

INVERCAIRN DRAINAGE WORKS

Town of Plympton-Wyoming



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London, Ontario
December 21, 2023

INVERCAIRN DRAINAGE WORKS

Town of Plympton-Wyoming

To the Mayor and Council of
the Town of Plympton-Wyoming

Mayor and Council:

We are pleased to present our report on the construction of the Invercairn Municipal Drainage Works serving parts of Lots 47 and 48, Concession Fronting Lake Huron in the Town of Plympton-Wyoming.

AUTHORIZATION

This report was prepared pursuant to Section 4 of the Drainage Act. Instructions were received from your Municipality with respect to a motion of Council. The work was initiated by a petition signed by the owners whose lands contain over 60 percent of the area requiring drainage.

DRAINAGE AREA

The total watershed area as described above contains approximately 2.4 hectares. The area requiring drainage for the Invercairn Drainage Works is described as the lands bounded by Cairns Boulevard, Mack Avenue, and Scott Avenue all west of Hillsboro Road. Further, the area requiring drainage also includes the lands adjacent to Scott Avenue on the north side including the first residential lot beyond the intersection of Mack Avenue and Scott Avenue.

EXISTING DRAINAGE CONDITIONS

A site meeting held with respect to the project and through later discussions the owners reported the following:

- that the majority of the landowners in attendance indicated that their lands are all subject to frequent flooding and prolonged standing water and therefore petitioned for a drain to obtain relief from it
- that some landowners indicated that there is a private drain along Mack Avenue that runs north and is no longer functioning effectively south of the intersection of Scott Avenue and Mack Avenue



EXISTING DRAINAGE CONDITIONS (cont'd)

- that the Road Authority for the Town of Plympton-Wyoming indicated that any new drain should provide surface inlets for roadside drainage

A field investigation and survey were completed. Upon reviewing our findings we note the following:

- that, with numerous locations in the watershed subject to standing water, the area requiring drainage does not currently have a sufficient outlet
- that there appears to be a few private tiles in various locations that have been installed over the years in an attempt to provide drainage, however they do function adequately and have no status under the Drainage Act

Preliminary design, cost estimates, and assessments were prepared, and an informal public meeting was held to review the findings and preliminary proposals. Further input and requests were provided by the affected owners at that time and at later dates. Based on the proposed design it was decided to proceed with the petition.

DESIGN CONSIDERATIONS

The drain was designed to utilize storm sewer design techniques and sized to accommodate a storm event with a return period of two years.

We would like to point out that there have been no indications of any adverse soil conditions. It should be noted that no formal soil investigation has been made, with this information being provided by the owners.

The proposed design and report have been generally completed using the "GUIDE FOR ENGINEERS WORKING UNDER THE DRAINAGE ACT IN ONTARIO" OMAFRA Publication 852.

RECOMMENDATIONS

We are therefore recommending the following:

- that a new closed drain system be constructed and referred to as the Invercairn Drain. The outlet drain shall commence at the Douglas Drain and run northerly through the lands of A. Cahill (Roll No. 30-637-01), across Marg Avenue and into Cairns Boulevard. The drain will then continue north across the lands of D. & M. Sawyer (Roll No. 30-633) and M. Hinch (Roll No. 30-632) to and across Scott Avenue. The drain will then take a slight jog before continuing north through the lands of G. & G. Hinch (Roll No. 30-629) to its head just within the lands of M. Wheelton & B. Burchmore (Roll No. 30-628) for a total length of 226 lineal meters.
- that a drain, to be referred to as Cairns Boulevard, be constructed commencing at the Outlet Drain on Cairns Boulevard and run easterly along the roadway before turning and heading northerly across the roadways and through the lands of L. & D. Baxter (Roll No. 30-631-02) to its head just within the lands of Invercairn Recreation (Roll No. 30-631-01) for a total length of 98 lineal meters.

RECOMMENDATIONS (cont'd)

- that a drain, to be referred to as Mack Avenue, be constructed commencing at the Outlet Drain and run westerly along Cairns Boulevard to Mack Avenue, continuing north along Mack Avenue across the intersection of Scott Avenue to its head near the laneway of M. Wheelton & B. Burchmore (Roll No. 30-628) for a total length of 177 lineal meters.
- that a drain, to be referred to as Scott Avenue, be constructed commencing at the Outlet Drain on Scott Avenue and run easterly along Scott Avenue for a length of 68 meters before turning north across Scott Avenue to its head on the north side of the travelled portion of Scott Avenue for a total length of 74 lineal meters. It will also contain an additional road crossing across Scott Avenue
- that catchbasins be placed along the course of the drain to alleviate surface ponding
- that each benefiting landowner be provided with a 150mm diameter connection to the drain
- that the drain be constructed with sealed sewer pipe to prevent the intrusion of tree roots into the drain
- that the drain be constructed utilizing trenchless methods down the slope in the lands of A. Cahill (Roll No. 30-637-01) to avoid disruption to the slope
- that no direct connections between basements, cellars, weeping tile, ect. are permitted in accordance with section 20(p) of by-law 68-2017 and sound engineering practice to prevent surcharging of the drain into these spaces and or tile

ENVIRONMENTAL CONSIDERATIONS AND MITIGATION MEASURES

There are no significant wetlands or sensitive areas within the affected watershed area or along the route of the drains. The proposed construction of the Invercairn Drainage Works includes quarry stone outlet protection, and surface inlets which greatly help reduce the overland surface flows and any subsequent erosion. A temporary flow check of silt fencing is to be installed in the ditch downstream of the tile outlet for the duration of the construction.

SUMMARY OF PROPOSED WORK

The proposed work consists of approximately 594 lineal meters of 250mm (10") to 450mm (18") diameter HDPE sewer pipe and DR-17 directional drilling pipe, including related appurtenances, and individual 150mm stubs to properties.



SCHEDULES

Four schedules are attached hereto and form part of this report, being Schedule 'A' - Allowances, Schedule 'B' - Cost Estimate, Schedule 'C' - Assessment for Construction, and Schedule 'D' - Assessment for Maintenance.

Schedule 'A' - Allowances. In accordance with Sections 29 and 30 of the Drainage Act, allowances are provided for right-of-way and damages to lands along the route of the drain as defined below.

Schedule 'B' - Cost Estimate. This schedule provides for a detailed cost estimate of the proposed work which is in the amount of \$282,3000.00. This estimate includes engineering and administrative costs associated with this project.

Schedule 'C' - Assessment for Construction. This schedule outlines the distribution of the total estimated cost of construction over the roads and lands which are involved.

Schedule 'D' - Assessment for Maintenance. In accordance with Section 38 of the Drainage Act, this schedule outlines the distribution of future repair and/or maintenance costs for portions of, or the entire drainage works.

Drawing No.'s 1 and 2, Job No. 222112, and specifications form part of this report. They show and describe in detail the location and extent of the work to be done and the lands which are affected.

ALLOWANCES

DAMAGES: Section 30 of the Drainage Act provides for the compensation to landowners along the drain for damages to lands caused by the construction of the drain. The amount granted is based on \$3,613.00/ha. for closed drain. This base rate is multiplied by the hectares derived from the working widths shown on the plans and the applicable lengths.

RIGHT-OF-WAY Section 29 of the Drainage Act provides for an allowance to the owners whose land must be used for the construction, repair, or future maintenance of a drainage works.

For tile drains where the owners will be able to continue to use the land, the allowance provides for the right to enter upon such lands, and at various times for the purpose of inspecting such drain, removing obstructions, and making repairs. Also, the allowance provides for the restrictions imposed on those lands to protect the right-of-way from obstruction or derogation. The amounts granted for right-of-way on tile drains is based on a percentage of the value of the land designated for future maintenance. Therefore, the amount granted is based on \$6,670.00/ha. through cropped lands. This value is multiplied by the hectares derived from the width granted for future maintenance and the applicable lengths.

ASSESSMENT DEFINITIONS

In accordance with the Drainage Act, lands that make use of a drainage works are liable for assessment for part of the cost of constructing and maintaining the system. These liabilities are known as benefit, outlet liability and special benefit liability as set out under Sections 22, 23, 24 and 26 of the Act.

BENEFIT as defined in the Drainage Act means the advantages to any lands, roads, buildings or other structures from the construction, improvement, repair, or maintenance of a drainage works such as will result in a higher market value or increased crop production or improved appearance or better control of surface or sub-surface water, or any other advantages relating to the betterment of lands, roads, buildings, or other structures.

OUTLET liability is assessed to lands or roads that may make use of a drainage works as an outlet either directly or indirectly through the medium of any other drainage works or of a swale, ravine, creek, or watercourse.

In addition, a Public Utility or Road Authority shall be assessed for and pay all the increased cost to a drainage works due to the construction and operation of the Public Utility or Road Authority. This may be shown as either benefit or special assessment.

ASSESSMENT

A modified "Todgham Method" was used to calculate the assessments shown on Schedule 'C'- Assessment for Construction. This entailed breaking down the costs of the drain into sections along its route. Special Assessments were then extracted from each section.

The remainder is then separated into Benefit and Outlet costs. The Benefit cost is distributed to those properties receiving benefit as defined under "Assessment Definitions", with such properties usually being located along or close to the route of the drain. The Outlet Costs are distributed to all properties within the watershed area of that section on an adjusted basis. The areas are adjusted for location along that section, and relative run-off rates. Due to their different relative run-off rates, roads have been assessed at run-off rates higher rates than residential properties.

The actual cost of the work involving this report, with the exception of Special Assessments, is to be assessed on a pro-rata basis against the lands and roads liable for assessment for benefit and outlet as shown in detail below and on Schedule 'C' - Assessment for Construction. The Special Assessments shall be levied as noted in the Section "Special Assessment".

SPECIAL ASSESSMENT

In accordance with Section 26 of the Drainage Act a Special Assessment has been made against the Town of Plympton-Wyoming being the increased cost to the drainage work for installing pipes across their road allowance on the Outlet Drain, Cairns Boulevard, Mack Avenue, and Scott Avenue due to the construction and operation of Cairns Boulevard, Scott Avenue, and Mack Avenue. The Special Assessments shall be made up of the actual cost of this work and both the final and estimated values of the Special Assessment are to be calculated as follows:

SPECIAL ASSESSMENT (cont'd)

Drain	Cost of Work	Less Equivalent Drain Cost (Fixed)	Plus Administration Cost	Plus Interest & Net H.S.T.	Special Assessment
Sta. @ 96	\$3,600.00	\$540.00	\$1,000.00	\$180.00	\$4,240.00
Sta. @ 187	\$5,100.00	\$810.00	\$1,000.00	\$240.00	\$5,530.00
Sta. @ 66	\$4,000.00	\$450.00	\$1,000.00	\$200.00	\$4,750.00
Sta. @ 145	\$6,300.00	\$1,260.00	\$1,000.00	\$270.00	\$6,310.00
Sta. @ 40	\$3,400.00	\$540.00	\$1,000.00	\$170.00	\$4,030.00
Sta. @ 71	\$3,100.00	\$810.00	\$1,000.00	\$150.00	\$3,440.00

The above special assessments shall not apply for future maintenance purposes.

In accordance with Section 26 of the Drainage Act, a Special Assessment has been made against the Town of Plympton-Wyoming for the cost of locating and determining the elevation of their watermain on Cairns Boulevard, Mack Avenue, and Scott Avenue, being the increased cost to the drainage works due to the construction and operation of their utilities. The Special Assessment shall be as shown on Schedule 'C' and shall **not** apply when pro-rating future maintenance costs.

If any additional work is required to the drainage works due to the existence of buried utilities such as gas pipelines, communications cables, etc. or if any of the utilities require relocation or repair, then, the extra costs incurred shall be borne by the utility involved in accordance with the provisions of Section 26 of the Drainage Act.

MAINTENANCE

Upon completion of construction, all owners are hereby made aware of Sections 80 and 82 of the Drainage Act which forbid the obstruction of or damage or injury to a municipal drain.

After completion, the entire Invercairn Drainage Works shall be maintained by the Town of Plympton-Wyoming at the expense of all upstream lands and roads assessed in Schedule 'D' - Assessment for Maintenance and in the same relative proportions until such time as the assessment is changed under the Drainage Act.

Respectfully submitted,

SPRIET ASSOCIATES LONDON LIMITED

J.M. Spriet
 J.M. Spriet, P.Eng.



JMS:bv

SCHEDULE 'A' - ALLOWANCES

INVERCAIRN DRAINAGE WORKS

Town of Plympton-Wyoming

In accordance with Sections 29 and 30 of the Drainage Act, we determine the allowances payable to owners entitled thereto as follows:

CONCESSION	LOT	ROLL NUMBER (Owner)	Section 29 Right-of-Way	Section 30 Damages	TOTALS
INVERCAIRN DRAINAGE WORKS					
F.L.H.	Pt. 47 & 48	30-637-01 (A. Cahill)	\$ 330.00	\$ 270.00	\$ 600.00
F.L.H.	Pt. 47 & 48	30-631-02 (L. & D. Baxter)	190.00	150.00	340.00
F.L.H.	Pt. 47	30-633 (D. & M. Sawyer)	250.00	210.00	460.00
F.L.H.	Pt. 47	30-632 (M. Hinch)	210.00	170.00	380.00
F.L.H.	Pt. 47	30-631-01 (Invercairn Recreation)	10.00	10.00	20.00
F.L.H.	Pt. 47	30-629 (G. & G. Hinch)	150.00	120.00	270.00
Total Allowances			\$ 1,140.00	\$ 930.00	\$ 2,070.00

TOTAL ALLOWANCES ON THE INVERCAIRN DRAINAGE WORKS

\$ 2,070.00

INVERCAIRN DRAINAGE WORKS**Town of Plympton-Wyoming**

We have made an estimate of the cost of the proposed work which is outlined in detail as follows:

OUTLET DRAIN

Quarry stone rip-rap protection around pipe and end of ditch and installation of rodent gate, (Approximately 10m ³ quarry stone req'd)		
Supply	\$	4,300.00
Installation	\$	2,100.00
Installation of the following fused pipe by directional drilling		
36 meters of 300mm dia. DR-17 H.D.P.E. fused pipe	\$	18,900.00
Supply of the above listed pipe	\$	9,000.00
Installation of the following H.D.P.E. sewer pipe and any required prefab. bends, including supply, install & compaction of bedding and backfill materials. Also, removal & disposal of excess material		
29 meters of 250mm dia. H.D.P.E. pipe	\$	2,200.00
83 meters of 300mm dia. H.D.P.E. pipe	\$	6,200.00
57 meters of 450mm dia. H.D.P.E. pipe	\$	4,600.00
Supply of the above listed pipe	\$	10,400.00
6 meters of 375mm H.D.P.E. dia. Sewer pipe (Sta 0+096)		
Supply	\$	400.00
Installation under Cairns Road by open cut	\$	3,200.00
9 meters of 300mm H.D.P.E. dia. Sewer pipe (Sta 0+187)		
Supply	\$	400.00
Installation under Scott Avenue by open cut	\$	4,700.00
Supply and install four 600mm x 600mm on-line catchbasins and two 900mm x 1200mm on-line catchbasins including grates, berms, ditching leads, wyes and any required prefab fittings including stubs	\$	18,200.00
Restoration of lawn areas, including 100mm imported topsoil & seed	\$	4,500.00
Clearing and Grubbing of existing trees through construction area	\$	1,250.00
Supply & Install N.A.G. SC-75 erosion control mat (Approx. 192m ²)	\$	1,000.00
Exposing and locating existing tile drains and utilities	\$	1,500.00
Tile connections and contingencies	\$	5,300.00
Allowances under Sections 29 & 30 of the Drainage Act	\$	1,710.00

INVERCAIRN DRAINAGE WORKS
Town of Plympton-Wyoming

CAIRNS BLVD.

Installation of the following H.D.P.E. sewer pipe and any required prefab. bends, including supply, install & compaction of bedding and backfill materials. Also, removal & disposal of excess material	
90 meters of 250mm dia. H.D.P.E. pipe	\$ 6,300.00
Supply of the above listed pipe	\$ 2,900.00
8 meters of 250mm H.D.P.E. dia. Sewer pipe (Sta 0+066)	
Supply	\$ 200.00
Installation under Cairns Road by open cut	\$ 3,800.00
Supply and install two 600mm x 600mm on-line catchbasins including grates, berms, ditching leads, wyes and any required prefab fittings	\$ 6,300.00
Restoration of lawn areas, including 100mm imported topsoil & seed	\$ 1,800.00
Sta: 0+006 to Sta: 0+022	
Restore gravel driveway using 300mm Granular 'B' and 150mm Granular 'A'	\$ 1,750.00
Clearing and Grubbing of existing trees through construction area	\$ 1,250.00
Exposing and locating existing tile drains and utilities	\$ 1,000.00
Tile connections and contingencies	\$ 1,300.00
Allowances under Sections 29 & 30 of the Drainage Act	\$ 360.00

MACK AVENUE

Installation of the following H.D.P.E. sewer pipe and any required prefab. bends, including supply, install & compaction of bedding and backfill materials. Also, removal & disposal of excess material	
60 meters of 300mm dia. H.D.P.E. pipe	\$ 4,500.00
112 meters of 375mm dia. H.D.P.E. pipe	\$ 9,000.00
Supply of the above listed pipe	\$ 9,100.00
17 meters of 300mm H.D.P.E. dia. Sewer pipe (Sta 0+145)	
Supply	\$ 700.00
Installation under Mack Avenue by open cut	\$ 5,600.00
Supply and install four 600mm x 600mm on-line catchbasins and one offset 600mm x 600mm catchbasins including grates, berms, ditching, 12m - 300mm HDPE leads, wyes and any required prefab fittings	\$ 13,500.00
Restoration of lawn areas, including 100mm imported topsoil & seed	\$ 4,900.00
Sta: 0+090 to Sta: 0+096	
Sawcut and restore concrete driveway and garden. Driveway to be 125mm thick, 32MPa concrete on 150mm granular 'A'	\$ 7,900.00
Exposing and locating existing tile drains and utilities	\$ 1,400.00
Tile connections and contingencies	\$ 3,000.00

**INVERCAIRN DRAINAGE WORKS
Town of Plympton-Wyoming**

SCOTT AVENUE

Installation of the following H.D.P.E. sewer pipe and any required prefab. bends, including supply, install & compaction of bedding and backfill materials. Also, removal & disposal of excess material		
75 meters of 300mm dia. H.D.P.E. pipe	\$	5,300.00
Supply of the above listed pipe	\$	2,400.00
6 meters of 300mm H.D.P.E. dia. Sewer pipe (Sta 0+040)		
Supply	\$	200.00
Installation under Scott Avenue by open cut	\$	2,900.00
6 meters of 300mm H.D.P.E. dia. Sewer pipe (Sta 0+071)		
Supply	\$	200.00
Installation under Scott Avenue by open cut	\$	3,200.00
Supply and install four 600mm x 600mm on-line catchbasins including grates, berms, ditching leads, wyes and any required prefab fittings	\$	10,800.00
Restoration of lawn areas, including 100mm imported topsoil & seed	\$	1,080.00
Sta: 0+021 to Sta: 0+036		
Restore gravel driveway using 300mm Granular 'B' and 150mm Granular 'A'	\$	1,600.00
Exposing and locating existing tile drains and utilities	\$	1,000.00
Tile connections and contingencies	\$	1,400.00

ADMINISTRATION

Interest and Net Harmonized Sales Tax	\$	12,070.00
Survey, Plan and Final Report	\$	30,700.00
Expenses	\$	3,830.00
Supervision and Final Inspection	\$	<u>19,200.00</u>
TOTAL ESTIMATED COST	\$	<u><u>282,300.00</u></u>

SCHEDULE 'C' - ASSESSMENT FOR CONSTRUCTION

INVERCAIRN DRAINAGE WORKS

Town of Plympton-Wyoming

Job No. 222112

December 21, 2023

CON.	LOT	HECTARES AFFECTED	ROLL No. (OWNER)	BENEFIT	OUTLET	TOTAL
INVERCAIRN DRAINAGE WORKS						
F.L.H.	Pt. 47 & 48	0.01	30-637-01 (A. Cahill)	\$	\$	\$
F.L.H.	Pt. 47 & 48	0.07	30-637-05 (T. & R. Fraser)		442.00	442.00
F.L.H.	Pt. 47 & 48	0.15	30-631-02 (L. & D. Baxter)	12,000.00	1,988.00	13,988.00
F.L.H.	Pt. 47	0.12	30-636 (M. Johnson, R. Cunningham &	12,000.00	1,546.00	13,546.00
F.L.H.	Pt. 47	0.12	30-635 (L. & F. Ferneyhough)	12,000.00	2,209.00	14,209.00
F.L.H.	Pt. 47	0.13	30-634 (J. & B. Grigg)	12,000.00	2,209.00	14,209.00
F.L.H.	Pt. 47	0.21	30-633 (D. & M. Sawyer)	12,000.00	2,871.00	14,871.00
F.L.H.	Pt. 47	0.19	30-632 (M. Hinch)	12,000.00	3,313.00	15,313.00
F.L.H.	Pt. 47	0.12	30-631-01 (Invercairn Recreation)	12,000.00	2,209.00	14,209.00
F.L.H.	Pt. 47	0.12	30-629 (G. & G. Hinch)	12,000.00	2,651.00	14,651.00
F.L.H.	Pt. 47	0.10	30-628 (M. Wheelton & B. Burchmore)	12,000.00	2,209.00	14,209.00
F.L.H.	Pt. 47	0.13	30-630 (M. & B. Ewasyshyn)		2,871.00	2,871.00
F.L.H.	Pt. 47	0.13	30-631 (J. Getty)	12,000.00	2,871.00	14,871.00
F.L.H.	Pt. 47	0.02	30-627-02 (B. Szymanski)		442.00	442.00
F.L.H.	Pt. 47	0.06	30-627-03 (B. Szymanski)		1,325.00	1,325.00
TOTAL ASSESSMENT ON LANDS				\$ 120,000.00	\$ 29,156.00	\$ 149,156.00
Marg Avenue		0.02	Town of Plympton-Wyoming	\$ 4,790.00	\$ 1,104.00	\$ 5,894.00
Cairns Blvd		0.23	Town of Plympton-Wyoming	24,720.00	10,602.00	35,322.00
Mack Avenue		0.23	Town of Plympton-Wyoming	17,300.00	7,731.00	25,031.00
Scott Avenue		0.29	Town of Plympton-Wyoming	16,680.00	19,217.00	35,897.00
TOTAL ASSESSMENT ON ROADS				\$ 63,490.00	\$ 38,654.00	\$ 102,144.00
SPECIAL ASSESSMENT against Town of Plympton-Wyoming for the increased cost of installing a 450mm (18") dia. H.D.P.E. Sewer Pipe under Cairns Road by open cut (Sta 0+096)						\$ 4,240.00
SPECIAL ASSESSMENT against Town of Plympton-Wyoming for the increased cost of installing a 300mm (12") dia. H.D.P.E. Sewer Pipe under Scott Avenue by open cut (Sta 0+187)						\$ 5,530.00
SPECIAL ASSESSMENT against Town of Plympton-Wyoming for the increased cost of installing a 250mm (10") dia. H.D.P.E. Sewer Pipe under Cairns Road by open cut (Sta 0+066)						\$ 4,750.00
SPECIAL ASSESSMENT against Town of Plympton-Wyoming for the increased cost of installing a 300mm (12") dia. H.D.P.E. Sewer Pipe under Mack Avenue by open cut (Sta 0+145)						\$ 6,310.00
SPECIAL ASSESSMENT against Town of Plympton-Wyoming for the increased cost of installing a 300mm (12") dia. H.D.P.E. Sewer Pipe under Scott Avenue by open cut (Sta 0+040)						\$ 4,030.00
SPECIAL ASSESSMENT against Town of Plympton-Wyoming for the increased cost of installing a 300mm (12") dia. H.D.P.E. Sewer Pipe under Scott Avenue by open cut (Sta 0+071)						\$ 3,440.00
SPECIAL ASSESSMENT against Town of Plympton-Wyoming for the increased cost of locating their watermains on Cairns Blvd, Mack Ave., & Scott Ave.						\$ 2,700.00
TOTAL ASSESSMENT ON THE INVERCAIRN DRAINAGE WORKS						\$ 282,300.00

SCHEDULE 'D' - ASSESSMENT FOR MAINTENANCE

INVERCAIRN DRAINAGE WORKS

Town of Plympton-Wyoming

Job No. 222112

December 21, 2023

CON.	LOT	HECTARES AFFECTED	ROLL No. (OWNER)	PERCENTAGE OF MAINTENANCE COST
INVERCAIRN DRAINAGE WORKS				
F.L.H.	Pt. 47 & 48	0.01	30-637-01 (A. Cahill)	%
F.L.H.	Pt. 47 & 48	0.07	30-637-05 (T. & R. Fraser)	0.3
F.L.H.	48	0.15	30-631-02 (L. & D. Baxter)	8.4
F.L.H.	Pt. 47	0.12	30-636 (M. Johnson, R. Cunningham & D. & M. Bri)	4.6
F.L.H.	Pt. 47	0.12	30-635 (L. & F. Ferneyhough)	5.0
F.L.H.	Pt. 47	0.13	30-634 (J. & B. Grigg)	5.0
F.L.H.	Pt. 47	0.21	30-633 (D. & M. Sawyer)	5.4
F.L.H.	Pt. 47	0.19	30-632 (M. Hinch)	5.6
F.L.H.	Pt. 47	0.12	30-631-01 (Invercairn Recreation)	5.0
F.L.H.	Pt. 47	0.12	30-629 (G. & G. Hinch)	5.2
F.L.H.	Pt. 47	0.10	30-628 (M. Wheelton & B. Burchmore)	5.0
F.L.H.	Pt. 47	0.13	30-630 (M. & B. Ewasyshyn)	1.7
F.L.H.	Pt. 47	0.13	30-631 (J. Getty)	5.4
F.L.H.	Pt. 47	0.02	30-627-02 (B. Szymanski)	0.3
F.L.H.	Pt. 47	0.06	30-627-03 (B. Szymanski)	0.8
				=====
TOTAL ASSESSMENT ON LANDS				57.7 %
				=====
Marg Avenue		0.02	Town of Plympton-Wyoming	2.1 %
Cairns Blvd		0.23	Town of Plympton-Wyoming	13.9
Mack Aveune		0.23	Town of Plympton-Wyoming	9.9
Scott Avenue		0.29	Town of Plympton-Wyoming	16.4
				=====
TOTAL ASSESSMENT ON ROADS				42.3 %
				=====
TOTAL ASSESSMENT FOR MAINTENANCE ON THE MAIN DRAIN				100.0 %

SCHEDULE OF NET ASSESSMENT

INVERCAIRN DRAINAGE WORKS

Town of Plympton-Wyoming
(FOR INFORMATION PURPOSES ONLY)

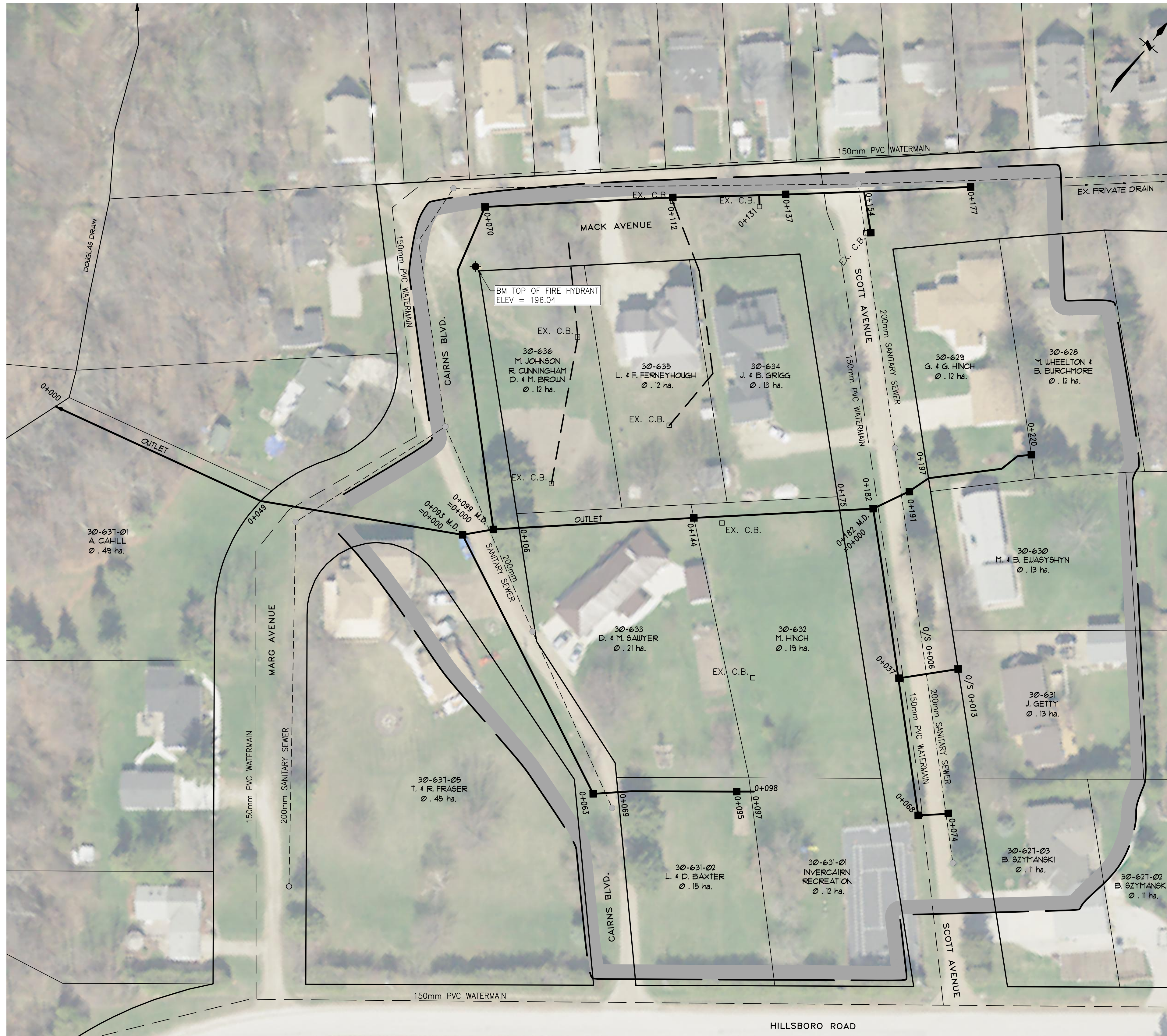
Job No. 222112

December 21, 2023

* = Non-agricultural

	ROLL NUMBER (OWNER)	TOTAL ASSESSMENT	GRANT	ALLOWANCES	APPROX. NET
*	30-637-01 (A. Cahill)	\$	\$	\$ 600.00	\$ -600.00
*	30-637-05 (T. & R. Fraser)	442.00			442.00
*	30-631-02 (L. & D. Baxter)	13,988.00		340.00	13,648.00
*	30-636 (M. Johnson, R. Cunningham & D. &	13,546.00			13,546.00
*	30-635 (L. & F. Ferneyhough)	14,209.00			14,209.00
*	30-634 (J. & B. Grigg)	14,209.00			14,209.00
*	30-633 (D. & M. Sawyer)	14,871.00		460.00	14,411.00
*	30-632 (M. Hinch)	15,313.00		380.00	14,933.00
*	30-631-01 (Invercairn Recreation)	14,209.00		20.00	14,189.00
*	30-629 (G. & G. Hinch)	14,651.00		270.00	14,381.00
*	30-628 (M. Wheelton & B. Burchmore)	14,209.00			14,209.00
*	30-630 (M. & B. Ewasyshyn)	2,871.00			2,871.00
*	30-631 (J. Getty)	14,871.00			14,871.00
*	30-627-02 (B. Szymanski)	442.00			442.00
*	30-627-03 (B. Szymanski)	1,325.00			1,325.00
*	Marg Avenue	\$ 5,894.00	\$	\$	\$ 5,894.00
*	Cairns Blvd	35,322.00			35,322.00
*	Special Assessment (Sta 0+096)	4,240.00			4,240.00
*	Special Assessment (Sta 0+066)	4,750.00			4,750.00
	Special Assessment Water	2,700.00			2,700.00
*	Mack Aveune	25,031.00			25,031.00
*	Special Assessment (Sta 0+145)	6,310.00			6,310.00
*	Scott Avenue	35,897.00			35,897.00
*	Special Assessment (Sta 0+187)	5,530.00			5,530.00
*	Special Assessment (Sta 0+040)	4,030.00			4,030.00
*	Special Assessment (Sta 0+071)	3,440.00			3,440.00
TOTALS		\$ 282,300.00	\$	\$ 2,070.00	\$ 280,230.00

CONCESSION FRONTING LAKE HURON (F.L.H.)



PLAN SCALE 1:500

GENERAL NOTES

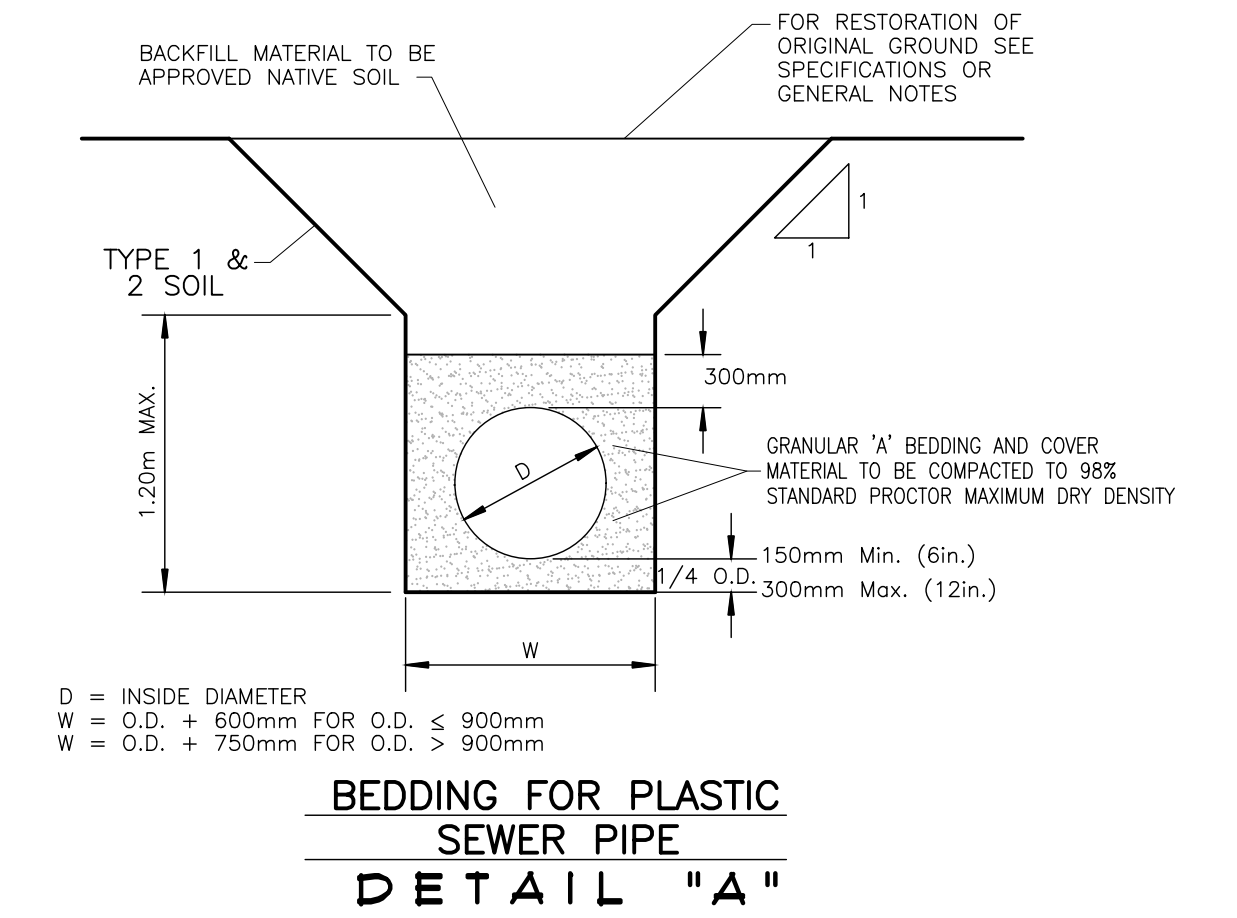
- 1/ OUR SPECIFICATIONS DATED JANUARY 2020 APPLY TO THIS PROJECT.
- 2/ THE WORKING WIDTH AVAILABLE TO THE CONTRACTOR TO CONSTRUCT THE NEW DRAINS SHALL CONSIST OF THOSE LANDS IMMEDIATELY ADJACENT TO THE DRAIN AND CONNECTIONS AND SHALL NOT EXCEED THE FOLLOWING AVERAGE WIDTHS .
CLOSED PORTIONS - 15 meters EXCEPT FOR STA. 0+000 - 0+0032 TO BE 6m. THE WORKING WIDTH FOR PURPOSES OF FUTURE MAINTENANCE SHALL BE 6m. TREES & GARDENS CONSTRUCTED OVER THE PROPOSED DRAIN MAY BE REMOVED FOR FUTURE MAINTENANCE PURPOSES. RESTORATION OF THESE FEATURES ARE THE RESPONSIBILITY OF THE LANDOWNER.
- 3/ ALL OWNERS ALONG THE COURSE OF THE DRAIN SHALL MAKE AN ACCESS ROUTE FROM THE NEAREST ROAD TO THE DRAIN LOCATION AVAILABLE TO THE CONTRACTOR THE AVERAGE WIDTH OF THIS ROUTE SHALL NOT EXCEED 8 METERS. THE ACCESS ROUTE SHALL ALSO APPLY FOR FUTURE MAINTENANCE PURPOSES.
- 4/a) ALL UTILITIES TO BE LOCATED AND EXPOSED PRIOR TO CONSTRUCTION SO THAT THE NEW DRAIN GRADES CAN BE CONFIRMED. IF THERE IS A CONFLICT IN ELEVATION BETWEEN THE PROPOSED DRAIN AND THE UTILITY, THE ENGINEER IS TO BE NOTIFIED IMMEDIATELY.
b) CONTRACTOR TO NOTIFY ALL UTILITIES 72 HOURS PRIOR TO HIS SCHEDULED TIME FOR STARTING THE ABOVE WORK.
c) THE COST FOR THIS WORK SHALL BE INCLUDED IN THE ITEM ON THE EXTENT OF WORK AND NO EXTRA PAYMENT SHALL BE MADE TO THE CONTRACTOR, EXCEPT IF ROAD RESTORATION IS REQUIRED.
- 5/ ALL TREES, SCRUB, BRUSH, ETC. TO BE CLEARED AND GRUBBED IN ACCORDANCE WITH "SECTION B. 3 AND C. 4" SPECIFICATIONS .
- 6/ RIP-RAP TO BE SUPPLIED AND INSTALLED IN ACCORDANCE WITH "SECTION A. 12" IN THE SPECIFICATIONS.
- 7/ CONTRACTOR TO ARRANGE A PRE-CONSTRUCTION MEETING WITH THE ENGINEER, DRAINAGE SUPERINTENDENT AND THE AFFECTED OWNERS . ALL PARTIES SHALL RECEIVE 48 HOURS NOTICE TO THE MEETING .
- 8/ LAWN AREAS TO RESTORED WITH SEED ON 100mm THICK SCREENED TOPSOIL BED
- 9/ ALL CATCHBASIN TO HAVE 2-150mm RISERS FOR FUTURE ADJUSTMENTS, GRATES TO BE LOCKABLE FLAT BAR
- 10/ NO DIRECT CONNECTIONS BETWEEN BASEMENTS, CELLARS, WEEPING TILES, ETC. ARE PERMITTED IN ACCORDANCE WITH SECTION 20 p OF BY-LAW 68-2017 AND SOUND ENGINEERING PRACTICE.
- 11/ SLOPE TO BE BRUSHED FROM STA. 0+000 - 0+032 FOR 6m WIDTH, NO REMOVAL OF STUMPS PERMITTED. BRUSHING TO BE UNDERTAKEN TO FACILITATE ACCESS TO OUTLET. UPON COMPLETION, SLOPE TO BE SEEDED AND COVERED WITH NAG SC-75 EROSION CONTROL BLANKET.

CONSTRUCTION NOTES FOR ENGINEERING DRAWINGS

1. THE CONTRACTOR SHALL CONSTRUCT TEMPORARY MEASURES TO CONTROL SILT ENTERING THE STORM DRAINAGE SYSTEM TO THE SPECIFICATIONS OUTLINED IN THE GUIDELINES ON EROSION AND SEDIMENT CONTROL FOR URBAN CONSTRUCTION SITES PREPARED BY THE MINISTRY OF NATURAL RESOURCES. THESE MEASURES ARE TO BE INSTALLED PRIOR TO COMMENCING ANY CONSTRUCTION AND SHALL REMAIN IN PLACE UNTIL CONSTRUCTION HAS BEEN COMPLETED TO THE SATISFACTION OF THE TOWN.
2. ALL WORK SHALL MEET THE MINIMUM STANDARDS AND SPECIFICATIONS OF THE TOWNSHIP OF PLYMPTON-WYOMING.
3. ALL ORGANIC, UNSTABLE OR UNSUITABLE MATERIALS BENEATH THE ROAD ALLOWANCES OR DRIVEWAYS MUST BE REMOVED AND THESE AREAS BACKFILLED WITH AN APPROVED FILL MATERIAL, ALL TO THE SATISFACTION OF THE TOWN OF PLYMPTON-WYOMING
4. ALL SUBSTITUTIONS MUST BE APPROVED BY TOWN OF PLYMPTON-WYOMING
5. ALL EXCAVATIONS WHOLLY OR PARTLY WITHIN PROPOSED OR EXISTING ROADWAYS SHALL BE BACKFILLED AND COMPACTED IN ACCORDANCE WITH THE RECOMMENDATIONS IN THE PROJECT SPECIFICATIONS.
6. CONTRACTOR TO SUBMIT DESIGN AND SHOP DRAWINGS FOR UTILITIES SUPPORT SYSTEM STAMPED AND SEALED BY A LICENSED PROFESSIONAL ENGINEER.
7. SEWER PIPE TO BE CONCRETE, H.D.P.E. PLASTIC 320 KPA (BELL & SPIGOT WITH RUBBER GASKETS CONFORMING TO C.S.A. 1026-08), PVC ULTRA RIB OR PVC SDR 35

SEDIMENT CONTROL MEASURE NOTES

1. PROTECT ALL EXPOSED SURFACES AND CONTROL ALL RUNOFF DURING CONSTRUCTION.
2. ALL EROSION CONTROL MEASURES ARE TO BE IN PLACE BEFORE STARTING CONSTRUCTION AND REMAIN IN PLACE UNTIL RESTORATION IS COMPLETE.
3. MAINTAIN EROSION CONTROL MEASURES DURING CONSTRUCTION.
4. ALL COLLECTED SEDIMENT TO BE DISPOSED OF AT AN APPROVED LOCATION.
5. MINIMIZE AREA DISTURBED DURING CONSTRUCTION.
6. ALL DEWATERING TO BE DISPOSED OF IN AN APPROVED SEDIMENTATION BASIN.
7. PROTECT ALL CATCH BASINS, MAINTENANCE HOLES AND PIPE ENDS FROM SEDIMENT INTRUSION WITH GEOTEXTILE (TERRAFIX 270R).
8. KEEP ALL SUMPS CLEAN DURING CONSTRUCTION.
9. PREVENT WIND-BLOWN DUST.
10. STRAW BALES TO BE USED IN LOCALIZED AREAS AS SHOWN AND AS DIRECTED BY THE ENGINEER DURING CONSTRUCTION.
11. STRAW BALES TO BE TERMINATED BY ROUNDING BALES TO CONTAIN AND FILTER RUNOFF.
12. ALL SILT FENCING AND DETAILS ARE AT THE MINIMUM TO BE CONSTRUCTED IN ACCORDANCE WITH THE MINISTRY OF NATURAL RESOURCES GUIDELINES ON EROSION AND SEDIMENT CONTROL FOR CONSTRUCTION SITES.
13. ALL OF THE ABOVE NOTES + SEDIMENT AND EROSION CONTROL MEASURES AND ANY ADDITIONAL SEDIMENT AND EROSION CONTROL MEASURES ARE TO BE IN ACCORDANCE WITH THE MINISTRY OF NATURAL RESOURCES GUIDELINES ON EROSION AND SEDIMENT CONTROL FOR CONSTRUCTION SITES.
14. WHEN ALL RESTORATION IS COMPLETED REMOVE SEDIMENT CONTROL MEASURES AND RESTORE IMPACTED AREAS.



PLAN LEGEND

- LIMIT OF WATERSHED AREA
- PROPOSED DRAINAGE WORKS
- EXTERIOR OR INTERIOR WATERSHED
- EXIST. WATERCOURSE OR PRIVATE DITCH
- 10 - 003 ASSESSMENT ROLL NUMBER
- J. 00TH OWNERS NAME
- 40 ± ha. HECTARES OWNED

INVERCAIRN DRAINAGE WORKS

Town of Plympton-Wyoming

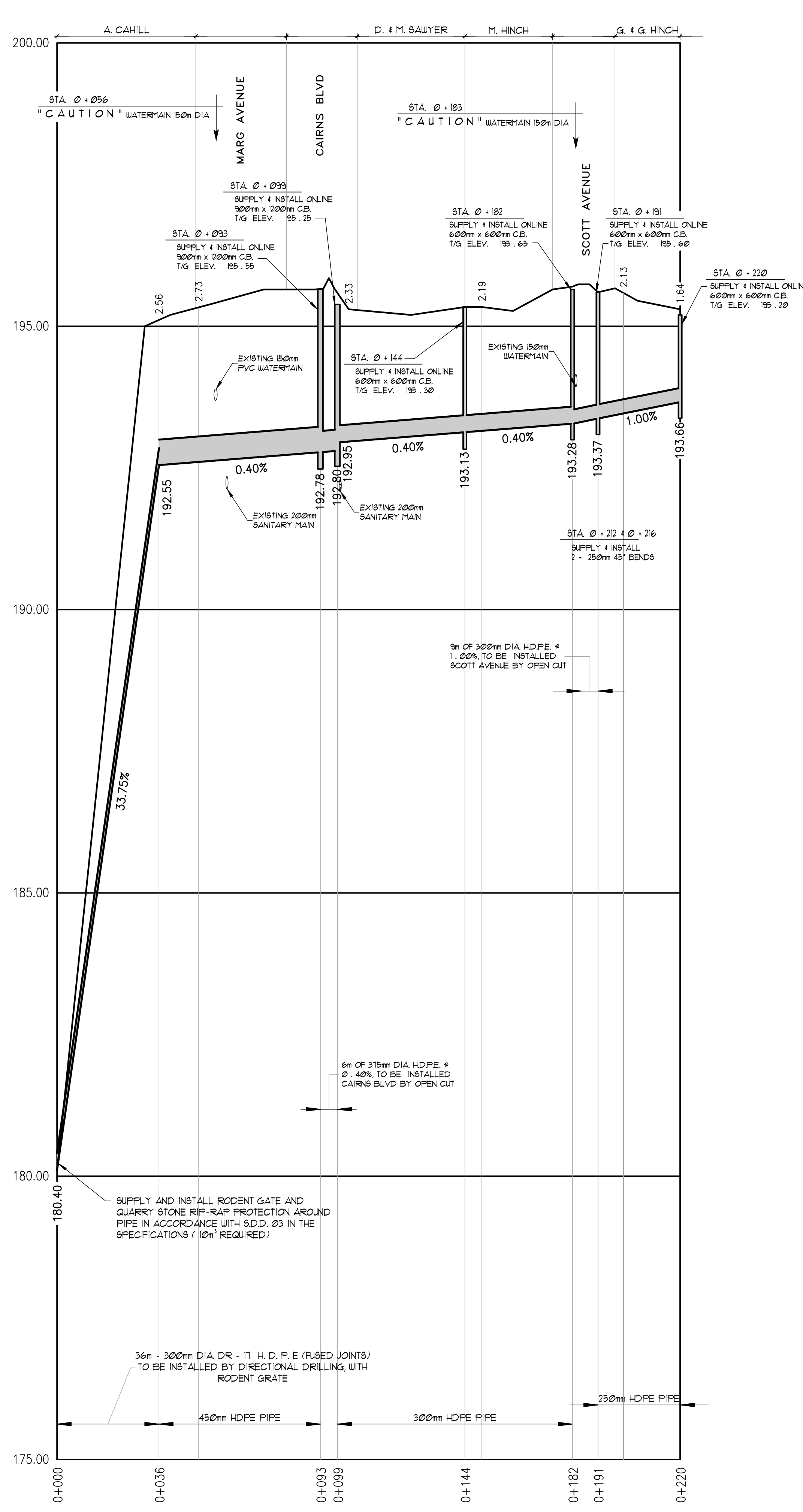
Drainage Superintendent: ELIZABETH CUMMINGS 519-845-3939	No.	REVISIONS	DATE
Drawn By: MM Date: DEC. 21, 2023		Field Book: RTS	JOB No.: 222112 Drawing No.: 1 of 2

PLAN, DETAIL & NOTES

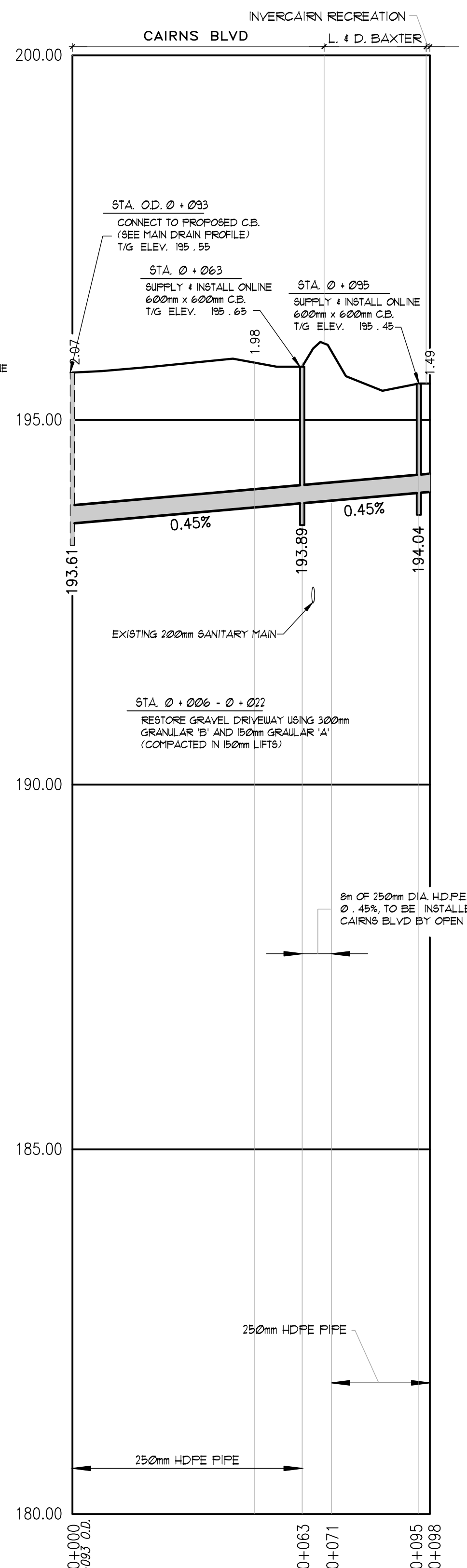
SPRIET ASSOCIATES

LONDON CONSULTING ENGINEERS LIMITED

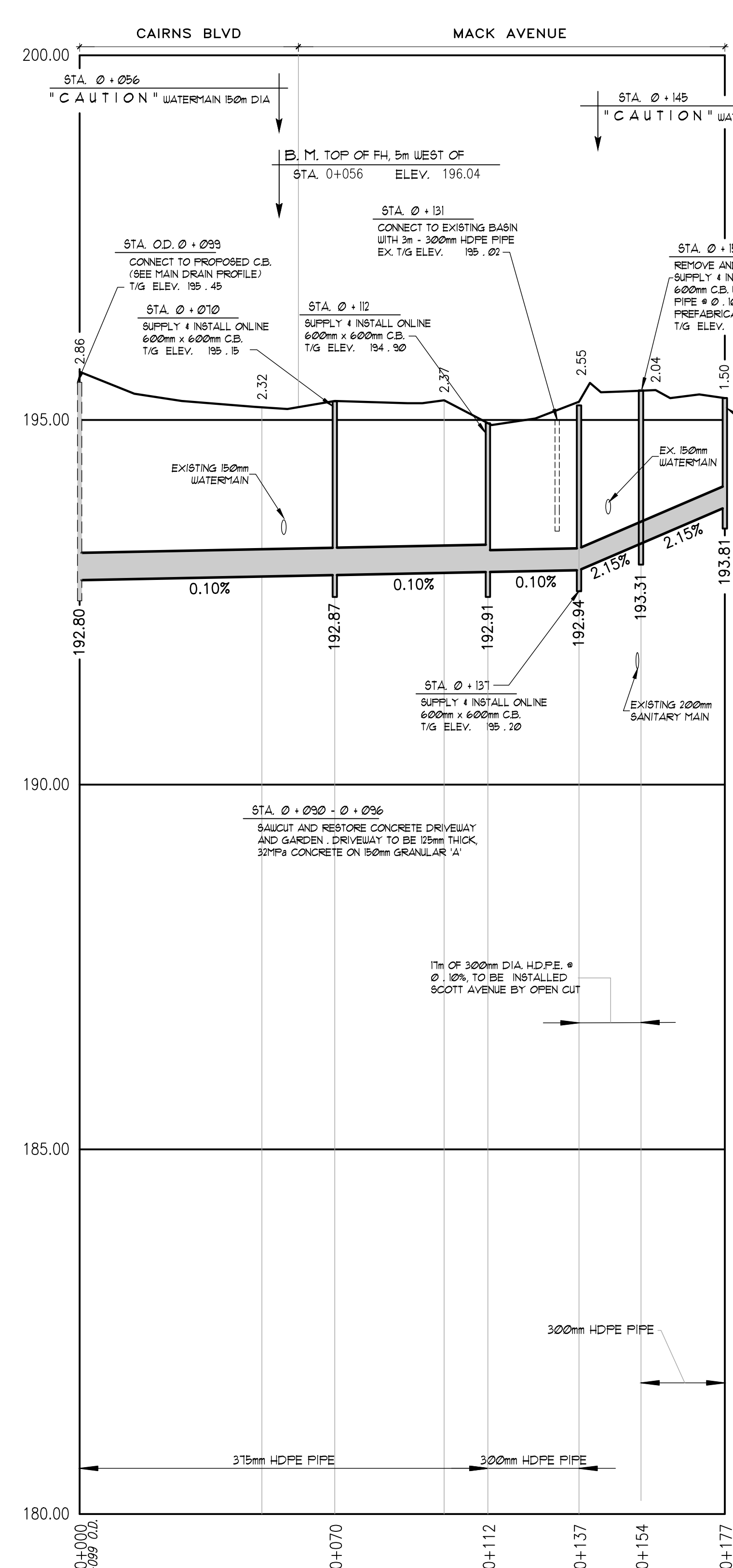
155 YORK STREET - LONDON (519) 672-4100 - NEA 1A8



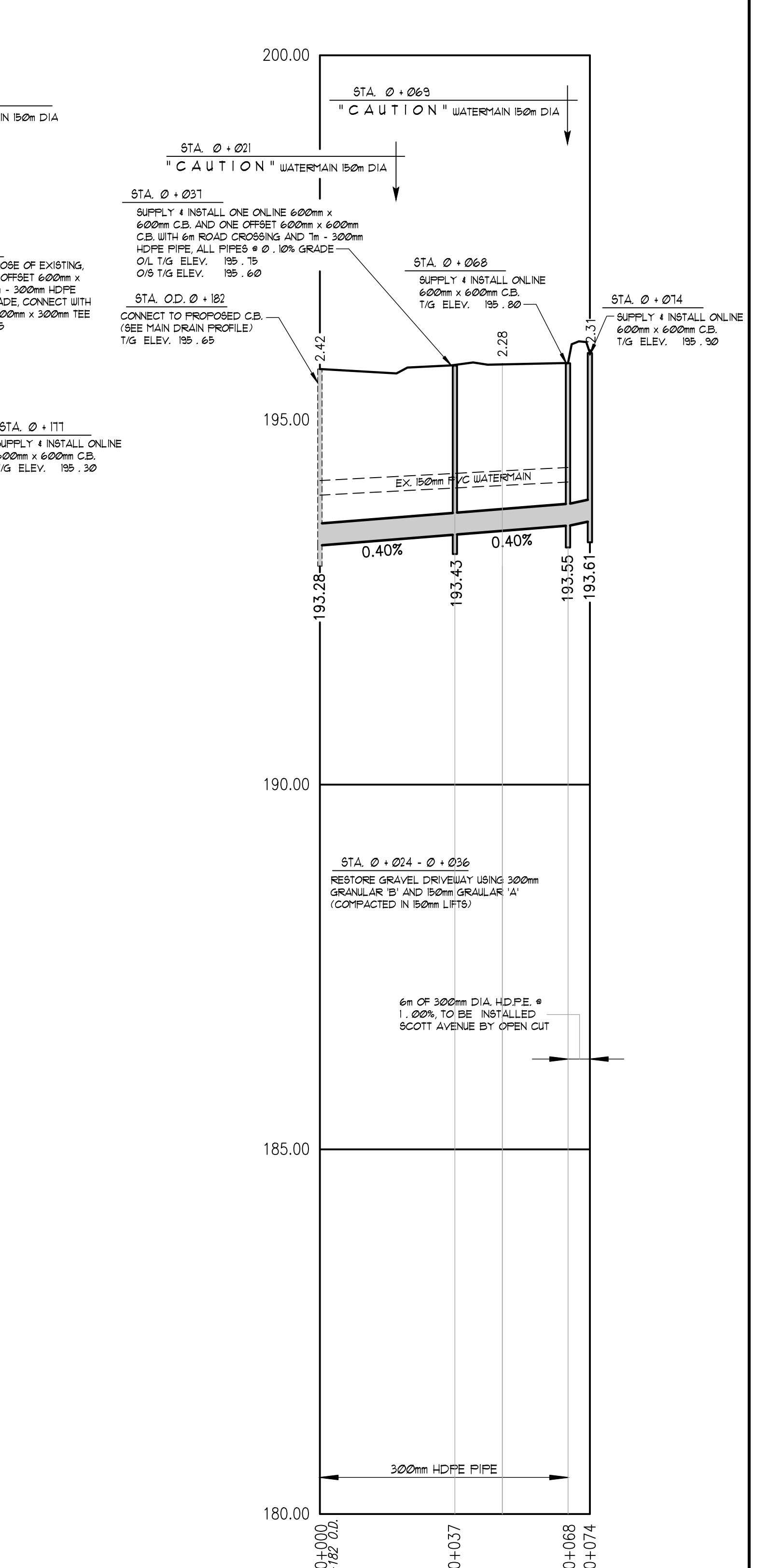
OUTLET DRAIN
SCALE: HOR 1:1,000
VERT. 1:50



CAIRNS BOULEVARD
SCALE: HOR 1:1,000
VERT. 1:50



**CAIRNS BOULEVARD
MACK AVENUE**
SCALE: HOR 1:1,000
VERT. 1:50



SCOTT AVENUE
SCALE: HOR 1:1,000
VERT. 1:50

PLAN LEGEND

- LIMIT OF WATERSHED AREA
- PROPOSED DRAINAGE WORKS
- EXTERIOR OR INTERIOR WATERSHED
- TO BE INCLUDED FOR FUTURE MAINTENANCE
- EXIST. MUNICIPAL DRAIN
- PRIVATE TILE OR SURFACE WATER RUN
- EXIST. WATERCOURSE OR PRIVATE DITCH

10 - 023 ASSESSMENT ROLL NUMBER
J. 02TH QUEBEC NAME
40 - 3 M. SECTARIES OWNED

**INVERCAIRN
DRAINAGE WORKS**
Town of
Plympton-Wyoming

Drainage Superintendent: ELIZABETH CUMMINGS 519-845-3939	No. _____	REVISIONS	DATE
	Drawn By: MM	Field Book: RTS	Job No.: 222112
	Date: DEC. 21, 2023	Drawing No.: 2 of 2	

SPRIET ASSOCIATES
LONDON CONSULTING ENGINEERS LIMITED
155 YORK STREET - LONDON (519) 672-4100 - NEA 1A8