

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 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 $\geq 25'$
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 NO. OF EXITS		TRAVEL DISTANCE		ARRANGEMENT MEANS OF EGRESS ^{1,2} (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

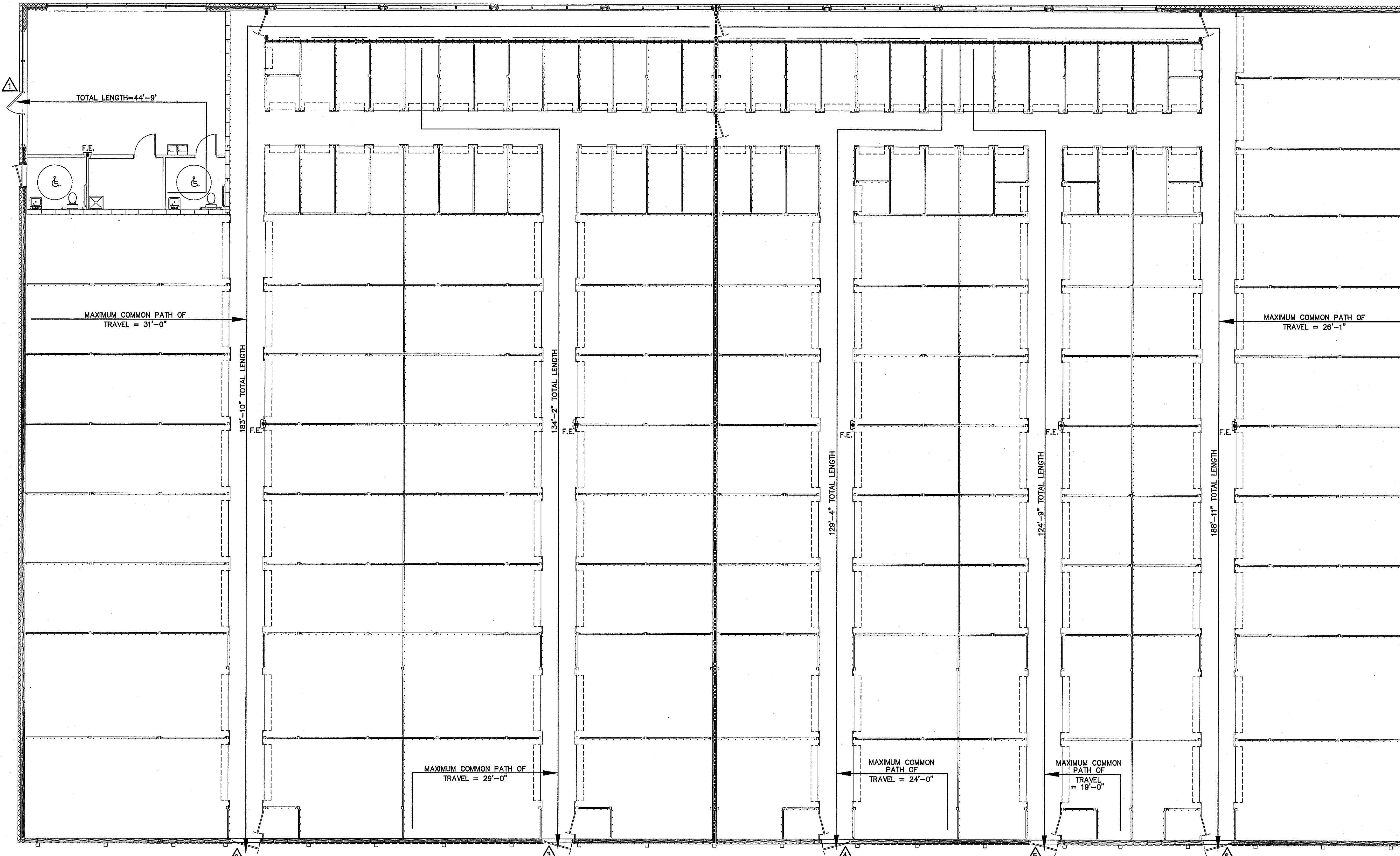
USE GROUP OR SPACE DESCRIPTION	(a)		(b)		(c)		EXIT WIDTH (in)				
	AREA ¹ SQ. FT.	AREA ¹ PER OCCUPANT (TABLE 1004.1.2)	CALCULATED OCCUPANT LOAD (a/b)	EGRESS WIDTH PER OCCUPANT (TABLE 1005.1)	STAIR LEVEL	LEVEL	REQUIRED WIDTH (SECTION 1005.1) (a/b) x c	STAIR LEVEL	LEVEL	STAIR LEVEL	ACTUAL WIDTH SHOWN ON PLANS
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
 Leslie Jackson
 06/19/2024 7:16:21 AM

Building B reviewed

- MAXIMUM CALCULATED OCCUPANT LOAD CAPACITY EACH EXIT DOOR CAN ACCOMMODATE BASED ON EGRESS WIDTH (1005.1)
- ⚠ 35" CLEAR WIDTH DIVIDED BY .2" = 175 OCCUPANTS
CALCULATED OCCUPANCY PER EXIT = 9 PEOPLE
CALCULATED OCCUPANCY DOES NOT EXCEED MAXIMUM CAPACITY OF EXIT.
 - ⚠ 47" CLEAR WIDTH DIVIDED BY .2" = 235 OCCUPANTS
CALCULATED OCCUPANCY PER EXIT = 10 PEOPLE
CALCULATED OCCUPANCY DOES NOT EXCEED MAXIMUM CAPACITY OF EXIT.
 - ⚠ 47" CLEAR WIDTH DIVIDED BY .2" = 235 OCCUPANTS
CALCULATED OCCUPANCY PER EXIT = 9 PEOPLE
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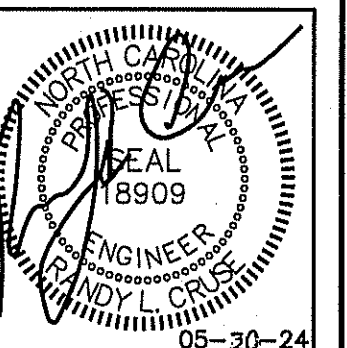


LEGEND
 3 HOUR RATED WALL U419

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"



PLANS FOR:
AMPLE STORAGE
 ERWIN, NORTH CAROLINA 28339

REVISIONS

NO.	DESCRIPTION

414 EAST EDITION STREET
 DURHAM, NORTH CAROLINA 28334
 PHONE: (919) 882-5166
 FAX: (919) 882-5168

Cruse And Associates, P.A.

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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
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- ☒ 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 $\geq 30'$
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 NO. OF EXITS		TRAVEL DISTANCE		ARRANGEMENT MEANS OF EGRESS ^{1,3} (SECTION 1019-1021)	
	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"

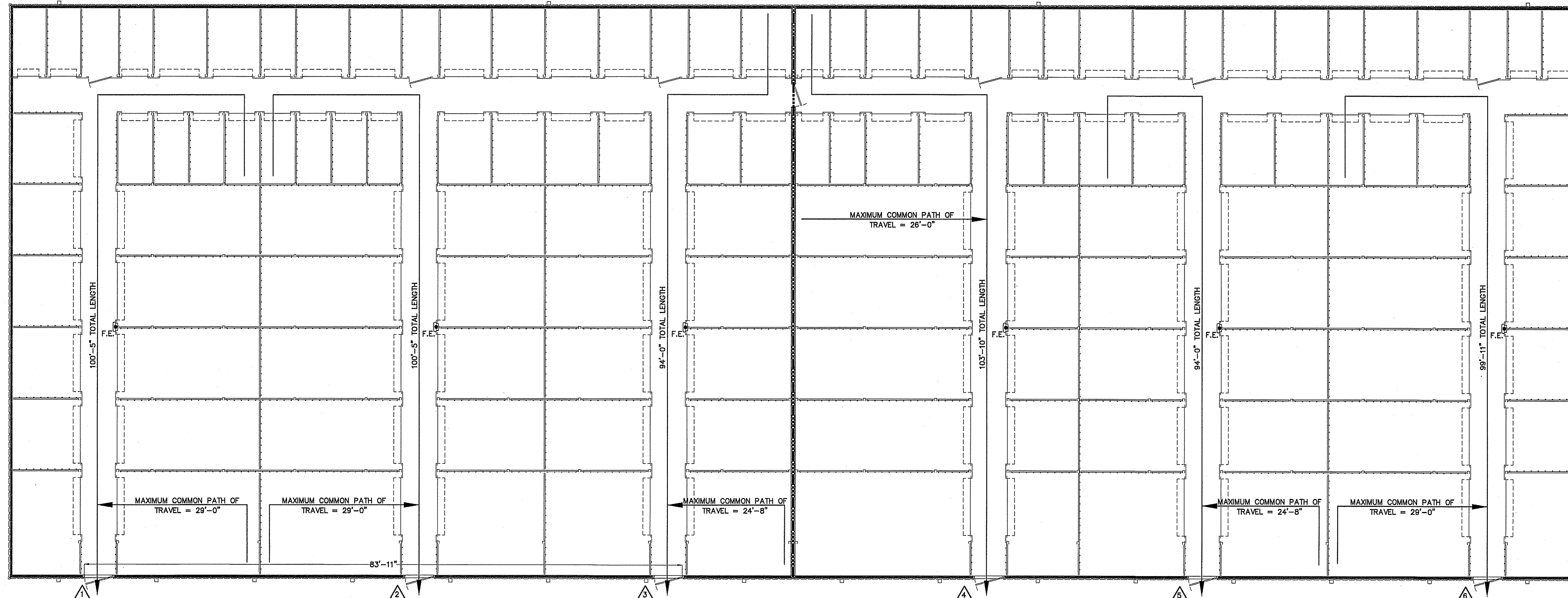
1. CORRIDOR DEAD ENDS (SECTION 1020.4)
2. BUILDINGS W/SINGLE EXITS (TABLE 1008.3.2(2)), SPACES W/ONE EXIT OR EXIT ACCESS DOORWAY (TABLE 1006.2.1)
3. COMMON PATH OF TRAVEL (SECTION 1029.8)

EXIT WIDTH

USE GROUP OR SPACE DESCRIPTION	EXIT WIDTH								
	(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)
- △ 47" CLEAR WIDTH DIVIDED BY .2" = 235 OCCUPANTS
CALCULATED OCCUPANCY PER EXIT = 6 PEOPLE
CALCULATED OCCUPANCY DOES NOT EXCEED MAXIMUM CAPACITY OF EXIT.
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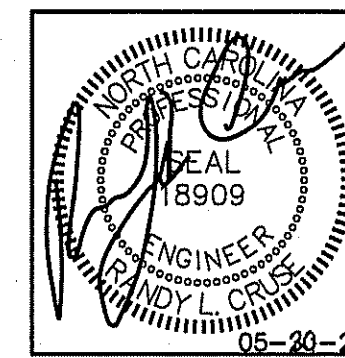


LEGEND
- - - - - 3 HOUR RATED WALL U419

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



**PLANS FOR:
AMPLE STORAGE**
ERWIN, NORTH CAROLINA 28839

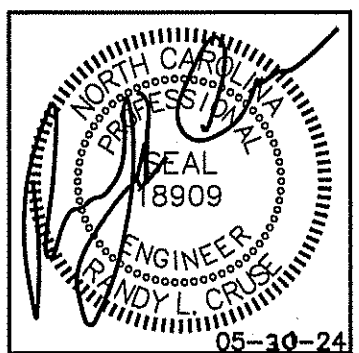
REVISIONS

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JOB NO. 24-23
SHEET NO. **LS-2 OF 4**



PLANS FOR:
AMPLE STORAGE
ERWIN, NORTH CAROLINA 28339

REVISIONS

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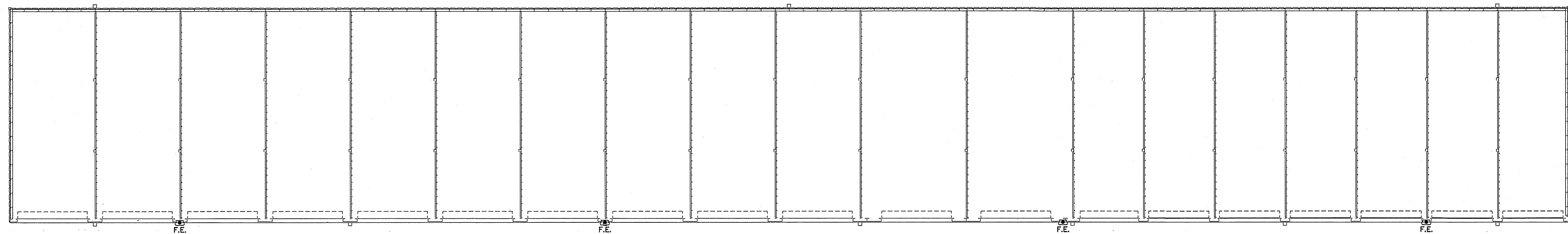
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JOB NO. 24-23

SHEET NO.

LS-3 OF 4

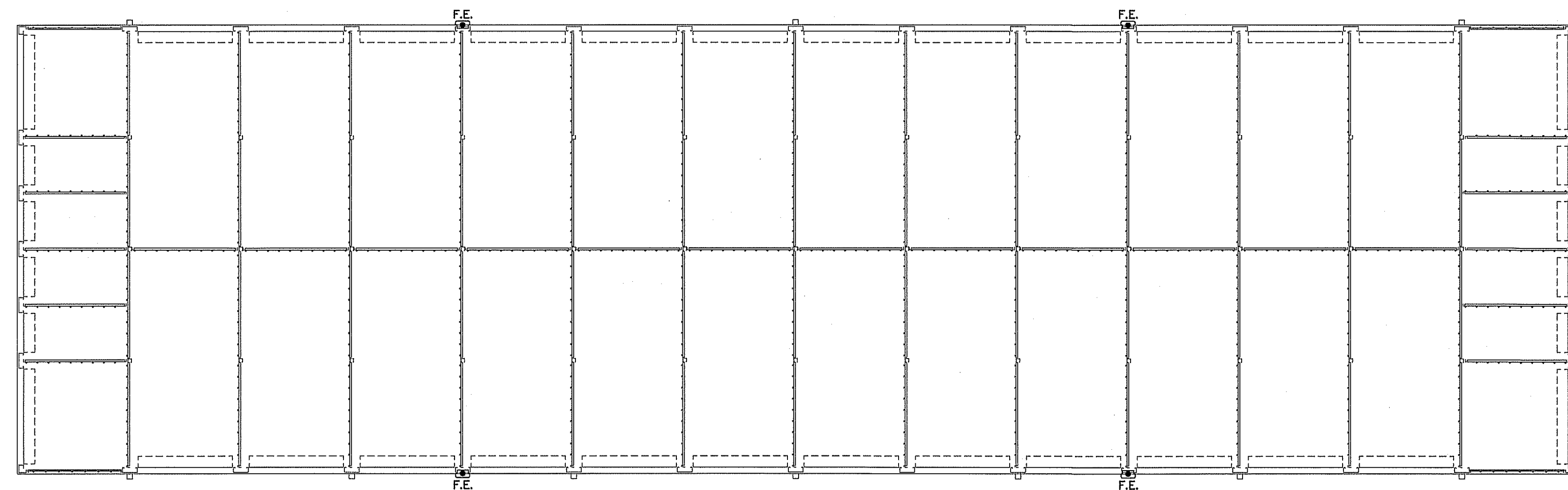
BUILDING "F" SHOWN FOR FIRE EXTINGUISHER PLACEMENT ONLY



LIFE SAFETY PLAN BUILDING "F"

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

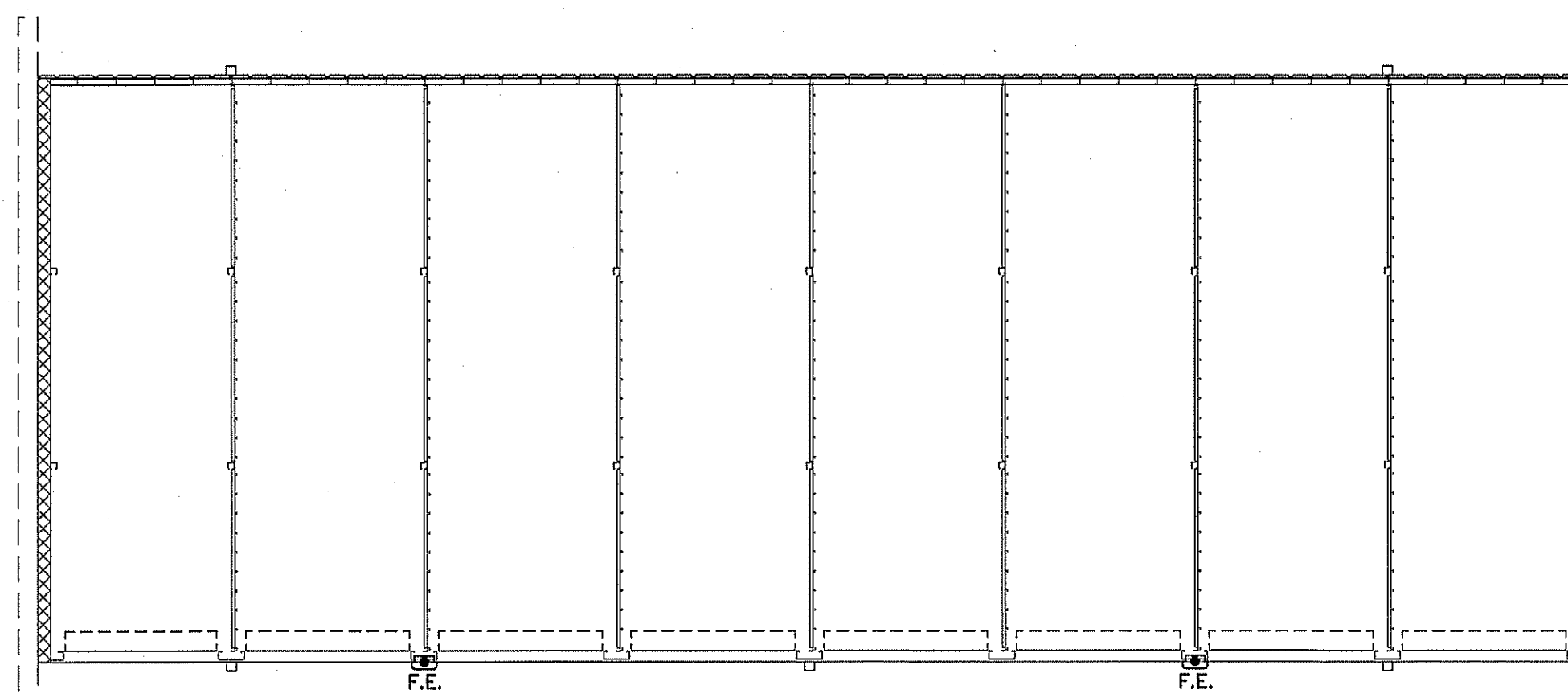
BUILDING "E" SHOWN FOR FIRE EXTINGUISHER PLACEMENT ONLY



LIFE SAFETY PLAN BUILDING "E"

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

BUILDING "B" SHOWN FOR FIRE EXTINGUISHER PLACEMENT ONLY



LIFE SAFETY PLAN BUILDING "B"

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

NOTE:
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4 HOUR WALL (U907)
SEE APARTMENT DRAWINGS FOR DETAIL

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.

LIFE SAFETY PLAN REQUIREMENTS:

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LIFE SAFETY PLAN NOTES:

1. SEE LEGEND FOR RATED WALLS.
2. ALL ASSUMED AND REAL PROPERTY LINES $\geq 20'$
3. ASSUMED PROPERTY LINES = 14'; UNLIMITED; 705.8.1 EXC. 2
4. NO DEAD ENDS OVER 10'; 20' ALLOWED
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7. NO DELAYED EGRESS LOCKS, ELECTROMAGNETIC LOCKS, HOLD OPEN DEVICES, OR EMERGENCY ESCAPE WINDOWS
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**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"

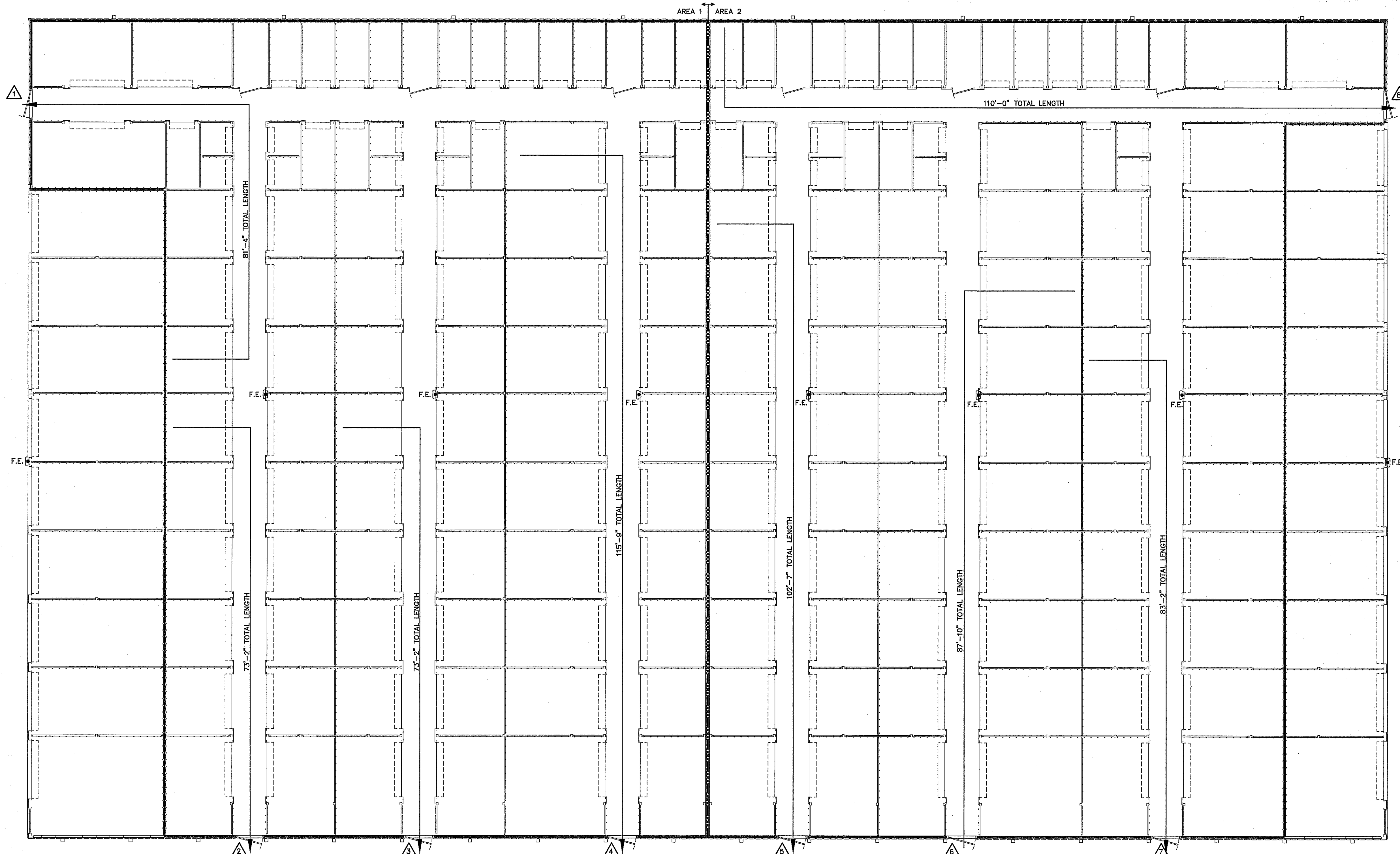
1. CORRIDOR DEAD ENDS (SECTION 1020.4)
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3. COMMON PATH OF TRAVEL (SECTION 1029.8)

EXIT WIDTH

USE GROUP OR SPACE DESCRIPTION	EXIT WIDTH					
	(a)		(b)		(c)	
	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 (c/b) x c	ACTUAL WIDTH SHOWN ON PLANS
S-1 (AREA 1)	10,100	500 GROSS	21	N/A	.2	N/A
S-1 (AREA 2)	10,425	500 GROSS	21	N/A	.2	N/A
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)
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- ▲ 47" CLEAR WIDTH DIVIDED BY .2" = 235 OCCUPANTS
CALCULATED OCCUPANCY PER EXIT = 5 PEOPLE
CALCULATED OCCUPANCY DOES NOT EXCEED MAXIMUM CAPACITY OF EXIT.
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CALCULATED OCCUPANCY PER EXIT = 5 PEOPLE
CALCULATED OCCUPANCY DOES NOT EXCEED MAXIMUM CAPACITY OF EXIT.



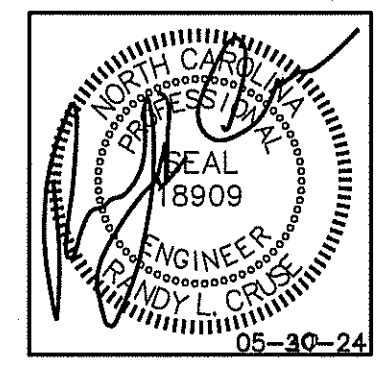
LEGEND
 - - - - - 3 HOUR RATED WALL
 U419

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
 [Symbol] 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.



PLANS FOR:
AMPLE STORAGE
 ERWIN, NORTH CAROLINA 28339

REVISIONS

NO.	

Cruse And Associates, P.A.
 414 EAST EDGEMONT STREET
 ERWIN, NORTH CAROLINA 28339
 PH: (810) 892-4429
 FAX: (810) 892-5182
 LICENSE NO.: C-1721

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 JOB NO. 24-23

SHEET NO.
LS-4 OF 4

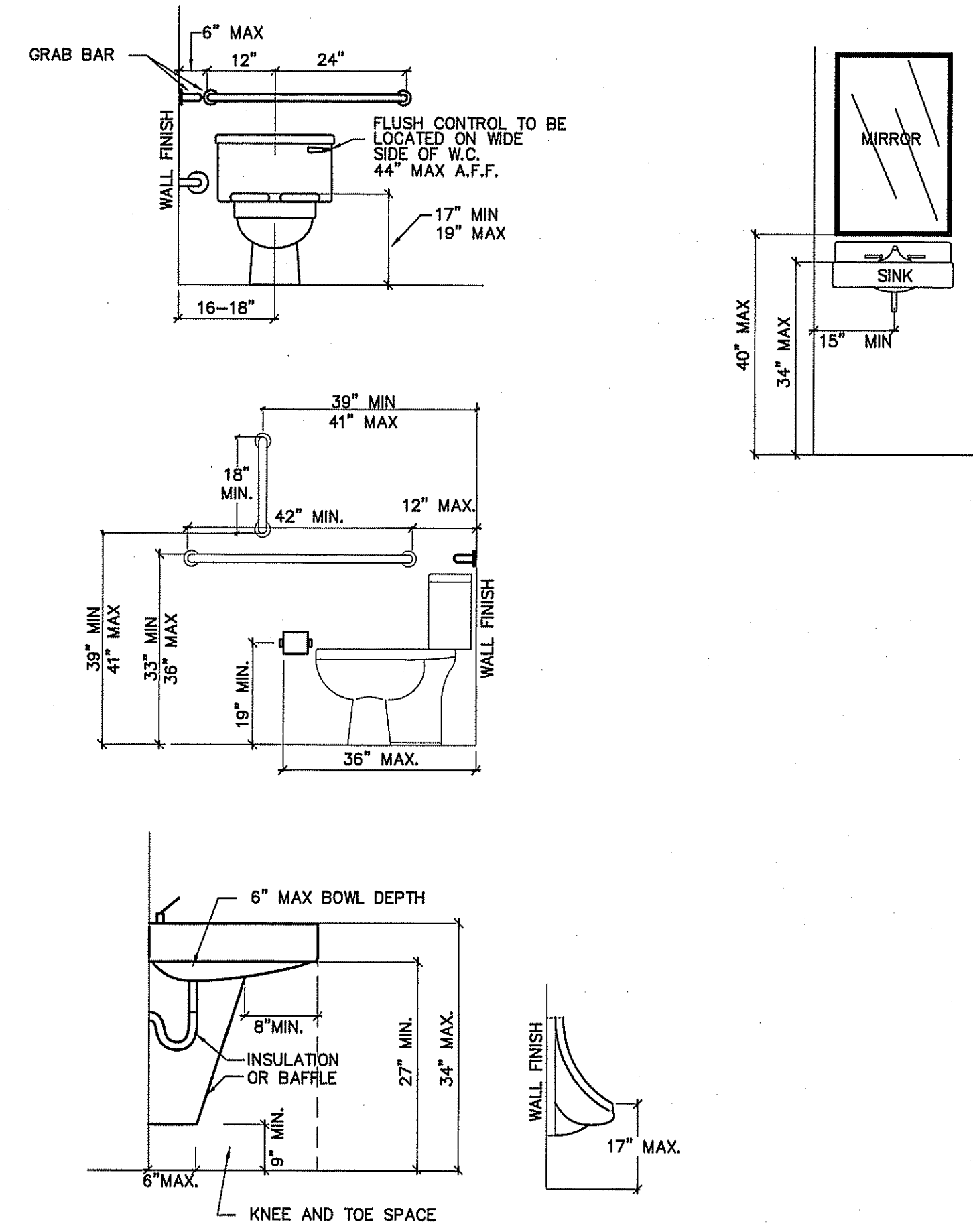
PLUMBING FIXTURE SCHEDULE				
MARK	MAKE	MODEL	DESCRIPTION	NOTES
P-1	AMERICAN STANDARD	CADET 2377.100	EL 1.6/PA 16.5" HC ELONGATED WATER CLOSET HC ACCESSIBLE, TANK TYPE	WHITE 5311.012 SEAT
P-2	AMERICAN STANDARD	REGALYN 4869.004.020	CAST IRON WALL MOUNTED SINK	1340.227 FAUCET. PROVIDE W/BASKET DRAIN
P-3	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

PLUMBING CALCULATIONS								
ITEM	# OF	FIXTURE UNITS (EACH)			FIXTURE UNITS (TOTAL)			FIXTURE UNITS (WASTE)
		COLD	HOT	TOTAL	COLD	HOT	TOTAL	
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		-	-	-	15.75	5.25	17.50	13.0

TOTAL 18.6 GPM
WATER SUPPLY PIPE SIZE: MINIMUM 1"

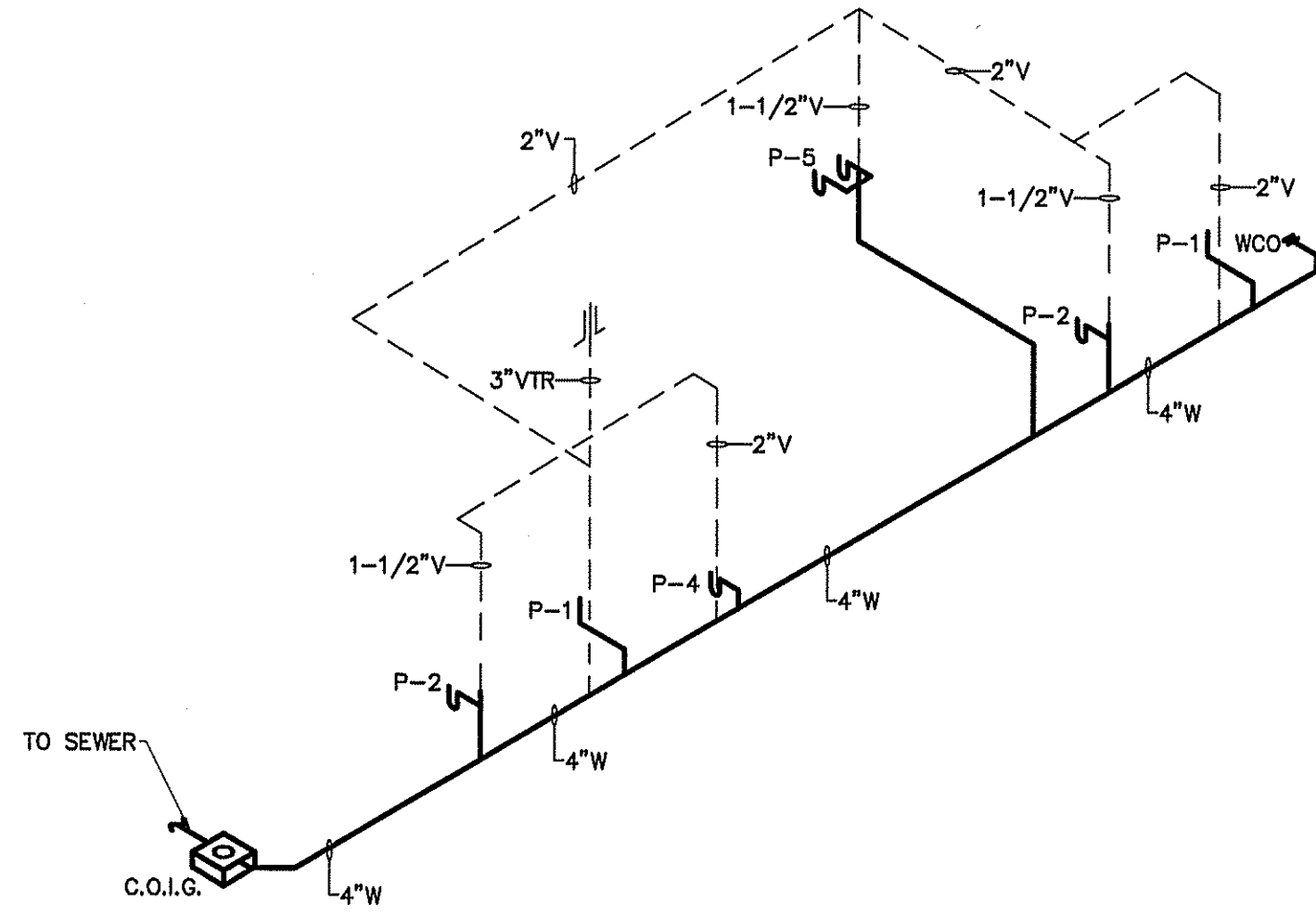
PLUMBING LEGEND	
DESCRIPTION	SYMBOL
COLD WATER	— CW
HOT WATER	— HW
COLD WATER (FILTERED)	—
RECIRCULATED WATER	— HWR
VENT PIPING	— V
WASTE PIPING	— W
CLEAN OUT IN GRADE	□ C.O.I.G.
FLOOR CLEAN OUT	○ F.C.O.
NON FREEZE HOSE BIBB	— NFFHB
FLOOR DRAIN	○ F.D.
CHECK VALVE	—
BALL VALVE	—
GATE VALVE	—
SHUT-OFF 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	—



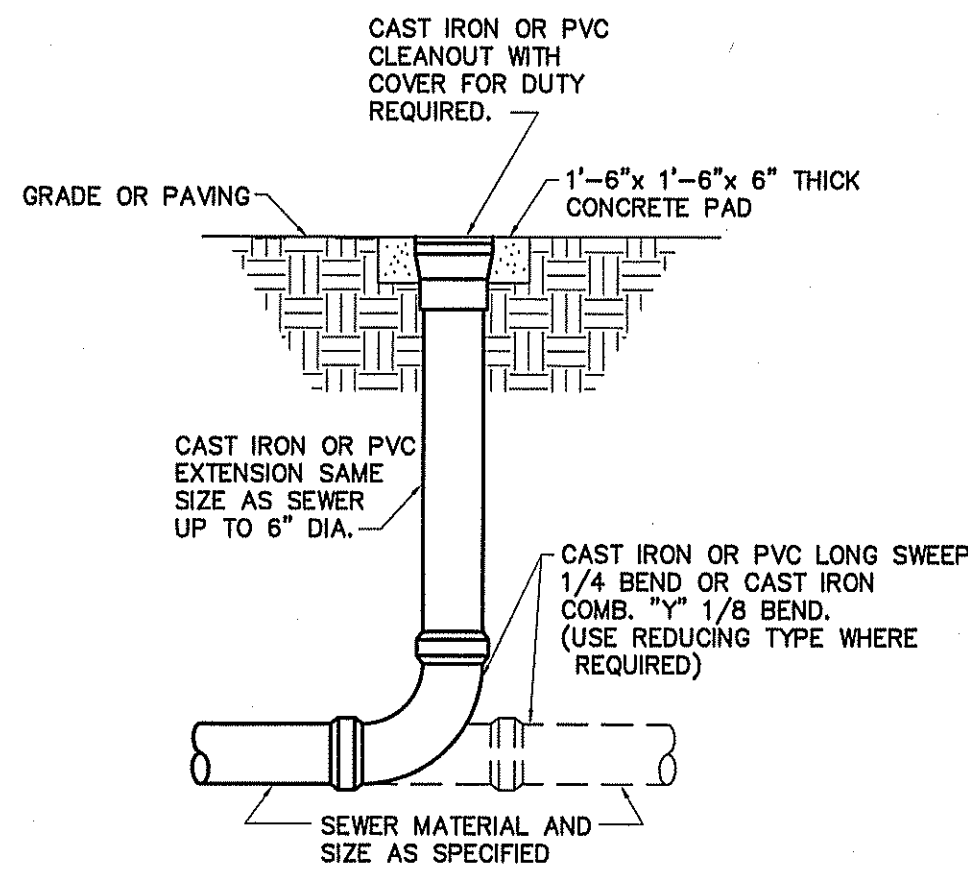
RESTROOM ACCESSIBILITY DETAILS
SCALE: 1/2" = 1'-0"

GENERAL PLUMBING NOTES

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

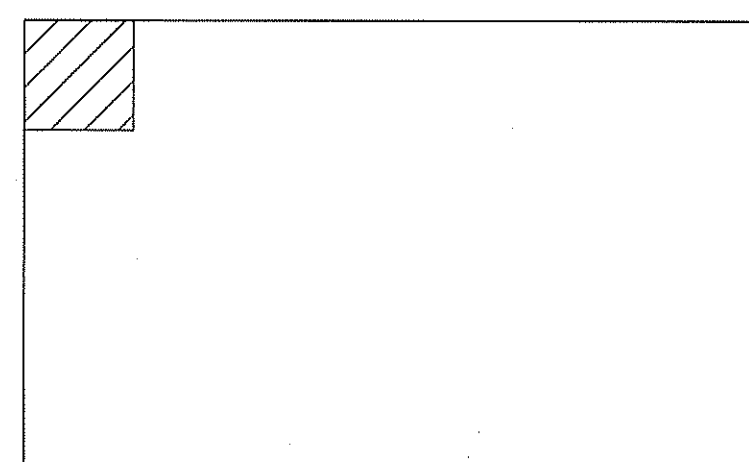


WASTE & VENT RISER DIAGRAM
NOT TO SCALE

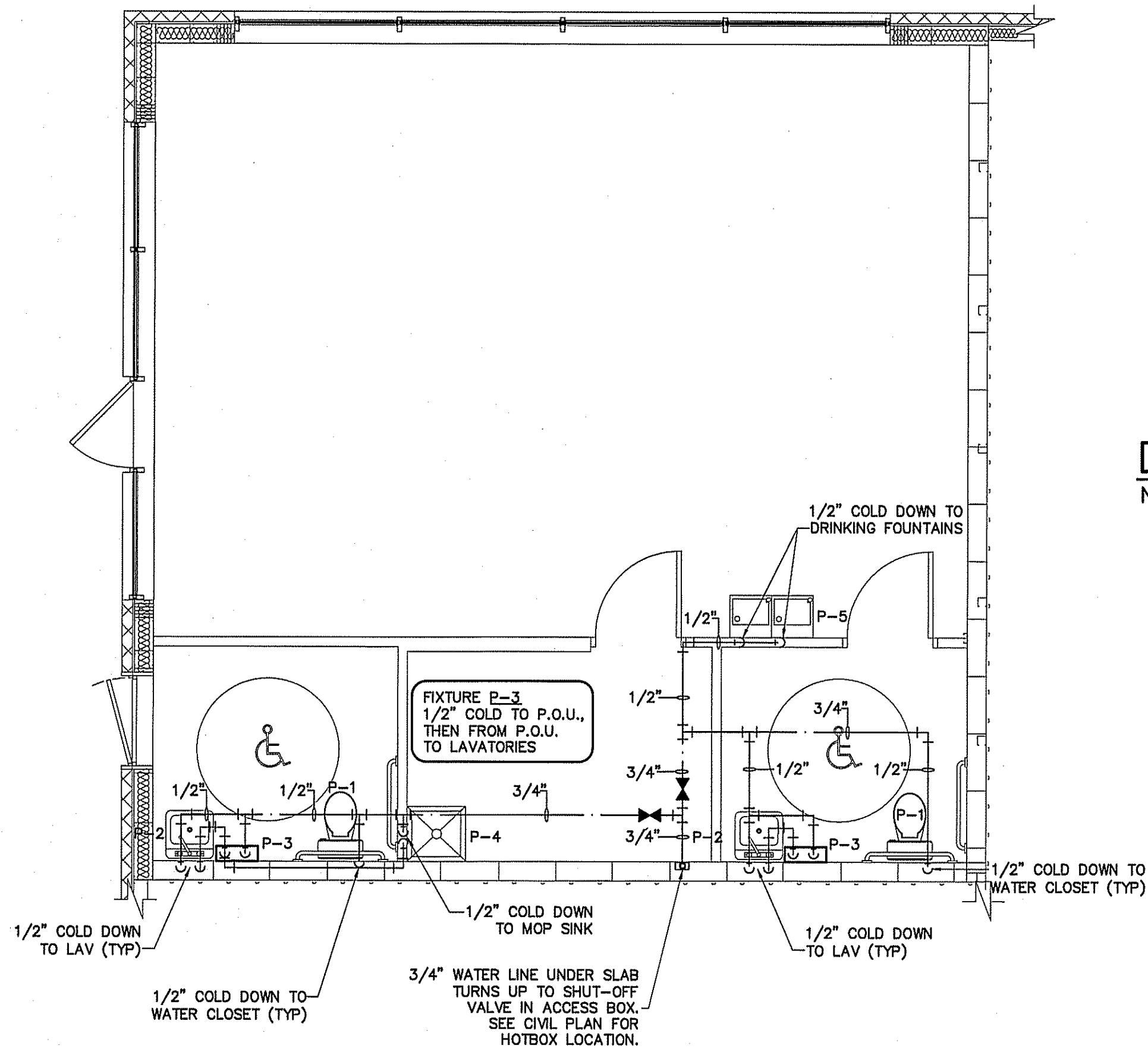


DETAIL-CLEAN OUT AT GRADE
NOT TO SCALE

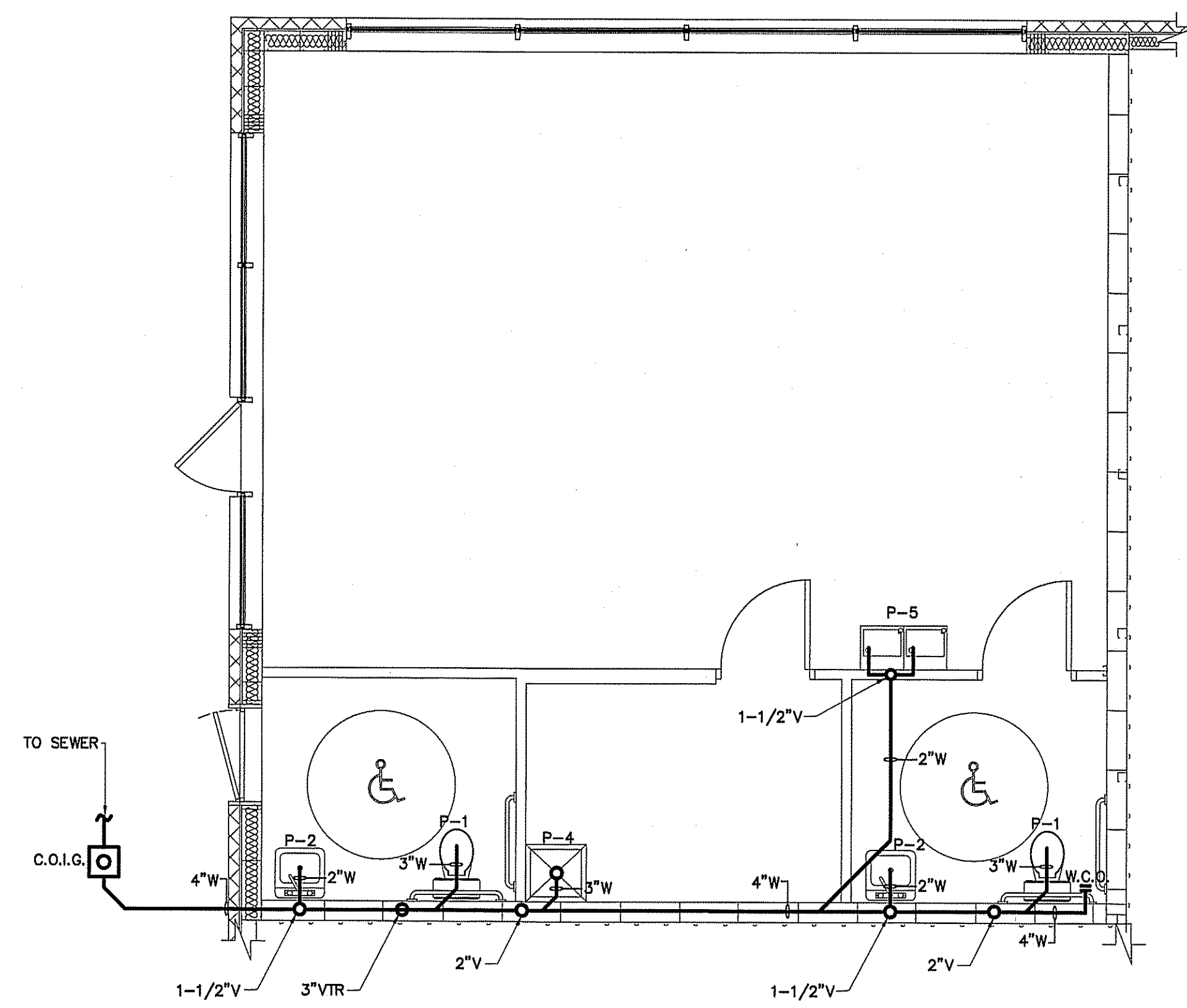
PLUMBING CONNECTION SCHEDULE				
FIXTURE	C.W.	H.W.	WASTE	VENT
FLUSH TANK WATER CLOSET	1/2"	-	3"	2"
LAVATORY	1/2"	1/2"	2"	1 1/2"
ELEC. WATER COOLER	1/2"	-	2"	1 1/2"
FLOOR DRAIN			3"	2"
MOP SINK	1/2"	1/2"	3"	2"



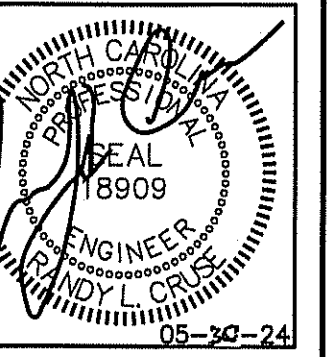
KEY PLAN
SCALE: NTS



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



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



PLANS FOR:
AMPLE STORAGE
ERWIN, NORTH CAROLINA 28339

REVISIONS	
NO.	

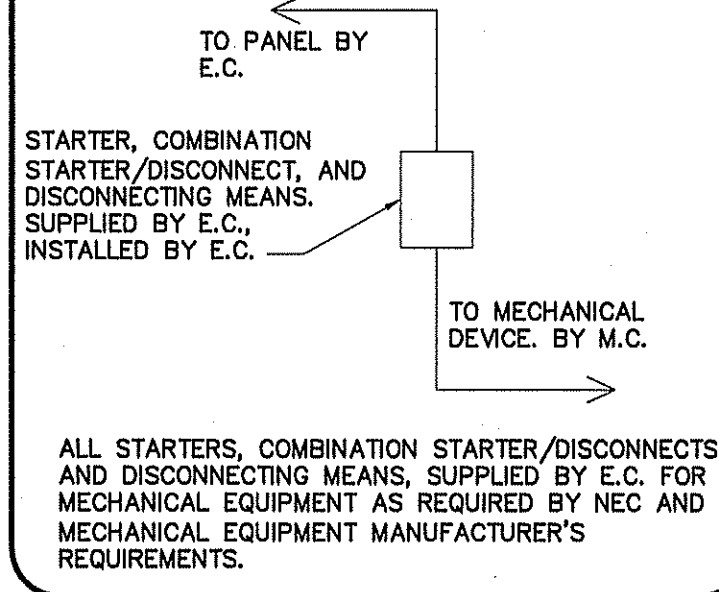
Cruse
And
Associates, P.A.
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JOB NO. 24-23

SHEET NO.
P-1 OF 1

CONNECTION SCHEDULE



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.

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

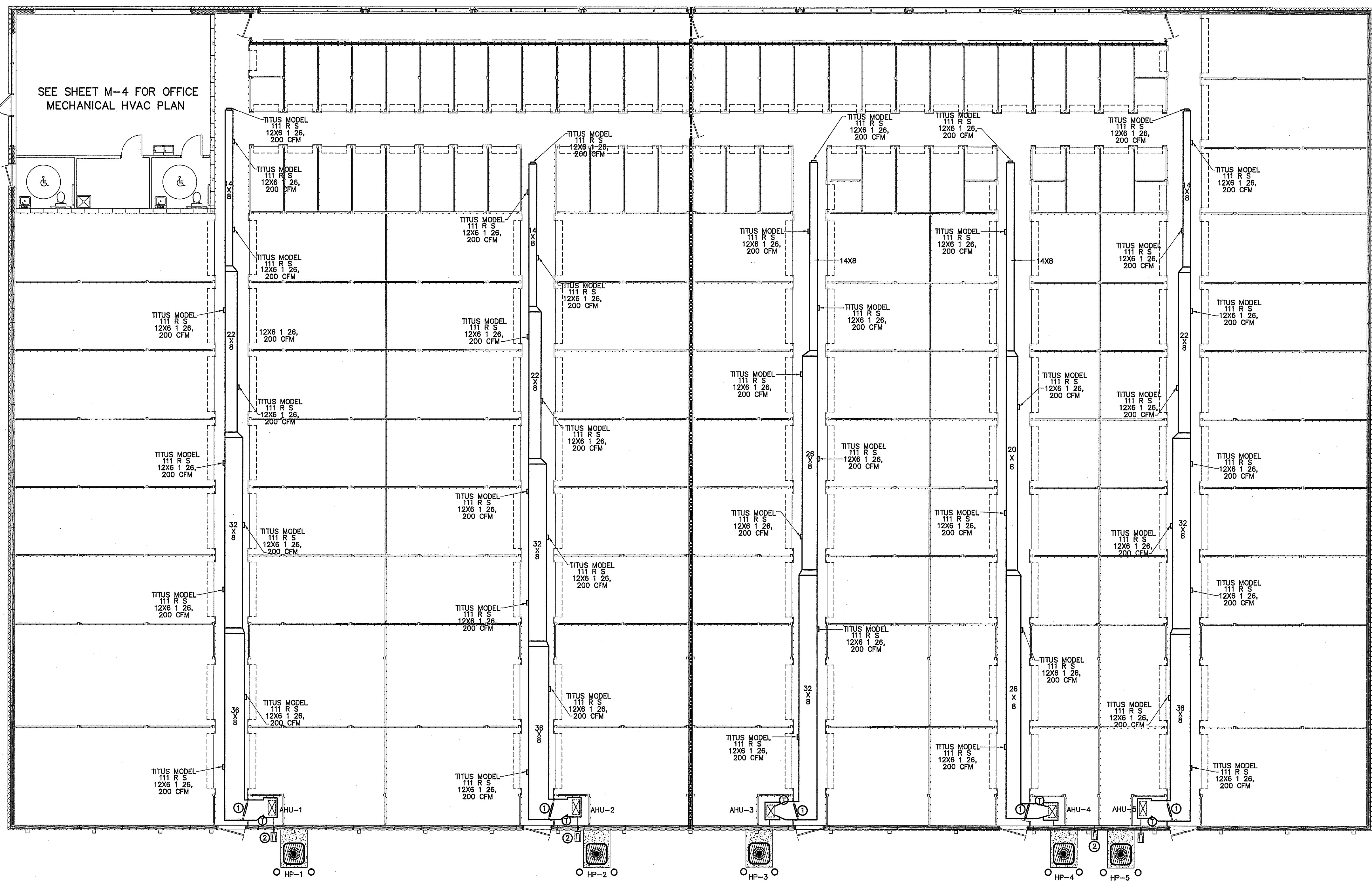
HVAC CONTRACTOR TO VERIFY EXACT LOCATION (THAT CORRESPONDS TO APPROVED SITE PLAN) OF HEAT PUMPS WITH GENERAL CONTRACTOR BEFORE BEGINNING CONSTRUCTION. THEN COORDINATE LOCATION WITH ELECTRICAL CONTRACTOR FOR ALL ELECTRICAL REQUIREMENTS.

NOTE:

VERIFY THERMOSTAT LOCATION WITH OWNER PRIOR TO INSTALLING.

GENERAL NOTE:

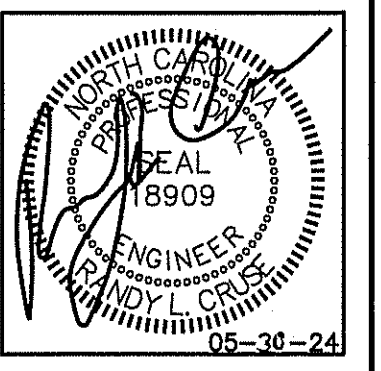
MAINTAIN MANUFACTURER'S REQUIRED CLEARANCES FOR ALL HVAC EQUIPMENT.



SEE SHEET M-4 FOR OFFICE MECHANICAL HVAC PLAN

MECHANICAL HVAC PLAN BUILDING "A"
SCALE: 1/8" = 1'-0"

LEGEND
3 HOUR RATED WALL
U419



PLANS FOR:
AMPLE STORAGE
ERWIN, NORTH CAROLINA 28339

REVISIONS	
NO.	

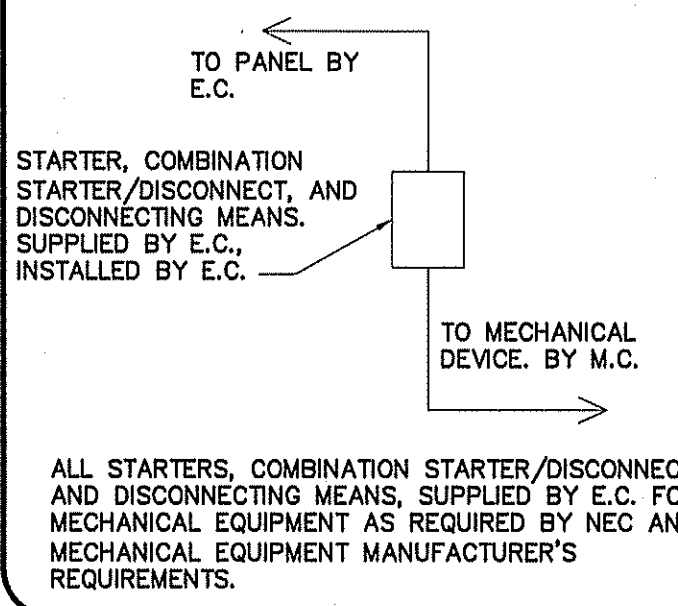
Cruse And Associates, P.A.
414 EAST EDGEMONT STREET
ERWIN, NORTH CAROLINA 28339
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LICENSE NO.: C-1721

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

SHEET NO.
M-1 OF 5

CONNECTION SCHEDULE



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

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

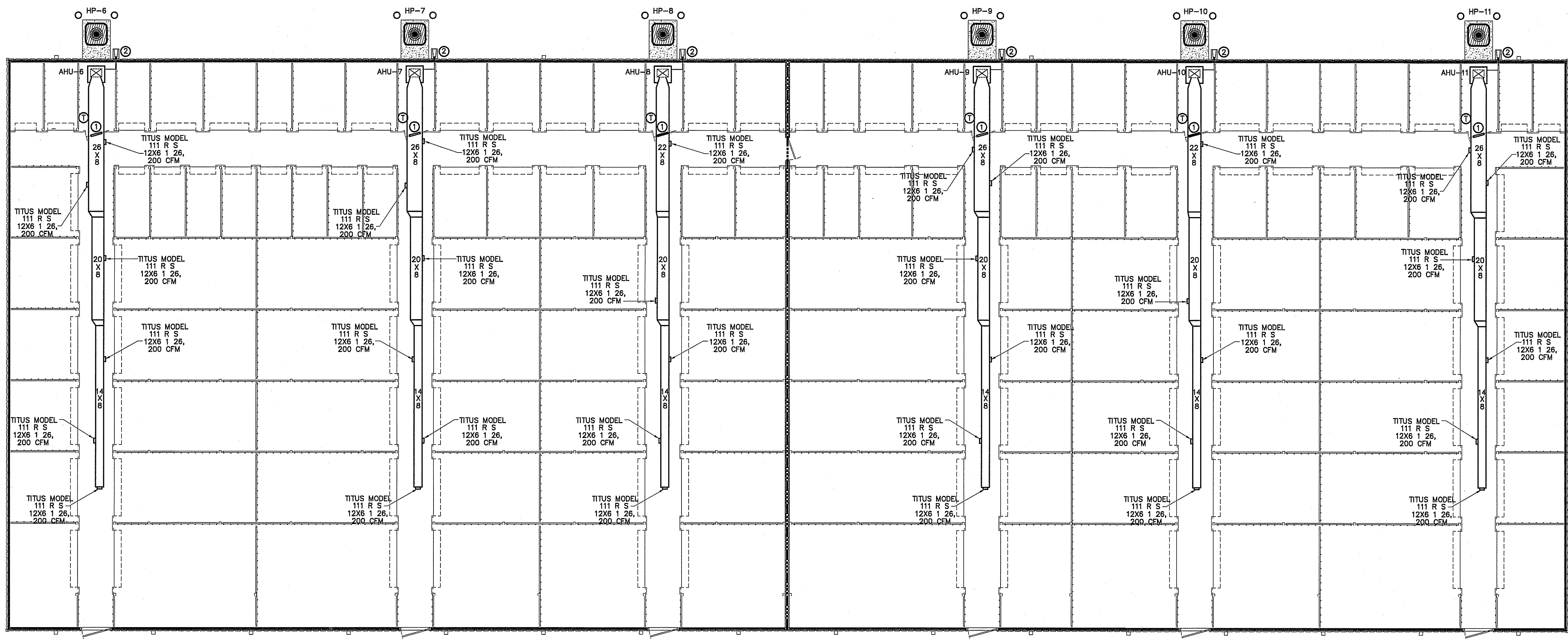
NOTE:
HVAC CONTRACTOR TO VERIFY EXACT LOCATION (THAT CORRESPONDS TO APPROVED SITE PLAN) OF HEAT PUMPS WITH GENERAL CONTRACTOR BEFORE BEGINNING CONSTRUCTION. THEN COORDINATE LOCATION WITH ELECTRICAL CONTRACTOR FOR ALL ELECTRICAL REQUIREMENTS.

NOTE:
VERIFY THERMOSTAT LOCATION WITH OWNER PRIOR TO INSTALLING.

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

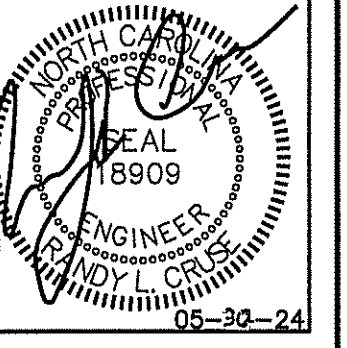
MECHANICAL SYMBOL LEGEND

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



LEGEND
3 HOUR RATED WALL
U419

HVAC MECHANICAL PLAN BUILDING "D"
SCALE: 1/8" = 1'-0"



**PLANS FOR:
AMPLE STORAGE**
ERWIN, NORTH CAROLINA 28339

REVISIONS

NO.	DESCRIPTION

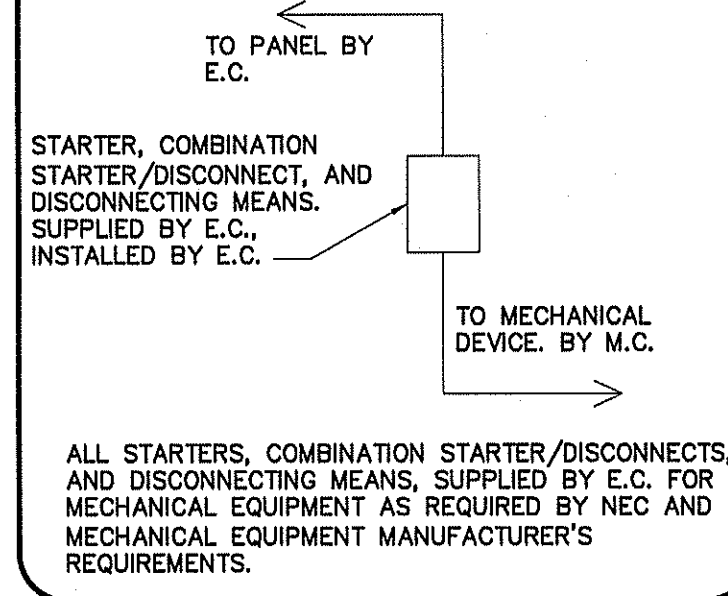
Cruse And Associates, P.A.
414 EAST REDGORTON STREET
ERWIN, NORTH CAROLINA 28334
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FAX: (810) 892-5162
LICENSE NO.: C-1721

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DRAWN BY BAM
JOB NO. 24-23

SHEET NO.
M-2 OF 5

CONNECTION SCHEDULE



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.

LEGEND

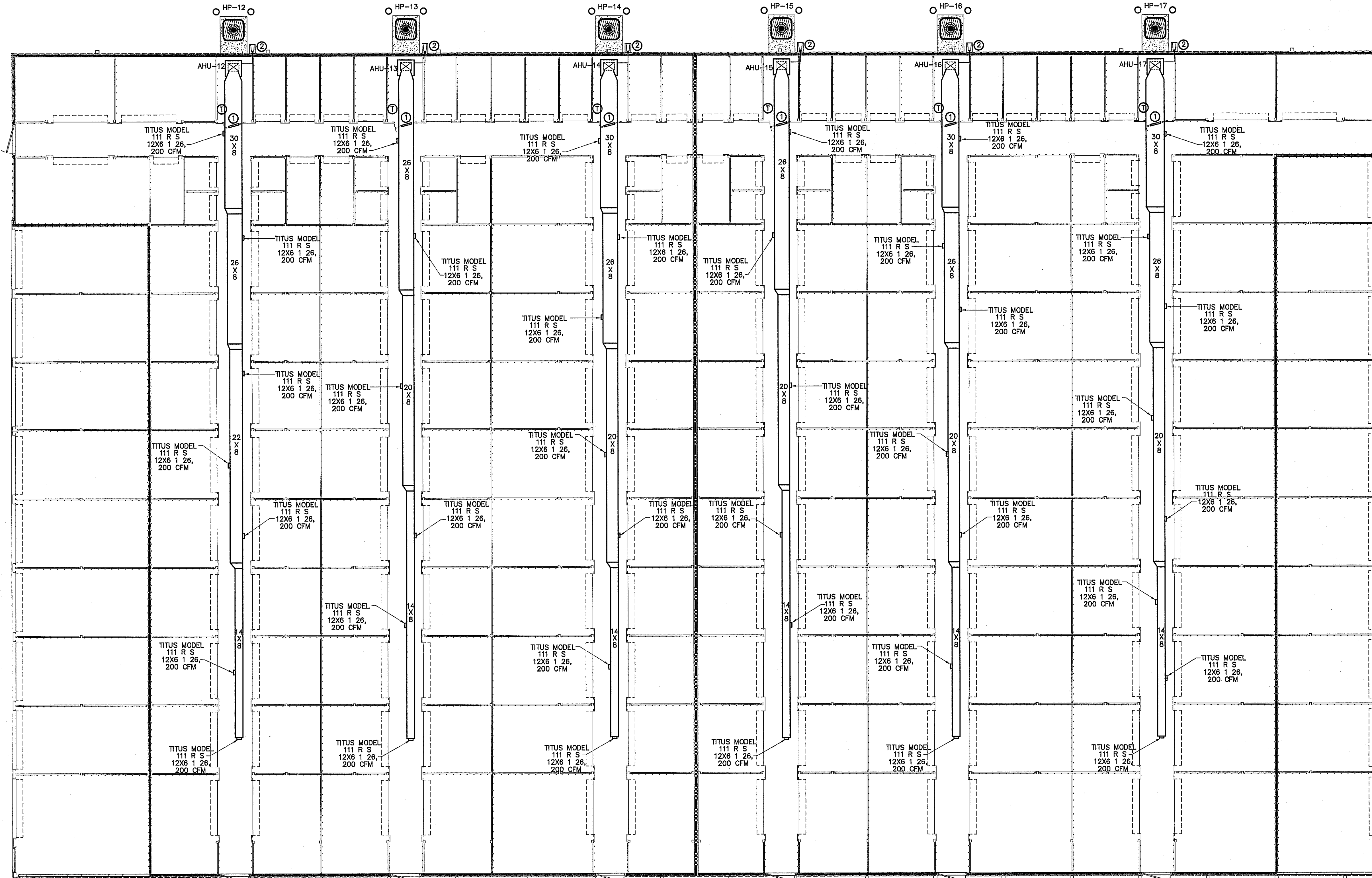
3 HOUR RATED WALL
U419

GENERAL NOTES:

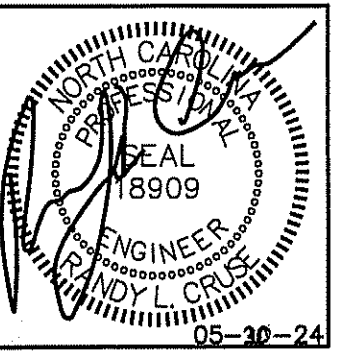
- ① RUN ALL DUCTWORK TIGHT TO CEILING INSULATION.
- ② FASTEN ALL CONDENSATE LINES TO WALLS OR CEILINGS WHERE APPLICABLE.
- ③ 7-DAY PROGRAMMABLE T*STAT WITH LOCKING COVER.
- ④ PROVIDE & INSTALL PROTECTIVE 6" CONCRETE-FILLED PIPE BOLLARDS, TWO PER HEAT PUMP OR AS SHOWN ON PLAN.
- ⑤ PROVIDE AND INSTALL 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	SINGLE LINE	DOUBLE LINE	DESCRIPTION	SINGLE LINE	DOUBLE LINE	DESCRIPTION
		TAKE OFF TO SUPPLY AIR REGISTER WITH EXT. INSUL. DUCTWORK			CEILING DIFFUSER FLEXIBLE DUCTWORK (14' MAX.)			SUPPLY AIR CEILING DIFFUSER, ARROW INDICATES DIRECTION OF BLOW & ACTIVE DIFFUSER SIDES
		BRANCH TAKEOFF FROM MAIN TRUNK DUCT WITH EXT. INSUL. DUCTWORK			ONE SIDED REDUCING TRANSITION			(1) CUSHION HEAD @ BRANCH OR DIFFUSER RUNOUT (2) CUSHION HEAD IS EQUAL TO 1-1/2" WIDTH OF THE BRANCH DUCT OR DIFFUSER RUNOUT
		END CAP			F.D.=FIRE DAMPER (1-1/2")=RATED FOR 1-1/2 HRS.			R.A. OR EXHAUST DUCT TURNS DOWN @ 90 DEGS.
		DUCT SMOKE DETECTOR			RETURN AIR OR EXHAUST GRILLE			MANUAL VOLUME CONTROL DAMPER W/ QUADRANT LOCKING DEVICE
		ACCESS DOOR DOOR SIZE DUCT HEIGHT 8X8 10" 10X10 12" 12X12 14" & LARGER			TWO SIDED TRANSITION			TWO SIDED TRANSITION
		ELECT. DUCT INSERT HEATER WITH CONTROL PANEL			AHU W/FLEXIBLE CONNECTION AT SUPPLY AND RETURN DUCT			KEY NOTE
		MARK XXX CFM-DIFFUSER, REGISTER OR GRILLE (SEE SCHEDULE)			EXHAUST FAN			



MECHANICAL HVAC PLAN BUILDING "G"
SCALE: 1/8" = 1'-0"



PLANS FOR:
AMPLE STORAGE
ERWIN, NORTH CAROLINA 28339

REVISIONS

NO.	DESCRIPTION

Cruse And Associates, P.A.
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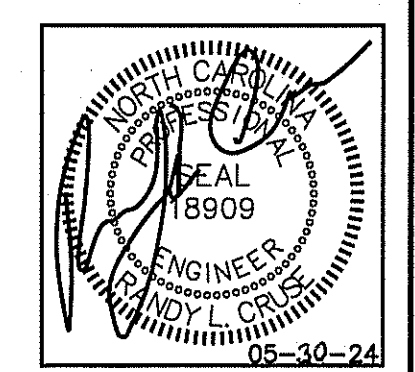
SHEET NO.
M-3 OF 5

MECHANICAL SYMBOL LEGEND

SINGLE LINE	DOUBLE LINE	DESCRIPTION	SINGLE LINE	DOUBLE LINE	DESCRIPTION	SINGLE LINE	DOUBLE LINE	DESCRIPTION
		TAKE OFF TO SUPPLY AIR REGISTER WITH EXT. INSUL. DUCTWORK			CEILING DIFFUSER FLEXIBLE DUCTWORK (14' MAX.)			SUPPLY AIR CEILING DIFFUSER, ARROW INDICATES DIRECTION OF BLOW & ACTIVE DIFFUSER SIDES ELECT. DUCT INSERT HEATER WITH CONTROL PANEL
		END CAP DUCT SMOKE DETECTOR			ONE SIDED REDUCING TRANSITION F.D.=FIRE DAMPER (1-1/2)=RATED FOR 1-1/2 HRS.			(1)CUSHION HEAD @ BRANCH (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
		ACCESS DOOR DOOR SIZE DUCT HEIGHT 8x8 10" 10x10 12" 12x12 14" & LARGER			TWO SIDED TRANSITION			KEY NOTE MARK CFM-DIFFUSER, REGISTER OR GRILLE (SEE SCHEDULE) 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	SEER	HTR KW (240)	COOLING CAPACITY (MBH)	HEATING CAPACITY (MBH)	HSPF	MIN. CIRC. AMPACITY	M.O.C.P.			
								GAS	LIQ.	TOTAL		SENS.	HIGH	LOW				
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	VARIABLE	*	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	NOTES		
							VOLT	PH	HZ	
EF-1,2	GREENHECK	SP-A90	CEILING FAN	70	.125	.34	115	1φ	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 - 15.0 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

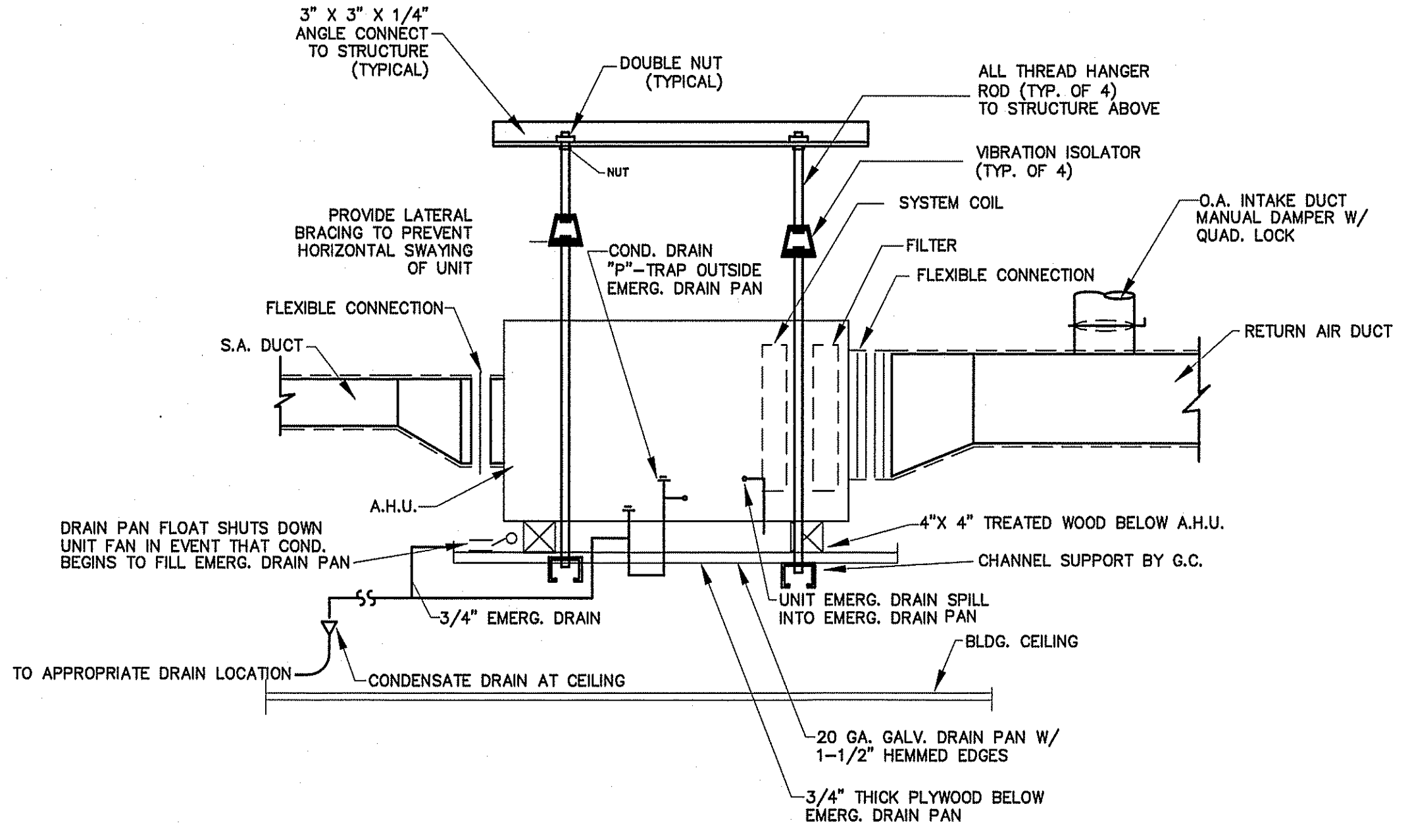
LIST EQUIPMENT EFFICIENCIES SEE SCHEDULE

PLANS FOR:
AMPLE STORAGE
ERWIN, NORTH CAROLINA 28639

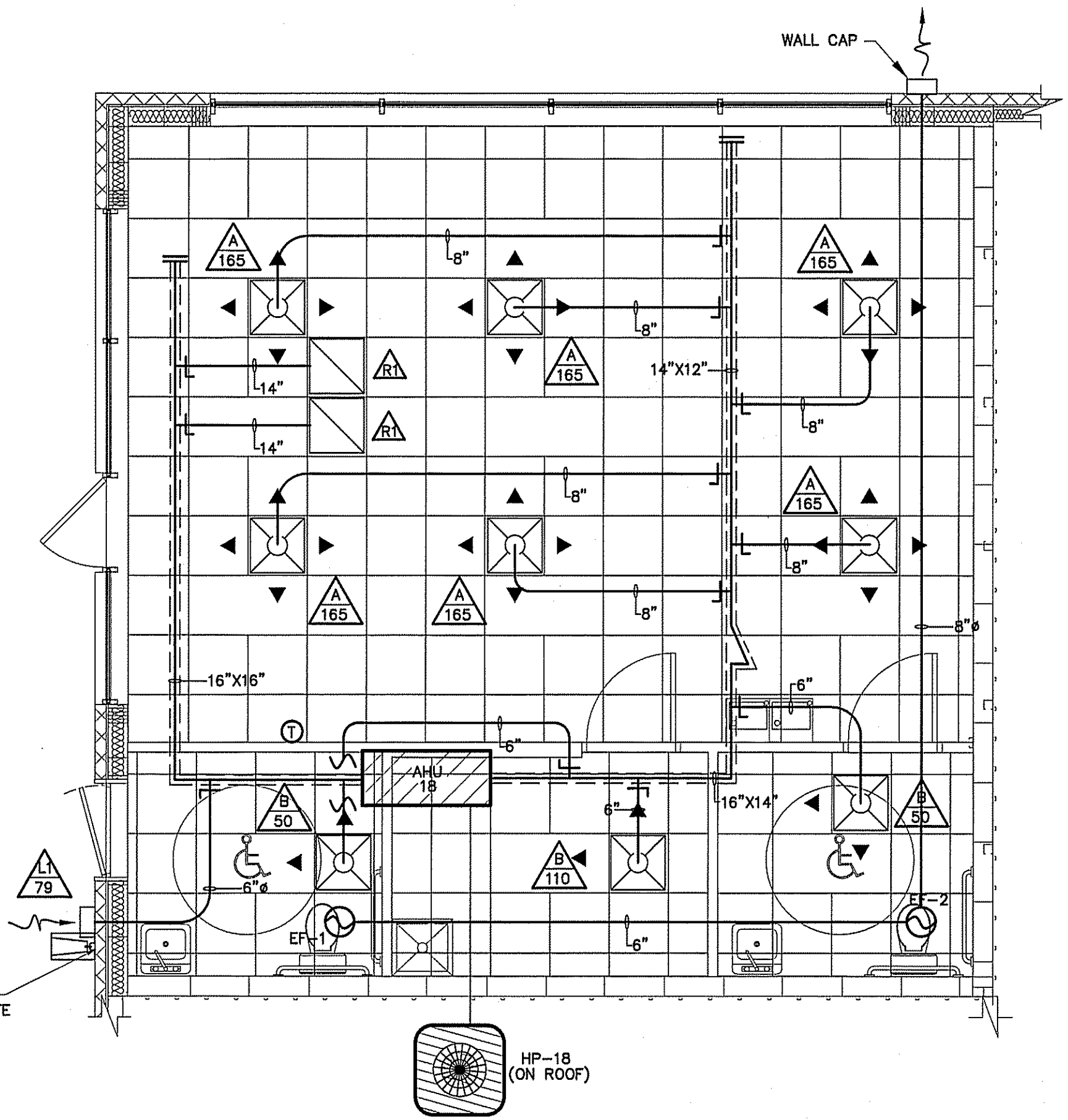
REVISIONS

NO.	DESCRIPTION

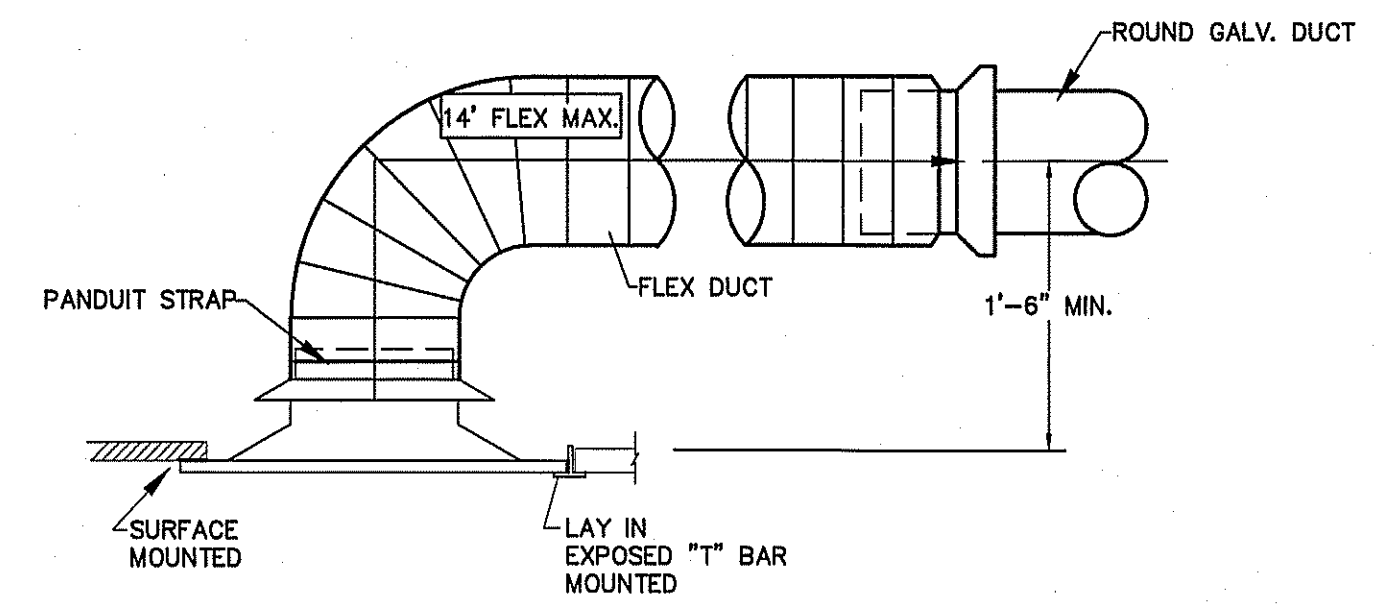
Cruse And Associates, P.A.
414 EAST ROBERTSON STREET
Durham, North Carolina 28834
PHONE: (919) 896-3162
FAX: (919) 896-3162
LICENSE NO.: C-1721



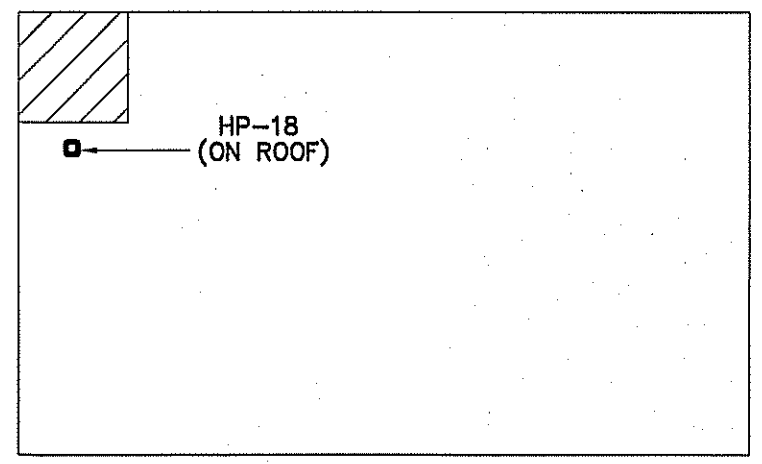
TYPICAL DETAIL AT AIR HANDLING UNITS
NOT TO SCALE



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



DIFFUSER DETAIL
NOT TO SCALE



KEY PLAN
SCALE: NTS

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

SHEET NO.
M-4 OF 5

AIR HANDLER UNIT

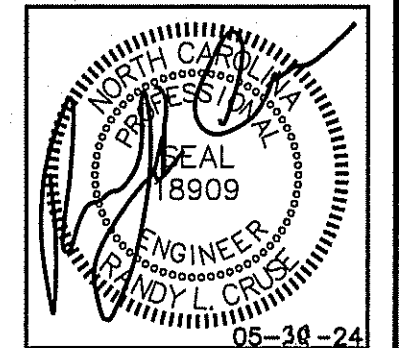
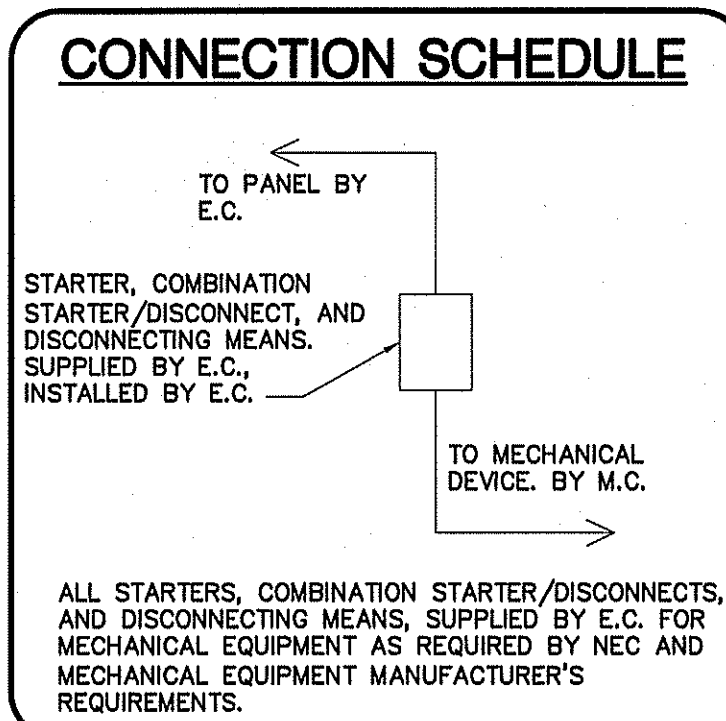
AHU NO.	MANUFACTURER	MODEL	VOLTAGE	E.S.P.	CFM	UNIT FLA	REF LINES		SEER	HTR KW (240)	COOLING CAPACITY (MBH)		HEATING CAPACITY (MBH)		HSPF	MIN. CIRC. AMPACITY	M.O.C.P.
							GAS	LIQ.			TOTAL	SENS.	HIGH	LOW			
AHU-8,10	TRANE	TEM4AOC37S31	240/1/60	.46	N/A	1000	32.0	3/4 3/8	14.0	7.68	28.4	22.4	27.2	18.5	8.5	43	45
AHU-4,6,7,9,11,13,15	TRANE	TEM4AOC42S31	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	TEM4AOC49M41	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	TEM4AOC49M41	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	TEM4AOC61M51	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 40F.
NOTE: SEE SHEET M-4 OF 5 FOR AHU-18 & HP-18.

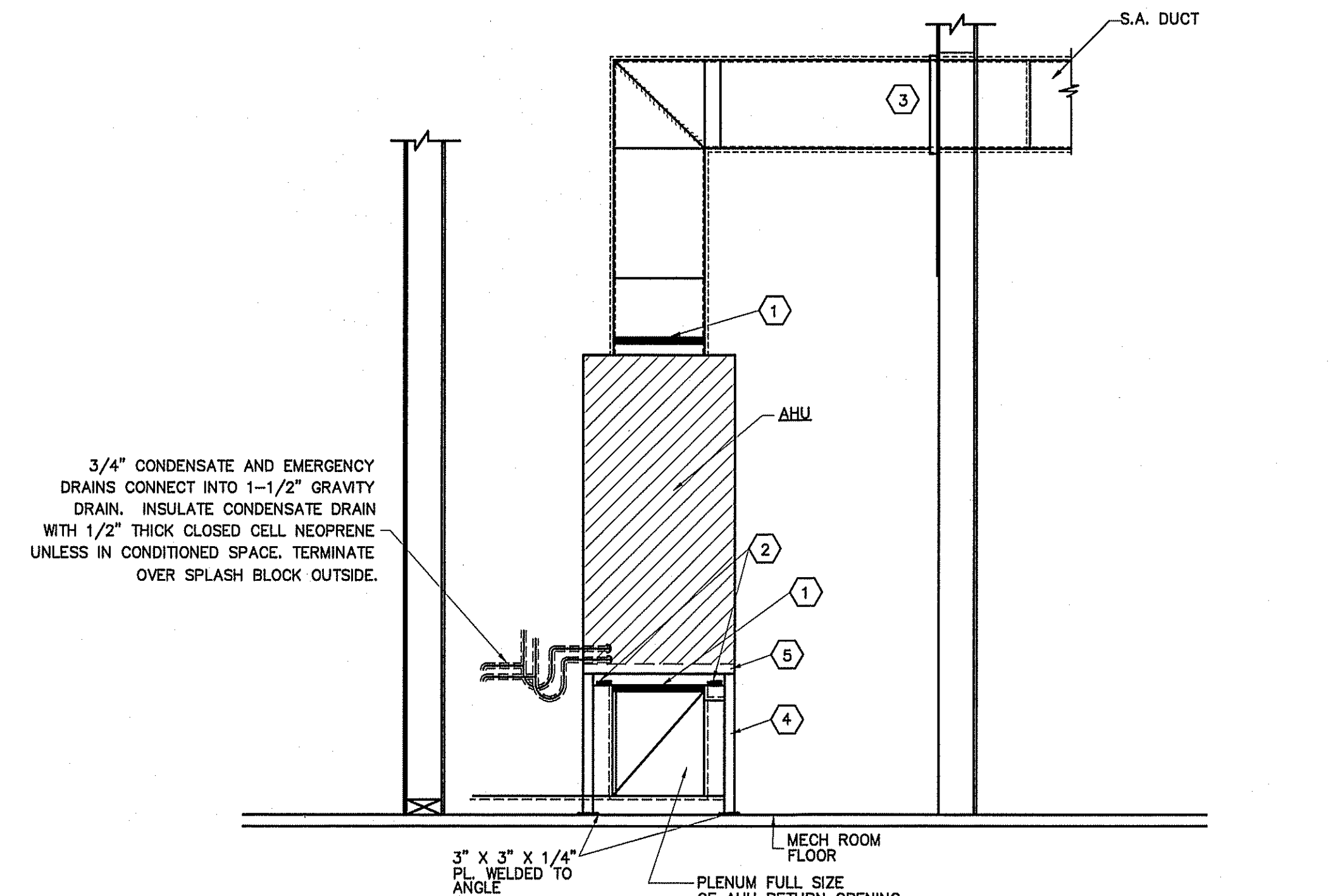
SPLIT SYSTEM HEAT PUMP UNITS

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



PLANS FOR:
AMPLE STORAGE
ERWIN, NORTH CAROLINA 28339

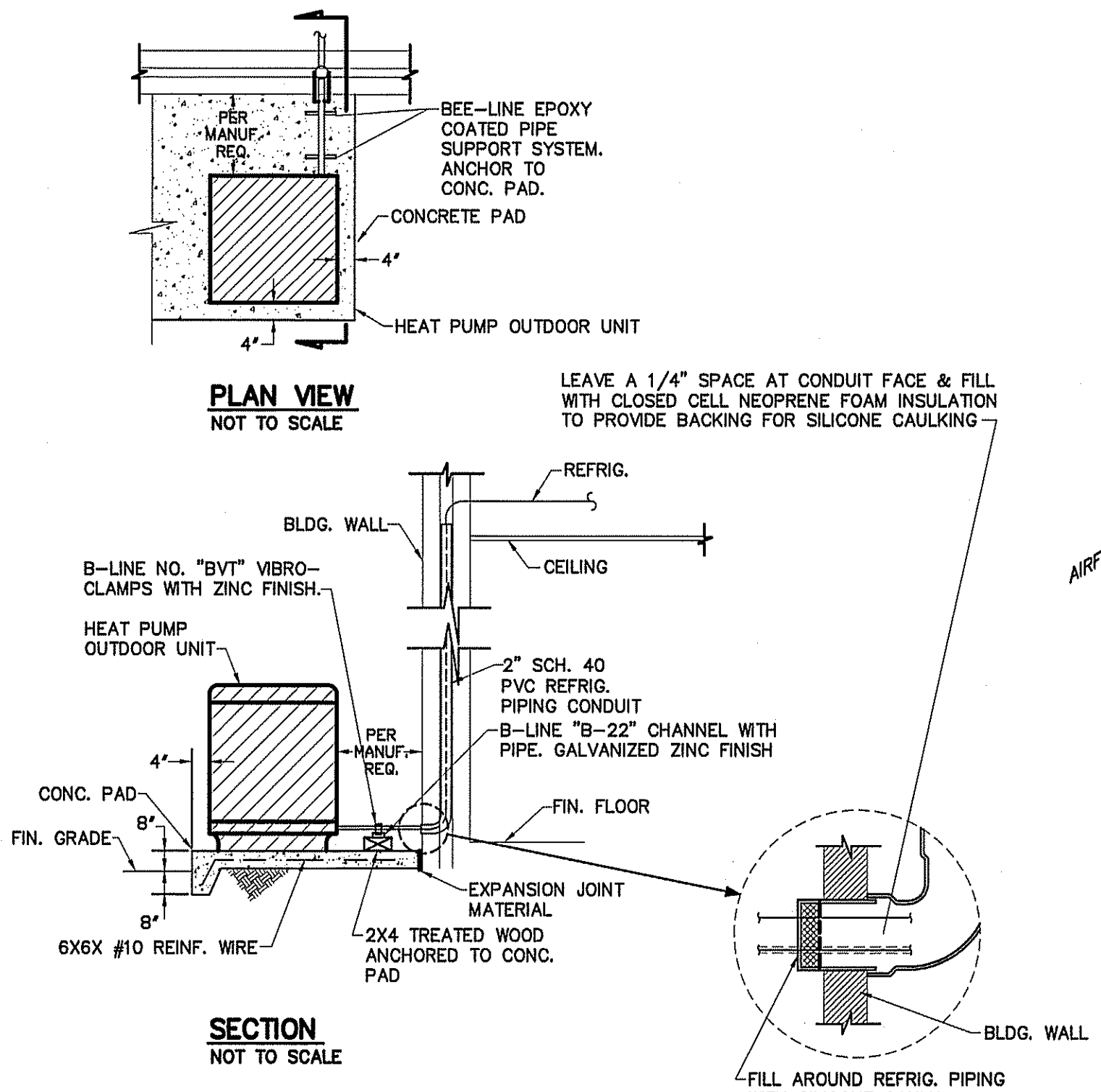


TYPICAL DETAIL AT FLOOR MOUNTED AHU
NOT TO SCALE

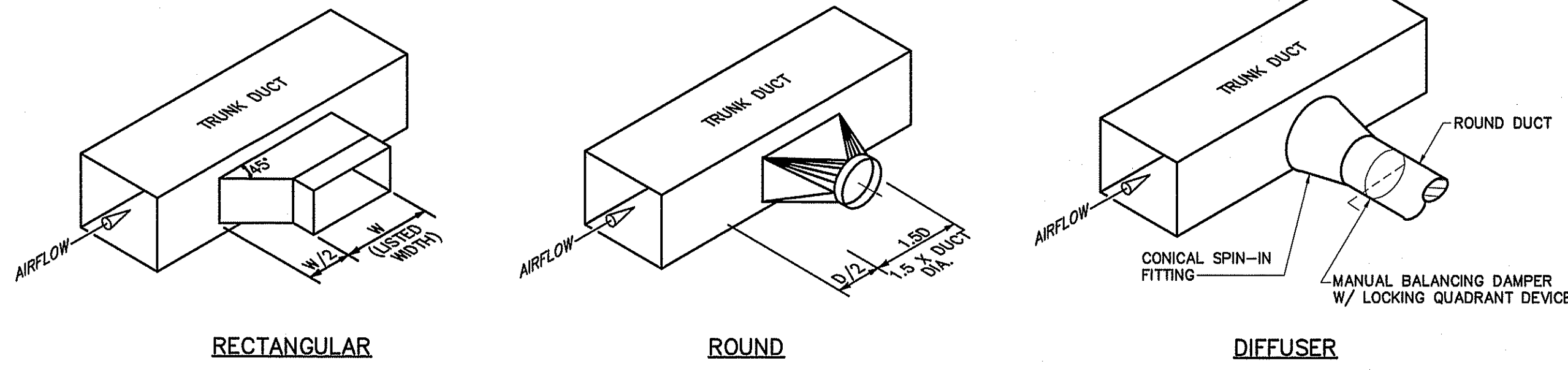
NOTES:

- 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.



DETAIL-TYPICAL HEAT PUMP OUTDOOR UNIT
NOT TO SCALE



TYPICAL LATERAL TO REGISTER OR BRANCH DUCT
NOT TO SCALE

MECHANICAL NOTES (GENERAL)

- 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.
- 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.
- ALL DUCTWORK SHALL BE SEALED AIR TIGHT WITH SEALING COMPOUND.
- 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.
- THIS CONTRACTOR SHALL COORDINATE HIS WORK WITH THAT OF OTHER TRADES PRIOR TO INSTALLATION OF ANY OF HIS PIPING, DUCTWORK, OR EQUIPMENT.
- 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.
- 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.
- ALL EQUIPMENT SHALL BE LOCATED AND INSTALLED TO PROVIDE MAXIMUM SPACE FOR MAINTENANCE AND SERVICE.
- 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
BOILER	HEATING EFFICIENCY - 8.5 HSPF COOLING EFFICIENCY - 14.5 SEER SIZE CATEGORY OF UNIT - ≤ 65,000 BTUH
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
BOILER	HEATING EFFICIENCY - 8.5 HSPF COOLING EFFICIENCY - 14.5 SEER SIZE CATEGORY OF UNIT - ≤ 65,000 BTUH
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
BOILER	HEATING EFFICIENCY - 9.0 HSPF COOLING EFFICIENCY - 14.8 SEER SIZE CATEGORY OF UNIT - ≤ 65,000 BTUH
CHILLER	SIZE CATEGORY. IF OVERSIZED, STATE REASON: N/A

LIST EQUIPMENT EFFICIENCIES SEE SCHEDULE

REVISIONS

NO.	DESCRIPTION

414 EAST INDEPENDENCE STREET
ERWIN, NC 28339-4429
TEL: (910) 892-4429
FAX: (910) 892-5126

Cruse And Associates, P.A.
LICENSE NO. C-1721

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

SHEET NO.
M-5 OF 5

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

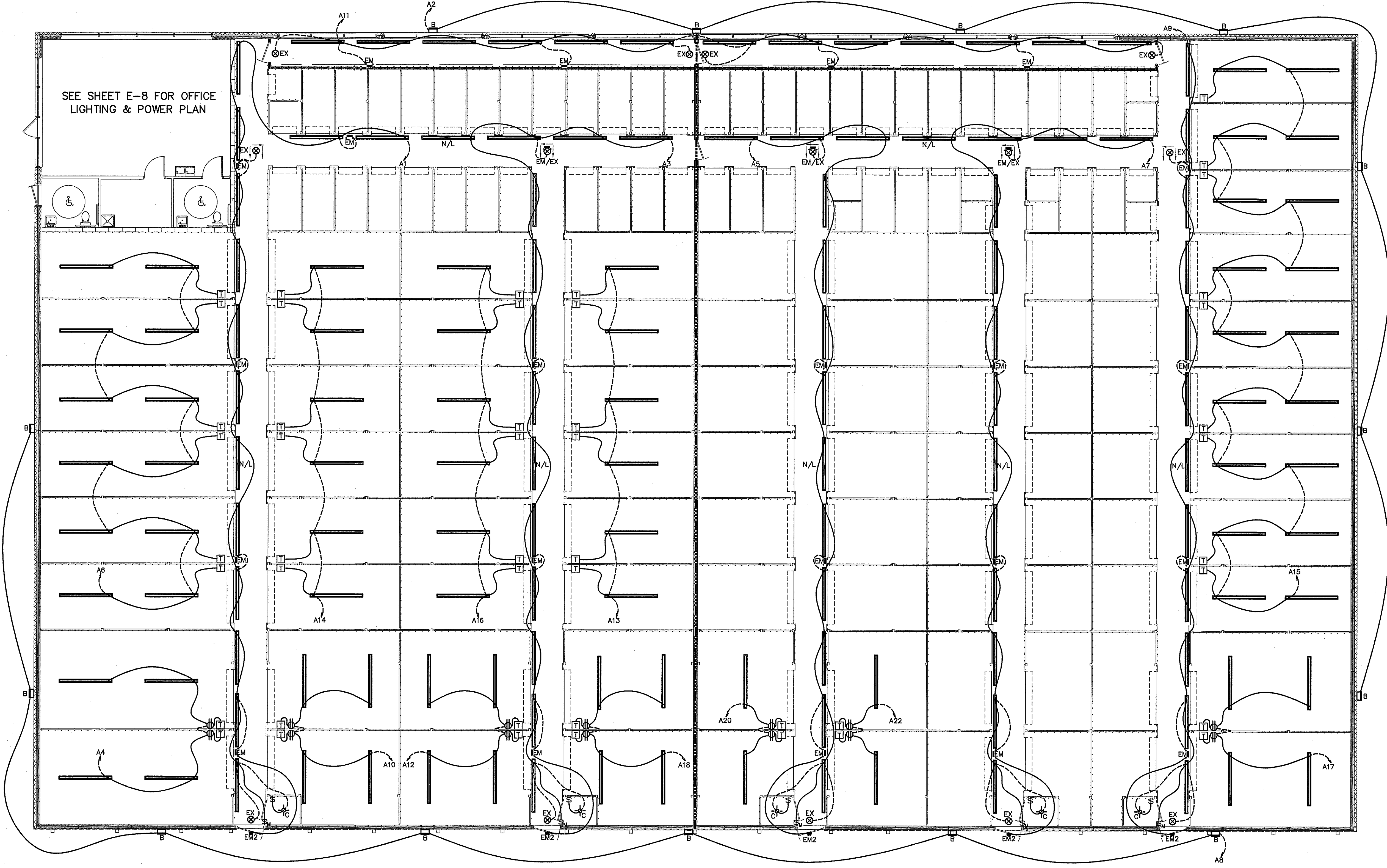
- NOTE:**
1. VERIFY LOCATION OF LIGHTS & RECEPTACLES WITH OWNER BEFORE CONSTRUCTION.
 2. COORDINATE LOCATION OF 8' STRIP LIGHTS IN CORRIDOR WITH DUCT WORK WHERE APPLICABLE.
 3. ALL FLUORESCENT LIGHTS IN CORRIDORS TO BE MOUNTED ON THE WALLS WHERE APPLICABLE.
 4. ALL HALLWAYS SWITCHES TO BE ON MOTION SENSORS 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 '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

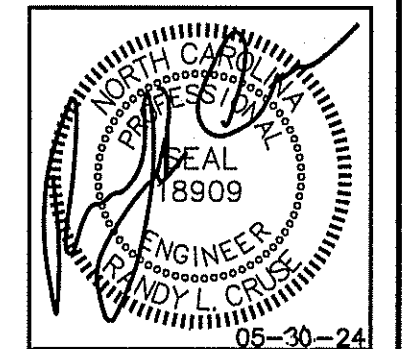
LIGHT FIXTURE SCHEDULE							
MARK	DESCRIPTION	MANUFACTURER	CATALOG NUMBER	LAMPS	BALLASTS	WATTAGE	REMARKS
A	8' LED STRIP W/WIRE GUARD	DAYBRITE	CLX L96 10000LM SEF WD MVOLT 40K 80 CRI WH	LED		71.0	WITH (2) 48" WIRE GUARDS WCLL48
B	OUTDOOR LED WALL LIGHT	LSI	TWR1 LED 3 50K MVOLT	LED	LED	58.4	VERIFY MOUNTING 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 18 CELL PARABOLIC 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



PLANS FOR:
AMPLE STORAGE
ERWIN, NORTH CAROLINA 28339

REVISIONS	
NO.	

Cruse And Associates, P.A.
444 EAST ROBERTSON STREET
ERWIN, NC 28339
PHONE: (910) 992-4429
FAX: (910) 992-3102
LICENSE NO.: C-1721

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

SHEET NO.
E-1 OF 10

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

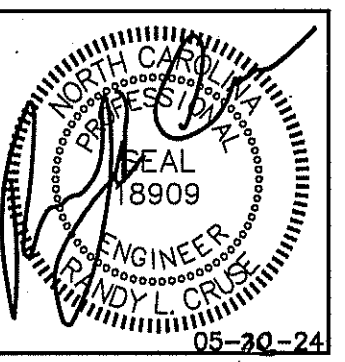
- NOTE:**
1. VERIFY LOCATION OF LIGHTS & RECEPTACLES WITH OWNER BEFORE CONSTRUCTION.
 2. COORDINATE LOCATION OF 8" STRIP LIGHTS IN CORRIDOR WITH DUCT WORK WHERE APPLICABLE.
 3. ALL FLUORESCENT LIGHTS IN CORRIDORS TO BE MOUNTED ON THE WALLS WHERE APPLICABLE.
 4. ALL HALLWAYS SWITCHES TO BE ON MOTION SENSORS 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

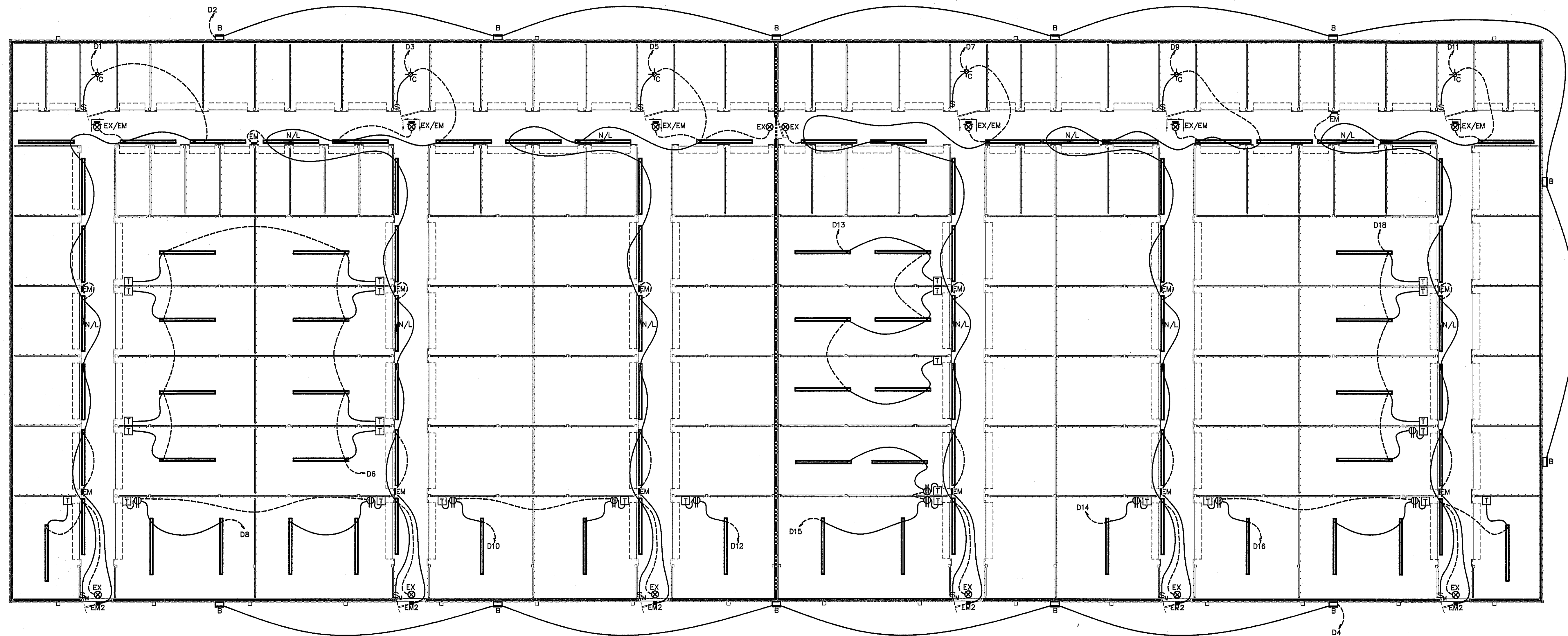
LIGHT FIXTURE SCHEDULE							
MARK	DESCRIPTION	MANUFACTURER	CATALOG NUMBER	LAMPS	BALLASTS	WATTAGE	REMARKS
A	8' LED STRIP W/WIRE GUARD	DAYBRITE	CLX L96 10000LM SEF WD MVOLT 40K 80 CRI WH	LED		71.0	WITH (2) 48" WIRE GUARDS WGLX48
B	OUTDOOR LED WALL LIGHT	LSI	TWR1 LED 3 50K MVOLT	LED	LED	58.4	VERIFY MOUNTING 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.



PLANS FOR:
AMPLE STORAGE
ERWIN, NORTH CAROLINA 28339



LEGEND
3 HOUR RATED WALL
U419

ELECTRICAL LIGHTING PLAN BUILDING "D"
SCALE: 1/8" = 1'-0"

REVISIONS	
NO.	

Cruse
And
Associates, P.A.

414 EAST BROADWAY STREET
RTE. 1010 BOX 4229
P.O. BOX 4229
FAS: (810) 892-1182

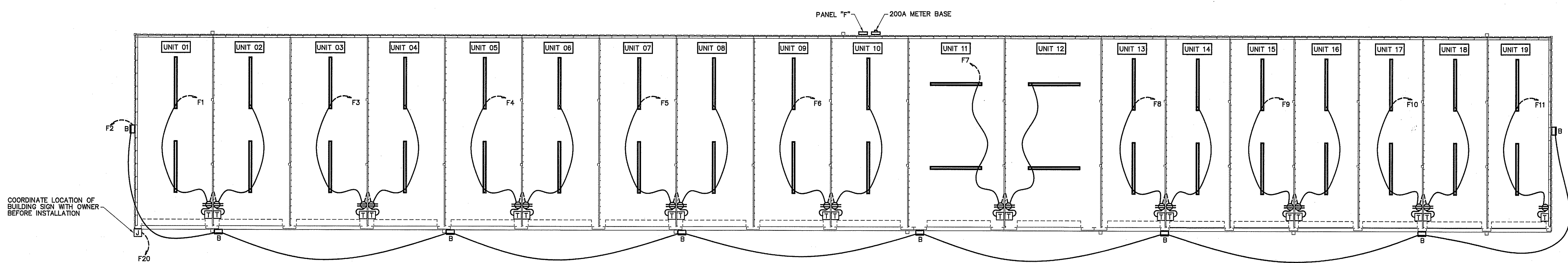
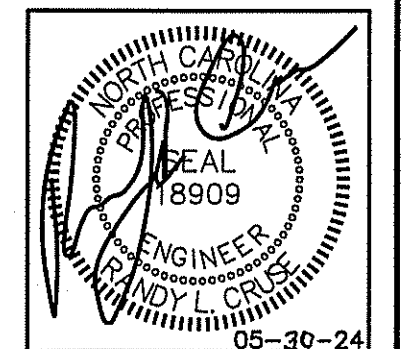
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DRAWN BY BAM
JOB NO. 24-23

SHEET NO.
E-2 OF 10

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

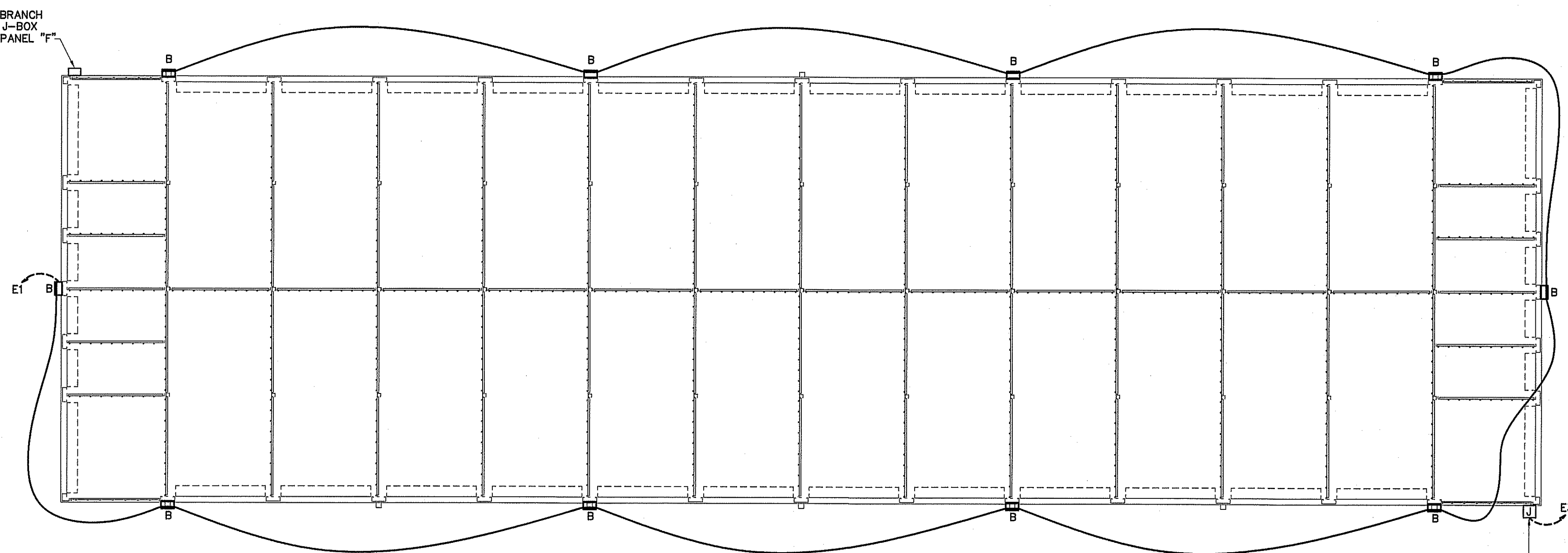


ELECTRICAL LIGHTING & POWER PLAN BUILDING "F"
SCALE: 1/8" = 1'-0"

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

MARK	DESCRIPTION
⊕	QUAD RECEPTACLE
⊕	DUPLEX RECEPTACLE
⊕	SINGLE POLE SWITCH OR TIMER AS APPLICABLE
⊕	HIGH WALL MOUNTED DUPLEX RECEPTACLE APPROXIMATELY 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.)
⊕(4)	MOTION DETECTING 3-WAY SWITCH (4-WAY SWITCH) WITH TIMER
⊕	FUSED DISCONNECT SWITCH
⊕	CEILING MOUNTED FUSED DISCONNECT SWITCH
△	TELEPHONE
⊕	JUNCTION BOX
⊕	SINGLE POLE SWITCH OR TIMER AS APPLICABLE
N/L	UNSWITCHED FIXTURE
⊕	OCCUPANCY SENSING SINGLE-POLE SWITCH NOT ON TIMER
⊕	280V RECEPTACLE
⊕	EMERGENCY LIGHT REMOTE WEATHERHEAD(S)

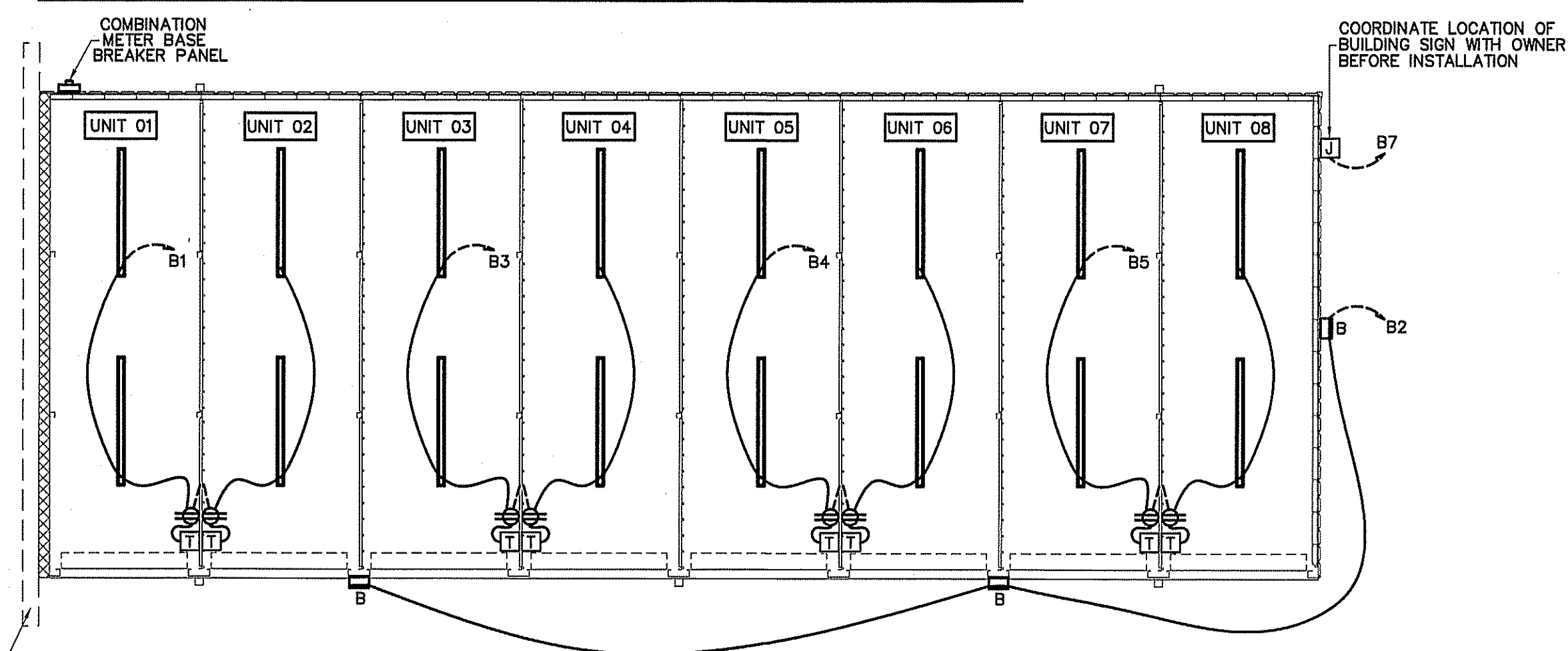
NOTE:
1. VERIFY LOCATION OF LIGHTS & RECEPTACLES WITH OWNER BEFORE CONSTRUCTION.
2. COORDINATE LOCATION OF 'B' STRIP LIGHTS IN CORRIDOR WITH DUCT WORK WHERE APPLICABLE.
3. ALL FLUORESCENT LIGHTS IN CORRIDORS TO BE MOUNTED ON THE WALLS WHERE APPLICABLE.
4. ALL HALLWAYS SWITCHES TO BE ON MOTION SENSORS OR SWITCHED AS INDICATED AND ON TIMERS OF 30 MINUTES. ALL UNIT SWITCHES & UNIT RECEPTACLES TO BE ON TIMERS 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"

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

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, 1ϕ, 60HZ	



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

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 TIMELOCK OR PHOTOCELL
3. LED WALLPACKS ON PHOTOCELL.

PLANS FOR:
AMPLE STORAGE
 ERWIN, NORTH CAROLINA 28339

NO.	

Cruse And Associates, P.A.
 414 EAST BROADWAY STREET
 FRIE, NC 28625
 TEL: (919) 882-4420
 FAX: (919) 882-5128
 LICENSE NO.: C-1721

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JOB NO. 24-23

SHEET NO.
E-3 OF 10

ELECTRICAL LEGEND	
MARK	DESCRIPTION
⊕	QUAD RECEPTACLE
⊕	DUPLEX RECEPTACLE
⊕	SINGLE POLE SWITCH OR TIMER AS APPLICABLE
⊕	HIGH WALL MOUNTED DUPLEX RECEPTACLE APPROXIMATELY 12" BELOW CEILING
⊕	FLUORESCENT FIXTURE
↔	SWITCHED BRANCH CIRCUIT
↔	UNSWITCHED BRANCH CIRCUIT
↔	120/208 VOLT CIRCUIT
⊕	MOTION DETECTING SINGLE-POLE SWITCH ON TIMER
⊕	'EXIT' LIGHT FIXTURE, TYPE 'EX'
⊕	BATTERY OPERATED EMERG. LT. (2-HEAD, WALL MTD.)
⊕	MOTION DETECTING 3-WAY SWITCH (4-WAY SWITCH) WITH TIMER
⊕	FUSED DISCONNECT SWITCH
⊕	CEILING MOUNTED FUSED DISCONNECT SWITCH
⊕	TELEPHONE
⊕	JUNCTION BOX
⊕	SINGLE POLE SWITCH OR TIMER AS APPLICABLE
⊕	UNSWITCHED FIXTURE
⊕	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 'B' 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.

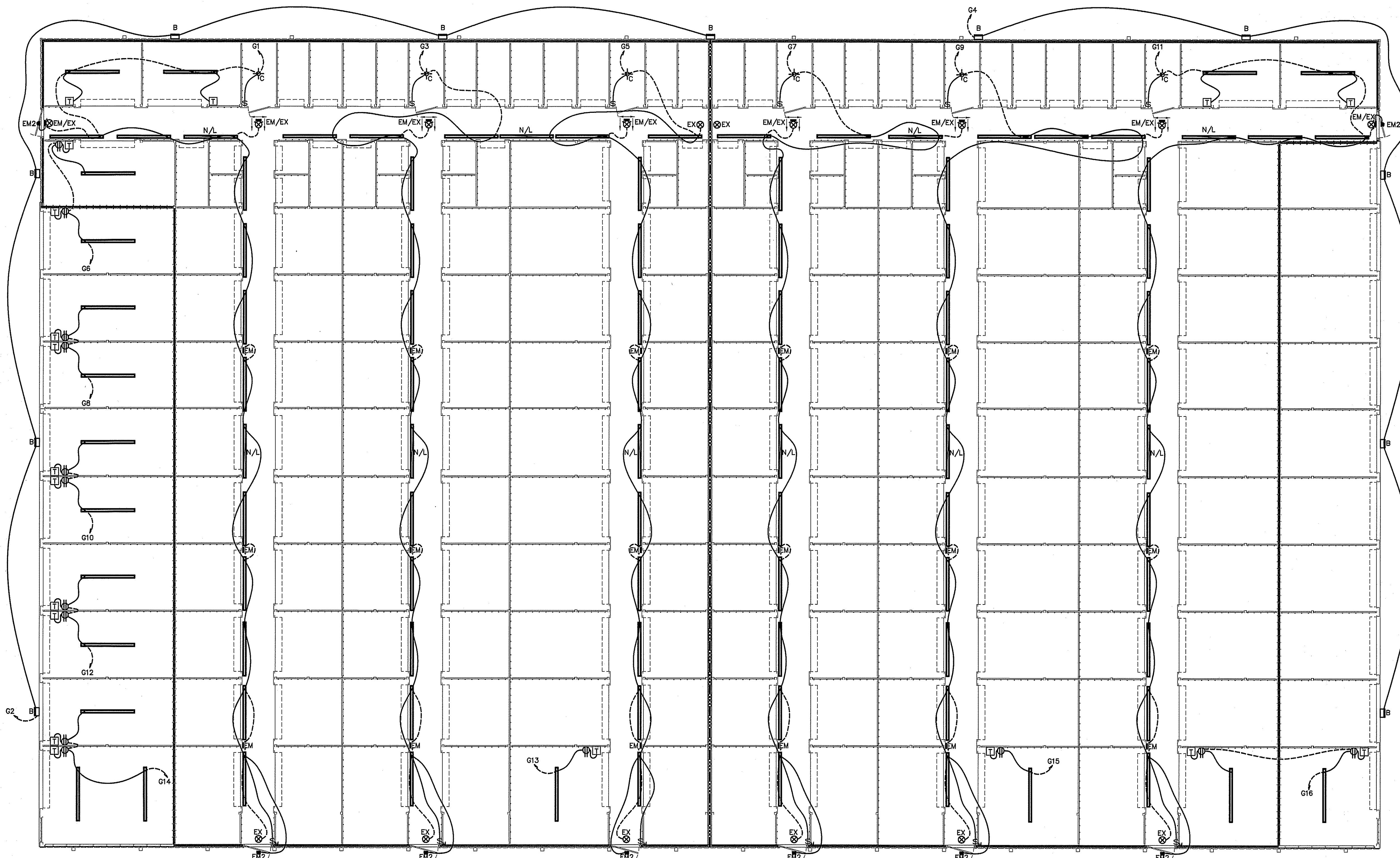
GENERAL NOTE:

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

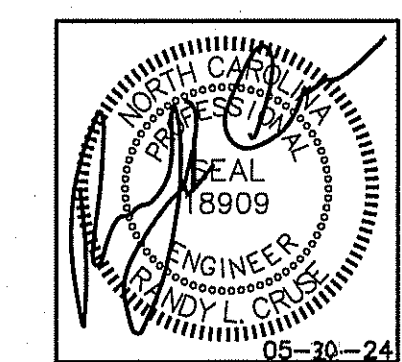
LIGHT FIXTURE SCHEDULE							
MARK	DESCRIPTION	MANUFACTURER	CATALOG NUMBER	LAMPS	BALLASTS	WATTAGE	REMARKS
A	8' LED STRIP W/WIRE GUARD	DAYBRITE	CLX L96 10000LM SEF WD MVOLT 40K 80 CRI WH	LED		71.0	WITH (2) 48" WIRE GUARDS WGLX48
B	OUTDOOR LED WALL LIGHT	LSI	TWR1 LED 3 50K MVOLT	LED	LED	58.4	VERIFY MOUNTING 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 GE810IS	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



PLANS FOR:
AMPLE STORAGE
ERWIN, NORTH CAROLINA 28339

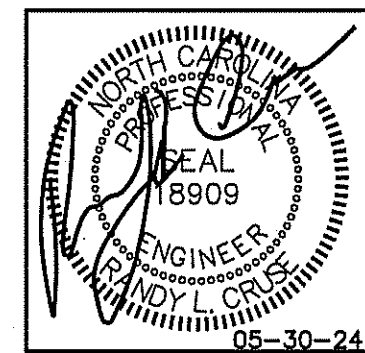
REVISIONS	
NO.	

Cruse And Associates, P.A.
414 EAST BROADWAY STREET
RTE. 1010 895-4459
FAX: (810) 895-1162
LICENSE NO.: C-1721

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JOB NO. 24-23

SHEET NO.
E-4 OF 10



PLANS FOR:
AMPLE STORAGE
 ERWIN, NORTH CAROLINA 28339

REVISIONS	
NO.	

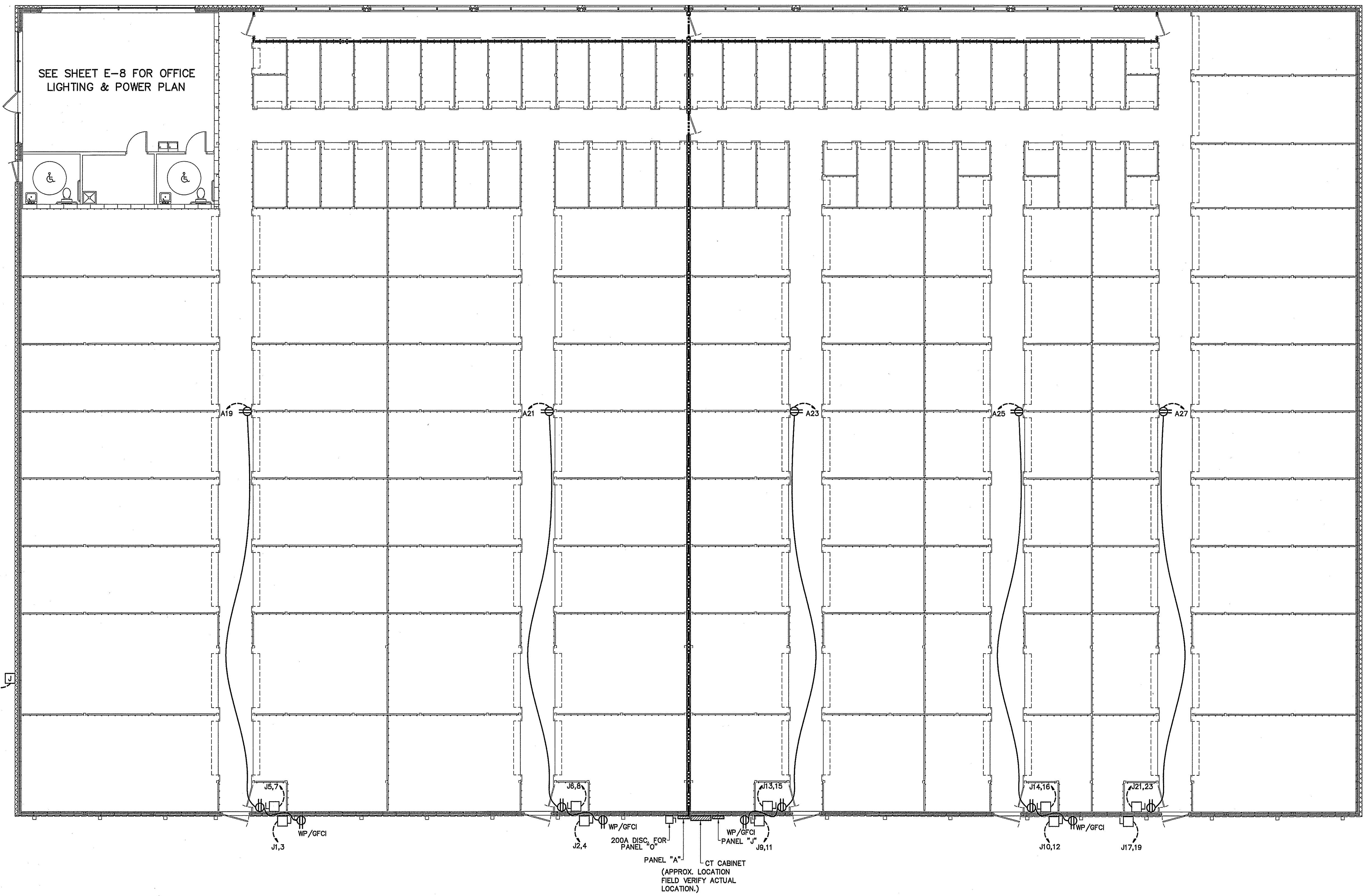
Cruse And Associates, P.A.
 414 EAST ROBERTSON STREET
 RALEIGH, NC 27601
 PH: (919) 882-4459
 FAX: (919) 882-5182
 LICENSE NO.: C-1721

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DATE 05/30/24
 DRAWN BY BAM
 JOB NO. 24-23
 SHEET NO. E-5 OF 10

- 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.

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



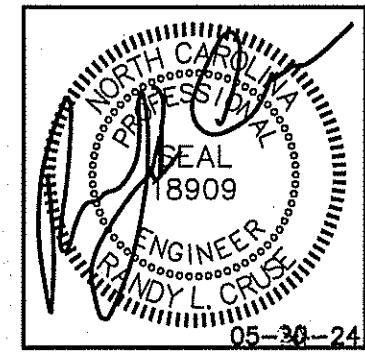
ELECTRICAL POWER PLAN BUILDING "A"
 SCALE: 1/8" = 1'-0"

LEGEND
 3 HOUR RATED WALL
 U419

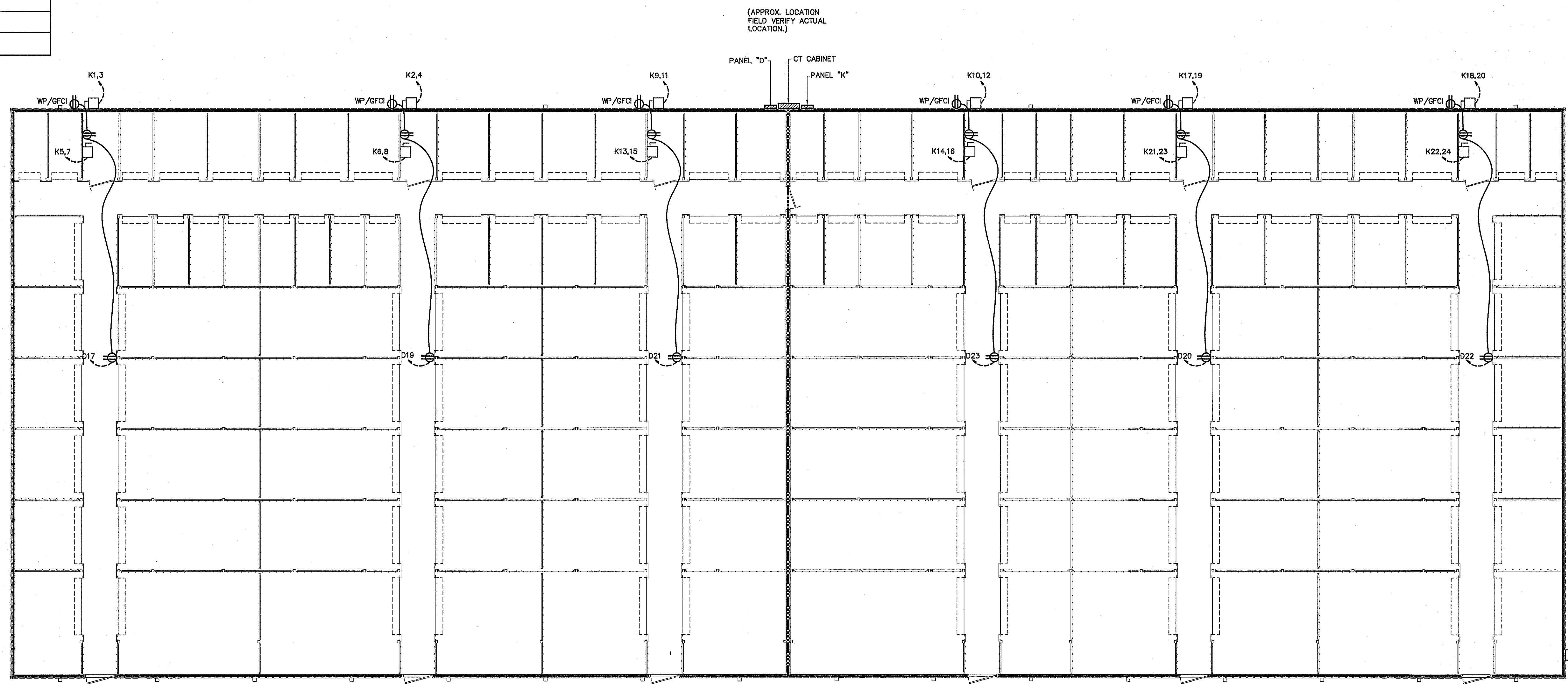
MARK	DESCRIPTION
⊕	QUAD RECEPTACLE
⊖	DUPLEX RECEPTACLE
⊞	SINGLE POLE SWITCH OR TIMER AS APPLICABLE
⊞	HIGH WALL MOUNTED DUPLEX RECEPTACLE APPROXIMATELY 12" BELOW CEILING
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⊞	OCCUPANCY SENSING SINGLE-POLE SWITCH NOT ON TIMER
⊞	280V RECEPTACLE
⊞	EMERGENCY 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.
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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.



PLANS FOR:
AMPLE STORAGE
 ERWIN, NORTH CAROLINA 28339



REVISIONS	
NO.	

Cruse And Associates, P.A.
 414 EAST HOBERTON STREET
 ERWIN, NC 28339
 PH: (710) 892-4429
 FAX: (710) 892-5182
 LICENSE NO.: C-1721

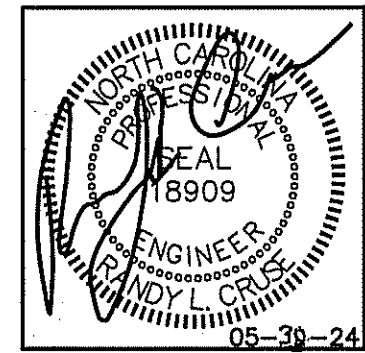
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LEGEND
 - - - - - 3 HOUR RATED WALL
 U419

ELECTRICAL POWER PLAN BUILDING "D"
 SCALE: 1/8" = 1'-0"

DATE 05/30/24
 DRAWN BY BAM
 JOB NO. 24-23
 SHEET NO.
E-6 OF 10

VERIFY LOCATION OF SIGN WITH OWNER BEFORE INSTALLATION



PLANS FOR:
AMPLE STORAGE
ERWIN, NORTH CAROLINA 28339

REVISIONS	
NO.	

Cruse
And
Associates, P.A.

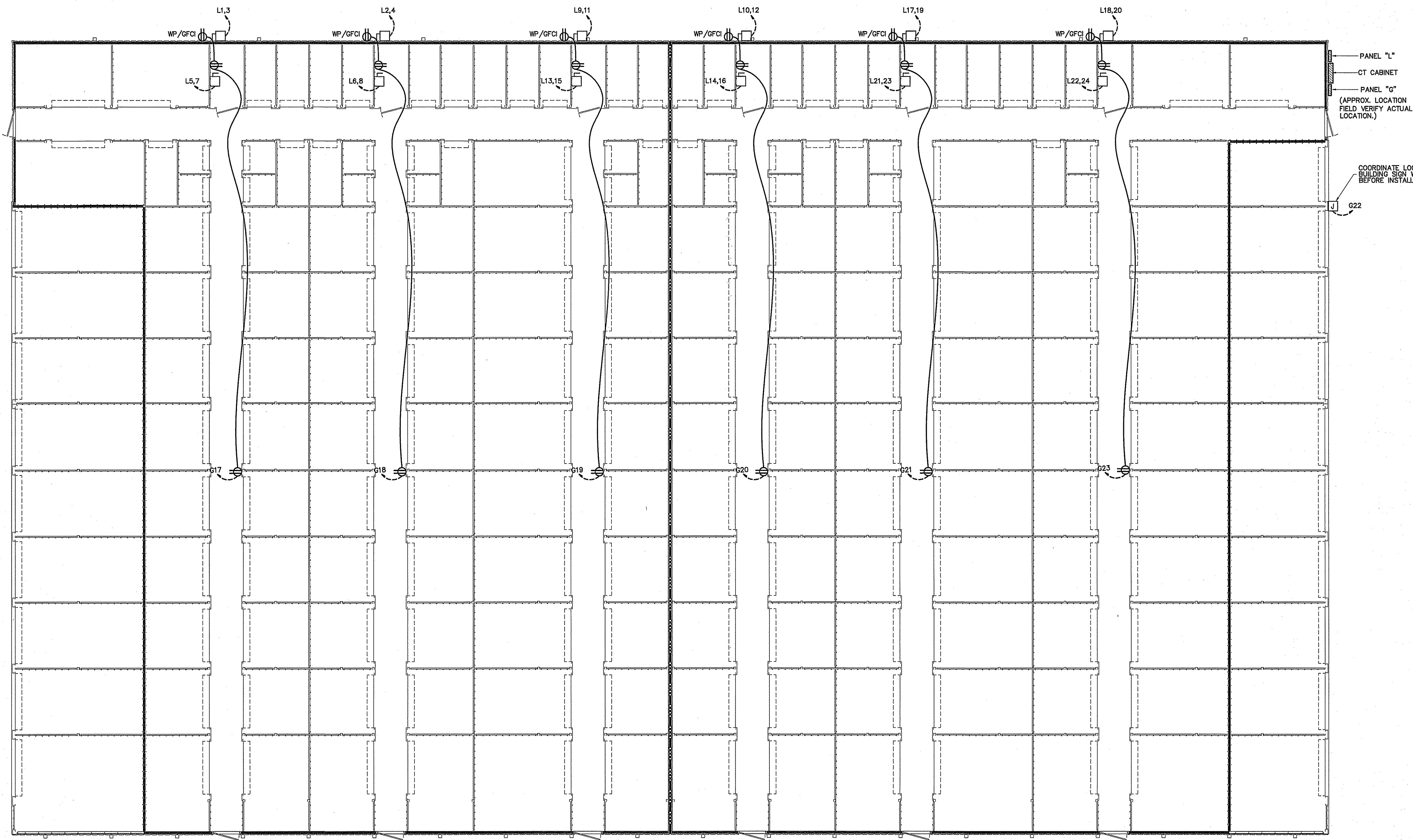
444 EAST BROADWAY STREET
Raleigh, NC 27604
TEL: (919) 885-4428
FAX: (919) 885-5182

LICENSE NO.: C-1721

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DATE 05/30/24
DRAWN BY BAM
JOB NO. 24-23
SHEET NO.
E-7 OF 10

- 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.



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

LEGEND
3 HOUR RATED WALL
U419

ELECTRICAL POWER PLAN BUILDING "G"
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 1000LM SEF WD MVOLT 40K 80 CRI WH	LED		71.0	WITH (2) 48" WIRE GUARDS WGLX48
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				

- ALL FIXTURE SELECTIONS TO BE VERIFIED BY OWNER BEFORE PURCHASE. *
- SIGN LETTERING TO BE ON TIMECLOCK OR PHOTOCELL
- 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 1B	2#8CU, 1#10CU GD	60	3/4"
HP 1B	2#10CU, 1#12CU GD	60	3/4"
P.O.U. WATER HEATERS	2#10CU, 1#12CU GD	30	3/4"

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) 1,170 X 1.25 1,463
900 SQ. FT. 1.3 1,170
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, 1ϕ, 60HZ

OFFICE

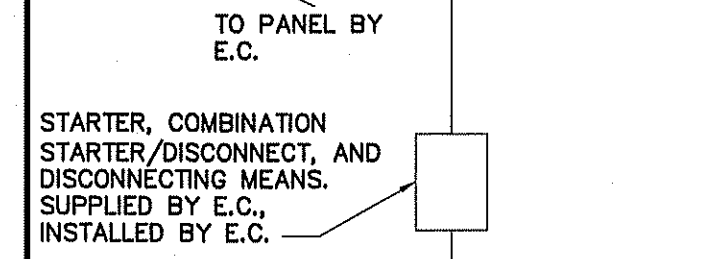
PANEL: O SCHEDULE: MANUFACTURER: SQ. D NO. OF SPACES 42
VOLTS: 120/240 AMPS: 200 TYPE: 'NQDD' MOUNTING: FLUSH
ENCLOSURE: NEMA 1 Ø: 1 SHORT CIRCUIT RATING: 10000
MARK: IS TOP FEED: BOTTOM FEED: COPPER BUS: GROUND BAR KIT: NEUTRAL BAR KIT:

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

L1	L2	CIRCUIT	POLES	TRIP	ASSIGNMENT	PHASE	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	
X		3.0	11	1	HVAC CONV. RECEPTACLES	o	AIR HANDLER UNIT # 18	45	2	12	32.0	
X		13			SPARE	o				14	32.0	
X		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		20	1	20	X	
6.0		21			COUNTER QUAD RECEPTACLES	o	WALLPACKS	20	1	22	1.0	X
X		5.0	23		BUILDING SIGN	o	HOTBOX	20	1	24	2.0	
X		25	1	20	SPARE	o		20	1	28	X	
X		27	1	20	SPARE	o	DRINKING FOUNTAIN	20	1	28	X	5.6
X		29	1	20	SPARE	o		20	1	30	X	
X		31	1	20	SPARE	o		20	1	32	X	
X		33	1	20	SPARE	o		20	1	34	X	
X		35	1	20	SPARE	o		20	1	36	X	
X		37	1	20	SPARE	o		20	1	38	X	
X		39	1	20	SPARE	o		20	1	40	X	
X		41	1	20	SPARE	o		20	1	42	X	

L1 = 112.1 A
L2 = 114.7 A

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: ASHRAE 90.1: PRESCRIPTIVE PERFORMANCE
PRESCRIPTIVE PERFORMANCE

LIGHTING SCHEDULE

LAMP TYPE REQUIRED IN FIXTURE: SEE SCHEDULE

NUMBER OF LAMPS IN FIXTURE:

BALLASTS TYPE USED IN FIXTURE:

NUMBER OF BALLASTS IN FIXTURE:

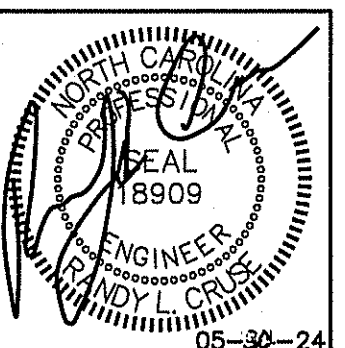
TOTAL WATTAGE PER FIXTURE:

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 EFFICIENCY SERVICE WATER HEATING
- 506.2.5 ON-SITE SUPPLY OF RENEWABLE ENERGY
- 506.2.6 AUTOMATIC DAYLIGHTING CONTROL SYSTEMS



PLANS FOR:
AMPLE STORAGE
ERWIN, NORTH CAROLINA 28339

REVISIONS

NO.	

Cruse And Associates, P.A.
414 EAST BROADWAY STREET, SUITE 200
RANDOLPH, NC 28134
TEL: (704) 982-4429
FAX: (704) 982-5122
LICENSE NO.: C-1721

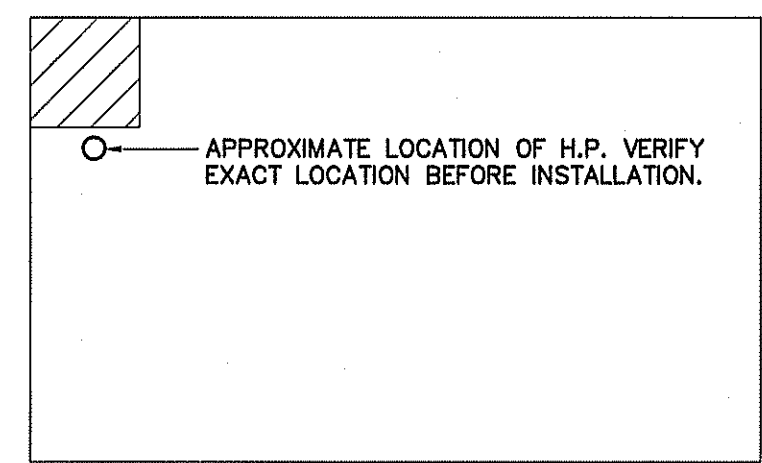
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DATE 05/30/24
DRAWN BY BAM
JOB NO. 24-23

SHEET NO.
E-8 OF 10

ELECTRICAL LEGEND

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

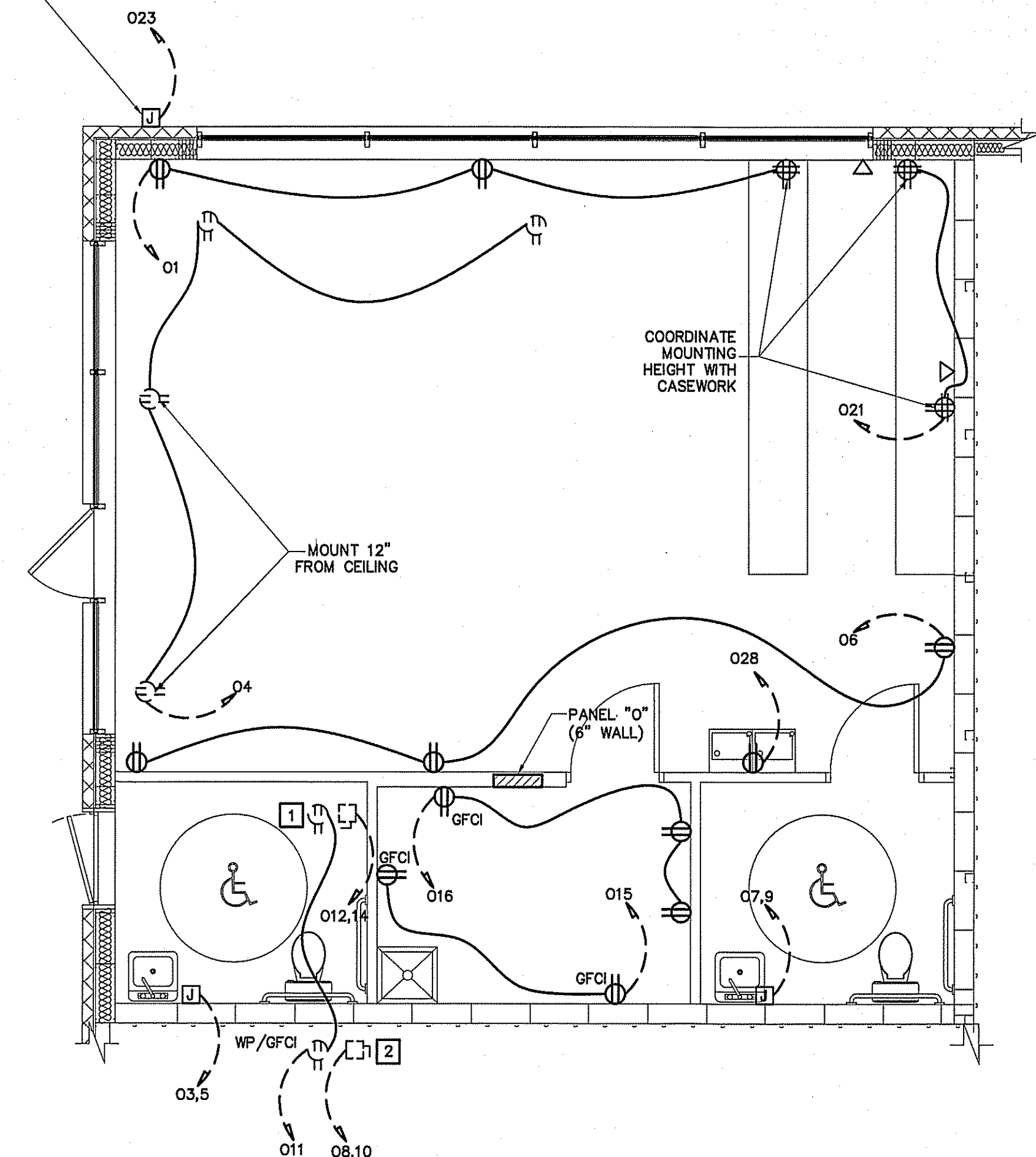


KEY PLAN

SCALE: NTS

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

FOR SIGN, FIELD VERIFY LOCATION



KEYNOTES:

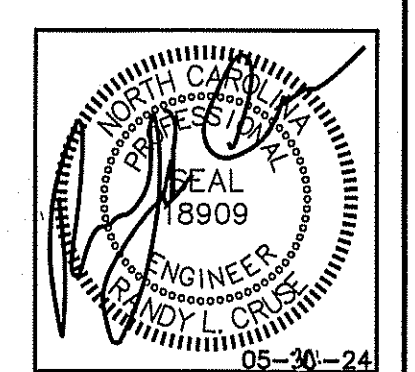
- AIR HANDLER & CONV. RECEPTACLE FOR AIR HANDLER LOCATED ON ABOVE CEILING. VERIFY EXACT LOCATION BEFORE INSTALLATION.
- HEAT PUMP & CONV. RECEPTACLE FOR HEAT PUMP LOCATED ON ROOF. VERIFY EXACT LOCATION BEFORE INSTALLATION.

ELECTRICAL LIGHTING PLAN BUILDING "A" (OFFICE)

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

ELECTRICAL POWER PLAN BUILDING "A" (OFFICE)

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



PLANS FOR: AMPLE STORAGE ERWIN, NORTH CAROLINA 28339

Table with 2 columns: NO., REVISIONS

414 EAST ROBERTSON STREET, ERWIN, NC 28339, PH: (704) 982-4429, FAX: (704) 982-5102

Cruse And Associates, P.A. LICENSE NO. C-1721

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

SHEET NO. E-9 OF 10

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.

BUILDING "A" ELECTRICAL LOAD CALCULATIONS. 23,800 SQUARE FEET. NONCONTINUOUS LOADS: 61 RECEPTACLES @ 180 VA EA. 10980, 1ST 10000 REMAINDER @ 50% 10000, 490. TOTAL 10490. CONTINUOUS LOADS: GENERAL LIGHTING LOAD VA/SQ. FT. (STORAGE) 23,800 SQ. FT. 1.2 28560, 35700. AIR HANDLER UNIT 38400, HEAT PUMPS 27744, EQUIPMENT 300, 25% OF LARGEST MOTOR 1134. GRAND TOTAL 113,768. 474 AMPS @ 120/240V, 1φ, 60HZ

BUILDING "D" ELECTRICAL LOAD CALCULATIONS. 17,600 SQUARE FEET. NONCONTINUOUS LOADS: 30 RECEPTACLES @ 180 VA EA. 5400, 1ST 10000 REMAINDER @ 50% 5400. TOTAL 5400. CONTINUOUS LOADS: GENERAL LIGHTING LOAD VA/SQ. FT. (STORAGE) 17,600 SQ. FT. 1.2 21120, 26400. AIR HANDLER UNIT 46080, HEAT PUMPS 20736, EQUIPMENT 300, 25% OF LARGEST MOTOR 1134. GRAND TOTAL 100,050. 417 AMPS @ 120/240V, 1φ, 60HZ

BUILDING "B" (METERBASE COMBINATION) PANEL: B SCHEDULE: MANUFACTURER: SQ_D NO. OF SPACES 30 VOLTS 120/240 AMPS 100 TYPE "NOOD" MOUNTING: SURFACE ENCLOSURE: NEMA 3R Φ-1 SHORT CIRCUIT RATING: 22K. Table with columns L1, L2, CIRCUIT, POLES, TRIP, ASSIGNMENT, PHASE, ASSIGNMENT, TRIP, POLES, CIRCUIT, L1, L2.

BUILDING "G" ELECTRICAL LOAD CALCULATIONS. 24,000 SQUARE FEET. NONCONTINUOUS LOADS: 32 RECEPTACLES @ 180 VA EA. 5760, 1ST 10000 REMAINDER @ 50% 5760. TOTAL 5760. CONTINUOUS LOADS: GENERAL LIGHTING LOAD VA/SQ. FT. (STORAGE) 24,000 SQ. FT. 1.2 28,800, 36000. AIR HANDLER UNIT 46080, HEAT PUMPS 24096, EQUIPMENT 300, 25% OF LARGEST MOTOR 1134. GRAND TOTAL 113,370. 473 AMPS @ 120/240V, 1φ, 60HZ

- ELECTRICAL SYSTEM AND EQUIPMENT METHOD OF COMPLIANCE: ENERGY CODE: PRESCRIPTIVE [X] 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 [X], 506.2.2 REDUCED LIGHTING POWER DENSITY [], 506.2.3 ENERGY RECOVERY VENTILATION SYSTEMS [], 506.2.4 HIGHER EFFICIENCY SERVICE WATER HEATING [], 506.2.5 ON-SITE SUPPLY OF RENEWABLE ENERGY [], 506.2.6 AUTOMATIC DAYLIGHTING CONTROL SYSTEMS []

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: A SCHEDULE: MANUFACTURER: SQ_D NO. OF SPACES 42 VOLTS 120/240 AMPS 200 TYPE "NOOD" MOUNTING: SURFACE ENCLOSURE: NEMA 3R Φ-1 SHORT CIRCUIT RATING: 22K. Table with columns L1, L2, CIRCUIT, POLES, TRIP, ASSIGNMENT, PHASE, ASSIGNMENT, TRIP, POLES, CIRCUIT, L1, L2.

BUILDING "A" PANEL: J SCHEDULE: MANUFACTURER: SQ_D NO. OF SPACES 42 VOLTS 120/240 AMPS 400 TYPE "NOOD" MOUNTING: SURFACE ENCLOSURE: NEMA 3R Φ-1 SHORT CIRCUIT RATING: 22K. Table with columns L1, L2, CIRCUIT, POLES, TRIP, ASSIGNMENT, PHASE, ASSIGNMENT, TRIP, POLES, CIRCUIT, L1, L2.

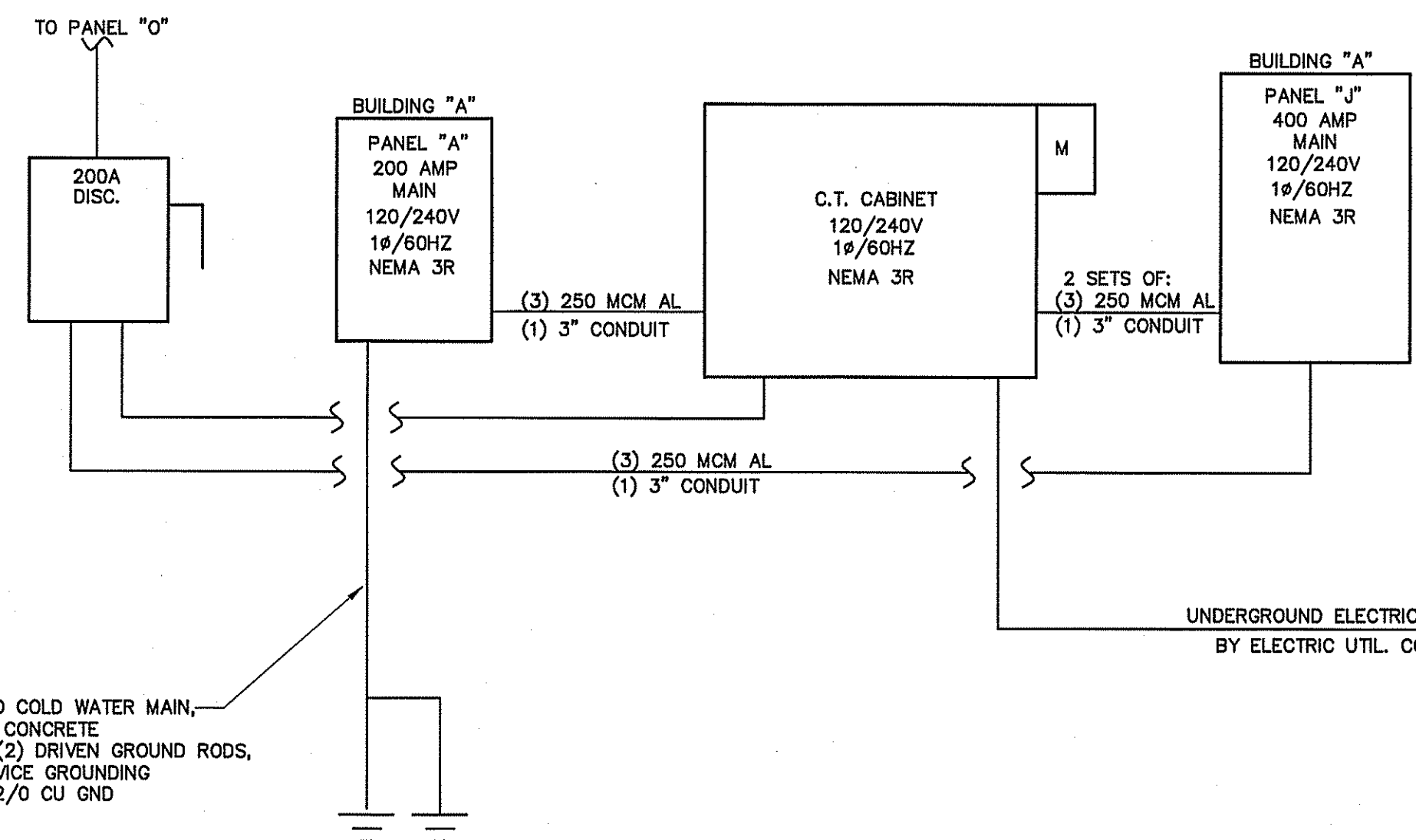
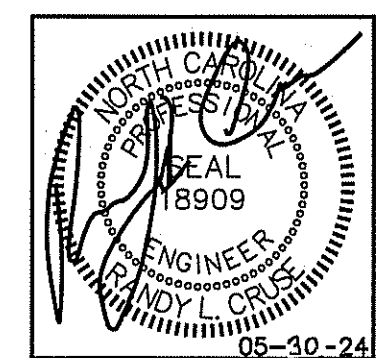
BUILDING "D" PANEL: D SCHEDULE: MANUFACTURER: SQ_D NO. OF SPACES 42 VOLTS 120/240 AMPS 200 TYPE "NOOD" MOUNTING: SURFACE ENCLOSURE: NEMA 3R Φ-1 SHORT CIRCUIT RATING: 22K. Table with columns L1, L2, CIRCUIT, POLES, TRIP, ASSIGNMENT, PHASE, ASSIGNMENT, TRIP, POLES, CIRCUIT, L1, L2.

BUILDING "D" PANEL: K SCHEDULE: MANUFACTURER: SQ_D NO. OF SPACES 42 VOLTS 120/240 AMPS 400 TYPE "NOOD" MOUNTING: SURFACE ENCLOSURE: NEMA 3R Φ-1 SHORT CIRCUIT RATING: 22K. Table with columns L1, L2, CIRCUIT, POLES, TRIP, ASSIGNMENT, PHASE, ASSIGNMENT, TRIP, POLES, CIRCUIT, L1, L2.

BUILDING "G" PANEL: G SCHEDULE: MANUFACTURER: SQ_D NO. OF SPACES 42 VOLTS 120/240 AMPS 200 TYPE "NOOD" MOUNTING: SURFACE ENCLOSURE: NEMA 3R Φ-1 SHORT CIRCUIT RATING: 22K. Table with columns L1, L2, CIRCUIT, POLES, TRIP, ASSIGNMENT, PHASE, ASSIGNMENT, TRIP, POLES, CIRCUIT, L1, L2.

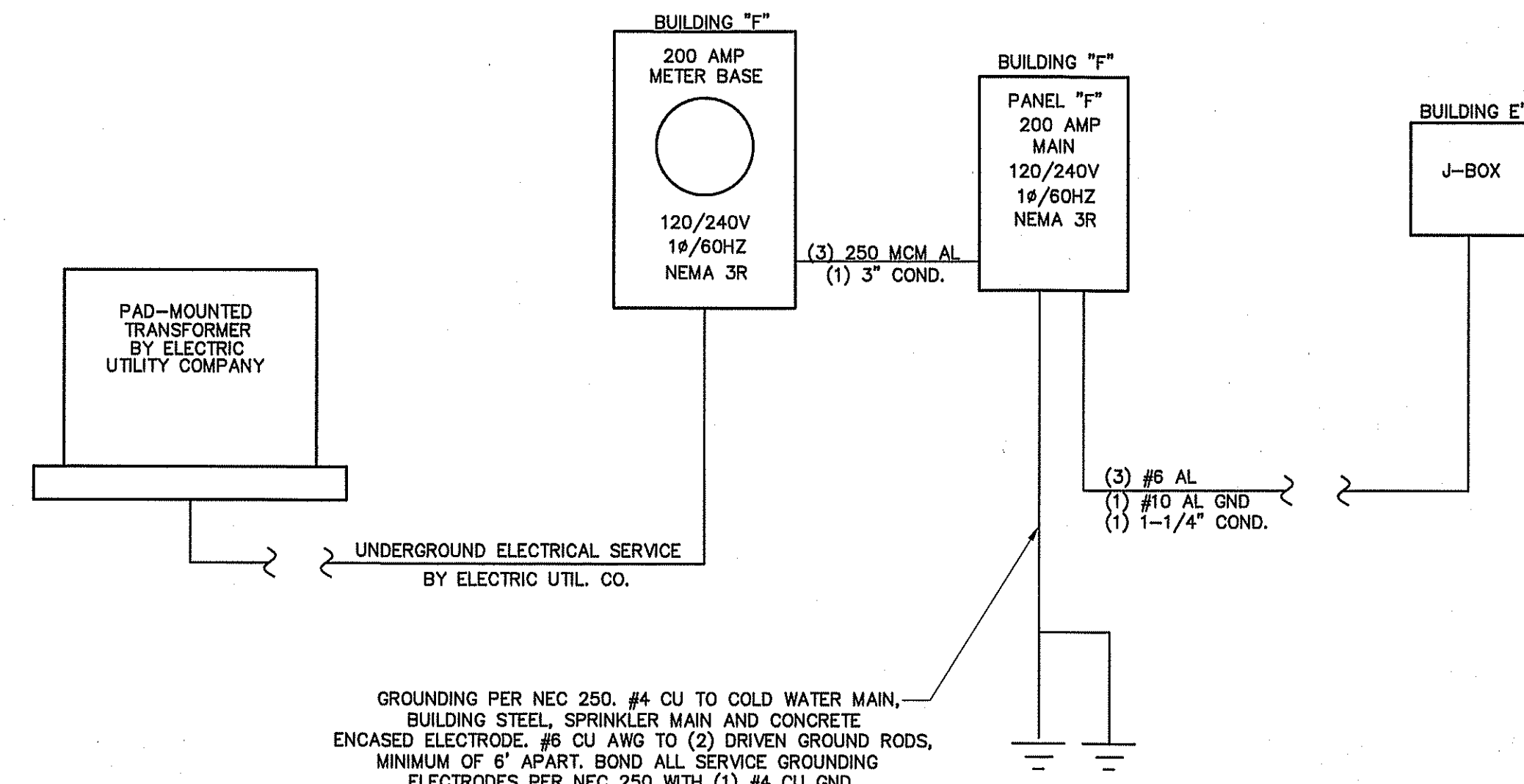
BUILDING "G" PANEL: L SCHEDULE: MANUFACTURER: SQ_D NO. OF SPACES 42 VOLTS 120/240 AMPS 400 TYPE "NOOD" MOUNTING: SURFACE ENCLOSURE: NEMA 3R Φ-1 SHORT CIRCUIT RATING: 22K. Table with columns L1, L2, CIRCUIT, POLES, TRIP, ASSIGNMENT, PHASE, ASSIGNMENT, TRIP, POLES, CIRCUIT, L1, L2.

BUILDING "F" PANEL: F SCHEDULE: MANUFACTURER: SQ_D NO. OF SPACES 30 VOLTS 120/240 AMPS 200 TYPE "NOOD" MOUNTING: SURFACE ENCLOSURE: NEMA 3R Φ-1 SHORT CIRCUIT RATING: 22K. Table with columns L1, L2, CIRCUIT, POLES, TRIP, ASSIGNMENT, PHASE, ASSIGNMENT, TRIP, POLES, CIRCUIT, L1, L2.



GROUNDING PER NEC 250, #2/0 CU TO COLD WATER MAIN, BUILDING STEEL, SPRINKLER MAIN AND CONCRETE ENCASED ELECTRODE, #6 CU AWG TO (2) DRIVEN GROUND RODS, MINIMUM OF 6' APART. BOND ALL SERVICE GROUNDING ELECTRODES PER NEC 250 WITH (1) #2/0 CU GND

ELECTRICAL RISER DIAGRAM BUILDING "A"
NOT TO SCALE



GROUNDING PER NEC 250, #4 CU TO COLD WATER MAIN, BUILDING STEEL, SPRINKLER MAIN AND CONCRETE ENCASED ELECTRODE, #6 CU AWG TO (2) DRIVEN GROUND RODS, MINIMUM OF 6' APART. BOND ALL SERVICE GROUNDING ELECTRODES PER NEC 250 WITH (1) #4 CU GND

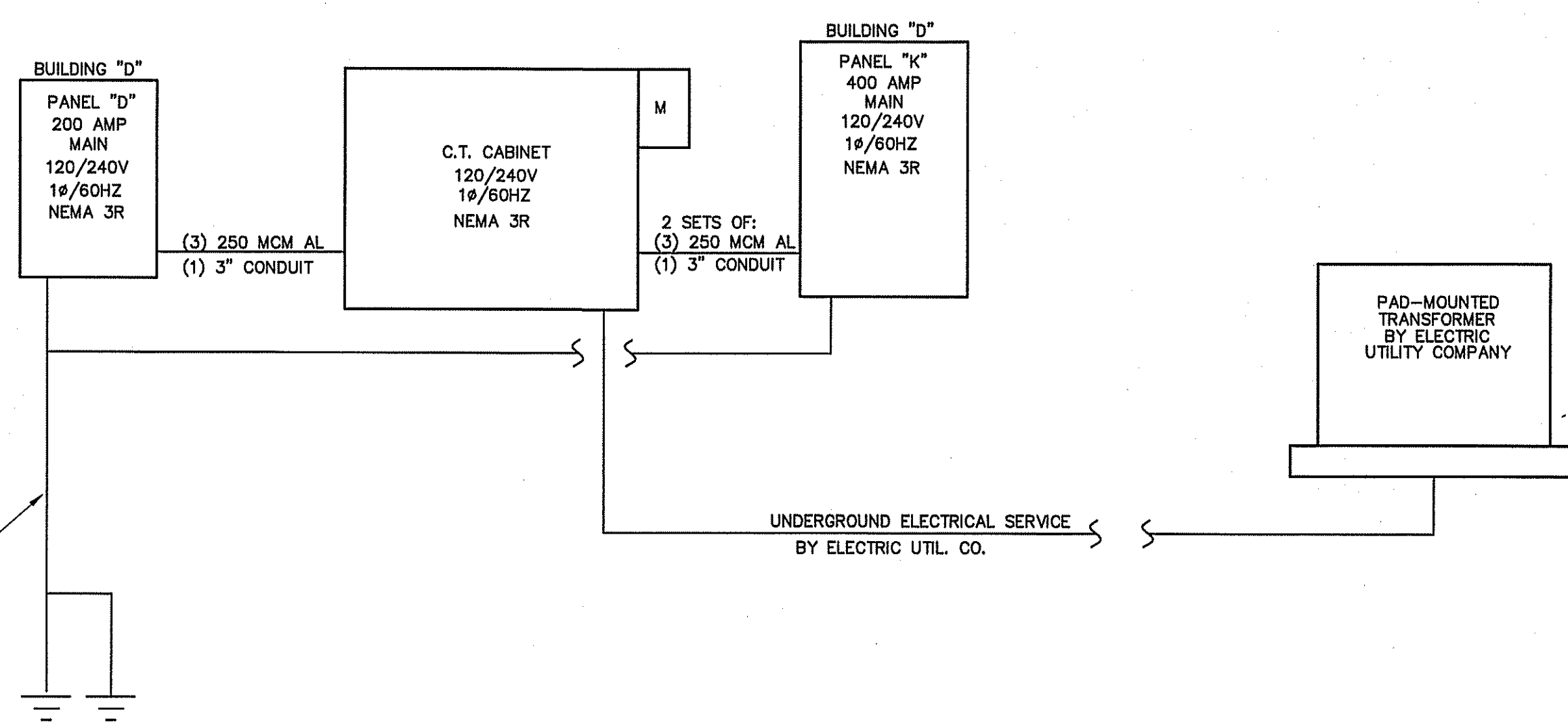
ELECTRICAL RISER DIAGRAM BUILDINGS "E" & "F"
NOT TO SCALE

BUILDING "F" & E

ELECTRICAL LOAD CALCULATIONS		VA.
12,200 SQUARE FEET		
NONCONTINUOUS LOADS:		
19 RECEPTACLES @ 180 VA EA.	3420	3420
1ST 10000 REMAINDER @ 50%		
TOTAL		3420
CONTINUOUS LOADS:		
GENERAL LIGHTING LOAD VA/SQ. FT.		
(STORAGE) 12,200 SQ. FT. 1.2	14640	18300
14640 X 1.25		
EQUIPMENT	500	
GRAND TOTAL	22,220	
93 AMPS @ 120/240V, 1φ, 60HZ		

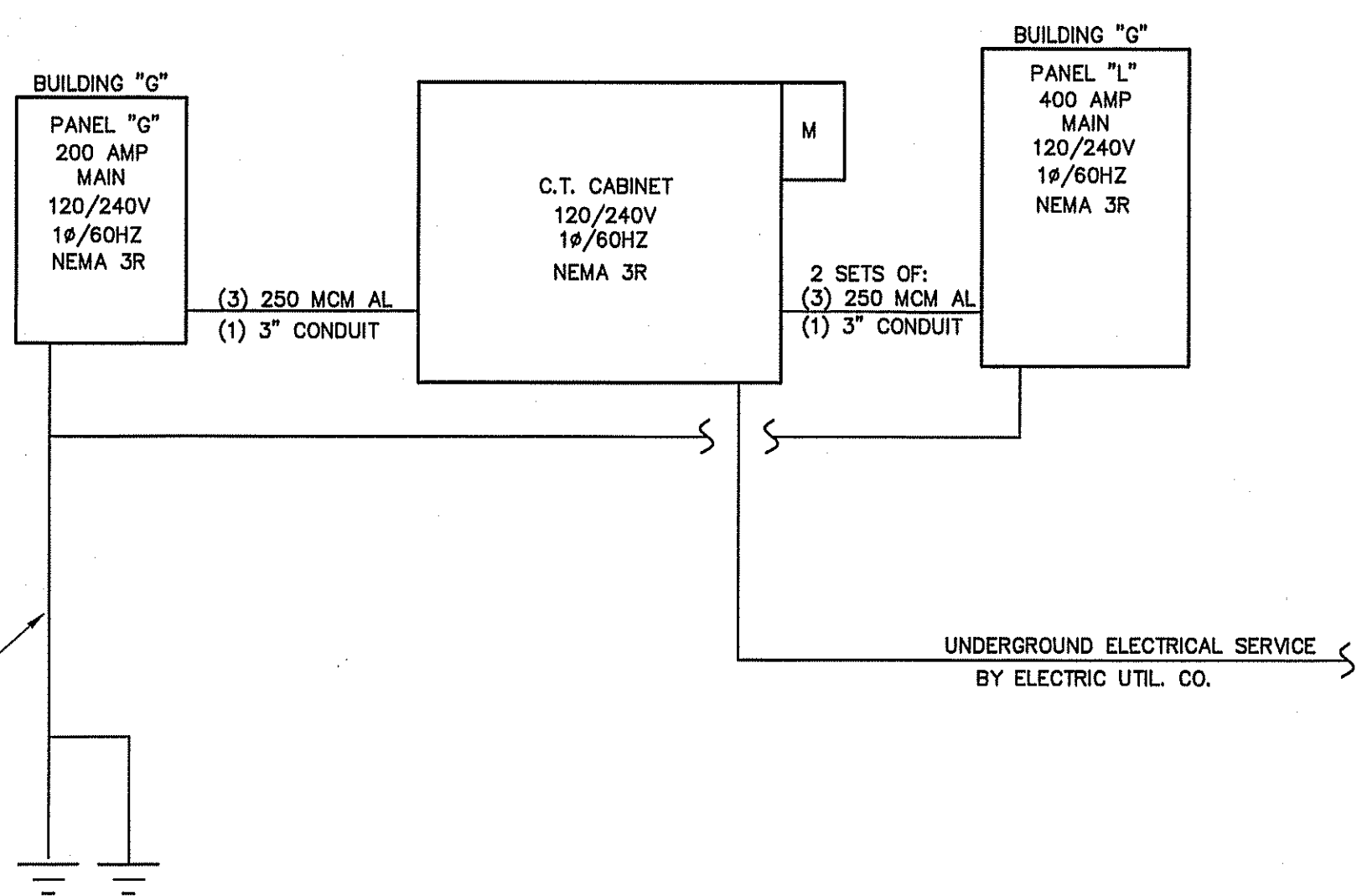
BUILDING "B"

ELECTRICAL LOAD CALCULATIONS		VA.
2,400 SQUARE FEET		
NONCONTINUOUS LOADS:		
8 RECEPTACLES @ 180 VA EA.	1440	1440
1ST 10000 REMAINDER @ 50%		
TOTAL		1440
CONTINUOUS LOADS:		
GENERAL LIGHTING LOAD VA/SQ. FT.		
(STORAGE) 2,400 SQ. FT. 1.2	5400	6750
5400 X 1.25		
EQUIPMENT	500	
GRAND TOTAL	6,690	
37 AMPS @ 120/240V, 1φ, 60HZ		



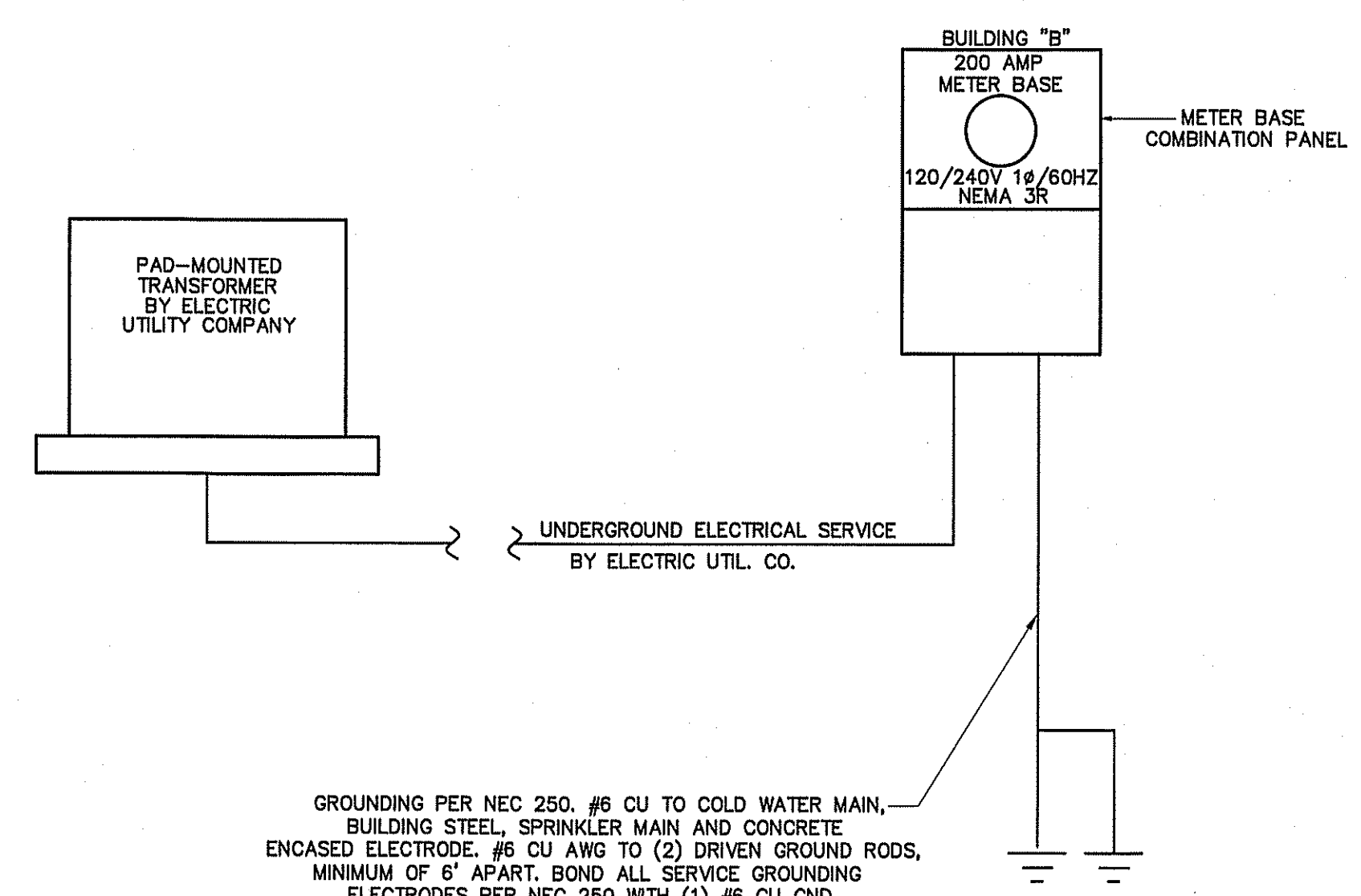
GROUNDING PER NEC 250, #2/0 CU TO COLD WATER MAIN, BUILDING STEEL, SPRINKLER MAIN AND CONCRETE ENCASED ELECTRODE, #6 CU AWG TO (2) DRIVEN GROUND RODS, MINIMUM OF 6' APART. BOND ALL SERVICE GROUNDING ELECTRODES PER NEC 250 WITH (1) #2/0 CU GND

ELECTRICAL RISER DIAGRAM BUILDING "D"
NOT TO SCALE



GROUNDING PER NEC 250, #2/0 CU TO COLD WATER MAIN, BUILDING STEEL, SPRINKLER MAIN AND CONCRETE ENCASED ELECTRODE, #6 CU AWG TO (2) DRIVEN GROUND RODS, MINIMUM OF 6' APART. BOND ALL SERVICE GROUNDING ELECTRODES PER NEC 250 WITH (1) #2/0 CU GND

ELECTRICAL RISER DIAGRAM BUILDING "G"
NOT TO SCALE



GROUNDING PER NEC 250, #6 CU TO COLD WATER MAIN, BUILDING STEEL, SPRINKLER MAIN AND CONCRETE ENCASED ELECTRODE, #6 CU AWG TO (2) DRIVEN GROUND RODS, MINIMUM OF 6' APART. BOND ALL SERVICE GROUNDING ELECTRODES PER NEC 250 WITH (1) #6 CU GND

ELECTRICAL RISER DIAGRAM BUILDING "B"
NOT TO SCALE

PLANS FOR:
AMPLE STORAGE
 ERWIN, NORTH CAROLINA 28339

REVISIONS	
NO.	

Cruse And Associates, P.A.
 414 EAST ROBERTSON STREET
 FAYETTEVILLE, NC 28404
 PHONE: (910) 882-4159
 FAX: (910) 882-4168
 LICENSE NO.: C-1721

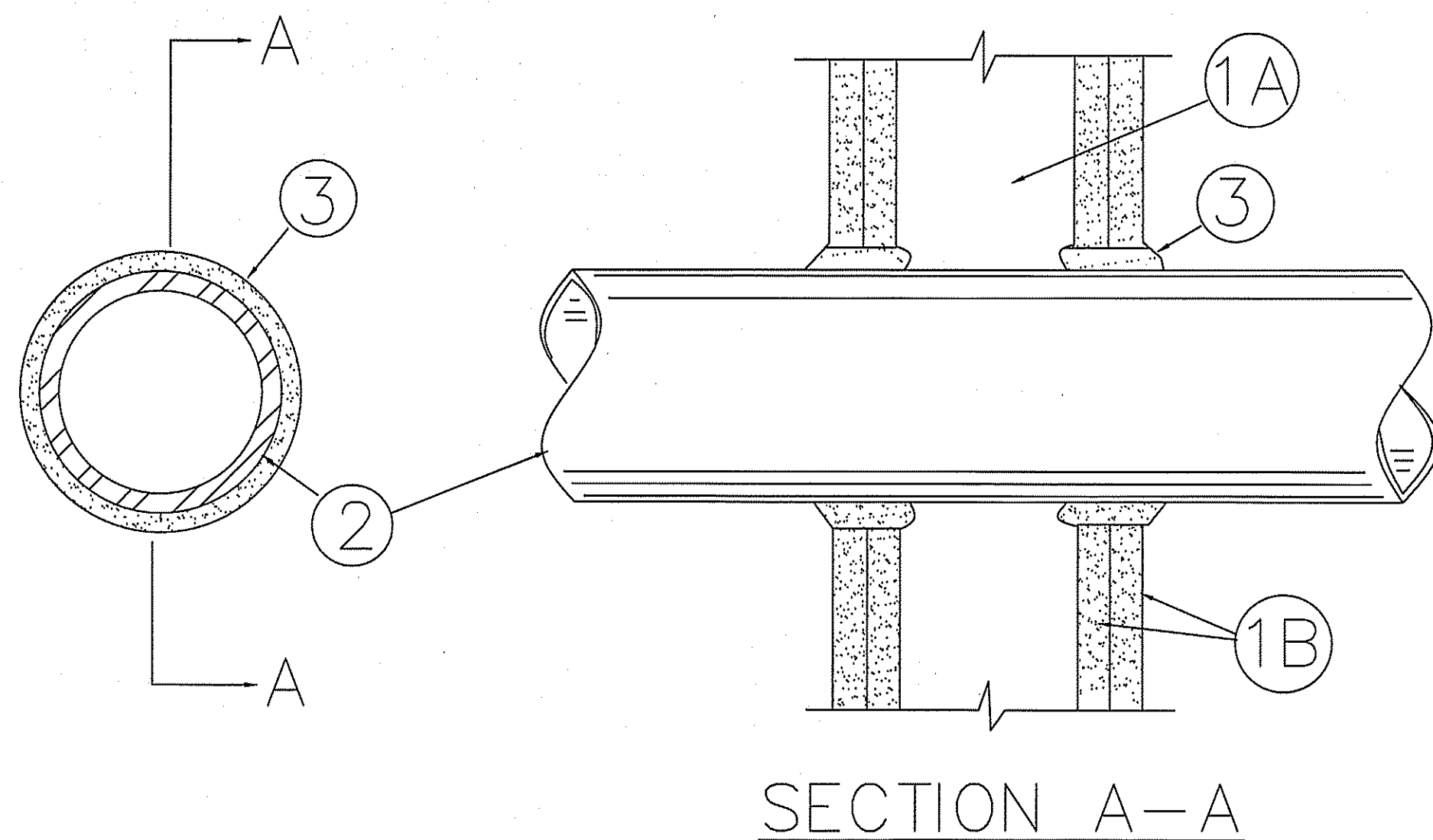
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DATE	05/30/24
DRAWN BY	BAM
JOB NO.	24-23
SHEET NO.	E-10 OF 10

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 hr 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 freestop system. The annular space between pipe 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 TITFLEX

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 in., 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 freestop 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 freestop 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.

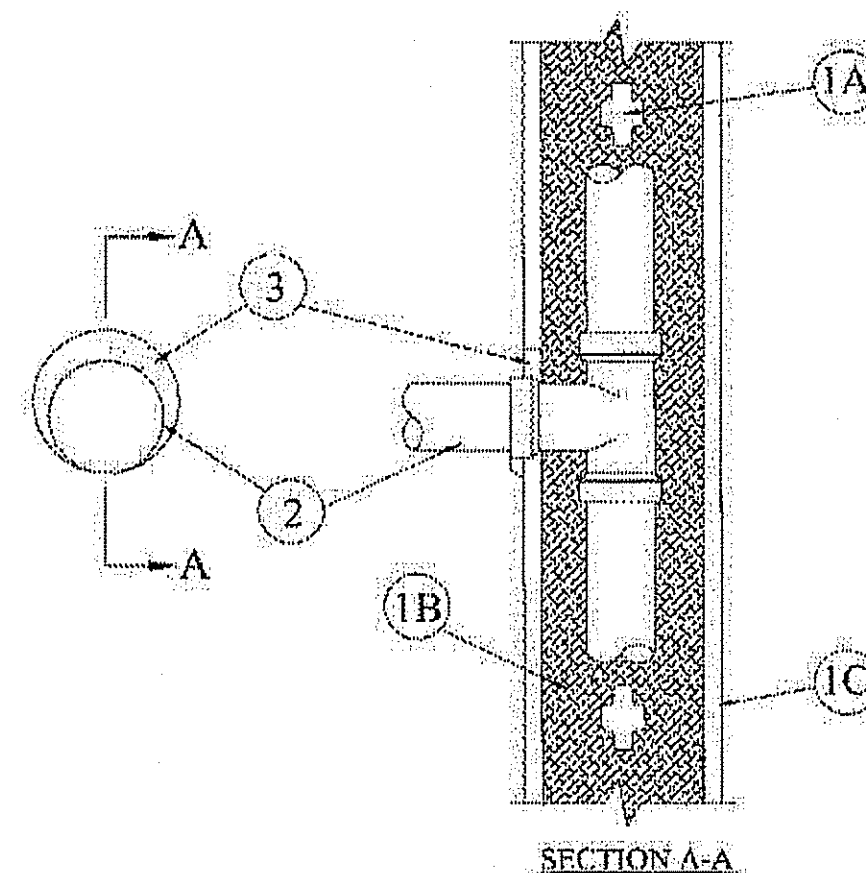
3M COMPANY ? CP 25WB+ or FB-3000 WT.

*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 freestop 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 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.

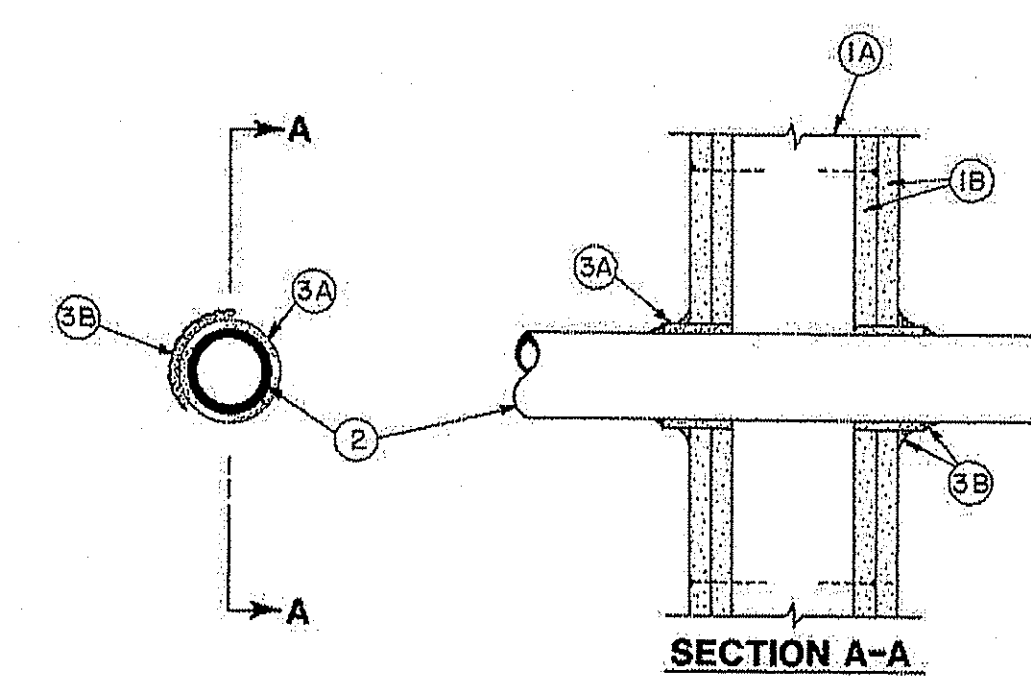
JOHNS MANVILLE INTERNATIONAL INC — FireTemp™ CI, FireTemp™ CE

*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. Freestop System — Installed symmetrically on both sides of wall assembly. The hourly F and T Ratings for the freestop system are equal to the hourly fire rating of the wall assembly in which it is installed. The details of the freestop 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.

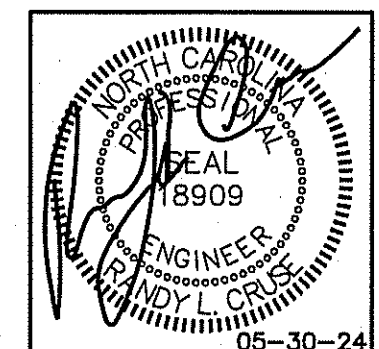
3M COMPANY — FS-195+

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.

*Bearing the UL Classification Mark



PLANS FOR:
 AMPLE STORAGE
 ERWIN, NORTH CAROLINA 28339

REVISIONS	
NO.	

Cruse and Associates, P.A.

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 PME 1 OF 1

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