



# KATAHIRA & ENGINEERS INTERNATIONAL

TOKYO, JAPAN

9

Tsurukuma Bldg, 4-2-8 Ohno  
Chuo-ku, Tokyo, Japan  
Cable Address: ENKATAHIRA TOKYO  
Telephone: 03-563-4053  
Telex: 2523838 KATAEG J  
Facsimile: 03-563-4055

Date: July 2, 1992

Gentlemen,

In connection with the Japan's Grant Aid, the Project for Constructing Bridges Along Rural Roads (Phase IV, Group 2), Katahira & Engineers International and representatives from DPWH (Central, Regional and District Offices) hereby agree on the following items for the construction of ALIMANGO Bridge;

07-15-06A

1. The proposed centerline will be located at the downstream (as per plan) of the bridge.
2. The Right-of-Way Acquisition and removal of all obstructions (to be undertaken by the DPWH)
3. Location of proposed detour if possible at downstream if not, the road will be closed upon commencement.
4. Highest Water Level, 142.548 m.
5. Location of Bore Holes two Bore Holes<sup>as</sup> shown in the plan.

Attached herewith is the plan showing the above agreed items.

Names and signatures of Representatives are shown below.

### DPWH Central Office

Mr. Adriano Doron (Engr. IV, BOD)  
Mr. Edwin Fortes (Engr. III, PS)

### DPWH Regional Office

Mr. Basilio D. Rosman (Reg'l. Director, Reg. VII)  
Mrs. Gloria Madin (Engr. IV, Reg. VII Planning & Design)

### DPWH District Office

Mrs. Filipina D. Oyo (OIC Toledo City Engineering Office)  
Engr. Ciraco Salazar (Engr. II Toledo City Engg. Office)

### Katahira & Engineers International

Mr. Masao Aizawa (Geotechnical Surveyor)  
Mr. Kenji Sugawara (Topographic Surveyor)

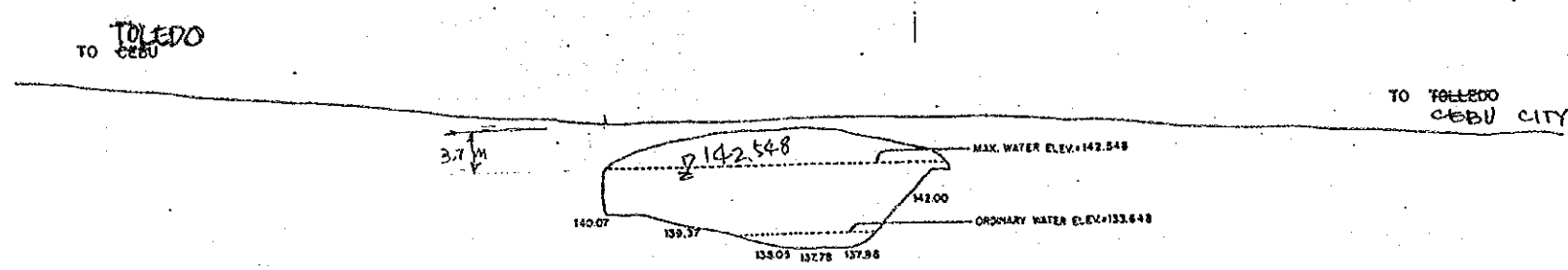
Note: Detour road no need for the road will be closed to traffic upon commencement of construction.



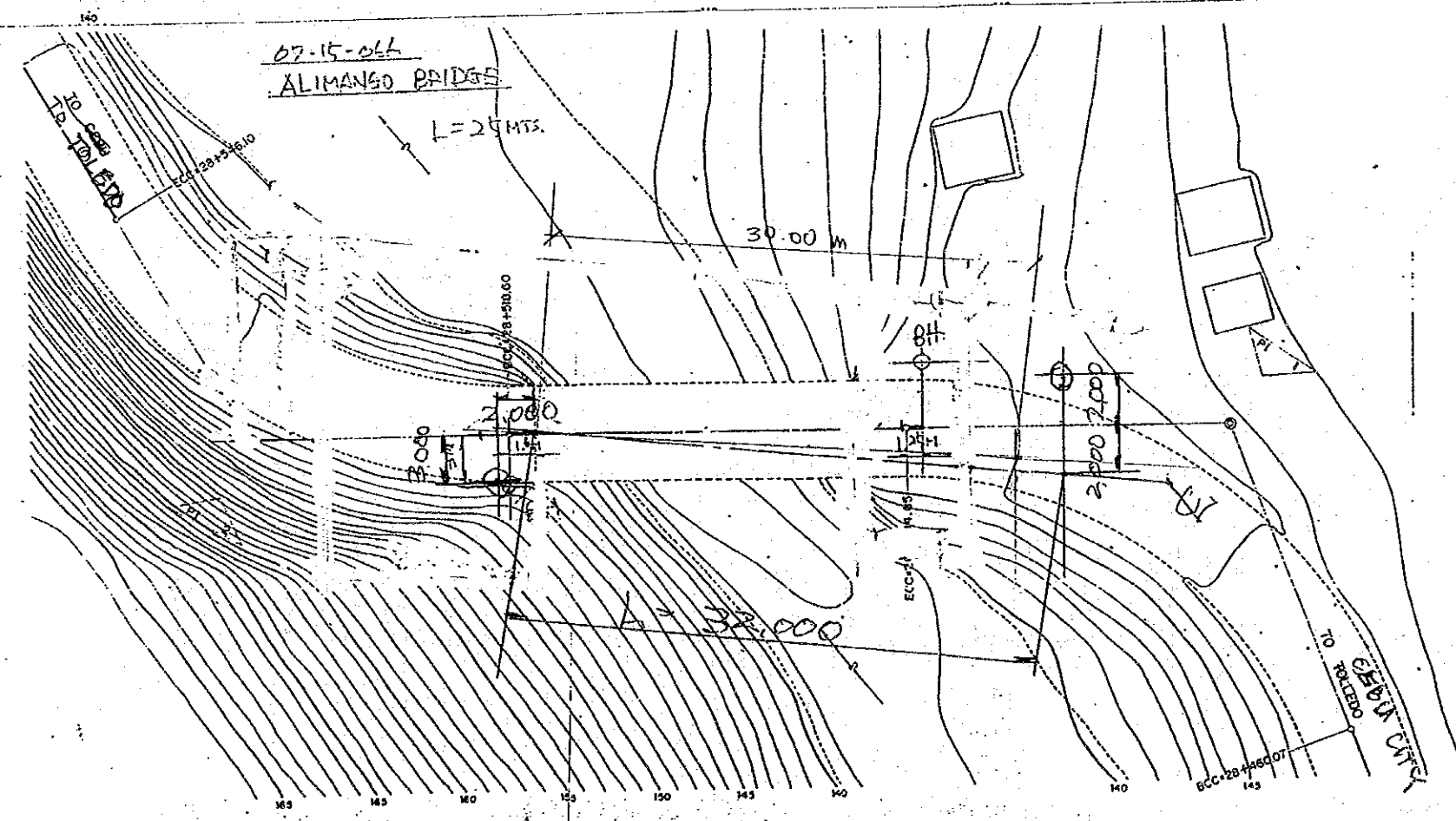
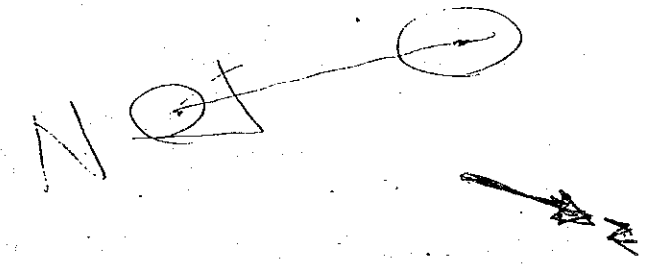
Note: Detour Road no need for the road will be closed to traffic upon commencement of construction.

BRIDGE NO. 07-15-06A ALIMA TO

Mr. Adriano D. Engr. IV, DPWH Central Office  
 Mr. Edorn F. Engr. III DPWH Central Office



GENERAL ELEVATION SCALE: 1:200 MTS



GENERAL PLAN SCALE: 1:200 MTS

Mr. Masao Aizawa  
 Geotechnical Surveyor (KEI)

Kenji Sugawara  
 Mr. Kenji Sugawara  
 Topographic Surveyor (KEI)

Ms. Filipinas (OIC Toledo City)  
 Engr. Ciriaco A. Engr. I (Toledo)

Ms. Gloria I. Engr. IV (CR)  
 Mr. Basim DPWH Regional Director

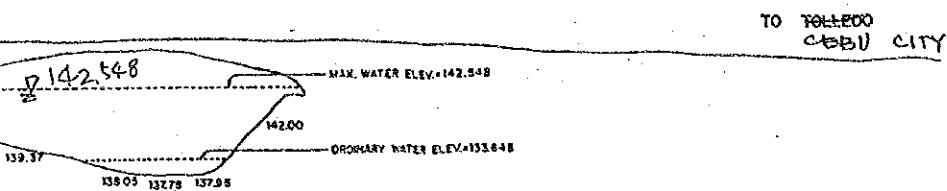
GENERAL NOTES

- LOCATION OF BRIDGE SHOULD BE DETERMINED BY THE DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS (DPWH).
- STRUCTURAL DIMENSIONS OF SUPERSTRUCTURES SHOULD NOT BE AMENDED.
- TYPES AND DIMENSIONS OF SUBSTRUCTURES SHALL BE JUSTIFIED ACCORDING TO THE DETAILED DESIGN OF SUBSTRUCTURES PREPARED BY DPWH.
- VERTICAL CLEARANCE BETWEEN THE H.F.L AND THE BOTTOM OF THE GIRDERS OF THE SUPERSTRUCTURE SHALL BE NOT LESS THAN 1.0 METER (CARRYING NO 80 DEBUS).
- DESIGN SPECIFICATION AASHTO STANDARD SPECIFICATION FOR HIGHWAY BRIDGE (14th EDITION 1989)
- DESIGN LOAD
 

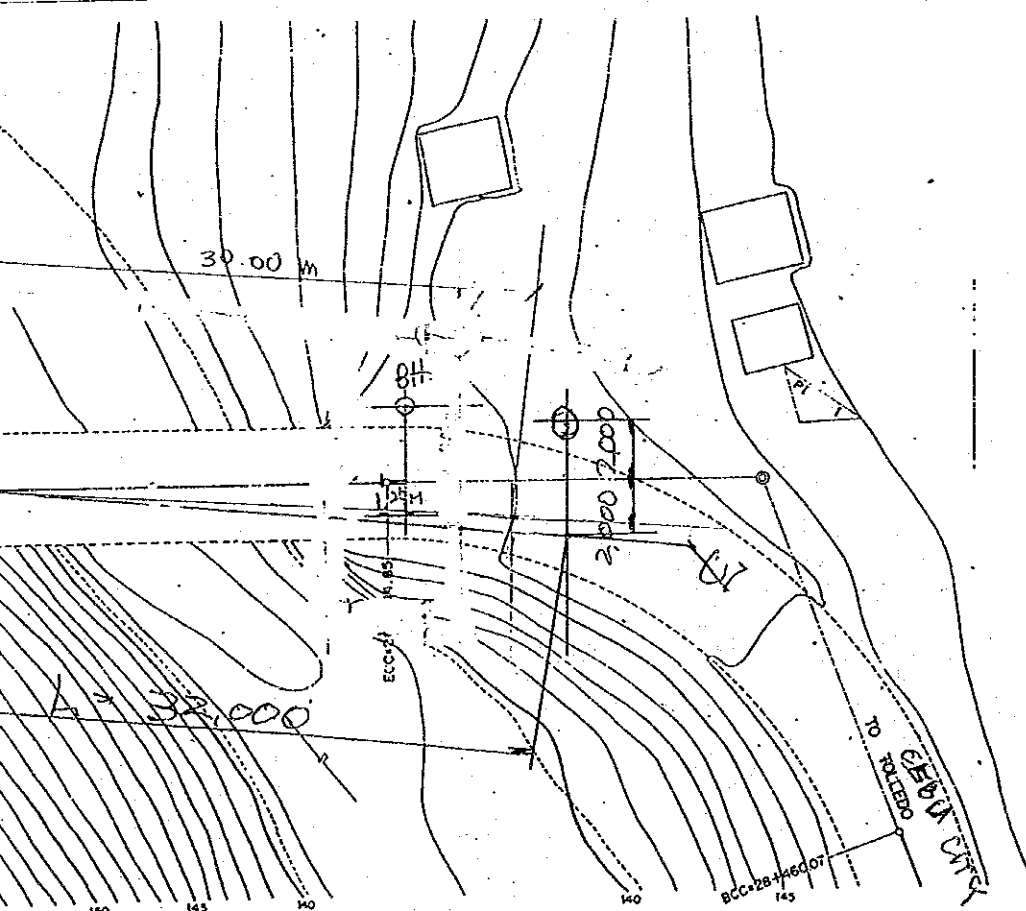
DEAD LOAD	CONCRETE	23.54 KN/m <sup>3</sup>
	ALL MATERIALS	17.65 KN/m <sup>3</sup>
LIVE LOAD	ROADWAY LIVE LOAD	HS 20-44 (MS-18)
	SIDEWALK LIVE LOAD	2.673 KN/m <sup>2</sup>
- TEMPERATURE CHANGE RISE + 10° FALL - 10°
- EARTHQUAKE LOAD IN ACCORDANCE WITH "GUIDELINE FOR SEISMIC DESIGN OF BRIDGES"
- OTHER LOADS: IN ACCORDANCE WITH 1989 AASHTO SPECIFICATION
- MATERIALS
 

STEEL FOR SUPERSTRUCTURE	STEEL SHALL BE SPECIFIED BY JIS (JAPANESE INDUSTRIAL STANDARD)
CONCRETE	CONCRETE FOR PRESTRESSED CONCRETE GIRDER (c' = 34.5 MPa) CONCRETE FOR DECK SLAB (c' = 20.7 MPa) CONCRETE FOR SUBSTRUCTURE (c' = 20.7 MPa)
OTHERS	OTHER MATERIALS SHALL CONFORMED TO ASTM

Note: Detour Road no need for the road will be closed to traffic upon commencement of construction.



GENERAL ELEVATION  
SCALE: 1:200 MTS



GENERAL PLAN  
SCALE: 1:200 MTS

THE BASIC DESIGN STUDY ON THE PROJECT  
FOR CONSTRUCTING BRIDGES ALONG RURAL ROADS (PHASE IV, GROUP )

BRIDGE NO. 07-15-06A	ALIMANGO BRIDGE TOLEDO CITY	SHEET NO.
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Mr. Adriano D. Droy  
Engr. IV, DPWH Central Office (BOD)

Mr. Edwin Fortes  
Engr. IV DPWH Central Office (Planning Service)

Ms. Filipinas D. Oyao  
(OIC Toledo City Engineering Office)

Engr. Cirilo A. Salazar, Jr.  
Engr. I (Toledo Engg. Office)

Ms. Gloria Dindin  
Engr. IV (Region VII, Planning & Design)

Mr. Basilio D. Rasuman  
DPWH Regional Director (Region VII)

Mr. Masao Aizawa  
Geotechnical Surveyor (KEI)

Mr. Kenji Sugawara  
Topographic Surveyor (KEI)

GENERAL NOTES

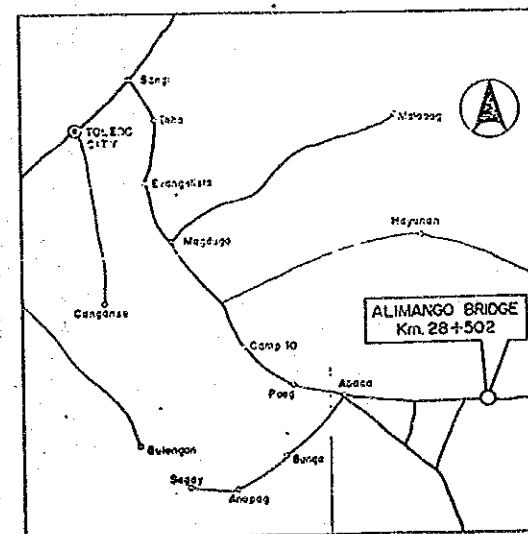
1. LOCATION OF BRIDGE SHOULD BE DETERMINED BY THE DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS (DPWH).
2. STRUCTURAL DIMENSIONS OF SUPERSTRUCTURES SHOULD NOT BE AMENDED.
3. TYPES AND DIMENSIONS OF SUBSTRUCTURES SHALL BE JUSTIFIED ACCORDING TO THE DETAILED DESIGN OF SUBSTRUCTURES PREPARED BY DPWH.
4. VERTICAL CLEARANCE BETWEEN THE M.F.L. AND THE BOTTOM OF THE GIRDERS OF THE SUPERSTRUCTURE SHALL BE NOT LESS THAN 1.0 METER (CARRYING NO B.G. DEBRIS).
5. DESIGN SPECIFICATION  
AASHTO STANDARD SPECIFICATION FOR HIGHWAY BRIDGE (14th EDITION 1989)
6. DESIGN LOAD
 

DEAD LOAD	CONCRETE	23.54 KN/m <sup>3</sup>
	FILL MATERIALS	17.66 KN/m <sup>3</sup>
LIVE LOAD	ROADWAY LIVE LOAD	HS 20-44 (MS-18)
	SIDEWALK LIVE LOAD	2.873 KN/m <sup>2</sup>

TEMPERATURE CHANGE  
RISE + 10° FALL - 10°

EARTHQUAKE LOAD  
IN ACCORDANCE WITH "GUIDELINE FOR SEISMIC DESIGN OF BRIDGES"

OTHER LOADS: IN ACCORDANCE WITH 1989 AASHTO SPECIFICATION
7. MATERIALS  
STEEL FOR SUPERSTRUCTURE  
STEEL SHALL BE SPECIFIED BY JIS (JAPANESE INDUSTRIAL STANDARD)  
CONCRETE FOR PRESTRESSED CONCRETE GIRDER  $f_c = 34.5 \text{ MPa}$   
CONCRETE FOR DECK SLAB  $f_c = 20.7 \text{ MPa}$   
CONCRETE FOR SUBSTRUCTURE  $f_c = 20.7 \text{ MPa}$   
OTHERS  
OTHER MATERIALS SHALL CONFORMED TO ASTM



VICINITY MAP





**KATAHIRA & ENGINEERS INTERNATIONAL**  
TOKYO, JAPAN

10

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Chuo-ku, Tokyo, Japan  
Cable Address: ENKATAHIRA TOKYO  
Telephone: 03-563-4033  
Telex: 252383B KATAEG J  
Facsimile: 03-563-4035

Date: July 5, 1992

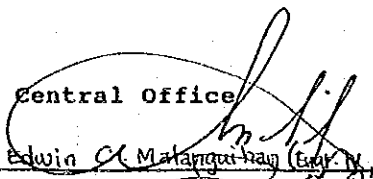
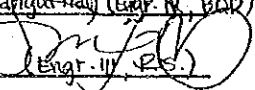
Gentlemen,

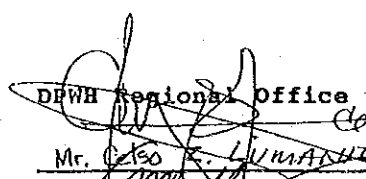
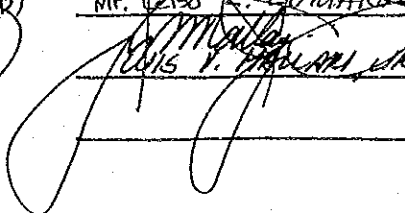
In connection with the Japan's Grant Aid, the Project for Constructing Bridges Along Rural Roads (Phase IV, Group 2), Katahira & Engineers International and representatives from DPWH (Central, Regional and District Offices) hereby agree on the following items for the construction of ANAS Bridge;

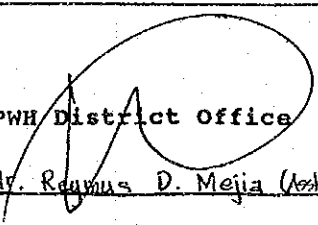
1. The proposed centerline will be located at the existing centerline of the bridge.
2. The Right-of-Way Acquisition and removal of all obstructions (to be undertaken by the DPWH)
3. Location of proposed detour Fording at upstream.
4. Highest Water Level, 50.20 m.
5. Location of Bore Holes Three (3) Bore Holes as indicated in the plan

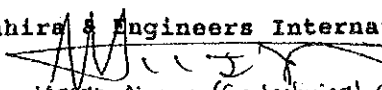
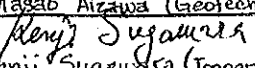
Attached herewith is the plan showing the above agreed items.

Names and signatures of Representatives are shown below.

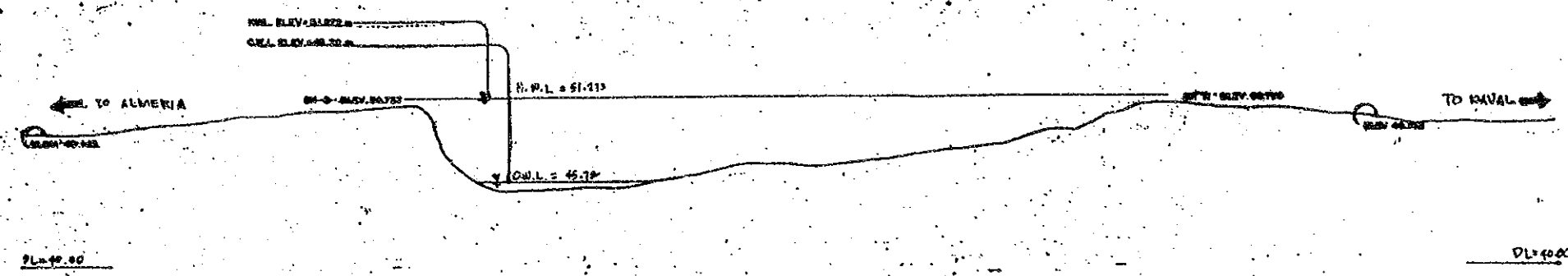
DPWH Central Office  
  
 Mr. Edwin C. Matanguihan (Eng. IV, BAR)  
  
 Mr. Edwin Fortes (Engt. III, P.S.)

DPWH Regional Office  
  
 Mr. Celso E. LUMADUG (Asst. Div. Chief, Reg. VIII)  
  
 LOUIS V. PABLANA, JR. (ENGR. 7, CHIEF, PDD) Reg. VII

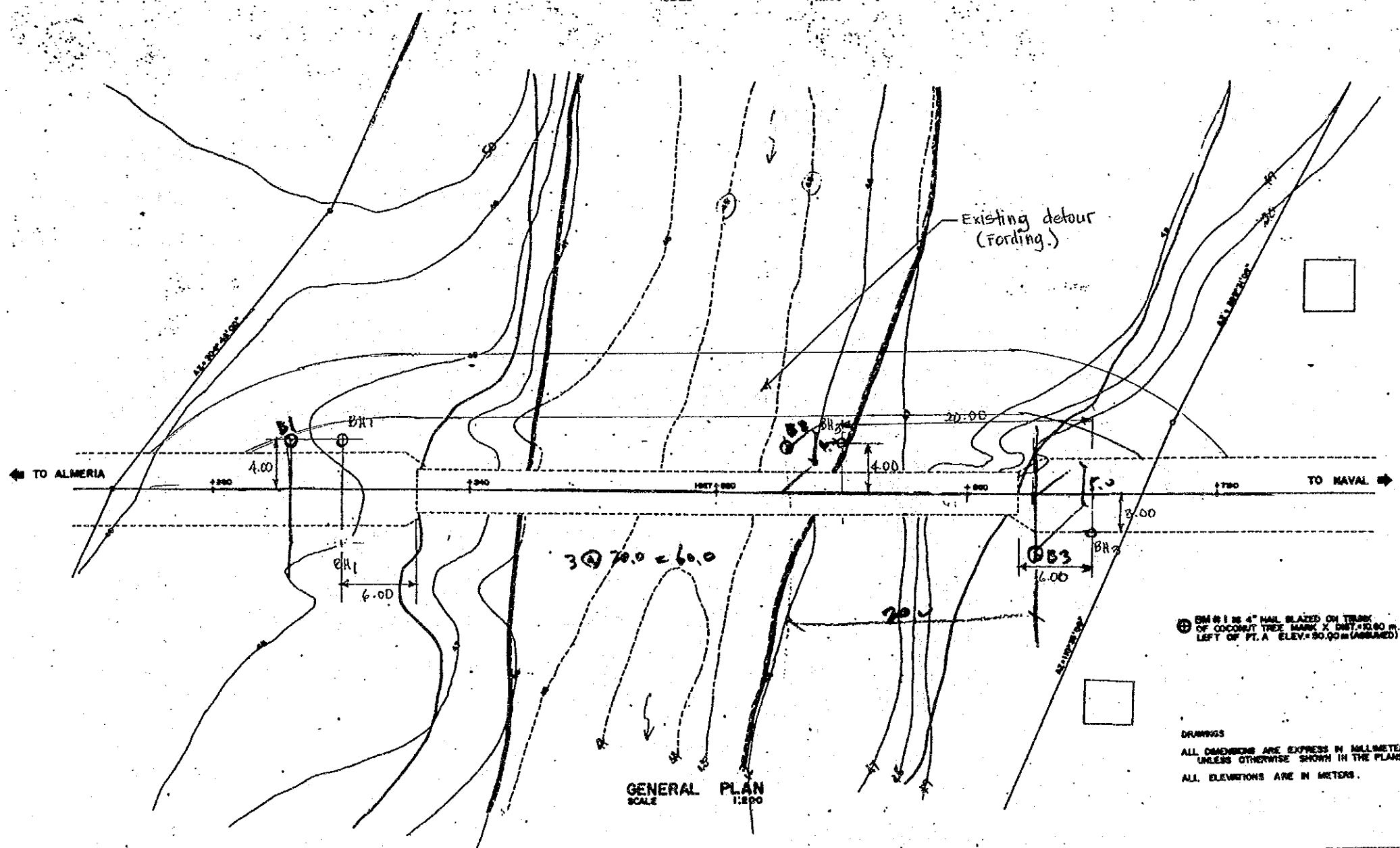
DPWH District Office  
  
 Mr. Ramon D. Mejia (Asst. DE, Piliapan District)

Katahira & Engineers International  
  
 Mr. Masao Aizawa (Geotechnical Surveyor)  
  
 Mr. Kenji Sugawara (Topographic Surveyor)

橋梁設計図 2074



GENERAL ELEVATION SCALE 1:500



GENERAL PLAN SCALE 1:500

*[Signature]*  
Mr. Masao Aizawa  
Geotechnical Surveyor (KEI)

*[Signature]*  
Mr. Kenji Sugawara  
Topographic Surveyor (KEI)

- Presently used detour (fording) which is located at the upstream side of the existing bridge will be utilized.
- Proposed centerline of new bridge coincided with the centerline of existing bridge.

*[Signature]*  
Mr. Edwin C.  
Engr. IV, Bureau

*[Signature]*  
Mr. Edwin  
Engr. III, District

*[Signature]*  
Mr. Reynold  
Assistant District

*[Signature]*  
Celso Z. ...  
Asst. Dir.

*[Signature]*  
...  
CHIEF

GENERAL NOTES

- LOCATION OF BRIDGE SHOULD BE DETERMINED BY THE DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS (DPWH).
- STRUCTURAL DIMENSIONS OF SUPERSTRUCTURES SHALL NOT BE AMENDED.
- TYPES AND DIMENSIONS OF SUPERSTRUCTURES SHALL BE JUSTIFIED ACCORDING TO THE DETAILED DESIGN OF SUPERSTRUCTURES PREPARED BY DPWH.
- VERTICAL CLEARANCE BETWEEN THE H.W.L. AND THE BOTTOM OF THE ORDERS OF THE SUPERSTRUCTURE SHALL BE NOT LESS THAN 1.0 METER (SCAFFOLDING NO. 800 SERIES).
- DESIGN SPECIFICATION ASHTO STANDARD SPECIFICATION FOR HIGHWAY BRIDGE (M 18 EDITION 1998)
- DESIGN LOAD
 

DEAD LOAD	CONCRETE	23.54 KN/m <sup>3</sup>
	FILL MATERIALS	17.68 KN/m <sup>3</sup>
LIVE LOAD	ROADWAY LIVE LOAD	HS 20-44 (MS-8)
	BIENNIAL LIVE LOAD	2.875 KN/m <sup>2</sup>

TEMPERATURE CHANGE  
RISE +10° FALL -10°

EARTHQUAKE LOAD  
IN ACCORDANCE WITH "GUIDELINE FOR SEISMIC DESIGN OF BRIDGES"

OTHER LOADS IN ACCORDANCE WITH 1998 ASHTO SPECIFICATION
- MATERIALS
 

STEEL FOR SUPERSTRUCTURE	STEEL SHALL BE SPECIFIED BY JIS (JAPANESE INDUSTRIAL STANDARD)
CONCRETE	CONCRETE FOR PRESTRESSED CONCRETE ORDER $f_c = 34.5$ MPa CONCRETE FOR DECK SLAB $f_c = 20.7$ MPa CONCRETE FOR SUBSTRUCTURE $f_c = 20.7$ MPa
OTHERS	OTHER MATERIALS SHALL CONFORMED TO ASTM

BM 101 IS 4" NAIL BLAZED ON TRUNK OF COCONUT TREE MARK X DIST. 12.80 m. LEFT OF P.I. A. ELEV. 50.00 m (ASSUMED)

DRAWINGS  
ALL DIMENSIONS ARE EXPRESS IN MILLIMETERS UNLESS OTHERWISE SHOWN IN THE PLANS.  
ALL ELEVATIONS ARE IN METERS.

THE BASIC DESIGN STUDY ON THE PROJECT  
FOR CONSTRUCTING BRIDGES ALONG RURAL ROADS (PHASE IV, GROUP #1)

BRIDGE NO.  
08-01-01

ANAS BRIDGE  
HAVAL, BILIRAN

SHEET NO.  
2

*Handwritten notes:* 70.0 = 60.0

*Signature:*  
Mr. Masao Aizawa  
Geotechnical Surveyor (KEI)

*Signature:*  
Mr. Edwin G. Matanguihan  
Engr. IV, Bureau of Design, Central Office

*Signature:*  
Mr. Kenji Sugawara  
Topographic Surveyor (KEI)

*Signature:*  
Mr. Edwin Fortes  
Engr. III, Planning Service, Central Office

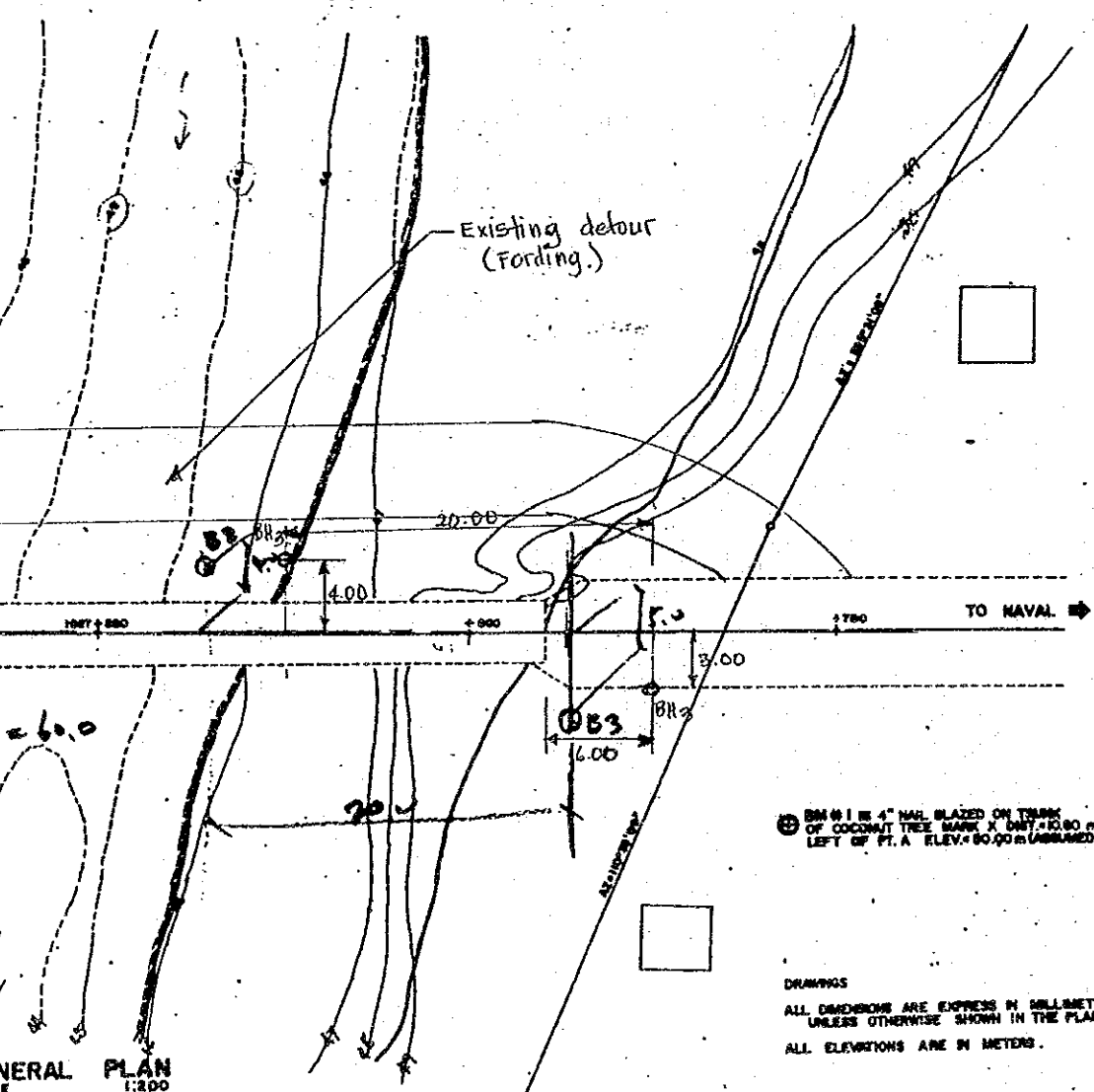
*Signature:*  
Mr. Reynaldo D. Mejia  
Assistant District Engr. (Biliran Dist.) Reg. VIII

*Signature:*  
Celso Z. Dimaano  
Asst. District Engr. (Reg. VIII)

*Signature:*  
Engr. V. P. ...  
CHIEF, ARD (Region VIII)

- Presently used detour (fording) which is located at the upstream side of the existing bridge will be utilized.
- Proposed centerline of new bridge coincided with the centerline of existing bridge.

GENERAL ELEVATION  
SCALE 1:500



GENERAL NOTES

- LOCATION OF BRIDGE SHOULD BE DETERMINED BY THE DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS (DPWH).
- STRUCTURAL DIMENSIONS OF SUPERSTRUCTURES SHOULD NOT BE AMENDED.
- TYPES AND DIMENSIONS OF SUBSTRUCTURES SHALL BE JUSTIFIED ACCORDING TO THE DETAILED DESIGN OF SUBSTRUCTURES PREPARED BY DPWH.
- VERTICAL CLEARANCE BETWEEN THE M.S.L. AND THE BOTTOM OF THE GIRDERS OF THE SUPERSTRUCTURE SHALL BE NOT LESS THAN 1.0 METER (EXCEPT FOR GIRDER BEAMS).
- DESIGN SPECIFICATION  
ASHTO STANDARD SPECIFICATION FOR HIGHWAY BRIDGES (1989 EDITION 1993)
- DESIGN LOAD
 

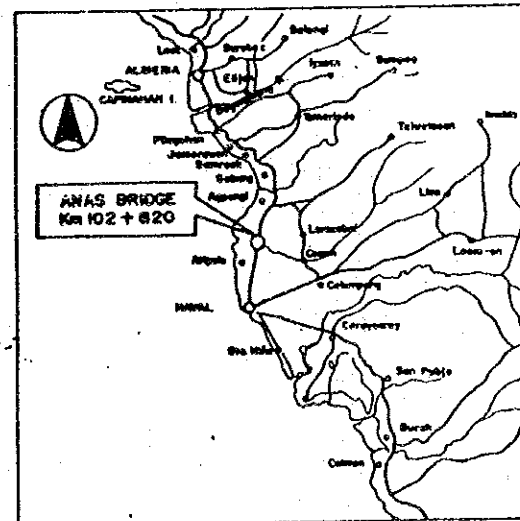
DEAD LOAD	CONCRETE	25.54 KN/m <sup>3</sup>
	FILL MATERIALS	17.08 KN/m <sup>3</sup>
LIVE LOAD	ROADWAY LIVE LOAD	HS 20-44 (MS-8)
	BIENNIAL LIVE LOAD	2.872 KN/m <sup>2</sup>

TEMPERATURE CHANGE  
RISE + 10° FALL - 10°

EARTHQUAKE LOAD  
IN ACCORDANCE WITH "GUIDELINE FOR SEISMIC DESIGN OF BRIDGES"

OTHER LOADS IN ACCORDANCE WITH 1989 ASHTO SPECIFICATION
- MATERIALS
 

STEEL FOR SUPERSTRUCTURE	STEEL SHALL BE SPECIFIED BY JIS (JAPANESE INDUSTRIAL STANDARD)
CONCRETE	CONCRETE FOR PRESTRESSED CONCRETE GIRDER f <sub>c</sub> ' = 34.5 MPa CONCRETE FOR DECK SLAB f <sub>c</sub> ' = 20.7 MPa CONCRETE FOR SUBSTRUCTURE f <sub>c</sub> ' = 20.7 MPa
OTHERS	OTHER MATERIALS SHALL CONFORMED TO ASTM



VICINITY MAP

BM # 1 is 4" NAIL BLAZED ON TRUNK OF COCONUT TREE MARK X DIST. 10.80 m. LEFT OF P.I.A. ELEV. = 80.00 m (ASSUMED)

DRAWINGS  
ALL DIMENSIONS ARE EXPRESS IN MILLIMETERS UNLESS OTHERWISE SHOWN IN THE PLANS.  
ALL ELEVATIONS ARE IN METERS.







**KATAHIRA & ENGINEERS INTERNATIONAL**  
TOKYO, JAPAN



Tsurukame Bldg., 4-2-8 Ginza  
Chuo-ku, Tokyo, Japan  
Cable Address: ENKATAHIRA TOKYO  
Telephone: 03-583-4033  
Telex: 2523838 KATAEG J  
Facsimile: 03-583-4035

Date: July 5, 1992

Gentlemen,

In connection with the Japan's Grant Aid, the Project for Constructing Bridges Along Rural Roads (Phase IV, Group 2), Katahira & Engineers International and representatives from DPWH (Central, Regional and District Offices) hereby agree on the following items for the construction of ELIZABETH Bridge;

08-03-04

1. The proposed centerline will be located at the downstream of the bridge.
2. The Right-of-Way Acquisition and removal of all obstructions (to be undertaken by the DPWH)
3. Location of proposed detour existing bridge.
4. Highest Water Level, 51.40 m.
5. Location of Bore Holes Three (3) Bore Holes as indicated in the plan.

Attached herewith is the plan showing the above agreed items.

Names and signatures of Representatives are shown below.

DPWH Central Office

Mr. Edwin C. Manalanghan (Engr. IV, B.O.D.)

Mr. Edwin Fortes (Engr. III (P.S.))

DPWH Regional Office

Engr. E. EUMARAS (Asst. Div. Chief, Reg. VII)

Engr. V. MARCELINO (Engr. I, CIVIL, PDD) Reg. VIII

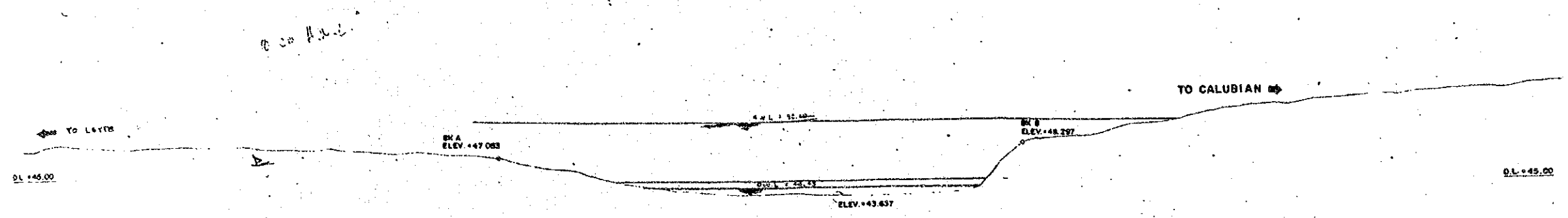
DPWH District Office

Mr. Reynus D. Mejia (Asst. D.E. - Biliran District)

Katahira & Engineers International

Mr. Masao Aizawa (Geotechnical Surveyor)

Mr. Kenji Sugawara (Topographic Surveyor)



NOTE: SLOPE OF REVETMENT SHALL BE DETERMINED BASED ON SOIL CONDITIONS.

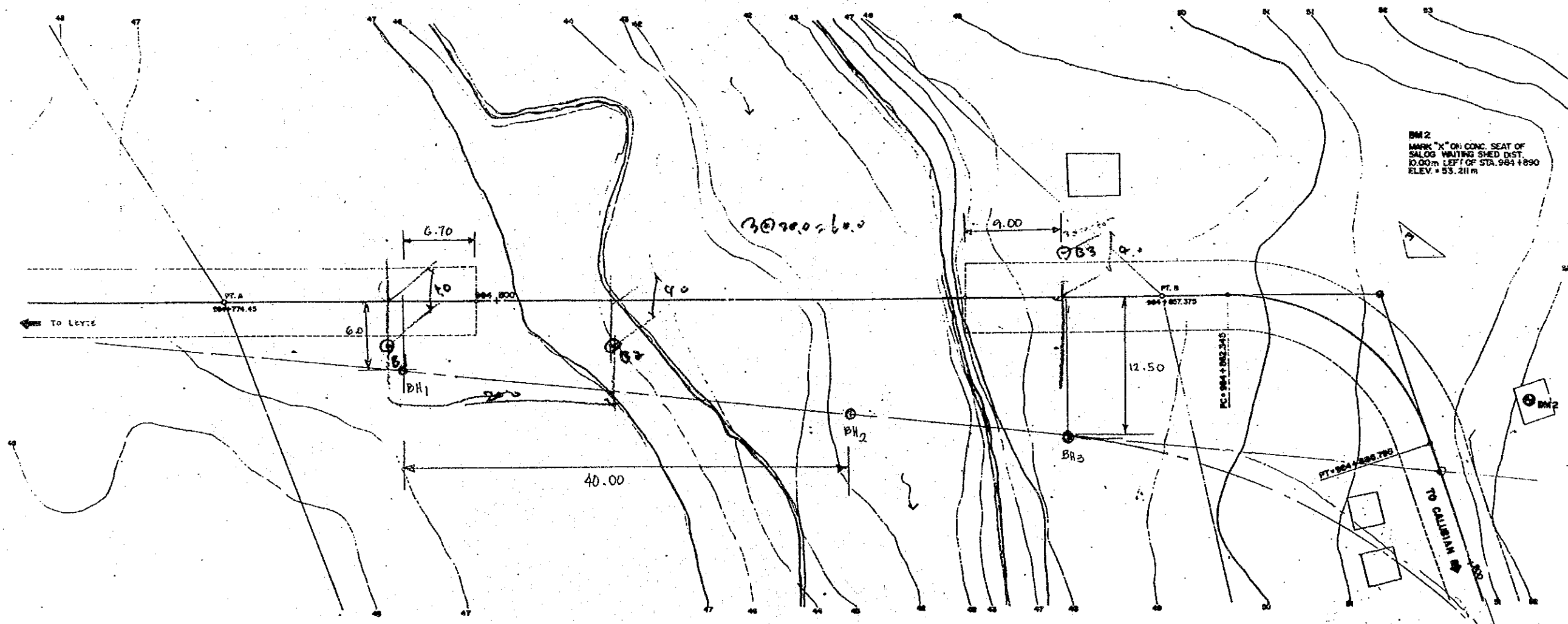
LEGEND: CENTER LINE

*Handwritten signature*  
 Mt. Magad Aizawa  
 Geotechnical Surveyor (KEI)

*Handwritten signature*  
 Mt. Kenji Sugawara  
 Topographic Surveyor (KEI)

- Existing bridge will serve as the detour with necessary supports.
- Affected house and electric posts must be relocated and thus survey for properties should be conducted as early as possible.

GENERAL ELEVATION  
 SCALE 1:200



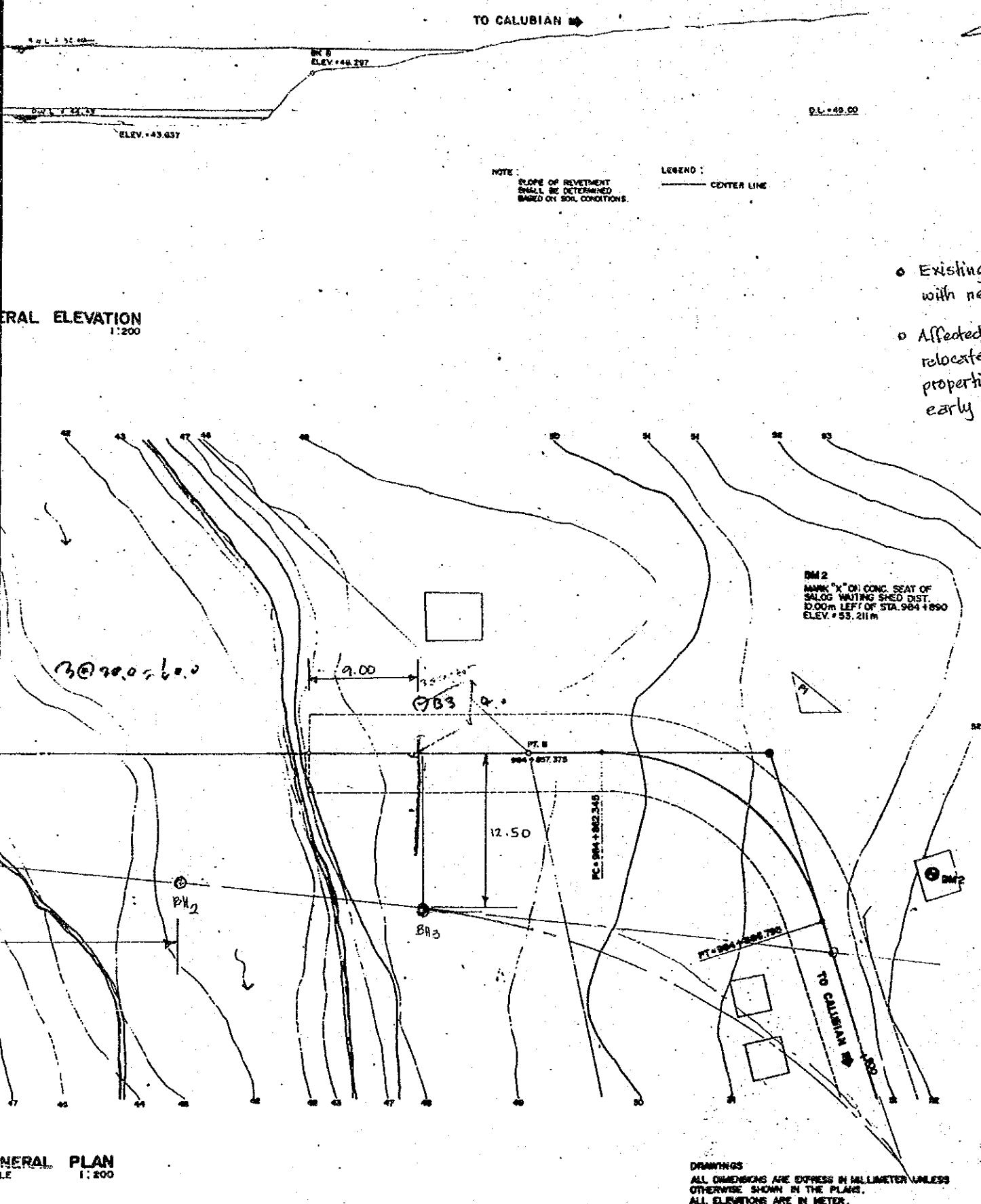
GENERAL PLAN  
 SCALE 1:200

DRAWINGS ALL DIMENSIONS ARE EXPRESS IN MILLIMETER UNLESS OTHERWISE SHOWN IN THE PLANS. ALL ELEVATIONS ARE IN METER.

- GENERAL SPECIFICATION
- LOCATION OF BRIDGE SHOULD PUBLIC WORKS AND HIGHWAY
  - STRUCTURAL DIMENSIONS OF I
  - TYPES AND DIMENSIONS OF I ACCORDING TO THE DETAILED
  - VERTICAL CLEARANCE BETWEEN OF THE SUPERSTRUCTURE SHA (CARRYING NO BIG DEBRIS).
  - DESIGN SPECIFICATION AASHTO STANDARD SPECIFIC
  - DESIGN LOAD
    - DEAD LOAD CONCRETE
    - FILL MATERIAL
    - LIVE LOAD ROADWAY I SIDEWALK I
    - TEMPERATURE CHANGE RISE + 10°
    - EARTHQUAKE LOAD IN ACCORD OF BRIDGE
    - OTHER LOADS IN ACCORD.
  - MATERIALS
    - STEEL FOR SUPERSTRUC STEEL 3M INDUSTRIA
    - CONCRETE CONCRETE
    - CONCRETE CONCRETE
    - OTHERS OTHER MA

THE BASIC DESIGN ON THE PROJECT  
FOR CONSTRUCTING BRIDGES ALONG RURAL ROADS (PHASE IV, GROUP 2)

BRIDGE NO.	ELIZABETH BRIDGE	NO.
08-03-04	LEYTE, LEYTE	



*Mr. Masao Kizawa*  
Geotechnical Surveyor (KEJ)

*Kenji Sugawara*  
Topographic Surveyor (KEJ)

*Mr. Edwin C. Malanguhan*  
Engr. IV Bureau of Design, Central Office.

*Mr. Edwin Follis*  
Eng III, Planning Service, Central Office.

- Existing bridge will serve as the detour with necessary supports.
- Affected house and electric posts must be relocated and thus survey for properties should be conducted as early as possible.

*Mr. Reynaldo D. Mejia*  
~~Assistant District Engr., Bihiran District, Region VIII~~  
CELESTO Z. LIMAN, CG  
Asst. District Engr. (Reg. VIII)

*Edwin V. Malabari, Jr.*  
ENGINEER I  
CHIEF, PDD (Reg. VIII)

GENERAL NOTES

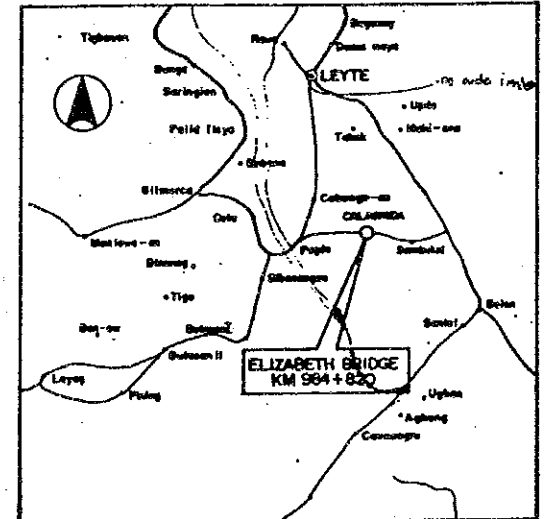
- LOCATION OF BRIDGE SHOULD BE DETERMINED BY THE DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS (DPWH).
- STRUCTURAL DIMENSIONS OF SUPERSTRUCTURES SHOULD NOT BE AMENDED.
- TYPES AND DIMENSIONS OF SUBSTRUCTURES SHALL BE JUSTIFIED ACCORDING TO THE DETAILED DESIGN OF SUBSTRUCTURES PREPARED BY DPWH.
- VERTICAL CLEARANCE BETWEEN THE M.F.L. AND THE BOTTOM OF THE GIRDERS OF THE SUPERSTRUCTURE SHALL BE NOT LESS THAN 1.0 METER (CARRYING NO BIG DEBRIS).
- DESIGN SPECIFICATION  
AASHTO STANDARD SPECIFICATION FOR HIGHWAY BRIDGE (14th EDITION 1989)
- DESIGN LOAD
 

DEAD LOAD	CONCRETE	23.54 KN/m <sup>3</sup>
	FILL MATERIALS	17.06 KN/m <sup>3</sup>
LIVE LOAD	ROADWAY LIVE LOAD	HS 20-44 (MS-18)
	SIDEWALK LIVE LOAD	2.873 KN/m <sup>2</sup>

TEMPERATURE CHANGE  
RISE + 10° FALL - 10°

EARTHQUAKE LOAD  
IN ACCORDANCE WITH "GUIDELINE FOR SEISMIC DESIGN OF BRIDGES"

OTHER LOADS: IN ACCORDANCE WITH 1989 AASHTO SPECIFICATION
- MATERIALS  
STEEL FOR SUPERSTRUCTURE  
STEEL SHALL BE SPECIFIED BY JIS (JAPANESE INDUSTRIAL STANDARD)
- CONCRETE  
CONCRETE FOR PRESTRESSED CONCRETE GIRDER f<sub>c</sub>'=34.5 MPa  
CONCRETE FOR DECK SLAB f<sub>c</sub>'=20.7 MPa  
CONCRETE FOR SUBSTRUCTURE f<sub>c</sub>'=20.7 MPa
- OTHERS  
OTHER MATERIALS SHALL CONFORMED TO ASTM



VICINITY MAP

GENERAL PLAN  
SCALE 1:200

DRAWINGS  
ALL DIMENSIONS ARE EXPRESS IN MILLIMETER UNLESS OTHERWISE SHOWN IN THE PLANS.  
ALL ELEVATIONS ARE IN METER.



APPENDIX 6

DATA OF  
TOPOGRAPHIC SURVEY



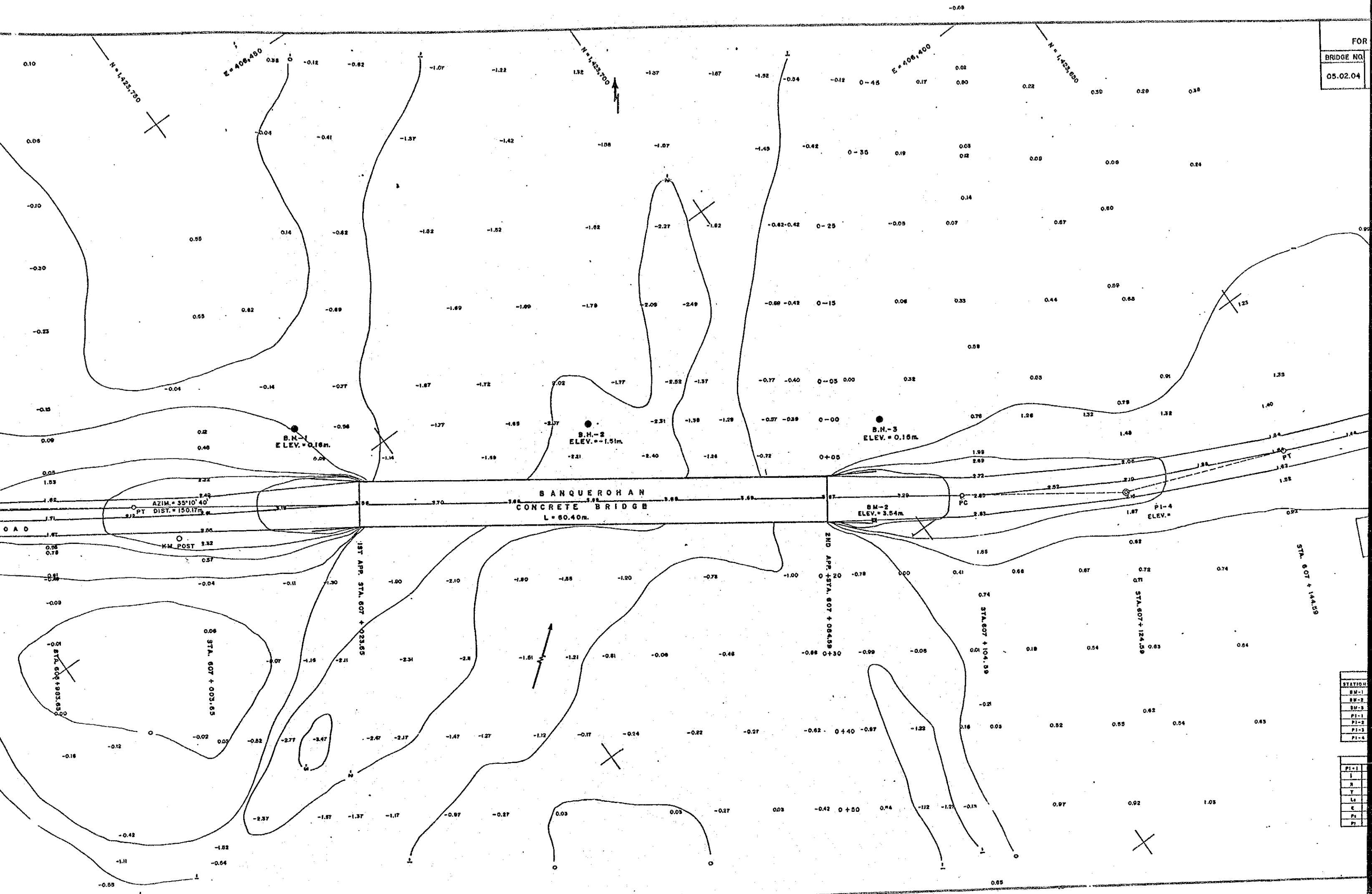
Table 1 SURVEY QUANTITY LIST

Bridge No.	Name of Bridge	Location	Centerline Survey		Profile Survey		Cross-Section Survey Along the Road			Monumenting		Topographic	
			Contract Surveyed (M)	Surveyed (M)	Contract Surveyed (M)	Surveyed (M)	Contract (Section)	Surveyed (Section)	Contract (Point)	Surveyed (Point)	Contract (Sheet)	Surveyed (Sheet)	
(1) 05.02.04	Banquerohan Br.	Km. 607 + 023.60 Cubat-Barcelona-Bulusan Road Barcelona, Sorsogon	540	540		540		24	11		3		1
(2) 05.03.01	Hitoma Br.	Km. 151 + 600 Virac-San Andres-Catamaran Pandian Road, Catanguanes	330	330		330		15	11		3		1
(3) 05.06.04	Lanang Br.	Km. 56 + 129.33 From Masbate Port, Masbate-Arory Road, Masbate	400	400		400		0	10		4		1
(4) 05.06.05	Potot Br.	Km. 37 + 739.78 From Masbate Port, Masbate-Balud Road, Masbate	240	240		240		10	23		4		1
(5) 06.06.04	Lawigan Br.	Km. 70 + 900 Tolas-Sinoguhan Road San Joaquin, Iloilo	345	345		345		13	15		3		1
(6) 07.06.01	Apalan Br.	Km. 97 + 803 Toledo-tabuelan Road Cebu I	350	350		350		18	0		2		1
(7) 07.06.05	Tambongon Br.	Km. 131 + 248 Antonio de Pio Highway Cebu I	540	540		540		21	0		2		1
(8) 07.06.07	Majon Br.	Km. 0 + 200 From Tabunok Road, Cebu II	520	520		520		15	20		2		1
(9) 07.15.06A	Alimango Br.	Km. 28 + 502 Cebu-Toledo Wharf Road Cantabaco, Toledo City	300	300		300		21	0		2		1
(10) 08.01.01	Anas Br.	Km. 102 + 820 From Port of Ormoc City to Naval-Almeria and Circumferen- tial Road Biliran Sub-Province	260	260		260		13	12		2		1
(11) 08.03.04	Elizabeth Br.	Km. 984 + 820 Leron-Sambolawan-Calaguise- Calubian Road Leyte II	360	360		360		18	12		2		1
	Total		4,185	4,185		4,185		188	114		29		11
	Difference												

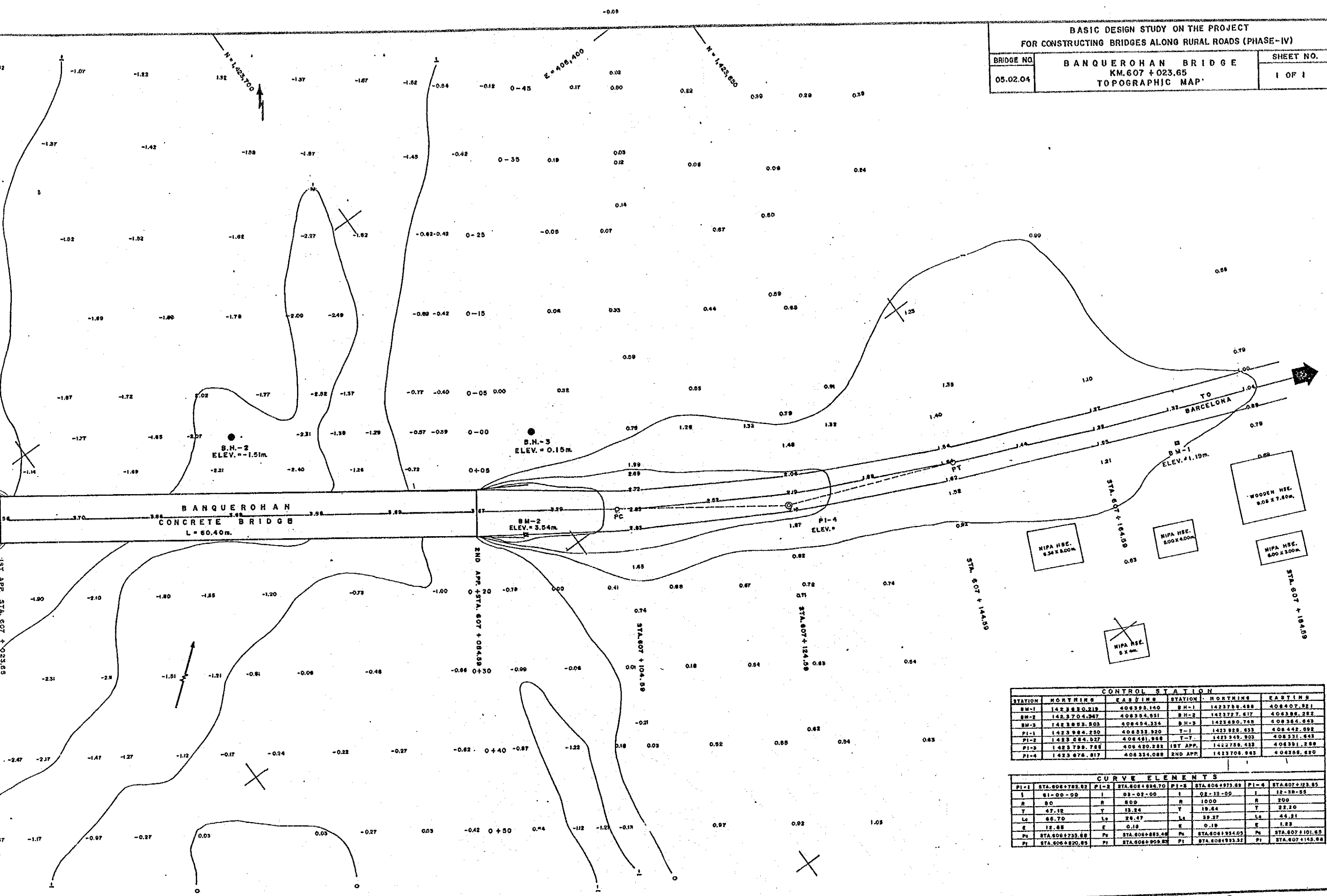






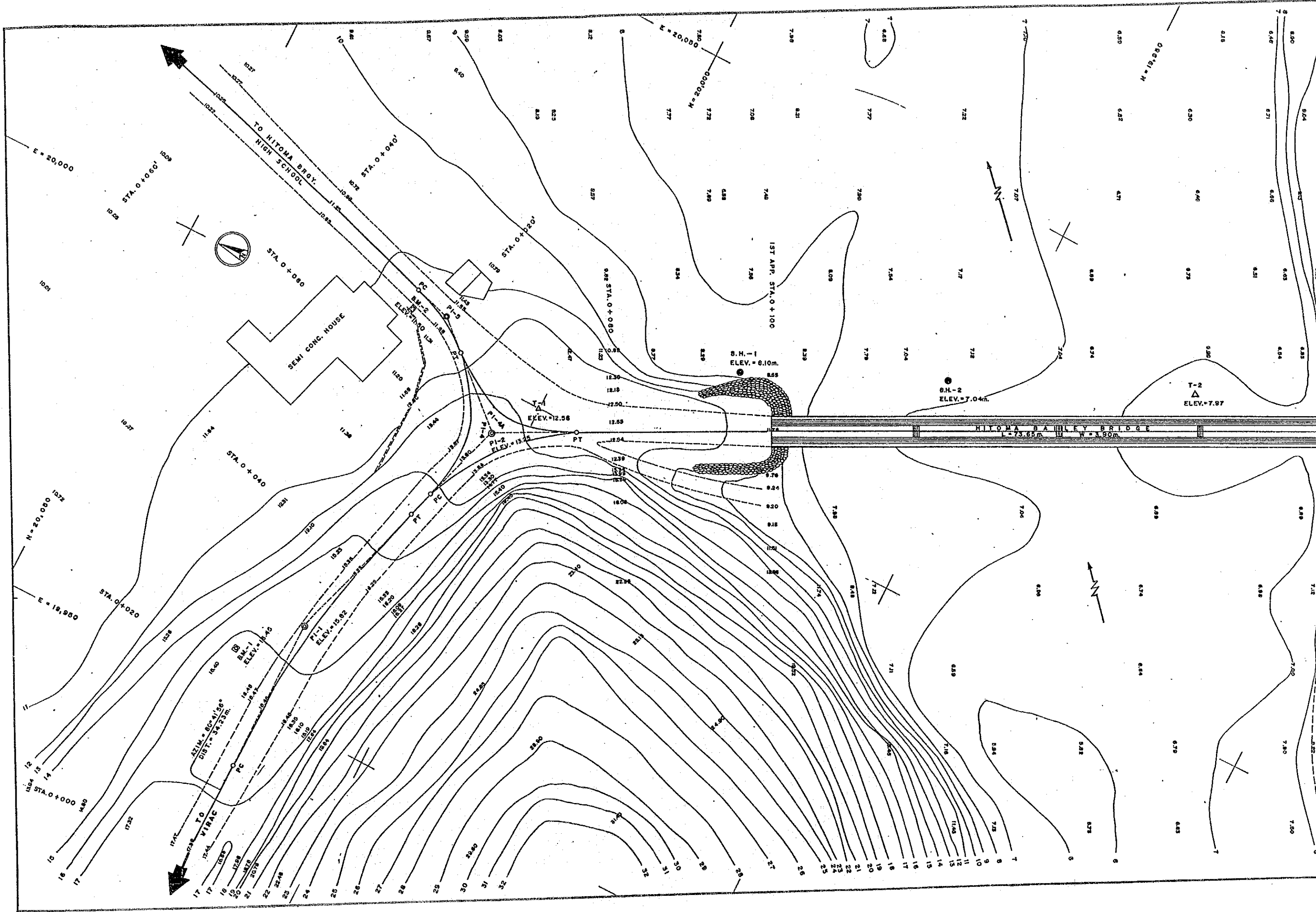


STATION	BM-1	BM-2	BM-3	PI-1	PI-2	PI-3	PI-4
1							
2							
3							
4							
5							
6							
7							
8							
9							
10							



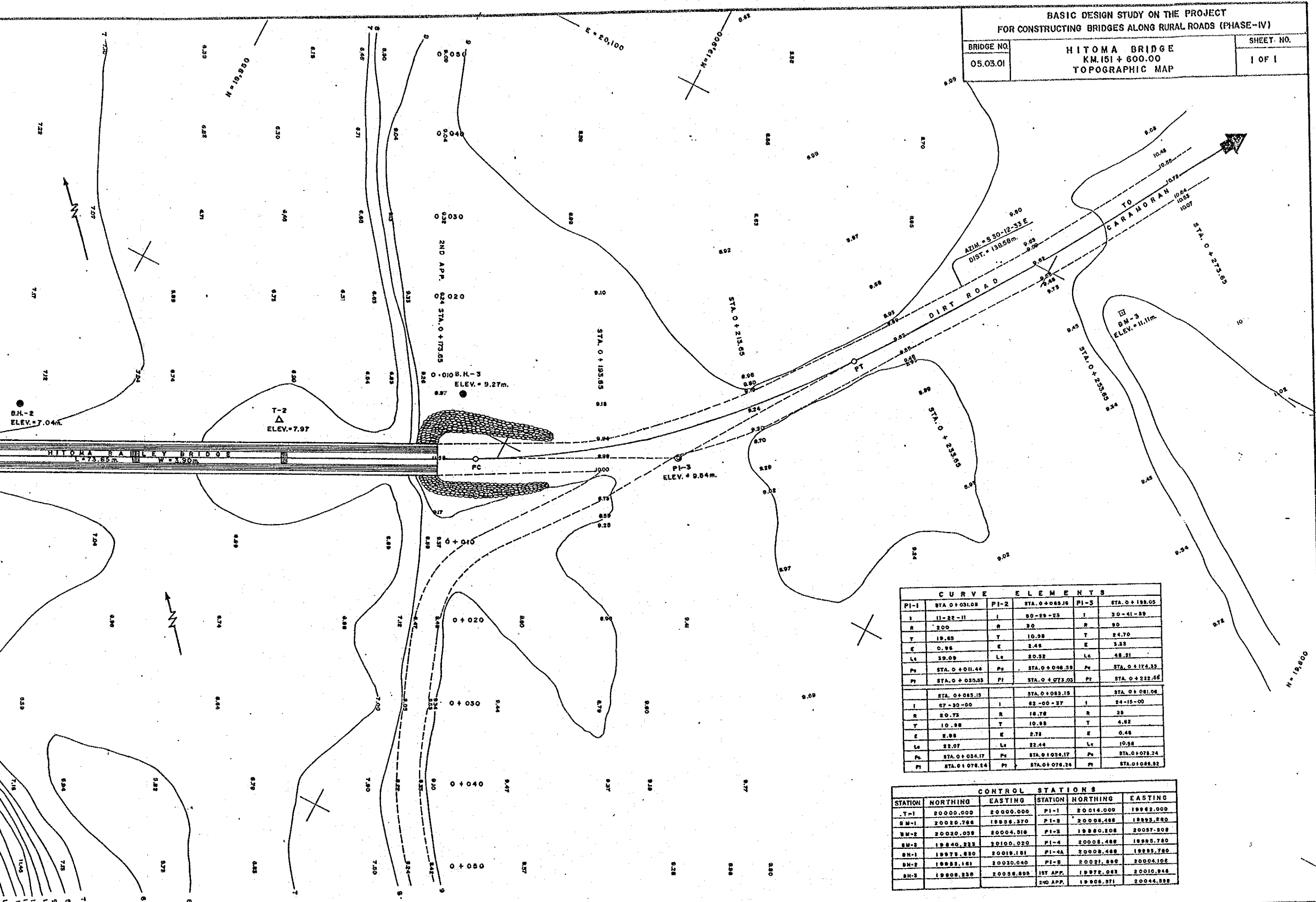
CONTROL STATION					
STATION	NORTHING	EASTING	STATION	NORTHING	EASTING
B.M.-1	1423550.219	406395.160	B.M.-1	142378.488	406407.921
B.M.-2	1423704.247	406354.931	B.M.-2	142377.617	406385.252
B.M.-3	1423888.903	406454.334	B.M.-3	1423690.748	406354.643
PI-1	1423984.250	406533.920	T-1	1423828.633	406442.692
PI-2	1423884.027	406461.856	T-7	1423345.903	406331.443
PI-3	1423798.786	406480.282	1ST APP.	1423758.432	406391.250
PI-4	1423676.817	406354.088	2ND APP.	1423705.963	406306.620

CURVE ELEMENTS					
PI-1	STA. 606+782.82	PI-2	STA. 606+884.70	PI-3	STA. 606+973.68
I	61-00-00	I	03-07-00	I	02-13-00
R	80	R	800	R	1000
T	47.12	T	13.24	T	18.84
Lc	66.70	Lc	26.47	Lc	38.27
E	12.68	E	0.19	E	0.19
Pc	STA. 606+733.68	Pc	STA. 606+883.48	Pc	STA. 606+954.03
Pt	STA. 606+820.85	Pt	STA. 606+909.82	Pt	STA. 606+993.32
PI-4	STA. 607+123.95	PI-4	STA. 607+123.95	PI-4	STA. 607+123.95
I	12-38-55	I	12-38-55	I	12-38-55
R	250	R	250	R	250
T	22.20	T	22.20	T	22.20
Lc	44.21	Lc	44.21	Lc	44.21
E	1.23	E	1.23	E	1.23
Pc	STA. 607+101.83	Pc	STA. 607+101.83	Pc	STA. 607+101.83
Pt	STA. 607+145.86	Pt	STA. 607+145.86	Pt	STA. 607+145.86



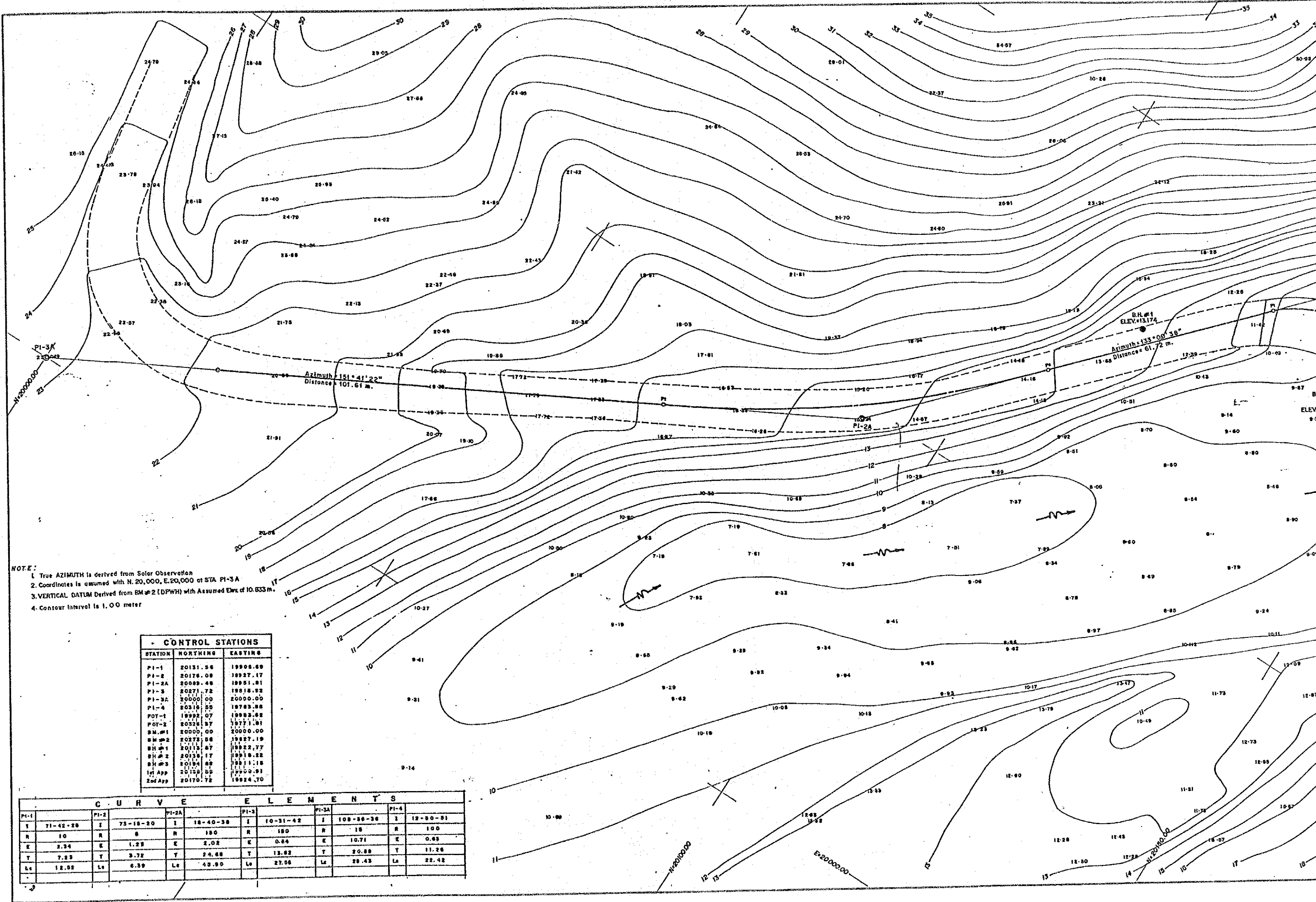
BASIC DESIGN STUDY ON THE PROJECT  
FOR CONSTRUCTING BRIDGES ALONG RURAL ROADS (PHASE-IV)

BRIDGE NO. 05.03.01	HITOMA BRIDGE KM.151 + 600.00 TOPOGRAPHIC MAP	SHEET NO. 1 OF 1
------------------------	---	---------------------



CURVE ELEMENTS					
PI-1	STA. 0 + 031.08	PI-2	STA. 0 + 083.18	PI-3	STA. 0 + 193.05
I	11-22-11	I	80-22-25	I	30-41-39
R	200	R	30	R	30
T	19.85	T	10.38	T	24.70
E	0.96	E	2.45	E	3.33
Lc	39.09	Lc	20.32	Lc	48.21
Pc	STA. 0 + 011.44	Pc	STA. 0 + 046.59	Pc	STA. 0 + 174.33
Pt	STA. 0 + 050.53	Pt	STA. 0 + 073.03	Pt	STA. 0 + 222.56
	STA. 0 + 083.15		STA. 0 + 083.15		STA. 0 + 081.06
I	27-20-00	I	22-00-27	I	24-15-00
R	20.73	R	18.78	R	25
T	10.98	T	10.38	T	4.82
E	2.88	E	2.73	E	0.46
Lc	22.07	Lc	22.44	Lc	10.38
Pc	STA. 0 + 034.17	Pc	STA. 0 + 034.17	Pc	STA. 0 + 078.24
Pt	STA. 0 + 076.24	Pt	STA. 0 + 076.24	Pt	STA. 0 + 086.82

CONTROL STATIONS					
STATION	NORTHING	EASTING	STATION	NORTHING	EASTING
T-1	20000.000	20000.000	PI-1	20014.000	19962.000
B.M.-1	20020.766	19958.370	PI-2	20008.488	19995.800
B.M.-2	20020.038	20004.818	PI-3	19980.208	20057.508
B.M.-3	19940.233	20100.020	PI-4	20008.488	19995.780
B.M.-1	19975.820	20019.151	PI-4A	20008.488	19995.780
B.M.-2	19982.161	20030.040	PI-5	20021.882	20004.102
B.M.-3	19908.238	20038.888	1ST APP.	19972.082	20010.948
			2ND APP.	19908.371	20044.888



- NOTE:
1. True AZIMUTH is derived from Solar Observation
  2. Coordinates is assumed with N. 20,000, E. 20,000 of STA PI-3A
  3. VERTICAL DATUM Derived from BM #2 (DPWH) with Assumed Elev. of 10.633 m.
  4. Contour Interval is 1.00 meter

CONTROL STATIONS		
STATION	NORTHING	EASTING
PI-1	20131.56	19906.69
PI-2	20126.08	19927.17
PI-2A	20089.48	19951.81
PI-3	20271.72	19818.92
PI-3A	20000.00	20000.00
PI-4	20319.50	19783.88
POT-1	19992.07	19983.62
POT-2	20321.87	19771.81
B.M. #1	20000.00	20000.00
B.M. #2	20273.58	19927.19
B.H. #1	20113.67	19922.77
B.H. #2	20138.17	19918.22
B.H. #3	20194.89	19911.18
1st App	20159.59	19900.91
2nd App	20170.78	19924.70

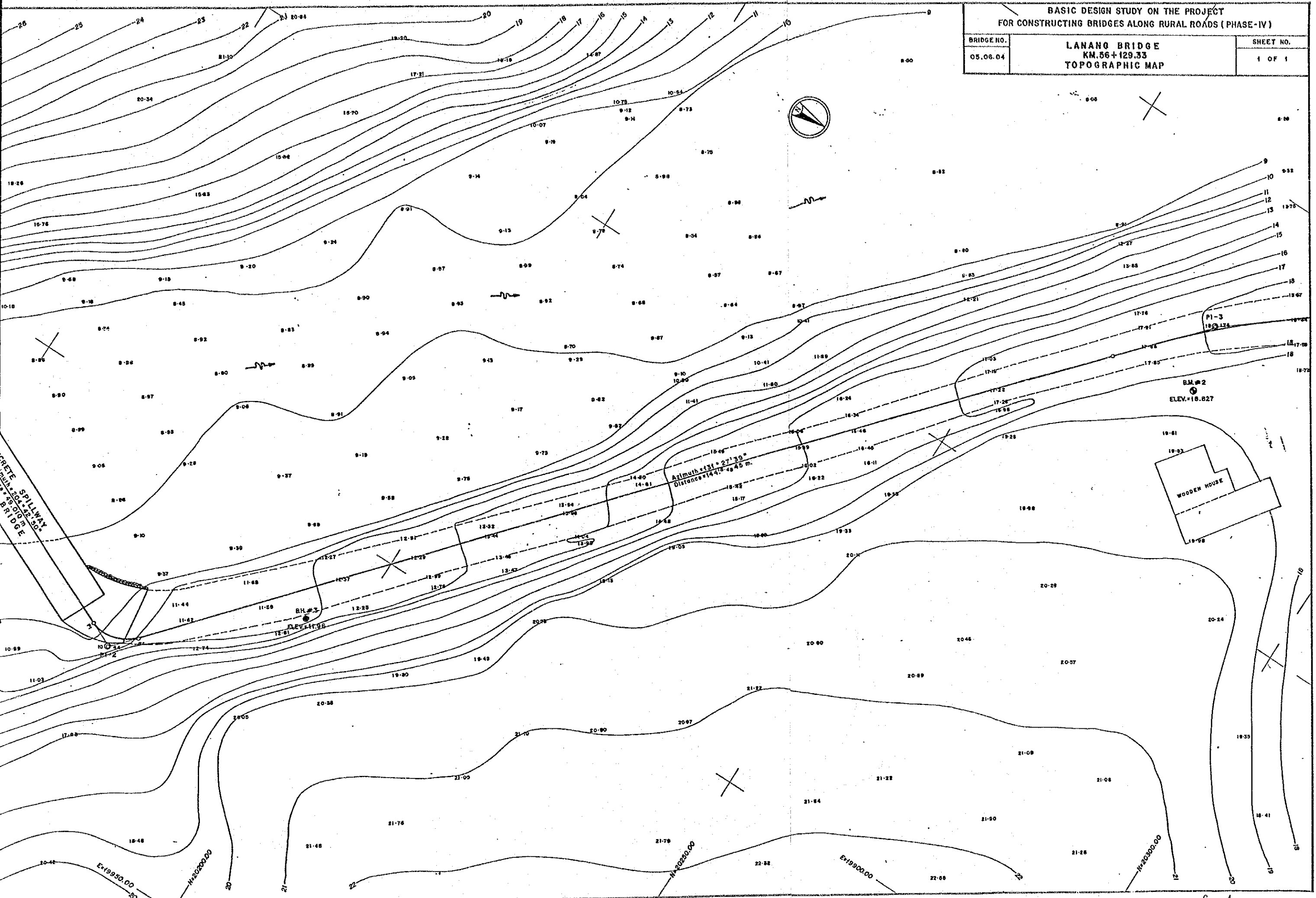
CURVE ELEMENTS											
PI-1	PI-2	PI-2A	PI-3	PI-3A	PI-4	PI-1	PI-2	PI-2A	PI-3		
I	71-42-28	I	73-18-20	I	18-40-38	I	10-31-42	I	108-38-38	I	12-30-31
R	10	R	8	R	180	R	180	R	18	R	100
E	2.34	E	1.28	E	2.02	E	0.84	E	10.71	E	0.69
T	7.23	T	3.72	T	24.68	T	13.82	T	20.89	T	11.28
Lc	12.62	Lc	6.39	Lc	43.90	Lc	27.56	Lc	28.43	Lc	22.42





BASIC DESIGN STUDY ON THE PROJECT  
FOR CONSTRUCTING BRIDGES ALONG RURAL ROADS (PHASE-IV)

BRIDGE NO. 05.06.04	LANANG BRIDGE KM.56+129.33 TOPOGRAPHIC MAP	SHEET NO. 1 OF 1
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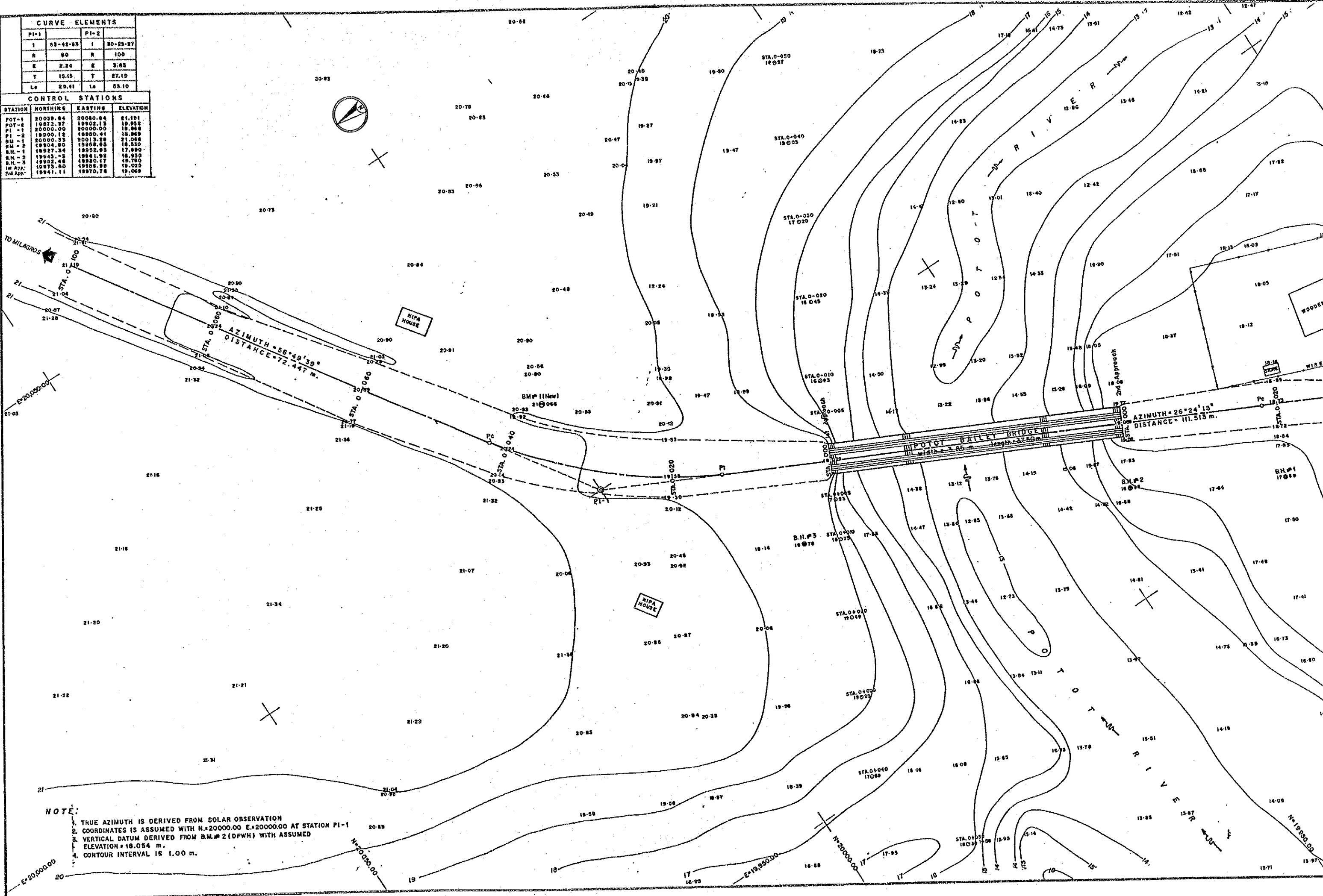


**CURVE ELEMENTS**

PI-1	53-42-59	PI-2	30-23-27
R	90	R	100
E	2.24	E	3.62
Y	19.15	Y	27.10
Ls	29.41	Ls	53.10

**CONTROL STATIONS**

STATION	NORTHING	EASTING	ELEVATION
POT-1	20035.64	20000.04	21.191
POT-2	19972.37	19902.13	19.952
PI-1	20000.00	20000.00	19.998
PI-2	19900.12	19900.41	18.869
BM-1	20000.33	20013.28	21.058
BM-2	19904.80	19922.85	18.530
S.N.-1	19927.34	19922.83	17.690
S.N.-2	19943.43	19951.92	18.930
S.N.-3	19921.48	19920.17	18.750
1st App.	19975.80	19928.90	19.029
2nd App.	19941.11	19970.76	19.069



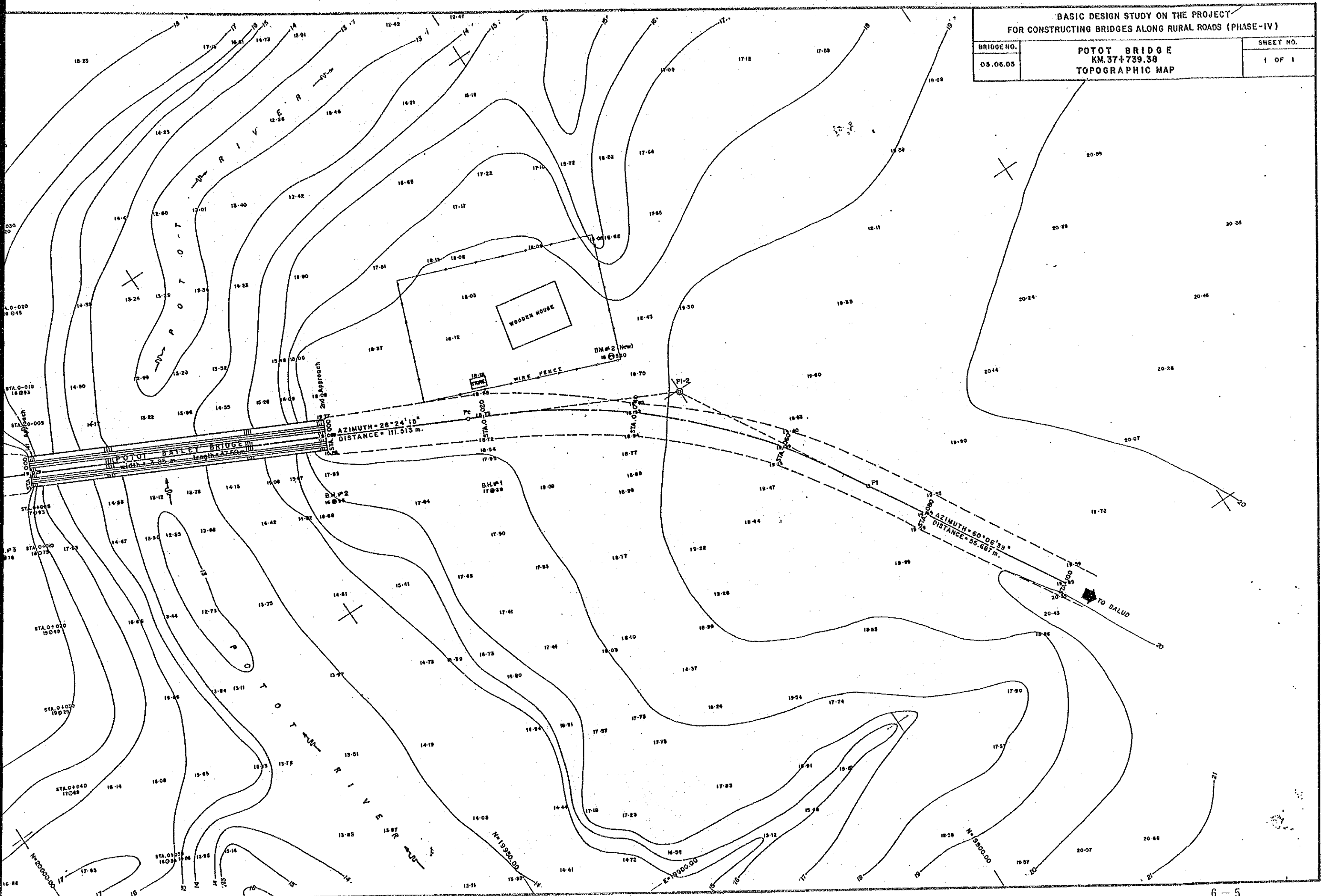
$\text{AZIMUTH} = 56^{\circ}49'39''$   
 $\text{DISTANCE} = 72.447 \text{ m.}$

$\text{AZIMUTH} = 26^{\circ}24'18''$   
 $\text{DISTANCE} = 111.513 \text{ m.}$

**NOTE:**  
 1. TRUE AZIMUTH IS DERIVED FROM SOLAR OBSERVATION  
 2. COORDINATES IS ASSUMED WITH N. = 20000.00 E. = 20000.00 AT STATION PI-1  
 3. VERTICAL DATUM DERIVED FROM B.M.# 2 (DPWH) WITH ASSUMED ELEVATION = 19.054 m.  
 4. CONTOUR INTERVAL IS 1.00 m.

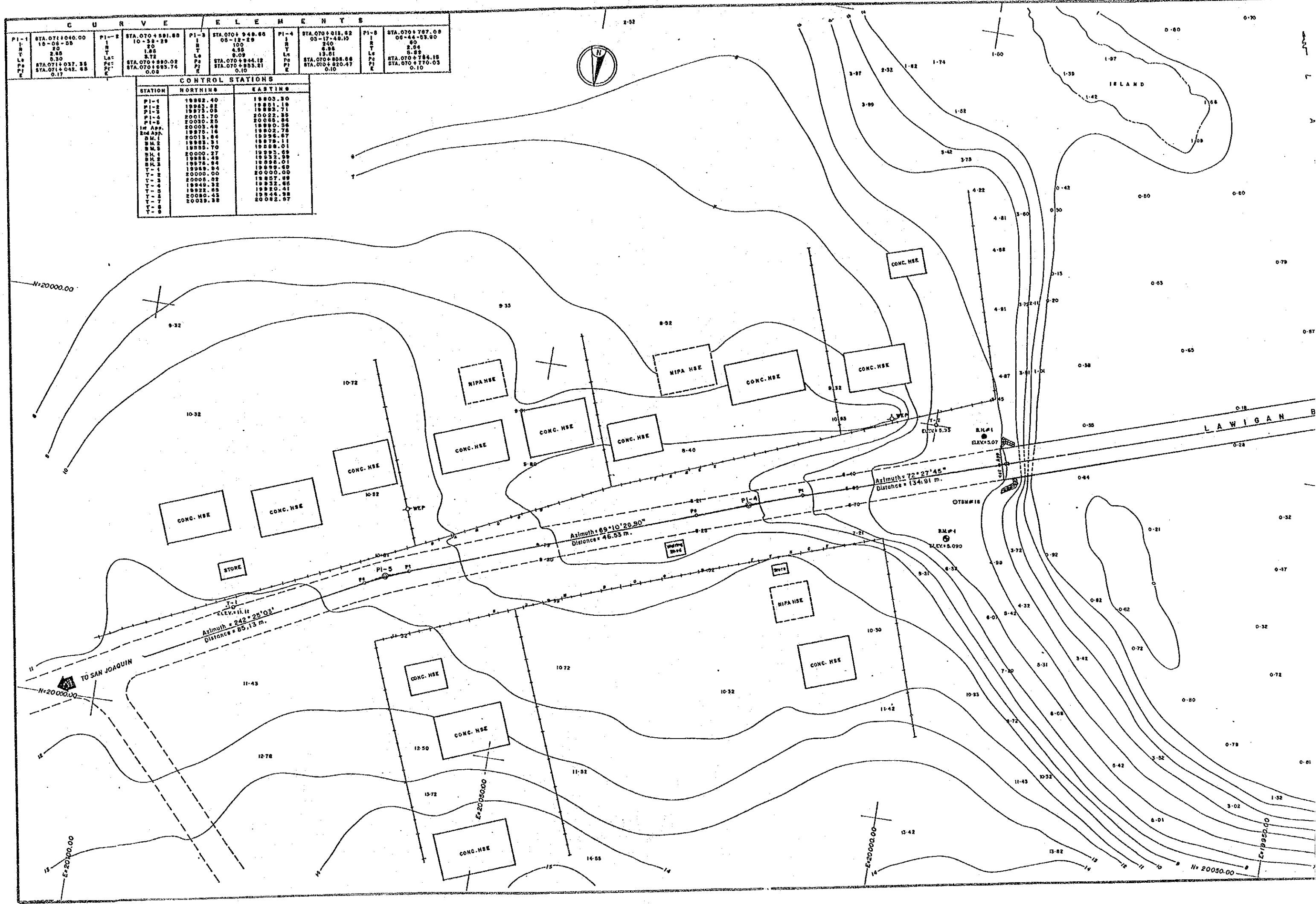
BASIC DESIGN STUDY ON THE PROJECT  
FOR CONSTRUCTING BRIDGES ALONG RURAL ROADS (PHASE-IV)

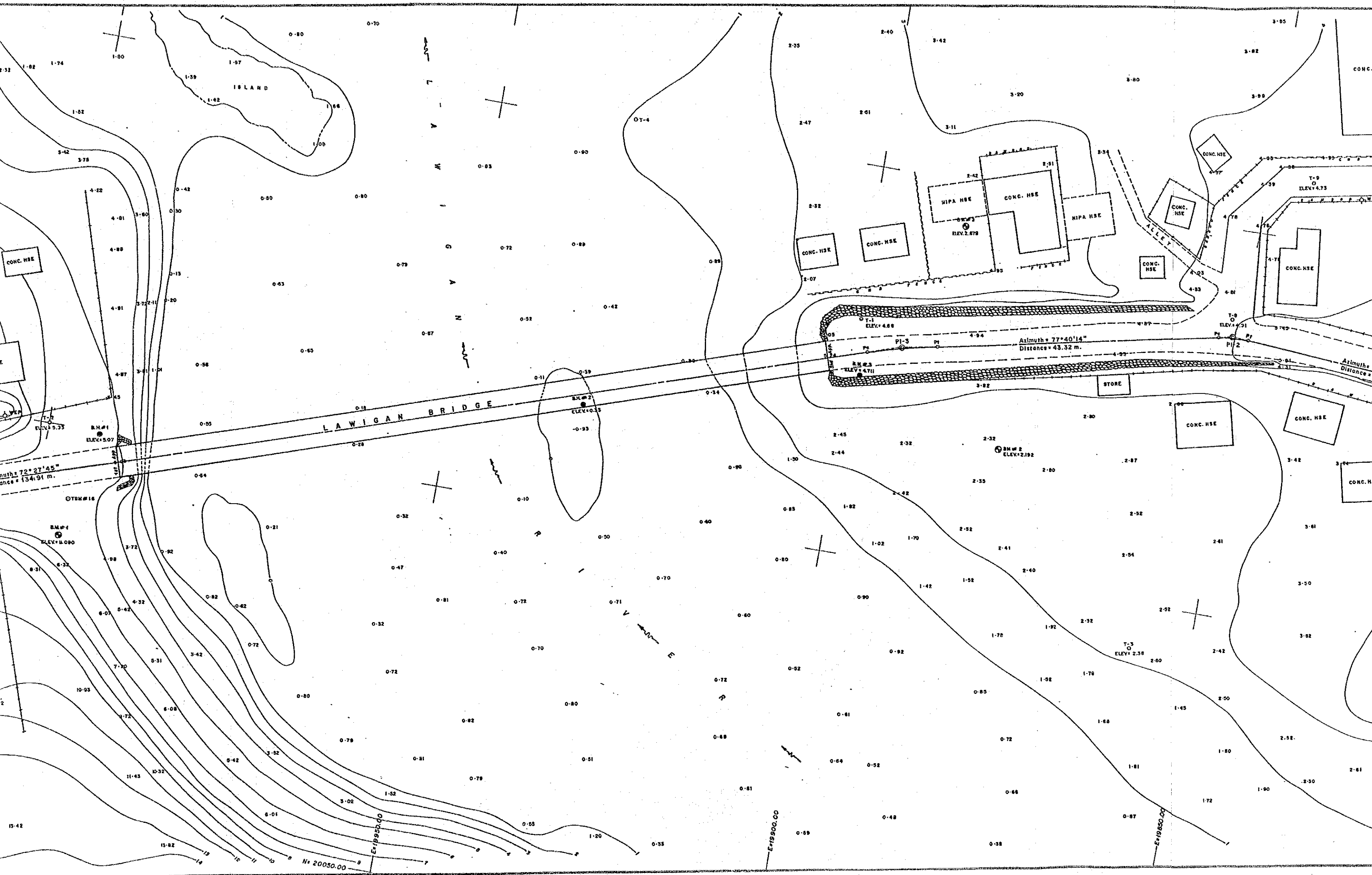
BRIDGE NO.	POTOT BRIDGE KM. 37+739.38 TOPOGRAPHIC MAP	SHEET NO.
05.06.05		1 OF 1



C U R V E			E L E M E N T S						
PI-1	STA. 071+040.00	PI-E	STA. 070+881.88	PI-3	STA. 070+948.88	PI-4	STA. 070+918.82	PI-5	STA. 070+787.08
I	10-05-35	I	10-24-38	I	06-12-28	I	03-17-48.10	I	06-44-03.90
R	20	R	20	R	100	R	250	R	50
T	2.35	T	1.85	T	4.85	T	6.85	T	2.84
Lc	0.30	Lc	0.75	Lc	0.09	Lc	13.81	Lc	8.88
Pc	STA. 071+037.88	Pc	STA. 070+880.02	Pc	STA. 070+944.12	Pc	STA. 070+808.68	Pc	STA. 070+784.18
Pe	STA. 071+042.88	Pe	STA. 070+883.74	Pe	STA. 070+953.21	Pe	STA. 070+920.47	Pe	STA. 070+770.03
E	0.17	E	0.02	E	0.10	E	0.10	E	0.10

CONTROL STATIONS		
STATION	NORTHING	EASTING
PI-1	19862.40	19803.30
PI-2	19823.82	19881.18
PI-3	19873.05	19893.71
PI-4	20013.70	20022.38
PI-5	20030.25	20068.84
IM App.	20003.48	19990.38
BM #1	19875.18	19905.78
BM #2	20015.84	19998.67
BM #3	19883.31	19978.11
BM #4	19855.70	19932.85
BM #5	20000.27	19993.69
BM #6	19882.48	19932.99
BM #7	19878.84	19992.01
BM #8	19889.34	19990.60
T-1	20000.00	20000.00
T-2	20008.02	19887.88
T-3	19840.32	19932.85
T-4	19832.85	19920.41
T-5	20080.43	19945.88
T-6	20019.38	20082.87
T-7		
T-8		
T-9		





LAWIGAN BRIDGE

NIPA HSE  
CONC. HSE  
NIPA HSE

STORE

CONC. HSE  
CONC. HSE  
CONC. HSE

CONC. HSE

CONC. HSE

CONC. HSE

CONC. HSE

CONC. HSE

CONC. HSE

CONC. HSE

CONC. HSE

CONC. HSE

CONC. HSE

CONC. HSE

B.M. #1  
ELEV. 5.33

B.M. #1  
ELEV. 5.07

B.M. #1  
ELEV. 5.090

B.M. #2  
ELEV. 0.53

B.M. #2  
ELEV. 2.192

T-3  
ELEV. 2.38

T-1  
ELEV. 4.68

T-2  
ELEV. 4.73

T-2  
ELEV. 4.91

N = 20050.00

E = 19950.00

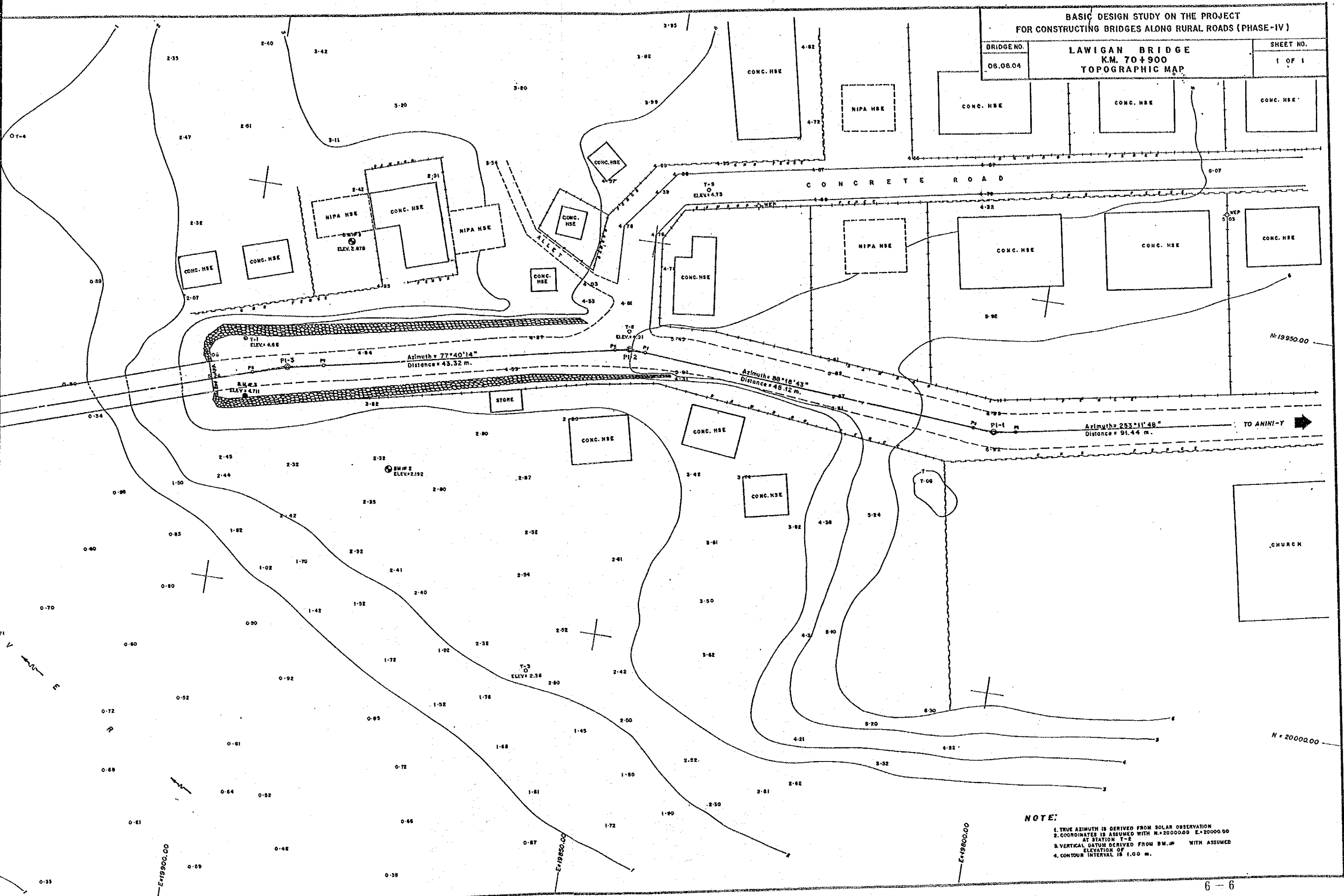
E = 19850.00

BASIC DESIGN STUDY ON THE PROJECT  
FOR CONSTRUCTING BRIDGES ALONG RURAL ROADS (PHASE-IV)

BRIDGE NO.  
08.08.04

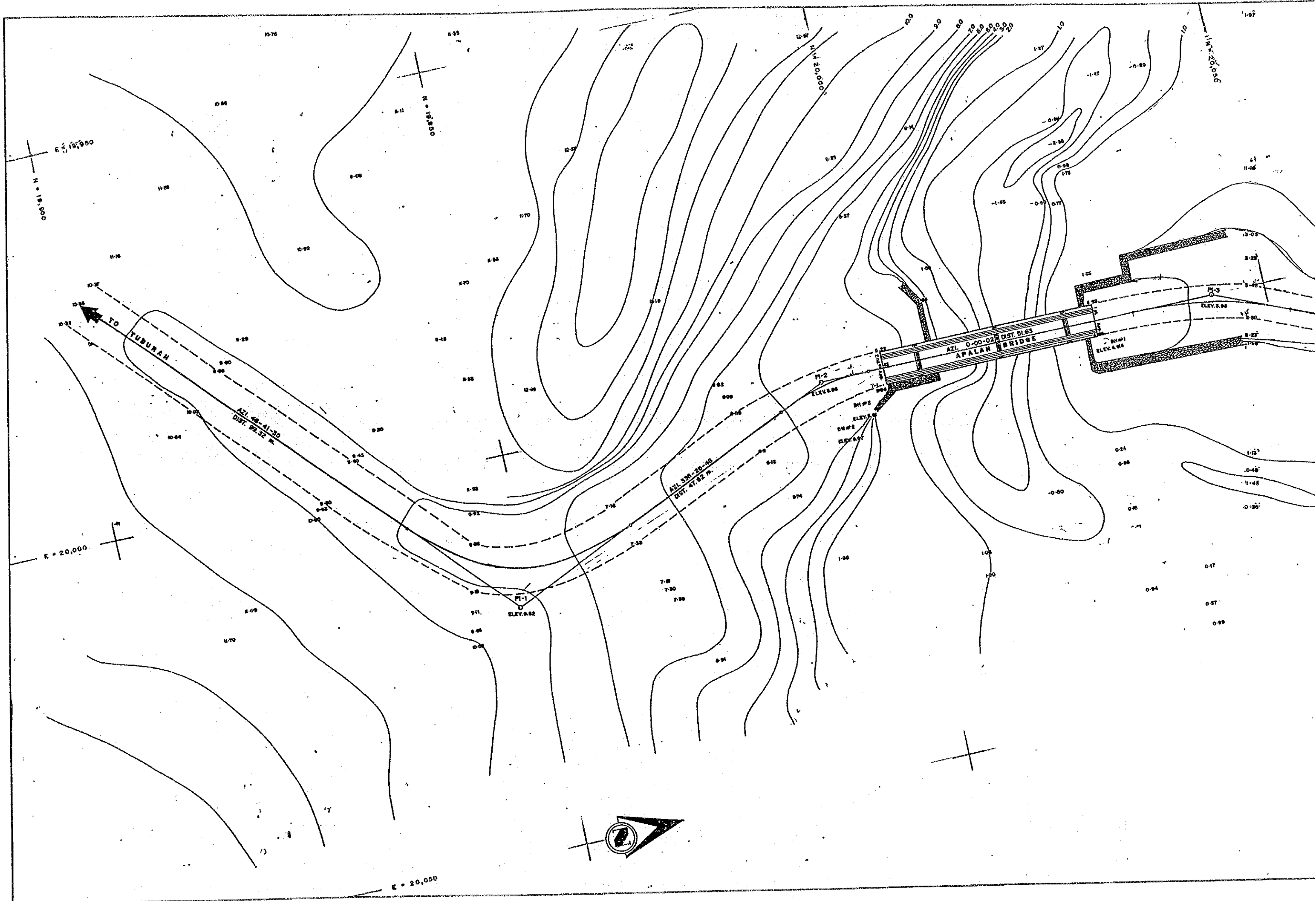
LAWIGAN BRIDGE  
K.M. 70+900  
TOPOGRAPHIC MAP

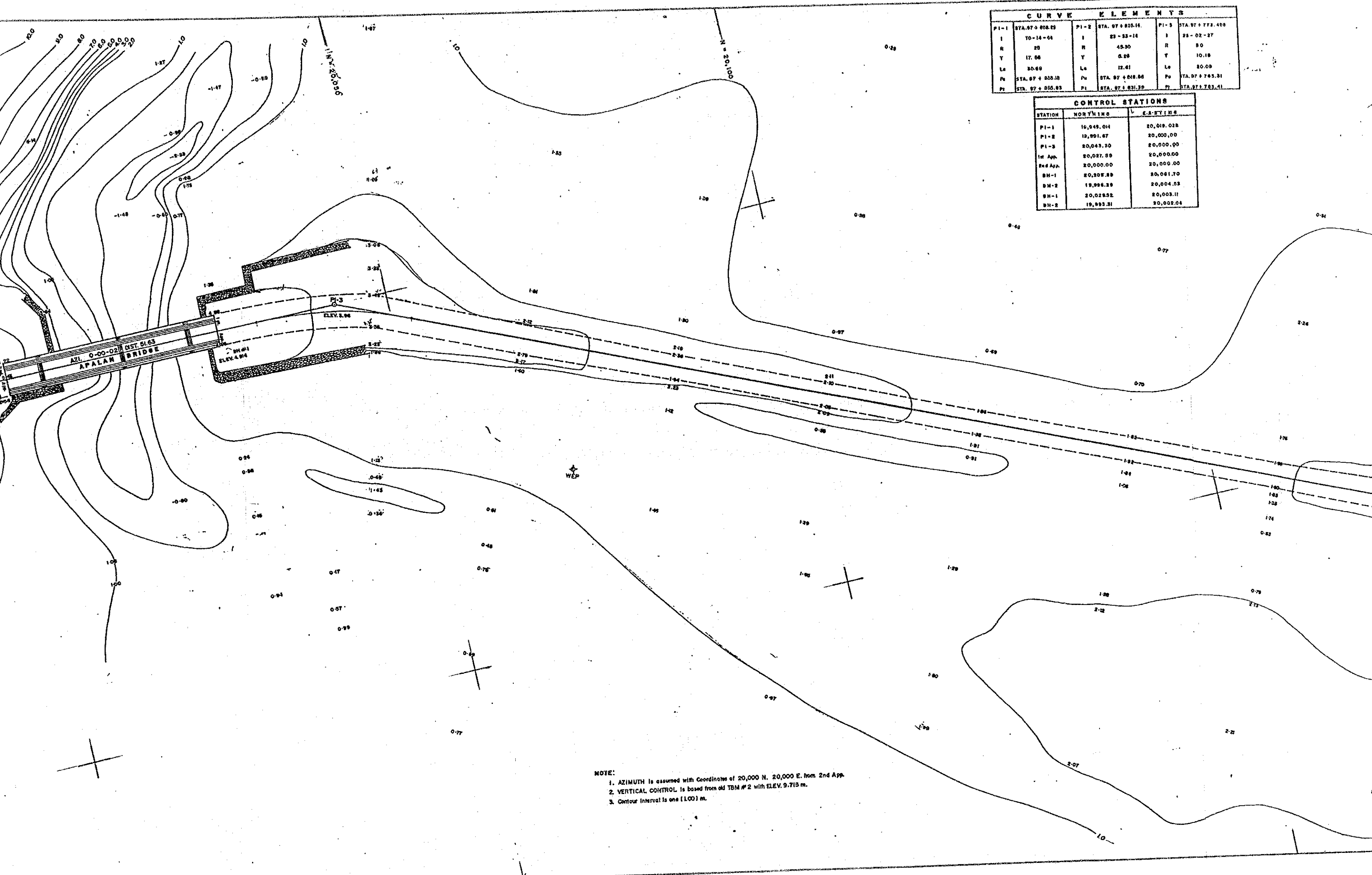
SHEET NO.  
1 OF 1



NOTE:

1. TRUE AZIMUTH IS DERIVED FROM SOLAR OBSERVATION
2. COORDINATES IS ASSUMED WITH N=2000000 E=2000000
3. VERTICAL DATUM DERIVED FROM B.M.# WITH ASSUMED ELEVATION OF 1.00 M.
4. CONTOUR INTERVAL IS 1.00 M.





CURVE ELEMENTS					
PI-1	STA. 97 + 008.05	PI-2	STA. 97 + 825.14	PI-3	STA. 97 + 772.408
I	70-14-04	I	23-33-14	I	25-02-27
R	25	R	45.30	R	50
Y	17.06	Y	0.29	Y	10.18
Ls	30.69	Ls	12.61	Ls	20.09
Pc	STA. 97 + 008.10	Pc	STA. 97 + 018.06	Pc	STA. 97 + 765.31
Pt	STA. 97 + 005.83	Pt	STA. 97 + 831.35	Pt	STA. 97 + 783.41

CONTROL STATIONS		
STATION	NORTHING	EASTING
PI-1	10,949.014	20,019.028
PI-2	19,991.67	20,000.00
PI-3	20,043.20	20,000.00
1st App.	20,027.89	20,000.00
2nd App.	20,000.00	20,000.00
BH-1	20,205.89	20,061.70
BH-2	19,986.29	20,004.03
BH-3	20,028.52	20,003.11
BH-4	19,993.31	20,002.04

**NOTE:**

1. AZIMUTH is assumed with Coordinates of 20,000 N. 20,000 E. from 2nd App.
2. VERTICAL CONTROL is based from old TBM # 2 with ELEV. 9.715 m.
3. Contour Interval is one (1.00) m.

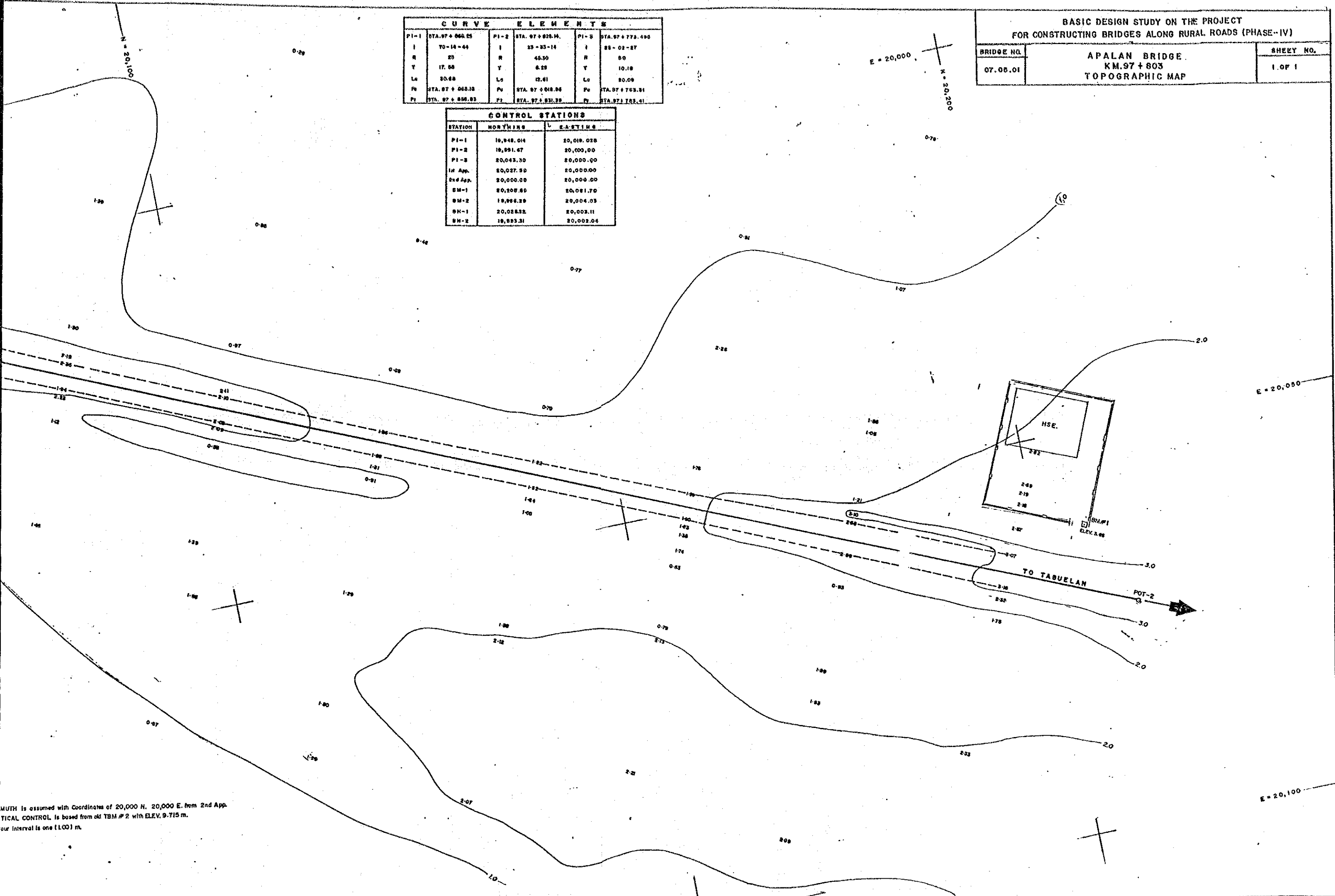


BASIC DESIGN STUDY ON THE PROJECT  
FOR CONSTRUCTING BRIDGES ALONG RURAL ROADS (PHASE-IV)

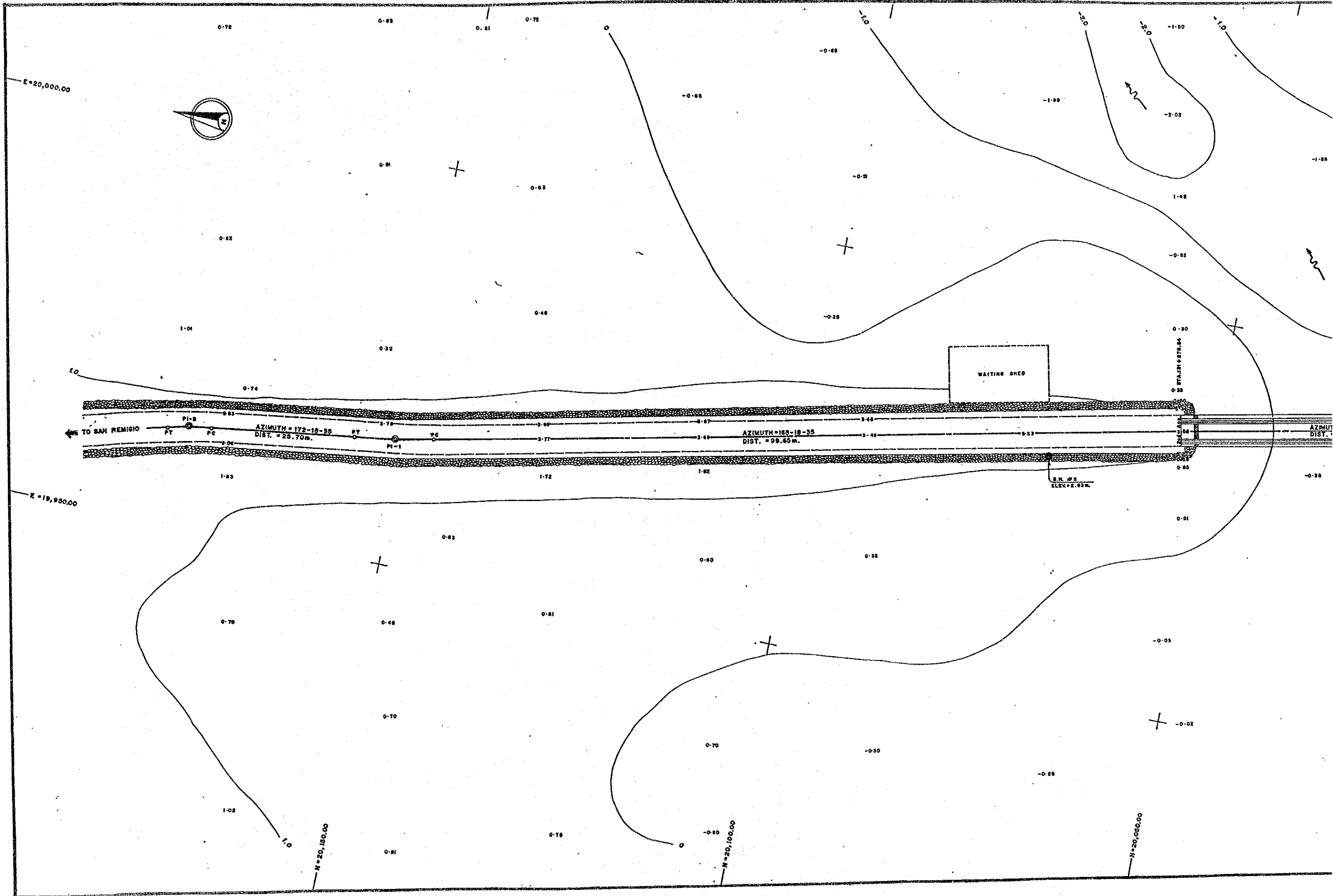
BRIDGE NO.	APALAN BRIDGE KM.97+803	SHEET NO.
07.08.01	TOPOGRAPHIC MAP	1 OF 1

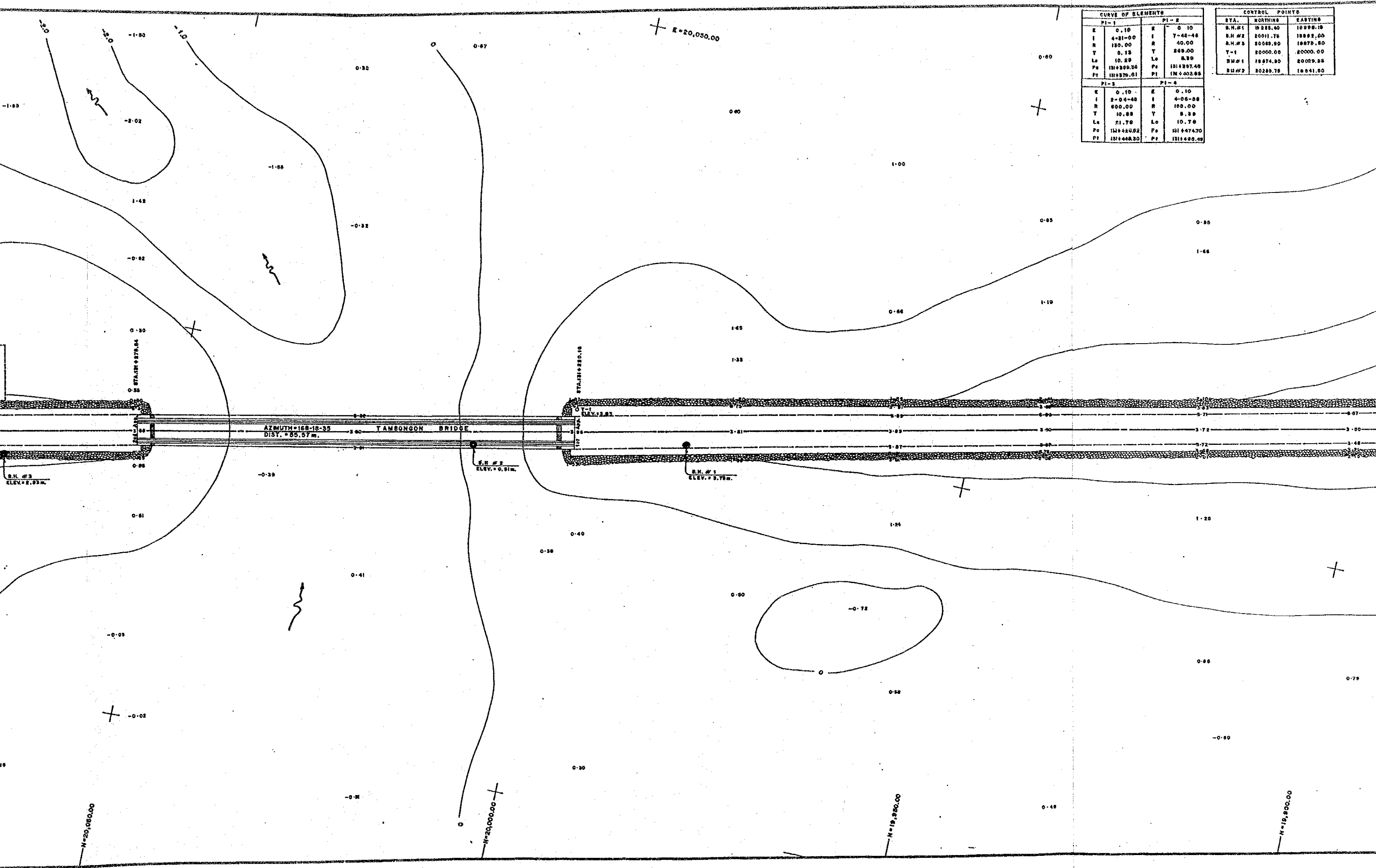
CURVE ELEMENTS					
PI-1	STA. 97+060.25	PI-2	STA. 97+025.14	PI-3	STA. 97+773.490
I	70-14-44	I	23-23-14	I	23-02-27
R	23	R	43.30	R	50
Y	17.58	Y	8.29	Y	10.18
Lc	20.48	Lc	12.41	Lc	20.09
Pc	STA. 97+065.18	Pc	STA. 97+018.96	Pc	STA. 97+763.31
Pt	STA. 97+886.83	Pt	STA. 97+831.29	Pt	STA. 97+783.41

CONTROL STATIONS		
STATION	NORTHING	EASTING
PI-1	19,948.014	20,019.028
PI-2	19,991.67	20,000.00
PI-3	20,043.30	20,000.00
1st App.	20,027.90	20,000.00
2nd App.	20,000.00	20,000.00
BM-1	20,208.89	20,081.70
BM-2	19,995.29	20,004.03
BM-1	20,028.32	20,002.11
BM-2	19,983.31	20,002.04



MUTH is assumed with Coordinates of 20,000 N, 20,000 E. from 2nd App.  
TICAL CONTROL is based from old TBM # 2 with ELEV. 9.715 m.  
our Interval is one (1.00) m.





CURVE OF ELEMENTS			
PI-1		PI-2	
E	0.10	E	0.10
I	4-21-00	I	7-42-48
R	120.00	R	50.00
T	0.13	T	289.00
Lc	10.29	Lc	8.90
Pe	131+309.56	Pe	131+397.48
Pf	131+279.01	Pf	131+402.88
PI-3		PI-4	
E	0.10	E	0.10
I	2-04-48	I	4-06-28
R	600.00	R	100.00
T	10.88	T	5.39
Lc	31.78	Lc	10.78
Pe	131+420.52	Pe	131+474.70
Pf	131+448.30	Pf	131+486.48

CONTROL POINTS		
STA.	NORTHING	EASTING
B.M.#1	2028.60	18892.18
B.M.#2	2001.75	18892.80
B.M.#3	2008.90	18873.80
T-1	20000.00	20000.00
B.M.#1	18874.80	20029.88
B.M.#2	2028.78	18841.80

AZMUTH = 168-18-35  
 DISY. = 55.57m  
 TAMBOGON BRIDGE

B.M. #2  
 ELEV. = 0.91m

B.M. #1  
 ELEV. = 2.75m

N = 20,080.00

N = 20,000.00

N = 19,980.00

N = 19,900.00

BASIC DESIGN STUDY ON THE PROJECT  
FOR CONSTRUCTING BRIDGES ALONG RURAL ROADS (PHASE-IV)

BRIDGE NO.  
07-05-07

TAMBONGON BRIDGE  
KM. 131 + 248.00  
TOPOGRAPHIC MAP

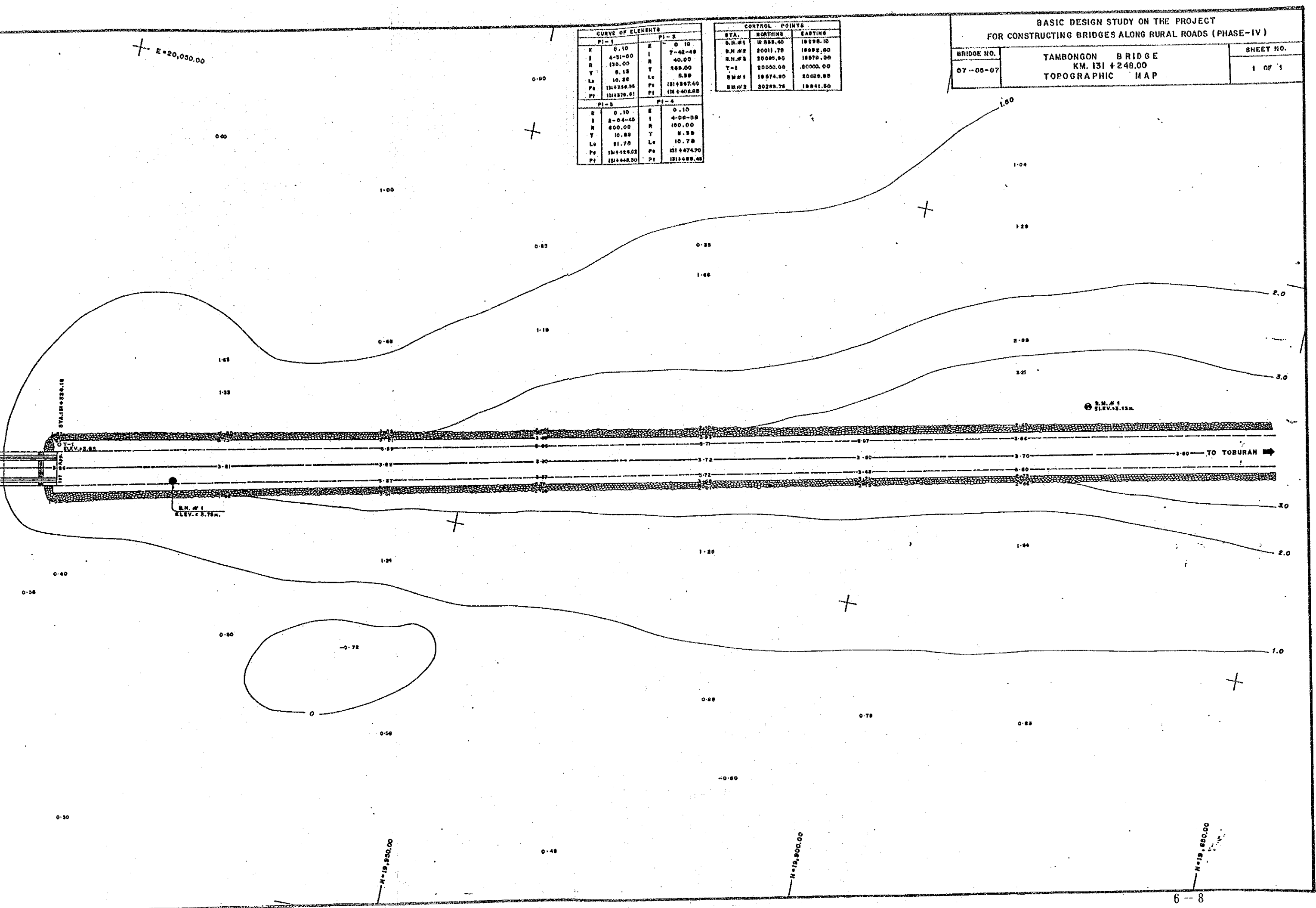
SHEET NO.  
1 OF 1

CURVE OF ELEMENTS			
PI-1		PI-2	
E	0.10	E	0.10
I	4-31-00	I	7-42-48
R	130.00	R	40.00
Y	8.13	Y	248.00
Lc	10.20	Lc	8.39
Pc	1314259.38	Pc	1314397.45
Pt	1314379.01	Pt	1314402.88

CURVE OF ELEMENTS			
PI-3		PI-4	
E	0.10	E	0.10
I	2-04-40	I	4-06-08
R	800.00	R	180.00
Y	10.88	Y	8.38
Lc	21.78	Lc	10.78
Pc	1314426.22	Pc	1314474.70
Pt	1314448.30	Pt	1314488.48

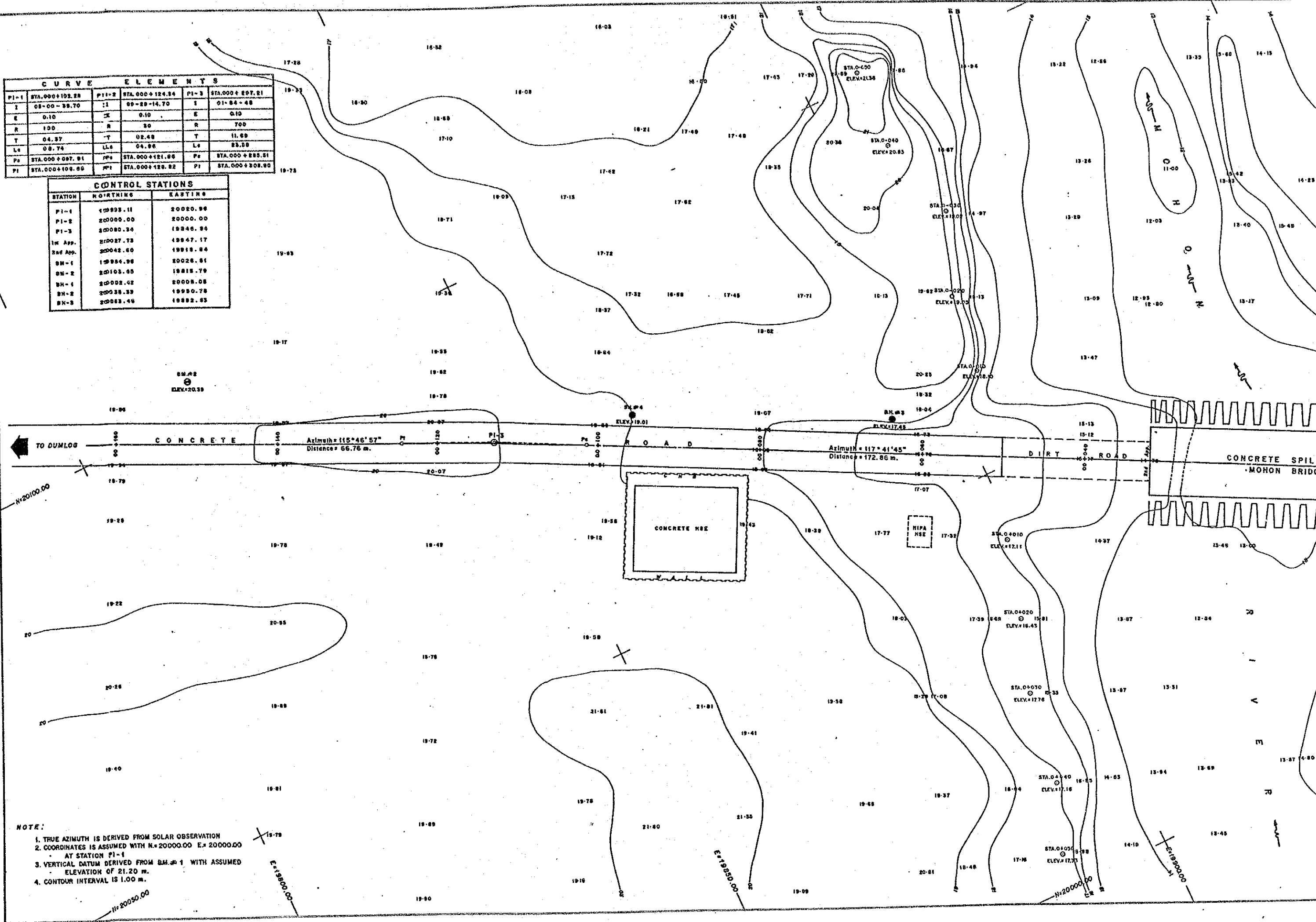
CONTROL POINTS		
STA.	NORTHING	EASTING
B.M.#1	1888.40	1898.10
B.M.#2	2001.78	1898.80
B.M.#3	2000.00	1898.00
T-1	2000.00	2000.00
B.M.#1	1897.80	2002.80
B.M.#2	2028.78	1894.80



E=20,050.00

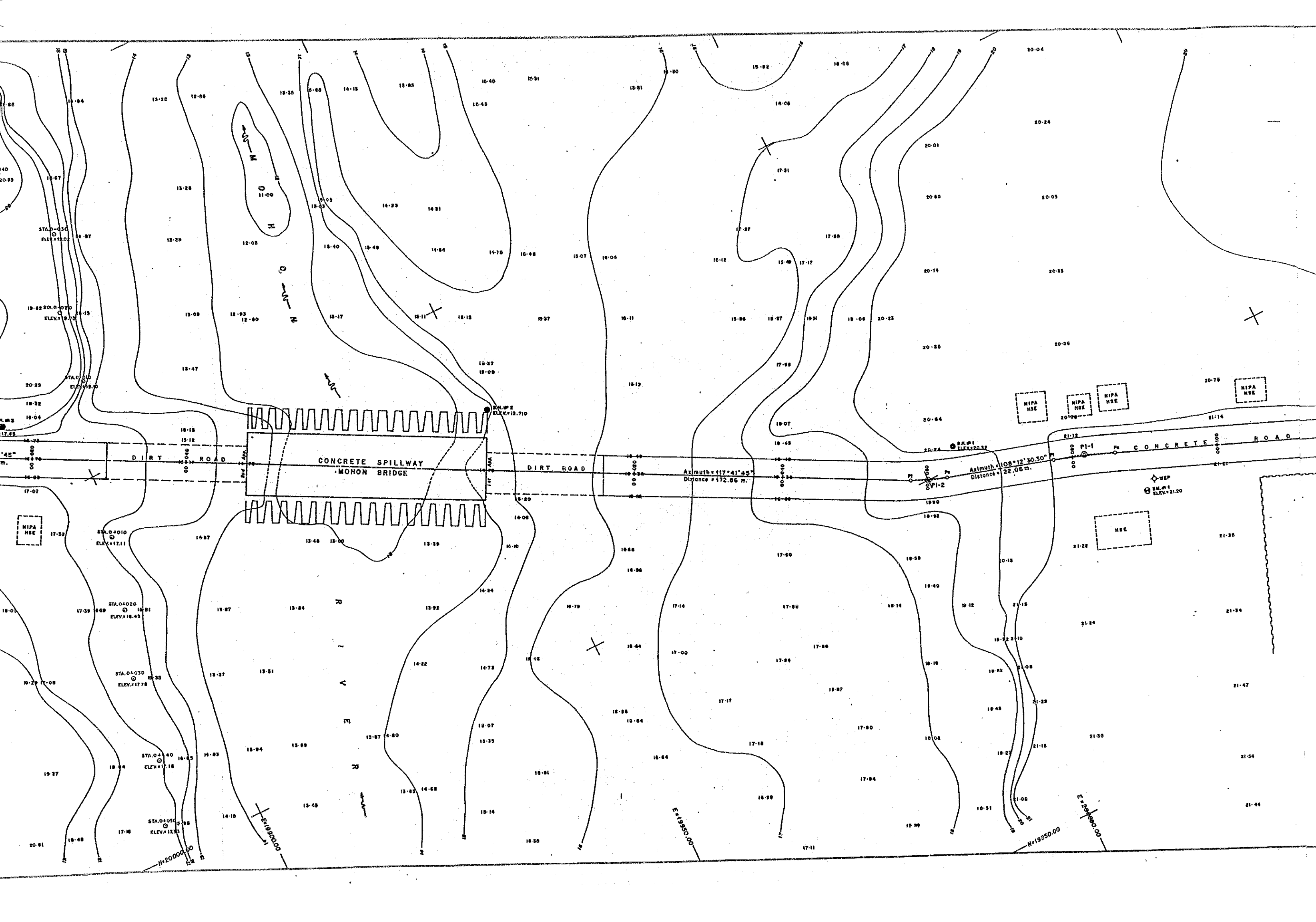
CURVE ELEMENTS					
PI-1	STA. 000+102.28	PI-2	STA. 000+124.34	PI-3	STA. 000+207.21
I	05-00-38.70	I	09-29-14.70	I	01-54-48
E	0.10	E	0.10	E	0.10
R	100	R	30	R	700
T	04.37	T	02.48	T	11.69
Lc	08.74	Lc	04.96	Lc	23.38
Pa	STA. 000+097.91	Pa	STA. 000+121.86	Pa	STA. 000+205.81
Pi	STA. 000+106.89	Pi	STA. 000+128.22	Pi	STA. 000+208.80

CONTROL STATIONS		
STATION	NORTHING	EASTING
PI-1	19995.11	20020.99
PI-2	20000.00	20000.00
PI-3	20000.34	19946.94
1st App.	20027.73	19947.17
2nd App.	20042.60	19913.84
BM-1	19984.98	20026.81
BM-2	20103.85	19818.79
BM-3	20092.42	20008.08
BM-4	20035.33	19980.78
BM-5	20083.46	19992.43



NOTE:

- TRUE AZIMUTH IS DERIVED FROM SOLAR OBSERVATION
- COORDINATES IS ASSUMED WITH N=20000.00 E=20000.00 AT STATION PI-1
- VERTICAL DATUM DERIVED FROM BM.# 1 WITH ASSUMED ELEVATION OF 21.20 m.
- CONTOUR INTERVAL IS 1.00 m.

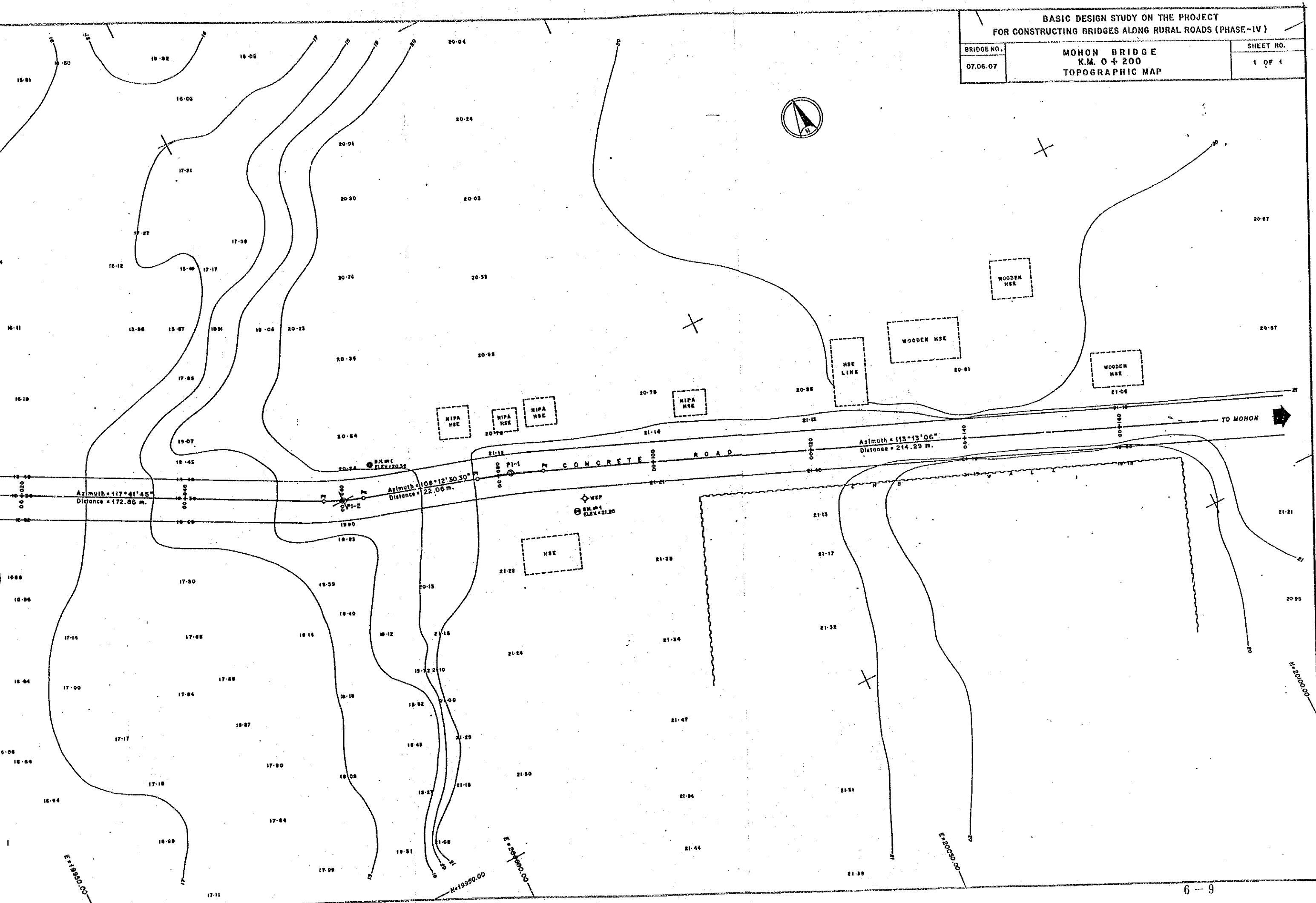


BASIC DESIGN STUDY ON THE PROJECT  
FOR CONSTRUCTING BRIDGES ALONG RURAL ROADS (PHASE-IV)

BRIDGE NO.  
07.06.07

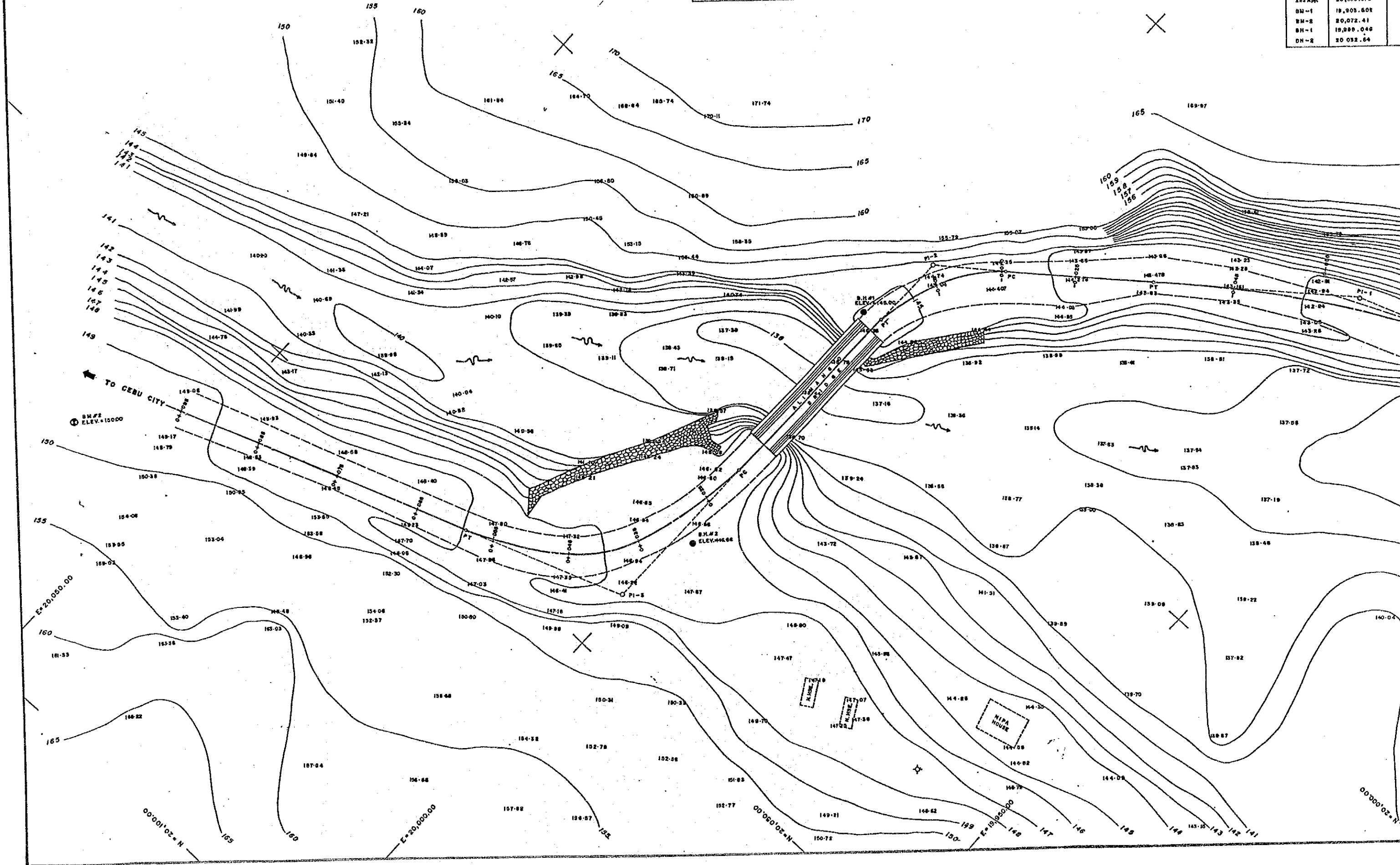
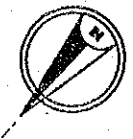
MOHON BRIDGE  
K.M. 0 + 200  
TOPOGRAPHIC MAP

SHEET NO.  
1 OF 1



CURVE ELEMENTS							
PI-1	STA. 28+432.13	PI-2	STA. 28+421.84	PI-3	STA. 28+324.40	PI-4	STA. 28+447.58
I	17-25-20.6	I	48-21-34	I	67-08-11	I	11-30-00
R	180	R	20	R	20	R	110
Y	24.59	Y	8.56	Y	20.23	Y	10.08
Lc	48.42	Lc	14.88	Lc	38.89	Lc	22.02
Pa	STA. 28+437.3	Pa	STA. 28+478.85	Pa	STA. 28+314.18	Pa	STA. 28+437.55
Pt	STA. 28+409.18	Pt	STA. 28+480.54	Pt	STA. 28+349.27	Pt	STA. 28+437.57

CONTROL STA	
STATION	NORTHING
PI-1	19,967.210
PI-2	19,888.943
PI-3	20,042.787
PI-4	19,942.900
PI-5	20,026.156
1st App.	20,000.000
2nd App.	20,018.878
BM-1	19,903.602
BM-2	20,072.41
BM-3	19,989.046
BM-4	20,032.54



TO CEBU CITY

NEPA HOUSE

E+20,050.00

E+20,000.00

N+20,050.00

N+20,100.00

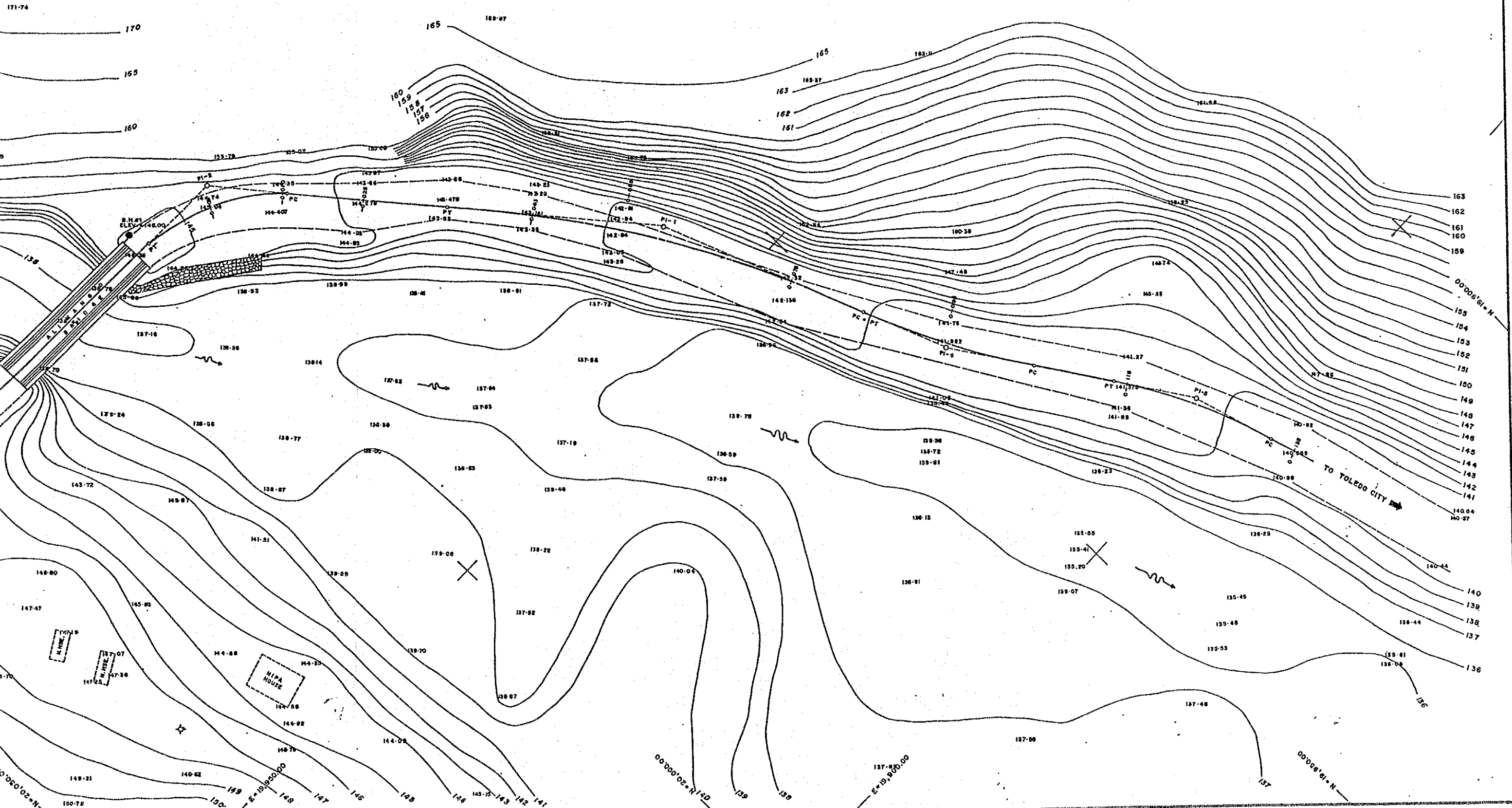
N+20,000.00



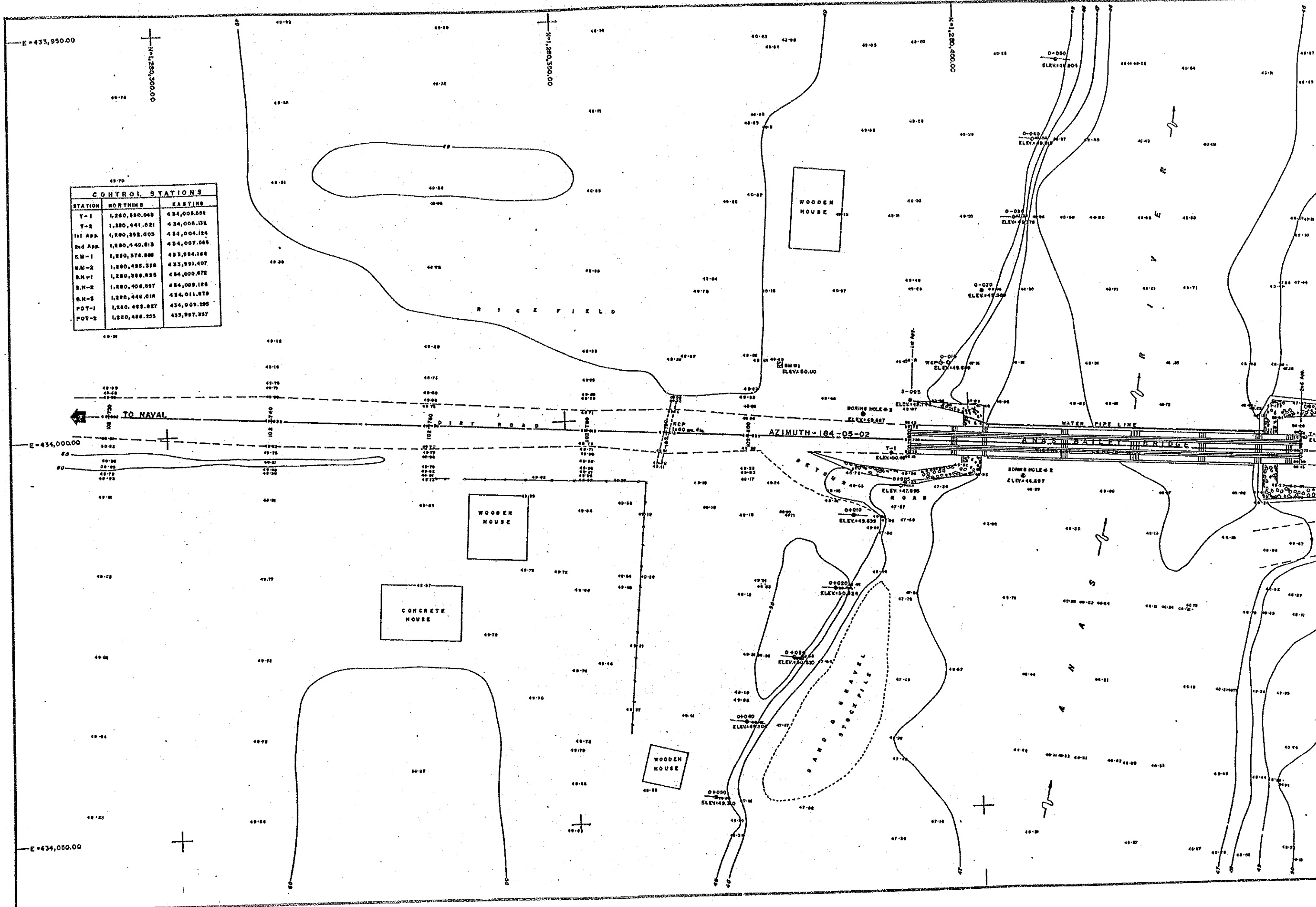
CURVE ELEMENTS							
PI-2	PI-3	PI-4	PI-5	PI-6	PI-7	PI-8	PI-9
STA. 28+481.64	STA. 28+834.40	STA. 28+447.88	STA. 28+418.80	STA. 28+400.00	STA. 28+418.80	STA. 28+447.88	STA. 28+834.40
43-21=24	67-58=11	11-20=00	16-48=00	11-20=00	16-48=00	43-21=24	67-58=11
R	R	R	R	R	R	R	R
20	20	110	48	110	48	20	20
T	T	T	T	T	T	T	T
8.88	10.28	10.08	0.97	10.08	0.97	8.88	10.28
Lc	Lc	Lc	Lc	Lc	Lc	Lc	Lc
16.88	20.56	22.02	19.00	22.02	19.00	16.88	20.56
Pe	Pe	Pe	Pe	Pe	Pe	Pe	Pe
STA. 28+472.68	STA. 28+431.18	STA. 28+447.88	STA. 28+400.00	STA. 28+447.88	STA. 28+400.00	STA. 28+431.18	STA. 28+472.68
PI	PI	PI	PI	PI	PI	PI	PI
STA. 28+408.84	STA. 28+848.87	STA. 28+447.88	STA. 28+447.88	STA. 28+447.88	STA. 28+447.88	STA. 28+848.87	STA. 28+408.84

CONTROL STATIONS		
STATION	NORTHING	EASTING
PI-1	19,927.210	19,940.29
PI-2	19,926.949	19,980.863
PI-3	20,042.787	20,000.830
PI-4	19,842.000	19,928.898
PI-5	19,928.105	19,908.804
1st App.	20,000.000	20,000.000
2nd App.	20,018.978	20,000.231
BM-1	19,903.802	19,990.620
BM-2	20,072.41	20,082.100
BM-1	19,989.048	20,001.690
BM-2	20,032.66	19,989.890

BASIC DESIGN STUDY ON THE PROJECT FOR CONSTRUCTING BRIDGES ALONG RURAL ROADS (PHASE-IV)		
BRIDGE NO.	ALIMANGO BRIDGE	SHEET NO.
07.15.06A	KM. 28 + 502 TOPOGRAPHIC MAP	1 OF 1



CONTROL STATIONS		
STATION	NORTHINGS	EASTINGS
T-1	1,280,280.048	434,008.093
T-2	1,280,441.821	434,008.132
1st APP.	1,280,392.005	434,004.124
2nd APP.	1,280,440.813	434,007.565
B.M.-1	1,280,378.888	433,994.184
B.M.-2	1,280,485.329	433,991.407
B.M.-3	1,280,388.828	434,009.872
B.M.-4	1,280,408.037	434,009.184
B.M.-5	1,280,440.818	434,011.879
POT-1	1,280,482.827	434,009.299
POT-2	1,280,486.255	433,997.937

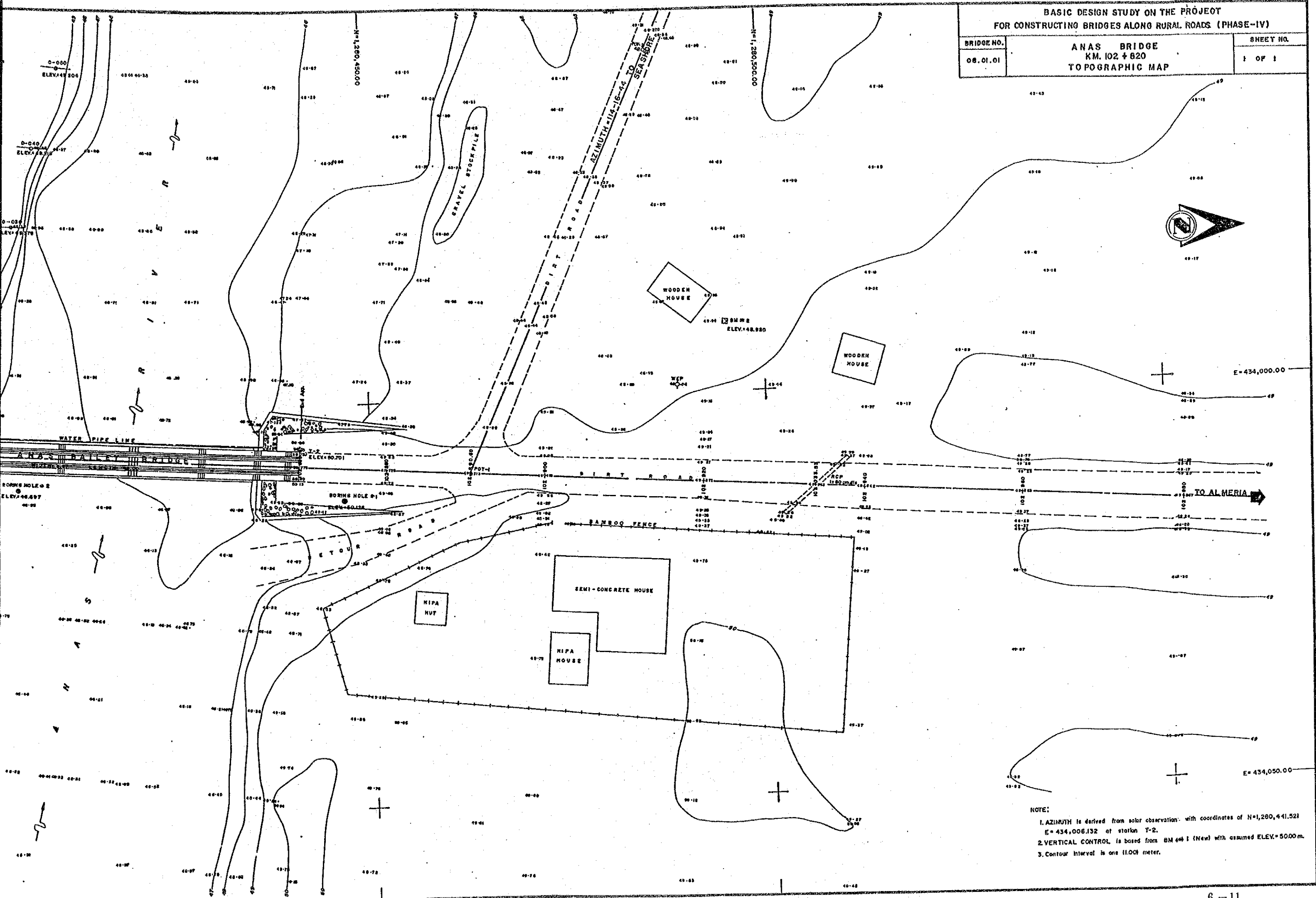


BASIC DESIGN STUDY ON THE PROJECT  
FOR CONSTRUCTING BRIDGES ALONG RURAL ROADS (PHASE-IV)

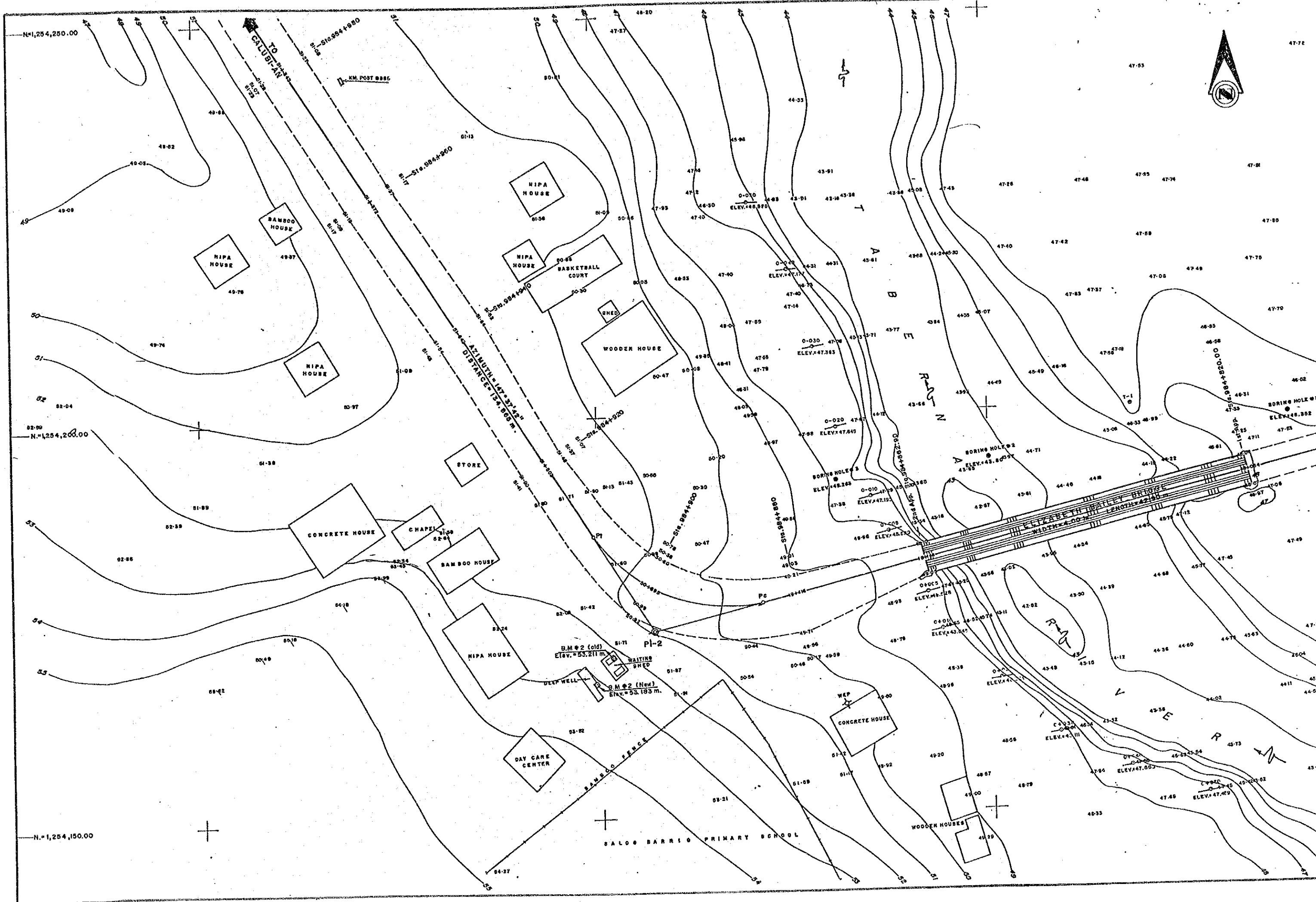
BRIDGE NO.  
08.01.01

ANAS BRIDGE  
KM. 102 + 820  
TOPOGRAPHIC MAP

SHEET NO.  
1 OF 1



NOTE:  
1. AZIMUTH is derived from solar observation with coordinates of N=1,280,441.521  
E= 434,006.132 at station T-2.  
2. VERTICAL CONTROL is based from BM 441 (New) with assumed ELEV.=5000m.  
3. Contour interval is one (1.00) meter.



N=1,254,250.00

N=1,254,200.00

N=1,254,150.00



SALDO BARRIO PRIMARY SCHOOL

WOODEN HOUSES

CONCRETE HOUSE

DAY CARE CENTER

NIPA HOUSE

BAMBOO HOUSE

CONCRETE HOUSE

CHAPEL

STORE

WOODEN HOUSE

BASKETBALL COURT

NIPA HOUSE

BAMBOO HOUSE

NIPA HOUSE

NIPA HOUSE

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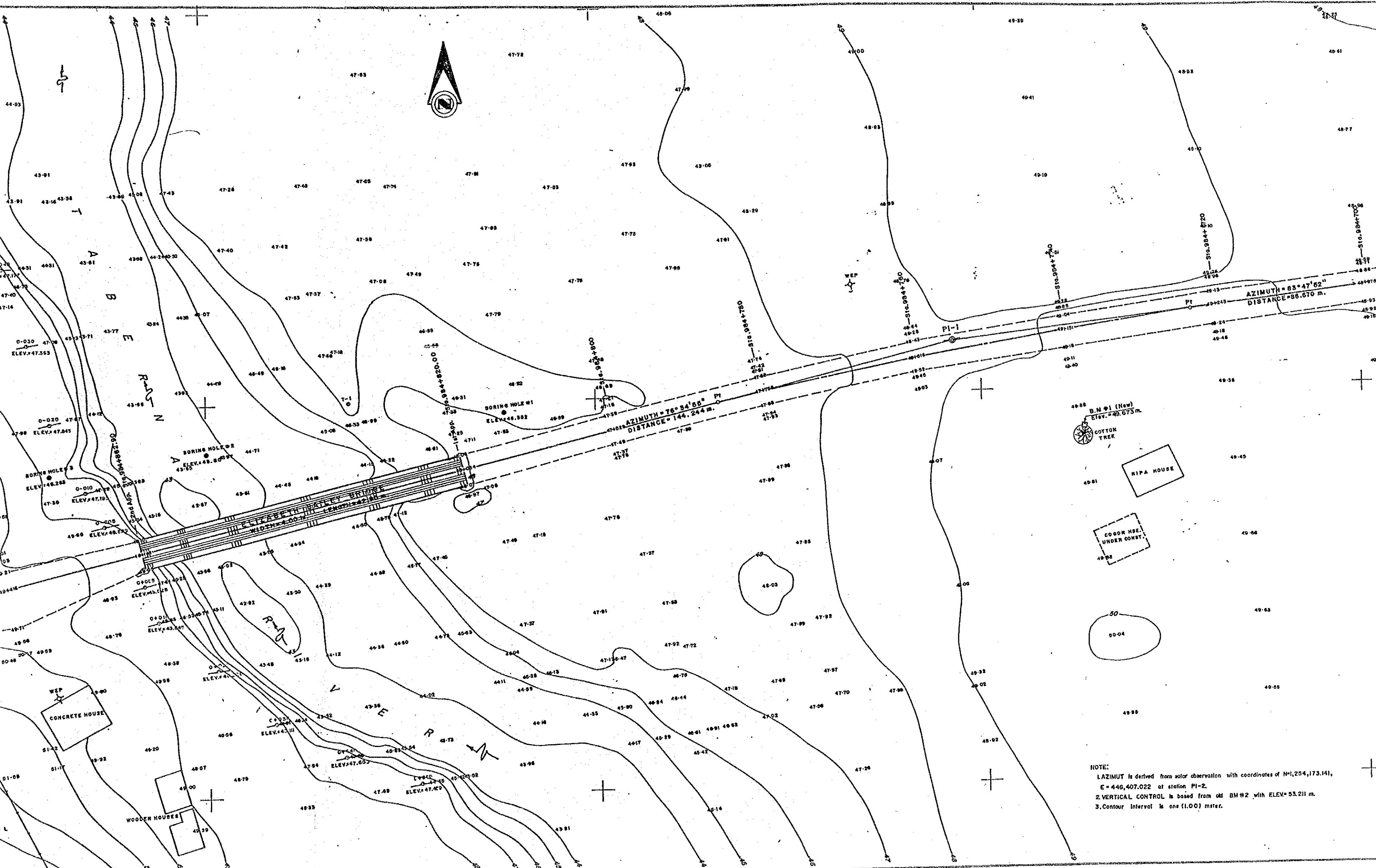
NIPA HOUSE

NIPA HOUSE

NIPA HOUSE

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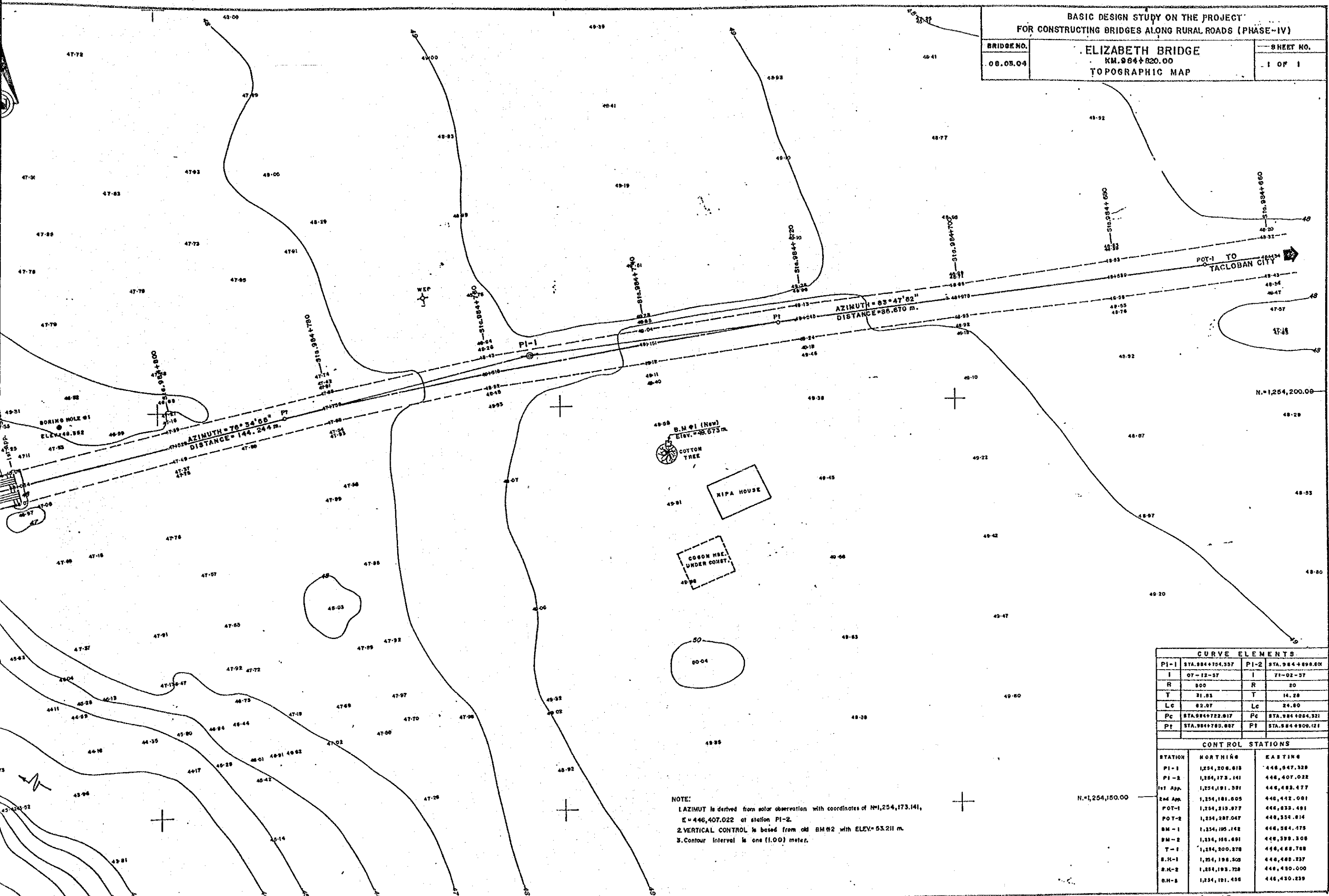
NIPA HOUSE



NOTE:  
 1. LAZIMUT is derived from solar observation with coordinates of N=1,234,173.141,  
 E=446,407.022 at station PI-2.  
 2. VERTICAL CONTROL is based from old BM #2 with ELEV=53.211 m.  
 3. Contour Interval is one (1.00) meter.

BASIC DESIGN STUDY ON THE PROJECT  
FOR CONSTRUCTING BRIDGES ALONG RURAL ROADS (PHASE-IV)

BRIDGE NO. 06.05.04	ELIZABETH BRIDGE KM. 984+020.00 TOPOGRAPHIC MAP	SHEET NO. 1 OF 1
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CURVE ELEMENTS			
PI-1	STA. 984+104.337	PI-2	STA. 984+209.600
I	07-12-57	I	71-02-57
R	800	R	20
T	31.05	T	14.28
Lc	82.07	Lc	24.80
Pc	STA. 984+722.017	Pc	STA. 984+024.321
Pt	STA. 984+780.857	Pt	STA. 984+900.121

CONTROL STATIONS		
STATION	NORTHING	EASTING
PI-1	1,254,206.618	446,947.328
PI-2	1,254,173.141	446,407.022
1st App.	1,254,181.391	446,482.477
2nd App.	1,254,181.005	446,472.081
POT-1	1,254,213.077	446,033.481
POT-2	1,254,287.047	446,334.814
BM-1	1,254,195.142	446,584.475
BM-2	1,254,196.691	446,399.106
T-1	1,254,200.378	446,462.788
B.M-1	1,254,196.505	446,488.237
B.M-2	1,254,193.728	446,450.000
B.M-3	1,254,191.438	446,430.239

NOTE:  
 1. AZIMUTH is derived from solar observation with coordinates of N=1,254,173.141, E=446,407.022 at station PI-2.  
 2. VERTICAL CONTROL is based from old BM#2 with ELEV.=53.211 m.  
 3. Contour Interval is one (1.00) meter.



**APPENDIX 7**

**DATA OF  
GEOTECHNICAL SURVEY**





Table I GEOLOGICAL SURVEY QUANTITY LIST (1/2)

Bridge No.	Name of Bridge	Location	Boring		Soil		SPT Undisturbed Samples	Unit Weight	Laboratory Test				Remarks	
			Nc. Depth (m)	Common	Hard	NMC			LL	PL	HA	QU C.T.		
05.02.04	Banquerohan Bridge	km. 607 + 023.60 Gubat-Barcelona-Bulusan Road Barcelona, Sorsogon	1	20.00	14.55	5.45	20	-	20	0	0	0	0	
			2	20.00	14.55	5.45	20	-	20	0	0	0	0	
			3	18.00	12.55	5.45	18	-	18	0	0	0	0	
05.03.01	Hitoma Bridge	km. 151 + 600 Virac-San Andres-Caramoran Pandan Road, Catanguanes	1	7.00	1.55	5.45	3	-	3	0	0	0	0	
			2	8.00	2.55	5.45	3	-	3	0	0	0	0	
			3	8.00	2.55	5.45	3	-	3	0	0	0	0	
05.06.04	Lanang Bridge	km. 56 + 129.33 From Masbate Port, Masbate-Arory Road, Masbate	1	5.00	0.00	5.00	0	-	0	0	0	0	0	
			2	6.00	0.55	5.45	5	-	5	0	0	0	0	
			3	9.00	3.55	5.45	5	-	5	0	0	0	0	
05.06.05	Potot Bridge	km. 37 + 739.78 From Masbate Port, Masbate-Balud Road, Masbate	1	11.00	6.55	4.45	11	-	11	0	0	0	0	
			2	9.00	3.55	5.45	4	-	4	0	0	0	0	
			3	9.00	4.55	4.45	8	-	8	0	0	0	0	
06.06.04	Lawigan Bridge	km. 70 + 900 Tioias-Sinogbahan Road San Joaquin, Iloilo	1	12.00	4.55	7.45	6	-	6	0	0	0	0	
			2	11.00	5.55	5.45	11	-	11	0	0	0	0	
			3	12.00	6.55	5.45	12	-	12	0	0	0	0	
07.05.01	Apalan Bridge	km. 97 + 803 Toledo-tabuelan Road Cebu I	1	12.00	6.55	5.45	10	-	10	0	0	0	0	
			2	37.00	32.55	4.45	37	2	37	0	0	0	0	

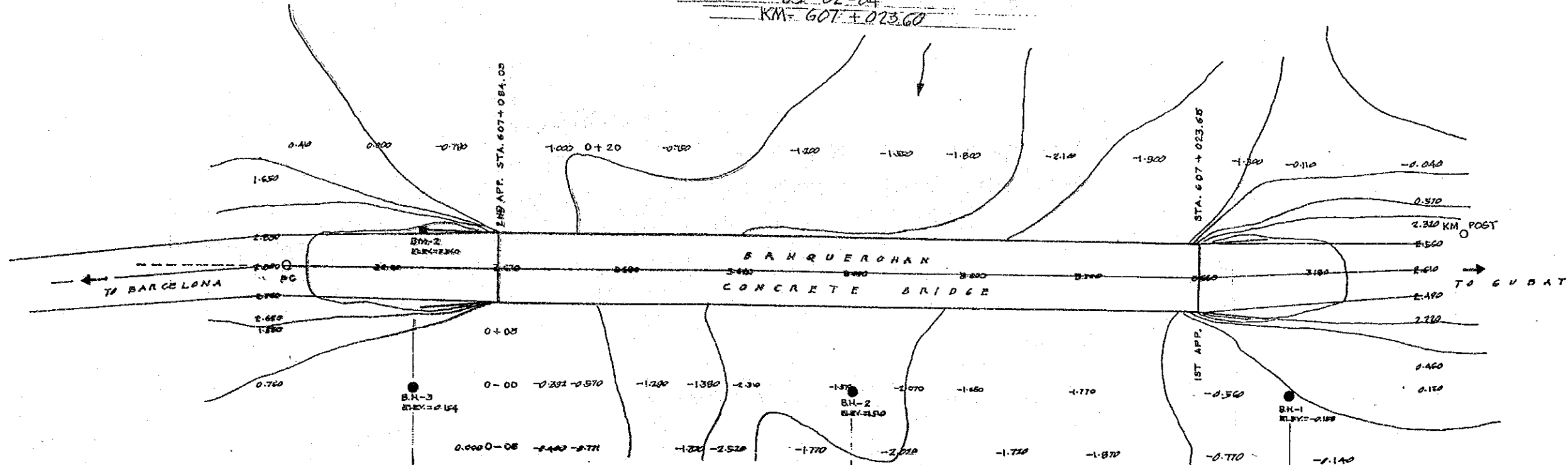
Table 1 GEOLOGICAL SURVEY QUANTITY LIST (2/2)

Bridge No.	Name of Bridge	Location	Boring		Soil		SPT Undisturbed Samples	Unit Weight	Laboratory Test				Remarks		
			No. Depth (m)	Common	Hard	NMC			LL	PL	HA	QU C.T.			
07.05.05	Tambongon Bridge	km. 131 + 248 Antonio de Pio Highway Cebu I	1	20.00	8.98	00.02	16	-	16	0	0	0	0	0	
			2	13.00	5.55	7.45	5	-	5	0	0	0	0	0	0
			3	28.00	18.65	9.40	25	2	25	0	0	0	0	0	0
07.06.07	Majon Bridge	km. 0 + 200 From Tabunok Tabunok-Talisay Road, Cebu II	1	11.00	5.55	5.45	7	-	7	0	0	0	0	0	
			2	14.00	7.55	6.45	9	-	9	0	0	0	0	0	
			3	7.00	1.55	5.45	2	-	2	0	0	0	0	0	0
			4	23.00	17.55	5.45	21	-	21	0	0	0	0	0	0
07.15.06A	Alimango Bridge	km. 28 + 502 Cebu-Toledo Wharf Road Cantabaco, Toledo City	1	7.00	0.55	6.45	1	-	1	0	0	0	0	0	
			2	25.00	6.55	17.45	22	-	22	0	0	0	0	0	
08.01.01	Anas Bridge	km. 102 + 820 From Port of Ormoc City to Naval-Almeria and Circumferen- tial Road Biliran Sub-Province	1	6.86	0.00	6.86	1	-	1	0	0	0	0	0	
			2	6.81	0.00	6.81	1	-	1	0	0	0	0	0	
			3	8.00	0.00	8.00	2	-	2	0	0	0	0	0	
08.03.04	Elizabeth Bridge	km. 994 + 820 Lemot-Sambolawan-Calaguise- Calubian Road Leyte II	1	25.00	20.55	4.45	25	-	25	0	0	0	0	0	
			2	20.00	13.55	6.45	20	-	20	0	0	0	0	0	
			3	20.00	15.55	4.45	20	-	20	0	0	0	0	0	
Total															

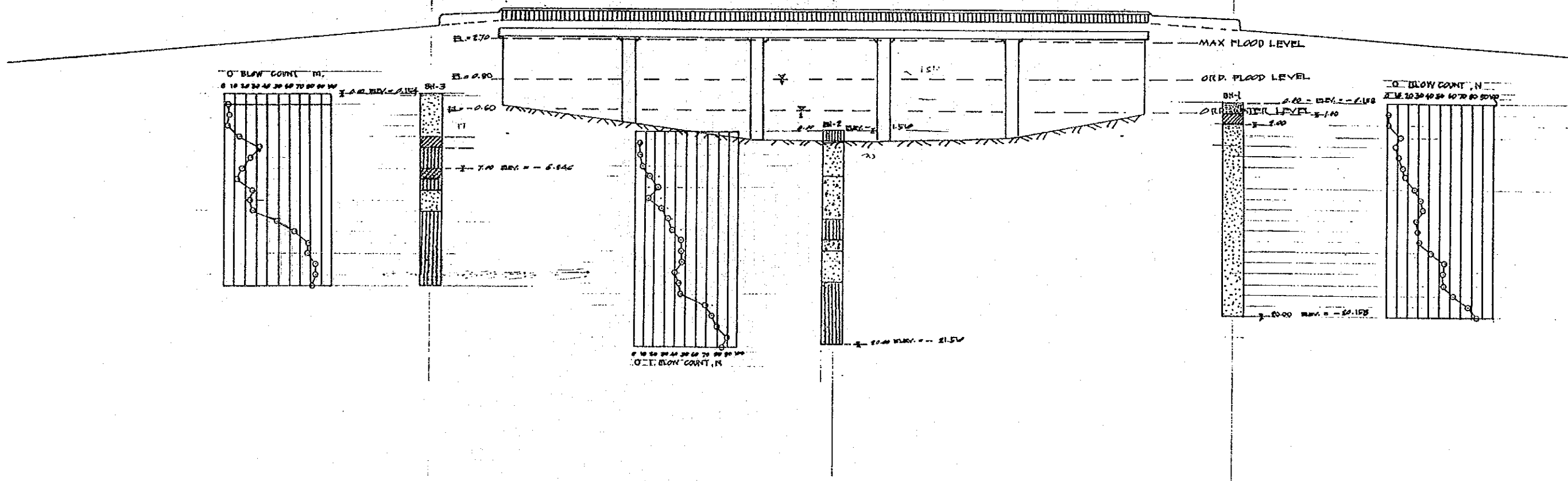
BANQUERCHAN BRIDGE

05-02-24

KM= 607+023.60

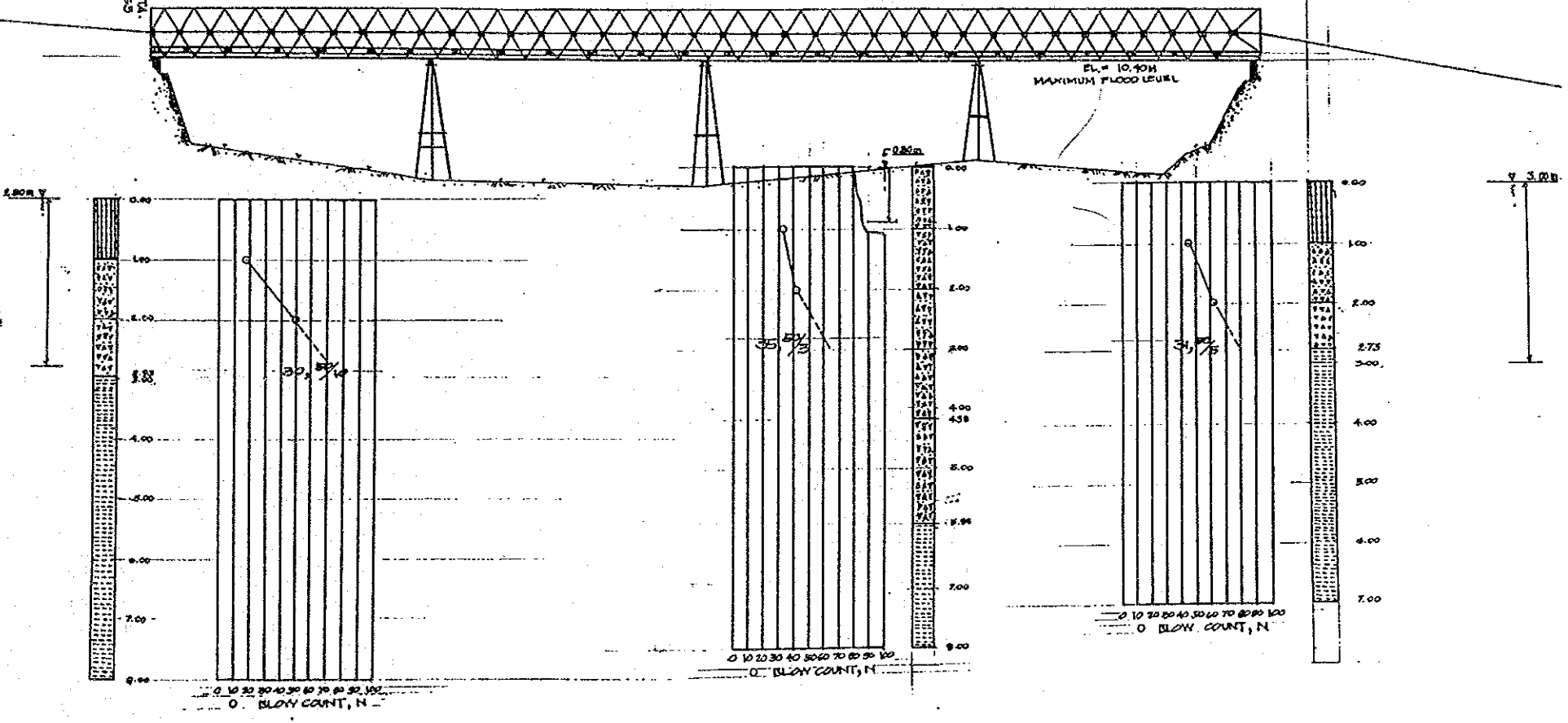
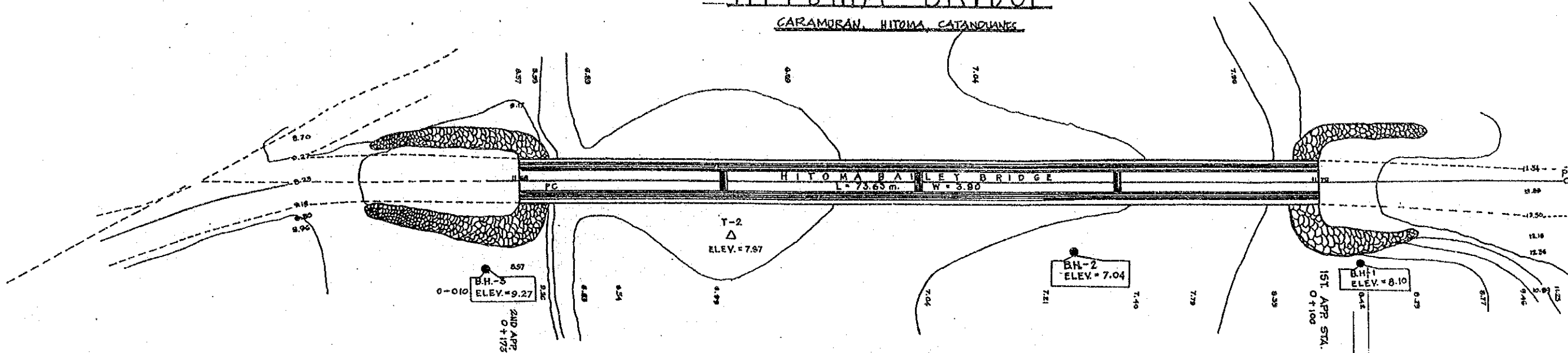


BOREHOLE PLANS



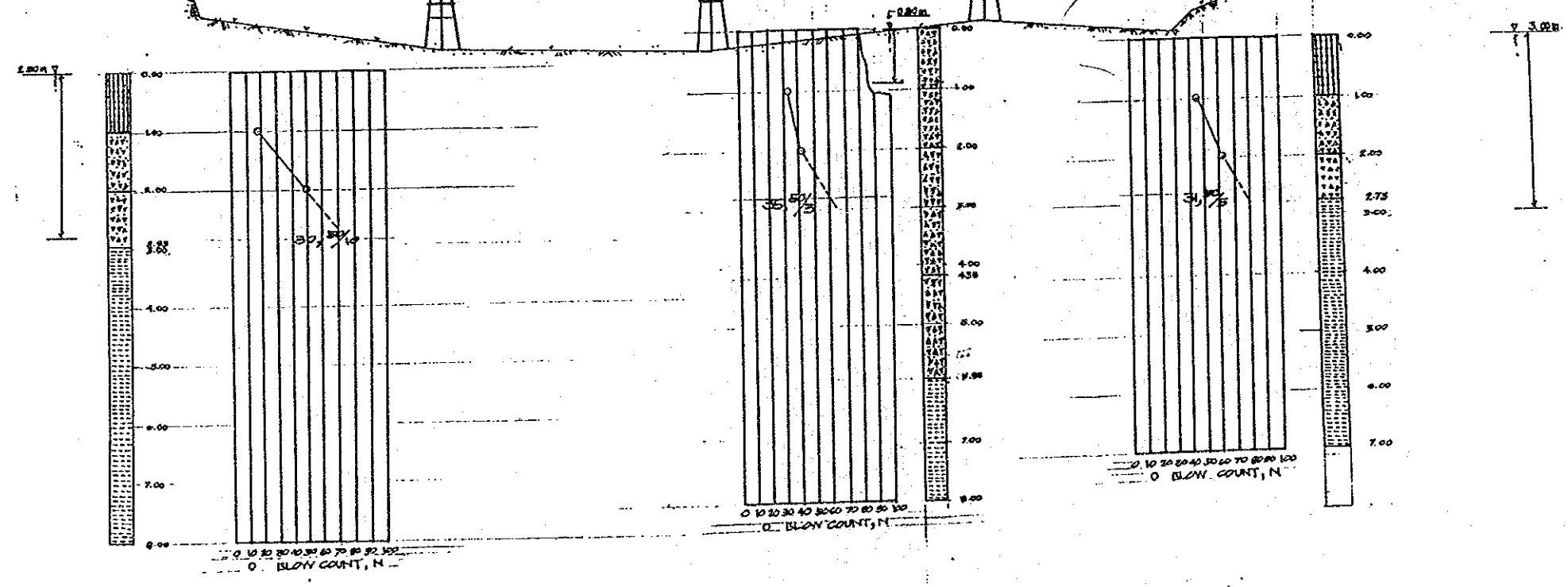
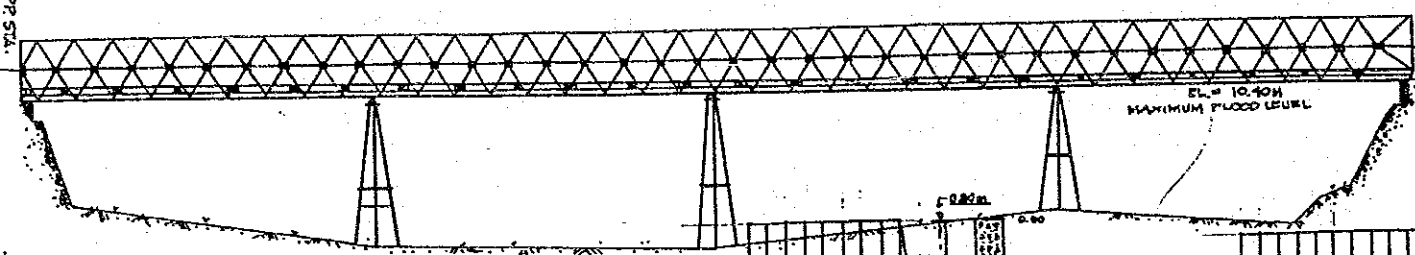
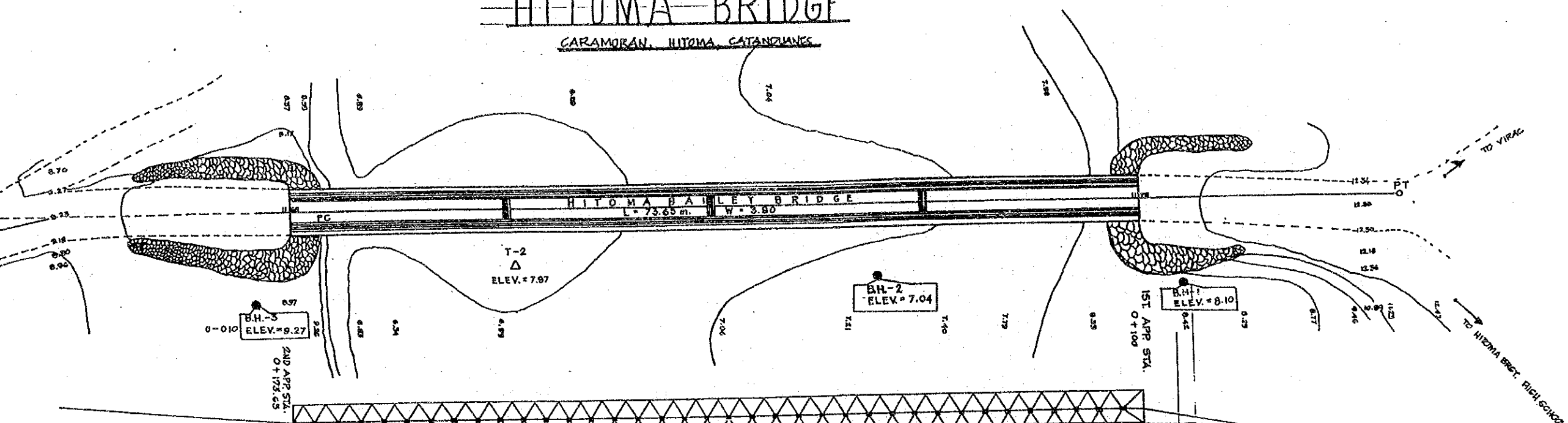
# HITOMA BRIDGE

CARAMORAN, HITOMA, CATANDUANES



# HITOMA BRIDGE

CARAMORAN, HITOMA, CATANDUANES



# LANANG BRIDGE

Km 56 + 129.33    No. 05-06-04

