

ELECTRICAL SPECIFICATIONS

GENERAL NOTE: THIS SPECIFICATIONS APPLIES TO ALL ELECTRICAL SERVICING AND STREET LIGHTING WORK

1. DEFINITIONS

- "PROVIDE" – MEANS "SUPPLY AND INSTALL."
- "INSTALL" –MEANS "MOUNT AND WIRE".
- "WIRE" – MEANS "SUPPLY AND INSTALL ALL REQUIRED WIRE AND RACENWAYS AND MAKE ALL CONNECTIONS".
- "SUPPLY" – MEANS "SUPPLY ONLY".
- "CONCEALED" –MEANS "NOT VISIBLE ON COMPLETION".
- "EXPOSED" –MEANS "VISIBLE ON COMPLETION".
- "WORK" – MEANS "ALL PERMITS, EQUIPMENT, MATERIAL, LABOR, START-UP, COMMISSIONING AND TESTING TO PROVIDE COMPLETE ELECTRICAL INSTALLATIONS AS REQUIRED.
- "DEVELOPER" MEANS CONTRACTOR ASSIGNED TO THIS WORK, UNLESS OTHERWISE SPECIFIED.

2. SCOPE OF WORK

THE WORK SHALL CONSIST OF, BUT SHALL NOT BE LIMITED TO THE FOLLOWING:

- ALL NECESSARY CONDUIT WIRING AND CONNECTIONS FOR A COMPLETE INSTALLATION.
- STREET LIGHTING, PATHWAY LIGHTING AND POWER DISTRIBUTION SYSTEM AS SHOWN ON THE DRAWINGS.
- COMPLETE CONDUIT SYSTEM FOR HIGH VOLTAGE AND LOW VOLTAGE SYSTEMS WHERE NOTED ON THE DRAWINGS.

3. GENERAL CONDITIONS & REQUIREMENTS

- DEVELOPER SHALL RETAIN THE SERVICES OF ELECTRICAL CONTRACTOR FROM EPCOR'S APPROVED LIST OF CONTRACTORS.
- INSPECTIONS DONE BY EPCOR SHALL BE DONE AT THE EXPENSE OF THIS CONTRACTOR.
- THE ELECTRICAL CONTRACTOR SHALL FURNISH ALL LABOUR, MATERIAL, TOOLS, EQUIPMENT, ETC. REQUIRED TO COMPLETE ALL WORK SHOWN ON THE DRAWINGS AND HEREIN SPECIFIED. THE WORK SHALL BE IN ACCORDANCE WITH RULES AND REGULATIONS OF ALL AUTHORITIES HAVING LEGAL JURISDICTION OVER THE WORK.
- THIS CONTRACTOR SHALL PROVIDE ANY SMALL ITEMS OR ACCESSORIES OF WORK NOT SPECIFICALLY CALLED FOR BUT REQUIRED TO COMPLETE THE INTENDED INSTALLATION. THE ENGINEER RESERVES THE RIGHT TO APPROVE THE QUALITY OF MATERIAL AND WORKMANSHIP, ALSO TO CALL FOR ANY TESTS WHICH ARE DEEMED NECESSARY DURING THE PROGRESS OF THE WORK AND A COMPLETE TEST OF EACH SYSTEM AT THE COMPLETION OF THE WORK. THE COST OF SUCH TESTS ARE NOT TO BE CONSIDERED AS EXTRAS.
- USE ONLY NEW CSA AND UL/C CERTIFIED EQUIPMENT AND MATERIALS. ONLY FIRST CLASS WORKMANSHIP WILL BE ACCEPTED IN REGARD TO ACCEPTED STANDARD PRACTICES, SAFETY, ACCESSIBILITY, DURABILITY AND NEATNESS OF DETAIL.
- BASE TENDER PRICE ON MATERIALS AND EQUIPMENT SPECIFIED OR LISTED FIRST. IF ALTERNATE EQUIPMENT IS PROPOSED INDICATE COST SAVINGS. DESIGN IS BASED ON DIMENSIONS AND PHYSICAL CONFIGURATIONS OF MANUFACTURER'S EQUIPMENT SPECIFIED OR LISTED FIRST. PAY FOR WORK, REQUIRED BY OTHER DIVISIONS TO ACCOMMODATE ALTERNATE EQUIPMENT.
- COMPLETE INSTALLATION IN ACCORDANCE WITH CSA C22.1-2002, LATEST ONTARIO SAFETY CODE BULLETINS AND REQUIREMENTS OF THE ELECTRICAL SAFETY AUTHORITY AND EPCOR'S HYDRO STANDARDS.
- ADHERE TO RULES AND REGULATIONS OF SITE PLAN SERVICES. CO-ORDINATE ALL WORK WITH SITE PLAN CIVIL SERVICES AS NECESSARY TO PERFORM WORK IN AS EXPEDITIOUS A MANNER AS POSSIBLE.
- EXAMINE SITE AND LOCAL CONDITIONS AFFECTING WORK. NO EXTRAS TO TENDER PRICE WILL BE APPROVED FOR ANY EXPENSES INCURRED THROUGH FAILURE TO EXAMINE THE SITE.
- SUBMIT TO THE ELECTRICAL SAFETY AUTHORITY NECESSARY NUMBER OF DRAWINGS AND SPECIFICATION FOR EXAMINATION AND APPROVAL PRIOR TO COMMENCEMENT OF WORK WHERE REQUIRED. PAY ASSOCIATED FEES.
- DRAWINGS AND SPECIFICATIONS INDICATE INTENT OF DESIGN ONLY. DRAWINGS ARE DIAGRAMMATIC ONLY AND DO NOT SHOW ALL STRUCTURAL AND CONSTRUCTION DETAILS. OBTAIN ANY INFORMATION INVOLVING ACCURATE MEASUREMENTS OF CIVIL SERVICES AT SITE. MAKE ANY NECESSARY CHANGES OR ADDITIONS TO ACCOMMODATE SITE CONDITIONS WITHOUT ADDITIONAL CHARGE.
- FURNISH A CERTIFICATE OF ACCEPTANCE FROM THE ELECTRICAL SAFETY AUTHORITY ON COMPLETION OF WORK.
- CLEAN, REMOVE DEBRIS AND ANY SURPLUS MATERIAL FROM SITE.
- IS CASE OF ANY CONFLICT BETWEEN STREET LIGHTING POLES AND OTHER CIVIL SERVICES SLIGHT CHANGE OF LOCATION OF STREET LIGHTING POLES MAY BE CONSIDERED AT NO EXTRA COST OR CREDIT.
- MAINTAIN RECORD OF ALL REVISIONS. PREPARE RECORD DRAWINGS IN NEAT MANNER SHOWING ALL DEVIATIONS IN WORK. ON COMPLETION OF WORK SUBMIT TO CONSULTANT ONE COPY OF RECORD DRAWINGS, SHOP DRAWINGS AND OPERATION MANUALS.
- VERIFY EXACT LOCATION AND POWER REQUIREMENTS OF ALL EQUIPMENT BEFORE PROCEEDING WITH RELATED WORK. NOTIFY CONSULTANT OF ANY DISCREPANCIES.
- EPCOR GENERAL CONTRACTOR REQUIREMENTS AND MATERIAL SPECIFICATIONS, CITY OF COLLINGWOOD MUNICIPAL STANDARDS AND UTILITIES STANDARD FORUM (USF) SECTION 12 SHALL BE CONSIDERED A BINDING DOCUMENT AND PART OF THIS CONTRACT WHERE APPLICABLE UNLESS OTHERWISE SPECIFIED.

4. CODES, PERMITS AND INSPECTION

- THIS CONTRACTOR SHALL BE RESPONSIBLE FOR AND SHALL OBTAIN ALL PERMITS, INSPECTIONS, ETC. AS REQUIRED BY ALL AUTHORITIES HAVING JURISDICTION OVER THIS WORK AND SHALL PAY FOR THE SAME. THESE COSTS SHALL BE INCLUDED IN THE TENDER PRICE.
- ALL PERMITS SHALL BE DELIVERED TO THE OWNER REPRESENTATIVE AS SOON AS THEY BECOME AVAILABLE.

5. DRAWINGS

THIS CONTRACTOR SHALL PREPARE, AT HIS OWN EXPENSE, ANY LARGE SCALE WORKING DRAWINGS WHICH MAY BE REQUIRED BY THE EXAMINING AUTHORITIES.

6. AS-BUILT DRAWINGS

HIS CONTRACTOR SHALL KEEP A SEPARATE SET OF WHITE PRINTS ON THE SITE AND NOTE ALL CHANGES AND DEVIATIONS FROM THE ORIGINAL DESIGN. TWO SETS OF THESE PLANS ALONG WITH UPDATED ELECTRONIC DRAWINGS IN LATEST AUTOCAD VERSION SHOWING ALL AS-BUILT CONDITIONS SHALL BE FORWARDED TO THE ENGINEER AT THE COMPLETION OF THIS CONTRACT BEFORE APPLYING FOR FINAL PAYMENT. SUBMIT TO ENGINEERS THE FOLLOWING DOCUMENTS FOR REVIEW AND APPROVAL AT THE COMPLETION OF PROJECT:
– ESA INSPECTION CERTIFICATE.

7. SHOP DRAWINGS

SUBMIT ONE ELECTRONIC COPY OF MANUFACTURER'S SHOP DRAWINGS FOR ALL DEVICES, SYSTEMS AND SUCH FOR REVIEW BY THE ENGINEER.

8. EXAMINATION OF SITE

- THIS CONTRACTOR SHALL VISIT THE SITE OF THE PROJECT AND FAMILIARIZE HIMSELF WITH THE SPECIFIC SITE CONDITIONS.
- ANY DEVIATION AND / OR CONFLICTS ON SITE ESPECIALLY CONCERNING THE DISTRIBUTION DIAGRAM(S) AS SHOWN ON THE PLANS, SHALL BE REPORTED TO THE ENGINEER PRIOR TO SUBMITTING TENDER.

9. CONSTRUCTION SCHEDULE

THIS CONTRACTOR SHALL SCHEDULE AND PERFORM HIS WORK TO MEET THE COMPLETION SCHEDULE AS SET OUT BY PROJECT MANAGER.

10. REVISIONS AND EXTRAS

NO ADDITIONAL MONEY OVER THE CONTRACT PRICE SHALL BE PAID UNLESS AN APPROVED CHANGE ORDER IS ISSUED BY THE ENGINEER. CLAIMS FOR EXTRAS SHALL BE SUBMITTED WITH A COMPLETE BREAKDOWN OF MATERIAL, LABOUR, HOURLY RATES, ETC. THERE SHALL BE NO EXTRA CLAIM FOR RELOCATION OF ANY EQUIPMENT WITHIN 10 FEET FROM ORIGINAL LOCATION.

11. DELIVERY DATES

THIS CONTRACTOR SHALL PLACE AN ORDER FOR ALL MATERIAL AND EQUIPMENT IMMEDIATELY AFTER SIGNING OF THE CONTRACT. HE SHALL SUBMIT A LIST OF DELIVERY DATES FOR EACH TYPE OF EQUIPMENT WITHIN 30 DAYS OF THE AWARDING OF THE CONTRACT. THE LIST SHALL INCLUDE MANUFACTURER'S NAMES.

12. EQUIPMENT AND MATERIAL

GROUNDING SHALL BE AS REQUIRED BY ELECTRICAL CODE AND THE APPROVAL OF ALL EQUIPMENT AND MATERIAL UNLESS SPECIFICALLY NOTED OTHERWISE, SHALL BE NEW AND WITHOUT BLEMISH OR DEFECT. ALL MATERIAL AND EQUIPMENT SHALL BE OF THE TYPE, SUBJECT TO FACTORY MUTUAL, "UNDERWRITERS LABORATORIES OF CANADA" OR "CANADIAN STANDARDS ASSOCIATION INSPECTION AND APPROVAL" AND SHALL BEAR "ULC" OR "C.S.A." LABELS.

13. IDENTIFICATION

PROVIDE COLOUR CODED IDENTIFICATION FOR ALL ELECTRICAL SERVICES AS INDICATED ON DRAWINGS.

14. COORDINATION

THIS CONTRACTOR SHALL BE RESPONSIBLE TO CO-ORDINATE THE INSTALLATION OF EQUIPMENT, CONDUIT WORK, LIGHTING FIXTURES, POLES AND BOLLARDS ETC. WITH OTHER TRADES PRIOR TO THE INSTALLATION.

15. ACCESSIBILITY

ALL WORK SHALL BE INSTALLED SO AS TO BE READILY ACCESSIBLE FOR OPERATION, MAINTENANCE AND REPAIRS.

16. RESPONSIBILITY

THIS TRADE SHALL BE RESPONSIBLE FOR THIS WORK UNTIL THE COMPLETION AND FINAL ACCEPTANCE, FOR REPLACING ANY ITEM THAT MAY BE DEFECTIVE, DAMAGED, LOST OR STOLEN WITHOUT ADDITIONAL COST TO THE OWNER OR DELAY TO THE COMPLETION OF THE PROJECT.

17. WARRANTY

THIS CONTRACTOR SHALL WARRANT ALL WORK AND EQUIPMENT INSTALLED UNDER THIS CONTRACT, AGAINST ALL DEFECTS, FOR WORKMANSHIP AND MATERIAL FOR A PERIOD OF TWO YEARS AFTER ACCEPTANCE OF THE INSTALLATION BY THE OWNER.

18. CONDUIT AND FITTINGS

CONDUIT SIZES SHALL BE AS INDICATED ON THE DRAWINGS AND SHALL NOT BE REDUCED IN SIZE WITHOUT AUTHORIZATION. CONDUIT IN FINISHED AREA SHALL BE CONCEALED.

19. INSTALLATION OF STREET LIGHTING POLES, BOLLARDS & PAD MOUNT TRANSFORMERS

THE PLANS SHOW APPROXIMATE LOCATION OF STREET LIGHTING POLES AND PAD MOUNT TRANSFORMERS. EXACT LOCATION SHALL BE CO-ORDINATED ON THE SITE WITH OTHER TRADES.

20. WIRE AND CABLE

- UNLESS OTHERWISE NOTED, ALL WIRES SHALL BE COPPER RMU-90 RATING AS INDICATED ON DRAWINGS AND AS DICTATED BY CODE. ALUMINUM WIRE SHALL NOT BE USED.
- THE MINIMUM PERMISSIBLE SIZE FOR BRANCH CIRCUIT WIRING SHALL BE #12 (20m).
- WIRES AND CABLES SHALL BE RATED AT 600 VOLTS.
- ALL WIRES SHALL BE NEW AND DELIVERED TO THE SITE OF THE PROJECT IN THEIR ORIGINAL PACKING. WIRES #10 AND BIGGER SHALL BE STRANDED. THIS DENOTES GAUGE #8, #6, #4, ETC. WIRES SHALL BE FACTORY IDENTIFIED, SHOWING SIZE, VOLTAGE RATING AND INSULATION TYPE.
- PROVIDE SEPARATE INSULATED GROUND CONDUCTOR FOR EACH FEEDER AND BRANCH CIRCUIT.
- FINAL CONNECTIONS TO LUMINAIRES SHALL ORIGINATE FROM HAN-HOLE BOX.
- CODE APPROVED WIRE SHALL BE USED FOR FINAL LUMINAIRE CONNECTIONS.
- NO SPLICING IS ALLOWED ON HV PRIMARY CABLES AND SECONDARY CABLES

21. CONNECTORS FOR WIRES

PROVIDE AN APPROVED TYPE WIRE CONNECTOR SIMILAR TO "IDEAL" OR "SUPER-NUT".

22. POWER DISTRIBUTION SYSTEM

THE POWER DISTRIBUTION SYSTEM SHALL BE AS SHOWN ON THE PLANS AND AS HEREINAFTER SPECIFIED. CABLES FROM TERMINAL TO TERMINAL SHALL BE ONE FULL RUN, NO SPLICES ARE ALLOWED.

23. DRY TYPE PAD MOUNT TRANSFORMER

- ELECTRICAL CONTRACTOR SHALL SUPPLY NEW PAD MOUNT TRANSFORMERS TO EPCOR'S SPECIFICATIONS. DEVELOPER TO SUBMIT TRANSFORMERS SHOPDRAWINGS TO EPCOR FOR APPROVAL PRIOR TO ORDERING.
- ELECTRICAL CONTRACTOR SHALL SUPPLY TRANSFORMER CONCRETE PAD AND VAULT TO EPCOR HYDRO STANDARDS
- PADMOUNT TRANSFORMERS ACCEPTABLE MANUFACTURERS: ABB, CAMTRAM, CARTE, CES AND MOLOMY ELECTRIC.
- PRECAST CONCRETE PAD ACCEPTABLE MANUFACTURERS: UTILICON OR BROOKLIN.

24. LIGHTING FIXTURES, BOLLARDS AND LIGHTING POLES

ALL LIGHTING FIXTURES WILL BE PROVIDED BY ELECTRICAL CONTRACTOR. REFER TO NOTES ON DRAWINGS.

25. DUCT BANKS

- DEVELOPER SHALL SUPPLY ALL HIGH VOLTAGE PRIMARY DUCT BANKS AND SECONDARY DUCT BANKS ENCASED IN CONCRETE WITH PULLING ROSES.
- HIGH VOLTAGE PRIMARY DUCT SHALL BE 103mm PVC TYPE DB2. INSPECTED BY EPCOR PRIOR TO CONCRETE CASTING.
- SECONDARY DUCTS SHALL BE PER ONTARIO ELECTRICAL SAFETY CODE, INSPECTED BY ESA INSPECTOR PRIOR TO CASTING CONCRETE.

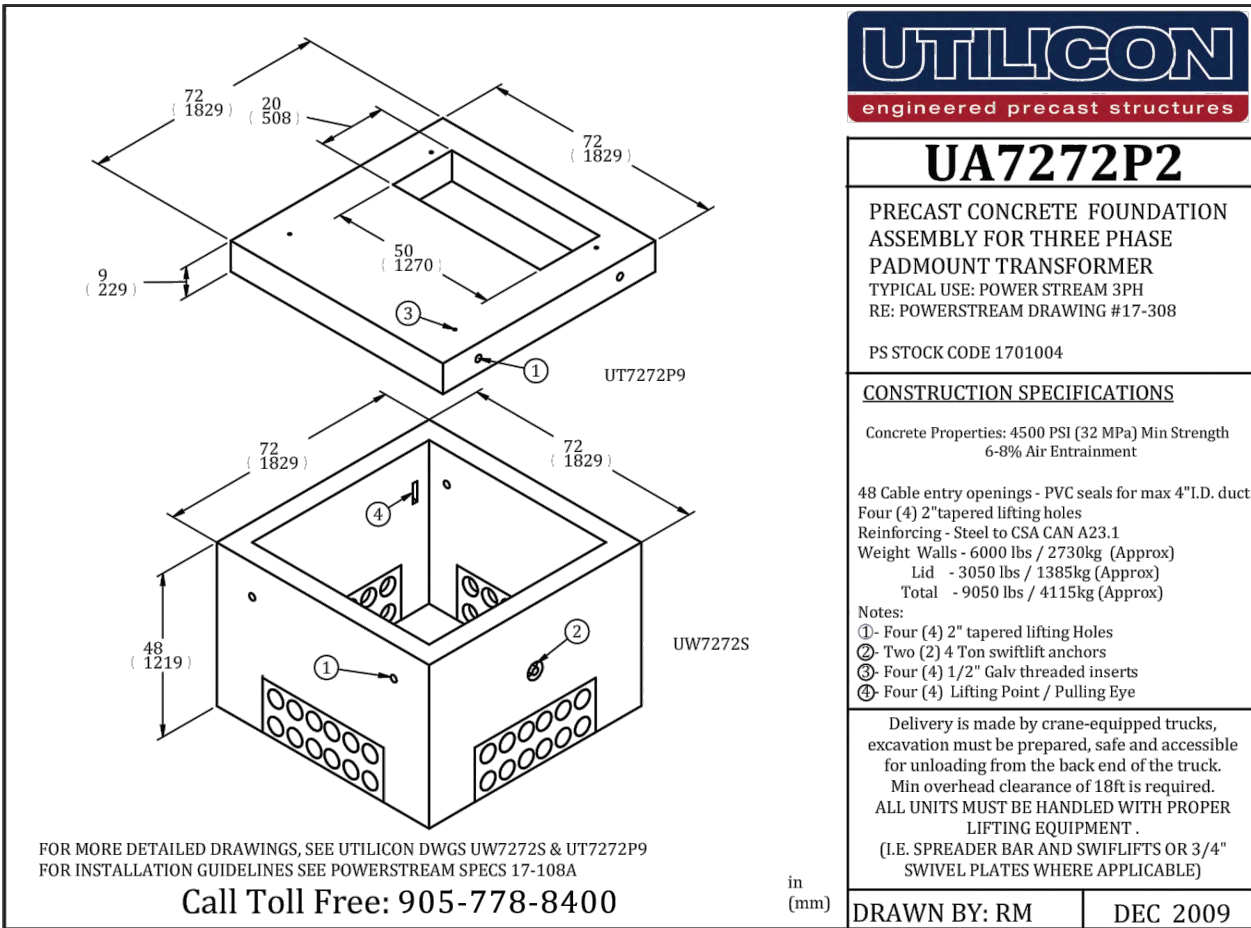
26. HIGH VOLTAGE CABLES TERMINATION AND TESTING

- DEVELOPER SHALL SUPPLY ALL NEW HIGH VOLTAGE CABLES AND TERMINATION MATERIAL TO EPCOR'S STANDARDS
- HV CABLES SHALL BE TO EPCOR'S "GENERAL CONTRACTOR REQUIREMENTS AND MATERIAL SPECIFICATIONS FOR MUNICIPAL SUBDIVISION"

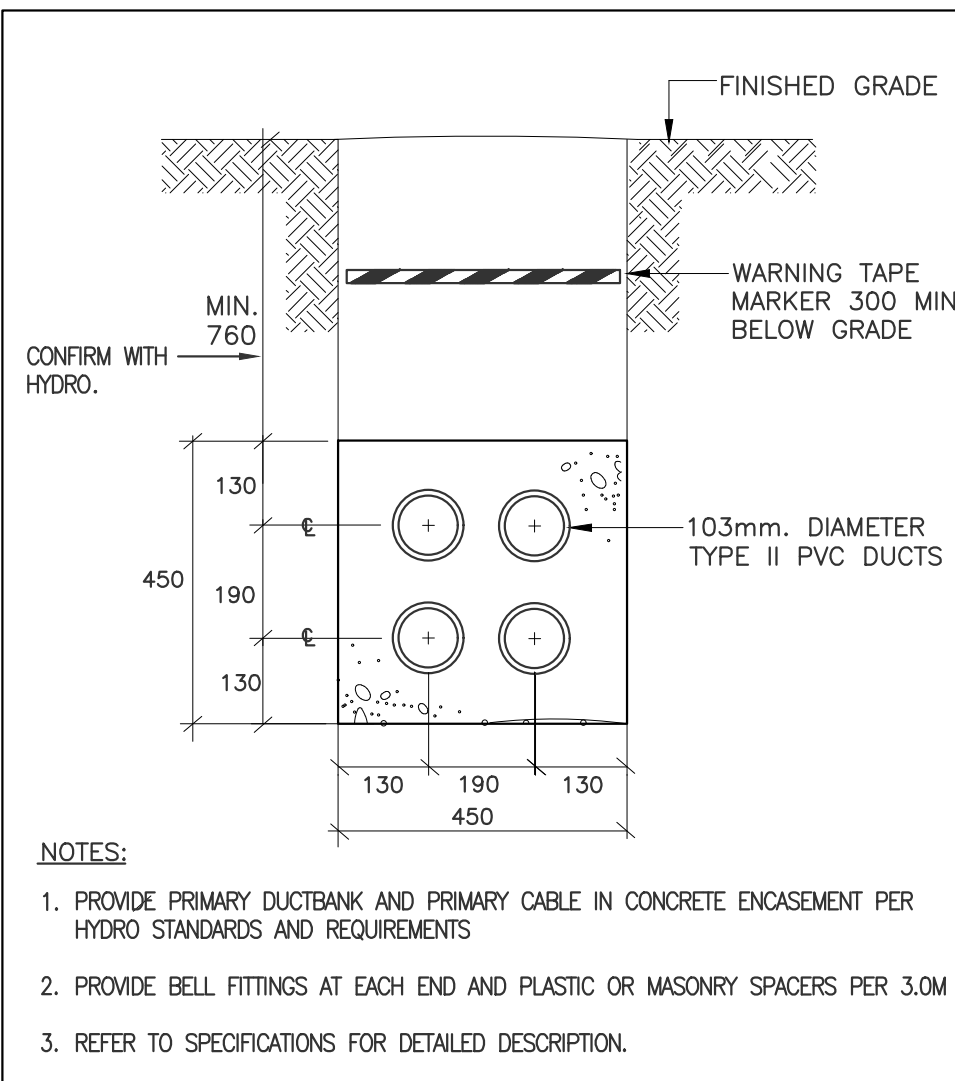
3. TERMINATION AND TESTING OF HIGH VOLTAGE CABLES AT SWITCHING CUBICLES AND TRANSFORMERS SHALL BE DONE BY EPCOR AT DEVELOPERS EXPENSE.

27. PADMOUNT HIGH VOLTAGE SWITCHING CUBICLES

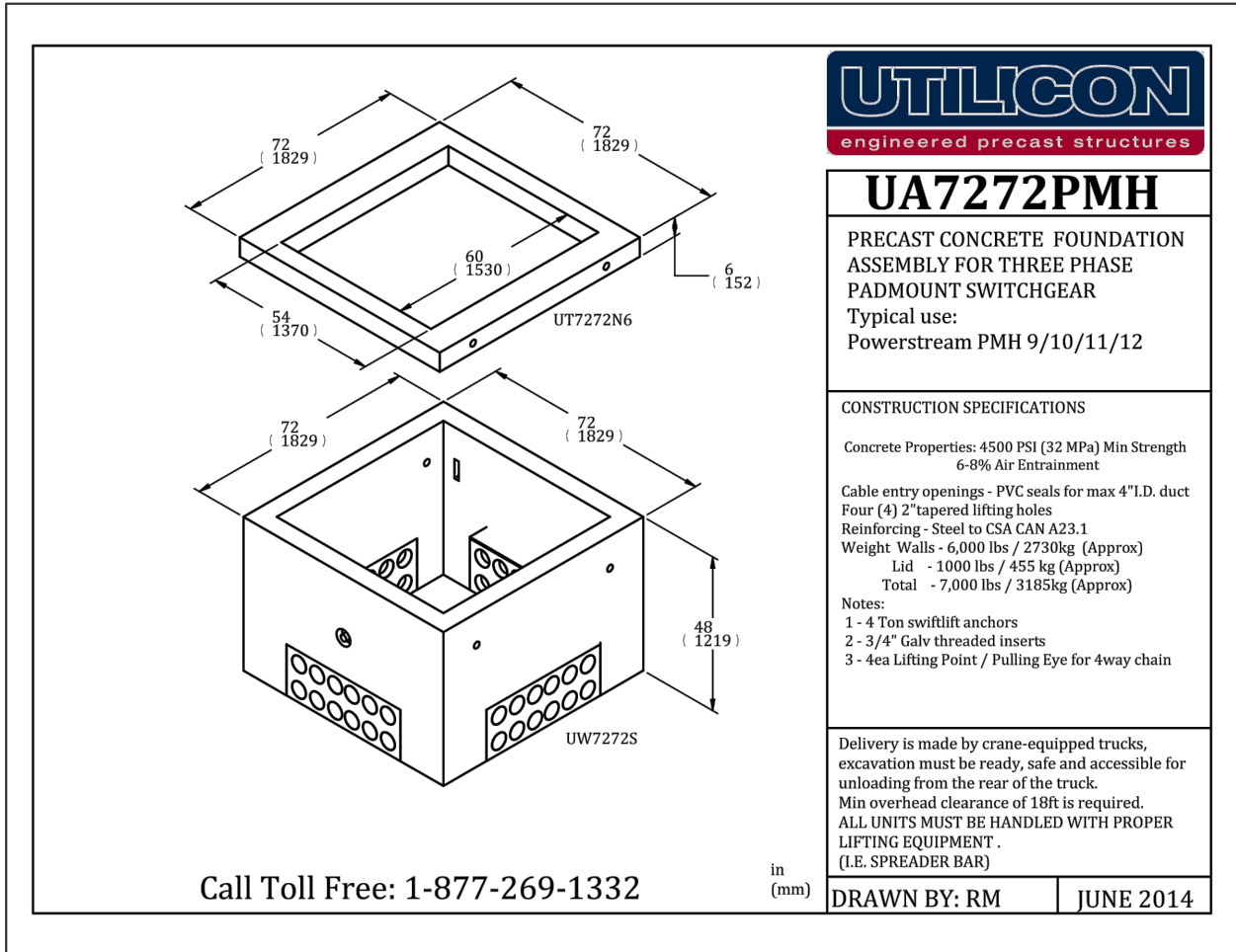
- DEVELOPER SHALL SUPPLY 600A RATED HIGH VOLTAGE PADMOUNT SWITCHING CUBICLES TO ANSI C57.12.28 SPECIFICATIONS. SUPPLIED BY DEVELOPER, OWNED AND OPERATED BY EPCOR.
- ACCEPTABLE MANUFACTURER: S&C ELECTRIC MODEL PMH-9.



1 3 PHASE TRANSFORMER FOUNDATION
E-01 N.T.S

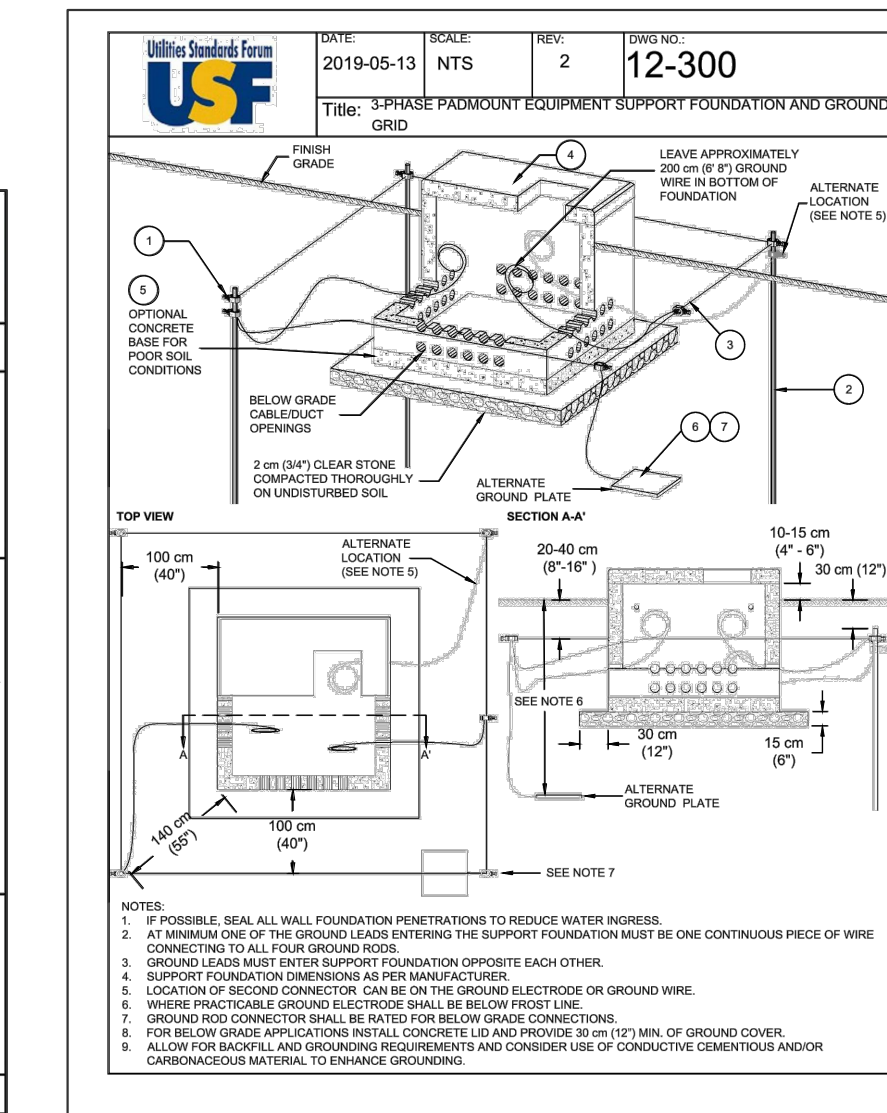


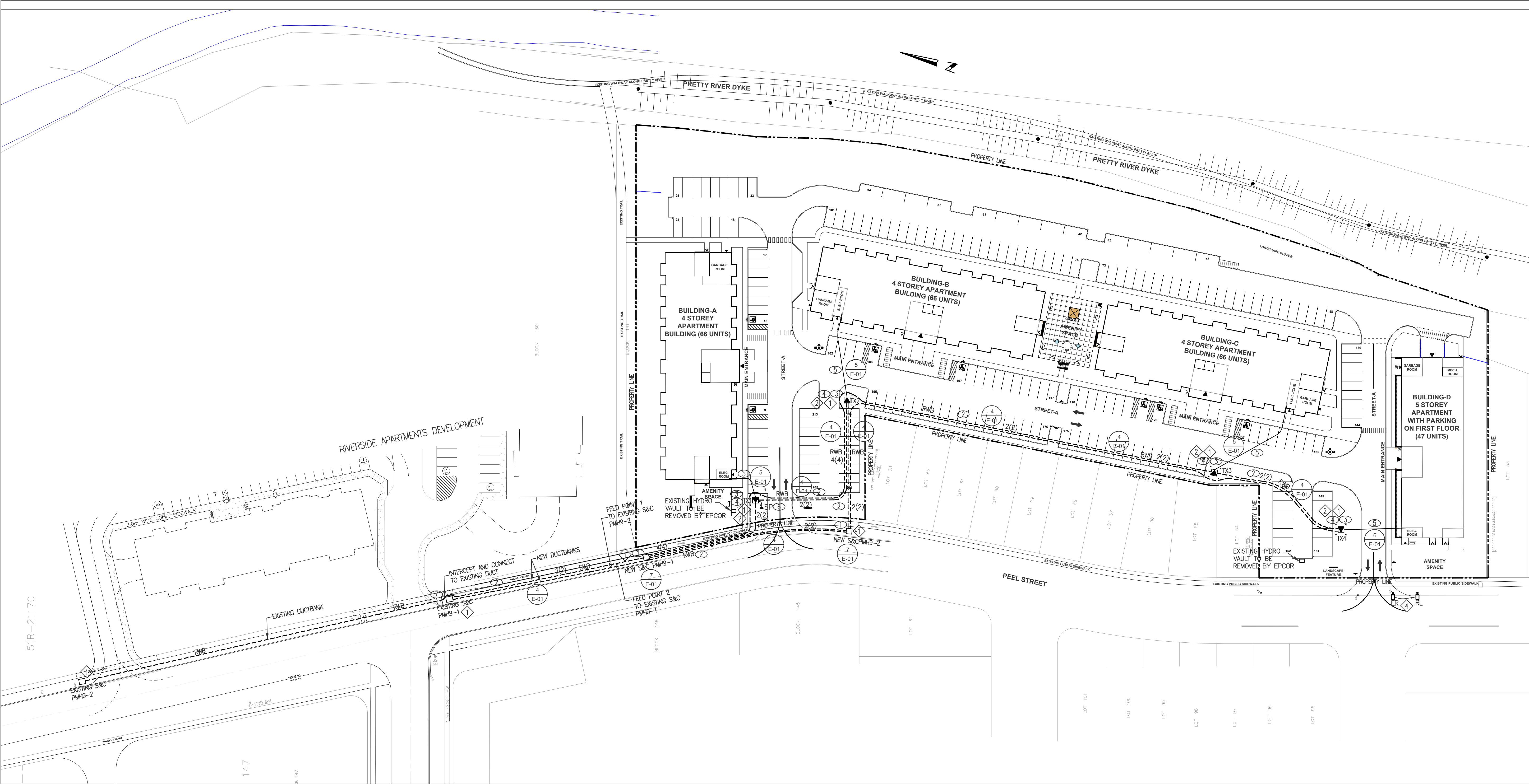
4 PRIMARY CABLE DUCTBANK
E-01 N.T.S



7 3 PHASE SWITCHGEAR FOUNDATION
E-01 N.T.S

DRAWING LIST		
DRAWING NO.	TITLE	SCALE
E-01	ELECTRICAL SPECIFICATIONS DRAWINGS LIST & DETAILS	N.T.S
E-02	SITE PLAN-ELECTRICAL SERVICING LEGEND & NOTES	1:600
E-03	ELECTRICAL HIGH VOLTAGE SCHEMATIC DIAGRAM & SEQUENCE OF OPERATION	N.T.S
SL-01	SITE PLAN - LIGHTING PHOTOMETRICS, LEGEND & NOTES	1:350
SL-02	ELECTRICAL DETAILS	N.T.S





1 SITE PLAN- ELECTRICAL SERVICING E-03 SCALE 1:600

LEGEND	
LP	STREET LIGHTING POLE,
B	PATHWAY LIGHTING BOLLARD,
SLP	STREET LIGHTING METERED PEDESTAL, TX- DENOTES FEED TRANSFORMER
TX	PAD MOUNTED TRANSFORMER. REFER TO NOTE 1 ON THIS DRAWING
2(2)	HIGH VOLTAGE DUCT BANK BY DIV. 16. REFER TO NOTE 2 ON THIS DRAWING
	2(2) DENOTES 2 OCCUPIED DUCTS AND 2 SPARE DUCTS TOTAL 4 DUCTS 2 CABLES
	120V/208V, 3PH, 4WIRE SECONDARY DUCTBANK AND CABLE BY DEVELOPER.
ER	DENOTES EXISTING TO BE RE-LOCATED
RL	DENOTES EXISTING AT RE-LOCATED POSITION
SC	DENOTES SWITCHING CUBICAL
	S&C PMH9 H.V SWITCHING CUBICAL
1 EX.X.X	DETAIL No.1 ON DRAWING EX.X.X
	REFERENCE TO THE EPCOR'S NOTE ON THE DRAWING
	REFERENCE TO THE DEVELOPER'S NOTE ON THE DRAWING
1.	REFERENCE TO THE GENERAL NOTE ON THE DRAWING

DRAWING NOTES:

DEVELOPER SCOPE OF WORK

- DEVELOPER TO SUPPLY/INSTALL NEW PAD MOUNT 600A HIGH VOLTAGE SWITCHING CUBICLES TO MEET ANSI C57.12.28. ORDERED BY EPCOR AND PAID FOR BY DEVELOPER. ACCEPTABLE MANUFACTURER FOR SWITCHING CUBICLES: S&C ELECTRIC MODEL PMH-9, ACCEPTABLE MANUFACTURERS FOR PRECAST CONCRETE PAD: UTILICON AND BROOKLIN. REFER TO SPECIFICATIONS ON DRAWING E-01 EPCOR WILL TAKE OWNERSHIP AND MAINTAIN.
- DEVELOPER TO SUPPLY/INSTALL NEW HIGH VOLTAGE DUCT BANK IN CONCRETE ENCASEMENT FOR HYDRO CABLES RUNNING UNDER ROADWAYS AND PARKING AREAS AND H.V 3 PHASE 15kV, 500MCM, JACKETED CONCENTRIC NEUTRAL FOR EXPRESS FEEDER CABLES AND 3 PHASE 15kV 1/0 JACKETED CONCENTRIC NEUTRAL FOR PRIMARY CABLES FROM SWITCHING CUBICLES TO TRANSFORMERS. ONE SPARE DUCT SHALL BE PROVIDED IN EACH H.V DUCT BANK FOR EACH CABLE. EPCOR WILL TAKE OWNERSHIP AND MAINTAIN. REFER TO SCHEMATIC DIAGRAM DETAIL 1/E-03 AND SPECIFICATION ON DRAWING E-01.
- DEVELOPER TO SUPPLY/INSTALL NEW PRE-FAB TRANSFORMERS CONCRETE FOUNDATIONS. 3 METERS CLEARANCE IN FRONT OF TRANSFORMER DOORS TO BE MAINTAINED WHERE POSSIBLE AND 1 METER ON ALL OTHER SIDES. TRANSFORMER DOORS TO FACE OPPOSITE COMING TRAFFIC. DEVELOPER SHALL PROVIDE PROTECTION BOLLARDS TO EPCOR'S SPECIFICATION. TRANSFORMER CONCRETE PAD AND VAULT SHALL BE UTILICON CAT#UA7272P2 SUBJECT TO EPCOR HYDRO APPROVAL. EPCOR WILL TAKE OWNERSHIP AND MAINTAIN.
- DEVELOPER SHALL PROVIDE GROUNDING GRID FOR PADMOUNT TRANSFORMERS PER USF DETAIL 12-100.
- DEVELOPER SHALL PROVIDE CONCRETE ENCASED SECONDARY SERVICING CONDUITS FROM TRANSFORMERS TO BUILDINGS' ELECTRICAL ROOMS. ESA RECORD OF INSPECTION IS REQUIRED.

DRAWING NOTES:

DEVELOPER SCOPE OF WORK (CONT'D)

- DEVELOPER SHALL PROVIDE METERED STREET LIGHTING PEDESTAL TO EPCOR STANDARDS. (PEDESTAL SOLUTIONS CAT# SLM421-4-20-100-LC). WIRE WITH 2#3+GROUND CU CONDUCTORS
- DEVELOPER TO INTERCEPT EXISTING EXPRESS DUCT BETWEEN EXISTING PMH9-1 AND EXISTING PMH9-2, PULL OUT EXISTING EXPRESS CABLE AND PULL IN NEW EXPRESS CABLE BETWEEN NEW PMH9-1 AND EXISTING PMH9-2
- EPCOR'S GENERAL CONTRACTOR REQUIREMENTS AND MATERIAL SPECIFICATIONS FOR MUNICIPAL SUBDIVISION" SHALL BE CONSIDERED A BINDING DOCUMENT AND PART OF THIS CONTRACT UNLESS OTHERWISE SPECIFIED.
- DEVELOPER SHALL RETAIN THE SERVICES OF ELECTRICAL CONTRACTOR FROM EPCOR'S APPROVED LIST OF CONTRACTORS.

DRAWING NOTES:

EPCOR SCOPE OF WORK

- EPCOR SHALL TERMINATE AND TEST AT DEVELOPER EXPENCES ALL HIGH VOLTAGE CABLES AT S&C'S SWITCHING CUBICLES AND TRANSFORMERS. TERMINATION MATERIAL SHALL BE SUPPLIED BY EPCOR AND PAID FOR BY DEVELOPER.
- EPCOR SHALL SUPPLY AND INSTALL NEW 4.16KV-120V/208V Y/Y PAD MOUNT TRANSFORMERS TO EPCOR'S STANDARDS AT DEVELOPER EXPENSE. EPCOR WILL TAKE OWNERSHIP AND MAINTAIN.
- ALL PRIMARY TERMINATION MATERIAL SHALL BE NEW AND SUPPLIED BY EPCOR AND PAID FOR BY THE DEVELOPER
- CITY OF COLLINGWOOD SHALL REMOVE/RE-LOCATE EXISTING STREET LIGHTING POLE AT PEEL STREET.

TRANSFORMERS LOADING PER PHASE:	
LOOP #1	LOOP #2
TX1 BUILDING A 66 UNITS APPROX. LOAD 367 Kw +STREET LIGHTING PEDESTAL	TX3 BUILDING C 66 UNITS APPROX. LOAD 367 Kw
TX2 BUILDING B 66 UNITS APPROX. LOAD 367 Kw	TX4 BUILDING D 47 UNITS APPROX. LOAD 354 Kw
LOADING PER FEED POINT #1: 734 Kw + STREET LIGHTING PEDISTAL	LOADING PER FEED POINT #2: 721 Kw

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CONSULTING CIVIL ENGINEERS

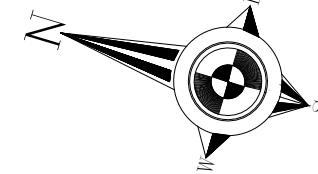
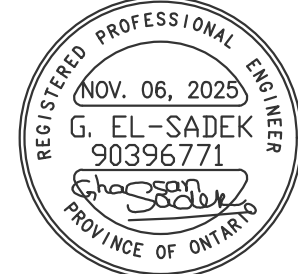


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This drawing is not to be used for construction until signed and stamped by the designer.

ELECTRICAL CONSULTANT STAMP



NOT FOR CONSTRUCTION FOR REVIEW ONLY

4.			
3.			
2.	06/11/25	ISSUED FOR SPA APPROVAL	G.S
1.	06/10/25	ISSUED FOR EPCOR APPROVAL	G.S
No.	DD/MM/YY	Version	Dwn.

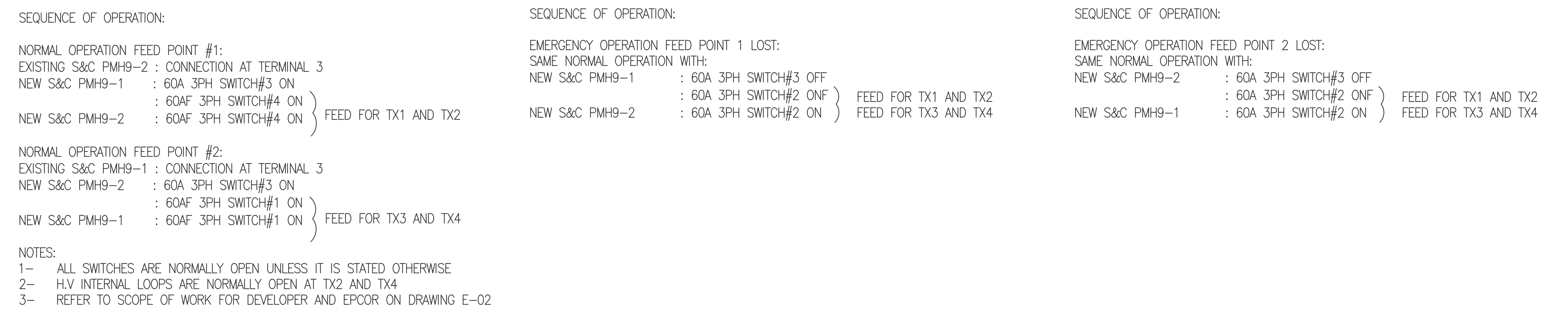
PROJECT:

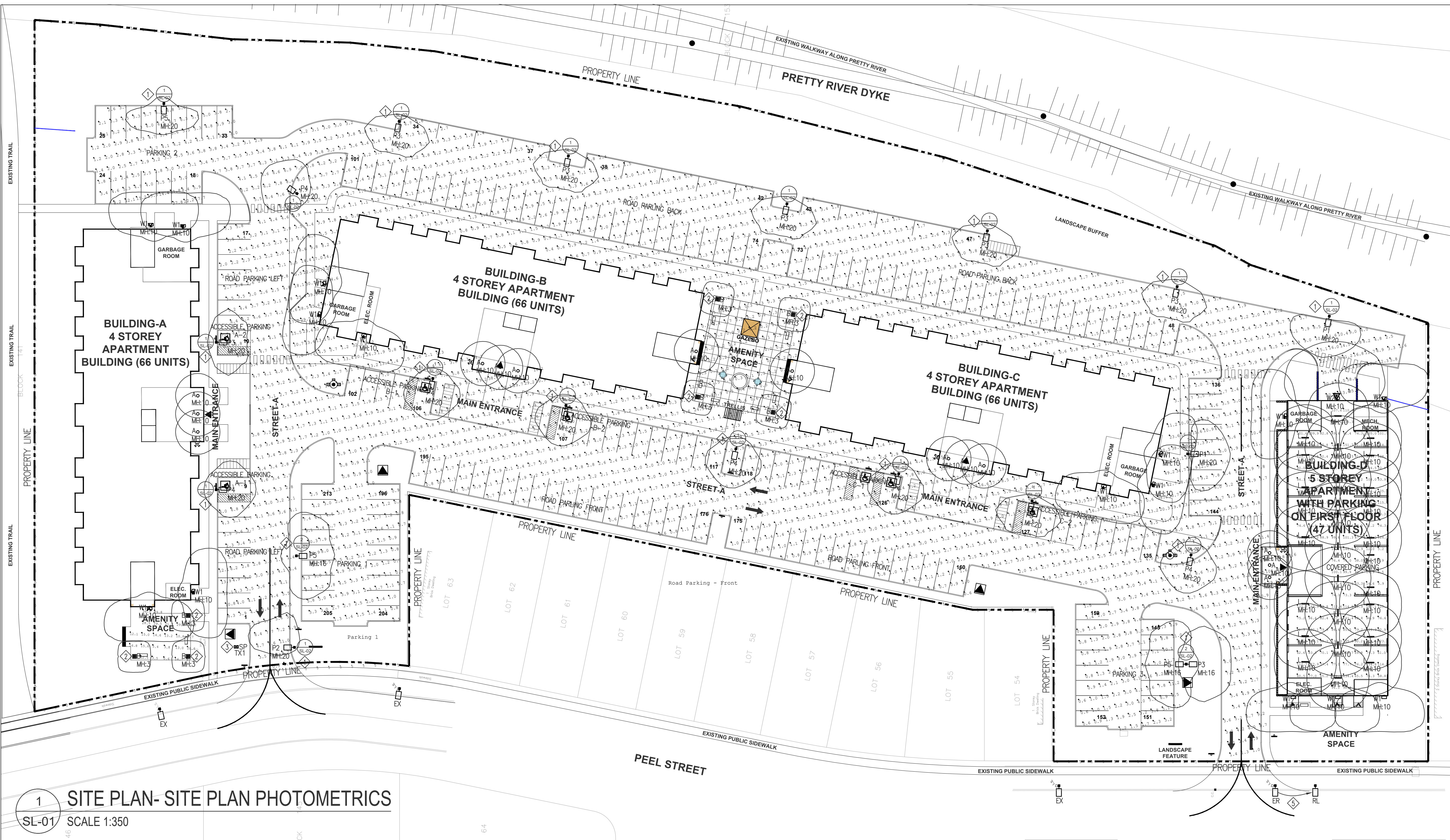
**APARTMENT
BUILDING**
BLOCK-151, HARMONY LIVING,
PEEL STREET, ON
(TOWN OF COLLINGWOOD)

DRAWING TITLE:

Site Plan
- Electrical Servicing,
Legend & Notes

DRAWN BY: G.S	DATE: DEC. 16, 2024
CHECKED BY: G.S	SCALE: AS NOTED
PROJECT NO.: 25-012	DRAWING NO.: E-02





1 SITE PLAN- SITE PLAN PHOTOMETRICS
SL-01 SCALE 1:350

Calculation Summary						
Label	CalcType	Units	Avg	Max	Min	Avg/Min
ACCESSIBLE PARKING A-1	Illuminance	Lux	7.56	8.3	6.2	1.22
ACCESSIBLE PARKING A-2	Illuminance	Lux	6.66	8.1	5.4	1.23
ACCESSIBLE PARKING B-1	Illuminance	Lux	6.74	8.1	5.7	1.18
ACCESSIBLE PARKING B-2	Illuminance	Lux	7.70	8.3	7.0	1.10
ACCESSIBLE PARKING C-1	Illuminance	Lux	5.71	8.4	3.0	1.90
ACCESSIBLE PARKING C-2	Illuminance	Lux	6.74	8.10	5.4	1.25
PARKING 1	Illuminance	Lux	3.33	10.9	0.5	6.66
PARKING 2	Illuminance	Lux	4.99	27.8	1.2	4.16
PARKING 3	Illuminance	Lux	3.76	12.0	0.6	6.27
COVERED PARKING GARAGE BLDG. D	Illuminance	Lux	99.23	174.5	5.2	19.08
ROAD PARKING BACK	Illuminance	Lux	4.45	113.6	0.6	7.42
ROAD PARKING FRONT	Illuminance	Lux	2.92	10.2	0.6	4.87
ROAD PARKING LEFT	Illuminance	Lux	4.28	17.0	1.0	4.28
ROAD PARKING RIGHT	Illuminance	Lux	6.57	44.0	1.0	6.57
AMENITY AREA BUILDING A	Illuminance	Lux	23.23	81.8	0.6	38.72
AMENITY AREA BUILDING B-C	Illuminance	Lux	6.16	101.1	0.1	61.6
LIGHT SPILL	Illuminance	Lux	0.00	1.0	0.0	N.A

Luminaire Schedule						
Symbol	Label	Qty	Arrangement	Description	LLF	Lumens
■	P1	2	Single	GARCOO P15-P-A01-827-BLC	0.90	1700
■	P2	1	Single	GARCOO P15-P-A01-827-LQL	0.90	1700
■	P3	8	Single	GARCOO P15-P-A01-827-T3M	0.90	2329
■	P4	7	Single	GARCOO P15-P-A01-827-T4W	0.90	1700
■	P5	3	Single	GARCOO P15-P-A01-827-T4M	0.90	1700
○	A	14	Single	LIGHTOLIER CR-6RLM-OCT	0.90	1500
□	W1	15	Single	GARCOO 121-16L-400-WW-G4-3	0.90	4431
□	W2	1	Single	GARCOO 121-32L-400-WW-G4-4	0.90	6076
—	L	25	Single	DAY-BRITE OF DWAE43.840-4-UV	0.90	4431
■	B	7	Single	GARCOO PBL-14L-200-WW-G2-5-UNV	0.90	605

LEGEND						
P=□ STREET LIGHTING POLE WITH LIGHTING FIXTURE						
○	POT LIGHTING FIXTURE					
■	PATHWAY BOLLARD LIGHTING FIXTURE					
—	PARKING GARAGE LIGHTING FIXTURE					
W	WALL MOUNTED LIGHTING FIXTURE					
SLP	STREET LIGHTING PEDISTAL					
H&V	FIRE HYDRANT & VALVE					
■	PAD MOUNTED TRANSFORMER					

- STREET LIGHTING NOTES:
- PROVIDE 16FT, 4" SQUARE ALUMINUM NON TAPERED POLE WITH HINGED BASE AND 460mm DIA 850mm HIGH ARTIFORM OR 325mm LOW ARTIFORM CONCRETE BASE, AND ALL REQUIRED ACCESSORIES. REFER TO DETAILS 1/SL-02 & 2/SL-02 AND LAYOUT ON THIS DRAWING. LIGHTING FIXTURES SHALL BE AS NOTED ON DRAWING. CONTRACTOR SHALL SUPPLY HOUSE SHIELD TO PREVENT UNWANTED LIGHT SPILL ON NEIGHBORING PROPERTIES WHERE REQUIRED.
 - PROVIDE PATHWAY LIGHTING BOLLARD TYPE B, C/W CONCRETE BASE PER MANUFACTURER'S RECOMMENDATIONS AND ALL NECESSARY ACCESSORIES.
 - PROVIDE 75 MM (3") RIGID TYPE 2, PVC DUCT FROM THE TRANSFORMER TX1 TO THE STREETLIGHT PEDISTAL. PROVIDE METERED STREET LIGHTING PEDISTAL TO CITY OF COLLINGWOOD MUNICIPAL STANDARDS (PEDESTAL SOLUTIONS CAT# SLM421-4-20-100-LC). PROVIDE SUPPLY CABLES FROM TRANSFORMER TX1 TO STREET LIGHTING PEDISTAL. CABLE SHALL BE 2#3-COPPER RMU-90+GROUND
 - PROVIDE STREET LIGHTING CABLES FROM PEDISTAL TO HANDHOLE IN STREET LIGHT POLE. CABLES SHALL BE 2#6-COPPER RMU-90 WITH 1#6-STRANDED COPPER GREEN JACKETED GROUND WIRE. CABLE FROM HANDHOLE TO LIGHTING FIXTURE SHALL BE 2#13-COPPER RMU-90 WITH 1#12-STRANDED COPPER GREEN JACKETED GROUND WIRE.
 - CITY OF COLLINGWOOD SHALL REMOVE/RE-LOCATE EXISTING STREET LIGHTING POLE AT PEEL STREET.
 - PHOTOMETRICS SHOWN ON THIS DRAWING ARE BASED ON ANSI/IESNA RP-8 STANDARDS AND CITY OF COLLINGWOOD MUNICIPAL STANDARDS USING SIGNIFY BRANDS LIGHTING FIXTURES NOTED ON THE DRAWING. EQUIVALENT LIGHTING FIXTURES FROM OTHER REPUTABLE MANUFACTURERS ARE ACCEPTABLE PROVIDED THAT AN EQUAL OR BETTER PERFORMANCE IS ACHIEVED.

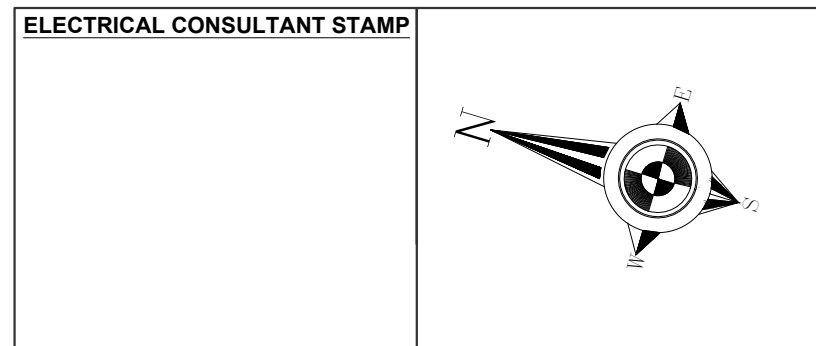
- STREET LIGHTING GENERAL NOTES:
- ALL STREET LIGHTING MATERIAL SHALL BE CSA APPROVED AND CONFORMING TO CITY OF COLLINGWOOD MUNICIPAL STANDARDS.
 - DUCTS FOR STREET LIGHTING SHALL BE 50mm PVC DB2 TYPE DUCT. AT ROAD CROSSINGS THIS 50mm DUCT SHALL PASS THROUGH 100mm DUCT.
 - 50mm BLACK POLY PIPE SHALL BE USED TO PROTECT CABLE ENTERING WIRING APERTURE IN CONCRETE POLE.
 - WARNING TAPE MUST BE PLACED OVER STREET LIGHTING DUCTS 0.3METERS BELOW FINAL GRADE, IN ACCORDANCE WITH ESA STANDARDS AND SPECIFICATIONS.
 - STREET LIGHTING SUPPLY PEDISTAL SHALL BE IN ACCORDANCE WITH CITY OF COLLINGWOOD MUNICIPAL STANDARDS.
 - STREET LIGHTING CABLES SHALL IN ACCORDANCE WITH CITY OF COLLINGWOOD MUNICIPAL STANDARDS.
 - STREET LIGHTING POLES SHALL BE 4" SQUARE ALUMINUM COMPLYING WITH CITY OF COLLINGWOOD MUNICIPAL STANDARDS.

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4.			
3.			
2.	06/11/25	ISSUED FOR SPA APPROVAL	G.S
1.	06/10/25	ISSUED FOR EPCOR APPROVAL	G.S
No.	DD/MM/YY	Version	Dwn.

PROJECT:
APARTMENT BUILDING
BLOCK-151, HARMONY LIVING,
PEEL STREET, ON
(TOWN OF COLLINGWOOD)

DRAWING TITLE:
SITE PLAN
-LIGHTING PHOTOMETRICS,
LEGEND & NOTES

DRAWN BY: G.S	DATE:
CHECKED BY: G.S	SCALE:
PROJECT NO.: 25-012	DRAWING NO.: SL-01

