

RIDEAU CANAL NEW RAILING AND REPAIR WORKS OF LOCALIZED WALL SECTIONS

OTTAWA, ONTARIO

ISSUED FOR TENDER  
AUGUST 14, 2017

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3	ISSUED FOR TENDER	14-08-17
2	DRAFT TENDER	07-07-17
1	PRELIMINARY DESIGN	24-02-17
no.	description	date

RIDEAU CANAL - NEW RAILING  
AND REPAIR WORKS OF  
LOCALIZED WALL SECTIONS

LEGEND & INDEX

LIST OF DRAWINGS

SHEET NO.	DESCRIPTION
0	COVER SHEET
C-0	INDEX
C-1	NEW CONSTRUCTION STA 10+000 TO STA 10+311
C-2	NEW CONSTRUCTION STA 10+311 TO STA 10+650
C-3	NEW CONSTRUCTION STA 10+650 TO STA 10+982
C-4	NEW CONSTRUCTION STA 10+982 TO STA 11+324
C-5	NEW CONSTRUCTION STA 11+324 TO STA 11+662
C-6	NEW CONSTRUCTION STA 11+662 TO STA 12+002
C-7	NEW CONSTRUCTION STA 12+002 TO STA 12+348
C-8	NEW CONSTRUCTION STA 12+348 TO STA 12+470
C-9	CONCRETE REPAIR DETAILS
C-10	RAILING SYSTEM DETAILS
C-11	NCC STANDARD DETAILS

GENERAL NOTES

- THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS, DETAILS AND ELEVATIONS OF THE EXISTING STRUCTURE THAT ARE RELEVANT TO THE WORK SHOWN ON THE DRAWINGS PRIOR TO COMMENCEMENT OF THE WORK. ANY DISCREPANCIES SHALL BE REPORTED TO THE NCC REPRESENTATIVE AND THE PROPOSED ADJUSTMENT OF THE WORK REQUIRED TO MATCH EXISTING STRUCTURE SHALL BE SUBMITTED FOR APPROVAL.
- THE CONTRACTOR SHALL ENSURE THE STABILITY AND INTEGRITY OF THE STRUCTURE AT ALL STAGES OF CONSTRUCTION.
- THE CONTRACTOR SHALL INSTALL SEDIMENT AND EROSION CONTROL MEASURES PRIOR TO COMMENCEMENT OF ANY WORK ON SITE.
- ALL AREAS AFFECTED BY CONSTRUCTION ACTIVITIES SHALL BE FULLY REINSTATED TO PRE-CONSTRUCTION OR BETTER CONDITIONS TO THE SATISFACTION OF THE NCC REPRESENTATIVE.
- ALL MATERIALS SHALL BE MANAGED AND DISPOSED OF OFF SITE IN ACCORDANCE WITH MUNICIPAL AND PROVINCIAL GUIDELINES, AND AS SPECIFIED ELSEWHERE IN THE CONTRACT.
- THE PROPOSED STATION ALIGNMENT (CONTROL LINE) SHOWN IS FOR INFORMATION PURPOSES ONLY. IT IS GRAPHICALLY DISPLAYED ALONG THE WESTERLY EDGE OF PATHWAY

GENERAL HANDRAIL NOTES FOR LAYOUT

- THE CONTRACTOR SHALL LAY-OUT THE CONCRETE POSTS FOR LINE, EXPANSION AND THE ALUMINUM POSTS FOR THE NCC REPRESENTATIVE PRIOR TO ORDERING OF MATERIALS.
- THE CONTRACTOR SHALL PERFORM QUANTITY TAKE-OFF BASED ON THE CONTRACTOR'S LAY-OUT FOR ORDERING AND FABRICATION OF THE MATERIALS.
- THE CONTRACTOR'S LAYOUT SHALL AVOID TO THE BEST OF HIS ABILITIES; THE EXPANSION AND CONSTRUCTION JOINTS INCLUDING THE 'SQUARE' HOLES WITHIN THE EXISTING RETAINING WALL.
- THE 'TEMPORARY' RAILING (ALUMINUM POSTS) SPACING MAY VARY SIGNIFICANTLY AT TIMES DUE TO THE EXISTING CONDITION OF THE RETAINING WALL.
- THE CONTRACTOR SHALL TAKE ALL REASONABLE MEASURES TO LIMIT AND/OR AVOID DAMAGE TO THE EXISTING RETAINING WALLS.
- PORTIONS OF THE EXISTING TOP OF RETAINING WALL HAVE VARYING CROSS-FALL WHICH MAY EFFECT THE PLUMB AND VISUAL APPEAL OF THE PERMANENT HANDRAIL CONCRETE POST INSTALLATION. THE CONTRACTOR SHALL GRIND THE BASE OF THE CONCRETE POSTS, PROPOSE LEVELING GROUT PADS, MINOR GRINDING OF TOP OF RETAINING WALL TO THE BEST OF HIS ABILITIES TO CREATE A UNIFORM APPEARANCE OF THE HANDRAIL ACCEPTABLE TO THE NCC REPRESENTATIVE.

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LEGEND:

- EXISTING RETAINING WALL
- NEW PERMANENT RAILING LAYOUT
- △ NEW TEMPORARY RAILING LAYOUT



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project  
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RIDEAU CANAL - PEDESTRIAN RAILING AND LOCALIZED WALL REPAIRS

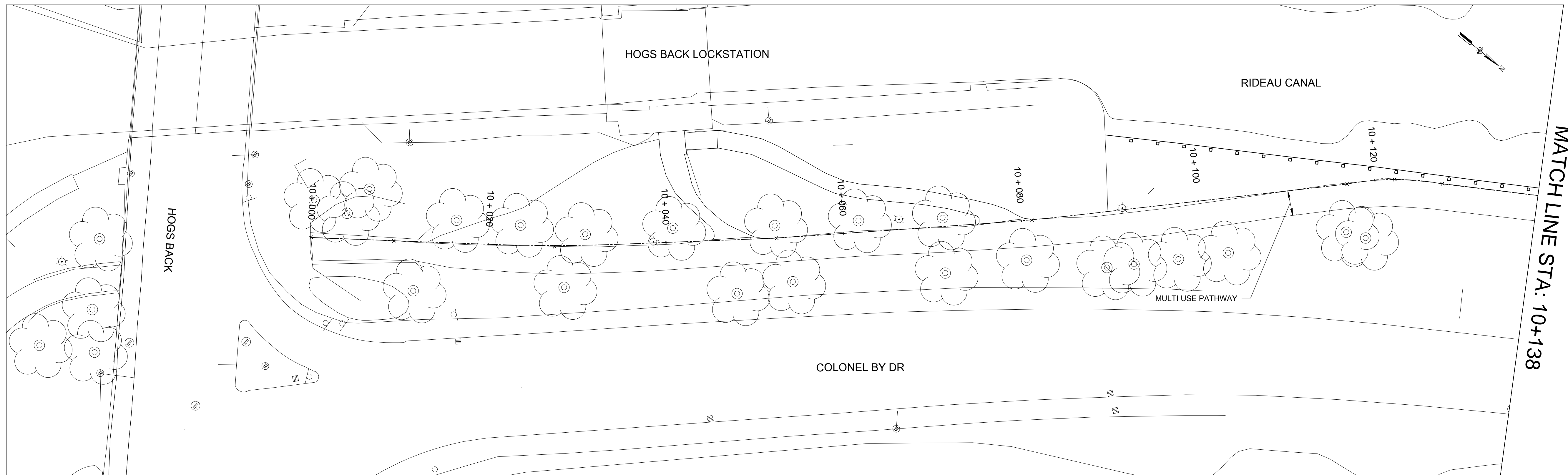
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NEW CONSTRUCTION - STA10+000 TO STA10+311

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designed by / conçu par: PD  
drawn by / dessiné par: PD

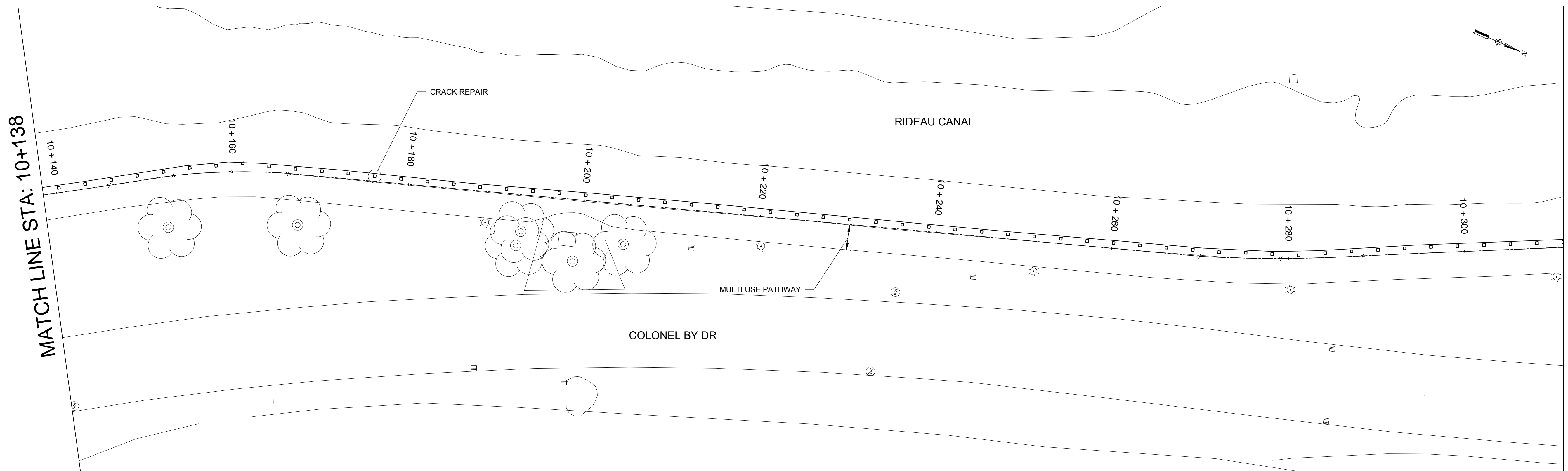
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sheet no. / no. de la feuille: C-1



NOTES:

REPAIR LOCATIONS SHOWN ARE SCHEMATIC ONLY. THE ACTUAL LOCATIONS, EXTENTS & LIMITS OF CONCRETE REMOVALS & REPAIRS WILL BE DETERMINED FOLLOWING THE CONCRETE REMOVAL SURVEY, IN ACCORDANCE WITH OPSS 928. THE CONCRETE REMOVAL SURVEY WILL BE UNDERTAKEN AFTER THE CONTRACTOR HAS CONFIRMED THE LOCATION OF THE POSTS.





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RIDEAU CANAL - PEDESTRIAN  
RAILING AND LOCALIZED WALL  
REPAIRS

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NEW CONSTRUCTION STA  
10+311 TO STA 10+650

approved by  
approuvé par CR

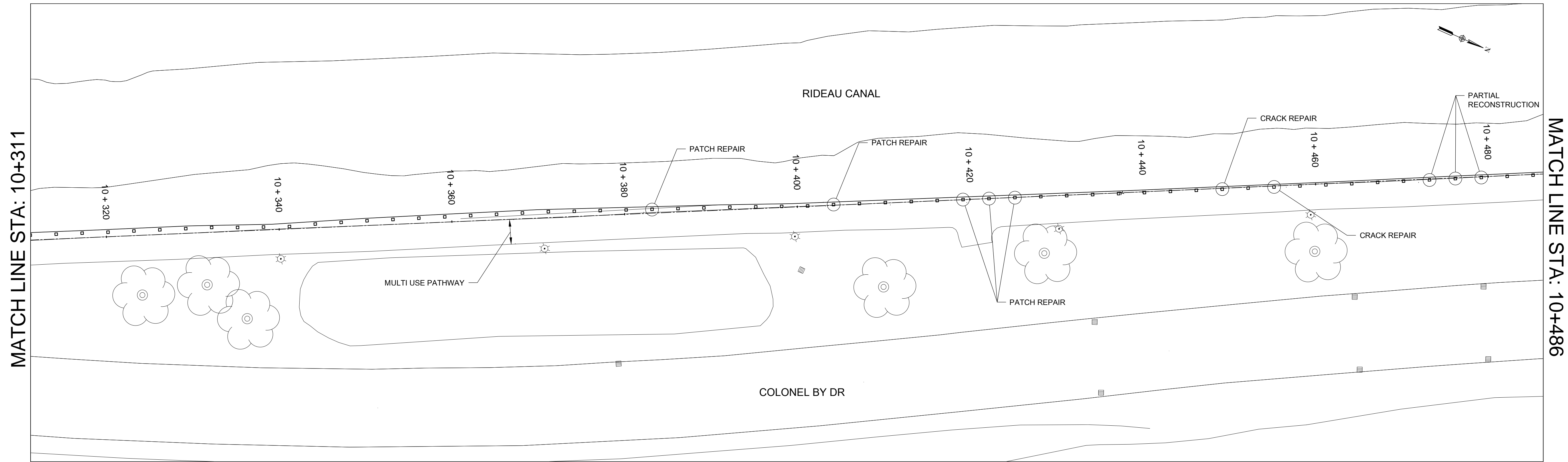
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drawn by  
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date 2017/06/15 scale  
échelle N.T.S.

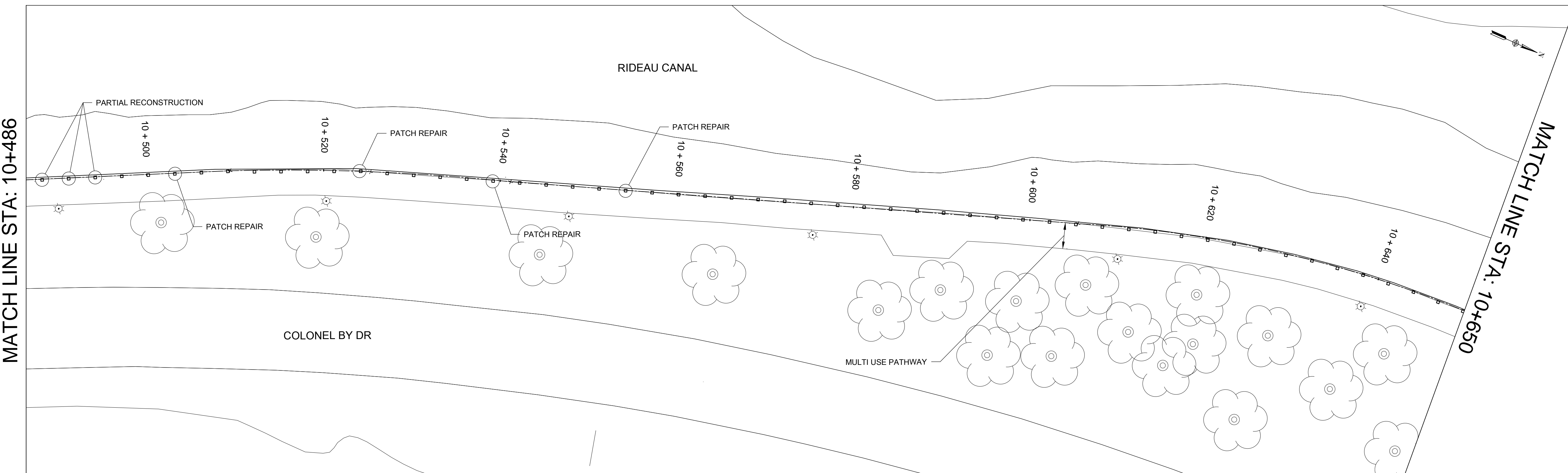
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RIDEAU CANAL - PEDESTRIAN RAILING AND LOCALIZED WALL REPAIRS

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NEW CONSTRUCTION - STA10+650 TO STA10+982

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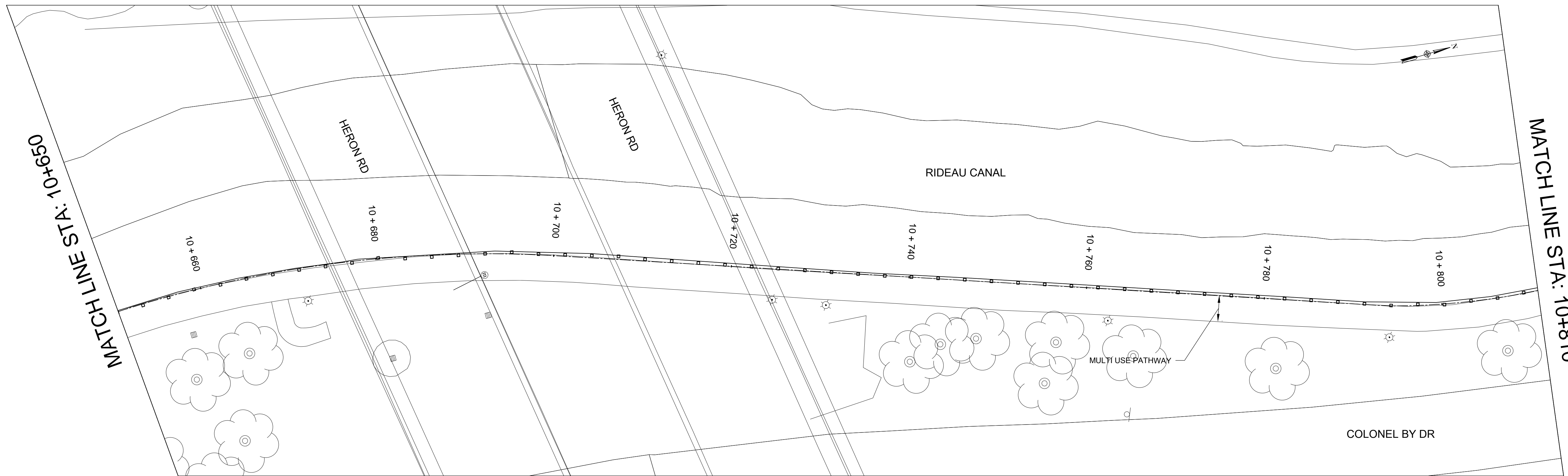
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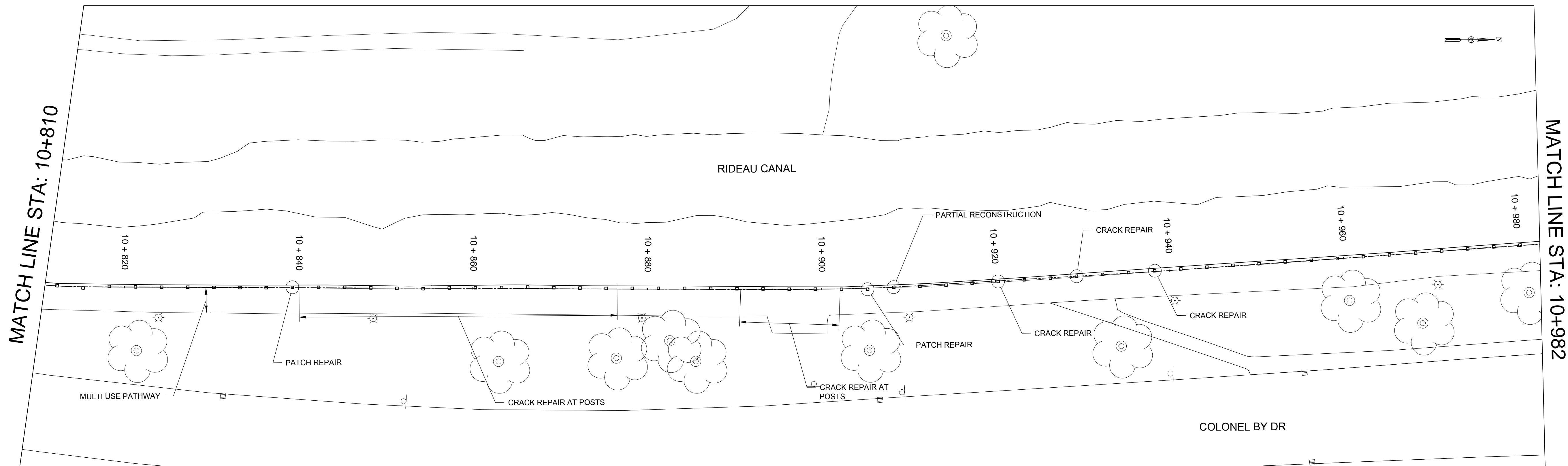
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NEW CONSTRUCTION STA  
10+982 TO STA 11+324

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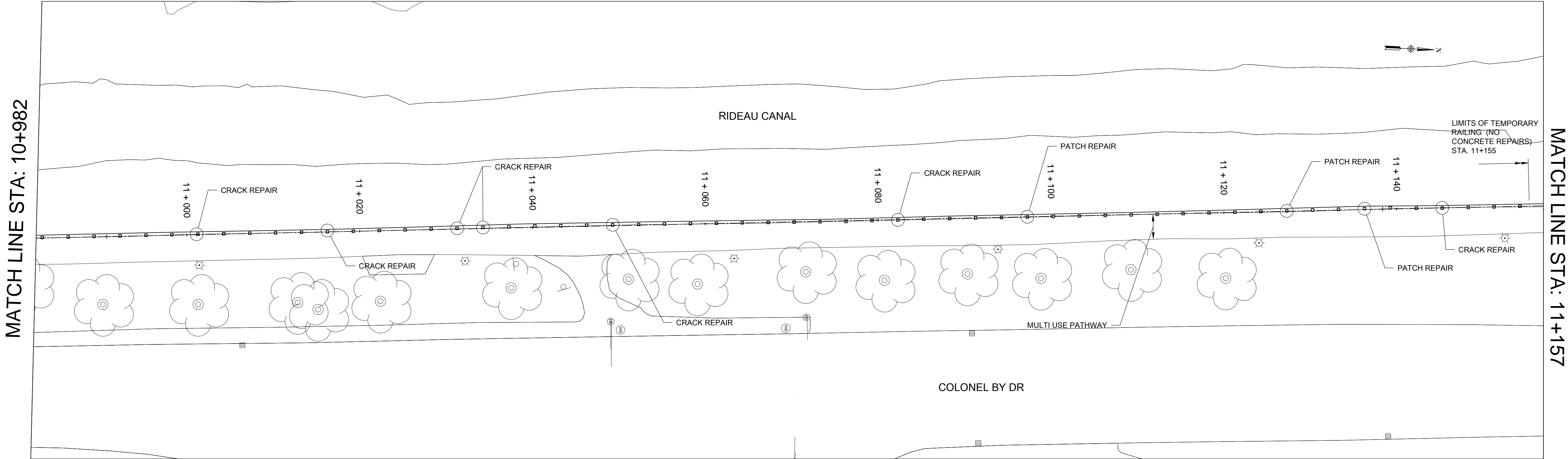
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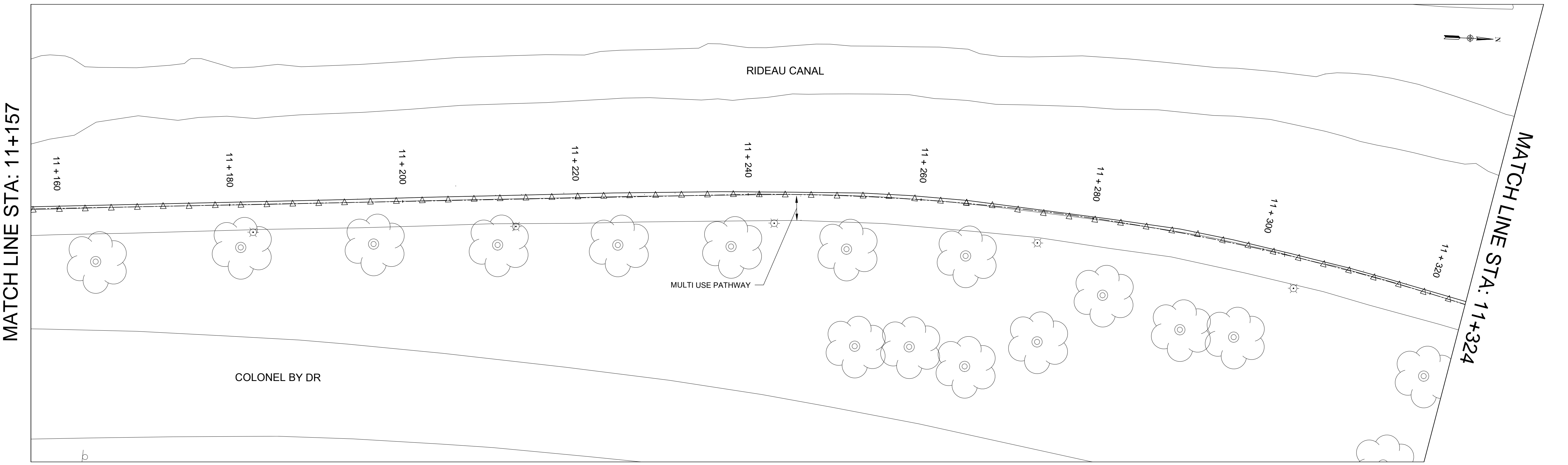
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no. de la feuille C-4



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RIDEAU CANAL - PEDESTRIAN  
RAILING AND LOCALIZED WALL  
REPAIRS

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NEW CONSTRUCTION -  
STA11+324 to STA11+662

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approuvé par CR

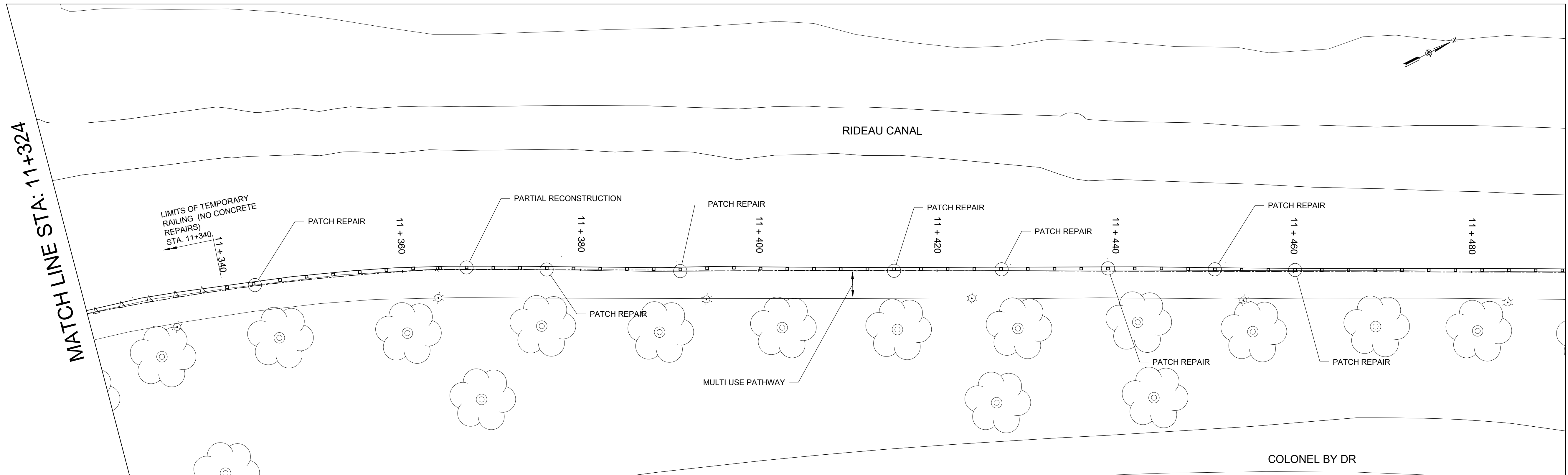
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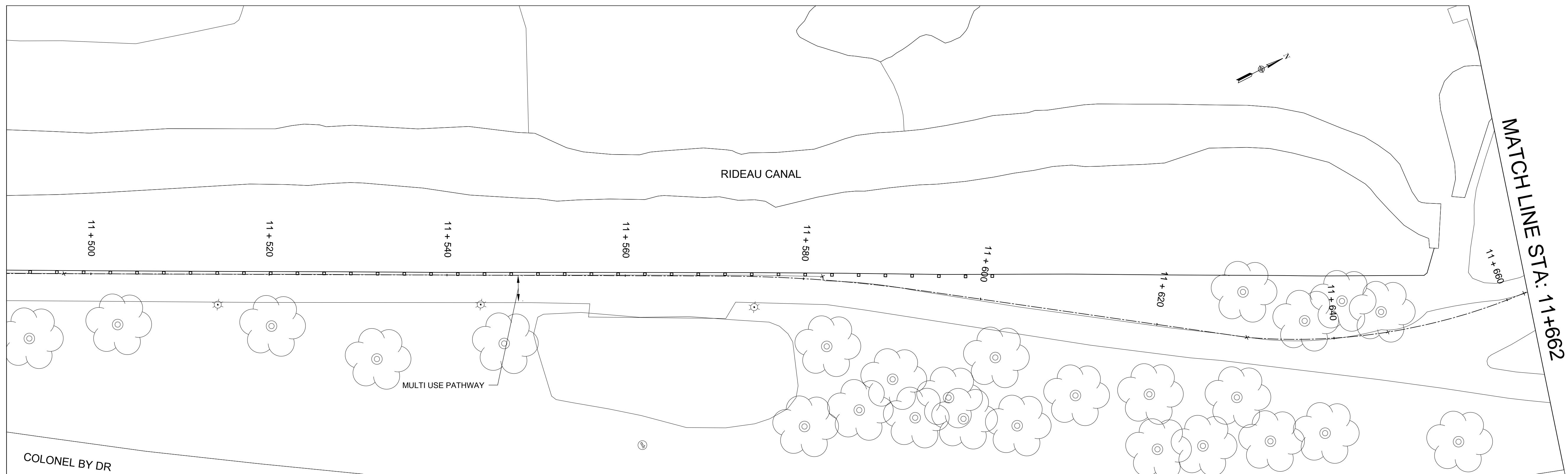
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RIDEAU CANAL - PEDESTRIAN RAILING AND LOCALIZED WALL REPAIRS

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NEW CONSTRUCTION - STA11+662 TO STA12+002

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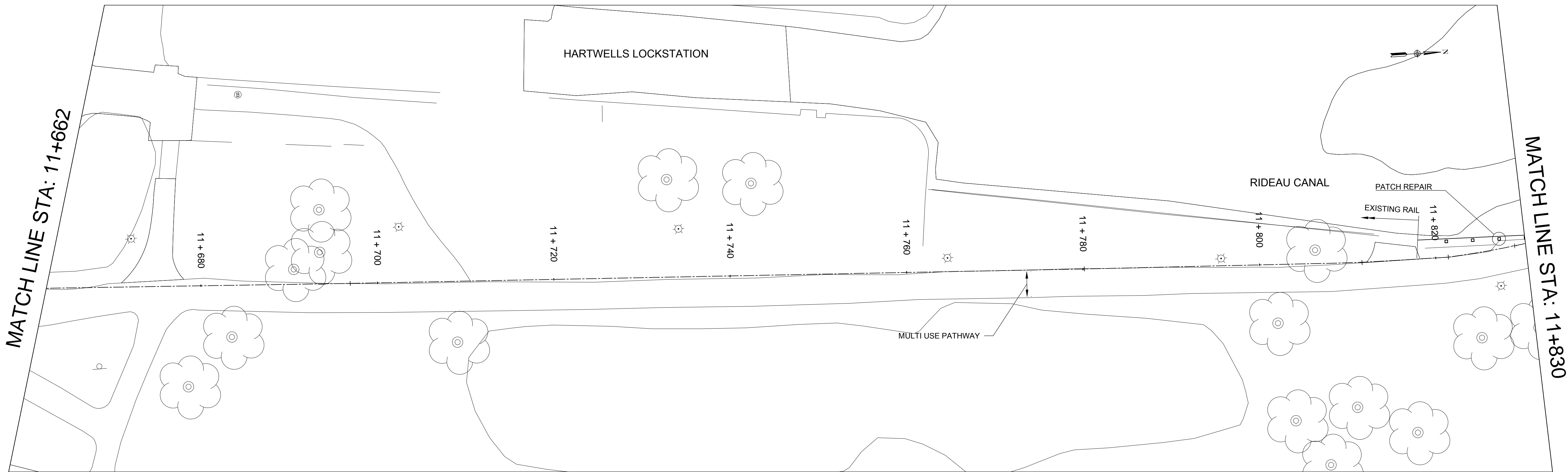
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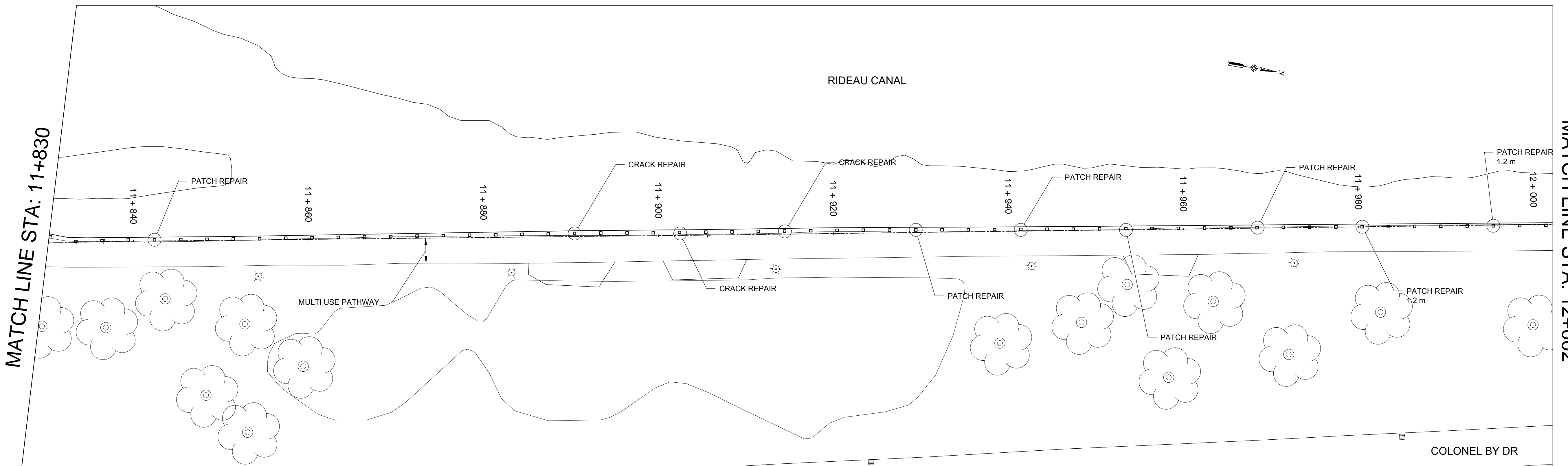
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RIDEAU CANAL - PEDESTRIAN  
RAILING AND LOCALIZED WALL  
REPAIRS

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NEW CONSTRUCTION STA  
12+002 TO STA 12+348

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conçu par

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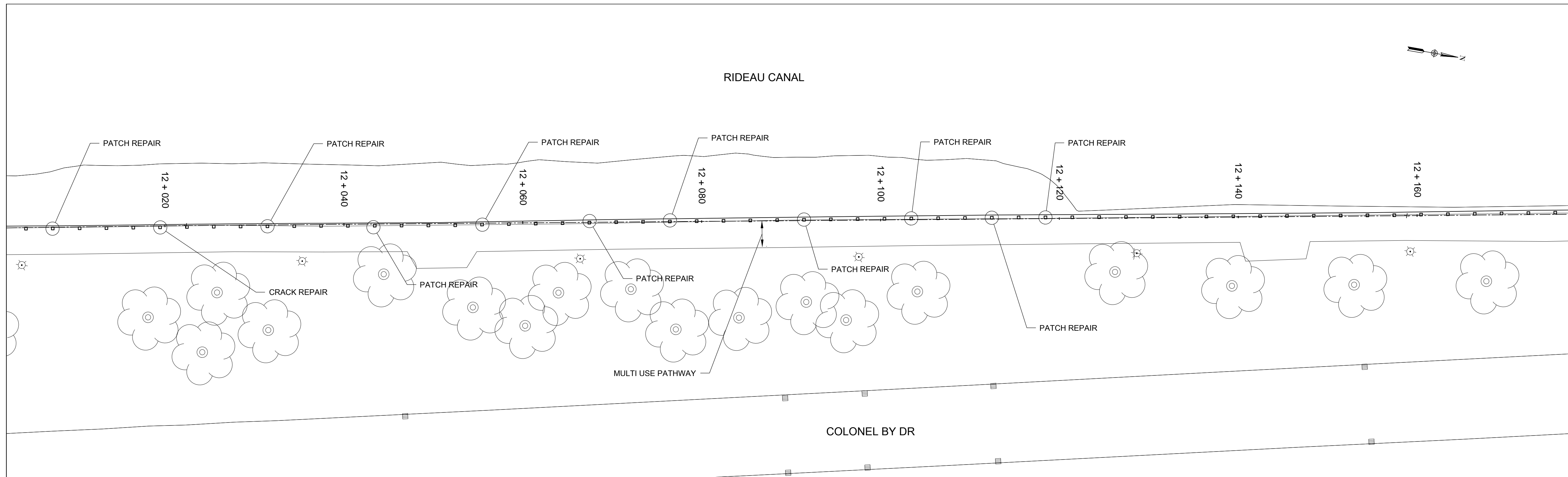
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no. de la feuille

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C-7

MATCH LINE STA: 12+002

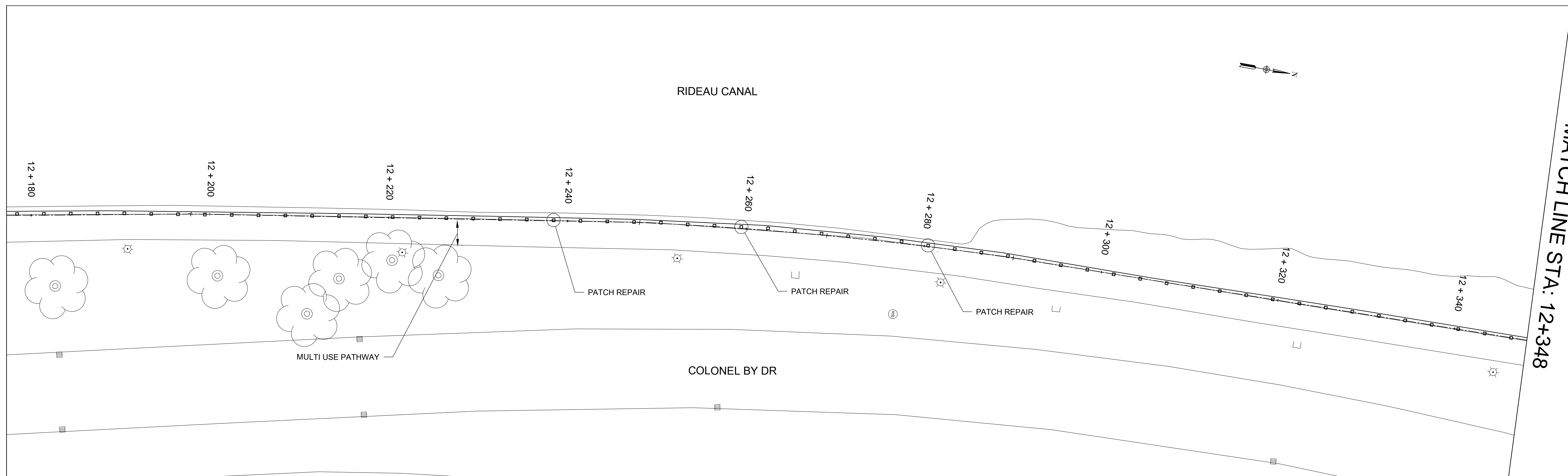


MATCH LINE STA: 12+177

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MATCH LINE STA: 12+177



MATCH LINE STA: 12+348

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RIDEAU CANAL - PEDESTRIAN  
RAILING AND LOCALIZED WALL  
REPAIRS

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NEW CONSTRUCTION STA  
12+348 TO STA 12+470

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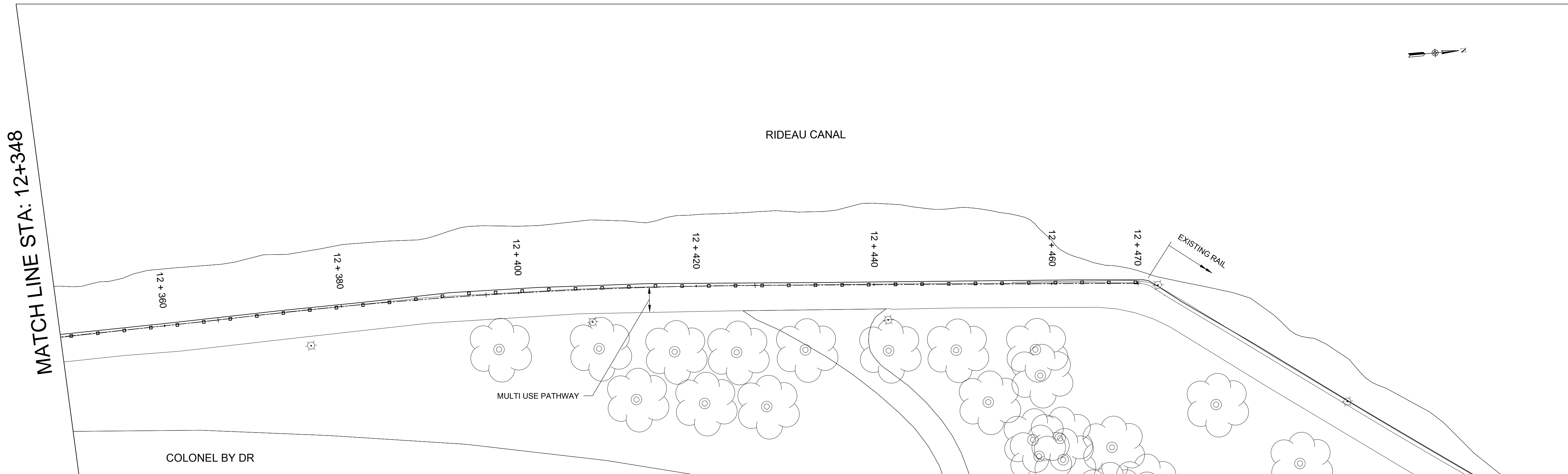
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**REPAIR NOTES:**

**CLASS OF CONCRETE**

- CLASS OF CONCRETE SHALL BE IN ACCORDANCE WITH CSA A23.1, WITH 28 DAY COMPRESSIVE STRENGTH OF 30 MPa AND EXPOSURE CLASS C-1

**REINFORCING STEEL**

- REINFORCING STEEL SHALL BE GRADE 400W
- UNLESS SHOWN OTHERWISE, TENSION LAP SPLICES FOR REINFORCING STEEL BARS SHALL BE CLASS B
- BAR HOOKS SHALL HAVE STANDARD HOOK DIMENSIONS USING MINIMUM BEND DIAMETERS, WHILE STIRRUPS AND TIES SHALL HAVE MINIMUM HOOK DIMENSIONS. ALL HOOKS SHALL BE IN ACCORDANCE WITH MTO STRUCTURAL MANUAL STANDARD DRAWING SS12-1, UNLESS INDICATED OTHERWISE.

**CLEAR COVER TO REINFORCING STEEL**

ALL SURFACES 70 ± 20 UNLESS INDICATED OTHERWISE

**REPAIR CONSTRUCTION NOTES:**

- SAW CUT PERIMETER OF REPAIR AREA TO A DEPTH OF 25mm. ANGLE SAWCUT 10° AS INDICATED INTO SOUND CONCRETE.
- CHIP TO DEPTH OF SOUND CONCRETE (MIN. 100mm REMOVAL DEPTH)
- WHEN EXISTING REINFORCING STEEL IS ENCOUNTERED, CHIP TO DEPTH OF SOUND CONCRETE WITH A MINIMUM OF 25mm AROUND EXPOSED REINFORCING.
- REMOVAL EQUIPMENT SHALL NOT USE SAWCUT FOR SUPPORT WHEN CHIPPING. MAINTAIN SAWCUT EDGE.
- APPLY BONDING AGENT WHEN FORMWORK NOT USED.
- ALL EXISTING REINFORCING STEEL SHALL REMAIN.
- CONCRETE REMOVAL SHALL NOT EXCEED 500mm IN DEPTH. IF SOUND CONCRETE IS NOT ENCOUNTERED WITHIN 500mm DEPTH, STRUCTURAL ENGINEER REVIEW IS REQUIRED.
- REPAIR AREAS ARE LIMITED TO 500mm FROM THE CENTER OF THE POSTS ON ALL SIDES.
- WHERE NEW CONCRETE IS TO EXTEND OVER THE EXISTING CONCRETE SURFACE, THAT PORTION OF EXISTING SURFACE SHALL BE ROUGHENED BY SCABBLING, CHIPPING, OR BUSH HAMMERING. THE CONCRETE SURFACES RECEIVING NEW CONCRETE SHALL BE ABRASIVE BLAST CLEANED. ALL DUST AND LOOSE MATERIAL SHALL BE REMOVED FROM THE PREPARED SURFACE OF THE REPAIR AREA BY COMPRESSED AIR BEFORE THE APPLICATION OF THE BONDING AGENT.
- ALL EXPOSED CONCRETE CORNERS TO HAVE 20mm CHAMFERS UNLESS OTHERWISE SHOWN.
- WALL SHALL BE REPAIRED TO MATCH TOP OF WALL ELEVATION OF AREAS IN CLOSE PROXIMITY EXHIBITING MINIMAL DETERIORATION. CURB FACE SHALL BE REPAIRED TO MATCH SLOPE OF CURB FACES OF AREAS IN CLOSE PROXIMITY EXHIBITING MINIMAL DETERIORATION.
- FINE AND HAIRLINE CRACKS LESS THAN 0.3mm IN WIDTH REQUIRE NO TREATMENT. IF CRACK IS GREATER THAN 5mm WIDE, TREAT AS PATCH.
- CRACK WIDTHS BETWEEN 0.3mm AND 5.0mm SHALL BE REPAIRED USING RESIN COMPLYING WITH THE CONTRACT SPECIFICATIONS.
- REPAIR DEPTH IS MEASURED FROM BOTTOM OF REMOVAL TO TOP OF FINAL CURB ELEVATION.
- EXISTING SOILS AND ASPHALT SHALL NOT BE REMOVED BEYOND THE LIMIT OF EXCAVATION.



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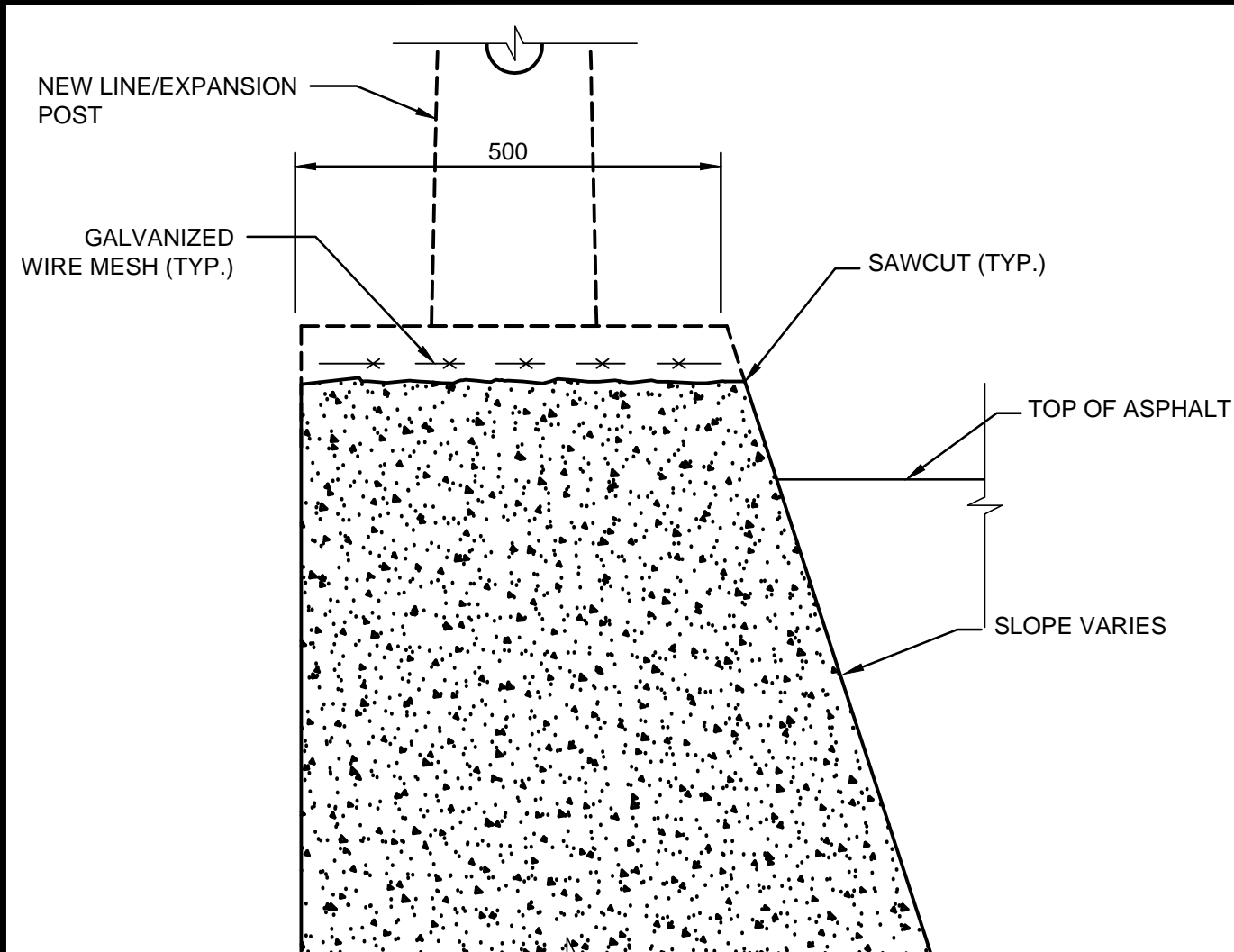
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**RIDEAU CANAL - NEW RAILING AND REPAIR WORKS OF LOCALIZED WALL SECTIONS**

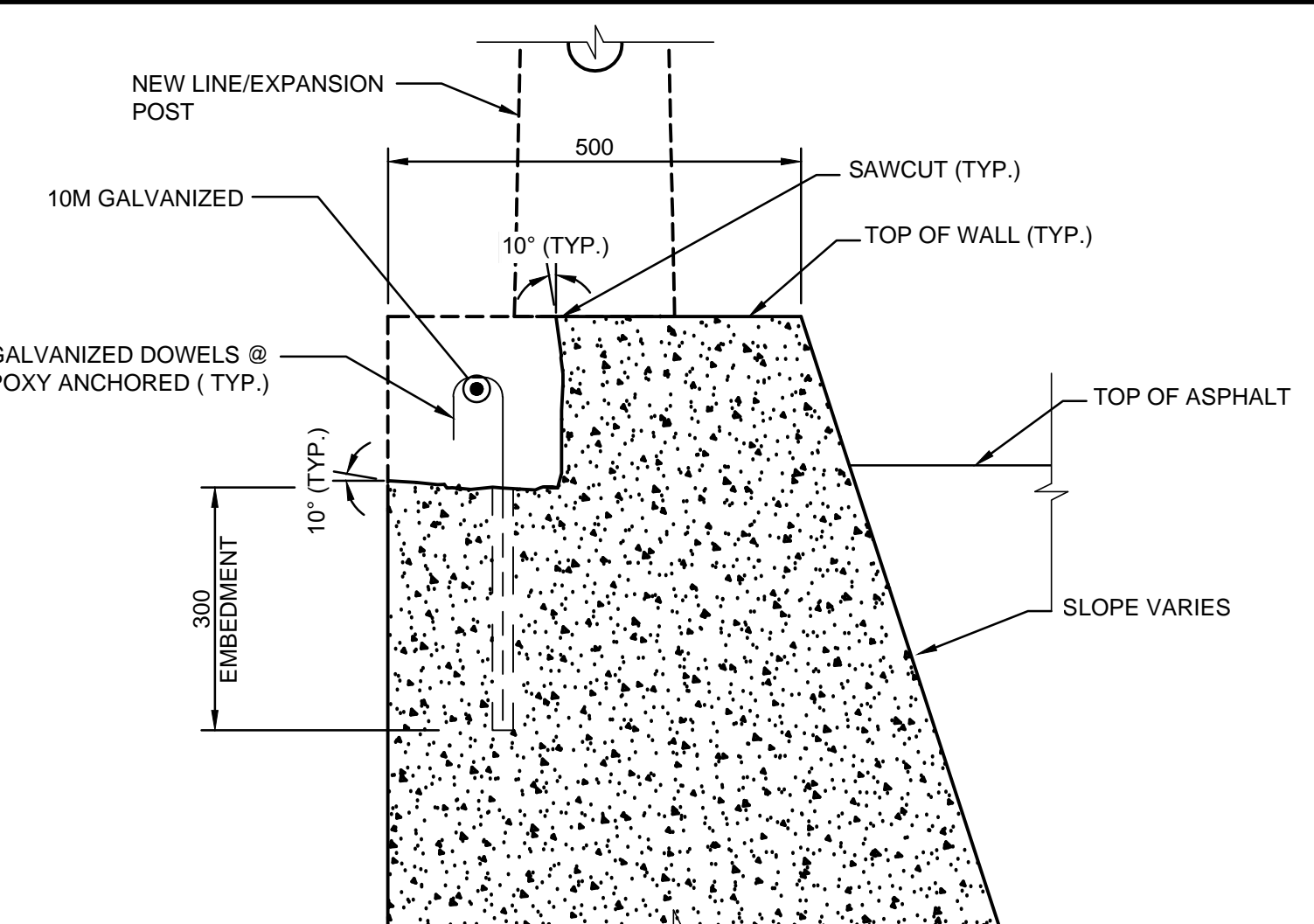
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**CONCRETE REPAIR DETAILS**

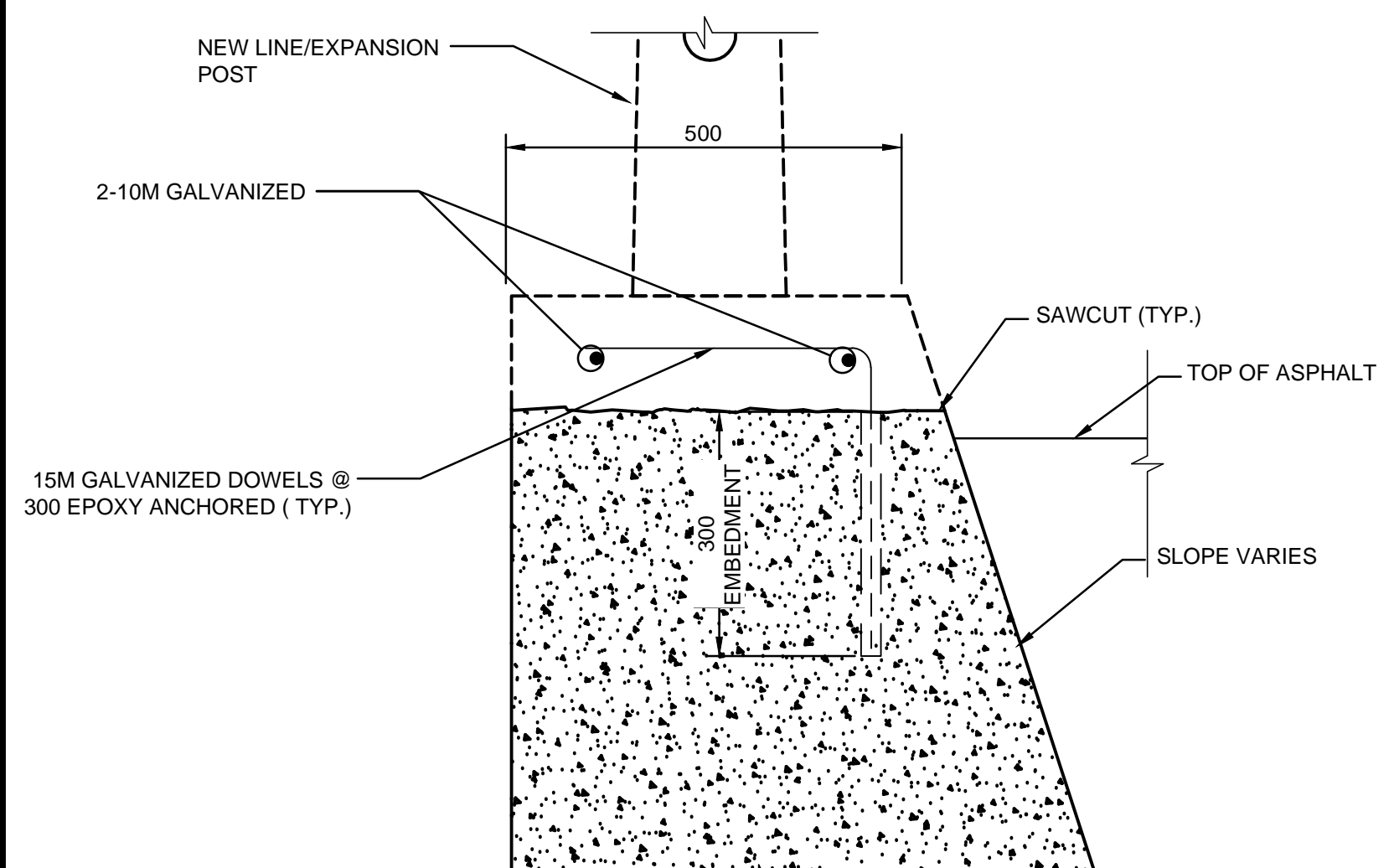
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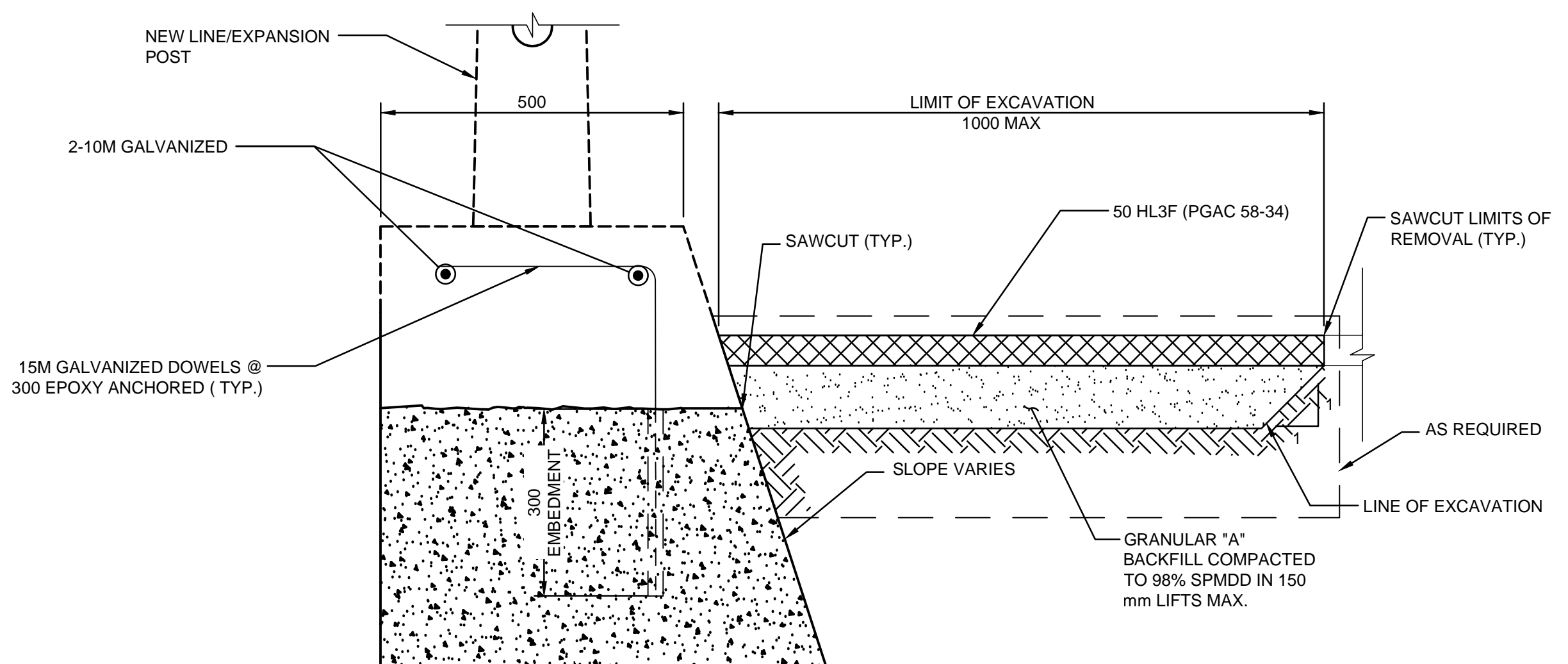
SECTION  
REPAIR DEPTH LESS THAN 125mm  
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SECTION  
REPAIR DEPTH 125mm TO 300mm  
N.T.S.

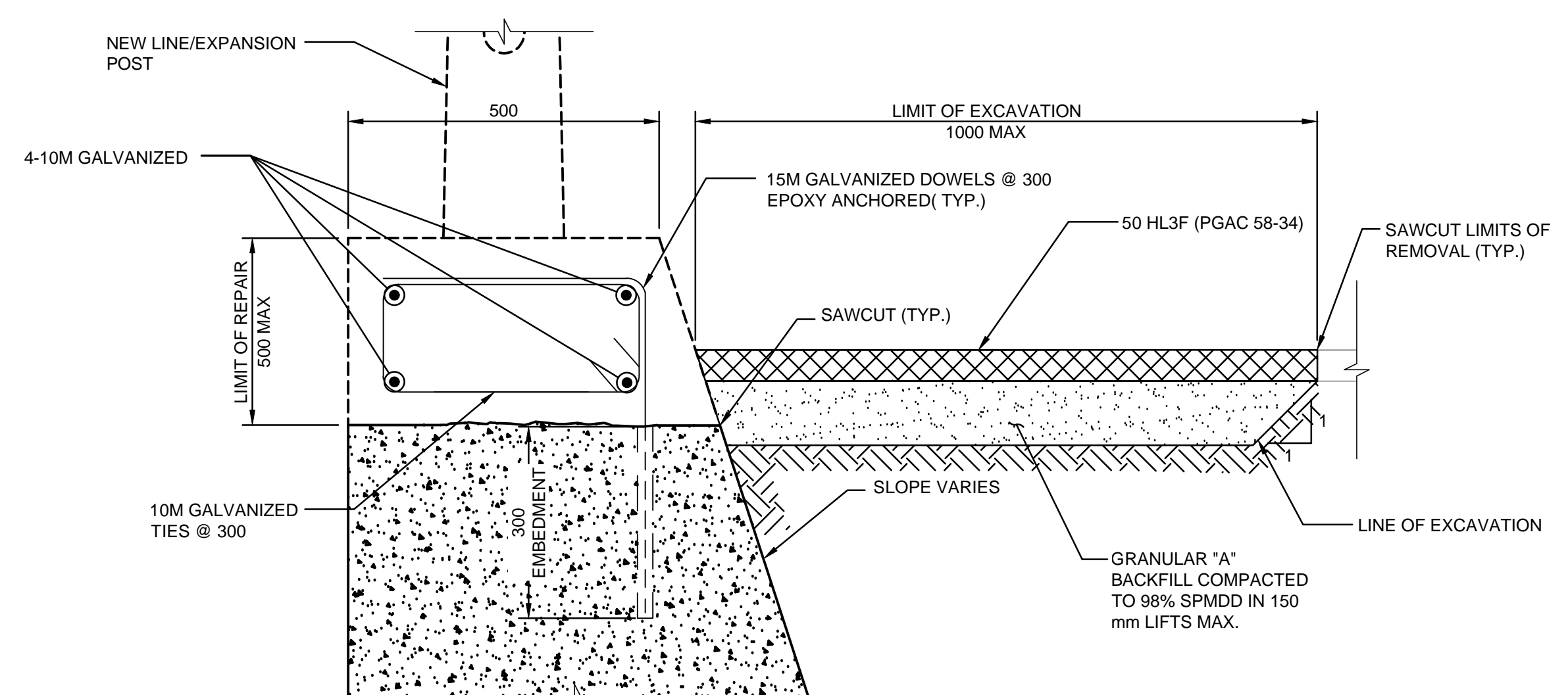


SECTION  
REPAIR DEPTH 125mm TO EXISTING ASPHALT ELEVATION  
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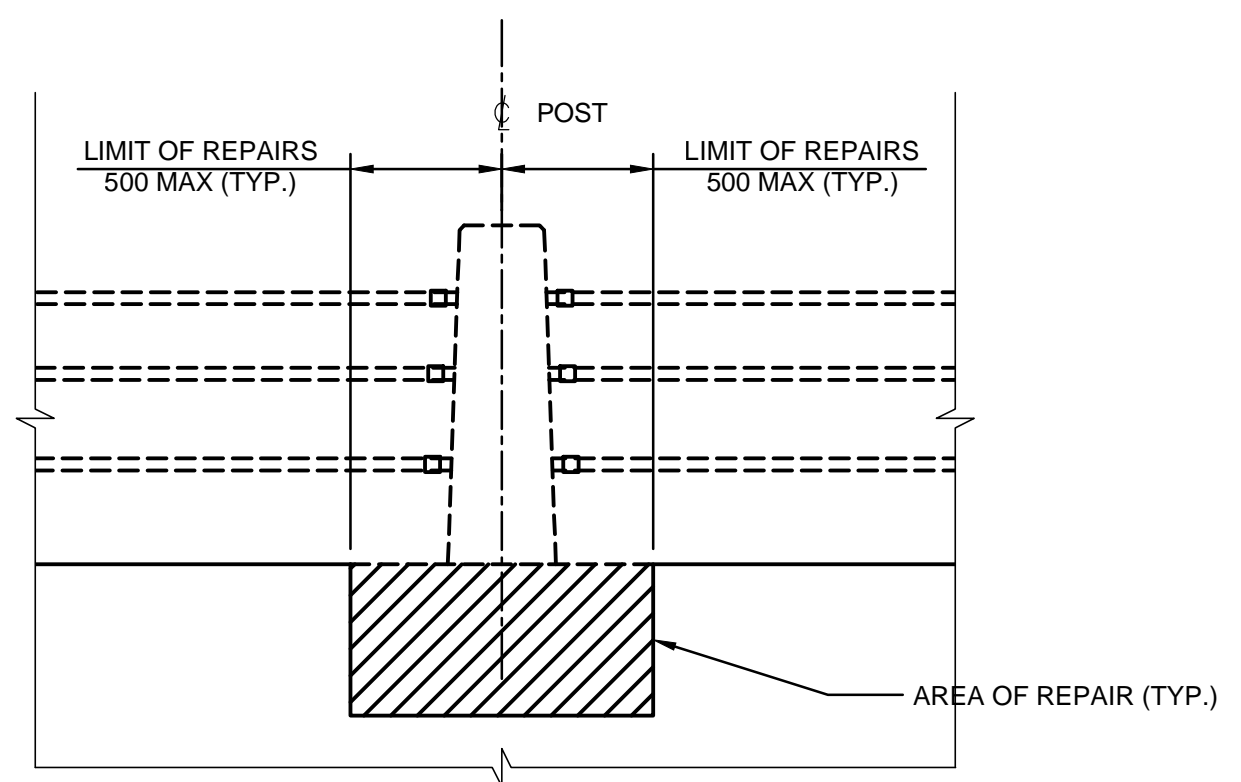


SECTION  
REPAIR DEPTH BELOW EXISTING ASPHALT ELEVATION (300mm MAX)  
N.T.S.

**TYPICAL PATCH REPAIRS**  
N.T.S.



SECTION  
TYPICAL PARTIAL RECONSTRUCTION  
REPAIR DEPTH EXCEEDING 300mm (500mm MAX)  
N.T.S.



SECTION  
EXTENT OF REHABILITATION  
N.T.S.

**LEGEND**

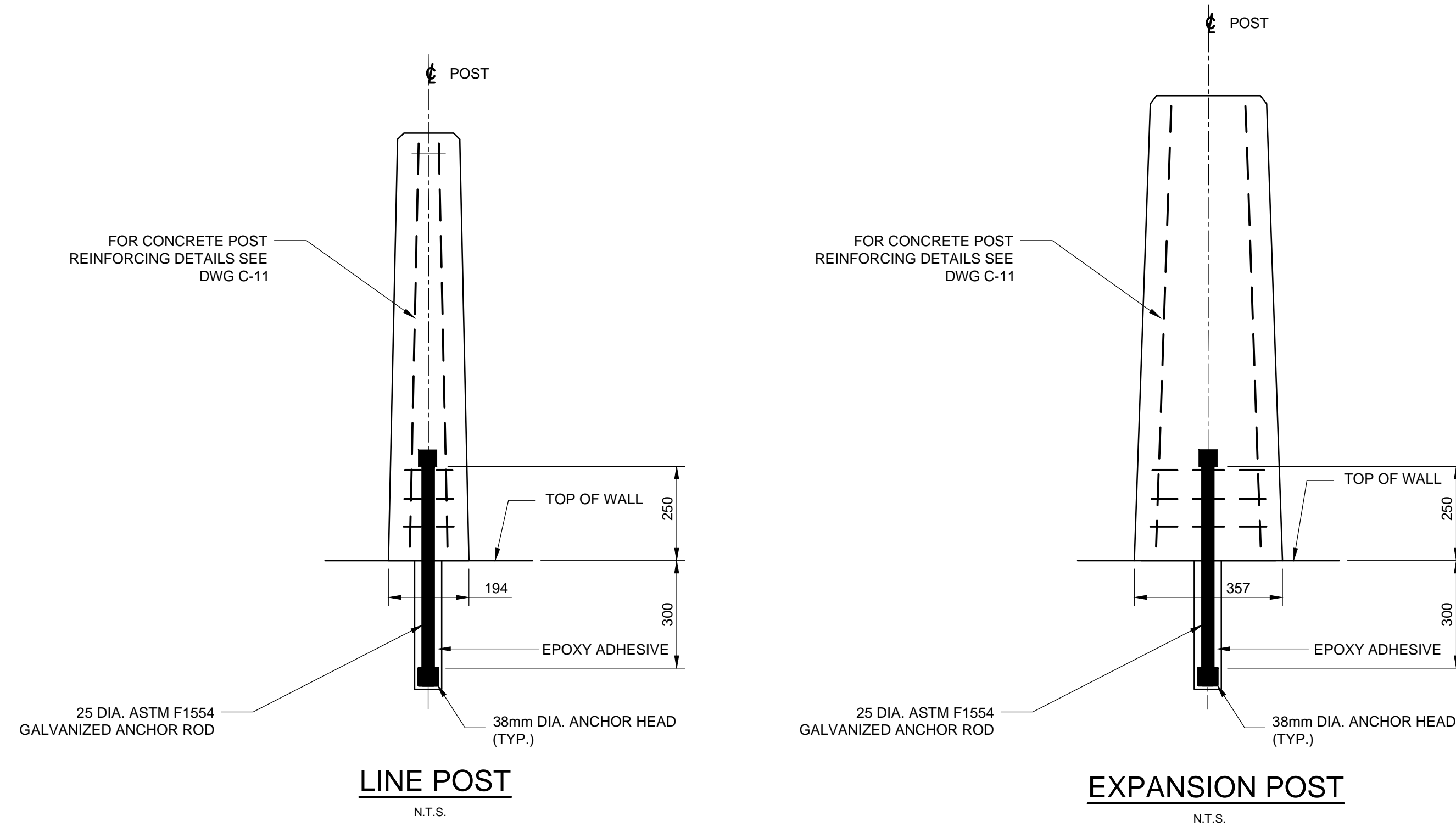
- EXISTING SOUND CONCRETE
- GRANULAR 'A'
- NEW ASPHALT
- EXISTING SOIL

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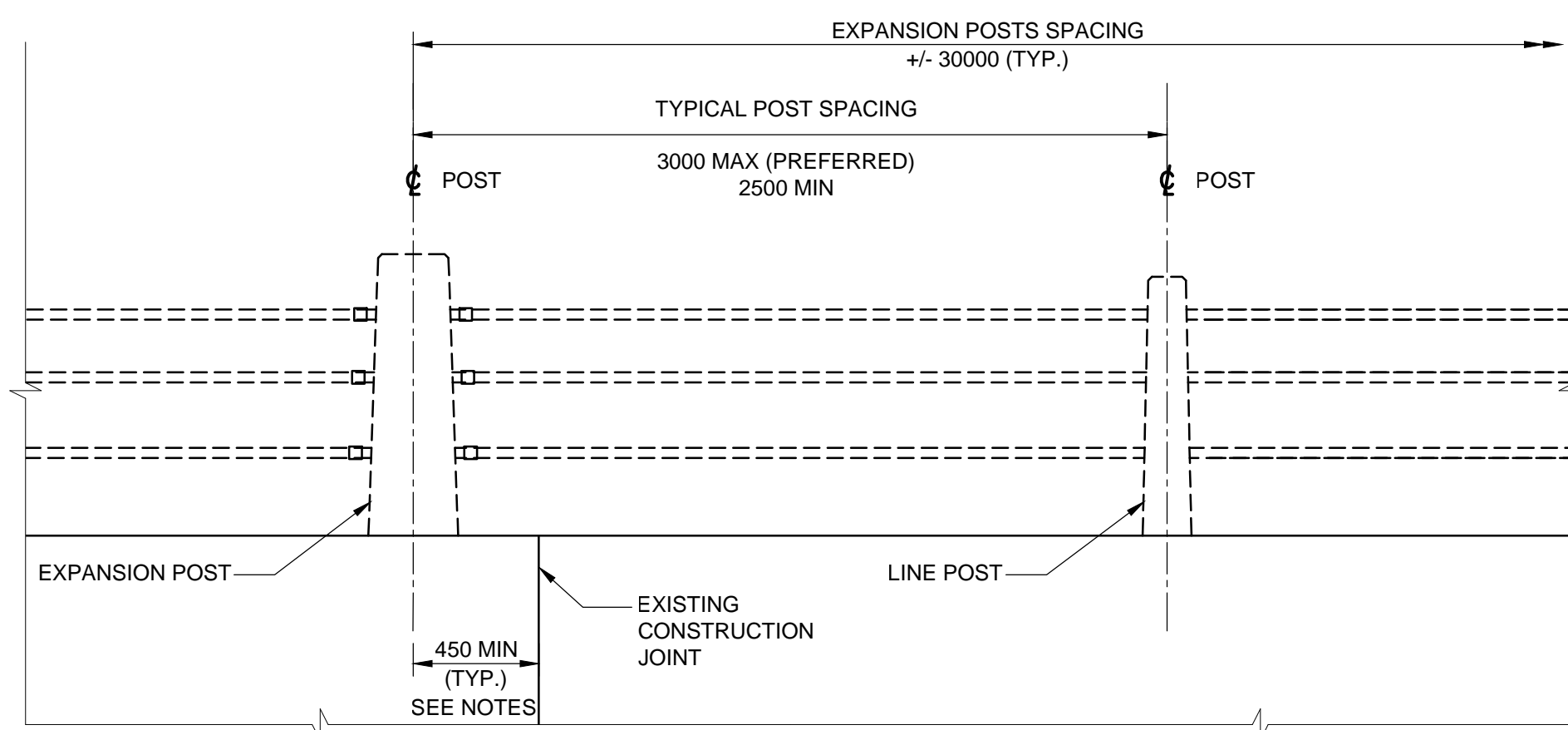
**NOTES:**

- POST ANCHORS SHALL BE 450 MIN FROM WALL CONSTRUCTION JOINTS. POST ANCHORS MAY BE PLACED 250 MIN FROM JOINTS IF POST SPACING TO ADJACENT POSTS ON BOTH SIDES IS REDUCED TO 2500, WHERE REQUIRED.
- ALUMINUM TO BE ALLOY 6061-T6.
- ANCHOR RODS TO CONFORM TO ASTM F1554 GRADE 55, S1 (WELDABLE).
- GROUT FOR LEVELING PADS SHALL BE LISTED ON THE MTO DESIGNATED SOURCES LIST AND SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 30 MPa PRIOR TO INSTALLATION OF POST ANCHORAGE.
- STEEL PLATES SHALL BE GRADE 350W.
- FOR TEMPORARY RAILING, STRUCTURAL ENGINEER REVIEW IS REQUIRED IF UNSOUND CONCRETE GREATER THAN 150mm IN DEPTH IS ENCOUNTERED.
- RAILING SYSTEM CONFIGURATION CONFORMS TO NCC STANDARDS
- RAIL DESIGNED FOR 1.7 kN/m FACRORED LIVE LOAD; ALL OTHER ELEMENTS OF RAILING DESIGNED TO RESIST LOADS IN CONFORMANCE WITH CHBDC (CSA S6-14)



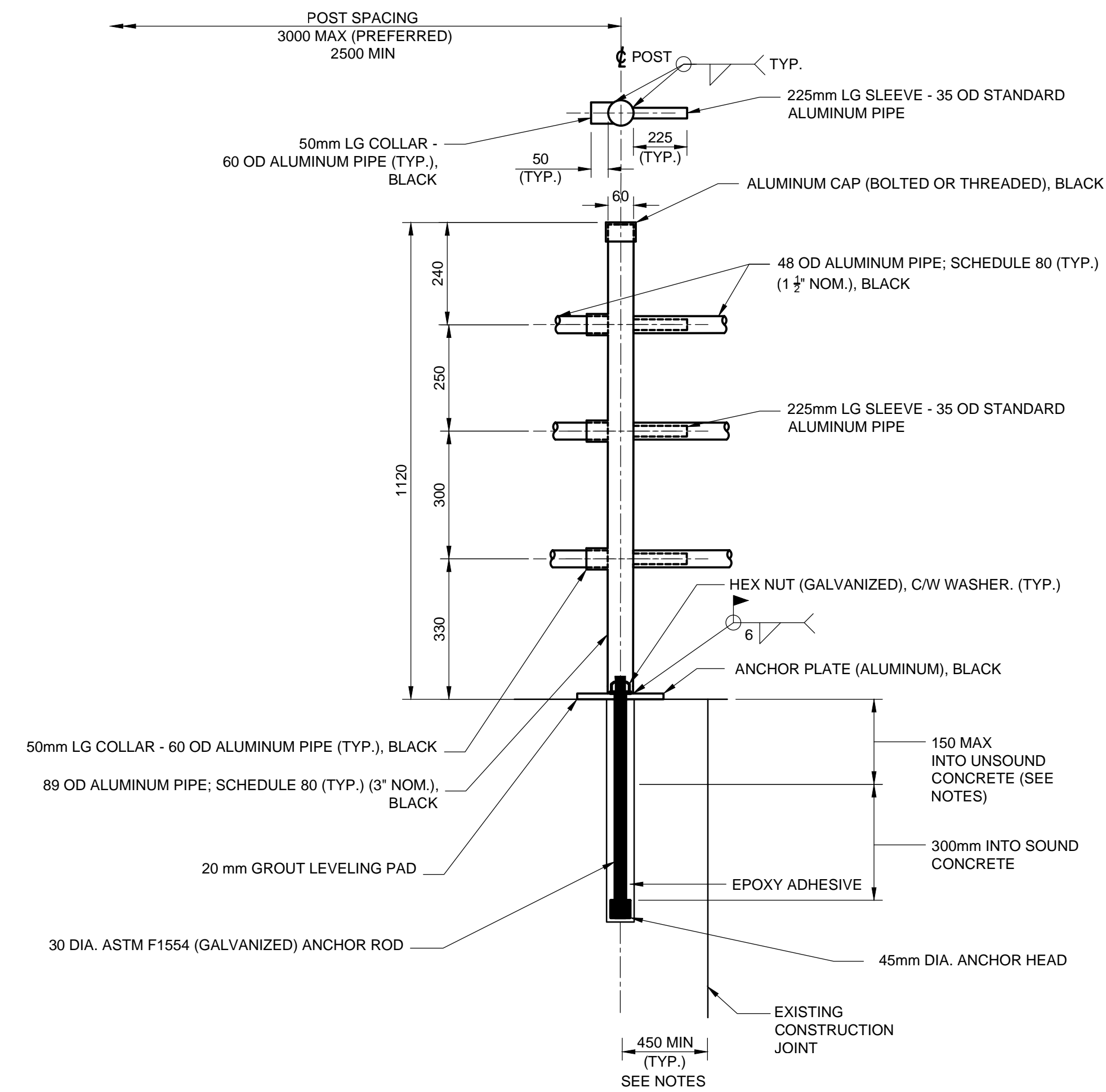
**CONCRETE POST ANCHOR DETAILS  
(PERMANENT RAILING)**

N.T.S.



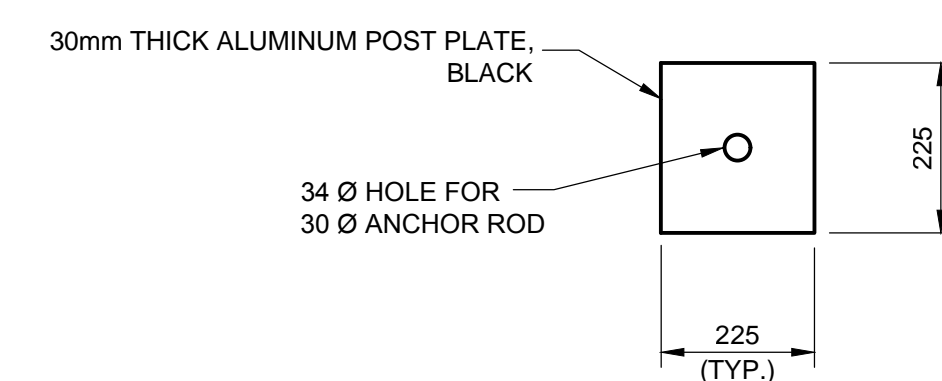
**POST LAYOUT (PERMANENT RAILING)**

N.T.S.



**ALUMINUM POST  
(TEMPORARY RAILING)**

N.T.S.



**ANCHOR PLATE DETAIL**

N.T.S.



issued or revised  
émis ou révisé

no.	description	date
5		
4		
3	ISSUED FOR TENDER	14-08-17
2	DRAFT TENDER	07-07-17
1	PRELIMINARY DESIGN	24-02-17

project  
projet

**RIDEAU CANAL - NEW RAILING  
AND REPAIR WORKS OF  
LOCALIZED WALL SECTIONS**

drawing  
dessin

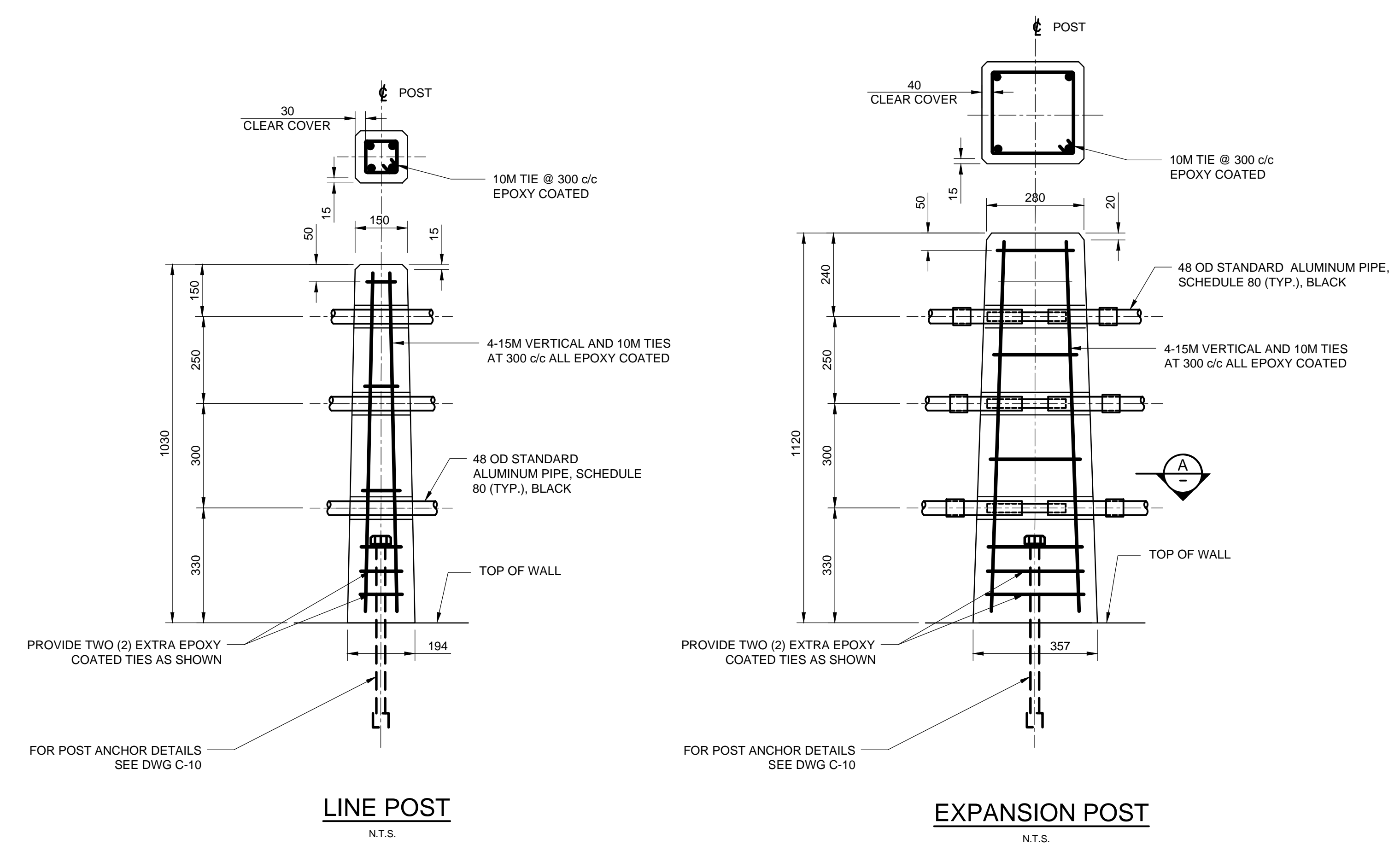
**RAILING SYSTEM DETAILS**

approved by approuvé par	CR
designed by conçu par	PMA
drawn by dessiné par	JGE
date	2017/06/15
scale échelle	N.T.S.
NCC project no. no. du projet de la CCN	DC-5250-6
sheet no. no. de la feuille	C-10

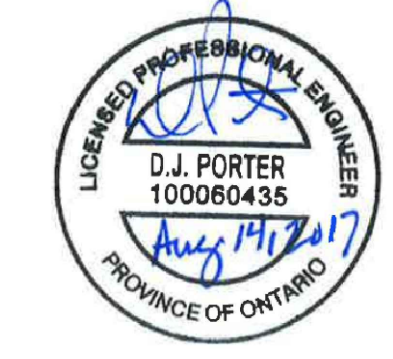
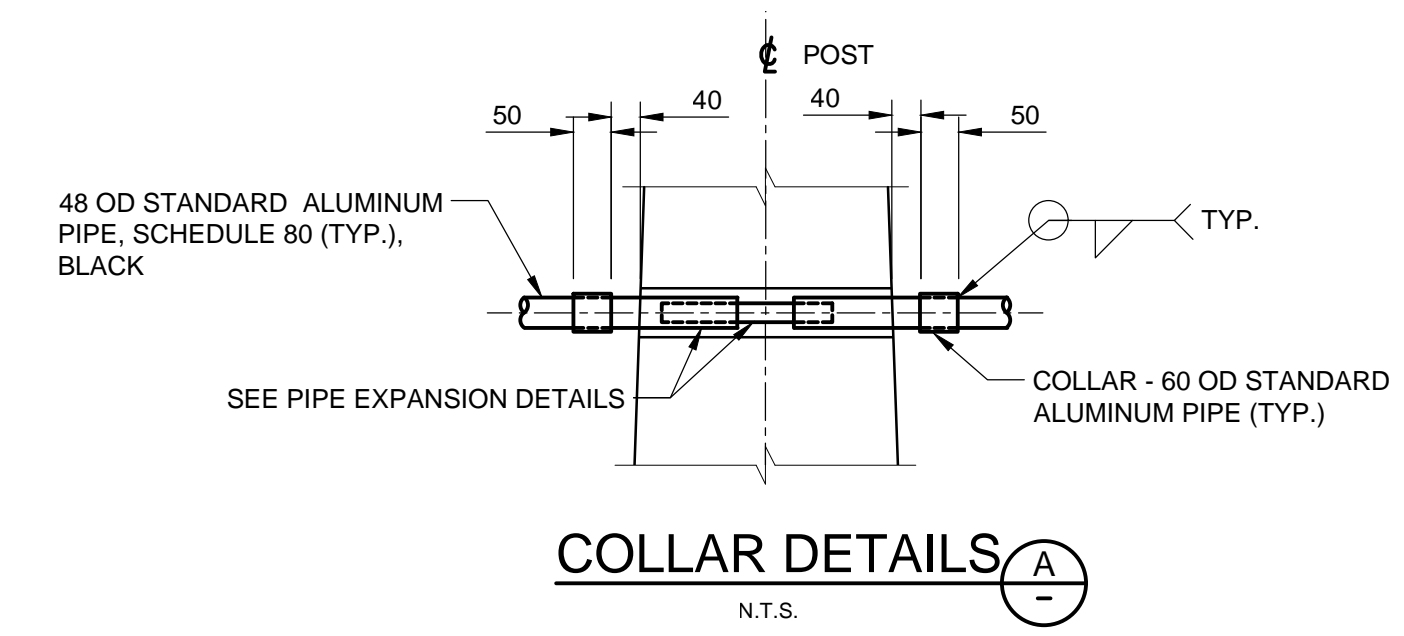
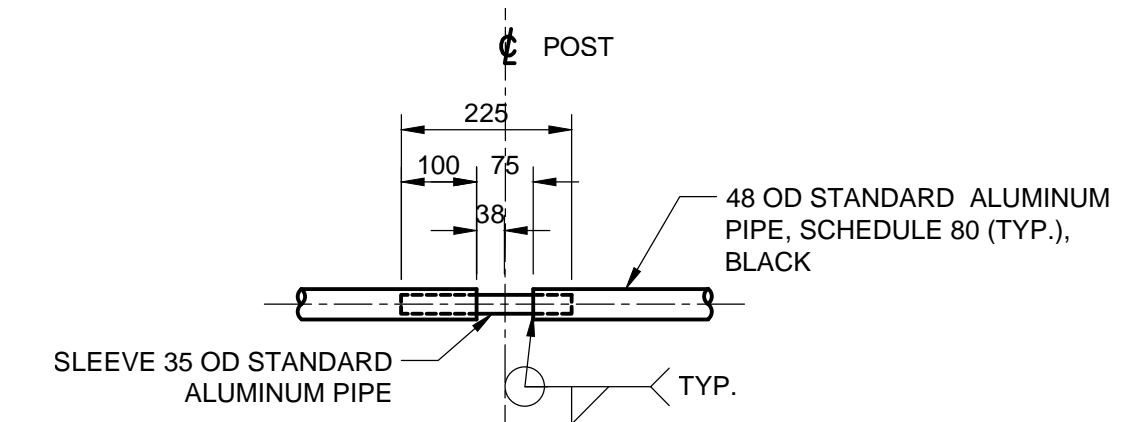


**CONCRETE POST AND RAILING NOTES:**

- THE POST FORM WILL BE SUPPLIED BY THE N.C.C AND OBTAINED FROM AN N.C.C. YARD IN THE OTTAWA-GATINEAU AREA.
- CONCRETE SHALL HAVE A COMPRESSIVE STRENGTH OF 35 MPa AT 28 DAYS, USING A NO. 2 GREEN MADOC AGGREGATE WITH RIVER WASHED SAND OR MORTAR SAND.
- THE AGGREGATE SHALL BE EXPOSED AND THE TEXTURE OF THE REQUIRED FINISH MAY BE INSPECTED AT A SITE SPECIFIED BY THE N.C.C. REPRESENTATIVE. PRIOR TO PRECASTING, THE FABRICATOR SHALL SUBMIT TWO (2) SAMPLE PANELS (300x300x25) TO THE ENGINEER FOR APPROVAL AND COMPARISON WITH THE TEXTURE AND AGGREGATE OF THE CAST UNIT.
- REINFORCING SHALL CONFORM TO C.S.A. STANDARD SPECIFICATION G30.12 WITH A MINIMUM YIELD STRENGTH OF 350 MPa AND SHALL BE EPOXY COATED.
- OPENINGS THROUGH POST TO ACCEPT 48 mm DIAMETER STANDARD PIPE USED AS HANDRAIL.
- CHAMFER ALL EDGES AS PROVIDED FOR IN FORM SUPPLIED.
- TOUCH UP REINFORCING BARS WITH EPOXY PAINT PRIOR TO CASTING.
- TEXTURING SHALL NORMALLY BE ACCOMPLISHED USING A CHEMICAL RETARDANT AND PRESSURE WASH. OTHER METHODS OF EXPOSING THE AGGREGATE WILL ONLY BE ALLOWED ON SPECIAL APPROVAL OF THE NCC.



**CONCRETE POST DETAILS  
(PERMANENT RAILING)**  
N.T.S.



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5		
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3	ISSUED FOR TENDER	14-08-17
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project / projet

**RIDEAU CANAL - NEW RAILING AND REPAIR WORKS OF LOCALIZED WALL SECTIONS**

drawing / dessin

**NCC STANDARD DETAILS**

approved by / approuvé par: CR

designed by / conçu par: PMA

drawn by / dessiné par: JGE

date: 2017/06/15, scale / échelle: N.T.S.

NCC project no. / no. du projet de la CCN: DC-5250-6, sheet no. / no. de la feuille: C-11