



County Road 22 Reconstruction and Drainage Improvements
Schedule B Environmental Assessment Study

Project File Report

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May 2023

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EXECUTIVE SUMMARY

E1 EA STUDY

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

This Environmental Assessment (EA) Study examined reconstruction alternatives and drainage and developed a Recommended Plan to address the needs of the Study Area. The recommended design addresses current and future operational needs considering all modes of travel.

The recommended improvements to County Road 22 were presented at Public Information Centre (PIC) No. 1. Following PIC No. 1, the recommendations for reconstruction, road widening, drainage improvements and property acquisition were refined and finalized.

The EA followed the Schedule B requirements under the Planning and Design process of the “Municipal Class Environmental Assessment”, as amended in 2023. This is a self-assessment process that includes mandatory public consultation.

E1.1 Study Area

The Study Area extends from the urban boundary of Maxville westerly to Highway 138. The study area is located in the United Counties and is illustrated in **Figure E1**.

E1.2 Consultation

The study was carried out in consultation with County staff, external agencies, property owners, and the public. The County Road 22 Improvements EA study consultation included the following:

- One (1) Public Information Centre (PIC)
- Liaison with external agencies
- Property owner meetings
- Consultation with Indigenous Peoples

Positive feedback was received on the Recommended Plan through this consultation.

The EA Project File Report will be available to the public, stakeholders and agencies for a 30-day review period from May 24 to June 30, 2023. The Study Completion Notice was posted on the County and Township websites on May 22, 2023. The notice has also been provided to the Township of North Glengarry as the County Road extends into Maxville.

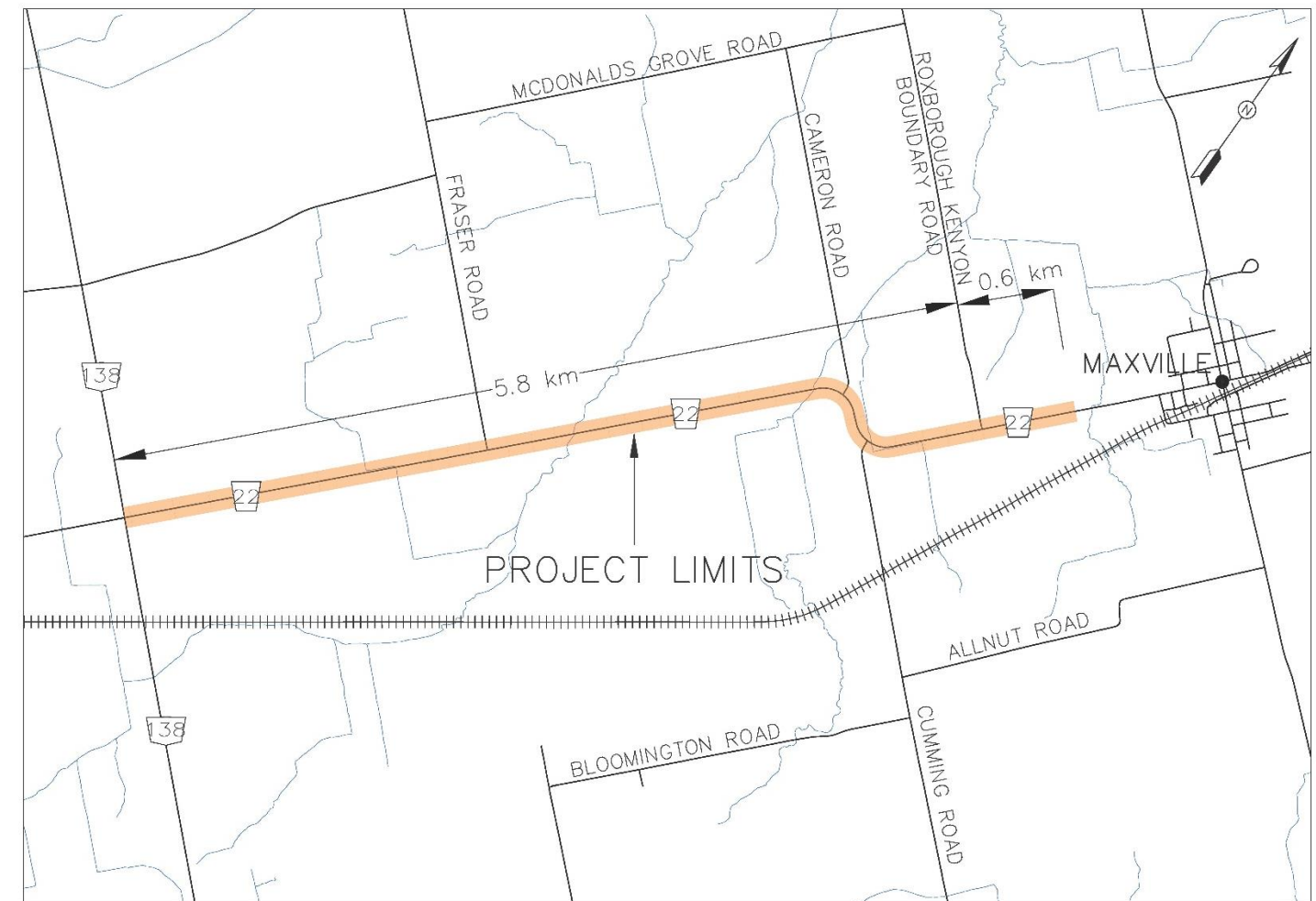


Figure E1: Study Area

E2 MUNICIPAL CLASS EA PROCESS

This study followed the Municipal Class Environmental Assessment process for a Schedule B project based on the scope and complexity of the project as well as the estimated capital cost of the project¹.

The Class EA Process was undertaken in a series of phases commencing with problem identification and culminating in the filing of a Project File Report. The Planning and Design Process for the Municipal Class EA is illustrated in **Figure E2**.

The Class EA process includes an evaluation of all reasonable alternatives and the selection of a preferred alternative(s) with acceptable effects (including avoidance and mitigation of any residual effects) on the natural and social/cultural environments. This project involved three of the five phases of the Municipal Class EA process (as required for a Schedule B project):

- Phase 1: Identify the Problem
- Phase 2: Alternative Solutions
- Phase 3: Alternative Design Concepts for Preferred Solution (not included in a Schedule B EA Study)
- Phase 4: Environmental Study Report (not included in a Schedule B EA Study)
- Phase 5: Implementation

The project will be approved for design and construction if no written concerns are submitted during the review period.

¹ Municipal Class Environmental Assessment, Municipal Engineers Association, 2023 “Municipal Road Projects”

NOTE: This flow chart is to be read in conjunction with Part A of the Municipal Class EA

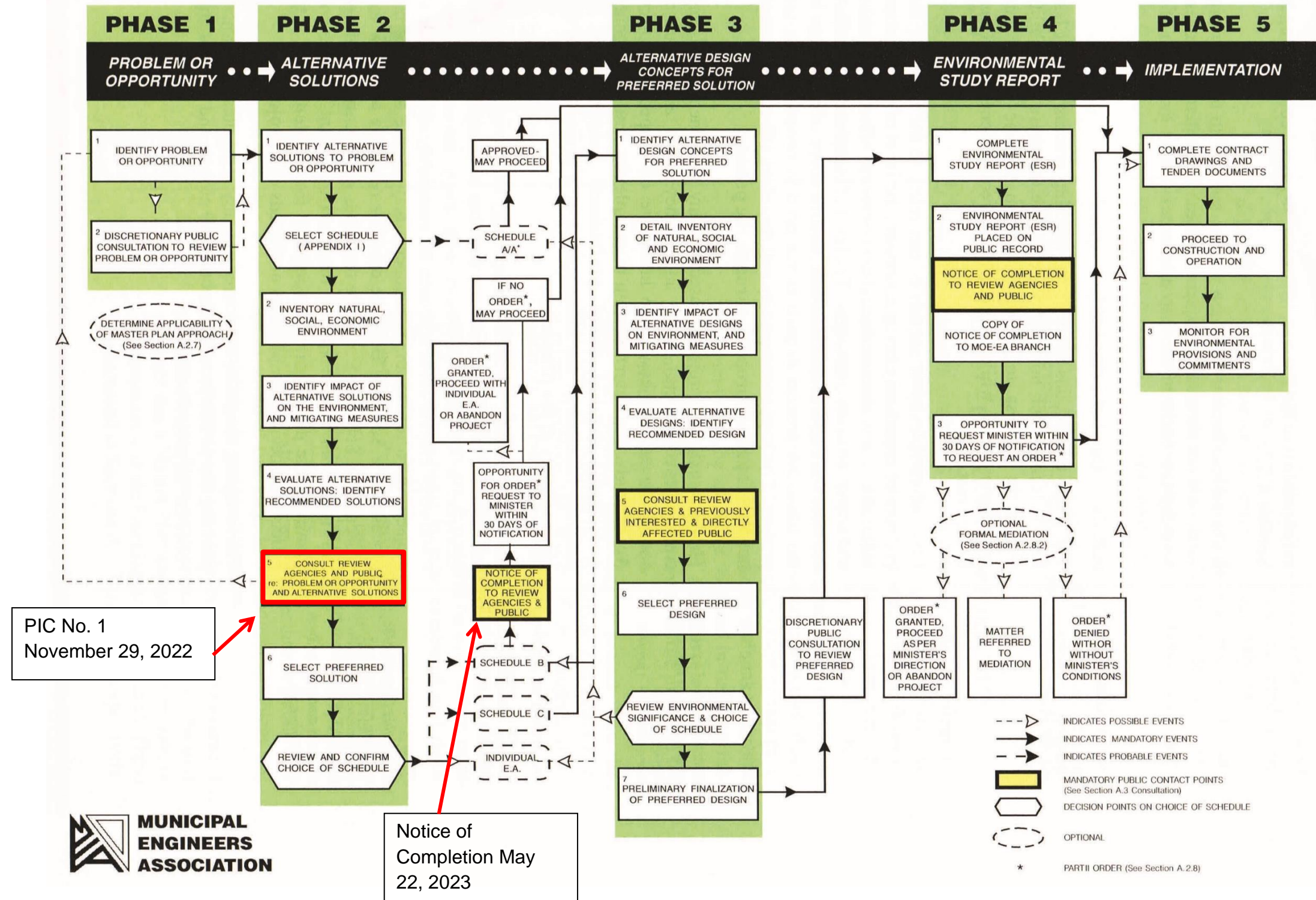


Figure E2: Municipal Class EA Planning and Design Process

E3 ANALYSIS AND EVALUATION

Based on the existing conditions and built environment, several groups of alternatives were generated to address various components of the project. These groups include:

- Rehabilitation or reconstruction alternatives;
- Widening alternatives;
- Back-to-back curve improvement alternatives; and
- Intersection operational improvements at Cummings Road.

Rehabilitation or Reconstruction Alternatives

The Geotechnical Investigation Report recommended the rehabilitation/reconstruction design to improve the drainage and load limit of County Road 22. The existing road has spring load limits that do not allow heavy trucks to travel along the roadway from Maxville to Highway 138. The EA recommends rehabilitation with the placement of new road base materials to improve the existing drainage and service life of the road.

The cost for full depth reconstruction of County Road 22 is considered to be prohibitive. The recommendations are:

- Pulverize and pave the road from Highway 138 to Boundary Road (total 250 mm grade raise); and
- Pulverize and pave the road from Boundary Road to the eastern limit of the Study Area (700 mm grade raise) where a higher water table and softer soils are present.

Widening Alternatives

Three widening alternatives were considered:

- Alternative A: Widen to the north;
- Alternative B: Widen to the south; and
- Alternative C: Widen on centre (recommended to widen to a 30 m right-of-way with equal property acquisition on each side). This was considered as a balanced solution.

Back-to-Back Curve Improvement Alternatives

Three alternatives were considered for the back-to-back curve improvements:

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

Alternative 2 is the preferred back-to-back curve improvement alternative. It will provide improved safety conditions without requiring property for the extension or relocation of the municipal drain culverts.

Intersection Operational Improvements at Cummings Road

Intersection operational improvements were considered at Cummings Road:

- Left-turn lane (not warranted); and
- Slip-around lane (recommended).

Intersection operational improvements were considered at Cummings Road to provide a left-turn lane or a slip-around lane. The intersection does not meet the left-turn lane warrant and therefore a slip-around lane is recommended as a solution to improve traffic operation and safety.

E4 TECHNICALLY PREFERRED PLAN (TPP)

The Technically Preferred Plan (TPP) includes:

- Rehabilitation and road widening to a 30 m right-of-way;
- In the area of back-to-back curves, provide fully paved shoulders, lane widening and guiderail;
- Relocation of municipal drains to 10 m beyond the right-of-way;
- Slip-around lane at Cummings Road and Cameron Road; and
- Realignment of Cumming Drain Morrow Branch to the north side of County Road 22 to improve drainage.

The final Recommended Plan is presented in **Section 11.0**.

E5 NEXT STEPS

At the end of the 30-day review period, should there be no objections to the project; the County may proceed with design and construction of the Recommended Plan, subject to availability of funding and competing construction priorities.

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- Appendix C Culvert Assessment and Fish Habitat Memorandum
- Appendix D Drainage
 - Appendix D1: Drainage Maps
 - Appendix D2: Culvert Hydraulic Assessment Memorandum
- Appendix E Geotechnical Report

1.0 INTRODUCTION

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Pour des renseignements en français, veuillez communiquer avec Daniel Riendeau: (613) 228-4813 ou daniel.riendeau@bteng.ca

The United Counties of Stormont, Dundas and Glengarry (United Counties) retained BT Engineering Inc. to complete the Environmental Assessment (EA) Study and preliminary design for the reconstruction of County Road 22 including relocation of utilities and municipal drains to accommodate potential road widening in accordance with the Municipal Class EA process.

This EA Study examined reconstruction alternatives and drainage and determined a Recommended Plan to address the needs of the Study Area. The recommended design addresses current and future operational needs considering all modes of travel.

The EA was initiated to consider improvements to County Road 22, which were presented at Public Information Centre (PIC) No. 1. Following PIC No. 1, the recommendations for road reconstruction, road widening, drainage improvements and property acquisition were refined and finalized.

The EA followed the Schedule B requirements under the Planning and Design process of the "Municipal Class Environmental Assessment", as amended in 2015. This is a self-assessment process that includes mandatory public consultation.

1.1 Study Areas

The Study Area extends from the urban boundary of Maxville westerly to Highway 138. The study area is in the United Counties and is illustrated in **Figure 1**.

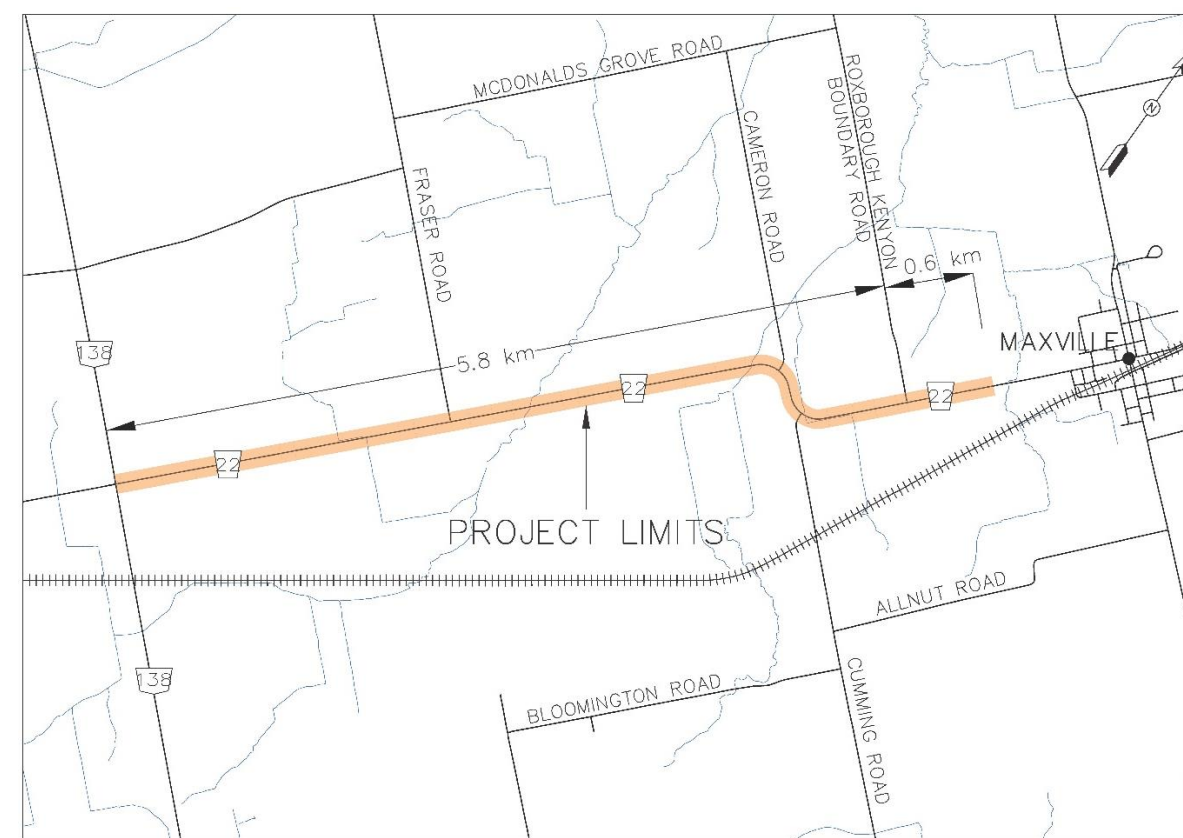


Figure 1: Study Area

1.2 Consultation

The study was carried out in consultation with County staff, external agencies, property owners, and the public. The County Road 22 Improvements EA study consultation included the following:

- One (1) Public Information Centre (PIC)
- Liaison with external agencies
- Property owner meetings
- Consultation with Indigenous Peoples

Positive feedback was received on the Recommended Plan through this consultation.

The EA report will be available to the public, stakeholders and agencies for a 30-day review period from May 24 to June 30, 2023. The study completion notice was posted on the County website on May 22, 2023.

2.0 EA PROCESS

This study followed the Municipal Class Environmental Assessment process for a Schedule B project based on the scope and complexity of the project as well as the estimated capital cost of the project².

The Class EA document specifies the procedures required to plan specific transportation projects according to an approved planning process.

The study approach included the Ministry of the Environment, Conservation and Parks (MECP) five guiding principles for EA studies, namely:

- Consider all reasonable alternatives;
- Provide a comprehensive assessment of the environment;
- Utilize a systematic and traceable evaluation of net effects;
- Undertake a comprehensive public consultation program; and
- Provide clear and concise documentation of the decision-making process and public consultation program.

The Class EA Process was undertaken in a series of phases commencing with problem identification and culminating in the filing of a Project File Report. The Planning and Design Process for the Municipal Class EA is illustrated in **Figure 2**.

The Class EA process includes an evaluation of all reasonable alternatives and the selection of a preferred alternative(s) with acceptable effects (including avoidance and mitigation of any residual effects) on the natural and social/cultural environments. This project involved three of the five Schedule B EA phases:

- Phase 1: Identify the Problem
- Phase 2: Alternative Solutions
- Phase 3: Alternative Design Concepts for Preferred Solution (not included in a Schedule B EA Study)
- Phase 4: Environmental Study Report (not included in a Schedule B EA Study)
- Phase 5: Implementation

The project will be approved for design and construction if no written concerns are submitted during the review period.

² Municipal Class Environmental Assessment, Municipal Engineers Association, 2023 "Municipal Road Projects"

NOTE: This flow chart is to be read in conjunction with Part A of the Municipal Class EA

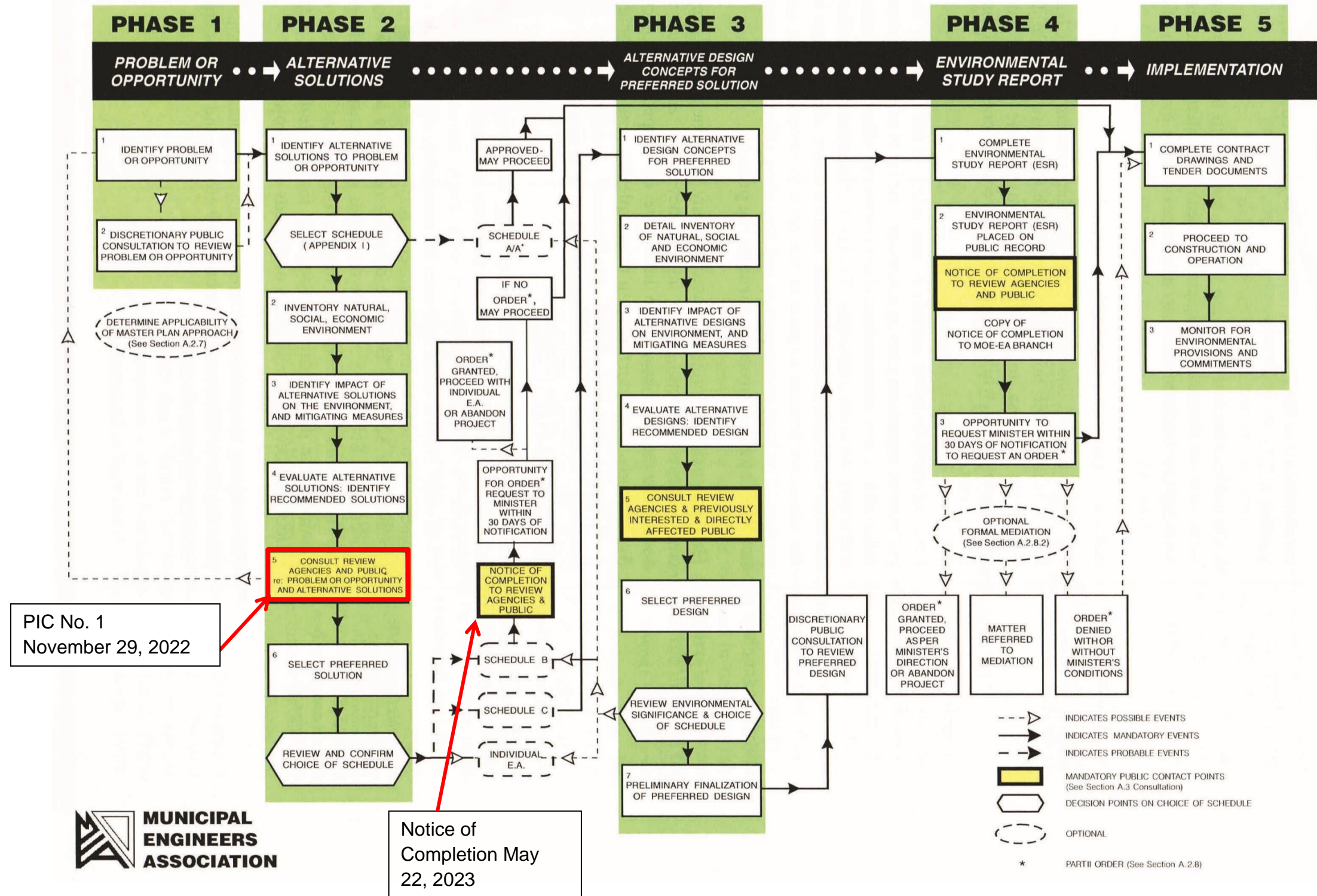


Figure 2: Municipal Class Planning and Design Process

3.0 CONSULTATION PROGRAM

The following sections provide a summary of the consultation activities held during the study.

3.1 Notices

Notices for the Study Commencement, PIC, and Notice of Filing Study Completion were posted on the United Counties' social media and website, as well as mailed to the contact list, as follows:

- Study Commencement – Thursday, July 2, 2022;
- PIC No. 1 – Tuesday, November 14, 2022, held on November 29, 2022 at the Maxville & District Sports Complex Banquet Hall; and
- Filing of Study Completion – May 22, 2023.

See **Appendix A** for the Notice of Study Commencement, PIC reports and Notice of Study Completion.

3.2 Contact List

A mailing list was provided by the County at the start of the study. The contact list was continuously updated during the study as people indicated an interest.

An agency contact list was also developed and expanded during the study. See **Section 3.4.2** Interest Groups and Agencies for the list of agencies and contact persons.

3.3 PIC No. 1

Public Information Centre (PIC) No. 1 was held in-person on Tuesday, November 29, 2022 at the Maxville & District Sports Complex Banquet Hall. Exhibits and Recommended Plan drawings were placed around the perimeter of the room for attendees to view at their leisure. United Counties and consultant staff were available to answer questions.

All property owners in the study area were mailed individual letters or emailed inviting them to attend the PIC.

PIC No. 1 presented the following:

1. Introduction and background of the Study;
2. Preliminary Design Drawings for the County Road 22 reconstruction
3. Relocation of the Municipal Drains;
4. Property impacts; and
5. Next steps.

A total of 7 comment sheets were received during the PIC comment period. Refer to **Appendix A** for the PIC summary report, including comment sheets (with all personal information removed).

3.4 Stakeholder Consultation

3.4.1 Property Owners

The Study recommendations include property acquisition from adjacent property owners. Property is required to widen the corridor to a 30 m right-of-way and to relocate the municipal drains. Notices were sent to the property owners along County Road 22 to invite them to the PIC and to review the Project File during the 30-day review period. Refinements to the recommendations were made, based on comments from property owners, and included in the Recommended Plan.

3.4.2 Agencies and Stakeholders

The following agencies and stakeholders were contacted as part of the project:

- Ministry of Natural Resources and Forestry (MNR); and
- Ministry of the Environment, Conservation and Parks (MECP).

Appendix B contains select correspondence received from interested agencies and Indigenous Peoples.

3.4.3 Indigenous Peoples

The following Indigenous Peoples groups were contacted at various milestones during the project, including EA Commencement, the PIC and Study Completion.

- Algonquins of Ontario
- Algonquins of Pikwàkanagàn First Nation
- Mohawk Council of Akwesasne
- Nation Huronne-Wendat

Appendix B includes select correspondence.

4.0 NEED AND JUSTIFICATION

County Road 22 provides an east-west arterial road paralleling Highway 417 across the north end of the County. County Road 22 is a minor arterial link between the Village of Maxville and Highway 138. The annual average daily traffic (AADT) at the west end of the road segment is 1,223 veh/day and at the east end of the segment is 1,267 veh/day.

County Road 22 is not designed as a full-load road, and spring load restrictions are posted. The current cross section is a two-lane rural road, and the speed limit is 80 km/h. The condition of the asphalt and drainage of the road are poor, and the shoulders are narrow. The pavement is nearing the end of its service life. County Road 22 has been considered a “Now Need” road in the United Counties recent road needs studies; however, given the road’s need for a full reconstruction rather than a rehabilitation, it has consistently failed to meet the “keep good roads good” target for improvement.

An inspection was done on the culverts along County Road 22 to assess the structural integrity and size of the culverts to determine if replacement is required, either for condition or upsizing to accommodate flow rates.

5.0 ENVIRONMENTAL CONDITIONS

Existing conditions along County Road 22 are mostly rural. The following sub-sections provide an overview of the existing conditions within the Study Area.

5.1 Natural Environment

5.1.1 Terrestrial Features

The Study Area is comprised of active agricultural fields and rural land. There are existing Woodlands (not significant) identified by the Official Plan. There are unevaluated wetland pockets throughout the Project Area, set back from the existing road corridor. Two avian Species at Risk, Bobolink and Eastern Meadowlark, have the potential to use inactive agricultural fields as habitat.

No significant natural heritage features were identified in the Study Area.

5.1.2 Aquatic Features

A total of 11 centreline culverts were observed, as well as numerous driveway culverts and ditches. All culverts and ditching associated with Municipal Drains in the Study Area were found to either provide direct fish habitat or found likely to function as contributing fish habitat. The Culvert Assessment and Fish Habitat Memorandum is in **Appendix C**.

5.2 Social and Cultural Environmental

5.2.1 Heritage/Cultural

There are no cultural heritage or built heritage resources that will be affected by the study recommendations within the Study Area.

5.2.2 Archaeology

The study recommendations do not include excavation beyond the previously disturbed road right-of-way and therefore a Stage 1 Archaeological Assessment was not completed. No cemetery sites or known archaeological sites are within the Study Area.

5.3 Utilities and Municipal Services

The Study Area is not serviced by municipal infrastructure. Water is supplied by source wells and sanitary service is provided by septic tanks.

There are Hydro One and communications services in the project corridor as follows:

- Highway 138 to Fraser Road:

- Hydro One 3-phase aerial pole line on the north side of the road with select service poles and anchors crossing onto the south side at properties.
- On the Hydro One pole line, there is a low-hanging aerial communications plant.
- Fraser Road to Cumming Road:
 - Hydro One 3-phase aerial pole line on the north side of the road with select service poles and anchors crossing onto the south side at properties.
 - Buried communications plant with service pedestals switching from the north to south side of the road as required.
- Cumming Road to the East Project Limit:
 - Hydro One 3-phase aerial pole line on the south side of the road with select service poles and anchors crossing onto the south side at properties.
 - Buried communications plant with service pedestals switching from the north to south side of the road as required.

Bell Canada plant (aerial and buried) will be reviewed for impacts.

See **Appendix B** for Select Correspondence with utility companies. The detail design will verify any required relocations.

5.4 Drainage

There are five (5) municipal drains within the Study Area, as well as roadside drainage contributing to each of these drains. The municipal drains are:

- McKenzie Drain Branch- McCrae Branch;
- McKenzie Municipal Drain;
- Cumming Drain- Morrow Brabec Branch;
- Cumming Drain; and
- Cumming Drain-Morrow Branch.

A total of eleven (11) cross culverts convey flow across County Road 22, five (5) of which are municipal drain crossings. A culvert hydraulic assessment was completed and eight (8) of the eleven (11) culverts are recommended for replacement. Nine of the eleven culverts are recommended for replacement, as shown in **Table 1**.

The drainage mosaic illustrates the drainage areas and culverts recommended for replacement and is in **Figure 3**. Drainage mapping was created to define the direction of flow, identify Municipal Drains and which culverts have fish habitat or fish habitat potential. The drainage mapping is in **Appendix D1**. The Culvert Hydraulic Assessment memorandum is in **Appendix D2**.

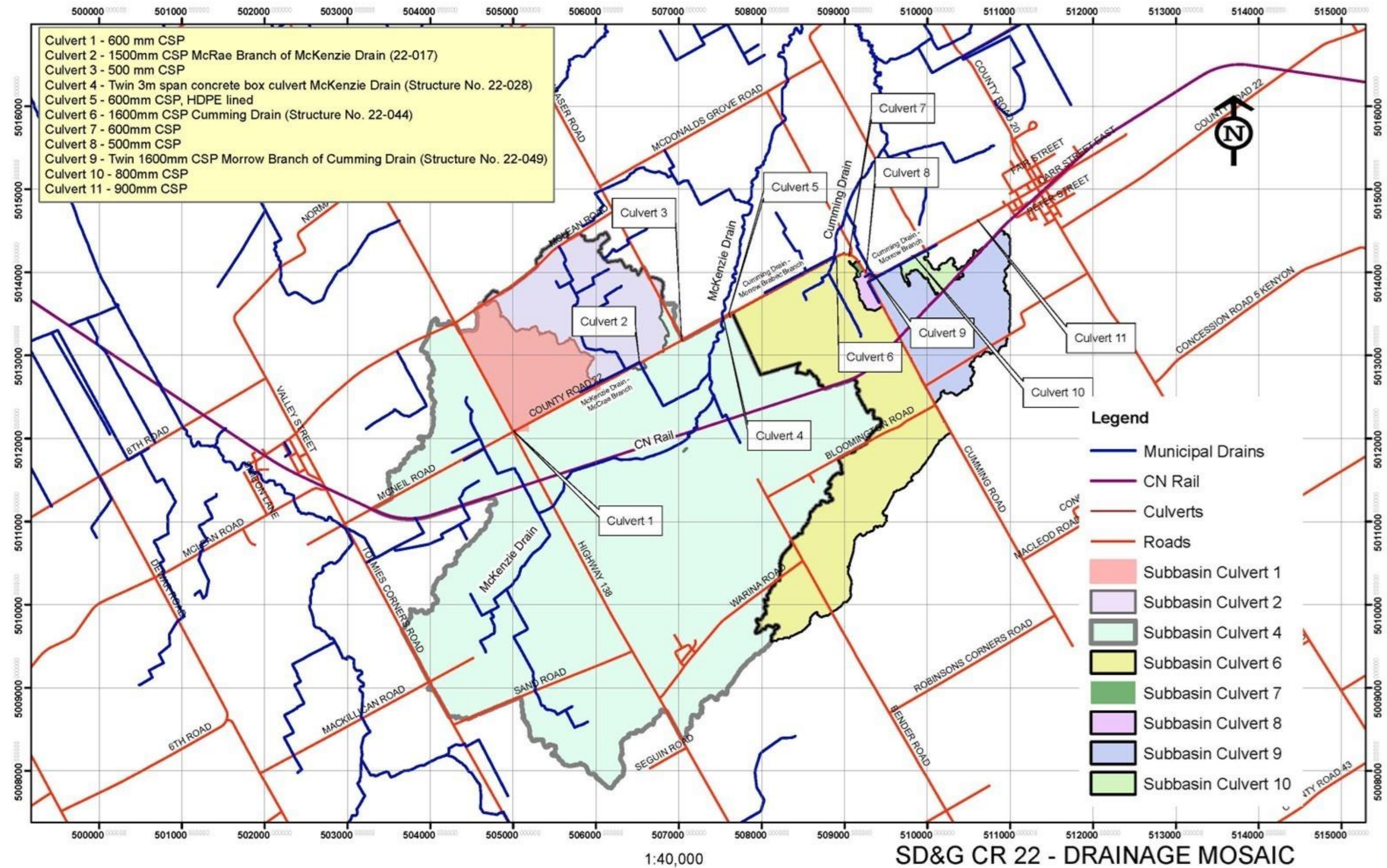


Figure 3: County Road 22 Drainage Mosaic

Table 1: Preliminary Replacement of Culverts Shown at PIC No. 1.				
Culvert Number	Existing Culvert		Proposed Culvert	
	Type	Diameter (mm)	Type	Diameter or Span x Rise (mm)
1	CSP	600	HDPE	900 ^(a)
2	CSP	1500	Aluminized Type 2 Steel CSP	1600
3	CSP	500	HDPE	600
5	UltraFlo™ CSP	600	HDPE	600
6	CSP	1600	Aluminized Type 2 Steel CSP	1600
7	CSP	600	HDPE	600
8	CSP	600	HDPE	600
9	Twin CSP	1600	CBC	2700 x 1500 ^(b)
10	CSP	800	HDPE	2-900 ^(a)

CSP = Corrugated Steel Pipe; HDPE = High Density Polyethylene; CBC = Concrete Box Culvert
^(a) Culvert must be upsized to accommodate the 25-year design storm flow.
^(b) Culvert 9 could be replaced with Twin Aluminized Type 2 Steel 1600 mm diameter CSP pipes, equal to the existing culvert.

Based on public input at PIC No. 1, the drainage recommendations were revised to realign the Cummings Drain – Morrow Branch to the north side of County Road 22.

5.5 Source Water Protection

The Study Area is located within the South Nation Conservation Area, a part of the South Nation River – Lower Ottawa River watershed. Industry best practices will be used to prevent spills and / or the release of contaminated material during construction. The improvements include partially paving the shoulders which increases the impervious area of the roadway and may increase the amount of road salt applied to the road. However, with the use of vegetated ditches the increased road width is not anticipated to significantly impact groundwater. The project will include ditch

improvements, where required, which will help to offset the increase in impervious area. The continued use of rural roadside ditches is a best management practice for water quality.

5.6 Land Use

The Official Plan (OP) of the United Counties is intended to provide the context within which the long-range planning of the County should occur. The OP describes the County as having, “a strong agricultural culture and economy supported by extensive natural heritage areas including woodlands, wetlands, and numerous watercourses and municipal drains”³.

Schedule A3 of the OP (Rural Schedule) indicates that the lands within and surrounding the Study Area are designated as Agriculture Resource Lands and Rural District. Existing land uses surrounding the project limits are a combination of agriculture, rural, agriculture restricted, residential, and institutional; this is referenced in **Figure 4**. The OP designations surrounding the Study Area are illustrated in **Figure 5**.

5.7 Geotechnical/Foundations

A geotechnical investigation was completed in July 2022. The assignment included field investigations consisting of advancement of boreholes to log the existing subsoil conditions, securing selective subsoil samples for laboratory analysis and a visual assessment of the existing roadway surface condition.

The recommendations included partial or fully reconstruction of County Road 22 to improve the loading conditions of the road. These recommendations were used as input to the design of the rehabilitation or the reconstruction of County Road 22. The soil classification was collected through Soil Survey of Stormont County Report No. 20 of the Ontario Soil Survey, 1954, Soil Survey of Glengarry County Report No. 24 of the Ontario Soil Survey, 1957, and AgMaps (gov.on.ca). Along County Road 22, the soil types identified are Osgoode, Mountain, Manotick, Kars, Eroded Channel, Achigan, Carp, and Urban Area, these are shown in **Figure 6**.

The geotechnical report is included in **Appendix E**.

5.8 Petroleum Wells

A review of the Study Area using Ontario GeoHub Petroleum Well Dataset was completed and one petroleum well is located within Maxville (Maxville, Near Station). This petroleum well is located outside of the Study Area.

³ United Counties of Stormont, Dundas and Glengarry Official Plan (approved February 4, 2018), page 8

Existing Land Use

County Road 22

Stormont Dundas and Glengarry



Map 1



Map 2



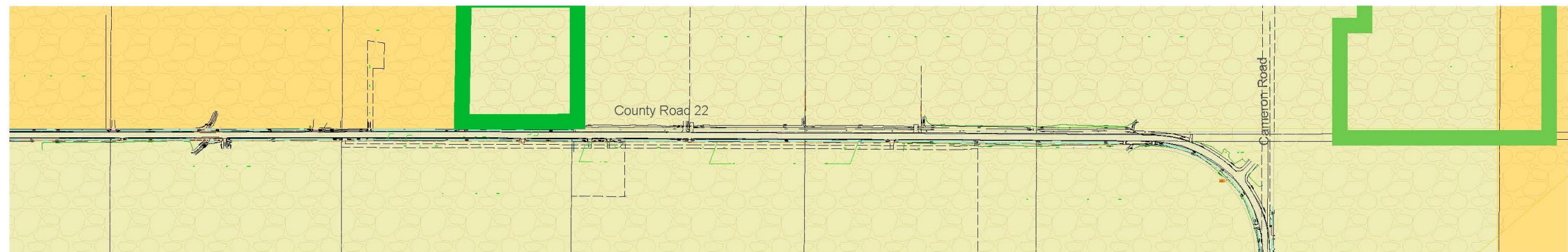
Figure 4: County Road 22 Existing Land Uses

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

NTS

Figure 5: County Road Official Plan

Soils

County Road 22

Stormont Dundas and Glengarry

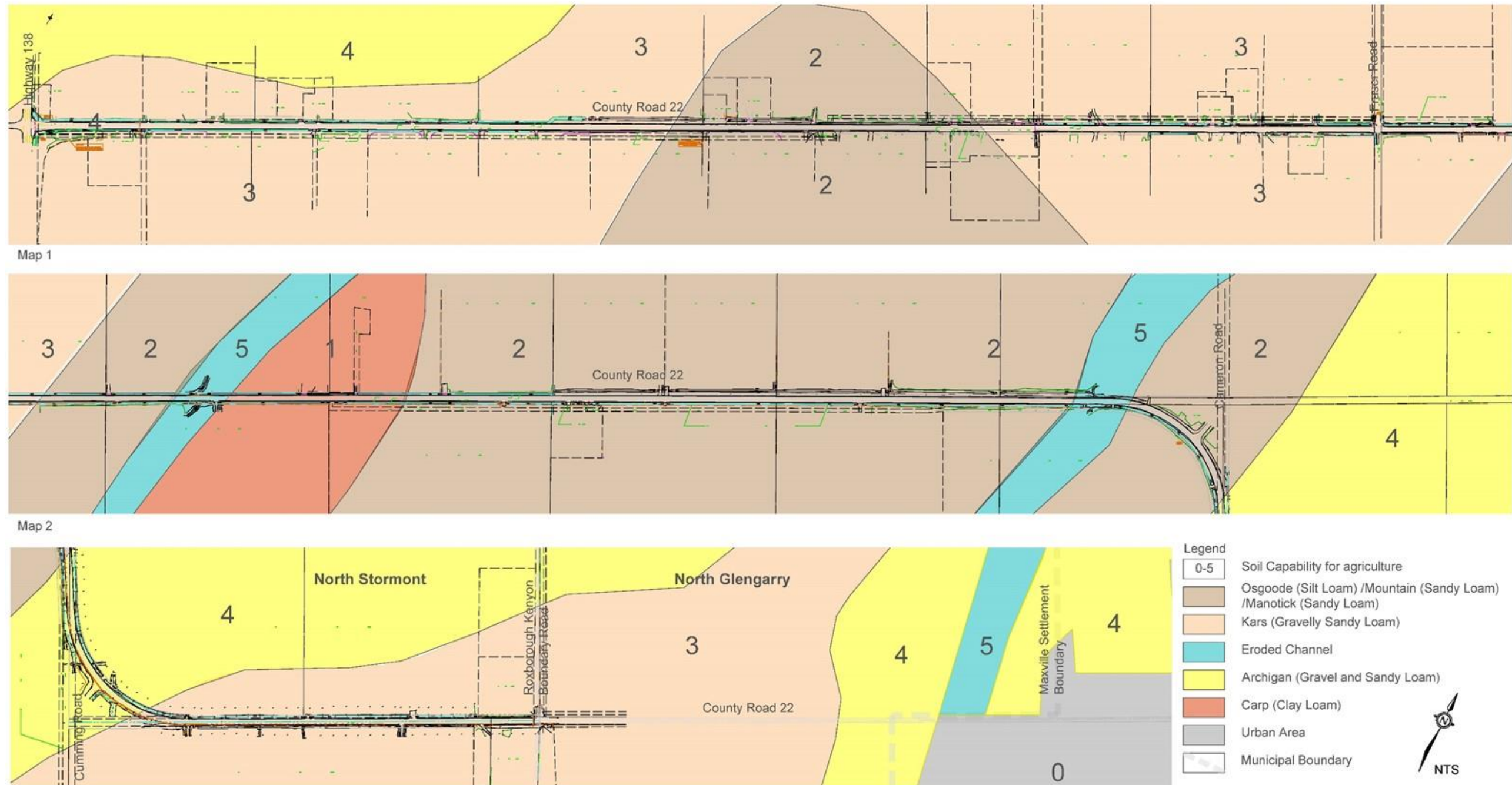


Figure 6: County Road 22 Soils

6.0 GENERATION OF ALTERNATIVES

Based on the existing conditions and built environment, several groups of alternatives were generated to address various components of the project. These groups include:

- Rehabilitation or reconstruction alternatives;
- Widening alternatives;
- Back-to-back curve improvement alternatives; and
- Intersection operational improvements at Cummings Road.

Rehabilitation or Reconstruction Alternatives

The Geotechnical Investigation Report recommended the rehabilitation/reconstruction design to improve the drainage and loading of County Road 22. The existing road has spring load limits that do not allow heavy trucks to travel along the roadway from Maxville to Highway 138. The report recommended full reconstruction to eliminate the spring load restriction; however, the alternative of rehabilitation with the placement of new road base materials would improve the existing drainage and service life of the road.

Widening Alternatives

Three widening alternatives were considered:

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

Back-to-Back Curve Improvement Alternatives

Three alternatives were considered for the back-to-back curve improvements:

- Alternative 1: Existing alignment with widened shoulders, see **Figure 7**;
- Alternative 2: Existing alignment with fully paved shoulder widening through curves and guiderail, see **Figure 7**; and
- Alternative 3: Curve realignment to flatten curves, see **Figure 8**.

Intersection Operational Improvements at Cummings Road

Intersection operational improvements were considered at Cummings Road:

- Left-turn lane (not warranted); and
- Slip-around lane (recommended).

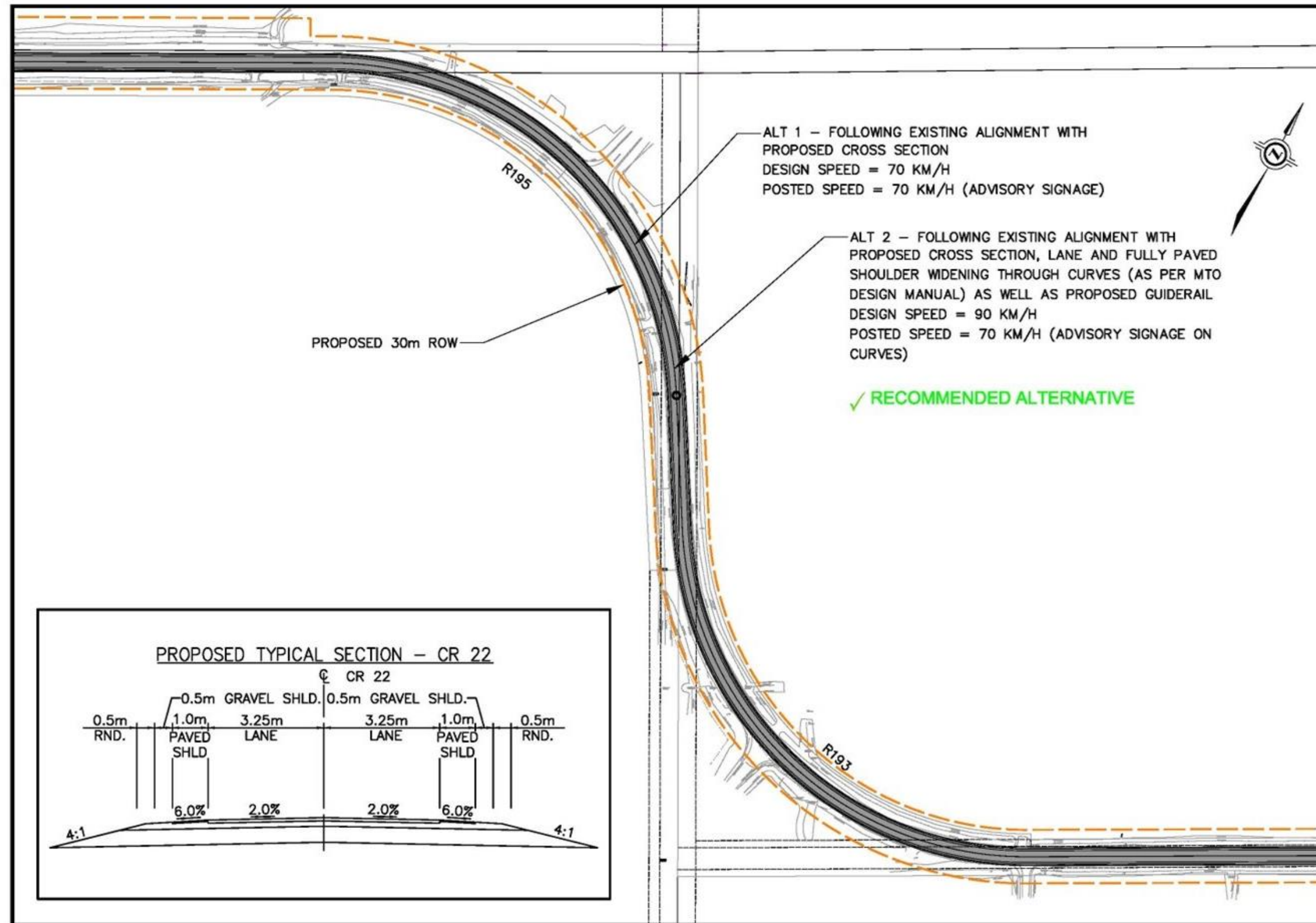


Figure 7: County Road 22 Back-to-Back Curves Alternatives 1 and 2

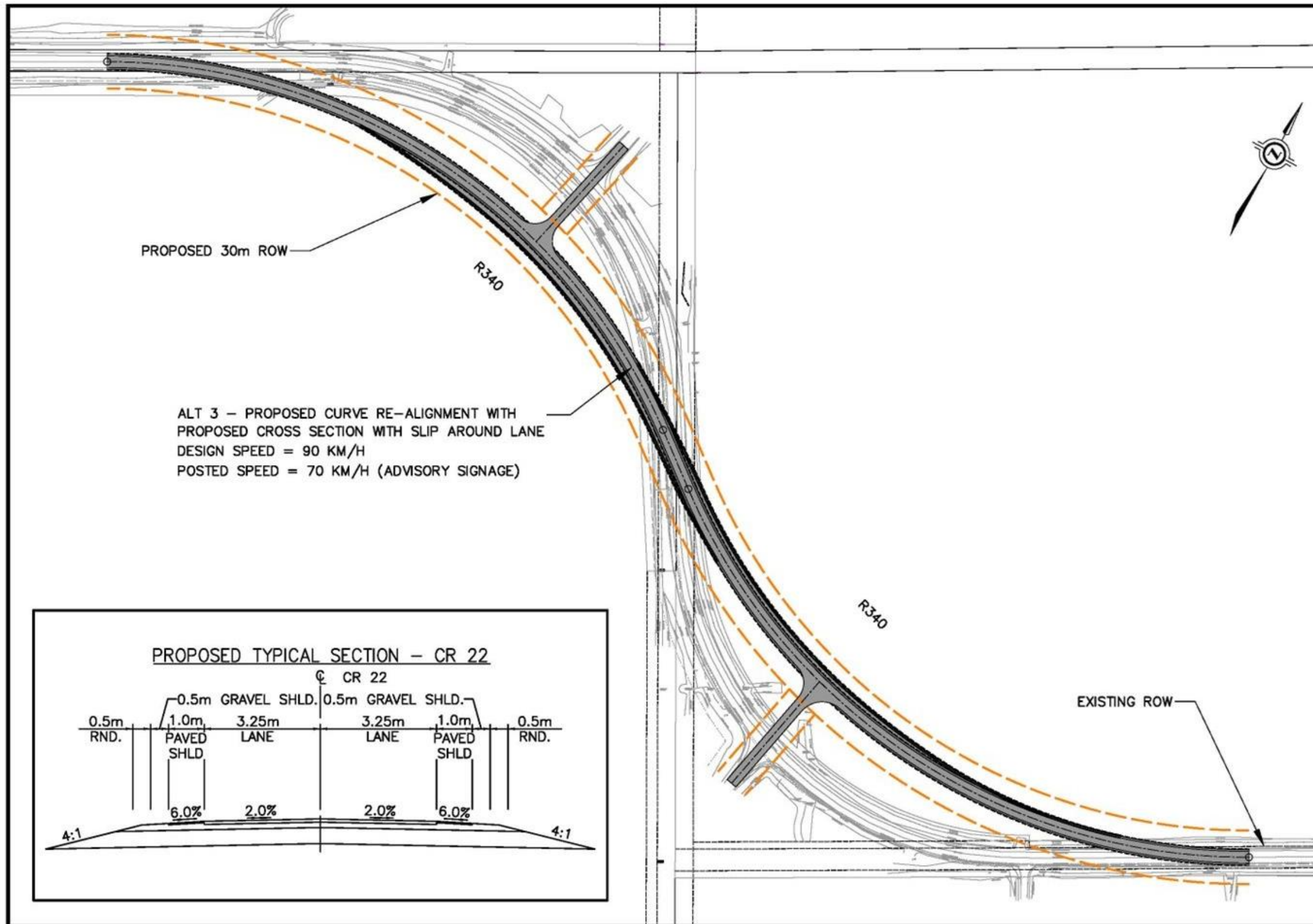


Figure 8: County Road 22 Back-to-Back Curves Alternative 3

7.0 EVALUATION OF ALTERNATIVES

The evaluation of the alternatives was completed using a qualitative assessment to compare the effects and performance of the alternatives. The evaluation considered the advantages and disadvantages of each of the alternatives using evaluation criteria as descriptors to measure the relative differences of the alternatives being considered.

Rehabilitation or Reconstruction Alternatives

The cost for full reconstruction of County Road 22 is considered to be prohibitive. **Figure 9** illustrates the rehabilitation alternatives that would not eliminate the spring load restriction but would improve the pavement structure. The recommendations include:

- Pulverize and pave the road from Highway 138 to Boundary Road (total 250 mm grade raise); and
- Pulverize and pave the road from Boundary Road to the eastern limit of the Study Area (700 mm grade raise) where higher water table and softer soils are present.

Back-to-Back Curve Improvement Alternatives

Alternative 2 is the preferred back-to-back curve improvement alternative. It balances the improved safety conditions compared to the existing conditions, without requiring property or the extension or relocation of the municipal drain culverts. The evaluation is in **Table 2**.

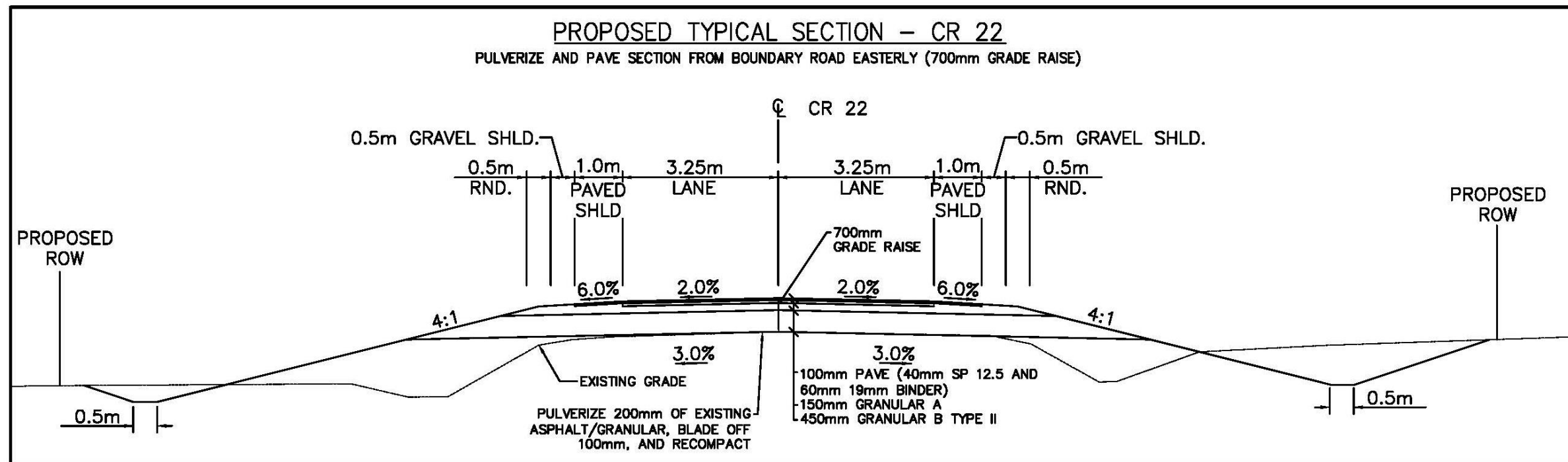
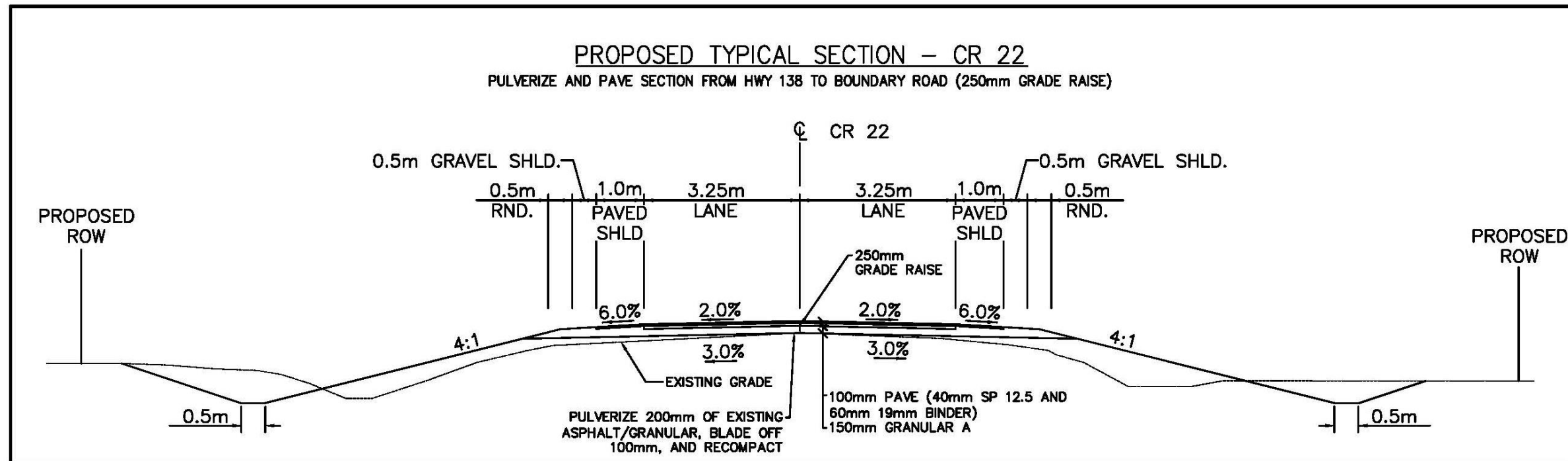
Criterion	Alt 1 Widened Shoulders	Alt 2 FPS Widening and Guiderails	Alt 3 Curve Realignment
Transportation – Traffic Operations	-	-	✓
Transportation – Safety	-	✓	✓
Municipal Drain Extension/Relocation	✓	✓	X
Land Use and Property	✓	✓	X
Cost – Capital Cost	✓	-	-
Recommendation	X	✓	X

Legend:

X (Poor Performance)	- (Neutral Performance)	✓ (Good Performance)
----------------------	-------------------------	----------------------

Intersection Operational Improvements at Cummings Road

Intersection operational improvements were considered at Cummings Road to provide left-turn lanes or a slip-around lane. The intersection does not meet the left-turn lane warrant and therefore a slip-around lane is recommended.



Scale 1:100

Figure 9: County Road 22 Rehabilitation or Reconstruction Alternative (30m Right-of-Way)

8.0 RECOMMENDED PLAN

8.1 Technically Preferred Plan

The following improvements are recommended:

- Rehabilitation and road widening to a 30 m right-of-way;
- In the area of back-to-back curves, improvements include fully paved shoulders, lane widening and guiderail;
- Relocation of municipal drains to 10 m beyond the right-of-way; and
- Slip-around lane at Cummings Road and Cameron Road.

The Technically Preferred Plan was presented at PIC No. 1. Comments were received and the following refinements were made:

- Ditch clean-out along the length of County Road 22;
- Relocate the Cumming Drain from Station 15+680 to 14+930;
- Reduce relocation of the McKenzie Drain-McCrae Branch in front of 17499 County Road 22 to eliminate the impacts to the trees; and
- Relocation of the municipal drain in front of 17689 County Road 22 to reduce the turn-around for delivery trucks at the farm. The parking lot/turn-around will be investigated as part of the design to ensure trucks can make their deliveries.

8.2 Endorsement of the Recommended Plan

The Technically Preferred Plan (TPP) reflected the recommendations of the consultant and the TAC. The plan was then carried forward as the Recommended Plan. The final Recommended Plan is presented in **Section 11.0**.

9.0 EFFECTS AND MITIGATION

Public comments were received during the comment period for PIC No. 1. Adjacent property owners impacted by the construction of the works were contacted regarding property acquisition.

Effects on the environment were considered in accordance with the Municipal Class EA process.

Remaining concerns related to the Recommended Plan will be mitigated to minimize or eliminate any detrimental effects. **Table 3** provides a description of the effects and mitigation proposed with the Recommended Plan.

Table 3: Effects and Impacts of the Study and Proposed Mitigation

Effects/Impact	Interested Party	Mitigation
Concern for improvements to raise the road, including potential water running from the road to houses/basements.		
Poor drainage of the existing ditches.	Public	Ditch clean-out will be completed as part of the construction contract, where required. This will improve the drainage along County Road 22.
Request to install a pipe under County Road 22 connecting Lot 10, Concession 6 and Lot 11, Concession 7.	Public	
Reduce relocation of the McKenzie Drain-McCrae Branch in front of 17499 County Road 22 to eliminate the need to relocate the trees.	Public	The relocation of the McKenzie Drain-McCrae Branch will be brought back to the edge of the road, to maintain the existing trees and limit property impacts at this location.
The road improvements at 17689 County Road 22 reduce the turn-around area for delivery trucks of the farm.	Public	The parking lot and turn-around have been included in the design to ensure trucks can make their deliveries. Two driveways are being provided to accommodate truck movements.
The Cummings Drain Morrow Branch Municipal Drain will be redirected to north of County Road 22 at the Kenyon - Roxborough Boundary Road which will then proceed west on the north side of County Road 22 Property owners were consulted at PIC No. 1 regarding this change.	Public	The Recommended Plan includes the relocation of this Municipal Drain to the north, to maintain the current drainage flow as well as limit impacts to properties on the south from this change.
There is a well located between the barn and County Road on Lot A. The well is 15 ft deep into an existing spring.	Public	The Recommended Plan includes the relocation of this Municipal Drain to the north, to maintain the current drainage flow as well as limit impacts to this well and existing utilities.
Potential impact to emergency service routes / access due to closures / lane reductions.	Public	Prepare / implement Traffic Management Plan during construction. Ensure ongoing and advance communication with emergency service providers during construction.
Potential damage to or loss of archaeological artefacts.	MCM	If deeply buried archaeological remains are encountered during construction, construction will be stopped in the vicinity of the discovery and the Contractor must notify the Ministry of Heritage, Sport, Tourism and Culture Industries. Indigenous Peoples communities will be contacted during the construction phase.
Noise from construction equipment and vehicles during construction.	MECP	Maintain equipment in good operating condition to prevent unnecessary noise. Restrict idling of equipment to the minimum necessary to perform the work. Contractor will be required to abide by noise control by-laws for day-to-day operations.
The project will result in the generation of waste asphalt, granulars, concrete and possibly earth materials.	MECP	Excess generation will be minimized through promoting re-use in the contract.
Potential for impacts to existing utilities	Utilities	Ensure advance coordination with utility companies and approval for all utility relocations / protections. Widened right of way will provide additional space for utilities outside of the roadside ditch.
Removal of various trees and woody vegetation due to clearing	MECP/Public	Maintain, where possible, mature tree specimens with a diameter (DBH) greater than 50 cm.
Tile drainage outlet to be protected	Public	Farm tile drainage outlets to be accommodated.
Opportunities for active transportation improvements	Public	This study includes widening County Road 22 and partially paved shoulders, which will accommodate paved shoulders for cyclists and pedestrians.
Potential disruption to migratory birds, nesting and / or Species at Risk (SAR)	MECP	Any clearing and grubbing should be completed outside of the active breeding bird season of April 1 to August 31. If this is not possible, clearing and grubbing should occur under the supervision of an environmental professional, and only after the specific trees and vegetation needing removal have been screened for nesting birds or roosting bats.

Table 3: Effects and Impacts of the Study and Proposed Mitigation

Effects/Impact	Interested Party	Mitigation
Impacts to fish and fish habitat	DFO	<p>Direct impacts to fish and fish habitat are expected to occur due to the realignment of fish-bearing drains throughout the Study Area. Although presence/absence surveys have been undertaken, a spring review of the drains should be conducted to confirm whether or not spawning habitat is present. Upon identification of potential spawning or nursery habitat (if any), site specific and minor adjustments to alignment should be considered to minimize impacts to fish and fish habitat. Any work proposed to occur below the two-year High-Water Mark of a drain identified as providing direct or indirect fish habitat must be submitted for review to the Department of Fisheries and Oceans (DFO). As such, the drain(s) realignment component of this project must be submitted to DFO for their review. Fish rescues will be required during construction to ensure no death of fish.</p> <p>During construction, erosion and sediment control should be installed to mitigate sediment transport into the drains. Overland flow will require stabilizing erodible soil during construction and associated clearing and grubbing. An erosion and sediment control specialist should be on site during construction to ensure the proper installation of these controls. Additional requirements identified in consultation with DFO should be followed.</p>

10.0 FUTURE ACTIVITIES

At the end of the 30-day review period, should there be no objections to the project, the County may proceed with property acquisition, design and construction of the Recommended Plan, subject to availability of funding and construction priorities.

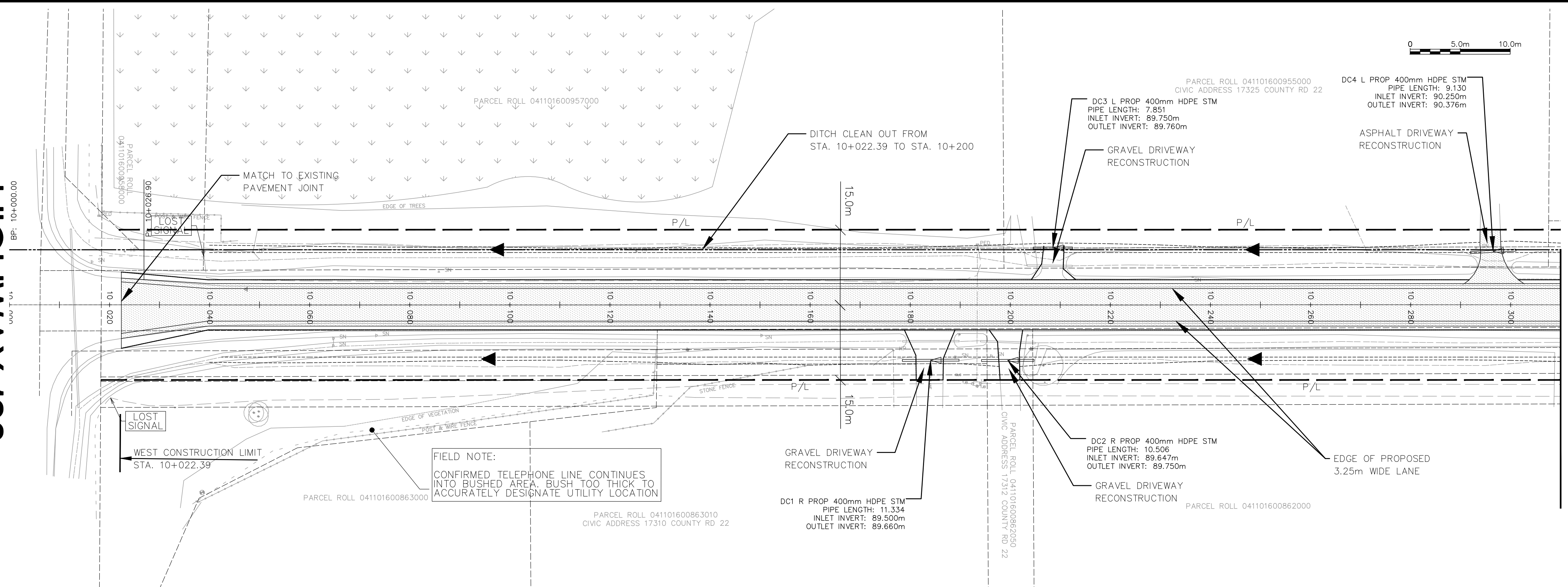
Following EA clearance this project, or any individual element of this project, may proceed to detail design and construction. Mitigation measures listed in **Table 3** are to be incorporated during design and construction, as appropriate.

The rehabilitation may be staged to achieve a balance of cost efficiency and minimize delays to the travelling public. This predicates that County Road 22 may be closed at key times, if required, or reduced to single-lane operation during construction.

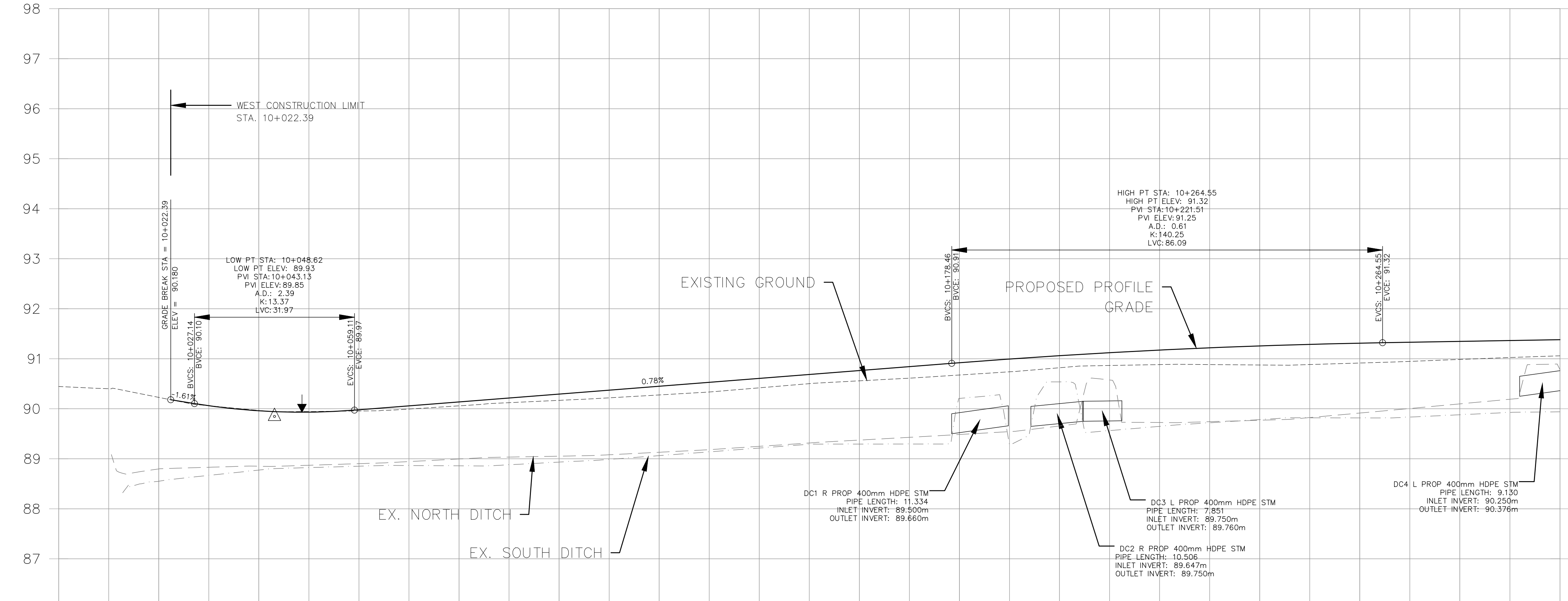
11.0 PLATES

The Recommended Plan is shown on the plates found on the following pages; see **Plate 1** to **Plate 22**.

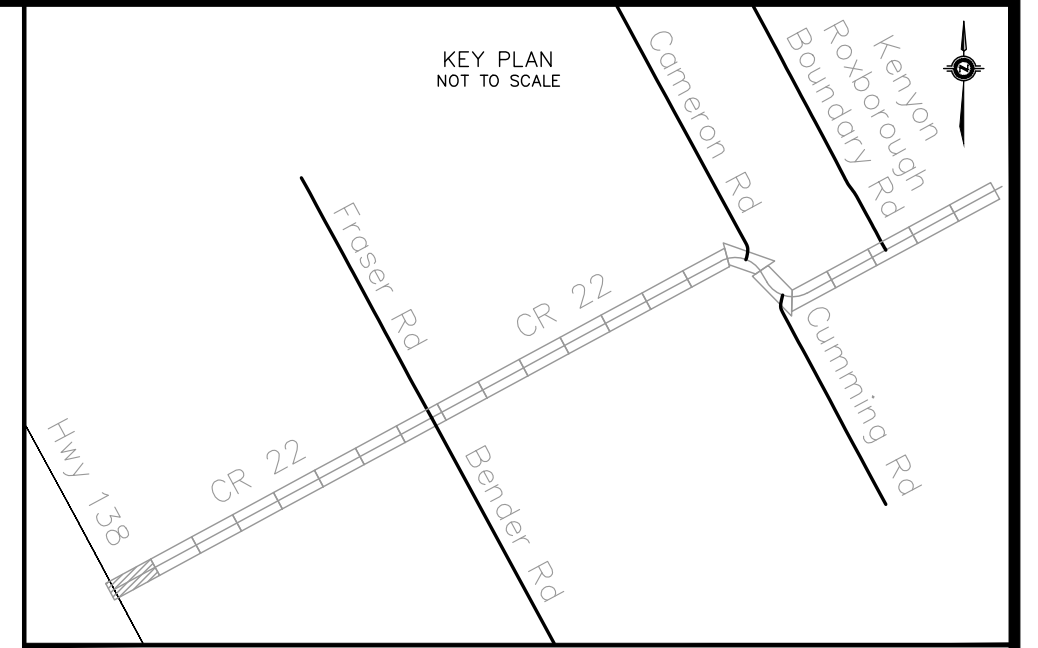
HIGHWAY 138



STORMONT, DUNDAS AND GLENGARRY COUNTY ROAD 22



CHAINAGE	PROP. GRADE ELEV.	EXIST. GROUND ELEV.	PROPOSED GRADE ELEV.
10+020	88.80	88.80	90.23
10+040	88.85	88.77	89.96
10+060	88.85	88.85	89.98
10+080	89.00	88.86	90.14
10+100	89.05	88.93	90.29
10+120	89.13	89.06	90.45
10+140	89.25	89.21	90.61
10+160	89.37	89.29	90.76
10+180	89.49	89.41	90.92
10+200	89.66	89.54	91.06
10+220	89.73	89.65	91.17
10+240	89.77	89.78	91.26
10+260	89.81	89.82	91.31
10+280	89.10	89.88	91.35



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 2. DRAWINGS PLOTTED HALF SIZE (1:1X17) ARE NOT TO SCALE.
 3. ALL DISTURBED AREAS WHERE GRADING IS REQUIRED UNLESS OTHERWISE NOTED IN PLAN SHALL BE RESTORED WITH 100mm TOPSOIL SEED & MULCH.
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 5. ALL DRIVEWAY RECONSTRUCTIONS ARE TO MATCH EXISTING GRADE AND WIDTH AT THE NEW PROPOSED PROPERTY LINE (P/L).

BENCH MARKS

NO.	REVISIONS	DATE	APPROVED
1.	ISSUED FOR 60% REVIEW	MM/YY	S.J.T.

NO.	REVISIONS	DATE	APPROVED
1.	ISSUED FOR 60% REVIEW	MM/YY	S.J.T.

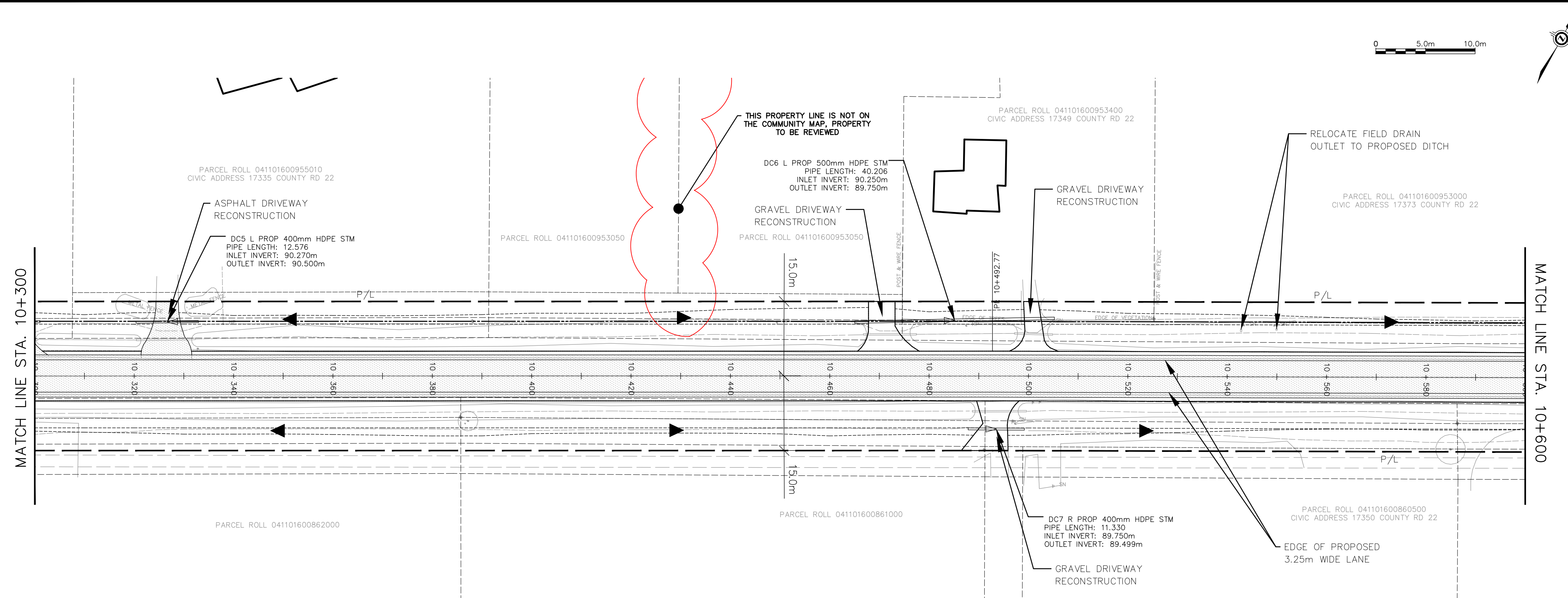
COUNTY ROAD 22
UNITED COUNTIES OF STORMONT, DUNDAS AND GLENGARRY

NEW CONSTRUCTION
STA. 10+000 TO STA. 10+300

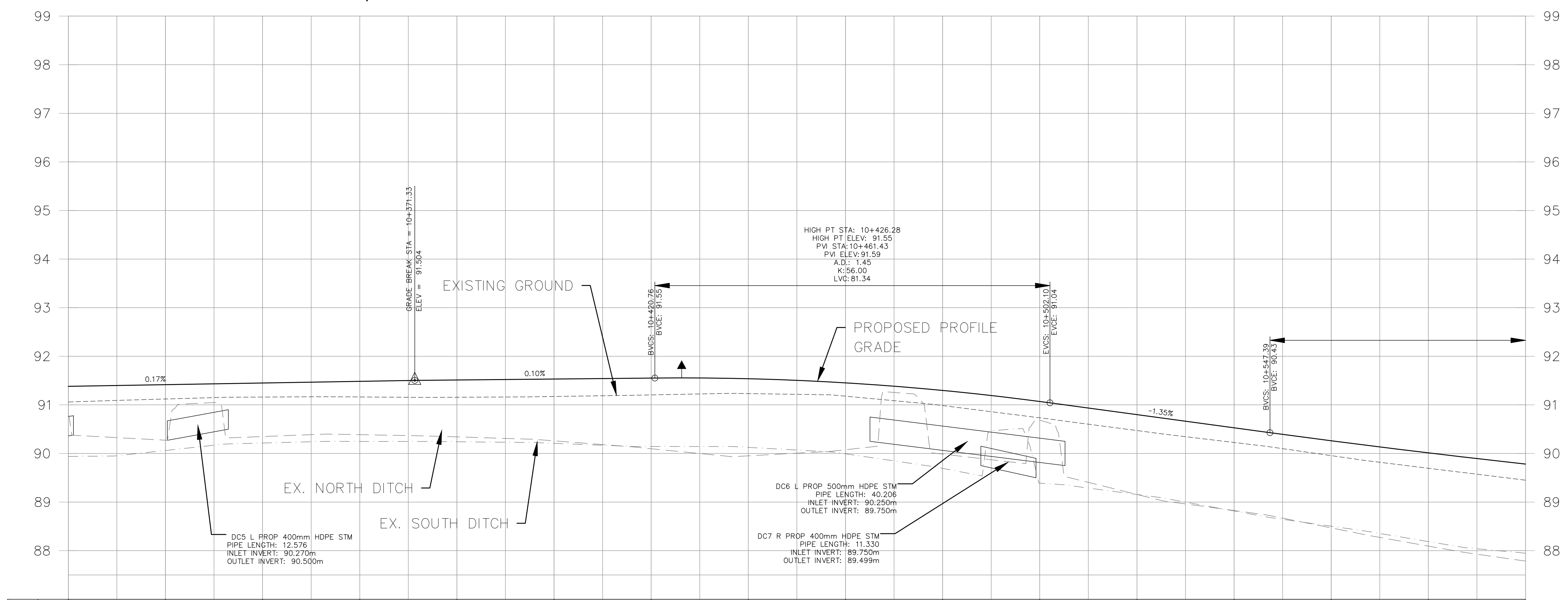
BT ENGINEERING
BTE

SCALE HOR. 1:250 VERT. 1:50 CONTRACT NO. ####
DESIGN XXXX DRAWN XXXX
REVIEWED XXXX DATE YYYY.MM.DD

PLATE 1



STORMONT, DUNDAS AND GLENGARRY COUNTY ROAD 22



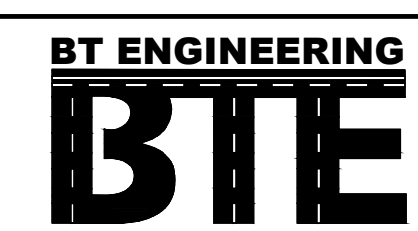
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90.06	90.06	90.21	90.21	90.25	90.25	90.24	90.24	90.21	90.21	90.14	90.14	90.13	90.13	89.09	89.09	89.69	89.69	89.16	89.16	88.50	88.50	88.19	88.19				
90.27	90.27	90.35	90.35	90.39	90.39	90.34	90.34	90.26	90.26	90.10	90.10	90.05	90.05	90.08	90.08	89.09	89.09	89.15	89.15	88.47	88.47	88.09	88.09				
90.27	90.27	90.35	90.35	90.39	90.39	90.34	90.34	90.26	90.26	90.10	90.10	90.05	90.05	90.08	90.08	89.09	89.09	89.15	89.15	88.47	88.47	88.09	88.09				
10+320	10+320	10+340	10+340	10+360	10+360	10+380	10+380	10+400	10+400	10+420	10+420	10+440	10+440	10+460	10+460	10+480	10+480	10+500	10+500	10+520	10+520	10+540	10+540	10+560	10+560	10+580	10+580

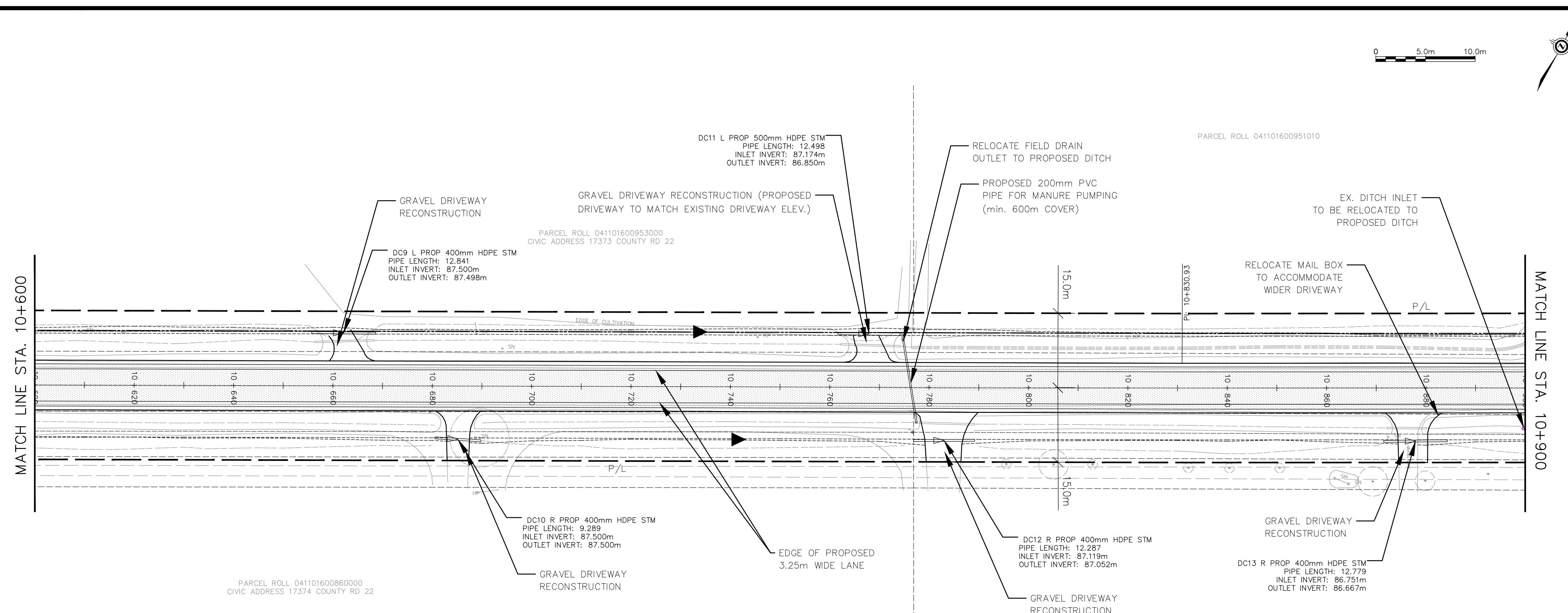
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BENCH MARKS

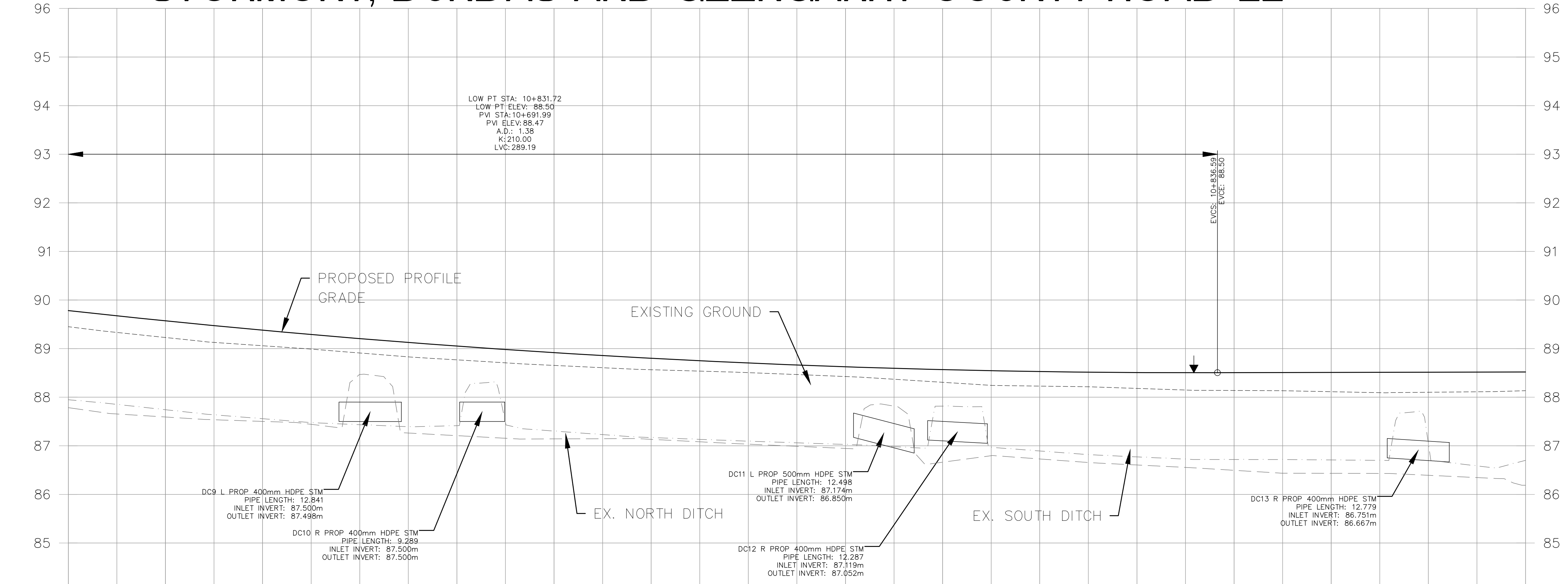
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1.	ISSUED FOR 60% REVIEW	MM/YY	S.J.T.

COUNTY ROAD 22
 UNITED COUNTIES OF STORMONT, DUNDAS
 AND GLENGARRY
 NEW CONSTRUCTION
 STA. 10+300 TO STA. 10+600

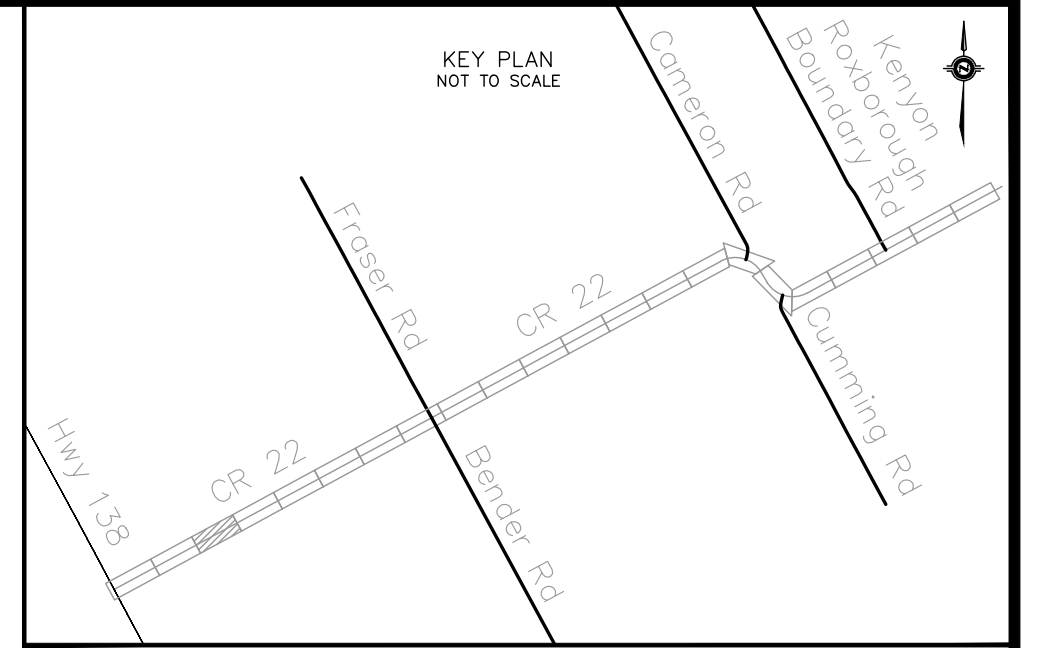
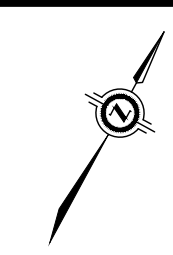
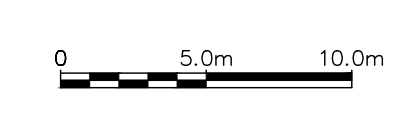




STORMONT, DUNDAS AND GLENGARRY COUNTY ROAD 22



CHAINAGE	PROF. GRADE C/L DITCH ELEV.	EXIST. GROUND DITCH ELEV.	PROF. GRADE DITCH ELEV.
10+620	89.23 89.23	87.59 87.76	89.57 89.23
10+640	89.06 89.06	87.50 87.50	89.18 89.06
10+660	88.91 88.91	87.14 87.43	89.21 88.91
10+680	88.77 88.77	87.21 87.41	89.05 88.77
10+700	88.65 88.65	87.14 87.30	88.92 88.62
10+720	88.57 88.57	87.13 87.13	88.80 88.57
10+740	88.51 88.51	87.03 87.10	88.70 88.51
10+760	88.43 88.43	86.95 87.03	88.63 88.43
10+780	88.31 88.31	86.66 86.82	88.57 88.37
10+800	88.23 88.23	86.73 86.89	88.53 88.23
10+820	88.16 88.16	86.50 86.72	88.51 88.16
10+840	88.14 88.14	86.50 86.72	88.50 88.14
10+860	88.11 88.11	86.43 86.71	88.51 88.11
10+880	88.10 88.10	86.39 87.03	88.51 88.10

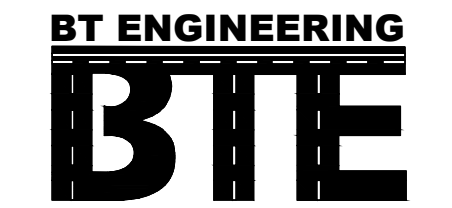


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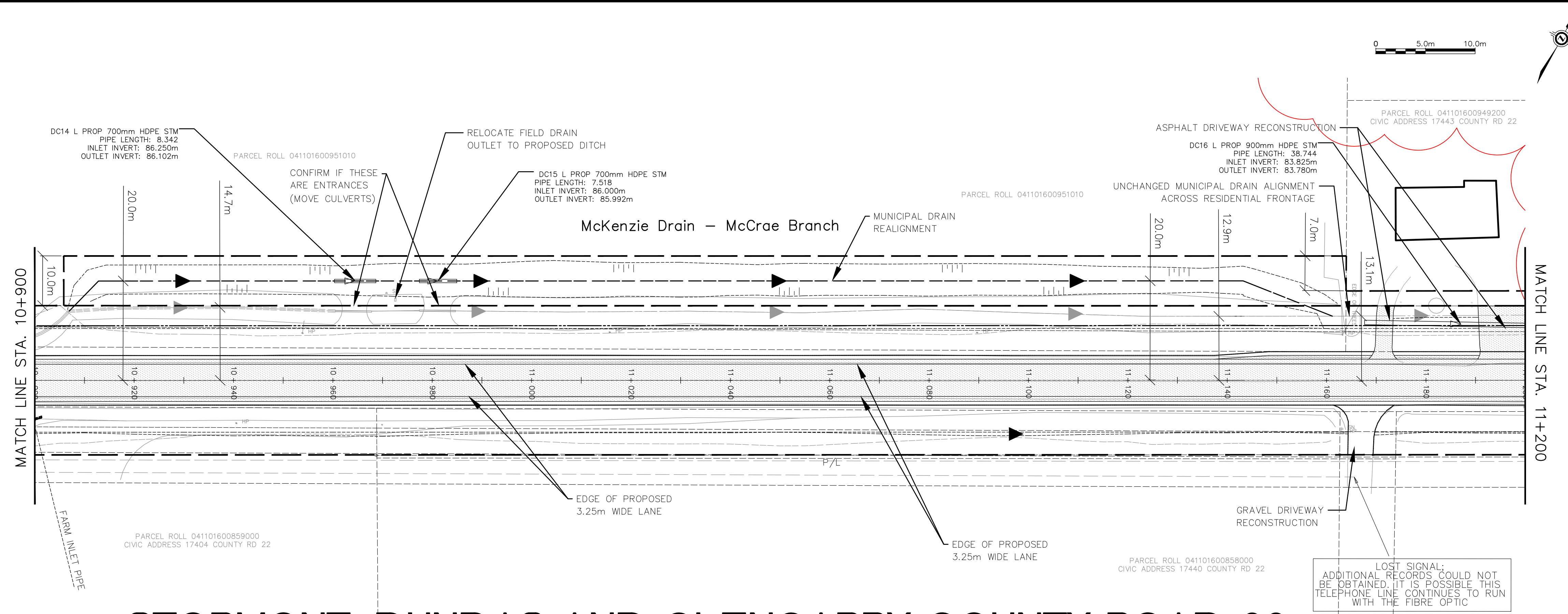
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NO.	REVISIONS	DATE	APPROVED
1.	ISSUED FOR 60% REVIEW	MM/YY	S.J.T.

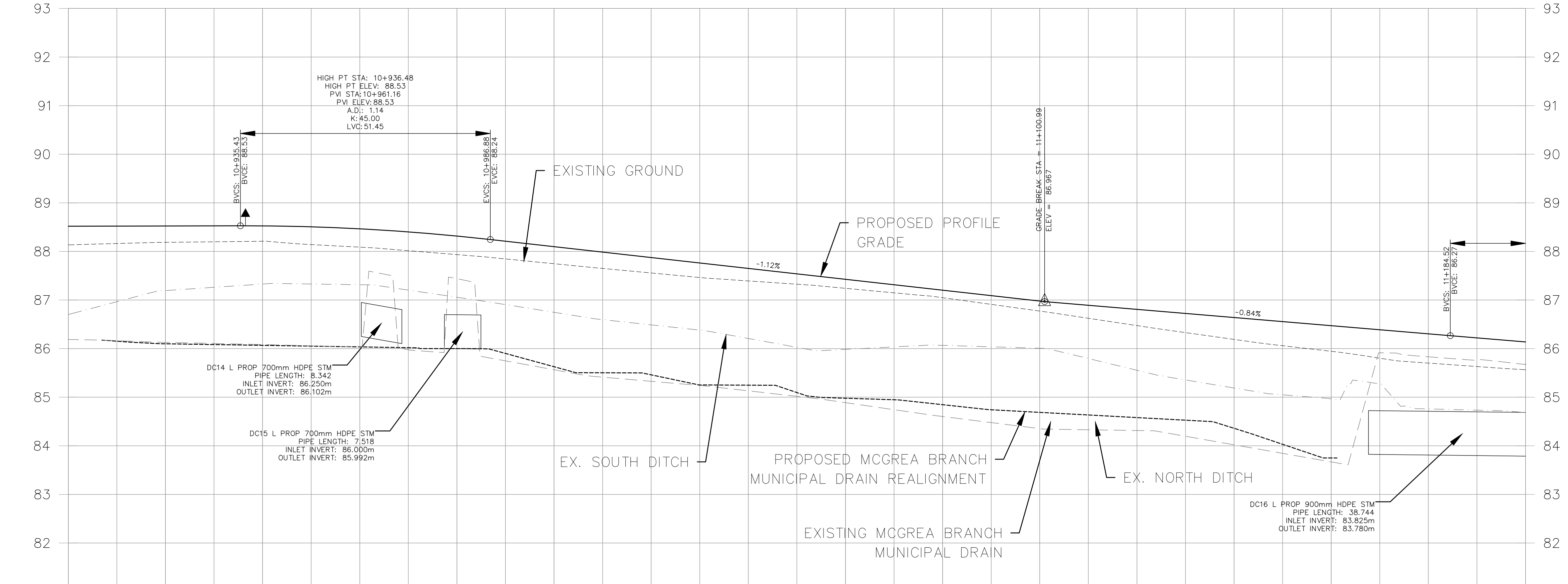
COUNTY ROAD 22
 UNITED COUNTIES OF STORMONT, DUNDAS
 AND GLENGARRY
 NEW CONSTRUCTION
 STA. 10+600 TO STA. 10+900



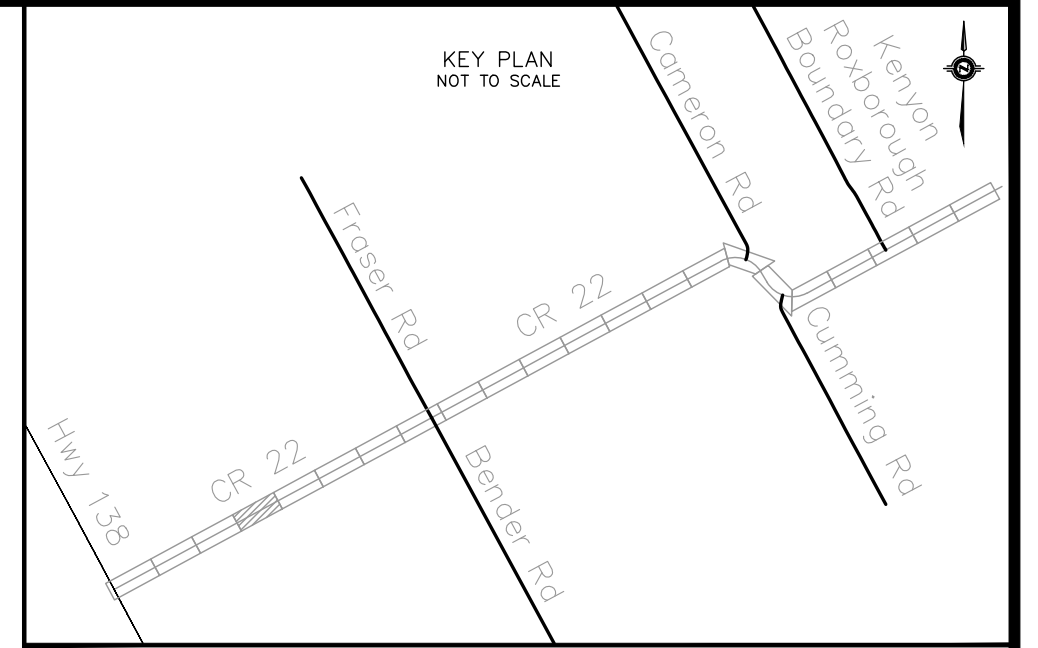
SCALE HOR. 1:250	VERT. 1:50	CONTRACT NO. ###
DESIGN XXXX	DRAWN XXXX	PLATE 3
REVIEWED XXXX	DATE YYYY.MM.DD	



STORMONT, DUNDAS AND GLENGARRY COUNTY ROAD 22



PROF. GRADE C/L	PROF. GRADE C/L	PROF. GRADE C/L	PROF. GRADE C/L	PROF. GRADE C/L	PROF. GRADE C/L	PROF. GRADE C/L	PROF. GRADE C/L	PROF. GRADE C/L	PROF. GRADE C/L	PROF. GRADE C/L	PROF. GRADE C/L	PROF. GRADE C/L	PROF. GRADE C/L	PROF. GRADE C/L	PROF. GRADE C/L
86.52	86.13	86.08	86.03	86.47	87.44	85.57	85.33	85.13	84.89	84.75	84.98	84.98	84.98	84.77	86.70
86.19	86.13	86.05	86.03	86.07	87.44	85.57	85.33	85.13	84.89	84.75	84.98	84.98	84.98	84.77	86.70
86.19	86.13	86.05	86.03	86.07	87.44	85.57	85.33	85.13	84.89	84.75	84.98	84.98	84.98	84.77	86.70
86.19	86.13	86.05	86.03	86.07	87.44	85.57	85.33	85.13	84.89	84.75	84.98	84.98	84.98	84.77	86.70
86.19	86.13	86.05	86.03	86.07	87.44	85.57	85.33	85.13	84.89	84.75	84.98	84.98	84.98	84.77	86.70

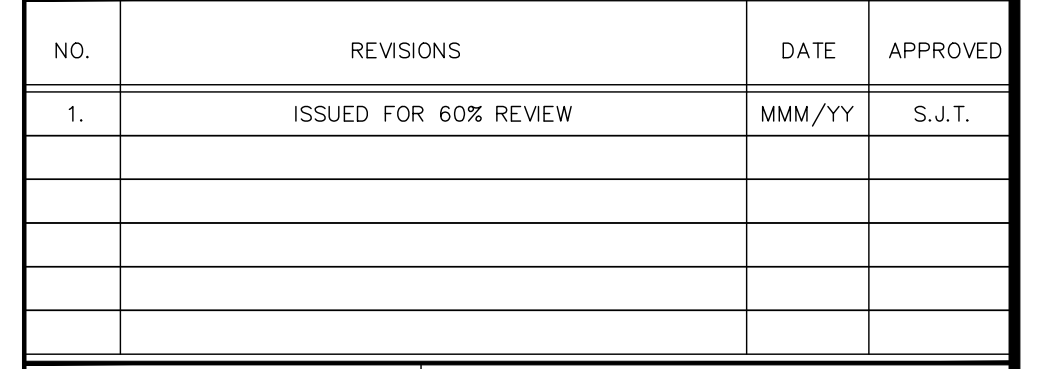


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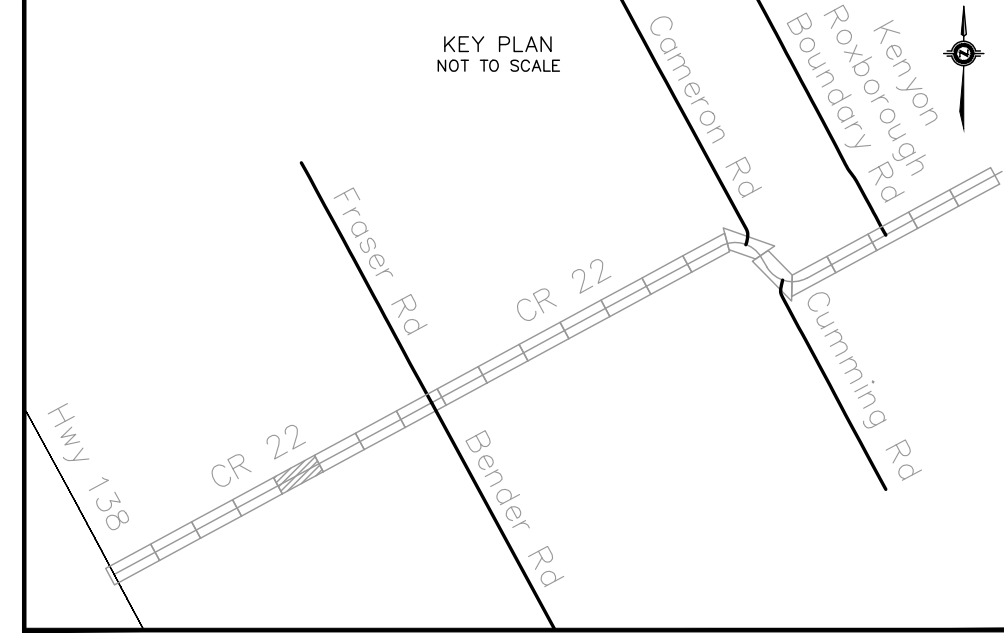
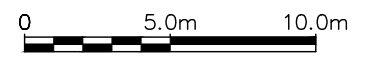
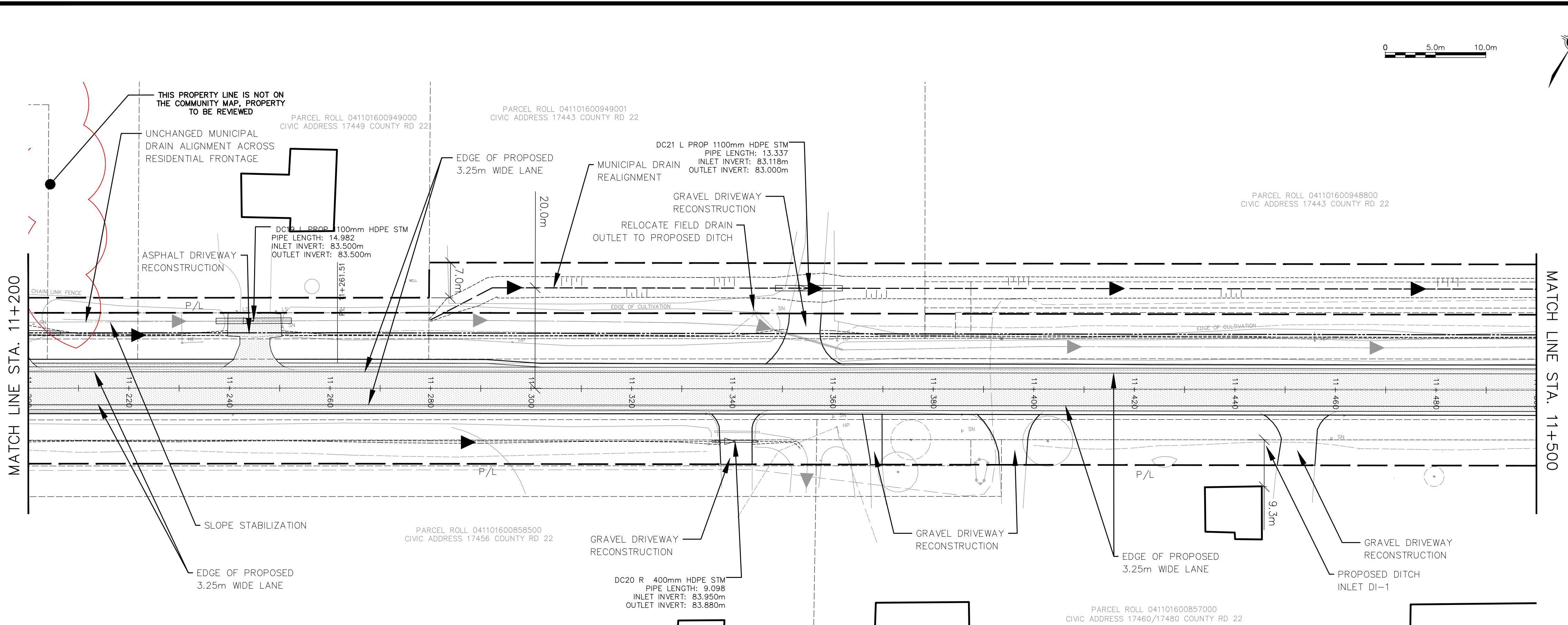
BENCH MARKS

NO.	REVISIONS	DATE	APPROVED
1.	ISSUED FOR 60% REVIEW	MM/YY	S.J.T.

COUNTY ROAD 22
 UNITED COUNTIES OF STORMONT, DUNDAS AND GLENGARRY
 NEW CONSTRUCTION
 STA. 10+900 TO STA. 11+200



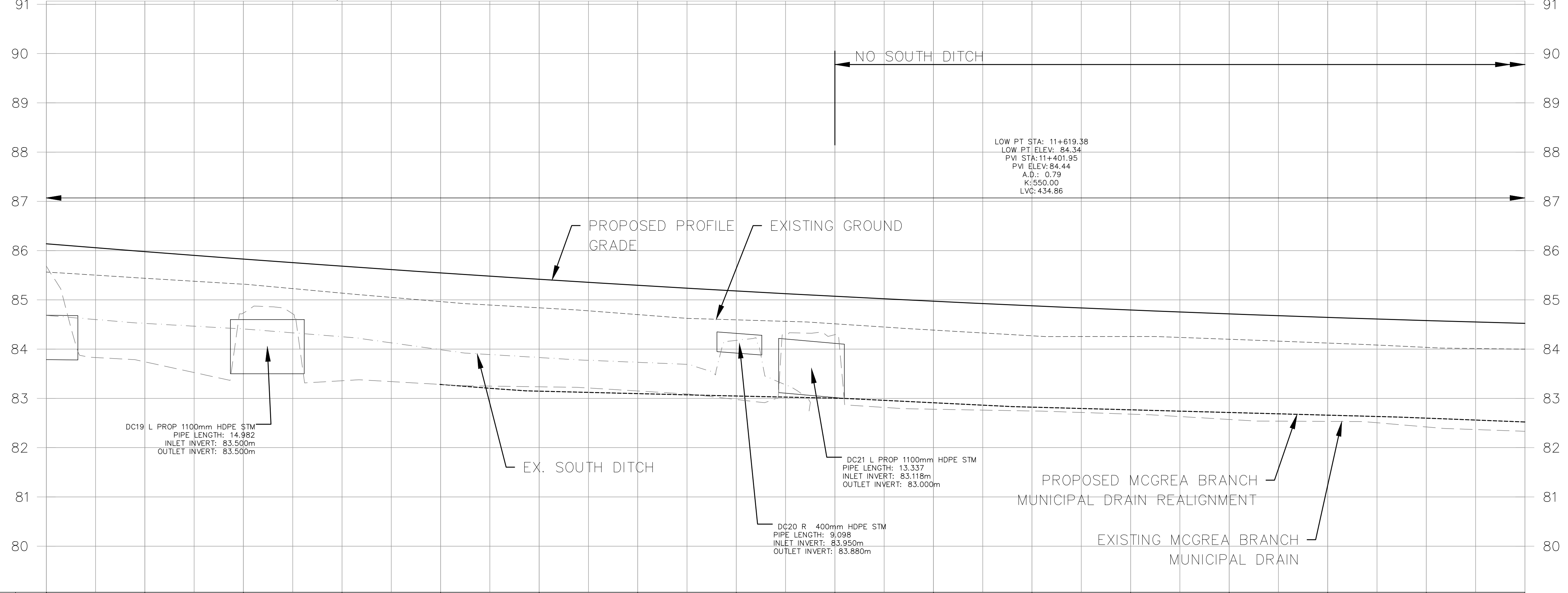
SCALE HOR. 1:250	VERT. 1:50	CONTRACT NO. ###
DESIGN XXXX	DRAWN XXXX	PLATE 4
REVIEWED XXXX	DATE YYYY.MM.DD	



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STORMONT, DUNDAS AND GLENGARRY COUNTY ROAD 22



PROF. GRADE ● C/L ○ GRADING ○ C/A	PROF. DITCH ELEV.	EXIST. DITCH ELEV.	CHAINAGE
85.98 85.44	83.74 83.44	85.08 85.44	11+220
85.83 85.32	84.73 85.32	85.32 85.32	11+240
85.68 85.14	83.36 85.14	85.14 85.14	11+260
85.55 84.97	83.28 84.97	85.55 84.97	11+280
85.42 84.84	83.24 84.84	85.42 84.84	11+300
85.30 84.70	83.15 84.70	85.30 84.70	11+320
85.18 84.58	82.98 84.58	85.18 84.58	11+340
85.07 84.51	84.29 84.51	85.07 84.51	11+360
84.97 84.39	82.78 84.39	84.97 84.39	11+380
84.88 84.27	82.74 84.27	84.88 84.27	11+400
84.79 84.26	82.68 84.26	84.79 84.26	11+420
84.71 84.20	82.57 84.20	84.71 84.20	11+440
84.64 84.12	82.53 84.12	84.64 84.12	11+460
84.58 84.04	82.42 84.04	84.58 84.04	11+480

BENCH MARKS

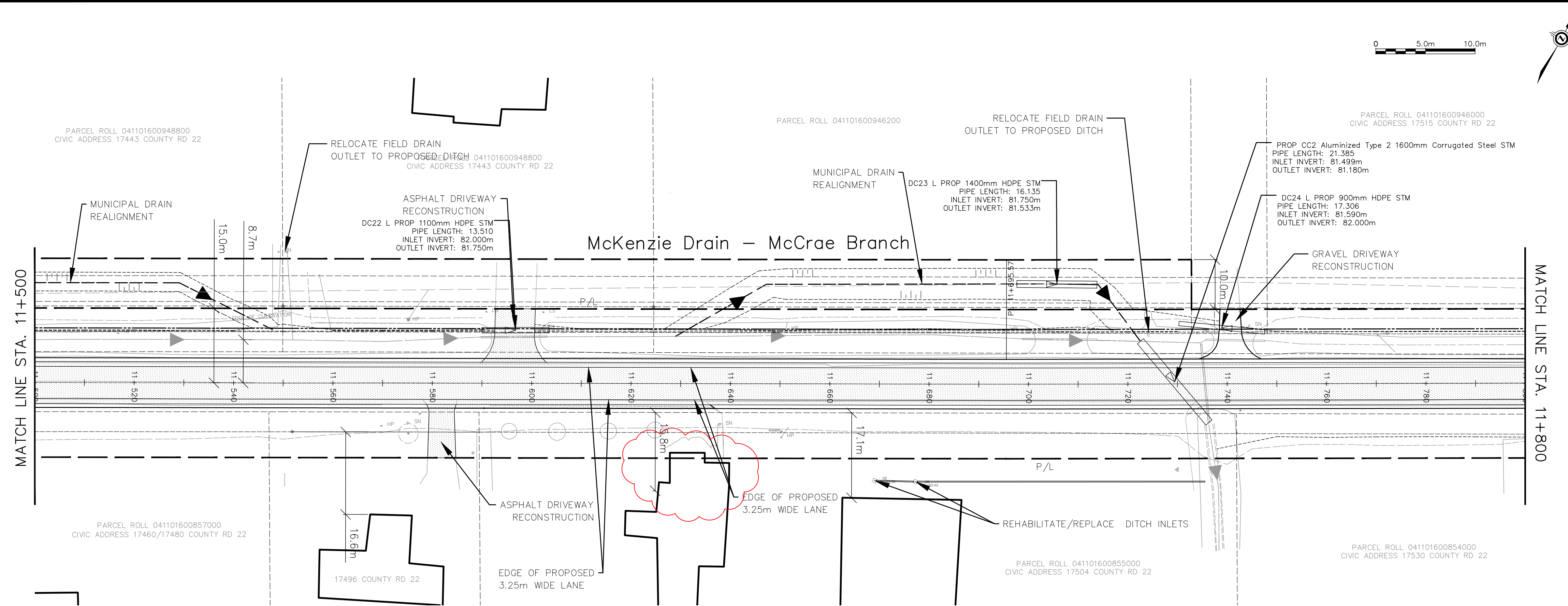
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1.	ISSUED FOR 60% REVIEW	MM/YY	S.J.T.

NO.	REVISIONS	DATE	APPROVED
1.	ISSUED FOR 60% REVIEW	MM/YY	S.J.T.

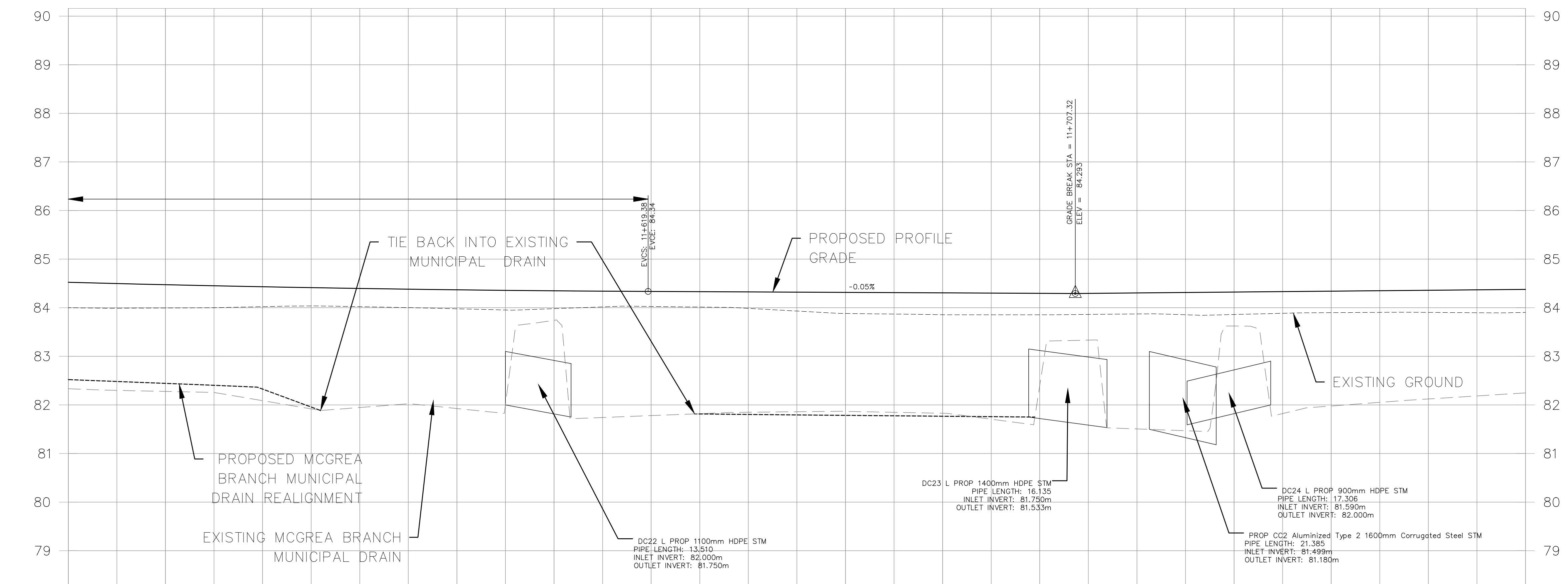
COUNTY ROAD 22
UNITED COUNTIES OF STORMONT, DUNDAS AND GLENGARRY
NEW CONSTRUCTION
STA. 11+200 TO STA. 11+500

BT ENGINEERING
BTE

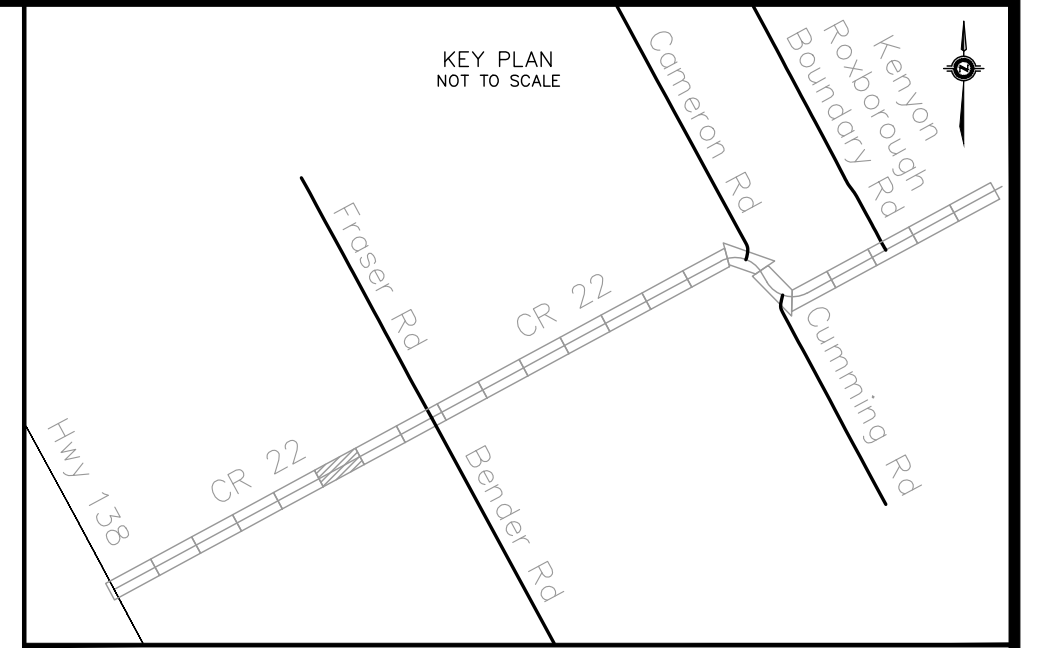
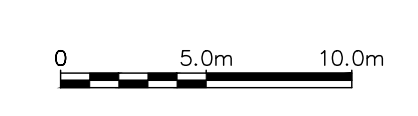
SCALE HOR. 1:250	VERT. 1:50	CONTRACT NO. ####
DESIGN XXXX	DRAWN XXXX	
REVIEWED XXXX	DATE YYYY.MM.DD	PLATE 5



STORMONT, DUNDAS AND GLENGARRY COUNTY ROAD 22



CHAINAGE	PROP. DITCH ELEV.	EXIST. DITCH ELEV.	PROP. GRADE C/L	EXIST. GROUND ELEV.
11+520	83.99	82.28	84.47	83.99
11+540	84.02	82.09	84.43	84.02
11+560	84.02	81.95	84.40	84.02
11+580	83.98	81.93	84.37	83.98
11+600	83.98	83.74	84.35	83.98
11+620	84.03	81.78	84.33	84.03
11+640	83.99	81.85	84.33	83.99
11+660	83.88	81.87	84.32	83.88
11+680	83.86	81.83	84.31	83.86
11+700	83.85	82.40	84.30	83.85
11+720	83.87	81.51	84.30	83.87
11+740	83.86	83.62	84.32	83.86
11+760	83.90	81.98	84.34	83.90
11+780	83.90	82.12	84.36	83.90



- GENERAL NOTES
- THE LOCATION OF UTILITIES IS APPROXIMATE ONLY, THE EXACT LOCATION SHOULD BE DETERMINED BY CONSULTING THE MUNICIPAL AUTHORITIES AND UTILITY COMPANIES CONCERNED. THE CONTRACTOR SHALL PROVE THE LOCATION OF UTILITIES AND SHALL BE RESPONSIBLE FOR ADEQUATE PROTECTION FROM DAMAGE.
 - DRAWINGS PLOTTED HALF SIZE (1:1) ARE NOT TO SCALE.
 - ALL DISTURBED AREAS WHERE GRADING IS REQUIRED UNLESS OTHERWISE NOTED IN PLAN SHALL BE RESTORED WITH 100mm TOPSOIL SEED & MULCH.
 - WHERE PAVED DRIVEWAY RECONSTRUCTION INDICATED IN PLAN PAVEMENT STRUCTURE SHALL BE 50mm HL3 AND PAD WITH GRANULAR 'A' AS REQUIRED. WHERE GRANULAR DRIVEWAY RECONSTRUCTION INDICATED IN PLAN RECONSTRUCT WITH GRANULAR 'A' AS REQUIRED.
 - ALL DRIVEWAY RECONSTRUCTIONS ARE TO MATCH EXISTING GRADE AND WIDTH AT THE NEW PROPOSED PROPERTY LINE (P/L).

BENCH MARKS

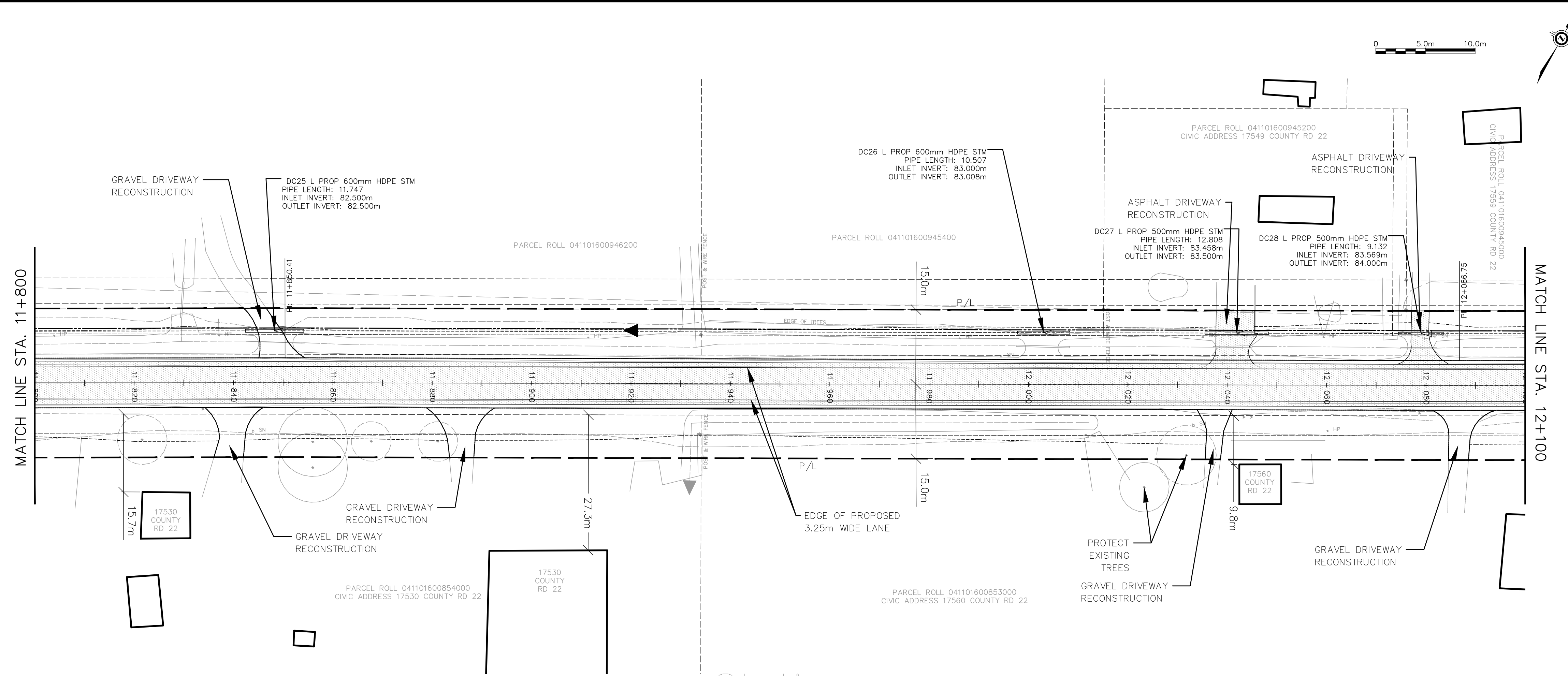
NO.	REVISIONS	DATE	APPROVED
1.	ISSUED FOR 60% REVIEW	MM/YY	S.J.T.

NO.	REVISIONS	DATE	APPROVED
1.	ISSUED FOR 60% REVIEW	MM/YY	S.J.T.

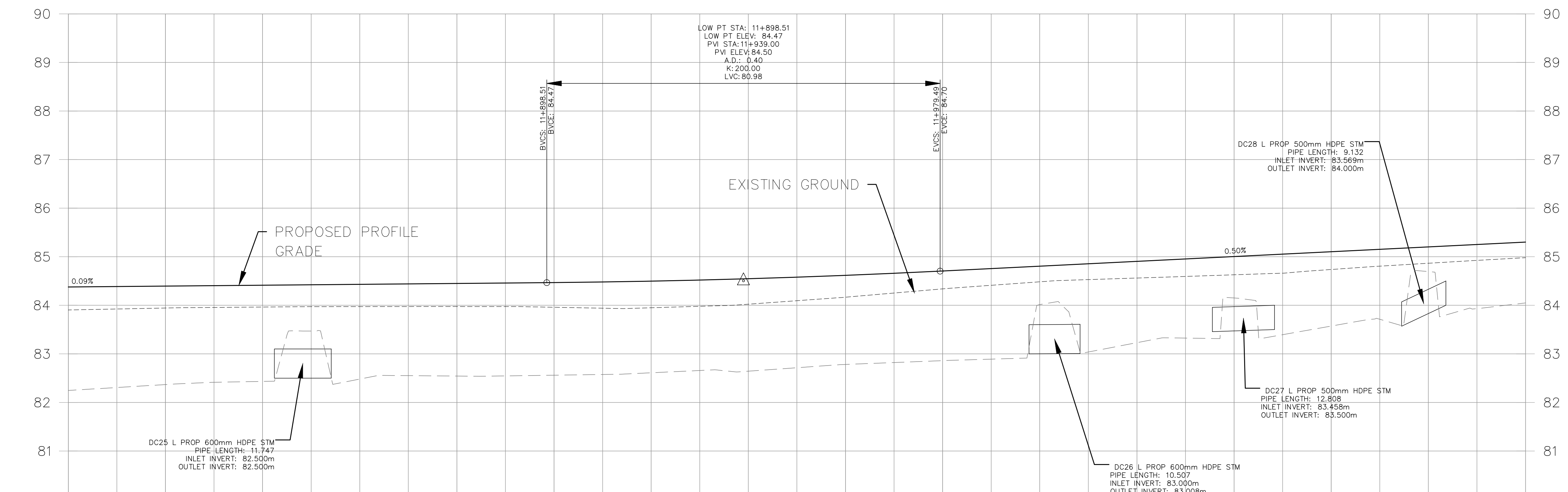
COUNTY ROAD 22
 UNITED COUNTIES OF STORMONT, DUNDAS AND GLENGARRY
 NEW CONSTRUCTION
 STA. 11+500 TO STA. 11+800

BT ENGINEERING
BTE

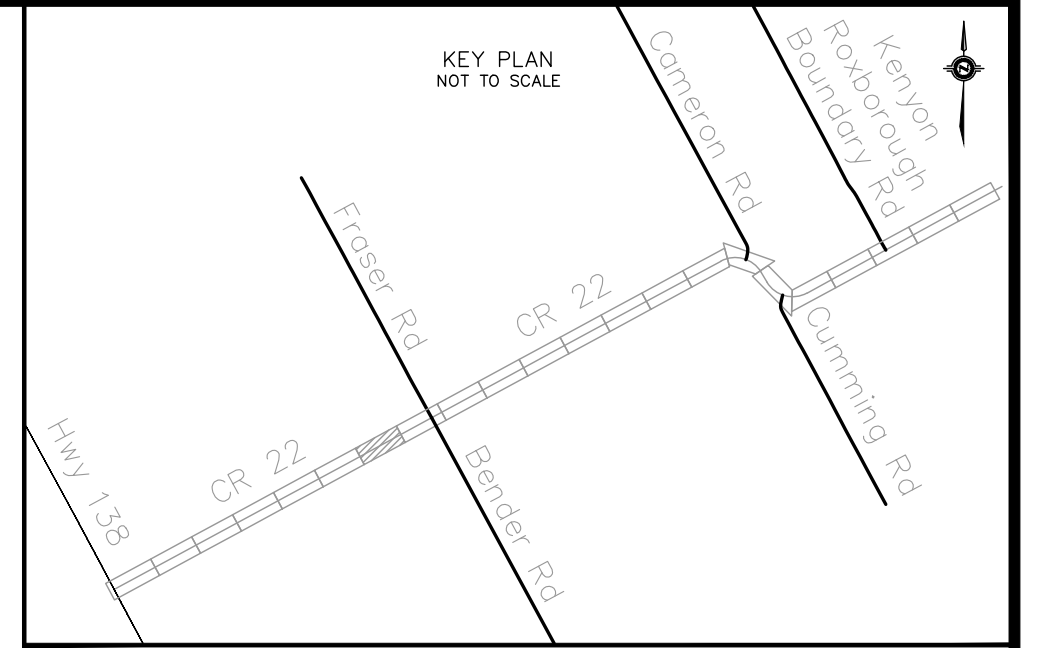
SCALE HOR. 1:250 VERT. 1:50 CONTRACT NO. ####
 DESIGN XXXX DRAWN XXXX
 REVIEWED XXXX DATE YYYY.MM.DD **PLATE 6**



STORMONT, DUNDAS AND GLENGARRY COUNTY ROAD 22



PROF. GRADE	C/L	RIGHT OF WAY	DITCH	ELEV.	PROF. GRADE	C/L	RIGHT OF WAY	DITCH	ELEV.	CHAINAGE
84.39	84.39	82.37	83.94	83.94	84.39	84.39	82.37	83.94	83.94	11+820
84.41	84.41	82.43	83.96	83.96	84.41	84.41	82.43	83.96	83.96	11+840
84.43	84.43	82.48	83.97	83.97	84.43	84.43	82.48	83.97	83.97	11+860
84.45	84.45	82.54	83.97	83.97	84.45	84.45	82.54	83.97	83.97	11+880
84.47	84.47	82.56	83.96	83.96	84.47	84.47	82.56	83.96	83.96	11+900
84.50	84.50	82.61	83.95	83.95	84.50	84.50	82.61	83.95	83.95	11+920
84.55	84.55	82.64	84.02	84.02	84.55	84.55	82.64	84.02	84.02	11+940
84.62	84.62	82.78	84.17	84.17	84.62	84.62	82.78	84.17	84.17	11+960
84.71	84.71	82.86	84.34	84.34	84.71	84.71	82.86	84.34	84.34	11+980
84.81	84.81	84.01	84.48	84.48	84.81	84.81	84.01	84.48	84.48	12+000
84.90	84.90	84.00	84.56	84.56	84.90	84.90	84.00	84.56	84.56	12+020
85.00	85.00	84.15	84.63	84.63	85.00	85.00	84.15	84.63	84.63	12+040
85.10	85.10	83.57	84.74	84.74	85.10	85.10	83.57	84.74	84.74	12+060
85.20	85.20	84.69	84.87	84.87	85.20	85.20	84.69	84.87	84.87	12+080



- GENERAL NOTES**
1. THE LOCATION OF UTILITIES IS APPROXIMATE ONLY, THE EXACT LOCATION SHOULD BE DETERMINED BY CONSULTING THE MUNICIPAL AUTHORITIES AND UTILITY COMPANIES CONCERNED. THE CONTRACTOR SHALL PROVE THE LOCATION OF UTILITIES AND SHALL BE RESPONSIBLE FOR ADEQUATE PROTECTION FROM DAMAGE.
 2. DRAWINGS PLOTTED HALF SIZE (11X17) ARE NOT TO SCALE.
 3. ALL DISTURBED AREAS WHERE GRADING IS REQUIRED UNLESS OTHERWISE NOTED IN PLAN SHALL BE RESTORED WITH 100mm TOPSOIL SEED & MULCH.
 4. WHERE PAVED DRIVEWAY RECONSTRUCTION INDICATED IN PLAN PAVEMENT STRUCTURE SHALL BE 50mm HL3 AND PAD WITH GRANULAR 'A' AS REQUIRED. WHERE GRANULAR DRIVEWAY RECONSTRUCTION INDICATED IN PLAN RECONSTRUCT WITH GRANULAR 'A' AS REQUIRED.
 5. ALL DRIVEWAY RECONSTRUCTIONS ARE TO MATCH EXISTING GRADE AND WIDTH AT THE NEW PROPOSED PROPERTY LINE (P/L).

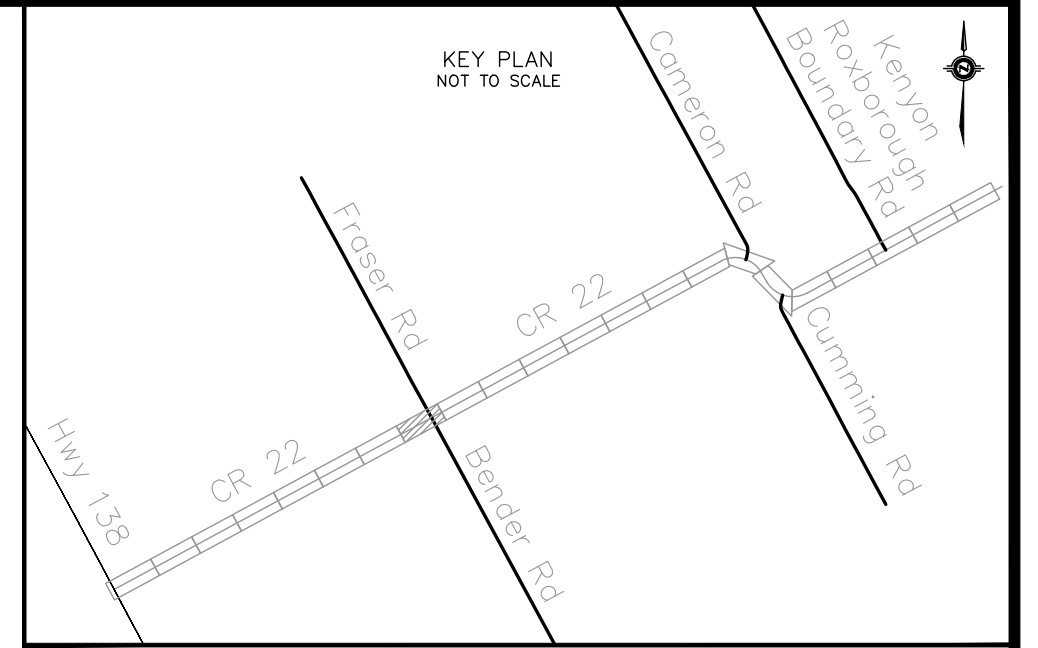
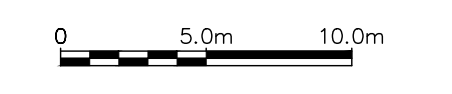
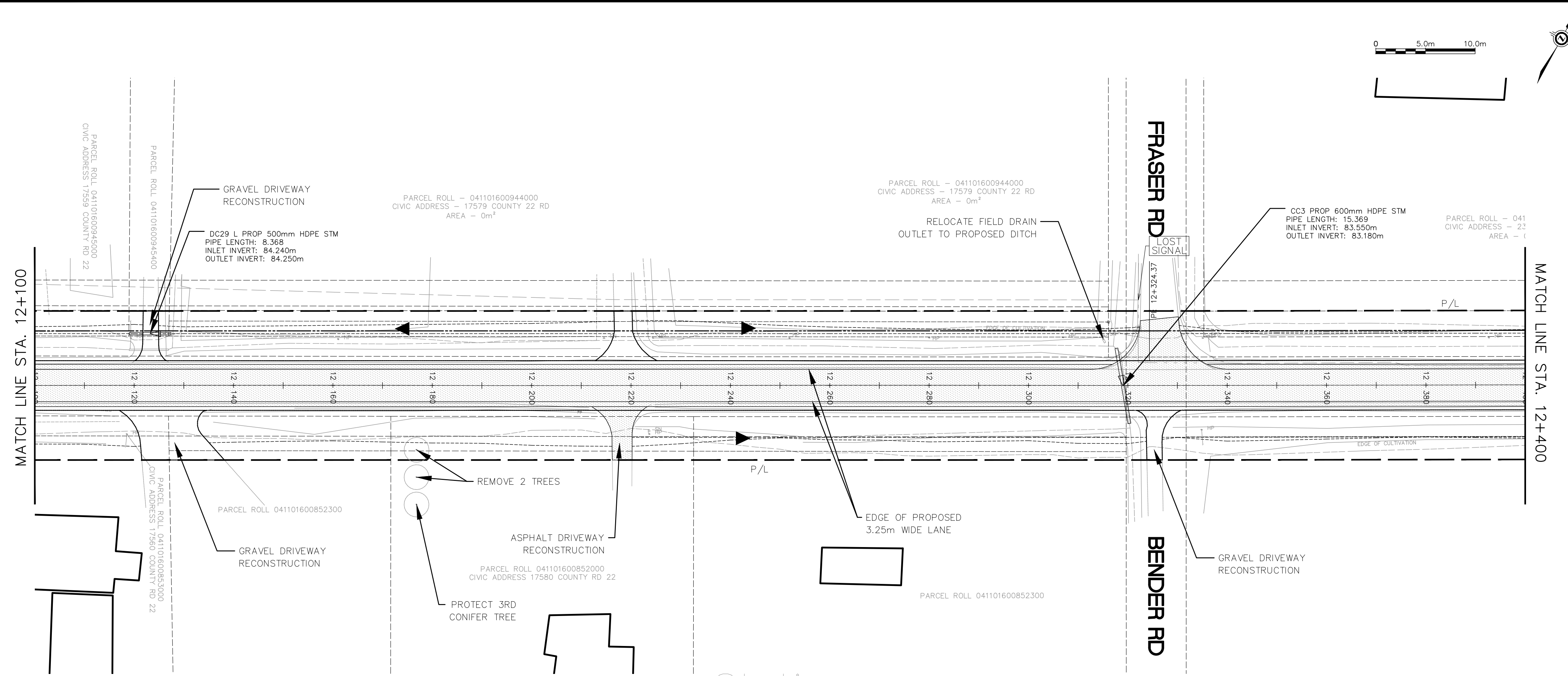
BENCH MARKS

NO.	REVISIONS	DATE	APPROVED
1.	ISSUED FOR 60% REVIEW	MM/YY	S.J.T.

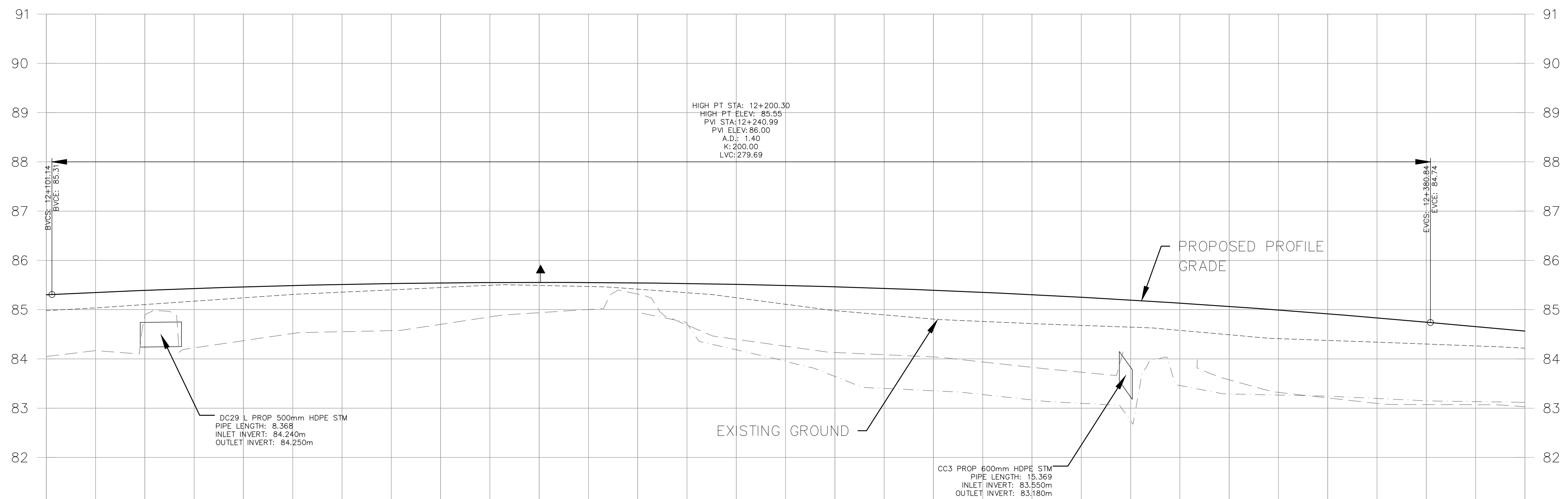
COUNTY ROAD 22
 UNITED COUNTIES OF STORMONT, DUNDAS AND GLENGARRY
 NEW CONSTRUCTION
 STA. 11+800 TO STA. 12+100

BT ENGINEERING
BTE

SCALE HOR. 1:250 VERT. 1:50 CONTRACT NO. ####
 DESIGN XXXX DRAWN XXXX
 REVIEWED XXXX DATE YYYY.MM.DD **PLATE 7**



- GENERAL NOTES**
1. THE LOCATION OF UTILITIES IS APPROXIMATE ONLY, THE EXACT LOCATION SHOULD BE DETERMINED BY CONSULTING THE MUNICIPAL AUTHORITIES AND UTILITY COMPANIES CONCERNED. THE CONTRACTOR SHALL PROVE THE LOCATION OF UTILITIES AND SHALL BE RESPONSIBLE FOR ADEQUATE PROTECTION FROM DAMAGE.
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 5. ALL DRIVEWAY RECONSTRUCTIONS ARE TO MATCH EXISTING GRADE AND WIDTH AT THE NEW PROPOSED PROPERTY LINE (P/L).



CHAINAGE	PROF. GRADE ● C/L ○ BENCH □ DITCH ■ C/A	PROP. PROFILE GRADE ELEV.	EXIST. GROUND ELEV.	PROF. GRADE ELEV.	EXIST. GROUND ELEV.
12+120	85.10 85.10	84.87 85.10	85.39 85.10	85.39 85.10	85.10
12+140	85.24 85.24	84.37 85.24	85.46 85.24	85.46 85.24	85.24
12+160	85.36 85.36	84.55 85.36	85.51 85.36	85.51 85.36	85.36
12+180	85.45 85.45	84.70 85.45	85.54 85.45	85.54 85.45	85.45
12+200	85.49 85.49	84.94 85.49	85.55 85.49	85.55 85.49	85.49
12+220	85.42 85.42	85.31 85.42	85.54 85.42	85.54 85.42	85.42
12+240	85.24 85.24	84.40 85.24	85.51 85.24	85.51 85.24	85.24
12+260	84.98 84.98	84.13 84.98	85.46 84.98	85.46 84.98	84.98
12+280	84.81 84.81	84.04 84.81	85.39 84.81	85.39 84.81	84.81
12+300	84.72 84.72	83.83 84.72	85.30 84.72	85.30 84.72	84.72
12+320	84.64 84.64	83.64 84.64	85.19 84.64	85.19 84.64	84.64
12+340	84.49 84.49	83.49 84.49	85.06 84.49	85.06 84.49	84.49
12+360	84.38 84.38	83.38 84.38	84.92 84.38	84.92 84.38	84.38
12+380	84.30 84.30	83.30 84.30	84.75 84.30	84.75 84.30	84.30

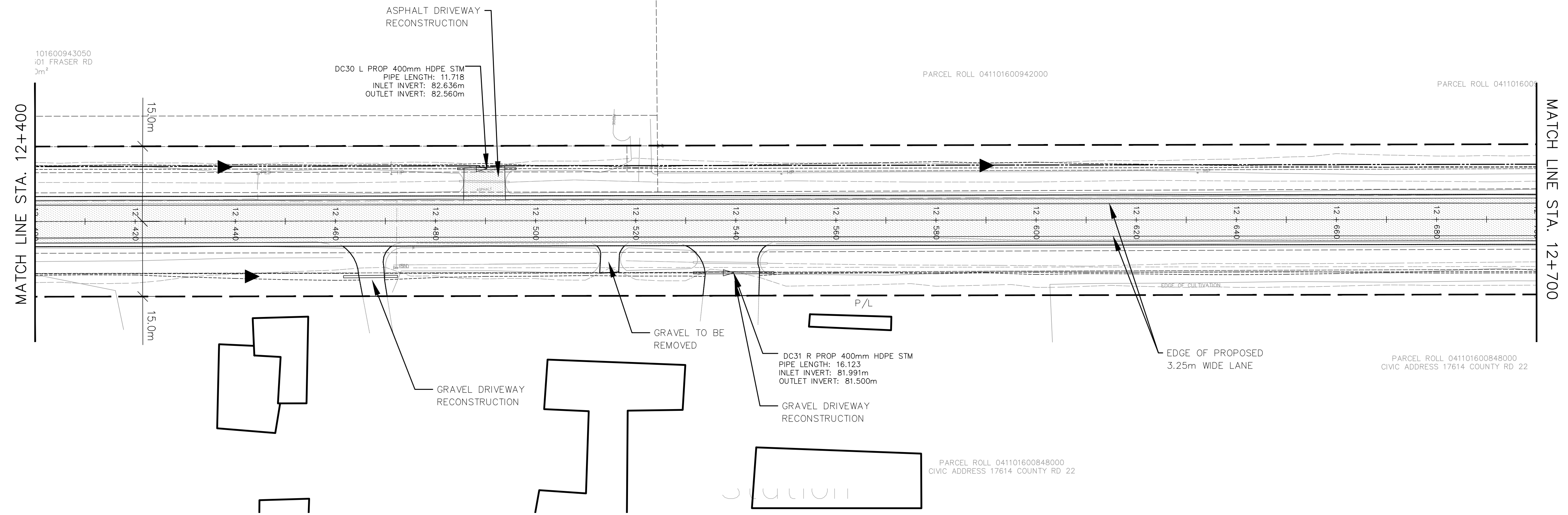
BENCH MARKS

NO.	REVISIONS	DATE	APPROVED
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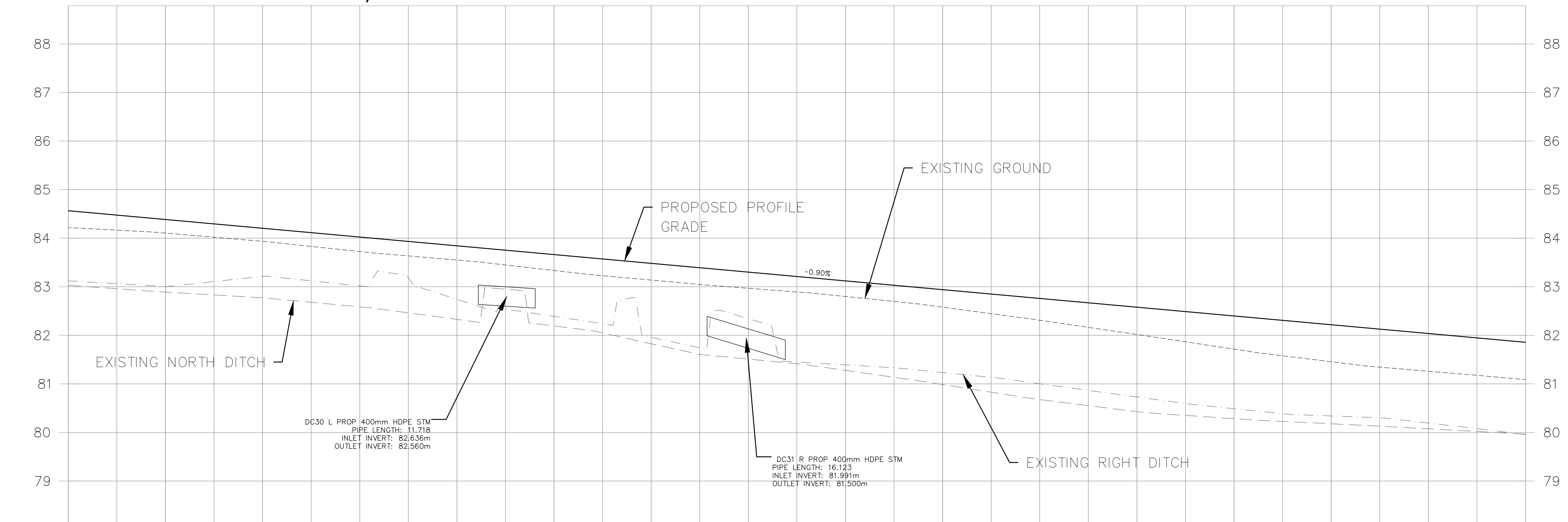
COUNTY ROAD 22
 UNITED COUNTIES OF STORMONT, DUNDAS
 AND GLENGARRY
 NEW CONSTRUCTION
 STA. 12+100 TO STA. 12+400

BT ENGINEERING

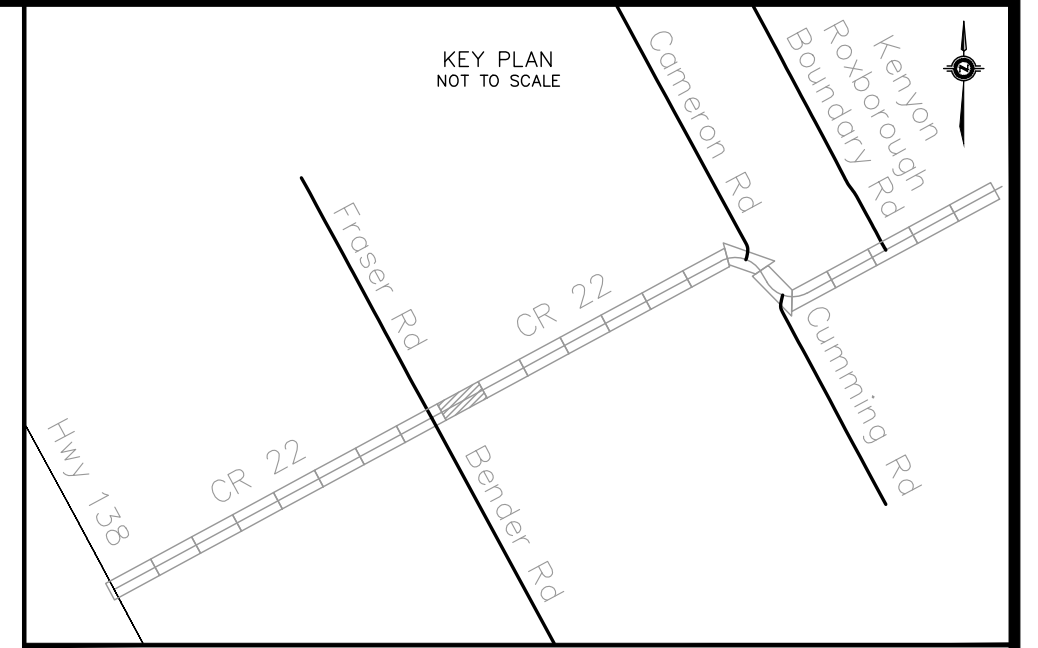
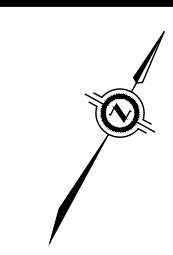
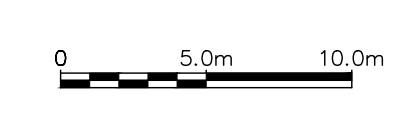
 SCALE HOR: 1:250 VERT: 1:50 CONTRACT NO: ####
 DESIGN: XXXX DRAWN: XXXX
 REVIEWED: XXXX DATE: YYYY.MM.DD **PLATE 8**



STORMONT, DUNDAS AND GLENGARRY COUNTY ROAD 22



CHAINAGE	PROF. GRADE @ C/L ELEV.	PROF. GRADE @ C/L ELEV.	PROF. GRADE @ C/L ELEV.	PROF. GRADE @ C/L ELEV.	PROF. GRADE @ C/L ELEV.	PROF. GRADE @ C/L ELEV.	PROF. GRADE @ C/L ELEV.	PROF. GRADE @ C/L ELEV.	PROF. GRADE @ C/L ELEV.	PROF. GRADE @ C/L ELEV.	PROF. GRADE @ C/L ELEV.	PROF. GRADE @ C/L ELEV.	PROF. GRADE @ C/L ELEV.	PROF. GRADE @ C/L ELEV.	PROF. GRADE @ C/L ELEV.	PROF. GRADE @ C/L ELEV.
12+420	84.10	84.10	84.10	84.10	84.10	84.10	84.10	84.10	84.10	84.10	84.10	84.10	84.10	84.10	84.10	84.10
12+440	83.93	83.93	83.93	83.93	83.93	83.93	83.93	83.93	83.93	83.93	83.93	83.93	83.93	83.93	83.93	83.93
12+460	83.73	83.73	83.73	83.73	83.73	83.73	83.73	83.73	83.73	83.73	83.73	83.73	83.73	83.73	83.73	83.73
12+480	83.55	83.55	83.55	83.55	83.55	83.55	83.55	83.55	83.55	83.55	83.55	83.55	83.55	83.55	83.55	83.55
12+500	83.33	83.33	83.33	83.33	83.33	83.33	83.33	83.33	83.33	83.33	83.33	83.33	83.33	83.33	83.33	83.33
12+520	83.14	83.14	83.14	83.14	83.14	83.14	83.14	83.14	83.14	83.14	83.14	83.14	83.14	83.14	83.14	83.14
12+540	82.97	82.97	82.97	82.97	82.97	82.97	82.97	82.97	82.97	82.97	82.97	82.97	82.97	82.97	82.97	82.97
12+560	82.80	82.80	82.80	82.80	82.80	82.80	82.80	82.80	82.80	82.80	82.80	82.80	82.80	82.80	82.80	82.80
12+580	82.58	82.58	82.58	82.58	82.58	82.58	82.58	82.58	82.58	82.58	82.58	82.58	82.58	82.58	82.58	82.58
12+600	82.31	82.31	82.31	82.31	82.31	82.31	82.31	82.31	82.31	82.31	82.31	82.31	82.31	82.31	82.31	82.31
12+620	82.02	82.02	82.02	82.02	82.02	82.02	82.02	82.02	82.02	82.02	82.02	82.02	82.02	82.02	82.02	82.02
12+640	81.71	81.71	81.71	81.71	81.71	81.71	81.71	81.71	81.71	81.71	81.71	81.71	81.71	81.71	81.71	81.71
12+660	81.45	81.45	81.45	81.45	81.45	81.45	81.45	81.45	81.45	81.45	81.45	81.45	81.45	81.45	81.45	81.45
12+680	81.26	81.26	81.26	81.26	81.26	81.26	81.26	81.26	81.26	81.26	81.26	81.26	81.26	81.26	81.26	81.26



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 2. DRAWINGS PLOTTED HALF SIZE (1:1) ARE NOT TO SCALE.
 3. ALL DISTURBED AREAS WHERE GRADING IS REQUIRED UNLESS OTHERWISE NOTED IN PLAN SHALL BE RESTORED WITH 100mm TOPSOIL SEED & MULCH.
 4. WHERE PAVED DRIVEWAY RECONSTRUCTION INDICATED IN PLAN PAVEMENT STRUCTURE SHALL BE 50mm HL3 AND PAD WITH GRANULAR 'A' AS REQUIRED. WHERE GRANULAR DRIVEWAY RECONSTRUCTION INDICATED IN PLAN RECONSTRUCT WITH GRANULAR 'A' AS REQUIRED.
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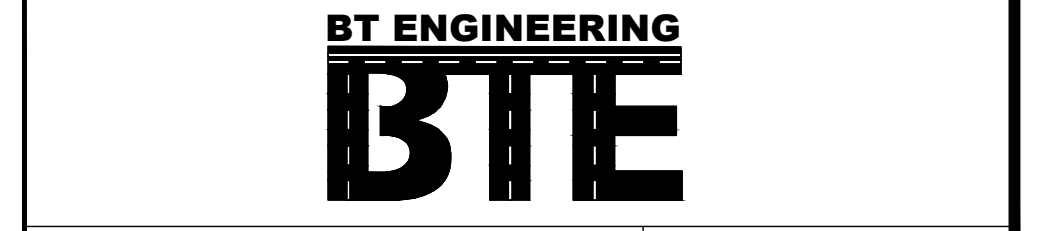
BENCH MARKS

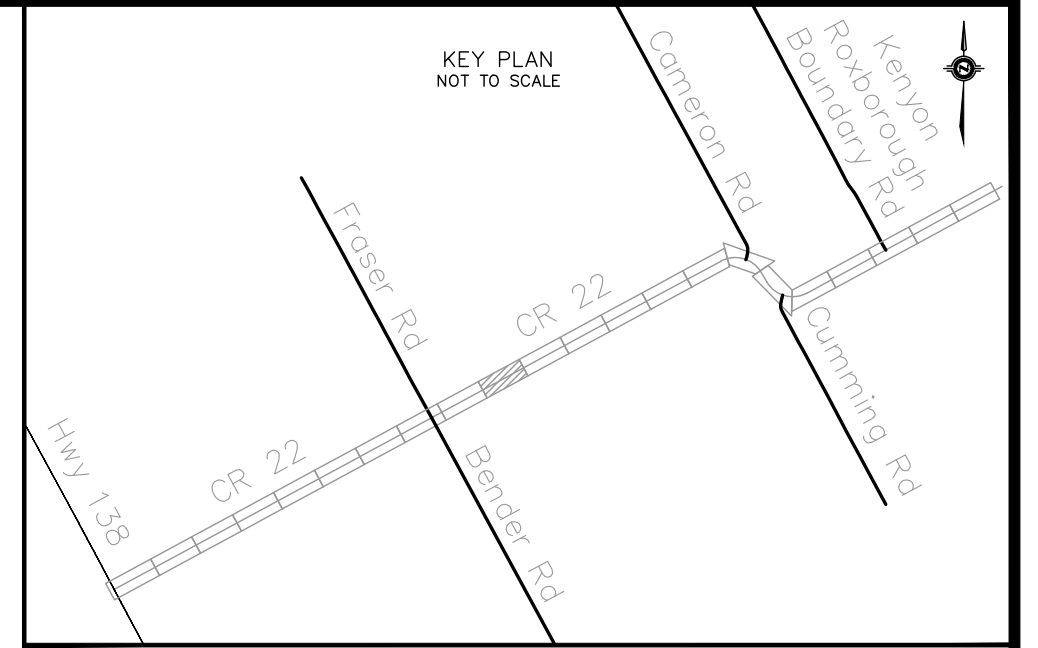
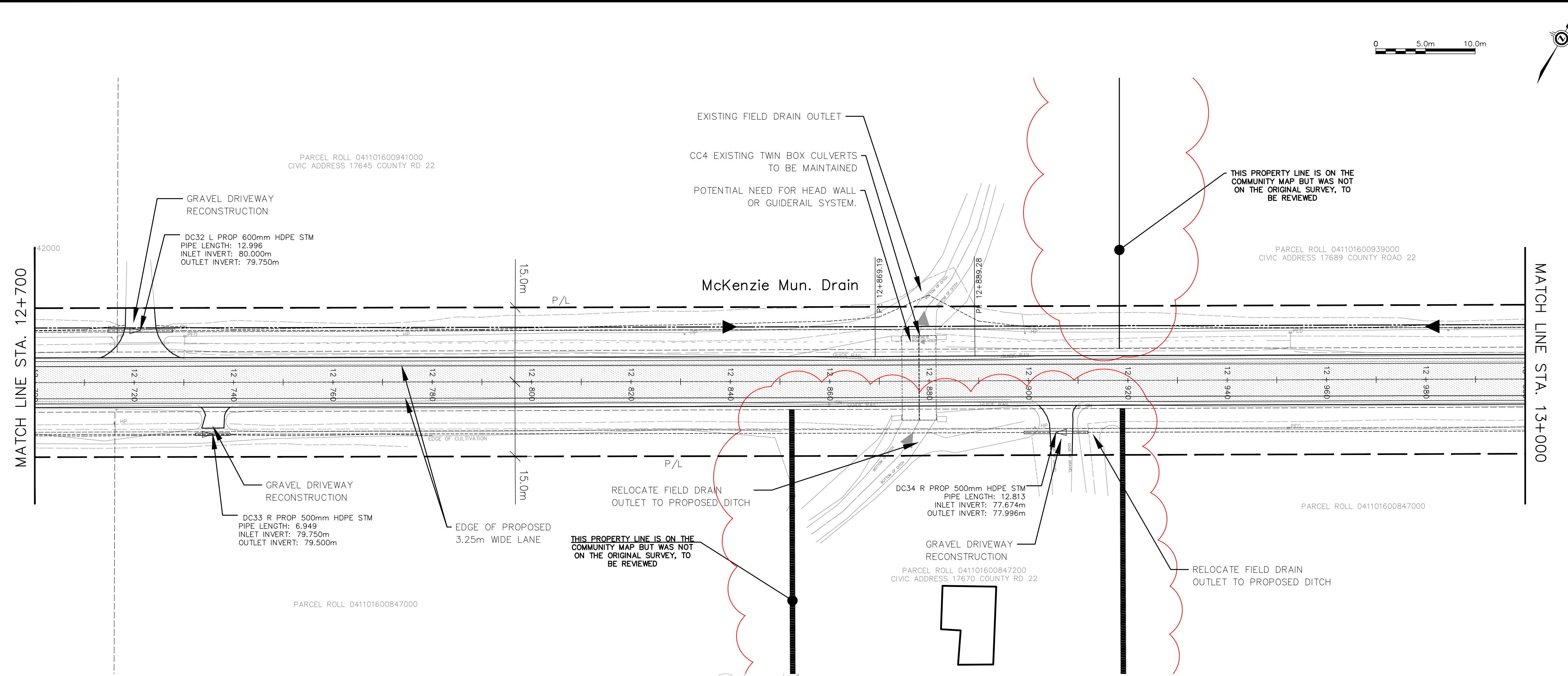
NO.	REVISIONS	DATE	APPROVED
1.	ISSUED FOR 60% REVIEW	MM/YY	S.J.T.

NO.	REVISIONS	DATE	APPROVED
1.	ISSUED FOR 60% REVIEW	MM/YY	S.J.T.

COUNTY ROAD 22
 UNITED COUNTIES OF STORMONT, DUNDAS
 AND GLENGARRY

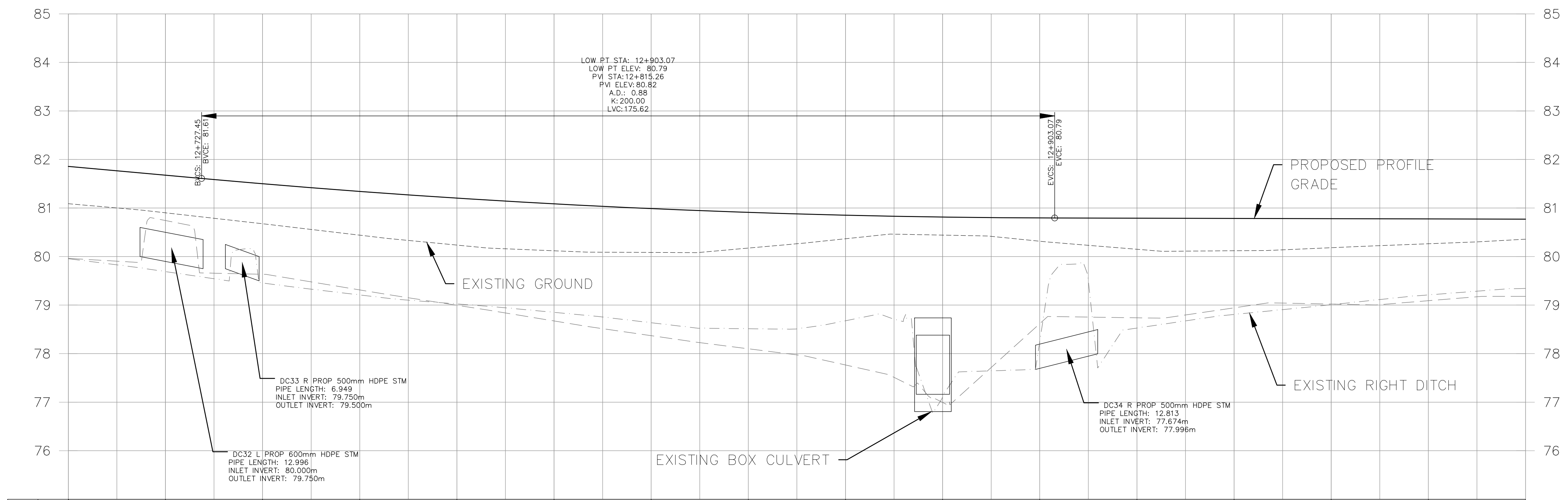
NEW CONSTRUCTION
 STA. 12+400 TO STA. 12+700





- GENERAL NOTES**
1. THE LOCATION OF UTILITIES IS APPROXIMATE ONLY, THE EXACT LOCATION SHOULD BE DETERMINED BY CONSULTING THE MUNICIPAL AUTHORITIES AND UTILITY COMPANIES CONCERNED. THE CONTRACTOR SHALL PROVE THE LOCATION OF UTILITIES AND SHALL BE RESPONSIBLE FOR ADEQUATE PROTECTION FROM DAMAGE.
 2. DRAWINGS PLOTTED HALF SIZE (11X17) ARE NOT TO SCALE.
 3. ALL DISTURBED AREAS WHERE GRADING IS REQUIRED UNLESS OTHERWISE NOTED IN PLAN SHALL BE RESTORED WITH 100mm TOPSOIL SEED & MULCH.
 4. WHERE PAVED DRIVEWAY RECONSTRUCTION INDICATED IN PLAN PAVEMENT STRUCTURE SHALL BE 50mm HL3 AND PAD WITH GRANULAR 'A' AS REQUIRED. WHERE GRANULAR DRIVEWAY RECONSTRUCTION INDICATED IN PLAN RECONSTRUCT WITH GRANULAR 'A' AS REQUIRED.
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STORMONT, DUNDAS AND GLENGARRY COUNTY ROAD 22



PROF. GRADE	C/L	EXIST. GROUND	EXIST. RIGHT DITCH	EXIST. LEFT DITCH	EXIST. BOX CULVERT
81.68	80.90	80.90	80.90	80.90	
81.50	80.68	80.68	80.68	80.68	
81.34	80.44	80.44	80.44	80.44	
81.20	80.24	80.24	80.24	80.24	
81.09	80.12	80.12	80.12	80.12	
80.99	80.08	80.08	80.08	80.08	
80.91	80.17	80.17	80.17	80.17	
80.85	80.37	80.37	80.37	80.37	
80.81	80.44	80.44	80.44	80.44	
80.80	80.32	80.32	80.32	80.32	
80.79	80.15	80.15	80.15	80.15	
80.79	80.12	80.12	80.12	80.12	
80.78	80.18	80.18	80.18	80.18	
80.78	80.26	80.26	80.26	80.26	

BENCH MARKS

NO.	REVISIONS	DATE	APPROVED
1.	ISSUED FOR 60% REVIEW	MM/YY	S.J.T.

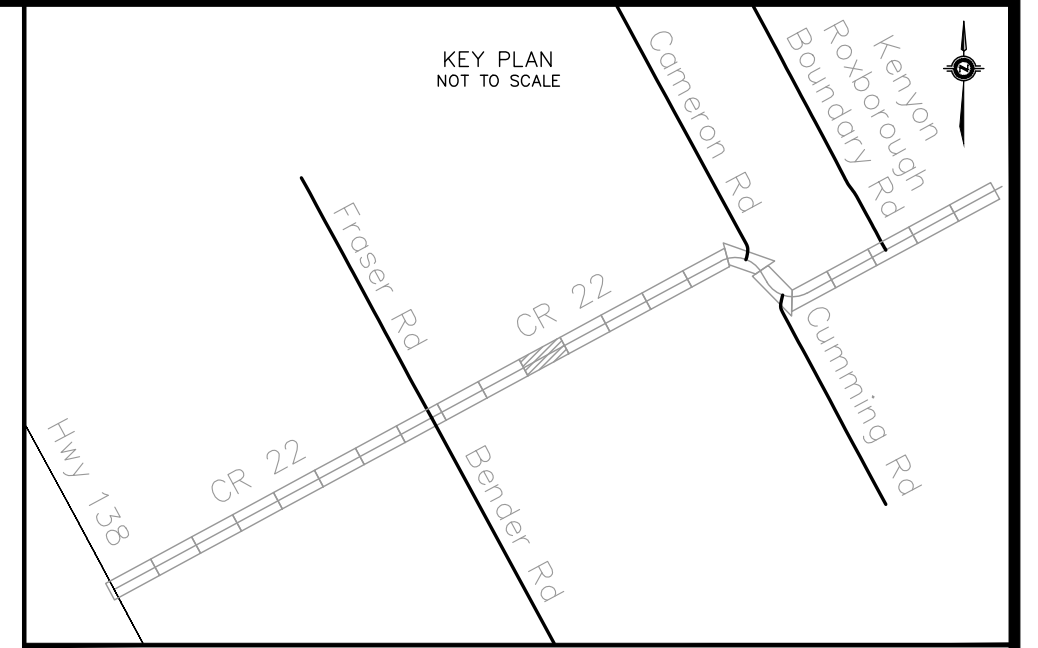
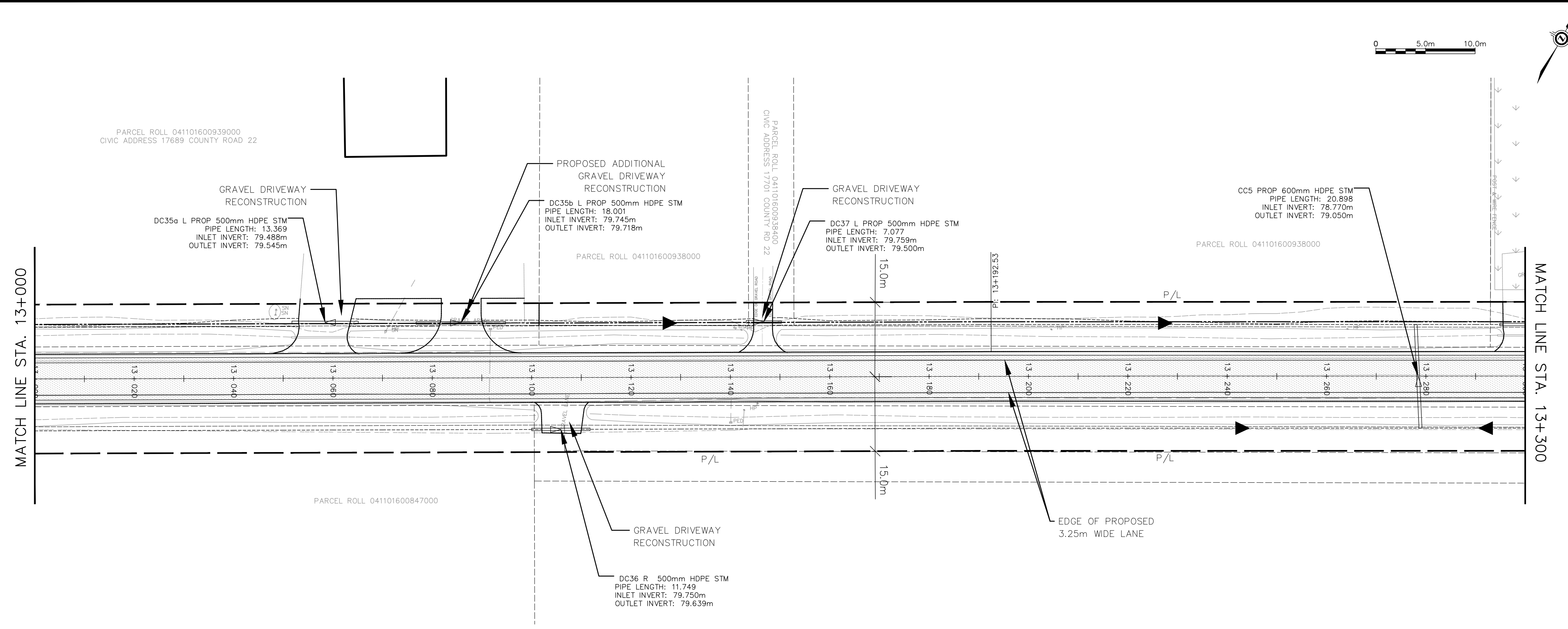
NO.	REVISIONS	DATE	APPROVED
1.	ISSUED FOR 60% REVIEW	MM/YY	S.J.T.

COUNTY ROAD 22
 UNITED COUNTIES OF STORMONT, DUNDAS AND GLENGARRY

NEW CONSTRUCTION
 STA. 12+700 TO STA. 13+000

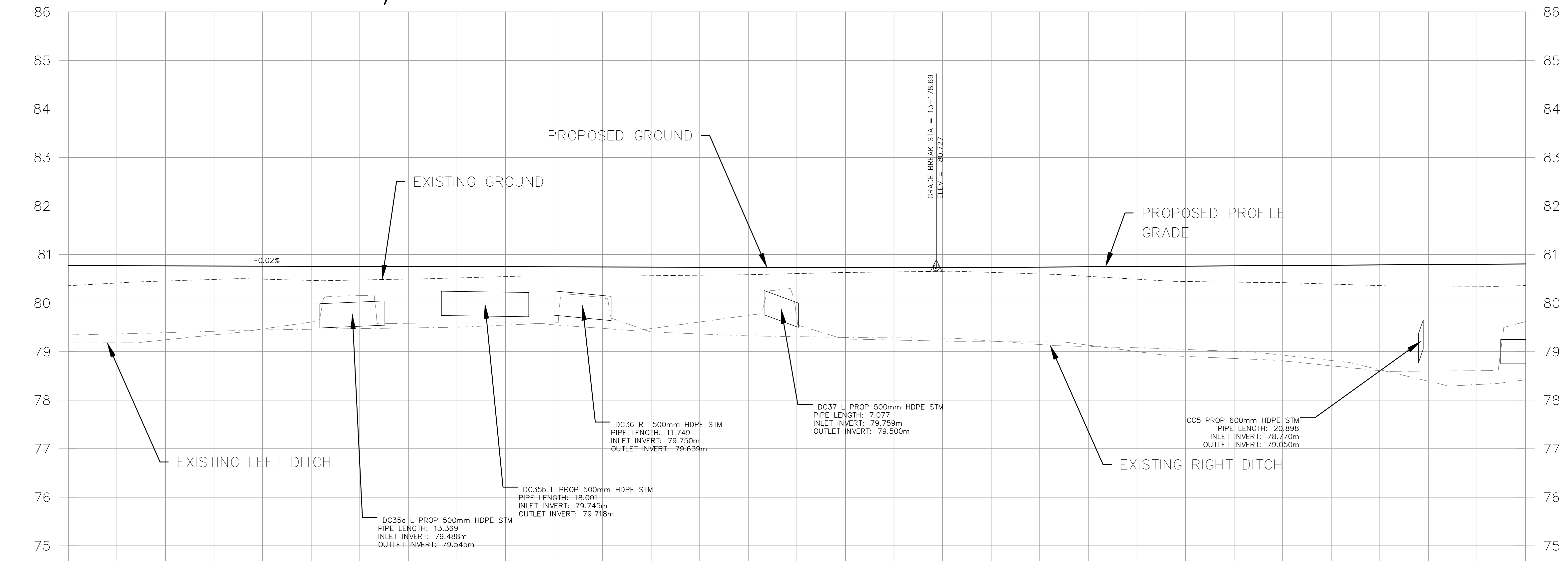
BT ENGINEERING
BTE

SCALE HOR. 1:250 VERT. 1:50 CONTRACT NO. ####
 DESIGN XXXX DRAWN XXXX
 REVIEWED XXXX DATE YYYY.MM.DD **PLATE 10**



- GENERAL NOTES**
1. THE LOCATION OF UTILITIES IS APPROXIMATE ONLY, THE EXACT LOCATION SHOULD BE DETERMINED BY CONSULTING THE MUNICIPAL AUTHORITIES AND UTILITY COMPANIES CONCERNED. THE CONTRACTOR SHALL PROVE THE LOCATION OF UTILITIES AND SHALL BE RESPONSIBLE FOR ADEQUATE PROTECTION FROM DAMAGE.
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 4. WHERE PAVED DRIVEWAY RECONSTRUCTION INDICATED IN PLAN PAVEMENT STRUCTURE SHALL BE 50mm HL3 AND PAD WITH GRANULAR 'A' AS REQUIRED. WHERE GRANULAR DRIVEWAY RECONSTRUCTION INDICATED IN PLAN RECONSTRUCT WITH GRANULAR 'A' AS REQUIRED.
 5. ALL DRIVEWAY RECONSTRUCTIONS ARE TO MATCH EXISTING GRADE AND WIDTH AT THE NEW PROPOSED PROPERTY LINE (P/L).

STORMONT, DUNDAS AND GLENGARRY COUNTY ROAD 22

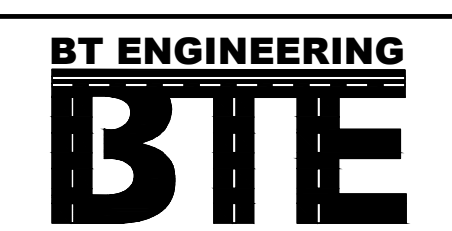


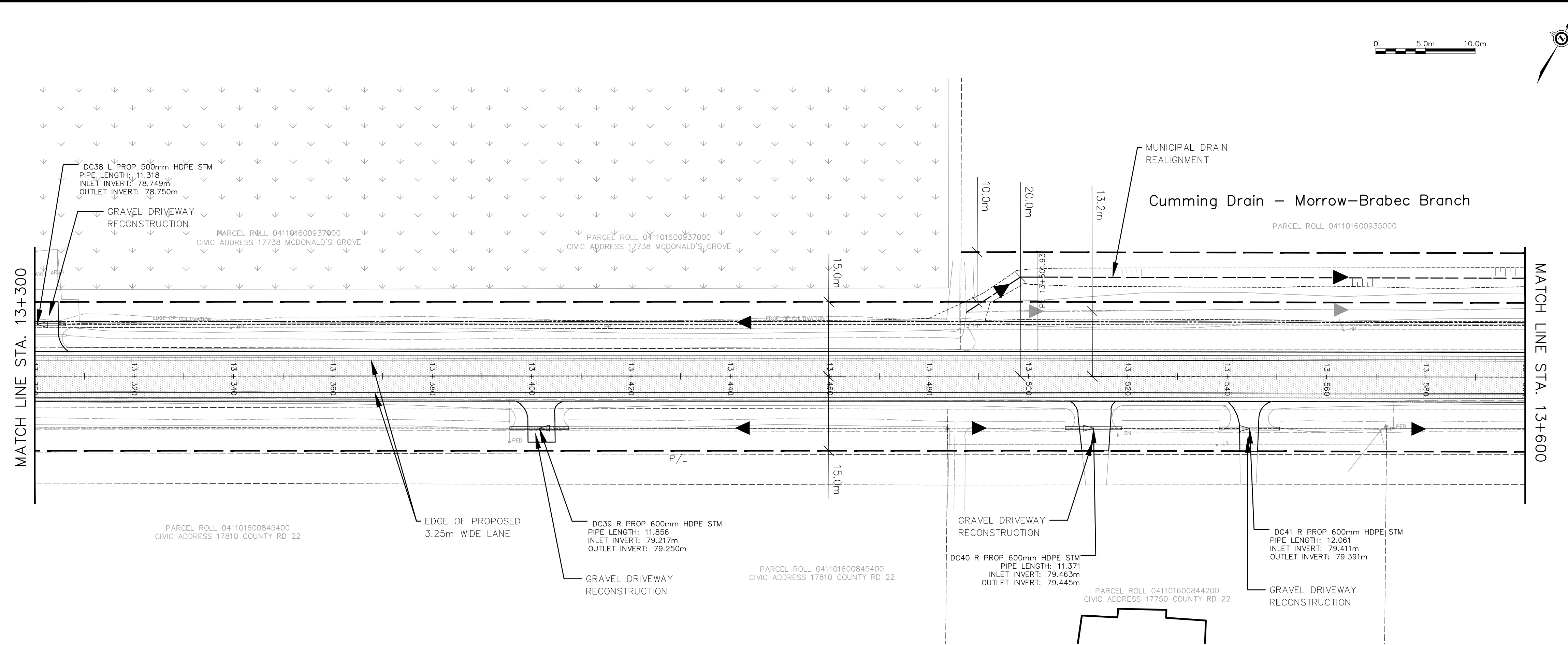
PROF. GRADE ● C/L ○ GRADE ○ C/A	PROP. RIGHT DITCH ELEV.	PROP. LEFT DITCH ELEV.	CHAINAGE
80.77 80.45	80.45	80.45	13+020
80.76 80.49	80.49	80.49	13+040
80.76 80.48	80.48	80.48	13+060
80.75 80.52	80.52	80.52	13+080
80.75 80.56	80.56	80.56	13+100
80.74 80.56	80.56	80.56	13+120
80.74 80.59	80.59	80.59	13+140
80.73 80.63	80.63	80.63	13+160
80.73 80.65	80.65	80.65	13+180
80.74 80.60	80.60	80.60	13+200
80.75 80.49	80.49	80.49	13+220
80.77 80.43	80.43	80.43	13+240
80.78 80.39	80.39	80.39	13+260
80.79 80.35	80.35	80.35	13+280

BENCH MARKS

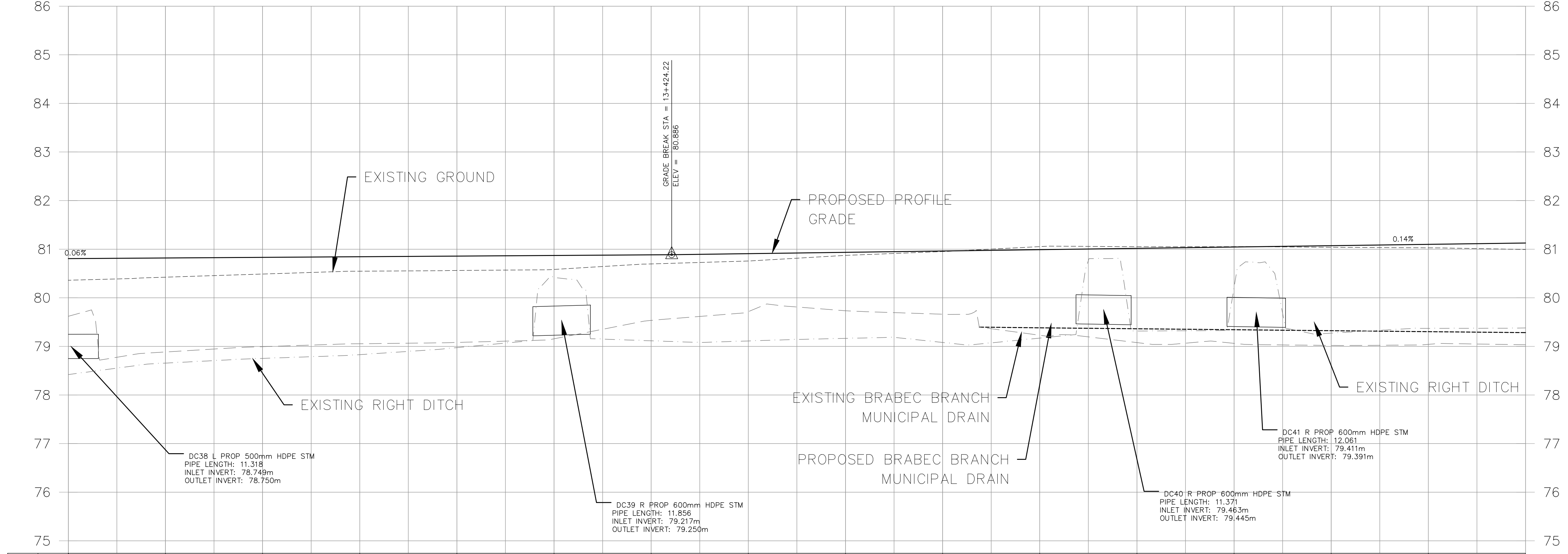
NO.	REVISIONS	DATE	APPROVED
1.	ISSUED FOR 60% REVIEW	MM/YY	S.J.T.

COUNTY ROAD 22
 UNITED COUNTIES OF STORMONT, DUNDAS
 AND GLENGARRY
 NEW CONSTRUCTION
 STA. 13+000 TO STA. 13+300

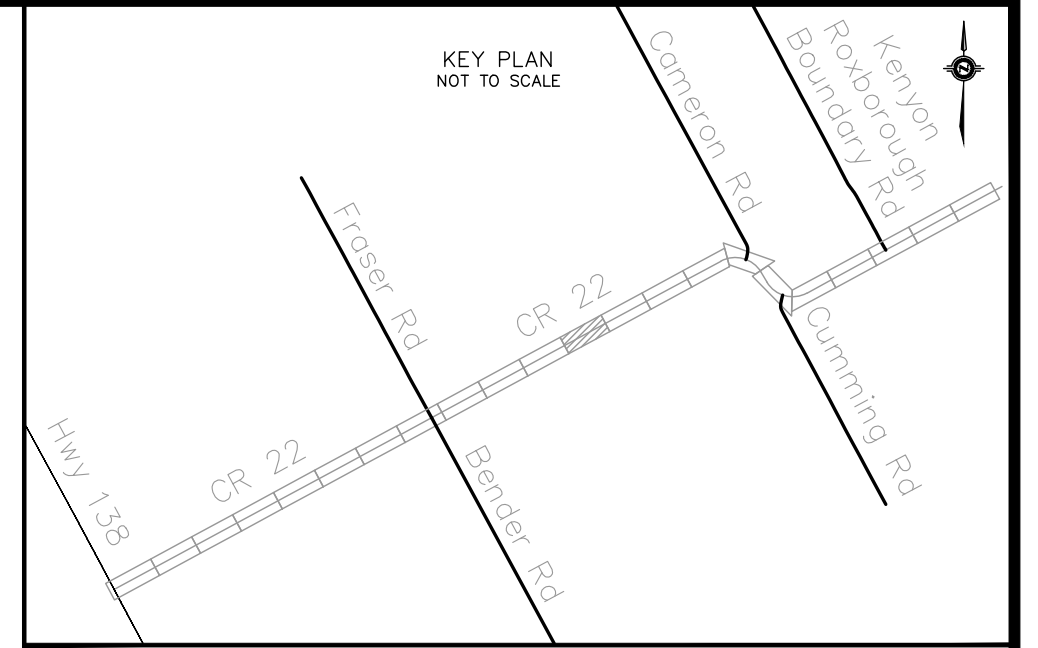
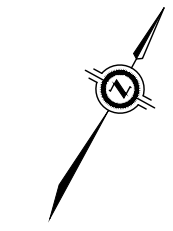




STORMONT, DUNDAS AND GLENGARRY COUNTY ROAD 22



PROF. GRADE C/L C/A	PROP. RIGHT DITCH ELEV.	EXIST. RIGHT DITCH ELEV.	PROP. LEFT DITCH ELEV.	CHAINAGE
80.82 80.42	80.42	80.42	80.42	13+320
80.83 80.49	80.49	80.49	80.49	13+340
80.84 80.55	80.55	80.55	80.55	13+360
80.86 80.56	80.56	80.56	80.56	13+380
80.87 80.58	80.58	80.58	80.58	13+400
80.88 80.70	80.70	80.70	80.70	13+420
80.91 80.76	80.76	80.76	80.76	13+440
80.94 80.87	80.87	80.87	80.87	13+460
80.96 80.95	80.95	80.95	80.95	13+480
80.99 81.05	81.05	81.05	81.05	13+500
81.02 81.05	81.05	81.05	81.05	13+520
81.04 81.05	81.05	81.05	81.05	13+540
81.07 81.04	81.04	81.04	81.04	13+560
81.10 81.03	81.03	81.03	81.03	13+580



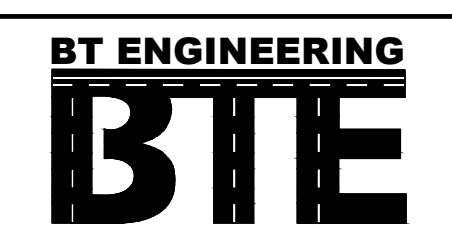
- GENERAL NOTES**
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 - DRAWINGS PLOTTED HALF SIZE (1:1) ARE NOT TO SCALE.
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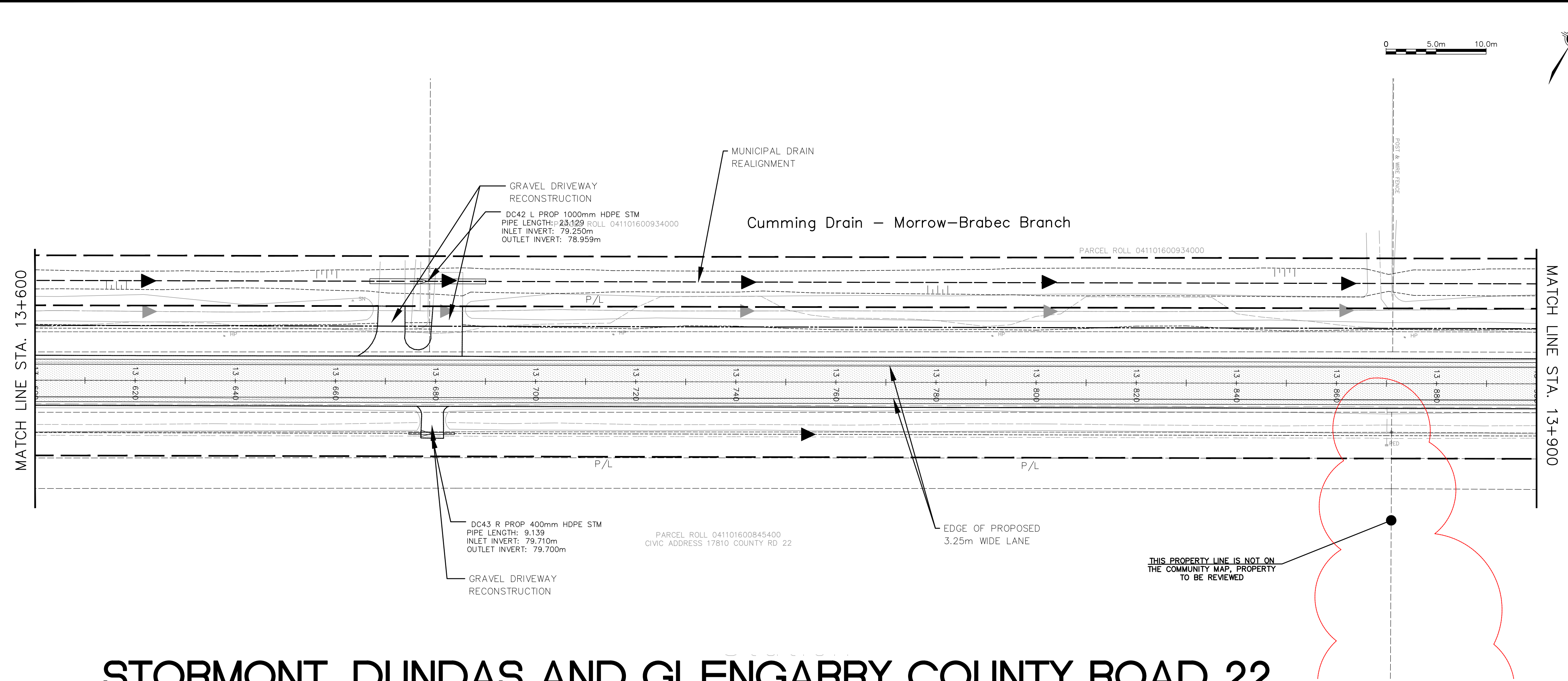
BENCH MARKS

NO.	REVISIONS	DATE	APPROVED
1.	ISSUED FOR 60% REVIEW	MM/YY	S.J.T.

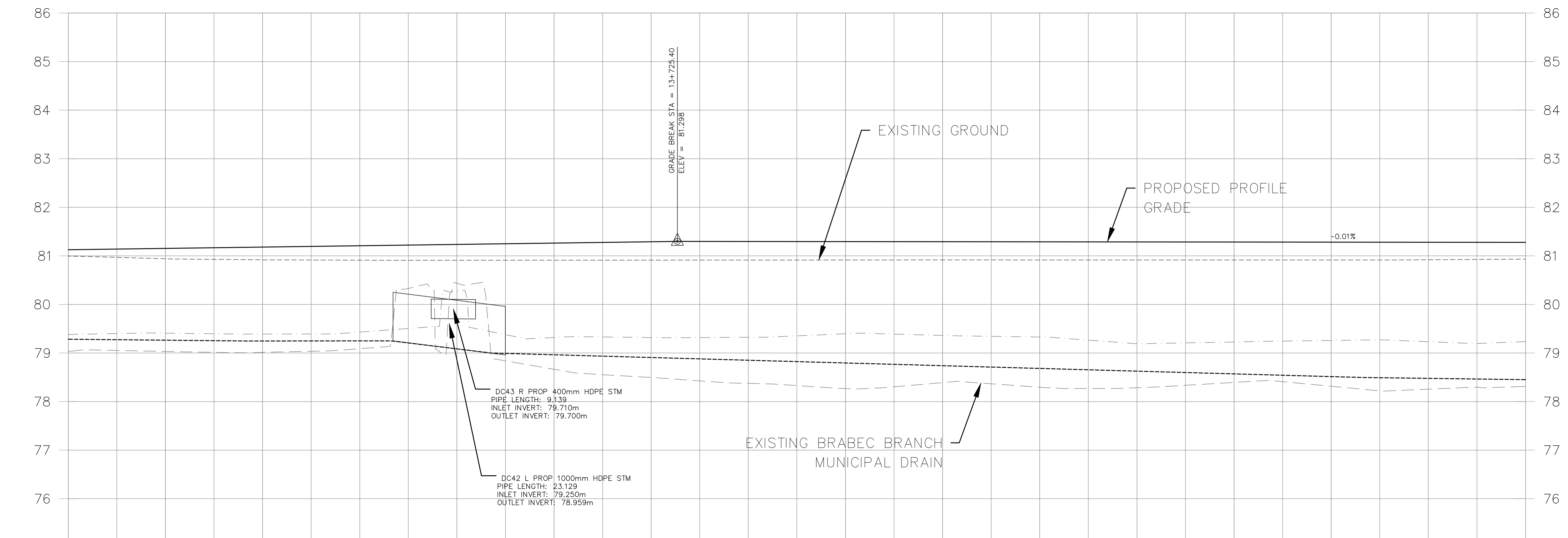
NO.	REVISIONS	DATE	APPROVED
1.	ISSUED FOR 60% REVIEW	MM/YY	S.J.T.

COUNTY ROAD 22
UNITED COUNTIES OF STORMONT, DUNDAS AND GLENGARRY
NEW CONSTRUCTION
STA. 13+300 TO STA. 13+600

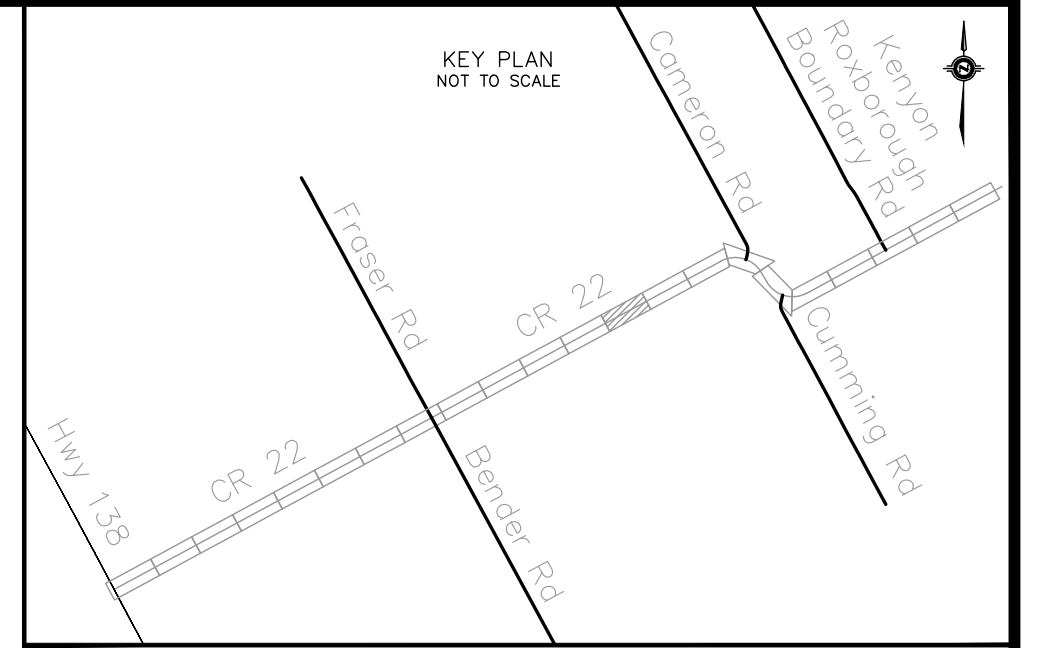




STORMONT, DUNDAS AND GLENGARRY COUNTY ROAD 22



PROF. GRADE	C/L	PROF. GRADE	C/L	PROF. GRADE	C/L	PROF. GRADE	C/L	PROF. GRADE	C/L	PROF. GRADE	C/L	PROF. GRADE	C/L	PROF. GRADE	C/L	PROF. GRADE	C/L	PROF. GRADE	C/L	PROF. GRADE	C/L	PROF. GRADE	C/L		
		81.15	80.94	81.18	80.92	81.21	80.91	81.24	80.91	81.26	80.91	81.29	80.91	81.29	80.92	81.29	80.92	81.29	80.92	81.29	80.92	81.28	80.92	81.28	80.92
		80.94	80.94	80.92	80.92	80.91	80.91	80.91	80.91	80.91	80.91	80.91	80.91	80.91	80.92	80.92	80.92	80.92	80.92	80.92	80.92	80.92	80.92	80.92	80.92
		80.94	80.94	80.92	80.92	80.91	80.91	80.91	80.91	80.91	80.91	80.91	80.91	80.91	80.92	80.92	80.92	80.92	80.92	80.92	80.92	80.92	80.92	80.92	80.92
CHAINAGE		13+620	13+640	13+660	13+680	13+700	13+720	13+740	13+760	13+780	13+800	13+820	13+840	13+860	13+880	13+900									



- GENERAL NOTES**
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BENCH MARKS

NO.	REVISIONS	DATE	APPROVED
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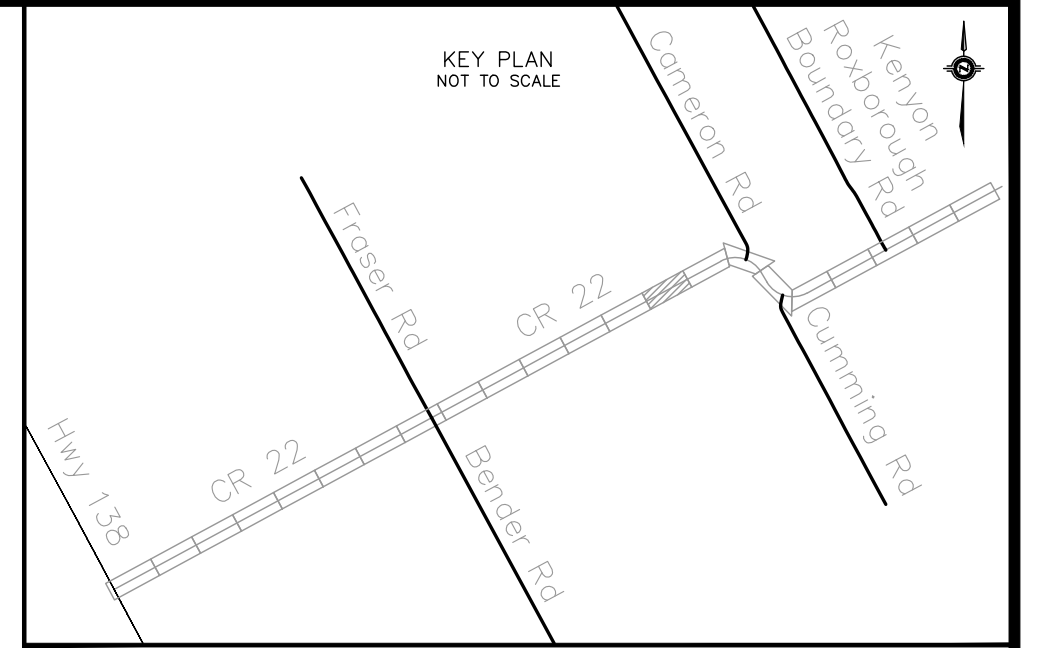
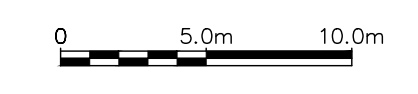
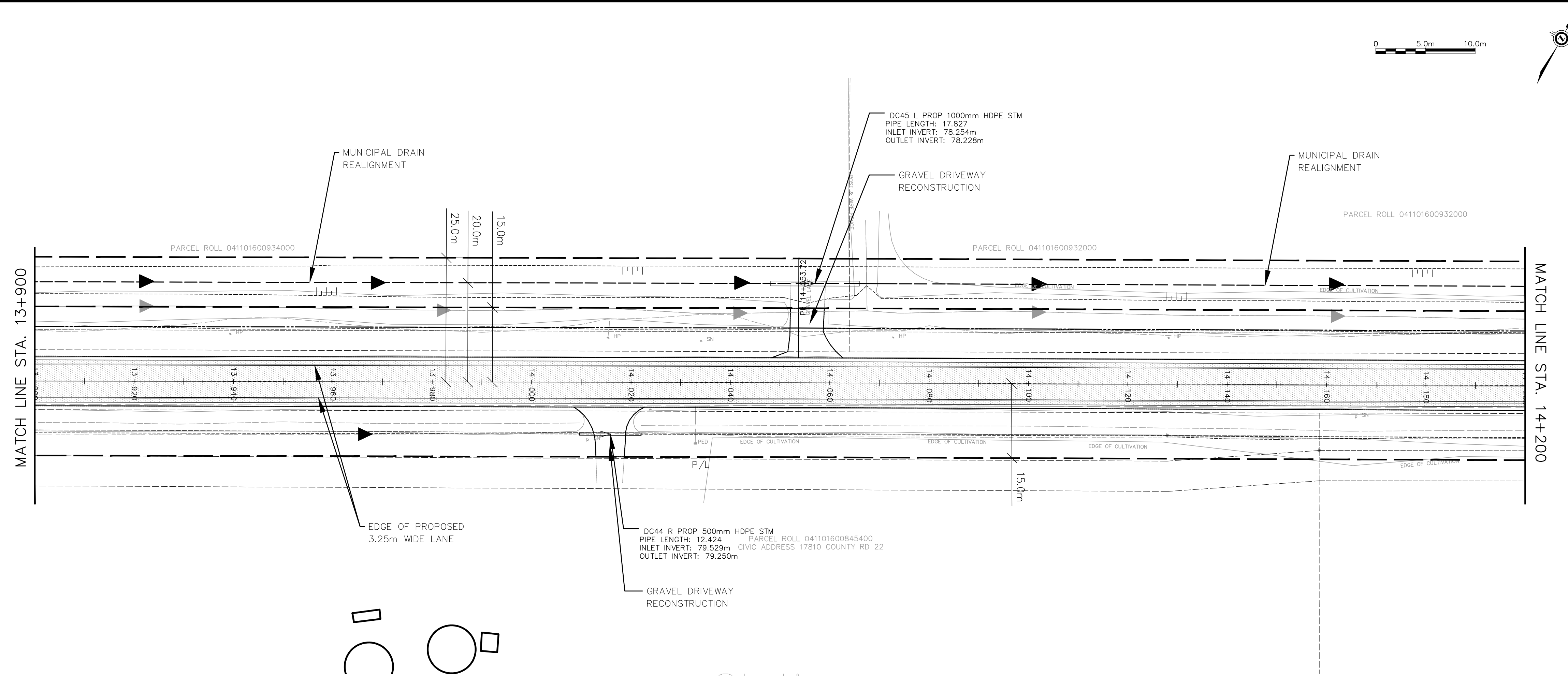
NO.	REVISIONS	DATE	APPROVED
1.	ISSUED FOR 60% REVIEW	MM/YY	S.J.T.

COUNTY ROAD 22
 UNITED COUNTIES OF STORMONT, DUNDAS
 AND GLENGARRY

NEW CONSTRUCTION
 STA. 13+600 TO STA. 13+900

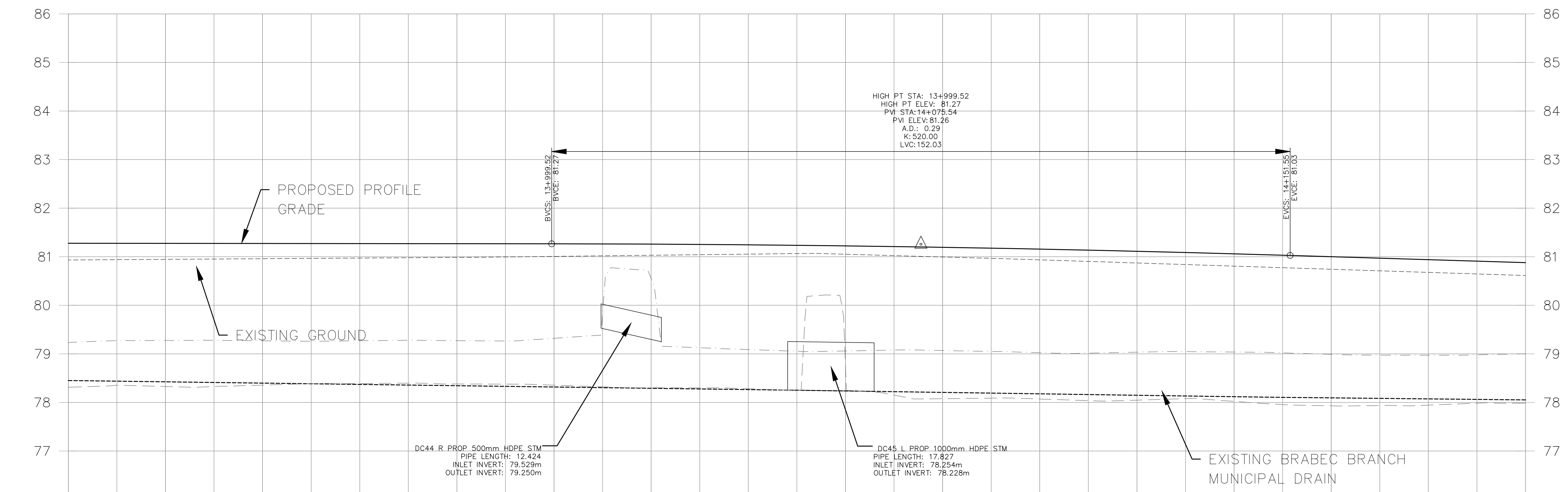
BT ENGINEERING
BTE

SCALE HOR. 1:250 VERT. 1:50 CONTRACT NO. ####
 DESIGN XXXX DRAWN XXXX
 REVIEWED XXXX DATE YYYY.MM.DD **PLATE 13**



- GENERAL NOTES**
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STORMONT, DUNDAS AND GLENGARRY COUNTY ROAD 22

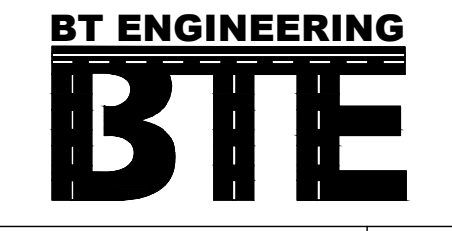


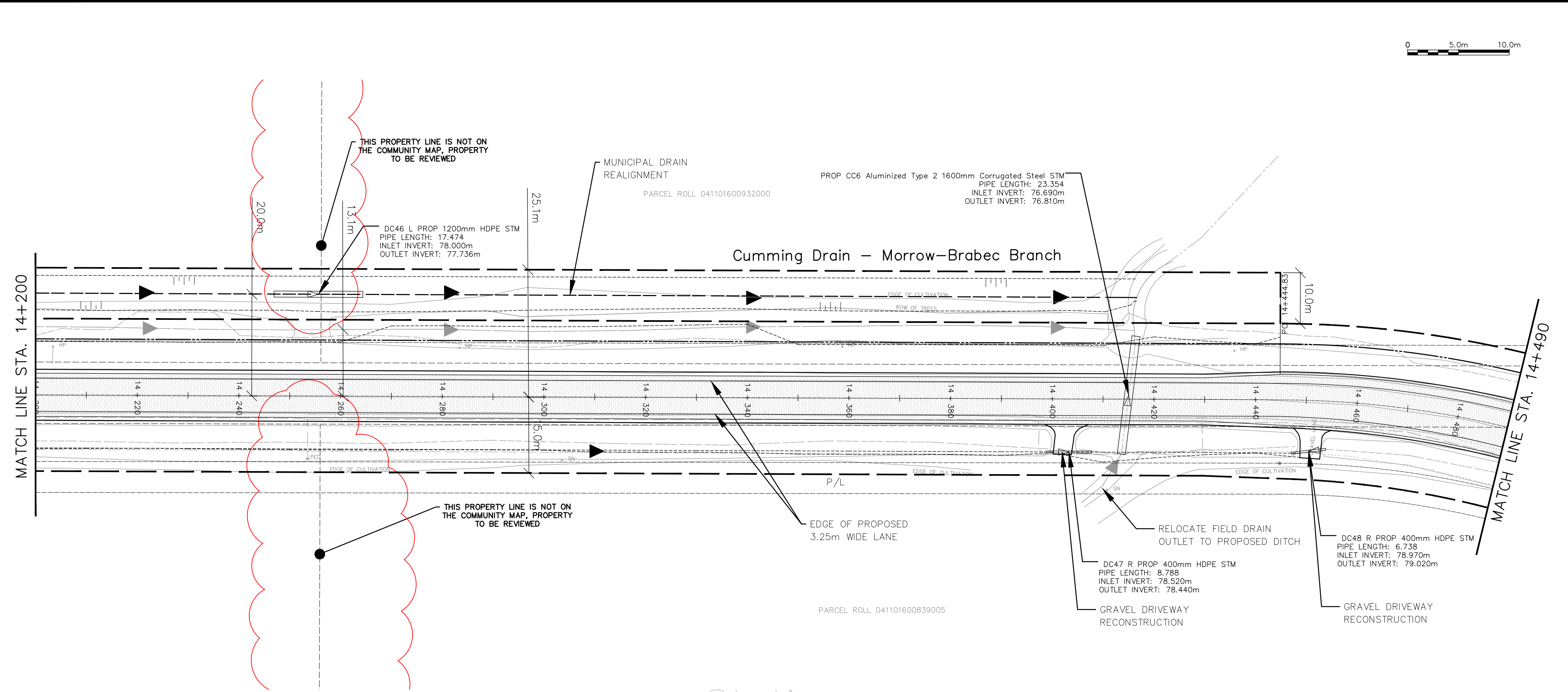
CHAINAGE	PROF. GRADE C/L ELEV.	PROF. GRADE C/L ELEV.	PROF. GRADE C/L ELEV.	PROF. GRADE C/L ELEV.	PROF. GRADE C/L ELEV.	PROF. GRADE C/L ELEV.	PROF. GRADE C/L ELEV.	PROF. GRADE C/L ELEV.	PROF. GRADE C/L ELEV.	PROF. GRADE C/L ELEV.	PROF. GRADE C/L ELEV.	PROF. GRADE C/L ELEV.	PROF. GRADE C/L ELEV.	PROF. GRADE C/L ELEV.	PROF. GRADE C/L ELEV.	PROF. GRADE C/L ELEV.
13+920	80.95	80.95	81.28	80.95	80.95	80.95	80.95	80.95	80.95	80.95	80.95	80.95	80.95	80.95	80.95	80.95
13+940	80.96	80.96	81.27	80.96	80.96	80.96	80.96	80.96	80.96	80.96	80.96	80.96	80.96	80.96	80.96	80.96
13+960	80.97	80.97	81.27	80.97	80.97	80.97	80.97	80.97	80.97	80.97	80.97	80.97	80.97	80.97	80.97	80.97
13+980	80.99	80.99	81.27	80.99	80.99	80.99	80.99	80.99	80.99	80.99	80.99	80.99	80.99	80.99	80.99	80.99
14+000	81.01	81.01	81.27	81.01	81.01	81.01	81.01	81.01	81.01	81.01	81.01	81.01	81.01	81.01	81.01	81.01
14+020	81.03	81.03	81.26	81.03	81.03	81.03	81.03	81.03	81.03	81.03	81.03	81.03	81.03	81.03	81.03	81.03
14+040	81.05	81.05	81.25	81.05	81.05	81.05	81.05	81.05	81.05	81.05	81.05	81.05	81.05	81.05	81.05	81.05
14+060	81.05	81.05	81.22	81.05	81.05	81.05	81.05	81.05	81.05	81.05	81.05	81.05	81.05	81.05	81.05	81.05
14+080	80.99	80.99	81.19	80.99	80.99	80.99	80.99	80.99	80.99	80.99	80.99	80.99	80.99	80.99	80.99	80.99
14+100	80.94	80.94	81.16	80.94	80.94	80.94	80.94	80.94	80.94	80.94	80.94	80.94	80.94	80.94	80.94	80.94
14+120	80.87	80.87	81.11	80.87	80.87	80.87	80.87	80.87	80.87	80.87	80.87	80.87	80.87	80.87	80.87	80.87
14+140	80.81	80.81	81.06	80.81	80.81	80.81	80.81	80.81	80.81	80.81	80.81	80.81	80.81	80.81	80.81	80.81
14+160	80.74	80.74	81.00	80.74	80.74	80.74	80.74	80.74	80.74	80.74	80.74	80.74	80.74	80.74	80.74	80.74
14+180	80.68	80.68	80.94	80.68	80.68	80.68	80.68	80.68	80.68	80.68	80.68	80.68	80.68	80.68	80.68	80.68

BENCH MARKS

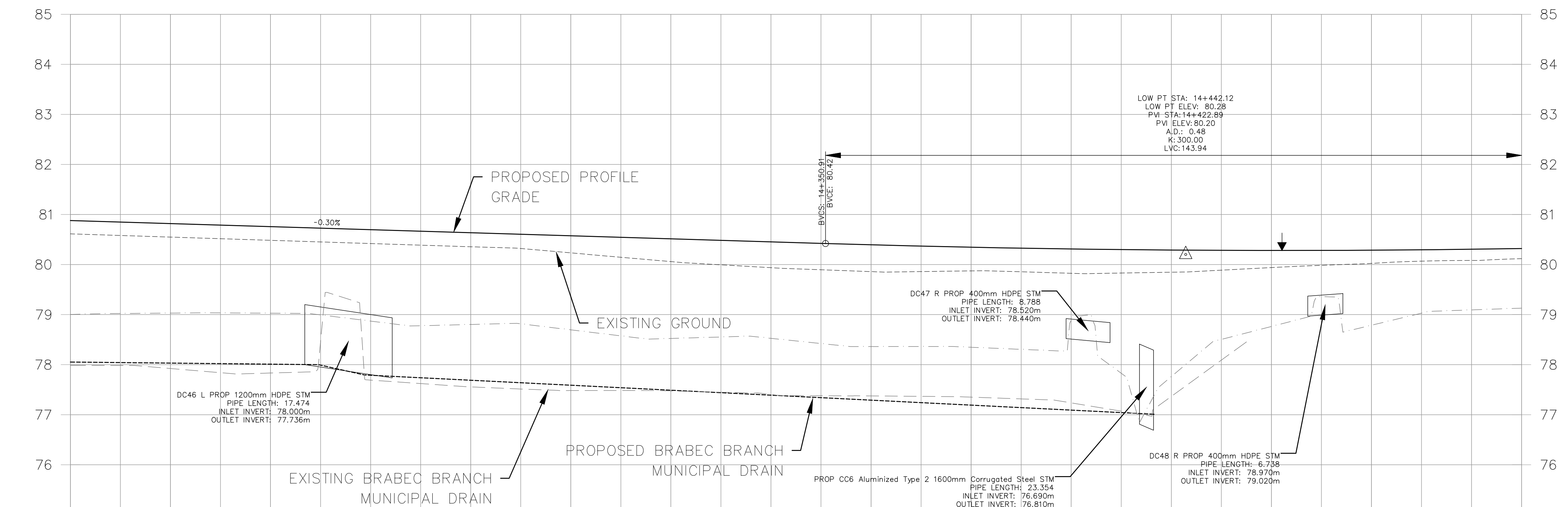
NO.	REVISIONS	DATE	APPROVED
1.	ISSUED FOR 60% REVIEW	MM/YY	S.J.T.

COUNTY ROAD 22
 UNITED COUNTIES OF STORMONT, DUNDAS
 AND GLENGARRY
 NEW CONSTRUCTION
 STA. 13+900 TO STA. 14+200





STORMONT, DUNDAS AND GLENGARRY COUNTY ROAD 22



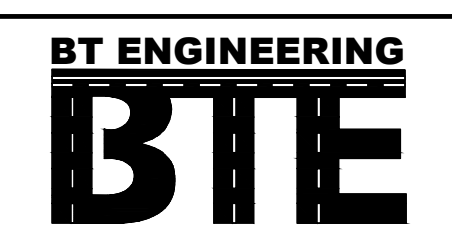
PROF. GRADE @ C/L	PROF. GRADE @ C/L	PROF. GRADE @ C/L	PROF. GRADE @ C/L	PROF. GRADE @ C/L	PROF. GRADE @ C/L	PROF. GRADE @ C/L	PROF. GRADE @ C/L	PROF. GRADE @ C/L	PROF. GRADE @ C/L	PROF. GRADE @ C/L	PROF. GRADE @ C/L	PROF. GRADE @ C/L	PROF. GRADE @ C/L	PROF. GRADE @ C/L	PROF. GRADE @ C/L
80.82	80.55	80.48	80.42	80.36	80.23	80.06	79.94	79.86	79.87	79.83	79.65	80.28	80.29	80.31	80.08
80.55	80.48	80.42	80.36	80.23	80.06	79.94	79.86	79.87	79.83	79.65	80.28	80.29	80.31	80.08	80.08
80.55	80.48	80.42	80.36	80.23	80.06	79.94	79.86	79.87	79.83	79.65	80.28	80.29	80.31	80.08	80.08
14+220	14+240	14+260	14+280	14+300	14+320	14+340	14+360	14+380	14+400	14+420	14+440	14+460	14+480		

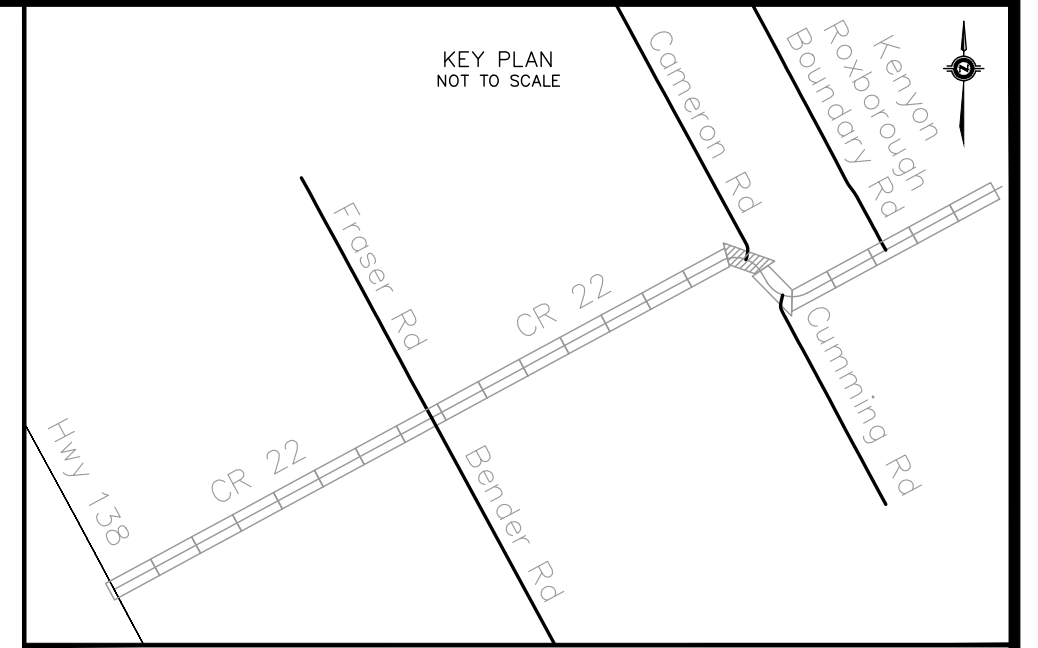
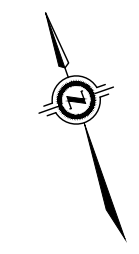
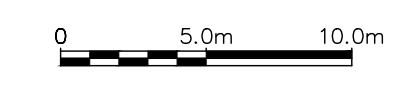
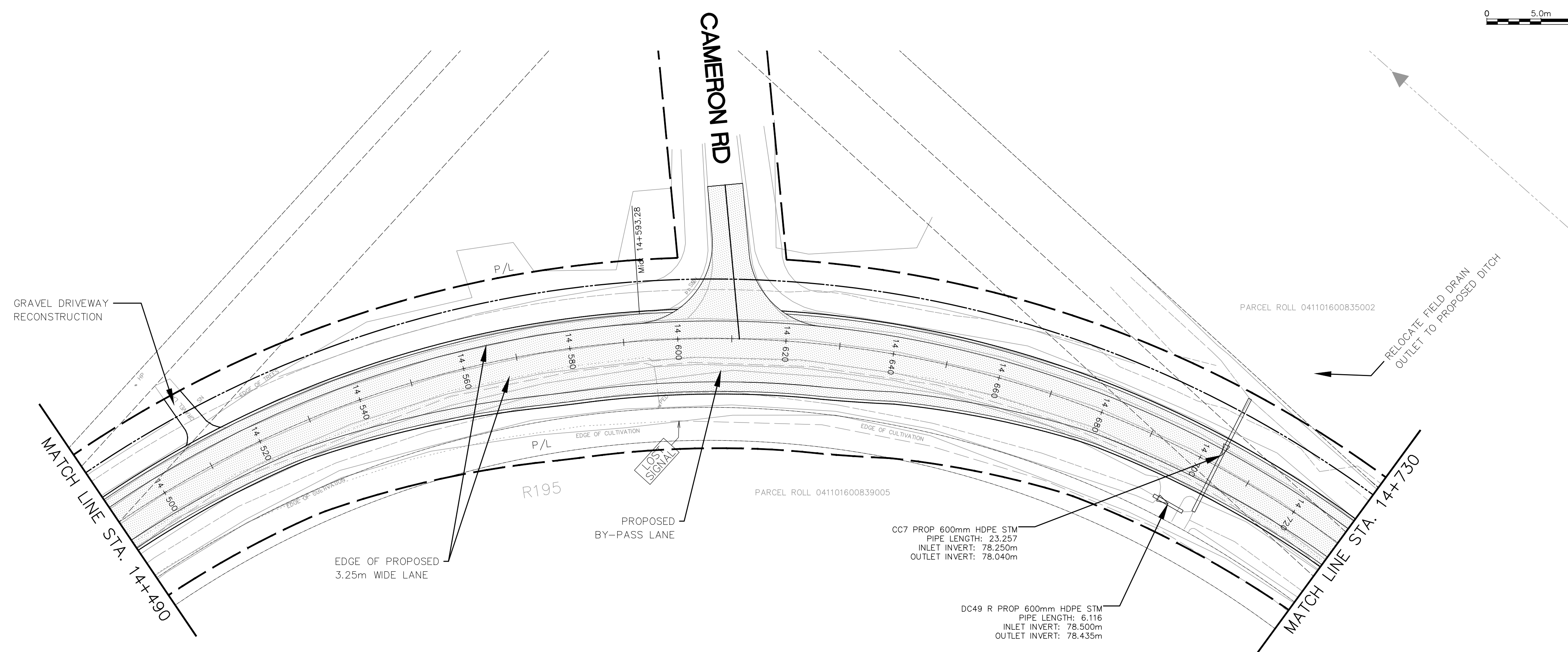
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BENCH MARKS

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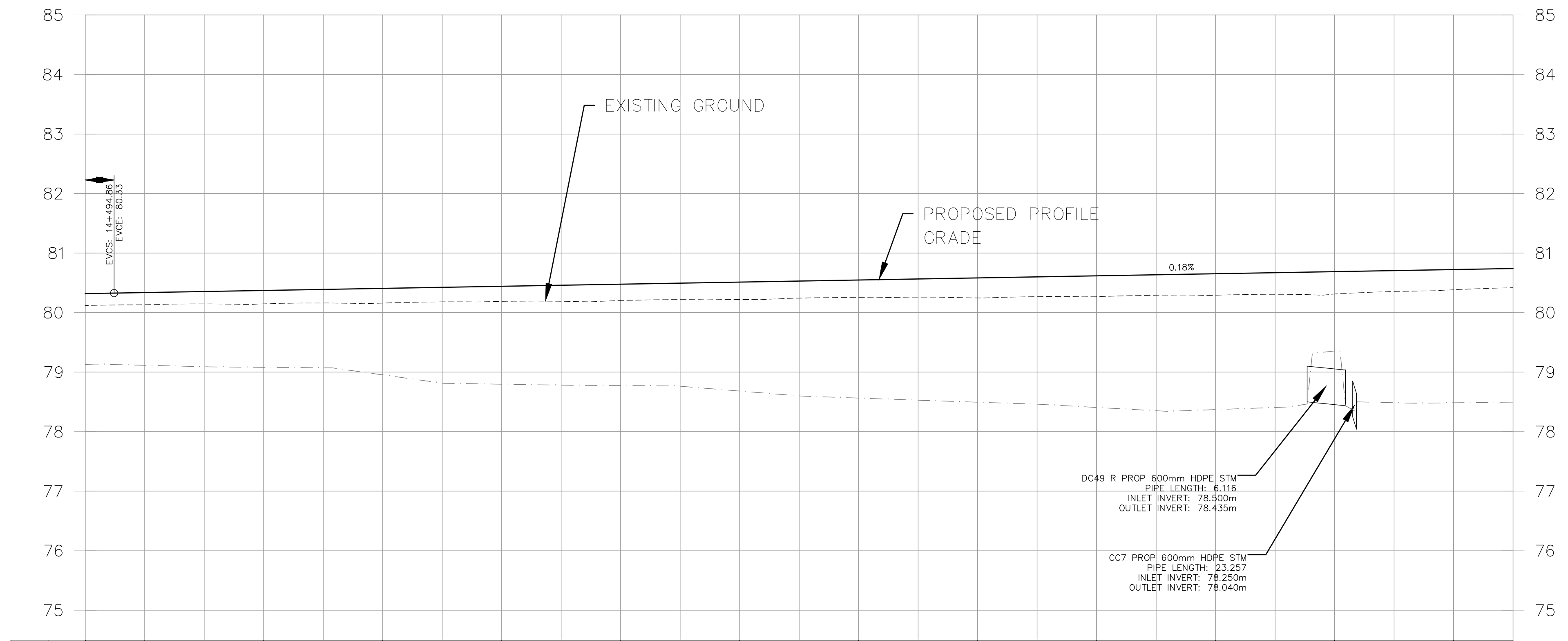
COUNTY ROAD 22
 UNITED COUNTIES OF STORMONT, DUNDAS AND GLENGARRY
 NEW CONSTRUCTION
 STA. 14+200 TO STA. 14+900





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Station STORMONT, DUNDAS AND GLENGARRY COUNTY ROAD 22

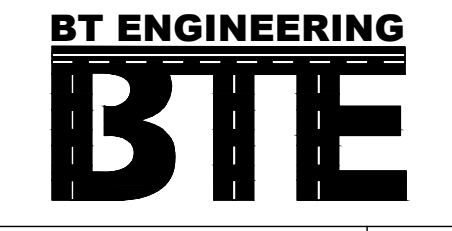


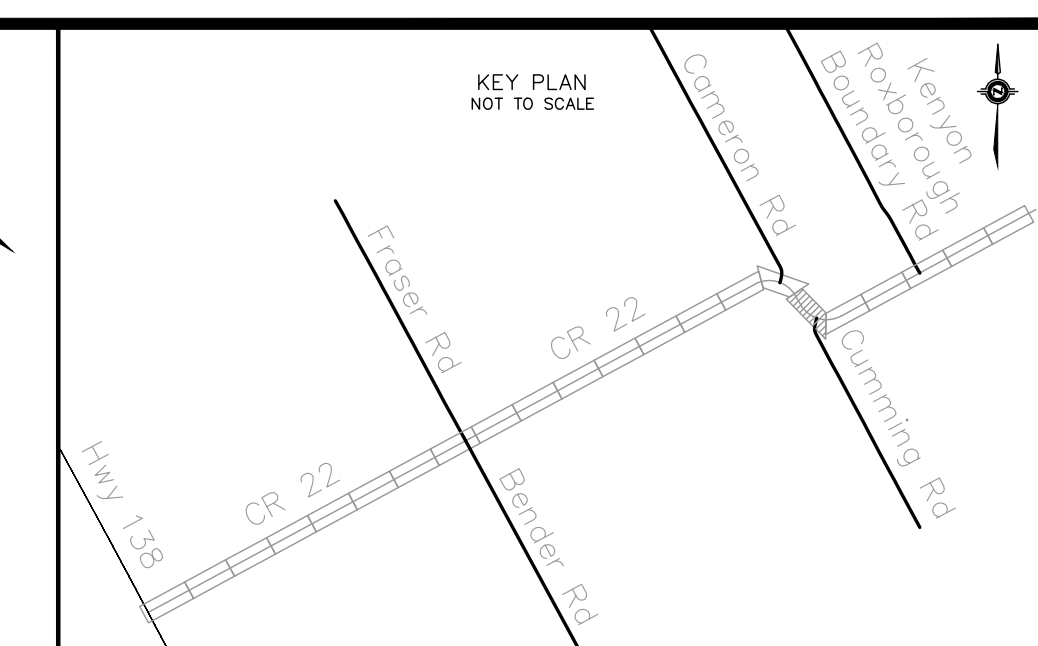
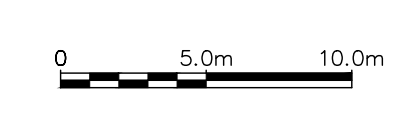
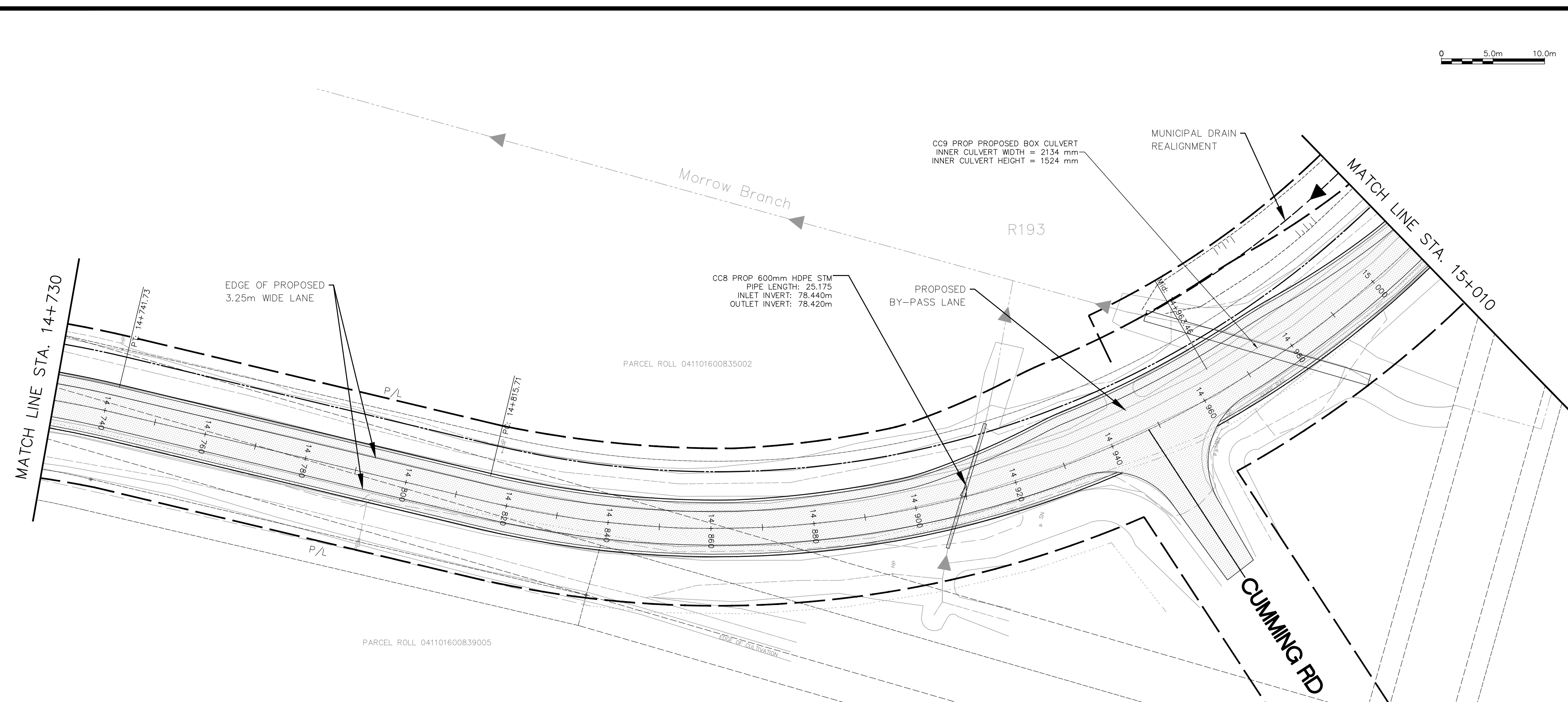
CHAINAGE	PROF. DITCH ELEV.	PROF. DITCH ELEV.	PROF. GRADE C/L ELEV.	PROF. GRADE C/L ELEV.
14+500	80.13	80.13	80.14	80.13
14+520	80.15	80.15	80.17	80.16
14+540	80.16	80.16	80.18	80.16
14+560	80.19	80.19	80.21	80.19
14+580	80.20	80.20	80.23	80.21
14+600	80.22	80.22	80.25	80.22
14+620	80.25	80.25	80.28	80.25
14+640	80.25	80.25	80.29	80.26
14+660	80.27	80.27	80.31	80.27
14+680	80.29	80.29	80.33	80.29
14+700	80.31	80.31	80.35	80.31
14+720	80.35	80.35	80.38	80.35

BENCH MARKS

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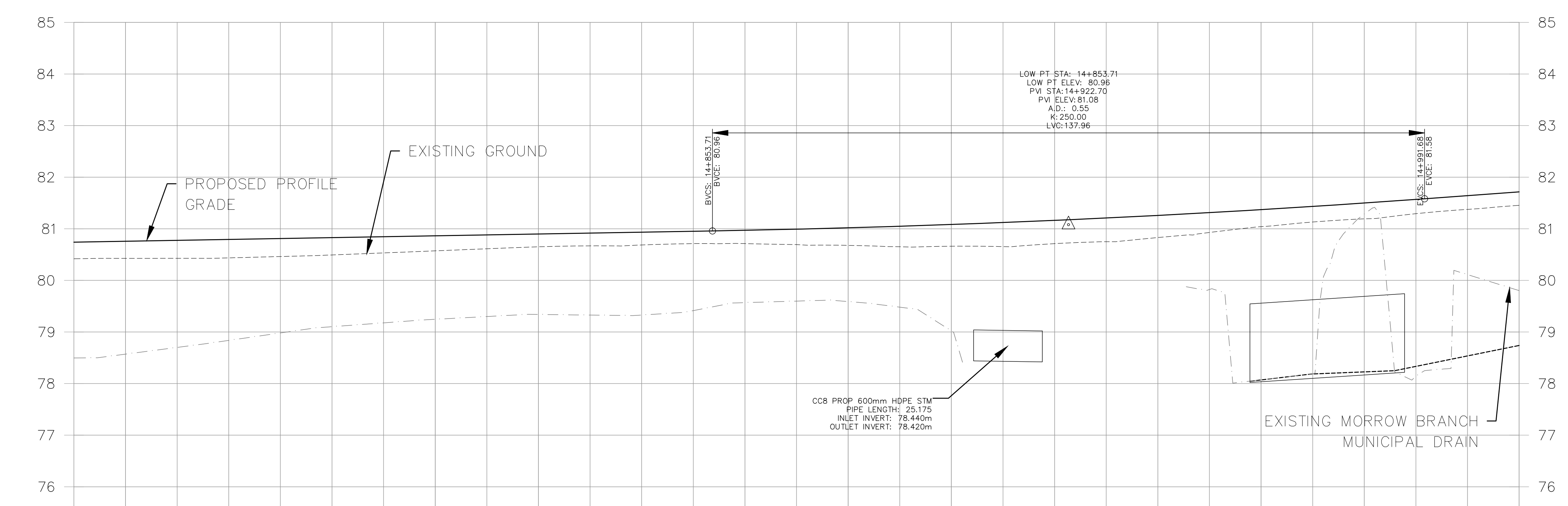
COUNTY ROAD 22
 UNITED COUNTIES OF STORMONT, DUNDAS
 AND GLENGARRY
 NEW CONSTRUCTION
 STA. 14+490 TO STA. 14+730





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STORMONT, DUNDAS AND GLENGARRY COUNTY ROAD 22

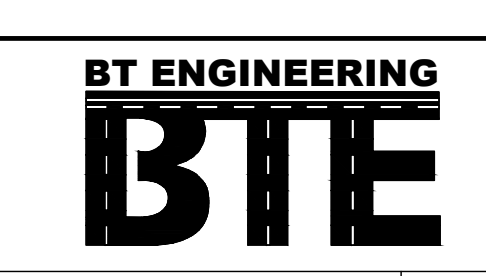


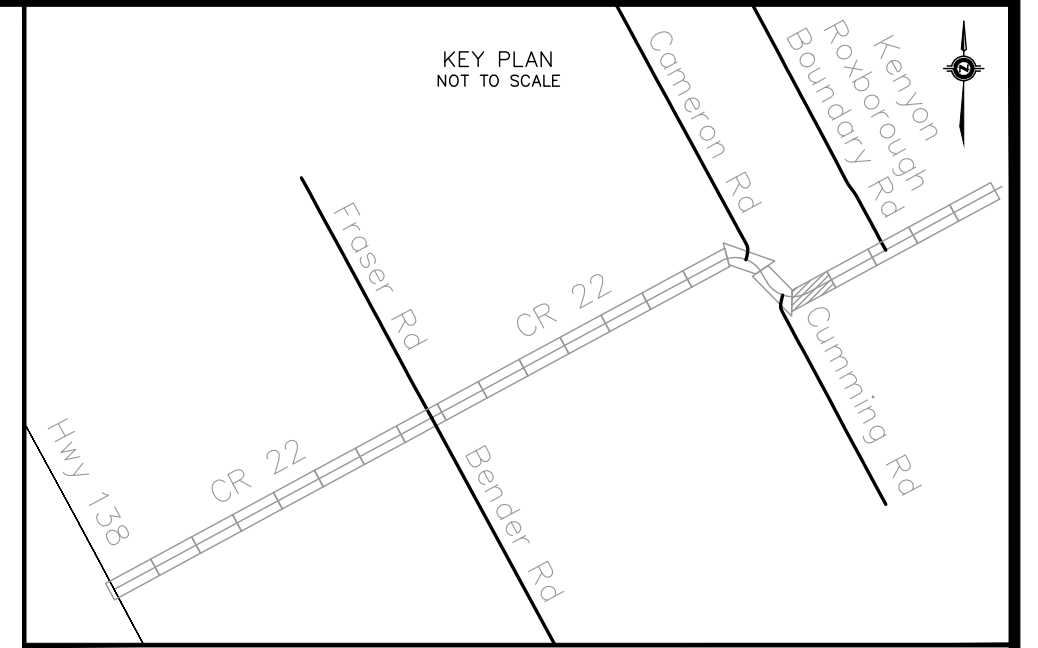
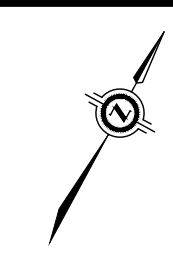
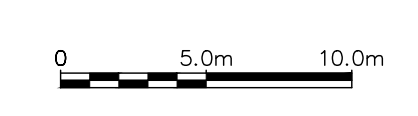
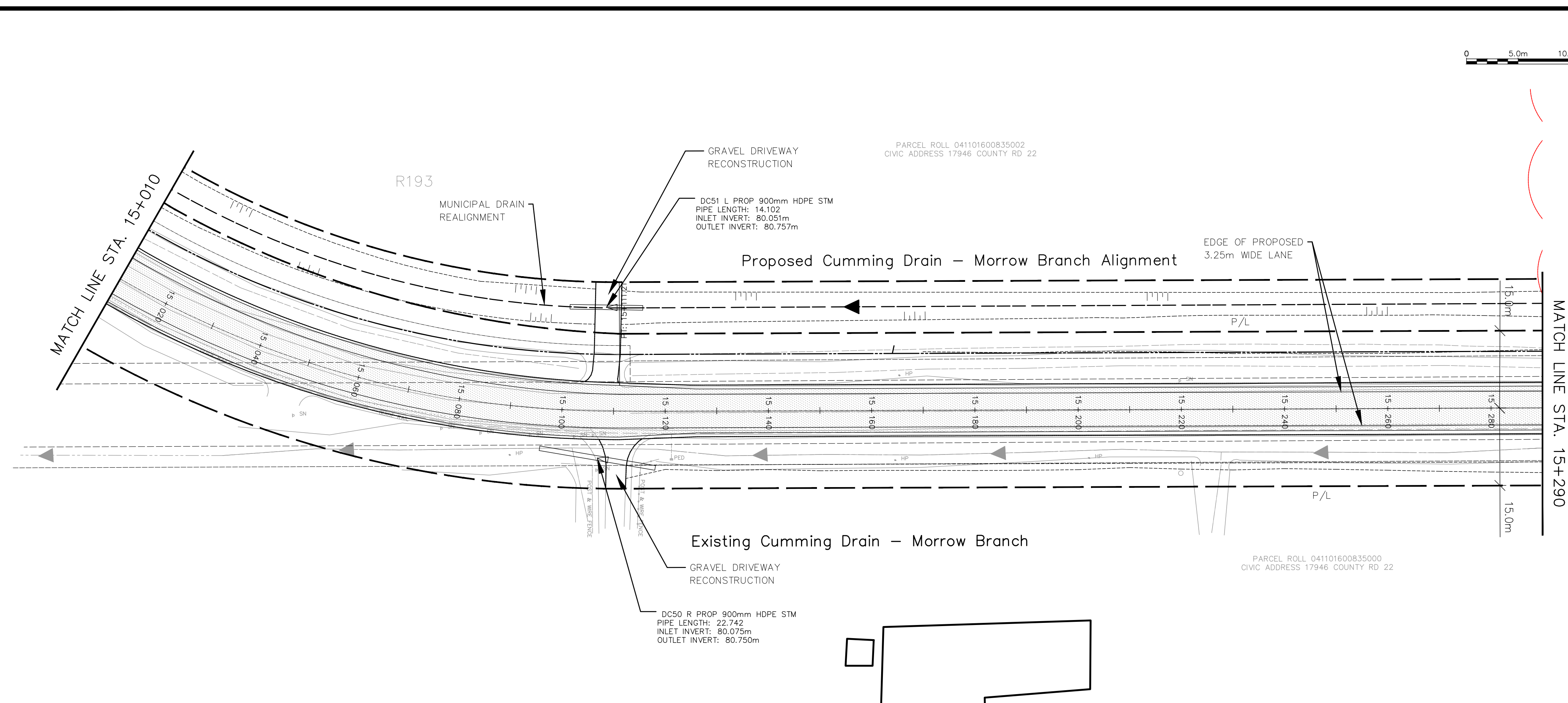
CHAINAGE	PROP. DITCH ELEV.	PROP. DITCH ELEV.	PROP. DITCH ELEV.	PROP. DITCH ELEV.	PROP. DITCH ELEV.	PROP. DITCH ELEV.	PROP. DITCH ELEV.	PROP. DITCH ELEV.	PROP. DITCH ELEV.	PROP. DITCH ELEV.	PROP. DITCH ELEV.	PROP. DITCH ELEV.	PROP. DITCH ELEV.	PROP. DITCH ELEV.	PROP. DITCH ELEV.
14+740	80.43	80.43	80.43	80.44	80.44	80.49	80.49	80.57	80.57	80.65	80.65	80.69	80.69	80.71	80.71
14+760	80.43	80.43	80.43	80.44	80.44	80.49	80.49	80.57	80.57	80.65	80.65	80.69	80.69	80.71	80.71
14+780	80.43	80.43	80.43	80.44	80.44	80.49	80.49	80.57	80.57	80.65	80.65	80.69	80.69	80.71	80.71
14+800	80.43	80.43	80.43	80.44	80.44	80.49	80.49	80.57	80.57	80.65	80.65	80.69	80.69	80.71	80.71
14+820	80.43	80.43	80.43	80.44	80.44	80.49	80.49	80.57	80.57	80.65	80.65	80.69	80.69	80.71	80.71
14+840	80.43	80.43	80.43	80.44	80.44	80.49	80.49	80.57	80.57	80.65	80.65	80.69	80.69	80.71	80.71
14+860	80.43	80.43	80.43	80.44	80.44	80.49	80.49	80.57	80.57	80.65	80.65	80.69	80.69	80.71	80.71
14+880	80.43	80.43	80.43	80.44	80.44	80.49	80.49	80.57	80.57	80.65	80.65	80.69	80.69	80.71	80.71
14+900	80.43	80.43	80.43	80.44	80.44	80.49	80.49	80.57	80.57	80.65	80.65	80.69	80.69	80.71	80.71
14+920	80.43	80.43	80.43	80.44	80.44	80.49	80.49	80.57	80.57	80.65	80.65	80.69	80.69	80.71	80.71
14+940	80.43	80.43	80.43	80.44	80.44	80.49	80.49	80.57	80.57	80.65	80.65	80.69	80.69	80.71	80.71
14+960	80.43	80.43	80.43	80.44	80.44	80.49	80.49	80.57	80.57	80.65	80.65	80.69	80.69	80.71	80.71
14+980	80.43	80.43	80.43	80.44	80.44	80.49	80.49	80.57	80.57	80.65	80.65	80.69	80.69	80.71	80.71
15+000	80.43	80.43	80.43	80.44	80.44	80.49	80.49	80.57	80.57	80.65	80.65	80.69	80.69	80.71	80.71

BENCH MARKS

NO.	REVISIONS	DATE	APPROVED
1.	ISSUED FOR 60% REVIEW	MM/YY	S.J.T.

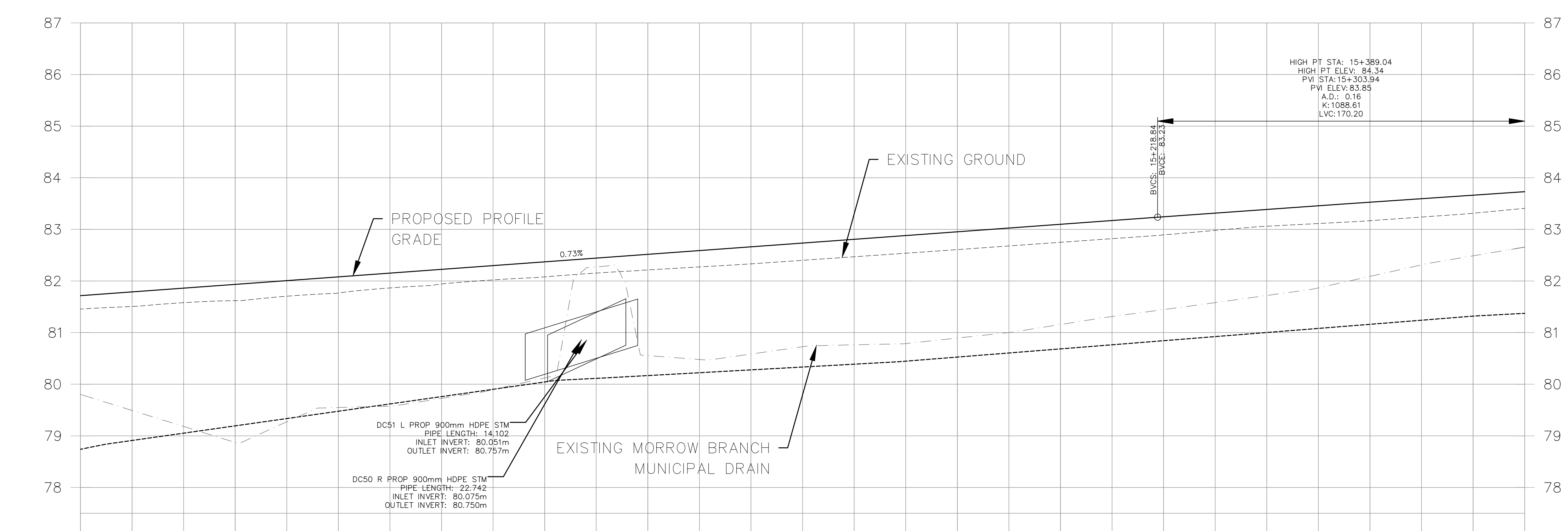
COUNTY ROAD 22
UNITED COUNTIES OF STORMONT, DUNDAS AND GLENGARRY
NEW CONSTRUCTION
STA. 14+730 TO STA. 15+010





- GENERAL NOTES**
1. THE LOCATION OF UTILITIES IS APPROXIMATE ONLY, THE EXACT LOCATION SHOULD BE DETERMINED BY CONSULTING THE MUNICIPAL AUTHORITIES AND UTILITY COMPANIES CONCERNED. THE CONTRACTOR SHALL PROVE THE LOCATION OF UTILITIES AND SHALL BE RESPONSIBLE FOR ADEQUATE PROTECTION FROM DAMAGE.
 2. DRAWINGS PLOTTED HALF SIZE (11X17) ARE NOT TO SCALE.
 3. ALL DISTURBED AREAS WHERE GRADING IS REQUIRED UNLESS OTHERWISE NOTED IN PLAN SHALL BE RESTORED WITH 100mm TOPSOIL SEED & MULCH.
 4. WHERE PAVED DRIVEWAY RECONSTRUCTION INDICATED IN PLAN PAVEMENT STRUCTURE SHALL BE 50mm HL3 AND PAD WITH GRANULAR 'A' AS REQUIRED. WHERE GRANULAR DRIVEWAY RECONSTRUCTION INDICATED IN PLAN RECONSTRUCT WITH GRANULAR 'A' AS REQUIRED.
 5. ALL DRIVEWAY RECONSTRUCTIONS ARE TO MATCH EXISTING GRADE AND WIDTH AT THE NEW PROPOSED PROPERTY LINE (P/L).

STORMONT, DUNDAS AND GLENGARRY COUNTY ROAD 22



PROP. GRADE @ C/L	EXISTING GRADE @ C/L	PROP. RIGHT SIDE ELEV.	PROP. LEFT SIDE ELEV.	CHAINAGE
81.79	81.51	81.51	81.51	15+020
81.93	81.62	81.62	81.62	15+040
82.08	81.77	81.77	81.77	15+060
82.22	81.94	81.94	81.94	15+080
82.37	82.08	82.08	82.08	15+100
82.52	82.21	82.21	82.21	15+120
82.66	82.33	82.33	82.33	15+140
82.81	82.47	82.47	82.47	15+160
82.95	82.61	82.61	82.61	15+180
83.10	82.75	82.75	82.75	15+200
83.24	82.89	82.89	82.89	15+220
83.39	83.06	83.06	83.06	15+240
83.53	83.17	83.17	83.17	15+260
83.66	83.31	83.31	83.31	15+280

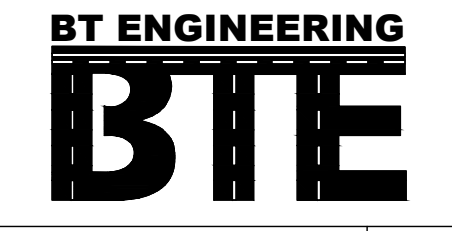
BENCH MARKS

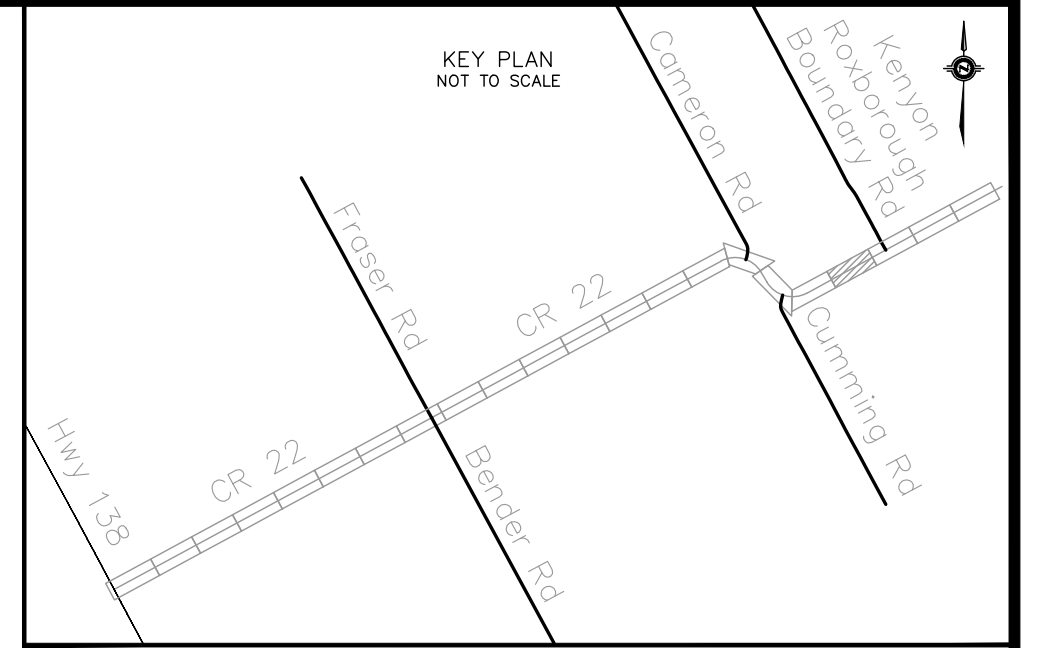
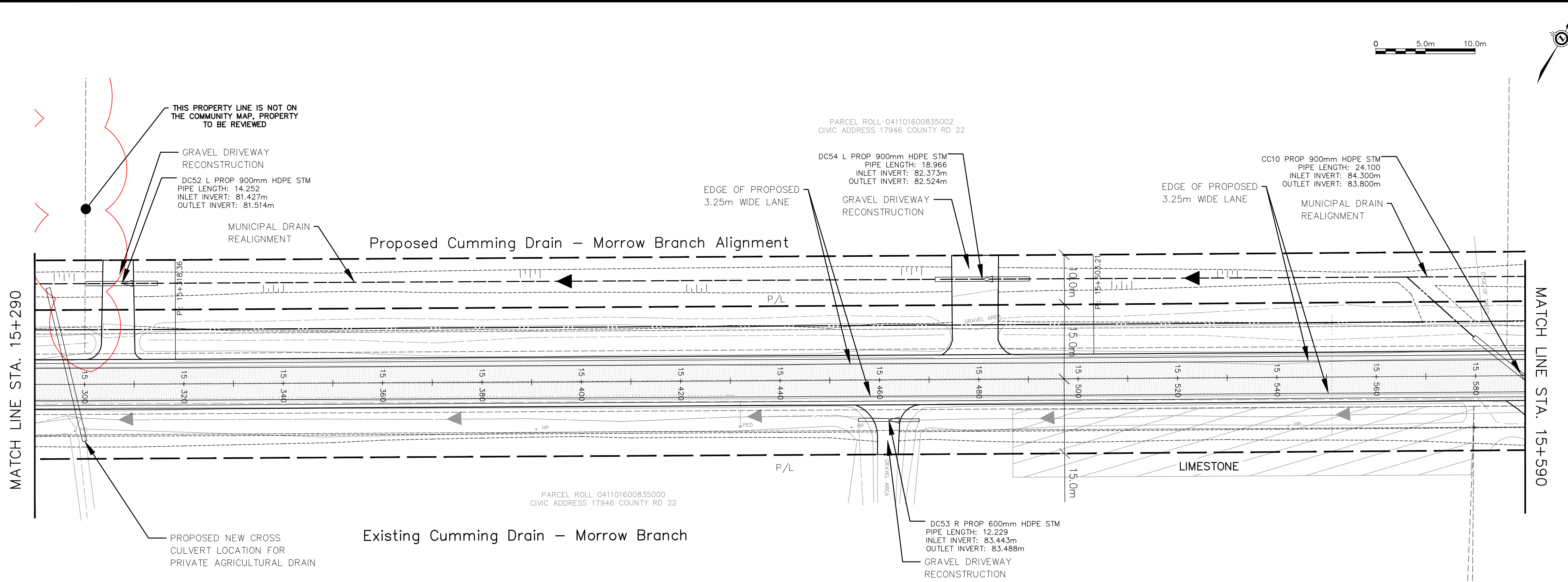
NO.	REVISIONS	DATE	APPROVED
1.	ISSUED FOR 60% REVIEW	MM/YY	S.J.T.

NO.	REVISIONS	DATE	APPROVED
1.	ISSUED FOR 60% REVIEW	MM/YY	S.J.T.

COUNTY ROAD 22
UNITED COUNTIES OF STORMONT, DUNDAS AND GLENGARRY

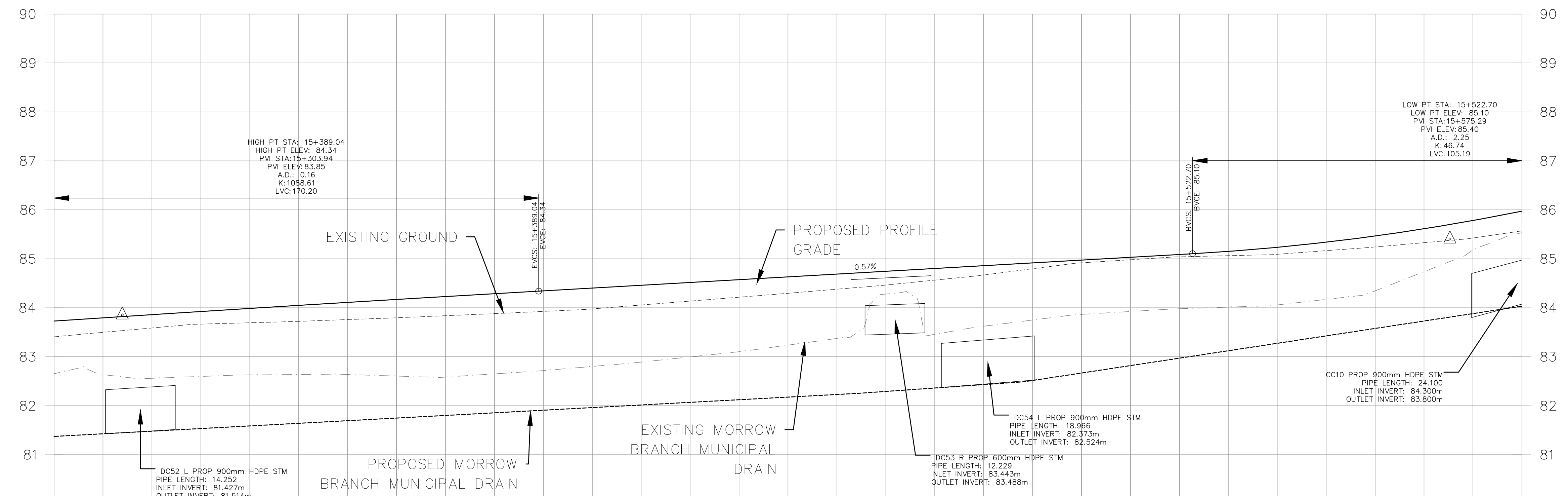
NEW CONSTRUCTION
STA. 15+010 TO STA. 15+290





- GENERAL NOTES
1. THE LOCATION OF UTILITIES IS APPROXIMATE ONLY, THE EXACT LOCATION SHOULD BE DETERMINED BY CONSULTING THE MUNICIPAL AUTHORITIES AND UTILITY COMPANIES CONCERNED. THE CONTRACTOR SHALL PROVE THE LOCATION OF UTILITIES AND SHALL BE RESPONSIBLE FOR ADEQUATE PROTECTION FROM DAMAGE.
 2. DRAWINGS PLOTTED HALF SIZE (1:1) ARE NOT TO SCALE.
 3. ALL DISTURBED AREAS WHERE GRADING IS REQUIRED UNLESS OTHERWISE NOTED IN PLAN SHALL BE RESTORED WITH 100mm TOPSOIL SEED & MULCH.
 4. WHERE PAVED DRIVEWAY RECONSTRUCTION INDICATED IN PLAN PAVEMENT STRUCTURE SHALL BE 50mm HL3 AND PAD WITH GRANULAR 'A' AS REQUIRED. WHERE GRANULAR DRIVEWAY RECONSTRUCTION INDICATED IN PLAN RECONSTRUCT WITH GRANULAR 'A' AS REQUIRED.
 5. ALL DRIVEWAY RECONSTRUCTIONS ARE TO MATCH EXISTING GRADE AND WIDTH AT THE NEW PROPOSED PROPERTY LINE (P/L).

STORMONT, DUNDAS AND GLENGARRY COUNTY ROAD 22

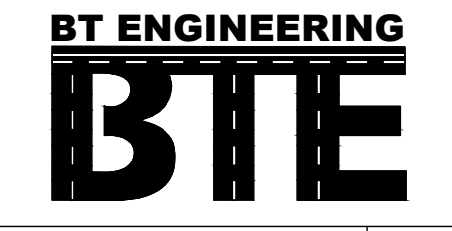


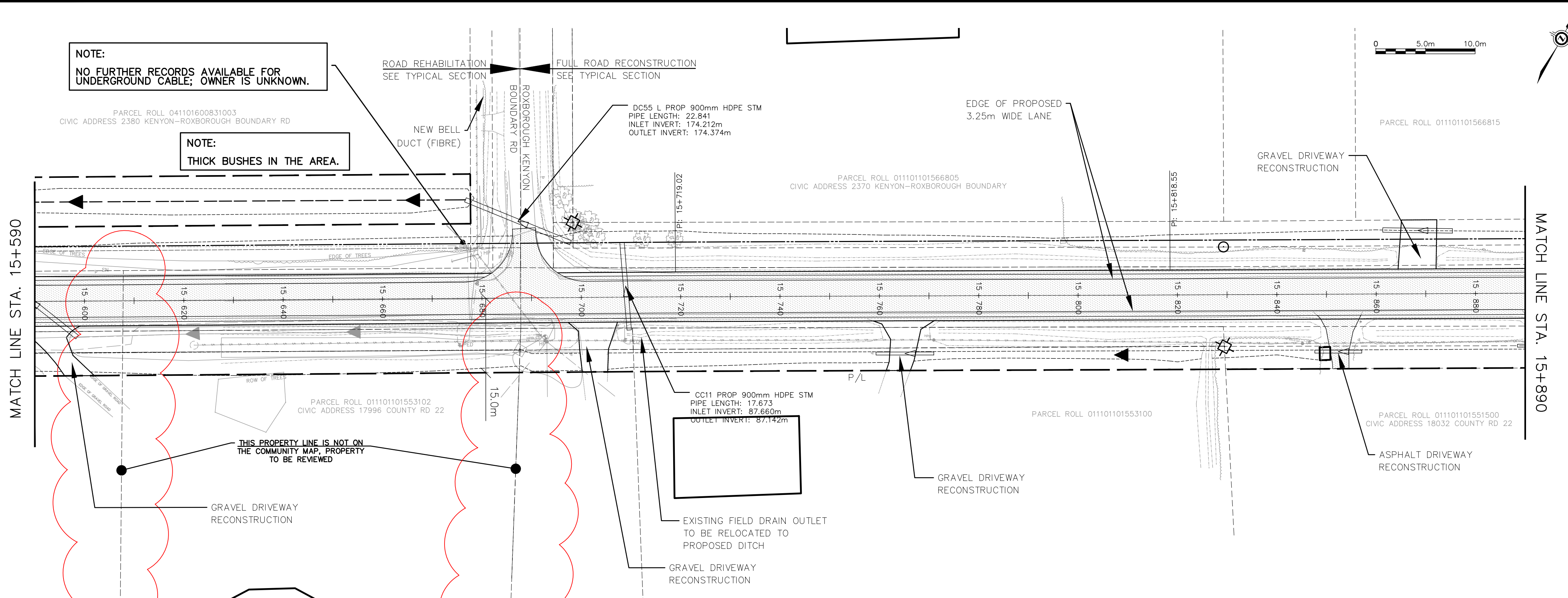
PROP. GRADE C/L ELEV.	PROP. RIGHT DITCH ELEV.	PROP. LEFT DITCH ELEV.	CHAINAGE
83.80	83.50	83.50	15+300
83.92	83.67	83.67	15+320
84.05	83.72	83.72	15+340
84.17	83.80	83.80	15+360
84.29	83.88	83.88	15+380
84.40	83.98	83.98	15+400
84.52	84.14	84.14	15+420
84.63	84.30	84.30	15+440
84.75	84.46	84.46	15+460
84.86	84.67	84.67	15+480
84.97	84.92	84.92	15+500
85.09	85.04	85.04	15+520
85.23	85.09	85.09	15+540
85.47	85.24	85.24	15+560
85.78	85.42	85.42	15+580

BENCH MARKS

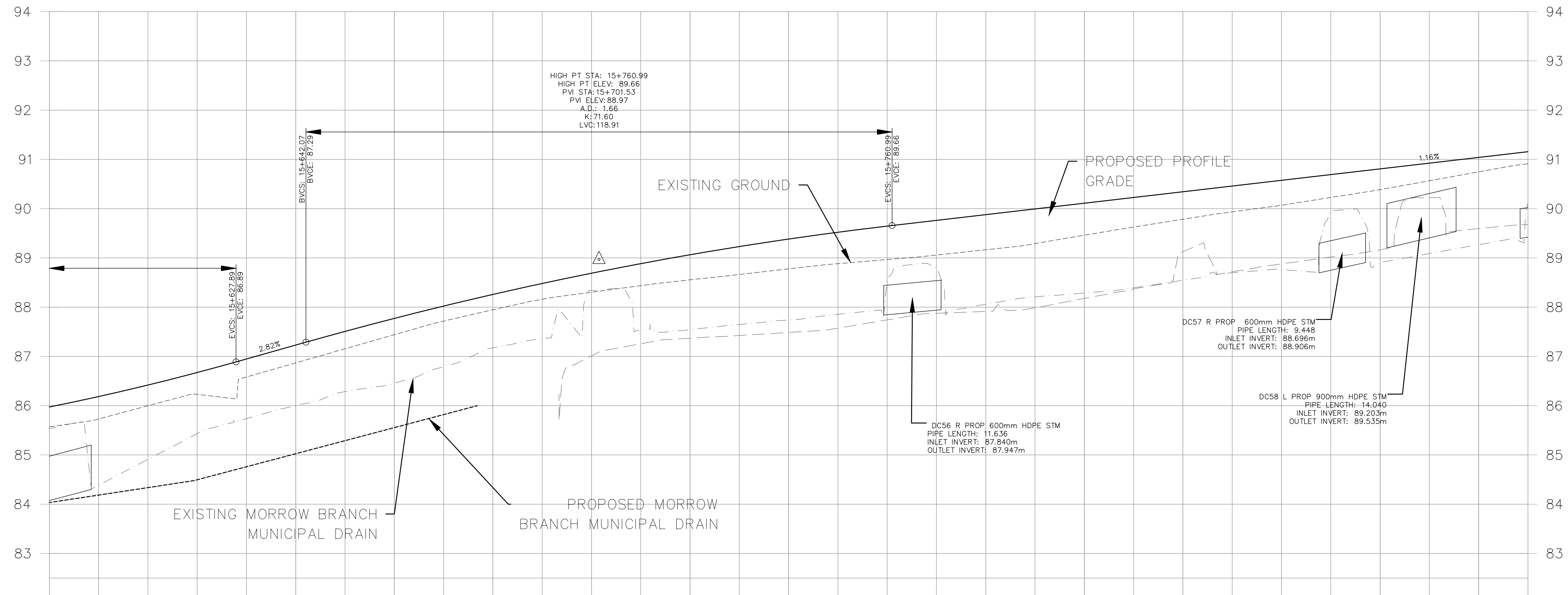
NO.	REVISIONS	DATE	APPROVED
1.	ISSUED FOR 60% REVIEW	MM/YY	S.J.T.

COUNTY ROAD 22
UNITED COUNTIES OF STORMONT, DUNDAS
AND GLENGARRY
NEW CONSTRUCTION
STA. 15+290 TO STA. 15+590

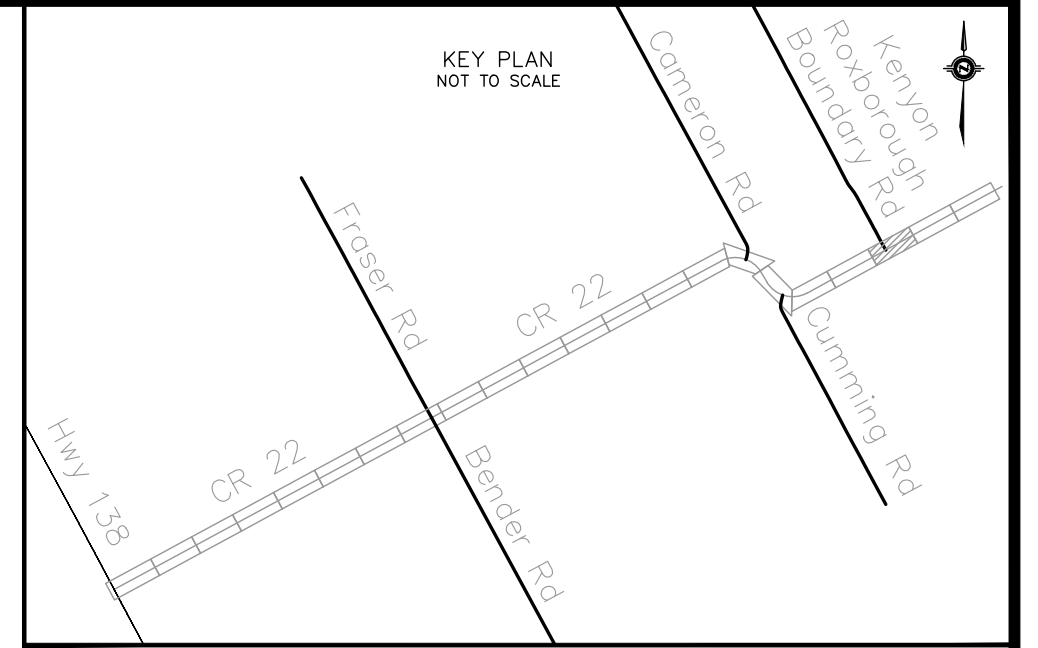




STORMONT, DUNDAS AND GLENGARRY COUNTY ROAD 22



CHAINAGE	PROP. EXISTING DITCH ELEV.	PROP. EXISTING DITCH ELEV.	PROP. EXISTING DITCH ELEV.
15+600	85.73	86.18	86.73
15+620	86.23	86.67	87.23
15+640	86.87	87.23	87.77
15+660	87.44	87.77	88.26
15+680	87.95	88.26	88.69
15+700	88.30	88.69	89.06
15+720	88.56	89.06	89.38
15+740	88.78	89.38	89.65
15+760	88.97	89.65	89.88
15+780	89.17	89.88	90.11
15+800	89.46	90.11	90.34
15+820	89.78	90.34	90.57
15+840	90.07	90.57	90.81
15+860	90.38	90.81	91.04
15+880	90.75	91.04	



- GENERAL NOTES**
- THE LOCATION OF UTILITIES IS APPROXIMATE ONLY, THE EXACT LOCATION SHOULD BE DETERMINED BY CONSULTING THE MUNICIPAL AUTHORITIES AND UTILITY COMPANIES CONCERNED. THE CONTRACTOR SHALL PROVE THE LOCATION OF UTILITIES AND SHALL BE RESPONSIBLE FOR ADEQUATE PROTECTION FROM DAMAGE.
 - DRAWINGS PLOTTED HALF SIZE (1:1/2) ARE NOT TO SCALE.
 - ALL DISTURBED AREAS WHERE GRADING IS REQUIRED UNLESS OTHERWISE NOTED IN PLAN SHALL BE RESTORED WITH 100mm TOPSOIL SEED & MULCH.
 - WHERE PAVED DRIVEWAY RECONSTRUCTION INDICATED IN PLAN PAVEMENT STRUCTURE SHALL BE 50mm HL3 AND PAD WITH GRANULAR 'A' AS REQUIRED. WHERE GRANULAR DRIVEWAY RECONSTRUCTION INDICATED IN PLAN RECONSTRUCT WITH GRANULAR 'A' AS REQUIRED.
 - ALL DRIVEWAY RECONSTRUCTIONS ARE TO MATCH EXISTING GRADE AND WIDTH AT THE NEW PROPOSED PROPERTY LINE (P/L).

BENCH MARKS

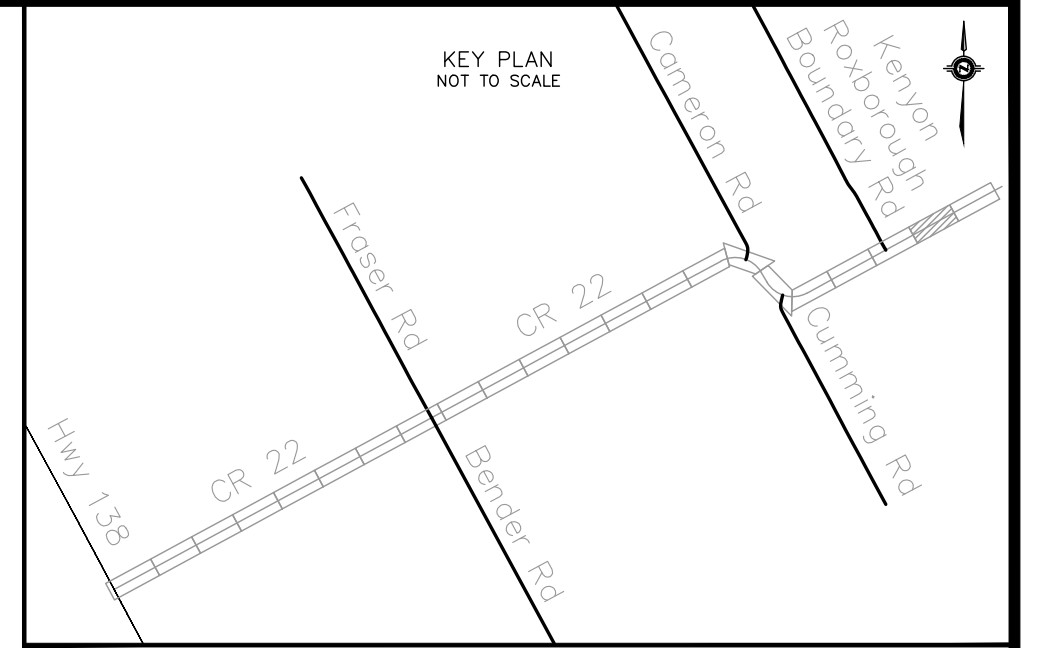
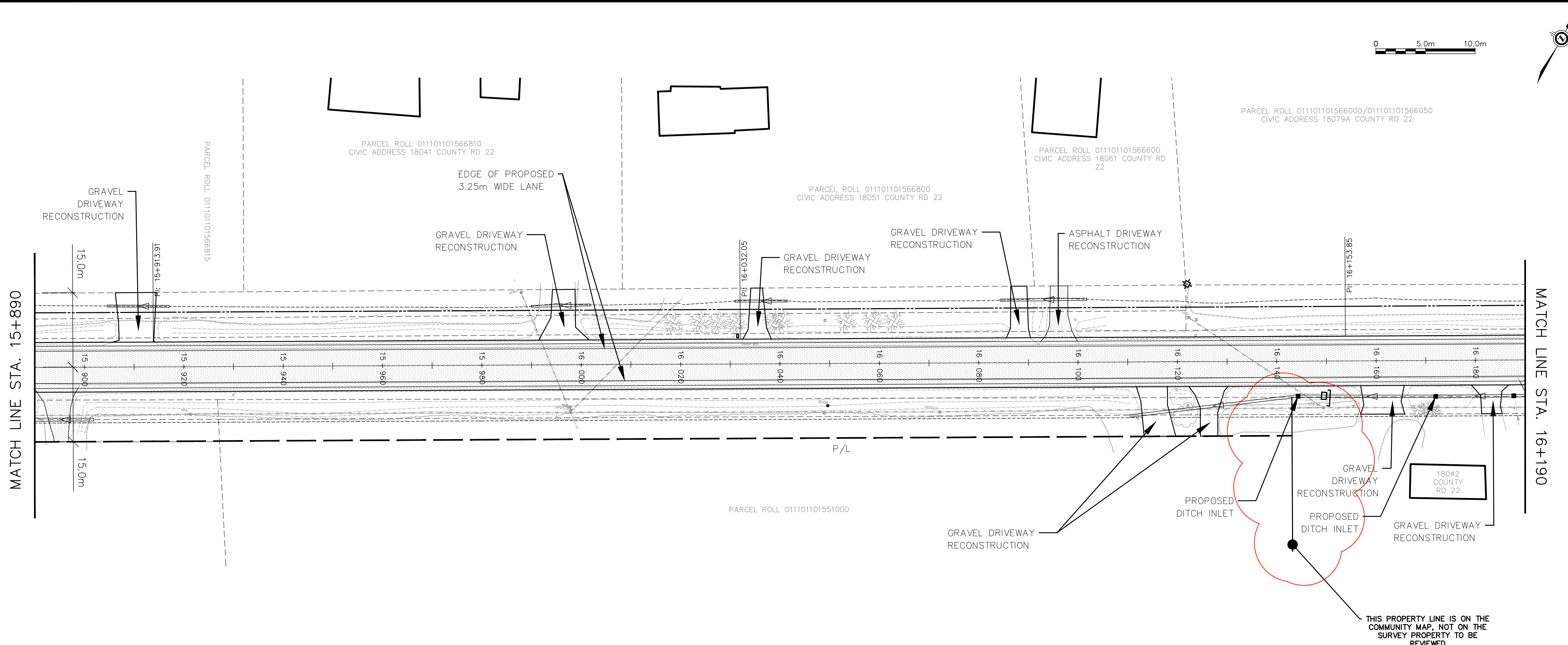
NO.	REVISIONS	DATE	APPROVED
1.	ISSUED FOR 60% REVIEW	MM/YY	S.J.T.

NO.	REVISIONS	DATE	APPROVED
1.	ISSUED FOR 60% REVIEW	MM/YY	S.J.T.

COUNTY ROAD 22
 UNITED COUNTIES OF STORMONT, DUNDAS
 AND GLENGARRY
 NEW CONSTRUCTION
 STA. 15+590 TO STA. 15+890

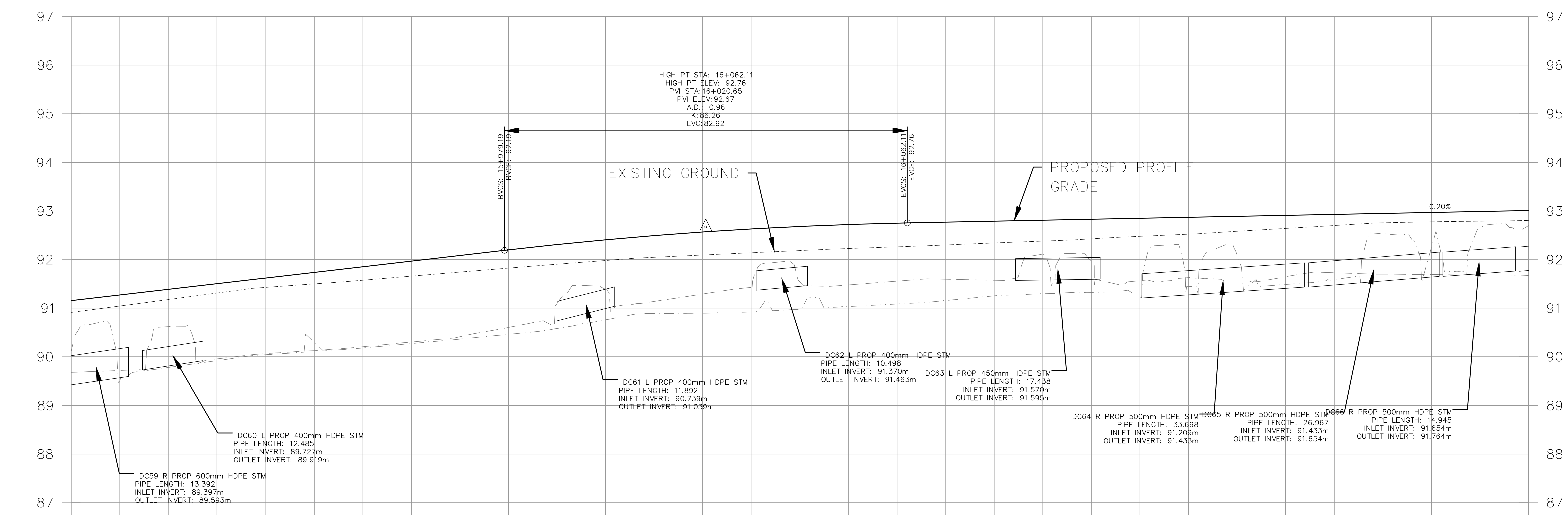
BT ENGINEERING

SCALE HOR. 1:250 VERT. 1:50 CONTRACT NO. ####
 DESIGN XXXX DRAWN XXXX
 REVIEWED XXXX DATE YYYY.MM.DD **PLATE 20**



- GENERAL NOTES**
1. THE LOCATION OF UTILITIES IS APPROXIMATE ONLY, THE EXACT LOCATION SHOULD BE DETERMINED BY CONSULTING THE MUNICIPAL AUTHORITIES AND UTILITY COMPANIES CONCERNED. THE CONTRACTOR SHALL PROVE THE LOCATION OF UTILITIES AND SHALL BE RESPONSIBLE FOR ADEQUATE PROTECTION FROM DAMAGE.
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 5. ALL DRIVEWAY RECONSTRUCTIONS ARE TO MATCH EXISTING GRADE AND WIDTH AT THE NEW PROPOSED PROPERTY LINE (P/L).

STORMONT, DUNDAS AND GLENGARRY COUNTY ROAD 22



CHAINAGE	PROP. EXISTING DITCH ELEV.	PROP. EXISTING DITCH ELEV.	PROP. EXISTING DITCH ELEV.	PROP. EXISTING DITCH ELEV.	PROP. EXISTING DITCH ELEV.	PROP. EXISTING DITCH ELEV.	PROP. EXISTING DITCH ELEV.	PROP. EXISTING DITCH ELEV.	PROP. EXISTING DITCH ELEV.	PROP. EXISTING DITCH ELEV.	PROP. EXISTING DITCH ELEV.	PROP. EXISTING DITCH ELEV.	PROP. EXISTING DITCH ELEV.	PROP. EXISTING DITCH ELEV.	PROP. EXISTING DITCH ELEV.	PROP. EXISTING DITCH ELEV.	PROP. EXISTING DITCH ELEV.	PROP. EXISTING DITCH ELEV.	PROP. EXISTING DITCH ELEV.
15+900	91.04	91.04	91.04	91.04	91.04	91.04	91.04	91.04	91.04	91.04	91.04	91.04	91.04	91.04	91.04	91.04	91.04	91.04	91.04
15+920	91.31	91.31	91.31	91.31	91.31	91.31	91.31	91.31	91.31	91.31	91.31	91.31	91.31	91.31	91.31	91.31	91.31	91.31	91.31
15+940	91.50	91.50	91.50	91.50	91.50	91.50	91.50	91.50	91.50	91.50	91.50	91.50	91.50	91.50	91.50	91.50	91.50	91.50	91.50
15+960	91.66	91.66	91.66	91.66	91.66	91.66	91.66	91.66	91.66	91.66	91.66	91.66	91.66	91.66	91.66	91.66	91.66	91.66	91.66
15+980	91.82	91.82	91.82	91.82	91.82	91.82	91.82	91.82	91.82	91.82	91.82	91.82	91.82	91.82	91.82	91.82	91.82	91.82	91.82
16+000	91.98	91.98	91.98	91.98	91.98	91.98	91.98	91.98	91.98	91.98	91.98	91.98	91.98	91.98	91.98	91.98	91.98	91.98	91.98
16+020	92.09	92.09	92.09	92.09	92.09	92.09	92.09	92.09	92.09	92.09	92.09	92.09	92.09	92.09	92.09	92.09	92.09	92.09	92.09
16+040	92.19	92.19	92.19	92.19	92.19	92.19	92.19	92.19	92.19	92.19	92.19	92.19	92.19	92.19	92.19	92.19	92.19	92.19	92.19
16+060	92.26	92.26	92.26	92.26	92.26	92.26	92.26	92.26	92.26	92.26	92.26	92.26	92.26	92.26	92.26	92.26	92.26	92.26	92.26
16+080	92.34	92.34	92.34	92.34	92.34	92.34	92.34	92.34	92.34	92.34	92.34	92.34	92.34	92.34	92.34	92.34	92.34	92.34	92.34
16+100	92.43	92.43	92.43	92.43	92.43	92.43	92.43	92.43	92.43	92.43	92.43	92.43	92.43	92.43	92.43	92.43	92.43	92.43	92.43
16+120	92.52	92.52	92.52	92.52	92.52	92.52	92.52	92.52	92.52	92.52	92.52	92.52	92.52	92.52	92.52	92.52	92.52	92.52	92.52
16+140	92.64	92.64	92.64	92.64	92.64	92.64	92.64	92.64	92.64	92.64	92.64	92.64	92.64	92.64	92.64	92.64	92.64	92.64	92.64
16+160	92.76	92.76	92.76	92.76	92.76	92.76	92.76	92.76	92.76	92.76	92.76	92.76	92.76	92.76	92.76	92.76	92.76	92.76	92.76
16+180	92.79	92.79	92.79	92.79	92.79	92.79	92.79	92.79	92.79	92.79	92.79	92.79	92.79	92.79	92.79	92.79	92.79	92.79	92.79

BENCH MARKS

NO.	REVISIONS	DATE	APPROVED
1.	ISSUED FOR 60% REVIEW	MM/YY	S.J.T.

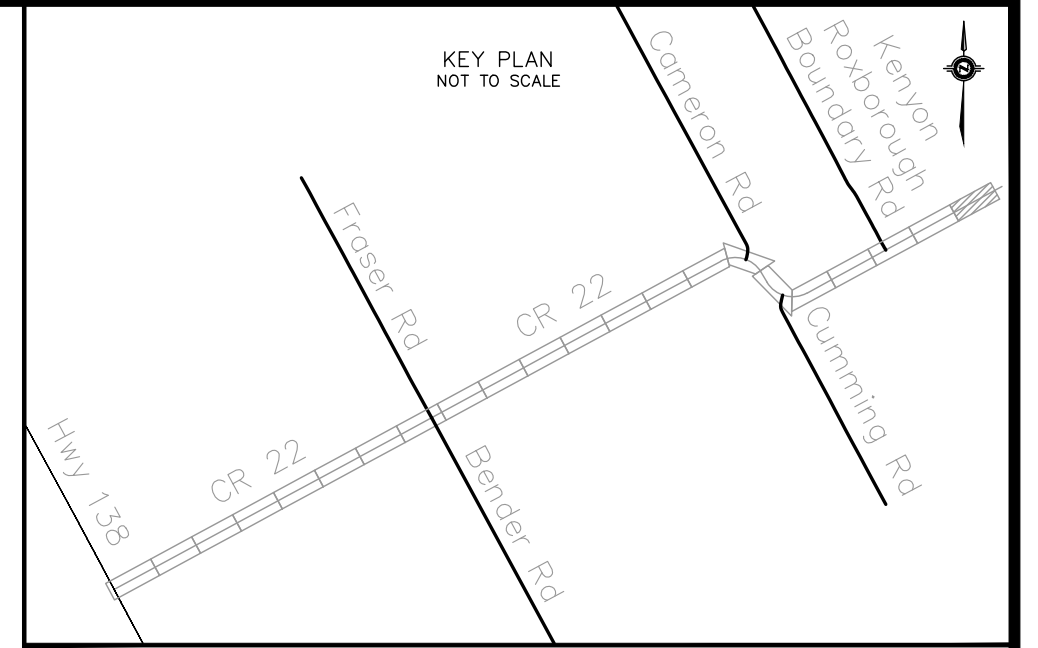
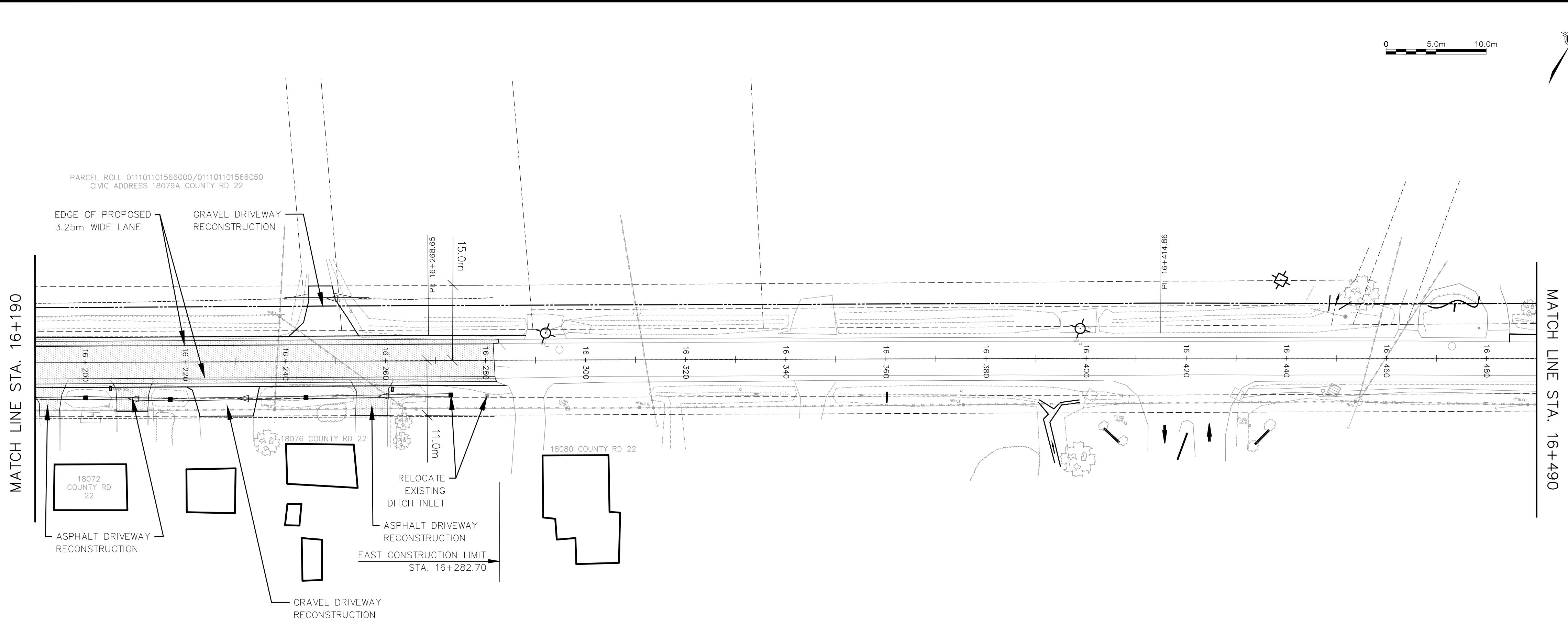
NO.	REVISIONS	DATE	APPROVED
1.	ISSUED FOR 60% REVIEW	MM/YY	S.J.T.

COUNTY ROAD 22
 UNITED COUNTIES OF STORMONT, DUNDAS
 AND GLENGARRY

NEW CONSTRUCTION
 STA. 15+890 TO STA. 16+190

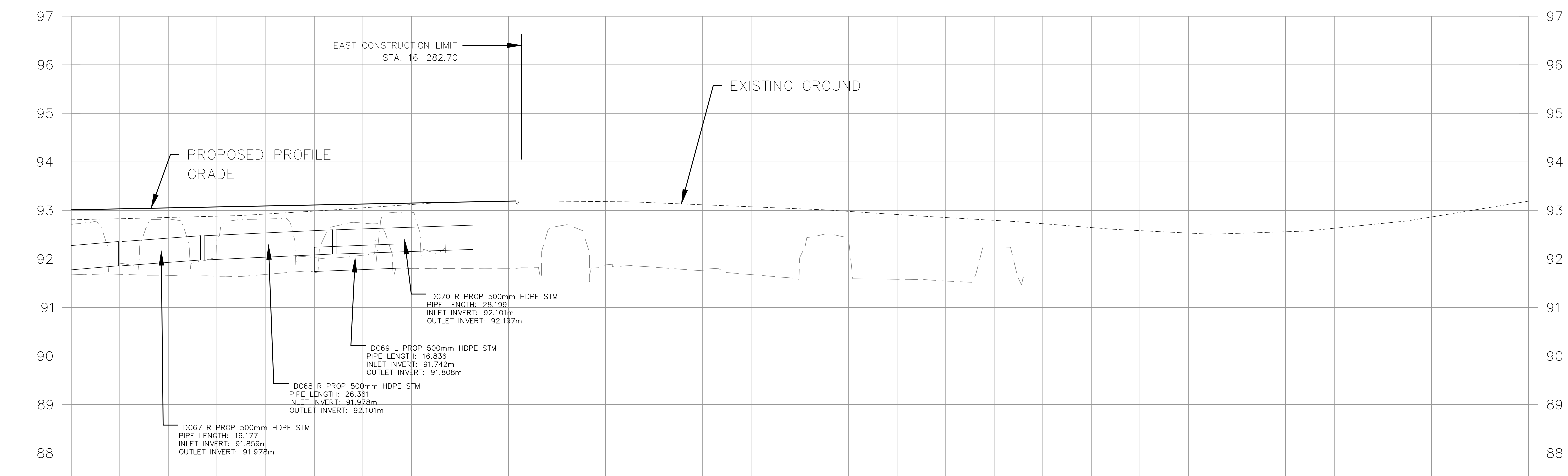
BT ENGINEERING
BTE

SCALE HOR. 1:250 VERT. 1:50 CONTRACT NO. ####
 DESIGN XXXX DRAWN XXXX
 REVIEWED XXXX DATE YYYY.MM.DD **PLATE 21**



- GENERAL NOTES**
1. THE LOCATION OF UTILITIES IS APPROXIMATE ONLY, THE EXACT LOCATION SHOULD BE DETERMINED BY CONSULTING THE MUNICIPAL AUTHORITIES AND UTILITY COMPANIES CONCERNED. THE CONTRACTOR SHALL PROVE THE LOCATION OF UTILITIES AND SHALL BE RESPONSIBLE FOR ADEQUATE PROTECTION FROM DAMAGE.
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STORMONT, DUNDAS AND GLENGARRY COUNTY ROAD 22



CHAINAGE	PROP. GRADE ELEV.	EXISTING DITCH ELEV.	PROP. DITCH ELEV.
16+200	92.83	92.83	92.83
16+220	92.88	92.88	92.88
16+240	92.99	92.99	92.99
16+260	93.12	93.12	93.12
16+280	93.19	93.19	93.19
16+300	93.18	93.18	93.18
16+320	93.12	93.12	93.12
16+340	93.03	93.03	93.03
16+360	92.92	92.92	92.92
16+380	92.80	92.80	92.80
16+400	92.65	92.65	92.65
16+420	92.53	92.53	92.53
16+440	92.56	92.56	92.56
16+460	92.73	92.73	92.73
16+480	93.03	93.03	93.03

BENCH MARKS

NO.	REVISIONS	DATE	APPROVED
1.	ISSUED FOR 60% REVIEW	MM/YY	S.J.T.

NO.	REVISIONS	DATE	APPROVED
1.	ISSUED FOR 60% REVIEW	MM/YY	S.J.T.

COUNTY ROAD 22
 UNITED COUNTIES OF STORMONT, DUNDAS AND GLENGARRY
 NEW CONSTRUCTION
 STA. 16+190 TO STA. 16+490

BT ENGINEERING
BTE

SCALE HOR. 1:250	VERT. 1:50	CONTRACT NO. ###
DESIGN XXXX	DRAWN XXXX	PLATE 22
REVIEWED XXXX	DATE YYYY.MM.DD	

GLOSSARY OF TERMS

AA DT	Annual Average Daily Traffic – the average 24-hour, two-way traffic for the period from January 1st to December 31st.
Alignment	The vertical and horizontal position of a road.
Alternative	Well-defined and distinct course of action that fulfils a given set of requirements. The EA Act distinguishes between alternatives to the undertaking and alternative methods of carrying out the undertaking.
Alternative Planning Solutions	Alternative ways of solving problems or meeting demand (Alternatives to the Undertaking).
Alternative Design Concepts	Alternative ways of solving a documented transportation deficiency or taking advantage of an opportunity. (Alternative methods of carrying out the undertaking).
Alternative Project	Alternative Planning Solution, see above.
Canadian Environmental Assessment Act (CEAA)	The CEAA applies to projects for which the federal government holds decision-making authority. It is legislation that identifies the responsibilities and procedures for the environmental assessment.
Class Environmental Assessment Document	An individual environmental report documenting a planning process which is formally submitted under the EA Act. Once the Class EA document is approved, projects covered by the class can be implemented without having to seek further approvals under the EA Act provided the Class EA process is followed.
Class Environmental Assessment Process	A planning process established for a group of projects in order to ensure compliance with the Environmental Assessment (EA) Act. The EA Act, in Section 13 makes provision for the establishment of Class Environmental Assessments.
Compensation	The replacement of natural habitat lost through implementation of a project, where implementation techniques and other measures could not alleviate the effects.

Corridor	A band of variable width between two locations. In transportation studies a corridor is defined area where a new or improved transportation facility might be located.
Criterion	Explicit feature or consideration used for comparison of alternatives.
Cross Section	Configuration of the road at a right angle to the centreline. Typical sections show the width, thickness and descriptions of the pavement section, as well as the geometrics of the graded roadbed, side ditches, and side slopes.
CSP	Corrugated Steel Pipe
Culvert	Transports water underneath roadways or embankments
Cumulative Effects Assessment	Cumulative Effects Assessment assesses the interaction and combination of the residual environmental effects of the project during its construction and operational phases on measures to prevent or lessen the predicted impacts with the same environmental effects from other past, present, and reasonably foreseeable future projects and activities.
Detail Design	The final stage in the design process in which the engineering and environmental components of preliminary design are refined and details concerning, for example, property, drainage, utility relocations and quantity estimate requirements are prepared, and contract documents and drawings are produced.
DFO	Department of Fisheries and Oceans.
EA	Environmental Assessment
EA Act	Ontario Environmental Assessment Act (as amended by S.O. 1996 C.27), RSO 1980.

Environment	Air, land or water, Plant and animal life, including man, The social, economic and cultural conditions that influence the life of man or a community, Any building structure, machine or other device or thing made by man, Any solid, liquid, gas, odour, heat, sound, vibration or radiation resulting directly or indirectly from the activities of man, or Any part or combination of the foregoing and the interrelationships between any two or more of them, in or of Ontario.
Environmental Effect	A change in the existing conditions of the environment which may have either beneficial (positive) or detrimental (negative) effects.
Environmentally Sensitive Areas (ESA's)	Those areas identified by any agency or level of government which contain natural features, ecological functions or cultural, historical or visual amenities which are susceptible to disturbance from human activities and which warrant protection.
Equivalent Sound Level (Leq)	The level of a continuous sound having the same energy as a fluctuating sound in a given time period. In this report Leq refers to 24-hour, 16 or 18-hour averages.
Evaluation	The outcome of a process that appraises the advantages and disadvantages of alternatives.
Evaluation Process	The process involving the identification of criteria, rating of predicted impacts, assignment of weights to criteria, and aggregation of weights, rates and criteria to produce an ordering of alternatives.
External Agencies	Include Federal departments and agencies, Provincial ministries and agencies, conservation authorities, municipalities, Crown corporations or other agencies other than MTO.
Factor	A category of sub-factors.
Grade Raise	Increase the elevation of the road.

Hydraulic	Civil engineering concerned with the flow of fluids, primarily water and sewage.
Individual Environmental Assessment	An environmental Assessment for an undertaking to which Assessment the EA Act applies and which requires formal review and approval under the Act.
MECP	Ministry of the Environment, Conservation and Parks
Mitigating Measure	A measure that is incorporated into a project to reduce, eliminate or ameliorate detrimental environmental effects.
Mitigation	Taking actions that either remove or alleviate to some degree the negative impacts associated with the implementation of alternatives.
MNRF	Ministry of Natural Resources and Forestry
Municipal Drains	System for moving water under the responsibility of the municipality for the construction of the drainage system and future maintenance and repair
Planning Alternatives	Planning alternatives are "alternative methods" under the EA Act. Identification of significant transportation engineering opportunities while protecting significant environmental features as much as possible.
Planning Solutions	That part of the planning and design process where alternatives to the undertaking and alternative routes are identified and assessed. Also described as "Alternative Project" under the federal EA Act.
PIC	Public Information Centre
Prime Agricultural Areas	Prime agricultural areas as defined in municipal official plans and other government policy sources.
Project	A specific undertaking planned and implemented in accordance with this Class EA including all those activities necessary to solve a specific transportation problem.
Project File	The final product of a Schedule B project. This is a completion of all data/reports produced for the project.

Proponent	A person or agency that carries or proposes to carry out an undertaking, or is the owner or person having charge, management, or control of an undertaking.
Public	Includes the general public, interest groups, associates, community groups, and individuals, including property owners.
Pulverize	Process that grinds up existing surface layers right in place, blending the asphalt layers with any sub-layers, essentially creating a new paving mix using all the old materials.
Recommended Plan	That part of the planning and design process, during which various alternative solutions are examined and evaluated including consideration of environmental effects and mitigation; the recommended design solution is then developed in sufficient detail to ensure that the horizontal and vertical controls are physically compatible with the proposed site, that the requirements of lands and rights-of-way are satisfactorily identified, and that the basic design criteria or features to be contained in the design, have been fully recognized and documented in sufficient graphic detail to ensure their feasibility.
Screening	Process of eliminating alternatives from further consideration, which do not meet minimum conditions or categorical requirements.
Sub-factor	A single criterion used for the evaluation. Each sub-factor is grouped under one of the factors.
TAC	Technical Advisory Committee
TMP	Transportation Master Plan
Traceability	Characteristics of an evaluation process which enables its development and implementation to be followed with ease.
Undertaking	In keeping with the definition of the Environmental Assessment Act, a project or activity subject to an Environmental Assessment.
Watershed	Land that channels water from rainfall and snowmelt into streams and rivers that have an outflow to lakes, oceans, bays, and reservoirs.