LIFE SAFETY PLAN REQUIREMENTS:

- ☒ FIRE AND/OR SMOKE RATED WALL LOCATIONS (CHAPTER 7) – SEE NOTE 1
- ☒ ASSUMED AND REAL PROPERTY LINE LOCATIONS – SEE NOTE 2
- ☒ EXTERIOR WALL OPENING AREA WITH RESPECT TO DISTANCE TO ASSUMED PROPERTY LINES (705.8) – SEE NOTE 3
- ☒ OCCUPANCY TYPES FOR EACH AREA AS IT RELATES TO OCCUPANT LOAD CALCULATION (TABLE 1004.1.2)
- ☒ OCCUPANT LOADS FOR EACH AREA
- ☒ EXIT ACCESS TRAVEL DISTANCES (1017)
- ☒ COMMON PATH OF TRAVEL DISTANCES (1006.2.1 & 1006.3.2(1))
- ☒ DEAD END LENGTHS (1020.4) – SEE NOTE 4
- ☒ CLEAR EXIT WIDTHS FOR EACH EXIT DOOR
- ☒ MAXIMUM CALCULATED OCCUPANT LOAD CAPACITY EACH EXIT DOOR CAN ACCOMMODATE BASED ON EGRESS WIDTH (1005.3)
- ☒ ACTUAL OCCUPANT LOAD FOR EACH EXIT DOOR
- ☒ A SEPARATE SCHEMATIC PLAN INDICATING WHERE FIRE RATED FLOOR/CEILING AND/OR ROOF STRUCTURE IS PROVIDED FOR PURPOSES OF OCCUPANCY SEPARATION. SEE NOTE 5
- ☒ LOCATION OF DOORS WITH PANIC HARDWARE (1008.1.10) – SEE NOTE 6
- ☒ LOCATION OF DOORS WITH DELAYED EGRESS LOCKS AND AND THE AMOUNT OF DELAY (1008.1.9.7) – SEE NOTE 7
- ☒ LOCATION OF DOORS WITH ELECTROMAGNETIC EGRESS LOCKS (1008.1.9.8) – SEE NOTE 7
- ☒ LOCATION OF DOORS EQUIPPED WITH HOLD–OPEN DEVICES – SEE NOTE 7
- ☒ LOCATION OF EMERGENCY ESCAPE WINDOWS (1029) – SEE NOTE 7
- ☒ THE SQUARE FOOTAGE OF EACH FIRE AREA (902) – SEE NOTE 8
- ☒ THE SQUARE FOOTAGE OF EACH SMOKE COMPARTMENT (407.5) – SEE NOTE 9
- ☐ NOTE ANY CODE EXCEPTIONS OR TABLE NOTES THAT MAY HAVE BEEN UTILIZED REGARDING THE ITEMS ABOVE

LIFE SAFETY PLAN NOTES:

1. SEE LEGEND FOR RATED WALLS.
2. ALL ASSUMED AND REAL PROPERTY LINES ≥25'
3. ASSUMED PROPERTY LINES = 14'; UNLIMITED; 705.8.1 EXC. 2
4. NO DEAD ENDS OVER 20'; 20' ALLOWED
5. NO RATING REQUIRED FOR THIS STRUCTURE.
6. PANIC HARDWARE NOT REQUIRED.
7. NO DELAYED EGRESS LOCKS, ELECTROMAGNETIC LOCKS, HOLD OPEN DEVICES, OR EMERGENCY ESCAPE WINDOWS
8. FIRE AREAS DO NOT EXCEED CODE ALLOWANCE
9. BUILDING MEETS CODE REQUIREMENTS WITHOUT SUBDIVISION INTO SMOKE COMPARTMENTS; NO SMOKE COMPARTMENTS

EXIT REQUIREMENTS: NUMBER AND ARRANGEMENTS OF EXITS

FLOOR, ROOM OR SPACE DESIGNATION	MINIMUM[2] NO. OF EXITS		TRAVEL DISTANCE		ARRANGEMENT MEANS OF EGRESS [1,3] (SECTION 1016–1021)	
	REQ'D.	SHOWN ON PLANS	ALLOWABLE TRAVEL DISTANCE (TABLE 1017.2)	ACTUAL TRAVEL DISTANCE SHOWN ON PLANS	REQUIRED DISTANCE BETWEEN EXIT DOORS	ACTUAL DISTANCE SHOWN ON PLANS
S–1	2	5	200'	188'–11"	116'–0"	140'–0"
OFFICE	1	1	75'	44'–9"	N/A	N/A

1. CORRIDOR DEAD ENDS (SECTION 1020.4)
2. BUILDINGS W/SINGLE EXITS (TABLE 1006.3.2(2)), SPACES W/ONE EXIT OR EXIT ACCESS DOORWAY (TABLE 1006.2.1)
3. COMMON PATH OF TRAVEL (SECTION 1029.8)

EXIT WIDTH

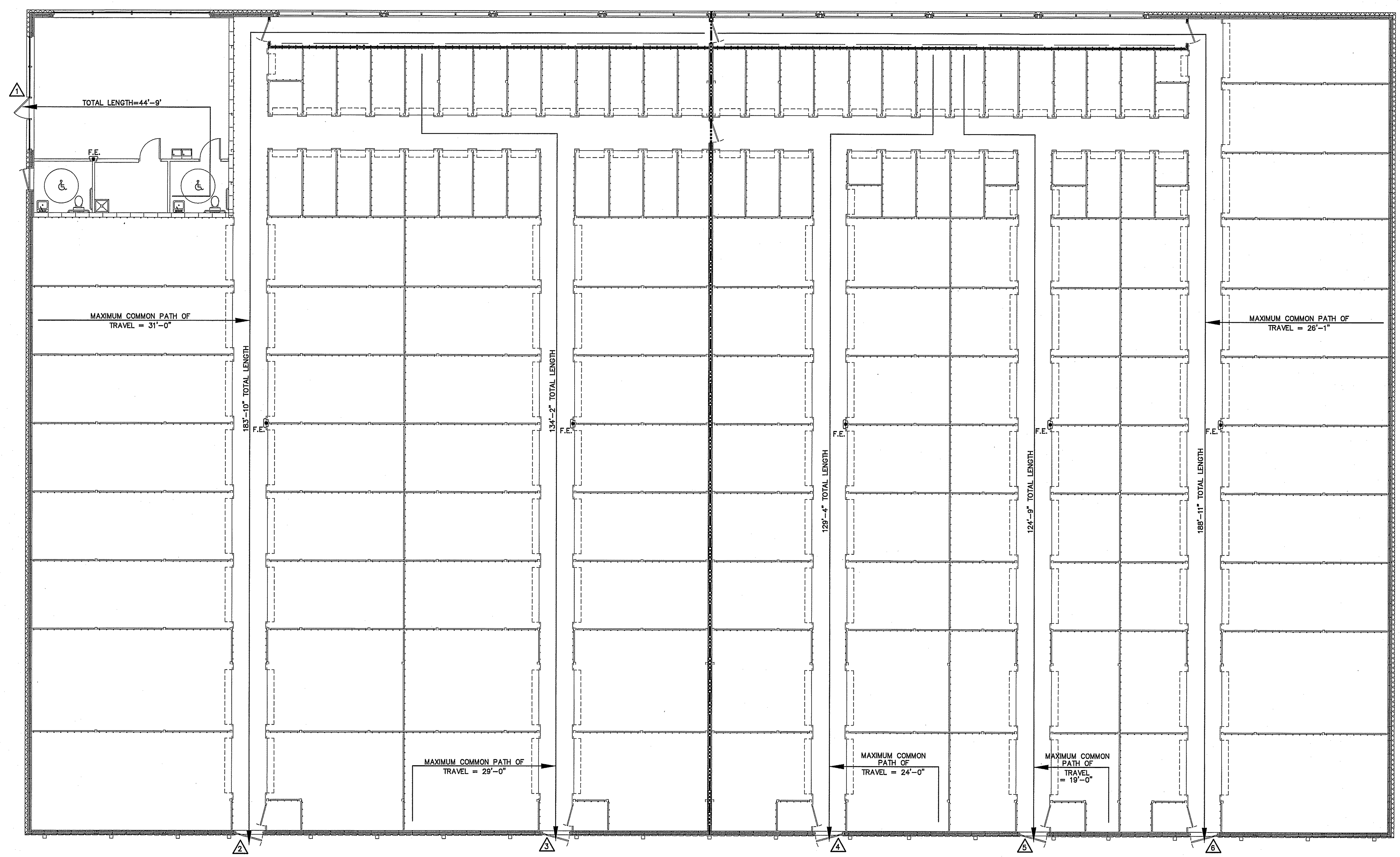
USE GROUP OR SPACE DESCRIPTION	(a) AREA[1] SQ. FT.	(b) AREA[1] PER OCCUPANT (TABLE 1004.1.2)	CALCULATED OCCUPANT LOAD (a/b)	(c) EGRESS WIDTH PER OCCUPANT (TABLE 1005.1)		EXIT WIDTH (In) REQUIRED WIDTH (SECTION 1005.1) (a/b) x c		ACTUAL WIDTH SHOWN ON PLANS	
				STAIR	LEVEL	STAIR	LEVEL	STAIR	LEVEL
S–1	23,100	500 GROSS	47	N/A	.2	N/A	9.4"	N/A	235"
OFFICE	900	100 GROSS	9	N/A	.2	N/A	1.8"	N/A	35"
TOTAL	24,000								

1. SEE TABLE 1004.1.2 TO DETERMINE WHETHER NET OR GROSS AREA IS APPLICABLE SEE DEFINITION "AREA, GROSS" AND "AREA, NET" (SECTION 1002, DEFINED IN CHAPTER 2)
2. MINIMUM STAIRWAY WIDTH (SECTION 1011.2); MIN. CORRIDOR WIDTH (SECTION 1020.2); MIN. DOOR WIDTH (SECTION 1010.1.1)
3. MINIMUM WIDTH OF EXIT PASSAGEWAY (SECTION 1024)
4. SEE SECTION 1005.6 FOR CONVERGING EXITS.
5. THE LOSS OF ONE MEANS OF EGRESS SHALL NOT REDUCE THE AVAILABLE CAPACITY TO LESS THAN 50% OF THE TOTAL REQUIRED (SECTION 1005.5)
6. ASSEMBLY OCCUPANCIES (SECTION 1029)

Reviewed for Fire Code Compliance
Harnett County — Leslie Jackson
06/19/2024 10:41:04 AM
Bldg E

MAXIMUM CALCULATED OCCUPANT LOAD CAPACITY EACH EXIT DOOR CAN ACCOMMODATE BASED ON EGRESS WIDTH (1005.1)

1. 35" CLEAR WIDTH DIVIDED BY .2" = 175 OCCUPANTS
   CALCULATED OCCUPANCY PER EXIT = 9 PEOPLE
   CALCULATED OCCUPANCY DOES NOT EXCEED MAXIMUM CAPACITY OF EXIT.
2. 47" CLEAR WIDTH DIVIDED BY .2" = 235 OCCUPANTS
   CALCULATED OCCUPANCY PER EXIT = 10 PEOPLE
   CALCULATED OCCUPANCY DOES NOT EXCEED MAXIMUM CAPACITY OF EXIT.
3. 47" CLEAR WIDTH DIVIDED BY .2" = 235 OCCUPANTS
   CALCULATED OCCUPANCY PER EXIT = 9 PERSON
   CALCULATED OCCUPANCY DOES NOT EXCEED MAXIMUM CAPACITY OF EXIT.
4. 47" CLEAR WIDTH DIVIDED BY .2" = 235 OCCUPANTS
   CALCULATED OCCUPANCY PER EXIT = 9 PEOPLE
   CALCULATED OCCUPANCY DOES NOT EXCEED MAXIMUM CAPACITY OF EXIT.
5. 47" CLEAR WIDTH DIVIDED BY .2" = 235 OCCUPANTS
   CALCULATED OCCUPANCY PER EXIT = 9 PEOPLE
   CALCULATED OCCUPANCY DOES NOT EXCEED MAXIMUM CAPACITY OF EXIT.
6. 47" CLEAR WIDTH DIVIDED BY .2" = 235 OCCUPANTS
   CALCULATED OCCUPANCY PER EXIT = 10 PEOPLE
   CALCULATED OCCUPANCY DOES NOT EXCEED MAXIMUM CAPACITY OF EXIT.



LEGEND
3 HOUR RATED WALL U419

NOTE:
AREA/ROOM/SPACE DESIGNATIONS USED ON LIFE SAFETY PLANS ARE EXCLUSIVE TO LIFE SAFETY PLAN ONLY, AND ARE NOT INDICATIVE OF ANY ACTUAL SPACE DESIGNATIONS USED ELSEWHERE.

LEGEND
F.E. FIRE EXTINGUISHER CLASS ABC 10 POUNDS

LIFE SAFETY PLAN BUILDING "A"

SCALE: 1/8" = 1'–0"

NORTH CAROLINA PROFESSIONAL SEAL 18909 ENGINEER RANDY L. CRUSE 05–30–24

PLANS FOR: AMPLE STORAGE

ERWIN, NORTH CAROLINA 28339

REVISIONS	
NO.	

Cruse And Associates, P.A.
414 EAST EDGERTON STREET
Dunn, North Carolina 28334
PH: (910) 892–4429
FAX: (910) 892–5162
LICENSE NO.: C–1721

DATE 05/30/24
DRAWN BY BAM
JOB NO. 24–23

SHEET NO. LS-1 OF 4

LIFE SAFETY PLAN REQUIREMENTS:

- ☒ FIRE AND/OR SMOKE RATED WALL LOCATIONS (CHAPTER 7) – SEE NOTE 1
- ☒ ASSUMED AND REAL PROPERTY LINE LOCATIONS – SEE NOTE 2
- ☒ EXTERIOR WALL OPENING AREA WITH RESPECT TO DISTANCE TO ASSUMED PROPERTY LINES (705.8) – SEE NOTE 3
- ☒ OCCUPANCY TYPES FOR EACH AREA AS IT RELATES TO OCCUPANT LOAD CALCULATION (TABLE 1004.1.2)
- ☒ OCCUPANT LOADS FOR EACH AREA
- ☒ EXIT ACCESS TRAVEL DISTANCES (1017)
- ☒ COMMON PATH OF TRAVEL DISTANCES (1006.2.1 & 1006.3.2(1))
- ☒ DEAD END LENGTHS (1020.4) – SEE NOTE 4
- ☒ CLEAR EXIT WIDTHS FOR EACH EXIT DOOR
- ☒ MAXIMUM CALCULATED OCCUPANT LOAD CAPACITY EACH EXIT DOOR CAN ACCOMMODATE BASED ON EGRESS WIDTH (1005.3)
- ☒ ACTUAL OCCUPANT LOAD FOR EACH EXIT DOOR
- ☒ A SEPARATE SCHEMATIC PLAN INDICATING WHERE FIRE RATED FLOOR/CEILING AND/OR ROOF STRUCTURE IS PROVIDED FOR PURPOSES OF OCCUPANCY SEPARATION. SEE NOTE 5
- ☒ LOCATION OF DOORS WITH PANIC HARDWARE (1008.1.10) – SEE NOTE 6
- ☒ LOCATION OF DOORS WITH DELAYED EGRESS LOCKS AND AND THE AMOUNT OF DELAY (1008.1.9.7) – SEE NOTE 7
- ☒ LOCATION OF DOORS WITH ELECTROMAGNETIC EGRESS LOCKS (1008.1.9.8) – SEE NOTE 7
- ☒ LOCATION OF DOORS EQUIPPED WITH HOLD–OPEN DEVICES – SEE NOTE 7
- ☒ LOCATION OF EMERGENCY ESCAPE WINDOWS (1029) – SEE NOTE 7
- ☒ THE SQUARE FOOTAGE OF EACH FIRE AREA (902) – SEE NOTE 8
- ☒ THE SQUARE FOOTAGE OF EACH SMOKE COMPARTMENT (407.5) – SEE NOTE 9
- ☐ NOTE ANY CODE EXCEPTIONS OR TABLE NOTES THAT MAY HAVE BEEN UTILIZED REGARDING THE ITEMS ABOVE

LIFE SAFETY PLAN NOTES:

1. SEE LEGEND FOR RATED WALLS.
2. ALL ASSUMED AND REAL PROPERTY LINES ≥30'
3. ASSUMED PROPERTY LINES = 10'; UNLIMITED; 705.8.1 EXC. 2
4. NO DEAD ENDS OVER 10'; 20' ALLOWED
5. NO RATING REQUIRED FOR THIS STRUCTURE.
6. PANIC HARDWARE NOT REQUIRED.
7. NO DELAYED EGRESS LOCKS, ELECTROMAGNETIC LOCKS, HOLD OPEN DEVICES, OR EMERGENCY ESCAPE WINDOWS
8. FIRE AREAS DO NOT EXCEED CODE ALLOWANCE
9. BUILDING MEETS CODE REQUIREMENTS WITHOUT SUBDIVISION INTO SMOKE COMPARTMENTS; NO SMOKE COMPARTMENTS

EXIT REQUIREMENTS:
NUMBER AND ARRANGEMENTS OF EXITS

FLOOR, ROOM OR SPACE DESIGNATION	MINIMUM[2] NO. OF EXITS		TRAVEL DISTANCE		ARRANGEMENT MEANS OF EGRESS [1,3] (SECTION 1016–1021)	
	REQ'D.	SHOWN ON PLANS	ALLOWABLE TRAVEL DISTANCE (TABLE 1017.2)	ACTUAL TRAVEL DISTANCE SHOWN ON PLANS	REQUIRED DISTANCE BETWEEN EXIT DOORS	ACTUAL DISTANCE SHOWN ON PLANS
S–1	2	6	200'	100'–05"	67'–6"	76'–1"

1. CORRIDOR DEAD ENDS (SECTION 1020.4)
2. BUILDINGS W/SINGLE EXITS (TABLE 1006.3.2(2)), SPACES W/ONE EXIT OR EXIT ACCESS DOORWAY (TABLE 1006.2.1)
3. COMMON PATH OF TRAVEL (SECTION 1029.8)

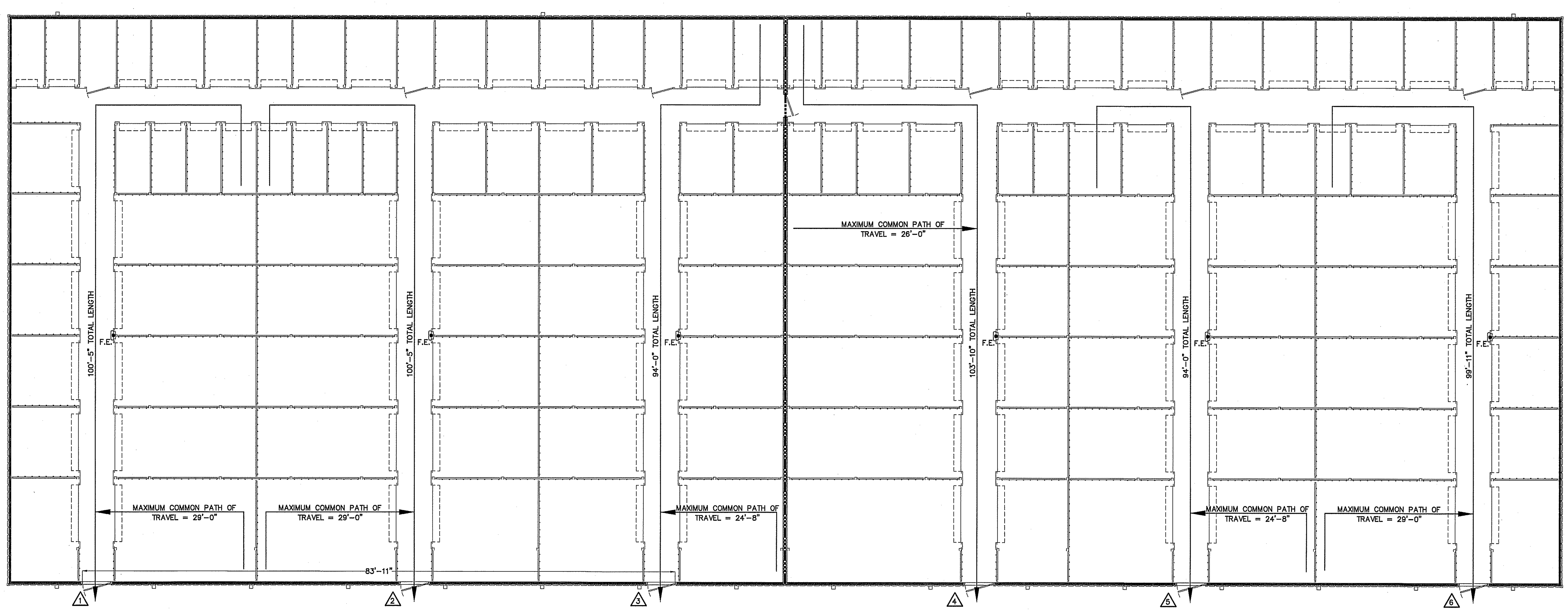
EXIT WIDTH

USE GROUP OR SPACE DESCRIPTION	(a)	(b)		(c)		EXIT WIDTH (in)			
	AREA[1] SQ. FT.	AREA[1] PER OCCUPANT (TABLE 1004.1.2)	CALCULATED OCCUPANT LOAD (a/b)	EGRESS WIDTH PER OCCUPANT (TABLE 1005.1)		REQUIRED WIDTH (SECTION 1005.1) (a/b) x c		ACTUAL WIDTH SHOWN ON PLANS	
				STAIR	LEVEL	STAIR	LEVEL	STAIR	LEVEL
S–1 (AREA 1)	17,600	500 GROSS	36	N/A	.2	N/A	7.2"	N/A	282"
TOTAL	17,600								

1. SEE TABLE 1004.1.2 TO DETERMINE WHETHER NET OR GROSS AREA IS APPLICABLE SEE DEFINITION "AREA, GROSS" AND "AREA, NET" (SECTION 1002, DEFINED IN CHAPTER 2)
2. MINIMUM STAIRWAY WIDTH (SECTION 1011.2); MIN. CORRIDOR WIDTH (SECTION 1020.2); MIN. DOOR WIDTH (SECTION 1010.1.1)
3. MINIMUM WIDTH OF EXIT PASSAGEWAY (SECTION 1024)
4. SEE SECTION 1005.6 FOR CONVERGING EXITS.
5. THE LOSS OF ONE MEANS OF EGRESS SHALL NOT REDUCE THE AVAILABLE CAPACITY TO LESS THAN 50% OF THE TOTAL REQUIRED (SECTION 1005.5)
6. ASSEMBLY OCCUPANCIES (SECTION 1029)

MAXIMUM CALCULATED OCCUPANT LOAD CAPACITY EACH EXIT DOOR CAN ACCOMMODATE BASED ON EGRESS WIDTH (1005.1)

1. 47" CLEAR WIDTH DIVIDED BY .2" = 235 OCCUPANTS
   CALCULATED OCCUPANCY PER EXIT = 6 PEOPLE
   CALCULATED OCCUPANCY DOES NOT EXCEED MAXIMUM CAPACITY OF EXIT.
2. 47" CLEAR WIDTH DIVIDED BY .2" = 235 OCCUPANTS
   CALCULATED OCCUPANCY PER EXIT = 6 PEOPLE
   CALCULATED OCCUPANCY DOES NOT EXCEED MAXIMUM CAPACITY OF EXIT.
3. 47" CLEAR WIDTH DIVIDED BY .2" = 235 OCCUPANTS
   CALCULATED OCCUPANCY PER EXIT = 6 PERSON
   CALCULATED OCCUPANCY DOES NOT EXCEED MAXIMUM CAPACITY OF EXIT.
4. 47" CLEAR WIDTH DIVIDED BY .2" = 235 OCCUPANTS
   CALCULATED OCCUPANCY PER EXIT = 6 PEOPLE
   CALCULATED OCCUPANCY DOES NOT EXCEED MAXIMUM CAPACITY OF EXIT.
5. 47" CLEAR WIDTH DIVIDED BY .2" = 235 OCCUPANTS
   CALCULATED OCCUPANCY PER EXIT = 6 PEOPLE
   CALCULATED OCCUPANCY DOES NOT EXCEED MAXIMUM CAPACITY OF EXIT.
6. 47" CLEAR WIDTH DIVIDED BY .2" = 235 OCCUPANTS
   CALCULATED OCCUPANCY PER EXIT = 6 PEOPLE
   CALCULATED OCCUPANCY DOES NOT EXCEED MAXIMUM CAPACITY OF EXIT.



LIFE SAFETY PLAN BUILDING "D"

SCALE: 1/8" = 1'–0"

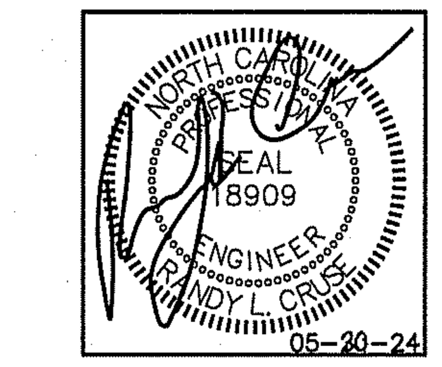
LEGEND

3 HOUR RATED WALL U419

NOTE:
AREA/ROOM/SPACE DESIGNATIONS USED ON LIFE SAFETY PLANS ARE EXCLUSIVE TO LIFE SAFETY PLAN ONLY, AND ARE NOT INDICATIVE OF ANY ACTUAL SPACE DESIGNATIONS USED ELSEWHERE.

LEGEND

F.E. FIRE EXTINGUISHER CLASS ABC 10 POUNDS



PLANS FOR:
AMPLE STORAGE
ERWIN, NORTH CAROLINA 28339

REVISIONS	
NO.	

Cruse And Associates, P.A.
414 EAST EDGERTON STREET
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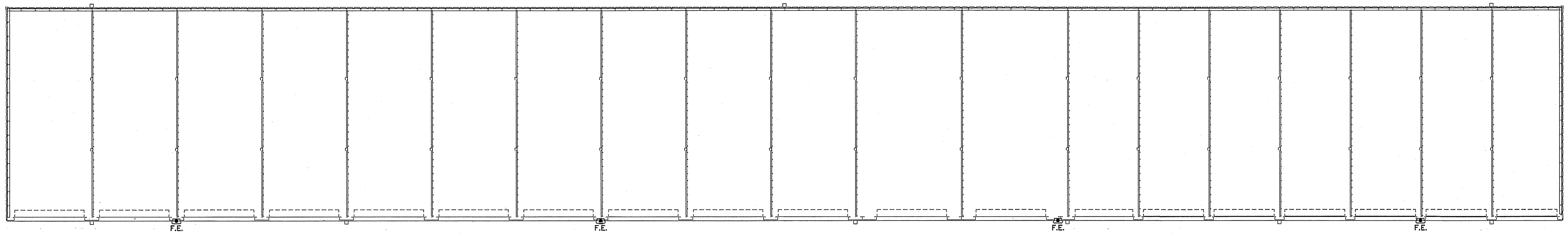
PH: (910) 892-4429
FAX: (910) 892-5162
LICENSE NO.: C–1721

DATE 05/30/24
DRAWN BY BAM
JOB NO. 24–23

SHEET NO.
LS-2 OF 4

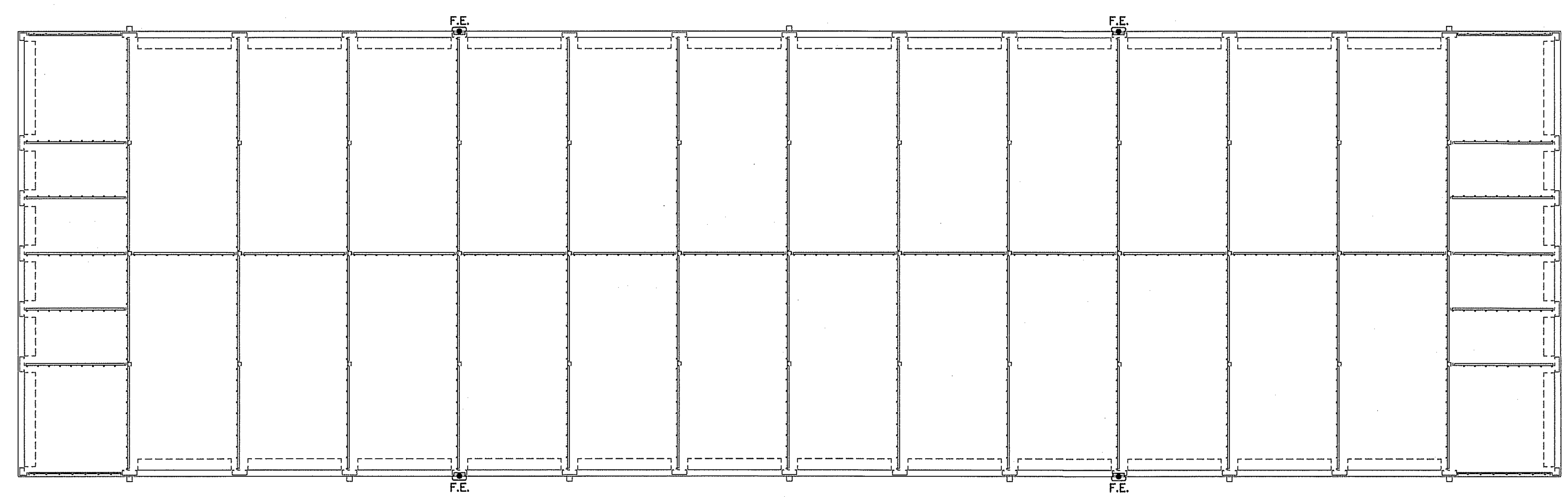
BUILDING "F" SHOWN FOR FIRE EXTINGUISHER PLACEMENT ONLY



LIFE SAFETY PLAN BUILDING "F"

SCALE: 1/8" = 1'-0"

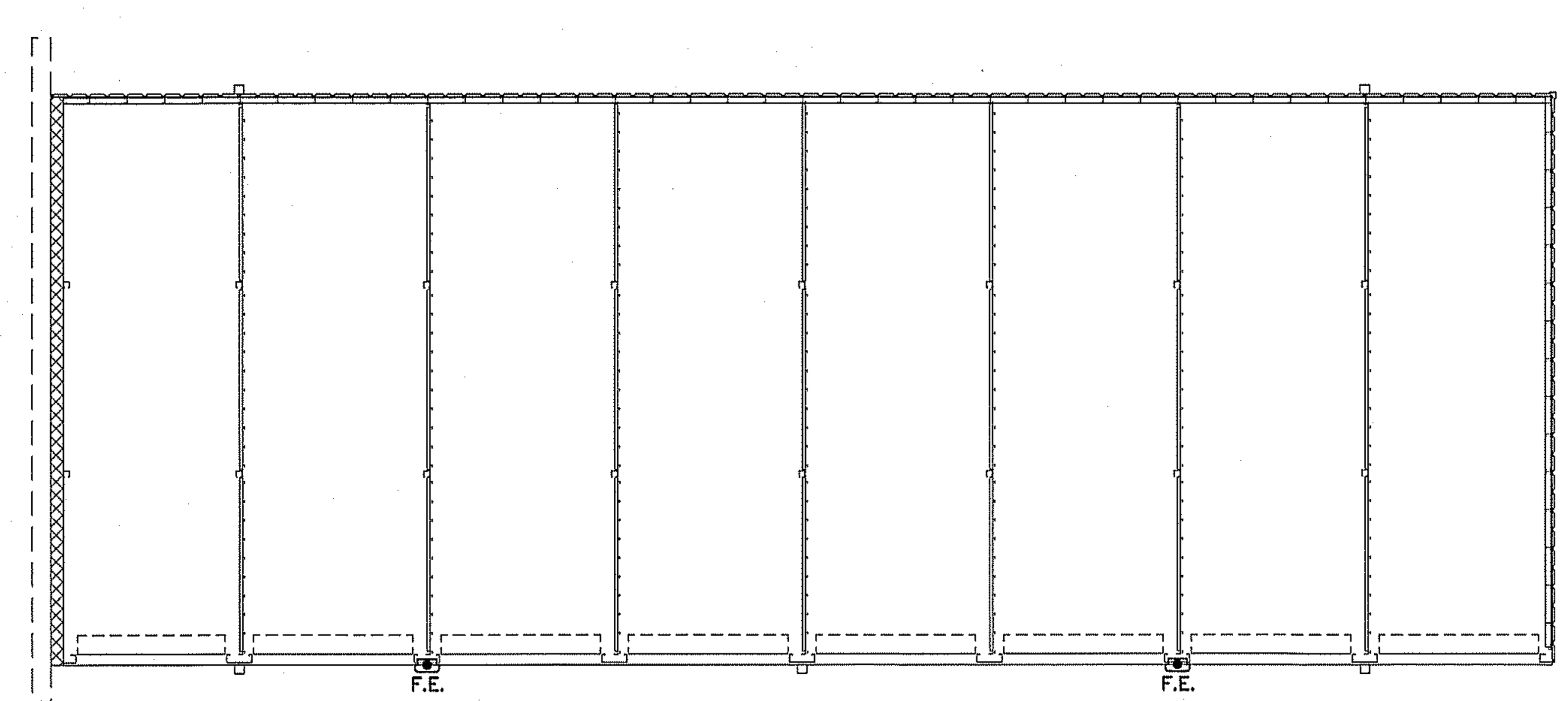
BUILDING "E" SHOWN FOR FIRE EXTINGUISHER PLACEMENT ONLY



LIFE SAFETY PLAN BUILDING "E"

SCALE: 1/8" = 1'-0"

BUILDING "B" SHOWN FOR FIRE EXTINGUISHER PLACEMENT ONLY



4 HOUR WALL (U907) SEE APARTMENT DRAWINGS FOR DETAIL

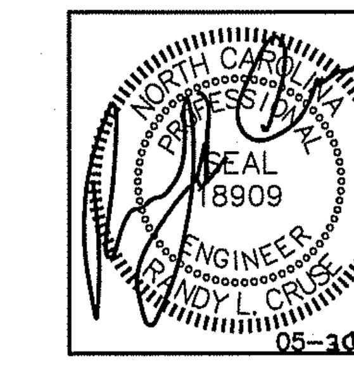
LIFE SAFETY PLAN BUILDING "B"

SCALE: 1/8" = 1'-0"

NOTE:
AREA/ROOM/SPACE DESIGNATIONS USED ON LIFE SAFETY PLANS ARE EXCLUSIVE TO LIFE SAFETY PLAN ONLY, AND ARE NOT INDICATIVE OF ANY ACTUAL SPACE DESIGNATIONS USED ELSEWHERE.

LEGEND
F.E. FIRE EXTINGUISHER CLASS ABC 10 POUNDS

NOTE: EXIT REQUIREMENTS CALCULATED ONLY FOR CONDITIONED AREAS. ALL OTHER AREAS HAVE DIRECT EXIT TO EXTERIOR.



PLANS FOR: AMPLE STORAGE

ERWIN, NORTH CAROLINA 28339

REVISIONS	
NO.	

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LICENSE NO.: C-1721

DATE 05/30/24
DRAWN BY BAM
JOB NO. 24-23

SHEET NO. LS-3 OF 4

LIFE SAFETY PLAN REQUIREMENTS:

- ☒ FIRE AND/OR SMOKE RATED WALL LOCATIONS (CHAPTER 7) – SEE NOTE 1
- ☒ ASSUMED AND REAL PROPERTY LINE LOCATIONS – SEE NOTE 2
- ☒ EXTERIOR WALL OPENING AREA WITH RESPECT TO DISTANCE TO ASSUMED PROPERTY LINES (705.8) – SEE NOTE 3
- ☒ OCCUPANCY TYPES FOR EACH AREA AS IT RELATES TO OCCUPANT LOAD CALCULATION (TABLE 1004.1.2)
- ☒ OCCUPANT LOADS FOR EACH AREA
- ☒ EXIT ACCESS TRAVEL DISTANCES (1017)
- ☒ COMMON PATH OF TRAVEL DISTANCES (1006.2.1 & 1006.3.2(1))
- ☒ DEAD END LENGTHS (1020.4) – SEE NOTE 4
- ☒ CLEAR EXIT WIDTHS FOR EACH EXIT DOOR
- ☒ MAXIMUM CALCULATED OCCUPANT LOAD CAPACITY EACH EXIT DOOR CAN ACCOMMODATE BASED ON EGRESS WIDTH (1005.3)
- ☒ ACTUAL OCCUPANT LOAD FOR EACH EXIT DOOR
- ☒ A SEPARATE SCHEMATIC PLAN INDICATING WHERE FIRE RATED FLOOR/CEILING AND/OR ROOF STRUCTURE IS PROVIDED FOR PURPOSES OF OCCUPANCY SEPARATION. SEE NOTE 5
- ☒ LOCATION OF DOORS WITH PANIC HARDWARE (1008.1.10) – SEE NOTE 6
- ☒ LOCATION OF DOORS WITH DELAYED EGRESS LOCKS AND AND THE AMOUNT OF DELAY (1008.1.9.7) – SEE NOTE 7
- ☒ LOCATION OF DOORS WITH ELECTROMAGNETIC EGRESS LOCKS (1008.1.9.8) – SEE NOTE 7
- ☒ LOCATION OF DOORS EQUIPPED WITH HOLD-OPEN DEVICES – SEE NOTE 7
- ☒ LOCATION OF EMERGENCY ESCAPE WINDOWS (1029) – SEE NOTE 7
- ☒ THE SQUARE FOOTAGE OF EACH FIRE AREA (902) – SEE NOTE 8
- ☒ THE SQUARE FOOTAGE OF EACH SMOKE COMPARTMENT (407.5) – SEE NOTE 9
- ☐ NOTE ANY CODE EXCEPTIONS OR TABLE NOTES THAT MAY HAVE BEEN UTILIZED REGARDING THE ITEMS ABOVE

LIFE SAFETY PLAN NOTES:

1. SEE LEGEND FOR RATED WALLS.
2. ALL ASSUMED AND REAL PROPERTY LINES >20'
3. ASSUMED PROPERTY LINES = 14'; UNLIMITED; 705.8.1 EXC. 2
4. NO DEAD ENDS OVER 10'; 20' ALLOWED
5. NO RATING REQUIRED FOR THIS STRUCTURE.
6. PANIC HARDWARE NOT REQUIRED.
7. NO DELAYED EGRESS LOCKS, ELECTROMAGNETIC LOCKS, HOLD OPEN DEVICES, OR EMERGENCY ESCAPE WINDOWS
8. FIRE AREAS DO NOT EXCEED CODE ALLOWANCE
9. BUILDING MEETS CODE REQUIREMENTS WITHOUT SUBDIVISION INTO SMOKE COMPARTMENTS; NO SMOKE COMPARTMENTS

EXIT REQUIREMENTS: NUMBER AND ARRANGEMENTS OF EXITS

FLOOR, ROOM OR SPACE DESIGNATION	MINIMUM[2] NO. OF EXITS		TRAVEL DISTANCE		ARRANGEMENT MEANS OF EGRESS [1,3] (SECTION 1016–1021)	
	REQ'D.	SHOWN ON PLANS	ALLOWABLE TRAVEL DISTANCE (TABLE 1017.2)	ACTUAL TRAVEL DISTANCE SHOWN ON PLANS	REQUIRED DISTANCE BETWEEN EXIT DOORS	ACTUAL DISTANCE SHOWN ON PLANS
S–1 (AREA 1)	2	4	250'	115'–9"	77'–5"	138'–0"
S–1 (AREA 2)	2	4	250'	110'–0"	77'–5"	138'–0"

1. CORRIDOR DEAD ENDS (SECTION 1020.4)
2. BUILDINGS W/SINGLE EXITS (TABLE 1006.3.2(2)), SPACES W/ONE EXIT OR EXIT ACCESS DOORWAY (TABLE 1006.2.1)
3. COMMON PATH OF TRAVEL (SECTION 1029.8)

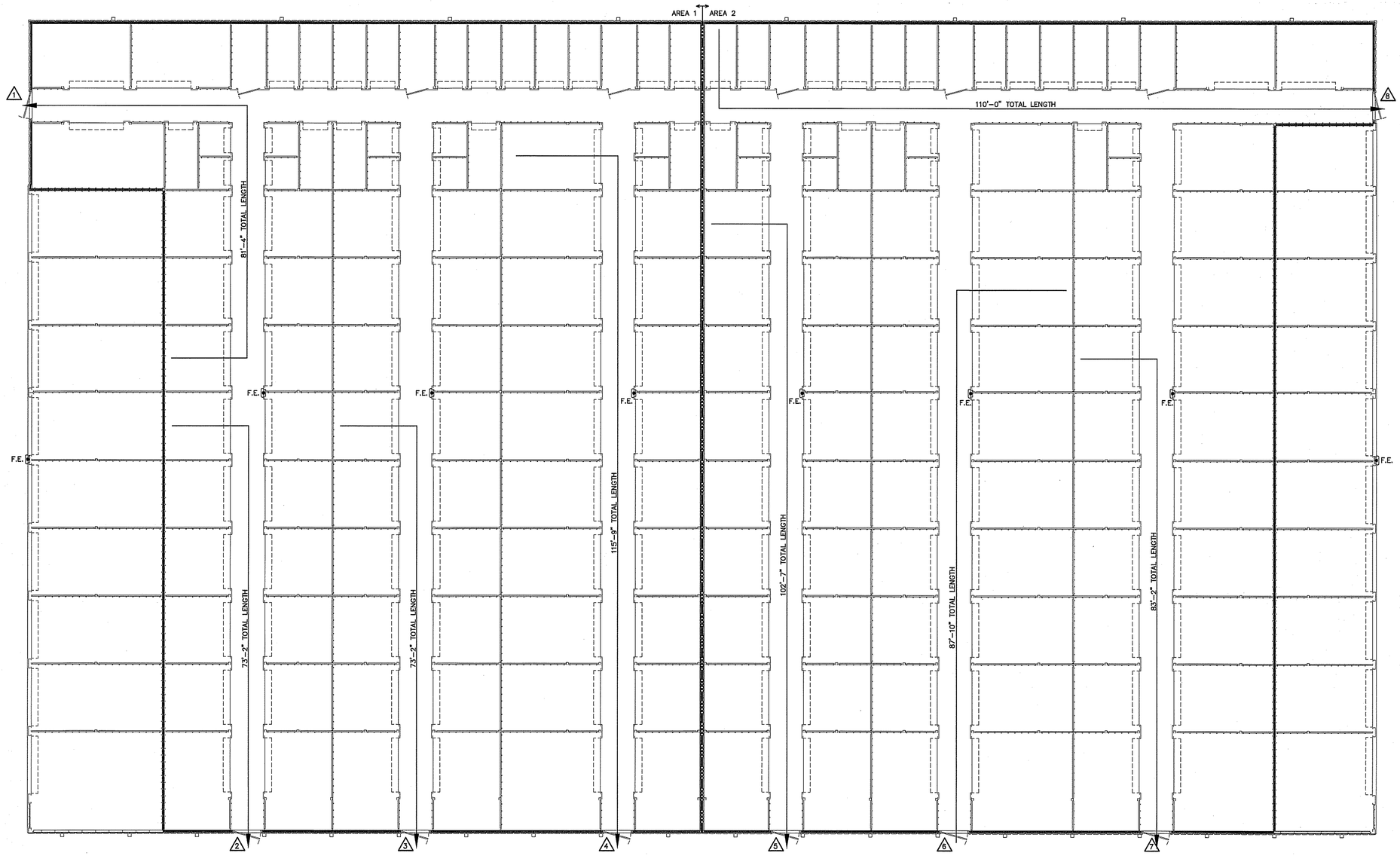
EXIT WIDTH

USE GROUP OR SPACE DESCRIPTION	(a)	(b)		(c)		EXIT WIDTH (in)			
	AREA[1] SQ. FT.	AREA[1] PER OCCUPANT (TABLE 1004.1.2)	CALCULATED OCCUPANT LOAD (a/b)	EGRESS WIDTH PER OCCUPANT (TABLE 1005.1)		REQUIRED WIDTH (SECTION 1005.1) (a/b) x c		ACTUAL WIDTH SHOWN ON PLANS	
				STAIR	LEVEL	STAIR	LEVEL	STAIR	LEVEL
S–1 (AREA 1)	10,100	500 GROSS	21	N/A	.2	N/A	4.2"	N/A	188"
S–1 (AREA 2)	10,425	500 GROSS	21	N/A	.2	N/A	4.2"	N/A	188"
TOTAL	20,525		42						

1. SEE TABLE 1004.1.2 TO DETERMINE WHETHER NET OR GROSS AREA IS APPLICABLE SEE DEFINITION "AREA, GROSS" AND "AREA, NET" (SECTION 1002, DEFINED IN CHAPTER 2)
2. MINIMUM STAIRWAY WIDTH (SECTION 1011.2); MIN. CORRIDOR WIDTH (SECTION 1020.2); MIN. DOOR WIDTH (SECTION 1010.1.1)
3. MINIMUM WIDTH OF EXIT PASSAGEWAY (SECTION 1024)
4. SEE SECTION 1005.6 FOR CONVERGING EXITS.
5. THE LOSS OF ONE MEANS OF EGRESS SHALL NOT REDUCE THE AVAILABLE CAPACITY TO LESS THAN 50% OF THE TOTAL REQUIRED (SECTION 1005.5)
6. ASSEMBLY OCCUPANCIES (SECTION 1029)

MAXIMUM CALCULATED OCCUPANT LOAD CAPACITY EACH EXIT DOOR CAN ACCOMMODATE BASED ON EGRESS WIDTH (1005.1)

1. 47" CLEAR WIDTH DIVIDED BY .2" = 235 OCCUPANTS CALCULATED OCCUPANCY PER EXIT = 5 PEOPLE CALCULATED OCCUPANCY DOES NOT EXCEED MAXIMUM CAPACITY OF EXIT.
2. 47" CLEAR WIDTH DIVIDED BY .2" = 235 OCCUPANTS CALCULATED OCCUPANCY PER EXIT = 5 PEOPLE CALCULATED OCCUPANCY DOES NOT EXCEED MAXIMUM CAPACITY OF EXIT.
3. 47" CLEAR WIDTH DIVIDED BY .2" = 235 OCCUPANTS CALCULATED OCCUPANCY PER EXIT = 5 PERSON CALCULATED OCCUPANCY DOES NOT EXCEED MAXIMUM CAPACITY OF EXIT.
4. 47" CLEAR WIDTH DIVIDED BY .2" = 235 OCCUPANTS CALCULATED OCCUPANCY PER EXIT = 5 PEOPLE CALCULATED OCCUPANCY DOES NOT EXCEED MAXIMUM CAPACITY OF EXIT.
5. 47" CLEAR WIDTH DIVIDED BY .2" = 235 OCCUPANTS CALCULATED OCCUPANCY PER EXIT = 6 PEOPLE CALCULATED OCCUPANCY DOES NOT EXCEED MAXIMUM CAPACITY OF EXIT.
6. 47" CLEAR WIDTH DIVIDED BY .2" = 235 OCCUPANTS CALCULATED OCCUPANCY PER EXIT = 5 PEOPLE CALCULATED OCCUPANCY DOES NOT EXCEED MAXIMUM CAPACITY OF EXIT.
7. 47" CLEAR WIDTH DIVIDED BY .2" = 235 OCCUPANTS CALCULATED OCCUPANCY PER EXIT = 6 PEOPLE CALCULATED OCCUPANCY DOES NOT EXCEED MAXIMUM CAPACITY OF EXIT.
8. 47" CLEAR WIDTH DIVIDED BY .2" = 235 OCCUPANTS CALCULATED OCCUPANCY PER EXIT = 5 PEOPLE CALCULATED OCCUPANCY DOES NOT EXCEED MAXIMUM CAPACITY OF EXIT.



LEGEND

3 HOUR RATED WALL U419

NOTE:
AREA/ROOM/SPACE DESIGNATIONS USED ON LIFE SAFETY PLANS ARE EXCLUSIVE TO LIFE SAFETY PLAN ONLY, AND ARE NOT INDICATIVE OF ANY ACTUAL SPACE DESIGNATIONS USED ELSEWHERE.

LEGEND

F.E. FIRE EXTINGUISHER CLASS ABC 10 POUNDS

LIFE SAFETY PLAN BUILDING "G"

SCALE: 1/8" = 1'–0"

NOTE: EXIT REQUIREMENTS CALCULATED ONLY FOR CONDITIONED AREAS. ALL OTHER AREAS HAVE DIRECT EXIT TO EXTERIOR.

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 18909 ANTHONY L. CRUSE 05-30-24

PLANS FOR:
AMPLE STORAGE
ERWIN, NORTH CAROLINA 28339

REVISIONS	
NO.	

Cruse And Associates, P.A.
414 EAST EMBERTON STREET
Dunn, North Carolina 28334
PH: (910) 892-5162
FAX: (910) 892-5162
LICENSE NO.: C-1721

DATE	05/30/24
DRAWN BY	BAM
JOB NO.	24–23

SHEET NO.
LS-4 OF 4

PLUMBING FIXTURE SCHEDULE

MARK	MAKE	MODEL	DESCRIPTION	NOTES
P-1	AMERICAN STANDARD	CADET 2377.100	EL 1.6/PA 16.5"HC ELONGATED WATER CLOSET HC ACCESSIBLE, TANK TYPE	WHITE 5311.012 SEAT
P-2	AMERICAN STANDARD	REGALYN 4869.004.020	CAST IRON WALL MOUNTED SINK	1340.227 FAUCET. PROVIDE W/BASKET DRAIN
P-3	BOSCH	TRONIC 3000 US4-2R	4.5KW POINT OF USE WATER HEATER	240V, 1ø
P-4	2'X2'X10" MOP SINK WITH WALL GUARD SELECTED BY OWNER			
P-5	OASIS	PGBACSL	SPLIT LEVEL ELECTRIC WATER COOLER	BARRIER - FREE

* VERIFY ALL FIXTURES WITH OWNER BEFORE PURCHASE OR INSTALLATION

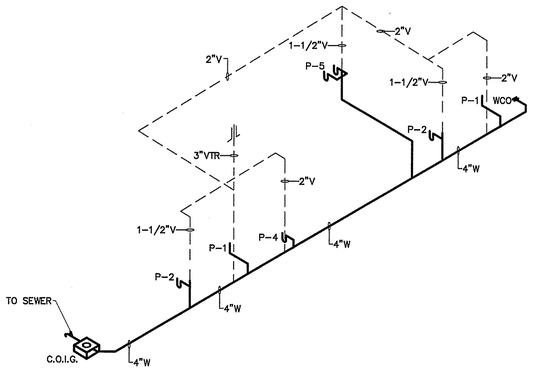
GENERAL PLUMBING NOTES

1. ALL WORK SHALL BE IN COMPLIANCE WITH APPLICABLE LOCAL, STATE, AND NATIONAL CODES.
2. CONTRACTORS SHALL COORDINATE PIPING WITH ALL OTHER TRADES.
3. CONTRACTOR SHALL REFER TO ARCHITECTURAL/STRUCTURAL DRAWINGS FOR DIMENSIONS.
4. CONTRACTOR SHALL FURNISH AND INSTALL DIELECTRIC UNIONS AT ALL CONNECTIONS BETWEEN DISSIMILAR METALS.
5. CONTRACTOR SHALL FURNISH AND INSTALL ESCUTCHEONS AND COVER PLATES AT ALL FINISHED WALLS, CEILINGS AND FLOOR OPENINGS.
6. PIPING SHALL BE DISINFECTED IN ACCORDANCE WITH STATE AND LOCAL CODE. (REFER TO SPECIFICATIONS.)
7. ALL PIPING SHALL BE TESTED FOR LEAKS. IF ANY LEAKS ARE DETECTED THE PIPING SHALL BE REPAIRED, RESOLDERED OR REPLACED AND RETESTED.
8. ALL SOLDER SHALL BE OF THE LEAD FREE TYPE.
9. WATER HEATER SHALL BE SUPPLIED WITH FACTORY INSTALLED T&P VALVES AND SHALL HAVE UNIONS AND ISOLATION VALVES.
10. DOMESTIC WATER SUPPLY PIPING SHALL BE COPPER OR CPVC. PEX IS ALLOWED WHERE PERMITTED BY CODE.
11. WASTE AND VENT PIPING SHALL BE SCH. 40 PVC OR HEAVY DUTY CAST IRON UNDER TRAFFIC AREAS.
12. INSTALL THERMOSTATICALLY CONTROLLED MIXING VALVES AS NEEDED TO ENSURE HOT WATER TEMPERATURE TO ALL HAND WASHING LOCATIONS DOES NOT EXCEED 110°F.
13. ALL FLOOR DRAINS & HUB DRAINS SHALL BE PROVIDED WITH TRAP PRIMER EXCEPT FLOOR DRAINS IN TOILETS WHERE HOSE BIBS ARE PROVIDED.
14. HOT WATER PIPING SHALL BE INSULATED WITH 1" THICK FIBROUS GLASS INSULATION. COLD WATER PIPING SHALL BE INSULATED WITH 1/2" FIBROUS GLASS INSULATION. VAPOR BARRIER SHALL BE APPLIED TO EACH.

PLUMBING CALCULATIONS

ITEM	# OF	FIXTURE UNITS (EACH) COLD	HOT	TOTAL	FIXTURE UNITS (TOTAL) COLD	HOT	TOTAL	FIXTURE UNITS (WASTE)
FLUSH TANK WATER CLOSET	2	5.0	–	5.0	10.0	–	10.0	4/8
LAVATORY	2	1.5	1.5	2	3.0	3.0	4.0	1/2
DRINKING FOUNTAIN	2	.25	–	.25	.50	–	.50	0.5/1.0
MOP SINK	1	2.25	2.25	3.0	2.25	2.25	3.0	2/2
TOTAL 18.6 GPM		–	–	–	15.75	5.25	17.50	13.0

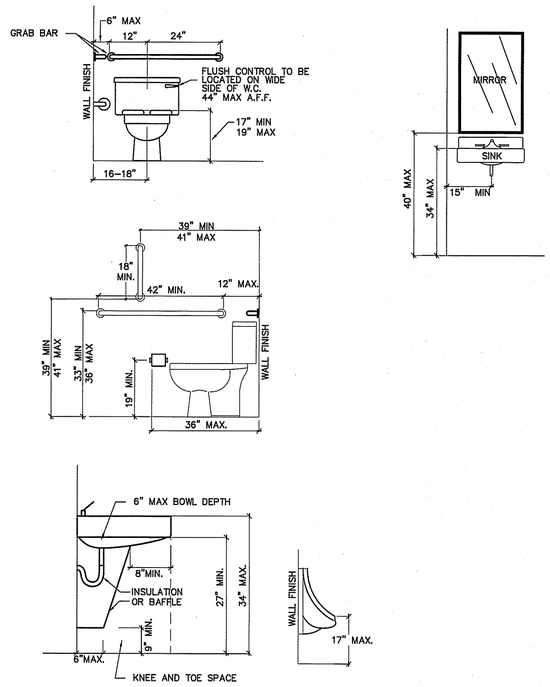
WATER SUPPLY PIPE SIZE: MINIMUM 1"



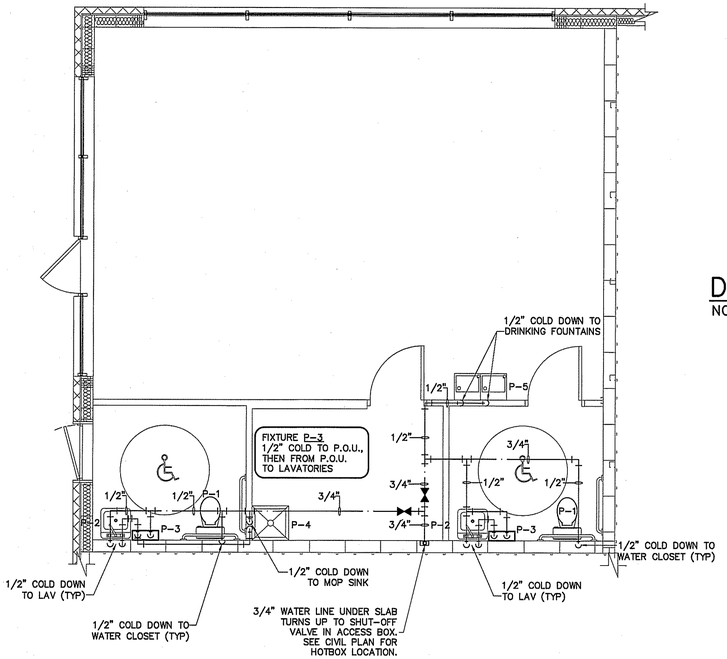
WASTE & VENT RISER DIAGRAM
NOT TO SCALE

PLUMBING LEGEND

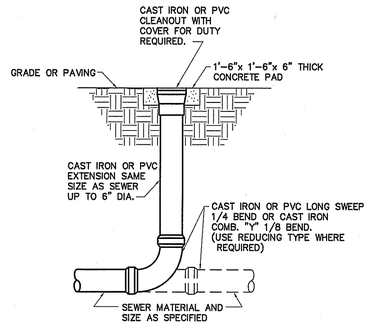
DESCRIPTION	SYMBOL	
COLD WATER		CW
HOT WATER		HW
COLD WATER (FILTERED)		
RECIRCULATED WATER		HWR
VENT PIPING		V
WASTE PIPING	NEW / EXISTING	W
CLEAN OUT IN GRADE		C.O.I.G.
FLOOR CLEAN OUT		F.C.O.
NON FREEZE HOSE BIBB		NFHB
FLOOR DRAIN		F.D.
CHECK VALVE		
BALL VALVE		
GATE VALVE		
SHUT-OFF VALVE		
DOUBLE CHECK VALVE		
FIXTURE DESIGNATION		P--
MOUNTING HEIGHT		MH
POINT OF CONNECTION NEW TO EXISTING		
FLOOR SINK		
SHOCK ABSORBER W/BALL VALVE SHUT-OFF	SA	SIZE PER MANUF. RECOMMENDATIONS
CHANGE IN PIPE SIZE		



RESTROOM ACCESSIBILITY DETAILS
SCALE: 1/2" = 1'-0"



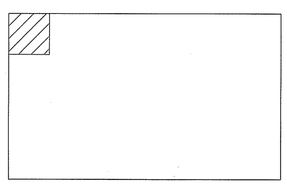
PLUMBING SUPPLY PLAN BUILDING "A" (OFFICE)
SCALE: 1/4" = 1'-0"



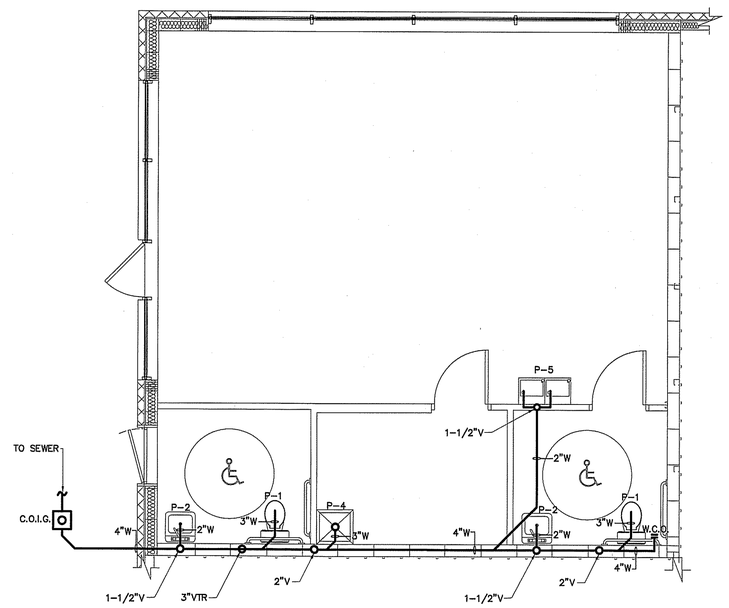
DETAIL-CLEAN OUT AT GRADE
NOT TO SCALE

PLUMBING CONNECTION SCHEDULE

FIXTURE	C.W.	H.W.	WASTE	VENT
FLUSH TANK WATER CLOSET	1/2"	–	3"	2"
LAVATORY	1/2"	1/2"	2"	1 1/2"
ELEC. WATER COOLER	1/2"	–	2"	1 1/2"
FLOOR DRAIN			3"	2"
MOP SINK	1/2"	1/2"	3"	2"



KEY PLAN
SCALE: NTS



PLUMBING WASTE PLAN BUILDING "A" (OFFICE)
SCALE: 1/4" = 1'-0"

NORTH CAROLINA PROFESSIONAL SEAL 18909 ENGINEER RANDY L CRUSE
05-30-24

PLANS FOR:
AMPLE STORAGE
ERWIN, NORTH CAROLINA 28339

REVISIONS

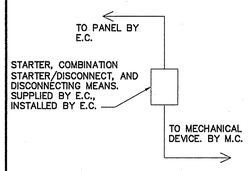
NO.	

Cruse And Associates, P.A.
414 EAST EDGERTON STREET
Dunn, North Carolina 28334
(910) 892-4179
FAX: (910) 892-5182
LICENSE NO.: C-1721

DATE 05/30/24
DRAWN BY BAM
JOB NO. 24-23

SHEET NO.
P-1 OF 1

CONNECTION SCHEDULE



ALL STARTERS, COMBINATION STARTER/DISCONNECTS, AND DISCONNECTING MEANS, SUPPLIED BY E.C. FOR MECHANICAL EQUIPMENT AS REQUIRED BY NEC AND MECHANICAL EQUIPMENT MANUFACTURER'S REQUIREMENTS.

GENERAL NOTES:

1. RUN ALL DUCTWORK TIGHT TO CEILING INSULATION.
2. FASTEN ALL CONDENSATE LINES TO WALLS OR CEILINGS WHERE APPLICABLE.
3. 7-DAY PROGRAMMABLE T'STAT WITH LOCKING COVER.
4. PROVIDE & INSTALL PROTECTIVE 6" CONCRETE-FILLED PIPE BOLLARDS, TWO PER HEAT PUMP OR AS SHOWN ON PLAN.
5. PROVIDE AND INSTALL CONCRETE SPLASH BLOCK, ONE PER 3 HEAT PUMPS MIN.
6. INSTALL FLOAT SWITCH IN AUXILIARY PAN TO STOP UNIT IN EVENT OF CONDENSATE OVERFLOW.

MECHANICAL SYMBOL LEGEND

SINGLE LINE	DOUBLE LINE	DESCRIPTION
-	-	TAKE OFF TO SUPPLY AIR REGISTER WITH EXT. INSUL. DUCTWORK
-	-	BRANCH TAKEOFF FROM MAIN TRUNK DUCT WITH EXT. INSUL. DUCTWORK
-	-	END CAP
(D) OR (DS) -	(D) OR (DS)	DUCT SMOKE DETECTOR
A.D. -	-	ACCESS DOOR (DOOR SIZE / DUCT HEIGHT: 8X8 / 10"; 10X10 / 12"; 12X12 / 14" & LARGER)
-	-	VOLUME CONTROL DAMPER (TYP); CEILING DIFFUSER; FLEXIBLE DUCTWORK (14' MAX.)
-	-	ONE SIDED REDUCING TRANSITION
-	F.D.(1-1/2)	F.D.=FIRE DAMPER (1-1/2)=RATED FOR 1-1/2 HRS.
-	-	RETURN AIR OR EXHAUST GRILLE
-	-	TWO SIDED TRANSITION

SINGLE LINE	DOUBLE LINE	DESCRIPTION
(1-WAY) (2-WAY) (3-WAY) (4-WAY) -	-	SUPPLY AIR CEILING DIFFUSER, ARROW INDICATES DIRECTION OF BLOW & ACTIVE DIFFUSER SIDES
CUSHION HEAD -	-	(1)CUSHION HEAD @ BRANCH OR DIFFUSER RUNOUT (2)CUSHION HEAD IS EQUAL TO 1-1/2 WIDTH OF THE BRANCH DUCT OR DIFFUSER RUNOUT
-	-	R.A. OR EXHAUST DUCT TURNS DOWN @ 90 DEGS.
-	-	MANUAL VOLUME CONTROL DAMPER W/ QUADRANT LOCKING DEVICE
-	-	TWO SIDED TRANSITION

-	ELECT. DUCT INSERT HEATER WITH CONTROL PANEL
-	AHU W/FLEXIBLE CONNECTION AT SUPPLY AND RETURN DUCT
-	KEY NOTE
X / XXX -	MARK; CFM-DIFFUSER, REGISTER OR GRILLE (SEE SCHEDULE)
-	EXHAUST FAN

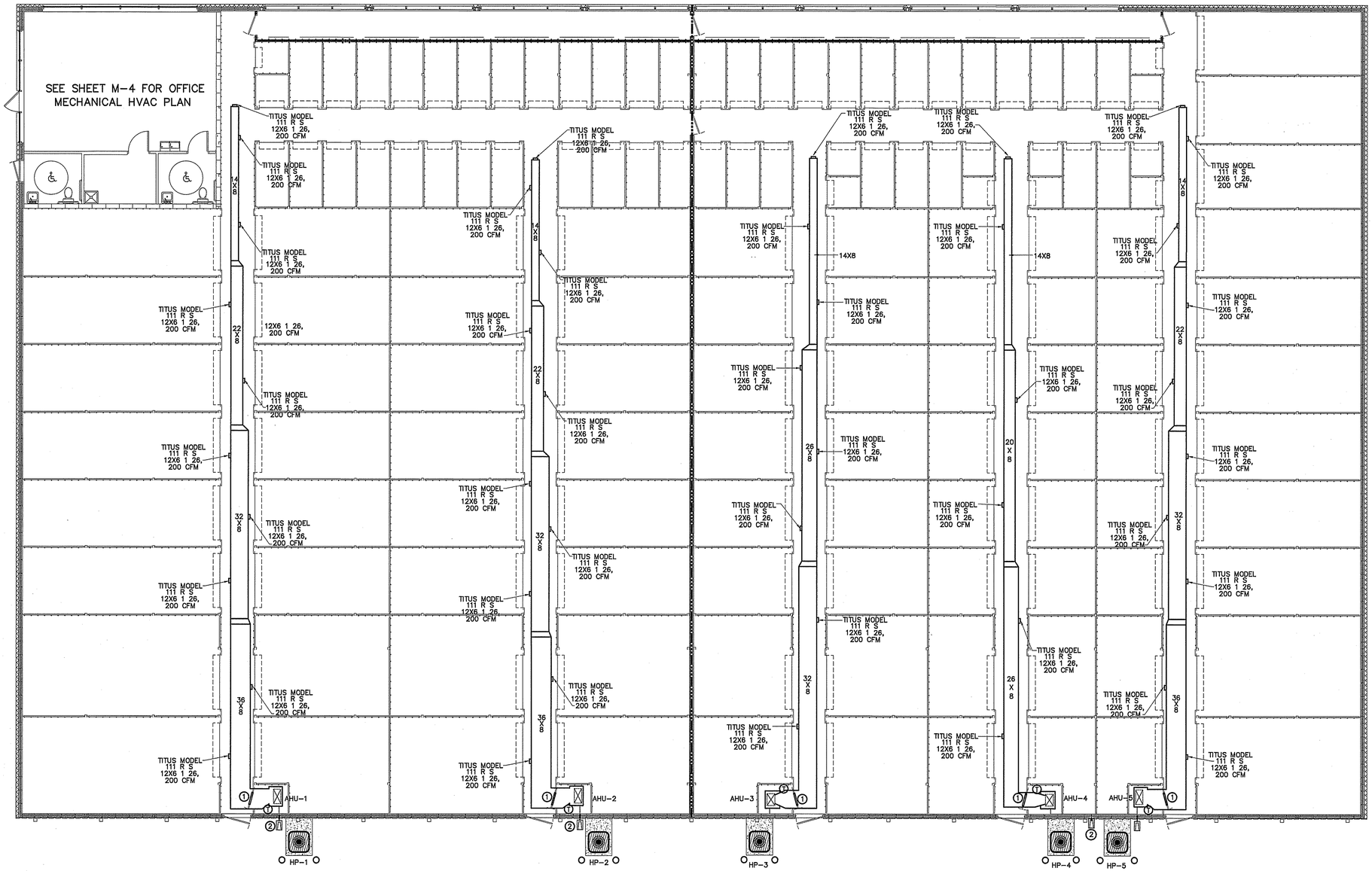
KEY NOTES:

1. 16" X 16" TRANSFER GRILL INSTALLED IN DOOR (TYPICAL)
2. 1-1/2" CONDENSATE LINE FROM EACH AHU TO SPLASH BLOCK. ONE 1-1/2" CONDENSATE LINE & ONE SPLASH BLOCK PER AHU (TYP.)

NOTE:
HVAC CONTRACTOR TO VERIFY EXACT LOCATION (THAT CORRESPONDS TO APPROVED SITE PLAN) OF HEAT PUMPS WITH GENERAL CONTRACTOR BEFORE BEGINNING CONSTRUCTION. THEN COORDINATE LOCATION WITH ELECTRICAL CONTRACTOR FOR ALL ELECTRICAL REQUIREMENTS.

NOTE:
VERIFY THERMOSTAT LOCATION WITH OWNER PRIOR TO INSTALLING.

GENERAL NOTE:
MAINTAIN MANUFACTURER'S REQUIRED CLEARANCES FOR ALL HVAC EQUIPMENT.



MECHANICAL HVAC PLAN BUILDING "A"

SCALE: 1/8" = 1'-0"

LEGEND
3 HOUR RATED WALL U419

PLANS FOR:
AMPLE STORAGE
ERWIN, NORTH CAROLINA 28339

NORTH CAROLINA PROFESSIONAL SEAL 18909 ENGINEER RANDY L CRUSE REGISTERED
05-30-24

REVISIONS

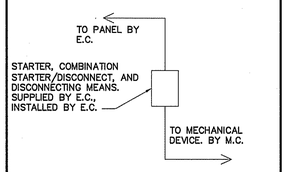
NO.	

Cruse And Associates, P.A.
414 EAST EDGERTON STREET
Dunn, North Carolina 28334
(910) 892-8179
FAX: (910) 892-5182
LICENSE NO.: C-1721

DATE 05/30/24
DRAWN BY BAM
JOB NO. 24-23

SHEET NO.
M-1 OF 5

CONNECTION SCHEDULE



ALL STARTERS, COMBINATION STARTER/DISCONNECTS, AND DISCONNECTING MEANS, SUPPLIED BY E.C. FOR MECHANICAL EQUIPMENT AS REQUIRED BY NEC AND MECHANICAL EQUIPMENT MANUFACTURER'S REQUIREMENTS.

GENERAL NOTES:

1. RUN ALL DUCTWORK TIGHT TO CEILING INSULATION.
2. FASTEN ALL CONDENSATE LINES TO WALLS OR CEILINGS WHERE APPLICABLE.
3. 7-DAY PROGRAMMABLE T'STAT WITH LOCKING COVER.
4. PROVIDE & INSTALL PROTECTIVE 6" CONCRETE-FILLED PIPE BOLLARDS, TWO PER HEAT PUMP OR AS SHOWN ON PLAN.
5. PROVIDE AND INSTALL CONCRETE SPLASH BLOCK, ONE PER 3 HEAT PUMPS MIN.
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MECHANICAL SYMBOL LEGEND

SINGLE LINE	DOUBLE LINE	DESCRIPTION
		TAKE OFF TO SUPPLY AIR REGISTER WITH EXT. INSUL. DUCTWORK
		BRANCH TAKEOFF FROM MAIN TRUNK DUCT WITH EXT. INSUL. DUCTWORK
		END CAP
(D) OR (DT)	(D) OR (DT)	DUCT SMOKE DETECTOR
A.D.		ACCESS DOOR

DOOR SIZE	DUCT HEIGHT
8X8	10"
10X10	12"
12X12	14" & LARGER

SINGLE LINE	DOUBLE LINE	DESCRIPTION
	VOLUME CONTROL DAMPER (TYP), CEILING DIFFUSER, FLEXIBLE DUCTWORK (14' MAX.)	
		ONE SIDED REDUCING TRANSITION
F.D.(1-1/2)		F.D.=FIRE DAMPER (1-1/2)=RATED FOR 1-1/2 HRS.
		RETURN AIR OR EXHAUST GRILLE
		TWO SIDED TRANSITION

SINGLE LINE	DOUBLE LINE	DESCRIPTION
(1-WAY) (2-WAY) (3-WAY) (4-WAY)		SUPPLY AIR CEILING DIFFUSER, ARROW INDICATES DIRECTION OF BLOW & ACTIVE DIFFUSER SIDES
CUSHION HEAD		(1)CUSHION HEAD @ BRANCH OR DIFFUSER RUNOUT (2)CUSHION HEAD IS EQUAL TO 1-1/2 WIDTH OF THE BRANCH DUCT OR DIFFUSER RUNOUT
		R.A. OR EXHAUST DUCT TURNS DOWN @ 90 DEGS.
		MANUAL VOLUME CONTROL DAMPER W/ QUADRANT LOCKING DEVICE
		TWO SIDED TRANSITION

	ELECT. DUCT INSERT HEATER WITH CONTROL PANEL
	AHU W/FLEXIBLE CONNECTION AT SUPPLY AND RETURN DUCT
①	KEY NOTE
MARK / XXX	CFM-DIFFUSER, REGISTER OR GRILLE (SEE SCHEDULE)
①	EXHAUST FAN

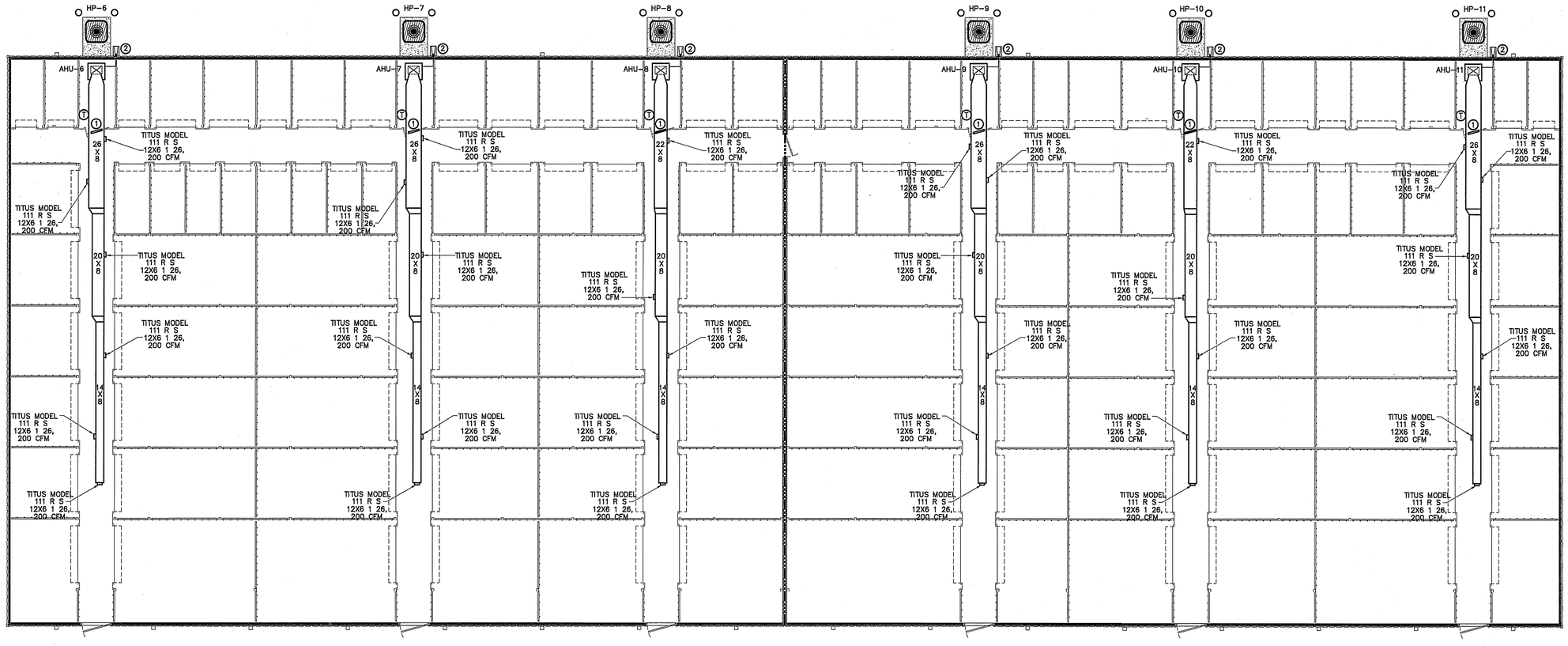
KEY NOTES:

1. 16" X 16" TRANSFER GRILL INSTALLED IN DOOR (TYPICAL)
2. 1-1/2" CONDENSATE LINE FROM EACH AHU TO SPLASH BLOCK. ONE 1-1/2" CONDENSATE LINE & ONE SPLASH BLOCK PER AHU (TYP.)

NOTE:
HVAC CONTRACTOR TO VERIFY EXACT LOCATION (THAT CORRESPONDS TO APPROVED SITE PLAN) OF HEAT PUMPS WITH GENERAL CONTRACTOR BEFORE BEGINNING CONSTRUCTION. THEN COORDINATE LOCATION WITH ELECTRICAL CONTRACTOR FOR ALL ELECTRICAL REQUIREMENTS.

NOTE:
VERIFY THERMOSTAT LOCATION WITH OWNER PRIOR TO INSTALLING.

GENERAL NOTE:
MAINTAIN MANUFACTURER'S REQUIRED CLEARANCES FOR ALL HVAC EQUIPMENT.



HVAC MECHANICAL PLAN BUILDING "D"

SCALE: 1/8" = 1'-0"

LEGEND
3 HOUR RATED WALL U419

NORTH CAROLINA PROFESSIONAL SEAL 18909 ENGINEER RANDY L CRUSE REGISTERED 05-30-24

PLANS FOR:
AMPLE STORAGE
ERWIN, NORTH CAROLINA 28339

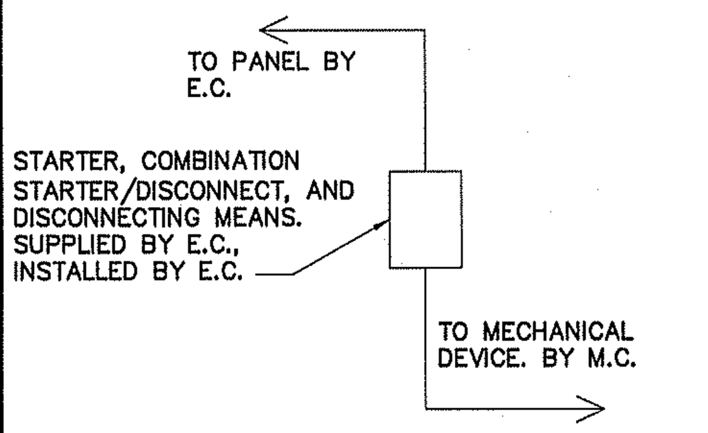
REVISIONS	
NO.	

Cruse And Associates, P.A.
414 EAST EDGERTON STREET
Dunn, North Carolina 28334
PHONE: (910) 892-4440
FAX: (910) 892-5162
LICENSE NO.: C-1721

DATE	05/30/24
DRAWN BY	BAM
JOB NO.	24-23

SHEET NO.
M-2 OF 5

CONNECTION SCHEDULE



ALL STARTERS, COMBINATION STARTER/DISCONNECTS, AND DISCONNECTING MEANS, SUPPLIED BY E.C. FOR MECHANICAL EQUIPMENT AS REQUIRED BY NEC AND MECHANICAL EQUIPMENT MANUFACTURER'S REQUIREMENTS.

GENERAL NOTES:

1. RUN ALL DUCTWORK TIGHT TO CEILING INSULATION.
2. FASTEN ALL CONDENSATE LINES TO WALLS OR CEILINGS WHERE APPLICABLE.
3. 7-DAY PROGRAMMABLE T'STAT WITH LOCKING COVER.
4. PROVIDE & INSTALL PROTECTIVE 6" CONCRETE-FILLED PIPE BOLLARDS, TWO PER HEAT PUMP OR AS SHOWN ON PLAN.
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MECHANICAL SYMBOL LEGEND

SINGLE LINE	DOUBLE LINE	DESCRIPTION
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		BRANCH TAKEOFF FROM MAIN TRUNK DUCT WITH EXT. INSUL. DUCTWORK
		END CAP
OR (D) OR (DD)	(D) OR (DD)	DUCT SMOKE DETECTOR
A.D.		ACCESS DOOR — DOOR SIZE / DUCT HEIGHT: 8X8 / 10"; 10X10 / 12"; 12X12 / 14" & LARGER
		VOLUME CONTROL DAMPER (TYP); CEILING DIFFUSER; FLEXIBLE DUCTWORK (14' MAX.)
		ONE SIDED REDUCING TRANSITION
F.D.(1-1/2)		F.D.=FIRE DAMPER (1-1/2)=RATED FOR 1-1/2 HRS.
		RETURN AIR OR EXHAUST GRILLE
		TWO SIDED TRANSITION
(1-WAY) (2-WAY) (3-WAY) (4-WAY)		SUPPLY AIR CEILING DIFFUSER, ARROW INDICATES DIRECTION OF BLOW & ACTIVE DIFFUSER SIDES
CUSHION HEAD		(1)CUSHION HEAD @ BRANCH OR DIFFUSER RUNOUT (2)CUSHION HEAD IS EQUAL TO 1-1/2 WIDTH OF THE BRANCH DUCT OR DIFFUSER RUNOUT
		R.A. OR EXHAUST DUCT TURNS DOWN @ 90 DEGS.
		MANUAL VOLUME CONTROL DAMPER W/ QUADRANT LOCKING DEVICE
		TWO SIDED TRANSITION
		ELECT. DUCT INSERT HEATER WITH CONTROL PANEL
		AHU W/FLEXIBLE CONNECTION AT SUPPLY AND RETURN DUCT
		KEY NOTE
X / XXX		MARK; CFM-DIFFUSER, REGISTER OR GRILLE (SEE SCHEDULE)
		EXHAUST FAN

KEY NOTES:

1. 16" X 16" TRANSFER GRILL INSTALLED IN DOOR (TYPICAL)
2. 1-1/2" CONDENSATE LINE FROM EACH AHU TO SPLASH BLOCK. ONE 1-1/2" CONDENSATE LINE & ONE SPLASH BLOCK PER AHU (TYP.)

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NOTE:

VERIFY THERMOSTAT LOCATION WITH OWNER PRIOR TO INSTALLING.

GENERAL NOTE:

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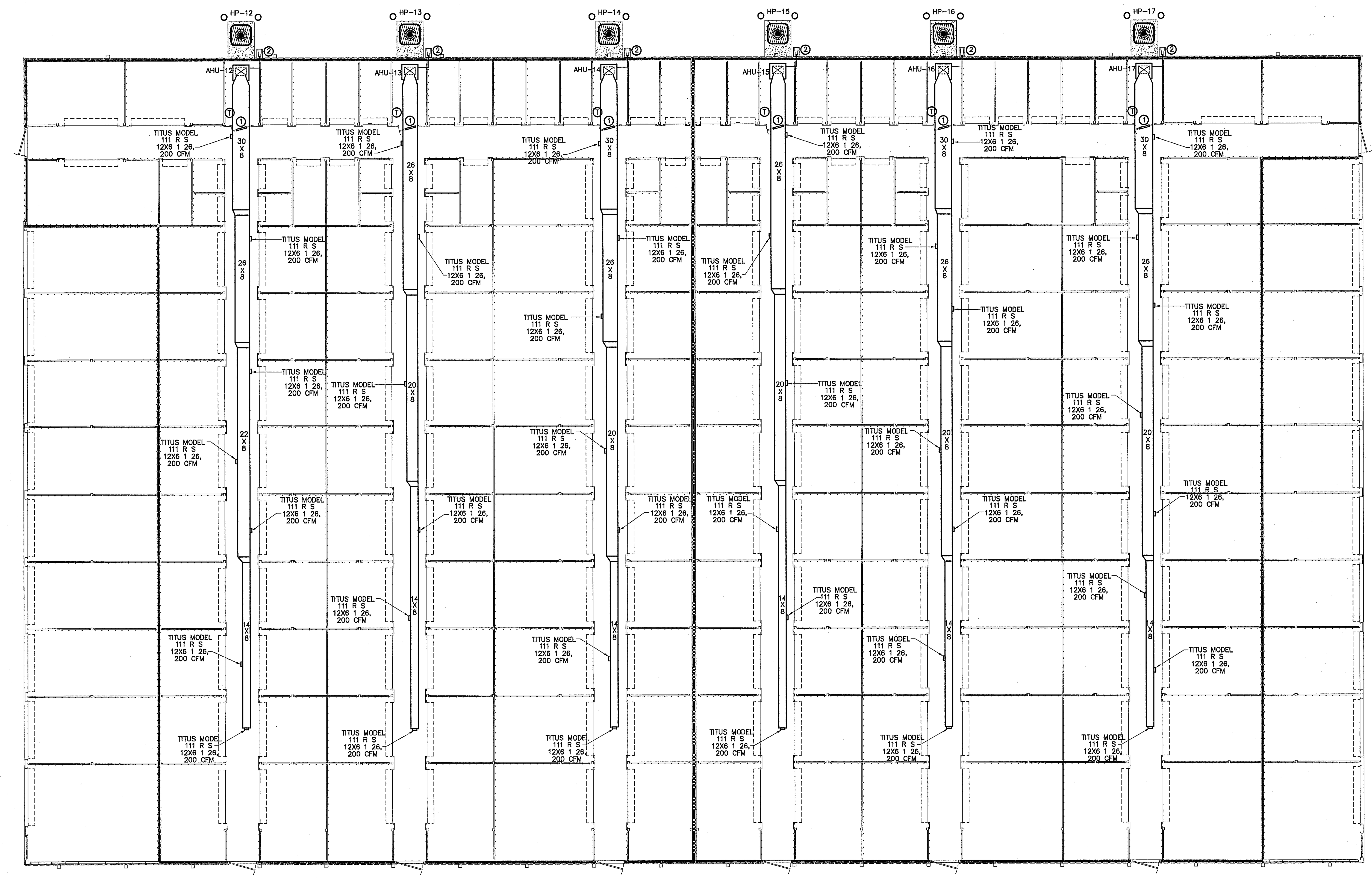
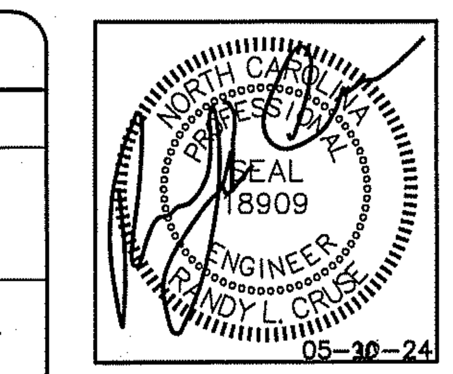


MECHANICAL HVAC PLAN BUILDING "G"

SCALE: 1/8" = 1'-0"

LEGEND

3 HOUR RATED WALL U419



PLANS FOR: AMPLE STORAGE

ERWIN, NORTH CAROLINA 28339

REVISIONS	
NO.	

Cruse And Associates, P.A.

414 EAST EDGERTON STREET
Dunn, North Carolina 28334
PH: (910) 892-4429
FAX: (910) 892-5162

LICENSE NO.: C-1721

DATE 05/30/24
DRAWN BY BAM
JOB NO. 24-23

SHEET NO.
M-3 OF 5

MECHANICAL SYMBOL LEGEND

SINGLE LINE	DOUBLE LINE	DESCRIPTION
-		TAKE OFF TO SUPPLY AIR REGISTER WITH EXT. INSUL. DUCTWORK
-		BRANCH TAKEOFF FROM MAIN TRUNK DUCT WITH EXT. INSUL. DUCTWORK
-		END CAP
(D) OR (DI) -	- (D) OR (DI)	DUCT SMOKE DETECTOR
A.D. -		ACCESS DOOR DOOR SIZE / DUCT HEIGHT 8X8 / 10" 10X10 / 12" 12X12 / 14" & LARGER

SINGLE LINE	DOUBLE LINE	DESCRIPTION
-	VOLUME CONTROL DAMPER (TYP) CEILING DIFFUSER FLEXIBLE DUCTWORK (14' MAX.)	
-		ONE SIDED REDUCING TRANSITION
F.D.(1-1/2)		F.D.=FIRE DAMPER (1-1/2)=RATED FOR 1-1/2 HRS.
-	A / 70	RETURN AIR OR EXHAUST GRILLE
-		TWO SIDED TRANSITION

SINGLE LINE	DOUBLE LINE	DESCRIPTION
(1-WAY) (2-WAY) (3-WAY) (4-WAY) -		SUPPLY AIR CEILING DIFFUSER, ARROW INDICATES DIRECTION OF BLOW & ACTIVE DIFFUSER SIDES
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-		TWO SIDED TRANSITION

-	ELECT. DUCT INSERT HEATER WITH CONTROL PANEL
-	AHU W/FLEXIBLE CONNECTION AT SUPPLY AND RETURN DUCT
-	KEY NOTE
X / XXX -	MARK CFM-DIFFUSER, REGISTER OR GRILLE (SEE SCHEDULE)
(1) -	EXHAUST FAN

NOTE:
VERIFY THERMOSTAT LOCATION WITH OWNER PRIOR TO INSTALLING. FILTER ALL OUTSIDE AIR.

GENERAL NOTE:
MAINTAIN MANUFACTURER'S REQUIRED CLEARANCES FOR ALL HVAC EQUIPMENT.

AIR HANDLER UNIT

AHU NO.	MANUFACTURER	MODEL	VOLTAGE	E.S.P.	OUTSIDE AIR (CFM)	CFM	UNIT FLA	REF LINES GAS	REF LINES LIQ.	SEER	HTR KW (240)	COOLING CAPACITY (MBH) TOTAL	COOLING CAPACITY (MBH) SENS.	HEATING CAPACITY (MBH) HIGH	HEATING CAPACITY (MBH) LOW	HSPF	MIN. CIRC. AMPACITY	M.O.C.P.
AHU-18	TRANE	TEM6A0C42H41	240/1/60	.46	N/A	1200	32.0	7/8	3/8	16.0	7.68	35.2	26.4	32.4	-	9.5	45	45

SPLIT SYSTEM HEAT PUMP UNITS

MARK	MANUF.	MODEL	VOLTAGE	# COMP.	MIN. CIRC. AMPACITY	M.O.C.P.	UNIT FLA.
HP-18	TRANE	4TWR6036N1000A	240/1/60	1	20	35	16.0

LOUVER SCHEDULE

MARK	DESCRIPTION	SERVES	CFM	APPROXIMATE OUTSIDE DIMENSIONS (W X H)	MODEL
L1	OUTSIDE AIR LOUVER	VARIES	*	12"X12"	HART & COOLEY 1530ZF 12X12 W/ INSECT SCREEN

REGISTER, GRILLE, & DIFFUSER SCHEDULE*

MARK	DESCRIPTION	MAX. NC	NECK	BORDER TYPE	MATERIAL	FINISH	MANUFACTURER	MODEL NUMBER	ACCESSORIES / NOTES
A	DIFFUSER-4-WAY	30	9"X9"	LAY-IN	STEEL	WHITE	TITUS	TDC 9X9 3 26 4	SQ-TO-RND
B	DIFFUSER-2-WAY	30	6"X6"	LAY-IN	STEEL	WHITE	TITUS	TDC 6X6 3 26 2	SQ-TO-RND
R1	RETURN GRILLE	30	12"X12"	LAY-IN	STEEL	WHITE	TITUS	23RFL 24X24 3 26	SQ-TO-RND

* VERIFY CEILING TYPE BEFORE ORDERING, NARROW TEE REQUIREMENTS, PLASTER FRAMES ETC. TO BE INCLUDED WITH DIFFUSERS AT NO ADDITIONAL COST TO OWNER

EXHAUST FAN SCHEDULE

MARK	MAKE	MODEL	TYPE	CFM	EXTERNAL S.P. IN (W.G.)	AMPS	ELECTRICAL VOLT	ELECTRICAL PH	ELECTRICAL HZ	NOTES
EF-1,2	GREENHECK	SP-A90	CEILING FAN	70	.125	.34	115	1ø	60	WC-8 WALL CAP

OUTSIDE AIR REQUIREMENTS
OFFICE - 0.06 CFM/SF X 900 SF = 54 CFM 5 PEOPLE X 5 CFM/PERSON = 25 CFM 79 CFM FOR OFFICE AHU-18.

"OFFICE"
MECHANICAL SYSTEMS, SERVICE SYSTEMS AND EQUIPMENT
THERMAL ZONE 4A - HARNETT COUNTY, NC

WINTER DRY BULB 16 DEG. F.

SUMMER DRY BULB 93 DEG. F.

INTERIOR DESIGN CONDITIONS

WINTER DRY BULB 70 DEG. F.

SUMMER DRY BULB 75 DEG. F.

RELATIVE HUMIDITY 55%

BUILDING HEATING LOAD 12.6 MBH

BUILDING COOLING LOAD 3.0 TONS

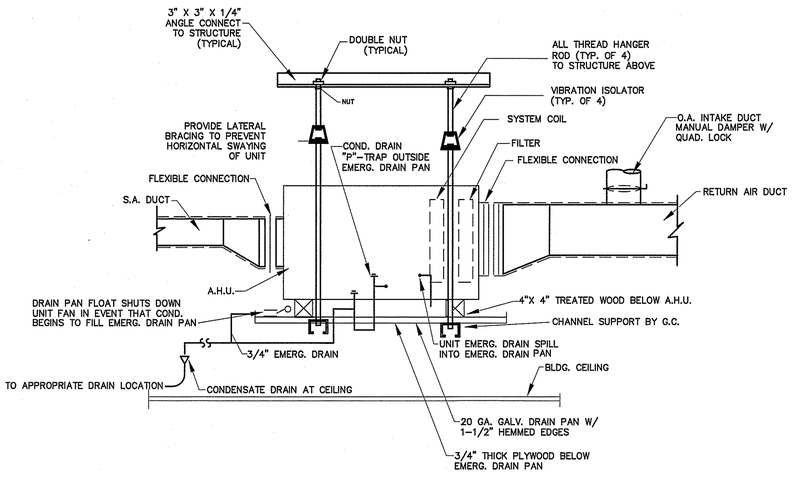
MECHANICAL SPACE CONDITIONING SYSTEM

UNITARY
DESCRIPTION OF UNIT - HEAT PUMP
HEATING EFFICIENCY - 9.5 HSPF
COOLING EFFICIENCY - 16.0 SEER
SIZE CATEGORY OF UNIT - ≤ 65,000 BTUH

BOILER
SIZE CATEGORY. IF OVERSIZED, STATE REASON: N/A

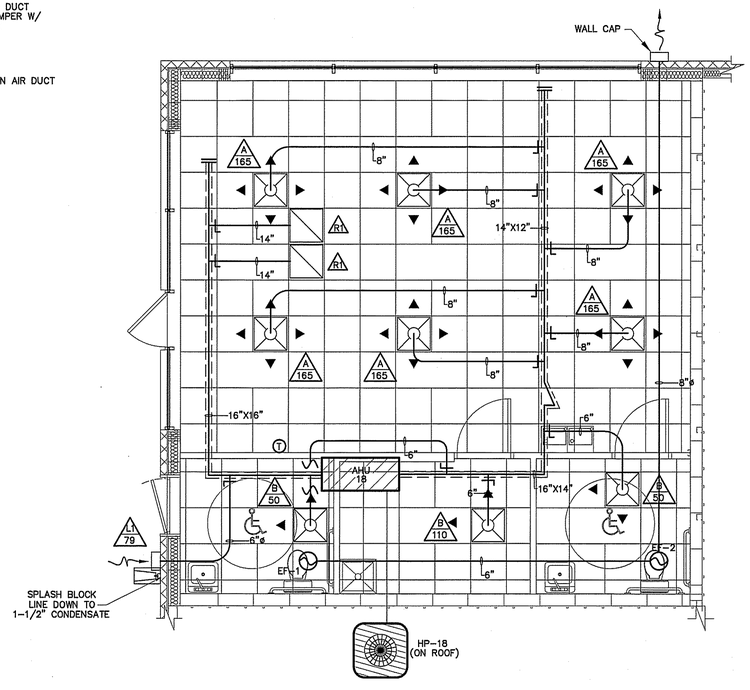
CHILLER
SIZE CATEGORY. IF OVERSIZED, STATE REASON: N/A

LIST EQUIPMENT EFFICIENCIES SEE SCHEDULE



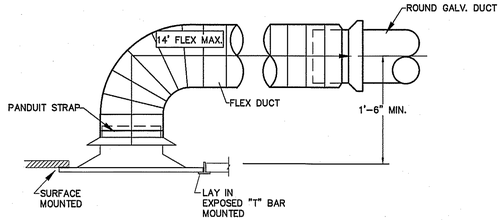
TYPICAL DETAIL AT AIR HANDLING UNITS

NOT TO SCALE



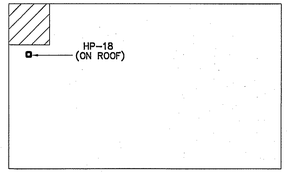
HVAC MECHANICAL PLAN BUILDING "A" (OFFICE)

SCALE: 1/4" = 1'-0"



DIFFUSER DETAIL

NOT TO SCALE



KEY PLAN

SCALE: NTS

NORTH CAROLINA PROFESSIONAL SEAL 18909 ENGINEER BRADLEY M. CRUSE INDIVIDUAL 05-30-24

PLANS FOR:
AMPLE STORAGE
ERWIN, NORTH CAROLINA 28339

REVISIONS	
NO.	

Cruse And Associates, P.A.
444 EAST BURTON STREET
Dunn, North Carolina 28334
PH: (910) 892-4123
FAX: (910) 892-1462
LICENSE NO.: C-1721

DATE	05/30/24
DRAWN BY	BAM
JOB NO.	24-23

SHEET NO.
M-4 OF 5

AIR HANDLER UNIT

AHU NO.	MANUFACTURER	MODEL	VOLTAGE	E.S.P.		CFM	UNIT FLA	REF LINES GAS	REF LINES LIQ.	SEER	HTR KW (240)	COOLING CAPACITY (MBH) TOTAL	COOLING CAPACITY (MBH) SENS.	HEATING CAPACITY (MBH) HIGH	HEATING CAPACITY (MBH) LOW	HSPF	MIN. CIRC. AMPACITY	M.O.C.P.
AHU-8,10	TRANE	TEM4A0C37S31	240/1/60	.46	N/A	1000	32.0	3/4	3/8	14.0	7.68	28.4	22.4	27.2	18.5	8.5	43	45
AHU-4,6,7,9,11,13,15	TRANE	TEM4A0B42S31	240/1/60	.46	N/A	1200	32.0	7/8	3/8	14.8	7.68	38.4	26.8	34.0	22.4	9.0	45	45
AHU-12,14,16,17	TRANE	TEM4A0C49M41	240/1/60	.46	N/A	1400	32.0	7/8	3/8	15.5	7.68	42.0	31.8	38.7	25.1	9.0	48	50
AHU-3	TRANE	TEM4A0C49M41	240/1/60	.46	N/A	1600	32.0	7/8	3/8	15.5	7.68	47.8	36.2	44.4	29.1	8.5	48	50
AHU-1,2,5	TRANE	TEM4A0C61M51	240/1/60	.46	N/A	2000	32.0	1-1/8	3/8	14.5	7.68	56.8	42.8	54.9	36.2	8.5	48	50

** PROVIDE OUTDOOR THERMOSTAT TO LOCK OUT SUPPLEMENTAL ELECTRIC HEAT AT OUTDOOR TEMPERATURES ABOVE 40°F.
NOTE: SEE SHEET M-4 OF 5 FOR AHU-18 & HP-18.

SPLIT SYSTEM HEAT PUMP UNITS

MARK	MANUF.	MODEL	VOLTAGE	# COMP.	MIN. CIRC. AMPACITY	M.O.C.P.	UNIT FLA.	ACCESSORIES
HP-8,10	TRANE	4TWR5030N1000A	240/1/60	1	17	25	13.6	EXCLUDE 8,18
HP-4,6,7,9,11,13,15	TRANE	4TWR5036N1000A	240/1/60	1	18	30	14.8	EXCLUDE 8,18
HP-12,14,16,17	TRANE	4TWR5042N1000A	240/1/60	1	24	40	17.7	EXCLUDE 8,18
HP-3	TRANE	4TWR5048N1000A	240/1/60	1	26	40	21.3	EXCLUDE 8,18
HP-1,2,5	TRANE	4TWR5060N1000A	240/1/60	1	32	50	26.5	EXCLUDE 8,18

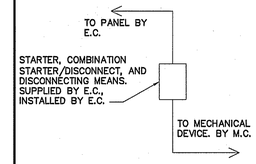
ACCESSORIES

1 TIME-DELAY RELAY
2 CYCLE PROTECTOR
3 EVAPORATOR FREEZE PROTECTOR
4 ISOLATION RELAY
5 TXV
6 HIGH PRESSURE SWITCH
7 LIQUID SOLENOID VALVE
8 LOW-AMBIENT CONTROLLER
9 FILTER DRIER (LIQUID LINE)
10 OUTDOOR T'STAT TO LOCK OUT AUX. HT. (SET @ 40° F ADJ)
11 LOW PRESSURE CONTROL
12 CRANKCASE HEATER
13 DISCHARGE LINE MUFFLER
14 SUCTION AND LIQUID LINE SHUT OFF VALVES
15 THERMOSTAT (SEE NOTE)
16 SUPPORT FEET
17 COIL GUARDS
18 HUMIDISTAT

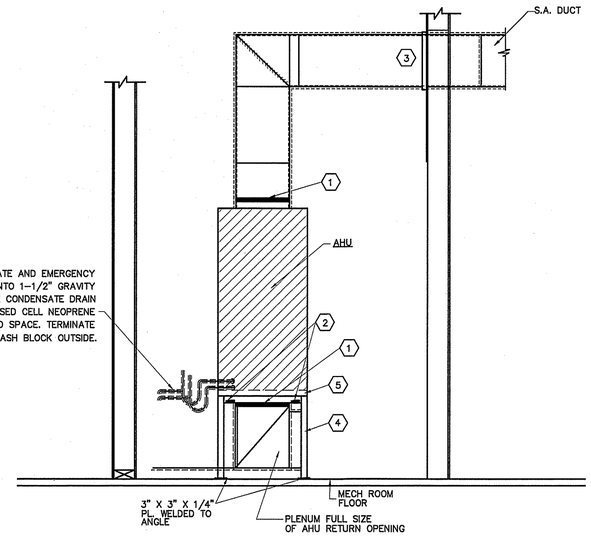
COOLING CAPACITY @ 80 DEG. F DB/67 DEG WB AIR ENTERING INDOOR UNIT & 95 DEG. F DB AIR ENTERING OUTDOOR UNIT
HEATING CAPACITY: HIGH TEMP = 70 DEG F DB INDOOR EAT & 47 DEG F DB/43 DEG F WB AIR ENTERING OUTDOOR UNIT
LOW TEMP = 70 DEG F DB INDOOR EAT & 17 DEG F DB/15 DEG F WB ENTERING OUTDOOR UNIT

T-STAT: THE NUMBER OF STAGES OF HEATING/COOLING SHALL MATCH THE NUMBER OF STAGES OF HEAT AVAILABLE IN THE HPIU OR THE NUMBER OF STAGES OF COOLING AVAILABLE IN THE HPOU. PROVIDE WITH T-STAT; 7 DAY PROGRAMMABLE, DIGITAL.

CONNECTION SCHEDULE



ALL STARTERS, COMBINATION STARTER/DISCONNECTS, AND DISCONNECTING MEANS, SUPPLIED BY E.C. FOR MECHANICAL EQUIPMENT AS REQUIRED BY NEC AND MECHANICAL EQUIPMENT MANUFACTURER'S REQUIREMENTS.



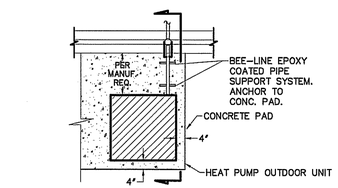
TYPICAL DETAIL AT FLOOR MOUNTED AHU

NOT TO SCALE

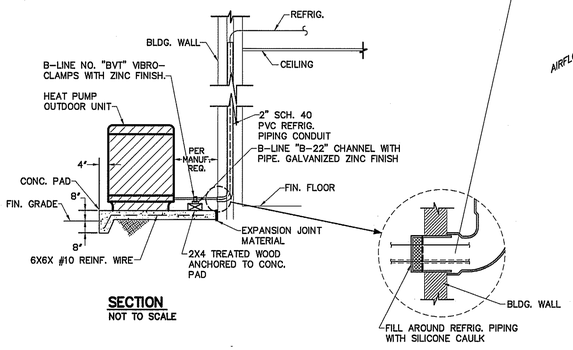
NOTES:

1. FLEXIBLE CONNECTION
2. NEOPRENE-IN-SHEAR VIBRATION ISOLATORS
3. SHEET METAL COLLAR AT WALL PENETRATION
4. 1-1/2" X 1-1/2" X 3/16" ANGLE HPIU SUPPORT STAND WITH ALL WELDED CONSTRUCTION. PAINT WITH 1 COAT OF PRIMER AND FINISH WITH (2) COATS GRAY HIGH GLOSS MACHINE ENAMEL, MARTIN SENOUR OR EQUAL.
5. 1" PLEATED FILTER

PROVIDE PROGRAMMABLE THERMOSTAT FOR EACH SYSTEM.



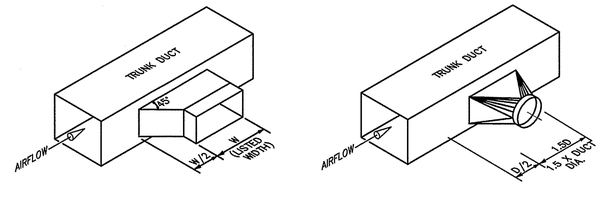
PLAN VIEW
NOT TO SCALE



SECTION
NOT TO SCALE

DETAIL-TYPICAL HEAT PUMP OUTDOOR UNIT

NOT TO SCALE



TYPICAL LATERAL TO REGISTER OR BRANCH DUCT

NOT TO SCALE

MECHANICAL NOTES (GENERAL)

1. DUCTWORK LAYOUTS ARE SCHEMATIC. ALL RISES, DROPS, OFFSETS, AND TRANSITIONS REQUIRED BUT ARE NOT SHOWN SHALL BE PROVIDED AND INSTALLED BY THE CONTRACTOR AT NO ADDITIONAL EXPENSE TO THE OWNER.
2. DUCTWORK SHALL BE GALVANIZED STEEL AND SHALL BE CONSTRUCTED IN COMPLIANCE WITH SMACNA STANDARDS FOR LOW VELOCITY DUCTWORK. DUCT SIZES SHOWN ARE INSIDE CLEAR DIMENSIONS. FLEXIBLE RUNOUTS SHALL NOT EXCEED 15' AND SHALL NOT BE USED TO FORM ELBOWS. CONNECTIONS FROM RECTANGULAR TO ROUND DUCT SHALL BE MADE WITH MANUFACTURED 45 DEG. LATERAL TAPS.
3. ALL DUCTWORK SHALL BE SEALED AIR TIGHT WITH SEALING COMPOUND.
4. ALL ELBOWS IN DUCTWORK SHALL BE RADIUS ELBOWS, UNLESS NOTED OTHERWISE. WHERE SQUARE ELBOWS ARE SHOWN, INSTALL TURNING VANES. DUCT SIZES SHOWN ARE NET INTERIOR DIMENSIONS.
5. THIS CONTRACTOR SHALL COORDINATE HIS WORK WITH THAT OF OTHER TRADES PRIOR TO INSTALLATION OF ANY OF HIS PIPING, DUCTWORK, OR EQUIPMENT.
6. THE MECHANICAL CONTRACTOR SHALL MAKE A COMPLETE REVIEW OF THE MECHANICAL PLANS, SCHEDULES, AND DETAILS PRIOR TO INSTALLATION OF THE MECHANICAL SYSTEMS AND REVIEW ANY CONFLICTS THAT ARE NOTED WITH THE ENGINEER.
7. IT WILL BE THE RESPONSIBILITY OF THE MECHANICAL CONTRACTOR TO ENSURE THAT ITEMS TO BE FURNISHED UNDER HIS CONTRACT WILL FIT THE SPACE AVAILABLE. HE SHALL MAKE NECESSARY FIELD MEASUREMENTS TO ASCERTAIN SPACE REQUIREMENTS, INCLUDING THOSE FOR CONNECTIONS AND SHALL FURNISH AND INSTALL SUCH SIZES AND SHAPES OF EQUIPMENT THAT ARE THE TRUE AND INTENT MEANING OF THE PLANS AND SPECIFICATIONS. HE SHALL PROVIDE THE ENGINEER SCALED DRAWINGS OF ALL MECHANICAL DRAWINGS.
8. ALL EQUIPMENT SHALL BE LOCATED AND INSTALLED TO PROVIDE MAXIMUM SPACE FOR MAINTENANCE AND SERVICE.
9. PROVIDE FACTORY OR FIELD INSTALLED DRAIN PANS UNDER ALL COOLING COIL UNITS. INSTALL DRAIN PAN FLOAT TO SHUT DOWN UNIT FAN IN EVENT THAT CONDENSATE BEGINS TO FILL EMERGENCY DRAIN PAN. RUN ALL CONDENSATE DRAIN LINES TO APPROPRIATE DRAIN.

BUILDING "A"
MECHANICAL SYSTEMS, SERVICE SYSTEMS AND EQUIPMENT
THERMAL ZONE 4A - HARNETT COUNTY, NC

WINTER DRY BULB 16 DEG. F.

SUMMER DRY BULB 93 DEG. F.

INTERIOR DESIGN CONDITIONS

WINTER DRY BULB 59 DEG. F.

SUMMER DRY BULB 80 DEG. F.

RELATIVE HUMIDITY 55%

BUILDING HEATING LOAD 160.0 MBH

BUILDING COOLING LOAD 22.0 TONS

MECHANICAL SPACE CONDITIONING SYSTEM

UNITARY
DESCRIPTION OF UNIT - HEAT PUMP
HEATING EFFICIENCY - 8.5 HSPF
COOLING EFFICIENCY - 14.5 SEER
SIZE CATEGORY OF UNIT - ≤ 65,000 BTUH

BOILER
SIZE CATEGORY. IF OVERSIZED, STATE REASON: N/A

CHILLER
SIZE CATEGORY. IF OVERSIZED, STATE REASON: N/A

LIST EQUIPMENT EFFICIENCIES SEE SCHEDULE

BUILDING "D"
MECHANICAL SYSTEMS, SERVICE SYSTEMS AND EQUIPMENT
THERMAL ZONE 4A - HARNETT COUNTY, NC

WINTER DRY BULB 16 DEG. F.

SUMMER DRY BULB 93 DEG. F.

INTERIOR DESIGN CONDITIONS

WINTER DRY BULB 59 DEG. F.

SUMMER DRY BULB 80 DEG. F.

RELATIVE HUMIDITY 55%

BUILDING HEATING LOAD 135.4 MBH

BUILDING COOLING LOAD 17.0 TONS

MECHANICAL SPACE CONDITIONING SYSTEM

UNITARY
DESCRIPTION OF UNIT - HEAT PUMP
HEATING EFFICIENCY - 8.5 HSPF
COOLING EFFICIENCY - 14.0 SEER
SIZE CATEGORY OF UNIT - ≤ 65,000 BTUH

BOILER
SIZE CATEGORY. IF OVERSIZED, STATE REASON: N/A

CHILLER
SIZE CATEGORY. IF OVERSIZED, STATE REASON: N/A

LIST EQUIPMENT EFFICIENCIES SEE SCHEDULE

BUILDING "G"
MECHANICAL SYSTEMS, SERVICE SYSTEMS AND EQUIPMENT
THERMAL ZONE 4A - HARNETT COUNTY, NC

WINTER DRY BULB 16 DEG. F.

SUMMER DRY BULB 93 DEG. F.

INTERIOR DESIGN CONDITIONS

WINTER DRY BULB 59 DEG. F.

SUMMER DRY BULB 80 DEG. F.

RELATIVE HUMIDITY 55%

BUILDING HEATING LOAD 157.0 MBH

BUILDING COOLING LOAD 20.0 TONS

MECHANICAL SPACE CONDITIONING SYSTEM

UNITARY
DESCRIPTION OF UNIT - HEAT PUMP
HEATING EFFICIENCY - 9.0 HSPF
COOLING EFFICIENCY - 14.8 SEER
SIZE CATEGORY OF UNIT - ≤ 65,000 BTUH

BOILER
SIZE CATEGORY. IF OVERSIZED, STATE REASON: N/A

CHILLER
SIZE CATEGORY. IF OVERSIZED, STATE REASON: N/A

LIST EQUIPMENT EFFICIENCIES SEE SCHEDULE

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 18909 CANDY L. CRUSE 05-30-24

PLANS FOR:
AMPLE STORAGE
ERWIN, NORTH CAROLINA 28339

REVISIONS

NO.	

Cruse And Associates, P.A.
414 EAST DIVERSION STREET
ERWIN, North Carolina 28339
PHONE: (910) 892-5162
FAX: (910) 892-5162
LICENSE NO.: C-1721

DATE 05/30/24
DRAWN BY BAM
JOB NO. 24-23

SHEET NO.
M-5 OF 5

ELECTRICAL LEGEND

MARK	DESCRIPTION
(quad receptacle symbol)	QUAD RECEPTACLE
(duplex receptacle symbol)	DUPLEX RECEPTACLE
[T]	SINGLE POLE SWITCH OR TIMER AS APPLICABLE
(high wall duplex symbol)	HIGH WALL MOUNTED DUPLEX RECEPTACLE APROXIMATELY 12" BELOW CEILING
(fluorescent fixture symbol)	FLUORESCENT FIXTURE
(switched branch symbol)	SWITCHED BRANCH CIRCUIT
(unswitched branch symbol)	UNSWITCHED BRANCH CIRCUIT
(120/208 circuit symbol)	120/208 VOLT CIRCUIT
$\$_M$	MOTION DETECTING SINGLE-POLE SWITCH ON TIMER
⊗	'EXIT' LIGHT FIXTURE, TYPE 'EX'
(emergency light symbol)	BATTERY OPERATED EMERG. LT. (2-HEAD, WALL MTD.)
$\$_{3(4)}$	MOTION DETECTING 3-WAY SWITCH (4-WAY SWITCH) WITH TIMER
(fused disconnect symbol)	FUSED DISCONNECT SWITCH
(ceiling fused disconnect symbol)	CEILING MOUNTED FUSED DISCONNECT SWITCH
◁	TELEPHONE
[J]	JUNCTION BOX
[T]	SINGLE POLE SWITCH OR TIMER AS APPLICABLE
N/L	UNSWITCHED FIXTURE
$\$_o$	OCCUPANCY SENSING SINGLE-POLE SWITCH NOT ON TIMER
(280V receptacle symbol)	280V RECEPTACLE
(weatherhead symbol)	EMERGENCY LIGHT REMOTE WEATHERHEAD(S)

NOTE:

1. VERIFY LOCATION OF LIGHTS & RECEPTACLES WITH OWNER BEFORE CONSTRUCTION.
2. COORDINATE LOCATION OF 8' STRIP LIGHTS IN CORRIDOR WITH DUCT WORK WHERE APPLICABLE.
3. ALL FLUORESCENT LIGHTS IN CORRIDORS TO BE MOUNTED ON THE WALLS WHERE APPLICABLE.
4. ALL HALLWAYS SWITCHES TO BE ON MOTION SENSORS OR SWITCHED AS INDICATED AND ON TIMERS OF 30 MINUTES. ALL UNIT SWITCHES & UNIT RECEPTACLES TO BE ON TIMER OF 30 MINUTES WITH NO HOLD MECHANISMS.
5. RECEPTACLES IN EACH UNIT ARE TO BE SWITCHED. TIE TO SWITCH/TIMER IN EACH UNIT.
6. VERIFY NIGHT LIGHTS AND PERMANENT BURN FIXTURES WITH OWNER BEFORE WIRING.

GENERAL NOTE:

1. VERIFY LOCATION OF WALL PACKS WITH OWNER & SITE LIGHTING PLAN BEFORE INSTALLATION.

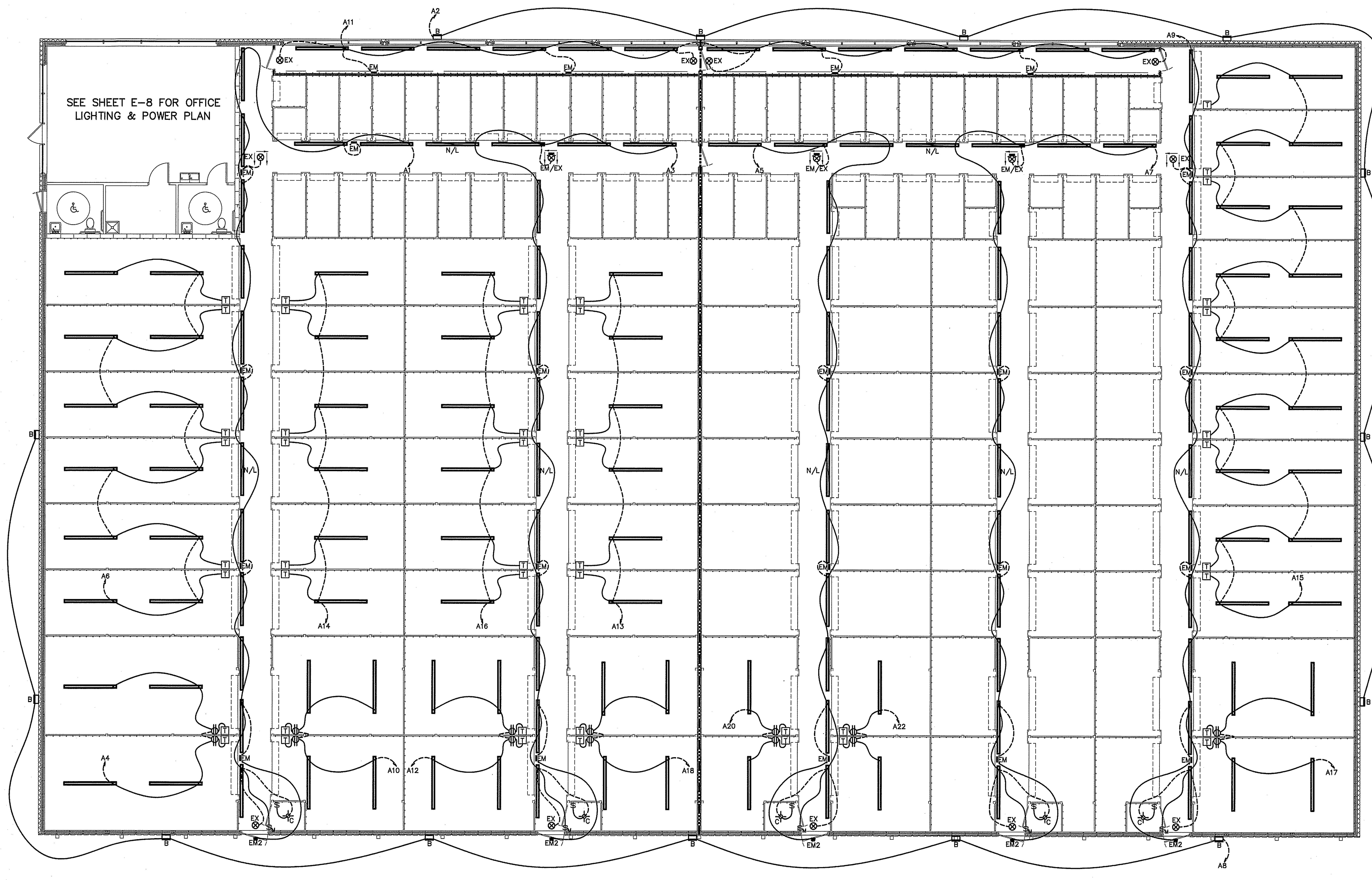
LIGHTING DATA FOR N.C. ENERGY CODE BUILDING "A"

AREA USE	AREA FT^2	WATTS PER FT^2 ALLOWED	TOTAL WATTS ALLOWED	TOTAL WATTS USED	TOTAL WATTS LEFT OVER
STORAGE	23,100	1.2	27,720	10,928	16,792
OFFICE	900	1.3	1,170	721	449
TOTAL	24,000		28,890	11,649	11,241

LIGHT FIXTURE SCHEDULE

MARK	DESCRIPTION	MANUFACTURER	CATALOG NUMBER	LAMPS	BALLASTS	WATTAGE	REMARKS
A	8' LED STRIP W/WIRE GUARD	DAYBRITE	CLX L96 10000LM SEF WD MVOLT 40K 80 CRI WH	LED		71.0	WITH (2) 48" WIRE GUARDS WGCLX48
B	OUTDOOR LED WALL LIGHT	LSI	TWR1 LED 3 50K MVOLT	LED	LED	58.4	VERIFY MOUNTING HEIGHT, OPTIONS BEFORE INSTALLATION
C	KEYLESS FIXTURE WITH WIREGUARD AND LED BULB	–	–	LED A19	–	13	WITH WIRE GUARD
D	2X4 2 LAMP FLUORESCENT LAY-IN WITH ACRYLIC LENSE	DAYBRITE	2SPG232FA01-UNV-1/2-EB10I	2-32W	1	56	
F	2X4 FLUORESCENT LAY-IN WITH 18 CELL PARABOLIC LENSE	LITHONIA	2PM3N G 3 32 18LD MVOLT 1/3 GEB10IS	3-32W	1	87	
G	2X4 3 LAMP FLUORESCENT LAY-IN WITH ACRYLIC LENSE	DAYBRITE	2SPG332FA01-UNV-1/2-EB10I	3-32W	1	87	
EM	EMERGENCY LIGHT WITH BATTERY BACKUP	MCPHILBEN	CAXR6L24W6				
EX	LED TYPE EXIT LIGHT WITH BATTERY BACKUP	MCPHILBEN	CXXL3RW				
EM2	EMERGENCY LIGHT REMOTE WEATHERHEAD(S)	MCPHILBEN	CR2CSWA				

1. ALL FIXTURE SELECTIONS TO BE VERIFIED BY OWNER BEFORE PURCHASE. *
2. SIGN LETTERING TO BE ON TIMECLOCK OR PHOTOCELL
3. LED WALLPACKS ON PHOTOCELL.



ELECTRICAL LIGHTING PLAN BUILDING "A"

SCALE: 1/8" = 1'-0"

LEGEND

3 HOUR RATED WALL U419

NORTH CAROLINA PROFESSIONAL SEAL 18909 ENGINEER RANDY L. CRUSE 05-30-24

PLANS FOR:
AMPLE STORAGE
ERWIN, NORTH CAROLINA 28339

REVISIONS	
NO.	

Cruse And Associates, P.A.
414 EAST EDGERTON STREET
Dunn, North Carolina 28334
PH: (910) 892-4429
FAX: (910) 892-5162
LICENSE NO.: C-1721

DATE 05/30/24
DRAWN BY BAM
JOB NO. 24-23

SHEET NO.
E-1 OF 10

ELECTRICAL LEGEND

MARK	DESCRIPTION
	QUAD RECEPTACLE
	DUPLEX RECEPTACLE
T	SINGLE POLE SWITCH OR TIMER AS APPLICABLE
	HIGH WALL MOUNTED DUPLEX RECEPTACLE APROXIMATELY 12" BELOW CEILING
	FLUORESCENT FIXTURE
	SWITCHED BRANCH CIRCUIT
	UNSWITCHED BRANCH CIRCUIT
	120/208 VOLT CIRCUIT
$M	MOTION DETECTING SINGLE-POLE SWITCH ON TIMER
⊗	'EXIT' LIGHT FIXTURE, TYPE 'EX'
	BATTERY OPERATED EMERG. LT. (2-HEAD, WALL MTD.)
$3(4)	MOTION DETECTING 3-WAY SWITCH (4-WAY SWITCH) WITH TIMER
	FUSED DISCONNECT SWITCH
	CEILING MOUNTED FUSED DISCONNECT SWITCH
	TELEPHONE
J	JUNCTION BOX
T	SINGLE POLE SWITCH OR TIMER AS APPLICABLE
N/L	UNSWITCHED FIXTURE
$O	OCCUPANCY SENSING SINGLE-POLE SWITCH NOT ON TIMER
	280V RECEPTACLE
	EMERGENCY LIGHT REMOTE WEATHERHEAD(S)

NOTE:

1. VERIFY LOCATION OF LIGHTS & RECEPTACLES WITH OWNER BEFORE CONSTRUCTION.
2. COORDINATE LOCATION OF 8' STRIP LIGHTS IN CORRIDOR WITH DUCT WORK WHERE APPLICABLE.
3. ALL FLUORESCENT LIGHTS IN CORRIDORS TO BE MOUNTED ON THE WALLS WHERE APPLICABLE.
4. ALL HALLWAYS SWITCHES TO BE ON MOTION SENSORS OR SWITCHED AS INDICATED AND ON TIMERS OF 30 MINUTES. ALL UNIT SWITCHES & UNIT RECEPTACLES TO BE ON TIMER OF 30 MINUTES WITH NO HOLD MECHANISMS.
5. RECEPTACLES IN EACH UNIT ARE TO BE SWITCHED. TIE TO SWITCH/TIMER IN EACH UNIT.
6. VERIFY NIGHT LIGHTS AND PERMANENT BURN FIXTURES WITH OWNER BEFORE WIRING.

LIGHTING DATA FOR N.C. ENERGY CODE BUILDING "D"

AREA USE	AREA FT^2	WATTS PER FT^2 ALLOWED	TOTAL WATTS ALLOWED	TOTAL WATTS USED	TOTAL WATTS LEFT OVER
STORAGE	17,600	1.2	21,120	6,326	14,794
TOTAL	17,600		21,120	6,326	14,794

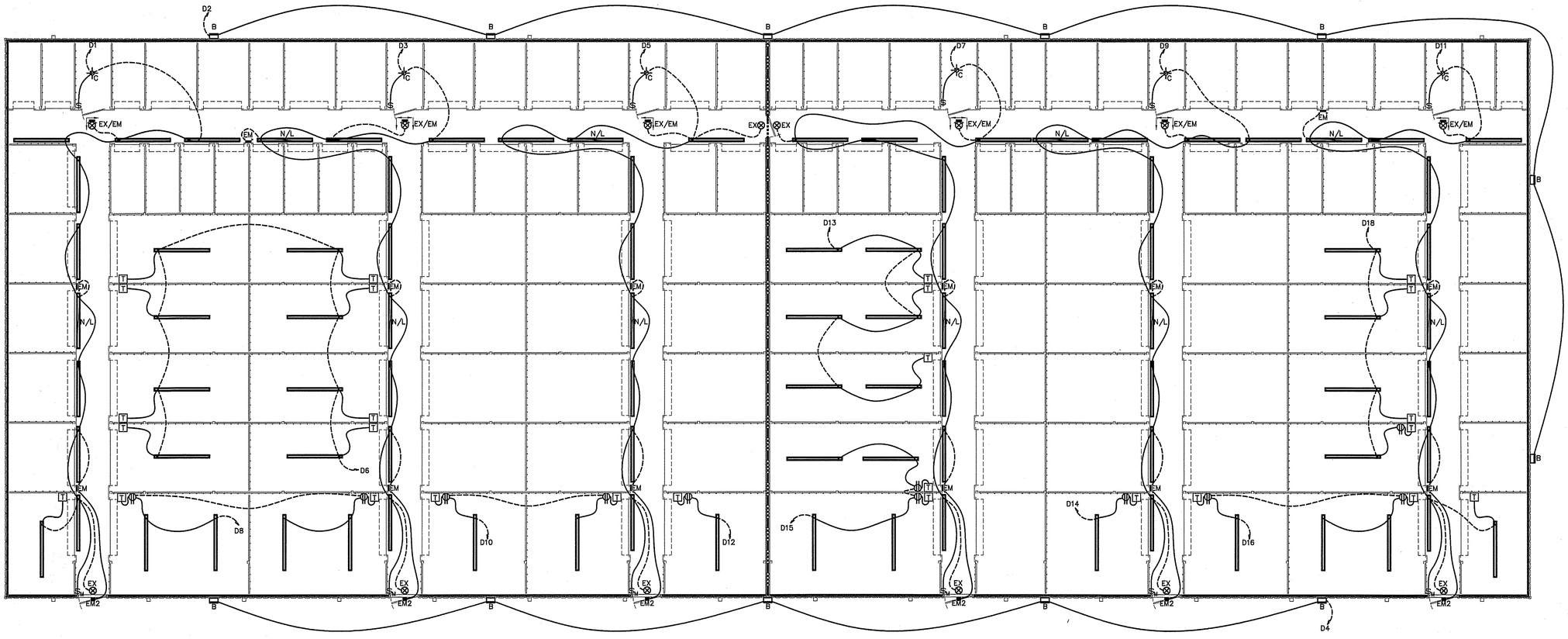
LIGHT FIXTURE SCHEDULE

MARK	DESCRIPTION	MANUFACTURER	CATALOG NUMBER	LAMPS	BALLASTS	WATTAGE	REMARKS
A	8' LED STRIP W/WIRE GUARD	DAYBRITE	CLX L96 10000LM SEF WD MVOLT 40K 80 CRI WH	LED		71.0	WITH (2) 48" WIRE GUARDS WGCLX48
B	OUTDOOR LED WALL LIGHT	LSI	TWR1 LED 3 50K MVOLT	LED	LED	58.4	VERIFY MOUNTING HEIGHT, OPTIONS BEFORE INSTALLATION
C	KEYLESS FIXTURE WITH WIREGUARD AND LED BULB	–	–	LED A19	–	13	WITH WIRE GUARD
D	2X4 2 LAMP FLUORESCENT LAY-IN WITH ACRYLIC LENSE	DAYBRITE	2SPG232FA01-UNV-1/2-EB10I	2-32W	1	56	
F	2X4 FLUORESCENT LAY-IN WITH 18 CELL PARABOLIC LENSE	LITHONIA	2PM3N G 3 32 18LD MVOLT 1/3 GEB10IS	3-32W	1	87	
G	2X4 3 LAMP FLUORESCENT LAY-IN WITH ACRYLIC LENSE	DAYBRITE	2SPG332FA01-UNV-1/2-EB10I	3-32W	1	87	
EM	EMERGENCY LIGHT WITH BATTERY BACKUP	MCPHILBEN	CAXR6L24W6				
EX	LED TYPE EXIT LIGHT WITH BATTERY BACKUP	MCPHILBEN	CXXL3RW				
EM2	EMERGENCY LIGHT REMOTE WEATHERHEAD(S)	MCPHILBEN	CR2CSWA				

1. ALL FIXTURE SELECTIONS TO BE VERIFIED BY OWNER BEFORE PURCHASE. *
2. SIGN LETTERING TO BE ON TIMECLOCK OR PHOTOCELL
3. LED WALLPACKS ON PHOTOCELL.

GENERAL NOTE:

1. VERIFY LOCATION OF WALL PACKS WITH OWNER & SITE LIGHTING PLAN BEFORE INSTALLATION.



ELECTRICAL LIGHTING PLAN BUILDING "D"

SCALE: 1/8" = 1'-0"

LEGEND

3 HOUR RATED WALL U419

NORTH CAROLINA PROFESSIONAL SEAL 18909 ENGINEER ANDY L. CRUSE 05-30-24

PLANS FOR:
AMPLE STORAGE
ERWIN, NORTH CAROLINA 28339

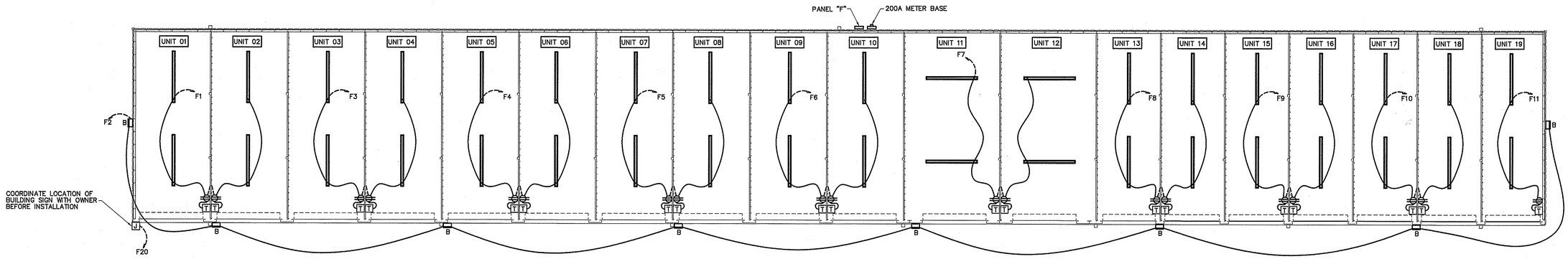
REVISIONS
NO.

Cruse And Associates, P.A.
414 EAST EDGERTON STREET
RALEIGH, N.C. 27601
PH: (919) 832-4459
FAX: (919) 832-5162
LICENSE NO.: C-1721

DATE	05/30/24
DRAWN BY	BAM
JOB NO.	24-23

SHEET NO.
E-2 OF 10

GENERAL NOTE:
1. VERIFY LOCATION OF WALL PACKS WITH OWNER & SITE LIGHTING PLAN BEFORE INSTALLATION.



ELECTRICAL LIGHTING & POWER PLAN BUILDING "F"
SCALE: 1/8" = 1'-0"

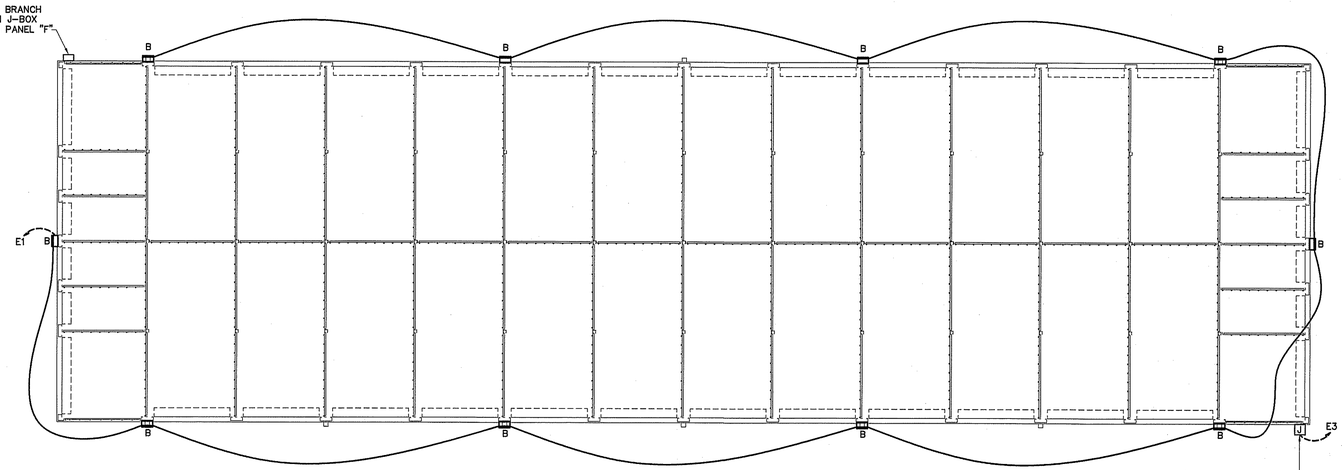
LIGHTING DATA FOR N.C. ENERGY CODE BUILDING "F"

AREA USE	AREA FT^2	WATTS PER FT^2 ALLOWED	TOTAL WATTS ALLOWED	TOTAL WATTS USED	TOTAL WATTS LEFT OVER
STORAGE	6,600	1.2	7,920	2,698	5,222
TOTAL	6,600		7,920	2,698	5,222

ELECTRICAL LEGEND

MARK	DESCRIPTION
	QUAD RECEPTACLE
	DUPLEX RECEPTACLE
T	SINGLE POLE SWITCH OR TIMER AS APPLICABLE
	HIGH WALL MOUNTED DUPLEX RECEPTACLE APROXIMATELY 12" BELOW CEILING
	FLUORESCENT FIXTURE
	SWITCHED BRANCH CIRCUIT
	UNSWITCHED BRANCH CIRCUIT
	120/208 VOLT CIRCUIT
S_M	MOTION DETECTING SINGLE-POLE SWITCH ON TIMER
⊗	'EXIT' LIGHT FIXTURE, TYPE 'EX'
	BATTERY OPERATED EMERG. LT. (2-HEAD, WALL MTD.)
$S_{3(4)}$	MOTION DETECTING 3-WAY SWITCH (4-WAY SWITCH) WITH TIMER
	FUSED DISCONNECT SWITCH
	CEILING MOUNTED FUSED DISCONNECT SWITCH
	TELEPHONE
J	JUNCTION BOX
T	SINGLE POLE SWITCH OR TIMER AS APPLICABLE
N/L	UNSWITCHED FIXTURE
S_O	OCCUPANCY SENSING SINGLE-POLE SWITCH NOT ON TIMER
	280V RECEPTACLE
	EMERGENCY LIGHT REMOTE WEATHERHEAD(S)

NOTE:
1. VERIFY LOCATION OF LIGHTS & RECEPTACLES WITH OWNER BEFORE CONSTRUCTION.
2. COORDINATE LOCATION OF 8' STRIP LIGHTS IN CORRIDOR WITH DUCT WORK WHERE APPLICABLE.
3. ALL FLUORESCENT LIGHTS IN CORRIDORS TO BE MOUNTED ON THE WALLS WHERE APPLICABLE.
4. ALL HALLWAYS SWITCHES TO BE ON MOTION SENSORS OR SWITCHED AS INDICATED AND ON TIMERS OF 30 MINUTES. ALL UNIT SWITCHES & UNIT RECEPTACLES TO BE ON TIMER OF 30 MINUTES WITH NO HOLD MECHANISMS.
5. RECEPTACLES IN EACH UNIT ARE TO BE SWITCHED. TIE TO SWITCH/TIMER IN EACH UNIT.
6. VERIFY NIGHT LIGHTS AND PERMANENT BURN FIXTURES WITH OWNER BEFORE WIRING.



ELECTRICAL LIGHTING & POWER PLAN BUILDING "E"
SCALE: 1/8" = 1'-0"

LIGHTING DATA FOR N.C. ENERGY CODE BUILDING "B"

AREA USE	AREA FT^2	WATTS PER FT^2 ALLOWED	TOTAL WATTS ALLOWED	TOTAL WATTS USED	TOTAL WATTS LEFT OVER
STORAGE	2,400	1.2	2,880	1,136	1,744
TOTAL	2,400		2,880	1,136	1,744

BUILDING "B"

ELECTRICAL LOAD CALCULATIONS

2,400 SQUARE FEET — VA.

NONCONTINUOUS LOADS:

8 RECEPTACLES @ 180 VA EA. 1440
1ST 10000
REMAINDER @ 50% 1440

TOTAL 1440

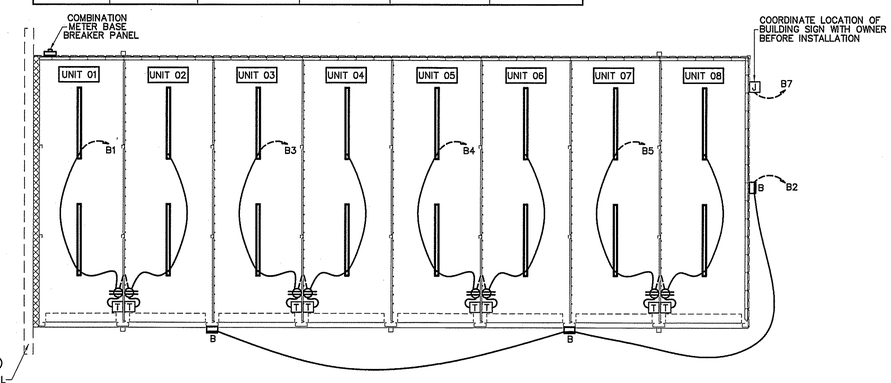
CONTINUOUS LOADS:

GENERAL LIGHTING LOAD VA/SQ. FT.
(STORAGE) 2,400 SQ. FT. 1.2 5400
5400 X 1.25 6750

EQUIPMENT 500

GRAND TOTAL 8,690

37 AMPS @ 120/240V, 1ø, 60HZ



ELECTRICAL LIGHTING & POWER PLAN BUILDING "B"
SCALE: 1/8" = 1'-0"

LIGHT FIXTURE SCHEDULE

MARK	DESCRIPTION	MANUFACTURER	CATALOG NUMBER	LAMPS	BALLASTS	WATTAGE	REMARKS
A	8' LED STRIP W/WIRE GUARD	DAYBRITE	CLX L96 10000LM SEF WD MVOLT 40K 80 CRI WH	LED		71.0	WITH (2) 48" WIRE GUARDS WGCLX48
B	OUTDOOR LED WALL LIGHT	LSI	TWR1 LED 3 50K MVOLT	LED	LED	58.4	VERIFY MOUNTING HEIGHT, OPTIONS BEFORE INSTALLATION
C	KEYLESS FIXTURE WITH WIREGUARD AND LED BULB	–	–	LED A19	–	13	WITH WIRE GUARD
D	2X4 2 LAMP FLUORESCENT LAY-IN WITH ACRYLIC LENSE	DAYBRITE	2SPG232FA01-UNV-1/2-EB10I	2-32W	1	56	
F	2X4 FLUORESCENT LAY-IN WITH 18 CELL PARABOLIC LENSE	LITHONIA	2PM3N G 3 32 18LD MVOLT 1/3 GEB10IS	3-32W	1	87	
G	2X4 3 LAMP FLUORESCENT LAY-IN WITH ACRYLIC LENSE	DAYBRITE	2SPG332FA01-UNV-1/2-EB10I	3-32W	1	87	
EM	EMERGENCY LIGHT WITH BATTERY BACKUP	MCPHILBEN	CAXR6L24W6				
EX	LED TYPE EXIT LIGHT WITH BATTERY BACKUP	MCPHILBEN	CXXL3RW				
EM2	EMERGENCY LIGHT REMOTE WEATHERHEAD(S)	MCPHILBEN	CR2CSWA				

1. ALL FIXTURE SELECTIONS TO BE VERIFIED BY OWNER BEFORE PURCHASE. *
2. SIGN LETTERING TO BE ON TIMECLOCK OR PHOTOCELL
3. LED WALLPACKS ON PHOTOCELL.

NORTH CAROLINA PROFESSIONAL SEAL 19909 ENGINEER RANDY L. CRUSE
05-30-24

PLANS FOR: AMPLE STORAGE
ERWIN, NORTH CAROLINA 28339

REVISIONS

NO.	

Cruse And Associates, P.A.
414 EAST EDGERTON STREET
RALEIGH, NC 27601
PH: (919) 832-4434
FAX: (919) 832-5162
LICENSE NO.: C-1721

DATE 05/30/24
DRAWN BY BAM
JOB NO. 24-23

SHEET NO.
E-3 OF 10

ELECTRICAL LEGEND

MARK	DESCRIPTION
⊕	QUAD RECEPTACLE
⏀	DUPLEX RECEPTACLE
[T]	SINGLE POLE SWITCH OR TIMER AS APPLICABLE
⏀	HIGH WALL MOUNTED DUPLEX RECEPTACLE APROXIMATELY 12" BELOW CEILING
▭	FLUORESCENT FIXTURE
	SWITCHED BRANCH CIRCUIT
	UNSWITCHED BRANCH CIRCUIT
	120/208 VOLT CIRCUIT
$\$_M$	MOTION DETECTING SINGLE-POLE SWITCH ON TIMER
⊗	'EXIT' LIGHT FIXTURE, TYPE 'EX'
	BATTERY OPERATED EMERG. LT. (2-HEAD, WALL MTD.)
$\$_{3(4)}$	MOTION DETECTING 3-WAY SWITCH (4-WAY SWITCH) WITH TIMER
	FUSED DISCONNECT SWITCH
	CEILING MOUNTED FUSED DISCONNECT SWITCH
◁	TELEPHONE
[J]	JUNCTION BOX
[T]	SINGLE POLE SWITCH OR TIMER AS APPLICABLE
N/L	UNSWITCHED FIXTURE
$\$_O$	OCCUPANCY SENSING SINGLE-POLE SWITCH NOT ON TIMER
	280V RECEPTACLE
	EMERGENCY LIGHT REMOTE WEATHERHEAD(S)

NOTE:

1. VERIFY LOCATION OF LIGHTS & RECEPTACLES WITH OWNER BEFORE CONSTRUCTION.
2. COORDINATE LOCATION OF 8' STRIP LIGHTS IN CORRIDOR WITH DUCT WORK WHERE APPLICABLE.
3. ALL FLUORESCENT LIGHTS IN CORRIDORS TO BE MOUNTED ON THE WALLS WHERE APPLICABLE.
4. ALL HALLWAYS SWITCHES TO BE ON MOTION SENSORS OR SWITCHED AS INDICATED AND ON TIMERS OF 30 MINUTES. ALL UNIT SWITCHES & UNIT RECEPTACLES TO BE ON TIMER OF 30 MINUTES WITH NO HOLD MECHANISMS.
5. RECEPTACLES IN EACH UNIT ARE TO BE SWITCHED. TIE TO SWITCH/TIMER IN EACH UNIT.
6. VERIFY NIGHT LIGHTS AND PERMANENT BURN FIXTURES WITH OWNER BEFORE WIRING.

GENERAL NOTE:

1. VERIFY LOCATION OF WALL PACKS WITH OWNER & SITE LIGHTING PLAN BEFORE INSTALLATION.

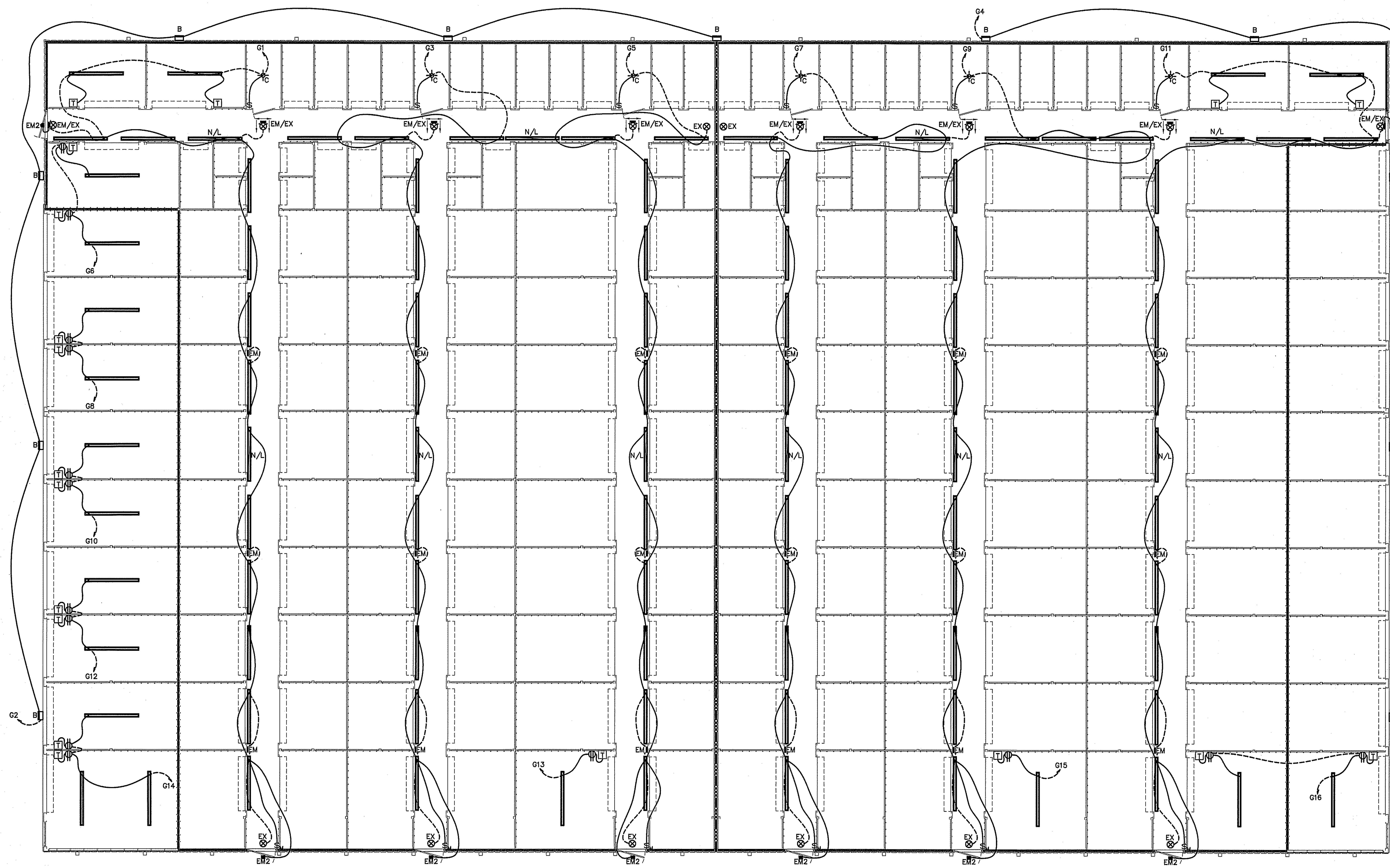
LIGHTING DATA FOR N.C. ENERGY CODE BUILDING 'G'

AREA USE	AREA FT^2	WATTS PER FT^2 ALLOWED	TOTAL WATTS ALLOWED	TOTAL WATTS USED	TOTAL WATTS LEFT OVER
STORAGE	24,000	1.2	28,800	6,603	22,197
TOTAL	24,000		28,800	6,603	22,197

LIGHT FIXTURE SCHEDULE

MARK	DESCRIPTION	MANUFACTURER	CATALOG NUMBER	LAMPS	BALLASTS	WATTAGE	REMARKS
A	8' LED STRIP W/WIRE GUARD	DAYBRITE	CLX L96 10000LM SEF WD MVOLT 40K 80 CRI WH	LED		71.0	WITH (2) 48" WIRE GUARDS WGCLX48
B	OUTDOOR LED WALL LIGHT	LSI	TWR1 LED 3 50K MVOLT	LED	LED	58.4	VERIFY MOUNTING HEIGHT, OPTIONS BEFORE INSTALLATION
C	KEYLESS FIXTURE WITH WIREGUARD AND LED BULB	–	–	LED A19	–	13	WITH WIRE GUARD
D	2X4 2 LAMP FLUORESCENT LAY-IN WITH ACRYLIC LENSE	DAYBRITE	2SPG232FA01-UNV-1/2-EB10I	2-32W	1	56	
F	2X4 FLUORESCENT LAY-IN WITH 18 CELL PARABOLIC LENSE	LITHONIA	2PM3N G 3 32 18LD MVOLT 1/3 GEB10IS	3-32W	1	87	
G	2X4 3 LAMP FLUORESCENT LAY-IN WITH ACRYLIC LENSE	DAYBRITE	2SPG332FA01-UNV-1/2-EB10I	3-32W	1	87	
EM	EMERGENCY LIGHT WITH BATTERY BACKUP	MCPHILBEN	CAXR6L24W6				
EX	LED TYPE EXIT LIGHT WITH BATTERY BACKUP	MCPHILBEN	CXXL3RW				
EM2	EMERGENCY LIGHT REMOTE WEATHERHEAD(S)	MCPHILBEN	CR2CSWA				

1. ALL FIXTURE SELECTIONS TO BE VERIFIED BY OWNER BEFORE PURCHASE. *
2. SIGN LETTERING TO BE ON TIMECLOCK OR PHOTOCELL
3. LED WALLPACKS ON PHOTOCELL.



ELECTRICAL LIGHTING PLAN BUILDING "G"

SCALE: 1/8" = 1'-0"

LEGEND

3 HOUR RATED WALL U419

NORTH CAROLINA PROFESSIONAL SEAL 18909 ENGINEER RANDY L. CRUSE 05-30-24

PLANS FOR: AMPLE STORAGE

ERWIN, NORTH CAROLINA 28339

REVISIONS	
NO.	

Cruse And Associates, P.A.

414 EAST EDGERTON STREET
Dunn, North Carolina 28334
PH: (910) 892-4429
FAX: (910) 892-5162

LICENSE NO.: C-1721

DATE 05/30/24
DRAWN BY BAM
JOB NO. 24-23

SHEET NO.
E-4 OF 10

ELECTRICAL LEGEND

MARK	DESCRIPTION
	QUAD RECEPTACLE
	DUPLEX RECEPTACLE
T	SINGLE POLE SWITCH OR TIMER AS APPLICABLE
	HIGH WALL MOUNTED DUPLEX RECEPTACLE APROXIMATELY 12" BELOW CEILING
	FLUORESCENT FIXTURE
	SWITCHED BRANCH CIRCUIT
	UNSWITCHED BRANCH CIRCUIT
	120/208 VOLT CIRCUIT
$_M	MOTION DETECTING SINGLE-POLE SWITCH ON TIMER
⊗	'EXIT' LIGHT FIXTURE, TYPE 'EX'
	BATTERY OPERATED EMERG. LT. (2-HEAD, WALL MTD.)
$_3 $_4	MOTION DETECTING 3-WAY SWITCH (4-WAY SWITCH) WITH TIMER
	FUSED DISCONNECT SWITCH
	CEILING MOUNTED FUSED DISCONNECT SWITCH
	TELEPHONE
J	JUNCTION BOX
T	SINGLE POLE SWITCH OR TIMER AS APPLICABLE
N/L	UNSWITCHED FIXTURE
$_O	OCCUPANCY SENSING SINGLE-POLE SWITCH NOT ON TIMER
	280V RECEPTACLE
	EMERGENCY LIGHT REMOTE WEATHERHEAD(S)

NOTE:

1. VERIFY LOCATION OF LIGHTS & RECEPTACLES WITH OWNER BEFORE CONSTRUCTION.
2. COORDINATE LOCATION OF 8' STRIP LIGHTS IN CORRIDOR WITH DUCT WORK WHERE APPLICABLE.
3. ALL FLUORESCENT LIGHTS IN CORRIDORS TO BE MOUNTED ON THE WALLS WHERE APPLICABLE.
4. ALL HALLWAYS SWITCHES TO BE ON MOTION SENSORS OR SWITCHED AS INDICATED AND ON TIMERS OF 30 MINUTES. ALL UNIT SWITCHES & UNIT RECEPTACLES TO BE ON TIMER OF 30 MINUTES WITH NO HOLD MECHANISMS.
5. RECEPTACLES IN EACH UNIT ARE TO BE SWITCHED. TIE TO SWITCH/TIMER IN EACH UNIT.
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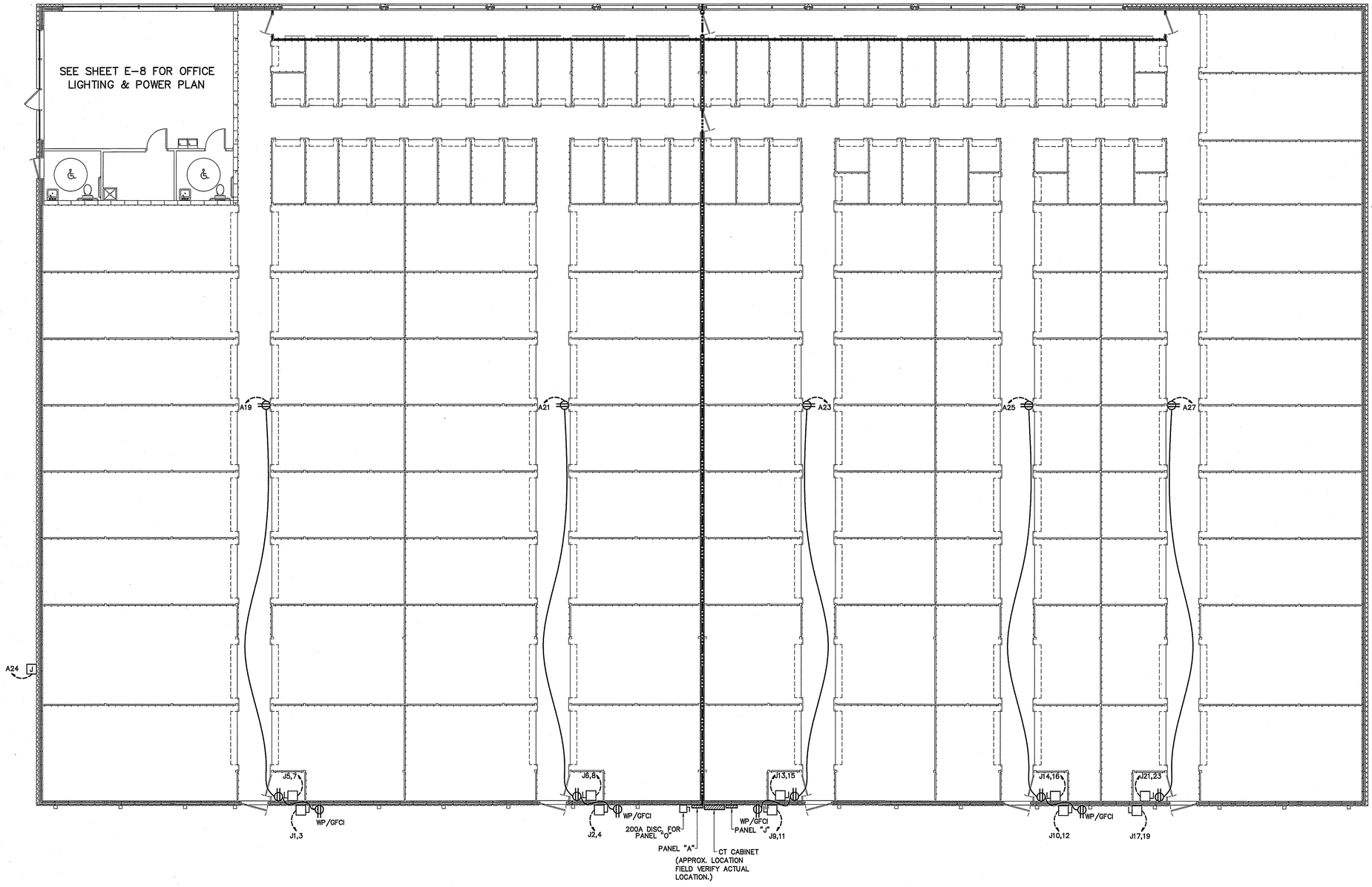

ELECTRICAL POWER PLAN BUILDING "A"

SCALE: 1/8" = 1'-0"

LEGEND

3 HOUR RATED WALL U419

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 8909 ENGINEER ANDY L. CRUSE 05-30-24

PLANS FOR:
AMPLE STORAGE
ERWIN, NORTH CAROLINA 28339

REVISIONS	
NO.	

Cruse And Associates, P.A.
414 EAST EDGERTON STREET
Dunn, North Carolina 28334
PHONE: (910) 892-5163
FAX: (910) 892-5182
LICENSE NO.: C-1721

DATE	05/30/24
DRAWN BY	BAM
JOB NO.	24-23

SHEET NO.
E-5 OF 10

ELECTRICAL LEGEND

MARK	DESCRIPTION
	QUAD RECEPTACLE
	DUPLEX RECEPTACLE
T	SINGLE POLE SWITCH OR TIMER AS APPLICABLE
	HIGH WALL MOUNTED DUPLEX RECEPTACLE APROXIMATELY 12" BELOW CEILING
	FLUORESCENT FIXTURE
	SWITCHED BRANCH CIRCUIT
	UNSWITCHED BRANCH CIRCUIT
	120/208 VOLT CIRCUIT
$M	MOTION DETECTING SINGLE-POLE SWITCH ON TIMER
⊗	'EXIT' LIGHT FIXTURE, TYPE 'EX'
	BATTERY OPERATED EMERG. LT. (2-HEAD, WALL MTD.)
$3(4)	MOTION DETECTING 3-WAY SWITCH (4-WAY SWITCH) WITH TIMER
	FUSED DISCONNECT SWITCH
	CEILING MOUNTED FUSED DISCONNECT SWITCH
◁	TELEPHONE
J	JUNCTION BOX
T	SINGLE POLE SWITCH OR TIMER AS APPLICABLE
N/L	UNSWITCHED FIXTURE
$O	OCCUPANCY SENSING SINGLE-POLE SWITCH NOT ON TIMER
	280V RECEPTACLE
	EMERGENCY LIGHT REMOTE WEATHERHEAD(S)

NOTE:

1. VERIFY LOCATION OF LIGHTS & RECEPTACLES WITH OWNER BEFORE CONSTRUCTION.
2. COORDINATE LOCATION OF 8' STRIP LIGHTS IN CORRIDOR WITH DUCT WORK WHERE APPLICABLE.
3. ALL FLUORESCENT LIGHTS IN CORRIDORS TO BE MOUNTED ON THE WALLS WHERE APPLICABLE.
4. ALL HALLWAYS SWITCHES TO BE ON MOTION SENSORS OR SWITCHED AS INDICATED AND ON TIMERS OF 30 MINUTES. ALL UNIT SWITCHES & UNIT RECEPTACLES TO BE ON TIMER OF 30 MINUTES WITH NO HOLD MECHANISMS.
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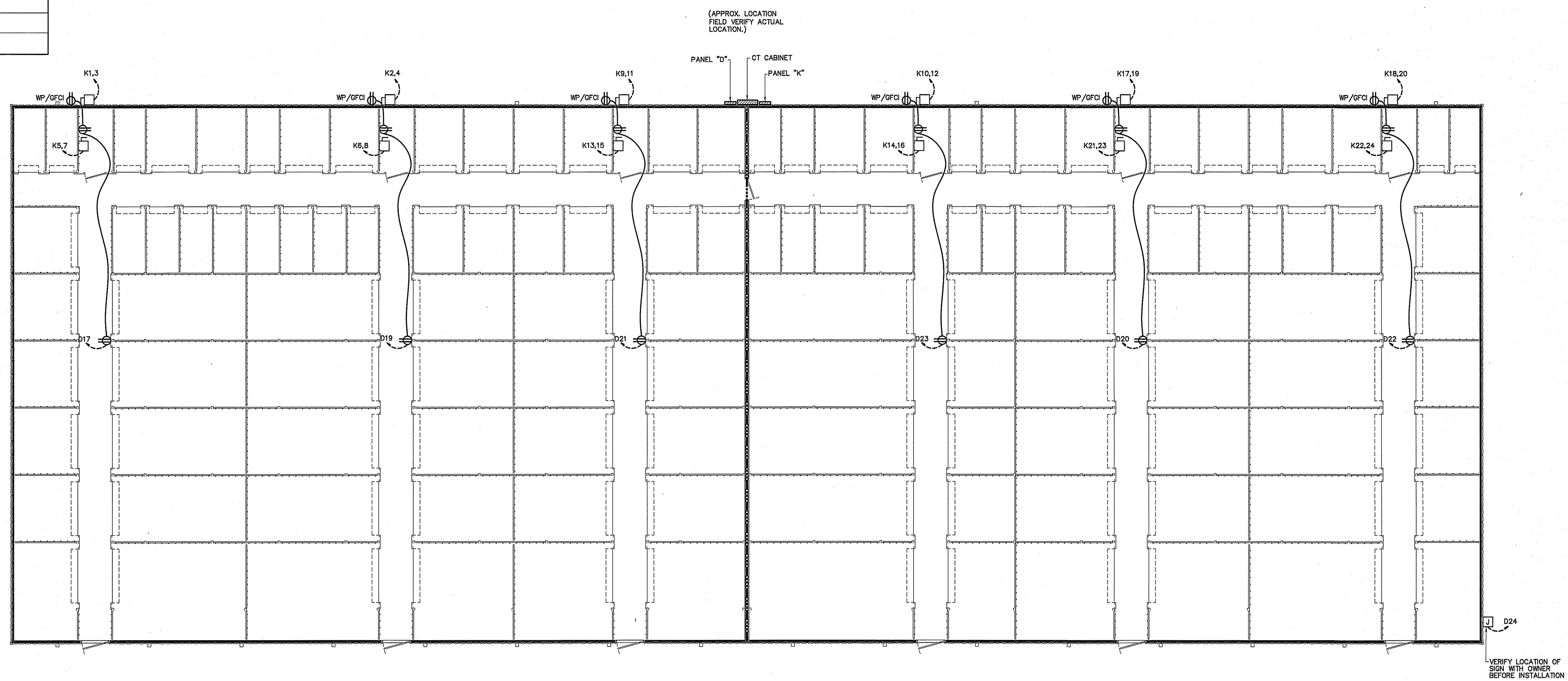

ELECTRICAL POWER PLAN BUILDING "D"

SCALE: 1/8" = 1'-0"

LEGEND

3 HOUR RATED WALL U419

NORTH CAROLINA PROFESSIONAL SEAL 18909 ENGINEER RANDY L. CRUSE

05-30-24

PLANS FOR: AMPLE STORAGE

ERWIN, NORTH CAROLINA 28339

REVISIONS	
NO.	

Cruse And Associates, P.A.

414 EAST EDGERTON STREET
Dunn, North Carolina 28334
PH: (910) 892-4429
FAX: (910) 892-5162

LICENSE NO.: C-1721

DATE 05/30/24

DRAWN BY BAM

JOB NO. 24-23

SHEET NO.

E-6 OF 10

ELECTRICAL LEGEND	
MARK	DESCRIPTION
	QUAD RECEPTACLE
	DUPLEX RECEPTACLE
T	SINGLE POLE SWITCH OR TIMER AS APPLICABLE
	HIGH WALL MOUNTED DUPLEX RECEPTACLE APROXIMATELY 12" BELOW CEILING
	FLUORESCENT FIXTURE
	SWITCHED BRANCH CIRCUIT
	UNSWITCHED BRANCH CIRCUIT
	120/208 VOLT CIRCUIT
$_M	MOTION DETECTING SINGLE-POLE SWITCH ON TIMER
⊗	'EXIT' LIGHT FIXTURE, TYPE 'EX'
	BATTERY OPERATED EMERG. LT. (2-HEAD, WALL MTD.)
$_3(4)	MOTION DETECTING 3-WAY SWITCH (4-WAY SWITCH) WITH TIMER
	FUSED DISCONNECT SWITCH
	CEILING MOUNTED FUSED DISCONNECT SWITCH
◁	TELEPHONE
J	JUNCTION BOX
T	SINGLE POLE SWITCH OR TIMER AS APPLICABLE
N/L	UNSWITCHED FIXTURE
$_O	OCCUPANCY SENSING SINGLE-POLE SWITCH NOT ON TIMER
	280V RECEPTACLE
	EMERGENCY LIGHT REMOTE WEATHERHEAD(S)

NOTE:

1. VERIFY LOCATION OF LIGHTS & RECEPTACLES WITH OWNER BEFORE CONSTRUCTION.
2. COORDINATE LOCATION OF 8' STRIP LIGHTS IN CORRIDOR WITH DUCT WORK WHERE APPLICABLE.
3. ALL FLUORESCENT LIGHTS IN CORRIDORS TO BE MOUNTED ON THE WALLS WHERE APPLICABLE.
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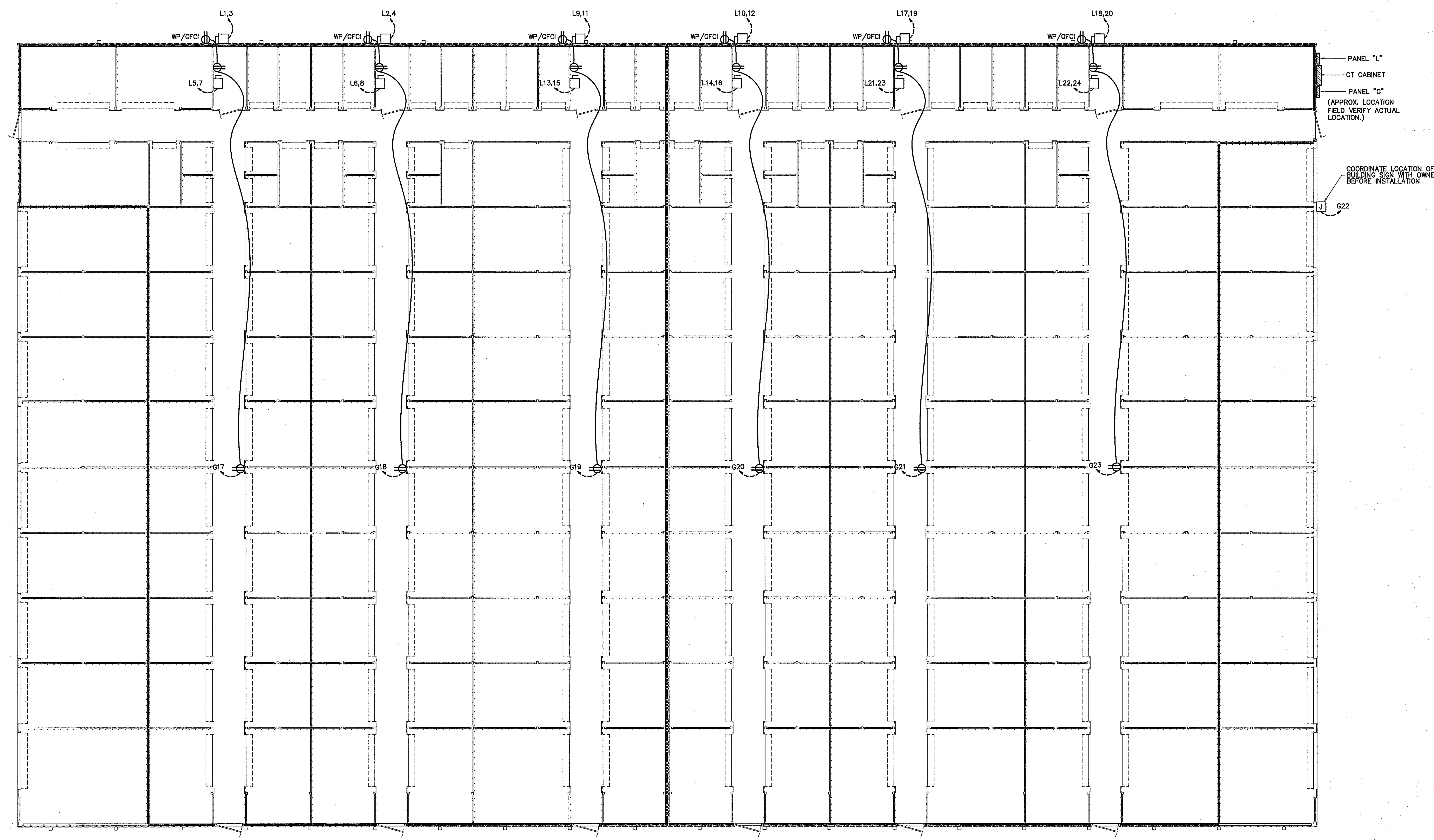
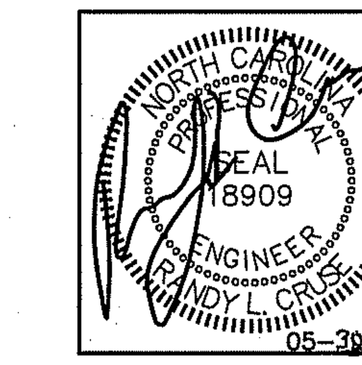


ELECTRICAL POWER PLAN BUILDING "G"

SCALE: 1/8" = 1'-0"

LEGEND

3 HOUR RATED WALL U419



PLANS FOR: AMPLE STORAGE

ERWIN, NORTH CAROLINA 28339

REVISIONS	
NO.	

Cruse And Associates, P.A.

414 EAST EDGERTON STREET
Dunn, North Carolina 28334
PH: (910) 892-4429
FAX: (910) 892-5162

LICENSE NO.: C-1721

DATE 05/30/24
DRAWN BY BAM
JOB NO. 24-23

SHEET NO.
E-7 OF 10

LIGHT FIXTURE SCHEDULE							
MARK	DESCRIPTION	MANUFACTURER	CATALOG NUMBER	LAMPS	BALLASTS	WATTAGE	REMARKS
A	8' LED STRIP W/WIRE GUARD	DAYBRITE	CLX L96 10000LM SEF WD MVOLT 40K 80 CRI WH	LED		71.0	WITH (2) 48" WIRE GUARDS WGCLX48
B	OUTDOOR LED WALL LIGHT	LSI	TWR1 LED 3 50K MVOLT	LED	LED	58.4	VERIFY MOUNTING HEIGHT, OPTIONS BEFORE INSTALLATION
C	KEYLESS FIXTURE WITH WIREGUARD AND LED BULB	–	–	LED A19	–	13	WITH WIRE GUARD
D	2X4 2 LAMP FLUORESCENT LAY-IN WITH ACRYLIC LENSE	DAYBRITE	2SPG232FA01-UNV-1/2-EB10I	2-32W	1	56	
F	2X4 FLUORESCENT LAY-IN WITH 18 CELL PARABOLIC LENSE	LITHONIA	2PM3N G 3 32 18LD MVOLT 1/3 GEB10IS	3-32W	1	87	
G	2X4 3 LAMP FLUORESCENT LAY-IN WITH ACRYLIC LENSE	DAYBRITE	2SPG332FA01-UNV-1/2-EB10I	3-32W	1	87	
EM	EMERGENCY LIGHT WITH BATTERY BACKUP	MCPHILBEN	CAXR6L24W6				
EX	LED TYPE EXIT LIGHT WITH BATTERY BACKUP	MCPHILBEN	CXXL3RW				
EM2	EMERGENCY LIGHT REMOTE WEATHERHEAD(S)	MCPHILBEN	CR2CSWA				

1. ALL FIXTURE SELECTIONS TO BE VERIFIED BY OWNER BEFORE PURCHASE. *
2. SIGN LETTERING TO BE ON TIMECLOCK OR PHOTOCELL
3. LED WALLPACKS ON PHOTOCELL.

LIGHTING DATA FOR S.C. ENERGY CODE (OFFICE)					
AREA USE	AREA FT ^{2}	WATTS PER FT ^{2} ALLOWED	TOTAL WATTS ALLOWED	TOTAL WATTS USED	TOTAL WATTS LEFT OVER
OFFICE	900	1.0	900	721	179
TOTAL	8400		900	721	179

OFFICE

FEEDER SCHEDULE			
UNIT	FEEDERS	FUSED DISCONNECT	CONDUIT
AHU 18	2#8CU, 1#10CU GD	60	3/4"
HP 18	2#10CU, 1#12CU GD	60	3/4"
P.O.U. WATER HEATERS	2#10CU, 1#12CU GD	30	3/4"

OFFICE

PANEL: O SCHEDULE: ___ MANUFACTURER: SQ. D NO. OF SPACES 42
VOLTS: 120/240 AMPS: 200 TYPE: "NQOD" MOUNTING: FLUSH
ENCLOSURE: NEMA 1 Ø: 1 SHORT CIRCUIT RATING: 10,000
MAIN: ☒ ☐ TOP FEED: ☐ BOTTOM FEED: ☒ COPPER BUS: ☒ GROUND BAR KIT: ☐ NEUTRAL BAR KIT: ☐

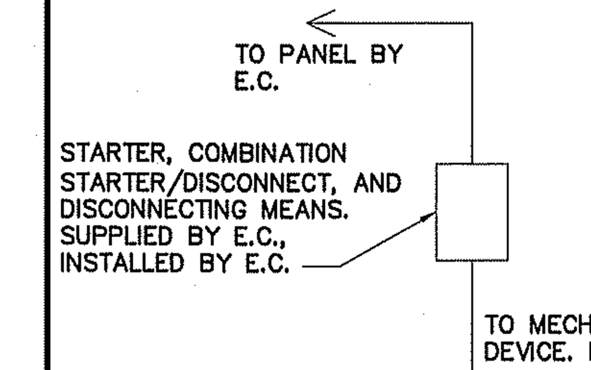
L1	L2	CIRCUIT	POLES	TRIP	ASSIGNMENT	PHASE L1	PHASE L2	ASSIGNMENT	TRIP	POLES	CIRCUIT	L1	L2
6.0		1	1	20	OFFICE RECEPTACLES	o		SPARE	20	1	2	X	
	18.8	3	2	25	POINT OF USE WATER HEATER		o	OFFICE CEILING RECEPTACLES	20	1	4		6.0
18.8		5				o		OFFICE RECEPTACLES	20	1	6	4.5	
	18.8	7	2	25	POINT OF USE WATER HEATER		o	HEAT PUMP UNIT # 18	35	2	8		16.0
18.8		9				o					10	16.0	
	3.0	11	1	20	HVAC CONV. RECEPTACLES		o	AIR HANDLER UNIT # 18	45	2	12		32.0
X		13			SPARE	o					14	32.0	
	3.0	15			PHONE/ELECT. ROOM REC.		o	PHONE/ELECT. ROOM REC.	20	1	16		4.5
9.0		17	1	20	INTERIOR OFFICE LIGHTS	o		SPARE	20	1	18	X	
	X	19	1	20	SPARE		o	SPARE	20	1	20		X
6.0		21			COUNTER QUAD RECEPTACLES	o		WALLPACKS	20	1	22	1.0	
	5.0	23			BUILDING SIGN		o	HOTBOX	20	1	24		2.0
X		25	1	20	SPARE	o		SPARE	20	1	26	X	
	X	27	1	20	SPARE		o	DRINKING FOUNTAIN	20	1	28		5.6
X		29	1	20	SPARE	o		SPARE	20	1	30	X	
	X	31	1	20	SPARE		o	SPARE	20	1	32		X
X		33	1	20	SPARE	o		SPARE	20	1	34	X	
	X	35	1	20	SPARE		o	SPARE	20	1	36		X
X		37	1	20	SPARE	o		SPARE	20	1	38	X	
	X	39	1	20	SPARE		o	SPARE	20	1	40		X
X		41	1	20	SPARE	o		SPARE	20	1	42	X	

L1 = 112.1 A
L2 = 114.7 A

SEE CIVIL PLAN SHEET FOR EXACT LOCATION OF HOTBOX

NOTE:
VERIFY AIC RATING WITH UTILITY COMPANY BEFORE ORDERING PANELS.

CONNECTION SCHEDULE



ALL STARTERS, COMBINATION STARTER/DISCONNECTS, AND DISCONNECTING MEANS, SUPPLIED BY E.C. FOR MECHANICAL EQUIPMENT AS REQUIRED BY NEC AND MECHANICAL EQUIPMENT MANUFACTURER'S REQUIREMENTS.

ELECTRICAL SYSTEM AND EQUIPMENT METHOD OF COMPLIANCE:

ENERGY CODE: PRESCRIPTIVE ☒ PERFORMANCE ☐
ASHRAE 90.1: PRESCRIPTIVE ☐ PERFORMANCE ☐

REFER TO DRAWINGS FOR RISER DIAGRAM AND PANEL SCHEDULES

LIGHTING SCHEDULE

LAMP TYPE REQUIRED IN FIXTURE: SEE SCHEDULE
NUMBER OF LAMPS IN FIXTURE:
BALLASTS TYPE USED IN FIXTURE:
NUMBER OF BALLASTS IN FIXTURE:
TOTAL WATTAGE PER FIXTURE:
TOTAL INTERIOR WATTAGE SPECIFIED VS. ALLOWED:
TOTAL EXTERIOR WATTAGE SPECIFIED VS. ALLOWED:

ADDITIONAL PRESCRIPTIVE COMPLIANCE

506.2.1 MORE EFFICIENT MECHANICAL EQUIPMENT ☒
506.2.2 REDUCED LIGHTING POWER DENSITY ☐
506.2.3 ENERGY RECOVERY VENTILATION SYSTEMS ☐
506.2.4 HIGHER EFFICENCY SERVICE WATER HEATING ☐
506.2.5 ON-SITE SUPPLY OF RENEWABLE ENERGY ☐
506.2.6 AUTOMATIC DAYLIGHTING CONTROL SYSTEMS ☐

OFFICE

ELECTRICAL LOAD CALCULATIONS

900 SQUARE FEET — VA

NONCONTINUOUS LOADS:

23 RECEPTACLES @ 180 VA EA.	4,140
1ST 10000	4,140
REMAINDER @ 50%	0
	4,140

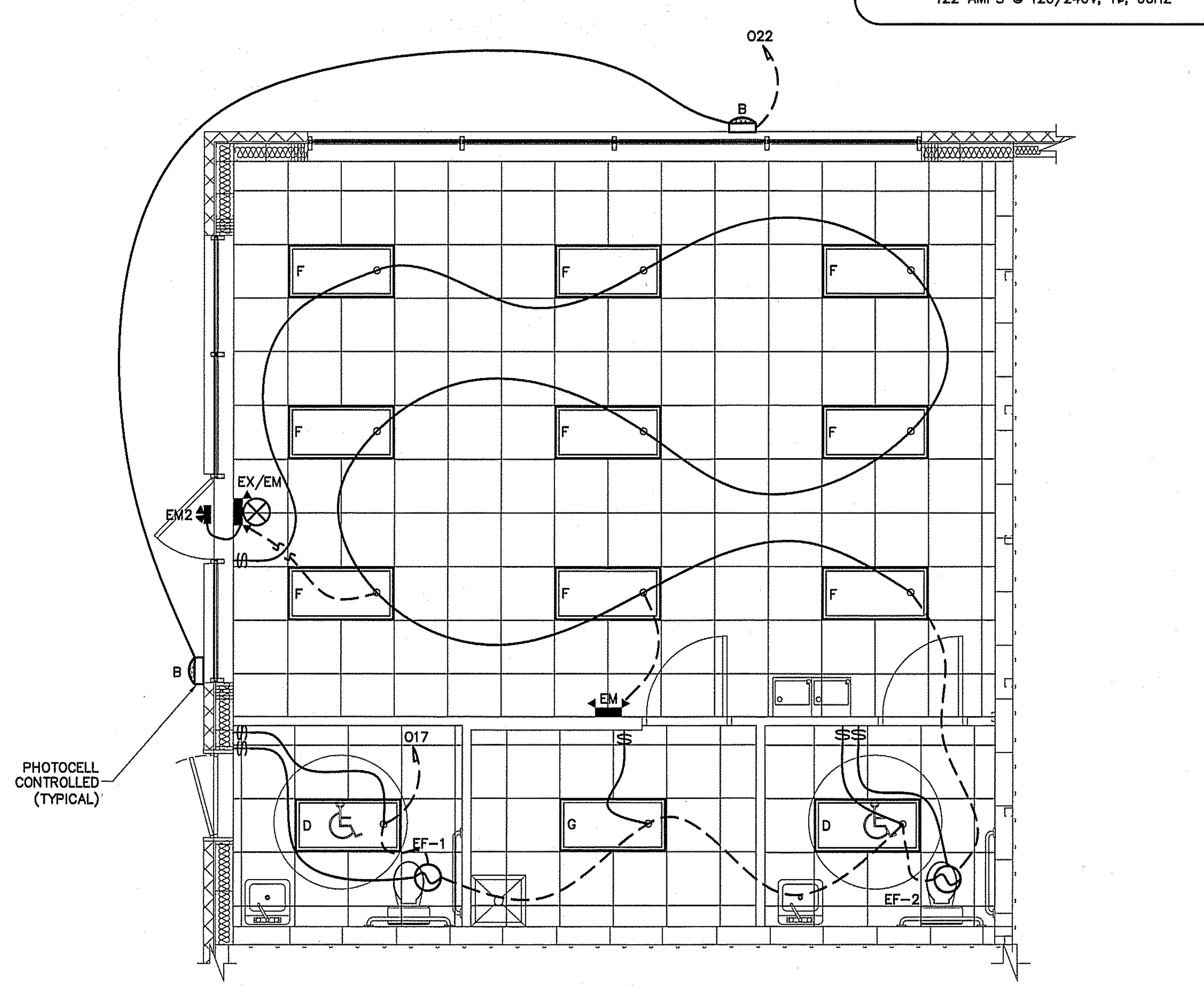
CONTINUOUS LOADS:

GENERAL LIGHTING LOAD	VA/SQ. FT. (OFFICE)		
900 SQ. FT.	1.3	1,170	
1,170 X 1.25			1,463
TOTAL			1,463
AIR HANDLING UNIT			7,680
HEAT PUMP			3,840
EQUIPMENT:			10,272
	25% OF LARGEST MOTOR		1,820
GRAND TOTAL			29,235

122 AMPS @ 120/240V, 1ø, 60HZ

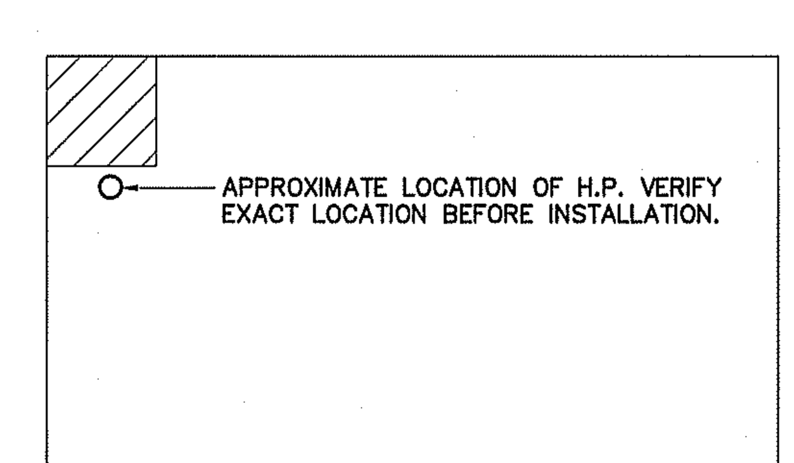
ELECTRICAL LEGEND	
MARK	DESCRIPTION
(symbol)	QUAD RECEPTACLE
(symbol)	DUPLEX RECEPTACLE
T	SINGLE POLE SWITCH OR TIMER AS APPLICABLE
(symbol)	HIGH WALL MOUNTED DUPLEX RECEPTACLE APROXIMATELY 12" BELOW CEILING
(symbol)	FLUORESCENT FIXTURE
(symbol)	SWITCHED BRANCH CIRCUIT
(symbol)	UNSWITCHED BRANCH CIRCUIT
(symbol)	120/208 VOLT CIRCUIT
$M	MOTION DETECTING SINGLE-POLE SWITCH ON TIMER
⊗	'EXIT' LIGHT FIXTURE, TYPE 'EX'
(symbol)	BATTERY OPERATED EMERG. LT. (2-HEAD, WALL MTD.)
$3(4)	MOTION DETECTING 3-WAY SWITCH (4-WAY SWITCH) WITH TIMER
(symbol)	FUSED DISCONNECT SWITCH
(symbol)	CEILING MOUNTED FUSED DISCONNECT SWITCH
◁	TELEPHONE/DATA
J	JUNCTION BOX
T	SINGLE POLE SWITCH OR TIMER AS APPLICABLE
N/L	UNSWITCHED FIXTURE
$O	OCCUPANCY SENSING SINGLE-POLE SWITCH NOT ON TIMER
(symbol)	280V RECEPTACLE
(symbol)	EMERGENCY LIGHT REMOTE WEATHERHEAD(S)

NOTE:
COORDINATE LOCATION OF SECURITY, CATV, INTERNET, PHONE, OR OTHER SYSTEMS OUTLETS WITH OWNER BEFORE BEGINNING CONSTRUCTION.



ELECTRICAL LIGHTING PLAN BUILDING "A" (OFFICE)

SCALE: 1/4" = 1'-0"

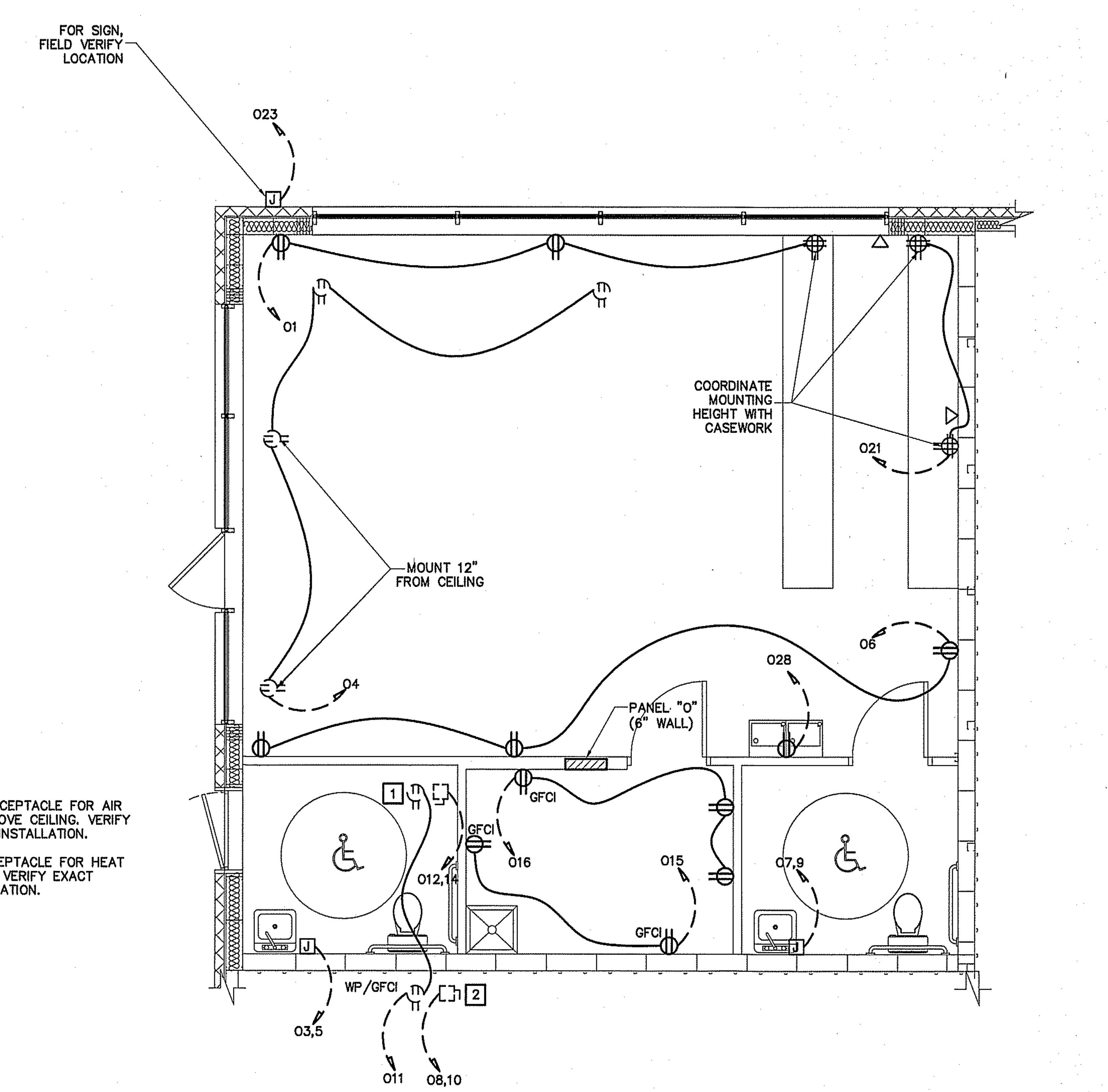


KEY PLAN

SCALE: NTS

KEYNOTES:

1. AIR HANDLER & CONV. RECEPTACLE FOR AIR HANDLER LOCATED ON ABOVE CEILING. VERIFY EXACT LOCATION BEFORE INSTALLATION.
2. HEAT PUMP & CONV. RECEPTACLE FOR HEAT PUMP LOCATED ON ROOF. VERIFY EXACT LOCATION BEFORE INSTALLATION.



ELECTRICAL POWER PLAN BUILDING "A" (OFFICE)

SCALE: 1/4" = 1'-0"

NORTH CAROLINA PROFESSIONAL SEAL 18909 ENGINEER RANDY L. CRUSE 05-30-24

PLANS FOR: AMPLE STORAGE

ERWIN, NORTH CAROLINA 28339

REVISIONS	
NO.	

Cruse And Associates, P.A.
414 EAST EDGERTON STREET
Dunn, North Carolina 28334
PH: (910) 892-4429
FAX: (910) 892-5162
LICENSE NO.: C-1721

DATE 05/30/24
DRAWN BY BAM
JOB NO. 24-23

SHEET NO.
E-8 OF 10

BUILDING 'A'

PANEL: A SCHEDULE:___ MANUFACTURER: SQ. D NO. OF SPACES 42
VOLTS: 120/240 AMPS: 200 TYPE: 'NQOD' MOUNTING: SURFACE
ENCLOSURE: NEMA 3R Φ: 1 SHORT CIRCUIT RATING: 22K
MAIN: ☒ MLO: ☐ TOP FEED: ☒ BOTTOM FEED: ☐ COPPER BUS: ☒ GROUND BAR KIT: ☒ NEUTRAL BAR KIT: ☒

L1	L2	CIRCUIT	POLES	TRIP	ASSIGNMENT	PHASE L1	PHASE L2	ASSIGNMENT	TRIP	POLES	CIRCUIT	L1	L2
8.4		1	1	20	CORRIDOR #1 LIGHTS	o		WALLPACKS	20	1	2	3.9	
	8.4	3	1	20	CORRIDOR #2 LIGHTS		o	LEFT SIDE 15X30 LTS./RECS.	20	1	4		5.4
7.8		5	1	20	CORRIDOR #3 LIGHTS	o		LEFT SIDE 10X30 UNIT LIGHTS	20	1	6	7.1	
	8.4	7	1	20	CORRIDOR #4 LIGHTS		o	WALLPACKS	20	1	8		3.9
7.2		9	1	20	CORRIDOR #5 LIGHTS	o		LEFT SIDE 15X20 LIGHTS/RECS.	20	1	10	5.4	
	7.7	11	1	20	REAR CORRIDOR LIGHTS		o	LEFT SIDE 15X20 LIGHTS/RECS.	20	1	12		5.4
3.6		13	1	20	CENTER 10X20 UNIT LIGHTS	o		LEFT SIDE 10X20 UNIT LIGHTS	20	1	14	3.6	
	10.7	15	1	20	RT. SIDE 10/25 UNIT LIGHTS		o	LEFT SIDE 10X20 UNIT LIGHTS	20	1	16		3.6
5.4		17	1	20	RT. SIDE 15X25 UNIT LTS./RECS	o		CENTER 15X20 UNIT RECS/LTS.	20	1	18	5.4	
	4.5	19	1	20	HVAC/CORR. UNIT #1 RECEPTS.		o	RT. CEN. 15/15 UNIT LTS/RECS	20	1	20		4.2
4.5		21	1	20	HVAC/CORR. UNIT #2 RECEPTS.	o		RT. SIDE 15/15 UNIT LTS/RECS	20	1	22	4.2	
	4.5	23	1	20	HVAC/CORR. UNIT #3 RECEPTS.		o	BUILDING SIGN	20	1	24		5.0
4.5		25	1	20	HVAC/CORR. UNIT #4 RECEPTS.	o		SPARE	20	1	26	X	
	3.0	27	1	20	HVAC/CORR. UNIT #5 RECEPTS.		o		20	1	28		X
X		29	1	20		o			20	1	30	X	
	X	31	1	20			o		20	1	32		X
X		33	1	20		o			20	1	34	X	
	X	35	1	20			o		20	1	36		X
X		37	1	20		o			20	1	38	X	
	X	39	1	20			o		20	1	40		X
X		41	1	20		o			20	1	42	X	

L1 = 71.0 A
L2 = 74.7 A

NOTE:
NEMA 3R PANELS ARE LOCATED ON THE EXTERIOR OF THE BUILDING.

NOTE:
VERIFY AIC RATING WITH UTILITY COMPANY BEFORE ORDERING PANELS.

BUILDING 'A'

PANEL: J SCHEDULE:___ MANUFACTURER: SQ. D NO. OF SPACES 42
VOLTS: 120/240 AMPS: 400 TYPE: 'NQOD' MOUNTING: SURFACE
ENCLOSURE: NEMA 3R Φ: 1 SHORT CIRCUIT RATING: 22K
MAIN: ☒ MLO: ☐ TOP FEED: ☒ BOTTOM FEED: ☐ COPPER BUS: ☒ GROUND BAR KIT: ☒ NEUTRAL BAR KIT: ☒

L1	L2	CIRCUIT	POLES	TRIP	ASSIGNMENT	PHASE L1	PHASE L2	ASSIGNMENT	TRIP	POLES	CIRCUIT	L1	L2
26.5		1	2	50	HEAT PUMP UNIT #1	o		HEAT PUMP UNIT #2	50	2	2	26.5	
	26.5	3					o				4		26.5
32.0		5	2	50	AIR HANDLING UNIT #1	o		AIR HANDLING UNIT #2	50	2	6	32.0	
	32.0	7					o				8		32.0
21.3		9	2	40	HEAT PUMP UNIT #3	o		HEAT PUMP UNIT #4	30	2	10	14.8	
	21.3	11					o				12		14.8
32.0		13	2	50	AIR HANDLING UNIT #3	o		AIR HANDLING UNIT #4	45	2	14	32.0	
	32.0	15					o				16		32.0
26.5		17	2	50	HEAT PUMP UNIT #5	o		SPARE	20	1	18	X	
	26.5	19					o	SPARE	20	1	20		X
32.0		21	2	50	AIR HANDLING UNIT #5	o		SPARE	20	1	22	X	
	32.0	23					o	SPARE	20	1	24		X
X		25	1	20	SPARE	o		SPARE	20	1	26	X	
	X	27	1	20	SPARE		o	SPARE	20	1	28		X
X		29	1	20	SPARE	o		SPARE	20	1	30	X	
	X	31	1	20	SPARE		o	SPARE	20	1	32		X
X		33	1	20	SPARE	o		SPARE	20	1	34	X	
	X	35	1	20	SPARE		o	SPARE	20	1	36		X
X		37	1	20	SPARE	o		SPARE	20	1	38	X	
	X	39	1	20	SPARE		o	SPARE	20	1	40		X
X		41	1	20	SPARE	o		SPARE	20	1	42	X	

L1 = 292.5 A
L2 = 292.5 A

BUILDING 'D'

PANEL: D SCHEDULE:___ MANUFACTURER: SQ. D NO. OF SPACES 42
VOLTS: 120/240 AMPS: 200 TYPE: 'NQOD' MOUNTING: SURFACE
ENCLOSURE: NEMA 3R Φ: 1 SHORT CIRCUIT RATING: 22K
MAIN: ☒ MLO: ☐ TOP FEED: ☒ BOTTOM FEED: ☐ COPPER BUS: ☒ GROUND BAR KIT: ☒ NEUTRAL BAR KIT: ☒

L1	L2	CIRCUIT	POLES	TRIP	ASSIGNMENT	PHASE L1	PHASE L2	ASSIGNMENT	TRIP	POLES	CIRCUIT	L1	L2
6.0		1	1	20	CORRIDOR #1 LIGHTS	o		WALLPACKS	20	1	2	3.4	
	5.4	3	1	20	CORRIDOR #2 LIGHTS		o	WALLPACKS	20	1	4		2.4
5.4		5	1	20	CORRIDOR #3 LIGHTS	o		LEFT SIDE 10X20 UNIT LIGHTS	20	1	6	4.7	
	5.4	7	1	20	CORRIDOR #4 LIGHTS		o	LEFT SIDE 15X20 LIGHTS/RECS.	20	1	8		5.4
6.0		9	1	20	CORRIDOR #5 LIGHTS	o		LEFT CEN. 15X15 LIGHTS/RECS.	20	1	10	4.2	
	6.0	11	1	20	CORRIDOR #6 LIGHTS		o	CENTER 15X15 LIGHT & REC.	20	1	12		2.1
3.6		13	1	20	CENTER 10X25 UNIT LIGHTS	o		RT CEN. 15X15 UNIT LTS./REC.	20	1	14	2.1	
	5.4	15	1	20	CEN.10/25&15/25 LTS/RECS		o	RT SIDE 15X15&15X20 LTS/RECS	20	1	16		4.8
4.5		17	1	20	HVAC UNIT #6/CORR. #1 RECS.	o		RIGHT SIDE 10X20 LIGHTS/REC.	20	1	18	3.9	
	4.5	19	1	20	HVAC UNIT #7/CORR. #2 RECS.		o	HVAC UNIT #10/CORR. #5 RECS	20	1	20		4.5
4.5		21	1	20	HVAC UNIT #8/CORR. #3 RECS.	o		HVAC UNIT #11/CORR. #6 RECS.	20	1	22	4.5	
	4.5	23	1	20	HVAC UNIT #9/CORR. #4 RECS.		o	BUILDING SIGN	20	1	24		5.0
X		25	1	20		o		SPARE	20	1	26	X	
	X	27	1	20			o		20	1	28		X
X		29	1	20		o			20	1	30	X	
	X	31	1	20			o		20	1	32		X
X		33	1	20		o			20	1	34	X	
	X	35	1	20			o		20	1	36		X
X		37	1	20		o			20	1	38	X	
	X	39	1	20			o		20	1	40		X
X		41	1	20		o			20	1	42	X	

L1 = 52.8 A
L2 = 55.4 A

BUILDING 'D'

PANEL: K SCHEDULE:___ MANUFACTURER: SQ. D NO. OF SPACES 42
VOLTS: 120/240 AMPS: 400 TYPE: 'NQOD' MOUNTING: SURFACE
ENCLOSURE: NEMA 3R Φ: 1 SHORT CIRCUIT RATING: 22K
MAIN: ☒ MLO: ☐ TOP FEED: ☒ BOTTOM FEED: ☐ COPPER BUS: ☒ GROUND BAR KIT: ☒ NEUTRAL BAR KIT: ☒

L1	L2	CIRCUIT	POLES	TRIP	ASSIGNMENT	PHASE L1	PHASE L2	ASSIGNMENT	TRIP	POLES	CIRCUIT	L1	L2
14.8		1	2	30	HEAT PUMP UNIT #6	o		HEAT PUMP UNIT #7	30	2	2	14.8	
	14.8	3					o				4		14.8
32.0		5	2	45	AIR HANDLING UNIT #6	o		AIR HANDLING UNIT #7	45	2	6	32.0	
	32.0	7					o				8		32.0
13.6		9	2	25	HEAT PUMP UNIT #8	o		HEAT PUMP UNIT #9	30	2	10	14.8	
	13.6	11					o				12		14.8
32.0		13	2	45	AIR HANDLING UNIT #8	o		AIR HANDLING UNIT #9	45	2	14	32.0	
	32.0	15					o				16		32.0
13.6		17	2	25	HEAT PUMP UNIT #10	o		HEAT PUMP UNIT #11	30	2	18	14.8	
	13.6	19					o				20		14.8
32.0		21	2	45	AIR HANDLING UNIT #10	o		AIR HANDLING UNIT #11	45	2	22	32.0	
	32.0	23					o				24		32.0
X		25	1	20	SPARE	o		SPARE	20	1	26	X	
	X	27	1	20	SPARE		o	SPARE	20	1	28		X
X		29	1	20	SPARE	o		SPARE	20	1	30	X	
	X	31	1	20	SPARE		o	SPARE	20	1	32		X
X		33	1	20	SPARE	o		SPARE	20	1	34	X	
	X	35	1	20	SPARE		o	SPARE	20	1	36		X
X		37	1	20	SPARE	o		SPARE	20	1	38	X	
	X	39	1	20	SPARE		o	SPARE	20	1	40		X
X		41	1	20	SPARE	o		SPARE	20	1	42	X	

L1 = 278.4 A
L2 = 278.4 A

BUILDING 'G'

PANEL: G SCHEDULE:___ MANUFACTURER: SQ. D NO. OF SPACES 42
VOLTS: 120/240 AMPS: 200 TYPE: 'NQOD' MOUNTING: SURFACE
ENCLOSURE: NEMA 3R Φ: 1 SHORT CIRCUIT RATING: 22K
MAIN: ☒ MLO: ☐ TOP FEED: ☒ BOTTOM FEED: ☐ COPPER BUS: ☒ GROUND BAR KIT: ☒ NEUTRAL BAR KIT: ☒

L1	L2	CIRCUIT	POLES	TRIP	ASSIGNMENT	PHASE L1	PHASE L2	ASSIGNMENT	TRIP	POLES	CIRCUIT	L1	L2
9.0		1	1	20	CORRIDOR #1 LIGHTS	o		WALLPACKS	20	1	2	2.9	
	7.8	3	1	20	CORRIDOR #2 LIGHTS		o	WALLPACKS	20	1	4		2.4
7.8		5	1	20	CORRIDOR #3 LIGHTS	o		LEFT SIDE 10X20 LIGHTS/RECS.	20	1	6	4.2	
	7.8	7	1	20	CORRIDOR #4 LIGHTS		o	LEFT SIDE 10X20 LIGHTS/RECS.	20	1	8		4.2
7.8		9	1	20	CORRIDOR #5 LIGHTS	o		LEFT SIDE 10X20 LIGHTS/RECS.	20	1	10	4.2	
	9.0	11	1	20	CORRIDOR #6 LIGHTS		o	LEFT SIDE 10X20 LIGHTS/RECS.	20	1	12		4.2
2.1		13	1	20	LEFT CENTER 15X15 LT./REC.	o		LEFT 10X20&15X20 LTS/RECS	20	1	14	4.8	
	2.1	15	1	20	RIGHT CENTER 15X15 LT./REC.		o	RIGHT SIDE 15X15 LTS./RECS.	20	1	16		4.2
4.5		17	1	20	HVAC UNIT #12/CORR. #1 RECS.	o		HVAC UNIT #13/CORR. #2 RECS.	20	1	18	4.5	
	4.5	19	1	20	HVAC UNIT #14/CORR. #3 RECS		o	HVAC UNIT #15/CORR. #4 RECS.	20	1	20		4.5
4.5		21	1	20	HVAC UNIT #16/CORR. #5 RECS	o		BUILDING SIGN	20	1	22	5.0	
	4.5	23	1	20	HVAC UNIT #17/CORR. #6 RECS		o	SPARE	20	1	24		X
X		25	1	20	SPARE	o		SPARE	20	1	26	X	
	X	27	1	20	SPARE		o	SPARE	20	1	28		X
X		29	1	20	SPARE	o		SPARE	20	1	30	X	
	X	31	1	20	SPARE		o	SPARE	20	1	32		X
X		33	1	20	SPARE	o		SPARE	20	1	34	X	
	X	35	1	20	SPARE		o	SPARE	20	1	36		X
X		37	1	20	SPARE	o		SPARE	20	1	38	X	
	X	39	1	20	SPARE		o	SPARE	20	1	40		X
X		41	1	20	SPARE	o		SPARE	20	1	42	X	

L1 = 61.3 A
L2 = 55.2 A

BUILDING 'G'

PANEL: L SCHEDULE:___ MANUFACTURER: SQ. D NO. OF SPACES 42
VOLTS: 120/240 AMPS: 400 TYPE: 'NQOD' MOUNTING: SURFACE
ENCLOSURE: NEMA 3R Φ: 1 SHORT CIRCUIT RATING: 22K
MAIN: ☒ MLO: ☐ TOP FEED: ☒ BOTTOM FEED: ☐ COPPER BUS: ☒ GROUND BAR KIT: ☒ NEUTRAL BAR KIT: ☒

L1	L2	CIRCUIT	POLES	TRIP	ASSIGNMENT	PHASE L1	PHASE L2	ASSIGNMENT	TRIP	POLES	CIRCUIT	L1	L2
17.7		1	2	40	HEAT PUMP UNIT #12	o		HEAT PUMP UNIT #13	30	2	2	14.8	
	17.7	3					o				4		14.8
32.0		5	2	50	AIR HANDLING UNIT #12	o		AIR HANDLING UNIT #13	45	2	6	32.0	
	32.0	7					o				8		32.0
17.7		9	2	40	HEAT PUMP UNIT #14	o		HEAT PUMP UNIT #15	30	2	10	14.8	
	17.7	11					o				12		14.8
32.0		13	2	50	AIR HANDLING UNIT #14	o		AIR HANDLING UNIT #15	45	2	14	32.0	
	32.0	15					o				16		32.0
17.7		17	2	40	HEAT PUMP UNIT #16	o		HEAT PUMP UNIT #17	40	2	18	17.7	
	17.7	19					o				20		17.7
32.0		21	2	50	AIR HANDLING UNIT #16	o		AIR HANDLING UNIT #17	50	2	22	32.0	
	32.0	23					o				24		32.0
X		25	1	20	SPARE	o		SPARE	20	1	26	X	
	X	27	1	20	SPARE		o	SPARE	20	1	28		X
X		29	1	20	SPARE	o		SPARE	20	1	30	X	
	X	31	1	20	SPARE		o	SPARE	20	1	32		X
X		33	1	20	SPARE	o		SPARE	20	1	34	X	
	X	35	1	20	SPARE		o	SPARE	20	1	36		X
X		37	1	20	SPARE	o		SPARE	20	1	38	X	
	X	39	1	20	SPARE		o	SPARE	20	1	40		X
X		41	1	20	SPARE	o		SPARE	20	1	42	X	

L1 = 292.4 A
L2 = 292.4 A

BUILDING "A"

ELECTRICAL LOAD CALCULATIONS

23,800 SQUARE FEET		VA
NONCONTINUOUS LOADS:		
61 RECEPTACLES @ 180 VA EA.	10980	
1ST 10000		10000
REMAINDER @ 50%		490
TOTAL		10490
CONTINUOUS LOADS:		
GENERAL LIGHTING LOAD VA/SQ. FT.		
(STORAGE) 23,800 SQ. FT. 1.2	28560	
28560 X 1.25		35700
AIR HANDLER UNIT		38400
HEAT PUMPS		27744
EQUIPMENT		300
25% OF LARGEST MOTOR		1134
GRAND TOTAL		113,768

474 AMPS @ 120/240V, 1ø, 60HZ

BUILDING "D"

ELECTRICAL LOAD CALCULATIONS

17,600 SQUARE FEET		VA
NONCONTINUOUS LOADS:		
30 RECEPTACLES @ 180 VA EA.	5400	
1ST 10000		5400
REMAINDER @ 50%		
TOTAL		5400
CONTINUOUS LOADS:		
GENERAL LIGHTING LOAD VA/SQ. FT.		
(STORAGE) 17,600 SQ. FT. 1.2	21120	
21120 X 1.25		26400
AIR HANDLER UNIT		46080
HEAT PUMPS		20736
EQUIPMENT		300
25% OF LARGEST MOTOR		1134
GRAND TOTAL		100,050

417 AMPS @ 120/240V, 1ø, 60HZ

BUILDING 'B' (METERBASE COMBINATION)

PANEL: B SCHEDULE:___ MANUFACTURER: SQ. D NO. OF SPACES 30
VOLTS: 120/240 AMPS: 100 TYPE: 'NQOD' MOUNTING: SURFACE
ENCLOSURE: NEMA 3R Φ: 1 SHORT CIRCUIT RATING: 22K
MAIN: ☒ MLO: ☐ TOP FEED: ☒ BOTTOM FEED: ☐ COPPER BUS: ☒ GROUND BAR KIT: ☒ NEUTRAL BAR KIT: ☒

L1	L2	CIRCUIT	POLES	TRIP	ASSIGNMENT	PHASE L1	PHASE L2	ASSIGNMENT	TRIP	POLES	CIRCUIT	L1	L2
5.4		1	1	20	UNITS 1 & 2 LIGHTS/RECEPTS.	o		WALLPACKS	20	1	2	1.5	
	5.4	3	1	20	UNITS 3 & 4 LIGHTS/RECEPTS.		o	UNITS 5 & 6 LIGHTS/RECEPTS.	20	1	4		5.4
5.4		5	1	20	UNITS 7 & 8 LIGHTS/RECEPTS.	o		SPARE	20	1	6	X	
	5.0	7	1	20	BUILDING SIGN		o	SPARE	20	1	8		X
X		9	1	20	SPARE	o		SPARE	20	1	10	X	
	X	11	1	20	SPARE		o	SPARE	20	1	12		X
X		13	1	20	SPARE	o		SPARE	20	1	14	X	
	X	15	1	20	SPARE		o	SPARE	20	1	16		X
X		17	1	20	SPARE	o		SPARE	20	1	18	X	
	X	19	1	20	SPARE		o	SPARE	20	1	20		X
X		21	1	20	SPARE	o		SPARE	20	1	22	X	
	X	23	1	20	SPARE		o	SPARE	20	1	24		X
X		25	1	20	SPARE	o		SPARE	20	1	26	X	
	X	27	1	20	SPARE		o	SPARE	20	1	28		X
X		29	1	20	SPARE	o		SPARE	20	1	30	X	

L1 = 12.3 A
L2 = 15.8 A

BUILDING 'F'

PANEL: F SCHEDULE:___ MANUFACTURER: SQ. D NO. OF SPACES 30
VOLTS: 120/240 AMPS: 200 TYPE: 'NQOD' MOUNTING: SURFACE
ENCLOSURE: NEMA 3R Φ: 1 SHORT CIRCUIT RATING: 22K
MAIN: ☒ MLO: ☐ TOP FEED: ☒ BOTTOM FEED: ☐ COPPER BUS: ☒ GROUND BAR KIT: ☒ NEUTRAL BAR KIT: ☒

L1	L2	CIRCUIT	POLES	TRIP	ASSIGNMENT	PHASE L1	PHASE L2	ASSIGNMENT	TRIP	POLES	CIRCUIT	L1	L2
5.4		1	1	20	UNITS 1 & 2 LIGHTS/RECEPTS.	o		WALLPACKS	20	1	2	3.9	
	5.4	3	1	20	UNITS 3 & 4 LIGHTS/RECEPTS.		o	UNITS 5 & 6 LIGHTS/RECEPTS.	20	1	4		5.4
5.4		5	1	20	UNITS 7 & 8 LIGHTS/RECEPTS.	o		UNITS 9 & 10 LIGHTS/RECS.	20	1	6	5.4	
	5.4	7	1	20	UNITS 11 & 12 LIGHTS/RECS.		o	UNITS 13 & 14 LIGHTS/RECS.	20	1	8		5.4
5.4		9	1	20	UNITS 15 & 16 LIGHTS/RECS.	o		UNITS 17 & 18 LIGHTS/RECS.	20	1	10	5.4	
	2.7	11	1	20	UNIT 19 LIGHTS/RECEPT.		o	BUILDING "E"	20	2	12		4.9
X		13	1	20	SPARE	o					14	5.0	
	X	15	1	20	SPARE		o	SPARE	20	1	16		X
X		17	1	20	SPARE	o		SPARE	20	1	18	X	
	X	19	1	20	SPARE		o	BUILDING SIGN	20	1	20		5.0
X		21	1	20	SPARE	o		SPARE	20	1	22	X	
	X	23	1	20	SPARE		o	SPARE	20	1	24		X
X		25	1	20	SPARE	o		SPARE	20	1	26	X	
	X	27	1	20	SPARE		o	SPARE	20	1	28		X
X		29	1	20	SPARE	o		SPARE	20	1	30	X	

L1 = 35.9 A
L2 = 34.2 A

ELECTRICAL NOTES (GENERAL)

1. THE ELECTRICAL INSTALLATION, EQUIPMENT, MATERIALS, AND WORKMANSHIP SHALL, AS A MINIMUM, BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE (NEC), OCCUPATIONAL SAFETY AND HEALTH ACT (OSHA), ALL APPLICABLE FEDERAL, STATE, COUNTY, AND LOCAL CODES, LAWS, AND ORDINANCES, AND RULINGS OF THE INSPECTION AUTHORITIES HAVING JURISDICTION. ALL FEES, PERMITS, ETC., ASSOCIATED WITH THE ELECTRICAL WORK SHALL BE THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR.

2. THE DRAWINGS GENERALLY INDICATE THE WORK TO BE INSTALLED, BUT DO NOT SHOW ALL BENDS, BOXES, FITTINGS, AND SPECIALTIES WHICH MAY BE REQUIRED FOR A COMPLETE INSTALLATION. ALL SUCH ITEMS REQUIRED TO COMPLETE THE INSTALLATION ACCORDING TO INDUSTRY ACCEPTED PRACTICES SHALL BE INCLUDED IN THE BID.

3. ALL EQUIPMENT AND MATERIALS SHALL BE NEW AND LISTED AND LABELED BY UNDERWRITERS LABORATORIES, INC.

4. THE ELECTRICAL CONTRACTOR SHALL COORDINATE ALL WORK WITH OTHER TRADES TO AVOID INTERFERENCES AND CONFLICTS. APPARENT INTERFERENCES OR CONFLICTS SHALL BE REPORTED TO THE PRIME CONTRACTOR AND RESOLVED PRIOR TO PROCEEDING WITH THE WORK IN QUESTION.

5. THE ELECTRICAL CONTRACTOR SHALL CONNECT BRANCH CIRCUITS TO THE MAIN LINE TERMINALS OF EQUIPMENT FURNISHED BY OTHER CONTRACTORS. THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING AND INSTALLING ANY NECESSARY SWITCHES, DISCONNECTS, OR OVERCURRENT PROTECTION AHEAD OF SUCH EQUIPMENT.

6. RACEWAYS ARE SHOWN SCHEMATICALLY AND MAY BE REROUTED IN THE FIELD. THEY SHALL BE INSTALLED AT RIGHT ANGLES TO OR PARALLEL WITH BUILDING LINES. THEY SHALL BE RUN CONCEALED WITHIN WALLS OR BUILDING STRUCTURES WHEREVER POSSIBLE.

7. THE MINIMUM ALLOWABLE SIZE FOR ANY CONDUIT, IMC, OR EMT SHALL BE 3/4"; 1/2" MAY BE USED FOR SWITCH LEGS.

8. FULL WEIGHT GALVANIZED RIGID STEEL CONDUIT SHALL BE USED IN THE FOLLOWING AREAS:

A. ON THE EXTERIOR OF THE BUILDING OR ROOF,

B. VERTICAL DROPS WHERE THE CONDUIT CANNOT BE ANCHORED TO WALLS OR OTHER SUPPORT STRUCTURES,

C. WHERE SUBJECT TO MECHANICAL DAMAGE.

D. UNDER FLOOR INSTALLATIONS

9. ALL WIRE AND CABLE SHALL BE ALUMINUM OR COPPER AND HAVE 600 VOLT THHN-THWN INSULATION.

10. THE MINIMUM WIRE SIZE SHALL BE #12 AWG EXCEPT FOR CONTROL WIRING, WHICH MAY BE #16 AWG. CONTROL WIRING SHALL USE STRANDED CONDUCTORS UNLESS OTHERWISE NOTED.

11. ALL METAL RACEWAY SYSTEMS SHALL BE MADE ELECTRICALLY CONTINUOUS. THE RACEWAY SYSTEM SHALL NOT BE THE SOLE GROUNDING METHOD. AN INSULATED COPPER GROUNDING CONDUCTOR SHALL BE INSTALLED FOR ALL FEEDERS AND BRANCH CIRCUITS. AT RECEPTACLES, A GREEN GROUND CONDUCTOR SHALL BE CONNECTED TO THE GROUND TERMINAL OF THE RECEPTACLE.

12. ALL CONDUCTORS TO BE INSTALLED IN CONDUIT.

13. ALL PENETRATIONS OF FIRE WALLS SHALL BE SEALED WITH APPROVED SEALING MATERIALS TO MAINTAIN THE FIRE RATING OF THE WALLS IN ACCORDANCE WITH UL PENETRATION DETAIL W-J-1042.

14. NO. CU 10 AWG CONDUCTORS SHALL BE USED FOR 20 AMP BRANCH CIRCUIT HOMERUNS EXCEEDING 50 FT. TO THE JUNCTION POINT.
20 AMP BRANCH CIRCUIT WIRING SHALL BE NO. 10 CU AWG THROUGHOUT IF THE CIRCUIT IS LONGER THAN 100 FEET TOTAL LENGTH.
20 AMP BRANCH CIRCUIT WIRING SHALL BE NO. 8 CU AWG THROUGHOUT IF THE CIRCUIT IS LONGER THAN 200 FEET TOTAL LENGTH.
20 AMP BRANCH CIRCUIT WIRING SHALL BE NO. 6 CU AWG THROUGHOUT IF THE CIRCUIT IS LONGER THAN 400 FEET TOTAL LENGTH.
20 AMP BRANCH CIRCUIT SHALL NOT EXCEED 500' FEET IN TOTAL LENGTH.

FEEDER SCHEDULE

UNIT	FEEDERS	FUSED DISCONNECT	CONDUIT
HP-4,6,7,8,9,10,11,15	2#12CU, 1#12CU GD	30	3/4"
HP-13	2#10CU, 1#10CU GD	30	3/4"
HP-3,14,16,17	2#10CU, 1#10CU GD	60	3/4"
HP-1,2,5,12	2#8CU, 1#10CU GD	60	1"
AHU-1,2,3,4,5,6,7,8,9,10,11,14,15,16,17	2#8CU, 1#10CU GD	60	1"
AHU-12,13	2#6CU, 1#8CU GD	60	1-1/4"

BUILDING "G"

ELECTRICAL LOAD CALCULATIONS

24,000 SQUARE FEET		VA
NONCONTINUOUS LOADS:		
32 RECEPTACLES @ 180 VA EA.	5760	
1ST 10000		5760
REMAINDER @ 50%		
TOTAL		5760
CONTINUOUS LOADS:		
GENERAL LIGHTING LOAD VA/SQ. FT.		
(STORAGE) 24,000 SQ. FT. 1.2	28,800	
28800 X 1.25		36000
AIR HANDLER UNIT		46080
HEAT PUMPS		24096
EQUIPMENT		300
25% OF LARGEST MOTOR		1134
GRAND TOTAL		113,370

473 AMPS @ 120/240V, 1ø, 60HZ

ELECTRICAL SYSTEM AND EQUIPMENT METHOD OF COMPLIANCE:

ENERGY CODE: PRESCRIPTIVE ☒ PERFORMANCE ☐
ASHRAE 90.1: PRESCRIPTIVE ☐ PERFORMANCE ☐

REFER TO DRAWINGS FOR RISER DIAGRAM AND PANEL SCHEDULES

LIGHTING SCHEDULE

LAMP TYPE REQUIRED IN FIXTURE: SEE SCHEDULE
NUMBER OF LAMPS IN FIXTURE:
BALLASTS TYPE USED IN FIXTURE:
NUMBER OF BALLASTS IN FIXTURE:
TOTAL WATTAGE PER FIXTURE:
TOTAL INTERIOR WATTAGE SPECIFIED VS. ALLOWED:
TOTAL EXTERIOR WATTAGE SPECIFIED VS. ALLOWED:

ADDITIONAL PRESCRIPTIVE COMPLIANCE

506.2.1 MORE EFFICIENT MECHANICAL EQUIPMENT ☒
506.2.2 REDUCED LIGHTING POWER DENSITY ☐
506.2.3 ENERGY RECOVERY VENTILATION SYSTEMS ☐
506.2.4 HIGHER EFFICENCY SERVICE WATER HEATING ☐
506.2.5 ON-SITE SUPPLY OF RENEWABLE ENERGY ☐
506.2.6 AUTOMATIC DAYLIGHTING CONTROL SYSTEMS ☐

NORTH CAROLINA PROFESSIONAL SEAL 18909 ENGINEER RANDY L. CRUSE
05-30-24

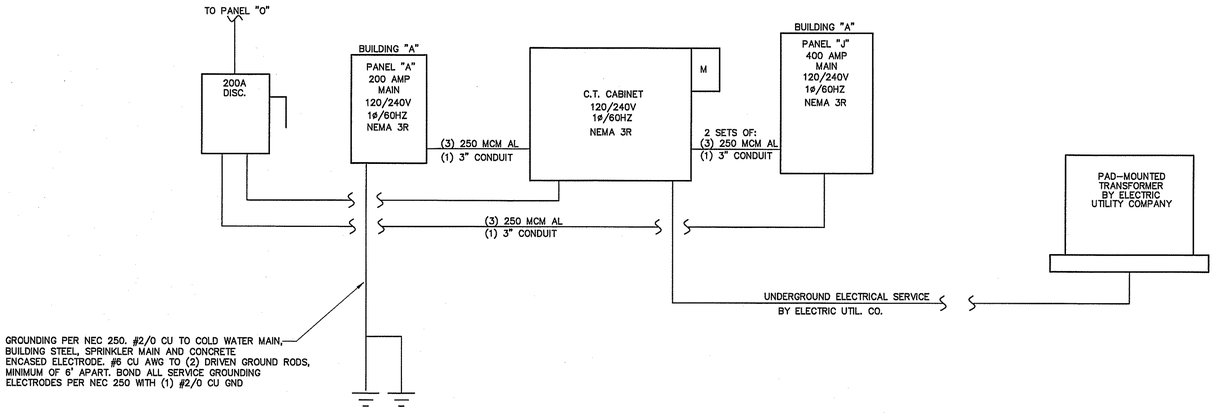
PLANS FOR:
AMPLE STORAGE
ERWIN, NORTH CAROLINA 28339

REVISIONS	
NO.	

Cruse And Associates, P.A.
414 EAST EDGERTON STREET
Dunn, North Carolina 28334
PH: (910) 892-4429
FAX: (910) 892-5162
LICENSE NO.: C-1721

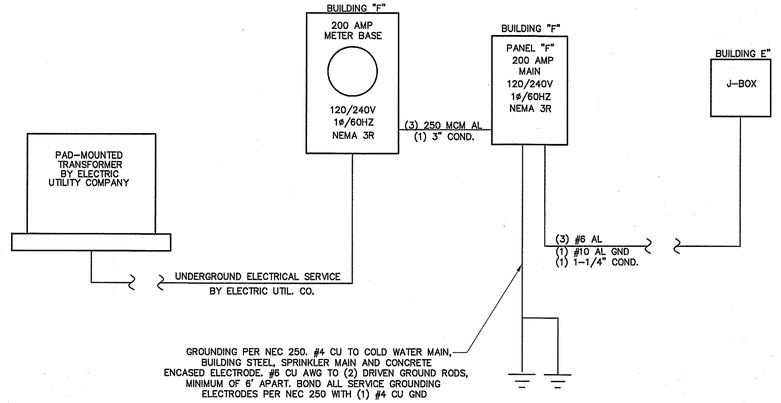
DATE 05/30/24
DRAWN BY BAM
JOB NO. 24-23

SHEET NO.
E-9 OF 10



ELECTRICAL RISER DIAGRAM BUILDING "A"

NOT TO SCALE



ELECTRICAL RISER DIAGRAM BUILDINGS "E" & "F"

NOT TO SCALE

BUILDING "F" & E

ELECTRICAL LOAD CALCULATIONS

12,200 SQUARE FEET		VA
NONCONTINUOUS LOADS:		
19 RECEPTACLES @ 180 VA EA.	3420	
1ST 10000		3420
REMAINDER @ 50%		
TOTAL		3420
CONTINUOUS LOADS:		
GENERAL LIGHTING LOAD VA/SQ. FT.		
(STORAGE) 12,200 SQ. FT. 1.2	14640	
14640 X 1.25		18300
EQUIPMENT		500
GRAND TOTAL		22,220

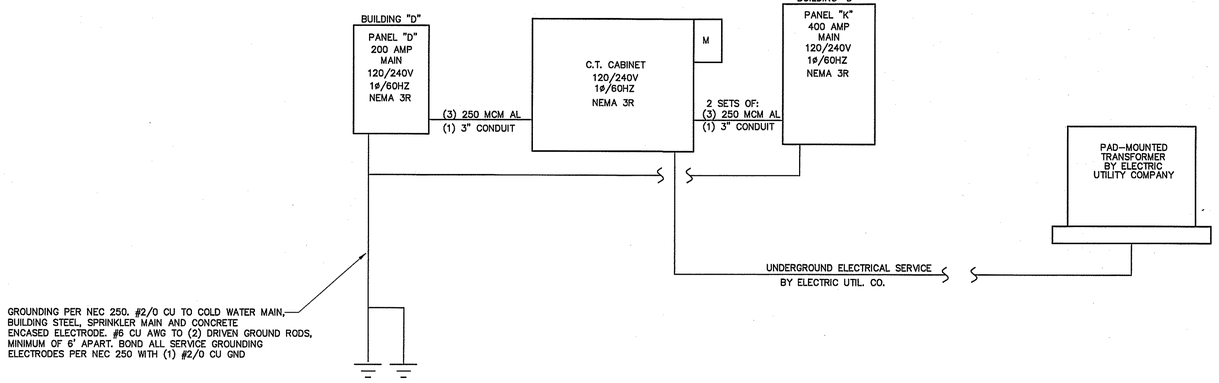
93 AMPS @ 120/240V, 1ø, 60HZ

BUILDING "B"

ELECTRICAL LOAD CALCULATIONS

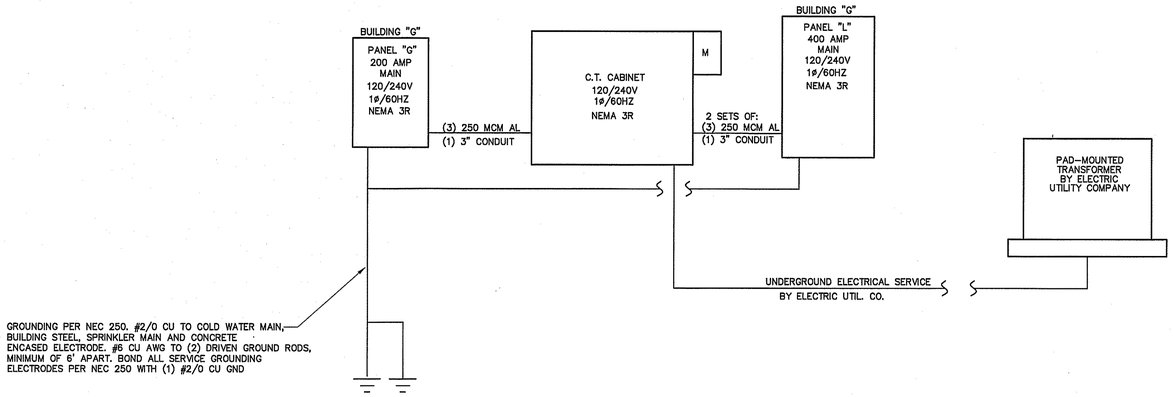
2,400 SQUARE FEET		VA.
NONCONTINUOUS LOADS:		
8 RECEPTACLES @ 180 VA EA.	1440	
1ST 10000		1440
REMAINDER @ 50%		
TOTAL		1440
CONTINUOUS LOADS:		
GENERAL LIGHTING LOAD VA/SQ. FT.		
(STORAGE) 2,400 SQ. FT. 1.2	5400	
5400 X 1.25		6750
EQUIPMENT		500
GRAND TOTAL		8,690

37 AMPS @ 120/240V, 1ø, 60HZ



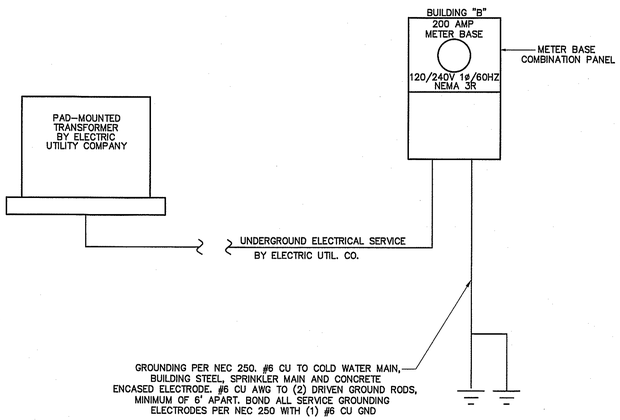
ELECTRICAL RISER DIAGRAM BUILDING "D"

NOT TO SCALE



ELECTRICAL RISER DIAGRAM BUILDING "G"

NOT TO SCALE



ELECTRICAL RISER DIAGRAM BUILDING "B"

NOT TO SCALE

NORTH CAROLINA PROFESSIONAL SEAL 18909 ENGINEER RANDY L. CRUSE
05-30-24

PLANS FOR: AMPLE STORAGE

ERWIN, NORTH CAROLINA 28339

REVISIONS

NO.	

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414 EAST EDENTON STREET
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FAX: (910) 892-5162
LICENSE NO.: C-1721

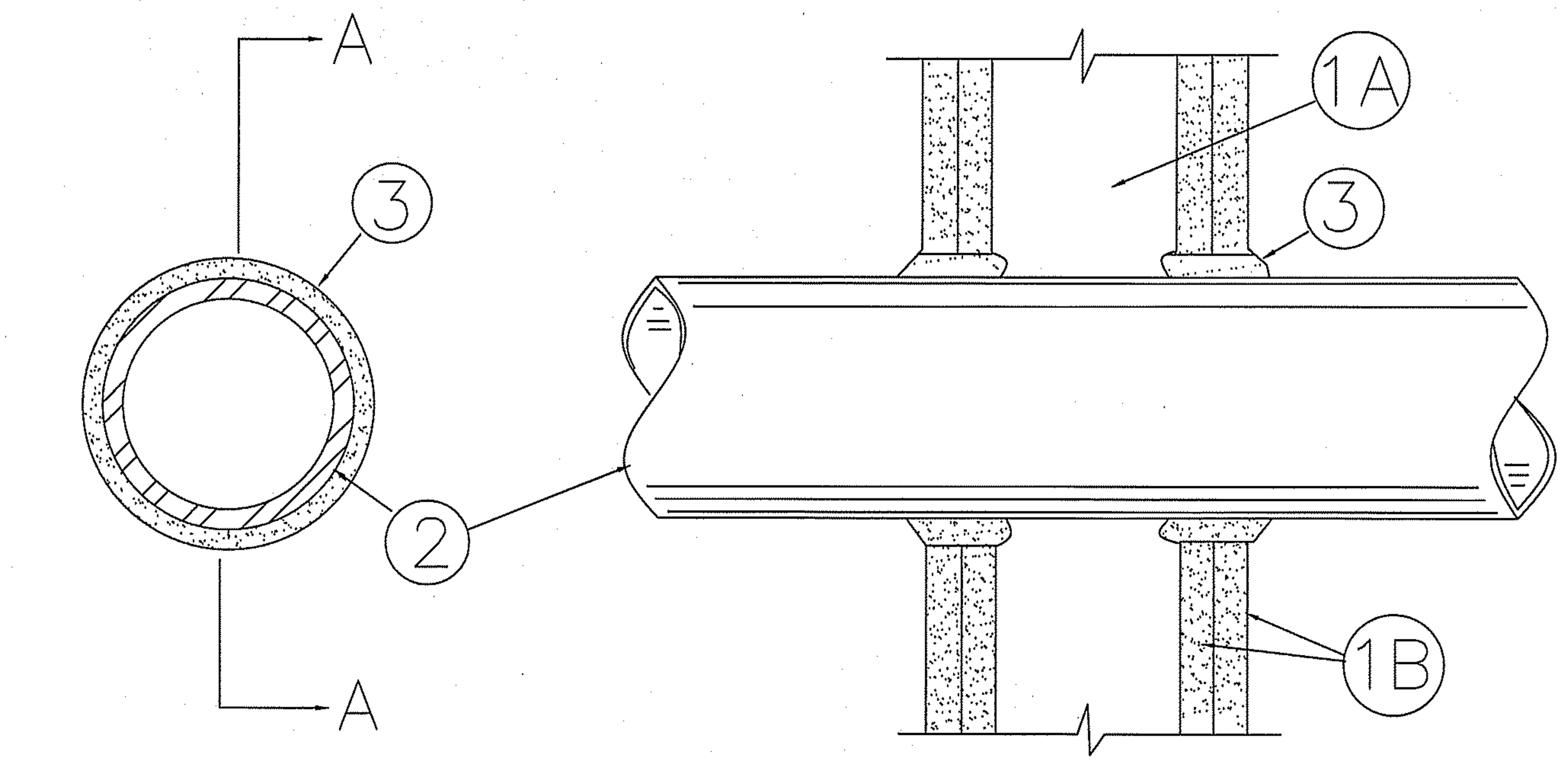
DATE	05/30/24
DRAWN BY	BAM
JOB NO.	24-23

SHEET NO.
E-10 OF 10

System No. W-L-1001

June 15, 2005

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



SECTION A—A

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. (51 by 102 mm) lumber spaced 16 in. (406 mm) OC with nom 2 by 4 in. (51 by 102 mm) lumber end plates and cross braces. Steel studs to be min 3—5/8 in. (92 mm) wide by 1—3/8 in. (35 mm) deep channels spaced max 24 in. (610 mm) OC.

B. Gypsum Board* — Nom 1/2 or 5/8 in. (13 or 16 mm) thick, 4 ft. (122 cm) 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. (660 mm).

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 / (0 mm). (point contact) to max 2 in. (51 mm) 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. (610 mm) diam (or smaller) Schedule 10 (or heavier) steel pipe.

B. Iron Pipe — Nom 24 in. (610 mm) diam (or smaller) service weight (or heavier) cast iron soil pipe, nom 12 in (305 mm) diam (or smaller) or Class 50 (or heavier) ductile iron pressure pipe.

C. Conduit — Nom 6 in. (152 mm) diam (or smaller) steel conduit or nom 4 in (102 mm) diam (or smaller) steel electrical metallic tubing

D. Copper Tubing — Nom 6 in. (152 mm) diam (or smaller) Type L (or heavier) copper tubing

E. Copper Pipe — Nom 6 in. (152 mm) diam (or smaller) Regular (or heavier) copper pipe.

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

1. Nom 2 in. (51 mm) 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. (25 mm) 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. (25 mm) 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 L L C

3. Fill, Void or Cavity Material* — Caulk or Sealant — Min 5/8. , 1—1/4,1—7/8 and 2—1/2 in. (16, 32, 48 and 64 mm) 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. (6 mm) 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 (mm)	F Rating Hr	T Rating Rating Hr
1 (25)	1 or 2	0+, 1 or 2
1 (25)	3 or 4	3 or 4
4 (102)	1 or 2	0
6 (152)	3 or 4	0
12 (305)	1 or 2	0

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

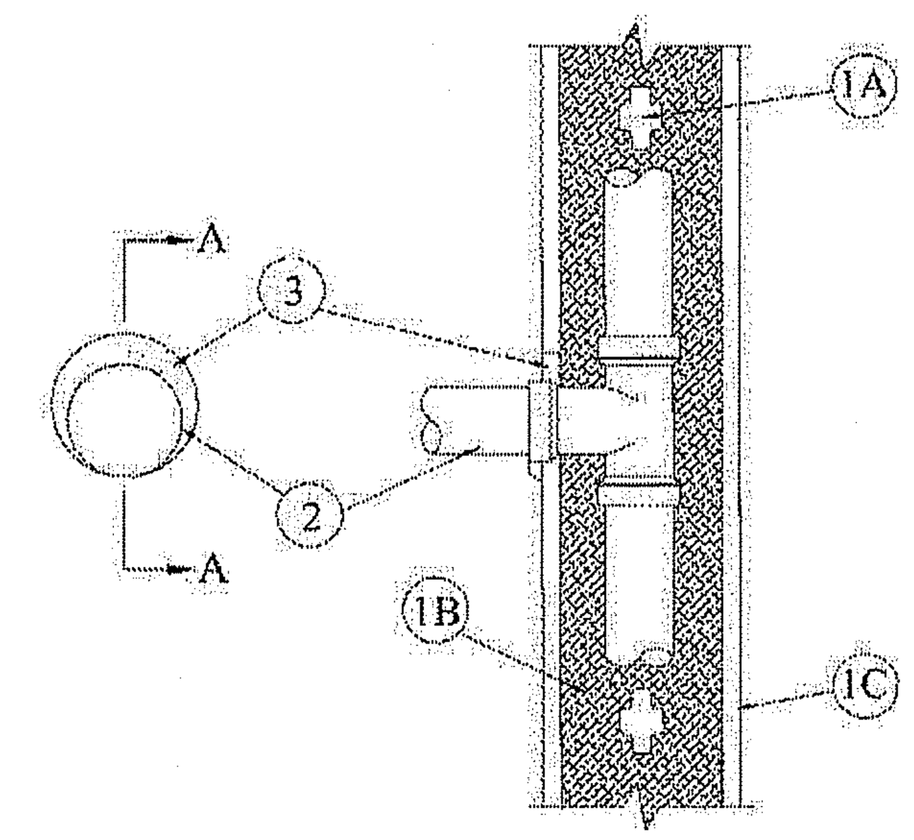
3M COMPANY ? CP 25WB+ or FB—3000 WT.

*Bearing the UL Classification Mark

System No. W-L-2179

September 17, 2001

F Rating — 1 Hr
T Rating — 1 Hr



SECTION A-A

1. Wall Assembly — The fire rated gypsum wallboard/stud wall assembly shall be constructed of the materials and in the manner specified in the individual U300 or U400 Series Wall and 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 or steel channel studs. Wood studs to consist of nom 2 by 4 in. lumber spaced max 16 in. OC. The steel studs to be min 3—5/8 in. wide and spaced max 24 in. OC.

B. Insulation, Glass Fiber* — R—13 fiber glass insulation installed entirely within single stud cavity of nonmetallic pipe (item 2).

C. Gypsum Board* — One layer of nom 5/8 in. thick gypsum wallboard, as specified in the individual Wall and Partition Design. Max diam of opening is 3—3/4 in.

2. Nonmetallic Pipe — Nonmetallic pipe, installed within stud cavity and connected to nonmetallic tee. Nonmetallic pipe penetrating wall assembly on one side of wall to be installed either concentrically or eccentrically within the firestop system. The annular space between pipe and periphery of opening shall be min 0 in. (point contact) to max 1 in. Pipe to be rigidly supported on penetrating side of wall assembly. The following types of and sizes of nonmetallic pipes and tees may be used:

A. Polyvinyl Chloride (PVC) Pipe — Nom 2 in. diam (or smaller) Schedule 40 cellular core or solid core PVC pipe and tee for use in vented (drain, waste or vent) or closed (process and supply) piping systems.

B. Chlorinated Polyvinyl Chloride (CPVC) Pipe — Nom 2 in. diam (or smaller) SDR17 CPVC pipe and tee for use in vented (drain, waste or vent) or closed (process and supply) piping systems.

C. Acrylonitrile Butadiene Styrene (ABS) Pipe — Nom 2 in. diam (or smaller) Schedule 40 cellular or solid core ABS pipe and tee for use in vented (drain, waste or vent) or closed (process and supply) piping systems.

3. Fill, Void or Cavity Material* — Sealant — Min 5/8 in. thickness of fill material applied within annulus, flush with both surfaces of wall. At point contact locations between wallboard and pipe, a min 1/2 in. diam bead of fill material shall be applied at the pipe/wallboard interface.

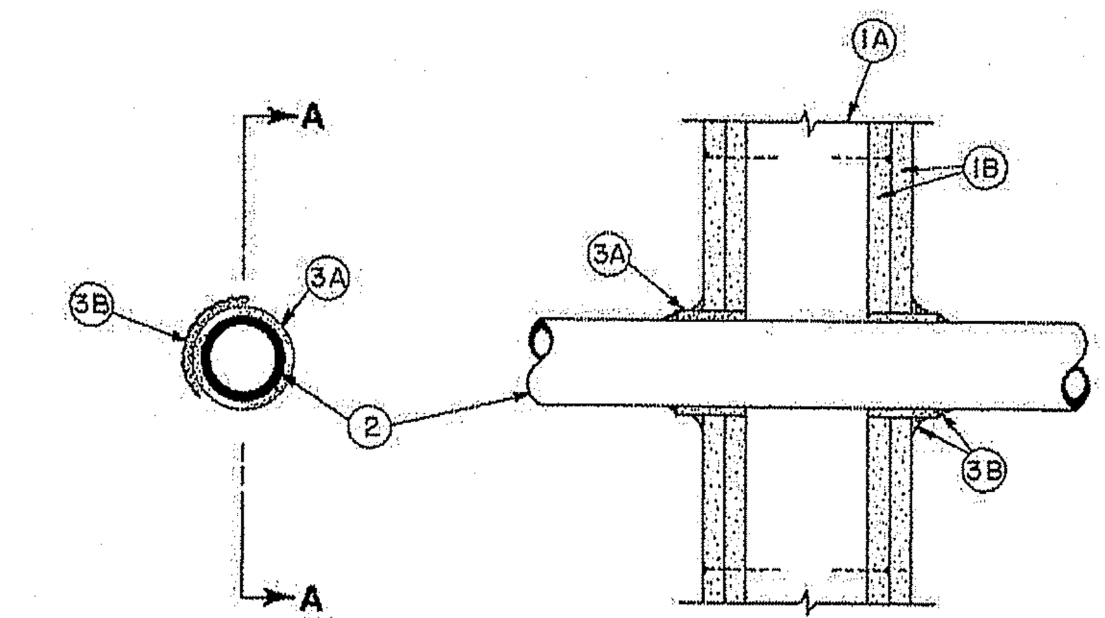
JOHNS MANVILLE INTERNATIONAL INC — FireTemp™ CI, FireTemp™ CE

*Bearing the UL Classification Mark

System No. W-L-2003

November 20, 2009

F Ratings — 1 and 2 Hr (See Item 3)
T Ratings — 1 and 2 Hr (See Item 3)
L Rating At Ambient — 7 CFM/sq ft (See Item 3B)
L Rating At 400 F — less than 1 CFM/sq ft (See Item 3B)



SECTION A-A

1. Wall Assembly — The 1 or 2 hr fire—rated gypsum board/stud wall assembly shall be constructed of the materials and in the manner described in the individual U300, U400 or V400 Series Wall or Partition Design in the UL Fire Resistance Directory and shall include the following construction features:

A. Studs — Wall framing may consist of either wood studs or steel channel studs. Wood studs to consist of nom 2 by 4 in. (51 by 102 mm) lumber spaced 16 in. (406 mm) OC with nom 2 by 4 in. (51 by 102 mm) lumber end plates and cross braces. Steel studs to be min 3—5/8 in. (92 mm) wide by 1—3/8 in. (35 mm) deep channels spaced max 24 in. (610 mm) OC.

B. Gypsum Board* — 5/8 in. (16 mm) thick, 4 ft (122 cm) wide with square or tapered edges. The gypsum board type, thickness, number of layers, fastener type and sheet orientation shall be as specified in the individual U300, U400 or V400 Series Design in the UL Fire Resistance Directory. Max diam of opening is 3—1/8 in. (79 mm).

2. Through Penetrants — One nonmetallic pipe or conduit to be centered in the through opening. The annular space between pipe or conduit and periphery of opening shall be min 1/4 in. (6 mm) and max 3/8 in. (10 mm). Pipe or conduit to be rigidly supported on both sides of the floor—ceiling assembly. The following types and sizes of nonmetallic pipes or conduits may be used:

A. Polyvinyl Chloride (PVC) Pipe — Nom 2 in. (51 mm) diam (or smaller) Schedule 40 solid core PVC pipe for use in closed (process or supply) or vented (drain, waste or vent) piping system.

B. Rigid Nonmetallic Conduit++ — Nom 2 in. (51 mm) diam (or smaller)(Schedule 40 or 80) PVC conduit installed in accordance with the National electric Code (NFPA No. 70).

C. Chlorinated Polyvinyl Chloride (CPVC) Pipe — Nom 2 in. (51 mm) diam (or smaller) SDR13.5 CPVC pipe for use in closed (process or supply) piping systems.

D. Cellular Core Polyvinyl Chloride (ccPVC) Pipe — Nom 2 in. (51 mm) diam (or smaller) Schedule 40 cellular core PVC pipe for use in closed (process or supply) or vented (drain, waste or vent) piping system.

E. Acrylonitrile Butadiene Styrene (ABS) Pipe — Nom 2 in. (51 mm) diam (or smaller) Schedule 40 solid core ABS pipe for use in closed (process or supply) or vented (drain, waste or vent) piping systems.

F. Cellular Core Acrylonitrile Butadiene Styrene (ccABS) Pipe — Nom 2 in. (51 mm) diam (or smaller) Schedule 40 cellular core ABS pipe for use in closed (process or supply) or vented (drain, waste or vent) piping systems.

3. Firestop System — Installed symmetrically on both sides of wall assembly. The hourly F and T Ratings for the firestop system are equal to the hourly fire rating of the wall assembly in which it is installed. The details of the firestop system shall be as follows.

A. Fill, Void or Cavity Materials* — Wrap Strip — Nom 1/4 in. (6 mm) thick intumescent elastomeric material faced on one side with aluminum foil, supplied in 2 in. (51 mm) wide strips. Nom 2 in. (51 mm) wide strip tightly wrapped around nonmetallic pipe (foil side out) with seam butted. Wrap strip layer securely bound with steel wire or aluminum foil tape and slid into annular space approx 1—1/4 in. (32 mm) such that approx 3/4 in. (19 mm) of the wrap strip protrudes from the wall surface.

3M COMPANY — FS—195+

B. Fill, Void or Cavity Materials* — Caulk, Sealant or Putty — Min 5/8 in. (16 mm) thickness of caulk or putty applied into annular space between wrap strip and periphery of opening. A nom 1/4 in. (6 mm) diam bead of caulk or putty to be applied to the wrap strip/wall interface and to the exposed edge of the wrap strip layers approx 3/4 in. (19 mm) from the wall surface.

3M COMPANY — CP 25WB+ caulk or MP+ Stix putty, IC 15WB+ caulk, FireDam 150+ caulk or FB—3000 WT sealant. (Note: L Ratings apply only when Type CP 25WB+ caulk or FB—3000 WT sealant is used. CP 25WB+ and FireDam 150+ not suitable for use with CPVC pipes.)

C. Foil Tape — (not shown) — Nom 4 in. (102 mm) wide, 3 mil thick aluminum tape wrapped around pipe prior to the installation of the wrap strip (Item 3A). Min of one wrap, flush with both sides of wall and proceeding outward. Tape is not required for pipes shown in Items 2A, 2B and 2C.

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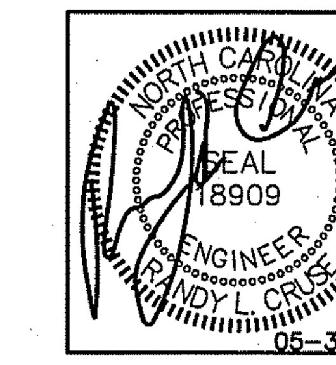
PENETRATION DETAILS

NOT TO SCALE



05-30-24

PLANS FOR:
AMPLE STORAGE
ERWIN, NORTH CAROLINA 28339

REVISIONS	
NO.	

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LICENSE NO.: C-1721

DATE 05/30/24
DRAWN BY BAM
JOB NO. 24—23

SHEET NO.
PME 1 OF 1