



**HUNTER SUBDIVISION SERVICING
FEASIBILITY STUDY**

June 1, 2022

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Auburn Developments Inc.

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Project Number:
161414095

Hunter Subdivision Servicing Feasibility Study

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Prepared by:

Dan Vucetic, MEng, P.Eng.



Reviewed by:

Signature

Approved by:

Tim Stubgen, P.Eng

Signature



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1 INTRODUCTION

1.1 PURPOSE OF REPORT

This report has been prepared for the information of Auburn Developments Inc. to provide background information and servicing strategy on the development of the property located at 1598 Richmond Street in the Town of Dorchester in accordance with the Draft Plan of Subdivision, included in Appendix 'A'. This report provides general background information regarding the property, its preliminary servicing information including discussions of storm servicing and the provision of stormwater management, sanitary servicing and connection to existing downstream sewers, and connection to the Town of Dorchester's municipal water supply system.

1.2 LOCATION

The lands are municipally addressed as Mun No. 1598 Richmond Street in the Town of Dorchester. The area of the subject site is approximately 44 hectares (108.6 acres), and the site is situated directly north of the CN railway tracks, directly south of Marion Street, east of Linwood Drive, and west of Clara Street. The site is located within the Dorchester Settlement Area of the Municipality of Thames Centre Official Plan.

2 LIMITATION OF REPORT

The information presented in this report is based on the review of the following information:

- As-constructed drawings on file with the Municipality of Thames Centre;
- Municipality of Thames Centre Engineering Design Standards and Specifications;
- The Hunter Property Draft Plan of Subdivision as prepared by Stantec Consulting Ltd.;
- Preliminary Geotechnical Investigation as prepared by EXP Services Inc., dated June 2021;
- Hydrogeological Assessment (Preliminary Report) as prepared by EXP Services Inc., dated January 19, 2022;
- Municipality of Thames Centre 2021 Development Charges Background Study: and,
- Municipality of Thames Centre Water and Wastewater Master Plan Update – Master Plan Report, prepared by GM BluePlan, dated August 2019.

3 Site Characteristics

3.1 Existing Land Use and Topography

The site is undeveloped at the present time, with the exception of the existing farm buildings located east of Richmond Street. There are five buildings located on the site, which appear to be a dwelling unit and accessory structures, based on aerial photos. The remaining property has been used for agricultural purposes, primarily crop production up to the present time.

Site elevations range from approximately 273 metres in the northeast corner to approximately 255 metres along the southern property line. The site topography generally slopes downwards towards the CN Railway tracks, but there is a significant ridge that is oriented in the east-west direction. While the average site slope is approximately 2%, there are portions of the ridge with slopes approaching 13%.

An initial analysis of the existing grades indicates that the existing topography does not preclude development on any portion of the property. However, substantial earthworks will likely be required in localized areas to flatten the east-west ridge.

3.2 Site Access

The northern property line borders Marion Street, with approximately 1050 m of frontage. Richmond Street crosses the property and provides approximately 400 m of frontage to both west and east lands. Additionally, the Middlesex County mapping shows unopened road allowances that extend westward into the subject site from Ida Street, Eva Street, and Minnie Street, which could provide access to the property from Clara Street.



4 Sanitary Servicing

4.1 Existing Sanitary Services

There is currently no sanitary sewer servicing for the subject site, and no existing local sanitary sewers crossing of the Thames River.

The existing Dorchester wastewater treatment plant (WWTP) is located on the south side of the Thames River near the Dorchester Fairgrounds.

4.2 Proposed Sanitary Servicing

The most recently completed sanitary servicing study that includes the subject lands is the Municipality of Thames Centre Water and Wastewater Master Plan Update – Master Plan Report, prepared by GM BluePlan and dated August 2019.

In order for the subject lands to develop, the site would require the sanitary sewer system to be constructed in accordance with the Municipality of Thames Centre Water and Wastewater Master Plan (2019) preferred strategy for sanitary servicing of the North Dorchester area, much of the contemplated capital works would be within its boundary. The preferred strategy would establish a new North Dorchester Sanitary Pump Station (SPS) which would provide the necessary sanitary outlet for the proposed gravity sewers and forcemain from surrounding developments including subject site (illustrated in Figure 1 & Figure 2 below). The subject site is therefore instrumental and likely the first development trigger required to move forward with the preferred strategy for servicing North Dorchester.

Refer to Appendix 'A' for the subject site proposed preliminary sewer routing details, including depth and how the intended lands which include lands external to the proposed development can ultimately flow by way of a gravity sewer to the proposed North Dorchester Sanitary Pump Station.

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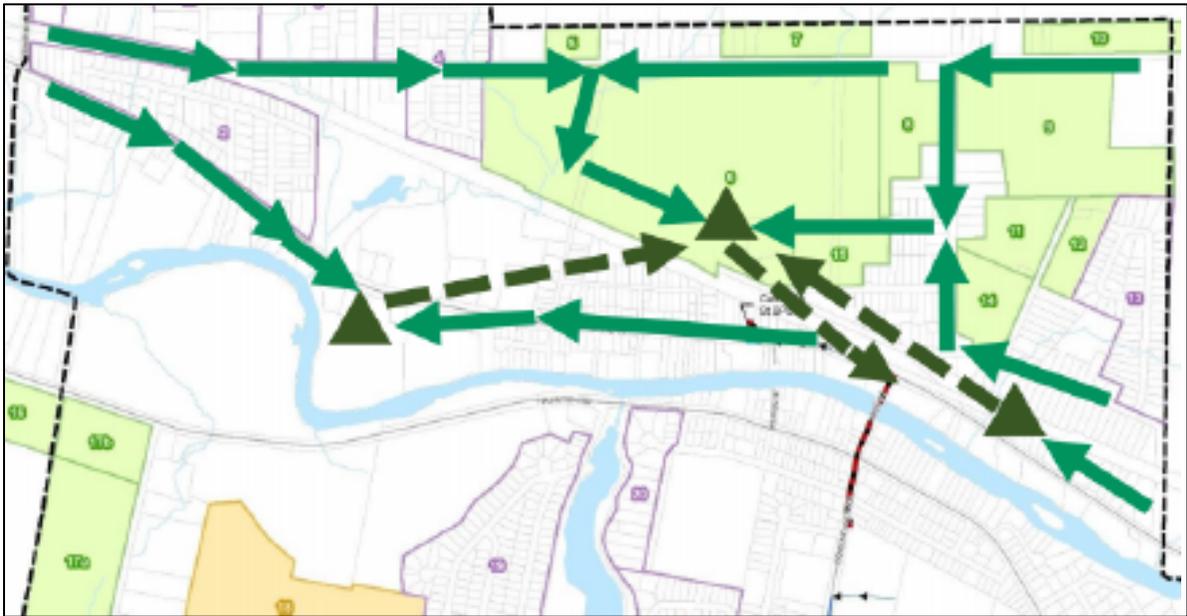


Figure 1. North Dorchester Preferred Sanitary Servicing Strategy as per Updated Master Plan (2019)



Hunter Subdivision Servicing Feasibility Study

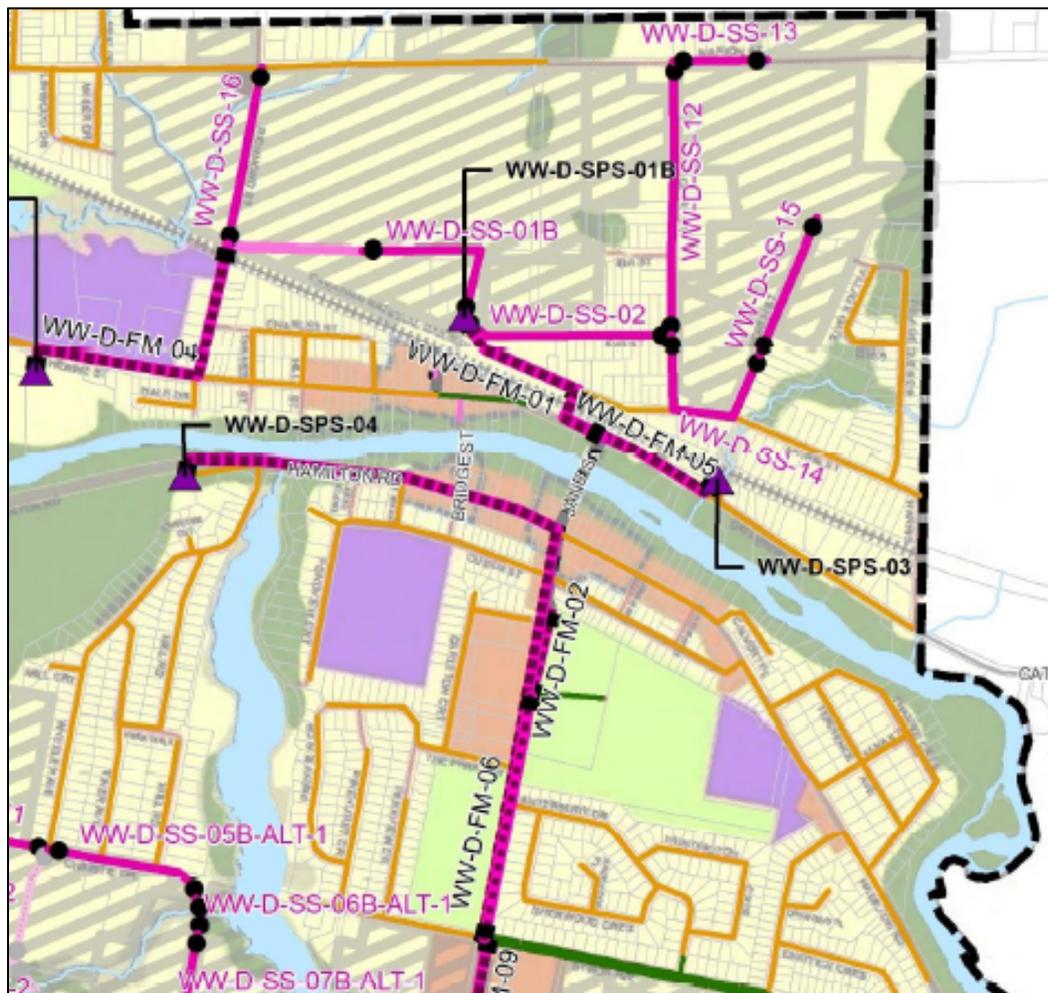


Figure 2. North Dorchester Preferred Sanitary Servicing Strategy Capital Works as per Updated Master Plan (2019)

The following is a list of anticipated capital works required to service the entirety of the subject site as identified in the Updated Master Plan along with accompanying estimated costs (2021 Estimate) and timing as per The Municipality of Thames Centre 2021 Development Charges Background Study:

- North Dorchester New Development Sanitary Pump Station (WW-D-SPS-01B) - \$5,400,000 – Timing 2030
- North Dorchester New Development Forcemain (WW-D-FM-01) - New 300mm forcemain needed to support new development SPS for development blocks North of CN rail in North Dorchester – \$1,418,500 – Timing 2030
- Dorchester Road Forcemain extension (WW-D-FM-02) – New 300mm forcemain from Dorchester Road bridge forcemain (Jane St) to Dorchester Road gravity sewers needed to support new



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development SPS for development blocks North of CN rail in North Dorchester - \$415,100 – Timing 2026

- Dorchester Road Forcemain extension (WW-D-FM-03) – New 300mm forcemain from Dorchester Road bridge forcemain (Jane Street) to Byron Ave 600mm diameter trunk sewers needed to support new development SPS for development blocks North of CN rail in North Dorchester – 1,013,700 – Timing 2026
- Richmond Street Sewer (WW-D-SS-16) - New 200mm diameter sanitary sewer to accommodate growth Northeast of new North Dorchester SPS - \$587,300 – Timing 2037
- New Development SPS West Sewers (WW-D-SS-01B) New 300mm diameter sanitary sewer required for development blocks going to new Development SPS in North Dorchester - \$558,800 – Timing 2026
- New Development SPS East Sewers (WW-D-SS-02) new 250mm diameter sanitary sewer required for development blocks going to new Development SPS in North Dorchester. - \$811,900 – Timing 2030

The capital works listed above total estimated cost is \$10,205,300.

The wastewater capital program (partially listed herein) will work as a foundation for the Municipality of Thames Centre's Capital Budget. The capital program provides a list and timing of new assets that the Municipality will have to operate and maintain; and therefore, it is the starting point for the planning of operation and maintenance costs and resources allocation for new wastewater infrastructure.

The funding source and timing was explicitly stated in the Municipality of Thames Centre 2021 Development Charges Background Study, however the timing for works can be suggested to coincide with the new development and based on the projected population and employment growth within the Municipality of Thames Centre. The funding (including availability) and timing of the infrastructure required for the Hunter Subdivision to proceed would have to be confirmed in discussion with the Municipality of Thames Centre.

4.3 Wastewater Treatment Plant Capacity

The existing Dorchester WWTP is located on the south side of the Thames River and uses a sequencing batch reactor secondary treatment process. The existing plant capacity is approximately 900 m³/d and expected to achieve 1,200 m³/d in 2022 with planned expansion. In 2017 only 56% of 520 m³/d rated capacity at the time was utilized leaving substantial room for growth contribution.

The expansion to 1200 m³/d is a part of the long-term plan to expand the WWTP to an ultimate capacity of 6,000 m³/d, as indicated in the original Certificate of Approval (CofA) issued in June 1999, which was later amended in November 2000 for approval for the 2002 capacity expansion to 520 m³/d.



4.4 Proposed Sewage Flow

We have assumed a design flow of 350 L/capita/day in calculating the anticipated subdivision sewage flow, which is consistent with current Municipality of Thames Centre standards. For the purpose of calculating the sewage flows, the Municipality's standard population densities for various land types were used. These densities are summarized as follows:

Table 1. Land Use Densities (Municipality of Thames Centre)

Land Use	Projected Density
Low Density Residential	30 units/ha @ 3 people/unit
Medium Density Residential	75 units/ha @ 2.4 people/unit

The estimated peak design flow for the full-build out of the Hunter Subdivision, using the above densities and the current Draft Plan of Subdivision, are detailed in the following table.

Table 2. Proposed Sanitary Flow (Municipality of Thames Centre)

Land Use	Area (ha)	Number of Units	Population
Low Density Residential	15.977	479	1437
Medium Density Residential	10.799	810	1944
Non-contributing Blocks and Rights-of-way	16.936	-	-
Total	43.712		3381

Total Peak Flow

45.32 L/s

As identified in the above table, the proposed site is approximately 44 ha which includes 479 single-family lots and 810 multi-family units for a total population of approximately 3381 persons. Based on an average daily flow of 350 L/capita/day, a total peak discharge of approximately 45.32 L/s is estimated for the entire development including infiltration allowance, and Harmon peaking factor.



5.2 Proposed Stormwater Management Strategy

The preferred alternative for stormwater management would be to create two stormwater management facilities (SWMF) on the north and south property limits on Parcel #2. The north SWMF will ultimately discharge into Sandusky Drain. The south SWMF will outlet to an open channel parallel to CN Railway and run west under Richmond Street via a proposed culvert and discharge into Sandusky Drain.

Parcel #1 (West of Richmond Street) will not have a SWM facility and instead will require on-site measures to provide quality control. Quantity control can be provided by over-controlling runoff in SWM facilities east of Richmond Street. The stormwater management strategy and preliminary design is available in the Appendix 'B' as detailed in the Conceptual SWM Strategy Memo prepared by Stantec Consulting Ltd., dated May 16, 2022.

6 Municipal Water Servicing

6.1 Existing Water Services

A municipal water tower is located southwest of the Marion Street/Clara Street intersection. There is an existing 250 mm diameter PVC watermain located on Marion Street, along the northern property.

Additionally, an existing 150mm diameter watermain on Linwood Drive within the neighboring Maplewoods Estates subdivision to the west is available for connection as well as an existing 150mm diameter watermain on Richmond Street just south of the CN Railway.

Lastly, a 250 mm diameter existing watermain is located along Clara Street, which feeds 150 mm diameter watermains on Ida Street, Eva Street, and Minnie Street. Watermain on Ida and Eva Street are expected to be extended into the subject site during capital infrastructure projects.

The Thames Centre as-built plan and profile information illustrating watermain location as detailed herein is included in Appendix 'A'.

6.2 Existing System Supply

According to the 2019 Water and Wastewater Master Plan Update (WWMP), the municipality is conducting well exploration for additional groundwater sources needed for the proposed build-out of Dorchester. In the event no suitable groundwater is found, a connection can be made to Lake Huron and Elgin Area Primary Supply Systems to provide needed capacity. In the meantime, upgrades to the pump and well at Dorchester Water Treatment Facility (WTF) are expected to provide sufficient capacity and pressure to attain peak hour and fire flow conditions to the subject site. Expected timeline for pump and well upgrades is 2023.

Dorchester is currently a single pressure zone supplied by 8 production wells that are pumped and treated at Dorchester WTF. Dorchester operates one elevated tank to provide system head pressure, and



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two underground 2500 m³ reservoirs for storage and chlorine contact time used in the disinfection of groundwater.

Maximum annual permitted withdrawal volume is 2,681,086 m³ as per the Permit to Take Water (PTTW) issued by the Ministry of Environment, Conservation and Parks (MECP). The current PTTW is slated to expire in May 2021, but changes to permitted water use is not expected to change. Percentage of actual annual withdrawal under present conditions is 453,380 m³, which is 17% of total the allocated capacity.

If the assumed Average Day Demand (ADD) is taken to be 225L/cap/day (Table 2.1, Master Plan) with a maximum projected subdivision population of 3000 people, gives 675,000L/day (675 m³/day) or 246,375 m³/year. This conservative figure brings water utilization to 26.1% of the theoretical maximum capacity.

6.3 Proposed Water Servicing

It is understood per Municipality of Thames Centre Design Standards (2021) Water distribution systems ought to be designed so that no more than fifty (50) units with individual water services and meters are serviced from a single source of supply. Therefore, given the projected number of units for the proposed subdivision it is expected that secondary connection will be required for looping and supply redundancy.

It is anticipated available connections for new water service to the development will be at connection points as listed below. Ultimate watermain connection locations and sizes will be confirmed during detailed design and based on pressure and flow requirements of the proposed development.

- Water service connection for servicing proposed Linwood Drive from existing 150mm diameter watermain in Maplewoods Estates Subdivision
- Water service connection at Street A from existing 250mm diameter watermain on Marion Street
- Watermain extension of existing 150mm diameter watermain on Richmond Street north or alternatively extension from Marion Street 250mm watermain to service medium density block on Richmond Street and to provide secondary connection at Street B
- Watermain extension of existing 150mm diameter watermain on Ida Street
- Medium Density Blocks fronting Marion Street to be serviced off existing 250mm diameter watermain on Marion Street



7 Summary and Recommendations

Water servicing is generally available as is access to the boundary road network. The absence of sanitary servicing and stormwater management infrastructure in the vicinity of development will require the implementation of the proposed strategy as detailed herein to service the development.

This report concludes that a sanitary outlet can be obtained through a funding formula with the Municipality, however, the agreement of the municipality and a significant up-front cost is required to develop due to external work required and benefit to growth in North Dorchester Area.

If you have any questions or concerns regarding the enclosed information, we would be pleased to meet or discuss with you further.



APPENDICES



Appendix A



Liability Note

The Contractor shall verify and be responsible for all dimensions. DO NOT scale the drawing - any errors or omissions shall be reported to Stantec without delay.

**DRAFT PLAN OF SUBDIVISION
HUNTER PROPERTY**

PART OF
LOTS 9 & 10
CONCESSION 4
IN THE
TOWN OF DORCHESTER
COUNTY OF MIDDLESEX

**INFORMATION REQUIRED UNDER SECTION
51(17) OF THE PLANNING ACT**

- A: AS SHOWN ON DRAFT PLAN
- B: AS SHOWN ON DRAFT AND KEY PLAN
- C: AS SHOWN ON DRAFT AND KEY PLAN
- D: ACCORDING TO LAND USE SCHEDULE
- E: RESIDENTIAL, AGRICULTURAL
- F: AS SHOWN ON DRAFT PLAN
- G: AS SHOWN ON DRAFT AND KEY PLAN
- H: MUNICIPAL PIPED WATER TO BE INSTALLED
- I: T.B.D.
- J: AS SHOWN ON DRAFT PLAN
- K: MUNICIPAL SANITARY AND STORM SEWERS TO BE INSTALLED
- L: AS SHOWN ON PLAN

SCHEDULE OF LAND USE

LOW DENSITY RESIDENTIAL	- BLOCKS 1 - 22	15,977 ha
MEDIUM DENSITY RESIDENTIAL	- BLOCKS 23 - 29	10,799 ha
PARK	- BLOCKS 30 - 36	4,745 ha
OPEN SPACE	- BLOCKS 37 - 39	3,872 ha
5m BUFFER	- BLOCK 40	0,092 ha
SWM FACILITY	- BLOCKS 41 - 42	3,006 ha
PUMPING STATION	- BLOCK 43	0,066 ha
ROADS		5,155 ha
	TOTAL	43,712 ha

OWNER'S AUTHORIZATION

THE UNDERSIGNED AUTHORIZES THE PREPARATION AND SUBMISSION OF THIS DRAFT PLAN OF SUBDIVISION.

JAMIE CRICH, PRESIDENT
AUBURN DEVELOPMENTS INC.
AUTHORIZING AGENT _____ DATE _____

SURVEYOR'S CERTIFICATE

I HEREBY CERTIFY THAT THE BOUNDARIES OF THE LAND TO BE SUBDIVIDED, AS SHOWN ON THIS PLAN, AND THEIR RELATIONSHIP TO ADJACENT LANDS ARE ACCURATELY AND CORRECTLY SHOWN.

JEREMY C.E. MATHEWS O.L.S.
STANTEC GEOMATICS _____ DATE _____

File Name: 161414095_1.csp
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YY.MM.DD

Client/Project

AUBURN DEVELOPMENTS INC.

HUNTER PROPERTY

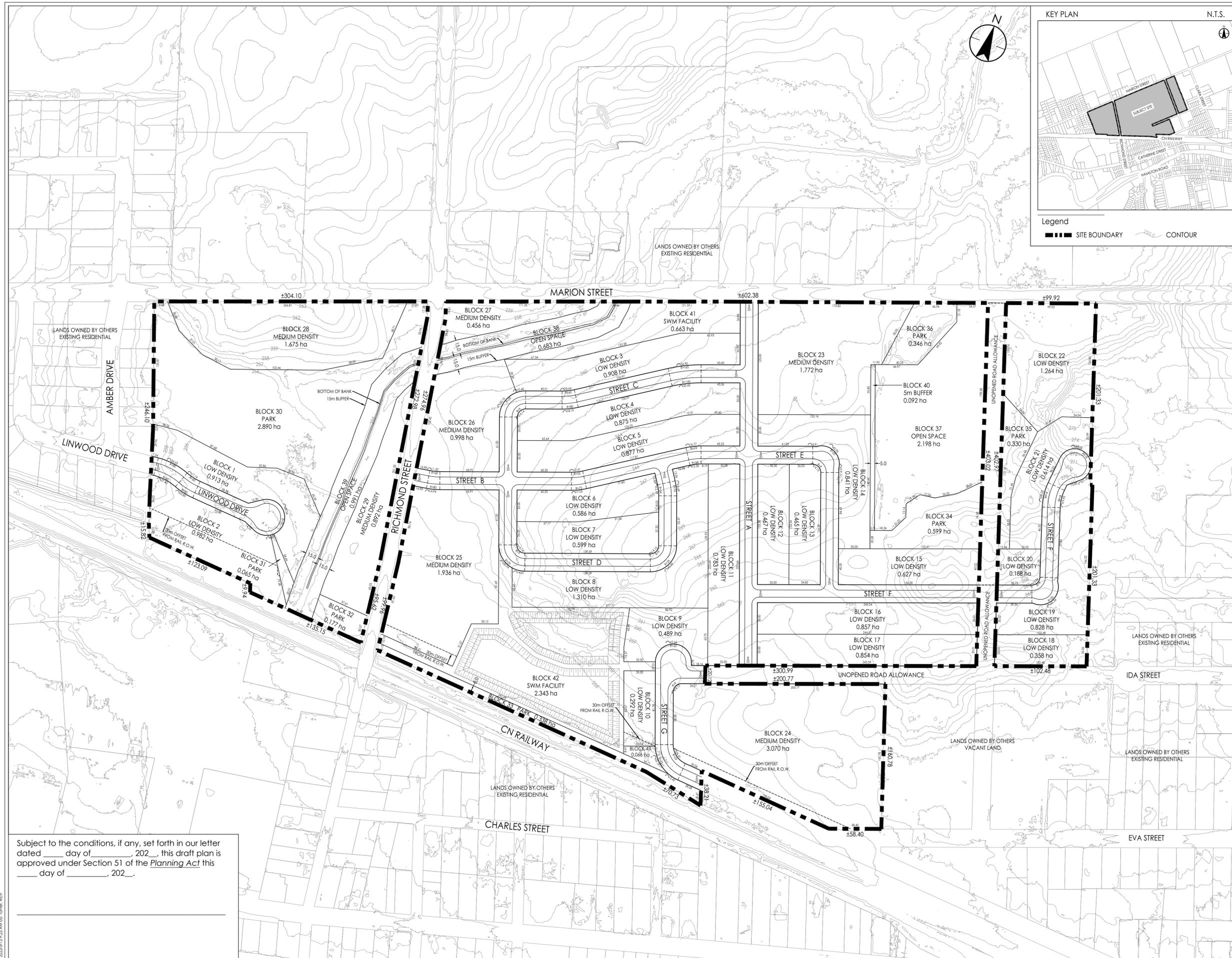
Dorchester, ON Canada

Title

DRAFT PLAN OF SUBDIVISION

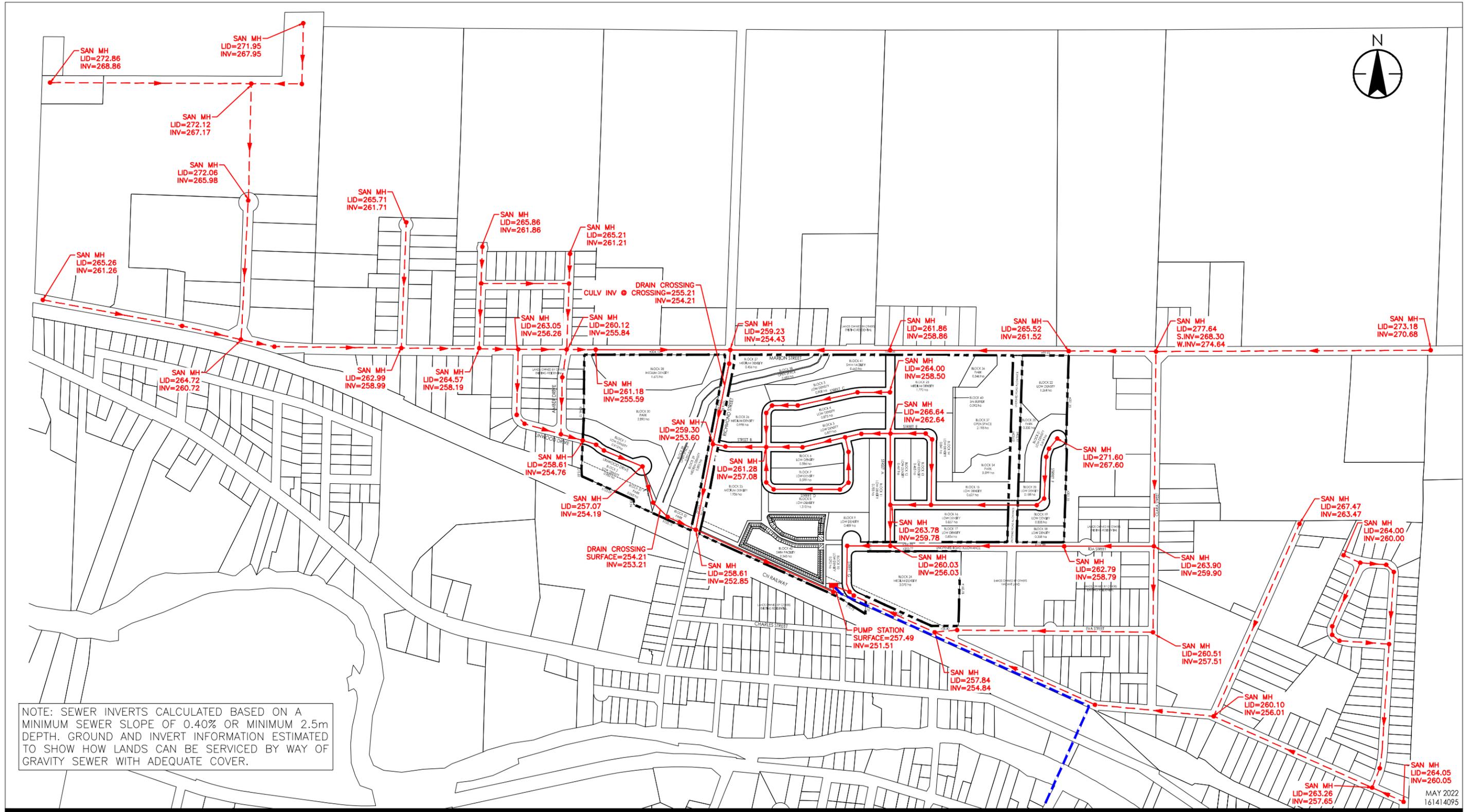
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Sheet 1 of 1
Revision

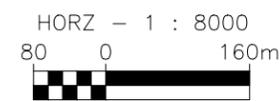


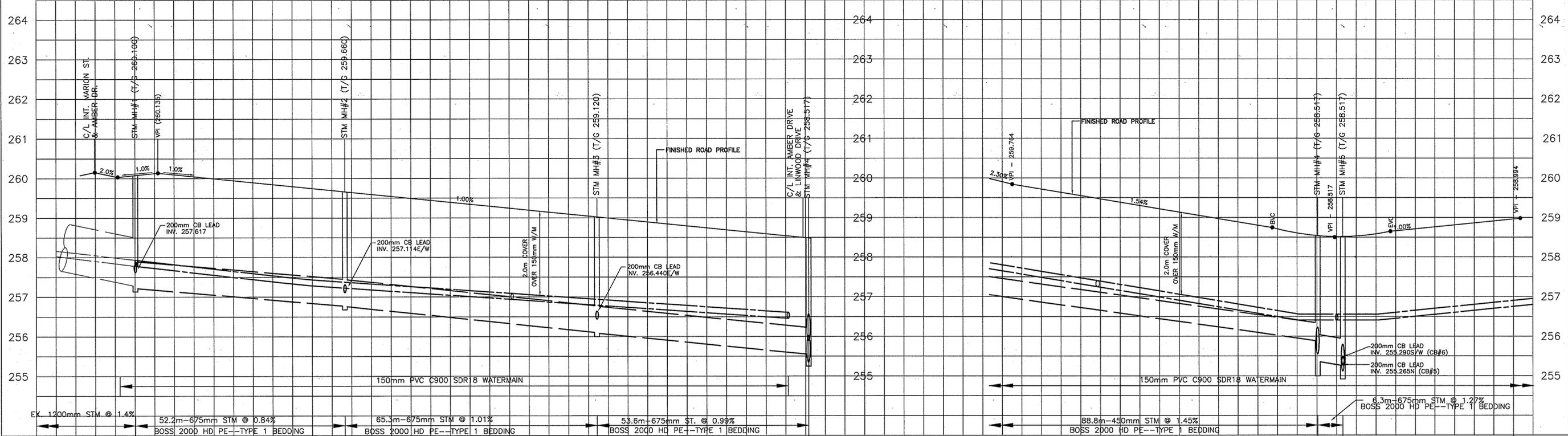
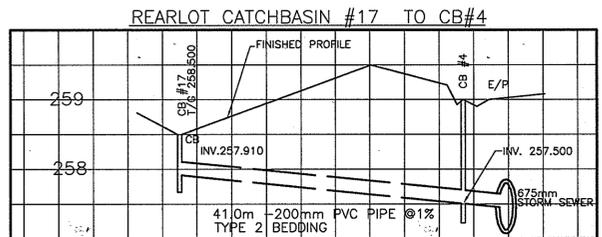
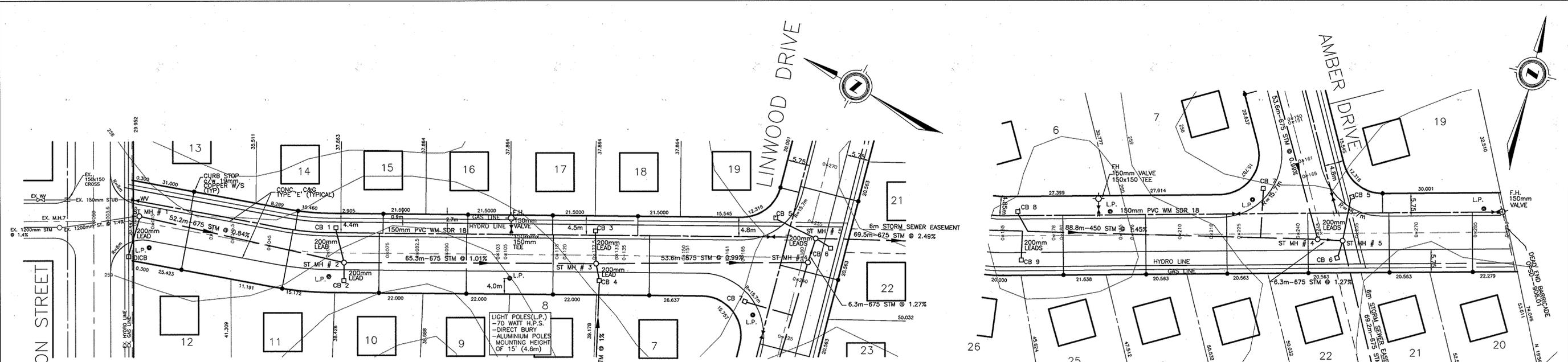
Subject to the conditions, if any, set forth in our letter dated _____ day of _____, 202__, this draft plan is approved under Section 51 of the *Planning Act* this _____ day of _____, 202__.

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 2022-5-24 7:48 AM by: Childs, Jason



Legend	
	SITE BOUNDARY
	EXISTING SAN FORCE MAIN
	PROPOSED SANITARY GRAVITY SEWER
	FUTURE SANITARY GRAVITY SEWER





STATION	ROAD ELEVATION	SEWER INVERT
0+000	260.150	257.291
0+003.6	260.076	257.626
0+010.5	260.080	257.225
0+015	260.125	257.225
0+030	259.995	
0+045	259.845	
0+060	259.895	256.781
0+075	259.545	256.781
0+090	259.396	
0+105	259.245	
0+120	259.095	256.101
0+135	258.945	256.095
0+150	258.795	
0+165	258.645	
0+180	258.500	255.551
0+185	258.450	255.551
0+180	259.586	
0+195	259.355	
0+210	259.124	
0+225	258.893	
0+240	258.662	255.889
0+255	258.431	255.551
0+270	258.200	255.354
0+285	257.969	255.125

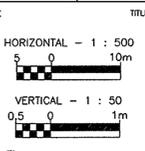
No.	REVISIONS	DATE	BY
1	FIRST SUBMISSION	04/02/94	JHV
2	REVISE GRADES AND DRAINAGE	03/08/94	JHV
3	FINAL REVISIONS	26/09/94	JHV
4	RELOCATE MH 6 AND HYDRANTS	17/11/94	JHV
5	AS CONSTRUCTED	19/03/00	EB



J.H. VINCENT SERVICES
 A DIVISION OF 509228 ONTARIO LIMITED
ENGINEERING
 449 LAWSON ROAD
 LONDON, ONTARIO, N6G-1X9
 PHONE: 472-9068 FAX: 472-4014



PIONEER DEVELOPMENTS
 344602 ONTARIO LIMITED
 P.O. BOX 40081, LONDON, ONTARIO
 N5W 5Z5



MAPLEWOOD ESTATES SUBDIVISION
 LOT 8, CONCESSION 4 NORTH OF THAMES RIVER
 IN THE TOWNSHIP OF NORTH DORCHESTER
 COUNTY OF MIDDLESEX

PROJECT No. **93/32/235**
 SHEET No. **5**
 PLAN FILE No. **39 T 89016**

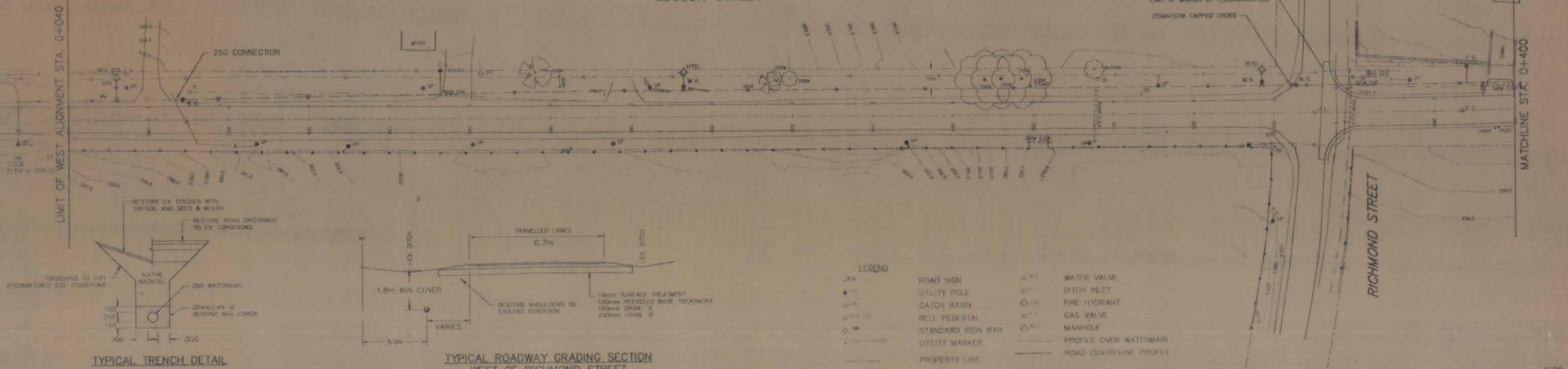
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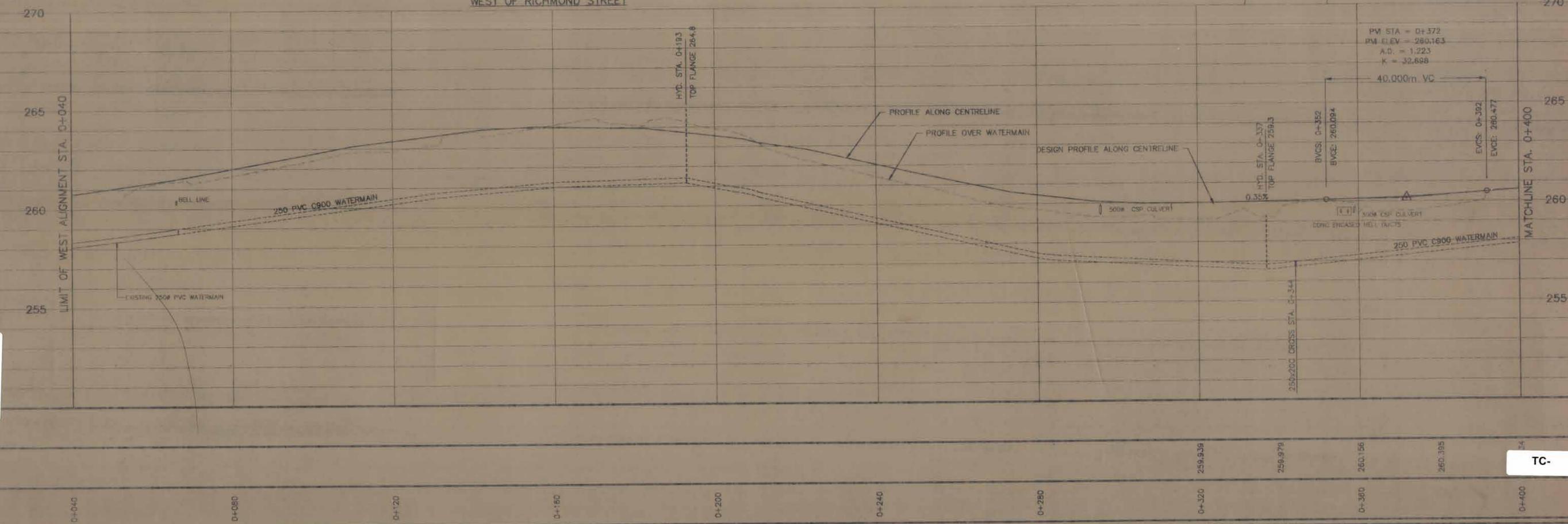
PLAN/PROFILE

IN THE 1996 CONSTRUCTION SEASON, MARION STREET WAS BUILT TO GRAN 'A' GRADES. TO ACHIEVE THE FINAL GRADES SHOWN 100mm OF RECYCLED ASPHALT AND 20mm OF SURFACE TREATMENT WILL BE PLACED IN 1997.

MARION STREET



- LEGEND
- ROAD SIGN
 - UTILITY POLE
 - CATCH BASIN
 - BELL PEDESTAL
 - STANDARD IRON BAR
 - UTILITY MARKER
 - PROPERTY LINE
 - WATER VALVE
 - DITCH INLET
 - FIRE HYDRANT
 - GAS VALVE
 - MANHOLE
 - PROFILE OVER WATERMAIN
 - ROAD CENTRELINE PROFILE



TC- 114

TC- 114

THE POSITION OF POLE LINES, CONCRETE WATERMANS, QUERNS AND FITTINGS, TELEGRAPHING AND OVERGROUND UTILITIES AND STRUCTURES IS NOT NECESSARILY SHOWN ON THE CONDUIT DRAWINGS, AND, WHERE SHOWN, THE ACCURACY OF THE POSITION OF SUCH UTILITIES AND STRUCTURES IS NOT GUARANTEED BEFORE STARTING WORK. THE CONTRACTOR SHALL INFORM HIMSELF OF THE EXACT LOCATION OF ALL SUCH UTILITIES AND STRUCTURES.

VALVE OPERATOR DETAIL AS PER OPSD 1101.02
 WATERMAIN CLASS 'B' BEDDING DETAIL AS PER OPSD 1102.01
 CONCRETE THRUST BLOCKS FOR TEES, AND HORIZONTAL BENDS AS PER OPSD 1103.01
 CONCRETE THRUST BLOCKS FOR VERTICAL BENDS AS PER OPSD 1103.02
 WATER SERVICE CONNECTION DETAIL AS PER OPSD 1104.01
 HYDRANT INSTALLATION DETAIL AS PER OPSD 1105.01
 WATER SERVICES ARE 20mm DIAMETER
 HYDRANT LEADS ARE 150mm DIAMETER

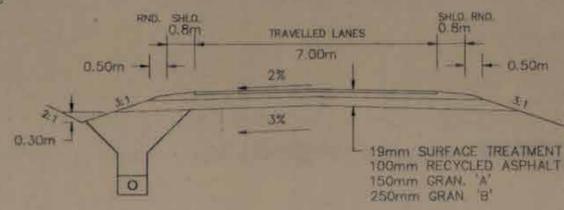
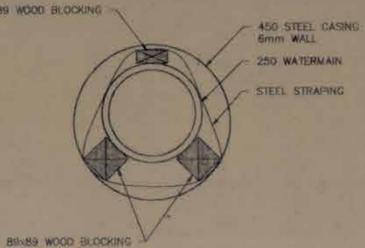
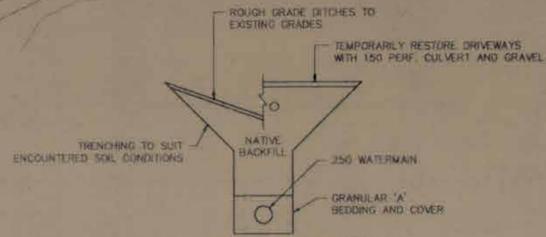
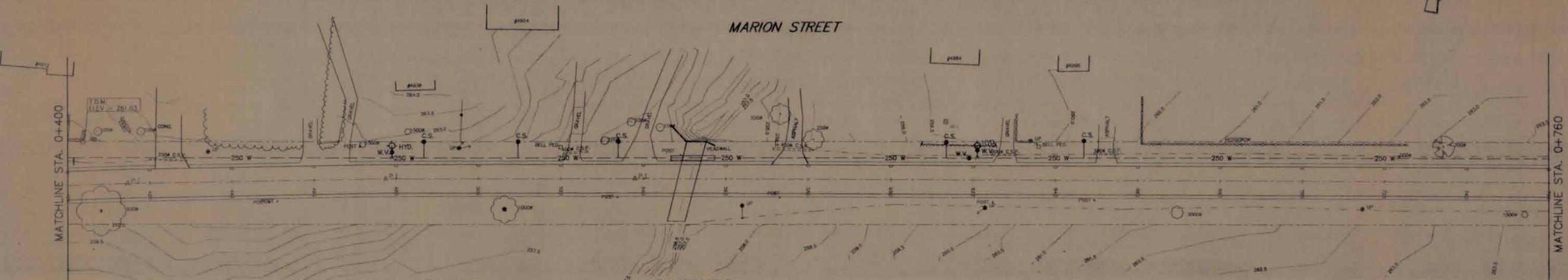
No.	Revision	Date	Initial
2	AS-CONSTRUCTED	MARCH 1997	MCC
1	ADDENDUM No. 1	AUGUST 16, '96	MCC

NORTH DORCHESTER
 PUBLIC UTILITIES COMMISSION
 MARION STREET WATERMAIN EXTENSION
 MARION STREET
 STA. 0+040 TO STA 0+400

CRA Consulting Engineers
CONESTOGA-ROVERS & ASSOCIATES
 851 Colby Drive, Waterloo, Ontario Canada N2V 1C2

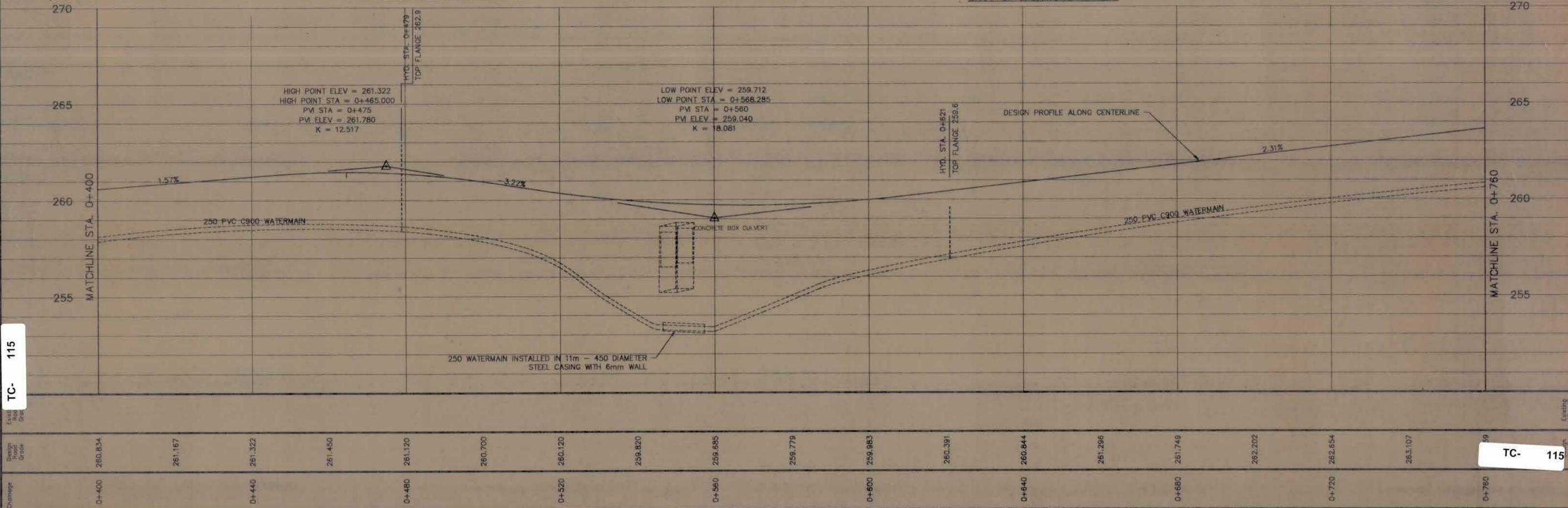
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IN THE 1996 CONSTRUCTION SEASON, MARION STREET WAS BUILT TO GRAN 'A' GRADES. TO ACHIEVE THE FINAL GRADES SHOWN 100mm OF RECYCLED ASPHALT AND 19mm OF SURFACE TREATMENT WILL BE PLACED IN 1997.



LEGEND

○ R.S.	ROAD SIGN	○ W.V.	WATER VALVE
● U.P.	UTILITY POLE	□ D.I.	DITCH INLET
□ C.B.	CATCH BASIN	○ F.H.	FIRE HYDRANT
□ B.P.	BELL PEDESTAL	○ G.V.	GAS VALVE
○ S.B.	STANDARD IRON BAR	○ M.	MANHOLE
▲ U.M.	UTILITY MARKER		
---	PROPERTY LINE	---	ROAD CENTRELINE PROFILE



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

TBM TOP OF SB 4.0m EAST OF HOUSE # 4912. DWY. CURB, 7.2m NORTH OF EDGE OF GRAVEL ROAD. ELEV = 261.03

VALVE OPERATOR DETAIL AS PER OPSD 1101.02
 WATERMAIN CLASS 'B' BEDDING DETAIL AS PER OPSD 1102.01
 CONCRETE THRUST BLOCKS FOR TEES, AND HORIZONTAL BENDS AS PER OPSD 1103.01
 CONCRETE THRUST BLOCKS FOR VERTICAL BENDS AS PER OPSD 1103.02
 WATER SERVICE CONNECTION DETAIL AS PER OPSD 1104.01
 HYDRANT INSTALLATION DETAIL AS PER OPSD 1105.01
 WATER SERVICES ARE 20mm DIAMETER
 HYDRANT LEADS ARE 150mm DIAMETER

No	Revision	Date	Initial
1	AS-CONSTRUCTED	MARCH 1997	MCG

NORTH DORCHESTER PUBLIC UTILITIES COMMISSION

MARION STREET WATERMAIN EXTENSION
MARION STREET-AS CONSTRUCTED
STA. 0+400 TO STA 0+760

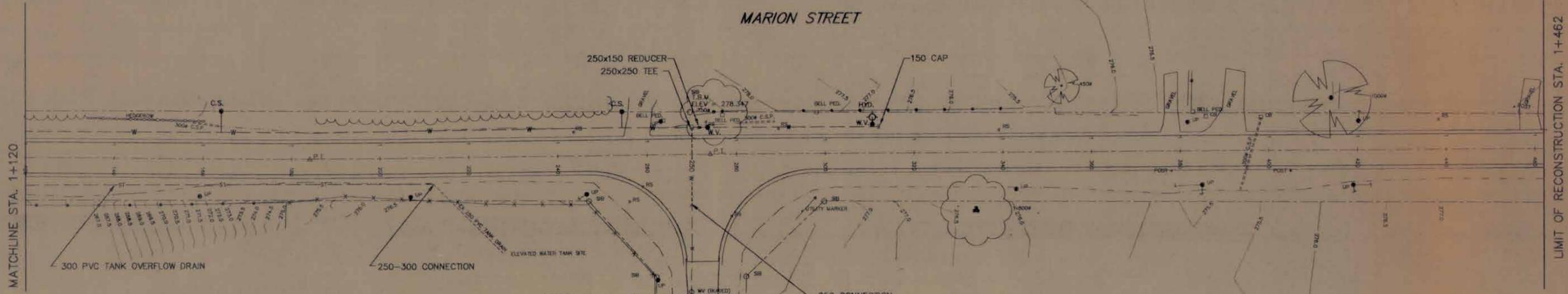
CRA Consulting Engineers
CONESTOGA-ROVERS & ASSOCIATES
 651 Colby Drive, Waterloo, Ontario Canada N2V 1C2

Drawn by: BMM	Scale: HORIZ 1:500 VERT 1:100	Date: JUNE 1996	File No: RPD2	Rev. No: 1
Designed by: MCG	Field book:	Project No: 8111	Drawing No: 2-AR	
Checked by: ROH				

TC- 115

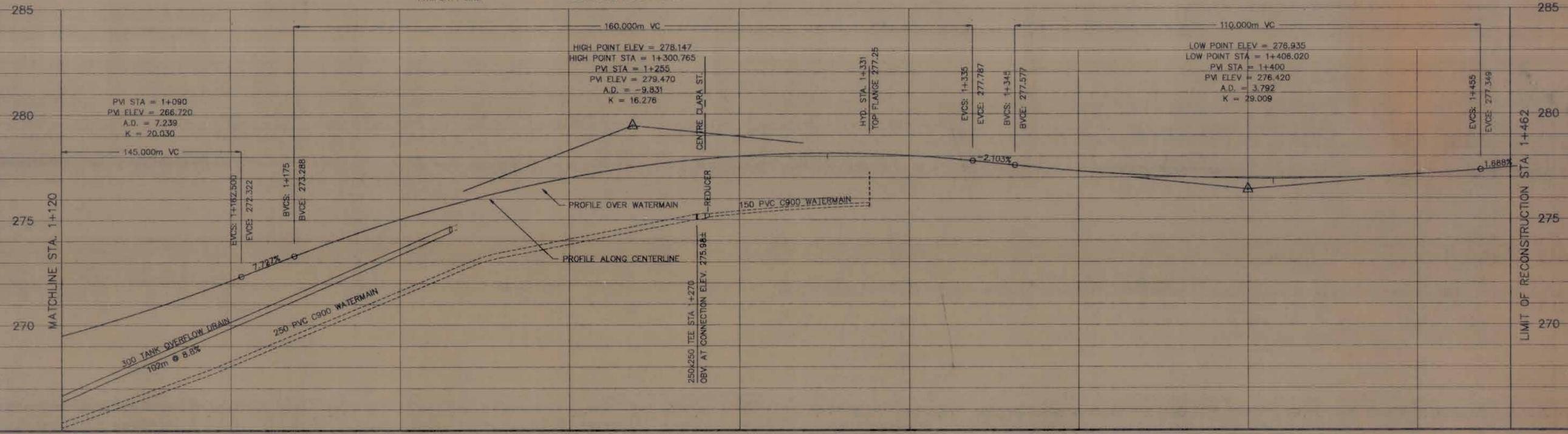
TC- 115

IN THE 1996 CONSTRUCTION SEASON, MARION STREET WAS BUILT TO GRAN 'A' GRADES. TO ACHIEVE THE FINAL GRADES SHOWN 100mm OF RECYCLED ASPHALT AND 19mm OF SURFACE TREATMENT WILL BE PLACED IN 1997.



LEGEND

AS	ROAD SIGN	○	WATER VALVE
UP	UTILITY POLE	○	DITCH INLET
CB	CATCH BASIN	○	FIRE HYDRANT
BP	BELL PEDESTAL	○	GAS VALVE
SI	STANDARD IRON BAR	○	MANHOLE
UM	UTILITY MARKER		
PL	PROPERTY LINE		
		—	CENTRELINE ROAD PROFILE



TC- 117

TC- 117

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

IBM: TOP OF SB MID SPAN BETWEEN BELL PED., 5.7m NORTH OF EDGE GRAVEL ROAD. ELEV = 278.347

VALVE OPERATOR DETAIL AS PER OPSD 1101.02
 WATERMAIN CLASS 'B' BEDDING DETAIL AS PER OPSD 1102.01
 CONCRETE THRUST BLOCKS FOR TEES, AND HORIZONTAL BENDS AS PER OPSD 1103.01
 CONCRETE THRUST BLOCKS FOR VERTICAL BENDS AS PER OPSD 1103.02
 WATER SERVICE CONNECTION DETAIL AS PER OPSD 1104.01
 HYDRANT INSTALLATION DETAIL AS PER OPSD 1105.01
 WATER SERVICES ARE 20mm DIAMETER
 HYDRANT LEADS ARE 150mm DIAMETER

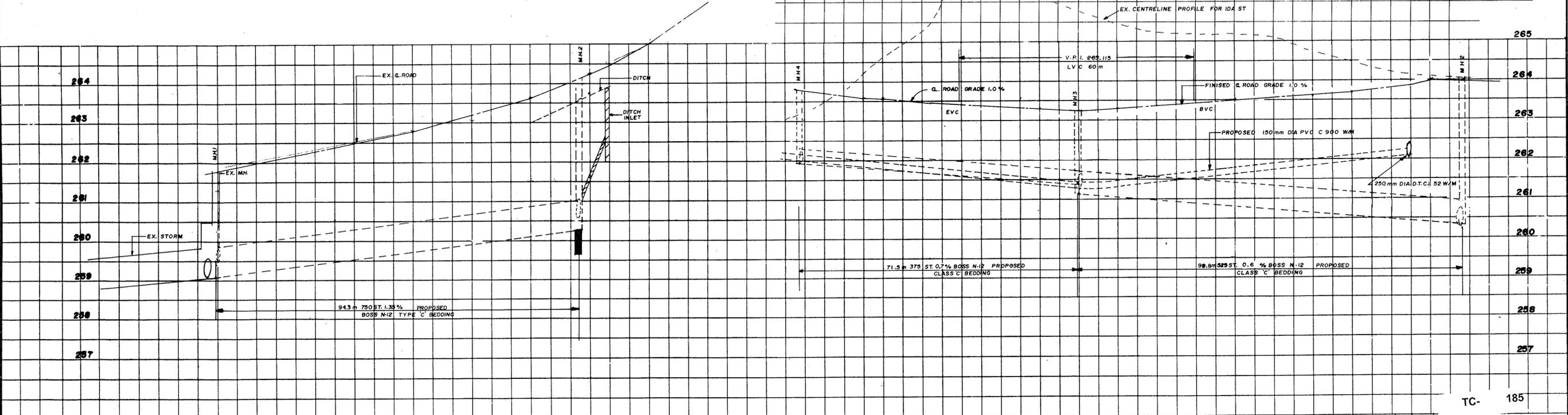
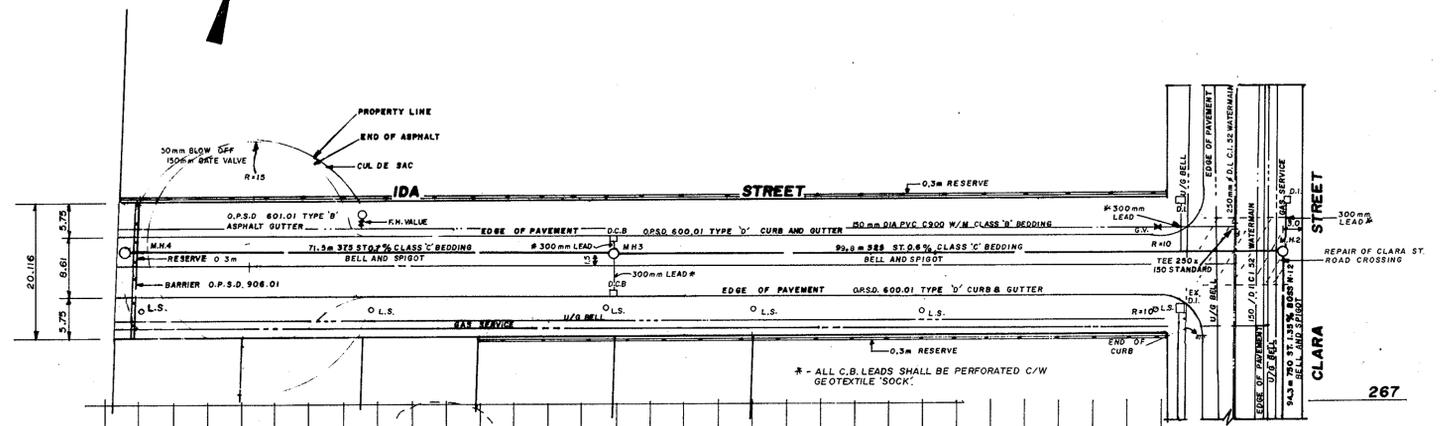
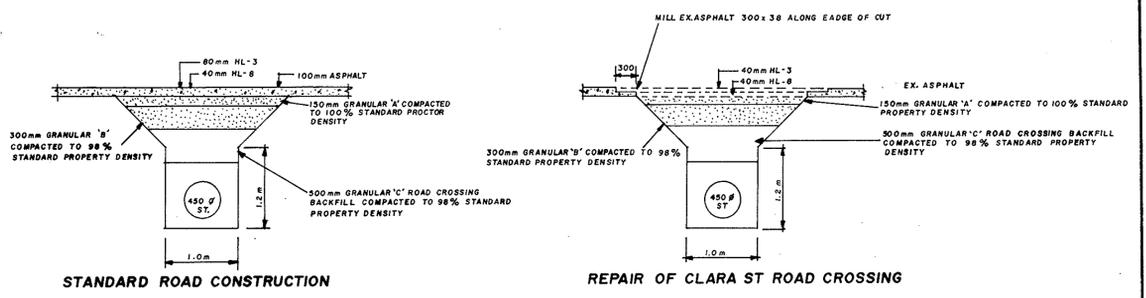
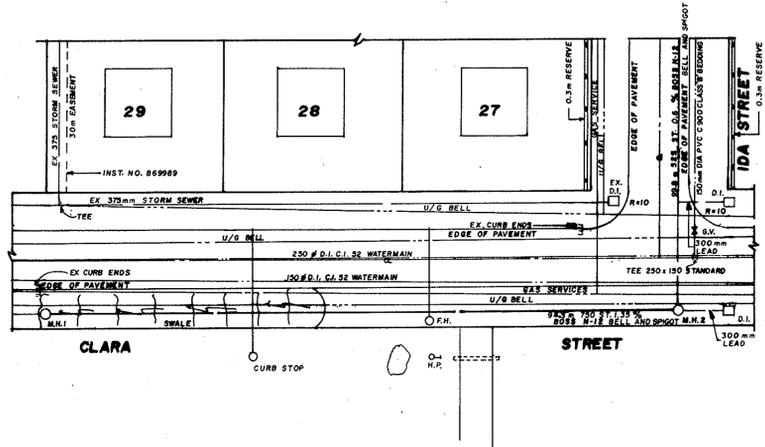
No.	Revision	Date	Initial
1	AS-CONSTRUCTED	MARCH 1997	MDG

**NORTH DORCHESTER
 PUBLIC UTILITIES COMMISSION**

MARION STREET WATERMAIN EXTENSION
 MARION STREET-AS CONSTRUCTED
 STA. 1+120 TO STA 1+462

**CRA Consulting Engineers
 CONESTOGA-ROVERS & ASSOCIATES**
 661 Colby Drive, Waterloo, Ontario Canada N2V 1C2

Scale: HORIZ 1:500, VERT 1:100
 Date: JUNE 1996
 Project No: 8111
 Drawing No: 4-AR



STATION	ROAD	STORM
259+00	259.15	259.15
259+10	259.17	259.17
259+20	259.19	259.19
259+30	259.21	259.21
259+40	259.23	259.23
259+50	259.25	259.25
259+60	259.27	259.27
259+70	259.29	259.29
259+80	259.31	259.31
259+90	259.33	259.33
260+00	259.35	259.35
260+10	259.37	259.37
260+20	259.39	259.39
260+30	259.41	259.41
260+40	259.43	259.43
260+50	259.45	259.45
260+60	259.47	259.47
260+70	259.49	259.49
260+80	259.51	259.51
260+90	259.53	259.53
261+00	259.55	259.55
261+10	259.57	259.57
261+20	259.59	259.59
261+30	259.61	259.61
261+40	259.63	259.63
261+50	259.65	259.65
261+60	259.67	259.67
261+70	259.69	259.69
261+80	259.71	259.71
261+90	259.73	259.73
262+00	259.75	259.75
262+10	259.77	259.77
262+20	259.79	259.79
262+30	259.81	259.81
262+40	259.83	259.83
262+50	259.85	259.85
262+60	259.87	259.87
262+70	259.89	259.89
262+80	259.91	259.91
262+90	259.93	259.93
263+00	259.95	259.95
263+10	259.97	259.97
263+20	259.99	259.99
263+30	260.01	260.01
263+40	260.03	260.03
263+50	260.05	260.05
263+60	260.07	260.07
263+70	260.09	260.09
263+80	260.11	260.11
263+90	260.13	260.13
264+00	260.15	260.15
264+10	260.17	260.17
264+20	260.19	260.19
264+30	260.21	260.21
264+40	260.23	260.23
264+50	260.25	260.25
264+60	260.27	260.27
264+70	260.29	260.29
264+80	260.31	260.31
264+90	260.33	260.33
265+00	260.35	260.35
265+10	260.37	260.37
265+20	260.39	260.39
265+30	260.41	260.41
265+40	260.43	260.43
265+50	260.45	260.45
265+60	260.47	260.47
265+70	260.49	260.49
265+80	260.51	260.51
265+90	260.53	260.53
266+00	260.55	260.55

AS CONSTRUCTED NOTES	AS CONSTRUCTED SERVICES	COMPLETION	DESIGN	DATE	BY
1 SEE DRAWING No. FOR FURTHER DETAIL.	STORM SEWER	DEC/93	J.H.V.	07-29-92	F.M.
2 SEWER DESIGN: TRANSITION WIDTH OR AS NOTED	WATERMAIN	JAN/93	J.H.V.	10-26-92	F.M.
3 REFERENCE R. M. No. ELEVATION	CURB & GUTTER	APRIL/93	J.H.V.	07-19-93	F.M.
	RESTORATION	APRIL/93	J.H.V.	08-12-93	F.M.
	GRANULAR A	MAR/93			
	GRANULAR B	MAR/93			
	ASPHALT BASE	MAY/93			
	FINISH	MAY/93			

PIONEER DEVELOPMENTS
A DIVISION OF 344602 ONT. LTD.

J.H. Vincent Services
A Division of 509228 Ontario Limited
449 Lawson Rd.
London, Ontario N6G 1X9
(519) 472-9068

SCALE: HOR 1:500, VERT 1:50
TITLE: **IDA, CLARA STREET PLAN PROFILE**
PROJECT No. _____
SHEET No. **5**
PLAN FILE No. _____

Appendix B

