

BRIDGE REHABILITATION

GLACIER NATIONAL PARK, BRITISH COLUMBIA

KM 9.7 TRANS-CANADA HIGHWAY

BEAVER RIVER BRIDGE

DRAWING LIST:

1080-01-001	COVER SHEET – DRAWING LIST AND LOCATION MAP
1080-01-002	GENERAL ARRANGEMENT – EXISTING CONDITION
1080-01-003	GENERAL ARRANGEMENT – FINAL CONDITION
1080-01-004	SUGGESTED CONSTRUCTION ZONE STAGING AND PARTIAL DEPTH DECK REPAIRS
1080-01-005	DECK JOINT REPLACEMENT
1080-01-006	BICYCLE RAILING
1080-01-007	ANIMAL PATHWAY – CONCEPTUAL – SHEET 1
1080-01-008	ANIMAL PATHWAY – CONCEPTUAL – SHEET 2

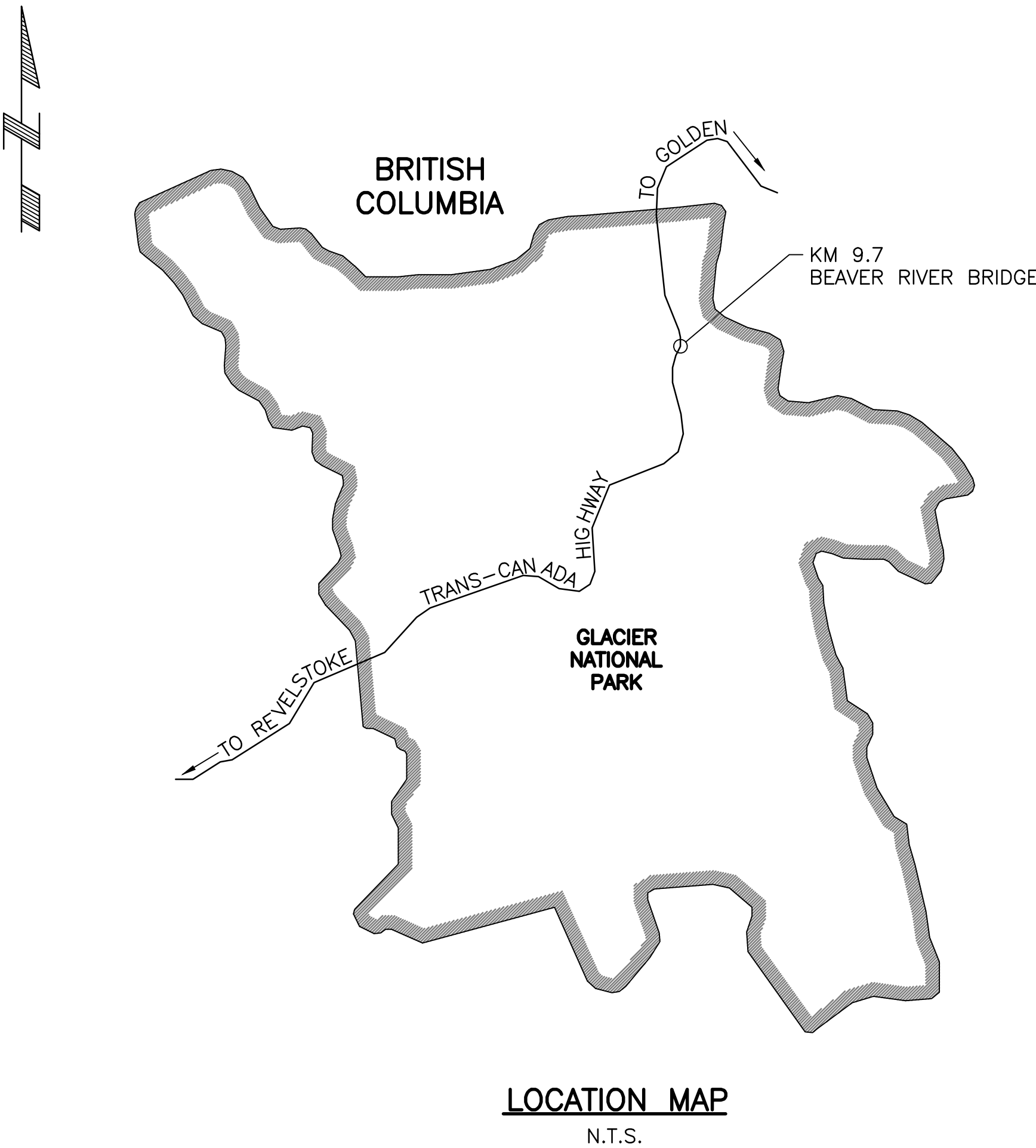
REFERENCE DRAWINGS

1958 ORIGINAL DESIGN DRAWINGS, BEAVER RIVER BRIDGE  
T.C.H. MI. 6.07 (KM 9.7), GLACIER NATIONAL PARK:

1 OF 7	GENERAL LAYOUT
2 OF 7	ABUTMENTS – CONCRETE DETAILS
3 OF 7	ABUTMENTS – REINFORCING DETAILS
4 OF 7	PIER & REINFORCING SCHEDULE
5 OF 7	DECK – CONCRETE & REINFORCING DETAILS
6 OF 7	DECK – STEEL LAYOUT
7 OF 7	STANDARD HANDRAIL DETAIL

1994 BEAVER RIVER BRIDGE REHABILITATION PROJECT No. 669097  
T.C.H. KM 9.8, GLACIER NATIONAL PARK:

–	COVER SHEET
1 OF 9	AS CONSTRUCTED EXISTING BRIDGE, PLAN & ELEVATION, GENERAL NOTES, SECTIONS & LOCATION PLAN
2 OF 9	AS CONSTRUCTED REHABILITATED BRIDGE PLAN, ELEVATION & DECK SECTION
4 OF 9	AS CONSTRUCTED DETAILS & SECTIONS: CAST-IN-PLACE BARRIERS & APPROACH RECONSTRUCTION
5 OF 9	AS CONSTRUCTED DECK JOINT DETAILS
6 OF 9	AS CONSTRUCTED GIRDER JACKING DETAILS & CRACK REPAIR DETAILS
7 OF 9	AS CONSTRUCTED DRAINAGE DETAILS
8 OF 9	AS CONSTRUCTED GROUT PAD AND BEARING DETAILS
9 OF 9	AS CONSTRUCTED GROUT PAD & CONCRETE REPAIR DETAILS



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Project title/Titre du projet  
**BRIDGE REHABILITATION  
GLACIER NATIONAL PARK, BRITISH COLUMBIA**  
**KM 9.7 TRANS-CANADA HIGHWAY  
BEAVER RIVER BRIDGE**

Approved by/Approuvé par  
JUGN

Designed by/Concept par  
TWB

Drawn by/Dessiné par  
MACM

PWGSC Project Manager/Administrateur de Projets TPSGC

PWGSC, Architectural and Engineering Resources Manager/  
Ressources Architectural et de Directeur d'Ingénierie, TPSGC

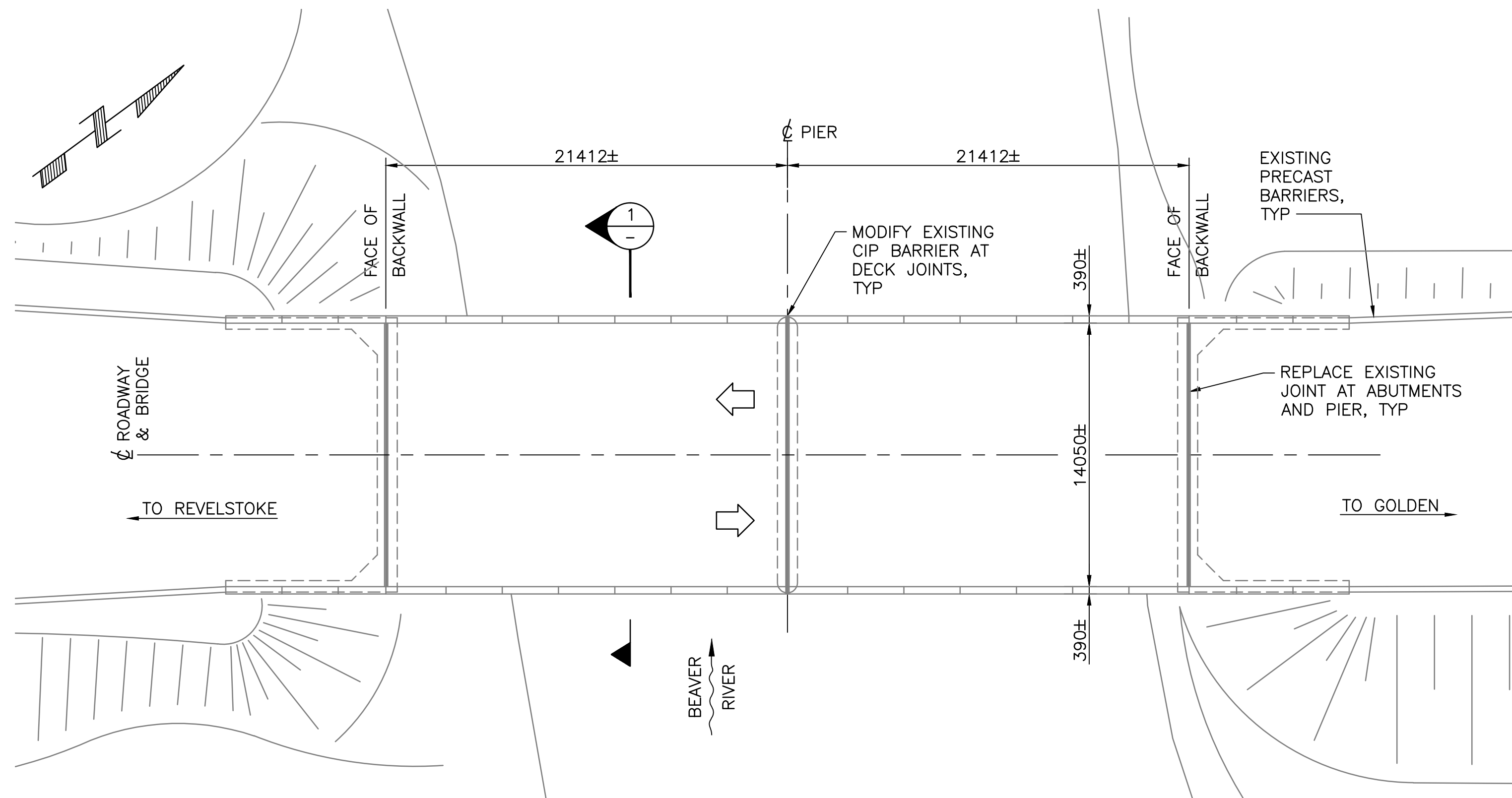
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PCA

Drawing title/Titre du dessin  
**COVER SHEET  
DRAWING LIST AND  
LOCATION MAP**

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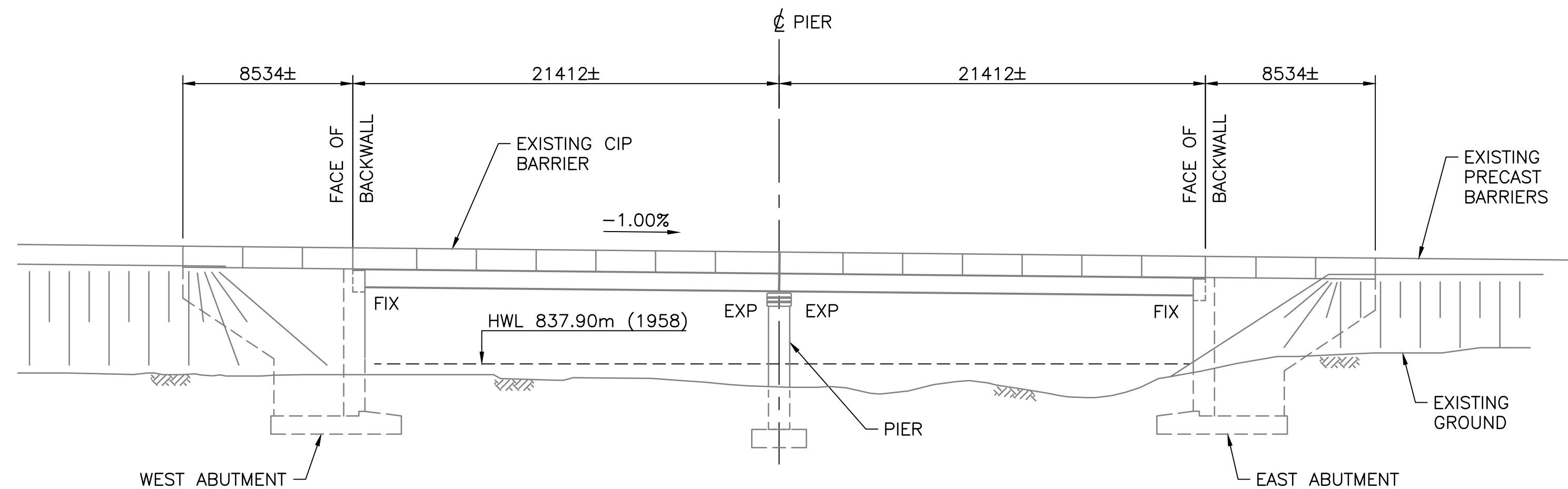


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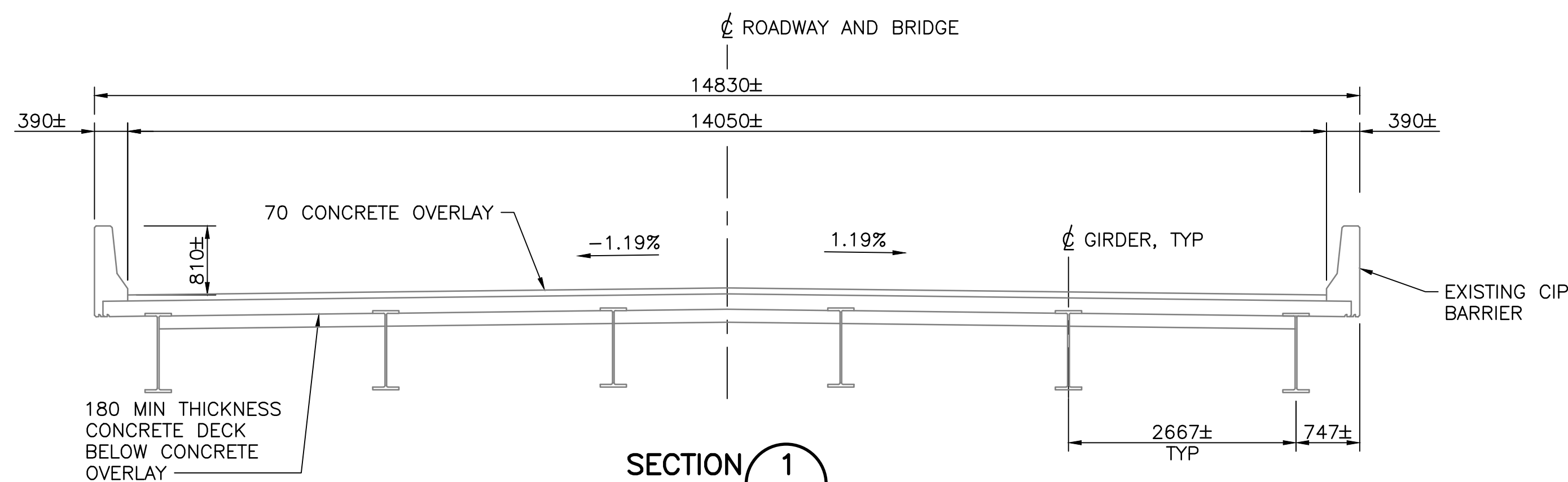
EXISTING CONDITION – PLAN

1:200



ELEVATION

1:200



SECTION 1

1:50

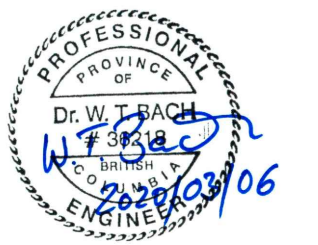
### NOTES:

1. DIMENSIONS PROVIDED FOR REFERENCE ONLY, CONTRACTOR TO VERIFY ACCURACY OF SUCH INFORMATION BY FIELD MEASUREMENTS.
2. ALL DIMENSIONS IN MILLIMETERS UNLESS NOTED OTHERWISE.

### SCOPE OF WORK:

1. CONSTRUCTION TO BE COMPLETED IN THREE STAGES.
2. REMOVAL AND DISPOSAL OF EXISTING BARRIER JOINT COVER PLATES AT DECK JOINTS.
3. LOCALIZED CONCRETE BARRIER REMOVAL AT DECK JOINTS.
4. PARTIAL DEPTH DECK CONCRETE REPAIRS WHEN AUTHORIZED BY DEPARTMENTAL REPRESENTATIVE.
5. LOCAL DECK CONCRETE REMOVAL AT PIER AND ABUTMENTS FOR NEW DECK JOINTS.
6. SUPPLY AND PLACEMENT OF NEW LOCALIZED CAST-IN-PLACE CONCRETE BARRIERS AT DECK JOINTS.
7. SUPPLY AND INSTALLATION OF NEW DECK JOINTS AT ABUTMENTS AND PIER.
8. LOCAL REPAIR OF CONCRETE OVERLAY AND APPROACH ASPHALT AT ABUTMENT DECK JOINTS.
9. SUPPLY AND INSTALLATION OF NEW BARRIER COVER PLATES AT DECK JOINTS.
10. SUPPLY, FABRICATION AND INSTALLATION OF NEW STEEL BICYCLE RAILING AND CONNECTION BRACKETS.
11. APPLICATION OF LANE MARKINGS AT DECK JOINTS.
12. DESIGN, SUPPLY AND INSTALLATION OF NEW ANIMAL PATHWAY AND GABION RETAINING WALL AT WEST ABUTMENT.

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BEAVER RIVER BRIDGE

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PWGSC Project Manager/Administrateur de Projets TPSPG  
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Ressources Architectural et de Directeur d'Ingénierie, TPSPG  
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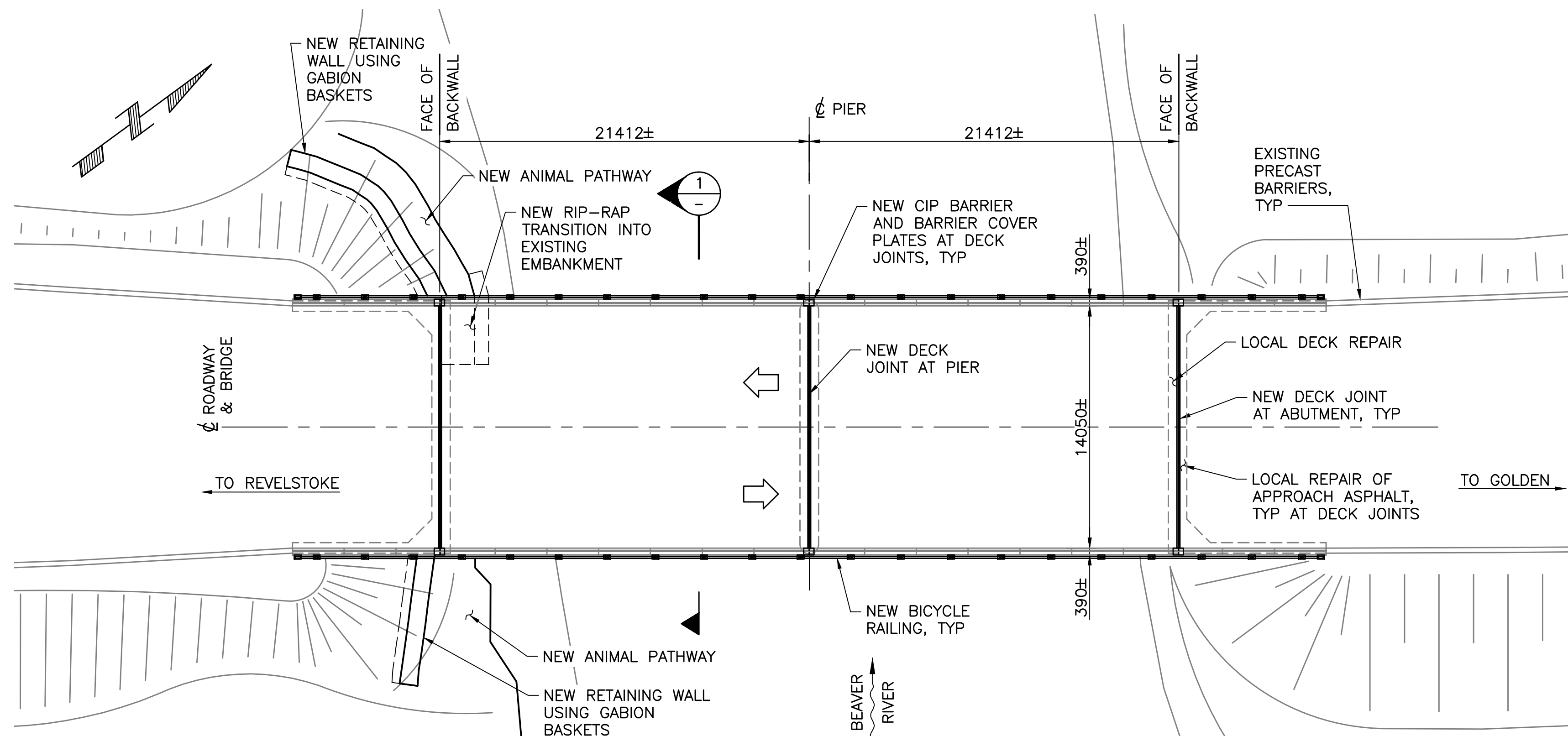
GENERAL ARRANGEMENT  
EXISTING CONDITION

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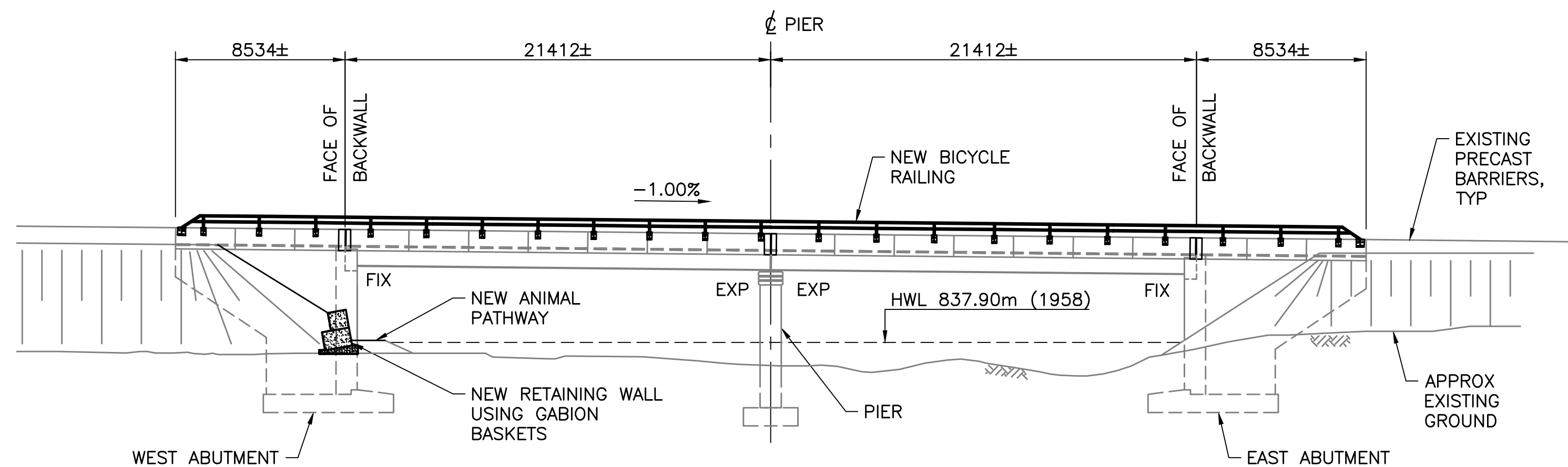


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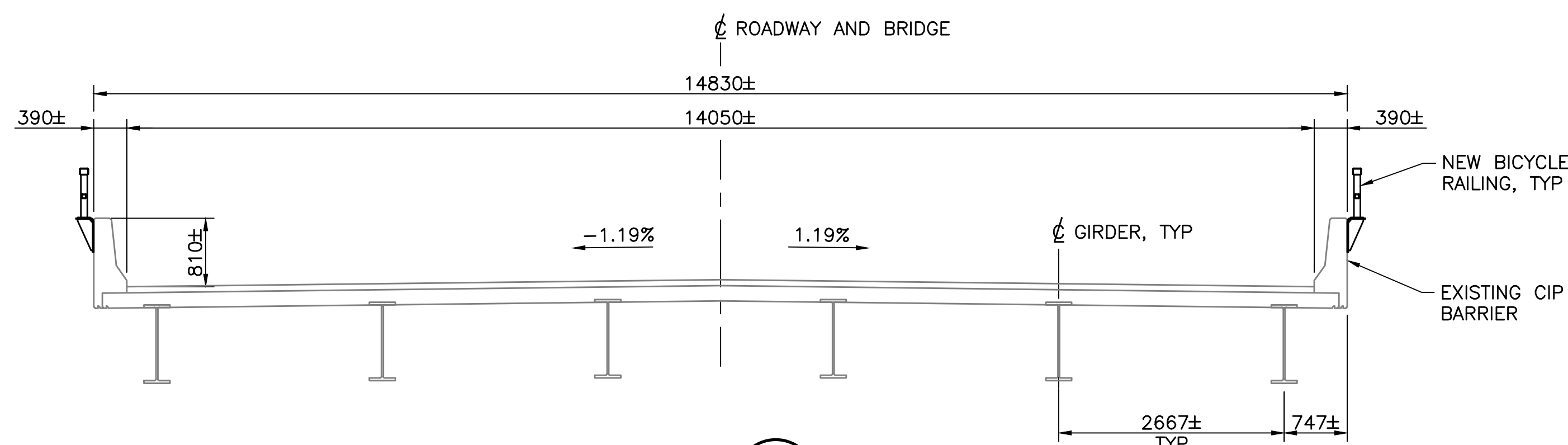
FINAL CONDITION – PLAN

1:200



ELEVATION

1:200



SECTION 1

1:50

GENERAL NOTES:

- DESIGN STANDARD: CAN/CSA-S6-14
- DESIGN LOADS:
  - DEAD LOADS (OTHER THAN STRUCTURE SELF WEIGHT):
    - STEEL BICYCLE RAILING: 0.3kN/m PER BARRIER.
  - TEMPERATURE DATA:
    - MAXIMUM MEAN DAILY TEMPERATURE: 28°C
    - MINIMUM MEAN DAILY TEMPERATURE: -36°C

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MACM

PWGC Project Manager/Administrateur de Projets TPSCG

PWGC, Architectural and Engineering Resources Manager/Ressources Architectural et de Directeur d'Ingénierie, TPSCG

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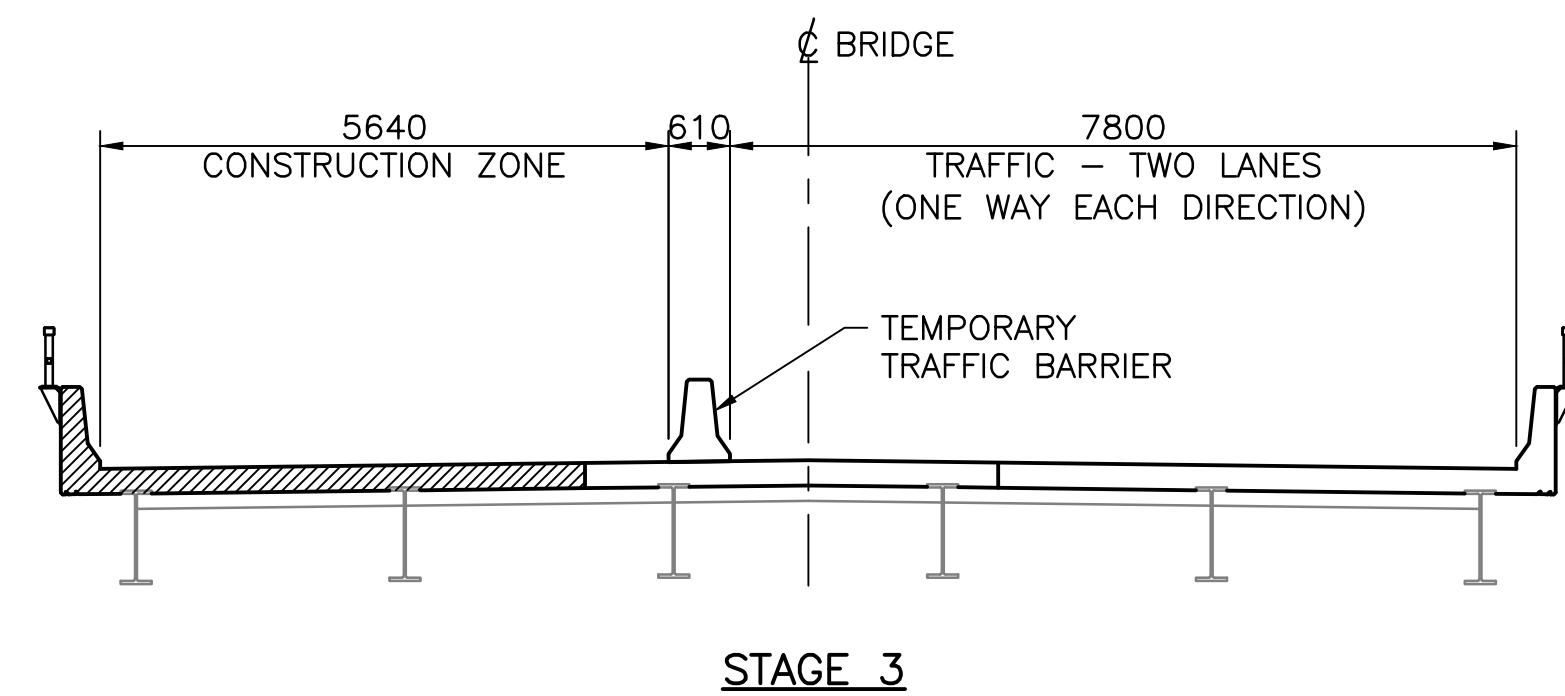
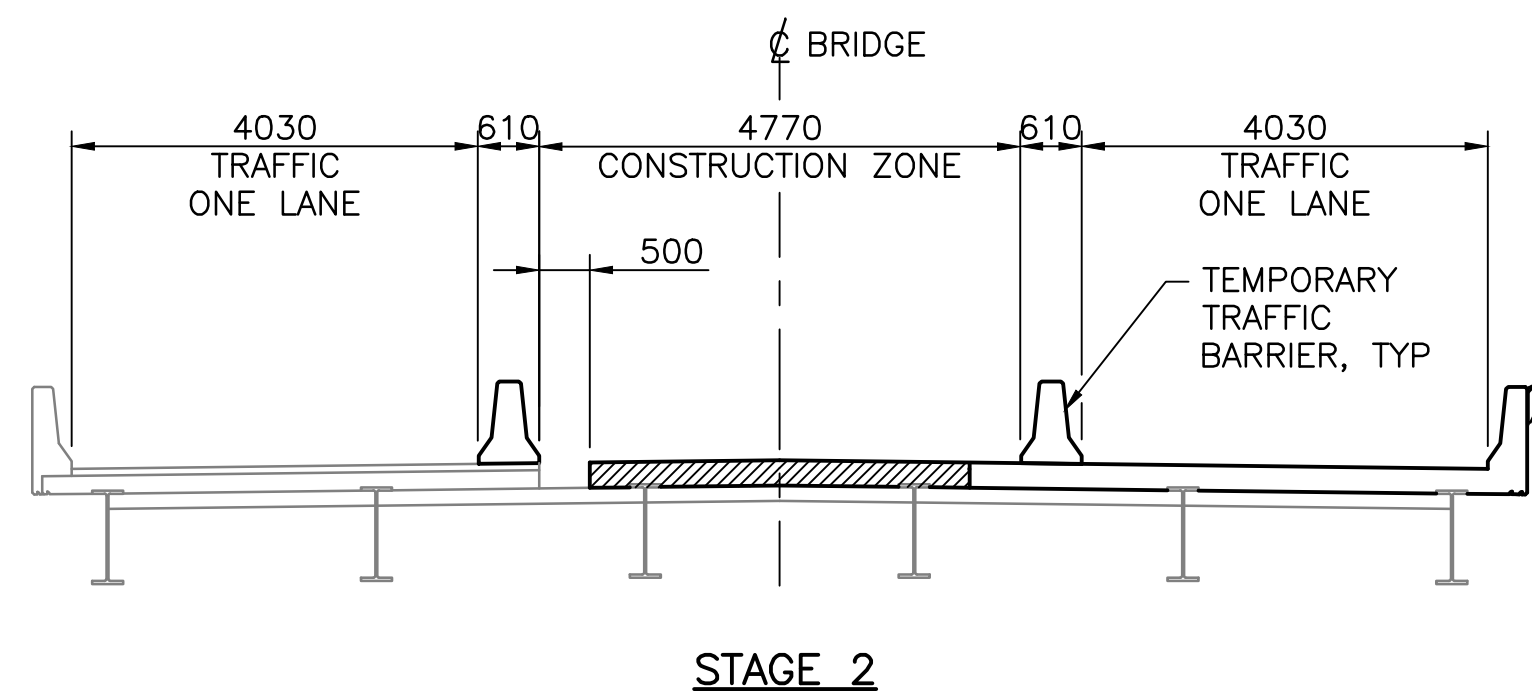
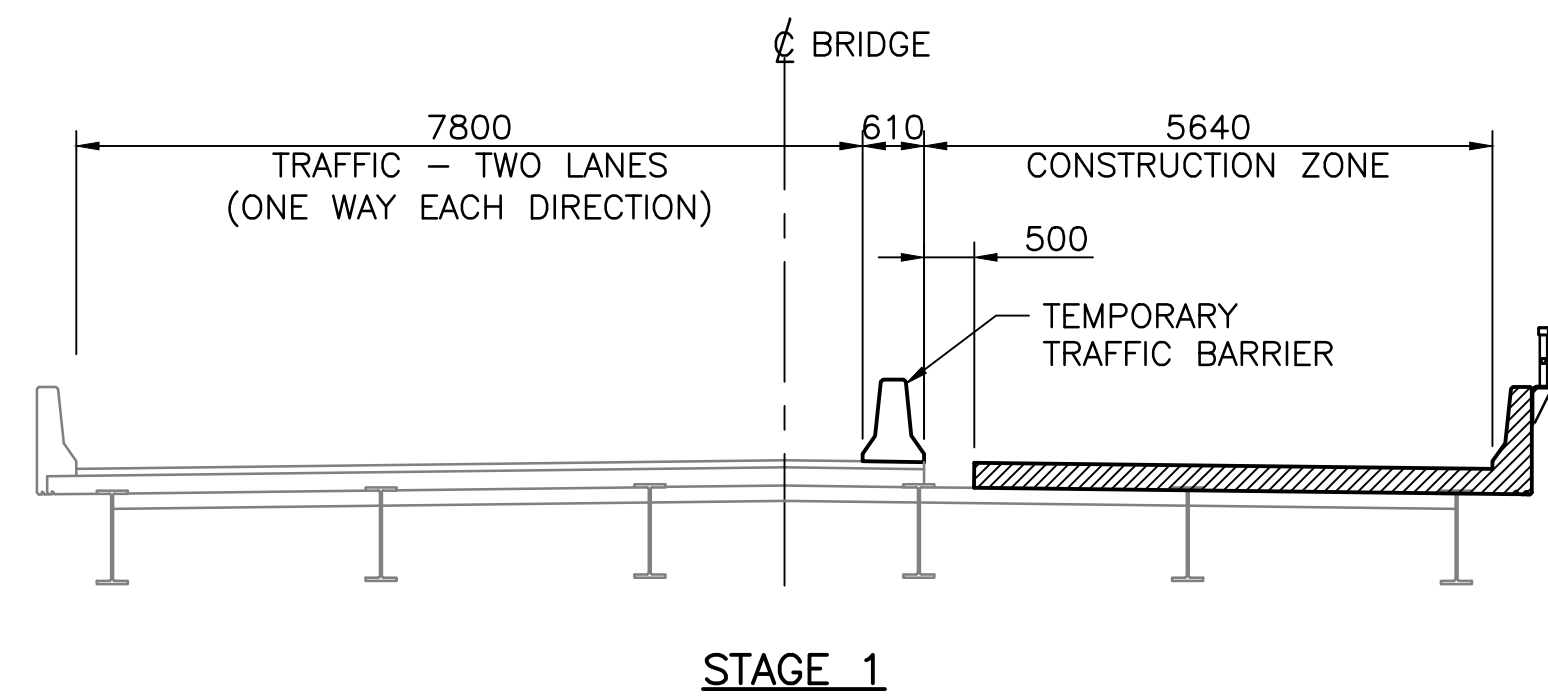
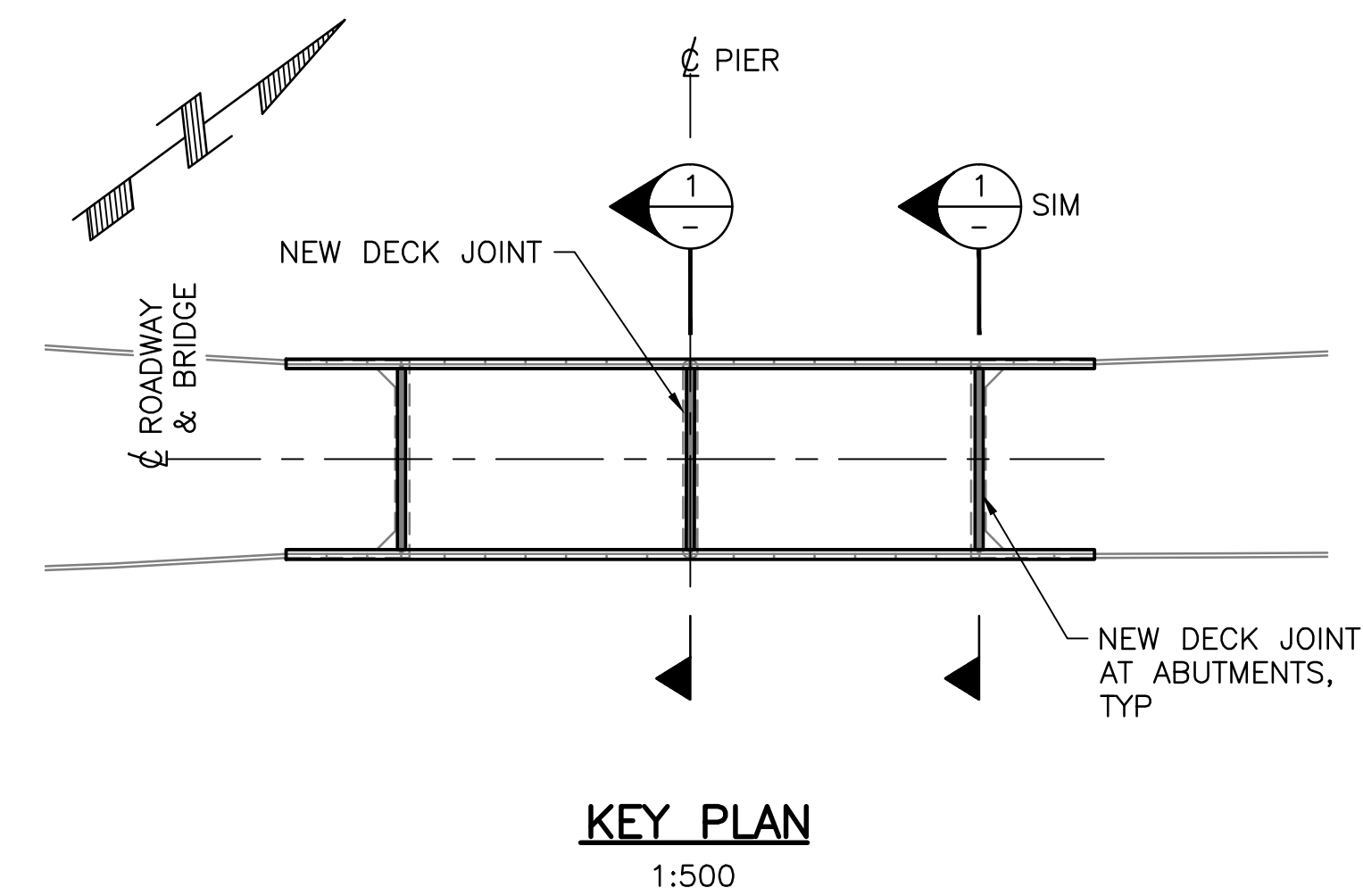
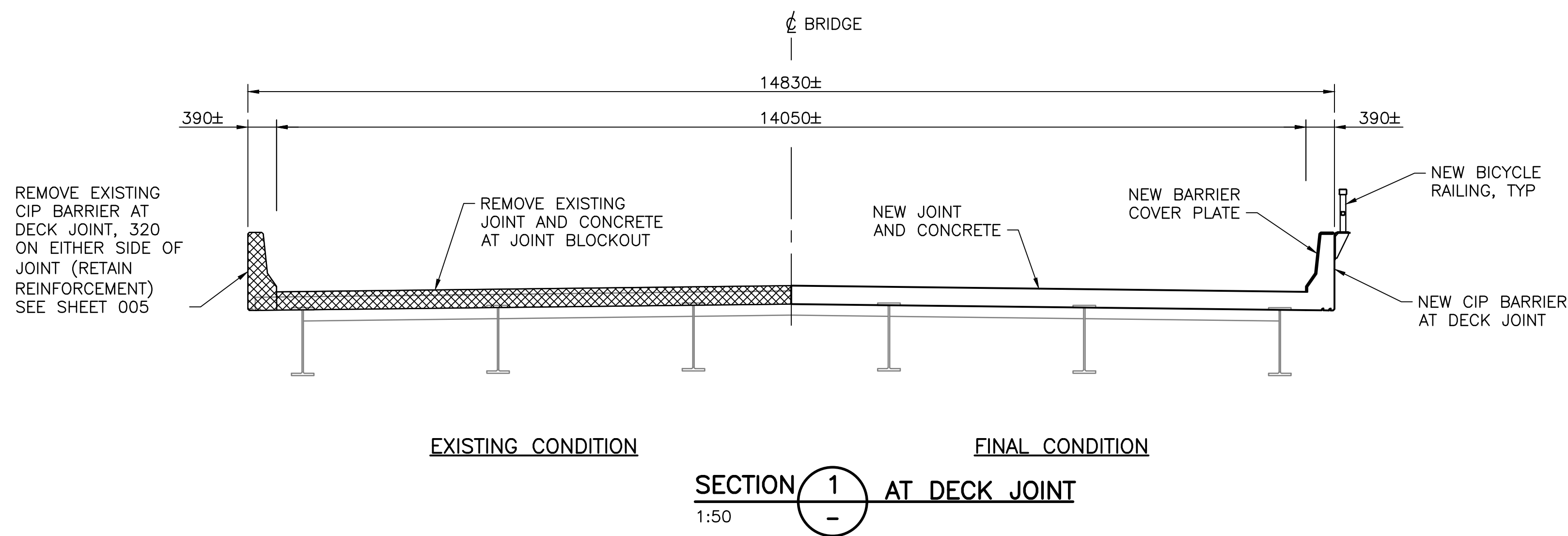
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GENERAL ARRANGEMENT  
FINAL CONDITION

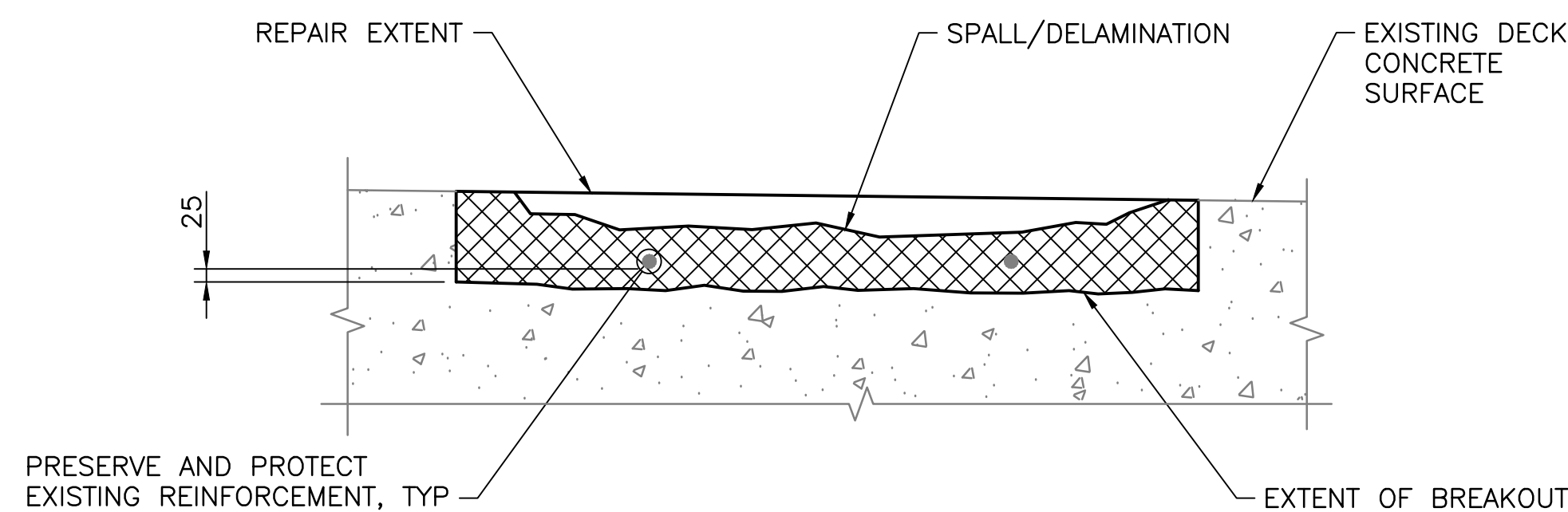
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**SUGGESTED CONSTRUCTION ZONE STAGING**  
1:75  
(WORK SHOWN REFERS TO DECK JOINT BLOCKOUT AND BARRIER JOINTS)



**PARTIAL DEPTH DECK CONCRETE REPAIR DETAIL**  
NTS  
(NOTE 4)

**LEGEND:**

- REMOVALS
- WORK IN CONSTRUCTION ZONE
- COMPLETED STAGE

**NOTES:**

- MINIMUM COMPRESSIVE STRENGTH OF CONCRETE: 45 MPa AT 28 DAYS.
- REINFORCING STEEL: G30.18M GRADE 400W.
- SAWCUT 15 DEPTH ALONG EDGE OF CONCRETE REPAIR.
- PARTIAL DEPTH DECK REPAIR AS DIRECTED BY DEPARTMENTAL REPRESENTATIVE IN ACCORDANCE WITH SPECIFICATIONS.

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**BEAVER RIVER BRIDGE**

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JUGN

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TWB

Drawn by/Dessiné par  
MACM

PWGSC Project Manager/Administrateur de Projets TPSPG

PWGSC, Architectural and Engineering Resources Manager/  
Ressources Architectural et de Directeur d'Ingénierie, TPSPG

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**SUGGESTED CONSTRUCTION ZONE**  
**STAGING AND PARTIAL DEPTH**  
**DECK REPAIRS**

Project No./No. du projet <b>1080-01</b>	Sheet/Feuille <b>004</b> OF	Revision no./La Révision no. <b>A</b>
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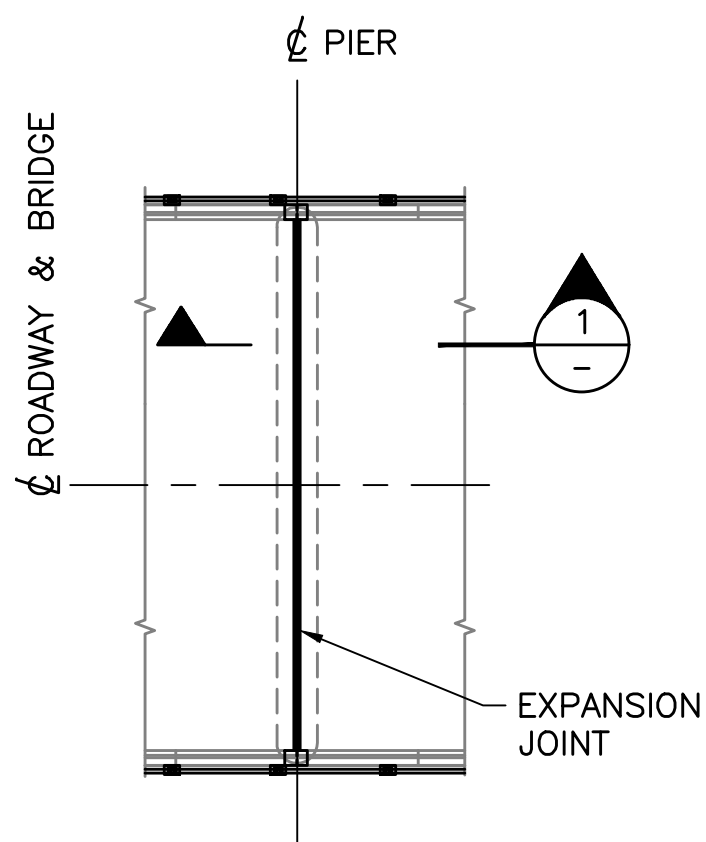
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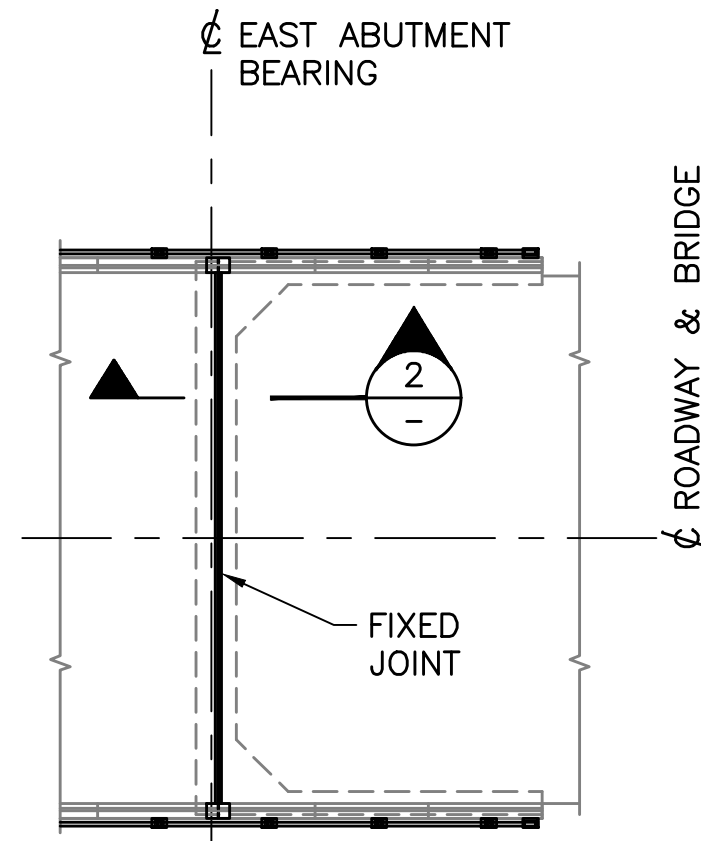
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**DECK JOINT REPLACEMENT**

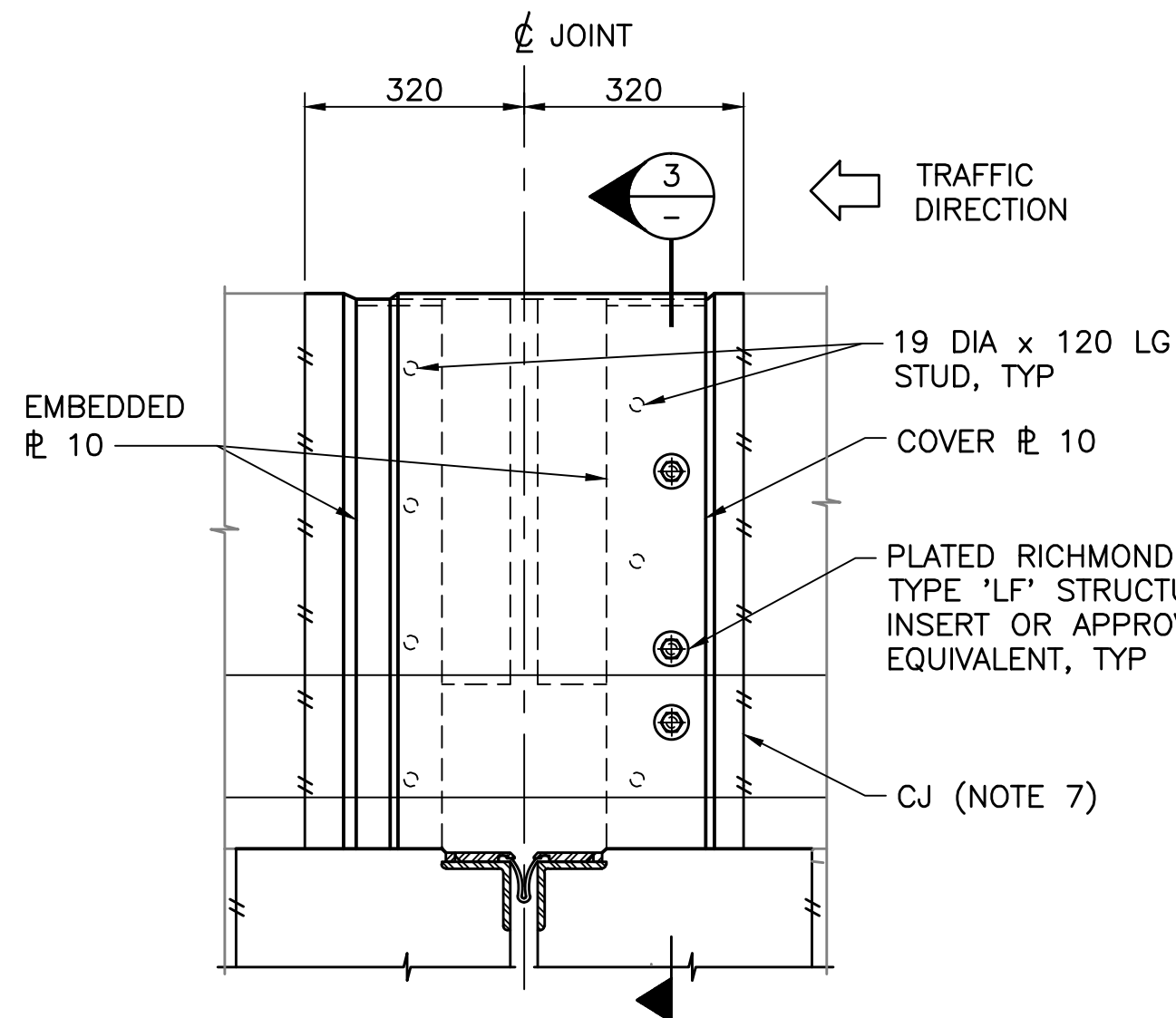
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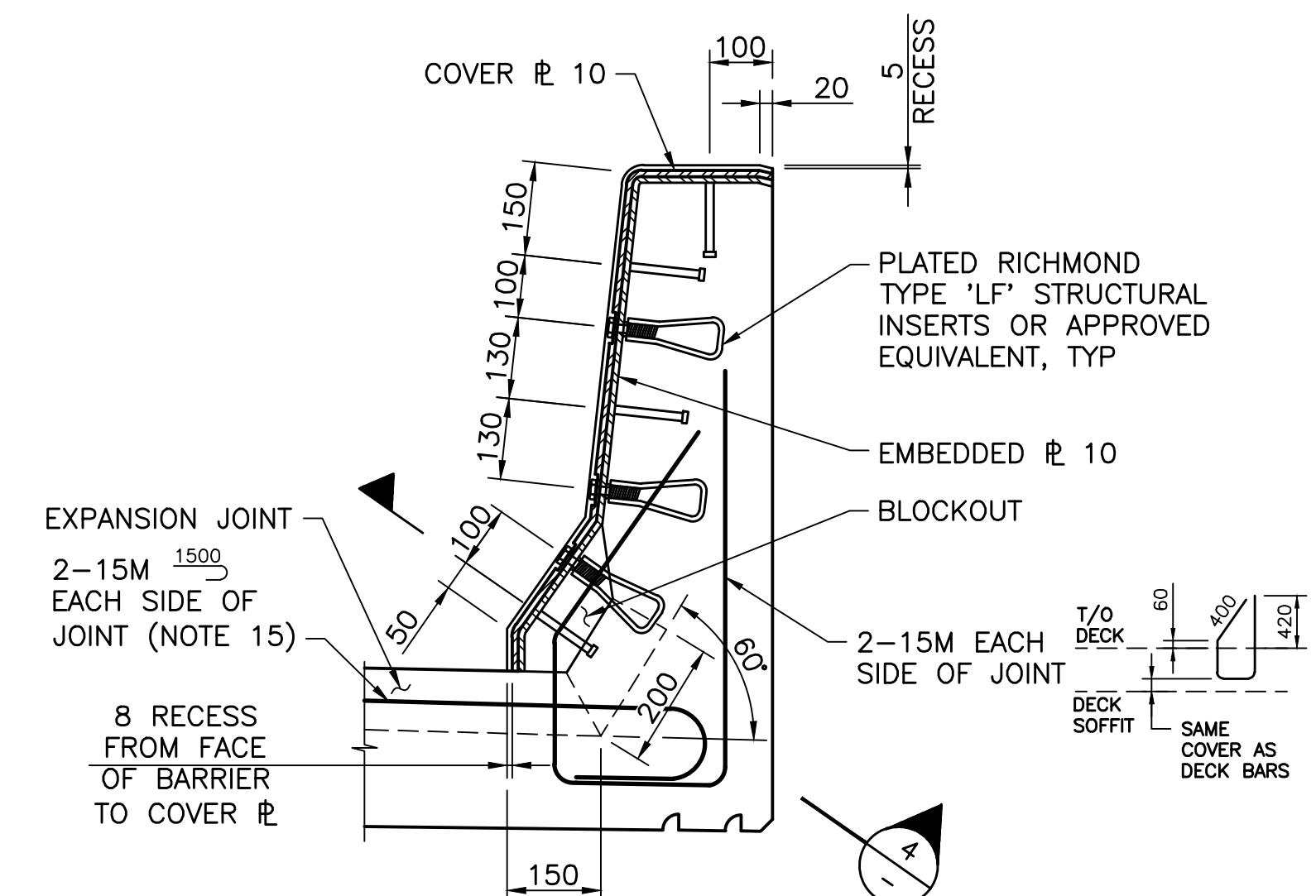
**EXPANSION JOINT AT  
PIER — PLAN**  
1:200



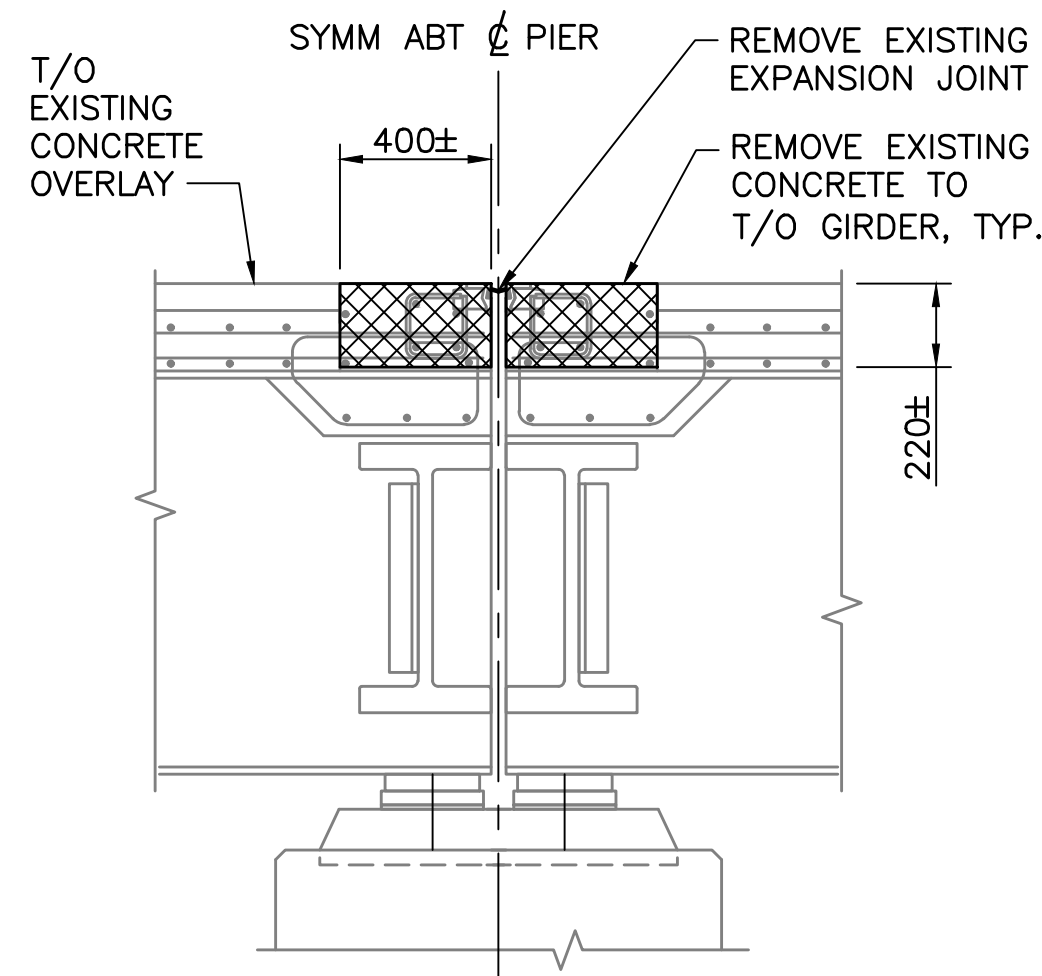
**FIXED JOINT AT  
ABUTMENT — PLAN**  
1:200  
(EAST ABUTMENT SHOWN — WEST ABUTMENT SIMILAR)



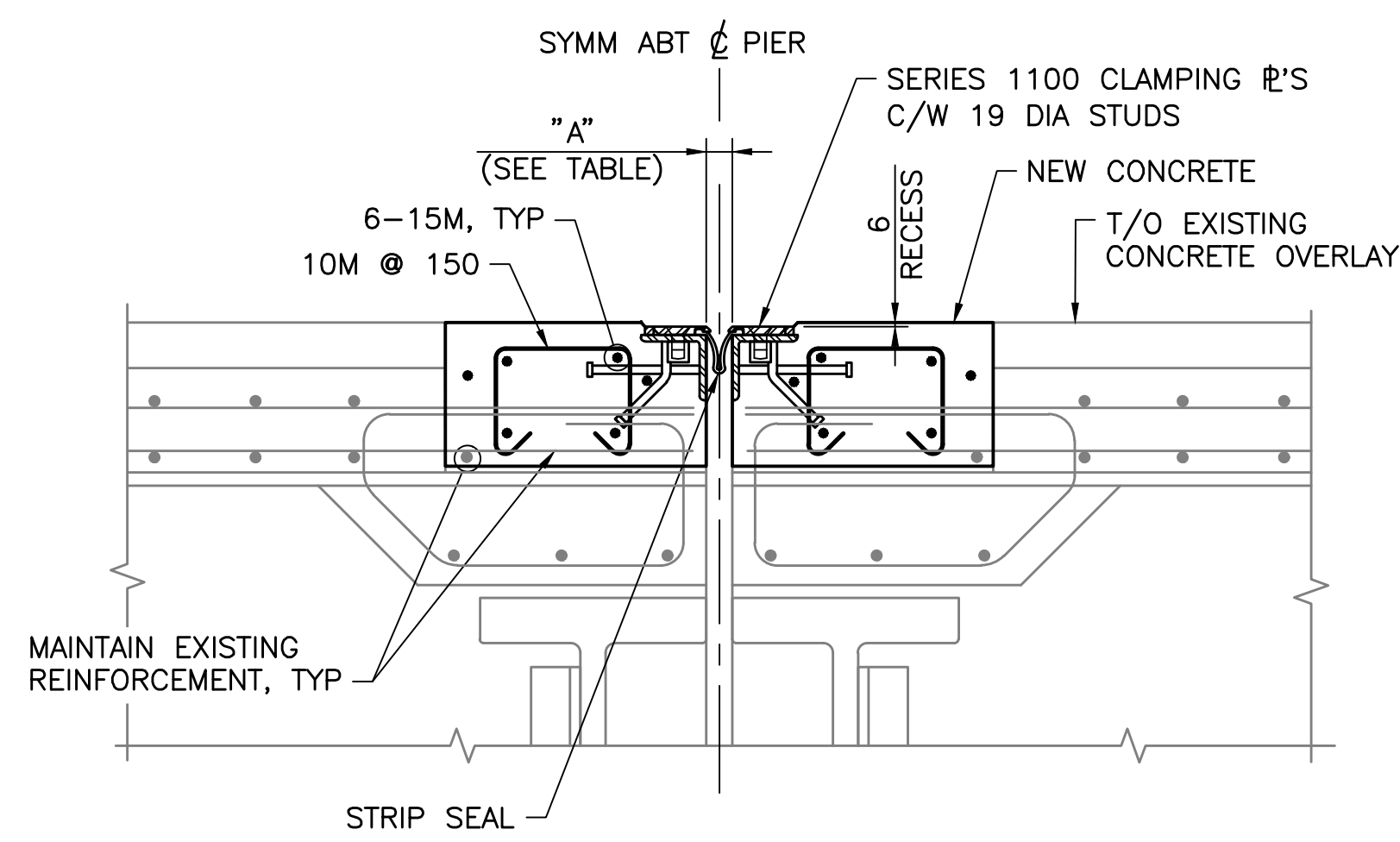
**BARRIER FIXED AND EXPANSION  
JOINT COVER PLATE — ELEVATION**  
1:10



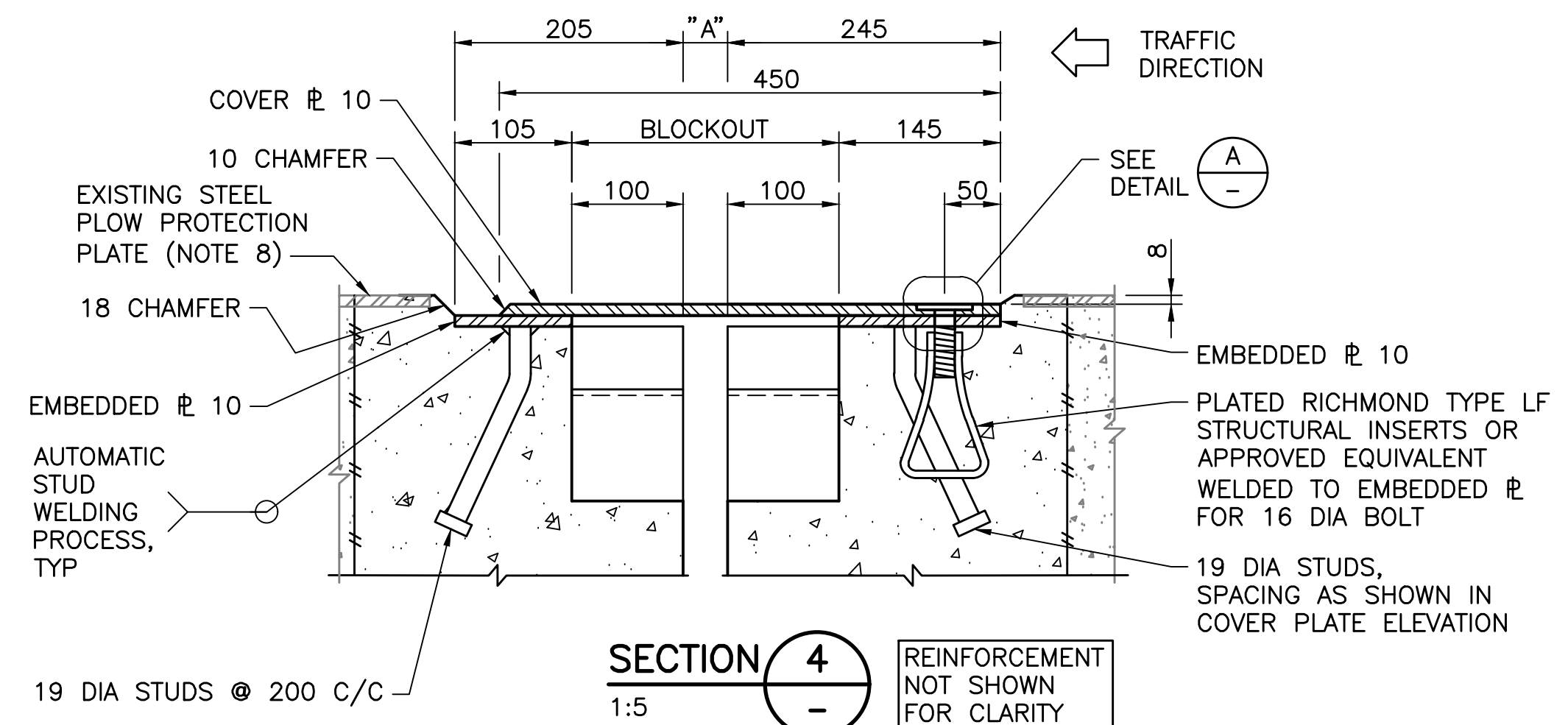
**SECTION 3**  
1:10



**EXISTING CONDITION**  
**SECTION 1**  
1:20



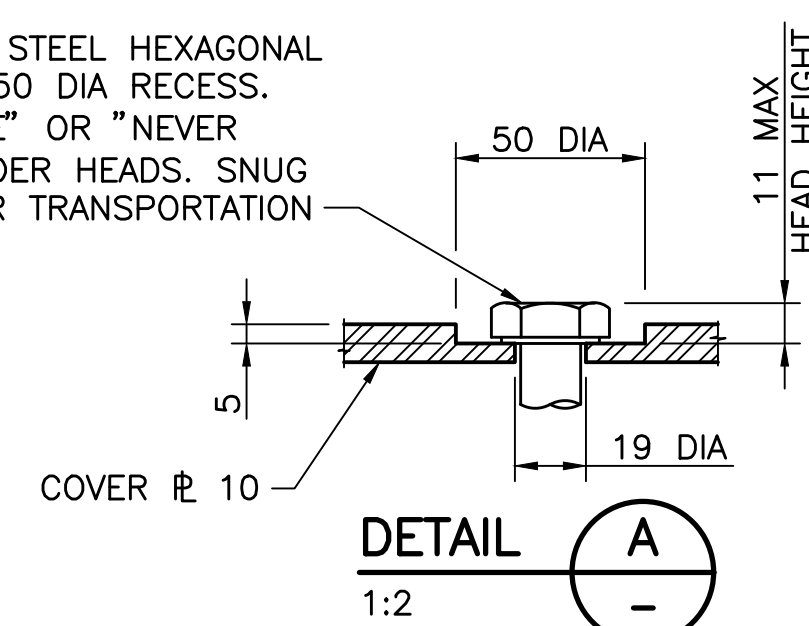
**FINAL CONDITION**  
**SECTION 1**  
1:10



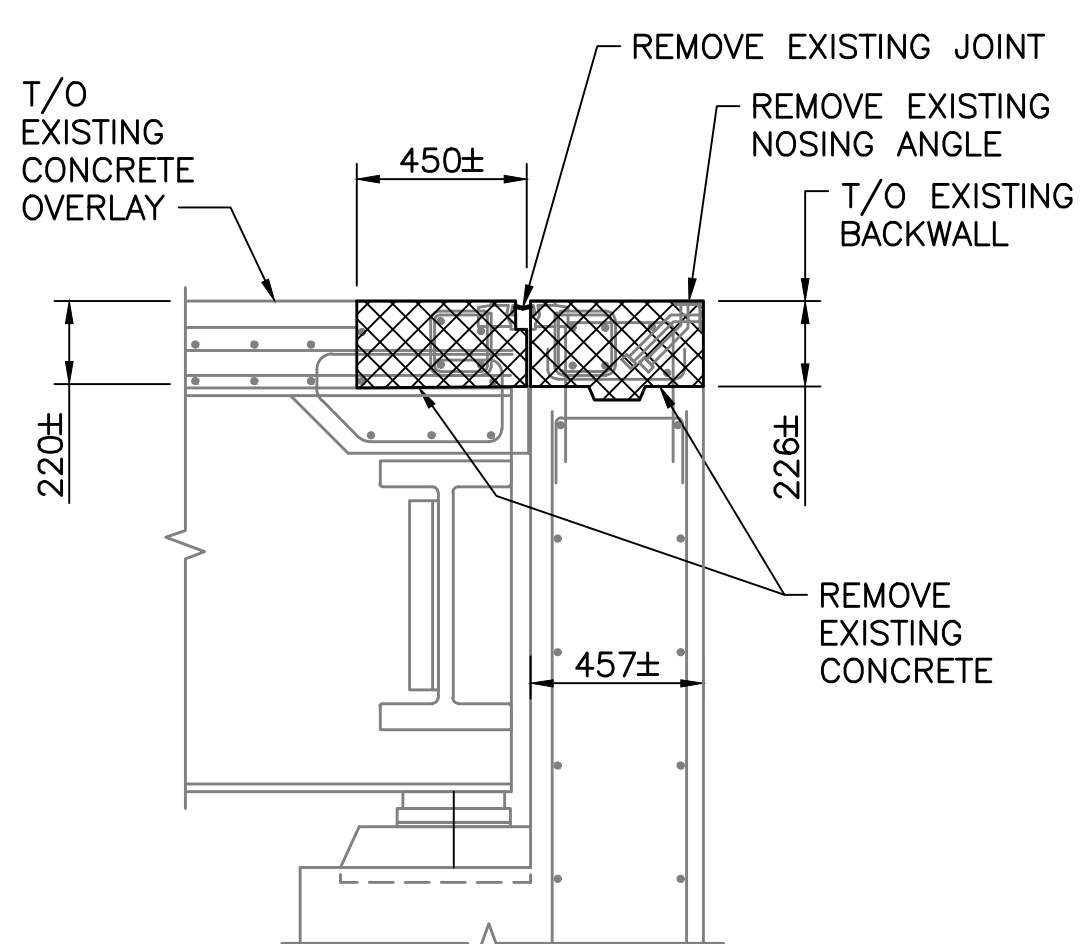
**SECTION 4**  
1:5

**NOTES:**

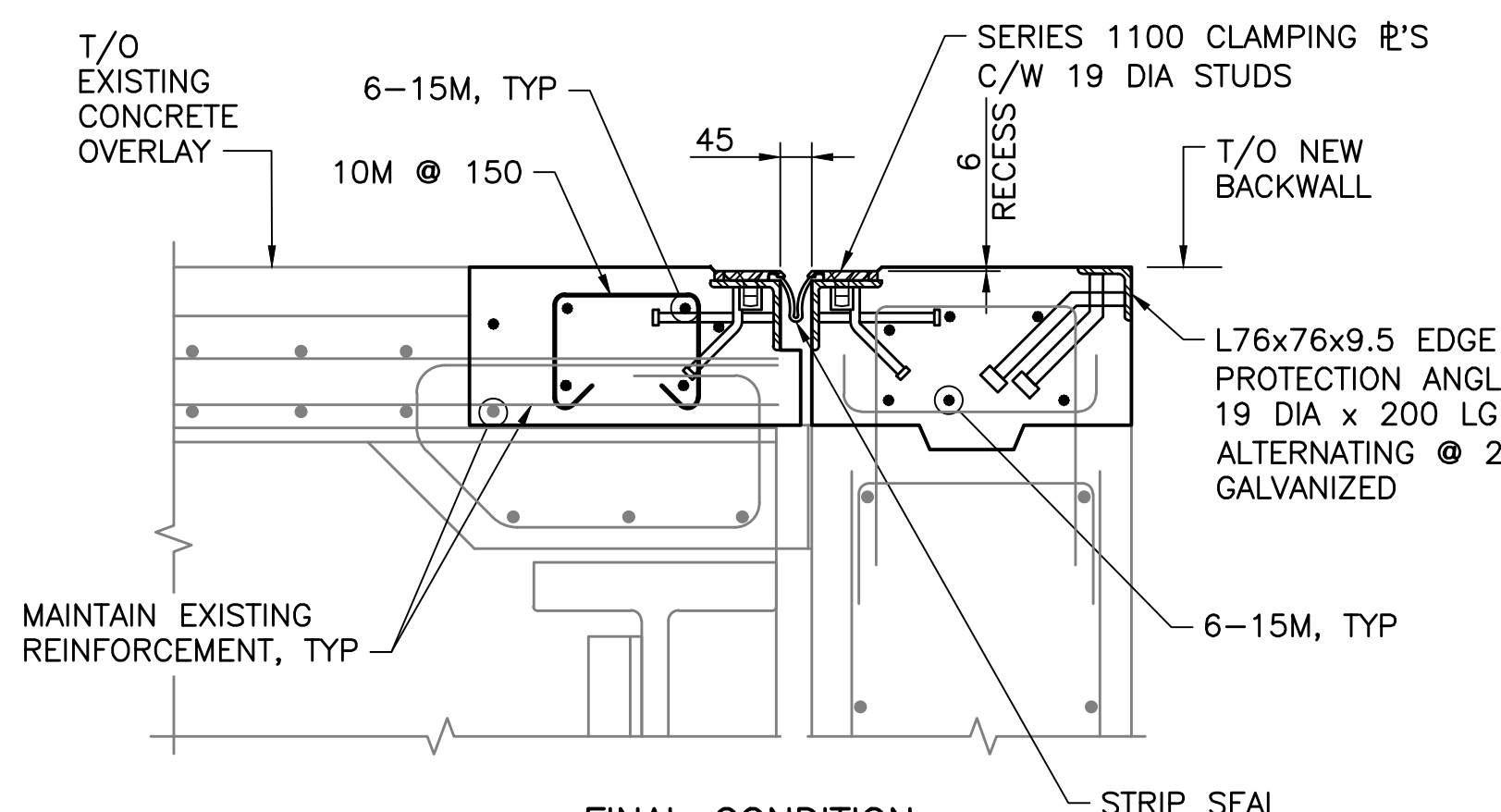
- WORK TO BE COMPLETED IN THREE STAGES IN ACCORDANCE WITH SPECIFICATIONS.
- NEW DECK JOINTS "GOODFLEX SERIES 1100 BY GOODCO Z-TECH" OR APPROVED EQUIVALENT, INSTALLED AS PER MANUFACTURER'S RECOMMENDATIONS.
- JOINT NEOPRENE SEAL "GOODCO FL-75" OR APPROVED EQUIVALENT INSTALLED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
- NEW STEEL: CSA G40.21M GRADE 300W. HOT DIP GALVANIZE TO ASTM A123/123M.
- STUDS: CAN/CSA W59 ANNEX H, TYPE B, GALVANIZE AFTER FABRICATION.
- WELDING: CAN/CSA W59.
- REMOVE EXISTING BARRIER COVER PLATES AND BARRIER CONCRETE UP TO THIS POINT. MAINTAIN EXISTING REINFORCEMENT.
- TRIM EXISTING SNOW PLOW PROTECTION PLATES TO FIT NEW EXPANSION JOINT COVER PLATE.
- GAP "A" FOR EXPANSION JOINT AT PIER IN ACCORDANCE WITH TABLE. GAP "A" FOR FIXED JOINTS AT ABUTMENTS TO BE 45mm.
- MINIMUM COMPRESSIVE STRENGTH OF CONCRETE : 45 MPa AT 28 DAYS.
- REINFORCING STEEL : CAN/CSA G30.18 GRADE 400W.
- MINIMUM COVER : 50 U.N.O.
- MINIMUM LAP : 450 U.N.O.
- SAWCUT 25 DEPTH ALONG EDGE OF CONCRETE REMOVALS.
- ROTATE HOOK TO SATISFY COVER. SPLICE WITH EXISTING REINFORCEMENT.



**DETAIL A**  
1:2



**EXISTING CONDITION**  
**SECTION 2**  
1:20



**FINAL CONDITION**  
**SECTION 2**  
1:10

**LEGEND:**

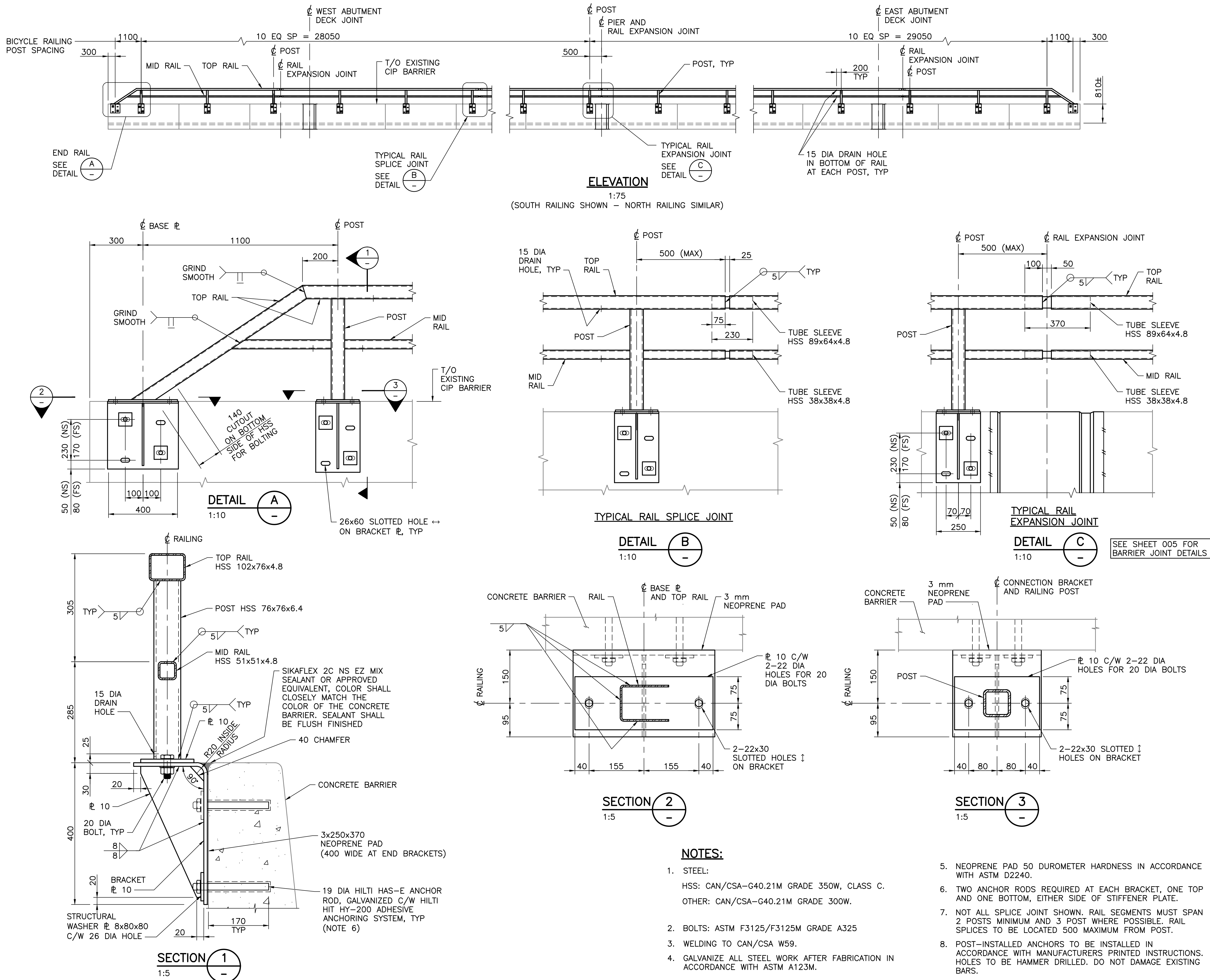
— REMOVALS

INSTALLATION TEMPERATURE	-40°C	-30°C	-20°C	-10°C	0°C	10°C	20°C	30°C	40°C	50°C
GAP "A" (mm)	71	65	60	55	50	45	40	35	30	25

NOTE: TO SATISFY INSTALLATION GAP, FACE OF CONCRETE AT BLOCKOUT MAY NOT ALIGN WITH EXISTING CONCRETE BELOW.



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BEAVER RIVER BRIDGE**

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MACM

PWGC Project Manager/Administrateur de Projets TPSCG

PWGC, Architectural and Engineering Resources Manager/  
Ressources Architectural et de Directeur d'Ingénierie, TPSCG

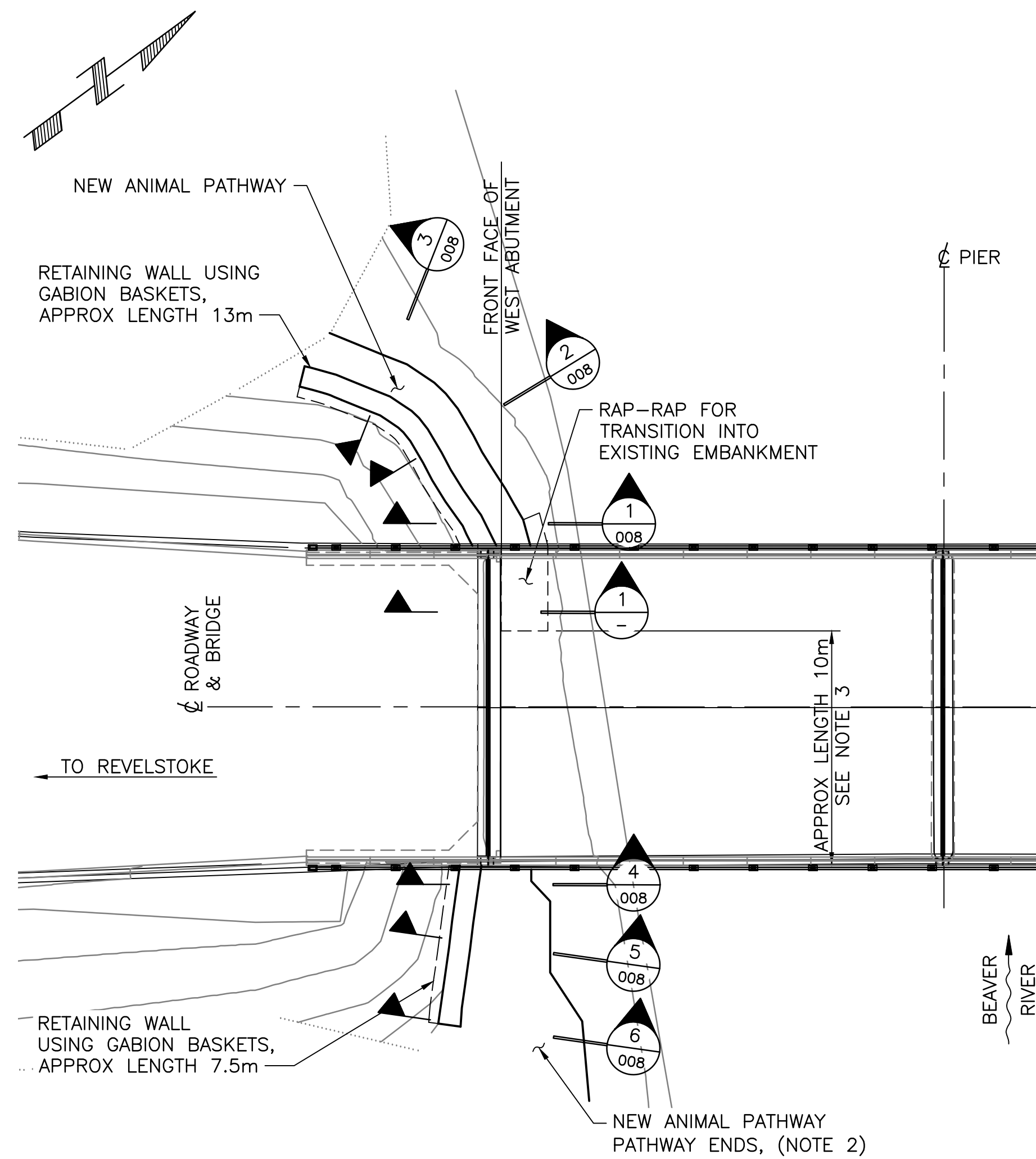
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**BICYCLE RAILING**

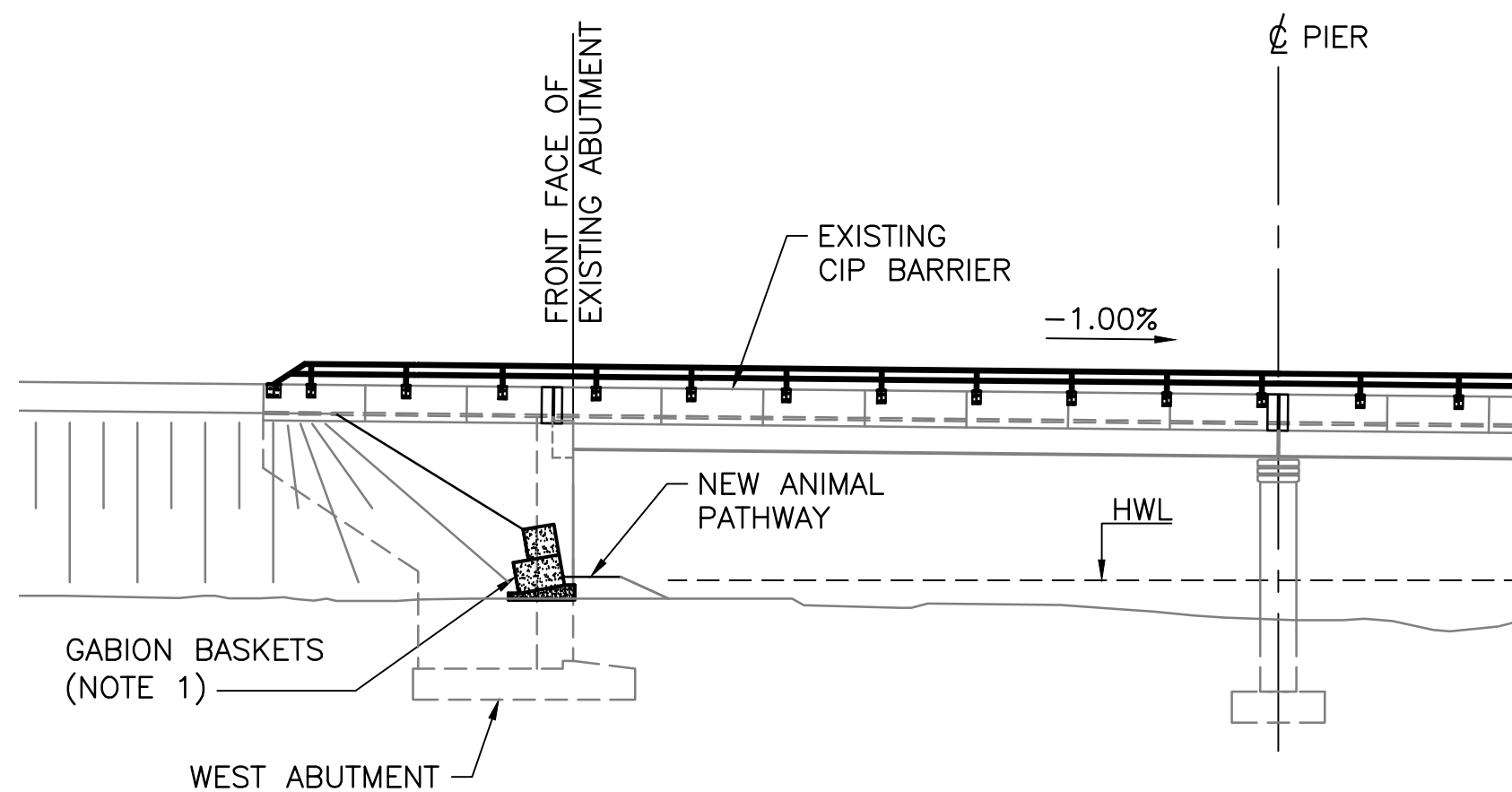
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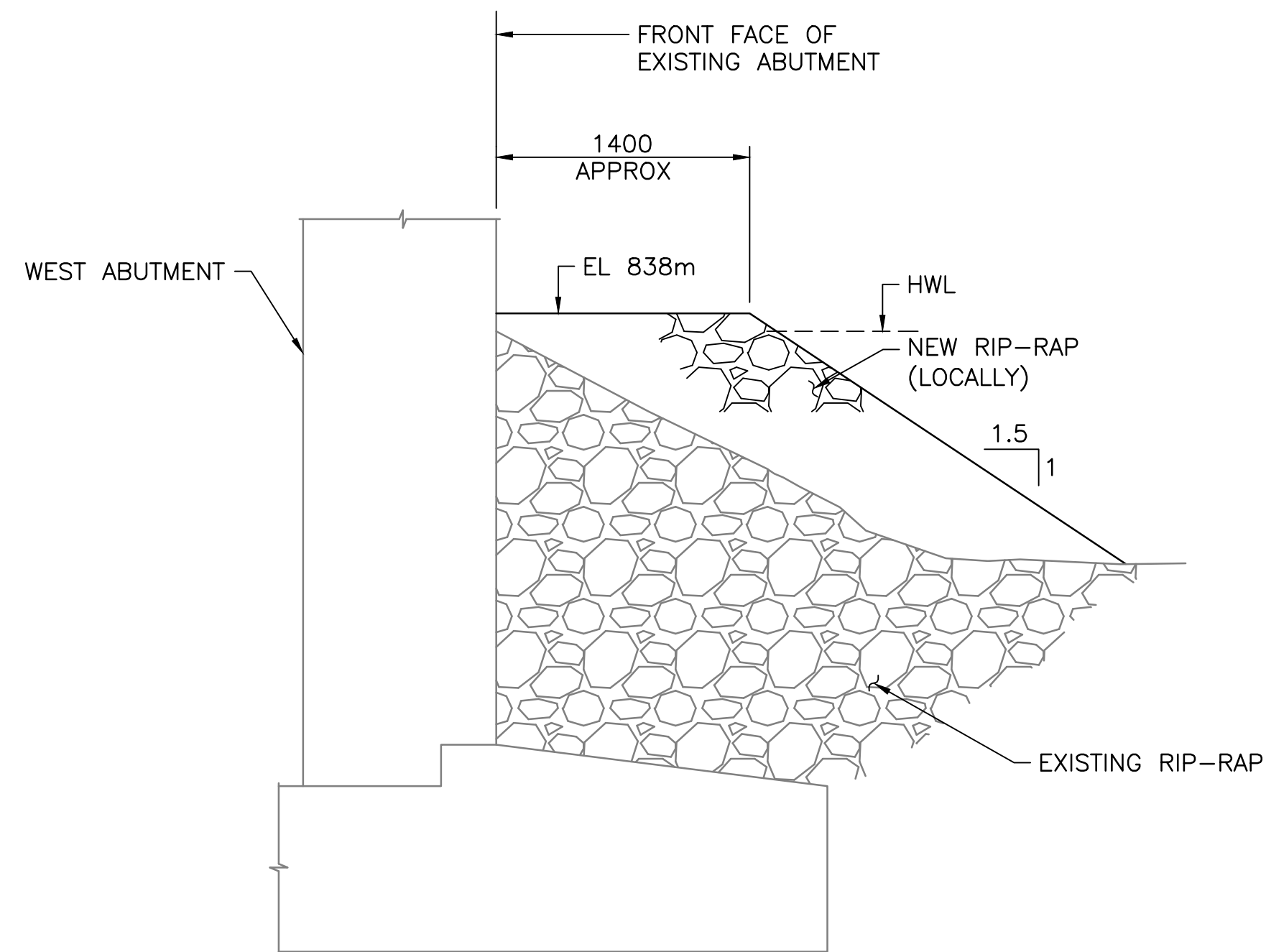
FINAL CONDITION - PLAN

1:200



ELEVATION

1:200



SECTION 1  
1:30

NOTES:

1. DETAILS SHOWN FOR GABION RETAINING WALL CONCEPTUAL ONLY. CONTRACTOR TO PROVIDE SIGNED AND SEALED DETAILED DESIGN FOR GABION RETAINING WALL, IN ACCORDANCE WITH SPECIFICATIONS.
2. PATHWAY ENDS TO SEAMLESSLY FADE INTO EXISTING TERRAIN.
3. NO WORK REQUIRED UNDERNEATH THE BRIDGE IN REGION NOTED. EMBANKMENT TO BE KEPT UNCHANGED.

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Drawn by/ Dessiné par  
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ANIMAL PATHWAY - CONCEPTUAL  
SHEET 1

Project No./ No. du projet  
1080-01

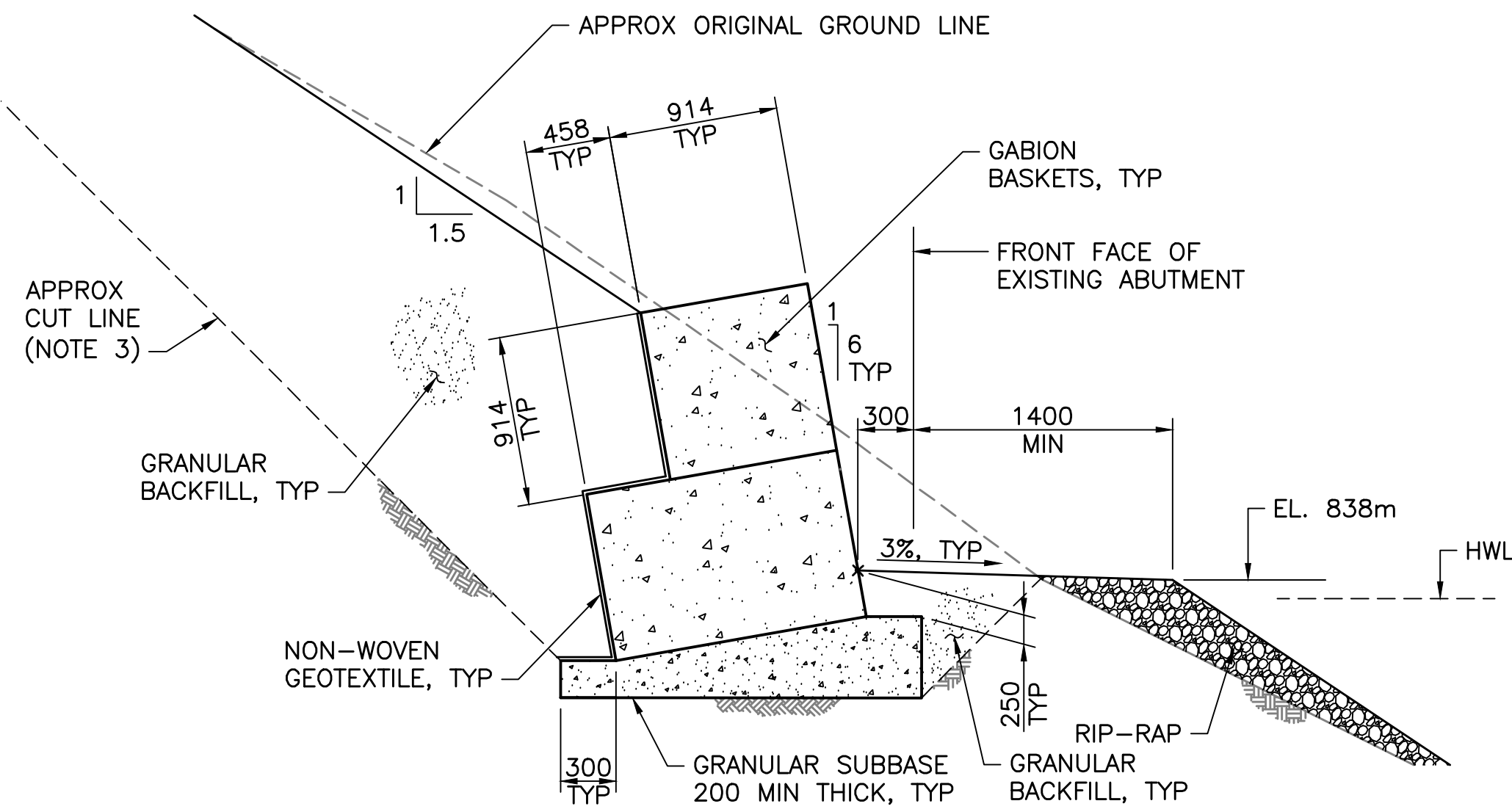
Sheet/ Feuille  
007  
OF

Revision no./  
La Révision  
no.  
A

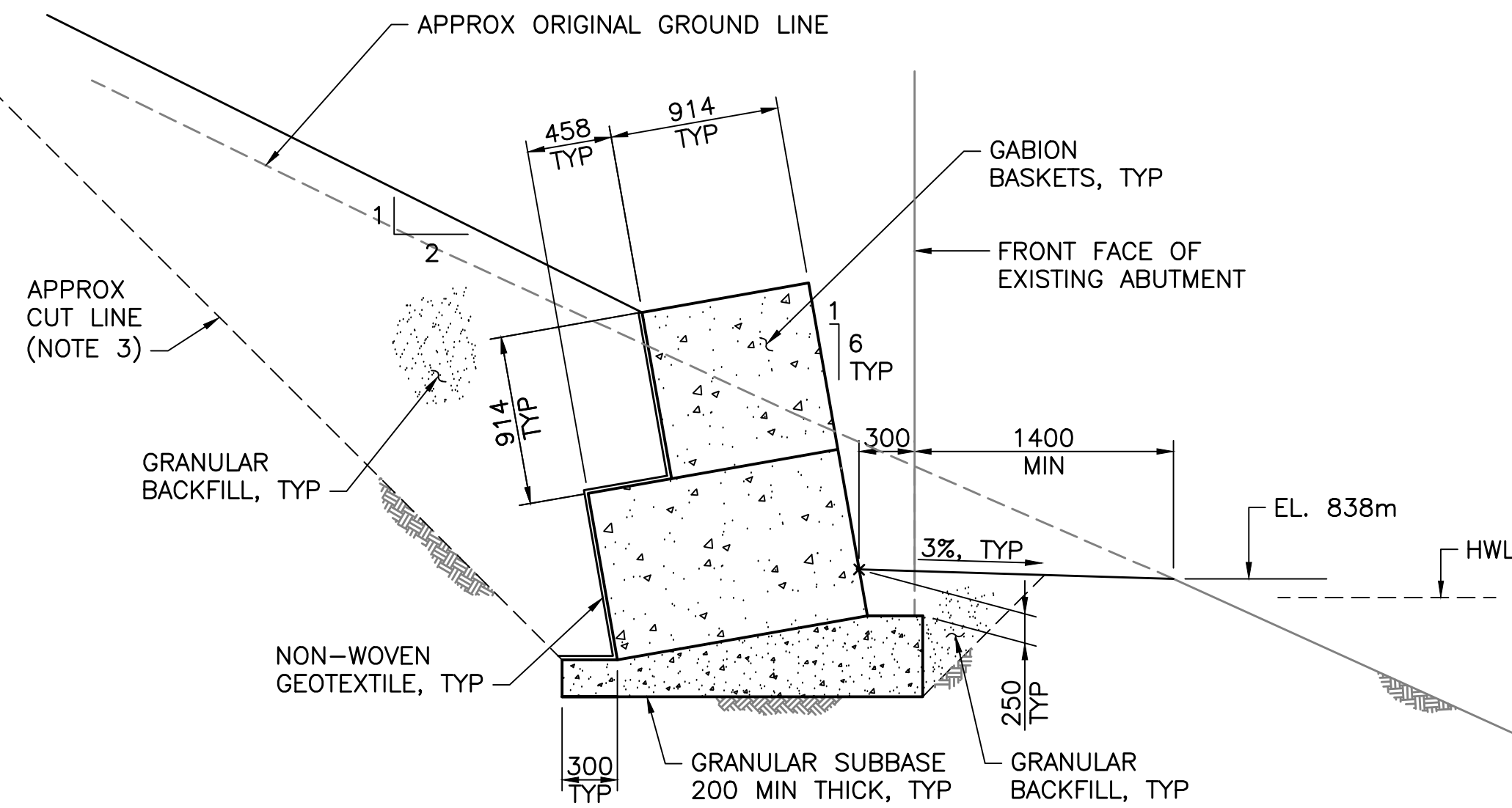


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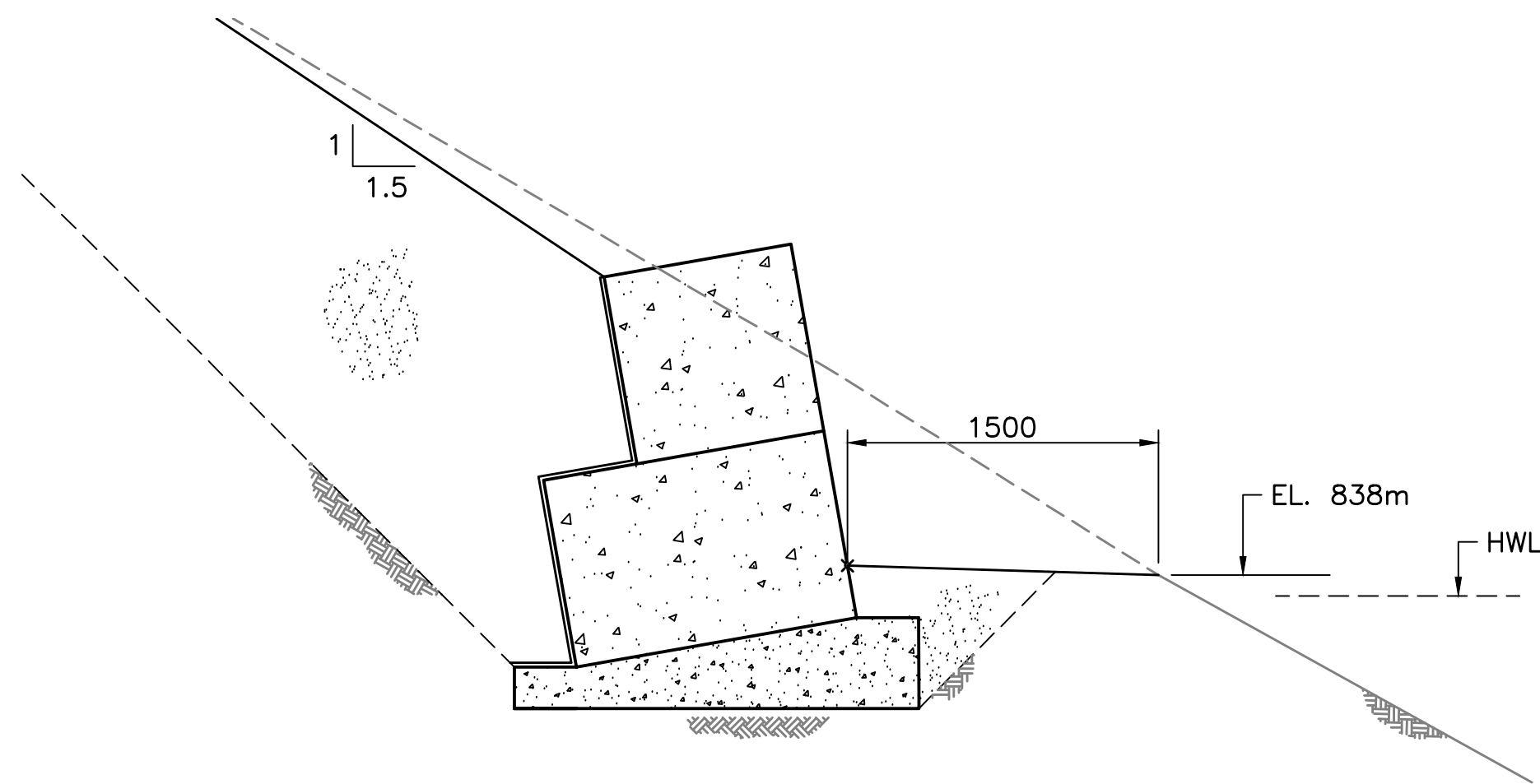
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SECTION 1  
1:30  
007

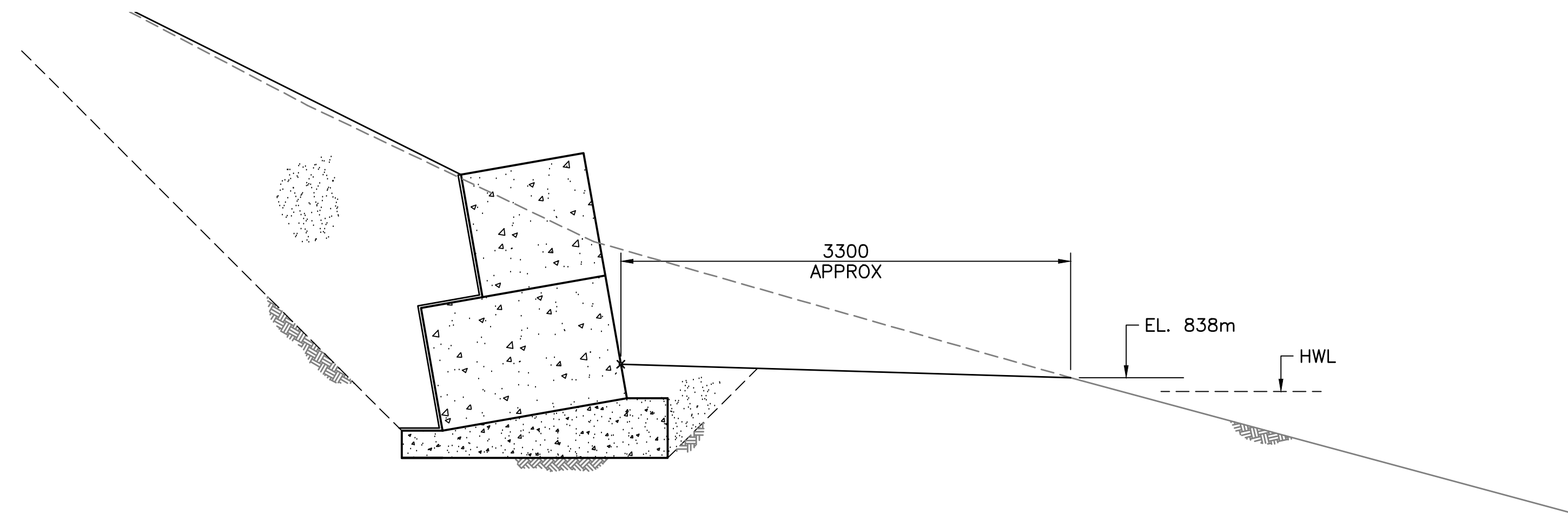


SECTION 4  
1:30  
007



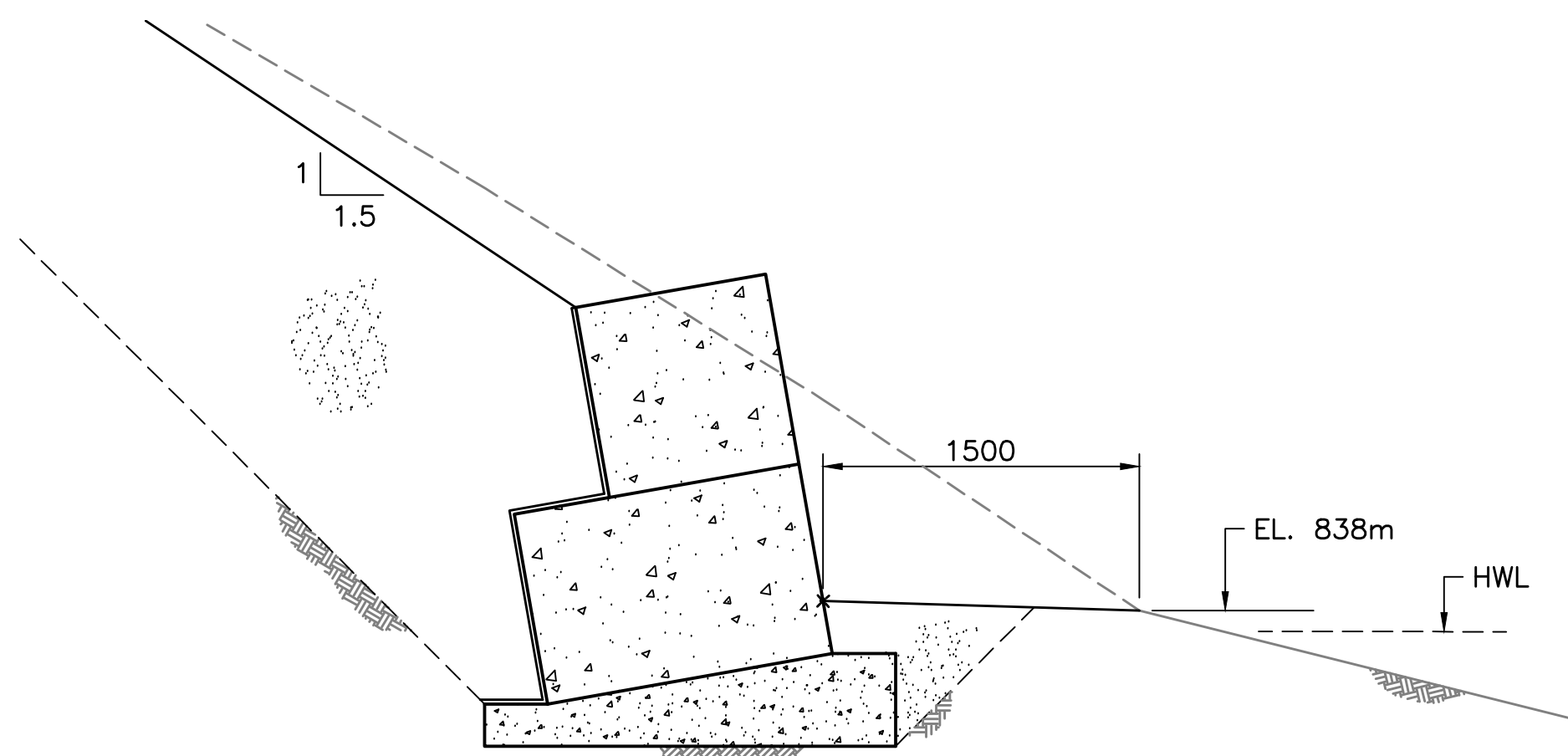
SECTION 2  
1:30  
007

SEE SECTION 1 FOR  
DIMENSIONS AND  
DETAILS NOT SHOWN



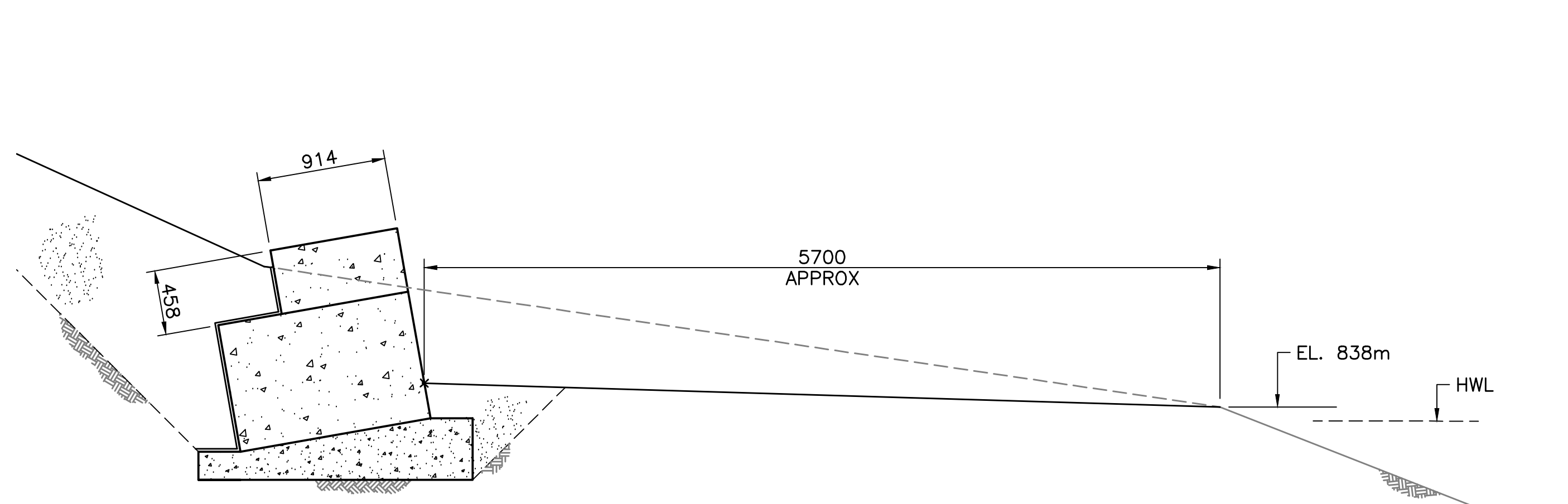
SECTION 5  
1:30  
007

SEE SECTION 4 FOR  
DIMENSIONS AND  
DETAILS NOT SHOWN



SECTION 3  
1:30  
007

SEE SECTION 1 FOR  
DIMENSIONS AND  
DETAILS NOT SHOWN



SECTION 6  
1:30  
007

SEE SECTION 4 FOR  
DIMENSIONS AND  
DETAILS NOT SHOWN

CONCEPT ONLY. CONTRACTOR TO PROVIDE  
DETAILED DESIGN FOR GABION RETAINING  
WALL IN ACCORDANCE WITH SPECIFICATION.

#### NOTES:

- ELEVATIONS ARE REFERENCED TO GEODETIC DATUM CVD 28.
- GABION BASKET FILL ACCORDING DESIGN SPECIFICATIONS.
- TEMPORARY SLOPE SUPPORT NOT SHOWN. ACTUAL SLOPE OF CUT LINE TO BE DETERMINED BY CONTRACTOR DEPENDING ON CONTRACTOR MEANS AND METHOD.
- FOR PATHWAY ENDS, SEE NOTE 2 ON SHEET 007.

ISSUED FOR TENDER  
NOT FOR CONSTRUCTION

DO NOT SCALE DRAWINGS

A	ISSUED FOR TENDER	20/03/08
Revision/ Révision	Description/Description	Date/Date

Client/client  
Parks Canada  
Agency  
L'Agence Parcs  
Canada

COWI

Project title/Titre du projet  
BRIDGE REHABILITATION  
GLACIER NATIONAL PARK, BRITISH COLUMBIA  
KM 9.7 TRANS-CANADA HIGHWAY  
BEAVER RIVER BRIDGE

Approved by/Approuvé par  
JUGN

Designed by/Conçu par  
TWB

Drawn by/Dessiné par  
LT

PWOSC Project Manager/Administrateur de Projets TPSCG

PWOSC, Architectural and Engineering Resources Manager/  
Ressources Architectural et de Directeur d'Ingénierie, TPSCG

Client/client  
PCA

Drawing title/Titre du dessin

ANIMAL PATHWAY - CONCEPTUAL  
SHEET 2

Project No./No. du projet 1080-01	Sheet/Feuille 008 OF	Revision no./ La Révision no. A
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