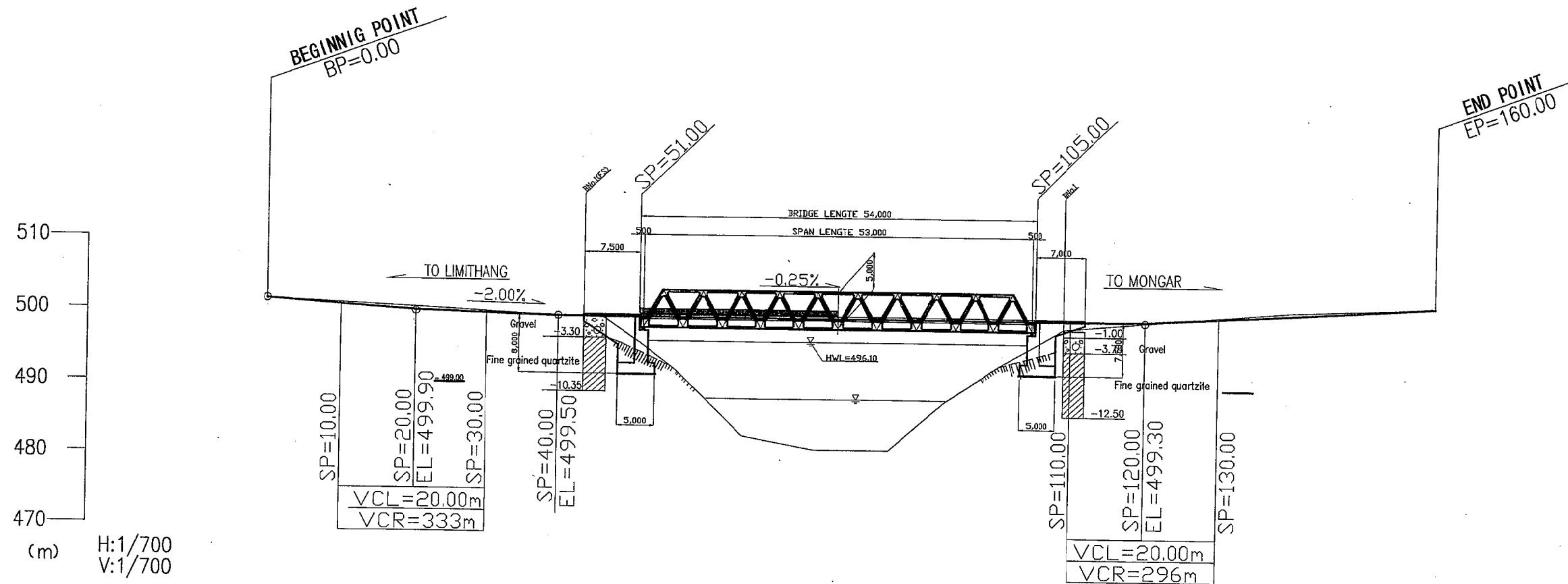


No.1 KURI BRIDGE



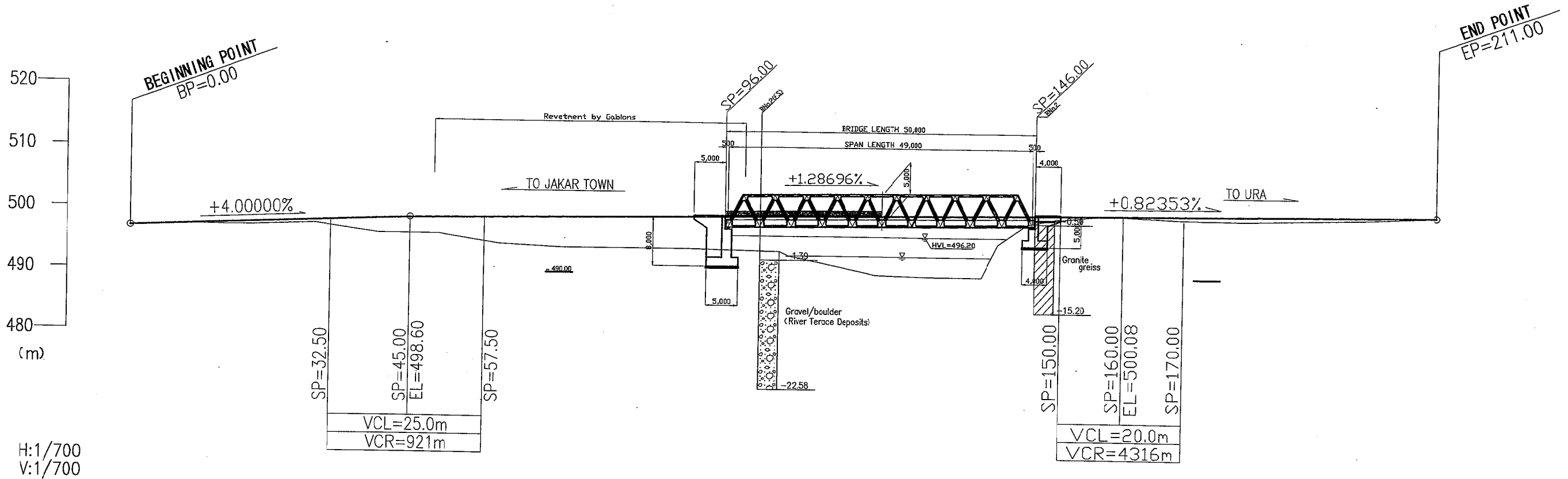
Proposed Height		501.50	501.50	500.05	499.50	499.50	481.09	492.00	483.00	481.09	481.09	488.00	493.00	499.35	498.30	499.30	499.47	501.00	500.60	501.90	501.90
Ground Level		501.50	501.50	500.05	499.50	499.50	481.09	492.00	483.00	481.09	481.09	488.00	493.00	499.35	498.30	499.30	499.47	501.00	500.60	501.90	501.90
Superelevation																					
Curve Band			Intersection																		
Station		0.00	20.00	40.00	46.00	56.00	60.00	65.00	75.00	80.00	85.00	92.50	100.00	109.00	120.00		140.00		160.00		

Figure PROFILE

縦断面

PROJECT NAME	BASIC DESIGN STUDY ON THE PROJECT FOR RECONSTRUCTION OF BRIDGES IN THE KINGDOM OF BHUTAN		
DRAWING NAME	PROFILE		
SCALE	As shown	DRAWING No.	1/5
JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)			

No.2 CHAMKAR BRIDGE



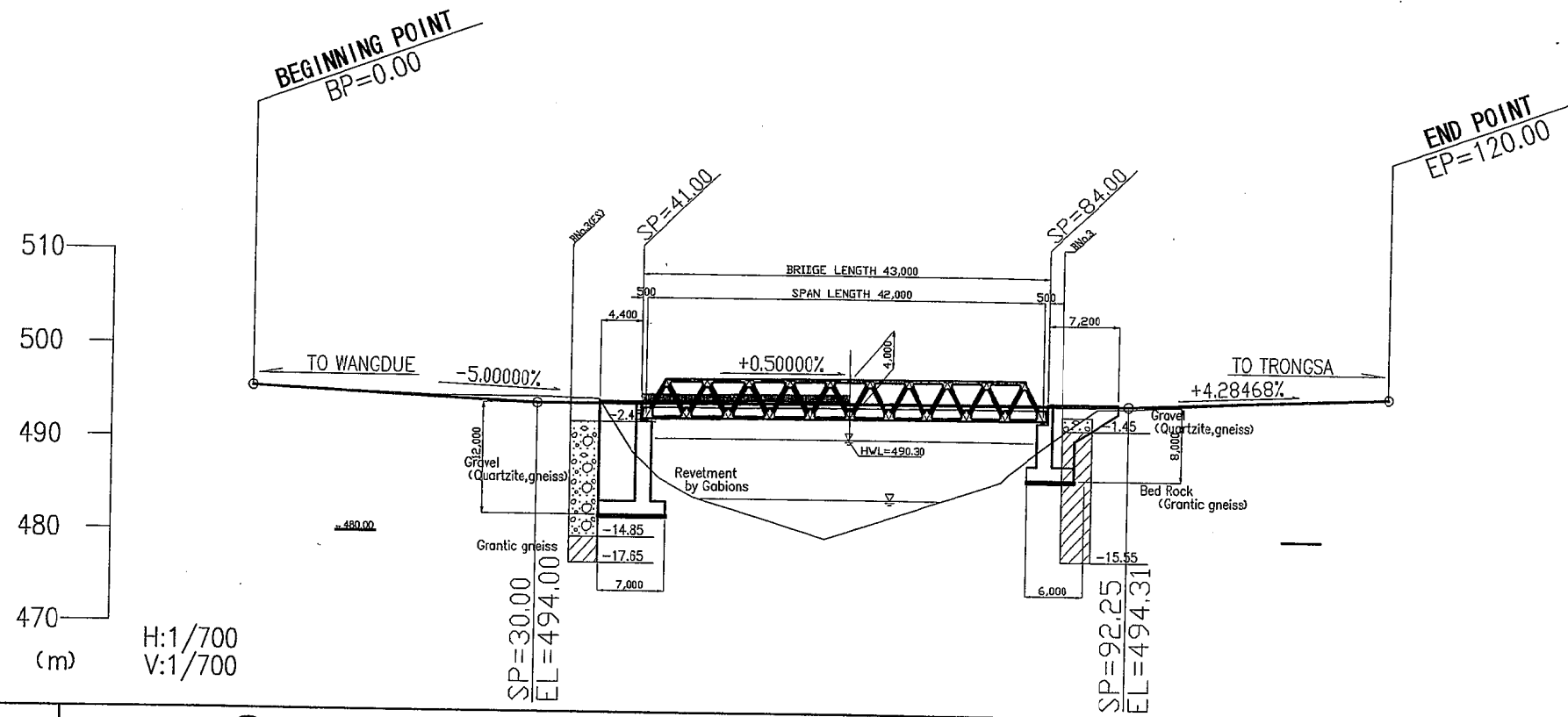
H:1/700
V:1/700

Proposed Height	496.80	497.60	498.37	498.52	498.79	499.05	499.31	499.57	499.82	500.04	500.24	500.41	500.50														
Ground Level	496.80	497.11	497.11	497.51	496.00	494.50	494.00	494.00	493.70	493.00	490.01	489.815	489.77	489.66	495.18	498.42	499.45	499.32	500.08	499.54	499.50	500.24	500.00	500.50			
Superelevation																											
Curve Band																											
Station	0.00	10.00	20.00	30.00	40.00	50.00	60.00	70.00	80.00	90.00	100.00	104.50	106.00	120.00	127.50	137.50	138.50	140.00	144.50	149.40	150.00	157.00	160.00	170.00	180.00	200.00	211.00

Figure PROFILE

PROJECT NAME	BASIC DESIGN STUDY ON THE PROJECT FOR RECONSTRUCTION OF BRIDGES IN THE KINGDOM OF BHUTAN		
DRAWING NAME	PROFILE		
SCALE	As shown	DRAWING No.	2/5
JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)			

No.3 BJEE BRIDGE

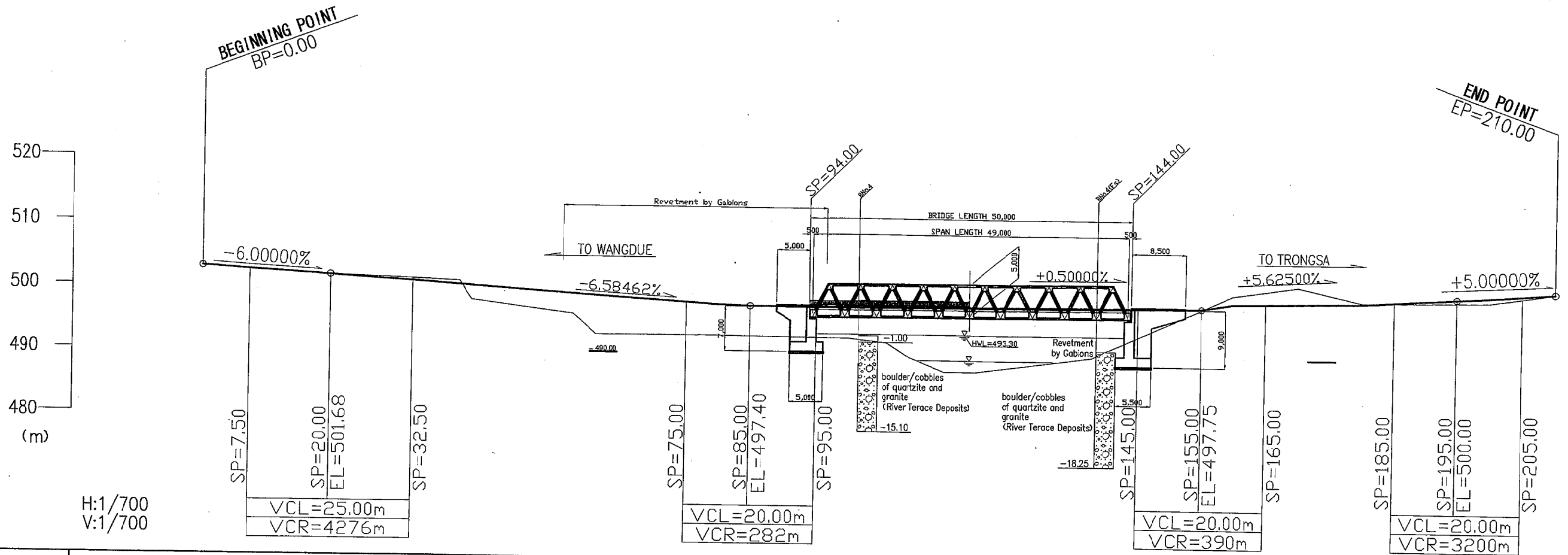


Proposed Height		495.50	494.50	494.00	494.05	494.15	494.25	494.31	494.64	495.50					
Ground Level		495.50	494.70	494.70	494.50	489.00	486.00	484.00	479.65	487.00	494.00	494.05	494.50	495.50	
Superelevation															
Curve Band															
Station		0.00	20.00	30.00	36.50	40.00	43.00	46.50	60.00	78.00	80.00	88.00	92.20	100.00	120.00

Figure PROFILE

PROJECT NAME	BASIC DESIGN STUDY ON THE PROJECT FOR RECONSTRUCTION OF BRIDGES IN THE KINGDOM OF BHUTAN		
DRAWING NAME	PROFILE		
SCALE	As shown	DRAWING No.	3/5
JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)			

No.4 WACHY BRIDGE



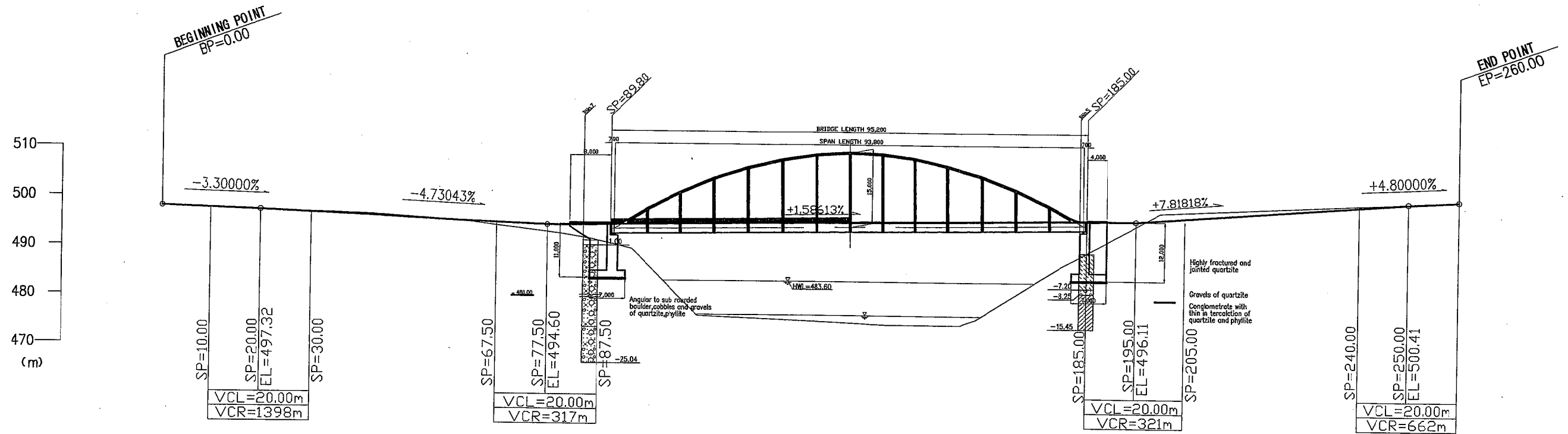
H:1/700
V:1/700

Proposed Height	502.88	501.66	500.36	499.05	497.77	497.58	497.48	497.58	497.68	497.88	498.96	499.06	499.98	500.25	501.00
Ground Level	502.88	501.68	500.92 498.00	496.00 492.80	492.90	497.77	492.69	492.00 490.00	487.50	487.50	490.00 491.00	500.00	499.19	499.50	501.00
Superelevation															
Curve Band															
Station	0.00	20.00	42.88	58.88 61.50	80.00	85.00	100.00	106.00 109.00	115.00	120.00	138.88 148.88	155.00 160.00	180.00	195.00 200.00	210.00

Figure PROFILE

PROJECT NAME	BASIC DESIGN STUDY ON THE PROJECT FOR RECONSTRUCTION OF BRIDGES IN THE KINGDOM OF BHUTAN		
DRAWING NAME	PROFILE		
SCALE	As shown	DRAWING No.	4/5
JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)			

No.5 MANGDE BRIDGE



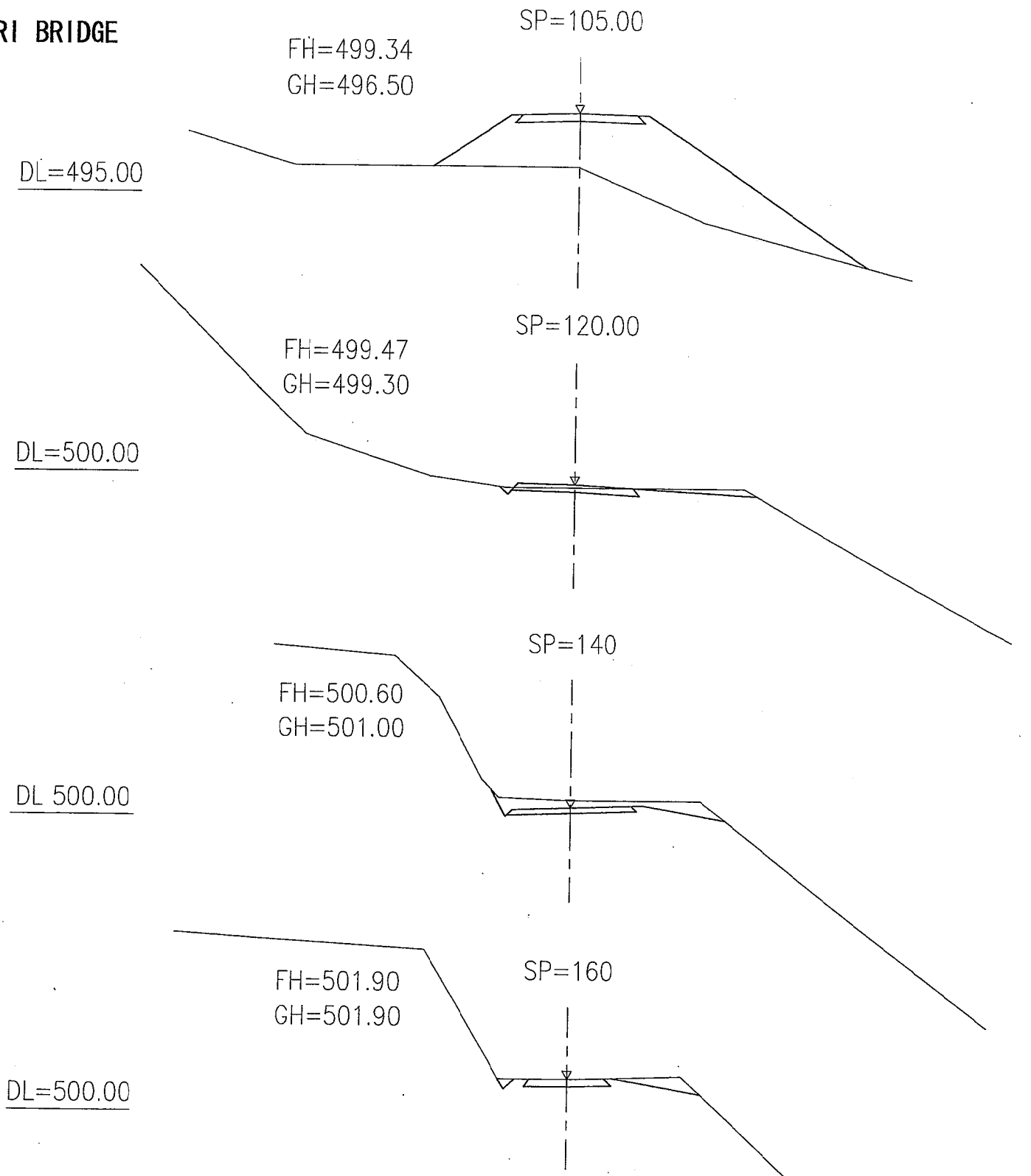
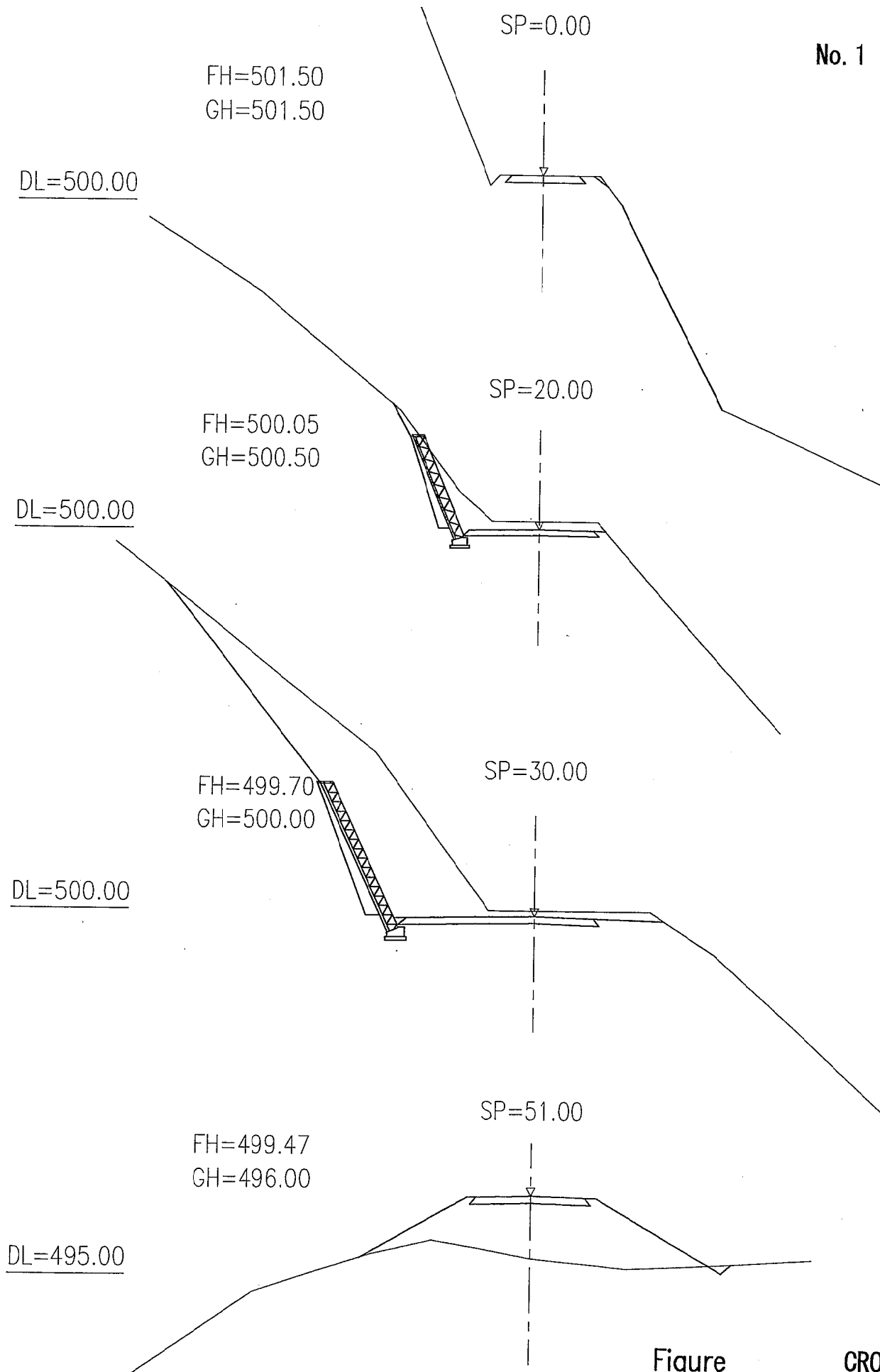
H:1/900
V:1/900

Proposed Height	497.98	497.28	496.37	495.43	494.76 494.74	495.12	495.43	495.59	495.91	496.23	496.27	496.54	498.06	499.63	500.33	500.89	
Ground Level	497.98	497.32	496.66	495.50	493.00 492.00	490.00	484.00	476.50	474.86	474.86 476.00	487.00	498.00	498.97	499.93	500.89	500.89	
Superelevation																	
Curve Band																	
Station	0.00	20.00	40.00	60.00	77.50 80.00	86.00	94.00	100.00	107.50	120.00	140.00 145.00	160.00 163.00	180.00	195.00 200.00	220.00	240.00 250.00	260.00

Figure PROFILE

PROJECT NAME	BASIC DESIGN STUDY ON THE PROJECT FOR RECONSTRUCTION OF BRIDGES IN THE KINGDOM OF BHUTAN		
DRAWING NAME	PROFILE		
SCALE	As shown	DRAWING No.	5/5
JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)			

No. 1 KURI BRIDGE



Figure

CROSS SECTION FOR APPROACH ROAD S=1:300

横断面

PROJECT NAME	BASIC DESIGN STUDY ON THE PROJECT FOR RECONSTRUCTION OF BRIDGES IN THE KINGDOM OF BHUTAN		
DRAWING NAME	CROSS SECTION FOR APPROACH ROAD		
SCALE	As shown	DRAWING No.	1/6
JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)			

No. 2 CHAMKAR BRIDGE

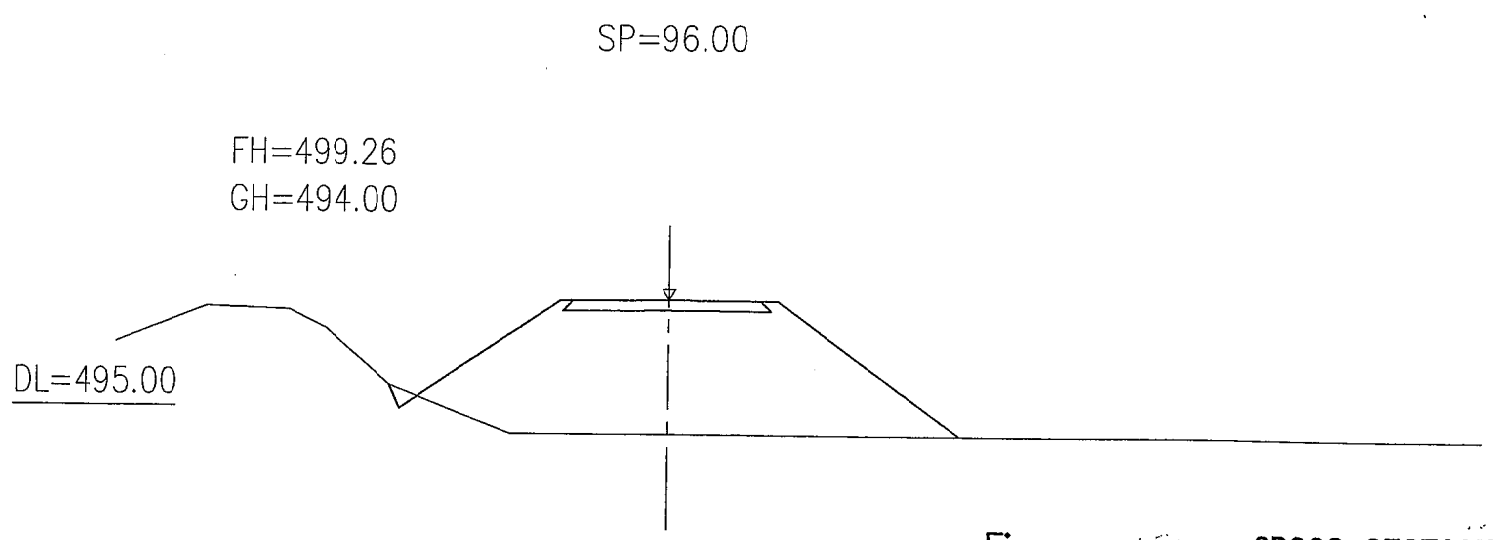
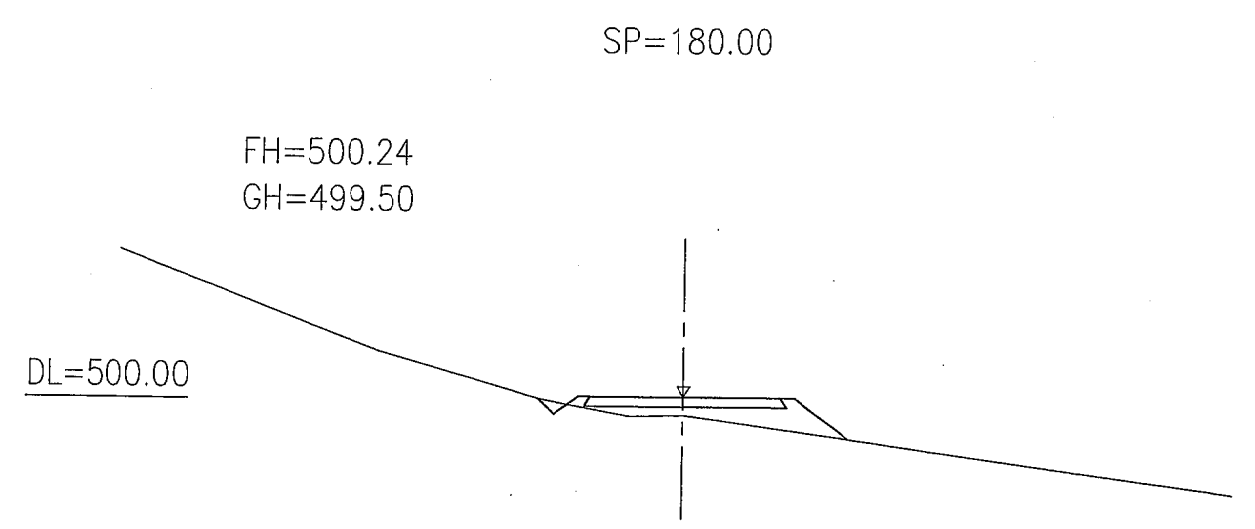
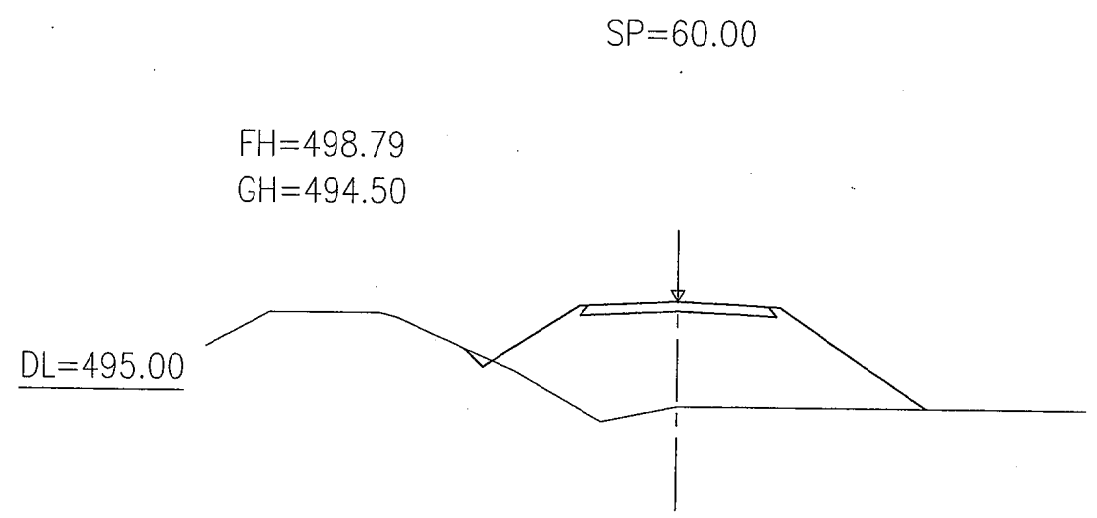
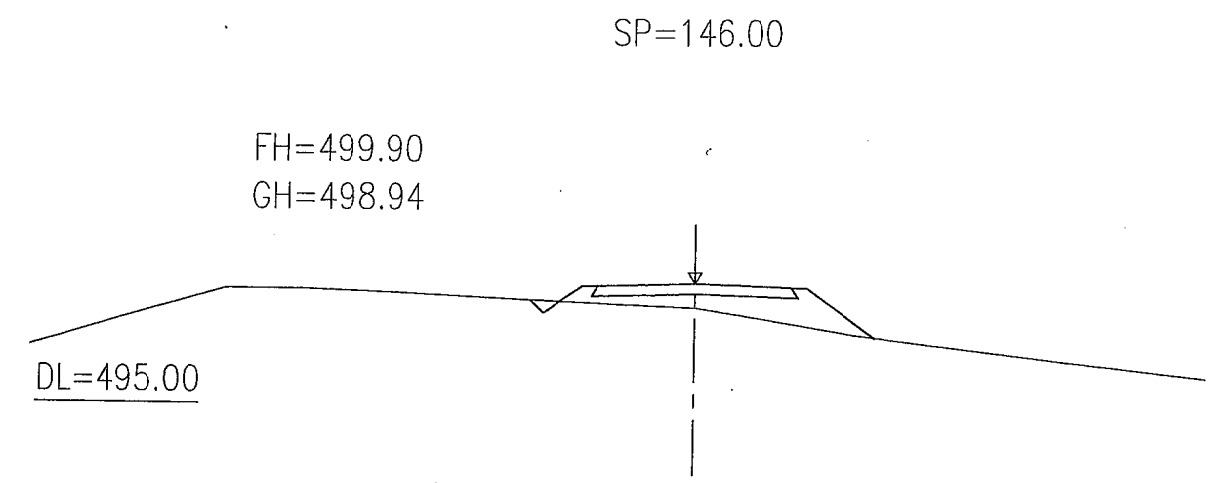
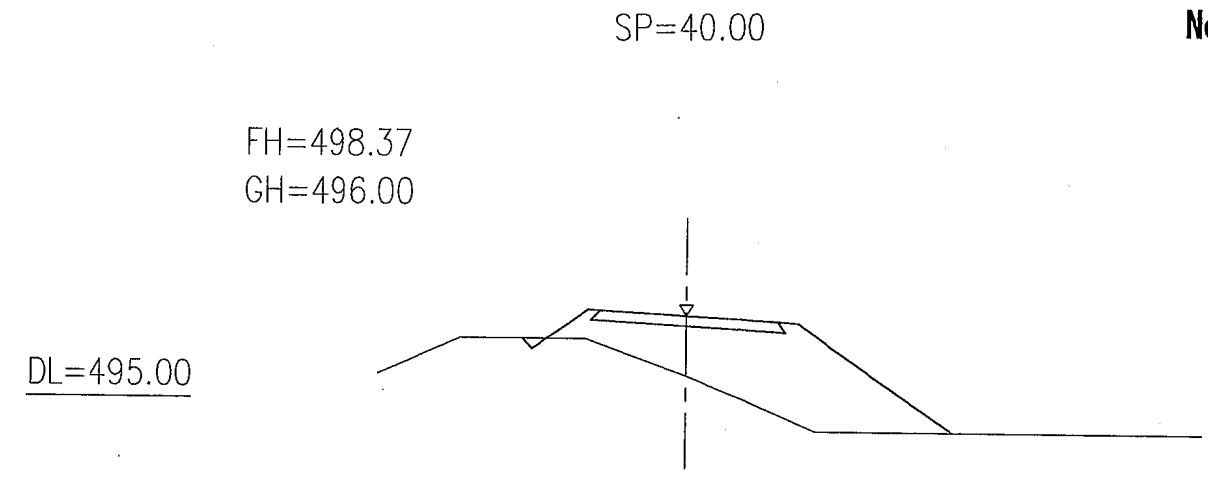
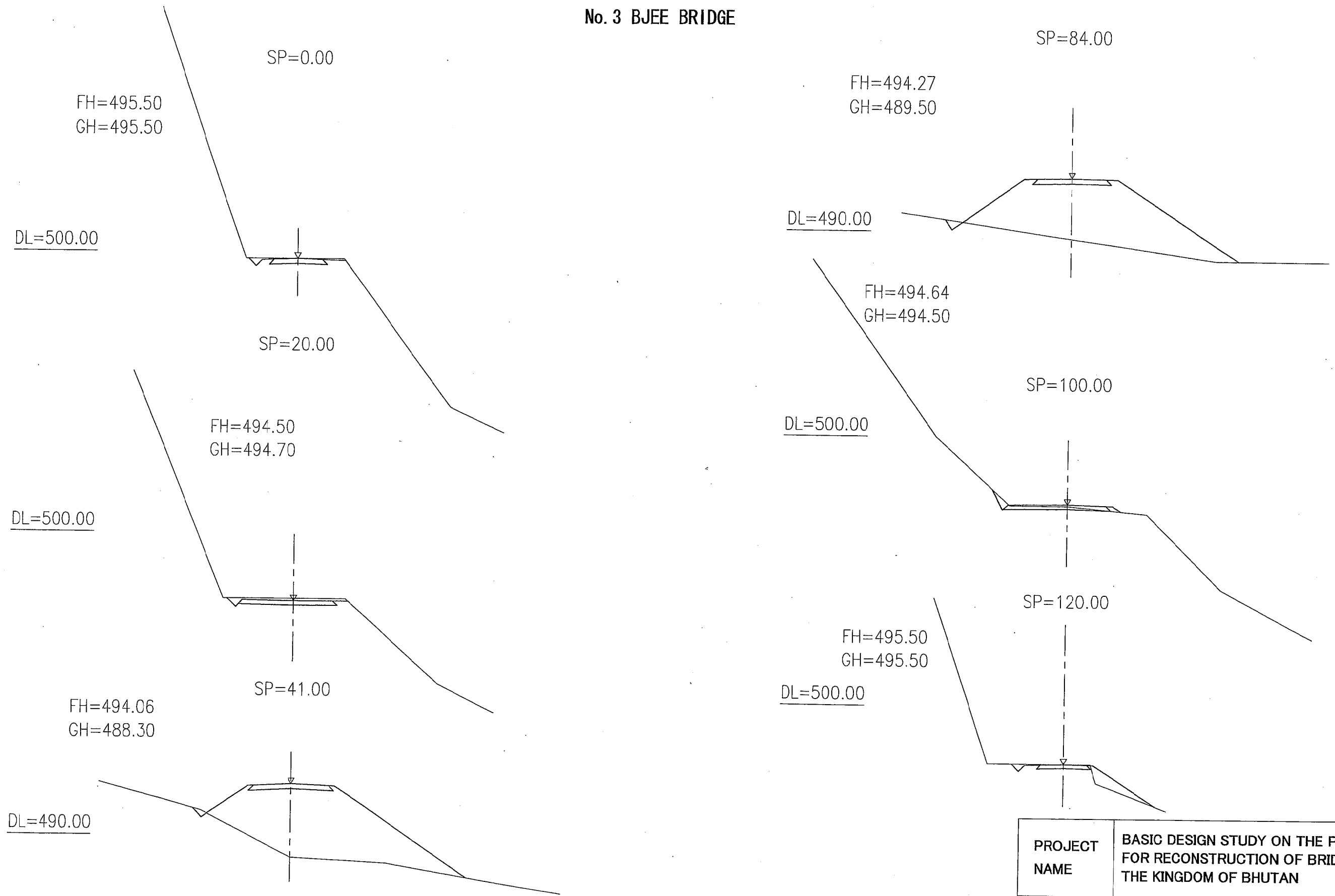


Figure 1.1 CROSS SECTION FOR APPROACH ROAD S=1:300

PROJECT NAME	BASIC DESIGN STUDY ON THE PROJECT FOR RECONSTRUCTION OF BRIDGES IN THE KINGDOM OF BHUTAN		
DRAWING NAME	CROSS SECTION FOR APPROACH ROAD		
SCALE	As shown	DRAWING No.	2/6
JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)			

No. 3 BJEE BRIDGE



CROSS SECTION FOR APPROACH ROAD S=1:300

PROJECT NAME	BASIC DESIGN STUDY ON THE PROJECT FOR RECONSTRUCTION OF BRIDGES IN THE KINGDOM OF BHUTAN		
DRAWING NAME	CROSS SECTION FOR APPROACH ROAD		
SCALE	As shown	DRAWING No.	3/6
JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)			

No. 4 WACHY BRIDGE (RIGHT BANK)

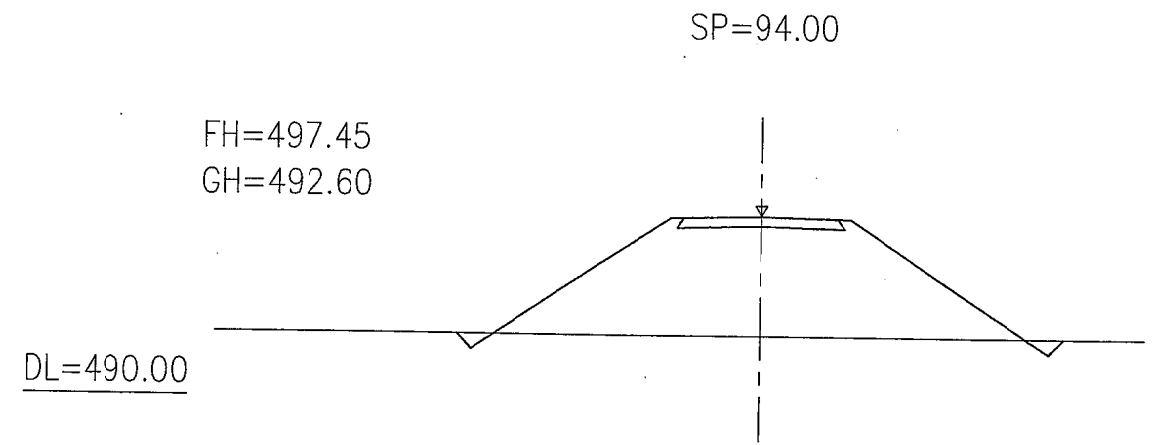
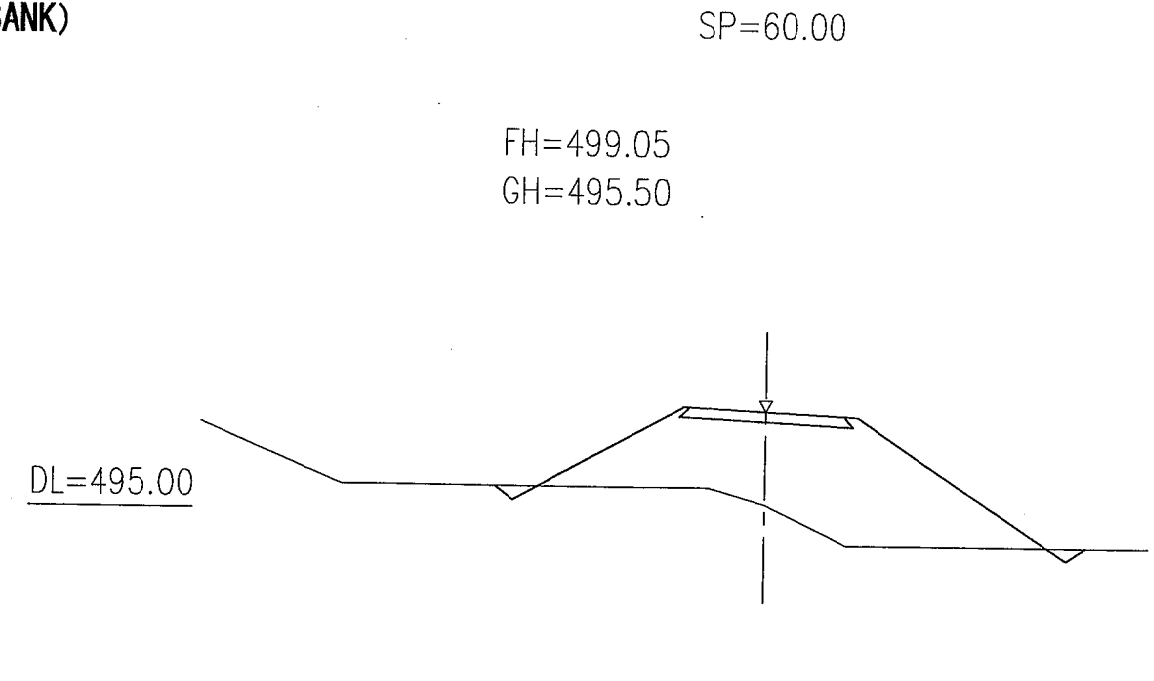
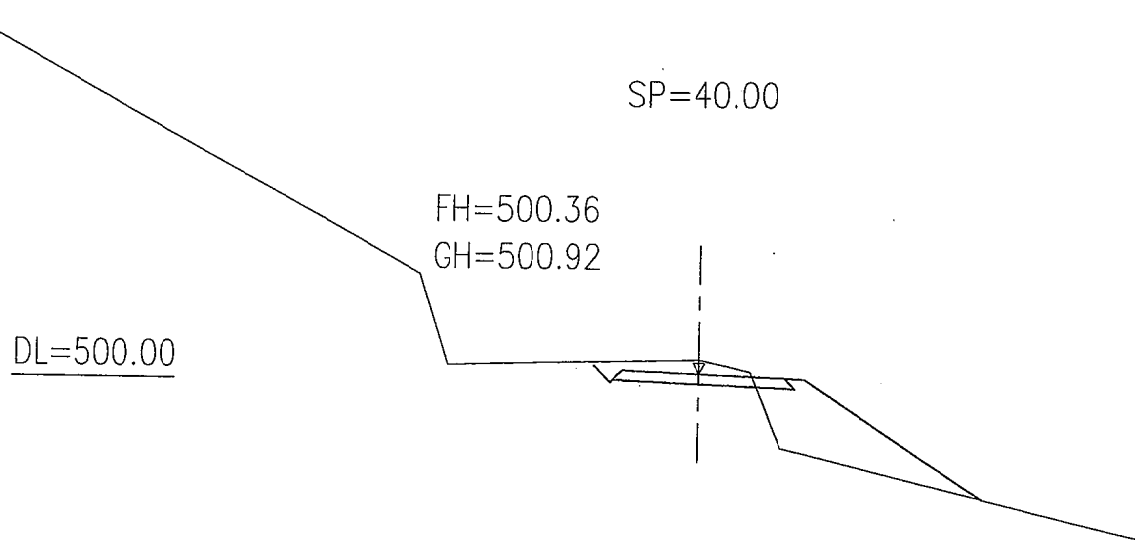
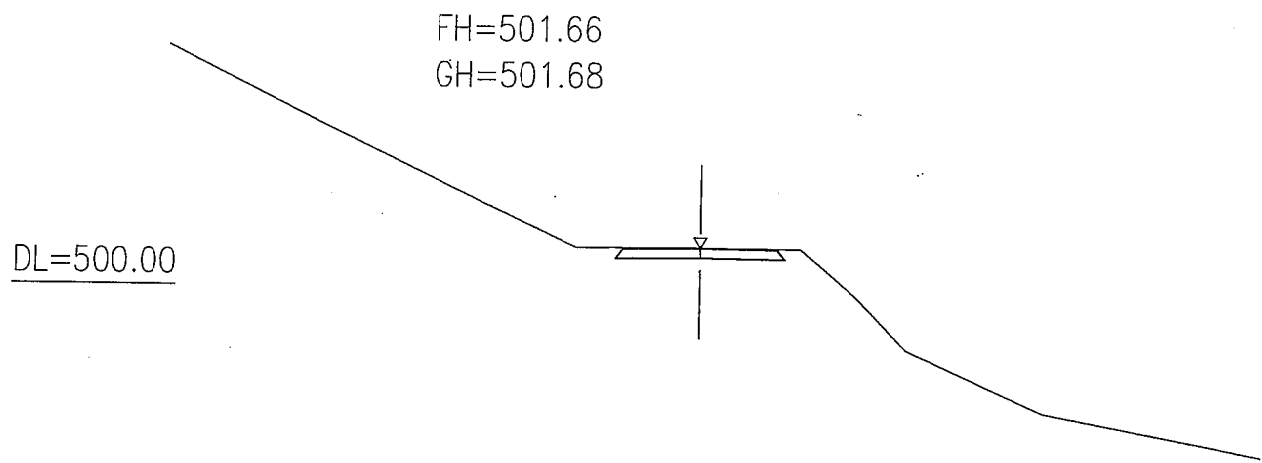
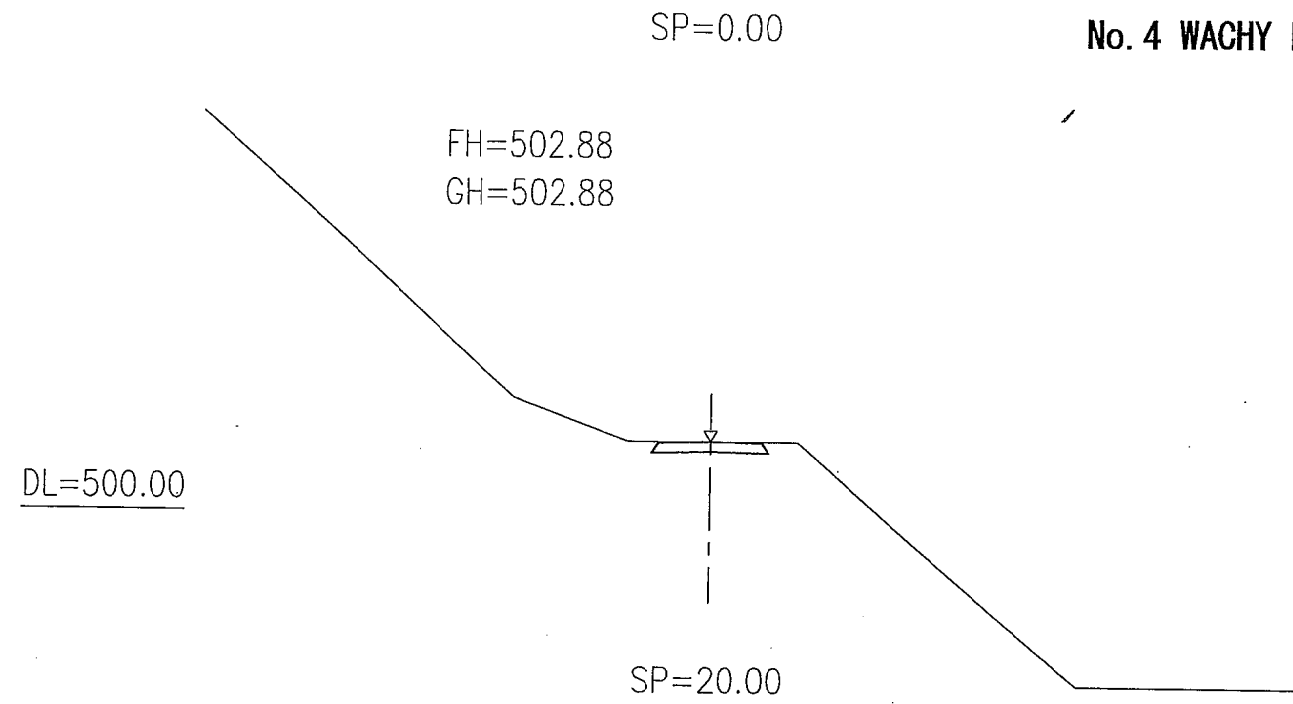


Figure CROSS SECTION FOR APPROACH ROAD S=1:300

PROJECT NAME	BASIC DESIGN STUDY ON THE PROJECT FOR RECONSTRUCTION OF BRIDGES IN THE KINGDOM OF BHUTAN		
DRAWING NAME	CROSS SECTION FOR APPROACH ROAD		
SCALE	As shown	DRAWING No.	4/6
JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)			

No. 4 WACHY BRIDGE (LEFT BANK)

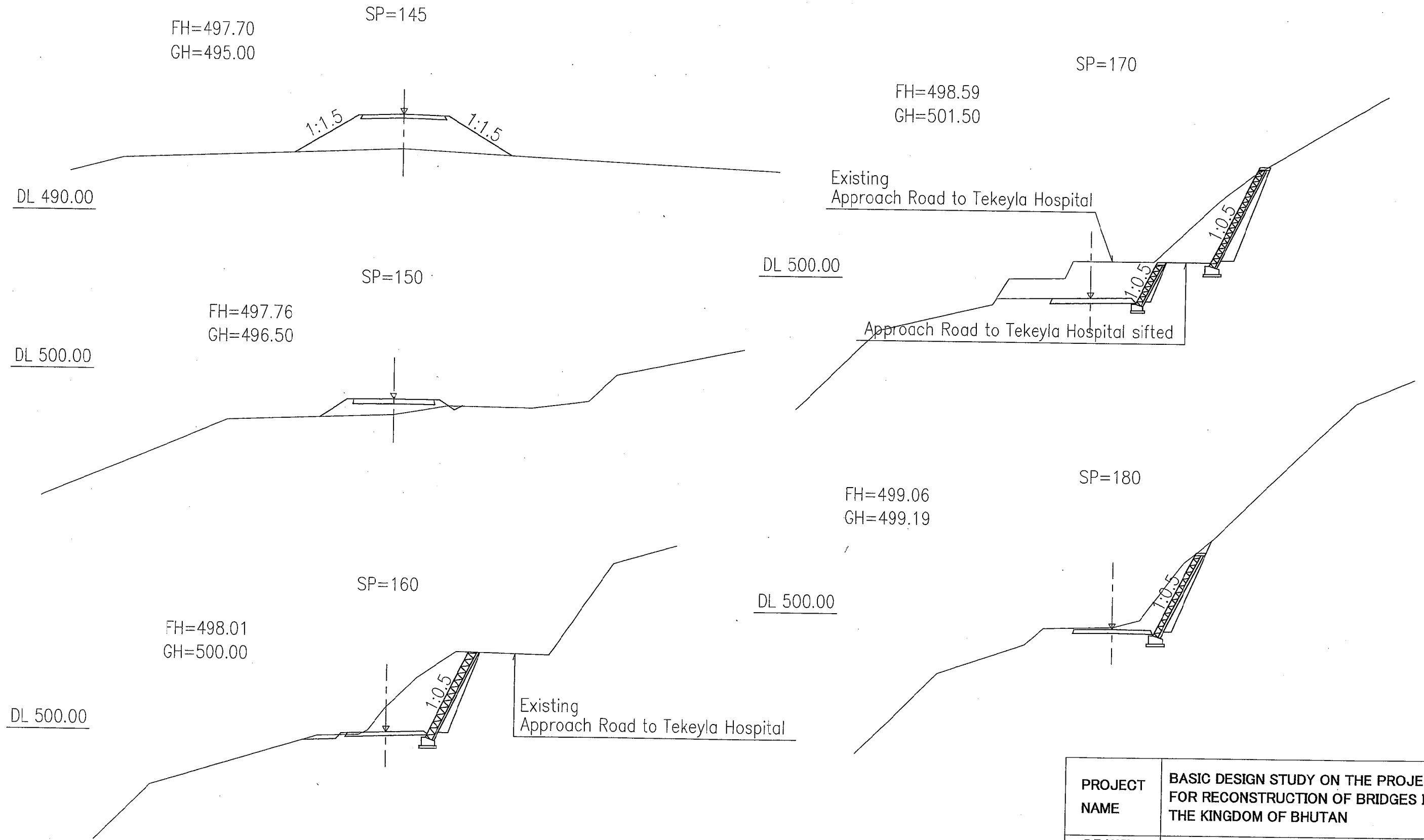


Figure CROSS SECTION FOR APPROACH ROAD S=1:300

PROJECT NAME	BASIC DESIGN STUDY ON THE PROJECT FOR RECONSTRUCTION OF BRIDGES IN THE KINGDOM OF BHUTAN		
DRAWING NAME	CROSS SECTION FOR APPROACH ROAD		
SCALE	As shown	DRAWING No.	5/6
JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)			

No.5 MANGDE BRIDGE

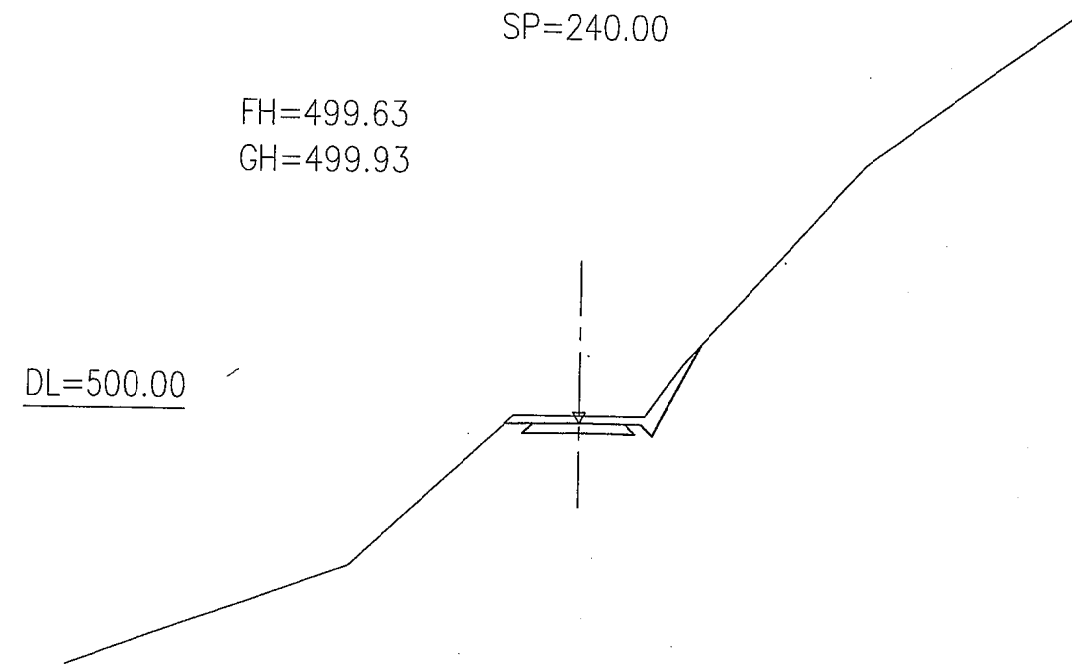
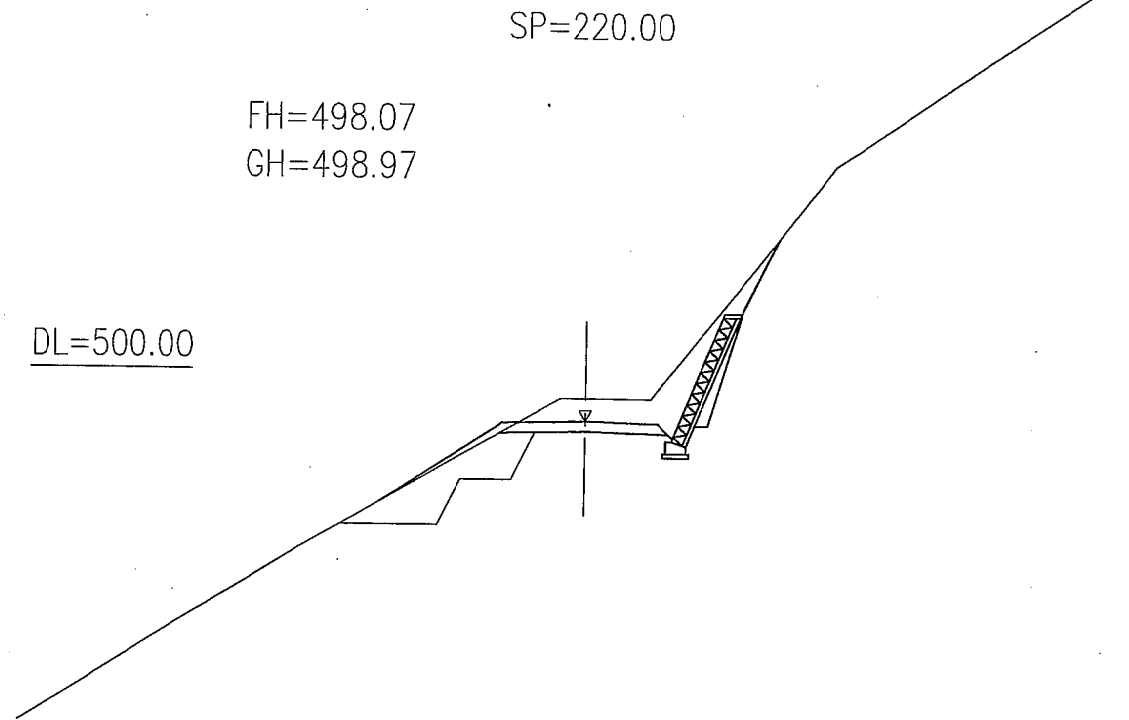
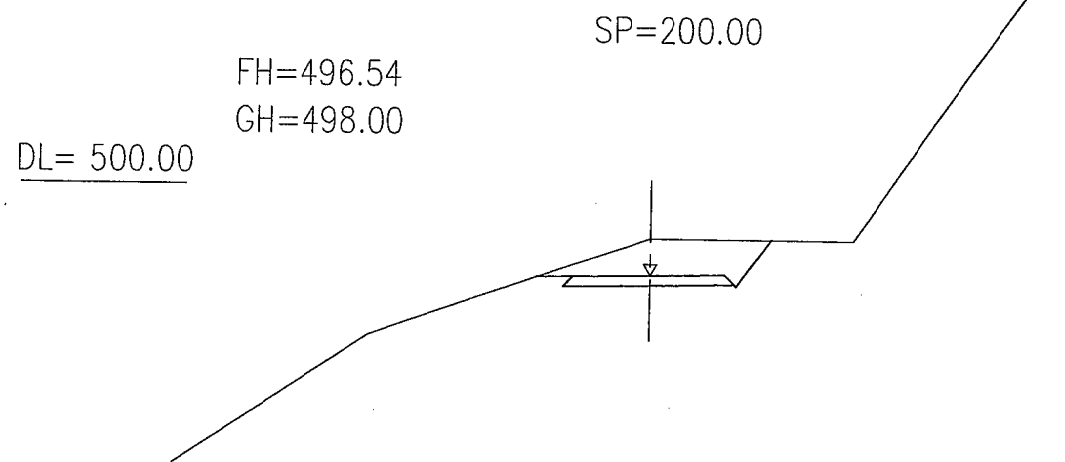
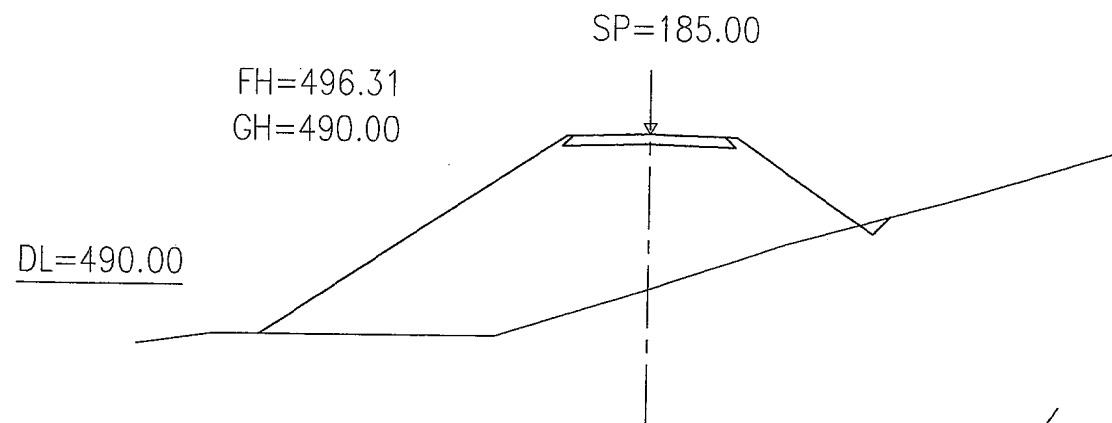
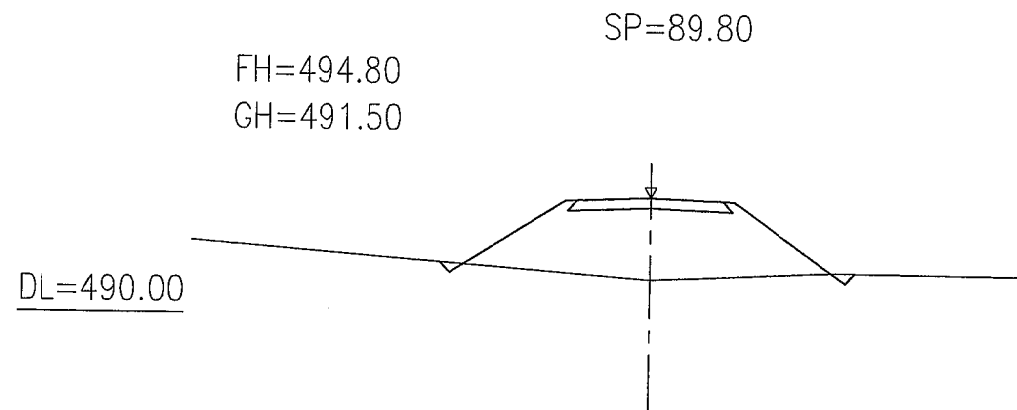
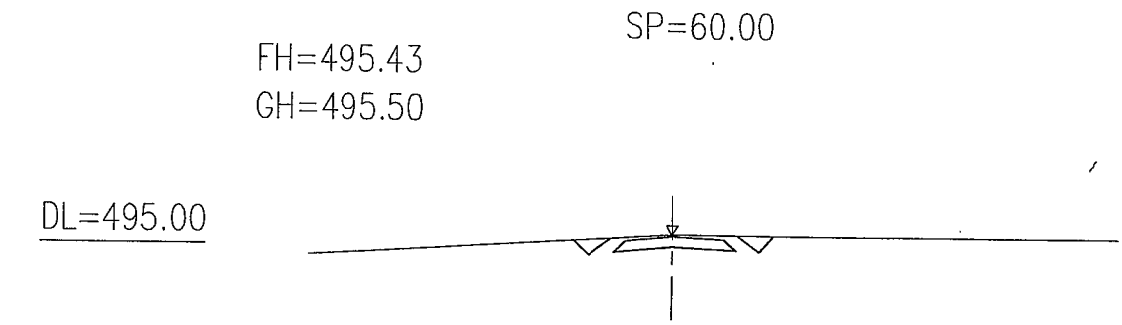
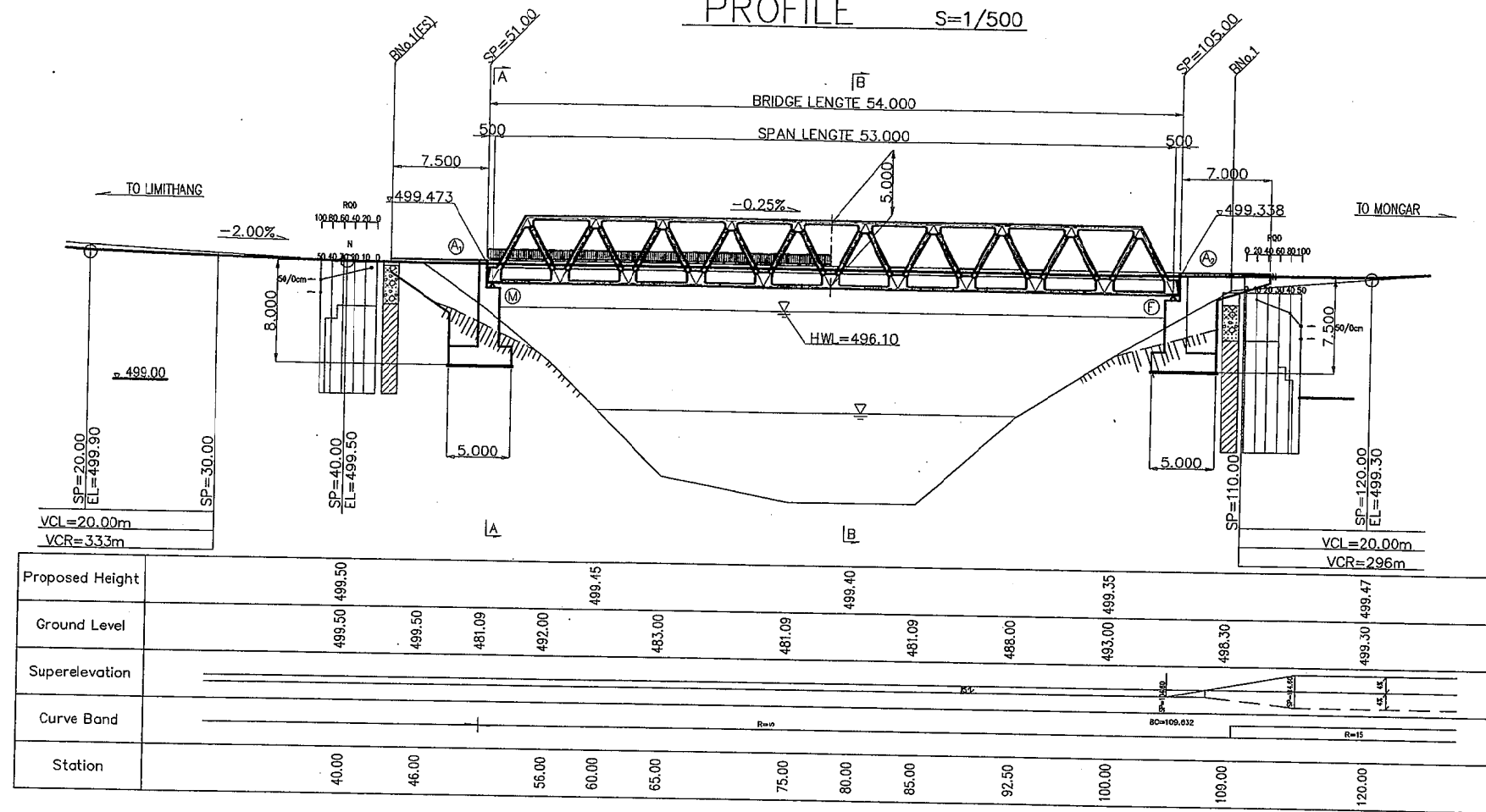


Figure CROSS SECTION FOR APPROACH ROAD S=1:300

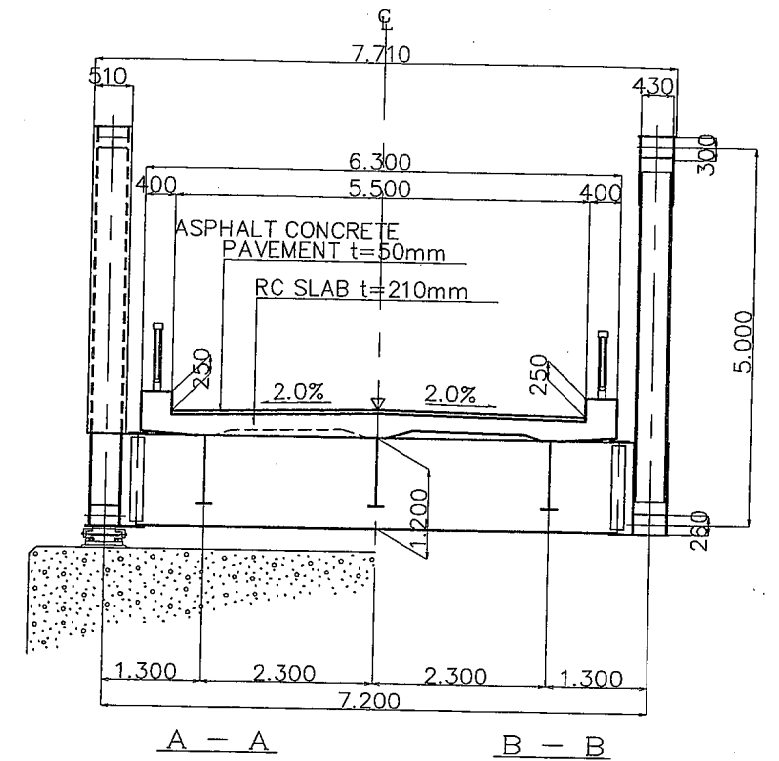
PROJECT NAME	BASIC DESIGN STUDY ON THE PROJECT FOR RECONSTRUCTION OF BRIDGES IN THE KINGDOM OF BHUTAN		
DRAWING NAME	CROSS SECTION FOR APPROACH ROAD		
SCALE	As shown	DRAWING No.	6/6
JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)			

No.1 KURI BRIDGE

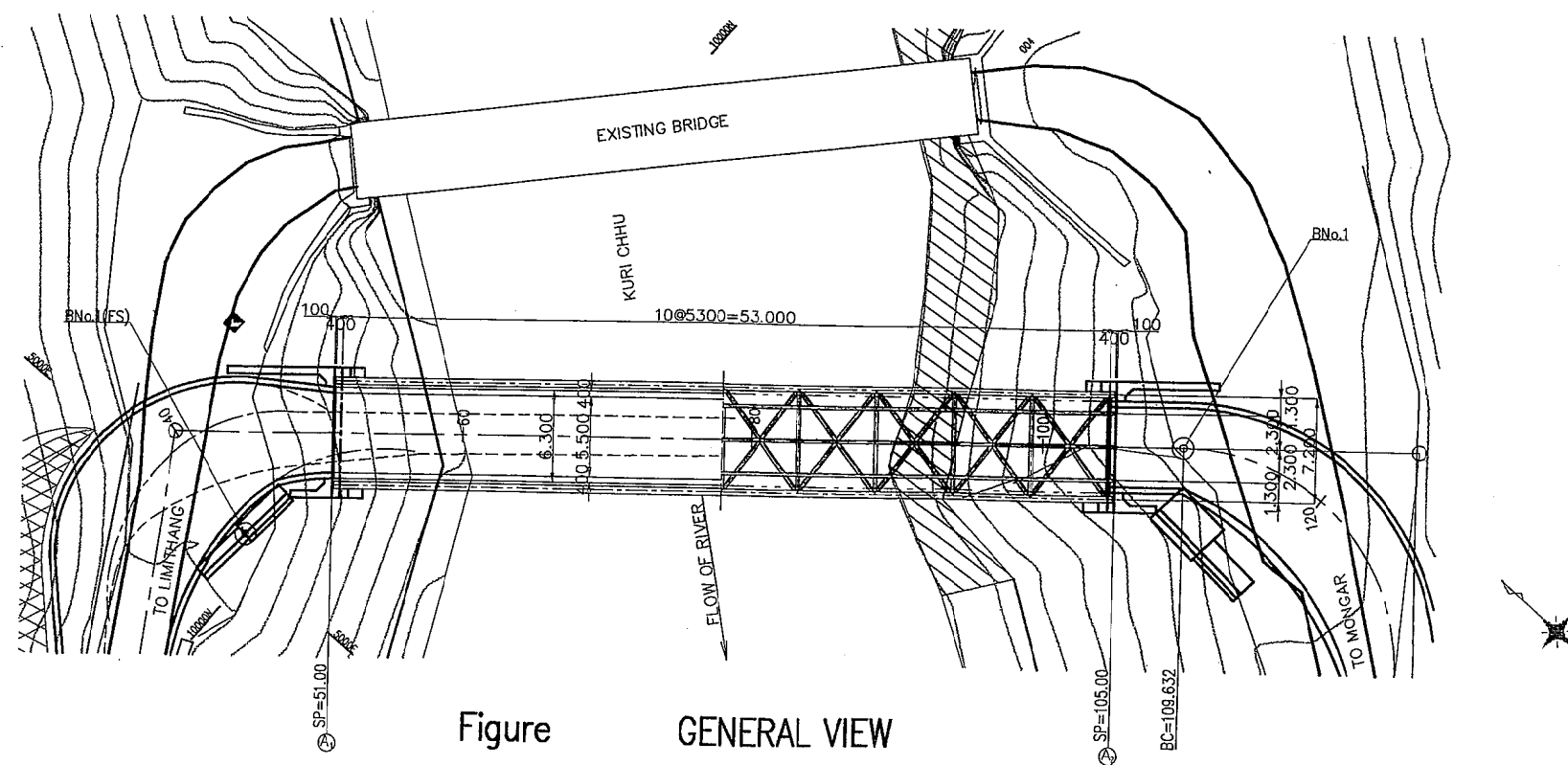
PROFILE S=1/500



CROSS SECTION S=1/100



PLAN S=1/500



桥梁一般图

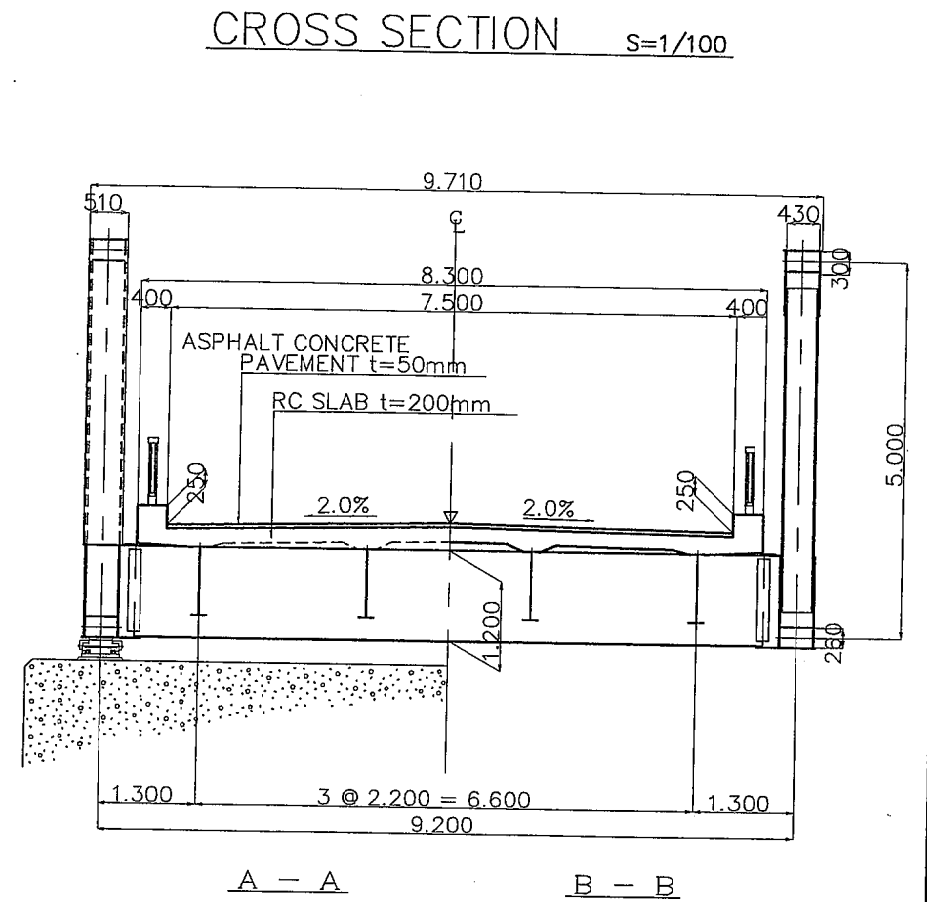
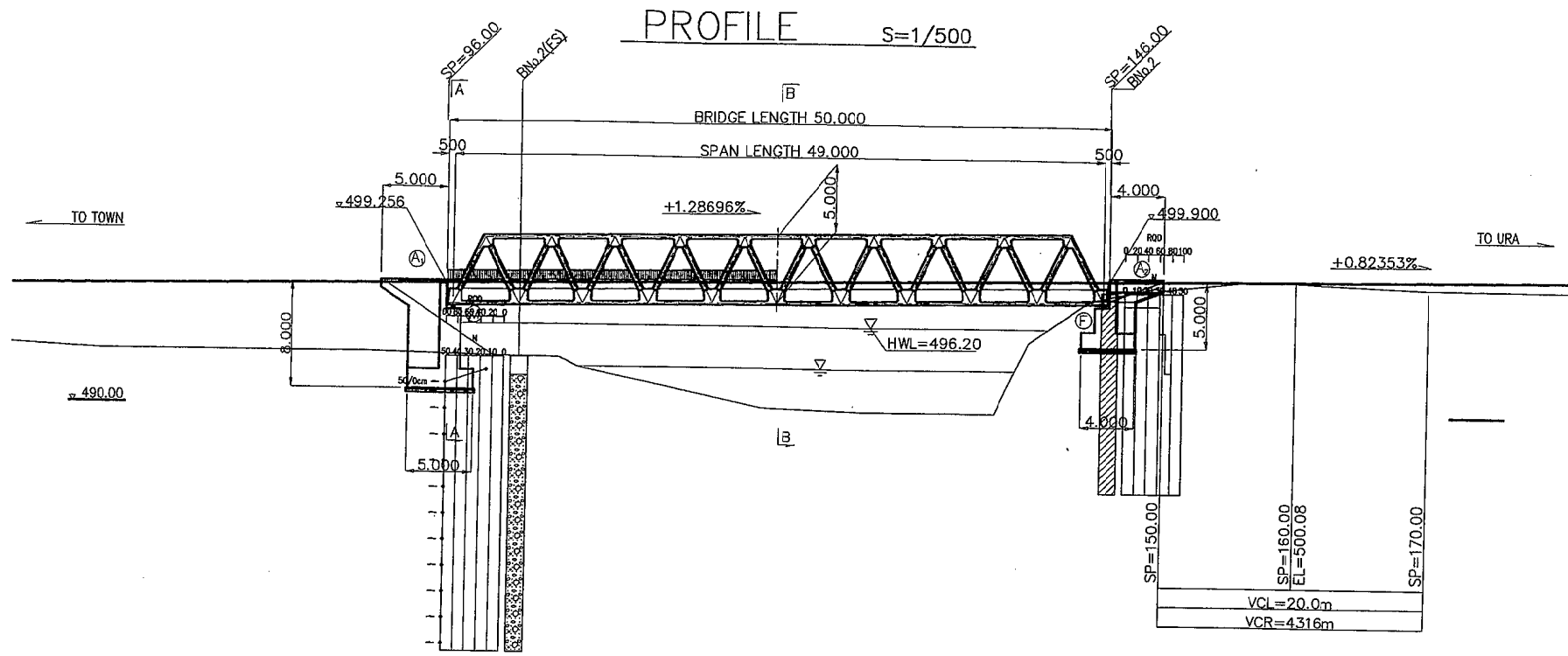
Figure GENERAL VIEW

The Terms Of Design

Bridge Order	First Order Bridge	
Bridge Length	54.000m	
Span Length	53.000m	
Road Width	5.500m	
Live Load	IRC Class A	
Design Seismic Scale	$k_w = 0.14$ $k_v = 0$	
Super structure	Form	Pony Truss
	Material	Concrete $\sigma_c = 210 \text{ kg/cm}^2$
Strength	Reinforcing Bar	SD295
	Steel	$\sigma_s = 210 \text{ N/mm}^2$ (SMA490W) $\sigma_s = 140 \text{ N/mm}^2$ (SMA400W)
Sub structure	Form	Inverted T Type Abutment
	Foundation	Spread Foundation
Material	Concrete	$\sigma_c = 210 \text{ kg/cm}^2$
	Reinforcing Bar	SD295

PROJECT NAME	BASIC DESIGN STUDY ON THE PROJECT FOR RECONSTRUCTION OF BRIDGES IN THE KINGDOM OF BHUTAN		
DRAWING NAME	GENERAL VIEW		
SCALE	As shown	DRAWING No.	1/5
JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)			

No.2 CHANKAR BRIDGE



Proposed Height		499.05		499.31		499.57		499.82		500.04		500.24																	
Ground Level	494.00		494.00		493.70	493.00		490.01	489.815	489.77	492.00	495.18	498.42	489.45	499.32	500.08	499.54	499.50	500.24										
Superelevation																													
Curve Band																													
Station	70.00		80.00		90.00		100.00		104.50	106.00		120.00		127.50		137.50	138.50	140.00	144.50	149.40	150.00		157.00		160.00		170.00		180.00

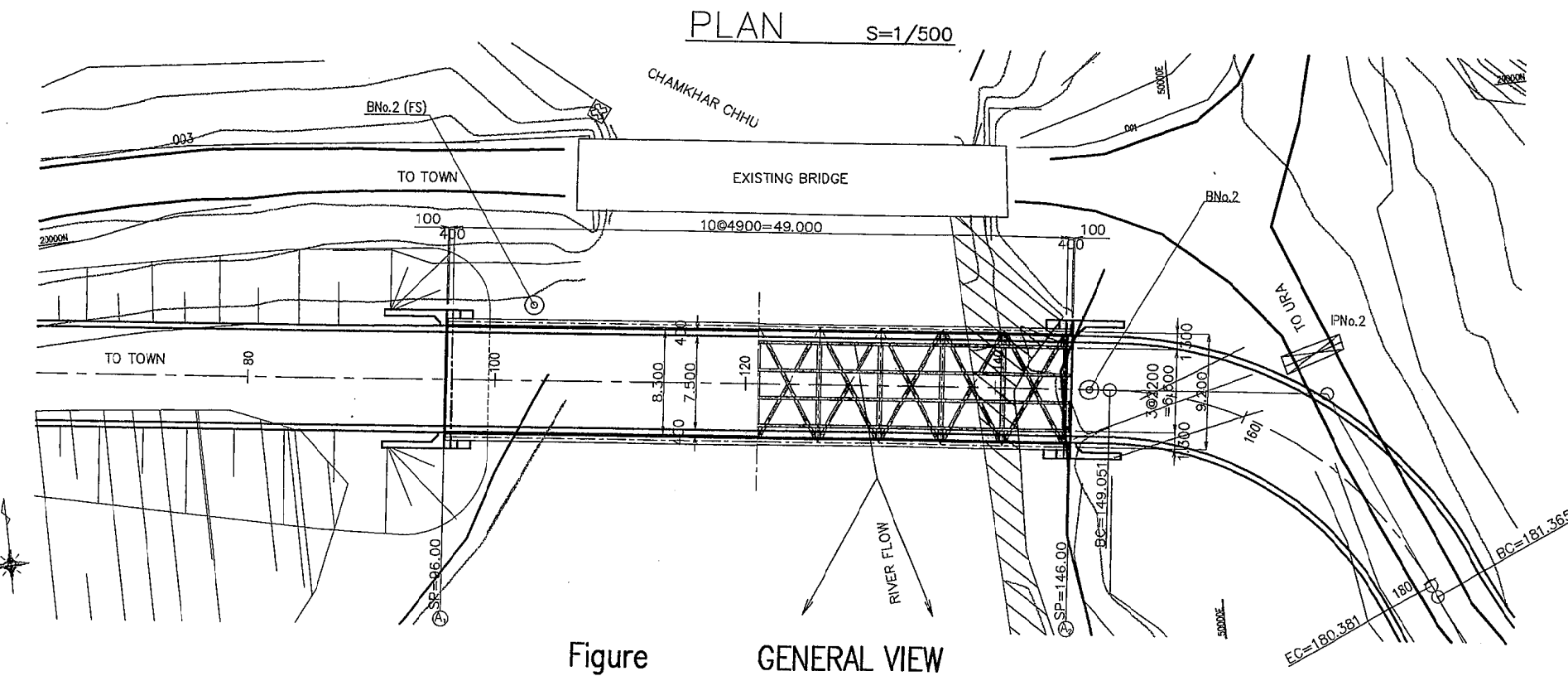


Figure GENERAL VIEW

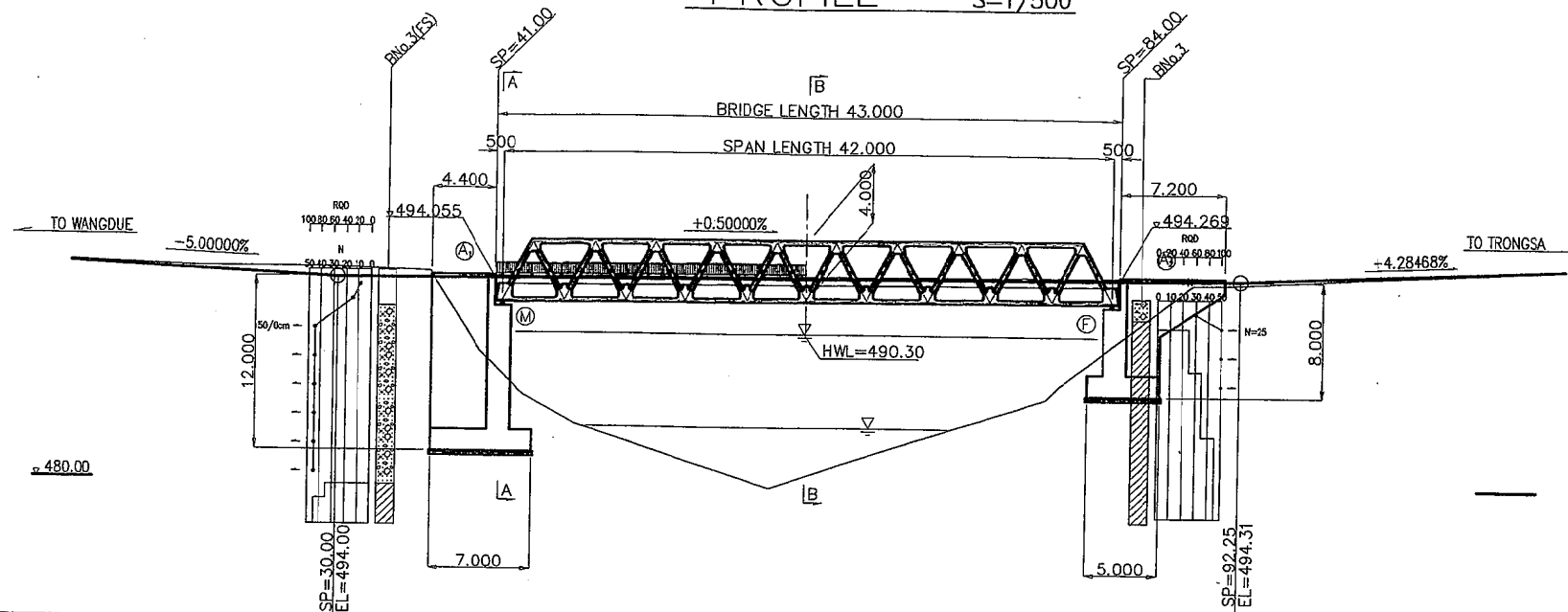
The Terms Of Design

Bridge Order	First Order Bridge
Bridge Length	50.000m
Span Length	49.000m
Road Width	7.500m
Live Load	IRC Class A
Design Seismic Scale	$k_h = 0.14$ $k_v = 0$
Form	Pony Truss
Concrete	$\sigma_c = 210 \text{ kg/cm}^2$
Reinforcing Bar	SD295
Steel	$\sigma_s = 210 \text{ N/mm}^2$ (SMA490W) $\sigma_s = 140 \text{ N/mm}^2$ (SMA400W)
Form	Inverted T Type Abutment
Foundation	Spread Foundation
Concrete	$\sigma_c = 210 \text{ kg/cm}^2$
Reinforcing Bar	SD295

PROJECT NAME	BASIC DESIGN STUDY ON THE PROJECT FOR RECONSTRUCTION OF BRIDGES IN THE KINGDOM OF BHUTAN		
DRAWING NAME	GENERAL VIEW		
SCALE	As shown	DRAWING No.	2/5
JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)			

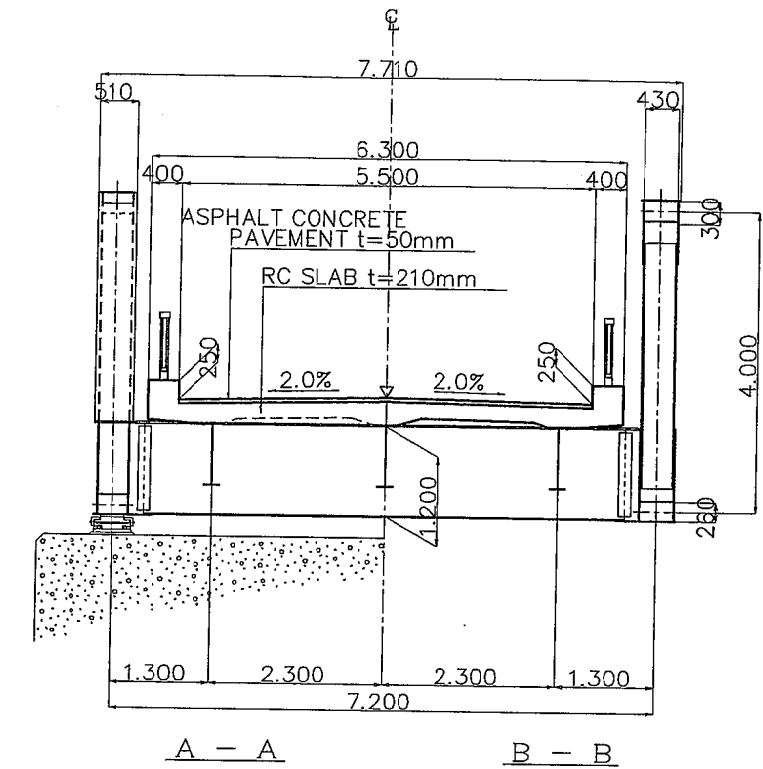
No.3 BJEE BRIDGE

PROFILE S=1/500



Proposed Height	494.50	494.00	494.05	494.15	494.25	494.31	494.64
Ground Level	494.70	494.70	494.50	489.00	486.00	484.00	479.65
Superelevation	-----						
Curve Band	-----						
Station	20.00	30.00	36.50	40.00	43.00	46.50	60.00
							79.00
							80.00
							89.00
							92.20
							100.00

CROSS SECTION S=1/100



PLAN S=1/500

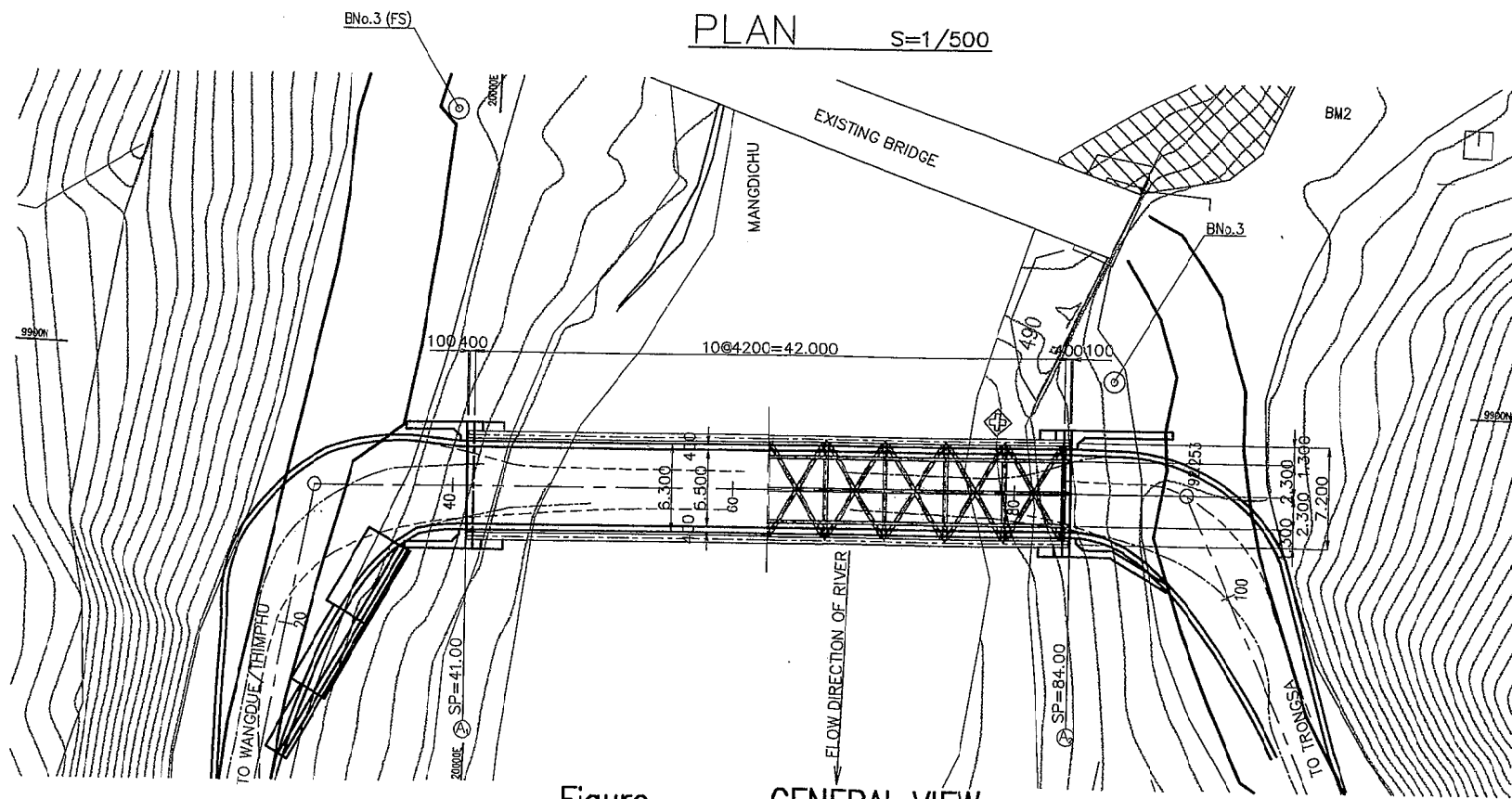


Figure GENERAL VIEW

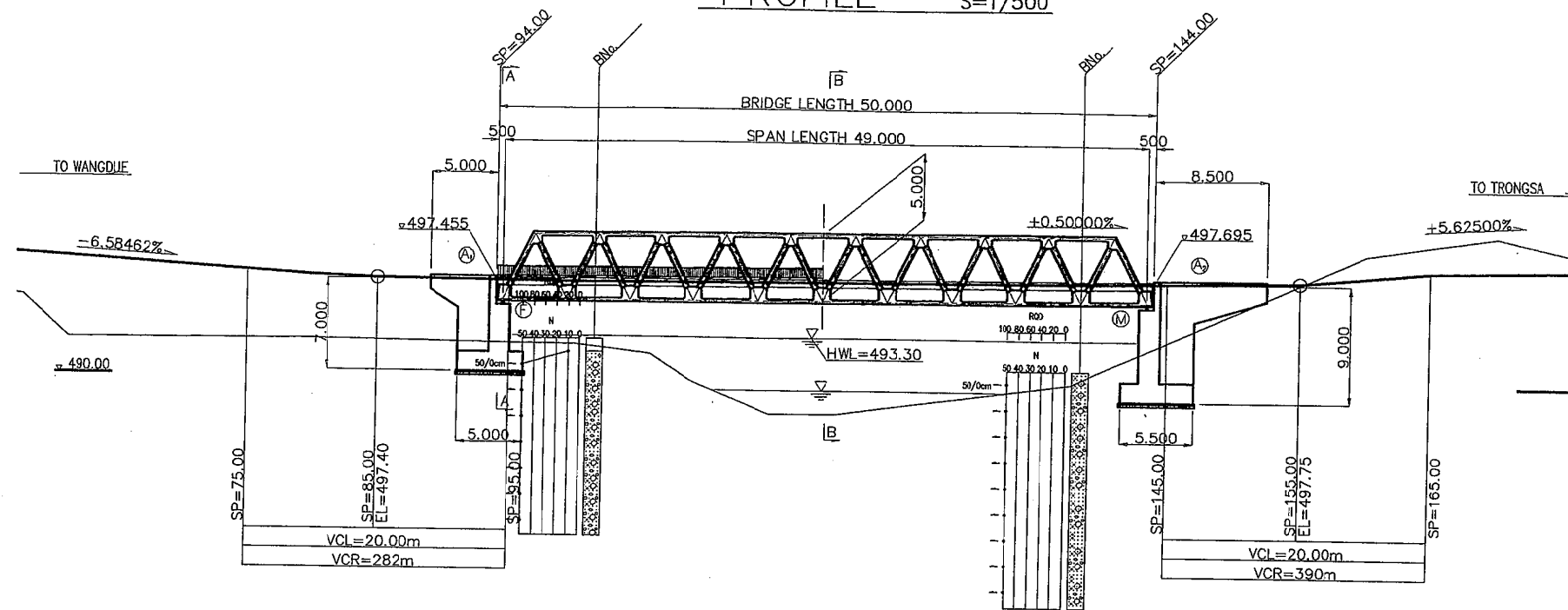
The Terms Of Design

Bridge Order	First Order Bridge	
Bridge Length	43.000m	
Span Length	42.000m	
Road Width	5.500m	
Live Load	IRC Class A	
Design Seismic Scale	$k_w = 0.14$ $k_v = 0$	
Super structure	Form	Pony Truss
	Material Strength	Concrete $\sigma_c = 210 \text{ kg/cm}^2$ Reinforcing Bar SD295
Sub structure	Form	Structure Inverted T Type Abutment
	Material Strength	Foundation Spread Foundation Concrete $\sigma_c = 210 \text{ kg/cm}^2$ Reinforcing Bar SD295

PROJECT NAME	BASIC DESIGN STUDY ON THE PROJECT FOR RECONSTRUCTION OF BRIDGES IN THE KINGDOM OF BHUTAN		
DRAWING NAME	GENERAL VIEW		
SCALE	As shown	DRAWING No.	3/5
JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)			

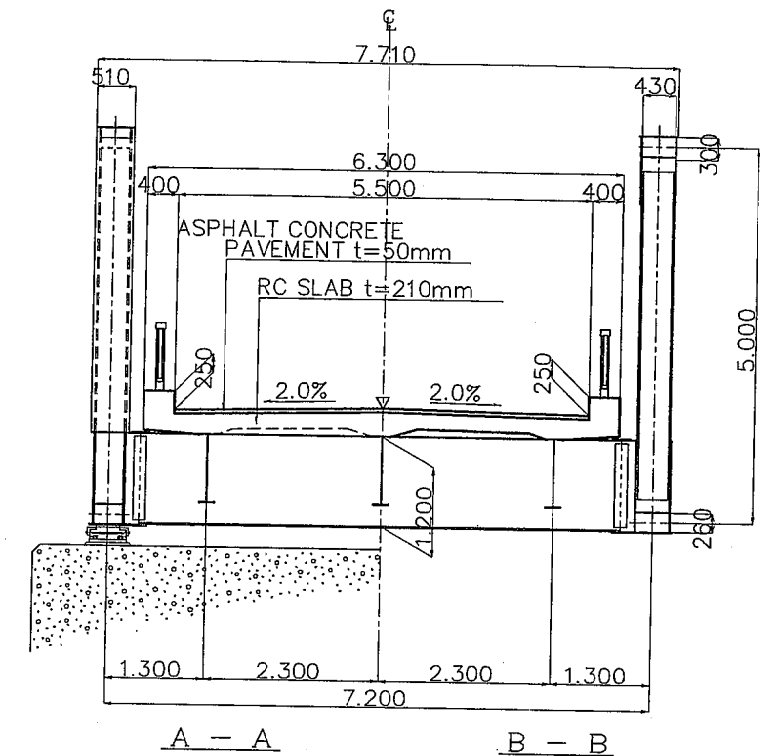
No.4 WACHY BRIDGE

PROFILE S=1/500



Proposed Height	497.77	497.58	497.48	497.58	497.68	497.88	498.96
Ground Level	492.90	492.69	492.00	490.00	487.50	487.50	498.96
Superelevation							
Curve Band							
Station	80.00	85.00	100.00	106.00	109.00	115.00	120.00

CROSS SECTION S=1/100



PLAN S=1/500

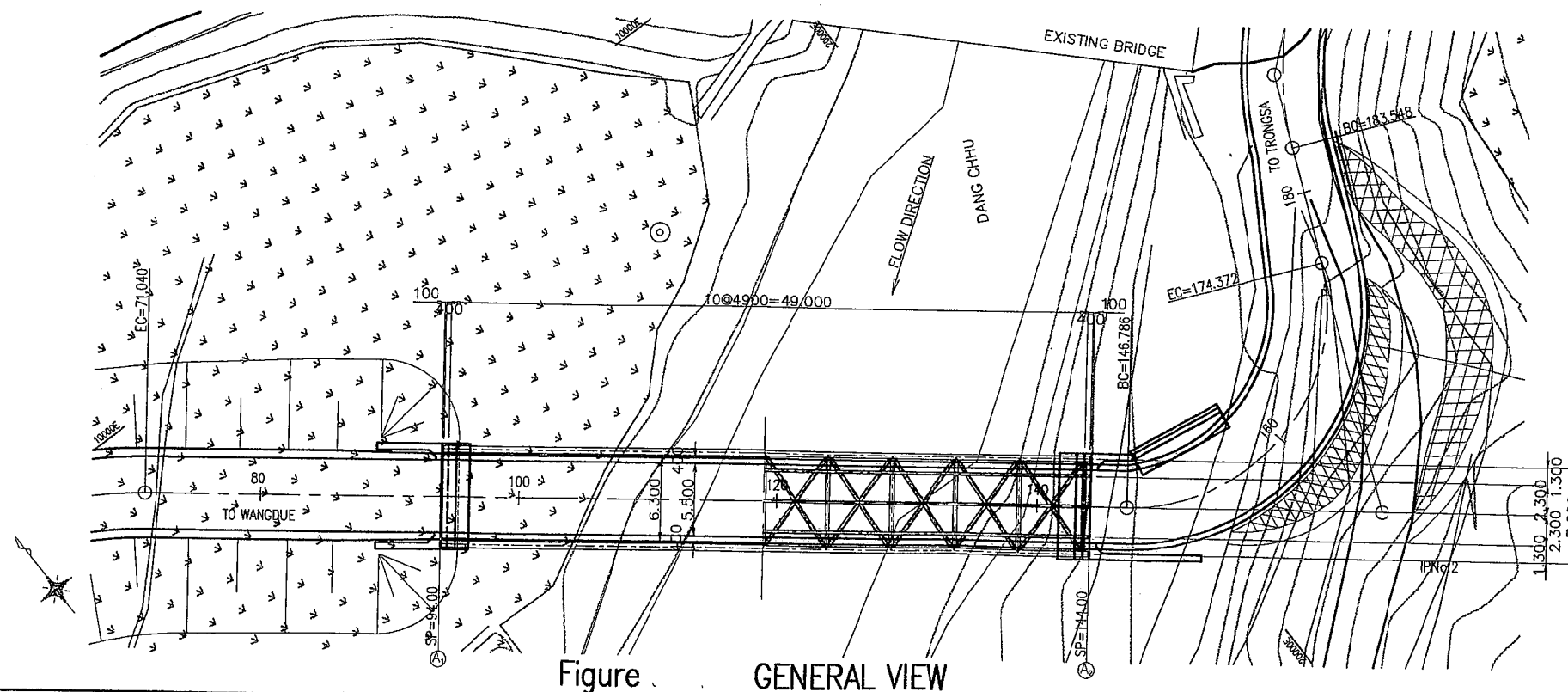


Figure GENERAL VIEW

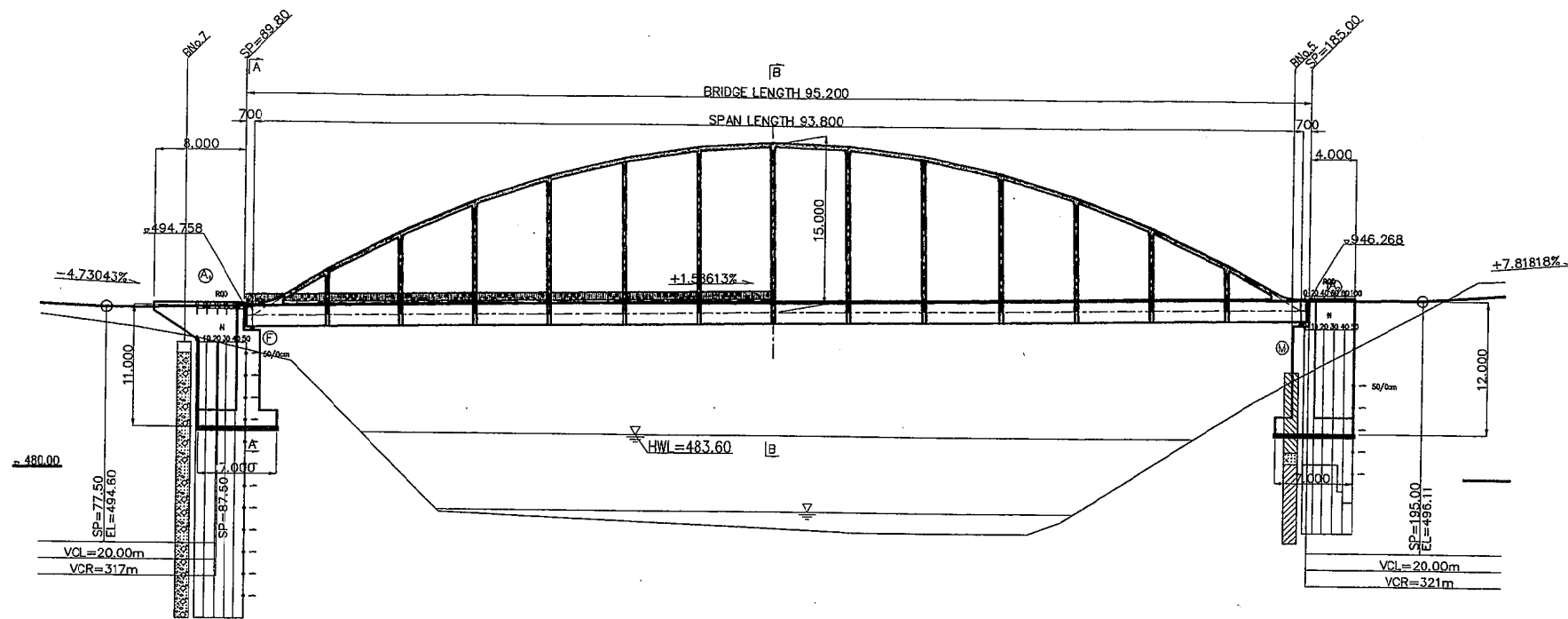
The Terms Of Design

Bridge Order	First Order Bridge	
Bridge Length	50.000m	
Span Length	49.000m	
Road Width	5.500m	
Live Load	IRC Class A	
Design Seismic Scale	$k_a = 0.14$ $k_v = 0$	
Super structure	Form	Pony Truss
	Material Strength	Concrete $\sigma_c = 210 \text{ kg/cm}^2$ Reinforcing Bar SD295
Sub structure	Form	Structure Inverted T Type Abutment
	Material Strength	Foundation Spread Foundation Concrete $\sigma_c = 210 \text{ kg/cm}^2$ Reinforcing Bar SD295

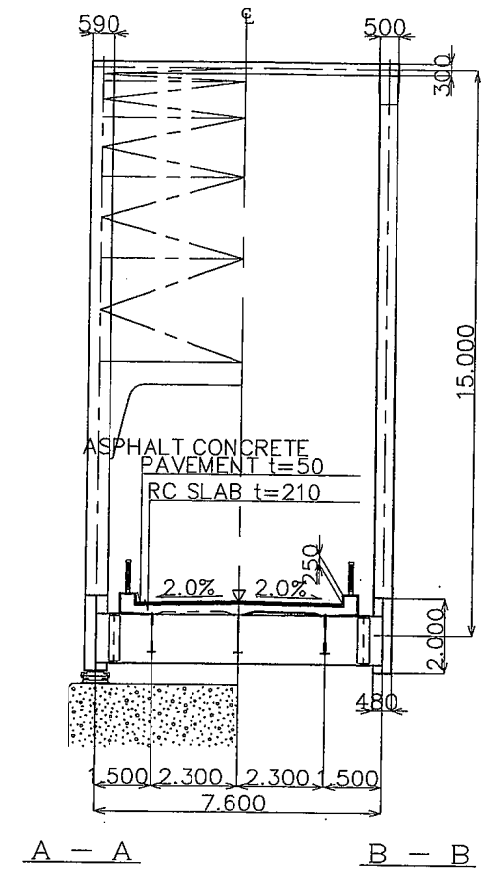
PROJECT NAME	BASIC DESIGN STUDY ON THE PROJECT FOR RECONSTRUCTION OF BRIDGES IN THE KINGDOM OF BHUTAN		
DRAWING NAME	GENERAL VIEW		
SCALE	As shown	DRAWING No.	4/5
JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)			

No.5 MANGDE BRIDGE

PROFILE S=1/600



CROSS SECTION S=1/200



Proposed Height	494.76	494.74	495.12	495.43	495.59	495.91	496.23	496.27	496.54
Ground Level	483.00	492.00	490.00	484.00	476.50	474.86	476.00	487.00	498.00
Superelevation									
Curve Band									
Station	77.50	80.00	86.00	94.00	100.00	107.50	120.00	140.00	145.00

PLAN S=1/600

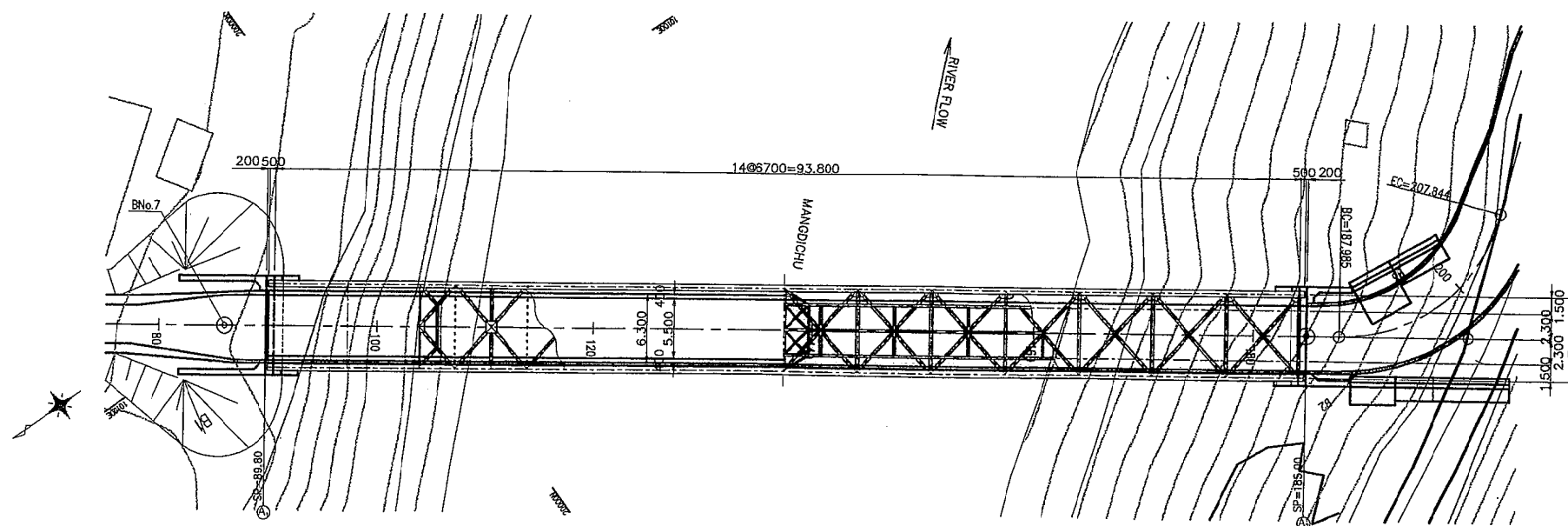


Figure GENERAL VIEW

The Terms Of Design

Bridge Order	First Order Bridge	
Bridge Length	95.200m	
Span Length	93.800m	
Road Width	5.500m	
Live Load	IRC Class A	
Design Seismic Scale	$k_h = 0.14$ $k_v = 0$	
Super structure	Form	Longer
	Material	Concrete $f_{ck} = 210\text{kg/cm}^2$
Material Strength	Reinforcing Bar	SD295
	Steel	$f_{yk} = 210\text{N/mm}^2$ (SMA490W), $f_{yk} = 140\text{N/mm}^2$ (SMA400W)
Sub structure	Form	Inverted T Type Abutment
	Foundation	Spread Foundation
Material Strength	Concrete	$f_{ck} = 210\text{kg/cm}^2$
	Reinforcing Bar	SD295

PROJECT NAME	BASIC DESIGN STUDY ON THE PROJECT FOR RECONSTRUCTION OF BRIDGES IN THE KINGDOM OF BHUTAN		
DRAWING NAME	GENERAL VIEW		
SCALE	As shown	DRAWING No.	5/5
JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)			