Technical Guidelines for Electrical Services Over 400 Amperes
(Former Kitchener-Wilmot Hydro Service Territory)

These guidelines are for property owners, developers, consultants, etc. **("Customers")** to use when coordinating a new or upgrade of electrical service **("Service")** to a property in the City of Kitchener or the Township of Wilmot. They are to be used in conjunction with the Conditions of Service for Enova Power Corp. ("**Enova**") for the former Kitchener-Wilmot Hydro Inc. service territory, service connection process, the Ontario Building Code **("OBC")**, the Ontario Electrical Safety Code **("OESC"),** and other applicable regulations.

1. GENERAL

1.1 Contact Enova's - Victoria Street office – Service Design Section prior to starting design to review service requirements for the property. Conceptual site plan and basic load calculation needs to be provided to assist in determining service requirements.

1.2 Customer to follow Enova's "Service Connection Process for Properties Requiring Site Plan Review" Document.

1.3 All materials, labor, and trucking costs associated with the installation, removal, etc., of Enova owned infrastructure for the purpose of servicing this property is 100% chargeable to the customer.

1.4 In most cases Enova will provide and own transformer(s), cables, and conductors. The customer will install transformer foundations, transformer rooms, and duct banks, as instructed by Enova Power. Refer to the Appendix of this document for general details.

1.5 Under certain conditions Enova may require a "looped" High Voltage service to supply multiple transformers. A looped service may require a High Voltage Switch. Enova Power will supply and install the High Voltage switch. Customer to install the switch foundation, switch rooms, and / or all duct structure. See appendix for general details.

2. TYPICAL INFRASTRUCTURE REQUIRED

A typical electrical service may be comprised of any of the following:

i) Underground high voltage duct structure from points of supply to the new service location.

ii) Transformer room(s), Pad mounted transformer(s), Switch Room(s), and submersible switches.

iii) A low voltage duct structure.

iv) An electrical room(s) and metering room(s) in the building.

3. EASEMENT REQUIREMENTS

Easements may be required for Enova owned high voltage infrastructure on private property. The easements are to be free of any structure, other underground utilities, tree roots, etc. The customer may be required to provide easement(s) per the following:

i) 3.0m wide easement over an underground high-voltage duct bank;

ii) 6.2m x 6.8m easement for the installation of a pad-mounted transformer;

iii) 7.0m x 7.0m easement for the installation of a switchgear unit.

4. CLEARANCE REQUIREMENTS

4.1 A building or any other structure shall not be constructed within 5.5 meters, measured horizontally from the center line, of an overhead distribution system pole line owned by Enova (OBC 3.1.19 and OESC 75-708). Enova will no longer provide cover up or isolation on our lines for construction and maintenance work in proximity to our lines. Permanent structures within the "restricted zone" surrounding overhead lines are prohibited. This restricted zone is defined by Enova standard DWG E11111. When planning to construct a building, the customer is also required to provide the extra space required for construction (skyjacks, scaffolding, etc.) and maintenance (window cleaning, painting, etc.)

4.2 An object (crane, hoisting device, backhoe, power shovel, or other vehicle and equipment) shall not be brought closer than 3 meters to an energized overhead conductor owned by Enova Corporation (O.Reg 213/91 -Section 188).

4.3 Enova will not permit a third party contractor to cover up and or provide isolation of its energized overhead conductors that lie along a construction site (O.Reg 213/91 - Section 189).

5. SPACE REQUIREMENTS

5.1 A minimum of 3 meters of clear space is required in front of pad mounted transformers, transformer room(s), submersible switch gear, and switch gear room(s). This area shall have a level surface (grass, or asphalt). (No curbs or concrete shall be installed within the 6.2m X 6.8m or 7m X 7m easements)

5.2 Pad mounted transformer foundations and underground switchgear vault foundations shall be a minimum of 3 meters away from a building or any other customer owned structure. This is to accommodate the ground grid installation and future operation/maintenance work. Pad mounted transformers and switch gear

installations must also be a minimum of 6 meters away from windows and doors.

5.3 A minimum of 1 meter square is required in front of Enova metering equipment. Meter rooms and electrical to have a minimum height of 2.1 meters.

5.4 When required by Enova, a transformer vault room / and high voltage switchgear room shall be provided by the customer for servicing. The transformer vault room and high voltage switchgear room shall be at grade level accessible from directly outside the building.

5.5 When required by Enova, the customer shall provide Enova with a road that is a minimum 4.6m wide with a minimum 12m turning radius, clear of any obstructions and capable of sustaining a maximum load of 25,000 kg to access the transformer(s), switchgear unit(s) or vault room. Refer to Enova Standard DWG E6341 for access road detail. Any canopy or other parts of the building above the access driveway must be minimum 5.0 m above roadway. Any canopy or other parts of the building above the pad mounted transformer or switchgear vault, must be a minimum of 11 meters above these structures. An 8.5m wide space is required for truck outriggers at the transformer location. Furthermore, extra 2.5m is required between the transformer and the truck to accommodate minimum swing of the truck mounted crane.

6. ACCESS REQUIREMENTS

6.1 The customer must provide or arrange free, safe and unobstructed access to any authorized representative of Enova corporation for the purpose of equipment maintenance, inspection, replacement.

6.2 The customer shall be responsible for supplying Enova corporation with a key to the premises if required to access equipment. Enova may request that the lock be keyed to Enova specifications.

6.3 Meter rooms, for multi-unit metering, shall be accessible to Enova personal via an outside door at grade level.

7. INSTALLATION DETAILS

The customer shall provide the required infrastructure in a location compliant with this document and approved by Enova Power, installed as per the following standards:

7.1 Transformer Installations:

Refer to Enova Standard DWG C10341 and C10342 for transformer vault design and installation specifications;

7.2 Transformer Room Installations:

Refer to Enova Standard DWG C5543, C5544 and C5545 for installation requirements.

C5544 - Small transformer room -12'W x15'L x9'H – for room type transformer up to 500kVA

C5543 - Medium transformer room -15'W x 20'L x9'H – for room type transformer between 500kVA and 1500kVA

7.3 Switchgear Vault Installations:

Refer to Enova Standard DWG C9095, B9098 and B9100 for Three phase underground switchgear vault design specification and installation requirement.

7.4 Switchgear Room Installations:

Refer to Enova Standard DWG C5604.

7.5 Duct bank Installations:

For underground distribution, refer to Enova Standard DWG B3727 for duct bank construction details.

For general underground primary service duct work, refer to Enova Standard DWG C5560 for duct formation details.

7.6 Metering Installations

For metering installation, refer to Enova Standard DWG E9925 and E9926 for installation requirements.

E9925: for 3 Ph transformer rated service metering with metering cabinet

E9926: for 3 Ph transformer rated service metering with LV switchgear

If the site is fed from a customer owned distribution transformer the customer must make provisions for bulk metering to accommodate a transformer discount meter.

Appendices:

C11111 – Clearances to adjacent structures 8.32kV -27.6kV

E6341 – Transformer room access road detail

C5604 – Typical switching room with Vista switch layout

C5554 – Typical small transformer room (12'W x15'L x9'H)

C5553 – Typical medium transformer room (15'W x 20'L x 9'H)

B3727 – Duct bank construction details

C5560 – General underground primary service duct formation details

C10341– Three-phase pad-mount transformer foundation c/w entrance way design specifications

C10342– Three-phase pad-mount transformer foundation c/w entrance way installation specifications

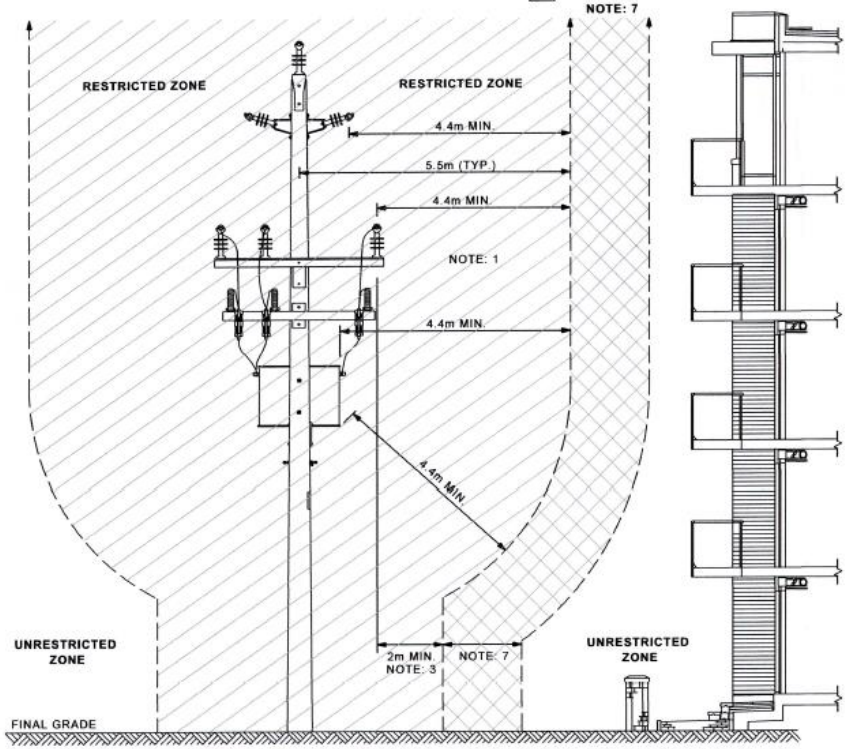
C9095 – Three phase underground switchgear (S & C Vista type) vault precast concrete design specification

B9098 – Steel hinged vault cover for three phase submersible switchgear (S & C Vista type) vault

B9100 – Three Phase underground switchgear vault ground loop installation

E9925 – Metering installation details -transformer rated for 3 Ph service without LV switchgear 120/208V or 347/600V

E9926 – Metering installation details -transformer rated for 3 Ph service with LV switchgear 120/208V or 347/600V



NOTES:

1. NO PERMANENT BUILDING OR STRUCTURE SHALL BE PLACED WITHIN 4.4 METRES MEASURED RADIALLY FROM ANY PRIMARY VOLTAGE CONDUCTOR OR EQUIPMENT, MEASURED FROM THE CLOSEST PRIMARY CONDUCTOR (AT REST) TO THE CLOSEST POINT OF THE BUILDING OR STRUCTURE.
2. A MINIMUM HORIZONTAL SEPARATION OF 1.6 METRES FROM THE BUILDING OR STRUCTURE TO THE SECONDARY CONDUCTOR (<750V) SHALL BE MAINTAINED, UNLESS THE SECONDARY CONDUCTORS ARE ATTACHED TO THE BUILDING (EG. A SERVICE CONDUCTOR).
3. NO PERMANENT BUILDING OR STRUCTURE SHALL BE PLACED OR CONSTRUCTED WITHIN 2 METRES HORIZONTAL SEPARATION FROM THE OUTERMOST OVERHEAD PRIMARY CONDUCTOR (AT REST).
4. ZERO VOLTAGE SUPPORT WIRES (I.E. SPAN GUYS) MAY CROSS OVER THE CUSTOMER'S STRUCTURE AND SHALL MAINTAIN AT LEAST 2.5 METRES VERTICAL CLEARANCE TO THE CLOSEST PART OVER THE BUILDING STRUCTURE.
5. CONTACT ENOVA TO DETERMINE SPECIFIC CLEARANCES APPLICABLE TO YOUR PROJECT.
6. CALCULATED CLEARANCES ARE BASED ON CONDUCTORS AT MAXIMUM SWING POSITION, CSA STD C22.3 NO. 1-15 TABLE 12, AND THE ONTARIO HEALTH AND SAFETY ACT (OHSA).
7. CONSTRUCTION SPACE IS TO ACCOMMODATE SCAFFOLDING, SKYJACKS, WINDOW CLEANING, ETC. THERE SHALL BE NO ENCROACHMENT INTO THE RESTRICTED ZONE DURING CONSTRUCTION OR BUILDING MAINTENANCE. ENOVA WILL NOT PROVIDE COVER UP OR ISOLATION OF ITS ENERGIZED PRIMARY CONDUCTORS THAT LIE ALONG A CONSTRUCTION SITE.

REV No.	DESCRIPTION	DATE & INITIALS
2	CONSTRUCTION SPACE DIMENSIONS REMOVED. NOTE 7 MODIFIED	JULY 7/23 B.M.
1	CONSTRUCTION SPACE ADDED. NOTES REVISED.	JULY 7/23 B.M.

Enova Power Corp.
Certificate of Approval

The installation work covered by this document meets the safety requirements of Section 4 of Ontario Regulation 22/04.

Name of P.Eng.: Shaun Wang
Signature:
Date: Jan. 4, 2024

LICENSED PROFESSIONAL ENGINEER
X. WANG
100089239
Jan 4 2024
PROVINCE OF ONTARIO

REV. 2 APPROVED:

REV. 1 SEALED BY X. WANG ON JULY 20/23

REV 0. SEALED BY X. WANG ON JUNE 23/21

PREVIOUS SEALED REVISIONS

Enova

CLEARANCES TO ADJACENT STRUCTURES 8.32KV - 27.6KV

DRAWN	B. BIN	JUL. 21/20	SCALE NONE
DESIGNED	S. WANG	JUNE 18/2021	
CHECKED	S.W.		D11111
APPROVED	G.A. CAMERON	JUNE 24/21	
FILE No.	6061-91-1		

PLOT 7

REVISIONS	
1	SIZE REVISED. MAY 11/06 B.B.

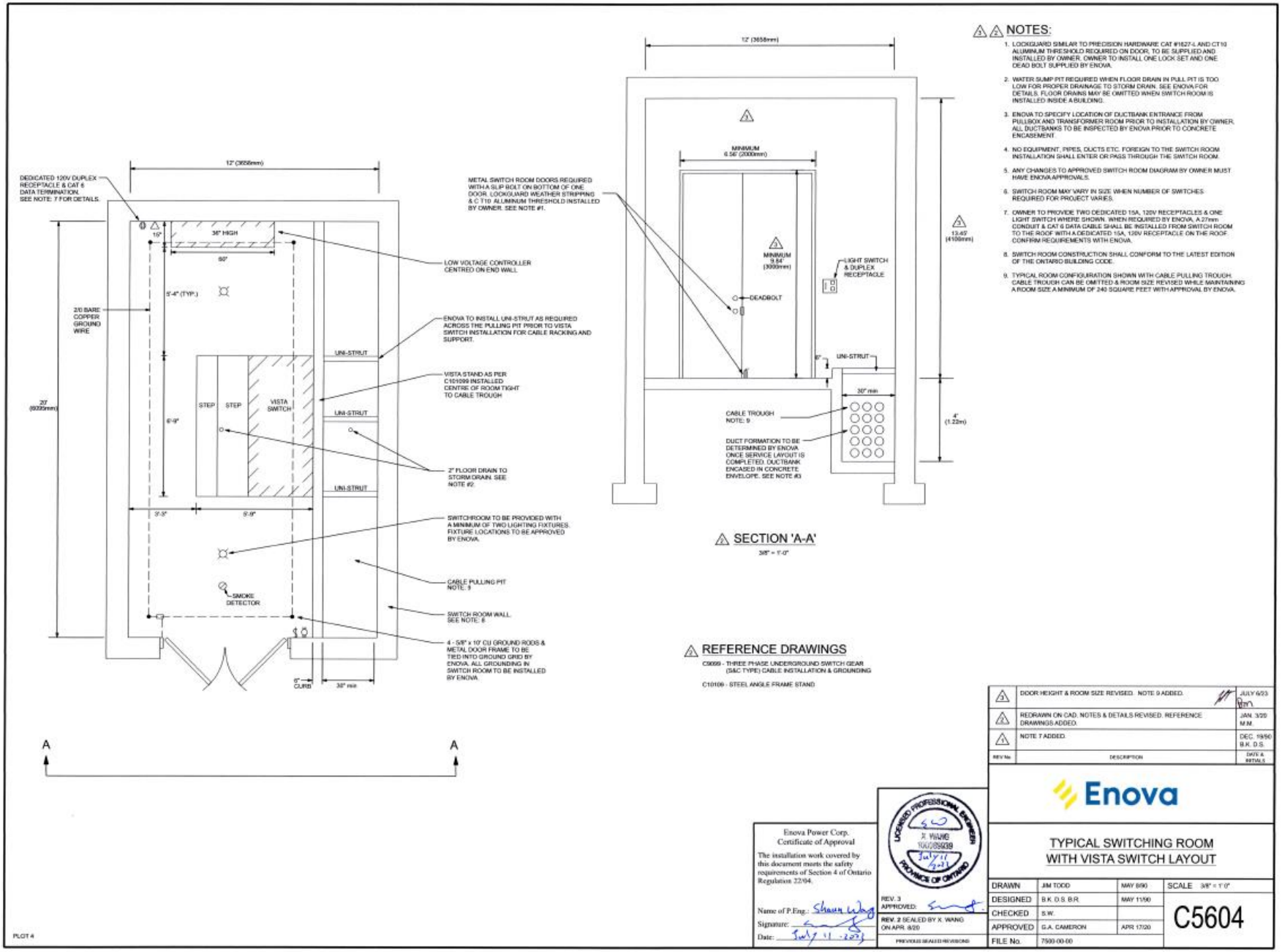
PLT 4

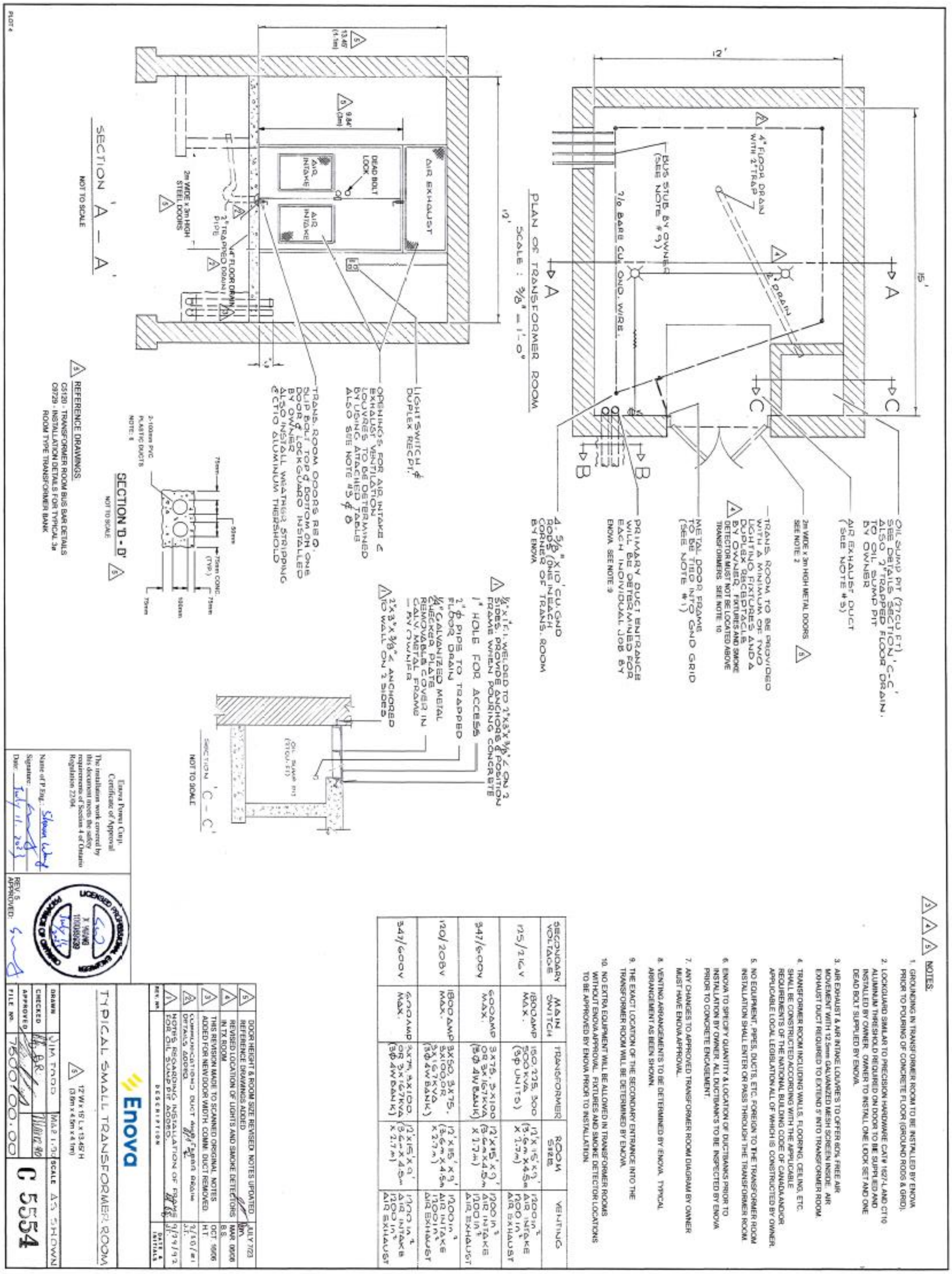
KITCHENER WILMOT HYDRO

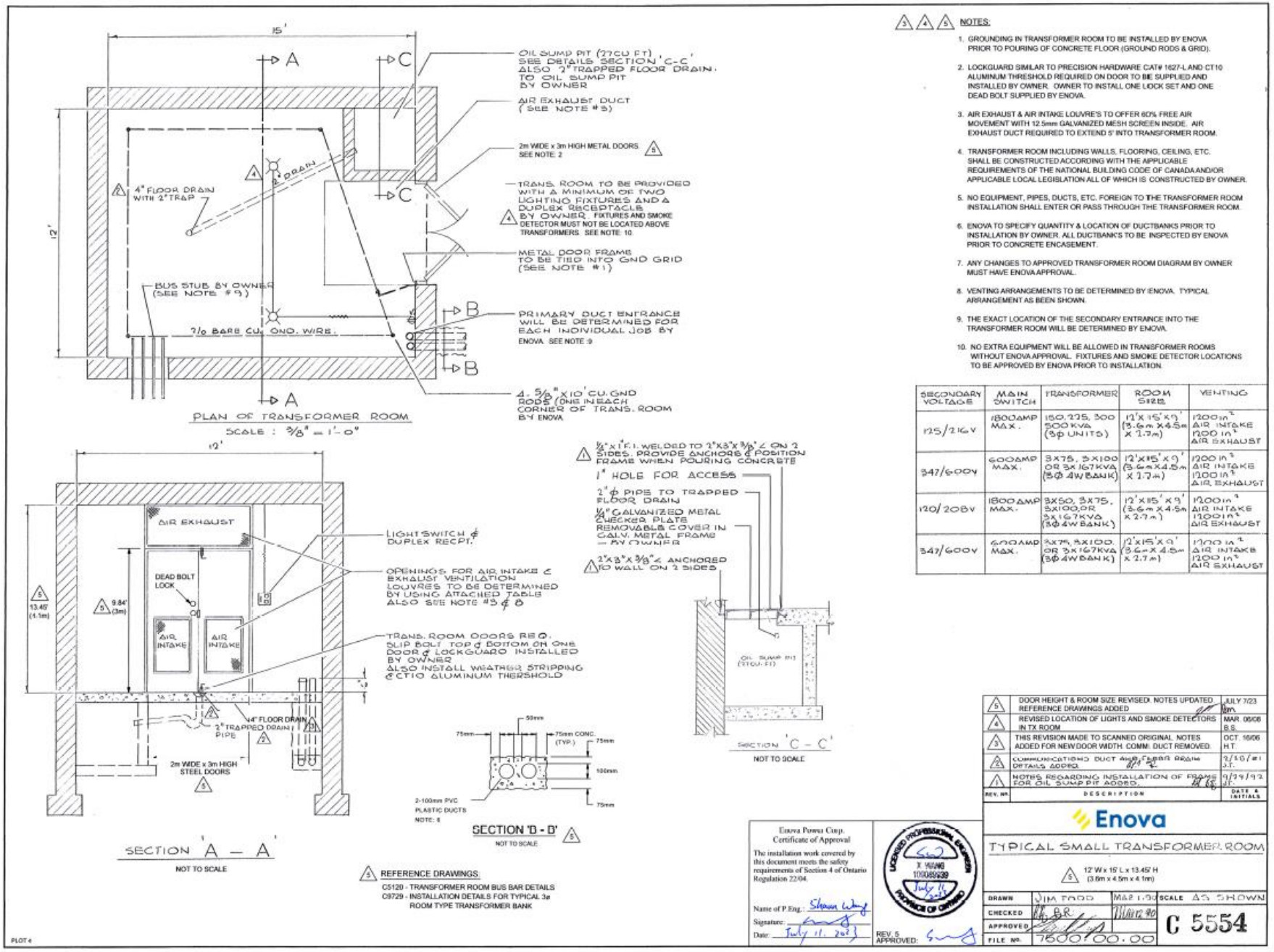
TRANSFORMER ROOM
ACCESS ROAD DETAIL

DRAWN	JIM TODD	2/17/94
DESIGNED	D. READ	
CHECKED	B.K. D.R. O.	MAR. 3/94
APPROVED	M. BRUCE McKAGUE	MAR. 3/94
FILE		

E
6341


NOTES:
1. LOCKGUARD SIMILAR TO PRECISION HARDWARE CAT #1627-L AND CT10 ALUMINUM THRESHOLD REQUIRED ON DOOR, TO BE SUPPLIED AND INSTALLED BY OWNER. OWNER TO INSTALL ONE LOCK SET AND ONE DEAD BOLT SUPPLIED BY ENOVA.
2. WATER SUMP PIT REQUIRED WHEN FLOOR DRAIN IN PULL PIT IS TOO LOW FOR PROPER DRAINAGE TO STORM DRAIN. SEE ENOVA FOR DETAILS. FLOOR DRAINS MAY BE OMITTED WHEN SWITCH ROOM IS INSTALLED INSIDE A BUILDING.
3. ENOVA TO SPECIFY LOCATION OF DUCTBANK ENTRANCE FROM PULLBOX AND TRANSFORMER ROOM PRIOR TO INSTALLATION BY OWNER. ALL DUCTBANKS TO BE INSPECTED BY ENOVA PRIOR TO CONCRETE ENCASEMENT.
4. NO EQUIPMENT, PIPES, DUCTS ETC. FOREIGN TO THE SWITCH ROOM INSTALLATION SHALL ENTER OR PASS THROUGH THE SWITCH ROOM.
5. ANY CHANGES TO APPROVED SWITCH ROOM DIAGRAM BY OWNER MUST HAVE ENOVA APPROVALS.
6. SWITCH ROOM MAY VARY IN SIZE WHEN NUMBER OF SWITCHES REQUIRED FOR PROJECT VARIES.
7. OWNER TO PROVIDE TWO DEDICATED 15A, 120V RECEPTACLES & ONE LIGHT SWITCH WHERE SHOWN. WHEN REQUIRED BY ENOVA, A 27mm CONDUIT & CAT 6 DATA CABLE SHALL BE INSTALLED FROM SWITCH ROOM TO THE ROOF WITH A DEDICATED 15A, 120V RECEPTACLE ON THE ROOF. CONFIRM REQUIREMENTS WITH ENOVA.
8. SWITCH ROOM CONSTRUCTION SHALL CONFORM TO THE LATEST EDITION OF THE ONTARIO BUILDING CODE.
9. TYPICAL ROOM CONFIGURATION SHOWN WITH CABLE PULLING TROUGH. CABLE TROUGH CAN BE OMITTED & ROOM SIZE REVISED WHILE MAINTAINING A ROOM SIZE A MINIMUM OF 240 SQUARE FEET WITH APPROVAL BY ENOVA.
12' (3658mm)
DEDICATED 120V DUPLEX RECEPTACLE & CAT 6 DATA TERMINATION. SEE NOTE 7 FOR DETAILS.
10"
36" HIGH
80"
LOW VOLTAGE CONTROLLER CENTRED ON END WALL
5'-4" (TYP.)
2/0 BARE COPPER GROUND WIRE
ENOVA TO INSTALL UNI-STRUT AS REQUIRED ACROSS THE PULLING PIT PRIOR TO VISTA SWITCH INSTALLATION FOR CABLE RACKING AND SUPPORT.
UNI-STRUT
VISTA STAND AS PER C101099 INSTALLED CENTRE OF ROOM TIGHT TO CABLE TROUGH
STEP
STEP
VISTA SWITCH
20' (6096mm)
6'-9"
UNI-STRUT
2" FLOOR DRAIN TO STORM DRAIN. SEE NOTE #2.
UNI-STRUT
3'-3"
9'-9"
SWITCHROOM TO BE PROVIDED WITH A MINIMUM OF TWO LIGHTING FIXTURES. FIXTURE LOCATIONS TO BE APPROVED BY ENOVA.
CABLE PULLING PIT NOTE: 9
SMOKE DETECTOR
SWITCH ROOM WALL SEE NOTE: 6
4 - 5/8" x 10' CU GROUND RODS & METAL DOOR FRAME TO BE TIED INTO GROUND GRID BY ENOVA. ALL GROUNDING IN SWITCH ROOM TO BE INSTALLED BY ENOVA.
6" CURB
30" min
A
A
METAL SWITCH ROOM DOORS REQUIRED WITH A SLIP BOLT ON BOTTOM OF ONE DOOR, LOCKGUARD WEATHER STRIPPING & C T10 ALUMINUM THRESHOLD INSTALLED BY OWNER. SEE NOTE #1.
12' (3658mm)
MINIMUM 6.56' (2000mm)
MINIMUM 9.84' (3000mm)
LIGHT SWITCH & DUPLEX RECEPTACLE
DEADBOLT
13.45' (4100mm)
8"
UNI-STRUT
30" min
4' (1.22m)
CABLE TROUGH NOTE: 9
DUCT FORMATION TO BE DETERMINED BY ENOVA ONCE SERVICE LAYOUT IS COMPLETED. DUCTBANK ENCASED IN CONCRETE ENVELOPE. SEE NOTE #3
SECTION 'A-A'
3/8" = 1'-0"
REFERENCE DRAWINGS
C9099 - THREE PHASE UNDERGROUND SWITCH GEAR (S&C TYPE) CABLE INSTALLATION & GROUNDING
C10109 - STEEL ANGLE FRAME STAND
1 DOOR HEIGHT & ROOM SIZE REVISED. NOTE 9 ADDED. JULY 6/23
2 REDRAWN ON CAD. NOTES & DETAILS REVISED. REFERENCE DRAWINGS ADDED. JAN. 3/20 M.M.
1 NOTE 7 ADDED. DEC. 19/90 B.K. D.S.
REV No. DESCRIPTION DATE & INITIALS
Enova
Enova Power Corp.
Certificate of Approval
The installation work covered by this document meets the safety requirements of Section 4 of Ontario Regulation 22/04.
Name of P.Eng.: Shawn Wang
Signature:
Date: July 11, 2023
LICENSED PROFESSIONAL ENGINEER X. WANG 100089439 July 11 2023 PROVINCE OF ONTARIO
REV. 3 APPROVED:
REV. 2 SEALED BY X. WANG ON APR. 8/20
PREVIOUS SEALED REVISIONS
TYPICAL SWITCHING ROOM WITH VISTA SWITCH LAYOUT
DRAWN JIM TODD MAY 6/90 SCALE 3/8" = 1'-0"
DESIGNED B.K. D.S. B.R. MAY 11/90
CHECKED S.W.
APPROVED G.A. CAMERON APR 17/20
FILE No. 7500-00-00
C5604
PLOT 4


PLAN OF TRANSFORMER ROOM
SCALE : 3/8" = 1'-0"
SECTION A - A
NOT TO SCALE
SECTION 'B - B'
SECTION 'C - C'
NOTES:
TYPICAL SMALL TRANSFORMER ROOM
C 5554



NOTES:

1. GROUNDING IN TRANSFORMER ROOM TO BE INSTALLED BY ENOVA PRIOR TO POURING OF CONCRETE FLOOR (GROUND RODS & GRID).
2. LOCKGUARD SIMILAR TO PRECISION HARDWARE CAT# 1627-L AND CT10 ALUMINUM THRESHOLD REQUIRED ON DOOR TO BE SUPPLIED AND INSTALLED BY OWNER. OWNER TO INSTALL ONE LOCK SET AND ONE DEAD BOLT SUPPLIED BY ENOVA.
3. AIR EXHAUST & AIR INTAKE LOUVRE'S TO OFFER 60% FREE AIR MOVEMENT WITH 12.5mm GALVANIZED MESH SCREEN INSIDE. AIR EXHAUST DUCT REQUIRED TO EXTEND 5' INTO TRANSFORMER ROOM.
4. TRANSFORMER ROOM INCLUDING WALLS, FLOORING, CEILING, ETC. SHALL BE CONSTRUCTED ACCORDING WITH THE APPLICABLE REQUIREMENTS OF THE NATIONAL BUILDING CODE OF CANADA AND/OR APPLICABLE LOCAL LEGISLATION ALL OF WHICH IS CONSTRUCTED BY OWNER.
5. NO EQUIPMENT, PIPES, DUCTS, ETC. FOREIGN TO THE TRANSFORMER ROOM INSTALLATION SHALL ENTER OR PASS THROUGH THE TRANSFORMER ROOM.
6. ENOVA TO SPECIFY QUANTITY & LOCATION OF DUCTBANKS PRIOR TO INSTALLATION BY OWNER. ALL DUCTBANKS TO BE INSPECTED BY ENOVA PRIOR TO CONCRETE ENCASEMENT.
7. ANY CHANGES TO APPROVED TRANSFORMER ROOM DIAGRAM BY OWNER MUST HAVE ENOVA APPROVAL.
8. VENTING ARRANGEMENTS TO BE DETERMINED BY ENOVA. TYPICAL ARRANGEMENT AS BEEN SHOWN.
9. THE EXACT LOCATION OF THE SECONDARY ENTRAINCE INTO THE TRANSFORMER ROOM WILL BE DETERMINED BY ENOVA.
10. NO EXTRA EQUIPMENT WILL BE ALLOWED IN TRANSFORMER ROOMS WITHOUT ENOVA APPROVAL. FIXTURES AND SMOKE DETECTOR LOCATIONS TO BE APPROVED BY ENOVA PRIOR TO INSTALLATION.

SECONDARY VOLTAGE	MAIN SWITCH	TRANSFORMER	ROOM SIZE	VENTING
125/216V	1800AMP MAX.	150, 225, 300 500 KVA (3ϕ UNITS)	12'X 15'X 9' (3.6m X 4.5m X 2.7m)	1200in² AIR INTAKE 1200 in² AIR EXHAUST
347/600V	600AMP MAX.	3X75, 3X100 OR 3X167KVA (3ϕ 4W BANK)	12'X15'X 9' (3.6m X 4.5m X 2.7m)	1200 in² AIR INTAKE 1200 in² AIR EXHAUST
120/208V	1800AMP MAX.	3X50, 3X75, 3X100, OR 3X167KVA (3ϕ 4W BANK)	12'X15'X 9' (3.6m X 4.5m X 2.7m)	1200in² AIR INTAKE 1200in² AIR EXHAUST
347/600V	600AMP MAX.	3X75, 3X100, OR 3X167KVA (3ϕ 4W BANK)	12'X15'X 9' (3.6m X 4.5m X 2.7m)	1200 in² AIR INTAKE 1200 in² AIR EXHAUST

REFERENCE DRAWINGS:
C5120 - TRANSFORMER ROOM BUS BAR DETAILS
C9729 - INSTALLATION DETAILS FOR TYPICAL 3ø ROOM TYPE TRANSFORMER BANK

Enova Power Corp.
Certificate of Approval
The installation work covered by this document meets the safety requirements of Section 4 of Ontario Regulation 22/04.
Name of P.Eng.: Shawn Wang
Signature:
Date: July 11, 2023

LICENSED PROFESSIONAL ENGINEER X. YUANG 100049939 July 11, 2023 PROVINCE OF ONTARIO

REV. 5 APPROVED:

REV. NO.	DESCRIPTION	DATE & INITIALS
5	DOOR HEIGHT & ROOM SIZE REVISED. NOTES UPDATED. REFERENCE DRAWINGS ADDED	JULY 7/23
4	REVISED LOCATION OF LIGHTS AND SMOKE DETECTORS IN TX ROOM	MAR. 05/06 B.S.
3	THIS REVISION MADE TO SCANNED ORIGINAL. NOTES ADDED FOR NEW DOOR WIDTH. COMM: DUCT REMOVED.	OCT. 16/06 H.T.
2	COMMUNICATIONS DUCT AND FLOOR DRAIN DETAILS ADDED.	2/10/01 J.T.
1	NOTES REGARDING INSTALLATION OF FRAMS FOR OIL SUMP PIT ADDED.	9/29/92 J.T.

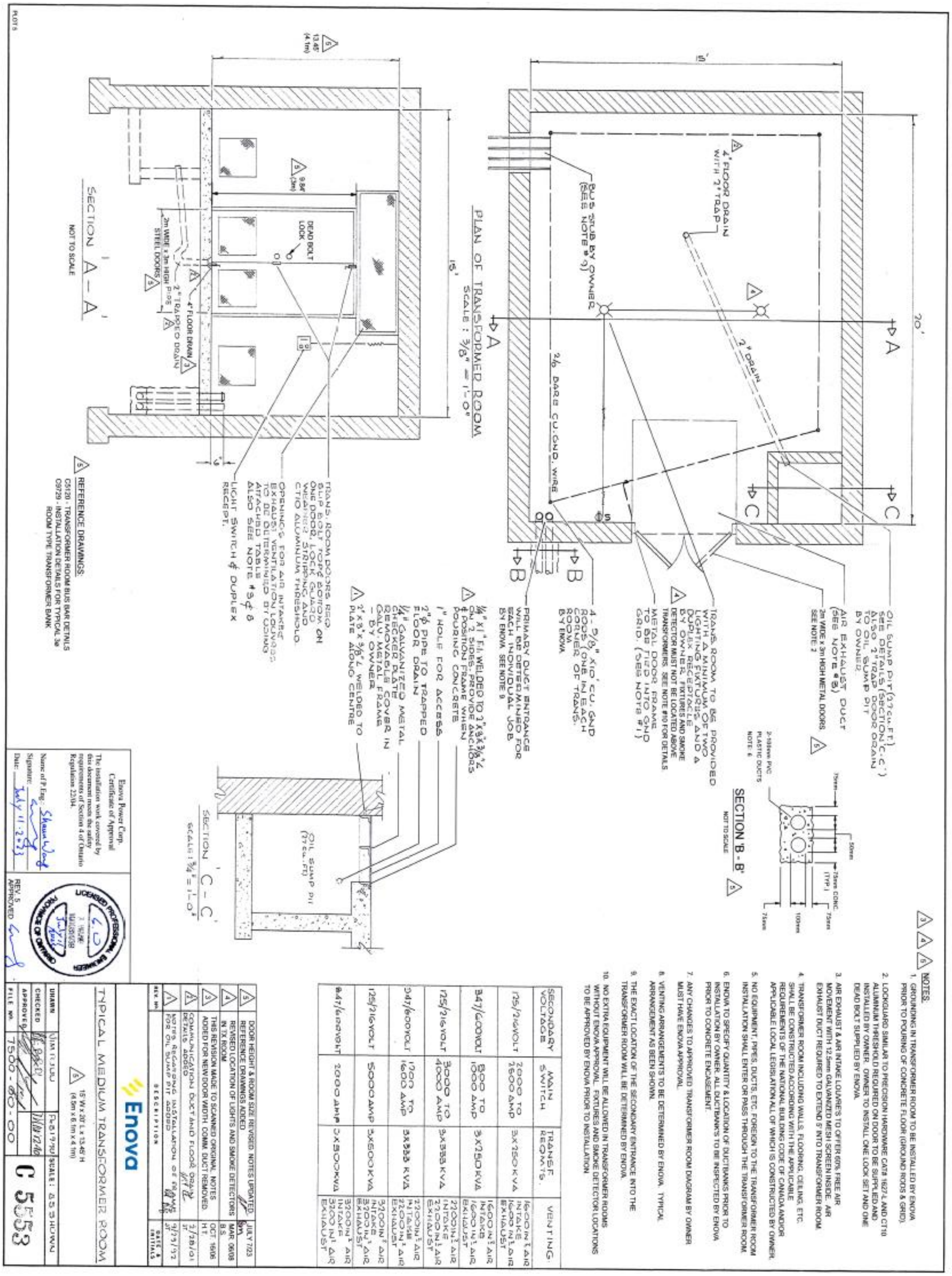
Enova

TYPICAL SMALL TRANSFORMER ROOM

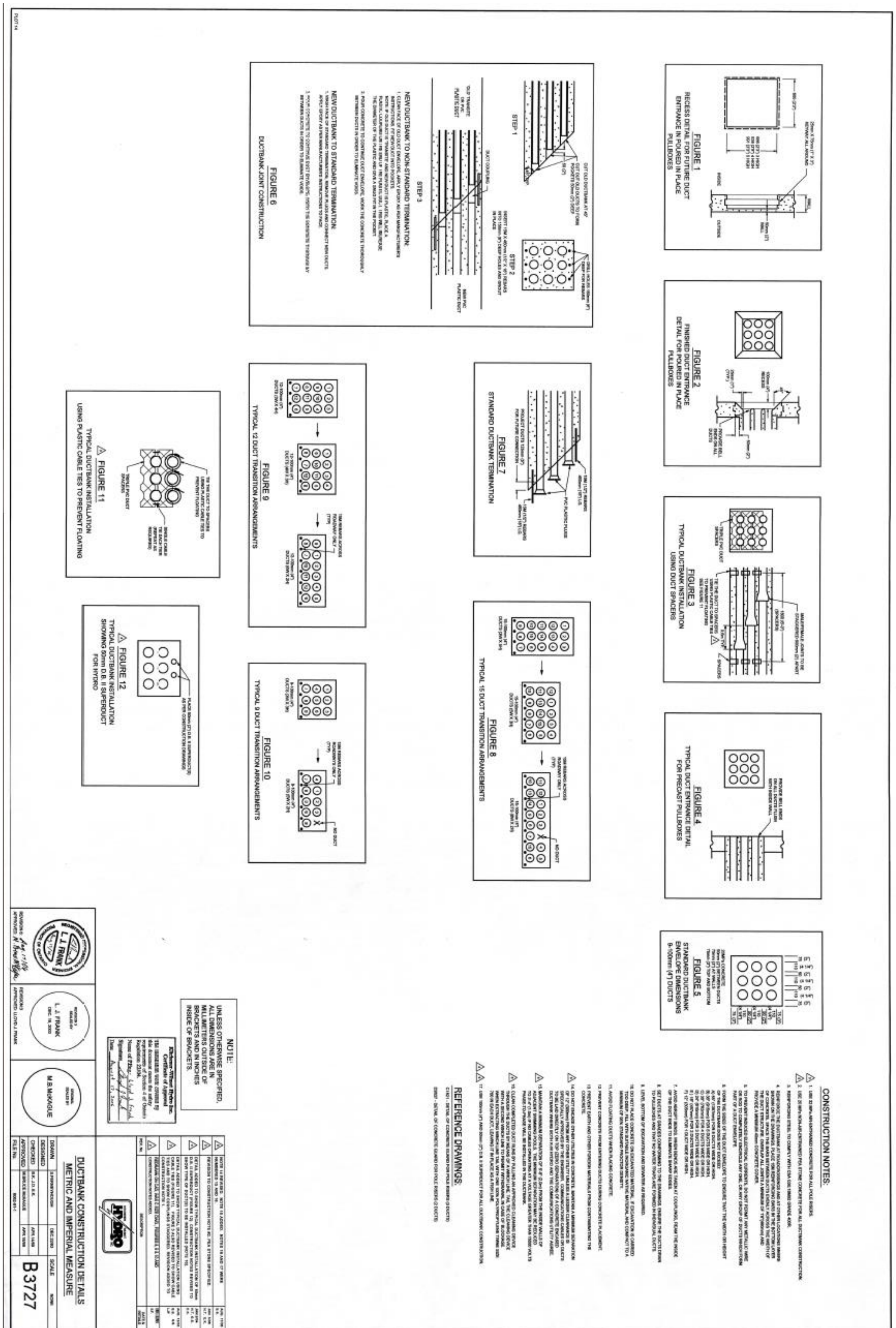
5 12' W x 16' L x 13.45' H (3.6m x 4.5m x 4.1m)

DRAWN	JIM TODD	MAR 1/00	SCALE AS SHOWN
CHECKED			
APPROVED			
FILE NO.	7500-00.00		C 5554

PLOT 4


PLAN OF TRANSFORMER ROOM
SCALE : 3/8" = 1'-0"
SECTION A – A'
NOT TO SCALE
SECTION 'B - B'
NOT TO SCALE
SECTION C – C'
REFERENCE DRAWINGS:
NOTES
TYPICAL MEDIUM TRANSFORMER ROOM
Enova
C 5553

Enova



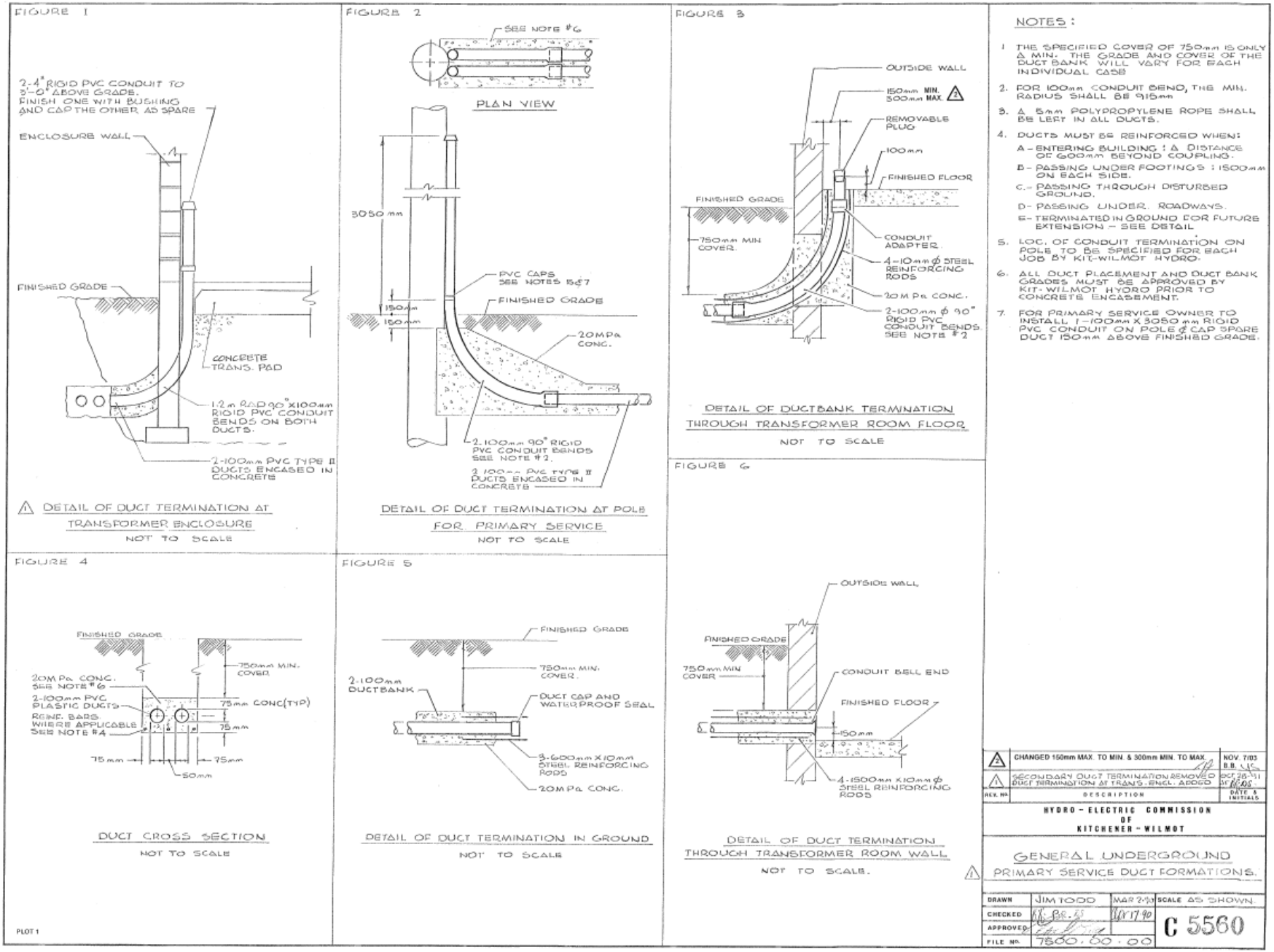
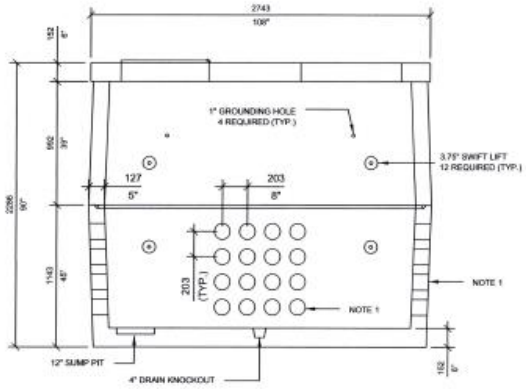
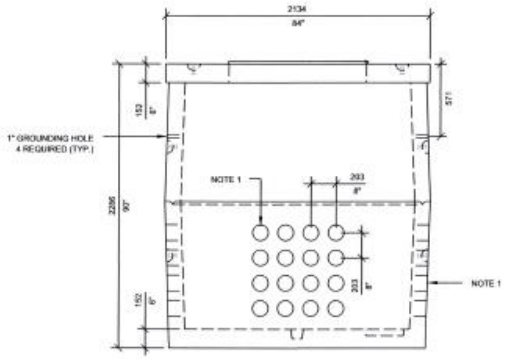


FIGURE 1
2-4" RIGID PVC CONDUIT TO 3'-0" ABOVE GRADE. FINISH ONE WITH BUSHING AND CAP THE OTHER AS SPARE
ENCLOSURE WALL
FINISHED GRADE
CONCRETE TRANS. PAD
1.2m RAD 90° X100mm RIGID PVC CONDUIT BENDS ON BOTH DUCTS.
2-100mm PVC TYPE II DUCTS ENCASED IN CONCRETE
DETAIL OF DUCT TERMINATION AT TRANSFORMER ENCLOSURE
NOT TO SCALE
FIGURE 2
SEE NOTE #6
PLAN VIEW
3050 mm
PVC CAPS SEE NOTES 5&7
FINISHED GRADE
150mm
150mm
20MPa CONC.
2-100mm 90° RIGID PVC CONDUIT BENDS SEE NOTE #2.
2-100mm PVC TYPE II DUCTS ENCASED IN CONCRETE
DETAIL OF DUCT TERMINATION AT POLE FOR PRIMARY SERVICE
NOT TO SCALE
FIGURE 3
OUTSIDE WALL
150mm MIN. 300mm MAX.
REMOVABLE PLUG
100mm
FINISHED FLOOR
FINISHED GRADE
750mm MIN COVER.
CONDUIT ADAPTER
4-10mm ϕ STEEL REINFORCING RODS
20M Pa CONC.
2-100mm ϕ 90° RIGID PVC CONDUIT BENDS SEE NOTE #2
DETAIL OF DUCTBANK TERMINATION THROUGH TRANSFORMER ROOM FLOOR
NOT TO SCALE
NOTES :
1. THE SPECIFIED COVER OF 750mm IS ONLY A MIN. THE GRADE AND COVER OF THE DUCT BANK WILL VARY FOR EACH INDIVIDUAL CASE
2. FOR 100mm CONDUIT BEND, THE MIN. RADIUS SHALL BE 915mm
3. A 5mm POLYPROPYLENE ROPE SHALL BE LEFT IN ALL DUCTS.
4. DUCTS MUST BE REINFORCED WHEN:
A - ENTERING BUILDING : A DISTANCE OF 600mm BEYOND COUPLING.
B - PASSING UNDER FOOTINGS : 1500mm ON EACH SIDE.
C - PASSING THROUGH DISTURBED GROUND.
D - PASSING UNDER ROADWAYS.
E - TERMINATED IN GROUND FOR FUTURE EXTENSION - SEE DETAIL
5. LOC. OF CONDUIT TERMINATION ON POLE TO BE SPECIFIED FOR EACH JOB BY KIT-WILMOT HYDRO.
6. ALL DUCT PLACEMENT AND DUCT BANK GRADES MUST BE APPROVED BY KIT-WILMOT HYDRO PRIOR TO CONCRETE ENCASEMENT.
7. FOR PRIMARY SERVICE OWNER TO INSTALL 1-100mm X 3050 mm RIGID PVC CONDUIT ON POLE & CAP SPARE DUCT 150mm ABOVE FINISHED GRADE.
FIGURE 4
FINISHED GRADE
750mm MIN. COVER.
20M Pa CONC. SEE NOTE #6
2-100mm PVC PLASTIC DUCTS
75mm CONC(TYP)
REINF. BARS WHERE APPLICABLE SEE NOTE #4
75mm
75mm
75mm
75mm
50mm
DUCT CROSS SECTION
NOT TO SCALE
FIGURE 5
FINISHED GRADE
750mm MIN. COVER.
2-100mm DUCTBANK
DUCT CAP AND WATERPROOF SEAL
3-600mm X10mm STEEL REINFORCING RODS
20M Pa CONC.
DETAIL OF DUCT TERMINATION IN GROUND
NOT TO SCALE
FIGURE 6
OUTSIDE WALL
FINISHED GRADE
750mm MIN COVER
CONDUIT BELL END
FINISHED FLOOR
150mm
4-1500mm X10mm ϕ STEEL REINFORCING RODS
DETAIL OF DUCT TERMINATION THROUGH TRANSFORMER ROOM WALL
NOT TO SCALE.
CHANGED 150mm MAX. TO MIN. & 300mm MIN. TO MAX.
NOV. 7/03 B.B.
SECONDARY DUCT TERMINATION REMOVED DUCT TERMINATION AT TRANS. ENCL. ADDED
OCT 28-91 BB
REV. No. DESCRIPTION DATE & INITIALS
HYDRO - ELECTRIC COMMISSION OF KITCHENER - WILMOT
GENERAL UNDERGROUND PRIMARY SERVICE DUCT FORMATIONS.
DRAWN JIM TODD MAR 2-90 SCALE AS SHOWN.
CHECKED
APPROVED
FILE No. 7500.60.00
C 5560
PLOT 1



FRONT VIEW



SIDE VIEW

NOTES:

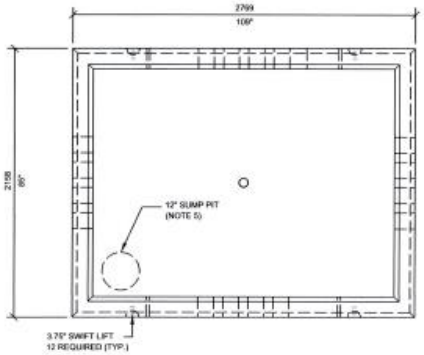
1. CABLE ENTRY OPENINGS - PVC SEALS FOR MAX. 4" INSIDE DIAMETER DUCT.
2. DELIVERY IS MADE BY CRANE-EQUIPPED TRUCKS, EXCAVATION MUST BE READY, SAFE AND ACCESSIBLE FOR UNLOADING FROM THE REAR OF THE TRUCK.
3. MINIMUM OVERHEAD CLEARANCE OF 18FT (5.5m) IS REQUIRED.
4. ALL UNITS MUST BE HANDLED WITH PROPER LIFTING EQUIPMENT (I.E. SPREADER BAR).
5. SUMP PUMP PIT TO BE UNDER THE GALVANIZED DOOR SIDE.
6. LID TO BE ROTATED AND INSTALLED AS PER THE ENOVA SERVICE DRAWING.
7. WATER PRESSURE WAS NOT CONSIDERED IN THE STRUCTURAL DESIGN. REPORT WATER TABLE DURING CONSTRUCTION.
8. PLACE BACKFILL SIMULTANEOUSLY AROUND THE VAULT TO AVOID UNBALANCE LATERAL EARTH PRESSURES.
9. BACKFILL SHOULD BE UNIFORMLY COMPACTED TO A MINIMUM OF 98% MATERIALS SPMDD.

BROOKLIN CONCRETE PRODUCTS - BCP1045W
CONCRETE: 35MPa/5099PSI
AIR ENTRAINMENT: 5-8%
REINFORCEMENT: STEEL TO CSA CAN A23.1 / A23.3. G30.18 Fy=400MPa

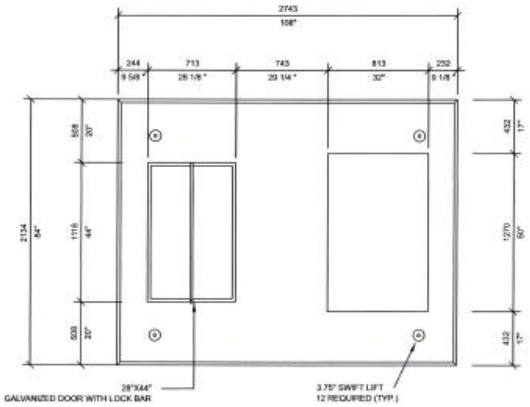
BOTTOM WEIGHT: 10,291LBS / 4,668KG
MIDDLE WEIGHT: 6,237LBS / 2,829KG
TOP WEIGHT: 3,307LBS / 1,500KG
TOTAL WEIGHT: **19,835LBS / 8,997KG**

MAX EQUIPMENT WEIGHT: 29,224LBS / 13,256KG

** ALL DIMENSIONS IN mm UNLESS OTHERWISE NOTED **



TOP VIEW



LID TOP VIEW

REFERENCE DRAWINGS:

D8821 - THREE PHASE PAD-MOUNT TRANSFORMER CABLE INSTALLATION AND GROUNDING

D8822 - THREE PHASE PAD-MOUNT TRANSFORMER PRECAST CONCRETE FOUNDATION GROUND LOOP INSTALLATION

D10342 - THREE PHASE PAD-MOUNT TRANSFORMER FOUNDATION C/W ENTRANCE WAY INSTALLATION SPECIFICATION

D10343 - THREE PHASE PAD-MOUNT TRANSFORMER MOUNTING ON FOUNDATION C/W ENTRANCE WAY

Kitchener-Wilmot Hydro Inc.
Certificate of Approval
The installation work covered by this document meets the safety requirements of Section 4 of Ontario Regulation 22/04.
Name of P.Eng.: Xiaoyu Wang
Signature:
Date: Sep. 5, 2023

LICENSED PROFESSIONAL ENGINEER
X. WANG
100059289
Sep. 5, 2023
PROVINCE OF ONTARIO

REV. 1 APPROVED: Sep. 5, 2023
REV 0. SEALED BY S. MUSTAFA ON JAN. 27/15
PREVIOUS SEALED REVISIONS

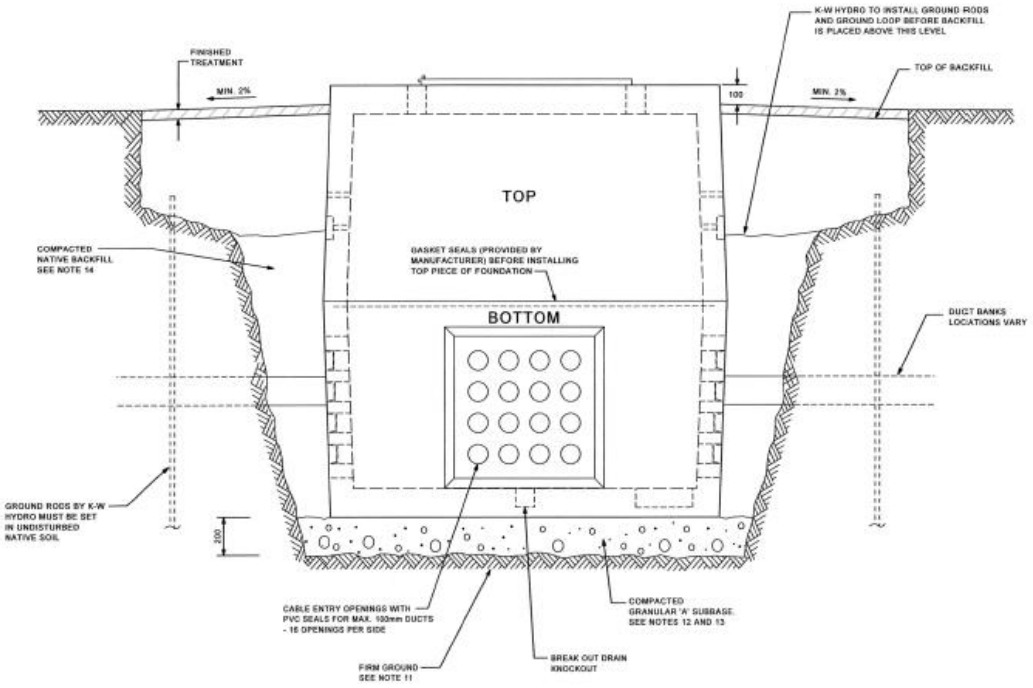
REV No.	DESCRIPTION	DATE & INITIALS
1	VAULT REVISED FROM TWO PIECE TO THREE PIECE BASED ON BROOKLIN BCP1045W VAULT.	AUG. 18/23

Enova

THREE PHASE PAD-MOUNT TRANSFORMER FOUNDATION C/W ENTRANCE WAY DESIGN SPECIFICATIONS

DRAWN	B. BIN	JAN. 6/15	SCALE 1/2" = 1'-0"
DESIGNED	S. MUSTAFA		C 10341
CHECKED	S.M.		
APPROVED	G.A. CAMERON	JAN. 27/15	
FILE No.	6062-06-5		

PLOT 3



SECTION

NOTES:

1. THREE PHASE PAD-MOUNTED TRANSFORMERS SUPPLIED BY K-W HYDRO ARE PROTECTED BY AN INTERNAL CURRENT-LIMITING FUSE AND ARE EQUIPPED WITH A PRESSURE RELIEF DEVICE. (SEE OESC RULE 26-242(3)).
2. PAD-MOUNTED TRANSFORMERS SHALL BE LOCATED SO THAT THE WORKING SPACE AROUND THE TRANSFORMER IS AT LEAST 3.0m ON ALL FOUR SIDES.
3. PAD-MOUNTED TRANSFORMERS MUST BE LOCATED BEHIND THE BUILDING LINE TO MINIMIZE VISIBILITY FROM THE STREET.
4. PAD-MOUNTED TRANSFORMERS MUST BE LOCATED ADJACENT TO AN ASPHALT OR GRAVEL DRIVEWAY OR PATH THAT PROVIDES ACCESS FOR A MOBILE CRANE OR OTHER SERVICE VEHICLES.
5. WHEN PLACED IN OR ADJACENT TO DRIVEWAYS, PARKING LOTS, ETC., PAD-MOUNTED TRANSFORMERS MUST BE PROTECTED FROM VEHICULAR TRAFFIC BY:
   A) PERMANENT BARRIERS OR CONCRETE CURBS AT LEAST 150mm HIGH.
6. TO ENSURE ADEQUATE VENTILLATION, PAD-MOUNTED TRANSFORMERS MUST NOT BE ENCLOSED (BY FENCES OR WALLS) ON MORE THAN TWO SIDES.
7. NO PLANTS, LUMINAIRES OR FIRE HYDRANTS SHALL BE INSTALLED WITHIN 3.0m OF A PAD-MOUNTED TRANSFORMER.
8. ALL WORK SHALL BE INSPECTED BY K-W HYDRO PRIOR TO BACKFILLING.
9. LOW VOLTAGE CABLES MUST BE INSTALLED IN DUCTS PRIOR TO INSTALLATION OF TRANSFORMER. LEAVE 4.0m OF EXCESS CABLE COILED IN TRANSFORMER FOR TERMINATION BY K-W HYDRO.
10. ALL WORK TO BE DONE IN ACCORDANCE WITH THE OCCUPATIONAL HEALTH AND SAFETY ACT AND ONTARIO REGULATION 213/91 FOR CONSTRUCTION PROJECTS.
11. BOTTOM OF EXCAVATION TO BE FIRM GROUND WHICH IS NATIVE OR COMPACTED FILL, FREE OF ORGANIC AND DELETERIOUS MATERIAL. IF GROUND IS SOFT AND NOT FIRM, CONTACT ENGINEER AT K-W HYDRO BEFORE PROCEEDING FURTHER.
12. GRANULAR "A" SUBASE TO BE COMPACTED WITH TWO (2) PASSES OF PLATE COMPACTOR.
13. IF STANDING WATER IS PRESENT AT BOTTOM OF EXCAVATION, REMOVE WATER BY PUMPING. SUBSTITUTE 19mm (3/4") CLEAR STONE FOR GRANULAR "A". KEEP PUMPING WATER FROM EXCAVATION UNTIL FOUNDATION IS INSTALLED. IF THERE IS MORE THAN 300mm (12 inches) OF STANDING WATER AT BOTTOM OF EXCAVATION, CONTACT ENGINEER AT K-W HYDRO BEFORE PROCEEDING FURTHER.
14. BACKFILL FOUNDATION WITH NATIVE MATERIAL. BACKFILL UP TO UNDERSIDE OF FINISHED TREATMENT. COMPACT IN 12 INCH LIFTS WITH THREE (3) PASSES OF PLATE COMPACTOR OR TAMPER (JUMPING JACK).
15. FOUNDATION TO BE PLACED LEVEL. MAXIMUM SLOPE TO BE 1/2" IN 6 FEET.

REFERENCE DRAWINGS:

D8821 - THREE PHASE PAD-MOUNT TRANSFORMER CABLE INSTALLATION AND GROUNDING

D8822 - THREE PHASE PAD-MOUNT TRANSFORMER PRECAST CONCRETE FOUNDATION GROUND LOOP INSTALLATION

D8823 - THREE PHASE PAD-MOUNT TRANSFORMER MOUNTING

C10341 - THREE PHASE PAD-MOUNT TRANSFORMER FOUNDATION C/W ENTRANCE WAY DESIGN SPECIFICATION

C10343 - THREE PHASE PADMOUNT TRANSFORMER MOUNTING ON FOUNDATION C/W ENTRANCE WAY

PLOT 2

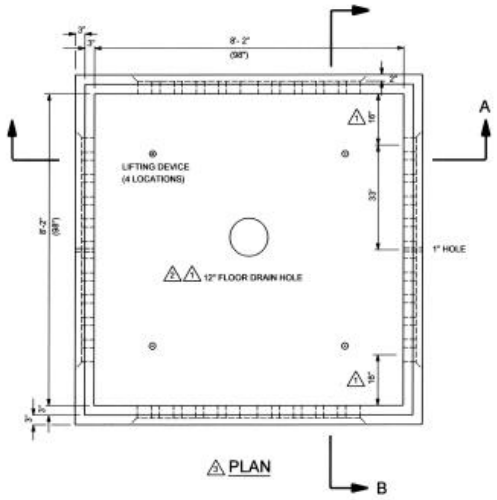
REV No.	DESCRIPTION	DATE & INITIALS

Kitchener-Wilmot Hydro Inc.
Certificate of Approval
The installation work covered by this document meets the safety requirements of Section 4 of Ontario Regulation 22/04.
Name of P.Eng.: Sheikh Mustafa
Signature: [signature]
Date: January 15/2015

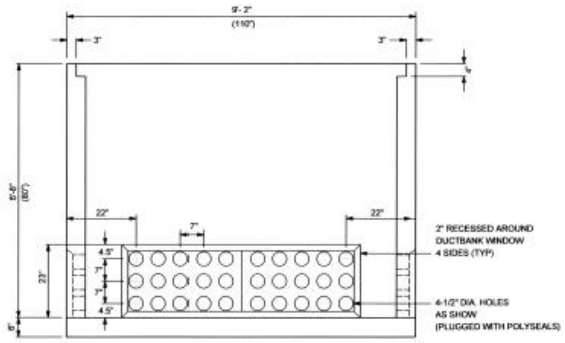
LICENSED PROFESSIONAL ENGINEER SHEIKH MUSTAFA 01/15/2015 PROVINCE OF ONTARIO

THREE PHASE PAD-MOUNT TRANSFORMER FOUNDATION C/W ENTRANCE WAY INSTALLATION SPECIFICATIONS

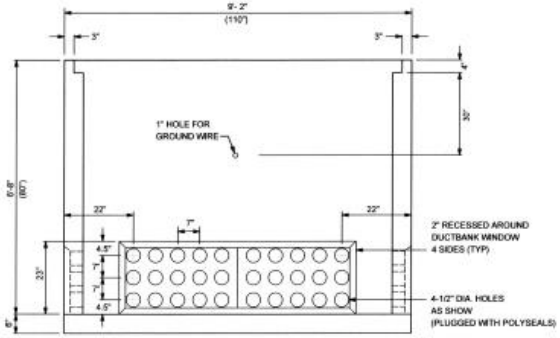
DRAWN	B. BIN	JAN. 6/15	SCALE 3/4" = 1'-0"
DESIGNED	S. MUSTAFA		
CHECKED	S.M.		C 10342
APPROVED	[signature]	27-Jan-2015	
FILE No.	5063-05-5		



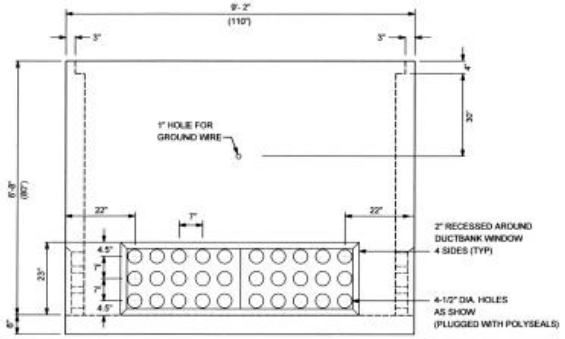
⚠ PLAN



⚠ SECTION A-A



⚠ FRONT VIEW



⚠ SECTION B-B

GENERAL NOTES:

DESIGN LOAD:
1. WEIGHT OF SWITCHGEAR 700 KG (1543 LBS)

2. PRECAST CONCRETE BOX TO BE DESIGNED TO CARRY WEIGHT OF EQUIPMENT AS WELL AS LATERAL LOADS DUE TO EARTH PRESSURE AND SURCHARGE LOAD OF 200 PSF.

STANDARDS:
1. CSA A23.1/A23.2, CONCRETE MATERIALS AND METHODS OF CONCRETE CONSTRUCTION
2. CSA A23.4/A251, MATERIALS AND CONSTRUCTION, QUALIFICATION CODE FOR ARCHITECTURAL AND STRUCTURAL PRECAST CONCRETE.

WEIGHT OF PRECAST CONCRETE:
1. APPROXIMATELY 10,750 KG (23,635 LBS)

DESIGN:
1. PRECAST CONCRETE BOX TO BE DESIGNED BY PRECAST CONCRETE MANUFACTURER.
2. SUBMIT SHOP DRAWINGS TO K-W HYDRO FOR REVIEW PRIOR TO COMMENCEMENT OF MANUFACTURE OF PRECAST CONCRETE. SHOP DRAWINGS TO BE SEALED BY AN ENGINEER LICENSED IN THE PROVINCE OF ONTARIO.
3. PRECAST CONCRETE BOX TO BE DESIGNED TO CARRY HANDLING STRESSES.
4. SHOP DRAWINGS TO INDICATE FINISHED WEIGHTS OF PRECAST ELEMENTS.

TOLERANCES:
1. LENGTH OF PRECAST ELEMENTS NOT TO VARY FROM DESIGN LENGTH BY MORE THAN PLUS OR MINUS 5mm.
2. CROSS SECTIONAL DIMENSIONS OF PRECAST ELEMENTS NOT TO VARY FROM DESIGN DIMENSIONS BY MORE THAN PLUS OR MINUS 3mm.
3. DEVIATIONS FROM STRAIGHT LINES NOT TO EXCEED 3mm IN 3m.
4. PRECAST ELEMENTS NOT TO VARY BY MORE THAN PLUS OR MINUS 5mm FROM TRUE OVERALL CROSS SECTIONAL SHAPE AS MEASURED BY DIFFERENCE IN DIAGONAL DIMENSIONS.

QUALITY CONTROL:
1. PRECAST CONCRETE REQUIREMENTS:
   - MINIMUM COMPRESSIVE STRENGTH OF 35MPA AT 28 DAYS
   - CLASS C1 EXPOSURE
   - 5-8% AIR ENTRAINMENT
2. PRECAST ELEMENTS ARE TO BE FINISHED TO STANDARD GRADE TO CSA A23.4, SECTION 24. ELEMENTS SHALL NOT SHOW VISIBLE SPALLING, CRACKING OR EVIDENCE OF CORROSION OF EMBEDDED STEEL.

REFERENCE DRAWINGS

C9096 - THREE PHASE UNDERGROUND SWITCHGEAR - INSTALLATION OF SWITCHGEAR AND PLATFORM SUPPORTS.

C9097 - THREE PHASE UNDERGROUND SWITCHGEAR AND PLATFORM SUPPORT DESIGN DETAILS.

⚠1 C9098 - THREE PHASE UNDERGROUND SWITCHGEAR VAULT - FRAME AND COVER DESIGN SPECIFICATIONS.

⚠1 C9099 - THREE PHASE UNDERGROUND SWITCHGEAR VAULT - CABLE INSTALLATION AND GROUNDING.

D9100 - THREE PHASE UNDERGROUND SWITCHGEAR VAULT - GROUND LOOP INSTALLATION.

D9101 - THREE PHASE UNDERGROUND SWITCHGEAR VAULT - INSTALLATION DETAILS.

REV No.	DESCRIPTION	DATE & INITIALS
⚠3	VAULT SIZE CHANGED TO 110" L X 110" W X 86" H. NUMBER OF DUCTS REVISED ON ALL 4 SIDES OF THE VAULT FROM TWO 3 WIDE X 3 HIGH WINDOWS TO ONE 10 WIDE X 3 HIGH WINDOW.	SEP. 11/20 B.B.
⚠2	DRAIN HOLE CHANGED FROM 6" TO 12" DIAMETER.	JUNE 23/14 M.M. G.S.
⚠1	HEIGHT FOR GROUND WIRE HOLD ADJUSTED. DRAIN HOLE SIZE CHANGED FROM 4" TO 6" DIAMETER. OFFSET FOR DUCTBANK WINDOW FROM INSIDE VAULT WALL ADJUSTED. REFERENCE DRAWING NUMBERS REVISED.	DEC. 4/08 B.B.

Kitchener-Wilmot Hydro Inc.
Certificate of Approval

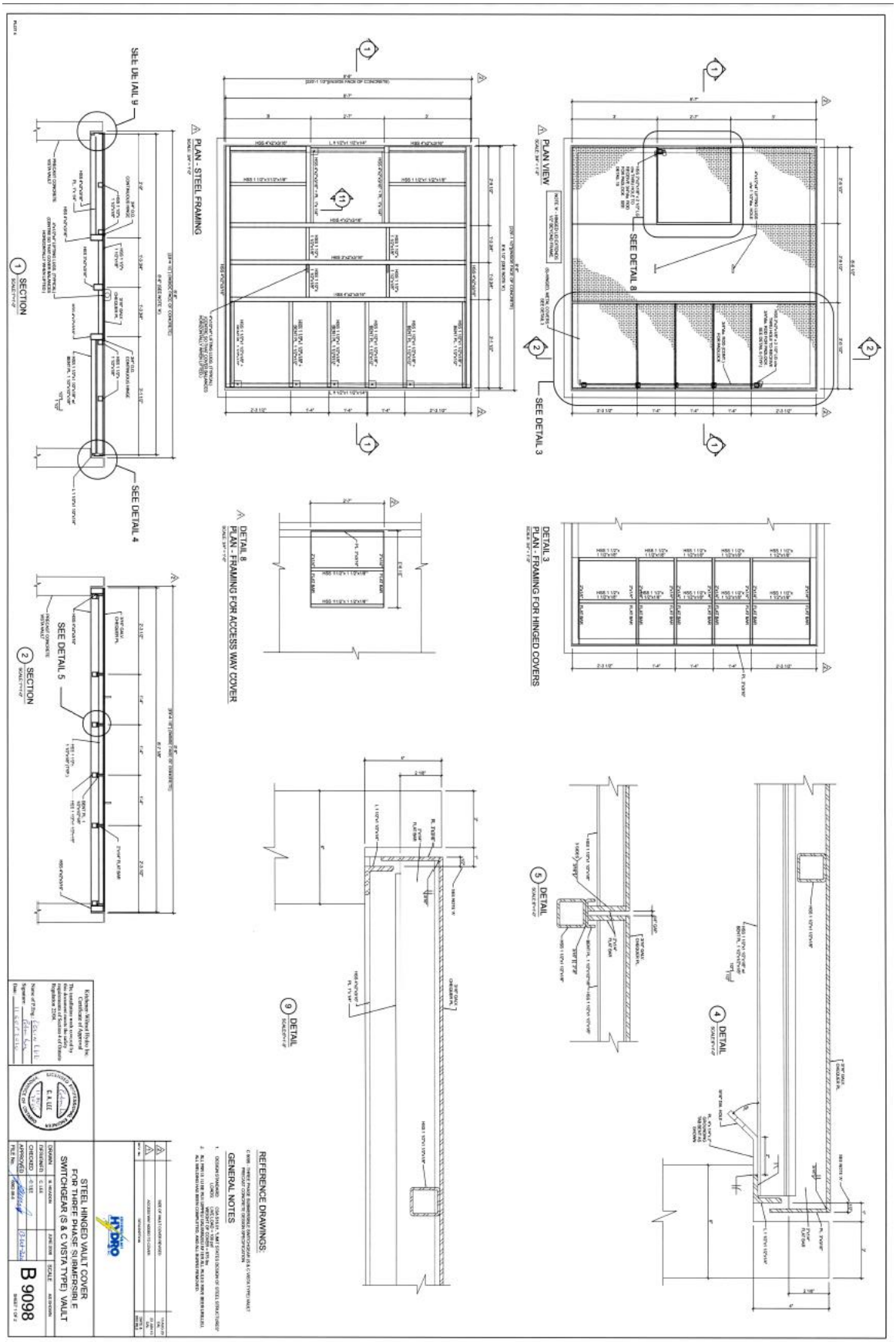
The installation work covered by this document meets the safety requirements of Section 4 of Ontario Regulation 22/04.

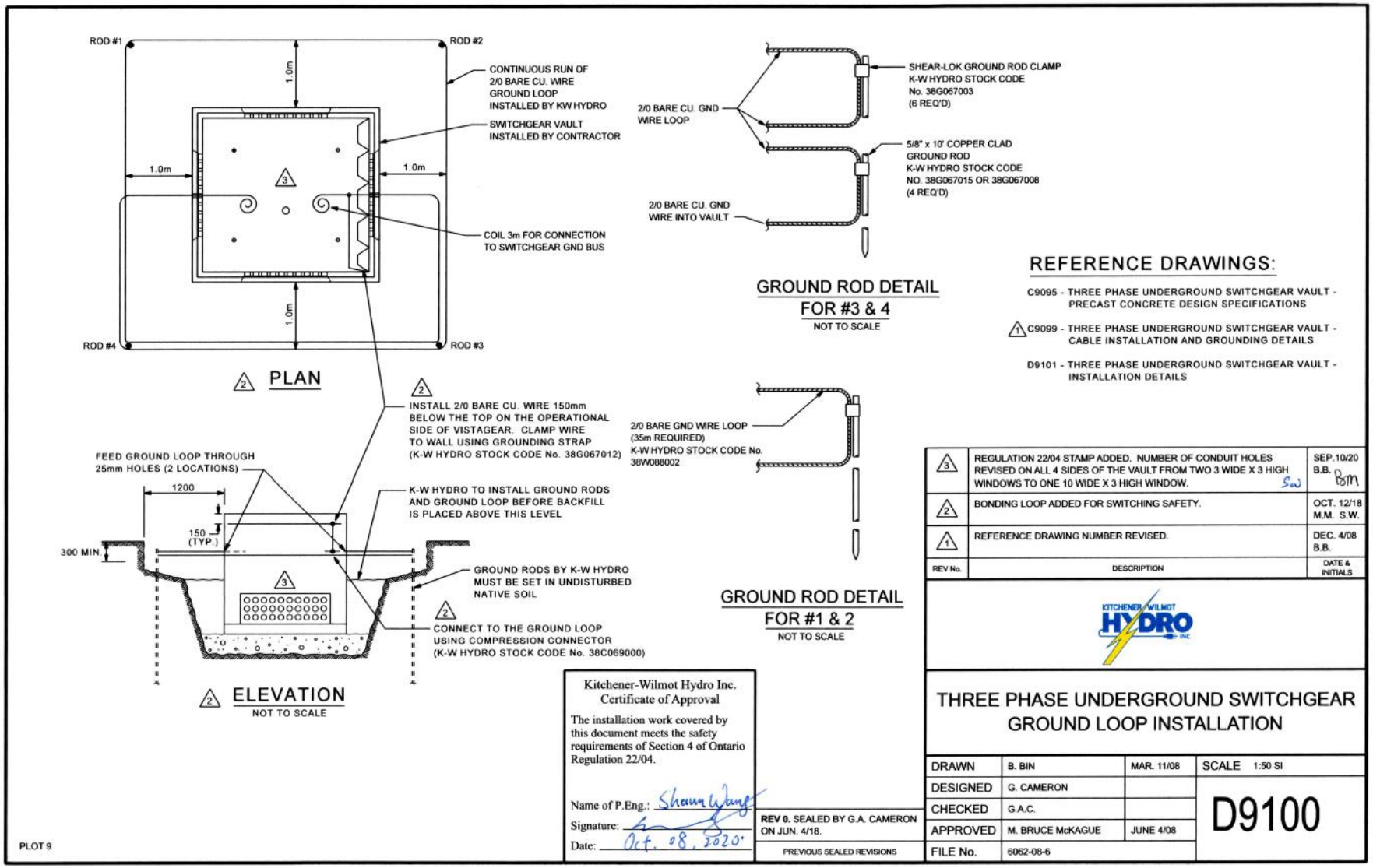
Name of P.Eng.: Shawn Wang
Signature:
Date: Oct. 05, 2020

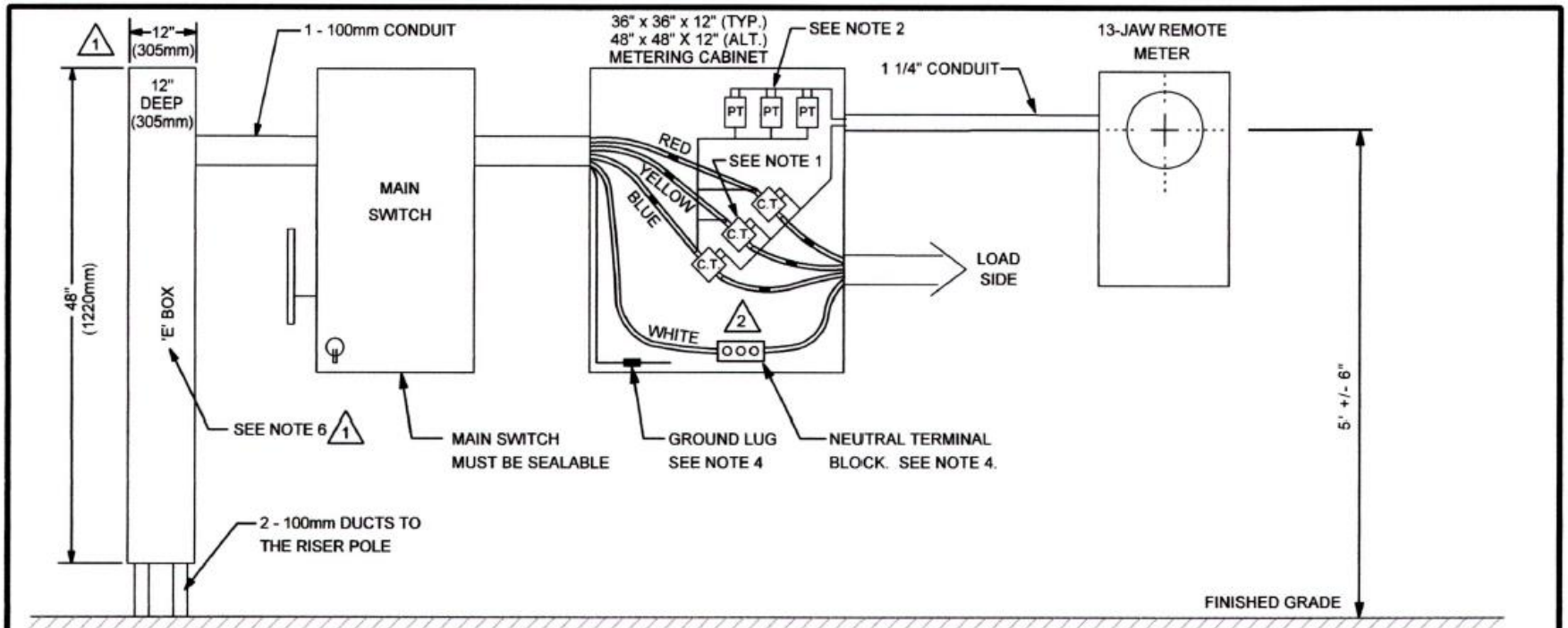
THREE PHASE UNDERGROUND SWITCHGEAR (S & C VISTA TYPE) VAULT-PRECAST CONCRETE DESIGN SPECIFICATION (110" W x 110" L x 86" H)

DRAWN	B. SCHWINDT	FEB. 28/08	SCALE 1/2" = 1'-0"
DESIGNED	G. CAMERON		
CHECKED	G. CAMERON	MAY 2/08	C9095
APPROVED	M. BRUCE McKAGUE	MAY 2/08	
FILE No.	6092-08-6		

PLOT 8


PLAN VIEW
SEE DETAIL 8
SEE DETAIL 3
PLAN - STEEL FRAMING
SEE DETAIL 9
SEE DETAIL 4
1 SECTION
DETAIL 3
PLAN - FRAMING FOR HINGED COVERS
DETAIL 8
PLAN - FRAMING FOR ACCESS WAY COVER
SEE DETAIL 5
2 SECTION
5 DETAIL
4 DETAIL
9 DETAIL
REFERENCE DRAWINGS:
GENERAL NOTES
STEEL HINGED VAULT COVER
FOR THREE PHASE SUBMERSIBLE
SWITCHGEAR (S & C VISTA TYPE) VAULT
B 9098


ROD #1
ROD #2
ROD #3
ROD #4
1.0m
1.0m
1.0m
1.0m
CONTINUOUS RUN OF 2/0 BARE CU. WIRE GROUND LOOP INSTALLED BY KW HYDRO
SWITCHGEAR VAULT INSTALLED BY CONTRACTOR
COIL 3m FOR CONNECTION TO SWITCHGEAR GND BUS
2 PLAN
2/0 BARE CU. GND WIRE LOOP
SHEAR-LOK GROUND ROD CLAMP K-W HYDRO STOCK CODE No. 38G067003 (6 REQ'D)
5/8" x 10' COPPER CLAD GROUND ROD K-W HYDRO STOCK CODE NO. 38G067015 OR 38G067008 (4 REQ'D)
2/0 BARE CU. GND WIRE INTO VAULT
GROUND ROD DETAIL FOR #3 & 4
NOT TO SCALE
REFERENCE DRAWINGS:
C9095 - THREE PHASE UNDERGROUND SWITCHGEAR VAULT - PRECAST CONCRETE DESIGN SPECIFICATIONS
1 C9099 - THREE PHASE UNDERGROUND SWITCHGEAR VAULT - CABLE INSTALLATION AND GROUNDING DETAILS
D9101 - THREE PHASE UNDERGROUND SWITCHGEAR VAULT - INSTALLATION DETAILS
2 INSTALL 2/0 BARE CU. WIRE 150mm BELOW THE TOP ON THE OPERATIONAL SIDE OF VISTAGEAR. CLAMP WIRE TO WALL USING GROUNDING STRAP (K-W HYDRO STOCK CODE No. 38G067012)
FEED GROUND LOOP THROUGH 25mm HOLES (2 LOCATIONS)
1200
150 (TYP.)
300 MIN.
K-W HYDRO TO INSTALL GROUND RODS AND GROUND LOOP BEFORE BACKFILL IS PLACED ABOVE THIS LEVEL
GROUND RODS BY K-W HYDRO MUST BE SET IN UNDISTURBED NATIVE SOIL
2 CONNECT TO THE GROUND LOOP USING COMPRESSION CONNECTOR (K-W HYDRO STOCK CODE No. 38C069000)
2 ELEVATION
NOT TO SCALE
2/0 BARE GND WIRE LOOP (35m REQUIRED) K-W HYDRO STOCK CODE No. 38W088002
GROUND ROD DETAIL FOR #1 & 2
NOT TO SCALE
3 REGULATION 22/04 STAMP ADDED. NUMBER OF CONDUIT HOLES REVISED ON ALL 4 SIDES OF THE VAULT FROM TWO 3 WIDE X 3 HIGH WINDOWS TO ONE 10 WIDE X 3 HIGH WINDOW. SEP.10/20 B.B.
2 BONDING LOOP ADDED FOR SWITCHING SAFETY. OCT. 12/18 M.M. S.W.
1 REFERENCE DRAWING NUMBER REVISED. DEC. 4/08 B.B.
REV No. DESCRIPTION DATE & INITIALS
KITCHENER WILMOT HYDRO INC
Kitchener-Wilmot Hydro Inc. Certificate of Approval
The installation work covered by this document meets the safety requirements of Section 4 of Ontario Regulation 22/04.
Name of P.Eng.: Shawn Wang
Signature:
Date: Oct. 08, 2020
REV 0. SEALED BY G.A. CAMERON ON JUN. 4/18.
PREVIOUS SEALED REVISIONS
THREE PHASE UNDERGROUND SWITCHGEAR GROUND LOOP INSTALLATION
DRAWN B. BIN MAR. 11/08
DESIGNED G. CAMERON
CHECKED G.A.C.
APPROVED M. BRUCE McKAGUE JUNE 4/08
FILE No. 6062-08-6
SCALE 1:50 SI
D9100
PLOT 9



REFERENCE DRAWINGS

E9919 - METER WIRING DIAGRAM 3ø TRANSFORMER RATED 120/208V

E9920 - METER WIRING DIAGRAM 3ø TRANSFORMER RATED 347/600V

△3 E10472 - METERING INSTALLATION DETAILS - MULTI UNIT METERING WITHOUT METER CENTRE

NOTES:

1. THE MINIMUM CLEARANCE BETWEEN THE LIVE PARTS OF THE C.T.'S SHOULD BE NO LESS THAN 1".
2. THE INSTALLATION OF THE P.T.'S IS FOR 3 PH. 347/600V ONLY.
3. △1 ALL METERING EQUIPMENT SHALL BE LOCATED INDOORS.
4. ALL CUSTOMER-OWNED EQUIPMENT AND INSTALLATION MUST BE APPROVED BY THE ELECTRICAL SAFETY AUTHORITY.
5. REFER TO ONTARIO ELECTRICAL SAFETY CODE FOR WIRING METHODS INCLUDING GROUNDING AND BONDING REQUIREMENTS.
6. △1 IF THE SPACE IS CONSTRAINED, AN 'E' BOX OF SIZE 24"(H) X 24"(W) X 12"(D) CAN BE USED AS ALTERNATIVE.

PLOT 10

Kitchener-Wilmot Hydro Inc.
Certificate of Approval

The installation work covered by this document meets the safety requirements of Section 4 of Ontario Regulation 22/04.

Name of P.Eng.: _____

Signature: _____

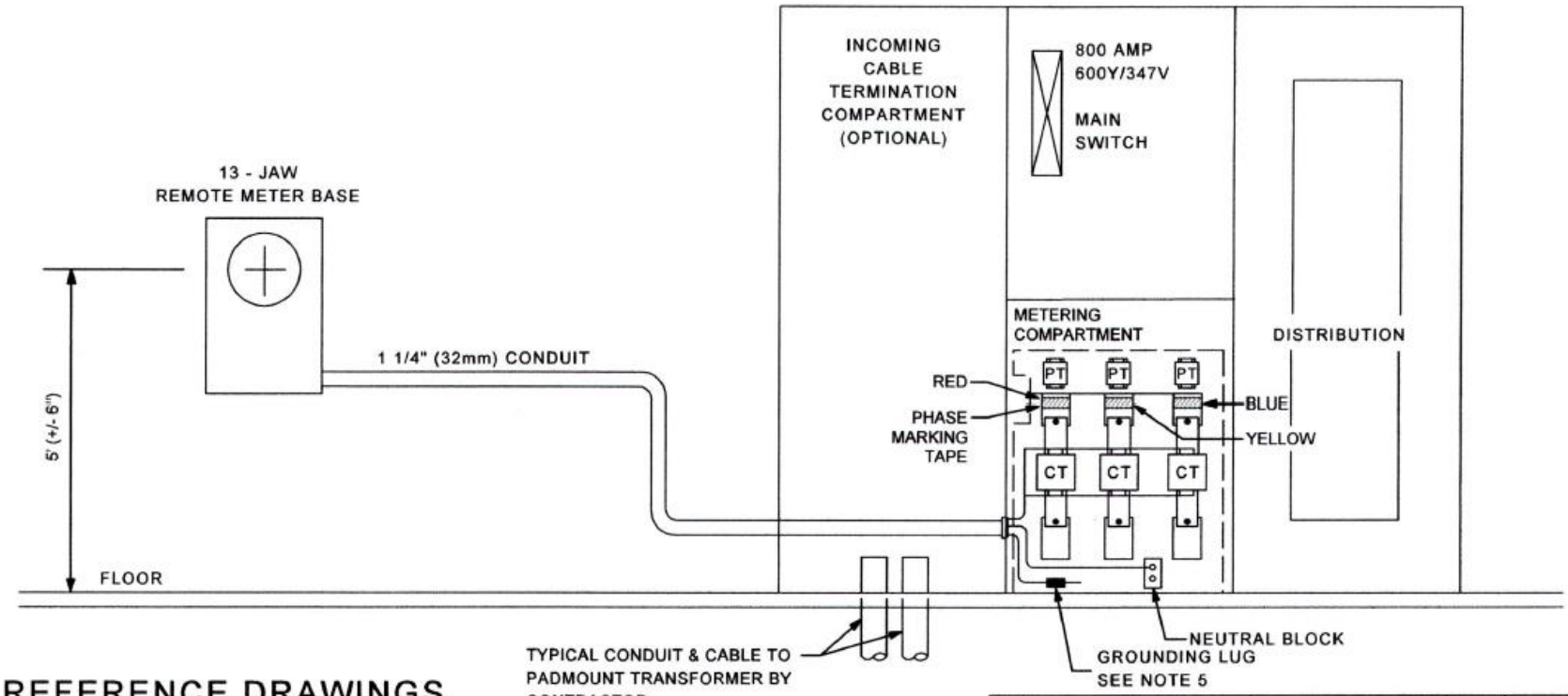
Date: _____

REV No.	DESCRIPTION	DATE & INITIALS
△3	REFERENCE DRAWING ADDED.	MAR.11/16 B.B.
△2	NEUTRAL TERMINAL BLOCK ADDED. CONDUIT FOR COMMUNICATIONS REMOVED. J.P.T.	NOV. 14/14 B.B. S.W
△1	'E' BOX ADDED TO METERING DETAIL. J.P.T.	NOV. 25/13 B.B. S.W.

KITCHENER-WILMOT HYDRO INC

METERING INSTALLATION DETAILS - TRANSFORMER RATED FOR 3ø SERVICE WITHOUT LV SWITCHGEAR 120/208V OR 347/600V

DRAWN	B. BIN	JULY 26/12	SCALE NONE
DESIGNED	S. WANG		E
CHECKED	S.W.		
APPROVED	G.A. CAMERON	1-OCT-2012	9925
FILE No.			



REFERENCE DRAWINGS

E9919 - METER WIRING DIAGRAM 3ø TRANSFORMER RATED 120/208V

E9920 - METER WIRING DIAGRAM 3ø TRANSFORMER RATED 347/600V

E10473 - METERING INSTALLATION DETAILS - MULTI UNIT METERING WITH METER CENTRE. 1

NOTES:

1. THE MINIMUM CLEARANCE BETWEEN THE LIVE PARTS OF THE C.T.'S SHOULD BE NO LESS THAN 1".
2. THE INSTALLATION OF THE P.T.'S IS FOR 3 PH. 347/600V ONLY.
3. ALL C.T.'S OR P.T.'S MUST BE SECURELY FASTENED ON THE BACK PLATE INSIDE THE SWITCHGEAR.
4. ALL CUSTOMER-OWNED EQUIPMENT AND INSTALLATION MUST BE APPROVED BY THE ELECTRICAL SAFETY AUTHORITY.
5. REFER TO ONTARIO ELECTRICAL SAFETY CODE FOR WIRING METHODS INCLUDING GROUNDING AND BONDING REQUIREMENTS.

PLOT 5

Kitchener-Wilmot Hydro Inc.
Certificate of Approval

The installation work covered by this document meets the safety requirements of Section 4 of Ontario Regulation 22/04.

Name of P.Eng.: Shawn Wang
Signature:
Date: July 17, 2017

REV No.	DESCRIPTION	DATE & INITIALS
2	1" - 90° CONDUIT FOR COMMUNICATION REMOVED	JUL. 13/17 B.U.
1	REFERENCE DRAWING ADDED.	MAR.11/16 B.B. J.PT.

METERING INSTALLATION DETAILS - TRANSFORMER RATED FOR 3ø SERVICE WITH LV SWITCHGEAR, 120/208V OR 347/600V

DRAWN	B. BIN	JULY 26/12
DESIGNED	S. WANG	
CHECKED	S.W.	
APPROVED	G.A. CAMERON	1-OCT-2012
FILE		

E
9926