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February 10, 2025  
19-1108

The Corporation of the City of Sault Ste. Marie  
Department of Engineering and Planning  
Level V – Civic Centre  
99 Foster Drive  
Sault Ste. Marie, ON  
P6A 5X6

**Attention: Maggie McAuley, P. Eng.  
Manager, Design and Transportation Engineering**

**Re: Sanitary Sewer Study Memo  
22 MacDonald Ave. Apartment Buildings  
MacDonald Avenue, Sault Ste. Marie, ON**

Ms. McAuley

We have concluded our downstream analysis of the sanitary sewer system serving the above-noted proposed development consisting of two 9-storey apartment buildings with a total of 220 units. This study examines the Pim Street Sanitary Drainage Area with the addition of the proposed MacDonald Ave. Apartment Building Development. (See attached overall plan on SK1).

### **Sanitary Sewer System Analysis**

This drainage study focuses on the area starting from manhole #5473 on Fauquier Avenue (south of the proposed development) to manhole #827 at the intersection of Pim Street and Queen Street. The downstream study was concluded at manhole #827 as the sewer splits eastwards and southward, and generally is part of the trunk sewer system which is influenced and collected by the Pim Street Pumping Station.

This analysis is based on the assumption that the apartment buildings include 220 units with an average of 1.6 persons per unit, therefore adding a population flow to the sanitary system of 1.83 L/s excluding infiltration. The Pim Street Sanitary Drainage Area is approximately 113 hectares.

Flow monitoring data for the Pim Street Pump Station completed in 2017 and 2018 indicates a peak design flow of 1290 L/s. Comparing peak flow data to population flow for all sanitary drainage areas feeding the Pim Street Pump Station allowed for TULLOCH to estimate an infiltration flow rate of 1.0 L/ha.s., which is similar to the conclusion presented in Section 6.4.2: Extraneous Flows, from the report titled "Sault Ste. Marie Sewage Report, 1977", prepared by Proctor and Redfern Ltd.

The MacDonald Ave. Apartment Building Development adds approximately 352 persons to the population contributing to the Pim Street sanitary sewer drainage area and system.

The sanitary sewer network along the drainage path to the Pim Street pump station was analyzed for capacity. The contributing areas and drainage path are depicted in the attached drawings SK1 and SK2. Pipe network data was obtained from City GIS data and input into the attached sewer design sheet. Population-generated flows and infiltration flows were combined to determine the peak design flow, which was then compared to the sewer capacity.

## Conclusion

Based on the analysis of the downstream sewer, the development contributes relatively minor sewage flows to the downstream pipe network. As indicated in the Sanitary Sewer Design Sheet, no downstream pipe exceeds 70% of its computed capacity, and the velocities remain within an acceptable range of 0.6 m/s to 6.0 m/s.

We are therefore of the opinion that the downstream sanitary sewer infrastructure has sufficient capacity to support the proposed development.

## Closure

We trust that the information in this report will be found to be complete and adequate for your consideration. Should further elaboration be required for any portion of this project, TULLOCH would be pleased to provide assistance.

Sincerely,



**Niraj Neupane**  
Engineering Intern

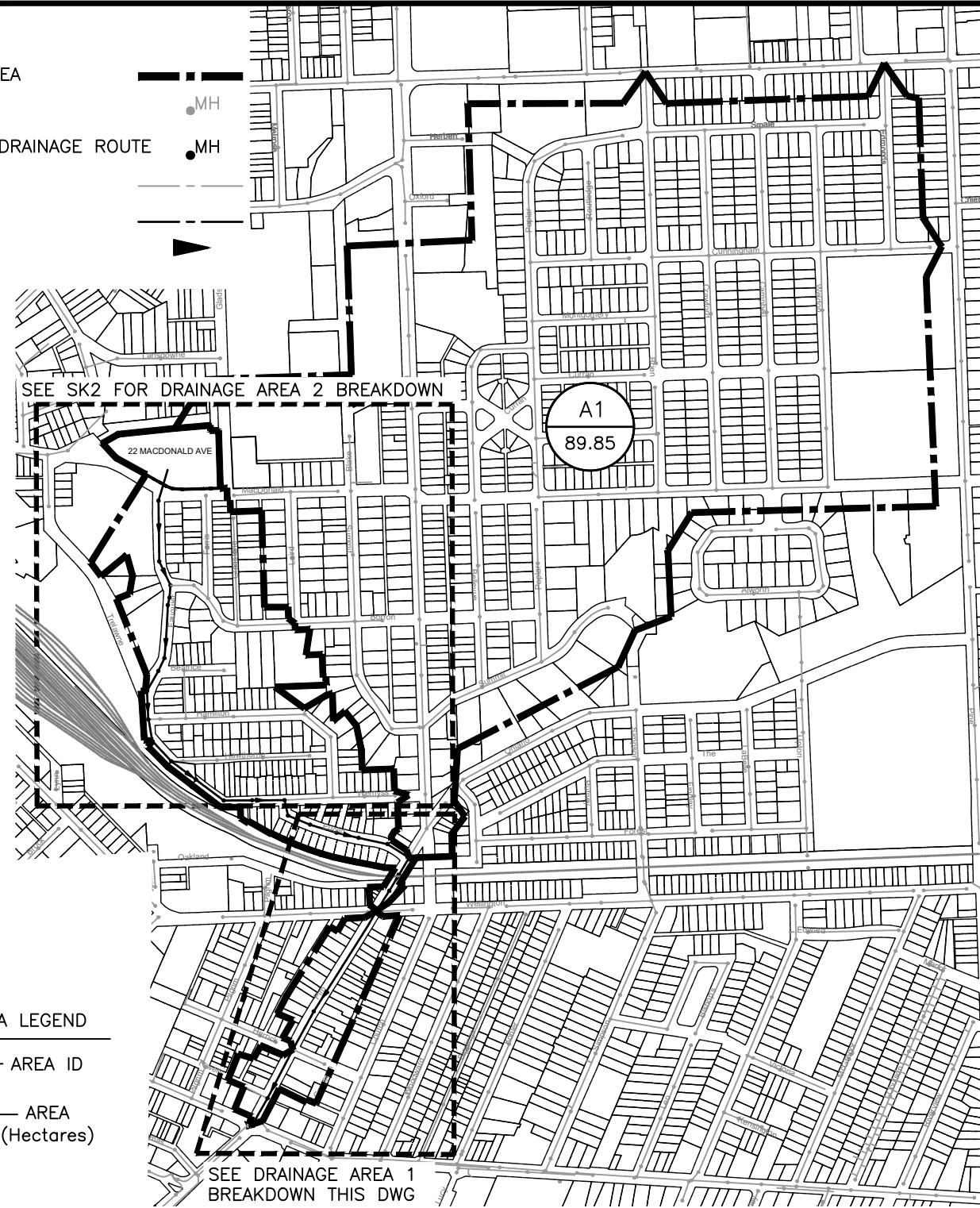
cc. **John McDonald, P.Eng.**  
Project Manager, Principal

Encl. 3



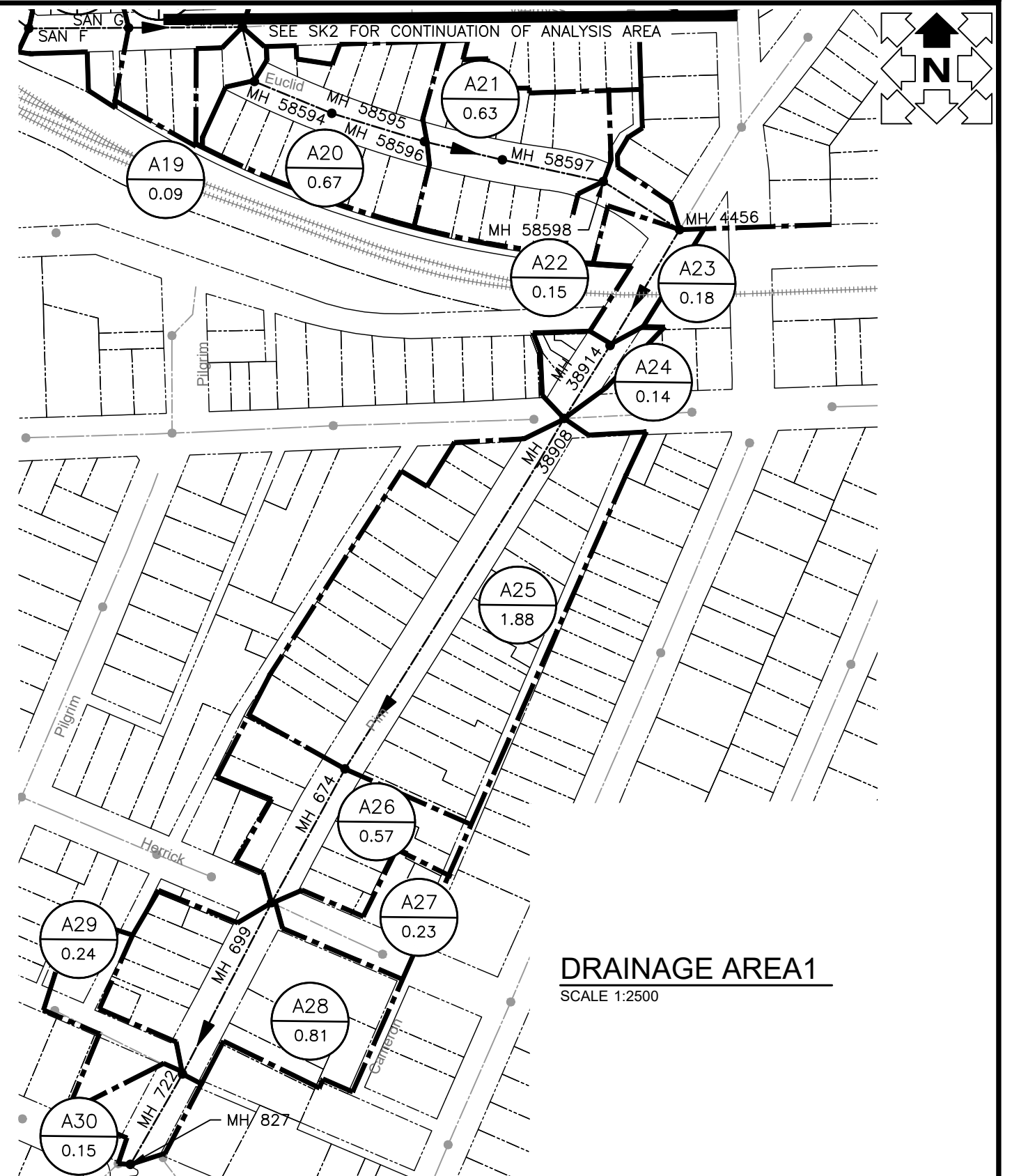
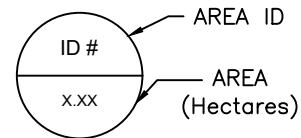
LEGEND

- SANITARY DRAINAGE AREA
- EX. SAN MANHOLD
- SAN MANHOLE ALONG DRAINAGE ROUTE
- EX. SAN PIPE
- DRAINAGE ROUTE
- FLOW DIRECTION



**OVERALL PLAN**  
SCALE 1:10000

SANITARY DRAINAGE AREA LEGEND



**DRAINAGE AREA 1**  
SCALE 1:2500

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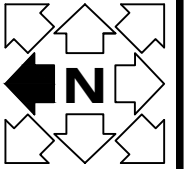
No.	DATE	BY	ISSUES / REVISIONS
0	01.22.25	KG	ISSUED FOR REPORT



DRAWING:  
**SANITARY DRAINAGE AREA**

PROJECT:  
**22 MACDONALD AVE APARTMENT DEVELOPMENT SAULT STE. MARIE, ON**

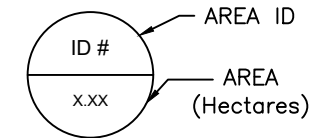
DRAWN BY: KG	CHECKED BY: JM	PROJECT No. : 191108
DESIGNED BY: NN	APPROVED BY: JM	DRAWING No. : <b>SK1</b>
SCALE: AS NOTED	DATE: JAN 22 2025	REVISION No. : <b>0</b>



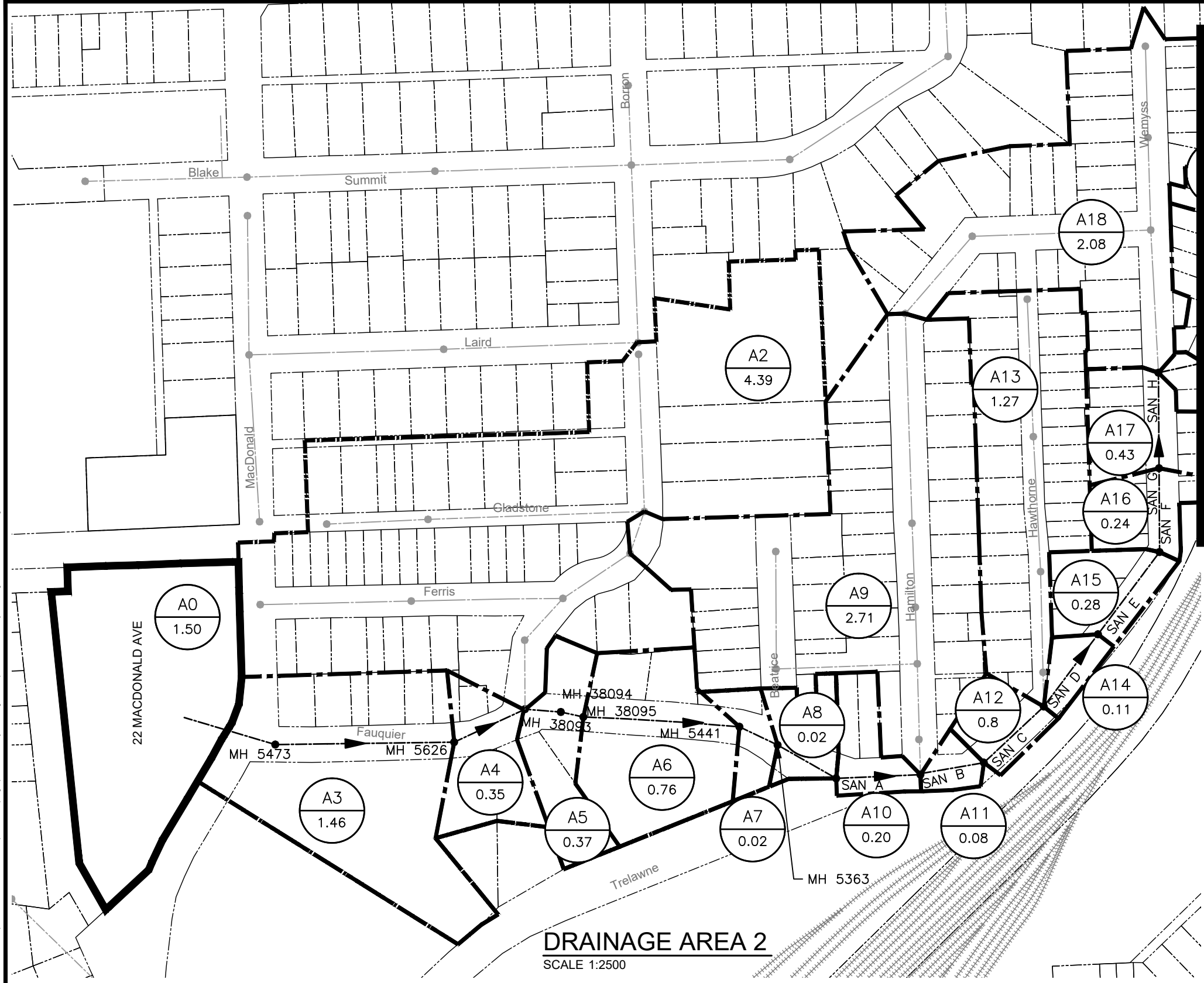
LEGEND

- SANITARY DRAINAGE AREA
- EX. SAN MANHOLD
- SAN MANHOLE ALONG DRAINAGE ROUTE
- EX. SAN PIPE
- DRAINAGE ROUTE
- FLOW DIRECTION

SANITARY DRAINAGE AREA LEGEND



SEE SK1 FOR CONTINUATION OF ANALYSIS AREA



**DRAINAGE AREA 2**  
SCALE 1:2500

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DRAWING:  
**SANITARY DRAINAGE AREA**

PROJECT:  
**22 MACDONALD AVE APARTMENT DEVELOPMENT SAULT STE. MARIE, ON**

DRAWN BY: KG	CHECKED BY: JM	PROJECT No. : 191108
DESIGNED BY: NN	APPROVED BY: JM	DRAWING No. : <b>SK2</b>
SCALE: 1:2500	DATE: JAN 22 2025	REVISION No. : <b>0</b>