

Project Name:	City of Mississauga Fire Station 123 3050 The Collegeway, Mississauga, ON	Date Issued:	June 27, 2024
Quasar Project #:	CM-22-281		
DPAI Project #:	12301		
Distribution			
DPAI	Sebastian Lubczynski		sebastian@dpai.ca
Quasar Consulting Group	Terry Sedore		Terry.sedore@quasarcg.com
Quasar Consulting Group	George Mikhael		George.mikhael@quasarcg.com
Quasar Consulting Group	Muhammad Shah		Muhhammad.Shah@quasarcg.com
Quasar Consulting Group	Dayton Chuck		Dayton.chuck@quasarcg.com
Addendum #:	E03		
Revision #:	0		

This Addendum forms part of the Contract Specifications and Drawings, and modifies the Bidding Documents, with Amendments and Additions noted below. This Addendum shall be added to the front of the specifications as issued. Bidders shall acknowledge receipt of this Addendum in the space provided in the Bid Form and include in bid amount.

This addendum includes modifications to the drawings as summarized below. Unless otherwise noted, all drawings listed below are attached herewith.

1.0 Revisions to Drawings

.1 Drawing E-003 – Electrical Site Photometric Plan

- i) Revise tag ZW1 to ZA2.

.2 Drawing E-102 – Roof Power and Systems Plan

- i) Revise tag from L1 to MD1, L2 to MD2 & L3 to MD3.
- ii) Delete L5.


.3 Drawing E-602 – Electrical Panelboard Schedule I

- i) Delete L5 motorized damper 15A-1P circuit breaker and add spare.

.4 Drawing E-605 – Schedules for Lighting

- i) Revise ZA1 and ZA2 substitutions from 'Beacon Viper' to 'KIM OURO Series'.
- ii) Revise the catalog no. for ZW4 from 'L50-I-12-06-30-80-MULT-9x59' to 'L50-E-12-06-30-80-MULT-9x59'.
- iii) Revise the catalog no. for ZWW from 'L50-I-12-06-30-80-MULT-70x70' to 'L50-E-2x12-06-30-80-MULT-70x70'.
- iv) Add remarks for ZWW '2x12 denotes total length of 24in'.

Quasar Consulting Group



Christopher Borcsok, P.Eng., LC, LEED AP

Senior Electrical Engineer

CB/bs

GENERAL NOTES

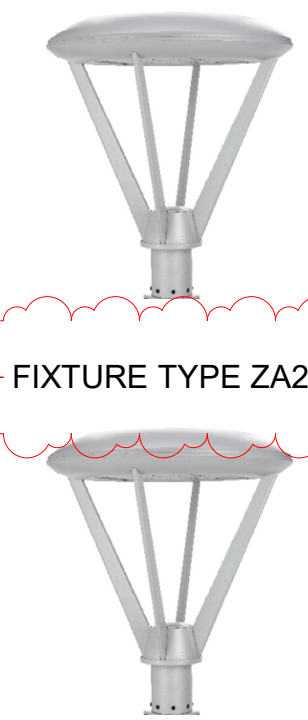
- CITY OF MISSISSAUGA NUISANCE LIGHTING BY-LAW 625-12, "THE CITY IS EXEMPT FROM THE REQUIREMENTS OF THIS BY-LAW."
- CITY OF MISSISSAUGA PROPERTY STANDARDS BY-LAW 654-89, SECTION 18 - LIGHTING.
 - LIGHTING FIXTURES SHALL BE INSTALLED AND MAINTAINED IN ALL AREAS INSIDE AND OUTSIDE EVERY BUILDING OR STRUCTURE OR PART THEREOF SO THAT WORK, USE OR OCCUPATION NORMALLY CARRIED OUT IN SUCH AREAS CAN BE UNDERTAKEN SAFELY.
 - ALL FIXTURES AND ALL CONNECTIONS THERETO SHALL BE KEPT IN A SAFE WORKING CONDITION.
 - EXTERIOR LIGHTING FIXTURES SHALL BE INSTALLED AND MAINTAINED SO AS TO PREVENT THE LIGHT SOURCE FROM SHINING DIRECTLY INTO A DWELLING UNIT.
- CITY OF MISSISSAUGA SITE PLAN APPLICATION: PROCESS GUIDELINES, SECTION 2.1.1.2 - ENGINEER CERTIFIED LIGHTING PLAN REQUIREMENTS. ENGINEER CERTIFIED LIGHTING PLANS ARE REQUIRED FOR THE EXTERIOR LIGHTING ON A PROPERTY FOR ALL SITE PLAN APPLICATIONS WITHIN 50 m (166.8 FT.) OF A RESIDENTIALLY ZONED PROPERTY. SITE PLAN APPLICATIONS FOR DETACHED AND SEMI-DETACHED DWELLINGS ARE EXCLUDED. THE ENGINEER CERTIFIED LIGHTING PLAN MUST ILLUSTRATE:
 - THE LOCATION, NUMBER, TYPE, POSITION, ELEVATION AND MOUNTING HEIGHT OF ALL EXTERIOR LIGHT FIXTURES INCLUDING EXTERIOR LIGHTING ON TIMERS.
 - THE ELEVATION DRAWINGS MUST SHOW THE HEIGHT AND TYPE OF "SHIELDED" LIGHTING FIXTURE. ALL PROPOSED EXTERIOR LIGHTING IS REQUIRED TO BE "SHIELDED" (EXAMPLES OF ACCEPTABLE/UNACCEPTABLE LIGHTING FIXTURES).
 - THE LIGHT SPREAD PATTERN DRAWING ALONG WITH ALL THE EXTERIOR LIGHT FIXTURE INFORMATION MUST BE SHOWN ON THE ENGINEERING CERTIFIED LIGHTING PLAN.
 - THE ENGINEER CERTIFIED LIGHTING PLAN MUST CONFORM TO THE SITE PLAN.
 - SITE WORKS SECURITIES ARE REQUIRED TO ENSURE THAT THE LIGHTING IS "SHIELDED" AND INSTALLED CORRECTLY AS PER THE APPROVED SITE PLAN AND ENGINEER CERTIFIED LIGHTING PLAN. THE SITE PLAN SECURITIES FOR EXTERIOR LIGHTING INCLUDE: THE EXTERNAL FREESTANDING FIXTURES, INCLUDING POLE MOUNTED LIGHTING, BOLLARDS, IN-GROUND LIGHTING, FLOODLIGHTS, ETC. A LUMP-SUM SECURITY WILL BE REQUIRED FOR WALL MOUNTED FIXTURES.
- LIGHTING DESIGN CRITERIA PER IES RP-8-18, CHAPTER 17: MINIMUM 5 LUX IN PARKING AREAS AND DRIVES, WITH A MAX-MIN UNIFORMITY OF 15:1 OR BETTER.
- PHOTOMETRIC DATA POINTS ARE PROVIDED IN LUX. ANALYSIS PERFORMED WITH 0.9 LIGHT LOSS FACTOR (LLF) FOR ALL LUMINAIRES. PHOTOMETRIC ANALYSIS PERFORMED BY CREE WITH AGI32 SOFTWARE.
- CITY OF MISSISSAUGA CORPORATE GREEN BUILDING (CSB) STANDARD:
 - ALL ROOFTOP FACADE ARCHITECTURAL ILLUMINATION MUST BE DIRECTED DOWNWARD AND TURNED OFF AFTER FACILITY OPERATING HOURS.
 - INTERNATIONAL DARK SKY ASSOCIATION SPECIFIES MAXIMUM 3000K CCT FOR ALL DARK SKY COMPLIANT LUMINAIRES.
 - EXTERIOR LIGHTING MANUFACTURER TO SUBMIT PHOTOMETRIC ANALYSIS PLAN OF PROPOSED LUMINAIRES SHOWING DELIVERED LIGHT LEVELS (MEASURED IN LUX), AND DEMONSTRATING MINIMIZING LIGHT TRESPASS.
 - UNDERGROUND LIGHTING CONDUCTORS MINIMUM #6 AWG.
 - EXTERIOR LIGHTING CONTROL SEQUENCE OF OPERATION TO ASHRAE 90-1.2013 8.4.1.4, AS AMENDED BY 2012 CIRC 88-10 VERSION EFFECTIVE JANUARY 1, 2017:
 - POLE MOUNTED LIGHTING TURNS OFF AUTOMATICALLY BY PHOTOCELL SENSOR WHEN SUFFICIENT DAYLIGHT IS AVAILABLE OR BY TIME SCHEDULE.
 - ALL BUILDING FACADE AND LANDSCAPE LIGHTING (TYPE ZWW) SHALL BE AUTOMATICALLY SHUT OFF BETWEEN MIDNIGHT AND 5AM.
 - EACH LUMINAIRE SHALL BE CONTROLLED BY A PHOTOCELL DEVICE THAT AUTOMATICALLY TURNS OFF THE LIGHTING WHEN SUFFICIENT DAYLIGHT IS AVAILABLE. (ASHRAE 90-1.2013 8.4.1.4.4.)
 - SITE CLASSIFIED LIGHTING ZONE "122" BASED ON ASHRAE 90-1.2013, TABLE 9.4.2.1 "AREAS PREDOMINANTLY CONSISTING OF RESIDENTIAL ZONING, NEIGHBORHOOD BUSINESS DISTRICTS, LIGHT INDUSTRIAL, WITH LIMITED NIGHTTIME USE AND RESIDENTIAL MIXED USE AREAS".
 - ALL EXTERIOR LIGHTING TO BE MINIMUM 80 CRI IN ACCORDANCE WITH IES G-1-16, AND OPTED PRINCIPALS.
- LED AREA LUMINAIRE ON 18 FOOT HIGH, 5 INCH SQUARE METAL POLE, BACKLIGHT CONTROL, DISTRIBUTION, MOUNTED ON CONCRETE "ARTFORMS" KELLAMT 610" BASE EXTENDING 30 INCHES ABOVE FINISHED GRADE. 18 FOOT OVERALL MOUNTING HEIGHT ABOVE FINISHED GRADE. THE EDGE SERIES BY CREE.
LUMINAIRE: ARE-EDR-4M-04-E-350-30K
120 VOLT, 3000 K, MIN 80 CRI, 46 INPUT WATTS, 5003 LUMENS
B-U-G RATING B0-U0-G1, DARK SKY FRIENDLY, ZERO UPLIGHT.
- LED AREA LUMINAIRE ON 12 FOOT HIGH, 5 INCH SQUARE METAL POLE, BACKLIGHT CONTROL, DISTRIBUTION, MOUNTED ON CONCRETE "ARTFORMS" KELLAMT 610" BASE EXTENDING 30 INCHES ABOVE FINISHED GRADE. 18 FOOT OVERALL MOUNTING HEIGHT ABOVE FINISHED GRADE. THE EDGE SERIES BY CREE.
LUMINAIRE: ARE-EDR-4M-04-E-350-30K
120 VOLT, 3000 K, MIN 80 CRI, 46 INPUT WATTS, 5003 LUMENS
B-U-G RATING B0-U0-G1, DARK SKY FRIENDLY, ZERO UPLIGHT.
- LED WALL MOUNT LUMINAIRE WITH TYPE 4 DISTRIBUTION.
XPS SERIES BY CREE.
LUMINAIRE: SEC-EDG-4M-02-E-525-30K
120 VOLT, 3000 K, MIN 80 CRI, 37 INPUT WATTS, 3365 LUMENS
B-U-G RATING B1-U0-G1, DARK SKY FRIENDLY, ZERO UPLIGHT.
- LED WALL MOUNT LUMINAIRE WITH TYPE 4 DISTRIBUTION.
XPS SERIES BY CREE.
LUMINAIRE: SEC-EDG-3M-02-E-525-30K
120 VOLT, 3000 K, MIN 80 CRI, 37 INPUT WATTS, 3365 LUMENS
B-U-G RATING B1-U0-G1, DARK SKY FRIENDLY, ZERO UPLIGHT.
- LED WALL MOUNT LUMINAIRE WITH TYPE 4 DISTRIBUTION.
XPS SERIES BY CREE.
LUMINAIRE: SEC-EDG-3M-02-E-525-30K
120 VOLT, 3000 K, MIN 80 CRI, 25 INPUT WATTS, 2501 LUMENS
B-U-G RATING B1-U0-G1, DARK SKY FRIENDLY, ZERO UPLIGHT.
- LED WALL WASHER.
TROY SERIES BY ECOSENSE LIGHTING.
LUMINAIRE: L50-4-12-02-30-80-MULT-9x59
120 VOLT, 3000 K, MIN 80 CRI, 2 INPUT WATTS, 139 LUMENS
B-U-G RATING B1-U0-G1, DARK SKY FRIENDLY, ZERO UPLIGHT.
- LED WALL WASHER.
TROY SERIES BY ECOSENSE LIGHTING.
LUMINAIRE: L50-4-12-02-30-80-MULT-7.7x70
120 VOLT, 3000 K, MIN 80 CRI, 6 INPUT WATTS, 614 LUMENS
B-U-G RATING B1-U0-G1, DARK SKY FRIENDLY, ZERO UPLIGHT.

LUMINAIRE SCHEDULE

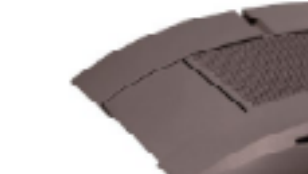
- ZA1 LED AREA LUMINAIRE ON 18 FOOT HIGH, 5 INCH SQUARE METAL POLE, BACKLIGHT CONTROL, DISTRIBUTION, MOUNTED ON CONCRETE "ARTFORMS" KELLAMT 610" BASE EXTENDING 30 INCHES ABOVE FINISHED GRADE. 18 FOOT OVERALL MOUNTING HEIGHT ABOVE FINISHED GRADE. THE EDGE SERIES BY CREE.
LUMINAIRE: ARE-EDR-4M-04-E-350-30K
120 VOLT, 3000 K, MIN 80 CRI, 46 INPUT WATTS, 5003 LUMENS
B-U-G RATING B0-U0-G1, DARK SKY FRIENDLY, ZERO UPLIGHT.
- ZA2 LED AREA LUMINAIRE ON 12 FOOT HIGH, 5 INCH SQUARE METAL POLE, BACKLIGHT CONTROL, DISTRIBUTION, MOUNTED ON CONCRETE "ARTFORMS" KELLAMT 610" BASE EXTENDING 30 INCHES ABOVE FINISHED GRADE. 18 FOOT OVERALL MOUNTING HEIGHT ABOVE FINISHED GRADE. THE EDGE SERIES BY CREE.
LUMINAIRE: ARE-EDR-4M-04-E-350-30K
120 VOLT, 3000 K, MIN 80 CRI, 46 INPUT WATTS, 5003 LUMENS
B-U-G RATING B0-U0-G1, DARK SKY FRIENDLY, ZERO UPLIGHT.
- ZW1 LED WALL MOUNT LUMINAIRE WITH TYPE 4 DISTRIBUTION.
XPS SERIES BY CREE.
LUMINAIRE: SEC-EDG-4M-02-E-525-30K
120 VOLT, 3000 K, MIN 80 CRI, 37 INPUT WATTS, 3365 LUMENS
B-U-G RATING B1-U0-G1, DARK SKY FRIENDLY, ZERO UPLIGHT.
- ZW2 LED WALL MOUNT LUMINAIRE WITH TYPE 4 DISTRIBUTION.
XPS SERIES BY CREE.
LUMINAIRE: SEC-EDG-3M-02-E-525-30K
120 VOLT, 3000 K, MIN 80 CRI, 37 INPUT WATTS, 3365 LUMENS
B-U-G RATING B1-U0-G1, DARK SKY FRIENDLY, ZERO UPLIGHT.
- ZW3 LED WALL MOUNT LUMINAIRE WITH TYPE 4 DISTRIBUTION.
XPS SERIES BY CREE.
LUMINAIRE: SEC-EDG-3M-02-E-525-30K
120 VOLT, 3000 K, MIN 80 CRI, 25 INPUT WATTS, 2501 LUMENS
B-U-G RATING B1-U0-G1, DARK SKY FRIENDLY, ZERO UPLIGHT.
- ZW4 LED WALL WASHER.
TROY SERIES BY ECOSENSE LIGHTING.
LUMINAIRE: L50-4-12-02-30-80-MULT-9x59
120 VOLT, 3000 K, MIN 80 CRI, 2 INPUT WATTS, 139 LUMENS
B-U-G RATING B1-U0-G1, DARK SKY FRIENDLY, ZERO UPLIGHT.
- ZWW LED WALL WASHER.
TROY SERIES BY ECOSENSE LIGHTING.
LUMINAIRE: L50-4-12-02-30-80-MULT-7.7x70
120 VOLT, 3000 K, MIN 80 CRI, 6 INPUT WATTS, 614 LUMENS
B-U-G RATING B1-U0-G1, DARK SKY FRIENDLY, ZERO UPLIGHT.

- NOTES:
- 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.
 - 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.
 - SEQUENCE OF OPERATION
EACH LUMINAIRE SHALL BE CONTROLLED BY A PHOTOCELL DEVICE THAT AUTOMATICALLY TURNS OFF THE LIGHTING WHEN SUFFICIENT DAYLIGHT IS AVAILABLE. (ASHRAE 90-1.2013 8.4.1.4.4.)
 - PROVIDE NEMA 7-PIN RECEPTACLE C/W SHORTING CAP AND ROUGH-IN FOR FUTURE ZW4A SOCKET.
 - LIGHTING MANUFACTURER TO SUBMIT PHOTOMETRIC ANALYSIS DEMONSTRATING COMPLIANCE WITH LIGHTING DESIGN CRITERIA AND MUNICIPAL LIGHTING ORDINANCE.

FIXTURE TYPE ZA1



FIXTURE TYPE ZW1



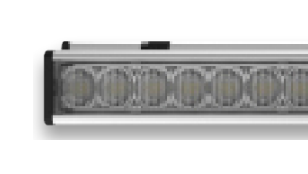
FIXTURE TYPE ZW2



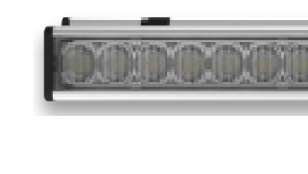
FIXTURE TYPE ZW3



FIXTURE TYPE ZW4



FIXTURE TYPE ZWW



LEGEND	
SYMBOL	DESCRIPTION
□	AREA LUMINAIRE ON POLE C/W CONCRETE BASE. DIRECTIONAL ARROW WHERE NOTED DENOTES PRIMARY LUMEN ORIENTATION.
○	WALL MOUNT LUMINAIRE

CALCULATION SUMMARY							
LABEL	CALC TYPE	UNITS	AVG	MAX	MIN	AVGMIN	MAXMIN
SPILL LIGHT	ILLUMINANCE	LUX	0.11	14	0.0	N.A.	N.A.
WHOLE SITE	ILLUMINANCE	LUX	10.04	36.7	0.0	N.A.	N.A.
PAVEMENT	ILLUMINANCE	LUX	14.59	36.7	6.3	2.32	5.83

KEYNOTE LEGEND	
Key Value	Keynote Text
L3	PROVIDE OUTDOOR RATED 24 V OCCUPANCY SENSOR, WATTSSTOPPER FSP-3018 C/W FSP-42 LENS, AND POWER PACK. ZW4 LUMINAIRES ALONG EAST WALL OF BUILDING TO BE ON ASTRONOMICAL TIME CLOCK-SENSOR OPERATION.

DRAWINGS ARE NOT TO BE SCALED.
CONTRACTOR MUST VERIFY ALL DIMENSIONS ON THE JOB AND REPORT ANY DISCREPANCY TO ARCHITECTS BEFORE PROCEEDING WITH WORK.

ALL DRAWINGS AND SPECIFICATIONS ARE THE PROPERTY OF THE ARCHITECT AND MUST BE RETURNED AT THE COMPLETION OF THE WORK.

SEALS

9	ISSUED FOR ADDENDUM E-ADD-03	2024-06-27
8	ISSUED FOR TENDER	2024-05-01
7	ISSUED FOR TENDER	2024-05-01
6	ISSUED FOR TENDER REVIEW	2024-03-08
5	ISSUED FOR PERMIT	2024-01-24
4	ISSUED FOR 99% CD	2024-01-19
3	ALECTRA COORDINATION	2023-12-18
2	ISSUED FOR DESIGN DEVELOPMENT	2023-10-06
1	ALECTRA SERVICE REQUEST	2023-08-11

NO.	ISSUES/REVISIONS	DATE
-----	------------------	------

DRAWING TITLE:

ELECTRICAL SITE
PHOTOMETRIC PLAN

ISSUE DATE: 2024-06-27

DRAWN BY: MS CHECKED BY: CB

PROJECT NO.: CM-22-281 SCALE: As Indicated

DRAWING NO.: REVISION:

E-003 9



KEYNOTE LEGEND	
Key Value	Keynote Text
E1	PROVIDE ONE DATA DROP TO WIRELESS ACCESS POINT (WAP) MODEL C8130. MOUNT WAP DIRECTLY ON CEILING (DRYWALL OR DROP CEILING, AS NOTED ON RFP).
E2	PROVIDE ONE DATA DROP TO WAP MODEL C8120. MOUNT WAP ON WALL APPROXIMATELY 9'10" TO 11' AFF.
P2	TWO TRANSFORMERS STACKED ONE ON TOP OF THE OTHER, COMPLETE WITH ENGINEERED STRUCTURAL CHANNEL SUPPORT. CONTRACTOR TO HIRE STRUCTURAL ENGINEER TO PROVIDE SEALED DETAIL DURING SUBMITTAL REVIEW PHASE.
P3	CONFIRM EXACT LOCATION OF DEVICE WITH THE OWNER PRIOR TO ROUGH-IN. PROVIDE LAMACOID NAMEPLATE INDICATING FUNCTION OF THE BUTTON.
P4	PROVIDE AUDIBLE ALARM FOR NOTIFICATION VIA PA SYSTEM TO THE IN-STATION STAFF. SEQUENCE OF OPERATION INITIATE AUDIBLE ALARM WHEN ENTRY IS MADE INTO THE BUILDING. DO NOT INITIATE AUDIBLE ALARM WHEN AN EXIT IS MADE.
P6	CONTRACTOR TO REVIEW FOUR FOLD DOOR SHOP DRAWINGS AND CONFIRM CONDUIT REQUIREMENTS FOR DOOR STATUS. WHETHER PROVIDED BY DOOR CONTACTS SENSOR ON THE DOOR, OR BY STATUS CONTACT IN THE CONTROL PANEL FOR EACH RESPECTIVE DOOR. CONTRACTOR TO INCLUDE FOR CONDUIT ROUGH-IN BASED ON EITHER SCENARIO.
P7	FOR TV IN DAY ROOM, PROVIDE LEGRAND EFSB4 4-GANG WALL BOX TO CONSOLIDATE POWER AND DATA BEHIND TV. PROVIDE DUPLEX RECEPTACLE AND AV PASS THRU BELOW TV SIMILAR TO DETAIL FOR TV AND DINING ROOM.
P8	ALTERNATIVE PRICE NO.1: CREDIT TO DELETE IN-FLOR RADIANT HEATING SYSTEM, DELETE BREAKERS, FEEDERS AND LOCAL DISCONNECTS FOR THE FOLLOWING EQUIPMENT: RFH-1, RFH-2, B-1, P-2 and P-3.
P9	ALTERNATIVE PRICE NO.2: DELETE 4-FOLD DOOR, AND IN LIEU, ADD OVERHEAD SECTIONAL DOOR. FOR POWER, DELETE 15A/3P CIRCUIT AND ADD 20A/2P CIRCUIT (BREAKER, FEEDER AND LOCAL DISCONNECT) TO SUIT 1HP, 208V/1PH OHM.

GENERAL SHEET NOTES

1. IN APPARATUS BAY, PROVIDE WEATHERPROOF WHILE IN USE COVER FOR ALL RECEPTACLES.



CITY OF MISSISSAUGA FIRE STATION 123

3050 THE COLLEGEWAY
MISSISSAUGA, ONTARIO
CANADA



architecture
interiors
urban design

25 Main Street West
Hamilton, Ontario
L8P 1H1 Canada

T: 905-522-0220



250 ROWNTREE DAIRY RD, WOODBRIDGE, ON
TEL: 905-507-0800
WEB: WWW.QUASARCG.COM

DRAWINGS ARE NOT TO BE SCALED.

CONTRACTOR MUST VERIFY ALL DIMENSIONS ON THE JOB AND REPORT ANY DISCREPANCY TO ARCHITECTS BEFORE PROCEEDING WITH WORK.

ALL DRAWINGS AND SPECIFICATIONS ARE THE PROPERTY OF THE ARCHITECT AND MUST BE RETURNED AT THE COMPLETION OF THE WORK.

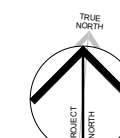
SEALS

9	ISSUED FOR ADDENDUM E-ADD-03	2024-06-27
8	ISSUED FOR TENDER	2024-05-01
7	ISSUED FOR TENDER	2024-05-01
6	ISSUED FOR TENDER REVIEW	2024-03-08
5	ISSUED FOR PERMIT	2024-01-24
4	ISSUED FOR 99% CD	2024-01-19
3	ELECTRA COORDINATION	2023-12-18
2	ISSUED FOR DESIGN DEVELOPMENT	2023-10-06
1	ELECTRA SERVICE REQUEST	2023-08-11

NO. ISSUES/REVISIONS DATE

DRAWING TITLE:

POWER AND SYSTEMS
PLAN



ISSUE DATE: 2024-06-27

DRAWN BY: MS CHECKED BY: CB

PROJECT NO.: CM-22-281 SCALE: As Indicated

DRAWING NO.: REVISION:

E-101

9

Branch Panel: RP-L															
Location: ELECTRICAL ROOM 135						Volts: 120/208 Wye						A.I.C. Rating:			
Supply From:						Phases: 3						Mains Type:			
Mounting:						Wires: 4						Mains Rating:			
Enclosure:												MCB Rating:			
Notes:															
CKT	Circuit Description	QTY	Trip	Poles	A	B	C	A	B	C	Poles	Trip	QTY	Circuit Description	CKT
L1	LIGHTING - EXTERIOR	11	15 A	1	352 VA			1016 VA			1	15 A	31	LIGHTING	L2
L3	LIGHTING	4	15 A	1		88 VA			2571 VA		1	15 A	68	LIGHTING	L4
L5	LIGHTING	25	15 A	1			847 VA			1325 VA	1	15 A	40	LIGHTING	L6
L7	LIGHTING	3	15 A	1	30 VA			1454 VA			1	15 A	10	LIGHTING	L8
L9	LIGHTING	29	15 A	1		1078 VA			357 VA		1	15 A	14	LIGHTING	L10
L11	LIGHTING	6	15 A	1			1284 VA			414 VA	1	15 A	9	LIGHTING - EXTERIOR	L12
L13	LIGHTING - EXTERIOR	11	15 A	1	220 VA			--	--		1	--	--	SPACE	L14
L15	SPARE	--	15 A	1		0 VA			--	--	1	--	--	SPACE	L16
L17	SPARE	--	15 A	1			0 VA			--	1	--	--	SPACE	L18
L19	SPARE	--	15 A	1	0 VA										L20
L21															L22
L23															L24
L25															L26
L27															L28
L29															L30
L31															L32
L33															L34
L35															L36
L37															L38
L39															L40
L41															L42
Total Load:					3068 VA		4078 VA		3852 VA						
Total Amps:					26 A		35 A		33 A						
Legend:															
Load Classification		Connected Load		Demand Factor		Estimated Demand		Panel Totals							
Other		2568 VA		100.00%		2568 VA		Total Conn. Load: 10990 VA							
LIGHTING		5447 VA		100.00%		5447 VA		Total Est. Demand: 11090 VA							
Lighting - Exterior		414 VA		125.00%		518 VA		Total Conn.: 31 A							
POWER		2600 VA		100.00%		2600 VA		Total Est. Demand: 31 A							
Notes:															

Branch Panel: RP-RB															
Location:					Volts: 120/208 Wye					A.I.C. Rating:					
Supply From:					Phases: 3					Mains Type:					
Mounting:					Wires: 4					Mains Rating:					
Enclosure:										MCB Rating: 1 A					
Notes:															
CKT	Circuit Description	QTY	Trip	Poles	A		B		C		Poles	Trip	QTY	Circuit Description	CKT
RB1	KITCHEN RECEPTACLE	1	20 A	1	180 VA	500 VA					1	20 A	1	DENT METER POWER	RB2
RB3	RECEPTACLE	1	15 A	1			180 VA	540 VA			1	15 A	3	KITCHEN RECEPTACLE	RB4
RB5	RECEPTACLE	2	15 A	1					360 VA	720 VA	1	15 A	4	KITCHEN RECEPTACLE	RB6
RB7	R. HVAC MAINTENANCE ON ROOF	4	20 A	1	720 VA	1500 VA					1	20 A	1	KITCHEN DISHWASHER	RB8
RB9	KITCHEN FRIDGE	1	20 A	1			1000 VA	1260 VA			1	15 A	7	RECEPTACLE	RB10
RB11	KITCHEN FRIDGE	1	20 A	1					1000 VA	1500 VA	1	20 A	3	PDO-F 105, PDO- 133, PDO-FC 108	RB12
RB13	RECEPTACLE	14	15 A	1	2520 VA	3420 VA					1	15 A	19	RECEPTACLE	RB14
RB15	RECEPTACLE	13	15 A	1			2340 VA	3328 VA							RB16
RB17	RECEPTACLE	13	15 A	1					2340 VA	3328 VA	2	50 A	1	KITCHEN STOVE	RB18
RB19															RB20
RB21	MB-1	2	20 A	2	180 VA	180 VA					1	20 A	1	RECEPTACLE WEATHERPROOF	RB22
							180 VA	180 VA			1	20 A	1	UNIVERSAL WASHROOM POWER	RB22
RB23	WATER BOTTLE FILLER	1	15 A	1					180 VA	540 VA	1	15 A	3	RECEPTACLE	RB24
RB25	RECEPTACLE	3	15 A	1	540 VA	900 VA					1	20 A	1	KITCHEN MICROWAVE	RB26
RB27	RECEPTACLE	3	15 A	1			540 VA	900 VA			1	20 A	5	RECEPTACLE WEATHERPROOF	RB28
RB29	RECEPTACLE	5	15 A	1					900 VA	1000 VA	1	20 A	2	PYLON SIGN POWER	RB30
RB31	PDO-FG 100A, PDO-FG 100B	2	15 A	1	1000 VA	500 VA					1	15 A	1	SECURITY PANEL	RB32
RB33	PDO-FG 112A, PDO-FG 112B	2	15 A	1			1000 VA	--			1	--	--	SPACE	RB34
RB35	PDO-FG 113A, PDO-FG 114A	2	15 A	1					1000 VA	--	1	--	--	SPACE	RB36
RB37	SPARE	--	15 A	1	0 VA	--					1	--	--	SPACE	RB38
RB39	SPARE	--	15 A	1			0 VA	--			1	--	--	SPACE	RB40
RB41	SPARE	--	15 A	1					0 VA	--	1	--	--	SPACE	RB42
RB43	SPARE	--	20 A	1	0 VA	--					1	--	--	SPACE	RB44
RB45	SPARE	--	20 A	1			0 VA								RB46
RB47	SPARE	--	20 A	1					0 VA						RB48
RB49															RB50
RB51															RB52
RB53															RB54
RB55															RB56
RB57															RB58
RB59															RB60
RB61															RB62
RB63															RB64
RB65															RB66
RB67															RB68
RB69															RB70
RB71															RB72
RB73															RB74
RB75															RB76
RB77															RB78
RB79															RB80
RB81															RB82
RB83															RB84
Total Load:					12140 VA		11448 VA		12868 VA						
Total Amps:					102 A		95 A		108 A						
Legend:															
Load Classification		Connected Load		Demand Factor		Estimated Demand		Panel Totals							
POWER		36456 VA		100.00%		36456 VA									
								Total Conn. Load: 36456 VA							
								Total Est. Demand: 36456 VA							
								Total Conn.: 101 A							
								Total Est. Demand: 101 A							
Notes:															

Branch Panel: RP-MB																	
Location: MECHANICAL ROOM 132						Volts: 120/208 Wye			A.I.C. Rating:								
Supply From:						Phases: 3			Mains Type:								
Mounting:						Wires: 4			Mains Rating:								
Enclosure:									MCB Rating: 1 A								
Notes:																	
CKT	Circuit Description	QTY	Trip	Poles	A		B		C		Poles	Trip	QTY	Circuit Description	CKT		
MB1	FC-13	1	20 A	1	500 VA	800 VA					1	20 A	4	CF-1, CF-2, CF-3, CF-4	MB2		
MB3	FC-10, FC-11	2	20 A	2			500 VA	750 VA			2	20 A	3	FC-7, FC-8, FC-9	MB4		
MB5							500 VA	750 VA								MB6	
MB7	UH-4	1	20 A	2	250 VA	250 VA			500 VA	750 VA		2	20 A	1	UH-3	MB8	
MB9							250 VA	250 VA								MB10	
MB11	P-1	1	20 A	1					500 VA	750 VA		2	20 A	3	FC-3, FC-4, FC-5	MB12	
MB13	UH-2	1	20 A	2	250 VA	750 VA										MB14	
MB15							250 VA	750 VA								MB16	
MB17	P-2	1	20 A	1					500 VA	750 VA		2	20 A	3	FC-1, FC-2, FC-6	MB18	
MB19	TSP-1	1	20 A	1	500 VA	500 VA					1	20 A	1	FC-14		MB20	
MB21	TSP-2	1	20 A	1			500 VA	500 VA			1	20 A	1	RH-1		MB22	
MB23	P-3	1	20 A	1					500 VA	250 VA		2	20 A	1	UH-4		MB24
MB25																MB26	
MB27	UH-1	1	20 A	2	250 VA	250 VA					2	20 A	1	DWHT-1		MB28	
MB29							250 VA	250 VA								MB30	
MB31	UH-7	1	20 A	3	167 VA	167 VA			167 VA	250 VA		2	20 A	1		MB32	
MB33							167 VA	167 VA					3	20 A	1	UH-8	MB34
MB35									167 VA	167 VA							MB36
MB37	UH-6	1	20 A	3	167 VA	167 VA											MB38
MB39							167 VA	167 VA					3	20 A	1	UH-9	MB40
MB41									1500 VA	167 VA							MB42
MB43	CND-1	1	20 A	2	1500 VA	500 VA											MB44
MB45	POWER	1	20 A	2			250 VA	500 VA					2	20 A	1	ERV-2	MB46
MB47									250 VA	1500 VA							MB48
MB49	FC-12	1	20 A	2	250 VA	1500 VA					2	20 A	1	CND-2			MB50
MB51							250 VA	250 VA									MB52
MB53	DWRPMP-1	1	20 A	1					500 VA	250 VA		2	20 A	1	EF-3		MB54
MB55	SPACE	--	--	1	--	2500 VA						1	20 A	1	POWER		MB56
MB57	L1,2,3 (MOTORIZED DAMPER)	3	20 A	1			300 VA	2500 VA			1	20 A	1	POWER			MB58
MB59	POWER	1	20 A	1					2500 VA	500 VA		1	20 A	1	POWER		MB60
MB61	POWER	1	20 A	1	500 VA	500 VA					1	20 A	1	POWER			MB62
MB63	POWER	1	20 A	1			2500 VA	--			1	--	--	SPACE			MB64
MB65	SPARE	--	15 A	1					0 VA	--	1	--	--	SPACE			MB66
MB67	SPARE	--	15 A	1	0 VA	--					1	--	--	SPACE			MB68
MB69	SPARE	--	15 A	1			0 VA	--			1	--	--	SPACE			MB70
MB71	SPARE	--	20 A	1					0 VA	--	1	--	--	SPACE			MB72
MB73	SPARE	--	20 A	1	0 VA	--					1	--	--	SPACE			MB74
MB75	SPARE	--	20 A	1			0 VA	--			1	--	--	SPACE			MB76
MB77	SPARE	--	20 A	1					0 VA	--	1	--	--	SPACE			MB78
MB79	SPARE	--	20 A	1	0 VA	--					1	--	--	SPACE			MB80
MB81	SPARE	--	20 A	1			0 VA	--			1	--	--	SPACE			MB82
MB83	SPARE	--	20 A	1					0 VA	--	1	--	--	SPACE			MB84
Total Load:					12217 VA		11467 VA		12417 VA								
Total Amps:					103 A		96 A		104 A								
Legend:																	
Load Classification		Connected Load		Demand Factor		Estimated Demand		Panel Totals									
POWER		36100 VA		100.00%		36100 VA											
								Total Conn. Load: 36100 VA									
								Total Est. Demand: 36100 VA									
								Total Conn.: 100 A									
								Total Est. Demand: 100 A									
Notes:																	

				Lighting Controls Matrix																											
Room #	Room Name or Type	ASHRAE 90.1-2013 Space Type	Same as	Controls Philosophy				Local Control...				Occupancy Sensor				Time Schedule		Daylight...		Other		Remarks									
				Controls Integrated into Luminaires	Line Voltage Controls	Standalone Control Devices	Network Lighting Controls	Building Automation System Lighting Controls	Manual (On/Off)	One zone only for space	Manual (On/Off) a, b Zoned switching	Manual Dimming Control	Key Switch (KS)	Scene Control (SC) or Graphic Touchscreen	Vacancy Mode (Manual On) (ASHRAE 90.1-2013 9.4.1.1b)	Occupancy Mode (Auto On) (Full On)	Occupancy Mode (Auto On) (Partial on to Max 50%)	Automatic Partial Off Sensor Time Out (Minutes) (ASHRAE 90.1-2013 9.4.1.1g)	Automatic Partial Off Luminaires Dimming Level	Full Off Sensor Time Out (Minutes) (ASHRAE 90.1-2013 9.4.1.1h)	Scheduled On Time		Scheduled Off Time	Schedule Override Switch	Open Loop (Switching On/Off)	Closed Loop (Dimming)	Target Lighting Levels (lux or fc)	Reduce light levels by 50% between midnight at 6am	Exterior Location	Plug Load Control	Controlled Emergency
100	Vestibule	Corridor, all other corridors			X																										
101	Access Corridor	Corridor, all other corridors	100																												
102	District Chief	Office and Dorm						X				X																			Disable Sensor.
103	Captain's Office 103	Office and Dorm	102																												
104	Captain's Office 104	Office and Dorm	102																												
105	Universal Washroom 105	Restroom, all other restrooms			X				X						X				20 mins												
106	Access Corridor 106	Corridor, all other corridors	100																												
107	Gym 107	Gymnasium/Fitness Centre, exercise area			X			X	X						X				20 mins								X				
108	Access Corridor 108	Corridor, all other corridors	100																												
109	Clean Laundry 109	Laundry/Washing Area							X																						
110	Janitor's Closet 110	Storage			X					X									20 mins												
111	Access Corridor 111	Corridor, all other corridors	100																												
112	Staff Vestibule 112	Corridor, all other corridors	100																												
113	Dormitory 113	Fire Station - Sleeping Quarters			X						X																				
114	Access Corridor 114	Corridor, all other corridors	100																												
115	Washroom/Shower 115	Restroom, all other restrooms	105																												
116	Washroom/Shower 116	Restroom, all other restrooms	105																												
117	Washroom/Shower 117	Restroom, all other restrooms	105																												
118	Washroom/Shower 118	Restroom, all other restrooms	105																												
119	Locker Room 119	Locker Room							X	X						X			20 mins												
120	Change Room 120	Locker Room	119																												
121	Change Room 121	Locker Room	119																												
122	Access Corridor 122	Corridor, all other corridors	100																												
123	I.T. Room 123	Computer Room							X	X						X			20 mins												
124	Access Corridor 124	Corridor, all other corridors	100																												
125	Access Corridor 125	Corridor, all other corridors	100																												
126	Kitchen 126	Food Preparation Area							X	X						X			20 mins												
127	Dining Area 127	Dining area, all other dining areas							X	X						X			20 mins												
128	Dayroom Lounge 128	Lounge/Breakroom, all other							X	X						X			20 mins									X			
129	Computer Workstation 129								X																						Part of adjacent space. Use sensor in Dining Room.
130	Apparatus Bay 130	Emergency Vehicle Garage							X		X					X			20 mins						X	800 lux					
131	Janitors 131	Storage	110																												
132	Mechanical Room 132	Electrical/Mechanical Room				X					X																				
133	Bay Vestibule 133	Corridor, all other corridors	100																												
134	Water Meter/Sprinkler Room 134	Electrical/Mechanical Room									X																				
135	Electrical Room 135	Electrical/Mechanical Room				X																									
136	Workshop 136	Workshop							X	X						X			20 mins												
137	Laundry 137	Laundry/Washing Area							X	X						X			20 mins												
138	Bunker Gear Room 138	Storage Room				X				X									20 mins												
139	Hose Room 139	Storage Room	138																												
140	Compressor Room 140	Storage Room	138																												
141	Material Storage 141	Storage Room	138																												
142	Outdoor Storage 142	Storage Room	138																												
E1	Exterior Parking Areas and Drives	Exterior				X														Sunset	Sunrise										Provide photocell with contactor
E2	Exterior Illuminated Signage	Exterior				X														Sunset	Sunrise										Provide photocell with contactor
E3	Exterior Wall Packs East Wall	Exterior				X														Sunset	Sunrise										Provide photocell with contactor...

Lighting Fixture Schedule														
LIGHTING FIXTURE SCHEDULE NOTES: 1. UNLESS NOTED OTHERWISE, ACCEPTABLE SUBSTITUTE MANUFACTURES AND SUPPLIERS: - COOPER LIGHTING SOLUTIONS - CREE (TYP. LIGHTING) - CURRENT LIGHTING (FORMERLY HUBBELL) (OMNILUMEN) - SIGINIFY (FORMERLY PHILIPS) (SALEX) - LUMENPULSE (TORONTO LIGHTWORKS) 2. 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. 3. SUBMIT SHOP DRAWINGS FOR CONSULTANT'S REVIEW PRIOR TO PLACING ANY ORDER. 4. ALL LIGHT FIXTURES MUST BEAR A CERTIFICATION OR LISTING MARK FROM A CERTIFICATION BODY ACCREDITED BY THE STANDARDS COUNCIL OF CANADA, I.E., CSA, cUL, cETL, ETC.														
Type	DESCRIPTION	MANUFACTURER	CATALOG NO.	VOLTAGE	WATTS	LUMEN PACKAGE	CONTROLS	CRI	CCT	MOUNTING	MOUNTING HEIGHT	SUBSTITUTIONS		REMARKS
D6B	4.5" Recessed Downlight (Suitable for Wet Locations)	3G LIGHTING	3G-DL45RF-22-H90-35K-60D (Wet Location Rated)	120 V	22 W	1827	0-10V	90	3500 K	RECESSED	<varies>	Alphabet NU4-20LM, COOPER HALO HC6		
D6C	4.5" Recessed Downlight	3G LIGHTING	3G-DL45RF-10-H90-35K-60D	120 V	10 W	1031	0-10V	90	3500 K	RECESSED	<varies>	Alphabet NU4-10LM, COOPER HALO HC6		
D6D	3.3" Recessed Downlight	3G LIGHTING	3G-DL33RF70-15-H90-35K-60D	120 V	14 W	1212	0-10V	90	3500 K	RECESSED	2750 mm	Alphabet NU3-15LM, COOPER HALO HC4		
HBA	Round Highbay Fixtures	CREE LIGHTING	VUE-A-UV-24L-35K9-M-UL-10V	120 V	151 W	23500	0-10V	90	3500 K	SUSPENDE	5450 mm	CURRENT LIGHTING/Albeo ABN1 Series, COOPER METALUX UHBS Series		
SP4A	4ft Pendant Linear LED	CREE LIGHTING	LS4-40L-35K	120 V	31 W	4000	0-10V	90	3500 K	SUSPENDE	<varies>	CURRENT LIGHTING/COLUMBIA MPS, COOPER METALUX SNX Lensed		
SP4B	4ft Pendant Linear LED	CREE LIGHTING	LS4-60L-35K	120 V	45 W	6000	0-10V	90	3500 K	SUSPENDE	<varies>	CURRENT LIGHTING/COLUMBIA MOD 3L-P-D, COOPER METALUX SNX Lensed		
SP8A	8ft Pendant Linear LED	3G LIGHTING	3G-4PLI-D-L1000-H90-35K-FL-8FT	120 V	65 W	7990	0-10V	90	3500 K	SUSPENDE	3900 mm	CURRENT LIGHTING/COLUMBIA MOD 3L-P-D, COOPER Neo-Ray Define 4		
SP8B	8ft Pendant Linear LED	3G LIGHTING	3G-4PLI-D-L750-H90-35K-FL-8FT	120 V	48 W	6000	0-10V	90	3500 K	SUSPENDE	2340 mm	CURRENT LIGHTING/COLUMBIA MOD 3L-P-D, COOPER Neo-Ray Define 4		
SR4A	4ft Recessed Linear LED	3G LIGHTING	3G-4RLI-L750-H90-35K-FL-4FT	120 V	24 W	3004	0-10V	90	3500 K	RECESSED	2750 mm	CURRENT LIGHTING/COLUMBIA MOD 3L-R-D, COOPER Neo-Ray Define 4		
SR4B	4ft Recessed Linear LED	3G LIGHTING	3G-4RLI-L1000-H90-35K-FL-4FT	120 V	32 W	4005	0-10V	90	3500 K	RECESSED	2750 mm	CURRENT LIGHTING/COLUMBIA MOD 3L-R-D, COOPER Neo-Ray Define 4		
SR8	8ft Recessed Linear LED	3G LIGHTING	3G-4PLI-D-L1000-H90-35K-FL-8FT	120 V	65 W	7990	0-10V	90	3500 K	RECESSED	3900 mm	CURRENT LIGHTING/COLUMBIA MOD 3L-R-D, COOPER Neo-Ray Define 4		
STA	LED Step Light	MP LIGHTING	L36-3-W30S	120 V	3 W	200	0-10V	90	3500 K	SURFACE	300 mm	AMICO LUNAR SERIES		
UCL1	Under Cabinet LED fixture	SOLID STATE LUMINAIRES	UNLE-2-35K-WH	120 V	12 W	300lm/ft	0-10V	80	3500 K	SURFACE	<varies>	CURRENT LIGHTING/COLUMBIA CUC, COOPER HALO HU30M		
WSA	3ft Wall Sconce	3G LIGHTING	3G-4WL-D-L500-H90-35K-DASY-3FT	120 V	12 W	1500	0-10V	90	3500 K	WALL	2136 mm	CURRENT LIGHTING/COLUMBIA MOD 3L-W-D, COOPER Neo-Ray Define 4		
ZA1	Pole Mounted LED Fixture	CREE LIGHTING	ARE-EDR-4MB-04-E-350-30K	120 V	46 W	5003	0-10V	80	3000 K	POLE-MOUNTED	REFER TO PLAN	CURRENT LIGHTING/KIM OURO SERIES, COOPER Invue MSA MESA		
ZA2	Pole Mounted LED Fixture	CREE LIGHTING	ARE-EDR-4M-04-E-350-30K	120 V	46 W	5003	0-10V	80	3000 K	POLE-MOUNTED	REFER TO PLAN	CURRENT LIGHTING/KIM OURO SERIES, COOPER Invue MSA MESA		
ZDA	6" Recessed Downlight	3G LIGHTING	3G-DL45RF-22-H90-35K-60D	120 V	22 W	1827	0-10V	90	3500 K	RECESSED	REFER TO PLAN	Alphabet NU4-20LM, COOPER HALO HC6 ¹⁰		
ZW1	Wall Mounted LED Fixture	CREE LIGHTING	SEC-EDG-4M-02-E-525-30K	120 V	37 W	3550	0-10V	80	3000 K	WALL	REFER TO PLAN	CURRENT LIGHTING/BEACON QSP2, COOPER McGraw-Edison		
ZW2	Wall Mounted LED Fixture	CREE LIGHTING	SEC-EDG-3M-02-E-525-30K	120 V	37 W	3365	0-10V	80	3000 K	WALL	REFER TO PLAN	CURRENT LIGHTING/BEACON QSP2, COOPER McGraw-Edison		
ZW3	Wall Mounted LED Fixture	CREE LIGHTING	SEC-EDG-3M-02-E-525-30K	120 V	25 W	2501	0-10V	80	3000 K	WALL	REFER TO PLAN	CURRENT LIGHTING/BEACON QSP2, COOPER McGraw-Edison		
ZW4	Wall Washer	ECOSENSE LIGHTING	L50-E-12-06-30-80-MULT-9x59	120 V	2 W	139	0-10V	80	3000 K	WALL	REFER TO PLAN	ACCLAIM XTR SERIES, COOPER IO LED CoviO Graze		
ZWW	Wall Washer	ECOSENSE LIGHTING	L50-E-2x12-06-30-80-MULT-70x70	120 V	6 W	614	0-10V	80	3000 K	WALL	REFER TO PLAN	ACCLAIM XTR SERIES, COOPER IO LED CoviO Graze		2x12 DENOTES TOTAL LENGTH OF 24IN