

# Technical Memorandum; Salt Management Plan

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Date: December 13<sup>th</sup>, 2023

To: City of Guelph – Engineering & Transportation Services  
City of Guelph  
1 Carden Street  
Guelph, ON

Attn: To Whom it May Concern

Re: **Salt Management Plan for Proposed Development – ‘Pergola Commons’**  
Proposed Mixed-Use Development of 1 Clair Road East, Guelph, ON  
Proposed Rezoning Bylaw Amendment & Official Plan Amendment Applications  
Owner: FCHT HOLDINGS (ONTARIO) CORPORATION  
civilGo Project No. 23-045

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## 1. Introduction & Objectives

The purpose of this memorandum is to recommend best management practices in the management of snow removal and salt application whereby the criteria identified by the City of Guelph for salt management are addressed, in the proposed re-development of 1 Clair Road East.

The proposed re-development of 1 Clair Road East comprises four 14-storey mid-rise buildings to be constructed on a 2.22 Ha portion of a larger existing 5.38 Ha commercial Site. The proposed development comprises proposed driveways, private roads, parking areas and pedestrian walkways, which will be subject to winter maintenance and snow clearing/salt application.

Refer to the *Functional Servicing & Stormwater Management Report, ‘Pergola Commons’, Proposed Mixed-Use Re-Development, 1 Clair Road East* by civilGo Engineering Inc. (December 2023) for further details of the proposed development and storm drainage.

The criteria that was observed in the preparation of this Technical Memorandum is provided in the City of Guelph’s document titled *Private Salt Management Plans in the City of Guelph, Guidance Document*

for Proponents (June 30, 2016 Version 1). This Technical Memorandum follows the general guidelines and structure identified in Section 3.0 of the City’s guidance document.

## 2. Identification of Traffic Areas and Sensitive Features

The proposed development comprises the following areas which will be subject to pedestrian and vehicular traffic and thus will require winter snow removal and salt application. Refer to the *Winter Maintenance & Salt Management Plan* figure, appended here, for the locations of the below areas.

- Private East-West Road/driveway extending through the Site from the west *Development Line*, to Hawkins Drive, to the east. This will be the main vehicular access for the site and will provide access to the four proposed buildings’ residential lobbies and loading areas.
- Private north-south ‘Woonerf’ pedestrian connection from the above Private East-West Road, connecting to Poppy Drive East, to the south. This will serve primarily as a pedestrian walkway surface.
- Pedestrian walkways surrounding the four proposed buildings, internal courtyards, etc. Each of the four proposed buildings will have walkways and pathways surrounding them in order to provide pedestrian access to ground-level residential units and building entrances/egresses.

The proposed development will be largely underlain by the proposed below-grade parking structures, and all pedestrian and driving surfaces as described above will be imperviously surfaced. In locations where there is a below-grade parking structure beneath the surfaces which are subject to winter maintenance, said below-grade structure will prevent the percolation of salt-laden water from the surface into underlying soils and subsequently into the groundwater table. Impervious pavements, when properly maintained, will also channel runoff to approved outlets and prevent unintentional percolation of salt-laden runoff into the groundwater table.

There is one possible sensitive feature in terms of salt contamination: the existing (and proposed) infiltration facilities. There is an existing infiltration facility located near the Site’s east side which is proposed to remain in the development in order to address Water Balance/Stormwater Retention criteria. There is also an infiltration gallery proposed in the POPS area. Refer to the *Functional Servicing & Stormwater Management Report* by civilGo Engineering Inc. for the details of the design and necessity for these features. All of the Site’s runoff will ultimately drain towards the existing infiltration facility, which directly contributes water to the groundwater table. Therefore, in winter months, this constitutes a sensitive feature. This may be addressed by closing the inlet to this feature in the winter months such that stormwater runoff is not infiltrated. It is noted that the existing Infiltration Facility was designed with this capability in the initial design therefore this concern has been addressed.

## 3. Identification of Snow-Storage/Disposal Areas

Snow storage areas have been identified on the *Winter Maintenance & Salt Management Site Plan* figure, below. It is shown that there is adequate space available for snow storage. If the volume of snow requiring storage exceeds the space available on-site, it may be disposed off-site.

## 4. Use of Alternative Products

Where possible, the use rock salt should be minimized in favor of liquid de-icing salt, for driving surfaces.

For sidewalks, there should be minimal use of sodium, calcium and magnesium chloride as a de-icing chemical. Where no alternatives are available and de-icing chemicals must be used, the following are the acceptable de-icing chemicals that may be applied in pedestrian areas: Potassium Acetate and Carbohydrate-based Solutions (e.g. Geomelt or Fusion). This is in accordance with the Owner’s policies regarding winter maintenance.

## 5. Engineered Measures

The following solutions pertaining to drainage engineering should be implemented to mitigate the effects of salting and infiltration of salt-laden runoff.

The proposed development’s drainage will be designed to direct runoff to catchbasins and trench drains, rather than features which would direct the salt-laden runoff to recharge the groundwater table. Refer to the *Functional Grading Plan(s)* by civilGo Engineering Inc. for the proposed development; Drawings CV-201, CV-202 and CV-203. It is shown thereon, that by the proposed grading design, stormwater runoff will be directed to proposed catchbasins and trench drains.

Given that the proposed development necessarily utilizes infiltration facilities to address Water Balance/Stormwater Retention criteria, these infiltration facilities will be taken ‘off-line’ during the winter months. This will be accomplished utilizing flap-gates at the inlet to the existing and proposed infiltration facilities which will be closed during the winter months when road salting occurs.

## 6. Operational Measures

The following operational measures should be applied in the future ongoing operation of the proposed development to mitigate the impacts of winter maintenance on groundwater quality.

- Commence snow clearing on the earlier of (i) when the accumulation reaches four centimetres (4cm) resulting from one or more snowfalls or (ii) after two (2) hours from the beginning of any snowfall.
- Move to designated pile areas, or from the site, all ploughed snow, in accordance with the enclosed *Winter Maintenance & Salt Management Site Plan* figure. Mechanical snow removal methods shall be used whenever possible.
- Salt parking lot areas after each ploughing, as required, to ensure meltdown of residual snow and prevent further accumulations.
- Salt at all other times required, or perform any such other measures which may be required to ensure maintenance of clear, hazard-free conditions and avoidance of any further accumulation of snow or ice.
- Maintain sewer and manhole covers free from ice, snow or other obstructions at all times.
- Clearing of sidewalks (are included) must be shoveled by hand or with a snow blower, no pick-up truck or heavy machinery shall be used on sidewalks; as well there should be minimal use of sodium, calcium and magnesium chloride as a de-icing chemical (rocksalt). Where no

alternatives are available and de-icing chemicals must be used, use one of the following on sidewalks (only):

- Potassium Acetate
- Carbohydrate based solutions (e.g. Geomelt or Fusion)
- Initiate and provide all snow removal and salting on a timely basis.

## 7. Conclusion

This Technical Memorandum has outlined the manner in which the objectives of the City of Guelph’s *Private Salt Management Plans in the City of Guelph* guidance document shall be addressed in the proposed development of 1 Clair Road East.

In summary, there is a potential for salt application in the proposed development due to the proposed driving surfaces (driveways and parking areas) as well as pedestrian areas, sidewalks, etc. There is generally low risk of groundwater contamination from at-source salting of road surfaces, due to the general imperviousness of the site, below-grade parking structures which would intercept percolating water, and grading design which will channel runoff into catchbasins. There is a potential for contamination of the groundwater table by the existing and proposed infiltration facilities, however this will be managed and mitigated by flapgates which may be closed during the winter months. Operational guidelines have additionally been provided here to inform winter maintenance activities and mitigate the effects of road salt.

Please contact the undersigned with any questions.

Respectfully Submitted,



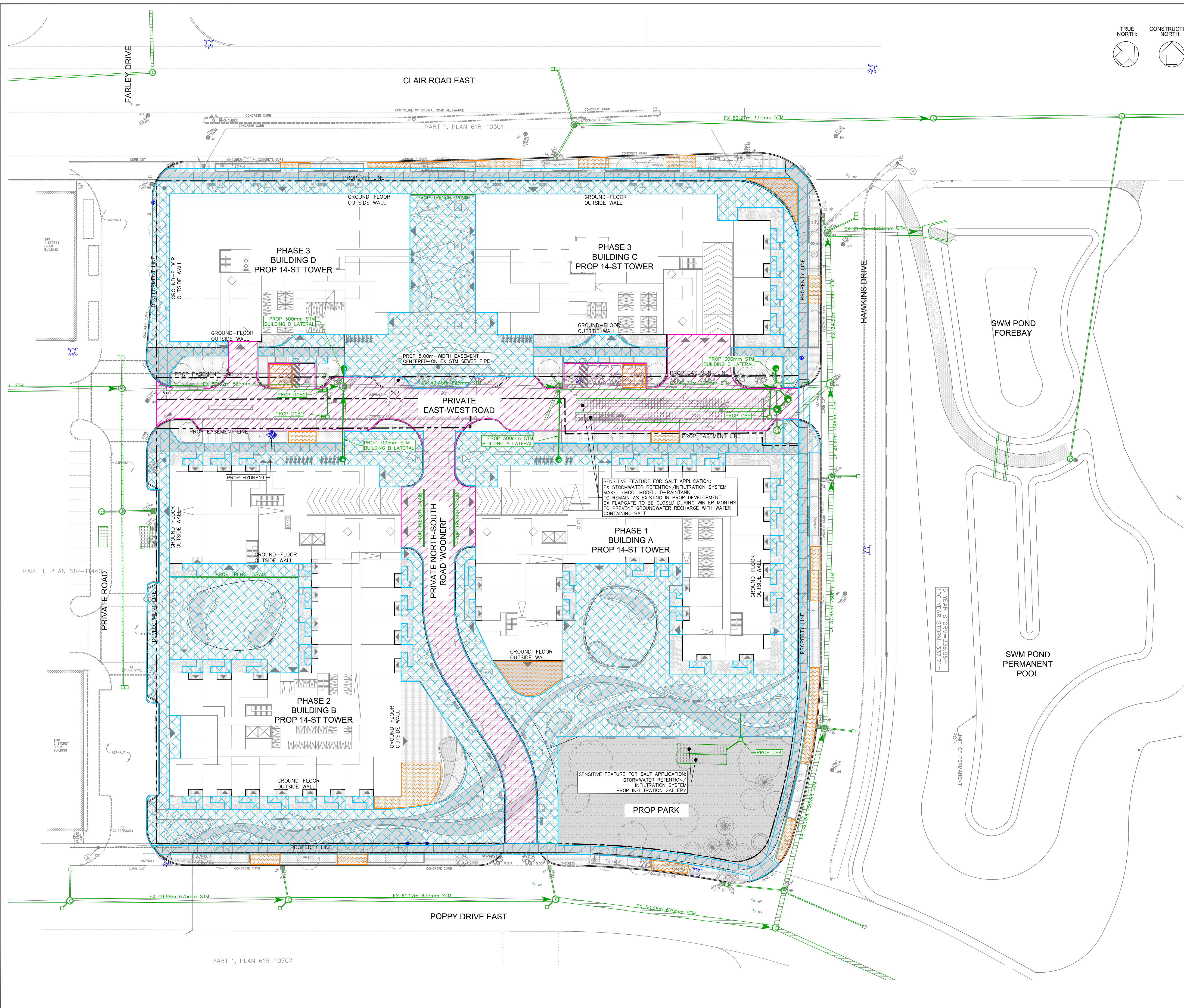
**Daniel Bancroft, P.Eng.**  
civilGo Engineering Inc.

Appendix A: Winter Maintenance & Salt Management Plan

cc Kara Green, FCHT HOLDINGS (ONTARIO) CORPORATION

# APPENDIX A

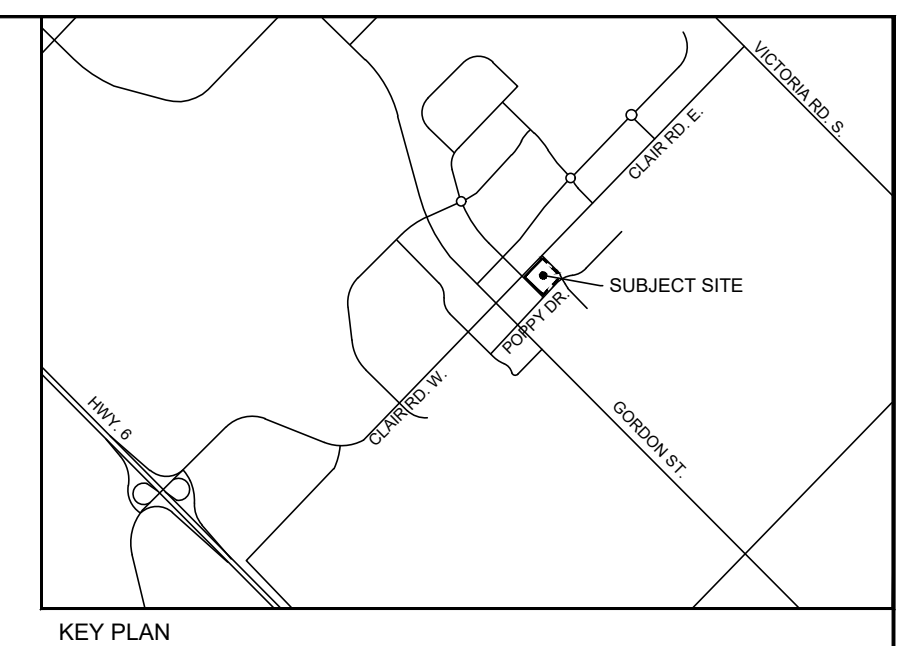
- *Winter Maintenance & Salt Management Plan*



**LEGEND**

- DENOTES EXISTING FIRE HYDRANT
- DENOTES PROPOSED FIRE HYDRANT
- DENOTES EXISTING WATER VALVE
- DENOTES PROPOSED WATER VALVE
- DENOTES EXISTING CATCHBASIN
- DENOTES PROPOSED CATCHBASIN
- DENOTES EXISTING STORM MH
- DENOTES PROPOSED STORM MH
- DENOTES EXISTING STORM SEWER
- DENOTES PROPOSED STORM SEWER
- DENOTES EXISTING INFILTRATION GALLERY
- DENOTES EXISTING PROPERTY LINE
- DENOTES SUBJECT SITE PROPERTY LINE
- DENOTES ON-SITE AREA OF VEHICULAR TRAFFIC REQUIRING SNOW REMOVAL & SALT APPLICATION
- DENOTES ON-SITE AREA OF PEDESTRIAN TRAFFIC REQUIRING SNOW REMOVAL & SALT APPLICATION
- DENOTES OFF-SITE AREA OF PEDESTRIAN TRAFFIC REQUIRING SNOW REMOVAL & SALT APPLICATION (ON PUBLIC R.O.W.)
- DENOTES SNOW STORAGE AREA

**NOTE**  
 THIS DRAWING SHOULD BE READ IN-CONJUNCTION WITH THE DOCUMENT TITLED 'TECHNICAL MEMORANDUM: SALT MANAGEMENT PLAN' BY CIVILGO ENGINEERING INC. (DECEMBER 2023). ALL BEST PRACTICE RECOMMENDATIONS MADE THEREIN APPLY IN COMBINATION WITH THE SNOW REMOVAL AREAS IDENTIFIED HEREON.



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CLIENT

1	DEC 13/2023	ISSUED FOR OPA & ZBA SUBMISSION	DB
REV.	DATE	REVISIONS	INITIAL

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**PERGOLA COMMONS  
 PROPOSED MIXED-USE DEVELOPMENT  
 1 CLAIR ROAD EAST, GUELPH, ON**

DESIGN	D.B.	DRAWN	DRAFT	CHECKED	D.B.	PROJECT No.	23-045
SCALE:	1:400		DRAWING TITLE			SHEET	
DATE:	SEPTEMBER 2023		WINTER MAINTENANCE & SALT MANAGEMENT PLAN			CV-300	