

\* OR APPROVED EQUAL

AHU CONTROL NOTE:

FOR EACH SYSTEM PROVIDE "SIMPLE ENGINEERED SOLUTIONS" MODEL #HPDM-XX HEAT PUMP DEHUMIDIFICATION CONTROL MODULE. PROVIDE PROGRAMMABLE ELECTRONIC THERMOSTAT WITH AUTO CHANGEOVER AND HUMIDISTAT FUNCTION. THERMOSTAT SHALL BE COMPATIBLE WITH DEHUMIDIFICATION CONTROL MODULE. PURPOSE OF DEHUMIDIFICATION CONTROL MODULE IS TO INITIATE COOLING MODE WHEN HUMIDISTAT SENSES HUMIDITY OVER SETPOINT AND ENERGIZE AND CONTROL ELECTRIC HEAT TO MAINTAIN SPACE TEMPERATURE. CONTACT SIMPLE ENGINEERED SOLUTIONS FOR INFORMATION ON DEHUMIDIFICATION CONTROL MODULE: (910) 231-9929. email: jmsuggs@yahoo.com.

Δ	AR DIST	RIBUTI	ON SCI	HEDUL	E		
MARK	* MANUFACTURER	MODEL NO.	NECK SIZE	FACE SIZE	MATERIAL	SERVICE	NOTES
A	CARNES	SPAB224	SEE FLEXIBLE DUCT SCHEDULE	24" X 24"	STEEL	SUPPLY	LAY-IN CEILING, WHITE 4-WAY BLOW
E	CARNES	RTDBH	12" X 12"	14" X 14"	STEEL	EXHAUST	DUCT, SIDE WALL, OR CEILING MOUNTED
RA	CARNES	SPRB22	SEE FLEXIBLE DUCT SCHEDULE	24" X 24"	STEEL	RETURN	LAY-IN CEILING, WHITE

\* OR APPROVED EQUAL

COORDINATE BORDER TYPE WITH THE CEILING TYPE. SEE ARCH SHEETS PROVIDE CUT SHEETS TO OWNER/ARCH. PRIOR TO ORDERING.

FYHAII	ST FAN SCHEDULE	
LAHAO	DI I AN SCILLOLL	

FLEXIB	BLE DUCTWO MAXIMUM CFM'S	RK SIZES
SIZES	SUPPLY	RETURN
6"	100	100
8*	175	175
10"	250	250
12"	400	350
14"	550	500
16"	NA	900

(CHANGE OUT EXISTING FLEX DUCTS AND COLLARS AS REQUIRED TO GET NEW CFM'S SHOWN)

# FLEXIBLE DUCTWORK NOTES

1) INSTALL FLEXIBLE DUCTWORK RUNS AS STRAIGHT AS POSSIBLE. 2) DO NOT ALLOW FLEXIBLE DUCT TO SAG BETWEEN SUPPORTS. 3) DO NOT STRETCH A SHORT SECTION TO FIT A SLIGHTLY LONGER SECTION. THIS DISTORTS THE DUCT SHAPE AND IMPEDES AIR FLOW.

4) DO NOT CRUSH DUCTWORK TO FIT IN A SPACE SMALLER THAN ITS ORIGINAL OUTSIDE DIAMETER. MAXIMUM ALLOWABLE DEFORMATION IS 15% OF ORIGINAL VOLUME.

5) USE RIGID 90 DEGREE ELBOWS AT ANY LOCATION WHERE THE DUCTWORK BECOMES DISTORTED.

() EXTREME CARE SHALL BE TAKEN TO ELIMINATE ANY REDUCTION IN FLOW WITHIN THE FLEXIBLE DUCTS. THE MECH. CONTRACTOR WILL BE REQUIRED TO REPLACE THE FLEXIBLE DUCT WITH RIGID IF PROPER FLOWING NOT OBTAINED.

1) SIZE ALL FLEXIBLE DUCT SO AS NOT TO EXCEED MAXIMUM CFM'S GIVEN IN TABLE.

# GENERAL NOTES - MECHANICAL

- 1. ALL WORK SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE STATE CODE AND ALL LOCAL AND OTHER APPLICABLE CODES.
- ANY PERMITS AND INSPECTION FEES SHALL BE SECURED AND PAID FOR BY THE MECHANICAL CONTRACTOR (MC).
- 3. ALL WORK SHALL BE PERFORMED BY EXPERIENCED AND SKILLED CRAFTSMEN. THE MC SHALL
- THE LOCATION OF ALL DUCT, PIPING AND EQUIPMENT SHALL BE ADJUSTED TO ACCOMMODATE ANTICIPATED OR ENCOUNTERED INTERFERENCES.

COORDINATE ALL OF HIS WORK WITH THE GENERAL CONTRACTOR (GC) AND OTHER TRADES.

- THESE PLANS ARE DIAGRAMMATIC AND MAY NOT SHOW MINOR DETAILS AND LOCATIONS. FOR DIMENSIONS REFER TO THE ARCHITECTURAL PLANS.
- THE MC SHALL BE RESPONSIBLE FOR ALL ELECTRICAL STARTERS INTERLOCKS, CONTROL WIRING CONDUIT AND POWER WIRING FROM DISCONNECTS TO HIS EQUIPMENT, USING A LICENSED ELECTRICIAN.
- 7. THE MC SHALL USE FIRE DAMPERS FOR PROTECTION OF THE OPENING IN ACCORDANCE WITH STATE AND LOCAL CODES IN ALL LOCATIONS WHERE PENETRATIONS OF RATED WALLS AND FLOORS OCCUR. SEE ARCHITECTURAL PLANS FOR RATED WALL AND FLOOR LOCATIONS. PROVIDE ACCESS DOORS AT ALL DAMPER LOCATIONS. LOCATE DOORS FOR EASY ACCESS.
- INSTALL FLEXIBLE CONNECTORS ON SUPPLY AND RETURN DUCTWORK AHU. ALL MECHANICAL EQUIPMENT SHALL OPERATE FREE OF OBJECTIONAL NOISE AND VIBRATION.
- INSTALL TURNING VANES IN SUPPLY DUCTS AT ALL ELBOWS AND SPLITTER DAMPERS. PROVIDE BALANCING DAMPERS IN ALL DUCTS WHERE SHOWN OR REQUIRED FOR SYSTEM BALANCING.
- 10. DUCT DIMENSIONS ARE SHOWN INSIDE CLEAR.
- THE MC SHALL KEEP THE PREMISES CLEAR OF DEBRIS FROM HIS WORK DURING CONSTRUCTION AND LEAVE THE AREA AND BUILDING CLEAN AT THE COMPLETION OF HIS WORK. HE SHALL ALSO LEAVE CLEAN ALL EXPOSED EQUIPMENT IN HIS CONTRACT.
- PROVIDE ALL REQUIRED ROOF PENETRATIONS FOR THE INSTALLATION OF THE NEW EQUIPMENT. ALL FLASHINGS ARE BY THE MECHANICAL CONTRACTOR. ALL ROOFING WORK SHALL BE DONE BY A LICENSED ROOFING CONTRACTOR SO AS TO MAINTAIN ORIGINAL WARRANTY.
- 13. THE M.C. SHALL COORDINATE WITH AND PROVIDE EQUIPMENT SPEC. SHEETS TO THE GENERAL AND ELECTRICAL CONTRACTORS FOR REVIEW PRIOR TO ORDERING EQUIPMENT.
- 14. PROPERLY SUPPORT ALL DUCT WORK, AND EQUIP FROM STRUCTURE. PROVIDE ALL STRUCTURAL SUPPORTS FOR THE LOADS AS REQUIRED AT NO ADDITIONAL COST TO THE OWNER.

OA SCHEDULE OUTDOOR VENTILATION AIR PROVIDED PER TABLE 403.3 NCSBC MECHANICAL CODE.

AREA PEOPLE OCCUPANCY
OUTDOOR AIR OUTDOOR AIR
FLOW RATE FLOW RATE (# PEOPLE/

(CFM/SF) (CFM/PERSON) "1000SF)

5

OUTDOOR AIR PROVIDED FROM EACH HVAC UNIT

EXHAUST PROVIDED BY TWO EXHAUST FANS, MAKE UP AIR BY TRANSFER AIR

FLOW RATE (# PEOPLE/

50

OCCUPNCY OUTDOOR OUTDOOR TOTAL AIR FLOW

200 - 8" DIA. O.A. DUCT

(CFM) (CFM)

(# PEOPLE) (CFM)

10

OUTDOOR AIR (CFM)

CFM

70 CFM/FLUSHING FIXTURE

200

SQUARE FOOTAGE

859

429

128

193

HVAC UNIT

AHU-3

TOTAL PROVIDED

**APPLICATION** 

TOILETS

0.06

0.06

0.12

0.06

6 FLUSHING FIXTURE X 70 CFM = 420 CFM

\* SET OUTDOOR AIR DAMPER CONTROLS TO PROVIDE OUTDOOR AIR AS INDICATED IN THIS SCHEDULE.

APPLICATION

OFFICE

CORRIDOR

STORAGE

CONFERENCE

TOTAL REQUIRED

## LEGEND - MECHANICAL

12 X 8

RECTANGULAR DUCTWORK. INSIDE CLEAR DIMENSION INDICATED (WIDTH X HEIGHT)

12" DIA.

ROUND GALVANIZED STEEL DUCT INSIDE CLEAR DIMENSION INDICATED.

FLEXIBLE DUCTWORK

12° OLA. DOUBLE WALLED GALVANIZED STEEL SPIRAL DUCT

DUCT MOUNTED SUPPLY AIR DIFFUSER

SUPPLY DIFFUSER

RETURN GRILLE

WALL MOUNTED THERMOSTAT

(UNIT SERVED IS INDICATED)

- MIN. CFM

1 HOUR FIRE BARRIER

—— D—— D—— CONDENSATE PIPING

REFRIGERANT PIPING

### APPENDIX B

## 2018 BUILDING CODE SUMMARY FOR ALL COMMERCIAL PROJECTS

MECHANICAL DESIGN (PROVIDE ON THE MECHANICAL SHEETS IF APPLICABLE)

MECHANICAL SYSTEMS, SERVICE SYSTEM AND EQUIPMENT

Thermal Zone

winter dry bulb summer dry bulb

Interior Design Conditions winter dry bulb summer dry bulb relative humidity

Building Heating Load

21,700 BTU/hr (Tenant space only) **Building Cooling Load** 33,600 BTU/hr (Tenant space only)

Mechanical Spacing Conditioning System

Unitary — The tenant space is served the following systems: (1) New 3 Ton split system heat pump unit

Efficiencies and outputs are listed on equipment

schedules - See drawings.

**ENGINEER** BURICE DESIGN GROUP 3305-109 DURHAM DRIVE RALEIGH, NC 27603 PHONE: (919) 771-1916

FAX: (919) 779-U5Z0 email: ben**©**bdg-nc.com Corp. License # C-2652



Coastal

**Architectural** 

Member of the America Institure of Architects

Lee D. Dixon, Jr., AIA

252-247-2127

4206 Bridges St. Ext.,

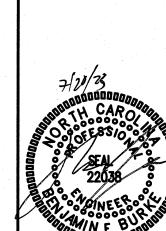
Morehead City, NC

TENAN

CENTER

28557

**Planning** 

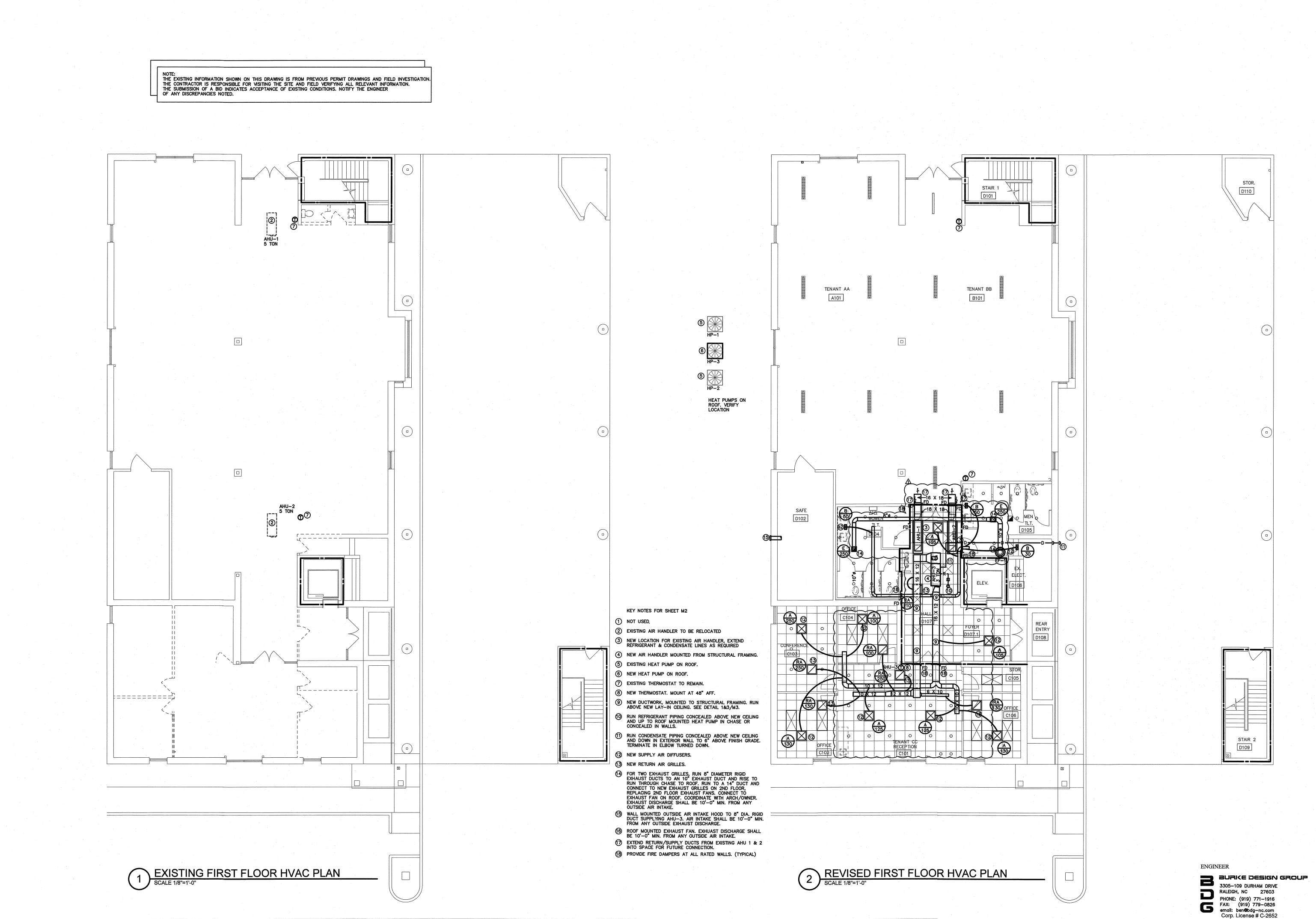


HYAC SCHED, NOTES, LEGENDS

SSUED: 7-19-2023 DWG BY: CLS CKD BY: BEB REVISIONS

7/18/23 OWNER CHANGES

SHEET NO.



Coastal Architecture

Architectural
Design
Planning
Interiors



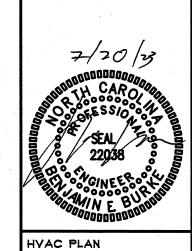
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4206 Bridges St. Ext.,
Suite C
Morehead City, NC
28557

SURNS AND WILCOX CENTER FLOOR RENOVATIONS TENANT (MOREHEAD CITY, NORTH CAROLINA



23001
ISSUED: 7-19-2023

ISSUED: 7-19-202

DWG BY: 
CKD BY: BEB

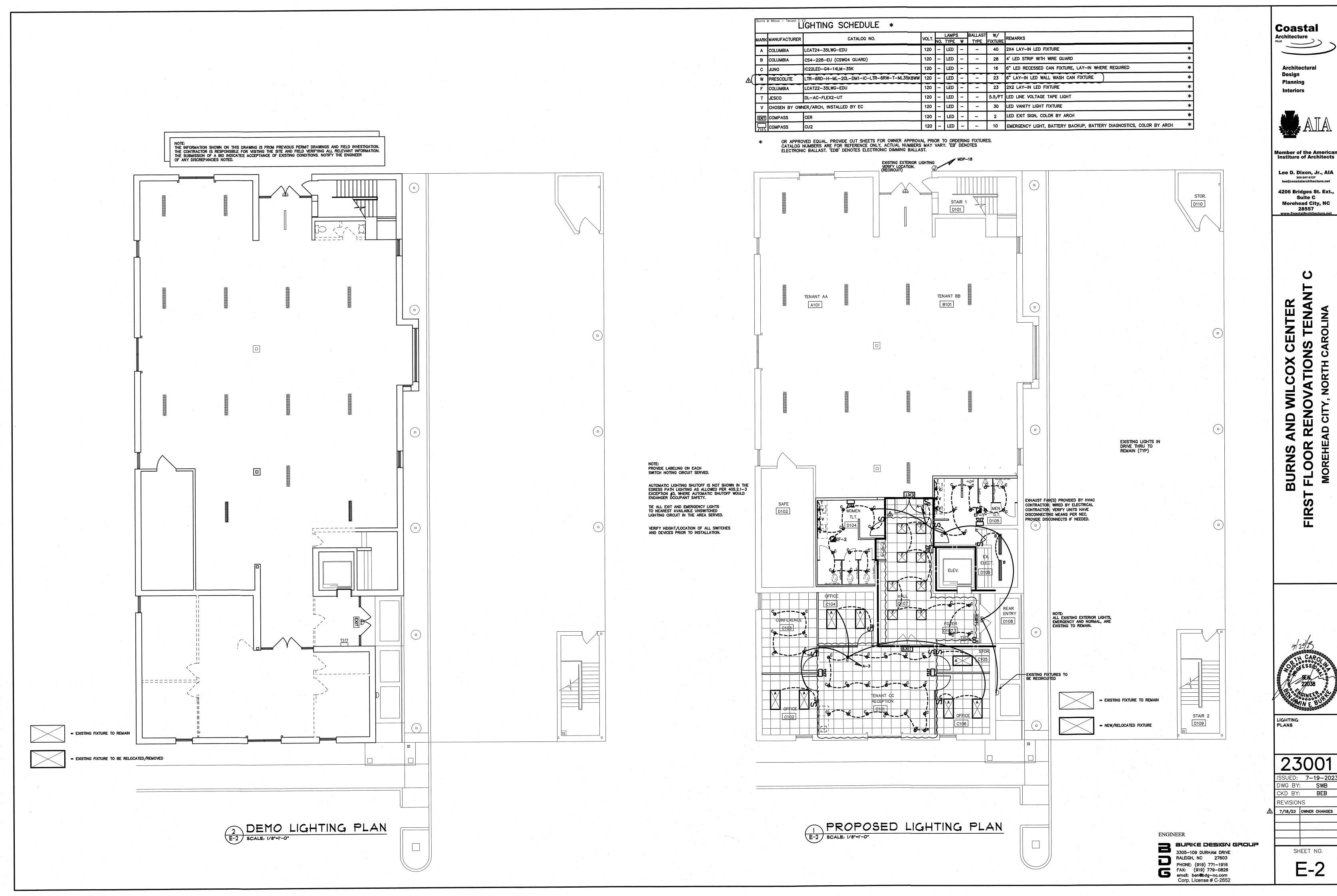
REVISIONS

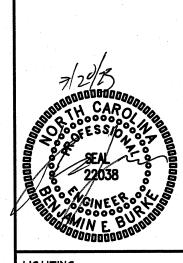
7/18/23 OWNER CHANGES

REVISIONS

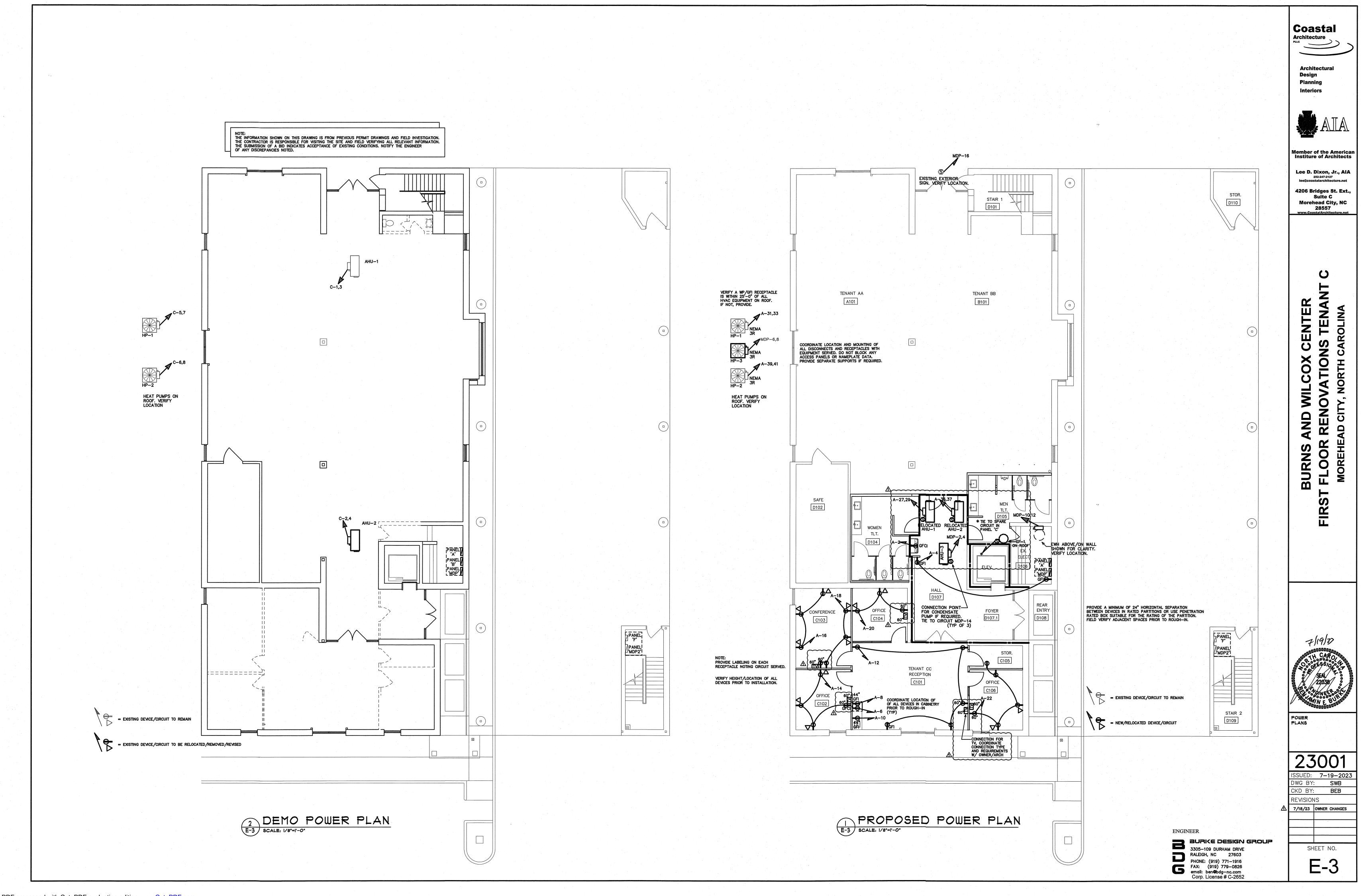
7/18/23 OWNER CHANGES

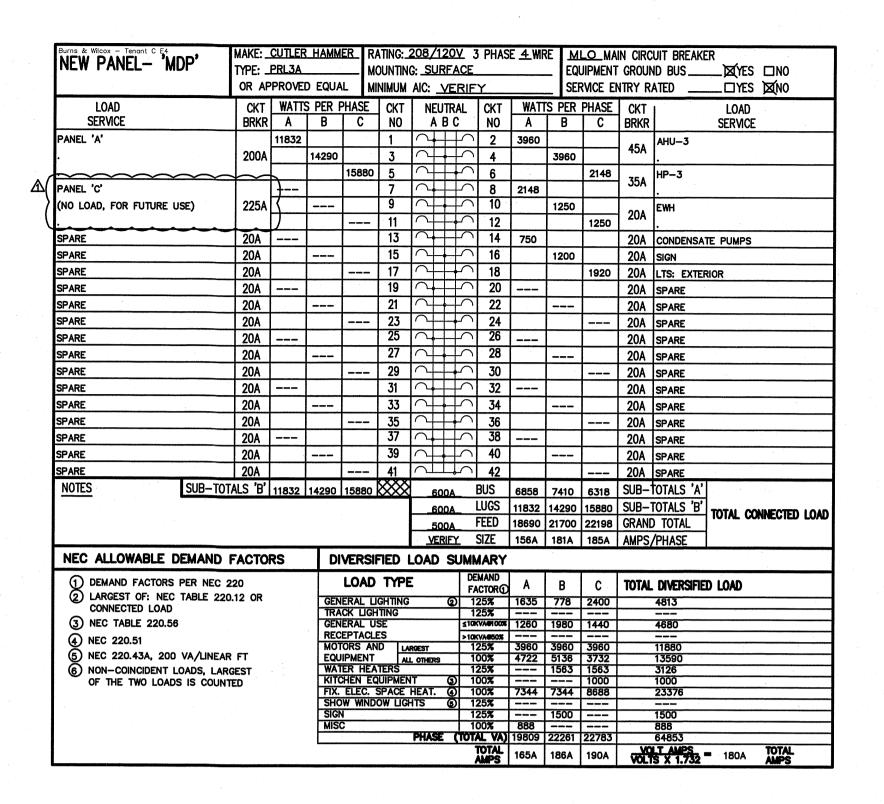
SHEET NO.





SSUED: **7-19-2023** 





NEW PANEL— A	MAKE:	CUTLE	R HAMM	ER R	ATING:_	208/120\	4 3 PHAS	SE 4 WI	RE M	LO MA	IN CIRC	UIT BREAK	ER
INCW PANEL- A		PRL1A				G: SURFA						ND BUS	
	OR A	PROVE	D EQUA	AL M	INIMUM	AIC: VEF	RIFY		_			ATED	
LOAD	СКТ		S PER	PHASE	CKT	NEUTRA	L CKT	WAT	ts per	PHASE	СКТ		LOAD
SERVICE	BRKR	A	В	C	NO	ABC	NO	Α	В	С	BRKR		SERVICE
LTS- RESTROOMS & HALL	20A	1308			1	$\cap$	<u> </u>	888			20A	EWC	
LTS- TENANT C	20A		622		3		<b>∽</b> 4		360		20A	REC- HAL	LWAY & ELECTRICAL RO
SPARE	20A				5	$\cap$	$\bigcirc$ 6			1000	20A	UC FRIDGE	
SPARE	20A				7		$\bigcirc$ 8	180			20A	REC- COU	NTER
SPARE	20A				9		$\bigcirc$ 10		180		20A	REC- COU	NTER
SPARE	20A				11		12			900	20A	REC- C10	1
SPARE	20A				13	$\cap$	14	540			20A	REC- C10	2
SPARE	20A				15	$\cap$	$\bigcirc$ 16		540			REC- C10	
SPARE	20A				17	$\cap$	<b>○</b> 18	1		540		REC- C10	
SPARE	20A				19		∩ 20	540				REC- C10	
SPARE	20A				21	$\cap$	<b>∩</b> 22		900		1	REC- C10	
SPARE	20A				23	$\cap$	<b>△</b> 24				20A	SPARE	
SPARE	20A				25	$\cap$	<b>○ 26</b>				20A	SPARE	
AHU-1	604		5064		27	$\cap$	<b>○ 28</b>				20A	SPARE	
6.0A MOTOR, 36.2A HEAT	60A			5064	29	$\cap$	$\bigcirc$ 30				20A	SPARE	
HP-1	504	3312			31	$\cap$	<b>○</b> 32				20A	SPARE	
26.4A COMP, 1.2A FAN	50A		3312		33	$\cap$	<b>○</b> 34				20A	SPARE	
AHU-2	60A			5064	35	$\cap$	36				20A	SPARE	
6.0A MOTOR, 36.2A HEAT	- OUA	5064			37	$\sim$	$\bigcirc$ 38				20A	SPARE	
HP-2	50A		3312		39	$\cap$	$\bigcirc$ 40				20A	SPARE	
26.4A COMP, 1.2A FAN	30A			3312	41	$\overline{\Box}$	<b>○ 42</b>				20A	SPARE	
NOTES	SUB-TOTALS 'B'	9684	12310	13440	$\bowtie$	_200A	BUS	2148	1980	2440	SUB-	TOTALS 'A'	`.
GFCI BREAKER						_200A	LUGS	9684	12310	13440		TOTALS 'B'	1
						_200A	FEED	11832	14290	15880		D TOTAL	TOTAL CONNECTED LO
			,			VERIFY	SIZE	99A	119A	132A		/PHASE	
NEC ALLOWABLE DE	MAND FACTO	RS	D	VERSI	FIED	LOAD SU	JMMARY						
1) DEMAND FACTORS P	FR NFC 220				TYPE		DEMAND	Т.			TOTAL		7 1040
2) LARGEST OF: NEC T			CEN	IERAL L			FACTOR		B	С	IUIAL	. DIVERSIFIE	D LOAD
CONNECTED LOAD				CK LIGH		<u> </u>	125% 125%	1635	778			2413	
3 NEC TABLE 220.56				IERAL U			≤10KVA@100%			1440		4680	
4 NEC 220.51				EPTACL		RGEST	>10KYA <b>650%</b> 125%	3960	3960	3960		11880	
(5) NEC 220.43A, 200 \	•		EQL	JIPMENT	AL	L OTHERS	100%	864	4176	1584		6624	
6 NON-COINCIDENT LO OF THE TWO LOADS				TER HEA		it g	125% 100%			1000		1000	
OF THE THE LUADS	IO COUNTED		FIX.	ELEC.	SPACE	HEAT. 🕢	100%	4344	4344	8688		17376	
			SHO	W WIND	OW LIG	HTS ®	125% 125%						
			MIS				100%	888				888	
						PHASE (	TOTAL VA	12951	15238	16672		44861	
							TOTAL				4.65	LT AMPS	TOTAL

EXISTING PANEL 'MDP2'	TYPE: _	NOOD				G: SURF. AIC: <u>v</u> e		Υ			JIPMENT RVICE EN		id Bus Ated	_XYES □NO _XYES □NO
LOAD Service	CKT BRKR	WATTS	PER F	PHASE C	CKT NQ	NEUTR A B		CKT NO	WATT A	S PER B	PHASE C	CKT BRKR		LOAD SERVICE
SPACE					1	$\cap$		2	12205				PANEL 'D'	
SPACE					3	$\cap$		4		11051		225A		
SPACE					5	$\cap$	$\sim$	6			10202			
PANEL 'MDP'		14520	11000		7	$\bigcirc$	$\stackrel{+}{\cong}$	8 10	6720		ļ		ELEVATOR	
			11028	7992	11		<u> </u>	12		6720	6720	70A	•	
•	500A			7002	13			14			0720		PANEL 'E'	
•					15	$\overline{}$		16				60A		
					17	$\cap$	2	18						
MAIN BREAKER				,	19	$\sim$	7	20	5760				PANEL 'F'	
•					21		$\triangle$	22		5760		60A		
	800A				23		$\stackrel{\longleftarrow}{\sim}$	24			5760			
• The second of					25		$\stackrel{+}{\sim}$	26	17378				PANEL 'M'	
•					27		$\stackrel{t}{\sim}$	28		13620		225A	•	
NOTES SUB-TOT	ALC 'P'	14500	44005		29	, <del>       </del>	•-/ \	30			15438	CHD .	TOTAL C 'A'	
308-101	VEO D	14520	11028	/992	KXXX	800/		BUS LUGS	42063		38120		TOTALS 'A'	
						8008		FEED	14520 56583		7992 46112		TOTALS 'B' TOTAL	TOTAL CONNECTED LOA
						800A	_	SIZE	472A	402A	385A		/PHASE	

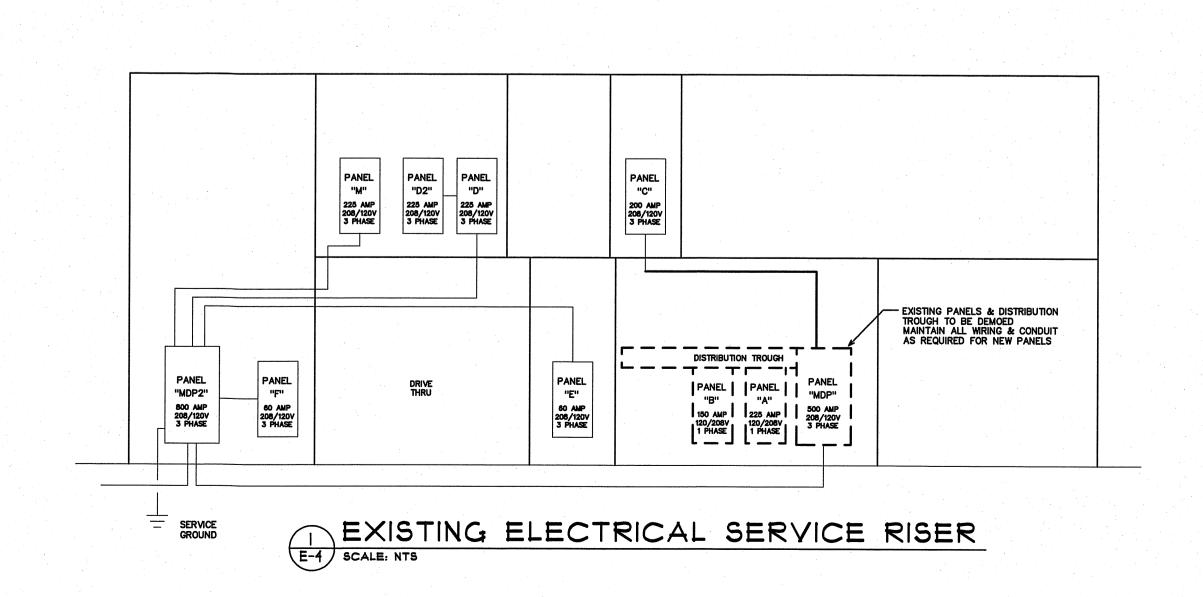
REVISED PANEL 'MDP2'	MAKE:_		E D			208/120		SE <u>4</u> WF				UIT BREAKE	
NEVISED FAILE MDF2	TYPE: _	NOOD		M	NITHUC	G: SURFA	CE		_   E	QUIPMENT	r Groun	ND BUS	`XYES □NO
				M	NIMUM	AIC: VE	RIFY		_ S	ervice ei	ntry R	ATED	`XYES □NO
LOAD	СКТ	WATT	s per i	PHASE	CKT	NEUTR/	AL CKT	WATT	IS PEF	R PHASE	CKT		LOAD
SERVICE	BRKR	A	В	С	NQ	ABC		Α	В	С	BRKR		SERVICE
SPACE		7			1	$\sim$	$\sim$ 2	12205				PANEL 'D'	
SPACE					3	$\cap$	$\sim$ 4		1105	1	1 225A		
SPACE	<u> </u>	1			5		$\overline{}$		1	10202	1		
PANEL 'MDP'	<del>-</del>	14520	1	<b>†</b>	7		$\overline{}$	6720	<del>                                     </del>	1.02.02	<del>                                     </del>	ELEVATOR	
		1.1020	11028	<u> </u>	9		$\overline{}$	10,20	6720		70A	ELEVATOR	
		<del></del>	11020	7992	11		$\frac{10}{12}$	-	0/20		1 /04	•	
	500A			7992	13		$\begin{array}{c c} \hline  & 12 \\ \hline  & 14 \\ \hline \end{array}$			6720	<del> </del>		
									<del> </del>		٠	PANEL 'E'	
					15		<u> 16</u>			•	60A	(NO LOAD,	FOR FUTURE USE)
					17		-∕ 18				1		
MAIN BREAKER					19	$\cap$	<b>∽</b> 20	5760				PANEL 'F'	
					21	$\cap$	<b>-</b>		5760		60A		
					23	$\cap$	<b>∽</b> 24			5760	1	l.	
	A008				25	$\overline{}$	$\bigcirc$ 26	17378	<u> </u>		<b> </b>	PANEL 'M'	
					27		$\bigcirc$ 28	117070	13620		225A	I	
			<del> </del>	<b></b>	29		$\frac{20}{30}$	+	1302		2234		
NOTES SUB-TO	TALS 'B'				XXX				-	15438	GUID :	I.	
	JIALS B	14520	11028	7992	$\times\!\!\times\!\!\times$	800A	BUS	42063	3715°			TOTALS 'A'	
EXISTING CIRCUIT TO REMAIN  NEW/REVISED CIRCUIT						800A	LUGS	14520	11028			TOTALS 'B'	TOTAL CONNECTED LO
						A008	FEED	56583	48179			D TOTAL	
						VERIFY	<u>SIZE</u>	472A	402A	385A	AMPS	/PHASE	
NEC ALLOWABLE DEMAND	<b>FACTO</b>	RS	DI	VERSI	FIED	LOAD SI	JMMAR'	1					
1 DEMAND FACTORS PER NEC	000			LOAD	TVDI	=	DEMAND	1	Τ_	T .			
(2) LARGEST OF: NEC TABLE 2							FACTOR		В	С	IOIAL	. Diversifie	D LOAD
CONNECTED LOAD	20.12 OK			IERAL LI ICK LIGH		<u> </u>	125%	4332	1589			7924	
(3) NEC TABLE 220.56				IERAL U			125% ≤10KVA@100	× 3333	3333			9999	
(4) NEC 220.51				EPTACL			>10KVA@50		1314			5312	
5 NEC 220.43A, 200 VA/LINE	D ET			TORS AN		RGEST	125%	3433	2385			9251	
6 NON-COINCIDENT LOADS, LA				JIPMENT IER HEA		L OTHERS	100%	20722	12960 2813			52116 5626	
OF THE TWO LOADS IS COU	NTED			CHEN EC		VT 3		800	3580		<u> </u>	6980	· · · · · · · · · · · · · · · · · · ·
				ELEC.		HEAT.	100%	7530	7530			15060	
			SHO	W WIND	OW LIG	HTS 📵	125%	<del> </del>					
			MIS				100%	12480				37740	
•						PHASE (	TOTAL V	55384	48284	4 46340		150008	

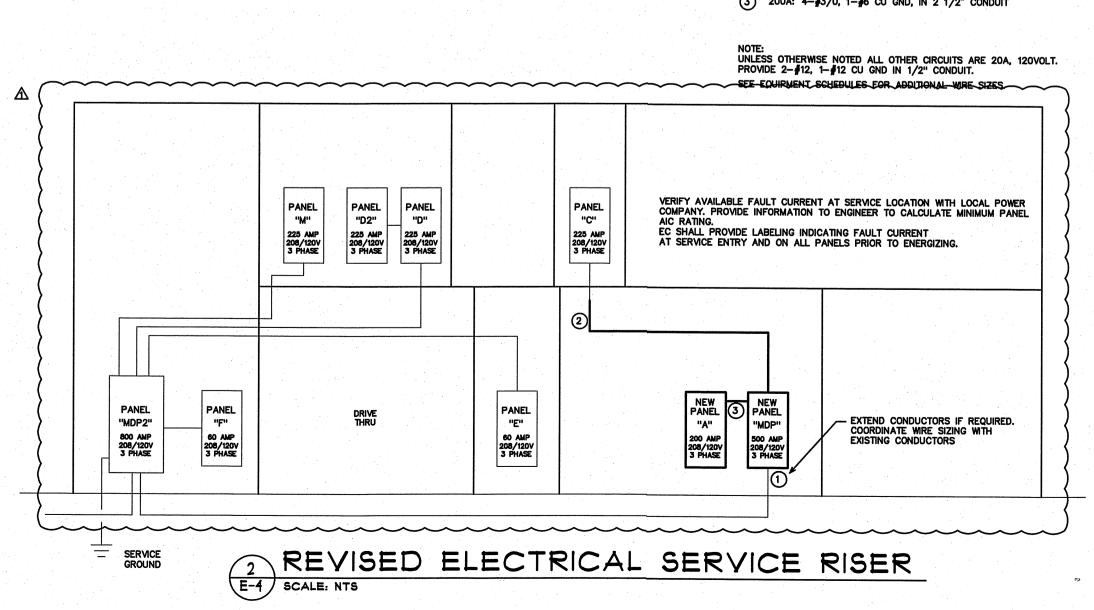
EQUIF		1T V	VIRIN	IG	SCHEDULE
EQUIPMENT	MCA	МОСР	VOLTS	PH	WIRE SIZE
AHU-1,2	52.8A	60A	208V	1	2-#6, 1-#10 GND IN 3/4" CONDUIT
HP-1,2	34.2A	50A	208V	1	2-#8, 1-#10 GND IN 3/4" CONDUIT
AHU-3	44.7A	45A	208V	1	2-#8, 1-#10 GND IN 3/4" CONDUIT
HP-3	22.1A	35A	208V	. 1	2-#8, 1-#10 GND IN 3/4" CONDUIT
EWH	(2.5KW)	20A	208V	1	2-#12, 1-#12 GND IN 1/2" CONDUIT

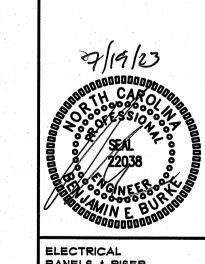
NOTE: THE ELECTRICAL CONTRACTOR SHALL VERIFY ALL EQUIPMENT ELECTRICAL REQUIREMENTS PRIOR TO ROUGH—IN AND RELEASING GEAR. ADJUST BREAKER, WIRE SIZES, ETC. AS REQUIRED.

## RISER WIRING SCHEDULE

- 1 500A: (2 SETS) 4-#250MCM, 1-#2 CU GND, IN (2) 2 1/2" CONDUIT
- 2) 225A: 4-#4/0, 1-#4 CU GND, IN 2 1/2" CONDUIT
- (3) 200A: 4-#3/0, 1-#6 CU GND, IN 2 1/2" CONDUIT







Coastal

**Planning** 

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4206 Bridges St. Ext., Suite C Morehead City, NC 28557

C

FLOOR

BURNS

PANELS & RISER

	23	3001
	ISSUED:	7-19-2023
	DWG BY	: SWB
	CKD BY:	BEB
	REVISION	NS .
Δ	7/18/23	OWNER CHANGES
		·

SHEET NO.

E-4

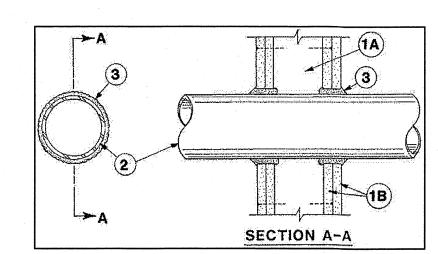
**ENGINEER** 3305–109 DURHAM DRIVE
RALEIGH, NC 27603
PHONE: (919) 771–1916
FAX: (919) 779–0826
email: benebdg-nc.com
Corn License # C-2652 Corp. License # C-2652

F Ratings -- 1, 2, 3 and 4 Hr (See Items 2 and 3)

T Ratings -- 0, 1, 2, 3, and 4 Hr (See Item 3)

L Rating At Ambient — less than 1 CFM/sq ft

L Rating At 400 F - less than 1 CFM/sq ft



1. Wall Assembly -- The 1, 2, 3 or 4 hr fire-rated gypsum wallboard/stud wall assembly shall be constructed of the materials and in the manner described in the individual U300 or U400 Series Wall or Partition Designs in the UL Fire Resistance Directory and shall include the following construction features:

A. Studs -- Wall framing may consist of either wood studs (max 2 h fire rated assemblies) or steel channel studs. Wood studs to consist of nom 2 by 4 in. lumber spaced 16 in. OC with nom 2 by 4 in. lumber end plates and cross braces. Steel studs to be min 3-5/8 in. wide by 1-3/8 in. deep channels spaced max 24 in. OC.

B. Gypsum Boards -- Nom 1/2 or 5/8 in. thick, 4 ft. wide with square or tapered edges. The gypsum wallboard type, thickness, number of layers, fastener type and sheet orientation shall be as specified in the individual U300 or U400 Series Design in the UL Fire Resistance Directory. Max diam of opening is 26 in.

2. Through-Penetrant -- One metallic pipe, conduit or tubing installed either concentrically or eccentrically within the firestop system. The annular space between pipe, conduit, or tubing and periphery of opening shall be min of 0 in. (point contact) to max 2 in. Pipe, conduit or tubing to be rigidly supported on both sides of wall assembly. The following types and sizes of metallic pipes, conduits or tubing may be used:

A. Steel Pipe -- Nom 24 in. diam (or smaller) Schedule 10 (or heavier) steel pipe.

B. Iron Pipe -- Nom 24 in. diam (or smaller) service weight (or heavier) cast iron soil pipe, nom 12 in. diam (or smaller) or Class 50 (or heavier)

C. Conduit -- Nom 6 in. diam (or smaller) steel conduit or nom 4 in. diam (or smaller) steel electrical metallic tubing.

D. Copper Tubing -- Nom 6 in. diam (or smaller) Type L (or heavier) copper tubing.

E. Copper Pipe -- Nom 6 in. diam (or smaller) Regular (or heavier)

F. Through Penetrating Product -- Flexible Metal Piping --The following types of steel flexible metal gas piping may be used:

1. Nom 2 in. diam (or smaller) steel flexible metal gas piping. Plastic

covering on piping may or may not be removed on both sides of floor or wall assembly.

### OMEGA FLEX INC

2. Nom 1 in. diam (or smaller) steel flexible metal gas piping. Plastic covering on piping may or may not be removed on both sides of floor or wall assembly.

### GASTITE, DIV OF TITEFLEX

3. Nom 1 in. diam (or smaller) steel flexible metal gas piping. Plastic covering on piping may or may not be removed on both sides of floor or wall assembly.

### WARD MFG LLC

3. Fill, Void or Cavity Material\* -- Caulk or Sealant -- Min 5/8, 1-1/4, 1-7/8 and 2-1/2 in. thickness of caulk for 1, 2, 3 and 4 hr rated assemblies, respectively, applied within annulus, flush with both surfaces of wall. Min 1/4 in. diam bead of caulk applied to gypsum board/penetrant interface at point contact location on both sides of wall. The hourly F Rating of the firestop system is dependent upon the hourly fire rating of the wall assembly in which it is installed, as shown in the following table. The hourly T Rating of the firestop system is dependent upon the type or size of the pipe or conduit and the hourly fire rating of the wall assembly in which it is installed, as tabulated below:

Max Pipe or Conduit Diam In	F RATING Hr	T RATING Hr
1	1 or 2	0+, 1 or 2
1	3 or 4	3 or 4
4	1 or 2	0
6	3 or 4	0
12	1 or 2	0

+When copper pipe is used, T Rating is 0 hr.

3M COMPANY -- CP 25WB+ or FB-3000 WT.

\*Bearing the UL Classification Mark

DIVISION 16 - FIRE ALARM

PART 1 - GENERAL

1.1 DESCRIPTION OF THE WORK A. Work under this section includes, but is not necessarily

limited to, furnishing and installing the following: 1. Fire alarm panel, wiring and devices

B. All work shall be complete and items, equipment, etc., shall be electrically connected for proper and correct

C. All work under this contract shall be installed in accordance with the latest edition of the following codes and

standards insofar as they apply: 1. The 2017 National Electrical Code.

2. NFPA 72 3. Underwriter's Laboratories, Inc., Standards and

approved listings. 4. Electrical Testing Labatories standards.

5. North Carolina Building Code, Latest Edition and Revisions. 6. All local codes and ordinances.

D. The Fire Alarm Contractor shall be licensed in the State of North Carolina and have all local licenses required for the

E. Obtain all permits, licenses, inspections, etc., required for the work and pay for the same. Furnish final certificate of inspection and approval from the electrical inspector having jurisdiction prior to acceptance of the work.

F. All work shall be done by skilled mechanics and shall present a neat, trim, workmanlike condition when complete.

A. The intent of these specifications and the accompanying drawings is to convey as reasonably as possible the requirements for a complete job ready for the building to operate. The Fire Alarm Contractor shall take this into consideration and include in his base bid allowance for contingencies as will allow him to provide minor pieces of equipment and labor not specifically indicated but required for the job to operate properly, at no additional cost

to the Owner.

1.3 COORDINATION A. Coordinate work with other contractors. Notify Architect of apparent conflicts early to expedite construction. If structural damage appears imminent, stop work and notify Architect for a decision before resuming

B. Locations shown are approximate. The drawings do not give exact details as to elevations and locations of various pipes, fittings, ducts, conduit, etc., and do not show all offsets and other installation details which may be required. Coordinate all locations with architect before any

### 1.4 SHOP DRAWNGS

A. Provide complete shop drawings per NCSFC section 907.1.2 to the local

fire marshal prior to start of construction including: 1. Floorplan with room names

2. Location of all FA devices 3. Location of panels

. Power connections 5. Battery calculations 6. Conductors types and sizes

7. Voltages drop calculations 8. Equipment cut—sheets, model numbers, etc.

### PART 2 - PRODUCTS AND MATERIALS

### 2.1 GENERAL

A. All material shall be new and shall bear the manufacturer's name, trade name, and UL label where such standard has been established for the particular material. Materials shall be the standard products of manufacturer's regularly engaged in the manufacturer of the required type of equipment and the manufacturer's latest approved design.

1. Boxes installed in concealed locations shall be set flush with

the finished surfaces. 2. Provide rated boxes in all fire barriers & walls installed per code.

### PART 3 - EXECUTION

### 3.1 FIRE ALARM SYSTEM EQUIPMENT

A. Provide a complete operable fire alarm system as shown on the drawings and as required by State, and Local codes.

B. The main control panel is existing. The unit is an addressable type. Verify spare capacity is available prior to bid. Expand as required.

C. Provide a remote key test switch for the duct detectors. Locate as

directed by the local AHJ. D. All fire alarm system cables shall be installed in conduit. Size as required by the equipment supplier. Provide a submittal of all devices and a riser diagram for

approval before installation of any equipment. E. The return air smoke detectors will be furnished by the E.C. to the HVAC contractor for installation. The HVAC contr shall be responsible for the shut down of all AHU'S. The E.C. shall be responsible for all connections to the fire alarm controller.

### 3.2 CLEAN UP

A. During construction, keep the site clean of debris. Upon completion, and before final inspection, clean up the premises to remove all evidence of work. In addition upon completion of construction leave equipment clean.

3.3 GUARANTEE

A. Guarantee all materials and labor included in the fire alarm work for a period of one year from date of final acceptance by the Owner. Any part or parts of the work or equipment which prove to be defective during the guarantee period shall be replaced at no additional cost to the Owner.

## FIRE ALARM LEGEND

HORN/STROBE SIGNALING DEVICE (XX) CANDELLA RATING; (S) INDICATES STROBE-ONLY

PULL STATION

SMOKE DETECTOR

DUCT SMOKE DETECTOR

REMOTE ANNUNCIATOR PANEL

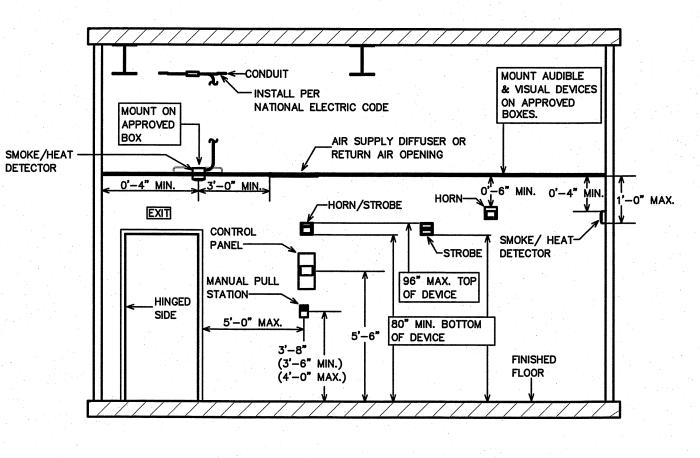
ONE HOUR FIRE BARRIER

FIRE ALARM CONTROL PANEL

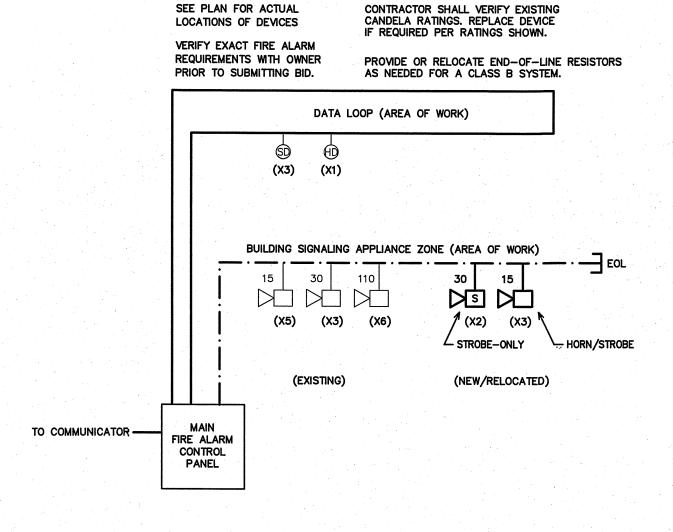
SYSTEM OUTPUTS FACP ANNUNCIATION NOTIFICATION REQUIRED FIRE SAFETY CONTROL

	OVOTEN INDUITO	/ P	ċ <u>,</u> ∕́	<u> </u>	<u>\$</u>			<u>%</u>	<u> </u>	?\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	8 / X	84 X	Sty.	5 S. S.	Y/&	<u> </u>	2 / K	<u> </u>	<b>\$</b> /\$	97/j	3	10/ K		\$\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	<u> </u>		
	SYSTEM INPUTS	Α	В		D		F		Н		J	К			N		Р		R		T	U		W		Y	
1	FIRE ALARM SYSTEM AC POWER FAILURE			•	•								<u></u>														1
2	FIRE ALARM SYSTEM LOW BATTERY					•	•						•														2
3	OPEN CIRCUIT					•	•						•														3
4	GROUND FAULT					•	•						•														4
5	NOTIFICATION APPLIANCE CIRCUIT SHORT						•						•														5
6	BUILDING MANUAL PULL STATIONS	•	•					•	•	•	•			•						•				-			6
7	CORRIDOR SMOKE DETECTORS	•	•					•	•	•	•			•	•				•	•		•	•	•			7
8	AREA SMOKE DETECTORS	•	•					•	•	•	•				•				•			•	•	•			8
9	HVAC AIR DUCT SMOKE DETECTORS			•	•							•									•						9
10	AREA HEAT DETECTORS	•	•					•	•	•	•		-	•	•				•	•		•	•	•			10
11	HOOD OR ROOM FIRE SUPPRESSION SYSTEM ALARM	•	•					•	•	•	•			•	•				•	•							11
12	SPRINKLER TAMPER SWITCH		1	•	•			•				•															12
13	SPRINKLER WATER FLOW IN BUILDING	•	•					•	•	•	•			•	•				•	•							13
14	SPRINKLER WATER FLOW IN ELEV EQUIP RM OR SHAFT	•	•					•	•	•	•			•	•		•	•	•	•							14
15	ELEV EQUIP RM AREA SMOKE DETECTOR	•	•	·				•	•	•	•			•	•		•		•	•							15
16	ELEV SHAFT AND ELEV EQUIP RM HEAT DETECTORS	•	•						•	•	•			•	•		•	•		•							16
17	ELEV LOBBY SMOKE DETECTORS - UPPER FLOORS	•						•		•	•			•	•		1.5	-	•	•		•	•	•			17
18	ELEV LOBBY SMOKE DETECTOR — RECALL FLOOR	•	•					•	•	•	•			•		•	•		•	•		•	•	•			18
19	ELEV CONTROLLER POWER SHUNT TRIP STATUS			•	•			•						-													19
20	FIRE PUMP POWER FAILURE/PHASE REVERSAL			•	•			•																			20
21	FIRE PUMP RUNNING	•	•					•	•	•	•			•	•				•	•							21
22	FIRE PUMP SYSTEM NOT IN AUTOMATIC			•	•			•				•														·	22
23	LEGALLY REQUIRED GENERATOR SYSTEM LOW FUEL			•	•							•															23
24	LEGALLY REQUIRED GENERATOR NOT IN AUTOMATIC			•	•			•				•							-								24
25	AREA OF REFUGE TWO-WAY COMMUNICATIONS STATUS				•			•																			25
26																											26
27																											27
		Α	В	С	D	E	F	G	Н	ı	J	K	L	М	N	0	Р	Q	R	S	T	U	V	W	٧	W	

NOTE:
THE EXISTING INFORMATION SHOWN ON THIS DRAWING IS FROM PREVIOUS DRAWINGS AND/OR 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.







SEE PLAN FOR ACTUAL

2 FIRE ALARM RISER
SCALE: NTS

**ENGINEER** BURICE DESIGN GROUP
3305-109 DURHAM DRIVE RALEIGH, NC 27603
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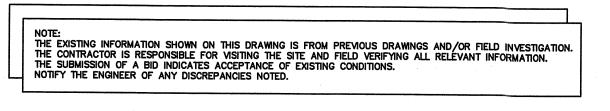
C ENTE C **SNS** 

SPECS & RISER

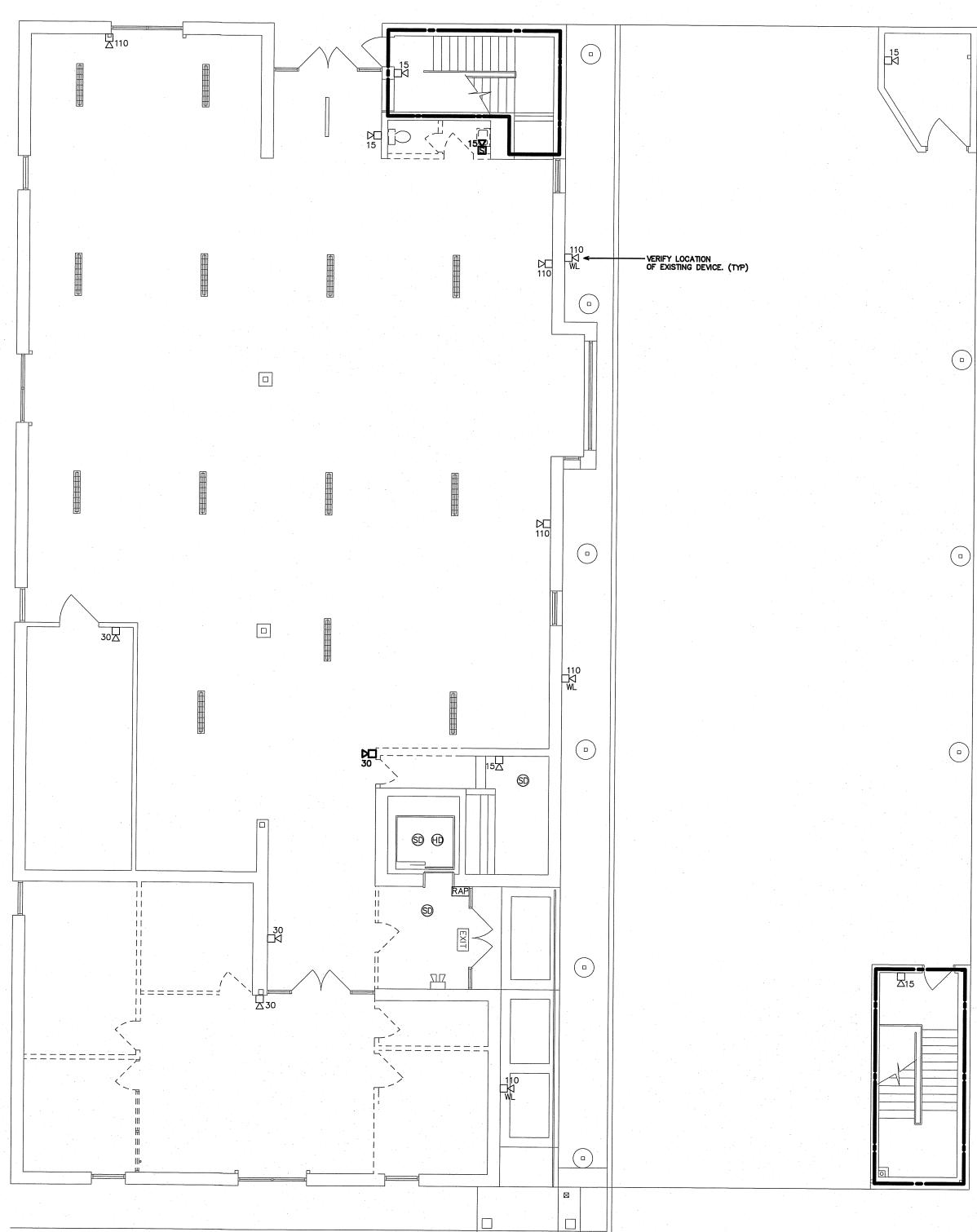
SSUED: **7-19-2023** DWG BY: RM

CKD BY: BEB **REVISIONS** 7/18/23 OWNER CHANGES

> SHEET NO. FA-1



ONE HOUR FIRE BARRIER EXISTING TO REMAIN TO BE REMOVED

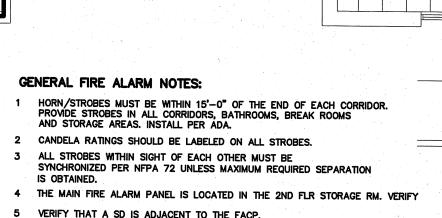


EXISTING FA PLAN

■ □ = EXISTING FA DEVICE/EQUIP TO REMAIN

= EXISTING FA DEVICE/EQUIP TO BE RELOCATED OR REMOVED

FA-2) SCALE: 1/8"=1'-0"

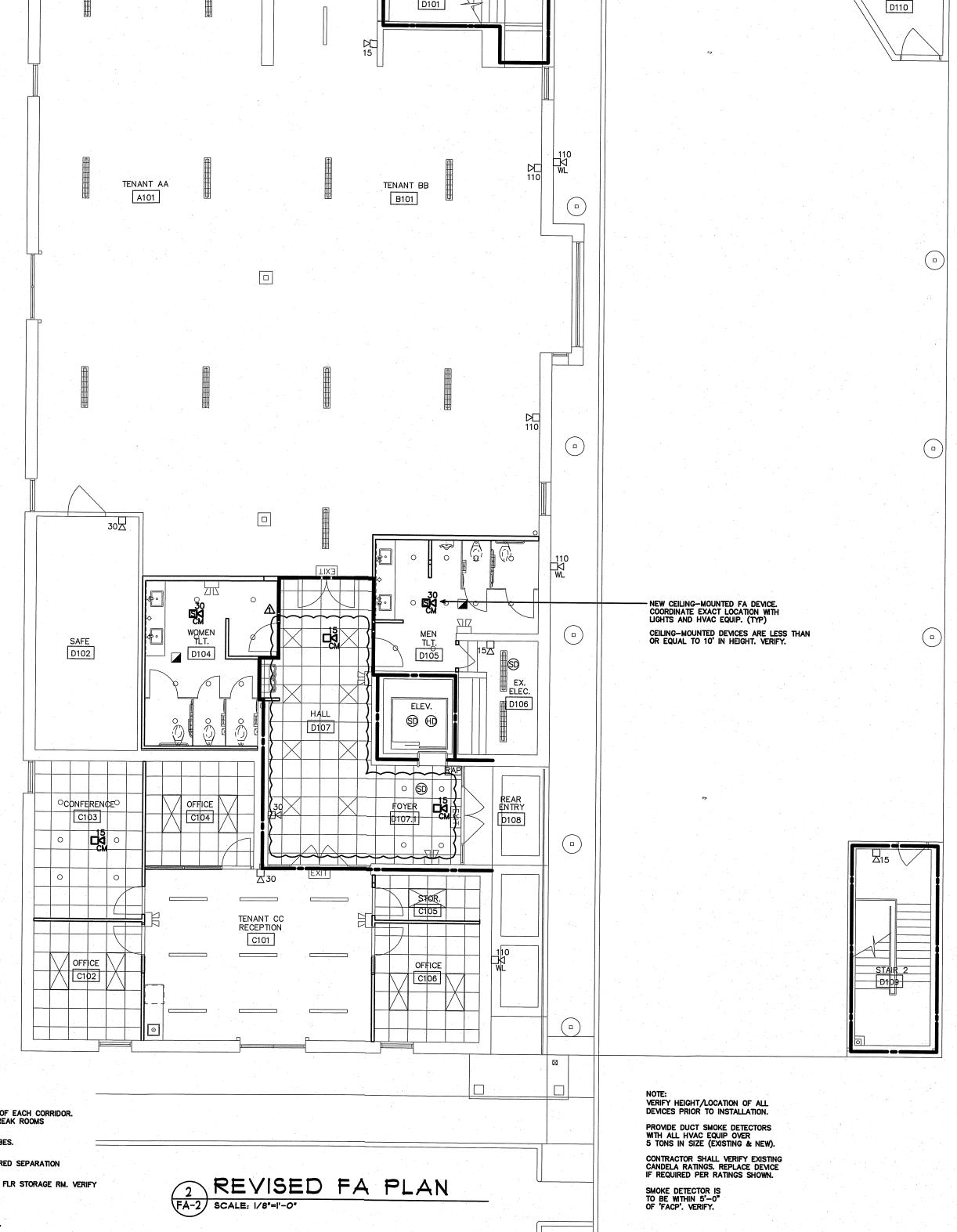


5 VERIFY THAT A SD IS ADJACENT TO THE FACP. 6 ALL EXPOSED WIRE SHALL BE IN CONDUIT.
ALL WIRING IN ASSEMBLY AREAS MUST BE IN CONDUIT.

7 ALL DEVICES, PANELS, ETC MUST BE BY SAME MANUFACTURER AND COMPATIBLE PROVIDE ALL ITEMS REQUIRED FOR A COMPLETE SYSTEM MEETING ALL CODES.

8 ALL WORK MUST MEET NFPA 72 AND APPLICABLE LOCAL CODES AND ORDINANCES. COORDINATE THE INSTALLATION WITH THE LOCAL FIRE MARSHALL. 9 MOUNT WALL-MOUNT HORN STROBES SUCH THAT THE ENTIRE LENS IS NOT LESS THAN 80" AND NOT GREATER THAN 96" ABOVE THE FINISHED FLOOR.

MOUNT MANUAL PULL STATIONS SUCH THAT THE OPERABLE PART OF THE DEVICE IS NOT LESS THAN 42" AFF AND NOT MORE THAN 54" AFF.



■ □ = EXISTING FA DEVICE/EQUIP TO REMAIN

■ ■ NEW OR RELOCATED FA DEVICE/EQUIP

Coastal

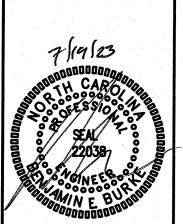
**Architectural** Design Planning Interiors



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Suite C Morehead City, NC 28557

RENOVATIONS TENA WILCOX EHEAD CITY, MOR



FIRE ALARM PLANS

SSUED: 7-19-2023 DWG BY: RM CKD BY: BEB REVISIONS

**ENGINEER** 

BURICE DESIGN GROUP
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RALEIGH, NC 27603

PHONE: (919) 771-1916 FAX: (919) 779-0826 email: ben@bdg-nc.com Corp. License # C-2652 7/18/23 OWNER CHANGES

SHEET NO. FA-2