Parcs Canada Parks Canada

QUESTIONS & ANSWERS No.2

	Dossier No – File No **5P315-14-0796/A**
Projet - Project Trent Severn Waterway Electrical Service Upgrade	**Date limite au plus tard - Closing Date on or before** **Wednesday, October 15, 2014 at 2 o'clock**
	Date d'émission – Date of issue **October 6, 2014**

OBJET DE LA PRÉSENTE MODIFICATION – THE PURPOSE OF THIS AMENDMENT IS TO GIVE EFFECT TO THE FOLLOWING

WE EXTEND THE OPENING DATE TO WEDNESDAY, OCTOBER 15, 2014 AT 2 O'CLOCK INSTEAD OF WEDNESDAY, OCTOBER 8, 2014

Questions & Answers

Q1: Can you provide the PUC specs for the primary trench and the transformer vaults required for the service upgrade at Parks Canada Peterborough? See attached

Q2: Also would DB2 Duct be an acceptable substitute for rigid PUC, as long as it meets ESA and PUC specs? Can we use directional drilling where possible to avoid open trenches? See attached

TOUTES LES AUTRES CONDITIONS INCLUSES DANS LES INSTRUCTIONS DE TRAVAIL DEMEURENT LES MÊMES / ALL OTHER CONDITIONS INCLUDED IN THE WORK INSTRUCTIONS REMAIN THE SAME.

Par la présente nous reconnaissons avoir reçu la version modifiée des instructions et nous attestons avoir modifié notre soumission en conséquence.

We hereby acknowledge receipt of the amendment instructions and confirm that privisions therefore have been made in our tender.

Pour être prise en considération, toute soumission devra être accompagnée d'un exemplaire signé de la présente modification. Si votre soumission a déjà été envoyée, veuillez signer et envoyer cette modification par télécopieur/courriel avec toutes révisions faites à votre prix de soumission, à nos bureaux avant la date limite. Télécopieur: 418-648-5392

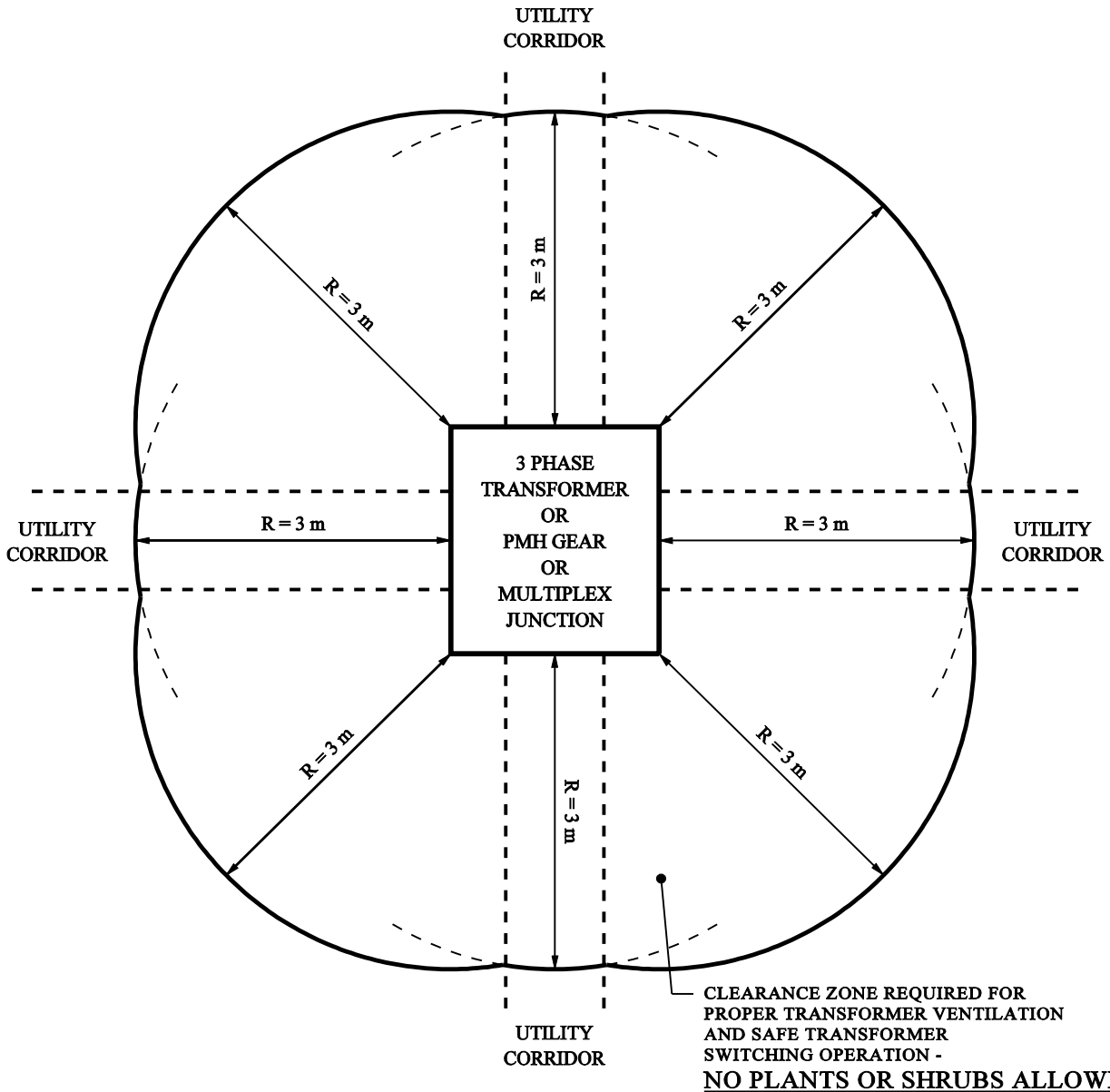
Signed copy of this amendment must accompany each tender in order that the tender be considered. If your submission has already been sent, please sign and send this amendment by fax / email with any revisions made to your bid price, at our office before the deadline. Fax: 418-648-5392.

Signé - Signed	**Titre - Title**	**Date**
Société - Company Canada		

Peterborough Distribution Inc.

OBSTRUCTION FREE AREA
THREE PHASE TRANSFORMER AND SWITCHING CUBICLES (ABOVE GROUND)
2.4/4.16kV TO 16/27.6kV

REFERENCE NUMBER
37-145
R1 (APR. 2010)



NOTES:

1. ANY AND ALL OBJECTS WITHIN THE OBSTRUCTION FREE AREA, ARE SUBJECT TO REMOVAL WITHOUT ANY PRIOR NOTICE SHOULD OPERATIONAL OR EMERGENCY CONDITIONS EXIST.
2. THE DISTRIBUTOR SHALL NOT BE HELD RESPONSIBLE FOR ANY COSTS ASSOCIATED WITH THE REMOVAL OR RESULTING DAMAGE TO ANY OBJECTS WITHIN THE OBSTRUCTION FREE AREA. (THE DEVELOPER/OWNER ASSUMES ALL RESPONSIBILITY FOR ENCROACHING WITHIN THE OBSTRUCTION FREE AREA.)

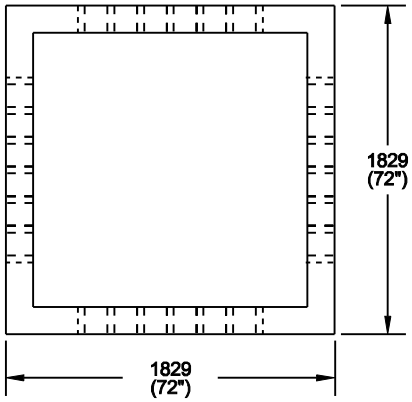
METRIC
LINEAR DIMENSIONS SHOWN IN MILLIMETRES

APPROVED BY:_____ DATE:_____

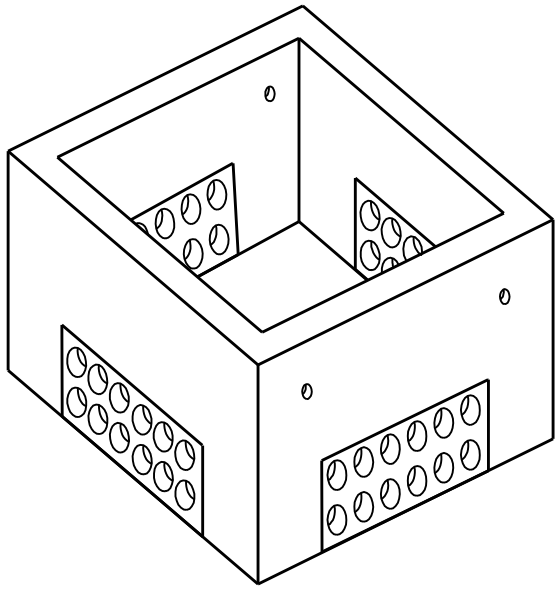
Peterborough Distribution Inc.

PRECAST CONCRETE FOUNDATION FOR 3 PHASE PAD MOUNTED TRANSFORMER UP TO 500 kVA (PUSI STORES #197003)

REFERENCE NUMBER
37-329C
(APR. 2011)

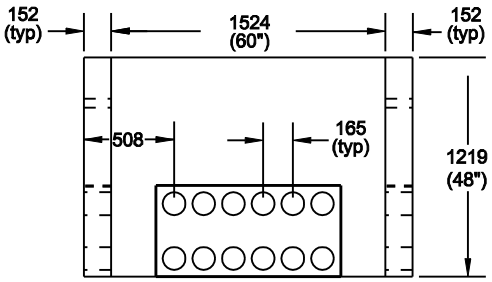


TOP VIEW

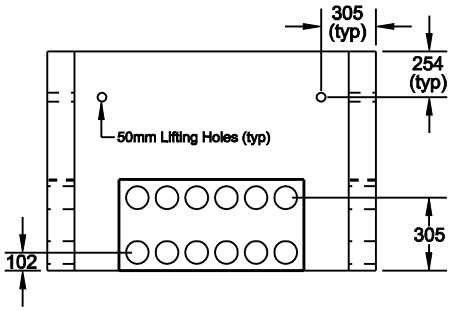


NOTE:

ALL UNITS MUST BE HANDLED WITH PROPER LIFTING EQUIPMENT.
(I.E. SPREAD BARS)



SECTION A-A



SECTION B-B

NOTES:

1. CONCRETE MIN. 32 MPa, 6-8% AIR ENTRAINED, LOW SLUMP
2. 12.7 mm (0.5") DIA THREADED GALVANIZED INSERTS COMPLETE WITH PLATED BOLTS - 2 REQUIRED
3. 50.8 mm (2") DIA LIFTING HOLES COMPLETE WITH PLASTIC CAPS - 4 REQUIRED
4. 114.3 mm (4.5") DIA CABLE ENTRY HOLES COMPLETE WITH PLASTIC SEALS - 48 REQUIRED
5. 25.4 mm (1") DIA RE-BAR HOLES AT 165.1 mm (6.5") APART FOR CONCRETE ENCASED DUCTBANK ATTACHMENT
6. TOP AND CABLE ENTRY SURFACES SHALL BE SMOOTH-FINISHED
7. REINFORCED WITH #3 (9.52 mm (0.375")) HI-BOND REINFORCED STEEL BARS AT 152.4 mm (6") CENTRES BOTH DIRECTIONS
8. NO SHARP EDGES, 6.35 mm (0.25") RADIUS ROUNDED CORNERS
9. NOMINAL FLAT SURFACE MOUNTING AREA WIDTH = 1003.3 mm (39.5")
10. APPROXIMATE WEIGHT = 2730 kg (6000 lbs)

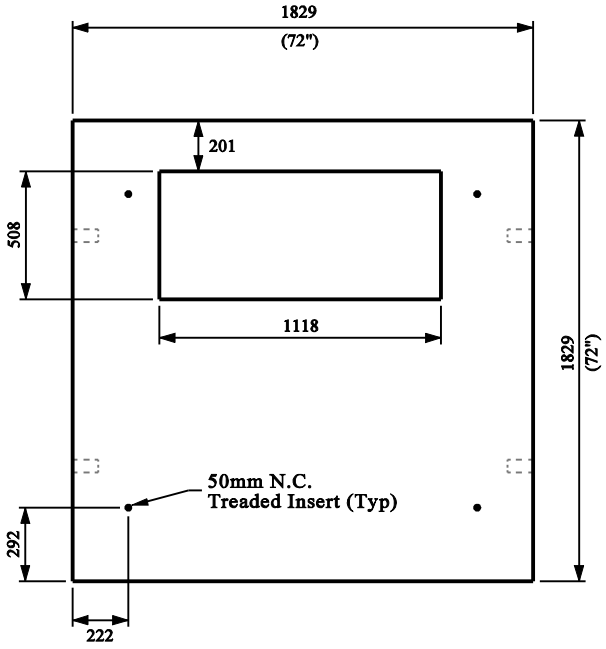
METRIC
LINEAR DIMENSIONS SHOWN IN MILLIMETRES

APPROVED BY: Michael Bloc DATE: 2011/04/27

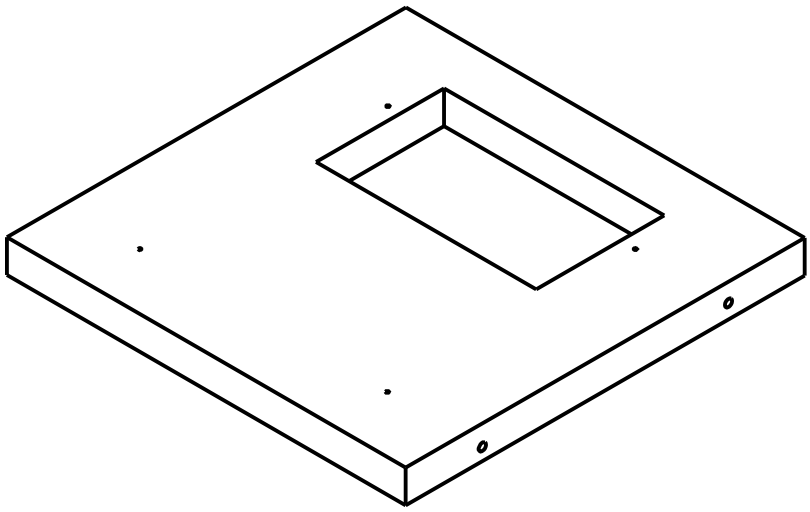
Peterborough Distribution Inc.

PRECAST TOP FOR 3 PHASE TRANSFORMER FOUNDATION UP TO 500 kVA (PUSI STORES #197001)

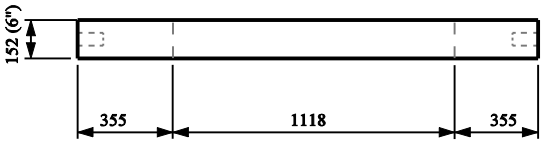
REFERENCE NUMBER
37-329D
(APR. 2011)



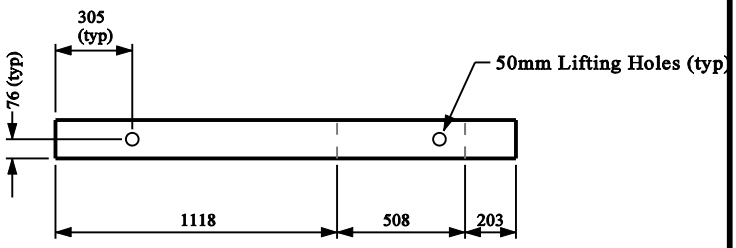
TOP VIEW



NOTE:
ALL UNITS MUST BE HANDLED WITH PROPER LIFTING EQUIPMENT.
(I.E. SPREAD BARS)



SECTION A-A



SECTION B-B

NOTES:
- CONCRETE MIN. 32MPa, 6-8% AIR ENTRAINED, LOW SLUMP
- REINFORCED WITH #3 (3/8" DIA.) HI-BOND REINFORCING STEEL BARS
- A1: 16 mm (5/8") GALVANIZED INSERTS PLUGGED WITH PLATED BOLTS - 4 REQUIRED
- A2: 50 mm (2") DIAMETER LIFTING HOLES - 4 REQUIRED
- ALL TOP SURFACES SHALL BE SMOOTH-FINISHED
- WEIGHT - 1000 KG / 2200 LBS (APPROXIMATE)
- USED IN CONJUNCTION WITH STD. 37-329C

METRIC
LINEAR DIMENSIONS SHOWN IN MILLIMETRES

APPROVED BY: Michael Plaxton DATE: 2011/04/27

Peterborough Distribution Inc.

CONCRETE ENCASED DUCT BANK REQUIREMENTS

REFERENCE NUMBER
37-341
R6 (APR. 2012)

1. DESIGN CONSIDERATIONS

1.1. BENDS AND TURNS IN A DUCT RUN SHALL BE ACCOMPLISHED BY A GRADUAL SWEEP. ALL 90 DEGREE CHANGES IN DIRECTION SHALL BE MADE OF 1.5 m (60") RADIUS ELBOW AND BE LIMITED TO TWO PER RUN.

1.2. DUCT BANKS SHALL BE BURIED WITH A MINIMUM COVER OF 900 mm, WITH THE EXCEPTION OF ROAD CROSSINGS WHICH SHALL BE BURIED WITH A MINIMUM COVER OF 1200 mm.

TRENCH RESTORATION SHALL BE MADE UP OF CLEAN BACKFILL ON DUCT BANKS INSTALLED UNDER LAWNS AND PARKWAYS. DUCT BANKS ALONG BOULEVARDS OR ACROSS ROADS SHALL HAVE BACKFILL MATERIALS AND TRENCH RESTORATION TO CONFORM WITH THE MUNICIPAL OR REGIONAL AUTHORITY, AS REQUIRED.

1.3. CUSTOMER'S DUCT BANK SHALL HAVE A MINIMUM SLOPE OF 1% AWAY FROM THE BUILDING. CONSULT DISTRIBUTOR'S INSPECTOR WHERE THE ABOVE REQUIREMENT CANNOT BE MET (ie. FRENCH DRAIN REQUIRED).

1.4. THE AREA WITHIN TWO METRES AT EACH END OF A DUCT BANK SHALL BE FREE OF ANY FOREIGN OBJECTS SUCH AS CABLES OR PIPES, FOR BACKHOE DIGGING.

1.5. DUCT BANK SHALL BE TERMINATED IN A LANDSCAPED AREA AT THE LOCATION GIVEN BY THE DISTRIBUTOR.

1.6. CONFIGURATIONS NOT COVERED BY STANDARDS 37-343 TO 37-348 SHALL BE ARRANGED IN A SIMILAR MANNER SUBJECT TO DISTRIBUTOR'S APPROVAL.

2. DUCT BANK CONSTRUCTION

2.1. PRIMARY DUCT SHALL BE 100 mm (4") DIAMETER. SECONDARY DUCT SHALL BE 75mm (3") DIAMETER. THE DUCT SHALL BE PVC TYPE DB2/ES2 (SOLID WALL ONLY) C/W BELL END AND BE APPROVED AS PER CSA STANDARD C22.2 No. 211.1 (LATEST REVISION) AND THE DISTRIBUTOR.

2.2. ALL FITTINGS AND BENDS SHALL BE PVC TYPE DB2/ES2. APPROVED SOLVENT CEMENT SHALL BE USED TO JOIN ALL DUCTS, FITTINGS AND BENDS AT MINIMUM 30 MINUTES PRIOR TO POURING CONCRETE.

2.3. ALL DUCTS AT THE FACE OF THE DUCT BANK SHALL BE ORIENTED AND TERMINATED WITH EITHER BELL ENDS SUPPORTING CABLES OR PLUGS FOR SPARE DUCTS AS PER DISTRIBUTOR STANDARD 37-349.

2.4. DUCTS SHALL BE SUPPORTED BY DISTRIBUTOR APPROVED SPACERS EVERY 1.5 m (5 ft) AND BE ANCHORED SO AS NOT TO FLOAT DURING CONCRETE POURING.

2.5. ALL DUCT BANKS SHALL BE REINFORCED WITH NON PRE-STRESSED 15 mm (5/8") DEFORMED STEEL REINFORCING BARS - GRADE 400 AND CONFORMED WITH CSA G30.12 (LATEST REVISION). STEEL REINFORCING BARS SHALL BE INSTALLED CONTINUOUSLY, MINIMUM 300 mm OVERLAP AND TIED, AND BE LOCATED AT THE BOTTOM OF THE DUCT BANK AS PER DISTRIBUTOR STANDARD 37-343 TO 37-348.

METRIC
LINEAR DIMENSIONS SHOWN IN MILLIMETRES

APPROVED BY: Michael Block DATE: April 5, 2012

Peterborough Distribution Inc.

CONCRETE ENCASED DUCT BANK REQUIREMENTS (CONTINUED)

REFERENCE NUMBER
37-341
R6 (APR. 2012)

2. DUCT BANK CONSTRUCTION (CONT'D)

2.6. STEEL REINFORCING BARS SHALL BE EXTENDED BEYOND THE DUCT BANK FOR FUTURE DUCT BANK EXTENSION. REINFORCING BARS SHALL BE PASSED CONTINUOUSLY FROM ONE DUCT BANK TO THE OTHER.

2.7. DUCTS SHALL BE ENCASED IN 20MPa CONCRETE WITH 10 mm PEA GRAVEL AGGREGATE. SLUMP MUST NOT EXCEED 100 mm (4") UNDER STANDARD SLUMP TEST. DUCT BANK SHALL BE FOUNDED ON UNDISTURBED NATIVE NON-ORGANIC SOIL WHERE POSSIBLE OR SUITABLY COMPACTED NON ORGANIC MATERIAL.

2.8. ALL DUCTS SHALL BE MANDRELLED AND BE CLEANED AFTER DUCT BANK INSTALLATION.

2.9. ALL DUCTS SHALL BE EQUIPPED WITH 10 mm (3/8") DIAMETER POLYPROPYLENE ROPE. ALL DUCTS SHALL HAVE THE ENDS SEALED WITH AN APPROVED DUCT PLUG IMMEDIATELY AFTER DUCT BANK INSTALLATION.

2.10. END OF DUCT BANK AND ROAD CROSSING SHALL BE MARKED WITH AN ELECTRONIC MARKER AS PER DISTRIBUTOR STANDARD 37-349.

3. CUSTOMER OBLIGATIONS

3.1. CUSTOMER'S DUCT BANK INSTALLATION SHALL BE SUBJECTED TO DISTRIBUTOR'S INSPECTION AND ACCEPTANCE PRIOR TO POURING OF CONCRETE OR ANY BACKFILL MATERIAL, OR WILL NOT BE PASSED. CUSTOMER SHALL CONTACT DISTRIBUTOR INSPECTIONS DEPARTMENT TO ARRANGE FOR INSPECTION 48 HOURS IN ADVANCE OF POURING CONCRETE.

3.2. THE CUSTOMER SHALL FOLLOW DIRECTIONS GIVEN BY THE DISTRIBUTOR'S INSPECTOR FOR ANY SITUATION NOT COVERED IN THIS SPECIFICATION.

3.3. DUCTS SHALL BE PROBED PRIOR TO CABLE INSTALLATION. CABLE SHALL NOT BE INSTALLED IN DUCT WHICH DOES NOT ALLOW PASSAGE OF A TEST MANDREL SIZED TO 95 % OF THE DIAMETER OF THE PVC TYPE DB2/ES2 DUCT.

3.4. LANDSCAPING, PAVING AND CURBS SHALL NOT BE COMPLETED UNTIL DISTRIBUTOR'S CABLE INSTALLATION IS COMPLETE. OTHERWISE, ALL RESTORATION SHALL BE DONE BY THE CUSTOMER AT THEIR OWN EXPENSE.

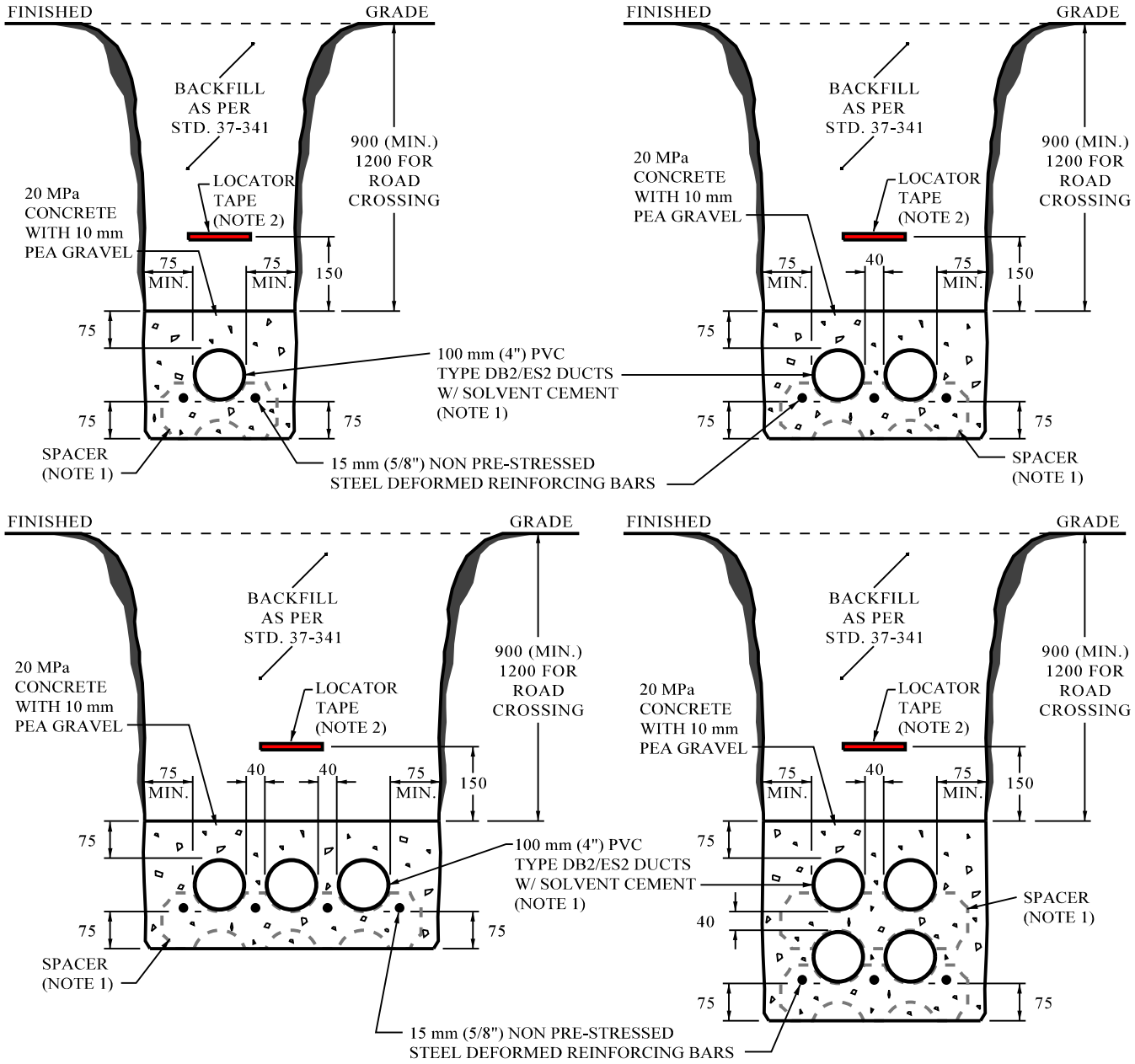
METRIC
LINEAR DIMENSIONS SHOWN IN MILLIMETRES

APPROVED BY: Michael Block DATE: April 5, 2012

Peterborough Distribution Inc.

TYPICAL ARRANGEMENT FOR DUCTS ENCASED IN CONCRETE FOR 1,2 3 OR 4 DUCTS

REFERENCE NUMBER
37-343
R2 (OCT. 2012)



NOTES:

1. ALTERNATIVE CONFIGURATIONS SUCH AS 1x4 DUCTS TO BE SPECIFIED BY ENGINEERING OR PUSI INSPECTOR AS REQUIRED.
2. REFER TO STD. 37-341 FOR CONCRETE ENCASED DUCT BANK REQUIREMENTS.
3. LOCATOR TAPE SHALL BE A RED PLASTIC, 152 mm (6") WIDE x 0.1 mm (0.004") THICK C/W BLACK BOLD LETTERING "CAUTION BURIED ELECTRIC LINE BELOW"

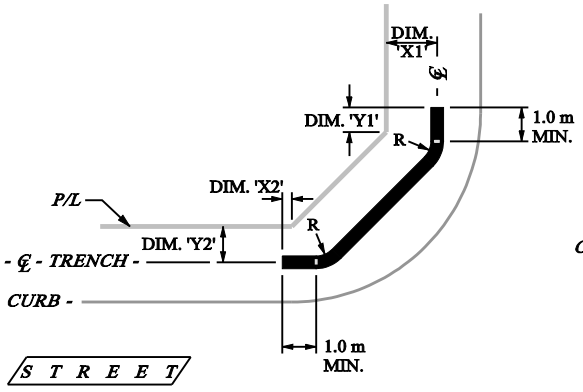
METRIC
LINEAR DIMENSIONS SHOWN IN MILLIMETRES

APPROVED BY: Michael Block DATE: October 30, 2012

Peterborough Distribution Inc.

CONCRETE ENCASED POWER TRENCH ROAD CROSSING AND BENDS (15°-90°)

REFERENCE NUMBER
37-351
R1 (APR. 2010)



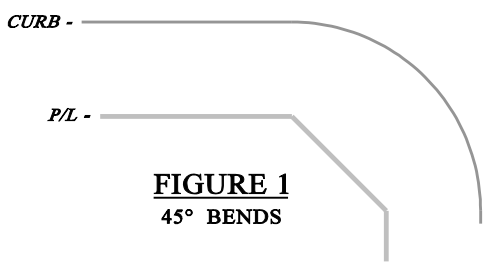


FIGURE 1
45° BENDS

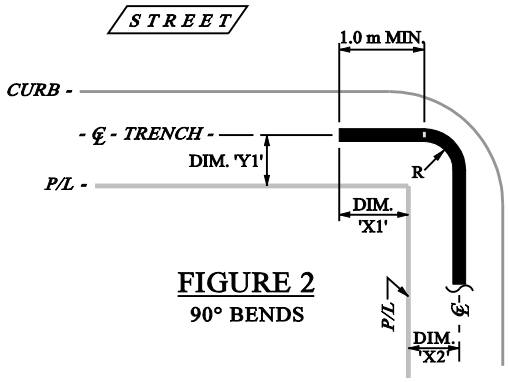


FIGURE 2
90° BENDS

MINIMUM BENDING RADIUS (R) OF PRIMARY CABLES		
SIZE OF CABLE	ON TIGHT LOCATION	PREFERRED
1000 kcmil CABLES	1524 mm (60")	1524 mm (60")
#1/0 AWG CABLES	910 mm (36") *	

* - SUBJECT TO DISTRIBUTOR APPROVAL AND INSPECTION.

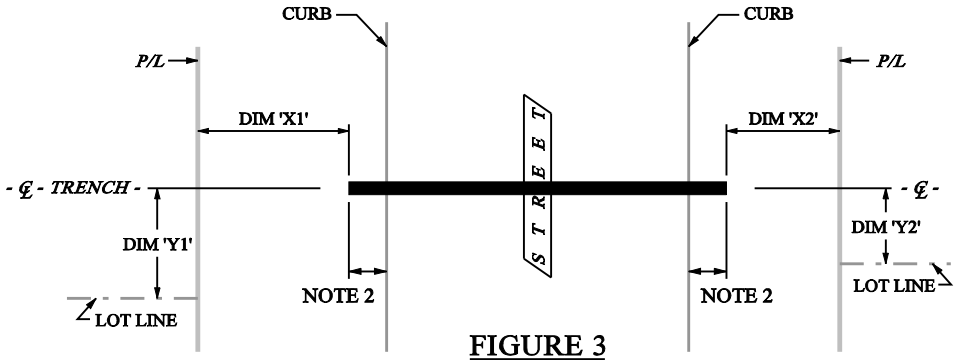


FIGURE 3
ROAD CROSSING

NOTES:

1. AT ALL BENDS, EXTEND THE CONCRETE A MINIMUM OF 1 m BEYOND THE BEND ENCASING BOTH THE 15° - 90° ELBOW AND A 1.0 m SECTION OF THE STRAIGHT, ADJOINING DUCT . (SEE FIG. 1 & 2)
2. AT ROAD CROSSING, EXTEND DUCTBANK BEYOND THE CURB AS PER STD. 37-349. (SEE FIG. 3)
3. ALL CONCRETE ENCASED DUCTS SHALL BE INSTALLED AS PER STD. 37-341 AND 37-343 TO 37-348.
4. DIMENSION 'X' AND 'Y' SHOWN IN FIGURE 1, 2 AND 3 SHALL BE TAKEN FROM THE PROPERTY LINE (P/L) AND LOT LINE ONLY, NOT FROM THE CURB. THESE DIMENSIONS SHALL BE REFLECTED BACK TO THE DESIGN CONSTRUCTION DRAWING/S AND MARKED "AS CONSTRUCTED" FOR RECORD PURPOSES.

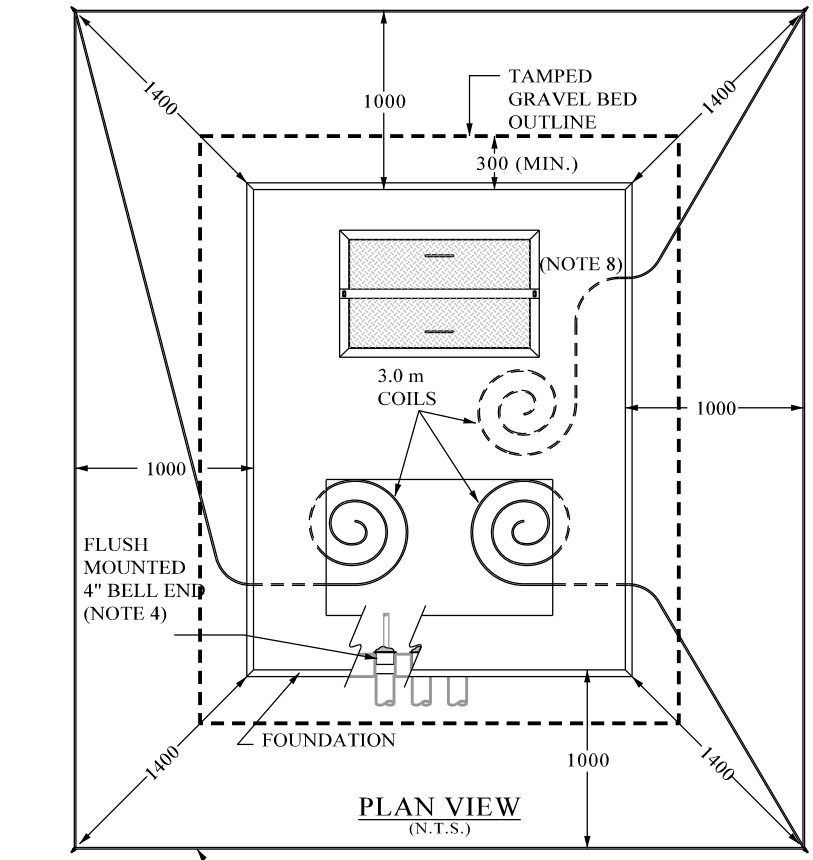
METRIC
LINEAR DIMENSIONS SHOWN IN MILLIMETRES

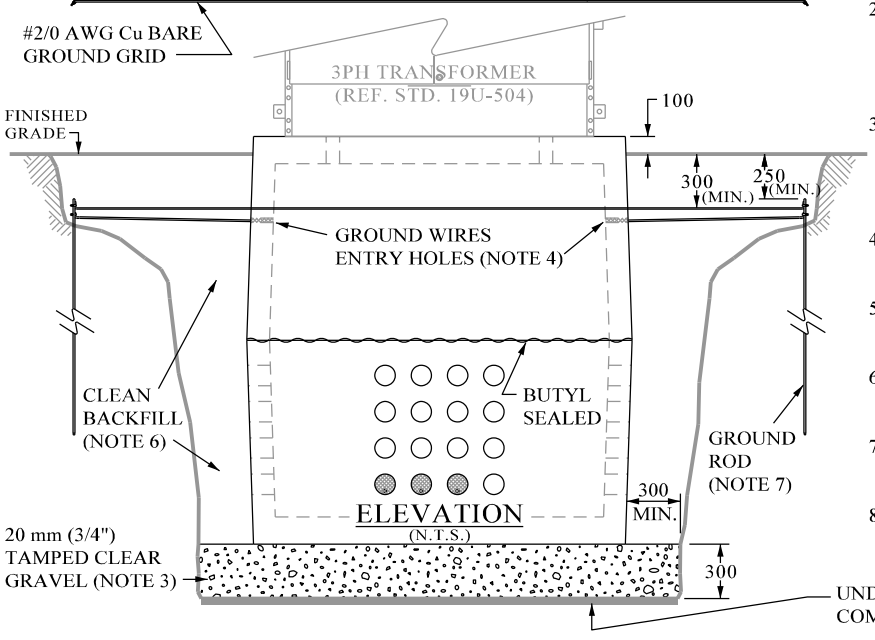
APPROVED BY:_____ DATE:_____

Peterborough Distribution Inc.

TYPICAL INSTALLATION OF TWO PIECE PRE-CAST CONCRETE FOUNDATION AND GROUP GRID FOR THREE PHASE PAD-MOUNTED TRANSFORMER 2.4/4.16kV TO 16/27.6kV

REFERENCE NUMBER
37-362
R1 (SEPT. 2010)





BILL OF MATERIALS
(REF. PUSI STORES CATALOGUE)

Part Number	Quantity	Description
184515	4	Ground Rod, 3/4" x 10', Cu clad
N/A	++	Sealant, Foam Duct
130200	1/Duct	Bell End, PVC, 4", Type DB2/ES2, CSA C22.2#211.1
197010	1	Vault, Base, Concrete, 3-Ph Tx, 64"x 100"x 69"
197012		Vault, Base, Concrete, 3-Ph Tx, 85"x 109"x 90"
197014		Vault, Base, Concrete, 3-Ph Tx, 85"x 131"x 90"
120071	++	Wire, Cu, 2/0 AWG -Stranded/Soft
134100	4	Connector - Ground Rod wire
134105	2	Connector, Grd, Fig C, #1/0-1/0 Awg,#2/0-#2/0 Awg
N/A	++	Gravel, Clear, 3/4"
	++	Sealant, Butyl

++ - LENGTH/QUANTITY TO SUIT

NOTES:

1. THE FOUNDATION SHALL BE OF A TYPE APPROVED BY THE DISTRIBUTOR.
2. THE FOUNDATION SHALL BE ORIENTED AS PER CONSTRUCTION DRAWING WITH TOP SURFACE HAVING A MAXIMUM 1% SLOPE.
3. GRAVEL BEDDING, FOUNDATION AND GROUND GRID INSTALLATION ARE ALL SUBJECT TO DISTRIBUTOR INSPECTION.
4. DUCTS AND GROUND WIRE ENTRY HOLES SEALED WITH FOAM.
5. UNUSED HOLES SHALL BE LEFT ALONE WITH PLASTIC SEAL INTACT.
6. PLACE BACKFILL IN THOROUGHLY COMPACTED LAYERS.
7. REFER TO STD. 41U-110, DETAIL 4 FOR GROUND ROD INSTALLATION.
8. THE THIRD GROUND GRID CONNECTION IS ONLY REQUIRED IF THE VAULT HAS A METAL ACCESS COVER

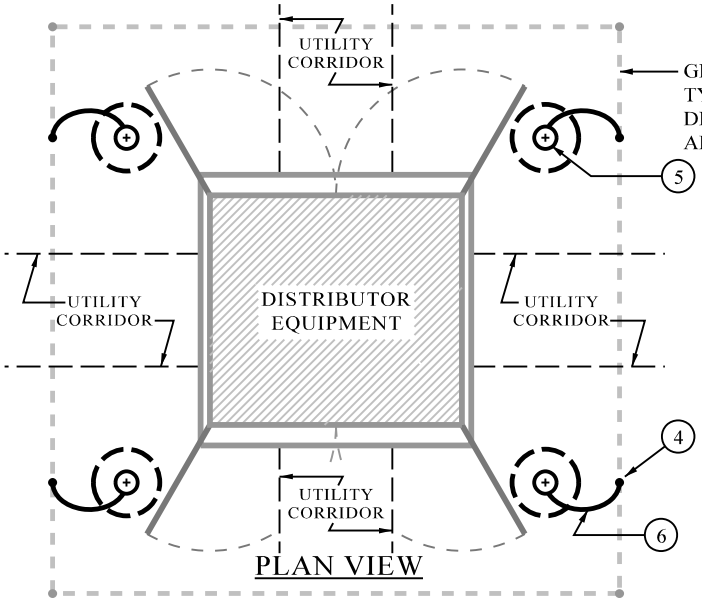
METRIC
LINEAR DIMENSIONS SHOWN IN MILLIMETRES

APPROVED BY: Michael Box DATE: 11/15/2013

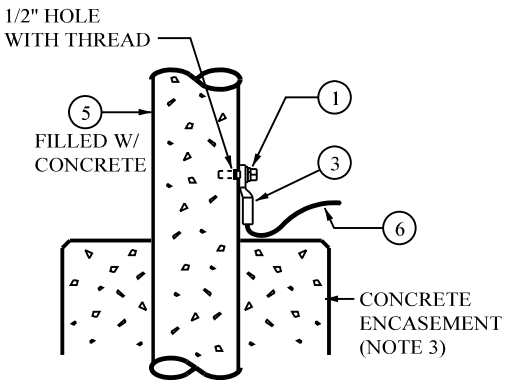
Peterborough Distribution Inc.

TYPICAL GUARD POST INSTALLATION

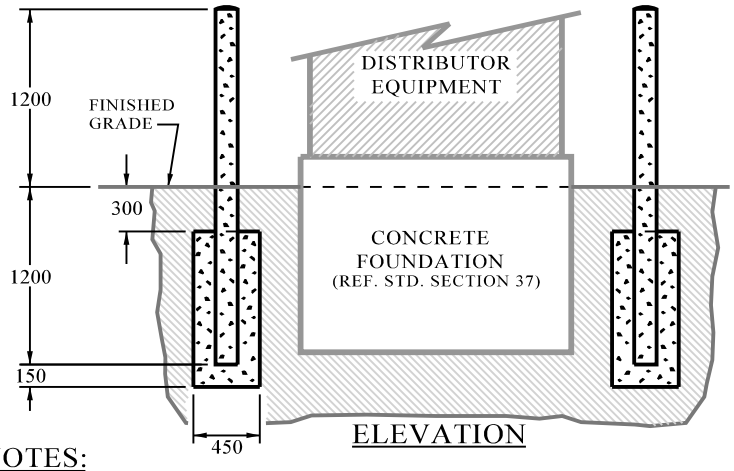
REFERENCE NUMBER
37-318.1
(JUNE 2014)



PLAN VIEW



DETAIL 1
(GROUNDING)



ELEVATION

PARTS LIST
(REF. PUSI STORES CATALOGUE)

Item Number	Description	Quantity	Part Number
1	Bolt, Kit, Hex Head, Si. Br., 1/2" x 1-1/2"	1/post	110415
2	Cement, Concrete	++	N/A
3	Connector, Lug, 2/0 AWG Cu. 1 Hole	1/post	134973
4	Connector, Grd, Fig C, #1/0-1/0 Awg,#2/0-#2/0 Awg	1/post	134105
5	Post, Guard, Galv. Steel, 150mm Dia. X 2.4m x 6mm Thick	++	N/A
6	Wire, Cu, 2/0 AWG -Stranded/Soft	++	120071

++ - LENGTH/QUANTITY TO SUIT

NOTES:

1. GUARD POSTS SHALL BE 150 mm DIA. x 2.4 m LONG x 6 mm THICK GALVANIZED STEEL PIPE FILLED WITH CONCRETE.
2. LOCATION AND NUMBER OF GUARD POSTS SHALL BE DETERMINED AND FINALIZED BY DISTRIBUTOR'S FIELD INSPECTOR WITH THE FOLLOWING CRITERIA:
   - 2.1. SHALL ALLOW EQUIPMENT DOORS (INCLUDING SUB-COMPARTMENT'S DOORS) TO BE OPENED THROUGH THEIR FULL RANGE.
   - 2.2. SHALL ALLOW DISTRIBUTOR PERSONNEL UNIMPEDED ACCESS TO THE EQUIPMENT AND PERMIT COMPLETE AND SAFE OPERATION OF THE EQUIPMENT.
   - 2.3. 500 mm MINIMUM CLEARANCE BETWEEN THE GUARD POST'S CONCRETE ENCASEMENT AND THE UTILITY CORRIDOR.
   - 2.4. 100 mm MINIMUM CLEARANCE BETWEEN THE GUARD POST'S CONCRETE ENCASEMENT AND THE GROUND GRID.
3. THE GUARD POSTS SHALL BE CONCRETE ENCASED IN 20 MPa CONCRETE WITH 10 mm PEA GRAVEL AGGREGATE.
4. WHERE GUARD POSTS ARE INSTALLED IN BACKFILL OR DISTURBED EARTH, ENSURE BACKFILL MATERIAL IS THOROUGHLY COMPACTED.
5. GUARD POSTS SHALL BE PAINTED WITH "SAFETY-YELLOW" (CITY'S STANDARD). FOR PROPER ADHESION OF PAINT, GUARD POSTS MUST BE CLEANED (FREE FROM DIRT, GREASE/OIL AND EXHAUST FUMES) AND PRIMED PRIOR TO PAINTING. PRETREATMENT PRIMER MUST BE COMPATIBLE WITH GALVANIZED COATING, SUCH AS MODIFIED ACRYLIC WATER-BORNE PRIMERS.
   FOR HIGH ADHESION OF PAINT, BRUSH OR SWEEP BLAST THE GALVANIZED POSTS IMMEDIATELY PRIOR TO PAINTING. INCORRECT TECHNIQUE OF BLASTING MAY RESULT IN DAMAGES TO THE GALVANIZED COATING. THEREFORE IT IS HIGHLY RECOMMENDED THAT A PERSON WITH EXPERTISE AND ABILITY TO FOLLOW STRICT PRETREATMENT REQUIREMENTS AND PROCEDURES BE USED.

METRIC
LINEAR DIMENSIONS SHOWN IN MILLIMETRES

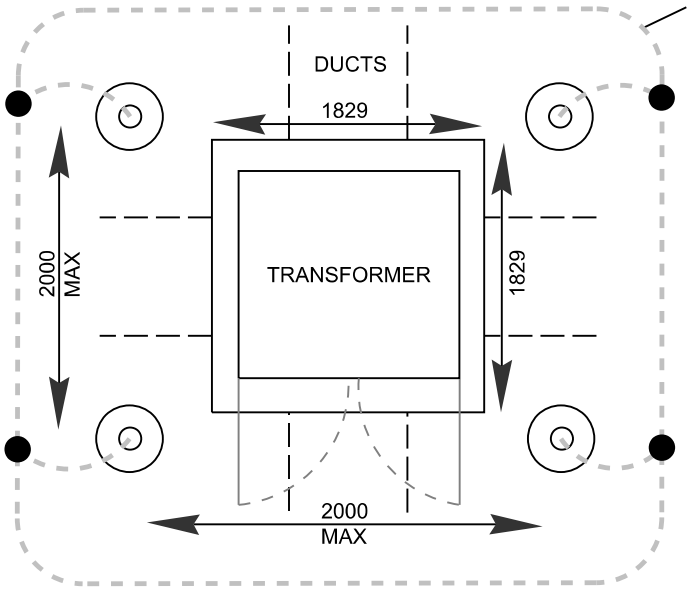
APPROVED BY: Michael Rex DATE: June 2, 2014

Peterborough Distribution Inc.

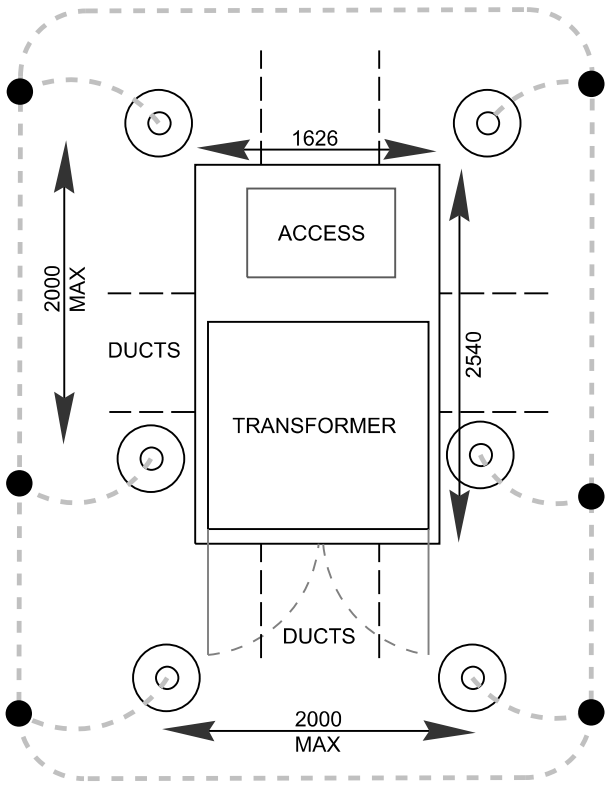
TYPICAL GUARD POST LOCATIONS FOR 3-PHASE TRANSFORMER VAULTS

REFERENCE NUMBER
37-318.2
(JUNE 2014)

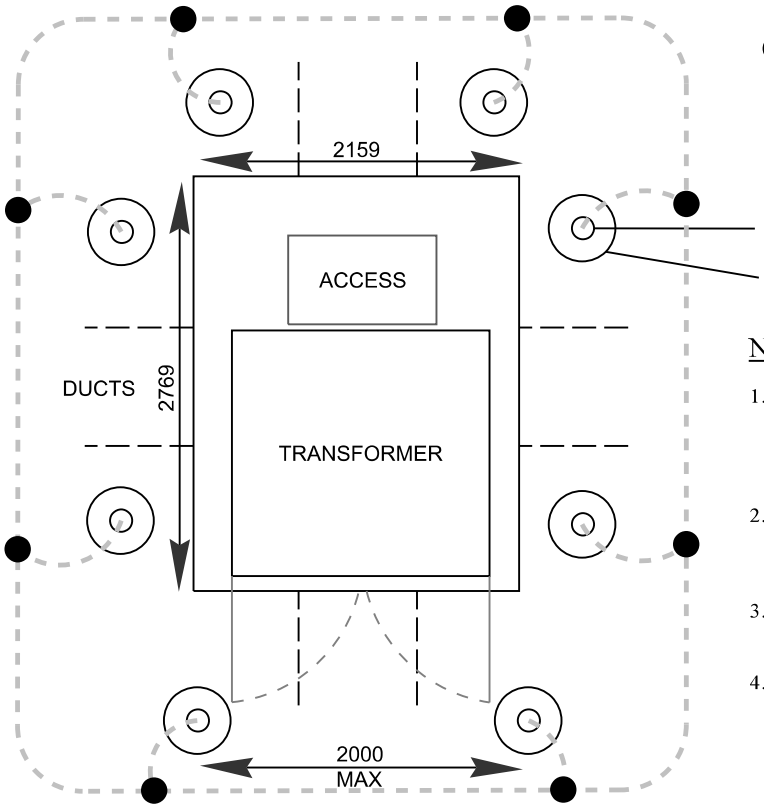
STD 37-329C/D



STD 37-324



STD 37-324A



BOLLARD

BOLLARD FOUNDATION

NOTES:

1. INSTALL BOLLARDS AS NEEDED IF THE TRANSFORMER IS WITHIN 3m OF A PARKING LOT OR CURBED AREA THAT IS CONSIDERED SUBJECT TO MECHANICAL DAMAGE.
2. BOLLARDS ARE NOT REQUIRED ON THE SIDES OF THE TRANSFORMER THAT ARE NOT SUBJECT TO MECHANICAL DAMAGE.
3. THE MAXIMUM SEPARATION BETWEEN BOLLARDS IS 2000mm.
4. OTHER MEANS OF MECHANICAL PROTECTION CAN BE CONSIDERED ON A CASE BY CASE BASIS.

METRIC
LINEAR DIMENSIONS SHOWN IN MILLIMETRES

APPROVED BY: Michael Box DATE: June 2, 2014