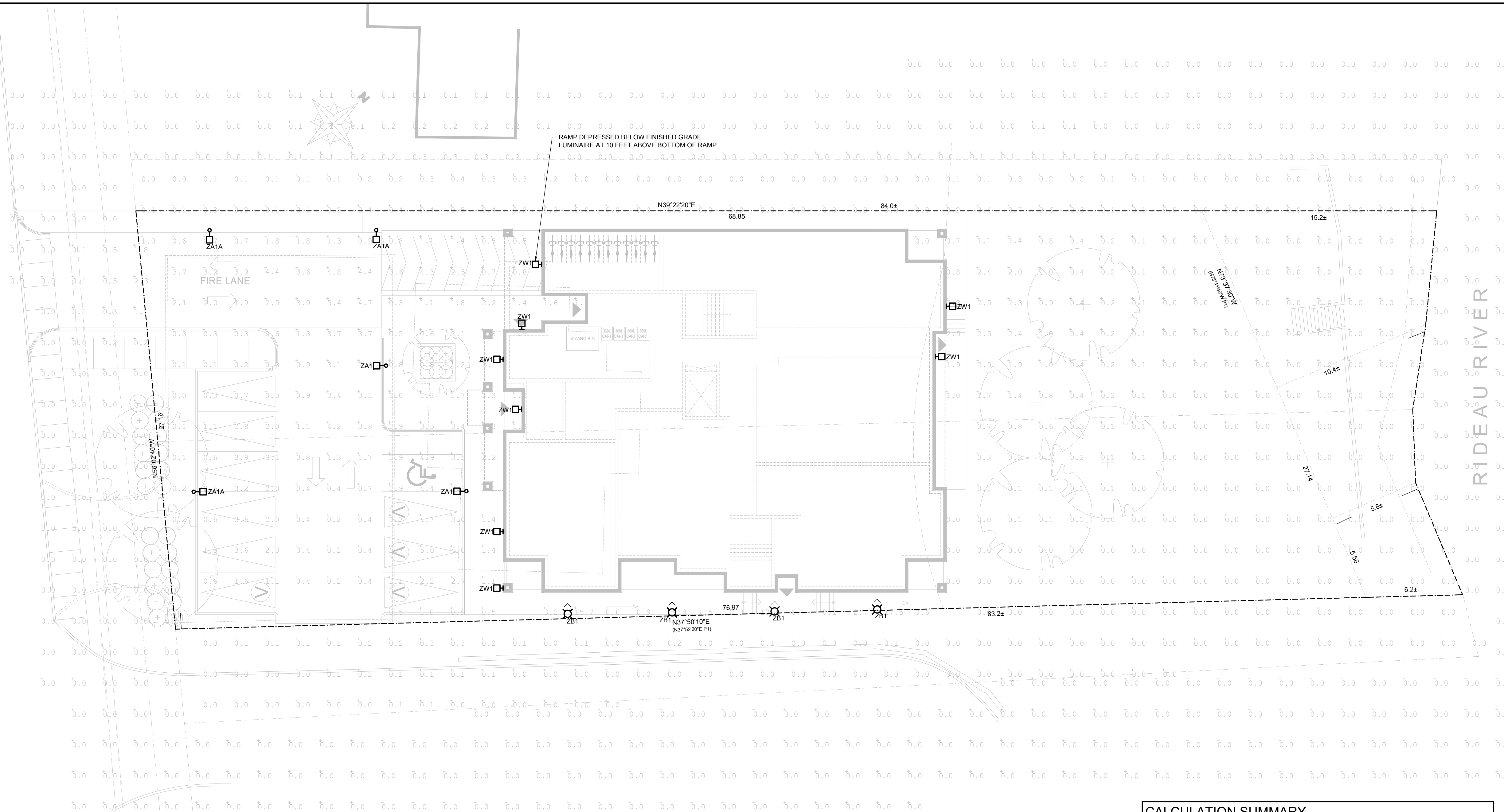


MANOTICK MAIN STREET

RIDEAU RIVER



**LIGHTING DESIGNER'S DECLARATION**

THIS DRAWING INDICATES ALL PROPOSED OUTDOOR LIGHTING FIXTURES FOR THIS DEVELOPMENT. THE LIGHTING DESIGN IS IN ACCORDANCE WITH THE APPLICABLE MUNICIPAL LIGHTING ORDINANCE AS ESTABLISHED BY THE PLANNING DEPARTMENT, AND DESIGNED IN ACCORDANCE WITH ILLUMINATING ENGINEERING SOCIETY (IES) GUIDELINES.

THE LIGHTING HAS BEEN DESIGNED USING ONLY FIXTURES THAT MEET THE CRITERIA FOR FULL CUT-OFF (SHARP CUT-OFF) CLASSIFICATION, AS RECOGNIZED BY THE ILLUMINATING ENGINEERING SOCIETY OF NORTH AMERICA (IESNA OR IES).

THE DESIGN RESULTS IN MINIMAL LIGHT SPILLAGE ONTO ADJACENT PROPERTIES, NOT EXCEEDING 0.5 FOOTCANDLES BEYOND THE PROPERTY LINE.

*Christopher Borcsok*  
SIGNATURE OF QUALIFIED DESIGNER

**LEGEND**

- ARM MOUNTED AREA LIGHT ON POLE
- BOLLARD LUMINAIRE, ARROW DENOTES PRIMARY LUMEN ORIENTATION.
- ▭ WALL PACK
- AFG ABOVE FINISHED GRADE

**MUNICIPAL LIGHTING ORDINANCE**

1. CITY OF OTTAWA PROPERTY STANDARDS BY-LAW NO. 2013-416 PART II - RESIDENTIAL PROPERTY STANDARDS SECTION 6 - YARDS
  - (11) IN RESPECT TO MULTIPLE DWELLINGS AND NON-RESIDENTIAL PROPERTIES, EVERY AREA OF A YARD WHICH IS USED FOR VEHICULAR TRAFFIC OR PARKING INCLUDING A LOADING AREA SHALL BE:
    - (a) KEPT FREE FROM DIRT AND REFUSE;
    - (b) ADEQUATELY LIGHTED; AND
    - (c) MAINTAINED IN GOOD REPAIR.
  - (12) LIGHTS USED TO ILLUMINATE ANY AREA USED FOR VEHICULAR AND PEDESTRIAN TRAFFIC, OR PARKING SHALL BE ARRANGED, INSTALLED OR DESIGNED SO AS TO DEFLECT AWAY FROM ADJUTING RESIDENTIAL PROPERTIES.
3. CITY OF OTTAWA OFFICIAL PLAN, VOLUME 1, SECTION 5 - IMPLEMENTATION 5.2 - IMPLEMENTATION MECHANISMS, BY AUTHORITY UNDER THE PLANNING ACT
  - d. [...] SUBMISSIONS MAY NEED TO INCLUDE INDICATION OF ANY OR ALL OF THE FOLLOWING:
    1. LOCATION, SITE, COLOUR, AND TYPE OF ALL BUILDING EXTERIOR SIGNAGE AND LIGHTING;
4. BEST PRACTICES (NOT CITED BY CITY OF OTTAWA BY-LAW)
  1. IES RP-8-18, CHAPTER 17 PARKING AREAS AND DRIVES MINIMUM 0.5 FC
  2. DARK SKY FRIENDLY LUMINAIRES - CCT OF MAX 3000 K CCT - MINIMIZE UPLIGHT

**MUNICIPAL LIGHTING ORDINANCE**

3. CITY OF OTTAWA BIRD SAFE DESIGN GUIDELINES GUIDELINE 6: DESIGN EXTERIOR LIGHTING TO MINIMIZE LIGHT TRESPASS AT NIGHT. THE FOLLOWING RECOMMENDATIONS APPLY TO BOTH PERMANENT AND TEMPORARY OR EVENT-BASED EXTERIOR LIGHTING.
  - (a) AVOID UP-LIGHTING.
  - (b) SPECIFY DARK SKY COMPLIANT, FULL-CUT-OFF EXTERIOR FIXTURES TO REDUCE LIGHT TRESPASS.
  - (c) USE MOTION DETECTORS AND OTHER AUTOMATIC LIGHTING CONTROLS TO REDUCE OR EXTINGUISH NON-ESSENTIAL LIGHTING BETWEEN 11 PM AND 6 AM.
  - (d) USE MINIMUM WATTAGE FIXTURES TO ACHIEVE APPROPRIATE LIGHTING LEVELS (NOTE: MINIMUM REQUIRED LIGHTING LEVELS ARE ESTABLISHED IN THE ONTARIO BUILDING CODE).
  - (e) MINIMIZE AMOUNT AND VISUAL IMPACT OF PERIMETER LIGHTING.
  - (f) AVOID USE OF FLOODLIGHTING.
4. COMMENTS RECEIVED FROM THE CITY OF OTTAWA, DATED 21 APR 2022, WITH REVIEW COMMENTS FROM THE FIRST SUBMISSION:
 

THE PLAN MUST DEMONSTRATE THAT EXTERIOR LIGHTING IS DESIGNED TO MEET THE FOLLOWING CRITERIA:

  - IT MUST BE DESIGNED USING ONLY FIXTURES THAT MEET THE CRITERIA FOR FULL CUT-OFF (SHARP CUT-OFF) CLASSIFICATION, AS RECOGNIZED BY THE ILLUMINATING ENGINEERING SOCIETY OF NORTH AMERICA (IESNA OR IES); AND
  - IT MUST RESULT IN MINIMAL LIGHT SPILLAGE ONTO ADJACENT PROPERTIES, AS A GUIDELINE, 0.5 FOOTCANDLES IS NORMALLY THE MAXIMUM ALLOWABLE SPILLAGE.\*

**LUMINAIRE SCHEDULE**

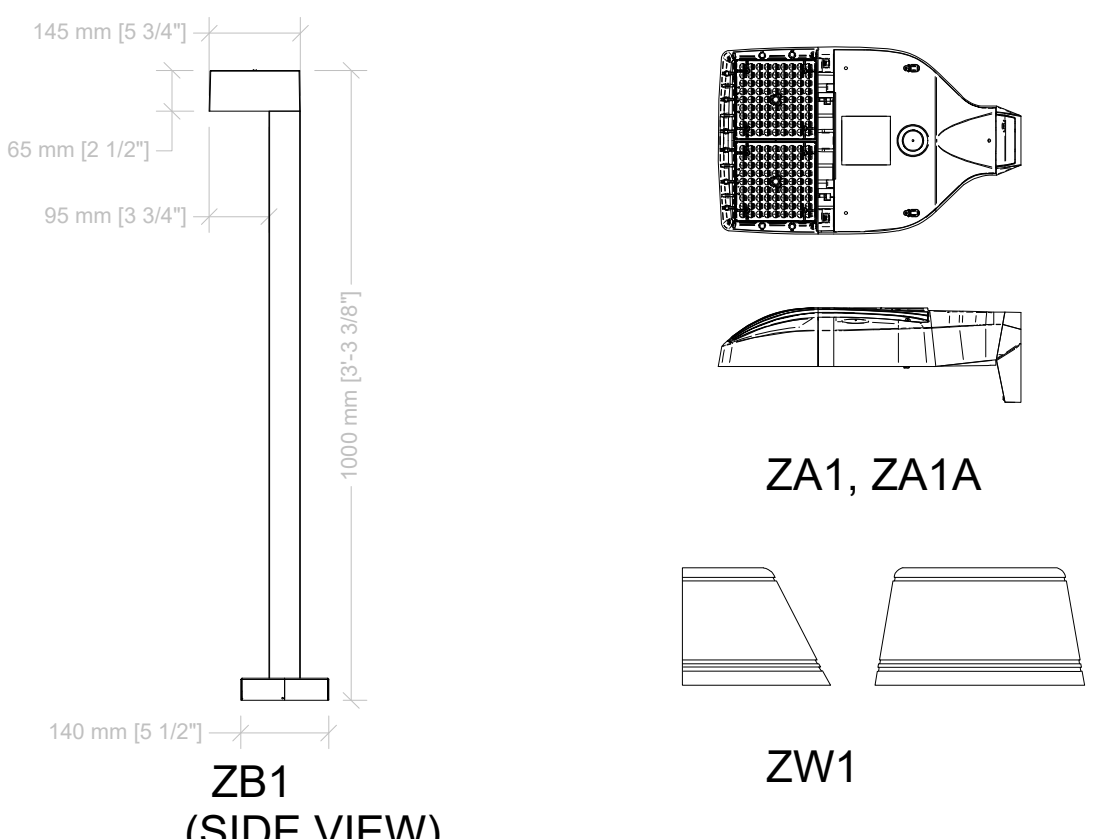
- ZA1 ARM MOUNTED AREA LIGHT, TYPE 4W DISTRIBUTION BASIS OF DESIGN: HUBBELL AIRO MICRO STRIKE ASL1-80L-25-3K7-4W-UJ 1996 LUMENS, 25.5 WATTS, 3000 K CCT, MIN 70 CRI, 120 VOLT MOUNTING 10 FEET AFG (7 FOOT POLE ON 3 FOOT ARTIFORMS KELLAMY 610R BASE) B0-U0-G0
- ZA1A ARM MOUNTED AREA LIGHT, TYPE 4W DISTRIBUTION, BACKLIGHT CONTROL BASIS OF DESIGN: HUBBELL AIRO MICRO STRIKE ASL1-80L-25-3K7-4W-U-BC 1996 LUMENS, 25.5 WATTS, 3000 K CCT, MIN 70 CRI, 120 VOLT MOUNTING 10 FEET AFG (7 FOOT POLE ON 3 FOOT ARTIFORMS KELLAMY 610R BASE) B0-U0-G0
- ZB1 BOLLARD LUMINAIRE, TYPE 3 DISTRIBUTION BASIS OF DESIGN: LIGMAN PRAGUE 1 SERIES PRA-10002-T3-W3 1 METRE HIGH BOLLARD 567 LUMENS, 14 WATTS, 120 VOLT, 3000 K CCT, MIN 70 CRI, B0-U0-G0
- ZW1 WALL MOUNT LUMINAIRE, TYPE 4 DISTRIBUTION BASIS OF DESIGN: HUBBELL GEOPAK SERIES 1, SIZE 1 TRP1-12L15-3K7-4 MOUNTING HEIGHT 10 FEET AFG 1471 LUMENS, 13.9 WATTS, 3000 K CCT, MIN 70 CRI, 120 VOLT, B1-U0-G1

**GENERAL SHEET NOTES**

1. PHOTOMETRIC DATA POINTS ARE PROVIDED IN FOOTCANDLES (fc). ANALYSIS PERFORMED BY OMNILUMEN TECHNICAL PRODUCTS IN AEGIS2 SOFTWARE WITH 0.9 LIGHT LOSS FACTOR (LLF). CALCULATION GRID SPACING 3.0 m x 3.0 m (10 FOOT X 10 FOOT) GRID AT GROUND LEVEL.
2. IES DEFINITIONS: FULL CUTOFF: "ZERO INTENSITY AT OR ABOVE HORIZONTAL (90° ABOVE NADIR) AND LIMITED TO A VALUE NOT EXCEEDING 10% OF LAMP LUMENS AT OR ABOVE 90° FULLY SHIELDED LUMINAIRE; A LUMINAIRE THAT ALLOWS NO EMISSION ABOVE A HORIZONTAL PLANE THROUGH THE FIXTURE."
3. IES TECHNICAL MEMORANDUM TM-15 ESTABLISHED THE "BUG" RATING SYSTEM THAT DEFINES BACKLIGHT, UPLIGHT, AND GLARE RATINGS OF EXTERIOR LUMINAIRES AND REPLACED THE PREVIOUSLY USED TERMINOLOGY FOR CUTOFF, FULL CUTOFF, ETC. A U0 RATING CORRESPONDS TO ZERO UPLIGHT (EQUAL TO FULL CUTOFF), AND A U1 RATING CORRESPONDS TO A MAXIMUM OF 10 LUMENS IN THE "UL" ZONE BETWEEN 90 DEGREES AND 100 DEGREES FROM NADIR, AND A MAXIMUM OF 10 LUMENS IN THE "UH" ZONE ABOVE 110 DEGREES ABOVE NADIR.
4. INTERNATIONAL DARK-SKY ASSOCIATION (IDA) RECOMMENDS 3000 K CCT (OR LESS) TO HELP REDUCE SKYGLOW AND IMPROVE NIGHTSCAPES. IDA DARK SKY APPROVED FIXTURE SEAL OF APPROVAL PERMITS A MAXIMUM OF 10 LUMENS IN THE 90-100 DEGREE UL ZONE.
5. IES RP-8-18 "PRACTICE FOR DESIGN AND MAINTENANCE OF ROADWAY AND PARKING FACILITY LIGHTING", CHAPTER 17 FOR PARKING AREAS AND DRIVES ESTABLISHES A RECOMMENDED PRACTICE OF MINIMUM 5 LUX (0.5 FC) THROUGHOUT PARKING AREAS AND DRIVES.
6. EXTERIOR LIGHTING MANUFACTURER TO SUBMIT PHOTOMETRIC ANALYSIS PLAN OF PROPOSED LUMINAIRES SHOWING DELIVERED LIGHT LEVELS (MEASURED IN FOOTCANDLES), AND DEMONSTRATING MUNICIPALLY COMPLIANT LIGHT TRESPASS.
7. UNDERGROUND LIGHTING CONDUCTORS MINIMUM #6 AWG.
8. WHERE AN INCOMPLETE MODEL CAT NO. IS LISTED, MANUFACTURERS/SUPPLIERS MUST CONFIRM THE PROPOSED FIXTURE WITH THE CONSULTANT A MINIMUM OF ONE WEEK PRIOR TO TENDER CLOSE. SUBSTITUTE MANUFACTURERS INCLUDE ACUITY BRANDS LIGHTING, COOPER LIGHTING SOLUTIONS, CREE LIGHTING, HUBBELL, LSI INDUSTRIES, SIGNIFY.
9. WHERE NOTED ABOVE THAT FIXTURES ARE TO HAVE FINISH TO SUIT ARCHITECT THE FINISH WILL BE SELECTED FROM MANUFACTURER'S OPTIONAL COLOUR CHART (i.e. RAL COLOURS OR EQUAL). PROVIDE THIS COLOUR CHART WITH SHOP DRAWING SUBMITTAL. SUBMIT SHOP DRAWINGS FOR CONSULTANT'S REVIEW PRIOR TO PLACING ANY ORDER.
10. SEQUENCE OF OPERATION EACH LUMINAIRE SHALL BE CONTROLLED BY A PHOTOCELL OR TIME CLOCK DEVICE THAT AUTOMATICALLY TURNS OFF THE LIGHTING WHEN SUFFICIENT DAYLIGHT IS AVAILABLE. (ASHRAE 90.1-2013 9.4.1.4.a.)

**CALCULATION SUMMARY**

LABEL	CALC TYPE	UNITS	AVG	MAX	MIN	AVG/MIN	MAX/MIN
BARRIER FREE PARKING	ILLUMINANCE FC	3.55	5.0	1.5	2.37	3.33	
GARBAGE ACCESS	ILLUMINANCE FC	2.70	3.2	1.9	1.42	1.68	
MAIN ENTRANCE	ILLUMINANCE FC	2.43	4.1	1.4	1.74	2.93	
PARKING	ILLUMINANCE FC	1.87	3.1	0.8	2.36	3.80	
RAMP	ILLUMINANCE FC	2.17	4.0	0.7	3.10	5.71	
SECONDARY ENTRANCE	ILLUMINANCE FC	2.15	3.0	1.2	1.79	2.50	
SPILL OF LIGHT (EXCLUDING DRIVEWAY)	ILLUMINANCE FC	0.02	0.5	0.0	N.A.	N.A.	



No.	DATE	DESCRIPTION	CH'D
6	2022-OCT-18	RE-ISSUED FOR SITE PLAN APPROVAL	CB
5	2022-JUL-11	RE-ISSUED FOR SITE PLAN APPROVAL	CB
4	2022-MAY-19	RE-ISSUED FOR SITE PLAN APPROVAL	CB
3	2021-DEC-06	RE-ISSUED FOR SITE PLAN APPROVAL	CB
2	2021-OCT-14	RE-ISSUED FOR SITE PLAN APPROVAL	CB
1	2021-AUG-17	ISSUED FOR SITE PLAN APPROVAL	CB

**REVISIONS**

THE SPECIFICATIONS ARE TO BE CONSIDERED AS AN INTEGRAL PART OF THESE DRAWINGS AND NEITHER THE DRAWINGS NOR THE SPECIFICATIONS SHALL BE USED ALONE. REFER TO ARCHITECTURAL DRAWINGS FOR DIMENSIONS, DO NOT SCALE.

**QUASAR CONSULTING GROUP**  
1025-130 SLATER ST., OTTAWA, ON K1P 6E2  
TEL: 905-507-0800  
WEB: WWW.QUASARCG.COM

FOR QUESTIONS REGARDING THIS PROJECT, PLEASE EMAIL: NCR-21-RE-009@QUASARCG.COM

CLIENT

**12213559**  
**Canada Inc**  
9966 ST AUGUSTIN ROAD, EMBRUM, ON K0A 1W0

PROJECT **SITE PLAN APPROVAL**  
5497 MANOTICK MAIN STREET  
OTTAWA, ON

TITLE **SITE LIGHTING PHOTOMETRIC PLAN**

CHECKED	CB	PROJECT No.	NCR-21-RE-009
SCALE	1:150	DRAWING No.	EL-101