



Contractor Information Pad Mount Transformer Installations

GENERAL:

EnWin Powerlines Ltd. will typically install and maintain a pad mounted transformer on the owner's property up to a maximum 2000 KVA at 347/600V or 1000 KVA at 120/208V if, in its judgment, the size and type of load warrants the supply of such transformation. The transformer will be sized to provide for the customer's present normal maximum meter demand load and an allowance for any reasonable load growth anticipated by the customer.

CONSTRUCTION NOTES:

Location

The pad mounted transformer shall not be located within 6.1m (20') of openings, doors and windows. The minimum clearance is to be 1m (39") around the transformer foundation.

In order to maintain the above noted clearances from buildings constructed on neighbouring properties, transformers must also be located no closer than 20 feet from all property lines.

At EnWin's discretion the customer must provide and install protective bollards around the transformer.

Grade

The concrete pad must be within 50 mm to 150 mm (2" to 6") above the surrounding ground. The grade of this surrounding area should not be sloped in such a manner that run-off collects around the pad.

Compaction Test

Compaction test reports as specified on the EnWin pad mounted transformer installation drawing.



SUPPLIERS OF TRANSFORMER FOUNDATIONS:

EnWin approved transformer foundations may be purchased from the following suppliers:

Porter Septic Tank R.R, #1 Lucknow, ON NOG 2H0 P: 519-528-3537 F: 519-528-2025	Underground Specialties 5340 Walker Road R.R.#1 Oldcastle, ON NOR 1L0 P: 737-1263	Babcock Concrete R.R.#5 Dresden, ON NOP 1M0 P: 1-800-463-7163 F: 1-519-683-2548
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LABOUR AND MATERIALS PROVIDED BY ENWIN POWERLINES LTD.:

- EnWin will provide and install transformer, primary cables and step potential grounding.
- EnWin will provide engineering and an installation drawing for the customer. This drawing should be studied very carefully. Any non-compliance will result in a refusal to connect by Enwin. See attached sample drawing, NOT FOR CONSTRUCTION, for information only.
- EnWin will provide duct, duct sweeps, spacers and copper ground wire for installation by the customer. Please call the Stores Foreman or his designated substitute at 251-7300 ext. 253 and schedule a pick up date and time two to three days in advance of when you would like to pick up your material (please provide the work order number). The EnWin stock room is located at 4545 Rhodes Drive. Material can be picked up between the hours of 8:00 to 11:30 and 12:45 to 15:30.
- A material list with the work order number must be presented at the stock room upon arrival (this material list will be provided along with the construction drawing). The storekeeper will refuse to serve any contractor who arrives without a copy of the material list with the work order number. The contractor must take all materials listed on the work order and return all surpluses immediately upon completion of the job requirements.
- If the contractor requires a material change upon arrival, the Stores Foreman or his designated substitute will try to contact the Engineer/Technologist on behalf of the contractor to authorize the change. If unsuccessful, the contractor will have to determine whether to accept the authorized material or not; and will have to contact the Engineer/Technologist on his/her own.
- The contractor must arrive at the stockyard with the appropriate vehicle(s) to transport the material safely. The storekeepers will not load concrete vaults or foundations. Be advised that some items will be approximately twenty feet long so please bring a vehicle to which such items can be secured in a safe manner. In most cases you will be expected to load the material onto your vehicle yourself. It is your responsibility to ensure that this material is secure before you move your vehicle.



LABOUR AND MATERIALS PROVIDED BY THE CUSTOMER:

The customer must provide excavation and backfilling, sand, concrete, transformer pad and foundations, installation of ducts, concrete encasement of ducts and reinstatement of sod from transformer site to lateral pole, protective bollards around the transformer, if required, and concrete pylon encasing duct at the lateral pole.

REQUIREMENTS FOR DELIVERY OF TRANSFORMER:

- Customer to have signed copy of commercial connection agreement and have provided with a cheque or purchase order (if required)
- EnWin to provide a “for construction” drawing to the contractor.
- Enwin indicate duct location on pole.
- Contractor to install foundation and ducts according to spec before pouring concrete the contractor contacts EnWin for inspection of layout. (two days notice required)
- EnWin Engineer/Technologist or Supervisor to inspect duct and foundation and verify location.
- Contractor pours concrete on duct and lateral pole according to spec.
- Contractor removes the lid of the foundation and removes any water that may be in the foundation and advises EnWin that civil work is done. At this point the contractor should also advise EnWin if extensions to the secondary paddles are required indicating the number and size of cables per phase and for the neutral
- Contractor completes final site grade, leaving/digging a trench 300mm x 300mm x 900 mm around the perimeter of the foundation per drawing notes and details.
- Enwin Powerlines pulls primary cable and installs step potential grounding. Enwin requires 3 to 5 notice in order to insure work will be done promptly.

Before the transformer is installed the following items **must** be in place.

- 1) The customer’s secondary cables must be installed, coiled and placed in the bottom of the transformer foundation. The cables should be long enough to rest on the bottom of the concrete foundation and to extend 2.14 m above the top of the transformer pad**
- 2) Bollards must be installed**
- 3) Compaction test results forwarded to EnWin**
- 4) Lid installed in the proper direction (as indicated by Enwin) and lifting hooks are removed.

Note ** these items may be done before the installation of the primary cables.

- Enwin Powerlines installs transformer. Enwin requires 3 to 5 days notice in order to install transformer.
- Contractor attaches secondary cables (loosely bolted) to transformer using ½” stainless steel bolt of appropriate length, flat washers and lock washer.
- EnWin receives connect order from ESA



- Enwin Powerlines makes permanent connections and energizes transformer - typically within 3 to 5 working days.
- Meters are installed

METERING INFORMATION:

A floor plan showing the location of the units in relation to the electrical room shall be posted in the electrical room and a copy submitted to Enwin. The drawing shall be revised within three months of any change to the floor plan.

Each of the service conductors must be marked to identify the individual phases and neutral both at the main switch and at the service entrance. In cases of multiple metering installations (both residential and commercial), it is necessary to clearly and permanently identify each unit and their corresponding meter socket, disconnect switch and panel. In the case of remote disconnects in a meter center or similar enclosure, the main disconnect switch handle and compartment must be identified.

The identification may be painted (oil based), engraved directly in the equipment, or consist of a permanently attached nameplate. Only the unit number or assigned municipal address may show on the equipment.

All meters must be located in a secured electrical room or a weatherproof cabinet.

Metering cabinets must have manufactured fixed backplate mounting studs. Self-tapping screws are not permitted. Cabinet height shall be 1 meter (3 feet) between finished floor and bottom of the cabinet. The location allocated for the metering equipment shall be directly accessible to Enwin. It shall have not less than 1219mm (48") clear space in front of the cabinet.

For service that will have a load of 200 kW or larger an activated voice grade analog telephone line terminated with a RJ11 receptacle must be installed into the meter cabinet for remote interrogation of the interval metering system.

Minimum length of cable looped inside the meter cabinet for instrument transformers shall be 1m (39"). This cable must be continuous i.e. it must not be cut.

For all CT connections, crimp type connectors up to 500MCM for copper wire only will be supplied by Enwin. There should be a maximum of two conductors per phase.

Where space is provided in a customers Switchgear for Enwin provided CTs and PTs, a 508 mm x 762mm x 254mm (20"x30"x10") metering cabinet must be included in the switchgear or remotely located with 32mm (1 ¼") rigid steel conduit connecting the cabinet and instrument transformer compartment. The maximum length of this conduit should be 32 meters (106 Feet).

Where pulse metering is to be used the maximum length of the 32mm (1 ¼") Rigid Steel conduit between the pulse metering cabinet and the instrument transformer compartment is 23 m (75 feet).



In cases where Switchgear will be installed it will be the contractors responsibility to install CT's and PT's. These will be provided by Enwin and can be picked up at the meter shop.

Meter Equipment Pick up and Delivery

Two weeks prior to inspection bring the backplate to the meter shop located at 4545 Rhodes Drive. Enwin will wire the meter cabinet backplate in all cases. If CTs and PTs are to be installed onto the backplate Enwin will wire these also. You can call the meter shop at 251-7300 ext. 229. Please label the backplate with the following information

- Address (must be written directly on the back plate in black marker)
- Top/Bottom
- Line and Load Entry and Exit points (please refer to drawings for acceptable locations and acceptable door opening)
- Size of main
- Conductor size
- Voltage