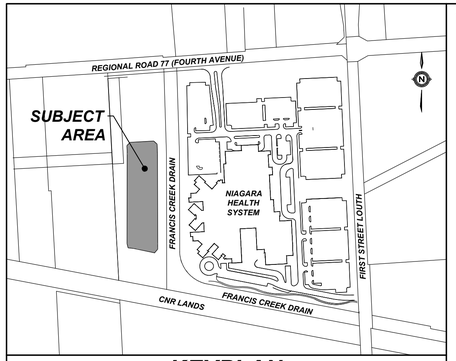


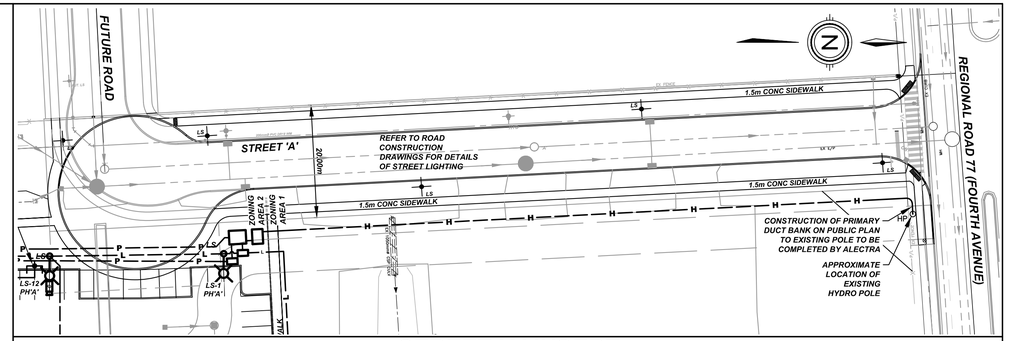
KEYPLAN
NOT TO SCALE

SYMBOL LEGEND

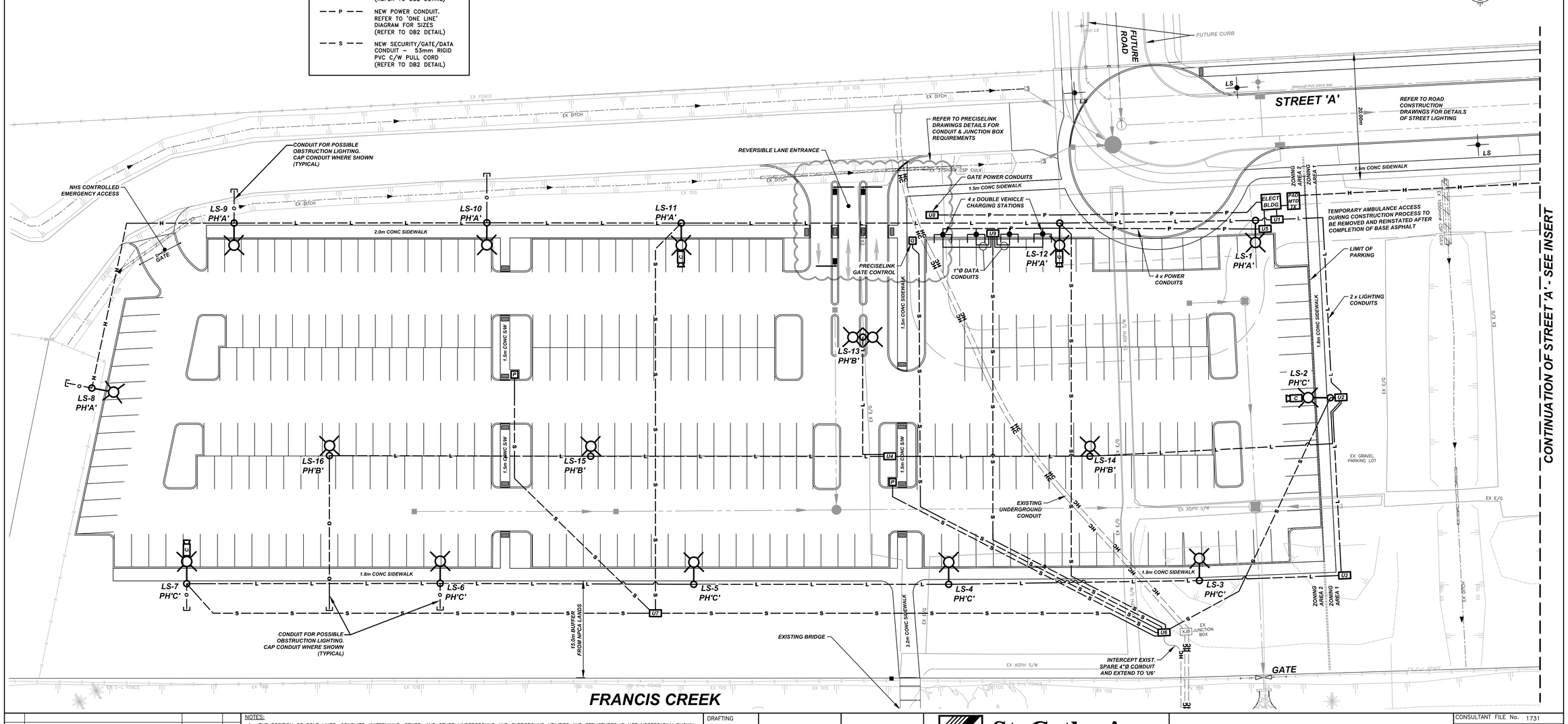
- NEW POLE, ELLIPTICAL ARM AND LUMINAIRE, TYPE 1 POLE BASE
- NEW POLE AND LUMINAIRE, TYPE 1 POLE BASE
- NEW POLE AND TWO LUMINAIRES, TYPE 1 POLE BASE
- U/1 — NEW URD CONDUIT BOX
- C — NEW SECURITY CAMERA MTD. OF LIGHTING POLE C/W CONDUIT
- P — NEW PANIC ALARM STATION C/W CONDUIT
- G — NEW GATE CONTROL BOX
- NEW ELECTRIC VEHICLE CHARGING STATION (REFER TO SPECIFICATION AND 'ONE LINE' DIAGRAM)
- — H — NEW HIGH VOLTAGE CONDUITS (REFER TO DB1 DETAIL)
- — L — NEW PARKING LOT LIGHTING CONDUIT – 53mm RIGID PVC C/W WIRING AS SPECIFIED (REFER TO DB2 DETAIL)
- — O — NEW OBSTRUCTION LIGHTING CONDUIT – 27mm RIGID PVC C/W PULL CORD (REFER TO DB2 DETAIL)
- — P — NEW POWER CONDUIT. REFER TO 'ONE LINE' DIAGRAM FOR SIZES (REFER TO DB2 DETAIL)
- — S — NEW SECURITY/GATE/DATA CONDUIT – 53mm RIGID PVC C/W PULL CORD (REFER TO DB2 DETAIL)

NOTES

1. ALL WORK TO BE PERFORMED IN ACCORDANCE WITH ONTARIO ELECTRICAL SAFETY CODE. 26th EDITION AND THE LOCAL UTILITY



STREET 'A' INSERT
SCALE - 1:500m



#	REVISION	DATE	INIT
0	ISSUED FOR ADDENDUM 1	2018-04-20	RS

NOTES:

1. THE POSITION OF POLE LINES, CONDUITS, WATERMAINS, SEWER, AND OTHER UNDERGROUND AND OVERGROUND UTILITIES AND STRUCTURES IS NOT NECESSARILY SHOWN ON THE CONTRACT DRAWINGS AND, WHERE SHOWN, THE ACCURACY OF THE POSITION OF SUCH UTILITIES AND STRUCTURES IS NOT GUARANTEED. BEFORE STARTING WORK, THE CONTRACTOR SHALL INFORM HIMSELF OF THE EXACT LOCATION OF ALL SUCH UTILITIES AND STRUCTURES AND SHALL ASSUME ALL LIABILITY FOR DAMAGE TO THEM.
2. PROPERTY LINES WERE PLOTTED USING REGISTERED PLANS AND BARS LOCATED IN THE FIELD. TO VERIFY THE ACCURACY OF THESE PROPERTY LINES, A LEGAL SURVEY SHOULD BE PERFORMED PRIOR TO CONSTRUCTION.
3. ALL CONSTRUCTION MUST COMPLY WITH THE NIAGARA PENINSULA STANDARD CONTRACT DOCUMENT.

DRAFTING	TO/BV
DESIGN	RS
CHECKED BY	RS
APPROVED BY	RS

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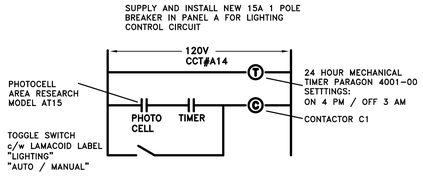
R. STASIAK ENGINEERING INC.
9 WHITE CREST CT., ST. CATHARINES, ONTARIO L2N 6Y1
905-931-3652
rstasiak@rseng.ca

R-088

NIAGARA HEALTH SYSTEM
PROPOSED PARKING LOT
ST.CATHARINES
ELECTRICAL SITE PLAN

CONSULTANT FILE No.	1731
DATE	2018-04-20
PRINTED	2018-04-23
SCALE	1:300 m
REF No.	SCS 17-006
DWG No.	1731-ELEC
REV	0

DRAWING FILE: F:\1731\Electrical-Parking Lot\1731-R088 Service Layout.dwg PLOTTED: Apr 23, 2018 - 11:55am PLOTTED BY: BVanderValk



PHOTOCELL SCHEMATIC

NOT TO SCALE

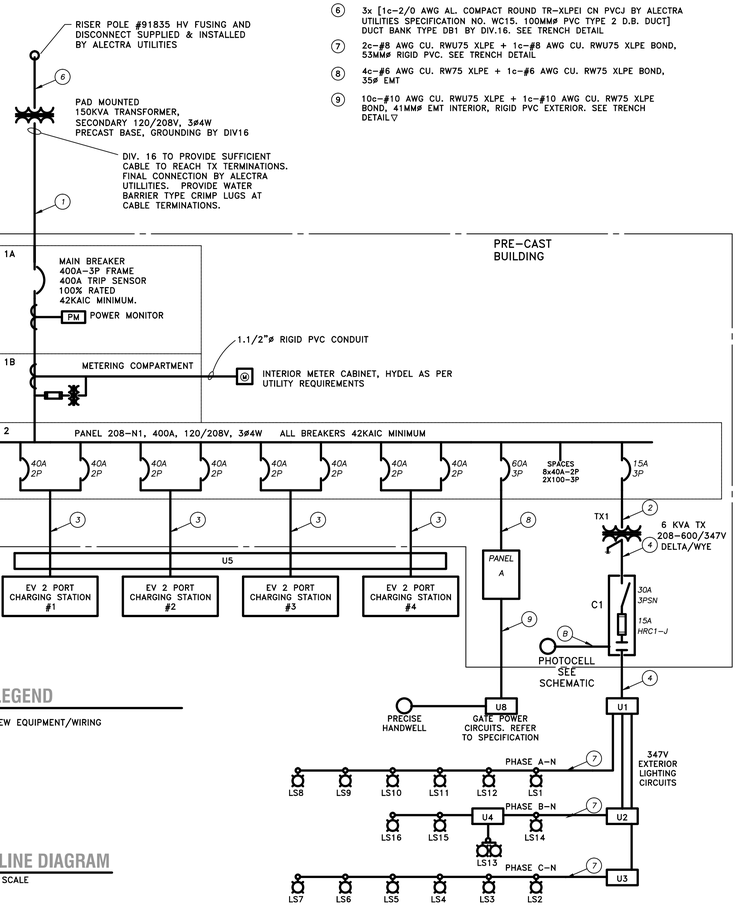
PANEL A — PRE-CAST BUILDING
120/208V, 3 PHASE, 4 WIRE, 100 A
CONNECTED LOAD= XX
ALL BREAKERS 25 KAIC MIN

BUILDING LTG	15	1	2	15	GATE POWER
REC	15	3	4	15	GATE POWER
SPARE	15	5	6	15	GATE POWER
SPARE	15	7	8	15	GATE POWER
.	–	9	10	15	GATE POWER
.	–	11	12	–	.
.	–	13	14	–	.
.	–	15	16	–	.

CABLE LEGEND

▽ DENOTES WIRE SIZE ADJUSTED FOR VOLTAGE DROP

1. 2x [4c–250 MCM CU. RWU75 XLPE, 78MMø RIGID PVC SCHED.40 CONDUIT] SEE TRENCH DETAIL
2. 3c–#12 AWG CU. RW75 XLPE + 1c–#6 AWG CU. RW75 XLPE BOND, 35ø EMT
3. 6c–#8 AWG CU. RWU75 XLPE + 1c–#8 AWG CU. RWU75 XLPE BOND, 53MMø RIGID PVC. SEE TRENCH DETAIL ▽
4. 4c–#8 AWG CU. RWU75 XLPE + 1c–#8 AWG CU. RW75 XLPE BOND, 27MMø EMT INTERIOR, RIGID PVC EXTERIOR. SEE TRENCH DETAIL▽
5. 2c–#12 AWG CU. T90 + 1c–#12 AWG CU. T90 BOND, 21MMø EMT
6. 3x [1c–2/0 AWG AL. COMPACT ROUND TR–XLPEI CN PVCJ BY ALECTRA UTILITIES SPECIFICATION NO. WC15. 100MMø PVC TYPE 2 D.B. DUCT] DUCT BANK TYPE DB1 BY DIV.16. SEE TRENCH DETAIL
7. 2c–#8 AWG CU. RWU75 XLPE + 1c–#8 AWG CU. RWU75 XLPE BOND, 53MMø RIGID PVC. SEE TRENCH DETAIL
8. 4c–#6 AWG CU. RW75 XLPE + 1c–#6 AWG CU. RW75 XLPE BOND, 35ø EMT
9. 10c–#10 AWG CU. RWU75 XLPE + 1c–#10 AWG CU. RW75 XLPE BOND, 41MMø EMT INTERIOR, RIGID PVC EXTERIOR. SEE TRENCH DETAIL▽

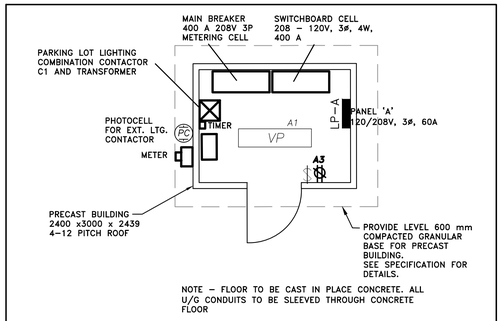


ONE LINE DIAGRAM

NOT TO SCALE

LEGEND

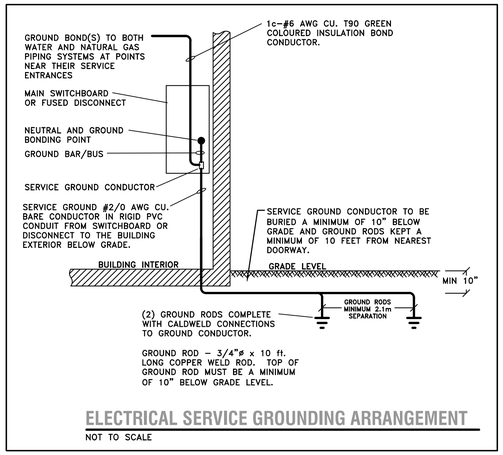
NEW EQUIPMENT/WIRING



NOTE – FLOOR TO BE CAST IN PLACE CONCRETE. ALL U/G CONDUITS TO BE SLEEVED THROUGH CONCRETE FLOOR

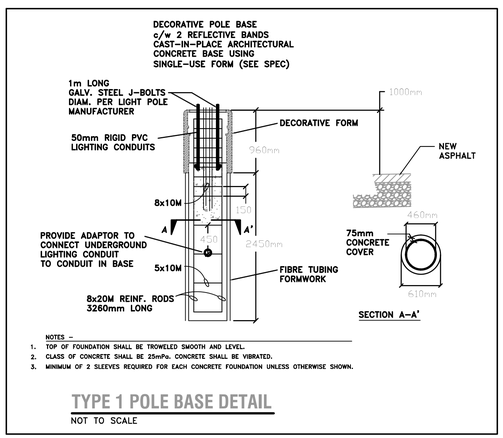
PLAN - ELECTRICAL BUILDING

NOT TO SCALE



ELECTRICAL SERVICE GROUNDING ARRANGEMENT

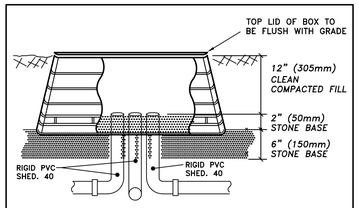
NOT TO SCALE



NOTES –
1. TOP OF FOUNDATION SHALL BE TROWELED SMOOTH AND LEVEL.
2. CLASS OF CONCRETE SHALL BE 25mPa. CONCRETE SHALL BE VIBRATED.
3. MINIMUM OF 2 SLEEVES REQUIRED FOR EACH CONCRETE FOUNDATION UNLESS OTHERWISE SHOWN.

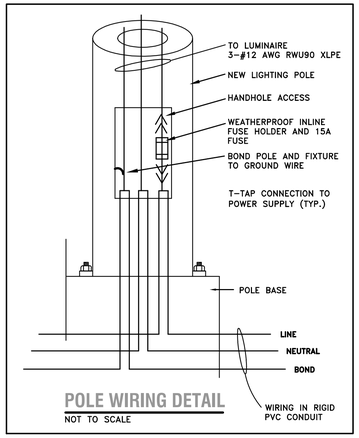
TYPE 1 POLE BASE DETAIL

NOT TO SCALE



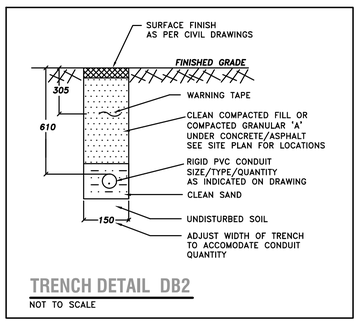
URD BOX DETAIL

NOT TO SCALE



POLE WIRING DETAIL

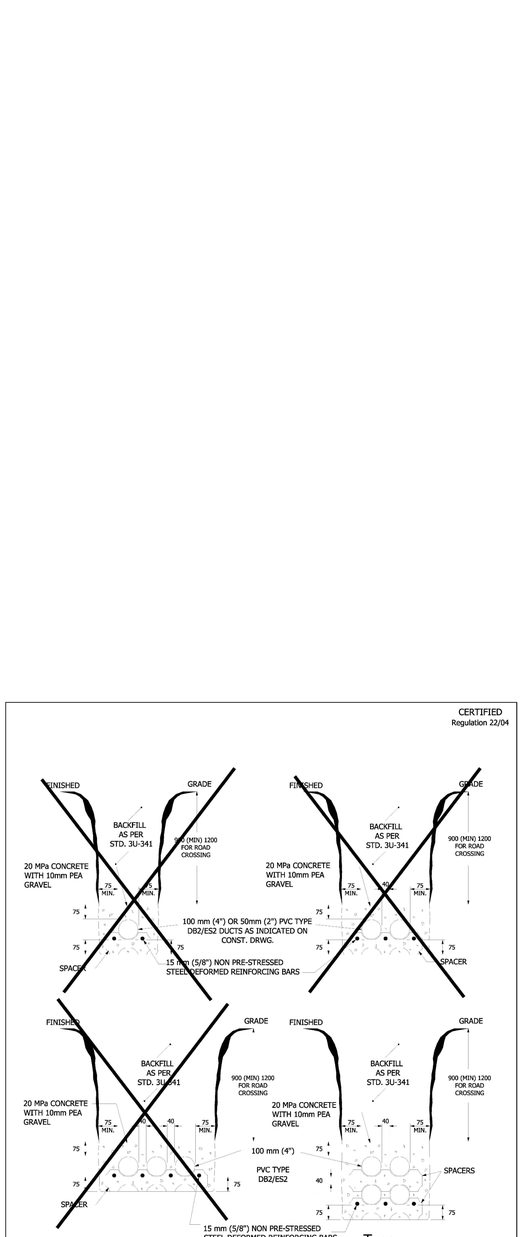
NOT TO SCALE



TRENCH DETAIL DB2

NOT TO SCALE

CERTIFIED
Regulation 22/04



NOTES:
1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE SPECIFIED.

Type DB1 Duct Bank

DRAWING STATUS	BY	DATE DD/MM/YY	TYPICAL ARRANGEMENT FOR DUCTS ENCASED IN CONCRETE FOR 1,2,3,4 DUCTS	REFERENCE DRAWINGS: 3U-341	DRAWINGS NOT TO SCALE
REDRAWN:	JH	12/06/07			
CHECKED:	ND	25/05/05		DRAWING # 3U-343	SHEET# 1
APPROVED:	CR	25/05/05			REVISION# 0

horizon UTILITIES Looking beyond

#	REVISION	DATE	INIT
0	ISSUED FOR ADDENDUM 1	2018–04–20	RS

NOTES:
1. THE POSITION OF POLE LINES, CONDUITS, WATERMAINS, SEWER, AND OTHER UNDERGROUND AND OVERGROUND UTILITIES AND STRUCTURES IS NOT NECESSARILY SHOWN ON THE CONTRACT DRAWINGS AND, WHERE SHOWN, THE ACCURACY OF THE POSITION OF SUCH UTILITIES AND STRUCTURES IS NOT GUARANTEED. BEFORE STARTING WORK, THE CONTRACTOR SHALL INFORM HIMSELF OF THE EXACT LOCATION OF ALL SUCH UTILITIES AND STRUCTURES AND SHALL ASSUME ALL LIABILITY FOR DAMAGE TO THEM.
2. PROPERTY LINES WERE PLOTTED USING REGISTERED PLANS AND BARS LOCATED IN THE FIELD. TO VERIFY THE ACCURACY OF THESE PROPERTY LINES, A LEGAL SURVEY SHOULD BE PERFORMED PRIOR TO CONSTRUCTION.
3. ALL CONSTRUCTION MUST COMPLY WITH THE NIAGARA PENINSULA STANDARD CONTRACT DOCUMENT.

DRAFTING	TO/BV
DESIGN	RS
CHECKED BY	RS
APPROVED BY	RS

St. Catharines
stcatharines.ca

R. STASIAK ENGINEERING INC.
9 WHITE CREST CT., ST. CATHARINES, ONTARIO L2N 6Y1
905–931–3652 rstasiak@rseng.ca
R-088

NIAGARA HEALTH SYSTEM
PROPOSED PARKING LOT
ST.CATHARINES
ELECTRICAL DETAILS 1

CONSULTANT FILE No.	1731
DATE	2018–04–20
PRINTED	2018–04–23
SCALE	1:300 m
REF No.	SCS 17-006
DWG No.	1731-DET1
REV	0

DRAWING FILE: F:\1731\Electrical–Parking Lot\1731–R088 Service Layout.dwg PLOTTED: Apr 23, 2018 – 11:39am PLOTTED BY: BVanderValk

CERTIFIED
Regulation 22/04

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 METRE (60") RADIUS ELBOW AND BE LIMITED TO NO GREATER THAN THREE (3) PER RUN.
NOTE: DUCT RUN SHALL BE DESIGNED SUCH THAT CABLE PULLING TENSIONS DO NOT EXCEED SPECIFIED LIMITS.

1.2. DUCT BANKS SHALL BE BURIED WITH A MINIMUM COVER OF 900 MILLIMETRES, WITH THE EXCEPTION OF ROAD CROSSINGS WHICH SHALL BE BURIED WITH A MINIMUM COVER OF 1200 MILLIMETRES. RED CAUTION TAPE SHALL BE INSTALLED APPROX. HALFWAY BETWEEN THE INSTALLATION AND GRADE LEVEL.
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 HORIZON UTILITIES CORP. INSPECTOR WHERE THE ABOVE REQUIREMENT CANNOT BE MET (ie. FRENCH DRAIN REQUIRED).

1.4. THE AREA WITHIN TWO METERS 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 HORIZON UTILITIES CORP.

1.6. CONFIGURATIONS NOT COVERED BY HORIZON UTILITIES CORPORATION STANDARDS 3U-343 TO 3U-348 SHALL BE ARRANGED IN A SIMILAR MANNER SUBJECT TO HORIZON UTILITIES CORP. APPROVAL.

2. DUCT BANK CONSTRUCTION

2.1. THE DUCT SHALL BE 100 MILLIMETRES (4") OR 50 MILLIMETRES (2") DIAMETER, PVC TYPE DB2/ES2 (SOLID WALL ONLY) C/W BELL END AND BE APPROVED AS PER C.S.A. STANDARD C22.2 No. 211.1 (LATEST REVISION) AND HORIZON UTILITIES CORP.

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. BELL END MUST ENTER THE PAD/VAULT AND BE FLUSH WITH THE INTERIOR CONCRETE WALL.

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

2.5. WHERE SPECIFIED ON CONSTRUCTION DRAWINGS, ALL DUCT BANKS SHALL BE REINFORCED WITH NON PRE-STRESSED 15 MILLIMETRE (5/8") DEFORMED STEEL REINFORCING BARS. - GRADE 400 AND CONFORMED WITH C.S.A. G30.12 (LATEST REVISION). STEEL REINFORCING BARS SHALL BE INSTALLED CONTINUOUSLY, MINIMUM 300 MILLIMETRES OVERLAP AND TIED, AND BE LOCATED AT THE BOTTOM OF THE DUCT BANK AS PER HORIZON UTILITIES CORPORATION STANDARD 3U-343 TO 3U-348.

horizon UTILITIES Looking beyond	DRAWING STATUS	BY	DATE DD/MM/YY	CONCRETE ENCASED DUCT BANK REQUIREMENTS	REFERENCE DRAWINGS: 3U-343 3U-348	DRAWINGS NOT TO SCALE
	DRAWN:	AESI	08/12/16		DRAWING # 3U-341	SHEET# 1 of 2 / REVISION# 1
	CHECKED:	FA	08/12/16			
	APPROVED:	RB	08/12/16			

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Regulation 22/04

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 MILLIMETRES (4") UNDER STANDARD SLUMP TEST. EARTH UNDER DUCT BANK SHALL BE THOROUGHLY COMPACTED PRIOR TO DUCT BANK INSTALLATION TO ELIMINATE SETTLING OF FINISHED DUCT BANK.

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

2.9. ALL DUCTS SHALL BE EQUIPPED WITH 10 MILLIMETRES (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 A RED ELECTRONIC MARKER (LIST NO.: MAOR) AND A RED 2" X 4" STAKE.

2.11. WOOD POLES SHALL BE INSTALLED FROM ALL EQUIPMENT FOUNDATIONS, MANHOLES AND VAULTS TO 2.0m OUTSIDE THE FOUNDATIONS, MANHOLES AND VAULTS. WIDTHS TO CONFORM TO ALL TYPICAL ARRANGEMENTS OF DUCT INCASED IN CONCRETE.

3. DUCT BANK CONSTRUCTION

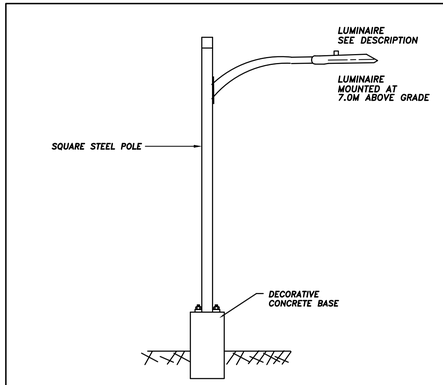
3.1. CUSTOMER'S DUCT BANK INSTALLATION SHALL BE SUBJECTED TO HORIZON UTILITIES CORP. INSPECTION AND ACCEPTANCE PRIOR TO POURING OF CONCRETE OR ANY BACKFILL MATERIAL, OR WILL NOT BE PASSED. CUSTOMER SHALL CONTACT HORIZON UTILITIES CORP., MANAGER OF OUTSIDE CONTRACTORS AT (905) 540-3234 TO ARRANGE FOR INSPECTION 48 HOURS IN ADVANCE OF POURING CONCRETE.

3.2. THE CUSTOMER SHALL FOLLOW DIRECTIONS GIVEN BY HORIZON UTILITIES CORP. INSPECTOR FOR ANY SITUATION NOT COVERED IN THIS SPECIFICATION.

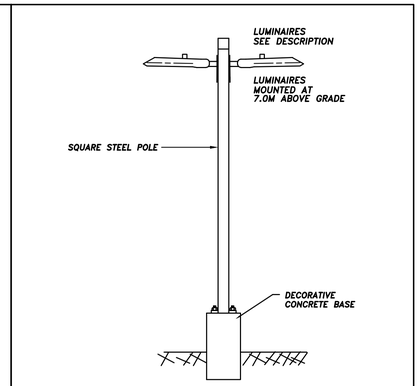
3.3. DUCTS SHALL BE PROBED PRIOR TO CABLE INSTALLATION. CABLE SHALL NOT BE INSTALLED IN DUCT WHICH DOES NOT ALLOW PASSAGE OF A TEST MANDREL SIZED TO 95 % OF THE DIAMETER OF THE PVC TYPE DB2/ES2 DUCT.

3.4. LANDSCAPING, PAVING AND CURBS SHALL NOT BE COMPLETED UNTIL HORIZON UTILITIES CORP. CABLE INSTALLATION IS COMPLETE. OTHERWISE, ALL RESTORATION SHALL BE DONE BY THE CUSTOMER AT THEIR EXPENSE.

horizon UTILITIES Looking beyond	DRAWING STATUS	BY	DATE DD/MM/YY	CONCRETE ENCASED DUCT BANK REQUIREMENTS	REFERENCE DRAWINGS: 3U-343 3U-348	DRAWINGS NOT TO SCALE
	DRAWN:	AESI	08/12/16		DRAWING # 3U-341	SHEET# 2 of 2 / REVISION# 1
	CHECKED:	FA	08/12/16			
	APPROVED:	RB	08/12/16			

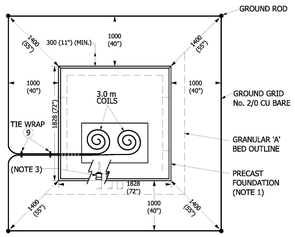


PERIMETER LIGHTING POLE DETAIL
NOT TO SCALE



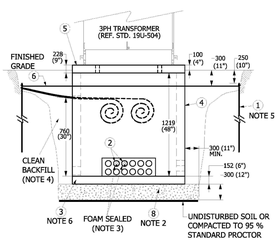
ISLAND LIGHTING POLE DETAIL
NOT TO SCALE

CERTIFIED
Regulation 22/04



PLAN VIEW

DETAIL 1



ELEVATION

NOTES:

1. THE FOUNDATION SHALL BE ORIENTED AS PER CONSTRUCTION DRAWING WITH TOP SURFACE HAVING A MAXIMUM 1% SLOPE.
2. GRANULAR 'A' BEDDING, FOUNDATION AND GROUND GRID INSTALLATION ARE ALL SUBJECT TO HORIZON UTILITIES CORPORATION INSPECTION.
3. DUCTS AND GROUND WIRE ENTRY HOLES SEALED WITH FOAM OR EQUIVALENT.
4. PLACE BACKFILL IN THOROUGHLY COMPACTED 300mm LAYERS.
5. REFER TO STD. 41U-110 (DETAIL 4) FOR GROUND ROD INSTALLATION.
6. FOUNDATION BASE TO BE SOLID TYPE, (NOT RING-TYPE).
7. ALL DIMENSIONS IN MILLIMETRES UNLESS OTHERWISE SPECIFIED.

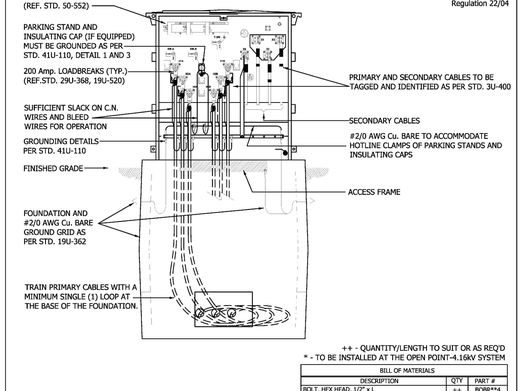
++ - QUANTITY/LENGTH TO SUIT

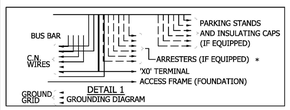
BILL OF MATERIALS

ITEM	DESCRIPTION	QTY	PART #
1	ROD, GROUND, 10' x 3/4"	4	ROG10
2	SEALANT, FOAM, DUCT	++	S201
3	FOUNDATION BASE 72" x 72" x 6"	1	SFB7272
4	FOUNDATION WALL 72" x 72" x 48"	1	SFW7272
5	FOUNDATION COVER 72" x 72" x 9"	1	SFT7272
6	WIRE, 2/0 AWG Cu	++	WCB20
7	CLAMP, GROUND ROD 3/4"	6	AMG275
8	GRANULAR 'A' 3/4" (20mm)	++	N01241
9	STRAP CABLE NYLON LRG	2	SCN527

horizon UTILITIES Looking beyond	DRAWING STATUS	BY	DATE DD/MM/YY	FOUNDATION AND GROUND GRID FOR THREE-PHASE PAD-MOUNTED TRANSFORMER	REFERENCE DRAWINGS: 19U-504 41U-110	DRAWINGS NOT TO SCALE
	DRAWN:	AESI	03/04/14		DRAWING # 19U-362	SHEET# 1 / REVISION# 1
	CHECKED:	BK	03/04/14			
	APPROVED:	BK	04/04/14			

CERTIFIED
Regulation 22/04





DETAIL 1
GROUNDING DIAGRAM

++ - QUANTITY/LENGTH TO SUIT OR AS REQ'D
* - TO BE INSTALLED AT THE OPEN POINT-4.16kV SYSTEM

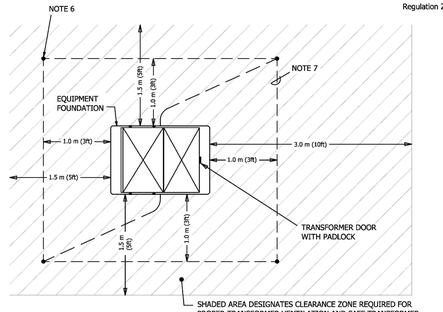
BILL OF MATERIALS

DESCRIPTION	QTY	PART #
BOLT, HEX HEAD, 1/2" x L	++	BOBR**4
CLAMP, HOT-LINE, #8 - 1/0	6*	CLHL10
WIRE, 2/0 AWG Cu	++	WCB20
WIRE, BLEED, Cu, #14 AWG	++	---
INSERT, BUSHING, 200A	6	STD. 29U-368
ELBOW, 200A	6	STD. 29U-368
STAND, PARKING, 200A	3*	STD. 29U-368
CAP, INSULATING, 200A	3*	STD. 29U-368
ARRESTER, BUSHING, ELBOW or PARKING STAND	Δ	STD. 19U-520
CONNECTOR, LUG, #2 AWG Cu, 1-HOLE	6	LGSC21
CONNECTOR, LUG, 2/0 AWG Cu, 1-HOLE	5	LGCW203
NUT, BRASS, FOR 1/2" BOLT	1/BOLT	NUB4014
WASHER, ROUND, FLAT, 1/2"	2/BOLT	WASF4014
LOCK WASHER FOR 1/2" BOLT	1/BOLT	WASL4014
PADLOCK - 50mm	1	PZPL1

Δ- ELBOW AND PARKING STAND ARRESTERS TO BE INSTALLED AT THE OPEN POINT - 13.8kV & 27.6kV SYSTEM. BUSHING ARRESTER TO BE INSTALLED AT THE MIDPOINT - 27.6kV SYSTEM.

horizon UTILITIES Looking beyond	DRAWING STATUS	BY	DATE DD/MM/YY	THREE-PHASE PAD-MOUNTED TRANSFORMER (UP TO 1500kVA)	REFERENCE DRAWINGS: 50-552 29U-368 19U-362 41U-110 19U-520	DRAWINGS NOT TO SCALE
	DRAWN:	AESI	07/05/15		DRAWING # 19U-504	SHEET# 1 / REVISION# 0
	CHECKED:	MM	07/05/15			
	APPROVED:	RB	07/05/15			

CERTIFIED
Regulation 22/04



SHADED AREA DESIGNATES CLEARANCE ZONE REQUIRED FOR PROPER TRANSFORMER VENTILATION AND SAFE TRANSFORMER SWITCHING OPERATION. NO PLANTS OR SHRUBS ALLOWED IN THIS AREA (SEE NOTES)

NOTES:

1. FOR ALL INSTANCES, A 3.0 METRE (10ft) CLEARANCE SHALL BE MAINTAINED FROM TREES, HYDRANTS, AND ABOVE GRADE UTILITY STRUCTURES.
2. ANY AND ALL OBJECTS WITHIN THE OBSTRUCTION FREE AREA, ARE SUBJECT TO REMOVAL WITHOUT ANY PRIOR NOTICE SHOULD OPERATIONAL OR EMERGENCY CONDITIONS EXIST.
3. HORIZON UTILITIES CORPORATION 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).
4. CIVIL DRAWINGS TO BE REVIEWED TO ENSURE TRANSFORMER OR SWITCH PLACEMENT DOES NOT OVERLAP OR INTERFERE WITH DEEP SERVICES.
5. TRANSFORMERS SHALL BE A MINIMUM OF 3.0 METRES (10ft) FROM DOORS, WINDOWS OR VENTILATION INLETS/OUTLETS. TRANSFORMERS WITHIN THE 3.0 METRE (10ft) LIMIT SHALL BE PROTECTED BY AN INTERNAL CURRENT-LIMITING FUSE AND EQUIPPED WITH A PRESSURE RELIEF DEVICE OR REQUIRE A SUITABLE BARRIER (BLAST WALL) (OESC RULE 26-242).
6. GROUND ROD TO BE INSTALLED AT MINIMUM DEPTH 300 MILLIMETRES (1ft) BELOW GRADE.
7. GROUND GRID LOOP Cu WIRE TO BE INSTALLED AT MINIMUM DEPTH 300 MILLIMETRES (1ft) BELOW GRADE AND 1.0 METRE (3ft) AWAY FROM TRANSFORMER FOUNDATION.

horizon UTILITIES Looking beyond	DRAWING STATUS	BY	DATE DD/MM/YY	PAD MOUNTED TRANSFORMER CLEARANCES	REFERENCE DRAWINGS:	DRAWINGS NOT TO SCALE
	DRAWN:	AESI	04/03/15		DRAWING # 19U-525	SHEET# 1 / REVISION# 1
	CHECKED:	MM	06/03/15			
	APPROVED:	RB	09/03/15			

R088 NHS PARKING LOT LIGHTING SCHEDULE (REV 0)

POLE No.	DESCRIPTION	POLE TYPE	POLE LENGTH (m)	POLE BASE TYPE	NUMBER OF LUMINAIRES	LUMINAIRE	WATTS	BRACKET ARM LENGTH (m)	LUMINAIRE HEIGHT (m)	SECURITY CAMERA MOUNT ON POLE	VOLTAGE / PHASE
LS1	NEW LIGHTING POLE AND LUMINAIRE	SQUARE STEEL (SEE SPEC)	5.88	CONCRETE BASE TYPE 1	1	TYPE A (SEE SPEC)	136	2.44	7.0	NO	347V/ PHASE A
LS2	NEW LIGHTING POLE AND LUMINAIRE	SQUARE STEEL (SEE SPEC)	5.88	CONCRETE BASE TYPE 1	1	TYPE A (SEE SPEC)	136	2.44	7.0	YES	347V/PHASE B
LS3	NEW LIGHTING POLE AND LUMINAIRE	SQUARE STEEL (SEE SPEC)	5.88	CONCRETE BASE TYPE 1	1	TYPE A (SEE SPEC)	136	2.44	7.0	NO	347V/PHASE C
LS3	NEW LIGHTING POLE AND LUMINAIRE	SQUARE STEEL (SEE SPEC)	5.88	CONCRETE BASE TYPE 1	1	TYPE A (SEE SPEC)	136	2.44	7.0	NO	347V/PHASE C
LS3	NEW LIGHTING POLE AND LUMINAIRE	SQUARE STEEL (SEE SPEC)	5.88	CONCRETE BASE TYPE 1	1	TYPE A (SEE SPEC)	136	2.44	7.0	NO	347V/PHASE C
LS5	NEW LIGHTING POLE AND LUMINAIRE	SQUARE STEEL (SEE SPEC)	5.88	CONCRETE BASE TYPE 1	1	TYPE A (SEE SPEC)	136	2.44	7.0	NO	347V/PHASE C
LS6	NEW LIGHTING POLE AND LUMINAIRE	SQUARE STEEL (SEE SPEC)	5.88	CONCRETE BASE TYPE 1	1	TYPE A (SEE SPEC)	136	2.44	7.0	NO	347V/PHASE C
LS7	NEW LIGHTING POLE AND LUMINAIRE	SQUARE STEEL (SEE SPEC)	5.88	CONCRETE BASE TYPE 1	1	TYPE A (SEE SPEC)	136	2.44	7.0	YES	347V/PHASE C
LS8	NEW LIGHTING POLE AND LUMINAIRE	SQUARE STEEL (SEE SPEC)	5.88	CONCRETE BASE TYPE 1	1	TYPE A (SEE SPEC)	136	2.44	7.0	NO	347V/ PHASE A
LS9	NEW LIGHTING POLE AND LUMINAIRE	SQUARE STEEL (SEE SPEC)	5.88	CONCRETE BASE TYPE 1	1	TYPE A (SEE SPEC)	136	2.44	7.0	NO	347V/ PHASE A
LS10	NEW LIGHTING POLE AND LUMINAIRE	SQUARE STEEL (SEE SPEC)	5.88	CONCRETE BASE TYPE 1	1	TYPE A (SEE SPEC)	136	2.44	7.0	NO	347V/ PHASE A
LS11	NEW LIGHTING POLE AND LUMINAIRE	SQUARE STEEL (SEE SPEC)	5.88	CONCRETE BASE TYPE 1	1	TYPE A (SEE SPEC)	136	2.44	7.0	YES	347V/ PHASE A
LS12	NEW LIGHTING POLE AND LUMINAIRE	SQUARE STEEL (SEE SPEC)	5.88	CONCRETE BASE TYPE 1	1	TYPE A (SEE SPEC)	136	2.44	7.0	YES	347V/ PHASE A
LS13	NEW LIGHTING POLE AND 2 LUMINAIRES	SQUARE STEEL (SEE SPEC)	6.10	CONCRETE BASE TYPE 1	2	TYPE C (SEE SPEC)	272	NO BRACKET	7.0	NO	347V/PHASE B
LS14	NEW LIGHTING POLE AND LUMINAIRE	SQUARE STEEL (SEE SPEC)	6.10	CONCRETE BASE TYPE 1	1	TYPE B (SEE SPEC)	136	NO BRACKET	7.0	YES	347V/PHASE B
LS15	NEW LIGHTING POLE AND LUMINAIRE	SQUARE STEEL (SEE SPEC)	6.10	CONCRETE BASE TYPE 1	1	TYPE B (SEE SPEC)	136	NO BRACKET	7.0	YES	347V/PHASE B
LS16	NEW LIGHTING POLE AND LUMINAIRE	SQUARE STEEL (SEE SPEC)	6.10	CONCRETE BASE TYPE 1	1	TYPE B (SEE SPEC)	136	NO BRACKET	7.0	YES	347V/PHASE B

#	REVISION	DATE	INIT
0	ISSUED FOR ADDENDUM 1	2018-04-20	RS

NOTES:

1. THE POSITION OF POLE LINES, CONDUITS, WATERMAINS, SEWER, AND OTHER UNDERGROUND AND OVERGROUND UTILITIES AND STRUCTURES IS NOT NECESSARILY SHOWN ON THE CONTRACT DRAWINGS AND, WHERE SHOWN, THE ACCURACY OF THE POSITION OF SUCH UTILITIES AND STRUCTURES IS NOT GUARANTEED. BEFORE STARTING WORK, THE CONTRACTOR SHALL INFORM HIMSELF OF THE EXACT LOCATION OF ALL SUCH UTILITIES AND STRUCTURES AND SHALL ASSUME ALL LIABILITY FOR DAMAGE TO THEM.
2. PROPERTY LINES WERE PLOTTED USING REGISTERED PLANS AND BARS LOCATED IN THE FIELD. TO VERIFY THE ACCURACY OF THESE PROPERTY LINES, A LEGAL SURVEY SHOULD BE PERFORMED PRIOR TO CONSTRUCTION.
3. ALL CONSTRUCTION MUST COMPLY WITH THE NIAGARA PENINSULA STANDARD CONTRACT DOCUMENT.

DRAFTING	TO/BV
DESIGN	RS
CHECKED BY	RS
APPROVED BY	RS

St. Catharines
stcatharines.ca

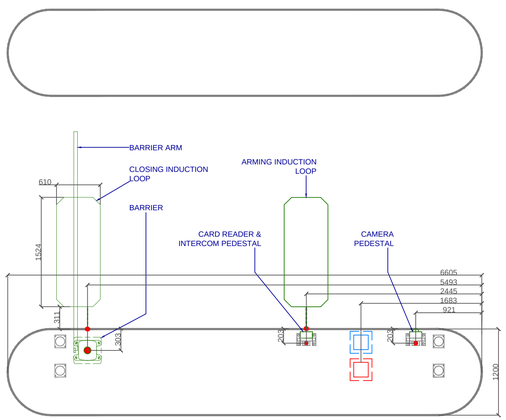
R. STASIAK ENGINEERING INC.
9 WHITE CREST CT., ST. CATHARINES, ONTARIO L2N 6Y1
905-931-3652 rstasiak@rseng.ca

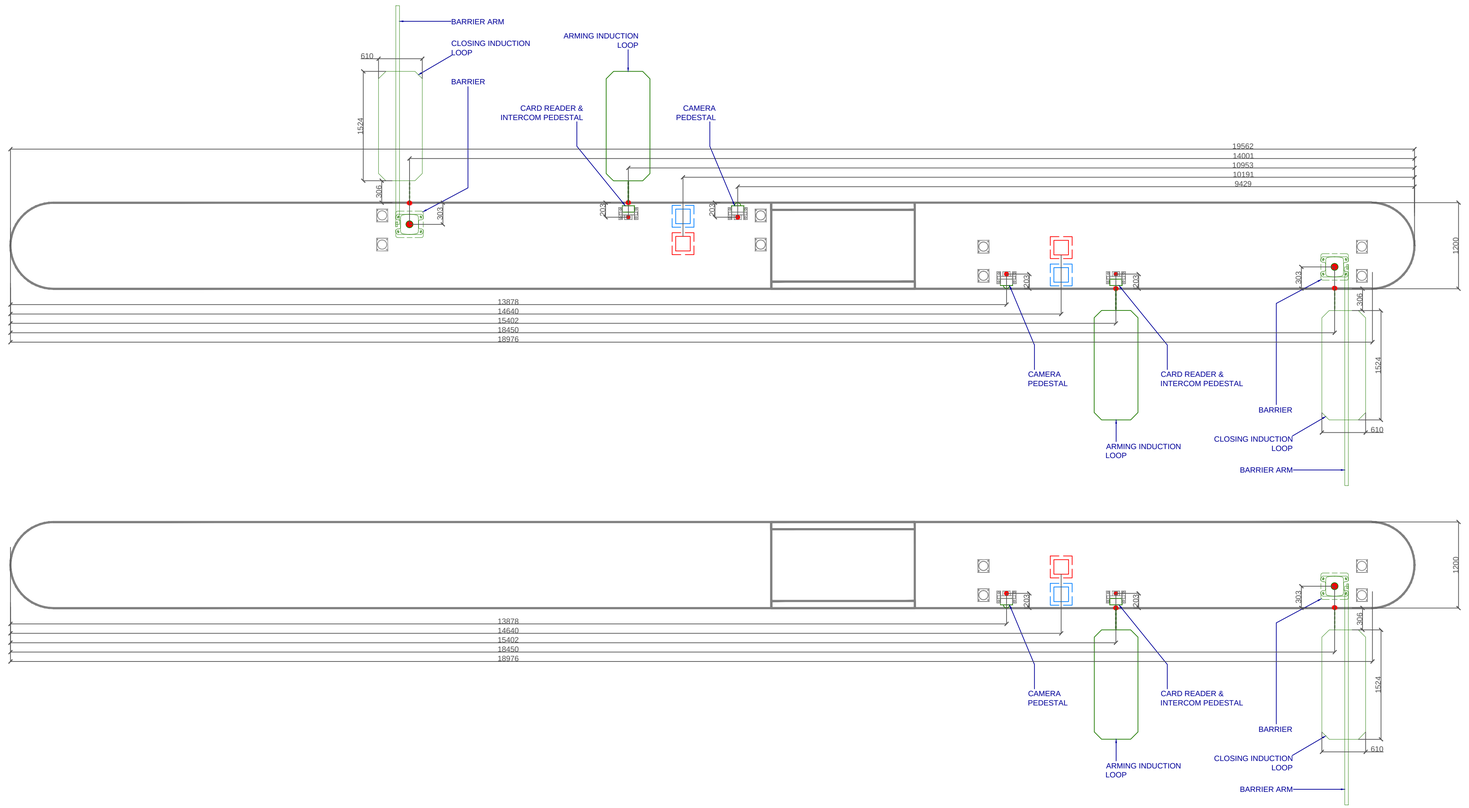
R-088

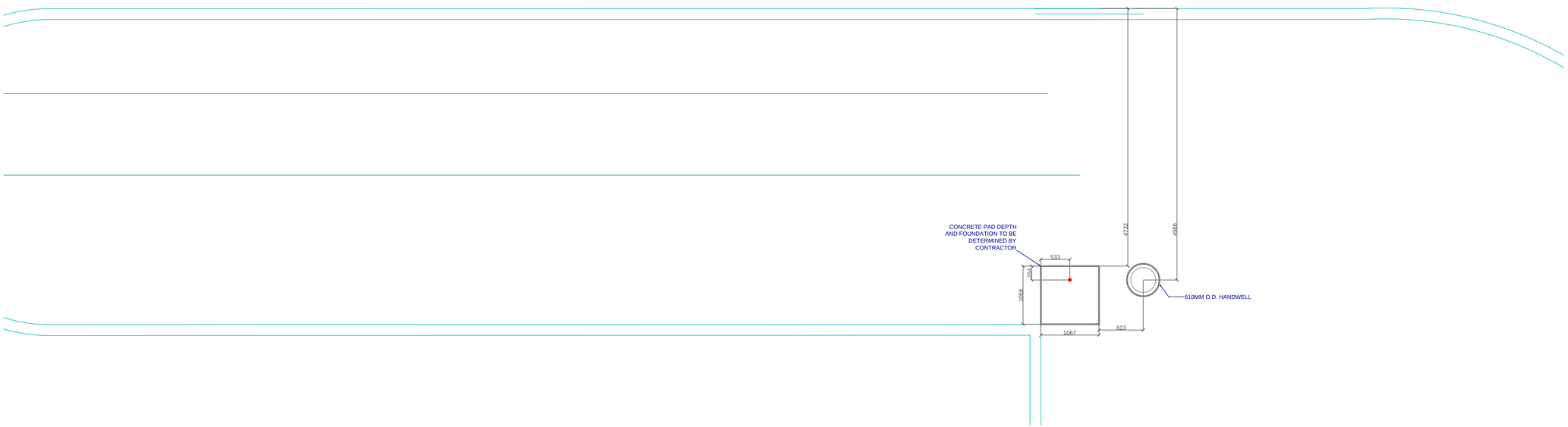
NIAGARA HEALTH SYSTEM
PROPOSED PARKING LOT
ST.CATHARINES
ELECTRICAL DETAILS 2

CONSULTANT FILE No.	1731
DATE	2018-04-20
PRINTED	2018-04-23
SCALE	1:300 m
REF No.	SCS 17-006
DWG No.	1731-DET2
REV	0

DRAWING FILE: F:\1731\Electrical-Parking Lot\1731-R088 Service Layout.dwg PLOTTED: Apr 23, 2018 - 12:18pm PLOTTED BY: BVanderValk







LEGEND

CONDUIT STUB LOCATION

POWER JUNCTION BOX

COMM. JUNCTION BOX

NOTES

MEASUREMENTS ARE APPROXIMATE, NOT TO SCALE

No.	Revision/Issue	Date
1	Issued for Approval	4/19/18

Andy Dass –
Precise Parklink
100 Floral Pkwy,
Ontario, Canada

NHS St. Catherines

1200 Fourth Ave.
St. Catherines. ON

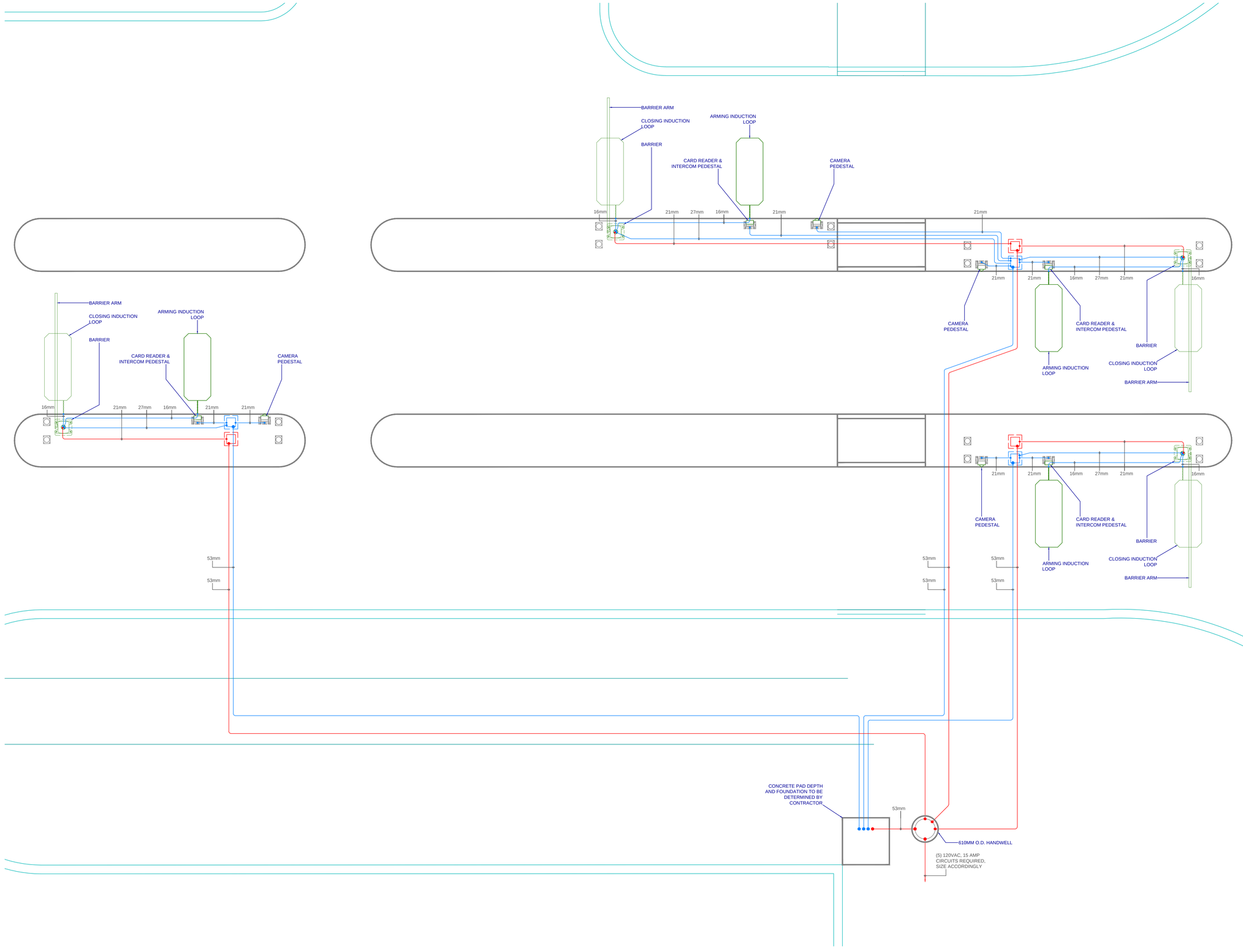
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Date	
4/19/18	

CONDUIT STUB LOCATIONS

11/01/2012

Andy Dass



LEGEND

- POWER CONDUIT
- COMM. CONDUIT
- POWER JUNCTION BOX
- COMM. JUNCTION BOX

NOTES

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NHS St. Catherines

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St. Catherines. ON

Staff Parking Expansion

Project	Sheet
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Date	
4/19/18	

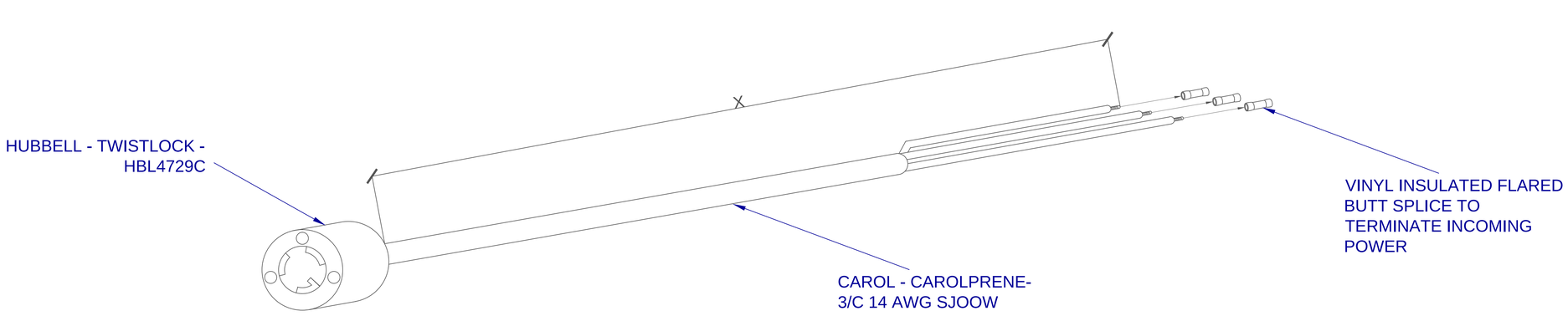
CONDUIT LAYOUT

11/01/2012

Andy Dass

ELECTRICAL TERMINATIONS

DEVICE	X
COLUMN	305mm
BARRIER	1219mm
PAYSTATION	1524mm



LEGEND

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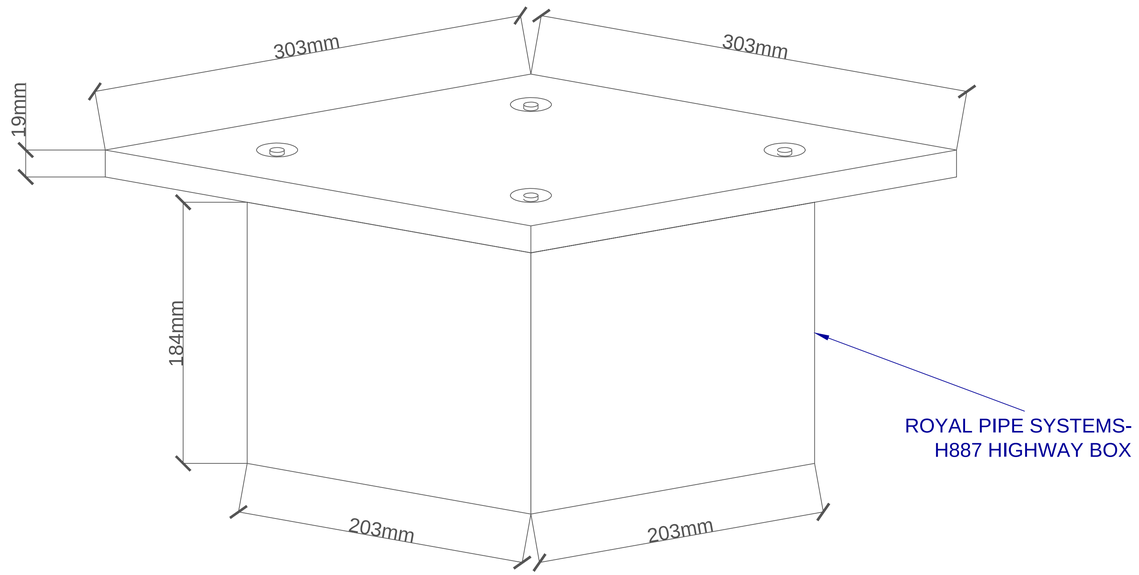
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4/19/18	

ELECTRICAL TERMINATIONS

11/01/2012

Andy Dass

JUNCTION BOX SPECIFICATIONS



LEGEND

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St. Catherines. ON

Staff Parking Expansion

Project	Sheet
N/A	5
Date	
4/19/18	

JUNCTION BOX SPECIFICATIONS

Andy Dass 11/01/2012