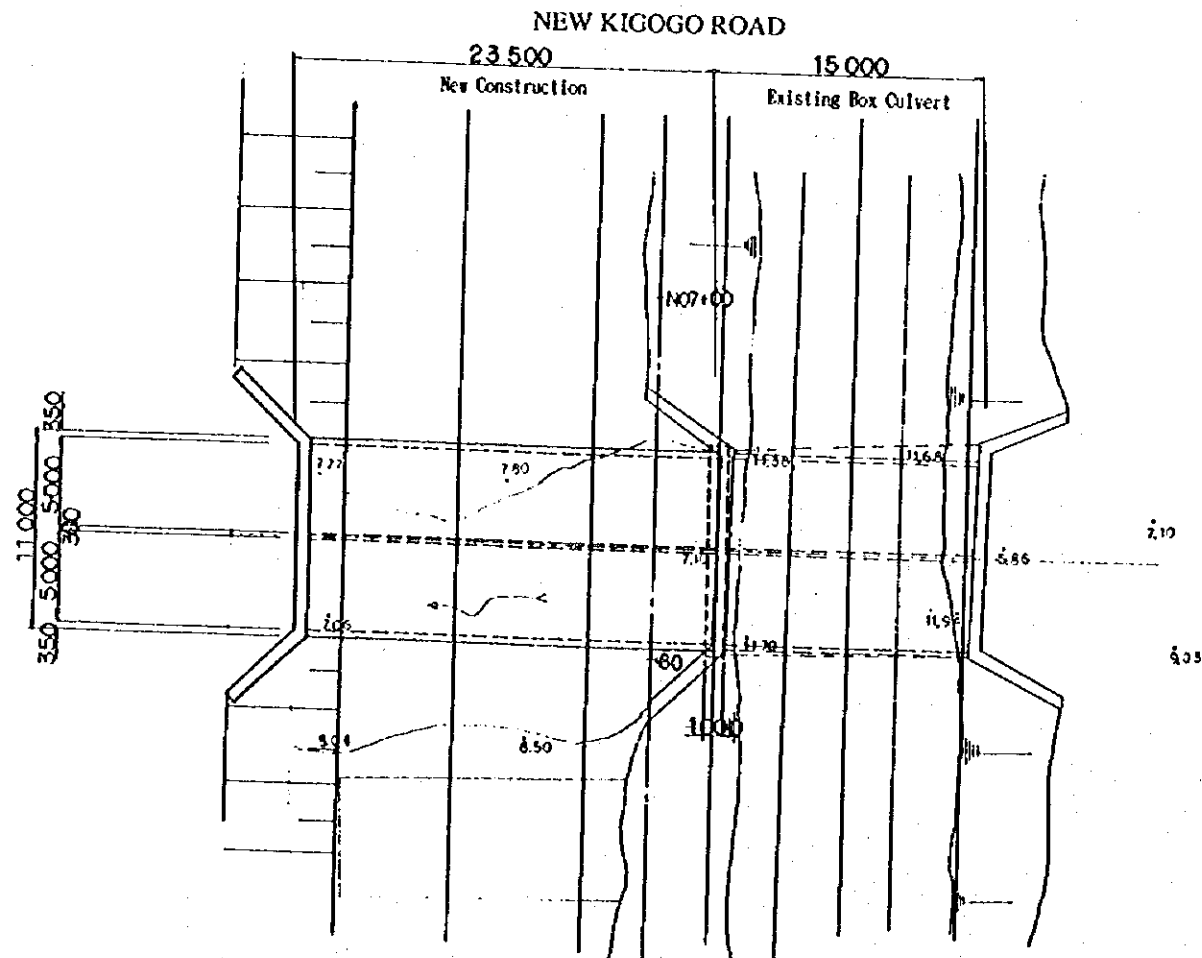
CROSS SECTION

S=1/50



GENERAL PLAN

S=1/200



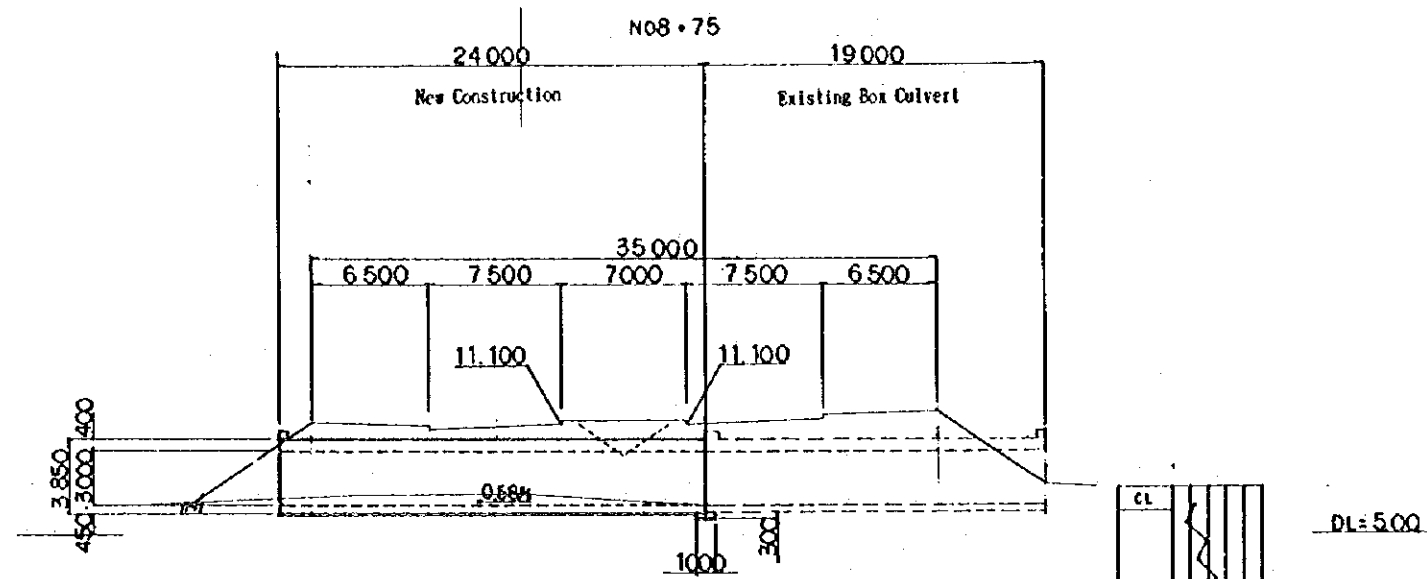
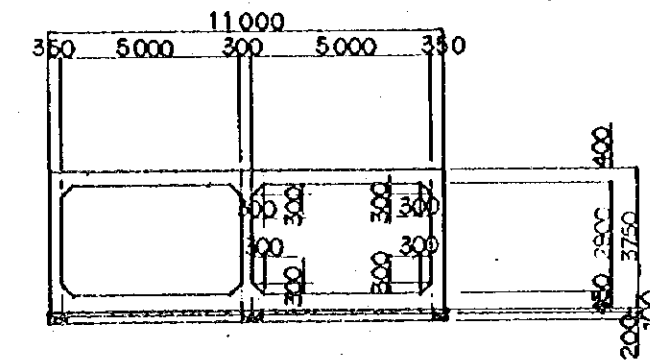
SECOND UBUNGO CULVERT-BOX

GENERAL ELEVATION

S=1/200

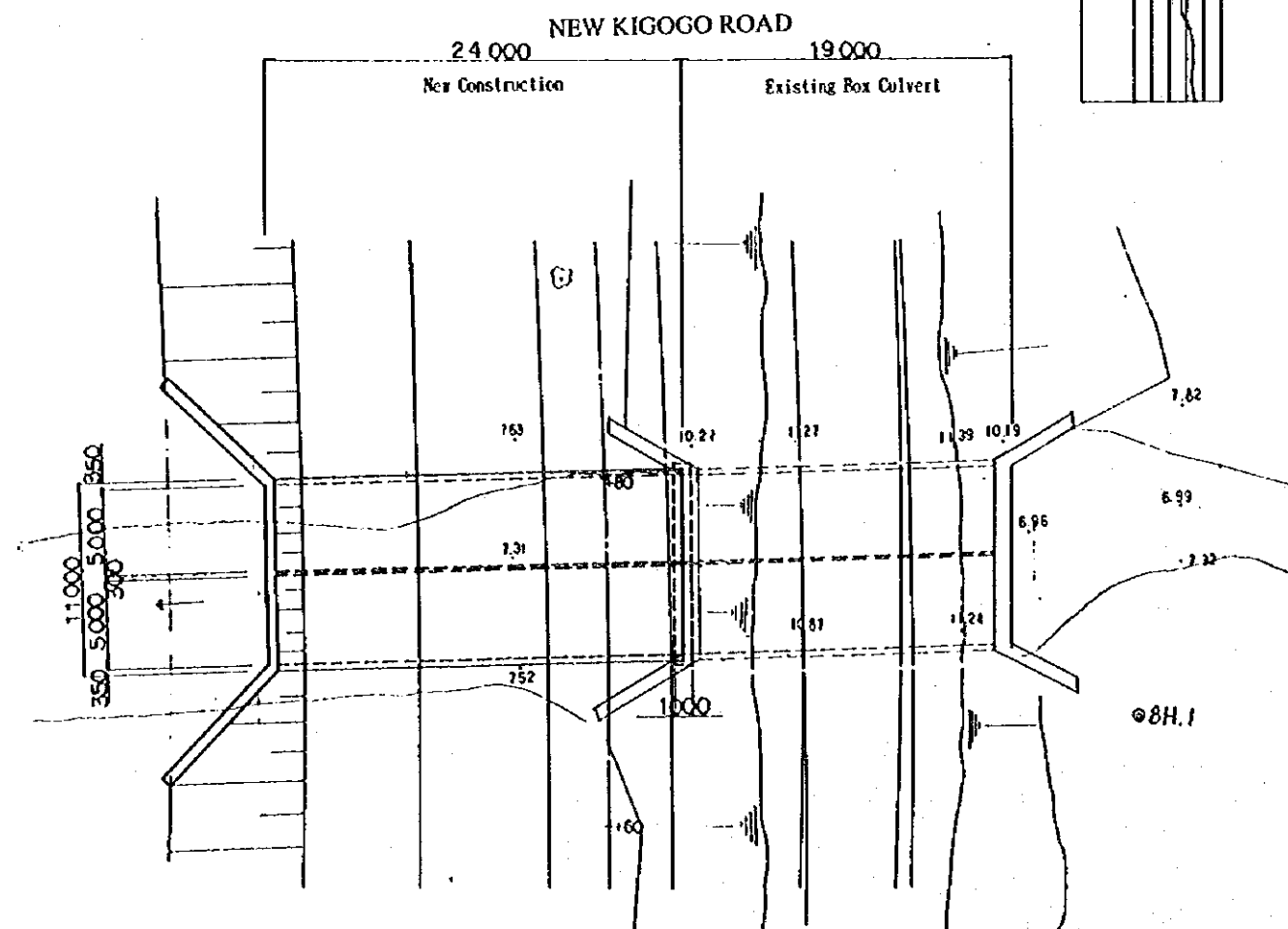
CROSS SECTION

S=1/100



GENERAL PLAN

S=1/200



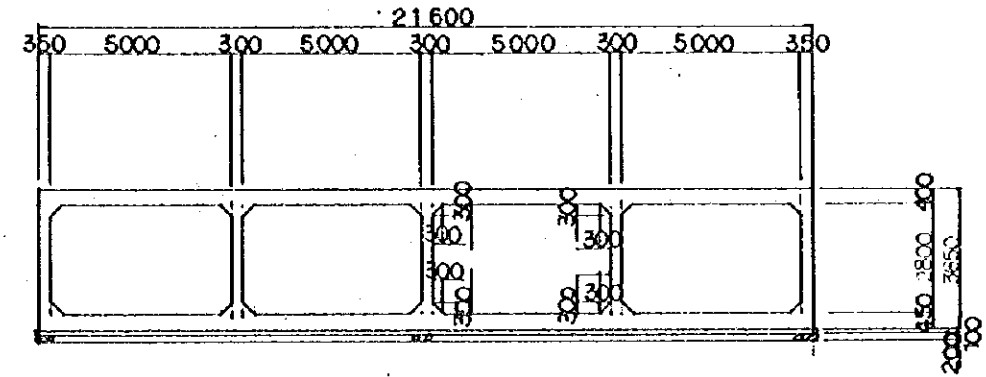
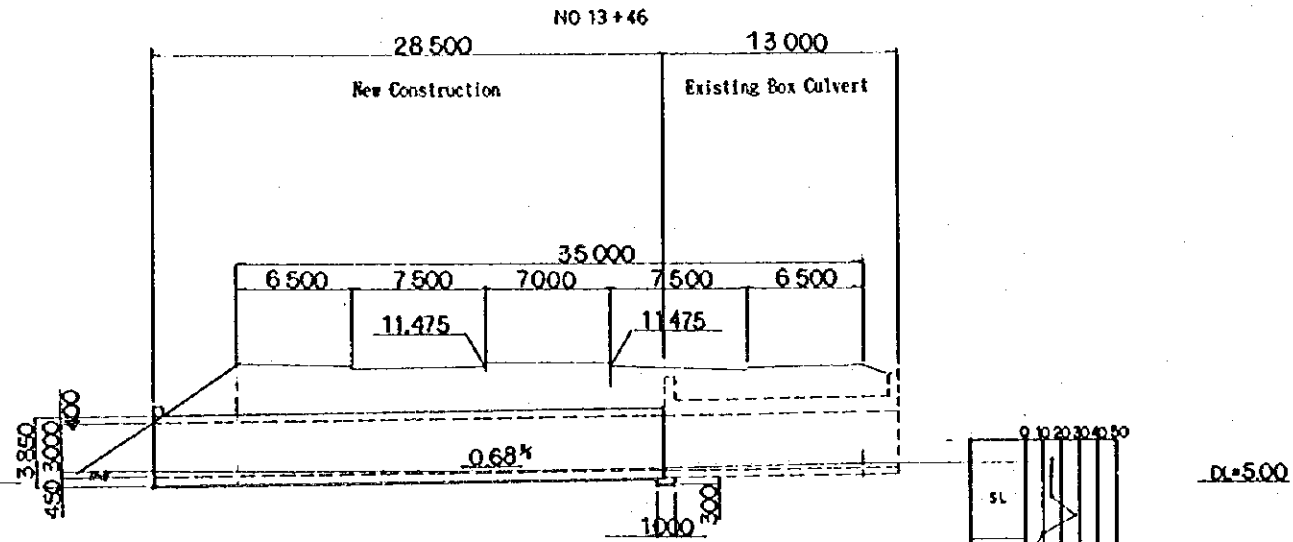
FIRST MSIMBAZI CULVERT-BOX

GENERAL ELEVATION

S=1/200

CROSS SECTION

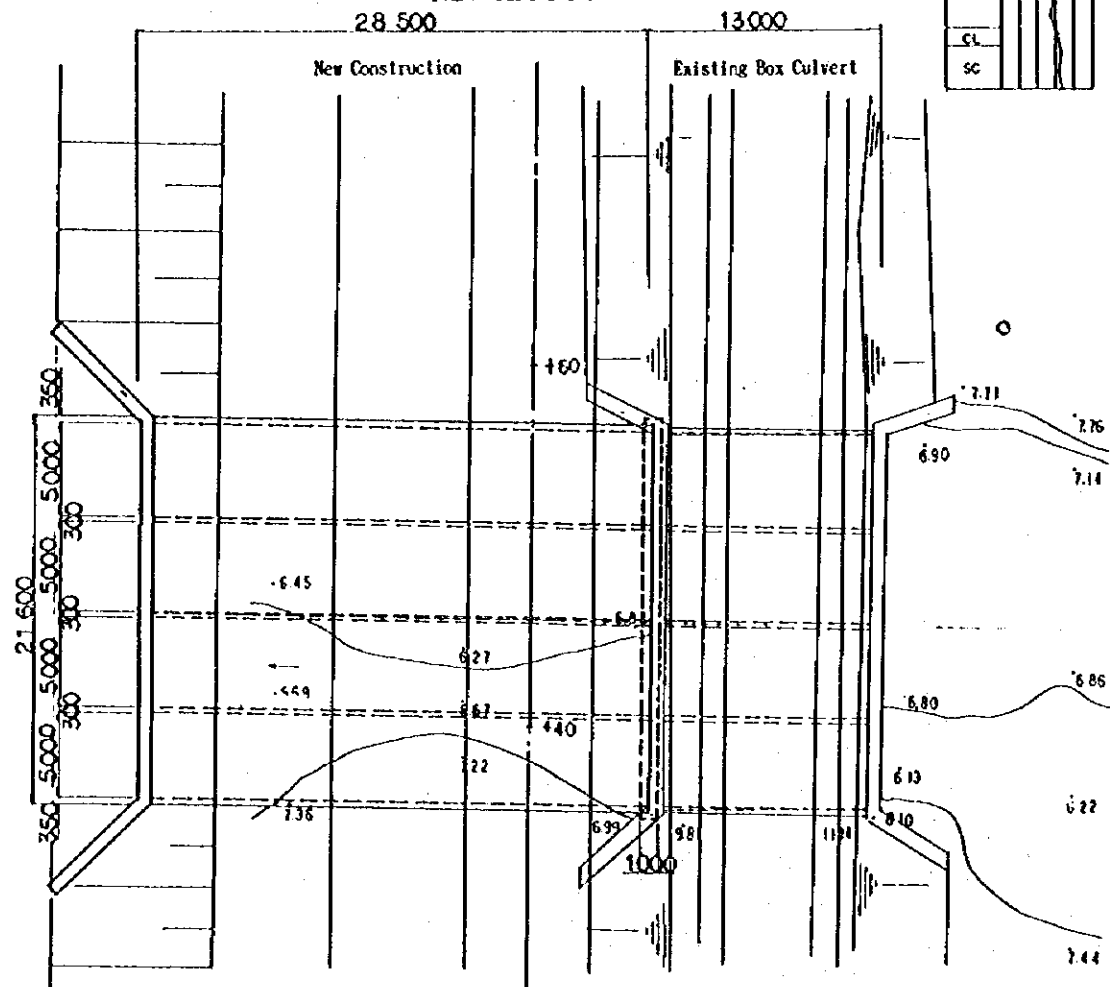
S=1/100



GENERAL PLAN

S=1/200

NEW KIGOGO ROAD



THE UNITED REPUBLIC OF TANZANIA

MINISTRY OF WORKS, COMMUNICATION AND TRANSPORT

THE STUDY
ON

DAR-ES-SALAAM ROAD DEVELOPEMENT PLAN

JAPAN INTERNATIONAL
COOPERATION AGENCY

GENERAL VIEW

FIRST MSIMBAZI
CULVERT-BOX

DATE

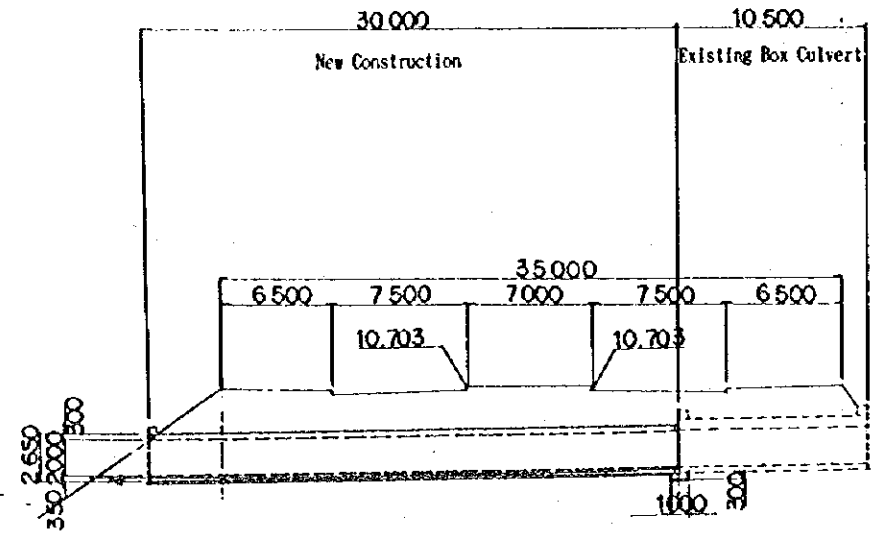
MARCH 1995

SHEET NO.

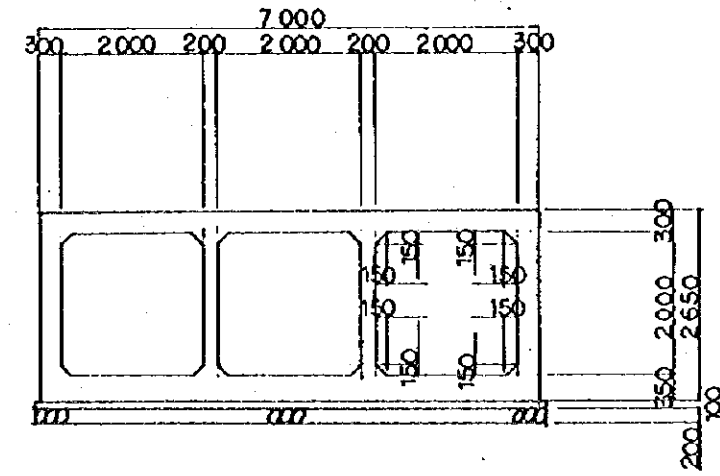
56

SECOND MSIMBAZI CULVERT-BOX

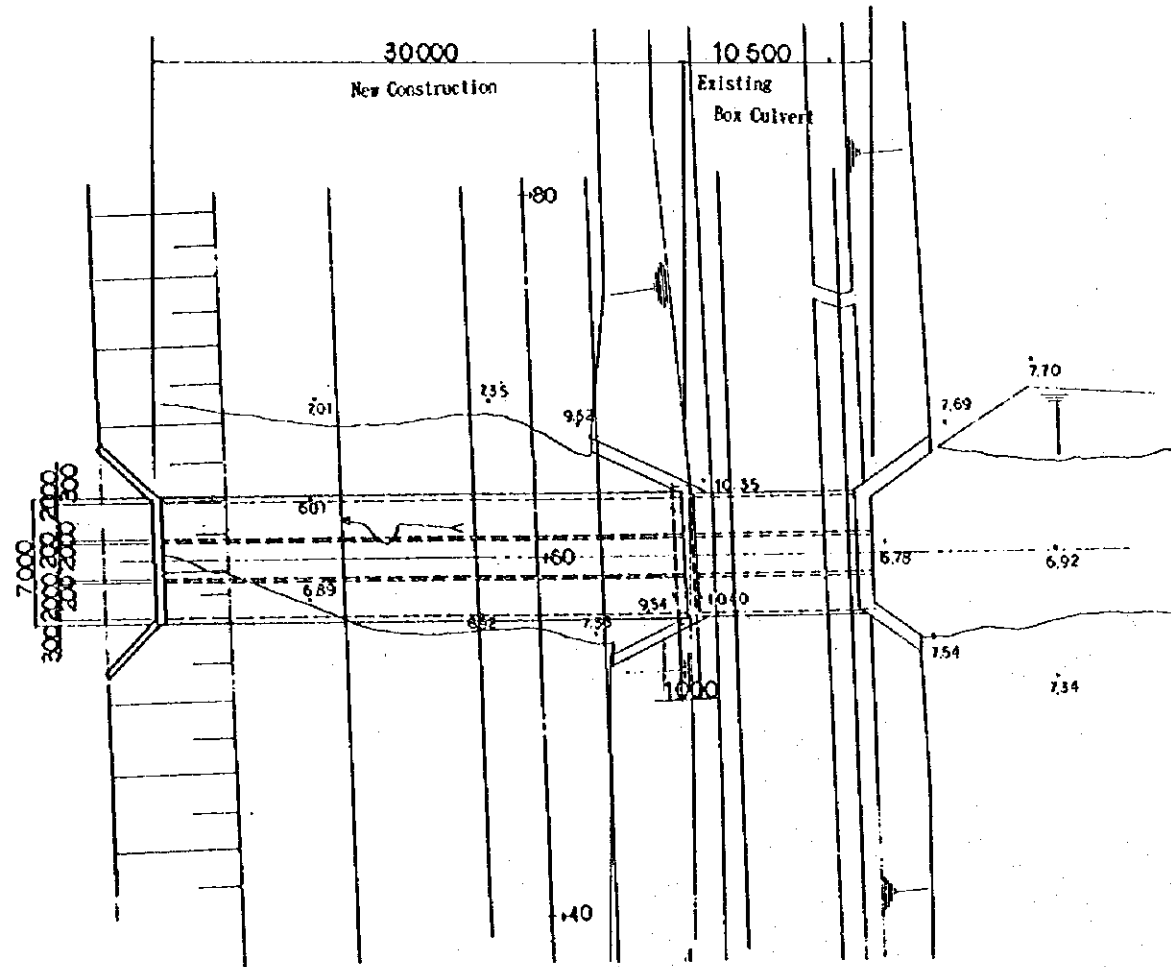
GENERAL ELEVATION
S=1/200



CROSS SECTION
S=1/50



GENERAL PLAN
S=1/200



THE UNITED REPUBLIC OF TANZANIA
MINISTRY OF WORKS, COMMUNICATION AND TRANSPORT

THE STUDY
ON
DAR-ES-SALAAM ROAD DEVELOPEMENT PLAN

JAPAN INTERNATIONAL
COOPERATION AGENCY

GENERAL VIEW
SECOND MSIMBAZI
CULVERT-BOX

DATE	SHEET NO.
MARCH 1995	57