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OEB File No. EB-2023-0360

December 22, 2023

BY EMAIL AND RESS
registrar@oeb.ca

Ms. Nancy Marconi
Ontario Energy Board
2300 Yonge Street, 27th Floor
Toronto, ON M4P 1E4

Dear Ms. Marconi:

**Re: PUC (Transmission) LP and Hydro One Sault Ste. Marie
Application for Leave to Construct and Related Matters
OEB File No. EB-2023-0360**

We are counsel to PUC (Transmission) LP¹ (“**PUC Tx**” or the “**Primary Applicant**”) in respect of the enclosed application (the “**Application**”) made pursuant to, *inter alia*, Section 92 of the *Ontario Energy Board Act, 1998* (the “**OEB Act**”) for an Order or Orders granting leave to construct:

- a new 230 kV transformer station, that will step-down voltage from 230 kV to 115 kV, to be constructed, owned, and operated by PUC Tx, and located at the easterly end of Yates Avenue within the boundaries of the City of Sault Ste. Marie (the “**Tagona West TS**”); and
- approximately 10 km of new 230 kV transmission lines that will cross the northerly and westerly areas of the City of Sault Ste. Marie, starting at the Third Line Transformer Station, which is owned and operated by Hydro One Sault Ste. Marie (“**HOSSM**” or the “**Secondary Applicant**”), and ending at the proposed Tagona West TS

(collectively, the “**Project**”), as further illustrated in Figure 1 below.

PUC Tx also seeks approval of the forms agreement offered, or to be offered, to affected landowners pursuant to Section 97 of the OEB Act.

The Project requires certain modifications at Third Line TS that will be designed, constructed, owned and operated by HOSSM (the “**HOSSM Station Project**”). Enclosed in the Application at **Exhibit**

¹ On October 21, 2021, the OEB issued a Decision and Order in EB-2021-0088 approving PUC (Transmission) LP’s application for a transmission licence, pending an amendment to Schedule 1 to include a description of the Project that is the subject of the approvals sought in this Application.

C, Tab 4, Schedule 1, is evidence prepared by HOSSM describing, *inter alia*, the HOSSM Station Project and seeking an Order or Orders pursuant to Section 92 of the OEB Act granting leave to construct the HOSSM Station Project.

Figure 1: PUC Transmission Project Overview Map



As further described in the Application, the Secondary Applicant is also seeking approval of a new Regulatory Deferral Account under Section 78 of the OEB Act, as well as an exemption from Section 11.2.1 of the Transmission System Code related to the payment of bypass compensation associated with the Project.

Because of the strong factual nexus between the Project and the HOSSM Station Project, PUC Tx submits that the Ontario Energy Board should combine the HOSSM application and the PUC Tx application pursuant to its authority under Section 21(5) of the OEB Act.

The Application has been prepared in accordance with Chapter 4 of the Ontario Energy Board’s Filing Requirements for Electricity Transmission Applications issued March 16, 2023 (the “**Filing Requirements**”).

Consistent with Section 4.3.5.2 of the Filing Requirements and Section 10 of the Practice Direction on Confidential Filings last revised December 17, 2021, and the Application includes a non-confidential copy of an affidavit of title with the names and addresses of all landowners affected by the Project redacted. As further described in the Application, no landowners are affected by the HOSSM Station Project. A separate confidential and password protected copy of the affidavit of title listing all affected landowners, their contact information, and a description of their property will be filed with the registrars’ office.

The Application includes letters of support from affected landowners and relevant land authorities that collectively address the land rights required for 90% of the overall length of new 230 kV line.

PUC Tx is not seeking approval to amend Schedule 1 of its transmission licence as part of this Application but will do so prior to the in-service date of the Project.

The contact details for the Primary Applicant and the Secondary Applicant are set out below:

<p>PUC Services Inc., for and on behalf of the Primary Applicant</p> <p>Dominic Parrella, Executive Lead, Special Projects PUC Services Inc. 500 Second Line East Sault Ste. Marie, Ontario P6A 6P2</p> <p>Email: Dominic.Parrella@ssmpuc.com Tel: (705) 941-8386</p> <p>If sent by email, please send a copy to: regulatory@ssmpuc.com</p> <p>With a copy to legal counsel at:</p> <p>John Vellone, Partner Borden Ladner Gervais LLP 22 Adelaide St. West Toronto, Ontario M5H 4E3</p> <p>Email: jvellone@blg.com Tel: (416) 367-6730</p>	<p>Hydro One Networks Inc., for and on behalf of the Secondary Applicant</p> <p>Carla Molina, Sr. Regulatory Coordinator Hydro One Networks Inc. 7th Floor, South Tower 483 Bay Street Toronto, Ontario M5G 2P5</p> <p>Email: regulatory@HydrOne.com Tel: (416) 343-5317</p> <p>With a copy to legal counsel at:</p> <p>Monica Caceres, Assistant General Counsel Hydro One Networks Inc. 8th Floor, South Tower 483 Bay Street Toronto, Ontario M5G 2P5</p> <p>Email: monica.caceres@HydroOne.com Tel: (647) 505-3341</p>
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Please contact the undersigned with any questions.

Yours truly,

BORDEN LADNER GERVAIS LLP



John Vellone

CC: Robert Brewer and Dominic Parrella, PUC (Transmission) LP
Carla Molina and Monica Caceres, Hydro One Networks Inc.

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1 **EXHIBIT B: THE APPLICATION**

2
3 **ADMINISTRATIVE MATTERS**

4
5 **ONTARIO ENERGY BOARD**

6
7 **IN THE MATTER OF** the *Ontario Energy Board Act, 1998*;

8
9 **And in the matter of** an Application by PUC (Transmission) LP
10 pursuant to s. 92 of the *Act* for an Order or Orders granting leave to
11 construct new transmission line and station facilities in the city of
12 Sault Ste. Marie.

13
14 **And in the matter of** an Application by PUC (Transmission) LP
15 pursuant to s. 97 of the *Act* for an Order granting approval of the forms
16 of the agreement offered or to be offered to affected landowners.

17
18 **And in the matter of** an Application by Hydro One Sault Ste. Marie LP
19 pursuant to s. 92 of the *Act* for an Order or Orders granting leave to
20 construct station facilities and related work at Third Line TS.

21
22 **And in the matter of** an Application by Hydro One Sault Ste. Marie LP
23 pursuant to s. 78 of the *Act* to create a new regulatory deferral account
24 to capture certain costs related to station work.

25
26 **And in the matter of** an Application by Hydro One Sault Ste. Marie LP
27 pursuant to s. 74 of the *Act* for an exemption from Section 11.2.1 of
28 the Transmission System Code from the requirement for Algoma Steel
29 Inc. to pay bypass compensation to Hydro One Sault Ste. Marie LP.

- 30
31 1. This is a joint application (the “**Application**”) prepared by PUC (Transmission) LP (“**PUC**
32 **Transmission**”) and Hydro One Sault Ste. Marie LP (“**HOSSM**”). For ease of reference, the

1 primary Applicant is PUC Transmission with its head office in the city of Sault Ste. Marie. The
2 secondary Applicant is HOSSM.

- 3
- 4 2. The evidence of PUC Transmission in support of its application has been prepared in
5 accordance with Chapter 4 of the *Filing Requirements for Transmission and Distribution*
6 *Applications* issued March 16, 2023 (“**Filing Requirements**”) and is set out in Exhibits A, B, C-
7 1 to C-3, D, E, F, G. The evidence of HOSSM in support of its application has been prepared in
8 accordance with Chapter 4 of the Filing Requirements and is set out in Exhibit C-4.

9

10 **Requested Relief**

- 11 3. PUC Transmission hereby applies to the Ontario Energy Board (the “**Board**” or “**OEB**”)
12 pursuant to s. 92 of the *Ontario Energy Board Act, 1998* (the “**Act**”) for an Order, or Orders,
13 granting leave to construct the “**Project**” consisting of:

- 14
- 15 a. approximately 10 km of new 230 kV transmission lines that will cross the northerly
16 and westerly areas of the city of Sault Ste. Marie, starting at the Third Line
17 Transformer Station (“**Third Line TS**”), which is owned and operated by HOSSM, and
18 ending at a new 230 kV transformer station to be constructed at the easterly limit of
19 Yates Avenue in Sault Ste. Marie (the “**230 kV Line**”); and
- 20 b. a new 230 kV transformer station, that will step-down voltage from 230 kV to 115 kV,
21 to be constructed, owned, and operated by PUC Transmission, and located at the
22 easterly end of Yates Avenue within the boundaries of the city of Saul Ste. Marie (the
23 “**Tagona West TS**”).

- 24
- 25 4. PUC Transmission is also applying to the OEB pursuant to s. 97 of the Act for approval of the
26 forms of the agreement offered, or to be offered, to affected landowners in **Exhibit E**.

- 27
- 28 5. The Project requires certain modifications at the Third Line TS that will be designed,
29 constructed, owned, and operated by HOSSM and which are necessary to enable the
30 interconnection of the Project to the Third Line TS (the “**HOSSM Station Project**”). HOSSM has
31 prepared and submitted evidence in this Application describing the HOSSM Station Project in
32 **Exhibit C, Tab 4, Schedule 1** (the “**HOSSM Evidence**”). The remainder of the Application is
33 evidence prepared and submitted by PUC Transmission (the “**PUC Transmission Evidence**”).

- 1 6. HOSSM is applying to the OEB pursuant to s. 92 of the Act for an Order, or Orders, granting leave
2 to construct the HOSSM Station Project. HOSSM is also seeking:
3
4 a. approval of a new Regulatory Deferral Account under s. 78 of the Act to capture costs
5 related to station work scope that will facilitate the connection of a new priority
6 transmission line in the region in the near future; and
7
8 b. approval, pursuant to s. 74 of the Act, for an exemption from the Transmission System
9 Code (“TSC”) from the requirement to require Algoma Steel to pay bypass
10 compensation to HOSSM under Section 11.2.1 of the TSC in respect of 30 MW of its
11 load that will be served by HOSSM on an interim basis for 3 years with the ultimate
12 intention that the 30 MW of load will be served by PUC Transmission once its facilities
13 come into service.
- 14 7. Because of the strong factual nexus between the Project and HOSSM Station Project, PUC
15 Transmission and HOSSM have filed their respective requests for relief as a joint application.
16

17 ***Background***

- 18 8. PUC Transmission is a newly formed Ontario limited partnership. PUC Transmission carries
19 on the business of owning and operating transmission facilities within Ontario. PUC
20 (Transmission) GP Inc. (“**PUC Transmission GP**”) is the general partner of PUC Transmission.
21 PUC Distribution Inc. (“**PUC Distribution**”), PUC (Transmission) LP Inc., and PUC
22 (Transmission) GP are wholly owned by PUC Inc. PUC Inc. and PUC Services Inc. are wholly
23 owned by The Corporation of the City of Sault Ste. Marie.
24
- 25 9. On October 21, 2021 the Ontario Energy Board issued its Decision and Order (EB-2021-0088)
26 approving PUC Transmission’s application for an electricity transmission licence, which “shall
27 be issued and take effect on the date which it files a description of its approved transmission
28 facilities to be included in schedule 1 of the licence with the OEB.” For further details on PUC
29 Transmission’s corporate structure please refer to the transmission licence application in the
30 referenced proceeding.
31
- 32 10. PUC Distribution owns the assets that are used to distribute electricity to residences and
33 businesses within the boundaries of the city of Sault Ste. Marie as well as parts of Prince
34 Township, Dennis Township, and the Rankin Reserve. It also owns 115 kV transmission assets,

1 which are managed, operated, and maintained by PUC Services Inc. All the assets of PUC
2 Distribution are managed, operated, and maintained by PUC Services Inc.

3
4 11. In addition to the Project and HOSSM Station Project, approximately 2 kilometers of a new
5 double-circuit 115 kV transmission line (the “**115 kV Line**”) will be constructed in conjunction
6 with the Project, starting at the Tagona West TS and ending at the Algoma Steel Inc. (“**Algoma**
7 **Steel**”) electric arc furnace 115 kV transformer station located on Algoma Steel’s property (the
8 “**EAF Station**”). The 115 kV Line will be designed and constructed by others, and fully paid for,
9 owned, and operated by Algoma Steel. Therefore, the 115 kV Line falls under the exemption
10 for leave to construct under sections 6.2(1)(e) and 6.2(1)(e.1) of O. Reg 161/99. The 115 kV
11 Line is not part of this application, but is identified herein for information and completeness, as
12 it was included in the Environmental Assessment.

13
14 12. The Project and HOSSM Station Project are required to provide adequate transmission supply
15 capacity and improve system reliability to accommodate new loads in the city of Sault Ste. Marie
16 and the surrounding area, including the new load from the construction of two electric arc
17 (“**EAF**”) furnaces by Algoma Steel, located in Sault Ste. Marie. Algoma Steel provided a letter of
18 support for the Project (see **Exhibit B, Tab 3, Schedule 1, Attachment 2**). Accordingly, the
19 Project and HOSSM Station Project are categorized as non-discretionary development projects
20 pursuant to section 4.3.2.4 of the OEB’s Chapter 4 Filing Requirements for Electricity
21 Transmission Applications (see **Exhibit B, Tab 4, Schedule 1**).

22
23 13. The Project will also support PUC Distribution’s infrastructure renewal, connect new
24 generators, and supply additional load customers that are currently being planned for the area.
25 The need also relates to an increase in local industrial load, which requires more transmission
26 capacity than is available on the existing transmission system within Sault Ste. Marie. In
27 particular, the Project would permit an industrial load to operate independently of the natural
28 gas generation servicing that load and enable access to a more reliable supply for operational
29 stability and efficiency as more energy becomes available through the Project and HOSSM
30 Station Project in conjunction with future regional transmission projects.

31
32 14. In the longer term, further increases in local industrial load are anticipated and will require
33 substantial additional capacity. The Project and HOSSM Station Project will address the large
34 load growth proposed in the Sault Ste. Marie area through these industrial expansion projects

1 and the required future PUC Distribution infrastructure renewal.

- 2
- 3 15. An overview map of the Project is included at **Exhibit B, Tab 2, Schedule 1, Attachment 1**. A
- 4 schematic single line diagram of the Project can be found at **Exhibit C, Tab 2, Schedule 1,**
- 5 **Attachment 2**. The proposed in-service date for the Project is end of Q2 2027, assuming a
- 6 construction start date in Q4 2024. Recognizing the importance of enhancing our electricity
- 7 transmission infrastructure, a focused effort is imperative to ensure a reliable and robust
- 8 power supply that meets the current and future needs of the local area. The essential nature of
- 9 this Project is accentuated by the extended lead times associated with procuring vital
- 10 equipment, construction challenges through the Northern Ontario winter weather, and access
- 11 to skilled trades which may impede the timely completion of the Project. PUC Transmission will
- 12 do what is practically within its power to advance the in-service date for its work. However, the
- 13 new network facilities are also dependent upon the completion of the HOSSM work at Third
- 14 Line TS, which is currently forecasted by HOSSM to go into service mid-2027. PUC
- 15 Transmission understands that HOSSM has undertaken a similar commitment with regards to
- 16 the Third Line TS work. On this basis, PUC Transmission and HOSSM are collectively looking
- 17 for opportunities to advance their respective work programs in an effort to better meet Algoma
- 18 Steel's needs. A project schedule is provided at **Exhibit B, Tab 11, Schedule 1**.
- 19

20 ***Additional Considerations***

- 21 16. On February 2, 2023, OEB Staff confirmed PUC Transmission's view that both the 230 kV Line
- 22 and the Tagona West TS are part of the provincial network pool consistent with the following
- 23 requirements:
- 24 a. the "Renewed Regional Planning Framework for Electricity Distributors:
- 25 Performance-Based Approach" ("**RRFE**") report, released on October 18, 2012, which
- 26 states that "all 115/230 kV auto-transformers and the associated switchgear should
- 27 consistently be defined as network assets";¹
- 28 b. section 3.0.14 (b)(ii) of the TSC defines a network station as including any station
- 29 with "an autotransformer that steps down voltage from a higher transmission level
- 30 to a lower transmission level"; and
- 31 c. section 3.0.14(a)(i) of the TSC defines a network facility as any line that forms part of

¹ Report of the Board - Renewed Regulatory Framework for Electricity Distributors: A Performance-Based Approach, issued October 18, 2012, page 45.

1 the path between two network stations.

2 PUC Transmission will be installing two 230/115 kV autotransformers at the Tagona West TS
3 in this initial construction phase. Consequently, the Tagona West TS is a network station within
4 the meaning of section 3.0.14(b)(ii) of the TSC and the RRFE. Given that both the Third Line TS
5 and the Tagona West TS are network stations, the 230 kV Line is a network facility within the
6 meaning of section 3.0.14(a)(i) of the TSC.

7
8 17. Pursuant to the OEB Bulletin regarding the *Allocation of Network Upgrade Costs related to*
9 *Customer Connections to the Transmission System* issued on September 29, 2022 (the
10 “**Bulletin**”) certain components of the Project form all or part of the minimum connection
11 requirements for Algoma. The Bulletin was not intended to redefine an entire facility from a
12 network to connection asset, instead it was meant to identify only some of the assets in a
13 network facility that perform a connection function. PUC Transmission has identified the
14 components of the Project that form the minimum connection requirements in **Table 3** located
15 at **Exhibit B, Tab 6, Schedule 1**, (the “**Minimum Connection Facilities**”) in accordance with
16 the examples noted on page 3 of the Bulletin. The Minimum Connection Facilities include
17 automatic interrupting devices at the connection interface with Algoma and a substantial
18 reactive power compensating device on the 230 kV bus, as prescribed by the IESO System
19 Impact Assessment (“**SIA**”) findings, all of which protect other customers on the IESO-
20 controlled grid from being negatively impacted by Algoma Steel’s connection.

21
22 18. PUC Transmission conducted a discounted cash flow calculation for the Minimum Connection
23 Facilities as set out in Appendix 5 of the TSC as the basis for an economic evaluation. As further
24 described below, PUC Transmission assessed Algoma Steel’s risk classification in accordance
25 with Appendix 4 of the TSC as “medium-high risk”, which stipulates an economic evaluation
26 period of 10 years (see **Exhibit B, Tab 9, Schedule 1**).

27
28 19. The Project will utilize a combination of municipal rights-of-way, existing powerline rights-of-
29 way, and additional easements to be acquired upon the Board granting leave to construct. The
30 existing powerline rights-of-way are currently unoccupied. Temporary land rights to facilitate
31 construction or to provide staging areas are not required since all the work will fall within the
32 existing and new rights-of-way. The agreements for new land rights, along with details on the
33 nature of existing land rights, can be found in **Exhibit E**.

34

- 1 20. The IESO has completed its SIA dated September 28, 2023. The SIA concludes that the Project
2 is expected to have no material adverse impact on the reliability of the integrated power
3 system, provided that all requirements in the SIA report are implemented. Also, the IESO issued
4 a *Notification of Conditional Approval for Connection* in conjunction with the final report. A copy
5 of the final SIA report is provided at **Exhibit F, Tab 1, Schedule 1, Attachment 1**. A copy of
6 and the Notification of Conditional Approval is provided at **Exhibit F, Tab 1, Schedule 1,**
7 **Attachment 2**. The IESO has also identified that an addendum to the final report is in the
8 process of being drafted at this time and is expected to be issued the second week of February
9 2024. The addendum relates primarily to identifying the requirements for the reactive power
10 compensation device that forms part of the Minimum Connection Facilities, and is not material
11 to the balance of the SIA. PUC Transmission will file a copy of the addendum when it is issued.
12
- 13 21. Hydro One Networks Inc. (“**HONI**” or “**Hydro One**”) has completed a Customer Impact
14 Assessment (“**CIA**”) ID# 2023-16, dated November 3, 2023. The results confirm that there will
15 be no material adverse impacts on area customers as a result of the Project and HOSSM Station
16 Project, provided the requirements identified in the IESO’s SIA report are implemented. A copy
17 of the CIA report is provided as **Exhibit G, Tab 1, Schedule 1, Attachment 1**.
18
- 19 22. The total capital cost of the Project to be constructed by PUC Transmission under this
20 application is approximately \$188.87 million. The details pertaining to these costs are
21 provided at **Exhibit B, Tab 6, Schedule 1, Table 1**. The total capital cost of the HOSSM Station
22 Project, to facilitate the connection of the Project, is approximately \$43.11 million. The details
23 pertaining to these costs are provided at **Exhibit C, Tab 4, Schedule 1**. The overall cost of the
24 Project and HOSSM Station Project included in this application is approximately \$231.98
25 million, as summarized in **Table 2 at Exhibit B, Tab 6, Schedule 1**.
26
- 27 23. Based on the OEB approved 2024 preliminary Uniform Transmission Rate for the network pool,
28 combined project economics for both the Project and HOSSM Station Project, as filed in **Exhibit**
29 **B, Tab 9, Schedule 1**, will result in a negligible impact of approximately 0.04% average
30 increase in the network pool rate over 25 years. This rate impact will not result in any material
31 change to the average residential consumer’s electricity bill.
32
- 33 24. Given the information provided herein, the Applicants submit that the Project and HOSSM
34 Station Project are in the public interest. The Project and HOSSM Station Project meet the needs

1 of the transmission system, provides increased transmission capacity to meet the increased
2 load within Sault Ste. Marie, and improves quality of service and reliability in the area with
3 minimal impact on provincial transmission rates.
4

5 25. The Applicants request that a decision on this Application be provided by no later than August
6 5, 2024,² and in any event as soon as practical, to ensure the Project and HOSSM Station Project
7 can be completed by the target in-service date, in order to meet Algoma Steel’s new EAF load
8 requirements in time for their operational needs.
9

10 26. PUC Transmission consents to this proceeding be disposed of without a hearing pursuant to
11 section 21(4) of the Act. As documented in the CIA report, Section 7.0 Conclusions and
12 Recommendations (see **Exhibit G, Tab 1, Schedule 1, Attachment 1**), there are no adverse
13 impacts to transmission customers as a result of the Project and HOSSM Station Project.
14 Furthermore, the SIA report, at page 5 under Notification of Conditional Approval (see **Exhibit**
15 **F, Tab 1, Schedule 1, Attachment 1**) confirms the Project and HOSSM Station Project will have
16 no material adverse impact on the reliability of the integrated power system. This conclusion
17 is confirmed in the Notice of Conditional Approval issued by the IESO that is included at **Exhibit**
18 **F, Tab 1, Schedule 1, Attachment 2**. Finally, while PUC Transmission will need to obtain land
19 rights to construct the Project, with letters of support from PUC Distribution and the Sault Ste.
20 Marie Regional Conservation Authority (“SSMRCA”) for this Application (see **Exhibit E, Tab 2,**
21 **Schedule 1, Attachments 2 and 3**) in conjunction with the letter of support from Algoma Steel
22 noted above (see **Exhibit B, Tab 3, Schedule 1, Attachment 2**), commitments are in place that
23 address the land rights requirements for 90% of the overall length of the 230 kV Line route. In
24 addition, as noted in **Exhibit E**, two property owners representing three parcels along the line
25 route and the owner of one of the two parcels required for the new Tagona West TS have
26 accepted conditional purchase offers at this time. Accordingly, the Project and HOSSM Station
27 Project will not adversely affect customers in any material way. However, if the OEB believes
28 a hearing is necessary, PUC Transmission requests a written hearing for this proceeding.
29

30 27. PUC Transmission requests that a copy of all documents filed with the Board be served on the
31 primary applicant, PUC Transmission, and its counsel and the secondary applicant, HOSSM, and
32 its counsel, as follows:

² This is 210 days after the first day after the end of the holiday time out (i.e. January 8, 2024).

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a. Primary Applicant's contact: Dominic Parrella, Executive Lead, Special Projects
PUC Services Inc.
500 Second Line East
Sault Ste. Marie, Ontario, P6A 6P2
Email: dominic.parrella@ssmpuc.com

b. Primary Applicant's counsel: John Vellone, Partner
Borden Ladner Gervais LLP
Bay Adelaide Centre, East Tower
22 Adelaide Street West
Toronto, Ontario,
M5H 4E3

c. Secondary Applicant's contact: Carla Molina, Sr. Regulatory Coordinator
Hydro One Networks Inc.
7th Floor, South Tower
483 Bay Street
Toronto, Ontario M5G 2P5
Telephone: (416) 345-5317
Fax: (416) 345-5866
Electronic access: regulatory@HydroOne.com

d. Secondary Applicant's counsel: Monica Caceres, Assistant General Counsel
Hydro One Networks Inc.
8th Floor, South Tower,
483 Bay Street
Toronto, Ontario M5G 2P5
Telephone: (647) 505-3341
Fax: (416) 345-6972
Electronic access: monica.caceres@hydroone.com

1 In respect of the PUC Transmission Evidence, dated at Sault Ste. Marie, Ontario, this 22nd day of
2 December, 2023.

3

4 All of which is respectfully submitted by:

5

6

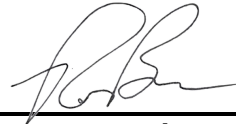
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**PUC (TRANSMISSION) LP by its General Partner
PUC (TRANSMISSION) GP INC.**

8

9

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11

Robert Brewer, President

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13

1 In respect of the HOSSM Evidence, dated at Toronto, Ontario, this 22nd day of December, 2023.

2

3 All of which is respectfully submitted by:

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Joanne Richardson, Director, Major Projects and
Partnerships

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PROJECT OVERVIEW

Project Description

As noted above, PUC Transmission is seeking approval to construct the 230 kV Line and the Tagona West TS within the municipal boundaries of the city of Sault Ste. Marie. As also noted above, the 115 kV Line is not part of this application as it will be fully paid for, owned, and operated by Algoma Steel. It is included herein for information and completeness only.

The Project serves to provide increased transmission capacity downstream of the HOSSM Third Line TS in order to serve near-term and long-term transmission-connected load and generator customers. The immediate need for increased transmission capacity is driven by the substantial increase in load at Algoma Steel due to the addition of two EAFs that will replace the existing blast furnaces. The new EAFs will result in approximately 280 MW of additional new power demand from the provincial transmission grid.

The Project will also include provisions to allow for cost effective and expedient future upgrades to supply anticipated new industrial loads and generators that are expected to develop within the westerly area of Sault Ste. Marie.

230 kV Transmission Line:

The new 230 kV Line will utilize single steel poles, carrying two 230 kV circuits, with each circuit rated at approximately 400 MVA. Total length of the 230 kV Line is approximately 10 km, starting at HOSSM's Third Line TS and ending at the applicant's new 230kV Station. The 230 kV Line includes approximately 68 structures, averaging 45 m tall, and approximately 180 m average span length.

Each 230 kV circuit will utilize a single 954 MCM ACSR conductor per phase at this time. Provision has been made in the design and will be included in the construction to allow for the addition of a second 954 MCM ACSR conductor per phase in the future, effectively doubling the capacity of the transmission line, when required to serve additional industrial loads planned for the area.

With reference to the Project Overview Map located at **Exhibit B, Tab 2, Schedule 1, Attachment 1,**

1 the route for the new 230 kV Line is outlined as follows:

2 a) The first 6,500 m of the Line running across the northerly area of the city will occupy existing
3 powerline easements. This northerly path along the existing easements includes the
4 following sections:

5 • The 230 kV Line will exit the HOSSM Third Line TS at the north-west limit of the station
6 and extend approximately 260 m to the west. From there it will extend north
7 approximately 390 m and turn due west for an additional 4,720 m running parallel to,
8 and approximately 790 m north of, Third Line West to the westerly limit.

9 • At approximately mid-way between Goulais Avenue and Allen's Side Road, the Line will
10 turn south and continue for approximately 1,100 m along existing easements.

11 b) Starting at approximately 300 m south of the centreline of Third Line West, the 230 kV Line
12 will occupy new easements to be acquired from various property owners. The Line sections
13 requiring new easements include the following:

14 • Approximately 2,405 m along primarily SSMRCA and adjacent private properties,
15 following the path represented by the dashed line on the Project Overview Map; and

16 • Approximately 1,050 m along primarily City of Sault Ste. Marie lands and adjacent private
17 properties, for the balance of the path represented by the dashed line on the Project
18 Overview Map.

19

20 Documentation for the form of easement and acquisition process proposed for use in acquiring new
21 land rights is detailed at **Exhibit E**.

22

23 It is anticipated that the overview map included at **Exhibit B, Tab 2, Schedule 1, Attachment 1**, is
24 suitable for use in preparation of the Notice of Hearing for this application.

25

26 **230 kV Transformer Station:**

27 PUC Transmission's new 230 kV transformer station, **Tagona West TS**, will consist of the following
28 main components:

29 • Two 230 kV buses with 2 diameters in a breaker and a half configuration;

30 • Two autotransformers at 240/125 kV, each rated 120/160/200 MVA;

31 • A dynamic, fast response, reactive power compensating device, (SVC or STATCOM),
32 connected to the 230 kV buses and rated at +/- 50 MVar combined with 4 x 35 MVar switched
33 capacitor banks, including control systems in accordance with the IESO SIA study outcome

1 requirements.

2

3 Provision has been included in the station design and will be incorporated into the physical layout to
4 allow for the future addition of up to two more 230/115 kV autotransformers and up to two 230/34.5
5 kV autotransformers, each rated between 100 and 200 MVA. This provision will provide for
6 economical and timely upgrades in the future to accommodate additional new industrial load and
7 generation that is anticipated for development in the area.

8

9 A schematic single line diagram of the station is included at **Exhibit C, Tab 2, Schedule 1,**
10 **Attachment 2.** A site plan showing the physical layout of the station is included at **Exhibit C, Tab 2,**
11 **Schedule 1, Attachment 3.**

12

13 As noted above, provisions will be made in the Tagona West TS for the future connection of up to two
14 230/ 34.5 kV transformers to connect PUC Distribution, the Local Distribution Company serving Sault
15 Ste. Marie and the surrounding area. PUC Distribution's two transformer stations, Tarentorus
16 Transformer Station ("**Tarentorus TS**") and St. Mary's Transformer Station ("**St. Mary's TS**"), are
17 supplied at 115 kV from HOSSM's Third Line TS. Both stations are now nearing their end of useful
18 life and must be reconstructed or retired, starting within the next five years. Connection to PUC
19 Transmission's new station at 230 kV will allow for PUC Distribution to eliminate one of its two 115
20 kV stations, and to reconstruct the other. This work is currently in the planning stages.

21

22 Transferring PUC Distribution load from the 115 kV supply at Third Line TS to PUC Transmission's
23 new 230 kV station also supports an IESO Regional Planning need identified as the "Sault No. 3 line
24 overload contingency". Please see **Exhibit H, Tab 1, Schedule 1** for further details on this matter.

25

26 **Project Overview Map**

27 Figure 1 below provides an overview map of the Project. It is representative of the final preferred
28 route and station location that were selected through the Class Environmental Assessment process.

29

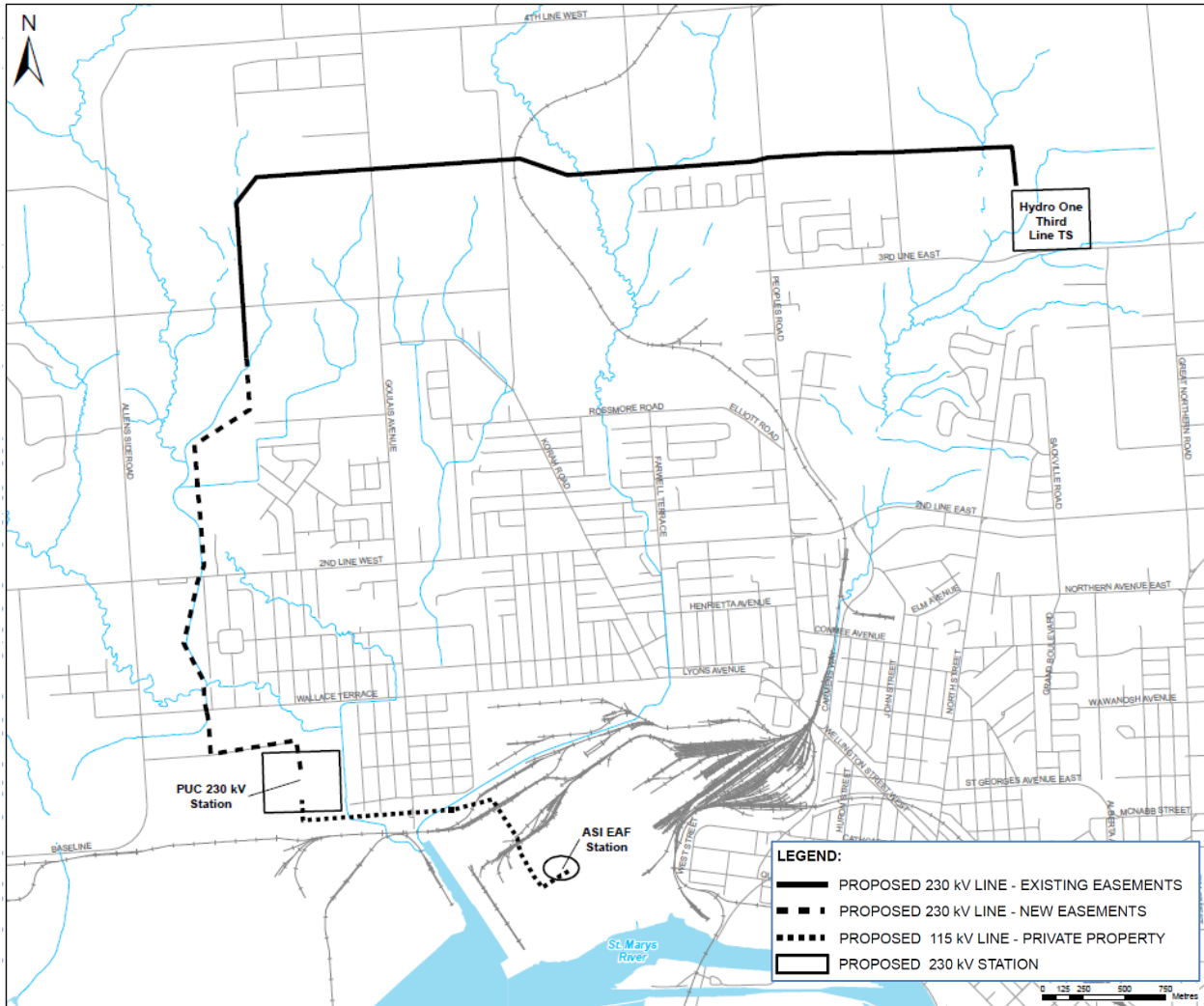
30 A full-page copy of this map is included at **Exhibit B, Tab 2, Schedule 1, Attachment 1** which is
31 anticipated to be suitable for use in the Notice of Hearing for this application.

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Figure 1: PUC Transmission Project Overview Map



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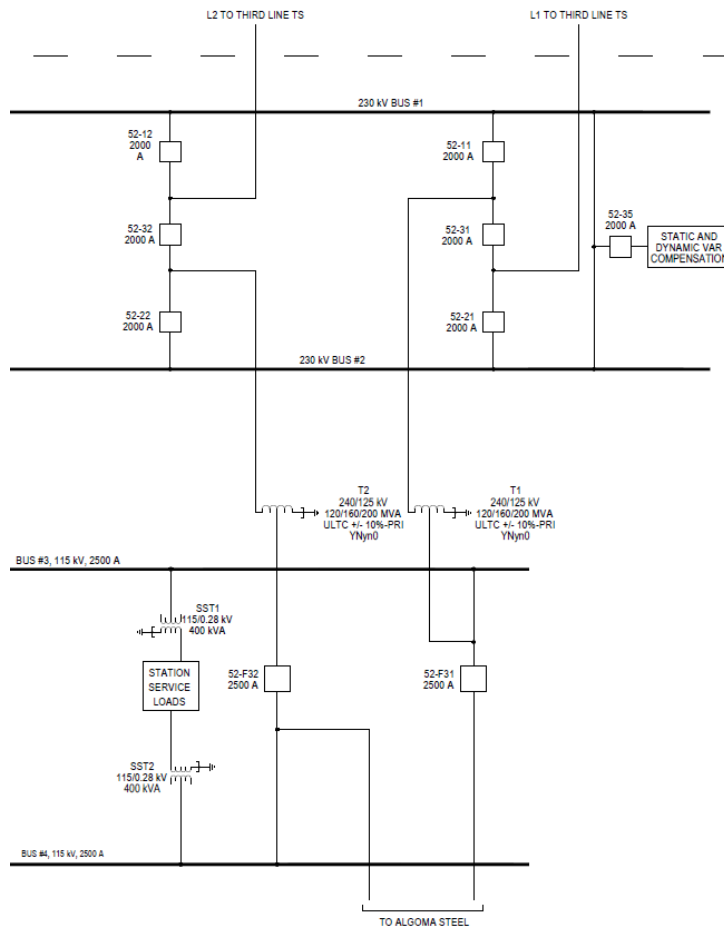
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Project Single Line Drawing

Figure 2 below provides a simplified version of the project single line diagram for the facilities that are included in this application.

Figure 2: Simplified Single Line Diagram, Current Section 92 Application

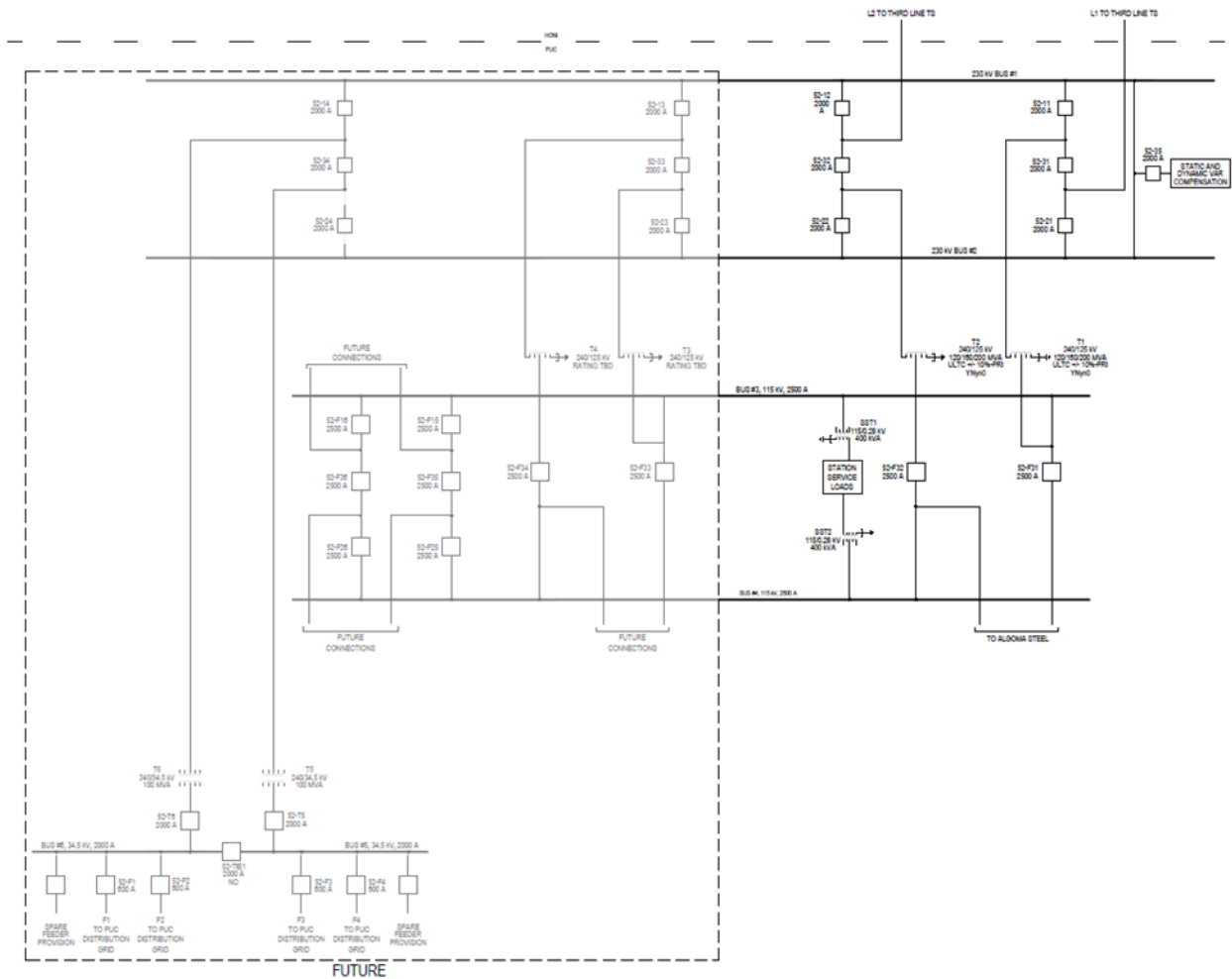


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Figure 3 below provides a simplified overview of the future expansions to the Tagona West TS that will be the subject of future Section 92 applications.

Figure 3: Current and future, ultimate station development.



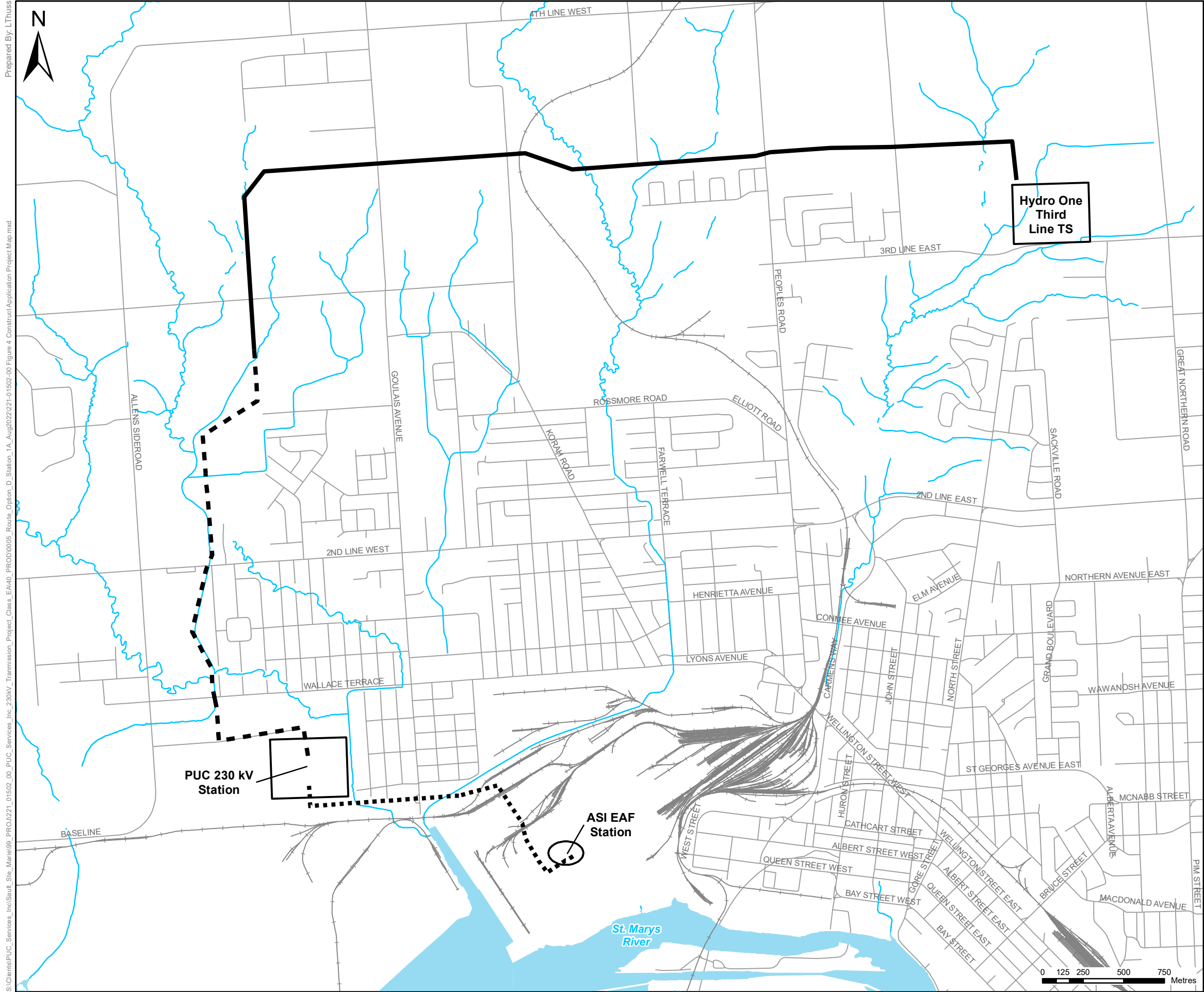
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A detailed single line diagram for the Project is included at **Exhibit C, Tab 2, Schedule 1, Attachment 2**.

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PROJECT OVERVIEW MAP

S:\Clients\PUC_Services_Inc\Sault_Site_Marie99_PROD\221_01502_00_PUC_Services_Inc_230kV_Transmission_Project_Class_EA\40_PROD\0005_Route_Option_D_Station_1A_Aug2022\221-01502-00_Figure 4_Construct_Application_Project_Map.mxd



LEGEND:

- PROPOSED 230 kV LINE - EXISTING EASEMENTS
- PROPOSED 230 kV LINE - NEW EASEMENTS
- PROPOSED 115 kV LINE - PRIVATE PROPERTY
- PROPOSED 230 kV STATION

TITLE: LEAVE TO CONSTRUCT APPLICATION - PROJECT MAP

PROJECT: PUC TRANSMISSION LP - PROPOSED TRANSMISSION FACILITIES - SAULT STE. MARIE, ONTARIO

CLIENT: PUC TRANSMISSION LP

	PROJECT NO.: 221-01502-00	REVIEWED BY: LE
	DATE: MAY 2023	FIGURE: 1

1 **EVIDENCE IN SUPPORT OF NEED FOR THE PROJECT**

2
3 PUC Transmission’s proposed facilities will provide the increased transmission supply capacity and
4 improve system reliability required to meet the increasing short-term and longer-term power
5 demands of the significant load growth forecasted for development within Sault Ste. Marie.

6
7 Additionally, the Project will include provisions to allow for cost effective and expedient future
8 upgrades in order to supply the anticipated new industrial loads and generators that are expected to
9 develop within the westerly area of Sault Ste. Marie within the next five to ten years. There is planning
10 currently underway for the construction and connection of proposed (which remains subject to a
11 PPA) new hybrid generation (i.e. photovoltaic panels combined with battery energy storage) in the
12 westerly area of the city.

13
14 With regards to industrial loads, Algoma Steel is constructing two new EAFs to replace its existing
15 blast furnaces. Algoma Steel currently maintains sufficient power for its proposed EAF steelmaking
16 operations through the use of its natural gas LSP combined cycle power plant (“**LSP Plant**”) in
17 conjunction with the existing 115kV grid. This setup allows for the initial operation of the EAFs at
18 limited capacity. However, the Project enhancement of the local infrastructure is anticipated to offer
19 a more reliable power supply for the EAFs, promoting operational stability and efficiency, as well as
20 allowing for increased utilization of the EAFs as more power becomes available through the Project.
21 The new EAF loads, of approximately 280 MW total, cannot be accommodated from the existing 115
22 kV supply at Third Line TS due to inadequate capacity of the existing 115 kV facilities at the Third
23 Line TS and the 115 kV transmission line to the Patrick Street Station, as well as the Patrick Street
24 Station itself. Moreover, the transition to the Project transmission facilities is expected to be less
25 carbon-intensive compared to the reliance on the LSP Plant, aligning with Algoma Steel's
26 commitment to environmentally sustainable practices in its operations.

27

28 **Algoma EAF Project**

29 Starting in 2021, Algoma Steel has published various media releases that confirm the national
30 significance and environmental benefits of its decision to transform its operations to become a world
31 class producer of “green” (i.e. environmentally friendly) steel.

32
33 On November 12, 2021, the Government of Ontario announced a major investment in clean

1 steelmaking technology in Sault Ste. Marie by Algoma Steel to leverage Ontario's clean energy
2 advantage, positioning Sault Ste. Marie as a world leader in the production of green, low emission
3 steel. Ontario is working with the domestic steel industry and its customers, including major
4 automotive, mining, energy, and construction companies, to reduce the environmental impact of
5 their operations and products for the benefit of all Ontarians. This project also supports Ontario's
6 plan to build a corridor of legacy infrastructure projects in the Far North that will unlock
7 unprecedented access to health, social services, high speed internet, and clean alternatives to diesel-
8 generated electricity for Northern First Nation communities. Shifting to electric arc steelmaking will
9 significantly lower GHG emissions while enhancing Ontario's competitiveness and sustaining good-
10 paying jobs in Sault Ste. Marie for generations to come.³ This announcement is included at
11 **Attachment 1 to this Tab.**

12

13 Construction of Algoma's new EAFs is currently well under way. Anticipated completion of
14 construction is scheduled by Algoma for mid-2024.

15

16 The planned development of Algoma Steel's EAF project, with respect to energy use, encompasses
17 three distinct stages. These three stages include the following:

- 18 • Stage 1: the EAFs would be supplied through the existing 115 kV supply from the Patrick
19 Street Station ("**Patrick Street**" or "**Patrick TS**") with only one EAF arcing at full power at
20 any time. In this scenario, Algoma's Lake Superior Power ("**LSP**") natural gas generating
21 station would be operating full-time to principally supply electricity to the EAFs;
- 22 • Stage 2: the EAFs would be supplied by a new 230 kV connection to the HOSSM Third Line
23 TS with
 - 24 ○ Stage 2A: only one EAF arcing at full power at any time and LSP not generating
25 electricity; and
 - 26 ○ Stage 2B: wherein both EAFs would operate simultaneous with the LSP facility in
27 operation; and
- 28 • Stage 3: the EAFs would be supplied by the new 230 kV line noted above and both EAFs
29 would be operating simultaneously without any additional electricity supply from LSP.

30

³ Ontario, News Release, Ontario Secures Major Investment in Clean Steelmaking Technology in Sault Ste. Marie, November 12, 2021, online: <https://news.ontario.ca/en/release/1001161/ontario-secures-major-investment-in-clean-steelmaking-technology-in-sault-ste-marie>

1 Stages 1 and 2B require the use of Algoma's pre-existing natural gas fired generating plant, LSP.
2 Significant upgrades to LSP are currently in progress in order to increase its electricity output.

3
4 Under the first phase of operation, Stage 1, as identified above, Algoma will operate the two EAFs
5 under their existing 115 kV supply out of Patrick Street, which will be supported by the operation of
6 their LSP combined cycle natural gas generating facility. The limited supply available from Patrick
7 Street will restrict operations to only one furnace at a time, while LSP will be required to run full-
8 time. These facilities are the subject of SIA applications CAA 2021-694 and 695.

9
10 Under the second phase of operation, Stage 2, as noted above, Algoma seeks to operate two EAFs
11 simultaneously. But this can only be accomplished utilizing a 230 kV reinforcement to the IESO
12 controlled grid. PUC Transmission's Project will upgrade the supply to Algoma with a new 115 kV
13 source out of PUC's proposed new 230 kV station in order to supply Algoma's additional new
14 electrical load of, ultimately, approximately 280 MW. The new PUC Transmission 230 kV
15 transmission line will convey electricity from HOSSM's Third Line TS in the city's north end to a new
16 PUC Transmission transformer station in the west end, at the east limit of Yates Avenue, near Algoma
17 Steel. These facilities are the subject of this Leave to Construct application. PUC Transmission applied
18 to the IESO for an SIA study on these facilities under application CAA 2021-740.

19
20 When PUC Transmission filed its request with the IESO in 2021 for an SIA study, the operating plan
21 for Algoma was to run two EAFs simultaneously with the support of a refurbished and upgraded LSP
22 generating facility. In the course of conducting the SIA, it was determined that it would be more
23 expedient for all parties if the operating proposal were subdivided into two sub-stages, as follows:

- 24 • Stage 2A; wherein only one EAF would operate at any time without the use of the LSP
25 generating facility; and
- 26 • Stage 2B: wherein both EAFs would operate simultaneous with the LSP facility in operation.

27
28 This application for Leave to Construct is made pursuant to the requirements prescribed by the IESO
29 stemming from its analysis of the Stage 2A operating scenario. The proposed Project to be
30 constructed under this initial development of PUC Transmission's new 230 kV station is designed to
31 satisfy the IESO's Stage 2A SIA findings that are required to facilitate Algoma's increased electrical
32 load.

33
34 Stage 2B is intended to be in place for an interim period until the necessary bulk system

1 reinforcements are completed by HOSSM and HONI. Once the necessary bulk system reinforcements
2 are complete, Algoma can commence Stage 3 operations.

3

4 **Algoma Steel Letter of Support**

5 Algoma Steel has provided a letter of support for PUC Transmission's application to the OEB for leave
6 to construct the Project. Their letter is included herein at **Attachment 2 to this Tab.**

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MEDIA RELEASE: GOVERNMENT OF ONTARIO SECURES MAJOR...

Ontario Secures Major Investment in Clean Steelmaking Technology in Sault Ste. Marie

Investment signals confidence in Ontario's plan to support northern jobs and prosperity

November 12, 2021

[Northern Development, Mines, Natural Resources and Forestry](#)

SAULT STE. MARIE — The Ontario government is building Ontario by attracting jobs and investment in every corner of the province, including historic and transformative investments such as Algoma Steel's all-new low-emission Electric Arc Furnace (EAF).

"Previously, Algoma Steel was buried in red tape, facing unpredictable skyrocketing hydro costs, and struggling to stay competitive, keep the lights on, and support current and retired workers," said Ross Romano, MPP for Sault Ste. Marie. "Early in our mandate, our government stepped up for the nearly 9,000 retired steel workers by protecting their pensions and providing \$60 million in financing to fund much needed capital expenditures in the plant. Next, we cut job killing red tape and made hydro rates competitive and predictable, which allowed Algoma Steel to emerge stronger than ever. These investments will ensure that there will be many more generations of steel workers who will have the benefit of supporting their families with good paying jobs and contribute to the growth of our community in Sault Ste. Marie."

Electrification of steel production at Algoma Steel will leverage Ontario's clean energy advantage, positioning Sault Ste. Marie as a world leader in the production of green, low emission steel. Ontario has taken action to support job creation and investment certainty for industries across the North, including providing companies like Algoma Steel with an affordable and reliable supply of clean electricity for years to come.

"Ontario is home to one of the cleanest grids in the world, with 94 per cent of our electricity generation producing zero emissions," said Todd Smith, Minister of Energy. "Our clean energy advantage and the actions our government has taken to reverse the trend of uncertainty and skyrocketing hydro bills has provided indispensable support to Algoma Steel in making this investment and transitioning to electric arc furnaces."

In cooperation with government, the domestic steel industry and its customers, including major automotive, mining, energy, and construction companies, are working hand-in-hand to reduce the environmental impact of their operations and products for the benefit of all Ontarians. Clean, Made-in-Ontario steel is a central part of Ontario's plan to build – leveraging domestic production to build the cars, technology, transit, hospitals, schools, and community infrastructure that are at the heart of the province's economic recovery.

"Ontario's plan to build includes a corridor of legacy infrastructure projects in the Far North that will unlock unprecedented access to health, social services, high speed internet, and clean alternatives to diesel-generated electricity for Northern First Nation communities," said Greg Rickford, Minister of Northern Development, Mines, Natural Resources and Forestry. "These community-led partnership projects and investments will connect northern First Nations to the Ontario highway network for the first time and bring unprecedented economic opportunities for all northern communities and the rest of the province."

Through *Build Ontario: the 2021 Fall Economic Statement*, the Ontario government's enhancements to the Far North Act will support new economic opportunities for First Nation and northern communities. This continued partnership will also unlock critical minerals and bring economic prosperity to Ontario's North, as the province's commitment to invest \$1 billion advances the planning and construction of an all-season road network and other projects that will connect remote First Nations living in the Far North.

"Algoma Steel's landmark investment in Sault Ste. Marie shows that our government's plan to support Northern Ontario workers, businesses, and communities is working. This is in stark contrast to earlier years when the province lost 300,000 manufacturing jobs because of skyrocketing hydro prices and creating mountains of job killing red tape," said Vic Fedeli, Minister of Economic Development, Job Creation and Trade. "Our government is laying the foundation for long-term competitiveness, economic prosperity, and more good, well-paying jobs in Sault Ste. Marie, and across all of Northern Ontario. We will keep working hard to ensure Ontario continues to attract these transformative investments and good jobs."

Not only does this investment align with Ontario's commitment to phase out the use of industrial coal, but it will lead to substantial reduction in greenhouse gases – removing three million tonnes of emissions, roughly the equivalent to taking almost one million cars off the road. Ontario is already leading the country in decarbonization and this investment will help Ontario achieve its target of reducing emissions by 30 per cent by 2030.

"I congratulate Algoma Steel on today's commitment to build new electric arc furnaces, which will have far-reaching benefits for the environment, clean jobs, and our economy for years to come," said David Piccini, Minister of the Environment, Conservation and Parks. "Our plan to support jobs, investment, and a clean economy is working and together we will grow our clean economy, fight climate change, and build a cleaner, greener future for our province together."

"Shifting to electric arc steelmaking will significantly lower GHG emissions while enhancing our competitiveness and sustaining good-paying jobs in Sault Ste. Marie for generations to come," said Michael McQuade, President and CEO of Algoma Steel. "We applaud the Government of Ontario for supporting us as we embark on this truly transformational change."

Quick Facts

- Today's announcement supports the 2021 Ontario Economic Outlook and Fiscal Review: Build Ontario – the government's plan to build the foundation for Ontario's recovery and prosperity by getting shovels in the ground on critical infrastructure, attracting increased investment, and restoring Ontario's leadership in auto manufacturing and other industries.
- Algoma Steel's \$700 million investment into an EAF will reduce carbon emissions by approximately 70 per cent, secure quality employment opportunities in the region, and lay the foundation for other major investments in the community.
- Algoma Steel is located in Sault Ste. Marie, Ontario. The company is a fully integrated producer of hot and cold rolled steel product and is a key supplier of steel products to customers in Canada and the Midwest USA. Algoma Steel's investment into the EAF will lead to the decarbonization of Algoma Steel customers across North America.
- Since 2019, the Ontario government stepped in to extend a \$60 million loan to support pensioners and secure the future of Algoma Steel, cut job killing red

tape, stop skyrocketing hydro bills, and reignite the economy to ensure all businesses in the province became competitive across North America.

Related Topics**Business and Economy**

Information about Ontario's economy and how to do business here. Includes economic development opportunities, research funding, tax credits for business and the Ontario Budget. [Learn more](#)

Environment and Energy

Learn more about how Ontario protects and restores wildlife and the environment. Includes information on conservation and the electricity system. [Learn more](#)

Rural and North

Information about the province's Far North and rural communities. Get connected to business improvement organizations and learn more about funding and programs that support rural, northern and Indigenous communities. [Learn more](#)

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LETTER OF SUPPORT: ALGOMA STEEL



June 26, 2023

To: The Ontario Energy Board.
2300 Yonge Street, 27th floor
P.O. Box 2319
Toronto, ON M4P 1E4

To whom it may concern,

Algoma Steel Inc. ("ASI") has issued this letter in support of the Application for Leave to Construct a new transmission line and station facilities as submitted by PUC (Transmission) LP to the Ontario Energy Board ("OEB").

The facilities outlined within the Application are required in part to meet the increased load resulting from the construction of two electric arc furnaces on our property, which will replace existing blast furnaces, as well as to improve and reinforce electricity supply to the City of Sault Ste. Marie. The switch to a low-carbon manufacturing process is expected to dramatically shrink Algoma's environmental footprint, reducing greenhouse gas emissions by 70%. When paired with Ontario's clean power supply, Algoma will join the leading producers of green steel in North America. The targeted operational date for the new electric arc furnaces is anticipated to be Q1 of 2025.

Algoma's project is expected to have significant benefits in the region, such as the creation of 500 new construction jobs, new supply-chain opportunities, high-skill career opportunities for local youth and a modernized workplace offering skills development and succession opportunities for employees.

This letter will serve to confirm our support for PUC (Transmission) LP's Leave to Construct Application.

Sincerely,

A handwritten signature in black ink that reads "Michael D. Garcia".

Michael D. Garcia
President & Chief Executive Officer

1 **PROJECT CATEGORIZATION**

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For the reasons that follow, this is a non-discretionary project as it will serve new loads and generators within the Sault Ste. Marie area, with Algoma Steel having the most immediate need for service.

The Project provides the increased transmission capacity required to serve Algoma Steel’s new EAFs . There will be a substantial increase in electrical load at Algoma Steel as the existing blast furnaces will be replaced by the new electric arc furnaces. This new load of approximately 280 MW can only be served by new transmission facilities connected to the HOSSM Third Line TS.

PUC Transmission’s proposed facilities will provide the increased transmission supply capacity and improve system reliability required to meet the increasing short-term and longer-term power demands of the significant load growth forecasted for development within Sault Ste. Marie.

Additionally, the Project will also include provisions to allow for cost effective and expedient future upgrades in order to supply the anticipated new industrial loads and generators that are expected to develop within the westerly area of Sault Ste. Marie within the next five to ten years. There is planning currently underway for the construction and connection of proposed (which remains subject to a PPA) new hybrid generation (i.e. photovoltaic panels combined with battery energy storage) in the westerly area of the city within the next year.

While PUC Transmission will do what is practically within its power to advance the in-service date for its work, the new network facilities are also dependent upon the completion of the HOSSM work at Third Line TS.

1 **ANALYSIS OF ALTERNATIVES**

2
3 The Board’s filing guidelines include the requirement to carry out a cost-benefit analysis of the
4 options available to address the need. As noted above, under *Evidence in Support of Need for the*
5 *Project*, the nature of the significant new additional load requirements of Algoma’s new EAFs is such
6 that there are no viable alternatives to this project. The only way to supply the substantial, 280 MW
7 of additional new load is to construct the subject 230 kV Line and associated Tagona West TS.

8
9 Algoma Steel is currently supplied at 115 kV from HOSSM’s Third Line TS through Patrick TS . The
10 new EAF loads, of approximately 280 MW total, cannot be accommodated from the existing 115 kV
11 supply at Third Line TS due to inadequate capacity of the existing 115 kV facilities at the Third Line
12 TS and the 115 kV transmission line to Patrick Street, as well as the station itself.

13
14 The construction required to upgrade or expand these existing 115 kV facilities cannot be undertaken
15 without significant power outages to all customers served from the Third Line TS. Such outages
16 would be economically unacceptable for these customers. Furthermore, upgrading the existing 115
17 kV transmission line would also be technically unfeasible due to physical constraints of existing
18 rights-of-way and existing clearances to privately owned buildings or existing utilities and
19 infrastructure.

20
21 HOSSM would have to upgrade the 115 kV facilities at Third Line TS, as well as the 115 kV lines to
22 Patrick Street to provide the required additional capacity. An upgrade of this magnitude would
23 require unacceptable extended outages for all customers in the city of Sault Ste. Marie. It is more
24 economic to provide increased transmission capacity via the Project, that will also serve additional
25 industrial and generator connections in the near future, rather than upgrading the existing 115 kV
26 facilities out of the Third Line TS.

27
28 **Environmental Assessment Alternative Routes**

29 A number of alternate routes for the Line and several potential sites for the Tagona West TS were
30 considered as options in the Class Environmental Assessment (“EA”). Under the EA process, a key
31 component of the route and station location evaluation process was to assess and compare the
32 advantages and disadvantages of each route and station alternative in a fair and holistic manner.

33
34 For this project, a weighted multi-criteria decision-making analysis was used, which consisted of:

- 1 • Collecting feedback from community members and stakeholders, as well as available
- 2 information across the evaluation categories.
- 3 • Using the feedback and information collected to build the evaluation framework, which
- 4 included:
- 5 • Identifying evaluation criteria under each category.
- 6 • Evaluating each option against each criterion.
- 7 • Assigning a relative ranking of each option based on the ratings of each criterion.
- 8 • Assessing each alternative based on the framework to select the preferred option.
- 9

10 Using public feedback received and information collected, the following criteria were used to

11 evaluate each route and station option:

Bio-physical Environment	Technical Environment	Socio-economic Environment
• Surface water protection	• Route length / station footprint	• Existing and future land use designations
• Ground water protection	• Number of structures	• Conformance with the Provincial Policy Statement
• Designated or special natural areas	• Contiguous right of way	• Existing recreational resources
• Vegetation	• Infrastructure crossings	• Scenic or aesthetically pleasing landscapes or views
• Wetlands and floodplain areas	• Constraints on future municipal capital works	• Archaeological resources
• Fish and fish habitat		
• Terrestrial and wildlife habitat		

12

13

14

1
2 The 230 kV Line routing and Tagona West TS location presented in this application represent the
3 outcome of the assessment of the various evaluation criteria for each route option and each site
4 option. Compared to the other line route and station site options, the preferred route and site
5 demonstrate the advantages summarized in the table below:

	Biophysical Environment	Technical Environment	Socio-economic Environment
Preferred Line Route	<ul style="list-style-type: none"> • Fewest natural features, such as SSMRCA regulated areas and wetlands 	<ul style="list-style-type: none"> • Shortest route length 	<ul style="list-style-type: none"> • Least number of nearby residences and businesses.
	<ul style="list-style-type: none"> • Smallest area of highly vulnerable aquifer and potential groundwater recharge area 	<ul style="list-style-type: none"> • Least number of new structures (poles) 	<ul style="list-style-type: none"> • Least number of cultural heritage resources
	<ul style="list-style-type: none"> • Least amount of vegetation 	<ul style="list-style-type: none"> • Least number of existing infrastructure crossings 	<ul style="list-style-type: none"> • Smallest area of lands designated as Open Space and recreational resources
	<ul style="list-style-type: none"> • Smallest area of fish and wildlife habitat 		<ul style="list-style-type: none"> • Least archaeological potential
Preferred Station Site	<ul style="list-style-type: none"> • Fewest number of watercourses 	<ul style="list-style-type: none"> • No constraints to future municipal capital works 	<ul style="list-style-type: none"> • Conformance with the Provincial Policy Statement
	<ul style="list-style-type: none"> • Least amount of wetlands and smallest floodplain area 	<ul style="list-style-type: none"> • No infrastructure crossings 	<ul style="list-style-type: none"> • Least archaeological potential
	<ul style="list-style-type: none"> • Smallest potential groundwater discharge area and groundwater recharge area 	<ul style="list-style-type: none"> • No constraints to future municipal capital works 	<ul style="list-style-type: none"> • No conflict with current zoning and land uses
	<ul style="list-style-type: none"> • Least amount of vegetation 		
	<ul style="list-style-type: none"> • Smallest area of fish and wildlife habitat 		

6
7 A copy of the completed **Environmental Study Report** can be accessed at this link:
8 [https://puctransmissionlp.com/documents/assets/uploads/files/en/puc transmission ea final esr 05oct2022.pdf](https://puctransmissionlp.com/documents/assets/uploads/files/en/puc%20transmission%20ea%20final%20esr%2005oct2022.pdf).

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1 **PROJECT COSTS**

2

3 **Overall Project Costs**

4 This section sets out the estimated costs of the Project, broken down by key cost centers as indicated
5 in the tables below, for the 230 kV Line and the Tagona West TS, inclusive of contingency and
6 capitalized interest. An allowance for capitalized interest has been estimated using the Board's
7 prescribed interest rate as of Q1, 2024 for the construction work in progress ("CWIP") account at
8 5.48%⁴

9

10 The estimated capital costs of the Project for PUC Transmission's Work are shown below in **Table 1**.
11 Several items are specifically listed under the category "Other" to facilitate exclusion of non-
12 comparable costs for the purposes of performing cost comparisons of similar projects in **Exhibit B**,
13 **Tab 8, Schedule 1**. All the work to be done by PUC Transmission will be carried out by third party
14 contractors through competitive bid processes.

15

16

Table 1: Estimated Cost of the Work (PUC Transmission Only)

	(\$millions)	Line	Station	Totals
Labour		\$21.18	\$22.85	\$44.03
Materials		\$12.23	\$25.47	\$37.70
Real Estate, Land Rights		\$3.49	\$2.31	\$5.80
Overheads		\$11.45	\$12.28	\$23.73
Capitalized Interest		\$5.10	\$11.09	\$16.19
Contingency		\$4.61	\$10.56	\$15.17
Other : Gas Main Induction Mitigation		\$0.75	---	\$0.75
Tree Clearing		\$0.50	---	\$0.50
SVC/STATCOM (incl. Installation)		---	\$45.00	\$45.00
Totals		\$59.31	\$129.56	\$188.87

17

18

19

⁴ OEB prescribed CWIP account interest rate, online at: <https://www.oeb.ca/regulatory-rules-and-documents/rules-codes-and-requirements/prescribed-interest-rates>

1
2 Costs related to the work to be done by HOSSM at the Third Line TS are included at **Exhibit C, Tab 4,**
3 **Schedule 1, Table 4** which amount to a total cost allocation of \$43.11 million to PUC Transmission.

4
5 **Table 2** below summarizes the overall total cost of the project.

6
7 **Table 2: Overall Total Project Cost**

	(\$millions)	PUC-T	HONI
Line Work		\$59.31	
Station Work		\$129.56	\$43.11
Transmitter Total Capital Costs:		\$188.87	\$43.11
Total Project Capital Cost: \$231.98			

8
9

10 **Cost Estimation**

11 The Project costs are formulated by combining actual costs incurred to date, and an estimate of
12 remaining development and construction costs to the projected in-service date. Forecasts are based
13 on vendor quotes and estimated construction costs for similar work derived from past experience of
14 the consultants.

15
16 As a newly licensed transmitter, PUC Transmission has not completed other projects that could be
17 used for cost comparison. Therefore, the section titled “Comparable Projects” below provides a
18 summary of costs presented in other Section 92 applications by other proponents for similar projects
19 constructed by other entities.

20

21 **Level/Class of Estimate**

22 The estimated Project costs presented herein represent an Association for the Advancement of Cost
23 Engineering (“**AACE**”) Class 3 cost estimate (-20%/+30% accuracy level), and are based on:

- 24 • Completed Class Environmental Assessment;
- 25 • Well-defined project scope;
- 26 • Fully identified and confirmed Line routing,

- 1 • Preliminary engineering, including detailed equipment specifications;
- 2 • Pre-purchase of long lead equipment under competitive bidding process; and
- 3 • Allowance for a competitive-bid selection of a Construction Contract to carry out
- 4 procurement of the balance of equipment and materials, and to carry out the construction of
- 5 line and station in accordance with pre-defined detailed engineering.

6

7 PUC Transmission will fully develop the scope of work required to be completed by the construction
8 contractor in advance of calling tenders for construction. This includes comprehensive geotechnical
9 investigations and development of dewatering plans and environmental impact mitigation measures.

10

11 The Proponent's engineering consultant (the "**Consultant**") has been an integral part of the Project,
12 from initial project definition, through to Section 92 application. The Consultant was hired through
13 a competitive bid process and has undertaken and completed or will undertake and complete the
14 following:

- 15 • Initial project conceptual designs;
- 16 • Development of specifications for long-lead equipment in harmony with IESO and HONI
- 17 requirements;
- 18 • Tendering, evaluation of bids, and recommendation for procurement, of long-lead
- 19 equipment;
- 20 • Preparation of an application to the IESO for a System Impact Assessment (SIA) and to HONI
- 21 for a Customer Impact Assessment (CIA);
- 22 • Ongoing liaison and consultation with the IESO throughout the SIA process;
- 23 • Ongoing liaison and consultation with HONI in relation to connection at Third Line TS;
- 24 • Detailed engineering of line and station facilities, including detailed geotechnical
- 25 investigations and preparation of environmental mitigation plans;
- 26 • Development of specifications for a construction contract for competitive bids tendering ;
- 27 • Assistance in evaluation of construction bids and recommendation of a construction
- 28 contractor; and
- 29 • Engineering oversight through construction and commissioning as the Owner's Engineer
- 30 (OE).

31

32 The Consultant also carried out the Environmental Assessment, associated public consultations, and
33 development of associated reports and mitigation plans required for the Project, including the
34 following:

- 1 • Class EA study and resulting Environmental Study Report (“**ESR**”); and
- 2 • Various permits and approvals associated with the Project and the ESR.

3
4 This continuity will ensure optimal planning and delivery of the overall project requirements in a
5 cost-effective and timely method. The Consultant will also continue through construction as the
6 Owner’s Engineer to oversee construction and ensure the work is completed in accordance with all
7 pre-defined project specifications. This process will ensure continuity of oversight and control
8 relative to project objectives and reduced opportunities for unexpected costs.

9 **Contingency**

10 The estimated Project cost includes a contingency allowance, as noted in **Table 1** above. The
11 contingency amount included in the overall cost estimate is expected to provide for variances in
12 project costs, including but not limited to the following items, which could reasonably be expected to
13 occur:

- 14 • Tender/contract variances;
- 15 • Subsurface conditions differing from design assumptions;
- 16 • Delays in interconnection and/or commissioning work due to outage scheduling constraints;
- 17 • Delays in material delivery resulting from vendor issues or deviations; and
- 18 • Downtime and delays due to weather, routine equipment failure, or delay in availability.

19
20 There are no allowances in the contingency amount, nor elsewhere in the estimated project costs, for
21 the following items:

- 22 • Force majeure events such as labour disputes, natural disasters and protests;
- 23 • Changes in material or equipment costs exceeding historical variability in exchange rates and
24 commodity prices; and
- 25 • Critical safety or environmental incidents resulting in prolonged work stoppages.

26

27 **Project Execution**

28 PUC Transmission will carry out the Project using a Design, Bid, Build (DBB) approach through a
29 combination of activities that include the following, and which are described further below:

- 30 • Detailed engineering prior to construction;
- 31 • Pre-purchase of Long Lead Equipment (“**LLE**”);
- 32 • Vegetation clearing of the transmission corridor prior to construction;

- 1 • Acquisition of new easements and real estate prior to construction; and
- 2 • Selection of a construction contractor through a competitive bid process.

3 4 **Detailed Engineering Prior to Construction**

5 Leading up to filing for Leave to Construct, the Consultant completed the following:

- 6 • Engineering required to detail the proposed facilities in order for the IESO and HONI to
7 conduct the SIA and CIA studies, which are prerequisites to the OEB application for Leave
8 to Construct;
- 9 • Engineering required to identify pole locations in order to inform property owners of
10 impacts to their properties under the EA process;
- 11 • Engineering required to develop specifications for advance purchase of long-lead items
12 that need to be ordered prior start of construction; and
- 13 • Engineering required to support the Leave to Construct application.

14
15 During and in parallel with the Leave to Construct process, the Consultant will complete the
16 following:

- 17 • Detailed engineering and geotechnical investigations for construction tendering; and
- 18 • Detailed engineering through construction and commissioning.

19
20 Under the DBB process, PUC Transmission retains primary control over the design of the project,
21 thereby ensuring better control of end results, from a technical perspective. Also, as the project
22 is fully engineered and documented prior to tendering for construction, including detailed
23 geotechnical work, pricing by construction contract bidders can be more accurately determined,
24 resulting in less cost buffering for unknowns. This approach should provide for more
25 competitive bids from construction contractors.

26 27 **Transmission Corridor Clearing**

28 Due to the overall project timing, PUC Transmission will undertake a competitive bid process to
29 hire a logging contractor to clear the transmission corridor prior to engaging a construction
30 contractor. It is anticipated this work will be conducted during the late fall 2023 through the
31 winter of 2024, outside of the restricted seasons for species at risk (“**SAR**”) bat and bird activity,
32 in conformance with MECP guidelines and requirements. Subsequent to the Environmental
33 Assessment, the Consultant prepared a Tree Management Plan (“**TMP**”) to address required
34 environmental mitigation measures and to clearly delineate the extent of vegetation clearing to

1 be carried out. The TMP will form the basis of the corridor clearing contract to be signed with
2 the successful bidder.

3 4 **Acquisition of Easements and Land**

5 PUC Transmission has initiated and will continue activities aimed at acquiring the new land and
6 land rights necessary to accommodate the preferred transmission line routing and station
7 location, as determined under the Environmental Assessment. Details regarding PUC
8 Transmission's process are provided in **Exhibit E, Tab 3, Schedule 1, "Land and Rights
9 Acquisition Process"**.

10 11 **Selection of a Construction Contractor**

12 A construction contractor will be selected through a competitive bid process. PUC Transmission
13 will fully define the scope of work required to be completed by the contractor in advance of
14 calling tenders for construction. This will include performing all the detailed engineering,
15 including comprehensive geotechnical investigations for the proposed pole locations and the
16 station construction site, prior to tendering for construction. This will ensure all bidders have a
17 clear understanding of the field conditions and the construction requirements at the time of
18 preparing their bids, which should minimize cost buffering for unknowns. Detailed engineering
19 by PUC Transmission's Consultant will also include the development of dewatering plans and
20 environmental impact mitigation measures prior to the start of construction.

21 22 **Cost Responsibility**

23 As will be discussed below, both the Tagona West TS and 230 kV Line are network facilities under
24 section 2.0.45 of the TSC. The Tagona West TS is a network station as it uses autotransformers that
25 step down voltage from a higher transmission level (230 kV) to a lower transmission level (115 kV),
26 pursuant to subsection 3.0.14(b)(ii) of the TSC. The Line is a network facility as it forms part of the
27 physical path between two network stations (the Tagona West TS and HOSSM's Third Line TS) such
28 that electricity can be transmitted along the entire path under normal operating conditions, pursuant
29 to subsection 3.0.14(a) of the TSC. Therefore, the costs associated with the station and line have been
30 allocated to the Network Pool.⁵

31

⁵ See footnote 36 in the OEB Chapter 4 Filing Requirements for Electricity Transmission Applications

1 The Project serves to provide increased transmission capacity downstream of the HOSSM Third Line
2 TS to serve near-term and longer-term transmission-connected load and generator customers. The
3 immediate need for increased transmission capacity is driven by the lack of transmission capacity
4 available in the SSM and surrounding area and the increase in load at Algoma Steel due to the addition
5 of two EAFs that will replace the existing blast furnaces.

6
7 This initial construction phase of PUC Transmission's new Tagona West TS will include two
8 autotransformers at 230/115 kV, each rated 120/160/200 MVA. The new station will also include
9 provisions that allow for future addition of up to four more autotransformers, each rated between
10 100 and 200 MVA. Once in service, the Project will provide communal benefits in the Sault Ste. Marie
11 area for new industrial loads, new renewable hybrid generators, and the transfer of existing
12 distributor load from the existing 115 kV supply at Third Line TS to the 230 kV supply.

13
14 This transfer of distributor load to the 230 kV system will also support the IESO regional planning
15 efforts to resolve the Sault No. 3 Overload Contingency need. The proposed new 230 kV station and
16 line will increase the capacity in the region to accommodate additional new connections for loads
17 and generation. Additionally, the 230 kV Line reinforces the transmission grid in the Sault Ste Marie
18 region to increase reliability for customers and the Tagona West TS.

19
20 Under section 3.0.14 of the Transmission System Code a "network station" includes any station with
21 an autotransformer that steps down voltage from a higher transmission level to a lower transmission
22 level. The rationale for this was discussed in the OEB's Notice of Proposal to Amend a Code on May
23 17, 2013 (EB-2011-0043):

24 *In relation to the redefinition of certain transmission line connection assets, the RRFE*
25 *Board Report identified that all 115/230 kV auto-transformers and the associated*
26 *switchgear should consistently be defined as network assets. The rationale for that*
27 *conclusion was that about 50% are currently defined as line connection assets and the*
28 *other 50% are defined as network assets. In addition, as the Board noted, these are*
29 *unique system elements that accommodate loads beyond a customer's requirement and*
30 *auto-transformers optimize use of the transmission system as a whole in*
31 *accommodating new loads safely, reliably and in a timely manner.*

32

1 A similar statement was made by the OEB in its RRFE report, released on October 18, 2012:⁶
2 The Board has concluded that all 115/230 kV auto-transformers and the associated
3 switchgear should consistently be defined as network assets. The rationale for
4 classifying this subset of transmission assets as network assets was previously explained
5 by the Board as follows:

6 *These unique system elements in some instances accommodate loads that are*
7 *beyond a customer's requirement (e.g., autotransformers connecting the 230*
8 *kV transmission system to the 115 kV transmission system) In particular,*
9 *use of autotransformers is seen as a means to optimize use of the transmission*
10 *system as a whole in accommodating new loads safely and reliably and, most*
11 *of all, in a timely manner.*

12
13 Thus, the Tagona West TS qualifies as a “network station” by virtue of having autotransformers that
14 step down voltage from a higher transmission level to a lower transmission level, pursuant to
15 subsection 3.0.14(b)(ii) of the TSC.

16
17 The 230 kV Line will transmit electricity at 230 kV between the Third Line TS and the Tagona West
18 TS, both of which are network stations. Therefore, the 230 kV Line qualifies as a network facility
19 under section 3.014(a) of the TSC since it... “forms part of the physical path between two network
20 stations... such that electricity can be transmitted along the entire path under some operating
21 conditions, which may or may not reflect normal operating conditions”.⁷

22
23 On February 1, 2023, OEB Staff confirmed that both the Tagona West TS and 230 kV Line would be
24 classified as part of the provincial network pool. OEB Staff stated it was of the view that the Tagona
25 West TS would be the Delivery Point, proposed 230 kV Line and HOSSM's Third Line TS:

26 The PUC Station would be classified as a network asset because, in its RRFE Report, we
27 note the OEB “concluded that all 115/230 kV auto-transformers and the associated
28 switchgear should consistently be defined as network assets”. Also, Section 3.0.14 (b) ii.
29 of the TSC defines a network station as including any station with “an autotransformer
30 that steps down voltage from a higher transmission level to a lower transmission level”
31 which the proposed PUC Station would do as a 230kV/115 kV station.

⁶ Report of the Board - Renewed Regulatory Framework for Electricity Distributors: A Performance-Based Approach, issued October 18, 2012, page 45.

⁷ TSC s.3.0.14(a)

1 Since the PUC Line would connect HONI's network station to PUC Transmission's
2 proposed network station, it would also be classified as a network facility based on
3 Section 3.0.14 (a) of the TSC [...]
4

5 As is typical, the views of OEB staff are based on the specific set of facts provided to them and the
6 legal and regulatory requirements currently in place – if the facts or the requirements were to change,
7 the response might be different. Further, the response was not offered as, and does not constitute,
8 legal advice and is not binding on the OEB.
9

10 **Minimum Connection Facilities**

11 Consistent with section 6.3.5 of the TSC, and in accordance with the examples listed at the top of page
12 3 of the OEB Bulletin, the following components comprise the Minimum Connection Facilities
13 required to connect Algoma Steel:
14

- 15 • Two 115 kV breakers that serve to connect the two 115 kV circuits that will supply power to
16 the new EAF Station. In accordance with the Bulletin examples, these automatic interrupting
17 devices located at the connection interface with Algoma serve to protect the upstream
18 transmission system and associated customers from equipment failures or interruptions in
19 service of Algoma's electrical infrastructure.
- 20 • One reactive power compensating device consisting of a large SVC/STATCOM and
21 substantial switched capacitor banks to be connected at the 230 kV bus. These components
22 comprise the "*fast-acting capacitive reactive compensation*" that is prescribed by the IESO SIA
23 report, as noted in the second paragraph of Assessment Finding #2 on page 6 of the report.
24 This reactive compensation is required to protect other customers on the IESO-controlled
25 grid from being negatively impacted by excessive voltage variations resulting from the
26 operations of the new EAF facilities.
- 27 • All switches or disconnects, support structures, terminating structures, concrete
28 foundations, and protection systems that are associated with the above noted equipment.
- 29 • Labour and materials required to connect the incoming 115 kV circuits.
30

31 The costs related to the Minimum Connection Facilities are summarized in **Table 3** below.
32
33

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2

Table 3: Minimum Connection Facilities Required to Connect Algoma Steel

	\$millions
Supply and install two 115 kV breakers, including all associated equipment, structures, and foundations.	\$10.3
Supply and install a combined static and dynamic reactive power compensating device to meet IESO SIA report requirements, including all associated equipment, structures, and foundations.	\$45.0
Connect two 115 kV circuits supplying Algoma Steel's EAF Station	\$0.1
Total	\$55.4

3

1

2 **PROJECT RISKS**

3

4 PUC Transmission's project cost estimate includes an allowance for contingencies that may impact
5 the final project costs upon completion. The contingency allowance is intended to cover the following
6 key project risks:

- 7 • Cost estimating accuracy;
- 8 • Approvals and permits;
- 9 • Material and equipment delivery timelines; and
- 10 • Pricing variations.

11 Cost contingencies that have not been included, due to the unlikelihood or uncertainty of occurrence,
12 include:

- 13 • Labour disputes;
- 14 • Safety or environmental incidents; and
- 15 • Any other unlikely but potentially significant event.

16

17 **Discussion of Risk Items:**

18 Cost Estimating Accuracy

19 At the time of submitting this application, PUC Transmission was in the process of
20 obtaining equipment quotes for long lead items such as the autotransformers and
21 SVCs. Delays in finalizing the SIA requirements, and therefore the equipment
22 requirements, precluded the availability of final vendor quotations that could have
23 improved the estimation accuracy. Moving forward, the items noted below,
24 particularly world-wide demand that is continuing to extend equipment delivery
25 times, could have significant impacts on actual versus estimated costs. It is noted the
26 overall project cost estimate is at an AACE Class 3 level.

27

28 Approvals and Permits:

29 It is noted that most of the required environmental studies as well as the Class EA
30 have already been completed. However, there are still a number of agency approvals
31 required that could impact the project schedule. These include, but are not limited
32 to, various approvals or permits required from the regional Conservation Authority,
33 the Railway company, the City of Sault Ste. Marie, and other government agencies.

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Material and Equipment Delivery Timelines:

Due to the ongoing supply chain disruption post-pandemic, and current elevated demand world-wide, there is risk of delay due to procurement or vendor issues.

Pricing Variations:

There are several factors that have impacted cost estimates for this project. These include the following:

- Supply chain pressures – includes increased labour costs, increased cost of materials, and availability of resources;
- Shipping costs – due primarily to significant increases in fuel costs;
- Global inflation levels; and
- Volatility of international markets.

1 **COMPARABLE PROJECTS**

2
3 The OEB Filing Requirements for Electricity Transmission and Distribution Applications, Chapter 4,
4 requires the Applicant to provide information about a cost comparable project constructed by the
5 Applicant.

6
7 The Project consists of constructing a new 230 kV double-circuit transmission line from the HOSSM
8 Third Line TS to the new Tagona West TS, to be constructed and owned by PUC Transmission.

9
10 PUC Transmission is a newly licensed Ontario transmitter. As such, PUC Transmission has not
11 completed other projects that could be used for cost comparison purposes. Therefore, PUC
12 Transmission includes herein information extracted from HONI's application EB-2018-0117⁸ for the
13 Barrie Area Transmission Upgrades (the "BATU" application) which provides a summary of
14 comparable projects completed by HONI.

15

16 **Comparable Line Construction Projects**

17 HONI compared the BATU project with three other transmission line construction projects including:
18 the Guelph Area Transmission Reinforcement ("GATR") Project, the Woodstock Area Transmission
19 Reinforcement ("WATR") Project, and the South Georgian Bay Transmission Reinforcement
20 ("SGTR") Project. PUC Transmission views the GATR, WATR and BATU projects as being similar to
21 the 230 kV Line project in that they each involved building a relatively short length (ranging from 5
22 km to 13.6 km) of double circuit 230kV transmission line in a mix of rural and semi-urban
23 environments on existing HONI rights-of-way. However, PUC Transmission excluded the SGTR
24 project from the comparison table below due to its substantially greater length (27 km). Additionally,
25 the SGTR project was excluded as the in-service date was over 15 years ago and it is not considered
26 to be a reasonably comparable project due to its significant age differential.

27

28 Several adjustments were made to the construction costs for the 230 kV Line to account for material
29 costs that were not present in the GATR, WATR or BATU projects. These include:

- 30
- A reduction of \$0.5M due to the 230 kV Line requiring significant tree clearing along both the

⁸ See EB-2018-0117 online at: <https://www.rds.oeb.ca/CMWebDrawer/Record?q=CaseNumber=EB-2018-0117&sortBy=recRegisteredOn-&pageLength=400>

1 existing and new rights-of way.

- 2 • A reduction of \$0.8M to account for mitigation measures required to protect an adjacent gas
- 3 pipeline from induced currents.
- 4 • A reduction of \$3.5M (real estate adjustment) to account for the estimated costs of procuring
- 5 land and land rights associated with the 230 kV Line. As real estate costs are generally driven
- 6 by market conditions and can vary widely from one project to another, this cost component
- 7 should be excluded from the project cost comparisons.

8

9 A side-by-side comparison of the 230 kV Line project with GATR, WATR and BATU projects is
10 provided in **Table 3** below. In accordance with the filing guidelines, *Section 4.3.2.8 Comparable*
11 *Projects*, **Table 3** provides key project information for each comparison, such as costs, in-service year,
12 similarities and differences in voltage level, number of circuits, type of towers, type of terrain, and
13 other parameters as may be appropriate. Adjustments have been included for differences in the
14 nature and scope of the projects where possible. Non-comparable cost items have been added or
15 subtracted, as appropriate, to provide as accurate a comparison as possible.

16

17 A key aspect of the comparison is the escalation adjustment for inflation in project costs to account
18 for timing differences of in-service dates and potential industry or market variations over time. The
19 costs for the 230 kV Line have been substantially impacted by post-COVID-19 impacts, such as global
20 supply chain issues, escalating inflation rates and rising interest rates. The price of essential
21 commodities, such as copper, aluminum and steel, has a significant impact on the cost of producing
22 equipment used for transmission projects, such as power transformers, breakers, steel towers and
23 wire. For example, from April 2020 to end of Q2 2023, aluminum prices have increased 46%, copper
24 prices have increased 69%, and steel plate prices have increased 51%.

25

26 In addition to the fluctuation in commodity prices, labour and equipment costs have shown dramatic
27 increases in recent years as well. In order to adequately account for the aforementioned variations,
28 PUC Transmission proposes the use of OEB prescribed inflation factors, also known as the Input Price
29 Index (“**IPI**”), to adjust the historical costs for the GATR, WATR and BATU projects.

30

31 **Table 1** below lists the annual IPI inflation factors published by the OEB. It is noted that the OEB
32 prescribed inflation factors are calculated based on data that is lagging by two years compared to the
33 OEB prescribed year.

34

1 **Table 2** lists the IPI factors in accordance with the year of the underlying data that the indices were
2 calculated from.

3
4 PUC Transmission has applied the annual IPI inflation adjustment factors listed in the manner set out
5 in **Table 2** to account for the two-year lag in IPI rates when determining the inflation adjustments
6 applied to the comparative projects that are listed in **Table 3**.

7
8
9

Table 1: OEB IPI Inflation Factor; Published Data

Year	Inflation Factor
2008	2.10%
2009	2.30%
2010	1.30%
2011	1.30%
2012	1.70%
2013	2.20%
2014	2.00%
2015	1.60%
2016	2.10%
2017	1.90%
2018	1.20%
2019	1.50%
2020	2.00%
2021	2.00%
2022	2.50%
2023	3.80%
2024	5.40%

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2

Table 2: OEB IPI Inflation Factor; Applied by Year of Underlying Data

Year	Inflation Factor
2006	2.10%
2007	2.30%
2008	1.30%
2009	1.30%
2010	1.70%
2011	2.20%
2012	2.00%
2013	1.60%
2014	2.10%
2015	1.90%
2016	1.20%
2017	1.50%
2018	2.00%
2019	2.00%
2020	2.50%
2021	3.80%
2022	5.40%
2023	5.40%

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After adjustment of non-comparable costs and escalation of historical costs for inflation, and exclusion of the non-comparable SGTR project, the table illustrates the 230 kV Line cost per km is approximately \$5.45 M/km and lies between the \$3.59 M/km and \$6.52 M/km costs of the comparative projects identified herein.

10
11
12
13

While PUC Transmission has deducted certain “non-comparable” costs in the table below, there are other factors placing upward pressure on the costs for the 230 kV Line that could not be ascertained with reliable precision to include in the table. Nevertheless, these factors are material and important to highlight, including:

14
15
16
17
18
19

- It is likely all of the comparable projects had ordered the majority of their materials and executed labour contracts before the COVID-19 pandemic occurred. As noted above, key commodities used in the construction of distribution systems, such as copper, aluminum and steel, have seen cost increases of up to 69% since April 2020. IPI may not truly reflect the extreme cost pressures that PUC Transmission and many other transmitters and distributors have been seeing, especially since it is a two-year lagging indicator.

- 1 • The Project is being constructed in Sault Ste. Marie, a relatively isolated northern community.
2 The comparable projects are all located in Southern Ontario with access to larger markets to
3 source local materials and labour.
- 4 • The Project is being constructed in northern Ontario where winters are colder, longer, and
5 snowier than the comparative projects. Cold weather substantially impacts productivity. PUC
6 Transmission anticipates that construction will occur over 20 to 24 months with
7 approximately 10-12 of those months being considered winter construction.
- 8 • Local construction contractors in Sault Ste Marie are not capable of constructing the Project.
9 PUC Transmission anticipates that it will be required to retain an out-of-town construction
10 contractor for a substantial portion of the work. This contractor may need to temporarily
11 bring equipment and workers into Sault Ste Marie from across Canada.
- 12 • Rising interest rates are placing financial pressures on all businesses that may in turn be
13 passed along to customers in pricing.
- 14 • PUC Transmission’s 230 kV Line includes multiple large-angle changes in direction along the
15 full line route. Each large-angle change involves two single steel poles with significantly
16 larger foundations, resulting in significant additional costs beyond the cost of standard in-
17 line poles. In total, there are 8 heavy-angle dead-end two-pole structures, as noted in the
18 Project Details section at **Exhibit C, Tab 2, Schedule 1**.

19
20 Given the foregoing, it is not unexpected to see the resulting cost per km for the 230 kV Line. PUC
21 Transmission notes that the 230 kV Line is still less cost, on a per km basis, than the GATR project, a
22 reflection of PUC Transmission’s commitment to executing the Project on a cost-effective and
23 prudent basis.

24
25 **Table 3: Cost of Comparable Line Construction Projects**

	PUC 230 kV Line	BATU	WATR	GATR
OEB File No.	EB-2023-0360	EB-2018-0117 EXHIBIT B, TAB 7, SCHEDULE 1	EB-2018-0117 & EB-2022-0140 EXHIBIT B, TAB 7, SCHEDULE 1	EB-2018-0117 EXHIBIT B, TAB 7, SCHEDULE 1
Technical Details	230 kV double circuits on single steel poles	230 kV double circuits on single steel lattice towers	230 kV double circuits on single structures – mostly steel lattice towers with some steel poles	230 kV double circuits on single structures – mostly steel lattice towers with some steel poles
Length (circuit km)	10.0	9.0	13.6	5.0

Project Surroundings	Urban-Rural multiple road crossings; a railway; parallel gas transmission main within 15 m	Mostly rural	Urban-Rural parallel to Karn Rd – multiple road crossings	Urban – parallel to Hwy 6 with multiple crossings – highway, roads
Geographic Region	Northern Ontario (District of Algoma)	Southern Ontario	Woodstock	Guelph
Environmental Issues	Multiple watercourses and ravine crossings requiring culverts with more complex access and multiple large-angle turns	Wetland and swamp conditions requiring increased foundation sizing, helical piles and more complex access	None	None
In-Service Date	June – 2027	Dec – 2023	Mar – 2012	Nov – 2016
OEB-Approved Cost Estimate	n/a	\$22.9 M EB-2018-0117	\$35.6 M EB-2018-0117	\$23.1 M
Estimated Cost and Date	\$ 59.3 M Dec 2023	\$35.5 M ¹ Aug 2022		
Actual Cost and Year	n/a		\$35.8 M ² EB-2022-014	
Less: Non-comparable Costs	\$0.5M (tree clearing) \$0.8 M (gas main mit.) \$3.5 M (real estate)		\$0.5 M (real estate) \$5.3 M (line bypass)	\$1.4 M (real estate)
Total Comparable Project Costs	\$54.5 M	\$35.5 M	\$30.0 M	\$21.7 M
Escalation Adjustment	n/a	\$10.71 M	\$18.89 M	\$10.90 M
Escalated Project Costs	\$54.5 M	\$46.21 M	\$48.89 M	\$32.60 M
Cost per km (\$M/km)	\$5.45	\$5.13	\$3.59	\$6.52
Post Covid19 Pandemic Cost Impacts	Yes	No	No	No

1 ¹ BATU updated cost estimate letter to OEB on August 8, 2022 in OEB Proceeding EB-2018-0117

2 ² WATR updated actual cast in OEB proceeding EB-2022-0140 EXHIBIT B, TAB 7, SCHEDULE 1

3

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5 **Comparable Station Construction Projects**

6 In the BATU application HONI provided three station construction projects that are comparable to
7 the Tagona West TS for PUC Transmission’s project. In addition to the Barrie TS that was the subject
8 of the BATU application, the other three stations included: the St. Isidore TS project, the Palmerston
9 TS refurbishment project, and the Enfield TS New DESN.

1
2 The proposed Tagona West TS is similar to the cited comparable stations, with respect to number of
3 transformers. However, the Tagona West TS will have a substantially higher maximum
4 transformation capacity than any of the comparable station projects. With 2 autotransformers rated
5 at 200 MVA each, the station will have a maximum total rating of 400 MVA. The comparatives are
6 either 250 MVA or 166 MVA total station rating. Therefore, the appropriate cost comparison
7 parameter should be the cost per MVA of station capacity, rather than the total station cost. In the
8 interest of simplifying the presentation, cost per kVA is the preferred reference.

9
10 A side-by-side comparison of the Tagona West TS with the BATU application comparison projects is
11 provided in **Table 3** below. Adjustments are included to account for non-comparable items. These
12 include adjustments for the following items:

- 13 • number of feeders: since the various comparatives include different quantities of feeders,
14 reductions are included for each comparative to reduce the number of feeders to two, in each
15 case;
- 16 • removal of capacitor bank costs: not all comparable projects include capacitors, therefore
17 reductions were made to remove the cost of capacitors, where appropriate;
- 18 • removal of the SVC/STATCOM cost; the Tagona West TS is the only project that includes a
19 significant cost for large reactive power compensation. Therefore, this cost was removed
20 from the PUC Transmission project; and
- 21 • removal of real estate costs: as noted above in the line project comparisons, real estate costs
22 are generally driven by market conditions and can vary widely from one project to another,
23 therefore this cost component should be excluded from the project cost comparisons.

24
25 As noted above in the Comparable Line Construction Projects section, commodities prices as well as
26 labour and equipment costs have shown dramatic increases in recent years. In order to adequately
27 account for the aforementioned variations, PUC Transmission used IPI to adjust for inflation impacts.
28 Please refer to **Table 2** above that lists the annual inflation adjustment amount used in the inflation
29 adjustment applied to the comparable station projects in **Table 4** below.

30
31 After adjustment for non-comparable costs and escalation of historical costs for inflation, **Table 4**
32 shows that the Tagona West TS station cost of \$194/kVA lies between the \$150/kVA and \$246/kVA
33 costs of the comparative station projects identified herein.

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Table 4: Cost of Comparable Station Construction Projects

Project	Tagona West TS	Barrie TS Station Upgrade	St. Isidore TS T3/T4 Replacement	Palmerston TS Station Refurbishment	Enfield TS New Station Build
OEB File No.	EB-2023-0360	EB-2018-0117 EXHIBIT B, TAB 7, SCHEDULE 1	EB-2018-0117 EXHIBIT B, TAB 7, SCHEDULE 1	EB-2018-0117 EXHIBIT B, TAB 7, SCHEDULE 1	EB-2018-0117 EXHIBIT B, TAB 7, SCHEDULE 1
Technical	230/115kV 120/200 MVA, 2 transformers, 2 feeders, 1 SVC/STATCOM, 1 PCT Bldg	230/44kV 75/125 MVA, 2 transformers, 8 feeders, 2 cap banks, 1 PCT Bldg	230/44kV 50/83 MVA DESN 2 transformers, 5 feeders, 2 cap banks, 1 PCT Bldg	115/44kV 50/83 MVA DESN 2 transformers, 4 feeders, 2 cap banks, 1 PCT Bldg	230/44kV 75/125 MVA DESN 2 transformers, 6 feeders, 1 cap bank, 1 PCT Bldg
Location	Station situated in new location	Upgrade within expanded footprint	Replacement within expanded footprint	Refurbishment within existing station	New station within existing fenced area.
Project Surroundings	Residential / Industrial	Suburban / Residential	Mostly Rural	Mostly Rural	Mostly Rural
Environmental Issues	None	None	None	None	None
In-Service Date	Jun - 2027	Jun - 2022	Jun - 2020	Apr - 2019	May - 2019
OEB-Approved Cost Estimate	n/a	\$35,068k	\$33,923k	\$32,006k	\$28,824k
Estimated Cost and Date	\$129,560k Dec 2023				
Adjust for Feeders (\$482k each)	--	-\$2,892k (6 feeders)	-\$1,446k (3 feeders)	-\$964k (2 feeders)	-\$1,928K (4 feeders)
Adjust for Cap Banks (\$1.3M ea.)	--	-\$2,600k	-\$2,600k	-\$2,600k	+\$1,300k
Adjust for SVC/STATCOM (incl. Capitalized Interest)	-\$49,629k	--	--	--	--
Adjust for Real Estate	-\$2,310k	--	--	--	--
Total Comparable Costs	\$77,621k	\$29,576k	\$29,877k	\$28,442k	\$28,196k
Add: Escalation Adjustment	n/a	\$8,922k	\$12,070k	\$12,522k	\$12,347k
Escalated Total Comparable Costs	\$77,621k	\$38,498k	\$41,947k	\$40,964k	\$40,543k
Station Total Max. MVA	400	250	166	166	250
Cost per kVA (\$/kVA)	\$194	\$150	\$246	\$240	\$158
Post Covid19 Pandemic Cost Impacts	Yes	No	No	No	No

3

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1 **TRANSMISSION RATE IMPACT ASSESSMENT**

2 **Economic Evaluation – Minimum Connection Facilities**

3 PUC Transmission conducted an Economic Evaluation (“EE”) of the Minimum Connection Facilities,
4 as identified in **Table 3** of the Cost Responsibility section, **Exhibit B Tab 6, Schedule 1**, in accordance
5 with the requirements of the TSC and Appendices 4 and 5 thereto. One of the key considerations in
6 any EE is the economic evaluation period that is determined based on the risk classification of the
7 proposed new or modified connection. Appendix 4 of the TSC, Customer Financial Risk Classification,
8 provides guidance on establishing this classification, which then determines the EE analysis timeline.

9

10 The following table from Appendix 4 of the TSC summarizes the risk classification categories.

Risk Classification	Economic Evaluation Period
High risk	5 years
Medium-high risk	10 years
Medium-low risk	15 years
Low risk	25 years

11

12

13 Appendix 4 of the TSC stipulates that the transmitter must use the customer’s credit rating, where
14 such a rating is available. Algoma Steel’s credit rating effective October 22, 2021, issued by S&P
15 Global Ratings,⁹ was B- (see **Attachment 1** to this Tab) which currently falls within the “medium-
16 high risk” classification category of Appendix 4 of the TSC.

17

18 This risk classification is consistent with HONI’s “Risk Horizon Table” located at page 34 of their
19 Transmission Connection Procedures document.¹⁰ A copy of this table is included here for reference.

⁹ Algoma Steel Inc., Algoma Steel Receives Upgrade from S&P Global Ratings, October 22, 2021 online:
<https://www.globenewswire.com/news-release/2021/10/22/2319290/0/en/Algoma-Steel-Receives-Upgrade-from-S-P-Global-Ratings.html>

¹⁰ HONI Transmission Connection Procedures, Revised: November 18, 2015, (Originally Issued: December 20, 2012), online:
https://www.hydroone.com/businessservices/Documents/Transmission%20Connection%20Procedures_Updated%20-%20Nov%2018%202015.pdf

**Risk Horizon Table
 Bond Rating and Altman Z Score**

Bond Rating*	Altman Z – Score**			Risk Profile	Risk Horizon
	Public Industrial	Private Industrial	Private Non-Industrial		
CCC and below	<1.81	<1.23	<1.10	High Risk	5 Years
B – BB	1.81 – 2.67	1.23 – 2.59	1.10 – 2.32	Medium High Risk	10 Years
Industrial BBB – AAA Non-industrial BBB	2.68 – 2.99	2.60 – 2.90	2.33 – 2.60	Medium Low Risk	15 Years
Non-industrial A - AAA	>2.99	>2.90	>2.60	Low Risk	25 Years

* Based on DBRS rating scale. Investment grade credits qualify for risk ratings of 15 years and above. Non-investment grade credits qualify for risk ratings of less than 15 years. Equivalent ratings from other rating agencies would apply if deemed suitable by Hydro One.

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Based on Algoma Steel’s credit rating, a 10-year revenue horizon should be used for the EE. The result of this 10-year EE, using the OEB’s approved 2024 preliminary Uniform Transmission Rate (“UTR”) of \$5.76 per kW, is summarized in the table below. Based on the total connection costs of \$55.4 million for the Minimum Connection Facilities, the EE indicates a net present value of \$41.07 million. Therefore, no capital contribution will be required from Algoma Steel. This outcome is summarized in **Table 1** below.

Table 1: 10-Year Discounted Cash Flow Results

Discounted Cash Flow Analysis (TSC - Appendix 5)	
Revenue Horizon Year-end	Net Present Value (NPV)
10	\$41.07 million

Figure 1 below summarizes the inputs and outputs of the economic evaluation. **Table 2**, further below, provides the detailed discounted cash flow analysis for the 10-year revenue horizon scenario.

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Figure 1: 10-Year Economic Evaluation Summary

EE Results Summary		Cost Inputs Summary		Revenue Inputs Summary	
Capital Contribution Summary \$M		Network Pool Costs - Minimum Connectin Facilities		Forecast UTR Revenue	
Amount Required	0	\$ 55,400,000	Total Cost for Minimum Connection Facilities	Asset Pool	UTR (2024)
		\$ 903,600	Annual OM&A	Network Service Charge	\$5.76
Based on UTRs Approved for: 2024 Prelim.		\$ 3,112	Annual Property Taxes (pro-rated)	Line Connection Charge	n/a
DCF Summary \$M		Discounted Cash Flow (DCF) Inputs		Transformation Connection Service	n/a
Net Present Value (NPV)	\$41.07	10	Economic Evaluation time period (years)	Notes: 1) EAF demand MW per furnace = 140	
Based on UTRs Approved for: 2024 Prelim.		5.00%	After-tax Discount Rate	2) LSP output MW = 0	
		26.50%	Income Tax Rate (Federal + Provincial)	3) Assume Project in service starting 07-2027	
		8.00%	CCA Rate (Class 47 CRA prescribed rate, Line & Station)	4) Assume Bulk System upgrades in service 07-2030	
		1.80%	OM&A % of Gross Fixed Assets	5) Yellow denotes Input Value for DCF	
		0.0635801	Municipal Property Tax Rate (Industrial Shared PL Class)	6) Excludes 115 kV EAF Supply Line	
<p>SCENARIO SUMMARY: Stage 2A - No LSP</p> <p>1) 1-EAF yr 1-3 at 140 MW net demand</p> <p>2) 2-EAF yr 4 and onward at 280 MW demand</p>					

1 **Network Pool Rate Impact**

2

3 The analysis of the network pool rate impact has been carried out on the basis of the total capital
4 costs, as identified in **Table 3**, and the combined revenue requirements for both PUC Transmission
5 and HOSSM, for the first full year the Project is in service and the 2024 approved Ontario
6 Transmission Rate Schedules. Once the Project is in service, the Network Pool revenue requirement
7 will lead to a negligible average increase in the Network Pool UTR over 25 years of approximately
8 0.04% relative to the current OEB approved 2024 preliminary Network Pool UTR. The Network Pool
9 rate is essentially unchanged from the preliminary 2024 rate of \$5.76 per kilowatt (“kW”) per month,
10 averaged over the 25-year evaluation period.

11

12 The detailed analysis illustrating the calculation of the incremental network revenue and rate impact
13 is included in **Table 2** below.

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Table 2: Revenue Requirement and Network Pool Rate Impact

	In-Service:	Jul-1	Jul-1	Jul-1	Jul-1	Jul-1	Jul-1	Jul-1	Jul-1	Jul-1	Jul-1	Jul-1	Jul-1	Jul-1	Jul-1	Jul-1	Jul-1	Jul-1	Jul-1	Jul-1	Jul-1	Jul-1	Jul-1	Jul-1	Jul-1		
	Jul-1-2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	
Capital Cost (\$millions)	231.98																										
Less: Capital Contribution (\$millions)	0.00																										
Net Project Capital Cost (\$millions)	231.98																										
Average Rate Base (\$millions)		113.67	225.02	220.38	215.74	211.10	206.46	201.82	197.18	192.54	187.90	183.26	178.62	173.99	169.35	164.71	160.07	155.43	150.79	146.15	141.51	136.87	132.23	127.59	122.95	118.31	
Incremental OM&A Costs (\$millions)		3.49	3.49	3.49	3.49	3.49	3.57	3.57	3.57	3.57	3.57	3.57	3.57	3.57	3.57	3.57	3.62	3.62	3.62	3.62	3.62	3.62	3.62	3.62	3.62	3.62	
Depreciation (\$millions)		4.64	4.64	4.64	4.64	4.64	4.64	4.64	4.64	4.64	4.64	4.64	4.64	4.64	4.64	4.64	4.64	4.64	4.64	4.64	4.64	4.64	4.64	4.64	4.64	4.64	
Interest and Return on Rate Base (\$millions)		14.76	14.28	13.79	13.31	12.82	12.34	11.85	11.37	10.88	10.40	9.91	9.43	8.94	8.46	7.97	7.49	7.00	6.52	6.03	5.55	5.06	4.58	4.09	3.61	3.12	
Income Tax Provision (\$millions)		(0.93)	(0.49)	(0.10)	0.25	0.57	0.85	1.10	1.32	1.52	1.69	1.85	1.98	2.09	2.19	2.27	2.33	2.38	2.42	2.45	2.47	2.48	2.48	2.47	2.45	2.43	
REVENUE REQUIREMENT PRE-TAX (\$millions)		21.96	21.91	21.82	21.69	21.52	21.40	21.17	20.91	20.62	20.31	19.97	19.62	19.25	18.86	18.45	18.08	17.64	17.20	16.74	16.28	15.80	15.31	14.82	14.32	13.81	
Incremental MW		140	140	140	280	280	280	280	280	280	280	280	280	280	280	280	280	280	280	280	280	280	280	280	280	280	
Network UTR		5.76	5.76	5.76	5.76	5.76	5.76	5.76	5.76	5.76	5.76	5.76	5.76	5.76	5.76	5.76	5.76	5.76	5.76	5.76	5.76	5.76	5.76	5.76	5.76	5.76	
Incremental Annual Revenue (\$millions)		9.67	9.67	9.67	19.35	19.35	19.35	19.35	19.35	19.35	19.35	19.35	19.35	19.35	19.35	19.35	19.35	19.35	19.35	19.35	19.35	19.35	19.35	19.35	19.35	19.35	
SUFFICIENCY/(DEFICIENCY) (\$millions)		(12.29)	(12.24)	(12.14)	(2.34)	(2.17)	(2.05)	(1.82)	(1.56)	(1.27)	(0.96)	(0.62)	(0.27)	0.10	0.49	0.90	1.27	1.70	2.15	2.61	3.07	3.55	4.04	4.53	5.03	5.54	
Base Year 2024 Preliminary UTR																											
Network Pool Revenue Requirement	1,368.78	1,390.75	1,390.69	1,390.60	1,390.47	1,390.30	1,390.18	1,389.95	1,389.69	1,389.40	1,389.09	1,388.76	1,388.40	1,388.03	1,387.64	1,387.23	1,386.86	1,386.43	1,385.98	1,385.52	1,385.06	1,384.58	1,384.10	1,383.60	1,383.10	1,382.59	
Network MW	237,686	239,366	239,366	239,366	241,046	241,046	241,046	241,046	241,046	241,046	241,046	241,046	241,046	241,046	241,046	241,046	241,046	241,046	241,046	241,046	241,046	241,046	241,046	241,046	241,046	241,046	
Network Pool Rate (\$/kW/month)	5.76	5.81	5.81	5.81	5.77	5.77	5.77	5.77	5.77	5.76	5.76	5.76	5.76	5.76	5.76	5.75	5.75	5.75	5.75	5.75	5.75	5.74	5.74	5.74	5.74	5.74	
Increase/(Decrease) (\$/kW/month) relative to base year		0.05	0.05	0.05	0.01	0.01	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00	(0.00)	(0.00)	(0.00)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.02)	(0.02)	(0.02)	(0.02)	
RATE IMPACT relative to base year	0.04%	Average (25 yrs)	0.89%	0.89%	0.88%	0.17%	0.16%	0.15%	0.13%	0.11%	0.09%	0.07%	0.04%	0.02%	-0.01%	-0.04%	-0.06%	-0.09%	-0.12%	-0.15%	-0.19%	-0.22%	-0.26%	-0.29%	-0.33%	-0.36%	-0.40%
Assumptions:																											
Depreciation	2.00%	Reflects 50 year average service life for towers, conductors and station equipment, excluding land																									
Income Tax Rate	26.50%	2022 federal and provincial corporate income tax rate																									
Capital Cost Allowance	8.0%	100 % Class 47 assets																									
Project MW; Years 1 - 3	140																										
Project MW; Years 4 - 25	280																										

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Impact on Typical Residential Customer

Based on the load forecast, initial capital costs and ongoing maintenance costs, adding the costs of the required facilities to the network pool will not result in any material change to a typical PUC Distribution residential customer’s monthly bill under the Regulated Price Plan (“RPP”).

The table below shows this result for the average PUC Distribution residential customer who is under the RPP in 2023, utilizing the average impact by rate pool over 25 years.

Monthly Bill Impact (Average PUC Distribution Residential Customer - 2023)		
A.	Average Residential Customer Bill	\$ 130.63
B.	Transmission component of monthly bill	\$ 11.69
C.	Network Pool share of transmission component	\$ 6.79
D.	Line Connection Pool share of Transmission component	\$ 1.12
E.	Transformation Connection Pool share of Transmission component	\$ 3.78
F.	Impact on Network Provincial Uniform Rates	0.04%
G.	Impact on Line Connection Pool Provincial Uniform Rates	n/a
H.	Impact on Transnsformation Connection Pool Provincial Uniform Rates	n/a
I.	Change in Transmission costs for typical bill (C x F) + (D x G) + (E x H)	\$ 0.00
J.	Net Impact on average residential customer bill (I / A)	0.00%

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MEDIA RELEASE: ALGOMA STEEL RECEIVES UPGRADE FROM S&P GLOBAL RATINGS



Algoma Steel Receives Upgrade from S&P Global Ratings

October 22, 2021 11:15 ET | Source: [Algoma Steel Inc](#)



SAULT STE. MARIE, Ontario, Oct. 22, 2021 (GLOBE NEWSWIRE) -- Algoma Steel Group Inc. ("Algoma") (NASDAQ: ASTL; TSX: ASTL), a leading Canadian producer of hot and cold rolled steel sheet and plate products, today announced that S&P Global Ratings ("S&P") has upgraded Algoma's issuer credit rating to 'B-' from 'CCC+', with a stable outlook.

S&P's upgrade and outlook reflect Algoma's strengthened liquidity position and access to capital markets following the recent completion of its merger with Legato Merger Corp., along with S&P's expectation for Algoma to deliver improved operating results and higher cash flow generation.

Rajat Marwah, Chief Financial Officer of Algoma, commented, "We are thrilled to receive this S&P upgrade to our credit rating on the heels of Algoma's recent return to the public equity markets. The S&P's improved rating is a solid endorsement of our strategy of thoughtfully managing our balance sheet while investing in our people, operations and sustainability initiatives to build value in Algoma for all stakeholders."

About Algoma Steel

Based in Sault Ste. Marie, Ontario, Canada, Algoma is a fully integrated producer of hot and cold rolled steel products including sheet and plate. With a current raw steel production capacity of an estimated 2.8 million tons per year, Algoma's size and diverse capabilities enable it to deliver responsive, customer-driven product solutions straight from the ladle to direct applications in the automotive, construction, energy, defense, and manufacturing sectors. Algoma is a key supplier of steel products to customers in Canada and Midwest USA and is the only producer of plate steel products in Canada. Algoma's mill is one of the lowest cost producers of hot rolled sheet steel (HRC) in North America owing in part to its state-of-the-art Direct Strip Production Complex ("DSPC"), which is the newest thin slab caster in North America with direct coupling to a basic oxygen furnace (BOF) melt shop.

Algoma has achieved several meaningful improvements over the last several years that are expected to result in enhanced long-term profitability for the business. Algoma has upgraded its DSPC facility and recently installed its No. 2 Ladle Metallurgy



company with the courage and growing capability to meet the industry's challenges head-on. It is investing in its people and processes, optimizing and modernizing so that it will continue to be your partner in steel.

Cautionary Statement Regarding Forward-Looking Statements

This news release contains forward-looking statements within the meaning of applicable securities legislation. These forward-looking statements generally are identified by the words “believe,” “project,” “expect,” “anticipate,” “estimate,” “intend,” “strategy,” “future,” “opportunity,” “plan,” “pipeline,” “may,” “should,” “will,” “would,” “will be,” “will continue,” “will likely result,” and similar expressions. Forward-looking statements are predictions, projections and other statements about future events that are based on current expectations and assumptions. Many factors could cause actual future events to differ materially from the forward-looking statements in this document, including but not limited to: the risk that the benefits of the Transaction may not be realized; the risks that Algoma will be unable to realize its business plans, including its proposed transformation journey; the risks associated with the steel industry generally; and changes in general economic conditions, including as a result of the COVID-19 pandemic. The foregoing list of factors is not exhaustive and readers should also consider the other risks and uncertainties set forth in the section entitled “Risk Factors” and “Cautionary Note Regarding Forward-Looking Statements” in the prospectus filed by Algoma with the Securities and Exchange Commission in connection with the Transaction. Forward-looking statements speak only as of the date they are made. Readers are cautioned not to put undue reliance on forward-looking statements, and Algoma assumes no obligation and does not intend to update or revise these forward-looking statements, whether as a result of new information, future events, or otherwise.

For more information, please contact:

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DEFERRAL ACCOUNTS

There are no deferral accounts requested by PUC Transmission in relation to carrying out the Project.

It is noted however, that HOSSM is seeking approval for a new regulatory account with two 'sub-accounts', as detailed in Section 18 of the HOSSM supporting evidence located at **Exhibit C, Tab 4, Schedule 1.**

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PROJECT SCHEDULE

PUC Transmission's Project schedule is provided in the table below.

TASK	START	FINISH
Submit Section 92 Application	--	December 2023
Projected Section 92 Approval	--	August 2024
Long Lead Items Ordered	January 2024	--
Detailed Engineering – Line and Station	January 2024	October 2024
Clearing of Existing Right-of-Way	December 2023	March 2024
Acquisition of New Right-of-Way	November 2023	October 2024
Clearing of New Right-of-Way	October 2024	December 2024
Construction of Line and Station	October 2024	January 2027
Connections at Third Line TS and Commissioning	--	June 2027
In-Service	--	June 2027

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2 **EXHIBIT C: PROJECT DETAILS**

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4 This section of the application provides detailed information on the Project regarding the project
5 design features and operational procedures for the proposed facilities.

6

7 **LINE ROUTE**

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9 As noted above under the Analysis of Alternatives section, a number of alternatives for the section of
10 line not covered by existing easements were considered and analyzed under the Environmental
11 Assessment (EA) process. The final preferred route and station location stemming from the EA
12 outcomes are shown in the Project Overview Map included at **Exhibit B, Tab 2, Schedule 1,**
13 **Attachment 1.**

14

15 More detailed maps that conform to section 4.3.3.3 of the filing requirements are included below at
16 **Tab 3 of this Exhibit.**

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PHYSICAL DESIGN

230 kV Transmission Line:

The initial configuration of the transmission line to be constructed at this time includes two circuits operating at 230 kV and utilizing a single 954 MCM ACSR conductor per phase. Each circuit is designed to operate at 630 A under normal conditions and 1005 A when one circuit is offline.

Provision has been made in the design and will be incorporated into the construction to allow for the addition of a second 954 MCM ACSR conductor per phase at a future date. This will allow for economical and timely doubling of the capacity of the transmission line in the future, when required to serve the additional industrial loads that are planned for the area.

Total length of the line is approximately 10 km, starting at Hydro One's Third Line TS and ending at the Applicant's new 230kV Tagona West TS.

The transmission line will utilize steel monopoles, averaging 45 m tall, and spaced at approximately 180 m average span length. A total of 68 structures will be installed include the following:

- 41 double-circuit tangent monopoles;
- 19 double-circuit medium angle double deadend mono poles; and
- 8 heavy angle deadend 2-pole structures.

The transmission line specifications, including wire and pole specifications are provided in **Attachment 1 to this Tab.**

230 kV Transformer Station:

The Tagona West TS will utilize "a breaker and a half" configuration for the 230 kV yard. The initial set of main elements to be constructed at this time includes the following:

- Two 240/125 kV autotransformers;
- One 230 kV fast acting reactive power compensating device rated at +/- 50 MVar combined with 4 x 35 MVar switched capacitor banks; and

- 1 • All associated breakers, switches and disconnects for both the 230 kV and 115 kV systems
2 along with all associated protections.

3

4 A detailed single line diagram of the proposed construction which includes all associated
5 equipment sizing details is included at **Attachment 2 to this Tab.**

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7 Design considerations to facilitate future expansion of the station include provisions for to up to two
8 more 230/115 kV autotransformers and up to two 230/34.5 kV autotransformers with associated
9 breakers and protections.

10

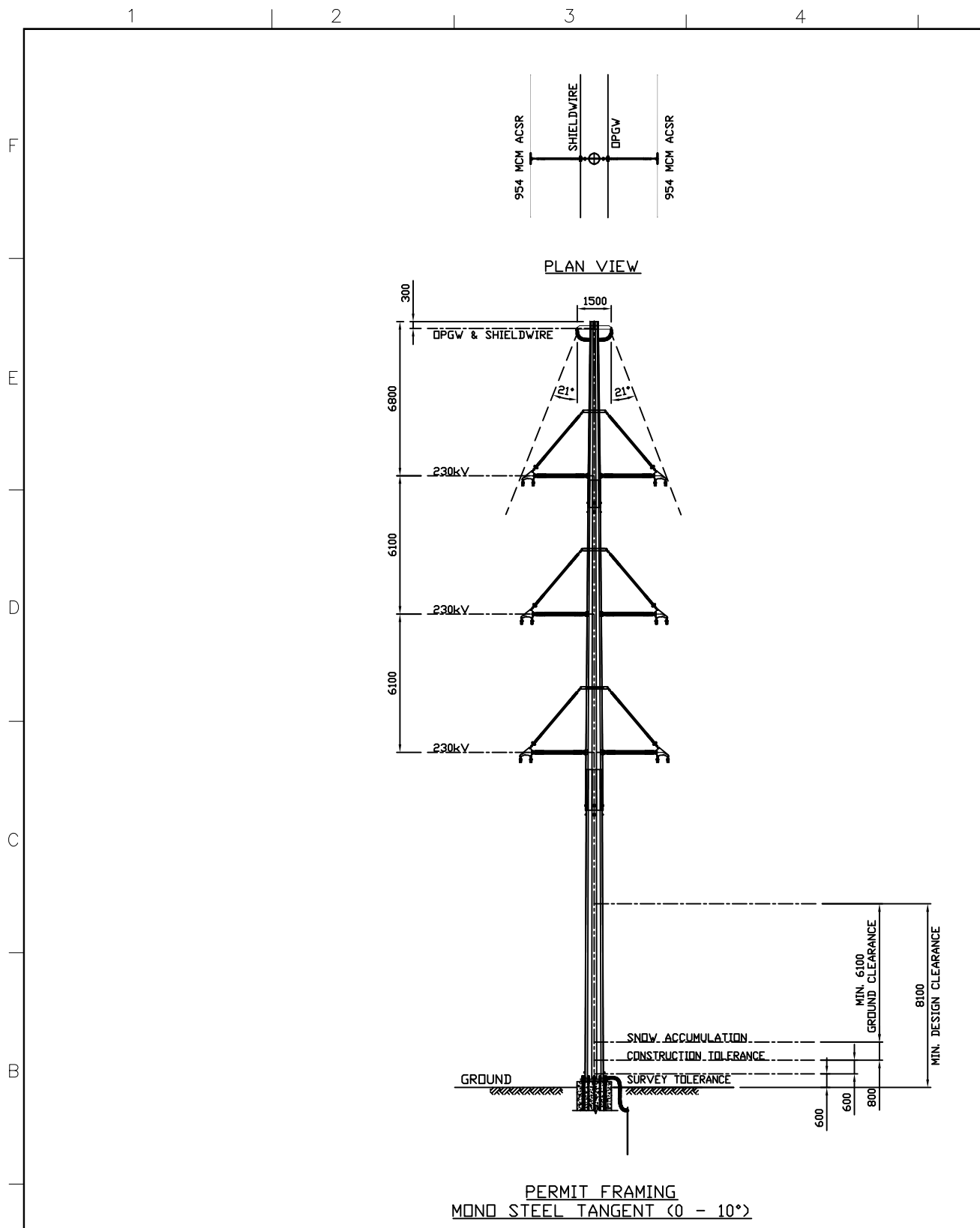
11 A drawing indicating the proposed physical layout for the Tagona West TS is included at **Attachment**
12 **3 to this Tab.** The layout drawing includes details relative the current proposed construction that
13 is the subject of this application, as well as an indication of the provisions included for future
14 expansion of the station to accommodate anticipated new industrial loads and hybrid generators in
15 the near future. The property extents provide the additional space required for these future
16 expansions.

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TYPICAL MONOPOLE STRUCTURE DRAWINGS



DESIGN NOTES:
 THE PROPOSED STRUCTURE FRAMING, POLE REQUIREMENT AND RECOMMENDATION STANDARD SPAN ARE BASED ON THE FOLLOWING DESIGN DATA:

- A. DESIGN CRITERIA**
1. METEOROLOGICAL LOCATION: SAULT STE. MARIE
- 1.1. CSA 22.3 No.1 (LIMIT STATE DESIGN) - CSA HEAVY CONDITION
- HOURLY WIND: 400 Pa
 - RADIAL ICE THICKNESS: 12.7 mm (1/2")
 - CONDUCTOR TEMPERATURE: -20°C
- 1.2. CSA 22.3 No.60826 (IEC RELIABILITY DESIGN) - 1/50 PERIOD
- (i) IEC ICE (1/50): 23 mm @ -5°C
 - (ii) IEC WIND (1/50): 100 km/h (492.3 Pa) @ -5°C
 - (iii) COMBINED ICE (85%) & WIND (60%): 19.6 mm & 187.3 Pa @ -10°C
 - (iv) COMBINED ICE (130%) & WIND (40%): 29.9 mm & 83.2 Pa @ -10°C
- WIRE ADJUSTMENT MODELS & MATERIAL FACTORS AS PER CSA 22.3 No. 60826.
- B. CLEARANCE CRITERIA**
- 1. MEAN ANNUAL SNOW ACCUMULATION: 0.8 m
 - 2. ADDITIONAL SURVEY TOLERANCE: 0.6 m
 - 3. CONSTRUCTION TOLERANCE: 0.3 m
 - 4. VERTICAL GROUND CLEARANCE:
 - 4.1. MINIMUM CSA 22.3 No.1 VERTICAL GROUND CLEARANCE 230kV CONDUCTOR: 6.10 m
 - 4.2. MTO (OPSD 2245.020) MINIMUM FREEWAY GROUND CLEARANCE 230kV CONDUCTOR: 6.40 m
 - 4.3. DESIGN VERTICAL GROUND CLEARANCE 230kV CONDUCTOR: 7.80 m
 - 4.4. DESIGN MTO FREEWAY GROUND CLEARANCE 230kV CONDUCTOR: 8.10m
 - 4.5. MINIMUM CSA 22.3 No.1 RAILWAY CROSSING 230kV CONDUCTOR: 9.00m
 - 5. VERTICAL GROUND CLEARANCE LOADING CONDITIONS
 - 5.1. PHASE CONDUCTOR
 - (i) MAXIMUM CONDUCTOR TEMPERATURE: 65°C / 110 °C
 - 6. PHASE CLEARANCE CONDITIONS:
 - (i) HOURLY WIND (NATIONAL BUILDING CODE 1/50): 440 Pa (~96.5 km/hr)
 - (ii) HOURLY WIND (NATIONAL BUILDING CODE 1/30): 370 Pa (~88.5 km/hr)
 - (iii) NORMAL BLOWOUT WIND: 290 Pa
 - (iv) GALLOPING
 - GALLOPING SWING: 96 Pa
 - GALLOPING ICE: 12.7 mm (1/2")
- C. PROJECT CIRCUITS DATA**
- 1. PUC CIRCUIT(S)
 - 1.1. NOMINAL SYSTEM VOLTAGE: 230 kV
 - 1.2. NUMBER OF PHASES: 3
 - 1.3. SYSTEM FREQUENCY: 60 Hz
 - 1.4. NUMBER OF CIRCUIT: 2 (TWO)
 - 2. INITIAL PHASE
 - 2.1. NUMBER OF CONDUCTOR PER PHASE: 1 PER PHASE
 - 2.2. MAXIMUM CIRCUIT CURRENT: 790A / 1260A PER CIRCUIT
 - 2.3. PHASE CONDUCTOR SIZE: 954 MCM ACSR
 - 2.4. DESIGN CONDUCTOR TEMPERATURE: 65°C / 93 °C
 - 3. FUTURE EXPANSION
 - 3.1. NUMBER OF CONDUCTOR PER PHASE: 2 PER PHASE
 - 3.2. MAXIMUM CIRCUIT CURRENT: 1370A / 2220A PER CIRCUIT
 - 3.3. PHASE CONDUCTOR SIZE: 954 MCM ACSR
 - 3.4. DESIGN CONDUCTOR TEMPERATURE: 56°C / 93 °C

NOTE:
 1. ALL DIMENSIONS ARE IN MILLIMETER, U.N.O.

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REV	D/M/Y	REVISION	DR	CHK	APP	APP	APP	APP	ISS	D/M/Y	APP	ISSUED FOR	REF	NUMBER	TITLE	REFERENCES
C	29/11/23	REVISED TITLE BLOCK DESCRIPTIONS		M.J.L.	E.K.	K.W.			C	29/11/23	K.W.	ISSUED FOR LEAVE TO CONSTRUCT (LTC) APPLICATION				
B	13/04/23	ISSUED FOR REVIEW		M.J.L.	E.K.	K.W.			B	13/04/23	K.W.	ISSUED FOR LEAVE TO CONSTRUCT (LTC) APPLICATION				
A	17/11/22	ISSUED FOR REVIEW		K.L.	M.J.L.				A	17/11/22		ISSUED FOR REVIEW				

APPROVED FOR CONSTRUCTION

CLIENT PROJECT MGR. DEPARTMENT MGR. PROJECT MGR.

PROJECT PHASE: PUC TRANSMISSION 230KV TRANSMISSION LINE

PROJECT NO. ACTIVITY NO. PACKAGE CODE SUBJECT: PERMIT FRAMING MONO STEEL TANGENT (0 - 10°)

SCALE: N.T.S. (11"x17")

BY: E.KWONG (DSN), K.LIU (DRN)

D/M/Y: 09/05/22, 10/05/22

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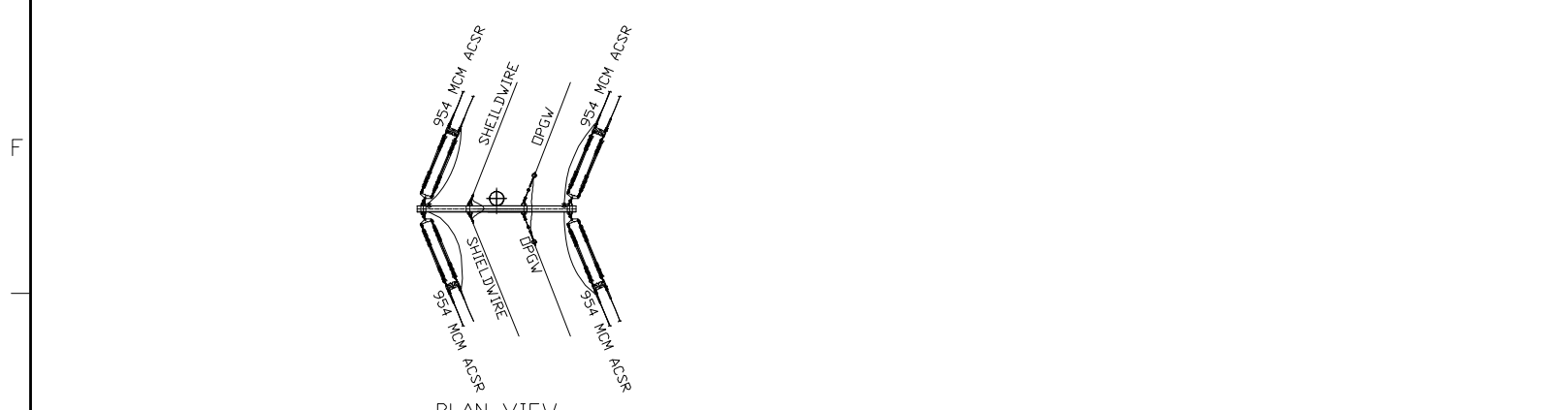
Chimax Inc. Engineering Company
 3050 Fourteenth Ave. East, Suite 203
 Markham, On. L3R 0A9
 Email: chimax@chimax.ca

CLIENT DWG. NO. 2214-P201

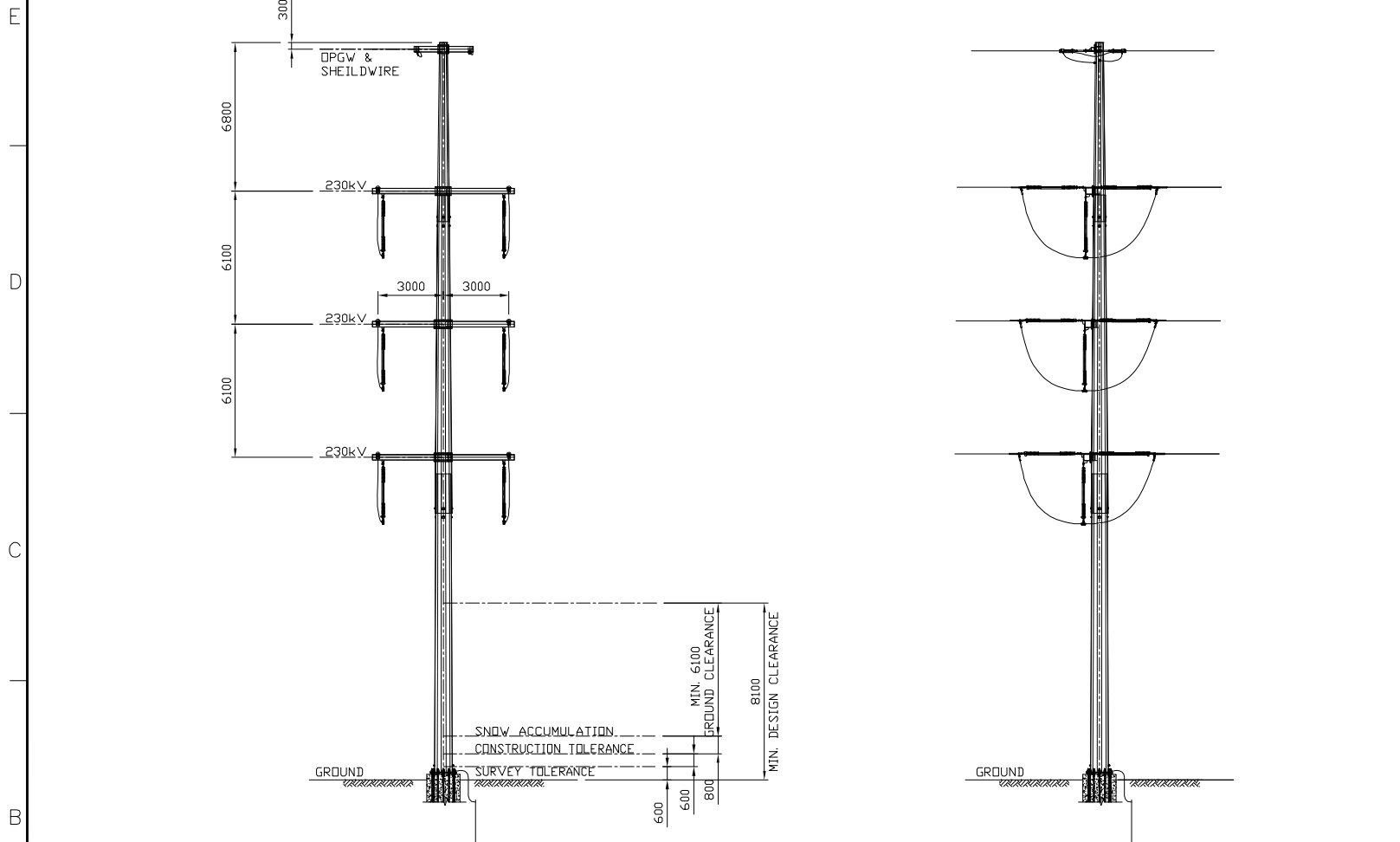
DRAWING NO. 2214-P201

REV. C

CADD FILE ADDRESS: 2214-P201-C



PLAN VIEW



FRONT VIEW

SIDE VIEW

PERMIT FRAMING
MONO STEEL DOUBLE DEADEND (0 - 45°)

DESIGN NOTES:

THE PROPOSED STRUCTURE FRAMING, POLE REQUIREMENT AND RECOMMENDATION STANDARD SPAN ARE BASED ON THE FOLLOWING DESIGN DATA:

- A. DESIGN CRITERIA**
1. METEOROLOGICAL LOCATION: SAULT STE. MARIE
- 1.1. CSA 22.3 No.1 (LIMIT STATE DESIGN) - CSA HEAVY CONDITION
- HOURLY WIND: 400 Pa
 - RADIAL ICE THICKNESS: 12.7 mm (1/2")
 - CONDUCTOR TEMPERATURE: -20°C
- 1.2. CSA 22.3 No.60826 (IEC RELIABILITY DESIGN) - 1/50 PERIOD
- (i) IEC ICE (1/50): 23 mm @ -5°C
 - (ii) IEC WIND (1/50): 100 km/h (492.3 Pa) @ -5°C
 - (iii) COMBINED ICE (85%) & WIND (60%): 19.6 mm & 187.3 Pa @ -10°C
 - (iv) COMBINED ICE (130%) & WIND (40%): 29.9 mm & 83.2 Pa @ -10°C
- WIRE ADJUSTMENT MODELS & MATERIAL FACTORS AS PER CSA 22.3 No. 60826.
- B. CLEARANCE CRITERIA**
- 1. MEAN ANNUAL SNOW ACCUMULATION: 0.8 m
 - 2. ADDITIONAL SURVEY TOLERANCE: 0.6 m
 - 3. CONSTRUCTION TOLERANCE: 0.3 m
 - 4. VERTICAL GROUND CLEARANCE:
 - 4.1. MINIMUM CSA 22.3 No.1 VERTICAL GROUND CLEARANCE 230kV CONDUCTOR: 6.10 m
 - 4.2. MTO (OPSD 2245.020) MINIMUM FREEWAY GROUND CLEARANCE 230kV CONDUCTOR: 6.40 m
 - 4.3. DESIGN VERTICAL GROUND CLEARANCE 230kV CONDUCTOR: 7.80 m
 - 4.4. DESIGN MTO FREEWAY GROUND CLEARANCE 230kV CONDUCTOR: 8.10m
 - 4.5. MINIMUM CSA 22.3 No.1 RAILWAY CROSSING 230kV CONDUCTOR: 9.00m
 - 5. VERTICAL GROUND CLEARANCE LOADING CONDITIONS
 - 5.1. PHASE CONDUCTOR
 - (i) MAXIMUM CONDUCTOR TEMPERATURE: 65°C / 110 °C
 - 6. PHASE CLEARANCE CONDITIONS:
 - (i) HOURLY WIND (NATIONAL BUILDING CODE 1/50): 440 Pa (~96.5 km/hr)
 - (ii) HOURLY WIND (NATIONAL BUILDING CODE 1/30): 370 Pa (~88.5 km/hr)
 - (iii) NORMAL BLOWOUT WIND: 290 Pa
 - (iv) GALLOPING: 96 Pa
 - GALLOPING SWING: 12.7 mm (1/2")
 - GALLOPING ICE: 12.7 mm (1/2")
- C. PROJECT CIRCUITS DATA**
- 1. PUC CIRCUIT(S)
 - 1.1. NOMINAL SYSTEM VOLTAGE: 230 kV
 - 1.2. NUMBER OF PHASES: 3
 - 1.3. SYSTEM FREQUENCY: 60 Hz
 - 1.4. NUMBER OF CIRCUIT: 2 (TWO)
 - 2. INITIAL PHASE
 - 2.1. NUMBER OF CONDUCTOR PER PHASE: 1 PER PHASE
 - 2.2. MAXIMUM CIRCUIT CURRENT: 790A / 1260A PER CIRCUIT
 - 2.3. PHASE CONDUCTOR SIZE: 954 MCM ACSR
 - 2.4. DESIGN CONDUCTOR TEMPERATURE: 65°C / 93 °C
 - 3. FUTURE EXPANSION
 - 3.1. NUMBER OF CONDUCTOR PER PHASE: 2 PER PHASE
 - 3.2. MAXIMUM CIRCUIT CURRENT: 1370A / 2220A PER CIRCUIT
 - 3.3. PHASE CONDUCTOR SIZE: 954 MCM ACSR
 - 3.4. DESIGN CONDUCTOR TEMPERATURE: 56°C / 93 °C

NOTE:

- 1. ALL DIMENSIONS ARE IN MILLIMETER, U.N.O.

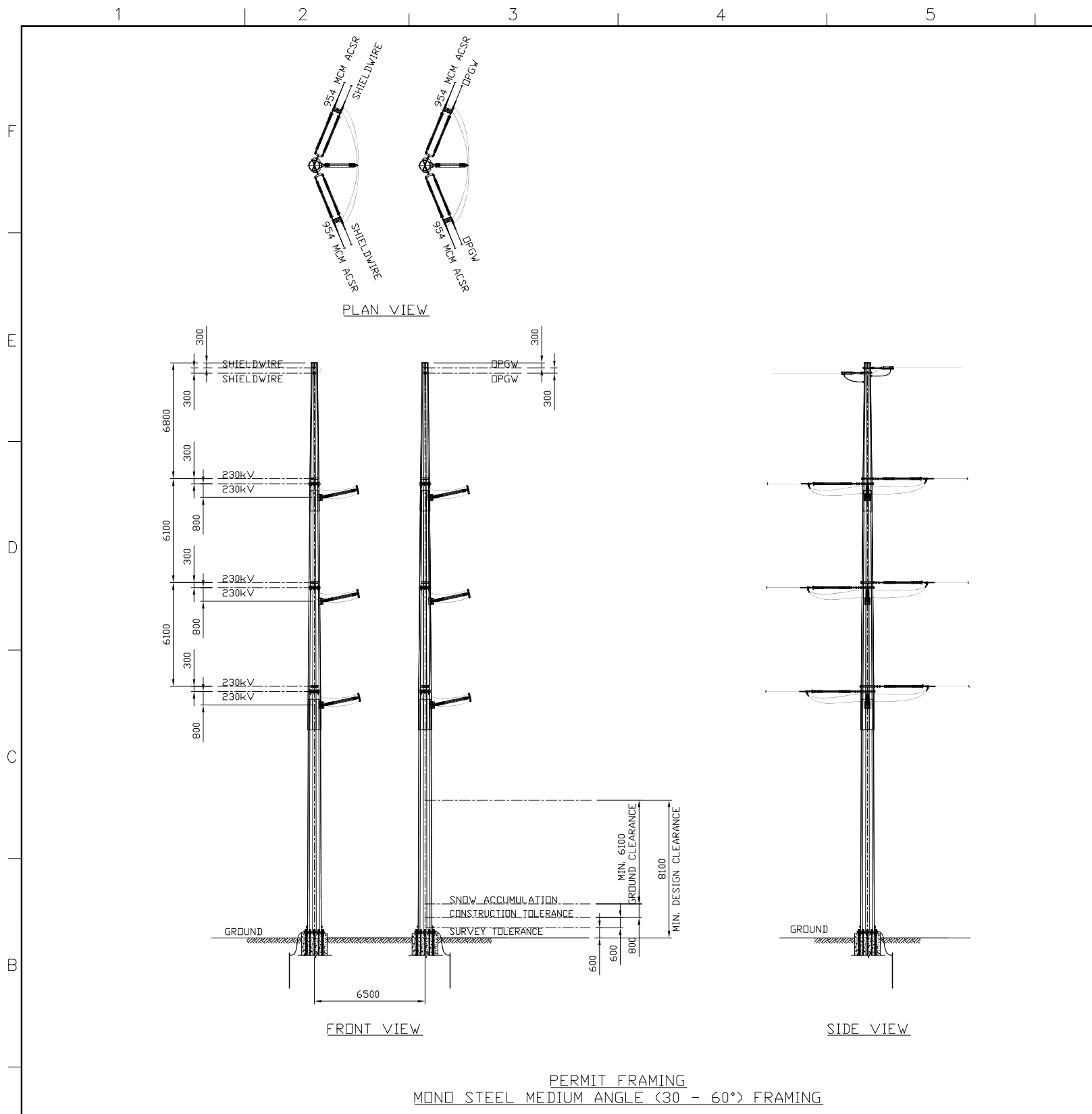
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B	13/06/23	ISSUED FOR REVIEW							B	13/06/23	K.W.	ISSUED FOR LEAVE TO CONSTRUCT (LTC) APPLICATION				
A	17/11/22	ISSUED FOR REVIEW							A	17/11/22		ISSUED FOR REVIEW				

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CLIENT PROJECT MGR.	DEPARTMENT MGR.	PROJECT MGR.	AREA	PUC TRANSMISSION 230KV TRANSMISSION LINE		
PROJECT NO.	ACTIVITY NO.	PACKAGE CODE	SUBJECT		CLIENT DWG. NO.	
SCALE			BY		D/M/Y	
N.T.S. (11"x17")			DSN.	E.KWONG	09/05/22	
			DRN.	K.LUI	10/05/22	
			PERMIT FRAMING MONO STEEL DOUBLE DEADEND (0 - 45°)		DRAWING NO.	2214-P202
					REV.	B
			CADD FILE ADDRESS		2214-P202-B	

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- A. DESIGN CRITERIA**
1. METEOROLOGICAL LOCATION: SAULT STE. MARIE
- 1.1. CSA 22.3 No.1 (LIMIT STATE DESIGN) - CSA HEAVY CONDITION
- HOURLY WIND: 400 Pa
 - RADIAL ICE THICKNESS: 12.7 mm (1/2")
 - CONDUCTOR TEMPERATURE: -20°C
- 1.2. CSA 22.3 No.60826 (IEC RELIABILITY DESIGN) - 1/50 PERIOD
- (i) IEC ICE (1/50): 23 mm @ -5°C
 - (ii) IEC WIND (1/50): 100 km/h (492.3 Pa) @ -5°C
 - (iii) COMBINED ICE (85%) & WIND (60%): 19.6 mm & 187.3 Pa @ -10°C
 - (iv) COMBINED ICE (130%) & WIND (40%): 29.9 mm & 83.2 Pa @ -10°C
- WIRE ADJUSTMENT MODELS & MATERIAL FACTORS AS PER CSA 22.3 No. 60826.
- B. CLEARANCE CRITERIA**
- 1. MEAN ANNUAL SNOW ACCUMULATION: 0.8 m
 - 2. ADDITIONAL SURVEY TOLERANCE: 0.6 m
 - 3. CONSTRUCTION TOLERANCE: 0.3 m
 - 4. VERTICAL GROUND CLEARANCE:
 - 4.1. MINIMUM CSA 22.3 No.1 VERTICAL GROUND CLEARANCE 230kV CONDUCTOR: 6.10 m
 - 4.2. MTO (OPSD 2245.020) MINIMUM FREEWAY GROUND CLEARANCE 230kV CONDUCTOR: 6.40 m
 - 4.3. DESIGN VERTICAL GROUND CLEARANCE 230kV CONDUCTOR: 7.80 m
 - 4.4. DESIGN MTO FREEWAY GROUND CLEARANCE 230kV CONDUCTOR: 8.10m
 - 4.5. MINIMUM CSA 22.3 No.1 RAILWAY CROSSING 230kV CONDUCTOR: 9.00m
 - 5. VERTICAL GROUND CLEARANCE LOADING CONDITIONS
 - 5.1. PHASE CONDUCTOR
 - (i) MAXIMUM CONDUCTOR TEMPERATURE: 65°C / 110 °C
 - 6. PHASE CLEARANCE CONDITIONS:
 - (i) HOURLY WIND (NATIONAL BUILDING CODE 1/50): 440 Pa (~96.5 km/hr)
 - (ii) HOURLY WIND (NATIONAL BUILDING CODE 1/30): 370 Pa (~88.5 km/hr)
 - (iii) NORMAL BLOWOUT WIND: 290 Pa
 - (iv) GALLOPING
 - GALLOPING SWING: 96 Pa
 - GALLOPING ICE: 12.7 mm (1/2")
- C. PROJECT CIRCUITS DATA**
- 1. PUC CIRCUIT(S)
 - 1.1. NOMINAL SYSTEM VOLTAGE: 230 kV
 - 1.2. NUMBER OF PHASES: 3
 - 1.3. SYSTEM FREQUENCY: 60 Hz
 - 1.4. NUMBER OF CIRCUIT: 2 (TWO)
 - 2. INITIAL PHASE
 - 2.1. NUMBER OF CONDUCTOR PER PHASE: 1 PER PHASE
 - 2.2. MAXIMUM CIRCUIT CURRENT: 790A / 1260A PER CIRCUIT
 - 2.3. PHASE CONDUCTOR SIZE: 954 MCM ACSR
 - 2.4. DESIGN CONDUCTOR TEMPERATURE: 65°C / 93 °C
 - 3. FUTURE EXPANSION
 - 3.1. NUMBER OF CONDUCTOR PER PHASE: 2 PER PHASE
 - 3.2. MAXIMUM CIRCUIT CURRENT: 1370A / 2220A PER CIRCUIT
 - 3.3. PHASE CONDUCTOR SIZE: 954 MCM ACSR
 - 3.4. DESIGN CONDUCTOR TEMPERATURE: 56°C / 93 °C

NOTE:
 1. ALL DIMENSIONS ARE IN MILLIMETER, U.N.O.



REV	D/M/Y	REVISION	DR	CHK	APP	APP	APP	APP	ISS	D/M/Y	APP	ISSUED FOR	REF	NUMBER	TITLE	REFERENCES
C	29/11/23	REVISED TITLE BLOCK DESCRIPTIONS	M.H.	E.K.	K.W.				C	29/11/23	K.W.	ISSUED FOR LEAVE TO CONSTRUCT (LIC) APPLICATION				
B	13/06/23	ISSUED FOR REVIEW	M.H.	E.K.	K.W.				B	13/06/23	K.W.	ISSUED FOR LEAVE TO CONSTRUCT (LIC) APPLICATION				
A	17/11/22	ISSUED FOR REVIEW	M.H.	E.K.	K.W.				A	17/11/22	K.W.	ISSUED FOR REVIEW				

APPROVED FOR CONSTRUCTION

CLIENT PROJECT MGR. DEPARTMENT MGR. PROJECT MGR.

PROJECT PHASE: PUC TRANSMISSION 230KV TRANSMISSION LINE

PROJECT NO. ACTIVITY NO. PACKAGE CODE SUBJECT: PERMIT FRAMING MONO STEEL MEDIUM ANGLE (30 - 60°) FRAMING

SCALE: N.T.S. (11"x17")

BY: DSN, E.KWONG, DRN, M.HUANG

D/M/Y: 31/05/22

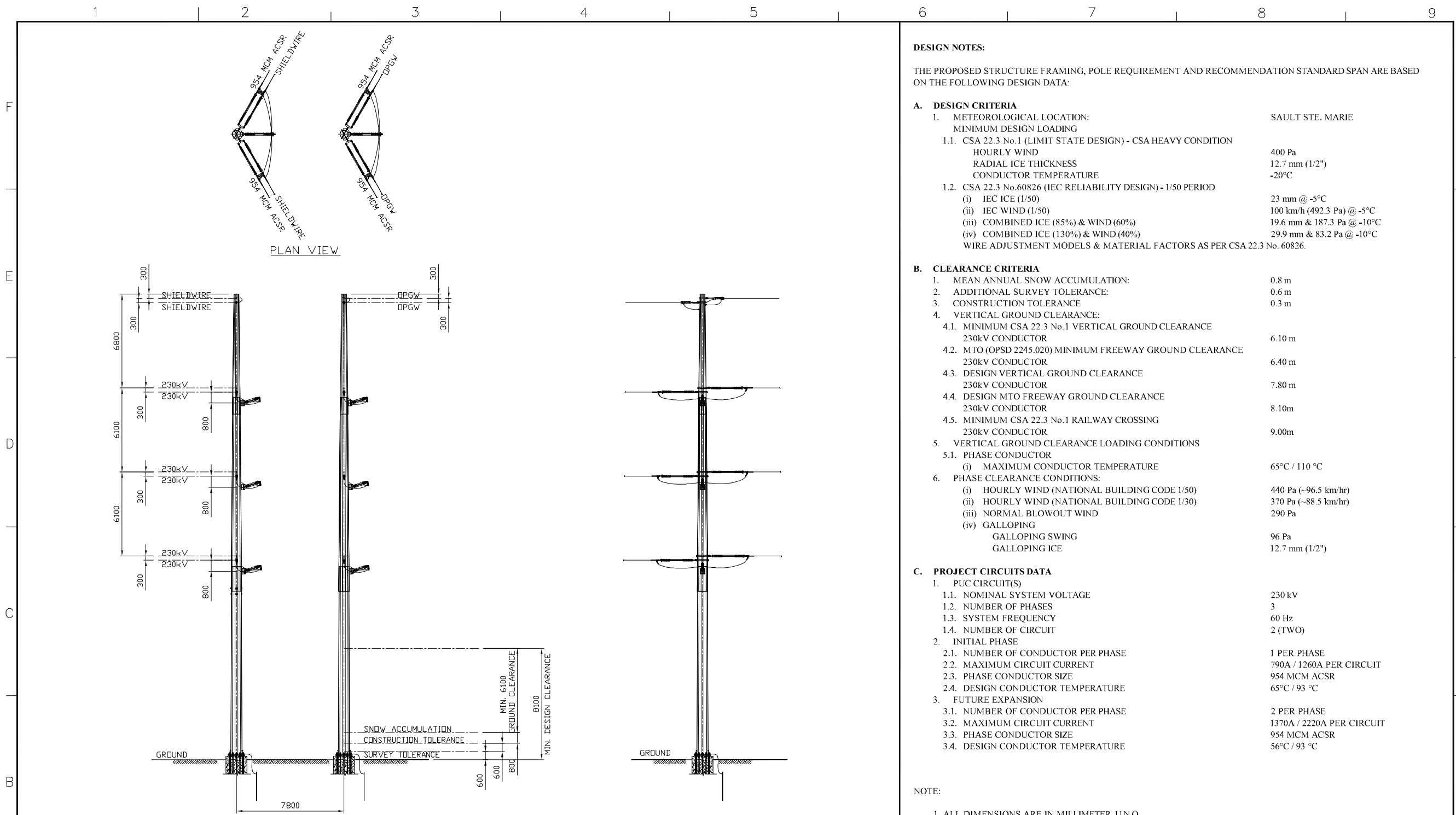
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600 COCHRANE DRIVE, 5TH FLOOR MARKHAM, ONTARIO CANADA L3R 5K3 www.wsp.com

Chimax Inc. Engineering Company 3950 Fourteenth Ave. East, Suite 203 Markham, On. L3R 0A9 Email: chimax@chimax.ca

CLIENT DWG. NO. DRAWING NO. 2214-P203 REV. C

CADD FILE ADDRESS 2214-P203-C



DESIGN NOTES:

THE PROPOSED STRUCTURE FRAMING, POLE REQUIREMENT AND RECOMMENDATION STANDARD SPAN ARE BASED ON THE FOLLOWING DESIGN DATA:

A. DESIGN CRITERIA

1. METEOROLOGICAL LOCATION: SAULT STE. MARIE

1.1. CSA 22.3 No.1 (LIMIT STATE DESIGN) - CSA HEAVY CONDITION

HOURLY WIND 400 Pa

RADIAL ICE THICKNESS 12.7 mm (1/2")

CONDUCTOR TEMPERATURE -20°C

1.2. CSA 22.3 No.60826 (IEC RELIABILITY DESIGN) - 1/50 PERIOD

(i) IEC ICE (1/50) 23 mm @ -5°C

(ii) IEC WIND (1/50) 100 km/h (492.3 Pa) @ -5°C

(iii) COMBINED ICE (85%) & WIND (60%) 19.6 mm & 187.3 Pa @ -10°C

(iv) COMBINED ICE (130%) & WIND (40%) 29.9 mm & 83.2 Pa @ -10°C

WIRE ADJUSTMENT MODELS & MATERIAL FACTORS AS PER CSA 22.3 No. 60826.

B. CLEARANCE CRITERIA

1. MEAN ANNUAL SNOW ACCUMULATION: 0.8 m

2. ADDITIONAL SURVEY TOLERANCE: 0.6 m

3. CONSTRUCTION TOLERANCE: 0.3 m

4. VERTICAL GROUND CLEARANCE:

4.1. MINIMUM CSA 22.3 No.1 VERTICAL GROUND CLEARANCE 230kV CONDUCTOR 6.10 m

4.2. MTO (OPSD 2245.020) MINIMUM FREEWAY GROUND CLEARANCE 230kV CONDUCTOR 6.40 m

4.3. DESIGN VERTICAL GROUND CLEARANCE 230kV CONDUCTOR 7.80 m

4.4. DESIGN MTO FREEWAY GROUND CLEARANCE 230kV CONDUCTOR 8.10m

4.5. MINIMUM CSA 22.3 No.1 RAILWAY CROSSING 230kV CONDUCTOR 9.00m

5. VERTICAL GROUND CLEARANCE LOADING CONDITIONS

5.1. PHASE CONDUCTOR

(i) MAXIMUM CONDUCTOR TEMPERATURE 65°C / 110 °C

6. PHASE CLEARANCE CONDITIONS:

(i) HOURLY WIND (NATIONAL BUILDING CODE 1/50) 440 Pa (~96.5 km/hr)

(ii) HOURLY WIND (NATIONAL BUILDING CODE 1/30) 370 Pa (~88.5 km/hr)

(iii) NORMAL BLOWOUT WIND 290 Pa

(iv) GALLOPING 96 Pa

GALLOPING SWING 12.7 mm (1/2")

GALLOPING ICE

C. PROJECT CIRCUITS DATA

1. PUC CIRCUIT(S)

1.1. NOMINAL SYSTEM VOLTAGE 230 kV

1.2. NUMBER OF PHASES 3

1.3. SYSTEM FREQUENCY 60 Hz

1.4. NUMBER OF CIRCUIT 2 (TWO)

2. INITIAL PHASE

2.1. NUMBER OF CONDUCTOR PER PHASE 1 PER PHASE

2.2. MAXIMUM CIRCUIT CURRENT 790A / 1260A PER CIRCUIT

2.3. PHASE CONDUCTOR SIZE 954 MCM ACSR

2.4. DESIGN CONDUCTOR TEMPERATURE 65°C / 93 °C

3. FUTURE EXPANSION

3.1. NUMBER OF CONDUCTOR PER PHASE 2 PER PHASE

3.2. MAXIMUM CIRCUIT CURRENT 1370A / 2220A PER CIRCUIT

3.3. PHASE CONDUCTOR SIZE 954 MCM ACSR

3.4. DESIGN CONDUCTOR TEMPERATURE 56°C / 93 °C

NOTE:

1. ALL DIMENSIONS ARE IN MILLIMETER, U.N.O.

NOT FOR CONSTRUCTION

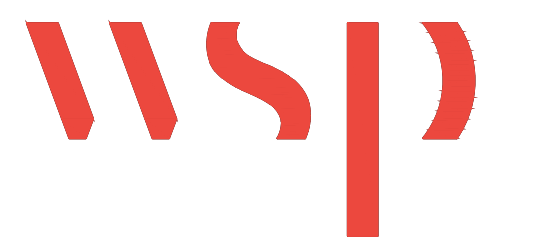


REV	D/M/Y	REVISION	DR	CHK	APP	APP	APP	APP	ISS	D/M/Y	APP	ISSUED FOR	REF	NUMBER	TITLE	REFERENCES
B	13/06/23	ISSUED FOR REVIEW							B	13/06/23	K.W.	ISSUED FOR LEAVE TO CONSTRUCT (LTC) APPLICATION				
A	17/11/22	ISSUED FOR REVIEW							A	17/11/22		ISSUED FOR REVIEW				

APPROVED FOR CONSTRUCTION		wsp		600 COCHRANE DRIVE, 5TH FLOOR MARKHAM, ONTARIO CANADA L3R 5K3 www.wsp.com	
CLIENT PROJECT MGR.	DEPARTMENT MGR.	PROJECT MGR.	AREA	PUC TRANSMISSION 230KV TRANSMISSION LINE	
PROJECT NO.	ACTIVITY NO.	PACKAGE CODE	SUBJECT		
			PERMIT FRAMING MONO STEEL HEAVY ANGLE (60 - 90°)		
SCALE			BY	D/M/Y	
N.T.S. (11"x17")			DSN. E.KWONG	09/05/22	
			DRN. K.LUI	10/05/22	
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STAMP/SEAL			Engineering Company 9950 Fourteenth Ave. East, Suite 203 Markham, On. L3R 0A9 Email: chimax@chimax.ca		
STAMP/SEAL			CLIENT DWG. NO.		
STAMP/SEAL			DRAWING NO. 2214-P204		
STAMP/SEAL			REV. B		
STAMP/SEAL			CADD FILE ADDRESS 2214-P204-B		

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DETAILED SINGLE LINE DIAGRAM



100 COMMERCE VALLEY DRIVE WEST
THORNHILL, ONTARIO CANADA L3T 0A1
TEL.: 905-882-1100 | FAX: 905-475-5994 | WWW.WSPGROUP.COM

SEAL:

CLIENT:



PROJECT:

KEY PLAN:

ISSUED FOR LEAVE TO CONSTRUCT APPLICATION

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IS	RV	DATE	DESCRIPTION
	K	Oct 12, 2023	ISSUED FOR LEAVE TO CONSTRUCT APPLICATION
	J	July 17, 2023	ISSUED FOR LEAVE TO CONSTRUCT APPLICATION
	I	June 7, 2023	ISSUED FOR LEAVE TO CONSTRUCT APPLICATION
IFR	H	Mar. 31, 2023	ISSUED FOR REVIEW
IFR	G	Jan. 24, 2023	ISSUED FOR REVIEW
IFR	F	Sep. 09, 2022	ISSUED FOR REVIEW
IFR	E	Jul. 15, 2022	ISSUED FOR REVIEW
IFR	D	Jun. 17, 2022	ISSUED FOR REVIEW
IFR	C	Apr. 20, 2022	ISSUED FOR REVIEW

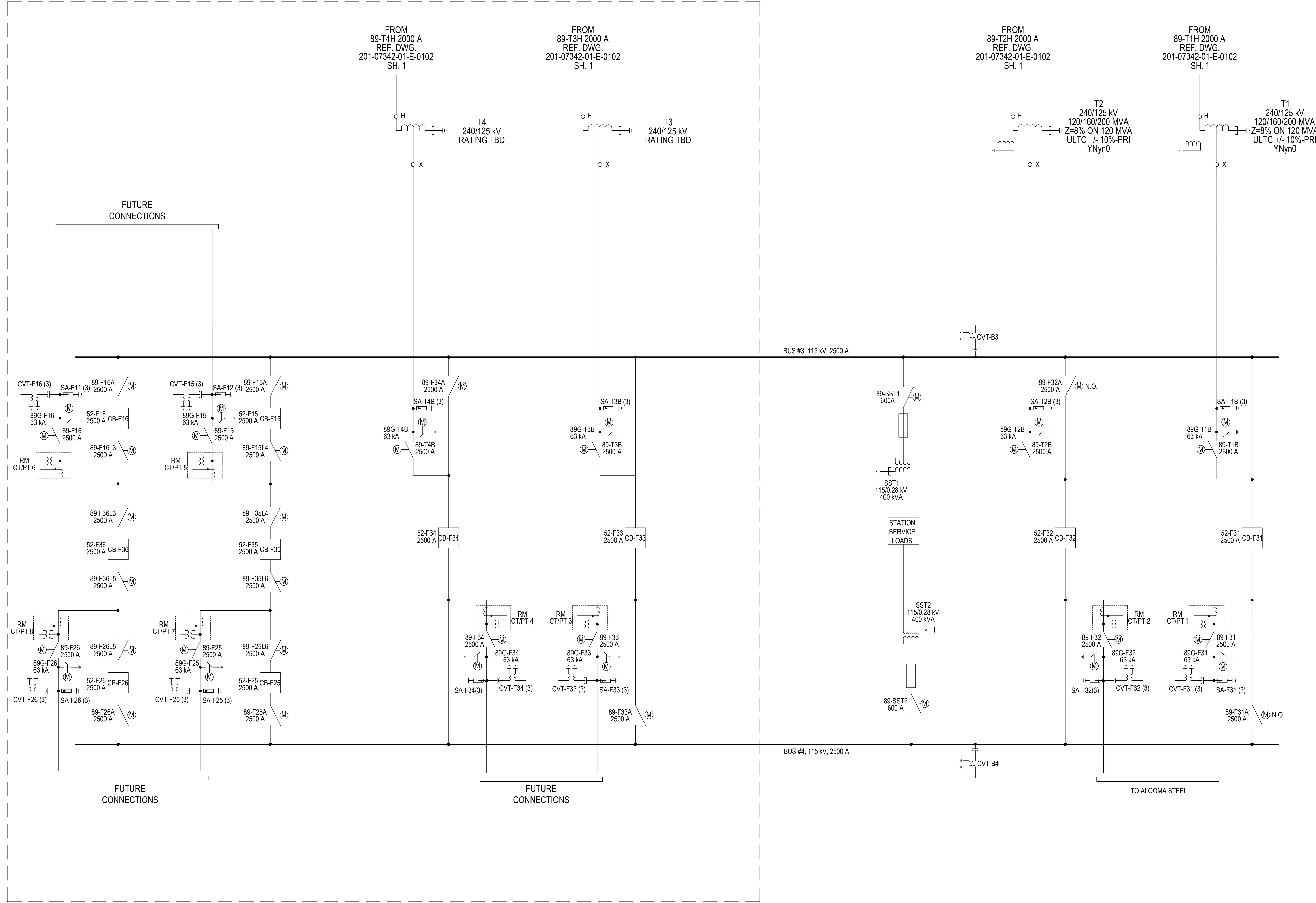
PROJECT NO.	DATE
	Aug. 17, 2020

ORIGINAL SCALE: NTS
 DESIGNED BY: A. SABER
 DRAWN BY: Y. MAHMOOD
 CHECKED BY: M. KLEIN
 DISCIPLINE: ELECTRICAL

TITLE:
**PUC TRANSMISSION 230 kV FACILITIES
 230 kV TRANSFORMER STATION AND LINE
 115kV AREA SINGLE LINE DIAGRAM**

SHEET NUMBER:
201-07342-01-E-0102

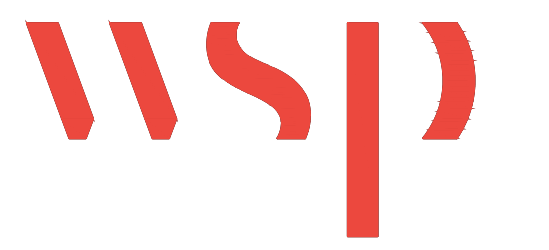
SHEET # 2 OF 3
 ISSUE: LEAVE TO CONSTRUCT APPLICATION
 DATE OF: Oct 12, 2023
 RV # K



FUTURE

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100 COMMERCE VALLEY DRIVE WEST
THORNHILL, ONTARIO CANADA L3T 0A1
TEL.: 905-882-1100 | FAX: 905-475-5994 | WWW.WSPGROUP.COM

SEAL:

CLIENT:



PROJECT:

KEY PLAN:

ISSUED FOR LEAVE
TO CONSTRUCT
APPLICATION

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NOTE:
THIS DOCUMENT SHALL NOT BE USED
FOR CONSTRUCTION
(OR FABRICATION OR INSTALLATION)

ISSUED FOR - REVISION			
REV.	DATE	DESCRIPTION	BY
K	Oct 12, 2023	ISSUED FOR LEAVE TO CONSTRUCT APPLICATION	
J	July 17, 2023	ISSUED FOR LEAVE TO CONSTRUCT APPLICATION	
I	June 7, 2023	ISSUED FOR LEAVE TO CONSTRUCT APPLICATION	
IFR	H Mar. 31, 2023	ISSUED FOR REVIEW	
IFR	G Jan. 24, 2023	ISSUED FOR REVIEW	
IFR	F Sep. 09, 2022	ISSUED FOR REVIEW	
IFR	E Jul. 15, 2022	ISSUED FOR REVIEW	
IFR	D Jun. 17, 2022	ISSUED FOR REVIEW	
IFR	C Apr. 20, 2022	ISSUED FOR REVIEW	

IS.	RV.	DATE	DESCRIPTION
		Aug. 17, 2020	

ORIGINAL SCALE:	IF THIS BAR IS NOT 25 mm LONG, ADJUST YOUR PLOTTING SCALE.
DESIGNED BY: A. SABER	25 mm
DRAWN BY: Y. MAHMOOD	
CHECKED BY: M. KLEIN	

DISCIPLINE: ELECTRICAL

TITLE:
PUC TRANSMISSION 230 kV FACILITIES
230 kV TRANSFORMER STATION AND LINE
34.5 kV AREA SINGLE LINE DIAGRAM

SHEET NUMBER:
201-07342-01-E-0102

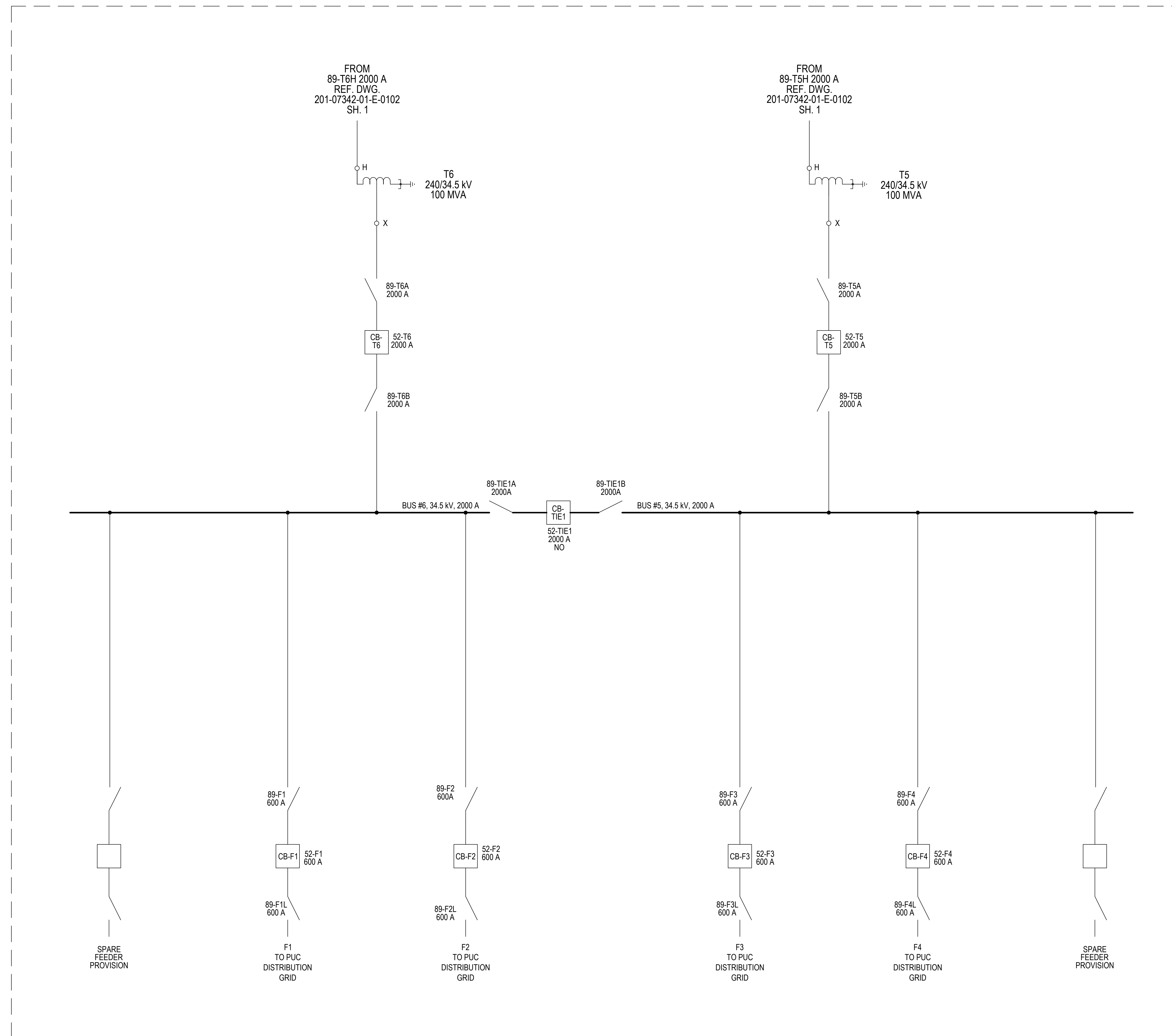
SHEET #: 3 OF 3

ISSUE: LEAVE TO CONSTRUCT APPLICATION

DATE OF: Oct 12, 2023

RV.#
K

FUTURE



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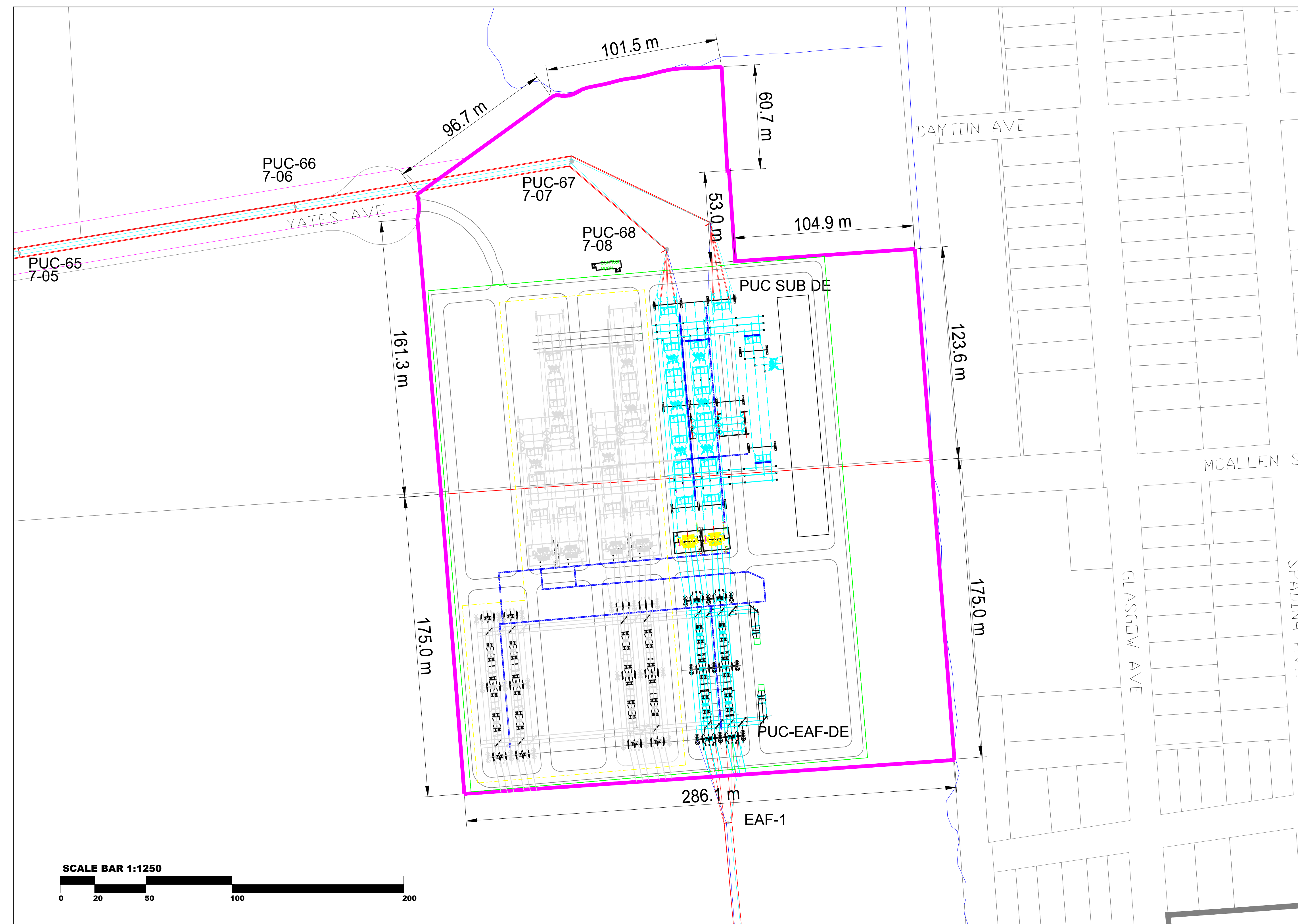
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STATION LAYOUT DRAWING

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Engineering Company
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Markham, On., L3R 0A9
Email: chimax@chimax.ca

REV	D/M/Y	REVISION	DR	CHK	APP	APP	APP	APP	ISS	D/M/Y	APP	ISSUED FOR	REF	NUMBER	TITLE	REFERENCES
A	23/10/23	ISSUED FOR REVIEW								A	23/10/23	D.P. ISSUED FOR LEAVE TO CONSTRUCT (LTC) APPLICATION				

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APPROVED FOR CONSTRUCTION		
CLIENT PROJECT MGR.	DEPARTMENT MGR.	PROJECT MGR.
PROJECT PHASE		
PROJECT NO.	ACTIVITY NO.	PACKAGE CODE
SCALE	BY	D/M/Y
1:1250 (ANSI-D)	DSN: A.SABER DRN: E.KWONG	16/10/23 23/10/23

wsp 600 COCHRANE DRIVE, 5TH FLOOR
MARKHAM, ONTARIO
CANADA L3R 5K3
www.wsp.com

AREA
PUC TRANSMISSION
230KV TRANSMISSION LINE

SUBJECT
230/115kV PUC SUBSTATION
SITE PLAN
YATES AVENUE

CLIENT DWG. NO.	
DRAWING NO.	REV.
2214-P021	A

CADD FILE ADDRESS
2214-P001-C

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MAPS

This section includes maps of the proposed routing in accordance with Section 4.3.3.3 of the filing requirements. The maps are located at **Attachment 1 to this Tab**. The maps delineate the routing of the proposed Line along with the Ontario Land Registry PIN for each parcel of land over or adjacent to which the Line runs as well as the right-of-way dimensions.

It is noted that all the lands over or adjacent to which the Line runs are privately owned lands, subject to either existing easements or new easements to be acquired.

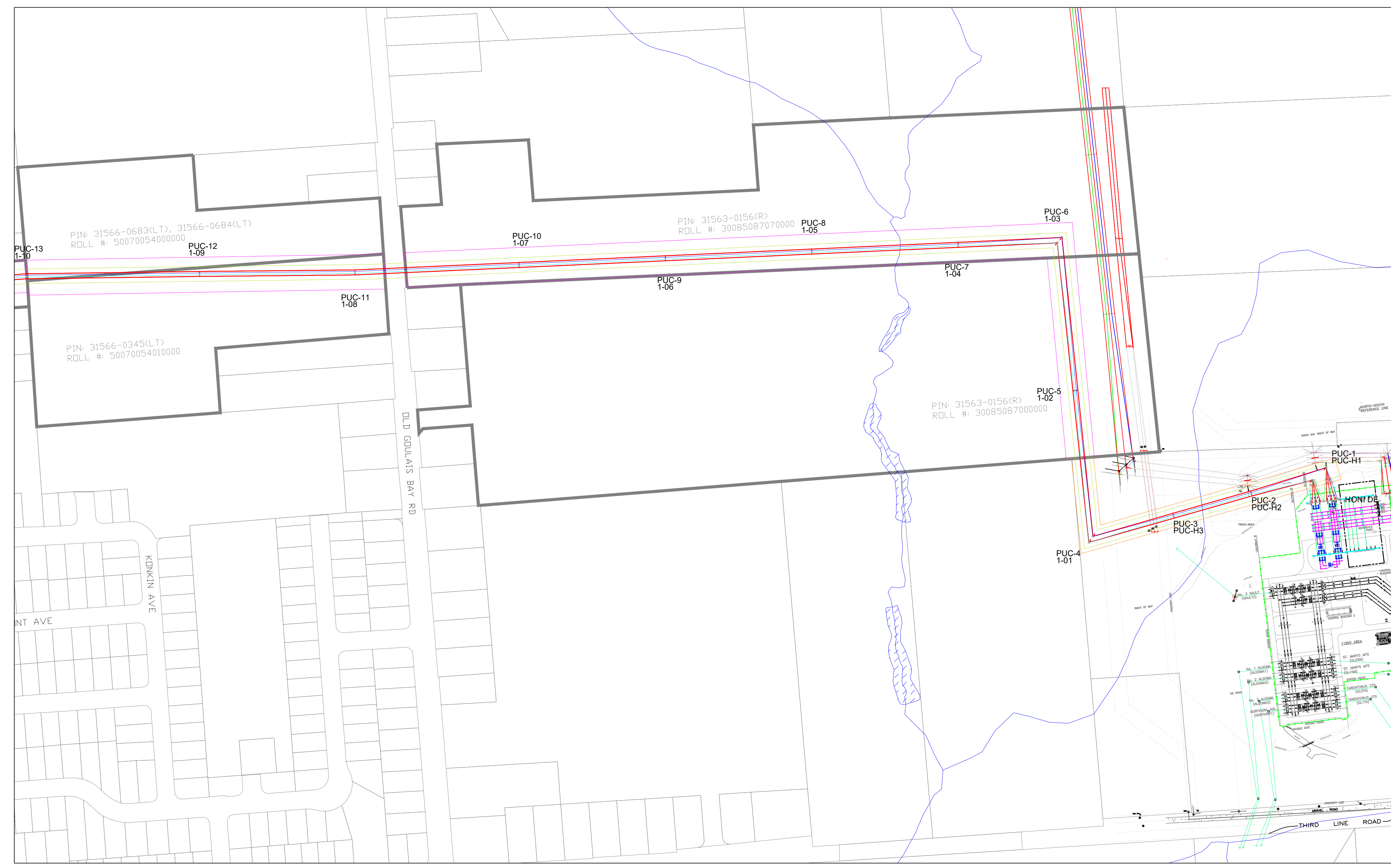
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PROPERTY DETAIL MAPS

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BASE MAP LEGEND:

- PROPERTY LINE
- PROPERTY ADJACENT TO TRANSMISSION LINE
- 230KV TRANSMISSION LINE R.O.W.

TRANSMISSION LINE LEGEND:

- PUC-1
- PUC-1-01
- PUC STRUCTURE IDENTIFICATION
- PUC ENVIRONMENTAL ASSESSMENT (EA) IDENTIFICATION
- 230KV STRUCTURE
- 230KV TRANSMISSION LINE CONDUCTOR
- (954MCM ACSR CARDINAL)
- OVERHEAD GROUND WIRE (OHGW)
- OPTICAL GROUND WIRE (OPGW)

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3950 Fourteenth Ave. East, Suite 203
Markham, On., L3R 0A9
Email: chimax@chimax.ca

REV	D/M/Y	REVISION	DR	CHK	APP	APP	APP	ISS	D/M/Y	APP	ISSUED FOR	REF	NUMBER	TITLE	REFERENCES
D	28/11/23	RELOCATED PUC-36 TO PUC-38						D	28/11/23	K.W.	ISSUED FOR LEAVE TO CONSTRUCT (LTC) APPLICATION				
C	16/10/23	INCORPORATE CLIENT'S COMMENT						C	16/10/23	K.W.	ISSUED FOR LEAVE TO CONSTRUCT (LTC) APPLICATION				
B	03/10/23	ISSUED FOR LTC APPLICATION						B	03/10/23	K.W.	ISSUED FOR LEAVE TO CONSTRUCT (LTC) APPLICATION				
A	13/06/23	ISSUED FOR REVIEW						A	13/06/23	K.W.	ISSUED FOR LEAVE TO CONSTRUCT (LTC) APPLICATION				

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APPROVED FOR CONSTRUCTION		
CLIENT PROJECT MGR.	DEPARTMENT MGR.	PROJECT MGR.
PROJECT PHASE		
PROJECT NO.	ACTIVITY NO.	PACKAGE CODE
SCALE	BY	D/M/Y
1:2500 (ANSI-D)	DSN. E.KWONG DRN. M.HUANG	13/05/23 13/05/23

wsp 600 COCHRANE DRIVE, 5TH FLOOR
MARKHAM, ONTARIO
CANADA L3R 5K3
www.wsp.com

AREA
PUC TRANSMISSION
230KV TRANSMISSION LINE

SUBJECT
230kv TRANSMISSION LINE
SITE PLAN
SHEET 1 OF 7

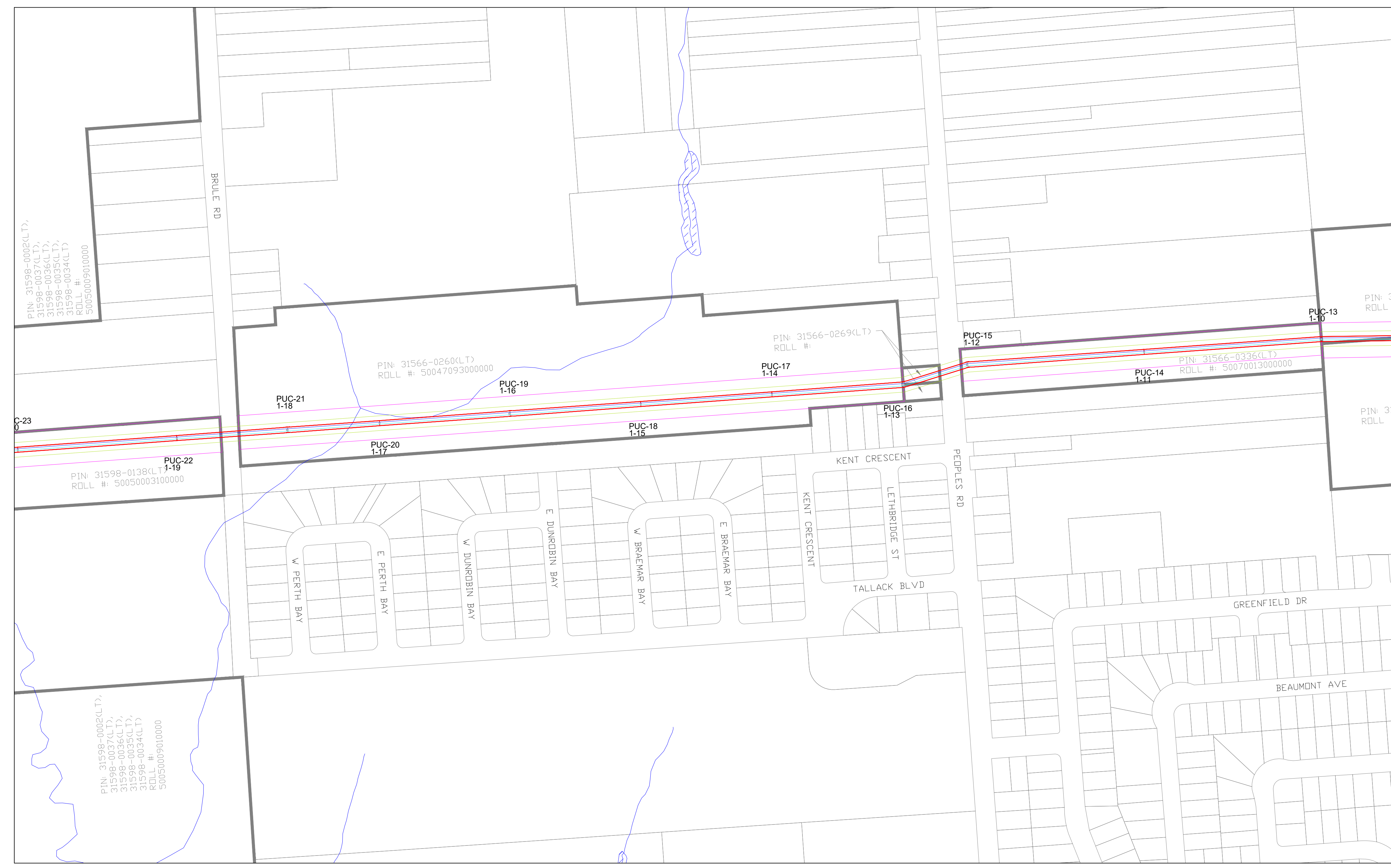
CLIENT DWG. NO.	
DRAWING NO.	REV.
2214-P001-S1	D

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2214-P001-D

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BASE MAP LEGEND:

- PROPERTY LINE
- PROPERTY ADJACENT TO TRANSMISSION LINE
- 230KV TRANSMISSION LINE R.O.W.

TRANSMISSION LINE LEGEND:

- PUC-1
PUC STRUCTURE IDENTIFICATION
- PUC ENVIRONMENTAL ASSESSMENT (EA) IDENTIFICATION
- 230KV STRUCTURE
- 230KV TRANSMISSION LINE CONDUCTOR (954MCM ACSR CARDINAL)
- OVERHEAD GROUND WIRE (OHGW)
- OPTICAL GROUND WIRE (OPGW)

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REV	D/M/Y	REVISION	DR	CHK	APP	APP	APP	ISS	D/M/Y	APP	ISSUED FOR	REF	NUMBER	TITLE	REFERENCES
D	28/11/23	RELOCATED PUC-36 TO PUC-38	M.H.	E.K.	K.W.			D	28/11/23	K.W.	ISSUED FOR LEAVE TO CONSTRUCT (LTC) APPLICATION				
C	16/10/23	INCORPORATE CLIENT'S COMMENT	M.H.	E.K.	K.W.			C	16/10/23	K.W.	ISSUED FOR LEAVE TO CONSTRUCT (LTC) APPLICATION				
B	03/10/23	ISSUED FOR LTC APPLICATION	M.H.	E.K.	K.W.			B	03/10/23	K.W.	ISSUED FOR LEAVE TO CONSTRUCT (LTC) APPLICATION				
A	13/06/23	ISSUED FOR REVIEW	M.H.	E.K.	K.W.			A	13/06/23	K.W.	ISSUED FOR LEAVE TO CONSTRUCT (LTC) APPLICATION				

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CLIENT PROJECT MGR.	DEPARTMENT MGR.	PROJECT MGR.
PROJECT NO.	ACTIVITY NO.	PACKAGE CODE
SCALE	BY	D/M/Y
1:2500 (ANSI-D)	E.KWONG M.HUANG	13/06/23 13/06/23

wsp	
AREA	SUBJECT
PUC TRANSMISSION 230KV TRANSMISSION LINE	230KV TRANSMISSION LINE SITE PLAN SHEET 2 OF 7

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CLIENT DWG. NO.	REV.
2214-P001-S2	D

CADD FILE ADDRESS
2214-P001-D

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BASE MAP LEGEND:

- PROPERTY LINE
- PROPERTY ADJACENT TO TRANSMISSION LINE
- 230KV TRANSMISSION LINE R.O.W.

TRANSMISSION LINE LEGEND:

- PUC-1
- 1-01
- PUC STRUCTURE IDENTIFICATION
- PUC ENVIRONMENTAL ASSESSMENT (EA) IDENTIFICATION
- 230KV STRUCTURE
- 230KV TRANSMISSION LINE CONDUCTOR
- (954MCM ACSR CARDINAL)
- OVERHEAD GROUND WIRE (OHGW)
- OPTICAL GROUND WIRE (OPGW)

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REV	D/M/Y	REVISION	DR	CHK	APP	APP	APP	ISS	D/M/Y	APP	ISSUED FOR	REF	NUMBER	TITLE	REFERENCES
D	28/11/23	RELOCATED PUC-26 TO PUC-38						D	28/11/23	K.W.	ISSUED FOR LEAVE TO CONSTRUCT (LTC) APPLICATION				
C	16/10/23	INCORPORATE CLIENT'S COMMENT						C	16/10/23	K.W.	ISSUED FOR LEAVE TO CONSTRUCT (LTC) APPLICATION				
B	03/10/23	ISSUED FOR LTC APPLICATION						B	03/10/23	K.W.	ISSUED FOR LEAVE TO CONSTRUCT (LTC) APPLICATION				
A	13/06/23	ISSUED FOR REVIEW						A	13/06/23	K.W.	ISSUED FOR LEAVE TO CONSTRUCT (LTC) APPLICATION				

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APPROVED FOR CONSTRUCTION		
CLIENT PROJECT MGR.	DEPARTMENT MGR.	PROJECT MGR.
PROJECT NO.	ACTIVITY NO.	PACKAGE CODE
SCALE	BY	D/M/Y
1:2500 (ANSI-D)	DSN. E.KWONG DRN. M.HUANG	13/06/23 13/06/23

wsp		600 COCHRANE DRIVE, 5TH FLOOR MARKHAM, ONTARIO CANADA L3R 5K3 www.wsp.com
AREA	PUC TRANSMISSION 230KV TRANSMISSION LINE	
SUBJECT	230KV TRANSMISSION LINE SITE PLAN SHEET 3 OF 7	

Chimax Inc.		Engineering Company 3950 Fourteenth Ave. East, Suite 203 Markham, On., L3R 0A9 Email: chimax@chimax.ca
CLIENT DWG. NO.	2214-P001-S3	
DRAWING NO.	2214-P001-S3	REV. D

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2214-P001-D

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BASE MAP LEGEND:

- PROPERTY LINE
- PROPERTY ADJACENT TO TRANSMISSION LINE
- 230KV TRANSMISSION LINE R.O.W.

TRANSMISSION LINE LEGEND:

- PUC-1
1-01 PUC STRUCTURE IDENTIFICATION
- PUC ENVIRONMENTAL ASSESSMENT (EA) IDENTIFICATION
- 230KV STRUCTURE
- 230KV TRANSMISSION LINE CONDUCTOR (954MCM ACSR CARDINAL)
- OVERHEAD GROUND WIRE (OHGW)
- OPTICAL GROUND WIRE (OPGW)

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REV	D/M/Y	REVISION	DR	CHK	APP	APP	APP	ISS	D/M/Y	APP	ISSUED FOR	REF	NUMBER	TITLE	REFERENCES
D	28/11/23	RELOCATED PUC-36 TO PUC-38	M.H.	E.K.	K.W.			D	28/11/23	K.W.	ISSUED FOR LEAVE TO CONSTRUCT (LTC) APPLICATION				
C	16/10/23	INCORPORATE CLIENT'S COMMENT	M.H.	E.K.	K.W.			C	16/10/23	K.W.	ISSUED FOR LEAVE TO CONSTRUCT (LTC) APPLICATION				
B	03/10/23	ISSUED FOR LTC APPLICATION	M.H.	E.K.	K.W.			B	03/10/23	K.W.	ISSUED FOR LEAVE TO CONSTRUCT (LTC) APPLICATION				
A	13/06/23	ISSUED FOR REVIEW	M.H.	E.K.	K.W.			A	13/06/23	K.W.	ISSUED FOR LEAVE TO CONSTRUCT (LTC) APPLICATION				

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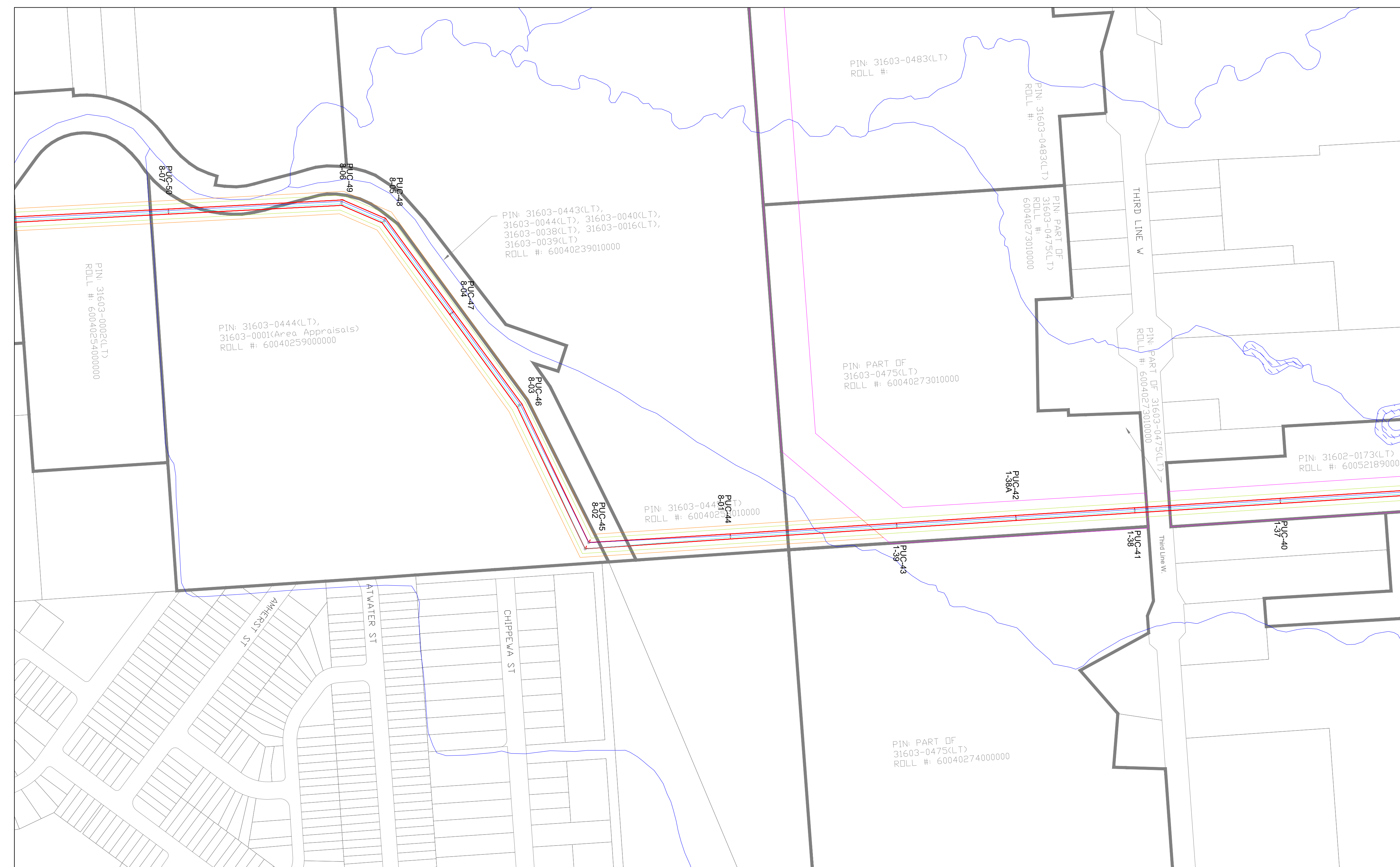
APPROVED FOR CONSTRUCTION			wsp		600 COCHRANE DRIVE, 5TH FLOOR MARKHAM, ONTARIO CANADA L3R 5K3 www.wsp.com	
CLIENT PROJECT MGR.	DEPARTMENT MGR.	PROJECT MGR.	AREA	PUC TRANSMISSION 230KV TRANSMISSION LINE		
PROJECT NO.	ACTIVITY NO.	PACKAGE CODE	SUBJECT	230KV TRANSMISSION LINE SITE PLAN SHEET 4 OF 7		
SCALE	BY	D/M/Y	DRN.	E.KWONG	13/06/23	
1:2500 (ANSI-D)				M.HUANG	13/06/23	

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CLIENT DWG. NO.	
DRAWING NO.	REV.
2214-P001-S4	D

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BASE MAP LEGEND:

- PROPERTY LINE
- PROPERTY ADJACENT TO TRANSMISSION LINE
- 230KV TRANSMISSION LINE R.O.W.

TRANSMISSION LINE LEGEND:

- PUC-1
- 1-01
- PUC STRUCTURE IDENTIFICATION
- PUC ENVIRONMENTAL ASSESSMENT (EA) IDENTIFICATION
- 230KV STRUCTURE
- 230KV TRANSMISSION LINE CONDUCTOR
- (954MCM ACSR CARDINAL)
- OVERHEAD GROUND WIRE (OHGW)
- OPTICAL GROUND WIRE (OPGW)

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Engineering Company
3950 Fourteenth Ave. East, Suite 203
Markham, On., L3R 0A9
Email: chimax@chimax.ca

REV	D/M/Y	REVISION	DR	CHK	APP	APP	APP	ISS	D/M/Y	APP	ISSUED FOR	REF	NUMBER	TITLE	REFERENCES
D	28/11/23	RELOCATED PUC-36 TO PUC-38	M.H.	E.K.	K.W.			D	28/11/23	K.W.	ISSUED FOR LEAVE TO CONSTRUCT (LTC) APPLICATION				
C	16/10/23	INCORPORATE CLIENT'S COMMENT	M.H.	E.K.	K.W.			C	16/10/23	K.W.	ISSUED FOR LEAVE TO CONSTRUCT (LTC) APPLICATION				
B	03/10/23	ISSUED FOR LTC APPLICATION	M.H.	E.K.	K.W.			B	03/10/23	K.W.	ISSUED FOR LEAVE TO CONSTRUCT (LTC) APPLICATION				
A	13/06/23	ISSUED FOR REVIEW	M.H.	E.K.	K.W.			A	13/06/23	K.W.	ISSUED FOR LEAVE TO CONSTRUCT (LTC) APPLICATION				

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APPROVED FOR CONSTRUCTION		
CLIENT PROJECT MGR.	DEPARTMENT MGR.	PROJECT MGR.
PROJECT PHASE	AREA	
PROJECT NO.	ACTIVITY NO.	PACKAGE CODE
SCALE	BY	D/M/Y
1:2500 (ANSI-D)	DSN. E.KWONG DRN. M.HUANG	13/05/23 13/05/23

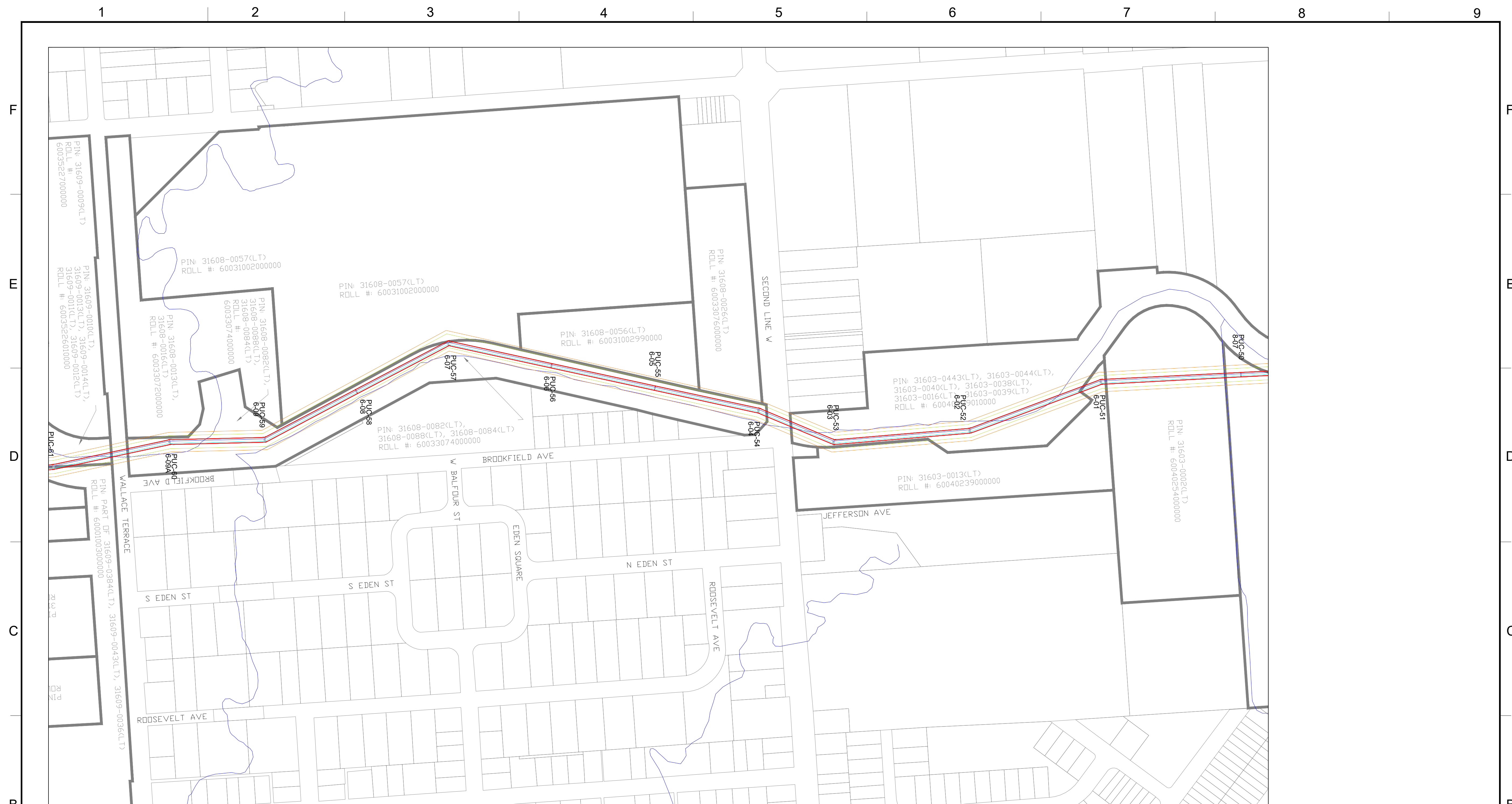
wsp 600 COCHRANE DRIVE, 5TH FLOOR
MARKHAM, ONTARIO
CANADA L3R 5K3
www.wsp.com

PUC TRANSMISSION
230KV TRANSMISSION LINE

230KV TRANSMISSION LINE
SITE PLAN
SHEET 5 OF 7

CLIENT DWG. NO.	
DRAWING NO.	REV.
2214-P001-S5	D

CADD FILE ADDRESS
2214-P001-D



BASE MAP LEGEND:

- PROPERTY LINE
- PROPERTY ADJACENT TO TRANSMISSION LINE
- 230kV TRANSMISSION LINE R.O.W.

TRANSMISSION LINE LEGEND:

- PUC-1 1-01
- PUC STRUCTURE IDENTIFICATION
- PUC ENVIRONMENTAL ASSESSMENT (EA) IDENTIFICATION
- 230kV STRUCTURE
- 230kV TRANSMISSION LINE CONDUCTOR (954MCM ACSR CARDINAL)
- OVERHEAD GROUND WIRE (OHGW)
- OPTICAL GROUND WIRE (OPGW)

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Chimax Inc.
Engineering Company
3950 Fourteenth Ave. East, Suite 203
Markham, On., L3R 0A9
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REV	D/M/Y	REVISION	DR	CHK	APP	APP	APP	APP	ISS	D/M/Y	APP	ISSUED FOR	REF	NUMBER	TITLE	REFERENCES
D	28/11/23	RELOCATED PUC-36 TO PUC-38	M.H.	E.K.	K.W.				D	28/11/23	K.W.	ISSUED FOR LEAVE TO CONSTRUCT (LTC) APPLICATION				
C	16/10/23	INCORPORATE CLIENT'S COMMENT	M.H.	E.K.	K.W.				C	16/10/23	K.W.	ISSUED FOR LEAVE TO CONSTRUCT (LTC) APPLICATION				
B	03/10/23	ISSUED FOR LTC APPLICATION	M.H.	E.K.	K.W.				B	03/10/23	K.W.	ISSUED FOR LEAVE TO CONSTRUCT (LTC) APPLICATION				
A	13/06/23	ISSUED FOR REVIEW	M.H.	E.K.	K.W.				A	13/06/23	K.W.	ISSUED FOR LEAVE TO CONSTRUCT (LTC) APPLICATION				

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APPROVED FOR CONSTRUCTION		
CLIENT PROJECT MGR.	DEPARTMENT MGR.	PROJECT MGR.
PROJECT NO.	ACTIVITY NO.	PACKAGE CODE
SCALE	BY	D/M/Y
1:2500 (ANSI-D)	E.KWONG DRN. M.HUANG	13/06/23

wsp 600 COCHRANE DRIVE, 5TH FLOOR
MARKHAM, ONTARIO
CANADA L3R 5K3
www.wsp.com

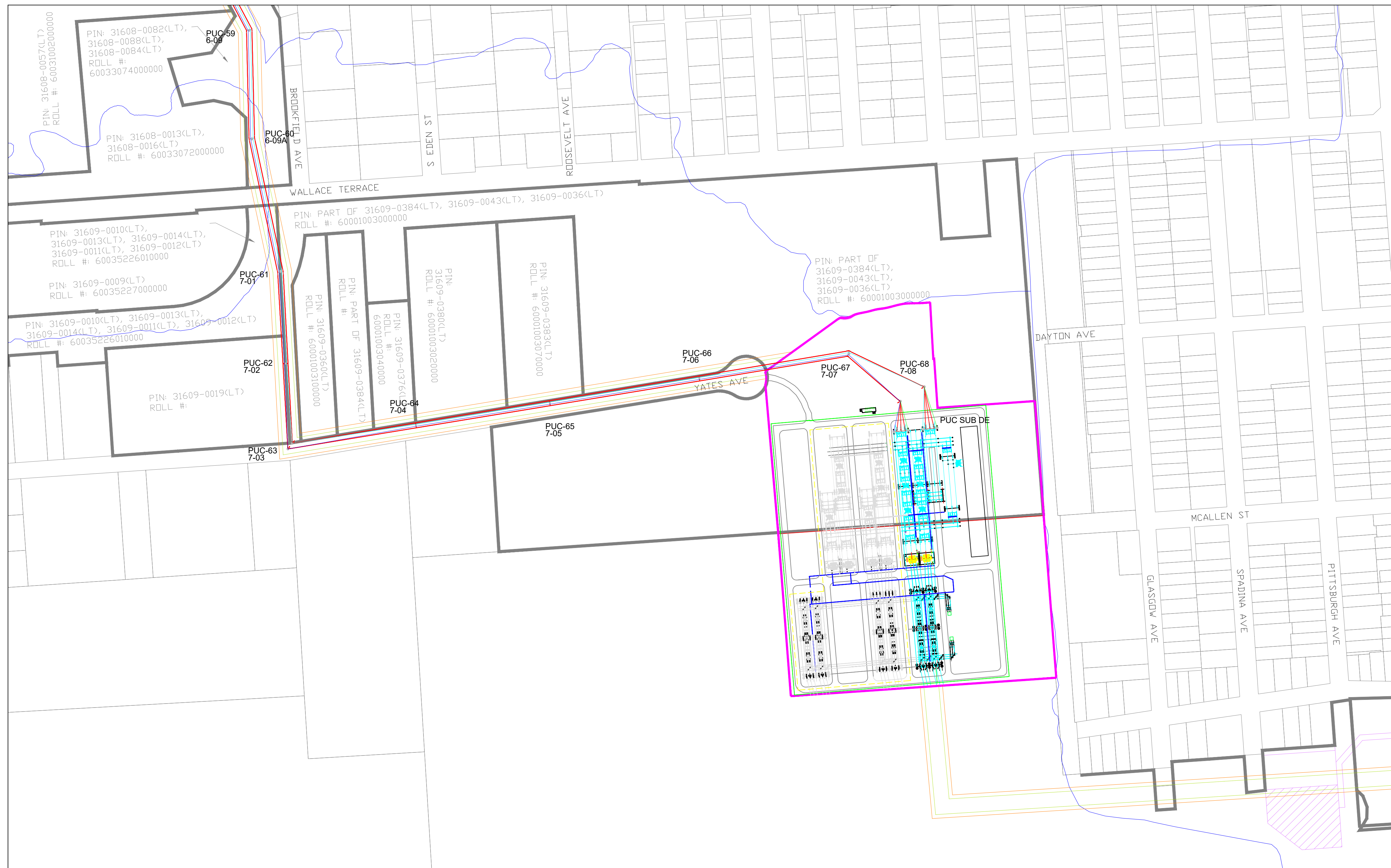
AREA
PUC TRANSMISSION
230KV TRANSMISSION LINE

SUBJECT
230kV TRANSMISSION LINE
SITE PLAN
SHEET 6 OF 7

CLIENT DWG. NO.		REV.
DRAWING NO. 2214-P001-S6		D
CADD FILE ADDRESS 2214-P001-D		

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BASE MAP LEGEND:

- PROPERTY LINE
- PROPERTY ADJACENT TO TRANSMISSION LINE
- 230KV TRANSMISSION LINE R.O.W.
- PUC SUBSTATION PROPERTY BOUNDARY

TRANSMISSION LINE LEGEND:

- PUC-1
1-01
- PUC STRUCTURE IDENTIFICATION
- PUC ENVIRONMENTAL ASSESSMENT (EA) IDENTIFICATION
- 230KV STRUCTURE
- 230KV TRANSMISSION LINE CONDUCTOR (954MCM ACSR CARDINAL)
- OVERHEAD GROUND WIRE (OHGW)
- OPTICAL GROUND WIRE (OPGW)

NOT FOR CONSTRUCTION



REV	D/M/Y	REVISION	DR	CHK	APP	APP	APP	ISS	D/M/Y	APP	ISSUED FOR	REF	NUMBER	TITLE	REFERENCES
D	28/11/23	RELOCATED PUC-56 TO PUC-38	M.H.	E.K.	K.W.			D	28/11/23	K.W.	ISSUED FOR LEAVE TO CONSTRUCT (LTC) APPLICATION				
C	16/10/23	INCORPORATE CLIENT'S COMMENT	M.H.	E.K.	K.W.			C	16/10/23	K.W.	ISSUED FOR LEAVE TO CONSTRUCT (LTC) APPLICATION				
B	03/10/23	ISSUED FOR LTC APPLICATION	M.H.	E.K.	K.W.			B	03/10/23	K.W.	ISSUED FOR LEAVE TO CONSTRUCT (LTC) APPLICATION				
A	13/06/23	ISSUED FOR REVIEW	M.H.	E.K.	K.W.			A	13/06/23	K.W.	ISSUED FOR LEAVE TO CONSTRUCT (LTC) APPLICATION				

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CLIENT PROJECT MGR.	DEPARTMENT MGR.	PROJECT MGR.	
PROJECT PHASE			AREA
			PUC TRANSMISSION 230KV TRANSMISSION LINE
PROJECT NO.	ACTIVITY NO.	PACKAGE CODE	SUBJECT
			230KV TRANSMISSION LINE SITE PLAN SHEET 7 OF 7
SCALE	BY	D/M/Y	
1:2500 (ANSI-D)	DSN. E.KWONG DRN. M.HUANG	13/06/23 13/06/23	

Chimax Inc. Engineering Company 3950 Fourteenth Ave. East, Suite 203 Markham, On., L3R 0A9 Email: chimax@chimax.ca	
CLIENT DWG. NO.	DRAWING NO.
	2214-P001-S7
REV.	D

CADD FILE ADDRESS
2214-P001-D

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HYDRO ONE SAULT STE. MARIE FACILITIES

1.0 PREFACE

Hydro One Sault Ste. Marie Limited Partnership (“**HOSSM**”) has prepared and provided this evidence in support of the joint application with PUC-Transmission LP (“**PUC Transmission**”) for s.92 Leave to Construct approval by the Ontario Energy Board (“**OEB**”).

As a licensed transmitter, HOSSM is required to perform transmission station and other transmission facilities work to enable PUC Transmission to connect its proposed transmission facilities, that are the primary subject, and driver of the need, for this Application.

2.0 INTRODUCTION

HOSSM owns and operates the electricity transmission system in the vicinity of Sault Ste. Marie, Ontario.

In this Application, HOSSM is seeking leave from the OEB, pursuant to s. 92 of the *Ontario Energy Board Act, (the “Act”)*1998, for an Order or Orders granting leave to construct station facilities and related work at Third Line TS. Hydro One is also seeking approval of a new Regulatory Deferral Account under s. 78 of the Act to capture costs related to station work scope that will facilitate the connection of a new priority transmission line in the region in the near future. Additionally, HOSSM is seeking an exemption from the Transmission System Code (“**TSC**”) from the requirement to require Algoma Steel to pay bypass compensation to HOSSM under Section 11.2.1 of the TSC in respect of 30 MW of its load that will be served by Hydro One on an interim basis for 3 years with the ultimate intention that the 30 MW of load will be served by PUC Transmission once its facilities come into service.

The proposed station scope of work at Third Line TS that will be executed by HOSSM, entitled “**HOSSM Station Project**,” includes the following three project components:

1. Component #1 – Line Connection Work (“**Line Connection Component**”) - Station work to connect the PUC Transmission line project at Third Line TS (the primary subject of this Application by PUC Transmission) and associated facilities;

1 2. Component #2 - Refurbishment Work (“**Refurbishment Component**”) at Third Line TS¹¹,
2 involving the replacement of the T2 autotransformer, upgrading of P21G and P22G line
3 protections and associated facilities; and
4

5 3. Component #3 – Preliminary work to accommodate the future new 230 kV Transmission Line
6 Project from Mississagi Transformer Station (“**Mississagi TS**”) to Third Line TS (“**New**
7 **Transmission Line Project**”).¹²
8

9 This Exhibit provides information including cost, scope, and economic impacts, regarding the work
10 HOSSM will be undertaking to deliver the HOSSM Station Project. Planning, developing, and
11 coordinating the three project components at Third Line TS at the same time, including an
12 identifiable ‘common cost scope’ that will benefit all components, will result in a more efficient and
13 cost-effective process that also maintains work crew safety.
14

15 The separately identifiable common cost project scope of the HOSSM Station Project, in addition to
16 the three separately identifiable project components, is described in more detail in the following
17 sections;

- 18 • Section 3.0 Common elements of the HOSSM Station Project
 - 19 • Section 4.0 Project Component #1 Line Connection Component
 - 20 • Section 5.0 Project Component #2 Refurbishment Component
 - 21 • Section 6.0 Project Component #3 New Transmission Line Project.
- 22

23 HOSSM is seeking OEB approval of a Regulatory Account for the station scope of work that will
24 facilitate Project Component #3, the New Transmission Line Project. The new regulatory account will
25 consist of two sub-accounts:

- 26 i. The first sub-account will track capital costs associated with the scope of work at Third
27 Line TS that will benefit and facilitate the connection of the future New Transmission Line
28 Project (i.e. Component #3) at Third Line TS and,
29

¹¹ This scope of work is not driven by the need for PUC Transmission’s transmission line connection request.

¹² On November 14, 2023, the OEB amended Hydro One’s transmission licence requiring it to develop and seek approval for three new transmission lines, including the New Transmission Line Project. Appendix B is the directive to the OEB from the Minister of Energy, including the Order in Council. Appendix C is Hydro One’s amended transmission licence.

1 ii. After the New Transmission Line Project is in-service, the second sub-account will record
2 the revenue requirement of the capital associated with that component until it is included
3 in a future OEB-approved revenue requirement application.
4

5 Further information on the Regulatory Account request is provided in Section 18 below.
6

7 **3.0 COMMON ELEMENTS**

8 The station modifications and elements described below encapsulate the common requirements of
9 the HOSSM Station Project related to the three components (Line Connection, Refurbishment, and
10 New Transmission Line) identified above. The cost of the project's 'Common Elements' will be shared
11 between HOSSM and PUC Transmission based on scope of benefiting projects.
12

13 Due to space constraints in the existing station relay building, HOSSM will construct a new relay
14 building for the 230 kV switchyard at Third Line TS to house new protection, control and tele-
15 protection equipment benefiting the three project components.
16

17 Additional civil and structural work is required to expand the 230 kV switchyard to create space for
18 the two new planned diameters. The most westly located diameter will accommodate the new PUC's
19 Transmission circuits and the adjacent diameter will be used to facilitate termination of the New
20 Transmission Line Project circuits (equipment such as breakers, disconnect switches and protection
21 relays for New Transmission Line Project are not being installed at this time, only space is being
22 allocated as required) as identified in the Order in Council at **Appendix B**. Please see the map below,
23 labelled **Figure 1**, for the post-Project configuration at the Third Line TS 230 kV switchyard.
24

25 Modification of AC and DC systems within the station is also required to supply additional loads from
26 all projects anticipated at Third Line TS. The AC modifications will include new AC station service
27 transformers and a new AC switching scheme to supply increased station AC load requirements. The
28 DC system upgrades will include new DC batteries, battery chargers and distribution panels.
29

30 Three existing 230 kV circuits need re-termination to expand the station westward. For the re-
31 terminations, two new breakers will be installed in the expanded east yard to create the required
32 new switching positions. This re-termination benefits both the Line Connection Component (new
33 PUC Transmission circuits) as well as the new circuits for the New Transmission Line Project. The
34 majority of the east-yard expansion scope is required by the Refurbishment Component because the

1 new autotransformer required a “greenfield” installation strategy due to potential stranded load
2 vulnerability.

3

4 The cost of the HOSSM Station Project’s common elements will be included in rate pools consistent
5 with the evidence provided by PUC Transmission found in **Exhibit B, Tab 9, Schedule 1**.
6 Additionally, information regarding cost allocation, including the common project elements, is
7 provided in **Section 16** below.

8

9 **4.0 LINE CONNECTION COMPONENT**

10 HOSSM understands that PUC Transmission is applying to the Board for leave to construct
11 transmission line facilities which will include the following:

- 12 • A new 230 kV double-circuit transmission line, approximately 10 km long, from HOSSM’s
13 Third Line TS to approximately 250 meters southeast of the east end of Yates Avenue in the
14 city of Sault Ste. Marie;
- 15 • A new 230/115 kV transformer station located at the Yates Avenue end of the new 230 kV
16 double-circuit transmission line. This station is referred to as the “**Tagona West TS**” in
17 exhibits of this Application prepared by PUC Transmission;

18

19 To connect the PUC Transmission 230 kV circuits HOSSM is required to perform certain station work.
20 As indicated in the IESO’s SIA report, dated September 28, 2023,¹³ the new PUC Transmission line
21 will connect to HOSSM’s existing transmission facility at Third Line TS. The connection to HOSSM’s
22 230 kV system at Third Line TS will enable connection of the Electric Arc Furnace Station (a non-
23 HOSSM transmission station) and will allow Algoma Steel (the ultimate customer utilizing the PUC
24 Transmission constructed line) to operate their facility at the desired capacity of 280 MW. Based on
25 the evidence provided by PUC Transmission in this Application, the following work is necessary for
26 HOSSM to facilitate the PUC Transmission line connection.

27

28 The Line Connection Component will require HOSSM to expand the 230 kV switchyard at its existing
29 Third Line TS facility, to install five new 230 kV circuit breakers and associated disconnect switches,
30 three new 230 kV line disconnect switches with ground switches, and protection and control
31 facilities. To do this, HOSSM will reconfigure the existing 230 kV switchyard and re-terminate three
32 existing 230 kV transmission lines, whose nomenclature are K24G, P21G and P22G, into new

¹³ Provided at Exhibit F, Tab 1, Schedule 1, Attachment

1 switching positions. Additionally, HOSSM will expand the station footprint, on land owned by HOSSM,
2 construct a new relay building, and upgrade the AC and DC systems as part of the expansion. These
3 modifications at Third Line TS will allow termination of PUC Transmission's new 230 kV double-
4 circuit transmission line. HOSSM will design, procure, construct, own and operate all these new
5 facilities at Third Line TS.

6

7 PUC Transmission Connection to Third Line TS

8 Hydro One will install two new line entrance structures inside the station to accept PUC
9 Transmission's two 230 kV circuits before terminating them in new switching positions. Three new
10 230 kV circuit breakers (nomenclatures numbers being, #432, #435 and #438) will form the most
11 westly located diameter and create switching positions for termination of the new circuits.

12

13 HOSSM will re-terminate the 230 kV transmission circuit, K24G, at a new switching position,
14 presently occupied by circuit P21G. This re-termination and removal of existing circuit breaker #402
15 is to allow expansion of the 230 kV switchyard westward (breaker #402 and a K24G entrance
16 structure are in the way and need to be physically moved). Consequently, the 230 kV transmission
17 circuits P21G and P22G will be re-terminated to new switching positions to make room for circuit
18 K24G. Two new circuit breakers, nomenclatures #418 and #428, will be installed to create the new
19 switching positions for circuits P21G and P22G respectively and, provide two-breaker separation
20 between the parallel network circuits for reliability purposes. Re-termination of circuit P22G in the
21 new switching position will require the installation of a new tower structure outside Third Line TS
22 and installation of a new line disconnect switch, which will be located inside the station fence.

23

24 **5.0 REFURBISHMENT COMPONENT**

25 HOSSM has identified the need to replace an autotransformer (whose nomenclature is "T2") and
26 related facilities at Third Line TS. This Project is required to replace the T2 autotransformer which is
27 at end-of-life and in poor condition, as verified through asset condition assessment and diagnostic
28 testing. This transformer is approaching a state where the probability of failure and inability to
29 maintain it is high and can result in unplanned consequences. The replacement of T2 was identified
30 in HOSSM's 10-Year Transmission System Plan ("TSP"). Also within this TSP is the replacement and
31 upgrade of line protections for 230 kV circuits P21G and P22G.

32

33 **6.0 NEW TRANSMISSION LINE PROJECT**

34 Station work related to the New Transmission Line Project is required as a result of an Order in

1 Council,¹⁴ as outlined in Section 2 above, having determined this circuit to be a priority transmission
2 project and subsequently resulting in the OEB having amended ¹⁵ Hydro One's electricity
3 transmission licence¹⁶ requiring it to develop and seek approvals for its construction.

4
5 The new double circuit 230 kV transmission line between Mississagi TS and Third Line TS, will have
6 an estimated length of approximately 75 km, with an in-service date of 2029. This double circuit 230
7 kV transmission line between Mississagi TS and Third Line TS, would result in one end of the new
8 circuits terminating at Third Line TS. The anticipated need for that circuit, including the necessary
9 station work required, is expected to occur within the same timeframe as the HOSSM station work
10 required to connect PUC Transmission's new transmission circuits (as proposed by the Primary
11 Applicant in this Application). The elements of the HOSSM Station Project's scope of work that will
12 benefit the New Transmission Line Project are the following;

- 13 i. Westward expansion of Third Line TS yard,
- 14 ii. Construction of a new Protections, Controls and Telecoms ("PCT") building within
15 Third Line TS yard to accommodate all existing and newly planned circuits at Third
16 Line TS, and
- 17 iii. Third Line TS work to accommodate the future connection of a new Mississagi x Third
18 Line TS circuit, which will be performed simultaneous with the Line Connection and
19 Refurbishment Component scopes of work.

20
21 HOSSM will pre-install the circuit spans for the new circuits being proposed at Third Line TS that
22 cross over the new buses at the time the new bus expansions are constructed. This will avoid any
23 schedule delays that may result in obtaining IESO-approval for a double bus outage in the future,
24 when required to install the circuit spans.

25
26 Component #3, of this HOSSM Station Project scope, will in-part, accommodate the New
27 Transmission Line Project. HOSSM writes 'in-part' because the scope of work included in this
28 Application will require further work at Third Line TS to facilitate connection of the New
29 Transmission Line Project's 230 kV circuits; construction of those facilities can occur at an
30 appropriate time in the future. For now, this Application includes only scope of work that is
31 essential/common or will provide coordinated efficiencies and reduce rework when the full New

¹⁴ Appendix B to this Exhibit.

¹⁵ Appendix D to this Exhibit

¹⁶ Appendix C to this Exhibit

1 Transmission Line Project is executed. Those additional costs will be included in a future s.92
2 Application to the OEB.

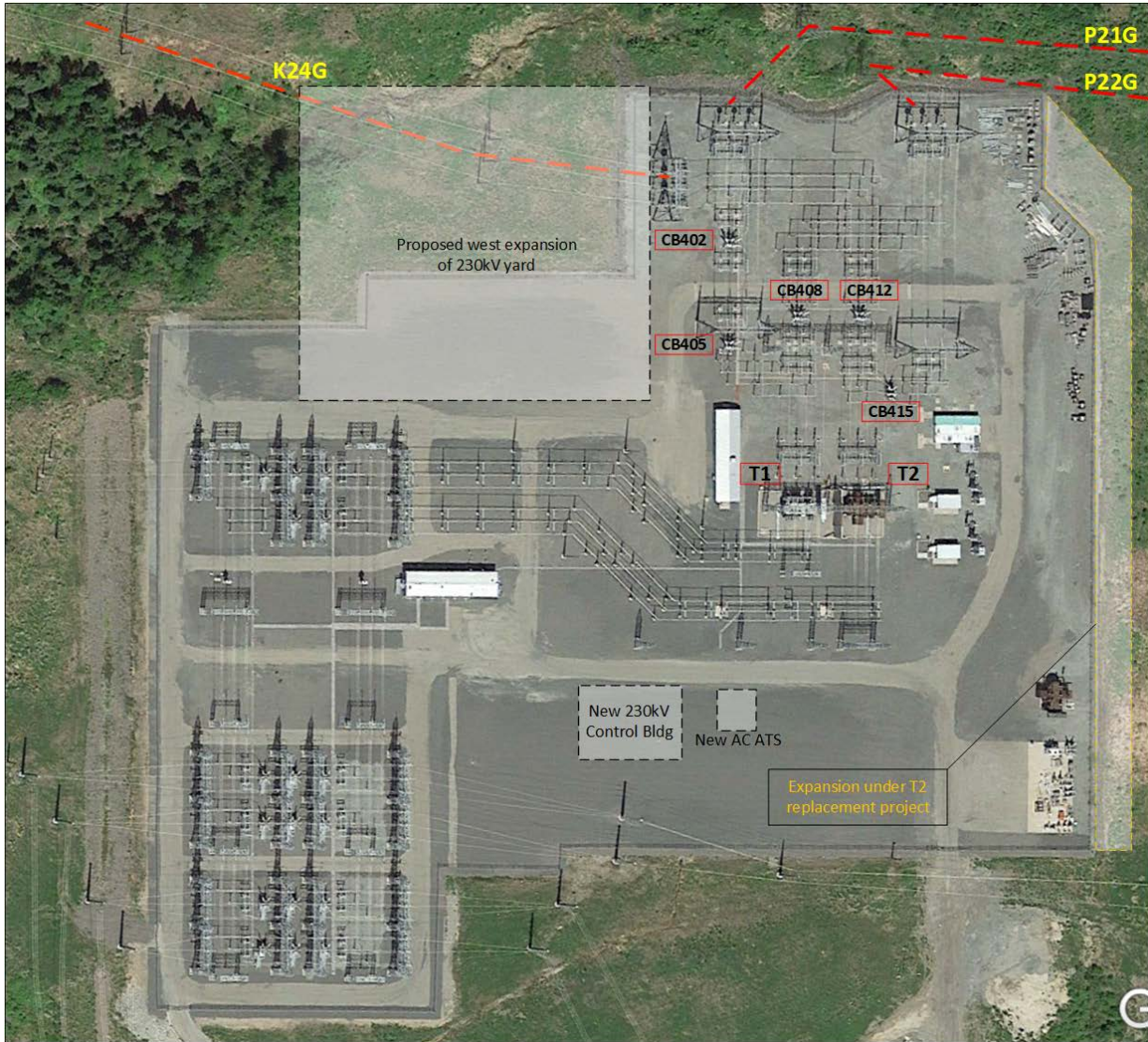
3
4 Planning and designing for station elements that accommodate the New Transmission Line Project
5 will eliminate future asset impairment. For example, if the HOSSM Station Project proposed did not
6 include all three project components, HOSSM would still need to construct a new PCT building.
7 Absent the accommodation of the Refurbishment Component and the New Transmission Line
8 Project, previous installation of a new PCT building would need to be replaced with a larger PCT
9 building or installation of a new PCT building.

10
11 By HOSSM seeking approval to complete work (i.e. Component #3) that will accommodate the New
12 Transmission Line Project at this time, it will eliminate wasting future resources, rework and
13 premature impairment (i.e. write off) of assets that would be required if Component #3 is not
14 executed in parallel with this HOSSM Station Project. This approach demonstrates appropriate
15 foresight and stewardship of utility assets and the transmission system, given the OEB's
16 acknowledgment of the priority New Transmission Line Project that will terminate one end of the
17 circuit at Third Line TS.

18
19 **7.0 MAP OF HOSSM STATION PROJECT**

20 A site map of Third Line TS is provided in Figure 1 below, illustrating the proposed location of the
21 above-described project components.

1 Figure 1: Map of Third Line TS Illustrating Location of Proposed Station Facility Work



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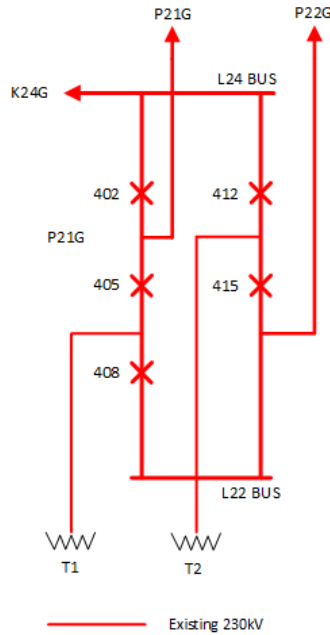
1 **8.0 SINGLE LINE DIAGRAMS**

2 Figures 2 and 3 show the before and after project-completion single line diagrams.

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Figure 2: Before - Existing 230kV Configuration at Third Line TS

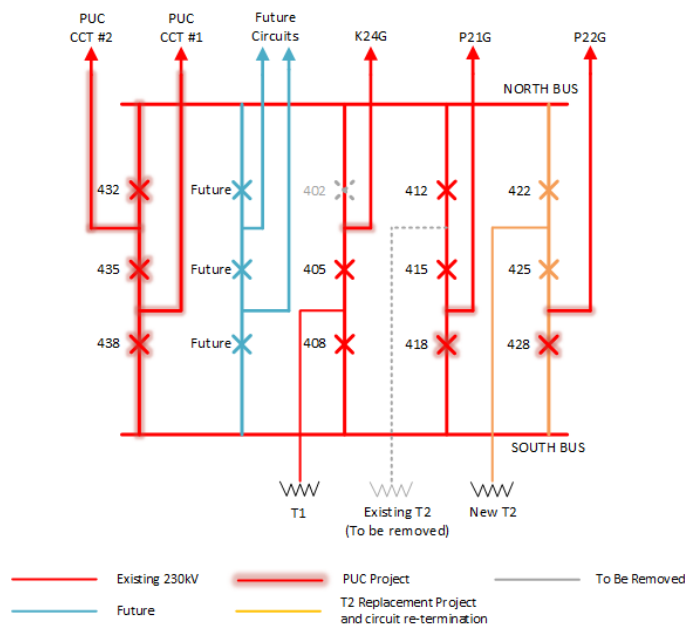


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Figure 3: After – 230 kV Configuration Post-Project Completion at Third Line TS¹⁷

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¹⁷ Final switching arrangement to accommodate new circuits resulting from Northeast Bulk transmission reinforcements is still to be determined.

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9.0 OPERATING DETAILS

HOSSM will maintain operational control of its proposed facilities with the use of circuit-breakers and switches at its existing station. HOSSM’s protection, control and telecom facilities will continue to protect all elements in the station and the 230 kV transmission lines connected to its station, by detecting faults and isolating faulted elements. Operation of the proposed facilities will continue to be in accordance with the procedures administered by Hydro One Networks Inc.’s Integrated System Operations Centre and the IESO.

10.0 LAND MATTERS FOR PROPOSED HOSSM STATION FACILITIES

HOSSM does not require new lands rights, permanent or temporary, to complete the HOSSM Station Project. HOSSM’s planned modifications to existing station facilities will be completed within HOSSM’s existing Third Line TS land ownership, located at 430 Third Line East, Sault Ste. Marie, Ontario. HOSSM’s Third Line TS lands are under fee simple ownership of Hydro One Sault Ste. Marie Holding Corp., a subsidiary of HOSSM.

All above-described HOSSM Station Project work, inclusive of that required to facilitate the connection of the new PUC Transmission circuits at Third Line TS will be sited within the existing Third Line TS property boundaries and no new permanent real estate rights are required. The HOSSM-owned Third Line TS property (PIN: 31563-0143 (LT)) and property boundaries are shown in Figure 4, below. The footprint (i.e., station fence) of the existing Third Line TS will be expanded to accommodate the expansion of the 230 kV switchyard but will remain within the existing Third Line TS property boundaries, of which HOSSM has ownership. Additionally, the existing Third Line TS property provides sufficient space for all construction activities associated with the HOSSM Station Project.

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Figure 4: Map of Station and Surrounding Areas Illustrating Project Works



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11.0 HOSSM STATION PROJECT COST ESTIMATE

The HOSSM Station Project is estimated to cost approximately \$73.4M. This is based on an Association for the Advancement of Cost Engineering (“AACE”) Class 3 estimate, consisting of an accuracy rate of (+30%/-20%). HOSSM expects to commence construction activities in late August 2024.

Third Line TS Expansion Project

The capital cost associated with HOSSM’s station project at Third Line TS is estimated at approximately about \$73.4M, including capitalized interest as shown below in **Table 1**.

Table 1 - Cost Estimate of Station Work - Third Line TS

	Estimated Cost (\$k)
Materials	14,074
Labour	25,616
Equipment Rental & Contractor Costs	17,769
Sundry	1,061
Contingencies	8,309
Overhead ¹⁸	-
Capitalized Interest	6,589
Real Estate	-
Total Station Work	73,418

12.0 RISKS AND CONTINGENCIES

As with most projects, there are risks associated with estimating costs. HOSSM's cost estimate includes an allowance for contingencies in recognition of these risks.

Contingency in this cost estimate has been established based on a focused Project Risk Workshop which considered the current level of design maturity and known risks based on the Project scope. Both common and specific project risks are identified and assessed by the project stakeholders during risk workshops. The risks identified are documented in a Risk Register outlining the type, source and expected level of impact to project cost and schedule. A probability assessment of the identified risks is performed to calculate the expected contingency value. The HOSSM Station Project contingency is the sum of the expected contingency values of all risks.

The top four project schedule and budget risks are outlined below. These risks are the major contributors to the total contingency suggested for the HOSSM Station Project.

- **Approvals and Permits** – there is a risk of a delay being encountered in obtaining required approvals, including the Environmental Certificate of Approval by PUC Transmission (which will cover the Third Line TS yard expansion footprint), and / or the OEB S.92 leave to

¹⁸ HOSSM's financial statements are reported under International Financial Reporting Standards (IFRS), therefore certain overhead costs are not capitalized.

- 1 construct approval being delayed due to unknown issues;
- 2 • **Outage constraints** - There is risk regarding the availability to securing outages. Summer
- 3 and winter outages may not be available;
- 4 • **Material delivery timelines** – there is risk of delay due to procurement or vendor issues;
- 5 and
- 6 • **Pricing variations** - due to the volatility of international markets.

7

8 Cost contingencies that have not been included, due to the unlikelihood or uncertainty of occurrence,

9 include:

- 10 • Labour disputes;
- 11 • Safety or environmental incidents;
- 12 • Significant changes in costs of materials since the estimate preparation; and
- 13 • Any other unforeseen and potentially significant events/occurrences.

14

15 **13.0 COSTS OF COMPARABLE PROJECTS**

16 The OEB Filing Requirements for Electricity Transmission and Distribution Applications, Chapter 4,

17 requires HOSSM to provide information about a cost comparable project constructed by the

18 Applicant.

19

20 HOSSM has provided two comparable projects for the Third Line TS work, 1) the Orangeville TS

21 Refurbishment Project and, 2) the Martindale TS T21, T23 & Component Replacement, both

22 constructed by Hydro One. The scope of work of these two comparison projects are similar with some

23 adjustments made for station-specific differences to the scope of work proposed at Third Line TS.

24

25 A side-by-side comparison of these projects is provided in **Table 2** below and illustrates that the

26 Third Line TS 230 kV PUC-TX project facility connection work cost, after adjustments for items that

27 are unique to only those comparable projects, is of a similar cost range to that of the appropriate

28 comparator station projects provided.

29

1

Table 2 - Costs of Comparable Station Projects

Project	Third Line TS 230kV PUC Connection	Martindale TS T21, T23 & Component Replacement	East West Tie Project - Marathon TS
Technical	Yard Reconfiguration: 5x 230kV breakers, 2x SS Transformer Replacements, 1x PCT Building, Station Expansion, 3 Line Relocations	44kV yard including: 2x Autotransformers, 5x 230kV breakers, 1x PCT Building, 5x SS Transformers, Station Expansion	New 230kV Yard: 12x 230kV breakers, 2x SS Transformers, 1x PCT Building
Location	Upgrade situated on expanded station footprint	Upgrade situated on expanded station footprint	Upgrade situated on expanded station footprint
Project Surroundings	Mostly rural	Suburban/Residential	Mostly rural
In-Service Date	June 2027	Oct 2021	March 2022
Estimate or Actual	Estimate	Actual	Actual
OEB-Approved Cost Estimate	N/A	\$73,800k ¹⁹	\$61,530k ²⁰
Total Capital Project Cost	\$73,407k	\$74,580k	\$71,800k
Non-Comparable Costs			
230 kV Breakers (at average unit cost of \$1,190k)	-	-	(8,330)
New DESN Yard	-	(9,000)	
Autotransformers (at average unit cost of \$7,000k)	-	(14,000)	-
SS Transformers (at average unit of \$800k)	-	(2,400)	-
Service Road	-	(2,000)	-
Removals	(477)	(3,500)	-
Total Project Cost	\$72,930k	\$43,680	\$63,470
Escalation Adjustment ²¹	-	30,096	40,379
Total Comparable Project Costs	\$72,930k	\$73,776k	\$108,849

2

3 As previously mentioned, station site expansion and reconfiguration work are highly dependent, and

¹⁹ EB-2019-0082, ISD SR-02-Station Reinvestment Projects, page 9.

²⁰ EB-2017-0194 – Exhibit B, Tab 7, Schedule 1, page 4.

²¹ Inflation adjustment factors used for comparator projects are consistent with the inflation parameters described in Exhibit B, Tab 8, Schedule 1, Table 2 of this Application.

1 inherently unique to an individual station’s site-specific conditions and geographical location.
2 HOSSM²² has made best efforts to provide appropriate comparable projects that are both complete
3 and closely resemble the station work proposed in this Project. However, due to the unique nature
4 of these types of facilities’ scopes of work, and the complexities involved in such large-scale
5 undertakings (compared for example to more frequent and smaller-scoped projects that have more
6 uniform scopes e.g. a capacitor bank installation) exact project one-to-one scope detail is not always
7 achievable.

8
9 A brief description of each comparable project is provided below, including applicable similarities
10 and/or differences to the HOSSM Station Project which drive the majority of project costs for each of
11 them:

12
13 a) Martindale TS is a 230 kV/115 kV Bulk Electric System (“**BES**”) designated station and major
14 hub for the 115 kV transmission system located in the Greater Sudbury area. This project
15 required replacement of end-of-life equipment including two autotransformers
16 (nomenclature being T21 and T23), five 230 kV circuit breakers, associated bus sections, 44
17 kV switchyard, upgrades to station service and the PCT building. The Martindale TS project
18 is significantly larger than the Third Line Project, however, it does share some of the same
19 key elements as the Third Line TS project, including replacement of the same number (i.e.,
20 five) of 230 kV breakers, station service transformer replacements and the replacement of
21 the PCT building at the station site.

22
23 b) Marathon TS is a Hydro One transformer station in-serviced in 1970, located in Marathon,
24 Ontario. The station consists of a 230 kV and a 115 kV switchyard connected by two 125MVA
25 autotransformers. The configuration of each yard is ring bus. The 230 kV switchyard
26 consists of four circuits and four circuit breakers. The 115 kV switchyard consists of two
27 circuits and four circuit breakers. There is reactive support in the form of capacitors and
28 reactors connected to each of the tertiaries of the autotransformers. The station is a major
29 hub for East-West power flow in northern Ontario. This project required expanding and
30 upgrading Marathon TS to accommodate the connection of four new East-West Tie circuits,

²² These comparator projects were completed by HONI, which like HOSSM is wholly owned by Hydro One Inc. HOSSM is also 100% operationally integrated into HONI’s transmission and therefore the comparator scope and cost can be considered an appropriate comparator. The acquisition of HOSSM (formerly Great Lakes Power Transmission) was approved by the OEB in EB-2016-0050.

1 including expanding the station property, extending existing bus work, relocating two
2 existing circuits, installing new circuit breakers and associated switches, and installation of
3 new protection, control, and telecom facilities in a new relay building.
4

5 **14.0 HOSSM STATION PROJECT SCHEDULE**

6 HOSSM's Project Schedule for the connection of the proposed PUC Transmission circuit is provided
7 in **Table 3**, below.

8 **Table 3 - HOSSM Station Project Schedule**

TASK	START	FINISH
Submit Section 92	December 2023	
Projected Section 92 Approval		August 2024
Stations		
Completion of Detailed Engineering	September 2022	Feb 2026
Construction	August 2024	June 2027
Commissioning	October 2024	June 2027
In-Service		June 2027
Completion of site remediation		September 2027

9
10
11 **15.0 HOSSM STATION PROJECT ASSET CLASSIFICATION**

12
13 **15.1 ASSET CLASSIFICATION**

14 HOSSM's existing station facilities at Third Line TS are classified as Network Station facilities and are
15 recovered through Uniform Transmission Rates ("UTR") in the Network rate pool.
16

17 The HOSSM Station Project will: (a) enable the connection of the proposed PUC-T lines (Line
18 Connection Component); (b) provide for station refurbishment work (Refurbishment Component);
19 and (c) facilitate the connect of the New Transmission Line Project at Third Line TS. Third Line TS is
20 a Network Station facility. In terms of cost allocation of the HOSSM Station Project, HOSSM proposes
21 the following:

- 22 i) 41%²³ of the HOSSM Station Project's cost directly relates to both HOSSM's refurbishment

²³ Refer to Section 16 – Cost Allocation of this Exhibit.

1 work and new transmission line station enabling work. Of this 41%, 8% relates to HOSSM's
2 station refurbishment and will be allocated to, and included in, HOSSM's rate base for
3 recovery through the provincial UTRs in the Network rate pool. The remaining 33% will be
4 allocated to the proposed new Transmission Line Project, and at the point that Project is in-
5 served will be included in HOSSM's²⁴ rate base for recovery through the provincial UTRs in
6 the Network rate pool. The cost of these facilities do not apply to, nor are they driven by, the
7 PUC Transmission Line Connection Component as described in this Exhibit.

- 8 ii) The remaining 59% of the HOSSM Station Project's cost directly relates to the PUC
9 Transmission circuit connection. HOSSM will treat these costs consistent with the OEB's
10 treatment of PUC Transmission's line construction costs, as requested by the Primary
11 Applicant in its leave to construct application. PUC Transmission is requesting these Network
12 facility costs be included in, and recovered via, the UTRs.

13 14 **16.0 COST ALLOCATION**

15 As discussed, the HOSSM Station Project will benefit three uniquely identifiable sub-component
16 needs at Third Line TS. Any scope of work identified as a 'common cost' will be allocated to each of
17 the project's sub-components based on the Transmission System Code ("TSC")'s cost allocation
18 principles and any decision made by the OEB regarding this leave to construct application submitted
19 to the OEB for approval. **Table 4** below illustrates this allocation.

²⁴ At the time station assets are placed in-service at Third Line TS, HOSSM may be financially integrated into HONI. In this case, the assets would be included in HONI's rate base.

1

Table 4 - Project Cost Allocation

Item	Direct Estimated AACE Class 3 (\$M)	Connect PUC-T(\$M)	HOSSM Investments		Rationale
			New Transmission Line Project HOSSM (Deferral Account) (\$M)	Refurbishment (\$M)	
Common Station elements (New control building, AC/DC station upgrades, etc.)	\$17.4M	33% \$5.8M	33% \$5.8M	33% \$5.8M	Split equally among beneficiaries (among benefitting projects)
East Yard (Circuit relocation and associated equipment and PCT work)	\$19.2M	50% \$9.6M	50% \$9.6M	-	Two beneficiaries, split between PUC Transmission connection and the New Transmission Line Project
West Yard (Electrical and Civil work including backfill ravine to station elevation)	\$18.2M	50% \$9.1M	50% \$9.1M	-	Two beneficiaries, split between PUC Transmission connection and the New Transmission Line Project
Non-common station elements (new diameter for PUC Transmission, associated protections etc.)	\$18.6M	100% \$18.6M			
Total	\$73.4M	\$43.1M	\$24.5M	\$5.8M	
% of Direct Project Cost		59%	33%	8%	

2

3

4 17.0 ALGOMA STEEL DIRECT CONNECTION TO HOSSM'S 115 KV SYSTEM

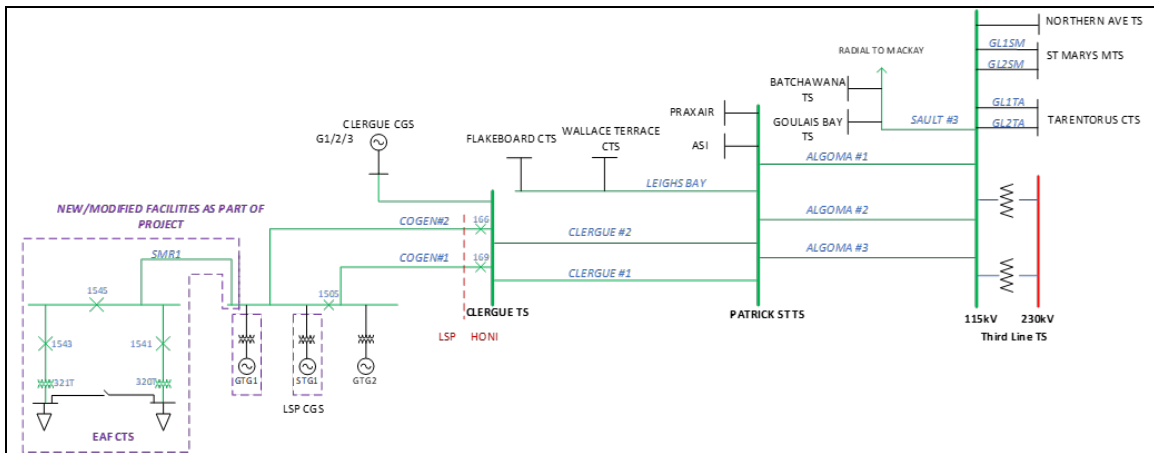
5 Prior to HOSSM completing Third Line TS work to connect PUC Transmission's new 203kV line (the
 6 primary subject of this leave to construct application to the OEB), and PUC Transmission's connect
 7 coming on-line, Algoma Steel, the end-use customer, has requested electricity supply to its Electric
 8 Arc Furnace ("EAF") prior to the connection of their Customer Transformer Station ("CTS") to the
 9 proposed PUC Transmission 230 kV line (i.e., the subject of this s.92 Application). To facilitate Algoma
 10 Steel's earlier²⁵ electricity system supply needs (i.e. approximately 140 MW), HOSSM will be required

²⁵ i.e. earlier than when the new 230 kV PUC-T circuit can be energized.

1 to perform work in alignment with the IESO’s SIA, titled, ‘*Algoma Steel New Load Facility and Lake*
2 *Superior Power CGS – Generation Reconfiguration*’ (ID: 2021-694 and 2021-695)²⁶. The SIA outlines
3 that the new load supplied to the Algoma Steel’s EAF shall not exceed 140 MW and is conditional on
4 Lake Superior Power CGS (“CGS”)²⁷, being operational while Algoma Steel’s EAF is drawing the new
5 load, such that the net load drawn from the system does not exceed 30 MW. Algoma Steel’s Electric
6 Arc Furnace and Lake Superior Power CGS are connected via HOSSM’s Clergue Transformer Station
7 (“Clergue TS”). To enable the electrical arrangement outlined by the IESO in the above-mentioned
8 SIA, HOSSM will need to perform work on two Remedial Action Schemes (“RAS”) and work at Clergue
9 TS²⁸.

10
11 During the period where the Phase 1 HOSSM connection arrangement will facilitate the supply of the
12 30 MW of new load to Algoma Steel, HOSSM’s Clergue TS will be the point of interconnection between
13 the Lake Superior Power CGS and Algoma Steel’s EAF via two existing 115 kV circuits (refer to the
14 items “COGEN#1” and “COGEN#2” as labeled in the Single Line Diagram provided below in **Figure**
15 **5**).

16
17 **Figure 5: Single Line Diagram of the Phase 1 Connection Configuration to HOSSM’s 115 kV**
18 **System**



19
20
21 Once the PUC Transmission 230 kV transmission line at HOSSM’s Third Line TS is in-service, the EAF
22 Station will draw load directly from Third Line TS via PUC-Transmission’s circuits without the

²⁶ IESO’s SIA is included at Appendix E to this Exhibit.

²⁷ The Lake Superior Power CGS is owned and operated by Algoma Steel.

²⁸ This Phase 1 HOSSM connection does not trigger the need for a s.92 leave to construct approval, as connection is being facilitated via existing 115 kV circuits.

1 dependency on the connection to HOSSM's 115kV system via Clergue TS. Phase 1 entails connection
2 of 30 MW of net new Algoma Steel load via Clergue TS and 12 MW of new Algoma Steel load via
3 Patrick Street TS. However, the costs initially incurred for Phase 1, and allocated to Algoma Steel, will
4 continue to be recuperated via the CCRA between HOSSM and Algoma Steel for the new Patrick St TS
5 load that will remain on those 115 kV circuits.

6
7 The connection of the EAF facility at Clergue TS is an interim connection solution and is required
8 until the new PUC-T 230 kV connection at Third Line TS is available. The EAF facilities will not be
9 able to draw more than 30 MW from the connection at HOSSM's Clergue TS. Hence, after being served
10 by HOSSM for approximately three years, Algoma Steel will change the connection point for the 30
11 MW of EAF facility load from HOSSM's Clergue TS to its final connection point, PUC-T's Tagona West
12 TS. And as such, HOSSM is requesting an exemption from the requirement to require Algoma Steel to
13 pay bypass compensation to HOSSM under Section 11.2.1 of the TSC for the bypass of HOSSM's 115
14 kV system for this planned change to the Primary Applicant's transmission facilities. The interim
15 connection solution is the most timely, efficient, and effective way of providing Algoma Steel with
16 some of the capacity that it requires for its operations prior the date on which the PUC Transmission
17 line can be in-serviced to provide the load expected from it.

18

19 **18.0 REGULATORY ACCOUNT REQUEST – PRIORITY TRANSMISSION LINE PROJECT**

20 **DEFERRAL SUB-ACCOUNT**

21 As part of this Application HOSSM is seeking approval of two new regulatory 'sub-accounts'
22 established under the OEB's generic Regulatory Account 1508, Other Regulatory Assets, within its
23 Uniform System of Accounts.

24

25 The first sub-account will be called the "Priority Transmission Line Project – Station Costs" (or
26 "PTLPDA-Costs") and will track capital costs associated with the New Transmission Line Project
27 described above, as part of the HOSSM Station Project, prior to being placed in rate base. The New
28 Transmission Line Project will accommodate the connection of new circuits between Third Line TS
29 and Mississagi TS line, as identified above in section 6 of this Exhibit. Costs will be tracked in this sub-
30 account for as long as the New Transmission Line Project is expected to be completed, up to the point
31 where the New Transmission Line Project will be placed in-service, whereby the costs will then be
32 recorded in HOSSM's and/or Hydro One's (see footnote 24 in this Exhibit) rate base. Further details
33 regarding this sub-account's function are outlined in more detail below.

34

1 The second sub-account will be called the “Priority Transmission Line Project – Station Revenue
2 Requirement” (or “PTLPDA-Revenue”), which will record any post-in-service Revenue Requirement
3 attributable to the New Transmission Line Project’s facilities that have not been included in an OEB
4 approved transmission rate filing. The proposed effective date for both sub-accounts is the date this
5 Application is filed to the OEB.

6
7 Details regarding the need and how these two sub-accounts meet the OEB’s eligibility criteria for
8 establishing a new regulatory account are outlined below. The Draft Accounting Order is provided at
9 **Appendix A** to this Exhibit.

10
11 **FUNCTIONALITY AND PURPOSE OF THE TWO REGULATORY SUB-ACCOUNTS**

12 **PTLPDA-COSTS**

13 Initially, the PTLPDA-Costs will only track capital costs for the New Transmission Line Project. The
14 tracking entries will mirror the capital costs incurred by HOSSM for this Project in its Construction
15 Work in Progress (“CWIP”) Account. If the New Transmission Line Project is completed and in-
16 serviced i.e. included in a transmitter’s rate base, then the regulatory account will not record any
17 balances and there will be no need for any disposition of the sub-account in the future.

18
19 However, if for any reason beyond HOSSM management’s control, the need for the New Transmission
20 Line Project ceases to exist, work being undertaken by HOSSM at Third Line TS (as part of the HOSSM
21 Station Project) will cease as quickly as reasonably possible, ensuring to undertake only additional
22 work necessary to render work sites secure and safe for the public and work crews, while ensuring
23 environmental considerations are appropriately addressed. In this scenario, the New Transmission
24 Line Project’s CWIP capital costs will be removed from HOSSM’s CWIP account and transferred to the
25 PTLPDA-Costs account (as debit balances). Subsequently, HOSSM’s intention will be to seek the
26 recovery of those costs in the sub-account in a future s.78 application. In this situation the PTLPDA-
27 Costs account provides protection for HOSSM’s shareholder against non-recovery of prudently
28 incurred costs.

29
30 The other two HOSSM Station Project components; 1) the Line Connection and 2) the Refurbishment
31 Components, will still be required as they are both driven by, and will continue to serve, other
32 alternate and independent transmission system needs.

33
34 **1) PTLPDA- REVENUE**

1 HOSSM is seeking relief from the OEB to record and recognize revenue requirement associated with
2 the rate base for the New Transmission Line Project, if at the time of in-service the OEB has not
3 approved a transmission rate filing that includes those costs. HOSSM will record the revenue
4 requirement earned as part of the HOSSM Station Project (which includes scope for Component #3),
5 in a sub-account up until such time they can be included in a future OEB-approved transmission
6 revenue requirement application.

7 Any revenue requirement amounts recorded in the sub-account will be subject to a prudence review
8 by a future OEB panel and disposed according to any OEB decision thereon.

9

10 **REGULATORY ACCOUNT INTEREST IMPROVEMENT**

11 At the time when any debit (DR) or credit (CR) balance exists²⁹ in either of the sub-accounts, HOSSM
12 will record interest on the principal balance using the interest rates set by the OEB. Simple interest
13 will be calculated on the opening monthly balance of the sub-account until the balance is fully
14 disposed. HOSSM will continue to interest improve any balances in the regulatory account until it is
15 eligible to seek disposition from the OEB, including any accrued interest, consistent with OEB's
16 policies and procedures.

17

18 **18.1 TEST FOR ESTABLISHMENT OF A REGULATORY ACCOUNT**

19 To establish a regulatory account, the Board's *Filing Requirements for Electricity Transmission*
20 *Applications* (dated February 11, 2016) ("**Filing Requirements**") outline that the eligibility criteria
21 of causation, materiality and prudence must be met. In addition, the Applicant must provide a Draft
22 Accounting Order.

23

24 **18.1.1 CAUSATION**

25 The Board's Filing Requirements define Causation as "the forecasted expense must be clearly outside
26 of the base upon which revenue requirement(s) were derived".³⁰

27

28 The costs and/or associated revenue requirement impacts resulting from the capital costs allocated
29 to the New Transmission Line Project have not been included in any current HOSSM OEB-approved
30 revenue requirement. Therefore, the forecast impacts (costs and incomes) are outside of the base
31 upon which HOSSM's revenue requirement is derived. Additionally, no capital costs for this Project

²⁹ Amounts that are being tracked (have equally offsetting DR and CR balances) will not accrue any interest.

³⁰ Chapter 2 Filing Requirements for Electricity Transmission Applications, February 11, 2016, page 35

1 were included in the rate base on which the OEB-approved revenue requirement of HOSSM's
2 predecessor entity to HOSSM, Great Lakes Power Transmission.

3
4 The proposed regulatory account will not be used to track costs or record any revenue requirement
5 that is allocated to either the HOSSM Station Project enabling the connection of PUC Transmission's
6 new circuits (i.e. the Line Connection component), or the Refurbishment Component, at Third Line
7 TS.

8
9 **18.1.2 MATERIALITY**

10 The Board's Filing Requirement (page 35) definition of Materiality is:

11 *The forecasted amounts must exceed the OEB-defined materiality threshold and have a*
12 *significant influence on the operation of the transmitter. Otherwise, they must be expensed in*
13 *the normal course and addressed through organizational productivity improvements.*

14
15 As per the Board's Filing Requirements (Section 2.1.1), HOSSM's materiality threshold is 0.5% of
16 transmission revenue requirement for a transmitter with a transmission revenue requirement
17 greater than \$10 million and less than or equal to \$200 million. Based on this direction, the
18 calculation of HOSSM's materiality threshold is \$219,555, and is calculated as follows;

19
20

Table 12 - HOSSM's Materiality Threshold

HOSSM's OEB Approved 2023 Revenue Requirement	\$43,911,032 ³¹
Materiality threshold (%)	0.5%
HOSSM Materiality Threshold	\$219,555

21
22 The capital costs expected to be allocated to the New Transmission Line Project, that are included in
23 the scope of this HOSSM Station Project Application at Third Line TS, is expected to be \$24.5M³². The
24 capital costs incurred for and / or allocated to the New Transmission Line Project are expected to
25 exceed HOSSM's materiality threshold³³ by many multiples. Furthermore, the approval of the sub-

³¹ HOSSM's 2023 OEB approved revenue requirement in [EB-2022-0189](#) and subsequently included in the OEB-approved 2023 UTRs per [EB-2023-0101](#)

³² Refer to Cost Allocation Section 16 of this Exhibit.

³³ The forecast annual revenue requirement for all HOSSM station rate base required to connect the Northeast Bulk Transmission Line Project (including the \$24.5M identified in this application) is expected to be in excess of

1 account to track capital costs allocated to the New Transmission Line Project will offer protection to
2 HOSSM who would otherwise not have a mechanism to recover these costs from ratepayers if the
3 New Transmission Line Project does not proceed to completion/in-service as currently expected,
4 through no fault of its own.

5

6 **18.1.3 PRUDENCE**

7 The Board's Filing Requirement (page 35) definition of Prudency is:

8 *The nature of the costs and forecasted quantum must be reasonably incurred, although*
9 *the final determination of prudence will be made at the time of disposition. In terms of*
10 *the quantum, this means that the applicant must provide evidence demonstrating why*
11 *the option selected represents the cost-effective option (not necessarily least initial cost)*
12 *for ratepayers.*

13

14 HOSSM is undertaking the connection of the new line to the Third Line TS at the request of PUC
15 Transmission (the customer) in line with HOSSM's obligations under the TSC. The benefits of
16 undertaking the Refurbishment Component and the New Transmission Line Project in parallel with
17 the Line Connection Component demonstrate appropriate transmitter foresight and prudent asset
18 investment and stewardship, the benefits of which are outlined in **Section 6** above. Both the new
19 Transmission Line Project's capital cost and corresponding revenue requirement are expected to be
20 material to HOSSM. On that basis it is reasonable for the OEB to approve the establishment of a new
21 regulatory sub-account and an Accounting Order for HOSSM to record these costs/revenues.

22

23 HOSSM is not seeking the OEB's approval or recovery of any balances that may be recorded in the
24 sub-accounts at this time. The final determination of the prudency of any amounts recorded in the
25 sub-accounts will be made at the time HOSSM applies for disposition. The OEB and other
26 stakeholders will have the opportunity to review the prudency of those costs or revenues at that time.
27 Additionally, as previously mentioned, HOSSM has not forecast any of the above-described amounts
28 in any OEB-approved rate filing or in any rate filing currently before the OEB for approval.

29

30 **19.0 TREATMENT OF CARRYING COSTS - INTEREST IMPROVEMENT**

31 HOSSM will accrue and record interest on the balance of the amounts in the sub-accounts using the

\$3.0M annually. Additional station facilities will be required, beyond what is included in this Exhibit, to construct and connect the Northeast Bulk Transmission Line at Third Line TS.

1 OEB's prescribed interest rates³⁴. Simple interest will be calculated on the opening monthly balance
2 of the sub-accounts until the balance is fully disposed. This treatment is consistent with the
3 methodology approved by the Board for other similar OEB-approved HOSSM and other transmitter
4 regulatory accounts.

5

6 **20.0 EFFECTIVE DATE**

7 HOSSM is requesting the effective date of the sub-accounts to be the date this Application is filed to
8 the OEB.

9

10

11

³⁴ The Board's prescribed interest rates as published here; <https://www.oeb.ca/regulatory-rules-and-documents/rules-codes-and-requirements/prescribed-interest-rates>

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APPENDIX A

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4 **APPENDIX A**

5 **Draft Accounting Order - Accounting Entries**

6
7 HOSSM is requesting the Board approve two new regulatory deferral sub-accounts, under the OEB-
8 established Account '1508, Other Regulatory Assets' control account, of the OEB's Uniform System of
9 Accounts.

10
11 This two new regulatory 1508 sub-accounts will be named and function as follows;

12
13 1) *Priority Transmission Line Project – Station Costs – Account*

14 This sub-account will track HOSSM-incurred costs related to the New Transmission Line Project.
15 This account will be a contra-account that will have identical and offsetting entries, and as such
16 no net debit or credit balances will exist while HOSSM management continue to believe the New
17 Transmission Line Project will be completed. This 'tracking' sub-account allows for tracking and
18 reporting of capital attributable to the New Transmission Line Project.

19
20 2) *Priority Transmission Line Project – Station Revenue Requirement – Account*

21 This sub-account will record the annual revenue requirement attributable to the level of in-
22 service New Transmission Line Project costs incurred by HOSSM. It will exist until a time when
23 HOSSM receives OEB approval to include those assets into the rate base on which a future HOSSM
24 revenue requirement is set.

25
26 The following outlines the proposed accounting entries for this variance account.

27

<u>USofA #</u>	<u>Account Description</u>
28 DR 1508	Other Regulatory Assets, Sub-Account "PTLPDA – Station Costs - Account"
29 CR 1508	Other Regulatory Assets, Sub-Account "PTLPDA – Station Costs - Account"

30
31

32 Initially the sub-account will be classified as a Contra-account, whereby no balances (either DR or CR,
33 will exist. The contra-account entries will facilitate the tracking of capital costs incurred and allocated
34 to the New Transmission Line Project. The DR and CR entries will be identical and offset each other,

1 such that no balance will accrue in the account while there is confidence in the need for the project,
2 and that management believe it will be in-serviced.

3

4 <u>USofA #</u>	<u>Account Description</u>
5 DR 1508	Other Regulatory Assets, Sub-Account "PTLPDA – Station Costs - Account"
6 CR 1508	Construction Work in Progress

7

8 Should the New Transmission Line Project not proceed, for reasons beyond HOSSM management's
9 control, the above entries record the removal of capital costs from HOSSM's Construction Work in
10 Progress ("CWIP") Account and become balances in the PTLPDA – Station Costs - Account (i.e. no
11 longer will the account act as a contra-account for tracking of capital costs only). These costs
12 represent costs HOSSM would seek OEB approval and recovery in a future S.78 Application. The
13 PTLPDA – Station Costs - Account would then record DR balances.

14

15 <u>USofA #</u>	<u>Account Description</u>
16 DR 17XX and 19XX	Transmission and General Plant Asset Range of Accounts
17 CR 1508	Construction Work in Progress

18

19 At the point where HOSSM Station Project capital costs are placed in-service and pertain to the New
20 Transmission Line Project, the above entries recognize the transfer of those project capital costs from
21 HOSSM's Construction Work in Progress ("CWIP") Account to the applicable General Plant and
22 Transmission Fixed Asset Account ranges.

23

24 <u>USofA #</u>	<u>Account Description</u>
25 CR/DR 1508	Other Regulatory Assets, Sub-Account "PTLPDA – Station Revenue Requirement Account"
27 DR/CR 4110	Transmission Services Revenue

28

29 Entry to record the revenue requirement impact of the in-service of the New Transmission Line
30 Project of the HOSSM Station Project that will facilitate the connection of New Transmission Line
31 Project. The capital driving this revenue requirement was no included in the rate base on which
32 HOSSM's current OEB-approved revenue requirement was based. The revenue requirement
33 attributable to any in-service capital of the New Transmission Line Project will be recorded in the
34 1508 sub-account called *PTLPDA – Station Revenue Requirement Account*, which is a separate and

1 distinct sub-account to that of the *PTLPDA – Station Costs - Account*.

2

3

4 USofA # Account Description

5 DR/CR 6035 Other Interest Expense

6 CR/DR 1508 Other Regulatory Assets, Sub-Account “PTLPDA – Station Revenue
7 Requirement Account”

8

9 To record interest improvement on the principal balance of the amounts included in the PTLPCA –
10 Station Revenue Requirement Account.

11

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APPENDIX B

APPENDIX B

**MINSTER DIRECTIVE TO THE OEB (DATED OCTOBER 23, 2023)
AND ORDER IN COUNCIL 1532/2023**

Ministry of Energy

Office of the Minister

77 Grenville Street, 10th Floor
Toronto ON M7A 2C1
Tel.: 416-327-6758

Ministère de l'Énergie

Bureau du ministre

77, rue Grenville, 10^e étage
Toronto ON M7A 2C1
Tél. : 416-327-6758



MC-994-2023-778

October 23, 2023

Mr. Glenn O'Farrell,
Chair of the OEB Board of Directors
Ontario Energy Board
2300 Yonge St, 27 Floor
PO Box 2319
Toronto ON M4P 1E4

Dear Mr. O'Farrell:

Electricity demand in northeast and eastern Ontario is projected to grow rapidly over the next decade due to community growth, electrification initiatives and economic development, including advanced manufacturing, Algoma Steel's conversion to electric arc furnaces, and mining for critical minerals. This has underscored the need to mitigate against regulatory delays in the approval processes for critical electricity transmission projects. As we have outlined in our *Powering Ontario's Growth* plan (July 2023), expanding the transmission system is critical to maintaining Ontario's clean energy advantage.

The Independent Electricity System Operator issued a bulk planning report entitled "Need for Northeast Bulk System Reinforcements" in October 2022 and a second bulk planning report entitled "Gatineau End of Life Study" in December 2022. These studies have recommended three new transmission lines come into service no later than 2029, two in northeast Ontario and one in eastern Ontario.

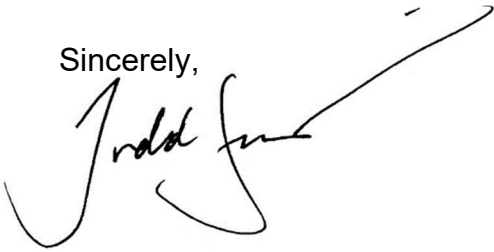
I am writing today to inform you that under the authority of section 96.1(1) of the *Ontario Energy Board Act, 1998* (the Act), the Lieutenant Governor in Council made an order declaring that the construction, expansion or reinforcement of these three transmission lines are needed as priority projects. The Order in Council, which is now effective, is attached to this letter.

...cont'd/

Furthermore, under the authority of section 28.6.1 of the Act, I am, with the approval of the Lieutenant Governor in Council pursuant to Order in Council No. 1532/2023, issuing a directive to the Ontario Energy Board (OEB) to amend Hydro One Networks Inc. (Hydro One)'s electricity transmission licence to include a requirement that it proceed to develop and seek all necessary approvals of these three priority projects. The licence amendments required by this directive will further support the timely development of these transmission lines.

Please do not hesitate to contact my office with any questions.

Sincerely,

A handwritten signature in black ink, appearing to read "Todd Smith", with a long, sweeping horizontal stroke extending to the right.

The Honourable Todd Smith
Minister of Energy

- c: Susanna Zagar, Chief Executive Officer, Ontario Energy Board
Jason Fitzsimmons, Deputy Minister, Ministry of Energy
David Lebeter, President and Chief Executive Officer, Hydro One Networks Inc.
Lesley Gallinger, President and Chief Executive Officer, Independent Electricity System Operator



Ontario

**Executive Council of Ontario
Order in Council**

**Conseil exécutif de l'Ontario
Décret**

On the recommendation of the undersigned, the Lieutenant Governor of Ontario, by and with the advice and concurrence of the Executive Council of Ontario, orders that:

Sur la recommandation de la personne soussignée, le lieutenant-gouverneur de l'Ontario, sur l'avis et avec le consentement du Conseil exécutif de l'Ontario, décrète ce qui suit :

WHEREAS Ontario considers it critical to expand Ontario's transmission system to provide a reliable and adequate supply of electricity to support economic growth and electrification initiatives throughout Northeastern and Eastern Ontario;

AND WHEREAS Ontario considers the expansion of the electricity network in Northeastern and Eastern Ontario to support economic growth and electrification to be a priority;

AND WHEREAS the Independent Electricity System Operator, the organization responsible for ensuring the reliability of Ontario's electricity grid, has published:

1. A bulk planning report dated October 27, 2022, entitled the "Need for Northeast Bulk System Reinforcements", which recommended a new transmission line running between Sault Ste. Marie and Sudbury and a new transmission line in the Sudbury region as the appropriate solution required to meet expected demand growth and system needs; and
2. A bulk planning report dated December 8, 2022, entitled the "Gatineau Corridor End-of-Life Study" which recommended a new transmission line between the Peterborough region and the Oshawa/Pickering area as the appropriate solution to meet forecast electricity demand growth and system needs.

AND WHEREAS the Lieutenant Governor in Council may make an order under section 96.1 of the *Ontario Energy Board Act, 1998* (the "Act") declaring that the construction, expansion or reinforcement of an electricity transmission line specified in the order is needed as a priority project;

AND WHEREAS an order under section 96.1 of the Act requires the Ontario Energy Board, in considering an application under section 92 of the Act in respect of an electricity transmission line specified in the order, to accept that the construction, expansion or reinforcement is needed when forming its opinion under section 96 of the Act;

NOW THEREFORE it is hereby declared pursuant to section 96.1 of the Act that the construction, expansion or reinforcement of the following electricity transmission lines are needed as priority projects:

O.C. | Décret : 1531 / 2023

1. A new 230 kilovolt (kV) transmission line from Mississagi Transformer Station to Third Line Transformer Station, including associated station facility expansions or upgrades required at the terminal stations;
2. A new 500 kV transmission line from Mississagi Transformer Station to Hanmer Transformer Station, including associated station facility expansions or upgrades required at the terminal stations; and
3. A new 230 kV transmission line from Dobbin Transformer Station to either Cherrywood Transformer Station or Clarington Transformer Station, including associated station facility expansions or upgrades required at the terminal stations.

ATTENDU QUE l'Ontario considère qu'il est essentiel d'étendre le réseau de transport d'électricité de l'Ontario afin d'offrir un approvisionnement fiable et adéquat en électricité pour soutenir la croissance économique et les projets d'électrification dans le Nord-Est et l'Est de l'Ontario;

ET ATTENDU QUE l'Ontario considère l'extension du réseau électrique au Nord-Est et à l'Est de l'Ontario pour soutenir la croissance économique et l'électrification comme des priorités;

ET ATTENDU QUE la Société indépendante d'exploitation du réseau d'électricité (SIERE), l'organisation qui a la responsabilité de s'assurer de la fiabilité du réseau de distribution d'électricité de l'Ontario, a publié :

1. un rapport de planification d'ensemble du 27 octobre 2022, intitulé « Need for Northeast Bulk System Reinforcements », qui recommandait une nouvelle ligne de transport entre Sault Ste. Marie et Sudbury et une nouvelle ligne de transport dans la région de Sudbury à titre de solution appropriée requise pour répondre à la croissance prévue de la demande et aux besoins du réseau;
2. et un rapport de planification d'ensemble du 8 décembre 2022, intitulé « Gatineau Corridor End-of-Life Study », qui recommandait une nouvelle ligne de transport entre la région de Peterborough et celle d'Oshawa/Pickering à titre de solution appropriée pour répondre à la croissance prévue de la demande en électricité et aux besoins du réseau.

ET ATTENDU QUE le lieutenant-gouverneur en conseil peut, en vertu de l'article 96.1 de *Loi de 1998 sur la Commission de l'énergie de l'Ontario* (la « Loi »), par décret, déclarer que la construction, l'extension ou le renforcement d'une ligne de transport d'électricité précisée dans un décret est nécessaire à titre de projet prioritaire;

ET ATTENDU QU'un décret pris en vertu de l'article 96.1 de la Loi exige que la Commission de l'énergie de l'Ontario, lors de l'examen d'une requête présentée en vertu de l'article 92 de la Loi concernant une ligne de transport d'électricité précisée dans le décret, accepte le fait que la construction, l'extension ou le renforcement est nécessaire lorsqu'elle se fait une opinion dans le cadre de l'article 96;

PAR CONSÉQUENT, il est déclaré aux présentes que conformément à l'article 96.1 de La Loi, la construction, l'extension ou le renforcement des lignes de transport d'électricité ci-dessous sont nécessaires à titre de projets prioritaires :

1. Une nouvelle ligne de transport de 230 kilovolts (kV) allant du poste de transformation de Mississagi au poste de transformation de Third Line, y compris les extensions des installations des postes associés ou les mises à niveau requises aux postes d'arrivée.
2. Une nouvelle ligne de transport de 500 kV allant du poste de transformation de Mississagi au poste de transformation de Hanmer, y compris les extensions des installations des postes associés ou les mises à niveau requises aux postes d'arrivée.
3. Une nouvelle ligne de transport de 230 kV allant du poste de transformation de Dobbin au poste de transformation de Cherrywood ou au poste de transformation de Clarington, y compris les extensions des installations des postes associés ou les mises à niveau requises aux postes d'arrivée.



Recommended: Minister of Energy
Recommandé par : Le ministre de l'Énergie



Concurred: Chair of Cabinet
Appuyé par : Le président / la présidente du Conseil des ministres

Approved and Ordered:
Approuvé et décrété le : OCT 19 2023



Lieutenant Governor
La lieutenante-gouverneure



Ontario

**Executive Council of Ontario
Order in Council**

**Conseil exécutif de l'Ontario
Décret**

On the recommendation of the undersigned, the Lieutenant Governor of Ontario, by and with the advice and concurrence of the Executive Council of Ontario, orders that:

Sur la recommandation de la personne soussignée, le lieutenant-gouverneur de l'Ontario, sur l'avis et avec le consentement du Conseil exécutif de l'Ontario, décrète ce qui suit :

WHEREAS Ontario considers it critical to expand Ontario's transmission system to provide a reliable and adequate supply of electricity to Northeastern and Eastern Ontario to support economic growth and electrification initiatives in the region;

AND WHEREAS the Independent Electricity System Operator, the organization responsible for ensuring the reliability of Ontario's electricity grid, has published:

1. A bulk planning report dated October 27, 2022, entitled the "Need for Northeast Bulk System Reinforcements", which recommended a new transmission line running between Sault Ste. Marie and Sudbury and a new transmission line in the Sudbury region as the appropriate solution required to meet expected demand growth and system needs; and
2. A bulk planning report dated December 8, 2022, entitled the "Gatineau Corridor End-of-Life Study" which recommended a new transmission line between the Peterborough region and the Oshawa/Pickering area as the appropriate solution to meet forecast electricity demand growth and system needs.

AND WHEREAS the Government has determined that the development of the transmission projects should be undertaken by a transmitter that is best positioned to ensure that the infrastructure can be developed expediently and on a timeline that supports economic growth, and that has demonstrated commitment to and progress toward advancing economic participation opportunities for Indigenous communities;

AND WHEREAS the Government has determined that the preferred manner of proceeding is to require Hydro One Networks Inc. to undertake the development of the transmission projects, including taking any and all steps that are deemed to be necessary and desirable in order to seek required approvals and fulfilling, as part of the environmental assessment process and other applicable authorizations and permits, any procedural aspects of the Crown's duty to consult potentially impacted Indigenous communities that may be delegated to it;

AND WHEREAS the Minister of Energy has, with the approval of the Lieutenant Governor in Council, the authority to issue Directives pursuant to section 28.6.1 of the *Ontario Energy Board Act, 1998*, which relate to the construction, expansion or re-enforcement of transmission systems;

NOW THEREFORE the Directive attached hereto is approved and shall be and is effective as of the date hereof.

ATTENDU QUE l'Ontario considère qu'il est essentiel d'étendre le réseau de transport d'électricité de l'Ontario pour offrir un approvisionnement fiable et adéquat en électricité au Nord-Est et à l'Est de l'Ontario afin de soutenir la croissance économique et les projets d'électrification dans la région;

ET ATTENDU QUE la Société indépendante d'exploitation du réseau d'électricité (SIERE), l'organisation qui a la responsabilité de s'assurer de la fiabilité du réseau de distribution d'électricité de l'Ontario, a publié :

1. un rapport de planification d'ensemble du 27 octobre 2022, intitulé « Need for Northeast Bulk System Reinforcements », qui recommandait une nouvelle ligne de transport entre Sault Ste. Marie et Sudbury et une nouvelle ligne de transport dans la région de Sudbury à titre de solution appropriée requise pour répondre à la croissance prévue de la demande et aux besoins du réseau;
2. et un rapport de planification d'ensemble du 8 décembre 2022, intitulé « Gatineau Corridor End-of-Life Study », qui recommandait une nouvelle ligne de transport entre la région de Peterborough et celle d'Oshawa/Pickering à titre de solution appropriée pour répondre à la croissance prévue de la demande en électricité et aux besoins du réseau.

ET ATTENDU QUE le gouvernement a décidé que le développement des projets de transport doit être entrepris par le transporteur le mieux placé pour s'assurer que les infrastructures peuvent être mises en place rapidement et conformément à un calendrier qui soutient la croissance économique, et qui a montré la preuve de son engagement et de ses progrès pour faire avancer les occasions de participation économique pour les communautés autochtones;

ET ATTENDU QUE le gouvernement a décidé que la meilleure façon de procéder consiste à exiger qu'Hydro One Networks Inc. entreprenne le développement des projets de transport, y compris prendre toutes les mesures qui sont jugées nécessaires et souhaitables afin d'obtenir les approbations requises et de remplir, dans le cadre du processus d'évaluation environnementale et des autres autorisations et permis applicables, les aspects procéduraux de l'obligation de la Couronne de consulter les communautés autochtones potentiellement concernées, qui peuvent lui être délégués;

ET ATTENDU QUE le ministre de l'Énergie a, avec l'approbation du lieutenant-gouverneur en conseil, le pouvoir de donner des directives conformément à l'article 28.6.1 de la *Loi de 1998 sur la Commission de l'énergie de l'Ontario*, à l'égard de la construction, de l'extension ou du renforcement des réseaux de transport;

PAR CONSÉQUENT, la directive jointe aux présentes est approuvée et entre en vigueur à la date des présentes.



Recommended: Minister of Energy
Recommandé par : Le ministre de l'Énergie



Concurred: Chair of Cabinet
Appuyé par : Le président | la présidente du Conseil des ministres

Approved and Ordered: OCT 19 2023
Approuvé et décrété le :



Lieutenant Governor
La lieutenante-gouverneure

MINISTER'S DIRECTIVE

TO: THE ONTARIO ENERGY BOARD

I, Todd Smith, Minister of Energy, hereby direct the Ontario Energy Board ("Board") pursuant to section 28.6.1 of the *Ontario Energy Board Act, 1998* as follows:

1. The Board shall amend the conditions of the electricity transmission licence of Hydro One Networks Inc. ("Hydro One") to include a requirement that Hydro One proceed to do the following related to the construction, expansion or reinforcement of its transmission system:
 - i. Develop and seek approvals for the following transmission line projects:
 1. A new 230 kilovolt (kV) transmission line from Mississagi Transformer Station to Third Line Transformer Station, including associated station facility expansions or upgrades required at the terminal stations;
 2. A new 500 kV transmission line from Mississagi Transformer Station to Hanmer Transformer Station, including associated station facility expansions or upgrades required at the terminal stations; and
 3. A new 230 kV transmission line from Dobbin Transformer Station to either Cherrywood Transformer Station or Clarington Transformer Station, including associated station facility expansions or upgrades required at the terminal stations.
 - ii. The scope and timing for the transmission line projects listed in sub-paragraph i above, including the terminal point for the transmission line project listed in clause 3 of that sub-paragraph, shall accord with the recommendations of the IESO.
2. The Board shall require that Hydro One provide such reporting to the Board as the Board may consider appropriate, with respect to budget, timing, and risks in relation to the development of the transmission line projects listed in sub-paragraph 1 i.
3. The Board shall make the amendments to Hydro One's electricity transmission licence without holding a hearing.

DIRECTIVE DU MINISTRE

DESTINATAIRES : LA COMMISSION DE L'ÉNERGIE DE L'ONTARIO

Je, Todd Smith, ministre de l'Énergie, ordonne par les présentes à la Commission de l'énergie de l'Ontario (la « Commission ») conformément à l'article 28.6.1 de la *Loi de 1998 sur la Commission de l'énergie de l'Ontario* ce qui suit :

1. La Commission est tenue de modifier les conditions du permis de transport d'électricité d'Hydro One Networks Inc. (« Hydro One ») afin d'ajouter l'exigence qu'Hydro One procède à ce qui suit dans le cadre de la construction, de l'extension ou du renforcement de son réseau de transport :
 - i. Élaborer les projets de ligne de transport ci-dessous et obtenir les approbations :
 1. Une nouvelle ligne de transport de 230 kilovolts (kV) allant du poste de transformation de Mississagi au poste de transformation de Third Line, y compris les extensions des installations des postes associés ou les mises à niveau requises aux postes d'arrivée;
 2. Une nouvelle ligne de transport de 500 kV allant du poste de transformation de Mississagi au poste de transformation de Hanmer, y compris les extensions des installations des postes associés ou les mises à niveau requises aux postes d'arrivée;
 3. Et une nouvelle ligne de transport de 230 kV allant du poste de transformation de Dobbin au poste de transformation de Cherrywood ou au poste de transformation de Clarington, y compris les extensions des installations des postes associés ou les mises à niveau requises aux postes d'arrivée;
 - ii. La portée et le calendrier des projets de ligne de transport énumérés à l'alinéa i ci-dessus, y compris le point d'arrivée du projet de ligne de transport énuméré à la clause 3 de cet alinéa, doivent concorder avec les recommandations de la SIERE.
2. La Commission exigera qu'Hydro One lui fournisse les rapports qu'elle peut considérer comme appropriés concernant le budget, le calendrier et les risques liés au développement des projets de lignes de transport énumérés à l'alinéa 1 i.
3. La Commission apportera les modifications au permis de transport d'électricité d'Hydro One sans tenir une audience.

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APPENDIX C

APPENDIX C

**HYDRO ONE NETWORKS INC., ELECTRICITY TRANSMISSION LICENCE
ET-2003-0035, AS AMENDED NOVEMBER 14, 2023.**



Electricity Transmission Licence

ET-2003-0035

Hydro One Networks Inc.

Valid Until

October 30, 2043

Brian Hewson
Vice President, Consumer Protection & Industry Performance
Ontario Energy Board

Date of Issuance: October 31, 2023
Date of Amendment: November 14, 2023

Ontario Energy Board
P.O. Box 2319
2300 Yonge Street
27th Floor
Toronto, ON M4P 1E4

Commission de l'énergie de l'Ontario
C.P. 2319
2300, rue Yonge
27e étage
Toronto ON M4P 1E4

LIST OF AMENDMENTS

OEB File No.	Date of Amendment
EB-2002-0501	August 11, 2004
EB-2011-0055	February 28, 2011
EB-2013-0437	January 9, 2014
EB-2015-0262	November 26, 2015
EB-2015-0270	November 26, 2015
EB-2020-0309	December 23, 2020
EB-2022-0142	April 6, 2022
EB-2022-0085	May 6, 2022
EB-2023-0275	October 31, 2023 – licence renewal date
EB-2023-0319	November 14, 2023

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1 Definitions

In this Licence:

“**Accounting Procedures Handbook**” means the handbook, approved by the Board which specifies the accounting records, accounting principles and accounting separation standards to be followed by the Licensee;

“**Act**” means the *Ontario Energy Board Act, 1998*, S.O. 1998, c. 15, Schedule B;

“**Affiliate Relationships Code for Electricity Distributors and Transmitters**” means the code, approved by the Board which, among other things, establishes the standards and conditions for the interaction between electricity distributors or transmitters and their respective affiliated companies;

“**Board**” means the Ontario Energy Board;

“**Electricity Act**” means the *Electricity Act, 1998*, S.O. 1998, c. 15, Schedule A;

“**Licensee**” means Hydro One Networks Inc.;

“**Market Rules**” means the rules made under section 32 of the Electricity Act;

“**Performance Standards**” means the performance targets for the distribution and connection activities of the Licensee as established by the Board in accordance with section 83 of the Act;

“**Rate Order**” means an Order or Orders of the Board establishing rates the Licensee is permitted to charge;

“**transmission services**” means services related to the transmission of electricity and the services the Board has required transmitters to carry out for which a charge or rate has been established in the Rate Order;

“**Transmission System Code**” means the code approved by the Board and in effect at the relevant time, which, among other things, establishes the obligations of a transmitter with respect to the services and terms of service to be offered to customers and provides minimum technical operating standards of transmission systems;

“**wholesaler**” means a person that purchases electricity or ancillary services in the IESO administered markets or directly from a generator or, a person who sells electricity or ancillary services through the IESO-administered markets or directly to another person other than a consumer.

2 Interpretation

- 2.1 In this Licence, words and phrases shall have the meaning ascribed to them in the Act or the Electricity Act. Words or phrases importing the singular shall include the plural and vice versa. Headings are for convenience only and shall not affect the interpretation of the Licence. Any reference to a document or a provision of a document includes an amendment or supplement to, or a replacement of, that document or that provision of that document. In the computation of time under this licence, where there is a reference to a number of days between two events, they shall be counted by excluding the day on which the first event happens and including the day on which the second event happens. Where the time for doing an act expires on a holiday, the act may be done on the next day that is not a holiday.

3 Authorization

- 3.1 The Licensee is authorized, under Part V of the Act and subject to the terms and conditions set out in this Licence to own and operate a transmission system consisting of the facilities described in Schedule 1 of this Licence, including all associated transmission equipment.

4 Obligation to Comply with Legislation, Regulations and Market Rules

- 4.1 The Licensee shall comply with all applicable provisions of the Act and the Electricity Act and regulations under these Acts, except where the Licensee has been exempted from such compliance by regulation.
- 4.2 The Licensee shall comply with all applicable Market Rules.

5 Obligation to Comply with Codes

- 5.1 The Licensee shall at all times comply with the following Codes (collectively the “Codes”) approved by the Board, except where the Licensee has been specifically exempted from such compliance by the Board. Any exemptions granted to the Licensee are set out in Schedule 2 of this Licence. The following Codes apply to this Licence:
- a) the Affiliate Relationships Code for Electricity Distributors and Transmitters; and
 - b) the Transmission System Code.
- 5.2 The Licensee shall:
- a) make a copy of the Codes available for inspection by members of the public at its head office and regional offices during normal business hours; and
 - b) provide a copy of the Codes to any person who requests it. The Licensee may impose a fair and reasonable charge for the cost of providing copies.

6 Requirement to Enter into an Operating Agreement

- 6.1 The Licensee shall enter into an agreement (“Operating Agreement”) with the IESO providing for the direction by the IESO of the operation of the Licensee’s transmission system. Following a request made by the IESO, the Licensee and the IESO shall enter into an Operating Agreement

within a period of 90 business days, unless extended with leave of the Board. The Operating Agreement shall be filed with the Board within ten (10) business days of its completion.

- 6.2 Where there is a dispute that cannot be resolved between the parties with respect to any of the terms and conditions of the Operating Agreement, the IESO or the Licensee may apply to the Board to determine the matter.

7 Obligation to Provide Non-discriminatory Access

- 7.1 The Licensee shall, upon the request of a consumer, generator, distributor or retailer, provide such consumer, generator, distributor or retailer, as the case may be, with access to the Licensee's transmission system and shall convey electricity on behalf of such consumer, generator, distributor or retailer in accordance with the terms of this Licence, the Transmission System Code and the Market Rules.

8 Obligation to Connect

- 8.1 If a request is made for connection to the Licensee's transmission system or for a change in the capacity of an existing connection, the Licensee shall respond to the request within 30 business days.
- 8.2 The Licensee shall process connection requests in accordance with published connection procedures and participate with the customer in the IESO's Connection Assessment and approval process in accordance with the Market Rules, its Rate Order(s) and the Transmission System Code.
- 8.3 An offer of connection shall be consistent with the terms of this Licence, the Market Rules, the Rate Order, and the Transmission System Code.
- 8.4 The terms of such offer to connect shall be fair and reasonable.
- 8.5 The Licensee shall not refuse to make an offer to connect unless it is permitted to do so by the Act or any Codes, standards or rules to which the Licensee is obligated to comply with as a condition of this Licence.

9 Obligation to Maintain System Integrity

- 9.1 The Licensee shall maintain its transmission system to the standards established in the Transmission System Code and Market Rules, and have regard to any other recognized industry operating or planning standards required by the Board.

10 Transmission Rates and Charges

- 10.1 The Licensee shall not charge for the connection of customers or the transmission of electricity except in accordance with the Licensee's Rate Order(s) as approved by the Board and the Transmission System Code.

11 Separation of Business Activities

- 11.1 The Licensee shall keep financial records associated with transmitting electricity separate from its financial records associated with distributing electricity or other activities in accordance with the Accounting Procedures Handbook and as otherwise required by the Board.

12 Expansion of Transmission System

- 12.1 The Licensee shall not construct, expand or reinforce an electricity transmission system or make an interconnection except in accordance with the Act and Regulations, the Transmission System Code and the Market Rules.

13 Provision of Information to the Board

- 13.1 The Licensee shall maintain records of and provide, in the manner and form determined by the Board, such information as the Board may require from time to time.
- 13.2 Without limiting the generality of paragraph 13.1, the Licensee shall notify the Board of any material change in circumstances that adversely affects or is likely to adversely affect the business, operations or assets of the Licensee as soon as practicable, but in any event no more than twenty (20) business days past the date upon which such change occurs.

14 Restrictions on Provision of Information

- 14.1 The Licensee shall not use information regarding a consumer, retailer, wholesaler or generator, obtained for one purpose for any other purpose without the written consent of the consumer, retailer, wholesaler or generator.
- 14.2 The Licensee shall not disclose information regarding a consumer, retailer, wholesaler or generator to any other party without the written consent of the consumer, retailer, wholesaler or generator, except where such information is required to be disclosed:
- a) to comply with any legislative or regulatory requirements, including the conditions of this Licence;
 - b) for billing, settlement or market operations purposes;
 - c) for law enforcement purposes; or
 - d) to a debt collection agency for the processing of past due accounts of the consumer, retailer, wholesaler or generator.
- 14.3 Information regarding consumers, retailers, wholesalers or generators may be disclosed where the information has been sufficiently aggregated such that their particular information cannot reasonably be identified.
- 14.4 The Licensee shall inform consumers, retailers, wholesalers and generators of the conditions under which their information may be released to a third party without their consent.
- 14.5 If the Licensee discloses information under this section, the Licensee shall ensure that the information is not be used for any other purpose except the purpose for which it was disclosed.

15 Term of Licence

15.1 This Licence shall take effect on October 31, 2023 and expire on October 30, 2043. The term of this Licence may be extended by the Board.

16 Transfer of Licence

16.1 In accordance with subsection 18(2) of the Act, this Licence is not transferable or assignable without leave of the Board.

17 Amendment of Licence

17.1 The Board may amend this Licence in accordance with section 74 of the Act or section 38 of the Electricity Act.

18 Fees and Assessments

18.1 The Licensee shall pay all fees charged and amounts assessed by the Board.

19 Expansion and Upgrading of Transmission System Further to Ministerial Directive

19.1 The Licensee shall, for the purposes of accommodating the safe connection of renewable energy generation facilities, immediately following February 28, 2011 work in co-operation with the Ontario Power Authority to establish the scope and timing of the transmission projects referred to in paragraphs 19.2 and 19.3.

19.2 The Licensee shall develop and seek approvals for the following transmission projects, the scope and timing of which shall be in accordance with the recommendations of the Ontario Power Authority made in the course of the Ontario Power Authority's transmission planning activities conducted in accordance with its objects, as well as those identified in a Directive issued to the Ontario Power Authority by the Minister of Energy on February 17, 2011 under section 25.30 of the *Electricity Act, 1998*:

- a) upgrade one or more existing transmission lines west of the City of London; and
- b) a new transmission line west of the City of London.

19.3 The Licensee shall develop and implement the following transmission projects, the scope and timing of which shall be in accordance with the recommendations of the Ontario Power Authority made in the course of the Ontario Power Authority's transmission planning activities conducted in accordance with its objects, as well as those identified in a Directive issued to the Ontario Power Authority by the Minister of Energy on February 17, 2011 under section 25.30 of the *Electricity Act, 1998*:

- a) one or more devices to enhance transfer capability, such as series or static var compensation or other similar devices, in Southwestern Ontario; and
- b) increase short circuit and/or transformer capacity at up to fifteen of the Licensee's transmission stations during the forty-eight month period beginning February 28, 2011, to enable the connection of small-scale renewable energy generation facilities.

- 19.4 Paragraph 19.3 in no way limits the obligation of the Licensee to obtain all necessary approvals for the transmission projects referred to in that paragraph.
- 19.5 Immediately following January 9, 2014 the Licensee shall, for the purposes of accommodating load due to forecast demand growth over the long term, promoting the use of clean and renewable energy sources from Ontario's supply mix, and enhancing opportunities for the development and connection of new renewable generation facilities over the long term, work in co-operation with the Ontario Power Authority to establish the scope and timing of the transmission project referred to in paragraph 19.6.
- 19.6 The Licensee shall develop and seek approvals for the expansion or reinforcement of a portion or portions of the Licensee's electricity transmission network in the area west of Thunder Bay (the "Northwest Bulk Transmission Line Project"). The scope and timing of the Northwest Bulk Transmission Line Project shall be in accordance with the recommendations of the Ontario Power Authority made in the course of the Ontario Power Authority's transmission planning activities conducted in accordance with its statutory mandate, objects and responsibilities under the *Electricity Act, 1998*, including with any transmission planning activities identified in any direction issued, or to be issued, by the Minister of Energy to the Ontario Power Authority pursuant to Part II.2 of the *Electricity Act, 1998*.
- 19.7 The Licensee shall develop and seek approvals for a new 230 kilovolt double-circuit transmission line from the existing Chatham Switching Station to the new Lakeshore Transformer Station to be located at Leamington Junction (Chatham to Lakeshore Line), including associated station facilities to connect the Chatham to Lakeshore Line at the terminal stations. Development of the Chatham to Lakeshore Line shall accord with the project scope and timing recommended by the Independent Electricity System Operator.
- 19.8.1 The Licensee shall develop and seek approvals for the following four transmission line projects:
- a) A new 230 kilovolt (kV) transmission line from Lambton Transformer Station to Chatham Switching Station, including associated station facility expansions or upgrades required at the terminal stations;
 - b) A new 500 kV transmission line from Longwood Transformer Station to Lakeshore Transformer Station, including associated station facility expansions or upgrades required at the terminal stations;
 - c) A second new 500 kV transmission line from Longwood Transformer Station to Lakeshore Transformer Station, including associated station facility expansions or upgrades required at the terminal stations; and
 - d) A new 230 kV transmission line that connect the Windsor area to the Lakeshore Transformer Station, including associated station facility expansions or upgrades required at the terminal stations.
- 19.8.2 Development of the projects set out in condition 19.8.1 shall accord with the project scope and timing recommended by the Independent Electricity System Operator.
- 19.9.1 The Licensee shall develop and seek approval for the following three transmission line projects:

- a) A new 230 kilovolt (kV) transmission line from Mississagi Transformer Station to Third Line Transformer Station, including associated station facility expansions or upgrades required at the terminal stations;
- b) A new 500 kV transmission line from Mississagi Transformer Station to Hanmer Transformer Station, including associated station facility expansions or upgrades required at the terminal stations; and
- c) A new 230 kV transmission line from Dobbin Transformer Station to either Cherrywood Transformer Station or Clarington Transformer Station, including associated station facility expansions or upgrades required at the terminal stations.

19.9.2 The scope and timing for the development of the projects set out in condition 19.9.1, including the terminal point for the transmission line project listed in c), shall accord with the recommendations of the Independent Electricity System Operator.

20 Communication

- 20.1 The Licensee shall designate a person that will act as a primary contact with the Board on matters related to this Licence. The Licensee shall notify the Board promptly should the contact details change.
- 20.2 All official communication relating to this Licence shall be in writing.
- 20.3 All written communication is to be regarded as having been given by the sender and received by the addressee:
- a) when delivered in person to the addressee by hand, by registered mail or by courier;
 - b) ten (10) business days after the date of posting if the communication is sent by regular mail; and
 - c) when received by facsimile transmission by the addressee, according to the sender's transmission report.

21 Copies of the Licence

- 21.1 The Licensee shall:
- a) make a copy of this Licence available for inspection by members of the public at its head office and regional offices during normal business hours; and
 - b) provide a copy of this Licence to any person who requests it. The Licensee may impose a fair and reasonable charge for the cost of providing copies.

SCHEDULE 1 SPECIFICATION OF TRANSMISSION FACILITIES

This Schedule specifies the facilities over which the Licensee is authorized to transmit electricity in accordance with paragraph 3 of this Licence.

1. The transmission system and facilities of Hydro One Networks Inc. are depicted in the attached diagram and include transmission lines, transformation stations and all associated facilities. Hydro One may alter this diagram from time to time and shall file it with the Board, upon receipt of which the updated diagram shall be deemed to be the specification of transmission facilities under this schedule.

SCHEDULE 2 LIST OF CODE EXEMPTIONS

This Schedule specifies any specific Code requirements from which the licensee has been exempted.

1. The Licensee is exempted from Section 1.2.1 of Schedule E of Appendix 1 of the Transmission System Code so as to allow the Licensee:
 - to enter into a connection agreement with certain proposed customers on terms and conditions other than those set forth in the said section 1.2.1; and
 - to amend connection agreements already entered into by the licensee with customers, such that they may be amended to contain terms and conditions other than those set forth in the said section 1.2.1.
2. The modifications to the connection agreement are attached as Schedules 3 and 4 to this Licence. Schedule 3 contains changes needed to address legacy system configuration issues as well as operating concerns affecting all generating stations owned by OPG and Bruce Power. Schedule 4 contains changes needed to comply with the operational requirements of nuclear generating facilities, facilitate compliance with Power Reactor Operating Licences, issued by the Canadian Nuclear Safety Commission (“CNSC”).
3. The Licensee is exempted from Sections 4.1.1 and 4.1.2 of the Transmission System Code for the purpose of entering into a Transmission Connection Agreement with Oneida Energy Storage LP for the connection of a 250 MW battery energy storage facility to its transmission system in the form approved in the OEB’s Decision and Order in EB-2022-0085.

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APPENDIX D

APPENDIX D

**OEB DECISION AND ORDER EB-2023-0319 DATED NOVEMBER 14, 2023,
AMENDING THE ELECTRICITY TRANSMISSION LICENCE OF HYDRO ONE
NETWORKS INC. TO REQUIRE IT TO DEVELOP AND SEEK APPROVALS FOR
NEW TRANSMISSION LINES**



Ontario
Energy
Board | Commission
de l'énergie
de l'Ontario

DECISION AND ORDER

EB-2023-0319

Amending the Electricity Transmission Licence of Hydro One Networks Inc. to Require it to Develop and Seek Approvals for New Transmission Lines

BY DELEGATION, BEFORE: Brian Hewson
Vice President,
Consumer Protection & Industry Performance

November 14, 2023

INTRODUCTION AND SUMMARY

Further to a directive from the Minister of Energy (Minister), the Ontario Energy Board (OEB), of its own motion, is commencing this proceeding to amend the electricity transmission licence¹ of Hydro One Networks Inc. (Hydro One) to require it to develop and seek approvals for three new transmission line projects.

BACKGROUND

Under section 28.6.1 of the *Ontario Energy Board Act, 1998* (Act), the Minister may issue directives to the OEB requiring the OEB to take such steps as are specified in the directive relating to the construction, expansion or reinforcement of transmission systems. Such a directive may, among other things, require the OEB to amend the licence conditions of a transmitter to require the transmitter to take the actions specified in the directive in relation to its transmission system. Such a directive may also specify whether the OEB is to hold a hearing for the purposes of implementing the directive.

The OEB received a [directive](#) under section 28.6.1 of the Act (Directive) from the Minister, which was approved by the Lieutenant Governor in Council on October 19, 2023 as Order in Council No. 1532/2023. The Directive requires the OEB to amend Hydro One's electricity transmission licence to require Hydro One to develop and seek approvals for the following three transmission line projects (collectively referred to as the Projects):

1. A new 230 kilovolt (kV) transmission line from Mississagi Transformer Station to Third Line Transformer Station, including associated station facility expansions or upgrades required at the terminal stations;
2. A new 500 kV transmission line from Mississagi Transformer Station to Hanmer Transformer Station, including associated station facility expansions or upgrades required at the terminal stations; and
3. A new 230 kV transmission line from Dobbin Transformer Station to either Cherrywood Transformer Station or Clarington Transformer Station, including associated station facility expansions or upgrades required at the terminal stations.

The Order in Council accompanying the Directive states that it is critical to expand Ontario's transmission system to provide a reliable and adequate supply of electricity to Northeastern and Eastern Ontario to support economic growth and electrification initiatives in the region.

¹ ET-2003-0035

The Directive also requires that the scope and timing for the development of the Projects accord with the recommendations of the IESO, and further directs the OEB to require that Hydro One provide such reporting to the OEB as the OEB may consider appropriate with respect to budget, timing and risks in relation to the development of the Projects.

In accordance with the Directive, the OEB is required to amend Hydro One's electricity transmission licence without a hearing.

This Decision and Order is being issued by Delegated Authority without a hearing.

DECISION

Further to the Directive, the OEB is amending Hydro One's electricity transmission licence to require it to develop and seek approvals for the Projects in accordance with the recommendations of the IESO.

With respect to reporting requirements, as an initial step, the OEB is requiring Hydro One to file a copy of any recommendations received from the IESO related to the scope and timing of the development of the Projects. Further reporting requirements to enable the OEB to monitor Hydro One's progress towards the implementation of the conditions being added to its electricity transmission licence today, including budget and risks, will be addressed at a later date.

IT IS ORDERED THAT:

1. Hydro One Networks Inc.'s electricity transmission licence ET-2003-0035 is amended by adding the following new conditions:

19.9.1 The Licensee shall develop and seek approval for the following three transmission line projects:

- a) A new 230 kilovolt (kV) transmission line from Mississagi Transformer Station to Third Line Transformer Station, including associated station facility expansions or upgrades required at the terminal stations;
- b) A new 500 kV transmission line from Mississagi Transformer Station to Hanmer Transformer Station, including associated station facility expansions or upgrades required at the terminal stations; and

- c) A new 230 kV transmission line from Dobbin Transformer Station to either Cherrywood Transformer Station or Clarington Transformer Station, including associated station facility expansions or upgrades required at the terminal stations.

19.9.2 The scope and timing for the development of the projects set out in condition 19.9.1, including the terminal point for the transmission line project listed in c), shall accord with the recommendations of the Independent Electricity System Operator.

2. Hydro One Networks Inc. shall, no later than December 20, 2023, file with the OEB a copy of any recommendations received from the Independent Electricity System Operator related to the scope and timing of the development of the projects.

DATED at Toronto, November 14, 2023

ONTARIO ENERGY BOARD

Brian Hewson
Vice President, Consumer Protection & Industry Performance

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APPENDIX E

APPENDIX E

**SYSTEM IMPACT ASSESSMENT REPORT - CAA ID: 2021-694 AND 2021-695
PROJECT: ALGOMA STEEL – NEW LOAD FACILITY AND LAKE SUPERIOR
POWER CGS – GENERATION RECONFIGURATION CONNECTION APPLICANT:
ALGOMA STEEL INC.**



System Impact Assessment Report

Final Report - Public

CAA ID: 2021-694 and 2021-695

Project: Algoma Steel – New Load Facility and Lake Superior
Power CGS – Generation Reconfiguration

Connection Applicant: Algoma Steel Inc.

April 21, 2023



Acknowledgement

The IESO wishes to acknowledge the assistance of Hydro One in completing this assessment.



Disclaimers

IESO

This report has been prepared solely for the purpose of assessing whether the connection applicant's proposed connection with the IESO-controlled grid would have an adverse impact on the reliability of the integrated power system and whether the IESO should issue a notice of conditional approval or disapproval of the proposed connection under Chapter 4, section 6 of the Market Rules.

Conditional approval of the project is based on information provided to the IESO by the connection applicant and Hydro One at the time the assessment was carried out. The IESO assumes no responsibility for the accuracy or completeness of such information, including the results of studies carried out by Hydro One at the request of the IESO. Furthermore, the conditional approval is subject to further consideration due to changes to this information, or to additional information that may become available after the conditional approval has been granted.

If the connection applicant has engaged a consultant to perform connection assessment studies, the connection applicant acknowledges that the IESO will be relying on such studies in conducting its assessment and that the IESO assumes no responsibility for the accuracy or completeness of such studies including, without limitation, any changes to IESO base case models made by the consultant. The IESO reserves the right to repeat any or all connection studies performed by the consultant if necessary to meet IESO requirements.

Conditional approval of the proposed connection means that there are no significant reliability issues or concerns that would prevent connection of the proposed project to the IESO-controlled grid. However, the conditional approval does not ensure that a project will meet all connection requirements. In addition, further issues or concerns may be identified by the transmitter(s) during the detailed design phase that may require changes to equipment characteristics and/or configuration to ensure compliance with physical or equipment limitations, or with the Transmission System Code, before connection can be made.

This report has not been prepared for any other purpose and should not be used or relied upon by any person for another purpose. This report has been prepared solely for use by the connection applicant and the IESO in accordance with Chapter 4, section 6 of the Market Rules. This report does not in any way constitute an endorsement of the proposed connection for the purposes of obtaining a contract with the IESO for the procurement of supply, generation, demand response, demand management or ancillary services.

The IESO assumes no responsibility to any third party for any use, which it makes of this report. Any liability which the IESO may have to the connection applicant in respect of this report is governed by Chapter 1, section 13 of the Market Rules. In the event that the IESO provides a draft of this report to the connection applicant, the connection applicant must be aware that the IESO may revise drafts of this report at any time in its sole discretion without notice to the connection applicant. Although the IESO will use its best efforts to advise you of any such changes, it is the responsibility of the connection applicant to ensure that the most recent version of this report is being used.

Hydro One

The results reported in this report are based on the information available to Hydro One, at the time of the study, suitable for a System Impact Assessment of this connection proposal.

The short circuit and thermal loading levels have been computed based on the information available at the time of the study. These levels may be higher or lower if the connection information changes as a result of, but not limited to, subsequent design modifications or when more accurate test measurement data is available.

This study does not assess the short circuit or thermal loading impact of the proposed facilities on load and generation customers.

In this report, short circuit adequacy is assessed only for Hydro One circuit breakers. The short circuit results are only for the purpose of assessing the capabilities of existing Hydro One circuit breakers and identifying upgrades required to incorporate the proposed facilities. These results should not be used in the design and engineering of any new or existing facilities. The necessary data will be provided by Hydro One and discussed with any connection applicant upon request.

The ampacity ratings of Hydro One facilities are established based on assumptions used in Hydro One for power system planning studies. The actual ampacity ratings during operations may be determined in real-time and are based on actual system conditions, including ambient temperature, wind speed and facility loading, and may be higher or lower than those stated in this study.

The additional facilities or upgrades which are required to incorporate the proposed facilities have been identified to the extent permitted by a System Impact Assessment under the current IESO Connection Assessment and Approval process. Additional facility studies may be necessary to confirm constructability and the time required for construction. Further studies at more advanced stages of the project development may identify additional facilities that need to be provided or that require upgrading.



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Table 1: UFLS relay settings

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Project Description

Algoma Steel Inc. (the “connection applicant”) is proposing to connect a new load facility for two new Electric Arc Furnaces (EAF), namely EAF CTS (CAA 2021-694), and re-connect the load displacement generators GTG-1 (42.5 MW of gas) and STG-1 (25 MW of steam) from Patrick St. TS (CAA 2021-695) back to their original configuration at the 115 kV Lake Superior Power (LSP) CGS bus. These two generator units along with the existing LSP CGS GTG-2 (42.5 MW) gas unit, which is not currently operating, will be in-service during EAF operation to offset the EAF’s load and provide voltage support. All the above changes will be referred to as the “project” in this report.

EAF CTS will connect to LSP CGS via one new 0.6 km underground 115 kV cable. It will be supplied by two 115/34.5 kV 200 MVA step-down transformers with associated circuit breakers and disconnect switches, including switches intended for future connection to a 230 kV system supply. Figure 1, included in Appendix B: Project Data (Confidential), shows the single line diagram of the project and surrounding area.

The instantaneous peak load at EAF CTS can be as high as 140 MW and will ramp up and down between 0 and 140 MW between 30-60 times per day. Each ramping operation will occur within seconds. The power factor of the EAF load remains constant at 0.97 lagging at all times, including during ramping.

A new auxiliary load of 20 MW required for the EAFs operation will be added at the connection applicant’s Patrick St. TS facility, while 8 MW of existing load at Patrick St. will be removed.

The connection applicant intends to operate EAF CTS, LSP CGS and Patrick St. TS facilities such that the net sum of the instantaneous peak load from all three facilities, as measured at their low voltage side of the 115 kV transformers at these three facilities, under normal operating conditions (“Algoma load”) will not exceed 188 MW without the EAFs operating, and 218 MW during EAF operation.

When the EAF is not operating, the connection applicant plans to utilize the full capability of LSP to offset 110 – 120 MW of load at its Patrick St. TS facility by opening the 115kV connection to Clergue TS, and connecting to Patrick St. TS through a normally open low voltage tie circuit stemming from the EAF 34.5 kV bus.

The LSP CGS bus connects to Hydro One Inc.’s (“H1 transmitter”) Clergue TS through COGEN#1 and COGEN #2 115 kV circuits, which are owned by the connection applicant.

In addition, as part of this project, all LSP CGS units will have their governors upgraded; GTG-1 and GTG-2 will have their rotors and stators rewind. Once these upgrades are complete, GTG-1 and STG-1 will initially be reconnected to their existing low-voltage bus at Patrick St. TS prior to being reconfigured to connect at the LSP 115 kV bus in Q4, 2023.

The in-service date of the EAF is expected to be Q1 2024.

Notification of Conditional Approval

This assessment concludes that the proposed connection of the project is expected to have no material adverse impact on the reliability of the integrated power system, provided that all requirements in this report are implemented. Therefore, the assessment supports the release of the Notification of Conditional Approval for connection of the project.

Assessment Findings

System impact studies were carried out to assess the impact of the project in accordance with Chapter 8 of Market Manual 1.4. The studied scenarios and main assumptions are available in Appendix D and detailed study results are available in Appendix E of this report. Based on the assessment results, we have identified the following findings:

1. The project load will reduce steady-state voltage performance in the Hydro One Sault Ste. Marie system during all elements in-service and outage conditions. This can be addressed by adding 75 MVar of reactive compensation. Installing two steps of 37.5 MVar each would satisfy the voltage change criteria of 4% for capacitor switching.
2. With any two transmission elements out of service, the addition of the project exacerbates or creates new post-contingency low-voltage violations and thermal overloading violations, which require up to 350 MW of total load interruption to address. Today, without the project, up to 310 MW of load interruption is required to address similar violations. The amounts of load that would need to be interrupted both today and with the project in-service are greater than the 150 MW allowed by the ORTAC (Ontario Resource and Transmission Assessment Criteria) load security requirement for two transmission elements out of service. For the current system, this has been grandfathered, given the system in this area was not originally designed meet all of today's ORTAC requirements. The IESO is currently in the process of addressing this issue through a Northeast bulk system planning study and an Integrated Resource Regional Plan (IRRP). In the interim, project's contribution to the thermal and voltage issues will be addressed through automatic load rejection by Remedial Action Schemes (RAS)s.
3. As a result of the amount of automatic load rejection required to resolve thermal and voltage issues for two elements out of service conditions, high voltages up to 263 kV could occur at Hanmer TS, Algoma TS, Wawa TS, Mississagi TS and Third Line TS. These voltages are acceptable for up to 30 minutes and there are control actions available within 30 minutes to reduce the voltages below the maximum continuous voltages.
4. At Mississagi Flow West (MISSW) flows above 700 MW, which may be needed to supply future loads connecting west of Mississagi, the system could inadvertently separate east of Mississagi TS following the loss of A23P and A24P under all-in-service conditions or the loss of S22A or X27A under outage conditions because of encroachment on protective relays on circuits X74P, S22A and X27A.

5. For certain recognized planning events involving transmission elements near the project, e.g. Breaker Fail (BF) of Third Line breaker 402, excessive area wide voltage decline occurs due to the addition of the project. This issue can be addressed by a voltage-based load rejection scheme located at the project.
6. In the SSM area, the system is operated within a tighter voltage range, 118-124 kV, than the rest of the system. The changes to voltages introduced by the ramping of the EAF will make operating within this range even more challenging.
7. The ramping of the EAF from 0 to 140 MW and vice versa results in material local voltage changes in the SSM area. Because of the frequency of voltage changes, both H1 transmitter and SSM PUC concluded that voltage changes in excess of 2% are not acceptable. This constraint is aligned with the Transmission System Code (TSC) Appendix 2 requirements.

Our studies identified that 105 MVar of fast-response dynamic Vars would maintain the local voltage changes within 2% for a 140 MW load fluctuation. This amount of dynamic reactive power could be sourced from the LSP generators and other devices. Please note this amount of reactive power is not in addition to, and would satisfy, the reactive power compensation mentioned in Finding #1 above.

8. The ramping of the EAF results in material voltage changes at transmission stations in the bulk system as far east as Hanmer TS. Because of the frequency of voltage changes, H1 transmitter has confirmed that, in order to maintain acceptable voltage performance for the existing customers and avoid excessive wear and tear on their equipment, voltage changes in excess of 2% are not acceptable.

Studies indicate that excessive voltage changes occur under heavy flows on the MISSW interface. While the IESO will deploy available resources to minimize grid voltage changes, there may be times when those resources are insufficient. At those times, EAF operation will be restricted. Based on historical flows and system conditions, EAF operation would be restricted for about 2% of the time annually. More information regarding system conditions under which EAF will be restricted and the degree of EAF restriction will be determined during the Market Registration stage, and will be subject to updates during operations planning and real-time operation as system conditions change.

9. The ramping of the EAF load will cause significant swings in active power (MW) flow through critical interfaces in Northeastern and Northwestern Ontario. Maintaining power flows within the operating security limits will require careful coordination of EAF operation with IESO's operations planning and real-time operations teams.
10. The full ramping of the EAF load could result in a change of 12.7 MW on the Minnesota interconnection and a total of 20 MW on the Manitoba interconnection. Minnesota phase shifters will automatically change tap positions should the difference between the actual and scheduled flows exceed 10 MW. Manitoba phase shifters will automatically change tap positions should the difference between the actual and scheduled flows exceed 25.6 MW. Minnesota Power and Manitoba Hydro have been informed of the results of this study and have agreed to

monitor the additional duty on the phase shifters once the project goes in-service to determine whether further investigation is needed.

11. For an outage to the main protection of T6 at Patrick St. TS, which has no fast redundant protection, a three phase fault or line-ground fault close to the Patrick St. TS bus, will cause the LSP CGS units to go unstable as the fault will remain on the bus until cleared by back-up protection after 1.3 seconds. If backup protection timing can be improved to clear a fault within 120 ms, units at LSP CGS will remain stable.

IESO Requirements for Connection

Specific Requirements:

The following specific requirements are applicable for the incorporation of the project and its connection facilities. Specific requirements pertain to the level of reactive power compensation needed, operation restrictions, remedial action scheme, upgrading of equipment and any project specific items not covered in the general requirements.

Requirements for the Connection Applicant

1. Ensure that the instantaneous peak Algoma load does not exceed 188 MW without EAF operation, or 218 MW during EAF operation with LSP generation in-service. The connection applicant must have measures in place to reduce its load within 5 minutes in the event the 188 MW, or 218 MW limit, are inadvertently exceeded; exceedance of these limits during normal operations is not allowed.
2. To support the levels of Algoma load described in requirement #1 above, LSP units must operate in voltage control mode and the connection applicant must install the equivalent of 75 MVar additional reactive support at its facilities. Two 37.6 MVar shunt capacitors rated at 34.5 kV would be acceptable.
3. Operate at voltages between 118 kV and 124 kV at its connection point. However, if current local voltage restrictions are relaxed or lifted in the future, the connection applicant shall be able to operate within normal voltage ranges, i.e., 113 kV to 127 kV.
4. Ensure that the operation of the EAF does not result in a local voltage change that exceeds H1 transmitter's and SSM PUC's 2% voltage change threshold. This could be achieved by installing locally placed fast-acting reactive compensation device(s) (i.e. SVC, Statcom, etc.) or, if feasible, by coordinating its own local reactive devices in a manner that is acceptable to the IESO, H1 transmitter and SSM PUC. The solution to satisfy the local voltage change needs shall be presented to the IESO and H1 transmitter for evaluation at least twelve months before the in-service date of the project.

5. Provide single points of contact to the IESO, reachable 24/7, and have those contacts participate in operations planning and real-time operations processes to allow for:
 - a. the IESO be aware of the intended next-day and real-time operations of the facility, and
 - b. the connection applicant to be aware when EAF operation needs to be restricted to accommodate system conditions, including outages, as communicated by the IESO market forecasts and integration team (MFI) or the IESO control room.
6. Have a demand management procedure acceptable to the IESO and H1 transmitter that ensures that the EAF operation can be curtailed within 5 minutes. The need for load curtailment could occur when H1 transmitter's 2% voltage change criterion is at risk of being violated, during outages to LSP CGS units, or during any other operating situations where the IESO cannot manage the power or voltage fluctuations triggered by the EAF's operation.

The demand management procedure must be subject to the following conditions:

- a. Reduce up to the entire project load, upon direction by the IESO, within 5 minutes; failure to follow the direction could result in immediate disconnection of the project from the transmission grid;
 - b. Set up a dedicated direct line for the IESO and H1 transmitter to reach the facility control room, which will be staffed at all times when the EAF is in-service; and,
 - c. Prepare a detailed procedure outlining how the EAF load reduction and/or EAF shutdown will be implemented. The procedure is to be approved by IESO and H1 transmitter.
7. The connection applicant shall install RAS facilities to participate in the following Remedial Action Schemes (RAS) that will automatically disconnect the EAF load for system events: Third Line Instantaneous Load Rejection Scheme and Northwest RAS. EAF loads must be rejected within 66 ms upon receipt of the signal from the applicable schemes.

The connection applicant shall ensure that the RAS facilities comply with NPCC Reliability Reference Directory #7 as per the RAS type classification which will be finalized during the Market Registration process. To avoid any delay to the project, it is strongly recommended the RAS facilities be designed to meet NPCC Reliability Reference Directory #7 for NPCC Type I RAS before the RAS type classification is finalized. If deemed or expected to be a Type II or Limited Impact RAS, the connection applicant shall ensure the RAS facilities have provisions to comply with NPCC Reliability Reference Directory #7 for Type I RAS in case the RAS is re-classified as NPCC Type I RAS in the future as the system evolves.

Telemetry, including but not limited to, MW, MVar and breaker status for the feeders/equipment tripped by the RAS, as specified by the IESO at the time of registration, shall be provided.

8. To prevent area wide voltage decline, install a voltage-based tripping scheme that will automatically disconnect one or all of its EAF(s) for voltages below 108 kV at the EAF 115 kV

bus within 1 second. All capacitors and LSP generator units shall remain in-service. Any other proposed settings will need to be approved by the IESO.

9. Ensure the LSP generators, exciters and power system stabilizers of GTG-1, GTG-2 and STG-1 meet, at a minimum, the original performance requirements applicable to them when the units were once connected directly to the 115 kV LSP CGS bus, in the event they are not able to meet the prevailing performance requirements as per Market Rules Appendix 4.2.
10. Be prepared to re-incorporate LSP units GTG-1 and STG-1 into the Mississagi Generation Scheme in the future if there is a need, upon request from the IESO.
11. To address Finding 11, the backup protection timing for Patrick St. T6 needs to be improved to clear a fault within 120 ms; otherwise T6 must be removed from service should the main protection be out-of-service. The connection applicant must work with H1 transmitter and SSM PUC to confirm what other equipment at the Patrick St. 115 kV bus may also be required to be taken out of service should equipment have similar protections to T6 in place, if improvements to back-up timing allowing the LSP CGS units to remain stable, cannot be made.

This requirement must be fulfilled prior to LSP CGS being reconfigured in Q4, 2023.

12. The connection applicant shall provide the missing governor model for STG-1 during the Market Registration process.

Requirements for H1 Transmitter

1. H1 transmitter shall include the project in the Third Line Instantaneous Load Rejection Scheme, and NW RAS (formerly Northwest SPS2) as per Appendix F of this report. During the IESO Market Registration process, a revised Facility Description Document (FDD) for both the Third Line Instantaneous Load Rejection Scheme and NW RAS (formerly Northwest SPS2), must be provided and finalized at least twelve months prior to in-service. The FDD must contain the finalized RAS matrix as well as expected operating times. The actual operating times must be measured during commissioning and documented as a Performance Validation Record.

If the FDD or performance testing as per the Performance Validation Record indicates a change in design or slower than expected operating times, as compared to what was assumed in this assessment, then further analysis of the project will need to be done by the IESO. This may delay the grant of IESO final approval to place the project in-service.

The H1 transmitter shall ensure that the RAS facilities comply with NPCC Reliability Reference Directory #7 as per the RAS type classification which will be finalized during the Market Registration process. To avoid any delay to the project, it is strongly recommended the RAS facilities be designed to meet NPCC Reliability Reference Directory #7 for NPCC Type I RAS before the RAS type classification is finalized. If deemed or expected to be a Type II or Limited Impact RAS, the transmitter shall ensure the RAS facilities have provisions to comply with NPCC Reliability Reference Directory #7 for Type I RAS in case the RAS is re-classified as NPCC Type I RAS in the future as the system evolves.

Telemetry, as specified by the IESO at the time of registration, shall be provided.

This requirement must be fulfilled prior to the EAF coming into service in Q1 2024.

2. Patrick St. T6 must be removed from service should the main protection be out-of-service, unless backup protection timing can be improved to clear a fault within 120 ms. H1 transmitter must work with the connection applicant and SSM PUC to confirm what other equipment at the Patrick St. 115 kV bus may also be required to be taken out of service or require protection timing improvement should equipment have similar protections to T6 in place.

This requirement must be fulfilled prior to LSP CGS being reconfigured in Q4, 2023.

General Requirements:

The connection applicant shall satisfy all applicable requirements specified in the Market Rules, the Transmission System Code (TSC) and reliability standards. Some of the general requirements that are applicable to this project are presented in detail in Appendix A: General Requirements of this report.

Recommendation

1. To relieve the number of times static reactive devices may need to be switched, it is recommended that H1 transmitter and SSM PUC examine possible solutions to addressing the operating voltage limitations at Third Line TS. Today, the acceptable continuous voltage range at the station is 118 kV to 124 kV whereas the ORTAC requirement should be between 113 kV to 127 kV.
2. The transmitter is recommended to modify the relay characteristics of circuits X74P, X27A and S22A and/or decrease the timing of the Third Line RAS L/R function. This will enable higher MISSW transfers without the risk of post-contingency system separation mentioned in finding 4.

Appendix A: General Requirements

The connection applicant shall satisfy all applicable requirements specified in the Market Rules, the Transmission System Code and reliability standards. This section highlights some of the general requirements that are applicable to the project.

The following requirements, i.e. (1) – (9), apply to both Algoma Steel – New Load Facility (CAA 2021-694) and Lake Superior Power CGS – Generation Reconfiguration (2021-695) portions of the project:

1. The connection applicant must notify the IESO at connection.assessments@ieso.ca as soon as they become aware of any changes to the project scope or data used in this assessment. The IESO will determine whether these changes require a re-assessment.
2. The connection applicant shall ensure that the BPS elements are in compliance with the applicable NPCC criteria and the BES elements in compliance with the applicable NERC reliability standards. To determine the standard requirements that are applicable, the IESO provides mapping tools titled “NPCC Criteria Mapping Spreadsheet” for BPS elements and “NERC Reliability Standard Mapping Tool/Spreadsheet” for BES elements at the IESO’s website of [Applicability Criteria for Compliance with Reliability Requirements](#).

Note, the connection applicant may request an exception to the application of the BES definition. The procedure for submitting an application for exemption can be found in Market Manual 11.4: “[Ontario Bulk Electric System \(BES\) Exception](#)” at the IESO’s website.

The IESO’s criteria for determining applicability of NERC reliability standards and NPCC Criteria can be found in the Market Manual 11.1: “[Applicability Criteria for Compliance with NERC Reliability Standards and NPCC Criteria](#)” at the IESO’s website.

Compliance with these reliability standards will be monitored and assessed as part of the IESO’s Ontario Reliability Compliance Program. For more details about compliance with applicable reliability standards, the connection applicant is encouraged to contact orcp@ieso.ca and also visit the [Ontario Reliability Compliance Program webpage](#).

However, like any other system element in Ontario, the BPS and BES classifications of the project will be periodically re-evaluated as the electrical system evolves. Newly identified BPS and BES facilities associated with this project are listed in Appendix C.

3. The connection applicant shall ensure that the project’s equipment meet the voltage requirements specified in section 4.2 and section 4.3 of the Ontario Resource and Transmission Assessment Criteria (ORTAC).
4. According to Section 6.1.2 of the TSC, the connection applicant must ensure the project’s transmission connection equipment is designed to withstand the fault levels in the area. According to Section 6.4.4 of the TSC, if any future system changes result in an increased fault level higher than the project’s equipment capability, the connection applicant is required to

replace that equipment with higher rated equipment capable of withstanding the increased fault level, up to the maximum fault level specified in Appendix 2 of the TSC.

It is the connection applicant's responsibility to verify that all equipment and circuit breakers within the project are appropriately sized for the local fault levels.

The connection applicant shall ensure that the circuit breakers/switchers installed at the project have rated interrupting time that satisfies Appendix 2 of the TSC. Fault interrupting devices installed at the project must be able to interrupt fault currents at the applicable maximum continuous voltage as specified in Section 4.2 and Section 4.3 of ORTAC.

5. The connection applicant shall ensure that the protection systems are designed to satisfy all the requirements of the TSC. New protection systems must be coordinated with existing protection systems. Protection systems within the project shall only trip the appropriate equipment isolating the fault.

Associated overvoltage protective relaying must be set to ensure that the project's equipment does not automatically trip for voltages up to 5% above the equipment's corresponding maximum continuous voltage as specified in section 4.2 of the ORTAC.

BPS elements are deemed by the IESO to be essential to system reliability and security and must be protected by redundant protection systems in accordance with Section 8.2 of the TSC. These redundant protection systems must satisfy all requirements of the TSC, and in particular, they must be physically separated and not use common components, common battery banks, or common instrument transformer secondary windings.

The protection systems for transmission voltage BES elements (whose rated voltage is higher than 100 kV) must be redundant. Redundancy must be present in protective relaying for normal fault clearing and control circuitry associated with protective functions including trip coils of the circuit breakers or other interrupting devices. These redundant protection systems must not use common instrument transformer secondary windings. A single communication system, if used, must be monitored and reported and a single DC supply, if used, must be monitored and reported for both low voltage and open circuit.

As the electrical system evolves, transmission voltage non-BPS or non-BES elements (whose rated voltage is higher than 100 kV) within the project, may be re-classified as BPS elements or BES elements. The connection applicant is recommended to design the protection systems for these elements according to the protection requirements for BPS elements or have adequate provisions for future upgrade to meet those requirements.

The connection applicant shall ensure that the project's automatic reconnection capability, if available, be disabled. Upon its disconnection following a contingency, the connection applicant must obtain the IESO's approval before reconnecting the project to the IESO-controlled grid.

6. The connection applicant shall ensure that the connection equipment is designed to be fully operational in all reasonably foreseeable ambient conditions. Failures of the connection

equipment must be contained within the project and have no adverse impact on the IESO-controlled grid.

7. The connection applicant must initiate the IESO's Market Registration process at least eight months prior to the commencement of any project related outages.

The connection applicant is required to provide "as-built" equipment data for the project during the IESO Market Registration process. If the submitted equipment data differ materially from the ones used in this assessment, then further analysis of the project may need to be done by the IESO before final approval to connect is granted.

Models and data, including any controls that would be operational, must be provided to the IESO. This includes both PSS/E and DSA software standard library models representing the new equipment for further IESO, NPCC and NERC analytical studies. The models and data may be shared with other reliability entities in North America as needed to fulfill the IESO's obligations under the Market Rules, NPCC and NERC rules. The connection applicant may need to contact the software manufacturers directly, in order to have the models included in their packages. This information should be submitted at least eight months before energization to the IESO-controlled grid, to allow the IESO to incorporate this project into IESO work systems and to perform any additional reliability studies.

As part of the IESO Market Registration process, the connection applicant must also provide evidence to the IESO confirming that the project's equipment installed meets the Market Rules requirements and matches or exceeds the performance predicted in this assessment. This evidence shall be either type tests done in a controlled environment or commissioning tests done on-site. In either case, the testing must be done not only in accordance with widely recognized standards, but also to the satisfaction of the IESO. Until this evidence is provided and found acceptable to the IESO, the Market Registration process will not be considered complete and the connection applicant must accept any restrictions the IESO may impose upon this project's participation in the IESO-administered markets or connection to the IESO-controlled grid. The evidence must be supplied to the IESO within 30 days after completion of commissioning tests. Failure to provide evidence may result in disconnection from the IESO-controlled grid.

If the submitted models and data differ materially from the ones used in this assessment, then further analysis of the project may need to be done by the IESO before final approval to connect is granted.

At the sole discretion of the IESO, performance tests may be required at generation and transmission facilities. The objectives of these tests are to demonstrate that equipment performance meets the IESO requirements, and to confirm models and data are suitable for IESO purposes. The H1 transmitter may also have its own testing requirements. The IESO and the H1 transmitter will coordinate their tests, share measurements and cooperate on analysis to the extent possible.

Once the IESO's Market Registration process has been successfully completed, the IESO will provide the connection applicant with a Registration Approval Notification (RAN) document,

confirming that the project is fully authorized to connect to the IESO-controlled grid. For more details about this process, the connection applicant is encouraged to contact IESO's Market Registration at market.registration@ieso.ca.

8. The connection applicant shall ensure that wholesale revenue metering installations comply with Chapter 6 of the Market Rules. This includes any intermediate project stages such as installation of temporary equipment or the use of mobile transformers. For more details, the connection applicant is encouraged to seek advice from their Metering Service Provider (MSP) or from the IESO metering group in early stages of project design.
9. As per Market Manual 1.4: Connection Assessment and Approval (formerly Market Manual 2.10), the connection applicant will be required to provide a status report of its proposed project with respect to its progress upon request of the IESO using the [project status report form](#) on the IESO website. Failure to comply with project status requirements listed in Market Manual 1.4: Connection Assessment and Approval (formerly Market Manual 2.10) will result in the project being withdrawn.

The connection applicant will be required to also provide updates and notifications in order for the IESO to determine if the project is "committed" as per Section 3.3 of Market Manual 1.4: Connection Assessment and Approval (formerly Market Manual 2.10).

The following requirements, i.e. (10) – (13), apply to only Algoma Steel – New Load Facility (CAA 2021-694):

10. In accordance with Appendix 4.3 of the Market Rules, the connection applicant shall ensure the project have the capability to maintain the power factor within the range of 0.9 lagging and 0.9 leading as measured at the defined meter point of the project by adjusting its reactive compensation at any time, upon the IESO's or the transmitter's request. However, it is recognized that the project with its reactive compensation required by the IESO in-service may normally operate outside this range.
11. The connection applicant has a total peak load at all its owned facilities, including the project, which is greater than 25 MW. According to Section 10.4.6 of Chapter 5 of the Market Rules and Section 11.3 of the Market Manual 7.1, the connection applicant is required to participate in the automatic Under-Frequency Load Shedding (UFLS) program and must select 35% of total peak load among its owned facilities for under-frequency tripping, based on a date and time specified by the IESO that approximates system peak, according to Section 10.4 of Chapter 5 of the Market Rules.

The UFLS relay connected loads shall be set to achieve the amounts to be shed as stated in Section 11.3 of Market Manual 7.1. Table 1 summarizes UFLS relay settings as a function of the total peak load of all facilities, including the project, owned by the connection applicant.

Table 1: UFLS relay settings

Aggregate Summer Peak Load	UFLS Stage	Frequency Threshold (Hz)	Total Nominal Operating Time (s)	Load Shed at stage as % of Connection Applicant's Load	Cumulative Load Shed at stage as % of Connection Applicant's Load
25 MW or more and less than 50 MW	1	59.5	0.3	≥ 35	≥ 35
50 MW or more and less than 100 MW	1	59.5	0.3	≥ 17	≥ 17
	2	59.1	0.3	≥ 18	≥ 35
100 MW or greater	1	59.5	0.3	7 – 9	7 – 9
	2	59.3	0.3	7 – 9	15 – 17
	3	59.1	0.3	7 – 9	23 – 25
	4	58.9	0.3	7 – 9	32 – 34
	Anti-Stall	59.5	10.0	3 – 4	35 – 37

The connection applicant, in conjunction with the H1 transmitter, must also ensure that capacitor banks connected to the same station bus as the load are shed by UFLS facilities at 59.5 Hz with a time delay of 3 seconds.

The maximum load that can be connected to any single UFLS relay is 150 MW to ensure that the inadvertent operation of a single under-frequency relay during the transient period following a system disturbance does not lead to further system instability.

The IESO will review the requirements annually and inform the relevant market participants of their automatic UFLS obligations.

12. In accordance with Section 7.5 of Chapter 4 of the Market Rules, the connection applicant shall provide to the IESO the applicable telemetry data listed in Appendix 4.17 of the Market Rules on a continual basis. The data shall be provided in accordance with the performance standards set forth in Appendix 4.22, subject to Section 7.6A of Chapter 4 of the Market Rules. The whole telemetry list will be finalized during the IESO's Market Registration process.

The connection applicant must install monitoring equipment that meets the requirements set forth in Appendix 2.2 of Chapter 2 of the Market Rules. As part of the IESO's Market Registration process, the connection applicant must also complete end to end testing of all necessary telemetry points with the IESO to ensure that standards are met and that sign conventions are understood. All found anomalies must be corrected before IESO's final approval to connect any phase of the project is granted.

13. The ORTAC states that the transmission system must be planned such that, following design criteria contingencies on the transmission system, affected loads can be restored with the restoration times listed below:

- a. All load must be restored within approximately a target of 8 hours;
- b. When the amount of load interrupted is greater than 150MW, the amount of load in excess of 150MW must be restored within approximately a target of 4 hours;
- c. When the amount of load interrupted is greater than 250MW, the amount of load in excess of 250MW must be restored within a target of 30 minutes.

The following requirements, i.e. (14) – (19), apply to only Lake Superior Power CGS – Generation Configuration (CAA 2021-695). In the event that LSP CGS generators, exciters and power system stabilizers are not able to meet the prevailing performance requirements as per Market Rules Appendix 4.2 and outlined below, the connection applicant must ensure they meet, at a minimum, the original performance requirements applicable to them when the units were once connected directly to the 115 kV LSP CGS bus.

14. As per Appendix 4.2 of the Market Rules, the connection applicant shall ensure that the generation facility has the capability to operate continuously between 59.4 Hz and 60.6 Hz and for a limited period of time in the region bounded by straight lines on a log-linear scale defined by the points (0.0 s, 57.0 Hz), (3.3 s, 57.0 Hz), and (300 s, 59.0 Hz) and the straight lines on a log-linear scale defined by the points (0.0 s, 61.8 Hz), (8 s, 61.8 Hz), and (600 s, 60.6 Hz).

The facility has to have the capability to Regulate speed/frequency with an average droop based on maximum active power adjustable between 3% and 7% and set at 4% unless otherwise specified by the IESO. Regulation dead-band shall not be wider than $\pm 0.06\%$. Speed/frequency shall be controlled in a stable fashion in both interconnected and island operation. A sustained 9% change of rated active power after 10 s in response to a step change of speed of 0.5% during interconnected operation shall be achievable. Due consideration will be given to inherent limitations such as mill points and gate limits when evaluating active power changes. Control systems that inhibit primary frequency response shall not be enabled without IESO approval.

15. The project is directly connected to the IESO-controlled grid, and thus, according to Appendix 4.2 of the Market Rules, the connection applicant shall ensure that the project has the capability to:

- continuously supply all levels of active power output within a +/- 5% range of its rated terminal voltage. Rated active power is the smaller output at either rated ambient conditions (e.g. temperature, head, wind speed, solar radiation) or 90% of rated apparent power. To satisfy steady-state reactive power requirements, active power reductions to rated active power are permitted.;
- Continuously (i.e., dynamically) inject or withdraw reactive power at the high-voltage terminal of the main output transformer up to 33% of rated active power at all levels of

active power output, and at the typical transmission system voltage, except where a lesser continually available capability is permitted with the IESO's approval. A conventional synchronous unit with a power factor range of 0.90 lagging and 0.95 leading at rated active power connected via a main output transformer impedance not greater than 13% based on generation unit rated apparent power is acceptable. Reactive power losses or charging between the high-voltage terminal of the main output transformer and the connection point shall be addressed in a manner permitted by IESO approval;

Regulate voltage automatically within $\pm 0.5\%$ of any set point within $\pm 5\%$ of rated voltage at the low-voltage terminal of the main output transformer if the transformer impedance is not more than 13% based on the rated apparent power of the generation facility, or at a point approved by the IESO. Reactive power-voltage droop or AVR reference load current compensation shall not be enabled without IESO approval. The equivalent time constants shall not be longer than 20 ms for voltage sensing and 10 ms for the forward path to the exciter output. AVR reference compensation shall be adjustable to within 10% of the unsaturated direct axis reactance on the unit side from a bus common to multiple units.

16. In accordance to Appendix 4.2 of the Market Rules, the connection applicant shall ensure that the excitation systems of the project shall have (a) Positive and negative ceilings not less than 200% and 140% of rated field voltage, respectively, while supplying the field winding of the generation unit operating at nominal voltage under open circuit conditions; (b) An excitation transformer impedance not greater than 10% on excitation system base; (c) A voltage response time to either ceiling not more than 50 ms for a 5% step change from rated voltage under open-circuit conditions; and (d) a linear response between ceilings. Rated field current is defined at rated voltage, rated active power and required maximum continuous reactive power.

In accordance to Appendix 4.2 of the Market Rules, the connection applicant shall ensure that the Power System Stabilizers (PSS) of the project shall have (a) a change of power and speed input configuration; (b) positive and negative output limits not less than $\pm 5\%$ of rated AVR voltage; (c) phase compensation adjustable to limit angle error to within 30° between 0.2 Hz and 2.0 Hz under conditions specified by the IESO, and (d) gain adjustable up to an amount that either increases damping ratio above 0.1 or elicits exciter modes of oscillation at maximum active output unless otherwise specified by the IESO. Due consideration will be given to inherent limitations.

17. In accordance to Appendix 4.2 of the Market Rules, the connection applicant shall ensure the project shall have the capability to ride-through routine switching events and design criteria contingencies assuming standard fault detection, auxiliary relaying, communication, and rated breaker interrupting times, unless disconnected by configuration.

The connection applicant will be required to demonstrate the project's voltage ride-through capability during commissioning by either providing manufacturer test results or monitoring several variables under a set of IESO specified field tests, and the test results must be verifiable using the dynamic models provided for the project.

18. The connection applicant shall install a permanent device for disturbance recording that meets the technical specifications provided in Section 2.7 of Market Manual 1.6: Performance Validation (formerly Market Manual 2.20). The quantities to be recorded and the trigger settings will be provided by the IESO during the Market Registration process.
19. If applicable according to Section 7.3 of Chapter 4 of the Market Rules, the connection applicant shall provide to the IESO the applicable telemetry data listed in Appendix 4.15 of the Market Rules on a continual basis. The data shall be provided with equipment that meets the requirements set forth in Appendix 2.2, Chapter 2 of the Market Rules, in accordance with the performance standards set forth in Appendix 4.19, subject to Section 7.6A of Chapter 4 of the Market Rules. The whole telemetry list will be finalized during the IESO's Market Registration process.

As part of the IESO's Market Registration process, the connection applicant must also complete end to end testing of all necessary telemetry points with the IESO to ensure that standards are met and that sign conventions are understood. All found anomalies must be corrected before IESO's final approval to connect any phase of the project is granted.



Appendix B: Project Data (Confidential)

Appendix C: Facility Classification (Confidential)

Appendix D: Study Scope of Work (Confidential)

Appendix E: Detailed Study Results (Confidential)

Appendix F: Remedial Action Scheme Selection
Matrices (Confidential)

Appendix G: Commissioning Tests (Confidential)

Appendix H: Protection Impact Assessments
(Confidential)

Appendix I: Telemetry Requirements
(Confidential)

**Independent Electricity
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facebook.com/OntarioIESO



linkedin.com/company/IESO

1 **EXHIBIT D: DESIGN SPECIFICATION AND OPERATIONAL DATA**

3 **OPERATIONAL DETAILS**

5 Operation of PUC Transmission's proposed transmission line and station facilities (the "**Facilities**")
6 will be carried out by PUC Services Inc. ("**PUC Services**"), an affiliated electric utility services
7 company. PUC Services also manages, operates and maintains the assets of PUC Distribution Inc.,
8 which is the licensed distributor that owns the distribution system that serves the residential and
9 commercial customers within the boundaries of the city of Sault Ste. Marie as well as parts of Prince
10 Township, Dennis Township and the Rankin Reserve. The distribution system also includes 115 kV
11 transmission assets that are also managed, operated and maintained by PUC Services.

13 PUC Services will operate the Facilities under a long term management, operations, and maintenance
14 agreement.

16 The Facilities include teleprotection monitoring and control and telecommunications systems that
17 will be used to protect all elements in the new 230 kV Station, the 230 kV Line and the 115 kV Line
18 by detecting faults and isolating faulted elements. Operation of the Project will be carried out in
19 accordance with the procedures administered by HONI's Integrated System Operations Centre
20 ("**ISOC**") and the IESO.

22 Any fault on the new 230 kV Line is expected to be cleared by dedicated and redundant line
23 protection and associated circuit breakers, on both ends of the circuits.

25 Teleprotection systems will utilize a combination of dedicated leased data circuits and optical ground
26 wires installed on the new 230 kV Line. This combination of circuits will ensure two physically
27 diverse telecommunications pathways are utilized to connect PUC Transmission's 230 kV station to
28 the HONI Third Line TS.

30 Metering for IESO settlement purposes will be located at the PUC Transmission station as indicated
31 on the Detailed Single Line Diagram included at **Exhibit C, Tab 2, Schedule 1, Attachment 2**.

32

1 **EXHIBIT E: LAND MATTERS**

2 The Project will utilize a combination of municipal rights-of-way, acquiring existing powerline rights-
3 of-way and acquiring new easements upon the Board granting leave to construct. Further details
4 regarding these easements are provided below.

5
6 Two parcels of land are to be purchased for the Tagona West TS.

7
8 Temporary land rights to facilitate construction or to provide staging areas are not required since all
9 the work will fall within the existing and new rights-of-way.

10
11 **DESCRIPTION OF LAND RIGHTS**

12
13 There are 46 property parcels, one railway crossing and eight municipal roadway crossings that are
14 directly impacted by the proposed location of Tagona West TS and routing of the 230 kV Line.
15 Currently, there are no locations along the line route expected where Section 41(9) of the *Electricity*
16 *Act* would be required for the use of public roads and highways as part of the route.

17
18 The table below summarizes the type of land rights required and the nature of the associated land
19 ownership.

Land Rights Type	Number of Parcels	Property Ownership
Existing easements	23	Private
New easements	20	Private, Municipal and Conservation Authority
Property purchase	2	Private and Municipal
Railway Crossing	1	Railway

20
21 At the time of filing this application, approximately 73% of the total parcel requirements had been
22 confirmed, either by way of accepted purchase offers conditional on approval of this application, or
23 through letters of support.

24

1 **PROPERTY EASEMENTS**

2

3 **Existing Easements**

4 There are 23 parcels along the proposed transmission line route where the line is planned to occupy
5 existing easements. These easements are currently unoccupied by any electrical facilities. Maps
6 detailing each parcel and associated existing easement are included in **Attachment 1 to this Tab**.

7

8 The existing easements are currently held by PUC Distribution. A letter of support from PUC
9 Distribution is included in **Attachment 2 to this Tab**. The existing easements account for
10 approximately 65% of the overall length of the 230 kV Line route. PUC Transmission will seek to
11 acquire the existing easements in accordance with the process outlined herein under the “Lands and
12 Rights Acquisition Process” section, at **Exhibit E, Tab 3, Schedule 1**. The existing easements
13 combined with new easements where a commitment has been confirmed by the property owners to
14 provide the required easement rights, as further detailed below, cover approximately 90% of the
15 total line length easement requirements.

16

17 Approximately 91% of the total line length to be built along the existing easements will be co-located
18 with an existing high pressure natural gas main. The gas main generally occupies the northerly 7.62
19 m of the existing electricity easements. The electricity easements have precedence over the gas main.
20 Suitable mitigation measures will be employed to address potential electrical inductance on the gas
21 main, in accordance with the owner’s requirements.

22

23 As all the work along the existing easements will be carried out within the width of the existing
24 easements, no additional land rights are required for temporary equipment laydown or construction
25 areas.

26

27 The following table summarizes the existing easements:

Existing Easement Width	Number of Property Parcels Affected	Type of Property Ownership
38.1 m	20	Private
35.1 m	2	Private
30.5 m	1	Private

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New Easements

There are 20 parcels along the proposed transmission line route where the line will occupy new easements. These new easements involve lands that are currently unoccupied by any electrical facilities, buildings or other above-ground structures. Maps detailing each parcel and associated new easement requirement are included in **Attachment 4 to this Tab**.

At the time of filing this application, two property owners representing three parcels that are impacted by the transmission line, had accepted PUC Transmission’s offer to purchase easement rights. In addition, one parcel owned by Algoma Steel and 4 parcels owned by the SSMRCA are impacted by easement requirements. Algoma Steel provided a letter of support, which is located at **Exhibit B, Tab 3, Schedule 1, Attachment 2**. The SSMRCA also provided a letter of support, which is located at **Exhibit E, Tab 2, Schedule 1, Attachment 3**.

Approximately 75% of the total line length to be built along the new easements involve proximity to an existing high pressure natural gas main. Suitable mitigation measures will be employed to address potential electrical inductance on the gas main, in accordance with the owner’s requirements.

As all the work along the new easements will be carried out within the width of the proposed easements, no additional land rights are required for temporary equipment laydown or construction areas.

The table below summarizes the new easement requirements:

New Easement Width	Number of Property Parcels Affected	Serviant Lands Type of Ownership
Variable up to 24 m	14	Private
Variable up to 24 m	4	Sault Ste. Maire Region Conservation Authority
Variable up to 12 m	2	The Corporation of the City of Sault Ste. Marie

25
26
27
28

Municipal Land Rights

Approximately 515 m of the proposed transmission line route involves locating the towers and lines

1 along the north side of the Yates Avenue municipal right-of-way. In addition, there are eight aerial
2 municipal road crossings along the full extent of the line route. Authorization for these sections of
3 line will be addressed through the municipal consent process. This process will be conducted
4 through 2024 once detailed engineering has advanced to the point where the required detailed
5 drawings are available to support the application to the City.

6

7 In addition, PUC Transmission will seek easements from the Corporation of the City of Sault Ste. Maire
8 (the “City”) for sections of the line that impact City owned lands, primarily along Yates Ave.

9

10 **Land Purchase for Tagona West TS**

11 As noted, there are two parcels required to accommodate the new Tagona West TS. One parcel is
12 owned by the City. The other parcel is owned by Algoma Steel.

13

14 As noted above, Algoma Steel has provided a letter of support, which is located at **Exhibit B, Tab 3,**
15 **Schedule 1, Attachment 2.**

16

17 PUC Transmission submitted an offer to acquire the parcel of City-owned land at the south-east end
18 of Yates Ave required for the station, subject to OEB approval of this application. *By-law 2023-159*
19 *(Property Sale) Surplus Property Portio of Yates Avenue (PUC)* approving the sale, was passed by the
20 Council of the City of Sault Ste. Marie in open session on September 18, 2023.

21

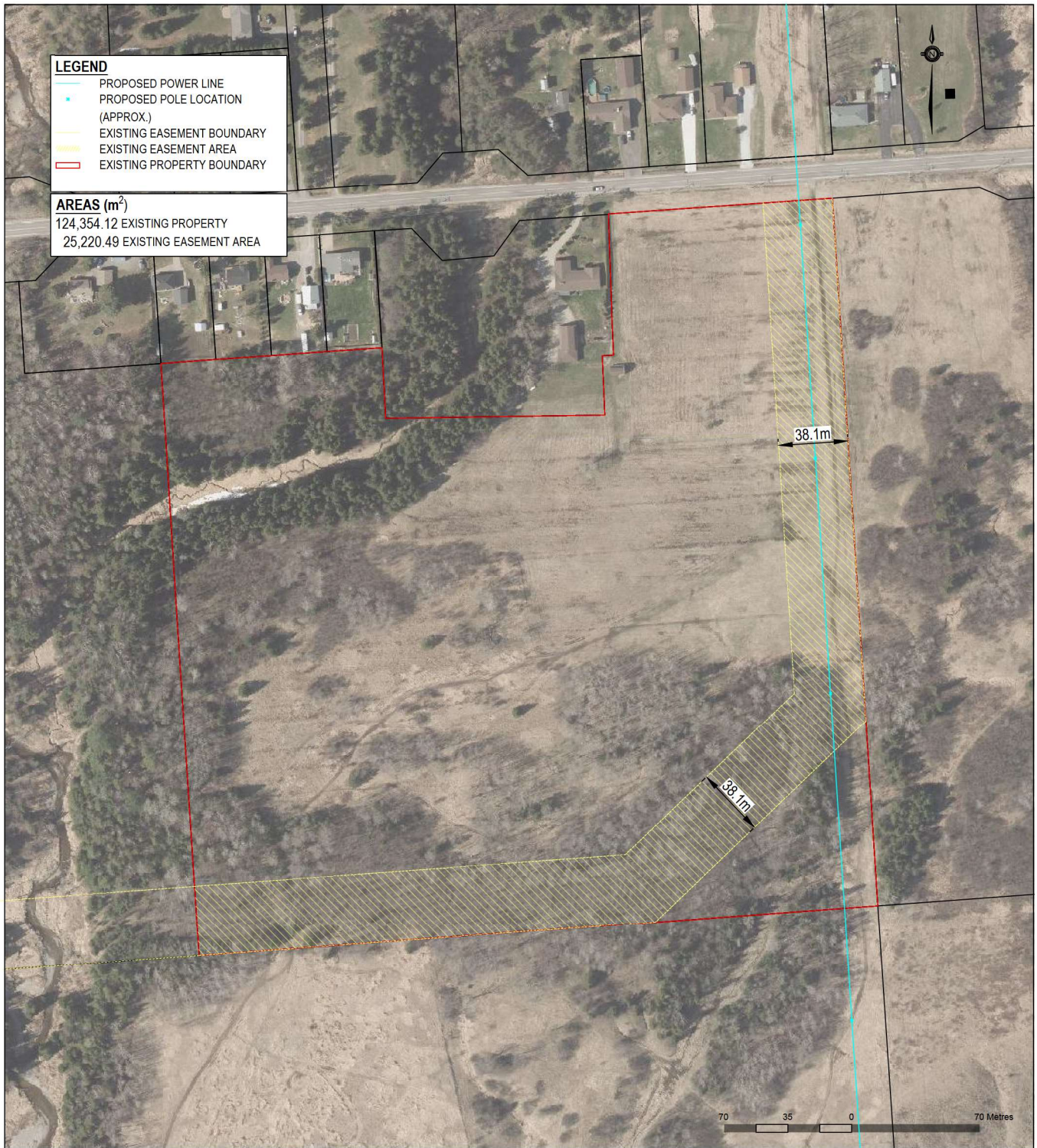
22 **Identified Potential Development**

23 In the course of conducting the Environmental Assessment, PUC Transmission became aware of a
24 proposal for a subdivision development in the Chippewa Street area that was in the early planning
25 stages. PUC Transmission was approached by the prospective purchaser of the subject lands to
26 assess the potential impact of the proposed transmission line on the proposed development. PUC
27 Transmission reviewed the proposed development plans and subsequently adjusted the
28 transmission line alignment in order to mitigate any material impact on the proposed development.
29 As a result of the re-alignment, there was no requirement to make any changes to the proposed
30 subdivision layout.

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EXISTING EASEMENTS PARCEL MAPS



PROJECT: SAULT STE. MARIE 230 kV TRANSMISSION
PROJECT: CLASS EA
SAULT STE MARIE, ONTARIO

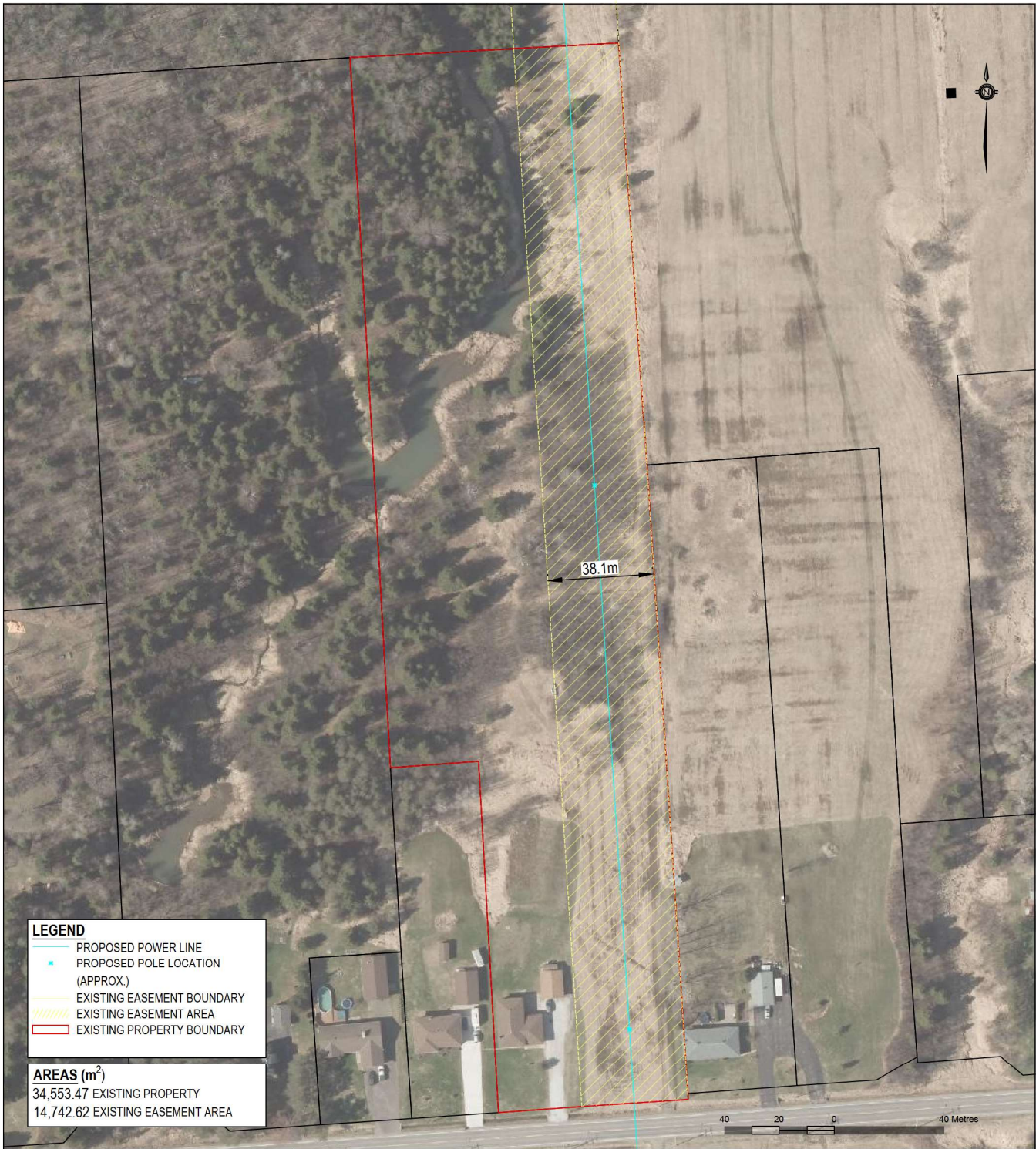
TITLE: 060040273010000 0 THIRD LINE W

CLIENT: PUC TRANSMISSION LP

SCALE: 1:3,000
DRAWN BY: TP CHECKED BY: DS

PROJECT NO: 221-01502-00
DATE: NOVEMBER 2022

FIGURE NO: 21

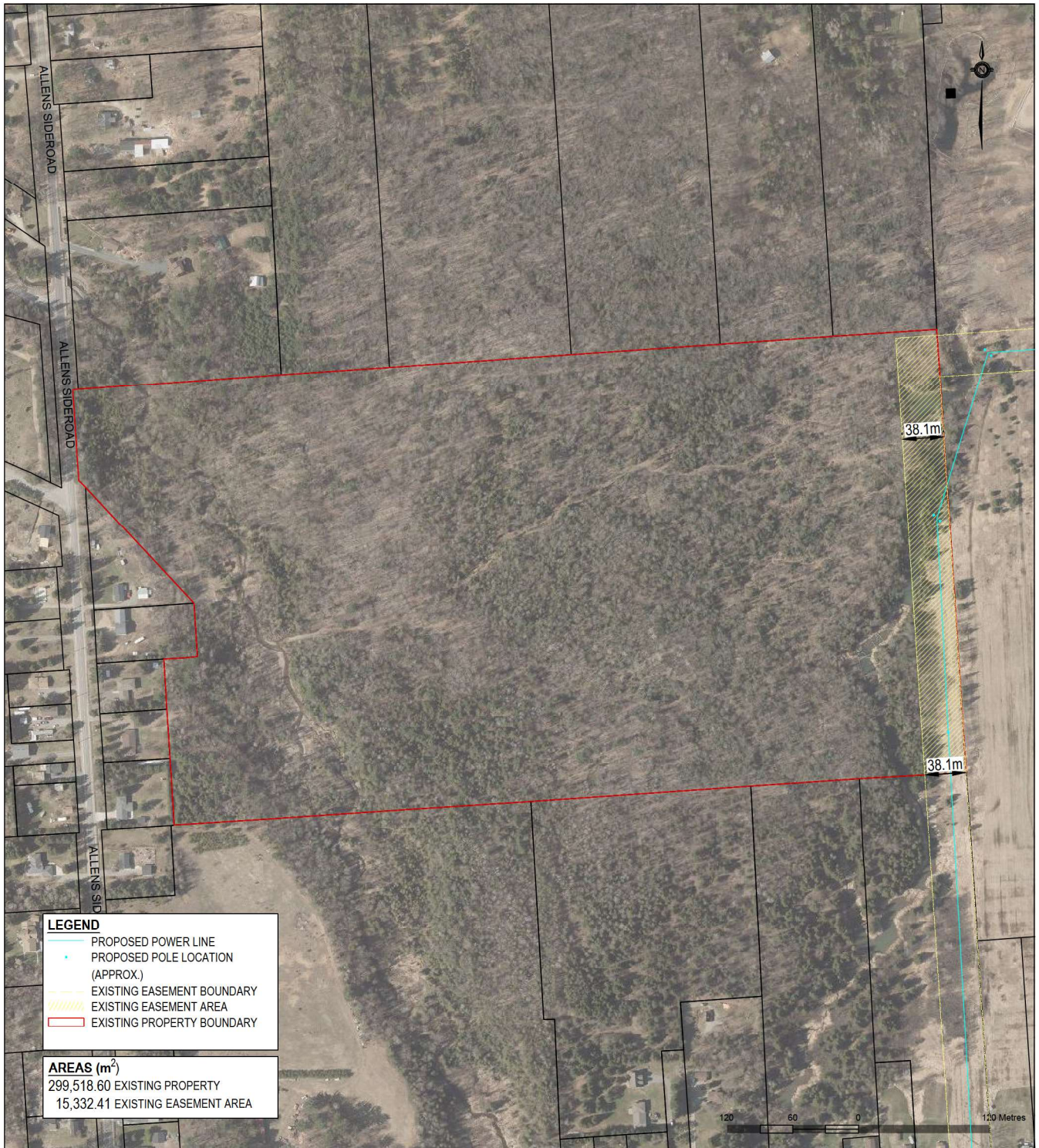


LEGEND	
	PROPOSED POWER LINE
	PROPOSED POLE LOCATION (APPROX.)
	EXISTING EASEMENT BOUNDARY
	EXISTING EASEMENT AREA
	EXISTING PROPERTY BOUNDARY

AREAS (m ²)	
34,553.47	EXISTING PROPERTY
14,742.62	EXISTING EASEMENT AREA

40 20 0 40 Metres

	PROJECT: SAULT STE. MARIE 230 kV TRANSMISSION PROJECT: CLASS EA SAULT STE MARIE, ONTARIO	SCALE: 1:2,000
	TITLE: 060052189000000 840 THIRD LINE W	DRAWN BY: CHECKED BY: TP DS
	CLIENT: PUC TRANSMISSION LP	PROJECT NO: 221-01502-00
		DATE: JANUARY 2023
		FIGURE NO: 22



PROJECT:	SAULT STE. MARIE 230 kV TRANSMISSION PROJECT: CLASS EA SAULT STE MARIE, ONTARIO		SCALE: 1:5,000	
	TITLE:	060052172000000 1036 ALLENS SIDE RD	DRAWN BY: TP	CHECKED BY: DS
			PROJECT NO: 221-01502-00	DATE: JANUARY 2023
CLIENT:	PUC TRANSMISSION LP		FIGURE NO: 23	



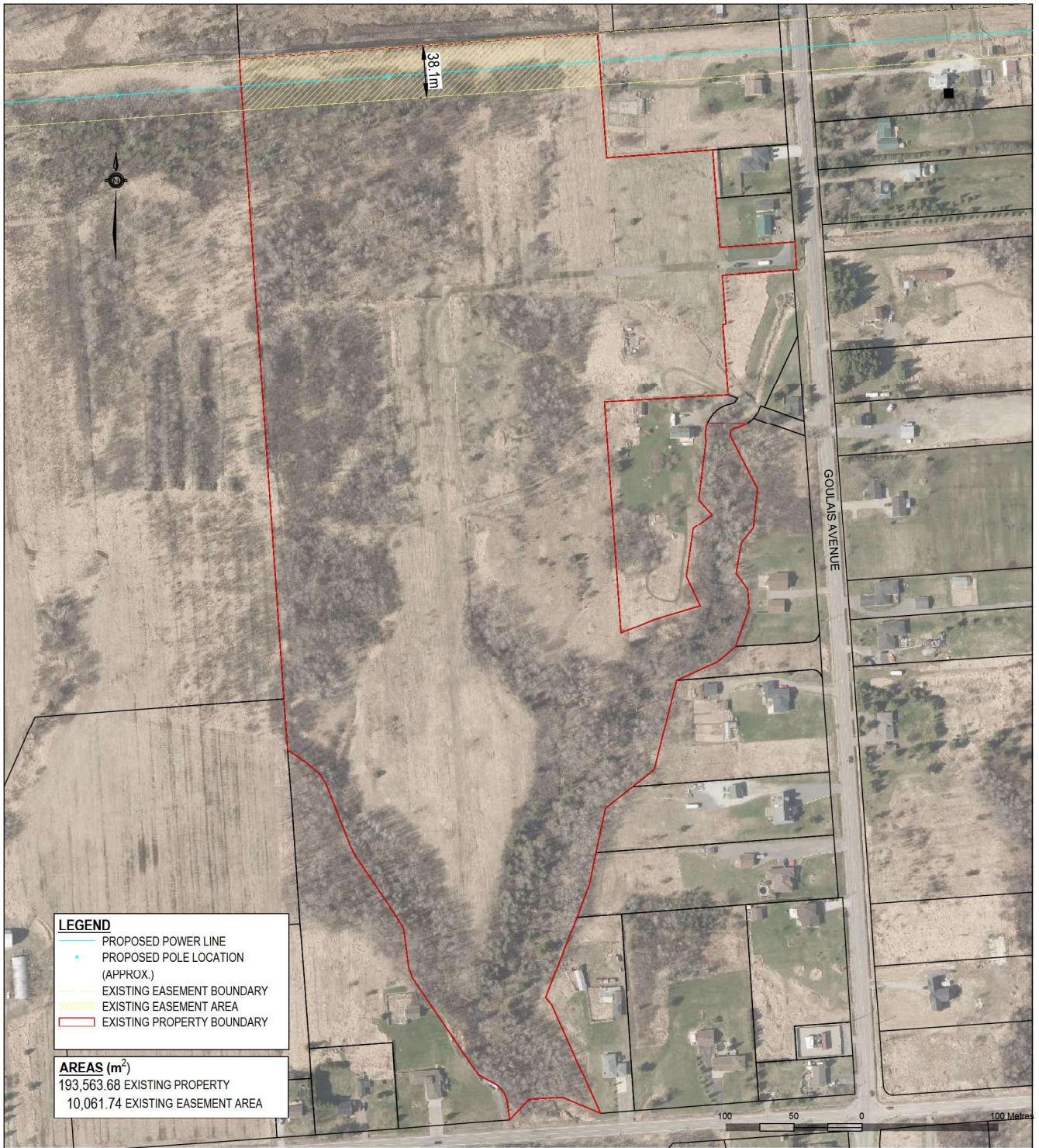
LEGEND	
	PROPOSED POWER LINE
	PROPOSED POLE LOCATION (APPROX.)
	EXISTING EASEMENT BOUNDARY
	EXISTING EASEMENT AREA
	EXISTING PROPERTY BOUNDARY

AREAS (m ²)	
330,517.66	EXISTING PROPERTY
15,425.63	EXISTING EASEMENT AREA




PROJECT:	SAULT STE. MARIE 230 kV TRANSMISSION PROJECT: CLASS EA SAULT STE MARIE, ONTARIO	
TITLE:	060052044010000	130 HOOD ST
CLIENT:	PUC TRANSMISSION LP	

SCALE:	1:5,000	
DRAWN BY:	TP	CHECKED BY: DS
PROJECT NO:	221-01502-00	
DATE:	JANUARY 2023	
FIGURE NO:	24	



LEGEND
 PROPOSED POWER LINE
 PROPOSED POLE LOCATION (APPROX.)
 EXISTING EASEMENT BOUNDARY
 EXISTING EASEMENT AREA
 EXISTING PROPERTY BOUNDARY

AREAS (m²)
 193,563.68 EXISTING PROPERTY
 10,061.74 EXISTING EASEMENT AREA

	PROJECT: <p style="text-align: center;">SAULT STE. MARIE 230 KV TRANSMISSION PROJECT: CLASS EA SAULT STE MARIE, ONTARIO</p>	SCALE: 1:4,000
	TITLE: <p style="text-align: center;">060052007010000 1007 GOULAIS AVE</p>	DRAWN BY: CHECKED BY: TP DS
	CLIENT: <p style="text-align: center;">PUC TRANSMISSION LP</p>	PROJECT NO: 221-01502-00 DATE: JANUARY 2023 FIGURE NO: 25



LEGEND	
	PROPOSED POWER LINE
	PROPOSED POLE LOCATION (APPROX.)
	EXISTING EASEMENT BOUNDARY
	EXISTING EASEMENT AREA
	EXISTING PROPERTY BOUNDARY

AREAS (m ²)	
12,174.98	EXISTING PROPERTY
5,023.70	EXISTING EASEMENT AREA



PROJECT: SAULT STE. MARIE 230 KV TRANSMISSION
PROJECT: CLASS EA
SAULT STE MARIE, ONTARIO

SCALE: 1:1,000
DRAWN BY: TP
CHECKED BY: DS

TITLE: 06005201000000 1041 GOULAIS AVE

PROJECT NO: 221-01502-00
DATE: JANUARY 2023

CLIENT: PUC TRANSMISSION LP

FIGURE NO: 26

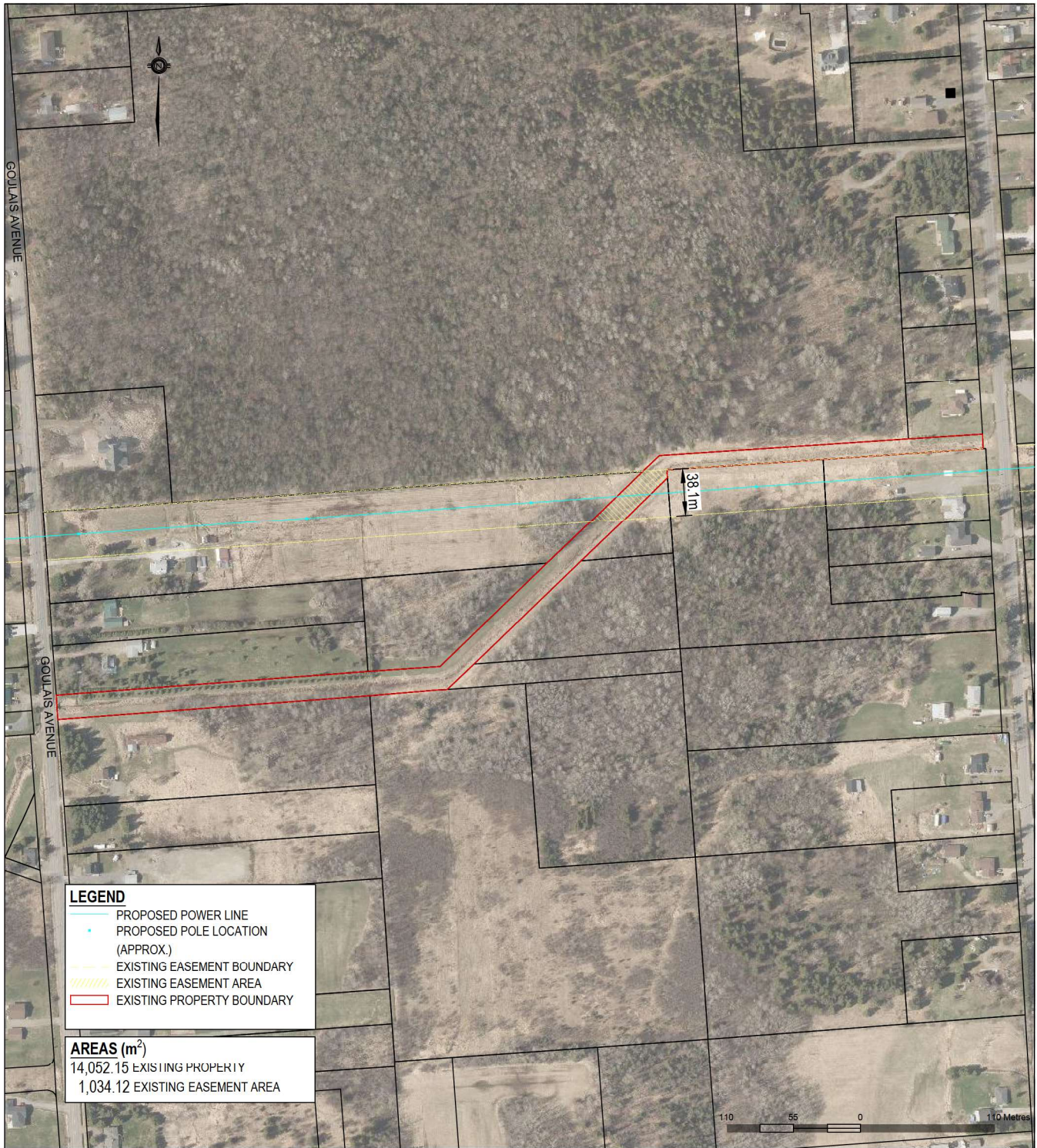


LEGEND	
	PROPOSED POWER LINE
	PROPOSED POLE LOCATION (APPROX.)
	EXISTING EASEMENT BOUNDARY
	EXISTING EASEMENT AREA
	EXISTING PROPERTY BOUNDARY

AREAS (m ²)	
33,001.35	EXISTING PROPERTY
18,728.13	EXISTING EASEMENT AREA



<p>PROJECT:</p> <p style="text-align: center;">SAULT STE. MARIE 230 KV TRANSMISSION PROJECT: CLASS EA SAULT STE MARIE, ONTARIO</p> <p>TITLE:</p> <p style="text-align: center;">05005004800000 1000 GOULAIS AVE</p> <p>CLIENT:</p> <p style="text-align: center;">PUC TRANSMISSION LP</p>	<p>SCALE:</p> <p>1:3,000</p>	
	<p>DRAWN BY:</p> <p>TP</p>	<p>CHECKED BY:</p> <p>DS</p>
	<p>PROJECT NO:</p> <p>221-01502-00</p>	
	<p>DATE:</p> <p>JANUARY 2023</p>	
<p>FIGURE NO:</p> <p>27</p>		

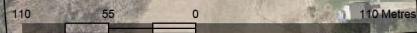


LEGEND

- PROPOSED POWER LINE
- PROPOSED POLE LOCATION (APPROX.)
- EXISTING EASEMENT BOUNDARY
- ▨ EXISTING EASEMENT AREA
- EXISTING PROPERTY BOUNDARY

AREAS (m²)

- 14,052.15 EXISTING PROPERTY
- 1,034.12 EXISTING EASEMENT AREA



	PROJECT:	SAULT STE. MARIE 230 KV TRANSMISSION PROJECT: CLASS EA SAULT STE MARIE, ONTARIO	SCALE: 1:4,500
	TITLE:	050050053020000 0 GOULAIS AVE	DRAWN BY: TP CHECKED BY: DS
	CLIENT:	PUC TRANSMISSION LP	PROJECT NO: 221-01502-00 DATE: JANUARY 2023 FIGURE NO: 28

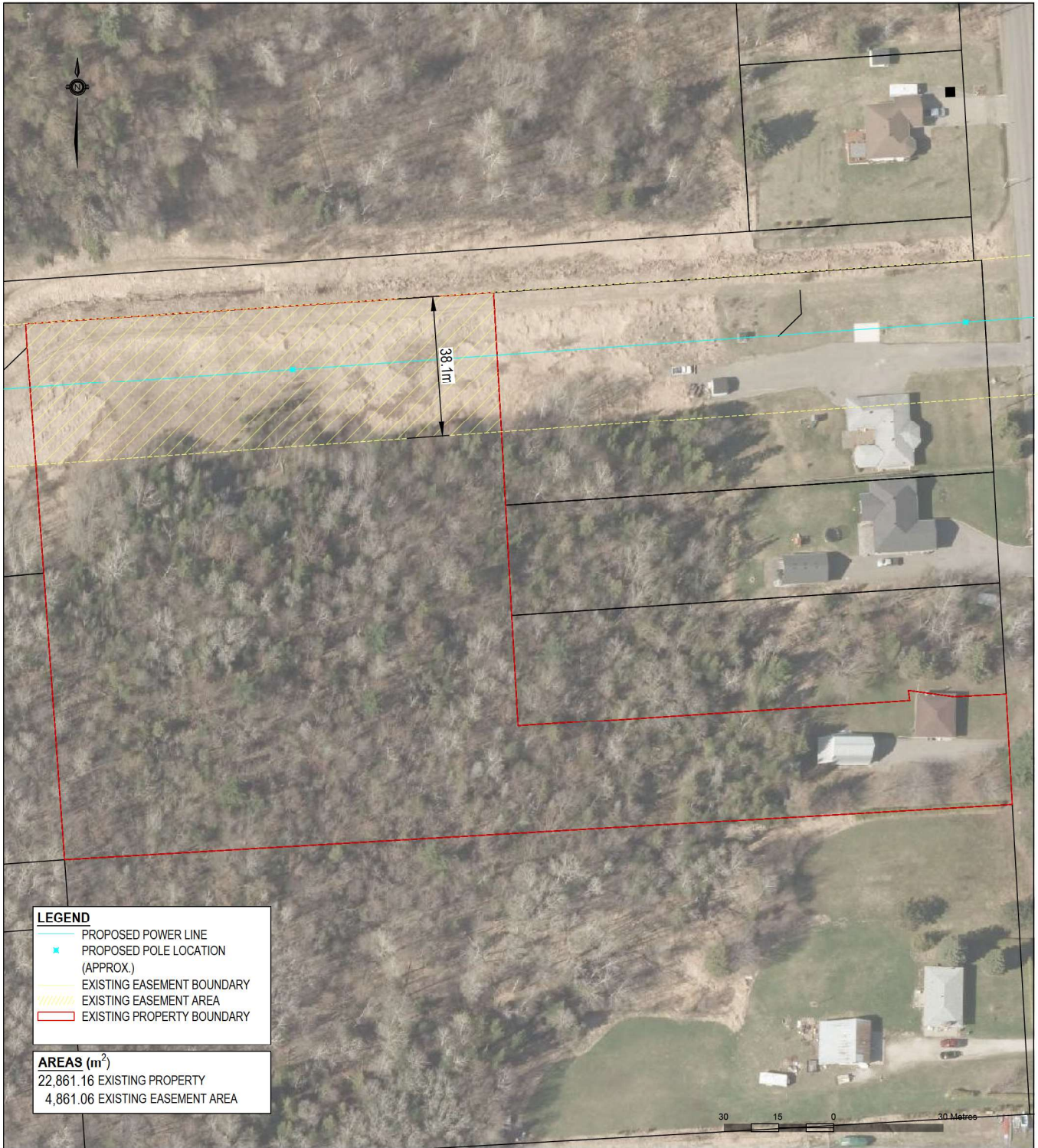


LEGEND	
	PROPOSED POWER LINE
	PROPOSED POLE LOCATION (APPROX.)
	EXISTING EASEMENT BOUNDARY
	EXISTING EASEMENT AREA
	EXISTING PROPERTY BOUNDARY

AREAS (m ²)	
2,367.02	EXISTING PROPERTY
578.57	EXISTING EASEMENT AREA

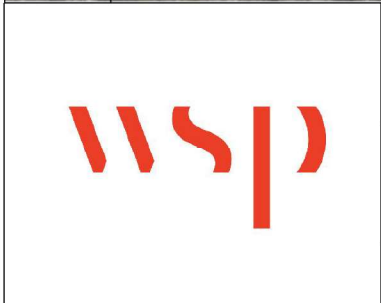


	PROJECT:	SAULT STE. MARIE 230 KV TRANSMISSION PROJECT: CLASS EA SAULT STE MARIE, ONTARIO	SCALE:	1:800
	TITLE:	050050048010000	DRAWN BY:	TP
	CLIENT:	PUC TRANSMISSION LP	CHECKED BY:	DS
			PROJECT NO:	221-01502-00
			DATE:	JANUARY 2023
			FIGURE NO:	29



LEGEND	
	PROPOSED POWER LINE PROPOSED POLE LOCATION (APPROX.)
	EXISTING EASEMENT BOUNDARY
	EXISTING EASEMENT AREA
	EXISTING PROPERTY BOUNDARY

AREAS (m ²)	
22,861.16	EXISTING PROPERTY
4,861.06	EXISTING EASEMENT AREA



PROJECT:	SAULT STE. MARIE 230 KV TRANSMISSION PROJECT: CLASS EA SAULT STE MARIE, ONTARIO	
TITLE:	050050036040000	341 MOSS RD
CLIENT:	PUC TRANSMISSION LP	

SCALE:	1:1,500	
DRAWN BY:	TP	CHECKED BY: DS
PROJECT NO:	221-01502-00	
DATE:	JANUARY 2023	
FIGURE NO:	30	



LEGEND	
	PROPOSED POWER LINE
	PROPOSED POLE LOCATION (APPROX.)
	EXISTING EASEMENT BOUNDARY
	EXISTING EASEMENT AREA
	EXISTING PROPERTY BOUNDARY

AREAS (m ²)	
7,811.72	EXISTING PROPERTY
5,039.03	EXISTING EASEMENT AREA

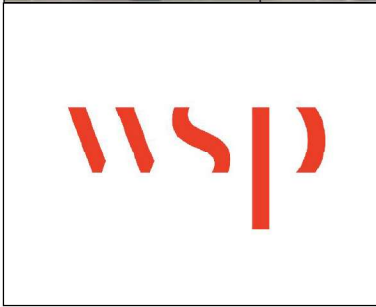


	PROJECT:	SAULT STE. MARIE 230 KV TRANSMISSION PROJECT: CLASS EA SAULT STE MARIE, ONTARIO		SCALE:	1:1,000
	TITLE:	050050037010000	347 MOSS RD	DRAWN BY:	TP
	CLIENT:	PUC TRANSMISSION LP		CHECKED BY:	DS
				PROJECT NO:	221-01502-00
				DATE:	JANUARY 2023
				FIGURE NO:	31



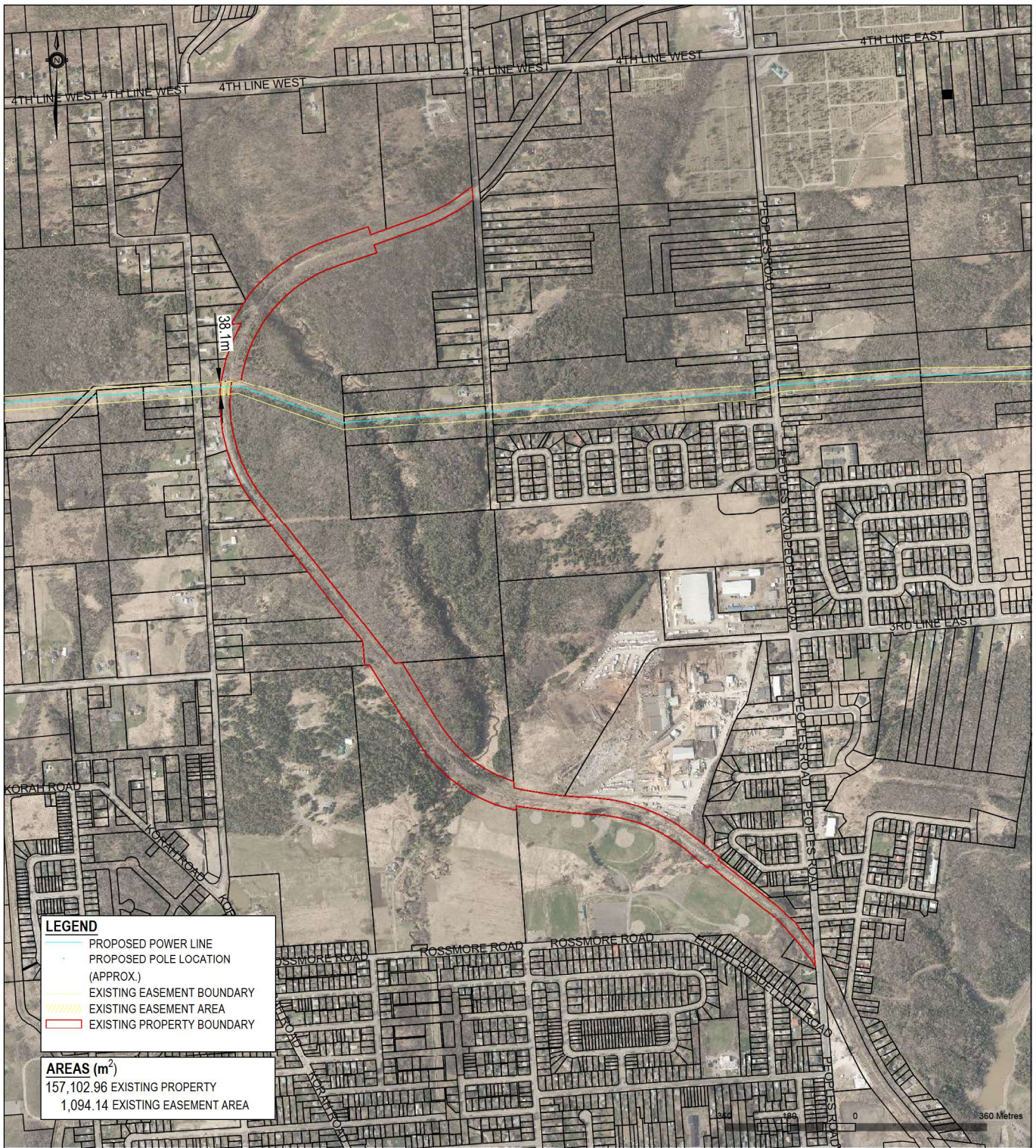
LEGEND	
	PROPOSED POWER LINE
	PROPOSED POLE LOCATION (APPROX.)
	EXISTING EASEMENT BOUNDARY
	EXISTING EASEMENT AREA
	EXISTING PROPERTY BOUNDARY

AREAS (m ²)	
4,762.82	EXISTING PROPERTY
1,987.71	EXISTING EASEMENT AREA



PROJECT:	SAULT STE. MARIE 230 KV TRANSMISSION PROJECT: CLASS EA SAULT STE MARIE, ONTARIO	
TITLE:	050050026000000	364 MOSS RD
CLIENT:	PUC TRANSMISSION LP	

SCALE:	1:800	
DRAWN BY:	TP	CHECKED BY: DS
PROJECT NO:	221-01502-00	
DATE:	JANUARY 2023	
FIGURE NO:	32	

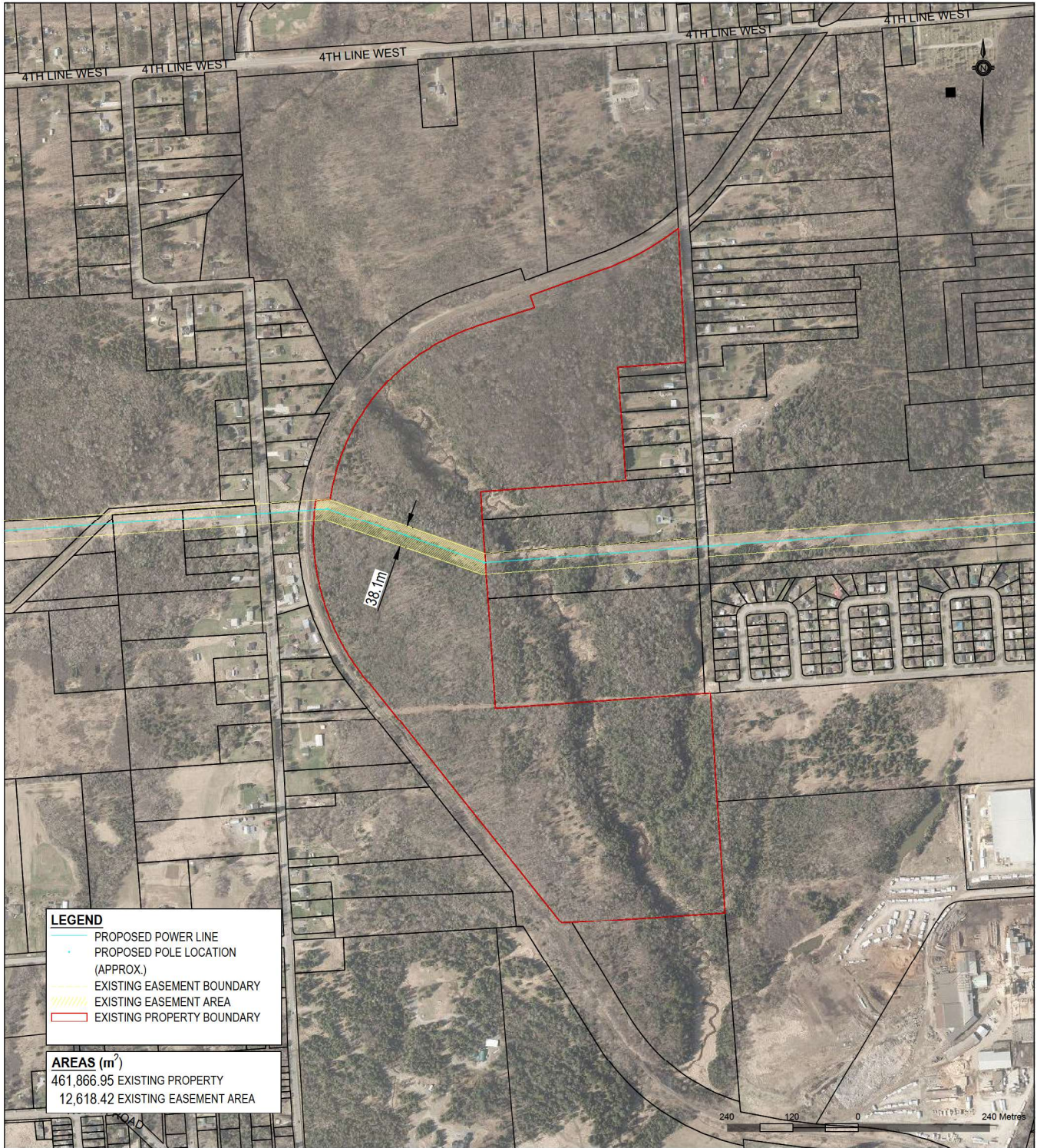


LEGEND	
	PROPOSED POWER LINE
	PROPOSED POLE LOCATION (APPROX.)
	EXISTING EASEMENT BOUNDARY
	EXISTING EASEMENT AREA
	EXISTING PROPERTY BOUNDARY

AREAS (m ²)	
157,102.96	EXISTING PROPERTY
1,094.14	EXISTING EASEMENT AREA



PROJECT:	SAULT STE. MARIE 230 kV TRANSMISSION PROJECT: CLASS EA SAULT STE MARIE, ONTARIO		SCALE:	1:15,000
	TITLE:	050080121050000	DRAWN BY:	CHECKED BY:
			TP	DS
CLIENT:	PUC TRANSMISSION LP		PROJECT NO:	221-01502-00
			DATE:	JANUARY 2023
			FIGURE NO:	33



LEGEND	
	PROPOSED POWER LINE
	PROPOSED POLE LOCATION (APPROX.)
	EXISTING EASEMENT BOUNDARY
	EXISTING EASEMENT AREA
	EXISTING PROPERTY BOUNDARY

AREAS (m ²)	
461,866.95	EXISTING PROPERTY
12,618.42	EXISTING EASEMENT AREA



PROJECT:	SAULT STE. MARIE 230 kV TRANSMISSION PROJECT: CLASS EA SAULT STE MARIE, ONTARIO
TITLE:	050050009010000
CLIENT:	PUC TRANSMISSION LP

SCALE:	1:10,000
DRAWN BY:	TP
CHECKED BY:	DS
PROJECT NO:	221-01502-00
DATE:	JANUARY 2023
FIGURE NO:	34

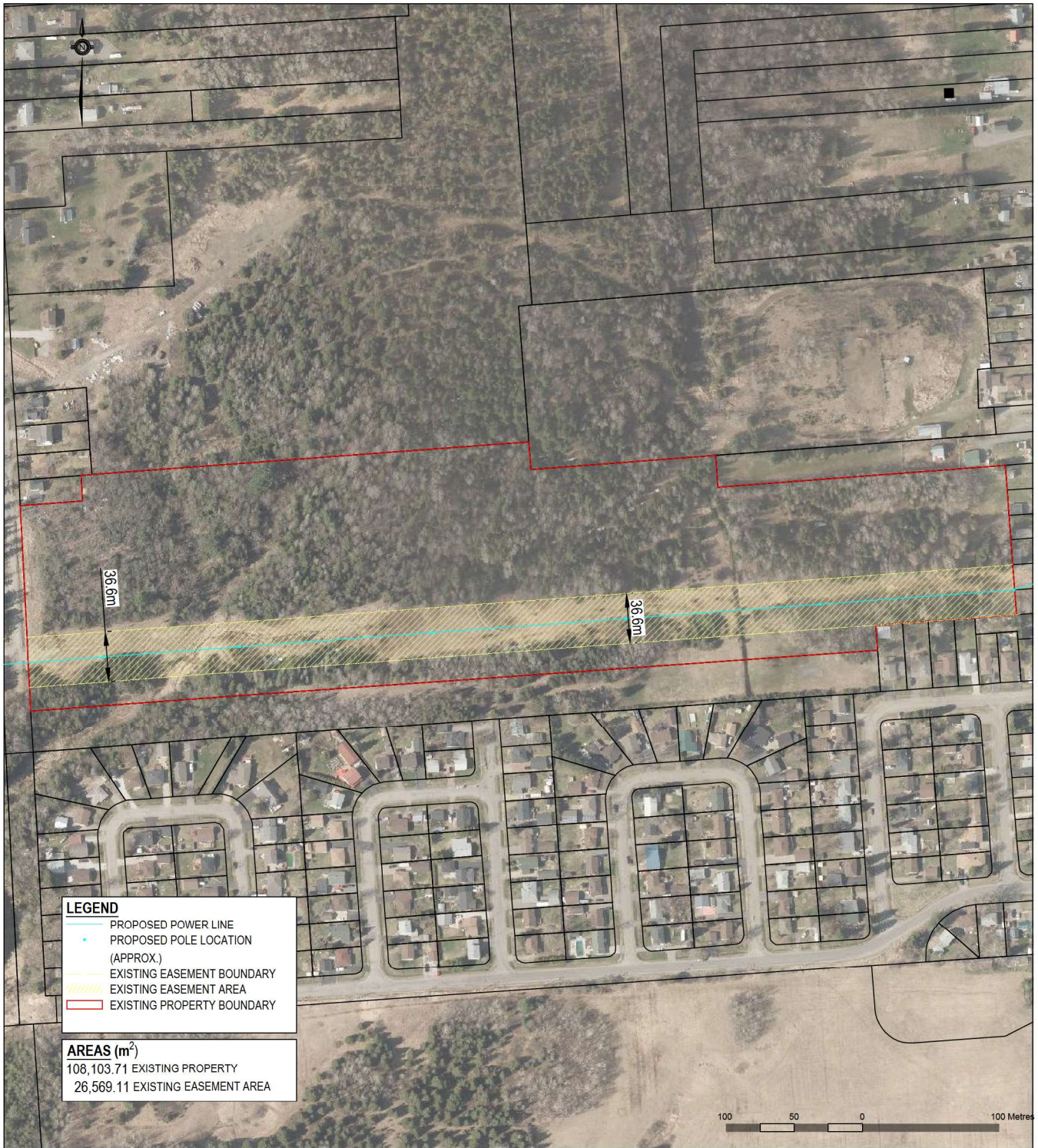


LEGEND	
	PROPOSED POWER LINE
	PROPOSED POLE LOCATION (APPROX.)
	EXISTING EASEMENT BOUNDARY
	EXISTING EASEMENT AREA
	EXISTING PROPERTY BOUNDARY

AREAS (m ²)	
32,405.76	EXISTING PROPERTY
14,819.33	EXISTING EASEMENT AREA



PROJECT: SAULT STE. MARIE 230 KV TRANSMISSION PROJECT: CLASS EA SAULT STE MARIE, ONTARIO	SCALE: 1:2,500	
	DRAWN BY: TP	CHECKED BY: DS
	PROJECT NO: 221-01502-00	
TITLE: 050050003100000 203 BRULE RD	DATE: JANUARY 2023	
CLIENT: PUC TRANSMISSION LP	FIGURE NO: 35	



LEGEND	
	PROPOSED POWER LINE
	PROPOSED POLE LOCATION (APPROX.)
	EXISTING EASEMENT BOUNDARY
	EXISTING EASEMENT AREA
	EXISTING PROPERTY BOUNDARY

AREAS (m ²)	
108,103.71	EXISTING PROPERTY
26,569.11	EXISTING EASEMENT AREA



<p>PROJECT:</p> <p style="text-align: center;">SAULT STE. MARIE 230 kV TRANSMISSION PROJECT: CLASS EA SAULT STE MARIE, ONTARIO</p> <p>TITLE:</p> <p style="text-align: center;">050047093000000 1349 PEOPLES RD</p> <p>CLIENT:</p> <p style="text-align: center;">PUC TRANSMISSION LP</p>	<p>SCALE:</p> <p style="text-align: center;">1:4,000</p> <p>DRAWN BY:</p> <p style="text-align: center;">TP</p>	<p>CHECKED BY:</p> <p style="text-align: center;">DS</p>
	<p>PROJECT NO:</p> <p style="text-align: center;">221-01502-00</p> <p>DATE:</p> <p style="text-align: center;">JANUARY 2023</p>	
	<p>FIGURE NO:</p> <p style="text-align: center;">36</p>	

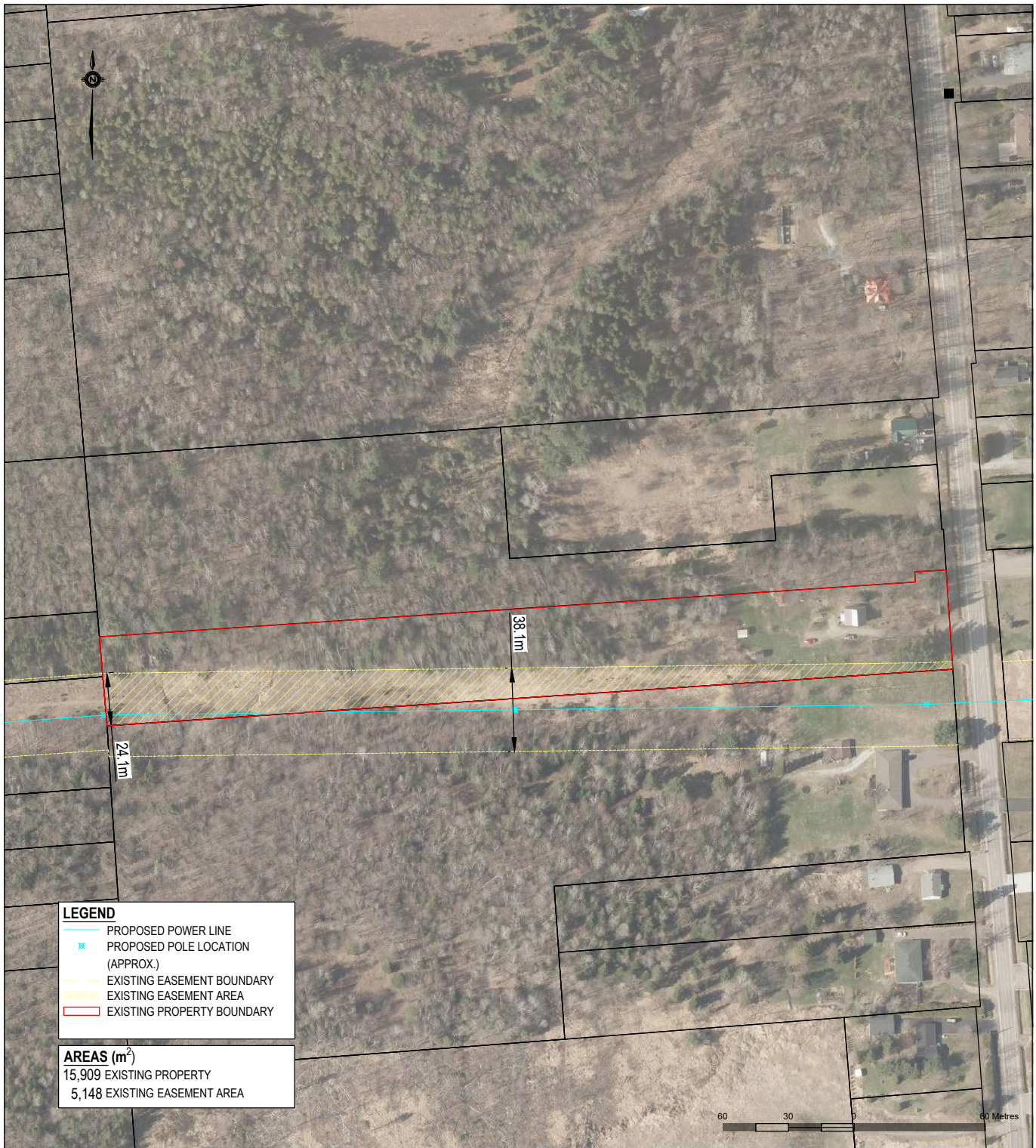


LEGEND	
	PROPOSED POWER LINE
	PROPOSED POLE LOCATION (APPROX.)
	EXISTING EASEMENT BOUNDARY
	EXISTING EASEMENT AREA
	EXISTING PROPERTY BOUNDARY

AREAS (m ²)	
19,907.16	EXISTING PROPERTY
13,733.01	EXISTING EASEMENT AREA



PROJECT: SAULT STE. MARIE 230 KV TRANSMISSION PROJECT: CLASS EA SAULT STE MARIE, ONTARIO	SCALE: 1:2,500	
	DRAWN BY: TP	CHECKED BY: DS
	PROJECT NO: 221-01502-00	
	DATE: JANUARY 2023	
TITLE: 050070013000000 1358 PEOPLES RD	FIGURE NO: 37	
CLIENT: PUC TRANSMISSION LP		



LEGEND	
	PROPOSED POWER LINE
	PROPOSED POLE LOCATION (APPROX.)
	EXISTING EASEMENT BOUNDARY
	EXISTING EASEMENT AREA
	EXISTING PROPERTY BOUNDARY

AREAS (m ²)	
15,909	EXISTING PROPERTY
5,148	EXISTING EASEMENT AREA



PROJECT:	SAULT STE. MARIE 230 KV TRANSMISSION PROJECT: CLASS EA SAULT STE MARIE, ONTARIO		SCALE: 1:2,500
	TITLE:	050070054000000 175 OLD GOULAIS BAY RD	DRAWN BY: JB CHECKED BY: DS
	CLIENT:	PUC TRANSMISSION LP	PROJECT NO: 221-01502-00 DATE: NOVEMBER 2023 FIGURE NO: 38B



LEGEND	
	PROPOSED POWER LINE
	PROPOSED POLE LOCATION (APPROX.)
	EXISTING EASEMENT BOUNDARY
	EXISTING EASEMENT AREA
	EXISTING PROPERTY BOUNDARY

AREAS (m ²)	
48,286.93	EXISTING PROPERTY
9,998.34	EXISTING EASEMENT AREA



PROJECT: SAULT STE. MARIE 230 kV TRANSMISSION PROJECT: CLASS EA SAULT STE MARIE, ONTARIO	SCALE:	1:2,500
	DRAWN BY:	CHECKED BY:
	TP	DS
	PROJECT NO: 221-01502-00	
TITLE: 050070054010000 161 OLD GOULAIS BAY RD	DATE: JANUARY 2023	
	CLIENT: PUC TRANSMISSION LP	
		FIGURE NO: 39

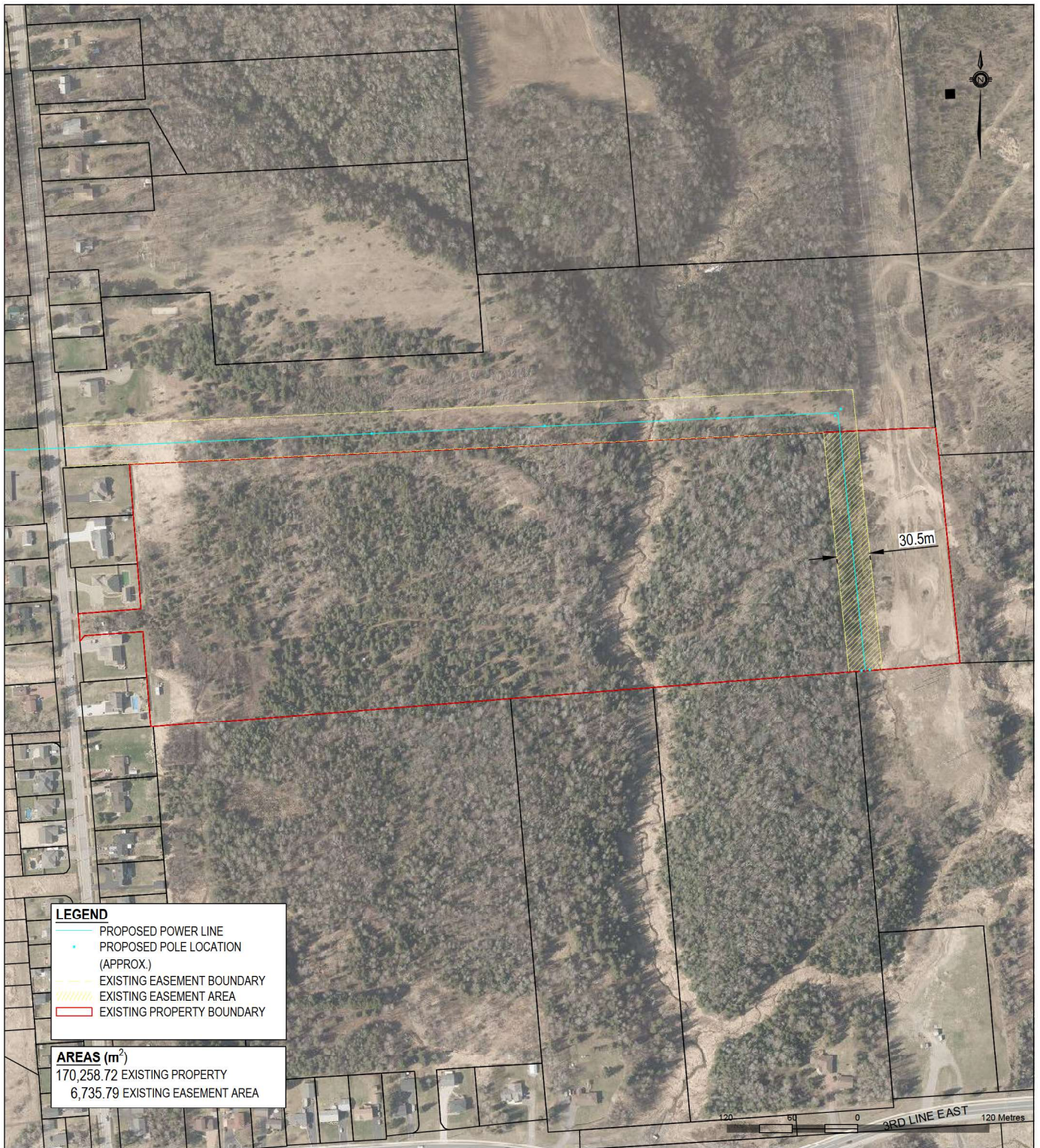


LEGEND	
	PROPOSED POWER LINE
	PROPOSED POLE LOCATION (APPROX.)
	EXISTING EASEMENT BOUNDARY
	EXISTING EASEMENT AREA
	EXISTING PROPERTY BOUNDARY

AREAS (m ²)	
105,536.42	EXISTING PROPERTY
27,843.16	EXISTING EASEMENT AREA



	PROJECT: SAULT STE. MARIE 230 kV TRANSMISSION PROJECT: CLASS EA SAULT STE MARIE, ONTARIO	SCALE: 1:5,000
	TITLE: 030085087070000 184 OLD GOULAIS BAY RD	DRAWN BY: TP CHECKED BY: DS
	CLIENT: PUC TRANSMISSION LP	PROJECT NO: 221-01502-00
		DATE: JANUARY 2023
		FIGURE NO: 40



LEGEND	
	PROPOSED POWER LINE
	PROPOSED POLE LOCATION (APPROX.)
	EXISTING EASEMENT BOUNDARY
	EXISTING EASEMENT AREA
	EXISTING PROPERTY BOUNDARY

AREAS (m ²)	
170,258.72	EXISTING PROPERTY
6,735.79	EXISTING EASEMENT AREA



PROJECT:	SAULT STE. MARIE 230 kV TRANSMISSION PROJECT: CLASS EA SAULT STE MARIE, ONTARIO	
TITLE:	030085087000000 104 OLD GOULAIS BAY RD	
CLIENT:	PUC TRANSMISSION LP	

SCALE:	1:5,000	
DRAWN BY:	TP	CHECKED BY: DS
PROJECT NO:	221-01502-00	
DATE:	JANUARY 2023	
FIGURE NO:	41	

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LETTER OF SUPPORT; PUC DISTRIBUTION

December 18, 2023

DELIVERED BY EMAIL
regulatory@ssmpuc.com

Dominic Parrella
PUC (Transmission) LP
500 Second Line East PO Box 9000
Sault Ste. Marie, ON P6A 6P2

Dear Mr. Parrella:

RE: Proposed PUC (Transmission) LP (“PUC Transmission”) Project

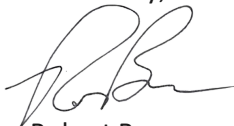
On behalf of PUC Distribution Inc. (“PUC Distribution”) I am writing to express our support for the PUC Transmission project to construct a new 230 kV transmission line, transformer station and associated facilities (“Project”).

PUC Distribution serves approximately 33,500 mostly residential and commercial electricity customers within the boundaries of the City of Sault Ste. Marie, the Batchewana First Nation (Rankin Reserve), Prince Township and parts of Dennis Township. PUC Distribution also owns 115 kV transmission assets, which are managed, operated, and maintained by PUC Services Inc. All the assets of PUC Distribution are managed, operated, and maintained by PUC Services Inc.

PUC Distribution supports the Project as it will facilitate infrastructure renewal in its service territory and provide other system benefits. For example, one of PUC Distribution’s 115 kV transformer stations, Tarentorus TS, is near the end of its useful life. A large proportion of Sault Ste. Marie load is currently served at 115 kV by Tarentorus TS through the Hydro One Third Line Transformer Station. Instead of renewing the Tarentorus TS, it may be feasible to transfer the load to the new 230 kV system. This could eliminate Tarentorus TS by replacing it with a new supply from the PUC Transmission at the new station. Moving the Tarentorus TS load to the new station would also avoid the need to add a third autotransformer at the Hydro One Third Line Transformer Station.

Furthermore, as local demand continues to increase and electrification is expected to grow, there may be additional demands on the distribution system requiring access to electricity supplied by the Project. Accordingly, PUC Distribution supports the Project to help meet local electricity needs in the City of Sault Ste. Marie.

Yours truly,



Robert Brewer
PUC Distribution Inc.

PUC DISTRIBUTION INC.

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LETTER OF SUPPORT; SSMRCA



December 22, 2023

DELIVERED BY EMAIL
regulatory@ssmpuc.com

Dominic Parrella
PUC (Transmission) LP
500 Second Line East PO Box 9000
Sault Ste. Marie, ON P6A 6P2

Dear Dominic Parrella:

Re: Proposed PUC (Transmission) LP (“PUC Transmission”) Project

On behalf of the Sault Ste. Marie Region Conservation Authority (“SSMRCA”), I am writing to indicate that PUC Transmission has, to date, complied with the requirements of the relevant legislation, policies, procedures and guidelines of the SSMRCA for the proposal to construct a new 230 kV transmission line, transformer station and associated facilities near Sault Ste. Marie, Ontario (“Project”).

The SSMRCA has been delegated the responsibility for natural hazard management by the Ministry of Natural Resources and Forestry. As such, the SSMRCA regulates development in areas where the control of flooding, erosion, dynamic beaches, pollution, or the conservation of land may be affected.

The SSMRCA watershed is located in northern Ontario. The jurisdiction of the SSMRCA is approximately 522 square kilometres in area which includes the watersheds of the Big Carp River, Little Carp River, Leigh Bay Creek, Bennett Creek, West Davignon Creek, Central Creek, East Davignon Creek, Fort Creek, Clark Creek and the Root River. Conservation Authorities regulate development activities in or adjacent to sensitive environmental areas such as wetlands, watercourses, and the shorelines of the Great Lakes, to protect people and property from natural hazards such as flooding and erosion, as well as to build resilient natural systems.

While the SSMRCA continues negotiations with the PUC for easements where the Project crosses over SSMRCA owned properties, based on a preliminary assessment of the materials provided by PUC Transmission for the Project, the SSMRCA does not currently see any impediments to the issuance of permits and/or easements for the Project.

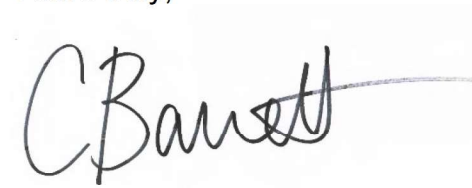
SSMRCA notes that this is only a preliminary assessment and certain aspects of the application remain outstanding. SSMRCA reserves the right to confirm, vary, suspend or revoke this initial assessment. SSMRCA will continue to follow its normal processes for



assessing the Project and may require PUC Transmission to furnish additional information to support its application to the SSMRCA.

The SSMRCA appreciates this is an important project for the region and commits to working diligently with PUC Transmission given the substantial environmental benefits of electrifying the Algoma Steel plant.

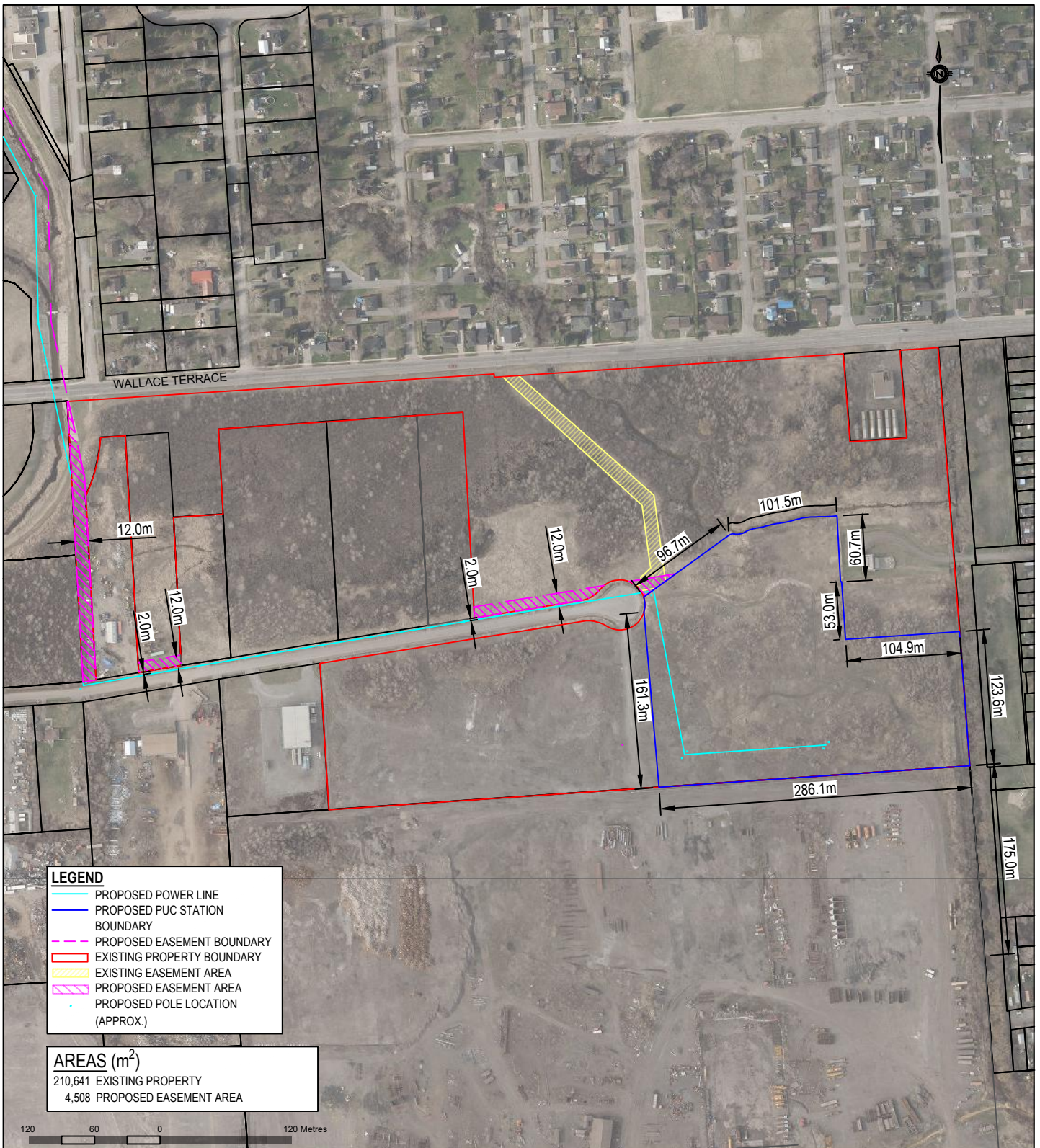
Yours truly,


A handwritten signature in black ink, appearing to read "C Barrett", with a long horizontal flourish extending to the right.

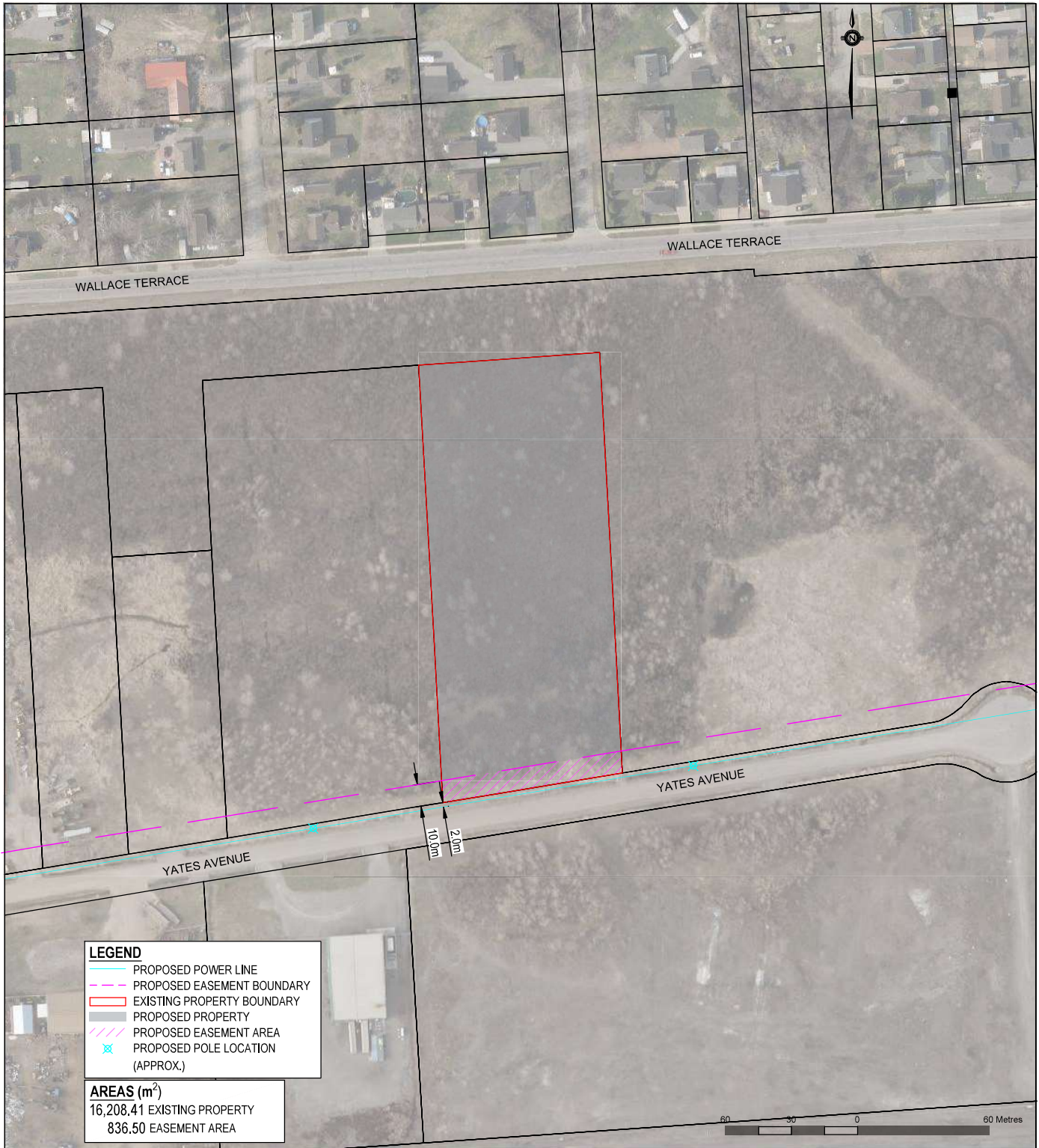
Corrina Barrett
General Manager / Secretary-Treasurer
Sault Ste. Marie Region Conservation Authority


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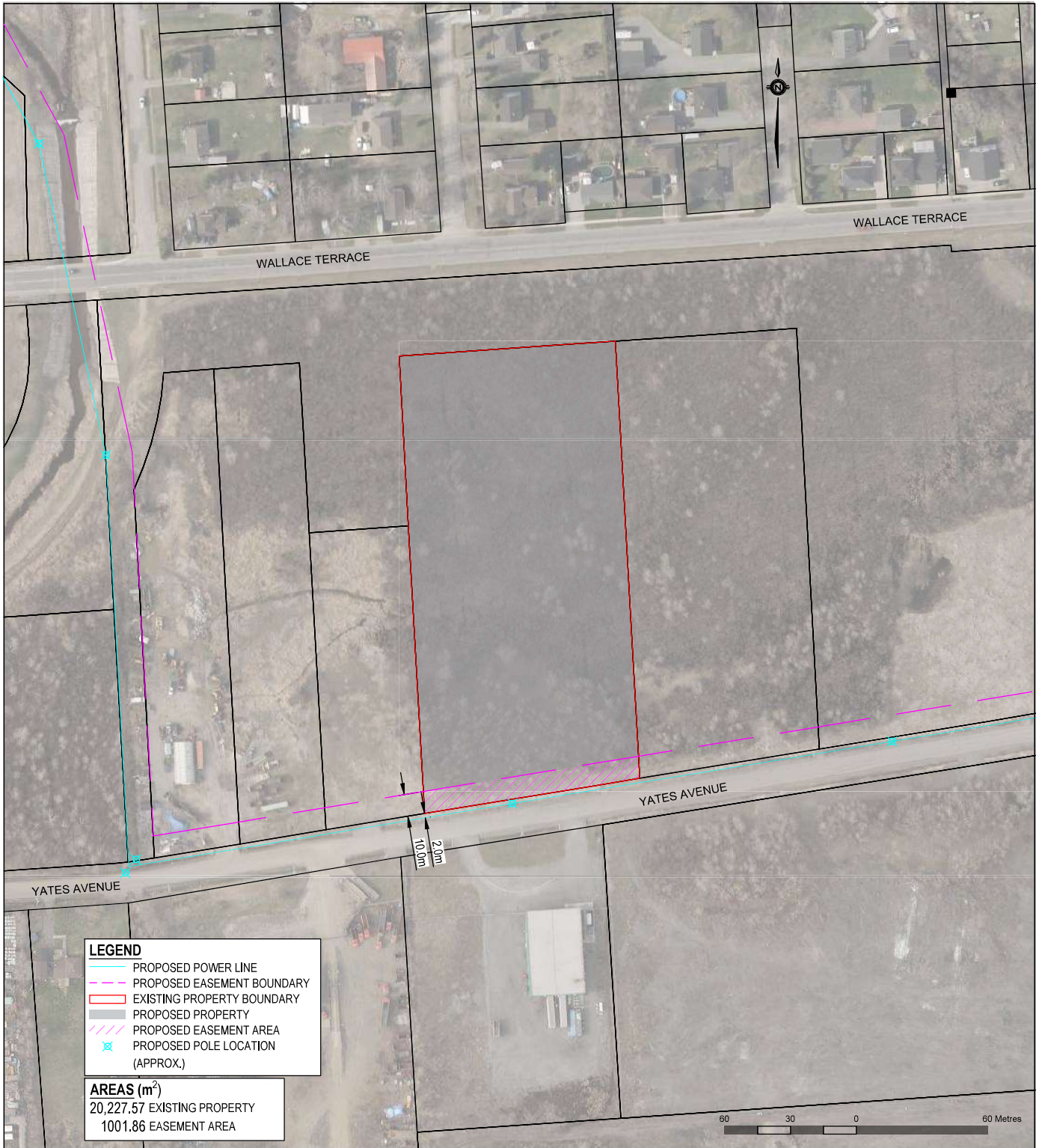
NEW EASEMENTS PARCEL MAPS



	PROJECT:	SAULT STE. MARIE 230 kV TRANSMISSION PROJECT: CLASS EA SAULT STE MARIE, ONTARIO		SCALE:	1:5,000
	TITLE:	060001003000000	0 YATES AVE	DRAWN BY:	CHECKED BY:
	CLIENT:	PUC TRANSMISSION LP		PROJECT NO:	DS
				DATE: NOVEMBER 2023	FIGURE NO:



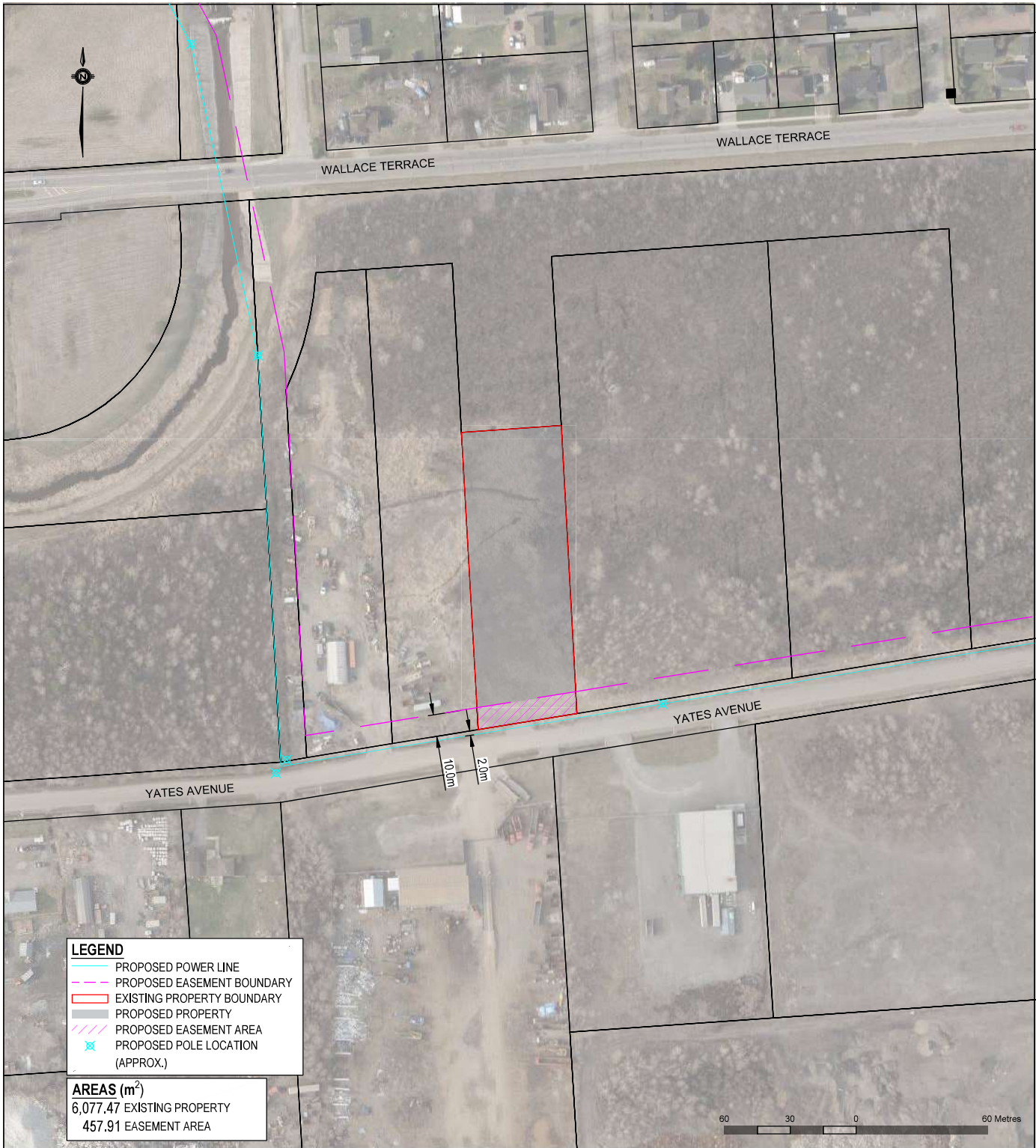
	PROJECT:		SAULT STE. MARIE 230 kV TRANSMISSION PROJECT: CLASS EA SAULT STE MARIE, ONTARIO		SCALE:	1:2,500
	TITLE:		060001003070000	162 YATES AVE	DRAWN BY:	CHECKED BY:
	CLIENT:		PUC TRANSMISSION LP		TP	DS
					PROJECT NO:	221-01502-00
				DATE:	NOVEMBER 2022	
				FIGURE NO:	5	



LEGEND	
	PROPOSED POWER LINE
	PROPOSED EASEMENT BOUNDARY
	EXISTING PROPERTY BOUNDARY
	PROPOSED PROPERTY
	PROPOSED EASEMENT AREA
	PROPOSED POLE LOCATION (APPROX.)

AREAS (m ²)	
20,227.57	EXISTING PROPERTY
1001.86	EASEMENT AREA

	PROJECT: SAULT STE. MARIE 230 kV TRANSMISSION PROJECT: CLASS EA SAULT STE MARIE, ONTARIO	SCALE: 1:2,500
	TITLE: 060001003020000 150 YATES AVE	DRAWN BY: TP CHECKED BY: DS
	CLIENT: PUC TRANSMISSION LP	PROJECT NO: 221-01502-00 DATE: NOVEMBER 2022 FIGURE NO: 6

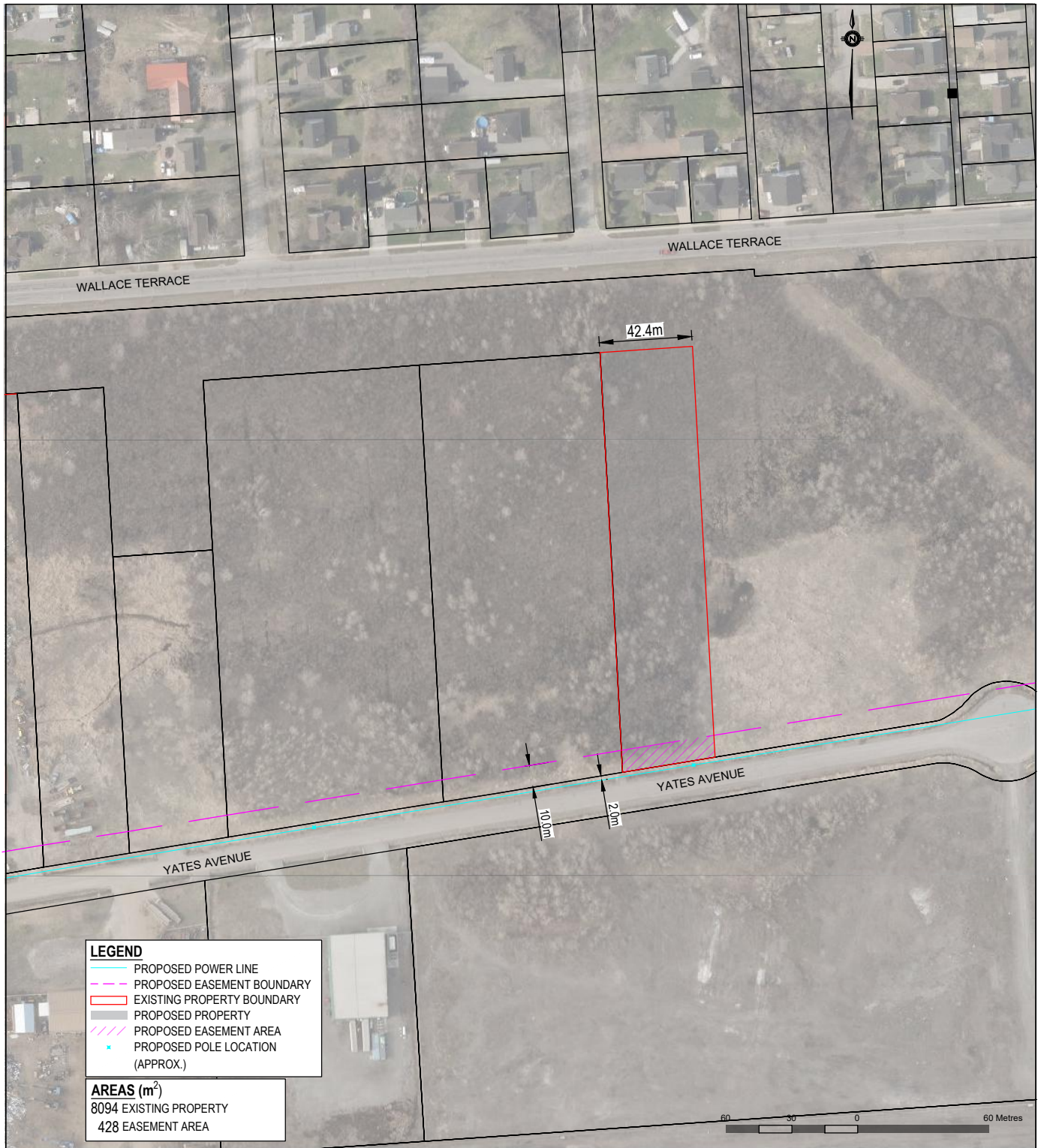


LEGEND	
	PROPOSED POWER LINE
	PROPOSED EASEMENT BOUNDARY
	EXISTING PROPERTY BOUNDARY
	PROPOSED PROPERTY
	PROPOSED EASEMENT AREA
	PROPOSED POLE LOCATION (APPROX.)

AREAS (m ²)	
6,077.47	EXISTING PROPERTY
457.91	EASEMENT AREA



<p>PROJECT:</p> <p style="text-align: center;">SAULT STE. MARIE 230 KV TRANSMISSION PROJECT: CLASS EA SAULT STE MARIE, ONTARIO</p> <p>TITLE:</p> <p style="text-align: center;">060001003040000 YATES AVE</p> <p>CLIENT:</p> <p style="text-align: center;">PUC TRANSMISSION LP</p>	<p>SCALE:</p> <p>1:2,500</p>				
	<table border="1"> <tr> <td>DRAWN BY:</td> <td>CHECKED BY:</td> </tr> <tr> <td>TP</td> <td>DS</td> </tr> </table>	DRAWN BY:	CHECKED BY:	TP	DS
	DRAWN BY:	CHECKED BY:			
TP	DS				
<p>PROJECT NO:</p> <p>221-01502-00</p> <p>DATE:</p> <p>NOVEMBER 2022</p> <p>FIGURE NO:</p> <p style="text-align: center;">7</p>					

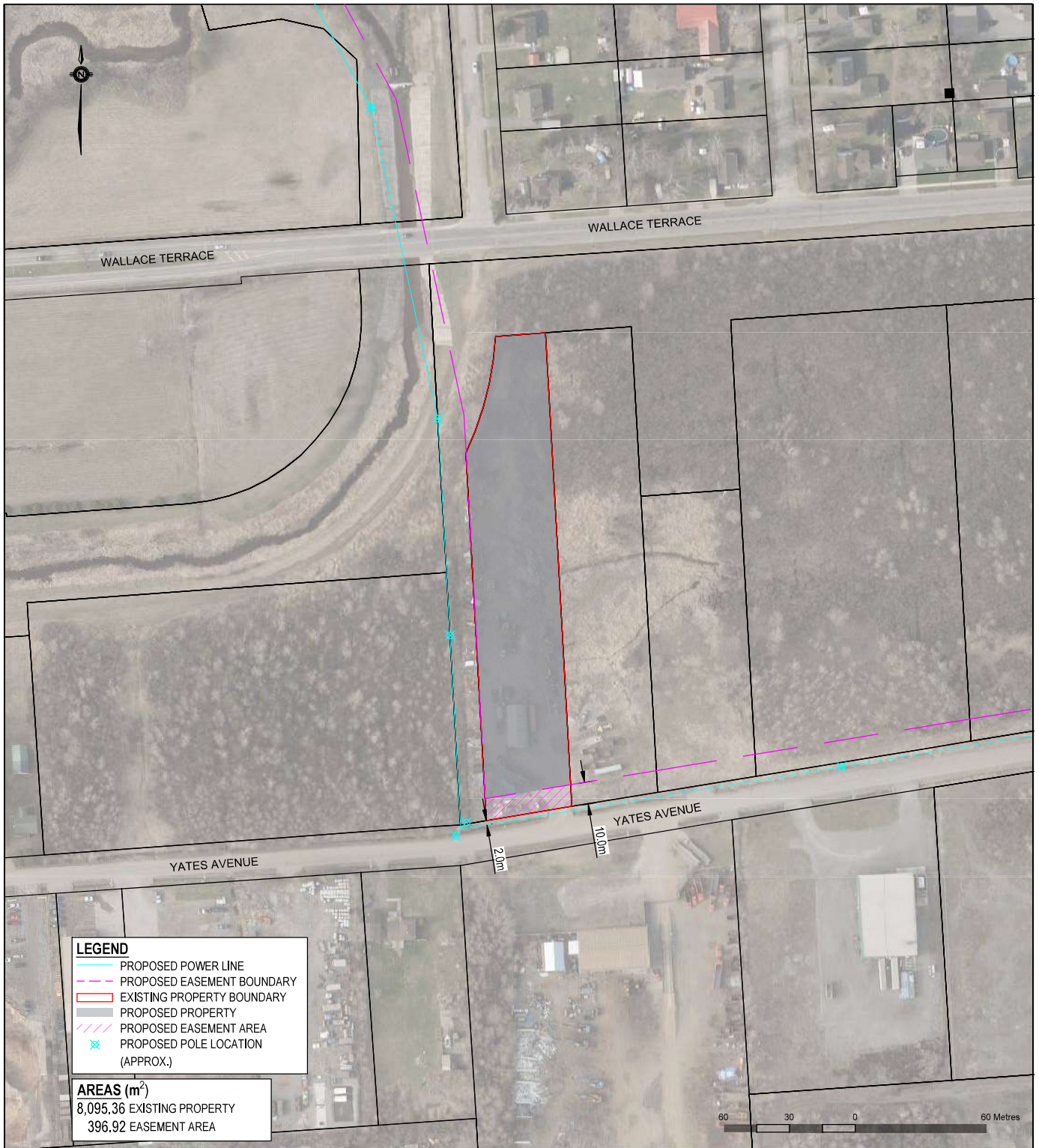


LEGEND	
	PROPOSED POWER LINE
	PROPOSED EASEMENT BOUNDARY
	EXISTING PROPERTY BOUNDARY
	PROPOSED PROPERTY
	PROPOSED EASEMENT AREA
	PROPOSED POLE LOCATION (APPROX.)

AREAS (m ²)
8094 EXISTING PROPERTY
428 EASEMENT AREA

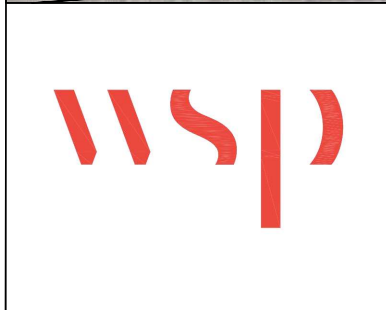


PROJECT:	SAULT STE. MARIE 230 KV TRANSMISSION PROJECT: CLASS EA SAULT STE MARIE, ONTARIO	SCALE: 1:2,500
	TITLE:	DRAWN BY: JB CHECKED BY: DS
	CLIENT:	PROJECT NO: 221-01502-00 DATE: JUNE 2023 FIGURE NO: 8



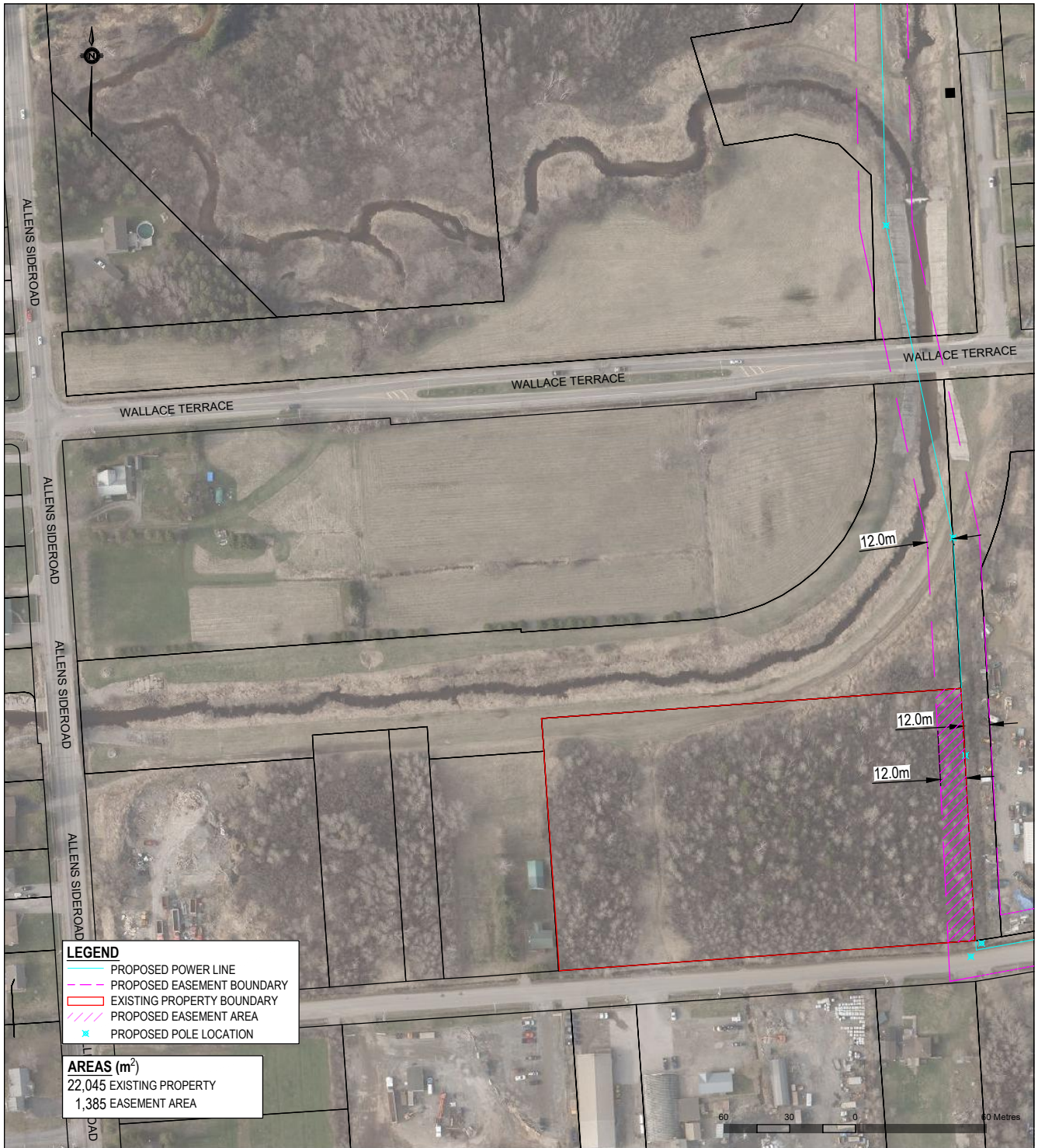
LEGEND	
	PROPOSED POWER LINE
	PROPOSED EASEMENT BOUNDARY
	EXISTING PROPERTY BOUNDARY
	PROPOSED PROPERTY
	PROPOSED EASEMENT AREA
	PROPOSED POLE LOCATION (APPROX.)

AREAS (m ²)	
8,095.36	EXISTING PROPERTY
396.92	EASEMENT AREA



PROJECT:	SAULT STE. MARIE 230 kV TRANSMISSION PROJECT: CLASS EA SAULT STE MARIE, ONTARIO	
TITLE:	06000100310000	120 YATES AVE
CLIENT:	PUC TRANSMISSION LP	


SCALE:	1:2,500	
DRAWN BY:	TP	CHECKED BY: DS
PROJECT NO:	221-01502-00	
DATE:	NOVEMBER 2022	
FIGURE NO:	9	

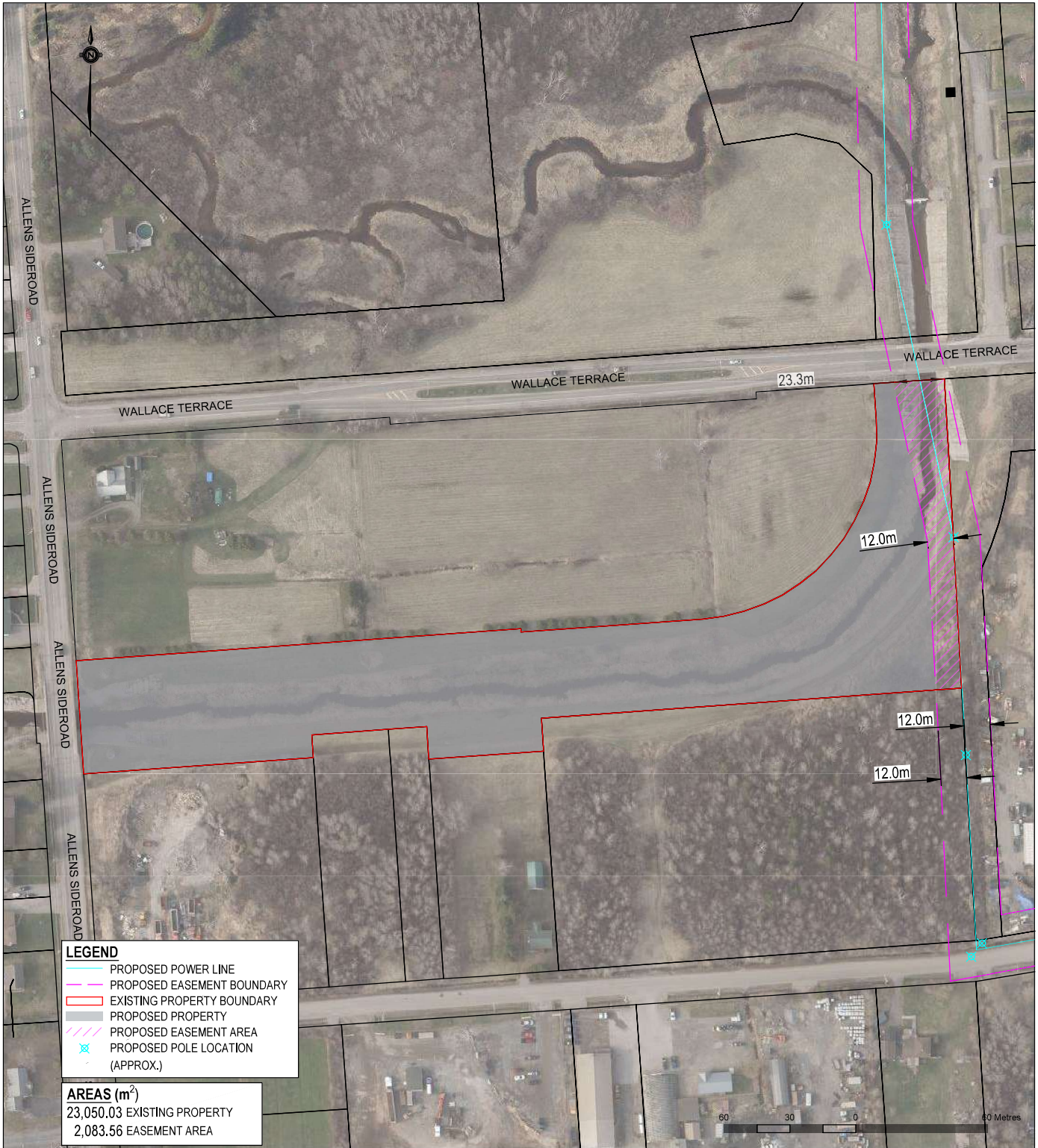



LEGEND
 — PROPOSED POWER LINE
 - - - PROPOSED EASEMENT BOUNDARY
 — EXISTING PROPERTY BOUNDARY
 ▨ PROPOSED EASEMENT AREA
 x PROPOSED POLE LOCATION

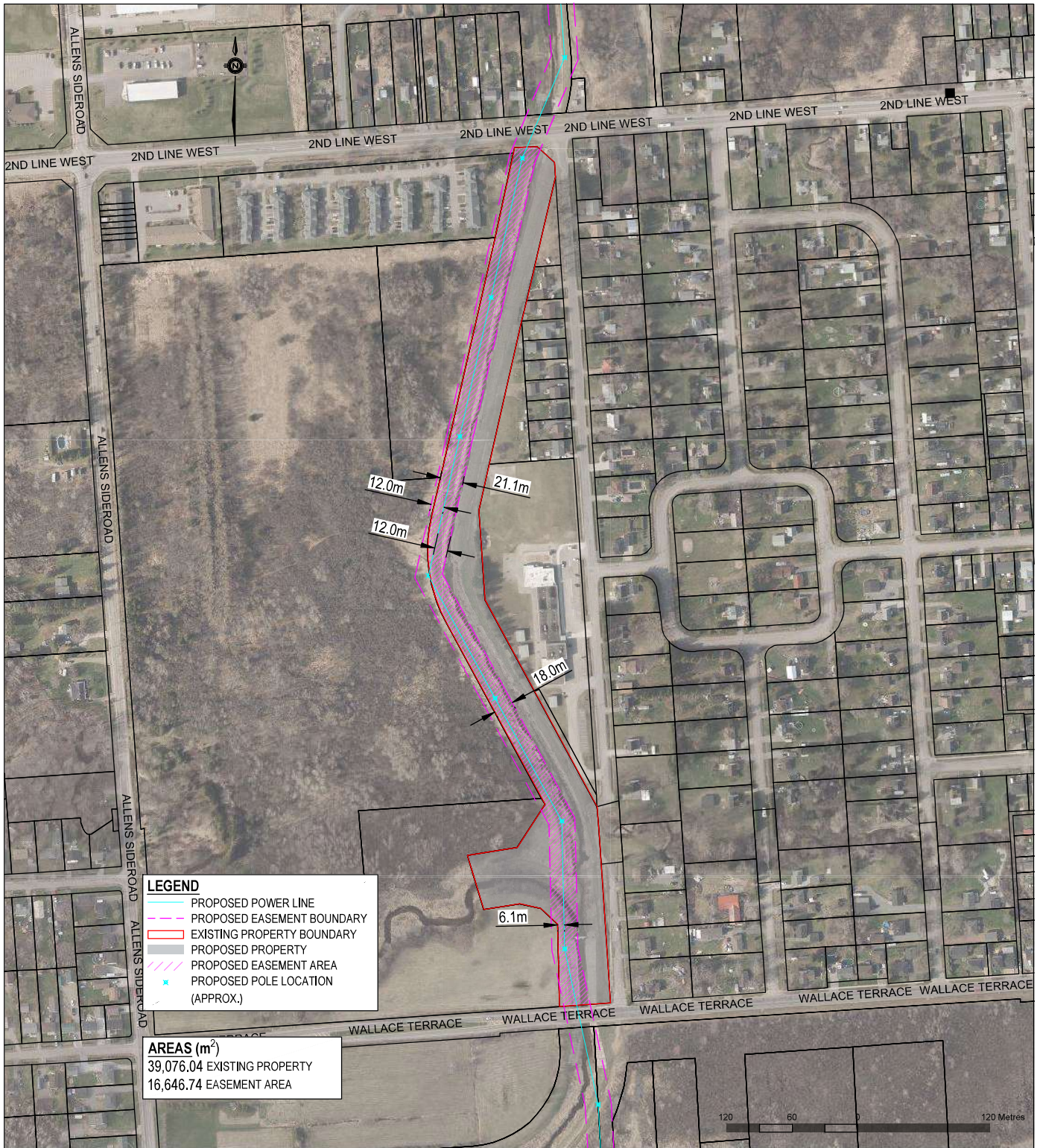
AREAS (m²)
 22,045 EXISTING PROPERTY
 1,385 EASEMENT AREA



	PROJECT:		SAULT STE. MARIE 230 kV TRANSMISSION PROJECT: CLASS EA SAULT STE MARIE, ONTARIO		SCALE:	1:2,500		
	TITLE:		060035226010000 56 YATES AVE		DRAWN BY:	JB	CHECKED BY:	DS
	CLIENT:		PUC TRANSMISSION LP		PROJECT NO:	221-01502-00		
					DATE:	JULY 2023		
					FIGURE NO:	10A		



	PROJECT: SAULT STE. MARIE 230 kV TRANSMISSION PROJECT: CLASS EA SAULT STE MARIE, ONTARIO	SCALE: 1:2,500
	TITLE: 060035226010000 166 ALLENS SIDE RD	DRAWN BY: CHECKED BY: TP DS
	CLIENT: PUC TRANSMISSION LP	PROJECT NO: 221-01502-00 DATE: NOVEMBER 2022 FIGURE NO: 10



LEGEND

- PROPOSED POWER LINE
- PROPOSED EASEMENT BOUNDARY
- EXISTING PROPERTY BOUNDARY
- PROPOSED PROPERTY
- / / PROPOSED EASEMENT AREA
- x PROPOSED POLE LOCATION (APPROX.)

AREAS (m²)
 39,076.04 EXISTING PROPERTY
 16,646.74 EASEMENT AREA

	PROJECT:	SAULT STE. MARIE 230 kV TRANSMISSION PROJECT: CLASS EA SAULT STE MARIE, ONTARIO	SCALE:	1:5,000
	TITLE:	060033074000000 141 BROOKFIELD AVE	DRAWN BY:	CHECKED BY:
	CLIENT:	PUC TRANSMISSION LP	TP	DS
			PROJECT NO:	221-01502-00
			DATE:	NOVEMBER 2022
			FIGURE NO:	11



LEGEND

- PROPOSED POWER LINE
- - - PROPOSED EASEMENT BOUNDARY
- EXISTING PROPERTY BOUNDARY
- PROPOSED PROPERTY
- PROPOSED EASEMENT AREA
- ✕ PROPOSED POLE LOCATION (APPROX.)

AREAS (m²)
 34,189.74 EXISTING PROPERTY
 284.9 EASEMENT AREA

	PROJECT:	SAULT STE. MARIE 230 kV TRANSMISSION PROJECT: CLASS EA SAULT STE MARIE, ONTARIO	SCALE:	1:2,500	
	TITLE:	060033072000000 1100 WALLACE TERR	DRAWN BY:	TP	CHECKED BY:
	CLIENT:	PUC TRANSMISSION LP	PROJECT NO:	221-01502-00	
			DATE:	NOVEMBER 2022	
			FIGURE NO:	12	

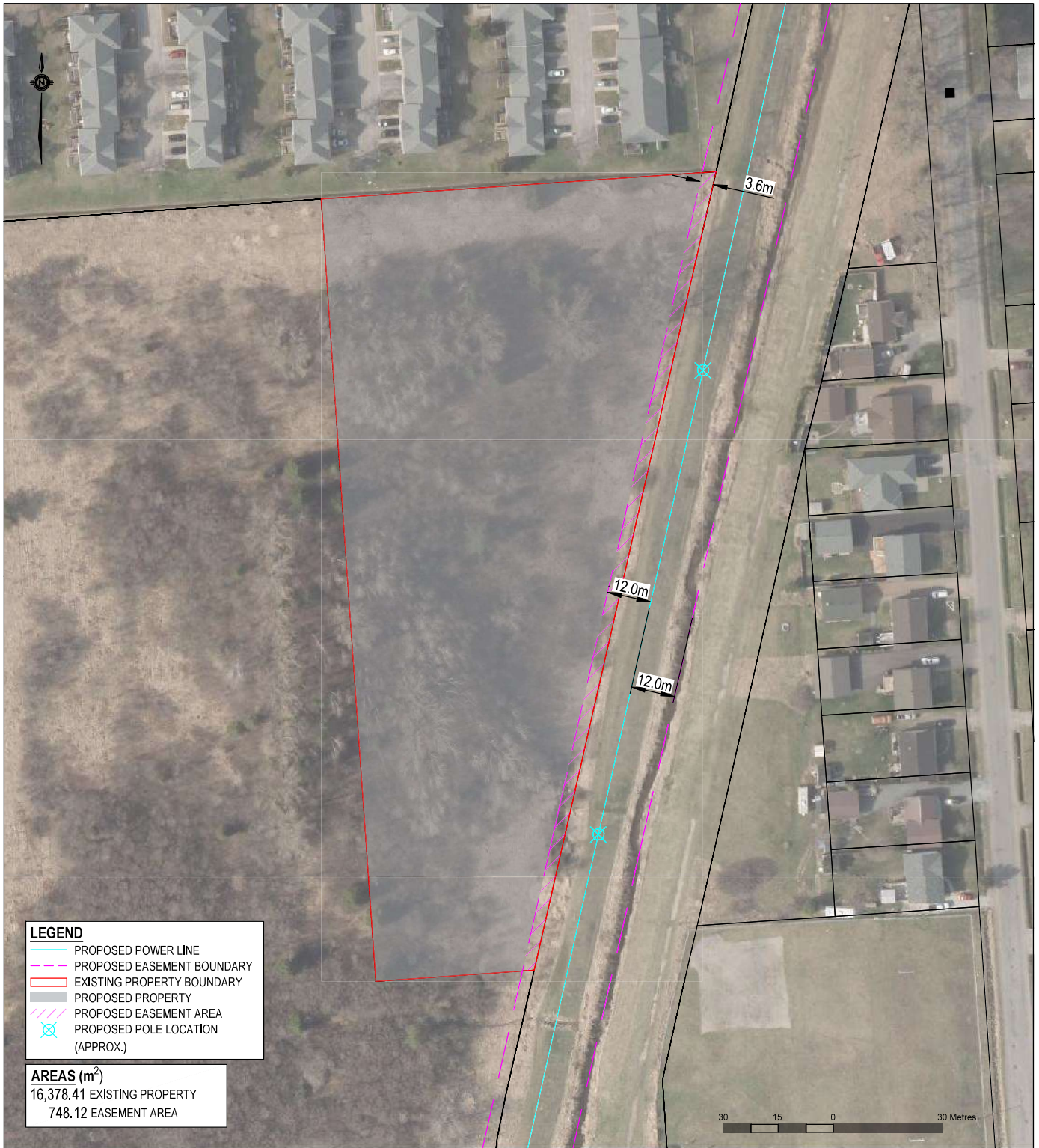


LEGEND	
	PROPOSED POWER LINE
	PROPOSED EASEMENT BOUNDARY
	EXISTING PROPERTY BOUNDARY
	PROPOSED PROPERTY
	PROPOSED EASEMENT AREA
	PROPOSED POLE LOCATION (APPROX.)

AREAS (m ²)	
173,824.82	EXISTING PROPERTY
1782.72	EASEMENT AREA



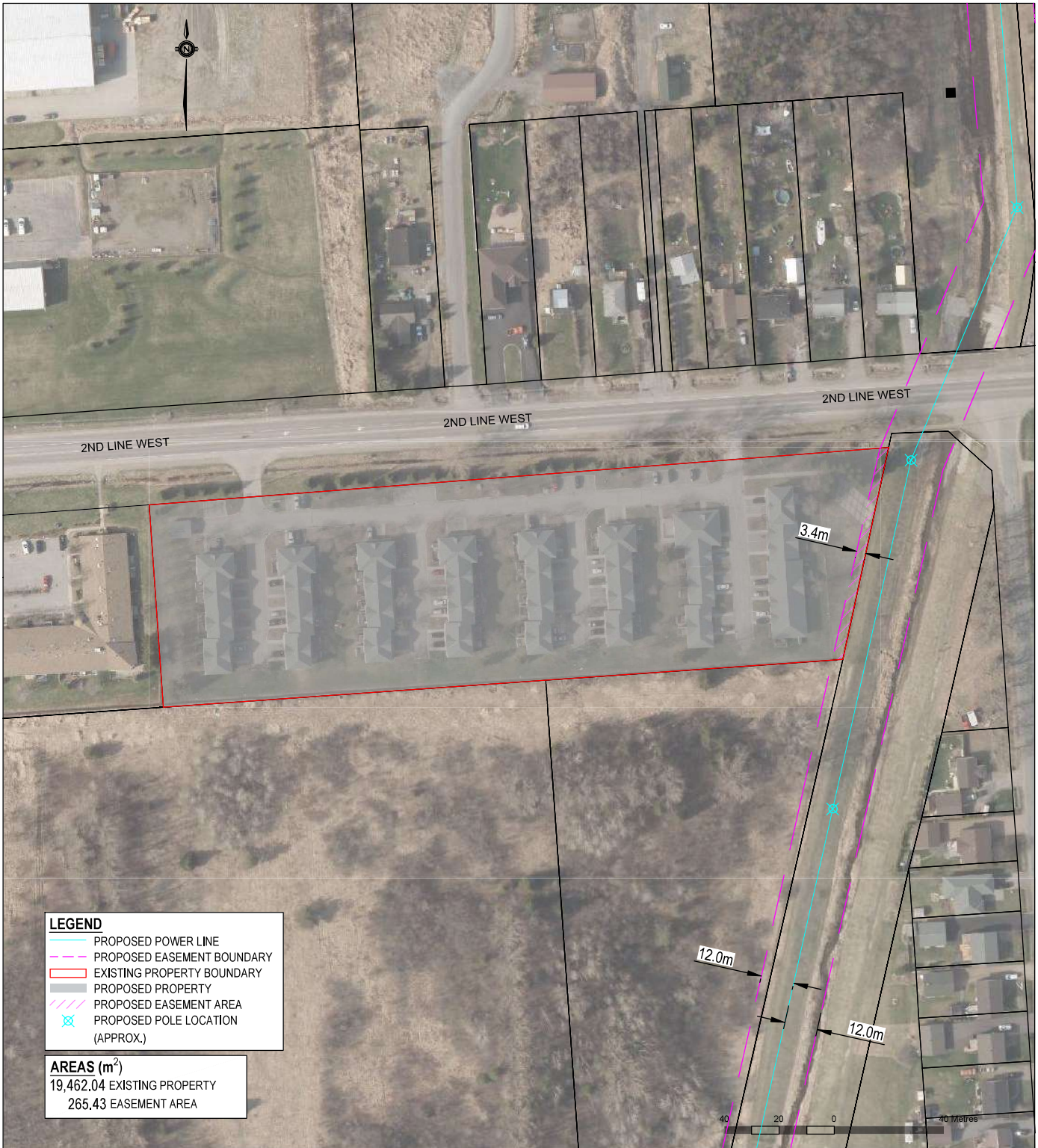
PROJECT:	SAULT STE. MARIE 230 kV TRANSMISSION PROJECT: CLASS EA SAULT STE MARIE, ONTARIO		SCALE:	1:4,000	
	TITLE:	060031002000000	0 ALLENS SIDE RD	DRAWN BY:	CHECKED BY:
				TP	DS
CLIENT:	PUC TRANSMISSION LP		PROJECT NO:	221-01502-00	
			DATE:	NOVEMBER 2022	
			FIGURE NO:	13	



LEGEND	
	PROPOSED POWER LINE
	PROPOSED EASEMENT BOUNDARY
	EXISTING PROPERTY BOUNDARY
	PROPOSED PROPERTY
	PROPOSED EASEMENT AREA
	PROPOSED POLE LOCATION (APPROX.)

AREAS (m ²)
16,378.41 EXISTING PROPERTY
748.12 EASEMENT AREA

	PROJECT: SAULT STE. MARIE 230 kV TRANSMISSION PROJECT: CLASS EA SAULT STE MARIE, ONTARIO	SCALE: 1:1,500
	TITLE: 060031002990000	DRAWN BY: TP CHECKED BY: DS
	CLIENT: PUC TRANSMISSION LP	PROJECT NO: 221-01502-00 DATE: NOVEMBER 2022 FIGURE NO: 14



LEGEND

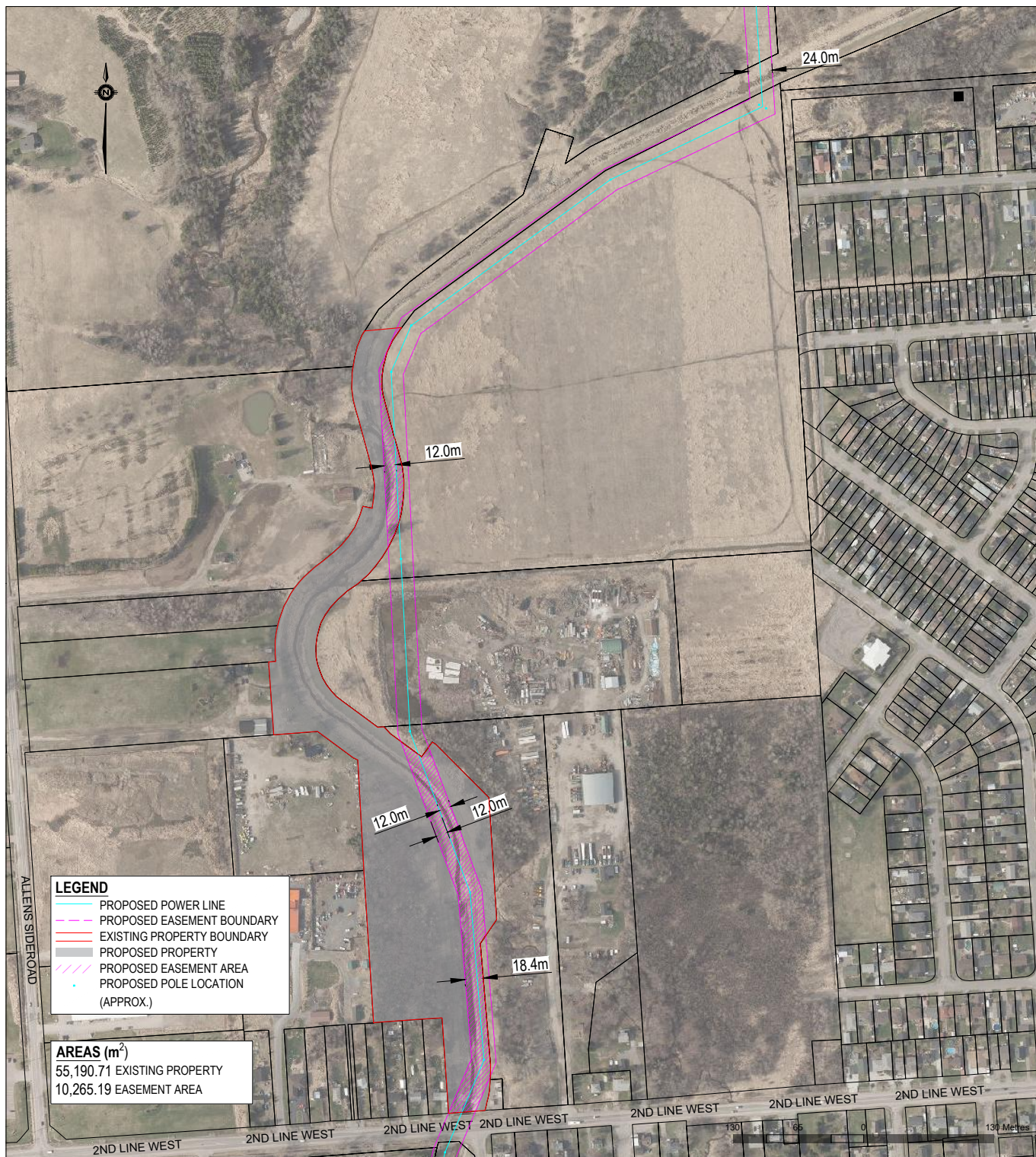
- PROPOSED POWER LINE
- PROPOSED EASEMENT BOUNDARY
- EXISTING PROPERTY BOUNDARY
- PROPOSED PROPERTY
- PROPOSED EASEMENT AREA
- X PROPOSED POLE LOCATION (APPROX.)


AREAS (m²)

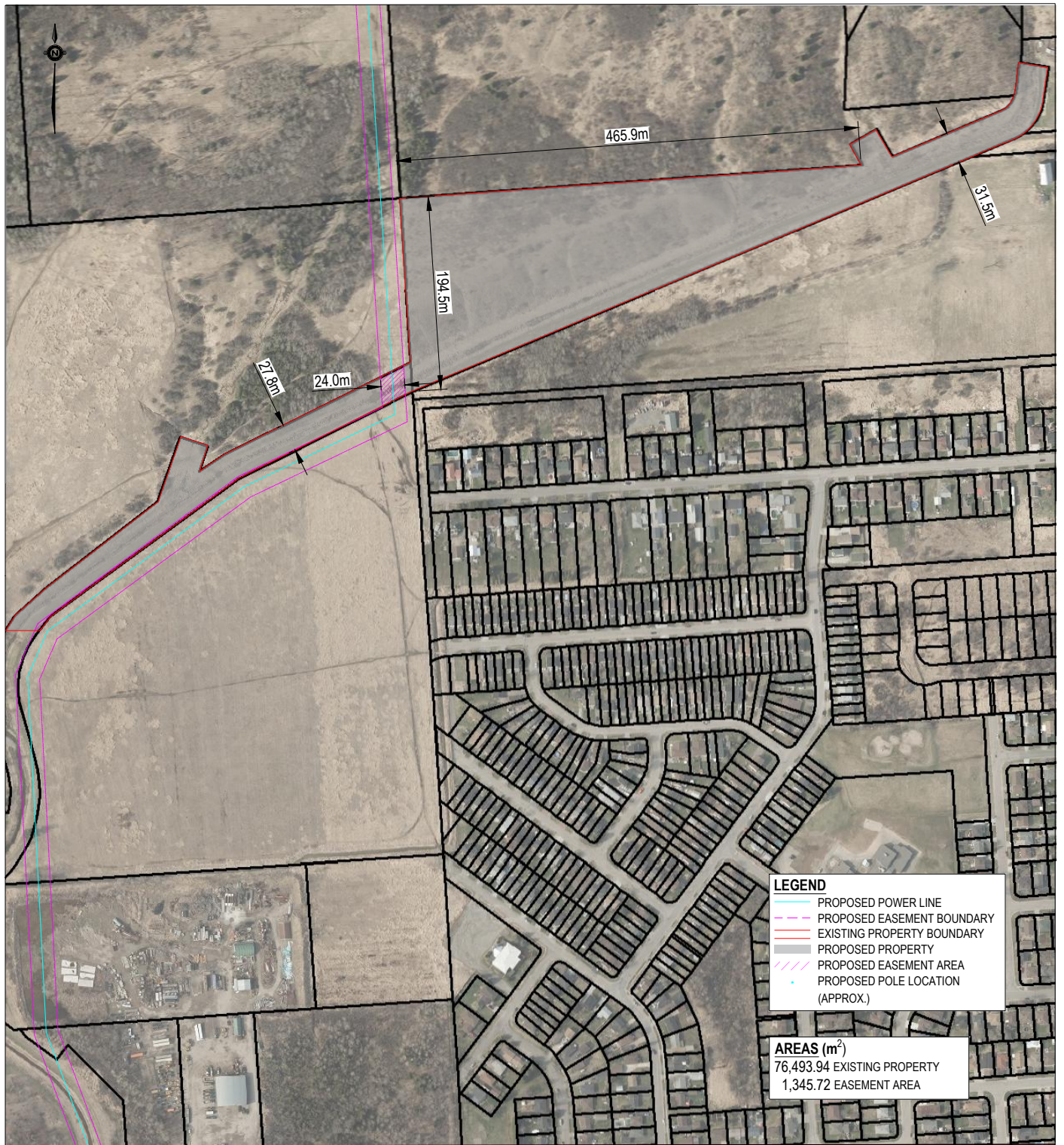
19,462.04 EXISTING PROPERTY
265.43 EASEMENT AREA



	PROJECT:	SAULT STE. MARIE 230 kV TRANSMISSION PROJECT: CLASS EA SAULT STE MARIE, ONTARIO	SCALE:	1:2,000
			DRAWN BY:	CHECKED BY:
			TP	DS
	TITLE:	060033076000000 1001 SECOND LINE W	PROJECT NO:	221-01502-00
			DATE:	NOVEMBER 2022
	CLIENT:	PUC TRANSMISSION LP	FIGURE NO:	15



	PROJECT: SAULT STE. MARIE 230 KV TRANSMISSION PROJECT: CLASS EA SAULT STE MARIE, ONTARIO	SCALE: 1:5,500
	TITLE: 06004023901000 0 SECOND LINE W	DRAWN BY: CHECKED BY: TP DS
	CLIENT: PUC TRANSMISSION LP	PROJECT NO: 221-01502-00
		DATE: MAY 2023
		FIGURE NO: 16A

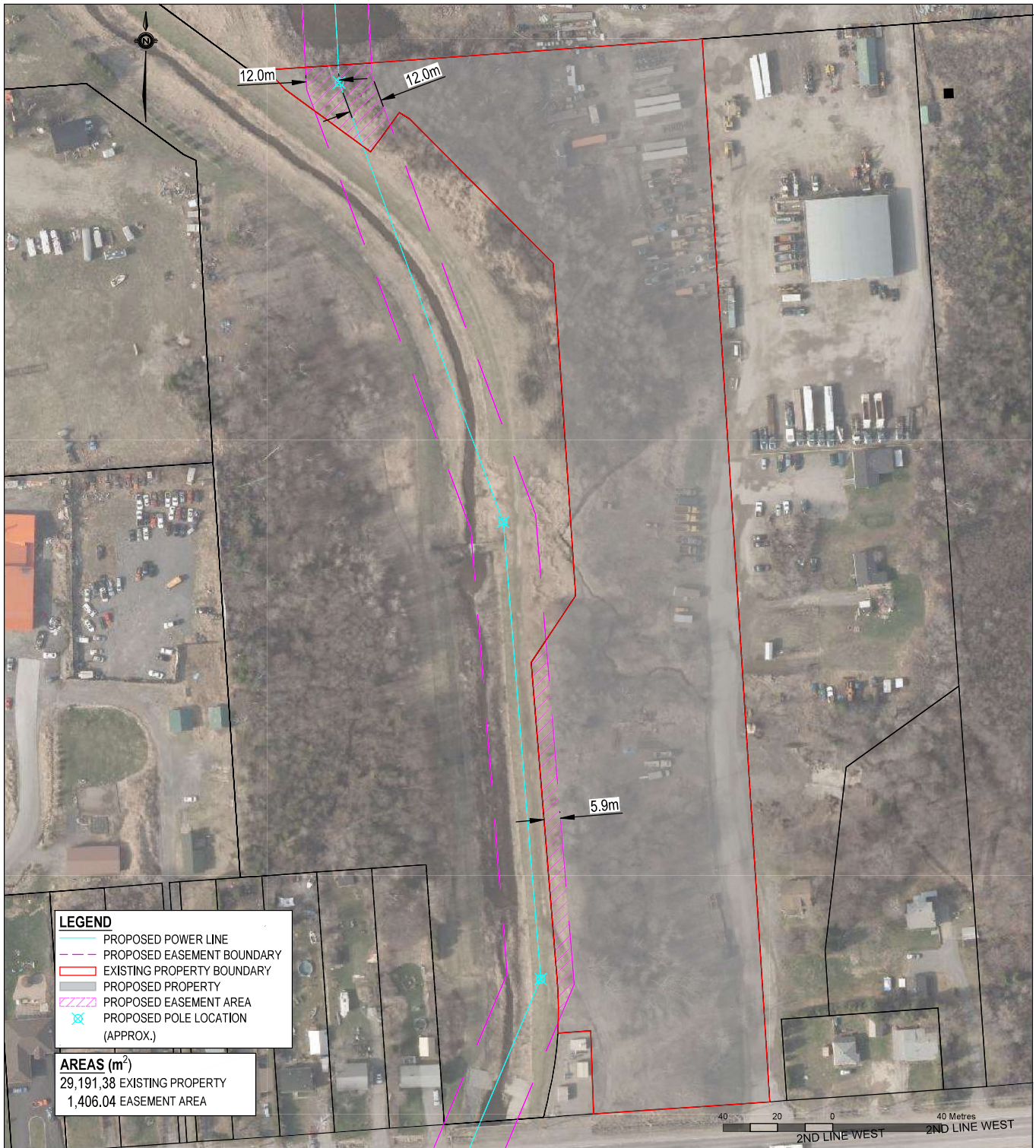


LEGEND	
	PROPOSED POWER LINE
	PROPOSED EASEMENT BOUNDARY
	EXISTING PROPERTY BOUNDARY
	PROPOSED PROPERTY
	PROPOSED EASEMENT AREA
	PROPOSED POLE LOCATION (APPROX.)

AREAS (m ²)	
76,493.94	EXISTING PROPERTY
1,345.72	EASEMENT AREA



PROJECT:	SAULT STE. MARIE 230 kV TRANSMISSION PROJECT: CLASS EA SAULT STE MARIE, ONTARIO		SCALE:	1:5,500	
	TITLE:	060040239010000	0 SECOND LINE W	DRAWN BY:	CHECKED BY:
				TP	DS
CLIENT:	PUC TRANSMISSION LP		PROJECT NO:	221-01502-00	
			DATE:	MAY 2023	
			FIGURE NO:	16B	

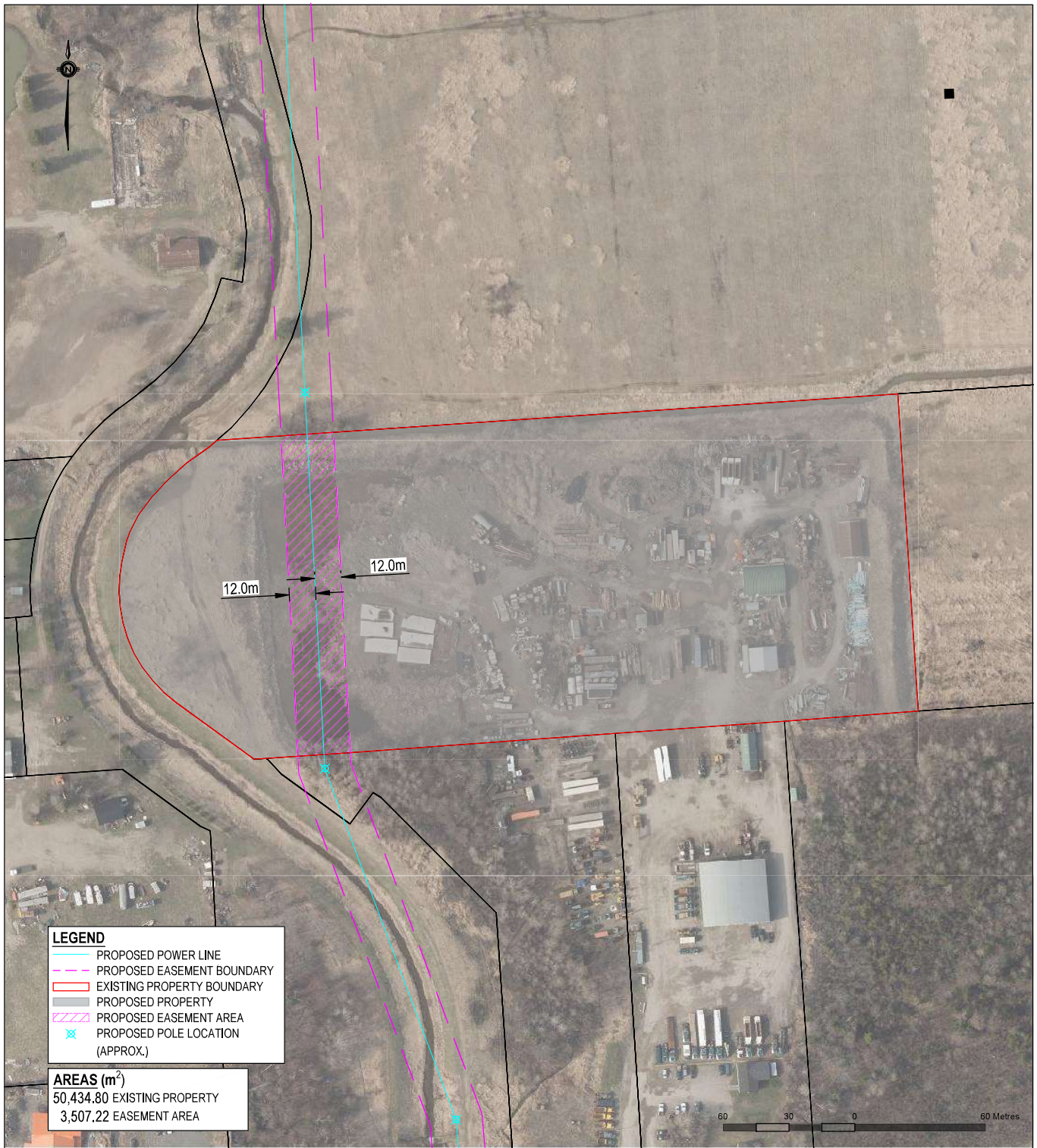



LEGEND	
	PROPOSED POWER LINE
	PROPOSED EASEMENT BOUNDARY
	EXISTING PROPERTY BOUNDARY
	PROPOSED PROPERTY
	PROPOSED EASEMENT AREA
	PROPOSED POLE LOCATION (APPROX.)

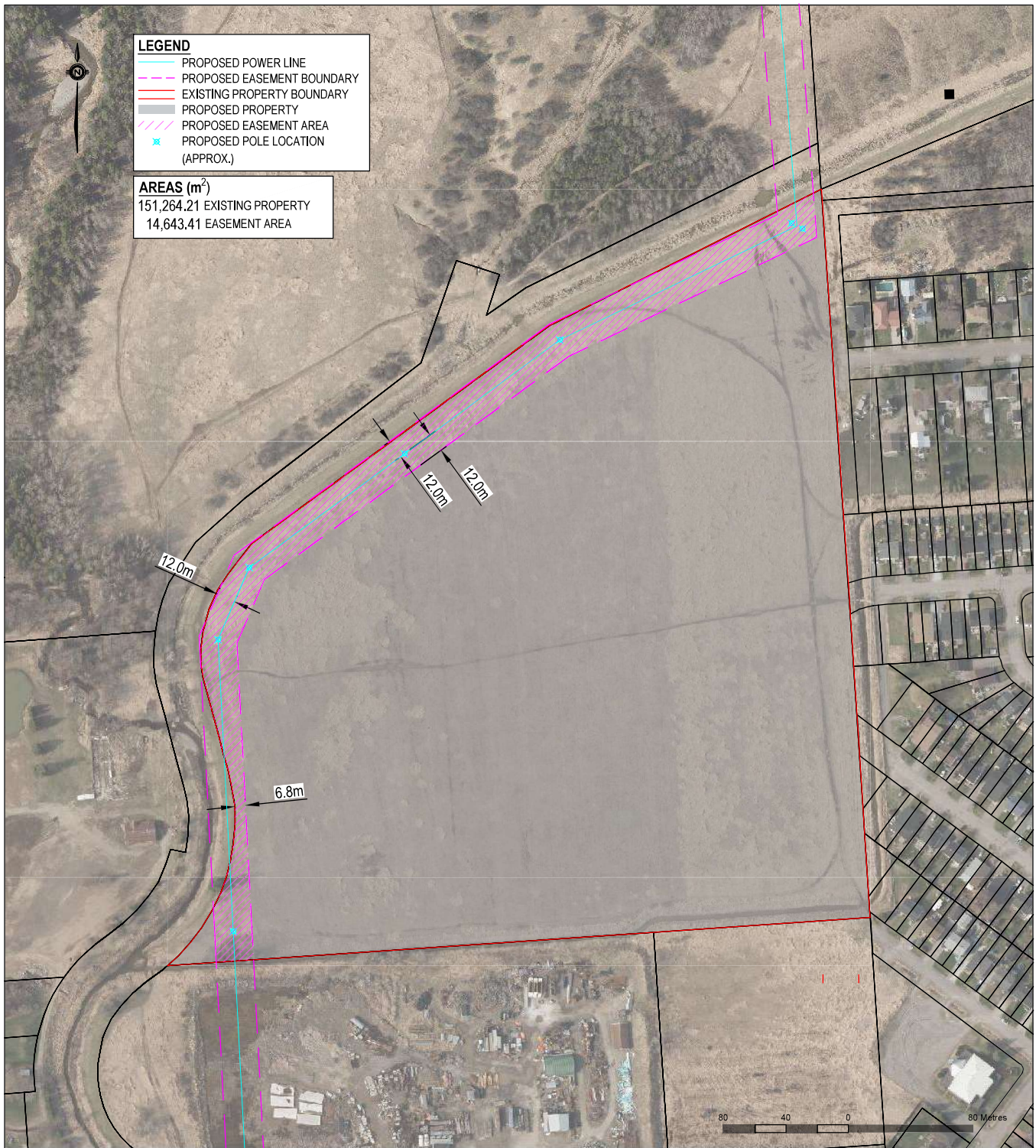
AREAS (m ²)	
29,191.38	EXISTING PROPERTY
1,406.04	EASEMENT AREA



PROJECT:	SAULT STE. MARIE 230 kV TRANSMISSION PROJECT: CLASS EA SAULT STE MARIE, ONTARIO		SCALE: 1:2,000
	TITLE:	06004023900000 948 SECOND LINE W	DRAWN BY: TP CHECKED BY: DS
	CLIENT:	PUC TRANSMISSION LP	PROJECT NO: 221-01502-00 DATE: NOVEMBER 2022 FIGURE NO: 17



	PROJECT: SAULT STE. MARIE 230 kV TRANSMISSION PROJECT: CLASS EA SAULT STE MARIE, ONTARIO	SCALE: 1:2,500
	TITLE: 060040254000000	DRAWN BY: TP CHECKED BY: DS
	CLIENT: PUC TRANSMISSION LP	PROJECT NO: 221-01502-00 DATE: NOVEMBER 2022 FIGURE NO: 18



LEGEND


- PROPOSED POWER LINE
- - - PROPOSED EASEMENT BOUNDARY
- EXISTING PROPERTY BOUNDARY
- PROPOSED PROPERTY
- /// PROPOSED EASEMENT AREA
- ⊗ PROPOSED POLE LOCATION (APPROX.)

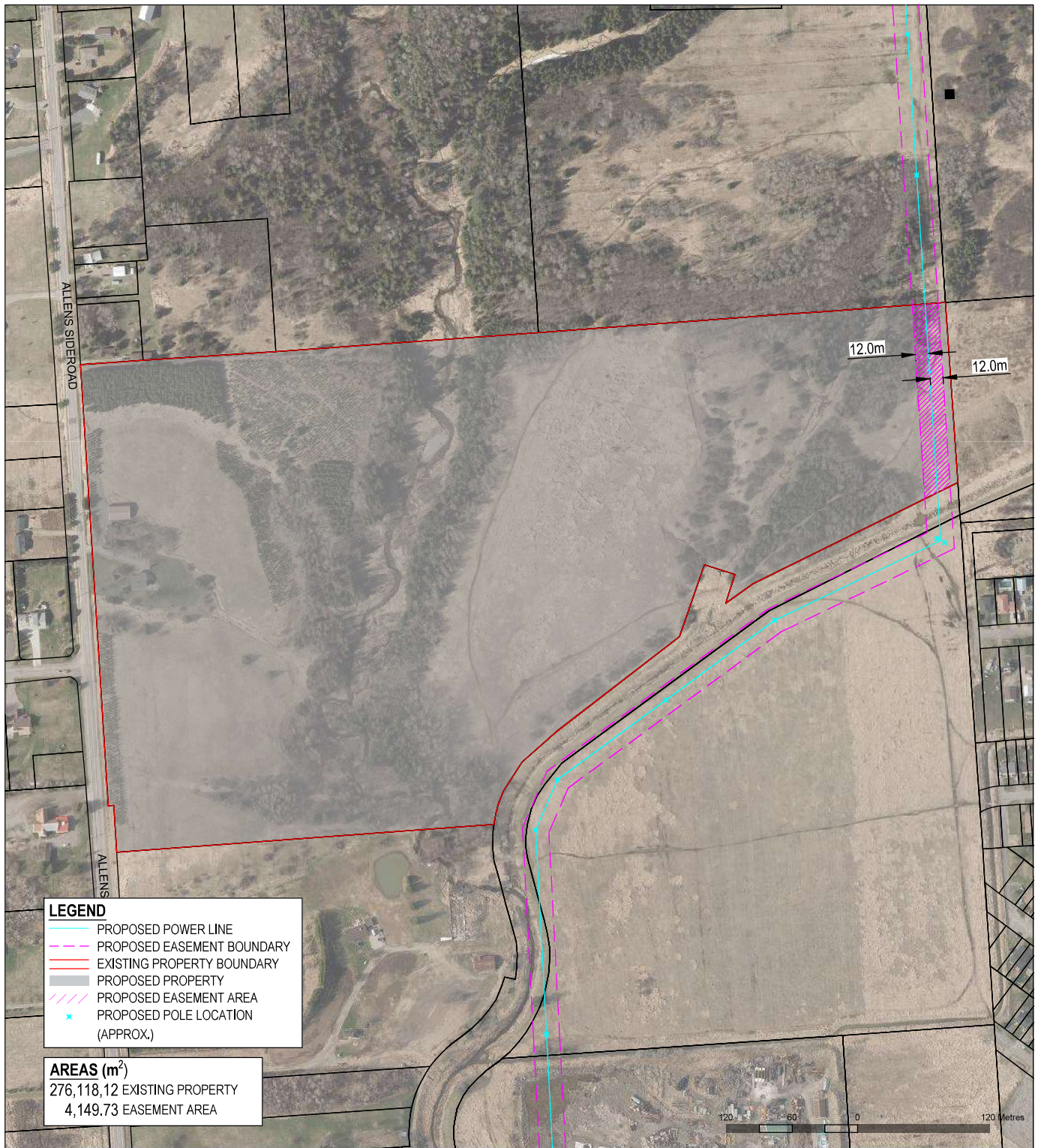
AREAS (m²)
 151,264.21 EXISTING PROPERTY
 14,643.41 EASEMENT AREA

12.0m
 12.0m
 12.0m
 6.8m

80 40 0 80 Metres



	PROJECT: SAULT STE. MARIE 230 KV TRANSMISSION PROJECT: CLASS EA SAULT STE MARIE, ONTARIO		SCALE: 1:3,500	
	TITLE: 06004025900000 0 CHIPPEWA ST		DRAWN BY: TP	CHECKED BY: DS
	CLIENT: PUC TRANSMISSION LP		PROJECT NO: 221-01502-00 DATE: NOVEMBER 2022 FIGURE NO: 19	

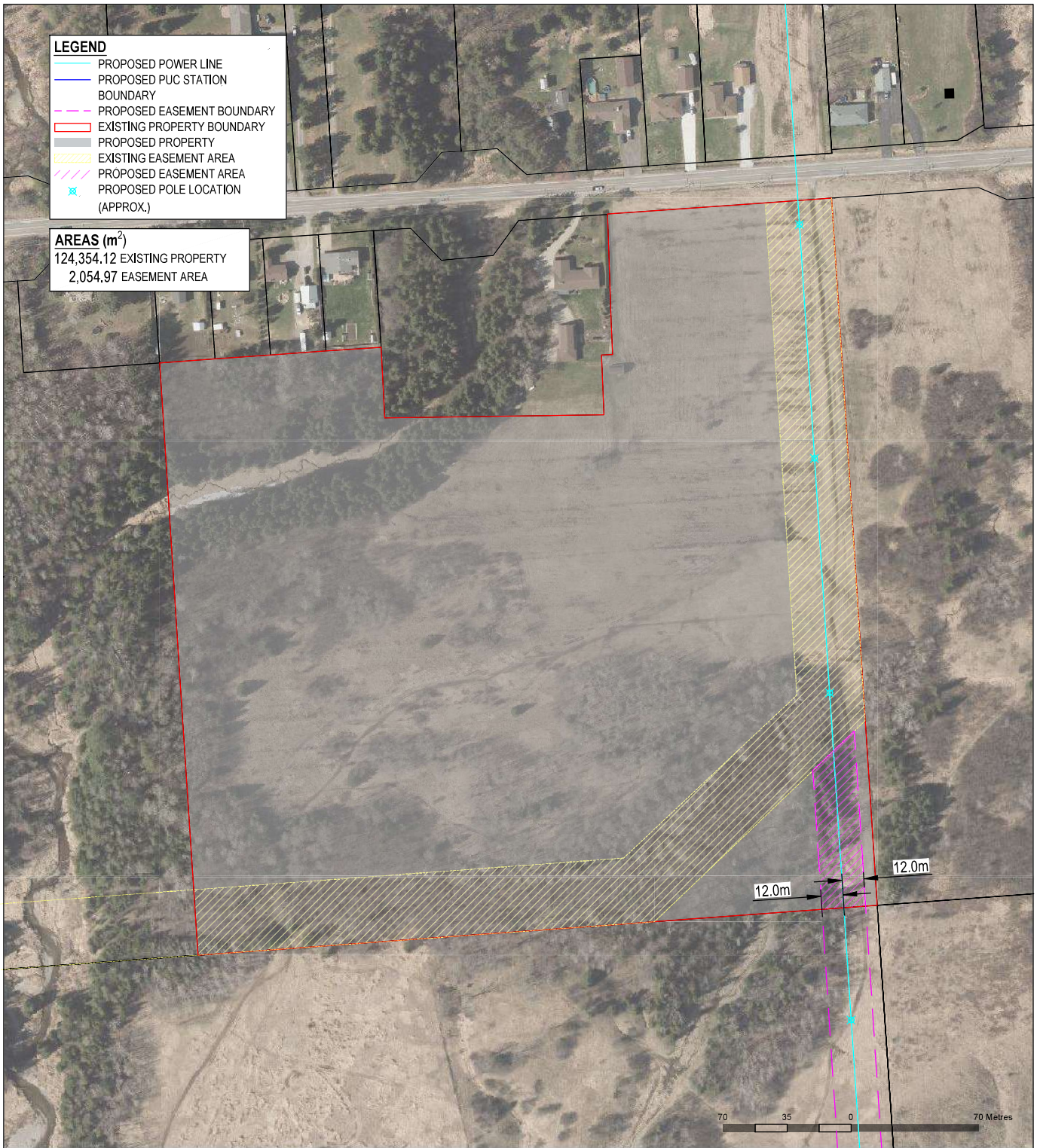


LEGEND	
	PROPOSED POWER LINE
	PROPOSED EASEMENT BOUNDARY
	EXISTING PROPERTY BOUNDARY
	PROPOSED PROPERTY
	PROPOSED EASEMENT AREA
	PROPOSED POLE LOCATION (APPROX.)

AREAS (m ²)
276,118.12 EXISTING PROPERTY
4,149.73 EASEMENT AREA



PROJECT:	SAULT STE. MARIE 230 kV TRANSMISSION PROJECT: CLASS EA SAULT STE MARIE, ONTARIO		SCALE: 1:5,000
	TITLE: 060040258010000 618 ALLENS SIDE RD		DRAWN BY: CHECKED BY: TP DS
	CLIENT: PUC TRANSMISSION LP		PROJECT NO: 221-01502-00 DATE: NOVEMBER 2022 FIGURE NO: 20



PROJECT:	SAULT STE. MARIE 230 kV TRANSMISSION PROJECT: CLASS EA SAULT STE MARIE, ONTARIO		SCALE:
			1:3,000
	DRAWN BY:	CHECKED BY:	
TITLE:	TP	DS	
060040273010000 0 THIRD LINE W	PROJECT NO:		221-01502-00
	DATE:		NOVEMBER 2022
CLIENT:	PUC TRANSMISSION LP		FIGURE NO: 21A

1 **LAND AND RIGHTS ACQUISITION PROCESS**

2
3 PUC Transmission retained an external, independent AACI designated appraiser to determine the fair
4 market value of the existing and proposed easements, and the properties to be purchased. At time of
5 filing this application, all the required property appraisals were completed.

6
7 Negotiations with PUC Distribution Inc. aimed at acquiring the existing easements have not yet
8 occurred. Negotiations with property owners for new land rights were initiated in early November
9 2023. Each property owner has been or will be provided with a copy of the appraisal report for
10 information. PUC Transmission will negotiate a mutually acceptable and reasonable fee for the
11 proposed acquisition which will be documented and confirmed by the associated agreements noted
12 below.

13
14 At the time of filing this application, one property owner had accepted PUC Transmission's offer to
15 purchase the right of easement across their property. Also, the owner of the property required to
16 accommodate the northerly half of the Tagona West TS had also accepted PUC Transmission's offer
17 to purchase the land in fee simple. All proposed purchases and offers are conditional on approval
18 by the OEB of this leave to construct application.

19
20 An affidavit of title search is included at **Attachment 1 to this Tab**. The affidavit includes a listing
21 of affected landowners, wherein owner names and contact information have been redacted to
22 preserve confidentiality. An unredacted version will be filed with the Board consistent with the
23 practice direction.

24
25 As noted above, there are no areas of the proposed transmission line anticipated to be subject to
26 Section 41(9) of the *Electricity Act*.

27
28 **Table 1** below provides a non-confidential listing of the properties affected by the Project for which
29 PUC Transmission will seek to acquire new easements.

30
31 **Table 2** further below provides a non-confidential listing of the properties affected by the Project for
32 which electricity transmission easements already exist.

33
34

1 Tabel 1: Listing of Properties for New Easements

Figure #	PIN	Property Legal Description	Roll #	Property Address
4	31609-0384(LT), 31609-0043(LT), 31609-0036(LT)	31609-0384(LT): Part Section 34 Korah Parts 1-3, 9, 16, 20 & 21 Plan 1R10744 Except Part 1 Plan 1R10935, Part 1 Plan 1R1773, Parts 2 & 3 Plan 1R13242, Part 1 Plan 1R13366; Subject to an Easement as in LT89277; City of Sault Ste. Marie; 31609-0043(LT): PCL 12753 SEC AWS; PT SEC 34 KORAH PT 4-8, 10-14, 17-19 1R10744; S/T LT127571; S/T EASEMENT IN FAVOUR OF THE PUBLIC UTILITIES COMMISSION OF THE CITY OF SAULT STE. MARIE OVER PT 6 1R10744 AS IN AL10430; 31609-0036(LT): PCL 10955 SEC AWS; PT SEC 34 KORAH PT 7 1R5829; SAULT STE. MARIE	60001003000000	0 YATES AVE and 130 YATES AVE
5	31609-0383(LT)	Part Section 34 Korah Part 1 Plan 1R13469; City of Sault Ste. Marie	60001003070000	162 YATES AVE
6	31609-0380(LT)	Part of Section 34 Korah, Part 1 Plan 1R13366 and Part 3 Plan 1R13242; City of Sault Ste. Marie	60001003020000	150 YATES AVE
7	31609-0376(LT)	Part Section 34 Korah Being Part 2 1R13242; City of Sault Ste. Marie	60001003040000	140 YATES AVE
8	n/a	Recently consolidated with property of Figure 5 above		
9	31609-0360(LT)	PCL 12794 SEC AWS; PT SEC 34 KORAH PT 1 1R10935; SAULT STE. MARIE	60001003100000	110/120 YATES AVE
10A	31609-0019(LT)	PCL 1620 SEC AWS; LT 15-19 PL M56 KORAH; S/T LT89277; SAULT STE. MARIE	60001001000000	56 YATES AVE
10	31609-0010(LT), 31609-0013(LT), 31609-0014(LT), 31609-0011(LT),	31609-0010(LT): PCL 7758 SEC AWS; PT SEC 34 KORAH PT 3, 12 & 13 1R1910; T/W PT 2 1R1910 AS IN LT89407; S/T LT146356; SAULT STE. MARIE; 31609-0013(LT): PCL 5897 SEC AWS; PT LT 1 PL M56 KORAH PT 4 1R1910; T/W PT 5 1R1910 AS IN LT 79535; SAULT STE. MARIE; 31609-0014(LT): PCL 5896 SEC AWS; PT LT 20 PL M56 KORAH; PT LT 21 PL M56 KORAH PT 8 1R1910; T/W PT 9 1R1910; T/W PT 9 1R910 AS IN LT79534; SAULT STE. MARIE; 31609-0011(LT): PCL 7759 SEC AWS; PT SEC 34 KORAH PT 1 1R1910; S/T LT91685; SAULT STE. MARIE;	60035226010000	166 ALLENS SIDE RD

Figure #	PIN	Property Legal Description	Roll #	Property Address
	31609-0012(LT)	31609-0012(LT): PCL 6934 SEC AWS; PT SEC 34 KORAH PT 18 1R1910; S/T LT91685; SAULT STE. MARIE		
11	31608-0082(LT), 31608-0088(LT), 31608-0084(LT)	31608-0082(LT): PCL 6938 SEC AWS; UNIT 1 PL D54 KORAH; UNIT 2 PL D54 KORAH EXCEPT PT 3 & 4 1R2557; S/T PT 5 1R3793 AS IN LT109951; T/W PT 3 1R2557 AS IN LT89134; S/T LT 146356, LT187612; SAULT STE. MARIE; 31608-0088(LT): PCL 7669 SEC AWS; FIRSTLY: PT SEC 34 KORAH PT 1 1R2557; FOR SCHOOL PURPOSES ONLY AS IN LT36585; T/W PT 6 1R2557 AS IN LT89135; SECONDLY: PT SEC 34 KORAH PT 2 1R2557; T/W PT 5 1R2557; T/W PT 5 1R2557 AS IN LT89135; SAULT STE. MARIE; 31608-0084(LT): PCL 7668 SEC AWS; PT SEC 34 KORAH PT 3 & 4 1R2557; S/T PT 3 1R2557 AS IN LT89134; SAULT STE. MARIE	60033074000000	141 BROOKFIELD AVE
12	31608-0013(LT), 31608-0016(LT)	31608-0013(LT): PCL 332 SEC AWS; PT SEC 34 KORAH AS IN LT8003 EXCEPT LT46135, UNIT 2 D54, PT 1 1R2531; SAULT STE. MARIE; 31608-0016(LT): PCL 441 SEC AWS; PT SEC 34 KORAH AS IN LT10194 EXCEPT LT46136; SAULT STE. MARIE	60033072000000	1100 WALLACE TERR
13	31608-0057(LT)	PCL 11661 SEC AWS; PT SEC 34 KORAH PT 4 1R7720 EXCEPT PT 2 1R8575; S/T LT85617; SAULT STE. MARIE	60031002000000	0 ALLENS SIDE RD
14	31608-0056(LT)	PCL 12037 SEC AWS; PT SEC 34 KORAH PT 2 1R8575; SAULT STE. MARIE	60031002990000	1001 SECOND LINE W - Rear
15	31608-0026(LT)	PCL 11978 SEC AWS; PT SEC 34 KORAH PT 1 1R8529; T/W PT 1 & 2 1R3793 AS IN LT109952; T/W PT 5 1R3793 AS IN LT109951; T/W PT 3 & 6 1R8529 AS IN LT86825; S/T LT85617; SAULT STE. MARIE	60033076000000	1001 Second Line W
16A	31603-0044(LT), 31603-0040(LT), 31603-0038(LT), 31603-0039(LT)	31603-044(LT): PCL 10898 SEC AWS; PT SEC 27 KORAH PT 1 D67; S/T LT139955; SAULT STE. MARIE; 31603-0040(LT): PCL 8927 SEC AWS; PT SEC 27 KORAH PT 1-3 1R3426; S/T PT 3 1R3426 AS IN LT97823; S/T LT59513; SAULT STE. MARIE; 31603-0038(LT): PCL 8204 SEC AWS; PT SEC 27 KORAH PT 4 & 6 1R3123; S/T LT146356; LT59512; SAULT STE. MARIE; 31603-0039(LT): PCL 8804 SEC AWS; UNIT 1-3 PL D62 KORAH; S/T LT146356; SAULT STE. MARIE	60040239010000	0 SECOND LINE W

Figure #	PIN	Property Legal Description	Roll #	Property Address
16B	31603-0443(LT)	PT SEC 27 KORAH PT 1-3 T238947, PT 1 T238950; S/T T264048, T429619; S/T T281921; SAULT STE. MARIE	60040280010000	0 GOULAIS AVE
17	31603-0013(LT)	PCL 2551 SEC AWS; PT SEC 27 KORAH AS IN LT24442 EXCEPT LT45167, UNIT 1 & 3 PL D62, PT 1 & 2 1R6381, PT 1 1R8672; S/T DEBTS IN LT 68791, IF ANY; SAULT STE. MARIE	60040239000000	948 SECOND LINE W
18	31603-0002(LT)	PCL1579 SEC ALG; PT SEC 27 KORAH AS IN A1065 EXCEPT PT 1 AR111, PT 1-2 AR1088, PT 4, 6 & 8 1R3123, PT 1 1R3123, PT 1 1R4315; S/T LT 140137, LT 59512; SAULT STE. MARIE	60040254000000	848 SECOND LINE W
19	31603-0444(LT), 31603-0001(LT)	31603-0444(LT): PT SEC 27 KORAH PT 2 1R6007; S/T DEBTS IN T251129; S/T T270394; S/T EXECUTION 98-000765, IF ENFORCEABLE; SAULT STE. MARIE; 31603-0001(LT): PCL 1073 SEC ALG; PT SEC 27 KORAH PT 5 & 6 1R6007; S/T LT143331, LT59513; SAULT STE. MARIE	60040259000000	0 CHIPPEWA ST
20	31603-0445(LT)	PT SEC 27 KORAH PT 1 1R6007; SAULT STE. MARIE	60040258010000	618 Allens Side Rd
21A	31603-0475(LT)	PT SEC 27 KORAH PT 1-3 1R3120 & AS IN T429617 N OF PT 2 T238947 EXCEPT PT 1 1R11528 AND PTS 1-3 1R11548; T/W T429619; S/T T136847, T265867; SAULT STE. MARIE	60040273010000	0 (875) THIRD LINE W

1
2
3

1

2 Tabel 2: Listing of Properties with Existing Easements

Figure #	PIN	Property Legal Description	Roll #	Property Address
21B	31603-0475(LT)	PT SEC 27 KORAH PT 1-3 1R3120 & AS IN T429617 N OF PT 2 T238947 EXCEPT PT 1 1R11528 AND PTS 1-3 1R11548; T/W T429619; S/T T136847, T265867; SAULT STE. MARIE	60040273010000	0 (875) Third Line West
22	31602-0173(LT)	PT SEC 22 KORAH PT 2-5 IR6377; S/T T136848, T264353; SAULT STE. MARIE	60052189000000	840 Third Line West
23	31602-0167(LT)	PT SEC 22 KORAH AS IN T417776; DESCRIPTION MAY NOT BE ACCEPTABLE IN FUTURE AS IN T417776; S/T INTEREST IN T417776; S/T DEBTS IN T190588; S/T T133815, T265258; S/T EXECUTION 95-000060, IF ENFORCEABLE; S/T EXECUTION LA-890062, IF ENFORCEABLE; S/T EXECUTION LA-890105, IF ENFORCEABLE; SAULT STE. MARIE	60052172000000	1036 Allen's Side Road
24	31602-0257(LT)	PART SEC 22 KORAH DESIGNATED AS PARTS 2, 3, 4, IR9060 & AS IN T397151; PART SEC 22 KORAH DESIGNATED AS PARTS 5, 6, 7, 8, 9, 10, 11 & 12, 1R12956; SUBJECT TO AN EASEMENT AS IN T136846; SUBJECT TO AN EASEMENT AS IN T255746; SUBJECT TO AN EASEMENT AS IN T368384; CITY OF SAULT STE. MARIE	60052044010000	130 Hood Street (780 Third Line West)
25	31602-0159(LT)	PT SEC 22 KORAH AS IN T435019 & PT 2 1R4505; S/T T136945, T216580, T241418, T263108; SAULT STE. MARIE	60052007010000	1007 Goulais Avenue
26	31602-0151(LT)	PT SEC 22 KORAH PT 1 & 5 1R2903; S/T T136945, T266114; SAULT STE. MARIE	60052010000000	1041 Goulais Avenue
27	31598-0061(LT)	PT SEC 23 KORAH AS IN T194812 (FIRSTLY & SECONDLY) LYING W OF PT 3 & 4 EXPROP PL T238949; S/T T136849, T263095; SAULT STE. MARIE	50050048000000	1000 Goulais Avenue
28	31598-0074(LT)	SEC 23 KORAH PT 1-6 EXPROP T238949; S/T T133813, T136849, T279727, T281921; SAULT STE. MARIE	50050053020000	0 Goulais Avenue - Drainage
29	31598-0060(LT)		50050048010000	1000 (rear) Goulais Avenue

Figure #	PIN	Property Legal Description	Roll #	Property Address
30	31598-0056(LT)	PT SEC 23 KORAH AS IN T194539 & T96880 EXCEPT EXPROP PL PT 2 T238949, PT 1-4 1R5661, & PT 1 & 2 1R8705; S/T T133813, T263096; SAULT STE. MARIE	50050036040000	341 Moss Road
31	31598-0059(LT)	PT SEC 23 KORAH PT 1-4 1R5661 EXCEPT PT 2 EXPROP PL T238949; S/T T133813, T263096; SAULT STE. MARIE	50050037010000	347 Moss Road
32	31598-0031(LT)	PCL 11162 SEC AWS; PT SEC 23 KORAH PT 3, 4, & 5 1R6313; S/T LT140074, LT77068; SAULT STE. MARIE; SUBJECT TO AN EASEMENT OVER PART OF SECTION 23 KORAH, DESIGNATED AS PART 1 ON PLAN 1R-13838 AS IN AL239241; CITY OF SAULT STE. MARIE	50050026000000	364 Moss Road
33	31598-0032(LT)	PCL 1444 SEC ALG; PT SEC 23 KORAH AS IN LT41871; S/T LT77894; SAULT STE. MARIE; SUBJECT TO AN EASEMENT AS IN AL242526	50080121050000	Rear of 364 Moss Road - railway
34	31598-0002(LT), 31598-0037(LT), 31598-0036(LT), 31598-0035(LT), 31598-0034(LT)	0002: PCL 231 SEC ACRL; PT SEC 23 KORAH AS ON A8771 (SCHEDULE F); SAULT STE. MARIE; 0037: PCL 706 SEC AWS; PT SEC 23 KORAH AS IN LT11337 LYING N OF LT12856; S/T LT77894; SAULT STE. MARIE; 0036: PCL 1015 SEC AWS; PT SEC 23 KORAH AS IN LT 12856; SAULT STE. MARIE; 0035: PCL 706 SEC AWS; PT SEC 23 KORAH AS IN LT11337 LYING S OF LT12856; SAULT STE. MARIE; 0034: PCL 666 SEC AWS; PT SEC 23 KORAH BEING THE S 1/2 OF E 1/2 OF SE 1/4 EXCEPT LT2948; SAULT STE. MARIE	50050009010000	Rear of 364 Moss Road - east of railway
35	31598-0138(LT)	PCL 12781 SEC AWS; PT SEC 23 KORAH PT 1 TO 6 1R10861; S/T D75, LT253778, LT76521; SAULT STE. MARIE	50050003100000	203 Brule Road
36	31566-0260(LT)	PT SEC 24 KORAH DESIGNATED AS PART 1, 1R-1684; EXCEPT PART 1, 1R-2550, PARTS 1, 2, 3, 1R-2355; S/T T281827; SUBJECT TO AN EASEMENT IN GROSS OVER PARTS 1, 3 & 4, 1R-13249 AS IN AL178394; CITY OF SAULT STE. MARIE	50047093000000	1349 Peoples Road
37	31566-0336(LT)	PT SEC 24 KORAH AS IN T401676; S/T T133816, T263207; SAULT STE. MARIE; SUBJECT TO AN EASEMENT IN GROSS OVER PART 2, PLAN 1R-13846 AS IN AL240220	50070013000000	1358 Peoples Road

Figure #	PIN	Property Legal Description	Roll #	Property Address
38	31566-0683(LT) and 31566-0684(LT)	0683: PART SECTION 24 KORAH PART 5, 6 PLAN 1R2597 EXCEPT PART 1 TO 3 PLAN 1R13682; S/T T133814, T263093; CITY OF SAULT STE. MARIE; 0684: FIRSTLY: PART OF SECTION 24 KORAH, PART 4 PLAN 1R13243; SECONDLY: PART OF SECTION 24 KORAH, PART 1 PLAN 1R13682; CITY OF SAULT STE. MARIE	50070054000000	175 Old Goulais Bay Road
39	31566-0345(LT)	PT SEC 24 KORAH PT 7 TO 11 1R2597; S/T T133814, T263094; SAULT STE. MARIE	50070054010000	161 Old Goulais Bay Road
40	31563-0156(R)	PT LT 29 RCP H739 PTS 1-8 1R10748 EXCEPT PTS 1-3 1R10761 T/W T432721 S/T T446846; TARENTORUS, CITY OF SAULT STE. MARIE	30085087070000	184 Old Goulais Bay Road
41	31563-0156(R)	LT 29 RCP H739 TARENTORUS EXCEPT PT 1 1R3031, PT 1-3 1R4891, PT 1-3 1R6112, PT 1-2 1R 9161, PT 1-3 1R10512, PT 1 & 3 1R11542, PT 1 1R12177; T/W T432721; CITY OF SAULT STE. MARIE	30085087000000	104 Old Goulais Bay Road

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AFFIDAVIT OF TITLE SEARCH

AFFIDAVIT

CANADA)	IN THE MATTER of title to subject
Province of Ontario)	lands outlined in Schedule "A";
To Wit:)	
)	AND IN THE MATTER OF the
)	PUC (Transmission) LP 230kV
)	Transmission Line Project.

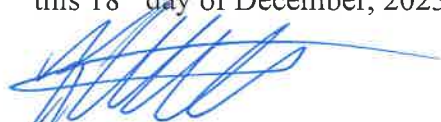
I, BROOKE ALEXANDRIA HOXAR-MOORE, of the City of Sault Ste. Marie, in the District of Algoma and Province of Ontario MAKE OATH AND SAY THAT:

1. I am a lawyer with the firm of Spadafora Johnson Lepore LLP, solicitors for PUC (Transmission) LP, and as such have knowledge of the matters hereinafter set forth.
2. I was provided with a list of properties prepared by PUC (Transmission) LP through and upon which the proposed 230kV transmission line and facilities would be located. Accordingly, I conducted a search of title to these properties in October, 2023.
3. As a result of my searches of title, I determined the land owners which would be affected by the construction of the proposed 230kV transmission line. Attached and marked as Schedule "A" is a list of all such land owners.

Sworn/Affirmed before me at the City)
of Sault Ste. Marie)
in the District)
of Algoma)
this 18th day of December, 2023.)



**BROOKE ALEXANDRIA
HOXAR-MOORE**


A Commissioner, etc.

Kathryn Elizabeth Willet
Barrister, Solicitor, Notary Public
and a Commissioner for Oaths
in and for Ontario.

Kathryn Elizabeth Miller
 A COMMISSIONER, NOTARY
 Barrister, Solicitor, Notary Public
 and a Commissioner for Oaths
 in and for Ontario.
 Address for Service

Listing of Landowners

Figure #	PIN	Property Legal Description	Roll #	Property Address	Owner According to Title Search	Address for Service
4	31609-0384(LT), 31609-0043(LT), 31609-0036(LT)	31609-0384(LT): Part Section 34 Korah Parts 1-3, 9, 16, 20 & 21 Plan 1R10744 Except Part 1 Plan 1R10935, Part 1 Plan 1R1773, Parts 2 & 3 Plan 1R13242, Part 1 Plan 1R13366; Subject to an Easement as in LT89277; City of Sault Ste. Marie; 31609-0043(LT): PCL 12753 SEC AWS; PT SEC 34 KORAH PT 4-8, 10-14, 17-19 1R10744; S/T LT127571; S/T EASEMENT IN FAVOUR OF THE PUBLIC UTILITIES COMMISSION OF THE CITY OF SAULT STE. MARIE OVER PT 6 1R10744 AS IN AL10430; 31609-0036(LT): PCL 10955 SEC AWS; PT SEC 34 KORAH PT 7 1R5829; SAULT STE. MARIE	60001003000000	0 YATES AVE and 130 YATES AVE		
5 and 8	31609-0388(LT)	PART SECTION 34 KORAH PART 1 PLAN 1R13469 AND PART 1, 1R14070; CITY OF SAULT STE. MARIE	60001003070000	162 YATES AVE		
6	31609-0380(LT)	Part of Section 34 Korah, Part 1 Plan 1R13366 and Part 3 Plan 1R13242; City of Sault Ste. Marie	60001003020000	150 YATES AVE		
7	31609-0376(LT)	Part Section 34 Korah Being Part 2 1R13242; City of Sault Ste. Marie	60001003040000	140 YATES AVE		
9	31609-0360(LT)	PCL 12794 SEC AWS; PT SEC 34 KORAH PT 1 1R10935; SAULT STE. MARIE	60001003100000	110/120 YATES AVE		
10A	31609-0019(LT)	PCL 1620 SEC AWS; LT 15-19 PL M56 KORAH; S/T LT89277; SAULT STE. MARIE	60001001000000	56 YATES AVE		
10	31609-0010(LT), 31609-0013(LT), 31609-0014(LT), 31609-0011(LT), 31609-0012(LT)	31609-0010(LT): PCL 7758 SEC AWS; PT SEC 34 KORAH PT 3, 12 & 13 1R1910; T/W PT 2 1R1910 AS IN LT89407; S/T LT146356; SAULT STE. MARIE; 31609-0013(LT): PCL 5897 SEC AWS; PT LT 1 PL M56 KORAH PT 4 1R1910; T/W PT 5 1R1910 AS IN LT 79535; SAULT STE. MARIE; 31609-0014(LT): PCL 5896 SEC AWS; PT LT 20 PL M56 KORAH; PT LT 21 PL M56 KORAH PT 8 1R1910; T/W PT 9 1R1910; T/W PT 9 1R910 AS IN LT79534; SAULT STE. MARIE;	60035226010000	166 ALLENS SIDE RD		

Listing of Landowners

Figure #	PIN	Property Legal Description	Roll #	Property Address	Owner According to Title Search	Address for Service
		31609-0011(LT): PCL 7759 SEC AWS; PT SEC 34 KORAH PT 1 1R1910; S/T LT91685; SAULT STE. MARIE; 31609-0012(LT): PCL 6934 SEC AWS; PT SEC 34 KORAH PT 18 1R1910; S/T LT91685; SAULT STE. MARIE				
11	31608-0082(LT), 31608-0088(LT), 31608-0084(LT)	31608-0082(LT): PCL 6938 SEC AWS; UNIT 1 PL D54 KORAH; UNIT 2 PL D54 KORAH EXCEPT PT 3 & 4 1R2557; S/T PT 5 1R3793 AS IN LT109951; T/W PT 3 1R2557 AS IN LT89134; S/T LT 146356, LT187612; SAULT STE. MARIE; 31608-0088(LT): PCL 7669 SEC AWS; FIRSTLY: PT SEC 34 KORAH PT 1 1R2557; FOR SCHOOL PURPOSES ONLY AS IN LT36585; T/W PT 6 1R2557 AS IN LT89135; SECONDLY: PT SEC 34 KORAH PT 2 1R2557; T/W PT 5 1R2557; T/W PT 5 1R2557 AS IN LT89135; SAULT STE. MARIE; 31608-0084(LT): PCL 7668 SEC AWS; PT SEC 34 KORAH PT 3 & 4 1R2557; S/T PT 3 1R2557 AS IN LT89134; SAULT STE. MARIE	60033074000000	141 BROOKFIELD AVE		
12	31608-0013(LT), 31608-0016(LT)	31608-0013(LT): PCL 332 SEC AWS; PT SEC 34 KORAH AS IN LT8003 EXCEPT LT46135, UNIT 2 D54, PT 1 1R2531; SAULT STE. MARIE; 31608-0016(LT): PCL 441 SEC AWS; PT SEC 34 KORAH AS IN LT10194 EXCEPT LT46136; SAULT STE. MARIE	60033072000000	1100 WALLACE TERR		
13	31608-0057(LT)	PCL 11661 SEC AWS; PT SEC 34 KORAH PT 4 1R7720 EXCEPT PT 2 1R8575; S/T LT85617; SAULT STE. MARIE	60031002000000	0 ALLENS SIDE RD		
14	31608-0056(LT)	PCL 12037 SEC AWS; PT SEC 34 KORAH PT 2 1R8575; SAULT STE. MARIE	60031002990000	1001 SECOND LINE W - Rear		
15	31608-0026(LT)	PCL 11978 SEC AWS; PT SEC 34 KORAH PT 1 1R8529; T/W PT 1 & 2 1R3793 AS IN LT109952; T/W PT 5 1R3793 AS IN LT109951; T/W PT 3 & 6 1R8529 AS IN LT86825; S/T LT85617; SAULT STE. MARIE	60033076000000	1001 Second Line W		

Listing of Landowners

Figure #	PIN	Property Legal Description	Roll #	Property Address	Owner According to Title Search	Address for Service
16A	31603-0044(LT), 31603-0040(LT), 31603-0038(LT), 31603-0039(LT)	31603-044(LT): PCL 10898 SEC AWS; PT SEC 27 KORAH PT 1 D67; S/T LT139955; SAULT STE. MARIE; 31603-0040(LT): PCL 8927 SEC AWS; PT SEC 27 KORAH PT 1-3 1R3426; S/T PT 3 1R3426 AS IN LT97823; S/T LT59513; SAULT STE. MARIE; 31603-0038(LT): PCL 8204 SEC AWS; PT SEC 27 KORAH PT 4 & 6 1R3123; S/T LT146356; LT59512; SAULT STE. MARIE; 31603-0039(LT): PCL 8804 SEC AWS; UNIT 1-3 PL D62 KORAH; S/T LT146356; SAULT STE. MARIE	60040239010000	0 SECOND LINE W		
16B	31603-0443(LT)	PT SEC 27 KORAH PT 1-3 T238947, PT 1 T238950; S/T T264048, T429619; S/T T281921; SAULT STE. MARIE	60040280010000	0 GOULAIS AVE		
17	31603-0013(LT)	PCL 2551 SEC AWS; PT SEC 27 KORAH AS IN LT24442 EXCEPT LT45167, UNIT 1 & 3 PL D62, PT 1 & 2 1R6381, PT 1 1R8672; S/T DEBTS IN LT 68791, IF ANY; SAULT STE. MARIE	60040239000000	948 SECOND LINE W		
18	31603-0002(LT)	PCL1579 SEC ALG; PT SEC 27 KORAH AS IN A1065 EXCEPT PT 1 AR111, PT 1-2 AR1088, PT 4, 6 & 8 1R3123, PT 1 1R3123, PT 1 1R4315; S/T LT 140137, LT 59512; SAULT STE. MARIE	60040254000000	848 SECOND LINE W		
19	31603-0444(LT), 31603-0001(LT)	31603-0444(LT): PT SEC 27 KORAH PT 2 1R6007; S/T DEBTS IN T251129; S/T T270394; S/T EXECUTION 98-000765, IF ENFORCEABLE; SAULT STE. MARIE; 31603-0001(LT): PCL 1073 SEC ALG; PT SEC 27 KORAH PT 5 & 6 1R6007; S/T LT143331, LT59513; SAULT STE. MARIE	60040259000000	0 CHIPPEWA ST		
20	31603-0445(LT)	PT SEC 27 KORAH PT 1 1R6007; SAULT STE. MARIE	60040258010000	618 Allens Side Rd		
21A	31603-0475(LT)	PT SEC 27 KORAH PT 1-3 1R3120 & AS IN T429617 N OF PT 2 T238947 EXCEPT PT 1 1R11528 AND PTS 1-3 1R11548; T/W T429619; S/T T136847, T265867; SAULT STE. MARIE	60040273010000	0 (875) THIRD LINE W		

Listing of Landowners

Figure #	PIN	Property Legal Description	Roll #	Property Address	Owner According to Title Search	Address for Service
21B	31603-0475(LT)	PT SEC 27 KORAH PT 1-3 1R3120 & AS IN T429617 N OF PT 2 T2389+647 EXCEPT PT 1 1R11528 AND PTS 1-3 1R11548; T/W T429619; S/T T136847, T265867; SAULT STE. MARIE	60040273010000	0 (875) Third Line West		
22	31602-0173(LT)	PT SEC 22 KORAH PT 2-5 1R6377; S/T T136848, T264353; SAULT STE. MARIE	60052189000000	840 Third Line West		
23	31602-0167(LT)	PT SEC 22 KORAH AS IN T417776; DESCRIPTION MAY NOT BE ACCEPTABLE IN FUTURE AS IN T417776; S/T INTEREST IN T417776; S/T DEBTS IN T190588; S/T T133815, T265258; S/T EXECUTION 95-000060, IF ENFORCEABLE; S/T EXECUTION LA-890062, IF ENFORCEABLE; S/T EXECUTION LA-890105, IF ENFORCEABLE; SAULT STE. MARIE	60052172000000	1036 Allen's Side Road		
24	31602-0257(LT)	PART SEC 22 KORAH DESIGNATED AS PARTS 2, 3, 4, 1R9060 & AS IN T397151; PART SEC 22 KORAH DESIGNATED AS PARTS 5, 6, 7, 8, 9, 10, 11 & 12, 1R12956; SUBJECT TO AN EASEMENT AS IN T136846; SUBJECT TO AN EASEMENT AS IN T255746; SUBJECT TO AN EASEMENT AS IN T368384; CITY OF SAULT STE. MARIE	60052044010000	130 Hood Street (780 Third Line West)		
25	31602-0159(LT)	PT SEC 22 KORAH AS IN T435019 & PT 2 1R4505; S/T T136945, T216580, T241418, T263108; SAULT STE. MARIE	60052007010000	1007 Goulais Avenue		
26	31602-0151(LT)	PT SEC 22 KORAH PT 1 & 5 1R2903; S/T T136945, T266114; SAULT STE. MARIE	60052010000000	1041 Goulais Avenue		
27	31598-0061(LT)	PT SEC 23 KORAH AS IN T194812 (FIRSTLY & SECONDLY) LYING W OF PT 3 & 4 EXPROP PL T238949; S/T T136849, T263095; SAULT STE. MARIE	50050048000000	1000 Goulais Avenue		
28	31598-0074(LT)	SEC 23 KORAH PT 1-6 EXPROP T238949; S/T T133813, T136849, T279727, T281921; SAULT STE. MARIE	50050053020000	0 Goulais Avenue - Drainage		

Listing of Landowners

Figure #	PIN	Property Legal Description	Roll #	Property Address	Owner According to Title Search	Address for Service
29	31598-0060(LT)		50050048010000	1000 (rear) Goulais Avenue		
30	31598-0056(LT)	PT SEC 23 KORAH AS IN T194539 & T96880 EXCEPT EXPROP PL PT 2 T238949, PT 1-4 1R5661, & PT 1 & 2 1R8705; S/T T133813, T263096; SAULT STE. MARIE	50050036040000	341 Moss Road		
31	31598-0059(LT)	PT SEC 23 KORAH PT 1-4 1R5661 EXCEPT PT 2 EXPROP PL T238949; S/T T133813, T263096; SAULT STE. MARIE	50050037010000	347 Moss Road		
32	31598-0031(LT)	PCL 11162 SEC AWS; PT SEC 23 KORAH PT 3, 4, & 5 1R6313; S/T LT140074, LT77068; SAULT STE. MARIE; SUBJECT TO AN EASEMENT OVER PART OF SECTION 23 KORAH, DESIGNATED AS PART 1 ON PLAN 1R-13838 AS IN AL239241; CITY OF SAULT STE. MARIE	50050026000000	364 Moss Road		
33	31598-0032(LT)	PCL 1444 SEC ALG; PT SEC 23 KORAH AS IN LT41871; S/T LT77894; SAULT STE. MARIE; SUBJECT TO AN EASEMENT AS IN AL242526	50080121050000	Rear of 364 Moss Road - railway		
34	31598-0002(LT), 31598-0037(LT), 31598-0036(LT), 31598-0035(LT), 31598-0034(LT)	0002: PCL 231 SEC ACRL; PT SEC 23 KORAH AS ON A8771 (SCHEDULE F); SAULT STE. MARIE; 0037: PCL 706 SEC AWS; PT SEC 23 KORAH AS IN LT11337 LYING N OF LT12856; S/T LT77894; SAULT STE. MARIE; 0036: PCL 1015 SEC AWS; PT SEC 23 KORAH AS IN LT 12856; SAULT STE. MARIE; 0035: PCL 706 SEC AWS; PT SEC 23 KORAH AS IN LT11337 LYING S OF LT12856; SAULT STE. MARIE; 0034: PCL 666 SEC AWS; PT SEC 23 KORAH BEING THE S 1/2 OF E 1/2 OF SE 1/4 EXCEPT LT2948; SAULT STE. MARIE	50050009010000	Rear of 364 Moss Road - east of railway		
35	31598-0138(LT)	PCL 12781 SEC AWS; PT SEC 23 KORAH PT 1 TO 6 1R10861; S/T D75, LT253778, LT76521; SAULT STE. MARIE	50050003100000	203 Brule Road		
36	31566-0260(LT)	PT SEC 24 KORAH DESIGNATED AS PART 1, 1R-1684; EXCEPT PART 1, 1R-2550, PARTS 1, 2, 3, 1R-2355; S/T T281827; SUBJECT	50047093000000	1349 Peoples Road		

Listing of Landowners

Figure #	PIN	Property Legal Description	Roll #	Property Address	Owner According to Title Search	Address for Service
		TO AN EASEMENT IN GROSS OVER PARTS 1, 3 & 4, 1R-13249 AS IN AL178394; CITY OF SAULT STE. MARIE				
37	31566-0336(LT)	PT SEC 24 KORAH AS IN T401676; S/T T133816, T263207; SAULT STE. MARIE; SUBJECT TO AN EASEMENT IN GROSS OVER PART 2, PLAN 1R-13846 AS IN AL240220	50070013000000	1358 Peoples Road		
38	31566-0683(LT) and 31566-0684(LT)	0683: PART SECTION 24 KORAH PART 5, 6 PLAN 1R2597 EXCEPT PART 1 TO 3 PLAN 1R13682; S/T T133814, T263093; CITY OF SAULT STE. MARIE; 0684: FIRSTLY: PART OF SECTION 24 KORAH, PART 4 PLAN 1R13243; SECONDLY: PART OF SECTION 24 KORAH, PART 1 PLAN 1R13682; CITY OF SAULT STE. MARIE	50070054000000	175 Old Goulais Bay Road		
39	31566-0345(LT)	PT SEC 24 KORAH PT 7 TO 11 1R2597; S/T T133814, T263094; SAULT STE. MARIE	50070054010000	161 Old Goulais Bay Road		
40	31563-0156(R)	PT LT 29 RCP H739 PTS 1-8 1R10748 EXCEPT PTS 1-3 1R10761 T/W T432721 S/T T446846; TARENTORUS, CITY OF SAULT STE. MARIE	30085087070000	184 Old Goulais Bay Road		
41	31563-0156(R)	LT 29 RCP H739 TARENTORUS EXCEPT PT 1 1R3031, PT 1-3 1R4891, PT 1-3 1R6112, PT 1-2 1R 9161, PT 1-3 1R10512, PT 1 & 3 1R11542, PT 1 1R12177; T/W T432721; CITY OF SAULT STE. MARIE	30085087000000	104 Old Goulais Bay Road		

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LAND-RELATED FORMS

Included as attachments to this Tab are the land rights agreements that PUC Transmission intends to utilize in order to obtain the required new land rights for the Project.

Easement Option Agreement

Attachment 1 to this Tab includes the form of easement that PUC Transmission intends to use in order to negotiate the acquisition of easement rights from affected landowners along the proposed transmission line route.

Option Agreement – Fee Simple Parcel

Attachment 2 to this Tab includes the form of fee simple ownership that PUC Transmission intends to use in order to negotiate the acquisition of land from affected landowners that is required for the construction of the Tagona West TS.

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FORM OF EASEMENT AGREEMENT

EASEMENT OPTION AGREEMENT

THIS EASEMENT OPTION AGREEMENT made as of the _____ day of _____, 2023 (the “**Agreement Date**”).

B E T W E E N:

[NAME OF OWNER]

(hereinafter **collectively** called the “**Owner**”)

OF THE FIRST PART

- and -

**PUC (TRANSMISSION) LP by its General Partner
PUC (TRANSMISSION) GP INC.**

(hereinafter called “**PUC Transmission**”)

OF THE SECOND PART

- and -

SPOUSE NAME

(hereinafter called the “**Spouse**”) **Only if Applicable**

OF THE THIRD PART

RECITALS:

- A. The Owner is the owner of the lands and premises described in Schedule “A” (the “**Lands**”);
- B. The Owner has agreed to grant to PUC Transmission for the consideration and on the terms and conditions set out herein and attached hereto as Schedule “B” (the “**Standard Terms and Conditions**”) an option to purchase a right-of-way and easement in, on, over, under, across and through (the “**Easement**”) that portion of the Lands described and shown on Schedule “A-1” attached hereto (the “**Easement Lands**”), the terms of which are more particularly set out in the Transfer and Grant of Easement (the “**Easement Agreement**”) attached hereto as Schedule “C”.

NOW THEREFORE, the parties hereby agree as follows:

1. GRANT OF OPTION

In consideration of the sum of **XXXXX (\$XXXXX)** of lawful money of Canada paid by PUC Transmission to the Owner, the receipt and sufficiency of which is hereby acknowledged by the Owner, (the “**Option Payment**”) the Owner hereby grants to PUC Transmission an irrevocable option (the “**Option**”), to purchase the Easement upon and subject to the terms and conditions set out herein, the Standard Terms and Conditions and the Schedules hereto.

2. PURCHASE PRICE

In accordance with the terms and conditions set out herein, the Standard Terms and Conditions and the Schedules hereto, PUC Transmission agrees to pay to or to the order of the Owner the amount of **XXXX Dollars (\$ ●)** for the Easement Lands (the "Purchase Price") on the Closing Date.

3. INCENTIVE PAYMENT

In addition to the payment of the Purchase Price as provided for in paragraph 2 herein, and as an incentive to the Owner to enter into this Option Agreement, PUC Transmission agrees to pay to or to the order of the Owner an incentive payment in the amount of **XXX Dollars (\$ ●)** on the Closing Date.

IN WITNESS WHEREOF the parties hereto have duly executed this Option Agreement as of the Agreement Date.

WITNESS:

OWNER:

Name:

Name: 1/s

Address:

WITNESS:

The spouse of the Owner hereby consents to this Agreement

SPOUSE OF OWNER:

Name:

Name: **Property Owner Spouse Name** 1/s

Address:

PUC (TRANSMISSION) LP by its General Partner PUC (TRANSMISSION) GP INC.

Per: _____

Name:

Title:

I have authority to bind the Corporation

**SCHEDULE "A"
LEGAL DESCRIPTION**

«LEGAL_DESCRIPTION»

DRAFT

**SCHEDULE "A-1"
EASEMENT LANDS**

Legal description to be determined by deposited Reference Plan; Easement Lands shown outlined in (colour) in sketch attached.

****NOTE – Sketch shall be replaced by Easement Lands description once applicable Reference Plan is deposited.**

DRAFT

SCHEDULE "B"
STANDARD TERMS AND CONDITIONS

1. EXERCISE OF OPTION

The Option shall be open for exercise at any time from the Agreement Date until the 2nd anniversary of the Agreement Date, as same may have been extended in accordance with the terms hereof, (the "**Option Term**"), by providing written notice to the Owner (the "**Exercise Notice**"), after which time, subject to Section 2, this Option Agreement shall be null and void and no longer binding upon either of the parties. If the Option is exercised within the Option Term, then this Option Agreement shall become a binding agreement for the purchase and sale of the Easement and this Option Agreement shall be completed on the terms set out herein.

2. EXTENSION OF OPTION TERM

At any time during the Option Term, PUC Transmission may, by written notice delivered to the Owner prior to the expiration of the Option Term, as same may have been extended, extend the Option Term with respect to the Lands for one (1) additional period of one (1) year, provided that upon such election, PUC Transmission pays to the Owner the amount of **\$XXXXXXX** in consideration for the extension of the Option Term.

3. PURCHASE PRICE

- (a) PUC Transmission shall pay the Purchase Price to or to the order of the Owner by way of a single payment by uncertified cheque or electronic funds transfer on the Closing Date (as hereinafter defined).
- (b) The Owner acknowledges receipt of an appraisal report commissioned by PUC Transmission and, prepared by an external, independent appraiser with the Accredited Appraiser Canadian Institute ("AAIC") designation, (the "**PUC Transmission Appraisal**").

4. CLOSING

The transaction of purchase and sale contemplated by this Option Agreement shall, subject to resolution of any title issues identified by PUC Transmission, be completed on the date that is ninety (90) days after PUC Transmission delivers the Exercise Notice to the Owner or on such earlier date as PUC Transmission, through its solicitors, may elect (the "**Closing Date**"). If the Closing Date is a date on which the Land Registry Office (the "**Land Registry Office**") in which the Lands are registered is closed, the Closing Date shall be on the next following day when such Land Registry Office is open. In the event that there is a delay in the completion of the transaction beyond the Closing Date as established by PUC Transmission upon delivery of the Exercise Notice that arises through no fault of PUC Transmission, then PUC Transmission shall not be responsible for any resulting delay in the Closing Date.

5. ACKNOWLEDGEMENT AND DIRECTION

The Owner and, if applicable, the Spouse, acknowledges and agrees that execution of the Option Agreement shall constitute execution of the Acknowledgement and Direction attached as Schedule "D" to the Option Agreement (the "**Acknowledgement and Direction**") authorizing PUC Transmission and its solicitors to register the Option and subsequent Easement on title to the Lands. PUC Transmission covenants and agrees to hold the Acknowledgement and Direction in escrow until PUC Transmission has paid the Purchase Price at which time the executed Acknowledgement and Direction and Option shall be released from escrow and may be acted upon by PUC Transmission.

6. REGISTRATION OF EASEMENT

The Owner acknowledges and agrees that PUC Transmission will register the Easement on title to the Lands on the Closing Date pursuant hereto and the Acknowledgement and Direction. PUC Transmission will provide notice to the Owner within a reasonable period of time after the Closing Date of the registration particulars of the Easement.

7. RIGHT TO TRANSFER

The Owner covenants and agrees with PUC Transmission that it has the right to grant the Easement

without restriction and that PUC Transmission will quietly possess and enjoy the Easement Lands.

8. INSPECTION PERIOD AND EARLY ACCESS PERIOD

(a) The Owner agrees and consents to PUC Transmission, its respective officers, employees, agents, contractors, sub-contractors, surveyors, workers, agents and permittees or any of them entering on, exiting and passing and repassing in, on, over, along, upon, across, through and under the Easement Lands and so much of the Lands as may be reasonably necessary at all reasonable times from the Agreement Date until the later of the expiration of the Option Term (as same may be extended) and the Closing Date, with or without all plant, machinery, material, supplies, vehicles, and equipment, for all purposes necessary or convenient to conduct such inspections, tests, audits, reports as PUC Transmission sees fit in connection with the acquisition, exercise or enjoyment of the Easement. PUC Transmission shall restore the Lands to their prior condition so far as reasonably possible following such inspections, tests, audits and reports.

(b) The Owner agrees and consents to PUC Transmission, its respective officers, employees, agents, contractors, sub-contractors, surveyors, workers, agents and permittees or any of them entering on, exiting and passing and repassing in, on, over, along, upon, across, through and under the Easement Lands and so much of the Lands as may be as reasonably necessary at all reasonable times from date PUC Transmission delivers the Exercise Notice to commence construction activities on the Easement Lands. PUC Transmission shall restore the Lands to their prior condition so far as reasonably possible in the event that the purchase transaction contemplated by this Option Agreement is not completed as contemplated herein.

9. SURVEY/REFERENCE PLAN

PUC Transmission agrees to obtain and register, at its sole expense, any new Reference Plan with respect to the Easement Lands that may be required by PUC Transmission for completion of this Option Agreement.

10. INCOME TAX ACT

The Owner represents and warrants and covenants that the Owner is not now and on Closing will not be a non-resident of Canada within the meaning of the *Income Tax Act (Canada)*.

11. HARMONIZED SALES TAX

The Owner and PUC Transmission acknowledge and agree that the grant of easement which is proposed under this Option Agreement constitutes a purchase and sale transaction of an interest in real property, and therefore, in conformance with subsections 221(2) and 228(4) of the *Excise Tax Act R.S.C. 1985, c E-15, as amended* (“the Act”), PUC Transmission shall report and pay to the Receiver General for Canada the Harmonized Sales Tax (“HST”) applicable to the purchase and sale of the Easement. For the purposes of this Section 11, PUC Transmission warrants that it is an HST registrant in good standing under the Act, that its HST registration number is *********, and that it is acquiring the Easement for use primarily in the course of its commercial activities.

12. NOTICE OF OPTION

PUC Transmission may, in its sole discretion and at its sole expense register this Option Agreement or notice thereof on title to the Lands.

13. NO OTHER RIGHTS

The Owner covenants and agrees with PUC Transmission that the Owner shall not grant, create or transfer any easement, right, covenant, restriction, privilege, permission, or other agreement in, through, under, over or in respect of the Easement Lands prior to the registration of the Easement without the prior written consent of PUC Transmission.

14. PRIOR ENCUMBRANCES

The Owner hereby grants PUC Transmission permission, should PUC Transmission elect in its sole discretion, to approach any encumbrancer having an interest in the Easement Lands in priority to the Easement Agreement and to obtain (in registrable form) and register all necessary consents, postponements or subordinations from all current and future encumbrancers having an interest in the Easement Lands in priority to the Easement Agreement or this Option Agreement consenting, postponing or subordinating such encumbrance and their respective rights, title and interest to the Easement and this Option Agreement or to place the Easement Agreement and this Option Agreement in first priority on title to the Easement Lands.

15. TIME OF ESSENCE

Time shall in all respects be of the essence hereof; provided, however, that the time for doing or completing any matter provided for herein may be extended or abridged by an agreement in writing between the parties or their respective counsel.

16. NOTICES

Notices to be given to either party shall be in writing, and will be sent via electronic mail (“email”), personally delivered or sent by registered mail (except during a postal disruption or threatened postal disruption), telegram, electronic facsimile or other similar means of prepaid recorded communication to the applicable address set forth below (or to such other address as such party may from time to time designate in such manner):

PUC TRANSMISSION LP: with a copy to its solicitors,

Attention:

Email:

Attention:

Email:

OWNER:

with a copy to their solicitors,

Solicitors Name

Solicitors Address 1

Notices personally delivered shall be deemed to have been validly and effectively given on the day of such delivery. Any notice sent by registered mail shall be deemed to have been validly and effectively given on the fifth (5th) Business Day following the date on which it was sent. Any notice sent by email, telegram, electronic facsimile or other similar means of prepaid recorded communication shall be deemed to have been validly and effectively given on the Business Day next following the day on which it was sent. “Business Day” shall mean any day which is not a Saturday or Sunday or a statutory holiday in the Province of Ontario.

17. ASSIGNMENT OF OPTION BY PUC TRANSMISSION

PUC Transmission shall have the right to assign all or any part of its interest in this Option Agreement and any or all rights, privileges and benefits accruing to PUC Transmission hereunder without the consent of the Owner prior to or on the Closing Date. Upon and to the extent of such

assignment, this Option Agreement shall thenceforth be construed as if originally made with such assignee or assignees instead of PUC Transmission and PUC Transmission shall, to the extent of such assignment, thereupon be relieved of all liabilities and obligations whatsoever arising out of this Option Agreement.

18. SURVIVAL OF REPRESENTATIONS

The parties hereto agree that any representations or covenants contained in this Option Agreement shall not merge on closing, but survive and continue in full force and effect thereafter, but only as to the accuracy of the representation or covenant as at the date of completion of this Option Agreement.

19. ENTIRE AGREEMENT

The parties acknowledge that there are no covenants, representations, warranties, agreements or conditions, express or implied, collateral or otherwise, forming part of or in any way affecting or relating to this Option Agreement save as expressly set out in this Option Agreement and that this Option Agreement and all Schedules hereto constitute the entire agreement between the parties and may not be modified except as expressly agreed between the Owner and PUC Transmission in writing.

20. SEVERABILITY

Any provision or provisions of this Option Agreement is declared illegal or unenforceable, it or they shall be considered separate and severable from the Option Agreement and the remaining provisions shall remain in force and be binding upon the parties hereto as though the said provision or provisions had never been included.

21. GOVERNING LAW

This Option Agreement shall be governed by and construed in accordance with the laws of the Province of Ontario.

22. SUCCESSORS AND ASSIGNS

This Option Agreement shall enure to the benefit of and be binding upon the parties hereto and their respective heirs, attorneys, guardians, estate trustees, executors, trustees, successors and permitted assigns.

23. EXECUTION AND DELIVERY

This Option Agreement may be executed in any number of counterparts, each of which is deemed to be an original and all of which taken together constitutes one agreement. To evidence the fact that it has executed this Option Agreement, a party may send a copy of its executed counterpart to all other parties by a delivery method set out in Section 16 herein (the "Transmission") and the signature transmitted by such Transmission is deemed to be its original signature for all purposes.

24. PLANNING ACT

This Option Agreement is subject to the express condition that it is to be effective only if the provisions of the *Planning Act, R.S.O. 1990, c. P.13* and amendments thereto are complied with.

25. FURTHER ASSURANCES

The Owner covenants and agrees to execute, if necessary, at no further cost or condition to PUC Transmission such other instruments, plans and documents as may reasonably be required by PUC Transmission to effect the registration of the Easement or notice of this Option Agreement on title to the Lands.

26. SPOUSAL CONSENT

The Owner represents that, except to the extent such consent has been obtained, spousal consent to this transaction is not necessary and on closing will not be necessary under the provisions of the *Family Law Act, R.S.O. 1990, c. F.3*.

27. AGE

The Owner represents that the Owner is at least 18 years of age.

28. INDEPENDENT LEGAL ADVICE AND REPRESENTATION

The Owner acknowledges that the Owner is entitled to consult with an independent solicitor of the Owner's choice prior to entering into this Agreement. Further, the Owner acknowledges that he/she may retain independent legal representation for the purposes of all matters arising in connection with this Agreement. In entering into this Agreement, the Owner acknowledges he/she has had the opportunity to seek independent legal advice, and either has done so or has chosen not to do so. PUC Transmission agrees to pay the Owner's reasonable legal costs in connection with such independent legal advice or representation.

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**SCHEDULE “C”
TRANSFER AND GRANT OF EASEMENT**

Whereas the Transferor is the owner in fee simple and in possession of **INSERT LEGAL DESCRIPTION OF PROPERTY** (the “**Lands**”);

And Whereas the Transferee has erected, or is about to erect, certain Works (as more particularly described in paragraph 1(a) herein) in, through, under, over, across, along and upon the Lands;

1. The Transferor hereby grants and conveys to PUC (Transmission) LP, its successors and assigns the rights and easement, free from all encumbrances and restrictions, the following unobstructed and exclusive rights, easements, rights-of-way, covenants, agreements and privileges in perpetuity (the “**Rights**”) on, in, through, under, over across, along and upon that portion of the Lands of the Transferor described in the Properties Section of the Transfer Easement to which this Schedule is attached (the “**Easement Lands**”) for the following purposes:
 - (a) To enter and lay down, install, construct, erect, maintain, open, inspect, add to, enlarge, alter, repair and keep in good condition, move, remove, replace, reinstall, reconstruct, relocate, supplement and operate and maintain at all times on, in, through, under, over, across, along and upon the Easement Lands an electricity transmission system consisting of pole structures, towers, anchors, guys and braces and all such aboveground or underground lines, wires, cables, grounding electrodes, conductors, apparatus, works, accessories, associated material and equipment, and appurtenances pertaining to or required by such system (all or any of which are herein individually or collectively called the “**Works**”) as in the opinion of the Transferee are necessary or convenient thereto for use as required by Transferee in its undertaking from time to time, or a related business venture.
 - (b) To enter on and cut or prune, and to clear and keep clear, and remove all trees, branches, bush and shrubs and other obstructions and materials, over or upon the Easement Lands, and without limitation, to cut and remove all leaning or decayed trees located on the Lands whose proximity to the Works renders them liable to fall and come in contact with the Works or which may in any way interfere with the safe, efficient or serviceable operation of the Works or this easement by the Transferee.
 - (c) To conduct all engineering, legal surveys, and make soil tests, soil compaction and environmental studies and audits in, under, on and over the Easement Lands as the Transferee in its discretion considers requisite.
 - (d) To erect, install, construct, maintain, repair and keep in good condition, move, remove, replace and use bridges and such gates in all fences which are now or may hereafter be on the Easement Lands as the Transferee may from time to time consider necessary.
 - (e) Except for fences and permitted paragraph 2(a) installations, to clear the Easement Lands and keep same clear of all buildings, structures, erections, installations, or other obstructions of any nature (hereinafter collectively called the

“**obstruction**”) whether above or below ground, including removal of any materials and equipment or plants and natural growth, which in the opinion of the Transferee, endanger its Works or any person or property or which may be likely to become a hazard to any Works of the Transferee or to any person or property or which do or may in any way interfere with the safe, efficient or serviceable operation of the Works or this easement by the Transferee.

- (f) To enter on and exit by the Transferor’s access routes and to pass and repass at all times on, in, over, along, upon and across the Easement Lands and so much of the Lands as is reasonably required, for Transferee, its respective officers, employees, agents, servants, contractors, subcontractors, workmen and permittees with or without all plant machinery, material, supplies, vehicles and equipment for all purposes necessary or convenient to the exercise and enjoyment of this easement subject to compensation afterwards for any crop or other physical damage only to the Lands or permitted structures sustained by the Transferor caused by the exercise of this right of entry and passageway.
- (g) To remove, relocate and reconstruct the line on or under the Easement Lands subject to payment by the Transferee of additional compensation for any damage caused thereby.

2. The Transferor agrees that:

- (a) It will not interfere with any Works established on or in the Easement Lands and shall not, without the Transferee’s consent in writing erect or cause to be erected or permit in, under or upon the Easement Lands any obstruction or plant or permit any trees, bush, shrubs, plants or natural growth which does or may interfere with the Rights granted herein. The Transferor agrees it shall not, without the Transferee’s consent in writing, change or permit the existing configuration, grade or elevation of the Easement Lands to be changed and the Transferor further agrees that no excavation or opening or work which may disturb or interfere with the existing surface of the Easement Lands shall be done or made unless consent therefore in writing has been obtained from Transferee, provided however, that the Transferor shall not be required to obtain such permission in case of emergency. Notwithstanding the foregoing, in cases where in the reasonable discretion of the Transferee, there is no danger or likelihood of danger to the Works of the Transferee or to any persons or property and the safe or serviceable operation of this easement by the Transferee is not interfered with, the Transferor may at its expense and with the prior written approval of the Transferee, construct and maintain roads, lanes walks, drains, sewers water pipes, oil and gas pipelines, fences (not to exceed 2 metres in height) and service cables on or under the Easement Lands (the “**Installation**”) or any portion thereof; provided that prior to commencing such Installation, the transferor shall give to the Transferee thirty (30) days’ notice in writing thereof to enable the Transferee to have a representative present to inspect the proposed Installation during the performance of such work, and provided further that Transferor comply with all instructions given by such representative and that all such work shall be done to the reasonable satisfaction of such representative. In the event of any unauthorized interference aforesaid or contravention of this paragraph, or if any authorized interference, obstruction or Installation is not maintained in accordance with the Transferee’s instructions or in the Transferee’s reasonable opinion, may subsequently interfere with the Rights

granted herein, the Transferee may at the Transferor's expense, forthwith remove, relocate, clear or correct the offending interference, obstruction, Installation or contravention complained of from the Easement Lands, without being liable for any damages cause thereby.

- (b) notwithstanding any rule of law or equity, the Works installed by the Transferee shall at all times remain the property of the Transferee, notwithstanding that such Works are or may become annexed or affixed to the Easement Lands and shall at any time and from time to time be removable in whole or in part by Transferee.
 - (c) no other easement or permission will be transferred or granted and no encumbrances will be created over or in respect to the Easement Lands, prior to the registration of a Transfer of this grant of Rights.
 - (d) The Transferor will execute such further assurances of the Rights in respect of this grant of easement as may be requisite.
 - (e) The Rights hereby granted:
 - (i) shall be of the same force and effect to all intents and purposes as a covenant running with the Easement Lands; and
 - (ii) are declared hereby to be appurtenant to and for the benefit of the Works and undertaking of the Transferee described in paragraph 1(a).
3. The Transferee covenants and agrees to obtain at its sole cost and expense all necessary postponements and subordinations (in registrable form) from all current and future prior encumbrancers, postponing their respective rights, title and interest to the transfer of Easement herein so as to place such Rights and easement in first priority on title to the Easement Lands.
4. Except to the extent attributable to wilful or negligent acts of the Transferor or its servants, employees, agents, contractors, subcontractors, permittees, licensees, lessees or those for whom such agents, contractors, subcontractors, permittees, licensees, or lessees are responsible, the Transferee will at all times indemnify and save harmless the Transferor from any and all manner of claims, demands, losses, costs, charges, damages, expenses, actions or other proceedings, whenever and howsoever arising, including those concerning any environmental liability, those arising under the Occupiers Liability Act, and those for compensation under the Workplace Safety and Insurance Act, 1997 or any similar Act, made or brought against, suffered by, or imposed upon the Transferor or its property, servants, agents, or any other person, firm or corporation, in respect of any injury, death, loss or damage of or to any person or property (including, without limitation servants, agents, permittees, invitees, licensees, lessees, and property of the Transferor and the Transferee) directly or indirectly arising out of, resulting from or sustained by the reason of this easement or the Transferee's occupancy or use of the Easement Lands or any buildings, fixtures, improvements, structures or chattels thereon, or the Transferee's use of other lands of the Transferor for any purpose whatsoever, including ingress to or egress from the Easement Lands, or any operation connected

with this easement, or any breach or non-performance by the Transferee of its covenants and obligations under this easement.

5. The Transferee agrees to maintain at all times a minimum of Five Million (\$5,000,000.00) Dollars comprehensive public liability insurance in respect of personal injury, death, loss or damage of or to any person or property of third parties, with insurers of recognized responsibility.
6. There are no representations, covenants agreements, warranties and conditions in any way relating to the subject matter of this grant of Rights whether expressed or implied, collateral or otherwise except those set forth herein.
7. No waiver of a breach or any of the covenants of this grant of Rights shall be construed to be a waiver of any succeeding breach of the same or any other covenant.
8. The burden and benefit of this transfer of Rights shall run with the Easement Lands and the Works and undertaking of the Transferee and shall extend to, be binding upon and enure to the benefit of the parties hereto and their respective heirs, executors, administrators, successors and assigns.

SCHEDULE "D"
ACKNOWLEDGEMENT AND
DIRECTION

TO: PUC Transmission LP ("PUC TRANSMISSION")

AND TO: Spadafora Johnson Lepore LLP, PUC Transmission's Solicitors herein

AND TO: Any and all designees of the above

RE: Option Agreement dated _____, 20__, (the "Option Agreement) and the Transfer and Grant of Easement in substantially the form attached [as Schedule "C" to the Option Agreement or hereto] (the "Easement Agreement")

This will confirm that:

- PUC Transmission and the Owner have reviewed the information set out in the Option Agreement and the draft document(s) attached to the Option Agreement, and that this information is accurate;
- You are authorized and directed to sign and register electronically on behalf of the undersigned the Option Agreement and the Easement Agreement as well as any other document(s) required to complete the transaction described above;
- You are authorized to amend the Option Agreement and the Easement Agreement as may be required to effect registration of such document including the insertion of a registerable legal description to describe the lands subject to the easement being granted pursuant to the Easement Agreement in the event one is not available at the time of execution of the Option Agreement; provided such amendments are non-material to the terms of the Option Agreement and the Easement Agreement and do not expand the description of the Easement Lands as described and/or illustrated in the Option Agreement in any material manner;
- The effect of the electronic documents described in this Acknowledgement and Direction has been fully explained to the Owner and PUC Transmission, and the Owner and PUC Transmission understand that each are parties to and bound by the terms and provisions of these electronic document(s) to the same extent as if each had signed these documents;
- You are directed to insert the names set forth in the signatory section of the Option Agreement as persons authorized (or other authorized signing officers of PUC Transmission) to act on behalf of PUC Transmission and the Owner, as applicable;
- The Owner acknowledges that Spadafora Johnson Lepore LLP has not met with them nor been engaged by them, is not entering into a solicitor-client relationship with them and is not representing them solely or jointly with PUC Transmission for the purposes of the preparation, negotiation, completion or registration of the Option Agreement or the Easement Agreement. Spadafora

Johnson Lepore LLP will act in a limited capacity as agent for the undersigned for the purposes of registering the Option Agreement and the Easement Agreement; and

- PUC Transmission and the Owner are in fact the parties named in the electronic documents described in this Acknowledgement and Direction and each has not misrepresented the identity of same to you.

Dated _____, 2023.

WITNESS:

OWNER:

Name:

Name: «Owner_1_name_for_letters»

l/s

Address:

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FORM OF PURCHASE AGREEMENT

OPTION AGREEMENT - FEE SIMPLE PARCEL

THIS OPTION AGREEMENT made as of the _____ day of _____, 2023
(the “**Agreement Date**”).

B E T W E E N:

[NAME OF OWNER]

(hereinafter **collectively** called the “**Owner**”)

OF THE FIRST PART

- and -

**PUC (TRANSMISSION) LP by its General Partner
PUC (TRANSMISSION) GP INC.**

(hereinafter called “**PUC Transmission**”)

OF THE SECOND PART

- and -

SPOUSE NAME

(hereinafter **collectively** called the “**Spouse**”) **Only if Applicable**

OF THE THIRD PART

RECITALS:

- A. The Owner is the owner of the lands and premises described in Schedule “A” attached hereto (the “**Lands**”);
- B. The Owner has agreed to grant to PUC Transmission for the consideration and on the terms and conditions set out herein and attached hereto as Schedule “B” (the “**Standard Terms and Conditions**”) an option to purchase that portion of the Lands described on Schedule “A-1” attached hereto (the “**Optioned Parcel**”) on the terms and conditions set out herein and attached hereto as Schedule “C” (the “**Agreement of Purchase and Sale**”).

NOW THEREFORE, the parties hereby agree as follows:

1. GRANT OF OPTION

In consideration of the sum of **XXX (\$XXX)** of lawful money of Canada paid by PUC Transmission to the Owner, the receipt and sufficiency of which is hereby acknowledged by the Owner, (the “**Option Payment**”) the Owner hereby grants to PUC Transmission an irrevocable option (the “**Option**”), to purchase the Owner’s fee simple interest in the Optioned Parcel upon and subject to the terms and conditions set out herein, the Standard Terms and Conditions and the Schedules hereto.

2. PURCHASE PRICE

In accordance with the terms and conditions set out herein, the Standard Terms and Conditions and the Schedules hereto, PUC Transmission agrees to pay to or to the order of the Owner the amount of **XXXX Dollars (\$ ●)** for the Optioned Parcel (the “**Purchase Price**”) on the Closing Date.

3. INCENTIVE PAYMENT

In addition to the payment of the Purchase Price as provided for in paragraph 2 herein, and as an incentive to the Owner to enter into this Option Agreement, PUC Transmission agrees to pay to or to the order of the Owner an incentive payment in the amount of **XXX Dollars (\$ ●)** on the Closing Date.

IN WITNESS WHEREOF the parties hereto have duly executed this Option Agreement as of the Agreement Date.

WITNESS:

OWNER:

Name:

Address:

Name: _____ 1/s

_____ 1/s

WITNESS:

The spouse of the Owner hereby consents to this Agreement

SPOUSE OF OWNER:

Name:

Address:

Name: **Property Owner Spouse Name** 1/s

PUC (TRANSMISSION) LP by its General Partner PUC (TRANSMISSION) GP INC.

PUC (TRANSMISSION) LP
HST ***

Per: _____
Name:
Title:

I have authority to bind the Corporation

SCHEDULE "A"
LEGAL DESCRIPTION

«LEGAL DESCRIPTION»

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**SCHEDULE "A-1"
OPTIONED
PARCEL**

Legal description to be determined by deposited Reference Plan; Optioned Parcel shown outlined in (colour) in sketch attached.

****NOTE – Sketch shall be replaced by Optioned Parcel description once applicable Reference Plan is deposited.**

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SCHEDULE "B"
STANDARD TERMS AND CONDITIONS

1. EXERCISE OF OPTION

The Option shall be open for exercise at any time from the Agreement Date until the 2nd anniversary of the Agreement Date, as same may have been extended in accordance with the terms hereof, (the "Option Term"), by providing written notice to the Owner (the "Exercise Notice"), after which time, subject to Section 2, this Option Agreement shall be null and void and no longer binding upon either of the parties. If the Option is exercised within the Option Term, then this Option Agreement shall become a binding agreement for the purchase and sale of the Optioned Parcel and this Option Agreement shall be completed on the terms set out herein.

2. EXTENSION OF OPTION TERM

At any time during the Option Term, PUC Transmission may, by written notice delivered to the Owner prior to the expiration of the Option Term, as same may have been extended, extend the Option Term with respect to the Lands for one (1) additional period of one (1) year, provided that upon such election, PUC Transmission pays to the Owner the amount of \$XXXXXX in consideration for the extension of the Option Term.

3. PURCHASE PRICE

PUC Transmission shall pay the Purchase Price to or to the order of the Owner by way of a single payment by uncertified cheque or electronic funds transfer on the Closing Date (as hereinafter defined).

The Owner acknowledges receipt of an appraisal report commissioned by PUC Transmission and, prepared by an external, independent appraiser with the Accredited Appraiser Canadian Institute ("AACI") designation, (the "PUC Transmission Appraisal").

4. CLOSING

The transaction of purchase and sale contemplated by this Option Agreement and the Agreement of Purchase and Sale shall, subject to resolution of any title issues identified pursuant to Article 5 of the Agreement of Purchase and Sale, be completed on the date that is ninety (90) days after PUC Transmission delivers the Exercise Notice to the Owner or on such earlier date as PUC Transmission, through its solicitors, may elect (the "Closing Date"). If the Closing Date is a date on which the Land Registry Office (the "Land Registry Office") in which the Lands are registered is closed, the Closing Date shall be on the next following day when such Land Registry Office is open. In the event that there is a delay in the completion of the transaction beyond the Closing Date as established by PUC Transmission upon delivery of the Exercise Notice that arises through no fault of PUC Transmission, then PUC Transmission shall not be responsible for any resulting delay in the Closing Date.

5. AGREEMENT OF PURCHASE AND SALE

The Owner and, if applicable, the Spouse, acknowledge and agree that execution of this Option Agreement shall constitute execution of the Agreement of Purchase and Sale attached as Schedule "C" to this Option Agreement.

6. RIGHT TO TRANSFER AND TITLE

The Owner covenants and agrees with PUC Transmission that it has good and marketable title to the Optioned Parcel and has the full and exclusive power to convey the fee simple interest in the Optioned Parcel to PUC Transmission free and clear of any financial encumbrances, and that PUC Transmission will quietly possess and enjoy the Optioned Parcel.

7. INSPECTION PERIOD AND EARLY ACCESS PERIOD

(a) The Owner agrees and consents to PUC Transmission, its respective officers, employees, agents, contractors, sub-contractors, surveyors, workers and permittees or any of them entering on, exiting and passing and re-passing in, on, over, along, upon, across, through and under the Optioned Parcel and so much of the Lands as may be reasonably necessary

at all reasonable times from the Agreement Date until the later of the expiration of the Option Term (as same may be extended) and the Closing Date, with or without all plant, machinery, material, supplies, vehicles, and equipment, for all purposes necessary or convenient to conduct such inspections, tests, audits, reports as PUC Transmission sees fit in connection with the acquisition, exercise or enjoyment of the Optioned Parcel. PUC Transmission shall restore the Lands to their prior condition so far as reasonably possible following such inspections, tests, audits and reports.

- (b) The Owner agrees and consents to PUC Transmission, its respective officers, employees, agents, contractors, sub-contractors, surveyors, workers, agents and permittees or any of them entering on, exiting and passing and repassing in, on, over, along, upon, across, through and under the Optioned Parcel and so much of the Lands as may be reasonably necessary at all reasonable times from date PUC Transmission delivers the Exercise Notice to commence construction activities on the Optioned Parcel. PUC Transmission shall restore the Lands to their prior condition so far as reasonably possible in the event that the purchase transaction contemplated by this Option Agreement is not completed as contemplated herein.

8. SURVEY/REFERENCE PLAN

PUC Transmission agrees to obtain and register, at its sole expense, any new Reference Plan with respect to the Optioned Parcel that may be required by PUC Transmission for completion of this Option Agreement.

9. INCOME TAX ACT

The Owner represents and warrants and covenants that the Owner is not now and on Closing will not be a non-resident of Canada within the meaning of the *Income Tax Act (Canada)*.

10. HARMONIZED SALES TAX

The Owner and PUC Transmission acknowledge and agree that the transfer of the fee simple of the Optioned Parcel which is proposed under this Option Agreement constitutes a purchase and sale transaction of an interest in real property, and therefore, in conformance with subsections 221(2) and 228(4) of the *Excise Tax Act* R.S.C. 1985, c E-15, as amended (“the Act”), PUC Transmission shall report and pay to the Receiver General for Canada the Harmonized Sales Tax (“HST”) applicable to the purchase and sale of the Optioned Parcel. For the purposes of this Section 10, PUC Transmission warrants that it is an HST registrant in good standing under the Act, that its HST registration number is *****, and that it is acquiring the Optioned Parcel for use primarily in the course of its commercial activities.

11. NOTICE OF OPTION

PUC Transmission may, in its sole discretion and at its sole expense register this Option Agreement or notice thereof on title to the Lands.

12. NO OTHER RIGHTS

The Owner covenants and agrees with PUC Transmission that the Owner shall not grant, create or transfer any easement, right, covenant, restriction, privilege, permission, or other agreement in, through, under, over or in respect of the Optioned Parcel prior to the registration of the Closing of the transaction contemplated herein without the prior written consent of PUC Transmission.

13. PRIOR ENCUMBRANCES

The Owner hereby grants PUC Transmission permission, should PUC Transmission elect in its sole discretion, to approach any encumbrancer having an interest in the Optioned Parcel in priority to the Option Agreement and to obtain (in registrable form) and register all necessary consents, postponements or subordinations from all current and future encumbrancers having an interest in the Optioned Parcel in priority this Option Agreement consenting, postponing or subordinating such encumbrance and their respective rights, title and interest to the Optioned Parcel and this Option Agreement or to place the this Option Agreement in first priority on title to the Optioned Parcel.

14. TIME OF ESSENCE

Time shall in all respects be of the essence hereof; provided, however, that the time for doing or completing any matter provided for herein may be extended or abridged by an agreement in writing between the parties or their respective counsel.

15. NOTICES

Notices to be given to either party shall be in writing, and will be sent via electronic mail (“email”), personally delivered or sent by registered mail (except during a postal disruption or threatened postal disruption), telegram, electronic facsimile or other similar means of prepaid recorded communication to the applicable address set forth below (or to such other address as such party may from time to time designate in such manner):

PUC Transmission: with a copy to its solicitors,

PUC Transmission LP
500 Second Line East
Sault Ste. Marie ON

Attention:

Email:

Attention:

Email:

OWNER:

with a copy to their solicitors,

Solicitors Name

Solicitors Address 1

Notices personally delivered shall be deemed to have been validly and effectively given on the day of such delivery. Any notice sent by registered mail shall be deemed to have been validly and effectively given on the fifth (5th) Business Day following the date on which it was sent. Any notice sent by email, telegram, electronic facsimile or other similar means of prepaid recorded communication shall be deemed to have been validly and effectively given on the Business Day next following the day on which it was sent. “Business Day” shall mean any day which is not a Saturday or Sunday or a statutory holiday in the Province of Ontario.

16. ASSIGNMENT OF OPTION BY PUC TRANSMISSION

PUC Transmission shall have the right to assign all or any part of its interest in this Option Agreement and any or all rights, privileges and benefits accruing to PUC Transmission hereunder without the consent of the Owner prior to or on the Closing Date. Upon and to the extent of such assignment, this Option Agreement shall thenceforth be construed as if originally made with such assignee or assignees instead of PUC Transmission and PUC Transmission shall, to the extent of such assignment, thereupon be relieved of all liabilities and obligations whatsoever arising out of this Option Agreement.

17. SURVIVAL OF REPRESENTATIONS

The parties hereto agree that any representations or covenants contained in this Option Agreement shall not merge on closing, but survive and continue in full force and effect thereafter, but only as to the accuracy of the representation or covenant as at the date of completion of this Option Agreement.

18. ENTIRE AGREEMENT

The parties acknowledge that there are no covenants, representations, warranties, agreements or conditions, express or implied, collateral or otherwise, forming part of or in any way affecting or relating to this Option Agreement save as expressly set out in this Option Agreement and that this Option Agreement and all Schedules hereto constitute the entire agreement between the parties and may not be modified except as expressly agreed between the Owner and PUC Transmission in writing.

19. SEVERABILITY

Any provision or provisions of this Option Agreement is declared illegal or unenforceable, it or they shall be considered separate and severable from the Option Agreement and the remaining provisions shall remain in force and be binding upon the parties hereto as though the said provision or provisions had never been included.

20. GOVERNING LAW

This Option Agreement shall be governed by and construed in accordance with the laws of the Province of Ontario.

21. SUCCESSORS AND ASSIGNS

This Option Agreement shall enure to the benefit of and be binding upon the parties hereto and their respective heirs, attorneys, guardians, estate trustees, executors, trustees, successors and permitted assigns.

22. EXECUTION AND DELIVERY

This Option Agreement may be executed in any number of counterparts, each of which is deemed to be an original and all of which taken together constitutes one agreement. To evidence the fact that it has executed this Option Agreement, a party may send a copy of its executed counterpart to all other parties by a delivery method set out in Section 15 herein (the "Transmission") and the signature transmitted by such Transmission is deemed to be its original signature for all purposes.

23. PLANNING ACT

This Option Agreement is subject to the express condition that it is to be effective only if the provisions of the *Planning Act*, R.S.O. 1990, c. P.13 and amendments thereto are complied with.

24. FURTHER ASSURANCES

The Owner covenants and agrees to execute, if necessary, at no further cost or condition to PUC Transmission such other instruments, plans and documents as may reasonably be required by PUC Transmission to effect the registration of the transfer of the Optioned Parcel or notice of this Option Agreement on title to the Lands.

25. SPOUSAL CONSENT

The Owner represents that, except to the extent such consent has been obtained, spousal consent to this transaction is not necessary and on closing will not be necessary under the provisions of the *Family Law Act*, R.S.O. 1990, c. F.3.

26. AGE

The Owner represents that the Owner is at least 18 years of age.

27. INDEPENDENT LEGAL ADVICE AND REPRESENTATION

The Owner acknowledges that the Owner is entitled to consult with an independent solicitor of the Owner's choice prior to entering into this Agreement. Further, the Owner acknowledges that he/she may retain independent legal representation for the purposes of all matters arising in connection with this Agreement. In entering into this Agreement, the Owner acknowledges he/she has had the opportunity to seek independent legal advice, and either has done so or has chosen not to do so. PUC Transmission agrees to pay the Owner's reasonable legal costs in connection with such independent legal advice or representation.

SCHEDULE "C"
AGREEMENT OF PURCHASE AND SALE

THIS AGREEMENT made as of the _____ day of _____, 2023 (the "**Agreement Date**").

B E T W E E N:

[NAME OF OWNER]

(hereinafter **collectively** called the "**Vendor**")

OF THE FIRST PART

-and-

PUC (TRANSMISSION) LP by its General Partner
PUC (TRANSMISSION) GP INC.

(hereinafter called "**Purchaser**")

OF THE SECOND PART

- and -

SPOUSE NAME

(hereinafter called the "**Spouse**") **Only if Applicable**

OF THE THIRD PART

RECITALS:

- A. The Vendor is the owner of the lands and premises described in Schedule "A" attached hereto (the "**Lands**");
- B. The Purchaser and the Vendor entered into an Option Agreement to which this Agreement of Purchase and Sale is attached wherein the Purchaser was granted an option by the Vendor to purchase the Property pursuant to this Agreement (the "**Option Agreement**")

NOW THEREFORE in consideration of the mutual covenants, agreements and payments herein provided, the parties hereto covenant and agree as follows:

ARTICLE 1
OFFER

- 11** The Vendor, being the owner of the lands and premises more particularly described in Schedule "A" (the "**Lands**") hereby agrees to sell to the Purchaser and the Purchaser agrees to purchase from the Vendor, on the terms and conditions set out in this Agreement, a portion of the Lands more particularly described on Schedule "A-1" attached hereto (the "**Property**") upon and subject to the terms and conditions hereinafter set forth.
- 12** The Vendor acknowledges and understands that upon execution of this Agreement by the Vendor and the Purchaser there shall be a binding agreement of Purchase and Sale between the Purchaser and the Vendor.
- 13** Included in the Purchase Price is the purchase of all of the Vendor's interest in all fixtures, improvements, and appurtenances located on the Property except those listed below which are expressly excluded:

NIL

**ARTICLE 2
PURCHASE PRICE**

2.1 (a) The total compensation to be paid by the Purchaser to the Vendor for the Property shall be the sum of ***** Canadian Dollars, (the “**Total Compensation**”), subject to usual adjustments, if any, payable on Closing by uncertified cheque or electronic funds transfer on the Closing (as hereinafter defined).

(b) The Total Compensation is comprised as follows:

(i) Purchase Price of the Property	\$XXXX
(ii) Option Payment	\$XXXX
TOTAL COMPENSATION	\$XXXX.00

2.2 The Vendor acknowledges receipt of an appraisal report and update, if any, prepared by an external, independent AACI accredited appraiser commissioned by the Purchaser.

2.3 The Purchaser agrees to obtain and register, at its sole expense, any new Reference Plan with respect to the Property that may be required by the Purchaser for completion of this Agreement of Purchase and Sale.

2.4 The calculation of the Total Compensation is shown on the calculation sheet attached hereto as Schedule “C” (the “**Calculation Sheet**”).

**ARTICLE 3
CLOSING**

3.1 The transaction of purchase and sale contemplated by this Agreement of Purchase and Sale shall, subject to resolution of any title issues identified pursuant to Article 5 of the Agreement of Purchase and Sale, be completed on the date that is ninety (90) days after the Purchaser delivers the Exercise Notice to the Owner or on such earlier date as the Purchaser, through its solicitors, may elect (the “**Closing Date**”). If the Closing Date is a date on which the Land Registry Office (the “**Land Registry Office**”) in which the Lands are registered is closed, the Closing Date shall be on the next following day when such Land Registry Office is open. In the event that there is a delay in the completion of the transaction beyond the Closing Date as established by the Purchaser upon delivery of the Exercise Notice that arises through no fault of the Purchaser, then the Purchaser shall not be responsible for any resulting delay in the Closing Date.

3.2 On Closing,

- (a) Vacant possession of the Property shall be given to the Purchaser;
- (b) The Purchaser shall pay the Total Compensation to the Vendor in accordance with section 2.1 of this Agreement;
- (c) If applicable, rents, realty taxes, local improvement charges, water and unmetered utility charges and the cost of fuel as applicable shall be apportioned and allowed to the date of completion (the day itself to be apportioned to the Purchaser);
- (d) In conformance with subsections 221(2) and 228(4) of the *Excise Tax Act* R.S.C. 1985, c E-15, as amended (“the Act”), Purchaser shall report and pay to the Receiver General, the Harmonized Sales Tax (“HST”) applicable to the purchase and sale of the Property. For the purposes of this clause 3.2(b), the Purchaser warrants that it is an HST registrant in good standing under the Act, that its HST registration number is *****, and that it is acquiring the Property for use primarily in the course of its commercial activities.

**ARTICLE 4
INSPECTION PERIOD**

4.1 The Purchaser shall be allowed thirty (30) days from the date of this Agreement (the “**Inspection Period**”) to satisfy itself with respect to all matters respecting the Property including its present state of repair and condition and any structures thereon, all

encumbrances and all regulations and by-laws governing the Property and the Vendor grants to the Purchaser the right to enter upon the Property and to conduct such inspections, surveys and tests as the Purchaser, acting reasonably, deems necessary in this regard, provided the Purchaser takes all reasonable care in the conduct of such inspections, surveys and tests and restores the Property to its prior condition so far as reasonably possible following such inspections and tests. The Vendor assumes no responsibility for and the Purchaser shall indemnify and save harmless the Vendor from and against all claims, demands, costs, damages, expenses and liabilities whatsoever arising out of its presence on the Property or of its activities on or in connection with the Property during the Inspection Period.

- 42 If for any reason, the Purchaser, acting reasonably, is not satisfied with respect to such matters arising from its activities in Section 4.1 herein, it may deliver a notice (the "**Notice of Termination**") to the Vendor prior to the expiry of the Inspection Period indicating that it is not satisfied with respect to such matters and desires to terminate this Agreement and release the Vendor from any further obligations. Upon delivery by the Purchaser of a Notice of Termination to the Vendor, and this Agreement shall be at an end and neither Party shall have any further obligation to the other respecting the Agreement.

ARTICLE 5 TITLE

- 51 The Purchaser shall be allowed thirty (30) days from the date of this Agreement to investigate title to the Property at its own expense (the "**Title Search Period**"), to satisfy itself that there are no outstanding encumbrances, or liens save and except those listed in Schedule "B" attached hereto and until the earlier of: (i) thirty (30) days from the later of the last date of the title search period or the date or which the conditions in this Agreement are fulfilled or otherwise waived or; (ii) five (5) days prior to completion, to satisfy itself that there are no outstanding work orders or deficiency notices affecting the property. Vendor hereby consents to the Municipality or other governmental agencies releasing to the Purchaser details of all outstanding work orders affecting the Property and the Vendor agrees to execute and deliver such further authorizations in this regard as Purchaser may reasonably require.
- 52 Provided that the title to the Property is good and free from all registered restrictions, charges, liens and encumbrances except those listed in Schedule "B" attached hereto, if within the Title Search Period, any valid objection to title is made by the Purchaser in writing to the Vendor together with documentary verification thereof, and which the Vendor shall be unwilling or unable to remove and which the Purchaser will not waive, this Agreement, notwithstanding any intermediate acts or negotiations in respect of such objections, shall be at an end and the Vendor shall not be liable for any costs or damages and the Vendor and the Purchaser shall be released from all obligations hereunder, and the Vendor shall also be released from all obligations under this Agreement, save and except those covenants of the Purchaser expressly stated to survive Closing or other termination of this Agreement. Save as to any valid objection to title made in accordance with this Agreement and within the Title Search Period, and except for any objection going to the root of title, Purchaser shall be conclusively deemed to have accepted Vendor's title to the Property.
- 53 The Vendor and Purchaser agree that there is no condition, express, or implied, representation or warranty of any kind that the future intended use of the Property by the Purchaser is or will be lawful except as may be specifically stipulated elsewhere in this Agreement.
- 54 The Vendor agrees to provide to the Purchaser any existing survey of the Property, within Fifteen (15) days from the date of this Agreement.

ARTICLE 6 PURCHASER'S INVESTIGATION RESULTS

- 6.1 Purchaser shall, at its own cost, forthwith make such investigation as the Purchaser deems appropriate of the Property and Vendor's title as provided for in this Agreement and shall notify the Vendor of any objection to title, together with a complete copy of any documents and other material information related thereto prior to the expiry of the Title Search Period.

ARTICLE 7 INSURANCE

- 71 The Vendor covenants and agrees that the Property and all structures or fixtures being purchased are insured, and that such insurance will remain in force until closing. The

Property and all structures or fixtures being purchased shall be and remain at the risk of the Vendor until Closing.

- 72 Pending completion, Vendor shall hold all insurance policies and the proceeds thereof in trust for the parties as their interests may appear and in the event of substantial damage to the Property the Purchaser may either terminate this Agreement and have all monies paid by the Purchaser returned to the Purchaser without interest or deduction or else take the proceeds of any insurance and complete the purchase.

ARTICLE 8 PLANNING ACT

- 8.1 This Agreement is subject to the express condition that it is to be effective only if the subdivision control provisions of the *Planning Act* R.S.O. 1990, c. P.13 as amended (the "*Planning Act*") are complied with prior to Closing. The Vendor shall forthwith make any application to the local Committee of Adjustment or Land Division Committee for any consent that may be required pursuant to the *Planning Act*. In the event that any such application for consent is denied, or any condition imposed by such body is unacceptable to the Vendor, this Agreement shall be terminated.

ARTICLE 9 ADDITIONAL PROVISIONS

- 9.1 The Transfer/Deed of Land (the "**Transfer**"), and the Land Transfer Tax Affidavit, shall be prepared in registrable form by the Purchaser, and the Purchaser covenants at its cost to register the Transfer on Closing. If requested by Purchaser, Vendor covenants that the Transfer Deed to be delivered on completion shall contain the statements contemplated by s. 50(22) of the *Planning Act*.
- 9.2 Time shall in all respects be of the essence hereof provided that the time for doing or completing of any matter provided for herein may be extended or abridged by an agreement in writing signed by the Parties or by their respective solicitors who are specifically authorized in that regard.
- 9.3 Any tender of documents or money hereunder may be made upon the Parties or their respective solicitors on the day set for Closing. Money may be tendered by bank draft, uncertified cheque, or electronic funds transfer.
- 9.4 Notices to be given to either party shall be in writing, and will be sent via email, personally delivered or sent by registered mail (except during a postal disruption or threatened postal disruption), telegram, electronic facsimile or other similar means of prepaid recorded communication to the applicable address set forth below (or to such other address as such party may from time to time designate in such manner):

PUC TRANSMISSION LP

with a copy to its solicitors,

500 Second Line East
Sault Ste. Marie ON

Attention:

Attention:

Email:

Email:

OWNER:

with a copy to their solicitors,

«Owner_1_name_for_letters»

Solicitors Name

Solicitors Address

Notices personally delivered shall be deemed to have been validly and effectively given on the day of such delivery. Any notice sent by registered mail shall be deemed to have been validly and effectively given on the fifth (5th) business day following the date on which it was sent. Any notice sent by email, telegram, electronic facsimile or other similar means of prepaid recorded communication shall be deemed to have been validly and effectively given on the Business Day next following the day on which it was sent. "Business Day" shall mean any day which is not a Saturday or Sunday or a statutory holiday in the Province of Ontario.

- 9.5** The parties acknowledge that there are no covenants, representations, warranties, agreements or conditions, express or implied, collateral or otherwise, forming part of or in any way affecting or relating to this Agreement save as expressly set out in this Agreement and that this Agreement and all Schedules hereto constitute the entire agreement between the parties and may not be modified except as expressly agreed between the Vendor and Purchaser in writing. This Agreement shall be read with all changes of gender or number required by the context
- 9.6** If any provision or provisions of this Agreement be declared illegal or unenforceable, it or they shall be considered separate and severable from the Agreement and its remaining provisions shall remain in force and be binding upon the parties hereto as though the said provision or provisions had never been included.
- 9.7** No act or omission or delay in exercising any right or enforcing any term, covenant or agreement to be performed under this Agreement shall impair such right or be construed as to be a waiver of any default or acquiescence in such failure to perform, unless such waiver shall be given or acknowledged in writing.
- 9.8** This Agreement to Purchase shall be governed by and construed in accordance with the laws of the Province of Ontario.
- 9.9** This Agreement to Purchase shall enure to the benefit of and be binding upon the parties hereto and their respective heirs, attorneys, guardians, estate trustees, executors, trustees, successors and permitted assigns.
- 9.10** The Vendor warrants that, except to the extent such consent has been obtained, spousal consent is not necessary to this transaction and on Closing will not be necessary under the provision of the *Family Law Act*, R.S.O. 1990, c. F.3.
- 9.11** The Purchaser may, in its sole discretion and at its sole expense register this Agreement to Purchase or notice thereof on title to the Lands.
- 9.12** Where each of the Vendor and the Purchaser retain a solicitor to complete this Agreement and where the transaction contemplated herein will be completed by electronic registration pursuant to Part III of the *Land Registration Reform Act*, R.S.O. 1990, c. L.4 and any amendments thereto, the Vendor and the Purchaser acknowledge and agree that the delivery of documents and the release thereof to the Vendor and the Purchaser may, at the solicitor's discretion; (a) not occur contemporaneously with the registration of the Transfer/Deed of Land (and other registrable) documentation), and (b) be subject to conditions whereby the solicitor receiving documents and/or money will be required to hold them in trust and not release them except in accordance with the terms of a written agreement between the solicitors
- 9.13** The provisions of the attached Schedules "A", "A-1", "B" and "C" shall form part of this Agreement as if set out herein.
- 9.14** The Vendor represents and warrants and covenants that it is not now and on Closing will not be a non-resident of Canada within the meaning of the *Income Tax Act (Canada)*.
- 9.15** The Purchaser shall have the right to assign all or any part of its interest in this Agreement and any or all rights, privileges and benefits accruing to the Purchaser hereunder without the consent of the Vendor prior to or on the Closing. Upon and to the extent of such assignment, this Agreement shall thenceforth be construed as if originally made with such assignee or assignees instead of the Purchaser and the Purchaser shall, to the extent of such assignment, thereupon be relieved of all liabilities and obligations whatsoever arising out of this Agreement.
- 9.16** The parties hereto agree that any representations or covenants contained in this Agreement shall not merge on closing, but survive and continue in full force and effect thereafter, but only as to the accuracy of the representation or covenant as at the date of completion of this

Agreement.

- 9.17** This Agreement may be executed in one or more counterparts, each of which shall be deemed an original and together shall constitute one and the same agreement. Counterparts may be executed either in original or by electronic means, including, without limitation, by facsimile transmission or by electronic delivery in portable document format (".pdf") or tagged image file format (".tif") and the parties shall adopt any signatures received by electronic means as original signatures of the Parties; provided, however that any party providing its signature in such manner shall promptly forward to the other party an original signed copy of this Agreement which was so delivered electronically.
- 9.18** Any terms not otherwise defined herein shall have the same meaning ascribed to them as in the Option Agreement.
- 9.19** The Vendor covenants and agrees to execute if necessary, at no further cost or condition to the Purchaser except payment of the Vendor's reasonable out-of-pocket costs, such other instruments, plans and documents as may reasonably be required by the Purchaser to effect the registration of any right or interest transferred hereunder or notice of this Agreement on title to the Lands.
- 9.20** The Purchaser agrees to pay the Vendor's reasonable legal costs in connection with this transaction.
- 9.21** The Vendor represents that the Vendor is at least 18 years of age.

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IN WITNESS WHEREOF the parties hereto have duly executed this Agreement as of the Agreement Date.

WITNESS:

OWNER:

Name:

Name: «Owner_1_name_for_letters»

1/s

Address:

WITNESS:

The spouse of the Owner hereby consents to this Agreement

SPOUSE OF OWNER:

Name:

Name: **Property Owner Spouse Name**

1/s

Address:

PUC (TRANSMISSION) LP by its General Partner PUC (TRANSMISSION) GP INC.

Per: _____

Name:

Title:

I have authority to bind the Corporation

SCHEDULE "A"
LEGAL DESCRIPTION OF LANDS

«LEGAL DESCRIPTION

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SCHEDULE "A-1"
LEGAL DESCRIPTION OF PROPERTY

Legal description to be determined by deposited Reference Plan; Property shown outlined in (colour) in sketch attached.

****NOTE – Sketch shall be replaced by Property description once applicable Reference Plan is deposited.**

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SCHEDULE "B"

PERMITTED ENCUMBRANCES

NIL

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SCHEDULE "C"

CALCULATION SHEET

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EXHIBIT F: SYSTEM IMPACT ASSESSMENT

The IESO has completed a System Impact Assessment (“SIA”) dated September 28, 2023; SIA reference number: CAA 2021-704. At time of filing this application, the IESO identified that an amendment to the final report (the “Addendum”) was in the process of being drafted and that they expect to issue it by the second week of February, 2024.

Subsequent to issuing the SIA final report, Algoma provided further clarification to the IESO on the nature of the power ramping capabilities of the new EAFs. As result of this new information, the IESO re-evaluated the nature of the reactive power compensation requirements that PUC Transmission must install at the Tagona West TS. The Addendum serves to confirm the updated technical specifications required for the reactive power compensation equipment that is required to be installed by PUC Transmission. The fast acting reactive power compensating device included under this application conforms to the IESO’s revised requirements that are the subject of the forthcoming Addendum.

The SIA concludes that the Project is expected to have no material adverse impact on the reliability of the integrated power system, provided that all requirements in the final SIA report and Addendum are implemented. The final SIA report is provided at **Attachment 1 to this Tab**. A copy of the Addendum will be submitted to the OEB once it is received by PUC Transmission.

PUC Transmission confirms that it will implement the requirements identified by the IESO in the final SIA report and as amended in the Addendum.

Also, the IESO issued a Notification of Conditional Approval for Connection in conjunction with the final report. The IESO’s Notification of Conditional Approval is provided at **Attachment 2 to this Tab**.

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SYSTEM IMPACT ASSESSMENT REPORT



System Impact Assessment Report

Final Report - Public

CAA ID: 2021-704

Project: PUC Transmission LP – New Transmission Station
Connection Applicant: PUC (Transmission) LP

September 28, 2023



Acknowledgement

The IESO wishes to acknowledge the assistance of Hydro One in completing this assessment.



Disclaimers

IESO

This report has been prepared solely for the purpose of assessing whether the connection applicant's proposed connection with the IESO-controlled grid would have an adverse impact on the reliability of the integrated power system and whether the IESO should issue a notice of conditional approval or disapproval of the proposed connection under Chapter 4, section 6 of the Market Rules.

Conditional approval of the project is based on information provided to the IESO by the connection applicant and Hydro One at the time the assessment was carried out. The IESO assumes no responsibility for the accuracy or completeness of such information, including the results of studies carried out by Hydro One at the request of the IESO. Furthermore, the conditional approval is subject to further consideration due to changes to this information, or to additional information that may become available after the conditional approval has been granted.

If the connection applicant has engaged a consultant to perform connection assessment studies, the connection applicant acknowledges that the IESO will be relying on such studies in conducting its assessment and that the IESO assumes no responsibility for the accuracy or completeness of such studies including, without limitation, any changes to IESO base case models made by the consultant. The IESO reserves the right to repeat any or all connection studies performed by the consultant if necessary to meet IESO requirements.

Conditional approval of the proposed connection means that there are no significant reliability issues or concerns that would prevent connection of the proposed project to the IESO-controlled grid. However, the conditional approval does not ensure that a project will meet all connection requirements. In addition, further issues or concerns may be identified by the transmitter(s) during the detailed design phase that may require changes to equipment characteristics and/or configuration to ensure compliance with physical or equipment limitations, or with the Transmission System Code, before connection can be made.

This report has not been prepared for any other purpose and should not be used or relied upon by any person for another purpose. This report has been prepared solely for use by the connection applicant and the IESO in accordance with Chapter 4, section 6 of the Market Rules. This report does not in any way constitute an endorsement of the proposed connection for the purposes of obtaining a contract with the IESO for the procurement of supply, generation, demand response, demand management or ancillary services.

The IESO assumes no responsibility to any third party for any use, which it makes of this report. Any liability which the IESO may have to the connection applicant in respect of this report is governed by Chapter 1, section 13 of the Market Rules. In the event that the IESO provides a draft of this report to the connection applicant, the connection applicant must be aware that the IESO may revise drafts of this report at any time in its sole discretion without notice to the connection applicant. Although the IESO will use its best efforts to advise you of any such changes, it is the responsibility of the connection applicant to ensure that the most recent version of this report is being used.

The IESO provides no comment, representation or opinion, express or implied, with respect to who should bear the cost of IESO requirements for connection in this report and disclaims any liability in connection therewith.

Hydro One

The results reported in this report are based on the information available to Hydro One, at the time of the study, suitable for a System Impact Assessment of this connection proposal.

The short circuit and thermal loading levels have been computed based on the information available at the time of the study. These levels may be higher or lower if the connection information changes as a result of, but not limited to, subsequent design modifications or when more accurate test measurement data is available.

This study does not assess the short circuit or thermal loading impact of the proposed facilities on load and generation customers.

In this report, short circuit adequacy is assessed only for Hydro One circuit breakers. The short circuit results are only for the purpose of assessing the capabilities of existing Hydro One circuit breakers and identifying upgrades required to incorporate the proposed facilities. These results should not be used in the design and engineering of any new or existing facilities. The necessary data will be provided by Hydro One and discussed with any connection applicant upon request.

The ampacity ratings of Hydro One facilities are established based on assumptions used in Hydro One for power system planning studies. The actual ampacity ratings during operations may be determined in real-time and are based on actual system conditions, including ambient temperature, wind speed and facility loading, and may be higher or lower than those stated in this study.

The additional facilities or upgrades which are required to incorporate the proposed facilities have been identified to the extent permitted by a System Impact Assessment under the current IESO Connection Assessment and Approval process. Additional facility studies may be necessary to confirm constructability and the time required for construction. Further studies at more advanced stages of the project development may identify additional facilities that need to be provided or that require upgrading.



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Project Description

PUC (Transmission) LP (the “connection applicant” and “transmitter”) is proposing a new 230/115 kV transformer station (TS), namely Tagona West TS, in Sault Ste. Marie supplied by Third Line TS through two new 230 kV circuits. The new station will in turn supply Algoma Steel Inc.’s new electric arc furnace load facility (“EAF”, assessed under CAA 2021-694 and CAA 2021-695) through two new 115 kV circuits (the “project”). Hydro One Sault Ste. Marie (“Hydro One”) will connect the two new 230 kV circuits at Third Line TS via a new separate diameter of three circuit breakers. In order to incorporate this new diameter at Third Line TS, Hydro One will remove 230 kV circuit breaker 402 for clearance to extend the existing buses and also add two new 230 kV circuit breakers on two existing diameters; this will result in the re-termination of 230 kV circuits K24G, P21G and P22G. The purpose of the project is to address anticipated industrial load growth in the west end of Sault Ste. Marie, with the immediate need to supply the EAF load. After this project is in service, 115 kV circuits Cogen 1 and Cogen 2 will be normally operated open at the Lake Superior Power (LSP) CGS end, which disconnects LSP CGS and the EAF from the 115 kV system supplied by Third Line TS.

Based on the request by Algoma Steel Inc., the connection applicant has specifically indicated that the generation units at LSP CGS (“LSP units”) will be assumed offline under all elements in-service conditions, while these units remain available to be placed back in service when needed by the system, e.g. under outage conditions. With LSP units in service, there will be power injection into the IESO-controlled grid at Tagona West TS when LSP generation exceeds EAF load.

Figure 1 in Appendix B: Project Data (Confidential) shows the single line diagram of the project and the surrounding area. Figure 2, also in Appendix B, shows the single line diagram of Third Line TS with the project incorporated. Note that the configuration at Third Line TS is planned to be further modified when Northeast bulk transmission reinforcements are incorporated later this decade.

The in-service date of this project is expected to be Q3 2025.

Should the project undergo outages for significant duration, Algoma Steel would like to be able to disconnect its EAF and LSP CGS facilities and connect them back to the local 115kV system as assessed in CAA 2021-694 and CAA 2021-695; in this configuration, System Impact Assessment (SIA) requirements for CAA 2021-694 and CAA 2021-695 will be applicable.

Notification of Conditional Approval

This assessment concludes that the proposed connection of the project is expected to have no material adverse impact on the reliability of the integrated power system, provided that all requirements in this report are implemented. Therefore, the assessment supports the release of the Notification of Conditional Approval for connection of the project.

Assessment Findings

System impact studies were carried out to assess the impact of the project in accordance with Chapter 8 of Market Manual 1.4. The studied scenarios and main assumptions are available in Appendix D and detailed study results are available in Appendix E of this report. Based on the assessment results, we have identified the following findings:

1. Under the Ontario Resources and Transmission Assessment Criteria (ORTAC) system conditions studied, i.e. peak load conditions and low hydraulic generation during draught seasons, the resulting MISSW¹ flow after the integration of the project will exceed the existing MISSW transfer limits under both all elements in-service and outage conditions. As such, LSP units will be needed in service and the EAF operation will be restricted to keep MISSW interface flow below its limit should these system conditions materialize.
2. The EAF ramping from 0 to 140 MW and vice versa, expected to occur between a total of 30 – 60 times per day, will result in material voltage changes in excess of 2% in the transmission system at all levels of MISSW transfers up to 700MW, which is not acceptable as indicated by the transmitters, PUC Transmission and Hydro One, and as per the Transmission System Code (TSC).

Studies identified that 125 Mvar fast-acting capacitive reactive compensation at the 230 kV bus of Tagona West TS can maintain the system voltage changes within 2% following the EAF ramping under all elements in-service conditions with a MISSW flow up to its existing limit of 700 MW. In order to achieve this, the 125 Mvar of fast-acting capacitive reactive compensation must be dedicated to mitigate voltage change caused by solely by EAF ramping. The actual device(s) installed would need to be sized larger to avoid some of the 125 Mvar of available dynamic reactive power range from getting used up due to changing system conditions if not adequately controlled.

There may be voltage changes higher than 2% on PUC's 115kV system that result from EAF ramping if only the minimum of 125 Mvar fast-acting capacitive reactive compensation is installed. The connection applicant has confirmed that the new 115 kV system will initially solely supply the Algoma Steel EAF load, and Algoma Steel accepted that voltage changes in this 115 kV system may be higher than 2% following the EAF ramping.

In the future, if new loads connect to this project's 115 kV system, additional fast-acting compensation may be required at Tagona West TS to limit voltage changes in this system to 2% due to EAF ramping.

3. With the dynamic reactive compensation identified in Finding (2), under the most critical outage condition, circuit X74P out of service, the EAF ramping will still result in system voltage changes higher than 2% unless the MISSW interface flow is limited to a maximum of 560 MW, assuming LSP units are in service. If LSP units are out of service under this outage condition, the MISSW

¹ MISSW – Mississagi Flow West, defined as the MW flow on circuits A23P, A24P, and X74P into Mississagi TS.

interface flow that would prevent voltage changes in excess of 2% is further reduced to 500 MW.

To allow the EAF operation at a MISSW interface flow higher than the above levels, additional reactive compensation is required at Hydro One's transmission station(s) further east along the 230 kV corridor. The IESO can provide the amount of the compensation required if the connection applicant and Hydro One agree to pursue this option. Without this additional compensation, EAF operation will likely be restricted if the MISSW interface flow exceeds the thresholds identified above under this outage condition.

IESO Requirements for Connection

Specific Requirements:

The following specific requirements are applicable for the incorporation of the project and its connection facilities. Specific requirements pertain to the level of reactive power compensation needed, operation restrictions, remedial action scheme, upgrading of equipment and any project specific items not covered in the general requirements.

Requirements for the Connection Applicant

1. In accordance with Finding (2), the connection applicant shall install voltage control facilities capable of mitigating voltage changes in excess of 2% as a result of EAF ramping.

To assist PUC in meeting this requirement, the IESO has developed two options for the PUC's consideration and decision, as below:

Option 1: Device(s) dedicated solely to EAF ramping via advanced control system

- Install an SVC/STATCOM rated 125 Mvar at the 230 kV bus of Tagona West TS controlling the 230 kV voltage;
- Receive a supervisory signal into this voltage control system. The supervisory should be a real-time indicator of EAF ramping status, obtained either by utilizing a direct signal from the EAF control system, or by detecting the EAF MW change against a pre-determined threshold;
- When the supervisory signal indicates the EAF is ramping, this voltage control system is enabled and its voltage reference is reset to the real-time Tagona West 230 kV bus voltage immediately before the latest EAF ramping started;
- When the supervisory signal indicates the EAF ramping has discontinued, this control system is disabled. The output of the SVC/STATCOM is held at the level just before the latest EAF ramping discontinued.
- The automatic capacitor switching scheme at the EAF will continue to be based on local voltage as per the voltage control solution utilized under CAA 2021-694 and CAA 2021-695 and remain adjustable at the IESO's request.

Option 2: Device(s) using local voltage control

For this option, additional reactive power range is needed to maintain a constant voltage at the Third Line 230 kV bus and ensure that the 125 Mvar dynamic reactive power range is reserved and available for the EAF ramping and not used up by changing system conditions. Studies determined that 195 Mvar of reactive power range is required to maintain a constant voltage at the Third Line 230 kV bus; this is in addition to the 125 Mvar dynamic reactive power range strictly required for the EAF ramping. The 75 Mvar of existing capacitors at the EAF facility can be utilized towards meeting a portion of the 195 Mvar range needed for changing system conditions. The following are two acceptable implementations:

Implementation 1

- Install +/- 122.5 Mvar STATCOM (new)
- Use 75 Mvar capacitors at the EAF facility (from CAA 2021-694 and CAA 2021-695)

Implementation 2

- Install +/- 62.5 Mvar STATCOM (new)
- Install 120 Mvar Thyristor Switched Capacitors in 2-3 steps (new)
- Use 75 Mvar capacitors at the EAF facility (from CAA 2021-694 and CAA 2021-695)

In either implementation the control scheme will be as followed:

- Dynamic device(s) controls the Tagona West 230 kV voltage with set point of 242.5 kV, adjustable;
- Auto switching scheme switches in/out the capacitors at the EAF facility based on the Tagona West 230 kV bus voltage:
 - (i) Switching off: voltage setting for SC1/SC2: $242.5 + 230 \times 2\% = 247.1$ kV, delay: SC1 - 1 second; SC2 - 5 seconds;
 - (ii) Switching on: voltage setting for SC1/SC2: $242.5 - 230 \times 2\% = 237.9$ kV, delay: SC1 - 1 second; SC2 - 5 seconds;

All settings shall be adjustable. The IESO will consider the use of local measurements for the automatic capacitor switching scheme at the EAF so that communication with the 230 kV system is not required.

The connection applicant may also choose to pursue an alternative solution that satisfies this requirement. The final solution, whether any of the above options or an alternative, will be subject to the IESO's approval and shall be submitted to the IESO for evaluation at least twelve months before the in-service date of the project.

Requirements for Algoma Steel Inc.

To address Findings (1) and (3), Algoma Steel Inc. shall meet the following requirements:

1. Algoma Steel Inc. shall provide single points of contact to the IESO, reachable 24/7, and participate in operations planning and real-time operations processes when required by the IESO to allow for:
 - a. the IESO be aware of the intended next-day and real-time operations of the EAF and LSP units, and
 - b. the connection applicant to be aware when EAF operation needs to be restricted and LSP units are required in service to accommodate system conditions, including outages, as communicated by the IESO market forecasts and integration team (MFI) or the IESO control room.
2. Algoma Steel Inc. shall have a demand management procedure acceptable to the IESO and the transmitter that ensures that the EAF operation can be curtailed within 5 minutes.

The demand management procedure must be subject to the following conditions:

- a. Reduce up to the entire EAF load, upon direction by the IESO, within 5 minutes; failure to follow the direction could result in immediate disconnection of the project from the transmission grid;
 - b. Set up a dedicated direct line for the IESO and the transmitter to reach the facility control room, which will be staffed at all times when the EAF is in service; and,
 - c. Prepare a detailed procedure outlining how the EAF load reduction and/or EAF shutdown will be implemented. The procedure is to be approved by the IESO and the transmitter.
3. Algoma Steel Inc. shall place LSP units in service to support EAF operation when requested by the IESO to accommodate system conditions. EAF operation may need to be curtailed until LSP units can be brought in service and/or ramped up to the desired MW output.
 4. Algoma Steel Inc. shall continue to meet all the requirements in the SIA report for CAA ID: 2021-694 and 2021-695 when it disconnects LSP CGS and the EAF facility from this project and reconnects these facilities back to the 115 kV system supplied by Third Line TS.

Requirements for Hydro One Networks Inc.

1. Hydro One is required to revise the Northwest RAS and the Third Line RAS by updating the detection logic for the P21G, P22G and K24G contingencies. Hydro One shall submit a revised Facility Description Document (FDD) for both of these RASs to the IESO for approval during the Market Registration process at least nine months prior to the in-service date. The FDD must contain the finalized RAS matrix as well as expected operating times. The actual operating times must be measured during commissioning and documented as a Performance Validation Record.

If the FDD or performance testing as per the Performance Validation Record indicates a change in design or slower than expected operating times, as compared to what was assumed in this assessment, then further analysis of the project will need to be done by the IESO. This may delay the grant of IESO final approval to place the project in-service.

The transmitter shall ensure that the RAS facilities comply with NPCC Reliability Reference Directory #7 as per the RAS type classification which will be finalized during the Market Registration process. To avoid any delay to the project, it is strongly recommended the RAS facilities be designed to meet NPCC Reliability Reference Directory #7 for NPCC Type I RAS before the RAS type classification is finalized. If deemed or expected to be a Type II or Limited Impact RAS, the transmitter shall ensure the RAS facilities have provisions to comply with NPCC Reliability Reference Directory #7 for Type I RAS in case the RAS is re-classified as NPCC Type I RAS in the future as the system evolves.

Telemetry, as specified by the IESO at the time of registration, shall be provided.

General Requirements:

The connection applicant shall satisfy all applicable requirements specified in the Market Rules, the Transmission System Code (TSC) and reliability standards. Some of the general requirements that are applicable to this project are presented in detail in Appendix A: General Requirements of this report.

Recommendation

1. Power transformers with a high side, wye grounded winding with terminal voltage greater than 200 kV are subject to North American Electric Reliability Corporation (NERC) standard TPL-007, Transmission System Planned Performance for Geomagnetic Disturbance Events. As per NERC standard TPL-007, the Planning Coordinator in conjunction with its Transmission Planner are required to implement a process(es) to obtain Geomagnetic Disturbance (GMD) measurement data, via geomagnetically-induced currents (GIC) monitors, which will aid in model validation and situational awareness. This data will more accurately support the owner of the applicable power transformer(s) to conduct a thermal impact assessment if required in the future. As such, it is recommended that the connection applicant makes provision(s) to install monitoring equipment for GIC on the new transformer(s).

Appendix A: General Requirements

The connection applicant shall satisfy all applicable requirements specified in the Market Rules, the Transmission System Code and reliability standards. This section highlights some of the general requirements that are applicable to the project.

1. The connection applicant must notify the IESO at connection.assessments@ieso.ca as soon as they become aware of any changes to the project scope or data used in this assessment. The IESO will determine whether these changes require a re-assessment.
2. The connection applicant shall ensure that the BPS elements are in compliance with the applicable NPCC criteria and the BES elements in compliance with the applicable NERC reliability standards. To determine the standard requirements that are applicable, the IESO provides mapping tools titled "NPCC Criteria Mapping Spreadsheet" for BPS elements and "NERC Reliability Standard Mapping Tool/Spreadsheet" for BES elements at the IESO's website of [Applicability Criteria for Compliance with Reliability Requirements](#).

Note, the connection applicant may request an exception to the application of the BES definition. The procedure for submitting an application for exemption can be found in Market Manual 11.4: "[Ontario Bulk Electric System \(BES\) Exception](#)" at the IESO's website.

The IESO's criteria for determining applicability of NERC reliability standards and NPCC Criteria can be found in the Market Manual 11.1: "[Applicability Criteria for Compliance with NERC Reliability Standards and NPCC Criteria](#)" at the IESO's website.

Compliance with these reliability standards will be monitored and assessed as part of the IESO's Ontario Reliability Compliance Program. For more details about compliance with applicable reliability standards, the connection applicant is encouraged to contact orcp@ieso.ca and also visit the [Ontario Reliability Compliance Program webpage](#).

However, like any other system element in Ontario, the BPS and BES classifications of the project will be periodically re-evaluated as the electrical system evolves. Newly identified BPS and BES facilities associated with this project are listed in Appendix C.

3. The connection applicant shall ensure that the project's equipment meet the voltage requirements specified in section 4.2 and section 4.3 of the ORTAC.
4. According to Section 6.1.2 of the TSC, the connection applicant must ensure the project's transmission connection equipment is designed to withstand the fault levels in the area. According to Section 6.4.4 of the TSC, if any future system changes result in an increased fault level higher than the project's equipment capability, the connection applicant is required to replace that equipment with higher rated equipment capable of withstanding the increased fault level, up to the maximum fault level specified in Appendix 2 of the TSC.

It is the connection applicant's responsibility to verify that all equipment and circuit breakers within the project are appropriately sized for the local fault levels.

The connection applicant shall ensure that the circuit breakers/switchers installed at the project have rated interrupting time that satisfies Appendix 2 of the TSC. Fault interrupting devices installed at the project must be able to interrupt fault currents at the applicable maximum continuous voltage as specified in Section 4.2 and Section 4.3 of ORTAC.

5. The connection applicant shall ensure that the protection systems are designed to satisfy all the requirements of the TSC. New protection systems must be coordinated with existing protection systems. Protection systems within the project shall only trip the appropriate equipment isolating the fault.

Associated overvoltage protective relaying must be set to ensure that the project's equipment does not automatically trip for voltages up to 5% above the equipment's corresponding maximum continuous voltage as specified in section 4.2 of the ORTAC.

BPS elements are deemed by the IESO to be essential to system reliability and security and must be protected by redundant protection systems in accordance with Section 8.2 of the TSC. These redundant protection systems must satisfy all requirements of the TSC, and in particular, they must be physically separated and not use common components, common battery banks, or common instrument transformer secondary windings.

The protection systems for transmission voltage BES elements (whose rated voltage is higher than 100 kV) must be redundant. Redundancy must be present in protective relaying for normal fault clearing and control circuitry associated with protective functions including trip coils of the circuit breakers or other interrupting devices. These redundant protection systems must not use common instrument transformer secondary windings. A single communication system, if used, must be monitored and reported and a single DC supply, if used, must be monitored and reported for both low voltage and open circuit.

As the electrical system evolves, transmission voltage non-BPS or non-BES elements (whose rated voltage is higher than 100 kV) within the project, may be re-classified as BPS elements or BES elements. The connection applicant is recommended to design the protection systems for these elements according to the protection requirements for BPS elements or have adequate provisions for future upgrade to meet those requirements.

6. The connection applicant shall ensure that the connection equipment is designed to be fully operational in all reasonably foreseeable ambient conditions. Failures of the connection equipment must be contained within the project and have no adverse impact on the IESO-controlled grid.
7. In accordance with Section 7.4 of Chapter 4 of the Market Rules, the connection applicant shall provide to the IESO the applicable telemetry data listed in Appendix 4.16 of the Market Rules on a continual basis. The data shall be provided in accordance with the performance standards set

forth in Appendix 4.20 and Appendix 4.21, subject to Section 7.6A of Chapter 4 of the Market Rules. The whole telemetry list will be finalized during the IESO's Market Registration process.

The connection applicant must install monitoring equipment that meets the requirements set forth in Appendix 2.2 of Chapter 2 of the Market rules. As part of the IESO's Market Registration process, the connection applicant must also complete end to end testing of all necessary telemetry points with the IESO to ensure that standards are met and that sign conventions are understood. All found anomalies must be corrected before IESO's final approval to connect any phase of the project is granted.

8. The connection applicant must initiate the IESO's Market Registration process at least eight months prior to the commencement of any project related outages.

The connection applicant is required to provide "as-built" equipment data for the project during the IESO Market Registration process. If the submitted equipment data differ materially from the ones used in this assessment, then further analysis of the project may need to be done by the IESO before final approval to connect is granted.

At the sole discretion of the IESO, performance tests may be required at generation and transmission facilities. The objectives of these tests are to demonstrate that equipment performance meets the IESO requirements, and to confirm models and data are suitable for IESO purposes. The H1 transmitter may also have its own testing requirements. The IESO and the H1 transmitter will coordinate their tests, share measurements and cooperate on analysis to the extent possible.

Once the IESO's Market Registration process has been successfully completed, the IESO will provide the connection applicant with a Registration Approval Notification (RAN) document, confirming that the project is fully authorized to connect to the IESO-controlled grid. For more details about this process, the connection applicant is encouraged to contact IESO's Market Registration at market.registration@ieso.ca.

9. If the connection applicant is currently a participant in the Ontario Power System Restoration Plan, its restoration participant attachment is required to be updated to include the project according to Market Manual 7.8. For either an existing or newly identified participant in the Ontario Power System Restoration Plan, details regarding restoration participant requirements will be finalized during the IESO Market Registration process.

If the project is classified as a Key Facility that is required to establish a Basic Minimum Power System following a system blackout, it shall meet testing requirements of Critical Components belonging to Key Facilities as specified in Market Manual 7.8. Key Facility, Basic Minimum Power System and Critical Component terms are defined in the NPCC Glossary of Terms.

10. As per Market Manual 1.4: Connection Assessment and Approval (formerly Market Manual 2.10), the connection applicant will be required to provide a status report of its proposed project with respect to its progress upon request of the IESO using the [project status report form](#) on the IESO website. Failure to comply with project status requirements listed in Market Manual 1.4:

Connection Assessment and Approval (formerly Market Manual 2.10) will result in the project being withdrawn.

The connection applicant will be required to also provide updates and notifications in order for the IESO to determine if the project is “committed” as per Section 3.3 of Market Manual 1.4: Connection Assessment and Approval (formerly Market Manual 2.10).

Appendix B: Project Data (Confidential)

Appendix C: Facility Classification (Confidential)

Appendix D: Study Scope of Work (Confidential)

Appendix E: Detailed Study Results (Confidential)

Appendix F: Protection Impact Assessment
(Confidential)

**Independent Electricity
System Operator**

1600-120 Adelaide Street West
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NOTIFICATION OF CONDITIONAL APPROVAL

September 28, 2023

Mr. Robert Brewer
President
PUC (Transmission) LP
500 Second Line East
Sault Ste. Marie, ON
P6A 6P2



Independent Electricity System Operator
Station A, Box 4474
Toronto, ON M5W 4E5
t 905.403.6900
www.ieso.ca

Dear Mr. Brewer:

**RE: PUC Transmission LP – New Transmission Station
Notification of Conditional Approval of Connection Proposal
CAA ID Number: 2021-704**

The IESO has now had an opportunity to review and assess your company's project as described in your System Impact Assessment application. The IESO has concluded that the proposed connection will not result in a material adverse impact on the reliability of the integrated power system. The IESO is therefore pleased to grant **conditional approval** as detailed in the attached System Impact Assessment report. Please note that any further material change to your proposed connection, or changes to the information available or system assumptions made by the IESO at the time the assessment for the project was carried out, may require a re-assessment by the IESO and may result in a nullification of the conditional approval.

The likelihood of your project being re-assessed due to changes in the system assumptions made by the IESO will be reduced once your project attains the "committed" status as per Section 3.3 of [Market Manual 1.4: Connection Assessment and Approval](#) (formerly Market Manual 2.10). Therefore, if your project is not "committed" at this point, you are reminded of your obligation to provide updates and notifications in order for the IESO to give your project this classification. Meanwhile, in the event you are required to make a project related decision and are concerned about the validity of the Notification of Conditional Approval of this project and the connection requirements presented in the System Impact Assessment, please contact us at connection.assessments@ieso.ca.

Please note that this conditional approval does not in any way constitute an endorsement of the proposed connection for the purposes of obtaining a contract with the IESO for the procurement of supply, generation, demand response, demand management or ancillary services.

You may now initiate the IESO's **Market Registration** process. To do so, please contact Market Registration at market.registration@ieso.ca at least eight months prior to your expected energization date. The SIA report, attached hereto, details the requirements that your company must fulfill during this process, including demonstrating that the facility *as installed* will not be materially different from the facility *as approved* by the IESO.

Your conditional right to connect is balanced by an obligation to demonstrate installed equipment meets performance requirements. During the **Market Registration** process, you shall be required to demonstrate this obligation has been fulfilled in accordance with [Market Manual 1.6: Performance Validation](#) (formerly Market Manual 2.20).

All information submitted in this process will be used by the IESO solely in support of its obligations under the *Electricity Act, 1998*, the *Ontario Energy Board Act, 1998*, the *Market Rules* and associated policies, standards and procedures and in accordance with its licence. All information submitted will be assigned the appropriate confidentiality level upon receipt.

When your company has successfully completed the IESO's **Market Registration** process, the IESO will provide you with a **final** approval, in the form of a Registration Approval Notification (RAN) documents, thereby confirming that the facility is fully authorized to connect to the IESO-controlled grid.

If you have any questions or require further information, please contact me.

Yours truly,

Samuel Jager, P.Eng.

Engineering Manager – Connection Assessments

Telephone: (905) 855-6331

E-mail: samuel.jager@ieso.ca

cc: IESO Records

1 **EXHIBIT G: CUSTOMER IMPACT ASSESSMENT**

2
3 HONI has completed a Customer Impact Assessment (“CIA”) in accordance with its customer
4 connection procedures, and the results confirm that there are no adverse impacts on transmission
5 customers as a result of this Project. A copy of the CIA report prepared by HONI is included at
6 **Attachment 1 to this Tab.**

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CUSTOMER IMPACT ASSESSMENT REPORT



Hydro One Networks Inc.
483 Bay Street
Toronto, Ontario
M5G 2P5

CUSTOMER IMPACT ASSESSMENT

**Connection of PUC Transmission –
New Double Circuit 230 kV Transmission line between
Third Line TS and new Tagona West TS**

Date: November 3rd, 2023
CIA ID# 2023-16
Revision Final

Issued by: **Transmission Planning Department
System Development Division
Hydro One Networks Inc.**

Prepared by:

Aman Parti

Aman Parti, P.Eng
Network Management Engineer
Transmission System Development
Hydro One Networks Inc.

Approved by:

Alessia Dawes, M.Eng, P.Eng
Transmission Planning Manager
Transmission System Development
Hydro One Networks Inc.

Disclaimer

This CIA was prepared based on information available to or provided to HOSSM and/or Hydro One at the time the CIA was performed regarding the: (i) proposed new or modified connection described herein (“**Project**”); and (ii) existing connection of one or more HOSSM transmission customers that HOSSM and/or Hydro One determined prior to conducting the CIA that may be impacted by the Proposed Project. The CIA is intended to highlight impacts of the Project, if any, on existing HOSSM transmission customers early in the project development process and thus allow an opportunity for impacted HOSSM transmission customers to bring forward any concerns that they may have. Subsequent changes to the required modifications or the implementation plan may affect the impacts of the proposed Project. The results of this CIA are also subject to change to accommodate the requirements of the IESO and/or other regulatory requirements.

Neither HOSSM nor Hydro One shall be liable to any person or entity reading or receiving the CIA (including, without limitation, any existing transmission customer that Hydro One and/or HOSSM determined may be impacted by the Project prior to conducting the CIA) under any circumstances whatsoever for any:

- direct damages resulting from or in any way related to the reliance on, acceptance or use of the CIA or its contents unless such liability arises under section 6.4 of the Transmission System Code or the terms of a contract made between HOSSM and that person or entity with respect to the proposed Project; and/or
- any indirect or consequential damages, loss of profit or revenues, business interruption losses, loss of contract or loss of goodwill, special damages, punitive or exemplary damages, whether any of the said liability, loss or damages arises in contract, tort or otherwise.

1.0 PURPOSE

PUC Transmission LP Inc. (PUC-T) (“connection application”), has filed a connection application to construct new double circuit 230kV transmission line from HOSSMs Third Line TS to a new PUC-T owned station, Tagona West TS. The station eventually supplies Algoma Steel Inc.’s (ASI) Electric Arc Furnace station.

In accordance with section 6 of the Ontario Energy Board’s Transmission System Code (“TSC”), Hydro One Sault Ste. Marie (“HOSSM”) is to carry out a Customer Impact Assessment (“CIA”) study to assess the impact of the proposed connection on existing customers in the affected area. This assessment does not evaluate the overall impact the project on the bulk electricity system. As part of the Connection Assessment and Approval (“CAA”) process, impact of the project on the bulk electricity system is the subject of the System Impact Assessment (“SIA”), which was carried out by the Independent Electricity System Operator (“IESO”). The IESO has documented such in the final SIA report CAA ID 2020-704, dated September 28, 2023.

Note: ASI has also filed a concurrent application to connect their facility to the 115kV system at Clergue TS. This will be an interim connection for the Electric Arc Furnace station until this subject project is completed. This phase of the project is anticipated to be in service in 2024 and is being assessed in separate System and Customer Impact Assessments.

2.0 PROJECT DESCRIPTION

Algoma Steel Inc. (ASI) is proposing to build a new electric arc furnace (EAF) load facility in Sault Ste. Marie, Ontario. In Phase 1 of the project Algoma Steel will construct a 115/34.5kV transformer station, EAF CTS and connect it to Hydro One Sault Ste. Marie’s existing 115 kV System. The EAFs will have limited operations under Phase 1.

For phase 2 of the connection of the EAF’s, PUC-T is proposing to construct a new 230kV double circuit line and a new 230/115kV transformer station, called Tagona West TS, to supply the new EAF CTS. The new Tagona West TS will connect to the 230kV network at Third Line TS via a new 10 km, 230kV double circuit line. Two 200MVA, 230/115kV autotransformers at Tagona West TS will supply the 115kV bus at the station. A new 115kV double circuit line will connect Tagona West TS to the EAF CTS. At this point, Algoma Steel’s normal supply to the EAF will move from HOSSMS’s 115 kV system to PUC-T’s 230 kV system.

Phase 2 is broken down to Phase 2a and 2b. For Phase 2a, the peak load of the EAF CTS is limited to 140MW and assumes that all generator units at Lake Superior Power are out of service during normal operation. This CIA is limited to area customers impacted by **Phase 2a** of the project. A separate or amended CIA will be provided for Phase 2b.

Figure 1 below, obtained from the PUC Transmission’s project website, shows the location of the new connection in the city of Sault Ste. Marie. Figure 2 in Appendix A shows the single-line diagram of the project and its connection to the transmission system. The requested in-service date of the project is Q4 2026.

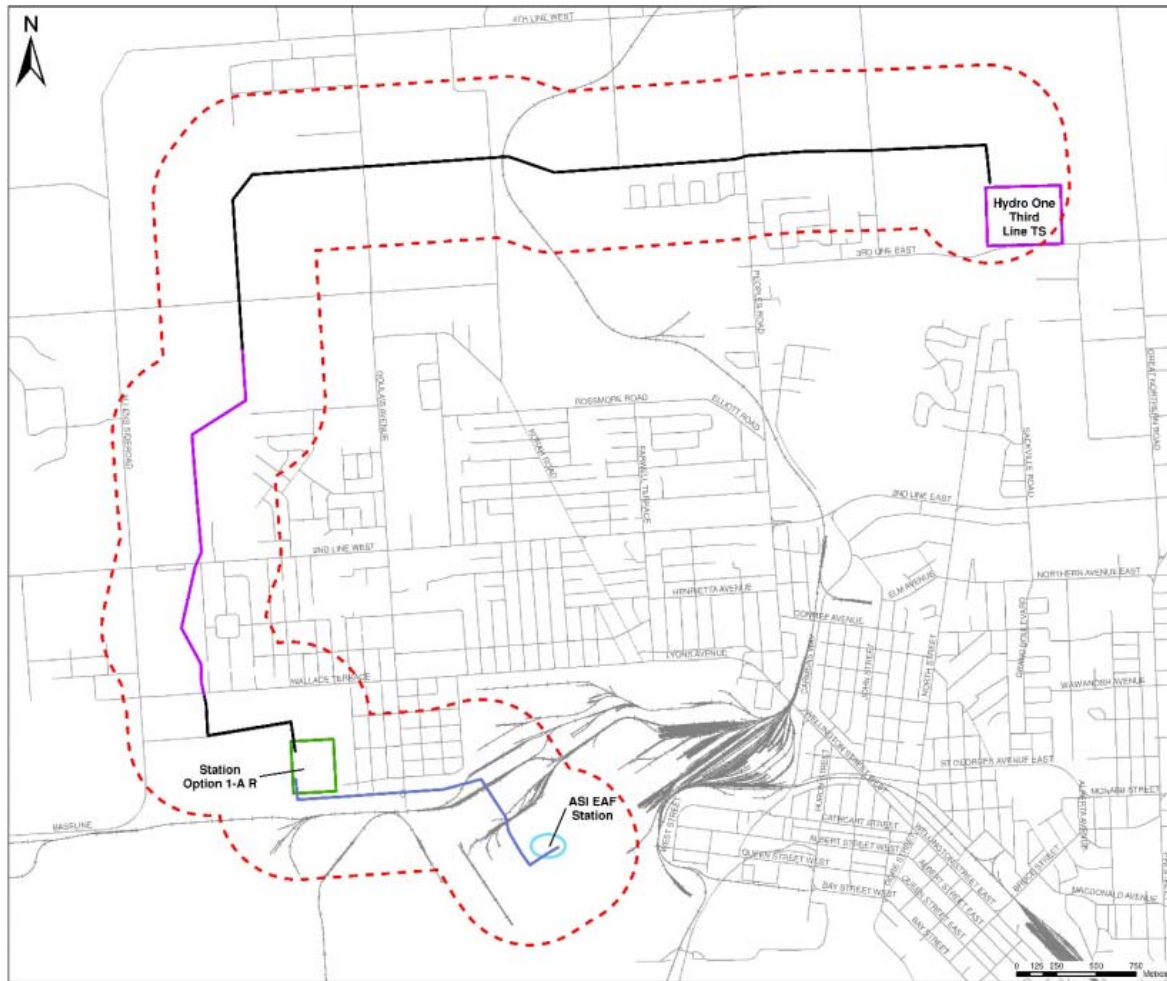


Figure 1 - Map of Project Area and PUC-T Station Location

The area customers that may be impacted by the proposed project, or work on Hydro One’s station or line assets to connect the proposed project are listed in Table 1 below.

A draft CIA for the proposed connection was issued for comments to area customers on August 28th, 2023. All comments have been addressed.

Table 1 - Area Customers

Station Name	Station / Line	Customer Name
St. Mary’s MTS	GL1SM / GL2SM	PUC Distribution
Tarentorus MTS	GL1TA / GL2TA	PUC Distribution
Northern Ave TS	Northern Ave TS	Algoma Power Inc.
Patrick St TS	Patrick St TS	Algoma Steel Inc
Flakeboard CTS	Leigh’s Bay	G-P Flakeboard Ltd
Wallace Terrace CTS	Leigh’s Bay	Algoma Steel Inc
Clergue CGS	Clergue TS	Evolugen
Batchawana TS	Sault #3	Algoma Power Inc.

Goulais Bay TS	Sault #3	Algoma Power Inc.
Andrews CGS	Andrews 115 kV	Evolugen
Hogg CGS	Hogg 115 kV	Evolugen
Bow Lake CGS	No. 2 Gartshore 115 kV No. 1 Gartshore	Nodin Kitagan LP and Nodin Kitagan 2 LP
McKay CGS	No. 1 Mackay No. 2 Mackay	Evolugen
Gartshore CGS	No. 3 Gartshore 115 kV	Evolugen
Echo River TS	P21G	Algoma Power Inc.
Aubrey Falls GS	P25W/P26W	Evolugen
Wells GS	P21G/P22G	Evolugen

3.0 OPERATING PHILOSOPHY

The EAF facility will be designed such that each furnace controller can be set to accommodate a few different load profiles for customized manufacturing processes or limitations in the power system. In **Phase 2a**, the EAFs will operate such that the combined loading of Algoma’s facility does not exceed 140MW, without the support from LSP generator units (assumed out-of-service). The facility load is expected to fluctuate from 0-140MW several times a day.

The LSP generators are considered out of service during normal operation of the EAFs. However, they are assumed to be in-service under certain system conditions as outlined in the SIA findings.

A new dynamic reactive device is recommended in the SIA (CAA ID 2020-704) for PUC-T’s Tagona West TS to limit the voltage fluctuations of the area’s 115kV and 230kV buses to remain within the Transmission System Code limits during ramping of the EAFs.

Additional requirements have been imposed such that the EAF facility does not violate transmission system performance requirements. Detailed description of such requirements can be found in the SIA (CAA ID 2020-704).

The Alternating mode is shown in Appendix A – Figure 3 whereby the two furnace units operate sequentially, with one in melting mode while the other is in scrap warm up mode. Furnace controllers again will limit consumption to 140MW.

4.0 TECHNICAL STUDIES

Hydro One assessed the impact of the proposed project on area customer buses. In addition, IESO System Impact Assessment (CAA ID 2020-704) has been completed to assess the performance of the IESO Controlled Grid following implementation of this project.

4.1 VOLTAGE PERFORMANCE

Voltage performance results of the proposed project are identified in Appendix B. Hydro One network and customer delivery buses remain within the limits specified in Section 4.2 and 4.3 of ORTAC following the implementation of this project provided requirements of the IESO SIA are met.

For bus voltages prior to this project please refer to CIA ID # 2023-07, Phase 1 Connection of the EAFs to the 115kV system at Third Line TS via Clergue TS.

For this assessment the worst-case scenario for voltage fluctuations, as identified by the SIA, was used: EAF facility ramps up from 0MW to a maximum loading of 140MW and Mississagi West Interface flows are at 700MW (flowing west). A dynamic reactive device with a 0Mvar to 125MVar range is required to limit the voltage fluctuations of area buses. In the absence of a dynamic reactive device, voltage changes greater than 2% are observed in the transmission and distribution systems in the area. Results are provided in Appendix B.

The SIA has presented two options for total reactive compensation required for the installation of this project, one which only considers the compensation required for ramping of the EAFs and the other that can maintain a constant bus voltage at Third Line TS due to changing system conditions and EAF ramping. For both options, a minimum of capacitive reactive compensation of 125MVar is required for the operation of the EAFs. If alternate solutions are found more effective, this CIA will be reviewed and amended, as necessary.

4.2 SHORT-CIRCUIT RESULTS

Short circuit results of the proposed project are identified in Appendix C.

Due to the configuration change from Phase 1, where LSP generators are connected to 115kV system through Clergue TS, to Phase 2a where the LSP generators are connected to PUC-T's 115kV bus via EAF CTS, the area buses experience marginal changes in short circuit level. The short circuit values remain within the limits of the Transmission System Code shown in table 2 below.

All fault levels at Hydro One stations remain within the limits of the circuit breakers ratings.

If the PUC-T station is unavailable to the EAF CTS, ASI may request to revert to Phase 1 configuration and connect the EAF CTS into 115kV system via Clergue TS. Hydro One cannot reserve transmission capacity for its customers as per the TSC. Reverting to the 115kV connection configuration will depend on system conditions at the time of such an event.

Table 2 - TSC: Transmission System Connection Point Performance Standards

Nominal Voltage (kV)	Maximum 3ph Fault (kA)	Maximum SLG Fault (kA)
230	63	63
115	50	50
27.6 (4-wire)	17	12
13.8	21	10

5.0 RELIABILITY IMPACT

5.1 LINE FACILITIES

PUC-T will construct a 10km, 230kV double circuit line from Third Line TS to the new PUC-T Tagona West TS. Two new circuit termination positions will be created at Third Line TS to connect the new 230kV circuits. Any fault on the new circuits is expected to be cleared by dedicated and redundant line protection and associated circuit breakers, on both ends of the circuit.

A new 115kV double circuit line will be constructed between Tagona West TS and EAF CTS.

5.2 STATION FACILITIES

The new Tagona West TS will consist of 230kV buses and 115kV buses connected via two 200MVA, 230/115kV autotransformers, with associated protection and control equipment for the purpose of clearing faults and isolating station equipment.

The new 230kV lines will terminate into two new circuit positions at Third Line TS. To accommodate the new circuits, reconfiguration of the 230kV yard is required. The new configuration is not expected to negatively impact the reliability of the existing transmission lines and autotransformers terminating at the 230kV and 115 kV buses at Third Line TS, as per IESO SIA.

There are no new contingencies or load being added to Remedial Action Schemes (RAS) as part of Phase 2a connection.

5.3 OUTAGE REQUIREMENTS

The outage schedule during the construction work will be developed during the detailed engineering and execution phase of the project. Construction will be staged by Hydro One and the IESO to minimize possible customer interruptions. The outage and recall durations will be minimized, and the risk will be managed with proper outage planning and co-ordination. The schedules will be coordinated and communicated to the affected customers in advance.

6.0 POWER QUALITY

Algoma Steel must demonstrate that the power quality performance of the new facility will have minimal impact to area customers and power quality (PQ) performance will be compliant with industry standards. Should performance of the EAF facility cause undue PQ violations to Hydro One and/or customer busses in the area, Hydro One will take immediate appropriate actions to investigate and remedy the situation.

Algoma Steel will install power quality meters at multiple locations within their facility and at the point of connection to PUC to diagnose the technical performance of the facility.

7.0 CONCLUSIONS AND RECOMMENDATIONS

This CIA illustrates that Hydro One systems and area customers will not be adversely impacted by the connection of the PUC 230 kV transmission lines.

It is recommended that area customers review the impact of the short circuit change on their facilities and take appropriate and timely action to address any safety/technical issues arising out of the changes following incorporation of the new facility.

Appendix A - Diagrams

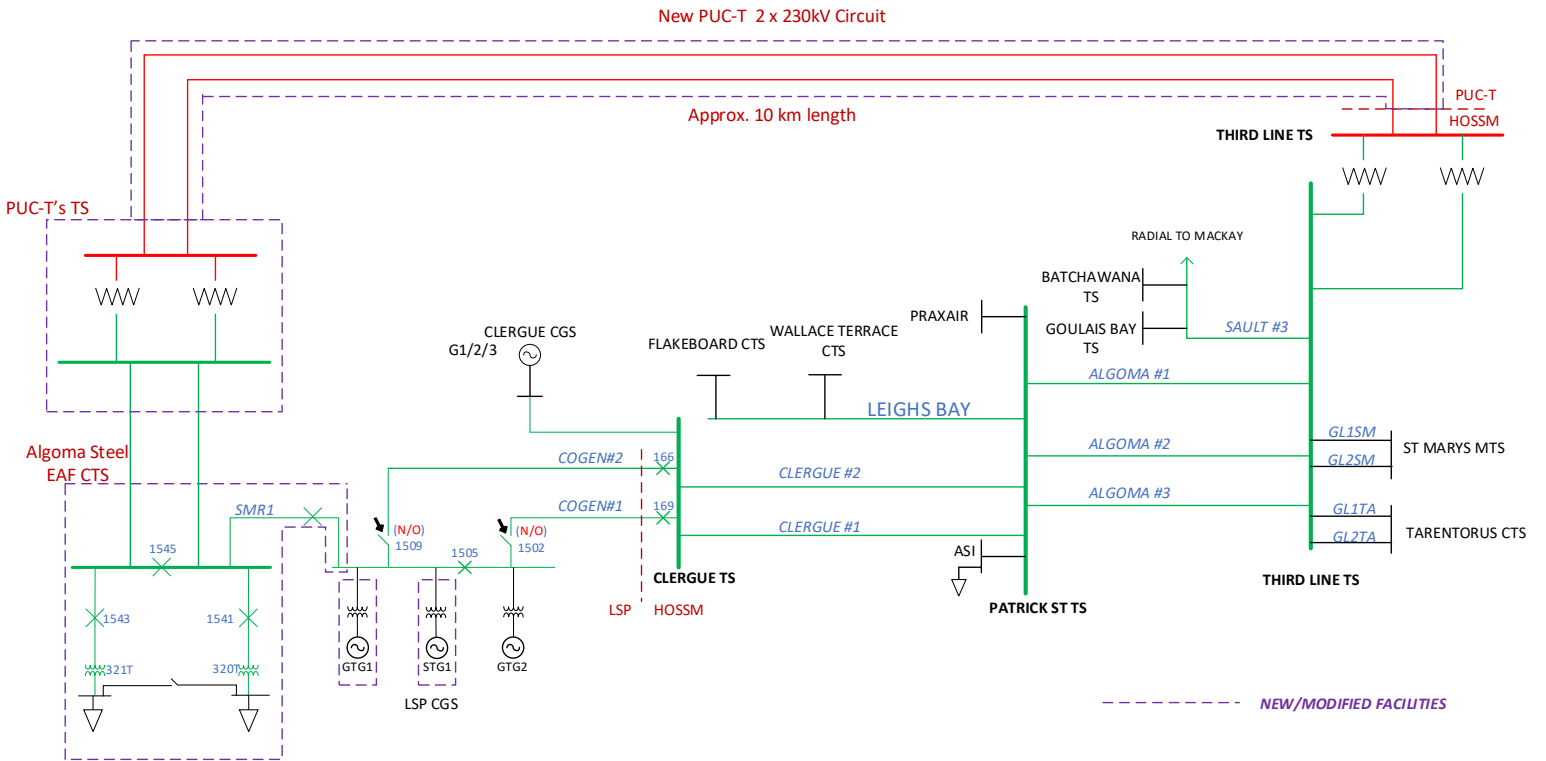


Figure 2 – Single Line Diagram of HOSSM network and proposed Tagona West TS connection

Charge mix 100% scrap (2 EAF arching alternatively)

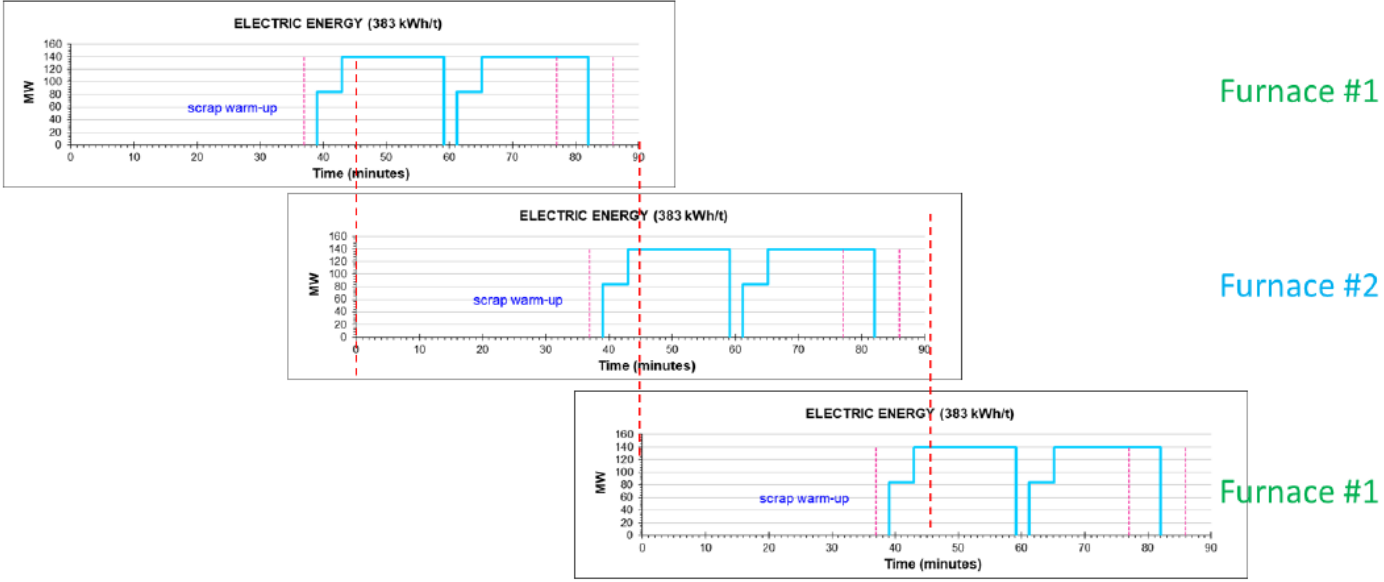


Figure 3: EAF Operating Mode – Alternating Mode

Appendix B – Voltage Performance

Station Name	Bus kV	EAF CTS In-Service (0MW load)		EAF load ramp up to 140 MW (without SVC) [pre-ULTC operation]		EAF load ramp up to 140 MW (with SVC) [pre-ULTC operation]	
		kV		kV	% change	kV	% change
Algoma TS	230	251.1		239.1	-4.7%	246.0	-2.0%
Aubrey GS	230	249.4		239.5	-4.0%	246.6	-1.1%
Echo River TS	230	244.3		226.6	-7.3%	242.0	-0.9%
Hanmer TS	230	244.2		238.7	-2.2%	240.7	-1.5%
Mackay TS	230	247.0		235.7	-4.6%	246.0	-0.4%
Mississagi TS	230	248.8		236.0	-5.1%	245.1	-1.5%
PUC's Tagona West TS	230	242.5		221.7	-8.6%	242.0	-0.2%
Third Line TS	230	242.4		222.6	-8.2%	241.4	-0.4%
Wawa TS	230	251.0		243.8	-2.9%	249.6	-0.6%
Wells GS	230	248.8		236.1	-5.1%	245.5	-1.5%
Andrews CGS	115	125.5		121.1	-3.5%	125.1	-0.4%
Batchawana TS	115	122.0		111.5	-8.6%	121.4	-0.4%
Bow Lake CGS	115	125.6		121.1	-3.5%	125.1	-0.4%
Clergue CGS	115	121.2		110.9	-8.5%	120.6	-0.4%
Echo River TS	115	125.9		116.2	-7.7%	124.7	-1.0%
Flakeboard CTS	115	120.9		110.5	-8.6%	120.3	-0.4%
Gartshore CGS	115	125.5		121.1	-3.5%	125.0	-0.4%
Goulais Bay TS	115	121.8		111.3	-8.6%	121.3	-0.4%
Hogg CGS	115	125.5		121.1	-3.5%	125.1	-0.4%
LSP CTS	115	125.4		111.0	-11.5%	122.1	-2.7%
Mackay CGS	115	122.2		111.7	-8.6%	121.7	-0.4%
Mackay TS	115	125.8		121.1	-3.7%	125.3	-0.4%
Northern Ave TS	115	122.2		111.8	-8.5%	121.6	-0.4%
Patrick St TS	115	121.2		110.8	-8.6%	120.6	-0.4%
PUC's Tagona West TS	115	125.4		111.4	-11.2%	122.4	-2.4%
St Mary's MTS	115	122.3		111.8	-8.6%	121.7	-0.4%
Tarentorous MTS	115	122.1		111.8	-8.5%	121.6	-0.4%
Third Line TS	115	122.2		111.8	-8.5%	121.6	-0.4%
Wallace Terrace CTS	115	121.1		110.7	-8.6%	120.6	-0.4%
Echo River TS	34.5	36.4		33.4	-8.3%	36.1	-1.1%
Northern Ave TS	34.5	39.5		36.1	-8.6%	39.3	-0.4%
Batchawana TS	12	12.0		11.0	-8.6%	12.0	-0.4%
Goulais Bay TS	12	13.3		12.1	-9.0%	13.2	-0.5%

1. SVC with 0 to +125MVar range was used for this assessment.
2. EAF CTS connected to Tagona West TS is operating at 0.97pf.
3. LSP Generator Units are out of service.

Appendix C – Short Circuit Results

Station Bus	Voltage (kV) ¹	Existing (Phase 1 EAF connection – I/S 2024)				With Project (Phase 2a PUC Connection)			
		3-Ph (kA)		L-G (kA)		3-Ph (kA)		L-G (kA)	
		Sym	Asym	Sym	Asym	Sym	Asym	Sym	Asym
Third Line TS	230	8.5	10.1	9.4	11.7	8.8	10.6	10.0	12.5
Third Line TS	115	14.5	17.7	18.6	23.2	13.4	16.8	17.5	22.3
St Mary's 1SM	115	10.8	12.3	8.2	9.0	10.3	11.8	8.0	8.8
St Mary's 2SM	115	10.8	12.3	8.2	9.0	10.3	11.8	8.0	8.8
Goulais Bay TS	115	5.8	5.8	4.0	4.0	5.7	5.7	3.9	4.0
Tarentorous 1TA	115	14.7	17.8	18.4	22.5	13.6	16.9	17.4	21.7
Tarentorous 2TA	115	14.7	17.8	18.4	22.5	13.6	16.9	17.4	21.7
Northern Ave TS	115	12.5	13.7	13.7	14.5	11.7	13.0	13.1	13.9
Batchawana TS	115	4.7	4.7	3.1	3.1	4.6	4.6	3.0	3.0
Patrick St TS	115	13.8	16.8	17.0	21.6	12.4	15.0	15.6	19.6
Wallace Terrace CTS	115	12.8	14.7	14.1	16.1	11.6	13.3	13.2	15.0
Flakeboard CTS	115	9.3	9.9	7.9	8.3	8.7	9.3	7.6	8.0
Clergue 1 TS	115	12.7	14.2	12.6	13.6	10.6	11.5	11.1	12.0
Clergue 2 TS	115	12.7	14.2	12.5	13.6	10.6	11.5	11.1	11.9
LSP CTS	115	13.1	15.0	9.0	11.3	8.4	10.4	9.7	12.2
Mackay CGS	115	5.7	6.3	5.5	6.3	8.4	9.4	9.8	11.2
Hogg CGS	115	5.5	5.6	5.3	5.4	5.5	5.6	5.3	5.4
Andrews CGS	115	5.5	5.6	5.8	5.9	5.5	5.6	5.8	5.9
Gartshore CGS	115	7.2	7.6	8.0	8.7	7.2	7.6	8.0	8.7
Bow Lake CGS	115	7.1	7.6	8.0	8.7	7.1	7.6	8.0	8.7
Northern Ave TS	34.5	4.3	4.3	4.5	4.7	4.2	4.2	4.4	4.7
Northern Ave TS	12	3.8	3.8	4.2	4.4	3.8	3.8	4.2	4.4
Goulais Bay TS	12	8.1	8.1	8.6	8.8	8.1	8.1	8.6	8.8
Batchawana TS	12	6.7	6.7	6.8	6.8	6.7	6.7	6.8	6.8

¹ Short circuit values were calculated at maximum continuous operating voltages. 230kV values are calculated at 250 kV; 115kV values at 124kV (Sault Ste. Marie region) or 127kV.

EXHIBIT H: REGIONAL PLANNING

The IESO Technical Working Group for the East Lake Superior (ELS) Region (the “**Team**”) identified several needs, as reported in the ELS Region IRRP dated April 1, 2021³⁵ (the “**Report**”), which were referred to the Bulk Planning group for consideration. These needs (collectively the “**Sault No.3 Need**”) are extracted from Table 2.1 of the Report and listed below.

Table 2.1 | Implementation of Recommended Plan for ELS Region

Need	Recommendation	Lead Responsibility	Required By
Loss of one Third Line TS autotransformer causes the companion autotransformer to be loaded close to its capacity	Monitor load and supply in the ELS region	IESO/HOSSM	Immediately and Ongoing
During an outage of P25W or P26W circuits, a loss of the K24G circuit results in thermal overload of the Sault No.3 circuit commencing in 2021 (assuming this circuit is replaced like-for-like at end-of-life and operated in a network configuration)	Consider as part of the IESO’s Bulk Planning Study for the broader region commencing in 2021	IESO/HOSSM	2023
During an outage of one of the Third Line TS autotransformers, a loss of the companion autotransformer results in thermal overload of the Sault No.3 circuit (assuming this circuit is replaced like-for-like at end-of-life and operated in a network configuration)	Consider as part of the IESO’s Bulk Planning Study for the broader region commencing in 2021	IESO/HOSSM	2023

³⁵ IESO working group report “2021 East Lake Superior Integrated Regional Resource Plan (IRRP)” report available online at: <https://www.ieso.ca/en/Get-Involved/Regional-Planning/Northeast-Ontario/East-Lake-Superior>

1 As a member of the ELS Working Group, PUC Distribution has been discussing potential options with
2 the Team in relation to planning for renewal of PUC Distribution's two 115 kV transformer stations,
3 Tarentorus TS and St. Mary's TS, which are near end of useful life. It was noted that a large proportion
4 of Sault Ste. Marie load (that served by Tarentorus TS) currently served by the 115 kV system at Third
5 Line TS would potentially be transferred over to the 230 kV system. The plan would be to eliminate
6 Tarentorus TS and replace it with a new supply from the PUC Transmission Tagona West TS. The St.
7 Mary's TS would remain on the 115 kV supply, and would be rebuilt in the same area of the city. The
8 Tarentorus TS peak loading represents 80-85 MW of the city's overall peak load of 125-140 MW. It
9 is noted that planning for the rebuild/replacement of the two PUC Distribution 115 kV transformer
10 stations is currently in progress. Replacement of the stations is anticipated to start within the next 5
11 years, subject to regulatory approvals.

12

13 In October 2022, the bulk planning group published its report, *Need for Northeast Bulk System*
14 *Reinforcement, October 27, 2022*³⁶ (the "**Bulk Plan**"). As the Bulk Plan did not recommend any
15 reinforcements related to the Sault No.3 Need, the concerns remain outstanding.

16

17 It is noted that moving the Tarentorus TS load to the Tagona West TS would avoid the need to add a
18 third autotransformer at the Third Line TS, which would address the Sault No.3 Need. The ELS
19 Working Group is working towards issuing an addendum to the *2021 East Lake Superior Integrated*
20 *Regional Resource Plan (IRRP)* which considers PUC Distribution's planned station replacements.

21

22

³⁶ IESO bulk planning report "Need for Northeast Bulk System Reinforcement, October 27, 2022" available online at: <https://www.ieso.ca/en/Get-Involved/Regional-Planning/Northeast-Ontario/Bulk-Planning>