GENERAL NOTES

1 ALL ELECTRICAL WORK SHALL BE IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE AND ALL LOCAL CODES HAVING JURISDICTION.

2 ALL BRANCH CIRCUIT CONDUCTORS TO BE COPPER. SERVICE CONDUCTORS TO BE COPPER UNLESS OTHERWISE SPECIFIED. ALUMINUM CONDUCTORS ARE NOT ALLOWED.

3 ALL CIRCUITS TO BE 2 #12, 1 #12 GND IN 1/2" EMT CONDUIT AS A MINIMUM. PROVIDE WIRING FOR LARGER CIRCUITS AS REQUIRED BY NEC. RIGID CONDUIT IS REQUIRED WHERE EXPOSED BELOW 8'-0" A.F.F.

4 ALL EMPTY CONDUIT RUNS IN EXCESS OF 10 FEET SHALL BE PROVIDED WITH A PULL WIRE OR FISH TAPE/CORD.

5 CONTRACTOR SHALL VERIFY THAT ALL DOOR SWINGS ARE CORRECT BEFORE INSTALLING LIGHT SWITCH OUTLETS.

6 ALL BRANCH CIRCUIT CONDUCTORS FROM THE PANEL TO THE FIRST OUTLET SHALL BE INCREASED TO THE NEXT LARGER SIZE WHERE THE LENGTH OF THE HOME RUN EXCEEDS 120 FEET ON 120V AND 208V CIRCUITS.

7 THE CORRECT NUMBER OF WIRES MAY NOT BE INDICATED FOR ALL CIRCUITS, ONLY THOSE WHERE CLARIFICATION IS NECESSARY. THE ELECTICAL CONTRACTOR SHALL PROVIDE ALL WIRES NECESSARY FOR THE PROPER FUNCTION OF THE SYSTEM WHETHER INDICATED ON DRAWINGS OR NOT.

8 THE CONTRACTOR SHALL BE RESPONSIBLE FOR CORRECTLY PHASING THE CIRCUITS IN THE PANELBOARDS.

9 SCHEDULE ELECTRICAL INSPECTIONS WITH THE STATE ELECTRICAL INSPECTOR FOR MONDAY THROUGH FRIDAY

10 ELECTRICAL REQUIREMENTS INDICATED ON DRAWINGS MAY DIFFER FROM ACTUAL EQUIPMENT FURNISHED. IF FURNISHED EQUIPMENT DIFFERS FROM RATINGS ON DRAWINGS CONTRACTOR SHALL NOTIFY ARCHITECT/ENGINEER FOR APPROPRIATE ACTION TO BE TAKEN.

11 IT SHALL BE THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR TO COORDINATE EXACT BREAKER REQUIREMENTS FOR ALL EQUIPMENT PRIOR TO ORDERING PANEL. ADJUST BREAKER AND WIRE SIZES AS REQUIRED.

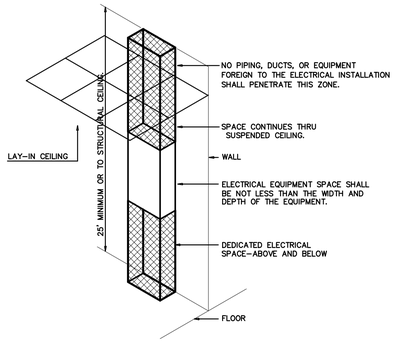
12 PROVIDE BOXES, JACKS, WIRING AND CONDUIT FROM LOCATIONS SHOWN TO MTP LOCATION. VERIFY EXACT REQUIREMENTS WITH OWNER.

13 ELECTRICAL CONTRACTOR SHALL PROVIDE ALL DISCONNECTS FOR MECHANICAL & PLUMBING EQUIPMENT. DISCONNECTS SHALL BE PER MANUFACTURES RECOMMENDATIONS AND FUSED PER NAME PLATE. PROVIDE NEMA 3R ENCLOSURES ON EXTERIOR. COORDINATE FUSE SIZES.

14 -- OMIT --

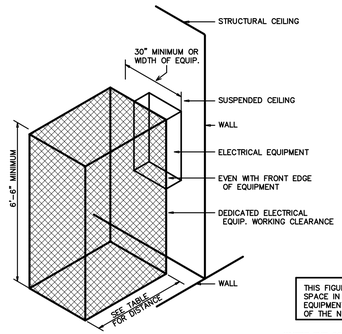
ELECTRICAL LEGEND

X / O_X / X	LIGHT FIXTURE: LETTER DENOTES FIXTURE TYPE (REFER TO LIGHTING PLAN AND FIXTURE SCHEDULE). NL = NIGHT LIGHT (NOT SWITCHED/ALWAYS ON)
U / WP/GFI	DUPLEX RECEPTACLE – 120V; MOUNT 18" TO CENTER AFF UNLESS NOTED OTHERWISE. "WP" INDICATES WEATHER PROOF, PROVIDE IN-USE COVER. "GFI" INDICATES GROUND FAULT CURRENT INTERRUPT PROTECTED. "U" INDICATES RECEPTACLE WITH (2) USB PORTS.
	QUADRAPLEX RECEPTACLE – 120V
	FLOOR OR CEILING OUTLET (AS NOTED) – 120V
	SPECIAL PURPOSE RECEPTACLE – REFER TO POWER PLAN AND PANEL SCHEDULE
S	LIGHT SWITCH
S_M	SWITCH WITH INTEGRAL PIR/US MOTION SENSOR FOR AUTOMATIC SHUT-OFF WITH UP TO 2 HOUR ADJUSTABLE DELAY.
S_D	DIMMABLE LIGHT SWITCH
S	MOTOR RATED SWITCH
J	JUNCTION BOX
	TELE/DATA OUTLET – PROVIDE JUNCTION BOX WITH CONDUIT BACK TO MTP. PROVIDE (1) TELEPHONE JACK AND (1) CAT 5 DATA JACK
	SINGLE-POLE HOMERUN TO PANELBOARD
	TWO-POLE OR 3-POLE HOMERUN TO PANELBOARD
EXIT	EXIT LIGHT
	EMERGENCY EGRESS FIXTURE
PC	PHOTOCELL (LED COMPLIANT)
	BRANCH CIRCUIT WIRING
	SWITCH LEG
	GROUND CONNECTION
PANEL A	DISTRIBUTION PANELBOARD
	DISCONNECTING MEANS AS REQUIRED BY CODE



ELECTRICAL EQUIPMENT DEDICATED SPACE PER ARTICLE 110.26.F.1 OF N.E.C.

1 DEDICATED SPACE
SCALE: NTS



ELECTRICAL EQUIPMENT WORKING CLEARANCE PER ARTICLE 110-26 OF N.E.C.

WORKING CLEARANCES				
VOLTAGE TO GROUND NOMINAL	MIN. CLEAR DISTANCE IN FEET			
	CONDITION:	1	2	3
0-150		3	3	3
151-600		3	3-1/2	4

THIS FIGURE ILLUSTRATES THE WORKING SPACE IN FRONT OF THE ELECTRICAL EQUIPMENT REQUIRED BY SECTION 110-16 OF THE N.E.C.

WHERE THE CONDITIONS ARE AS FOLLOWS:

1 EXPOSED LIVE PARTS ON ONE SIDE AND NO LIVE OR GROUNDED PARTS ON THE OTHER SIDE OF THE WORKING SPACE, OR EXPOSED LIVE PARTS ON BOTH SIDES EFFECTIVELY GUARDED BY SUITABLE WOOD OR INSULATED BUSBARS OPERATING AT NOT OVER 300V SHALL NOT BE CONSIDERED LIVE PARTS.

2 EXPOSED LIVE PARTS ON ONE SIDE AND GROUNDED PARTS ON THE OTHER SIDE.

3 EXPOSED LIVE PARTS ON BOTH SIDES OF THE WORK SPACE (NOT GUARDED AS PROVIDED IN CONDITION 1) WITH THE OPERATOR BETWEEN.

2 ELECTRICAL CLEARANCES
SCALE: NTS

2018 APPENDIX B
BUILDING CODE SUMMARYFOR ALL COMMERCIAL PROJECTS
ELECTRICALDESIGN
(PROVIDE ON THE ELECTRICALSHEETS IF APPLICABLE)

ELECTRICAL SUMMARY

ELECTRICAL SYSTEM AND EQUIPMENT

Method of Compliance: ENERGY CODE-PRESCRIPTIVE

Lighting schedule (each fixture type)
lamp type required in fixture
number of lamps in fixture
ballast type used in the fixture
number of ballasts in fixture
total wattage per fixture
→ See Light Fixture Schedule
total interior wattage specified vs. allowed 1015VA / 1109VA
total exterior wattage specified vs. allowed 973VA / 1060VA

Additional Efficiency Package Options
(When using the 2018 NCECC; not required for ASHRAE 90.1)
- ☐ C406.2 More Efficient HVAC Equipment Performance
- ☒ C406.3 Reduced Lighting Power Density
- ☐ C406.4 Enhanced Digital Lighting Controls
- ☐ C406.5 On-Site Renewable Energy
- ☐ C406.6 Dedicated Outdoor Air System
- ☐ C406.7 Reduced Energy Use in Service Water Heating

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NORTH CAROLINA REGISTERED PROFESSIONAL SEAL 22038 ENGINEER BENJAMIN E. BURKE
DocuSigned by: Ben Burke C93761EB0F34D5...
6/16/2023

BID SET 4.28.22

WVS: 15RE.13.3

SCO ID# 21-24079-01A

PROJECT TITLE
BRUNSWICK CTY VISITOR'S CENTER
394 WHITEVILLE ROAD NW
SHALLOTTE, NORTH CAROLINA

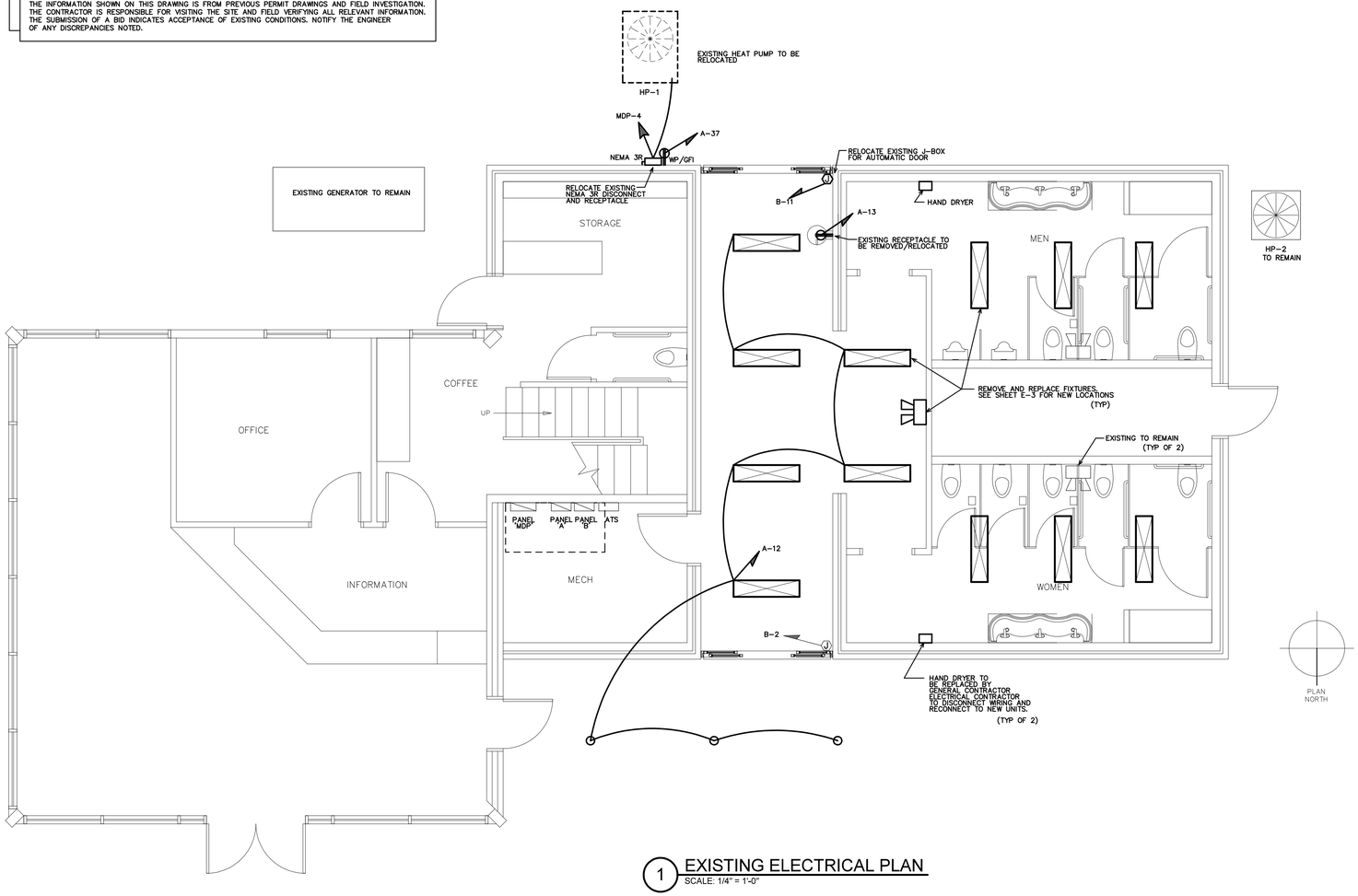
PROJECT NO.
2104A

DRAWING TITLE
ELEC. SPECS & DETAILS

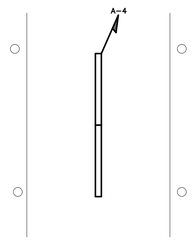
E1

PLOT DATE 6/16/23

NOTE:
THE INFORMATION SHOWN ON THIS DRAWING IS FROM PREVIOUS PERMIT DRAWINGS AND FIELD INVESTIGATION. THE CONTRACTOR IS RESPONSIBLE FOR VISITING THE SITE AND FIELD VERIFYING ALL RELEVANT INFORMATION. THE SUBMISSION OF A BID INDICATES ACCEPTANCE OF EXISTING CONDITIONS. NOTIFY THE ENGINEER OF ANY DISCREPANCIES NOTED.



1 EXISTING ELECTRICAL PLAN
SCALE: 1/4" = 1'-0"



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NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 22038 BENJAMIN E. BURKE
DocuSigned by: Ben Burke
6/16/2023

BID SET 4.28.22

WVS: 15RE.13.3

SCO ID# 21-24079-01A

PROJECT TITLE
BRUNSWICK CTY VISITOR'S CENTER
394 WHITEVILLE ROAD NW
SHALLOTE, NORTH CAROLINA

PROJECT NO.
2104A

DRAWING TITLE
EXISTING ELEC PLAN

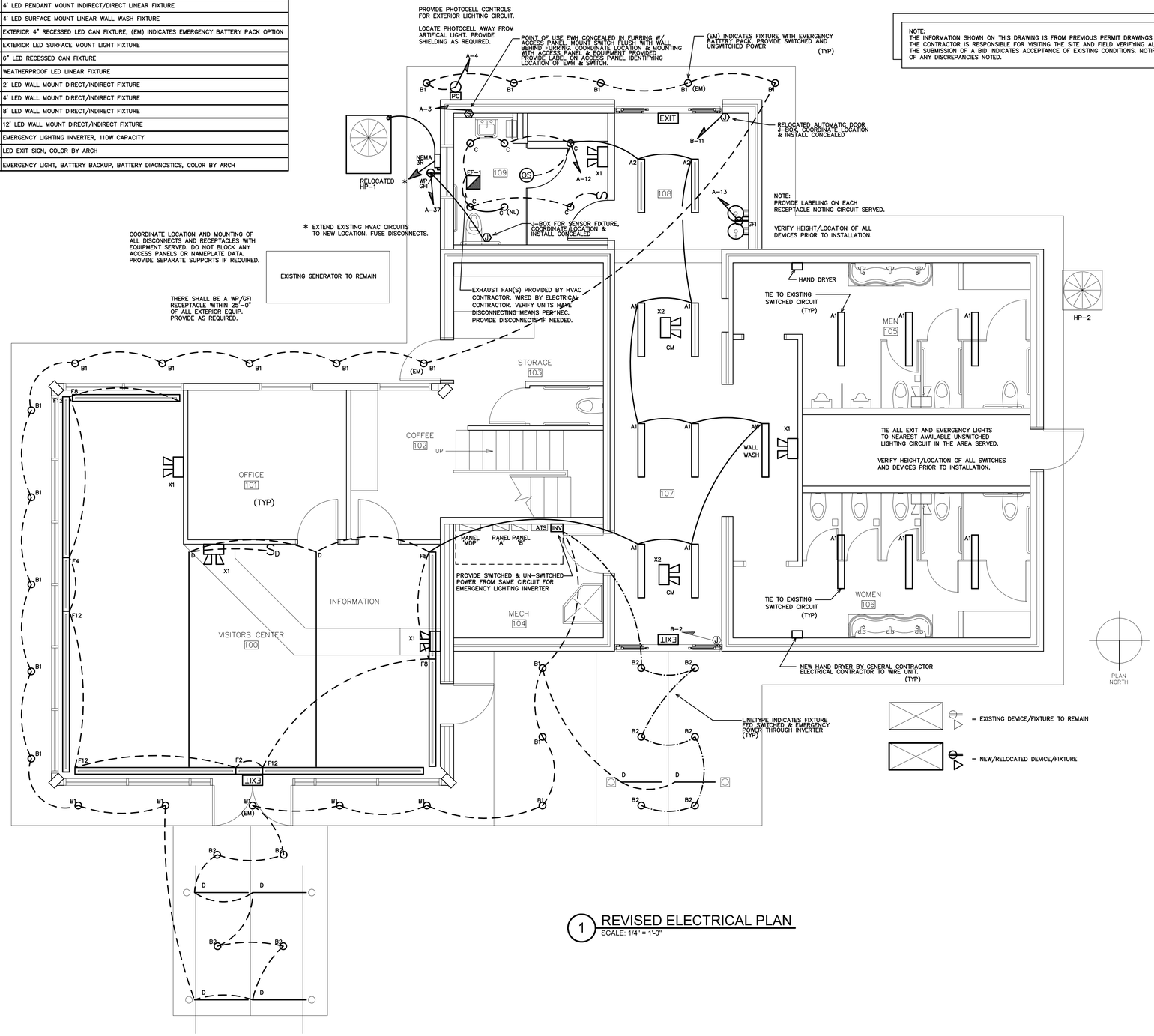
E2

PLOT DATE 6/16/23

Brunswick City Visitor Center_E3

PARTIAL LIGHTING SCHEDULE – SEE E4

MARK	REMARKS
A1	4' LED SURFACE MOUNT LINEAR FIXTURE
A2	4' LED PENDANT MOUNT INDIRECT/DIRECT LINEAR FIXTURE
AW	4' LED SURFACE MOUNT LINEAR WALL WASH FIXTURE
B1	EXTERIOR 4" RECESSED LED CAN FIXTURE, (EM) INDICATES EMERGENCY BATTERY PACK OPTION
B2	EXTERIOR LED SURFACE MOUNT LIGHT FIXTURE
C	6" LED RECESSED CAN FIXTURE
D	WEATHERPROOF LED LINEAR FIXTURE
F2	2' LED WALL MOUNT DIRECT/INDIRECT FIXTURE
F4	4' LED WALL MOUNT DIRECT/INDIRECT FIXTURE
F8	8' LED WALL MOUNT DIRECT/INDIRECT FIXTURE
F12	12' LED WALL MOUNT DIRECT/INDIRECT FIXTURE
INV	EMERGENCY LIGHTING INVERTER, 110W CAPACITY
EXIT	LED EXIT SIGN, COLOR BY ARCH
	EMERGENCY LIGHT, BATTERY BACKUP, BATTERY DIAGNOSTICS, COLOR BY ARCH



1 REVISED ELECTRICAL PLAN
SCALE: 1/4" = 1'-0"

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NORTH CAROLINA PROFESSIONAL SEAL 22038 ENGINEER BENJAMIN E BURKE
DocuSigned by: Ben Burke 6/16/2023

BID SET 4.28.22

WVS: 15RE.13.3

SCO ID# 21-24079-01A

PROJECT TITLE
BRUNSWICK CTY VISITOR'S CENTER
394 WHITEVILLE ROAD NW
SHALLOTTE, NORTH CAROLINA

PROJECT NO.
2104A

DRAWING TITLE
NEW ELEC PLAN

E3

PLOT DATE 6/16/23

Brunswick Cty Visitor Center– E4

EXISTING PANEL– 'MDP'

MAKE: CUTLER HAMMER | TYPE: PRL1a | RATING: 208/120V 3 PHASE 4 WIRE | MOUNTING: SURFACE | MINIMUM AIC: 10,000A | MLO MAIN CIRCUIT BREAKER | EQUIPMENT GROUND BUS ☒YES ☐NO | SERVICE ENTRY RATED ☒YES ☐NO

LOAD SERVICE	CKT BRKR	A	B	C	CKT NO	CKT NO	A	B	C	CKT BRKR	LOAD SERVICE
VENDING BLD	125A	---			1	2	---				SPACE
.			---		3	4		---			.
.				---	5	6			---		.
AHU–1	80A	---			7	8	---			100A	HP–1
.			---		9	10		---			.
.				---	11	12			---		.
PANEL 'A'	225A	---			13	14	---			100A	SPARE
.			---		15	16		---			.
.				---	17	18			---		.
NOTES	SUB–TOTALS 'B'	---	---	---							

		A	B	C	
400A	BUS	---	---	---	SUB–TOTALS 'A'
400A	LUGS	---	---	---	SUB–TOTALS 'B'
400A	FEED	---	---	---	GRAND TOTAL
VERIFY	SIZE	--A	--A	--A	AMPS/PHASE

TOTAL CONNECTED LOAD

Brunswick Cty Visitor Center– E4

REVISED PANEL– 'MDP'

MAKE: CUTLER HAMMER | TYPE: PRL1a | RATING: 208/120V 3 PHASE 4 WIRE | MOUNTING: SURFACE | MINIMUM AIC: 10,000A | MLO MAIN CIRCUIT BREAKER | EQUIPMENT GROUND BUS ☒YES ☐NO | SERVICE ENTRY RATED ☒YES ☐NO

LOAD SERVICE	CKT BRKR	A	B	C	CKT NO	CKT NO	A	B	C	CKT BRKR	LOAD SERVICE
VENDING BLD	125A	---			1	2	---				SPACE
.			---		3	4		---			.
.				---	5	6			---		.
AHU–1	80A	8880			7	8	5520			100A	HP–1
.			8880		9	10		5520			.
.				8880	11	12			5520		.
PANEL 'A'	225A	16124			13	14	---			100A	SPARE
.			15525		15	16		---			.
.				13354	17	18			---		.
NOTES	SUB–TOTALS 'B'	25004	24405	22234							

		A	B	C	
400A	BUS	5520	5520	5520	SUB–TOTALS 'A'
400A	LUGS	25004	24405	22234	SUB–TOTALS 'B'
400A	FEED	30524	29925	27754	GRAND TOTAL
VERIFY	SIZE	254A	249A	231A	AMPS/PHASE

TOTAL CONNECTED LOAD

EXISTING CIRCUIT/BREAKER TO REMAIN
NEW/REVISED CIRCUIT/BREAKER

NEC ALLOWABLE DEMAND FACTORS

1. DEMAND FACTORS PER NEC 220
2. LARGEST OF: NEC TABLE 220.12 OR CONNECTED LOAD
3. NEC TABLE 220.56
4. NEC 220.51
5. NEC 220.43A, 200 VA/LINEAR FT
6. NON–COINCIDENT LOADS, LARGEST OF THE TWO LOADS IS COUNTED

DIVERSIFIED LOAD SUMMARY

LOAD TYPE		DEMAND FACTOR (1)	A	B	C	TOTAL DIVERSIFIED LOAD
GENERAL LIGHTING (2)		125%	8450	5464	4220	18134
TRACK LIGHTING		125%	---	---	---	---
GENERAL USE RECEPTACLES		≤10KVA@100%	1080	1980	900	3960
		>10KVA@50%	---	---	---	---
MOTORS AND EQUIPMENT	LARGEST	125%	11100	11100	11100	33300
	ALL OTHERS	100%	7644	9444	6756	23844
WATER HEATERS		125%	---	6563	2813	9376
KITCHEN EQUIPMENT (3)		100%	---	---	---	---
FIX. ELEC. SPACE HEAT. (4)		100%	4992	---	4992	9984
SHOW WINDOW LIGHTS (5)		125%	---	---	---	---
SIGN		125%	---	---	---	---
MISC		100%	1168	---	600	1768
PHASE (TOTAL VA)			34434	34551	31381	100366
TOTAL AMPS			287A	288A	262A	VOLT AMPS / VOLTS X 1.732 = 279A TOTAL AMPS

Brunswick Cty Visitor Center– E4

EXISTING PANEL– 'A'

MAKE: CUTLER HAMMER | TYPE: PRL1a | RATING: 208/120V 3 PHASE 4 WIRE | MOUNTING: SURFACE | MINIMUM AIC: 10,000A | 225A MAIN CIRCUIT BREAKER | EQUIPMENT GROUND BUS ☒YES ☐NO | SERVICE ENTRY RATED ☐YES ☒NO

LOAD SERVICE	CKT BRKR	A	B	C	CKT NO	CKT NO	A	B	C	CKT BRKR	LOAD SERVICE
LTS: FLOOD	20A	---			1	2	---			20A	LTS: OFFICE, RM 102, 103
SPARE	20A		---		3	4		---		20A	LTS: ENTRANCE
REC: RR & STORAGE	20A			---	5	6			---	20A	LTS: VISITOR CENTER
SPARE	20A	---			7	8	---			20A	LTS: STAIRWAY, STORE, 203, 204
REC: 102	20A		---		9	10		---		20A	LTS: BREEZEWAY
REC: 102	20A			---	11	12			---	20A	LTS: BREEZEWAY, PHOTOCELL
HAND DRYER & EWC	20A	---			13	14	---			40A	PANEL 'B'
HAND DRYER	20A		---		15	16		---			.
SPARE	20A			---	17	18			---		.
TELEPHONE, CAR PARKING	20A	---			19	20	---			20A	REC: OUTDOOR & STORAGE
EWH	30A		---		21	22		---		20A	SPARE
.				---	23	24			---	20A	LTS: FLAG
HEAT PUMP	20A	---			25	26	---			20A	SPARE
.			---		27	28		---		20A	LTS: EMERGENCY
HEAT STRIPS	60A			---	29	30			---	20A	FACP
.		---			31	32	---			20A	REC: EXTERIOR
BACK AUTO DOOR	20A		---		33	34		---		20A	REC: MEZZ FLOOR
FRONT AUTO DOOR	20A			---	35	36			---	20A	RR SENSORS
REC: AC	20A	---			37	38	---			15A	AHU
SPARE	20A		---		39	40		---			.
.				---	41	42			---		.
NOTES	SUB–TOTALS 'B'	---	---	---							

		A	B	C	
225A	BUS	---	---	---	SUB–TOTALS 'A'
225A	LUGS	---	---	---	SUB–TOTALS 'B'
225A	FEED	---	---	---	GRAND TOTAL
VERIFY	SIZE	--A	--A	--A	AMPS/PHASE

TOTAL CONNECTED LOAD

Brunswick Cty Visitor Center– E4

REVISED PANEL– 'A'

MAKE: CUTLER HAMMER | TYPE: PRL1a | RATING: 208/120V 3 PHASE 4 WIRE | MOUNTING: SURFACE | MINIMUM AIC: 10,000A | 225A MAIN CIRCUIT BREAKER | EQUIPMENT GROUND BUS ☒YES ☐NO | SERVICE ENTRY RATED ☐YES ☒NO

LOAD SERVICE	CKT BRKR	A	B	C	CKT NO	CKT NO	A	B	C	CKT BRKR	LOAD SERVICE
LTS: FLOOD	20A	1920			1	2	1920			20A	LTS: OFFICE, RM 102, 103
EWH	**30A**		3000		3	4		951		20A	**LTS: ENTRANCE, EXTERIOR**
REC: RR & STORAGE	20A			360	5	6			1920	20A	LTS: VISITOR CENTER
SPARE	20A	---			7	8	1920			20A	LTS: STAIRWAY, STORE, 203, 204
REC: 102	20A		540		9	10		1920		20A	LTS: BREEZEWAY
REC: 102	20A			540	11	12			956	20A	**LTS: BREEZEWAY, RR, PHOTOCELL**
EWC	20A	888			13	14	1460			40A	PANEL 'B'
HAND DRYER	20A		1800		15	16		1900			.
SPARE	20A			---	17	18			860		.
TELEPHONE, CAR PARKING	20A	180			19	20	360			20A	REC: OUTDOOR & STORAGE
EWH	30A		2250		21	22		---		20A	SPARE
.				2250	23	24			500	20A	LTS: FLAG
HEAT PUMP	20A	1248			25	26	---			20A	SPARE
.			1248		27	28		500		20A	LTS: EMERGENCY
HEAT STRIPS	60A			4992	29	30			---	20A	FACP
.		4992			31	32	360			20A	REC: EXTERIOR
BACK AUTO DOOR	20A		360		33	34		540		20A	REC: MEZZ FLOOR
FRONT AUTO DOOR	20A			360	35	36			100	20A	RR SENSORS
REC: AC & TOILET SENSOR	20A	360			37	38	516			15A	AHU
SPARE	20A		---		39	40		516			.
.				---	41	42			516		.
NOTES	SUB–TOTALS 'B'	9588	9198	8502							

		A	B	C	
225A	BUS	6536	6327	4852	SUB–TOTALS 'A'
225A	LUGS	9588	9198	8502	SUB–TOTALS 'B'
225A	FEED	16124	15525	13354	GRAND TOTAL
VERIFY	SIZE	135A	130A	112A	AMPS/PHASE

TOTAL CONNECTED LOAD

EXISTING CIRCUIT/BREAKER TO REMAIN
NEW/REVISED CIRCUIT/BREAKER

NEC ALLOWABLE DEMAND FACTORS

1. DEMAND FACTORS PER NEC 220
2. LARGEST OF: NEC TABLE 220.12 OR CONNECTED LOAD
3. NEC TABLE 220.56
4. NEC 220.51
5. NEC 220.43A, 200 VA/LINEAR FT
6. NON–COINCIDENT LOADS, LARGEST OF THE TWO LOADS IS COUNTED

DIVERSIFIED LOAD SUMMARY

LOAD TYPE		DEMAND FACTOR (1)	A	B	C	TOTAL DIVERSIFIED LOAD
GENERAL LIGHTING (2)		125%	8450	5464	4220	18134
TRACK LIGHTING		125%	---	---	---	---
GENERAL USE RECEPTACLES		≤10KVA@100%	1080	1980	900	3960
		>10KVA@50%	---	---	---	---
MOTORS AND EQUIPMENT	LARGEST	125%	1560	2250	645	4455
	ALL OTHERS	100%	876	2124	720	3720
WATER HEATERS		125%	---	6563	2813	9376
KITCHEN EQUIPMENT (3)		100%	---	---	---	---
FIX. ELEC. SPACE HEAT. (4)		100%	4992	---	4992	9984
SHOW WINDOW LIGHTS (5)		125%	---	---	---	---
SIGN		125%	---	---	---	---
MISC		100%	1168	---	600	1768
PHASE (TOTAL VA)			18126	18381	14890	51397
TOTAL AMPS			152A	154A	125A	VOLT AMPS / VOLTS X 1.732 = 143A TOTAL AMPS

Brunswick Cty Visitor Center– E4

EXISTING PANEL– 'B'

MAKE: CUTLER HAMMER | TYPE: PRL1a | RATING: 208/120V 3 PHASE 4 WIRE | MOUNTING: SURFACE | MINIMUM AIC: 10,000A | 100A MAIN CIRCUIT BREAKER | EQUIPMENT GROUND BUS ☒YES ☐NO | SERVICE ENTRY RATED ☐YES ☒NO

LOAD SERVICE	CKT BRKR	A	B	C	CKT NO	CKT NO	A	B	C	CKT BRKR	LOAD SERVICE
MAIN	100A				1	2	---			20A	FRONT AUTO DOOR
.					3	4		---		20A	LTS: BATHROOM
.					5	6			---	20A	FLUSH CIR
URINAL	20A	---			7	8	---			20A	LTS: ENTRANCE
JANITOR ROOM	20A		---		9	10		---			SPACE
BACK AUTO DOOR	20A			---	11	12			---		SPACE
SPACE		---			13	14	---				SPACE
SPACE			---		15	16		---			SPACE
SPACE				---	17	18			---		SPACE
SPACE		---			19	20	---				SPACE
SPACE			---		21	22		---			SPACE
SPACE				---	23	24			---		SPACE
SPACE		---			25	26	---				SPACE
SPACE			---		27	28		---			SPACE
SPACE				---	29	30			---		SPACE
NOTES	SUB–TOTALS 'B'	---	---	---							

		A	B	C	
100A	BUS	---	---	---	SUB–TOTALS 'A'
100A	LUGS	---	---	---	SUB–TOTALS 'B'
40A	FEED	---	---	---	GRAND TOTAL
VERIFY	SIZE	--A	--A	--A	AMPS/PHASE

TOTAL CONNECTED LOAD

Brunswick Cty Visitor Center– E4

REVISED PANEL– 'B'

MAKE: CUTLER HAMMER | TYPE: PRL1a | RATING: 208/120V 3 PHASE 4 WIRE | MOUNTING: SURFACE | MINIMUM AIC: 10,000A | 100A MAIN CIRCUIT BREAKER | EQUIPMENT GROUND BUS ☒YES ☐NO | SERVICE ENTRY RATED ☐YES ☒NO

LOAD SERVICE	CKT BRKR	A	B	C	CKT NO	CKT NO	A	B	C	CKT BRKR	LOAD SERVICE
MAIN	100A				1	2	360			20A	FRONT AUTO DOOR
.					3	4		1000		20A	LTS: BATHROOM
.					5	6			500	20A	FLUSH CIR
URINAL	20A	100			7	8	1000			20A	LTS: ENTRANCE
JANITOR ROOM	20A		900		9	10		---			SPACE
BACK AUTO DOOR	20A			360	11	12			---		SPACE
SPACE		---			13	14	---				SPACE
SPACE			---		15	16		---			SPACE
SPACE				---	17	18			---		SPACE
SPACE		---			19	20	---				SPACE
SPACE			---		21	22		---			SPACE
SPACE				---	23	24			---		SPACE
SPACE		---			25	26	---				SPACE
SPACE			---		27	28		---			SPACE
SPACE				---	29	30			---		SPACE
NOTES	SUB–TOTALS 'B'	100	900	360							

		A	B	C	
100A	BUS	1360	1000	500	SUB–TOTALS 'A'
100A	LUGS	100	900	360	SUB–TOTALS 'B'
40A	FEED	1460	1900	860	GRAND TOTAL
VERIFY	SIZE	12A	16A	7A	AMPS/PHASE

TOTAL CONNECTED LOAD

EXISTING CIRCUIT/BREAKER TO REMAIN
NEW/REVISED CIRCUIT/BREAKER

NEC ALLOWABLE DEMAND FACTORS

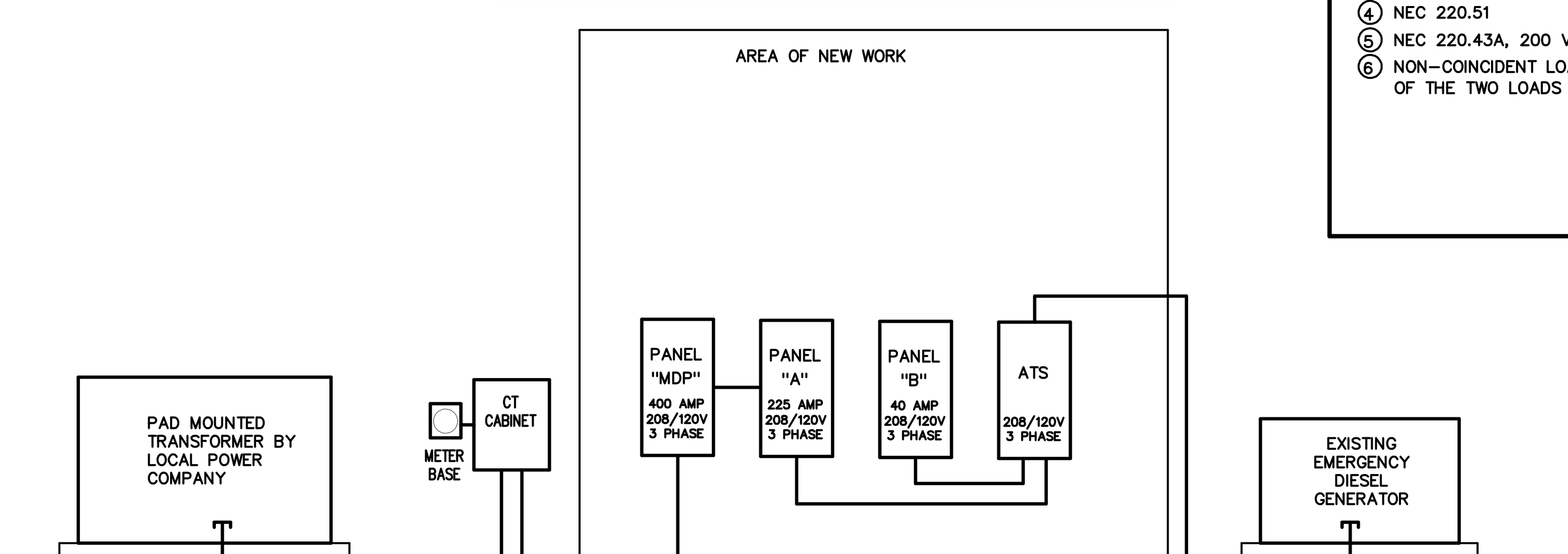
1. DEMAND FACTORS PER NEC 220
2. LARGEST OF: NEC TABLE 220.12 OR CONNECTED LOAD
3. NEC TABLE 220.56
4. NEC 220.51
5. NEC 220.43A, 200 VA/LINEAR FT
6. NON–COINCIDENT LOADS, LARGEST OF THE TWO LOADS IS COUNTED

DIVERSIFIED LOAD SUMMARY

LOAD TYPE		DEMAND FACTOR (1)	A	B	C	TOTAL DIVERSIFIED LOAD
GENERAL LIGHTING (2)		125%	1250	1250	---	2500
TRACK LIGHTING		125%	---	---	---	---
GENERAL USE RECEPTACLES		≤10KVA@100%	---	900	---	900
		>10KVA@50%	---	---	---	---
MOTORS AND EQUIPMENT	LARGEST	125%	450	---	450	900
	ALL OTHERS	100%	---	---	---	---
WATER HEATERS		125%	---	---	---	---
KITCHEN EQUIPMENT (3)		100%	---	---	---	---
FIX. ELEC. SPACE HEAT. (4)		100%	---	---	---	---
SHOW WINDOW LIGHTS (5)		125%	---	---	---	---
SIGN		125%	---	---	---	---
MISC		100%	100	---	500	600
PHASE (TOTAL VA)			1800	2150	950	4900
TOTAL AMPS			15A	18A	8A	VOLT AMPS / VOLTS X 1.732 = 14A TOTAL AMPS

VERIFY AVAILABLE FAULT CURRENT AT SERVICE LOCATION WITH LOCAL POWER COMPANY. PROVIDE INFORMATION TO ENGINEER TO CALCULATE MINIMUM PANEL AIC RATING.
EC SHALL PROVIDE LABELING INDICATING FAULT CURRENT AT SERVICE ENTRY AND ON ALL PANELS PRIOR TO ENERGIZING.

NOTE:
THE ELECTRICAL SERVICE IS EXISTING AND SHOWN FOR REFERENCE ONLY. NO NEW WORK IS REQUIRED.



(1) EXISTING SERVICE RISER
SCALE: NOT TO SCALE

Brunswick Cty Visitor Center– E4

EQUIPMENT WIRING SCHEDULE

EQUIPMENT	MCA	MOCP	VOLTS	PH	WIRE SIZE
EWH	(3.0KW)	30A	120V	1	2–#10, 1–#10 GND IN 1/2" CONDUIT

NOTE:
THE ELECTRICAL CONTRACTOR SHALL VERIFY ALL EQUIPMENT ELECTRICAL REQUIREMENTS PRIOR TO ROUGH–IN AND RELEASING GEAR. ADJUST BREAKER, WIRE SIZES, ETC. AS REQUIRED.

Brunswick Cty Visitor Center– E4

LIGHTING SCHEDULE *

MARK	MANUFACTURER	CATALOG NO.	VOLT.	LAMPS NO.	LAMPS TYPE	LAMPS W	BALLAST TYPE	W/ FIXTURE	REMARKS		ALTERNATE 1 MANUFACTURER	ALTERNATE 1 CATALOG NO.	ALTERNATE 2 MANUFACTURER	ALTERNATE 2 CATALOG NO.
A1	FINELITE	HP4–SM–D–4–B	120	–	LED	–	–	18	4' LED SURFACE MOUNT LINEAR FIXTURE	*	MARK ARCH. LTG.	S4LS 4FT MSL4 90CRI 35K 800LMF	PEERLESS	OPMS S 4FT 90CRI 35K 810LMF DARK ZT
A2	FINELITE	HP4–P–ID–4–B	120	–	LED	–	–	36	4' LED PENDANT MOUNT INDIRECT/DIRECT LINEAR FIXTURE	*	MARK ARCH. LTG.	S4LID 4FT MSL4 90CRI 35K 800LMF I90CRI I35K I600LMF	PEERLESS	OPM4 LCB 4FT MSL4 90CRI 35K I610LMF 810LFM DARK ZT
AW	FINELITE	HP4–SM–WW–D–8–B	120	–	LED	–	–	37	4' LED SURFACE MOUNT LINEAR WALL WASH FIXTURE	*	MARK ARCH. LTG.	S4LS 4FT MSL4 90CRI 35K 800LMF WW	PEERLESS	OPMW S 4FT 90CRI 35K 810LMF DARK ZT
B1	PRESCOLITE	LF4ML(EM)–4LFML30L35K8	120	–	LED	–	–	33	EXTERIOR 4" RECESSED LED CAN FIXTURE, (EM) INDICATES EMERGENCY BATTERY PACK OPTION	*	LITHONIA	LDN4 35/10 L04AR (EL)	GOTHAM	EVO4SH 35/10 (ELR)
B2	PRESCOLITE	LBSE–6RD–35K8	120	–	LED	–	–	13	EXTERIOR LED SURFACE MOUNT LIGHT FIXTURE	*	JUNO	6RLS G2 07LM 30K 90 CRI 120 FRPC WH	LITON	LCMPD5RW–T35
C	JUNO	IC22LED–G4–14LM–35K	120	–	LED	–	–	30	6" LED RECESSED CAN FIXTURE	*	LITHONIA	LDN6 35/10 L06AR	GOTHAM	ICO 35/20 6AR
D	KKDC	KKSL–SA–X–N–504–34–I48	120	–	LED	–	–	3.81/FT	WEATHERPROOF LED LINEAR FIXTURE	*	JESCO	DL–FLEX2–LNSB–RGB	GVA LIGHTING	HL–1200–3500DWT
F2	FINELITE	HP4–WM–ID–2–B	120	–	LED	–	–	18	2' LED WALL MOUNT DIRECT/INDIRECT FIXTURE	** *	MARK ARCH. LTG.	S4LWID 2FT MSL8 90CRI 35K 800LFM	COLUMBIA	CWM2–35MWSM–DIS
F4	FINELITE	HP4–WM–ID–4–B	120	–	LED	–	–	36	4' LED WALL MOUNT DIRECT/INDIRECT FIXTURE	** *	MARK ARCH. LTG.	S4LWID 4FT MSL8 90CRI 35K 800LFM	COLUMBIA	CWM4–35MWSM–DIS
F8	FINELITE	HP4–WM–ID–8–B	120	–	LED	–	–	72	8' LED WALL MOUNT DIRECT/INDIRECT FIXTURE	** *	MARK ARCH. LTG.	S4LWID 8FT MSL8 90CRI 35K 800LFM	COLUMBIA	(2) CWM4–35MWSM–DIS
F12	FINELITE	HP4–WM–ID–12–B	120	–	LED	–	–	108	12' LED WALL MOUNT DIRECT/INDIRECT FIXTURE	** *	MARK ARCH. LTG.	S4LWID 12FT MSL8 90CRI 35K 800LFM	COLUMBIA	(3) CWM4–35MWSM–DIS
INV	DUAL–LITE	LG125–S	120	–	–	–	–	–	EMERGENCY LIGHTING INVERTER, 110W CAPACITY	*	IOTA	IIS 125 SM	EMERGI–LITE	EMIU–125
EXIT	MULE	PVT–1–B–R–U–BA–SD	120	–	LED	–	–	2	LED EXIT SIGN, COLOR BY ARCH	*	EXITRONIX	S902–WB–SR–RC–AG–G2	COMPASS	CELCR1RN
X1	MULE	ELW–BB–10L3–DG	120	–	LED	–	–	10	EMERGENCY LIGHT, BATTERY BACKUP, BATTERY DIAGNOSTICS, VERIFY BOX DEPTH, REPLACE AS NEEDED	*	EXITRONIX	NF2–WB–10L–WH–DR	DUAL LITE	PGW
X2	MULE	REMW–SDT	120	–	LED	–	–	2	EMERGENCY LIGHT, BATTERY BACKUP, BATTERY DIAGNOSTICS, COLOR BY ARCH		EXITRONIX	FRM–WH–G2	DUAL LITE	EV4R–1

* OR APPROVED EQUAL. PROVIDE CUT SHEETS FOR OWNER APPROVAL PRIOR TO ORDERING FIXTURES. CATALOG NUMBERS ARE FOR REFERENCE ONLY, ACTUAL NUMBERS MAY VARY. 'EB' DENOTES ELECTRONIC BALLAST. 'EDB' DENOTES ELECTRONIC DIMMING BALLAST.

** 'F' FIXTURES MAY BE ORDERED IN CONTINUOUS LENGTHS IF AVAILABLE FROM MANUFACTURER

THE EMERGENCY LIGHTS AND EXIT SIGNS MUST HAVE INTEGRAL BATTERIES, CHARGERS AND TEST SWITCHES.

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NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 22038 BENJAMIN E. BURKE

DocuSigned by: Ben Burke
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6/16/2023

BID SET 4.28.22
WVS: 15RE.13.3
SCO ID# 21–24079–01A

PROJECT TITLE
BRUNSWICK CTY VISITOR'S CENTER
394 WHITEVILLE ROAD NW
SHALLOTE, NORTH CAROLINA

PROJECT NO.
2104A

DRAWING TITLE
ELEC. PANELS & RISER

E4

PLOT DATE 6/16/23