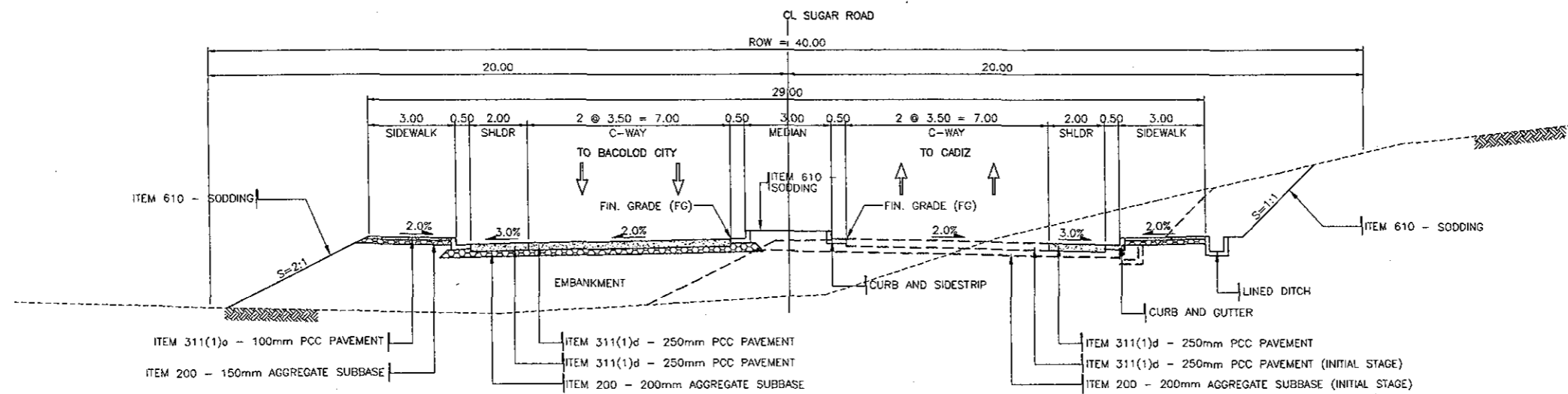
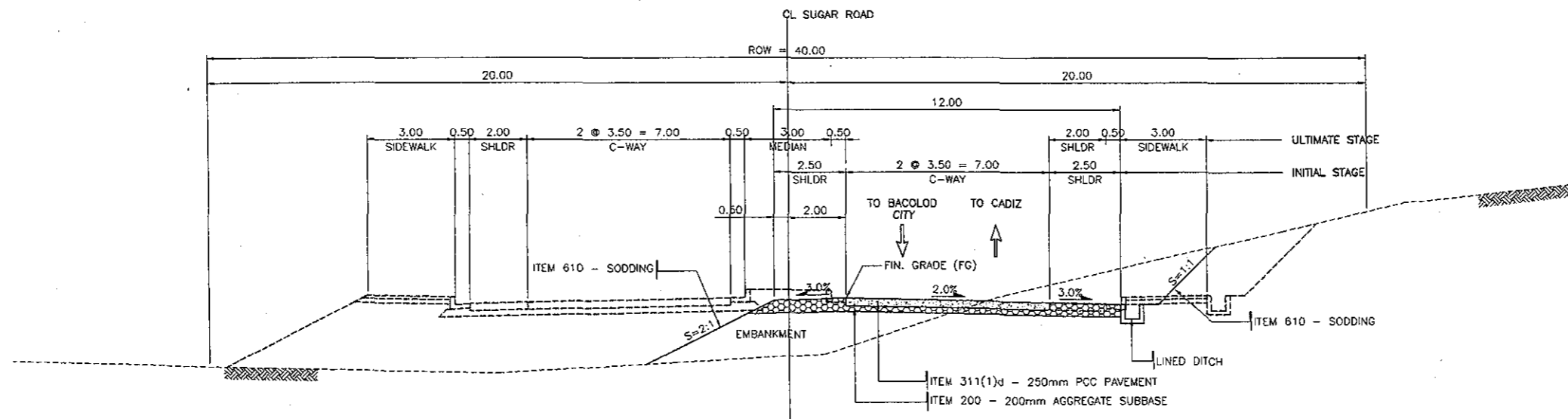


STA. 6+900.000 TO STA. 34+043.640
(Rural Area)

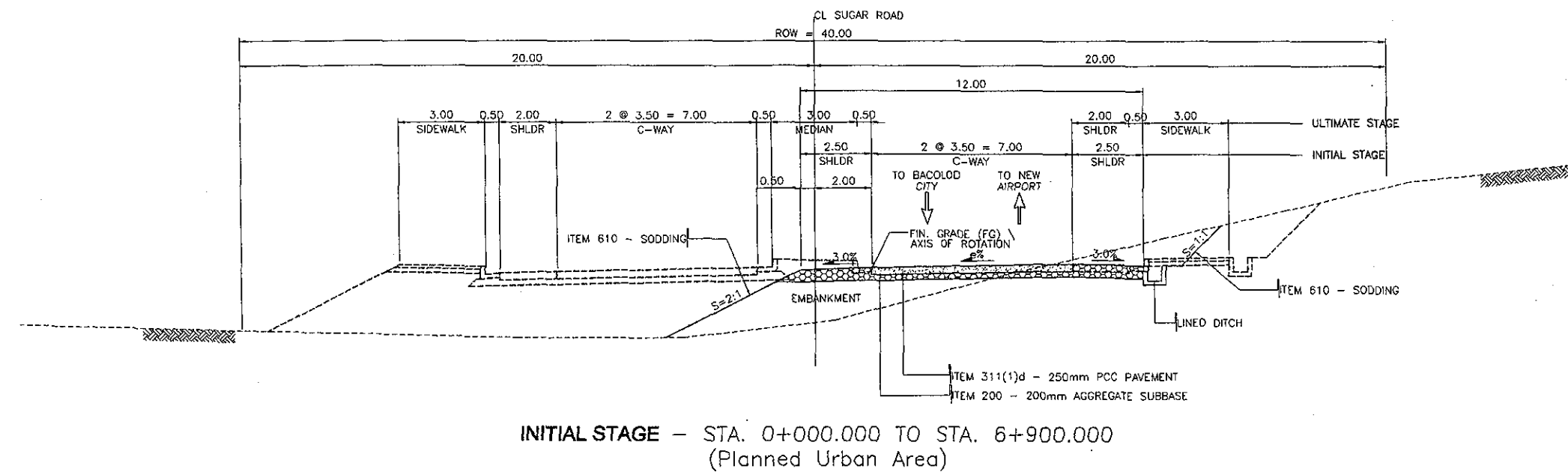
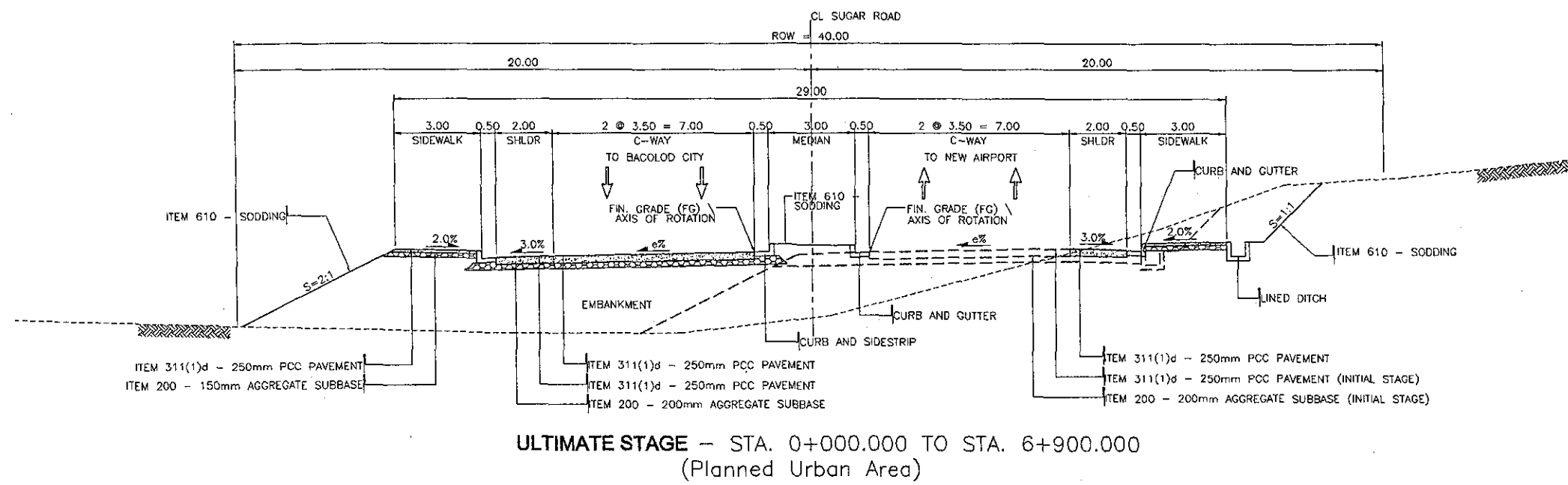
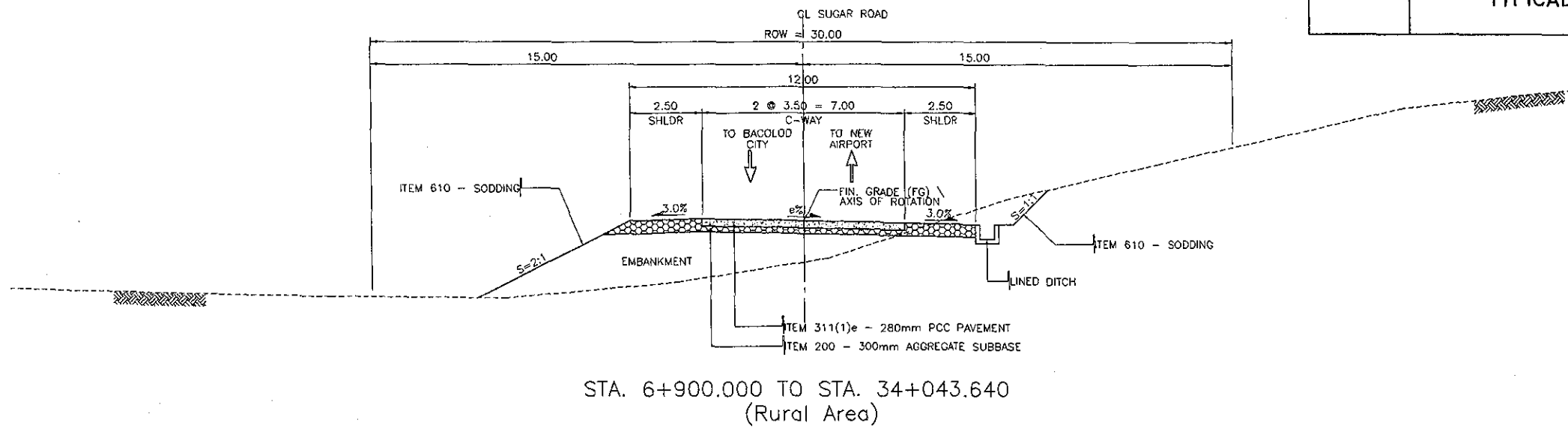


ULTIMATE STAGE - STA. 0+000.000 TO STA. 6+900.000
(Planned Urban Area)



INITIAL STAGE - STA. 0+000.000 TO STA. 6+900.000
(Planned Urban Area)

TYPICAL ROAD SECTIONS - NORMAL

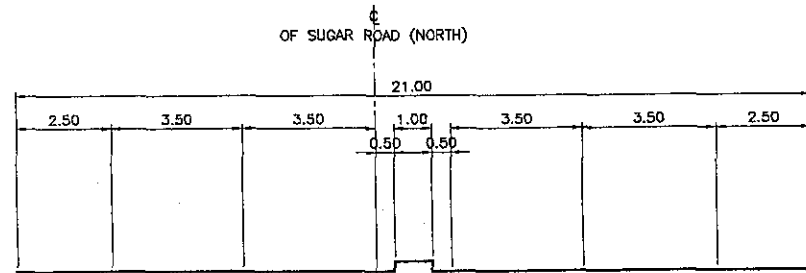


TYPICAL ROAD SECTIONS - SUPERELEVATED

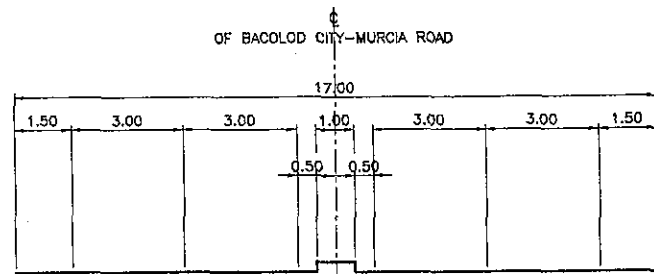
SCALE :
PLAN. 1:1000
SECTION. 1:200

BACOLOD SUGAR ROAD (NORTH)
INTERSECTION WITH BACOLOD CITY-MURCIA ROAD
STA. 0+000.00

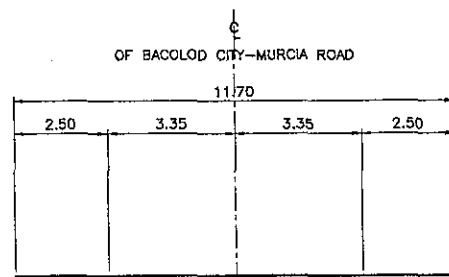
DRAWING NO.
R-46



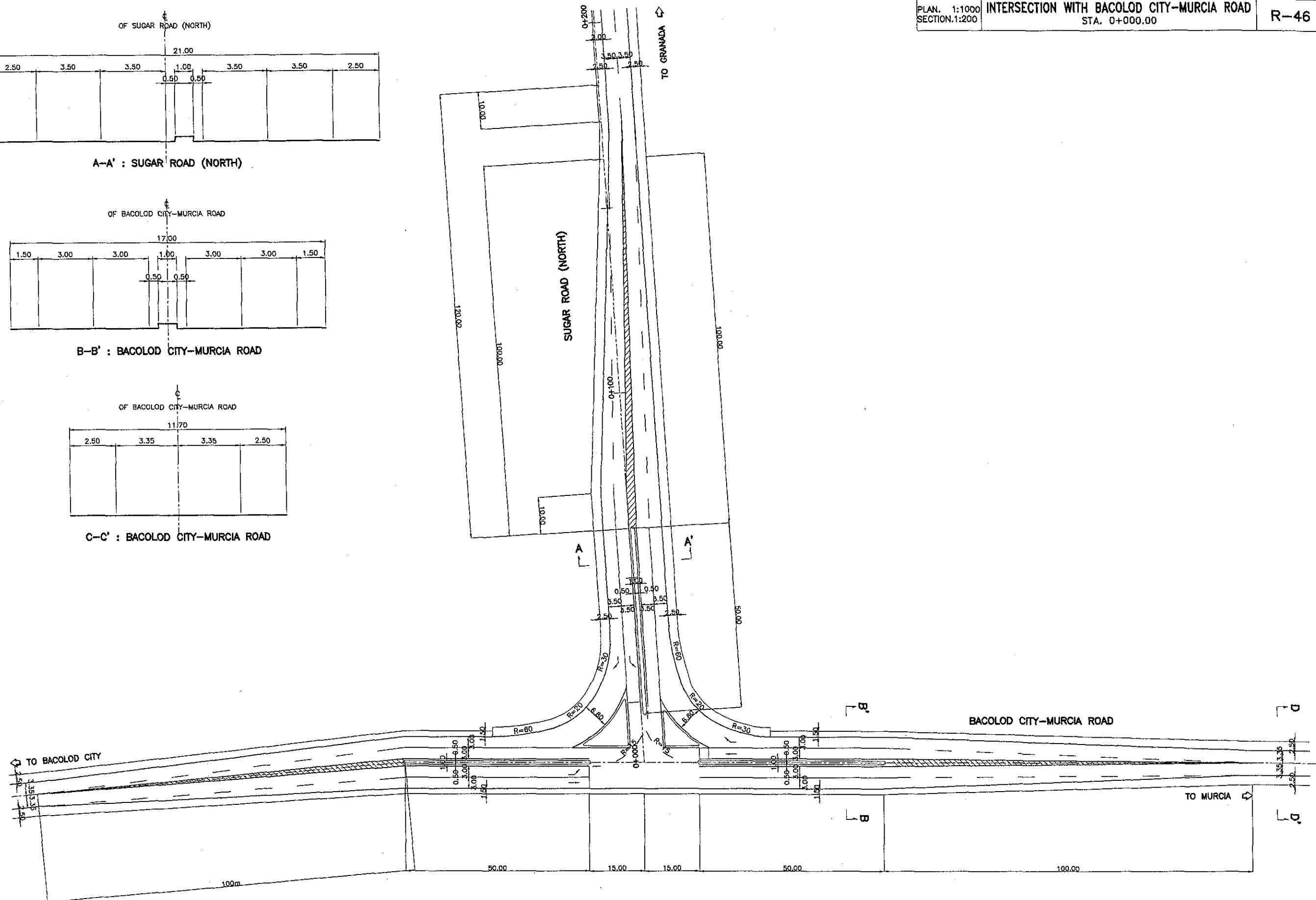
A-A' : SUGAR ROAD (NORTH)



B-B' : BACOLOD CITY-MURCIA ROAD



C-C' : BACOLOD CITY-MURCIA ROAD

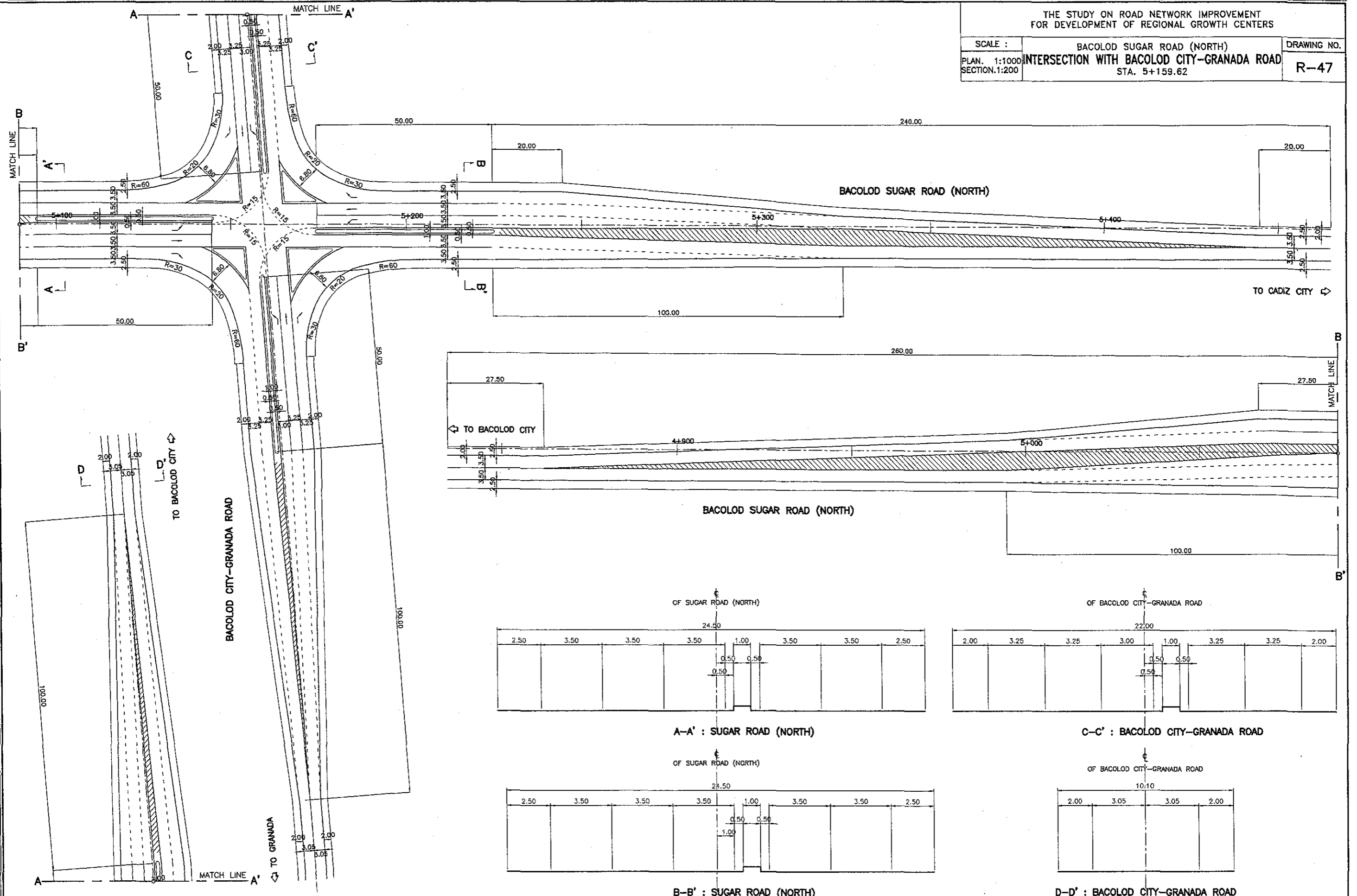


INTERSECTION WITH BACOLOD CITY-MURCIA ROAD (TYPE K)
STA. 0+000.00, BEG. OF SUGAR ROAD (NORTH)

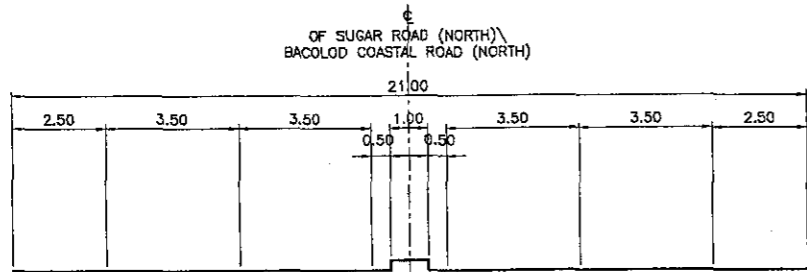
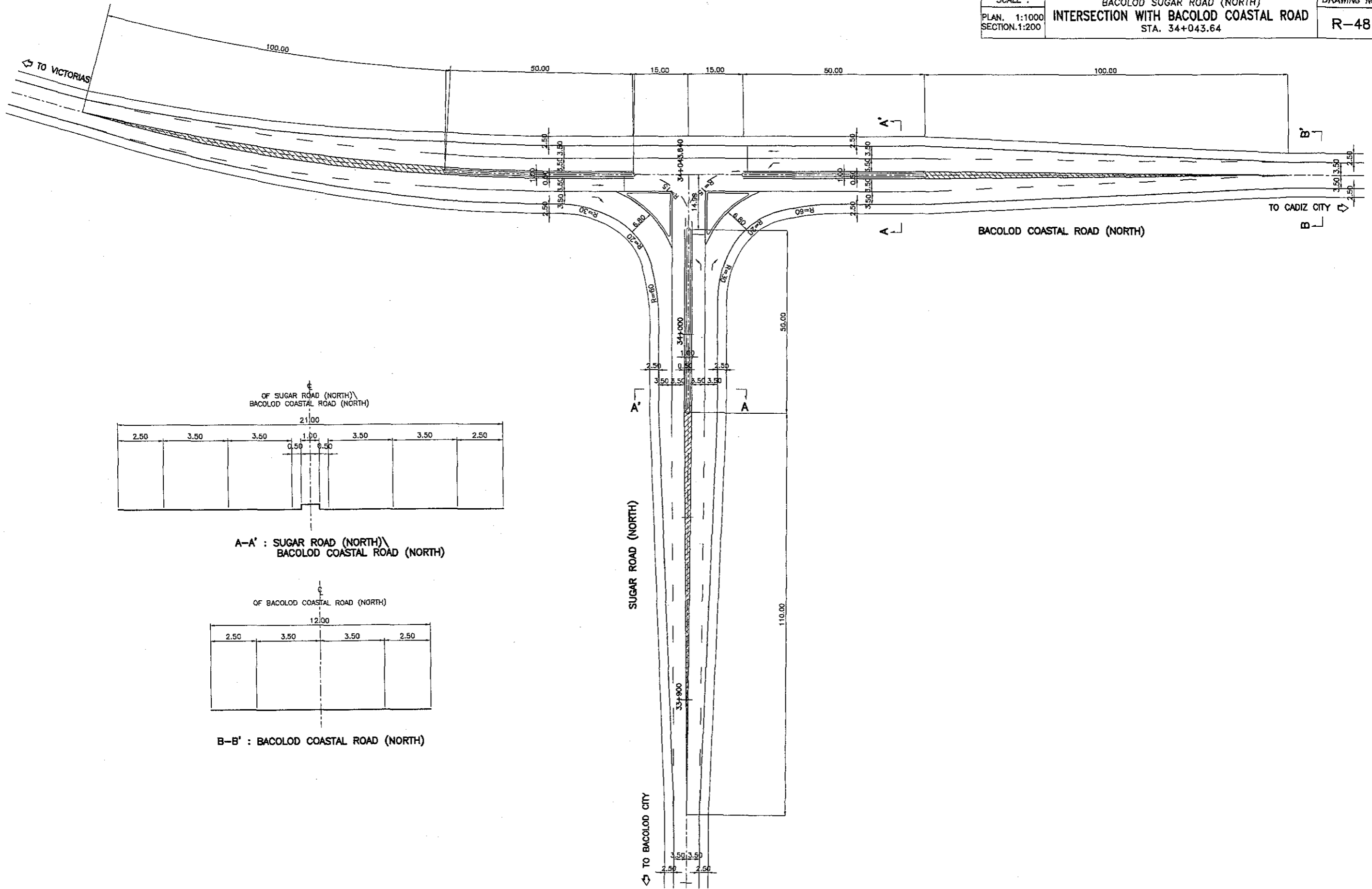
SCALE :
PLAN. 1:1000
SECTION. 1:200

BACOLOD SUGAR ROAD (NORTH)
INTERSECTION WITH BACOLOD CITY-GRANADA ROAD
STA. 5+159.62

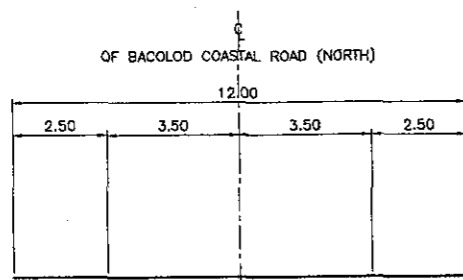
DRAWING NO.
R-47



INTERSECTION WITH BACOLOD CITY-GRANADA ROAD (TYPE C)
STA. 5+159.62



A-A' : SUGAR ROAD (NORTH) \\
BACOLOD COASTAL ROAD (NORTH)



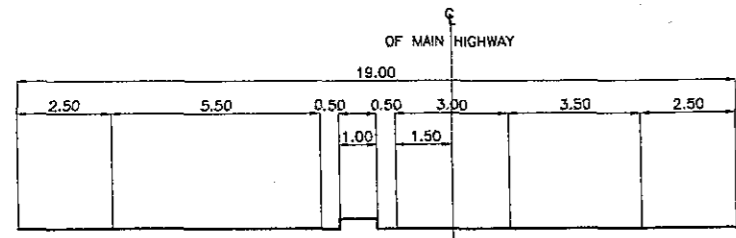
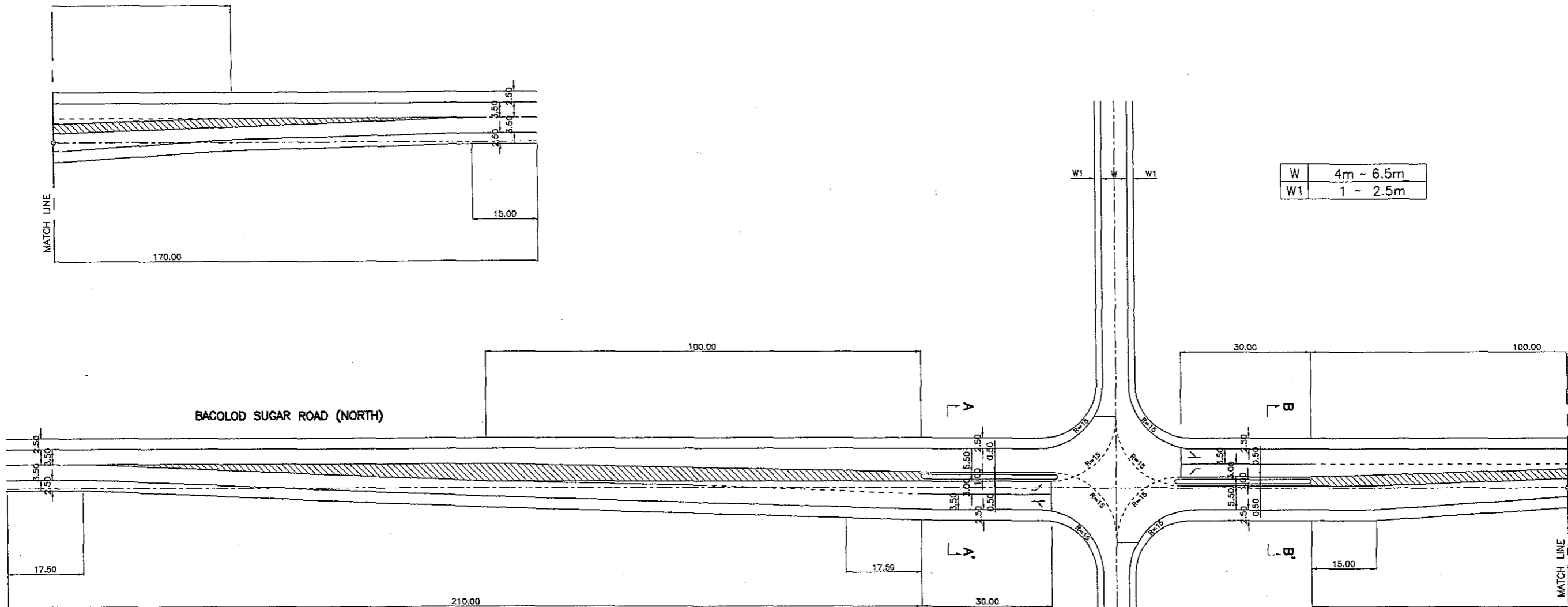
B-B' : BACOLOD COASTAL ROAD (NORTH)

INTERSECTION WITH BACOLOD COASTAL ROAD (TYPE O)
STA. 34+043.64, END. OF BACOLOD SUGAR ROAD (NORTH)

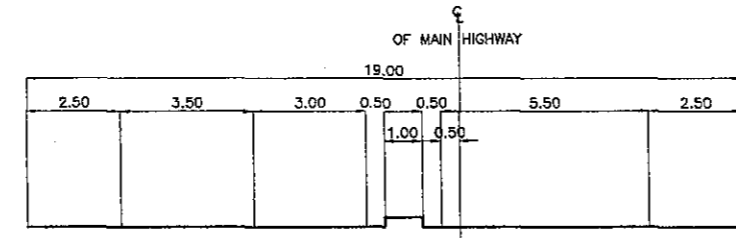
SCALE :
PLAN. 1:1000
SECTION. 1:200

BACOLOD SUGAR ROAD (NORTH)
INTRSECTION DETAILS WITH MINOR ROADS
(TYPE P)

DRAWING NO.
R-49



A-A' : MAIN HIGHWAY



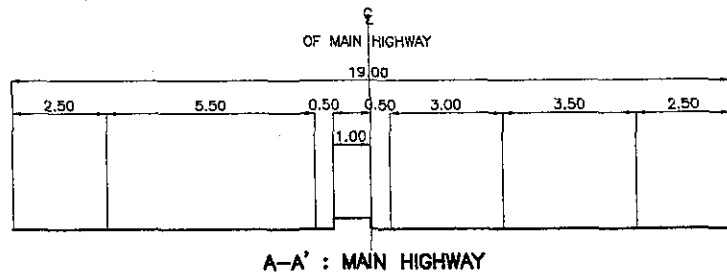
B-B' : MAIN HIGHWAY

INTERSECTION DETAILS WITH MINOR ROADS (TYPE P)

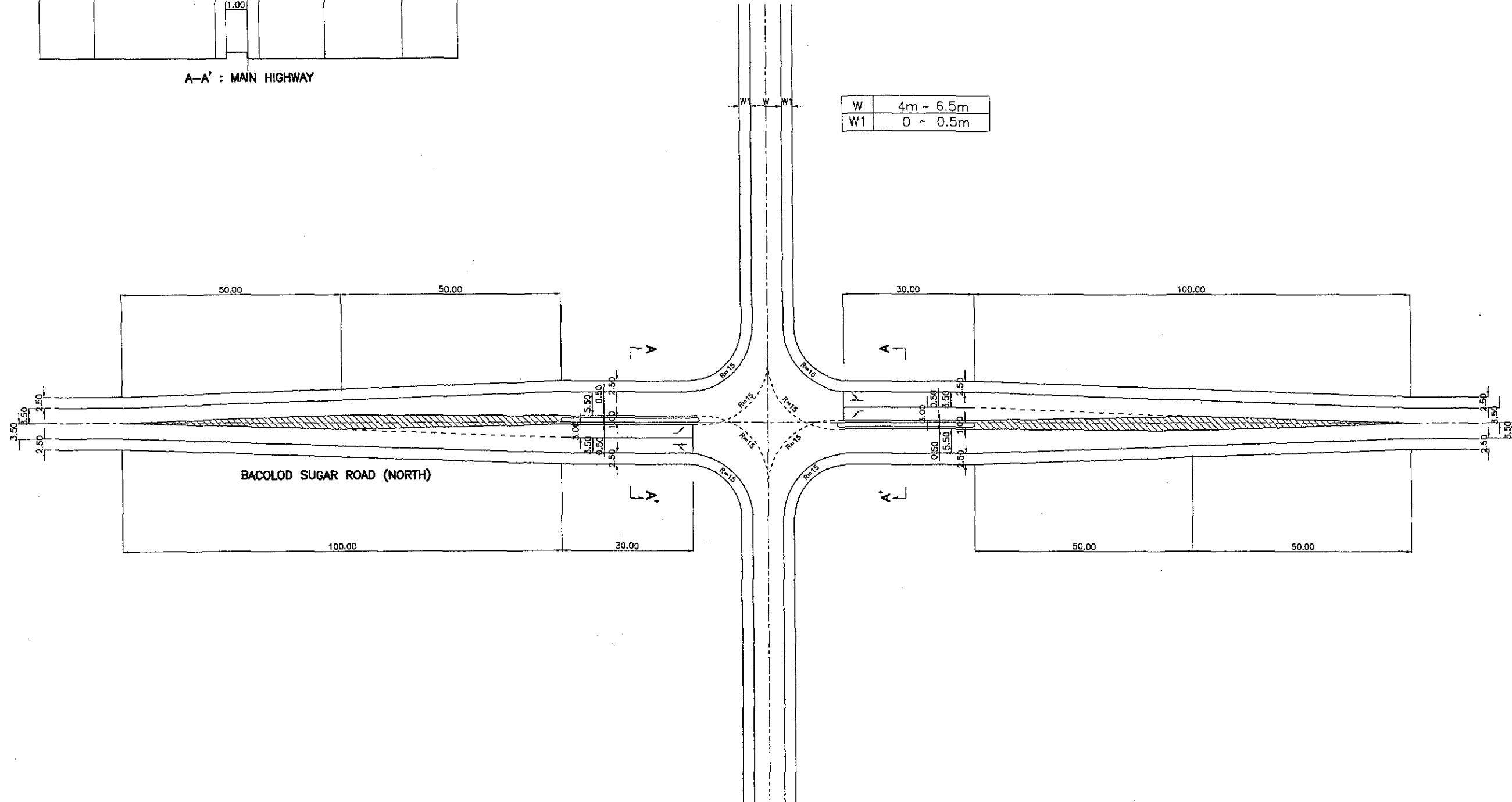
SCALE :
PLAN. 1:1000
SECTION.1:200

BACOLOD SUGAR ROAD (NORTH).
INTERSECTION DETAILS WITH MINOR ROADS
(TYPE Q)

DRAWING NO.
R-50



| | |
|----|-----------|
| W | 4m ~ 6.5m |
| W1 | 0 ~ 0.5m |



INTERSECTION DETAILS WITH MINOR ROADS (TYPE Q)

SCALE :
1:30000

BACOLOD SUGAR ROAD (NORTH)
LOCATION PLAN
AND BRIDGE LIST

DRAWING NO.
B-1

| Bridge No. | Station | | River Name | River Hydraulics | | | No. of Span | Span Length(m) | Proposed Bridge | | Superstructure Type |
|------------|----------------|----------------|-------------------------|------------------|------------------------------|--------------|-------------|----------------|------------------|------------|----------------------------|
| | Beg | End | | Elev. DFL | Q(m ³ /s) (50yrs) | Velocity m/s | | | Bridge Length(m) | Skew (deg) | |
| S-1 | Sta. 0+192.00 | Sta. 0+232.00 | MAGSUNGAY DACO CREEK | 44.20 | 111.89 | 2.45 | 1 | 40 | 40.00 | 65 | PCDG, AASHTO Type VI |
| S-2 | Sta. 0+788.00 | Sta. 0+823.00 | MAGSUNGAY RIVER | 43.70 | 49.81 | 2.20 | 1 | 35 | 35.00 | 107 | PCDG, AASHTO Type VI |
| S-3 | Sta. 2+642.00 | Sta. 2+702.00 | MAGSUNGAY PEQUENA RIVER | 61.30 | 96.14 | 2.11 | 3 | 20 | 60.00 | 105 | PCDG, AASHTO Type IV |
| S-4 | Sta. 4+822.00 | Sta. 4+891.00 | NGALAN RIVER | 74.30 | 106.83 | 2.07 | 3 | 22+25+22 | 60.00 | 120 | PCDG, AASHTO Type IV-B |
| S-5 | Sta. 6+008.00 | Sta. 6+036.00 | LOGOY RIVER 1 | 79.60 | 67.73 | 1.95 | 1 | 28 | 28.00 | - | PCDG, AASHTO Type IV-B |
| S-6 | Sta. 6+541.00 | Sta. 6+571.00 | LOGOY RIVER 2 | 71.60 | 40.00 | 2.42 | 1 | 30 | 30.00 | - | PCDG, AASHTO Type V |
| S-7 | Sta. 7+186.00 | Sta. 7+246.00 | LOGOY RIVER 3 | 61.80 | 102.39 | 2.36 | 2 | 35+25 | 60.00 | 80 | PCDG, AASHTO Type VI, IV-B |
| S-8 | Sta. 9+713.75 | Sta. 9+748.75 | LOGOY RIVER 4 | 67.20 | 42.26 | 2.54 | 1 | 35 | 35.00 | - | PCDG, AASHTO Type VI |
| S-9 | Sta. 11+478.00 | Sta. 11+538.00 | BANAGO RIVER | 73.80 | 130.99 | 2.63 | 2 | 30 | 60.00 | 105 | PCDG, AASHTO Type V |
| S-10 | Sta. 13+169.50 | Sta. 13+224.50 | IMBANG RIVER 1 | 66.50 | 415.54 | 3.22 | 3 | 18+23+16 | 55.00 | 70 | RCDG |
| S-11 | Sta. 13+594.30 | Sta. 13+624.30 | SINULJAN CREEK | 57.80 | 69.66 | 2.37 | 1 | 30 | 30.00 | - | PCDG, AASHTO Type V |
| S-12 | Sta. 14+244.50 | Sta. 14+324.50 | IMBANG RIVER 2 | 48.10 | 67.45 | 2.09 | 2 | 40 | 80.00 | 120 | PCDG, AASHTO Type VI |
| S-13 | Sta. 16+819.00 | Sta. 16+914.00 | HINALINAN RIVER | 48.60 | 475.54 | 3.18 | 3 | 35+30+30 | 95.00 | 65 | PCDG, AASHTO Type VI,V |
| S-14 | Sta. 17+880.00 | Sta. 17+910.00 | MUYAO CREEK | 48.40 | 65.01 | 1.68 | 1 | 30 | 30.00 | - | PCDG, AASHTO Type V |
| S-15 | Sta. 19+101.20 | Sta. 19+191.20 | MALISBOG RIVER | 41.10 | 554.06 | 2.45 | 4 | 20+25+25+20 | 90.00 | - | PCDG, AASHTO Type IV-B |
| S-16 | Sta. 21+007.00 | Sta. 21+072.00 | NAPILAS RIVER | 30.10 | 375.32 | 2.49 | 2 | 35+30 | 65.00 | - | PCDG, AASHTO Type V |
| S-17 | Sta. 23+012.00 | Sta. 23+338.00 | MALOGO RIVER | 36.60 | 1451.86 | 2.75 | 9 | 3-3@36 | 324.00 | - | PCDG, AASHTO Type VI |
| S-18 | Sta. 27+962.00 | Sta. 28+022.00 | MALJAO RIVER | 18.90 | 63.19 | 1.67 | 2 | 30 | 60.00 | - | PCDG, AASHTO Type V |
| S-19 | Sta. 32+305.50 | Sta. 32+372.50 | MAGNANOD RIVER | 13.80 | 320.91 | 2.03 | 3 | 20+27+20 | 67.00 | - | PCDG, AASHTO Type IV-B |

START OF SUGAR ROAD
STA. 0 + 000.00

BRIDGE NO. S-2
PCDG, 1 SPAN
STA. 0 + 788.00
L = 35.00m

BRIDGE NO. S-5
PCDG, 1 SPAN
STA. 6 + 008.00
L = 28.00m

BRIDGE NO. S-3
PCDG, 3 SPANS
STA. 2 + 642.00
L = 60.00m

BRIDGE NO. S-6
PCDG, 1 SPAN
STA. 6 + 541.00
L = 30 M

BRIDGE NO. S-10
RCDG, 3 SPANS
STA. 13 + 169.50
L = 55.00m

BRIDGE NO. S-14
PCDG, 1 SPAN
STA. 17 + 880.00
L = 30.00m

BRIDGE NO. S-1
PCDG, 1 SPAN
STA. 0 + 192.00
L = 40.00m

BRIDGE NO. S-4
PCDG, 3 SPANS
STA. 4 + 822.00
L = 69.00m

BRIDGE NO. S-7
PCDG, 2 SPANS
STA. 7 + 186.00
L = 60.00m

BRIDGE NO. S-8
PCDG, 1 SPAN
STA. 9 + 713.75
L = 35.00m

BRIDGE NO. S-12
PCDG, 2 SPANS
STA. 14 + 244.50
L = 80.00m

BRIDGE NO. S-16
PCDG, 2 SPANS
STA. 21 + 007.00
L = 65.00m

BRIDGE NO. S-18
PCDG, 2 SPANS
STA. 27 + 962.00
L = 60.00m

END OF SUGAR ROAD
STA. 34 + 043.64

BRIDGE NO. S-9
PCDG, 2 SPANS
STA. 11 + 478.00
L = 60.00m

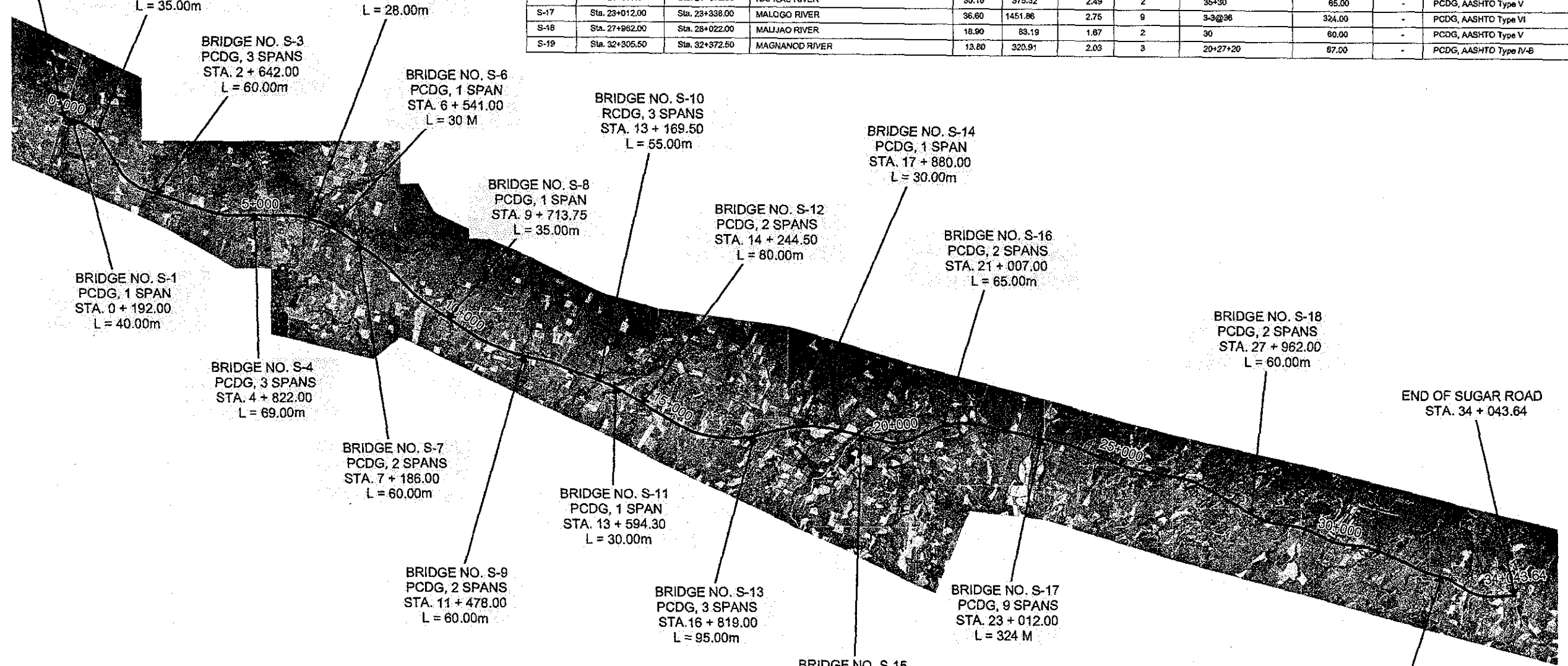
BRIDGE NO. S-11
PCDG, 1 SPAN
STA. 13 + 594.30
L = 30.00m

BRIDGE NO. S-13
PCDG, 3 SPANS
STA. 16 + 819.00
L = 95.00m

BRIDGE NO. S-15
PCDG, 4 SPANS
STA. 19 + 101.20
L = 90.00m

BRIDGE NO. S-17
PCDG, 9 SPANS
STA. 23 + 012.00
L = 324 M

BRIDGE NO. S-19
PCDG, 3 SPANS
STA. 32 + 305.50
L = 67.00m



SCALE
AS SHOWN

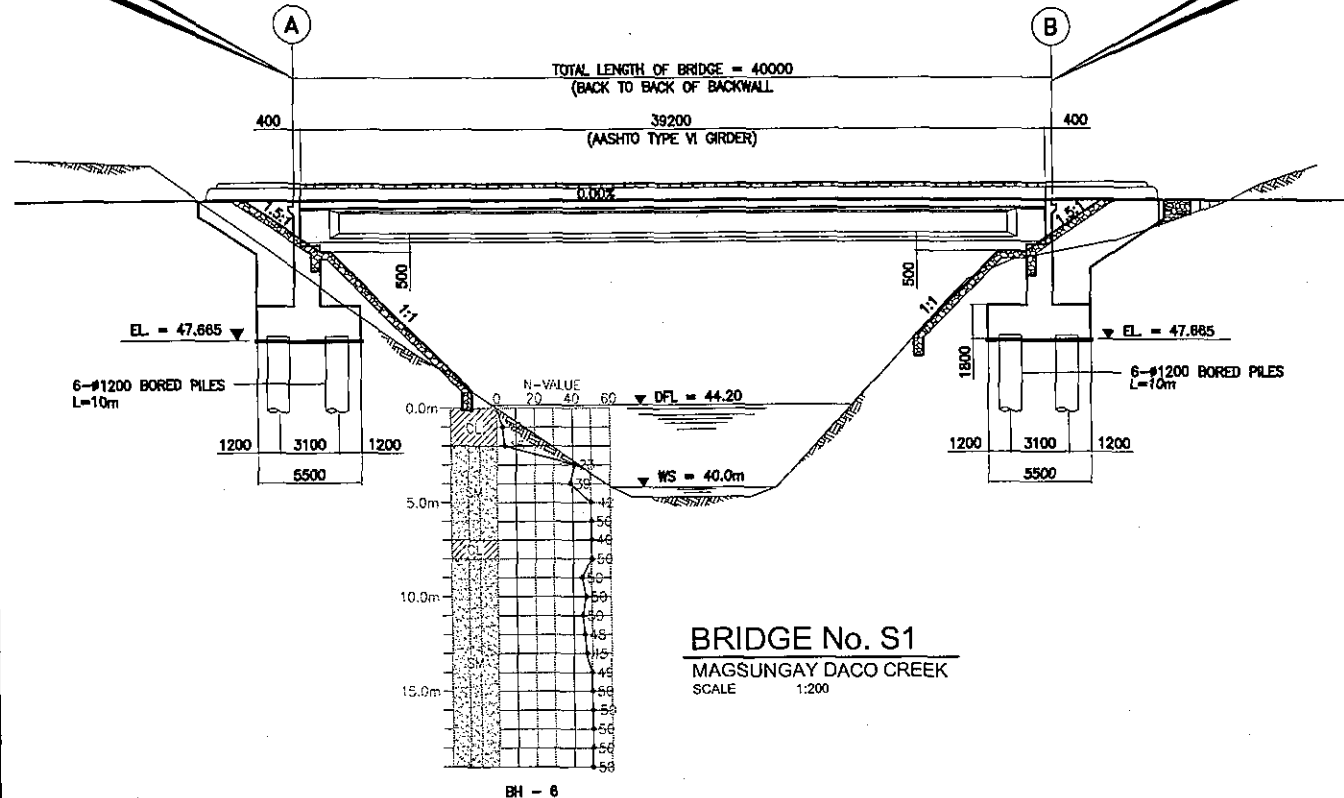
BACOLOD SUGAR ROAD (NORTH)
BRIDGE ELEVATIONS, S1 TO S4

DRAWING NO.
B-2

BEG. OF BRIDGE
BACK OF BACKWALL
STA. 0+192.00
ELEV. = 55.165m

Q (50) 111.69 cms
V 2.45 mps

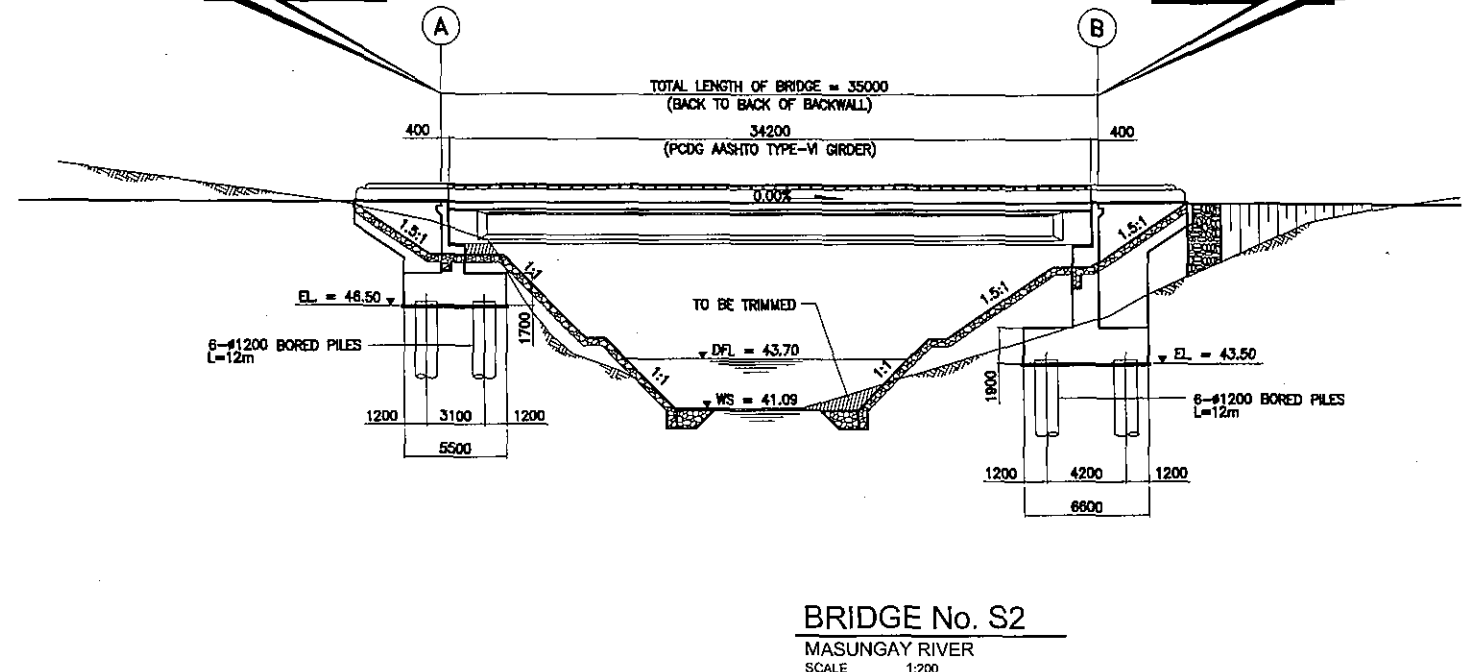
END OF BRIDGE
BACK OF BACKWALL
STA. 0+232.00
ELEV. = 55.165m



BEG. OF BRIDGE
BACK OF BACKWALL
STA. 0+788.00
ELEV. = 52.00m

Q (50) 49.81 cms
V 2.20 mps

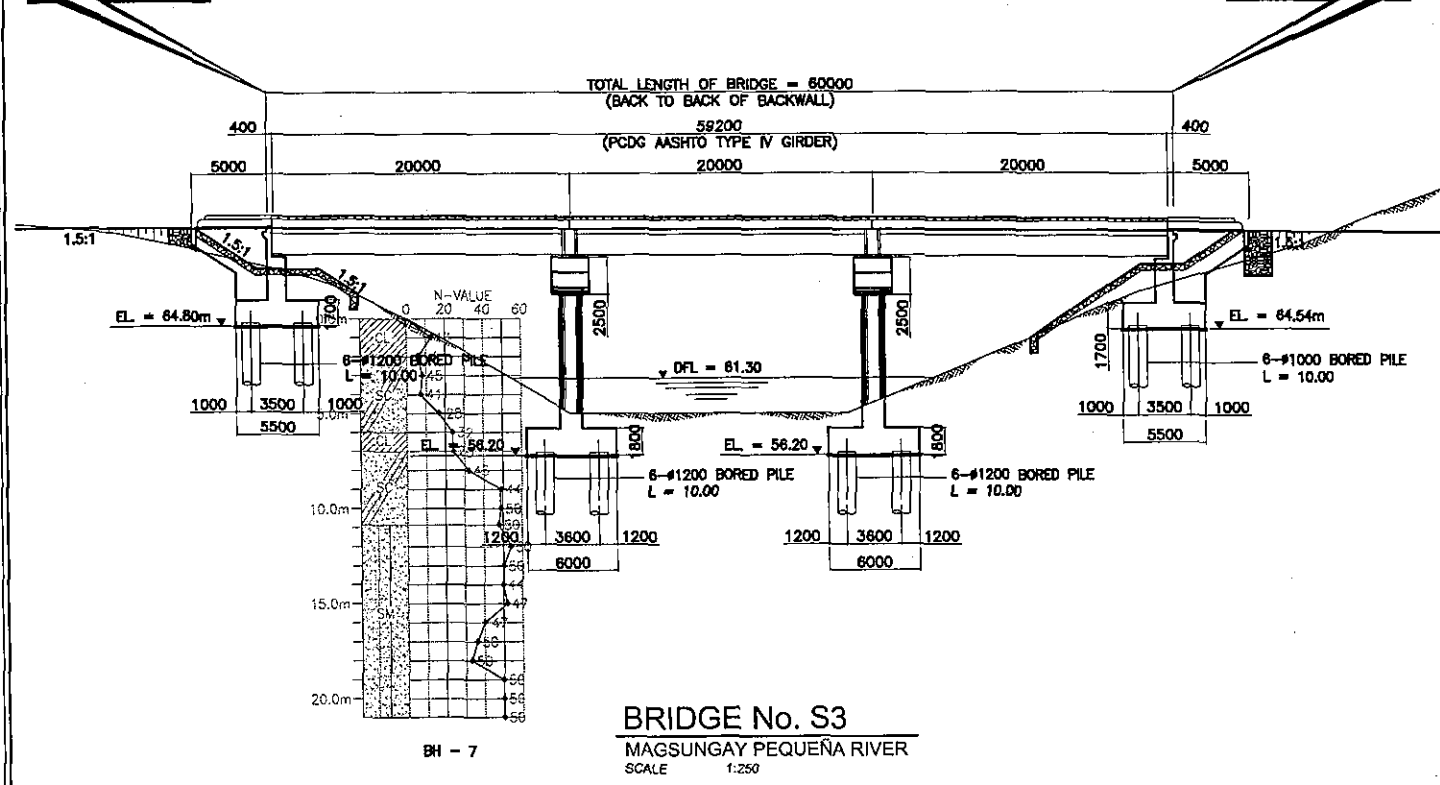
END OF BRIDGE
BACK OF BACKWALL
STA. 0+823.00
ELEV. = 52.00m



END OF BRIDGE
BACK OF BACKWALL
STA. 2+642.00
ELEV. = 71.30m

Q (50) 95.14 cms
V 2.11 mps

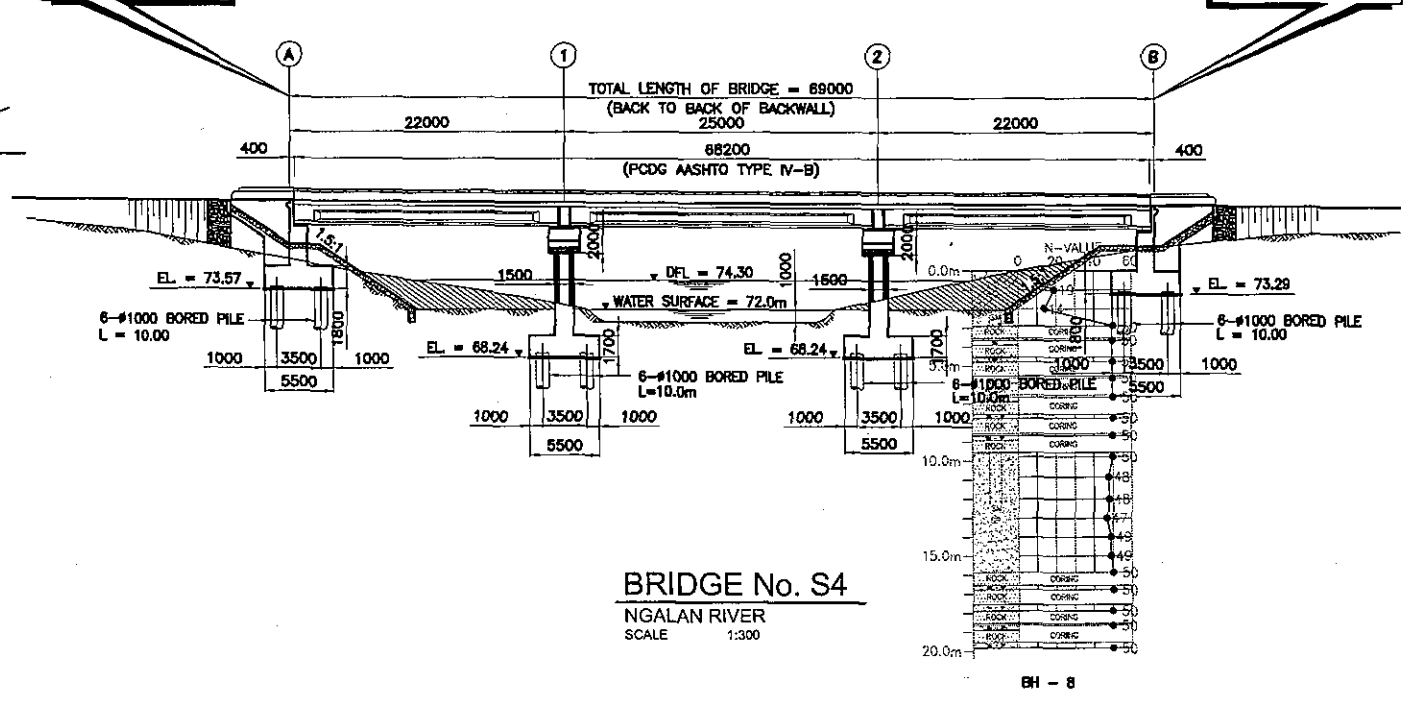
END OF BRIDGE
BACK OF BACKWALL
STA. 2+702.00
ELEV. = 71.04m



BEG. OF BRIDGE
BACK OF BACKWALL
STA. 4+822.00
ELEV. = 80.57m

Q (50) 108.83 cms
V 2.07 mps

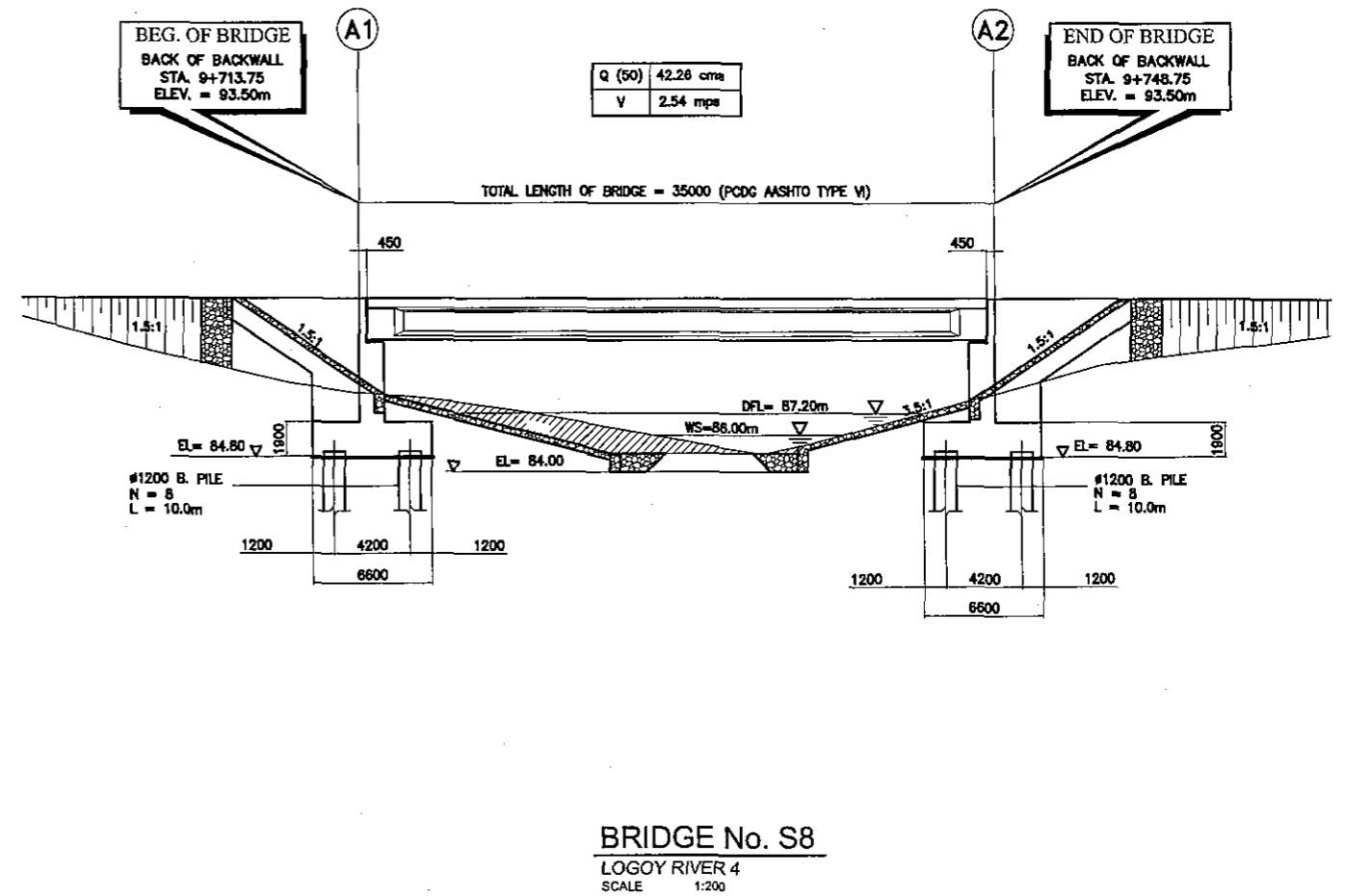
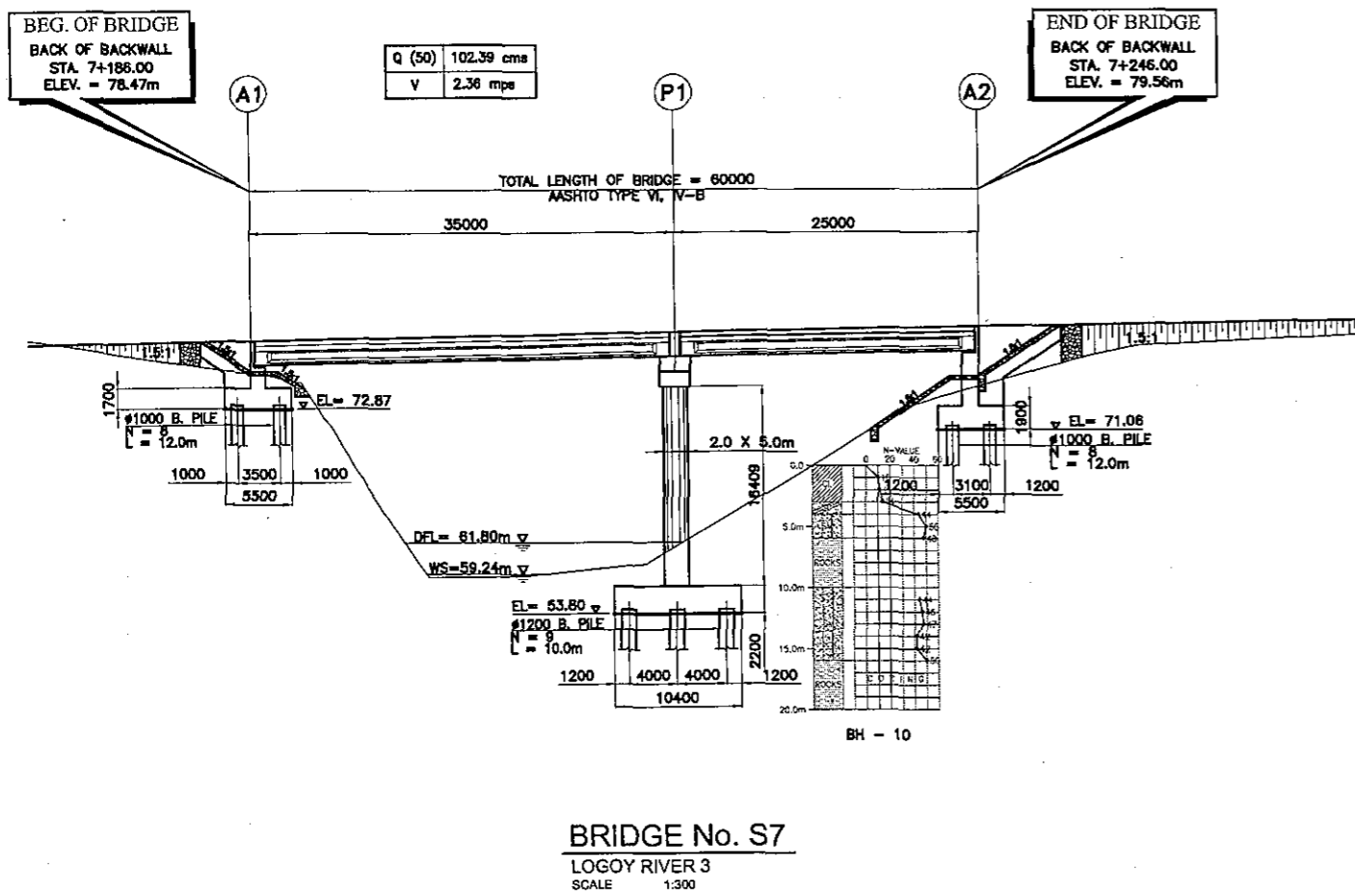
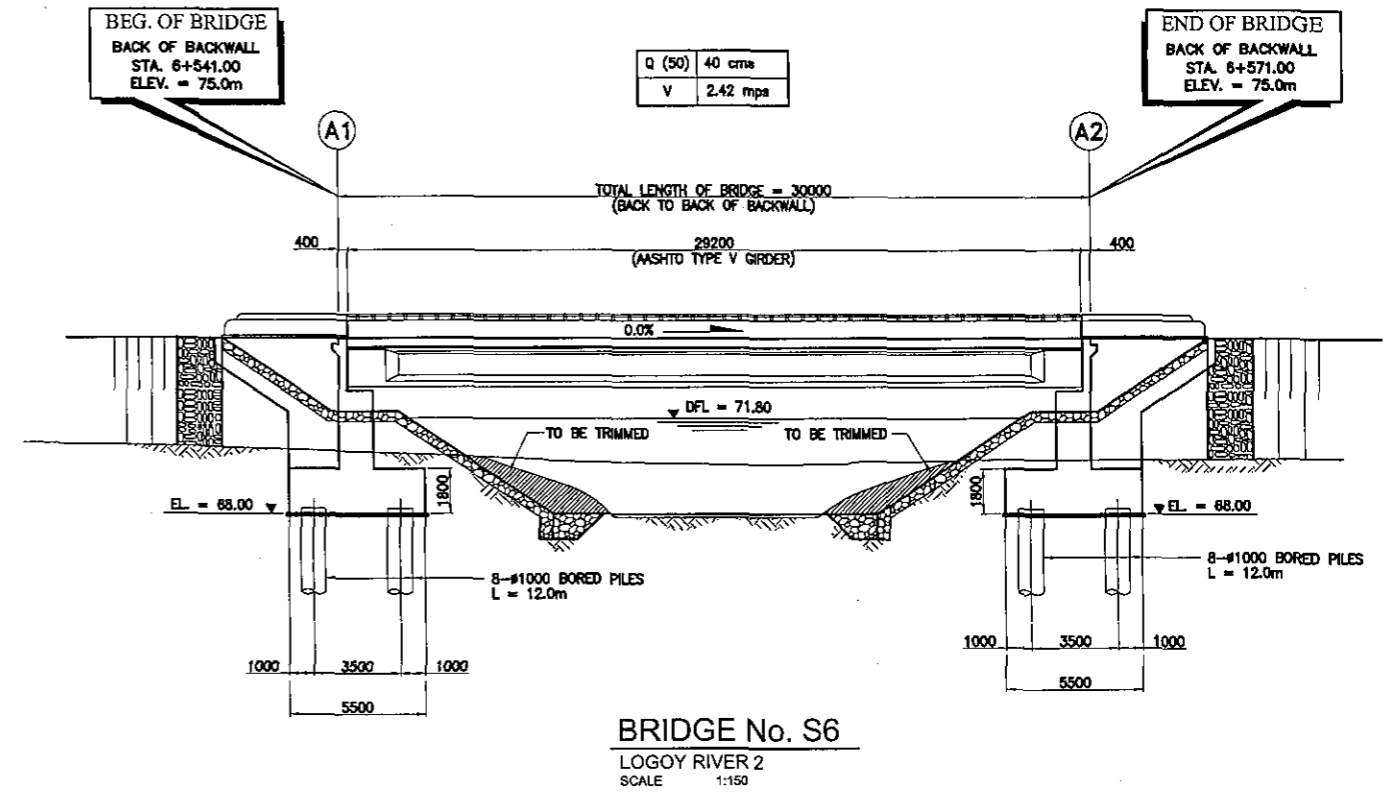
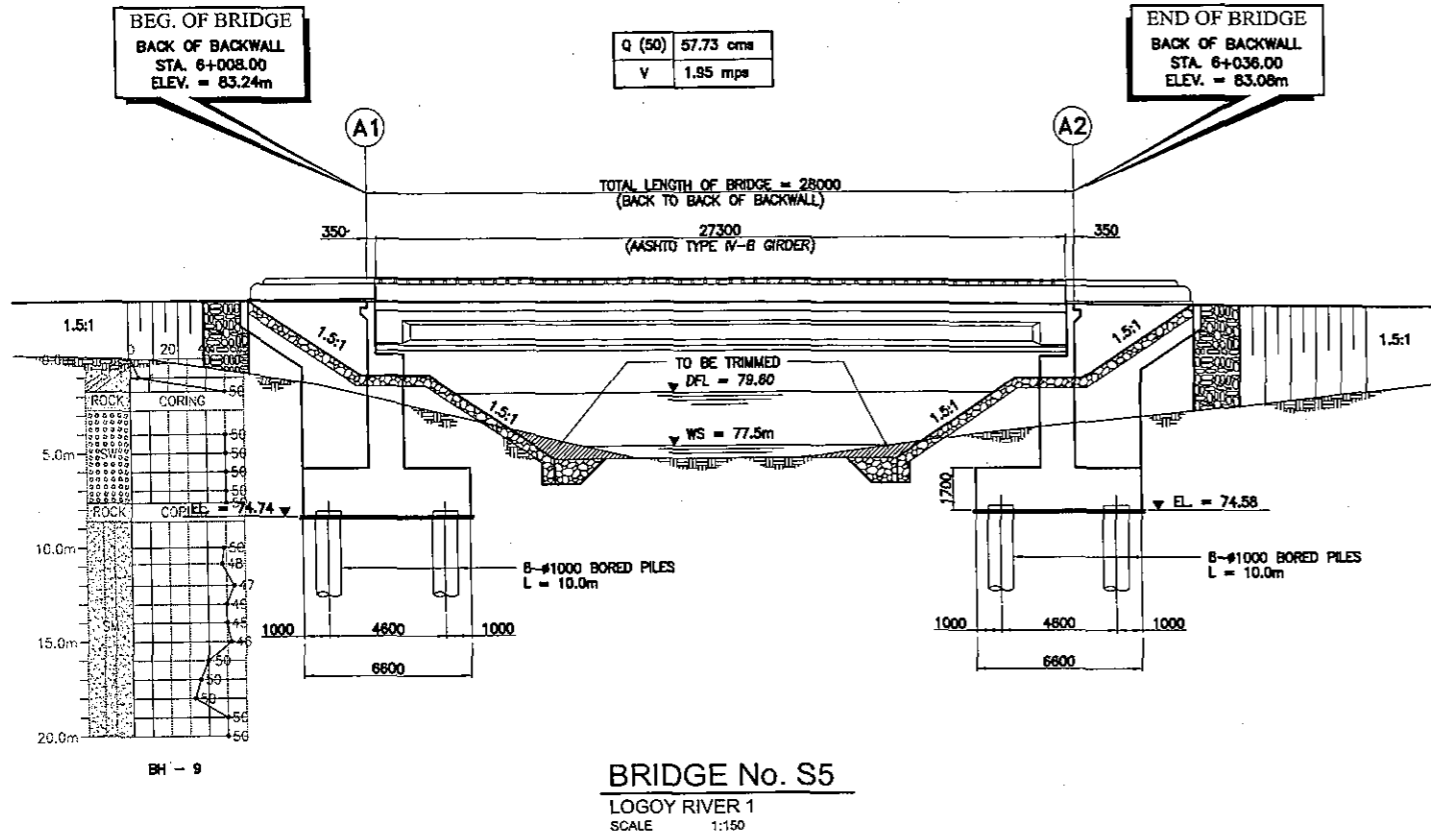
END OF BRIDGE
BACK OF BACKWALL
STA. 4+891.00
ELEV. = 80.29m



SCALE
AS SHOWN

BACOLOD SUGAR ROAD (NORTH)
BRIDGE ELEVATIONS, S5 TO S8

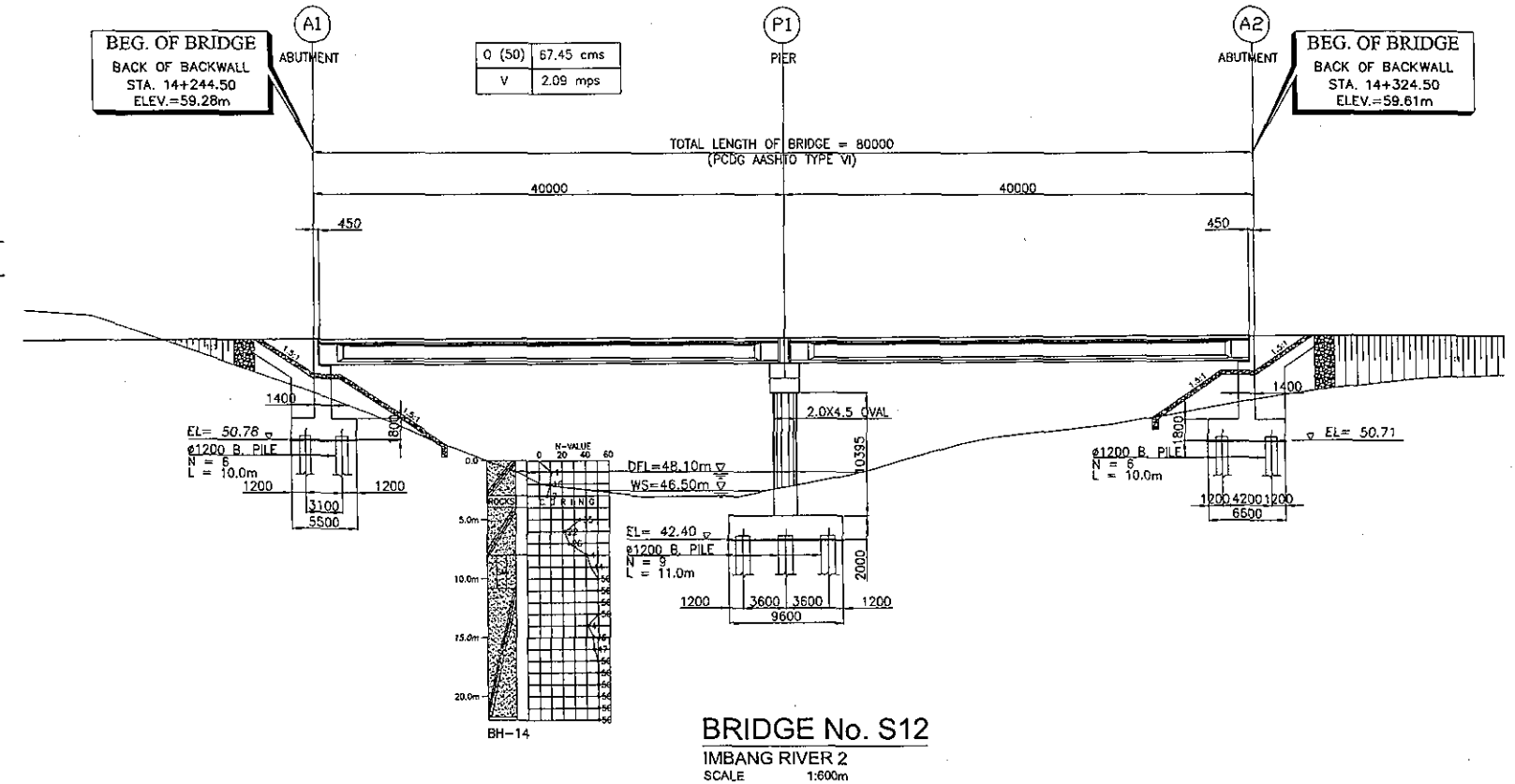
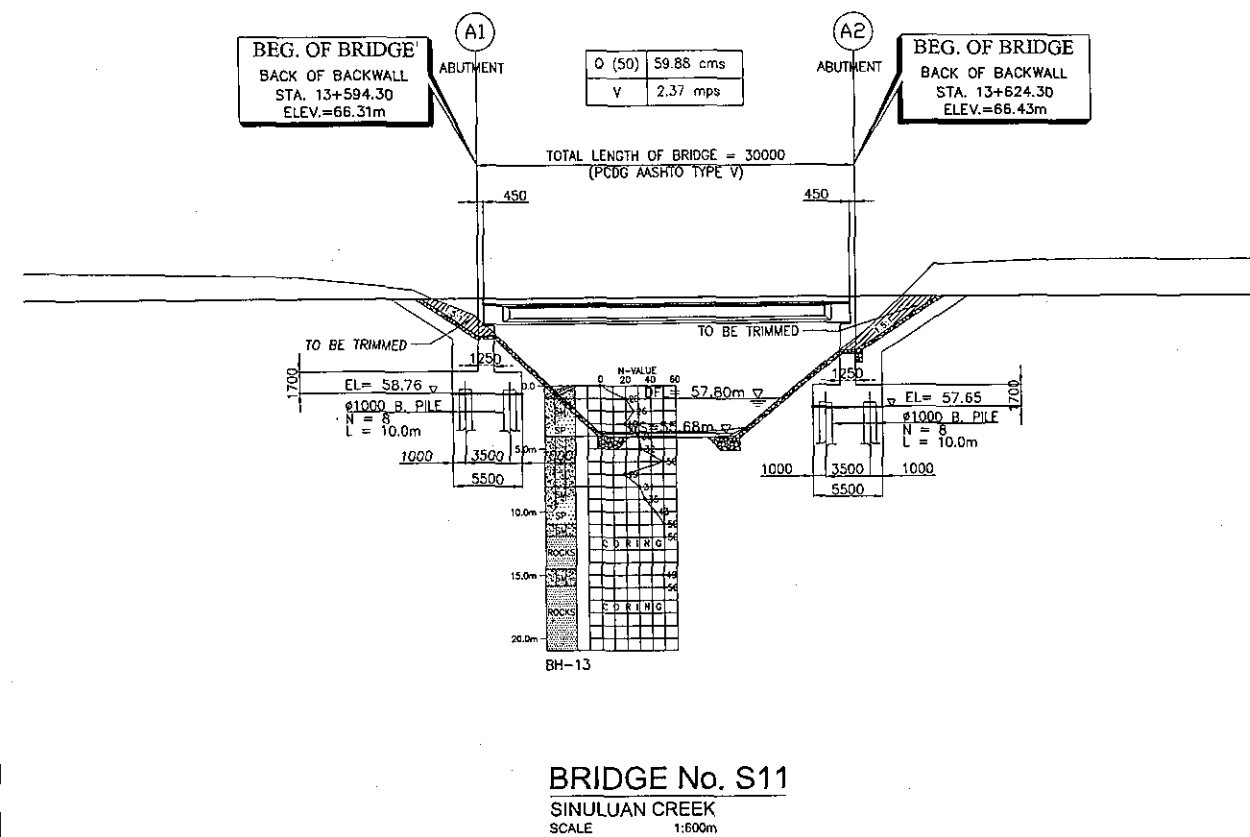
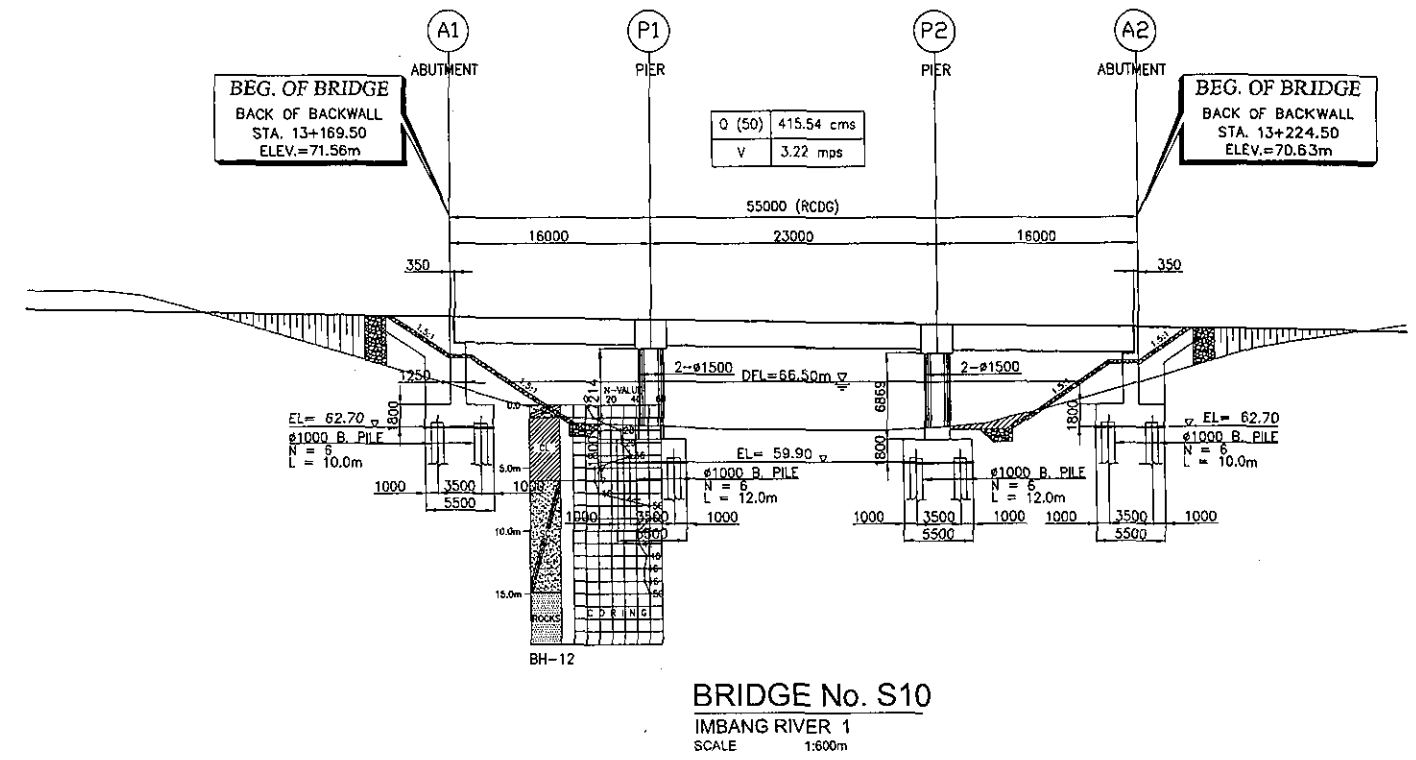
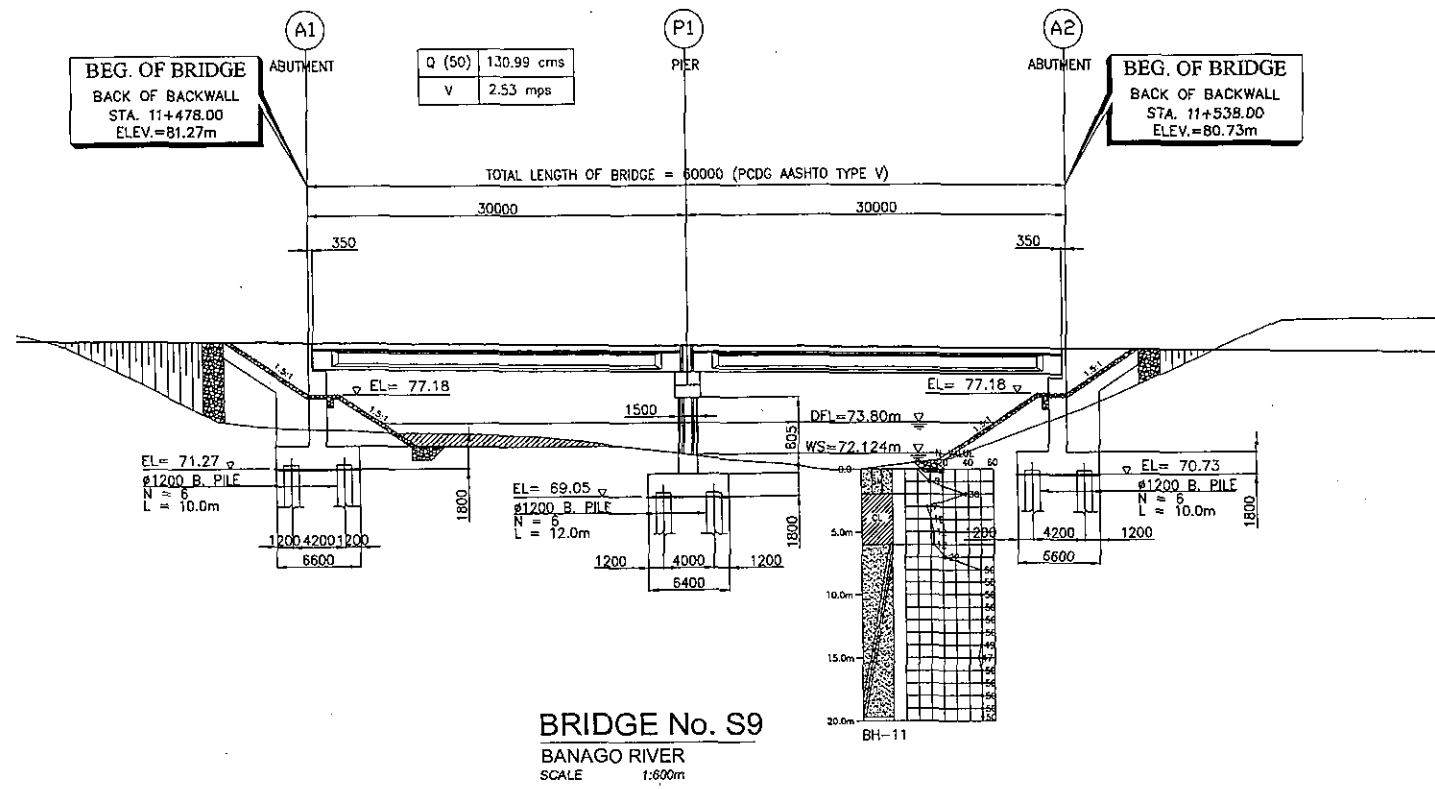
DRAWING NO.
B-3

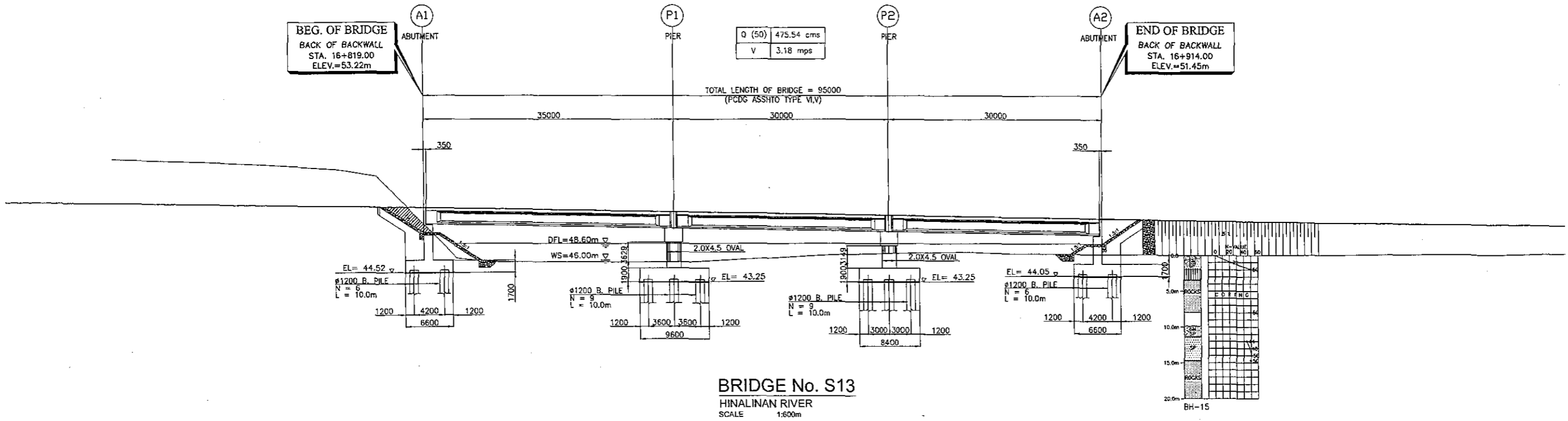


SCALE :
AS SHOWN

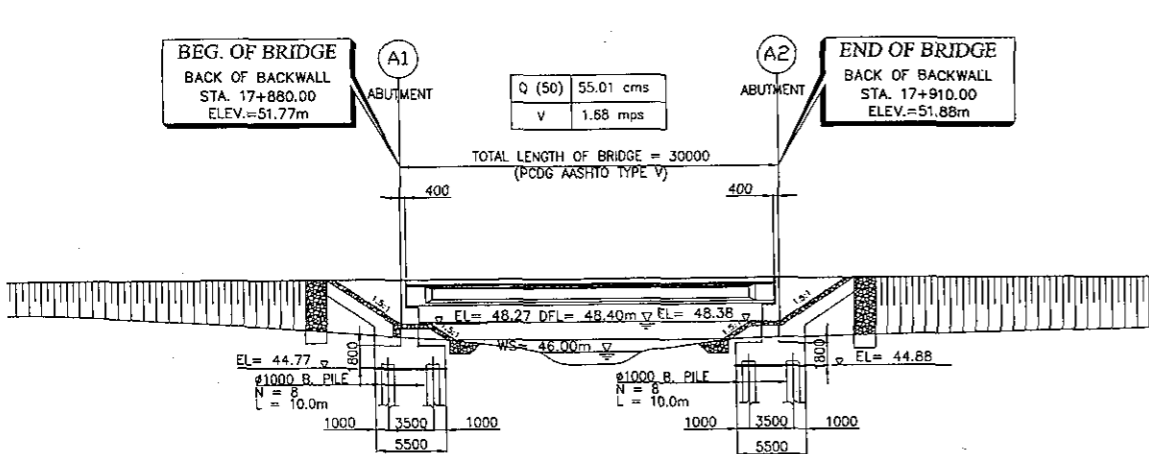
BACOLOD SUGAR ROAD (NORTH)
BRIDGE ELEVATIONS S9 TO S12

DRAWING NO.
B-4

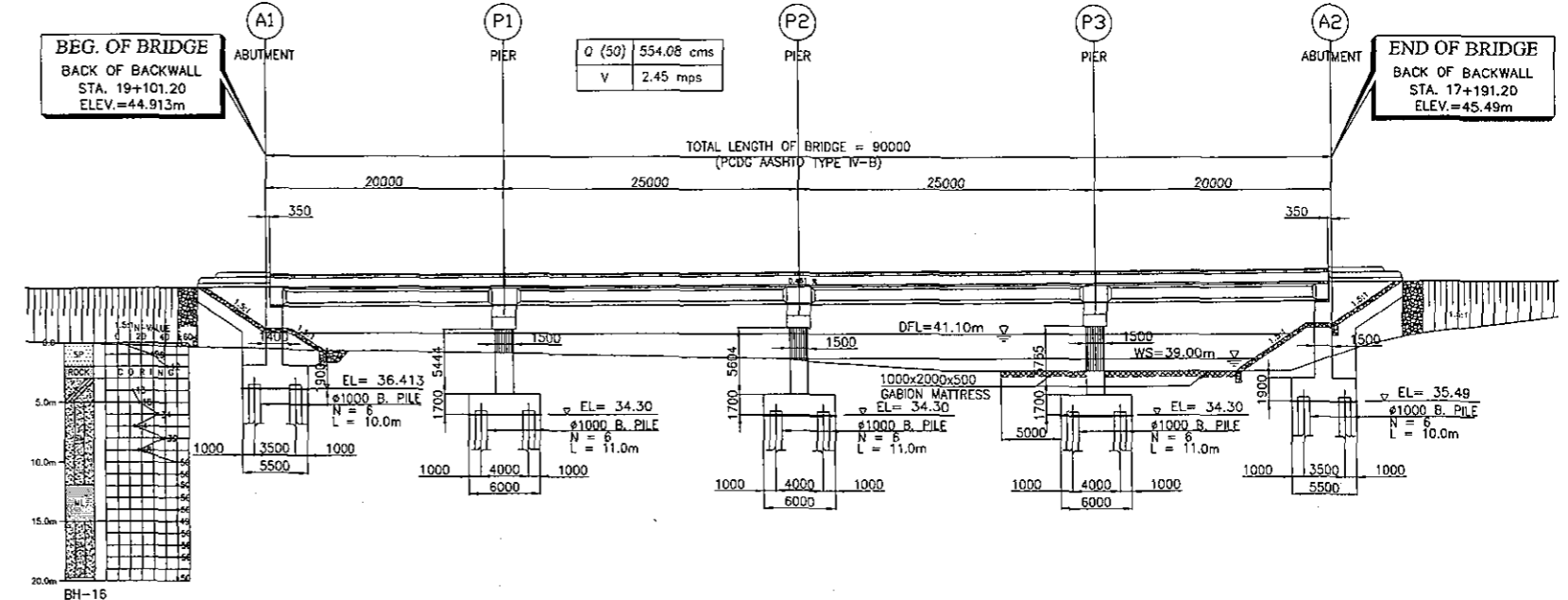




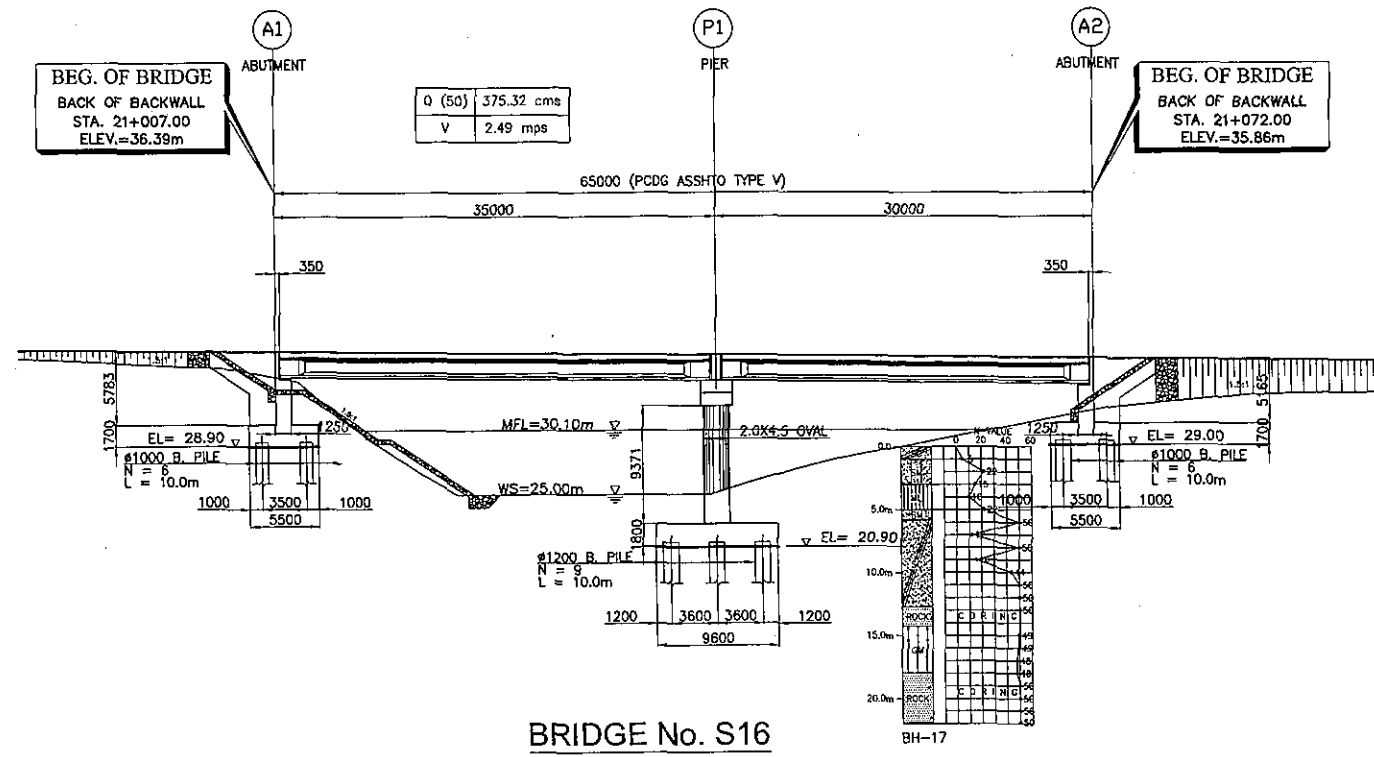
BRIDGE No. S13
HINALINAN RIVER
SCALE 1:600m



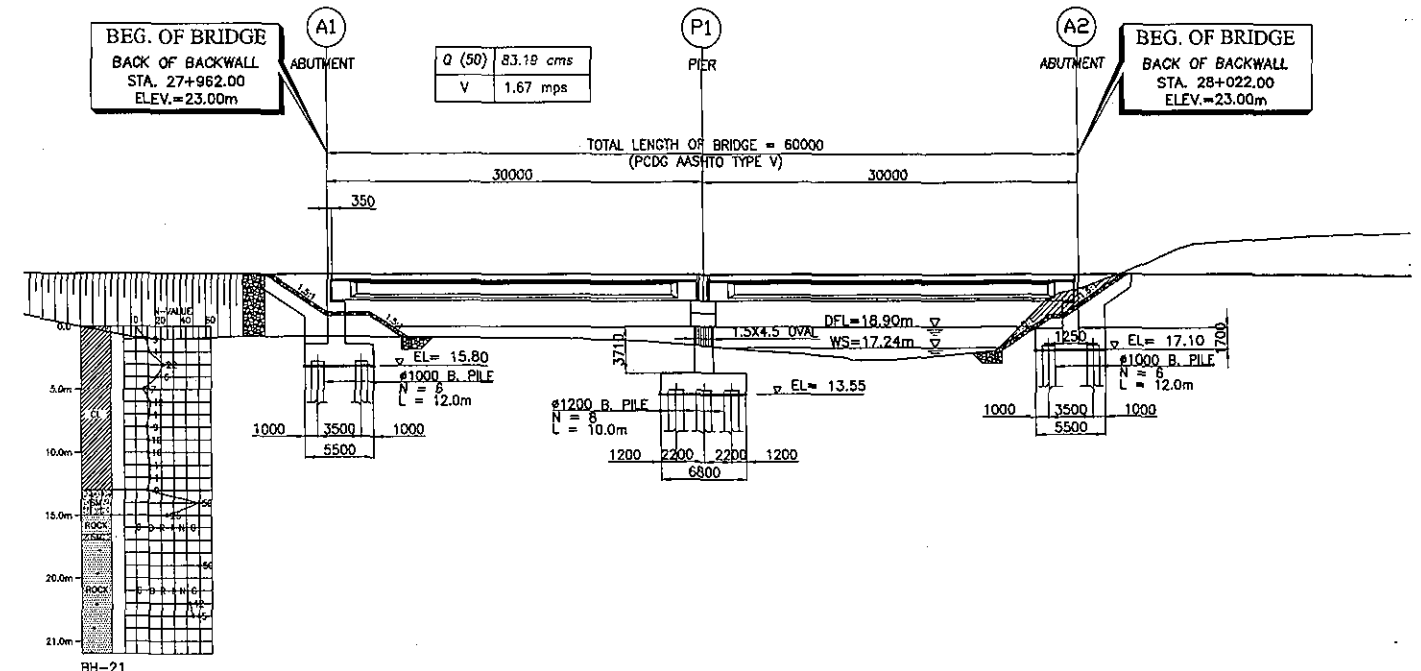
BRIDGE No. S14
SINLUAN CREEK
SCALE 1:600m



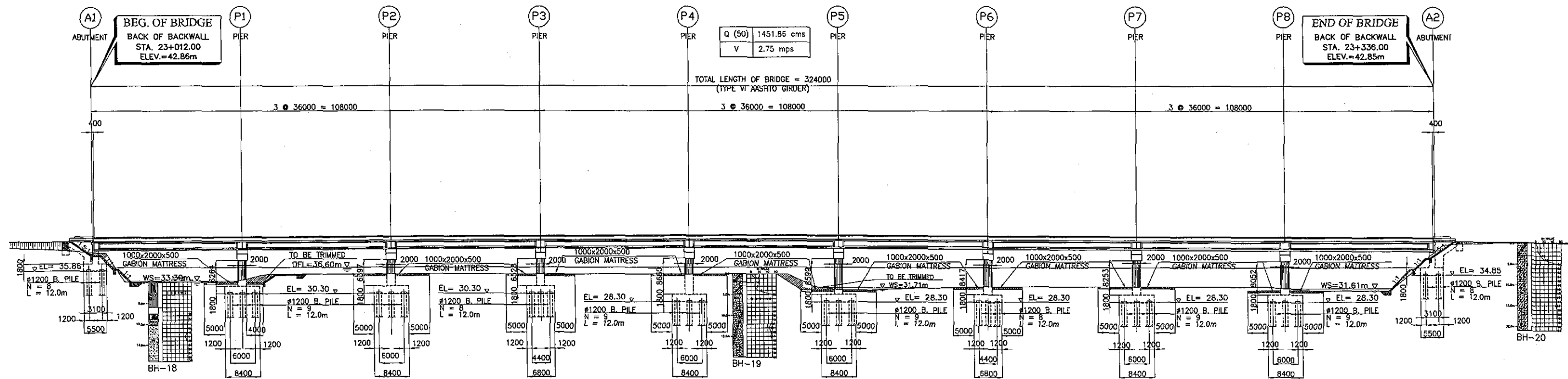
BRIDGE No. S15
MALISBOG RIVER
SCALE 1:600m



BRIDGE No. S16
NAPILAS RIVER
SCALE 1:600m



BRIDGE No. S18
MALJAO RIVER
SCALE 1:600m

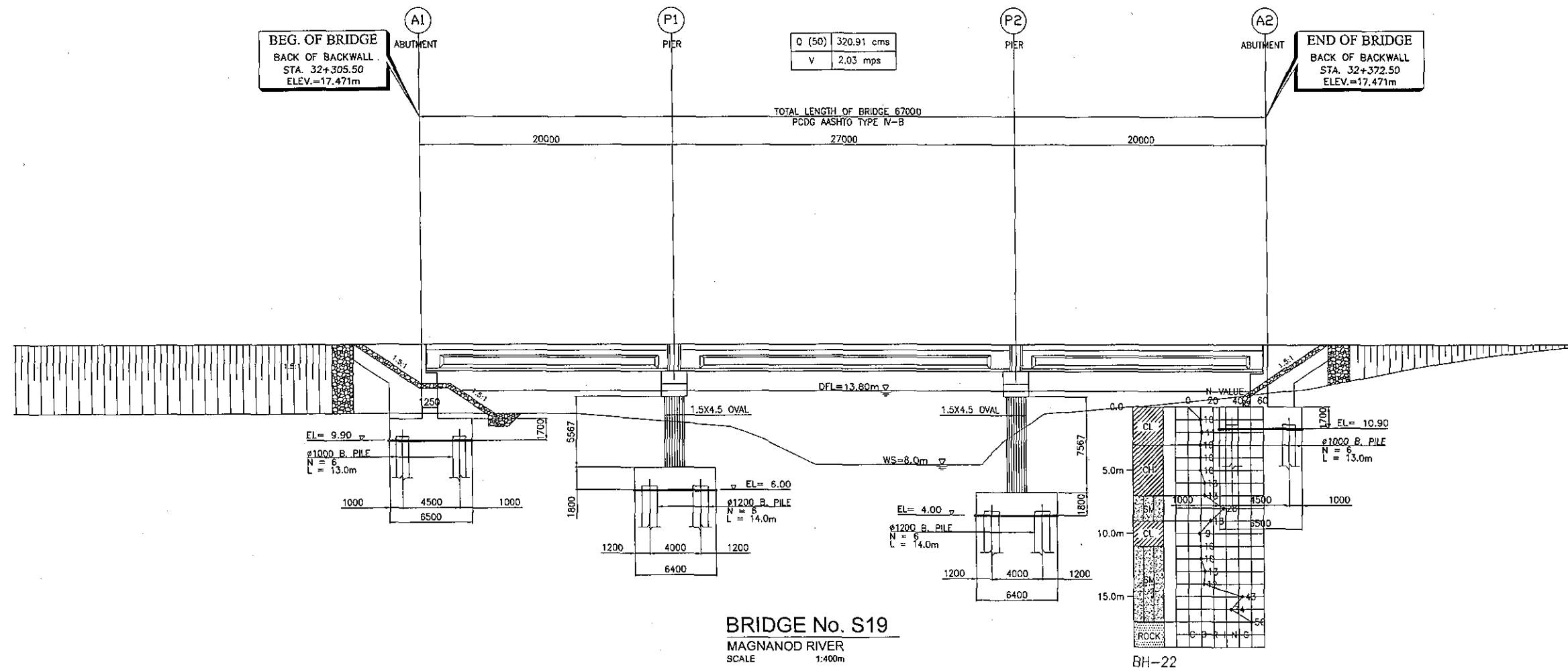


BRIDGE No. S17
MALOGO RIVER
SCALE 1:1000m

SCALE :
AS SHOWN

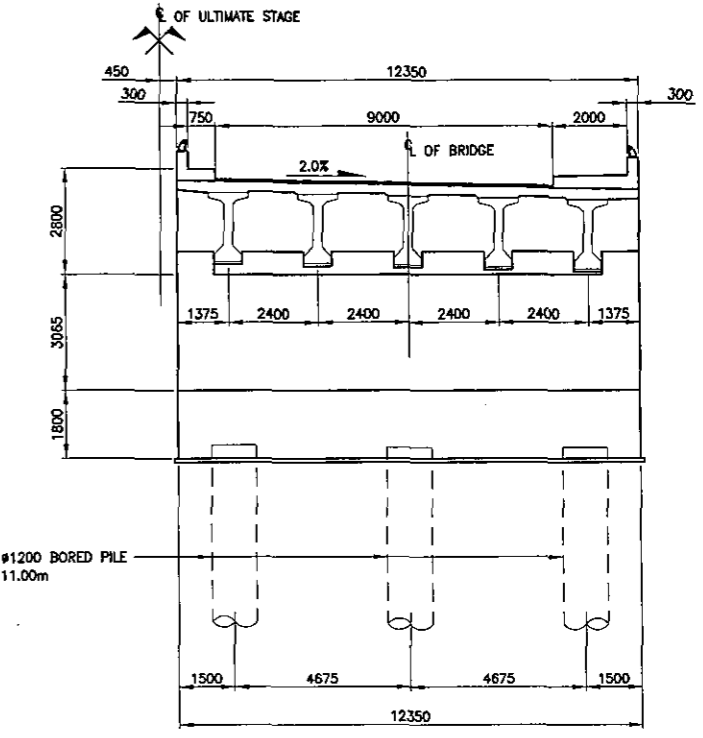
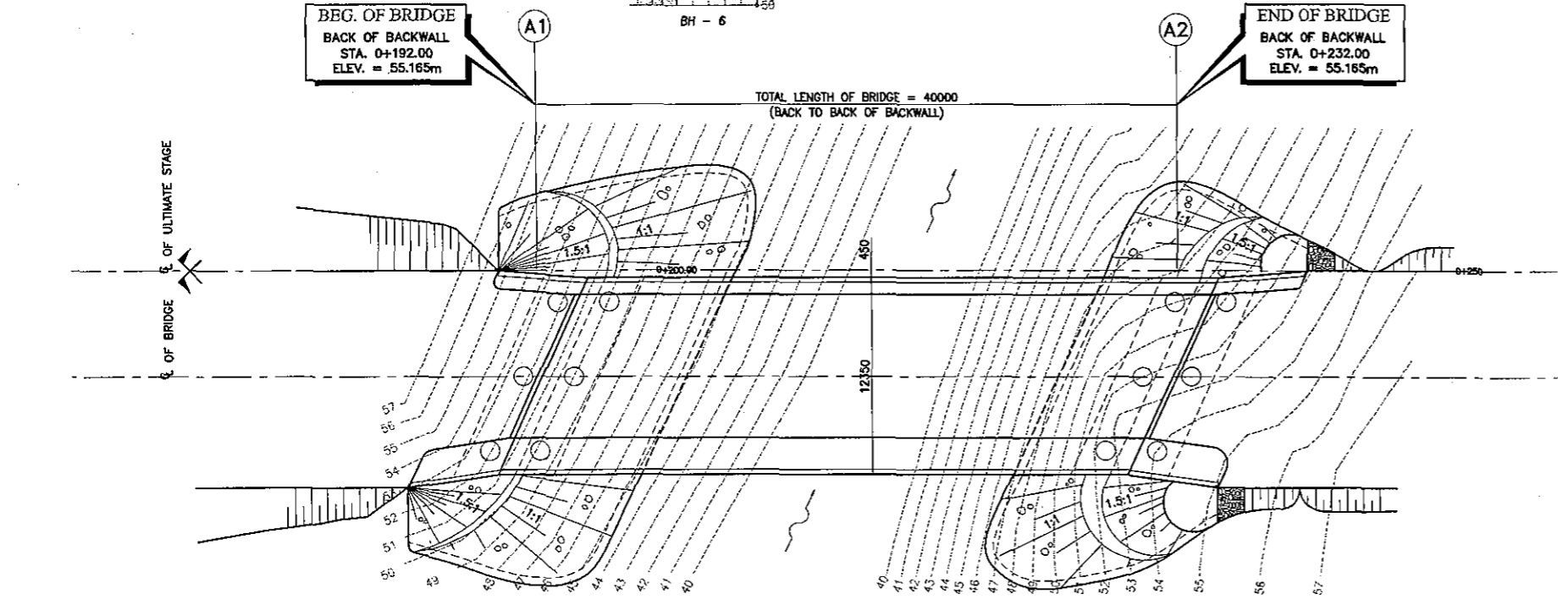
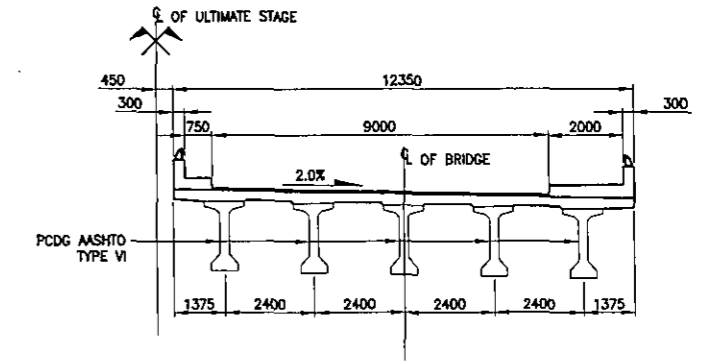
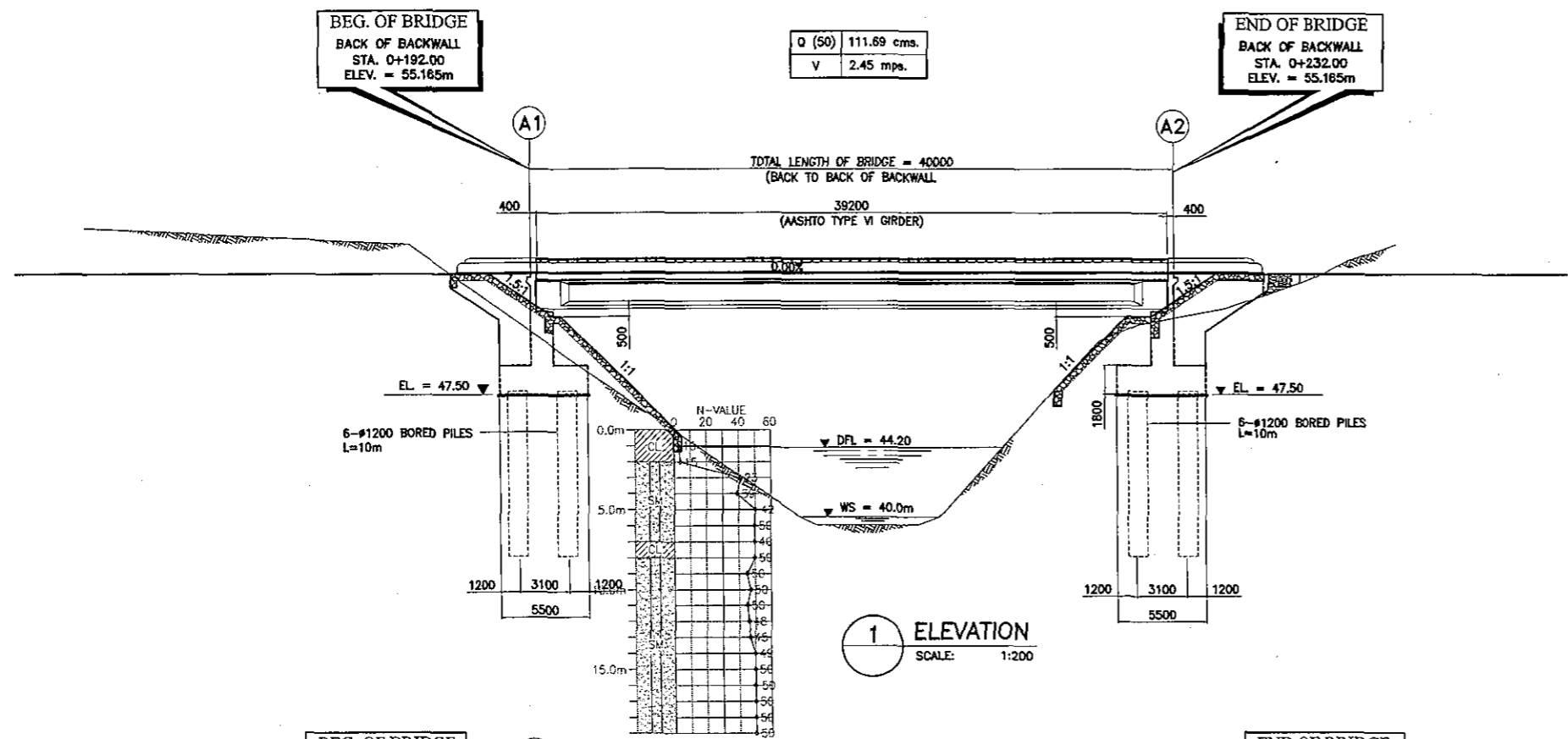
BACOLOD SUGAR ROAD ALIGNMENT
BRIDGE ELEVATION, S19

DRAWING NO.
B-7



THE STUDY ON ROAD NETWORK IMPROVEMENT
FOR DEVELOPMENT OF REGIONAL GROWTH CENTERS

| | | |
|----------|---|-------------|
| SCALE | BACOLOD SUGAR ROAD (NORTH) BRIDGE NO. S1 (MAGSUNGAY DACO CREEK) STA. 0+192.00 - STA. 0+232.00 GENERAL PLAN, ELEVATION AND SECTIONS | DRAWING NO. |
| AS SHOWN | | B-8 |



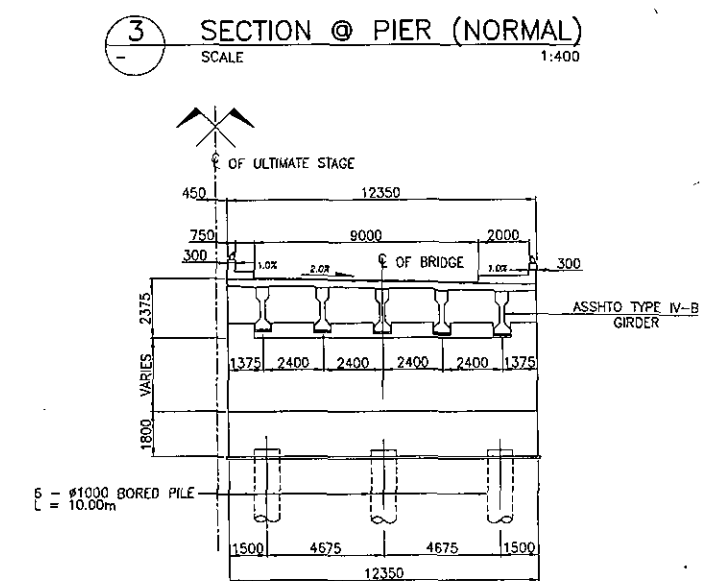
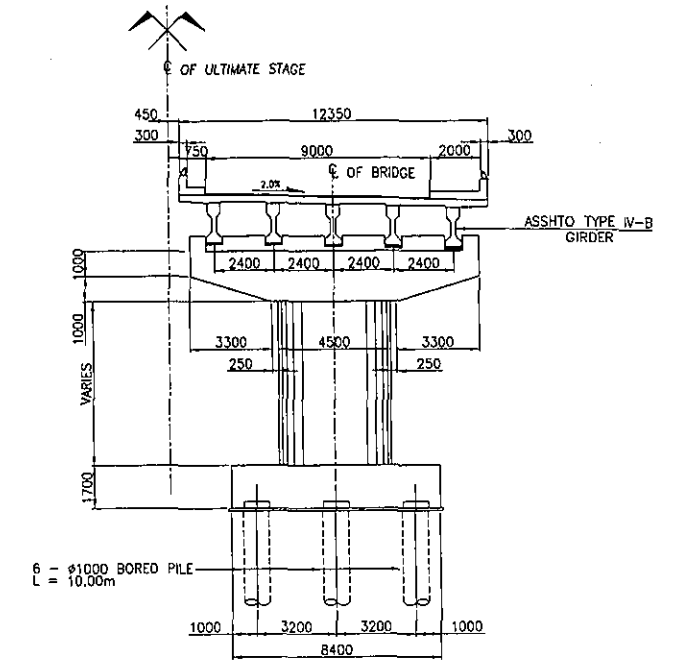
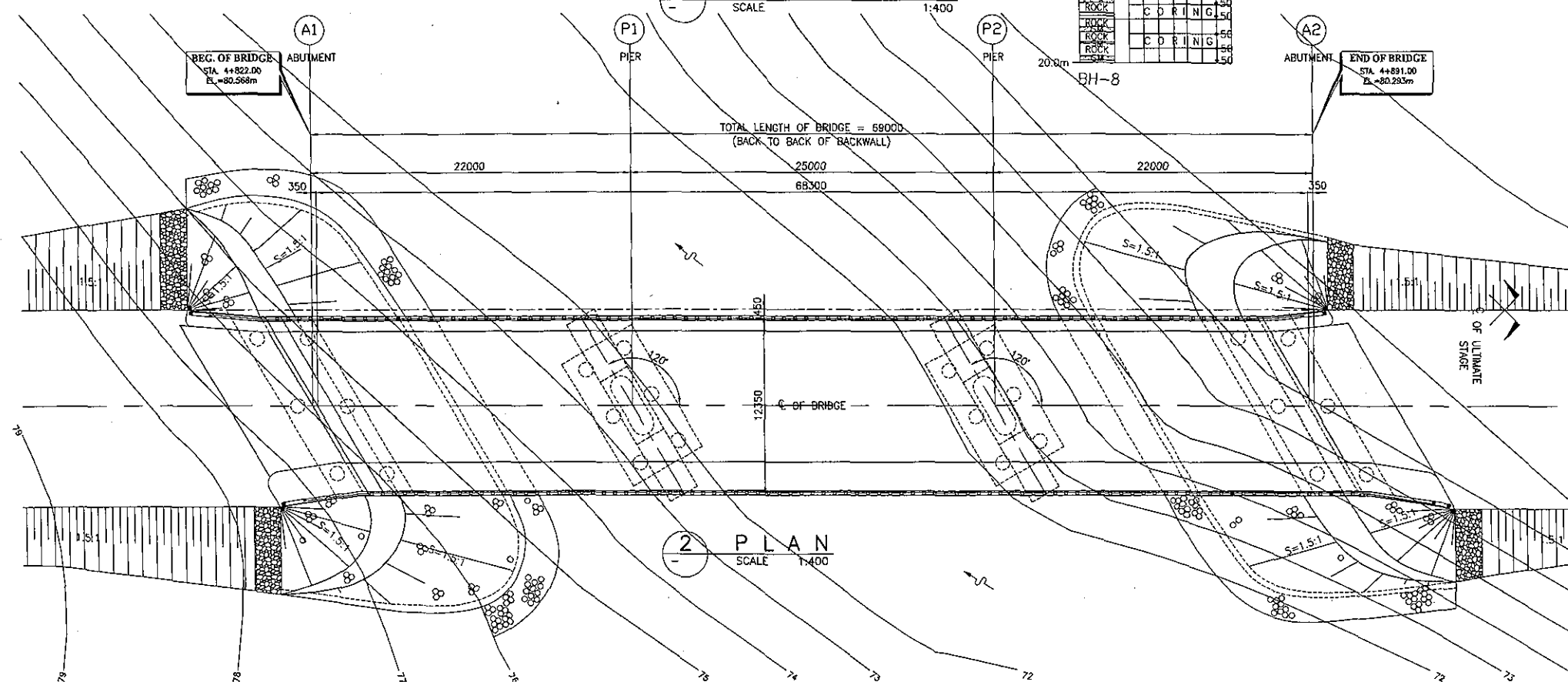
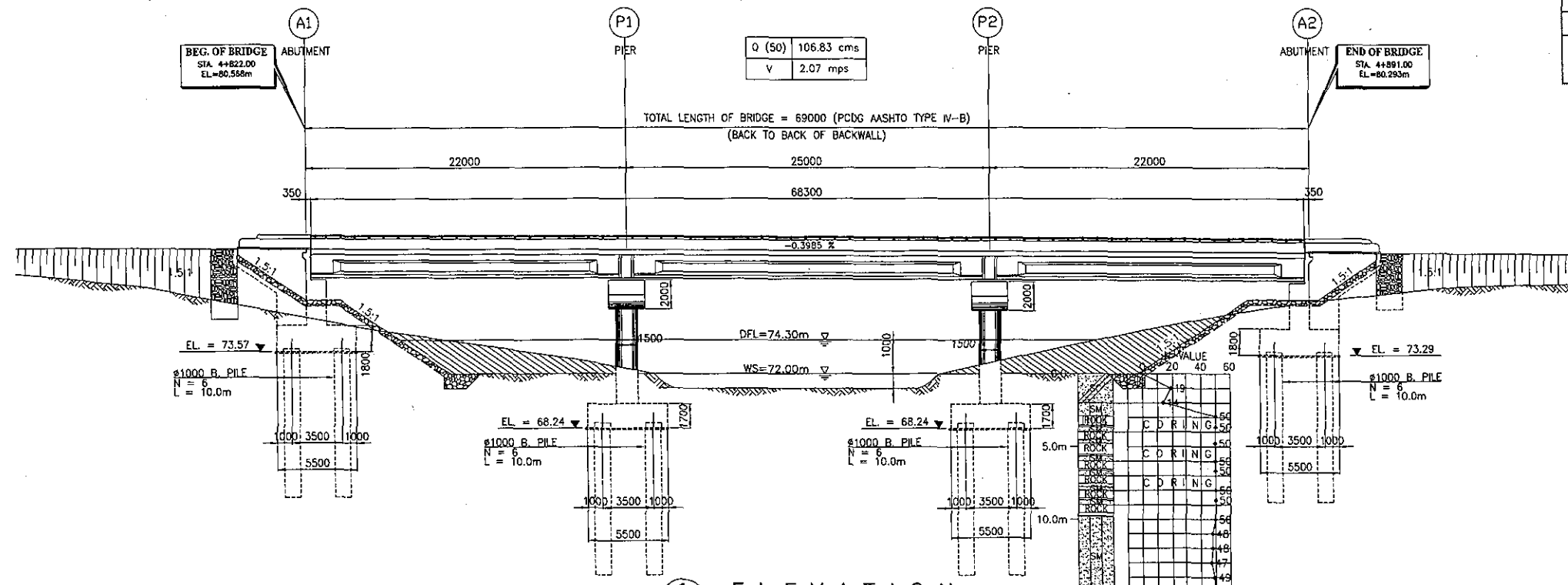
SUMMARY OF ESTIMATED QUANTITIES

| ITEM No. | DESCRIPTION | UNIT | QUANTITY |
|----------|---|----------------|-----------|
| 103(2) | BRIDGE EXCAVATION, COMMON, ABOVE OWL | m ³ | 860.00 |
| 104(1)c | SELECTED BORROW FOR BACKFILLING | m ³ | 360.00 |
| 311(2) | PCC PAVEMENT(REINFORCED) FOR APPROACH SLAB, t = 300mm | m ² | 90.00 |
| 400(16)b | CAST-IN-PLACE BORED PILES, # 1200mm | m | 120.00 |
| 401 | CONCRETE RAILINGS | m | 80.00 |
| 404(2) | REINFORCING STEEL, GRADE 60(f _y = 415MPa) | kg | 52,502.00 |

| | | | |
|---------|---|----------------|--------|
| 405(1) | STRUCTURAL CONCRETE CLASS "A1" FOR SUBSTRUCTURE(f _c ' = 24MPa) | m ³ | 162.00 |
| 405(2) | STRUCTURAL CONCRETE CLASS "A2" FOR SUPERSTRUCTURE(f _c ' = 24MPa) | m ³ | 302.00 |
| 405(6) | STRUCTURAL CONCRETE "LEAN CONCRETE" (f _c ' = 17MPa) | m ³ | 22.00 |
| 406(1)k | PRESTRESSED CONCRETE GIRDER, AASHTO TYPE VI, L = 40m | ea | 5 |
| 407(1)d | ELASTOMERIC BEARING PAD, 700 x 475 x 60(DURO 60) | ea | 10 |
| 407(2)b | EXPANSION JOINT, MULTIPLEX M100(± 50mm MOVEMENT) | m | 18.00 |
| 407(4) | METAL DRAIN (X 150mm G.I. DRAIN PIPE) | m | 8.00 |
| 504 | GROUTED RIPRAP SLOPE PROTECTION | m ³ | 12.00 |
| 510 | RUBBLE CONCRETE SLOPE PROTECTION, t = 350mm | m ³ | 233.00 |

THE STUDY ON ROAD NETWORK IMPROVEMENT
FOR DEVELOPMENT OF REGIONAL GROWTH CENTERS

| | | |
|----------|---|-------------|
| SCALE : | BACOLOD SUGAR ROAD (NORTH) BRIDGE NO. S4 (NGALAN RIVER) STA. 4+822.00 | DRAWING NO. |
| AS SHOWN | GENERAL PLAN, ELEVATION AND SECTIONS | B-9 |



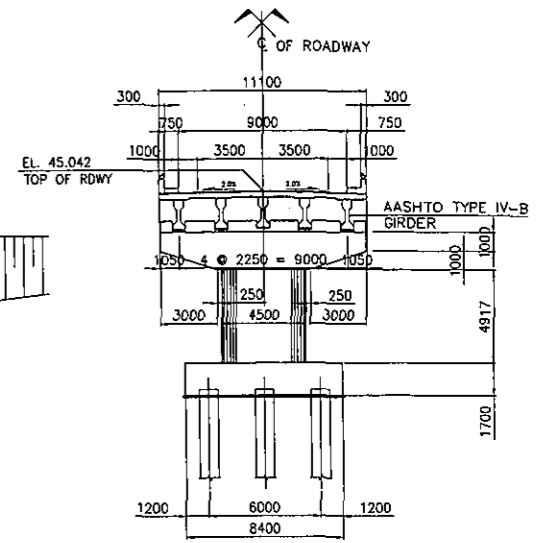
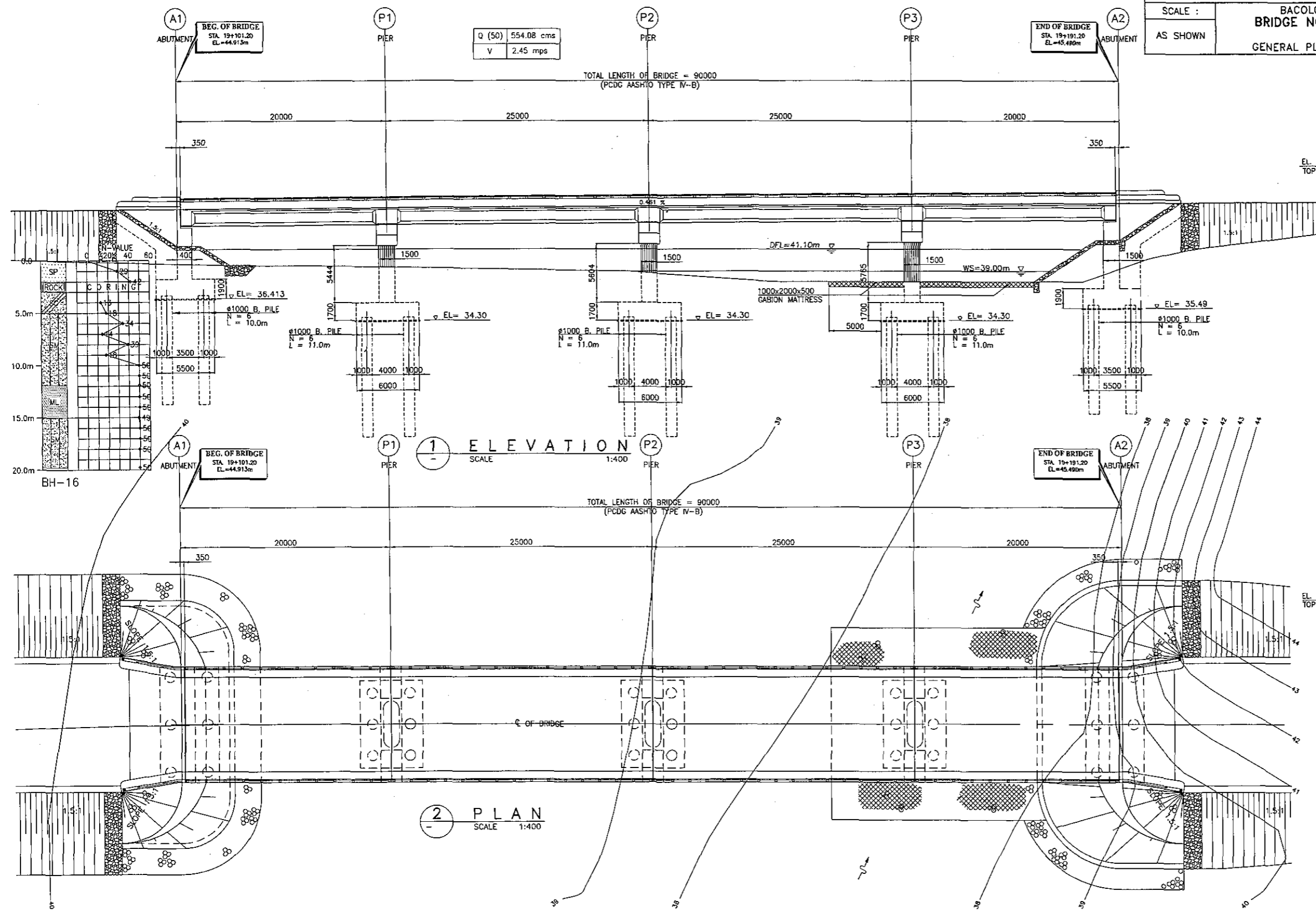
SUMMARY OF ESTIMATED QUANTITIES

| ITEM No. | DESCRIPTION | UNIT | QUANTITY |
|----------|--|----------------|------------|
| 103(2) | BRIDGE EXCAVATION, COMMON, ABOVE OWL | m ³ | 642.00 |
| 103(2)b | BRIDGE EXCAVATION, COMMON, BELOW OWL | m ³ | 562.00 |
| 104(1)c | SELECTED BORROW FOR BACKFILLING | m ³ | 550.00 |
| 311(2) | PCC PAVEMENT(REINFORCED) FOR APPROACH SLAB, t = 300mm | m ² | 90.00 |
| 400(16)a | CAST-IN-PLACE BORED PILES, #1000mm | m | 288.00 |
| 401 | CONCRETE RAILINGS | m | 138.00 |
| 404(2) | REINFORCING STEEL, GRADE 60(fy = 415MPa) | kg | 162,690.50 |
| 405(1) | STRUCTURAL CONCRETE CLASS "A1" FOR SUBSTRUCTURE(fc' = 24MPa) | m ³ | 492.20 |

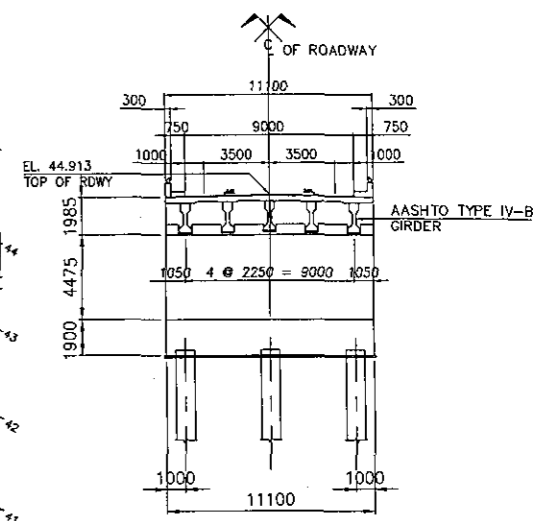
| | | | |
|---------|--|----------------|--------|
| 405(2) | STRUCTURAL CONCRETE CLASS "A2" FOR SUPERSTRUCTURE(fc' = 24MPa) | m ³ | 521.00 |
| 405(6) | STRUCTURAL CONCRETE "LEAN CONCRETE" (fc' = 17MPa) | m ³ | 37.00 |
| 406(1)b | PRESTRESSED CONCRETE GIRDER, AASHTO TYPE IV-B, L = 22m | ea | 10.00 |
| 406(1)c | PRESTRESSED CONCRETE GIRDER, AASHTO TYPE IV-B, L = 25m | ea | 5.00 |
| 407(1)b | ELASTOMERIC BEARING PAD, 550 x 350 x 60(DURO 60) | ea | 10.00 |
| 407(2)a | EXPANSION JOINT, MULTIFLEX M80(± 30mm MOVEMENT) | m | 18.00 |
| 407(4) | METAL DRAIN (#150mm G.I. DRAIN PIPE) | m | 24.00 |
| 504 | GRouted RIPRAP SLOPE PROTECTION | m ³ | 14.00 |
| 510 | RUBBLE CONCRETE SLOPE PROTECTION, t = 350mm | m ³ | 317.00 |

THE STUDY ON ROAD NETWORK IMPROVEMENT
FOR DEVELOPMENT OF REGIONAL GROWTH CENTERS

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| SCALE : | BACOLOD SUGAR ROAD (NORTH) | DRAWING NO. |
| AS SHOWN | BRIDGE NO. S15 (MALISBOG RIVER) | B-10 |
| | STA. 19+101.20 | |
| | GENERAL PLAN, ELEVATION AND SECTIONS | |



3 SECTION @ PIER
SCALE 1:400



4 SECTION @ ABUTMENT
SCALE 1:400

SUMMARY OF ESTIMATED QUANTITIES

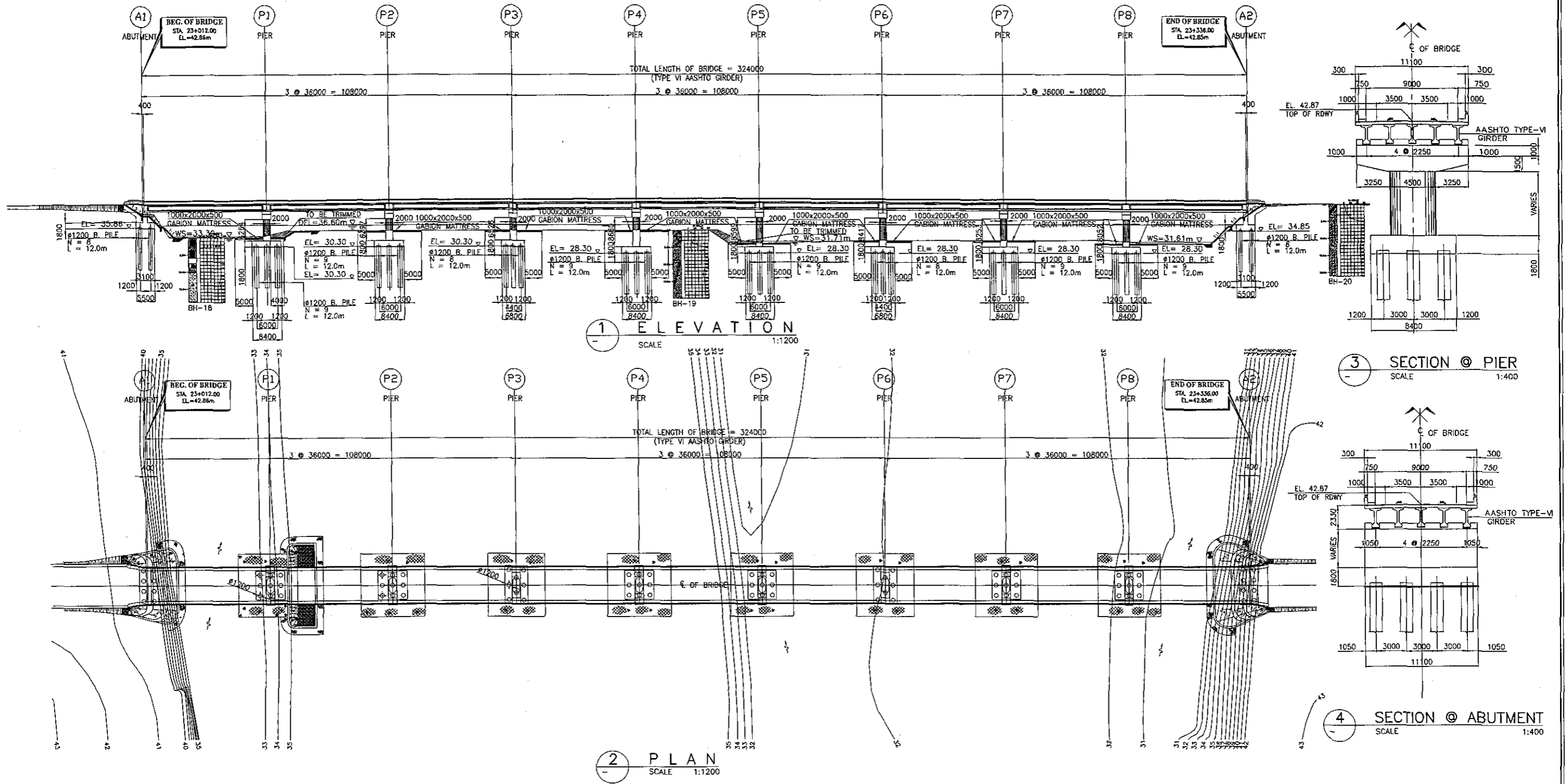
| ITEM No. | DESCRIPTION | UNIT | QUANTITY |
|----------|---|----------------|------------|
| 103(2) | BRIDGE EXCAVATION, COMMON, ABOVE OWL | m ³ | 418.00 |
| 103(2)b | BRIDGE EXCAVATION, COMMON, BELOW OWL | m ³ | 2,490.00 |
| 104(1)c | SELECTED BORROW FOR BACKFILLING | m ³ | 320.00 |
| 311(2) | PCC PAVEMENT(REINFORCED) FOR APPROACH SLAB, t = 300mm | m ² | 90.00 |
| 400(15)a | CAST-IN-PLACE BORED PILES. #1000mm | m | 318.00 |
| 401 | CONCRETE RAILINGS | m | 180.00 |
| 404(2) | REINFORCING STEEL, GRADE 60($f_y = 415MPa$) | kg | 193,400.00 |
| 405(1) | STRUCTURAL CONCRETE CLASS "A1" FOR SUBSTRUCTURE($f_c' = 24MPa$) | m ³ | 598.00 |

| | | | |
|---------|---|----------------|--------|
| 405(2) | STRUCTURAL CONCRETE CLASS "A2" FOR SUPERSTRUCTURE($f_c' = 24MPa$) | m ³ | 611.00 |
| 405(6) | STRUCTURAL CONCRETE "LEAN CONCRETE" ($f_c' = 17MPa$) | m ³ | 48.00 |
| 406(1)a | PRESTRESSED CONCRETE GIRDER, AASHTO TYPE IV-B, L = 20m | ec | 10 |
| 406(1)c | PRESTRESSED CONCRETE GIRDER, AASHTO TYPE IV-B, L = 25m | ec | 10 |
| 407(1)a | ELASTOMERIC BEARING PAD, 450 x 350 x 60(DURO 60) | ea | 10 |
| 407(2)a | EXPANSION JOINT, MULTIPLEX M80($\pm 30mm$ MOVEMENT) | m | 18.00 |
| 407(4) | METAL DRAIN ($\phi 150mm$ G.I. DRAIN PIPE) | m | 32.00 |
| 504 | GROUTED RIPRAP SLOPE PROTECTION | m ³ | 12.00 |
| 510 | RUBBLE CONCRETE SLOPE PROTECTION, t = 350mm | m ³ | 120.00 |

THE STUDY ON ROAD NETWORK IMPROVEMENT
FOR DEVELOPMENT OF REGIONAL GROWTH CENTERS

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| SCALE : | BACOLOD SUGAR ROAD (NORTH) BRIDGE NO. S17 (MALOGO RIVER) STA. 23+012.00 | DRAWING NO. |
| AS SHOWN | GENERAL PLAN, ELEVATION AND SECTIONS | B-11 |

Q (50) 1451.86 cms
V 2.75 mps



SUMMARY OF ESTIMATED QUANTITIES

| ITEM No. | DESCRIPTION | UNIT | QUANTITY |
|----------|---|----------------|------------|
| 103(2) | BRIDGE EXCAVATION, COMMON, ABOVE OWL | m ³ | 2,124.00 |
| 103(2)b | BRIDGE EXCAVATION, COMMON, BELOW OWL | m ³ | 2,115.00 |
| 104(1)c | SELECTED BORROW FOR BACKFILLING | m ³ | 511.00 |
| 311(2) | PCC PAVEMENT(REINFORCED) FOR APPROACH SLAB, t = 300mm | m ² | 90.00 |
| 400(16)b | CAST-IN-PLACE BORED PILES, #1200mm | m | 1,056.00 |
| 401 | CONCRETE RAILINGS | m | 648.00 |
| 404(2) | REINFORCING STEEL, GRADE 60(f _y = 415MPa) | kg | 556,720.00 |
| 405(1) | STRUCTURAL CONCRETE CLASS "A1" FOR SUBSTRUCTURE(f _c = 24MPa) | m ³ | 1281.00 |

| | | | |
|---------|---|----------------|---------|
| 405(2) | STRUCTURAL CONCRETE CLASS "A2" FOR SUPERSTRUCTURE(f _c = 24MPa) | m ³ | 2199.00 |
| 405(6) | STRUCTURAL CONCRETE "LEAN CONCRETE" (f _c = 17MPa) | m ³ | 112.00 |
| 405(1)k | PRESTRESSED CONCRETE GIRDER, AASHTO TYPE V, L = 36m | ea | 45 |
| 407(1)d | ELASTOMERIC BEARING PAD, 700 x 475 x 60(DURO 60) | ea | 30 |
| 407(2)b | EXPANSION JOINT, MULTIPLEX M100(± 50mm MOVEMENT) | m | 36.00 |
| 407(4) | METAL DRAIN (#150mm G.I. DRAIN PIPE) | m | 72.00 |
| 504 | GROUTED RIPRAP SLOPE PROTECTION | m ³ | 18.00 |
| 509 | GABIONS | m ³ | 2709.00 |
| 510 | RUBBLE CONCRETE SLOPE PROTECTION, t = 350mm | m ³ | 359.00 |

