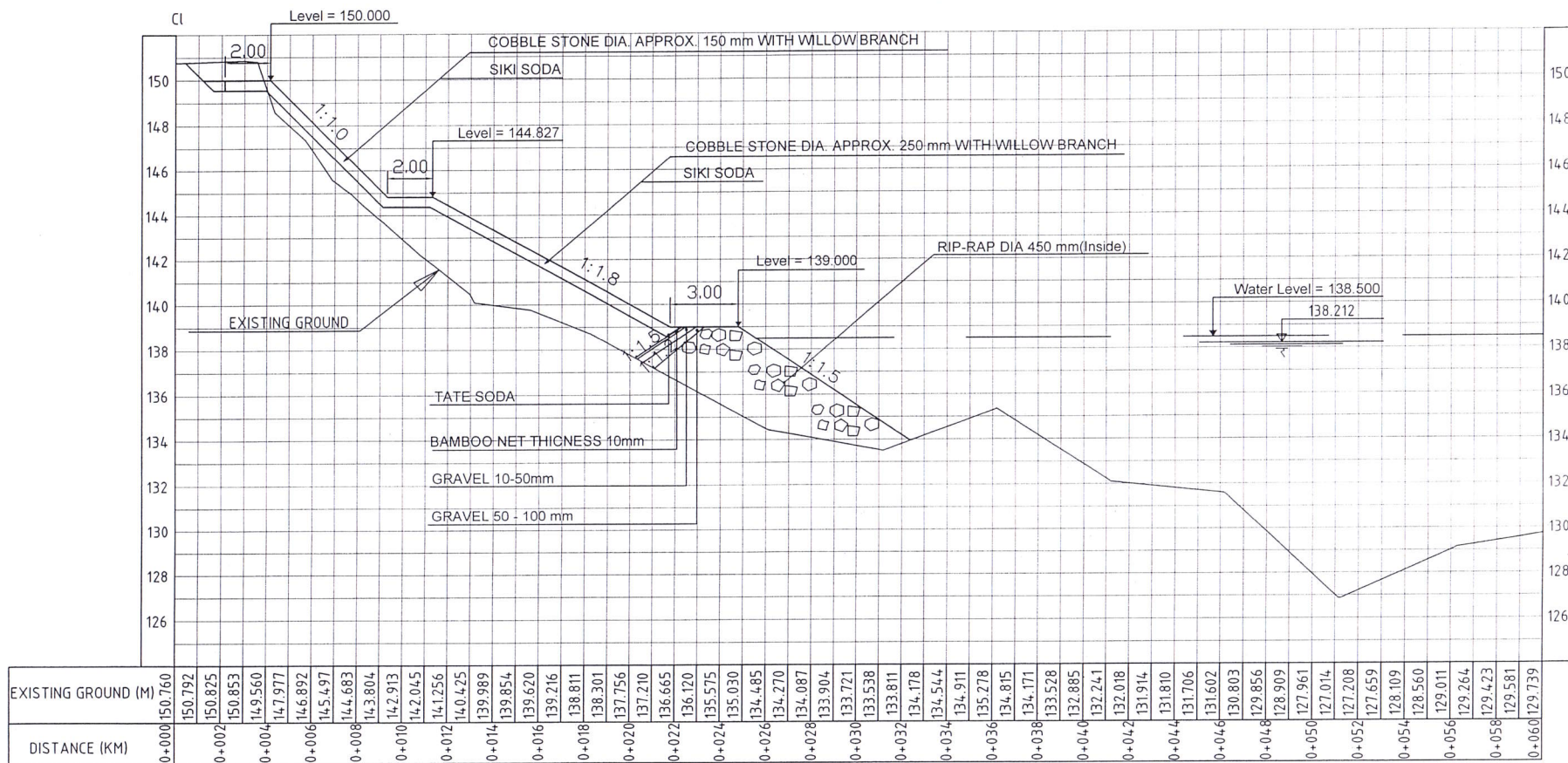


CROSS SECTION KM (0+200)



GRAPHIC SCALE

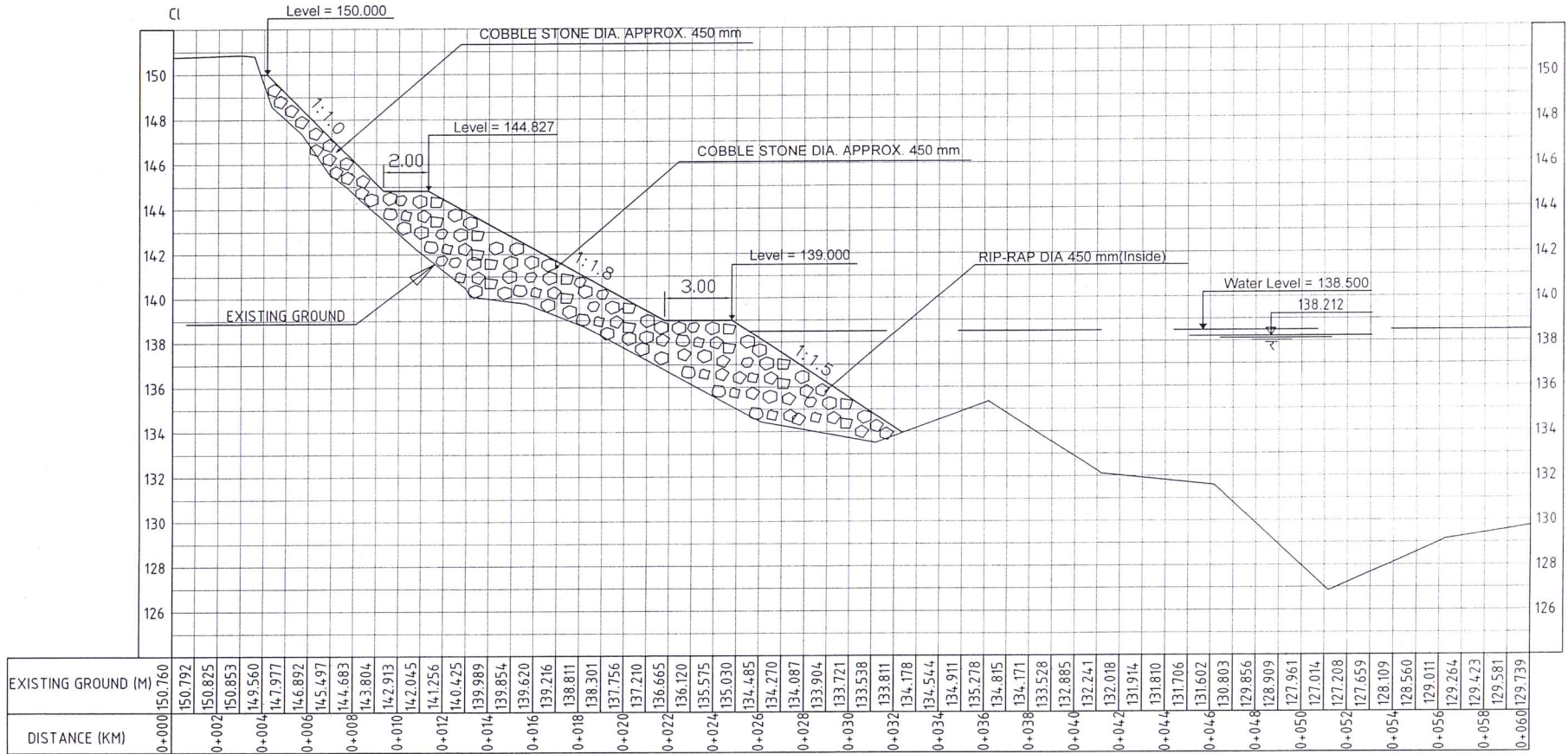
(IN METERS)



1 : 200

LAO PDR Peace Independence Democracy Unity Prosperity Department of Public Works and Transport Bolikhamxay Province	Name:		Date
	Design by:	<i>[Signature]</i>	
	C/P	<i>[Signature]</i>	Dec. 18. 12
	Check by:		
The project on riverbank protection works phase II Japan international Cooperation Agency	JICA Expert design	Y. MYWA	Dec. 18. 12
	Approved by:	<i>[Signature]</i>	Dec. 18. 12
	Chief Advisor	<i>[Signature]</i>	Dec. 18. 12
	Approved by:	<i>[Signature]</i>	Dec. 18. 12
CROSS SECTION		Project Manager	<i>[Signature]</i>
		Drawing number	CR-14 Page: 18

CROSS SECTION KM (0+200,0+202)



GRAPHIC SCALE

(IN METERS)

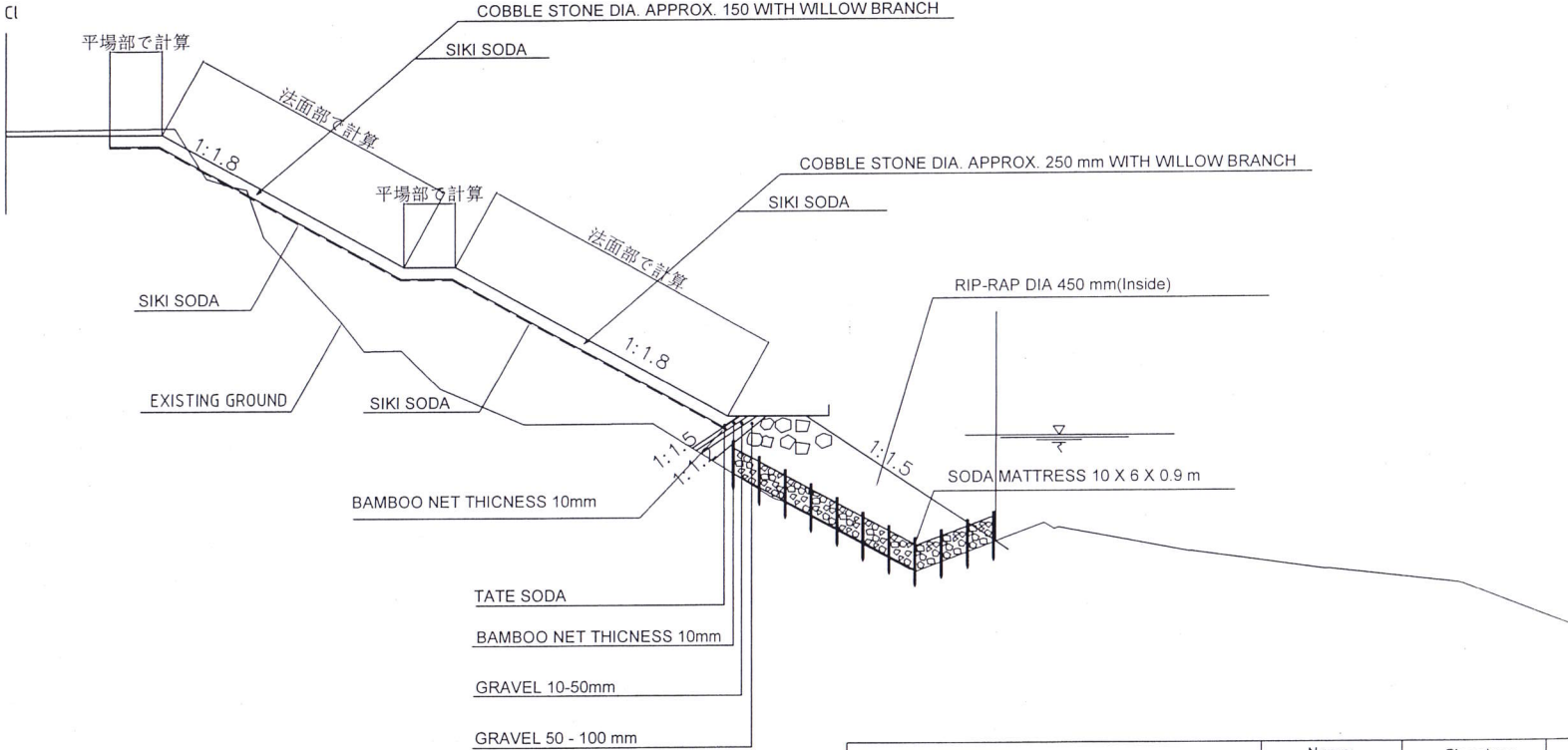


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LAO PDR Peace Independence Democracy Unity Prosperity	Name:	Signature	Date
	Design by:	<i>[Signature]</i>	
Department of Public Works and Transport Bolikhamxay Province	C/P	<i>[Signature]</i>	Dec. 18, 12
	Check by:		
The project on riverbank protection works phase II Japan international Cooperation Agency	JICA Expert design	<i>[Signature]</i>	Dec. 18, 12
	Approved by:	<i>[Signature]</i>	Dec. 18, 12
CROSS SECTION	Chief Advisor	<i>[Signature]</i>	
	Approved by:	<i>[Signature]</i>	Dec 18 / 12
	Project Manager	<i>[Signature]</i>	
	Drawing number	CR-15	Page: 19

Slop protection Works and Foot protection Works

CROSS SECTION



GRAPHIC SCALE

(IN METERS)



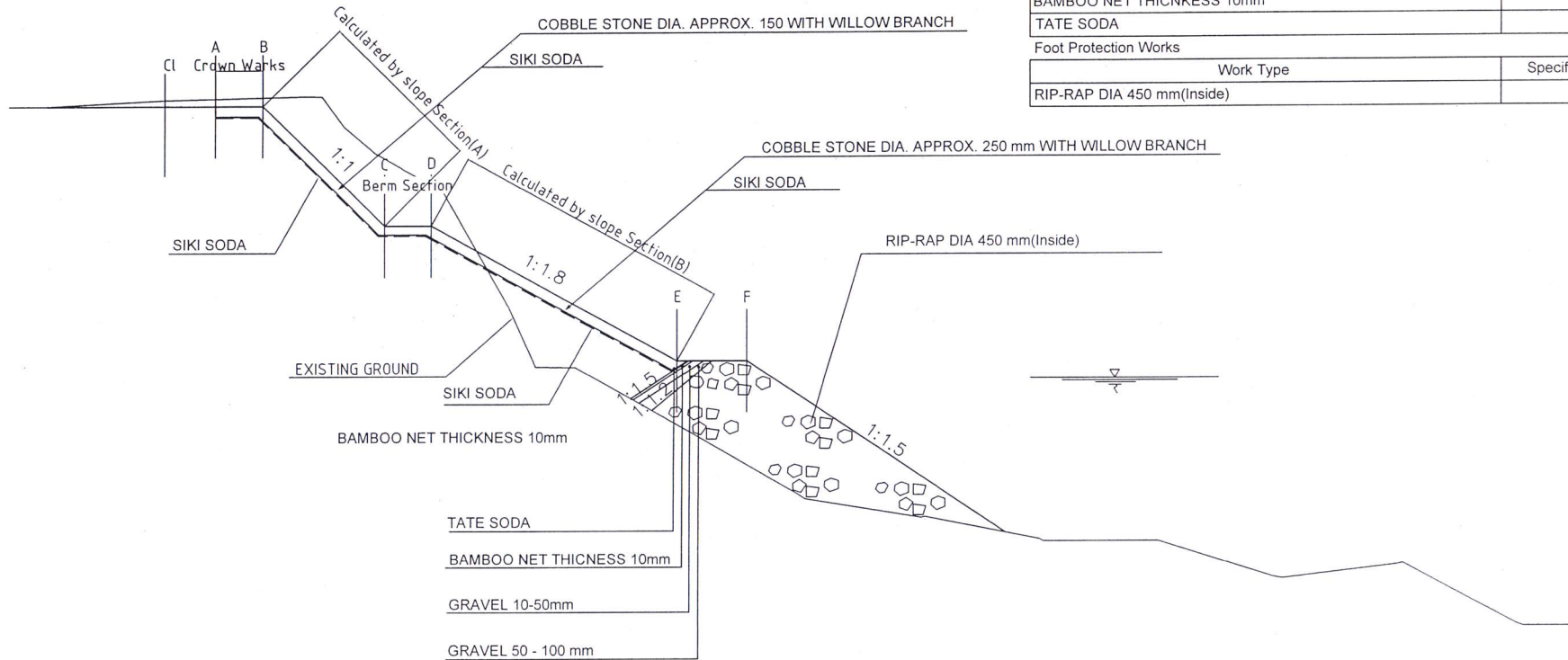
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LAO PDR Peace Independence Democracy Unity Prosperity Department of Public Works and Transport Balikhambay Province The project on riverbank protection works phase II Japan international Cooperation Agency	Name:	Signature	Date
	Design by:	<i>[Signature]</i>	
	C/P	<i>[Signature]</i>	Dec. 18. 12.
	Check by:		
	JICA Expert design	<i>[Signature]</i>	Dec 18. 12
Approved by:	<i>[Signature]</i>	Dec. 18. 12	
Chief Advisor	<i>[Signature]</i>	Dec. 18. 12	
Approved by:	<i>[Signature]</i>	Dec 18. 12	
Project Manager	<i>[Signature]</i>	Dec 18. 12	
Drawing number	DT-01	Page: 20	

CROSS SECTION (DETAIL 1)

Slope protection Works and Foot protection Works

CROSS SECTION (0+100)



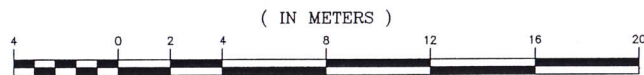
Slope Protection Works

Work Type	Specification	Unit
COBBLE STONE DIA. APPROX. 150 mm WITH WILLOW BRANCH	Crown Section	m
COBBLE STONE DIA. APPROX. 150 mm WITH WILLOW BRANCH	slope section(A)	m
COBBLE STONE DIA. APPROX. 150 mm WITH WILLOW BRANCH	Berm section	m
COBBLE STONE DIA. APPROX. 250 mm WITH WILLOW BRANCH	slope section(B)	m
BAMBOO NET THICKNESS 10mm		m
TATE SODA		m

Foot Protection Works

Work Type	Specification	Unit
RIP-RAP DIA 450 mm(Inside)		m ²

GRAPHIC SCALE



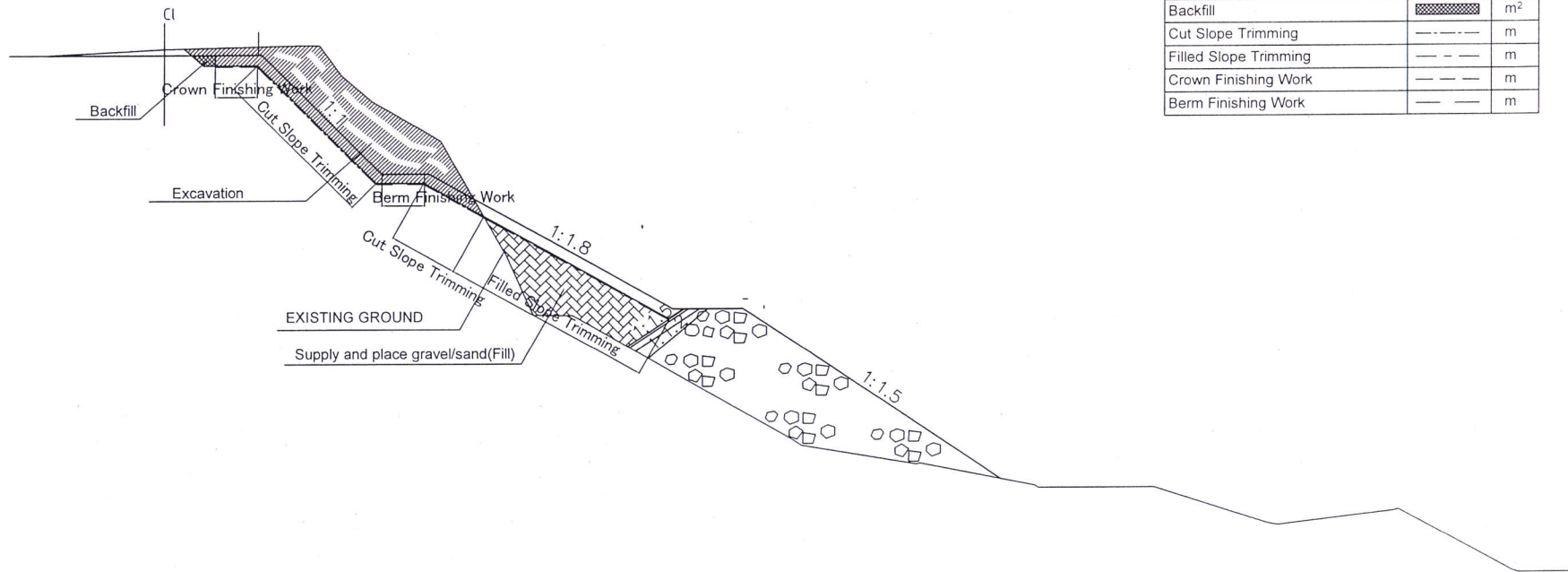
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LAO PDR Peace Independence Democracy Unity Prosperity Department of Public Works and Transport Bolikhamxay Province The project on riverbank protection works phase II Japan international Cooperation Agency	Name:	Signature	Date
	Design by:	<i>[Signature]</i>	
	C/P	<i>[Signature]</i>	Dec. 18. 12
	Check by:		
	JICA Expert design	<i>[Signature]</i>	Dec 18. 12
Approved by:	<i>[Signature]</i>	Dec. 18. 12	
Chief Advisor	<i>[Signature]</i>	Dec. 18. 12	
Approved by:	<i>[Signature]</i>	Dec 18. 12	
Project Manager	<i>[Signature]</i>	Dec 18. 12	
Drawing number	DT-02	Page: 21	

CROSS SECTION (DETAIL 1)

ROADWAY DIAGRAPH

CROSS SECTION (0+100)



Earth works

Work Type	Legend	Unit
Excavation		m
Supply and place gravel/sand(Fill)		m ²
Backfill		m ²
Cut Slope Trimming		m
Filled Slope Trimming		m
Crown Finishing Work		m
Berm Finishing Work		m

GRAPHIC SCALE

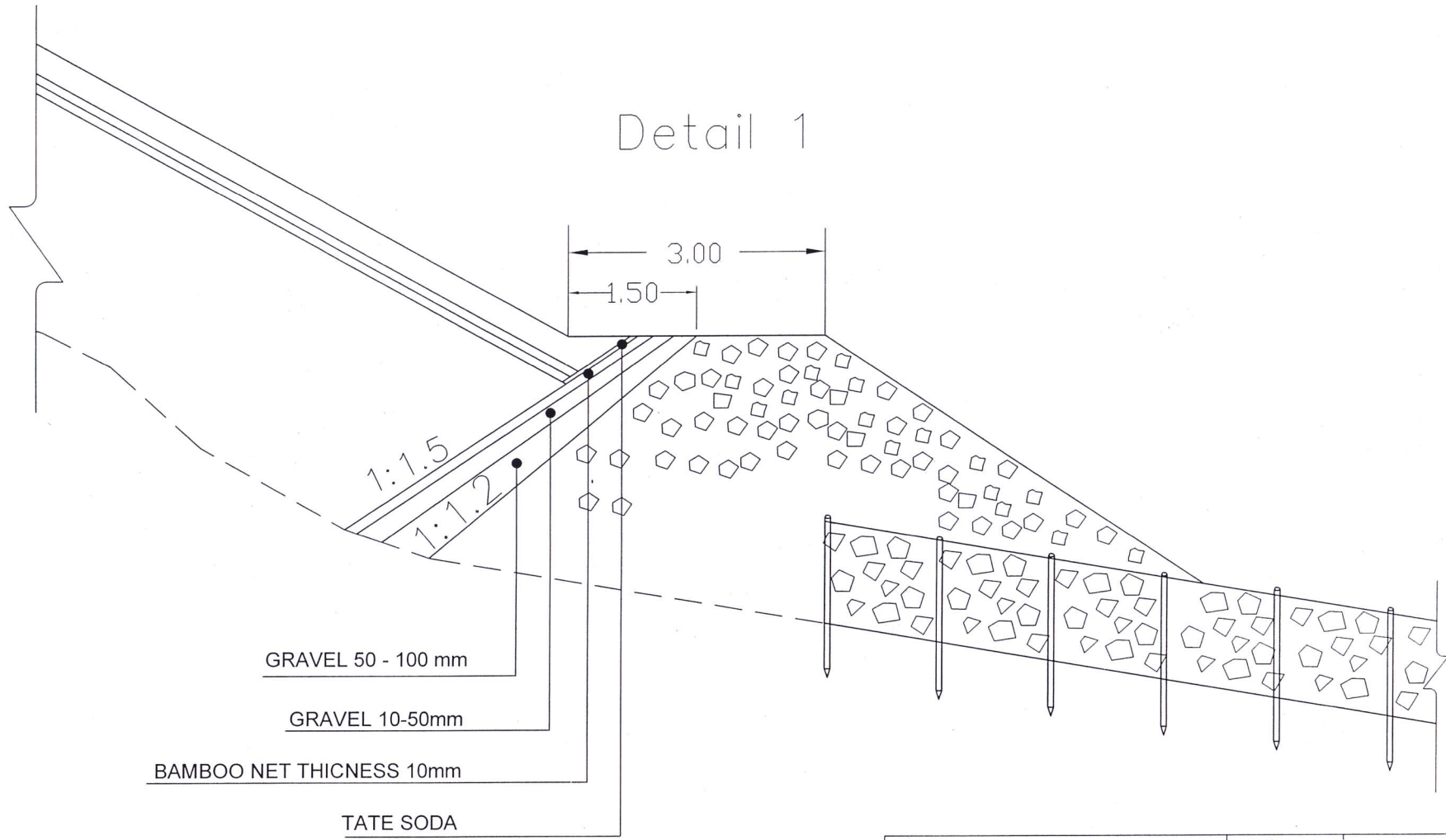
(IN METERS)



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LAO PDR Peace Independence Democracy Unity Proeperity Department of Public Works and Transport Bolikhamxay Province	Name:	Signature	Date
	Design by:		
	C/P		Dec. 18. 12
	Check by:		
The project on riverbank protection works phase II Japan international Cooperation Agency	JICA Expert design		Dec. 18. 12
	Approved by:		Dec. 18. 12
	Chief Advisor		
CROSS SECTION (DETAIL 1)	Approved by:		Dec. 18. 12
	Project Manager		
	Drawing number	DT-03	Page: 22

Detail 1



GRAVEL 50 - 100 mm
 GRAVEL 10-50mm
 BAMBOO NET THICNESS 10mm
 TATE SODA

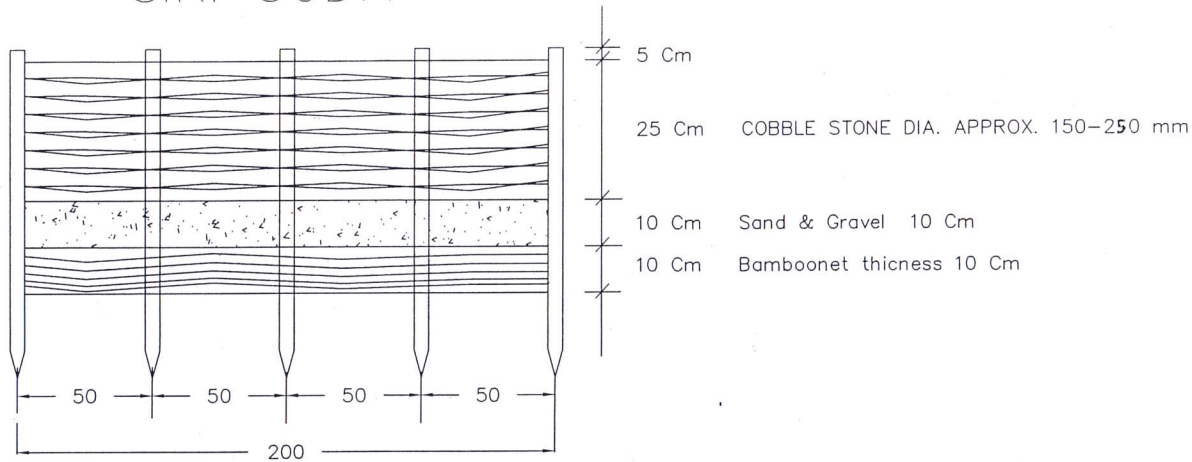
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LAO PDR Peace Independence Democracy Unity Proeperity Department of Public Works and Transport Bolikhamxay Province	Name:	Signature	Date
	Design by:	<i>[Signature]</i>	
The project on riverbank protection works phase II Japan international Cooperation Agency	C/P	<i>[Signature]</i>	Dec. 18.12
	Check by:		
JICA Expert design Approved by:	JICA Expert design	<i>[Signature]</i>	Dec. 18.12
	Approved by:	<i>[Signature]</i>	Dec. 18.12
Chief Advisor Approved by:	Chief Advisor	<i>[Signature]</i>	Dec. 18.12
	Approved by:	<i>[Signature]</i>	Dec. 18.12
DETAIL	Project Manager	<i>[Signature]</i>	Dec. 18.12
	Drawing number	DT-04	Page: 23

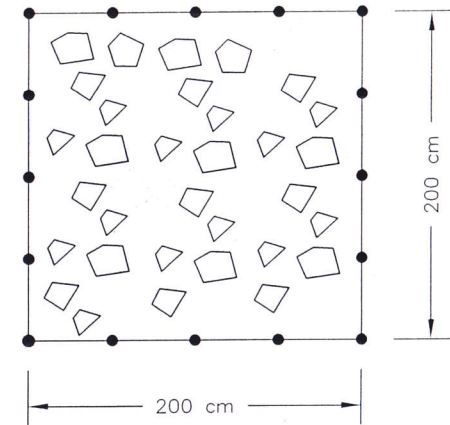
SECTION A-A

Not to scale

SIKI SODA

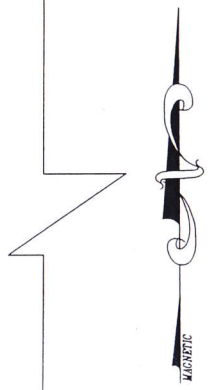
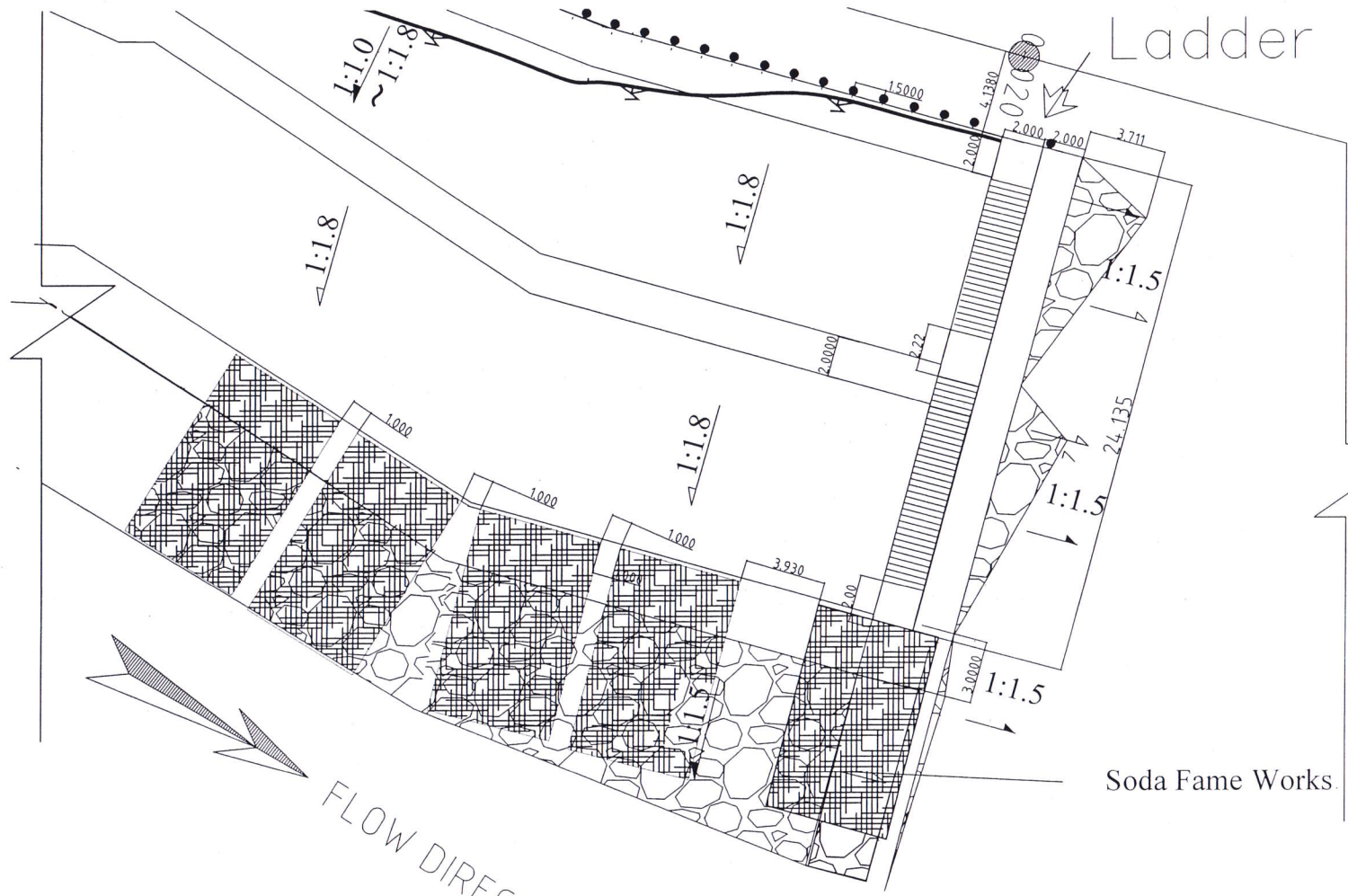


TOP VIEW SIKI SODA



NO SCALE

LAO PDR Peace Independence Democracy Unity Prosperity	Name:	Signature	Date
	Design by:	<i>[Signature]</i>	
Department of Public Works and Transport Balikhamxay Province	C/P	<i>[Signature]</i>	Dec. 18. 12.
	Check by:		
The project on riverbank protection works phase II Japan international Cooperation Agency	JICA Expert design	Y. M. W. A.	Dec. 18. 12
	Approved by:	<i>[Signature]</i>	Dec. 18. 12
DETAIL	Chief Advisor	<i>[Signature]</i>	
	Approved by:	<i>[Signature]</i>	Dec. 18. 12
	Project Manager	<i>[Signature]</i>	
	Drawing number	DT-05	Page: 24



FLOW DIRECTION

GRAPHIC SCALE

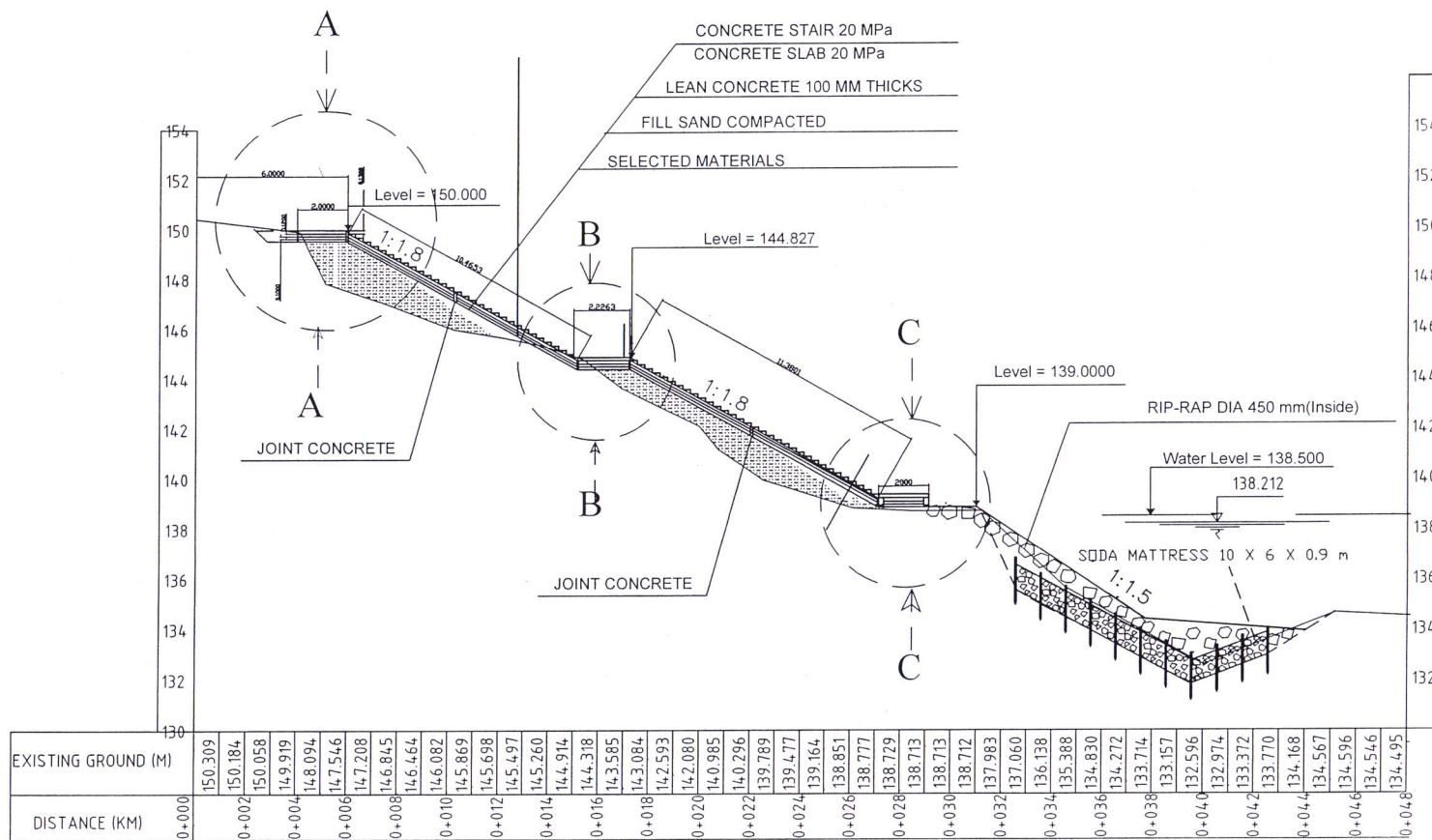
(IN METERS)



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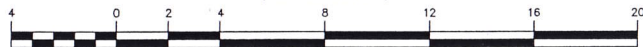
LAO PDR Peace Independence Democracy Unity Prosperity Department of Public Works and Transport Balikhambxay Province The project on riverbank protection works phase II Japan international Cooperation Agency	Name:	Signature	Date
	Design by:	<i>[Signature]</i>	
	C/P	<i>[Signature]</i>	Dec. 18. 12.
	Check by:		
	JICA Expert design	<i>[Signature]</i>	Dec. 18. 12
DETAIL DETAIL	Approved by:	<i>[Signature]</i>	Dec. 18. 12
	Chief Advisor	<i>[Signature]</i>	Dec. 18. 12
	Approved by:	<i>[Signature]</i>	Dec 18-12
	Project Manager	<i>[Signature]</i>	
	Drawing number	DT-06	Page: 25

LADDER Cross Section Km (0+020)



GRAPHIC SCALE

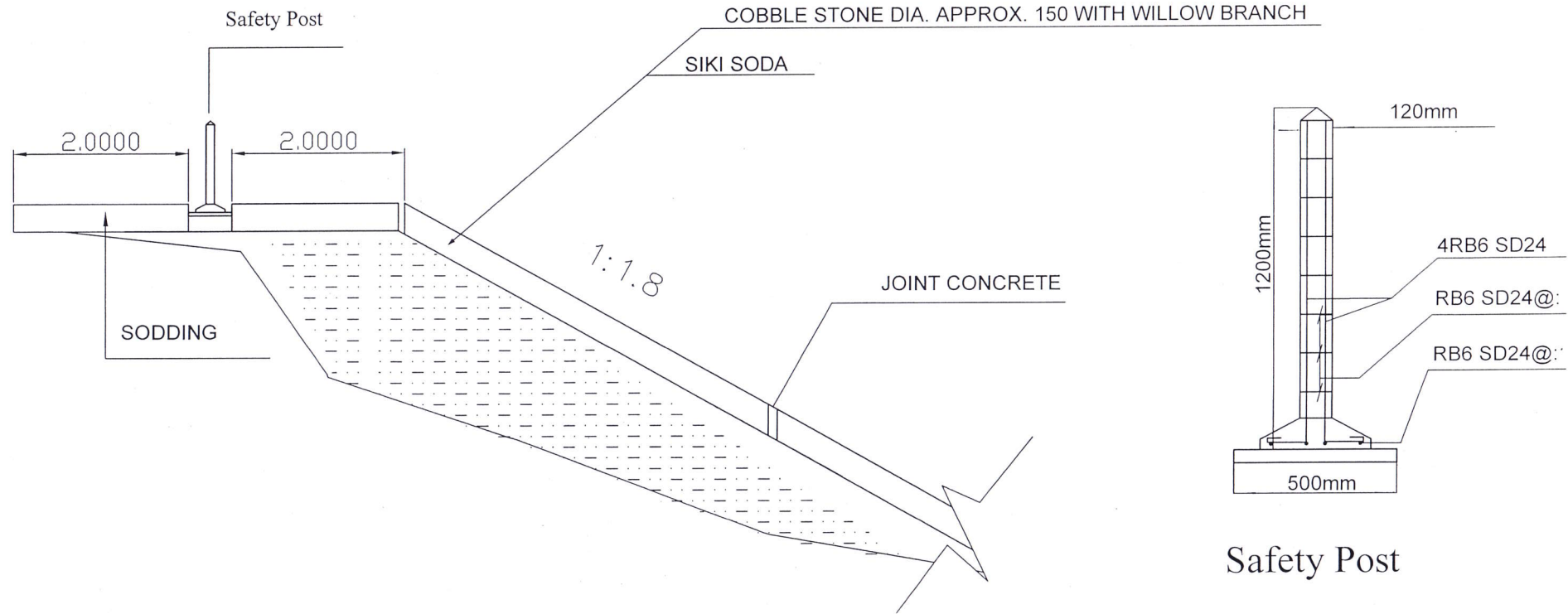
(IN METERS)



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LAO PDR Peace Independence Democracy Unity Prosperity	Name:	Signature	Date
Department of Public Works and Transport Bolikhamsay Province	Design by:		
The project on riverbank protection works phase II	C/P		Dec. 18. 12.
Japan international Cooperation Agency	Check by:		
	JICA Expert design		Dec 18. 12
	Approved by:		Dec. 18. 12
	Chief Advisor		
	Approved by:		Dec 18. 12
	Project Manager		
DETAIL	Drawing number	DT-07	Page: 26

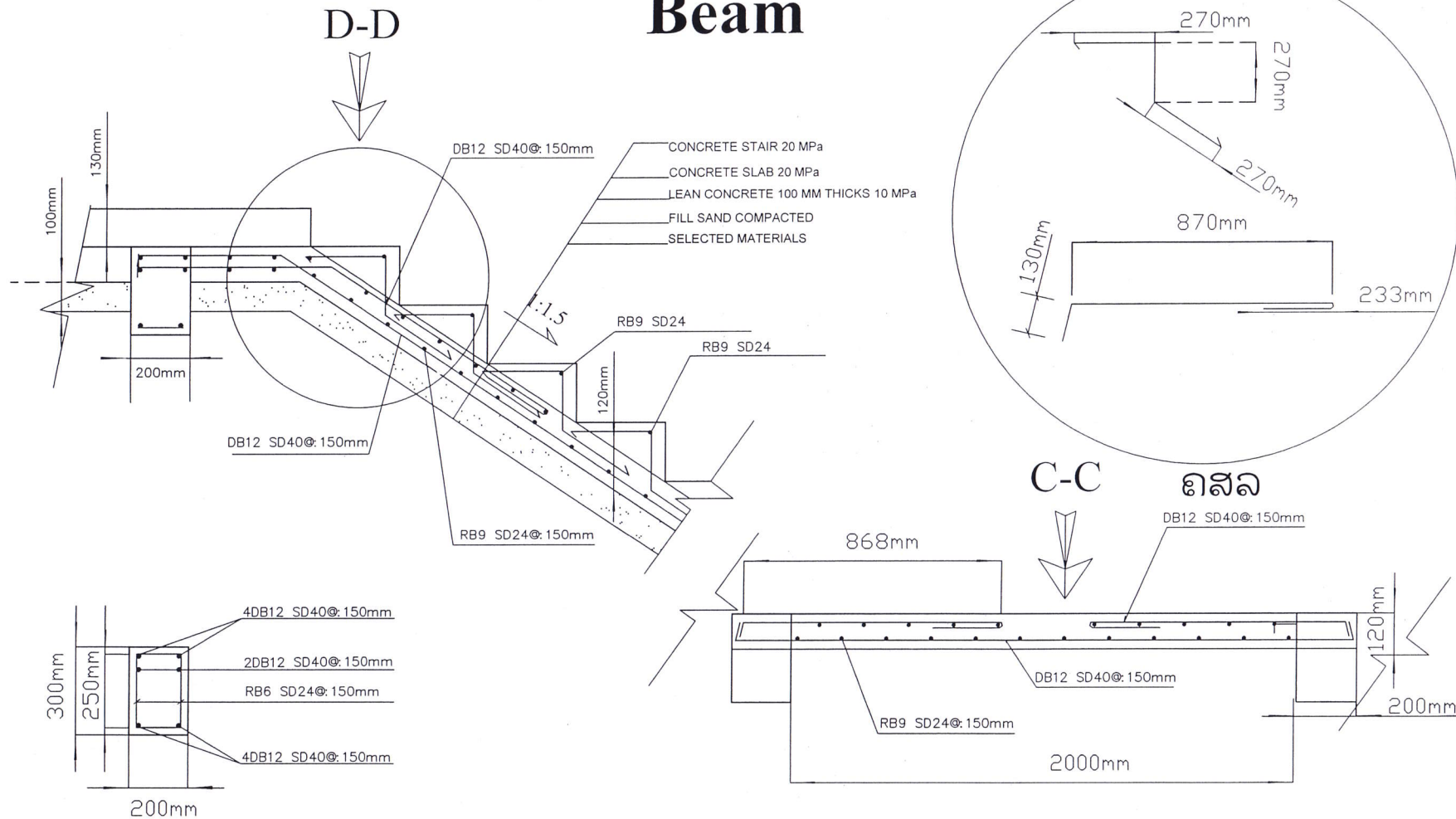
Section A-A



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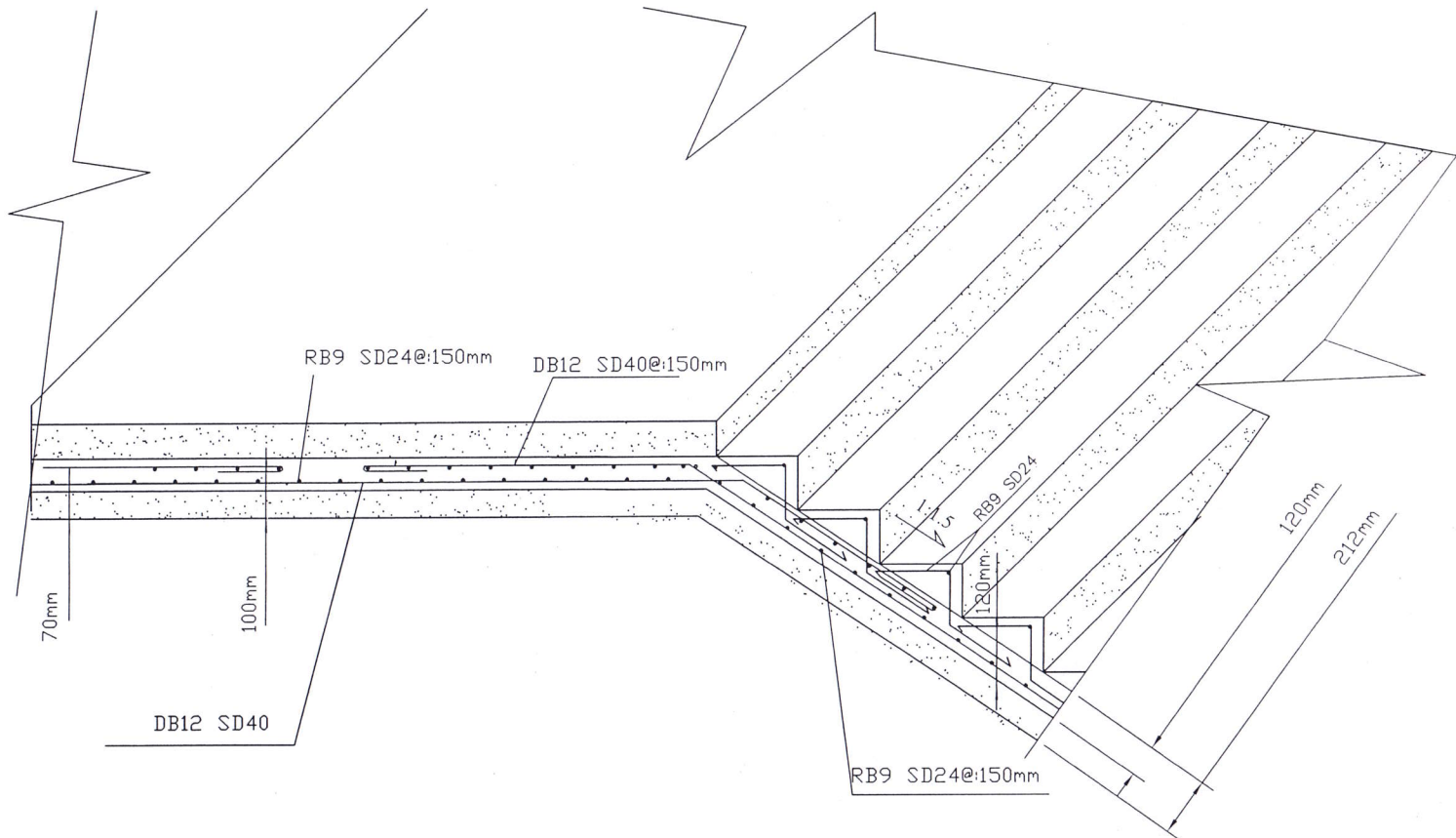
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	Design by:	<i>[Signature]</i>	
	C/P	<i>[Signature]</i>	Dec. 18. 12.
	Check by:		
	JICA Expert design	<i>[Signature]</i>	Dec. 18. 12
	Approved by:	<i>[Signature]</i>	Dec. 18. 12
	Chief Advisor	<i>[Signature]</i>	Dec. 18. 12
	Approved by:	<i>[Signature]</i>	Dec. 18. 12
DETAIL	Project Manager	<i>[Signature]</i>	Dec. 18. 12
	Drawing number	DT-08	Page: 27

Beam



NO SCALE

LAO PDR Peace Independence Democracy Unity Prosperity	Name:	Signature	Date
	Design by:	<i>[Signature]</i>	
Department of Public Works and Transport Bolikhamsay Province	C/P	<i>[Signature]</i>	Dec. 18. 12
	Check by:		
The project on riverbank protection works phase II Japan international Cooperation Agency	JICA Expert design	<i>[Signature]</i>	Dec. 18. 12
	Approved by:	<i>[Signature]</i>	Dec. 18. 12
DETAIL	Chief Advisor	<i>[Signature]</i>	Dec. 18. 12
	Approved by:	<i>[Signature]</i>	Dec. 18. 12
	Project Manager	<i>[Signature]</i>	Dec. 18. 12
	Drawing number	DT-09	Page: 26



DB12 SD40

RB9 SD24@150mm

DB12 SD40@150mm

RB9 SD24

RB9 SD24@150mm

70mm

100mm

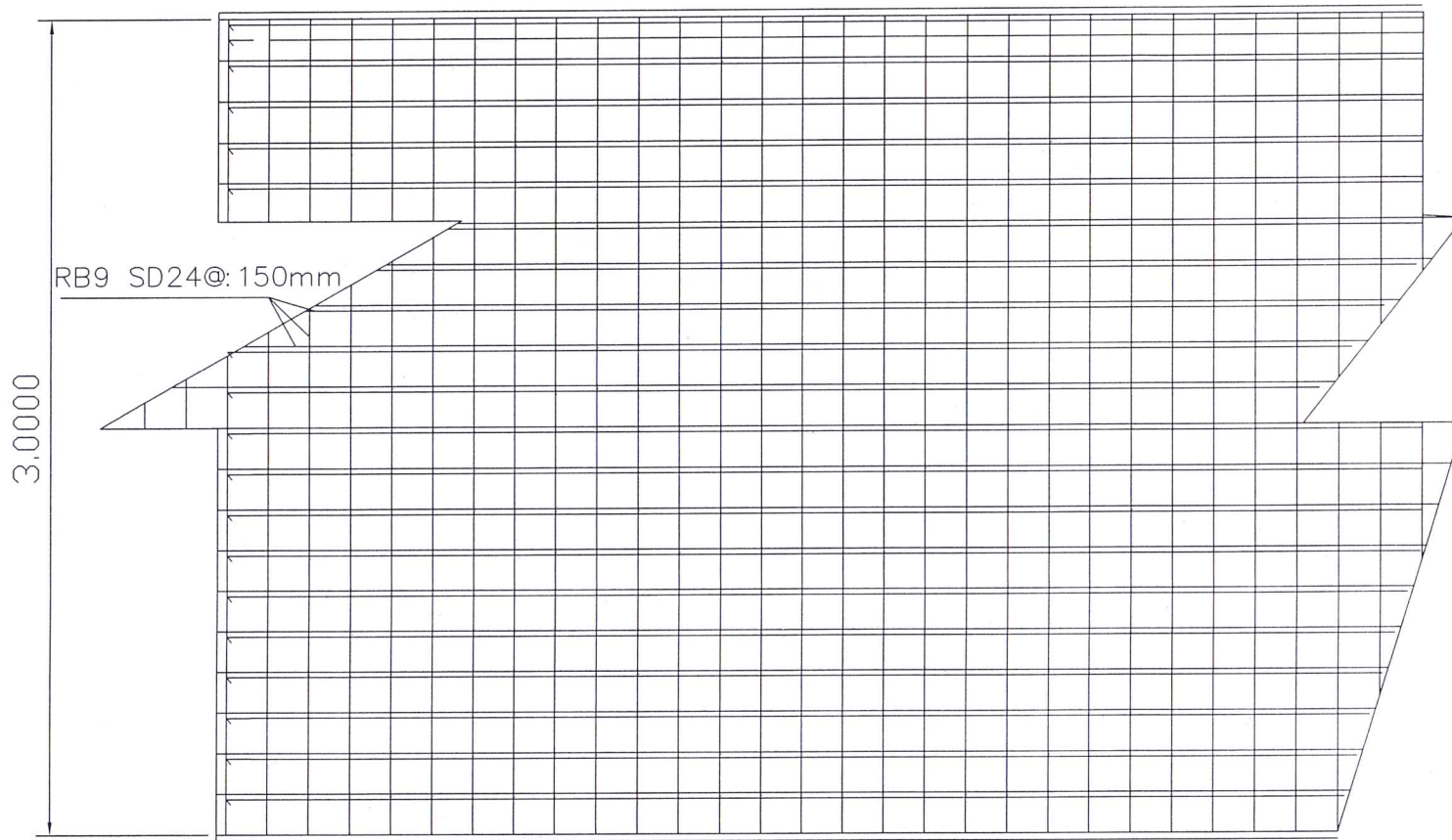
120mm

120mm

212mm

NO SCALE

LAO PDR Peace Independence Democracy Unity Prosperity Department of Public Works and Transport Bolikhamxay Province	Name:	Signature	Date
	Design by:	<i>[Signature]</i>	
The project on riverbank protection works phase II Japan international Cooperation Agency	C/P	<i>[Signature]</i>	Dec. 18. 12
	Check by:		
DETAIL	JICA Expert design	<i>[Signature]</i>	Dec. 18. 12
	Approved by:	<i>[Signature]</i>	Dec. 18. 12
	Chief Advisor	<i>[Signature]</i>	Dec. 18. 12
	Approved by:	<i>[Signature]</i>	Dec. 18. 12
	Project Manager	<i>[Signature]</i>	Dec. 18. 12
	Drawing number	DT-10	Page: 29

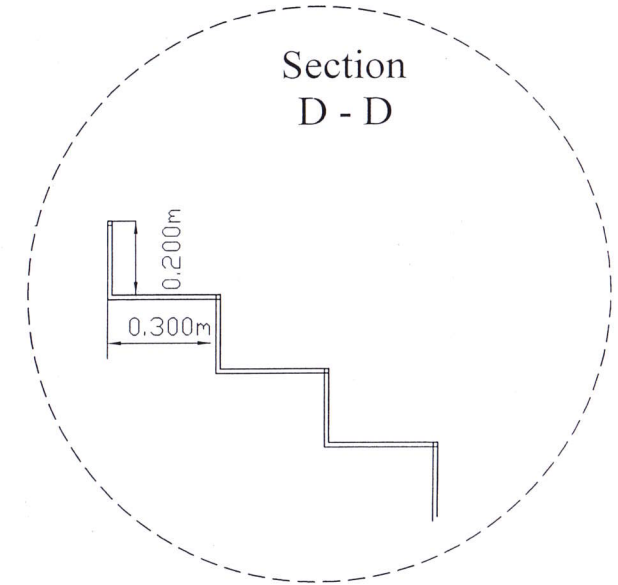
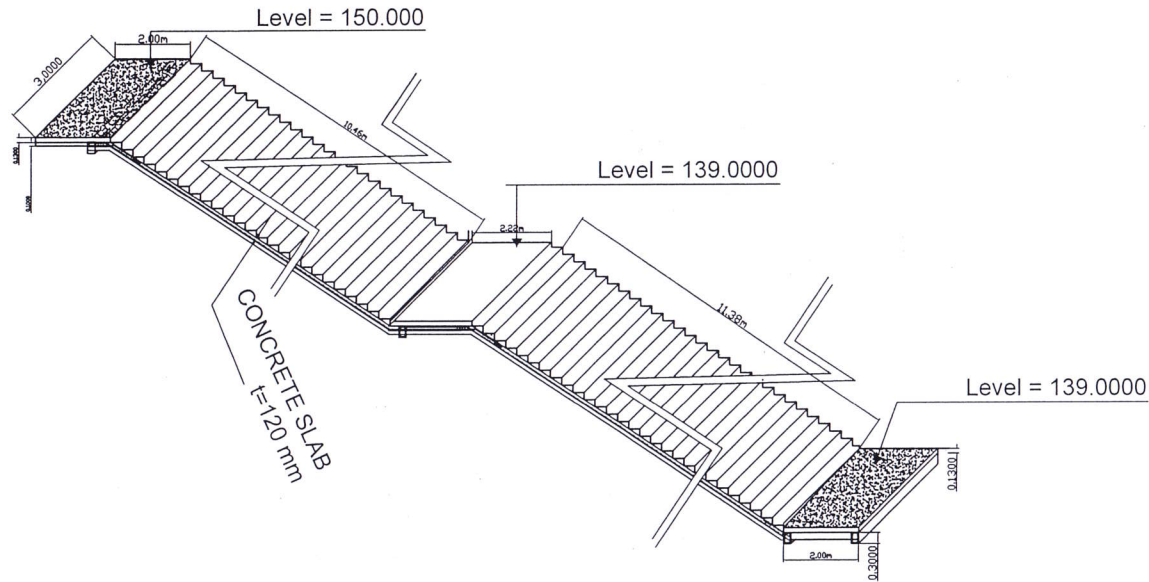


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	Design by:	<i>[Signature]</i>	
Department of Public Works and Transport Bolikhamxay Province	C/P	<i>[Signature]</i>	Dec. 18. 12
	Check by:		
The project on riverbank protection works phase II Japan international Cooperation Agency	JICA Expert design	<i>[Signature]</i>	Dec 18. 12
	Approved by:	<i>[Signature]</i>	Dec. 18. 12
DETAIL	Chief Advisor	<i>[Signature]</i>	Dec. 18. 12
	Approved by:	<i>[Signature]</i>	Dec 18. 12
	Project Manager	<i>[Signature]</i>	Dec 18. 12
	Drawing number	DT-11	Page: 30

LADDER

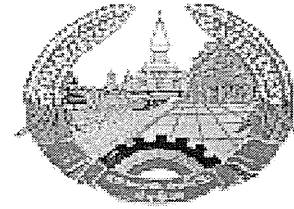
Section Km (0+020)



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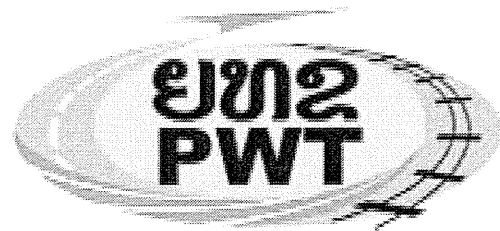
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Department of Public Works and Transport Bolikhamsay Province	C/P	<i>[Signature]</i>	Dec. 18.12
	Check by:		
The project on riverbank protection works phase II Japan international Cooperation Agency	JICA Expert design	<i>[Signature]</i>	Dec. 18.12
	Approved by:		
DETAIL	Chief Advisor	<i>[Signature]</i>	Dec. 18.12
	Approved by:		
	Project Manager	<i>[Signature]</i>	Dec. 18.12
	Drawing number	DT-12	Page: 31

ເອກະສານຊ້ອນທ້າຍ 5-3 ແຜ່ນແຕ້ມ ແບບການກໍ່ສ້າງ
ໂຄງການຕົວແບບປ້ອງກັນຕະຝັງ
ເຂດບ້ານສວນຫຼວງ ເມືອງຊຽງເງິນ
ແຂວງຫຼວງພະບາງ



LAO PEOPLE'S DEMOCRATIC REPUBLIC
PEACE INDEPENDENCE DEMOCRACY UNITY PROSPERITY

ສາສາສາສາສາ 000 ວາວວາວວາວວາວ



MINISTRY OF PUBLIC WORKS AND TRANSPORT
DEPARTMENT OF WATERWAYS
JAPAN INTERNATIONAL COOPERATION AGENCY

PROJECT CODE: LAJP-RBP 3-11-13-366-2 FY13-14

THE PROJECT ON RIVERBANK PROTECTION WORKS PHASE II
PILOT CONSTRUCTION RIVERBANK PROTECTION WORKS
AT NASA VILLAGE, XIANG NGEUN DISTRICT, LUANG PARBANG PROVINCE

DRAWINGS

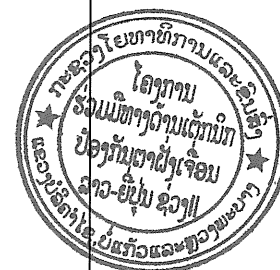


VIENTIANE, DECEMBER 12th, 2013

ສາລະບານ LIST OF DRAWING

NO.	DRAWING TITLE	DRAWING NUMBER	PAGE NUMBER
I. GENERAL DRAWING			
1	LIST OF DRAWINGS	LDW-01	01
2	PROJECT LOCATION LOUANGPHABANG PROVINCE	PL-01	02
3	SYMBOLS AND ABBREVIATIONS	SB-01	03
4	PLAN	PL-01	04
II. CROSS-SECTIONS			
1	CROSS-SECTIONS KM 0 - 010	CR-01	05
2	CROSS-SECTIONS KM 0 - 002	CR-02	06
3	CROSS-SECTIONS KM 0 - 000	CR-03	07
4	CROSS-SECTIONS KM 0 + 000	CR-04	08
5	CROSS-SECTIONS KM 0 + 020	CR-05	09
6	CROSS-SECTIONS KM 0 + 040	CR-06	10
7	CROSS-SECTIONS KM 0 + 060	CR-07	11
8	CROSS-SECTIONS KM 0 + 080	CR-08	12
9	CROSS-SECTIONS KM 0 + 087.436 (D3-D2-D1)	CR-09	13
10	CROSS-SECTIONS KM 0 + 098.012 (IP1)	CR-10	14
11	CROSS-SECTIONS KM 0 + 098.012 (IP1)	CR-11	15
12	CROSS-SECTIONS KM 0 + 100	CR-12	16
13	CROSS-SECTIONS KM 0 + 114.5	CR-13	17
14	CROSS-SECTIONS KM 0 + 132.5	CR-14	18
15	CROSS-SECTIONS KM 0 + 138	CR-15	19
16	CROSS-SECTIONS KM 0 + 140	CR-16	20



NO.	DRAWING TITLE	DRAWING NUMBER	PAGE NUMBER
17	CROSS-SECTIONS KM 0 + 140	CR-17	21
18	CROSS-SECTIONS KM 0 + 160	CR-18	22
19	CROSS-SECTIONS KM 0 + 180	CR-19	23
20	CROSS-SECTIONS KM 0 + 200	CR-20	24
21	CROSS-SECTIONS KM 0 + 220	CR-21	25
22	CROSS-SECTIONS KM 0 + 240	CR-22	26
23	CROSS-SECTIONS KM 0 + 240	CR-23	27
24	CROSS-SECTIONS KM 0 + 242	CR-24	28
25	CROSS-SECTIONS KM 0 + 247	CR-25	29
III. DETAIL			
1	DETAIL (LADDER)	DT-06	30
2	DETAIL (LADDER)	DT-07	31
3	DETAIL (SAFETY POST)	DT-08	32
4	DETAIL (STAIR)	DT-09	33
5	DETAIL (STAIR)	DT-10	34
6	DETAIL (STAIR)	DT-11	35
7	DETAIL (STAIR)	DT-12	36



	Ministry of Public works and Transport Department of Waterways	Name	Signature	Date
		Japan International Cooperation Agency JICA	Design by	<i>[Signature]</i>
The Project on Riverbank Protection Works Phase II		Counterpart	<i>[Signature]</i>	
	LIST OF DRAWING	Check by	<i>[Signature]</i>	25/12/13
JICA Expert Design		Approved by	<i>[Signature]</i>	25/12/13
	Chief Advisor	<i>[Signature]</i>		
	Approved by	<i>[Signature]</i>		
	Project Manager	<i>[Signature]</i>		
	Drawing number	LDW - 01		Page 01

ທີ່ຕັ້ງໂຄງການ PROJECT LOCATION



 Ministry of Public works and Transport Department of Waterways	Name	Signature	Date
	Design by	<i>[Signature]</i>	16/12/03
 Japan International Cooperation Agency JICA	Counterpart	<i>[Signature]</i>	
	Check by	<i>[Signature]</i>	25/12/13
	JICA Expert Design	<i>[Signature]</i>	25/12/13
The Project on Riverbank Protection Works Phase II	Approved by	<i>[Signature]</i>	25/12/13
	Chief Advisor	<i>[Signature]</i>	
PROJECT LOCATION	Approved by	<i>[Signature]</i>	
	Project Manager	<i>[Signature]</i>	
	Drawing number	PL - 01	Page 02

ສັນຍາລັກ SYMBOLS AND ABBREVIATIONS

AASHTO	AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS
m ²	SQUARE METER
m ³	CUBIC METER
mm	MILLIMETER
mm ²	SQUARE MILLIMETER
MPa	MEGAPASCAL
Kg	KILOGRAM
KM	KILOMETER
KN	KILONEWTON
m	METER
Cm	CENTIMETER
L	LENGTH
No.	NUMBER
BH	BORE HOLE
BM	BENCH MARK
DWG	DRAWING
ELEV.	ELEVATION
HC	HIGH OF CUTTING
HF	HIGH OF FILLING
H.W.L	HIGH WATER LEVEL
L.W.L	LOW WATER LEVEL
REIN.	REINFORCEMENT
i	GRADIENT
EP	END POINT

SP	START POINT
PI	POINT OF INTERSECTION FOR HORIZONTAL ALIGNMENT
HA	HORIZONTAL ALIGNMENT
R	RADIUS OF HORIZONTAL CIRCULAR CURVE
T	TANGENT LENGTH OF CIRCULAR CURVE
E	EXTERNAL DISTANCE
Lc	LENGTH OF CURVE
BC	BEGINING OF CURVE
EC	END OF CURVE
PKT	CONNECTION POINT
PSC	PRESTRESS STEEL CONCRETE
PVC	POINT OF VERTICAL CURVE
PVI	POINT OF VERTICAL INTERSECTION
PVT	POINT OF VERTICAL TANGENT
Pw	EXTRA WIDENING IN HORIZONTAL CURVE
Lvc	LENGTH OF VERTICAL CREST CURVE
Lvs	LENGTH OF VERTICAL SAGCURVE
V	DESIGN SPEED
R.L	ROAD LEVEL
RV	RADIUS OF VERTICAL CURVE
Se	SUPERELEVATION
X/E	EASTING COORDINATE IN METER
Y/N	NORTHING COORDINATE IN METER
Z/LEV.	VERTICAL COORDINATE IN METER (OR LEVEL)
FL	FLAGE
	FLAGE
	MARSH
	PADDY FIELD

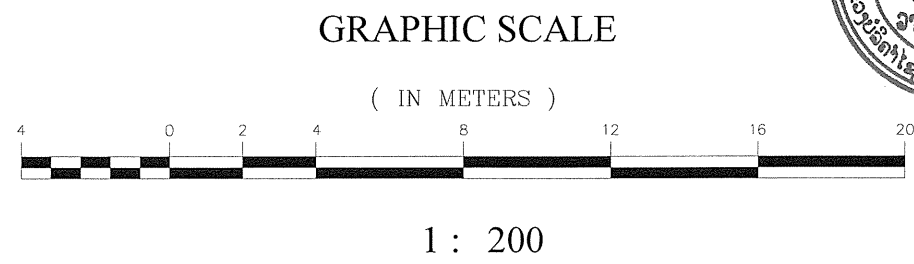
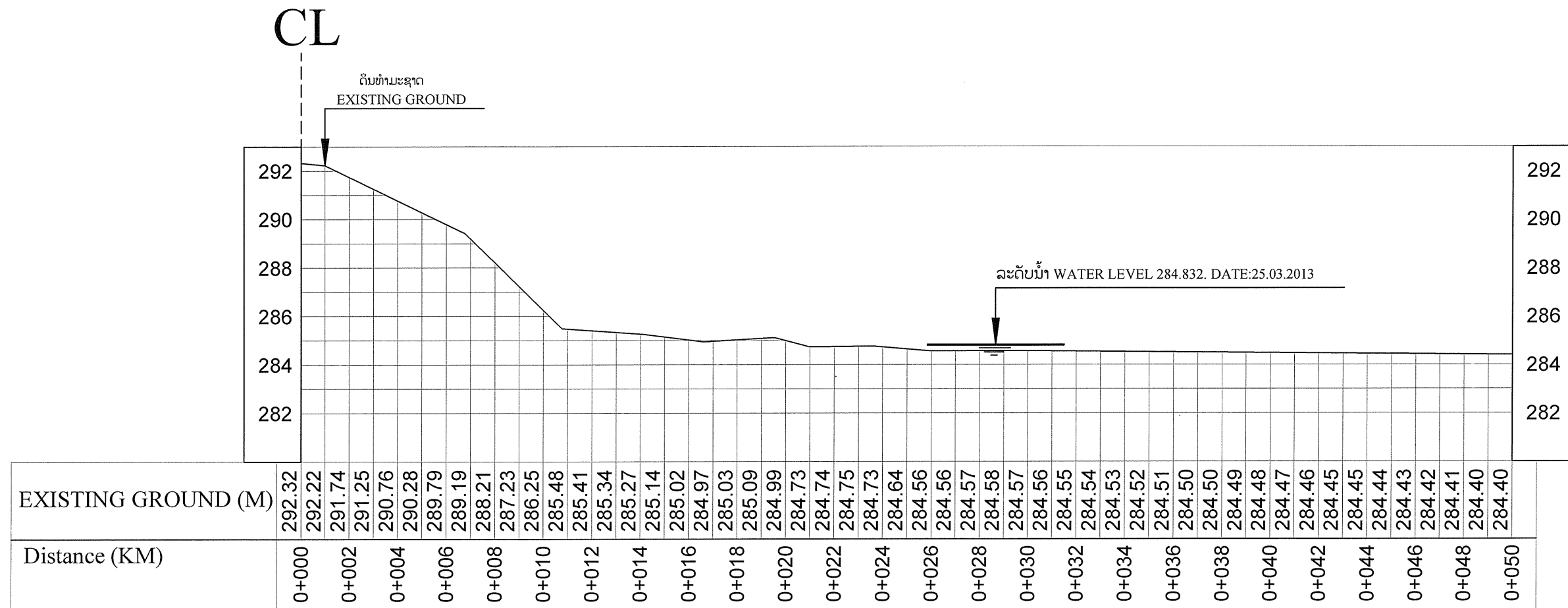
	BENCH MARK		HOUSE, HUT
	POINT NUMBER		BUILDING, HOUSE, ONE STOREY WOOD
	PKT PICKET POINT		HOUSE, TWO STOREY BRICK AND WOOD
	BORE HOLE (BH)		BUILDING, HOUSE, TWO STOREY CONCRETE / BRICK
	STATION POINT		BAMBOO
	ROAD		TREE, EXISTING
	EXISTING BRIDGE		GUIDE POST
	DETOUR		ELEVATION
	CONTOUR LINE		(HIGH) WATER LEVEL
	PIPE CULVERT EXISTING		BENCH MARK
	ELECTRICITY PYLON		GPS POINT
	MANHOLE		FLOW
	CENTERLINE OF ROAD		TO M. TONPHEUNG
	EXISTING ROAD FILL SLOPE		SECTION A-A
	TRAFFIC SIGNAL		SLOPE
	ROAD SIGN		
	BOTTOM OF BANK		



	Ministry of Public works and Transport	Name	Signature	Date
	Department of Waterways	Design by		16/12/03
	Japan International Cooperation Agency	Counterpart		
	JICA	Check by		25/12/13
The Project on Riverbank Protection Works Phase II		JICA Expert Design		25/12/13
		Approved by		
SYMBOLS AND ABBREVIATION		Chief Advisor		
		Approved by		
		Project Manager		
		Drawing number	SB - 01	Page 03

ຮູບຕັດຂວາງ ໜ້າຕັດ 0-010

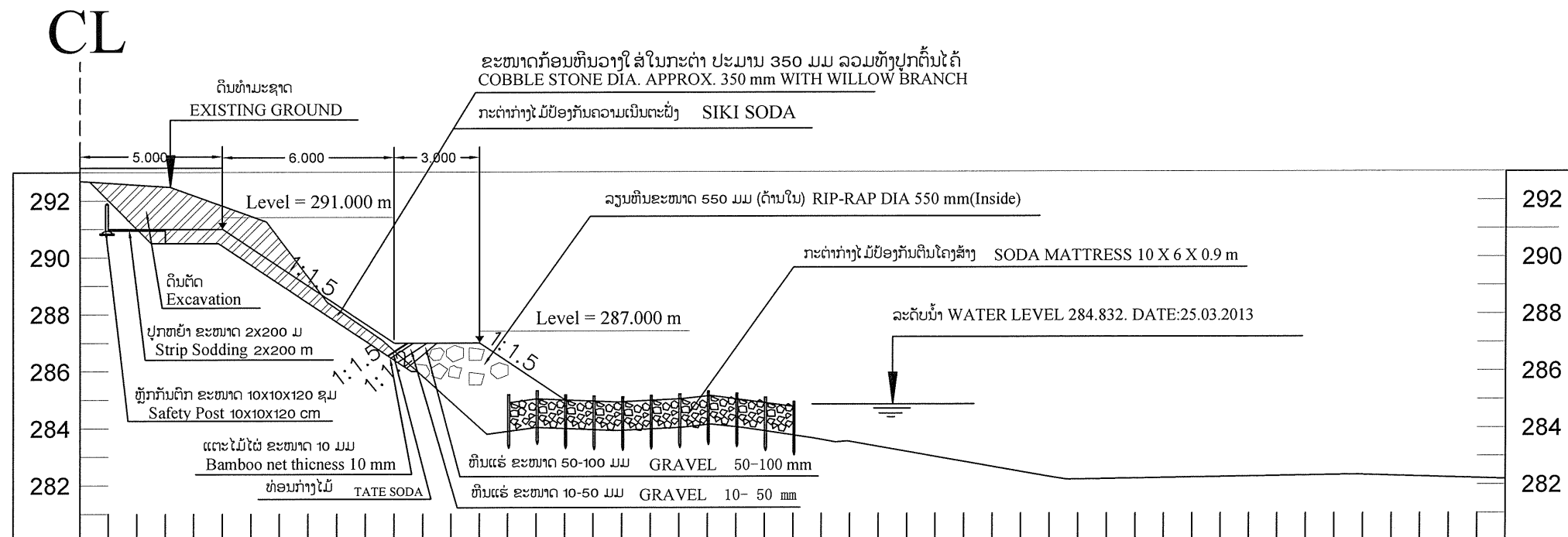
TYPICAL CROSS SECTION 0-010



Ministry of Public works and Transport Department of Waterways	Name	Signature	Date
	Design by	<i>[Signature]</i>	16/12/13
Japan International Cooperation Agency JICA	Counterpart	<i>[Signature]</i>	
	Check by	<i>[Signature]</i>	25/12/13
The Project on Riverbank Protection Works Phase II	JICA Expert Design	<i>[Signature]</i>	
	Approved by	<i>[Signature]</i>	25/12/13
CROSS SECTION	Chief Advisor	<i>[Signature]</i>	
	Approved by	<i>[Signature]</i>	
	Project Manager	<i>[Signature]</i>	
	Drawing number	CR 01	Page 05

ຮູບຕັດຂວາງ ໜ້າຕັດ 0+020

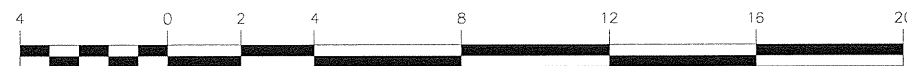
CROSS SECTION 0+020



EXISTING GROUND (M)	292.68	292.62	292.55	292.49	292.18	291.82	291.45	290.65	289.31	288.19	287.50	286.73	285.83	284.93	284.03	283.89	284.02	283.99	283.95	283.92	283.97	284.02	284.12	284.04	283.90	283.75	283.59	283.52	283.34	283.16	282.99	282.81	282.63	282.46	282.28	282.19	282.20	282.22	282.24	282.25	282.27	282.29	282.30	282.32	282.34	282.34	282.31	282.28	282.25	282.22	282.19
Distance (KM)	0+000	0+002	0+004	0+006	0+008	0+010	0+012	0+014	0+016	0+018	0+020	0+022	0+024	0+026	0+028	0+030	0+032	0+034	0+036	0+038	0+040	0+042	0+044	0+046	0+048	0+050																									

GRAPHIC SCALE

(IN METERS)



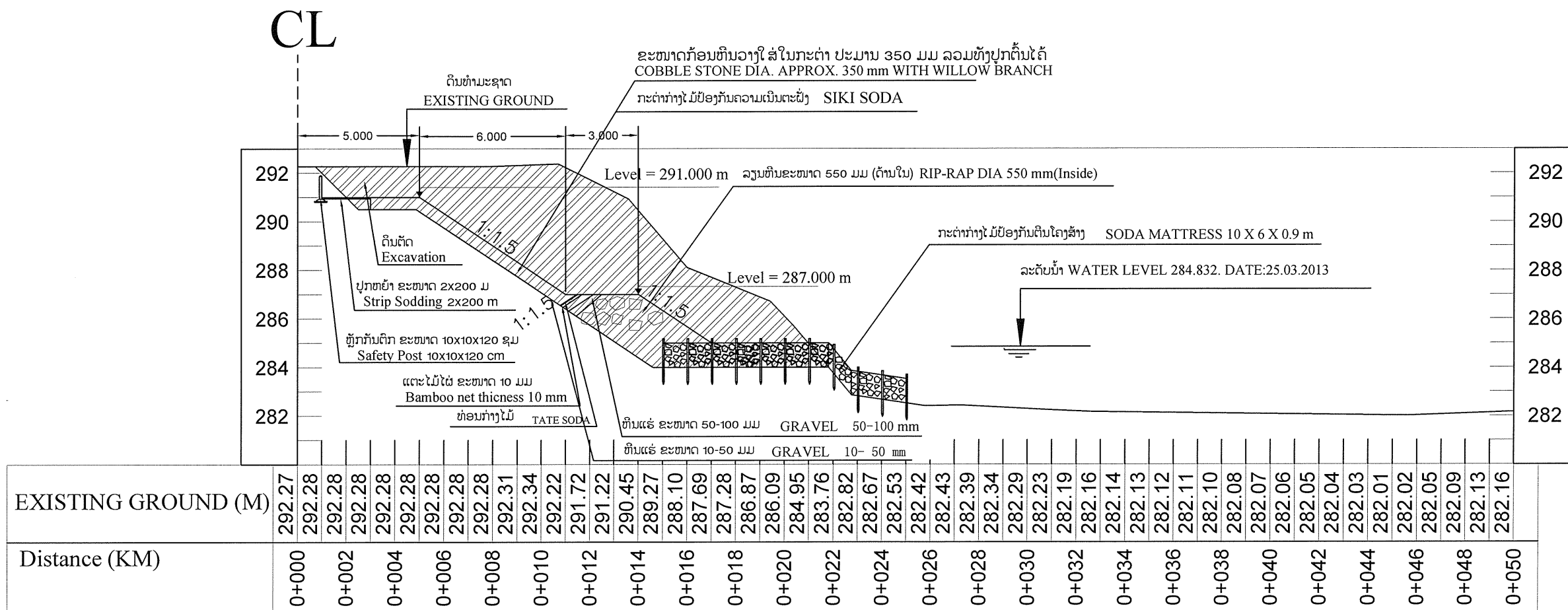
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Ministry of Public works and Transport Department of Waterways	Name	Signature	Date
	Design by	<i>[Signature]</i>	16/12/03
Japan International Cooperation Agency JICA	Counterpart	<i>[Signature]</i>	
	Check by	<i>[Signature]</i>	25/12/13
The Project on Riverbank Protection Works Phase II	JICA Expert Design	<i>[Signature]</i>	25/12/13
	Approved by	<i>[Signature]</i>	
CROSS SECTION	Chief Advisor	<i>[Signature]</i>	
	Approved by	<i>[Signature]</i>	
	Project Manager	<i>[Signature]</i>	
	Drawing number	CR 05	Page 09

ຮູບຕັດຂວາງ ໜ້າຕັດ 0+040

CROSS SECTION 0+040



GRAPHIC SCALE

(IN METERS)



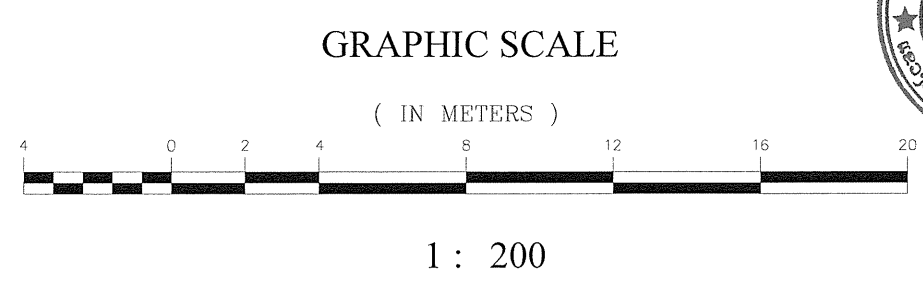
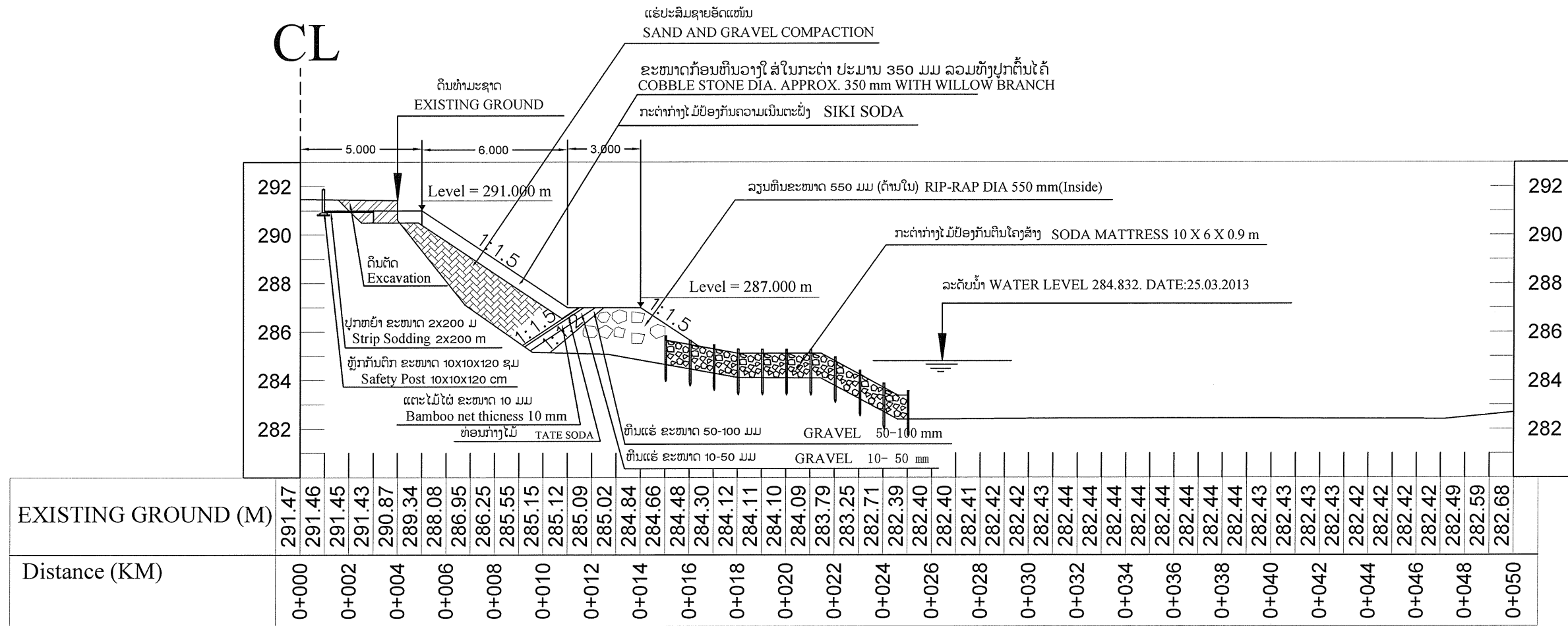
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Ministry of Public works and Transport Department of Waterways	Name		16/12/03
	Design by		
Japan International Cooperation Agency JICA	Counterpart		25/12/13
	Check by		
The Project on Riverbank Protection Works Phase II	JICA Expert Design		25/12/13
	Approved by		
CROSS SECTION	Chief Advisor		
	Approved by		
	Project Manager		
	Drawing number	CR 06	Page 10

ຮູບຕັດຂວາງ ໜ້າຕັດ 0+080

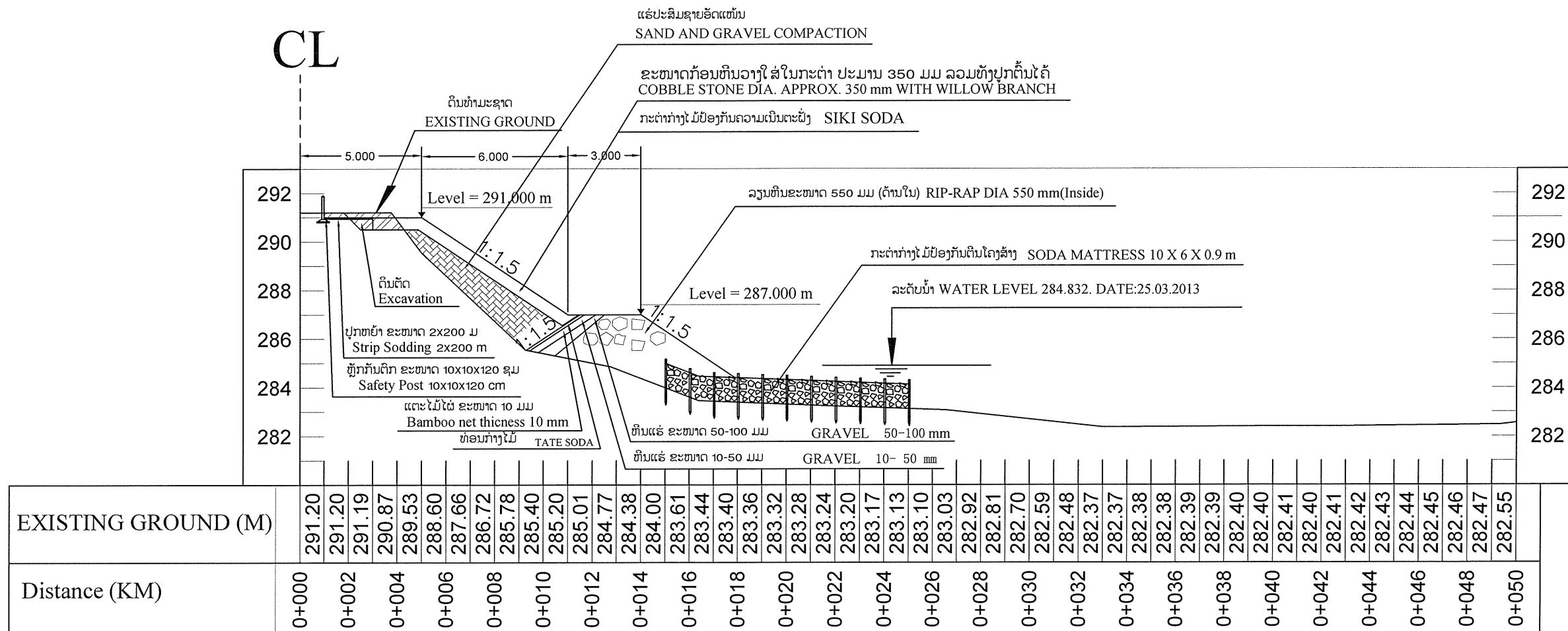
CROSS SECTION 0+080



	Ministry of Public works and Transport Department of Waterways	Name	Signature	Date
		Japan International Cooperation Agency JICA	Design by	<i>[Signature]</i>
The Project on Riverbank Protection Works Phase II		Counterpart	Check by	<i>[Signature]</i>
	JICA Expert Design	Approved by	<i>[Signature]</i>	25/12/13
	Chief Advisor	Approved by	<i>[Signature]</i>	
CROSS SECTION		Project Manager	<i>[Signature]</i>	
		Drawing number	CR 08	Page 12

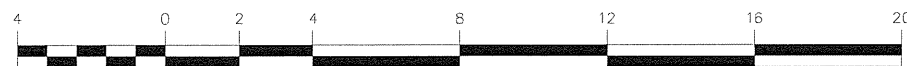
ຮູບຕັດຂວາງ ໜ້າຕັດ 0+087.436 (D3-D2-D1)

CROSS SECTION 0+087.436 (D3-D2-D1)



GRAPHIC SCALE

(IN METERS)



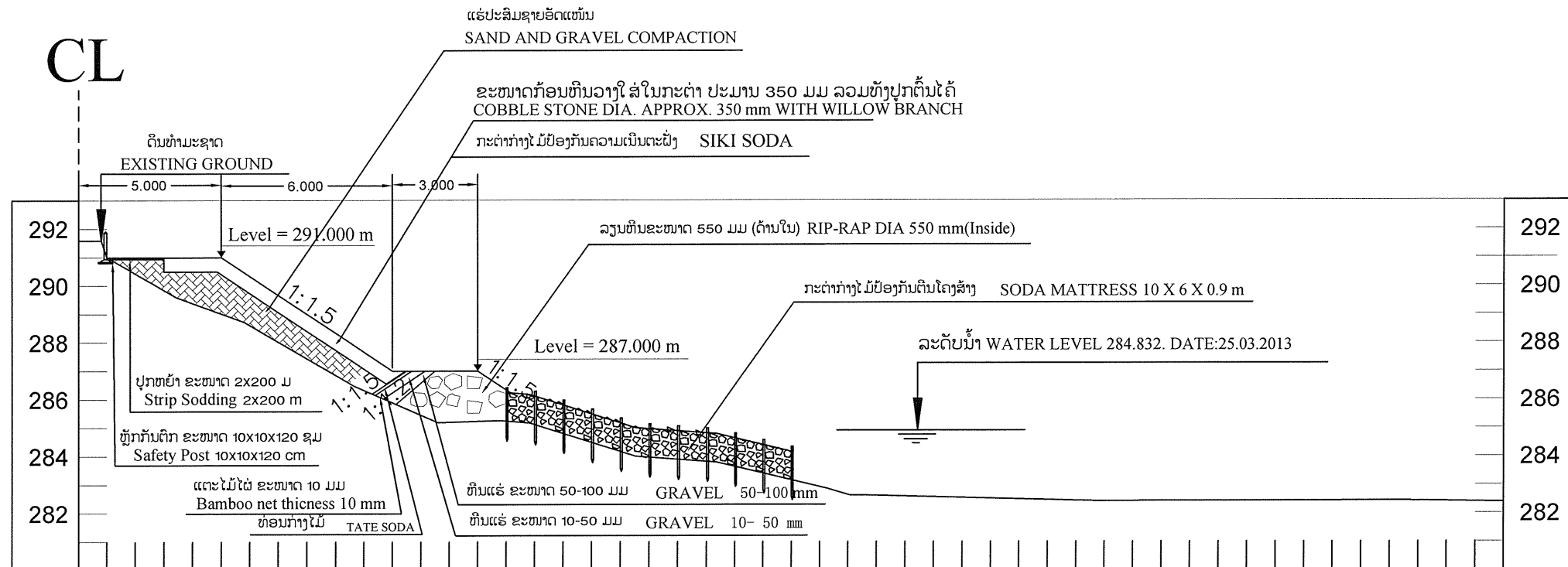
1 : 200



Ministry of Public works and Transport Department of Waterways	Name	Signature	Date
	Design by	<i>[Signature]</i>	6/12/05
Japan International Cooperation Agency JICA	Counterpart	<i>[Signature]</i>	
	Check by	<i>[Signature]</i>	25/12/13
The Project on Riverbank Protection Works Phase II	JICA Expert Design	<i>[Signature]</i>	25/12/13
	Approved by	<i>[Signature]</i>	
CROSS SECTION	Chief Advisor	<i>[Signature]</i>	
	Approved by	<i>[Signature]</i>	
	Project Manager	<i>[Signature]</i>	
	Drawing number	CR 09	Page 13

ຮູບຕັດຂວາງ ໜ້າຕັດ 0+098.012(IP1)

CROSS SECTION 0+098.012(IP1)



EXISTING GROUND (M)	291.59	291.00	290.42	289.84	289.38	289.01	288.60	288.02	287.43	286.85	286.32	285.89	285.45	285.20	285.24	285.24	285.11	284.80	284.48	284.17	283.96	283.89	283.82	283.64	283.40	283.16	282.92	282.65	282.61	282.59	282.56	282.54	282.51	282.49	282.46	282.44	282.42	282.42	282.43	282.43	282.43	282.43	282.43	282.43	282.43	282.41	282.40	282.38
Distance (KM)	0+000	0+002	0+004	0+006	0+008	0+010	0+012	0+014	0+016	0+018	0+020	0+022	0+024	0+026	0+028	0+030	0+032	0+034	0+036	0+038	0+040	0+042	0+044	0+046	0+048	0+050																						

GRAPHIC SCALE

(IN METERS)



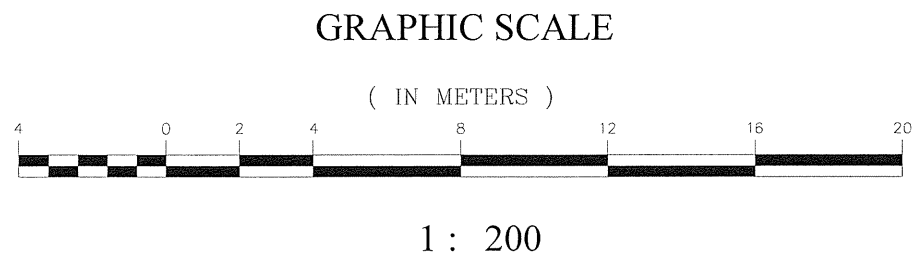
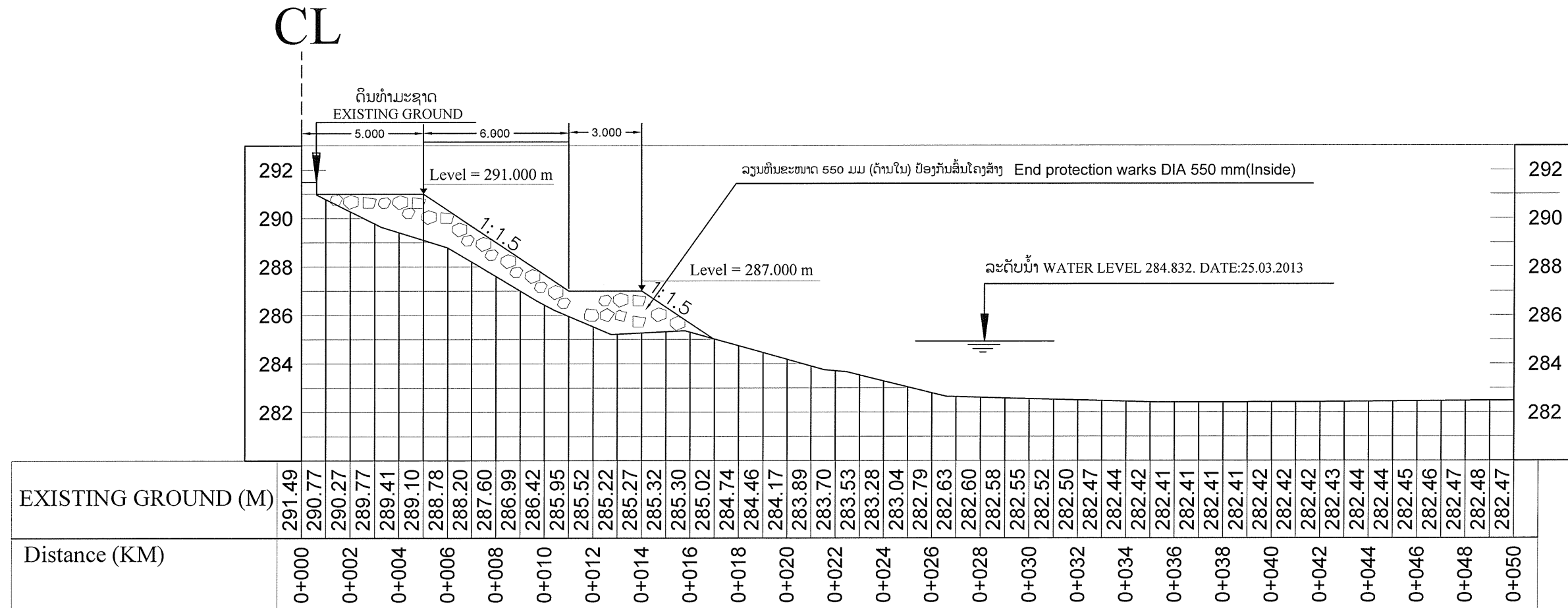
1 : 200



Ministry of Public works and Transport Department of Waterways	Name	Signature	Date
	Design by	<i>[Signature]</i>	16/12/03
Japan International Cooperation Agency JICA	Counterpart	<i>[Signature]</i>	
	Check by	<i>[Signature]</i>	25/12/13
The Project on Riverbank Protection Works Phase II	JICA Expert Design	<i>[Signature]</i>	
	Approved by	<i>[Signature]</i>	25/12/13
CROSS SECTION	Chief Advisor	<i>[Signature]</i>	
	Approved by	<i>[Signature]</i>	
	Project Manager	<i>[Signature]</i>	
	Drawing number	CR 10	Page 14

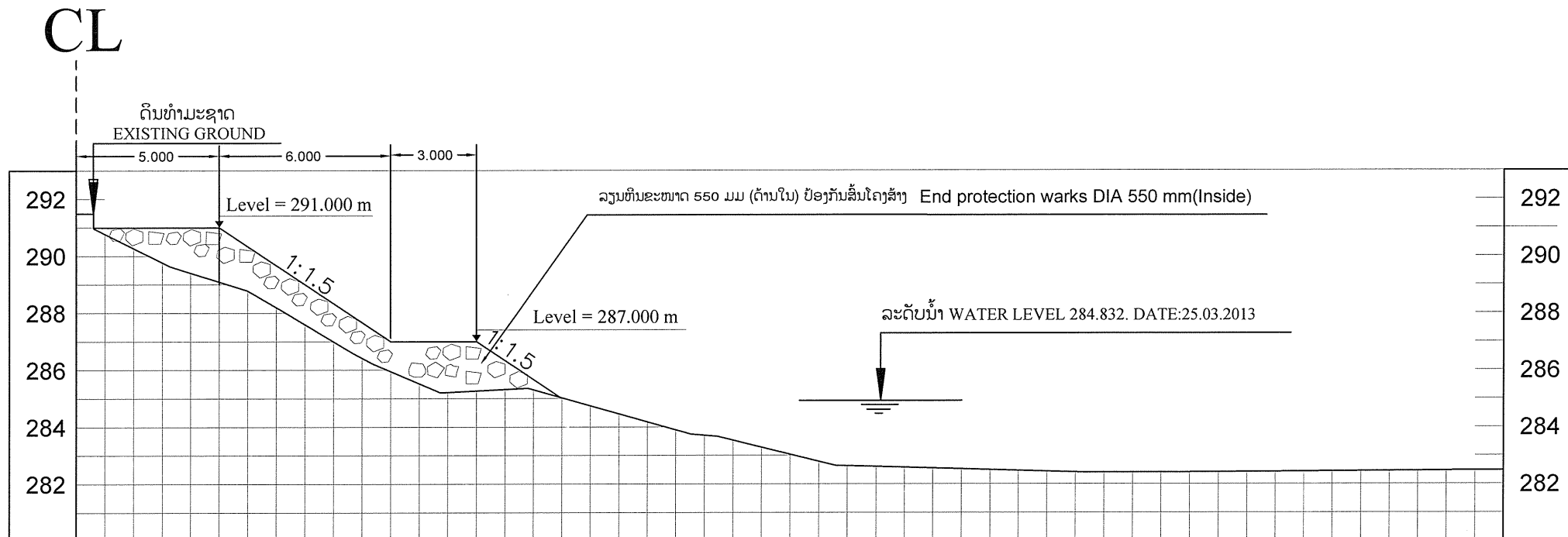
ຮູບຕັດຂວາງ ໜ້າຕັດ 0+098.012(IP1)

CROSS SECTION 0+098.012(IP1)

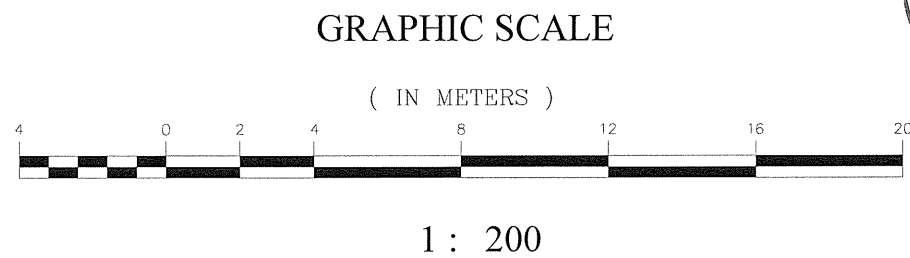


Ministry of Public works and Transport Department of Waterways	Name	Signature	Date
	Design by	<i>[Signature]</i>	16/12/03
Japan International Cooperation Agency JICA	Counterpart	<i>[Signature]</i>	
	Check by	Y. Miwa	25/12/13
The Project on Riverbank Protection Works Phase II	JICA Expert Design		
	Approved by	<i>[Signature]</i>	25/12/13
CROSS SECTION	Chief Advisor		
	Approved by	<i>[Signature]</i>	
	Project Manager		
	Drawing number	CR 11	Page 15

ຮູບຕັດຂວາງ ໜ້າຕັດ 0+100 CROSS SECTION 0+100



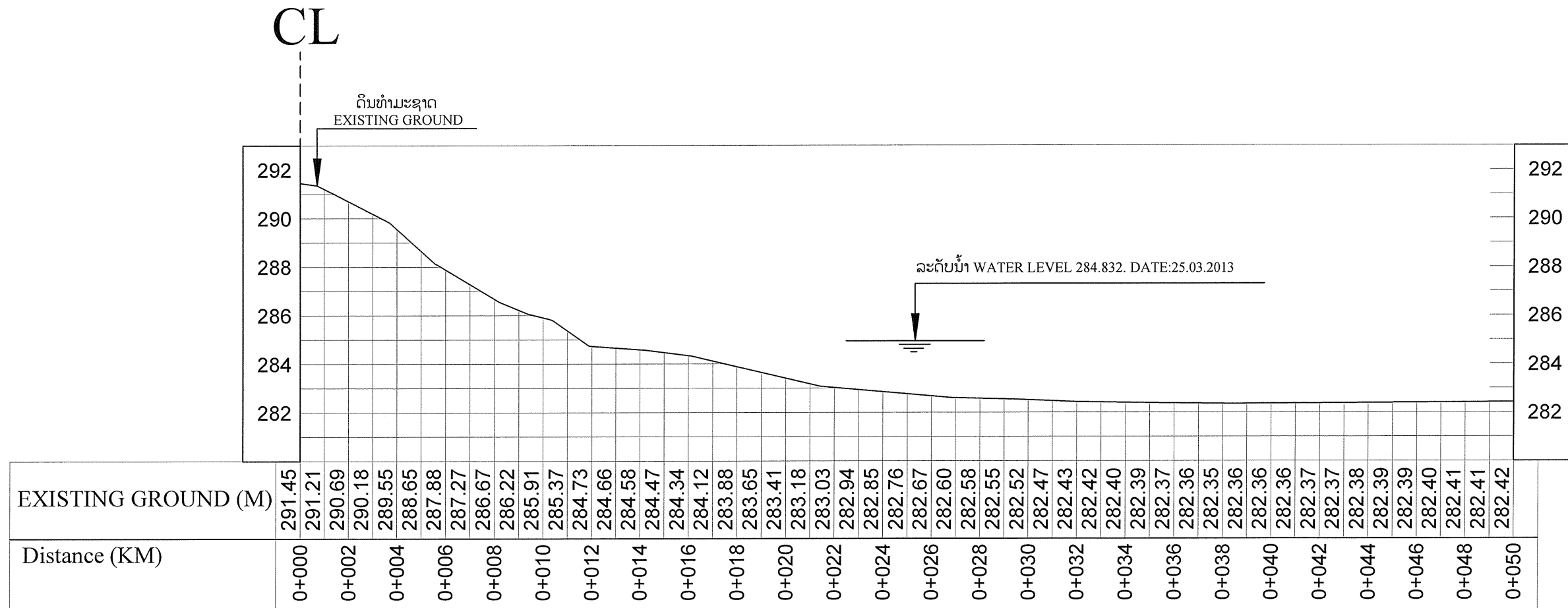
EXISTING GROUND (M)	291.49	290.77	290.27	289.77	289.41	289.10	288.78	288.20	287.60	286.99	286.42	285.95	285.52	285.22	285.27	285.32	285.30	285.02	284.74	284.46	284.17	283.89	283.70	283.53	283.28	283.04	282.79	282.63	282.60	282.58	282.55	282.52	282.50	282.47	282.44	282.42	282.41	282.41	282.41	282.41	282.42	282.42	282.42	282.43	282.44	282.44	282.45	282.46	282.47	282.48	282.47
Distance (KM)	0+000	0+002	0+004	0+006	0+008	0+010	0+012	0+014	0+016	0+018	0+020	0+022	0+024	0+026	0+028	0+030	0+032	0+034	0+036	0+038	0+040	0+042	0+044	0+046	0+048	0+050																									



Ministry of Public works and Transport Department of Waterways	Name	Signature	Date
	Design by	<i>[Signature]</i>	16/12/03
Japan International Cooperation Agency JICA	Counterpart	<i>[Signature]</i>	
	Check by	Y. Miwa	25/12/13
The Project on Riverbank Protection Works Phase II	JICA Expert Design		
	Approved by	<i>[Signature]</i>	25/12/13
CROSS SECTION	Chief Advisor	<i>[Signature]</i>	
	Approved by	<i>[Signature]</i>	
	Project Manager	<i>[Signature]</i>	
	Drawing number	CR 12	Page 16

ຮູບຕັດຂວາງ ໜ້າຕັດ 0+114.5

CROSS SECTION 0+114.5



GRAPHIC SCALE

(IN METERS)



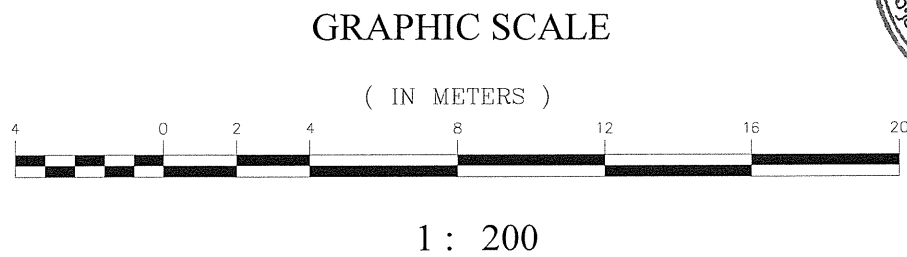
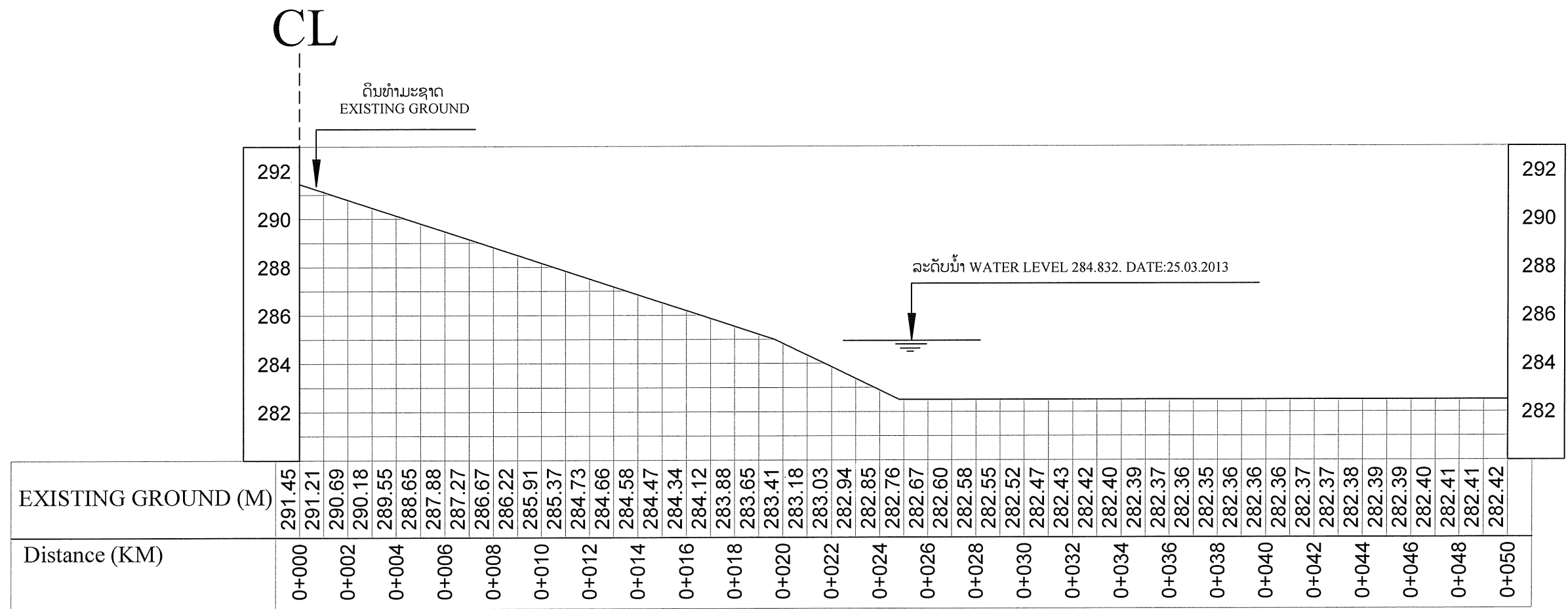
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Ministry of Public works and Transport Department of Waterways	Name	Signature	Date
	Design by	<i>[Signature]</i>	18/12/13
Japan International Cooperation Agency JICA	Counterpart	<i>[Signature]</i>	
	Check by	<i>[Signature]</i>	25/12/13
The Project on Riverbank Protection Works Phase II	JICA Expert Design	<i>[Signature]</i>	
	Approved by	<i>[Signature]</i>	25/12/13
CROSS SECTION	Chief Advisor	<i>[Signature]</i>	
	Approved by	<i>[Signature]</i>	
	Project Manager	<i>[Signature]</i>	
	Drawing number	CR 13	Page 17

ຮູບຕັດຂວາງ ໜ້າຕັດ 0+132.5

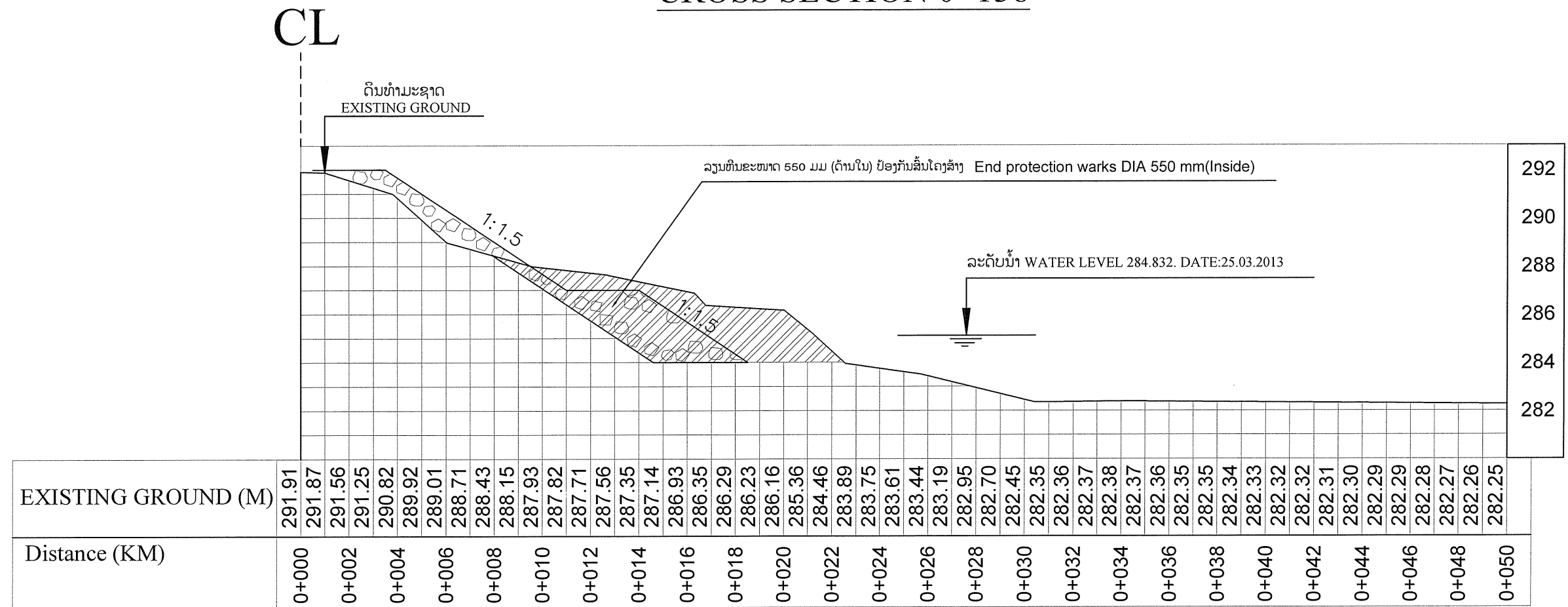
CROSS SECTION 0+132.5



Ministry of Public works and Transport Department of Waterways	Name		
	Design by	<i>Flambert</i>	16/12/09
Japan International Cooperation Agency JICA	Counterpart	<i>Grav. S.</i>	
	Check by	<i>Y. MIWA</i>	25/12/13
The Project on Riverbank Protection Works Phase II	Approved by	<i>[Signature]</i>	25/12/13
	Chief Advisor	<i>[Signature]</i>	
CROSS SECTION	Approved by	<i>[Signature]</i>	
	Project Manager	<i>[Signature]</i>	
	Drawing number	CR 14	Page 18

ຮູບຕັດຂວາງ ໜ້າຕັດ 0+138

CROSS SECTION 0+138



GRAPHIC SCALE

(IN METERS)



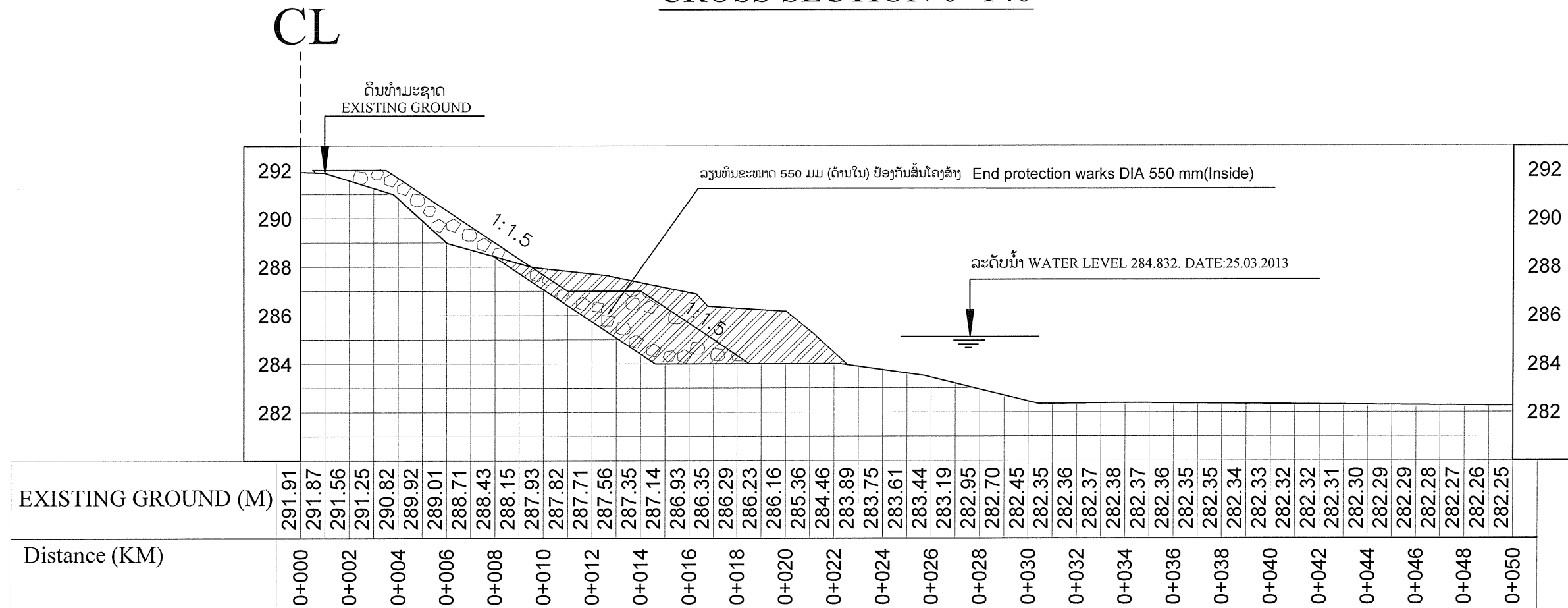
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Ministry of Public works and Transport Department of Waterways	Name	Signature	Date
	Design by	<i>[Signature]</i>	16/12/13
Japan International Cooperation Agency JICA	Counterpart	<i>[Signature]</i>	
	Check by	<i>[Signature]</i>	25/12/13
The Project on Riverbank Protection Works Phase II	JICA Expert Design	<i>[Signature]</i>	25/12/13
	Approved by	<i>[Signature]</i>	
CROSS SECTION	Chief Advisor	<i>[Signature]</i>	25/12/13
	Approved by	<i>[Signature]</i>	
	Project Manager	<i>[Signature]</i>	
	Drawing number	CR 15	Page 19

ຮູບຕັດຂວາງ ໜ້າຕັດ 0+140

CROSS SECTION 0+140



GRAPHIC SCALE

(IN METERS)



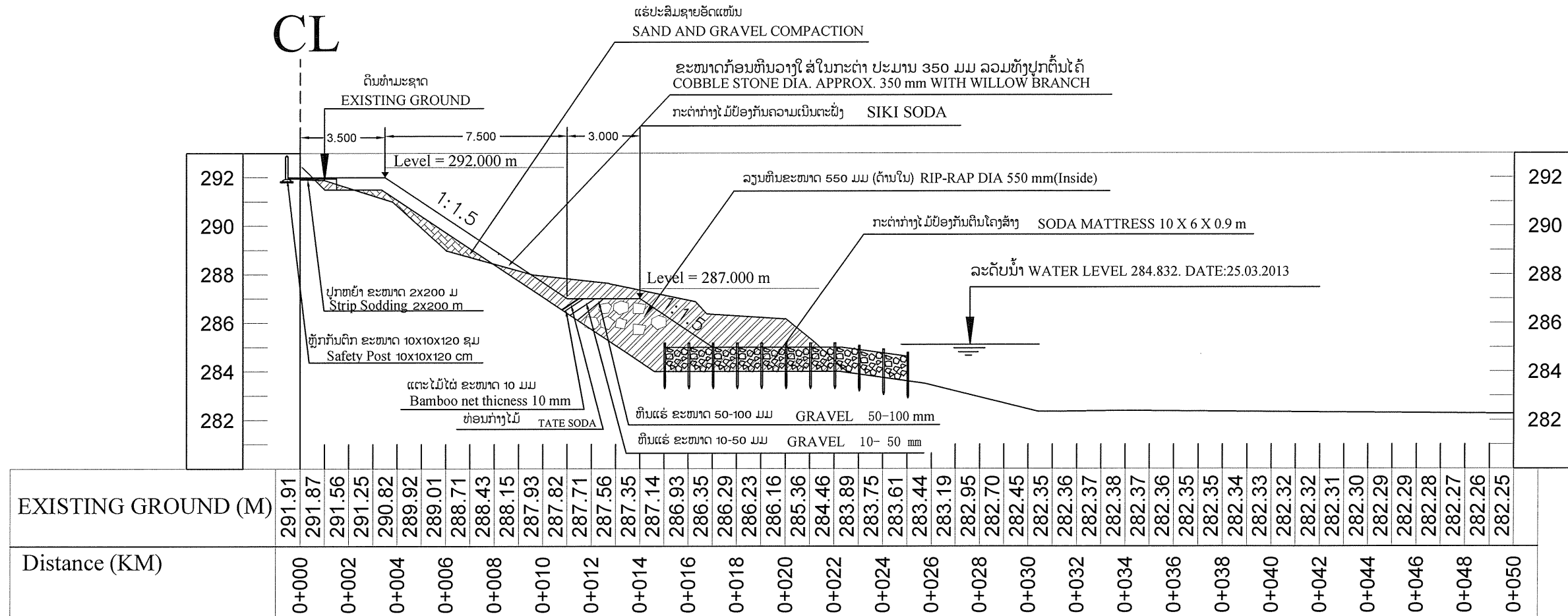
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Ministry of Public works and Transport Department of Waterways	Name	Signature	Date
	Design by	<i>[Signature]</i>	16/12/03
Japan International Cooperation Agency JICA	Counterpart	<i>[Signature]</i>	
	Check by	<i>[Signature]</i>	25/12/13
The Project on Riverbank Protection Works Phase II	JICA Expert Design	<i>[Signature]</i>	25/12/13
	Approved by	<i>[Signature]</i>	
CROSS SECTION	Chief Advisor	<i>[Signature]</i>	
	Approved by	<i>[Signature]</i>	
	Project Manager	<i>[Signature]</i>	
	Drawing number	CR 16	Page 20

ຮູບຕັດຂວາງ ໜ້າຕັດ 0+140

CROSS SECTION 0+140



GRAPHIC SCALE

(IN METERS)



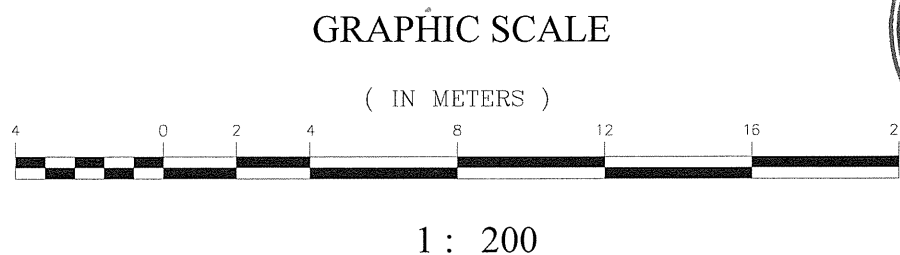
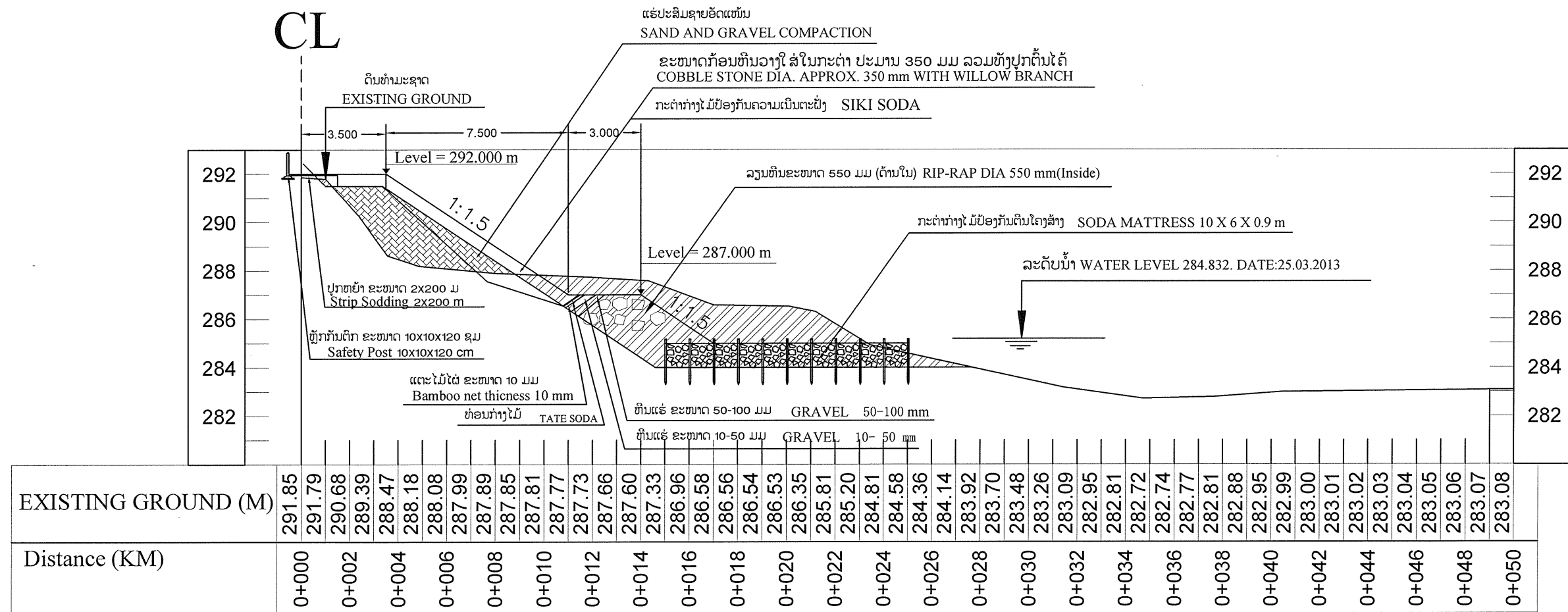
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Ministry of Public works and Transport Department of Waterways	Name		Date
	Design by		
Japan International Cooperation Agency JICA	Counterpart		16/12/13
	Check by		
The Project on Riverbank Protection Works Phase II	JICA Expert Design	Y. Niwa	25/12/13
	Approved by		25/12/13
Chief Advisor			
CROSS SECTION	Approved by		
	Project Manager		
	Drawing number	CR 17	Page 21

ຮູບຕັດຂວາງ ໜ້າຕັດ 0+160

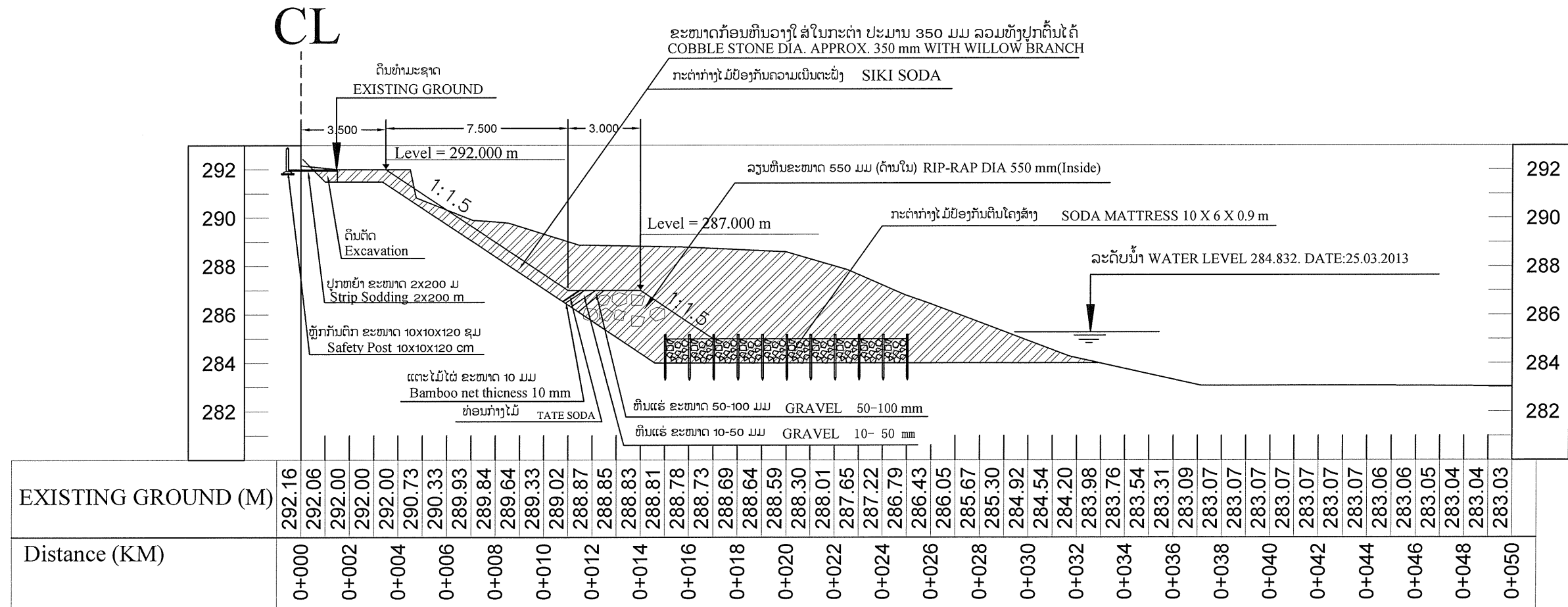
CROSS SECTION 0+160



Ministry of Public works and Transport Department of Waterways	Name		Date
	Design by		
Japan International Cooperation Agency JICA	Counterpart		Date
	Check by		
	JICA Expert Design		
The Project on Riverbank Protection Works Phase II	Approved by		Date
	Chief Advisor		
CROSS SECTION	Approved by		Date
	Project Manager		
	Drawing number		

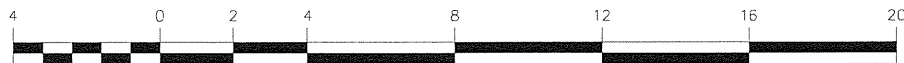
ຮູບຕັດຂວາງ ໜ້າຕັດ 0+180

CROSS SECTION 0+180



GRAPHIC SCALE

(IN METERS)



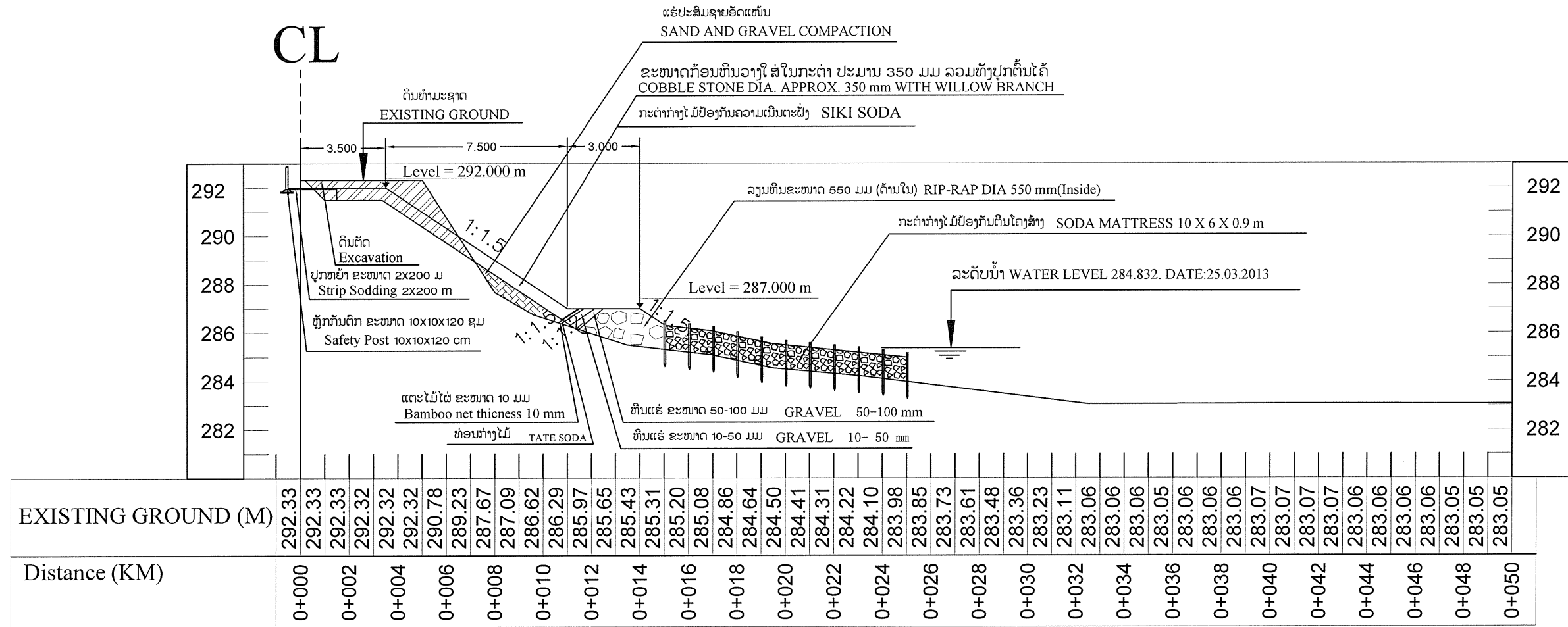
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Ministry of Public works and Transport Department of Waterways	Name	Signature	Date
	Design by	<i>[Signature]</i>	16/12/09
Japan International Cooperation Agency JICA	Counterpart	<i>[Signature]</i>	
	Check by	<i>[Signature]</i>	25/12/13
The Project on Riverbank Protection Works Phase II	JICA Expert Design	<i>[Signature]</i>	25/12/13
	Approved by	<i>[Signature]</i>	
CROSS SECTION	Chief Advisor	<i>[Signature]</i>	
	Approved by	<i>[Signature]</i>	
	Project Manager	<i>[Signature]</i>	
	Drawing number	CR 19	Page 23

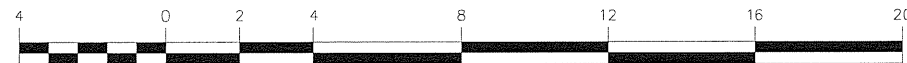
ຮູບຕັດຂວາງ ໜ້າຕັດ 0+200

CROSS SECTION 0+200



GRAPHIC SCALE

(IN METERS)



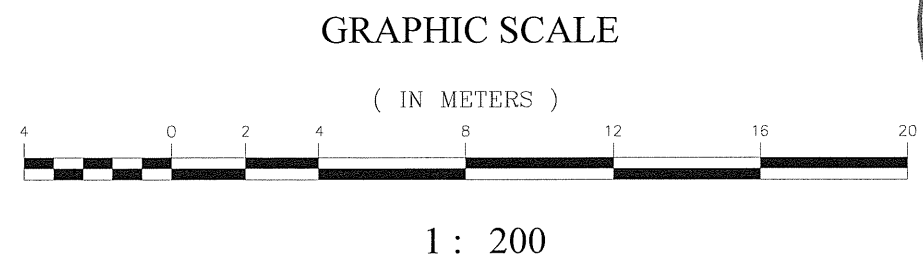
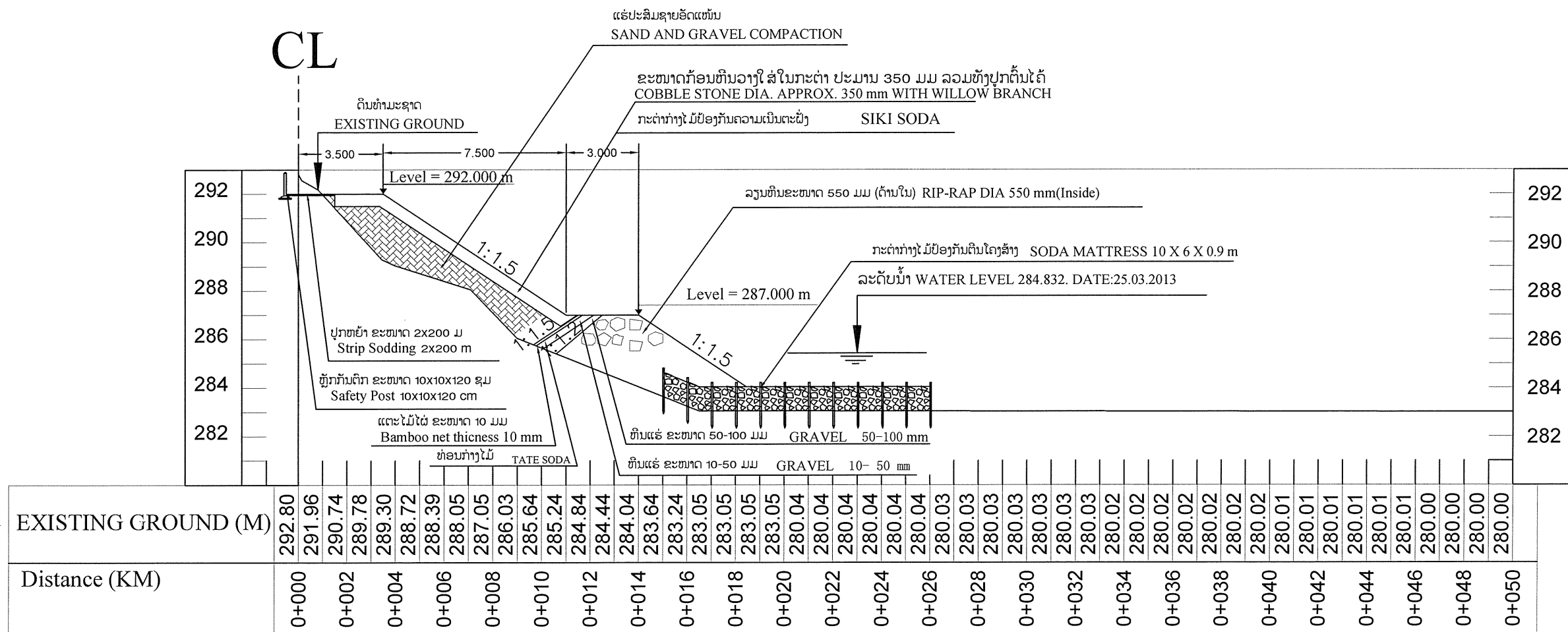
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Ministry of Public works and Transport Department of Waterways	Name	Signature	Date
	Design by	<i>[Signature]</i>	16/12/13
Japan International Cooperation Agency JICA	Counterpart	<i>[Signature]</i>	
	Check by	<i>[Signature]</i>	25/12/13
The Project on Riverbank Protection Works Phase II	JICA Expert Design	<i>[Signature]</i>	25/12/13
	Approved by	<i>[Signature]</i>	25/12/13
CROSS SECTION	Chief Advisor	<i>[Signature]</i>	
	Approved by	<i>[Signature]</i>	
	Project Manager	<i>[Signature]</i>	
	Drawing number	CR 20	Page 24

ຮູບຕັດຂວາງ ໜ້າຕັດ 0+240

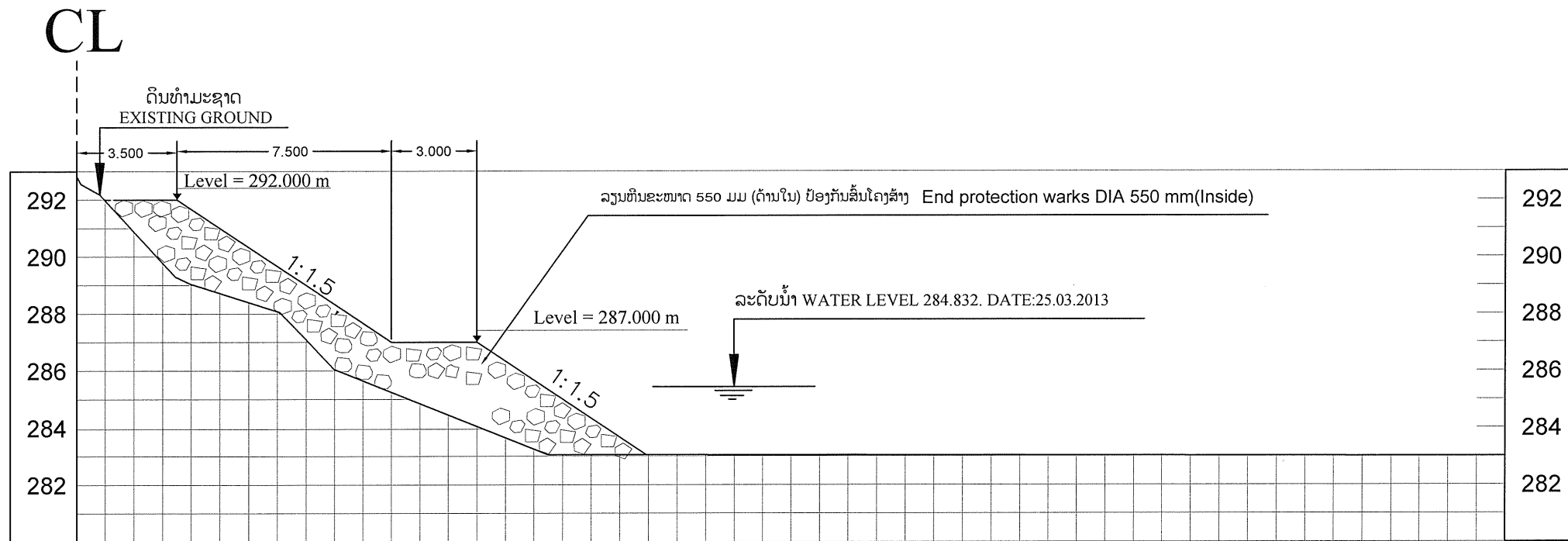
CROSS SECTION 0+240



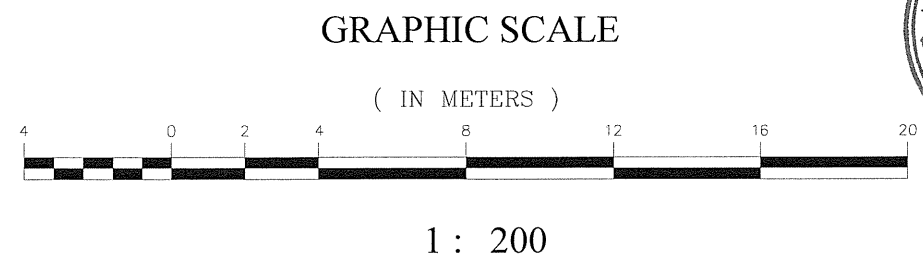
Ministry of Public works and Transport Department of Waterways	Name		16/12/13
	Design by		
Japan International Cooperation Agency JICA	Counterpart		25/12/13
	Check by		
The Project on Riverbank Protection Works Phase II	JICA Expert Design		25/12/13
	Approved by		
CROSS SECTION	Chief Advisor		
	Approved by		
	Project Manager		
	Drawing number	CR 22	Page 26

ຮູບຕັດຂວາງ ໜ້າຕັດ 0+240

CROSS SECTION 0+240



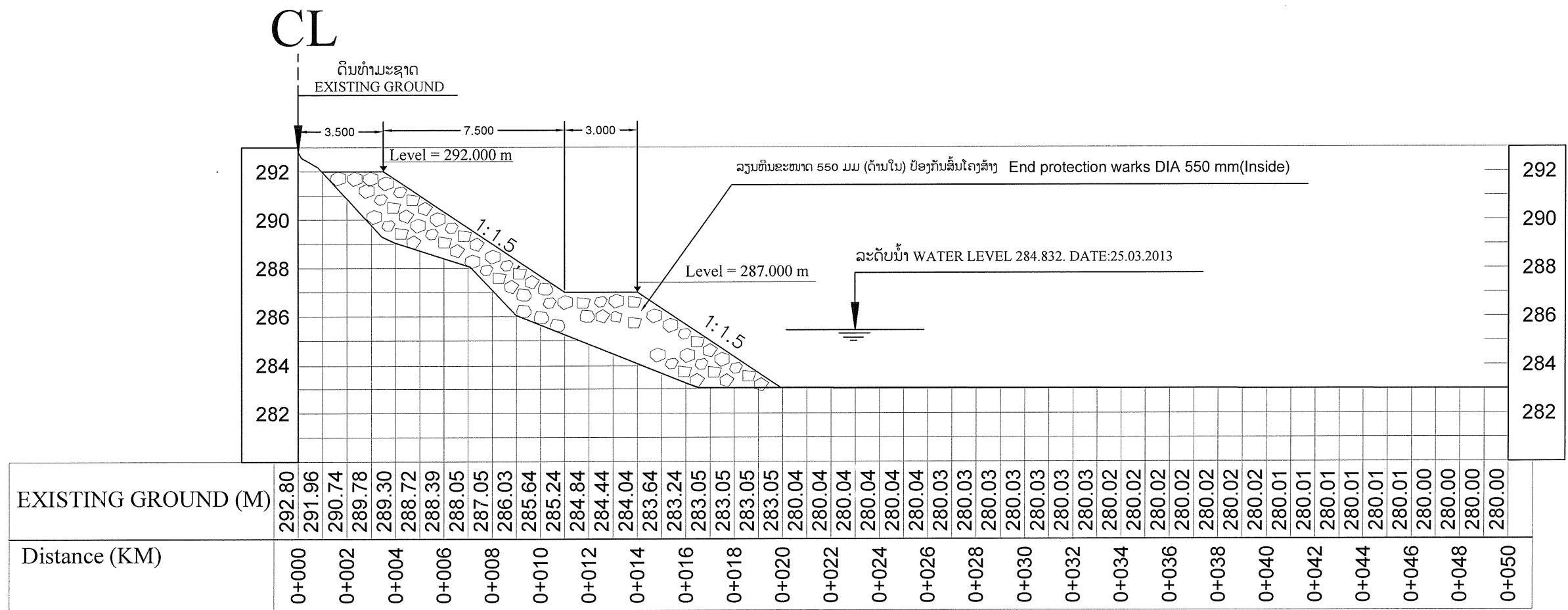
EXISTING GROUND (M)	292.80	291.96	290.74	289.78	289.30	288.72	288.39	288.05	287.05	286.03	285.64	285.24	284.84	284.44	284.04	283.64	283.24	283.05	283.05	283.05	283.05	280.04	280.04	280.04	280.04	280.04	280.04	280.03	280.03	280.03	280.03	280.03	280.03	280.03	280.02	280.02	280.02	280.02	280.02	280.02	280.01	280.01	280.01	280.01	280.01	280.00	280.00	280.00	280.00
Distance (KM)	0+000	0+002	0+004	0+006	0+008	0+010	0+012	0+014	0+016	0+018	0+020	0+022	0+024	0+026	0+028	0+030	0+032	0+034	0+036	0+038	0+040	0+042	0+044	0+046	0+048	0+050																							



Ministry of Public works and Transport Department of Waterways	Name	Signature	Date
	Design by	<i>[Signature]</i>	16/12/03
Japan International Cooperation Agency JICA	Counterpart	<i>[Signature]</i>	
	Check by	<i>[Signature]</i>	25/12/13
The Project on Riverbank Protection Works Phase II	JICA Expert Design	<i>[Signature]</i>	25/12/13
	Approved by	<i>[Signature]</i>	
CROSS SECTION	Chief Advisor	<i>[Signature]</i>	25/12/13
	Approved by	<i>[Signature]</i>	
	Project Manager	<i>[Signature]</i>	
	Drawing number	CR 23	Page 27

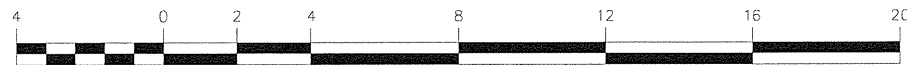
ຮູບຕັດຂວາງ ໜ້າຕັດ 0+242

CROSS SECTION 0+242



GRAPHIC SCALE

(IN METERS)



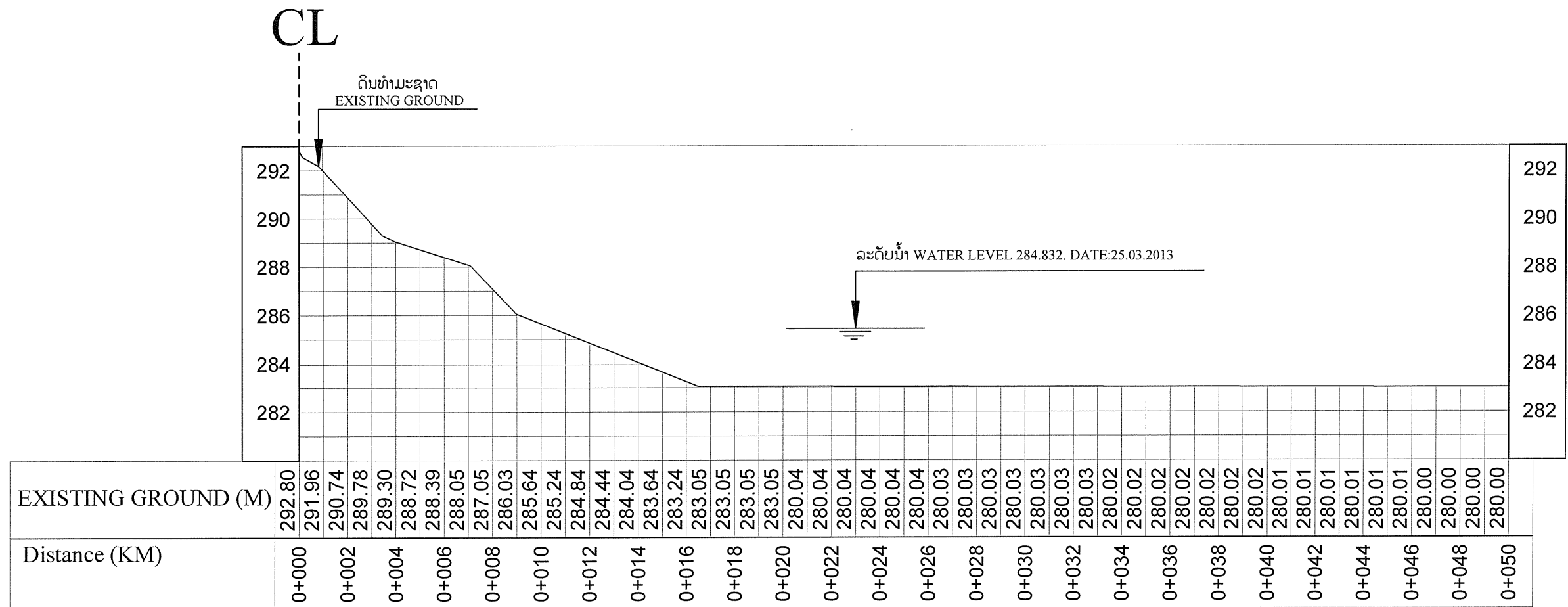
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Ministry of Public works and Transport Department of Waterways	Name		
	Design by	<i>Handwritten Signature</i>	16/12/13
Japan International Cooperation Agency JICA	Counterpart	<i>Handwritten Signature</i>	
	Check by	Y. Niwa	25/12/13
The Project on Riverbank Protection Works Phase II	JICA Expert Design		
	Approved by	<i>Handwritten Signature</i>	25/12/13
CROSS SECTION	Chief Advisor	<i>Handwritten Signature</i>	
	Approved by	<i>Handwritten Signature</i>	
	Project Manager	<i>Handwritten Signature</i>	
	Drawing number	CR 24	Page 28

ຮູບຕັດຂວາງ ໜ້າຕັດ 0+247

CROSS SECTION 0+247



GRAPHIC SCALE

(IN METERS)



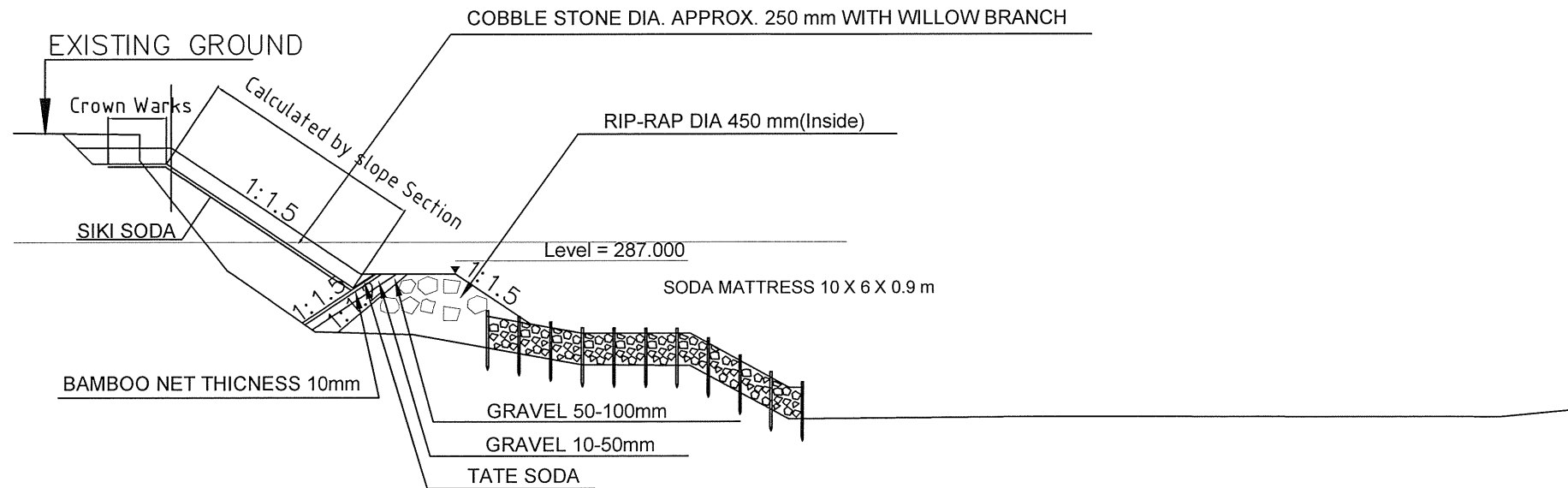
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Ministry of Public works and Transport Department of Waterways	Name	Signature	Date
	Design by	<i>[Signature]</i>	16/12/03
Japan International Cooperation Agency JICA	Counterpart	<i>[Signature]</i>	
	Check by	<i>[Signature]</i>	25/12/13
The Project on Riverbank Protection Works Phase II	JICA Expert Design	<i>[Signature]</i>	25/12/13
	Approved by	<i>[Signature]</i>	
CROSS SECTION	Chief Advisor	<i>[Signature]</i>	25/12/13
	Approved by	<i>[Signature]</i>	
	Project Manager	<i>[Signature]</i>	
	Drawing number	CR 25	Page 29

Slop protection Works and Foot protection Works

CROSS SECTION 0+080





Slope Protection Works

Work Type	Specification	Unit
COBBLE STONE DIA. APPROX. 250 mm WITH WILLOW BRANCH	Crown Section	m
COBBLE STONE DIA. APPROX. 250 mm WITH WILLOW BRANCH	slope section	m
BAMBOO NET THICKNESS 10mm		m
TATE SODA		m
GRAVEL 50-100mm		m ²
GRAVEL 10-50mm		m ²

Foot Protection Works

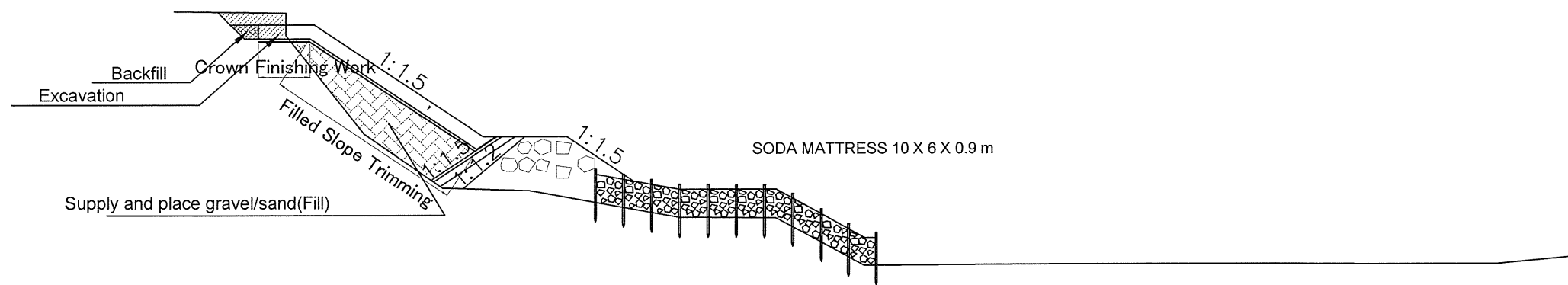
Work Type	Specification	Unit
RIP-RAP DIA 450 mm(Inside)		m ²



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The Project on Riverbank Protection Works Phase II	JICA Expert Design	<i>[Signature]</i>	
	Approved by	<i>[Signature]</i>	25/12/13
DETAIL CROSS SECTION	Chief Advisor	<i>[Signature]</i>	
	Approved by	<i>[Signature]</i>	
	Project Manager	<i>[Signature]</i>	
Drawing number	DT 01		Page 30

ROADWAY DIAGRAPH

CROSS SECTION 0+080



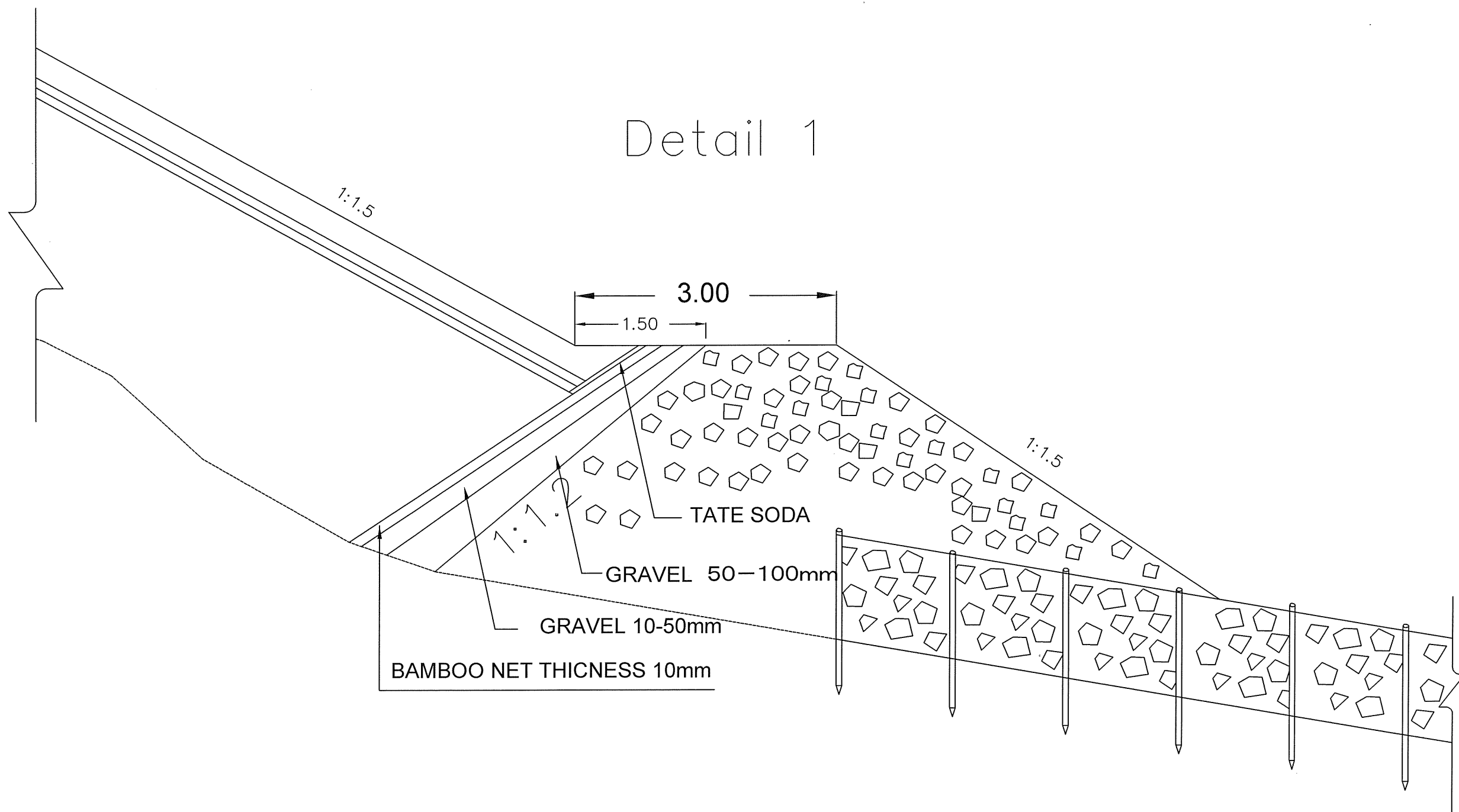
Earth works



Work Type	Legend	Unit
Excavation		m
Supply and place gravel/sand(Fill)		m ²
Backfill		m ²
Cut Slope Trimming		m
Filled Slope Trimming		m
Crown Finishing Work		m



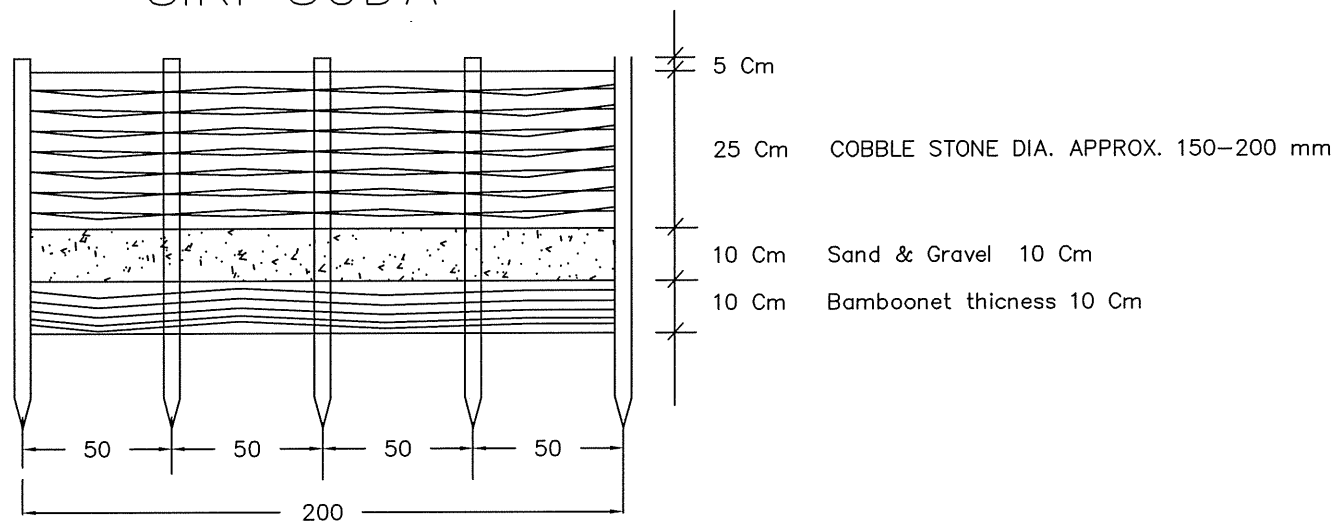
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Japan International Cooperation Agency JICA	Counterpart		
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The Project on Riverbank Protection Works Phase II	JICA Expert Design		
	Approved by		25/12/13
DETAIL CROSS SECTION	Chief Advisor		
	Approved by		
	Project Manager		
	Drawing number	DT 01	Page 31

Detail 1

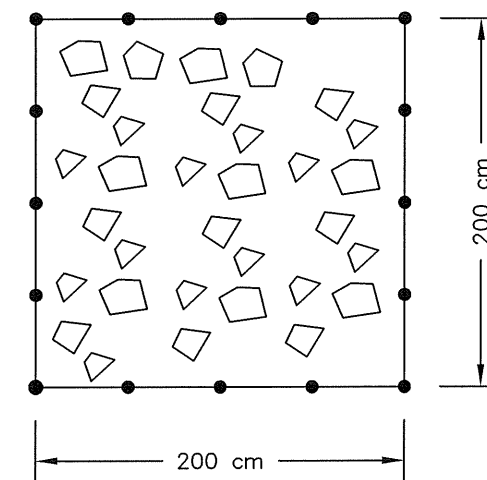




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	Chief Advisor	<i>[Signature]</i>	
DETAIL	Approved by	<i>[Signature]</i>	
	Project Manager	<i>[Signature]</i>	
	Drawing number	DT 03	Page 32

SECTION A-A
Not to scale
SIKI SODA

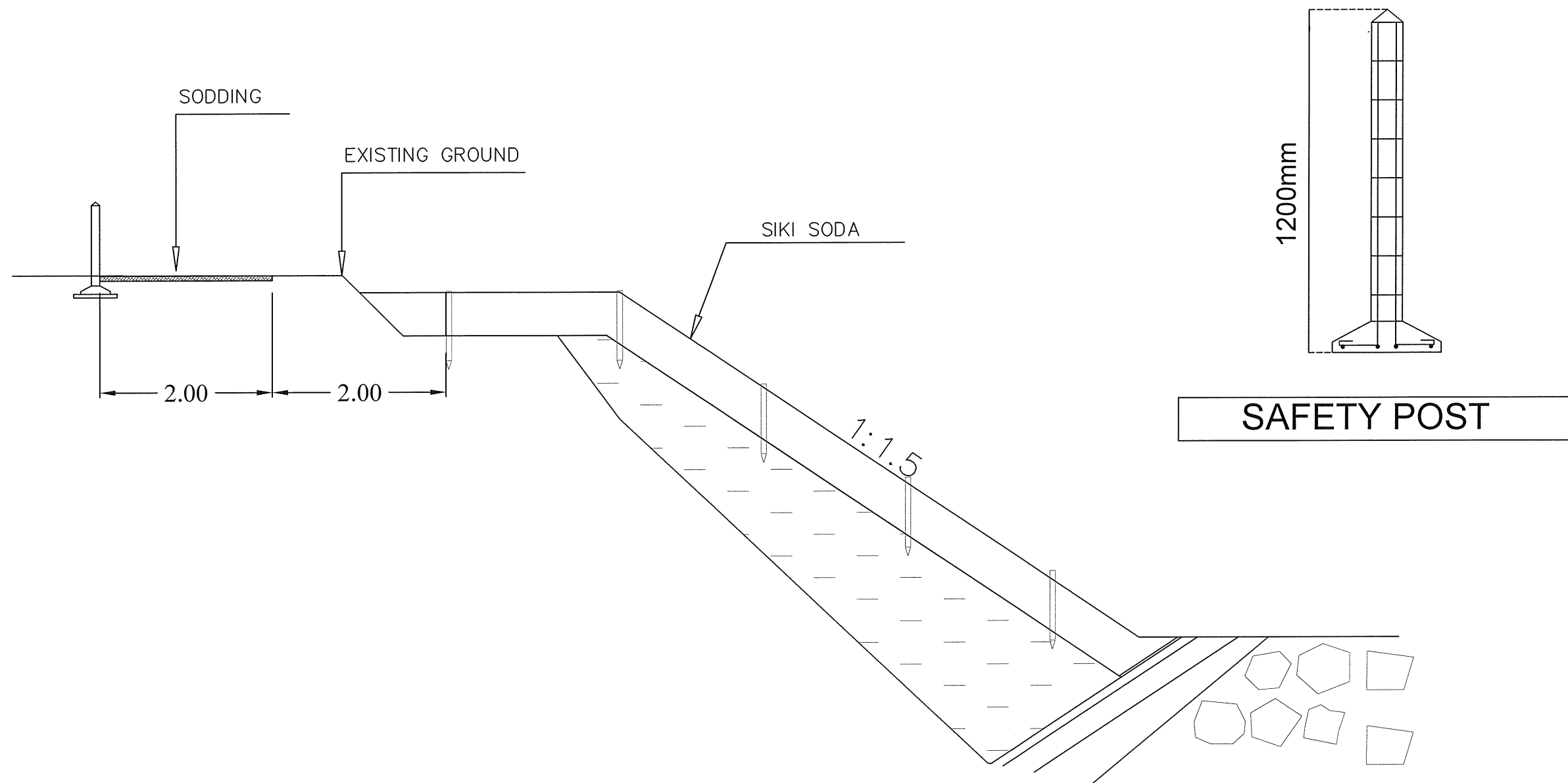




TOP VIEW
SIKI SODA

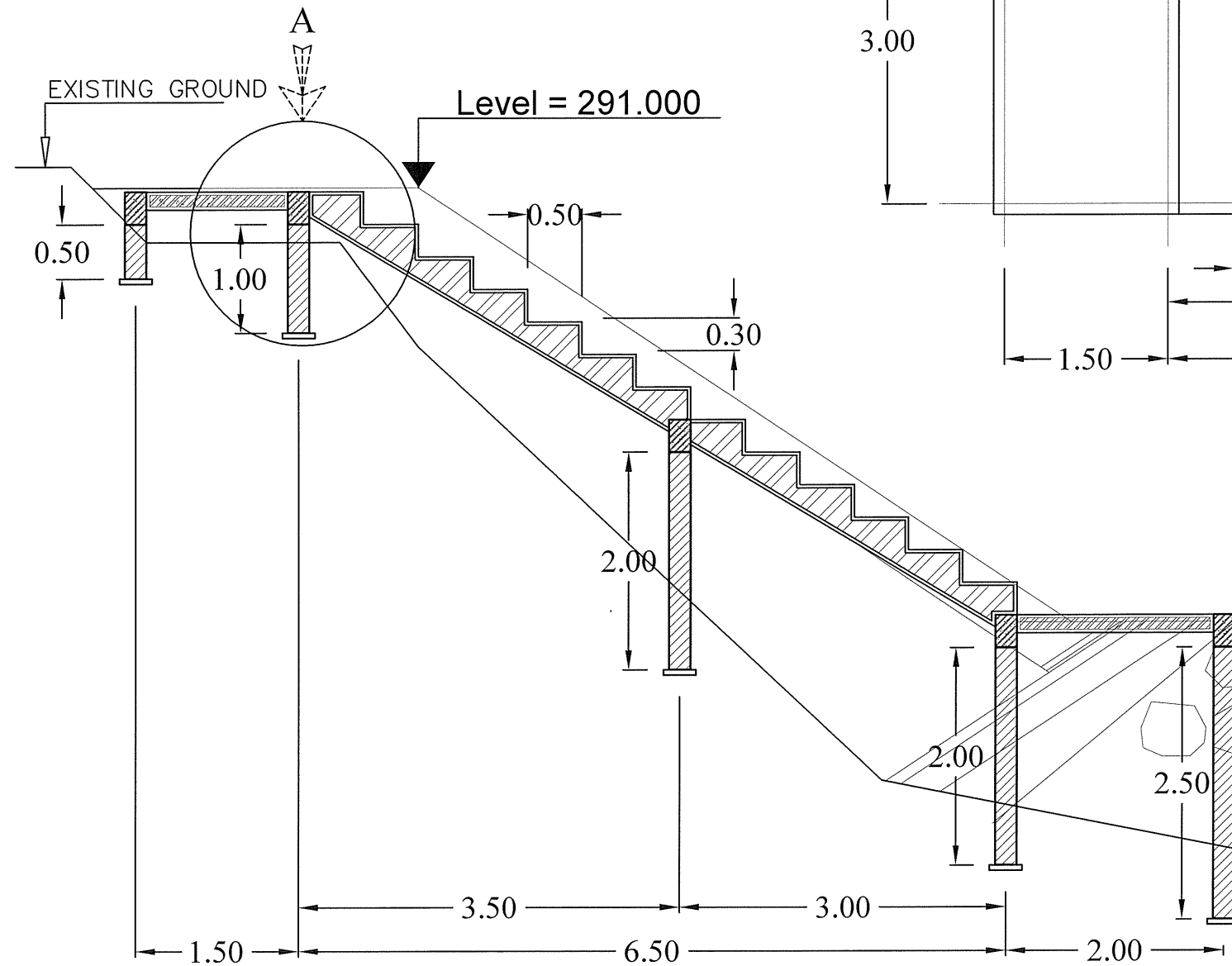


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 Japan International Cooperation Agency JICA	Counterpart	<i>[Signature]</i>	
	Check by	<i>[Signature]</i>	25/12/13
	JICA Expert Design	<i>[Signature]</i>	25/12/13
The Project on Riverbank Protection Works Phase II	Approved by	<i>[Signature]</i>	25/12/13
	Chief Advisor	<i>[Signature]</i>	
DETAIL	Approved by	<i>[Signature]</i>	
	Project Manager	<i>[Signature]</i>	
	Drawing number	DT 04	Page 33

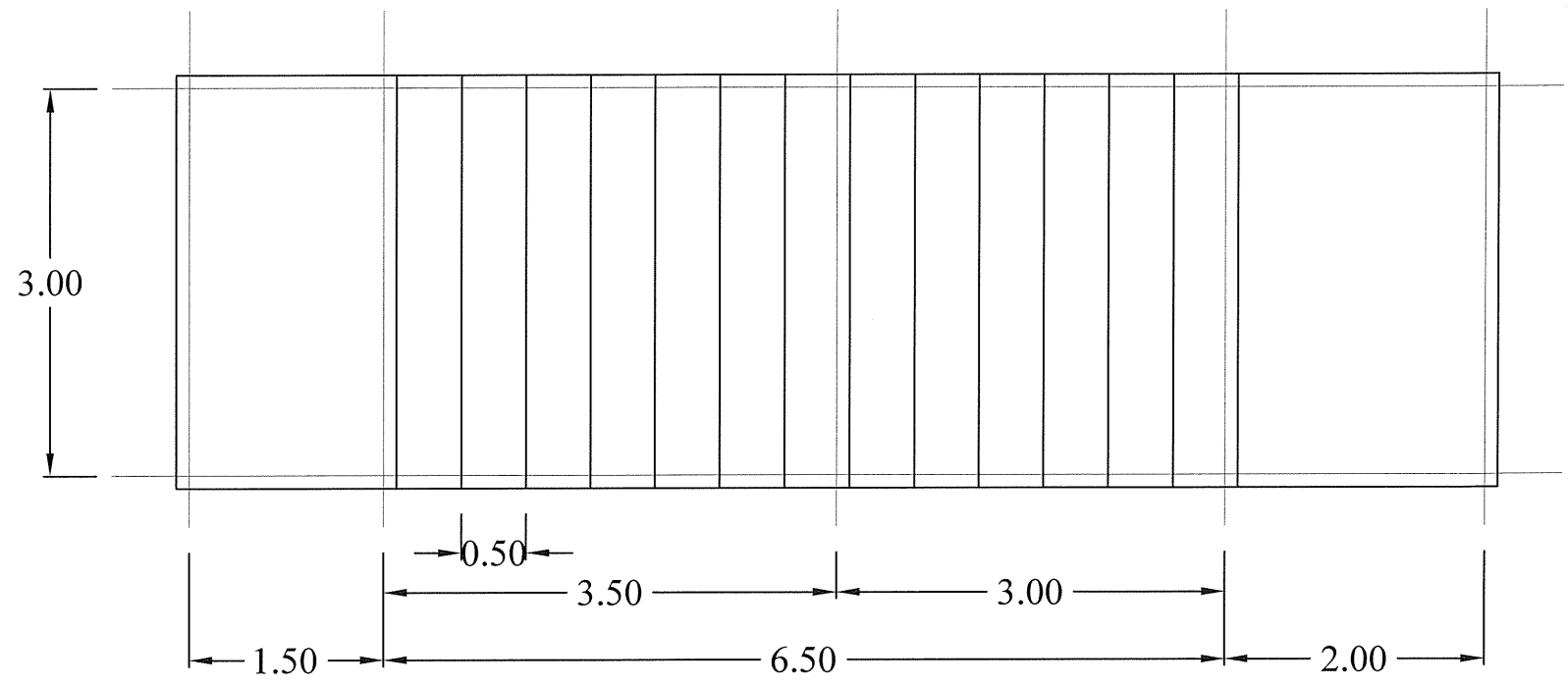
DETAIL FINISHING WORK



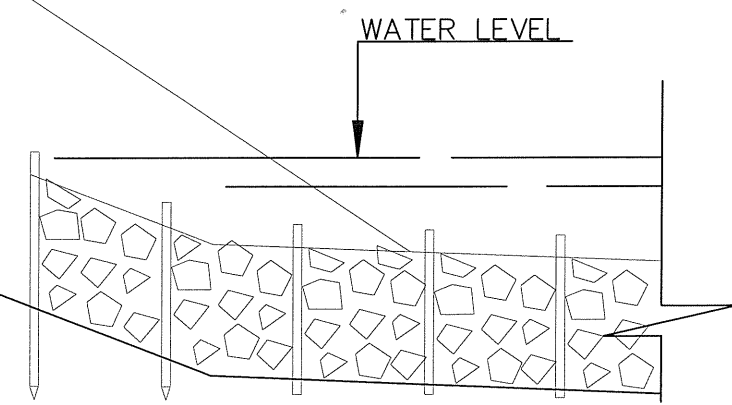
 Ministry of Public works and Transport Department of Waterways	Name		
	Design by	<i>[Signature]</i>	16/12/13
 Japan International Cooperation Agency JICA	Counterpart	<i>[Signature]</i>	
	Check by	<i>[Signature]</i>	25/12/13
The Project on Riverbank Protection Works Phase II	JICA Expert Design	<i>[Signature]</i>	25/12/13
	Approved by	<i>[Signature]</i>	
DETAIL	Chief Advisor	<i>[Signature]</i>	25/12/13
	Approved by	<i>[Signature]</i>	
	Project Manager	<i>[Signature]</i>	
	Drawing number	DT 05	Page 34



Section



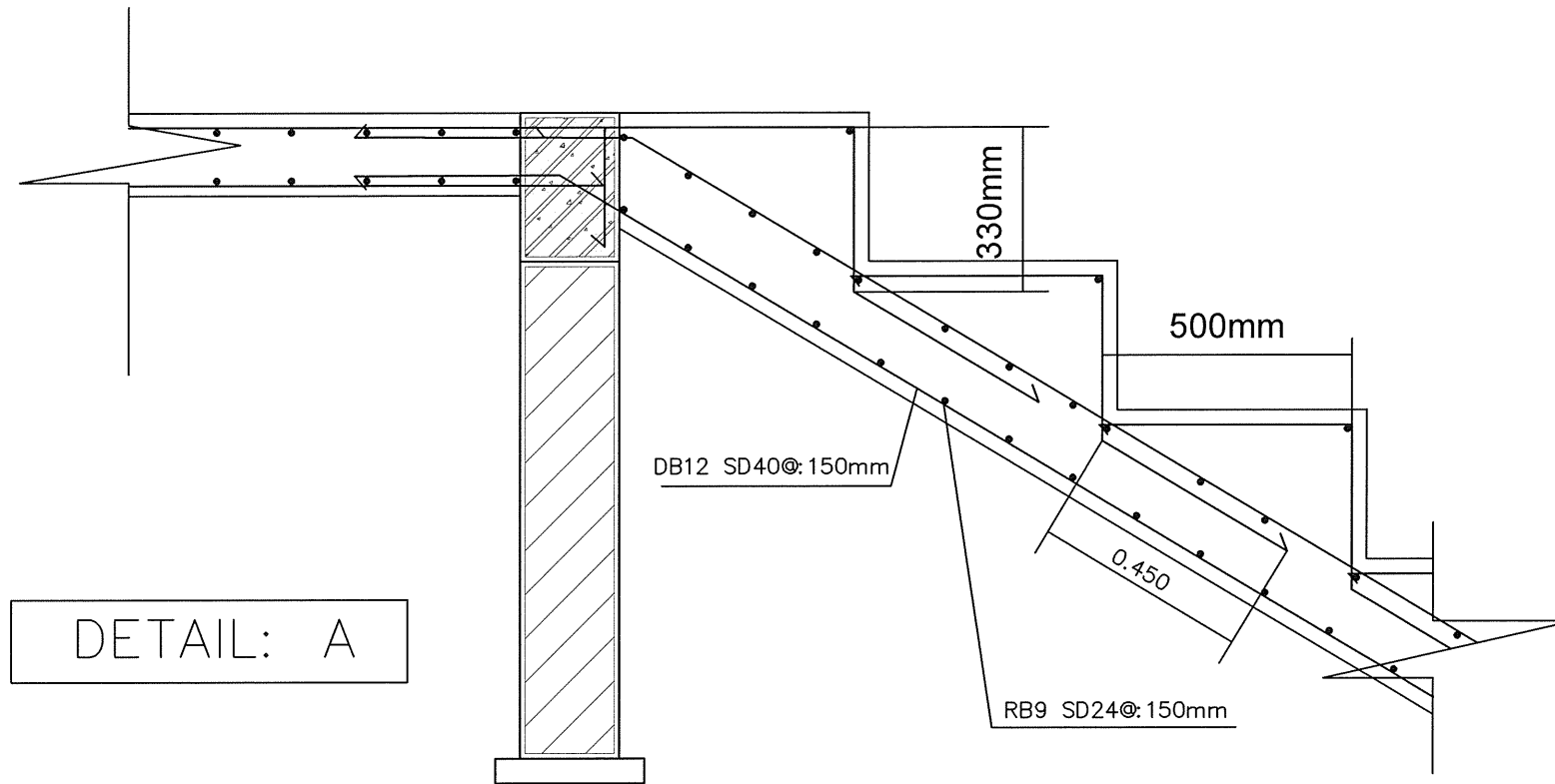
PLAN



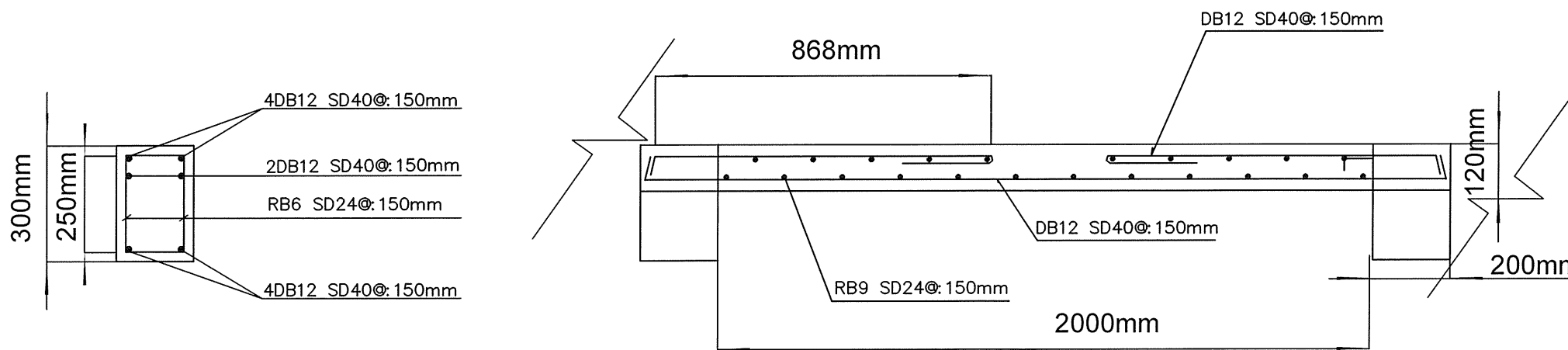
DETAIL CONCRETE WORK



Ministry of Public works and Transport Department of Waterways	Name	Signature	Date
	Design by	<i>[Signature]</i>	16/12/03
Japan International Cooperation Agency JICA	Counterpart	<i>[Signature]</i>	
	Check by	<i>[Signature]</i>	25/12/13
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	Approved by	<i>[Signature]</i>	25/12/13
DETAIL	Chief Advisor	<i>[Signature]</i>	
	Approved by	<i>[Signature]</i>	
	Project Manager	<i>[Signature]</i>	
	Drawing number	DT 06	Page 35





DETAIL: A



DETAIL: BEAM

DETAIL CONCRETE WORK



 Ministry of Public works and Transport Department of Waterways	Name		
	Design by	<i>[Signature]</i>	16/12/03
 Japan International Cooperation Agency JICA	Counterpart	<i>[Signature]</i>	
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	JICA Expert Design	<i>[Signature]</i>	25/12/13
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	Chief Advisor	<i>[Signature]</i>	
DETAIL	Approved by	<i>[Signature]</i>	
	Project Manager	<i>[Signature]</i>	
	Drawing number	DT 07	Page 36