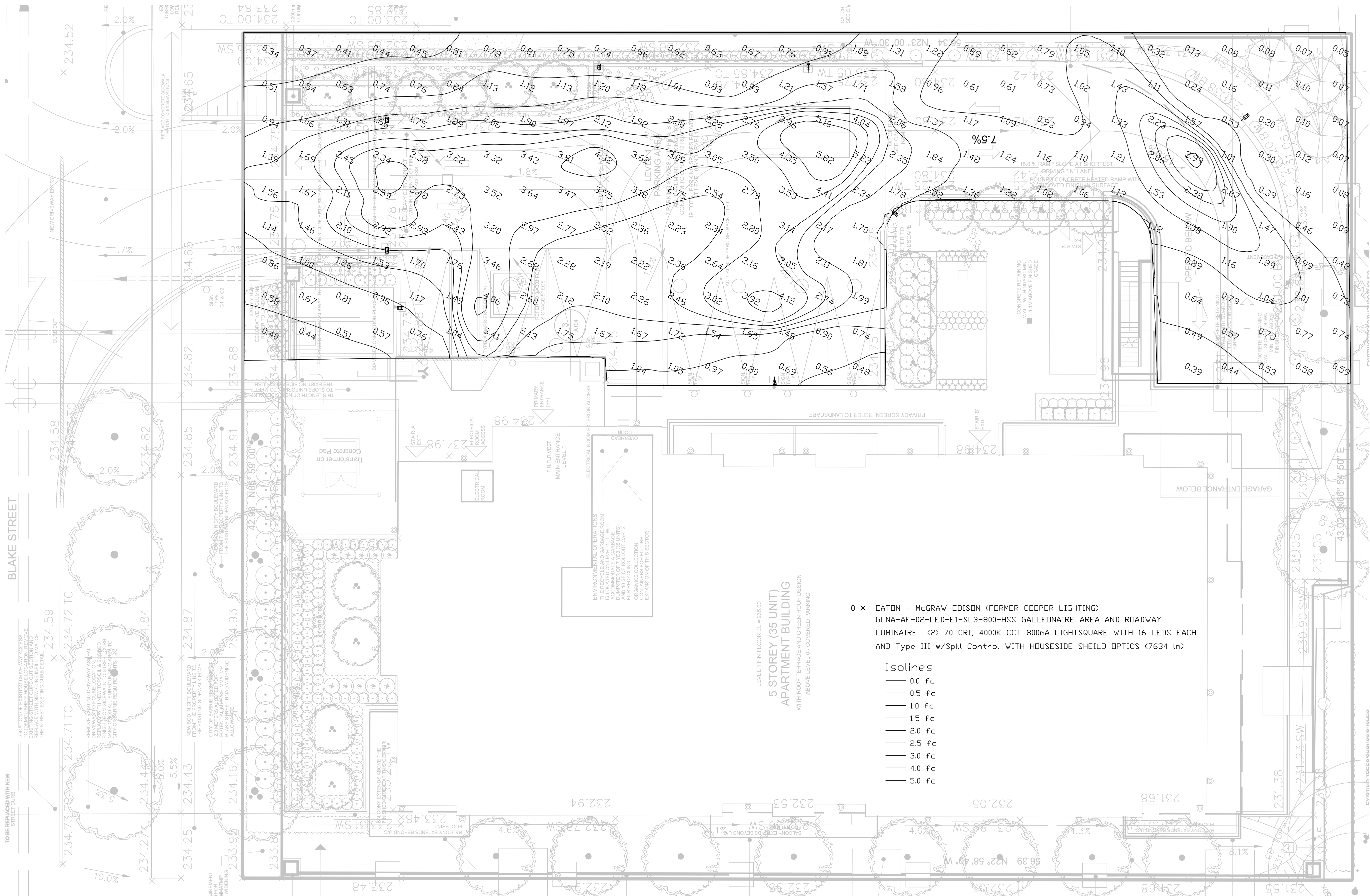




A

B

C

A DETAIL NUMBER
B PAGE WHERE DETAIL IS REFERENCED
C PAGE WHERE DETAIL IS LOCATED

0c	14 DEC. 20	SA	RE-ISSUED FOR SPA
0b	23 AUG. 19	SA	RE-ISSUED FOR SPA
0a	18 JAN. 19	SA	RE-ISSUED FOR SPA
REV.	DATE	NAME	DESCRIPTION

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CLIENT:

ARCHITECT:
studio K architects Architecture & Interior Design

PROJECT:
27 & 31 BLAKE ST,
BARRIE, ON L4M 1J7

DRAWING TITLE:
PHOTOMETRIC PLAN

DATE:
NOV 2018

SCALE:
1/8"=1'

CHECKED:
S.A.

DRAWN:
V.Z., K.Z.

APPROVED BY:

LICENCED PROFESSIONAL ENGINEER
S. ALHAMADANI
100084588
14 DEC 20
PROVINCE OF ONTARIO

PROJECT NO:
18-1196

FILE NO:
18-1196-E101-0c

DRAWING NO:
E101

Power Stream
YOUR CURRENT CONNECTION

Construction Standard

17-107A

ONE WAY PROTECTION

TWO WAY PROTECTION

THREE WAY PROTECTION

FOUR WAY PROTECTION

DETAIL A

DETAIL B

CONVERSION TABLE	
METRIC	IMPERIAL (APPROX.)
15cm	0'-6"
27cm	0'-11"
30cm	1'-0"
50cm	1'-8"
70cm	2'-4"
100cm	3'-3"
110cm	3'-7"
120cm	3'-11"
122cm	4'-0"
200cm	6'-7"

NOTES:

- CUSTOMER IS TO SUPPLY AND INSTALL GUARD POSTS (BOLLARDS) IF THE EQUIPMENT IS LESS THAN 300cm (120") FROM THE TRAVELED AREA OR ANYWHERE POWERSTREAM DEEMS NECESSARY.
- NUMBER OF GUARD POSTS AND LOCATIONS ABOVE ARE EXAMPLES ONLY. ACTUAL LOCATIONS TO BE DETERMINED BY POWERSTREAM ENGINEERING TECHNICIAN AND MODIFICATIONS CAN BE MADE BY POWERSTREAM INSPECTORS, WITH THE APPROVAL OF ENGINEERING TECHNICIAN, IN THE FIELD WITH THE FOLLOWING CRITERIA:
 - GUARD POST INSTALLATIONS SHALL ALLOW EQUIPMENT DOORS TO BE OPENED THROUGH THEIR FULL RANGE. GUARD POSTS ON THE DOOR SIDE MUST BE PLACED EVEN WITH THE EDGE OF THE VAULT.
 - GUARD POST INSTALLATIONS SHALL ALLOW POWERSTREAM PERSONNEL UNIMPEDED ACCESS TO THE EQUIPMENT.
- THE GUARD POSTS SHALL BE INSTALLED A MINIMUM OF 70cm (27.5") FROM THE VAULT.
- GUARD POSTS INSIDE GROUNDING GRID MUST BE BONDED TO THE GROUND GRID USING AN APPROVED MECHANICAL CONNECTOR OR A CALDWELL CONNECTION AND 2/0 CU BARE GROUND CONDUCTOR. TO AVOID POSSIBLE DAMAGE TO THE GROUND GRID THE BOLLARDS MUST BE INSTALLED BEFORE OR AT THE SAME TIME OF THE GROUNDING GRID.
- INSTALL GUARD POSTS AT THE CORNERS FIRST, THEN INSTALL THE INTERMEDIATE GUARD POSTS. THE DISTANCE BETWEEN TWO GUARD POSTS SHALL BE MAXIMUM OF 200cm (79").
- POWERSTREAM APPROVED GUARD POST SHALL BE 15cm (6") DIAMETER x 244cm (96") LONG 0.76mm (3") THICK GALVANIZED STEEL PIPE (MINIMUM GAUGE SCHEDULE 40) COVERED WITH A 18cm (7") DIAMETER x 152cm (60") LONG HIGH DENSITY POLYETHYLENE (HOPE) RESIN PIPE COVER.
- DIG 45cm (14") DIAMETER x 137cm (54") DEEP HOLE IN GROUND AND POUR 110cm (42") OF 20MPa (2900 PSI) CONCRETE AROUND THE GUARD POST KEEPING 15cm (6") BELOW THE GUARD POST AS A BASE. FILL THE REMAINING 27cm (11") AROUND THE GUARD POST WITH FILL COMPACTED TO 95% STANDARD PROCTOR DENSITY.
- STEEL GUARD POSTS SHALL BE FILLED WITH 20MPa (2900 PSI) CONCRETE WITH THE TOP BOUNDED. TWO FOAM SPACER STRIPS ARE REQUIRED TO BE PLACED ACROSS THE TOP BETWEEN THE STEEL GUARD POST AND THE HOPE COVER.
- BOLLARDS, GROUNDING GRIDS, AND VAULTS MUST BE INSPECTED BY POWERSTREAM INSPECTIONS DEPARTMENT PRIOR TO THE ENERGIZATION TO THE TRANSFORMER POWERSTREAM INSPECTIONS DEPARTMENT MUST BE CONTACTED 48HOURS PRIOR TO AN INSPECTION.
- ALL DIMENSIONS ARE IN CENTIMETERS.

GUARD POSTS (BOLLARDS) INSTALLATION EQUIPMENT PROTECTION 36 TX. UP TO 1500KVA (NON RESIDENTIAL)

ORIGINAL ISSUE DATE: 2012-FEB-06 REVISION NO: 0 REVISION DATE:

Certificate of Approval

This construction Standard meets the safety requirements of Section 4 of Regulation 2304

Joe Crozier, P.Eng. Date 2012-FEB-06
Name Date
P.Eng. Approval By: Joe Crozier

[illegible][illegible]

**Power
Stream** 
YOUR CURRENT CONNECTION

Construction Standard

17-140

NOTES:

1. FINAL GRADE WITHIN THE RESTRICTED OPERATIONAL CLEARANCE ZONE (SHOWN AS "HATCHED ZONES" ABOVE) MUST NOT BE ALTERED.
2. HATCHED ZONES AROUND THE APPARATUS AND IN FRONT OF ACCESS DOORS/HOODS TO REMAIN CLEAR OF ALL SHRUBS AND TREES. WHEN THE APPARATUS IS POSITIONED WITHIN THE HATCHED ZONE, THE ZONE WITHIN OR ABOVE MUST REMAIN CLEAR OF, INCLUDING BUT NOT LIMITED TO, BUILDINGS, STRUCTURES, FENCES OR OBSTRUCTIONS INCLUDING ANY LANDSCAPING FEATURES.
3. PREFERRED SURFACE COATING WITHIN THE HATCHED ZONES IS LAWN (SEEDED OR SOD) AND WITH PRIOR WRITTEN CONSENT OF POWERSTREAM GRAVEL AND/OR PAVED WITH ASPHALT OR PAVERS OR A CONCRETE FINISH MAY BE PERMITTED.
4. ACCESS TO ALL EQUIPMENT DOORS/HOODS MUST REMAIN PERMANENTLY CLEAR OF ALL OBSTRUCTIONS.

REFERENCES

UNDERGROUND	SECTION 17
-------------	------------

Certificate of Approval

This construction Standard meets the safety requirements of Section 4 of Regulation 22/04

Joe Crozier, P.Eng. 2011-JUN-23

Name Date

P.Eng. Approval By: Joe Crozier

**PADMOUNT TRANSFORMER/SECTIONALIZER
CLEARANCES**

ORIGINAL ISSUE DATE: 2007-JAN-25 REVISION NO: R2 REVISION DATE: 2011-JUN-23

**Power
Stream**
YOUR CURRENT CONNECTION

Construction Standard

17-145

DETAIL "A"
(SEE NOTE 2)

DETAIL "B"

DETAIL "C"

NOTES:

- 1) ATTACH EVERY DIFFERENT CABLE TO ONE UNISTRUT CHANNEL.
- 2) ATTACH CABLE TO UNISTRUT CHANNELS WITH THE WRAPS.
- 3) UNISTRUT CHANNELS MUST BE 0'-0" TO 1'-0" BELOW CEILING LEVEL OF MAN-HOLE.
- 4) NUMBER OF UNISTRUT CHANNELS IS SPECIFIC TO THE JOB. ORDER APPROPRIATE AMOUNT TO SIZE OF MAN-HOLE.

SECONDARY UNISTRUT CHANNEL CONFIGURATION

ORIGINAL ISSUE DATE: 2014-AUG-29 REVISION NO.: RD REVISION DATE:
SCALE : NTS

CLAMP SIZE REFERENCES	
P1768AEV/1000 KCMIL 28 KV 1790115	
P1769 / 176 KCMIL 28 KV 1790000	
P1791AEV/350 KCMIL 15 KV 1790113	

Certificate of Approval	
This construction standard meets the safety requirements of Section 4 of Regulation 23(6)	
Issued By: J. Hsu	Date: 2014-AUG-29
Name:	
Per Appr. Approved By:	Jin Chiehlin

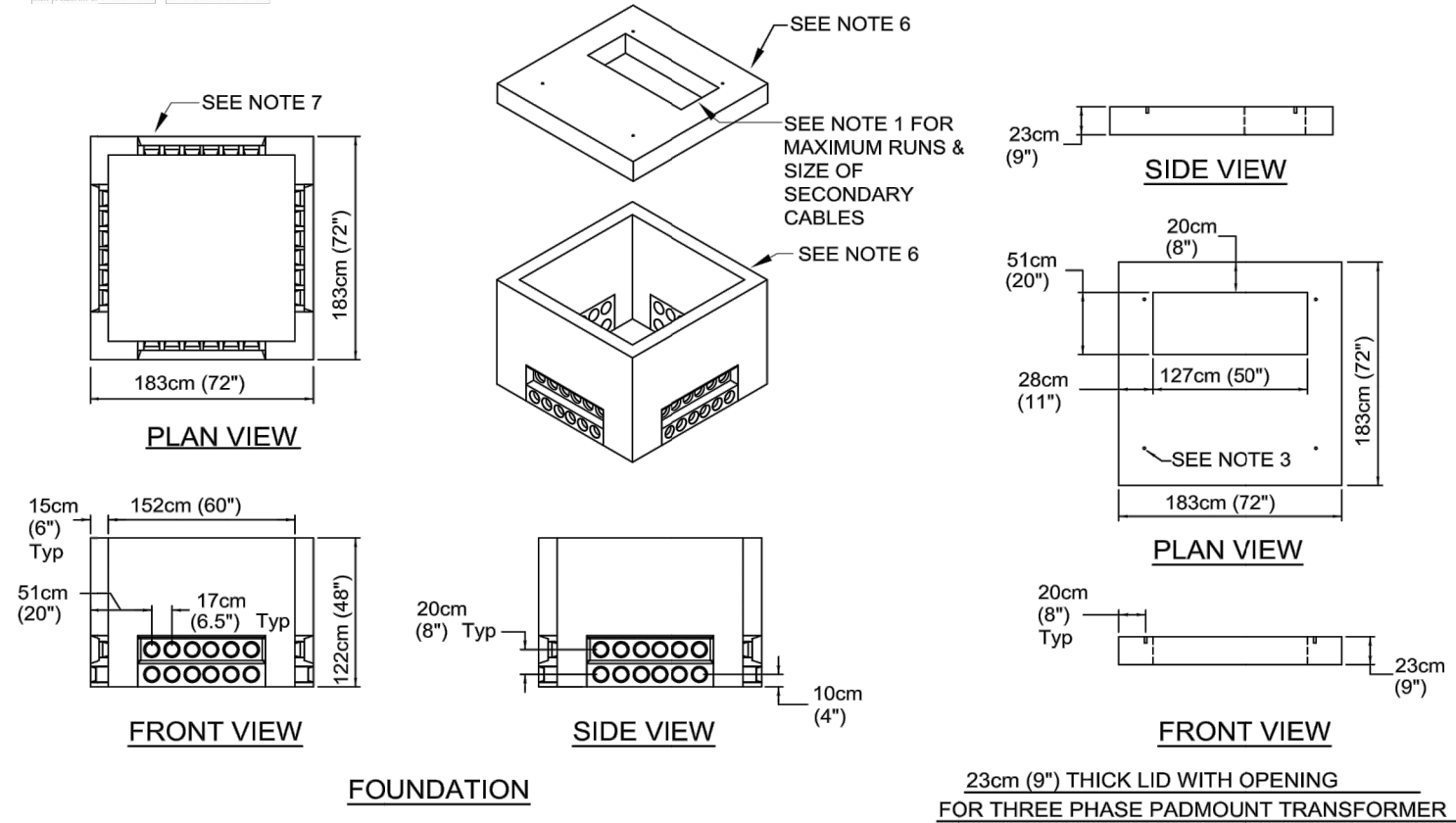
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	A	D E T A I L NUMBER
B	C	P A G E W H E R E D E T A I L IS R E F E R E N C E D
C		P A G E W H E R E D E T A I L IS L O C A T E D
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ELECTRICAL MECHANICAL CCCEI CANADIAN CONSTRUCTION & CONSULTANT ENGINEERS INC. UNIT #205, 3950 14TH AVE., MARKHAM, ON L3R 0A9, Canada Tel.: (416) 827-5551 Fax: (647) 795-9189 sdfo@cccei.ca SPECIALTY DESIGN SERVICES		
CLIENT:		
ARCHITECT:		
studio K architects Architecture B.I.M. Master Planning Interior Design		
PROJECT:		
27 & 31 BLAKE ST, BARRIE, ON L4M 1J7		
DRAWING TITLE: DETAILS		
DATE: NOV 2018		
SCALE: 1/8"=1'		
CHECKED: S.A.		
DRAWN: V.Z., K.Z		
APPROVED BY: 		
PROJECT NO: 18-1196		
FILE NO: 18-1196-E301_Oc		
DRAWING NO: E301		



Construction Standard

17-308



NOTES:

- MAXIMUMS:
(A) SERVICE SIZE 800A AT 347/600V
(B) SERVICE SIZE 1600A AT 120/208V
(C) SIX RUNS OF 600 KCMIL SECONDARY CABLE PER PHASE
(D) FIVE RUNS OF 600 KCMIL SECONDARY CABLE PER PHASE
(E) FOUR RUNS OF 750 KCMIL SECONDARY CABLE PER PHASE
- CONCRETE 32MPa (4500 PSI), MINIMUM STRENGTH, 6-8% AIR-ENTRAINMENT.
- FOUR 1.3CM (1/2") THREADED INSERTS, THE INSERTS TO BE PLUGGED BY THE MANUFACTURER TO PREVENT ENTRY OF FOREIGN MATTER DURING TRANSIT (FOR TRANSFORMER MOUNTING).
- STEEL REINFORCING WITH WELDED WIRE MESH OR REINFORCED BARS MUST BE DESIGNED TO SUSTAIN THE MAXIMUM TRANSFORMER WEIGHT OF 18,000 KG (39,683 LBS). THE STEEL REINFORCING MUST COMPLY WITH CSA STANDARD - CAN/CSA A23 (LATEST).
- MANUFACTURERS ARE RESPONSIBLE FOR DESIGN AND P.ENG CERTIFICATION OF THE LIFTING SYSTEM FOR FOUNDATION AND LID, MANUFACTURERS MUST PROVIDE THIS CERTIFICATION TO POWERSTREAM.
- 48 CABLE ENTRY OPENINGS WITH POWERSTREAM APPROVED PVC SEALS FOR 10CM (4") INTERNAL DIAMETER HOLES AT OPPOSITE ENDS OF FOUNDATION AS SHOWN IN PLAIN VIEW.
- FOUNDATION IS DELIVERED BY CRANE-EQUIPPED TRUCKS. EXCAVATION MUST BE READY SAFE AND ACCESSIBLE FOR UNLOADING FROM THE REAR OF THE TRUCK. MINIMUM OVERHEAD CLEARANCE OF 5.5M (18FT) IS REQUIRED. ALL UNITS MUST BE HANDLED WITH PROPER LIFTING EQUIPMENT (I.E. SPREAD BAR).
- REFER TO MATERIAL SPECIFICATION SHEET STOCK CODE 1701004 FOR POWERSTREAM APPROVED MANUFACTURERS AND CATALOG NUMBERS.

REFERENCES	
3PH PAD TX INST.	17-108
3PH TX FOUNDATION INST.	17-108A
GROUNDING AND INST.	17-110A
PMH SWGR STD.	17-114
PRECAST LID FOR PMH	17-308B

Certificate of Approval	
This construction Standard meets the safety requirements of Section 4 of Regulation 22/04	
Joe Crozier, P.Eng.	2016-SEPT-30
Name	Date
P.Eng. Approval By: Joe Crozier, P.Eng.	

PRECAST FOUNDATION AND LID FOR THREE PHASE
PAD MOUNT TRANSFORMER UP TO 750 KVA

ORIGINAL ISSUE DATE: 2006-SEPT-30

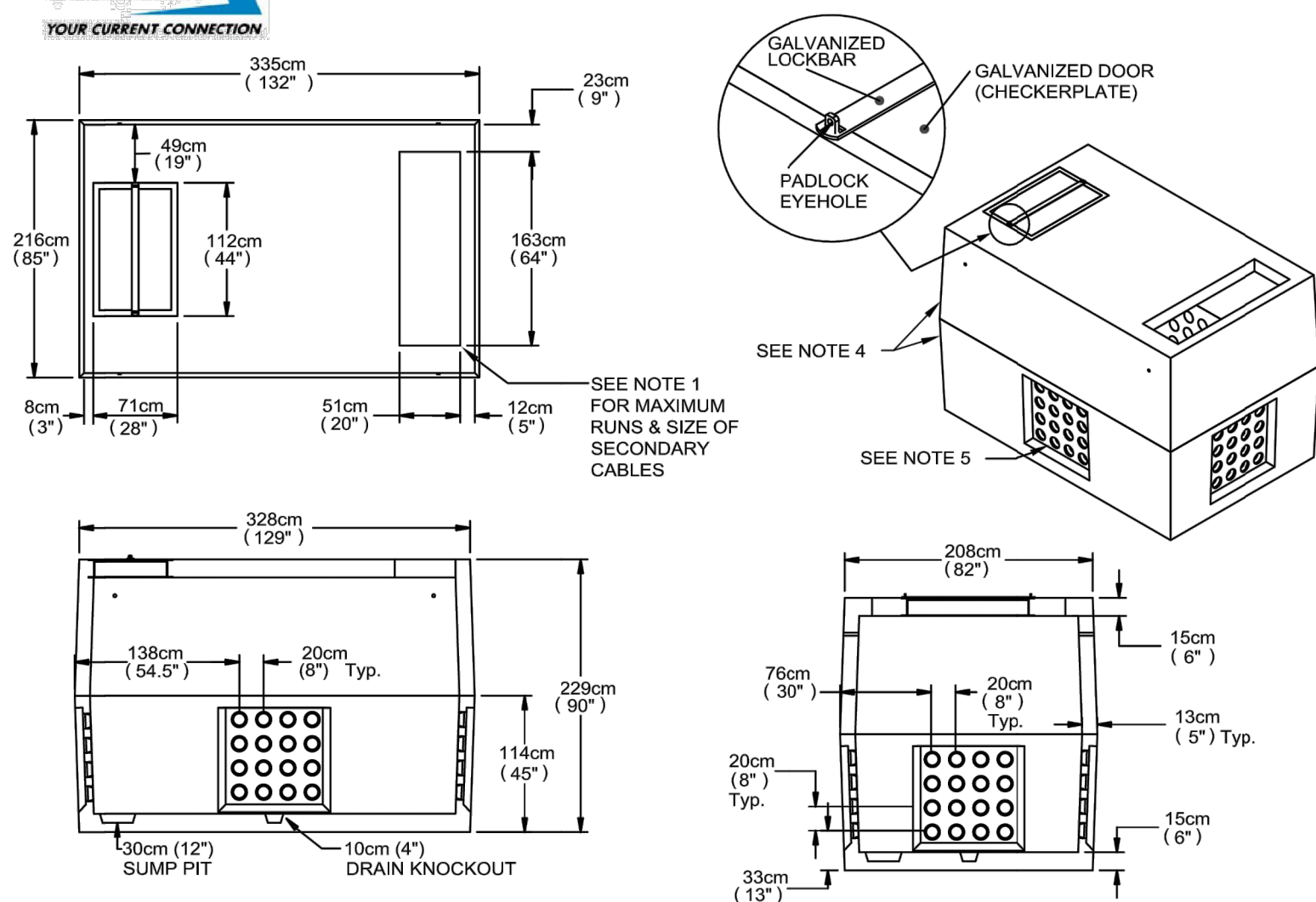
REVISION NO: R9

REVISION DATE: 2016-SEPT-30



Construction Standard

17-308A



NOTES:

- MAXIMUM 8 RUNS OF SECONDARY CABLES PER PHASE AND MAXIMUM SECONDARY CABLE SIZE OF 1000KCMIL ARE ALLOWED TO FIT IN THE OPENING OF THIS FOUNDATION.
- CONCRETE 32MPa (4500 PSI), MINIMUM STRENGTH, 6-8% AIR-ENTRAINMENT.
- STEEL REINFORCING WITH WELDED WIRE MESH OR REINFORCED BARS MUST BE DESIGNED TO SUSTAIN THE MAXIMUM TRANSFORMER WEIGHT OF 9590KG (21,100 LBS). THE STEEL REINFORCING MUST COMPLY WITH CSA STANDARD - CAN/CSA A23.1/A23.2.
- MANUFACTURERS ARE RESPONSIBLE FOR DESIGN & P.ENG CERTIFICATION OF THE LIFTING SYSTEM FOR FOUNDATION AND LID. MANUFACTURERS MUST PROVIDE THIS CERTIFICATION TO POWERSTREAM.
- 64 CABLE ENTRY OPENINGS WITH POWERSTREAM APPROVED PVC SEALS FOR 10cm (4") INTERNAL DIAMETER HOLES AT OPPOSITE ENDS OF FOUNDATION AS SHOWN IN PLAIN VIEW.
- FOUNDATION IS DELIVERED BY CRANE-EQUIPPED TRUCKS. EXCAVATION MUST BE READY SAFE AND ACCESSIBLE FOR UNLOADING FROM THE REAR OF THE TRUCK. MINIMUM OVERHEAD CLEARANCE OF 5.5m (18ft) IS REQUIRED. ALL UNITS MUST BE HANDLED WITH PROPER LIFTING EQUIPMENT (I.E. SPREADER BAR).
- REFER TO MATERIAL SPECIFICATION SHEET STOCK CODE 1701003 FOR POWERSTREAM APPROVED MANUFACTURERS AND CATALOG NUMBERS.

REFERENCES	
3PH PAD TX INST.	17-108
3PH TX FOUNDATION INST.	17-108A

Certificate of Approval	
This construction Standard meets the safety requirements of Section 4 of Regulation 22/04	
Joe Crozier, P.Eng.	2015-MAY-29
Name	Date
P.Eng. Approval By: Joe Crozier, P.Eng.	

PRECAST FOUNDATION (TOP & BOTTOM SECTIONS)
FOR THREE PHASE PADMOUNT TRANSFORMER
UP TO 3000KVA

ORIGINAL ISSUE DATE: 2007-SEPT-30

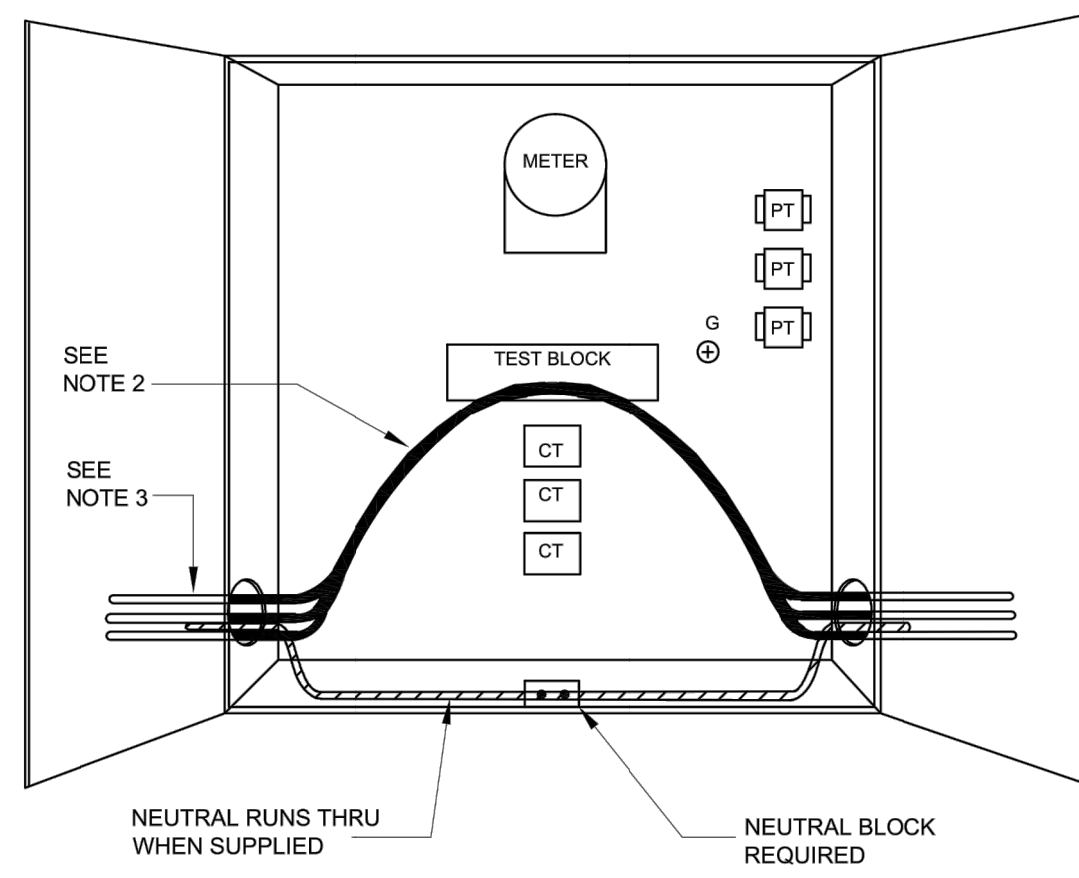
REVISION NO: R5

REVISION DATE: 2015-MAY-29



Construction Standard

25-200



NOTES:

- THE METER CABINET SIZE SHALL BE 122cm(W) X 122cm(H) X 30.5cm(D). NO MORE THAN TWO CONDUCTORS MAXIMUM SIZE BEING 500 kcmil PER PHASE ARE ALLOWED FOR ALL SERVICES.
- SECONDARY CABLE TO BE LOOPED 1/2 WAY UP THE METER CABINET HEIGHT.
- LINE & LOAD ENTRY POINTS ARE RESTRICTED TO OPPOSITE ENDS OF THE METER CABINET. BOTTOM 1/3 OF CABINET ONLY.

CONVERSION TABLE	
METRIC	IMPERIAL (APPROX.)
122cm	4'-0"
30.5cm	1'-0"

Certificate of Approval	
This construction Standard meets the safety requirements of Section 4 of Regulation 22/04	
Joe Crozier, P.Eng.	2013-NOV-12
Name	Date
P.Eng. Approval By: Joe Crozier, P.Eng.	

METER CABINET INSTALLATION
COMMERCIAL / INDUSTRIAL USE
UP TO 600A AT 600/347V

ORIGINAL ISSUE DATE: 2007-JAN-29 REVISION NO: R2 REVISION DATE: 2013-NOV-12

A	DETAIL NUMBER
B	PAGE WHERE DETAIL IS REFERENCED
C	PAGE WHERE DETAIL IS LOCATED

0c	14 DEC. 20	SA	RE-ISSUED FOR SPA
0b	23 AUG. 19	SA	RE-ISSUED FOR SPA
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CLIENT:

ARCHITECT:

studio K architects Architecture & Interiors
B.L.M. Master Planning
Interior Design

PROJECT:

27 & 31 BLAKE ST,
BARRIE, ON L4M 1J7

DRAWING TITLE:

DETAILS

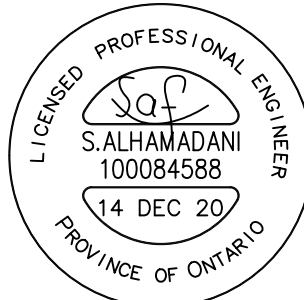
DATE: NOV 2018

SCALE: 1/8"=1'

CHECKED: S.A.

DRAWN: V.Z., K.Z

APPROVED BY:

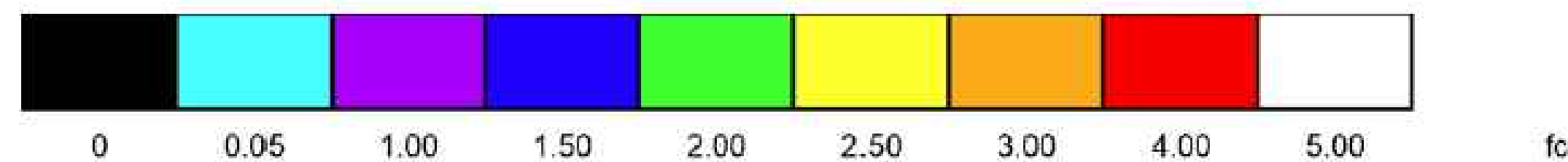


PROJECT NO: 18-1196

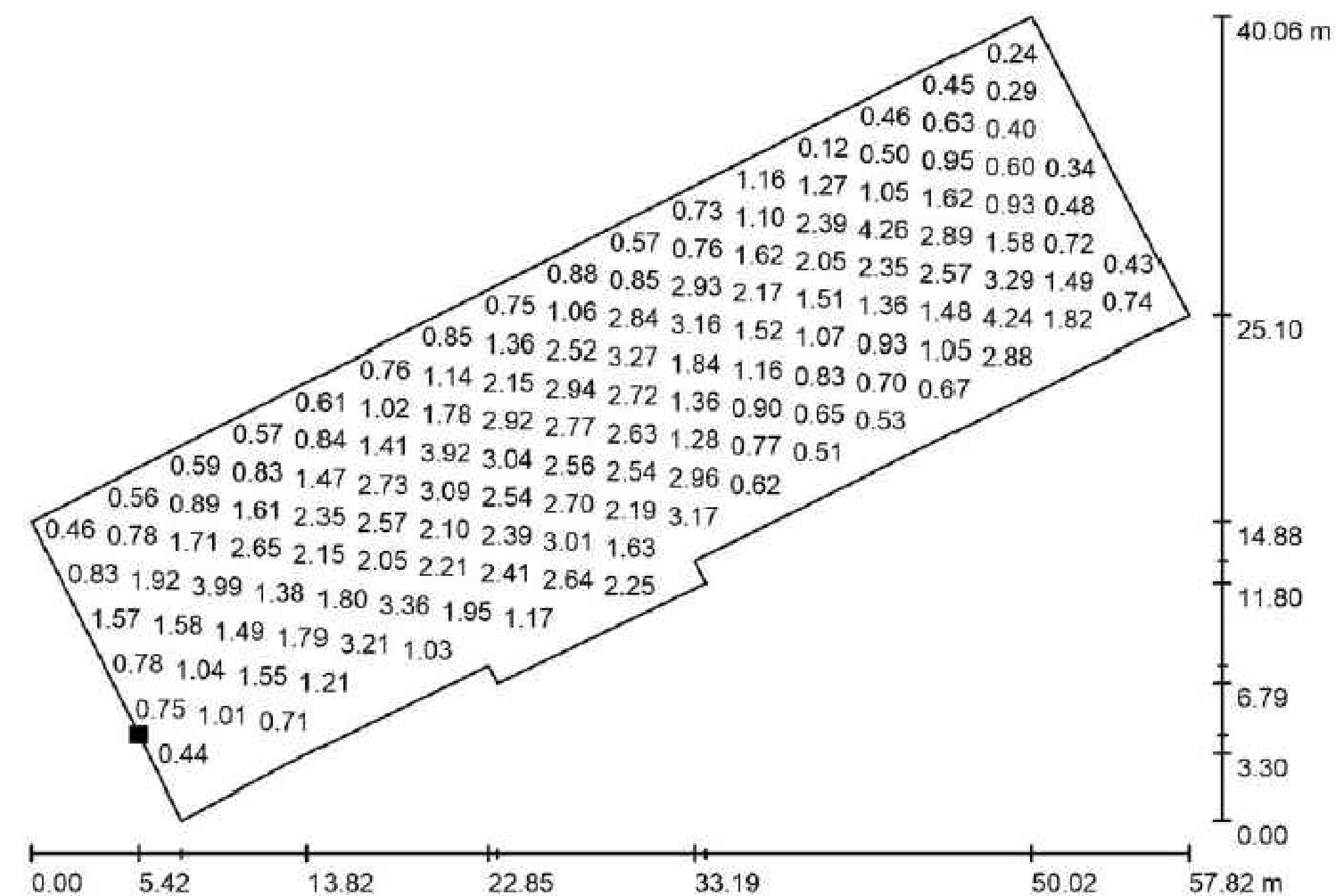
FILE NO: 18-1196-E302_0c

DRAWING NO:

E302



2 PHOTOMETRIC PLAN - ISOLINES
E303 E303 NTS



Position of surface in external scene:
Marked point:
(26.700 m, 39.000 m, 0.000 m)

E_{av} [fc]	E_{min} [fc]	E_{max} [fc]	u_0	E_{min} / E_{max}
1.50	0.08	4.82	0.056	0.017

3 PHOTOMETRIC PLAN - VALUE CHART

studio K | Architecture
architects | B.I.M.
Master Planning
Interior Design

27 & 31 BLAKE ST,
BARRIE, ON L4M 1J7

OUTDOOR LIGHTING LEVELS CALCULATION

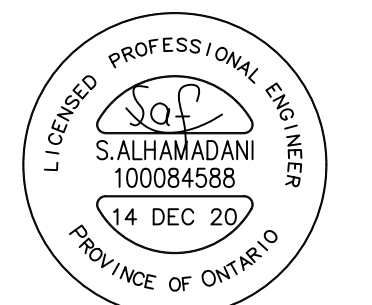
DATE: NOV 2018

SCALE: $1/8"=1'$

CHECKED: S.A.

DRAWN: V.Z., K.Z

APPROVED BY:



PROJECT NO: 18-1196

FILE NO:
18-1196-E303_0c

DRAWING NO:

E303