

Three bridges on farm roads along National Highway No.4

**Table 3-8 Outlines of the Replacement Bridge -2**

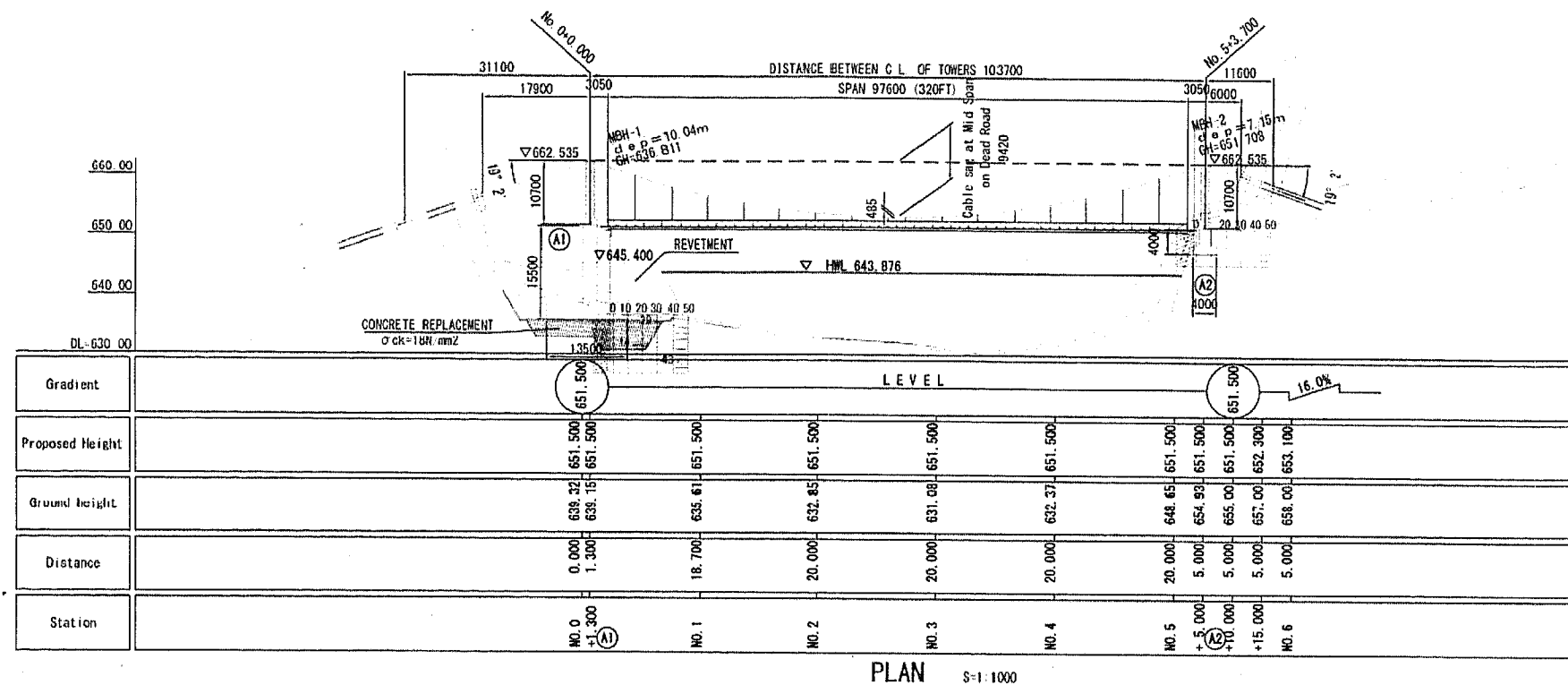
Bridge name	Mandechhu (Reotala) Bridge	Kela Bridge	Jangbi Bridge
Bridge structure	Bailey suspension bridge	Bailey bridge	Bailey bridge
Bridge length	103.7m(340FT)	49.532m(163FT)	49.532m(163FT)
Span length	97.6m(320FT)	48.768m(160FT)	48.768m(160FT)
Width	3.277m (one lane)	3.277m (one lane)	3.277m (one lane)
Foundation structure	Spread foundation (Abutments A1 and A2)	Spread foundation (Abutments A1 and A2)	Spread foundation (Abutments A1 and A2)
Main material	Steel for beams of Bailey bridge concrete ( $\sigma_{ck}=21\text{N/mm}^2$ (Abutment))	Steel for beams of Bailey bridge concrete ( $\sigma_{ck}=18\text{N/mm}^2$ (Abutment))	Steel for beams of Bailey bridge concrete ( $\sigma_{ck}=18\text{N/mm}^2$ (Abutment))
Method to erect superstructure	Cable erection/vertical suspension method	Launching method with a support in the middle	Launching method with a support in the middle
Notes	The construction is to be handed over to the Bhutanese side after the substructure and revetment works in the scope of the works of the Japanese side have been completed. Material procurement and construction of the superstructure should be carried out by the Bhutanese side.	The construction is to be handed over to the Bhutanese side after the substructure works in the scope of the works of the Japanese side have been completed. Material procurement and construction of the superstructure should be carried out by the Bhutanese side.	The construction is to be handed over to the Bhutanese side after the substructure works in the scope of the works of the Japanese side have been completed. Material procurement and construction of the superstructure should be carried out by the Bhutanese side.

### 3-2-3-2 Basic Design Drawing

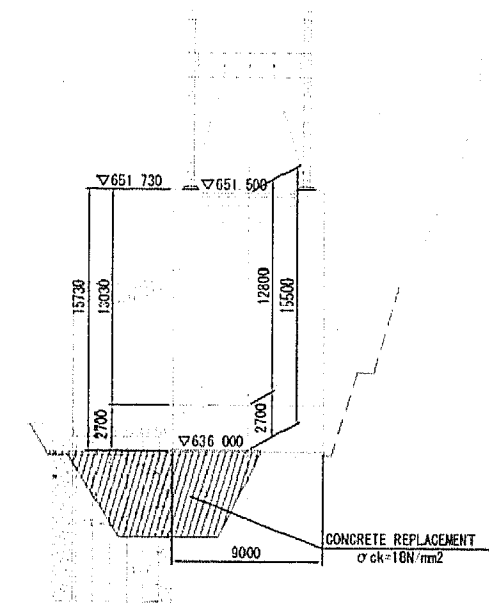
For the basic design drawing, the general drawing of each bridge is shown on the following pages.

# GENERAL DRAWING (No. 9 Mangdechhu (Reotala) Bridge)

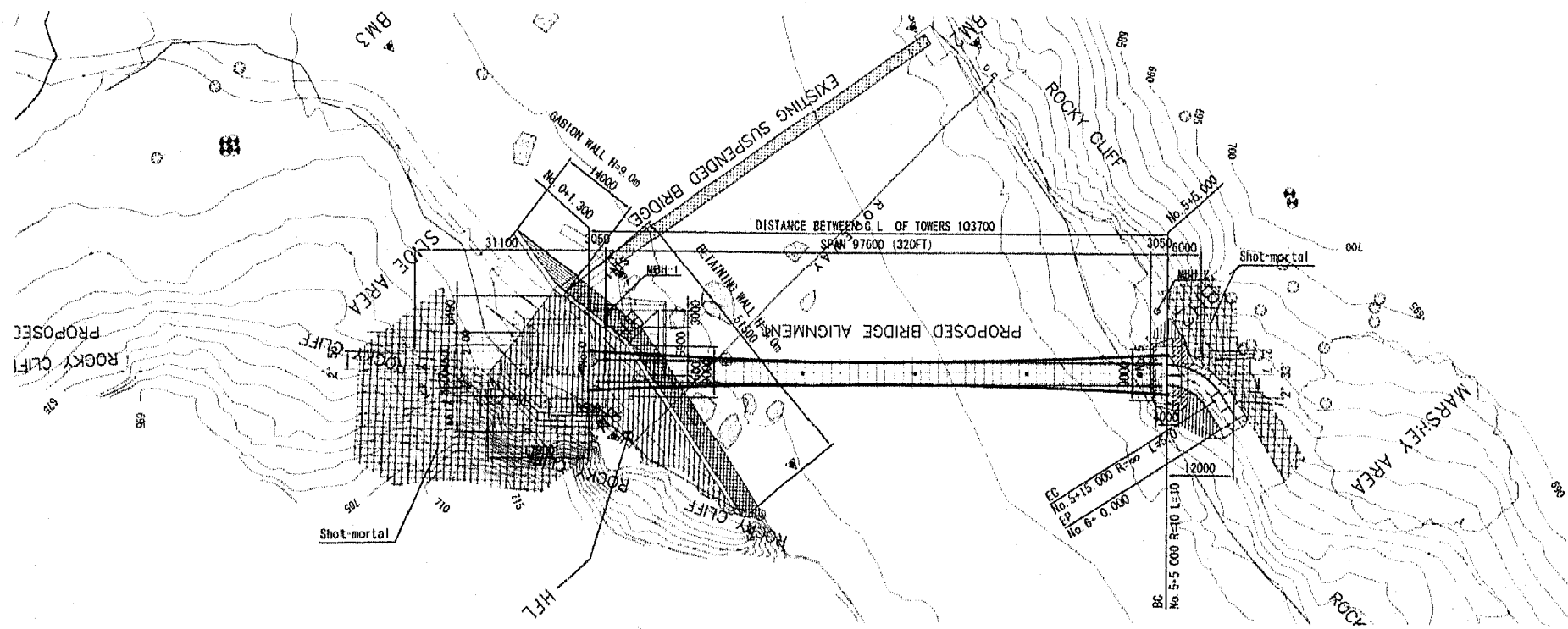
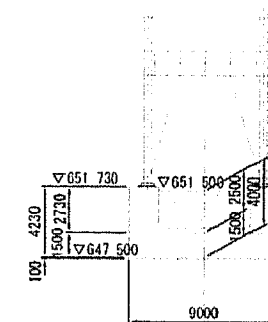
PROFILE S=1:1000



A1-ABUT S=1:400



A2-ABUT S=1:400



## The Terms Of Design

Bridge Length		103.700m
Span Length		97.600m (320FT)
Road Width		3.27m
Live Load		IRC 24R
Design Seismic Scale		KH=0.22 KV=0.00
Super structure	Form	Bailey Suspension Bridge
Sub structure	Form	Inverted T-Type Abutment
	Foundation	Spread Foundation
	Material strength	Concrete $\sigma_{ck}=21$ N/mm <sup>2</sup>
	Reinforcing Bar	SD295 Equivalent

MINISTRY OF WORKS AND HUMAN SETTLEMENT  
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RESTORATION AND IMPROVEMENT OF VITAL INFRASTRUCTURES  
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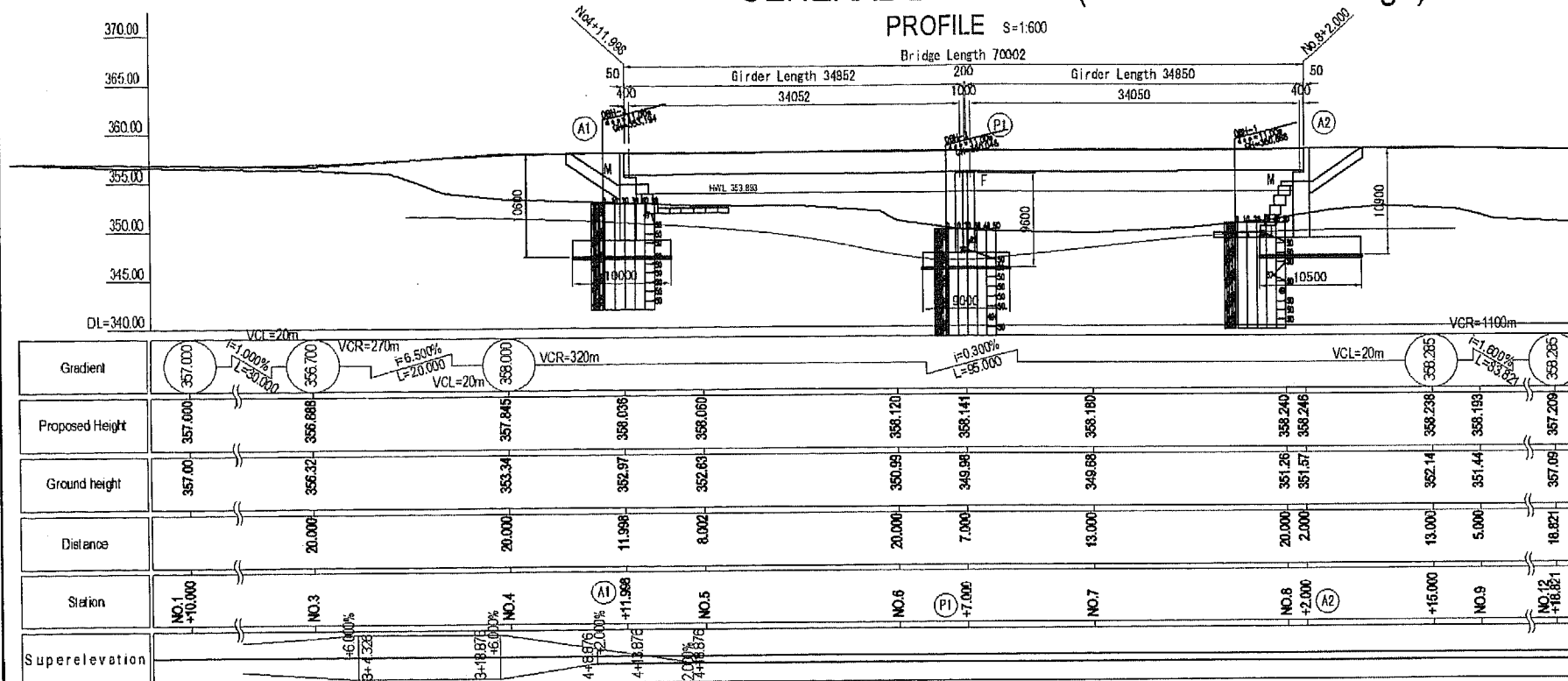
JAPAN INTERNATIONAL  
COOPERATION AGENCY (JICA)

TITLE  
GENERAL DRAWING (No. 9 Mangdechhu (Reotala) Bridge)

SCALE  
DATE  
DRAWING NO.  
Ma 3

# GENERAL DRAWING (No.17 Dolkhola Bridge)

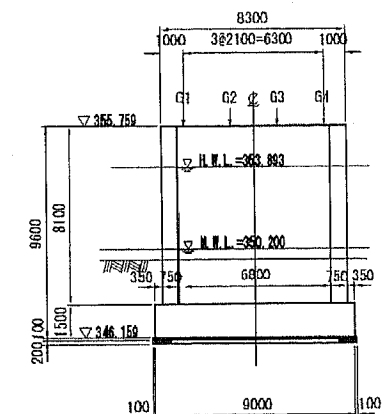
PROFILE S=1:600



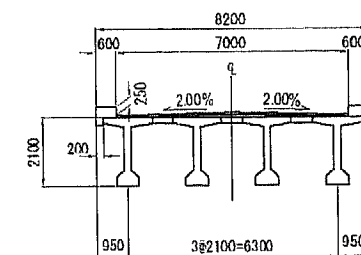
## The Terms Of Design

Bridge Length	70.000m
Span Length	34.045m
Road Width	7.000m
Live Load	Single lane IRC 70R(wheeled) or Double lane IRC Class A
Design Seismic Scale	KH=0.22 KV=0.00
Super structure	Form PC T-Shape Girder
Material strength	Concrete $\sigma_{ck}=30\text{ N/mm}^2$ Reinforcing Bar SD295 Tendon 12S12.7mm
Sub structure	Form Inverted T-Type Abutment Well Type Pier
Foundation	Spread Foundation
Material strength	Concrete $\sigma_{ck}=21\text{ N/mm}^2$ Reinforcing Bar SD295 Equivalent

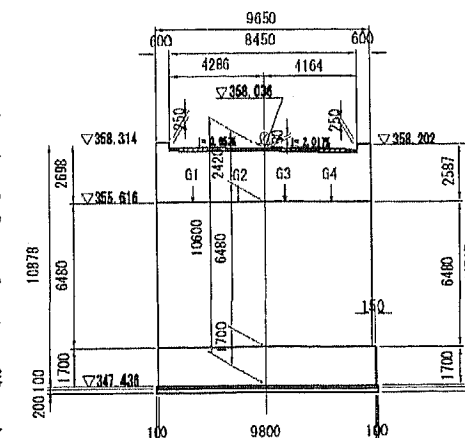
## P1-PIER S=1:300



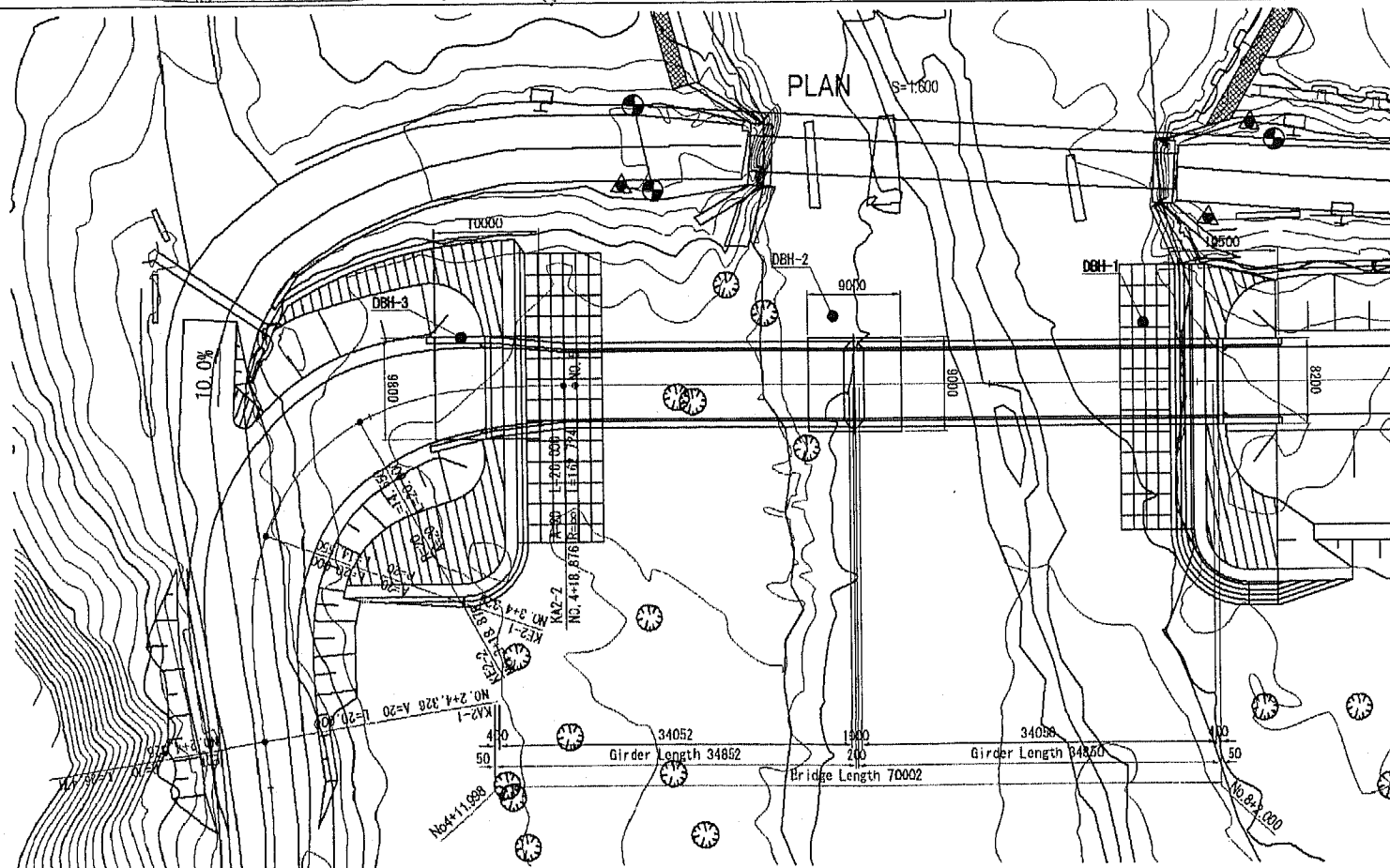
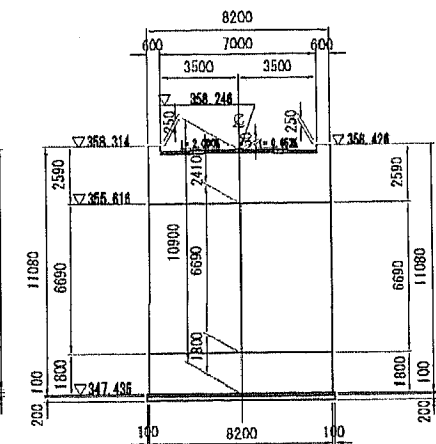
## CROSS SECTION S=1:200



## A1-ABUT S=1:300



## A2-ABUT S=1:300



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DATE

DRAWING NO.

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