



Welcome!

United Counties of Stormont, Dundas and Glengarry County Road 22 Reconstruction and Drainage Improvements

Welcome to the Public Information Centre event for the County Road 22 Reconstruction and Drainage Improvements project.

Should you have any questions regarding the materials or any other aspect of the study, or if you would like to review any of the background reports, contact either of the following by **December 16, 2022**:

Steve Taylor, P.Eng.
BT Engineering Inc., Project Manager
Email: steven.taylor@bteng.ca
Phone: 613-228-4813

Michael Jans, P.Eng.
Manager of Infrastructure, United Counties
Email: mjans@sdgcounties.ca
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There is an opportunity at any time during the process for interested persons to provide written input. Any comments received will be collected under the *Environmental Assessment Act* and, with the exception of personal information, will become part of the public record.

Purpose of Public Information Centre

The purpose of this meeting is to:

- Present the preliminary design drawings for the County Road 22 reconstruction
- Present the relocation of the Municipal Drains
- Present property impacts
- Provide a timeline of upcoming steps
- Provide the public with an opportunity to ask questions and provide comments

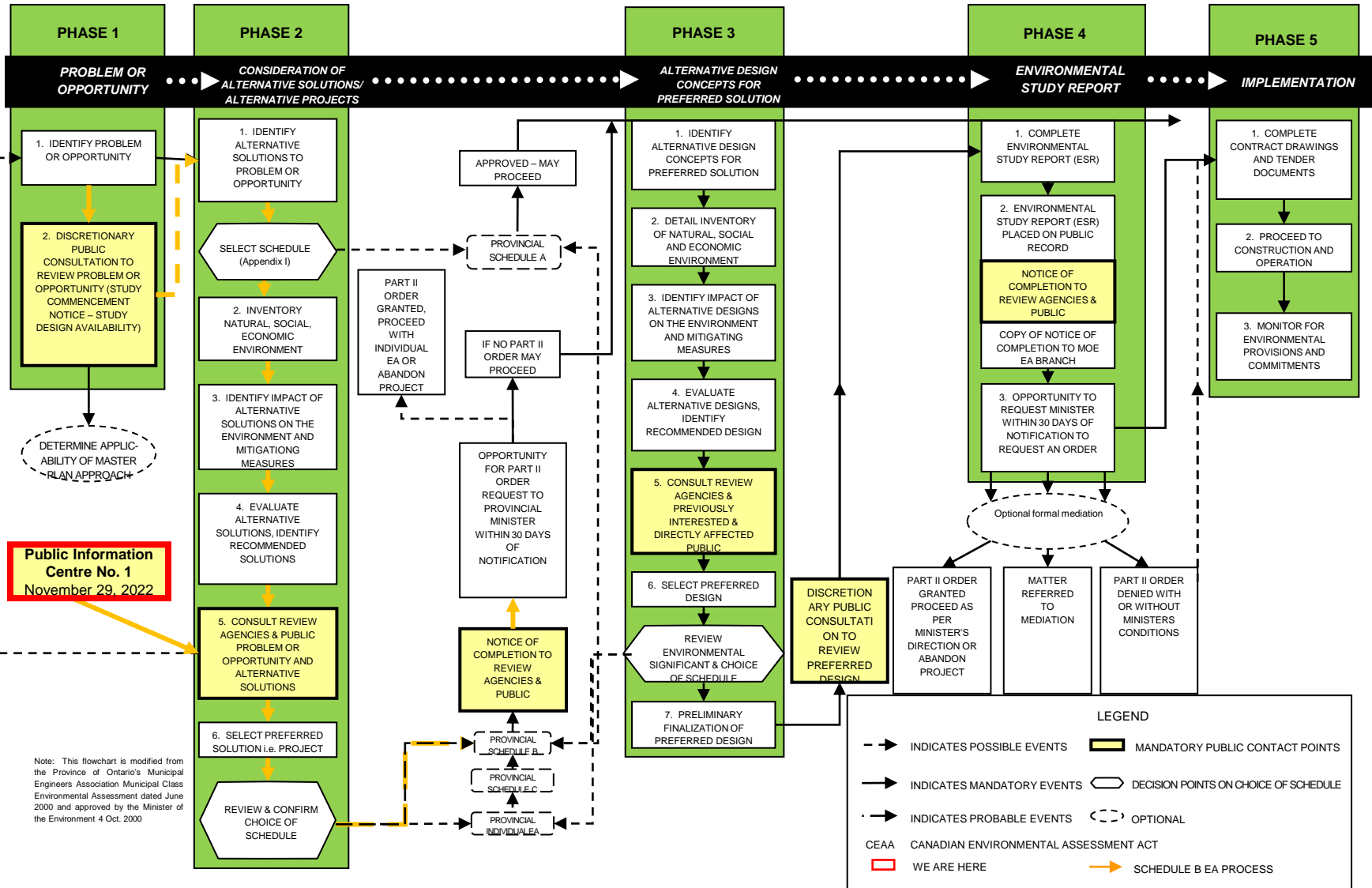
The works are tentatively scheduled to be constructed within the 5-year property program (subject to Council approval). The following exhibits present background information, existing conditions and the detail design of the projects.

Introduction

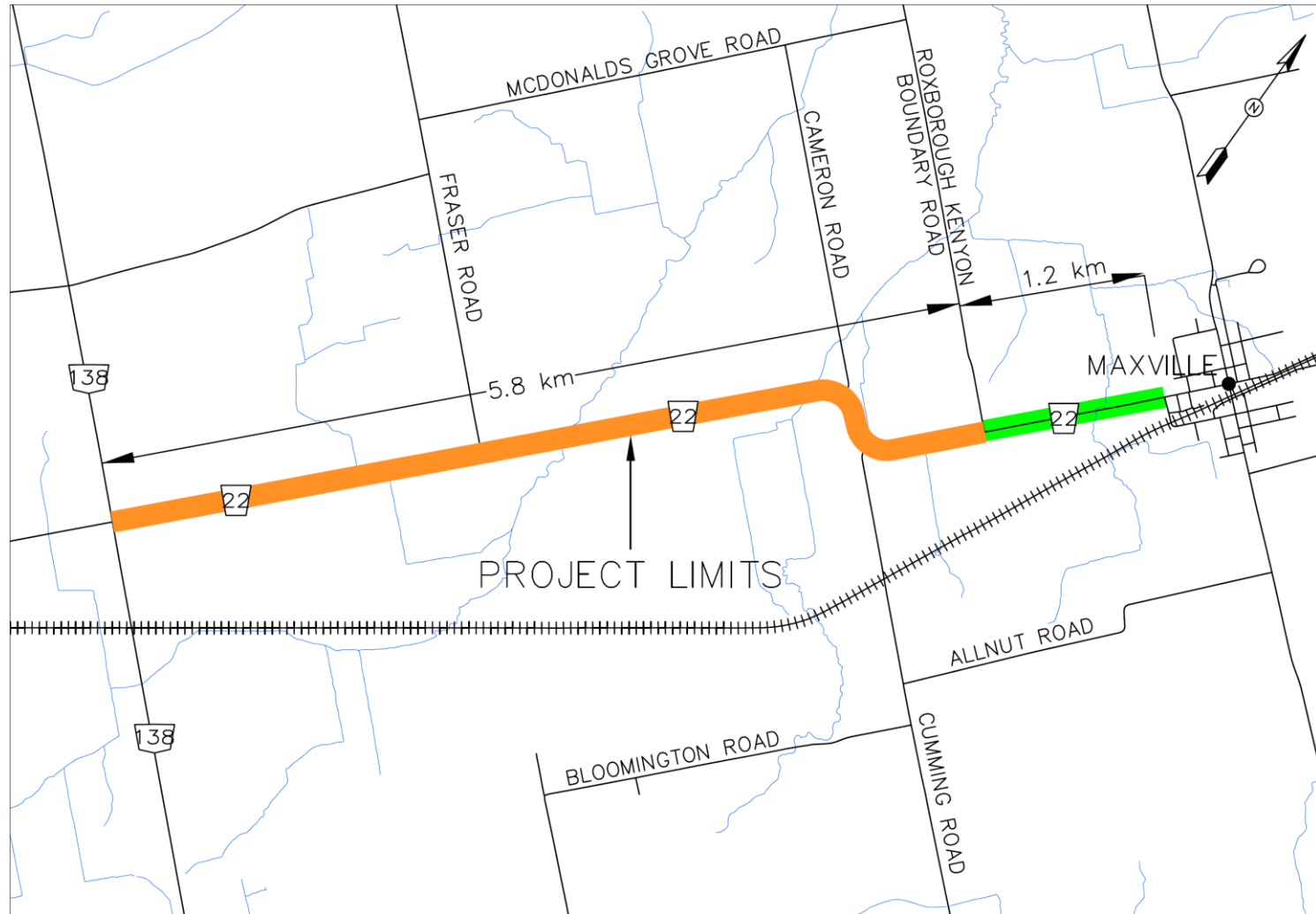
The United Counties of Stormont, Dundas and Glengarry has retained BT Engineering Inc. to undertake engineering services for the reconstruction and drainage improvements for County Road 22. The project will complete the design for the reconstruction including relocation of utilities (if required) and municipal drains to accommodate potential road widening.

Property acquisition is recommended for the reconstruction and drainage improvements and therefore the project has been elevated to a Schedule B Municipal Class Environmental Assessment project. Phases 1 and 2 are being completed to present the recommendations to the public. After completion of the EA process, a Project File will be produced. The Report will document key components of the study: need and justification; natural and socio-economic inventories; evaluation of alternatives; selection of the recommended alternative; and public and Indigenous Peoples consultation. The Project File will be made available for a 30-day public review of the Report.

Municipal Class EA Process



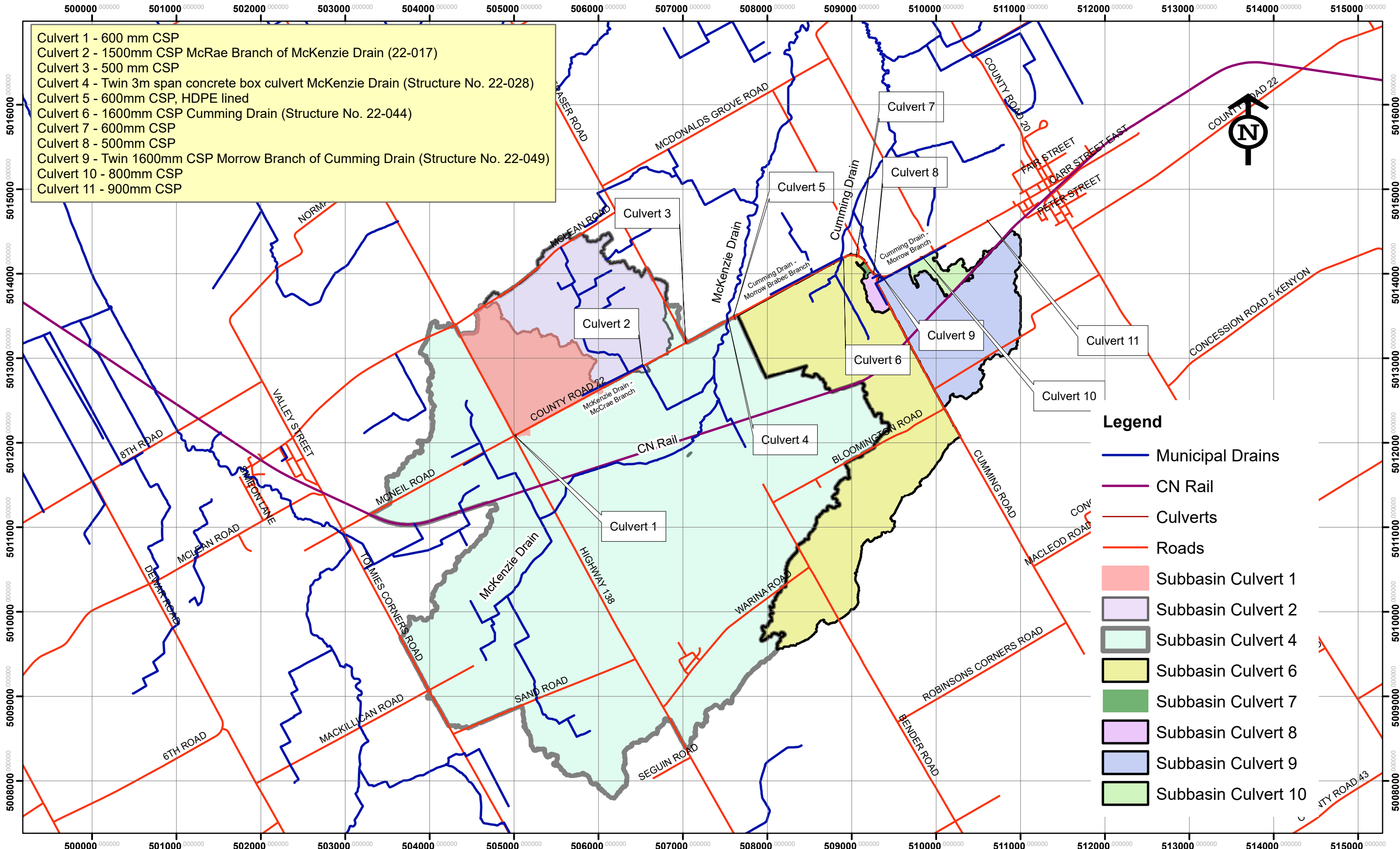
Project Limits



Legend:

Original Project Limits

Project Limit Extension based on Geotechnical Investigations



Culvert 1 - 600 mm CSP
 Culvert 2 - 1500mm CSP McRae Branch of McKenzie Drain (22-017)
 Culvert 3 - 500 mm CSP
 Culvert 4 - Twin 3m span concrete box culvert McKenzie Drain (Structure No. 22-028)
 Culvert 5 - 600mm CSP, HDPE lined
 Culvert 6 - 1600mm CSP Cumming Drain (Structure No. 22-044)
 Culvert 7 - 600mm CSP
 Culvert 8 - 500mm CSP
 Culvert 9 - Twin 1600mm CSP Morrow Branch of Cumming Drain (Structure No. 22-049)
 Culvert 10 - 800mm CSP
 Culvert 11 - 900mm CSP

- Legend**
- Municipal Drains
 - CN Rail
 - Culverts
 - Roads
 - Subbasin Culvert 1
 - Subbasin Culvert 2
 - Subbasin Culvert 4
 - Subbasin Culvert 6
 - Subbasin Culvert 7
 - Subbasin Culvert 8
 - Subbasin Culvert 9
 - Subbasin Culvert 10

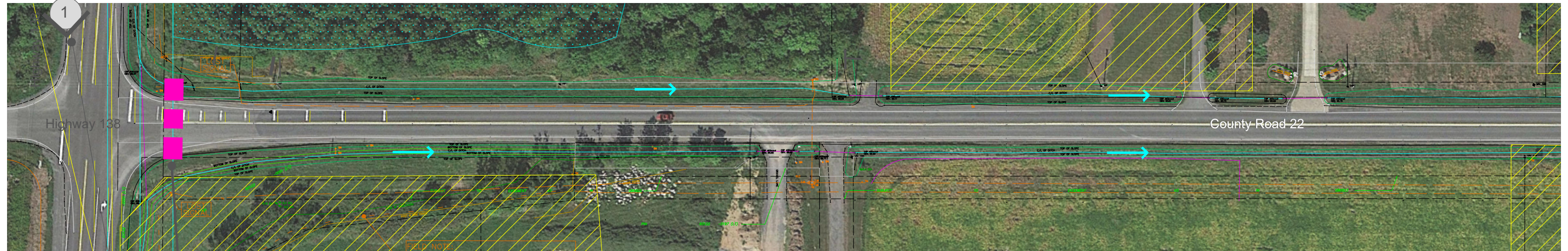
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SD&G CR 22 - DRAINAGE MOSAIC

Drainage Map 1

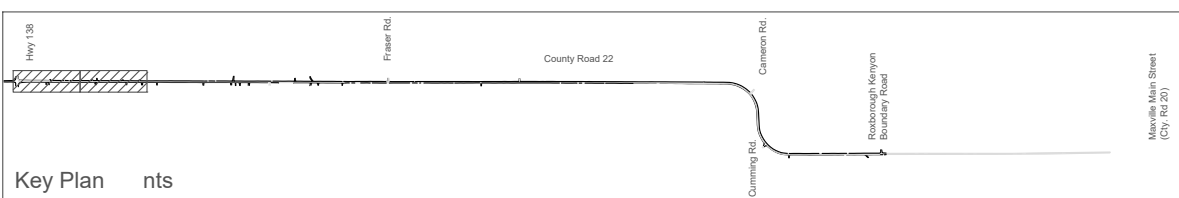
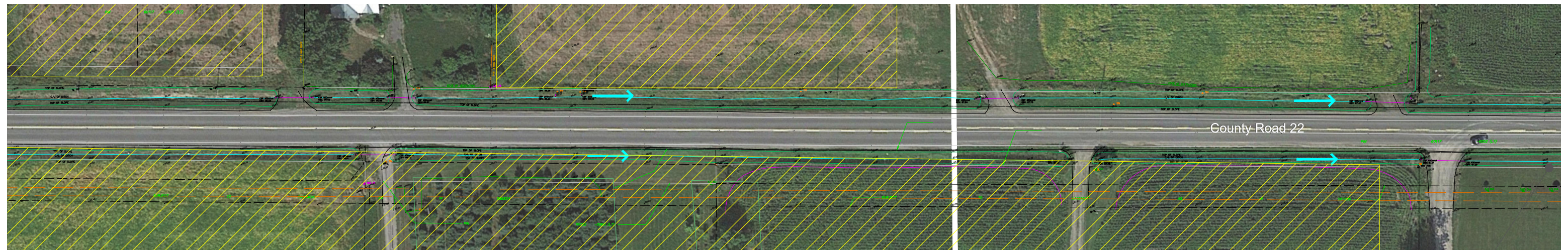
County Road 22

Stormont Dundas and Glengarry







Culvert 1:
600 mm Cross Culvert

1. Looking south



Legend

-  Ditch and direction of flow
-  Municipal Drain and direction of flow
-  Wetland
-  Tile Drain

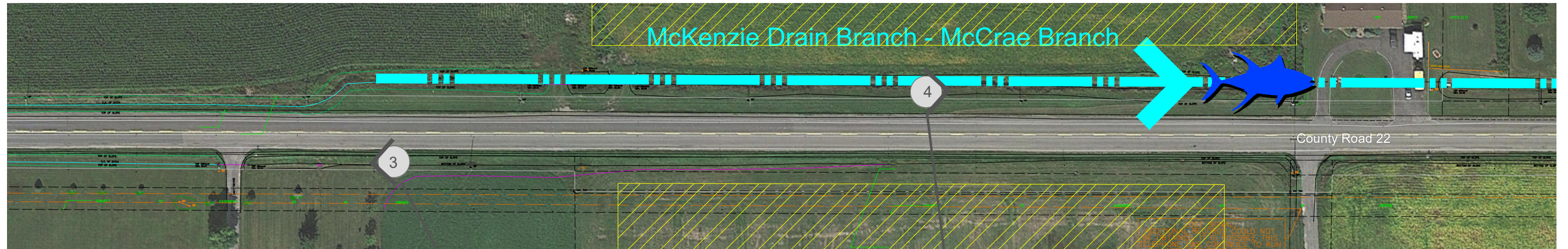


2. Unknown outlet

Drainage Map 2

County Road 22

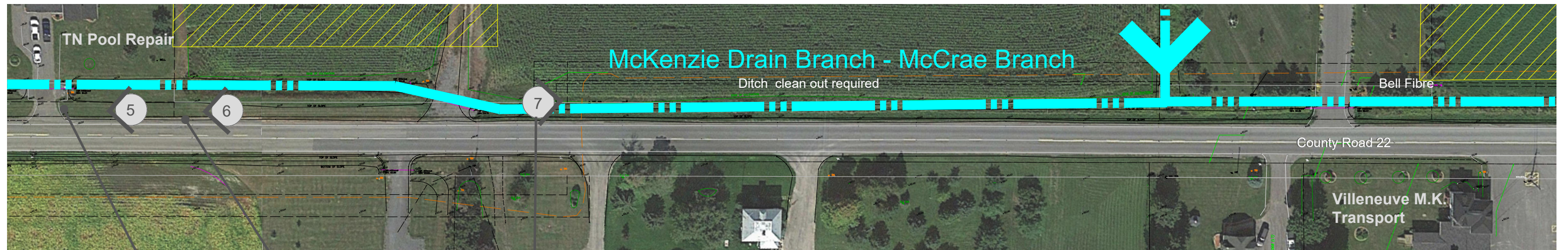
Stormont Dundas and Glengarry



3. Buried Bell, south side



4. South side looking east



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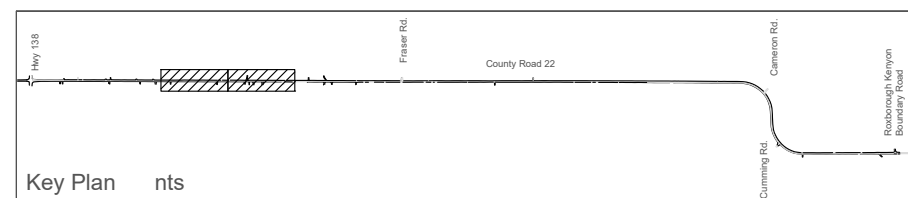
5. North side looking west at 17449 CR 22



6. North side looking west at 17449 CR 22







7. North side looking east along municipal drain



Key Plan nts

Legend

-  Ditch and direction of flow
-  Municipal Drain and direction of flow
-  Tile Drain
-  Fish

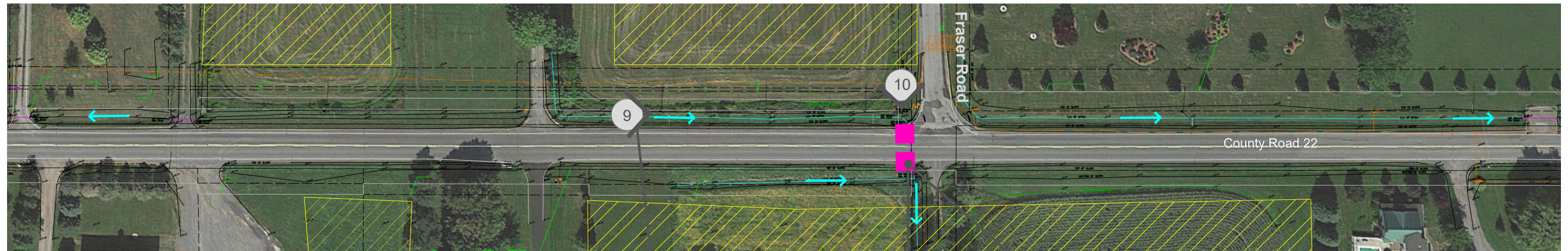
Drainage Map 3

County Road 22

Stormont Dundas and Glengarry



8. Fish
Culvert 2: CSP 1500 mm Ø



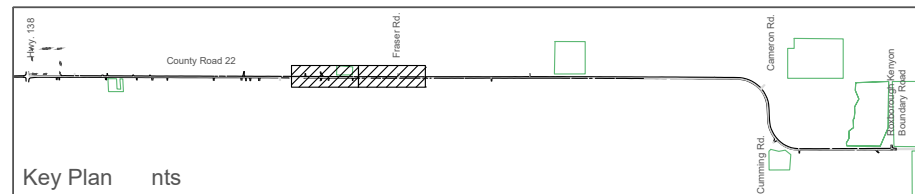
9 Looking east
Top of the crest curve



10. Culvert 3:
CSP 500 mm Ø



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Key Plan

Legend



Ditch and direction of flow



Municipal Drain and
direction of flow



Tile Drain



Fish

Drainage Map 4

County Road 22

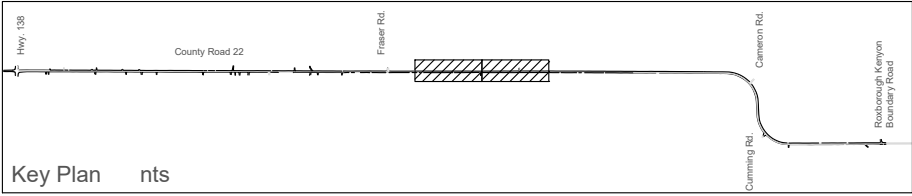
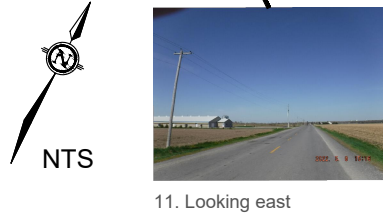
Stormont Dundas and Glengarry








Culvert 4:
Twin box culverts
38 m Steel Beam
3.3 m wide x 2.4 m ht.



Culvert 5:
600 mm Ø High-density polyethylene (HDPE)



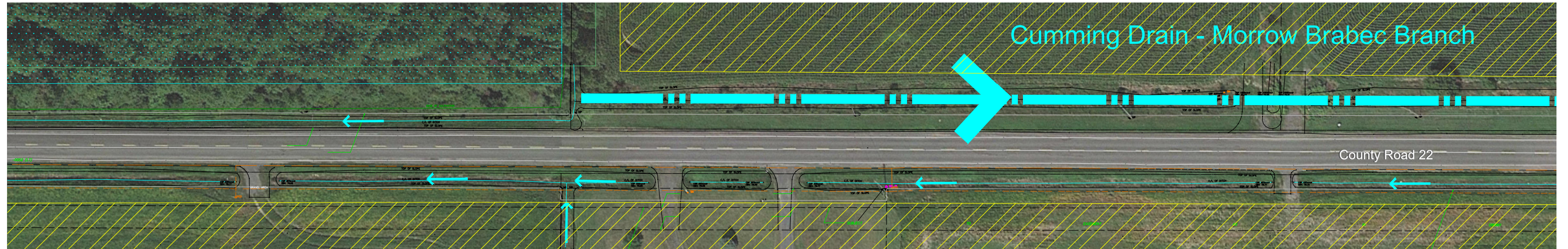
Legend

-  Ditch and direction of flow
-  Municipal Drain and direction of flow
-  Tile Drain
-  Wetland
-  Fish

Drainage Map 5

County Road 22

Stormont Dundas and Glengarry



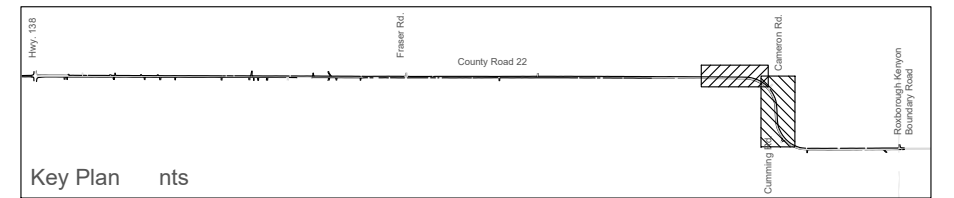
Legend

-  Ditch and direction of flow
-  Municipal Drain and direction of flow
-  Wetland
-  Tile Drain

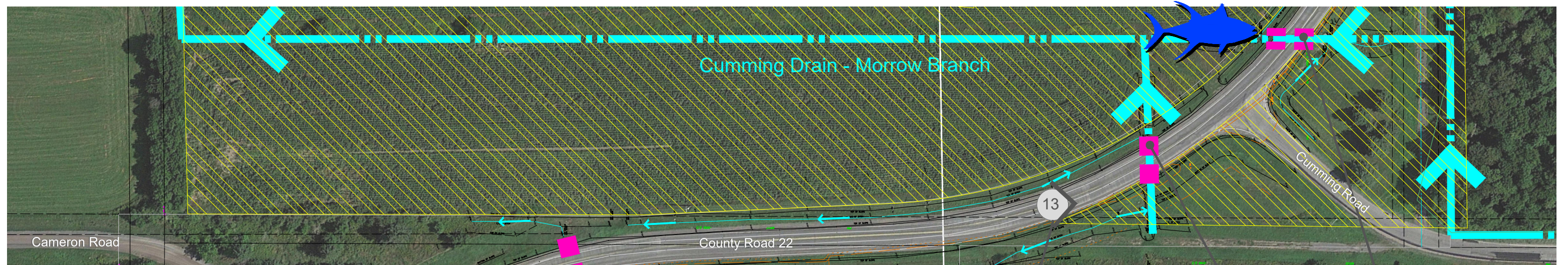
Drainage Map 6

County Road 22

Stormont Dundas and Glengarry



Culvert 6:
1600 mm Ø CSP



Culvert 7: 500 mm Ø CSP



12. Looking south-east



13. Looking south-east

Spur







Culvert 8:
500 mm Ø CSP plus liner



Culvert 9:
Twin 1600 mm Ø CSP

Legend

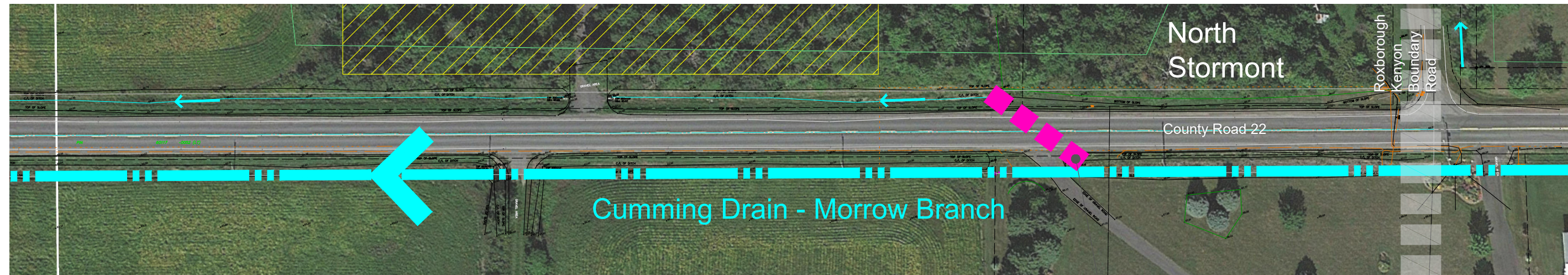
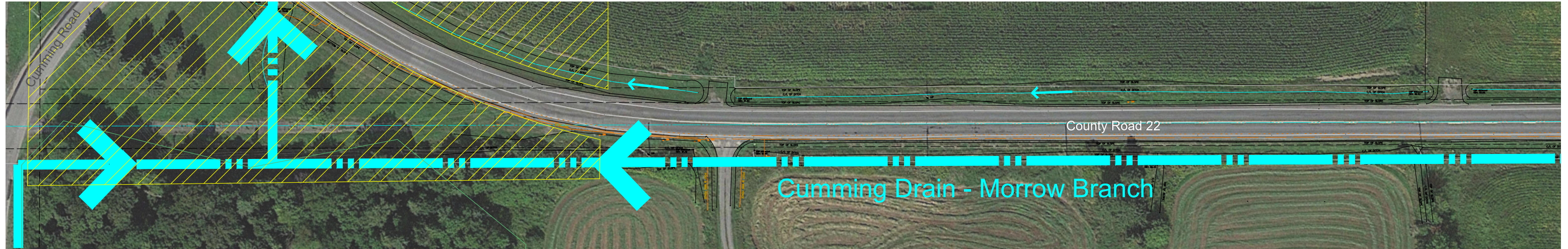
-  Ditch and direction of flow
-  Municipal Drain and direction of flow
-  Tile Drain
-  Fish

NTS

Drainage Map 7





County Road 22

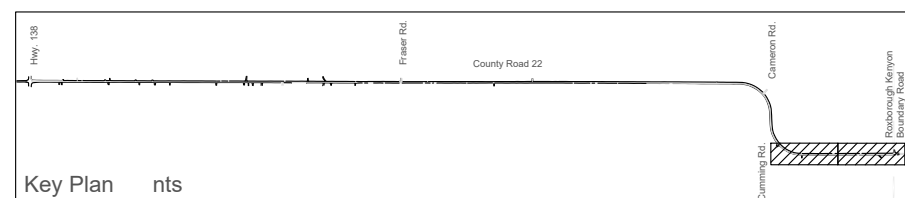
Stormont Dundas and Glengarry



Culvert 10:
800 mm Ø CSP

Legend

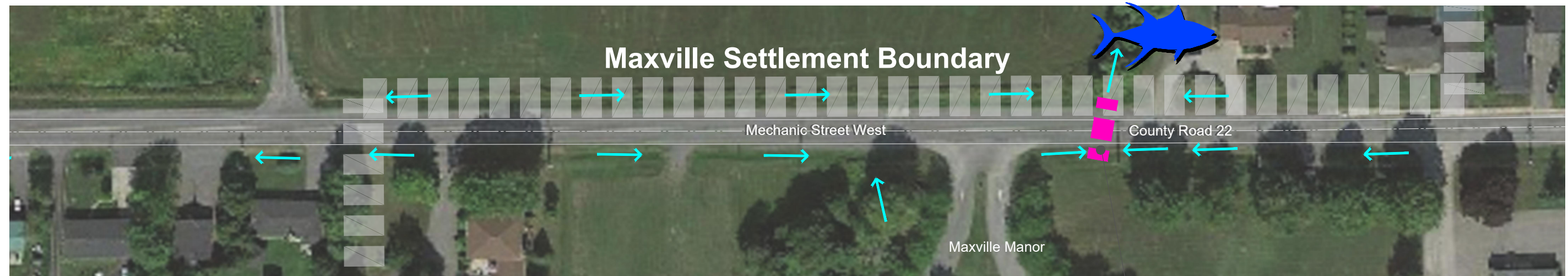
-  Ditch and direction of flow
-  Municipal Drain and direction of flow
-  Tile Drain
-  Municipal Boundary



Drainage Map 8

County Road 22

Stormont Dundas and Glengarry







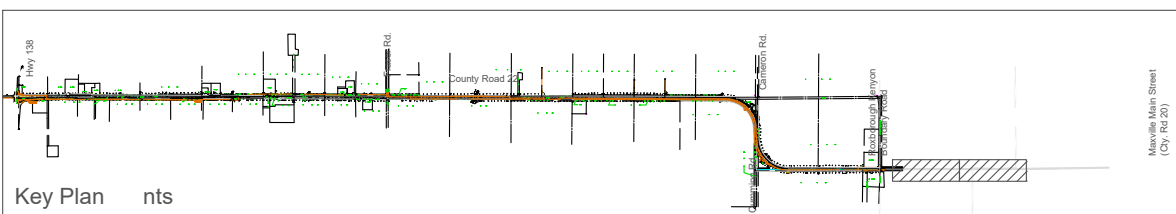
Culvert 11:
900 mm Ø CSP



Fish

Legend

-  Ditch and direction of flow
-  Municipal Drain and direction of flow
-  Tile Drain
-  Municipal Boundary



Key Plan



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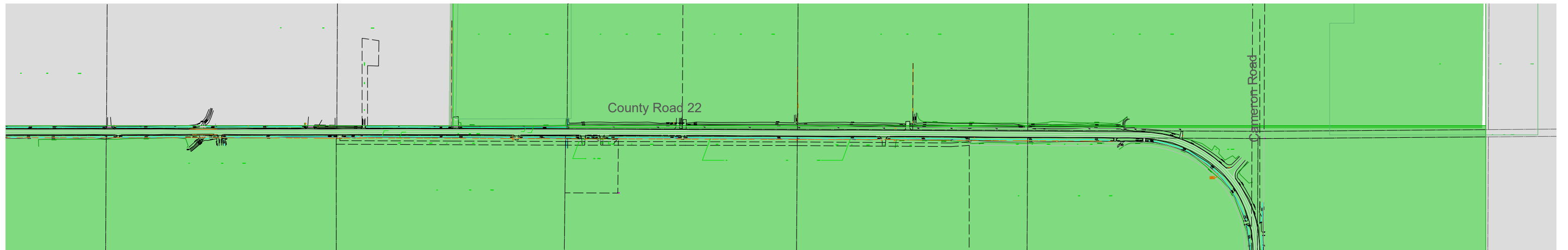
Existing Land Use

County Road 22

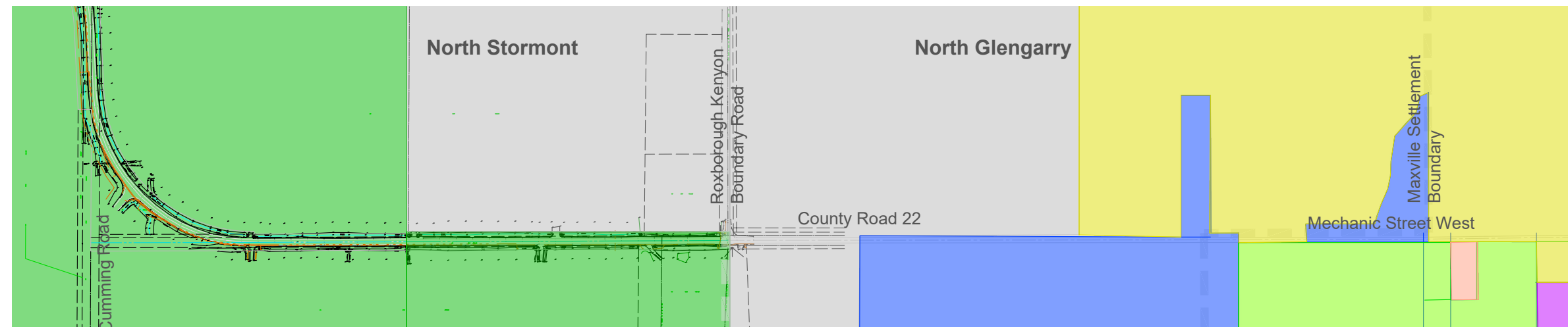
Stormont Dundas and Glengarry



Map 1












Map 2



Map 3

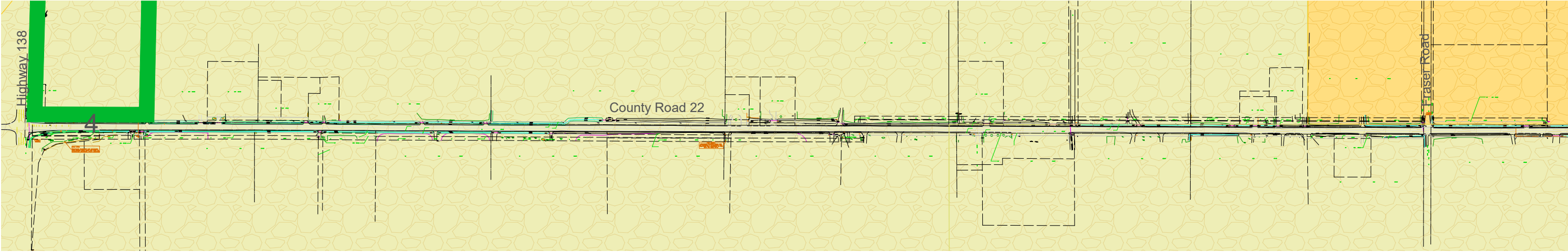
Legend

-  Rural
-  Agriculture
-  Highway Commercial
-  Residential
-  Agriculture Restricted
-  Village Core Area
-  General Industrial
-  Institutional
-  Municipal Boundary

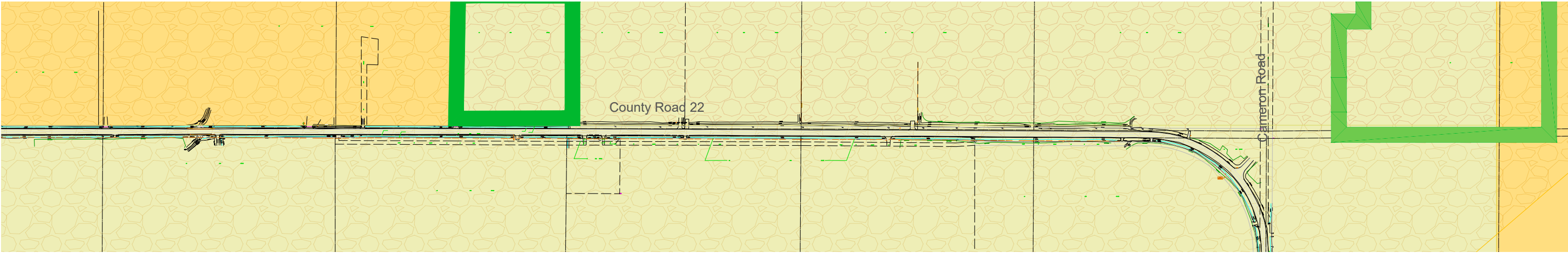


Official Plan County Road 22

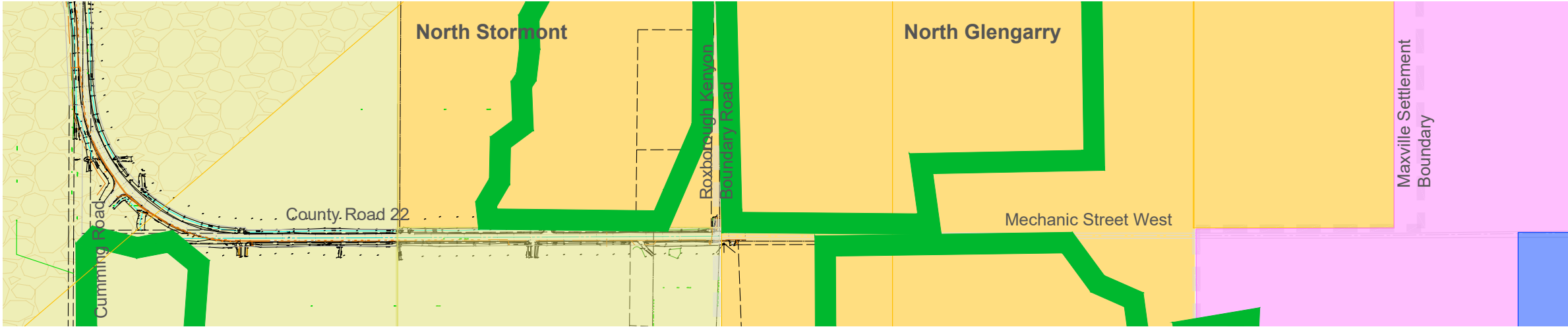
Stormont Dundas and Glengarry



Map 1



Map 2




Map 3

Legend

- Rural District
- Agriculture Resource Lands
- Residential District
- Employment District
- Extractive Resource Land (Bedrock Overlay)
- Woodlands
- Municipal Boundary

Sources:

1. Land Use Schedule A3, Township of North Stormont
2. Constraints Plan Schedule B3 Township of North Stormont
3. Land Use Schedule A5, Township of North Glengarry
4. Constraints Plan Schedule B5 North Glengarry
5. Schedule A5b - Maxville

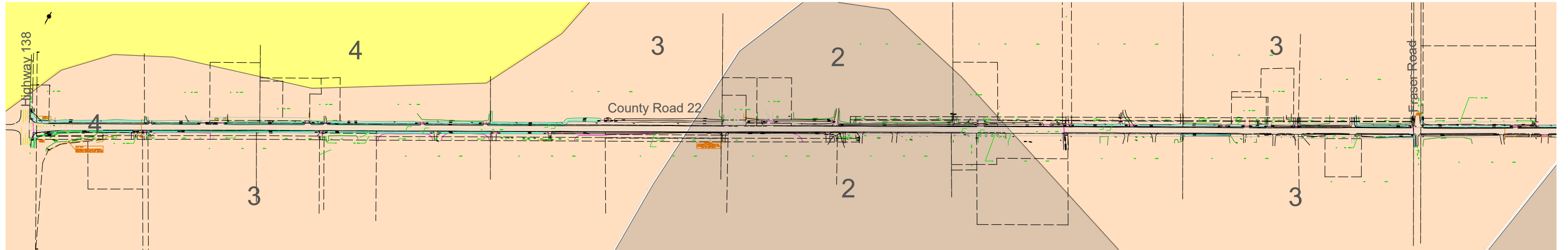


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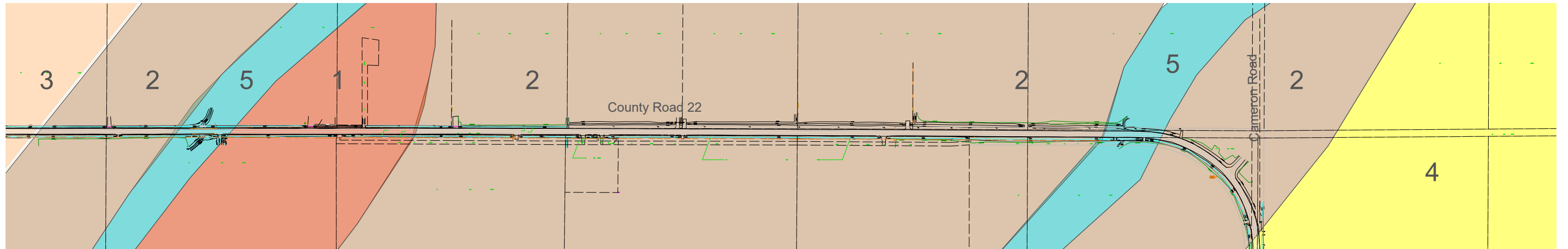
Soils

County Road 22

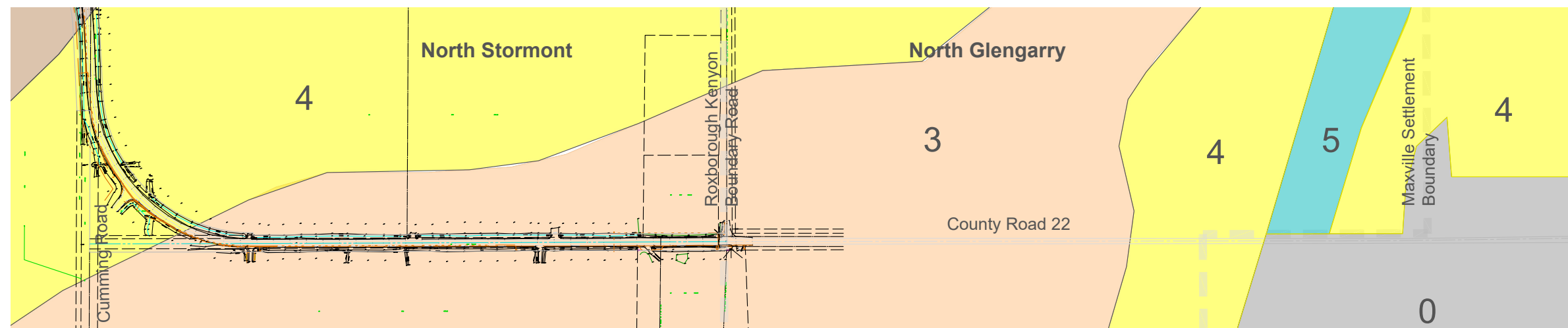
Stormont Dundas and Glengarry



Map 1



Map 2



Legend

- 0-5 Soil Capability for agriculture
- Osgoode (Silt Loam) /Mountain (Sandy Loam) /Manotick (Sandy Loam)
- Kars (Gravelly Sandy Loam)
- Eroded Channel
- Archigan (Gravel and Sandy Loam)
- Carp (Clay Loam)
- Urban Area
- Municipal Boundary



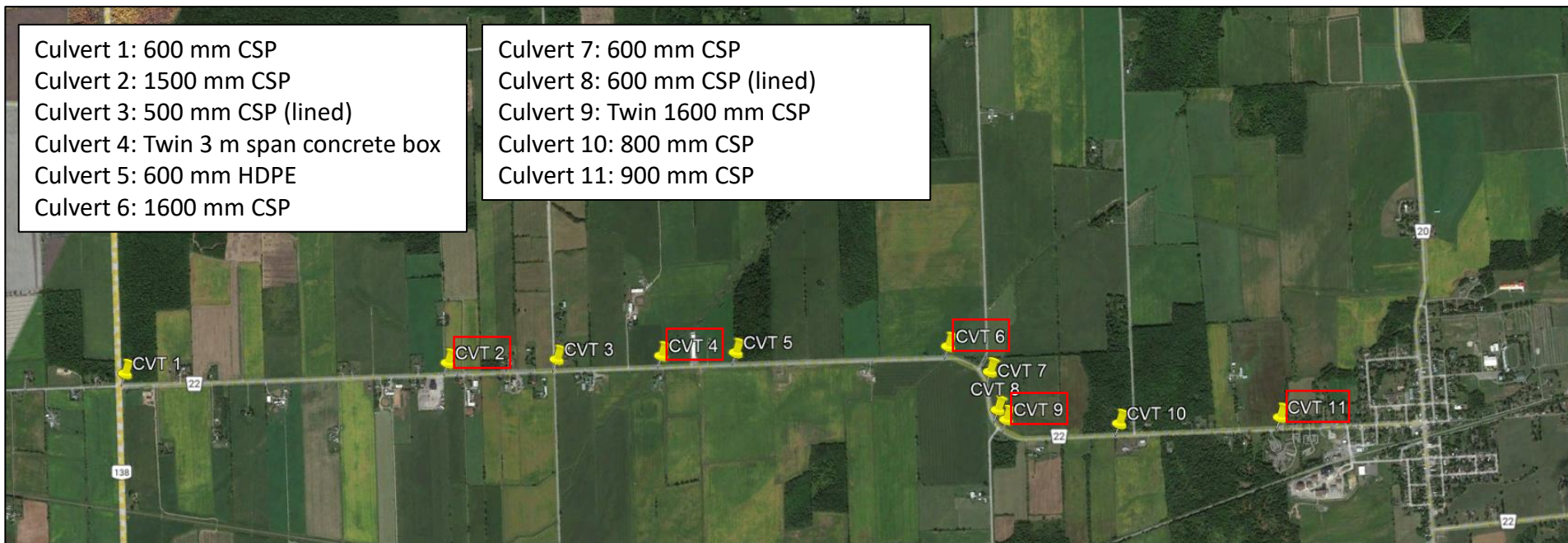
Natural Environment and Cross Culverts

- Fish habitat in roadside ditches (not shown), unnamed tributaries, MacKenzie Drain and the Cumming Drain.
- Perched and damaged culverts inhibiting fish passage.
- Erosion leading to sedimentation of fish habitat.
- Unevaluated wetland pockets throughout the Project Area.
- Woodlands (not significant) identified by the Official Plan.



Culvert 1: 600 mm CSP
Culvert 2: 1500 mm CSP
Culvert 3: 500 mm CSP (lined)
Culvert 4: Twin 3 m span concrete box
Culvert 5: 600 mm HDPE
Culvert 6: 1600 mm CSP

Culvert 7: 600 mm CSP
Culvert 8: 600 mm CSP (lined)
Culvert 9: Twin 1600 mm CSP
Culvert 10: 800 mm CSP
Culvert 11: 900 mm CSP



 Direct / Indirect Fish Habitat

Photo Log of Cross Culverts



Culvert #1: Damaged, 600 mm CSP immediately east of Highway 138. Proposed to be replaced.



Culvert #2: Corroded, 1500 mm CSP west of 17515 CR 22. Proposed to be replaced.



Culvert #3: Lined and perched 500 mm CSP, west of Fraser Road. Proposed to be replaced.



Culvert #4: Twin box culverts conveying the MacKenzie Municipal Drain. Not proposed for replacement.



Culvert #5: 600 mm HDPE pipe. Not proposed for replacement.



Culvert #6: Damaged, 1600 mm CSP with erosion issues conveying Cumming Drain. Proposed to be replaced.

Photo Log of Cross Culverts



Culvert #7: Lined, 600 mm CSP. Proposed to be replaced.



Culvert #8: Lined 600 mm CSP, 40 m west of Cumming Road. Proposed to be replaced.



Culvert #9: Corroded, twin 1600 mm CSPs conveying the Morrow Branch of the Cumming Drain. Proposed to be replaced.



Culvert #10: 800 mm CSP. Proposed to be replaced.



Culvert #11: Perched 900 mm CSP, east of the Maxville Manor. Not proposed for replacement. Recommend river run rock outlet.

Preliminary Design Alternatives

Three alternatives are being reviewed for the back-to-back curve improvements, as shown on the following exhibits:

- Alternative 1: Existing alignment with widened shoulders
- Alternative 2: Existing alignment with fully paved shoulder widening through curves and guiderail (recommended)
- Alternative 3: Curve realignment to flatten curves

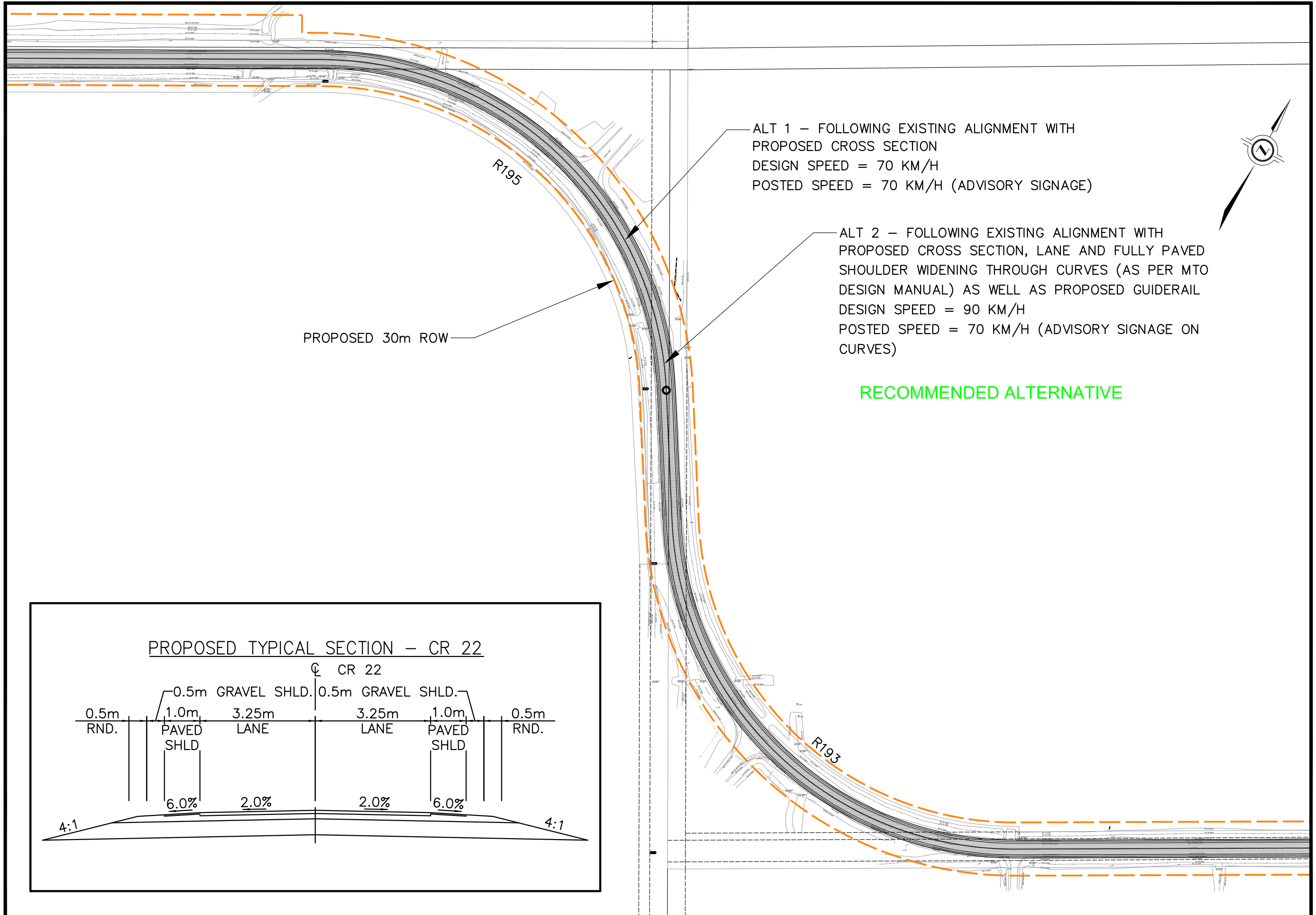
Three cross section alternatives are being reviewed for improvements:

- Alternative A: Widen to the north
- Alternative B: Widen to the south
- Alternative C: Widen on centre (recommended to widen to a 30 m right-of-way with equal property acquisition)

Intersection operational improvements are being considered at Cummings Road:

- Left-turn lane (not warranted)
- Slip-around lane (recommended)

**CR 22 BACK-TO-BACK CURVE FOLLOWING EXISTING
ALIGNMENT - ALTERNATIVES 1 & 2**

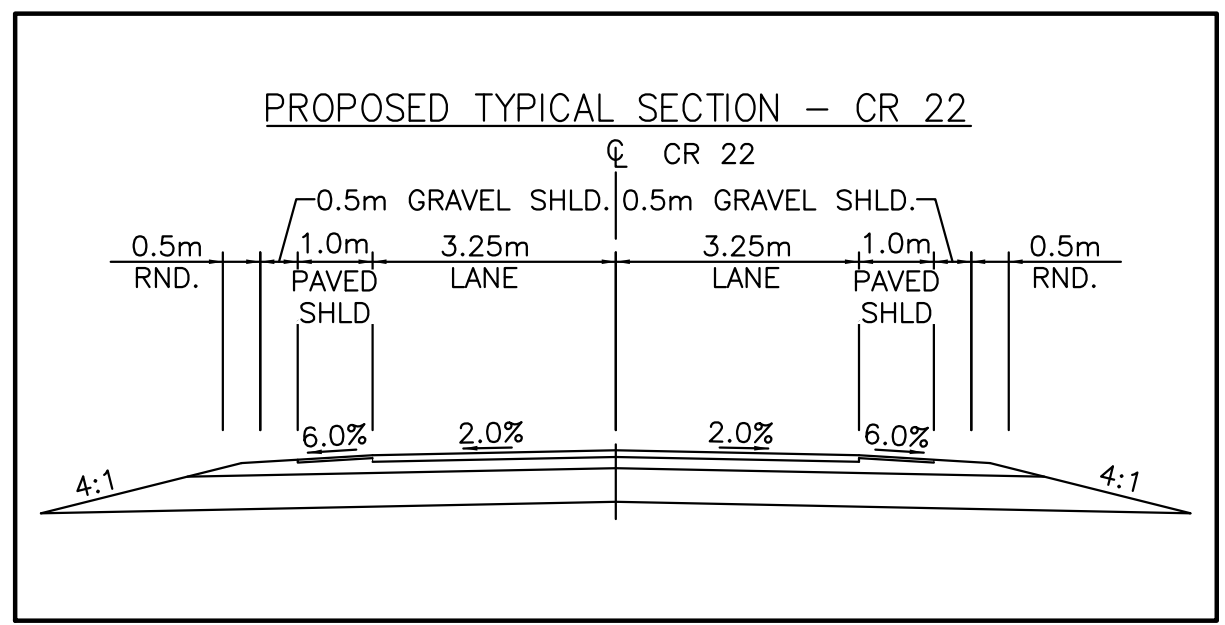


ALT 1 – FOLLOWING EXISTING ALIGNMENT WITH PROPOSED CROSS SECTION
DESIGN SPEED = 70 KM/H
POSTED SPEED = 70 KM/H (ADVISORY SIGNAGE)

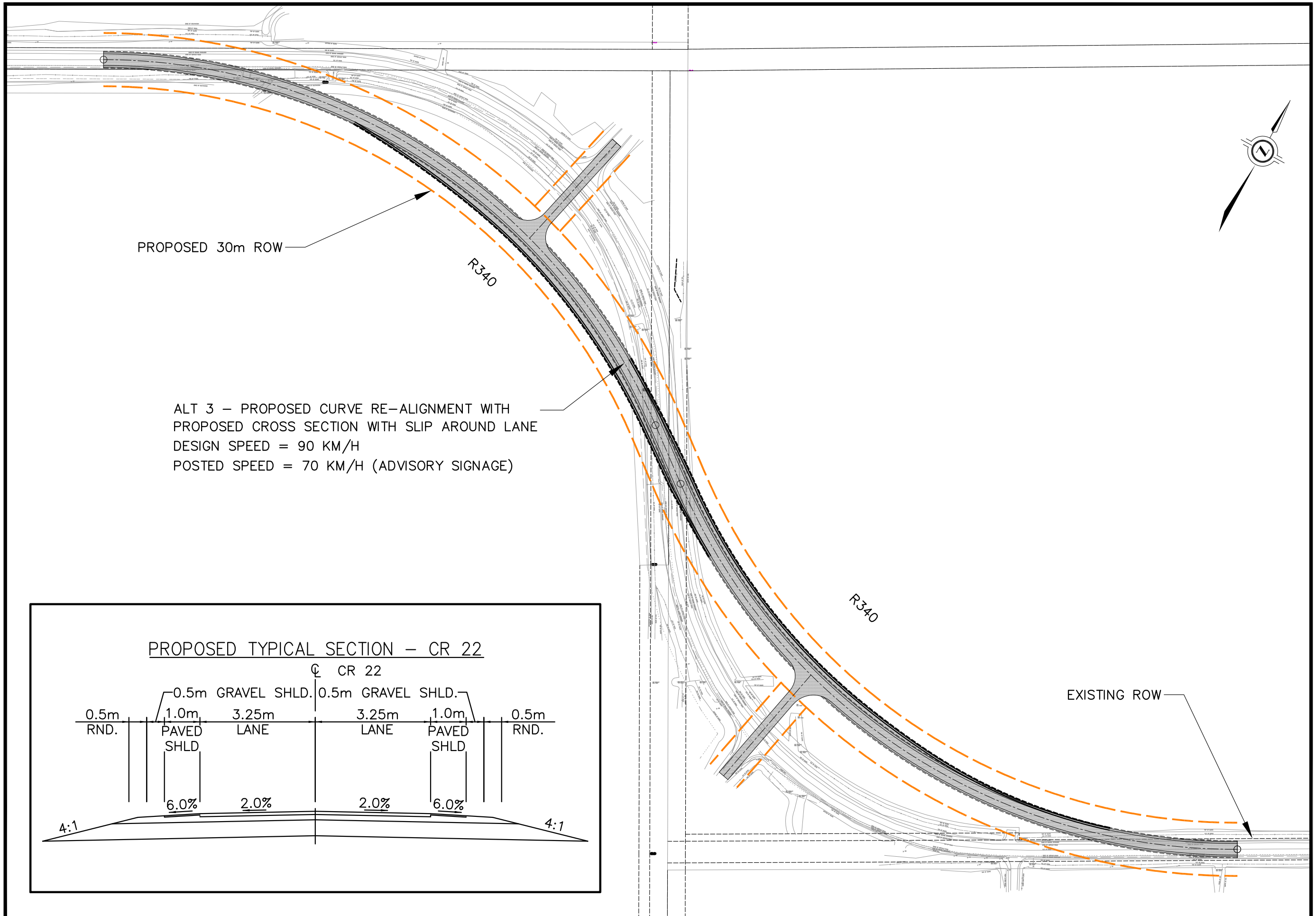
ALT 2 – FOLLOWING EXISTING ALIGNMENT WITH PROPOSED CROSS SECTION, LANE AND FULLY PAVED SHOULDER WIDENING THROUGH CURVES (AS PER MTO DESIGN MANUAL) AS WELL AS PROPOSED GUIDERAIL
DESIGN SPEED = 90 KM/H
POSTED SPEED = 70 KM/H (ADVISORY SIGNAGE ON CURVES)

PROPOSED 30m ROW

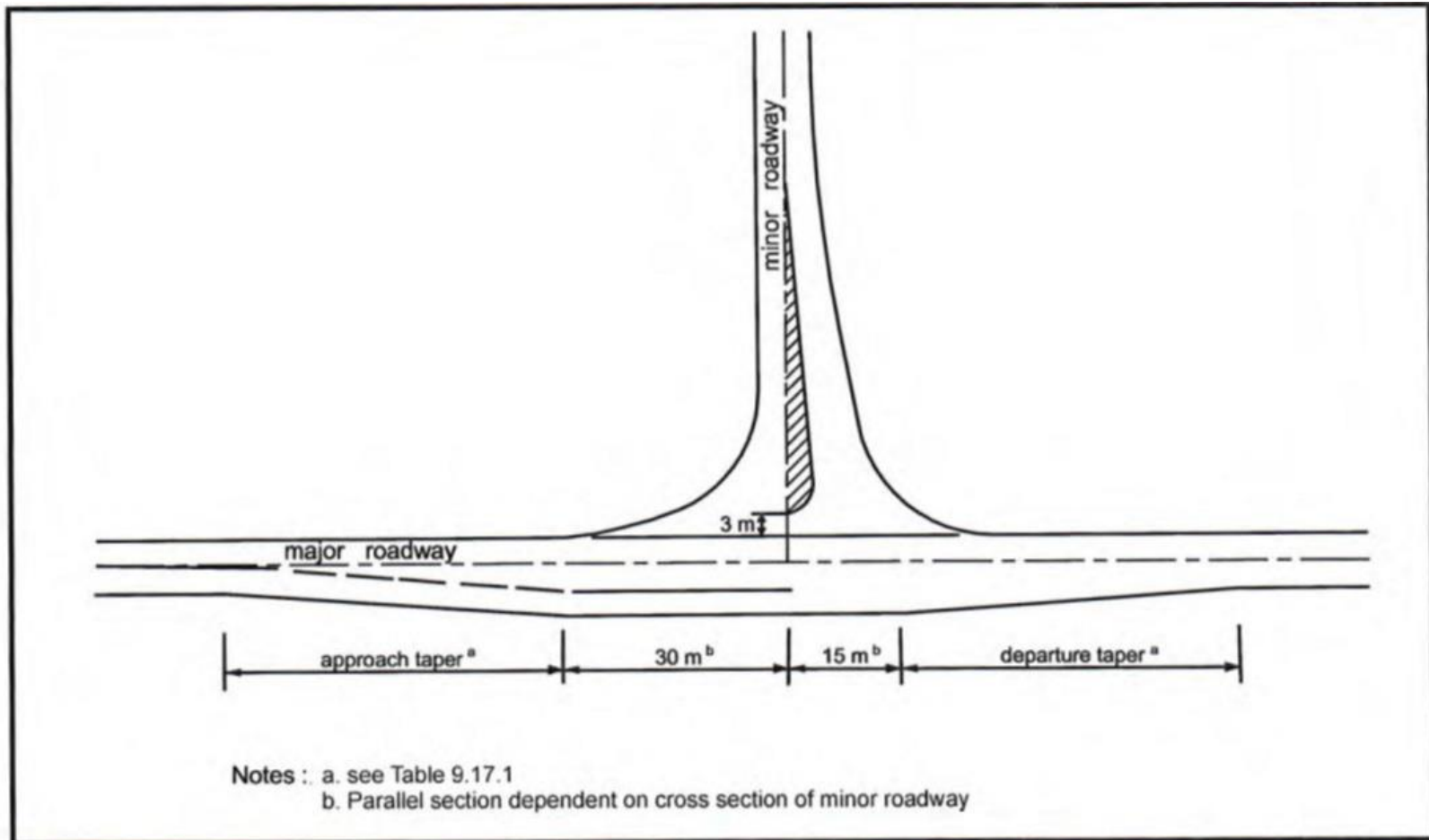
RECOMMENDED ALTERNATIVE



CR 22 BACK-TO-BACK CURVE REALIGNMENT - ALTERNATIVE 3



Slip-around Lane at Cummings Road and Cameron Road



Pavement Rehabilitation and Reconstruction Alternatives

The following pavement alternatives are being considered:

- Pavement removal and resurfacing
- Pulverizing with minor grade raise and resurfacing
- Full reconstruction with larger grade raise

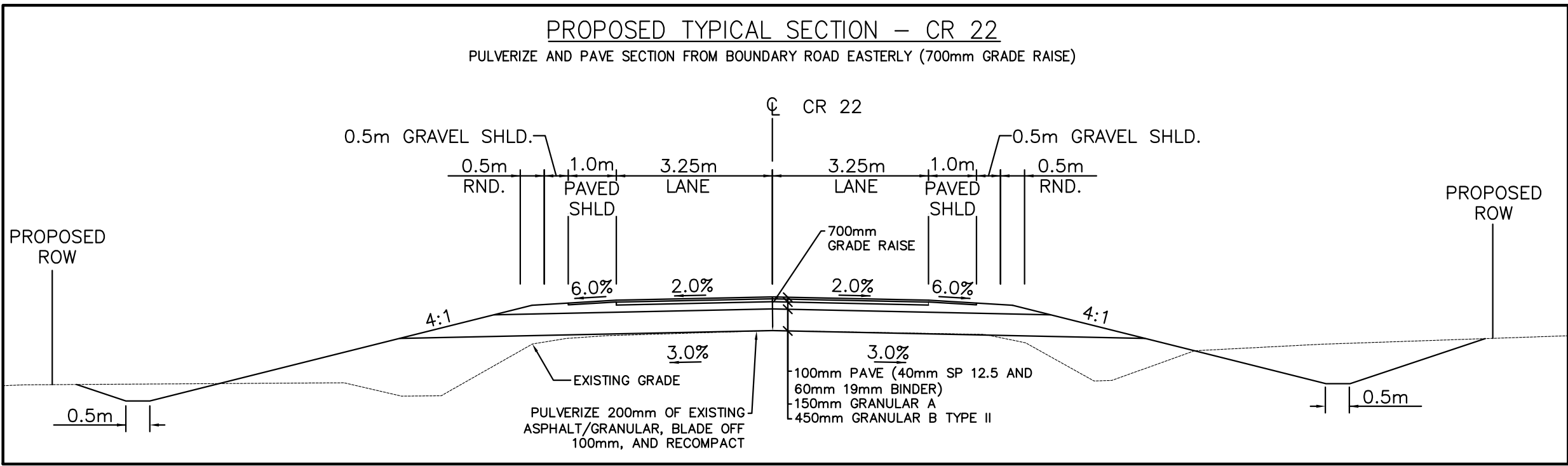
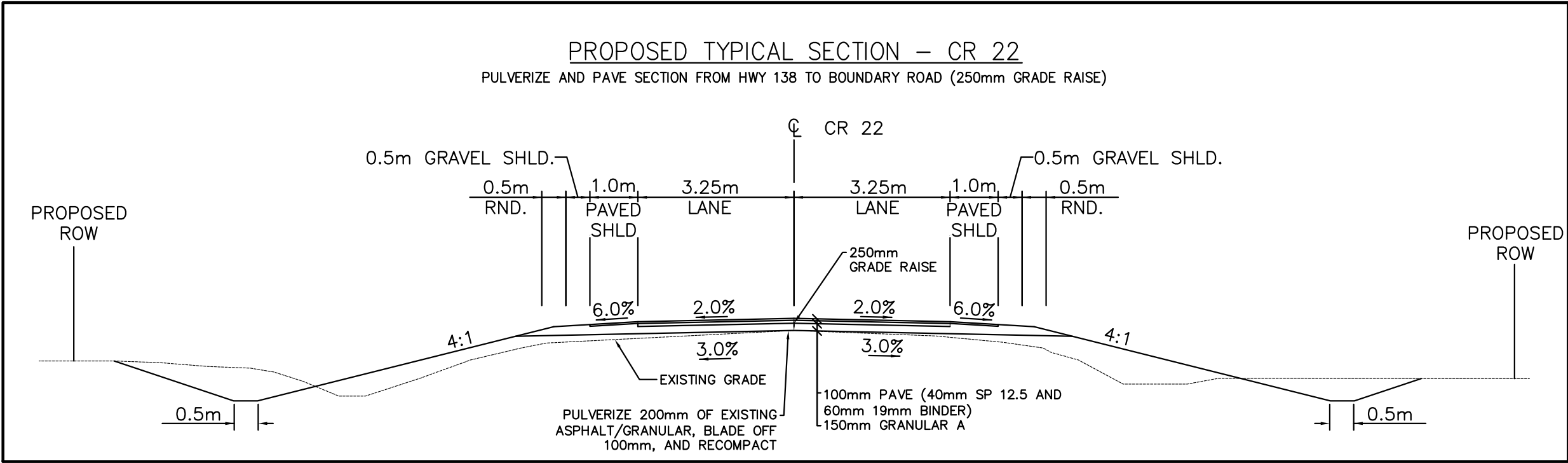
Pulverizing with a minor grade raise and resurfacing is recommended from Highway 138 to the Kenyon Roxborough Boundary Road. See the following exhibit.

Reconstruction with grade raise is recommended from the Kenyon Roxborough Boundary Road to the urban area of Maxville. See the following exhibit.

Reconstruction and Drainage Improvement Plan No.10

County Road 22

Stormont, Dundas and Glengarry



Recommended Improvements

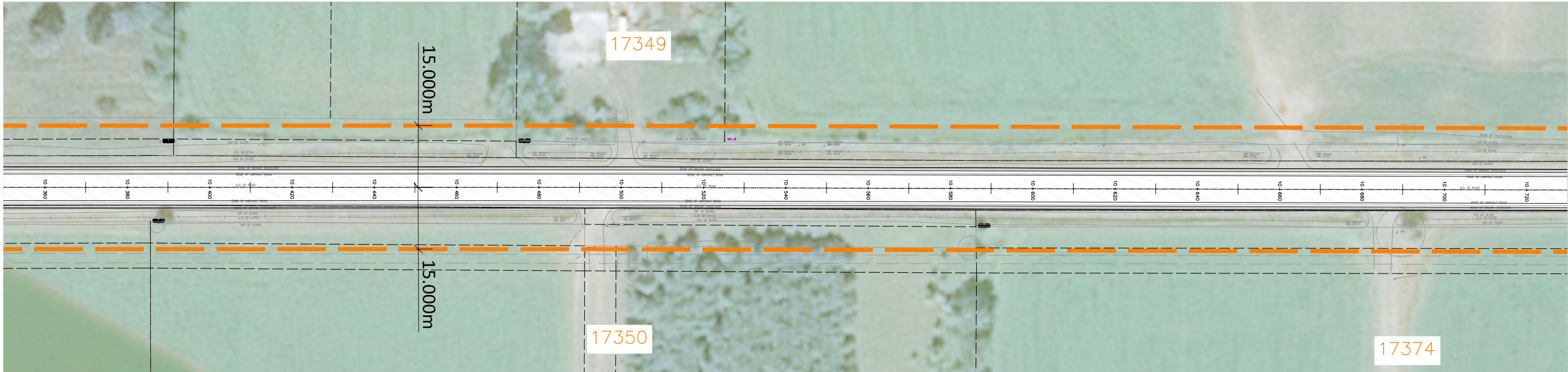
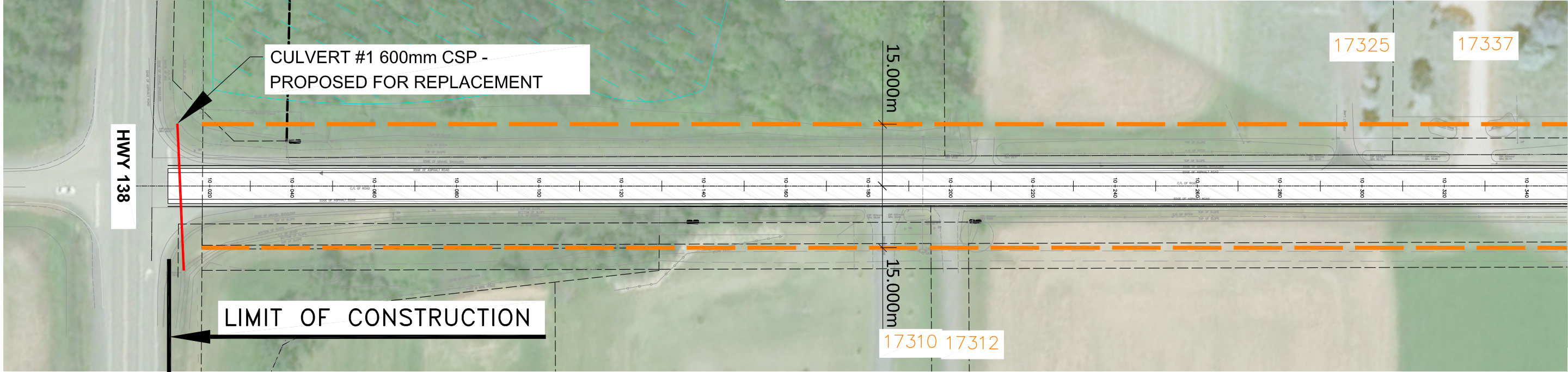
The following improvements are recommended:

- Pavement rehabilitation and standard County cross section
- In the area of the back-to-back curves, improvements include fully paved shoulders, lane widening and guiderail
- Relocation of the municipal drains
- Slip-around lane at Cummings Road and Cameron Road

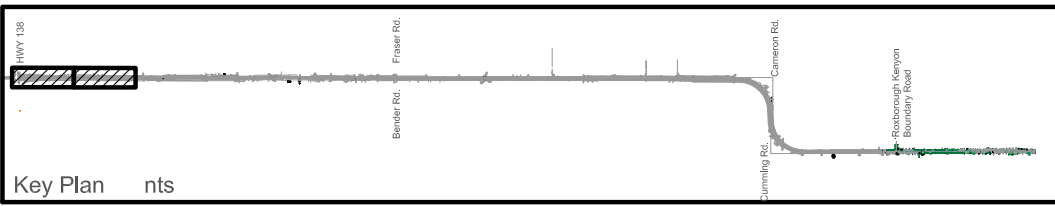
Reconstruction and Drainage Improvement Plan No.1






County Road 22

Stormont, Dundas and Glengarry



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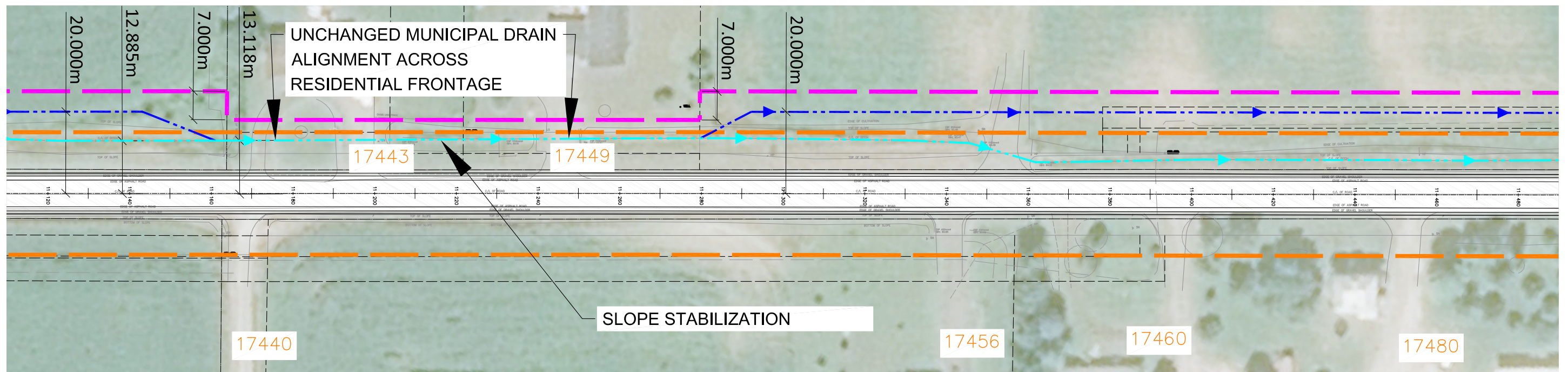
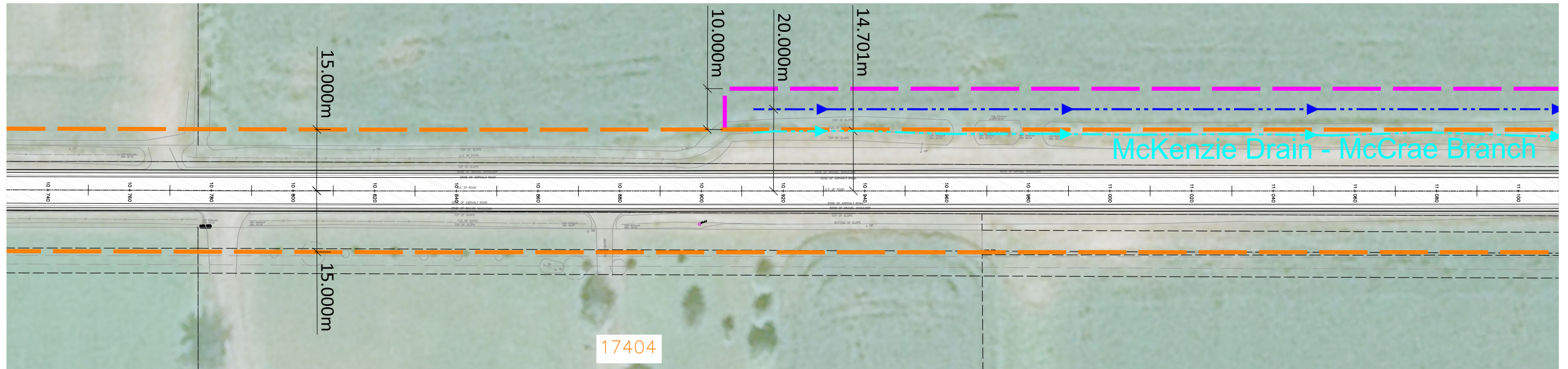


- Legend
-  Wetland
 -  Proposed 30m Right of Way
 -  Proposed 10m Easement
 -  Existing Municipal Drain and Direction of Flow
 -  Proposed Municipal Drain Relocation and direction of flow

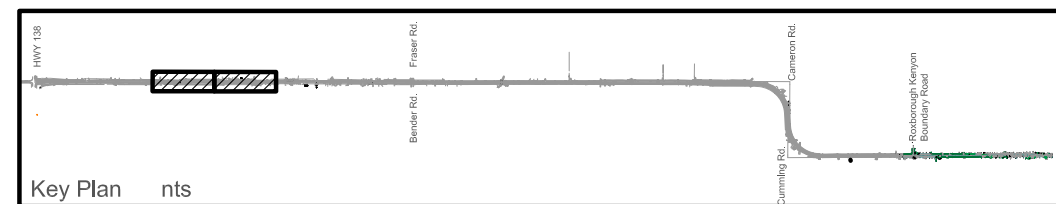
Reconstruction and Drainage Improvement Plan No.2

County Road 22

Stormont, Dundas and Glengarry



Scale 1:1000



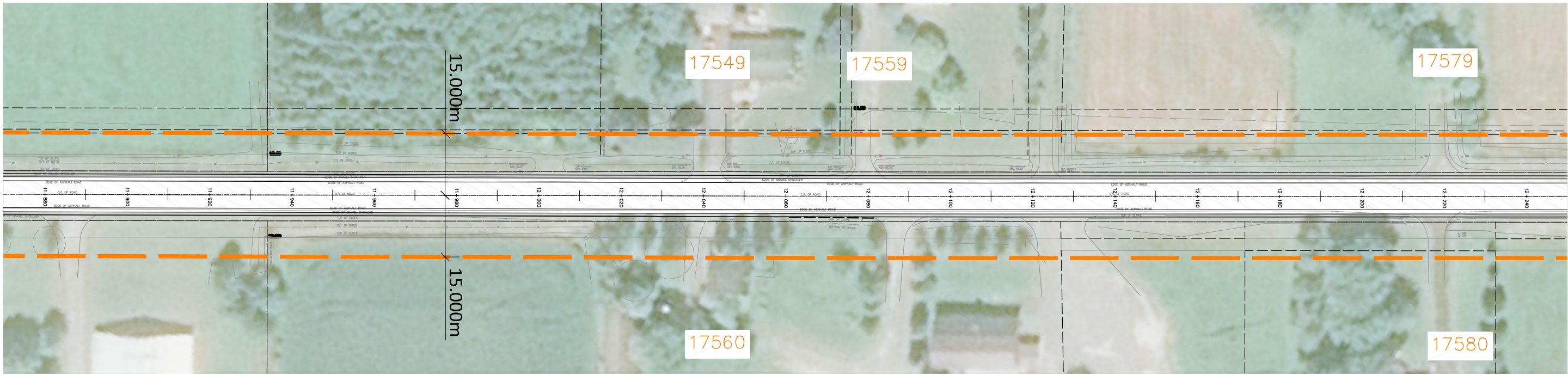
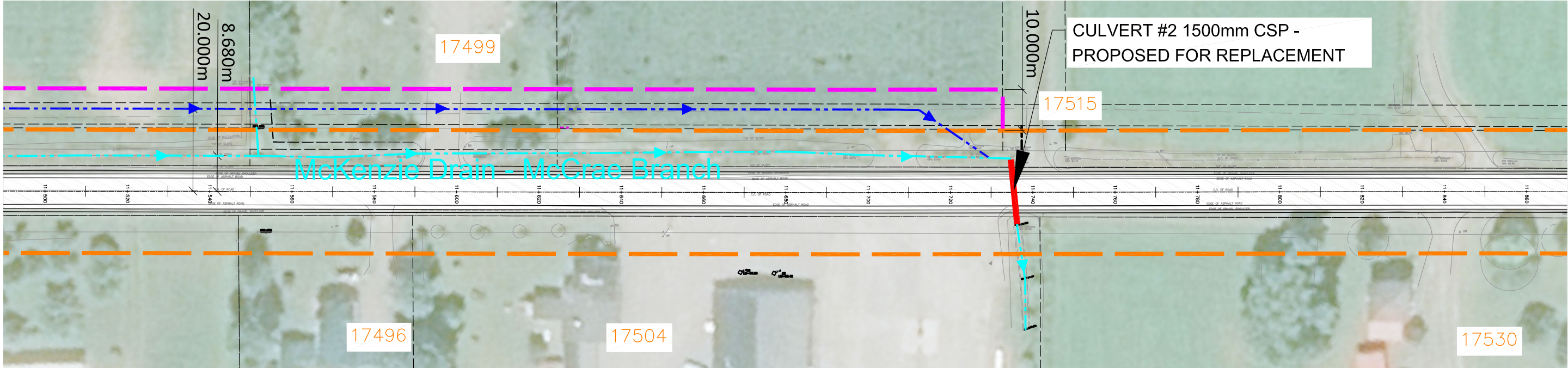
Legend

- Proposed 30m Right of Way
- Proposed 10m Easement
- Existing Municipal Drain and Direction of Flow
- Proposed Municipal Drain Relocation and direction of flow

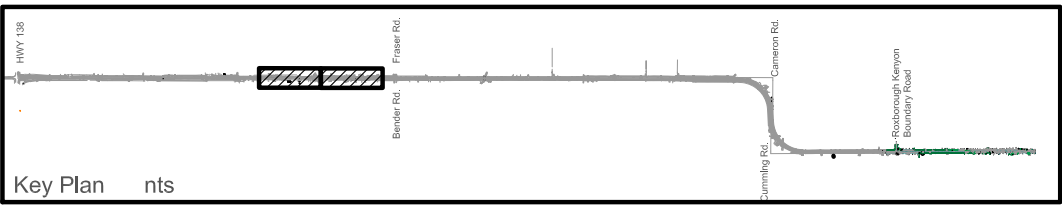
Reconstruction and Drainage Improvement Plan No.3

County Road 22

Stormont, Dundas and Glengarry



Scale 1:1000

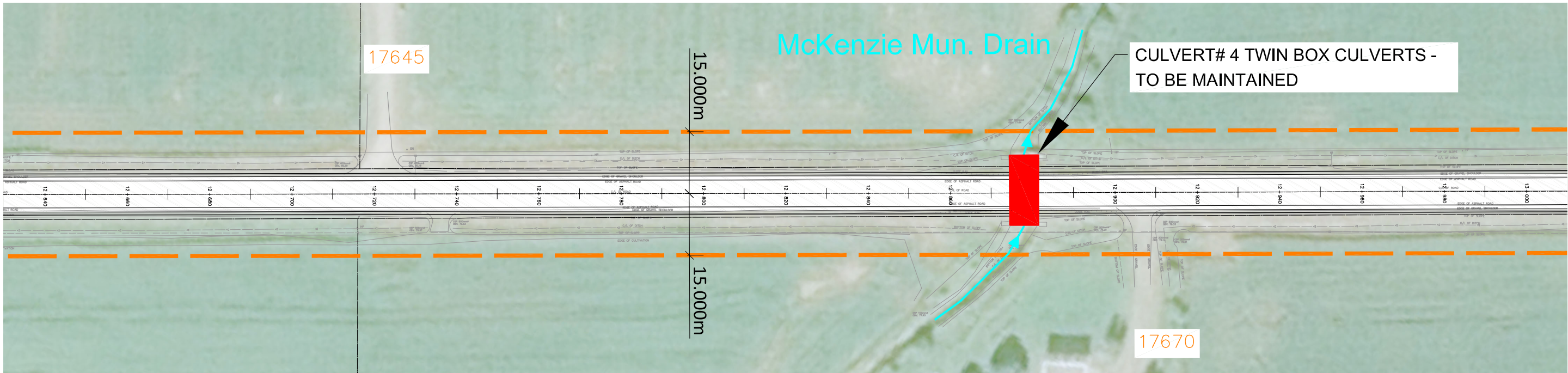
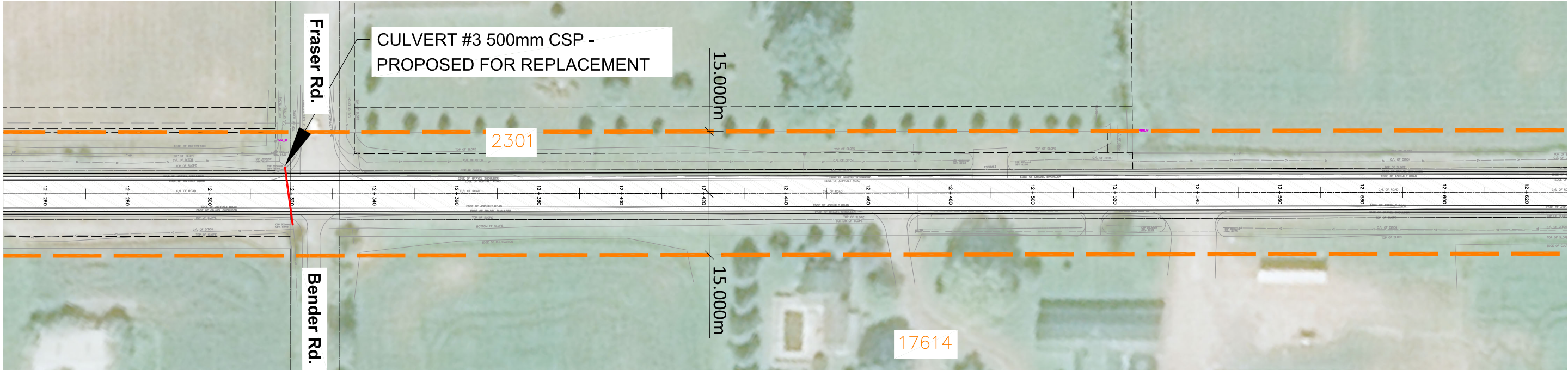


- Legend
- Proposed 30m Right of Way
 - Proposed 10m Easement
 - Existing Municipal Drain and Direction of Flow
 - Proposed Municipal Drain Relocation and direction of flow

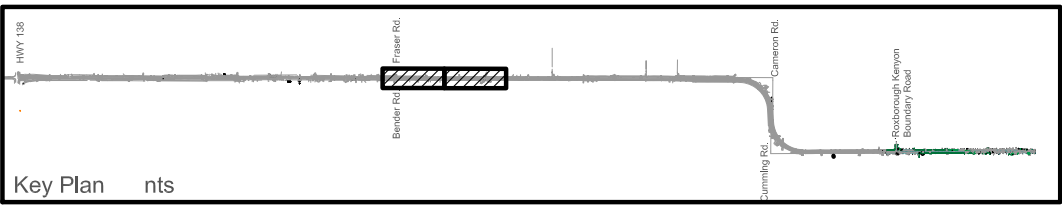
Reconstruction and Drainage Improvement Plan No.4

County Road 22

Stormont, Dundas and Glengarry



Scale 1:1000

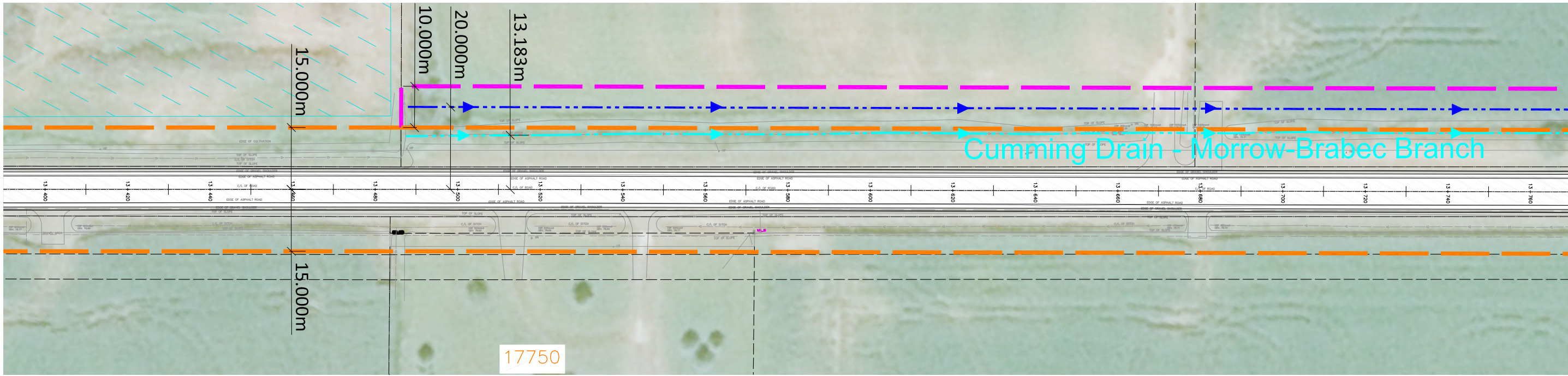
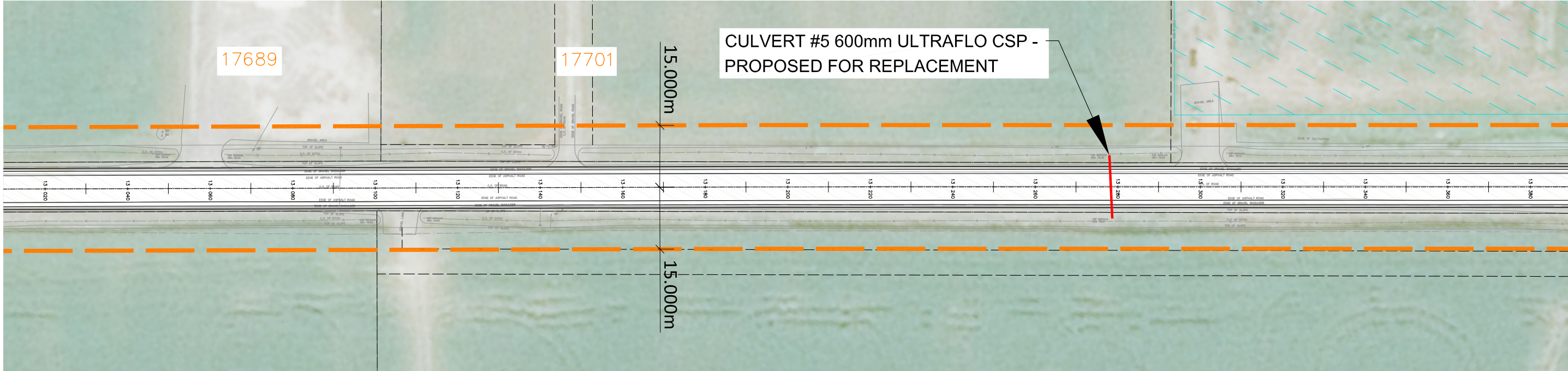


- Legend
- Proposed 30m Right of Way
 - Proposed 10m Easement
 - Existing Municipal Drain and Direction of Flow
 - Proposed Municipal Drain Relocation and direction of flow

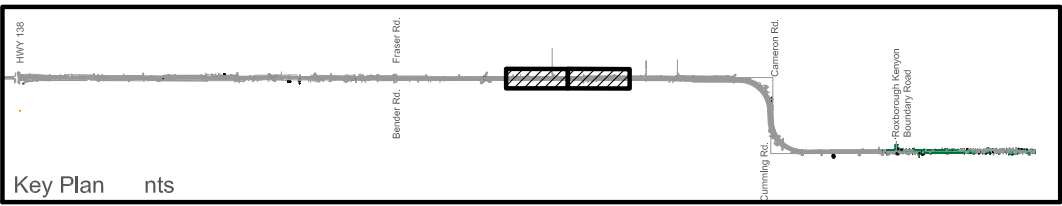
Reconstruction and Drainage Improvement Plan No.5

County Road 22

Stormont, Dundas and Glengarry



Scale 1:1000

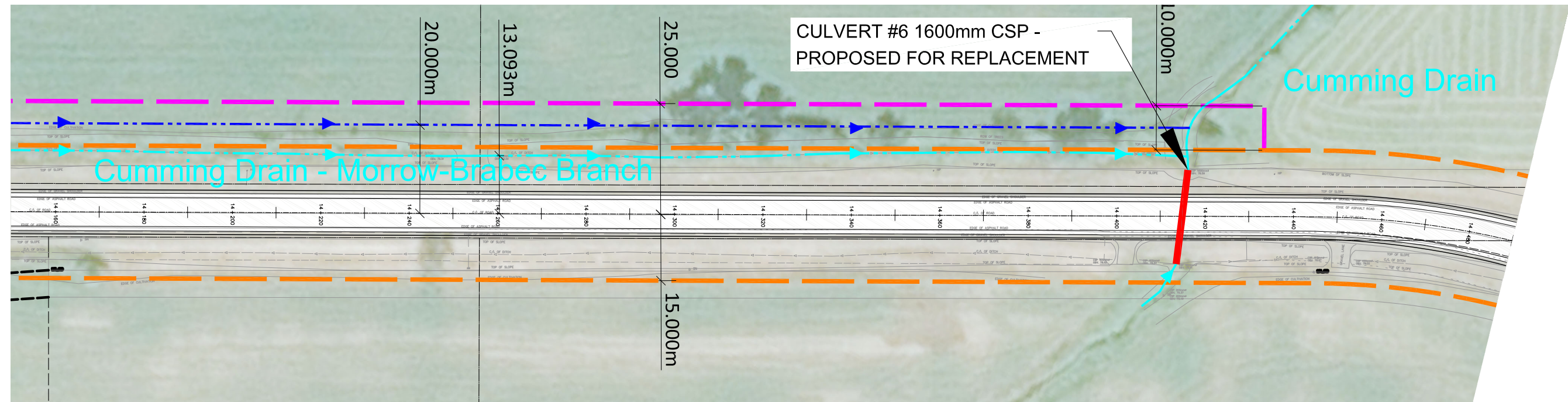
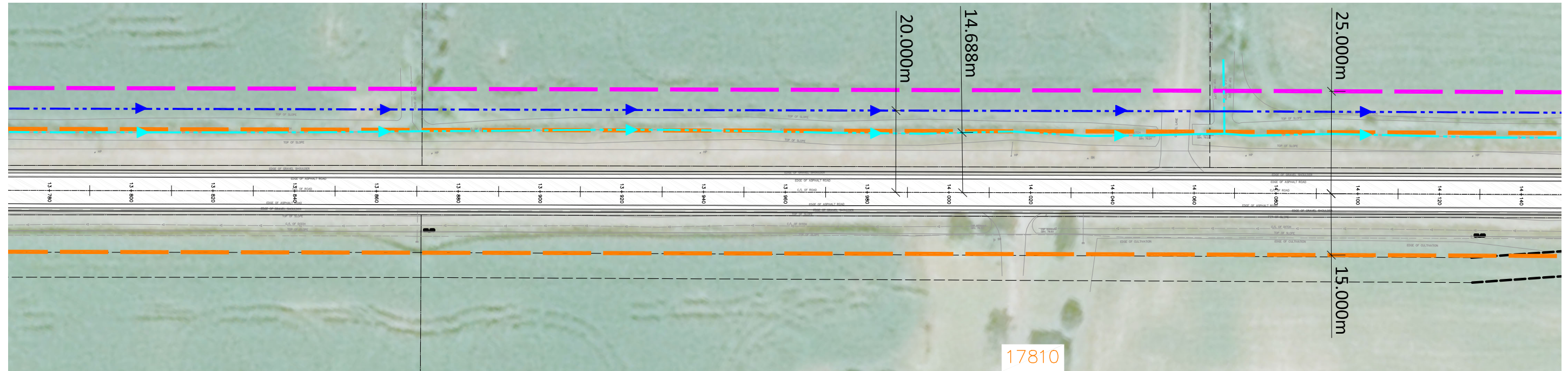


- Legend
- Wetland
 - Proposed 30m Right of Way
 - Proposed 10m Easement
 - Existing Municipal Drain and Direction of Flow
 - Proposed Municipal Drain Relocation and direction of flow

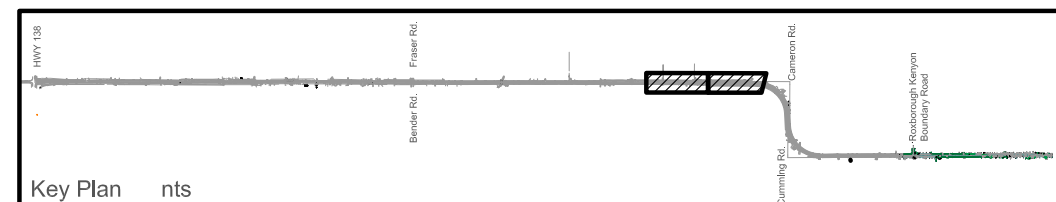
Reconstruction and Drainage Improvement Plan No.6

County Road 22

Stormont, Dundas and Glengarry



Scale 1:1000



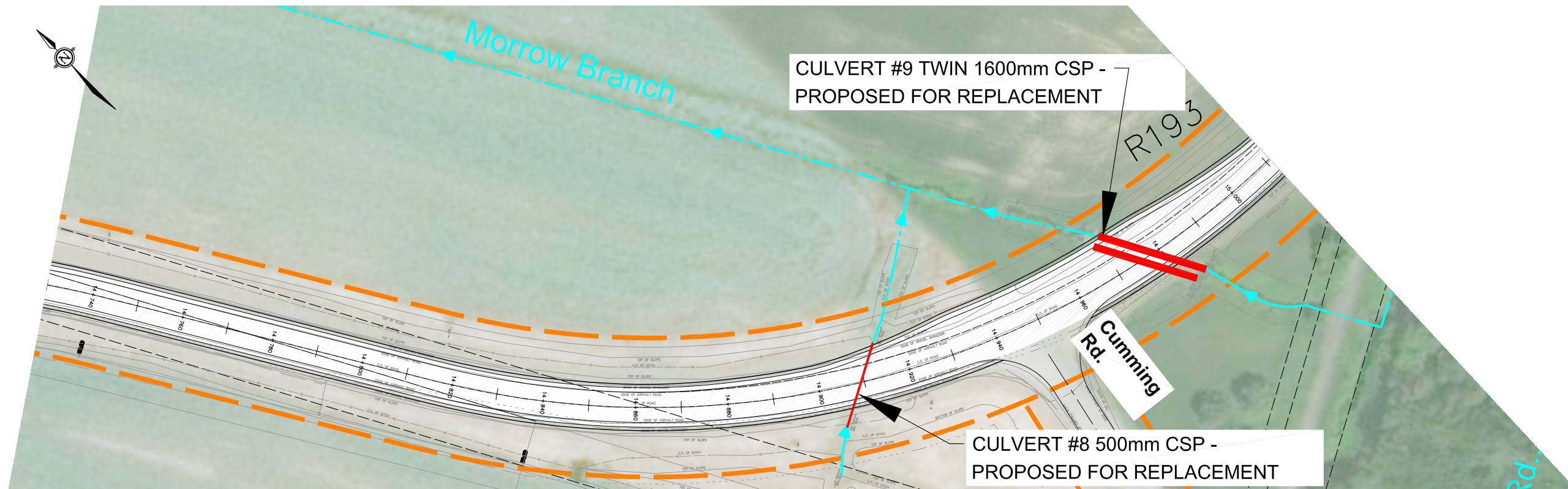
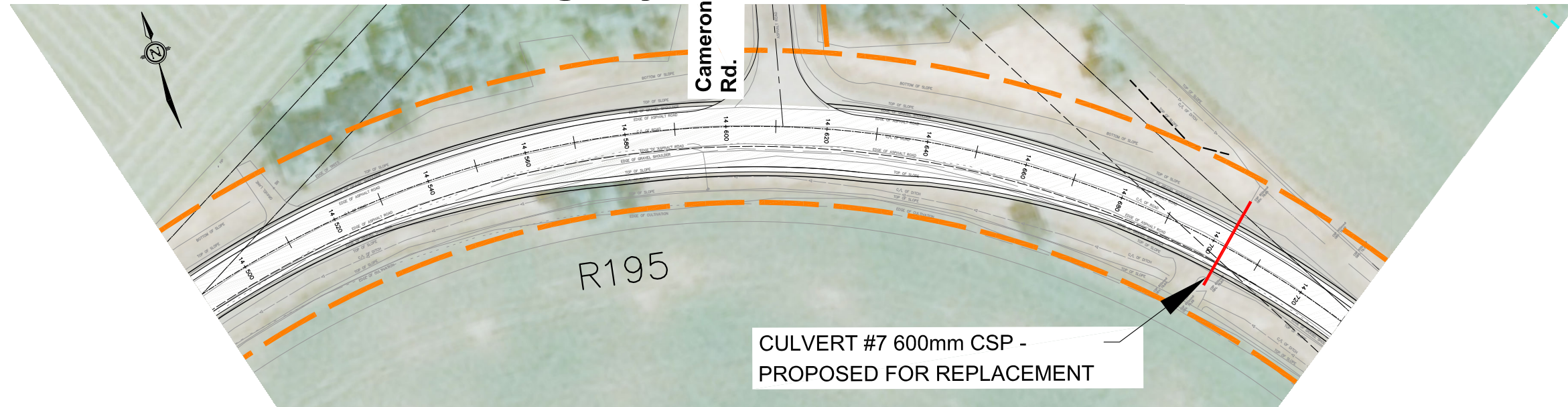
Legend

- Proposed 30m Right of Way
- Proposed 10m Easement
- Existing Municipal Drain and Direction of Flow
- Proposed Municipal Drain Relocation and direction of flow

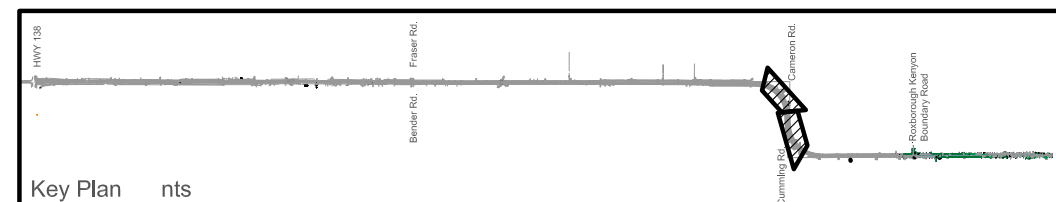
Reconstruction and Drainage Improvement Plan No.7

County Road 22

Stormont, Dundas and Glengarry



Scale 1:1000



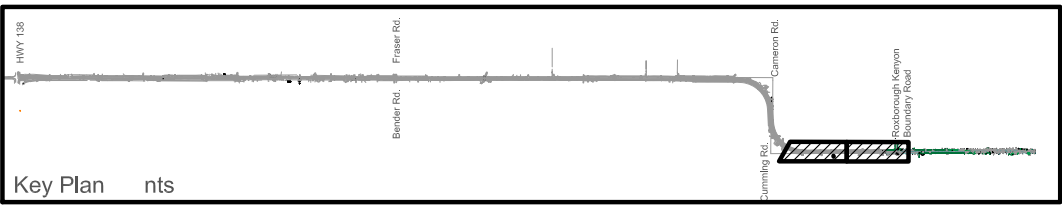
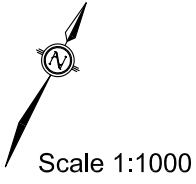
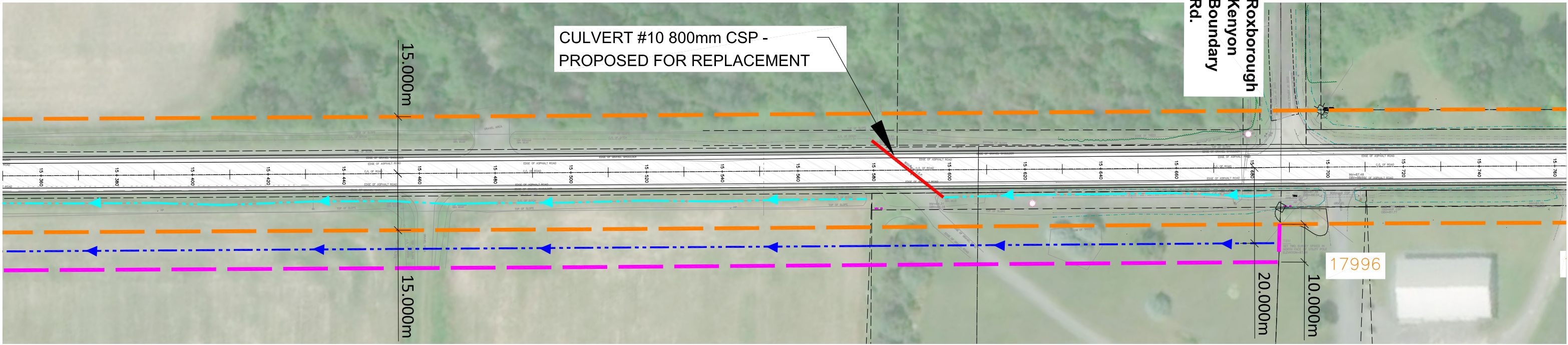
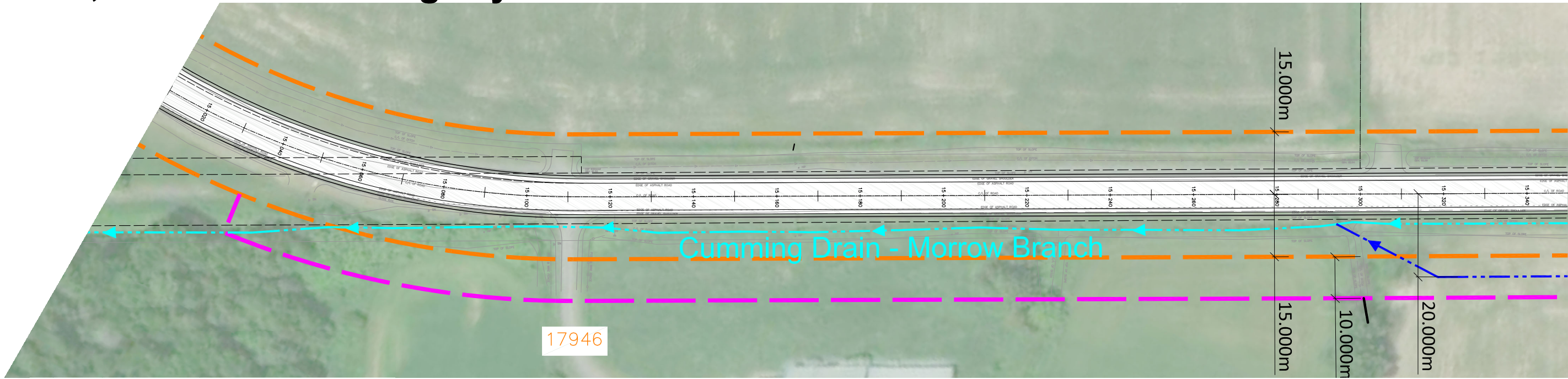
Legend

- Proposed 30m Right of Way
- Proposed 10m Easement
- Existing Municipal Drain and Direction of Flow
- Proposed Municipal Drain Relocation and direction of flow

Reconstruction and Drainage Improvement Plan No.8

County Road 22

Stormont, Dundas and Glengarry

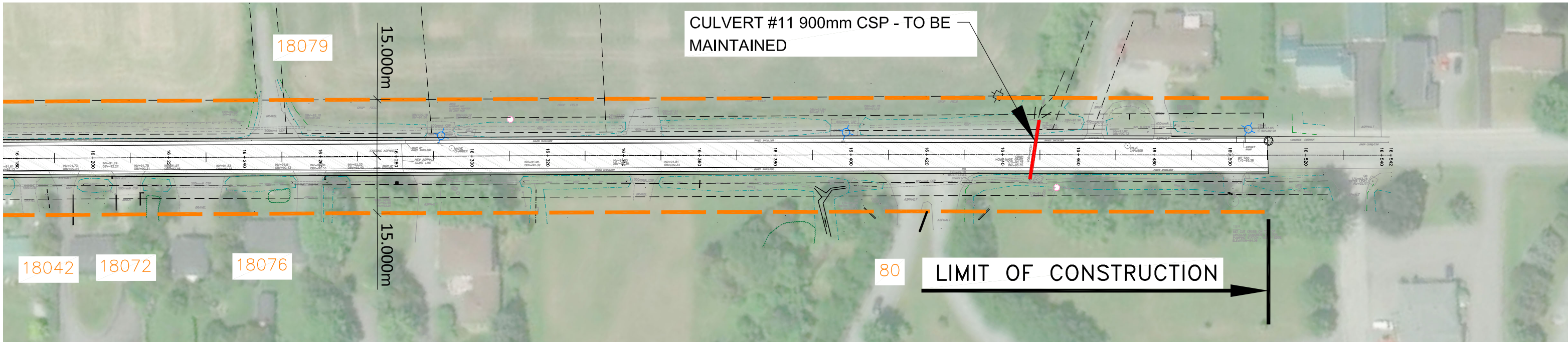
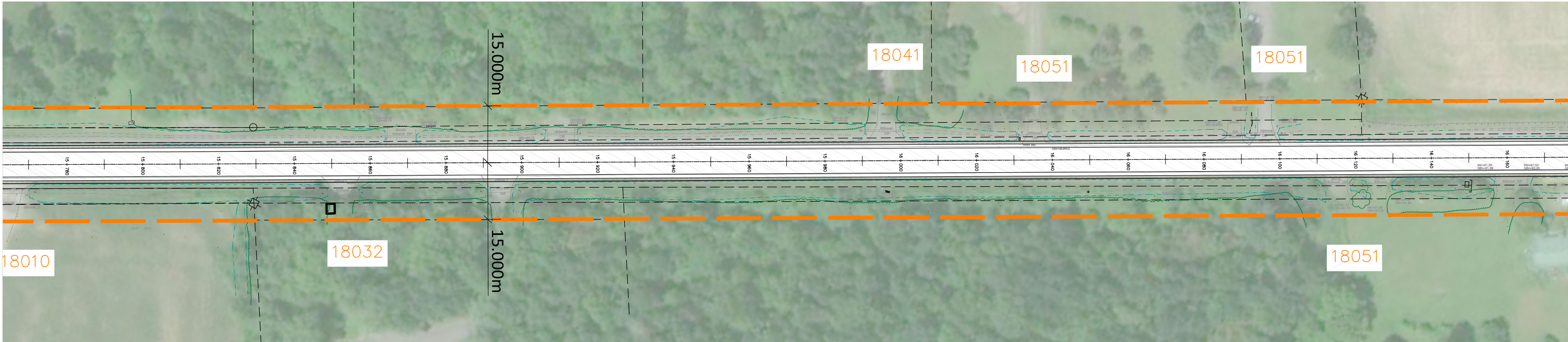


- Legend
- Proposed 30m Right of Way
 - Proposed 10m Easement
 - Existing Municipal Drain and Direction of Flow
 - Proposed Municipal Drain Relocation and direction of flow

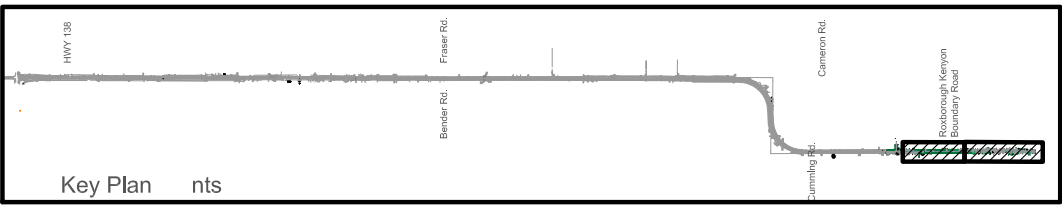
Reconstruction and Drainage Improvement Plan No.9

County Road 22

Stormont, Dundas and Glengarry



Scale 1:1000



- Legend
- Proposed 30m Right of Way
 - Proposed 10m Easement
 - Existing Municipal Drain and Direction of Flow
 - Proposed Municipal Drain Relocation and direction of flow

Sample Municipal Drain Relocation Outside Right-of-way County Road 5, Inkerman Ontario



Next Steps

Following this Public Information Centre we will:

- Review all Public Information Centre comments and prepare a Summary Report
- Review transition of high to low grade raise
- Project File and 30-day Public Review
- Municipal Drain planning process under the *Drainage Act*
- Engineer's Report for the Municipal Drain improvements and relocation

Your Involvement

How can you remain involved in the Study?

- Request that your name/e-mail be added to the Project Mailing List
- Provide an online comment
- Contact the County's representative or the Consultant at any time. Contact information is provided on the next exhibit.

Thank you for your participation in this Public Information Centre.

Your input into this project is valuable and appreciated.

All information is collected in accordance with the *Freedom of Information and Protection of Privacy Act*.

For More Information Please Contact:

<p>Steve Taylor, P.Eng. BT Engineering Inc., Project Manager Email: steven.taylor@bteng.ca Phone: 613-228-4813</p>	<p>Michael Jans, P.Eng. Manager of Infrastructure, United Counties Email: mjans@sdgcounties.ca Phone: 613-932-1515 ext. 219</p>
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Please submit any questions or comments to the contacts listed above by
December 16, 2022.