

# EMERY BRIDGE REPLACEMENT

## Township of Georgian Bluffs

GEI PROJECT No. 2401469

TENDER No. RFT 2025-01

Township:

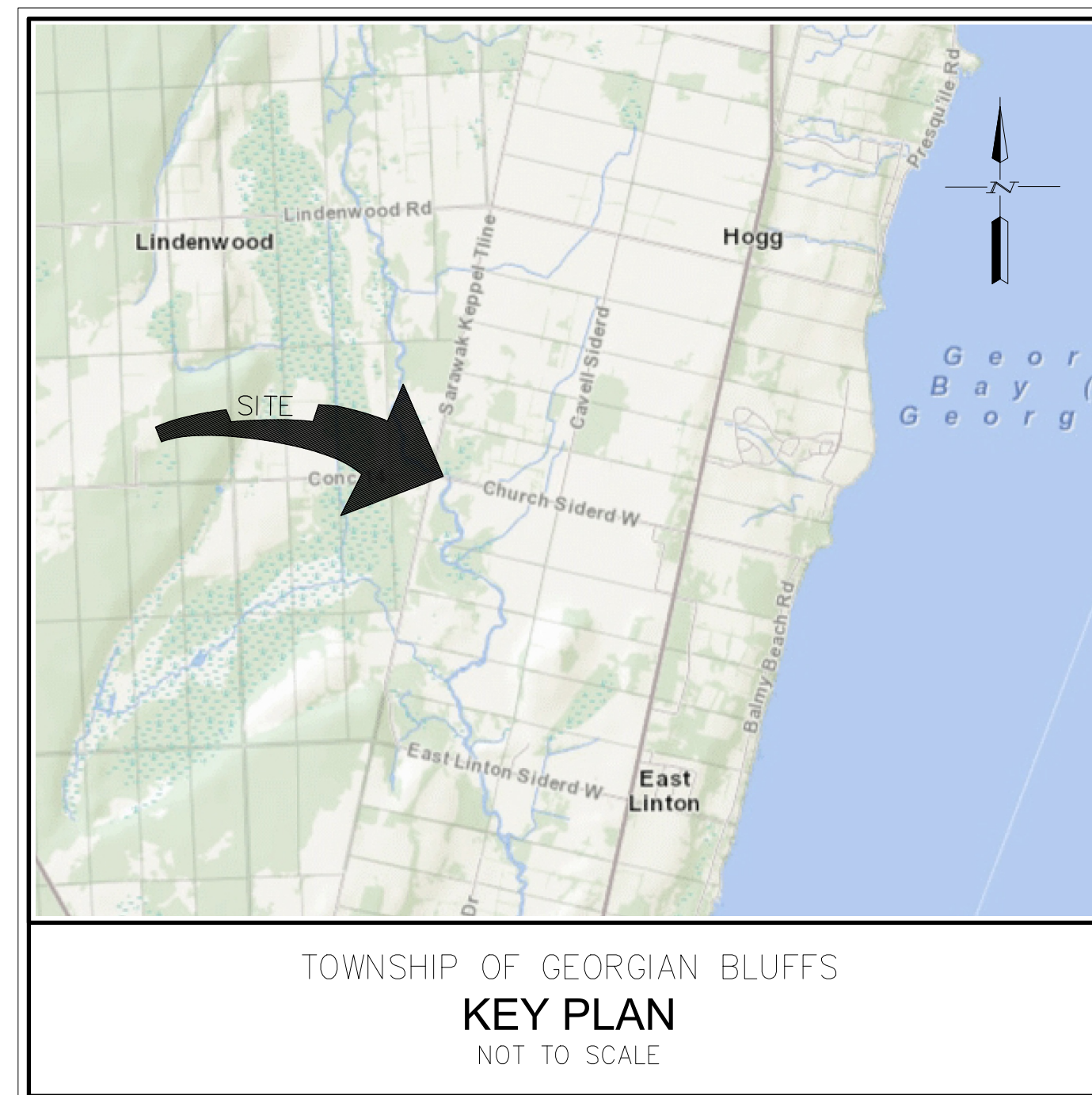


Township of Georgian Bluffs  
177964 Grey Road 18, R.R. #3  
Owen Sound, Ontario  
N4K 5N5

Consulting Engineers:



GEI Consultants Canada Limited  
1260 - 2nd Avenue East  
Owen Sound, Ontario  
N4K 2J3



### INDEX

SHEET NO.	DESCRIPTION
--	TITLE SHEET
G1	GENERAL NOTES & LEGEND
S1	EXISTING PLAN & PROFILE
S2	GENERAL ARRANGEMENT
S3	PROPOSED PLAN & PROFILE
S4	ENVIRONMENTAL PROTECTION PLAN & DEWATERING DETAILS
S5	FOOTING DETAILS
S6	ABUTMENT & WINGWALL DETAILS
S7	DECK REPLACEMENT
S8	DECK DETAILS
S9	POST & BARRIER WALL DETAILS
S10	STANDARDS & DETAILS
T1	TRAFFIC SIGNAGE

GENERAL NOTES:

- 1. ALL DIMENSIONS ARE IN MILLIMETERS, UNLESS OTHERWISE NOTED.
2. DO NOT RELY ON DRAWINGS UNLESS THEY ARE SIGNED AND SEALED.
3. ALL ELEVATIONS ARE IN METRES, UNLESS OTHERWISE NOTED.
4. READ STRUCTURAL DRAWINGS IN CONJUNCTION WITH OTHER CONTRACT DOCUMENTS.
5. THE CONTRACTOR IS TO CHECK AND VERIFY ALL DIMENSIONS ON THE DRAWINGS BEFORE CONSTRUCTION. ANY DISCREPANCIES MUST BE REPORTED TO THE ENGINEER PRIOR TO COMMENCING WORK.
6. DO NOT SCALE DRAWINGS.
7. FEATURES OF CONSTRUCTION NOT FULLY SHOWN ARE OF THE SAME CHARACTER AS THOSE NOTED FOR SIMILAR CONDITIONS.
8. STRUCTURAL DESIGN IS BASED ON THE LATEST EDITION OF THE CANADIAN HIGHWAY BRIDGE DESIGN CODE (CSA S6).
9. CONSTRUCTION LAYOUT BY CONTRACTOR WITH LAYOUT INFORMATION SUPPLIED BY GEI CONSULTANTS CANADA LTD.
10. CONTRACTOR RESPONSIBLE FOR ARRANGING FOR THE TESTING OF CONCRETE, COMPACTION AND REVIEW OF REINFORCING STEEL INSTALLATION. THE CONTRACTOR SHALL NOTIFY THE ENGINEER AT THE START OF THE PROJECT AND ARRANGE FOR ALL REVIEWS. PROVIDE MINIMUM 48 HOURS NOTICE WHEN A REVIEW IS REQUIRED.
11. THE CONTRACTOR IS RESPONSIBLE FOR LOCATING AND PROTECTING ALL EXISTING UTILITIES PRIOR TO AND DURING CONSTRUCTION. LOCATION OF EXISTING UTILITIES TO BE VERIFIED IN THE FIELD.
12. ALL TEMPORARY SHORING INCLUDED ON THE DRAWINGS IS CONCEPTUAL. CONTRACTOR RESPONSIBLE FOR THE DESIGN AND LAYOUT OF ALL TEMPORARY SHORING REQUIRED TO COMPLETE THE WORKS.
13. GEI CONSULTANTS CANADA LTD. CANNOT BE RESPONSIBLE FOR CHANGES MADE DURING CONSTRUCTION FOR ANY REASON, UNLESS WRITTEN APPROVAL IS PROVIDED BY THE DESIGN ENGINEER.

TRAFFIC CONTROL

- 1. TRAFFIC CONTROL SHALL BE IN ACCORDANCE WITH THE ONTARIO TRAFFIC MANUAL (OTM) BOOK 7 AND THE ONTARIO OCCUPATIONAL HEALTH AND SAFETY ACT.
2. CONTRACTOR IS TO MAINTAIN LOCAL ACCESS THROUGHOUT CONSTRUCTION.
3. THE METHODOLOGY SHOWN ON DRAWINGS IS CONCEPTUAL ONLY FOR THE PURPOSES OF BIDDING.

ROAD/EARTH WORKS

- 1. ALL IMPORTED BACKFILL MATERIAL TO BE COMPACTED TO A MINIMUM OF 98% STD. PROCTOR DENSITY. THE SUITABILITY OF IMPORTED FILL MATERIAL IS TO BE CONFIRMED BY A GEOTECHNICAL ENGINEER PRIOR TO BACKFILLING OPERATIONS.
2. ALL IMPORTED FILL FOR ROADWAY BASE TO BE COMPACTED TO A MINIMUM OF 100% STD. PROCTOR DENSITY.
3. GRANULAR MATERIALS TO CONFORM WITH OPSS STANDARDS.
4. ASPHALT MATERIALS TO CONFORM WITH OPSS STANDARDS.
5. EXCAVATIONS MUST MEET MINISTRY OF LABOR STANDARDS FOR TYPE OF SOIL ENCOUNTERED.

POURED IN PLACE CONCRETE

- 1. POURED IN PLACE CONCRETE TO CONFORM TO ONTARIO PROVINCIAL STANDARD SPECIFICATION OPSS 904 AND THE FOLLOWING:
- SOURCE OF SUPPLY OF READY MIX CONCRETE SHALL BE A MEMBER OF READY MIX CONCRETE ASSOCIATION OF ONTARIO (RMCAO)
- DESIGN MIXES SHALL BE SUBMITTED FOR APPROVAL AND CONFORM TO CSA-A23.1-19 AND THE FOLLOWING:
- CONCRETE SHALL BE EXPOSURE CLASS C-1
- CONCRETE COMPRESSIVE STRENGTH - Fc-MIN 35MPa AT 56 DAYS
- MAXIMUM WATER TO CEMENTING MATERIALS RATIO SHALL BE 0.4 (TABLE 2)
- AGGREGATE SIZE SHALL BE MAX 13mm FOR PATCH WORK AND 14-20mm FOR ALL OTHER CONCRETE.
- AIR CONTENT 5-8% (CATEGORY 1, TABLE 4)
- CURE CONCRETE TO THE REQUIREMENTS OF OPSS 904 AND TABLE 19, TYPE 2 OF CSA A23.1-19 FOR A MINIMUM OF 7 DAYS.
- SLUMP SHALL BE CONSISTENT AT 80 ± 20mm. ADMIXTURES WHERE APPROVED BY THE ENGINEER SHALL CONFORM TO CSA A23.1/2 AND MAY BE USED TO INCREASE SLUMP ABOVE THIS VALUE.
- WATER WILL NOT BE ADDED TO THE CONCRETE MIX AFTER BATCHING.
2. CONCRETE COVER TO REINFORCING:
- CONCRETE CAST AGAINST EARTH = 100mm ±25mm
- CONCRETE IN SOFFIT = 50mm ±10mm
- ALL OTHER CONCRETE = 70mm ±20mm
3. ALL CONSTRUCTION JOINTS SHALL BE MADE ONLY AT LOCATIONS SHOWN ON THE DRAWINGS OR APPROVED BY ENGINEER.
4. ALL EXPOSED EDGES AND CONSTRUCTION JOINTS TO BE CHAMFERED 20mm UNLESS OTHERWISE NOTED.
5. CURE CONCRETE TO THE REQUIREMENTS OF OPSS 904 WITH A MINIMUM WET BURLAP AND MOISTURE VAPOUR BARRIER FILM.

CONCRETE COLD WEATHER REQUIREMENTS

THE FOLLOWING COLD WEATHER REQUIREMENTS SHALL APPLY WHENEVER THE AIR TEMPERATURE IS AT OR BELOW 5°C, OR WHEN THERE IS A PROBABILITY OF ITS FALLING BELOW 5°C WITHIN 24 HOURS OF PLACING CONCRETE. NO COLD WEATHER CONCRETE WORK SHOULD BE DONE WITHOUT APPROVAL BY THE STRUCTURAL ENGINEER.

- 1. ALL COLD WEATHER CONCRETING SHALL BE IN COMPLIANCE WITH CSA A23.1-19.
2. ALL MATERIALS AND HEATING EQUIPMENT NEEDS FOR ADEQUATE PROTECTION AND CURING SHALL BE ON HAND AND READY FOR USE BEFORE PLACEMENT IS STARTED. PROTECTION SHALL BE PROVIDED BY MEANS OF HEATED ENCLOSURES, COVERINGS, INSULATION, OR A SUITABLE COMBINATION OF THESE METHODS.
3. ALL AGGREGATES AND WATER SHALL BE PRE-HEATED. ALL FORMS FILL AND GROUND WITH WHICH THE CONCRETE IS IN CONTACT OR IS CALCULATED TO COME IN CONTACT WITH SHALL BE DEFROSTED. STEEL REINFORCEMENT AND AGGREGATES SHALL BE PROTECTED BY ADEQUATE MEANS TO PREVENT FORMATION OF AN ICE FILM.
4. ALL CONCRETE SHALL HAVE A TEMPERATURE BETWEEN 10°C AND 25°C WHEN PLACED IN THE FORMS. REFER TO CAST-IN-PLACE CONCRETE NOTES FOR CURING TYPES. MAINTAIN THE FOLLOWING CONCRETE TEMPERATURES DURING CURING:
- CURING TYPE 1 - 10°C FOR 3 DAYS (OR UNTIL 40% SPECIFIED STRENGTH IS OBTAINED)
- CURING TYPE 2 - 10°C FOR 10 DAYS (OR UNTIL 70% OF SPECIFIED STRENGTH IS OBTAINED)
5. ALL CANVAS OR OTHER PROTECTIVE COVERING SHALL BE KEPT CLEAR OF ALL CONCRETE IN ORDER TO PERMIT FREE CIRCULATION OF AIR AROUND ALL WALLS, COLUMNS, AND OVER THE TOPS OF ALL SLABS.
6. THE HEATING PROTECTION SHALL NOT BE COMPLETELY REMOVED UNTIL THE CONCRETE HAS COOLED TO A MAXIMUM TEMPERATURE DIFFERENTIAL BETWEEN THE CONCRETE AND AIR TEMPERATURE OF 12°C.
7. THE CONTRACTOR IS TO PROTECT ALL FOUNDING SOIL FROM FREEZING DURING THE CONSTRUCTION PERIOD. THIS INCLUDES FOOTINGS THAT HAVE BEEN CAST.

REINFORCING STEEL

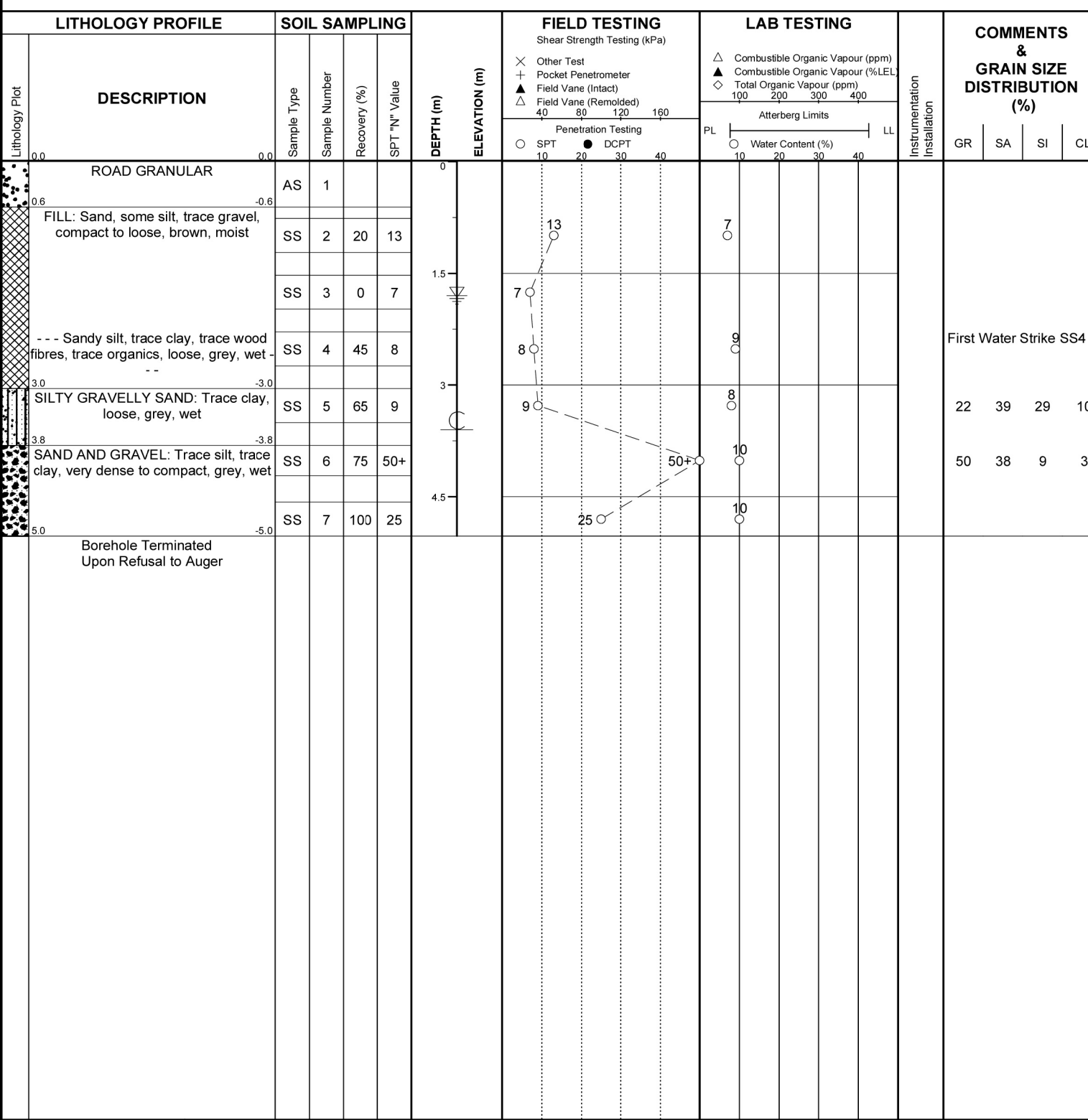
- 1. ALL REINFORCING STEEL TO BE BLACK STEEL UNLESS OTHERWISE NOTED.
2. REINFORCING STEEL SHALL BE CSA G30.18-09 (R2014) GRADE 400W.
3. ALL REINFORCING STEEL BAR LAPS AS PER CANADIAN HIGHWAY BRIDGE DESIGN CODE (CSA S6-19) OR AS SHOWN.
4. MINIMUM INSIDE DIAMETER OF BENDS = 6 BAR DIAMETERS.

CONSTRUCTION NOTES

- 1. CONTRACT ADMINISTRATOR SHALL REVIEW REINFORCING STEEL AND FORMWORK PRIOR TO ANY CONCRETE POURS. PROVIDE MINIMUM 48 HOURS NOTICE.
2. CONSTRUCTION JOINTS SHALL ONLY BE MADE AT LOCATIONS SHOWN ON THE DRAWINGS OR AS APPROVED BY THE CONTRACT ADMINISTRATOR.
3. SUCCESSIVE POURS SHALL BE SUITABLY KEYED TOGETHER.
4. FALSEWORK SHALL NOT BE REMOVED WITHOUT THE CONTRACT ADMINISTRATOR'S APPROVAL.
5. ALL EXPOSED EDGES TO BE CHAMFERED 20mm UNLESS NOTED OTHERWISE.
6. PLACE BRIDGE FOOTINGS ON THE BEDROCK MATERIAL. CLEAN ALL DEBRIS AND LOOSE WEATHERED BEDROCK PRIOR TO PLACEMENT. THE FOUNDING BEDROCK MUST BE INSPECTED BY THE GEOTECHNICAL ENGINEER PRIOR TO PLACING THE BRIDGE FOOTINGS FOR REQUIRED BEARING CAPACITY.
- 300 kPa at ULS
AS PER GEOTECHNICAL INVESTIGATION REPORT COMPLETED BY GEI CONSULTANTS CANADA LTD, DATED DECEMBER 19, 2023.
7. CROSSING OF THE EXISTING STRUCTURE BY CONSTRUCTION EQUIPMENT DURING CONSTRUCTION IS AT THE RISK OF THE CONTRACTOR WHO SHALL TAKE SUCH MEASURES AS THEY CONSIDER NECESSARY TO ENSURE SAFE PASSAGE OF EQUIPMENT.
8. THE CONTRACTOR IS RESPONSIBLE FOR ALL LAYOUT.
9. EXCAVATIONS SHALL BE PER SOIL CLASS AND OCCUPATIONAL HEALTH AND SAFETY ACT.

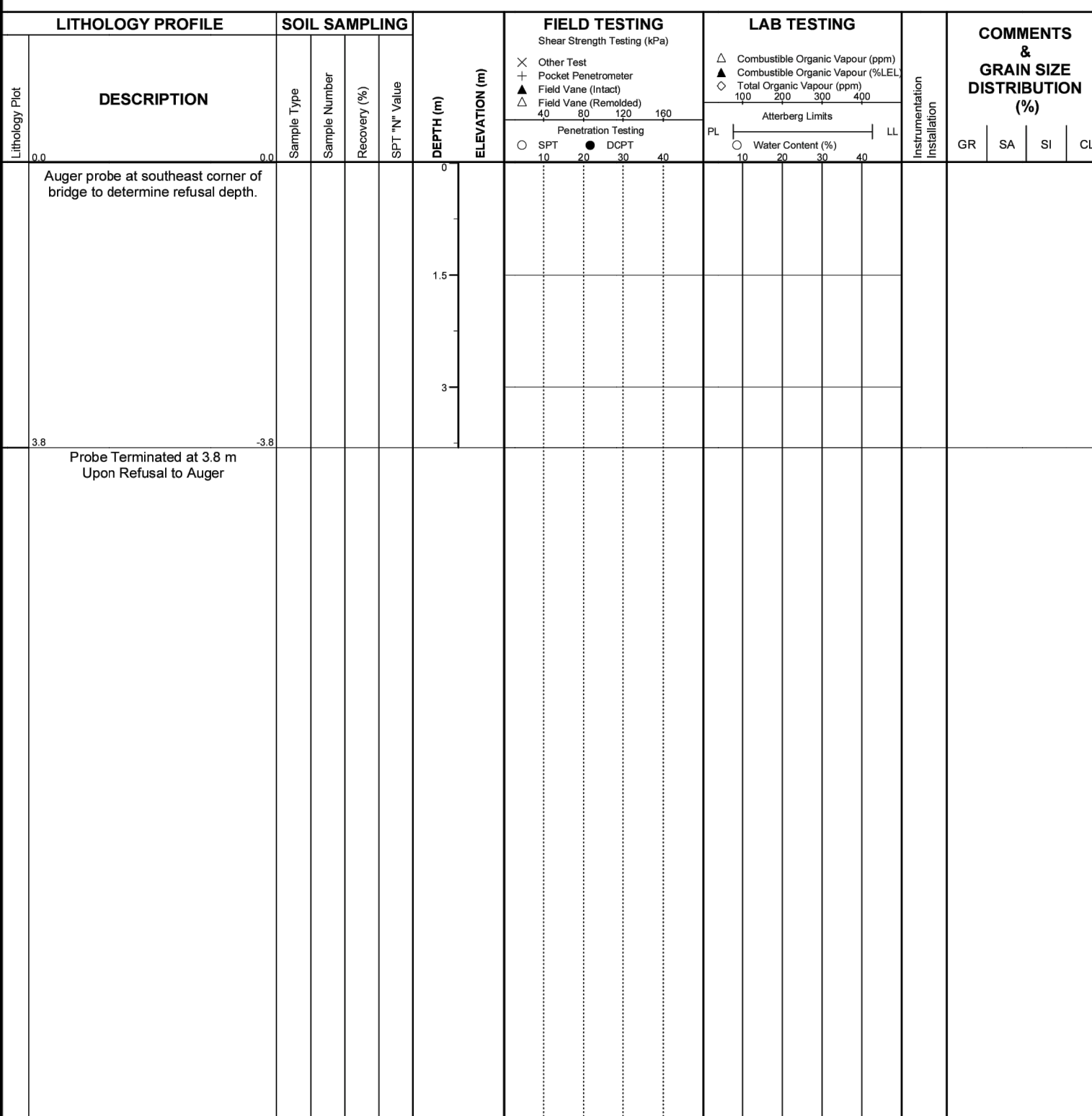
RECORD OF BOREHOLE No. 1

Project Number: 2304959
Project Client: GM Blue Plan
Project Name: EIS for Emery Bridge Replacement
Project Location: Georgian Bluffs, ON
Drilling Method: Hollow Stem Augers
Drilling Machine: Truck Mount
Logged By: MH
Northing: 4946055
Date Started: Oct 19/23
Reviewed By: GW
Easting: 503241
Date Completed: Oct 19/23



RECORD OF BOREHOLE No. 1B

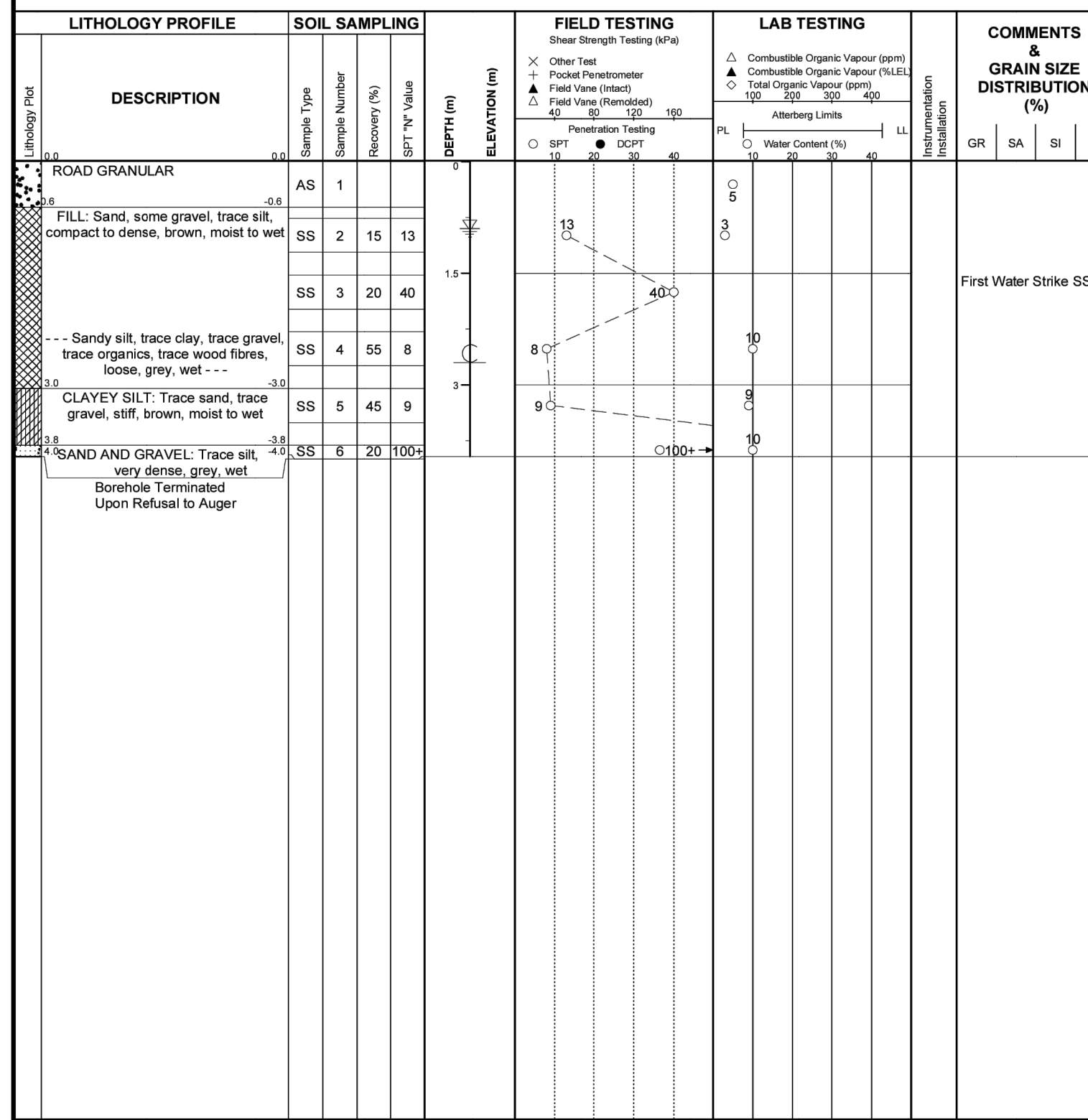
Project Number: 2304959
Project Client: GM Blue Plan
Project Name: EIS for Emery Bridge Replacement
Project Location: Georgian Bluffs, ON
Drilling Method: Hollow Stem Augers
Drilling Machine: Truck Mount
Logged By: MH
Northing: 4946055
Date Started: Oct 19/23
Reviewed By: GW
Easting: 503241
Date Completed: Oct 19/23



Groundwater depth encountered on completion of drilling: C
Groundwater depth observed on:
Groundwater Elevation:
Borehole details presented do not constitute a thorough understanding of all potential conditions present and require interpretative assistance from a qualified geotechnical engineer. Also, borehole information should be read in conjunction with the geotechnical report for which it was commissioned and the accompanying 'Explanation of Boring Log'.

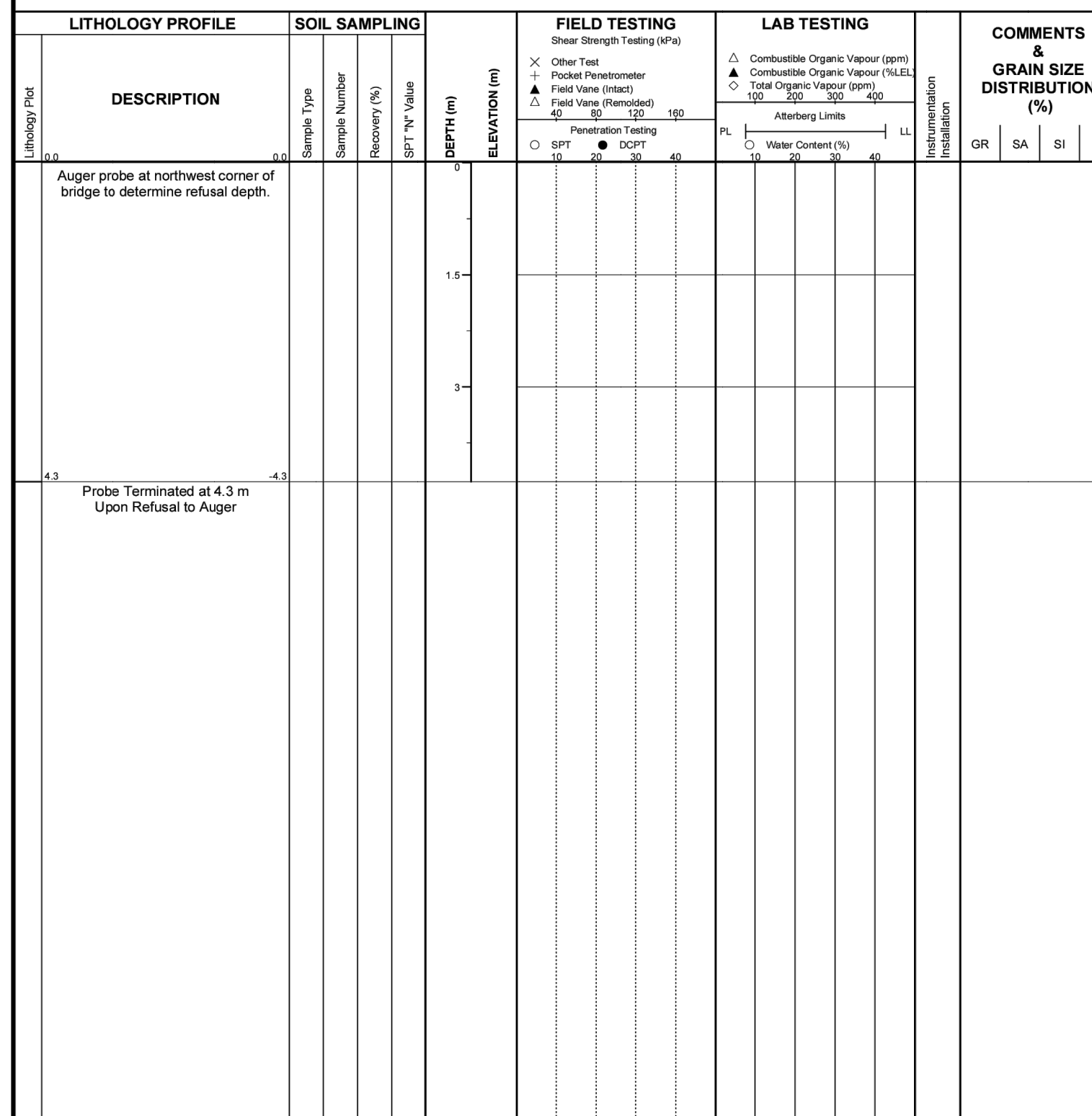
RECORD OF BOREHOLE No. 2

Project Number: 2304959
Project Client: GM Blue Plan
Project Name: EIS for Emery Bridge Replacement
Project Location: Georgian Bluffs, ON
Drilling Method: Hollow Stem Augers
Drilling Machine: Truck Mount
Logged By: MH
Northing: 4946056
Date Started: Oct 19/23
Reviewed By: GW
Easting: 503206
Date Completed: Oct 19/23



RECORD OF BOREHOLE No. 2B

Project Number: 2304959
Project Client: GM Blue Plan
Project Name: EIS for Emery Bridge Replacement
Project Location: Georgian Bluffs, ON
Drilling Method: Hollow Stem Augers
Drilling Machine: Truck Mount
Logged By: MH
Northing: 4946056
Date Started: Oct 19/23
Reviewed By: GW
Easting: 503206
Date Completed: Oct 19/23



Groundwater depth encountered on completion of drilling: C
Groundwater depth observed on:
Groundwater Elevation:
Borehole details presented do not constitute a thorough understanding of all potential conditions present and require interpretative assistance from a qualified geotechnical engineer. Also, borehole information should be read in conjunction with the geotechnical report for which it was commissioned and the accompanying 'Explanation of Boring Log'.

NOMENCLATURE:

- @ AT
B/FTG. BOTTOM OF FOOTING
c/c CENTRE TO CENTRE
C.I.P. CAST IN PLACE
c/w COMPLETE WITH
E.F. EACH FACE
E.W. EACH WAY
ELEV. ELEVATION
I.F. INSIDE FACE
KN KILONEWTON
MAX. MAXIMUM
MIN. MINIMUM
MPa MEGAPASCAL
NTS NOT TO SCALE
OAE OR APPROVED EQUIVALENT
O.F. OUTSIDE FACE
SPMDD STANDARD PROCTOR MAXIMUM DRY DENSITY
S.S. STAINLESS STEEL
SLS SERVICEABILITY LIMIT STATES
TBD TO BE DETERMINED
T/ TOP OF
TYP. TYPICAL
u/s UNDERSIDE
ULLS ULTIMATE LIMIT STATES
UP UTILITY POLE
WP WORKING POINT
B.U.L. THE UPPER LAYER OF THE BOTTOM MAT
T.L.L. THE LOWER LAYER OF THE TOP MAT
U.U.L. THE UPPER LAYER OF THE TOP MAT
B.L.L. THE LOWER LAYER OF THE BOTTOM MAT
V.I.F. DENOTES VERTICAL INSIDE FACE
V.O.F. DENOTES VERTICAL OUTSIDE FACE
H.I.F. DENOTES HORIZONTAL INSIDE FACE
H.O.F. DENOTES HORIZONTAL OUTSIDE FACE

BENCHMARK 1 ELEV. - 223.09m

NAIL AND FLAG IN HYDRO POLE AT STA. 0+104.699. 8m RIGHT.

BENCHMARK 2 ELEV. - 223.40m

NAIL AND FLAG IN HYDRO POLE AT STA. 0+000. 14m RIGHT.

THE POSITION OF POLE LINES, CONDUITS, WATERMANS, SEWERS AND OTHER UNDERGROUND AND OVERGROUND UTILITIES AND STRUCTURES IS NOT NECESSARILY SHOWN ON THE CONTRACT DRAWINGS, AND, WHERE SHOWN, THE ACCURACY OF THE POSITION OF SUCH UTILITIES AND STRUCTURES IS NOT GUARANTEED.

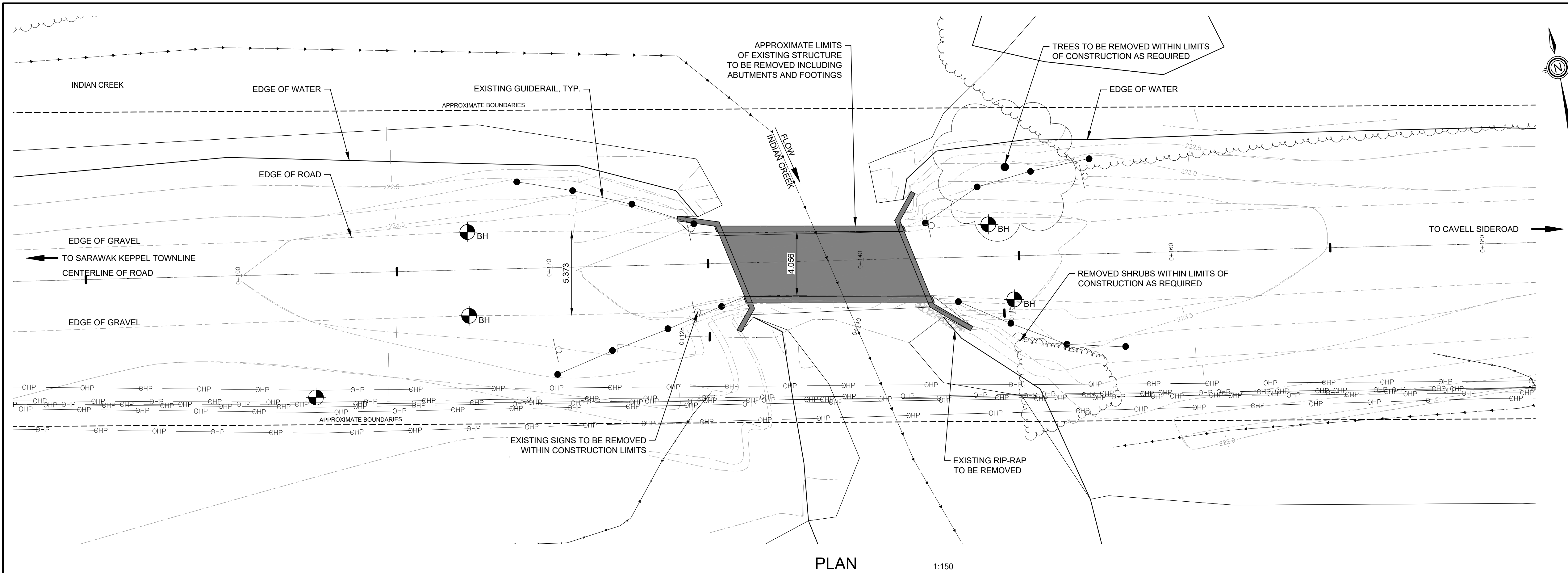
BEFORE STARTING WORK, THE CONTRACTOR SHALL INFORM HIMSELF OF THE EXACT LOCATION OF ALL SUCH UTILITIES AND STRUCTURES, AND SHALL ASSUME ALL LIABILITY FOR ANY DAMAGE TO THEM.



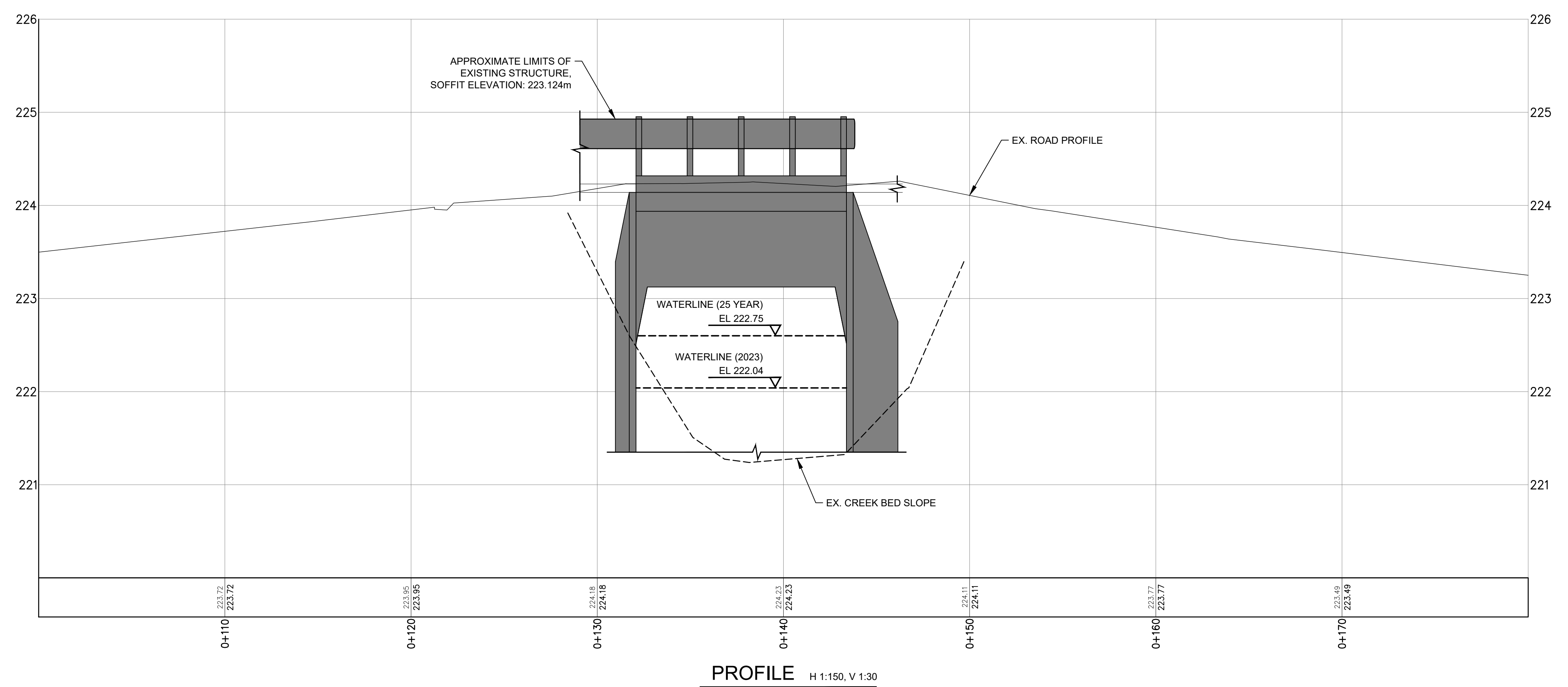
Table with 3 columns: NO., DATE, REVISION DESCRIPTION, CHKD. Includes entries for 2025/01/22 and 2024/12/04.

Project title block: EMERY BRIDGE REPLACEMENT, TOWNSHIP OF GEORGIAN BLUFFS, FORMER TOWNSHIP OF KEPPEL, GENERAL NOTES & LEGEND.

DRAWN BY: K.V.H. APPROVED BY: B.A.W. PROJECT NO.: 2401469 DRAWING NO.: G1
DESIGNED BY: D.D. DATE: JANUARY, 2025 SCALE: AS NOTED

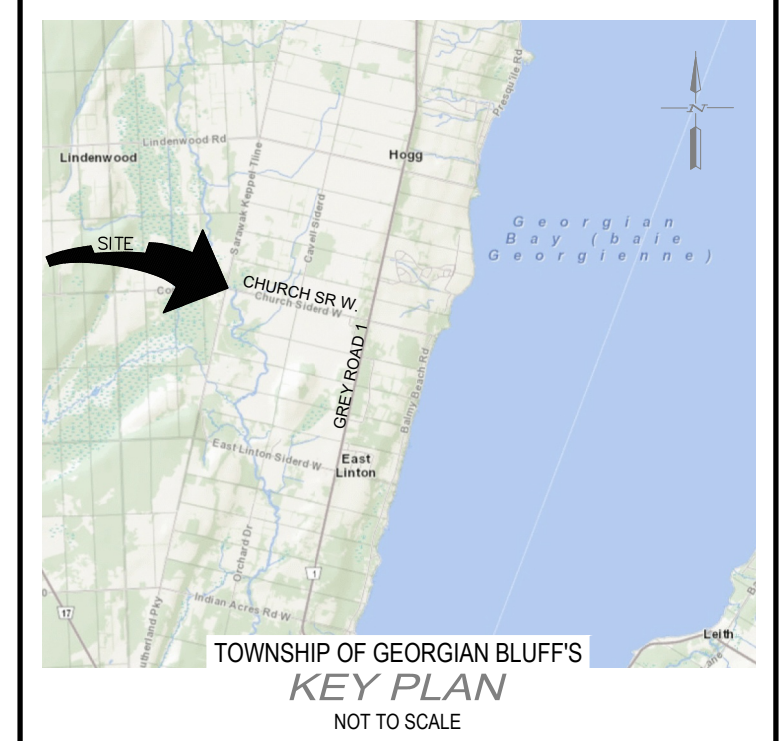


PLAN 1:150



PROFILE H 1:150, V 1:30

NOTE: STRUCTURE NOT SHOWN BELOW WATER DUE TO INSUFFICIENT BACKGROUND INFORMATION.



NOTES:  
1. AS RECORDED TOPOGRAPHIC SURVEY CONDUCTED BY GEI CONSULTANTS CANADA LTD, NOVEMBER 20, 2023.

- LEGEND:
- - - - - EXISTING GROUND CONTOUR
  - - - - - EXISTING DITCH / SWALE
  - - - - - EXISTING OVERHEAD POWER LINE
  - ⊕ BENCHMARK LOCATION
  - ⊕ BOREHOLE LOCATION

BENCHMARK 1 ELEV. - 223.09m

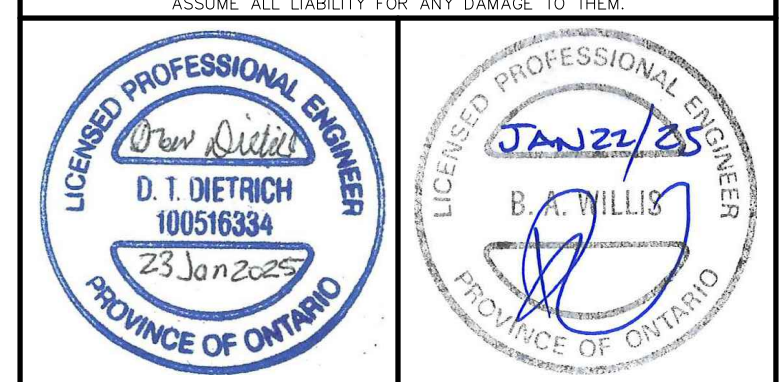
NAIL AND FLAG IN HYDRO POLE AT STA. 0+104.699. 8m RIGHT.

BENCHMARK 2 ELEV. - 223.40m

NAIL AND FLAG IN HYDRO POLE AT STA. 0+000. 14m RIGHT.

THE POSITION OF POLE LINES, CONDUITS, WATERMANS, SEWERS AND OTHER UNDERGROUND AND OVERGROUND UTILITIES AND STRUCTURES IS NOT NECESSARILY SHOWN ON THE CONTRACT DRAWINGS, AND, WHERE SHOWN, THE ACCURACY OF THE POSITION OF SUCH UTILITIES AND STRUCTURES IS NOT GUARANTEED.

BEFORE STARTING WORK, THE CONTRACTOR SHALL INFORM HIMSELF OF THE EXACT LOCATION OF ALL SUCH UTILITIES AND STRUCTURES, AND SHALL ASSUME ALL LIABILITY FOR ANY DAMAGE TO THEM.



NO.	DATE	REVISION DESCRIPTION	CHKD
3	2025/01/22	ISSUED FOR TENDER	B.A.W.
2	2024/12/04	ISSUED FOR APPROVALS	B.A.W.
1	2024/10/11	ISSUED FOR PRELIMINARY REVIEW	B.A.W.

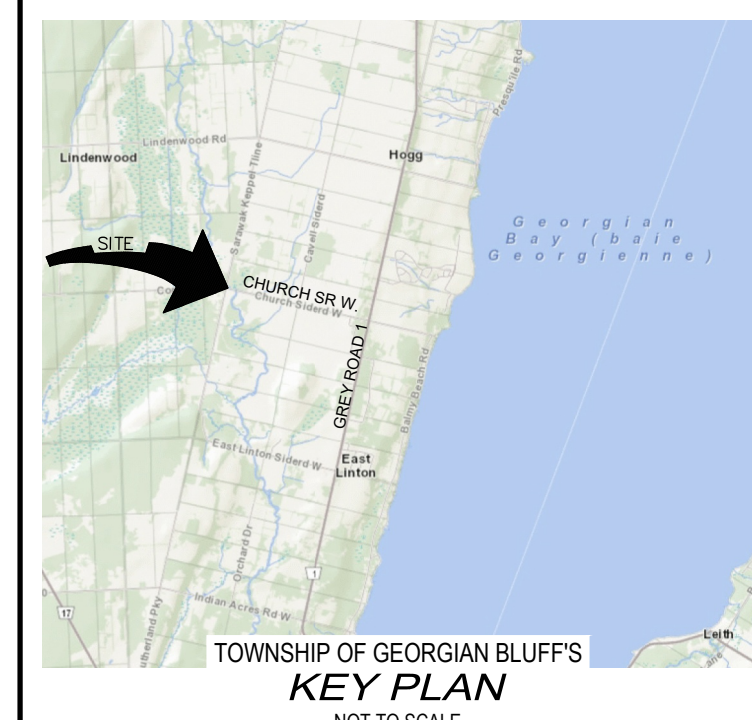
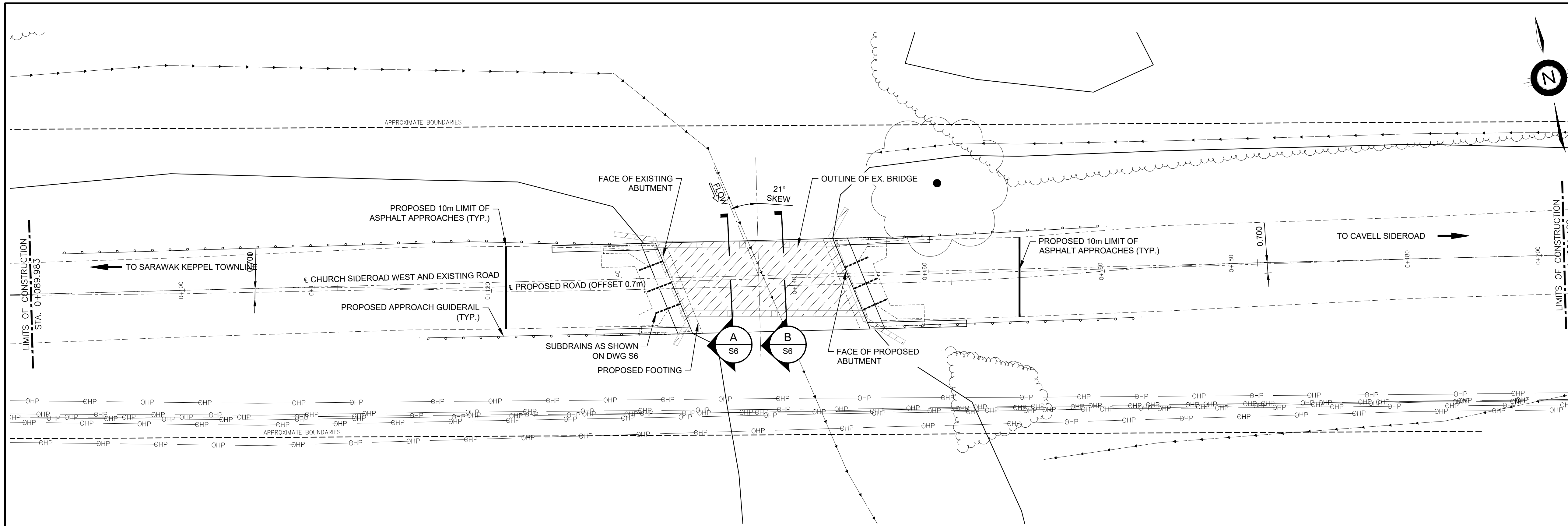


EMERY BRIDGE REPLACEMENT  
TOWNSHIP OF GEORGIAN BLUFFS  
FORMER TOWNSHIP OF KEPPEL

EXISTING PLAN & PROFILE

DRAWN BY: K.V.H.	APPROVED BY: B.A.W.	PROJECT NO.: 2401469	DRAWING NO.: <b>S1</b>
DESIGNED BY: D.D.	DATE: JANUARY, 2025	SCALE: AS SHOWN	

FILE: \\w:\projects\2024\2401469\2401469\_01\Drawings\Plan\day\_LA\001\001.dwg, 5/6/2025 10:48:56 AM, 1:27:59 AM, PLOTTED BY: K.V.H., 1/22/2025 1:43:14 PM  
 LAST SAVED BY: K.V.H., 1/22/2025 1:43:14 PM



NOTES:  
1. AS RECORDED TOPOGRAPHIC SURVEY CONDUCTED BY GEI CONSULTANTS CANADA LTD, NOVEMBER 20, 2023.

BENCHMARK 1 ELEV. - 223.09m  
NAIL AND FLAG IN HYDRO POLE AT STA. 0+104.699. 8m RIGHT.

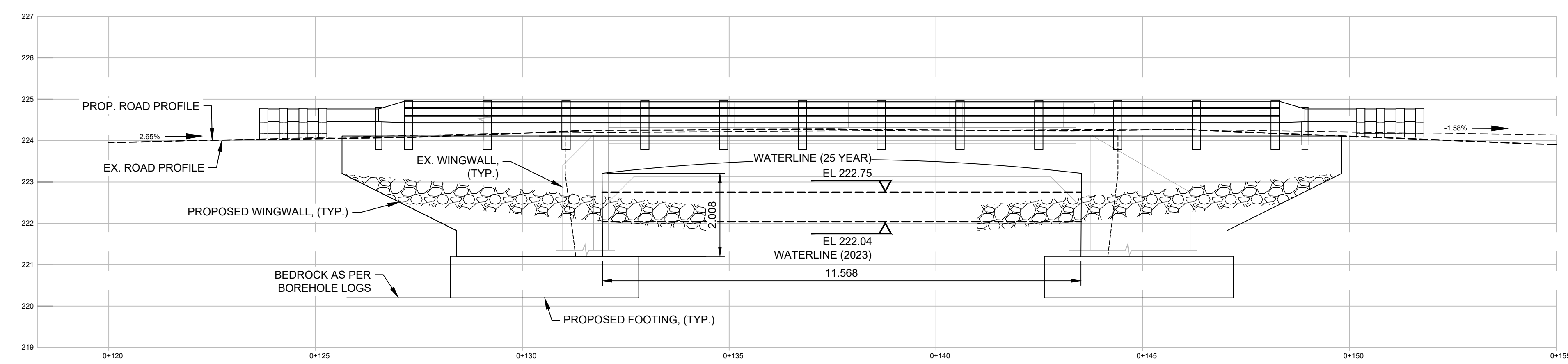
BENCHMARK 2 ELEV. - 223.40m  
NAIL AND FLAG IN HYDRO POLE AT STA. 0+000. 14m RIGHT.

THE POSITION OF POLE LINES, CONDUITS, WATERMANS, SEWERS AND OTHER UNDERGROUND AND OVERGROUND UTILITIES AND STRUCTURES IS NOT NECESSARILY SHOWN ON THE CONTRACT DRAWINGS, AND, WHERE SHOWN, THE ACCURACY OF THE POSITION OF SUCH UTILITIES AND STRUCTURES IS NOT GUARANTEED.

BEFORE STARTING WORK, THE CONTRACTOR SHALL INFORM HIMSELF OF THE EXACT LOCATION OF ALL SUCH UTILITIES AND STRUCTURES, AND SHALL ASSUME ALL LIABILITY FOR ANY DAMAGE TO THEM.



NO.	DATE	REVISION DESCRIPTION	CHKD
3	2025/01/22	ISSUED FOR TENDER	B.A.W.
2	2024/12/04	ISSUED FOR APPROVALS	B.A.W.
1	2024/10/11	ISSUED FOR PRELIMINARY REVIEW	B.A.W.



NOTES:  
- EXISTING BRIDGE IS GREYED OUT FOR CLARITY.  
- EXISTING FOOTINGS NOT SHOWN DUE TO INSUFFICIENT BACKGROUND INFORMATION.



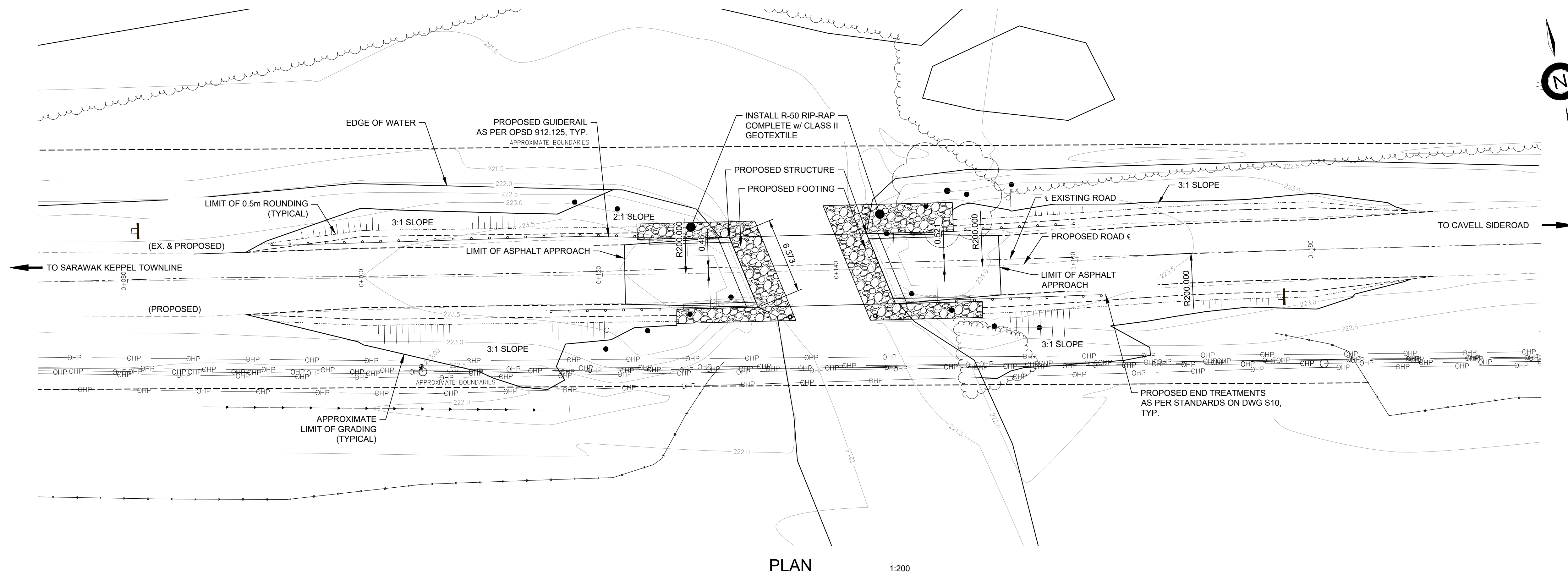
QUELPH | OWEN SOUND | LISTOWEL | KITCHENER | LONDON | HAMILTON | GTA  
1260 - 2ND AVENUE EAST, UNIT 1, OWEN SOUND, ON N4K 2J3  
TEL. 519-376-1805

EMERY BRIDGE REPLACEMENT  
TOWNSHIP OF GEORGIAN BLUFFS  
FORMER TOWNSHIP OF KEPPEL

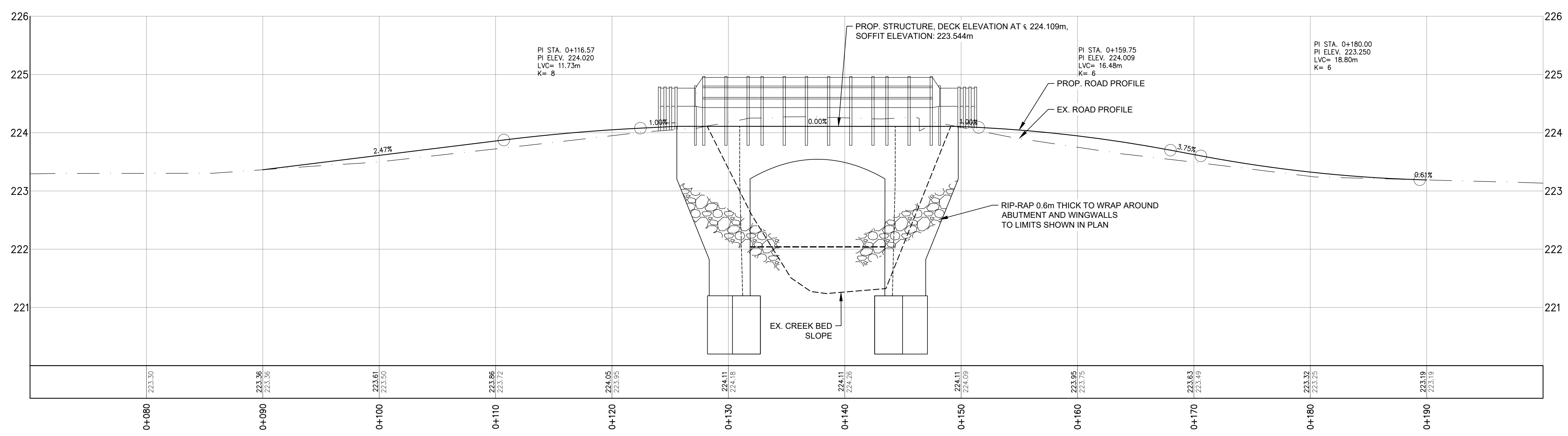
GENERAL ARRANGEMENT

DRAWN BY: K.V.H.	APPROVED BY: B.A.W.	PROJECT NO.: 2401469	DRAWING NO.: S2
DESIGNED BY: D.D.	DATE: JANUARY, 2025	SCALE: AS SHOWN	

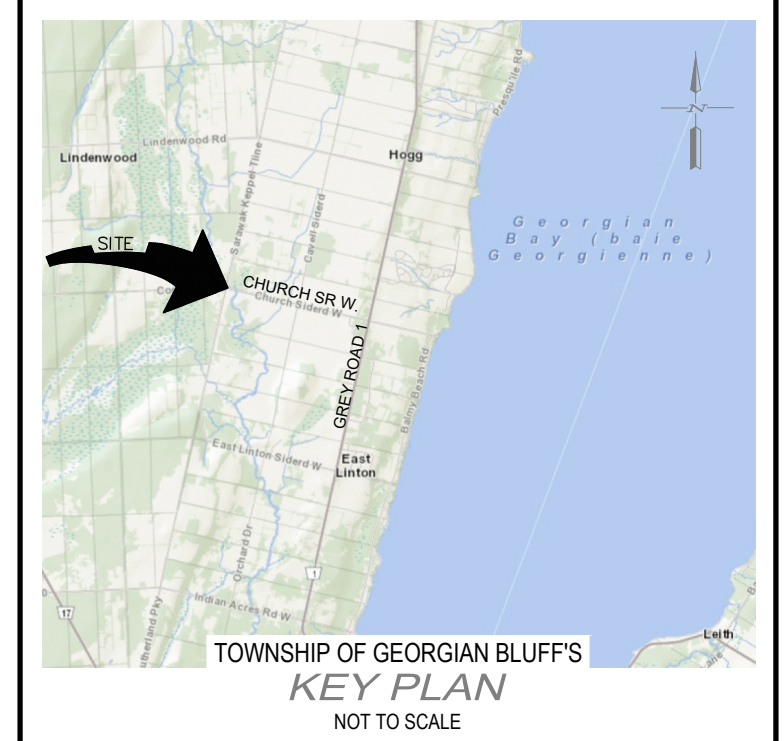
FILE: H:\Projects\2025\EMERY BRIDGE REPLACEMENT\Drawings\20250122\20250122\_S2\_General\_Arrangement.dwg  
 LAST SAVED BY: K.V.H. ON: 2025/01/22 10:50:00 AM  
 PLOT DATE: 2025/01/22 10:50:00 AM  
 PLOT BY: K.V.H.



PLAN 1:200



PROFILE H 1:200, V 1:40



NOTES:  
 1. AS RECORDED TOPOGRAPHIC SURVEY CONDUCTED BY GEI CONSULTANTS CANADA LTD, NOVEMBER 20, 2023.

LEGEND:  
 - - - - - EXISTING GROUND CONTOUR  
 - - - - - EXISTING DITCH / SWALE  
 - - - - - EXISTING OVERHEAD POWER LINE

BENCHMARK 1 ELEV. - 223.09m  
 NAIL AND FLAG IN HYDRO POLE AT STA. 0+104.699, 8m RIGHT.

BENCHMARK 2 ELEV. - 223.40m  
 NAIL AND FLAG IN HYDRO POLE AT STA. 0+000, 14m RIGHT.

THE POSITION OF POLE LINES, CONDUITS, WATERMANS, SEWERS AND OTHER UNDERGROUND AND OVERGROUND UTILITIES AND STRUCTURES IS NOT NECESSARILY SHOWN ON THE CONTRACT DRAWINGS, AND, WHERE SHOWN, THE ACCURACY OF THE POSITION OF SUCH UTILITIES AND STRUCTURES IS NOT GUARANTEED.  
 BEFORE STARTING WORK, THE CONTRACTOR SHALL INFORM HIMSELF OF THE EXACT LOCATION OF ALL SUCH UTILITIES AND STRUCTURES, AND SHALL ASSUME ALL LIABILITY FOR ANY DAMAGE TO THEM.



NO.	DATE	REVISION DESCRIPTION	CHKD
3	2025/01/22	ISSUED FOR TENDER	B.A.W.
2	2024/12/04	ISSUED FOR APPROVALS	B.A.W.
1	2024/10/11	ISSUED FOR PRELIMINARY REVIEW	B.A.W.



QUELPH | OWEN SOUND | LISTOWEL | KITCHENER | LONDON | HAMILTON | GTA  
 1260 - 2ND AVENUE EAST, UNIT 1, OWEN SOUND, ON N4K 2J3  
 TEL: 519-376-1805

EMERY BRIDGE REPLACEMENT  
 TOWNSHIP OF GEORGIAN BLUFFS  
 FORMER TOWNSHIP OF KEPPEL

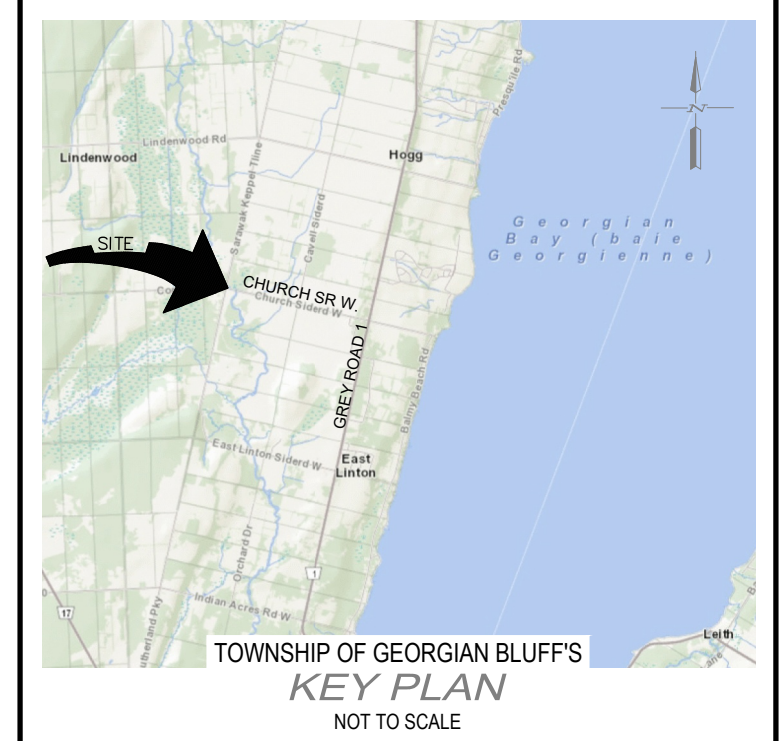
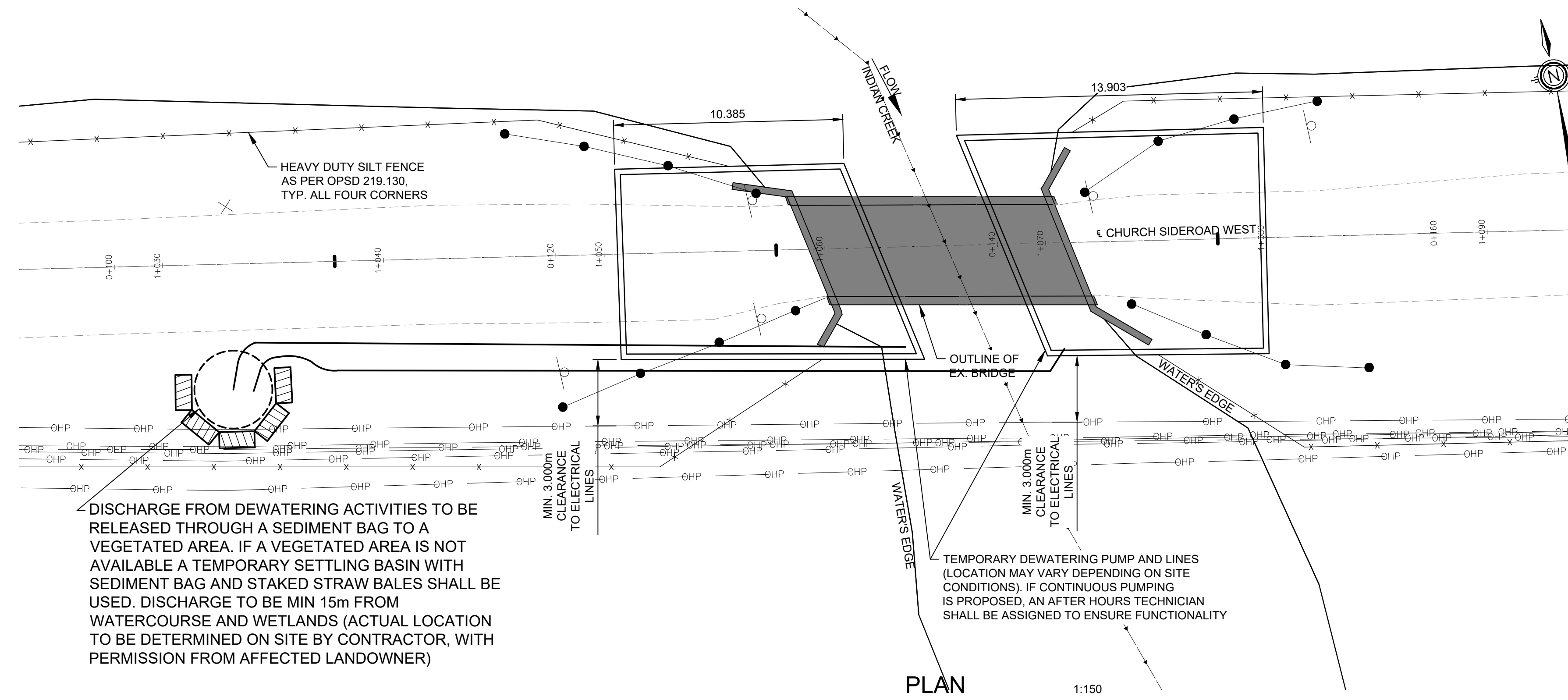
PROPOSED PLAN & PROFILE

DRAWN BY: K.V.H.	APPROVED BY: B.A.W.	PROJECT NO.: 2401469	DRAWING NO.: S3
DESIGNED BY: D.D.	DATE: JANUARY, 2025	SCALE: AS SHOWN	

FILE: H:\Projects\2024\EMERY BRIDGE REPLACEMENT\Drawings\20250122\20250122\_Plan.dwg  
 LAST SAVED BY: ddiethrich  
 DATE: 2025-01-22 11:32:50 AM  
 PLOTTED BY: ddiethrich  
 DATE: 2025-01-22 11:18:30 AM

**ENVIRONMENTAL REQUIREMENTS:**

1. ANY DEWATERING OPERATIONS REQUIRED TO COMPLETE THE WORK IN THE DRY ARE NOT TO EXCEED 50,000 LITRES PER DAY WITHOUT A MINISTRY OF THE ENVIRONMENT, CONSERVATION AND PARKS (MECP) PERMIT TO TAKE WATER OR COMPLETION OF AN ENVIRONMENTAL ACTIVITY AND SECTOR REGISTRY (AS APPLICABLE).
2. ESTIMATED 2 YEAR FLOW = 11.46m<sup>3</sup>/s.
3. THE CONTRACTOR IS RESPONSIBLE FOR THE DESIGN OF TEMPORARY WORKSITE ISOLATION, DIVERSION AND DEWATERING SYSTEMS. THE CONTRACTOR SHALL SUBMIT PLANS FOR THESE SYSTEMS TO BE REVIEWED BY THE DESIGN ENGINEER PRIOR TO COMMENCEMENT OF CONSTRUCTION. DIVERSION AND WORK SITE ISOLATION DETAILS IN THE DRAWING SET ARE CONCEPTUAL ONLY. THE CAPACITY OF THE DIVERSION SYSTEM SHOWN SHALL BE TAKEN AS A MINIMUM REQUIREMENT. ALTERNATIVE DIVERSION PIPING AND CONFIGURATIONS MAY BE SUBMITTED BY THE CONTRACTOR FOR REVIEW PRIOR TO MOBILIZATION.
4. ALL MATERIAL AND EQUIPMENT USED FOR THE PURPOSE OF OR GENERATED DURING COMPLETION OF THE WORKS SHALL BE OPERATED, STORED AND REMOVED FROM SITE IN A MANNER THAT PREVENTS ANY DELETERIOUS SUBSTANCE (EG. PETROLEUM PRODUCTS, SILT, DEBRIS, ETC.) FROM ENTERING THE WATERCOURSE.
5. ANY STOCKPILED MATERIALS SHALL BE STORED AND STABILIZED AWAY FROM AND ABOVE THE HIGH WATER MARK.
6. IN WATER WORK IS TO OCCUR BETWEEN JULY 1 AND SEPTEMBER 30 (INCLUSIVE).
7. ALL DISTURBED AREAS SHALL BE STABILIZED AND RE-VEGETATED AS REQUIRED UPON COMPLETION OF WORK AND RESTORED TO A PRE-DISTURBED STATE OR BETTER, INCLUDING RE-INSTALLMENT OF THE WATERCOURSE.
8. SEDIMENT AND EROSION CONTROL MEASURES SHALL BE IMPLEMENTED PRIOR TO COMMENCEMENT OF WORK, AND MAINTAINED DURING THE WORK PHASE, TO PREVENT ENTRY OF SEDIMENT INTO THE WATERCOURSE OR THE MOVEMENT OF RE-SUSPENDED SEDIMENT.
9. SEDIMENT AND EROSION CONTROL MEASURES SHALL BE LEFT IN PLACE UNTIL ALL DISTURBED AREAS HAVE BEEN STABILIZED.
10. NO WORK IS PERMITTED IN THE WATERCOURSE AND NO MATERIAL SHALL BE RELEASED INTO THE WATERCOURSE. WORK IS TO BE COMPLETED IN THE DRY.
11. NO MACHINERY SHALL CROSS THE WATERCOURSE AT ANY TIME. MACHINERY THAT IS REQUIRED ON THE OPPOSITE SIDE OF THE WATERCOURSE WHILE THE STRUCTURE IS BEING REPLACED SHALL BE DRIVEN ACROSS THE STRUCTURE ITSELF, HAULED BY FLOAT, OR DRIVEN AROUND ON ROADS.
12. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING ANY TEMPORARY PROTECTION MEASURES NECESSARY TO PREVENT ANY CONCRETE, RUBBLE, DEMOLITION DEBRIS, OR DUST FROM ENTERING THE WATERCOURSE. SUCH MATERIAL SHALL BE REMOVED FROM TEMPORARY PROTECTION MEASURES REGULARLY AND AT THE END OF EACH DAY.
13. THE SEDIMENT AND EROSION CONTROL MEASURES MAY BE SUBJECT TO CHANGE OR MODIFICATIONS AS A RESULT OF SITE DEVELOPMENT OR CHANGES ON-SITE.
14. ADDITIONAL SILT FENCE AND CLEAR STONE SHALL BE KEPT ON-SITE FOR REPAIRS TO PROPOSED SEDIMENT AND EROSION CONTROL FEATURES.
15. EROSION AND SEDIMENT CONTROL MEASURES ARE TO BE EVALUATED ON A WEEKLY BASIS AND AFTER ANY STORM EVENT. ANY REPAIRS REQUIRED ARE TO BE RECTIFIED IMMEDIATELY.
16. SEDIMENT LADEN WATERS ARE TO BE TREATED PRIOR TO DISCHARGING INTO THE WATERCOURSE, AND MUST BE DISCHARGED AT LEAST 15m FROM THE WATERCOURSE.
17. MACHINERY, VEHICLES, EQUIPMENT, AND PUMPS SHALL NOT BE REFUELED OR CLEANED WITHIN 30 METERS OF THE WATERCOURSE.
18. ALL MACHINERY SHALL BE MAINTAINED FREE OF FLUID LEAKS AND SHALL ARRIVE ON-SITE IN A CLEAN AND WASHED CONDITION.
19. AN EMERGENCY SPILL KIT SHALL BE KEPT ON SITE AT ALL TIMES. THE CONTRACTOR SHALL COMPLY WITH ALL MECP REQUIREMENTS AND SHALL REPORT SPILLS TO THE SPILLS ACTION CENTRE (1-800-268-6060).
20. MEASURES SHALL BE TAKEN TO PREVENT CONCRETE LEACHATE FROM ENTERING THE WATERCOURSE. ALL CEMENTITIOUS PRODUCTS INCLUDING CONCRETE, GROUT, AND MORTAR SHALL BE COMPLETELY ISOLATED FROM PRECIPITATION AND WATERCOURSE FLOW FOR A MINIMUM OF 48 HOURS (OR UNTIL SIGNIFICANTLY CURED) TO ALLOW THE PH TO REACH NEUTRAL LEVELS. CONTAINMENT FACILITIES SHALL BE PROVIDED AT THE SITE FOR WASH DOWN OF CONCRETE TRUCKS, PUMPS, EQUIPMENT, AND TOOLS AS REQUIRED.
21. SMALL MESH SEINE TO BE USED TO EXCLUDE FISH FROM THE PROJECT AREA. ALL FISH STRANDED WITHIN THE PROJECT AREA DURING CONSTRUCTION SHALL BE RELOCATED BY A QUALIFIED BIOLOGIST.
22. THE CONTRACTOR SHALL MONITOR THE WEEKLY WEATHER FORECAST ON A DAILY BASIS AND PREPARE THE SITE ADEQUATELY FOR CONDITIONS THAT MAY CAUSE WATER LEVELS TO RISE.
23. THE CONTRACTOR SHALL BE AWARE THAT THE WATER LEVEL SPECIFIED ON THE CONTRACT DRAWINGS HAS BEEN PROVIDED FOR INFORMATIONAL PURPOSES ONLY AND BY NO MEANS INDICATES THE WATER LEVEL AT THE TIME OF CONSTRUCTION OR THE HIGH WATER LEVEL FOR THE WATER COURSE. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING ALL EQUIPMENT AND MATERIALS REQUIRED TO COMPLETE THE PROJECT REGARDLESS OF THE WATER LEVEL AT THE TIME OF CONSTRUCTION.

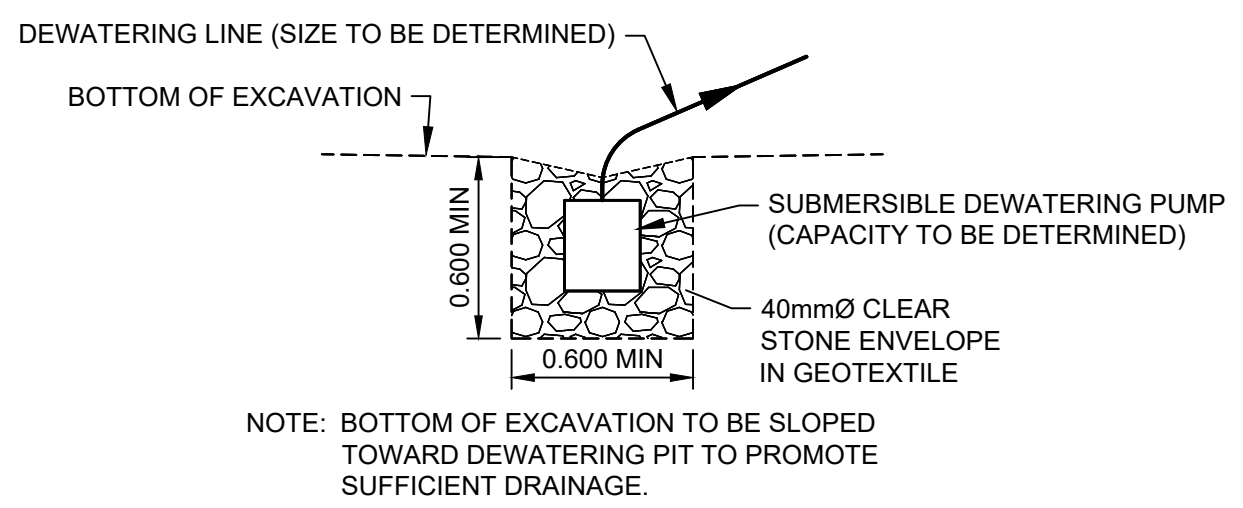
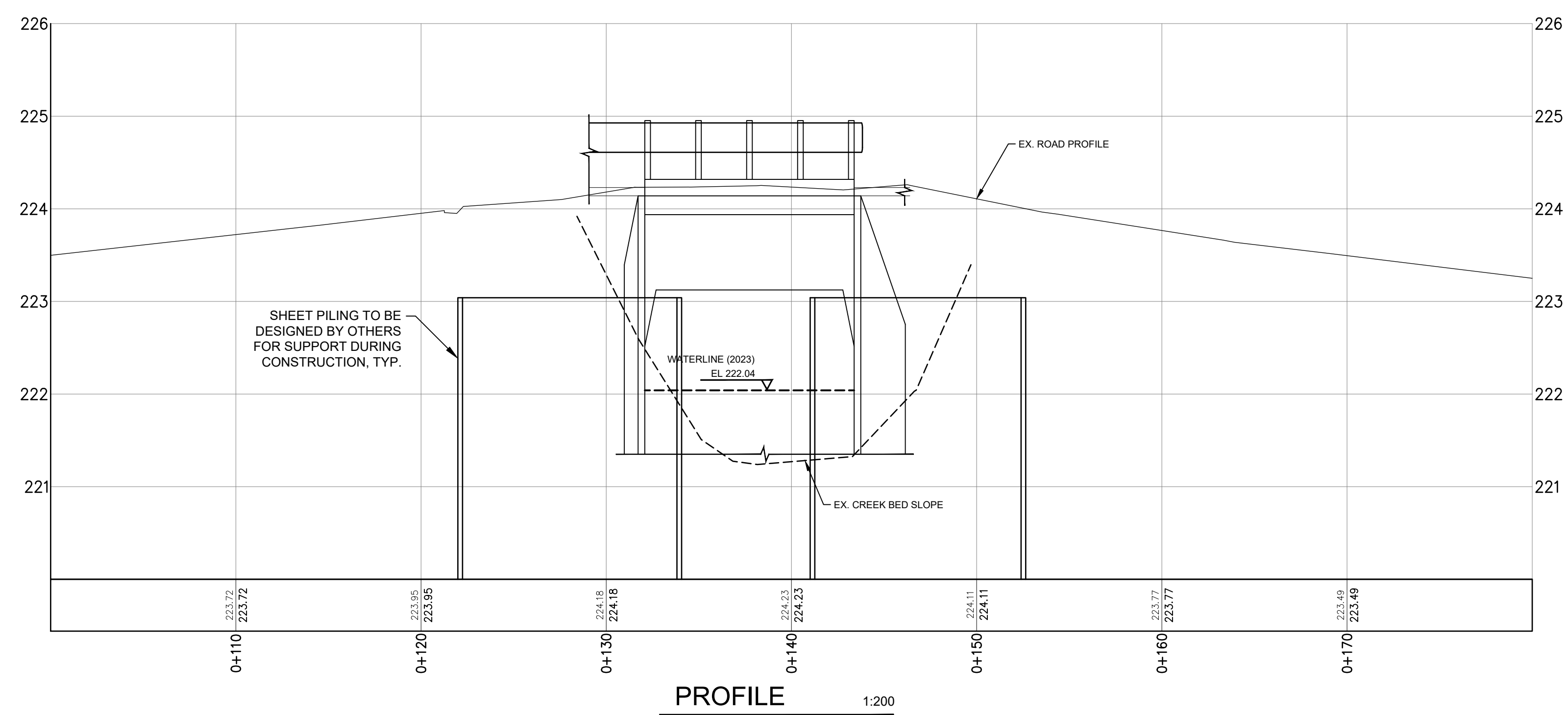
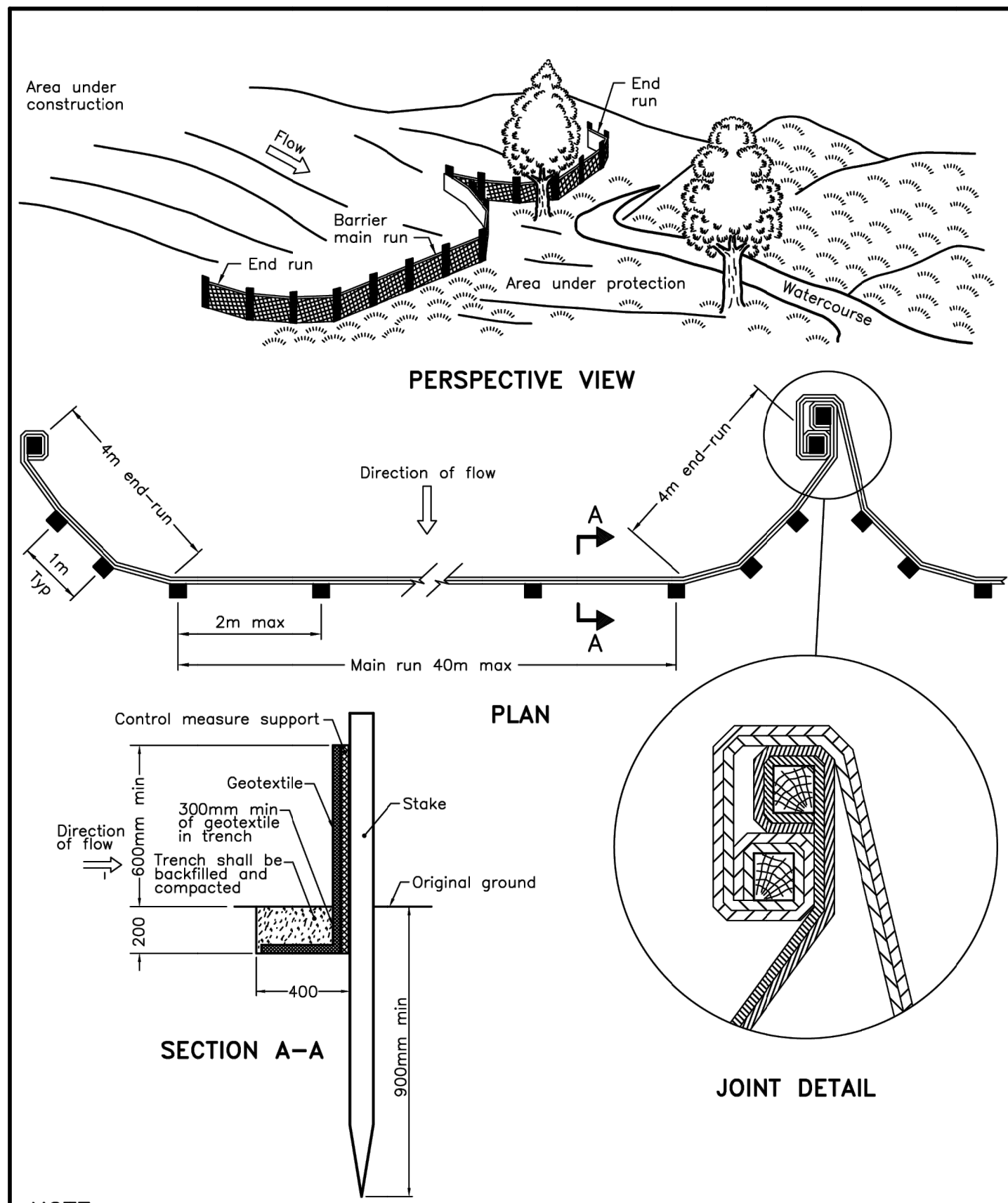


**NOTES:**

1. AS RECORDED TOPOGRAPHIC SURVEY CONDUCTED BY GEI CONSULTANTS CANADA LTD, NOVEMBER 20, 2023.

**LEGEND:**

- EXISTING GROUND CONTOUR
- - - EXISTING DITCH / SWALE
- HP EXISTING OVERHEAD POWER LINE



1 DETAIL 1:25  
TYPICAL DEWATERING PIT DETAIL

**BENCHMARK 1 ELEV. - 223.09m**  
NAIL AND FLAG IN HYDRO POLE AT STA. 0+104.699. 8m RIGHT.

**BENCHMARK 2 ELEV. - 223.40m**  
NAIL AND FLAG IN HYDRO POLE AT STA. 0+000. 14m RIGHT.

THE POSITION OF POLE LINES, CONDUITS, WATERMANS, SEWERS AND OTHER UNDERGROUND AND OVERGROUND UTILITIES AND STRUCTURES IS NOT NECESSARILY SHOWN ON THE CONTRACT DRAWINGS, AND, WHERE SHOWN, THE ACCURACY OF THE POSITION OF SUCH UTILITIES AND STRUCTURES IS NOT GUARANTEED.

BEFORE STARTING WORK, THE CONTRACTOR SHALL INFORM HIMSELF OF THE EXACT LOCATION OF ALL SUCH UTILITIES AND STRUCTURES, AND SHALL ASSUME ALL LIABILITY FOR ANY DAMAGE TO THEM.



NO.	DATE	REVISION DESCRIPTION	CHKD
3	2025/01/22	ISSUED FOR TENDER	B.A.W.
2	2024/12/04	ISSUED FOR APPROVALS	B.A.W.
1	2024/10/11	ISSUED FOR PRELIMINARY REVIEW	B.A.W.

**GEI Consultants**

GEI | OWEN SOUND | LISTOWEL | KITCHENER | LONDON | HAMILTON | GTA  
1260 - 2ND AVENUE EAST, UNIT 1, OWEN SOUND, ON N4K 2J3  
TEL: 519-376-1805

<b>EMERY BRIDGE REPLACEMENT</b>			
<b>TOWNSHIP OF GEORGIAN BLUFFS</b>			
<b>FORMER TOWNSHIP OF KEPPEL</b>			
<b>ENVIRONMENTAL PROTECTION PLAN &amp; DEWATERING DETAILS</b>			
DRAWN BY: K.V.H.	APPROVED BY: B.A.W.	PROJECT NO.: 2401469	DRAWING NO.: S4
DESIGNED BY: D.D.	DATE: JANUARY, 2025	SCALE: AS SHOWN	

FILE: H:\Projects\2024\EMERY BRIDGE REPLACEMENT\Drawings\20250122\20250122\_130129\_A11\_PLOTTED\_BY\_VLW.dwg, 1:30:29 AM, PLOTTED BY VLW, 1:30:29 AM, 1/22/2025, 1:30:29 PM

**NOMENCLATURE:**

- @ AT
- B/FTG. BOTTOM OF FOOTING
- c/c CENTRE TO CENTRE
- C.I.P. CAST IN PLACE
- c/w COMPLETE WITH
- E.F. EACH FACE
- E.W. EACH WAY
- ELEV. ELEVATION
- I.F. INSIDE FACE
- kN KILOWEIGHTON
- MAX. MAXIMUM
- MIN. MINIMUM
- MPa MEGAPASCAL
- NTS NOT TO SCALE
- OAE OR APPROVED EQUIVALENT
- O.F. OUTSIDE FACE
- SPMDD STANDARD PROCTOR MAXIMUM DRY DENSITY
- S.S. STAINLESS STEEL
- SLS SERVICEABILITY LIMIT STATES
- TBD TO BE DETERMINED
- T/ TOP OF
- TYP. TYPICAL
- u/s UNDERSIDE
- ULS ULTIMATE LIMIT STATES
- UP UTILITY POLE
- WP WORKING POINT
- B.U.L. THE UPPER LAYER OF THE BOTTOM MAT
- L.L. THE LOWER LAYER OF THE TOP MAT
- T.U.L. THE UPPER LAYER OF THE TOP MAT
- B.L.L. THE LOWER LAYER OF THE BOTTOM MAT
- V.I.F. DENOTES VERTICAL INSIDE FACE
- V.O.F. DENOTES VERTICAL OUTSIDE FACE
- H.I.F. DENOTES HORIZONTAL INSIDE FACE
- H.O.F. DENOTES HORIZONTAL OUTSIDE FACE

**BENCHMARK 1 ELEV. - 223.09m**

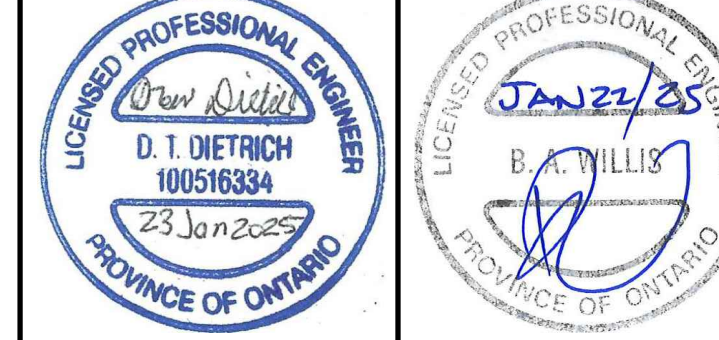
NAIL AND FLAG IN HYDRO POLE AT STA. 0+104.699.  
8m RIGHT.

**BENCHMARK 2 ELEV. - 223.40m**

NAIL AND FLAG IN HYDRO POLE AT STA. 0+000.  
14m RIGHT.

THE POSITION OF POLE LINES, CONDUITS, WATERMANS, SEWERS AND OTHER UNDERGROUND AND OVERGROUND UTILITIES AND STRUCTURES IS NOT NECESSARILY SHOWN ON THE CONTRACT DRAWINGS, AND, WHERE SHOWN, THE ACCURACY OF THE POSITION OF SUCH UTILITIES AND STRUCTURES IS NOT GUARANTEED.

BEFORE STARTING WORK, THE CONTRACTOR SHALL INFORM HIMSELF OF THE EXACT LOCATION OF ALL SUCH UTILITIES AND STRUCTURES, AND SHALL ASSUME ALL LIABILITY FOR ANY DAMAGE TO THEM.



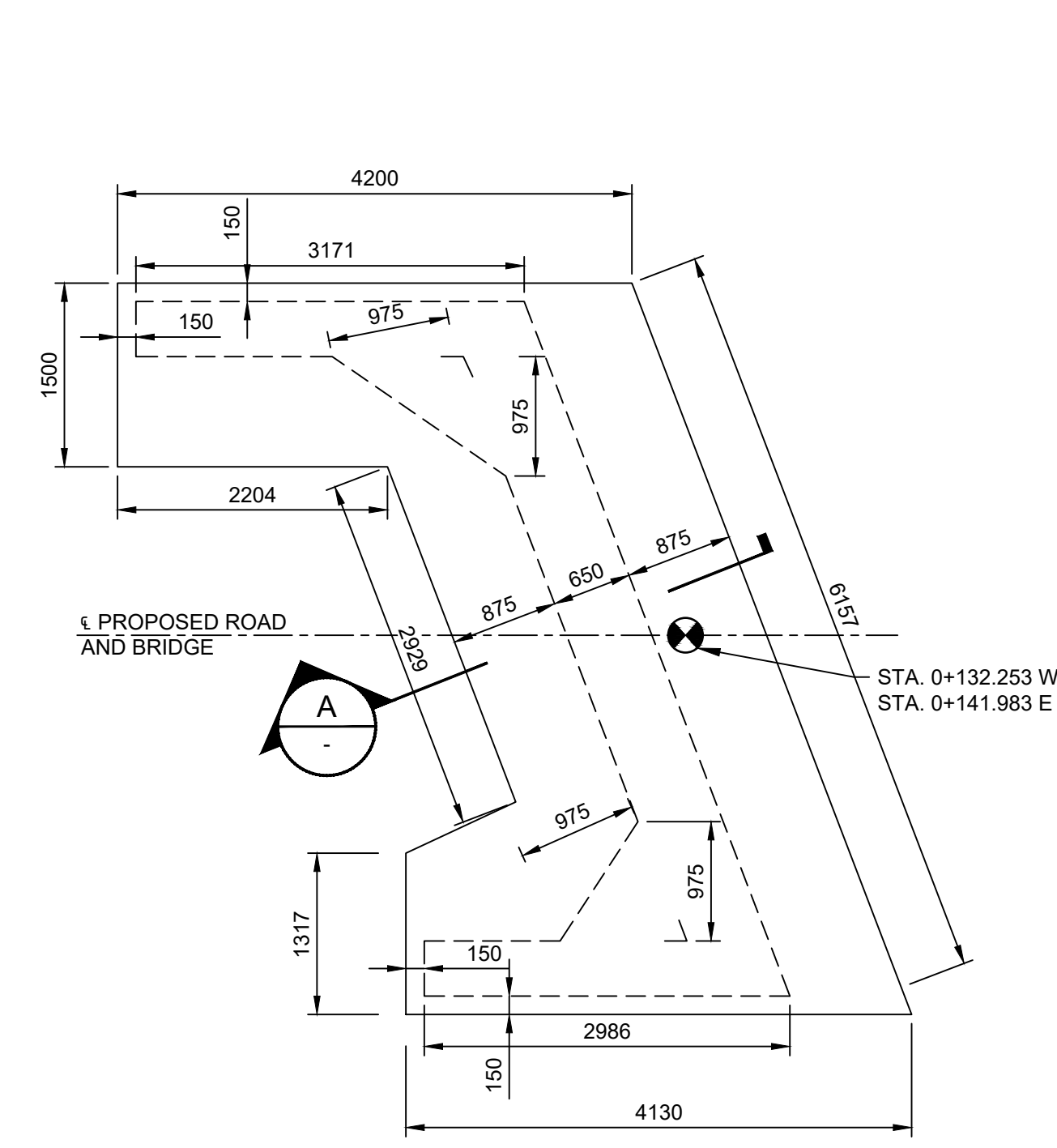
NO.	DATE	REVISION DESCRIPTION	CHKD
3	2025/01/22	ISSUED FOR TENDER	B.A.W.
2	2024/12/04	ISSUED FOR APPROVALS	B.A.W.
1	2024/10/11	ISSUED FOR PRELIMINARY REVIEW	B.A.W.



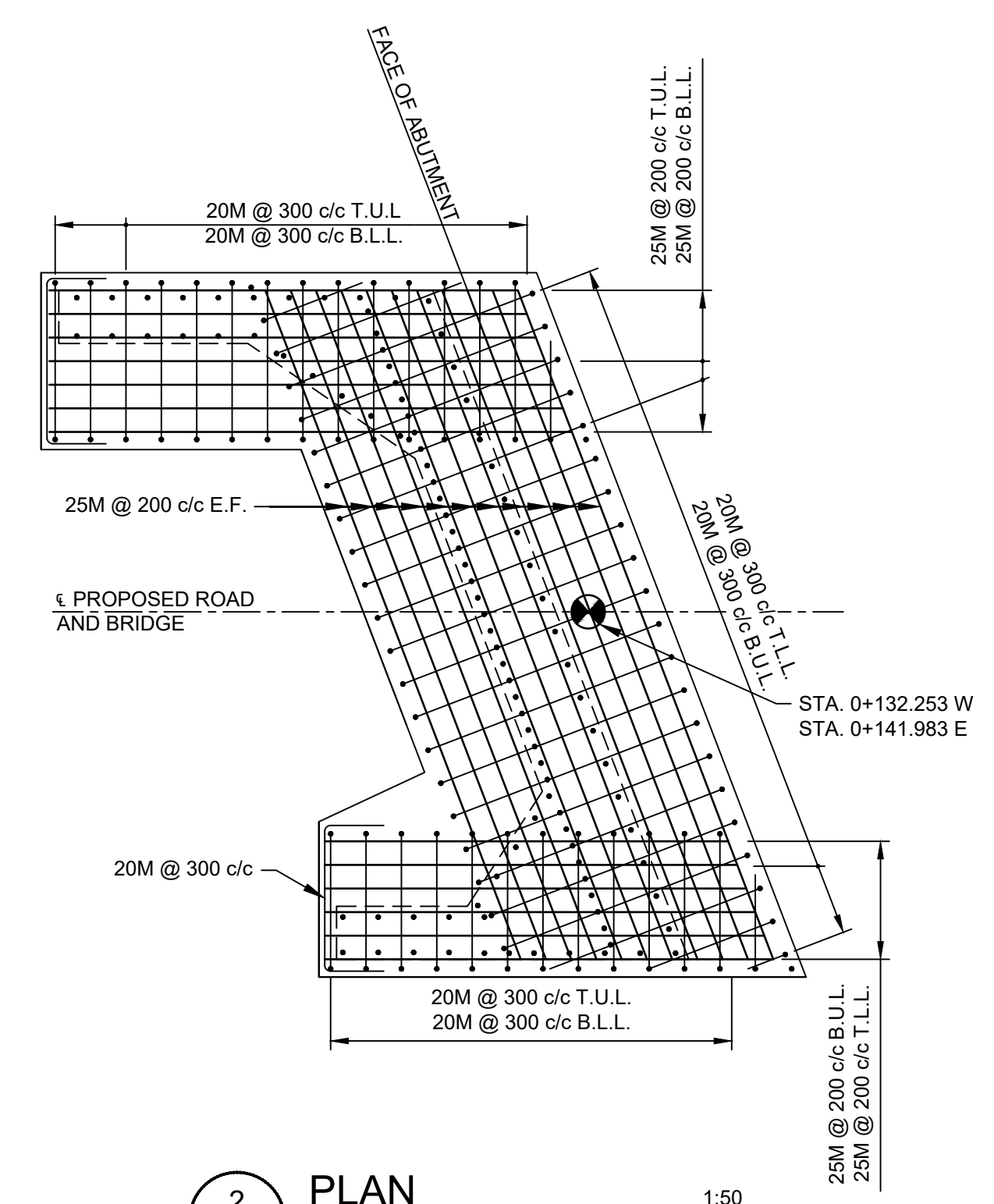
**EMERY BRIDGE REPLACEMENT**  
**TOWNSHIP OF GEORGIAN BLUFFS**  
**FORMER TOWNSHIP OF KEPPEL**

**FOOTING DETAILS**

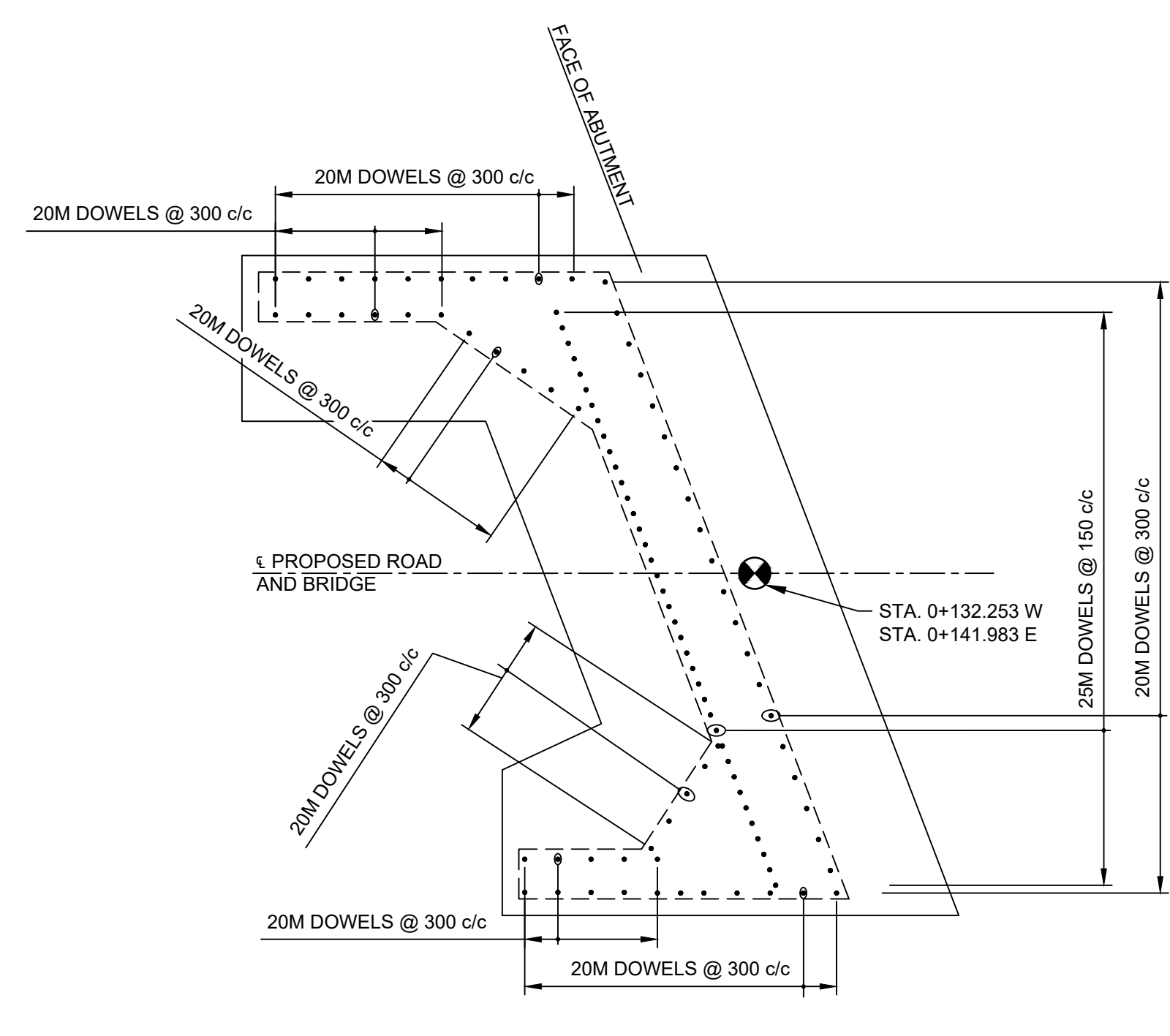
DRAWN BY: K.V.H.	APPROVED BY: B.A.W.	PROJECT NO.: 2401469	DRAWING NO.: <b>S5</b>
DESIGNED BY: D.D.	DATE: JANUARY, 2025	SCALE: AS SHOWN	



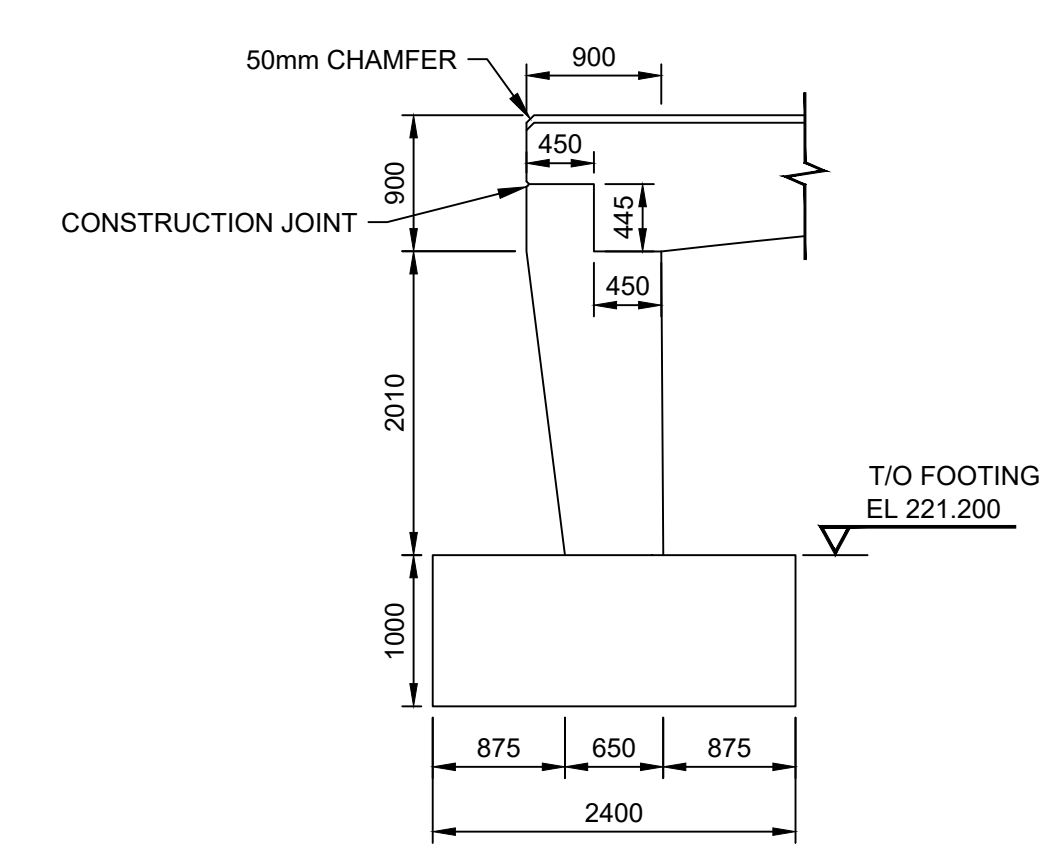
**1 PLAN** 1:50



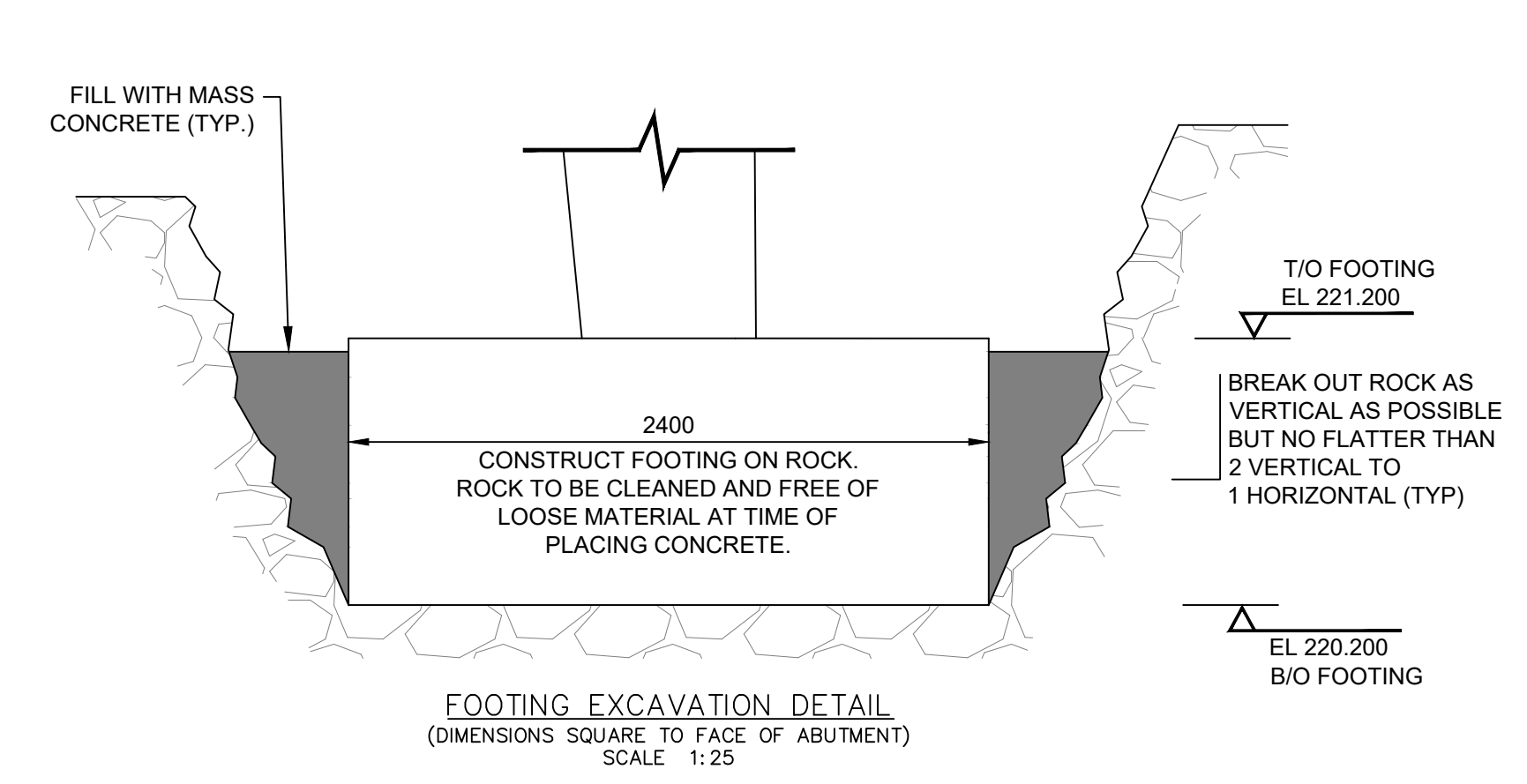
**2 PLAN** 1:50  
**FOOTING REINFORCEMENT**



**3 PLAN** 1:50  
**DOWEL REINFORCEMENT**



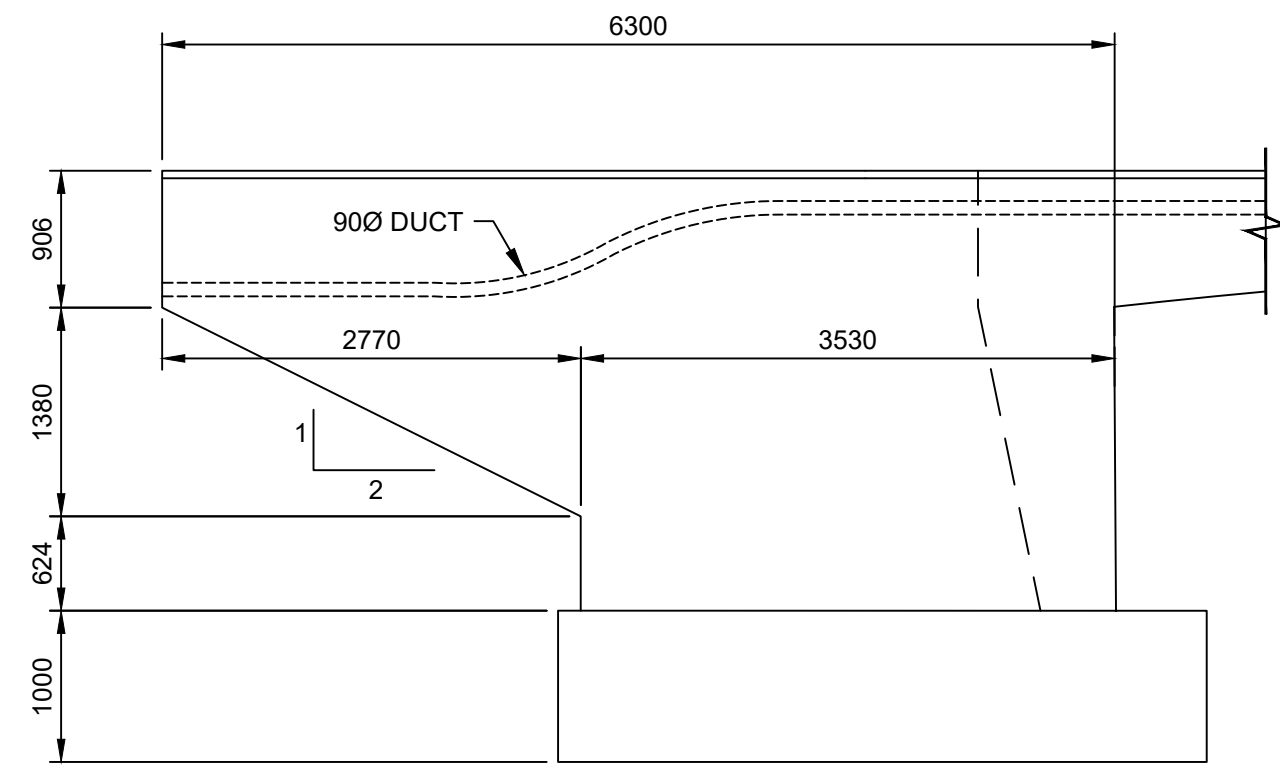
**A SECTION** 1:50



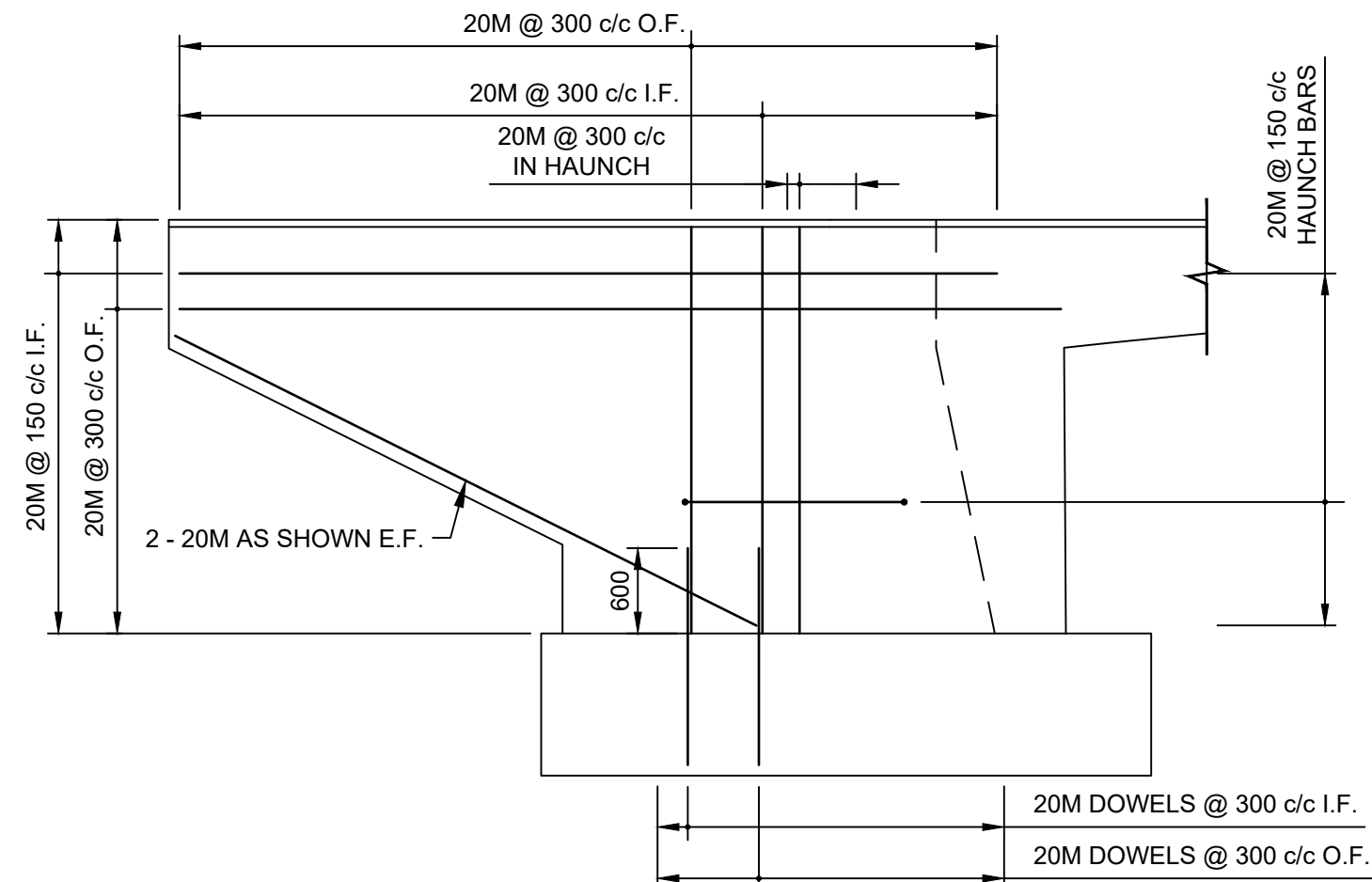
**B SECTION** 1:50  
**FOOTING EXCAVATION DETAIL**  
(DIMENSIONS SQUARE TO FACE OF ABUTMENT)  
SCALE 1:25

ALL BEARING CAPACITIES TO BE CONFIRMED TO MEET FOOTING BEARING CAPACITY AT U.L.S. OF 300 kPa.

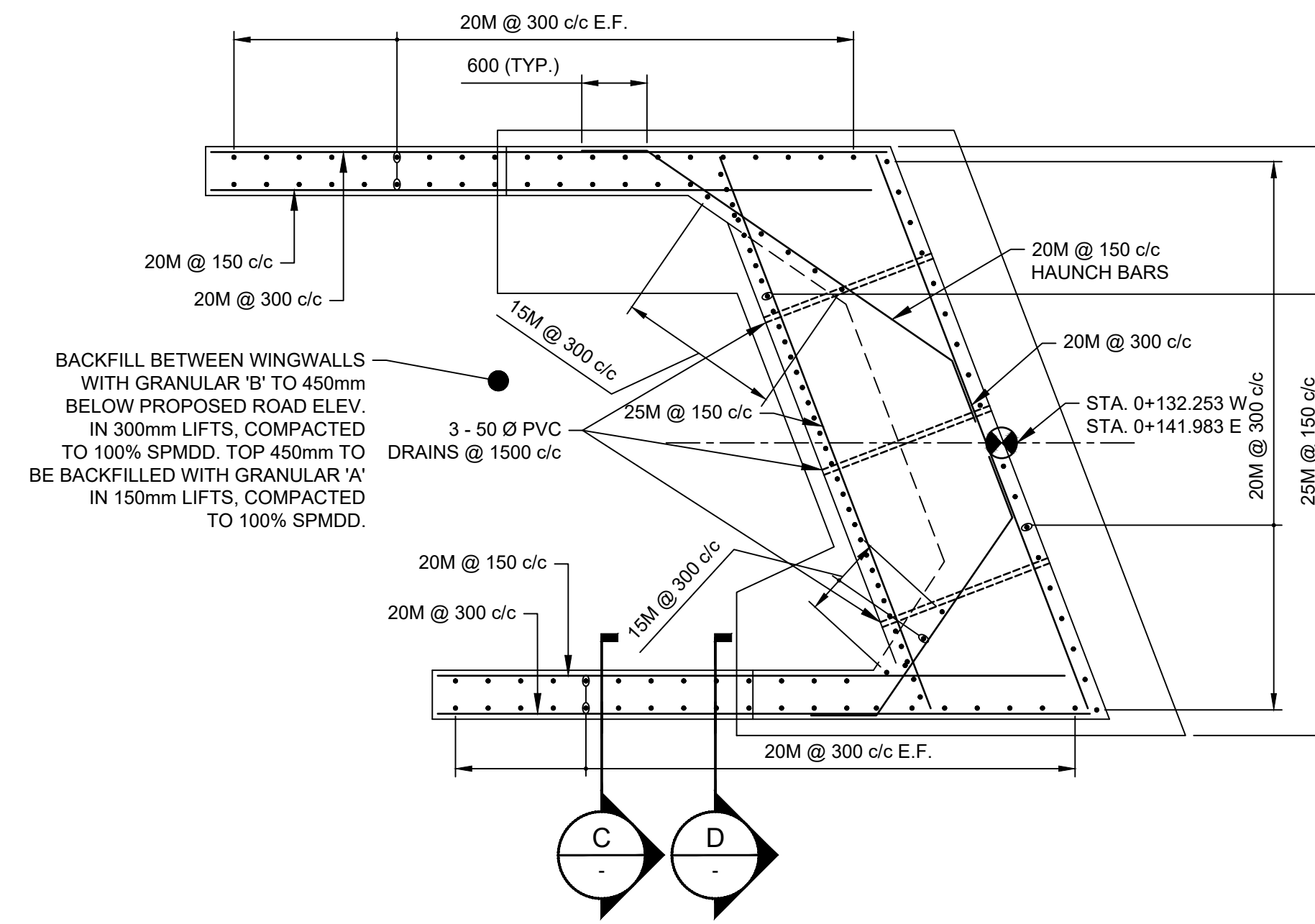
FILE: H:\Projects\2025\EMERY BRIDGE REPLACEMENT\Drawings\20250122\20250122\_11301309.dwg  
 LAST SAVED BY: gregory.martin@gei.com  
 DATE: 2025/01/22 11:30:13 AM  
 PROJECTED BY: gregory.martin@gei.com  
 DATE: 2025/01/22 11:30:13 AM  
 DRAWING NO.: S5



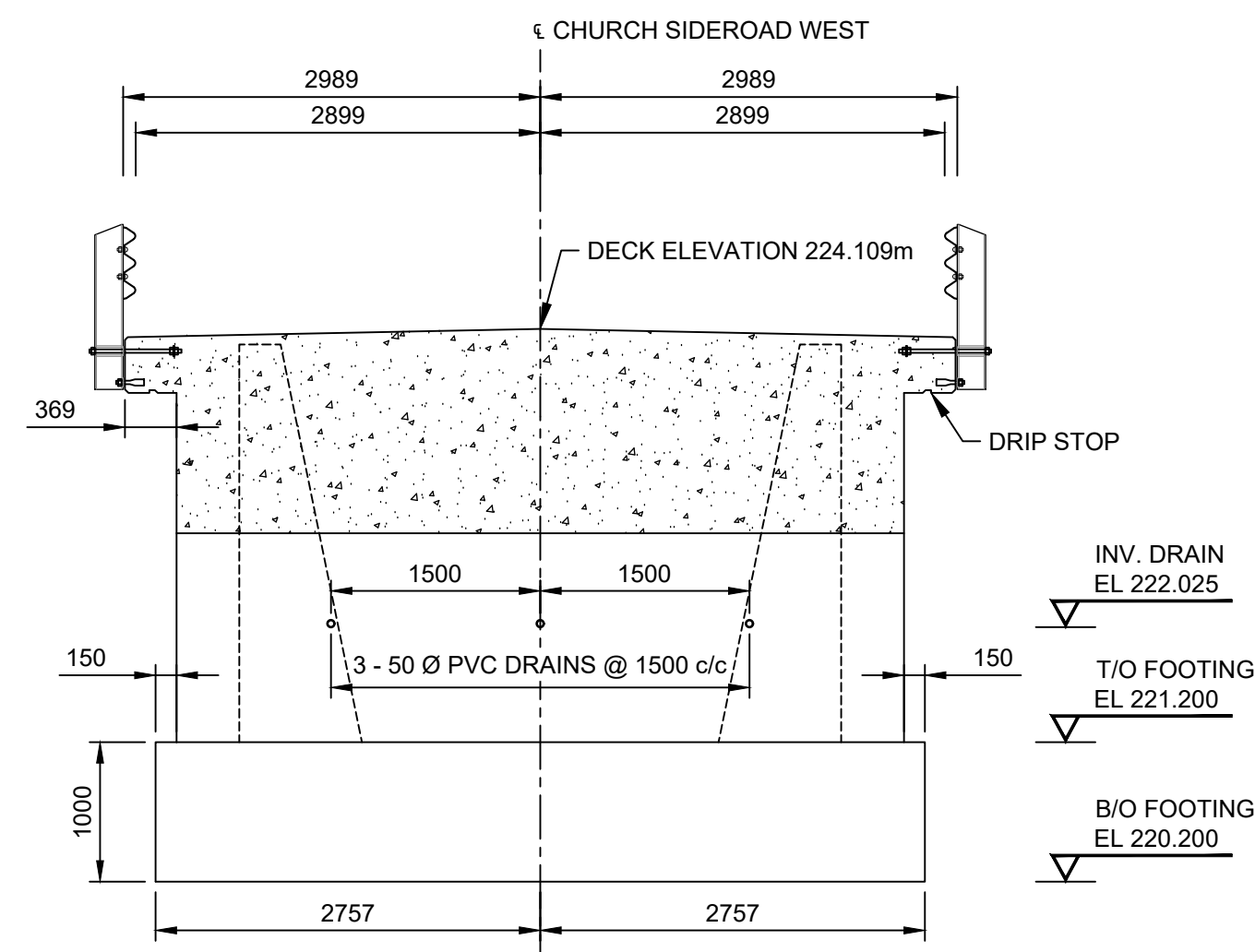
**ELEVATION** 1:50  
DIMENSIONS



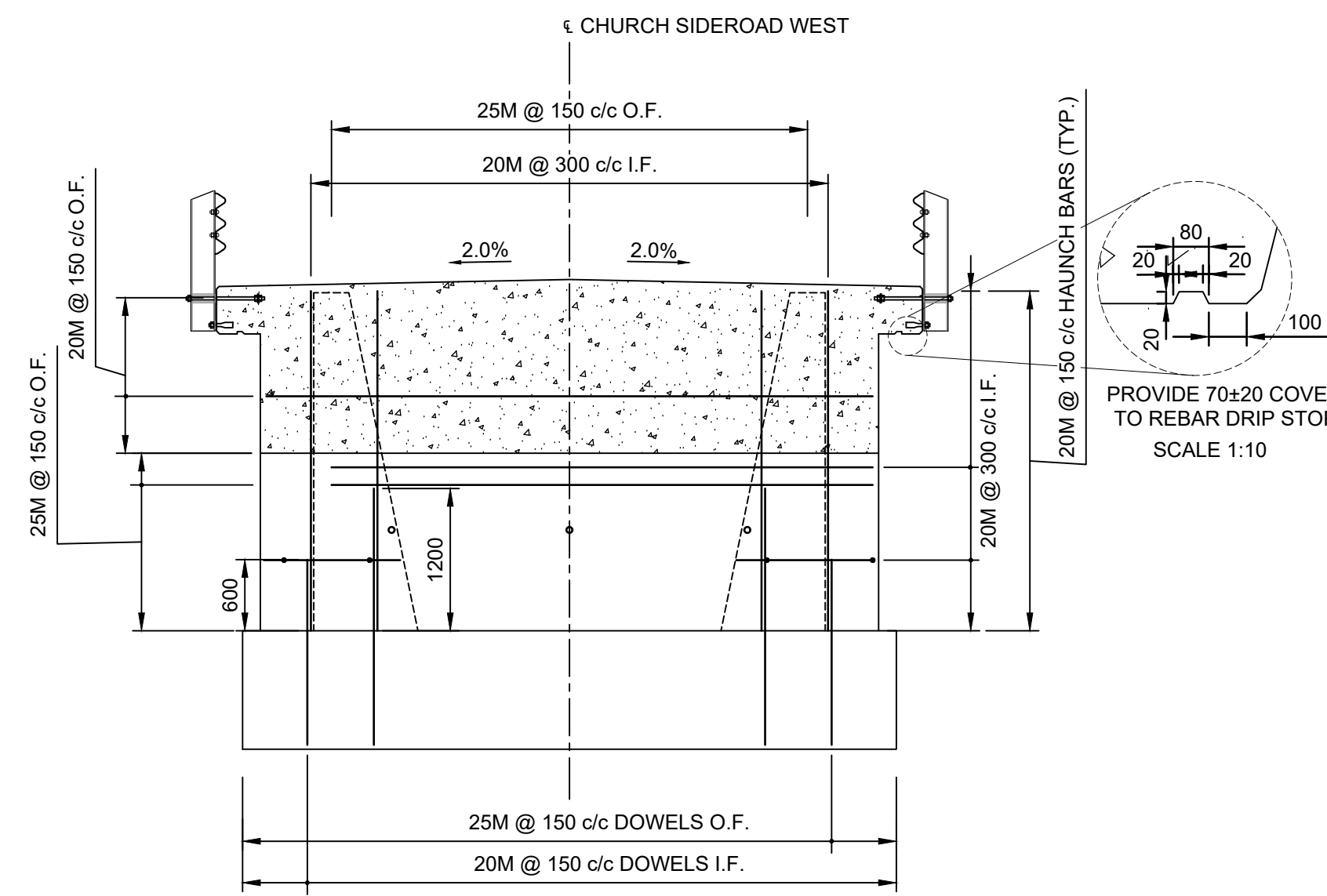
**ELEVATION** 1:50  
REINFORCEMENT



**PLAN** 1:50

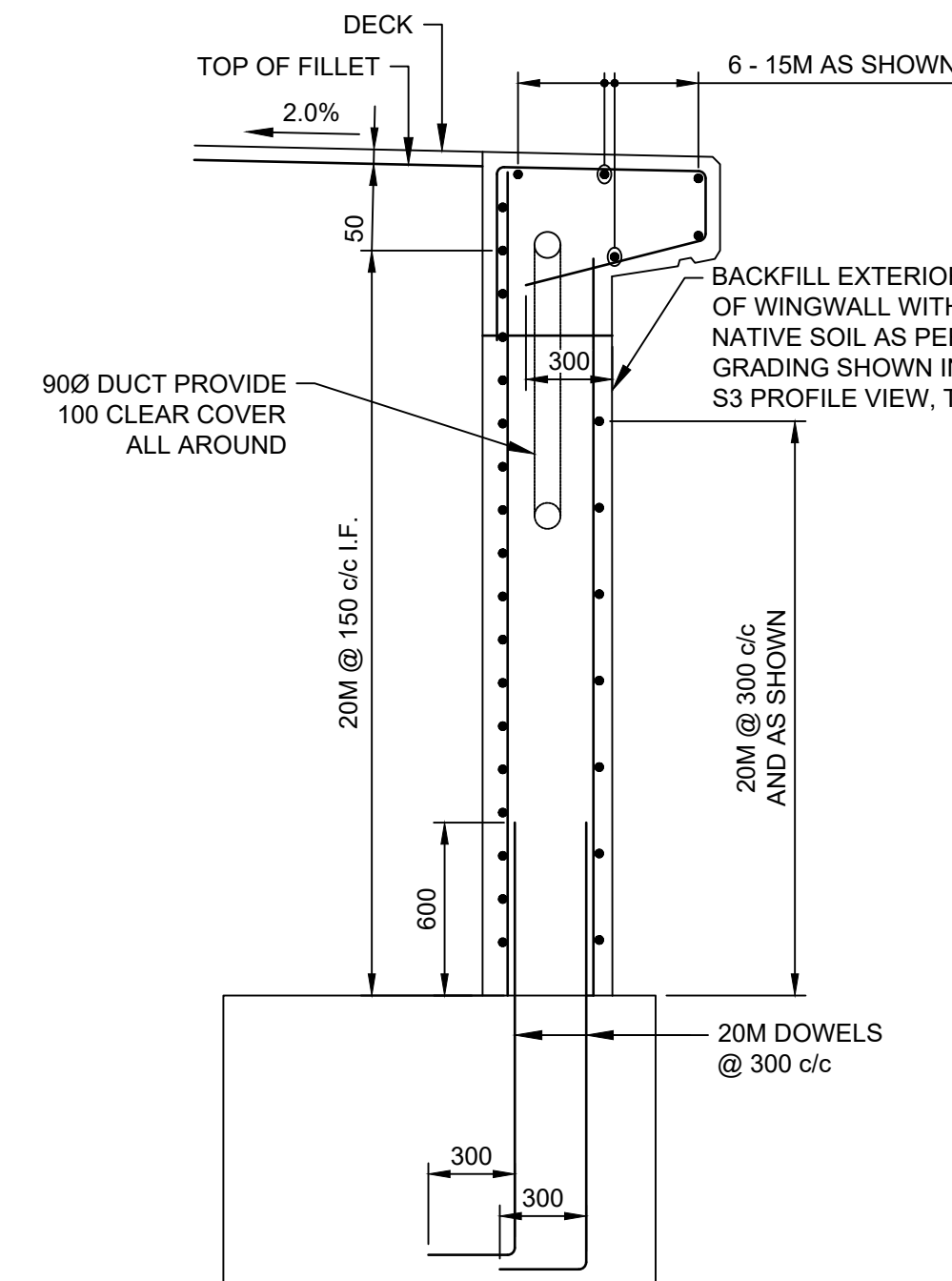


**A SECTION** 1:50  
DIMENSIONS

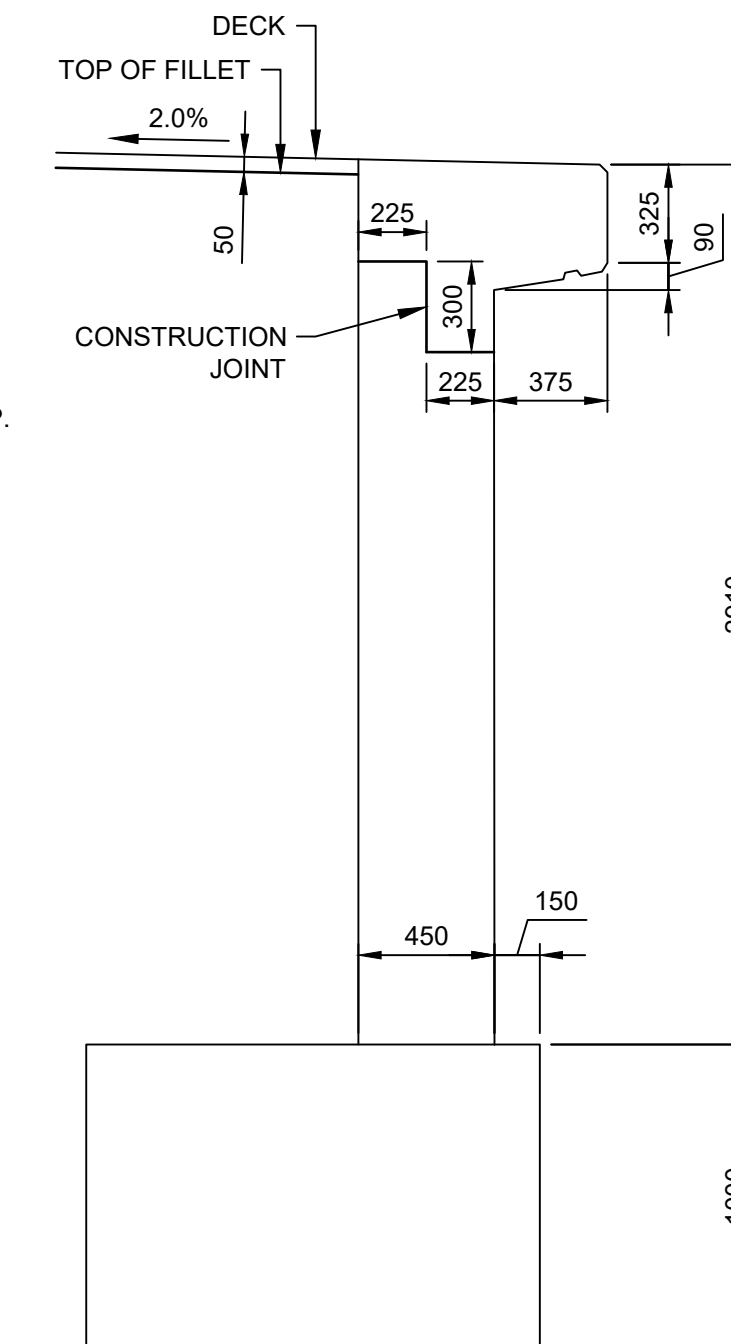


**B SECTION** 1:50  
REINFORCEMENT

NOTE: FOR FOOTING REINFORCEMENT SEE DWG. S5



**C SECTION** 1:25



**D SECTION** 1:25

**NOMENCLATURE:**

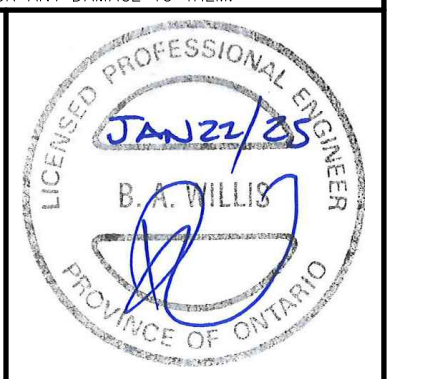
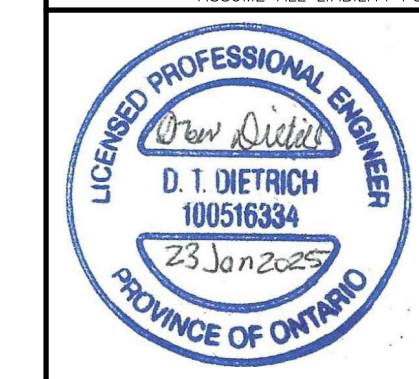
- @ AT
- B/FTG. BOTTOM OF FOOTING
- c/c CENTRE TO CENTRE
- C.I.P. CAST IN PLACE
- c/w COMPLETE WITH
- E.F. EACH FACE
- E.W. EACH WAY
- ELEV. ELEVATION
- I.F. INSIDE FACE
- KN KILONEWTN
- MAX. MAXIMUM
- MIN. MINIMUM
- MPa MEGAPASCAL
- NTS NOT TO SCALE
- OAE OR APPROVED EQUIVALENT
- O.F. OUTSIDE FACE
- SPMDD STANDARD PROCTOR MAXIMUM DRY DENSITY
- S.S. STAINLESS STEEL
- SLS SERVICEABILITY LIMIT STATES
- TBD TO BE DETERMINED
- T/ TOP OF
- TYP. TYPICAL
- u/s UNDERSIDE
- ULS ULTIMATE LIMIT STATES
- UP UTILITY POLE
- WP WORKING POINT
- B.U.L. THE UPPER LAYER OF THE BOTTOM MAT
- T.L.L. THE LOWER LAYER OF THE TOP MAT
- T.U.L. THE UPPER LAYER OF THE TOP MAT
- B.L.L. THE LOWER LAYER OF THE BOTTOM MAT
- V.I.F. DENOTES VERTICAL INSIDE FACE
- V.O.F. DENOTES VERTICAL OUTSIDE FACE
- H.I.F. DENOTES HORIZONTAL INSIDE FACE
- H.O.F. DENOTES HORIZONTAL OUTSIDE FACE

BENCHMARK 1 ELEV. - 223.09m

BENCHMARK 2 ELEV. - 223.40m

THE POSITION OF POLE LINES, CONDUITS, WATERMANS, SEWERS AND OTHER UNDERGROUND AND OVERGROUND UTILITIES AND STRUCTURES IS NOT NECESSARILY SHOWN ON THE CONTRACT DRAWINGS, AND, WHERE SHOWN, THE ACCURACY OF THE POSITION OF SUCH UTILITIES AND STRUCTURES IS NOT GUARANTEED.

BEFORE STARTING WORK, THE CONTRACTOR SHALL INFORM HIMSELF OF THE EXACT LOCATION OF ALL SUCH UTILITIES AND STRUCTURES, AND SHALL ASSUME ALL LIABILITY FOR ANY DAMAGE TO THEM.



NO.	DATE	REVISION DESCRIPTION	CHKD
3	2025/01/22	ISSUED FOR TENDER	B.A.W.
2	2024/12/04	ISSUED FOR APPROVALS	B.A.W.
1	2024/10/11	ISSUED FOR PRELIMINARY REVIEW	B.A.W.



QUELPH | OWEN SOUND | LISTTOWEL | KITCHENER | LONDON | HAMILTON | GTA  
1260 - 2ND AVENUE EAST, UNIT 1, OWEN SOUND, ON N4K 2J3  
TEL. 519-376-1805

EMERY BRIDGE REPLACEMENT

TOWNSHIP OF GEORGIAN BLUFFS

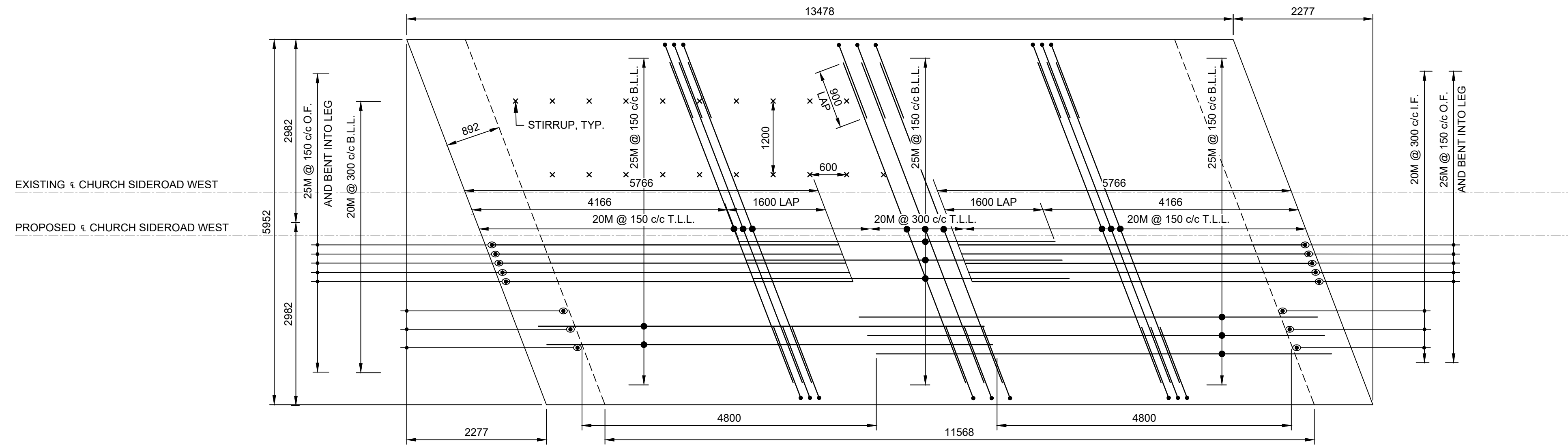
FORMER TOWNSHIP OF KEPPEL

ABUTMENT & WINGWALL DETAILS

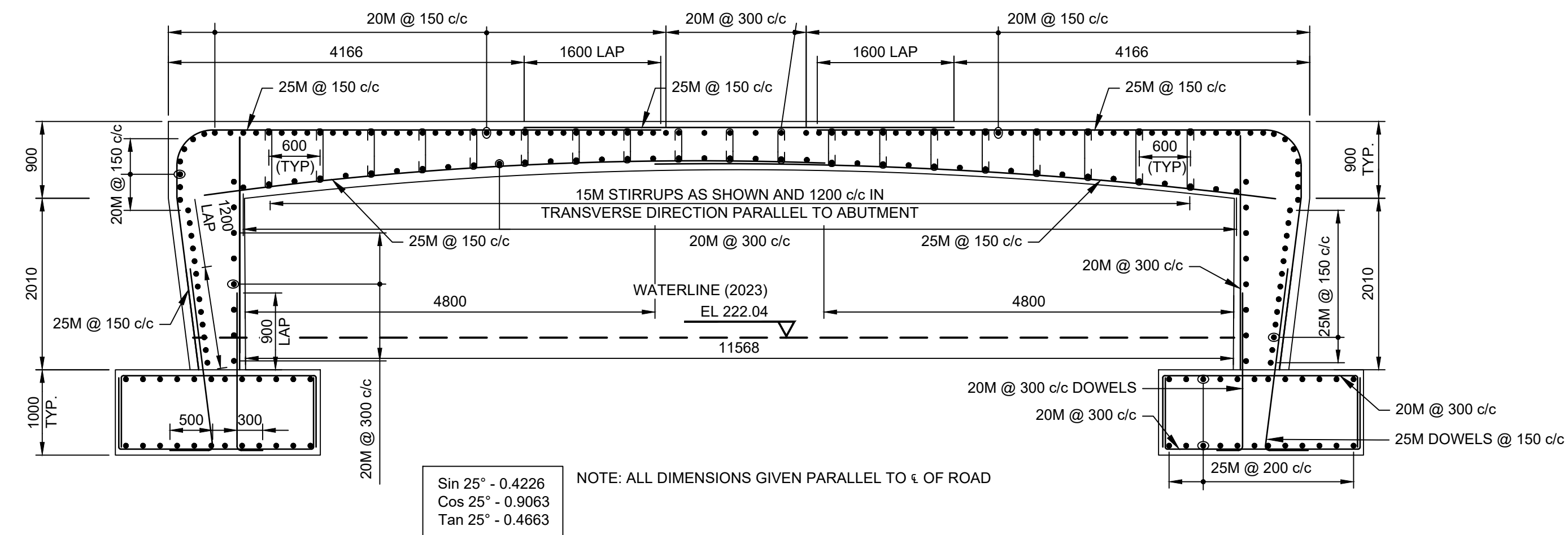
DRAWN BY: K.V.H.	APPROVED BY: B.A.W.	PROJECT NO.: 2401469	DRAWING NO.: <b>S6</b>
DESIGNED BY: D.D.	DATE: JANUARY, 2025	SCALE: AS SHOWN	

FILE: H:\Projects\2024\EMERY BRIDGE REPLACEMENT\Drawings\Wingwall\_Details.dwg LAOUC/Abutment & Wingwall  
LAST SAVED BY: gregory.m.12.12.2025, 11:26:42 AM PLOTTED BY: gregory.m.12.12.2025, 11:26:42 AM





PLAN 1:50



SECTION A-A 1:50

**NOMENCLATURE:**

- @ AT
- B/FTG. BOTTOM OF FOOTING
- c/c CENTRE TO CENTRE
- C.I.P. CAST IN PLACE
- c/w COMPLETE WITH
- E.F. EACH FACE
- E.W. EACH WAY
- ELEV. ELEVATION
- I.F. INSIDE FACE
- kN KILOWEIGHTON
- MAX. MAXIMUM
- MIN. MINIMUM
- MPa MEGAPASCAL
- NTS NOT TO SCALE
- OAE OR APPROVED EQUIVALENT
- O.F. OUTSIDE FACE
- SPMDD STANDARD PROCTOR MAXIMUM DRY DENSITY
- S.S. STAINLESS STEEL
- SLS SERVICEABILITY LIMIT STATES
- TBD TO BE DETERMINED
- T/ TOP OF
- TYP. TYPICAL
- u/s UNDERSIDE
- ULS ULTIMATE LIMIT STATES
- UP UTILITY POLE
- WP WORKING POINT
- B.U.L. THE UPPER LAYER OF THE BOTTOM MAT
- T.L.L. THE LOWER LAYER OF THE TOP MAT
- T.U.L. THE UPPER LAYER OF THE TOP MAT
- B.L.L. THE LOWER LAYER OF THE BOTTOM MAT
- V.I.F. DENOTES VERTICAL INSIDE FACE
- V.O.F. DENOTES VERTICAL OUTSIDE FACE
- H.I.F. DENOTES HORIZONTAL INSIDE FACE
- H.O.F. DENOTES HORIZONTAL OUTSIDE FACE

**BENCHMARK 1 ELEV. - 223.09m**

NAIL AND FLAG IN HYDRO POLE AT STA. 0+104.699.  
8m RIGHT.

**BENCHMARK 2 ELEV. - 223.40m**

NAIL AND FLAG IN HYDRO POLE AT STA. 0+000.  
14m RIGHT.

THE POSITION OF POLE LINES, CONDUITS, WATERMANS, SEWERS AND OTHER UNDERGROUND AND OVERGROUND UTILITIES AND STRUCTURES IS NOT NECESSARILY SHOWN ON THE CONTRACT DRAWINGS, AND, WHERE SHOWN, THE ACCURACY OF THE POSITION OF SUCH UTILITIES AND STRUCTURES IS NOT GUARANTEED.

BEFORE STARTING WORK, THE CONTRACTOR SHALL INFORM HIMSELF OF THE EXACT LOCATION OF ALL SUCH UTILITIES AND STRUCTURES, AND SHALL ASSUME ALL LIABILITY FOR ANY DAMAGE TO THEM.



NO.	DATE	REVISION DESCRIPTION	CHKD
3	2025/01/22	ISSUED FOR TENDER	B.A.W.
2	2024/12/04	ISSUED FOR APPROVALS	B.A.W.
1	2024/10/11	ISSUED FOR PRELIMINARY REVIEW	B.A.W.



QUELPH | OWEN SOUND | LISTOWEL | KITCHENER | LONDON | HAMILTON | GTA  
1260 - 2ND AVENUE EAST, UNIT 1, OWEN SOUND, ON N4K 2J3  
TEL: 519-376-1805

EMERY BRIDGE REPLACEMENT

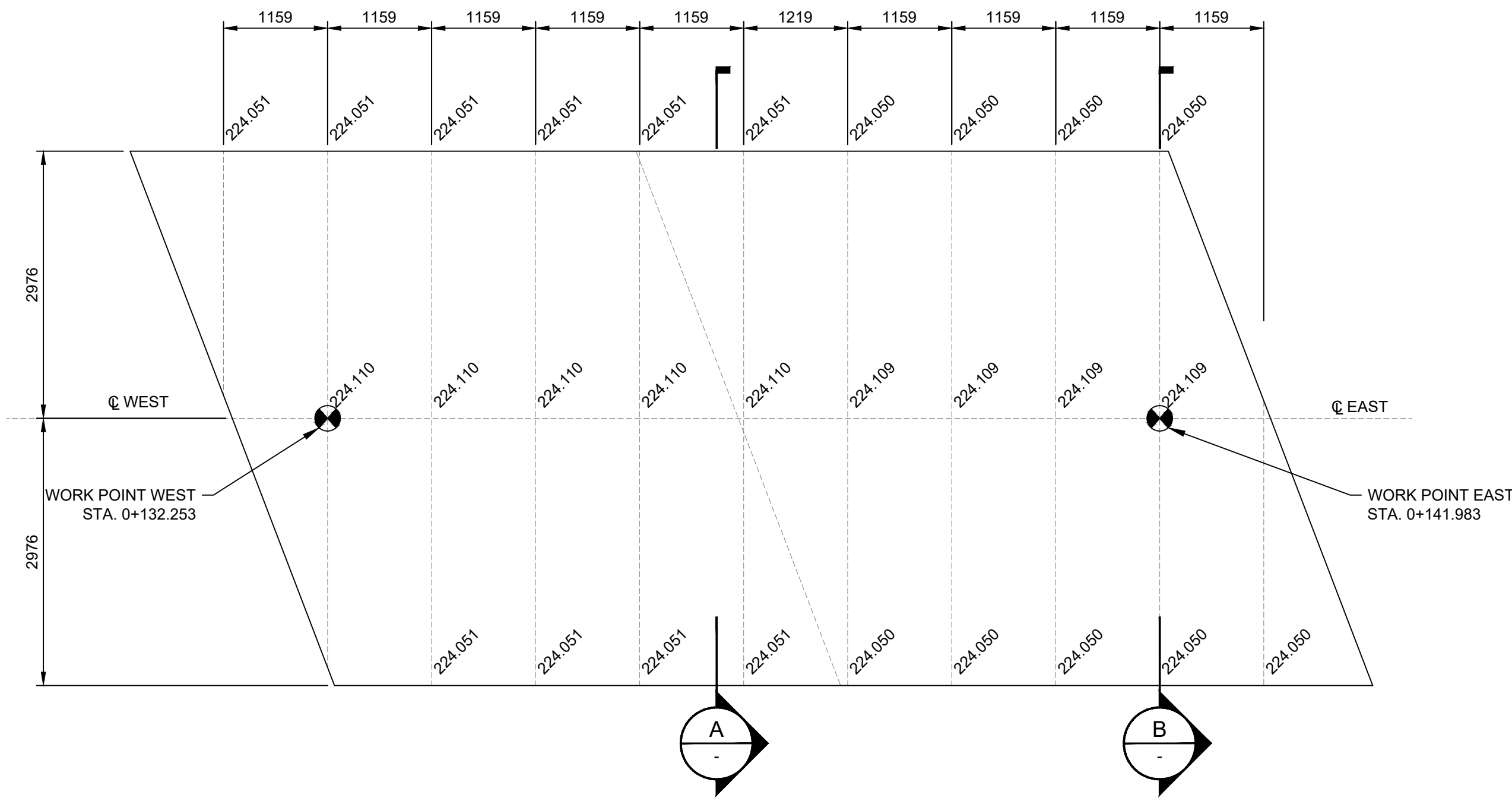
TOWNSHIP OF GEORGIAN BLUFFS

FORMER TOWNSHIP OF KEPPEL

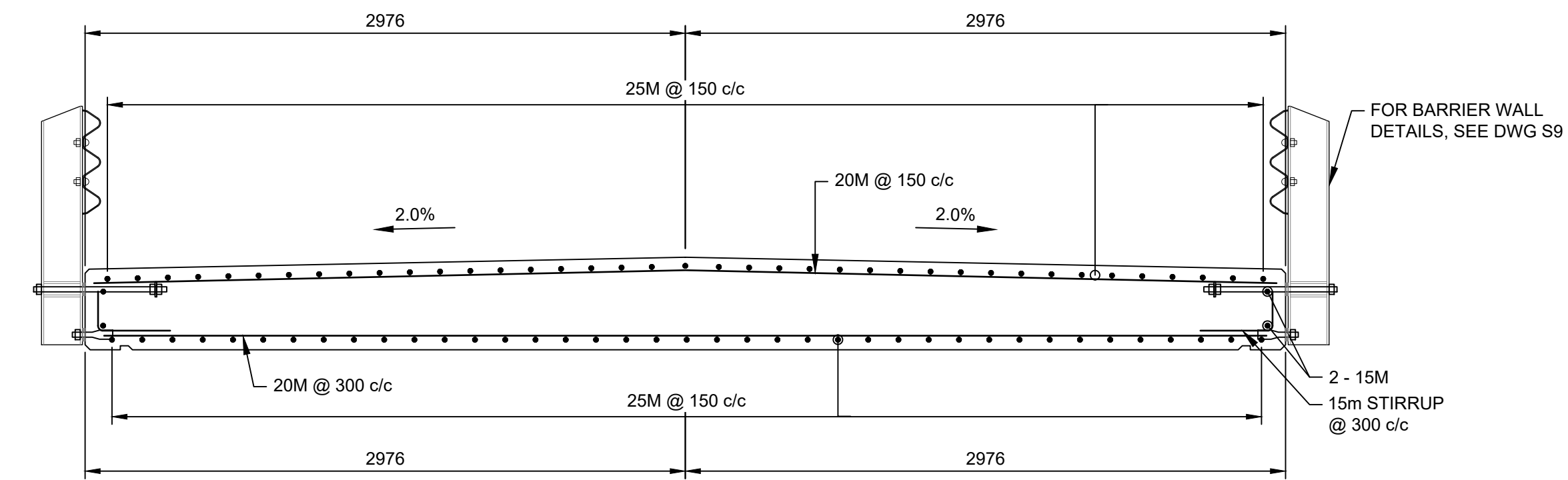
DECK REPLACEMENT

DRAWN BY: K.V.H.	APPROVED BY: B.A.W.	PROJECT NO.: 2401469	DRAWING NO.: <b>S7</b>
DESIGNED BY: D.D.	DATE: JANUARY, 2025	SCALE: AS SHOWN	

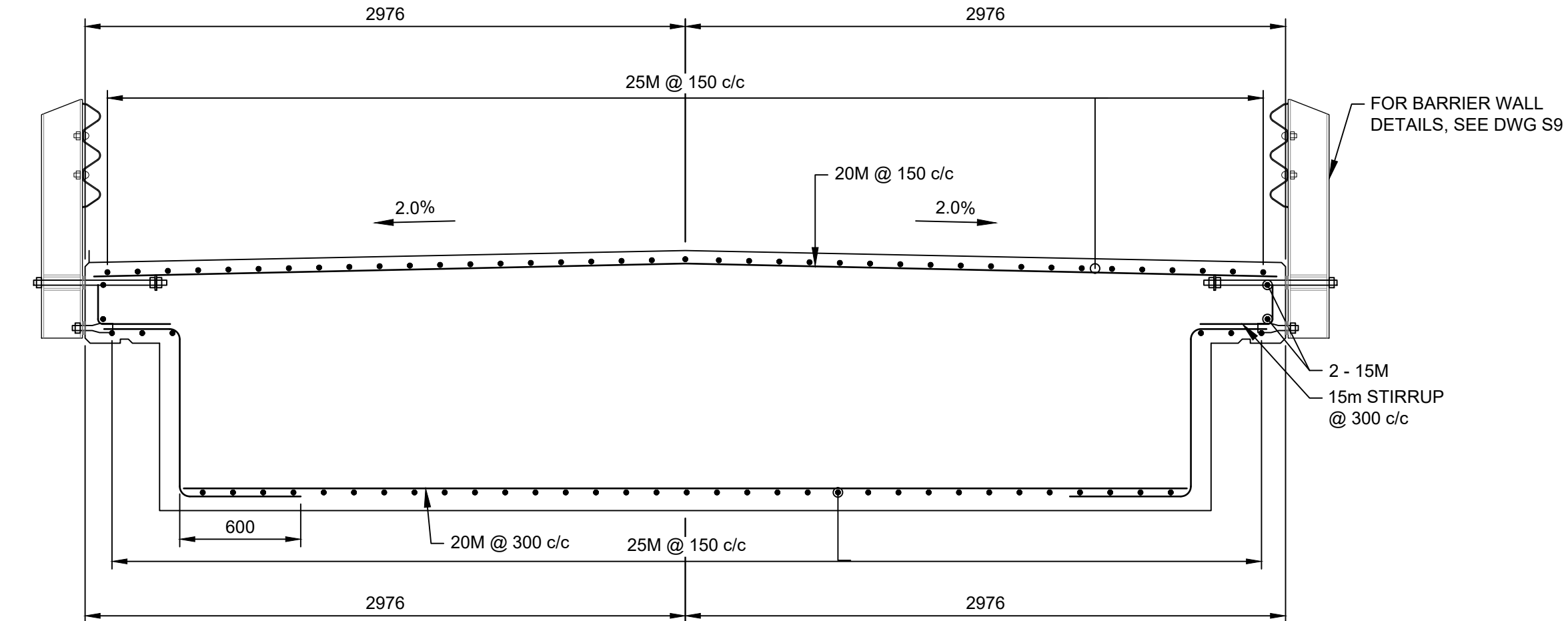
FILE: H:\Projects\2024\EMERY BRIDGE REPLACEMENT\Drawings\Deck Replacement.dwg  
 LAST SAVED BY: K.V.H. ON: 2025/01/22 11:31:07 AM  
 PLOTTED BY: K.V.H. ON: 2025/01/22 11:31:07 AM  
 PLOTTED BY: K.V.H. ON: 2025/01/22 11:31:07 AM



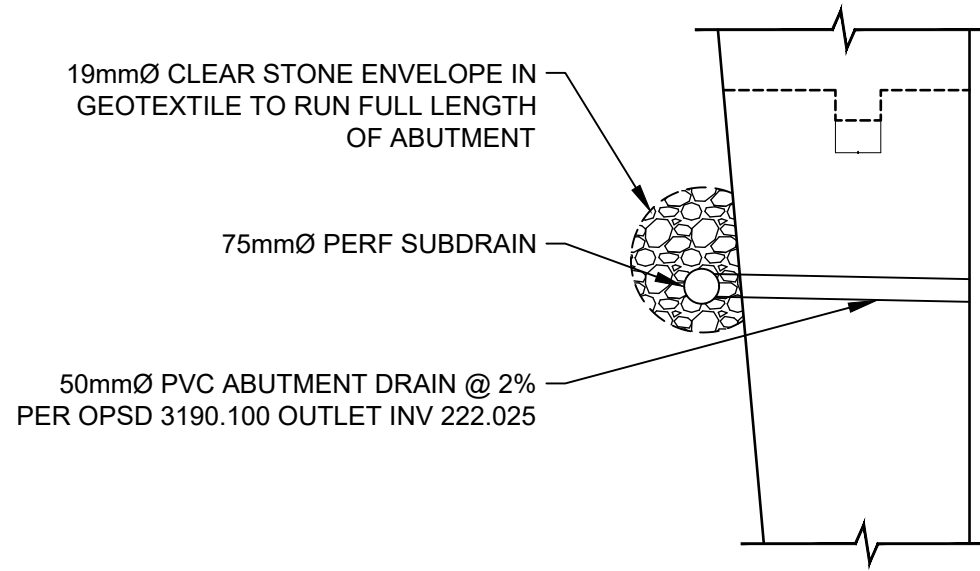
PLAN 1:50



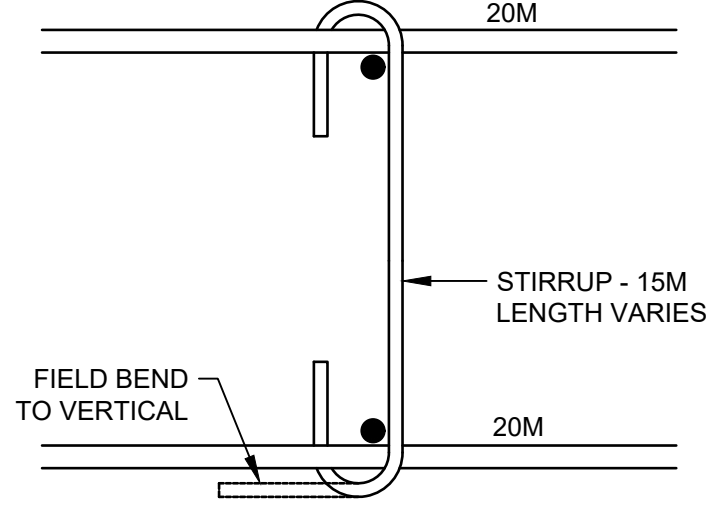
A SECTION 1:25



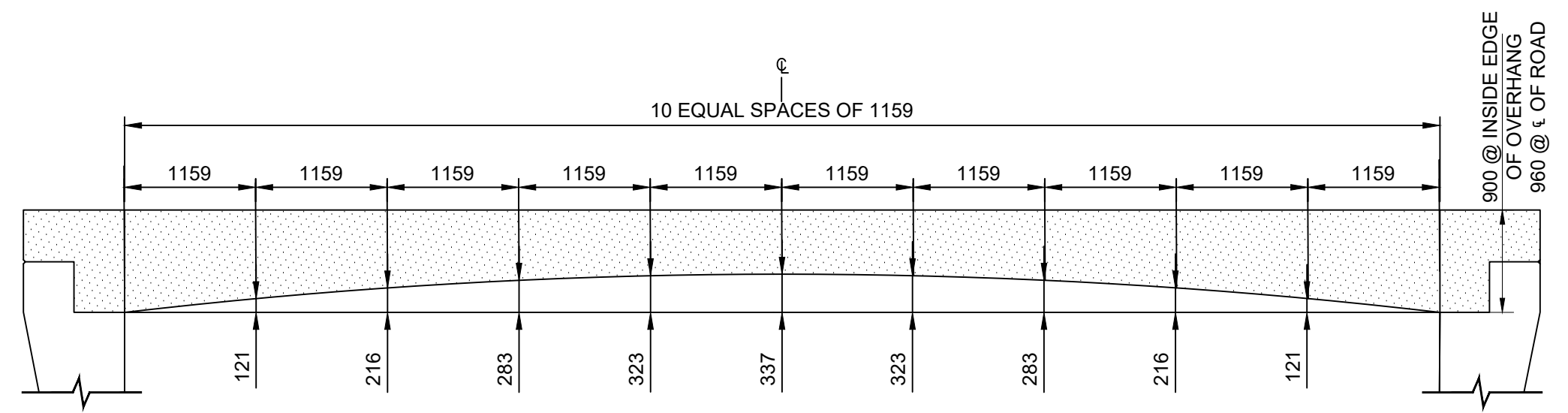
B SECTION 1:25



1 DETAIL 1:50  
ABUTMENT DRAIN



2 DETAIL 1:50  
STIRRUP



3 ELEVATION 1:50

**NOMENCLATURE:**

- @ AT
- B.F.T.G. BOTTOM OF FOOTING
- c/c CENTRE TO CENTRE
- C.I.P. CAST IN PLACE
- c/w COMPLETE WITH
- E.F. EACH FACE
- E.W. EACH WAY
- ELEV. ELEVATION
- I.F. INSIDE FACE
- kN KILONEWTON
- MAX. MAXIMUM
- MIN. MINIMUM
- MPa MEGAPASCAL
- NTS NOT TO SCALE
- OAE OR APPROVED EQUIVALENT
- O.F. OUTSIDE FACE
- SPMDD STANDARD PROCTOR MAXIMUM DRY DENSITY
- S.S. STAINLESS STEEL
- SLS SERVICEABILITY LIMIT STATES
- TBD TO BE DETERMINED
- T/ TOP OF
- TYP. TYPICAL
- u/s UNDERSIDE
- ULS ULTIMATE LIMIT STATES
- UP UTILITY POLE
- WP WORKING POINT
- B.U.L. THE UPPER LAYER OF THE BOTTOM MAT
- T.L.L. THE LOWER LAYER OF THE TOP MAT
- T.U.L. THE UPPER LAYER OF THE TOP MAT
- B.L.L. THE LOWER LAYER OF THE BOTTOM MAT
- V.I.F. DENOTES VERTICAL INSIDE FACE
- V.O.F. DENOTES VERTICAL OUTSIDE FACE
- H.I.F. DENOTES HORIZONTAL INSIDE FACE
- H.O.F. DENOTES HORIZONTAL OUTSIDE FACE

**BENCHMARK 1 ELEV. - 223.09m**

NAIL AND FLAG IN HYDRO POLE AT STA. 0+104.699.  
8m RIGHT.

**BENCHMARK 2 ELEV. - 223.40m**

NAIL AND FLAG IN HYDRO POLE AT STA. 0+000.  
14m RIGHT.

THE POSITION OF POLE LINES, CONDUITS, WATERMANS, SEWERS AND OTHER UNDERGROUND AND OVERGROUND UTILITIES AND STRUCTURES IS NOT NECESSARILY SHOWN ON THE CONTRACT DRAWINGS, AND, WHERE SHOWN, THE ACCURACY OF THE POSITION OF SUCH UTILITIES AND STRUCTURES IS NOT GUARANTEED.

BEFORE STARTING WORK, THE CONTRACTOR SHALL INFORM HIMSELF OF THE EXACT LOCATION OF ALL SUCH UTILITIES AND STRUCTURES, AND SHALL ASSUME ALL LIABILITY FOR ANY DAMAGE TO THEM.



NO.	DATE	REVISION DESCRIPTION	CHKD
3	2025/01/22	ISSUED FOR TENDER	B.A.W.
2	2024/12/04	ISSUED FOR APPROVALS	B.A.W.
1	2024/10/11	ISSUED FOR PRELIMINARY REVIEW	B.A.W.



QUELPH | OWEN SOUND | LISTOWEL | KITCHENER | LONDON | HAMILTON | GTA  
1260 - 2ND AVENUE EAST, UNIT 1, OWEN SOUND, ON N4K 2J3  
TEL. 519-376-1805

EMERY BRIDGE REPLACEMENT

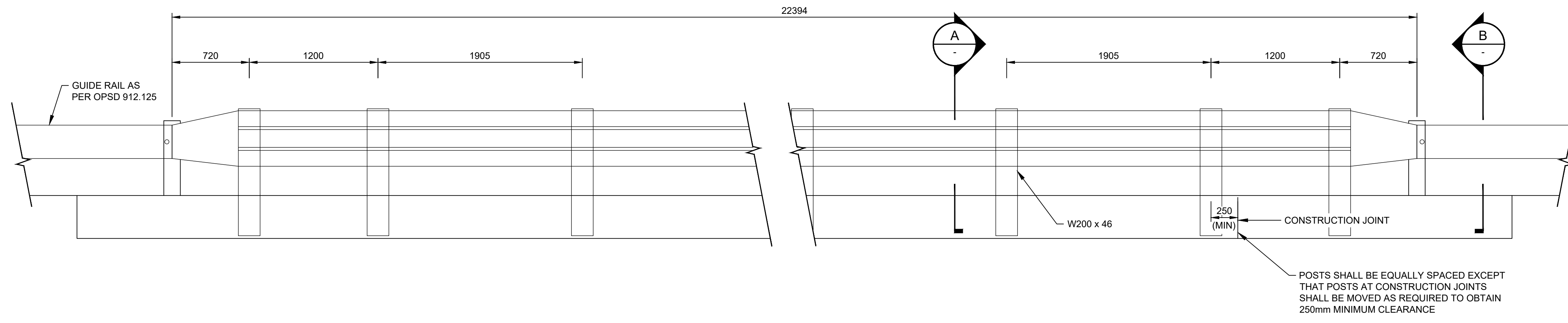
TOWNSHIP OF GEORGIAN BLUFFS

FORMER TOWNSHIP OF KEPPEL

DECK DETAILS

DRAWN BY: K.V.H.	APPROVED BY: B.A.W.	PROJECT NO.: 2401469	DRAWING NO.: <b>S8</b>
DESIGNED BY: D.D.	DATE: JANUARY, 2025	SCALE: AS SHOWN	

FILE: H:\Projects\2024\EMERY BRIDGE REPLACEMENT\Drawings\Deck\Details.dwg, LAYOUT: Deck\_Details.dwg  
 LAST SAVED BY: K.V.H. ON: 2025/01/22 11:30:00 AM, PLOTTED BY: K.V.H. ON: 2025/01/22 11:30:00 AM



ELEVATION 1:25

**NOMENCLATURE:**

- @ AT
- B/FTG. BOTTOM OF FOOTING
- c/c CENTRE TO CENTRE
- C.I.P. CAST IN PLACE
- c/w COMPLETE WITH
- E.F. EACH FACE
- E.W. EACH WAY
- ELEV. ELEVATION
- I.F. INSIDE FACE
- kN KILOWEIGHTON
- MAX. MAXIMUM
- MIN. MINIMUM
- MPa MEGAPASCAL
- NTS NOT TO SCALE
- OAE OR APPROVED EQUIVALENT
- O.F. OUTSIDE FACE
- SPMDD STANDARD PROCTOR MAXIMUM DRY DENSITY
- S.S. STAINLESS STEEL
- SLS SERVICEABILITY LIMIT STATES
- TBD TO BE DETERMINED
- T/ TOP OF
- TYP. TYPICAL
- u/s UNDERSIDE
- ULS ULTIMATE LIMIT STATES
- UP UTILITY POLE
- WP WORKING POINT
- B.U.L. THE UPPER LAYER OF THE BOTTOM MAT
- T.L.L. THE LOWER LAYER OF THE TOP MAT
- T.U.L. THE UPPER LAYER OF THE TOP MAT
- B.L.L. THE LOWER LAYER OF THE BOTTOM MAT
- V.I.F. DENOTES VERTICAL INSIDE FACE
- V.O.F. DENOTES VERTICAL OUTSIDE FACE
- H.I.F. DENOTES HORIZONTAL INSIDE FACE
- H.O.F. DENOTES HORIZONTAL OUTSIDE FACE

**BENCHMARK 1 ELEV. - 223.09m**

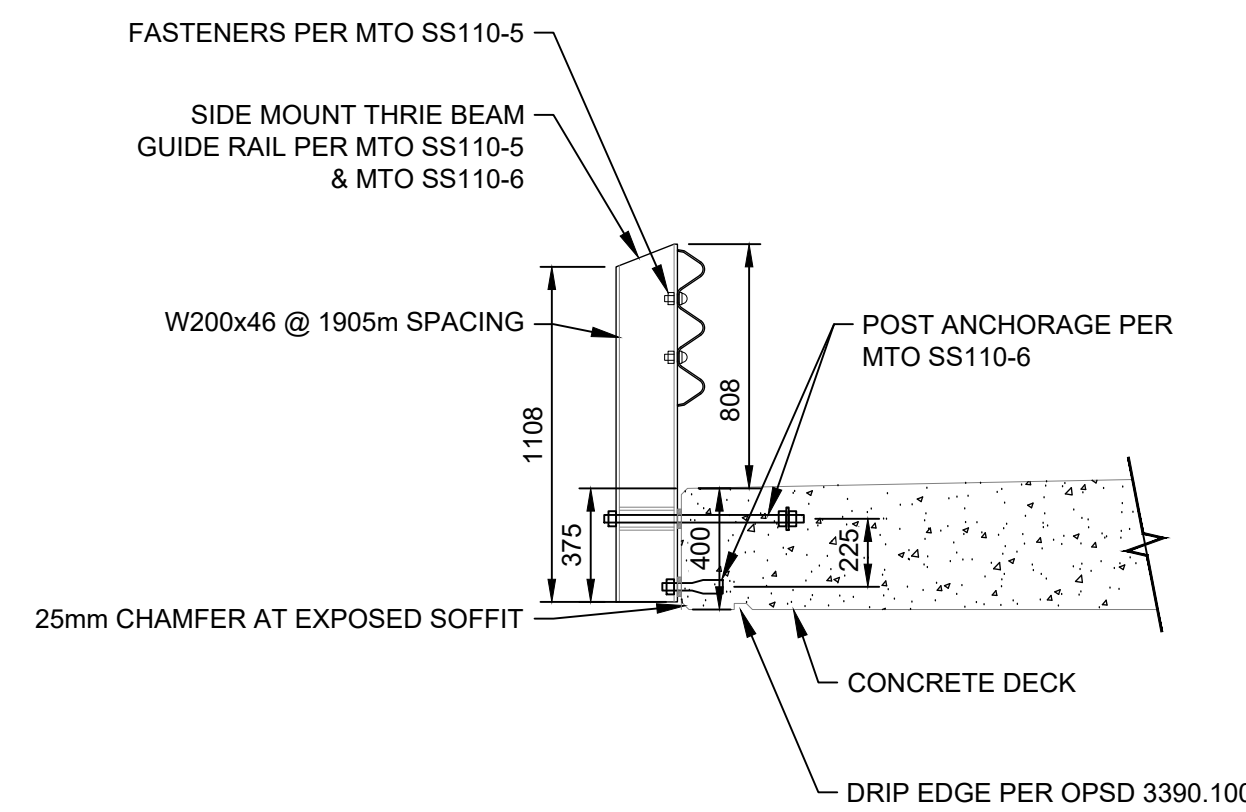
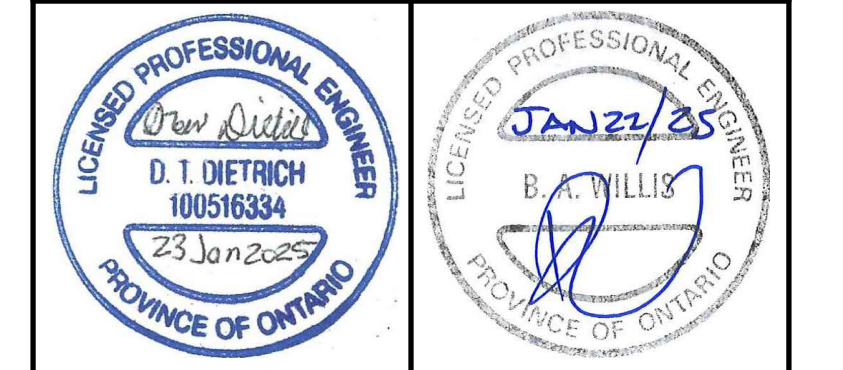
NAIL AND FLAG IN HYDRO POLE AT STA. 0+104.699.  
8m RIGHT.

**BENCHMARK 2 ELEV. - 223.40m**

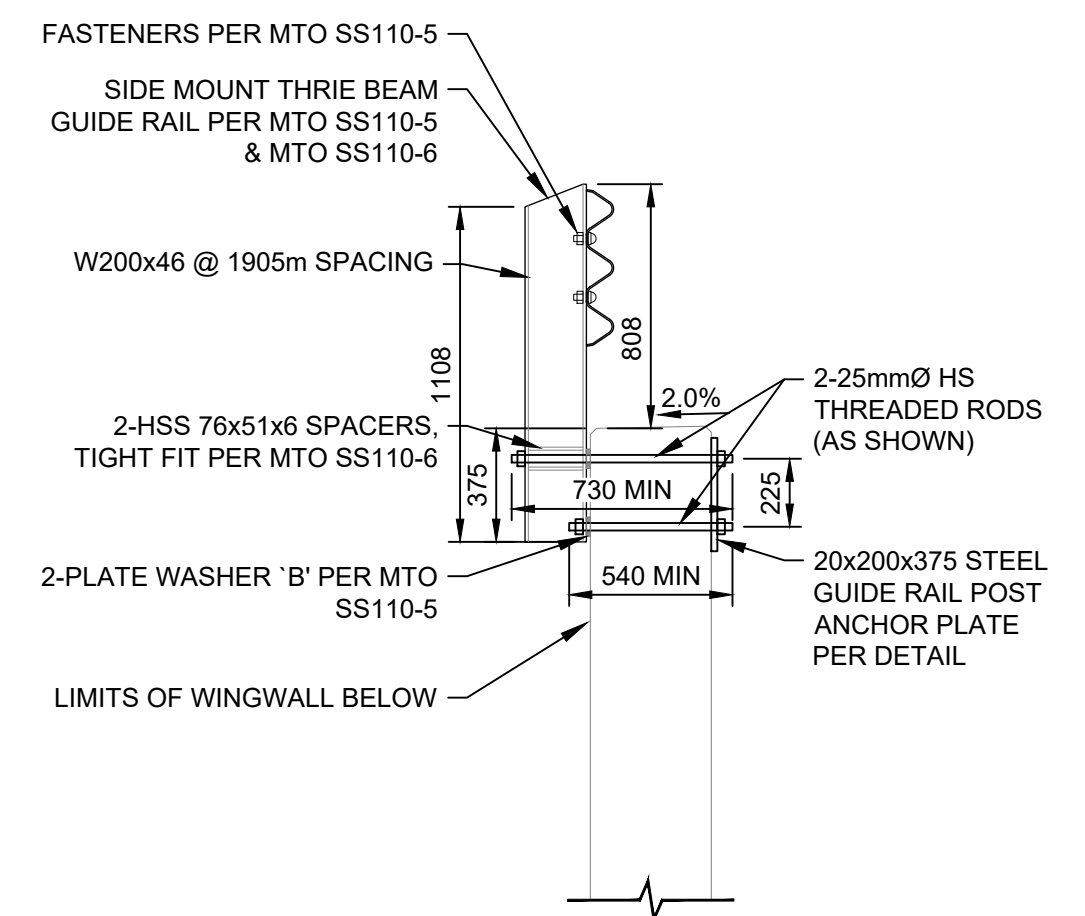
NAIL AND FLAG IN HYDRO POLE AT STA. 0+000.  
14m RIGHT.

THE POSITION OF POLE LINES, CONDUITS, WATERMANS, SEWERS AND OTHER UNDERGROUND AND OVERGROUND UTILITIES AND STRUCTURES IS NOT NECESSARILY SHOWN ON THE CONTRACT DRAWINGS, AND, WHERE SHOWN, THE ACCURACY OF THE POSITION OF SUCH UTILITIES AND STRUCTURES IS NOT GUARANTEED.

BEFORE STARTING WORK, THE CONTRACTOR SHALL INFORM HIMSELF OF THE EXACT LOCATION OF ALL SUCH UTILITIES AND STRUCTURES, AND SHALL ASSUME ALL LIABILITY FOR ANY DAMAGE TO THEM.



A SECTION 1:25



B SECTION 1:25

NO.	DATE	REVISION DESCRIPTION	CHKD
3	2025/01/22	ISSUED FOR TENDER	B.A.W.
2	2024/12/04	ISSUED FOR APPROVALS	B.A.W.
1	2024/10/11	ISSUED FOR PRELIMINARY REVIEW	B.A.W.

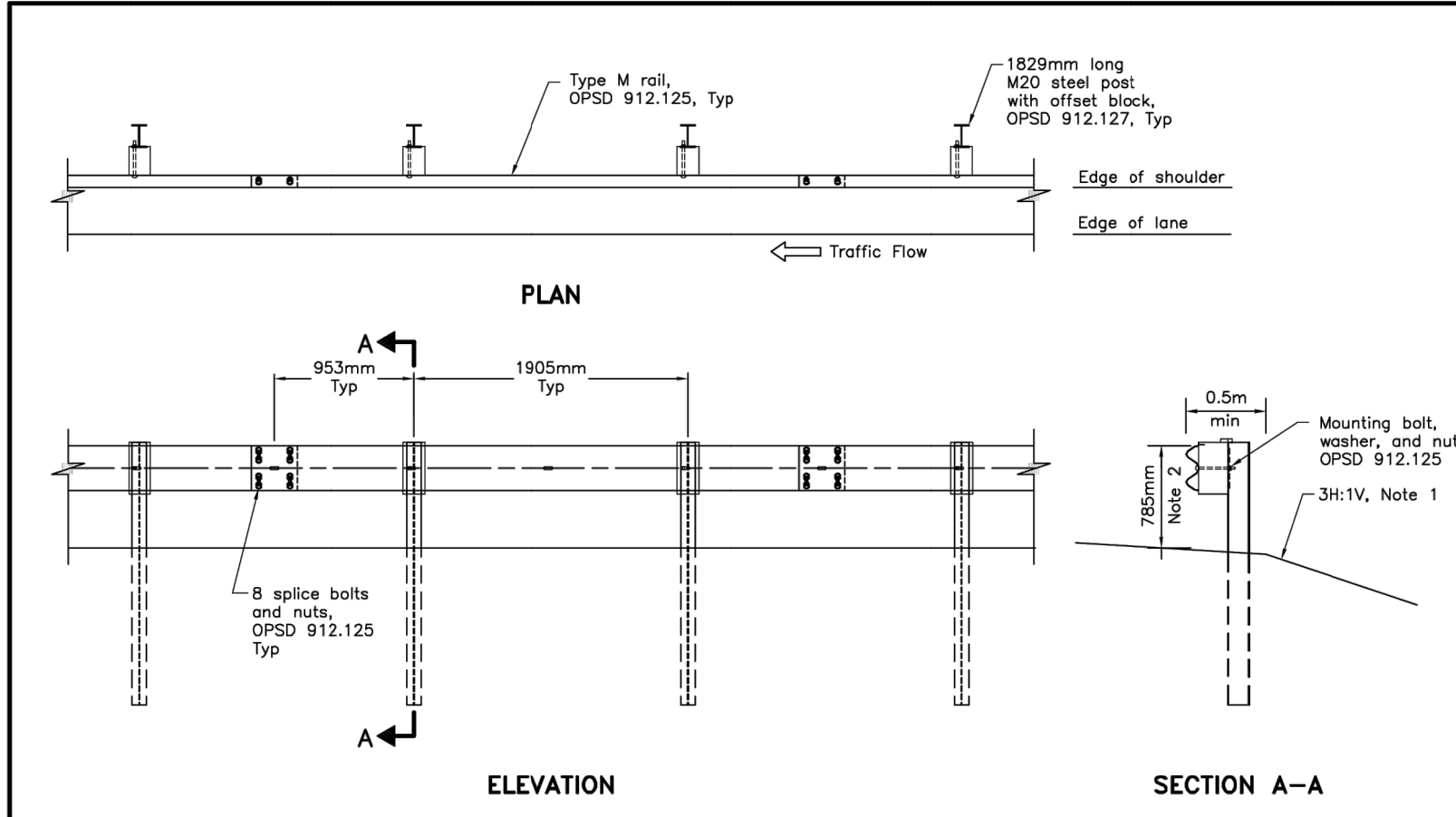


QUELPH | OWEN SOUND | LISTOWEL | KITCHENER | LONDON | HAMILTON | GTA  
1260 - 2ND AVENUE EAST, UNIT 1, OWEN SOUND, ON N4K 2J3  
TEL: 519-376-1805

EMERY BRIDGE REPLACEMENT  
TOWNSHIP OF GEORGIAN BLUFFS  
FORMER TOWNSHIP OF KEPPEL

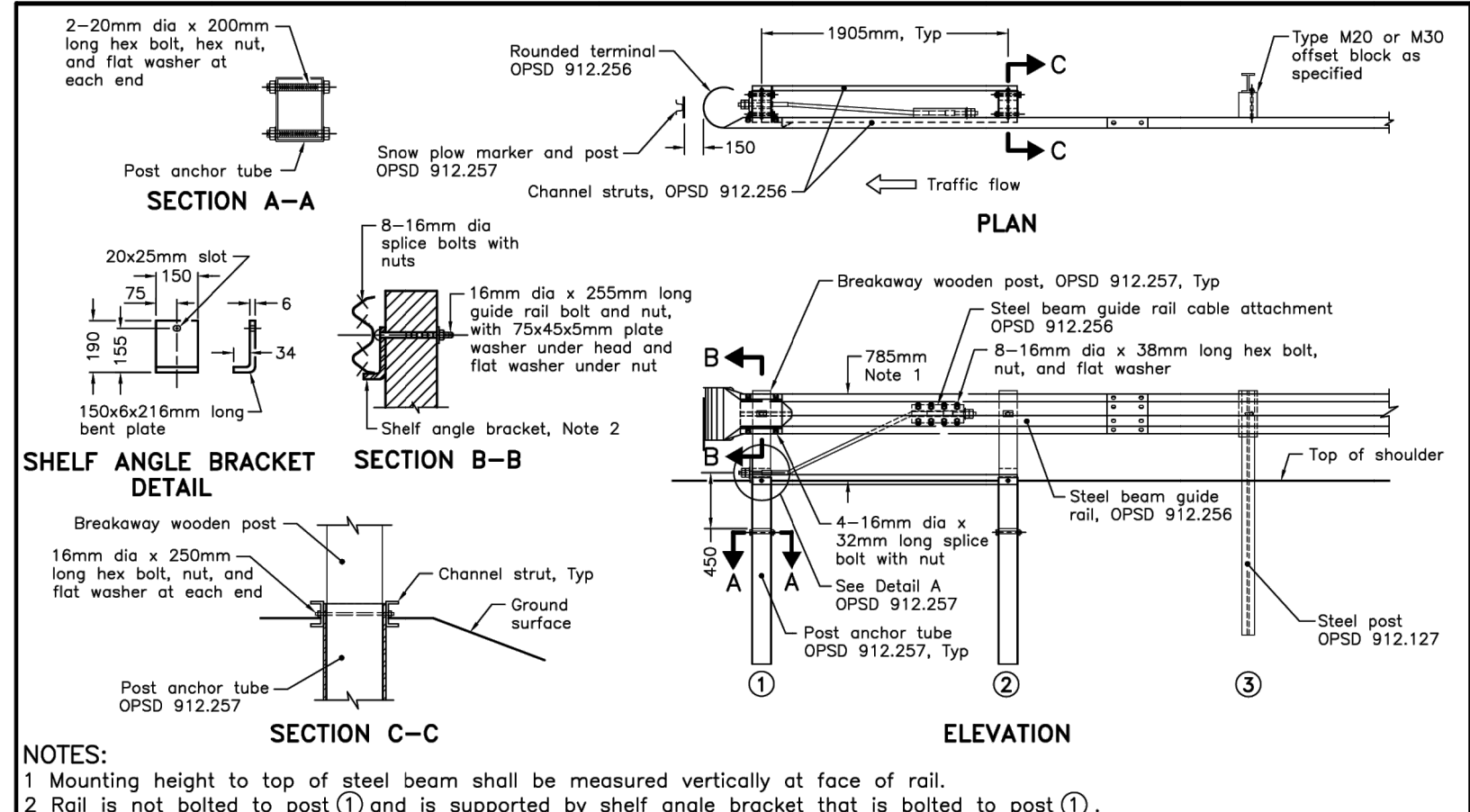
POST & BARRIER DETAILS

DRAWN BY: K.V.H.	APPROVED BY: B.A.W.	PROJECT NO.: 2401469	DRAWING NO.: S9
DESIGNED BY: D.D.	DATE: JANUARY, 2025	SCALE: AS SHOWN	



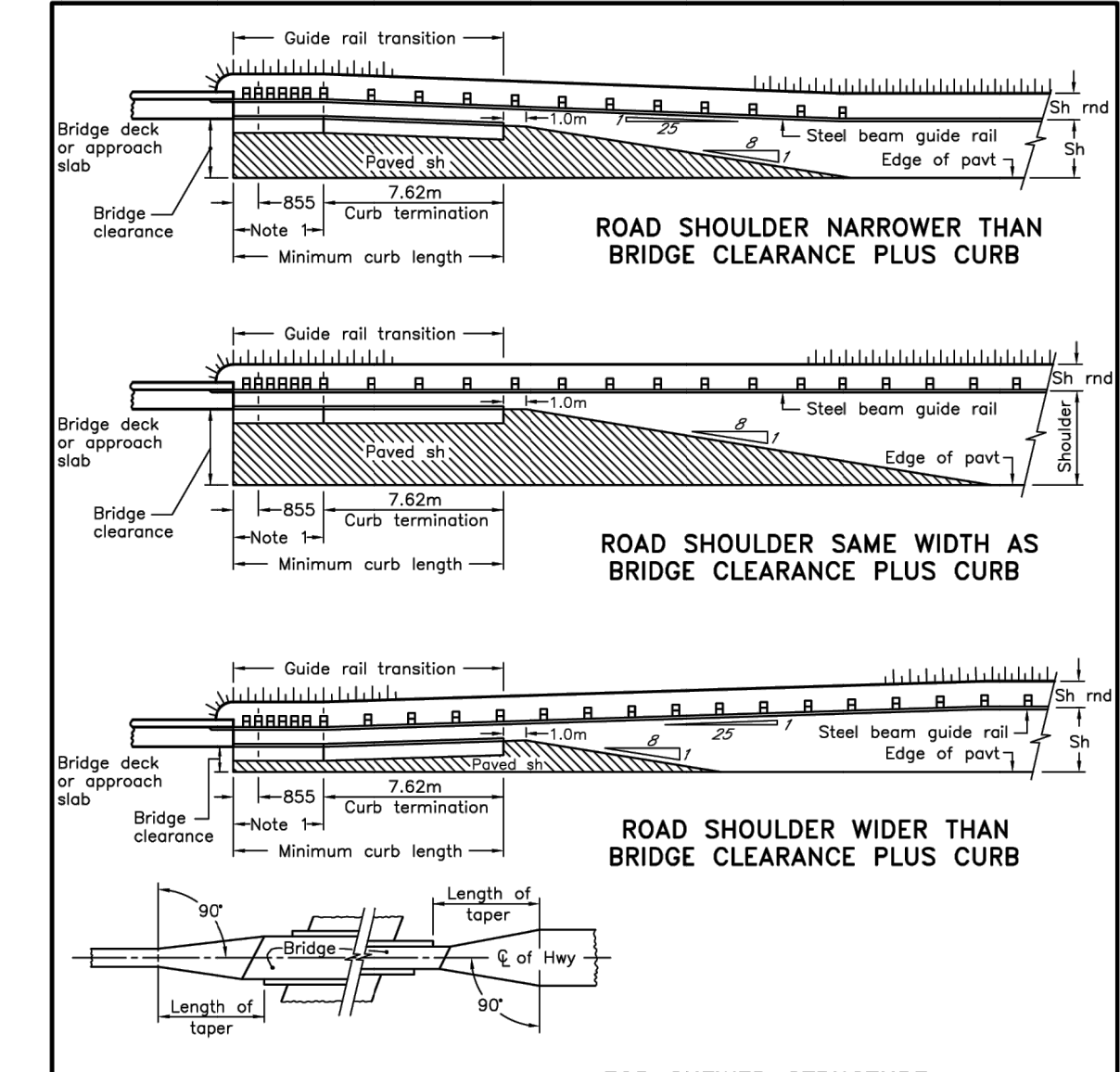
NOTES:  
 1 Slope shall be flatter when specified.  
 2 Mounting height to top of steel beam shall be measured vertically at face of rail.  
 A System configuration meets AASHTO MASH TL-3.  
 B All dimensions are in millimetres unless otherwise shown.

ONTARIO PROVINCIAL STANDARD DRAWING	Nov 2016	Rev 0
GUIDE RAIL SYSTEM, STEEL BEAM TYPE M20 INSTALLATION	OPSD 912.185	



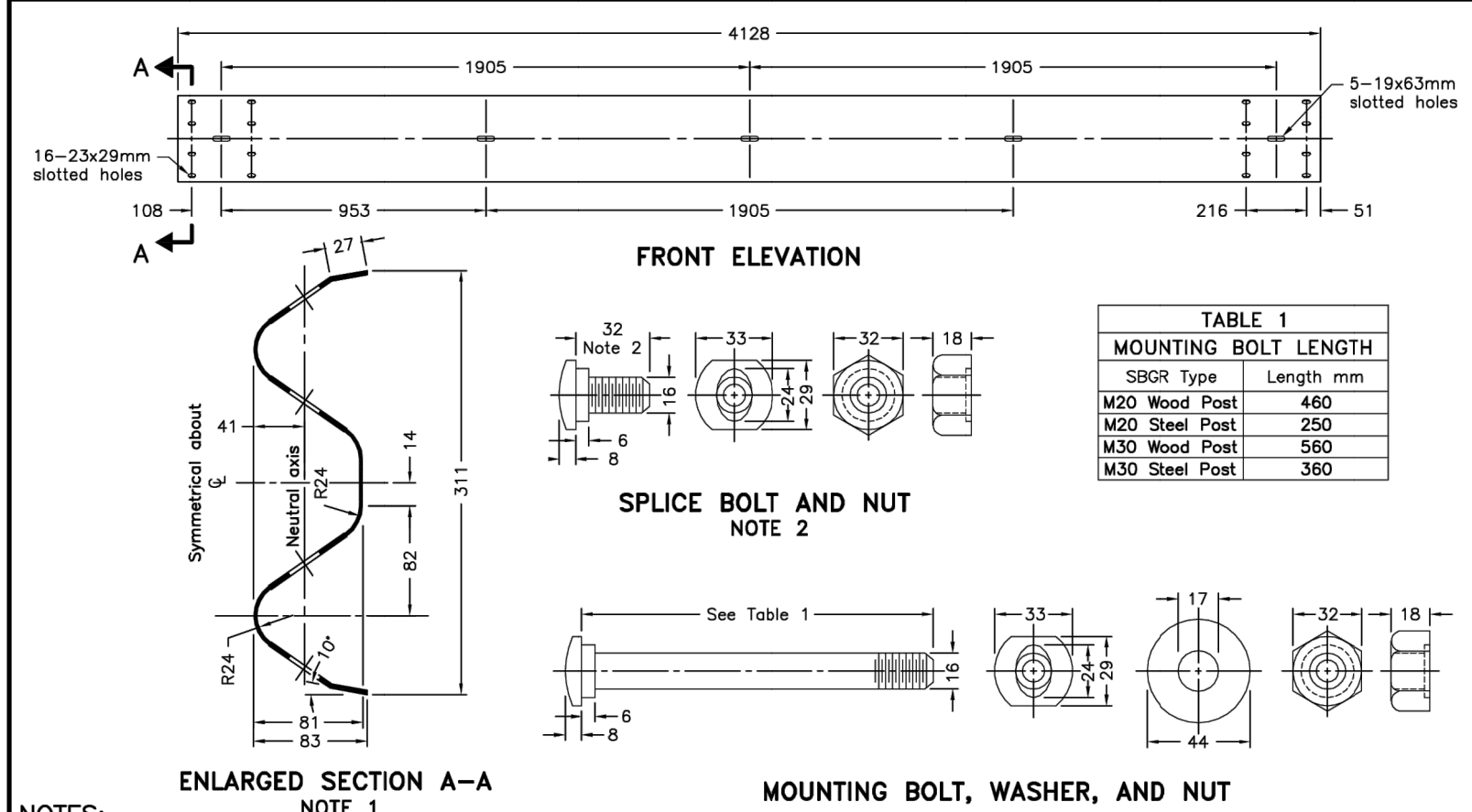
NOTES:  
 1 Mounting height to top of steel beam shall be measured vertically at face of rail.  
 2 Rail is not bolted to post ① and is supported by shelf angle bracket that is bolted to post ①.  
 A Splice and mounting hardware shall be according to OPSD 912.125.  
 B This OPSD shall be read in conjunction with OPSD 912.256 and 912.257.  
 C All dimensions subject to manufacturing tolerances unless otherwise shown.  
 D System configuration meets AASHTO MASH TL-3.  
 E All dimensions are in millimetres unless otherwise shown.

ONTARIO PROVINCIAL STANDARD DRAWING	Nov 2018	Rev 1
GUIDE RAIL SYSTEM, STEEL BEAM TYPE M20 AND M30 LEAVING END TREATMENT INSTALLATION	OPSD 912.255	



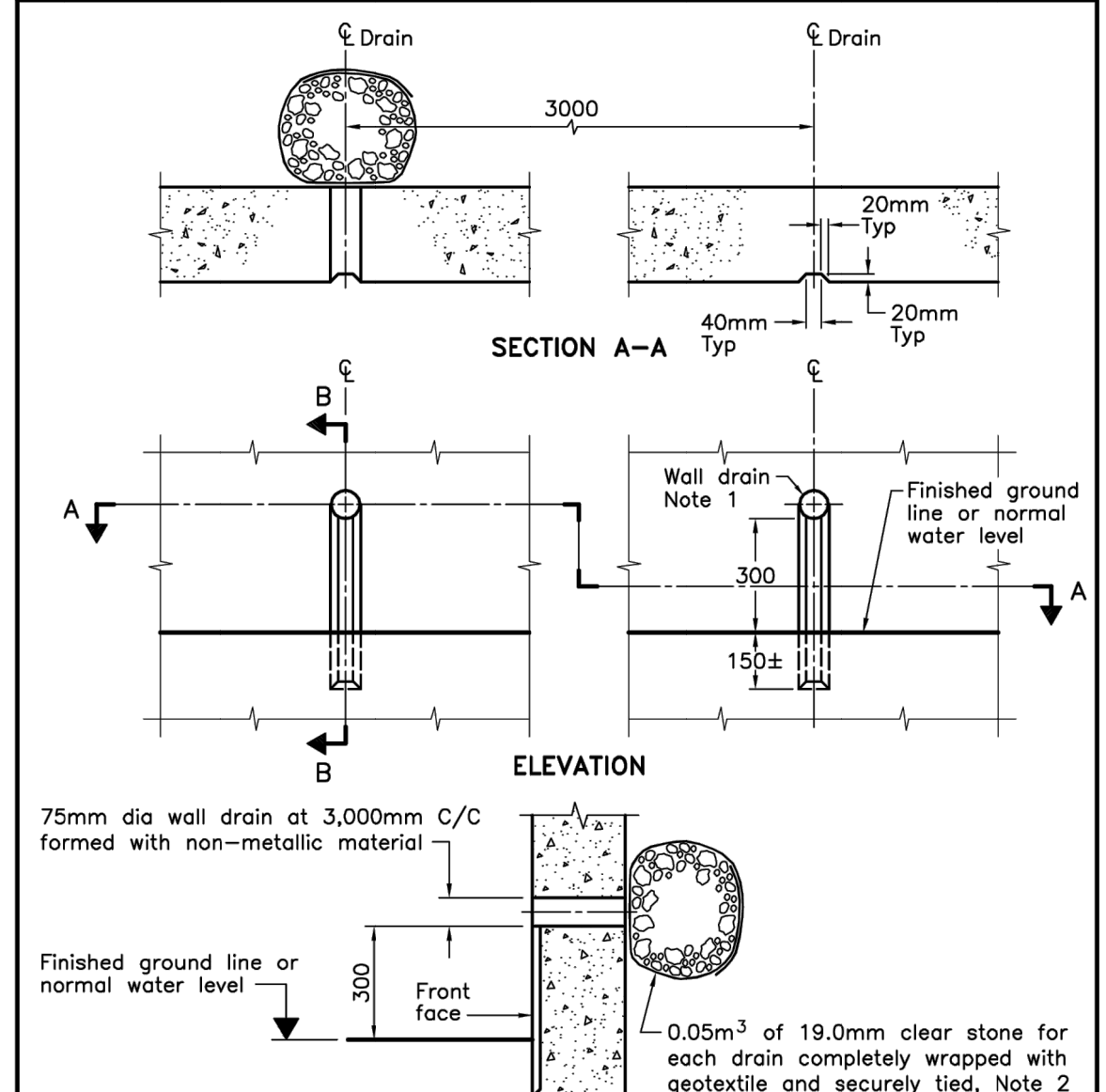
NOTES:  
 1 Tangent to structure shall be one standard rail length +855mm long minimum. If approach slab is more than one standard beam element +855mm beyond wing wall, then tangent section shall be taken to end of approach slab.  
 2 The pavement taper is to end on a line at right angles to  $\frac{1}{2}$  of highway, length of taper shall be measured from bridge corner that allows greatest length of tapered section.  
 A All dimensions are in millimetres unless otherwise shown.  
 B This OPSD is to be read in conjunction with OPSD 912.430.

ONTARIO PROVINCIAL STANDARD DRAWING	Apr 2024	Rev 3
GUIDE RAIL SYSTEM, STEEL BEAM STRUCTURE APPROACH TREATMENT INSTALLATION - RURAL HIGHWAY	OPSD 912.530	



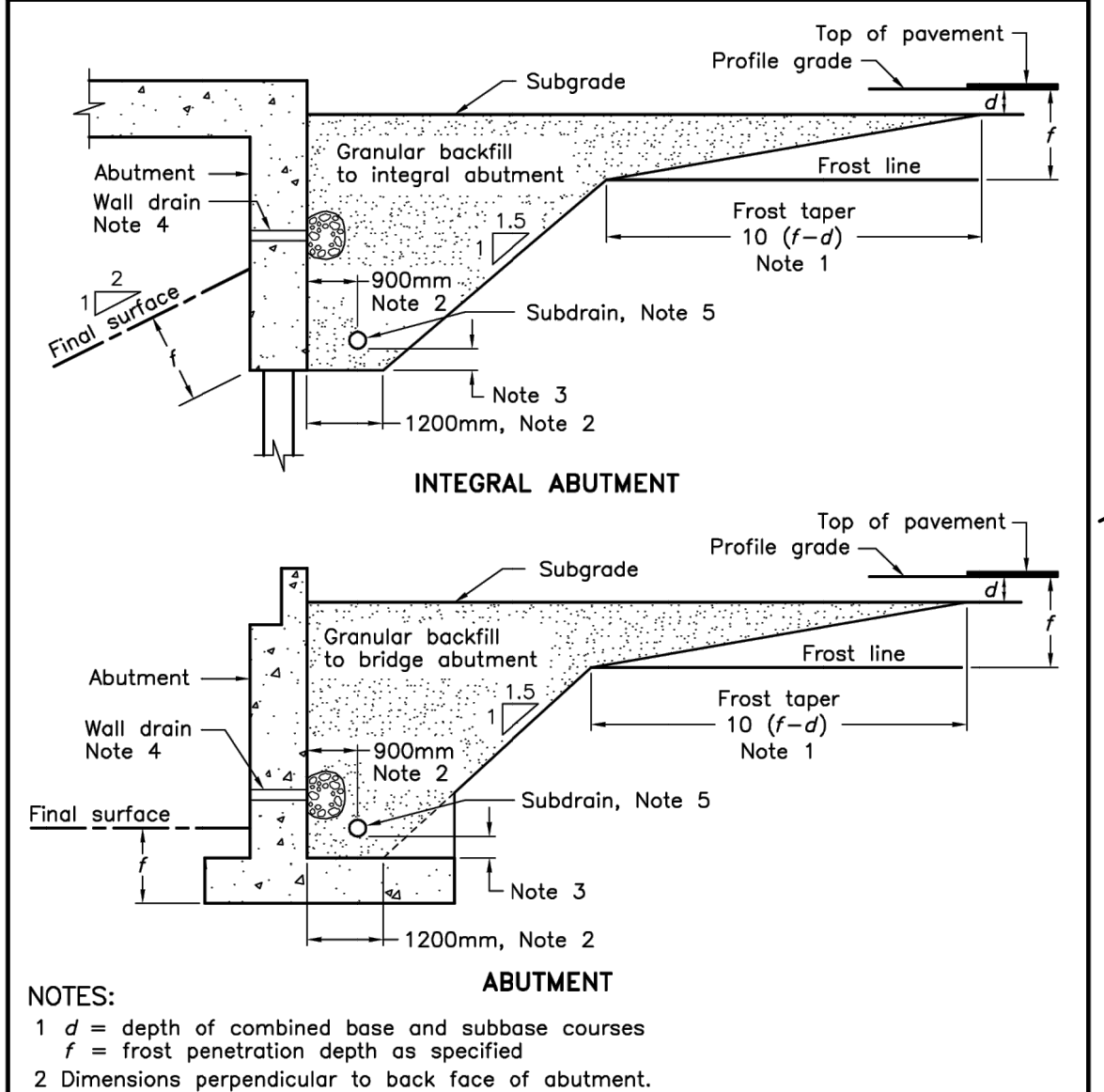
NOTES:  
 1 Base metal thickness of rail shall be 2.67mm nominal and 2.44mm minimum.  
 2 Splice bolt length shall be 38mm when connecting nested (double) rails.  
 A All dimensions subject to manufacturing tolerances unless otherwise indicated.  
 B All dimensions are in millimetres unless otherwise shown.

ONTARIO PROVINCIAL STANDARD DRAWING	Apr 2016	Rev 0
GUIDE RAIL SYSTEM, STEEL BEAM TYPE M RAIL COMPONENT	OPSD 912.125	



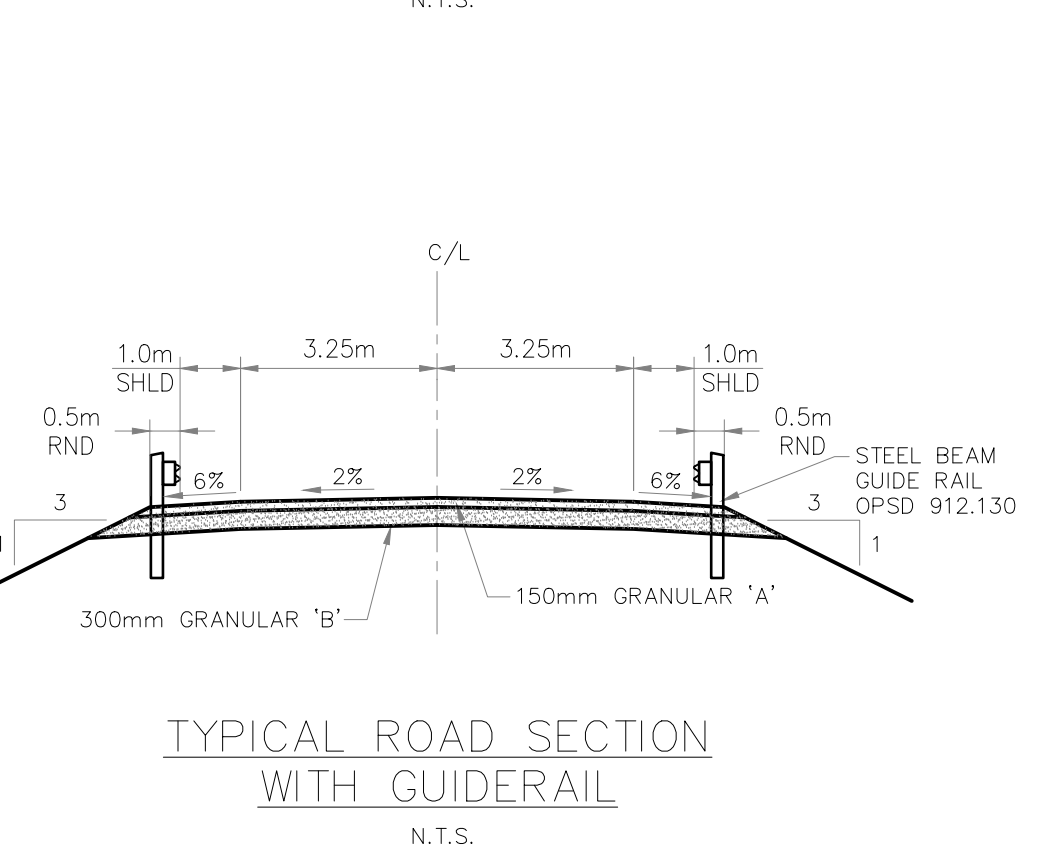
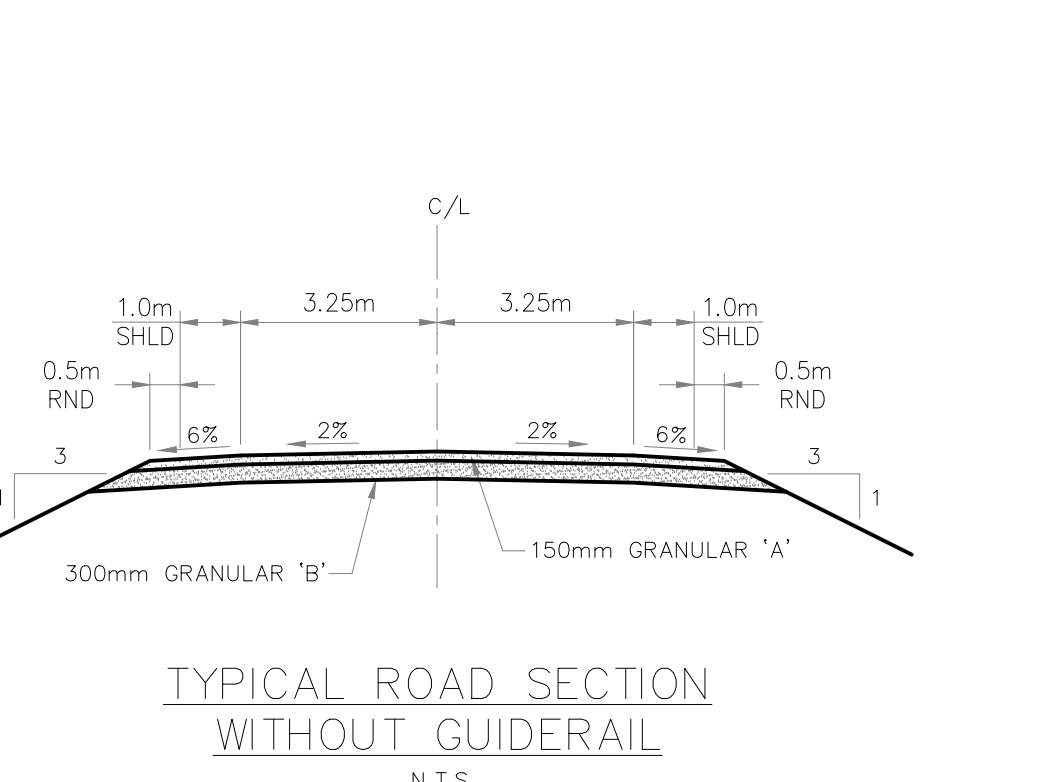
NOTES:  
 1 Bottom half of drain to be contoured to shape of vertical groove after removal of formwork.  
 2 Geotextile shall be non-woven, Class II, with an FOS of 125-250  $\mu$ m.  
 A Minimum cover to reinforcing bars shall be measured from the base of the groove.  
 B All dimensions are in millimetres unless otherwise shown.

ONTARIO PROVINCIAL STANDARD DRAWING	Apr 2011	Rev 2
WALLS RETAINING AND ABUTMENT WALL DRAIN	OPSD 3190.100	



NOTES:  
 1  $d$  = depth of combined base and subbase courses  
 $f$  = frost penetration depth as specified.  
 2 Dimensions perpendicular to back face of abutment.  
 3 Height to be consistent with positive drainage of subdrain as specified.  
 4 Where specified, wall drains shall be installed according to OPSD 3190.100.  
 5 150mm dia perforated pipe subdrain wrapped with geotextile.  
 A Lateral limits of granular backfill to bridge abutment to be inside face to inside face of retaining wall or wingwall. Frost taper shall extend the full width of the backfill unless interrupted by the retaining wall or wingwall.  
 B Sections shown are parallel to centreline of roadway.  
 C Subdrain shall be installed with a 2% gradient behind wall.  
 D All dimensions are in millimetres unless otherwise shown.

ONTARIO PROVINCIAL STANDARD DRAWING	Nov 2010	Rev 1
WALLS ABUTMENT, BACKFILL MINIMUM GRANULAR REQUIREMENT	OPSD 3101.150	



**NOMENCLATURE:**

@	AT
B.F.T.G.	BOTTOM OF FOOTING
clc	CENTRE TO CENTRE
C.I.P.	CAST IN PLACE
c/w	COMPLETE WITH
E.F.	EACH FACE
E.W.	EACH WAY
ELEV.	ELEVATION
I.F.	INSIDE FACE
KN	KILONEWTN
MAX.	MAXIMUM
MIN.	MINIMUM
MPa	MEGAPASCAL
NTS	NOT TO SCALE
OAE	OR APPROVED EQUIVALENT
O.F.	OUTSIDE FACE
SPMDD	STANDARD PROCTOR MAXIMUM DRY DENSITY
S.S.	STAINLESS STEEL
SLS	SERVICEABILITY LIMIT STATES
TBD	TO BE DETERMINED
T/	TOP OF
TYP.	TYPICAL
u/s	UNDERSIDE
ULS	ULTIMATE LIMIT STATES
UP	UTILITY POLE
WP	WORKING POINT
B.U.L.	THE UPPER LAYER OF THE BOTTOM MAT
L.L.L.	THE LOWER LAYER OF THE TOP MAT
T.U.L.	THE UPPER LAYER OF THE TOP MAT
B.L.L.	THE LOWER LAYER OF THE BOTTOM MAT
V.I.F.	VERTICAL INSIDE FACE
V.O.F.	VERTICAL OUTSIDE FACE
H.I.F.	HORIZONTAL INSIDE FACE
H.O.F.	HORIZONTAL OUTSIDE FACE

**BENCHMARK 1 ELEV. - 223.09m**  
 NAIL AND FLAG IN HYDRO POLE AT STA. 0+104.699.  
 8m RIGHT.

**BENCHMARK 2 ELEV. - 223.40m**  
 NAIL AND FLAG IN HYDRO POLE AT STA. 0+000.  
 14m RIGHT.

THE POSITION OF POLE LINES, CONDUITS, WATERMANS, SEWERS AND OTHER UNDERGROUND AND OVERGROUND UTILITIES AND STRUCTURES IS NOT NECESSARILY SHOWN ON THE CONTRACT DRAWINGS, AND, WHERE SHOWN, THE ACCURACY OF THE POSITION OF SUCH UTILITIES AND STRUCTURES IS NOT GUARANTEED.



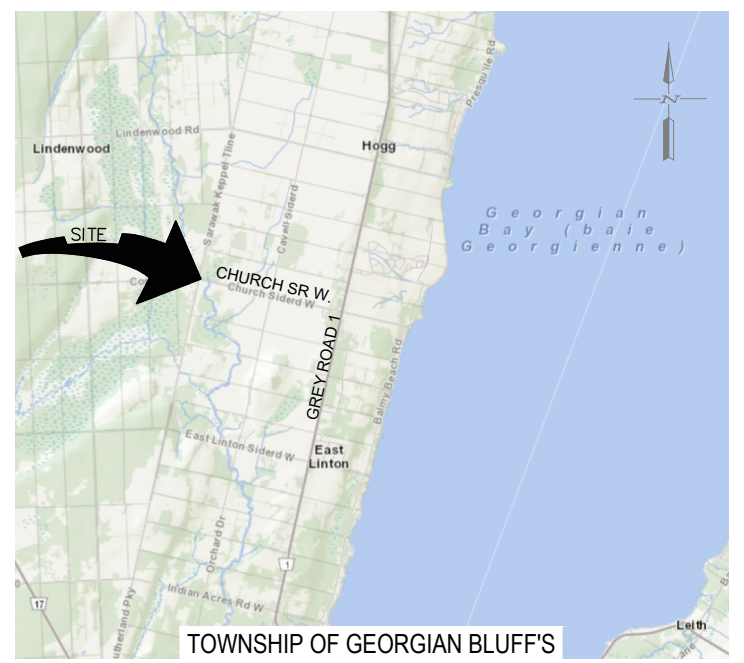
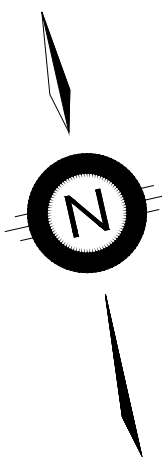
3	2025/01/22	ISSUED FOR TENDER	B.A.W.
2	2024/12/04	ISSUED FOR APPROVALS	B.A.W.
1	2024/10/11	ISSUED FOR PRELIMINARY REVIEW	B.A.W.
NO.	DATE	REVISION DESCRIPTION	CHKD



**EMERY BRIDGE REPLACEMENT**  
**TOWNSHIP OF GEORGIAN BLUFFS**  
**FORMER TOWNSHIP OF KEPPEL**

**STANDARDS & DETAILS**

DRAWN BY:	APPROVED BY:	PROJECT NO.:	DRAWING NO.:
K.V.H.	B.A.W.	2401469	S10
DESIGNED BY:	DATE:	SCALE:	
D.D.	JANUARY, 2025	AS SHOWN	



TOWNSHIP OF GEORGIAN BLUFF'S  
KEY PLAN  
NOT TO SCALE

NOTES :

- AS RECORDED TOPOGRAPHIC SURVEY CONDUCTED BY GEI CONSULTANTS CANADA LTD, NOVEMBER 20, 2023.

LEGEND:

- 223.0 — EXISTING GROUND CONTOUR
- — EXISTING DITCH / SWALE
- OHP — EXISTING OVERHEAD POWER LINE

BENCHMARK 1 ELEV. - 223.09m

NAIL AND FLAG IN HYDRO POLE AT STA. 0+104.699.  
8m RIGHT.

BENCHMARK 2 ELEV. - 223.40m

NAIL AND FLAG IN HYDRO POLE AT STA. 0+000.  
14m RIGHT.

THE POSITION OF POLE LINES, CONDUITS, WATERMANS, SEWERS AND OTHER UNDERGROUND AND OVERGROUND UTILITIES AND STRUCTURES IS NOT NECESSARILY SHOWN ON THE CONTRACT DRAWINGS, AND, WHERE SHOWN, THE ACCURACY OF THE POSITION OF SUCH UTILITIES AND STRUCTURES IS NOT GUARANTEED.

BEFORE STARTING WORK, THE CONTRACTOR SHALL INFORM HIMSELF OF THE EXACT LOCATION OF ALL SUCH UTILITIES AND STRUCTURES, AND SHALL ASSUME ALL LIABILITY FOR ANY DAMAGE TO THEM.



NO.	DATE	REVISION DESCRIPTION	CHKD
3	2025/01/22	ISSUED FOR TENDER	B.A.W.
2	2024/12/04	ISSUED FOR APPROVALS	B.A.W.
1	2024/10/11	ISSUED FOR PRELIMINARY REVIEW	B.A.W.



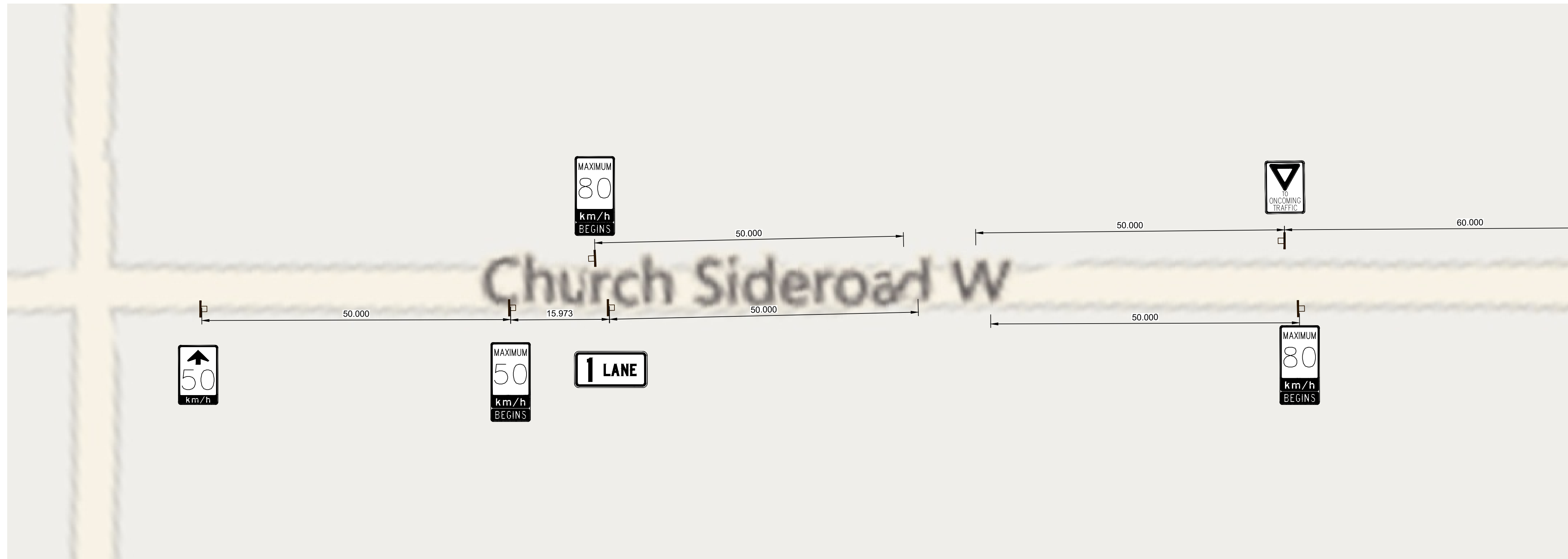
EMERY BRIDGE REPLACEMENT

TOWNSHIP OF GEORGIAN BLUFF'S

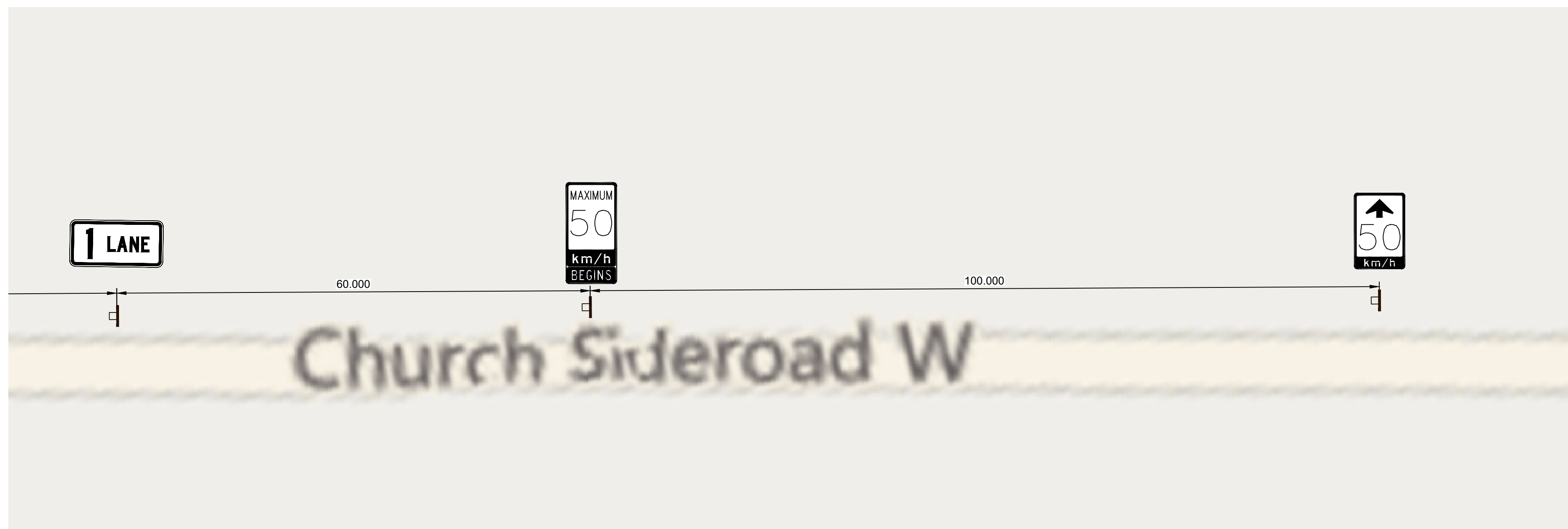
FORMER TOWNSHIP OF KEPPEL

TRAFFIC SIGNAGE

DRAWN BY: K.V.H.	APPROVED BY: B.A.W.	PROJECT NO. : 2401469	DRAWING NO. : <b>T1</b>
DESIGNED BY : D.D.	DATE : JANUARY, 2025	SCALE : AS SHOWN	



PLAN 1:400



PLAN 1:400