Functional Servicing Report

Proposed Draft Plan of Subdivision & Zoning Bylaw Amendment

Rural Subdivision
Wallace Point Road
Lots 17 and 18
Concession 15

D.M. Wills Project No. 21-85162

D.M. Wills Associates Limited
Partners in Engineering, Planning and Environmental Services
Peterborough

April 2023

Prepared for:
Life at Wallace Point Inc.

Summary of Revisions

Revision No.	Revision Title	Date of Release	Summary of Revisions
0	OPA & ZBA	April 2023	First Submission

This report has been formatted considering the requirements of the Accessibility for Ontarians with Disabilities Act.

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1.0 Introduction

D.M. Wills Associates Limited (Wills) has been retained by Life at Wallace Point Inc. to prepare a Functioning Servicing Report (FSR) for the property located on Wallace Point Road, Lots 17 and 18, Concession 15 in the Township of Otonabee-South Monaghan (Township). The Site is located north-east of the Wallace Point Road and Matchett Line intersection, just north of Crystal Springs. The proposed development is a rural subdivision with 50 residential lots, 1 commercial block, and 1 stormwater management (SWM) block supported with an access block. The purpose of this report is to provide sufficient information to establish that the proposed development is feasible. The FSR will provide guidance for future detailed design of sanitary (septic), domestic water, stormwater and utility servicing of the Site.

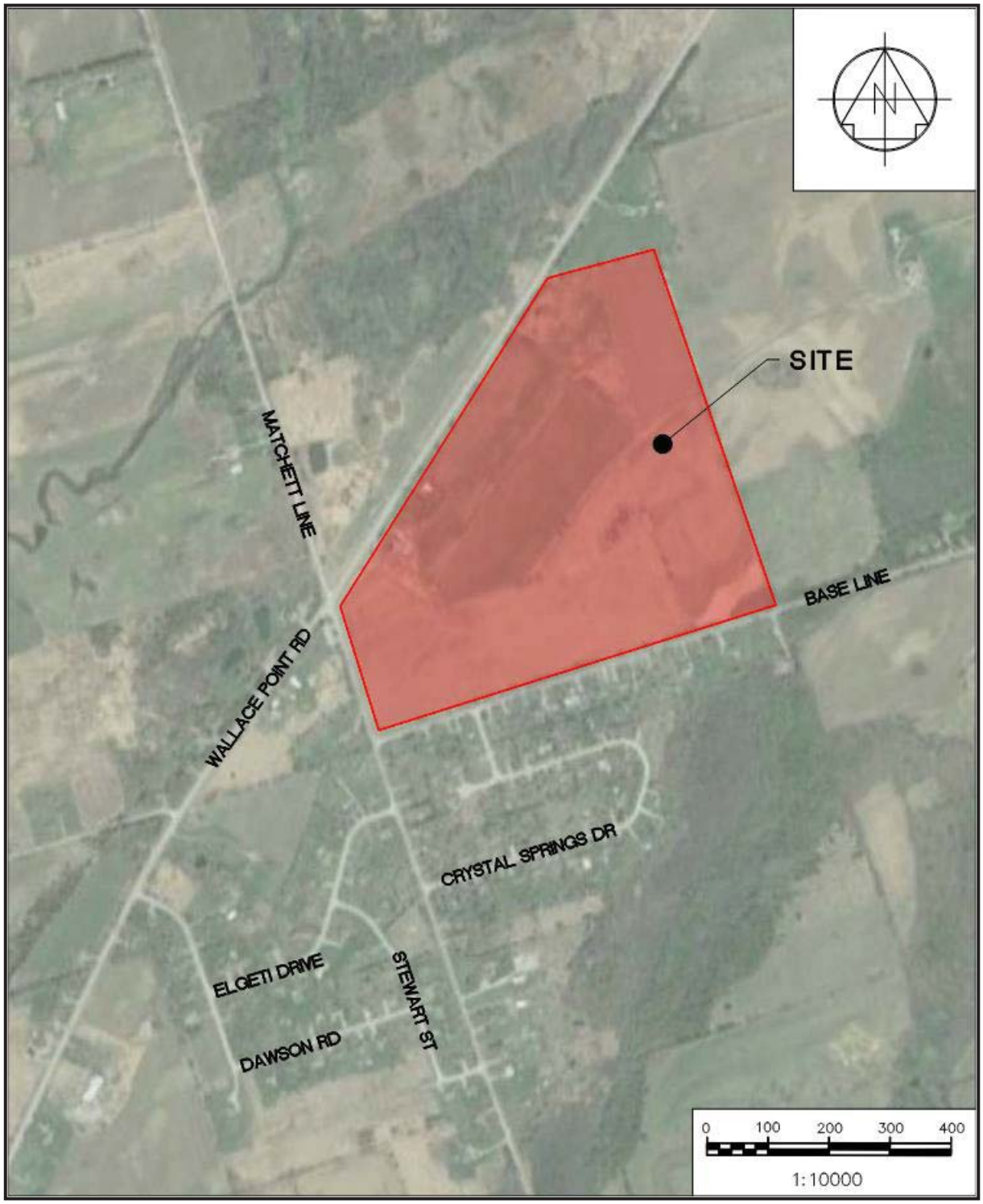
1.1 Site Location / Study Area

The Site is legally defined as Lots 17 and 18, Concession 15, in the Township of Otonabee-South Monaghan, County of Peterborough. The surrounding land use is mainly agricultural land with low-density residential to the south (see **Figure 1 – Site Location Map**).

The Site has an existing farmhouse with a neighbouring barn and silos. The 24.79 ha Site is currently zoned for future development with unevaluated wetlands located at the north and east limits of the Site. In post-development conditions, the wetlands will be removed and compensated for on a neighbouring property owned by the client.

A Draft Plan prepared by Wills defines 50 new single detached houses (**Appendix A – Preliminary Servicing and Grading Plan – Draft Plan – Sheet 200**). A private subdivision entrance is proposed from Base Line to provide access to all the properties.

Figure 1 – Site Location Map



2.0 Site Grading and Servicing

2.1 Site Grading

A topographic survey of the existing Site contours was provided by Elliott and Parr, dated October 6, 2022. There is approximately 14 m of elevation change from the south end of the site (along Base Line) to the culvert crossing in the north-west end of the Site which will be maintained or upgraded as the Site's low point and outlet.

The majority of proposed grading takes place within the common element and includes a 2-lane paved roadway, paved shoulder and roadside ditches. The roadway grading will collect drainage and direct it towards the north end of the Site to ultimately outlet to the SWM Pond (for more information regarding stormwater management refer to the stand-alone **Preliminary Storm Water Management Report** prepared by Wills, dated April 2023). Proposed grading outside the common element will make use of existing topography wherever possible.

Lot grading will generally follow the existing topography of the Site. Once building footprints have been established, detailed lot grading including side yard and apron swales will be detailed to direct water away from the dwelling units and toward the stormwater management pond. Refer to **Appendix A – Preliminary Servicing and Grading Plan**.

2.2 Sanitary Servicing

There is no existing sanitary sewer infrastructure located in close proximity of the proposed development. The existing soil conditions are capable of supporting private septic systems for each house (refer to the **Hydrogeological Study** prepared by Wills, dated July 2022).

Each septic system will be sized for the individual block and will be comprised of a septic tank, a primary tile field and reserve tile field. The septic tank provides the first level of sewage treatment by separating the solids and liquids as well as providing space for the solids to break down. The primary tile field provides the second level of treatment by way of filtration. Liquids exiting the septic tank enter the tile field; the wastewater then percolates into the existing soils or granular structure. The reserve tile field is required in septic designs and is intended to act as a reserve area should the existing tile field need to be replaced. Refer to **Appendix A – Preliminary Servicing and Grading Plan**.

2.3 Storm Servicing

There is no existing storm sewer outlet for the Site. Storm servicing will be accommodated through swales and ditches conveying rainfall to the proposed stormwater management pond. A 450 mm diameter driveway culvert will be required to access each lot. Refer to the **Preliminary Storm Water Management Report** prepared by Wills, dated April 2023.

2.4 Water Servicing

2.4.1 Design Criteria

The following water service design calculations reference the "Design Guidelines for Drinking-Water Systems" published by the Ministry of the Environment (MOE) dated 2008. The MOE Design Guidelines provides different methods of calculating the water demands of a drinking water system. Below we have provided two methods: 1) based on values provided in MOE Design Guidelines, and 2) based on historical data and values provided in the MOE Design Guidelines.

The MOE Design Guidelines states for design purposes to use a flow rate of 270 – 450 L/Person/Day. The Township has directed the use of 450 L/Person/Day for water demand calculations.

2.4.2 Proposed Servicing

The existing 200 mm diameter municipal watermain, serviced from the Elgeti & Crystal Springs Drinking Water System, is located on the south side of the Base Line right-of-way. The proposed watermain will extend within the common element road to service all the proposed lots within the Site.

2.4.3 Domestic Water Demand

Using "Table 3-3: Peaking Factors for Drinking-Water Systems Serving Fewer than 500 People" from the referenced guideline above (Section 2.4.1), the following data was used based on the 50 dwelling units serviced under post-development conditions:

- Equivalent Population: 150 (3 persons/unit)
- Maximum Day Factor: 1.6
- Peak Hour Factor: 2.47

Based on the above data including the required 450 L/Person/Day, the Maximum Residential Demand on the system is 232.4 m^3/d.

2.4.4 Commercial Water Demand

Within the proposed development a commercial block is also proposed. The configuration of the commercial development has yet to be determined; however, for the purposes of this report, a building coverage based on 10% of the lot area was used resulting in a proposed building of 1,480 m^2.

From the referenced guideline above, the following data was used to determine post-development conditions:

- Anticipated Building Footprint: 1,480 m^2
- Commercial Flow: 1.2 $L/m^2/day$
- Maximum Day Factor: 3.0
- Peak Hour Factor: 4.5
- Operating Hours: 18 hrs/day

Based on the above data it is anticipated that the proposed commercial block will demand 4.00 m^3/day.

2.4.5 Water Demand Conclusion

Combining the residential and the commercial water demand concludes the total demand for the proposed development will be 236.4 m^3/day.

This value is lower than the current Maximum Capacity of the water treatment plan; therefore, all 50 proposed residential lots and the commercial block can be serviced. Refer to **Appendix B – Water Analysis**. It should be noted the values used in the above calculation are considered to be overly conservative for calculating water capacity in 2023.

A second method of calculating water capacity would be to follow the MOE Design Guideline, Section 3.4.2 Domestic Water Demands which states; “For design purposes, existing reliable records should be used wherever possible.”

Historical data has been provided through annual reports of the Elgeti & Crystal Springs Drinking Water System provided by Ontario Clean Water Agency (OCWA). Average Maximum Daily Flow and capacity data from these reports have been tabulated in the “Water Capacity Analysis” provided in **Appendix B – Water Analysis**.

Based on the historical data and the peaking factors provided in the MOE Design Guidelines, the Maximum Demand on the system is 184.2 m^3/d. Since historical data is not available for the proposed commercial block, we are required to use the MOE guideline calculation from above which will then be added to the residential demand for a total proposed development demand of 188.2 m^3/day.

This value is below the current Maximum Capacity of the water treatment plant; therefore, all 50 proposed residential lots and the proposed commercial block could be serviced and built without restriction. It should be noted based on this calculation method there remains residual capacity in the treatment plant to add an additional 292 units (in addition to this proposed development) to the system before its capacity is reached. Refer to **Appendix B – Water Analysis**.

To summarize, Wills has reviewed the available Annual Water Reports (dated 2009-2020) for the Elgeti & Crystal Springs Drinking Water System and confirmed there is available capacity to support the proposed development. Refer to **Appendix B – Water Analysis** for the annual report data along with calculation sheets used to determine the above results.

2.5 Utility Servicing

Currently primary electrical service is readily available via overhead aerial cable located on the east side of Matchett Line approximately 165 m west of the Site entrance. Alternatively, connections to the existing primary electrical service can be accomplished from the east side of Wallace Point Road or from the existing neighbouring subdivision on the south side of Base Line. The adequacy of the overhead hydro will be determined by an electrical consultant during the detailed design stage. (Refer to **Appendix C – Correspondence** for plans from Hydro One.)

Currently Bell's telecommunication services are readily available as overhead aerial cable on the same poles as Hydro. Connecting to Bell's existing infrastructure can be accomplished at the same location as connecting to Hydro (Refer to **Appendix C – Correspondence** for plans from Bell).

3.0 Conclusion

Servicing for the proposed development is feasible.

1. Stormwater runoff will be accommodated by a system of swales and sheet drainage that divert water to the proposed roadside infiltration ditches and ultimately the stormwater management pond.
2. Sanitary servicing will be accommodated by individual septic systems (treatment, tanks and tile fields).
3. Domestic water servicing will be provided by connecting to the existing municipal watermain infrastructure along Base Line.
4. Utilities to service the development are readily available overhead within the Wallace Point Road and Matchett Line right-of-way, along with the Crystal Springs subdivision to the South.

If you require any further information, or have any questions, please do not hesitate to contact the undersigned.

Respectfully submitted,

Joseph D. Fleming, C.E.T.
Group Leader, Site Development

Mitch Bell
Municipal Project Designer

JDF/MB/jh

Statement of Limitations

This report has been prepared by D.M. Wills Associates Limited on behalf Life at Wallace Point Inc. to address the requirements of the Township of Otanabee-South Monaghan.

The conclusions and recommendations in this report are based on available background documentation and discussions with applicable agencies at the time of preparation.

The report is intended to determine the feasibility of the proposed development with respect to sanitary, water, stormwater and utility servicing of the subject lands. The design information provided in this report is preliminary in nature and should not be used for construction purposes.

Any use that a third party makes of this report other than a functional servicing report for the proposed development is the responsibility of such third parties. D.M. Wills Associates Limited accepts no responsibility for damages, if any, suffered by a third party as a result of decisions made or action taken based on using this report for purposes other than a functional servicing report for the subject property located on Wallace Point Road.

Appendix A

Preliminary Servicing and Grading Plan

SUMMARY CHART
SECTION 51(17) PLANNING ACT

(a) THE BOUNDARIES OF THE LAND PROPOSED TO BE SUBDIVIDED, CERTIFIED BY AN ONTARIO LAND SURVEYOR;	AS REFERENCED ON DRAFT PLAN
(b) THE LOCATIONS, WIDTHS AND NAMES OF THE PROPOSED HIGHWAYS WITHIN THE PROPOSED SUBDIVISION AND OF EXISTING HIGHWAYS ON WHICH THE PROPOSED SUBDIVISION ABUTS;	AS REFERENCED ON DRAFT PLAN
(c) ON A SMALL KEY PLAN, ON A SCALE OF NOT LESS THAN ONE CENTIMETRE TO 100 METRES, ALL OF THE LAND ADJACENT TO THE PROPOSED SUBDIVISION THAT IS OWNED BY THE APPLICANT OR IN WHICH THE APPLICANT HAS AN INTEREST, EVERY SUBDIVISION ADJACENT TO THE PROPOSED SUBDIVISION AND THE RELATIONSHIP OF THE BOUNDARIES OF THE LAND TO BE SUBDIVIDED TO THE BOUNDARIES OF THE TOWNSHIP LOT OR OTHER ORIGINAL GRANT OF WHICH THE LAND FORMS THE WHOLE PART;	AS REFERENCED ON DRAFT PLAN
(d) THE PURPOSE FOR WHICH THE PROPOSED LOTS ARE TO BE USED;	AS REFERENCED ON DRAFT PLAN
(e) THE EXISTING USES OF ALL ADJOINING LANDS;	AS REFERENCED ON DRAFT PLAN
(f) THE APPROXIMATE DIMENSIONS AND LAYOUT OF THE PROPOSED LOTS;	AS REFERENCED ON DRAFT PLAN
(f1) IF ANY AFFORDABLE HOUSING UNITS ARE BEING PROPOSED, THE SHAPE AND DIMENSIONS OF EACH PROPOSED AFFORDABLE HOUSING UNIT AND THE APPROXIMATE LOCATION OF EACH PROPOSED AFFORDABLE HOUSING UNIT IN RELATION TO OTHER PROPOSED RESIDENTIAL UNITS;	REFER TO PLANNING JUSTIFICATION REPORT
(g) NATURAL AND ARTIFICIAL FEATURES SUCH AS BUILDINGS OR OTHER STRUCTURES OR INSTALLATIONS, RAILWAYS, HIGHWAYS, WATERCOURSES, DRAINAGE DITCHES, WETLANDS AND WOODED AREAS WITHIN OR ADJACENT TO THE LAND PROPOSED TO BE SUBDIVIDED;	AS REFERENCED ON DRAFT PLAN
(h) THE AVAILABILITY AND NATURE OF DOMESTIC WATER SUPPLIES;	REFER TO FUNCTIONAL SERVICING REPORT
(i) THE NATURE AND POROSITY OF THE SOIL;	REFER TO SUBSURFACE SOIL AND INFILTRATION INVESTIGATION REPORT
(j) EXISTING CONTOURS OR ELEVATIONS AS MAY BE REQUIRED TO DETERMINE THE GRADE OF THE HIGHWAYS AND THE DRAINAGE OF THE LAND PROPOSED TO BE SUBDIVIDED;	AS REFERENCED ON DRAFT PLAN
(k) THE MUNICIPAL SERVICES AVAILABLE OR TO BE AVAILABLE TO THE LAND PROPOSED TO BE SUBDIVIDED; AND	REFER TO FUNCTIONAL SERVICING REPORT
(l) THE NATURE AND EXTENT OF ANY RESTRICTIONS AFFECTING THE LAND PROPOSED TO BE SUBDIVIDED, INCLUDING RESTRICTIVE COVENANTS OR EASEMENTS. 1994, c. 23, s. 30; 1996, c. 4, s. 28 (3); 2016, c. 25, Sched. 4, s. 8 (1).	NO RESTRICTIONS ON SITE

LEGAL DESCRIPTION

LOT 17 & 18
CONCESSION 15
GEOGRAPHIC TOWNSHIP OF OTONABEE
TOWNSHIP OF OTONABEE–SOUTH MONAGHAN

OWNER'S CERTIFICATE

I AUTHORIZE D.M. WILLS ASSOCIATES LIMITED TO PREPARE AND SUBMIT THIS DRAFT PLAN OF SUBDIVISION TO THE COUNTY OF PETERBOROUGH FOR APPROVAL CERTIFY THAT:

DATED THIS _ _ _ _ _DAY OF_ _ _ _ _2023

SURVEYOR'S CERTIFICATE

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

_ _ _ _ _ DATE

_ _ _ _ _ SHAWN M. O'CONNOR, ONTARIO LAND SURVEYOR

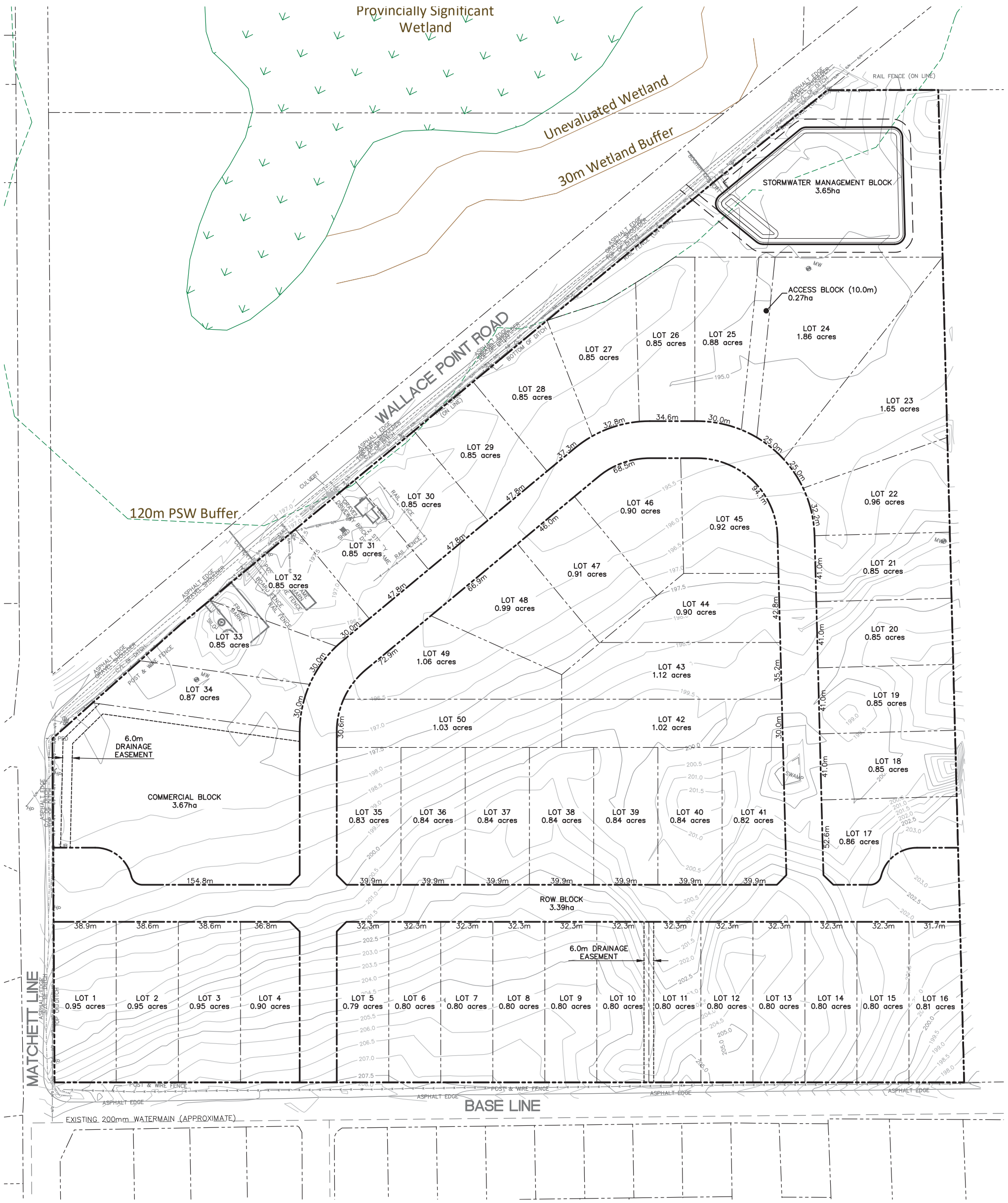
BUILDING SETBACKS

FRONT YARD	TBD
SIDE YARD	TBD
REAR YARD	TBD

SUMMARY TABLE

85162 – WALLACE POINT ROAD, OTONABEE–SOUTH MONAGHAN

REGULATIONS	PROPOSED
NUMBER OF LOTS	50 RESIDENTIAL LOTS 1 COMMERCIAL BLOCK 1 SWM BLOCK 1 ACCESS BLOCK 1 RIGHT-OF-WAY BLOCK
LOT AREA (MIN.)	0.79 ACRE (3197.0m²)
LOT FRONTAGE (MIN.)	25.0m
AVERAGE LOT DEPTH	72–84m
ROAD AREA	3.39ha
TOTAL SITE AREA	24.79ha



Parcel Area Table

LOT #	Area (ha/acres)	Frontage (m)	Intended Use
1	0.38/0.95	38.9	SINGLE DETACHED DWELLING
2	0.38/0.95	38.6	SINGLE DETACHED DWELLING
3	0.38/0.95	38.6	SINGLE DETACHED DWELLING
4	0.36/0.90	36.8	SINGLE DETACHED DWELLING
5	0.32/0.79	32.3	SINGLE DETACHED DWELLING
6	0.32/0.80	32.3	SINGLE DETACHED DWELLING
7	0.32/0.80	32.3	SINGLE DETACHED DWELLING
8	0.32/0.80	32.3	SINGLE DETACHED DWELLING
9	0.32/0.80	32.3	SINGLE DETACHED DWELLING
10	0.32/0.80	32.3	SINGLE DETACHED DWELLING
11	0.32/0.80	32.3	SINGLE DETACHED DWELLING
12	0.32/0.80	32.3	SINGLE DETACHED DWELLING
13	0.32/0.80	32.3	SINGLE DETACHED DWELLING
14	0.32/0.80	32.3	SINGLE DETACHED DWELLING
15	0.32/0.80	32.3	SINGLE DETACHED DWELLING
16	0.33/0.81	31.7	SINGLE DETACHED DWELLING
17	0.35/0.86	52.6	SINGLE DETACHED DWELLING
18	0.34/0.85	41.0	SINGLE DETACHED DWELLING
19	0.34/0.85	41.0	SINGLE DETACHED DWELLING
20	0.34/0.85	41.0	SINGLE DETACHED DWELLING
21	0.34/0.85	41.0	SINGLE DETACHED DWELLING
22	0.39/0.96	32.2	SINGLE DETACHED DWELLING
23	0.67/1.65	25.0	SINGLE DETACHED DWELLING
24	0.75/1.86	25.0	SINGLE DETACHED DWELLING
25	0.36/0.88	30.0	SINGLE DETACHED DWELLING
26	0.34/0.85	34.6	SINGLE DETACHED DWELLING
27	0.34/0.85	32.8	SINGLE DETACHED DWELLING
28	0.34/0.85	37.3	SINGLE DETACHED DWELLING
29	0.34/0.85	47.8	SINGLE DETACHED DWELLING
30	0.34/0.85	47.8	SINGLE DETACHED DWELLING
31	0.34/0.85	47.8	SINGLE DETACHED DWELLING
32	0.34/0.85	30.0	SINGLE DETACHED DWELLING
33	0.34/0.85	30.0	SINGLE DETACHED DWELLING
34	0.35/0.87	30.0	SINGLE DETACHED DWELLING
35	0.34/0.83	39.9	SINGLE DETACHED DWELLING
36	0.34/0.84	39.9	SINGLE DETACHED DWELLING
37	0.34/0.84	39.9	SINGLE DETACHED DWELLING
38	0.34/0.84	39.9	SINGLE DETACHED DWELLING
39	0.34/0.84	39.9	SINGLE DETACHED DWELLING
40	0.34/0.84	39.9	SINGLE DETACHED DWELLING
41	0.33/0.82	39.9	SINGLE DETACHED DWELLING
42	0.41/1.02	30.0	SINGLE DETACHED DWELLING
43	0.45/1.12	35.2	SINGLE DETACHED DWELLING
44	0.37/0.90	42.8	SINGLE DETACHED DWELLING
45	0.37/0.92	94.1	SINGLE DETACHED DWELLING
46	0.37/0.90	68.5	SINGLE DETACHED DWELLING
47	0.37/0.91	46.0	SINGLE DETACHED DWELLING
48	0.40/0.99	66.9	SINGLE DETACHED DWELLING
49	0.43/1.06	72.9	SINGLE DETACHED DWELLING
50	0.42/1.03	30.6	SINGLE DETACHED DWELLING
51	1.48/3.67	154.8	COMMERCIAL BLOCK
52	0.11/0.27	–	SWM POND ACCESS BLOCK
53	1.48/3.65	–	SWM POND BLOCK
54	3.39/8.38	–	RIGHT-OF-WAY BLOCK

TRUE NORTH

KEY PLAN

REVISIONS

No.	Description	Date
1	FIRST SUBMISSION	04/21/23

METRIC: Dimensions are in METRES and/or MILLIMETRES unless otherwise shown

LEGEND: TO BE READ IN CONJUNCTION WITH OPSD 100 SERIES

WILLS
D.M. Wills Associates Limited
150 Jameson Drive
Peterborough, Ontario
Canada K9J 0B9
P. 705.742.2297
F. 705.748.9944
E. wills@dmwills.com

Project Name/Location

PROPOSED RESIDENTIAL DEVELOPMENT

3491 WALLACE POINT ROAD, PETERBOROUGH

Drawing Title

DRAFT PLAN

Drawn By: M.B.	SCALE: Horz. 1:1500 Vert. –	
Designed By: M.B.	Issue Date: April 21, 2023	
Checked By: J.D.F.	Project No.: 21-85162	Sht. No.:
Engineer: –––	Dwg File No.: 85162 – DP	200

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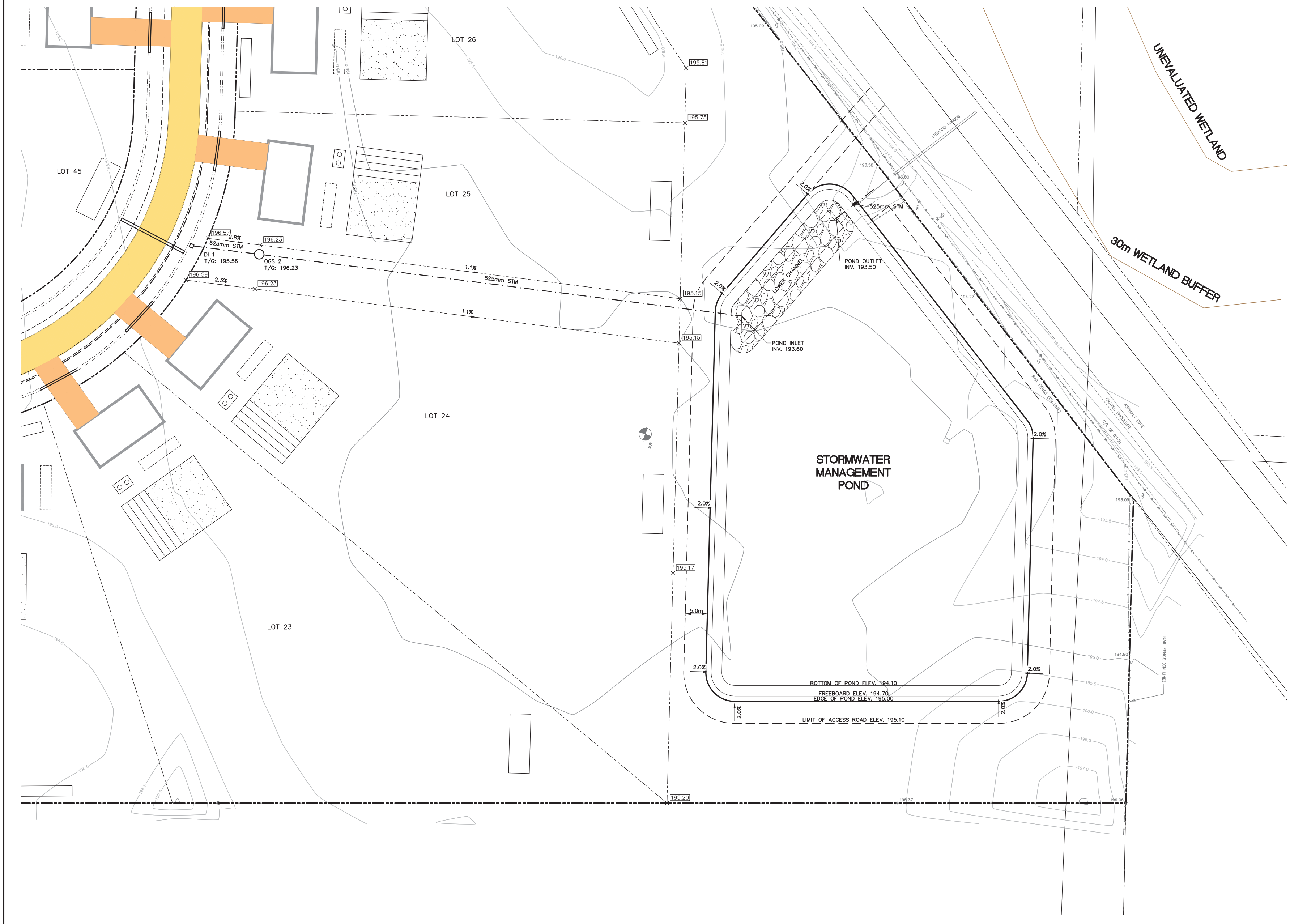

KEY PLAN

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LEGEND — TO BE READ IN CONJUNCTION WITH OPSD 100 SERIES

- RIPRAP
- EX. BUILDING
- EX./PR. EDGE OF PAVEMENT
- EX./PR. ROAD CENTERLINE
- EX./PR. EDGE OF SHOULDER/GRAVEL
- EX./PR. WATER VALVE
- EXISTING HYDRO POLE
- EX. OVERHEAD HYDRO
- EX. UNDERGROUND HYDRO
- EX./PR. DITCH
- PR. SWALE
- PR. CULVERT
- PR. CATCH BASIN
- EX./PR. WATERMAIN
- R.O.W
- PROPERTY LINE
- EXISTING VEGETATION
- PROPOSED HOUSE WITH 2 CAR GARAGE
- SEPTIC TANK
- TILE FIELD AND MANTLE
- x214.00 x 214.00 EX./PR. ELEVATION

WILLS
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Project Name/Location

PROPOSED RESIDENTIAL DEVELOPMENT

3491 WALLACE POINT ROAD, PETERBOROUGH

Drawing Title

STORMWATER MANAGEMENT POND

Drawn By: M.B.	SCALE: Horz. 1:400 Vert. –		
Designed By: M.B.	Issue Date: April 21, 2023		
Checked By: J.D.F.	Project No.: 21-85162		Sht. No.:
Engineer: M.H.	Dwg File No.: 85162 – POND		300

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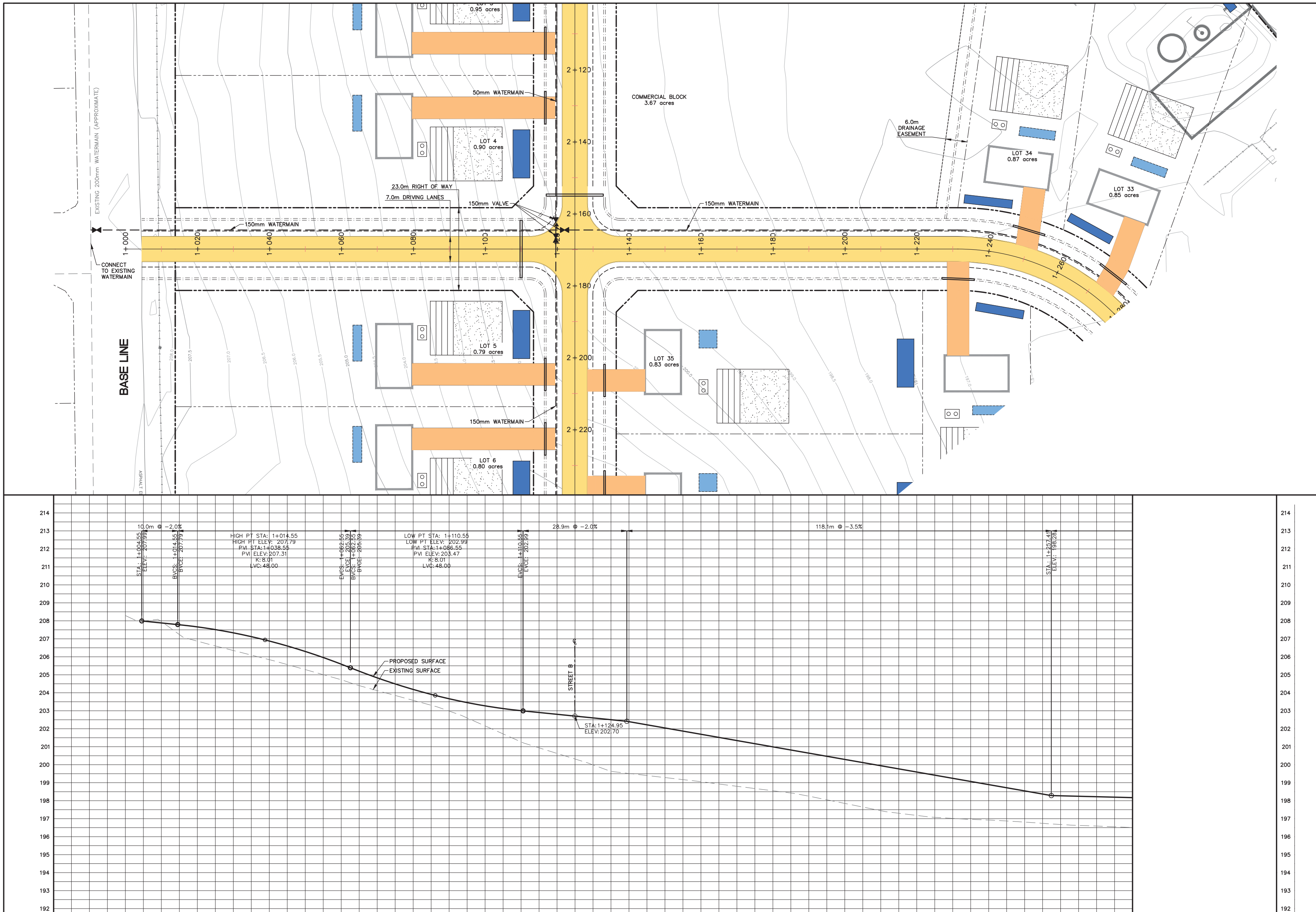

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PR. ELEV.		207.66	206.88	205.59	204.19	203.27	202.80	202.39	201.69	200.99	200.29	199.59	198.89	198.27	198.17
EX. ELEV.	208.29	206.87	205.84	204.73	203.58	202.16	200.63	199.51	199.06	198.55	197.85	197.18	196.92	196.68	196.51

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- PROPOSED HEAVY DUTY ASPHALT
- PROPOSED MEDIUM DUTY ASPHALT
- PROPOSED SURFACE DRAINAGE STORAGE AREA
- PROPOSED UNDERGROUND DRAINAGE STORAGE AREA
- EX. BUILDING
- EX./PR. EDGE OF PAVEMENT
- EX./PR. ROAD CENTERLINE
- EX./PR. EDGE OF SHOULDER/GRAVEL
- EX./PR. WATER VALVE
- EXISTING HYDRO POLE
- EX. OVERHEAD HYDRO
- EX. UNDERGROUND HYDRO
- EX./PR. DITCH
- PR. SWALE
- PR. CULVERT
- PR. CATCH BASIN
- EX./PR. WATERMAIN
- R.O.W
- PROPERTY LINE
- EXISTING VEGETATION
- PROPOSED HOUSE WITH 2 CAR GARAGE
- SEPTIC TANK
- TILE FIELD AND MANTLE
- EX./PR. ELEVATION (x 214.00)

WILLS
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E. wills@dmwills.com

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PLAN AND PROFILES STA. 1+000 TO 1+280

Drawn By: M.B.	SCALE: Horz. 1:500	Vert. 1:100	
Designed By: M.B.	Issue Date: April 21, 2023		
Checked By: J.D.F.	Project No.: 21-85162		Sht. No.:
Engineer: ---	Dwg File No.: 85162 – PP		400

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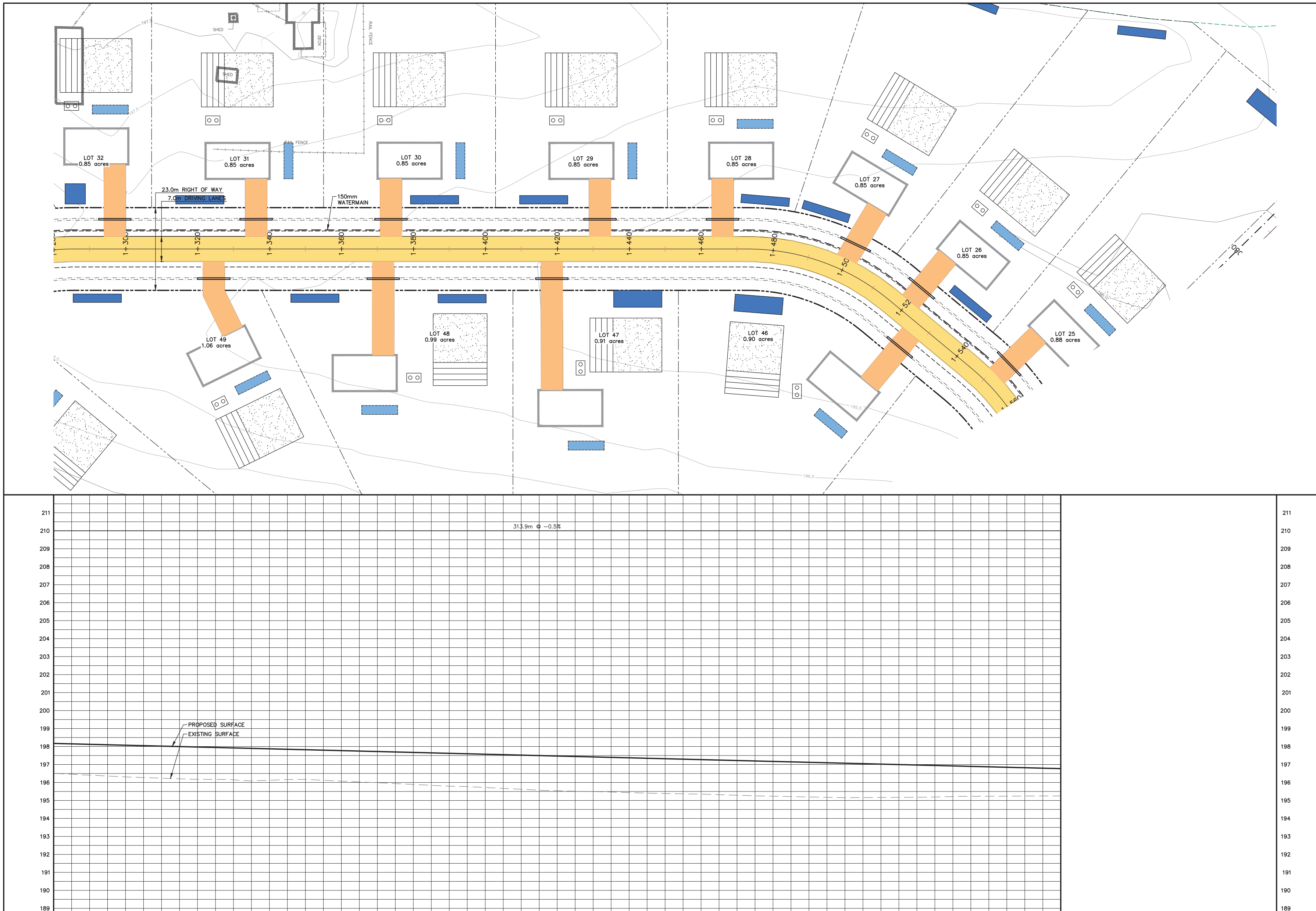

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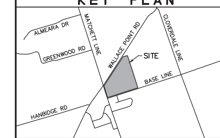
PR. ELEV.	198.17	198.07	197.97	197.87	197.77	197.67	197.57	197.47	197.37	197.27	197.17	197.07	196.97	196.87	196.77
EX. ELEV.	196.51	196.31	196.18	196.12	196.08	195.89	195.72	195.54	195.44	195.35	195.23	195.16	195.18	195.23	195.25

TRUE NORTH

KEY PLAN



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- EX. UNDERGROUND HYDRO
- EX./PR. DITCH
- PR. SWALE
- PR. CULVERT
- PR. CATCH BASIN
- EX./PR. WATERMAIN
- R.O.W
- PROPERTY LINE
- EXISTING VEGETATION
- PROPOSED HOUSE WITH 2 CAR GARAGE
- SEPTIC TANK
- TILE FIELD AND MANTLE
- x214.00 x 214.00 EX./PR. ELEVATION

WILLS
D.M. Wills Associates Limited
150 Jameson Drive
Peterborough, Ontario
Canada K9J 0B9
P. 705.742.2297
F. 705.748.9944
E. wills@dmwills.com

Project Name/Location

PROPOSED RESIDENTIAL DEVELOPMENT

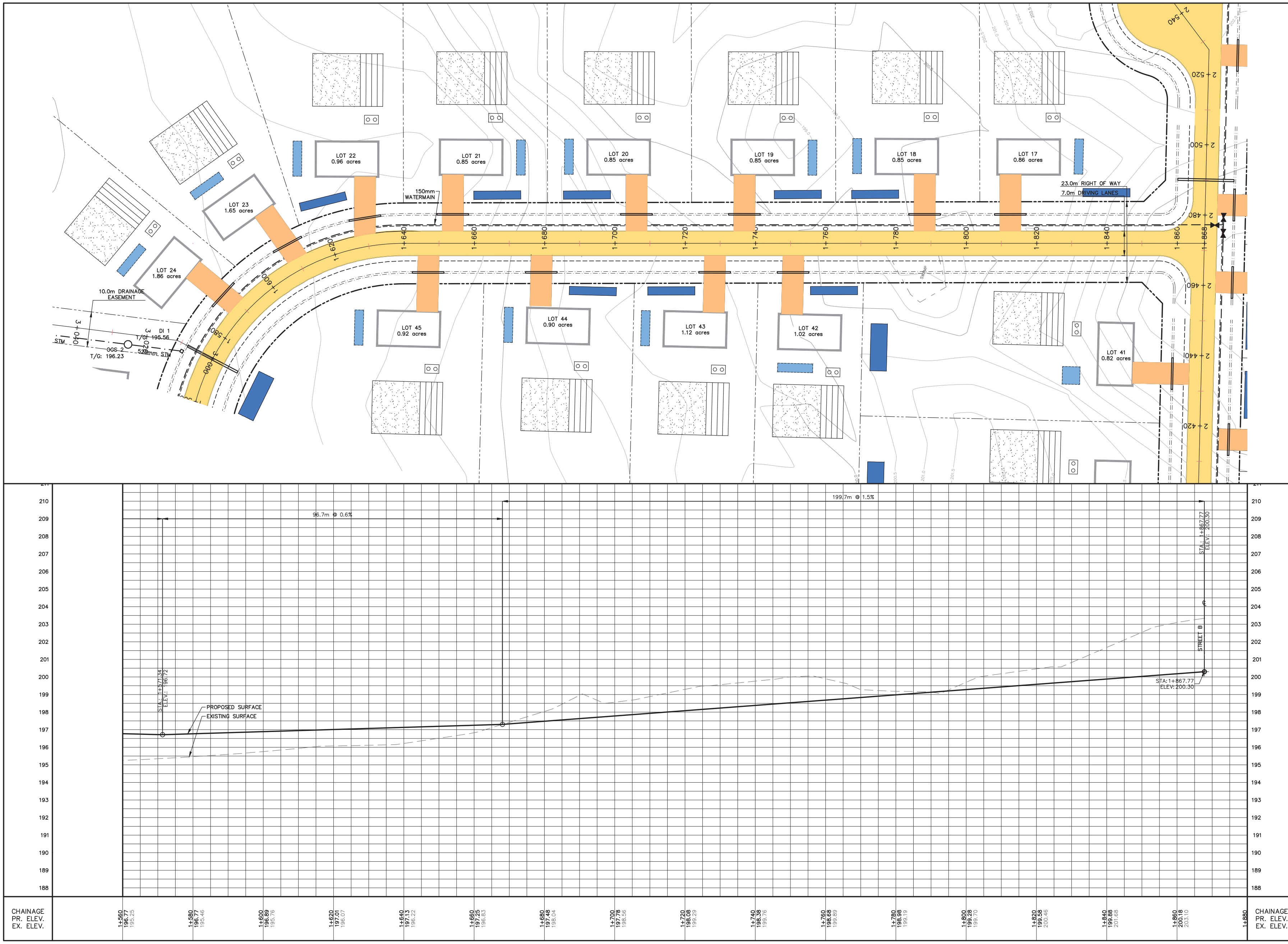
3491 WALLACE POINT ROAD, PETERBOROUGH

Drawing Title

PLAN AND PROFILES
STA. 1+280 TO 1+560

Drawn By: M.B.	SCALE: Horz. 1:500 Vert. 1:100		Sht. No.:
Designed By: M.B.	Issue Date: April 21, 2023		
Checked By: J.D.F.	Project No.: 21-85162		
Engineer: ---	Dwg File No.: 85162 – PP		401

NOT FOR CONSTRUCTION



TRUE NORTH

KEY PLAN

REVISIONS

No.	Description	Date
1	FIRST SUBMISSION	04/21/23

METRIC Dimensions are in METRES and/or MILLIMETRES unless otherwise shown

LEGEND TO BE READ IN CONJUNCTION WITH OPSD 100 SERIES

- PROPOSED HEAVY DUTY ASPHALT
- PROPOSED MEDIUM DUTY ASPHALT
- PROPOSED SURFACE DRAINAGE STORAGE AREA
- PROPOSED UNDERGROUND DRAINAGE STORAGE AREA
- EX. BUILDING
- EX./PR. EDGE OF PAVEMENT
- EX./PR. ROAD CENTERLINE
- EX./PR. EDGE OF SHOULDER/GRAVEL
- EX./PR. WATER VALVE
- EXISTING HYDRO POLE
- EX. OVERHEAD HYDRO
- EX. UNDERGROUND HYDRO
- EX./PR. DITCH
- PR. SWALE
- PR. CULVERT
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- PROPERTY LINE
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WILLS

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150 Jameson Drive
Peterborough, Ontario
Canada K9J 0B9

P. 705.742.2297
F. 705.748.9944
E. wills@dmwills.com

Project Name/Location

PROPOSED RESIDENTIAL DEVELOPMENT

3491 WALLACE POINT ROAD, PETERBOROUGH

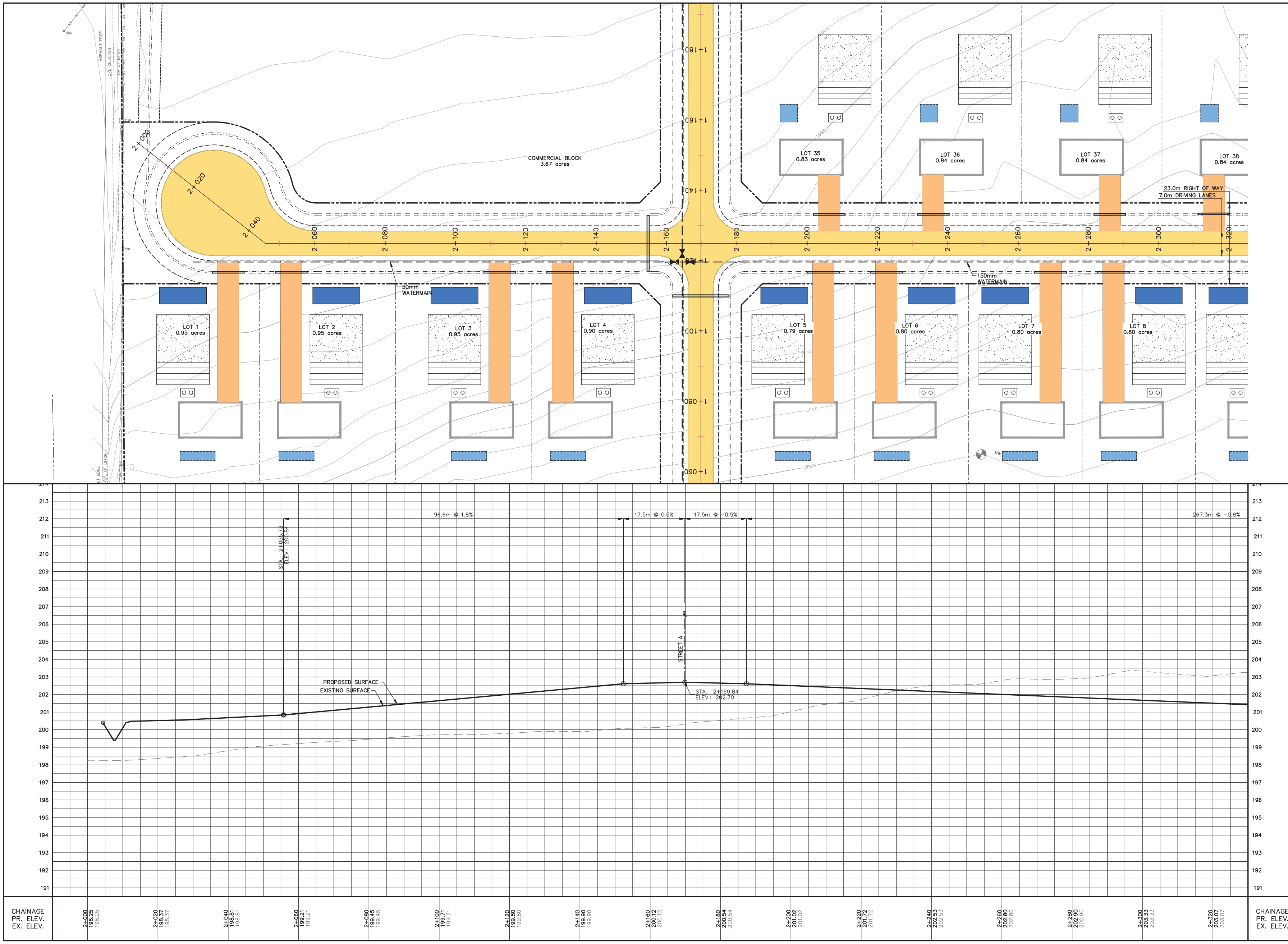
Drawing Title

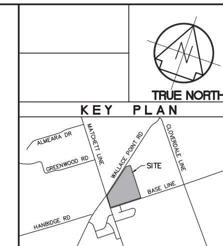
PLAN AND PROFILES STA. 1+560 TO 1+868

Drawn By: M.B.	SCALE: Horz. 1:500	Vert. 1:100	
Designed By: M.B.	Issue Date: April 21, 2023		
Checked By: J.D.F.	Project No.: 21-85162		Sht. No.:
Engineer: ---	Dwg File No.: 85162 – PP		402

NOT FOR CONSTRUCTION

Printed By: srobinson Printed On: April 21, 2023
q:\85000 – private\85100–85199\85162 – 3491 wallace point rd\02 drawings\02 current drawings\cad\spg\85162 – pp.dwg





REVISIONS

No.	Description	Date
1	FIRST SUBMISSION	04/21/23

METRIC Dimensions are in METRES and/or MILLIMETRES unless otherwise shown

LEGEND TO BE READ IN CONJUNCTION WITH OPSD 100 SERIES

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- PROPOSED SURFACE DRAINAGE STORAGE AREA
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- EX./PR. WATER VALVE
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WILLS

D.M. Wills Associates Limited
150 Jameson Drive
Peterborough, Ontario
Canada K9J 0B9
P. 705.742.2297
F. 705.748.9944
E. wills@dmwills.com

Project Name/Location

PROPOSED RESIDENTIAL DEVELOPMENT

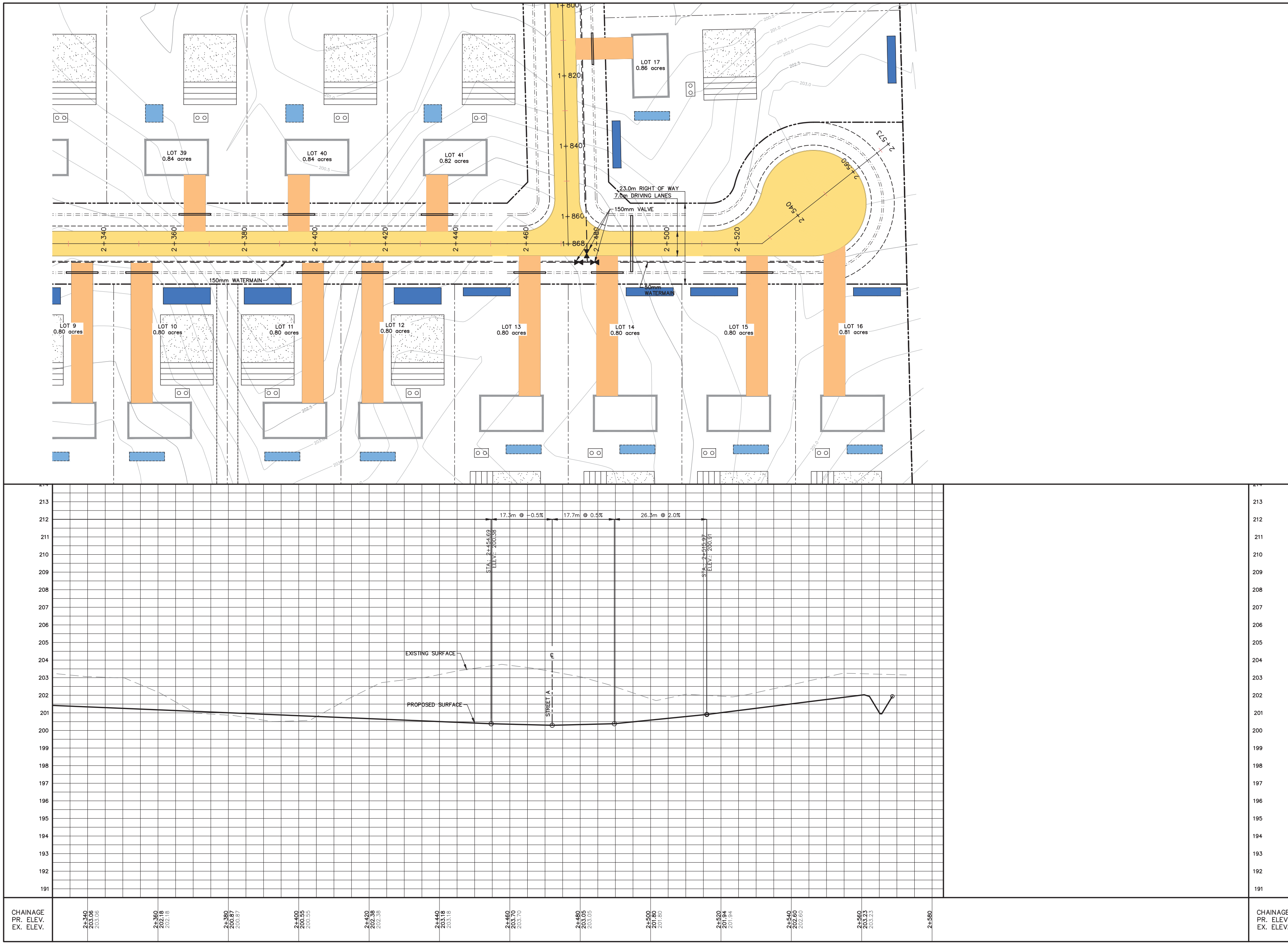
3491 WALLACE POINT ROAD, PETERBOROUGH

Drawing Title

PLAN AND PROFILES STA. 2+000 TO 2+330

Drawn By: M.B.	SCALE: Horz. 1:500 Vert. 1:100	Sht. No.:
Designed By: M.B.	Issue Date: April 21, 2023	
Checked By: J.D.F.	Project No.: 21-85162	
Engineer: ---	Dwg File No.: 85162 – PP	403

NOT FOR CONSTRUCTION



TRUE NORTH

KEY PLAN

REVISIONS

No.	Description	Date
1	FIRST SUBMISSION	04/21/23

METRIC — Dimensions are in METRES and/or MILLIMETRES unless otherwise shown

LEGEND — TO BE READ IN CONJUNCTION WITH OPSD 100 SERIES

- PROPOSED HEAVY DUTY ASPHALT
- PROPOSED MEDIUM DUTY ASPHALT
- PROPOSED SURFACE DRAINAGE STORAGE AREA
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- EX./PR. EDGE OF SHOULDER/GRAVEL
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- PROPOSED HOUSE WITH 2 CAR GARAGE
- SEPTIC TANK
- TILE FIELD AND MANTLE
- EX./PR. ELEVATION ($\times$ 214.00)

WILLS
D.M. Wills Associates Limited
150 Jameson Drive
Peterborough, Ontario
Canada K9J 0B9
P. 705.742.2297
F. 705.748.9944
E. wills@dmwills.com

Project Name/Location

PROPOSED RESIDENTIAL DEVELOPMENT

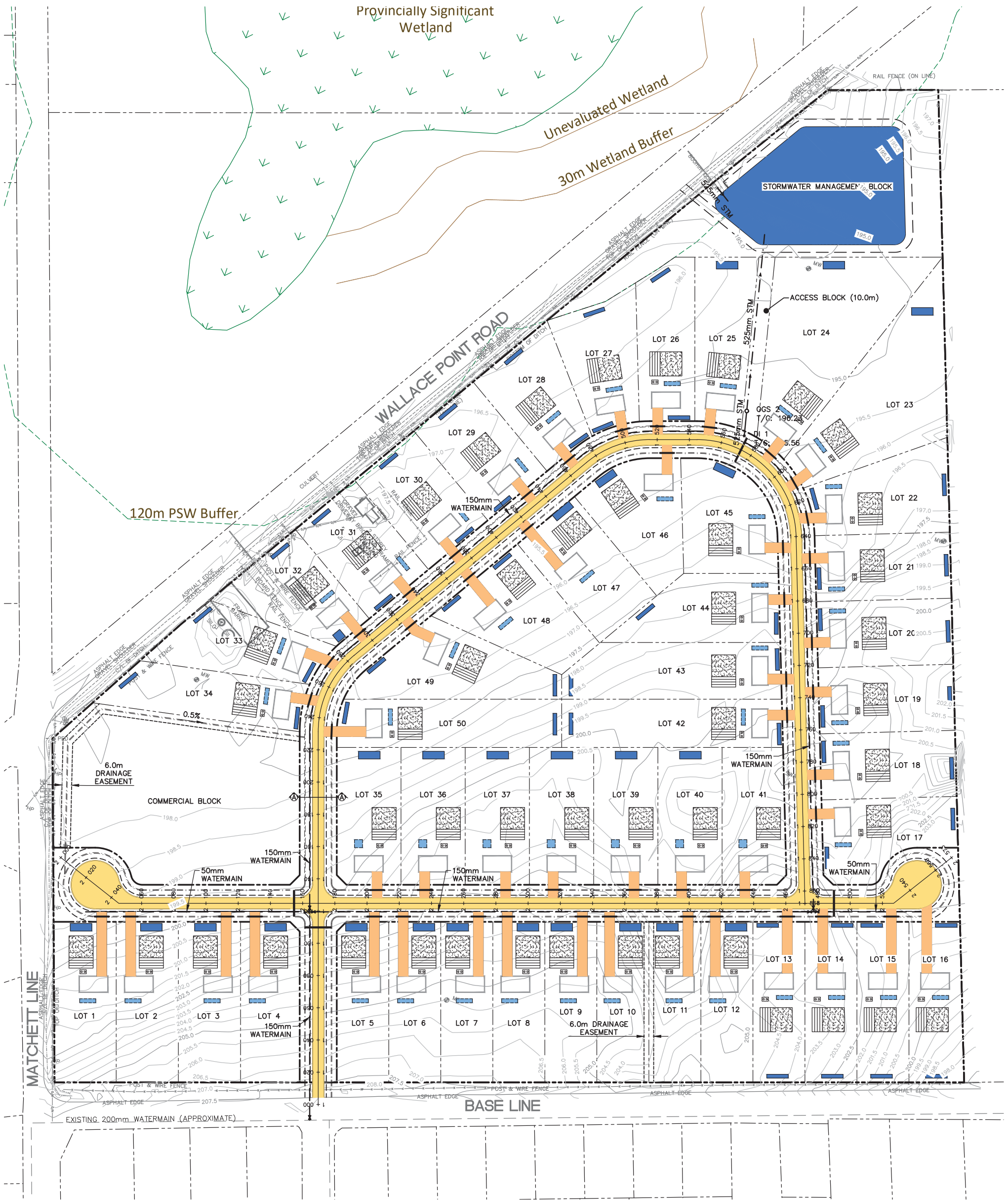
3491 WALLACE POINT ROAD, PETERBOROUGH

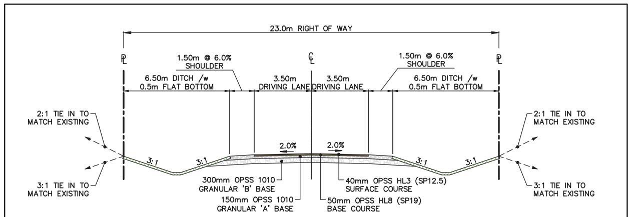
Drawing Title

PLAN AND PROFILES STA. 2+330 TO 2+578

Drawn By: M.B.	SCALE: Horz. 1:500 Vert. 1:100		Sht. No.:
Designed By: M.B.	Issue Date: April 21, 2023		
Checked By: J.D.F.	Project No.: 21-85162		
Engineer: ---	Dwg File No.: 85162 - PP		404

NOT FOR CONSTRUCTION





A–A **DETAIL – TYPICAL CROSS SECTION**
SCALE = 1:150

TRUE NORTH

KEY PLAN

REVISIONS

No.	Description	Date
1	FIRST SUBMISSION	04/21/23

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WILLS
D.M. Wills Associates Limited
150 Jameson Drive
Peterborough, Ontario
Canada K9J 0B9
P. 705.742.2297
F. 705.748.9944
E. wills@dmwills.com

Project Name/Location

PROPOSED RESIDENTIAL DEVELOPMENT

3491 WALLACE POINT ROAD, PETERBOROUGH

Drawing Title

SERVICING PLAN

Drawn By: M.B.	SCALE: Horz. 1:1500 Vert. –		
Designed By: M.B.	Issue Date: April 21, 2023		
Checked By: J.D.F.	Project No.: 21–85162		Sht. No.:
Engineer: – – –	Dwg File No.: 85162 – SS		200

NOT FOR CONSTRUCTION

Appendix B

Correspondence

D.M. Wills Associates Limited
150 Jameson Drive
Peterborough, ON K9J 0B9
P. 705.742.2297 F. 705.741.3568

Date: April 6, 2023
Project: 85162 - Wallace Point Subdivision

Water Capacity Analysis

Year	Maximum Daily Flows Per Month												Average Max Daily Flow (m^3/d)	Max Capacity (m^3/d)
	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC		
2010	133	100	107	136	213	134	144	152	118	99	96	97	127	540
2011	100	96	118	110	145	148	181	101	107	102	98	100	117	540
2012	132	103	129	132	166	127	150	157	143	150	150	178	143	540
2013	140	140	140	145	227	161	175	149	95	87	104	91	138	540
2014	96	88	88	99	138	161	116	125	106	126	110	109	114	540
2015	107	106	101	122	234	115	159	131	142	138	128	167	138	540
2016	143	139	142	156	204	227	128	113	84	75	80	67	130	540
2017	59	118	82	93	109	92	92	92	89	75	99	102	92	540
2018	91	81	76	76	109	114	162	128	101	85	103	89	101	540
2020	85	76	79	97	158	201	185	141	109	99	94	108	119	540
2021	122	136	174	95	176	175	162	127	114	129	125	163	142	540

Notes:
- Using the existing Average Maximum Daily Flow information of 95m^3/day gathered since 2010, we can determine, based on the plant currently servicing 103 dwellings, that each dwelling uses an average maximum flow of 1.204m^3/day. Using this value we can predict that the additional 50 dwellings and 1 commercial block proposed in our design will increase the average maximum daily flow by approximately 60.19m^3/day. Therefore, the post-development average maximum daily flow is calculated to be 188.2m^3/day.

Average Existing (Pre-Development):	124	Servicing 103 dwellings
Proposed Residential:	60.19	Servicing 50 dwellings
Proposed Commercial:	4	Servicing 1 Block
Total (Post-Development):	188.2 m3/d	Servicing 153 dwellings + 1 Commercial Block

PROJECT INFORMATION

PROJECT LOCATION:	Township of Otonabee-South Monaghan
DM WILLS PROJECT:	3491 Wallace Point Rd
DM WILLS PROJECT No.:	85162
DESIGNED BY:	S.Robinson
CHECKED BY:	J.Fleming
Date:	04-13-23

PROPOSED DOMESTIC WATER DEMAND - MOE Demands

CRITERIA USED: Guidelines for the Design of Water Distribution Systems - July 1985
Design Guidelines for Drinking-Water Systems - 2008
Existing Historical Flows - Ontario Clean Water Agency 2020 Report

DOMESTIC WATER DEMAND:	**450**	L/person/day	A
No. OF PROPOSED UNITS:	**50**	units	B
No. PERSONS/UNIT (Low Density):	**3.0**	persons/unit	C
MAX. DAY FACTOR (MOE):* 4.9	**1.60**		D
PEAK HOUR FACTOR (MOE): *7.4	**2.47**		E
HISTORICAL AVERAGE MAX DAY FLOW:	**1.44**	L/second	G

CALCULATIONS:

Total Residential Development fire Flow (flow previously calculated)

FF= FF
FF= 0.00 L/min
FF= 0.00 L/s

Prop. Development Average Day Demand:

$F_{PropAvgD}$ = A x B x C
$F_{PropAvgD}$ = 67500 L/Day
$F_{PropAvgD}$ = 0.78 L/s

Total Maximum Day Demand:

$F_{MaxD} = F_{PropAvgD} \times D + G$
F_{MaxD} = 2.69 L/s

Total Peak Hour Demand:

$F_{PeakH} = F_{PropAvgD} \times E + G$
F_{PeakH} = 3.37 L/s

Total Maximum Demand: (Max Day + Fire Flow vs. Peak Hour)

$F_{Total} = F_{MaxD} + FF$
F_{Total} = 2.69 L/s
F_{Total} = 232.42 m³/d

* Max Day Factor (D) and Peak Hour Factor (E) are adjusted for population density of 3 persons per unit

D = 4.9 / 3 person/unit = 1.6
E = 7.4 / 3 person/unit = 2.47

PROJECT INFORMATION

PROJECT LOCATION:	Township of Otonabee-South Monaghan
DM WILLS PROJECT:	3491 Wallace Point Rd
DM WILLS PROJECT No.:	85162
DESIGNED BY:	S.Robinson
CHECKED BY:	J.Fleming
Date:	03-11-23

PROPOSED DOMESTIC WATER DEMAND - Commercial

CRITERIA USED: Guidelines for the Design of Water Distribution Systems - July 1985
Design Guidelines for Drinking-Water Systems - 2008

COMMERCIAL (Building Footprint):	1,480	m²	A
COMMERCIAL FLOW:	1.2	L/(footprint) m²/day	B
MAX. DAY FACTOR:	3.0		C
PEAK HOUR FACTOR:	4.5		D
OPERATING HOURS:	18.0	hr/day	E

CALCULATIONS:

Total Commercial Development fire Flow (flow previously calculated)

FF= FF
FF= 0.00 L/min
FF= 0.00 L/s

Operating Day Factor

O_{day}= E / 24
O_{day}= 0.75 days

Average Day Demand:

F_{AvgD} = A x B x O_{day}
F_{AvgD} = 1332 L/Day
F_{AvgD} = 0.02 L/s

Maximum Day Demand:

F_{MaxD} = F_{AvgD} x C
F_{MaxD} = 0.05 L/s

Peak Hour Demand:

F_{PeakH} = F_{AvgD} x F
F_{PeakH} = 0.07 L/s

Total Maximum Demand: (Max Day + Fire Flow vs. Peak Hour)

F_{Total} = F_{MaxD} +FF
F_{Total} = 0.05 L/s
F_{Total} = 4.00 m³/d

PROJECT INFORMATION

PROJECT LOCATION:	Township of Otonabee-South Monaghan
DM WILLS PROJECT:	3491 Wallace Point Rd
DM WILLS PROJECT No.:	85162
DESIGNED BY:	S.Robinson
CHECKED BY:	J.Fleming
Date:	04-11-23

PROPOSED DOMESTIC WATER DEMAND - HISTORICAL DEMAND

CRITERIA USED: Guidelines for the Design of Water Distribution Systems - July 1985
Design Guidelines for Drinking-Water Systems - 2008
Existing Historical Flows - Ontario Clean Water Agency 2020 Report

MAX. DOMESTIC WATER DEMAND:	1204	L/unit/day	A
No. OF UNITS:	**153**	units	B
MAX. HOUR FACTOR (MOE):	4.50		C

CALCULATIONS:

Total Residential Development fire Flow
(flow previously calculated)

FF= FF
FF= 0.00 L/min
FF= 0.00 L/s

Peak Hour Demand:

F_{PeakH} = A x B x C
F_{PeakH} = 9.59 L/s

Total Maximum Demand:

F_{Total} = A x B + FF
F_{Total} = 2.13 L/s
F_{Total} = 184.21 m³/d

PROJECT INFORMATION

PROJECT LOCATION: Otonabee-South Monaghan, Ontario
DM WILLS PROJECT: 3491 Wallace Point Rd
DM WILLS PROJECT No.: 85162

DESIGNED BY: S. Robinson
CHECKED BY: J. Fleming

Date: 2023-04-11

ESTIMATED SYSTEM PRESSURE DROP - PUMP STATION TO LOT 25

Pipe Flow: 9.68 m³/h 9680 kg/h
Available ΔP: 60 psi 4.13685545 bar

Pipe section	Fluid	Specific gravity rho kg/m3	Temperature (Deg c)	Dynamic viscosity mu (Pa.s)	Pipe diameter D (m)	Pipe length L (m)	Height difference H (m)	Roughness e (mm)	Relative roughness e/D	Mass flow rate Qm (kg/h)	Volumetric flow rate Qv (m3/h)	Fluid velocity u (m/s)	Reynolds Re -	Moody friction factor A	B	f
Existing	Water	1000	25	0.00089	0.2	396	-7	0.0015	0.0000075	9680	9.68	0.085668	19251.23596	7.78E+19	43523.03	0.026104
Site	Water	1000	25	0.00089	0.15	580	7	0.0015	0.00001	9680	9.68	0.15229867	25668.31461	1.37E+20	436.2138	0.024318

Pipe section	Appurtenances									Sum k	Valve and fitting pressure drop (Pa)	Straight pipe pressure drop (bar)	Δ Elevation (m)	Total Pressure Drop (bar)
	90° Elbow			45° Elbow			Gate Valve (OPEN)							
	#	k	Total K	#	k	Total K	#	k	Total K					
Existing	4	0.75	3		0.35	0	2	0.17	0.34	3.34	0.000122561	0.00189665	-0.6867	-0.68468
Site	0	0.75	0	2	0.35	0.7	2	0.17	0.34	1.04	0.000120613	0.01090499	0.6867	0.697726

Calculated Results:
System ΔP: -0.0130 bar or -0.19 psi
Residual Pressure: 4.1238 bar or 59.81 psi

Appendix C

Correspondence

G-tel Engineering Inc.

1150 Frances St 2nd Floor
London, Ontario
N5W 5N5

Planning Request For: HONI Planning (H1DPLAN),

Ticket #: 2022119292

Issued By: **G-tel Lookup Dept.**

Date: 03/14/2022

Time: 12:57:23

Requester: MITCHELL BELL

Requester's Email: mbell@dmwills.com

Requesting Company: D.M. WILLS ASSOCIATES LIMITED

Fax #:

Ticket Request Type: **Design And Planning**

Location: 3491 WALLACE POINT RD (COUNTY ROAD 21)

Locate Details:
REQUESTING MARK-UPS ONLY

Remarks:
REQUESTING MARK-UPS ONLYDEPTH UNKNOWNPETERBOROUGH

Comments To Excavator:

If you have any questions or concerns regarding your planning request, please call G-tel Engineering at 1-866-692-0208, dial 0 and request the lookup department.

CAUTION: The details provided are to be used solely for planning your design and not for excavation. You must call Ontario One Call at 1-800-400-2255 at least 1 week prior to excavation to obtain a physical locate.

See disclaimer document for further details.

Planning Request Disclaimer

This letter is to indicate that the drawing(s) and information provided is the property of Hydro One and its licensees (all rights reserved), and is to be used for planning and design purposes only solely to assist you in reviewing your project. The drawing(s) and information is not to be altered or used for any other purpose.

Please note that the attached drawings represent Hydro One distribution lines.

The attached drawing(s) and information **do not** include Hydro One transmission line information and they do **not** include privately owned/third party owned conductor.

The drawing(s) and information is **not** to be used for excavation purposes. The distribution lines and equipment locations indicated should not be relied upon for construction purposes as being exact. The exact location, configuration and/or materials used may not be accurately represented.

The drawing(s) and information are not to be relied upon by any third parties. Hydro One assumes no liability for the incorrect reliance or use of the drawing(s) or information.

You understand that you must contact Ontario One Call (1-800-400-2255) for more details for your excavation purposes, and must contact Ontario One Call to obtain locates a minimum of 5 business days prior to your excavation needs.

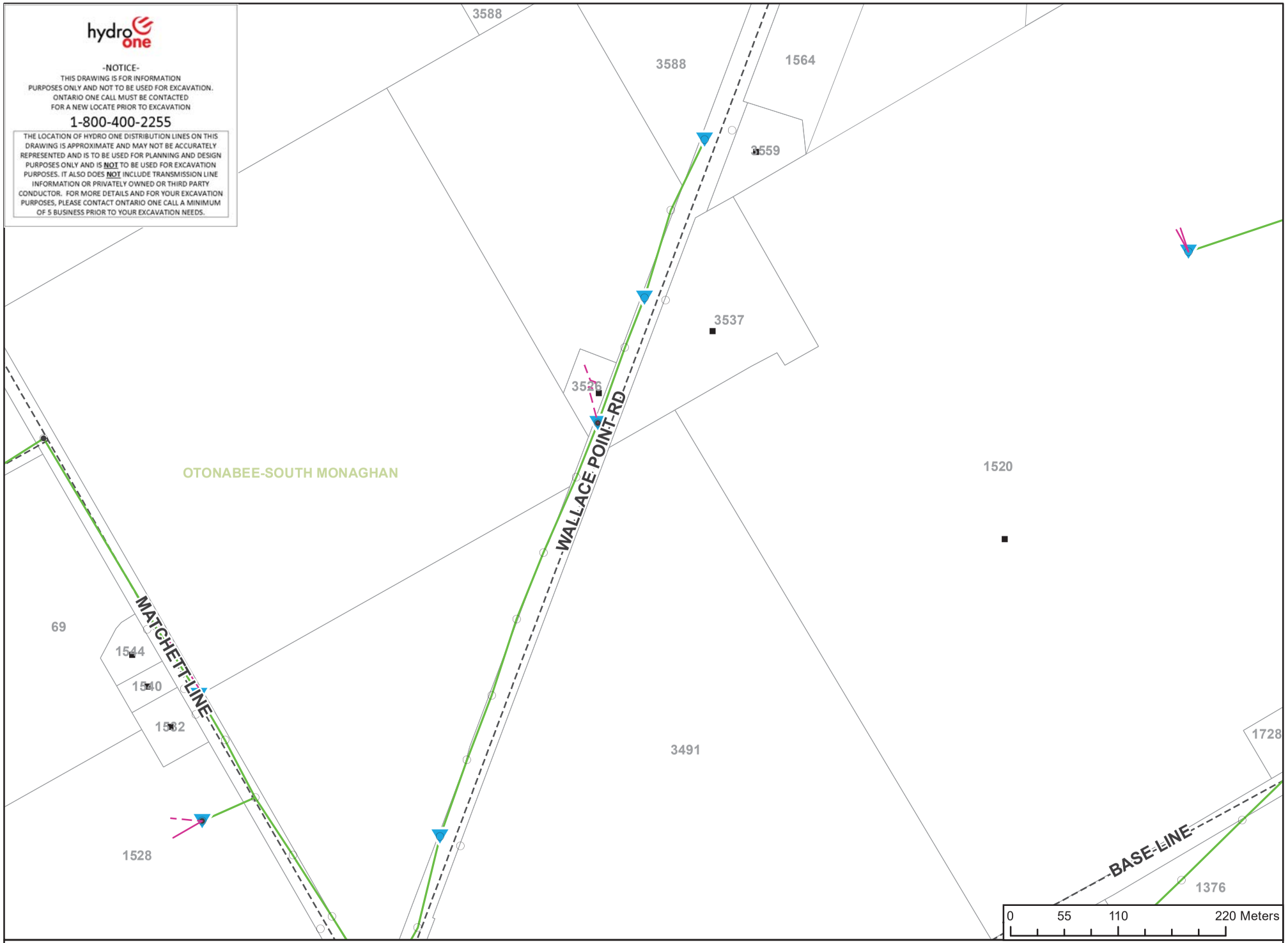
Hydro One
Distribution Damage Prevention Team

Hydro One Network

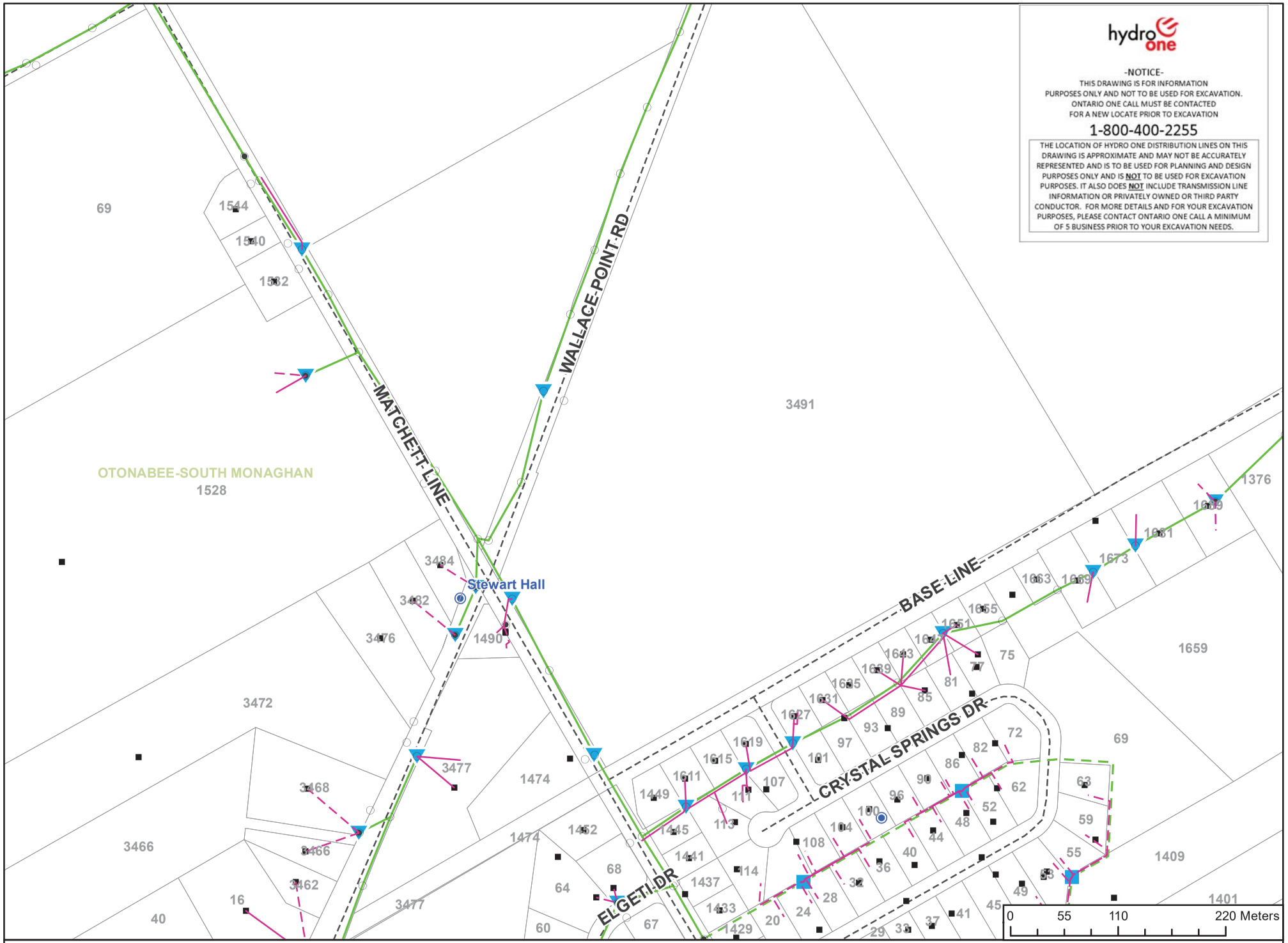
Layer name	Display	Description
PRI_UG_CONDUCTOR		Primary Underground – 2.4/4.16kV; 4.8/8.32 kV
		Primary Underground – 7.2/12.51 kV
		Primary Underground – 16.0/27.6 kV; 34.5 kV; 44 kV
		Primary Underground – All other voltage
PRI_OH_CONDUCTOR		Primary Overhead – 2.4/4.16kV; 4.8/8.32 kV
		Primary Overhead – 7.2/12.51 kV
		Primary Overhead – 16.0/27.6 kV; 44 kV
		Primary Overhead – All other voltage
SEC_UG_CONDUCTOR		Secondary Underground Conductor
SEC_OH_CONDUCTOR		Secondary Overhead Conductor
TRANSFORMER		Single Phase Underground
		Single Phase Overhead
POLES		Poles
AWITCHINGFACILITY		Structures: Pad, Vault and Other
BUSBAR		Shown same as Primary Underground
RISERS		PVC or Fiberglass type risers

Hydro One Landbase

Layer name	Display	Description
STREETS		Centre line of road
PARCELS		Polygons representing parcel



Territory:GE01 Layers:Hydro One Vintage:2/25/2022 Date:3/14/2022 12:58:55 PM



Territory:GE01 Layers:Hydro One Vintage:2/25/2022 Date:3/14/2022 12:58:36 PM

G-tel Engineering Inc.

1150 Frances St 2nd Floor
London, Ontario
N5W 5N5

Planning Request For: HONI Planning (H1DPLAN),

Ticket #: 2022119292

Issued By: **G-tel Lookup Dept.**

Date: 03/14/2022

Time: 12:57:23

Requester: MITCHELL BELL

Requester's Email: mbell@dmwills.com

Requesting Company: D.M. WILLS ASSOCIATES LIMITED

Fax #:

Ticket Request Type: **Design And Planning**

Location: 3491 WALLACE POINT RD (COUNTY ROAD 21)

Locate Details:
REQUESTING MARK-UPS ONLY

Remarks:
REQUESTING MARK-UPS ONLYDEPTH UNKNOWNPETERBOROUGH

Comments To Excavator:

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Hydro One
Distribution Damage Prevention Team

Hydro One Network

Layer name	Display	Description
PRI_UG_CONDUCTOR		Primary Underground – 2.4/4.16kV; 4.8/8.32 kV
		Primary Underground – 7.2/12.51 kV
		Primary Underground – 16.0/27.6 kV; 34.5 kV; 44 kV
		Primary Underground – All other voltage
PRI_OH_CONDUCTOR		Primary Overhead – 2.4/4.16kV; 4.8/8.32 kV
		Primary Overhead – 7.2/12.51 kV
		Primary Overhead – 16.0/27.6 kV; 44 kV
		Primary Overhead – All other voltage
SEC_UG_CONDUCTOR		Secondary Underground Conductor
SEC_OH_CONDUCTOR		Secondary Overhead Conductor
TRANSFORMER		Single Phase Underground
		Single Phase Overhead
POLES		Poles
AWITCHINGFACILITY		Structures: Pad, Vault and Other
BUSBAR		Shown same as Primary Underground
RISERS		PVC or Fiberglass type risers

Hydro One Landbase

Layer name	Display	Description
STREETS		Centre line of road
PARCELS		Polygons representing parcel

Bell Canada Municipal Operations Centre
100 Borough Drive. 3 Toronto (Ontario) Canada M1P 4W2

Application for Plant Location and Consent

Mark Up Number	28343	Date Received from Applicant	2022-03-09 07:37:24
MU Administrator Name	Anita Devar		
Mark Up Response Date	2022-03-30 09:15:00		

Applicant Information

Applicant	D.M. WILLS ASSOCIATES LIMITED		
Applicant Ref Number	2022118120		
Applicant First Name	MITCHELL	Applicant Last Name	BELL
Applicant Phone Number	7057422297.0	Extension	x288
Applicant Email	mbell@dmwills.com		

Construction Details

Project Municipality	OTONABEE-SOUTH MONAGHAN
Project Location	
Project Street	WALLACE POINT RD (COUNTY ROAD 21)
Detail Type of Construction Taking Place	Not Provided
Opportunity for Joint Build	No
Is it in Conflict	No
Conflict Identified Date	
Conflict Comments	

Group Mark Up #

Comments to Applicant

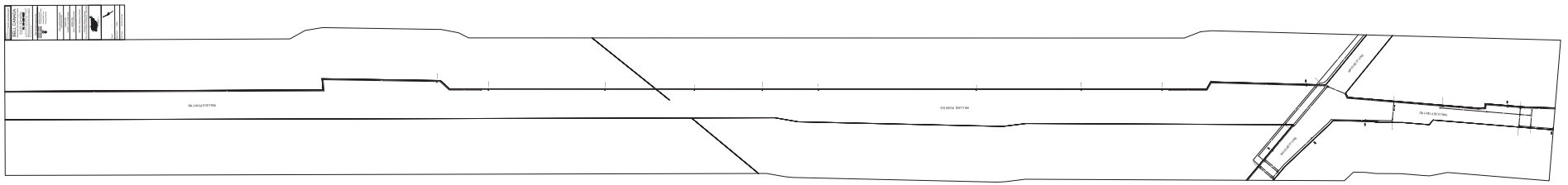
Critical Mark Up Details Pertaining Bell Plant Location

Existing and/or proposed Bell Canada underground plant are indicated on the attached plan
Not for PUCC approval - Mark up only
Caution - Bell has plant around proposed area. Tie-in measurements are a guideline only and physical verification may be required by applicant to determine the true separation between plant. Call for locates. Maintain min 0.6m horizontal clearance and min 0.3m vertical clearance when crossing Bell. Within 1m of Bell and when crossing Bell, hand dig.

PROCEDURES TO FOLLOW:

1. Request locates prior to construction 1-800-400-2255
2. If exact location and depth are critical – test pits are recommended
3. Bell Canada plant location information is approximate
4. If the location of your proposed design changes, it will be necessary to re-apply
5. Permits expire six (6) months from approval date

Signature:	**Anita Devar**	**Date:**	2022-03-30



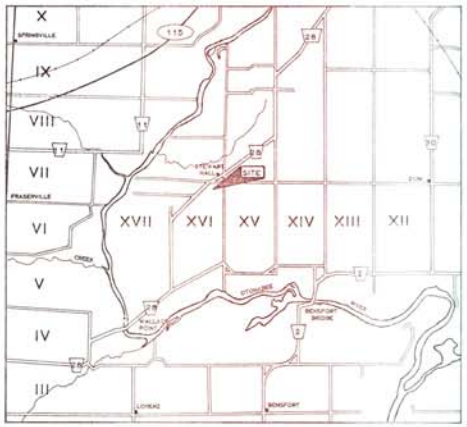
Appendix D

As-Builts

ELGETI SUBDIVISION

TOWNSHIP OF OTONABEE

PROJECT NO. 83-D-101

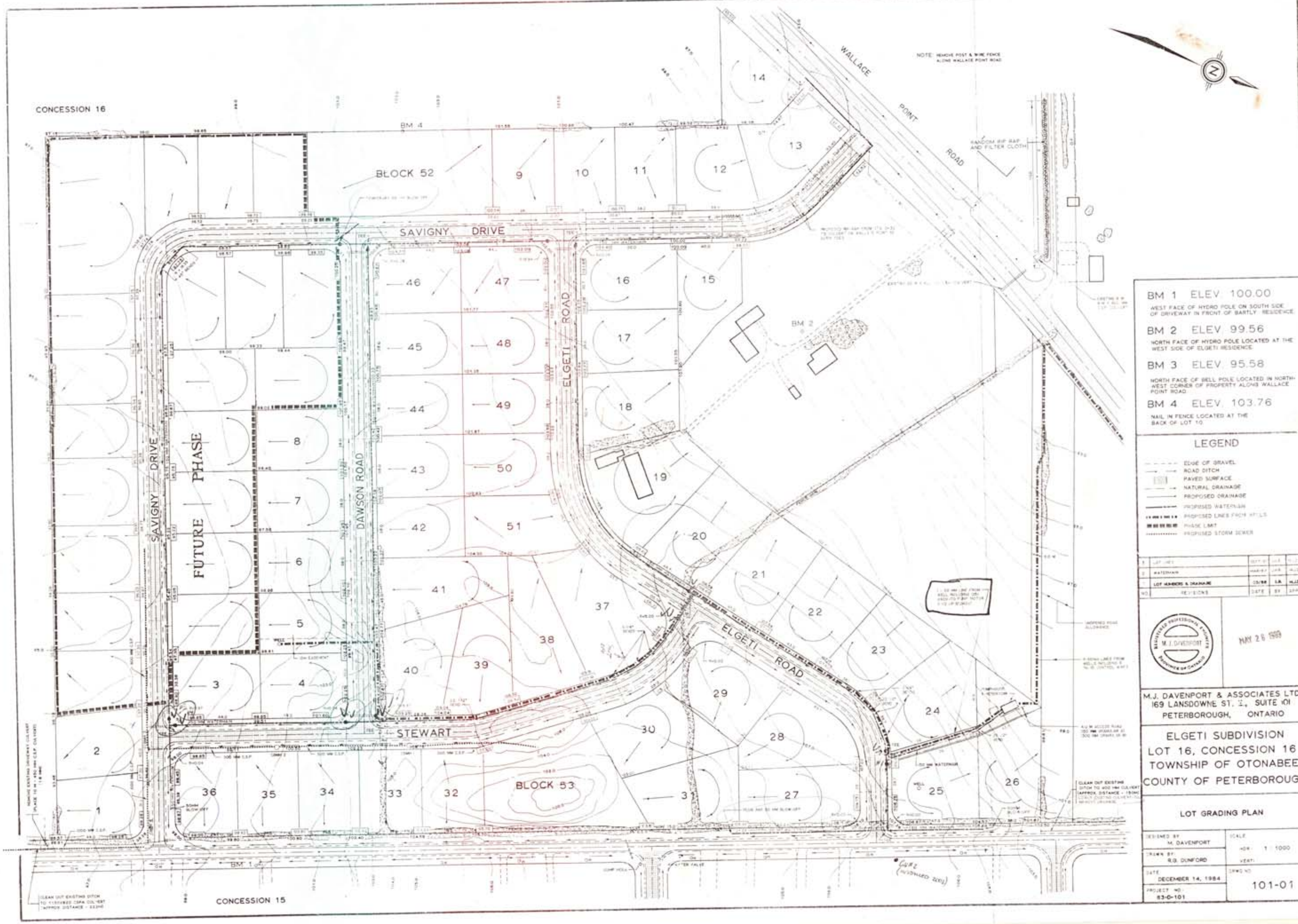


KEY PLAN
1 : 63360

MAY 26 1983

OWNER: HERMAN ELGETI
R.R. N°. 11
PETERBOROUGH, ONTARIO

ENGINEER: M.J. DAVENPORT & ASSOCIATES LTD.
169 LANSDOWNE ST. E., SUITE 10'
PETERBOROUGH, ONTARIO
K9J 7P7


BM 1 ELEV. 100.00
WEST FACE OF HYDRO POLE ON SOUTH SIDE OF DRIVEWAY IN FRONT OF BARTLY RESIDENCE
BM 2 ELEV. 99.56
NORTH FACE OF HYDRO POLE LOCATED AT THE WEST SIDE OF ELGETI RESIDENCE
BM 3 ELEV. 95.58
NORTH FACE OF BELL POLE LOCATED IN NORTH-WEST CORNER OF PROPERTY ALONG WALLACE POINT ROAD
BM 4 ELEV. 103.76
NAIL IN FENCE LOCATED AT THE BACK OF LOT 10
LEGEND
EDGE OF GRAVEL
ROAD DITCH
PAVED SURFACE
NATURAL DRAINAGE
PROPOSED DRAINAGE
PROPOSED WATERMAIN
PHASE LIMIT
PROPOSED STORM SEWER
WATERMAIN
LOT NUMBERS & DRAINAGE
REVISIONS
M.J. DAVENPORT
MAY 26 1989
M.J. DAVENPORT & ASSOCIATES LTD
169 LANSDOWNE ST. E., SUITE 101
PETERBOROUGH, ONTARIO
ELGETI SUBDIVISION
LOT 16, CONCESSION 16
TOWNSHIP OF OTONABEE
COUNTY OF PETERBOROUGH
LOT GRADING PLAN
DESIGNED BY M. DAVENPORT
DRAWN BY R.G. DUNFORD
DATE DECEMBER 14, 1984
PROJECT NO. 83-0-101
SCALE HOR. 1 : 1000
101-01
NOTE: REMOVE POST & WIRE FENCE ALONG WALLACE POINT ROAD
RANDOM RIP RAP AND FILTER CLOTH
WALLACE POINT ROAD
CONCESSION 16
CONCESSION 15
SAVIGNY DRIVE
ELGETI ROAD
DAWSON ROAD
STEWART
FUTURE PHASE
BLOCK 52
BLOCK 53
BM 1
BM 2
BM 4
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
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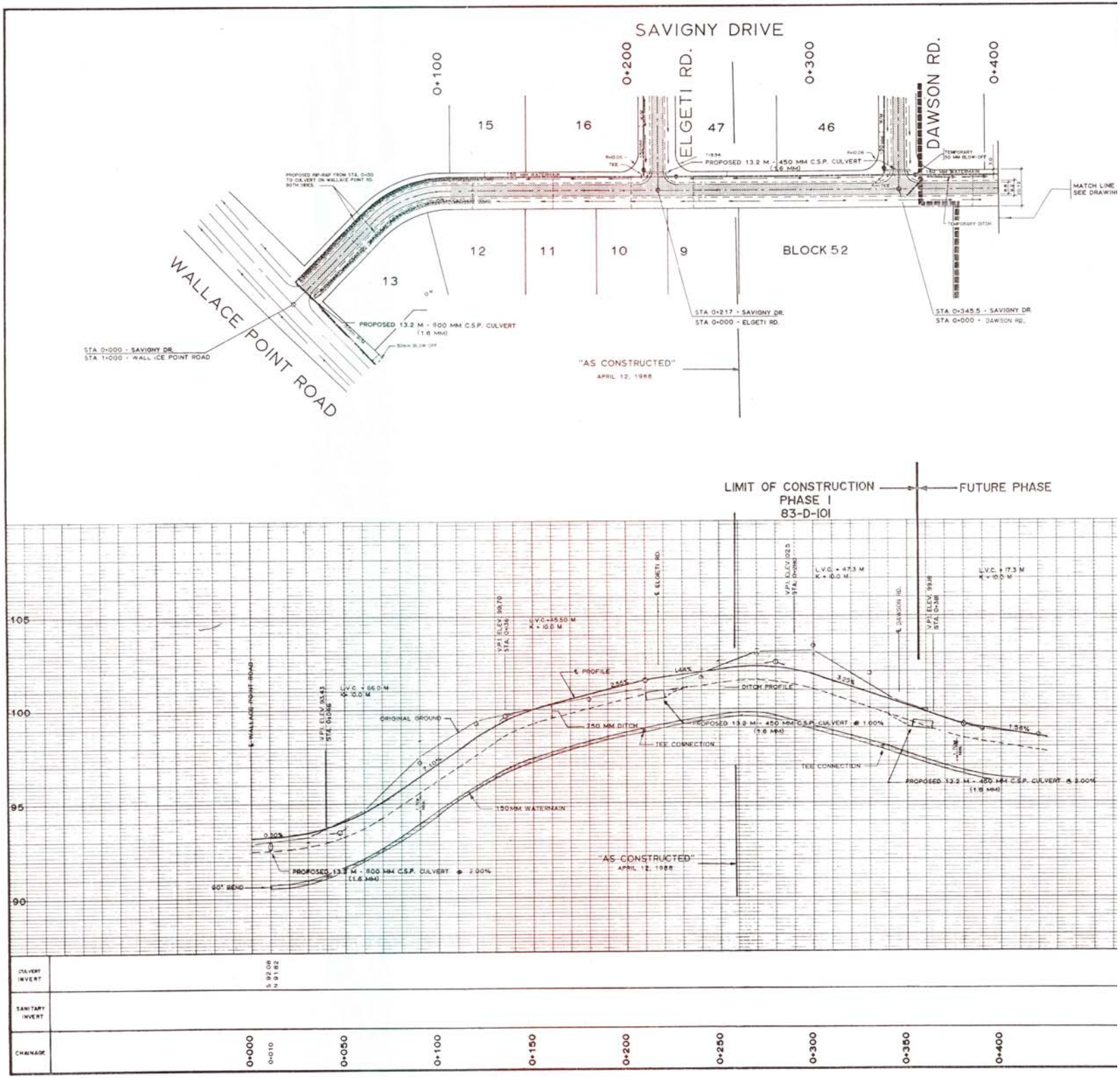
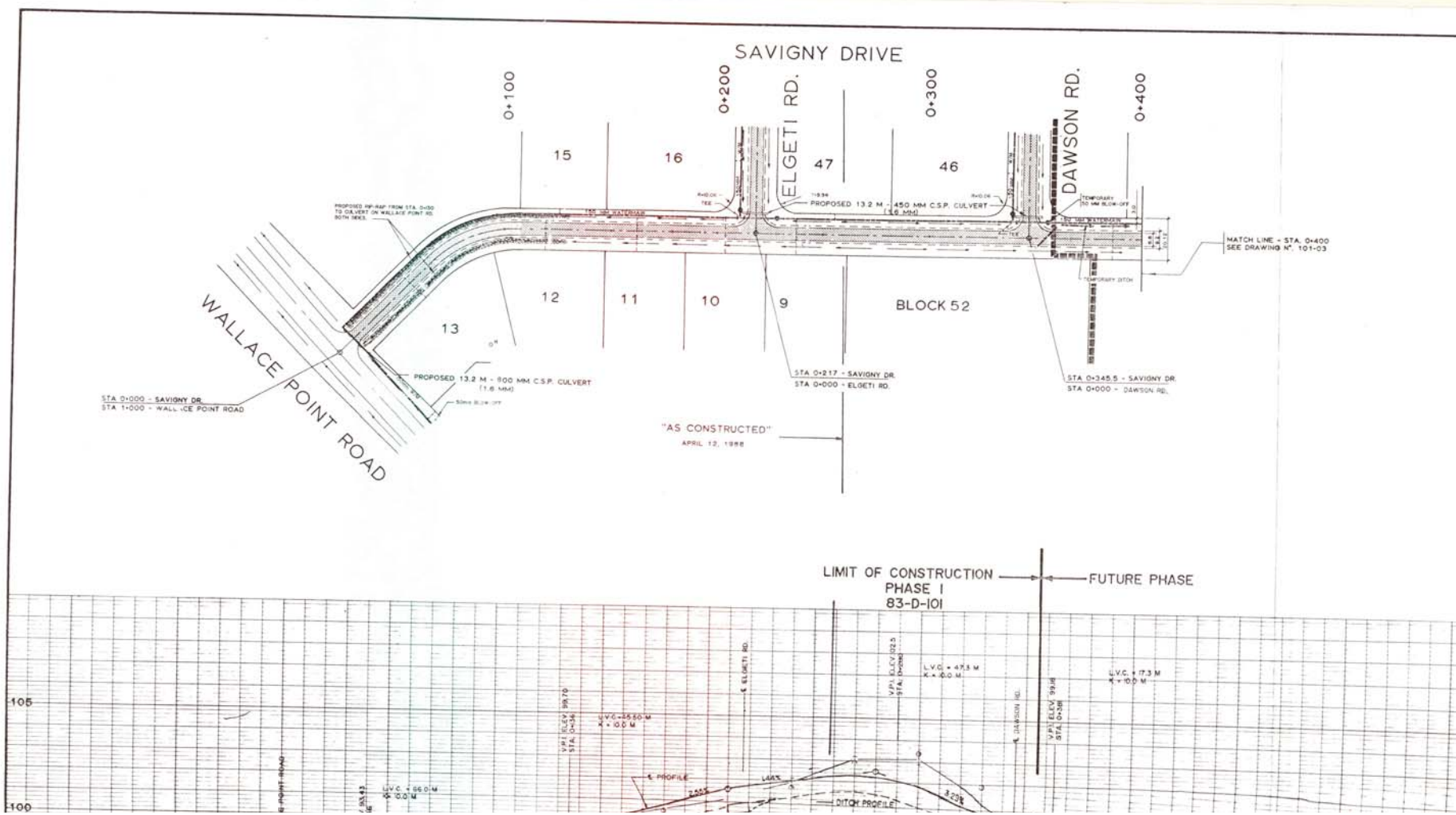
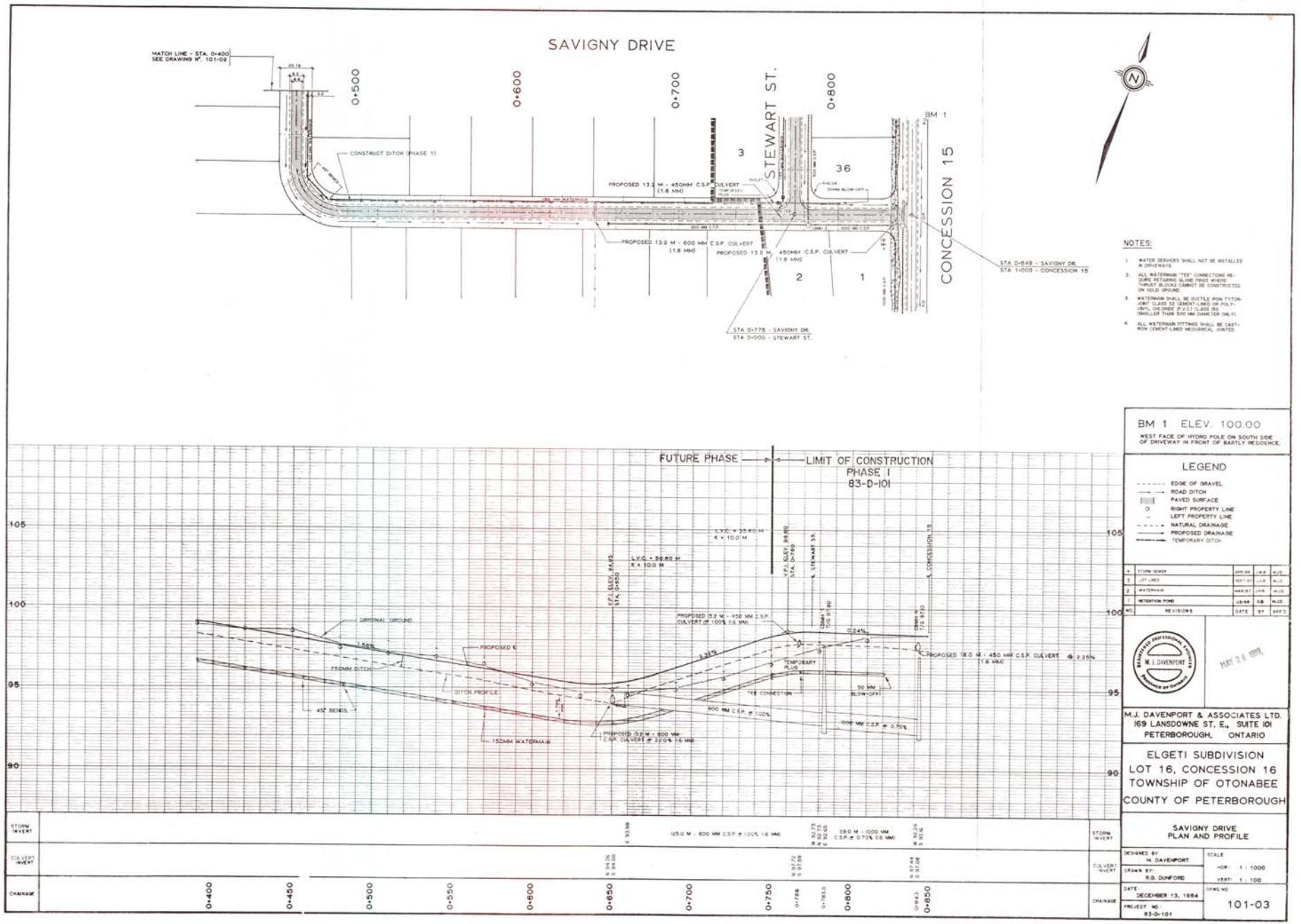
51


SAVIGNY DRIVE
0+100
0+200
0+300
0+400
ELGETI RD.
DAWSON RD.
15
16
47
46
12
11
10
9
13
BLOCK 52
WALLACE POINT ROAD
PROPOSED 13.2 M - 450 MM C.S.P. CULVERT (1.6 MM)
PROPOSED 13.2 M - 600 MM C.S.P. CULVERT (1.6 MM)
PROPOSED RIP-RAP FROM STA. 0+130 TO CULVERT ON WALLACE POINT RD. BOTH SIDES
150 MM WATERMAIN
TEMPORARY 50 MM BLOW-OFF
TEMPORARY DITCH
MATCH LINE SEE DRAWIN
STA 0+000 - SAVIGNY DR.
STA 1+000 - WALLACE POINT ROAD
STA 0+217 - SAVIGNY DR.
STA 0+000 - ELGETI RD.
STA 0+345.5 - SAVIGNY DR.
STA 0+000 - DAWSON RD.
"AS CONSTRUCTED"
APRIL 12, 1988
LIMIT OF CONSTRUCTION
PHASE I
83-D-101
FUTURE PHASE
105
100
95
90
℄ WALLACE POINT ROAD
℄ ELGETI RD.
℄ DAWSON RD.
℄ PROFILE
DITCH PROFILE
ORIGINAL GROUND
250 MM DITCH
TEE CONNECTION
150MM WATERMAIN
60° BEND
L.V.C. = 66.0 M K = 0.0 M
L.V.C. = 45.50 M K = 10.0 M
L.V.C. = 47.3 M K = 10.0 M
L.V.C. = 17.3 M K = 10.0 M
V.P.I. ELEV. 99.43 STA. 0+048
V.P.I. ELEV. 99.70 STA. 0+136
V.P.I. ELEV. 102.5 STA. 0+286
V.P.I. ELEV. 99.18 STA. 0+381
PROPOSED 13.2 M - 600 MM C.S.P. CULVERT @ 2.00% (1.6 MM)
PROPOSED 13.2 M - 450 MM C.S.P. CULVERT @ 1.00% (1.6 MM)
PROPOSED 13.2 M - 450 MM C.S.P. CULVERT @ 2.00% (1.6 MM)
CULVERT INVERT
SANITARY INVERT
CHAINAGE
0+000
0+010
0+050
0+100
0+150
0+200
0+250
0+300
0+350
0+400


SAVIGNY DRIVE
0+100
0+200
0+300
0+400
ELGETI RD.
DAWSON RD.
15
16
47
46
12
11
10
9
13
BLOCK 52
PROPOSED 13.2 M - 450 MM C.S.P. CULVERT (1.6 MM)
PROPOSED 13.2 M - 900 MM C.S.P. CULVERT (1.6 MM)
TEMPORARY 50 MM BLOW-OFF
TEMPORARY DITCH
MATCH LINE - STA. 0+400
SEE DRAWING N°. 101-03
WALLACE POINT ROAD
STA 0+000 - SAVIGNY DR.
STA 1+000 - WALLACE POINT ROAD
STA 0+217 - SAVIGNY DR.
STA 0+000 - ELGETI RD.
STA 0+345.5 - SAVIGNY DR.
STA 0+000 - DAWSON RD.
"AS CONSTRUCTED"
APRIL 12, 1988
LIMIT OF CONSTRUCTION
PHASE I
83-D-101
FUTURE PHASE
105
100
E PROFILE
DITCH PROFILE



BM 1 ELEV. 100.00

WEST FACE OF HYDRO POLE ON SOUTH SIDE OF DRIVEWAY IN FRONT OF BARTLY RESIDENCE.

LEGEND

- EDGE OF GRAVEL
- ROAD DITCH
- PAVED SURFACE
- RIGHT PROPERTY LINE
- LEFT PROPERTY LINE
- NATURAL DRAINAGE
- PROPOSED DRAINAGE
- TEMPORARY DITCH

NO.	REVISIONS	DATE	BY	APP'D
4	STORM SEWER	APR/84	J.M.R.	M.J.D.
3	LOT LINES	SEPT/83	J.M.R.	M.J.D.
2	WATERMAIN	MAR/83	J.M.R.	M.J.D.
1	RETENTION POND	05/83	D.B.	M.J.D.

REGISTERED PROFESSIONAL ENGINEER M. J. DAVENPORT Province of Ontario

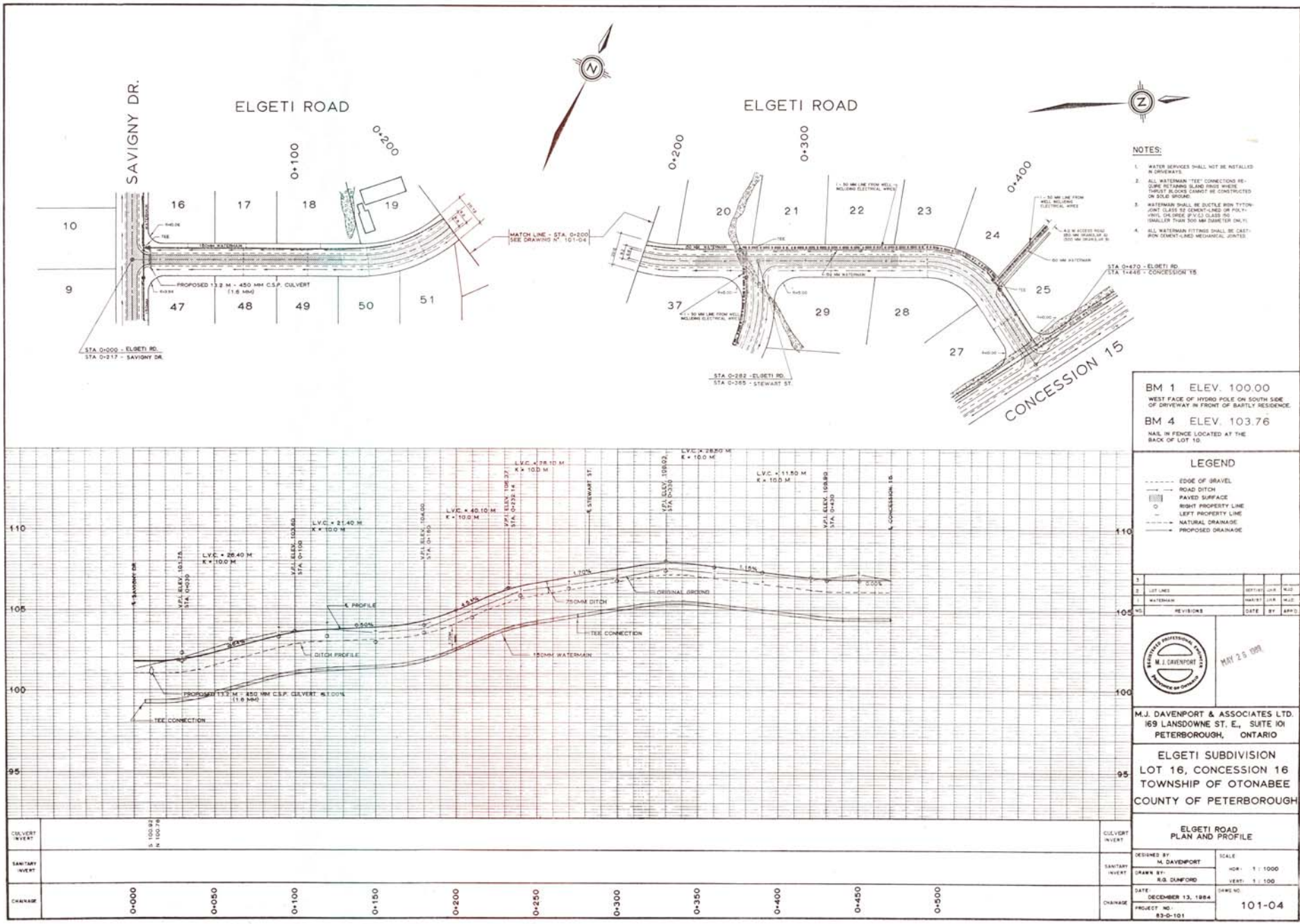
MAY 2 6 1983

M.J. DAVENPORT & ASSOCIATES LTD.
169 LANSDOWNE ST. E., SUITE 101
PETERBOROUGH, ONTARIO

ELGETI SUBDIVISION
LOT 16, CONCESSION 16
TOWNSHIP OF OTONABEE
COUNTY OF PETERBOROUGH

SAVIGNY DRIVE
PLAN AND PROFILE

DESIGNED BY: M. DAVENPORT	SCALE: HOR: 1 : 1000
DRAWN BY: R.G. DUNFORD	VERT: 1 : 100
DATE: DECEMBER 13, 1984	DWG NO. 101-03
PROJECT NO. 83-D-101	



BM 1 ELEV. 100.00
WEST FACE OF HYDRO POLE ON SOUTH SIDE OF DRIVEWAY IN FRONT OF BARTLY RESIDENCE.

BM 4 ELEV. 103.76
NAIL IN FENCE LOCATED AT THE BACK OF LOT 10.

LEGEND

- EDGE OF GRAVEL
- ROAD DITCH
- PAVED SURFACE
- RIGHT PROPERTY LINE
- LEFT PROPERTY LINE
- NATURAL DRAINAGE
- PROPOSED DRAINAGE

NO.	REVISIONS	DATE	BY	APP'D
3				
2	LOT LINES	SEPT/87	J.H.R.	M.J.D.
1	WATERMAIN	MAR/87	J.H.R.	M.J.D.

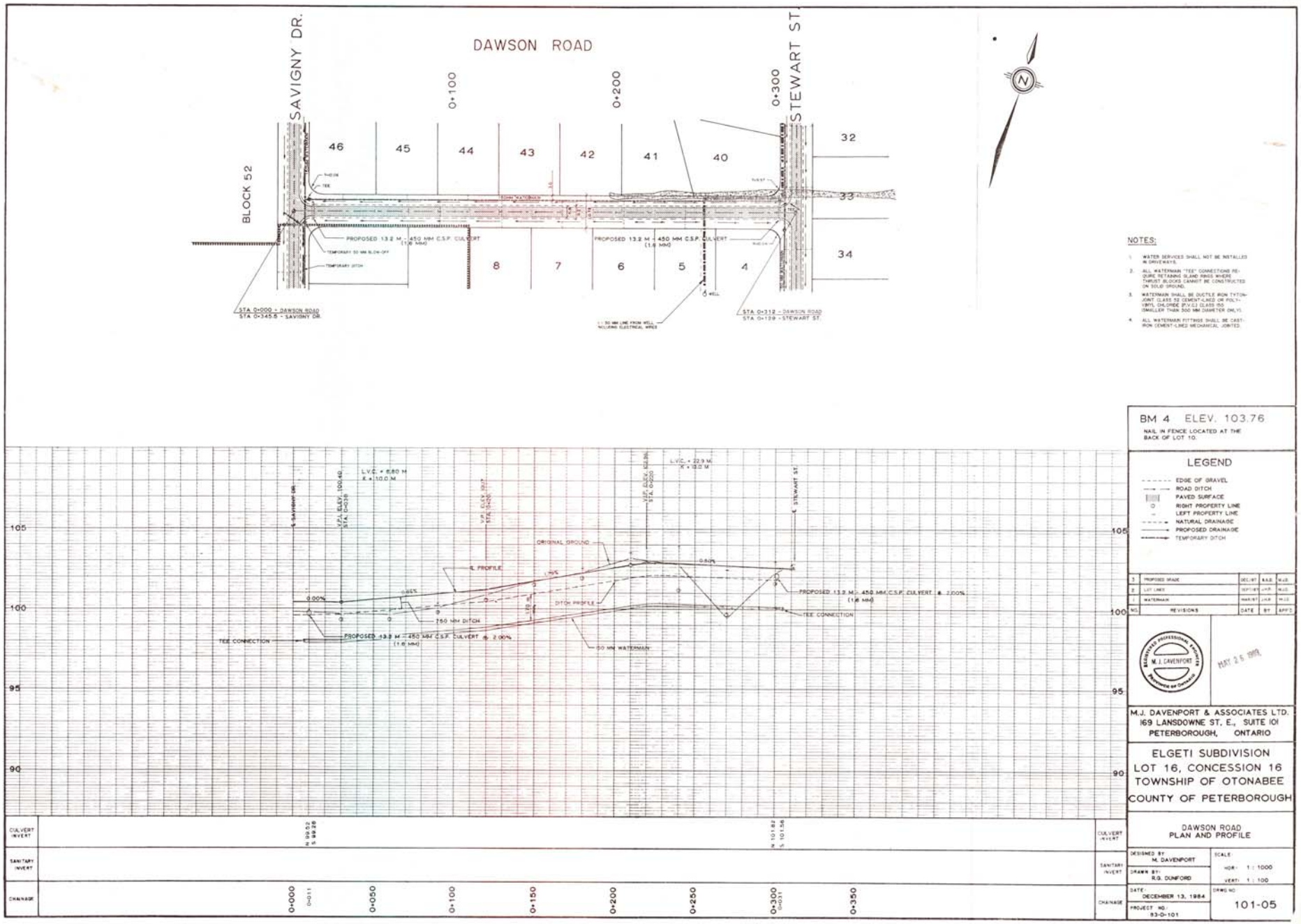
REGISTERED PROFESSIONAL ENGINEER PROVINCE OF ONTARIO
M. J. DAVENPORT
MAY 2 5 1989

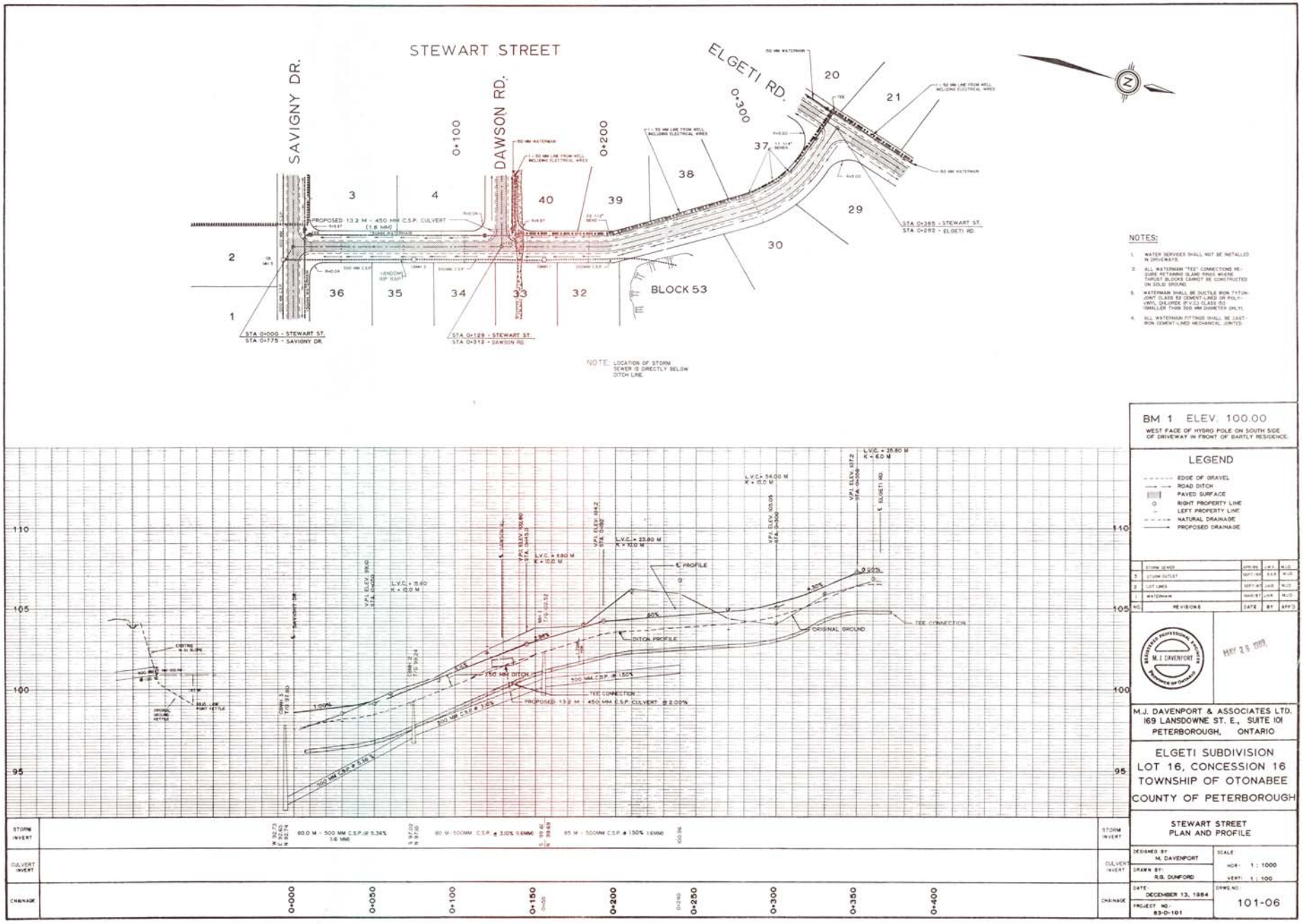
M.J. DAVENPORT & ASSOCIATES LTD.
169 LANSDOWNE ST. E., SUITE 101
PETERBOROUGH, ONTARIO

ELGETI SUBDIVISION
LOT 16, CONCESSION 16
TOWNSHIP OF OTONABEE
COUNTY OF PETERBOROUGH

ELGETI ROAD
PLAN AND PROFILE

DESIGNED BY: M. DAVENPORT	SCALE: HOR. 1 : 1000
DRAWN BY: R.G. DUNFORD	VERT. 1 : 100
DATE: DECEMBER 13, 1984	DRWG NO. 101-04
PROJECT NO.: 83-O-101	


DAWSON ROAD
SAVIGNY DR.
STEWART ST.
BLOCK 52
0+100
0+200
0+300
46
45
44
43
42
41
40
32
33
34
8
7
6
5
4
PROPOSED 13.2 M - 450 MM C.S.P. CULVERT (1.6 MM)
PROPOSED 13.2 M - 450 MM C.S.P. CULVERT (1.6 MM)
TEMPORARY 50 MM BLOW-OFF
TEMPORARY DITCH
STA 0+000 - DAWSON ROAD
STA 0+345.5 - SAVIGNY DR.
STA 0+312 - DAWSON ROAD
STA 0+139 - STEWART ST.
50 MM LINE FROM WELL HOUSING ELECTRICAL WIRES
WELL
N
NOTES:
1. WATER SERVICES SHALL NOT BE INSTALLED IN DRIVEWAYS.
2. ALL WATERMAIN "TEE" CONNECTIONS REQUIRE RETAINING GLAND RINGS WHERE THRUST BLOCKS CANNOT BE CONSTRUCTED ON SOLID GROUND.
3. WATERMAIN SHALL BE DUCTILE IRON TYTON-JOINT CLASS 52 CEMENT-LINED OR POLY-VINYL CHLORIDE (P.V.C.) CLASS 150 (SMALLER THAN 300 MM DIAMETER DR.18).
4. ALL WATERMAIN FITTINGS SHALL BE CAST-IRON CEMENT-LINED MECHANICAL JOINTED.
L.V.C. = 8.80 M
X = 10.0 M.
V.P.I. ELEV. 100.40
STA. 0+036
V.P.I. ELEV. 99.17
STA. 0+400
V.P.I. ELEV. 98.94
STA. 0+550
L.V.C. = 22.9 M.
X = 13.2 M.
S. SAVIGNY DR.
S. STEWART ST.
ORIGINAL GROUND
R.L. PROFILE
DITCH PROFILE
0.66%
1.7%
0.80%
0.00%
150 MM DITCH
PROPOSED 13.2 M - 450 MM C.S.P. CULVERT @ 2.00% (1.6 MM)
TEE CONNECTION
TEE CONNECTION
PROPOSED 13.2 M - 450 MM C.S.P. CULVERT @ 2.00% (1.6 MM)
50 MM WATERMAIN
105
100
95
90
CULVERT INVERT
SANITARY INVERT
CHAINAGE
N 99.52
S 99.28
N 101.82
S 101.58
0+000
0+050
0+100
0+150
0+200
0+250
0+300
0+350
BM 4 ELEV. 103.76
NAIL IN FENCE LOCATED AT THE BACK OF LOT 10.
LEGEND
EDGE OF GRAVEL
ROAD DITCH
PAVED SURFACE
RIGHT PROPERTY LINE
LEFT PROPERTY LINE
NATURAL DRAINAGE
PROPOSED DRAINAGE
TEMPORARY DITCH
3 PROPOSED MAINS DEC./87 M.J.D.
2 LOT LINES SEPT./87 M.J.D.
1 WATERMAIN MAR./87 M.J.D.
NO. REVISIONS DATE BY APP'D
REGISTERED PROFESSIONAL ENGINEER M.J. DAVENPORT PROVINCE OF ONTARIO
MAY 26 1988
M.J. DAVENPORT & ASSOCIATES LTD.
169 LANSDOWNE ST. E., SUITE 101
PETERBOROUGH, ONTARIO
ELGETI SUBDIVISION
LOT 16, CONCESSION 16
TOWNSHIP OF OTONABEE
COUNTY OF PETERBOROUGH
DAWSON ROAD
PLAN AND PROFILE
DESIGNED BY: M. DAVENPORT
DRAWN BY: R.G. DUNFORD
SCALE: HOR: 1 : 1000 VERT: 1 : 100
DATE: DECEMBER 13, 1984
PROJECT NO.: 83-O-101
DWG NO. 101-05



BM 1 ELEV. 100.00

WEST FACE OF HYDRO POLE ON SOUTH SIDE OF DRIVEWAY IN FRONT OF BARTLY RESIDENCE.

LEGEND

- EDGE OF GRAVEL
- ROAD DITCH
- PAVED SURFACE
- RIGHT PROPERTY LINE
- LEFT PROPERTY LINE
- NATURAL DRAINAGE
- PROPOSED DRAINAGE

NO.	REVISIONS	DATE	BY	APP'D
3	STORM SEWER	APR. 85	J.R.V.	M.J.D.
2	STORM OUTLET	SEPT. 84	R.G.D.	M.J.D.
1	LOT LINES	SEPT. 84	J.R.D.	M.J.D.
	WATERMAIN	MAR. 84	J.R.D.	M.J.D.

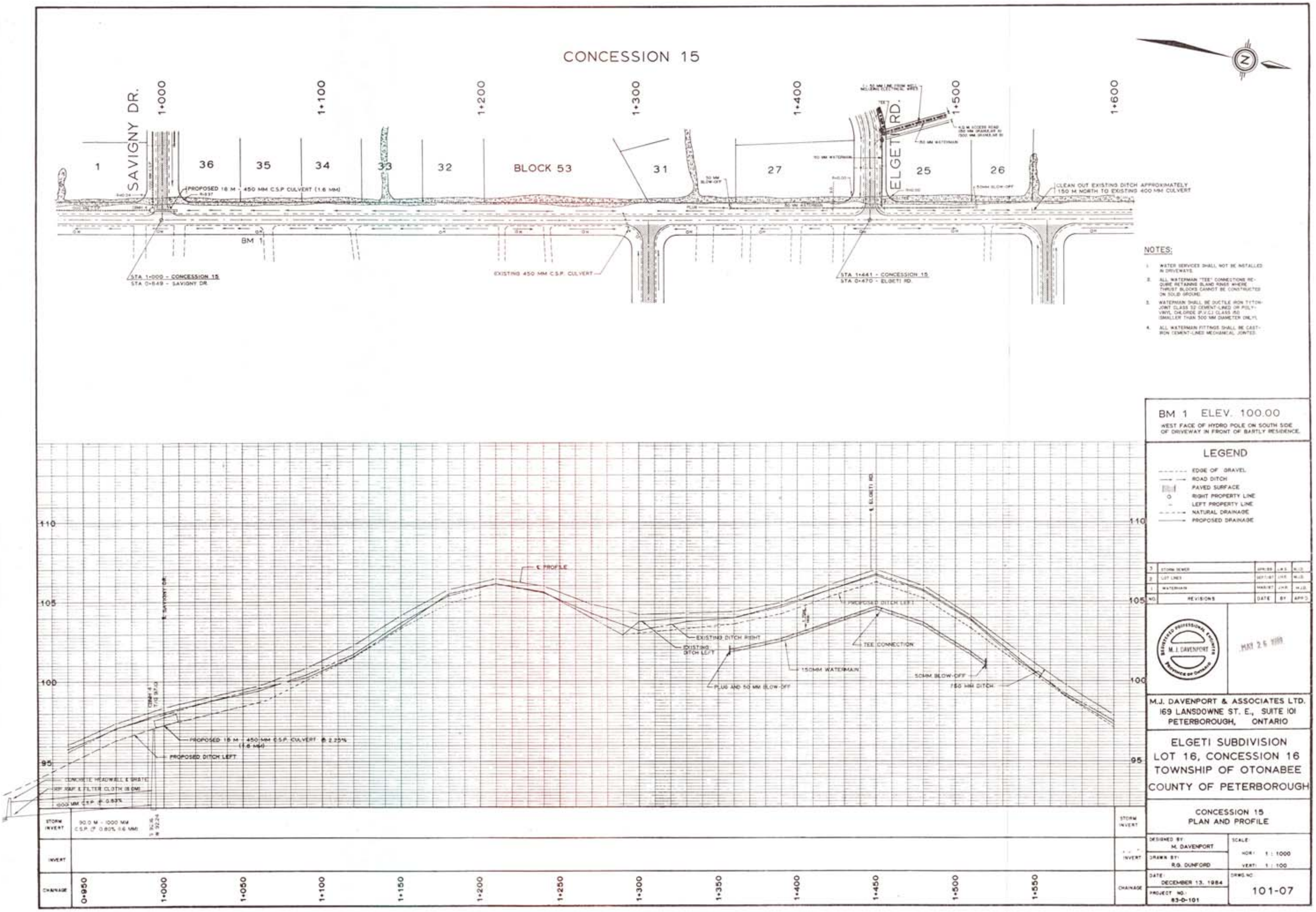
REGISTERED PROFESSIONAL ENGINEER PROVINCE OF ONTARIO
M. J. DAVENPORT
MAY 28 1985

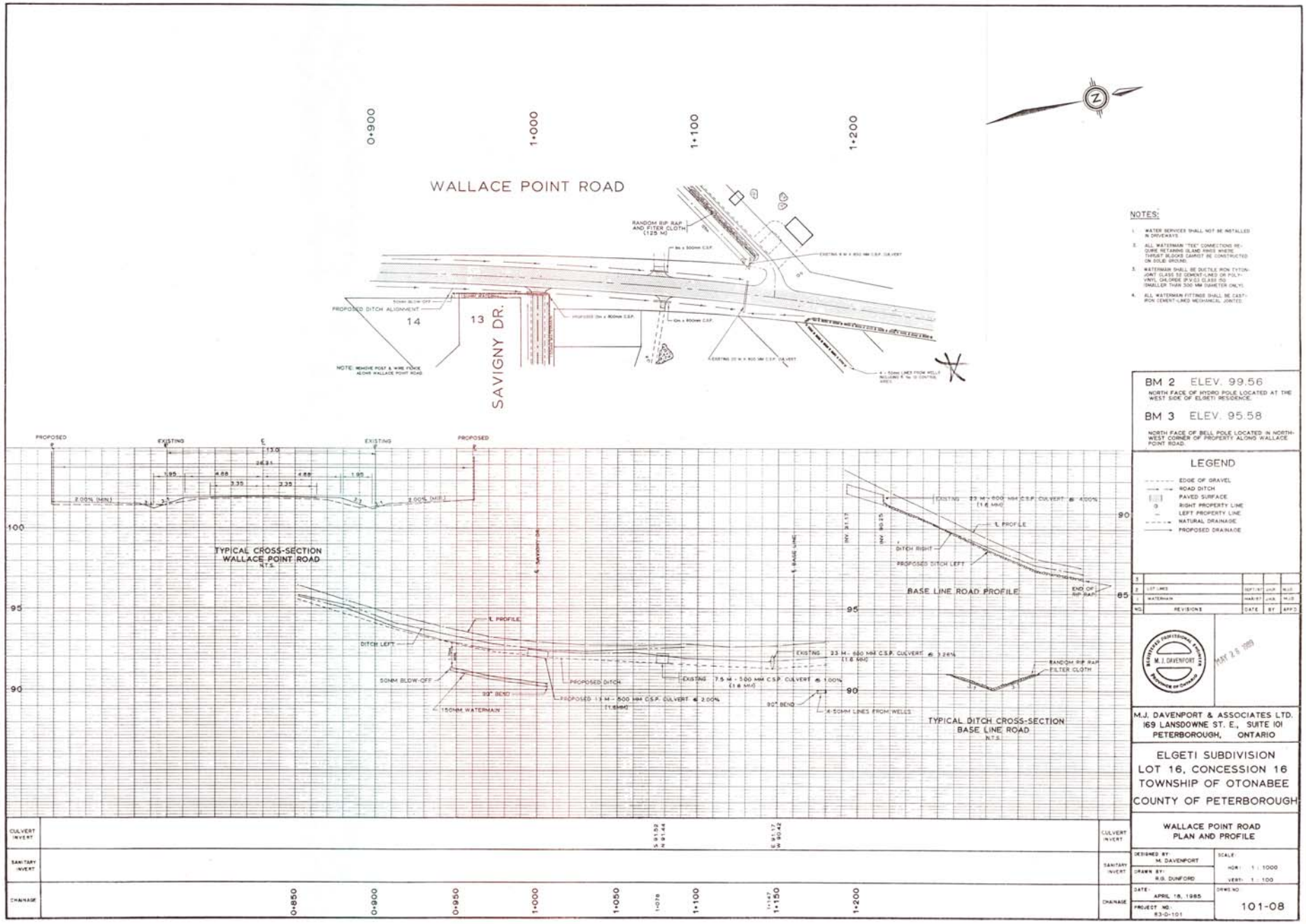
M.J. DAVENPORT & ASSOCIATES LTD.
169 LANSDOWNE ST. E., SUITE 101
PETERBOROUGH, ONTARIO

ELGETI SUBDIVISION
LOT 16, CONCESSION 16
TOWNSHIP OF OTONABEE
COUNTY OF PETERBOROUGH

STEWART STREET
PLAN AND PROFILE

DESIGNED BY: M. DAVENPORT
DRAWN BY: R.G. DUNFORD
SCALE: HOR: 1 : 1000 VERT: 1 : 100
DATE: DECEMBER 13, 1984
PROJECT NO.: 83-0-101
DRWG NO.: 101-06


CONCESSION 15
SAVIGNY DR.
ELGETI RD.
1+000
1+100
1+200
1+300
1+400
1+500
1+600
1
36
35
34
33
32
BLOCK 53
31
27
25
26
PROPOSED 18 M - 450 MM C.S.P. CULVERT (1.6 MM)
CLEAN OUT EXISTING DITCH APPROXIMATELY 150 M NORTH TO EXISTING 400 MM CULVERT
BM 1
STA 1+000 - CONCESSION 15
STA 0+649 - SAVIGNY DR.
EXISTING 450 MM C.S.P. CULVERT
STA 1+441 - CONCESSION 15
STA 0+470 - ELGETI RD.
NOTES:
1. WATER SERVICES SHALL NOT BE INSTALLED IN DRIVEWAYS.
2. ALL WATERMAIN "TEE" CONNECTIONS REQUIRE RETAINING GLAND RINGS WHERE THRUST BLOCKS CANNOT BE CONSTRUCTED ON SOLID GROUND.
3. WATERMAIN SHALL BE DUCTILE IRON TYTON-JOINT CLASS 52 CEMENT-LINED OR POLYVINYL CHLORIDE (P.V.C.) CLASS 150 (SMALLER THAN 300 MM DIAMETER ONLY).
4. ALL WATERMAIN FITTINGS SHALL BE CAST-IRON CEMENT-LINED MECHANICAL JOINTED.
BM 1 ELEV. 100.00
WEST FACE OF HYDRO POLE ON SOUTH SIDE OF DRIVEWAY IN FRONT OF BARTLY RESIDENCE.
LEGEND
EDGE OF GRAVEL
ROAD DITCH
PAVED SURFACE
RIGHT PROPERTY LINE
LEFT PROPERTY LINE
NATURAL DRAINAGE
PROPOSED DRAINAGE
110
105
100
95
℄ PROFILE
℄ SAVIGNY DR.
℄ ELGETI RD.
PROPOSED DITCH LEFT
EXISTING DITCH RIGHT
EXISTING DITCH LEFT
TEE CONNECTION
150MM WATERMAIN
50MM BLOW-OFF
750 MM DITCH
PLUG AND 50 MM BLOW-OFF
PROPOSED 18 M - 450 MM C.S.P. CULVERT @ 2.25% (1.6 MM)
CONCRETE HEADWALL & GRATE
RIP RAP & FILTER CLOTH (8.0M)
1000 MM C.S.P. @ 0.83%
STORM INVERT
90.0 M - 1000 MM C.S.P. @ 0.80% (1.6 MM)
INVERT
CHAINAGE
0+950
1+050
1+150
1+250
1+350
1+450
1+550
3 STORM SEWER
2 LOT LINES
1 WATERMAIN
NO. REVISIONS DATE BY APP'D
M. J. DAVENPORT
MAY 26 1999
M.J. DAVENPORT & ASSOCIATES LTD.
169 LANSDOWNE ST. E., SUITE 101
PETERBOROUGH, ONTARIO
ELGETI SUBDIVISION
LOT 16, CONCESSION 16
TOWNSHIP OF OTONABEE
COUNTY OF PETERBOROUGH
CONCESSION 15
PLAN AND PROFILE
DESIGNED BY: M. DAVENPORT
DRAWN BY: R.G. DUNFORD
DATE: DECEMBER 13, 1984
PROJECT NO: 83-0-101
SCALE: HOR: 1 : 1000 VERT: 1 : 100
DRWG NO: 101-07



NOTES:

1. WATER SERVICES SHALL NOT BE INSTALLED IN DRIVEWAYS.
2. ALL WATERMAIN "TEE" CONNECTIONS REQUIRE RETAINING ISLAND WHICH WHERE THRUST BLOCKS CANNOT BE CONSTRUCTED ON SOLID GROUND.
3. WATERMAIN SHALL BE DUCTILE IRON TYTON-JOINT CLASS 52 CEMENT-LINED OR POLY-VINYL CHLORIDE (P.V.C.) CLASS 150 (SMALLER THAN 300 MM DIAMETER ONLY).
4. ALL WATERMAIN FITTINGS SHALL BE CAST-IRON CEMENT-LINED MECHANICAL JOINTED.

BM 2 ELEV. 99.56

NORTH FACE OF HYDRO POLE LOCATED AT THE WEST SIDE OF ELGETI RESIDENCE.

BM 3 ELEV. 95.58

NORTH FACE OF BELL POLE LOCATED IN NORTH-WEST CORNER OF PROPERTY ALONG WALLACE POINT ROAD.

LEGEND

- EDGE OF GRAVEL
- ROAD DITCH
- PAVED SURFACE
- RIGHT PROPERTY LINE
- LEFT PROPERTY LINE
- NATURAL DRAINAGE
- PROPOSED DRAINAGE

NO.	REVISIONS	DATE	BY	APP'D
3				
2	LOT LINES	SEPT/87	JNR	M.J.D
1	WATERMAIN	MAR/87	JNR	M.J.D

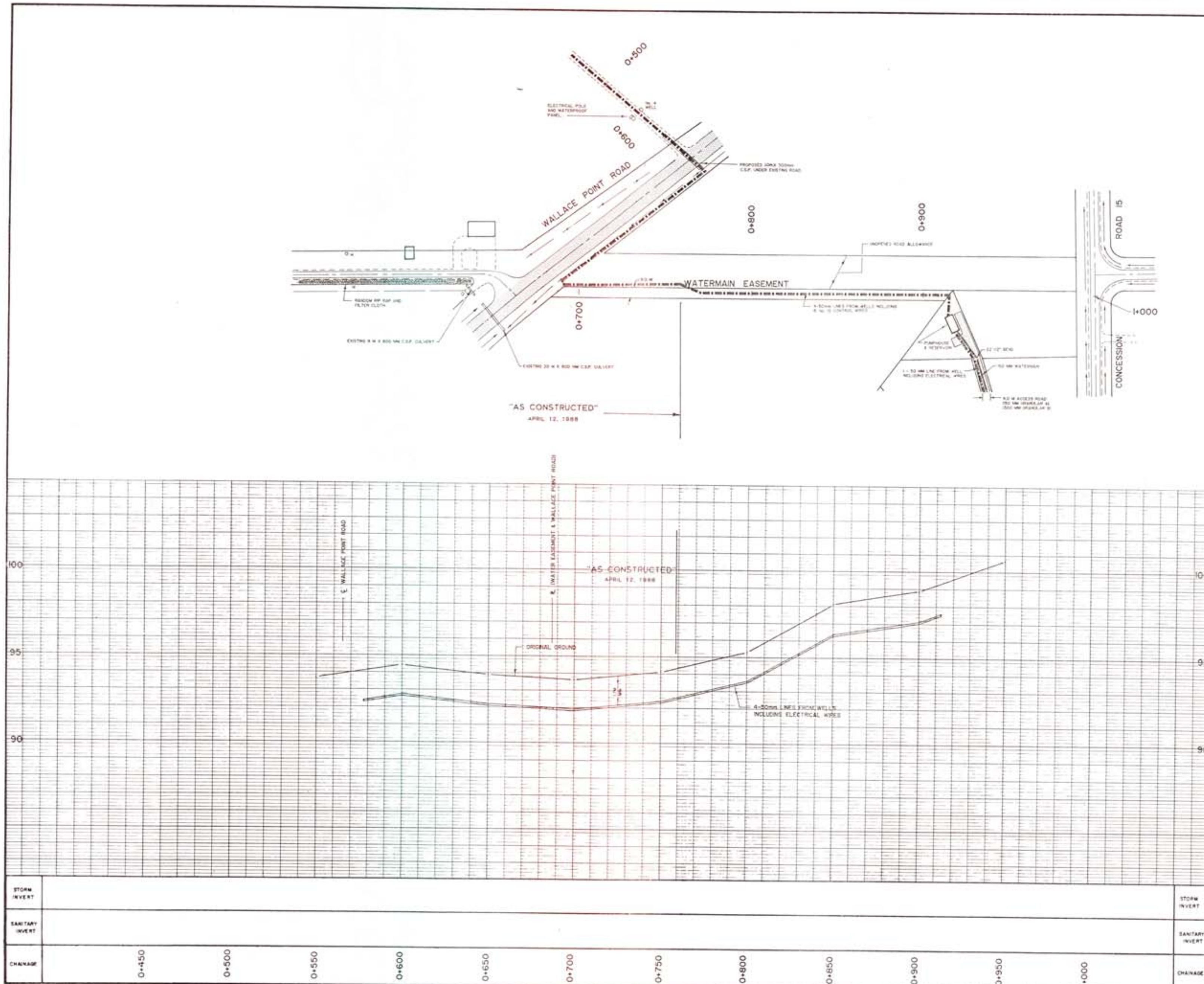
REGISTERED PROFESSIONAL ENGINEER PROVINCE OF ONTARIO
M. J. DAVENPORT
MAY 2 5 1988

M.J. DAVENPORT & ASSOCIATES LTD.
169 LANSDOWNE ST. E., SUITE 101
PETERBOROUGH, ONTARIO

ELGETI SUBDIVISION
LOT 16, CONCESSION 16
TOWNSHIP OF OTONABEE
COUNTY OF PETERBOROUGH

WALLACE POINT ROAD
PLAN AND PROFILE

DESIGNED BY: M. DAVENPORT
DRAWN BY: R.G. DUNFORD
SCALE: HOR: 1 : 1000 VERT: 1 : 100
DATE: APRIL 15, 1985
PROJECT NO.: 83-0-101
DRWG NO. 101-08



NOTES:

1. WATER SERVICES SHALL NOT BE INSTALLED IN DRIVEWAYS.
2. ALL WATERMAIN "TEE" CONNECTIONS REQUIRE RETAINING GLAND RINGS WHERE THRUST BLOCKS CANNOT BE CONSTRUCTED ON SOLID GROUND.
3. WATERMAIN SHALL BE DUCTILE IRON TYTON JOINT CLASS 52 CEMENT-LINED OR POLYVINYL CHLORIDE P.V.C. CLASS 150 (SMALLER THAN 300 MM DIAMETER ONLY).
4. ALL WATERMAIN FITTINGS SHALL BE CAST-IRON CEMENT-LINED MECHANICAL JOINTED.

BM 1 ELEV. 100.000

WEST FACE OF HYDRO POLE ON SOUTH SIDE OF DRIVEWAY IN FRONT OF BARTLY RESIDENCE.

BM 2 ELEV. 99.56

NORTH FACE OF HYDRO POLE LOCATED AT THE WEST SIDE OF ELGETI RESIDENCE.

BM 3 ELEV. 95.58

NORTH FACE OF BELL POLE LOCATED IN NORTH-WEST CORNER OF PROPERTY ALONG WALLACE POINT ROAD.

BM 4 ELEV. 103.76

NAIL IN FENCE LOCATED AT THE BACK OF LOT 10.

LEGEND

- EDGE OF GRAVEL
- ROAD DITCH
- PAVED SURFACE
- NATURAL DRAINAGE
- PROPOSED DRAINAGE
- PROPOSED WATERMAIN
- PROPOSED LINES FROM WELLS

NO.	REVISIONS	DATE	BY	APP'D
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2				
1	"AS CONSTRUCTED"	APR 88	LAB	HJD

M. J. DAVENPORT

MAY 26 1989

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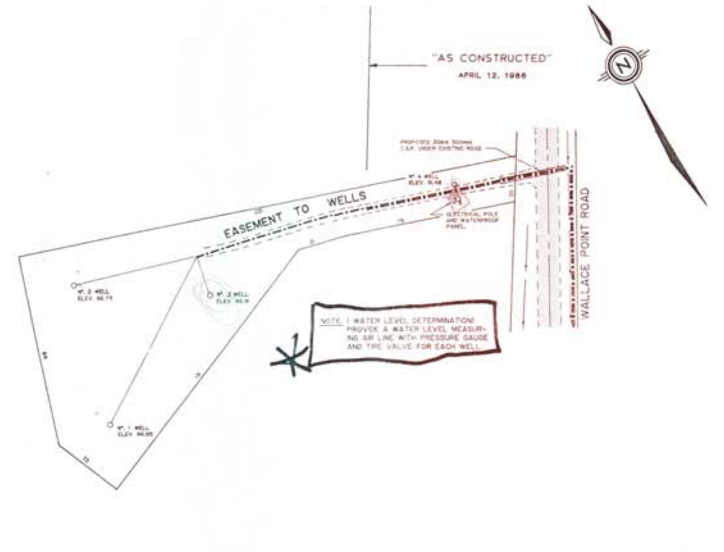
169 LANSDOWNE ST. E., SUITE 101
PETERBOROUGH, ONTARIO

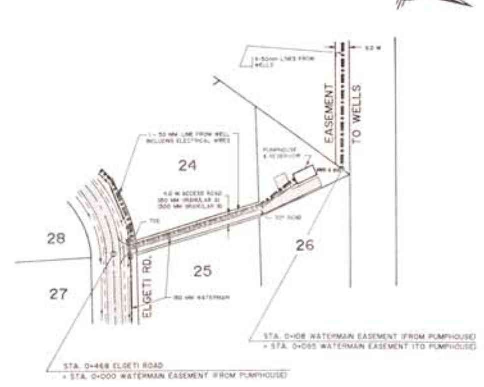
ELGETI SUBDIVISION
LOT 16, CONCESSION 16
TOWNSHIP OF OTONABEE
COUNTY OF PETERBOROUGH

WATERMAIN EASEMENT
PLAN AND PROFILE

DESIGNED BY: M. DAVENPORT	SCALE: HOR: 1:1000 VERT:
DRAWN BY: J. RUTLEDGE	
DATE: SEPTEMBER, 1987	DRWG NO.: 101-09
PROJECT NO.: 83-0-101	



EASEMENT TO WELLS



EASEMENT TO PUMPHOUSE

NOTES:

1. WATER SERVICES SHALL NOT BE INSTALLED IN DRIVEWAYS.
2. ALL WATERMAIN "TEE" CONNECTIONS REQUIRE RETAINING GLAND RINGS WHERE THRUST BLOCKS CANNOT BE CONSTRUCTED ON SOLID GROUND.
3. WATERMAIN SHALL BE DUCTILE IRON TYTON-JOINT CLASS 52 CEMENT-LINED OR POLYVINYL CHLORIDE (P.V.C.) CLASS 150 (SMALLER THAN 300 MM DIAMETER ONLY).
4. ALL WATERMAIN FITTINGS SHALL BE CAST-IRON CEMENT-LINED MECHANICAL JOINTED.

BM 1 ELEV. 100.000
WEST FACE OF HYDRO POLE ON SOUTH SIDE OF DRIVEWAY IN FRONT OF BARTLY RESIDENCE.

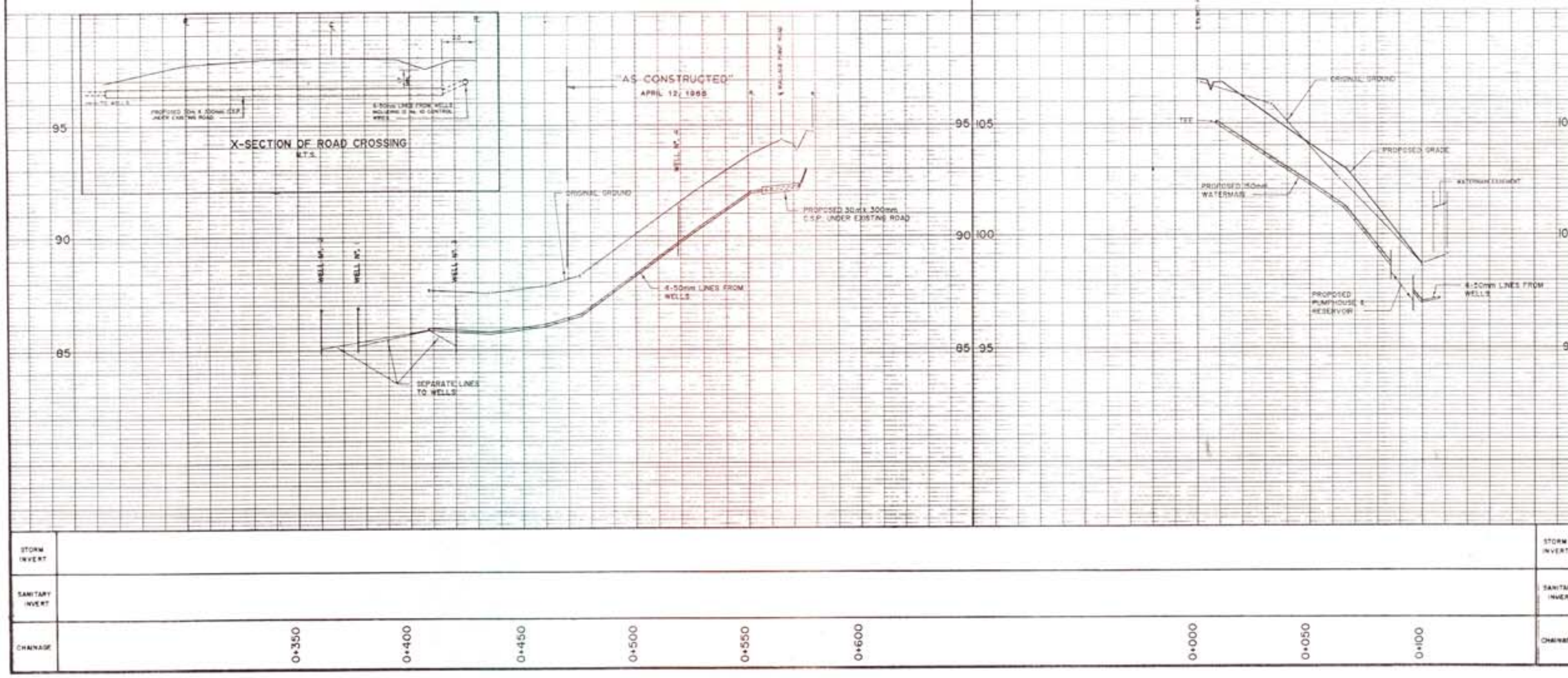
BM 2 ELEV. 99.56
NORTH FACE OF HYDRO POLE LOCATED AT THE WEST SIDE OF ELGETI RESIDENCE.

BM 3 ELEV. 95.58
NORTH FACE OF BELL POLE LOCATED IN NORTH-WEST CORNER OF PROPERTY ALONG WALLACE POINT ROAD.

BM 4 ELEV. 103.76
NAIL IN FENCE LOCATED AT THE BACK OF LOT 10.

LEGEND

- EDGE OF GRAVEL
- ROAD DITCH
- PAVED SURFACE
- NATURAL DRAINAGE
- PROPOSED DRAINAGE
- PROPOSED WATERMAIN
- PROPOSED LINES FROM WELLS



NO.	REVISIONS	DATE	BY	APP'D
3				
2	AS CONSTRUCTED	APRIL 88	[illegible]	MJD
1	EASEMENTS TO WELLS	[illegible]	[illegible]	MJD

M. J. DAVENPORT (professional engineer seal) — MAY 25 [illegible]

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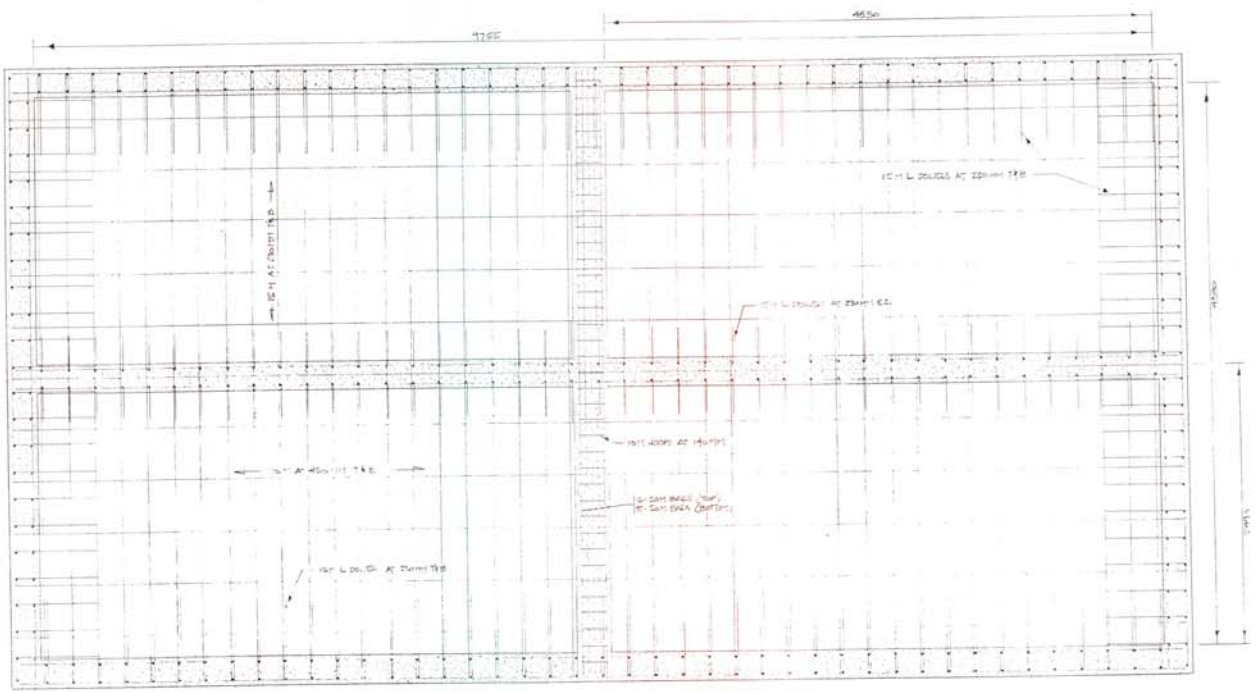
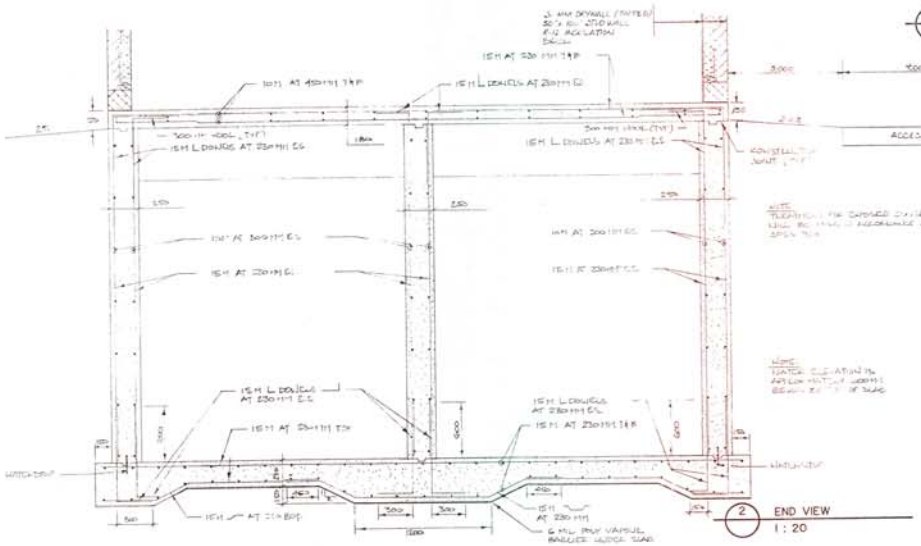
ELGETI SUBDIVISION
LOT 16, CONCESSION 16
TOWNSHIP OF OTONABEE
COUNTY OF PETERBOROUGH

WATERMAIN EASEMENT
PLAN AND PROFILE

DESIGNED BY: M. DAVENPORT	SCALE: HOR: 1:1000 VERT:
DRAWN BY: J. RUTLEDGE	
DATE: SEPTEMBER, 1987	DRWG NO: 101-10
PROJECT NO: 83-D-101	



1 TOP VIEW
1 : 20



2 END VIEW
1 : 20

No.	REVISIONS	DATE	BY	APPD.
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MAY 28 1999

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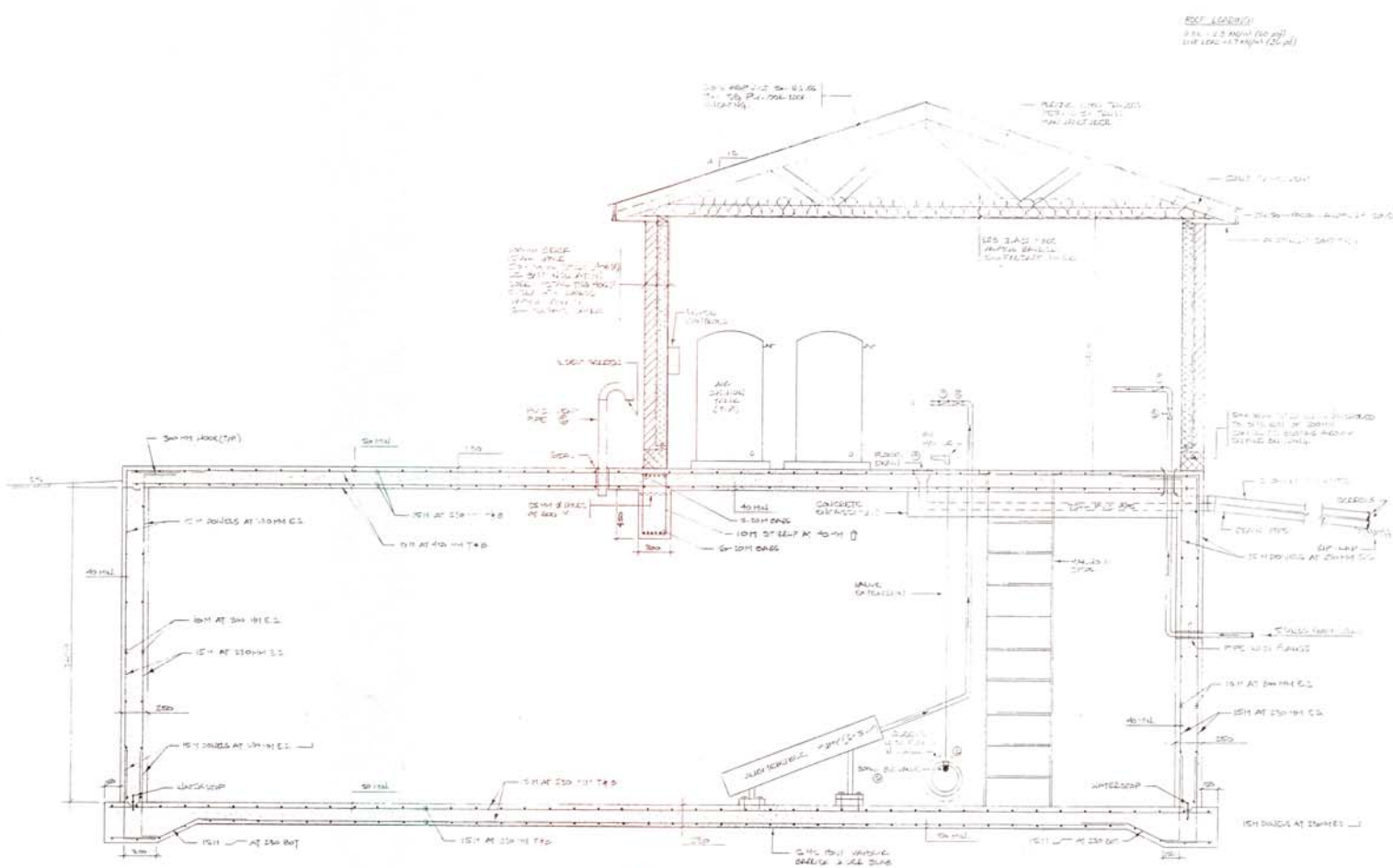
LOT 16, CONCESSION 16
TOWNSHIP OF OTONABEE
COUNTY OF PETERBOROUGH

RESERVOIR TANK DETAILS

DESIGNED BY: J. BURKE	SCALE: HORZ. 1 : 20 VERT.
DRAWN BY: J. RUTLEDGE	
DATE: AUGUST, 1997	DRAWING No. 101-11
PROJECT No. 83-0-101	



SECTION A-A
1 : 20

NO	REVISIONS	DATE	BY	APP'D
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ELGETI SUBDIVISION
LOT 16, CONCESSION 16
TOWNSHIP OF OTONABEE
COUNTY OF PETERBOROUGH

MECHANICAL AND STRUCTURAL DETAILS

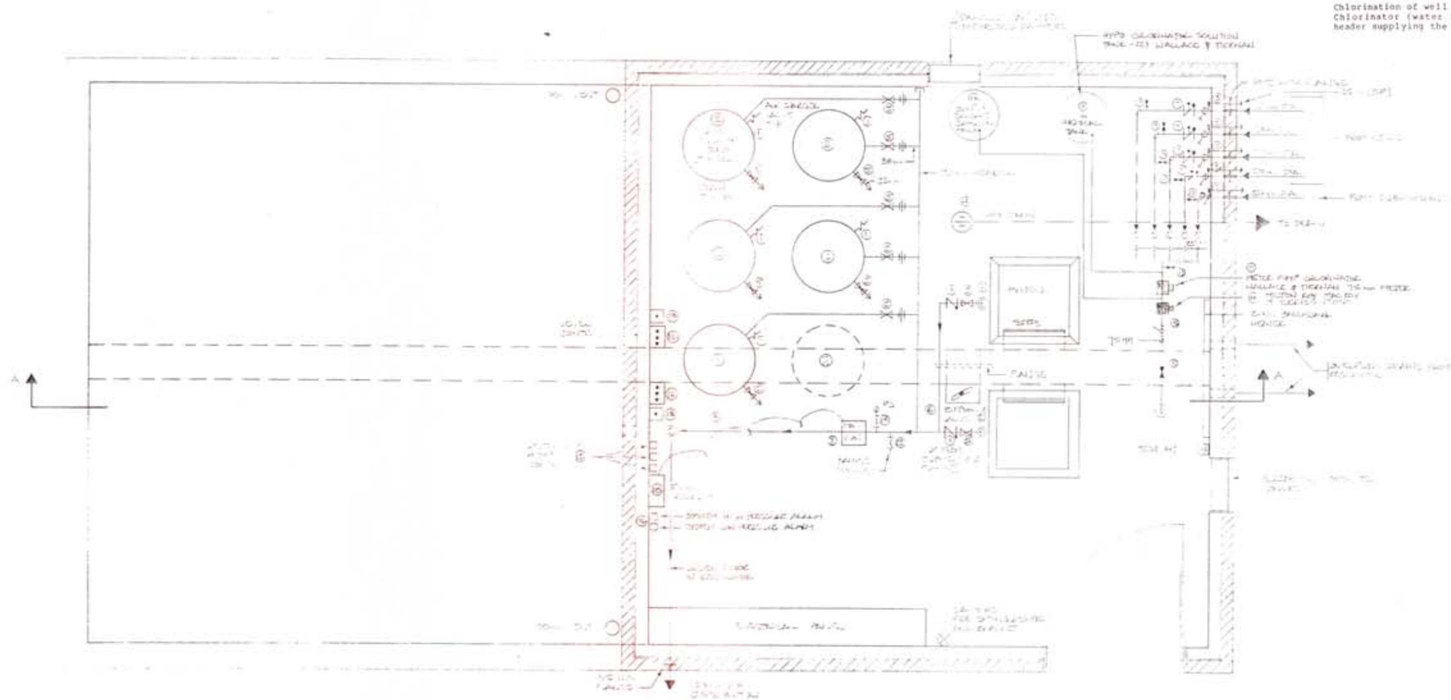
DESIGNED BY: J. BURKE	SCALE: HORZ 1 : 20 VERT
DRAWN BY: J. RUTLEDGE	
DATE: MAY, 1987	DRAWING NO. 101-12
PROJECT NO. 83-0-101	

OPERATION OF THE SYSTEM

Wells start and stop on demand from the level controls to maintain the reservoir levels between 3200 mm and 2300 mm above the reservoir floor. Wells are protected by "Sub Guards" in the wells which bypass water back into the wells so the pumps always have adequate water for cooling even at low water levels in the wells.

The distribution pumps are controlled by the pressuretrols and run on an alternating basis as required to satisfy the system demands. The pumps are protected by a low level cut off and alarm in the reservoir.

Chlorination of well water is accomplished by the Meter Pump Chlorinator (water flow operated) on the 75 mm diameter header supplying the reservoir with well water.



NOTES:

EQUIPMENT LIST

1. Air charging valve for pneumatic tanks - Myers #5000 A10.
2. Air cushion pneumatic tanks - Myers100 Gallon with float.
3. Wall flange pipe sections - all pipes passing through walls.
4. Floor drain - 75 mm Ancon # 100.
5. Valves - Gate or Ball - Jenkins or Worchester 32 mm, 38 mm, 50 mm.
6. Butterfly Valve - Reservoir - 300 mm valve with extension stem up through the floor with operating handle.
7. Combination flow control and check valve.
8. Check valve.
9. Mag. flow meter - Fischer Porter model 10 D1419 50 mm in size.
10. Flowrecorder - Totalizer and converter - Fischer Porter Model 1102 D1 - 7 day chart.
11. Chemical pumps: Meter pump chlorinator Wallace & Tiernan and tank (model no. 227) 75mm (Hypo chlorinator solution).
12. Test kit - Myers # M1650.
13. Sampling valve - EMCO # B 2010 Brass Faucet.
14. Pressure Gauge - Bronze 100 mm face - 0 to 700 KPa. Trerice or Morrison with pet cocks.
15. Pressure Switches - Honeywell Pressure Trol s #L404 with Pet Cocks for Distribution pump control.
16. Level Controls - Reservoir - Warrick Level switches # 1G101 with electrodes. Well pumps Control. NEMA 4
17. Low level protection - Wells - Sub guard - Model 200 manufactured by Flowmatic corporation available from Triangle Plumbing, Peterborough, Ontario.
18. Low level alarms for distribution pumps - Warrick level alarm.

Pipe - Vent & Drain - P.V.C.
- Water - SCH 40 Galv. Iron in Pumphouse.
- PVC to distribution.

Fittings - Galv. M.I. 150

Unions - Galv. M.I. REX

Pipe Supports - Grinnell Fig. 264

Wall louvre & motor - 305 mm x 305 mm. Louvre with damper motor-interlock with wall fan to open when fan starts.

Wall fan & motorized damper - Greenheck model GW-85-D-(37 L/S @ 62 Pa) sp. with motorized damper.

D Distribution pumps - Myers SJ 5080, 5 HP 230/1/60, complete with well shroud and stand & control box CJ50-3 or Grundfos equivalent with flow inducer sleeve and stand & control box.

Well Pumps (see note at right) - Myers or Grundfos HP 230/1/60 depending on well capacity, depth of well & static level.

Maintenance and operation manuals required for all equipment.

Master Control Panel (shown on drawing 101-14)

This panel is to operate the two distribution pumps on the pressure trols and the low water cut off on an alternating basis. Pressure trol settings 45 to 55 p.s.i. (310 KPa to 380 KPa) Low distribution pressure- 20 p.s.i. (138 KPa). High pressure distribution- 70p.s.i. (483 KPa).
The well pumps operate on the level switches in the reservoirs and are to start sequentially and pump between the 2300 mm level to the 3200 mm level with the alarm shut off at the 3350 mm level.

All pumps are to have hand-off automatic magnetic starters and pilot lights for run & off.

Electrical connections from this control panel to the control boxes and level controls as shown on the E-1 drawing.

NOTE: MYERS WELL PUMPS
1 - J78 - 3/4 HP 230 V 1 Ø
2 - J78 - 3/4 HP 230 V 1 Ø
3 - J78 - 3/4 HP 230 V 1 Ø
4 - J34 - 1/3 HP 230 V 1 Ø
SUBDIVISION - SJ535 - 1 1/2 HP 230 V 1 Ø

RESERVOIR LEVELS PUMP OPERATION
3350- HIGH LEVEL ALARM (OVERFLOW)
3200- WELL PUMPS STOP (900 mm PUMP UP)
2300- WELL PUMPS START
900- LOW LEVEL ALARM AND SHUT-OFF OF DISTRIBUTION PUMPS.

Nº	REVISIONS	DATE	BY	APP'D
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8715
R. G. WHITE

MAY 26 1989

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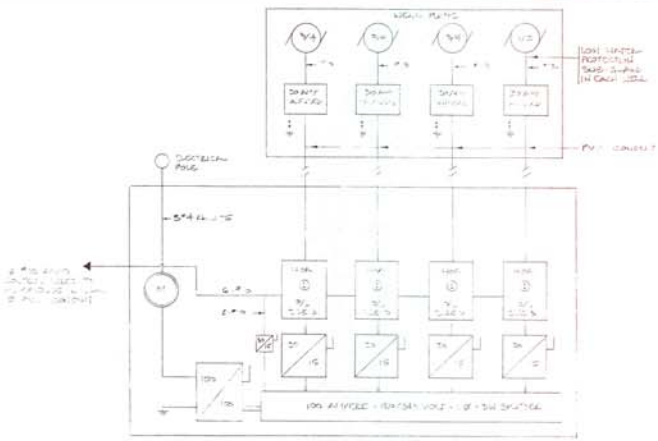
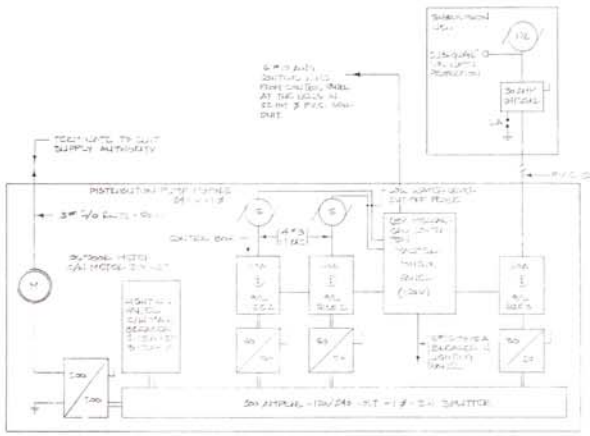
PETERBOROUGH, ONTARIO

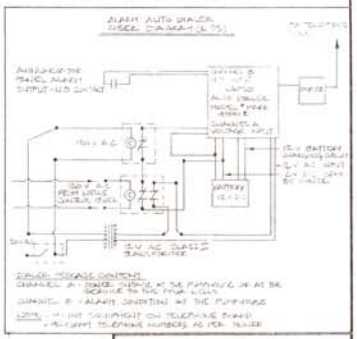
ELGETI SUBDIVISION
LOT 16, CONCESSION 16
TOWNSHIP OF OTONABEE
COUNTY OF PETERBOROUGH

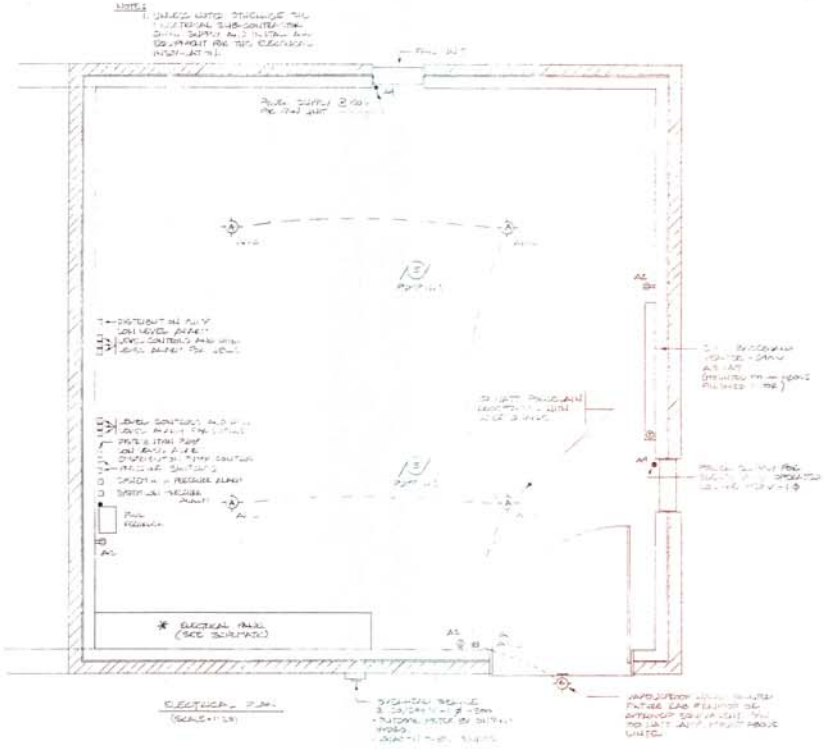
MECHANICAL DETAILS

DESIGNED BY: B. WHITE	SCALE: HORZ. 1 : 20 VERT.
DRAWN BY: J. RUTLEDGE	
DATE: MAY, 1987	DRAWING Nº: 101-13
PROJECT Nº: 83-D-101	









SPECIFICATIONS

1. All wiring shall be installed in accordance with the latest edition of the Ontario Hydro Electrical Code.
2. Minimum size of wire shall be #12 A.W.G. except that #14 A.W.G. may be used for control wire.
3. Conduit shall be PVC type with approved fittings to meet specific requirements.
4. All wiring shall be exposed and laid out parallel to the building lines.
5. Receptacle and switch boxes shall be cast type with galvanized covers ganged to suit the layout.
6. Mount switches at 1370 mm from the floor to the centre line of the outlet and 1220 mm for Duplex Receptacles.
7. Use approved fittings, flexible "sealtite" conduit (for connections to motors) as required for the specific area.
8. Switches and receptacles are to be brown in colour with plates to match and of specification grade.
9. Lighting panel shall be Federal Pioneer Limited, catalogue # NBLP-12 c/w 100 amp. main breaker (surface mounted).
10. Feeder wire runs to well pumps shall be a minimum of #6 A.W.G. to minimize voltage drop suitable for direct burial in water.
11. Ensure that the entire system is adequately grounded using insulated (green in colour) ground wire.
12. Electrical contractor shall provide all electrical components for a complete system, except where specifically noted in these documents.
13. Electrical contractor shall verify actual rating and characteristics of electrical equipment being installed by others prior to commencing actual construction.
14. Provide and install lightning arrestors at each well pump. (Myers catalogue # 15506A or approved equivalent rated for 230-240 Voltage - 1 Phase supply).
15. All pump motors are to be supplied with 120 / 240 volts magnetic contactor in standard metal enclosed with "Hand-Off Auto" control and over-load protection for each motor.

No.	REVISIONS	DATE	BY	APP'D
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MAY 26 1988

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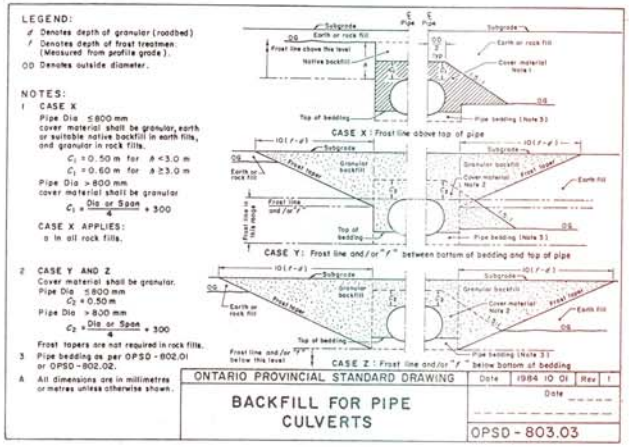
ELGETI SUBDIVISION
LOT 16, CONCESSION 16
TOWNSHIP OF OTONABEE
COUNTY OF PETERBOROUGH

ELECTRICAL DETAILS

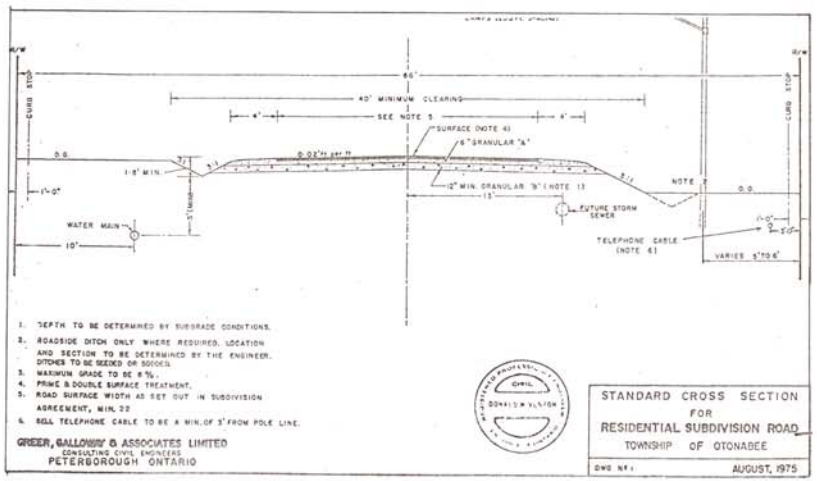
DESIGNED BY: J. QUIST	SCALE: NONE AS SHOWN
DRAWN BY: J. RUTLEDGE	
DATE: JUNE, 1987	DRAWING No. 101-14
PROJECT No. 83-D-101	

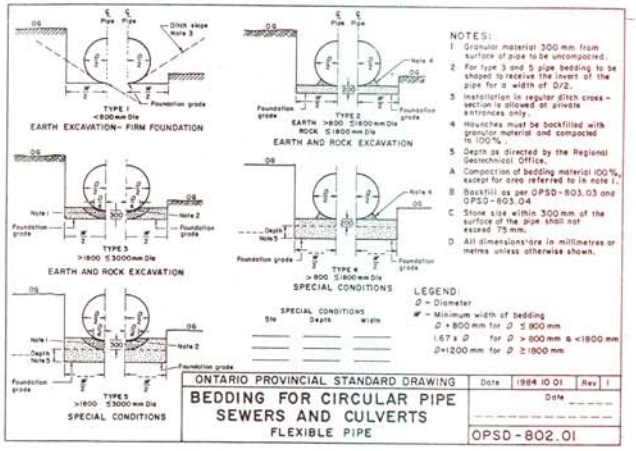


ONTARIO PROVINCIAL STANDARD DRAWING | Date 1984 10 01 | Rev 1

BACKFILL FOR PIPE CULVERTS

OPSD - 803.03

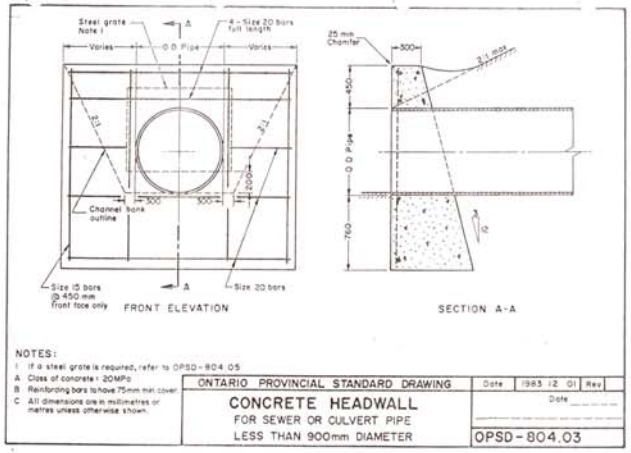




ONTARIO PROVINCIAL STANDARD DRAWING | Date 1984 10 01 | Rev 1

BEDDING FOR CIRCULAR PIPE SEWERS AND CULVERTS FLEXIBLE PIPE

OPSD - 802.01



ONTARIO PROVINCIAL STANDARD DRAWING | Date 1983 12 01 | Rev

CONCRETE HEADWALL FOR SEWER OR CULVERT PIPE LESS THAN 900mm DIAMETER

OPSD - 804.03

NO.	REVISIONS	DATE	BY	APP'D
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M.J. DAVENPORT & ASSOCIATES LTD.
R.R. N°. 7, LEANNE AVENUE
PETERBOROUGH, ONTARIO

ELGETI SUBDIVISION
LOT 16, CONCESSION 16
TOWNSHIP OF OTONABEE
COUNTY OF PETERBOROUGH

STANDARDS

DESIGNED BY: M. DAVENPORT	SCALE: HOR: VARIOUS VERT:
DRAWN BY: R.G. DUNFORD	
DATE: DECEMBER 31, 1984	DRWG NO: 101-15
PROJECT NO: 84-O-101	