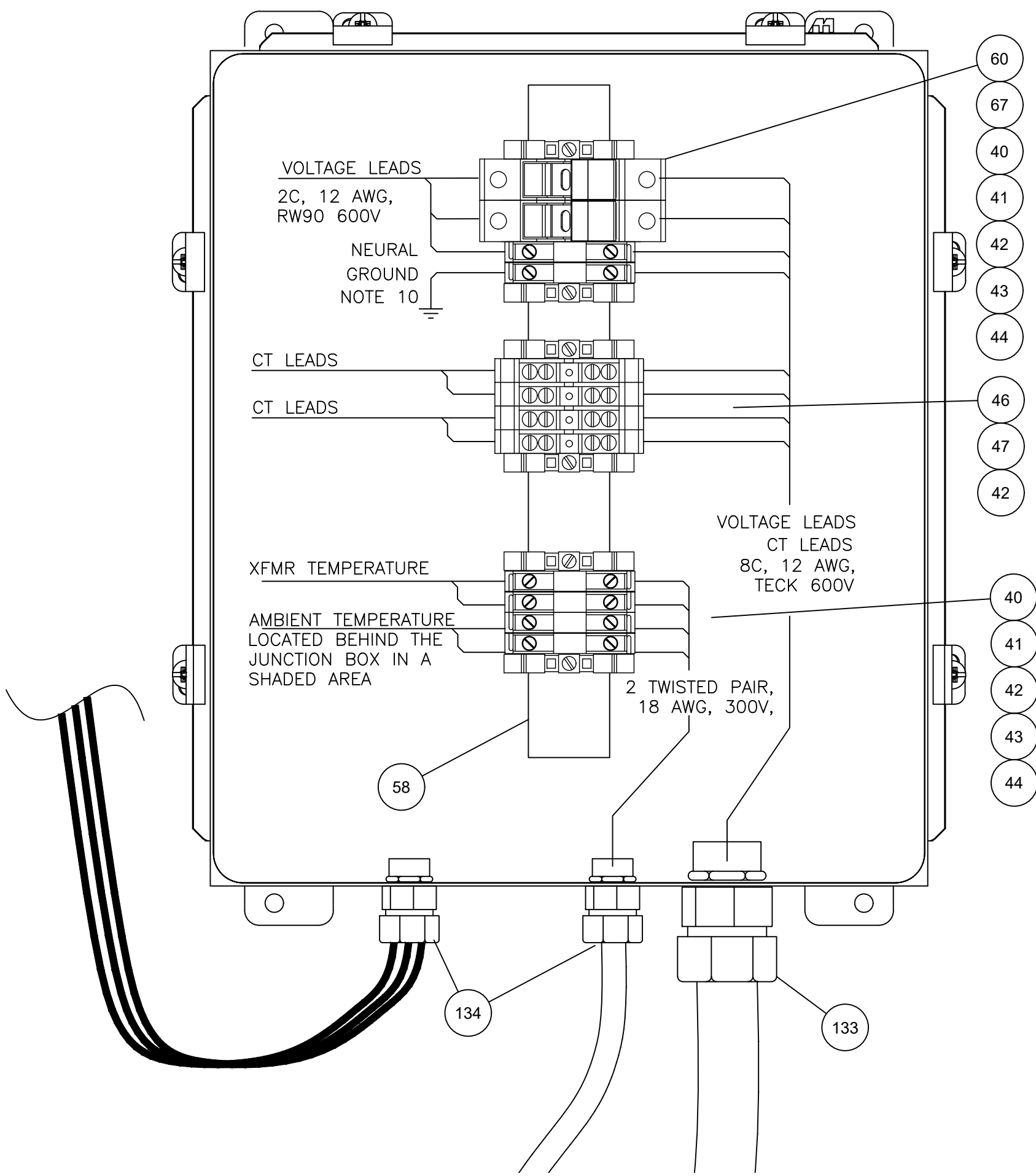


NOTES:

1. ALL DIMENSION IN mm UNLESS NOTED.
2. ALL WORK SHALL BE ACCORDING TO APPLICABLE CODES AND STANDARDS AND SHALL BE SUBJECT TO APPROVAL BY AUTHORITY HAVING JURISDICTION ON THE WORK. ALL MATERIAL SHALL BE APPROVED BY THE APPLICABLE STANDARDS AUTHORITY.
3. PART NUMBER IS AN INDICATION OF THE QUALITY OF THE MATERIAL. EQUIVALENT MATERIAL WILL BE CONSIDERED. CHANGE OF MATERIAL SHALL BE APPROVED BY THE DER PROGRAM MANAGER.
4. THE CONTRACTOR IS RESPONSIBLE TO COMPLETE THE BILL OF MATERIAL FOR ALL SMALL HARDWARE.
5. QUANTITY AND MATERIAL PART NUMBER TO BE VALIDATED BY CONTRACTOR
6. MOUNTING HARDWARE LISTED IN THE BILL OF MATERIALS HAS BEEN PROVIDED AS SUGGESTION AND MAY NEED SOME ADJUSTMENT. OTHER METHOD MAY BE USED BASED ON MATERIAL AVAILABILITY OR WITH MATERIAL THAT IS MORE STANDARD WITH THE INSTALLER. SMALL HARDWARE LIKE NUTS AND BOLTS COULD BE ADDED TO THE LIST ONCE A PROVEN STANDARDIZED DESIGN IS DEFINED.
7. ALL INSTALLATIONS WILL REQUIRE SOME CUSTOMIZATION BASED ON SPECIFIC TRANSFORMER AND POLE ARRANGEMENT. FOR EXAMPLE, THE FINAL WEIGHT OF THE COMPLETED ENCLOSURES MAY REQUIRE A DIFFERENT SUPPORT ARRANGEMENT. BOLTING INSTEAD OF STRAPPING MAY BE A PREFERRED SOLUTION.
8. CT'S TO BE SELECTED WITH AN OUTDOOR RATING AND ACCURACY DEFINED BY THE ENGINEER BASED ON SPECIFIC INSTALLATIONS AND AVAILABILITY.
9. IDEALLY, THE TRANSFORMER TEMPERATURE PROBE IS MOUNTED INSIDE THE TRANSFORMER CORE OR WITHIN THE OIL. FAILING THAT, ONE TEMPERATURE PROBE SHALL BE MOUNTED ON TRANSFORMER ENCLOSURE, ANYWHERE AROUND THE TANK BUT UNDER THE PRESSURE RELIEF VALVE ELEVATION, TO BEST MEASURE INTERNAL TEMPERATURE OF TRANSFORMER ENCLOSURE. THE SECOND TEMPERATURE PROBE SHALL BE MOUNTED ON THE JUNCTION BOX, AS MUCH AS POSSIBLE IN A SHADED AREA. PROBE SHALL BE ATTACHED WITH THE USE OF APPROVED REMOVABLE ADHESIVE.
10. UTILITY TO PAY ATTENTION TO THE COORDINATION / CONNECTION OF THE GROUND CONDUCTOR VS THE NEUTRAL AS IT DEVIATES FROM A CONVENTIONAL CONNECTION TO A SERVICE ENTRANCE.



Contributed by CIMA Canada Inc. (the "Contributor")
Copyright 2019 Hydro Ottawa (the "Licensor")

Licensed under the MiGen Open Source License (the "License"); you may not use this file except in compliance with the License. You may obtain a copy of the license at:

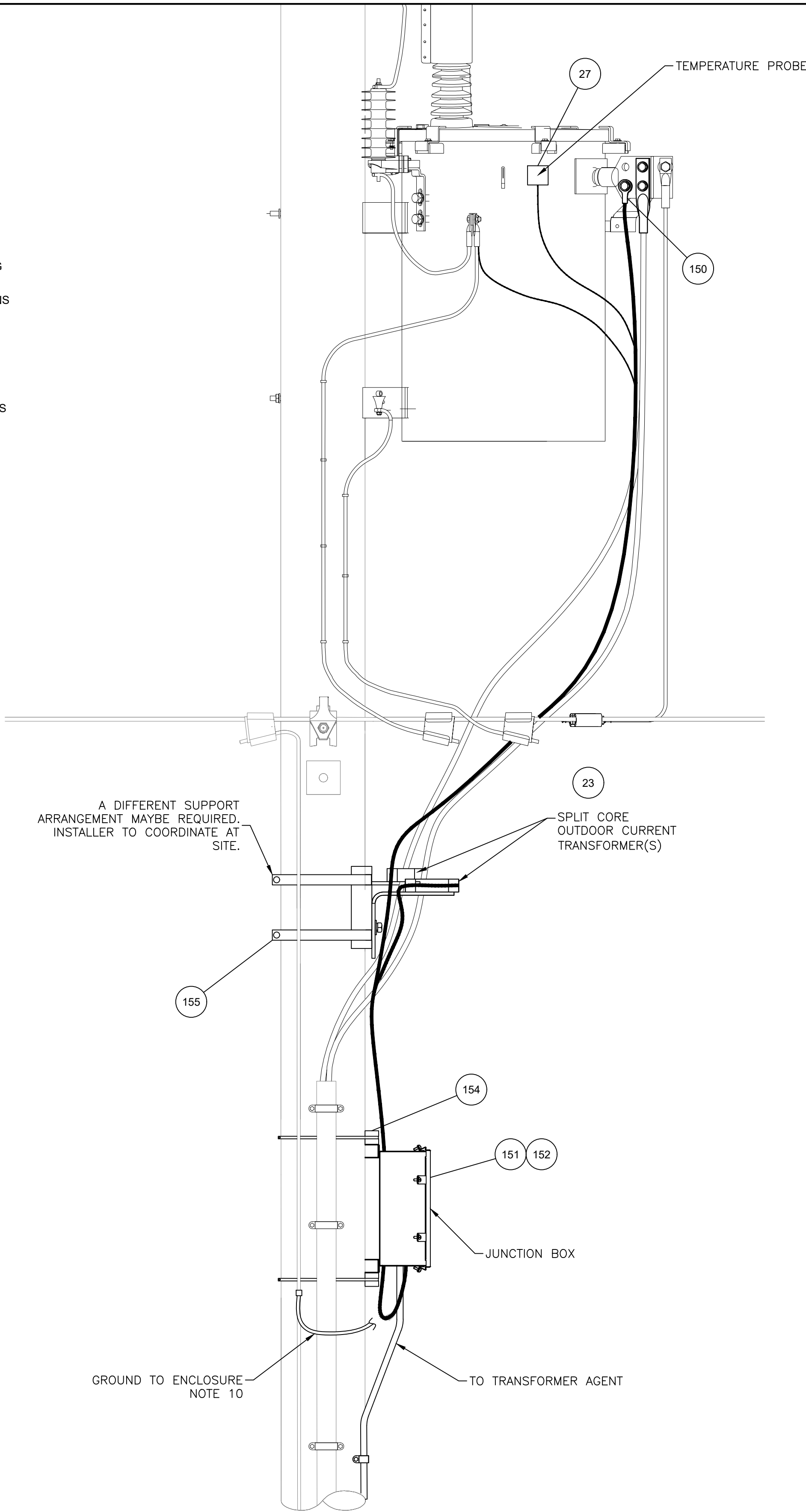
<https://github.com/MigenTransactiveGrid/MiGen1.0/blob/master/LICENSE>

Unless required by applicable law or agreed to in writing, all software, drawings, and any other material contributed by Contributor, and distributed by Licensor, under the License are contributed or distributed, as applicable, on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including NO WARRANTY with respect to use or fitness of this file FOR any purpose, including NON-INFRINGEMENT OF INTELLECTUAL PROPERTY, COMPLIANCE WITH PRIVACY LEGISLATION, PROTECTION FROM SECURITY VULNERABILITIES, or COMPLIANCE WITH ANY GOVERNMENT STANDARD.

See the License for the specific language governing permissions, disclaimer of warranty, limitation of liability and other limitations under the License

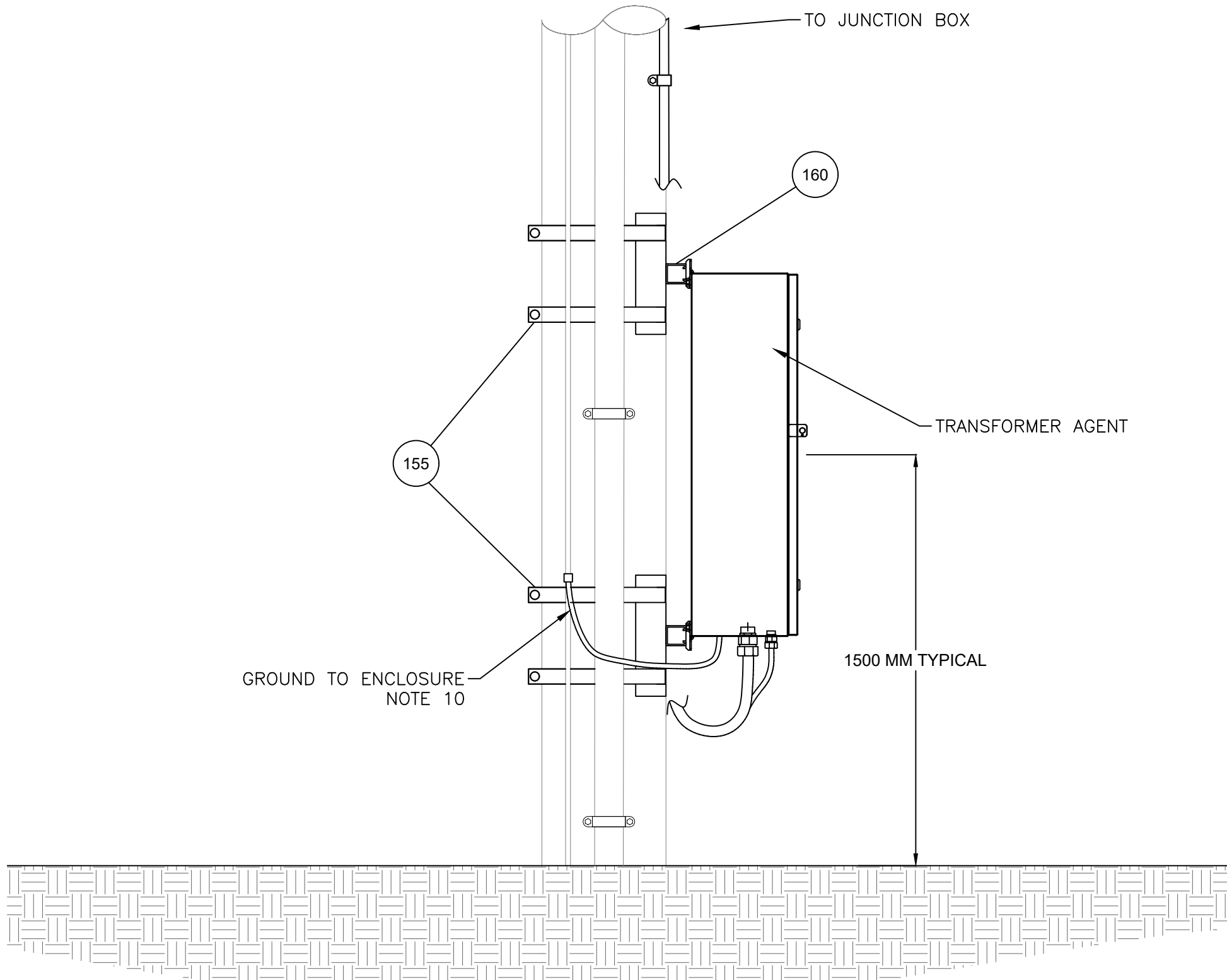
REFERENCE DRAWING

This document is to be used as a reference conceptual document and is based on the applicable standards in effect at time of issue. Use of this design for a specific location must be verified and adapted by a local professional engineer to meet site specific conditions, equipment selection, codes, standards and requirements from the authority having jurisdiction



UPPER POLE SECTION VIEW
SCALE: 1 = 10

| BILL OF MATERIALS | | | | |
|-------------------|-------------|---|----------------------------------|----------------------------------|
| 23 | 2 | SPLIT CORE CURRENT TRANSFORMER, 5A SECONDARY PART NUMBER PROVIDED FOR INFORMATION. INTEGRATOR TO VALIDATE AMPACITY, BURDEN AND ACCURACY ACCORDING TO THE APPLICATION. | FLEX-CORE | FCL 200/5-4 |
| 27 | 2 | PROGRAMMABLE RESOLUTION 1 WIRE DIGITAL THERMOMETER | MAXIM INTEGRATED | DS18B20 |
| 40 | As Required | TERMINAL BLOCK, 6 mm2, 600V, 50A, AWG 22 TO 8 | WEIDMULLER / WDU6 | 1020200000 |
| 41 | As Required | TERMINAL BLOCK, END PLATE | WEIDMULLER / WAP 2.5-10, WM, BG | 1050000000 |
| 42 | As Required | TERMINAL BLOCK, END BRACKET | WEIDMULLER / WEW 35/2 | 1061200000 |
| 43 | As Required | TERMINAL BLOCK, GROUP MARKER | WEIDMULLER / WAD 8 MC NE WS | 1112940000 |
| 44 | As Required | GROUNDING TERMINAL BLOCK, | WEIDMULLER / WPE 6 | 1010200000 |
| 46 | As Required | TERMINAL BLOCK, DOUBLE SCREW, 600V, 65A, 24-6 AWG | PHOENIX CONTACT, URK-ND2 | 0701095 |
| 47 | As Required | END PLATES | PHOENIX CONTACT, D-URK-ND | 0701121 |
| 58 | As Required | SYMMETRICAL DIN3 MOUNTING RAIL, TS 35 x 7.5, STEEL, GALVANIZED WITH SLOTTED HOLE | WEIDMULLER TS 35X7.5/LL 1M/ST/ZN | 0514510000 |
| 60 | 2 | 2 POLE, FINGER SAFE FUSE HOLDER WITH 15A FUSE REJECTION TYPE CLASS CC, 100KA S.C., 600VAC | MERSEN | USCC2 |
| 67 | 2 | 20A FUSE REJECTION TYPE CLASS CC, 200KA S.C., 600VAC | MERSEN | ATMR20 |
| 133 | 1 | TECK CABLE FITTINGS, JACKET 0.88" TO 1.075", HUB 3/4" | THOMAS & BETTS | 10467 |
| 134 | 1 | CABLE FITTING, LIQUIDTIGHT SIZED TO BE CONFIRMED AT SITE | THOMAS & BETTS | 2562 |
| 150 | 2 | LUGS FOR POTENTIAL LEADS | TBD | TBD |
| 151 | 1 | JUNCTION BOX 12in x 14in x 6in | HAMMOND MANUFACTURING | 1414N4M6 |
| 152 | KIT | MOUNTING FOOT KIT | HAMMOND MANUFACTURING | EZPMFHD |
| 154 | KIT | POLE MOUNTING KIT: - VERTICAL STEEL CHANNEL - HORIZONTAL STEEL CHANNEL - SST STRAP - 15" POLE DIA. | HAMMOND MANUFACTURING | PMV1216GY PMH15GY PMSTRP55 |
| 155 | 4 | POLE ATTACHMENT: - MOUNTING BRACKET - SST BAND, WIDTH: 1 1/4", LENGTH: 60" - BUCKLES FOR BAND | CHANCE / HUBBELL | CD4080 CBAB5860 CBAB58 |
| 160 | As Required | METAL CHANNEL, HOT-DIP GALVANIZED, 1 5/8" X 1 5/8", 10' LENGTH | T&B / SUPERSTRUT | A-1200-HDG |



LOWER POLE SECTION VIEW
SCALE: 1 = 10

MiGen Transactive Grid is a smart grid technology field demonstration project led by Hydro Ottawa and partially funded by the Ontario Ministry of Energy, Northern Development and Mines' Smart Grid Fund and the LDC Tomorrow Fund, with great support from the IEEE Standards Association and seven collaborating partners: Carleton University, CIMA+, Panasonic Eco Solutions Canada, Quadra Power, Tantalus (formerly Energate), Thorium Technologies, and University of Ottawa



Stamp

| | | | |
|----|----------------------------|------------|------------------|
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| 0 | ISSUE AS REFERENCE DRAWING | 01/13/2020 | R.L / A.L |
| No | Revision | Date | Init. eng. / cad |



Project Manager:
E. Cantin, tech.

Client: HYDRO OTTAWA
Project title: MiGen TRANSACTIVE GRID REFERENCE DRAWING
Drawing title: TA IMPLEMENTATION POLE MOUNTED

Project number: A000597B
Designed by: A.Langlois
Drawn by: A.Teranun
Verified by: R.Langlois
Revision: 0
Drawing N°: REF-EGN-02