

Department of Agrarian Reform
The Republic of the Philippines

**BASIC DESIGN STUDY
ON
THE BRIDGE CONSTRUCTION PROJECT
FOR EXPANDED AGRARIAN REFORM
COMMUNITIES DEVELOPMENT
IN THE REPUBLIC OF THE PHILIPPINES**

**DRAWINGS
(UMIRAY BRIDGE)**

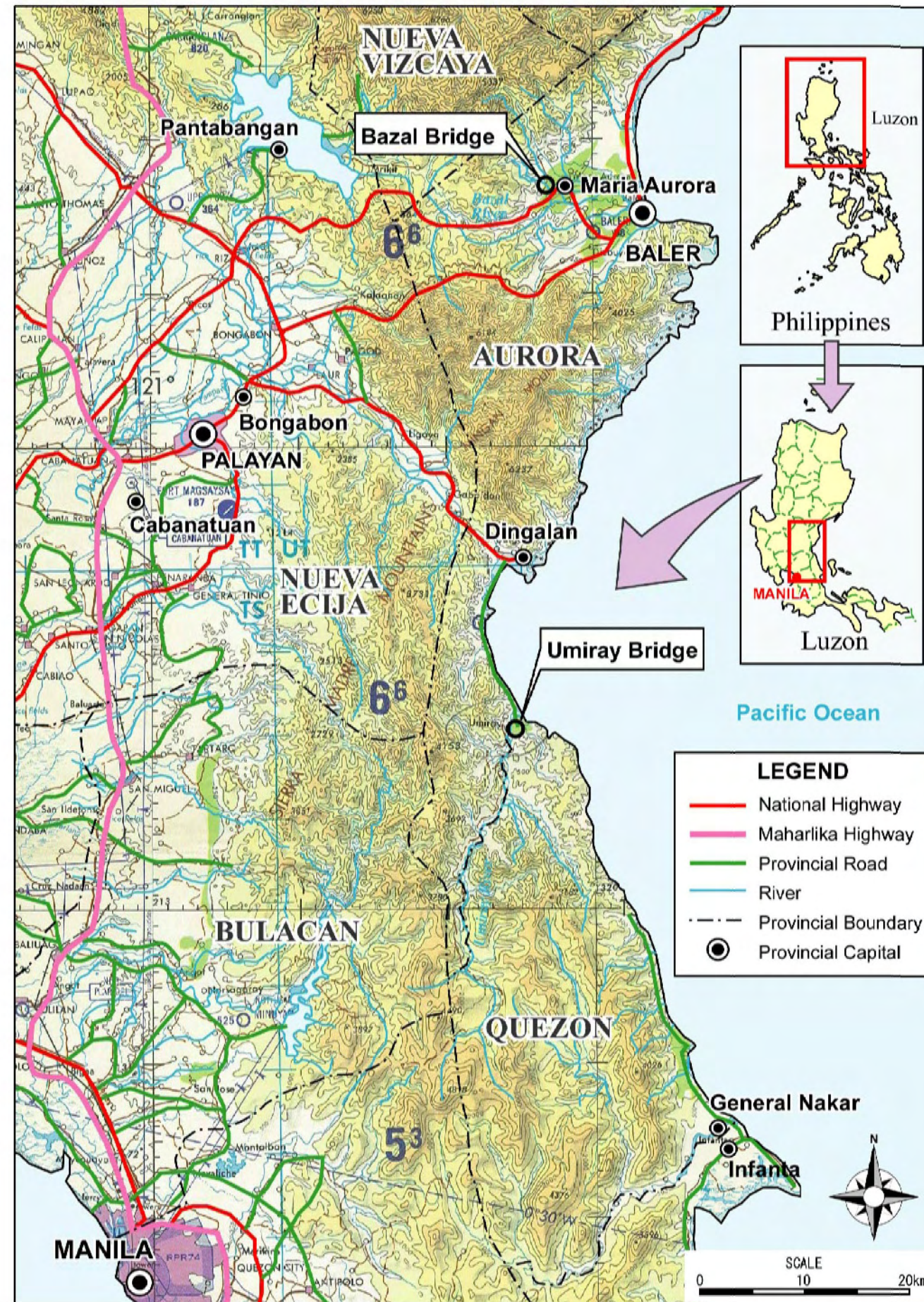
September 2008

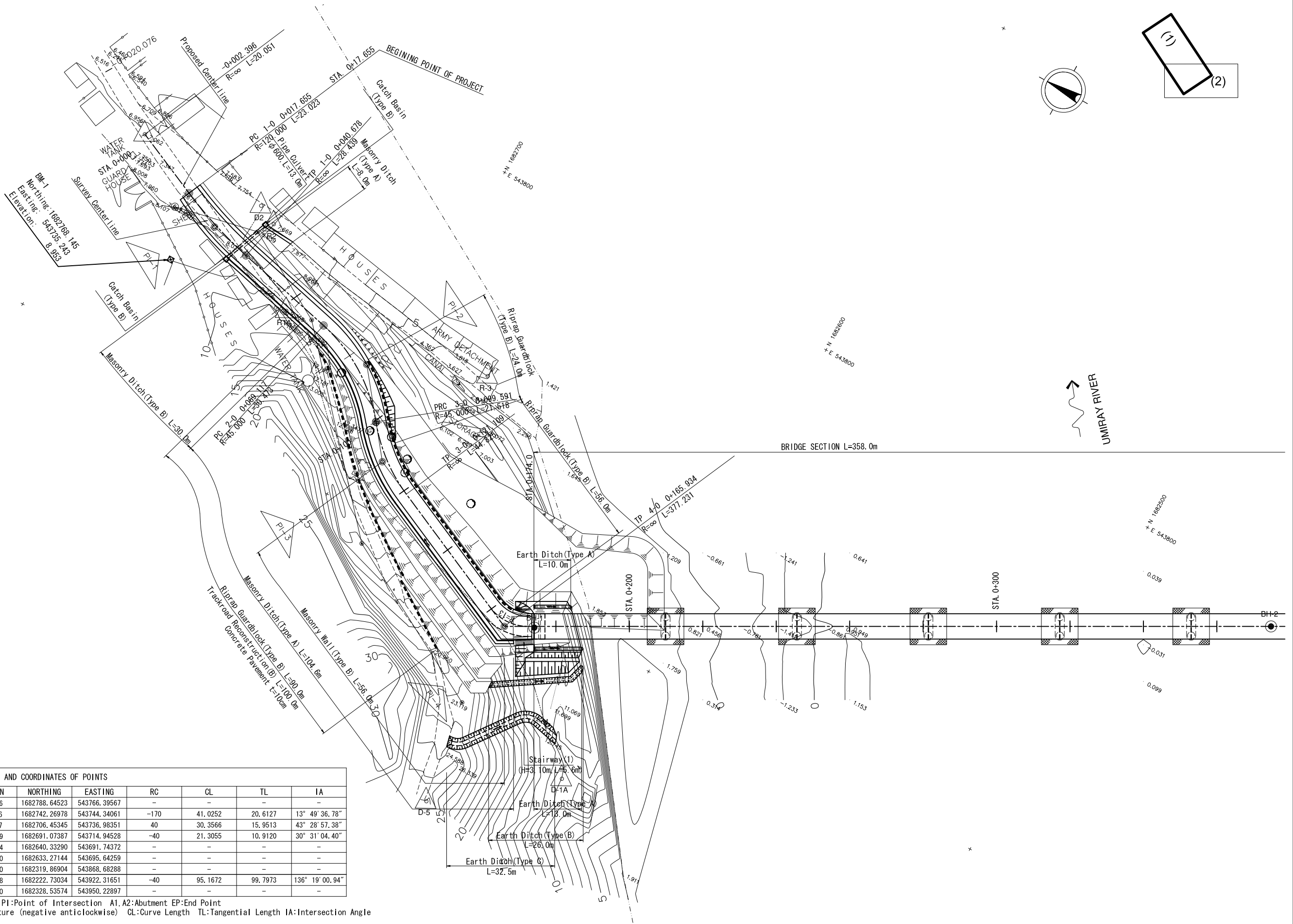
JAPAN INTERNATIONAL COOPERATION AGENCY

CTI ENGINEERING INTERNATIONAL CO., LTD.

LIST OF DRAWINGS (UMIRAY BRIDGE)

No.	Drawing Title	Scale	No.	Drawing Title	Scale
U01	Project Location Map	-	U21	Road Cross Section (3/6)	1/100
U02	Road Plan (1/2)	1/500	U22	Road Cross Section (4/6)	1/100
U03	Road Plan (2/2)	1/500	U23	Road Cross Section (5/6)	1/100
U04	Road Plan for Temporary Works	1/500	U24	Road Cross Section (6/6)	1/100
U05	Road Profile (1/2)	H=1/500, V=1/100	U25	Cross Section for Detour Road	1/100
U06	Road Profile (2/2)	H=1/500, V=1/100	U26	Cross Section for Temporary Road (1/3)	1/100
U07	Typical Cross Section of Road Section (1/2)	1/50	U27	Cross Section for Temporary Road (2/3)	1/100
U08	Typical Cross Section of Road Section (2/2)	1/50	U28	Cross Section for Temporary Road (3/3)	1/100
U09	Typical Cross Section of Temporary Works	1/50	U29	Drainage Facilities (1/2)	1/20
U10	General Drawing of Umiray Bridge	1/500	U30	Drainage Facilities (2/2)	1/20
U11	Structural Drawing of Superstructure (1/2)	1/150	U31	Road Signs	-
U12	Structural Drawing of Superstructure (2/2)	1/150	U32	Detail of Concrete Pavement	1/100
U13	Structural Drawing of A1 Abutment (1/2)	1/50	U33	Miscellaneous Details (1/2)	1/20
U14	Structural Drawing of A1 Abutment (2/2)	1/50	U34	Miscellaneous Details (2/2)	1/20
U15	Structural Drawing of A2 Abutment (1/2)	1/50			
U16	Structural Drawing of A2 Abutment (2/2)	1/50			
U17	Structural Drawing of P1-P4, P6-P9 Bridge Pier	1/50			
U18	Structural Drawing of P5 Bridge Pier	1/50			
U19	Road Cross Section (1/6)	1/100			
U20	Road Cross Section (2/6)	1/100			





ELEMENTS OF CURVES AND COORDINATES OF POINTS							
POINTS	STATION	NORTHING	EASTING	RC	CL	TL	IA
BP	-0+002.386	1682788.64523	543766.39567	-	-	-	-
PI-1	0+048.866	1682742.26978	543744.34061	-170	41.0252	20.6127	13° 49' 36.78"
PI-2	0+084.557	1682706.45345	543736.98351	40	30.3566	15.9513	43° 28' 57.38"
PI-3	0+110.399	1682691.07387	543714.94528	-40	21.3055	10.9120	30° 31' 04.40"
PI-4	0+165.934	1682640.33290	543691.74372	-	-	-	-
A1	0+174.000	1682633.27144	543695.64259	-	-	-	-
A2	0+532.000	1682319.86904	543868.68288	-	-	-	-
PI-5	0+590.748	1682222.73034	543922.31651	-40	95.1672	99.7973	136° 19' 00.94"
EP	0+647.960	1682328.53574	543950.22897	-	-	-	-

BP:Beginning Point PI:Point of Intersection A1,A2:Abutment EP:End Point
RC:Radius of Curvature (negative anticlockwise) CL:Curve Length TL:Tangential Length IA:Intersection Angle

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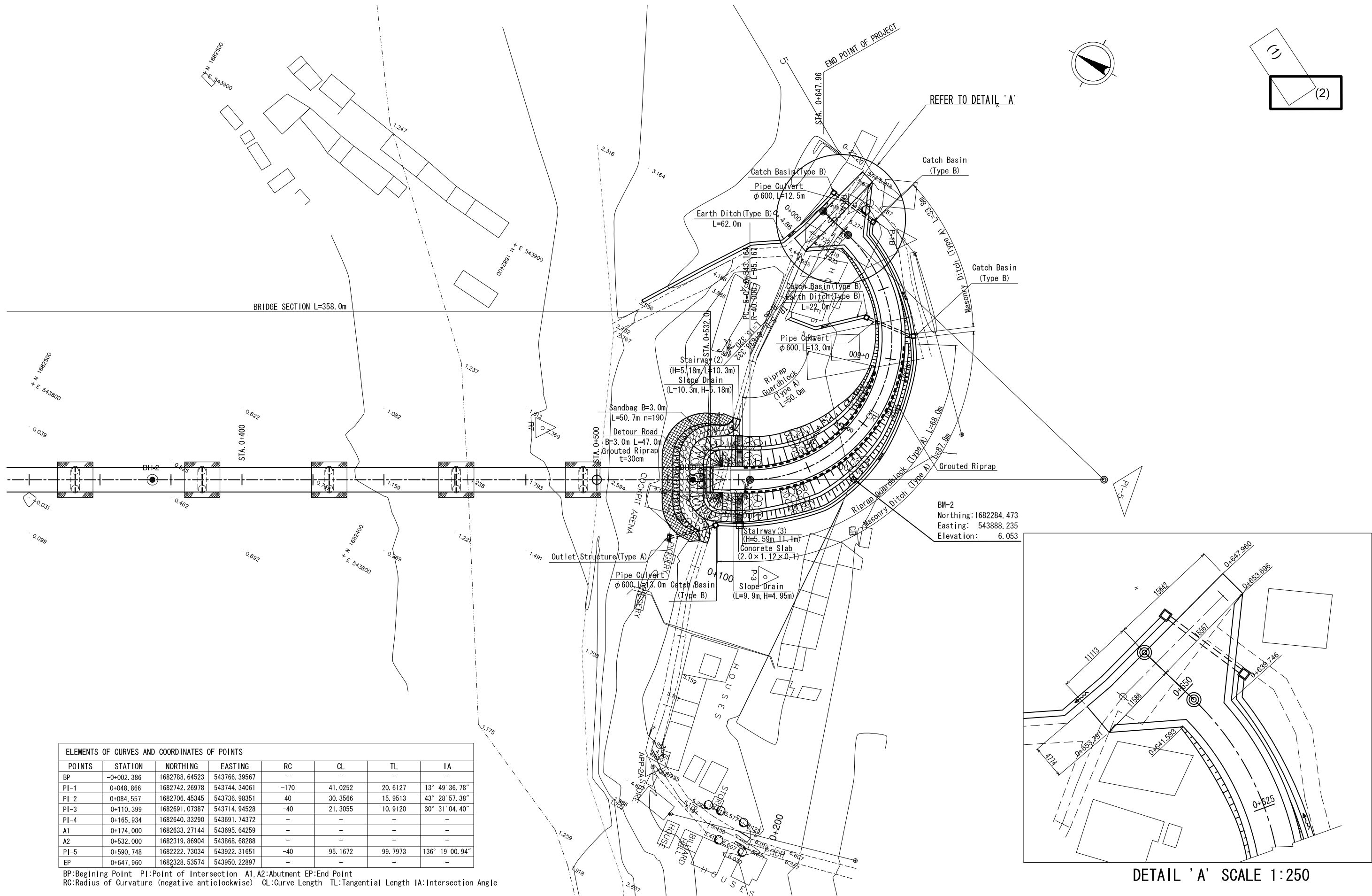
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TITLE : UMIRAY BRIDGE
ROAD PLAN (1/2)

SCALE
S=1:500

Drawing No.
U02



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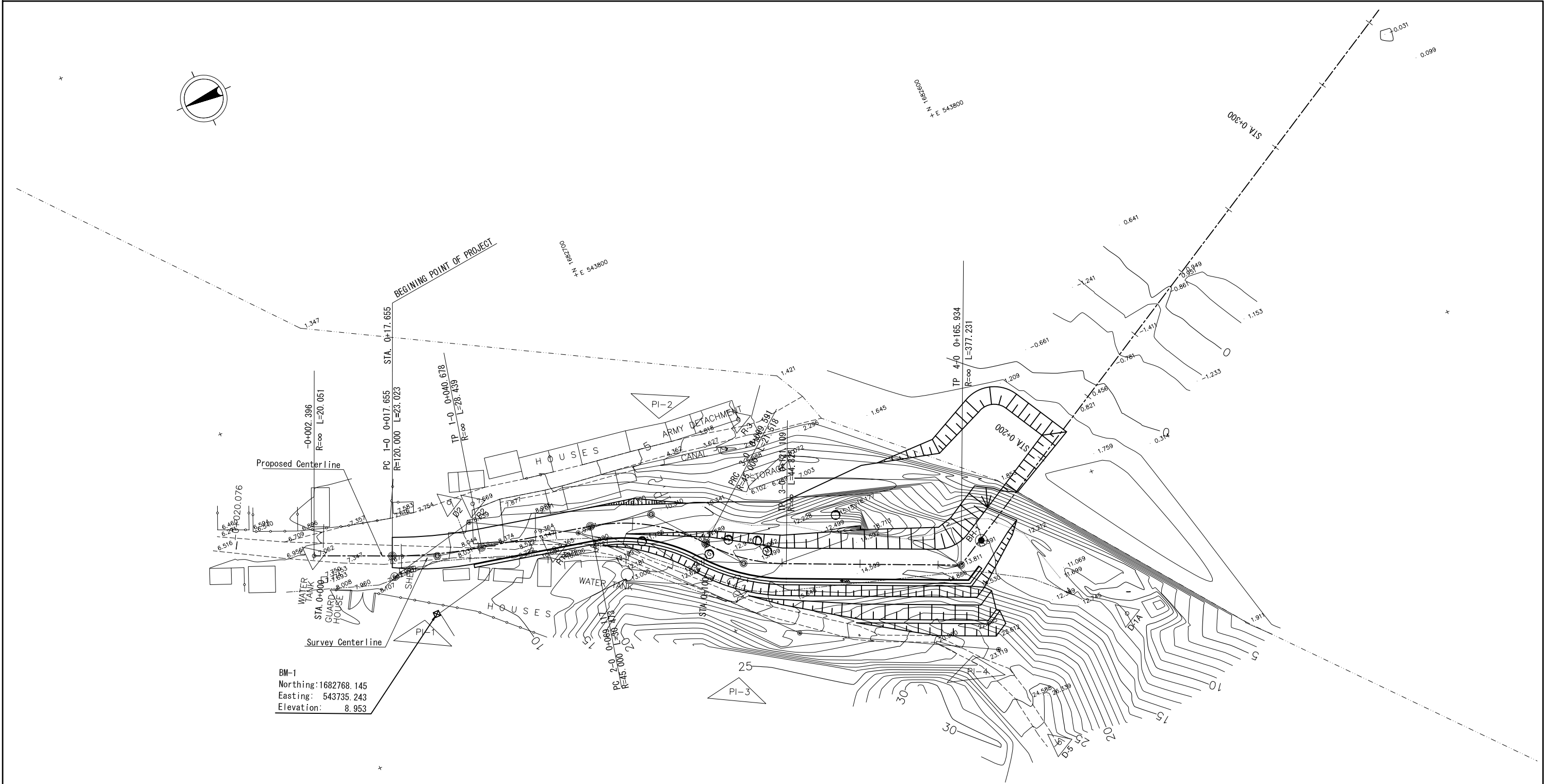
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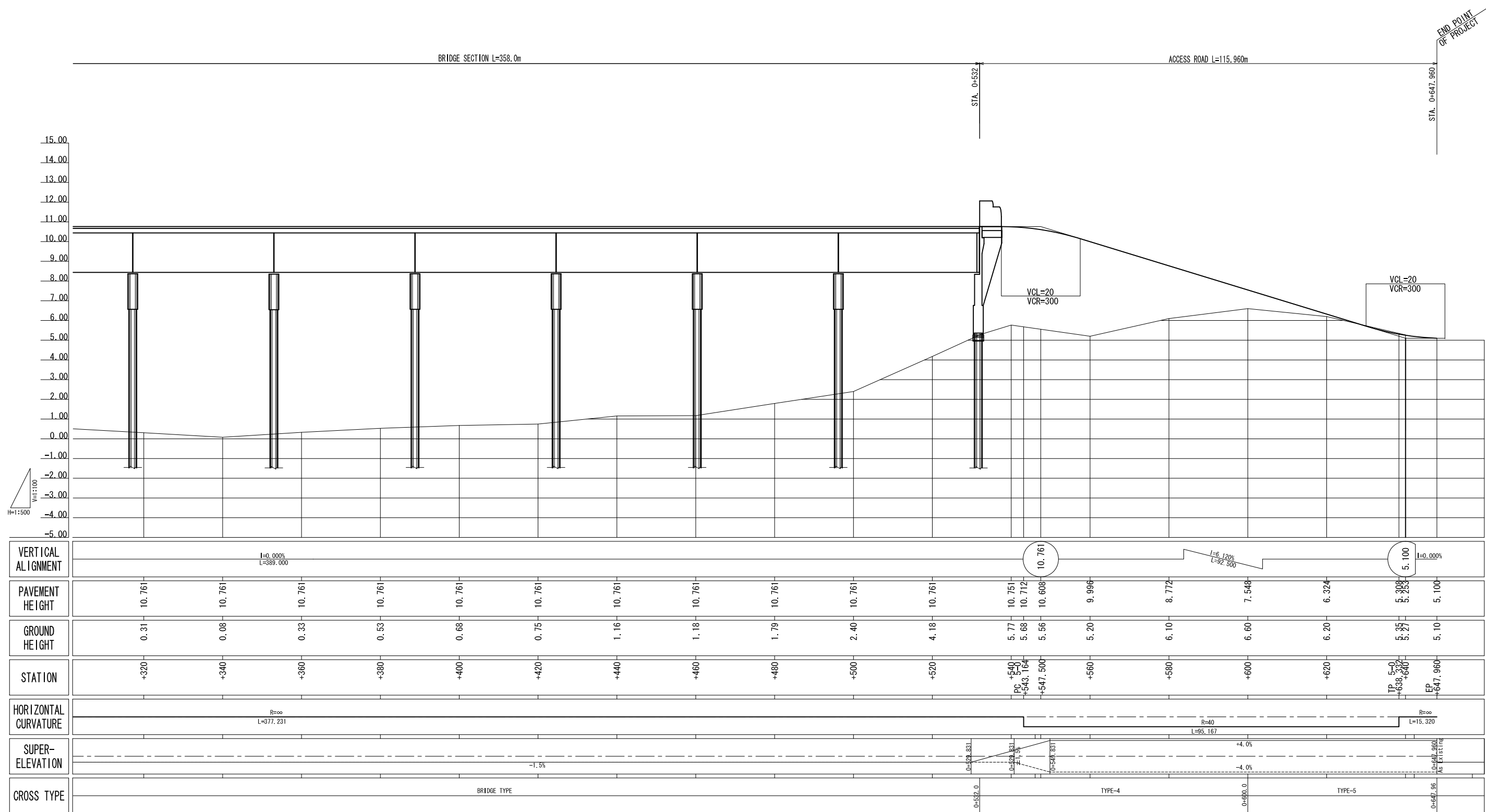
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TITLE : UMIRAY BRIDGE
ROAD PLAN (2/2)

SCALE
S=1:500

Drawing No.
U03





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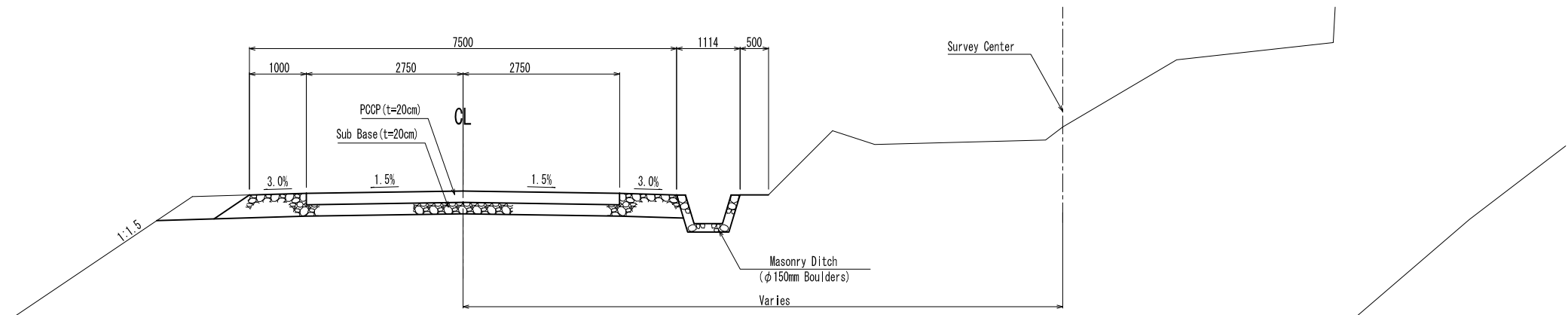
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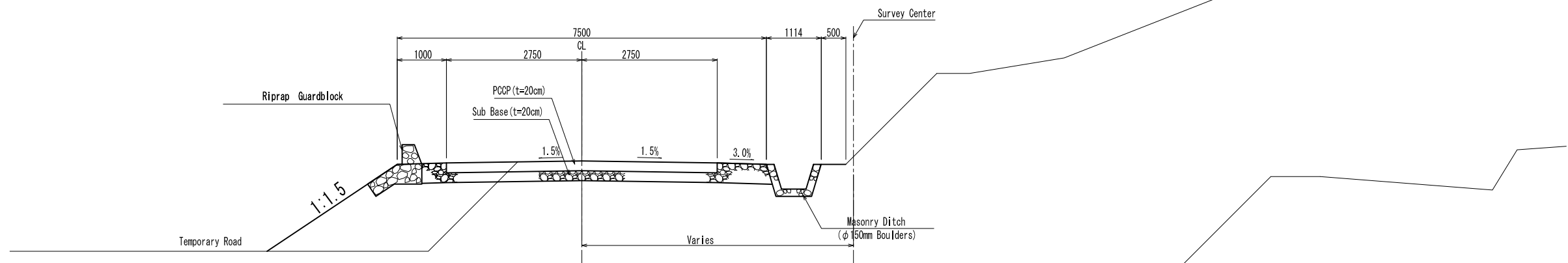
TITLE : UMIRAY BRIDGE
ROAD PROFILE (2/2)

SCALE
H=1:500
V=1:100

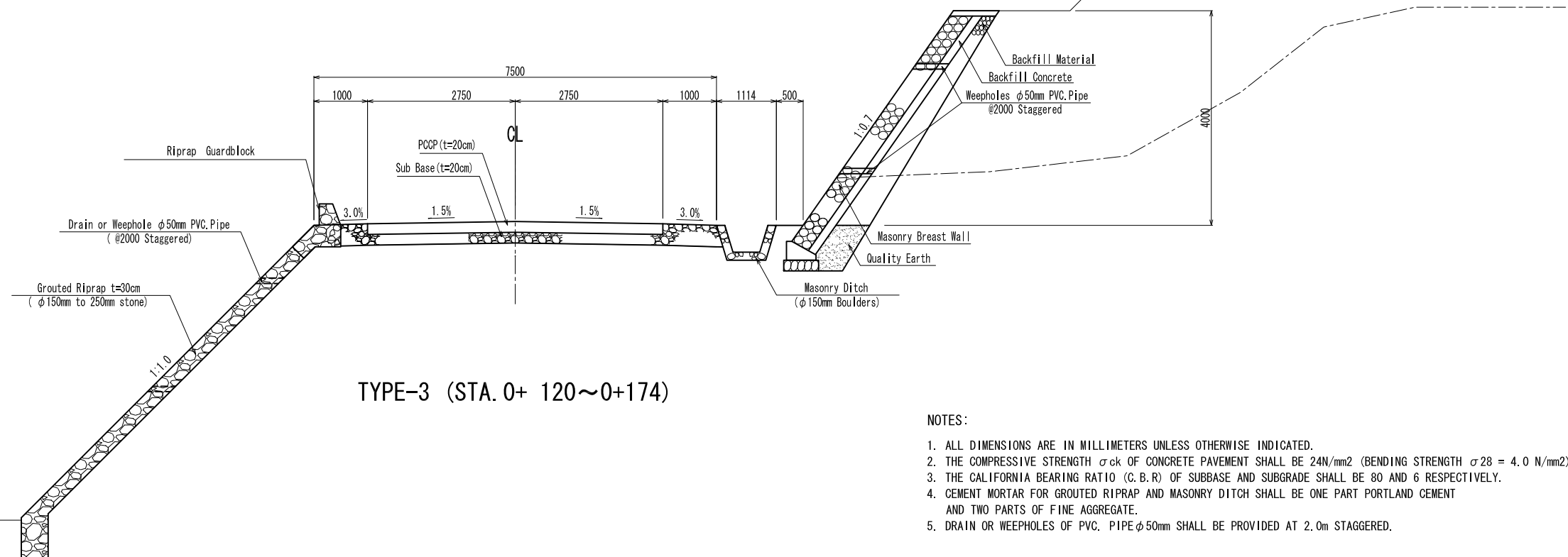
Drawing No.
U06



TYPE-1 (STA. 0+ 20~0+80)



TYPE-2 (STA. 0+80~0+120)



TYPE-3 (STA. 0+ 120~0+174)

NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE INDICATED.
2. THE COMPRESSIVE STRENGTH σ_{ck} OF CONCRETE PAVEMENT SHALL BE 24N/mm² (BENDING STRENGTH $\sigma_{28} = 4.0$ N/mm²).
3. THE CALIFORNIA BEARING RATIO (C.B.R) OF SUBBASE AND SUBGRADE SHALL BE 80 AND 6 RESPECTIVELY.
4. CEMENT MORTAR FOR GROUTED RIPRAP AND MASONRY DITCH SHALL BE ONE PART PORTLAND CEMENT AND TWO PARTS OF FINE AGGREGATE.
5. DRAIN OR WEEPHOLES OF PVC PIPE $\phi 50$ mm SHALL BE PROVIDED AT 2.0m STAGGERED.

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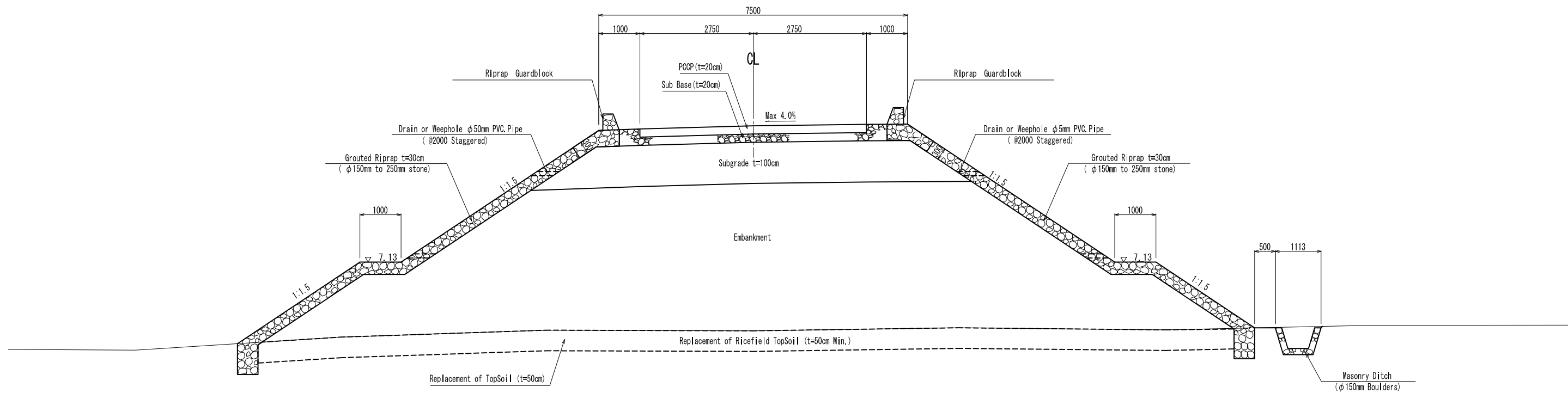
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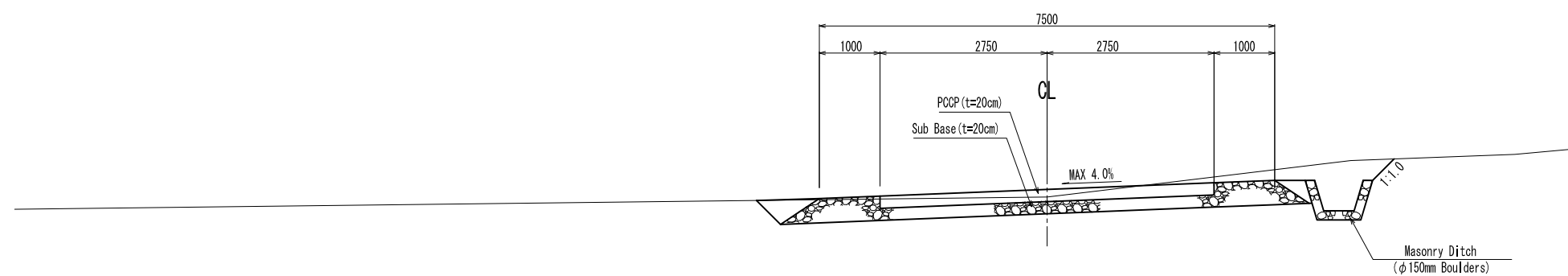
TITLE : UMIRAY BRIDGE
TYPICAL CROSS SECTION
OF ROAD SECTION(1/2)

SCALE
S=1:50

Drawing No.
U07



TYPE-4 (STA. 0+532~0+600)



TYPE-5 (STA. 0+600~0+647.96)

NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE INDICATED.
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3. THE CALIFORNIA BEARING RATIO (C.B.R.) OF SUBBASE AND SUBGRADE SHALL BE 80 AND 6 RESPECTIVELY.
4. CEMENT MORTAR FOR GROUTED RIPRAP AND MASONRY DITCH SHALL BE ONE PART PORTLAND CEMENT AND TWO PARTS OF FINE AGGREGATE.
5. DRAIN OR WEEPHOLES OF PVC. PIPE $\phi 50$ mm SHALL BE PROVIDED AT 2.0m STAGGERED.

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TITLE : UMIRAY BRIDGE
TYPICAL CROSS SECTION
OF ROAD SECTION(2/2)

SCALE
S=1:50

Drawing No.
U08

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