

Public Services and
Procurement Canada

Services publics et
Approvisionnement Canada

Real Property Services Branch
Professional and Technical Services
Pacific Region

ALASKA HIGHWAY, B.C.

EROSION REPAIRS

Emergency Pier Scour Protection - Racing River Bridge km 641.1

Project No.: R.122128.002

Emergency Embankment Stabilization - Liard River km 780

Project No.: R.117668.001

DRAWING INDEX

C01 - COVER SHEET

C02 - RACING RIVER BRIDGE km 641.1 - GENERAL ARRANGEMENT AND RIPRAP DETAILS

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C05 - LIARD RIVER KM 780.0 - SECTIONS 2 OF 2



Revision	Description	Date
0	ISSUED FOR TENDER	21/08/06



Project title: **BRITISH COLUMBIA ALASKA HIGHWAY**

EROSION REPAIRS
Project No.: R.122128.002
Project No.: R.117668.001

Designed by: **S. HARADA**
Drawn by: **P. LOWNEY**
Approved by: **K. HENSHAW**

Drawing title: **COVER SHEET**

Project no./No. du projet	Drawing no./No. du dessin	Revision no.
R.122128.002 R.117668.001	C01 OF 5	0

BRITISH COLUMBIA

AUGUST 2021

1. GENERAL

- 1.1 THE METRIC SYSTEM OF MEASUREMENT IS USED ON ALL DRAWINGS. ELEVATIONS AND STATIONS ARE SHOWN IN METRES AND ALL OTHER DIMENSIONS ARE SHOWN IN MILLIMETRES, UNLESS NOTED OTHERWISE (U.N.O.)
- 1.2 EXISTING PIER DETAILS ARE BASED ON U.S. FEDERAL WORKS AGENCY'S 1943 RECORD DRAWINGS AND PUBLIC WORKS CANADA'S 1975 PIER MODIFICATION DRAWINGS.
- 1.3 ALL ELEVATIONS REFERENCED TO CVGD28.
- 1.4 AERIAL PHOTO AND SURVEY CAPTURED ON 2020-10-03.
- 1.5 REPAIRS BEING UNDERTAKEN ARE FOR THE PURPOSE OF PROTECTING AND STABILIZING PIER No. 3 (MID-CHANNEL PIER)
- 1.6 DESIGN DIMENSIONS ARE BASED ON INSPECTION INFORMATION AND SURVEY DATA. ADJUSTMENTS TO THE DESIGN MAY BE REQUIRED BASED ON ACTUAL FIELD CONDITIONS AT THE TIME OF CONSTRUCTION. THE ENGINEER OF RECORD SHALL BE CONTACTED IF SIGNIFICANT DIFFERENCES ARE FOUND.

CONSTRUCTION SEQUENCE NOTES

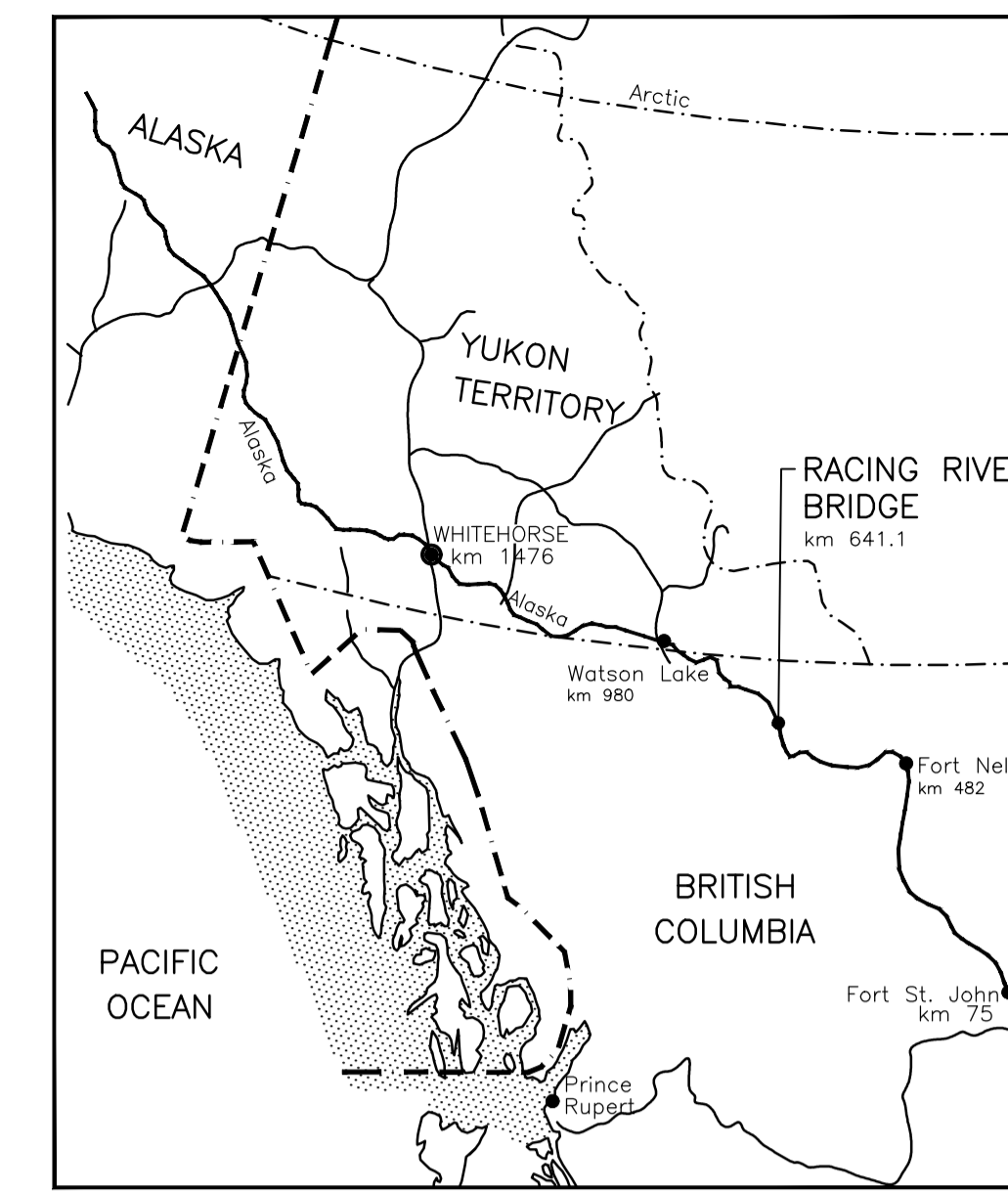
1. PRIOR TO CONSTRUCTION, DISCUSS THE RIPRAP LAYOUT WITH THE DEPARTMENTAL REPRESENTATIVE AND AGREE ON ANY CHANGES REQUIRED IF CONDITIONS DO NOT MATCH DRAWINGS.
2. INSTALL ENVIRONMENTAL PROTECTION MEASURES AND SITE ISOLATION AS NEEDED.
3. SALVAGE EXISTING ROCK AS NECESSARY.
4. EXCAVATE, TRIM AND BACKFILL AS NECESSARY TO CONSTRUCT 1.5H:1V SLOPE SUITABLE FOR RIPRAP PLACEMENT.
5. PLACEMENT OF GRAVEL/COBBLE MATERIAL BELOW THE PIER CAP SHOULD BE FREE OF FINES, AND SHALL BE PLACED IN LIFTS IN CONJUNCTION WITH THE RIPRAP.
6. PLACE RIPRAP TO DIMENSIONS AND ELEVATIONS SHOWN AND AS AGREED TO WITH DEPARTMENTAL REPRESENTATIVE.

RIPRAP NOTES

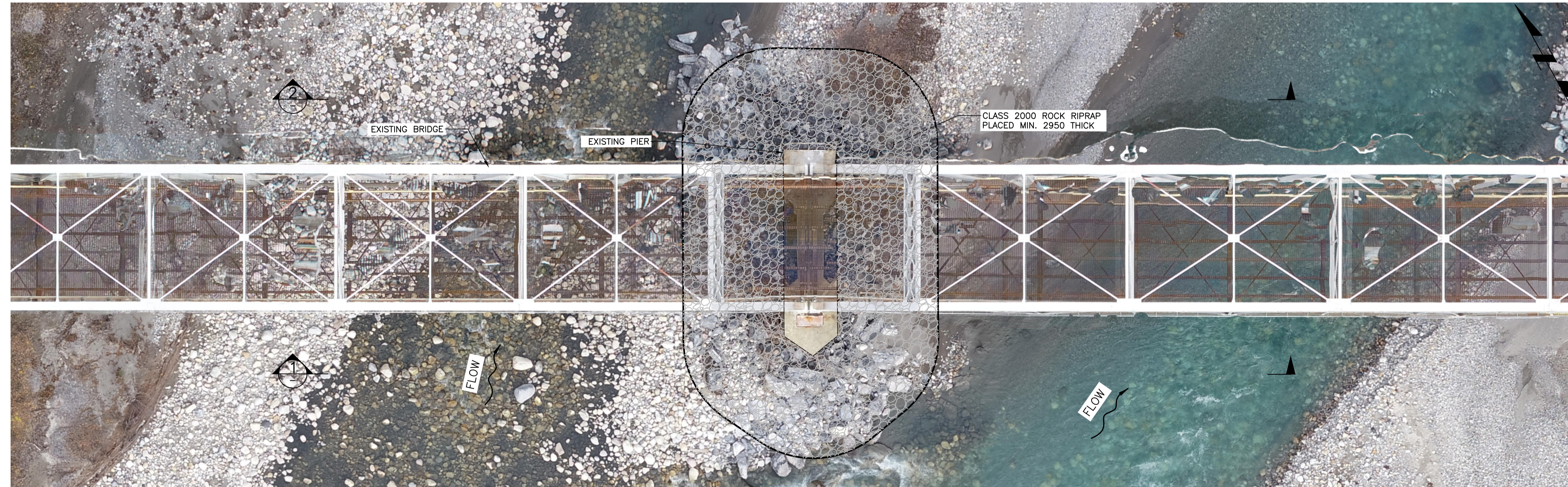
1. ESTIMATED 25-YEAR DESIGN FLOW WITHOUT CLIMATE CHANGE: 290 m³/s.
2. ROCK RIPRAP SHALL COVER THE AREA SHOWN AND SHALL BE A MINIMUM THICKNESS OF 2950mm.
3. PLACE RIPRAP AT A SLOPE NO STEEPER THAN 1.5H:1V
4. PLACE NON-WOVEN FILTER FABRIC UNDER ALL ROCK RIPRAP.
5. CLASS 2000 kg RIPRAP SHALL CONTAIN ANGULAR ROCK WITH AN AVERAGE DIMENSION OF 1150mm, AND SHALL CONFORM TO THE FOLLOWING GRADATION REQUIREMENTS:

ROCK GRADATION %	WEIGHT LESS THAN (kg)	APPROXIMATE DIAMETER LESS THAN (mm)
15%	200	535
50%	2000	1150
85%	6000	1650

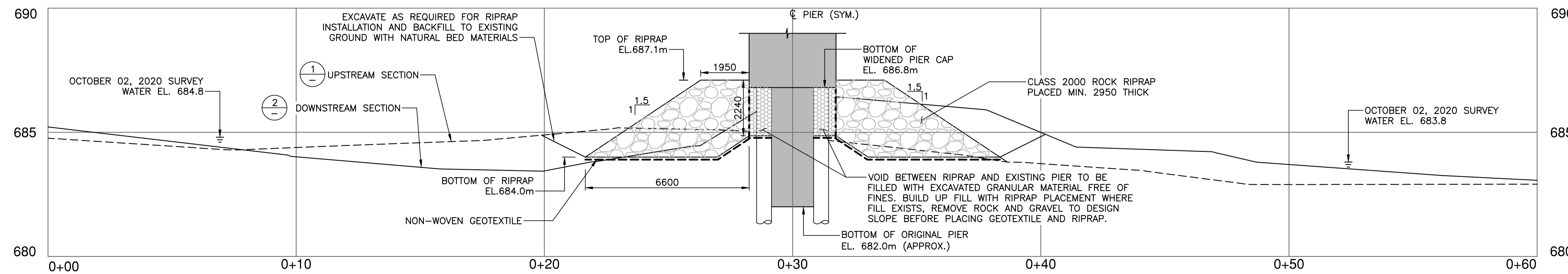
6. TOTAL ESTIMATES CLASS 2000kg RIPRAP VOLUME = 604 m³
7. TOTAL ESTIMATED RIPRAP FOOTPRINT = 355 m²
8. BOTTOM OF ROCK ELEVATION MAY BE INCREASED TO A MAXIMUM OF 684.2 m TO ACCOMMODATE HIGHER THAN ANTICIPATED WATER LEVELS. THE TOTAL VOLUME OF RIPRAP PLACED SHALL NOT BE DECREASED FROM THE DESIGN VOLUME. THE MAXIMUM RIPRAP FOOTPRINT SHALL NOT BE INCREASED.



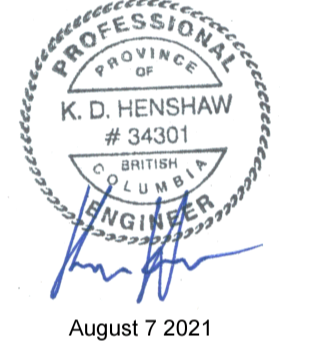
LOCATION MAP
SCALE: NTS



PLAN - RACING RIVER BRIDGE
SCALE 1:150



TYPICAL SECTION
SCALE 1:100



Revision	Description	Date
0	ISSUED FOR TENDER	21/08/06



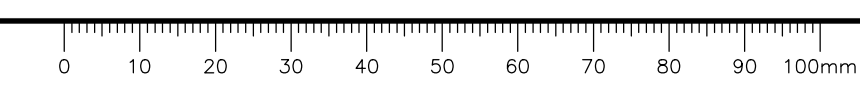
Project title: BRITISH COLUMBIA ALASKA HIGHWAY

EROSION REPAIRS
Emergency Pier Scour Protection
Racing River Bridge km 641.1
Project No.: R.122128.002

Designed by: S. HARADA
Drawn by: P. LOWNEY
Approved by: K. HENSHAW

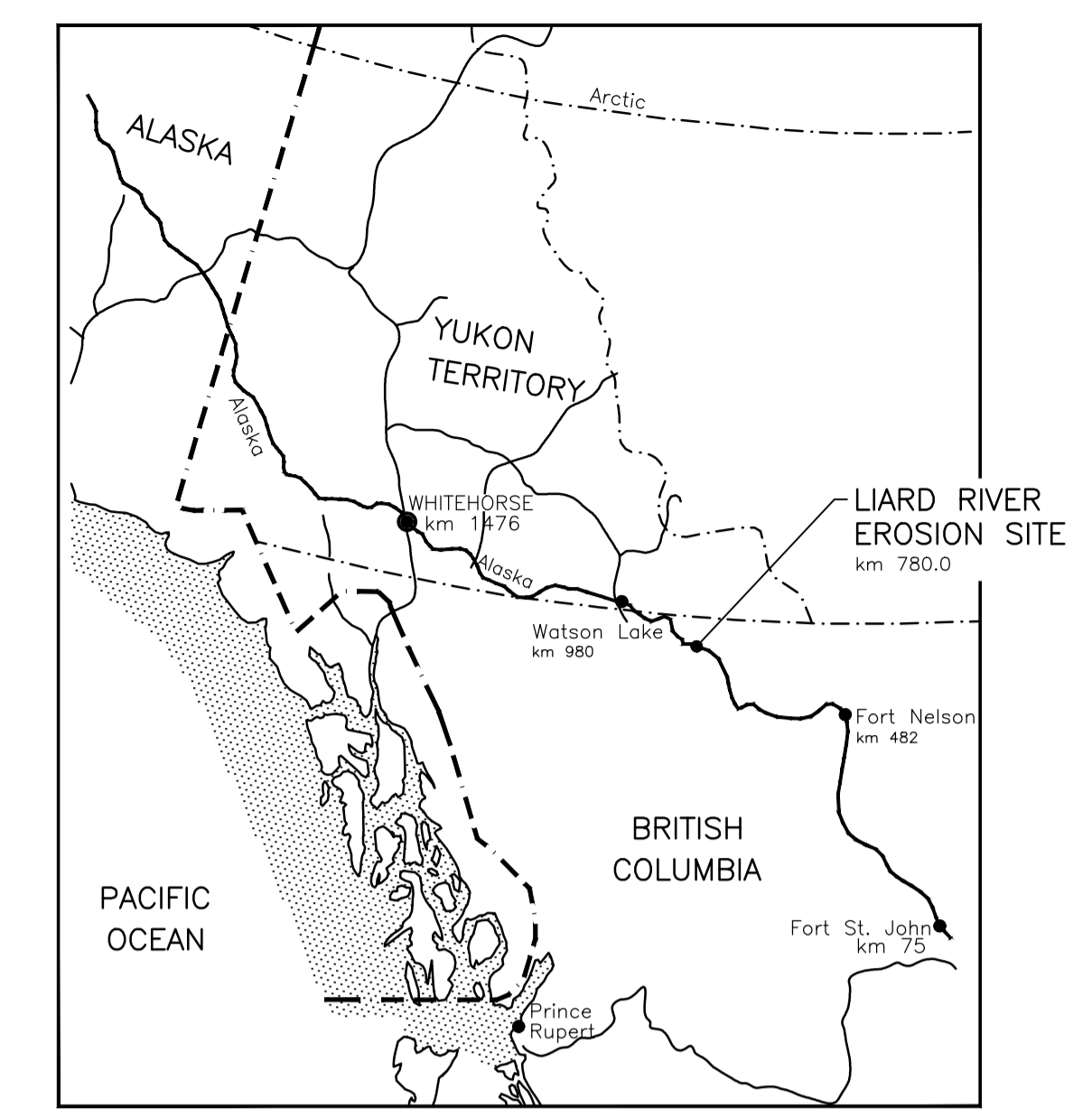
Drawing title: RACING RIVER BRIDGE km 641.1
GENERAL ARRANGEMENT AND RIPRAP DETAILS

Project no./No. du projet	Drawing no./No. du dessin	Revision no.
R.122128.002	C02 OF 5	0

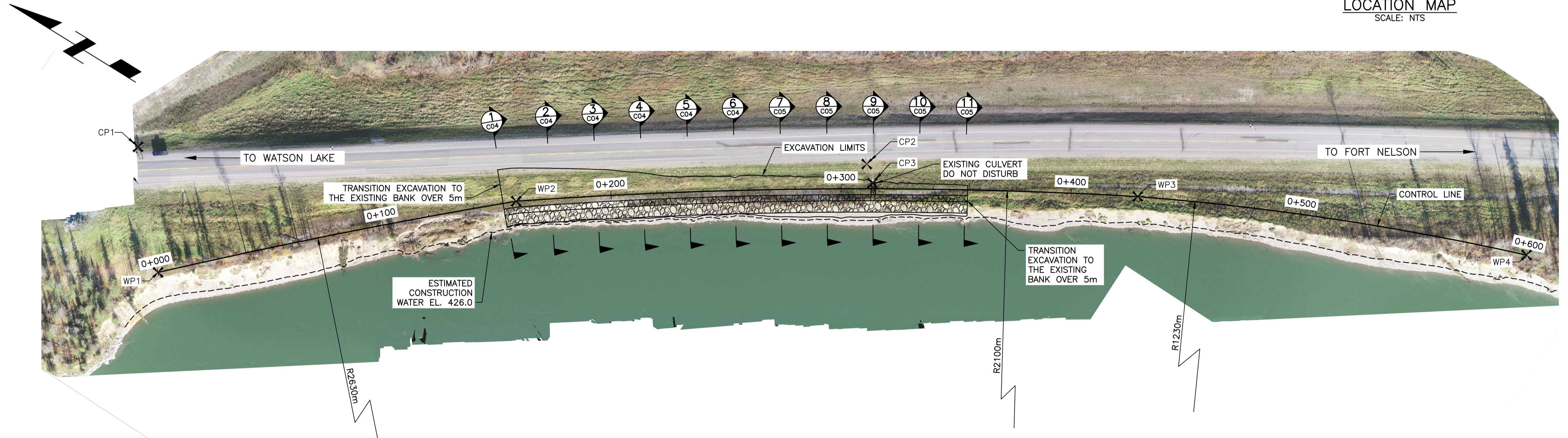


1. GENERAL

- 1.1 THE METRIC SYSTEM OF MEASUREMENT IS USED ON ALL DRAWINGS. ELEVATIONS AND STATIONS ARE SHOWN IN METRES AND ALL OTHER DIMENSIONS ARE SHOWN IN MILLIMETERS, UNLESS NOTED OTHERWISE (U.N.O.)
- 1.2 ALL ELEVATIONS REFERENCED TO CVGD28
- 1.3 PROJECTED COORDINATE NAD 1983 UTM ZONE 9N
- 1.4 AIR PHOTO AND SURVEY DATA CAPTURED ON 2020-10-02
- 1.5 REPAIRS BEING UNDERTAKEN ARE FOR THE EMERGENCY PROTECTION AND STABILIZATION OF THE HIGHWAY EMBANKMENT SLOPE.
- 1.6 DESIGN DIMENSIONS ARE BASED ON INSPECTION INFORMATION AND SURVEY DATA. ADJUSTMENTS TO THE DESIGN MAY BE REQUIRED BASED ON ACTUAL FIELD CONDITIONS AT THE TIME OF CONSTRUCTION. THE ENGINEER OF RECORD SHALL BE CONTACTED IF SIGNIFICANT DIFFERENCES ARE FOUND.



LOCATION MAP
SCALE: NTS



LIARD RIVER EROSION SITE - PLAN
SCALE: 1:1000



0	ISSUED FOR TENDER	21/08/06
Revision	Description	Date
Client		client



Project title: **BRITISH COLUMBIA ALASKA HIGHWAY**

EROSION REPAIRS
Emergency Embankment Stabilization
Liard River km 780
Project No.: R.117668.001

Designed by: **S. HARADA**
Drawn by: **J. ERNEST**
Approved by: **K. HENSHAW**

Drawing title: **LIARD RIVER km 780 GENERAL ARRANGEMENT**

Project no./No. du projet	Drawing no./No. du dessin	Revision no.
R.117668.001	C03 OF 5	0

CONSTRUCTION SEQUENCE NOTES

1. PRIOR TO CONSTRUCTION, DISCUSS THE RIPRAP LAYOUT OF THE SITE WITH THE DEPARTMENTAL REPRESENTATIVE AND AGREE ON ANY CHANGES REQUIRED IF CONDITIONS DO NOT MATCH DRAWINGS.
2. INSTALL ENVIRONMENTAL PROTECTION MEASURES AND SITE ISOLATION AS NEEDED.
3. EXCAVATE, TRIM AND BACKFILL AS NECESSARY TO CONSTRUCT 1.5H:1V SLOPE SUITABLE FOR RIPRAP PLACEMENT.
4. PLACE RIPRAP TO DIMENSIONS AND ELEVATIONS SHOWN AND AS AGREED TO WITH DEPARTMENTAL REPRESENTATIVE.
5. TRIM AND PREPARE FINAL SLOPES AS REQUIRED.

RIPRAP NOTES

1. ESTIMATED DESIGN 50-YEAR FLOW WITHOUT CLIMATE CHANGE: 8440 m³/s.
2. ESTIMATED DESIGN CONSTRUCTION FLOW: 1500 m³/s. (APPROXIMATE AVERAGE FLOW FOR AUGUST)
3. CLASS 500 KG RIPRAP SHALL BE PLACED AT A MINIMUM OF 1200mm THICK.
4. MODIFIED CLASS 2000 KG RIPRAP SHALL BE PLACED AT A MINIMUM OF 1500mm THICK.
5. PLACE RIPRAP AT A SLOPE NO STEEPER THAT 1.5H:1V
6. PLACE NON-WOVEN FILTER FABRIC UNDER ALL ROCK RIPRAP.
7. CLASS 500 kg RIPRAP SHALL CONTAIN ANGULAR ROCK WITH AN AVERAGE DIMENSION OF 725mm, AND SHALL CONFORM TO THE FOLLOWING GRADATION REQUIREMENTS:

ROCK GRADATION %	WEIGHT LESS THAN (kg)	APPROXIMATE DIAMETER LESS THAN (mm)
15%	50	340
50%	500	752
85%	1500	1050

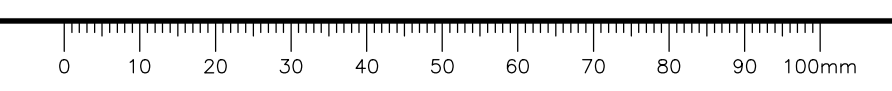
8. MODIFIED CLASS 2000 KG RIPRAP SHALL CONTAIN ANGULAR ROCK WITH AN AVERAGE DIMENSION OF 1200mm AND NO SMALLER THAN 725mm
9. TOTAL ESTIMATED CLASS 500 KG RIPRAP VOLUME = 1320 m³

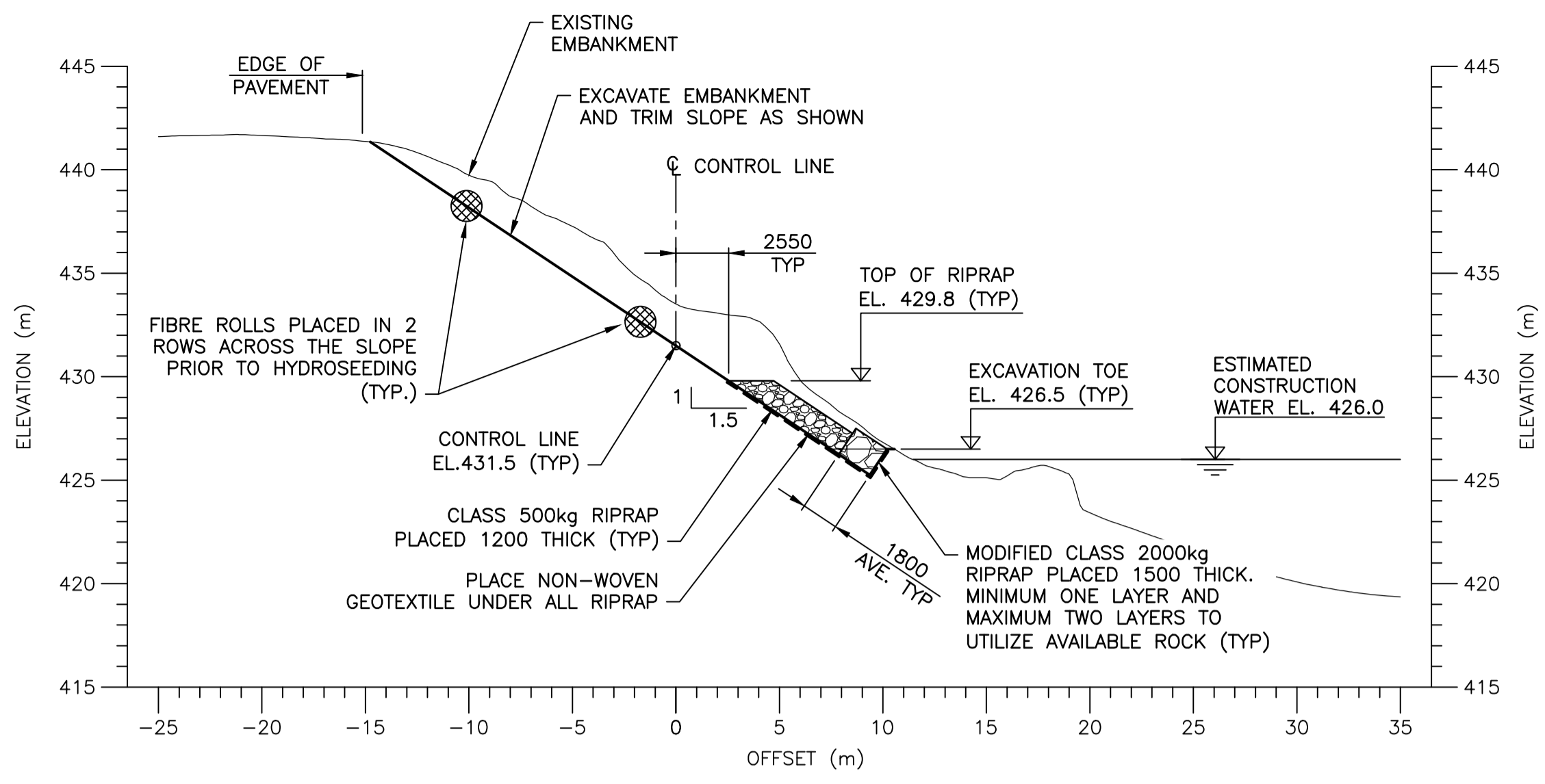
10. TOTAL ESTIMATED MODIFIED CLASS 2000KG RIPRAP VOLUME = 540 m³
11. BOTTOM OF ROCK ELEVATION MAY BE INCREASED TO ACCOMMODATE HIGHER THAN ANTICIPATED WATER LEVELS. MAXIMUM TOP OF RIPRAP ELEVATION SHALL REMAIN AT 429.8m.

WORKPOINT	NORTHING	EASTING	ELEVATION
WP1	6598640.648	651165.701	431.500
WP2	6598526.923	651276.360	431.500
WP3	6598301.523	651425.140	431.500
WP4	6598145.953	651495.879	431.500

WORKPOINT	NORTHING	EASTING	ELEVATION	DESCRIPTION
CP1	6598677.605	651206.694	448.160	CONTROL POINT
CP2	6598407.930	651372.841	435.996	CONTROL POINT
CP3	6598401.379	651367.233	433.727	CSP CULVERT OUTLET TOP

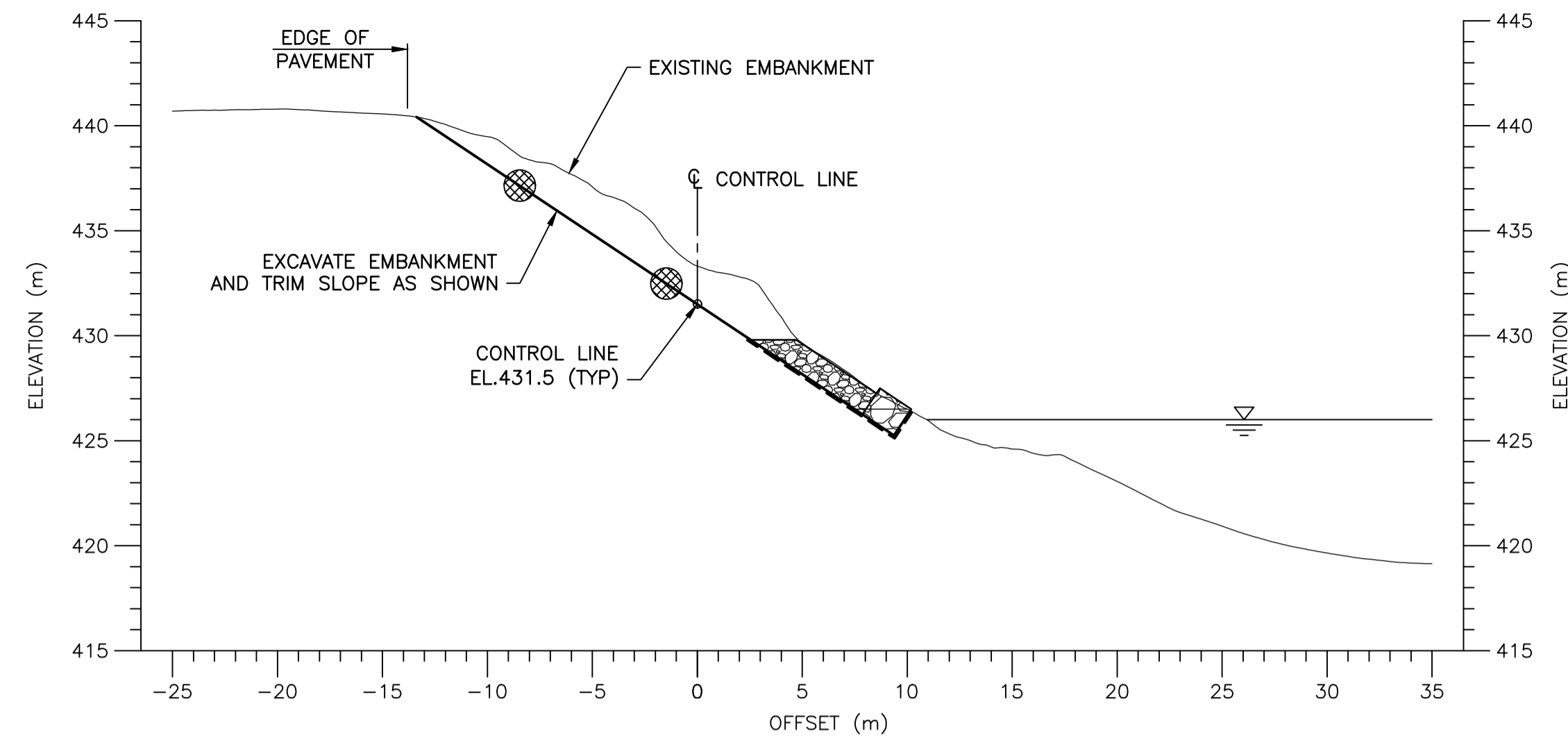
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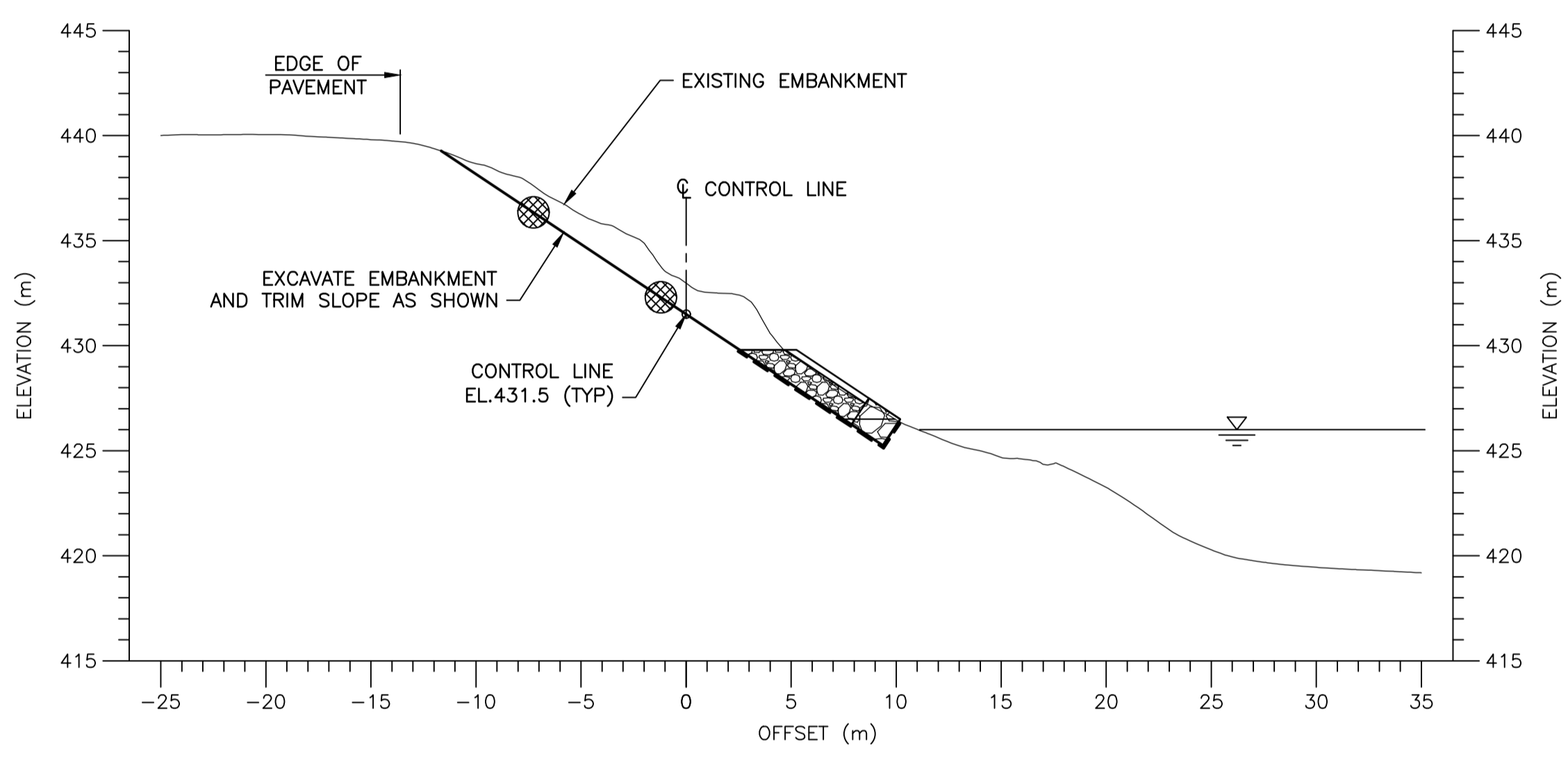
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SECTION 1
SCALE 1:250
C03



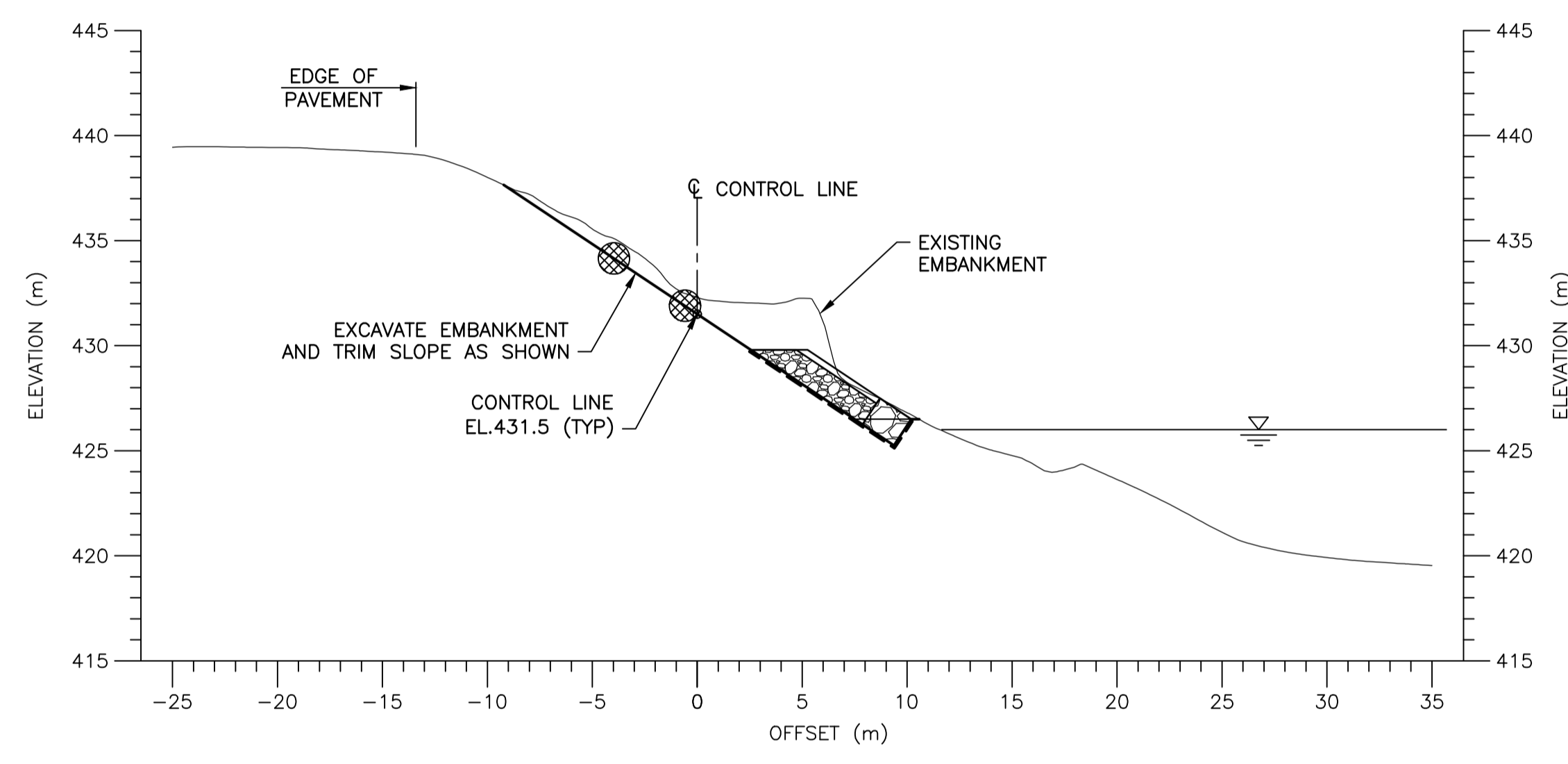
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SECTION 2
SCALE 1:250
C03



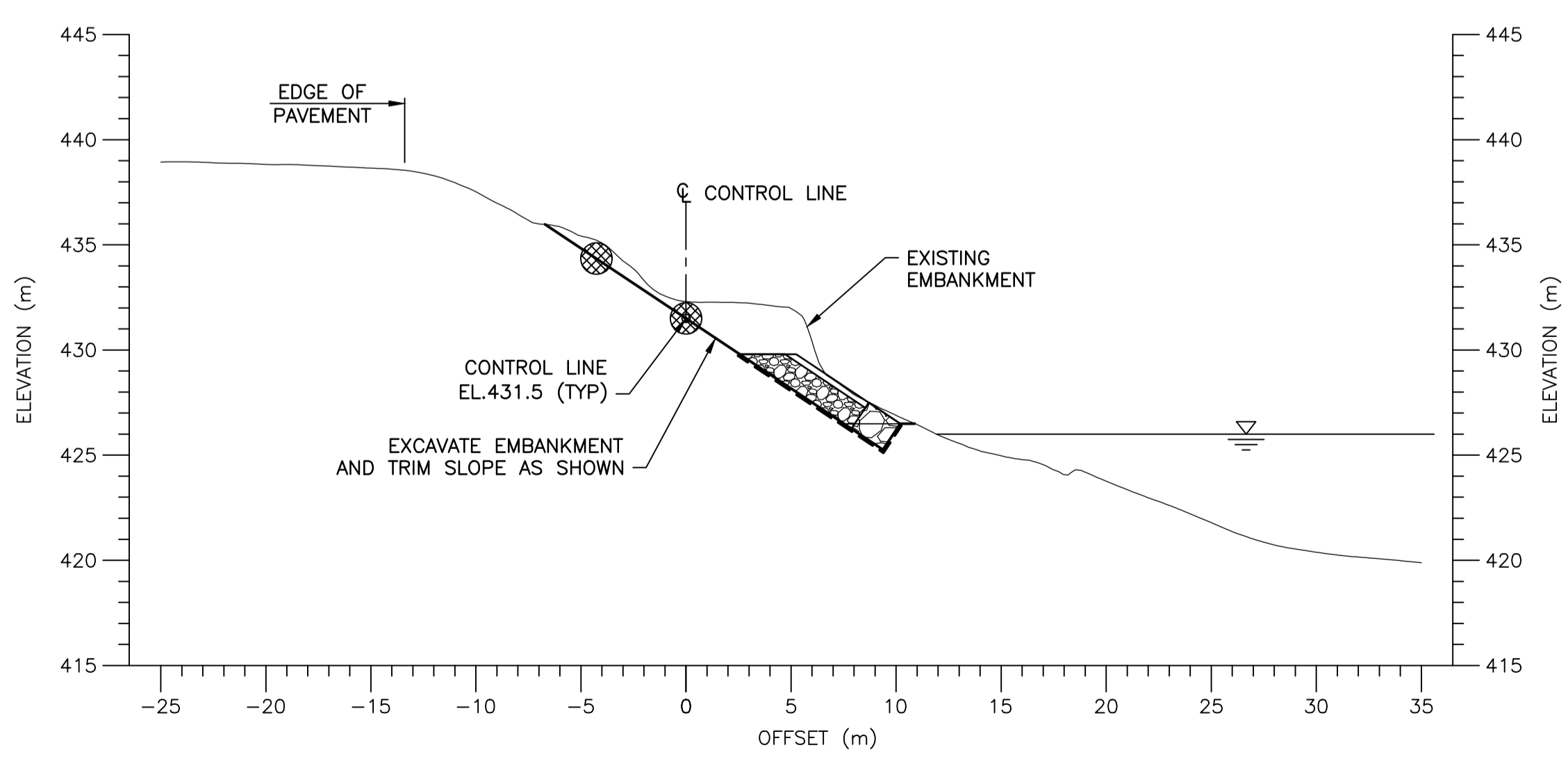
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SECTION 3
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C03



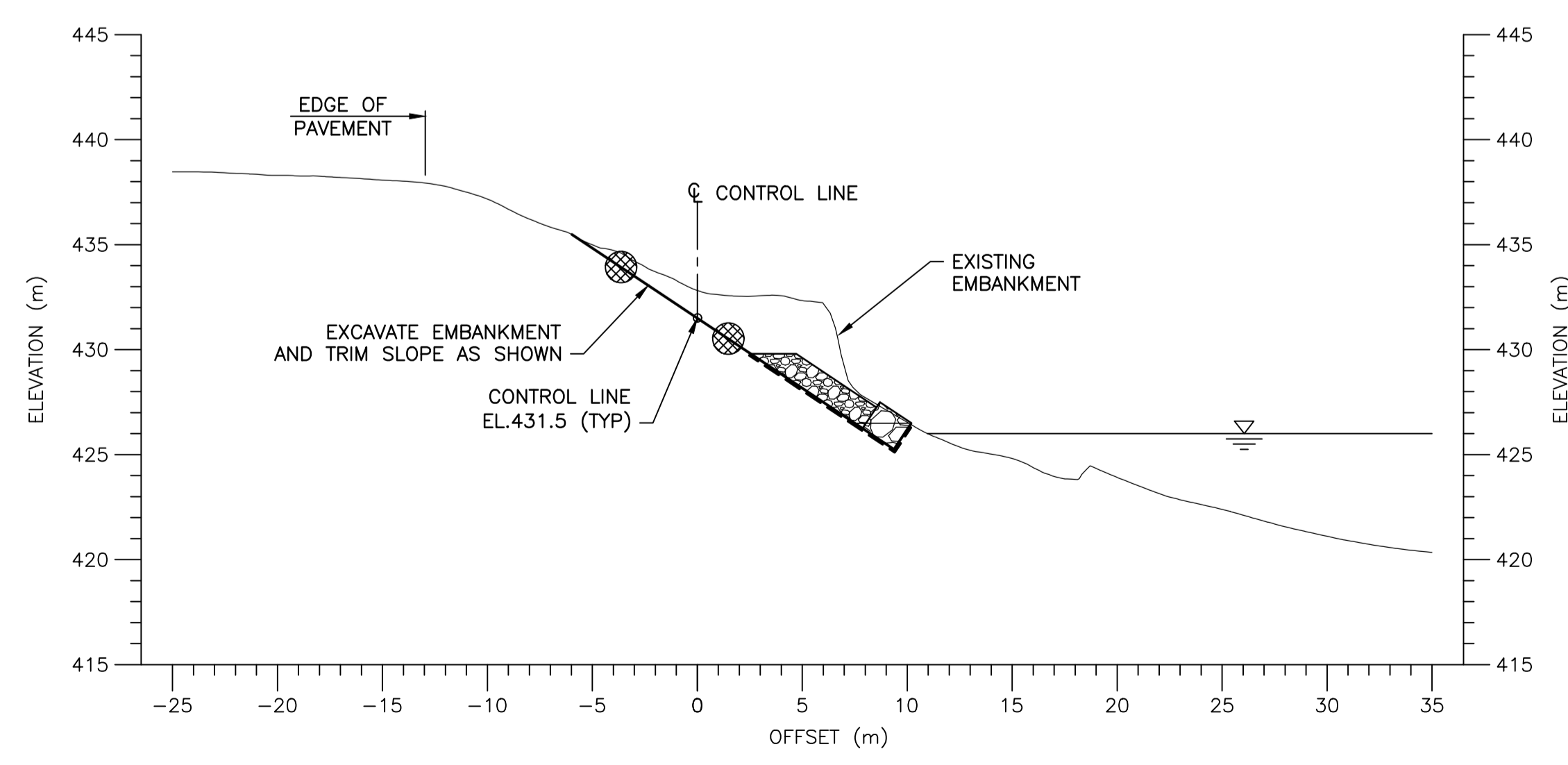
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SECTION 4
SCALE 1:250
C03



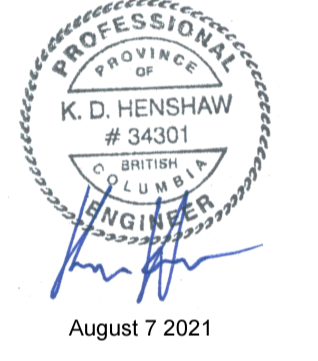
STA. 0+234.000

SECTION 5
SCALE 1:250
C03



STA. 0+254.000

SECTION 6
SCALE 1:250
C03



Revision	Description	Date
0	ISSUED FOR TENDER	21/08/06

Client _____



Project title **BRITISH COLUMBIA ALASKA HIGHWAY**

EROSION REPAIRS
Emergency Embankment Stabilization
Liard River km 780
Project No.: R.117668.001

Designed by **S. HARADA**

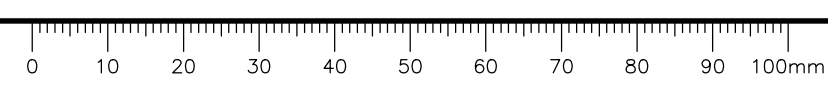
Drawn by **J. ERNEST**

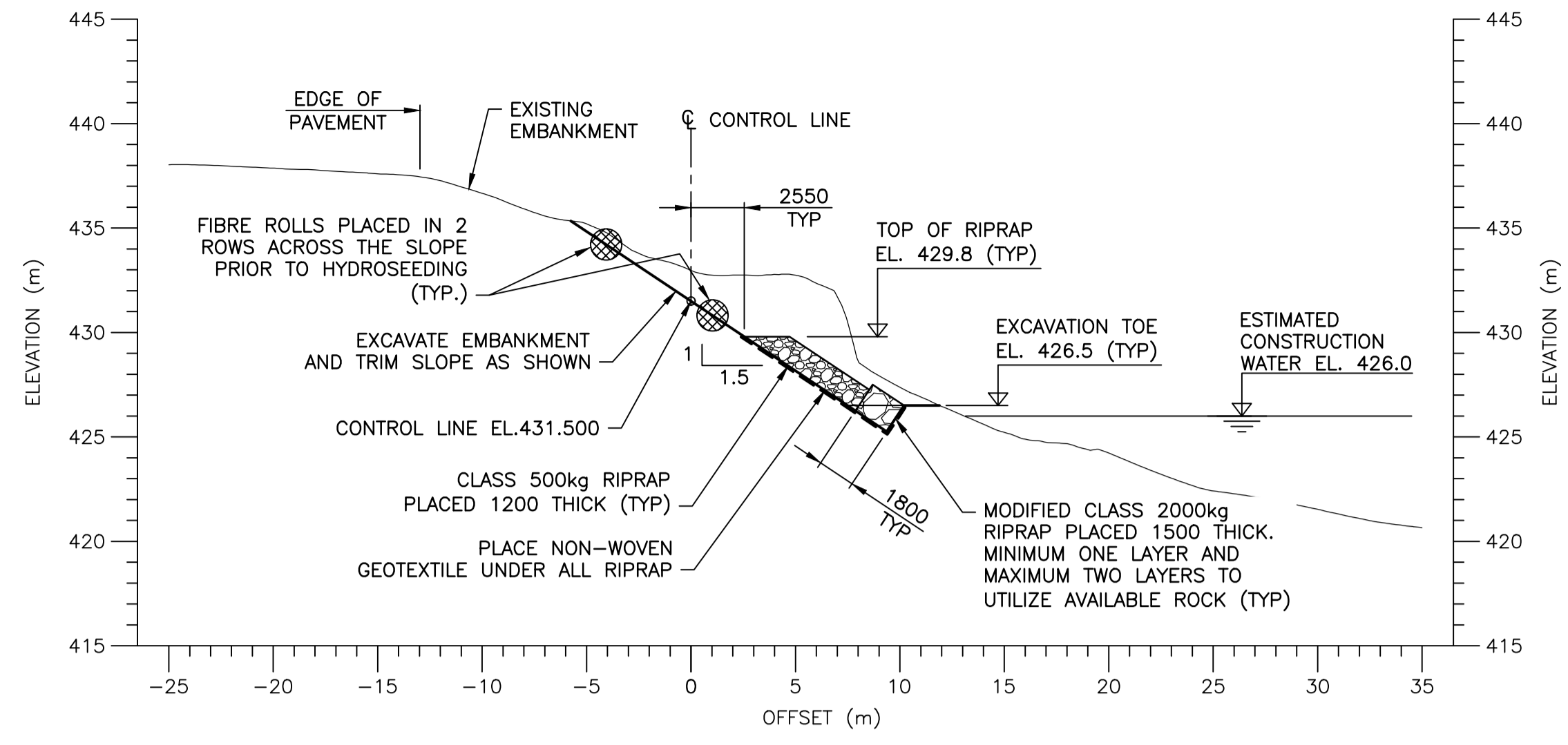
Approved by **K. HENSHAW**

Drawing title
LIARD RIVER km 780
SECTIONS 1 OF 2

Project no./No. du projet	Drawing no./No. du dessin	Revision no.
R.117668.001	C04 OF 5	0

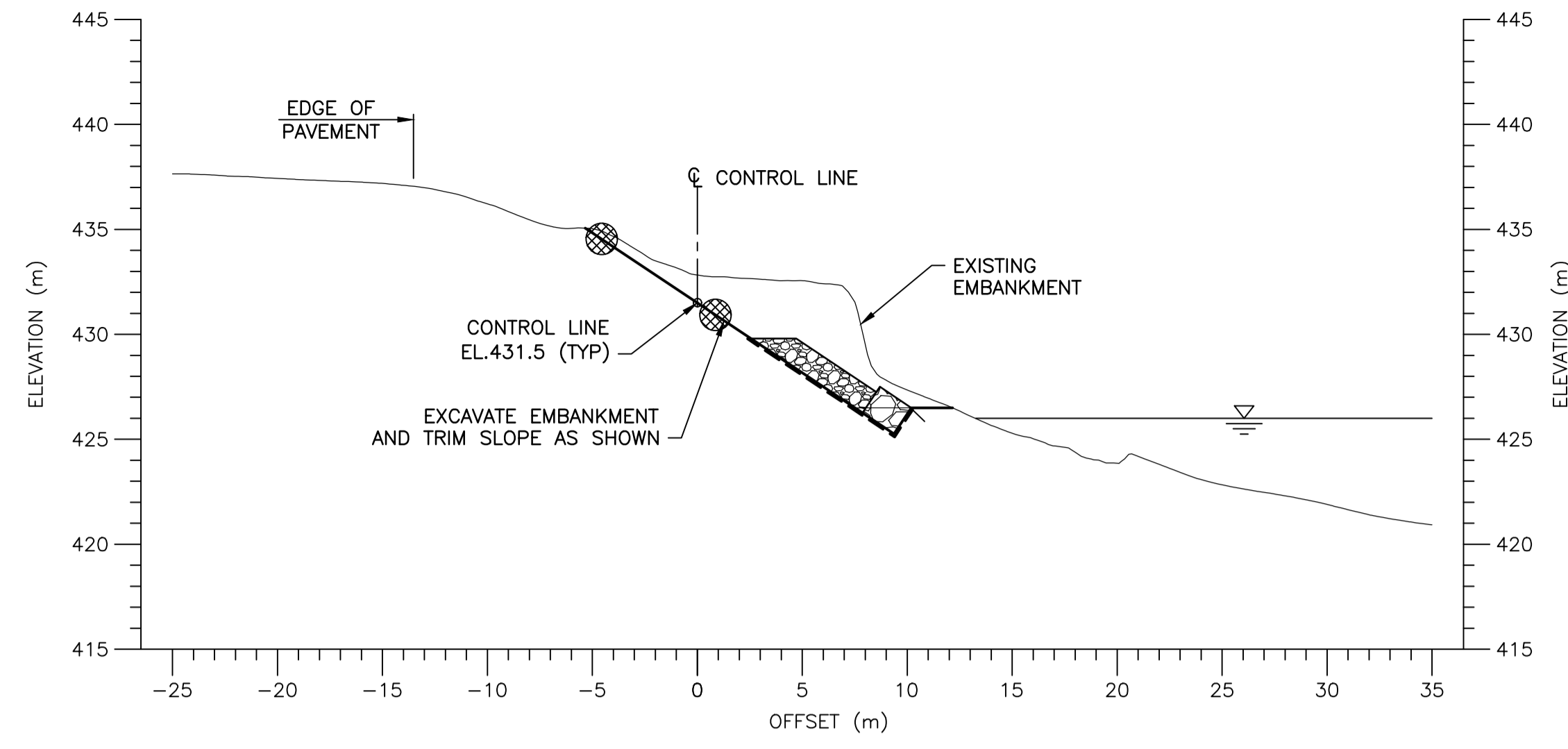
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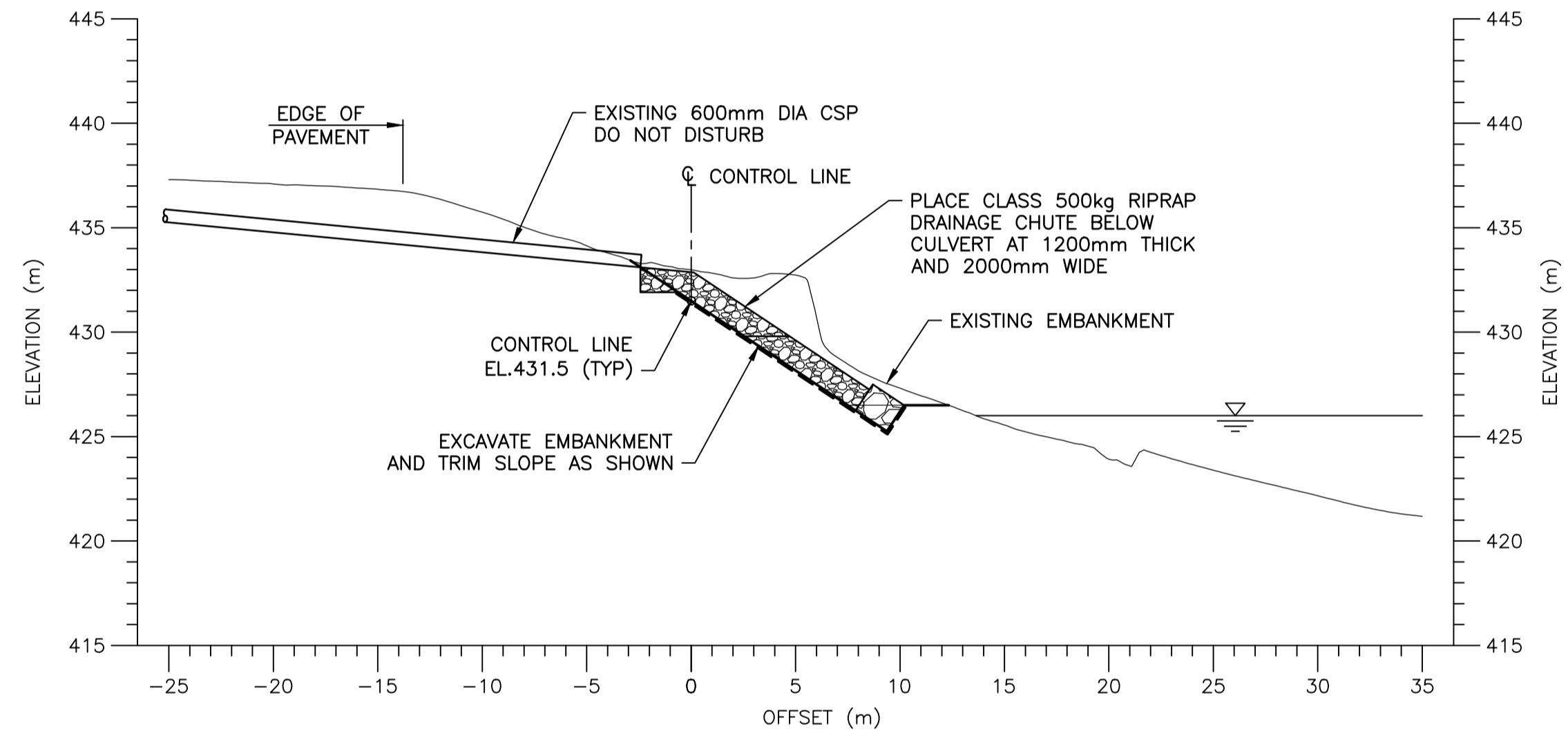
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SECTION 7
SCALE 1:250
C03



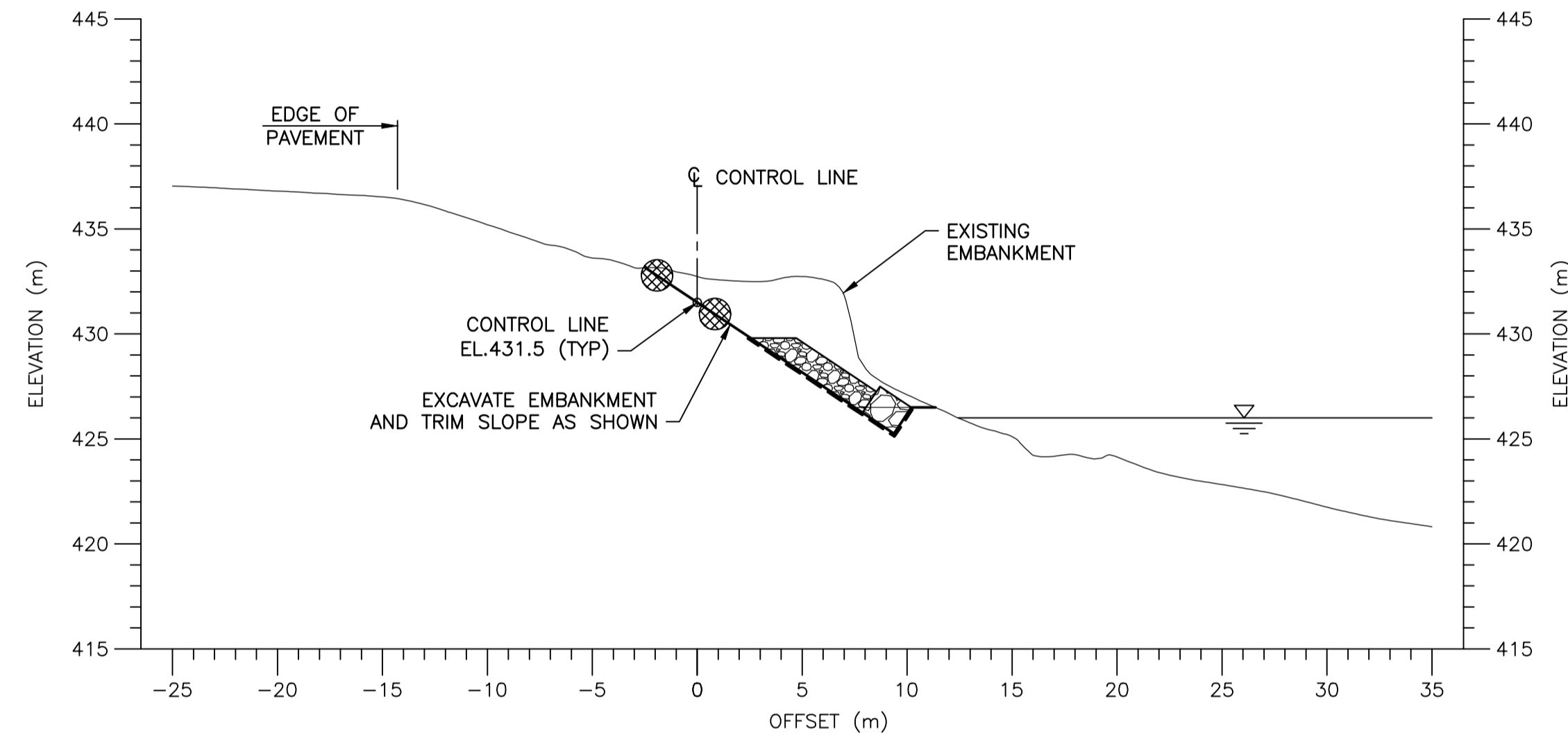
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SECTION 8
SCALE 1:250
C03



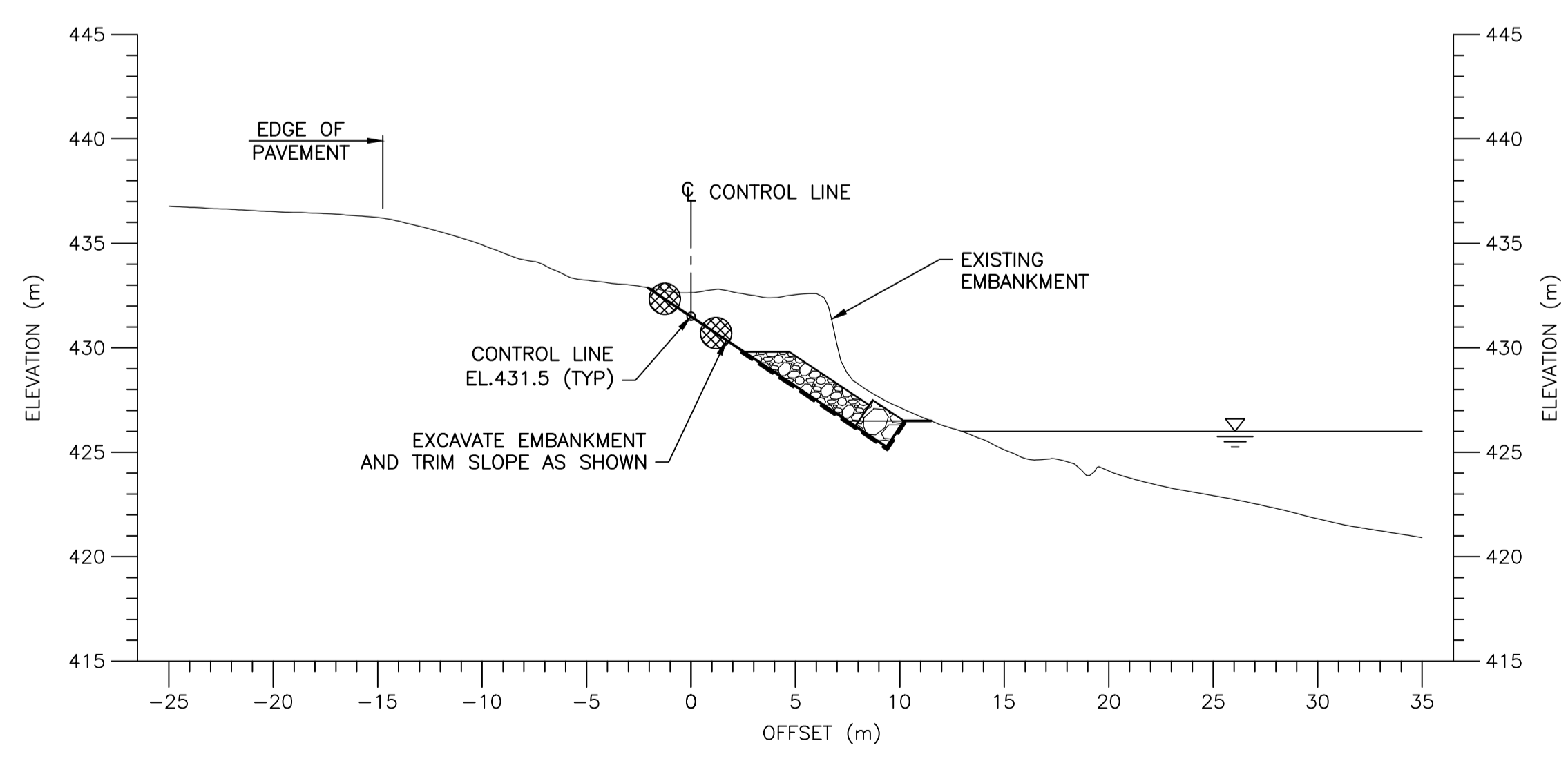
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SECTION 9
SCALE 1:250
C03



STA. 0+334.000

SECTION 10
SCALE 1:250
C03



STA. 0+354.000

SECTION 11
SCALE 1:250
C03



Revision	Description	Date
0	ISSUED FOR TENDER	21/08/06

Client _____ client



Project title **BRITISH COLUMBIA ALASKA HIGHWAY** Projet

EROSION REPAIRS
Emergency Embankment Stabilization
Liard River km 780
Project No.: R.117668.001

Designed by **S. HARADA** Conçu par

Drawn by **J. ERNEST** Dessiné par

Approved by **K. HENSHAW** Approuvé par

Drawing title **LIARD RIVER km 780 SECTIONS 2 OF 2** Titre du dessin

Project no./No. du projet	Drawing no./No. du dessin	Revision no.
R.117668.001	C05 OF 5	0

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