



**Electrical
Safety
Authority**

400 Sheldon Dr, Unit 5, Cambridge, ON , N1T 2H9

For inquiries:

TOLL FREE TEL: 1-800-746-6480

TOLL FREE FAX: 1-800-957-2738

www.esasafe.com

High and Low Voltage Report

STANTEC CONSULTING LTD
Attn: FRANCESCO NARDONE @ 416-598-7
401 WELLINGTON ST W, SUITE 100
TORONTO ON M5V 1E7

NOTICE DATE: July 19, 2012
NOTIFICATION #: 40030091
PLAN REVIEWER: Dunn, Troy
INSPECTOR: Coholan, Christian
TELEPHONE: (705)644-1900
PRINT DATE: July 19, 2012
CUSTOMER ID: 31482
CUST. ORDER #: 140010092

Subject property:

GRAVENHURST BC55 BEAVER CREEK
SLD E-600 R05
INSTITUTION, FINANCE & PAROLE BLDG
2000 BEAVER CREEK DR
WOOD TWP ON
GRAVENHURST

This office has examined the plans submitted by you for the high and low voltage portion of the above noted installation. Work may commence on the project provided the installation is made in accordance with the submitted plans and specifications, the Ontario Electrical Safety Code, 25th Edition, 2012 and its supplements together with the following comments. Final approval of the installation is subject to field inspection.



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1. Unless within a fenced area, the pad mounted transformer must be tamper resistant as defined by Bulletin 36-15-* and standard CAN/CSA C227.
2. Note 3 on Drawing E-600 indicated the installation of an isolation switch/cutout and fusing. Details were not provided for this piece of equipment. Each consumer's service, operating unit of apparatus, feeder, and branch circuit shall be provided with overcurrent protection consisting of a circuit breaker or with fuses preceded by a group-operated visible break load interrupting device capable of making and interrupting its full load rating and that may be closed with safety to the operator with a fault on the system. Rule 36-204.
3. The location of the pole mounted equipment in relation to the Local Distribution Company supply was not provided. On overhead installations, a customer owned fused loadbreak switch shall be installed within 200M of the LDC point of connection. Rule 36-204, Bulletin 36-17-*
4. Suitable warning signs shall be installed as required by Rule 36-006, 36-100(4) and Bulletin 36-6-*
5. Suitable warning signs shall be installed adjacent to the 15kV fuses, warning operators not to replace fuses while the supply circuit is energized as required by Subrule 36-006(3).
6. Details for the high voltage cable were not provided. The HV cable voltage rating to be used in a particular installation shall be selected on the basis of the applicable phase to phase voltage. In addition to the cable voltage rating, the insulation level shall be suitable for the application in accordance with CSA C68.10-08. Rule 36-100, Bulletin 36-12-*
7. The details for the high voltage underground installation were not provided. The high voltage underground shall be installed per Rule 12-012 and depth as detailed in Table 53.
8. The low voltage underground trench detail found on Drawing E-200 does not appear to be compliant with the Ontario Electrical Safety Code. All secondary underground wiring shall be installed per Diagrams B4-1 to B4-4 found in Appendix "B" and cable ampacities as determined from the applicable "D" Table. Ensure your configuration conforms to the "B" Diagrams, or provide an IEEE 835 calculation prepared by the cable manufacturer stating the revised cable ampacity specific to this installation. Rule 4-004, Rule 12-012.
9. The rating of the high voltage fuses was not provided. Each high voltage transformer shall be protected by an individual overcurrent device on the primary side, which shall be rated at not more than 150% of the rated primary current of the transformer in the case of fuses and not more than 300% of the rated primary current of the transformer in the case of circuit breakers. Where 150% of the rated primary current does not correspond to a standard rating of a fuse, the next higher standard rating shall be permitted. Rule 26-252.
10. All wood primary poles are to be "Species-Treatment" combinations listed in Table



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102. Rule 75-120

11. The minimum height requirement for a primary pole is 12.2 metres. Rule 75-102

12. The poles that support the phase conductors of a primary line shall be so located and of such height as to afford a minimum clearance of 7m measured vertically between the conductors under maximum sag conditions and the ground. Rule 75-706(1)

13. The primary line neutral shall have a minimum vertical clearance of 6m measured vertically between the conductors under maximum sag conditions and the ground. Rule 75-706(2)

14. The installation of guys to be in accordance with Rules 75-300 through 75-316.

15. The primary "HO" connection of the high voltage transformer shall be connected to the LDC system neutral, when required by the LDC. Rule 2-034, Rule 75-004

16. The low voltage neutral "XO" of the transformer shall be grounded to the station electrode with a 2/0 AWG copper conductor. Rules 10-106, 10-204 and 10-500.

17. The low voltage neutral "XO" of the transformer shall be bonded to the transformer enclosure / ground bus with a minimum #4 AWG copper conductor. Rule 36-308(6)(b), Rule 10-500, Rule 10-814, Table 16.

18. Details of the station ground electrode were not provided in the plan review submittal. The station ground shall consist of a minimum of four 19.0mm by 3m long rods, and be interconnected with not less 2/0 AWG bare copper conductors buried to a maximum depth of 600mm below the rough station grade and a minimum depth of 150mm below the finished station grade. Rule 36-302

19. Please ensure that a gradient control mat will be located under the group-operated pole mounted switch and that it is connected to the operating handle with a minimum of two 2/0 grounding conductors as detailed in accordance with Rule 36-310, Bulletin 36-10-16.

20. Where tamper resistant equipment is subject to damage from vehicles, it shall be surrounded by a fence meeting the requirements of Rule 26-300 to 26-324 or suitable barriers of a permanent nature shall be erected to provide the necessary protection.
? Equipment within 3 meters of a parking lot or curbed area is considered subject to mechanical damage.
? Steel posts (bollards) at the corners of equipment and with separations not exceeding 2 meters are an example of a suitable barrier for tamper resistant equipment.
? Protective fencing or bollards may require bonding to ground in accordance with Bulletin 36-10-.*.

21. Any metal (i.e. metal fences, bollards, protective barrier, etc) located within 2.4M of the outdoor padmounted equipment enclosure shall be bonded to the station ground electrode with a 2/0 copper conductors. Rule 36-308, Bulletin 36-10-*

22. At least one receptacle shall be installed for the maintenance of rooftop HVAC



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equipment as per Rule 2-314, and shall be located within 7.5m of all such equipment and comply with the requirements of 26-704 and Bulletin 26-27-.*.

23. Where exposed to the weather, receptacles of configurations 5-15R, 5-20R, 5-20RA, 6-15R, 6-20R and 6-20RA shall be provided with cover plates suitable for wet locations whether or not a plug is inserted into the receptacle (In-use cover plates). Rule 26-702(2).

An invoice will be sent directly to your Accounts Payable Department. If we may be of any assistance regarding any aspect of this installation, particularly with respect to clarification of the above comments and regulations, please contact the Plan Review Department or the Inspector listed above.

Pour obtenir une version française du rapport, veuillez appeler 1-877-372-7233.