S. LLEWELLYN & ASSOCIATES LIMITED
CONSULTING ENGINEERS

September 2, 2026

File: 26024

Losani Homes (1998) Ltd.
430 McNeilly Road, Suite 203
Stoney Creek, ON, L8E 5E3

RE: Stormwater Management Brief
206 & 210 Main Street East, Town of Grimsby

1.0 INTRODUCTION

S. Llewellyn & Associates Limited (SLA) has been retained by Losani Homes (1998) Ltd. to provide Consulting Engineering services for properties located at 206 & 210 Main Street East in the Town of Grimsby. The subject lands are bound by Main Street East to the north and existing residential lands to the east, west and south. Refer to Figure 1.0 for the location plan.



Figure 1 - Location Plan

Our stormwater management scheme is based on the Reference Plan prepared by A.T. McLaren Limited. The Reference Plan illustrates two (2) blocks, 206 and 210 Main Street East, each divided into three (3) lots, for a total of six (6) residential lots. Each of the proposed six lots will consist of a single-family dwelling, a driveway and grassed areas.

1.1 Background Information

The following documents were referenced in the preparation of this brief:

Ref. 1: Town of Grimsby Stormwater Management Plan Dorchester Estates Phase 1 (Revised) (Philips Planning + Engineering Limited, June 1995)

Ref. 2: Design Criteria for Sanitary Sewers, Storm Sewer and Forcemains for Alterations Authorized under Environmental Compliance Approval (Ministry of Environment, Conservation and Parks, May 2023)

Ref. 3: Low Impact Development Stormwater Management Guidance Manual (Ministry of Environment, Conservation and Parks, January 2022)

Ref. 4: Town of Grimsby Storm Drainage Update Master Drainage Plan Outlets 16, 22, 25, 27 & 30 (Philips Planning + Engineering Limited, October 1989)

Ref. 5: Test Pit Study, 206 & 210 Main Street East, Grimsby (Soil-Mat Engineers & Consultants Ltd., August 2026

1.2 Existing Conditions & Topography

Under existing conditions, the subject lands consist of two (2) vacant blocks, one block located at 206 Main Street East and the other at 210 Main Street East in the Town of Grimsby. Both blocks contain high points at the southeast corner of the property and sheet drain towards the northwest corner of the blocks and into the existing ditches along Main Street East. The subject lands are relatively flat with average slopes between 1.4% and 1.9%.

Based on the Test Pit Study (Ref. 5) prepared by Soil-Mat Engineers & Consultants Ltd, the subsurface conditions observed at the test pit locations had a surficial veneer of topsoil approximately 200 to 300mm thick, overlaying native reddish brown silty sand with traces of gravel, transitioning to red weathered Queenston Shale bedrock at depths of 2.1 to 2.9m.

2.0 STORMWATER MANAGEMENT

2.1 Existing Storm Drainage

The subject lands are located within the Town of Grimsby's Outlet 25 watershed. As part of the Dorchester Estates Phase 1 development, the subject lands were included in the stormwater management analysis (Ref. 1) prepared by Philips Planning and Engineering Limited. This stormwater management analysis assigned a 35% imperviousness percentage to the Dorchester Estates Phase 1 Subdivision.

Stormwater drainage from the subject lands ultimately discharges to the existing 1650mmØ storm sewer along Main Street East. This trunk storm sewer conveys flows west to the existing

1650mmØ truck storm sewer on Baker Road and where it ultimately discharges north to Lake Ontario.

Two catchment areas, Catchments 101 and 102, have been identified in the existing condition. Catchments 101 and 102 both discharge to the existing 1650mmØ trunk storm sewer on Main Street East. See Table 2.1 below and the Pre-Development Drainage Area Plan in Appendix A for details.

Table 2.1 – Existing Conditions Catchment Areas

Catchment ID	Description	Area (ha)	Percent Impervious	Run-off Coefficient (C)
101	Drainage from Lot 206 to ex. 1650mmØ storm sewer on Main Street East	0.15	0%	0.25
102	Drainage from Lot 210 to ex. 1650mmØ storm sewer on Main Street East	0.19	0%	0.25

The existing conditions discharge from the development was calculated using the Rational Method based on the above runoff coefficient (C) and the Town of Grimsby storm intensities at a time of concentration of 10 minutes (T_c=10min). A summary of the peak flows is shown below in Table 2.2.

Table 2.2 – Existing Conditions Stormwater Discharge

Storm Event	Catchment 101 (m^3/s)	Catchment 102 (m^3/s)
2-Yr Event	0.0070	0.0089
5-Yr Event	0.0092	0.0116
10-Yr Event	0.0106	0.0134
25-Yr Event	0.0124	0.0157
50-Yr Event	0.0134	0.0170
100-Yr Event	0.0147	0.0186

2.2 Stormwater Management Criteria

The following stormwater management (SWM) criteria will be applied to the site, in accordance with the Town of Grimsby standards:

2.2.1 Quality Control

Since the proposed development consists of six (6) freehold lots composed mostly of grassed areas and rooftop, which produces clean runoff, quality control measures are not proposed.

2.2.2 Quantity Control

Based on the Dorchester Estates Phase 1 (Revised) Stormwater Management (SWM) Report (Ref. 1), the future developments of lots 206 and 210 were allocated in the design of the 1650mm trunk storm sewer on Main Street East and the analysis of the downstream trunk storm sewer

system, which conveys flows north to discharge into Lake Ontario. The Dorchester Estates Phase 2 Subdivision was designed to accommodate an imperviousness of 35%.

Two catchment areas, Catchments A01 and A02, have been identified to represent the allocated drainage of the subject lands based on the Dorchester Estates Phases 1 Stormwater Management Plan. Catchment A01 represents the assumed future development of 206 Main Street East, which has been allocated for in the existing 1650mmØ storm sewer on Main Street East. Catchment A02 represents the assumed future development of 210 Main Street East, which has been allocated for in the existing 1650mmØ storm sewer on Main Street East. See Table 2.3 and the Dorchester Estates Phase 1 Stormwater Management Plan in Appendix A for details.

Table 2.3 – Allocated Catchment Areas Parameters

Catchment ID	Description	Area (ha)	Percent Impervious	Run-off Coefficient (C)
A01	Allocated drainage from Lot 206 to ex. 1650mmØ storm sewer on Main Street East	0.15	35%	0.48
A02	Allocated drainage from Lot 210 to ex. 1650mmØ storm sewer on Main Street East	0.19	35%	0.48

The allocated discharge from the subject lands was calculated using the Rational Method based on the above runoff coefficient (C) and the Town of Grimsby storm intensities at a time of concentration of 10 minutes (T_c=10min). A summary of the peak flow rates is shown below in Table 2.4.

Table 2.4 – Allocated Stormwater Discharge

Storm Event	Catchment 101 (m^3/s)	Catchment 102 (m^3/s)
2-Yr Event	0.0135	0.0171
5-Yr Event	0.0171	0.0223
10-Yr Event	0.0203	0.0258
25-Yr Event	0.0239	0.0302
50-Yr Event	0.0258	0.0327
100-Yr Event	0.0282	0.0358

2.3 Proposed Storm Drainage

Under proposed conditions, storm runoff from the subject lands will discharge to the 1650mmØ trunk storm sewer along Main Street East. Each single-family dwelling will contain a 150mmØ storm service, with a minimum slope of 1.0%, which connects into the existing 1650mmØ trunk storm sewer. Additionally, it is proposed to re-grade the existing ditch along Main Street East and direct drainage to three (3) ditch inlet catchbasins.

2.3.1 Quality Control

As the proposed development will contain freehold lots consisting mostly of grassed areas and rooftop, quality control measures are not proposed.

2.3.2 Quantity Control

Two catchment areas, Catchments 201 and 202, has been identified in the proposed condition. Catchments 201 and 202 will ultimately drain to the existing 1650mmØ trunk storm sewer on Main Street East via proposed ditch inlet and single catchbasins. See Table 2.5 below and the Post-Development Drainage Area Plan in Appendix A for details.

Table 2.5 – Proposed Conditions Catchment Areas

Catchment ID	Description	Area (ha)	Percent Impervious	Run-off Coefficient (C)
201	Drainage from Lot 206 to ex. 1650mmØ storm sewer on Main Street East	0.15	47%	0.57
202	Drainage from Lot 210 to ex. 1650mmØ storm sewer on Main Street East	0.19	45%	0.56

The proposed condition discharge from the development was calculated using the Rational Method based on the runoff coefficients (C) shown above and the Town of Grimsby storm intensities at a time of concentration of 10 minutes (T_c=10min). A summary of the peak flows is shown below in Table 2.6.

Table 2.6 – Proposed Conditions Stormwater Discharge

Storm Event	Catchment 101 (m^3/s)	Catchment 102 (m^3/s)
2-Yr Event	0.0160	0.0199
5-Yr Event	0.0209	0.0260
10-Yr Event	0.0242	0.0301
25-Yr Event	0.0283	0.0353
50-Yr Event	0.0306	0.0381
100-Yr Event	0.0335	0.0417

Table 2.7 below compares the proposed condition discharge rates to the allocated discharge rates from Table 2.4.

Table 2.7 – Allocated and Proposed Stormwater Discharge Comparison		
Storm Event	Catchments A01 and 201 Discharge Difference (m^3/s)	Catchments A02 and 202 Discharge Difference (m^3/s)
2-Yr Event	+0.0025	+0.0028
5-Yr Event	+0.0033	+0.0037
10-Yr Event	+0.0039	+0.0043
25-Yr Event	+0.0044	+0.0051
50-Yr Event	+0.0048	+0.0054
100-Yr Event	+0.0053	+0.0059

The proposed development will exceed the allocated discharge of the subject lands to the existing trunk storm sewer. Since the subject lands are proposed as freehold lots, there is limited opportunity to incorporate stormwater quantity controls. As the anticipated increase in runoff is minor, stormwater quantity control measures are not proposed.

3.0 CONCLUSIONS

Based on the information provided herein, it is concluded that the proposed residential development at 206 & 210 Main Street East can be constructed to meet SWM requirements of the Town of Grimsby and the Niagara Region.

Therefore, it is recommended that:

- The development be graded and serviced in accordance with the Site Grading & Servicing Plans prepared by S. Llewellyn & Associates Limited;
- No stormwater quality and quantity controls are proposed to service the proposed development.

We trust the information enclosed herein is satisfactory. Should you have any questions please do not hesitate to contact our office.

Yours truly,

S. LLEWELLYN & ASSOCIATES LIMITED

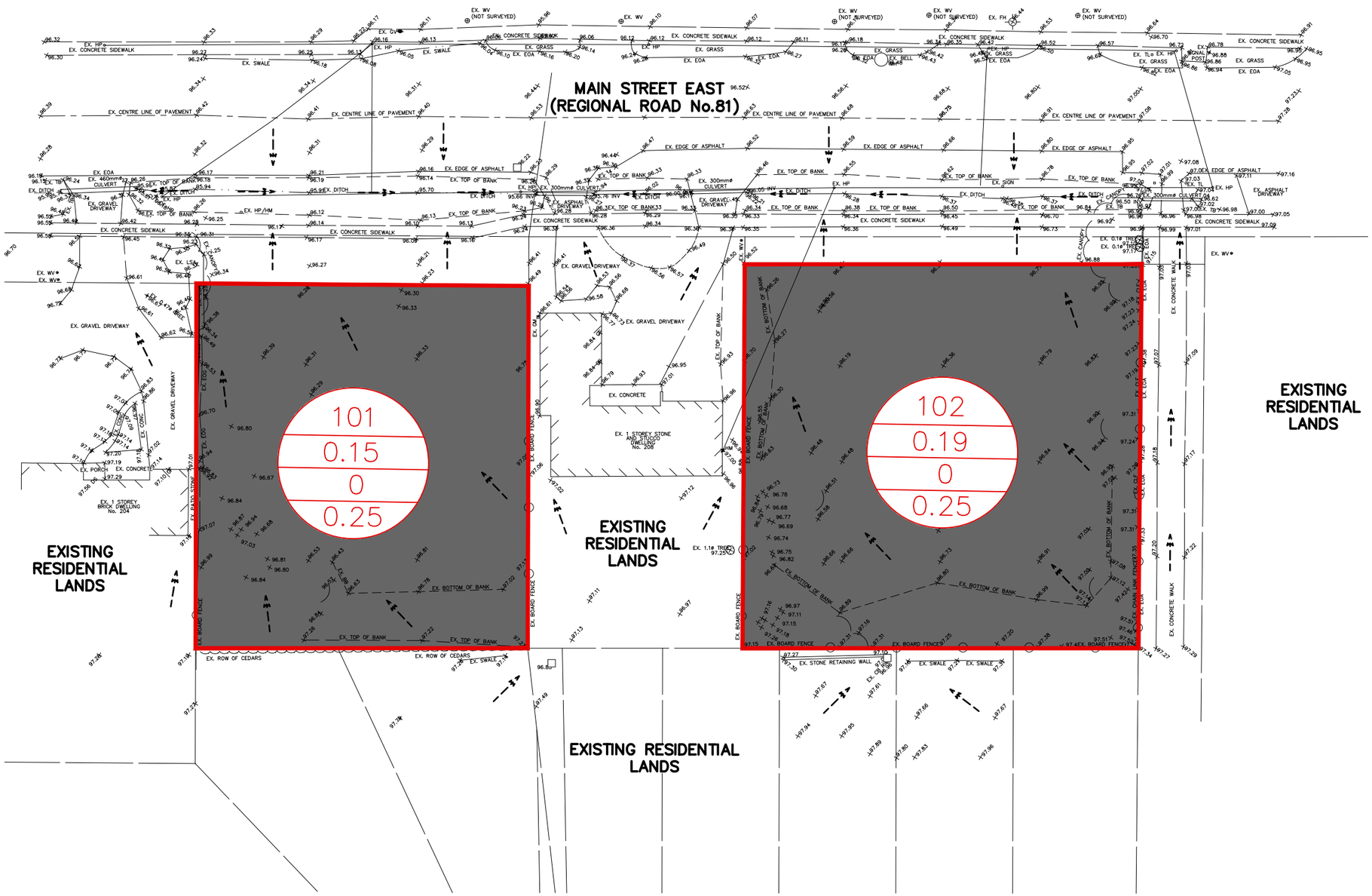
Professional Engineers Ontario
Sept.2/2026
Limited Engineering Licensee
Name: C. G. DOUGAN
Number: 100599296
Limitations: Supervise, design, review and evaluate municipal/private roadways, linear infrastructure (storm sewers, sanitary sewers & watermain), stormwater management, grading, and earthworks for municipalities/private land development.
Association of Professional Engineers of Ontario

J. Konstantinou, B. Eng.

C. Dougan, L.E.L.

APPENDIX A
STORMWATER MANAGEMENT INFORMATION

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LEGEND

PERVIOUS AREA

201 / 0.39 / 11 / 0.32 — DRAINAGE AREA I.D. / DRAINAGE AREA (ha) / PERCENT IMPERVIOUS / RUNOFF COEFFICENT

DIRECTION OF SHEET FLOW

PRE-DEVELOPMENT STORM DRAINAGE AREA PLAN

SCALE: 1:500

PROJECT: 206 & 210 MAIN STREET EAST
PROJECT No.: 26024

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8/27/2026 10:19:20 AM - Madelyn Middleton

LEGEND

- STORM SEWER
- STORM MANHOLE
- CATCHBASIN
- CATCHMENT BOUNDARY
- CATCHMENT AREA (HECTARES) RUNOFF COEFFICIENT
- FUTURE CATCHMENT BOUNDARY
- FUTURE CATCHMENT AREA (HECTARES) FUTURE RUNOFF COEFFICIENT
- FUTURE STORM SEWER
- FUTURE STORM MANHOLE

PHASE II

PHASE II

DORCHESTER DRIVE

BLOCK 9

BLOCK 81

BLOCK 81

BLOCK 80

BLOCK 83

BLOCK 79

BLOCK 82

BLOCK 79

JUDELL WAY

WILKINS CRES.

WILKINS CRESCENT

GRIFFITH DRIVE

GRIFFITH DRIVE

MAIN STREET EAST

BELL AVENUE

TUER AVENUE

PEMBROKE CIRCLE

HEWITT DRIVE

MANOR CRESCENT

HEATHCOTE COURT

TUNBRIDGE CRESCENT

INTERIM QUANTITY FACILITY

INTERIM QUANTITY FACILITY

LOT LAYOUT FOR PHASE 2 TO BE REVISED, IN ORDER TO DIRECT DRAINAGE FROM LOTS 96-118 TO MH F94

DRAINAGE FROM LOTS 182-192 TO BE DIRECTED TO BAKER ROAD

NO	Date	By	REVISIONS	MANU CAD
5	DEC 96	RKA	AS CONSTRUCTED	X
4	MAR 96	RKA	REV. AS PER T.O. GRIMSBY COMMENTS	X
3	FEB 96	RKA	REV. STORM SEWER LAYOUT	X
2	MAY 95	RKA	REV. AS PER T.O. GRIMSBY COMMENTS	X
1	FEB 95	RKA	UPDATED CATCHMENT AREAS	X

Design	J.F.B.	Ch'kd	R.R.M.	Date JANUARY 1995
Drawn	J.P.R.	Ch'kd	J.F.B	

Scale 1 : 1000

References

APPROVALS

Municipal

Regional

Field Notes

Stamp

Philips Planning Engineering Limited

DORCHESTER ESTATES PHASE I

TOWN OF GRIMSBY

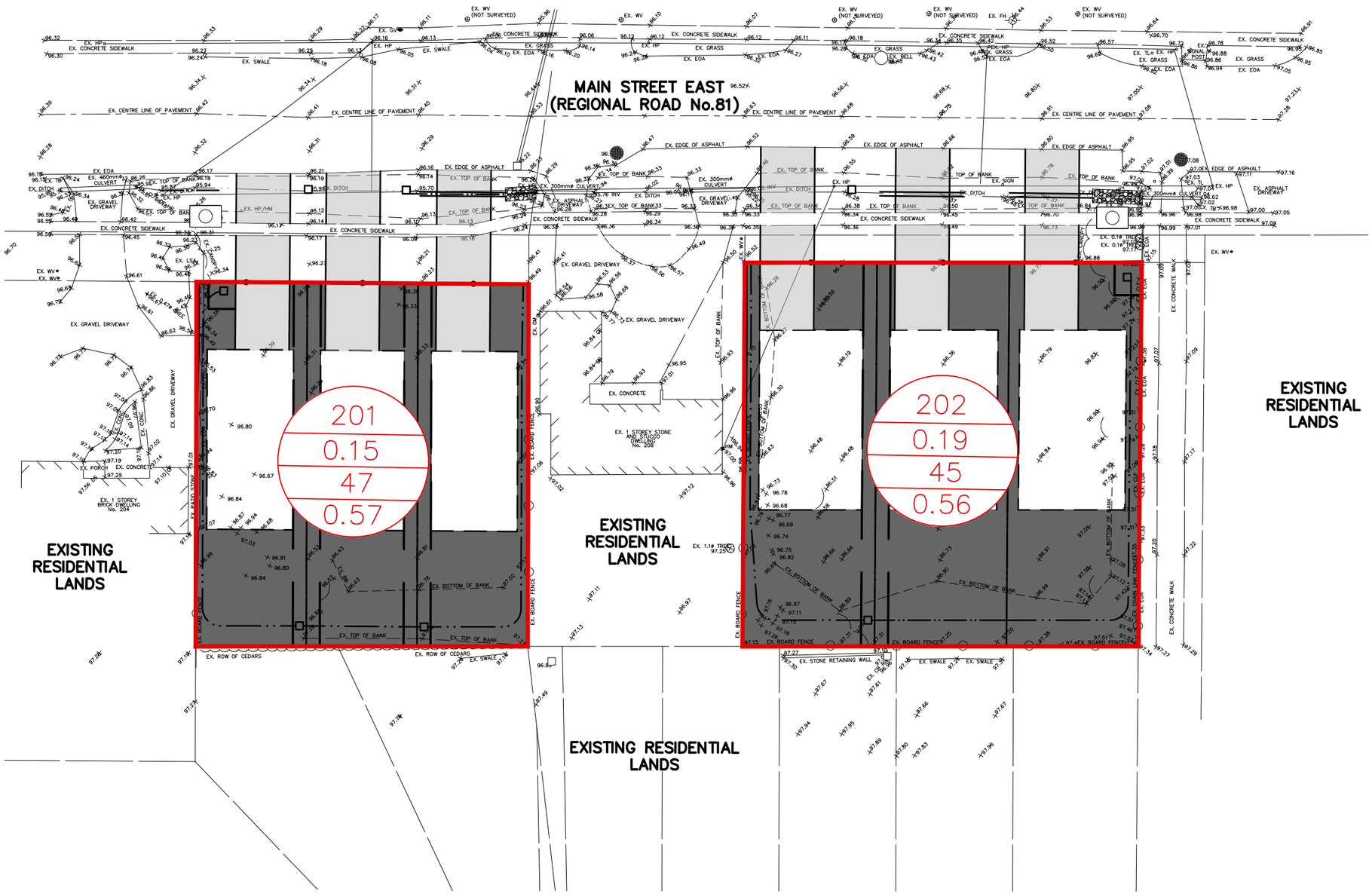
TITLE

STORM DRAINAGE PLAN

Consultant File NO	Regional Drawing NO
92001C	
CONTRACT NO	Drawing NO SHEET G2 OF 3

DEC. 10/96

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LEGEND

PERVIOUS AREA

201
0.39
11
0.32

DRAINAGE AREA I.D.
DRAINAGE AREA (ha)
PERCENT IMPERVIOUS
RUNOFF COEFFICENT

DIRECTION OF SHEET FLOW

POST-DEVELOPMENT STORM DRAINAGE AREA PLAN

SCALE: 1:500

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8/27/2026 10:20:42 AM - Madelyn Middleton

206 and 210 Main Street East
Grimsby, ON

S. LLEWELLYN & ASSOCIATES LIMITED
CONSULTING ENGINEERS

RUNOFF COEFFICIENT CALCULATIONS

Pre		C-Value
Drainage Area #:	101	
Roof/Building Area (m²):	0	0.95
Asphalt/Conc. Area (m²):	0	0.90
Grass Area - Pervious (m²):	1491	0.25
Total Area (m²):	1491	0.25
Impervious	0	**0.00**
Pervious	1491	**1.00**
Site	1491	

Post		C-Value
Drainage Area #:	201	
Roof/Building Area (m²):	507	0.95
Asphalt/Conc. Area (m²):	198	0.90
Grass Area (m²):	786	0.25
Total Area (m²):	1491	0.57
Impervious	705	**0.47**
Pervious	786	**0.53**
Site	1491	

Pre		C-Value
Drainage Area #:	102	
Roof/Building Area (m²):	0	0.95
Asphalt/Conc. Area (m²):	0	0.90
Grass Area - Pervious (m²):	1880	0.25
Total Area (m²):	1880	0.25
Impervious	0	**0.00**
Pervious	1880	**1.00**
Site	1880	

Post		C-Value
Drainage Area #:	202	
Roof/Building Area (m²):	708	0.95
Asphalt/Conc. Area (m²):	134	0.90
Grass Area (m²):	1038	0.25
Total Area (m²):	1880	0.56
Impervious	842	**0.45**
Pervious	1038	**0.55**
Site	1880	

Dorchester Estates Phase 1

Allocated		C-Value
Drainage Area #:	A01	
Roof/Building Area (m²):	230	0.95
Asphalt/Conc. Area (m²):	100	0.90
Grass Area - Pervious (m²):	1161	0.25
Total Area (m²):	1491	0.48
Impervious	521	**0.35**
Pervious	970	**0.65**
Site	1491	

Dorchester Estates Phase 1

Allocated		C-Value
Drainage Area #:	A02	
Roof/Building Area (m²):	270	0.95
Asphalt/Conc. Area (m²):	150	0.90
Grass Area - Pervious (m²):	1460	0.25
Total Area (m²):	1880	0.48
Impervious	658	**0.35**
Pervious	1222	**0.65**
Site	1880	