

ເອກະສານຊ້ອນທ້າຍ 5-1 ແຜນແຕ້ມແບບການກໍ່ສ້າງ
ໂຄງການຕົວແບບປ້ອງກັນຕະຝົງ
ເຂດບ້ານປ່າອ້ອຍ ເມືອງຫ້ວຍຊາຍ
ແຂວງບໍ່ແກ້ວ

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ໂຄງການຮ່ວມມືທາງດ້ານເຕັກນິກປ້ອງກັນຕາຝັ່ງເຈື່ອນ ລາວ-ຍີ່ປຸ່ນ ຊວງ ||

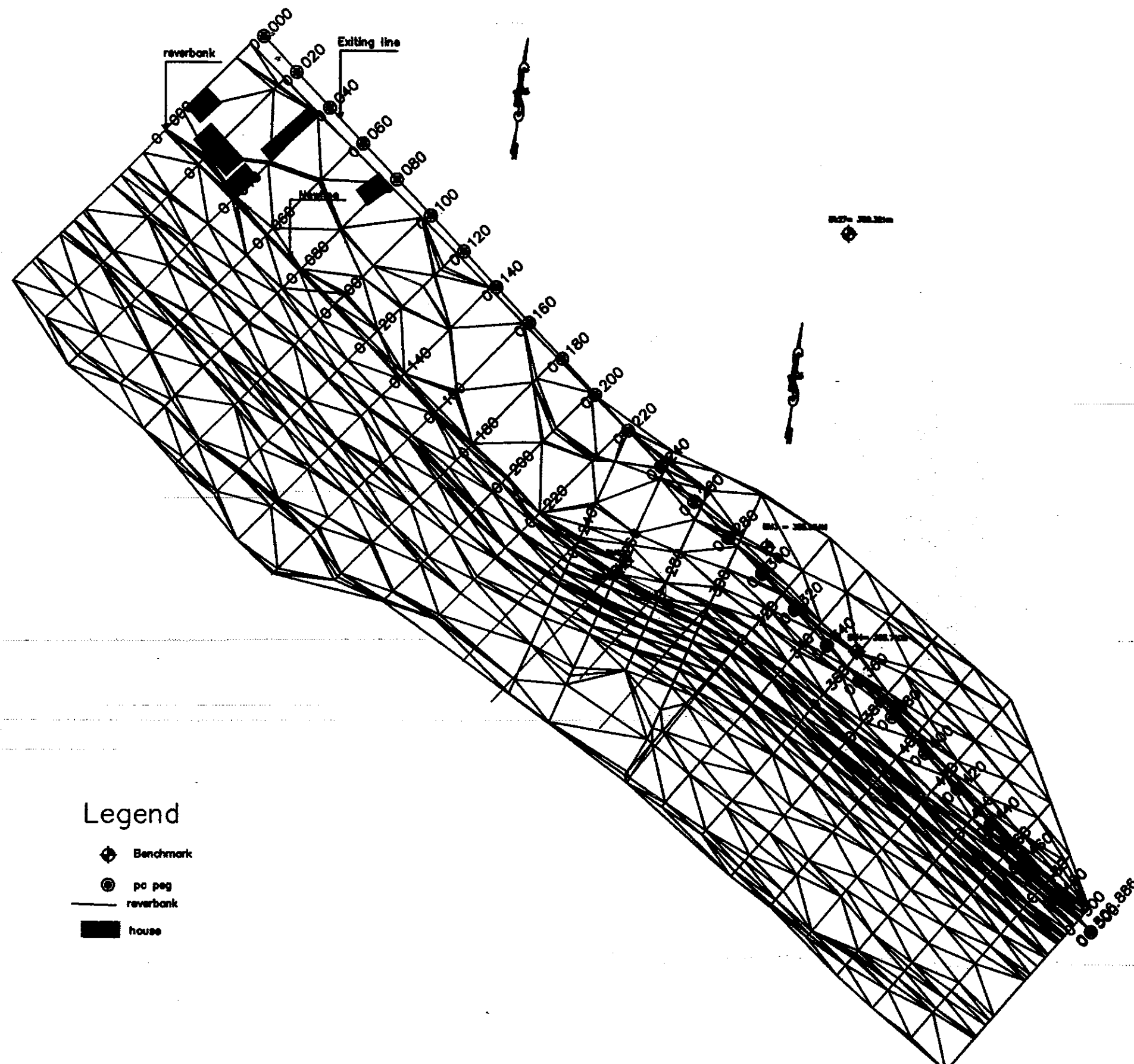
ໂຄງການກໍ່ສ້າງປ້ອງກັນຕາຝັ່ງເຈື່ອນ  
ເຂດບ້ານປ່າອ້ອຍ ເມືອງ ຫ້ວຍຊາຍ, ແຂວງບໍ່ແກ້ວ

# សេចក្តីផ្តើម

အေးလှည့် မ : 1/1000

ຕັດຂວາງແບບຢ່າງ ມ :1/1000

ພະຈິກ (11) ປີ 2011



# Legend

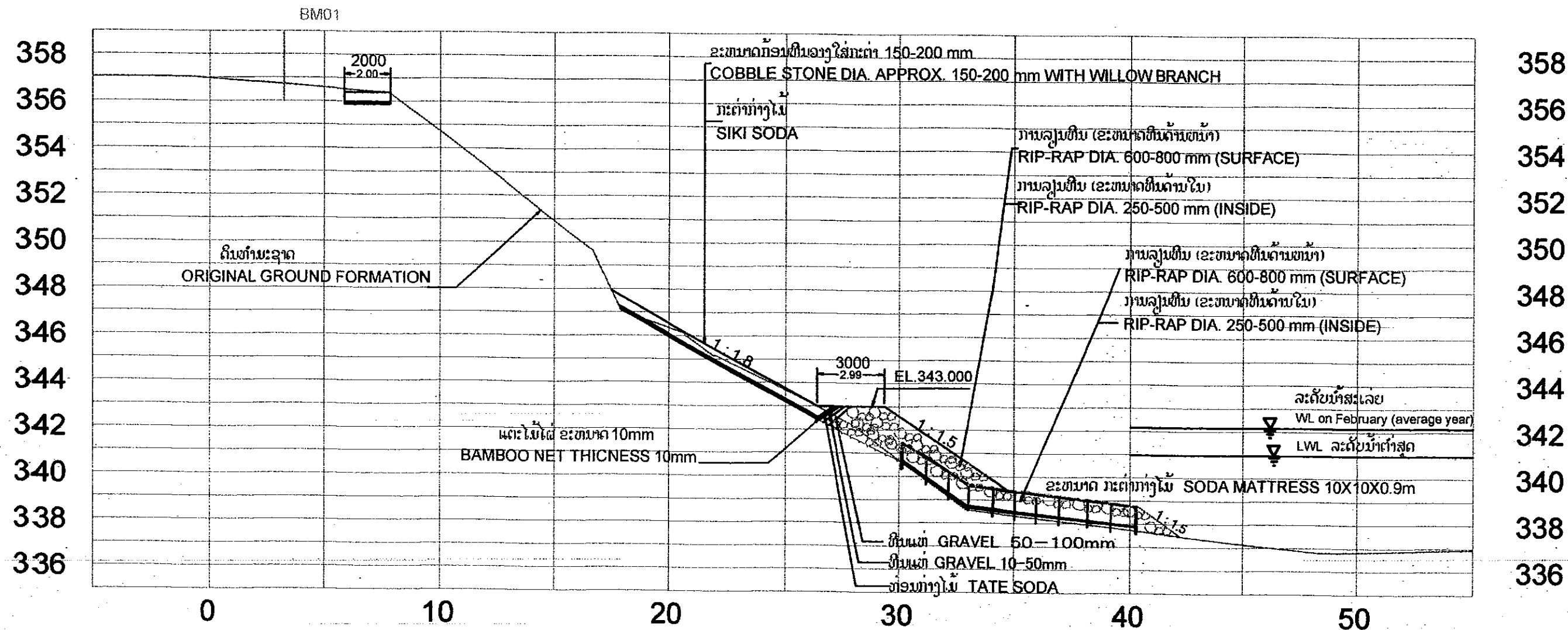
- Benchmark
- po peg
- reverbank
- house

| Station | Northing   | Easting    | ELEVEL  |
|---------|------------|------------|---------|
| BK27    | 2239796.43 | 649387.900 | 359.321 |
| BM03    | 2239668.36 | 649354.276 | 355.945 |
| BM04    | 2239625.00 | 649392.443 | 355.710 |
| BM01    | 2239657.47 | 649292.303 | 357.266 |
| BM02    | 2239662.01 | 649296.134 | 357.191 |
| 0+000   | 2239822.52 | 649104.979 | 356.882 |
| 0+020   | 2239808.39 | 649119.135 | 355.661 |
| 0+040   | 2239794.26 | 649133.291 | 355.582 |
| 0+060   | 2239780.13 | 649147.448 | 357.878 |
| 0+080   | 2239766.01 | 649161.604 | 357.749 |
| 0+100   | 2239751.88 | 649175.760 | 357.491 |
| 0+120   | 2239737.75 | 649189.917 | 356.409 |
| 0+140   | 2239723.62 | 649204.073 | 355.614 |
| 0+160   | 2239709.49 | 649218.229 | 356.898 |
| 0+180   | 2239695.37 | 649232.386 | 356.721 |
| 0+200   | 2239681.24 | 649246.542 | 356.965 |
| 0+220   | 2239669.90 | 649260.698 | 357.029 |
| 0+240   | 2239661.60 | 649275.786 | 357.138 |
| 0+260   | 2239653.30 | 649294.983 | 357.040 |
| 0+280   | 2239645.00 | 649313.179 | 357.254 |
| 0+300   | 2239634.39 | 649331.375 | 357.312 |
| 0+320   | 2239621.36 | 649348.096 | 357.017 |
| 0+340   | 2239608.33 | 649363.269 | 356.630 |
| 0+360   | 2239595.30 | 649378.443 | 356.488 |
| 0+380   | 2239582.27 | 649393.616 | 355.880 |
| 0+400   | 2239569.24 | 649408.790 | 355.386 |
| 0+420   | 2239556.21 | 649423.964 | 355.397 |
| 0+440   | 2239543.18 | 649439.137 | 355.386 |
| 0+460   | 2239530.15 | 649454.311 | 354.354 |
| 0+480   | 2239517.12 | 649469.485 | 354.039 |
| 0+500   | 2239504.09 | 649484.658 | 354.682 |

|                                                                                                                                  |            |
|----------------------------------------------------------------------------------------------------------------------------------|------------|
| <b>LAO PDR</b><br>Peace Independence Democracy Unity Prosperity<br>Department of Public Works and Transport<br>Vientiane Capital |            |
| <b>Asia-Survey Design and Consultant Co., Ltd</b>                                                                                |            |
| The Project on Riverbank Protection Works<br>phase II<br>Crosssection<br>Km 0+060-Km 0+100                                       |            |
| SCALE: 1:200                                                                                                                     | DATE       |
| Surveyor: Saphone                                                                                                                | 28/03/2011 |
| Drawn: Saphone                                                                                                                   | 28/03/2011 |
| Checked: Phouyong                                                                                                                | 01/04/2011 |
| Approved: Katsana                                                                                                                | 05/04/2011 |
| Drawing Number: Sites2-CR- No 02                                                                                                 |            |

# 0+200

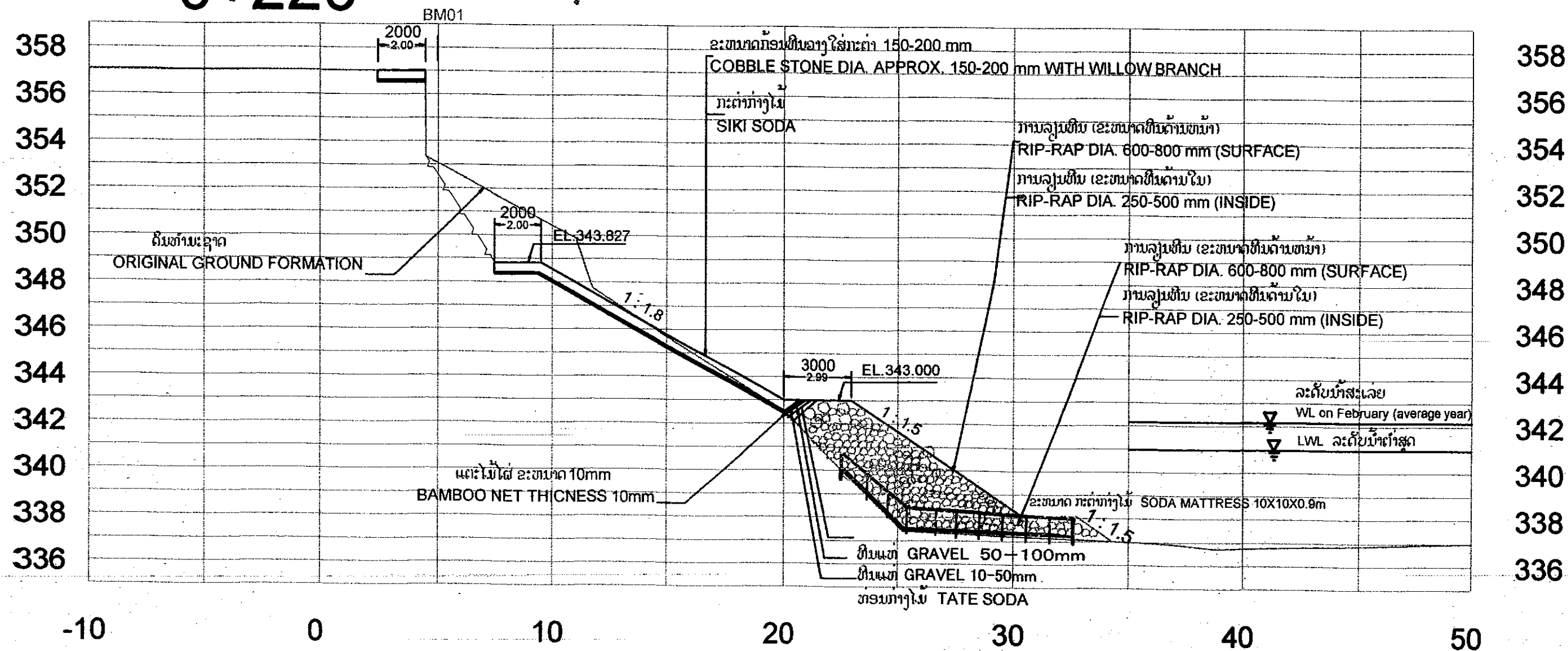
## ການວາງຫີນໃສ່ກະຕ່າກ່າງໄມ້ COBBLE STONE WITH SODA WORK



|                                                                                            |            |
|--------------------------------------------------------------------------------------------|------------|
| LAO PDR                                                                                    |            |
| Peace Independence Democracy Unity Prosperity                                              |            |
| Department of Public Works and Transport<br>Vientiane Capital                              |            |
| Asia-Survey Design and Consultant Co.,Ltd                                                  |            |
| The Project on Riverbank Protection Works<br>phase II<br>Crosssection<br>Km 0+060-Km 0+100 |            |
| SCALE: 1:200                                                                               | DATE       |
| SURVEYED: Saphone                                                                          | 20/03/2011 |
| DRAWN: Saphone                                                                             | 30/03/2011 |
| CHECKED: Phouvong                                                                          | 01/04/2011 |
| APPROVED: Ketsana                                                                          | 03/04/2011 |
| Drawing Number: Sites2-CR- No 02                                                           |            |

# 0+220

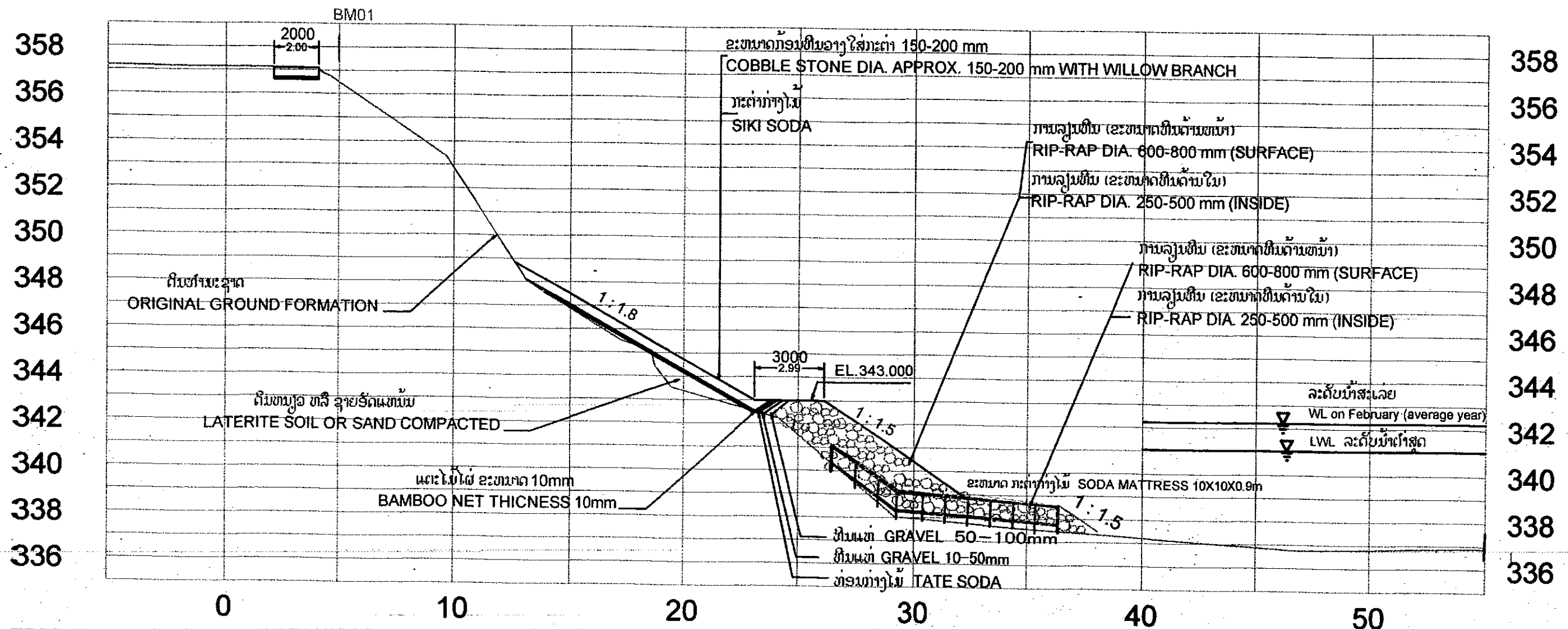
## ການອາງຫີນໃສ່ກະຕ່າກ່າງໄມ້ COBBLE STONE WITH SODA WORK



|                                                                                            |                  |
|--------------------------------------------------------------------------------------------|------------------|
| LAO PDR                                                                                    |                  |
| Peace Independence Democracy Unity Prosperity                                              |                  |
| Department of Public Works and Transport<br>Vientiane Capital                              |                  |
| Asia-Survey Design and Consultant Co.,Ltd                                                  |                  |
| The Project on Riverbank Protection Works<br>phase II<br>Crosssection<br>Km 0+080-Km 0+100 |                  |
| SCALE: 1:200                                                                               | DATE             |
| SURVEYED: Saphone                                                                          | 20/03/2011       |
| DRAWN: Saphone                                                                             | 30/03/2011       |
| CHECKED: Phouvang                                                                          | 01/04/2011       |
| APPROVED: Katsana                                                                          | 03/04/2011       |
| Drawing Number:                                                                            | Sites2-CR- No 02 |

# 0+240

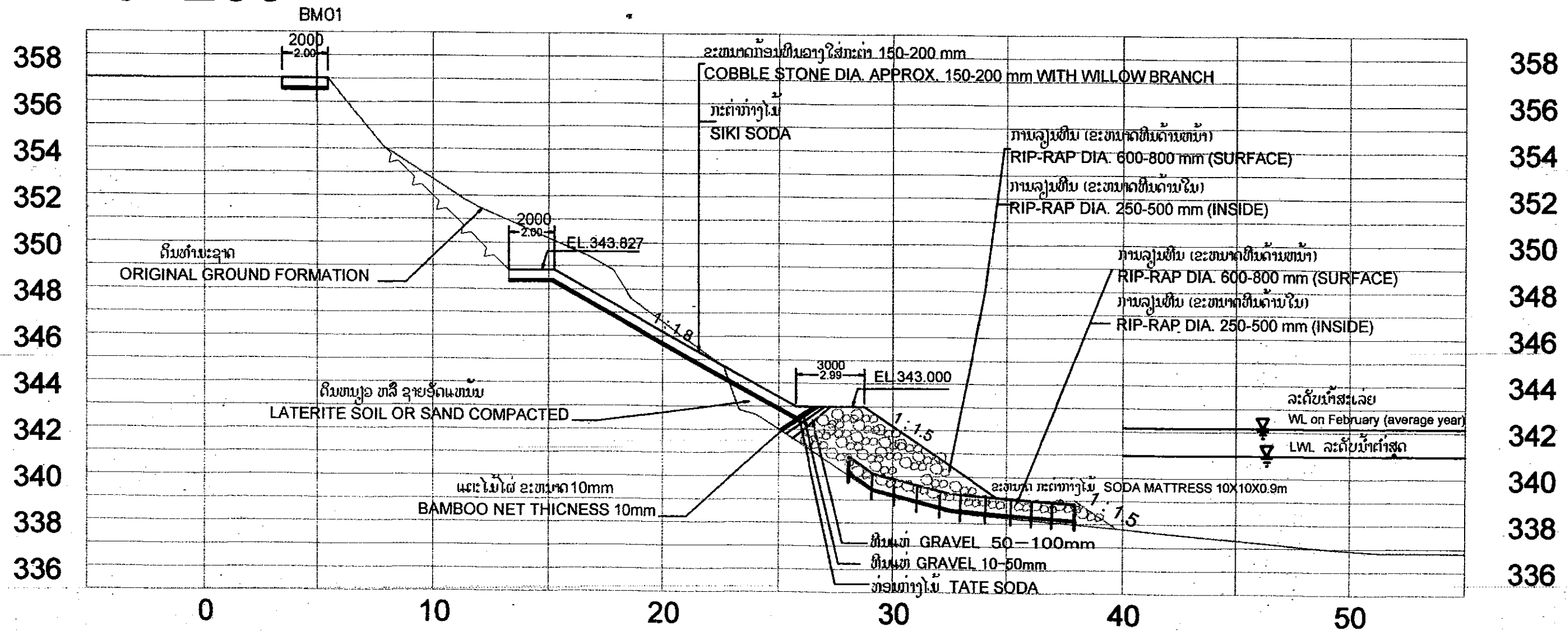
## ການວາງຫີນໃສ່ກະຕ່າກ່າງໄມ້ COBBLE STONE WITH SODA WORK



| LAO PDR                                                                                    |            |
|--------------------------------------------------------------------------------------------|------------|
| Peace Independence Democracy Unity Prosperity                                              |            |
| Department of Public Works and Transport<br>Vientiane Capital                              |            |
| Asia-Survey Design and Consultant Co.,Ltd                                                  |            |
| The Project on Riverbank Protection Works<br>phase II<br>Crosssection<br>Km 0+060-Km 0+100 |            |
| SCALE: 1:200                                                                               | DATE       |
| SURVEYED: Saphone                                                                          | 20/03/2011 |
| DRAWN: Saphone                                                                             | 30/03/2011 |
| CHECKED: Phouvang                                                                          | 01/04/2011 |
| APPROVED: Ketsana                                                                          | 03/04/2011 |
| Drawing Number: Sites2-CR- No 02                                                           |            |

# 0+260

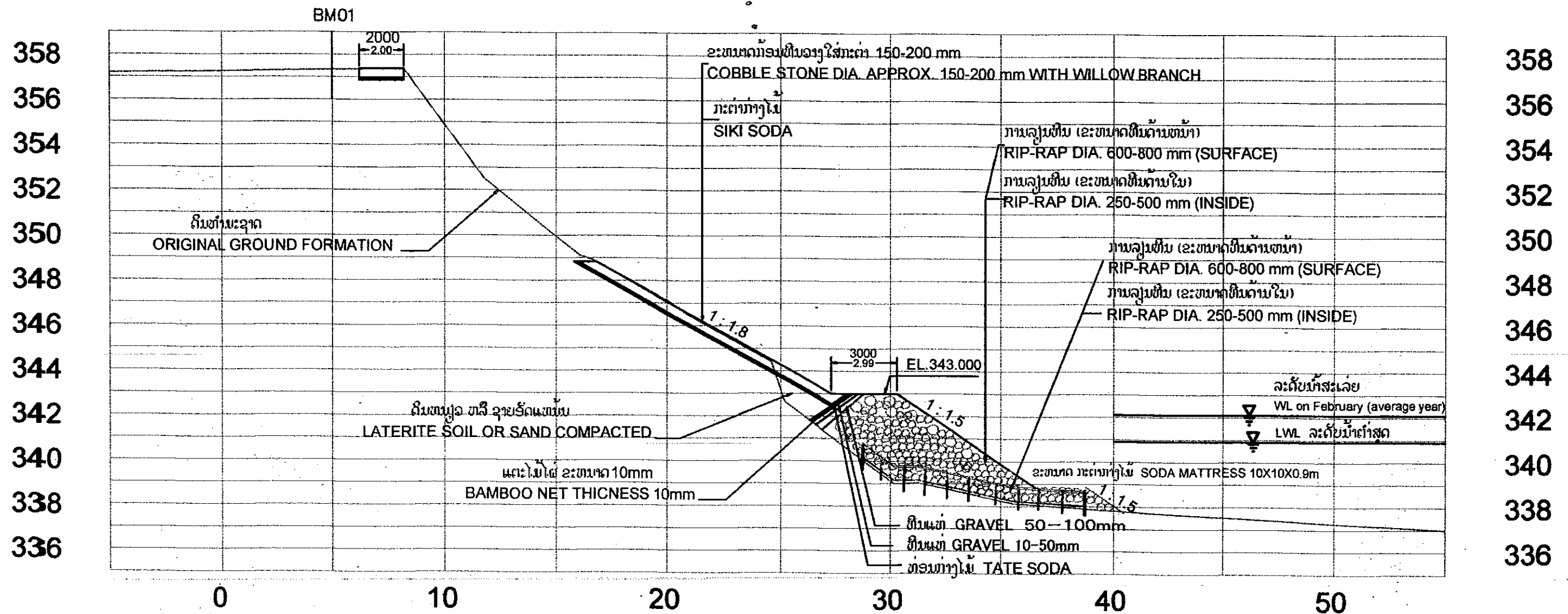
## ການອາງທິນໃສ່ກະຕ່າກ່າງໄມ້ COBBLE STONE WITH SODA WORK



|                                                                                            |            |
|--------------------------------------------------------------------------------------------|------------|
| LAO PDR                                                                                    |            |
| Peace Independence Democracy Unity Prosperity                                              |            |
| Department of Public Works and Transport<br>Vientiane Capital                              |            |
| Asia-Survey Design and Consultant Co.,Ltd                                                  |            |
| The Project on Riverbank Protection Works<br>phase II<br>Crosssection<br>Km 0+060-Km 0+100 |            |
| SCALE: 1:200                                                                               | DATE       |
| SURVEYED: Saphone                                                                          | 20/03/2011 |
| DRAWN: Saphone                                                                             | 30/03/2011 |
| CHECKED: Phouvang                                                                          | 01/04/2011 |
| APPROVED: Ketsana                                                                          | 03/04/2011 |
| Drawing Number: Sites2-CR- No 02                                                           |            |

# 0+280

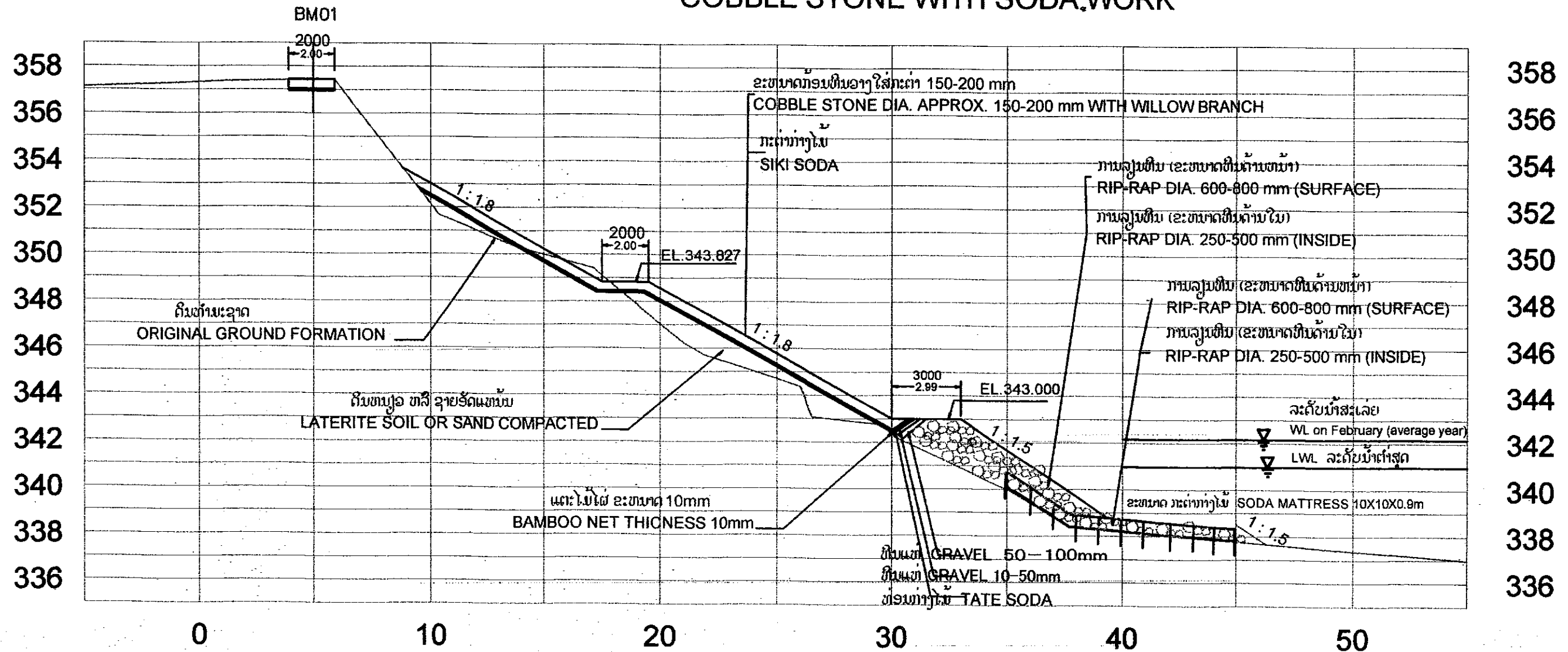
## ການວາງຫີນໃສ່ກະຕ່າກ່າງໄມ້ COBBLE STONE WITH SODA WORK



|                                                                                            |            |
|--------------------------------------------------------------------------------------------|------------|
| LAO PDR                                                                                    |            |
| Peace Independence Democracy Unity Prosperity                                              |            |
| Department of Public Works and Transport<br>Vientiane Capital                              |            |
| Asia-Survey Design and Consultant Co.,Ltd                                                  |            |
| The Project on Riverbank Protection Works<br>phase II<br>Crosssection<br>Km 0+060-Km 0+100 |            |
| SCALE: 1:200                                                                               | DATE       |
| SURVEYED: Saphone                                                                          | 20/03/2011 |
| DRAWN: Saphone                                                                             | 30/03/2011 |
| CHECKED: Phouvang                                                                          | 01/04/2011 |
| APPROVED: Ketsana                                                                          | 03/04/2011 |
| Drawing Number: Sites2-CR- No 02                                                           |            |

# 0+300

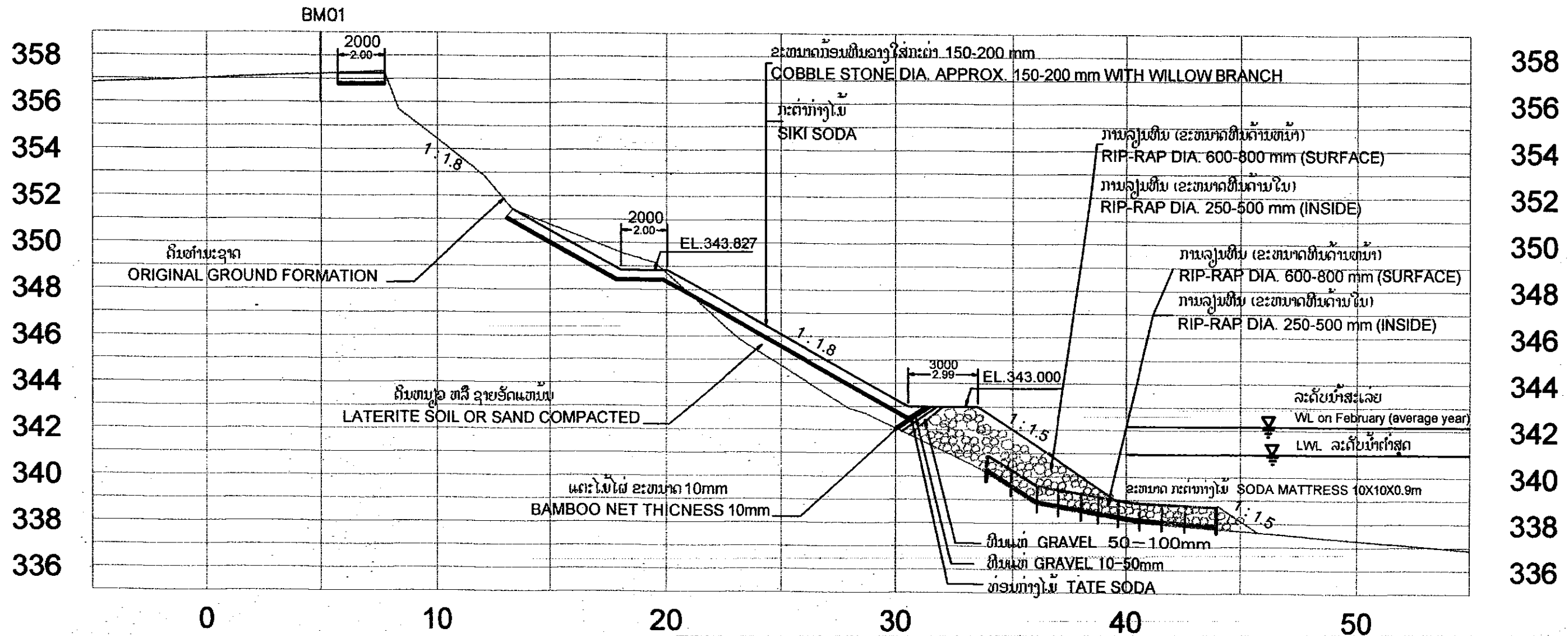
## ການອາງຫີນໃສ່ກະຕ່າກ່າງໂມ້ COBBLE STONE WITH SODA WORK



|                                                                                            |            |
|--------------------------------------------------------------------------------------------|------------|
| LAO PDR                                                                                    |            |
| Peace Independence Democracy Unity Prosperity                                              |            |
| Department of Public Works and Transport<br>Vientiane Capital                              |            |
| Asia-Survey Design and Consultant Co.,Ltd                                                  |            |
| The Project on Riverbank Protection Works<br>phase II<br>Crosssection<br>Km 0+080-Km 0+100 |            |
| SCALE: 1:200                                                                               | DATE       |
| SURVEYED: Saphone                                                                          | 20/03/2011 |
| DRAWN: Saphone                                                                             | 30/03/2011 |
| CHECKED: Phouvang                                                                          | 01/04/2011 |
| APPROVED: Ketsana                                                                          | 03/04/2011 |
| Drawing Number: Sites2-CR- No 02                                                           |            |

# 0+320

## ການວາງຫີນໃສ່ກະຕ່າກ່າງໂມ້ COBBLE STONE WITH SODA WORK



| LAO PDR                                                                                    |            |
|--------------------------------------------------------------------------------------------|------------|
| Peace Independence Democracy Unity Prosperity                                              |            |
| Department of Public Works and Transport<br>Vientiane Capital                              |            |
| Asia-Survey Design and Consultant Co.,Ltd                                                  |            |
| The Project on Riverbank Protection Works<br>phase II<br>Crosssection<br>Km 0+060-Km 0+100 |            |
| SCALE: 1:200                                                                               | DATE       |
| SURVEYED: Saphone                                                                          | 20/03/2011 |
| DRAWN: Saphone                                                                             | 30/03/2011 |
| CHECKED: Phouvang                                                                          | 01/04/2011 |
| APPROVED: Ketsana                                                                          | 03/04/2011 |
| Drawing Number: Sites2-CR- No 02                                                           |            |

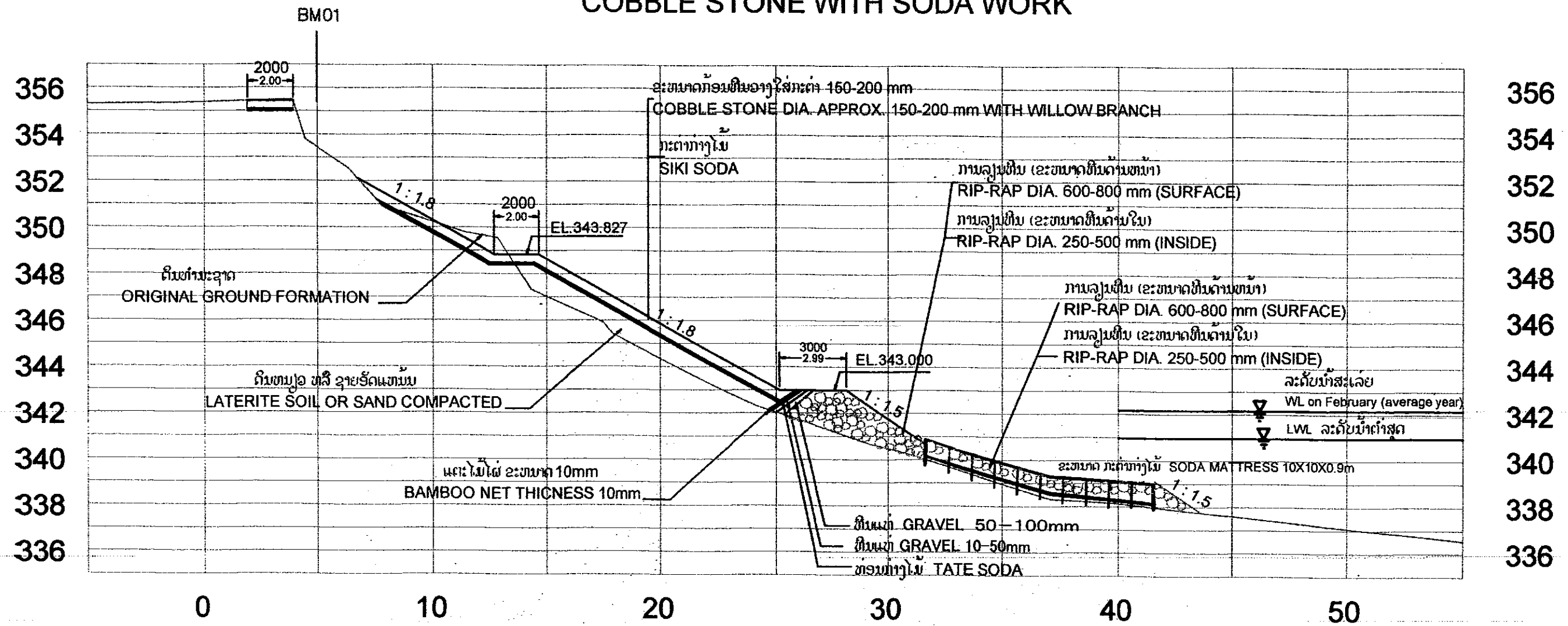






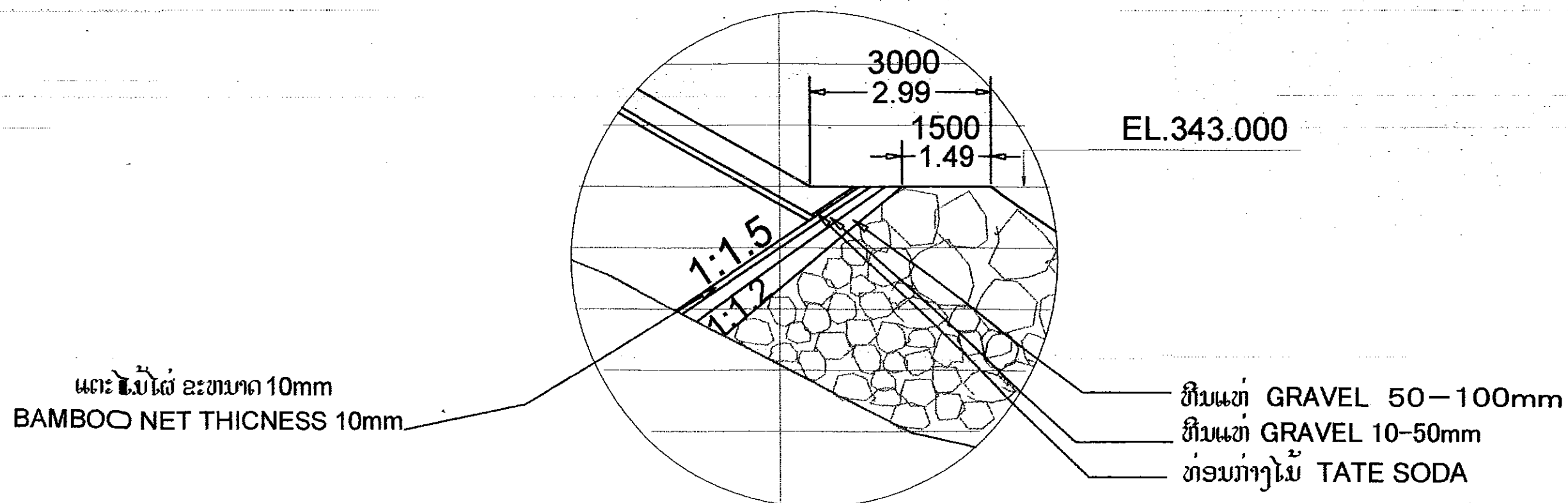
# 0+400

## ການວາງຫີນໃສ່ກະຕ່າກ່າງໄມ້ COBBLE STONE WITH SODA WORK



|                                                               |            |
|---------------------------------------------------------------|------------|
| LAO PDR                                                       |            |
| Peace Independence Democracy Unity Prosperity                 |            |
| Department of Public Works and Transport<br>Vientiane Capital |            |
| Asia-Survey Design and Consultant Co.,Ltd                     |            |
| The Project on Riverbank Protection Works<br>phase II         |            |
| Crosssection<br>Km 0+080-Km 0+100                             |            |
| SCALE: 1:200                                                  | DATE       |
| SURVEYED: Saphone                                             | 20/03/2011 |
| DRAWN: Saphone                                                | 20/03/2011 |
| CHECKED: Phouvang                                             | 01/04/2011 |
| APPROVED: Ketsana                                             | 03/04/2011 |
| Drawing Number: Sites2-CR- No 02                              |            |

ການວາງຫີນໃສ່ກະຕ່າກ່າງໄມ້  
COBBLE STONE WITH SODA WORK



|                                                                                                                                                                          |                          |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|
| <p><b>LAO PDR</b></p> <p><b>Peace Independence Democracy Unity Prosperity</b></p> <p><b>Department of Public Works and Transport</b></p> <p><b>Vientiane Capital</b></p> |                          |
| <p><b>Asia-Survey Design and Consultant Co.,Ltd</b></p>                                                                                                                  |                          |
| <p><b>The Project on Riverbank Protection Works</b></p> <p><b>phase II</b></p> <p><b>Crosssection</b></p> <p><b>Km 0+060-Km 0+100</b></p>                                |                          |
| <p><b>SCALE: 1:200</b></p>                                                                                                                                               | <p><b>DATE</b></p>       |
| <p><b>SURVEYED: Saphone</b></p>                                                                                                                                          | <p><b>20/03/2011</b></p> |
| <p><b>DRAWN: Saphone</b></p>                                                                                                                                             | <p><b>30/03/2011</b></p> |
| <p><b>CHECKED: Phouvang</b></p>                                                                                                                                          | <p><b>01/04/2011</b></p> |
| <p><b>APPROVED: Ketsana</b></p>                                                                                                                                          | <p><b>03/04/2011</b></p> |
| <p><b>Drawing Number: Sites2-CR- No 02</b></p>                                                                                                                           |                          |

ເອກະສານຊ້ອນທ້າຍ 5-2    ແຜນແຕ້ມ ແບບການກໍ່ສ້າງ  
ໂຄງການຕົວແບບປ້ອງກັນຕະຝົງ  
ເຂດບ້ານປາທວາຍ ເມືອງທ່າພະບາດ  
ແຂວງບໍລິຄຳໄຊ

## LIST OF DRAWING

| NO.       | DRAWING TITLE                                    | DRAWING NUMBER | PAGE NUMBER |
|-----------|--------------------------------------------------|----------------|-------------|
| <b>I.</b> | <b>GENERAL DRAWING</b>                           |                |             |
| 1         | LIST OF DRAWINGS                                 | LDW-01         | 01          |
| 2         | LOCAL MAP OF THE PROJECT<br>BOLIKHAMXAY PROVINCE | LMP-01         | 02          |
| 3         | SYMBOLS AND ABBREVIATIONS                        | SB-01          | 03          |
| <b>II</b> | <b>CROSS-SECTIONS</b>                            |                |             |
| 1         | PLAN                                             | PL-01          | 04          |
| 2         | CROSS-SECTIONS KM 0 + 000                        | CR-01          | 05          |
| 3         | CROSS-SECTIONS KM 0 + 018,0+020                  | CR-02          | 06          |
| 4         | CROSS-SECTIONS KM 0 + 020                        | CR-03          | 07          |
| 5         | CROSS-SECTIONS KM 0 + 040                        | CR-04          | 08          |
| 6         | CROSS-SECTIONS KM 0 + 060                        | CR-05          | 09          |
| 7         | CROSS-SECTIONS KM 0 + 080                        | CR-06          | 10          |
| 8         | CROSS-SECTIONS KM 0 + 086                        | CR-07          | 11          |
| 9         | CROSS-SECTIONS KM 0 + 095                        | CR-08          | 12          |
| 10        | CROSS-SECTIONS KM 0 + 100                        | CR-09          | 13          |
| 11        | CROSS-SECTIONS KM 0 + 120                        | CR-10          | 14          |
| 12        | CROSS-SECTIONS KM 0 + 140                        | CR-11          | 15          |
| 13        | CROSS-SECTIONS KM 0 + 160                        | CR-12          | 16          |
| 14        | CROSS-SECTIONS KM 0 + 180                        | CR-13          | 17          |
| 15        | CROSS-SECTIONS KM 0 + 200                        | CR-14          | 18          |
| 16        | CROSS-SECTIONS KM 0 + 200, 0 + 202               | CR-15          | 19          |

| NO.        | DRAWING TITLE             | DRAWING NUMBER | PAGE NUMBER |
|------------|---------------------------|----------------|-------------|
| <b>III</b> | <b>DETAIL</b>             |                |             |
| 1          | CROSS-SECTIONS (DETAIL 1) | DT-01          | 20          |
| 2          | CROSS-SECTIONS (DETAIL 2) | DT-02          | 21          |
| 3          | CROSS-SECTIONS (DETAIL 3) | DT-03          | 22          |
| 4          | DETAIL (FOOTING)          | DT-04          | 23          |
| 5          | DETAIL (SIKI SODA)        | DT-05          | 24          |
| 6          | DETAIL (LADDER)           | DT-06          | 25          |
| 7          | DETAIL (LADDER)           | DT-07          | 26          |
| 8          | DETAIL (SAFETY POST)      | DT-08          | 27          |
| 9          | DETAIL (STAIR)            | DT-09          | 28          |
| 10         | DETAIL (STAIR)            | DT-10          | 29          |
| 11         | DETAIL (STAIR)            | DT-11          | 30          |
| 12         | DETAIL (STAIR)            | DT-12          | 31          |

|                                                                                                                                                                                                                                        |                    |           |           |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|-----------|-----------|
| <b>LAO PDR</b><br>Peace Independence Democracy Unity Prosperity<br>Department of Public Works and Transport<br>Bolikhamxay Province<br>The project on riverbank protection works<br>phase II<br>Japan international Cooperation Agency | Name:              | Signature | Date      |
|                                                                                                                                                                                                                                        | Design by:         |           |           |
|                                                                                                                                                                                                                                        | C/P                |           | Dec 18.12 |
|                                                                                                                                                                                                                                        | Check by:          |           |           |
|                                                                                                                                                                                                                                        | JICA Expert design |           | Dec 18.12 |
|                                                                                                                                                                                                                                        | Approved by:       |           | Dec 18.12 |
| <b>LIST OF DRAWING</b>                                                                                                                                                                                                                 | Chief Advisor      |           | Dec 18.12 |
|                                                                                                                                                                                                                                        | Approved by:       |           | Dec 18.12 |
|                                                                                                                                                                                                                                        | Project Manager    |           | Dec 18.12 |
|                                                                                                                                                                                                                                        | Drawing number     | LDW-01    | Page: 01  |

|                                                                                                                                                                     |                    |  |           |             |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|--|-----------|-------------|
| <p style="text-align: center;"><b>LAO PDR</b></p> <p style="text-align: center;">Peace Independence Democracy Unity Prosperity</p>                                  | Name:              |  | Signature | Date        |
|                                                                                                                                                                     | Design by:         |  |           |             |
| <p style="text-align: center;">Department of Public Works and Transport</p> <p style="text-align: center;">Bolikhamxay Province</p>                                 | C/P                |  |           | Dec 9, 12   |
|                                                                                                                                                                     | Check by:          |  |           |             |
| <p style="text-align: center;">The project on riverbank protection works<br/>phase II</p> <p style="text-align: center;">Japan international Cooperation Agency</p> | JICA Expert design |  |           | Dec 18, 12  |
|                                                                                                                                                                     | Approved by:       |  |           |             |
| <p style="text-align: center;"><b>LOCAL MAP OF THE PROJECT</b></p>                                                                                                  | Chief Advisor      |  |           | Dec. 18, 12 |
|                                                                                                                                                                     | Approved by:       |  |           |             |
|                                                                                                                                                                     | Project Manager    |  |           | Dec 18, 12  |
|                                                                                                                                                                     | Drawing number     |  | LMP-01    | Page: 02    |

# SYMBOLS AND ABBREVIATIONS

|                 |                                                                          |
|-----------------|--------------------------------------------------------------------------|
| AASHTO          | AMERICAN ASSOCIATION OF<br>STATE HIGHWAY AND<br>TRANSPORTATION OFFICIALS |
| m <sup>2</sup>  | SQUARE METER                                                             |
| m <sup>3</sup>  | CUBIC METER                                                              |
| mm              | MILLIMETER                                                               |
| mm <sup>2</sup> | 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              | BEGINNING OF CURVE                                                       |
| EC              | END OF CURVE                                                             |
| PKT             | CONNECTION POINT                                                         |
| PSC             | PRESTRESS STEEL CONCRETE                                                 |
| PVC             | POINT OF VERTICAL CURVE                                                  |

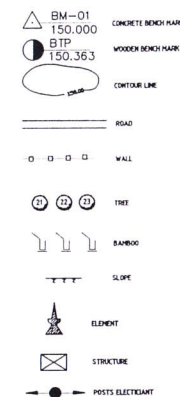
|         |                                         |
|---------|-----------------------------------------|
| PVI     | POINT OF VERTICAL INTERSECTION          |
| PVT     | POINT OF VERTICAL TANGENT               |
| Pw      | EXTRA WIDENING IN HORIZONTAL CURVE      |
| Lvc     | LENGTH OF VERTICAL CREST CURVE          |
| Lvs     | LENGTH OF VERTICAL SAG CURVE            |
| 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      | FLAG                                    |
| ☀       | FLAG                                    |
| ☪       | MARSH                                   |
| ↓       | PADDY FIELD                             |

|   |                       |
|---|-----------------------|
| △ | BENCH MARK            |
| ○ | POINT NUMBER          |
| ○ | PKT PICKET POINT      |
| ⊙ | BORE HOLE (BH)        |
| ⊙ | STATION POINT         |
|   | ROAD                  |
|   | EXISTING BRIDGE       |
|   | DETOUR                |
| ~ | CONTOUR LINE          |
| — | PIPE CULVERT EXISTING |
| ⊠ | ELECTRICITY PYLON     |
| ⊠ | MANHOLE               |

|         |                                                 |
|---------|-------------------------------------------------|
| —       | CENTERLINE OF ROAD                              |
| —       | EXISTING ROAD, ON PROPOSED<br>FILL SLOPE ROAD   |
| ⊙       | TRAFFIC SIGNAL                                  |
| ⊙       | ROAD SIGN                                       |
| —       | BOTTOM OF BANK                                  |
| H       | HOUSE, HUT                                      |
| 1W      | BUILDING, HOUSE,<br>ONE STOREY WOOD             |
| BW      | HOUSE, TWO STOREY BRICK AND WOOD                |
| 2C      | BUILDING, HOUSE,<br>TWO STOREY CONCRETE / BRICK |
| ⊙       | BAMBOO                                          |
| ⊙       | TREE, EXISTING                                  |
| •       | GUIDE POST                                      |
| 0.00    | ELEVATION                                       |
| 10.00   | (HIGH) WATER LEVEL                              |
| △       | BENCH MARK                                      |
| BM 191  |                                                 |
| ⊠       | GPS POINT                                       |
| GPS 002 |                                                 |
| →       | FLOW                                            |
| →       | TO M. TONPHEUNG                                 |
| A A     | SECTION A-A                                     |
|         | SLOPE                                           |
| —       | BOTTOM OF BANK                                  |

|                                                                                                                                                                                                                                        |                    |                    |           |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|--------------------|-----------|
| <b>LAO PDR</b><br>Peace Independence Democracy Unity Prosperity<br>Department of Public Works and Transport<br>Bolikhamsay Province<br>The project on riverbank protection works<br>phase II<br>Japan international Cooperation Agency | Name:              | Signature          | Date      |
|                                                                                                                                                                                                                                        | Design by:         | <i>[Signature]</i> |           |
|                                                                                                                                                                                                                                        | C/P                | <i>[Signature]</i> | Dec 8/12  |
|                                                                                                                                                                                                                                        | Check by:          |                    |           |
|                                                                                                                                                                                                                                        | JICA Expert design | <i>[Signature]</i> | Dec 18/12 |
| <b>SYMBOLS AND ABBREVIATIONS</b>                                                                                                                                                                                                       | Approved by:       | <i>[Signature]</i> | Dec 18/12 |
|                                                                                                                                                                                                                                        | Chief Advisor      | <i>[Signature]</i> |           |
|                                                                                                                                                                                                                                        | Approved by:       | <i>[Signature]</i> | Dec 18/12 |
|                                                                                                                                                                                                                                        | Project Manager    |                    |           |
|                                                                                                                                                                                                                                        | Drawing number     | SB-01              | Page: 03  |

# Legend



| No | STA     | Easting    | Northing    | LEVEL   |
|----|---------|------------|-------------|---------|
| 1  | BM-01   | 335017.674 | 2039603.440 | 150.396 |
| 2  | BM-02   | 334909.579 | 2039663.237 | 150.015 |
| 3  | 0+018.7 | 335059.407 | 2039584.092 | 150.263 |
| 4  | 0+000   | 335041.441 | 2039589.408 | 150.834 |
| 5  | 0+020   | 335022.478 | 2039594.899 | 150.459 |
| 6  | 0+040   | 335003.073 | 2039600.135 | 150.187 |
| 7  | 0+060   | 334984.364 | 2039605.660 | 150.045 |
| 8  | IP1     | 334982.787 | 2039606.042 | 150.080 |
| 9  | 0+080   | 334965.255 | 2039614.348 | 150.013 |
| 10 | IP2     | 334963.310 | 2039615.220 | 149.995 |
| 11 | 0+100   | 334948.794 | 2039627.268 | 150.251 |
| 12 | 0+120   | 334932.750 | 2039639.921 | 149.941 |
| 13 | IP3     | 334919.520 | 2039649.968 | 150.469 |
| 14 | 0+140   | 334916.296 | 2039651.662 | 150.183 |
| 15 | 0+160   | 334898.672 | 2039660.755 | 150.633 |
| 16 | 0+180   | 334880.964 | 2039669.945 | 150.690 |
| 7  | IP4     | 334872.760 | 2039674.312 | 150.719 |
| 18 | 0+200   | 334862.808 | 2039678.688 | 150.760 |
| 9  | IP5     | 334849.604 | 2039684.656 | 150.843 |
| 20 | 0+220   | 334845.679 | 2039687.712 | 150.974 |
| 21 | 0+232   | 334836.443 | 2039694.865 | 150.279 |

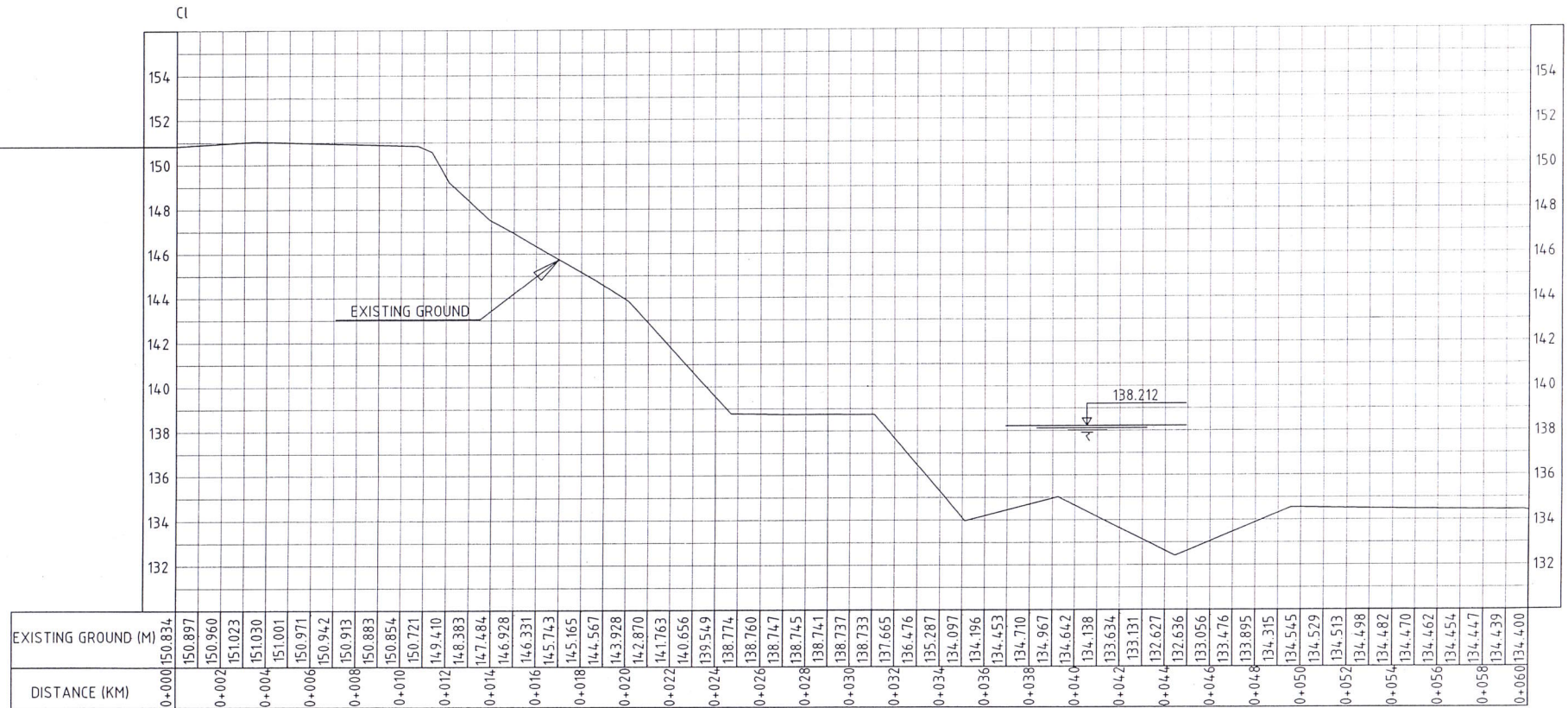
GRAPHIC SCALE

( IN METERS )

1 : 1000

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| <p>LAO PDR</p> <p>Peace Independence Democracy Unity Proeperity</p> <p>Department of Public Works and Transport</p> <p>Balikhmay Province</p> <p>The project on riverbank protection works phase II</p> <p>Japan international Cooperation Agency</p> <p><b>PLAN</b></p> | 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> |              |
|                                                                                                                                                                                                                                                                          | Drawing number     | PL-01              | Page: 04     |

# CROSS SECTION KM (0+000)



GRAPHIC SCALE

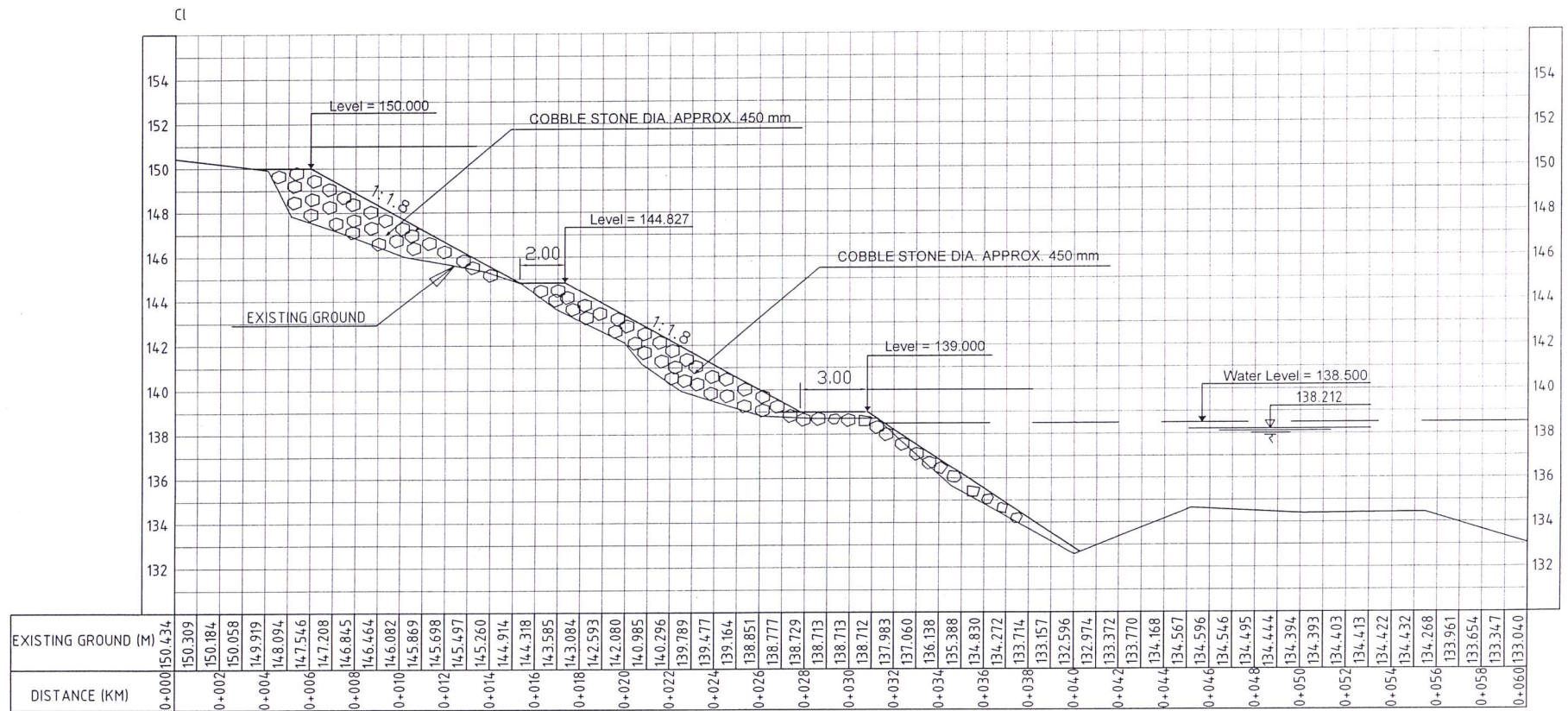
( IN METERS )



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|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|--------------------|-----------|
| <b>LAO PDR</b><br>Peace Independence Democracy Unity Prosperity<br>Department of Public Works and Transport<br>Bolikhamxay Province<br>The project on riverbank protection works<br>phase II<br>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 |
| <b>CROSS SECTION</b>                                                                                                                                                                                                                   | 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     | CR-01              | Page: 05  |

# CROSS SECTION KM (0+018,0+020)



GRAPHIC SCALE

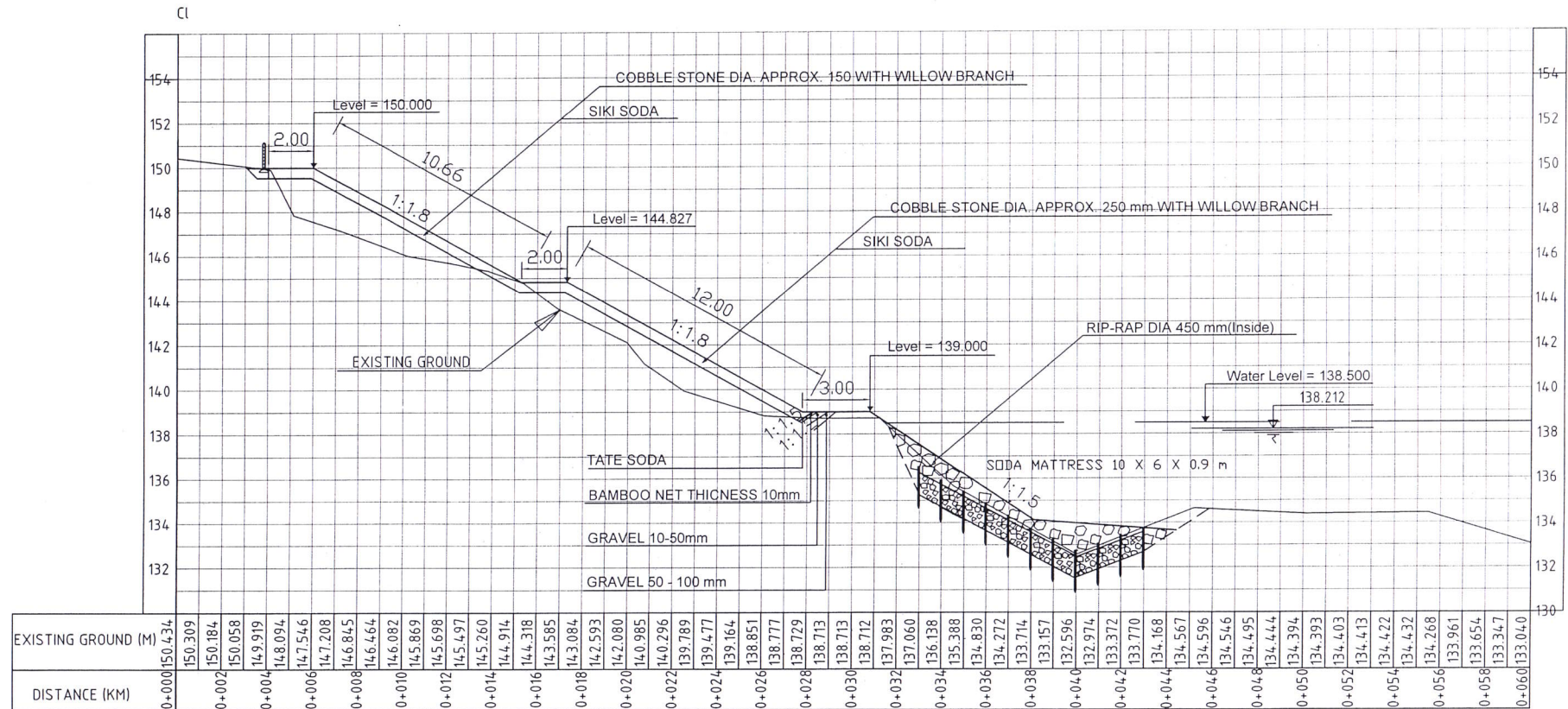
( IN METERS )



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| <b>LAO PDR</b><br>Peace Independence Democracy Unity Prosperity<br>Department of Public Works and Transport<br>Bolikhamxay Province<br>The project on riverbank protection works<br>phase II<br>Japan international Cooperation Agency | Name:              | Signature          | Date        |
|                                                                                                                                                                                                                                        | Design by:         | <i>[Signature]</i> |             |
|                                                                                                                                                                                                                                        | C/P                | <i>[Signature]</i> | Dec. 18. 12 |
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|                                                                                                                                                                                                                                        | JICA Expert design | <i>[Signature]</i> | Dec. 18. 12 |
|                                                                                                                                                                                                                                        | Approved by:       | <i>[Signature]</i> | Dec. 18. 12 |
| <b>CROSS SECTION</b>                                                                                                                                                                                                                   | 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     | CR-02              | Page: 06    |

# CROSS SECTION KM (0+020)



GRAPHIC SCALE

( IN METERS )



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LAO PDR

Peace Independence Democracy Unity Prosperity

Department of Public Works and Transport  
Bolikhamsay Province

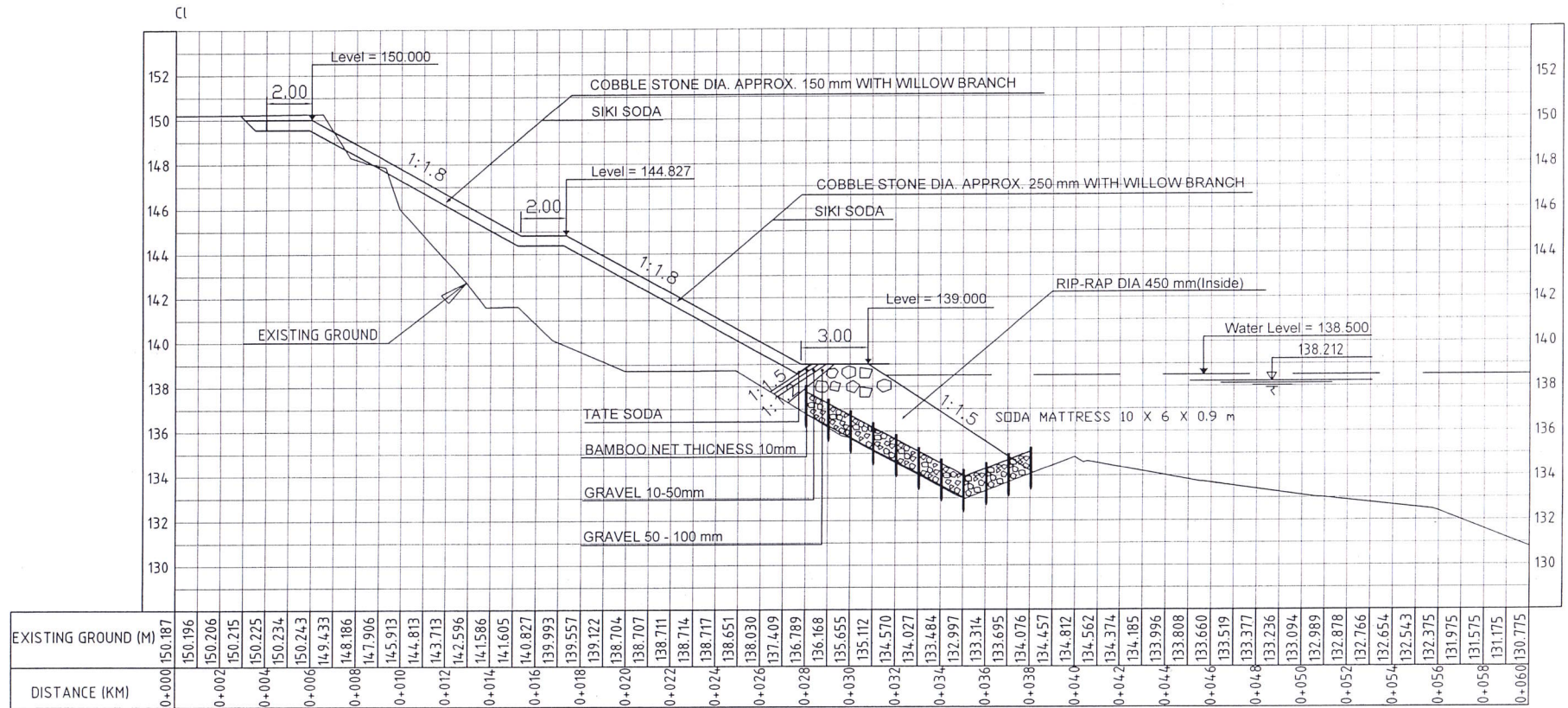
The project on riverbank protection works  
phase II

Japan international Cooperation Agency

CROSS SECTION

| 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> |             |
| Drawing number     | CR-03              | Page: 07    |

# CROSS SECTION KM (0+040)



GRAPHIC SCALE

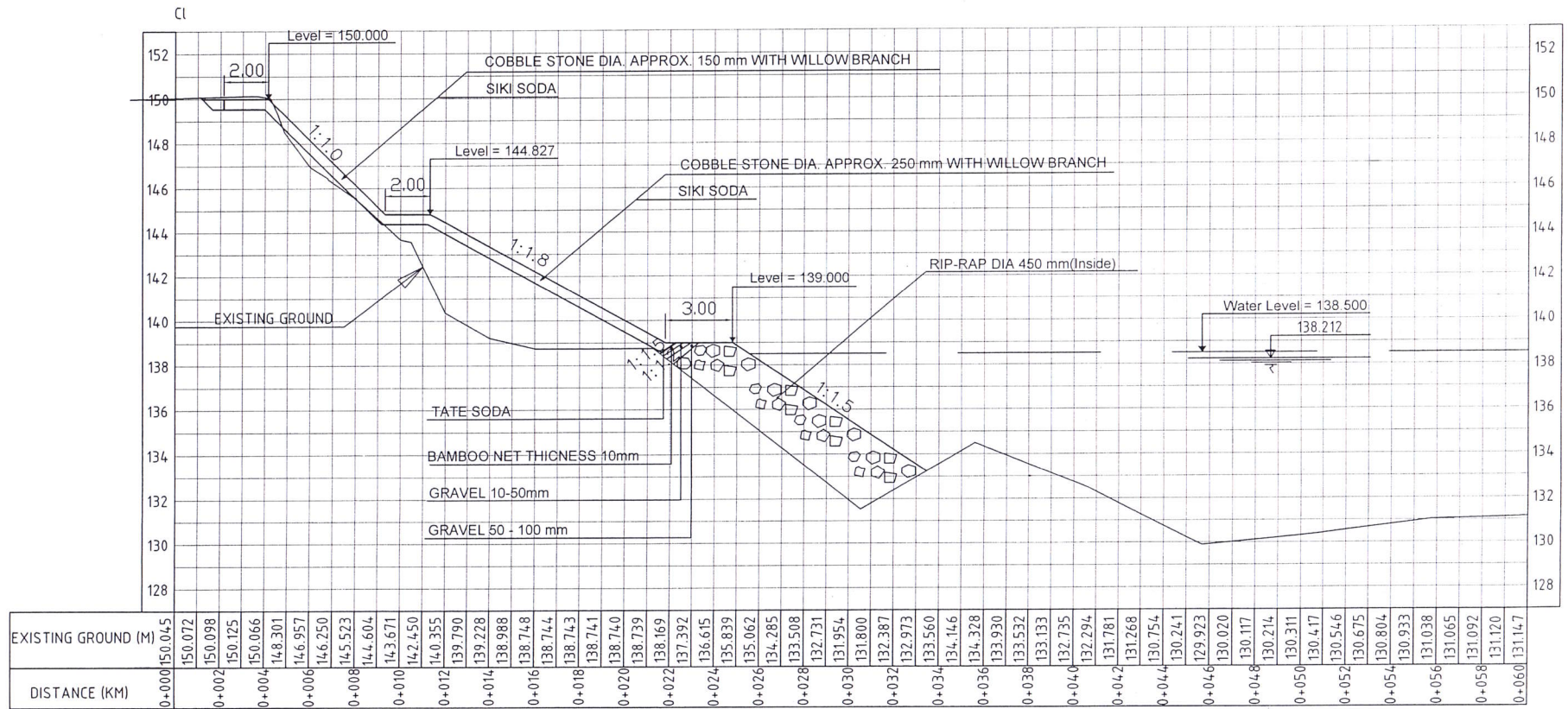
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| <b>LAO PDR</b><br>Peace Independence Democracy Unity Prosperity<br>Department of Public Works and Transport<br>Bolikhamxay Province<br>The project on riverbank protection works<br>phase II<br>Japan international Cooperation Agency | Name:              | 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. |
| <b>CROSS SECTION</b>                                                                                                                                                                                                                   | Approved by:       | <i>[Signature]</i> | Dec. 18.12. |
|                                                                                                                                                                                                                                        | Chief Advisor      | <i>[Signature]</i> |             |
|                                                                                                                                                                                                                                        | Approved by:       | <i>[Signature]</i> | Dec. 18.12. |
|                                                                                                                                                                                                                                        | Project Manager    | <i>[Signature]</i> |             |
|                                                                                                                                                                                                                                        | Drawing number     | CR-04              | Page: 08    |

# CROSS SECTION KM (0+060)



GRAPHIC SCALE

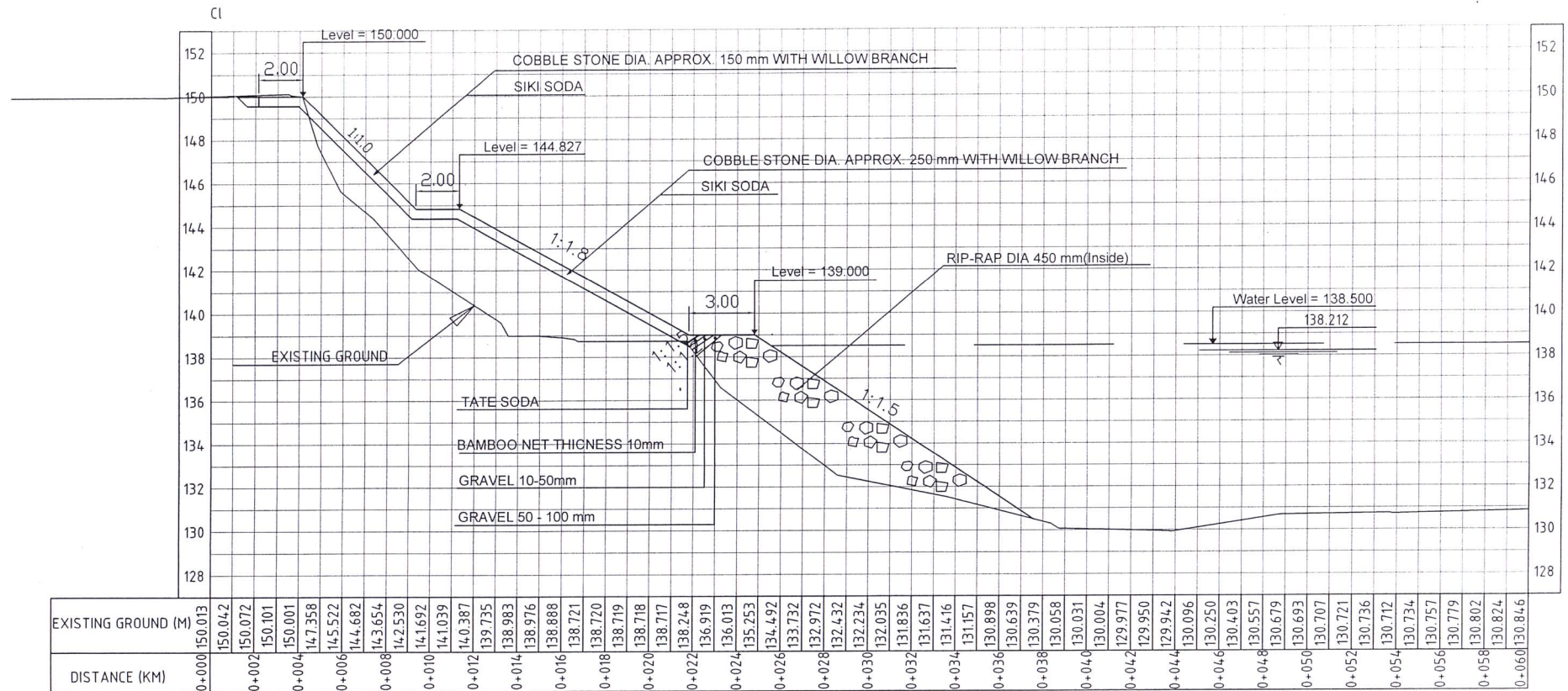
( IN METERS )



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| LAO PDR                                            |  | Name:              | Signature          | Date        |
|----------------------------------------------------|--|--------------------|--------------------|-------------|
| Peace Independence Democracy Unity Prosperity      |  | Design by:         | <i>[Signature]</i> |             |
| Department of Public Works and Transport           |  | C/P                | <i>[Signature]</i> | Dec. 18. 12 |
| Balikhamxay Province                               |  | Check by:          |                    |             |
| The project on riverbank protection works phase II |  | JICA Expert design | <i>[Signature]</i> | Dec. 18. 12 |
| Japan international Cooperation Agency             |  | Approved by:       | <i>[Signature]</i> | Dec. 18. 12 |
| Chief Advisor                                      |  | Project Manager    | <i>[Signature]</i> | Dec. 18. 12 |
| CROSS SECTION                                      |  | Drawing number     | CR-05              | Page: 09    |

# CROSS SECTION KM (0+080)



GRAPHIC SCALE

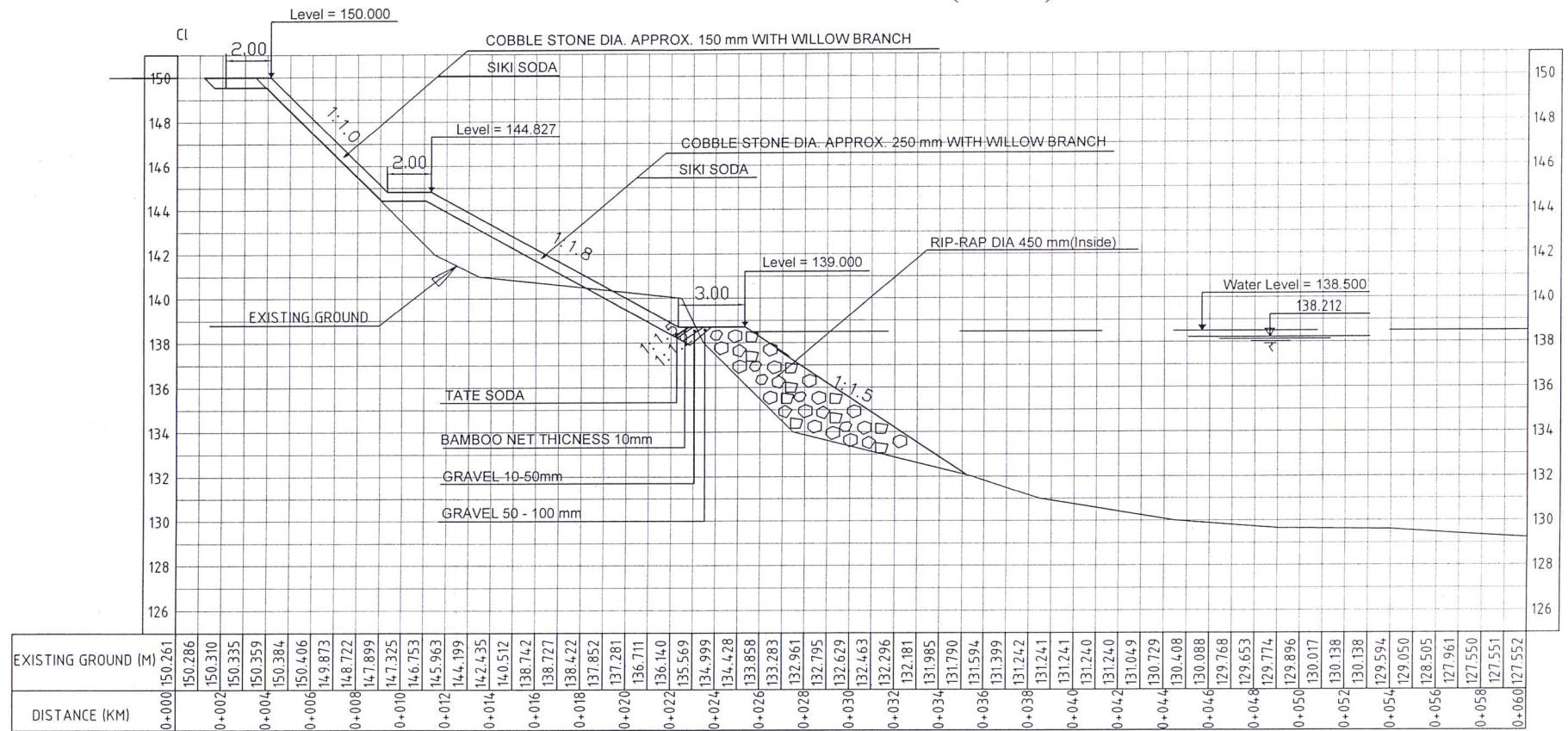
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| <b>LAO PDR</b><br>Peace Independence Democracy Unity Prosperity<br><br>Department of Public Works and Transport<br>Bolikhamxay Province<br><br>The project on riverbank protection works<br>phase II<br>Japan international Cooperation Agency | Name:              | Signature          | Date       |
|                                                                                                                                                                                                                                                | Design by:         | <i>[Signature]</i> |            |
|                                                                                                                                                                                                                                                | C/P                | <i>[Signature]</i> | Dec 18.12  |
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| <b>CROSS SECTION</b>                                                                                                                                                                                                                           | Approved by:       | <i>[Signature]</i> | Dec. 18.12 |
|                                                                                                                                                                                                                                                | Chief Advisor      | <i>[Signature]</i> |            |
|                                                                                                                                                                                                                                                | Approved by:       | <i>[Signature]</i> | Dec 18.12  |
|                                                                                                                                                                                                                                                | Project Manager    | <i>[Signature]</i> |            |
|                                                                                                                                                                                                                                                | Drawing number     | CR-06              | Page: 10   |

# CROSS SECTION KM (0+086)



## GRAPHIC SCALE

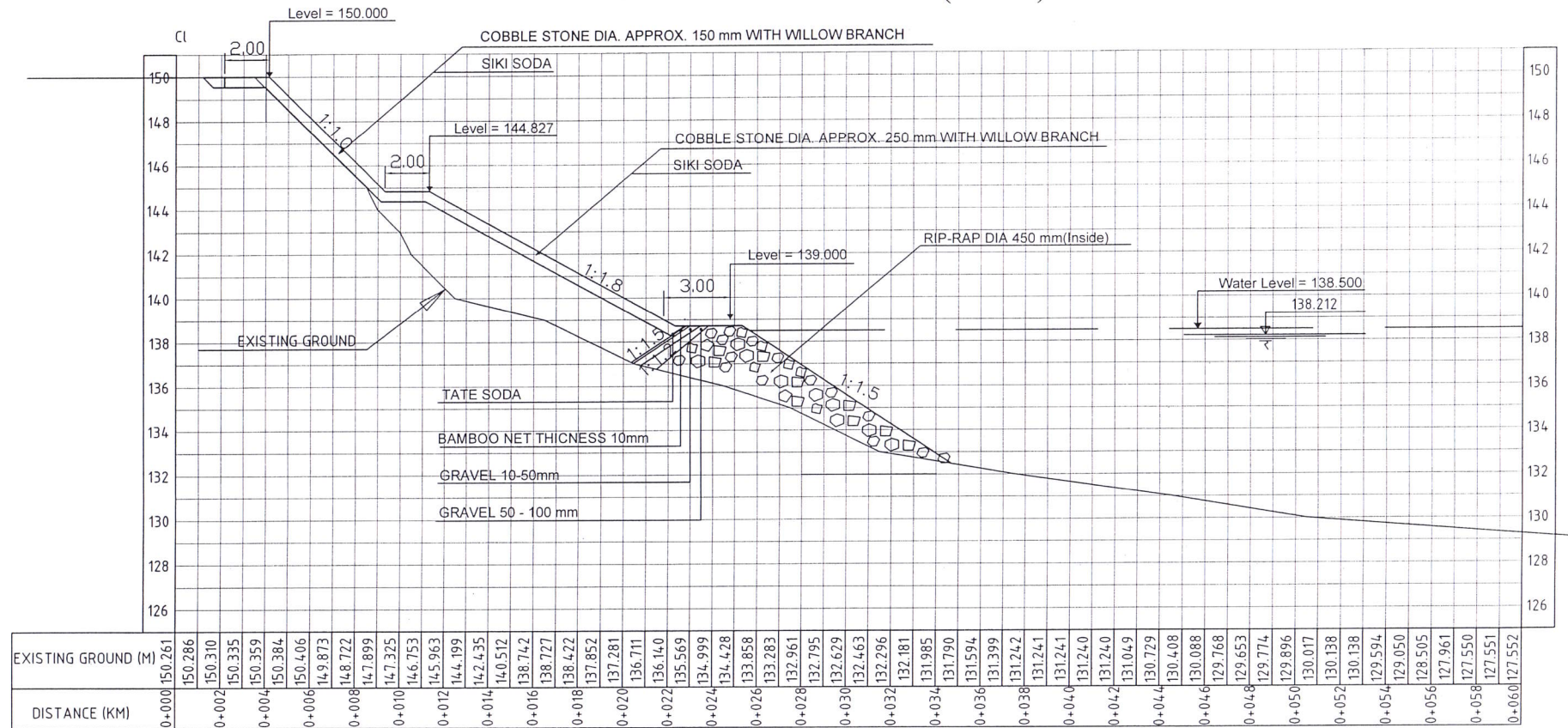
( IN METERS )



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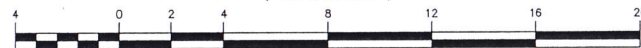
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| <b>LAO PDR</b><br>Peace Independence Democracy Unity Prosperity<br>Department of Public Works and Transport<br>Bolikhamxay Province<br>The project on riverbank protection works<br>phase II<br>Japan international Cooperation Agency | Name:              | 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 |
| <b>CROSS SECTION</b>                                                                                                                                                                                                                   | Approved by:       | <i>[Signature]</i> | Dec 18, 12 |
|                                                                                                                                                                                                                                        | Chief Advisor      | <i>[Signature]</i> |            |
|                                                                                                                                                                                                                                        | Approved by:       | <i>[Signature]</i> | Dec 18, 12 |
|                                                                                                                                                                                                                                        | Project Manager    | <i>[Signature]</i> |            |
|                                                                                                                                                                                                                                        | Drawing number     | CR-07              | Page: 11   |

# CROSS SECTION KM (0+095)



GRAPHIC SCALE

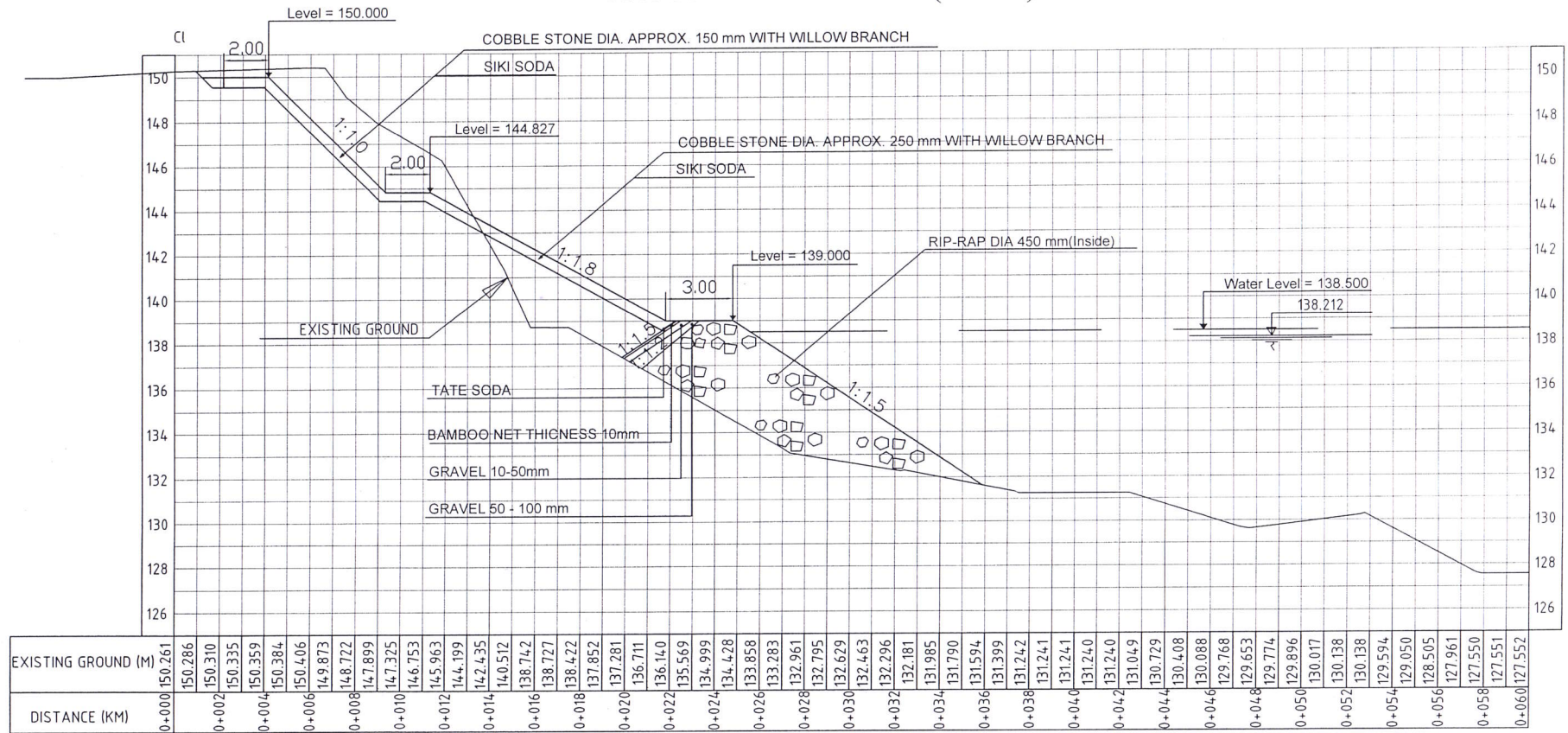
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| LAO PDR<br>Peace Independence Democracy Unity Prosperity<br>Department of Public Works and Transport<br>Bolikhamxay Province<br>The project on riverbank protection works<br>phase II<br>Japan international Cooperation Agency | Name:              | Signature          | Date       |
|                                                                                                                                                                                                                                 | Design by:         | <i>[Signature]</i> |            |
|                                                                                                                                                                                                                                 | C/P                | <i>[Signature]</i> | Dec. 18.12 |
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|                                                                                                                                                                                                                                 | JICA Expert design | <i>[Signature]</i> | Dec. 18.12 |
| CROSS SECTION                                                                                                                                                                                                                   | Approved by:       | <i>[Signature]</i> | Dec. 18.12 |
|                                                                                                                                                                                                                                 | Chief Advisor      | <i>[Signature]</i> |            |
|                                                                                                                                                                                                                                 | Approved by:       | <i>[Signature]</i> | Dec. 18.12 |
|                                                                                                                                                                                                                                 | Project Manager    | <i>[Signature]</i> |            |
|                                                                                                                                                                                                                                 | Drawing number     | CR-08              | Page: 12   |

# CROSS SECTION KM (0+100)



GRAPHIC SCALE

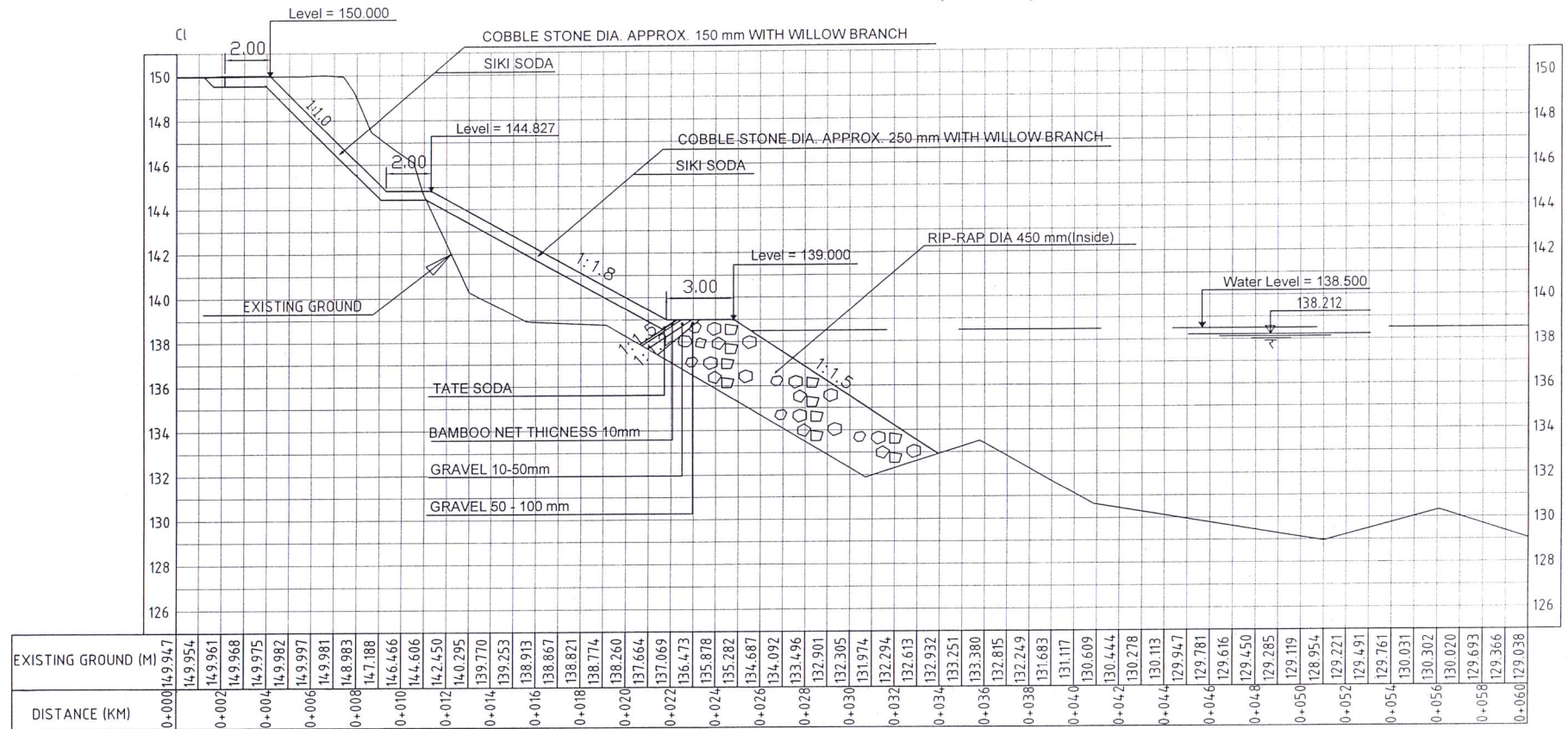
( IN METERS )



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| LAO PDR<br>Peace Independence Democracy Unity Prosperity<br>Department of Public Works and Transport<br>Bolikhamxay Province<br>The project on riverbank protection works<br>phase II<br>Japan international Cooperation Agency | Name:              | Signature          | Date       |
|                                                                                                                                                                                                                                 | Design by:         | <i>[Signature]</i> |            |
|                                                                                                                                                                                                                                 | C/P                | <i>[Signature]</i> | Dec. 18.12 |
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|                                                                                                                                                                                                                                 | JICA Expert design | <i>[Signature]</i> | Dec. 18.12 |
|                                                                                                                                                                                                                                 | Approved by:       | <i>[Signature]</i> | Dec. 18.12 |
| CROSS SECTION                                                                                                                                                                                                                   | 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     | CR-09              | Page: 13   |

# CROSS SECTION KM (0+120)



GRAPHIC SCALE

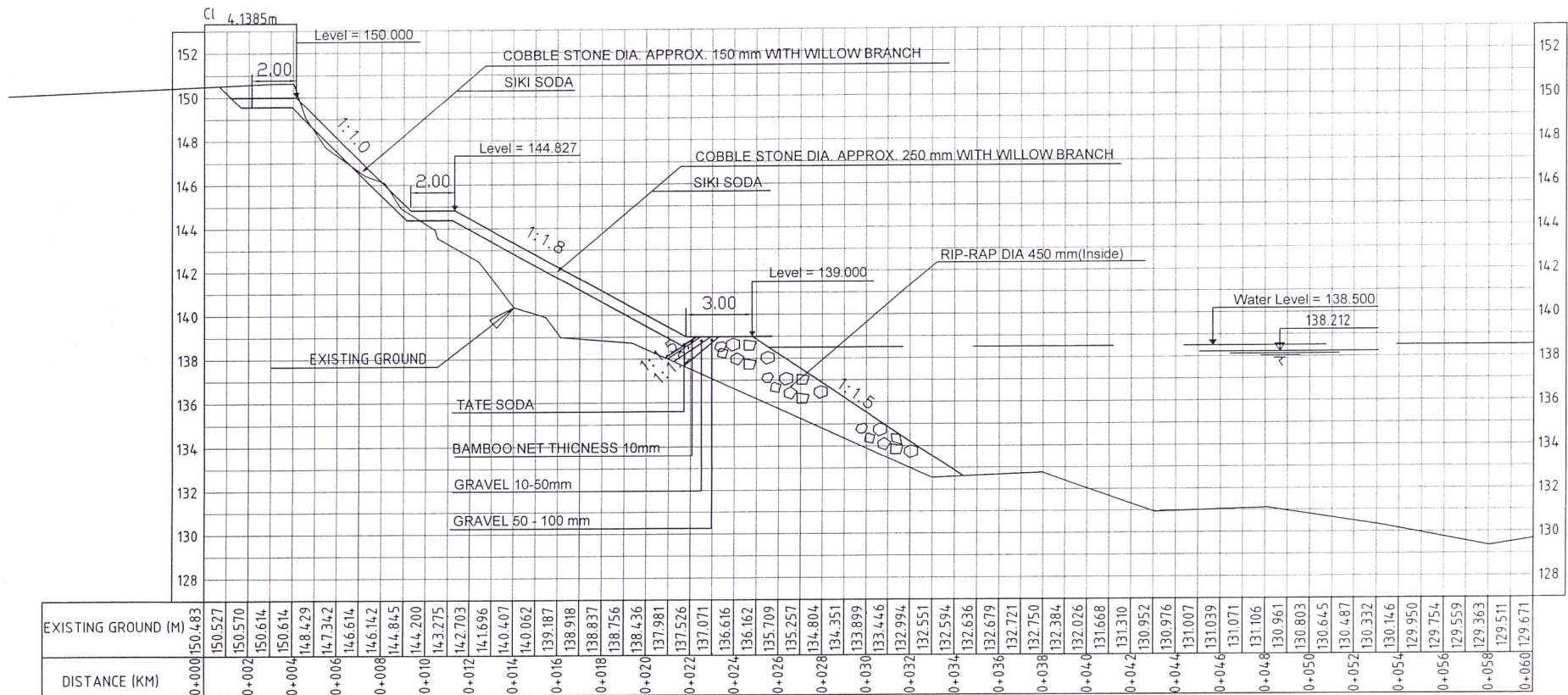
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| LAO PDR<br>Peace Independence Democracy Unity Prosperity<br>Department of Public Works and Transport<br>Bolikhamxay Province<br>The project on riverbank protection works<br>phase II<br>Japan international Cooperation Agency | Name:              | Signature          | Date        |
|                                                                                                                                                                                                                                 | Design by:         | <i>[Signature]</i> |             |
|                                                                                                                                                                                                                                 | C/P                | <i>[Signature]</i> | Dec. 19. 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> |             |
| CROSS SECTION                                                                                                                                                                                                                   | Approved by:       | <i>[Signature]</i> | Dec. 18. 12 |
|                                                                                                                                                                                                                                 | Project Manager    | <i>[Signature]</i> |             |
|                                                                                                                                                                                                                                 | Drawing number     | CR-10              | Page: 14    |

# CROSS SECTION KM (0+140)



GRAPHIC SCALE

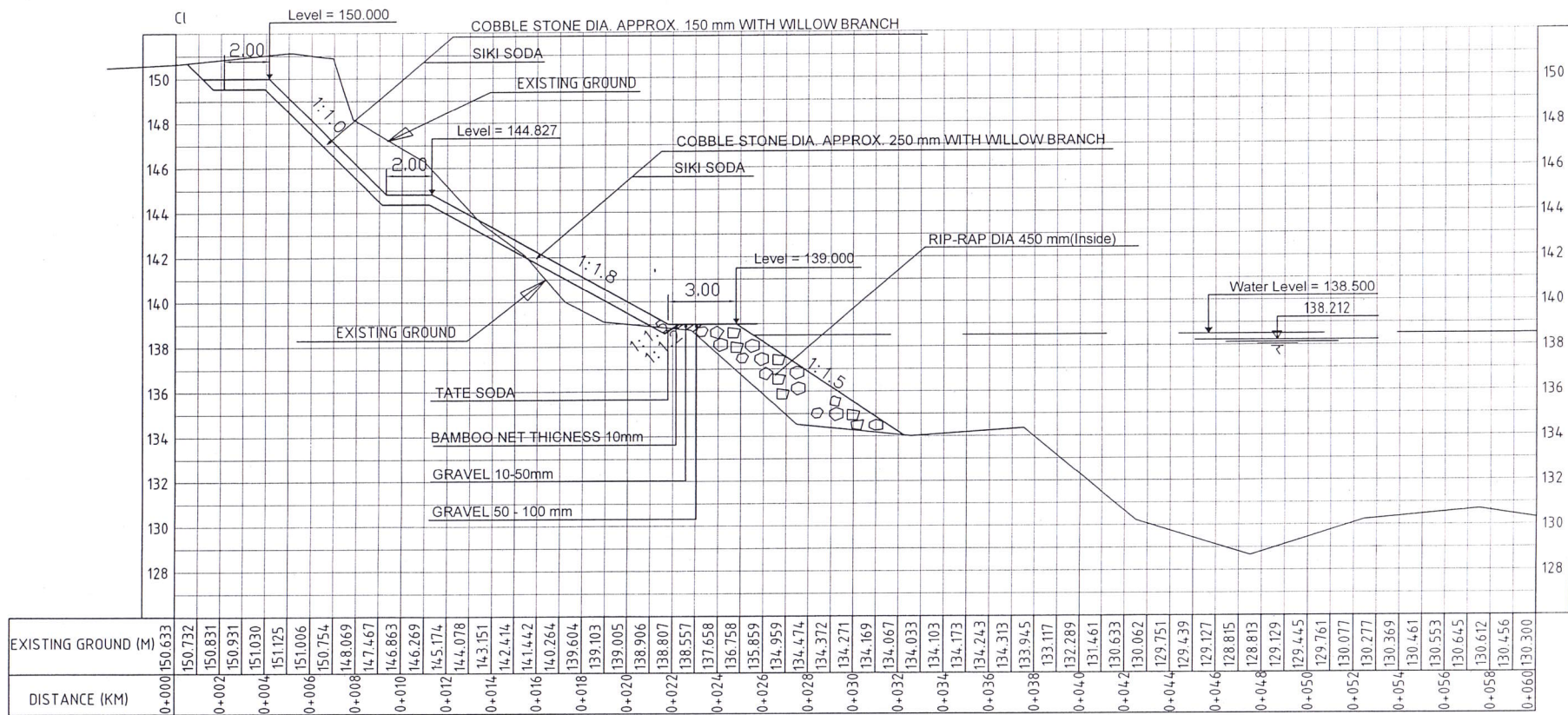
( IN METERS )



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| LAO PDR<br>Peace Independence Democracy Unity Prosperity<br>Department of Public Works and Transport<br>Bolikhamxay Province<br>The project on riverbank protection works<br>phase II<br>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 |
| CROSS SECTION                                                                                                                                                                                                                   | Approved by:       | <i>[Signature]</i> | Dec. 18, 12 |
|                                                                                                                                                                                                                                 | Chief Advisor      | <i>[Signature]</i> |             |
|                                                                                                                                                                                                                                 | Approved by:       | <i>[Signature]</i> | Dec. 18, 12 |
|                                                                                                                                                                                                                                 | Project Manager    | <i>[Signature]</i> |             |
|                                                                                                                                                                                                                                 | Drawing number     | CR-11              | Page: 15    |

CROSS SECTION KM (0+160)

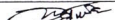


GRAPHIC SCALE

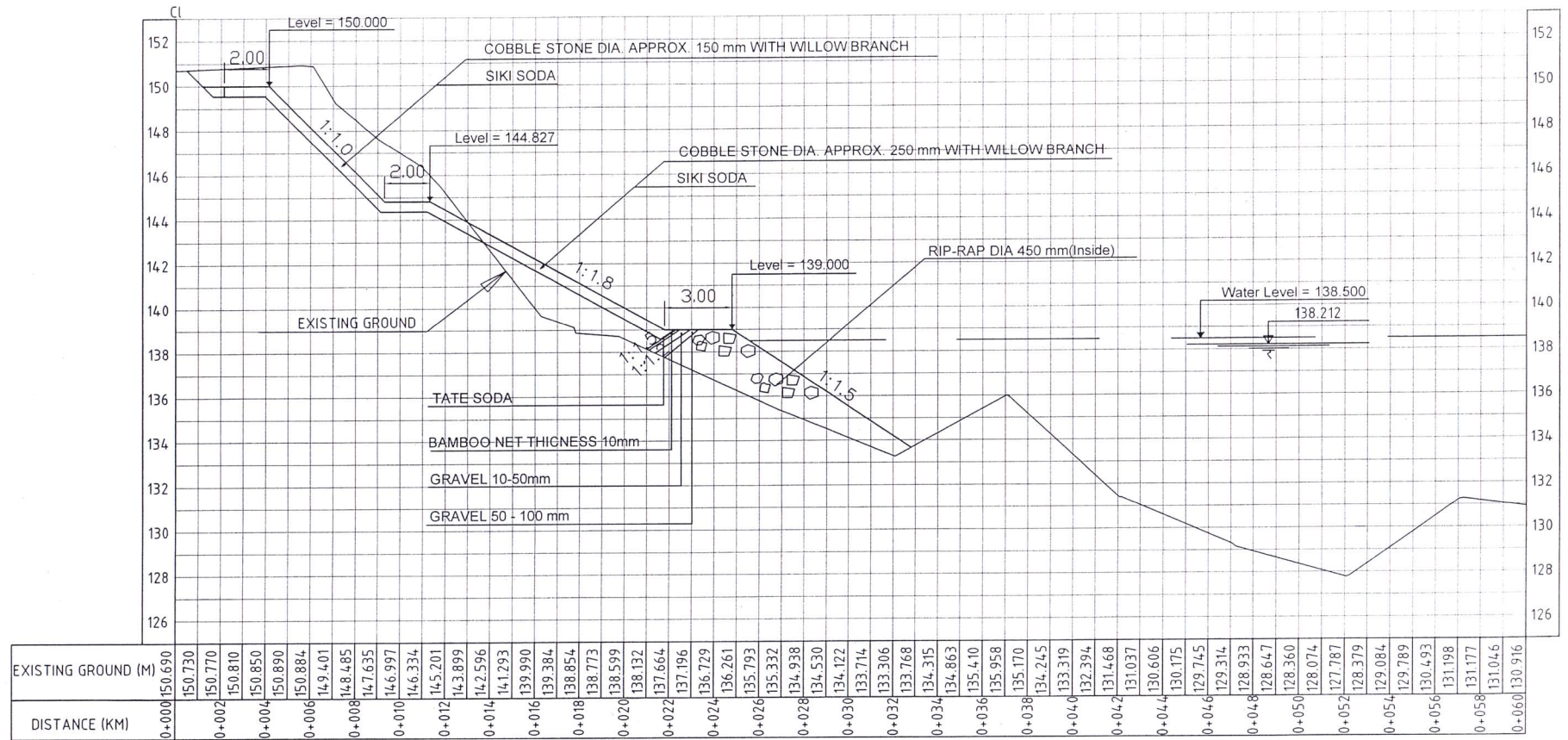
( IN METERS )



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|                                                                                                 |                    |                                                                                       |             |
|-------------------------------------------------------------------------------------------------|--------------------|---------------------------------------------------------------------------------------|-------------|
| <div>LAO PDR</div> <div>Peace Independence Democracy Unity Proeperity</div>                     | Name:              | Signature                                                                             | Date        |
|                                                                                                 | Design by:         |  | Dec. 18. 12 |
|                                                                                                 | C/P                |  |             |
|                                                                                                 | Check by:          |                                                                                       |             |
| Department of Public Works and Transport<br>Bolikhamsay Province                                | JICA Expert design |  | Dec 18. 12  |
|                                                                                                 | Approved by:       |  | Dec. 18. 12 |
| The project on riverbank protection works<br>phase II<br>Japan international Cooperation Agency | Chief Advisor      |                                                                                       |             |
|                                                                                                 | Approved by:       |  | Dec /8- 12  |
|                                                                                                 | Project Manager    |                                                                                       |             |
| CROSS SECTION                                                                                   | Drawing number     | CR-12                                                                                 | Page: 16    |

# CROSS SECTION KM (0+180)



GRAPHIC SCALE

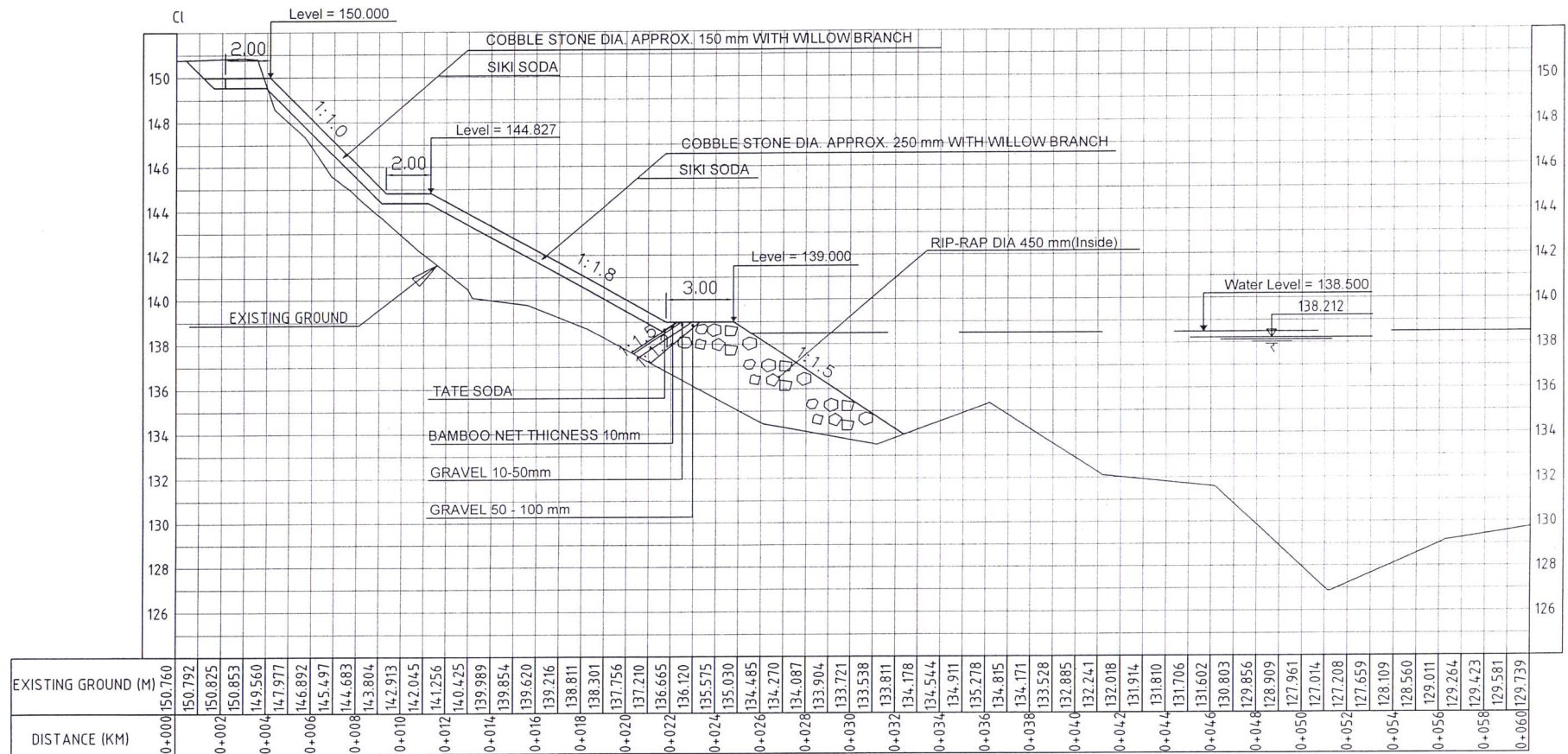
( IN METERS )



1 : 200

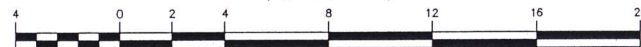
|                                                                                                                                                                                                                                        |                    |                    |              |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|--------------------|--------------|
| <b>LAO PDR</b><br>Peace Independence Democracy Unity Prosperity<br>Department of Public Works and Transport<br>Bolikhamxay Province<br>The project on riverbank protection works<br>phase II<br>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   |
|                                                                                                                                                                                                                                        | Chief Advisor      | <i>[Signature]</i> | Dec. 18. 12  |
| <b>CROSS SECTION</b>                                                                                                                                                                                                                   | Approved by:       | <i>[Signature]</i> | Dec 18. 12   |
|                                                                                                                                                                                                                                        | Project Manager    | <i>[Signature]</i> |              |
|                                                                                                                                                                                                                                        | Drawing number     | CR-13              | Page: 17     |

# CROSS SECTION KM (0+200)



GRAPHIC SCALE

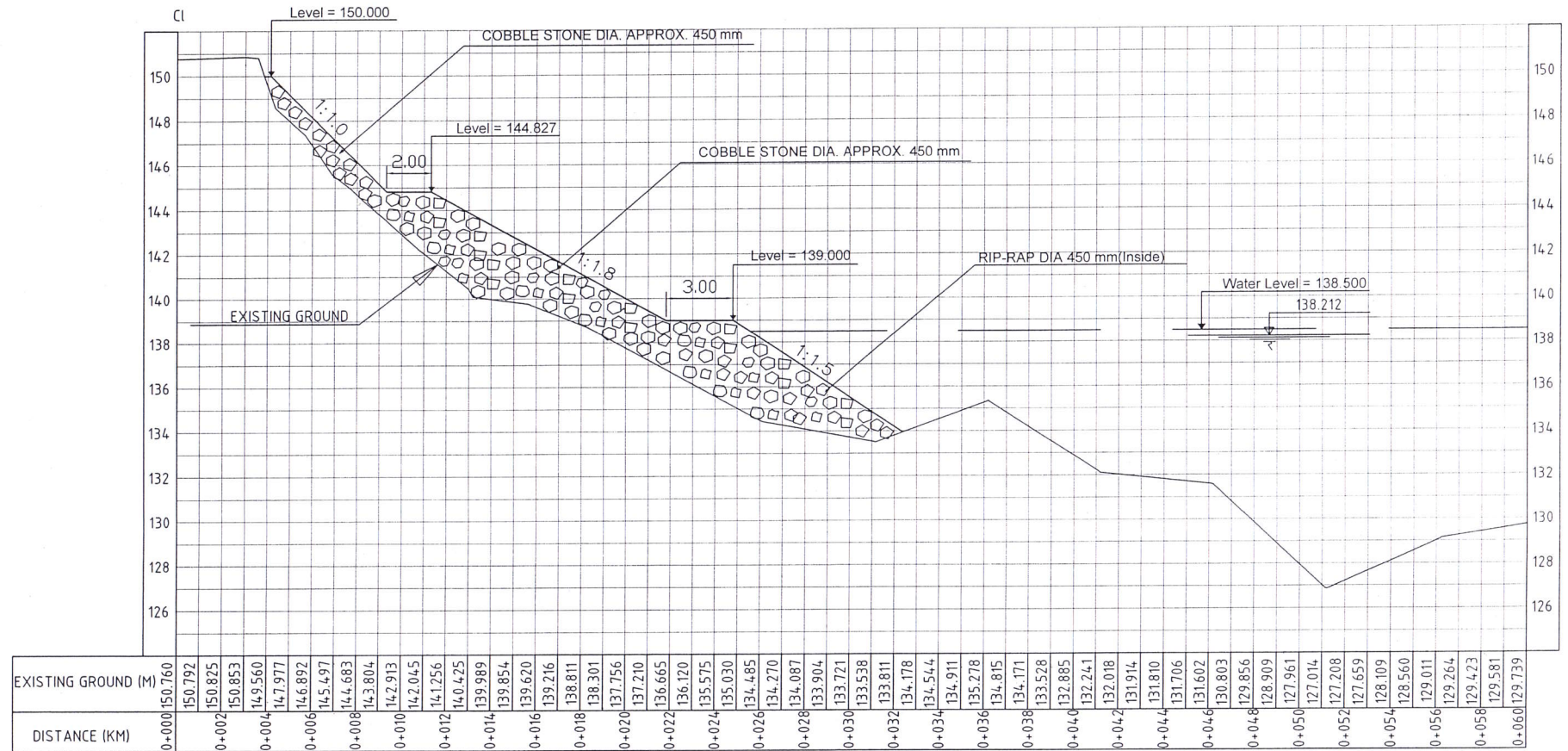
( IN METERS )



1 : 200

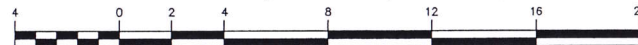
|                                                                                                                                                                                                                                        |                    |                    |             |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|--------------------|-------------|
| <b>LAO PDR</b><br>Peace Independence Democracy Unity Prosperity<br>Department of Public Works and Transport<br>Bolikhamxay Province<br>The project on riverbank protection works<br>phase II<br>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 |
| <b>CROSS SECTION</b>                                                                                                                                                                                                                   | 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     | CR-14              | Page: 18    |

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



GRAPHIC SCALE

( IN METERS )

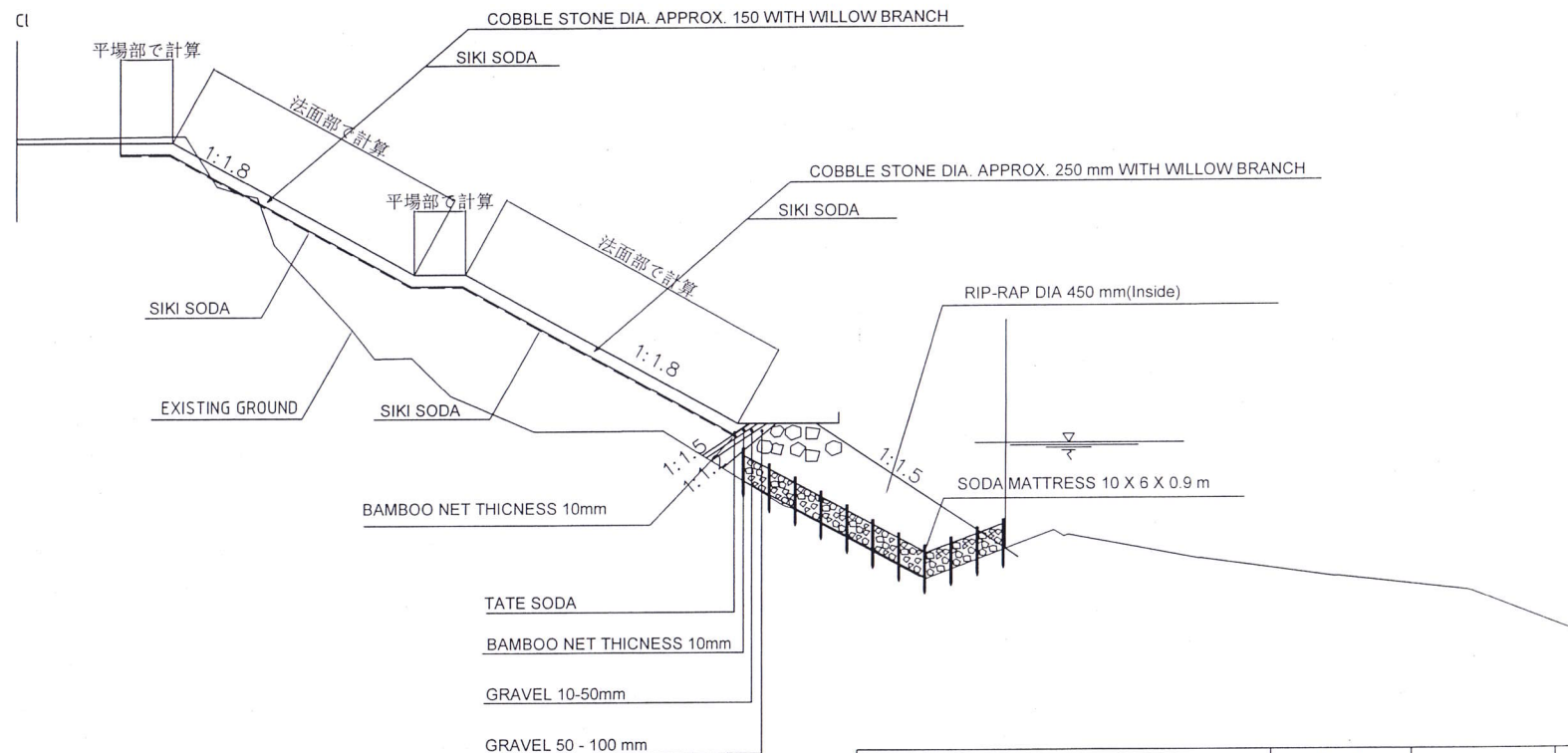


1 : 200

|                                                                                                                                                                                                                                 |                    |                    |              |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|--------------------|--------------|
| LAO PDR<br>Peace Independence Democracy Unity Prosperity<br>Department of Public Works and Transport<br>Bolikhamxay Province<br>The project on riverbank protection works<br>phase II<br>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  |
| CROSS SECTION                                                                                                                                                                                                                   | Approved by:       | <i>[Signature]</i> | Dec. 18, 12  |
|                                                                                                                                                                                                                                 | 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 )

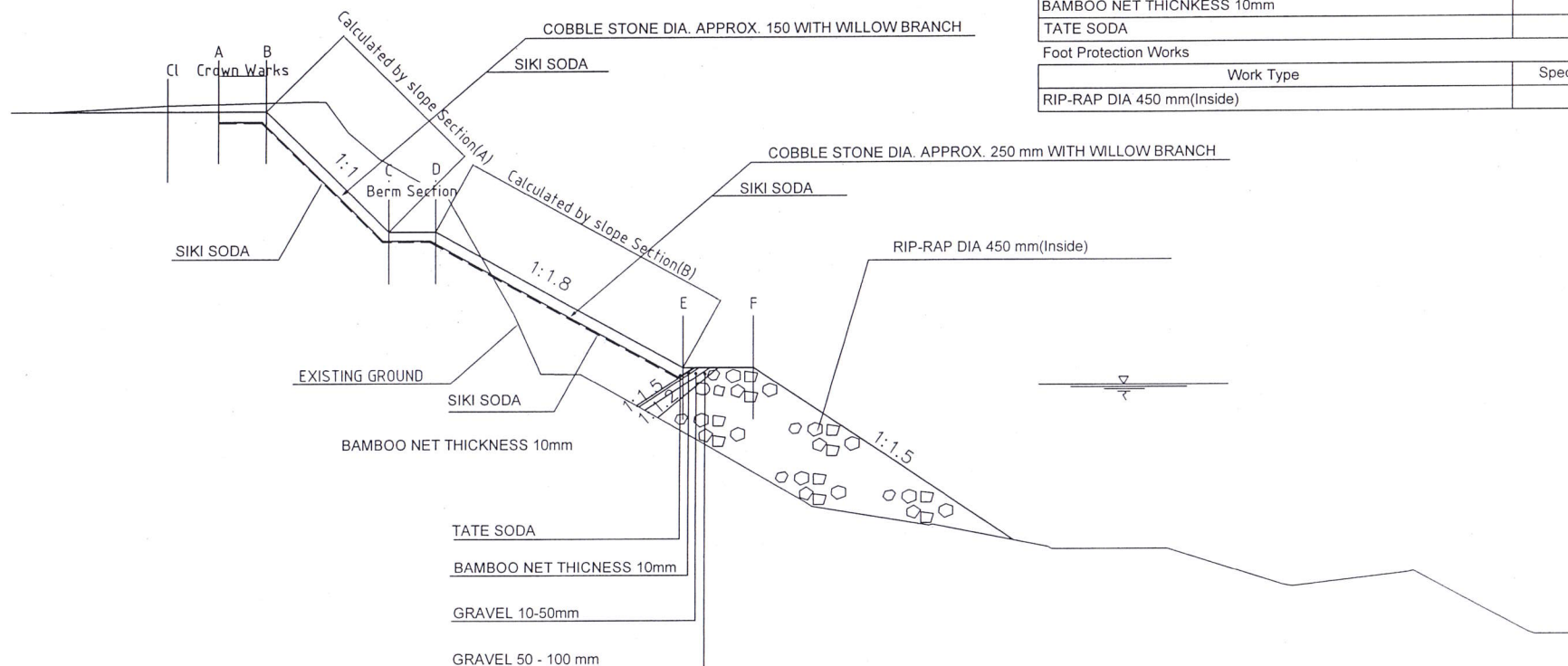


1 : 200

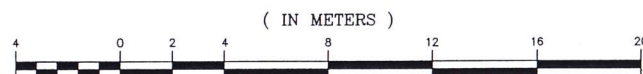
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|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|--------------------|--------------|
| <b>LAO PDR</b><br>Peace Independence Democracy Unity Prosperity<br>Department of Public Works and Transport<br>Bolikhamxay Province<br>The project on riverbank protection works<br>phase II<br>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    |
| <b>CROSS SECTION (DETAIL 1)</b>                                                                                                                                                                                                        | Approved by:       | <i>[Signature]</i> | Dec. 18. 12  |
|                                                                                                                                                                                                                                        | Chief Advisor      | <i>[Signature]</i> |              |
|                                                                                                                                                                                                                                        | Project Manager    | <i>[Signature]</i> | Dec 18. 12   |
|                                                                                                                                                                                                                                        | Drawing number     | DT-01              | Page: 20     |

# Slope protection Works and Foot protection Works

## CROSS SECTION (0+100)



### GRAPHIC SCALE



1 : 200

### 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    |

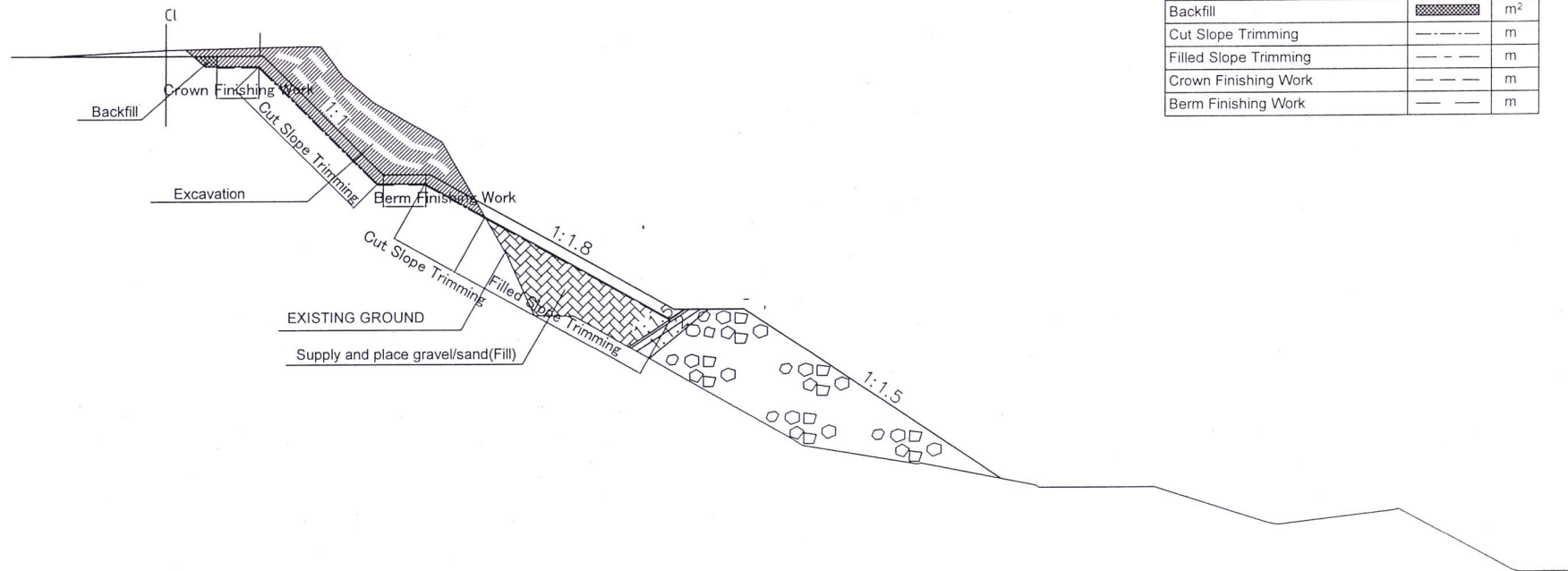
### Foot Protection Works

| Work Type                  | Specification | Unit           |
|----------------------------|---------------|----------------|
| RIP-RAP DIA 450 mm(Inside) |               | m <sup>2</sup> |

|                                                                                                                                                                                                                                        |                    |                    |             |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|--------------------|-------------|
| <b>LAO PDR</b><br>Peace Independence Democracy Unity Prosperity<br>Department of Public Works and Transport<br>Bolikhamxay Province<br>The project on riverbank protection works<br>phase II<br>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  |
| <b>CROSS SECTION (DETAIL 1)</b>                                                                                                                                                                                                        | Approved by:       | <i>[Signature]</i> | Dec. 18. 12 |
|                                                                                                                                                                                                                                        | Chief Advisor      | <i>[Signature]</i> |             |
|                                                                                                                                                                                                                                        | Approved by:       | <i>[Signature]</i> | Dec 18. 12  |
|                                                                                                                                                                                                                                        | Project Manager    | <i>[Signature]</i> |             |
|                                                                                                                                                                                                                                        | Drawing number     | DT-02              | Page: 21    |

# ROADWAY DIAGRAPH

## CROSS SECTION (0+100)



### Earth works

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

### GRAPHIC SCALE

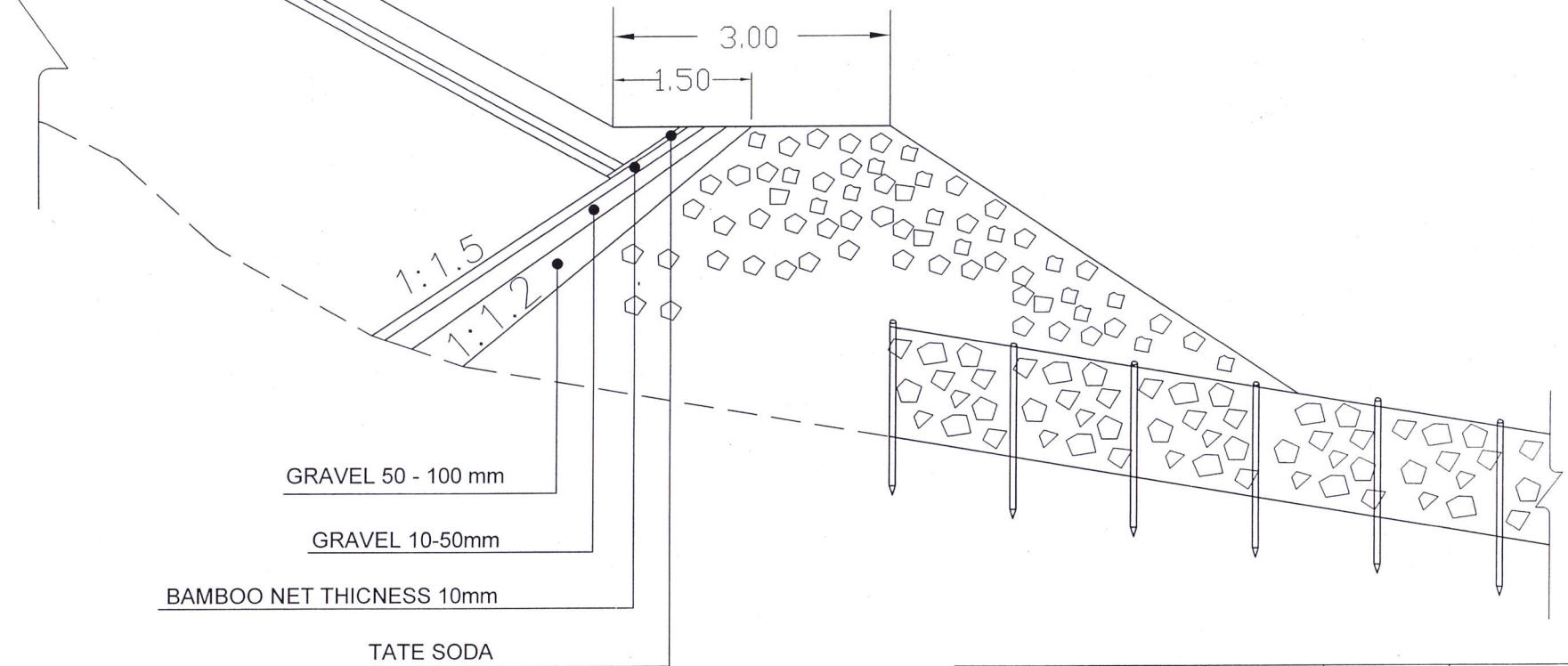
( IN METERS )



1 : 200

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

# Detail 1



NO SCALE

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