2018 APPENDIX B
BUILDING CODE SUMMARY
FOR ALL COMMERCIAL PROJECTS
(EXCEPT 1 AND 2 FAMILY DWELLINGS AND TOWNHOUSES)

NAME OF PROJECT: J & L MANUFACTURING

ADDRESS: 252 JARCO DRIVE, FUQUAY VARINA ZIP CODE: 27521

OWNER/AUTHORIZED AGENT: JIM THOMAS PHONE #: (919) 567-0706 EMAIL: JIM.THOMAS@ECSCONTROLS.NET

OWNED BY: ☐ CITY/COUNTY ☒ PRIVATE ☐ STATE

CODE ENFORCEMENT JURISDICTION: ☐ CITY _____ ☒ COUNTY HARNETT ☐ STATE

LEAD DESIGN PROFESSIONAL: CRUSE & ASSOCIATES, P.A.

DESIGNER	FIRM	NAME	LICENSE #	TELEPHONE NO.	E-MAIL
ARCHITECTURAL					
BUILDING	CRUSE AND ASSOCIATES, P.A.	RANDY CRUSE, PE	18909	(910)-892-4429	RCRUSE@CRUSEASSOCIATES.COM
CIVIL					
ELECTRICAL	CRUSE AND ASSOCIATES, P.A.	RANDY CRUSE, PE	18909	(910)-892-4429	RCRUSE@CRUSEASSOCIATES.COM
FIRE ALARM					
PLUMBING	CRUSE AND ASSOCIATES, P.A.	RANDY CRUSE, PE	18909	(910)-892-4429	RCRUSE@CRUSEASSOCIATES.COM
MECHANICAL	CRUSE AND ASSOCIATES, P.A.	RANDY CRUSE, PE	18909	(910)-892-4429	RCRUSE@CRUSEASSOCIATES.COM
SPRINKLER-STANDPIPE					
STRUCTURAL					
STRUCTURAL (FOUNDATION)					
RETAINING WALLS >5' HIGH					
OTHER					

("OTHER" SHOULD INCLUDE FIRMS AND INDIVIDUALS SUCH AS TRUSS, PRECAST, PRE-ENGINEERED, INTERIOR DESIGNERS, ETC.)

2018 EDITION NC BUILDING CODE: ☐ NEW BUILDING ☐ ADDITION ☐ RENOVATION

☒ 1ST TIME INTERIOR COMPLETIONS

☐ SHELL/CORE-CONTACT THE LEAD INSPECTION JURISDICTION FOR POSSIBLE ADDITIONAL PROCEDURES & REQUIREMENTS

☐ PHASED CONSTRUCTION-SHELL/CORE-CONTACT THE LEAD INSPECTION JURISDICTION FOR FOR POSSIBLE ADDITIONAL PROCEDURES & REQUIREMENTS

2018 NC EXISTING BUILDING CODE: ☐ PRESCRIPTIVE ☐ REPAIR ☐ CHAPTER 14

ALTERATION: ☐ LEVEL I ☐ LEVEL II ☐ LEVEL III

☐ HISTORIC PROPERTY ☐ CHANGE OF USE

CONSTRUCTED: (DATE)_____ CURRENT OCCUPANCY(S): (CH. 3) _____

RENOVATED: (DATE) _____ PROPOSED OCCUPANCY(S) (CH. 3): _____

OCCUPANCY CATEGORY (TABLE 1604.5): CURRENT: ☐ I ☒ II ☐ III ☐ IV

PROPOSED: ☐ I ☒ II ☐ III ☐ IV

BASIC BUILDING DATA:

CONSTRUCTION TYPE: ☐ I-A ☐ I-B ☐ II-A ☐ II-B ☐ III-A ☒ III-B ☐ IV ☐ V-A ☐ V-B

SPRINKLERS: ☒ NO ☐ PARTIAL ☐ YES E.S.F.R. ☐ NFPA 13 ☐ NFPA 13R ☐ NFPA 13D

STANDPIPES: ☒ NO ☐ YES CLASS ☐ I ☐ II ☐ III ☐ WET ☐ DRY

PRIMARY FIRE DISTRICT: ☒ NO ☐ YES FLOOD HAZARD AREA: ☐ NO ☐ YES

SPECIAL INSPECTIONS REQUIRED: ☒ NO ☐ YES (CONTACT THE LOCAL INSPECTION JURISDICTION FOR ADDITIONAL PROCEDURES & REQUIREMENTS)

GROSS BUILDING AREA:

FLOOR	EXISTING (SQ FT)	NEW (SQ FT)	SUB-TOTAL
3RD FLOOR			
2ND FLOOR			
MEZZANINE			
1ST FLOOR	1,250(EXISTING TENANT)	3,750(UP-FIT)	
BASEMENT			

TOTAL GROSS AREA: 5,000

THIS UPFIT INCLUDES ONE TENANT SPACE = 3,750 SQ. FT.

ALLOWABLE AREA

PRIMARY OCCUPANCY CLASSIFICATION(S):

ASSEMBLY ☐ A-1 ☐ A-2 ☐ A-3 ☐ A-4 ☐ A-5

BUSINESS ☐

EDUCATIONAL ☐

FACTORY ☒ F-1 MODERATE ☐ F-2 LOW

HAZARDOUS ☐ H-1 DETONATE ☐ H-2 DEFLAGRATE ☐ H-3 COMBUST ☐ H-4 HEALTH ☐ H-5 HPM

INSTITUTIONAL ☐ I-1 CONDITION ☐ 1 ☐ 2; ☐ I-2 CONDITION ☐ 1 ☐ 2; ☐ I-3 CONDITION ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5; ☐ I-4

MERCANTILE ☐

RESIDENTIAL ☐ R-1 ☐ R-2 ☐ R-3 ☐ R-4

STORAGE ☐ S-1 MODERATE ☐ S-2 LOW ☐ HIGH-PILED; ☐ PARKING GARAGE ☐ OPEN ☐ ENCLOSED ☐ REPAIR GARAGE; ☐ UTILITY AND MISCELLANEOUS

ACCESSORY OCCUPANCY CLASSIFICATION(S): _____

INCIDENTAL USES(TABLE 509): _____

SPECIAL USES(CHAPTER 4-LIST CODE SECTIONS): _____

SPECIAL PROVISIONS(CHAPTER 5-LIST CODE SECTIONS): _____

MIXED OCCUPANCY: ☒ NO ☐ YES SEPARATION: ____HR. EXCEPTION: _____

☒ NON-SEPARATED USE(508.3) THE REQUIRED TYPE OF CONSTRUCTION FOR THE BUILDING SHALL BE DETERMINED BY APPLYING THE HEIGHT AND AREA LIMITATIONS FOR EACH OF THE APPLICABLE OCCUPANCIES TO THE ENTIRE BUILDING. THE MOST RESTRICTIVE TYPE OF CONSTRUCTION, SO DETERMINED, SHALL APPLY TO THE ENTIRE BUILDING.

☐ SEPARATED USE (508.4) SEE BELOW FOR AREA CALCULATIONS FOR EACH STORY, THE AREA OF THE OCUPANCY SHALL BE SUCH THAT THE SUM OF THE RATIOS OF THE ACTUAL FLOOR AREA OF EACH USE DIVIDED BY THE ALLOWABLE FLOOR AREA FOR EACH USE SHALL NOT EXCEED 1.

$$\frac{\text{ACTUAL AREA OF OCCUPANCY A}}{\text{ALLOWABLE AREA OF OCCUPANCY A}} + \frac{\text{ACTUAL AREA OF OCCUPANCY B}}{\text{ALLOWABLE AREA OF OCCUPANCY B}} \leq 1$$

_____ + _____ + ... = _____ ≤1.00

STORY NO.	DESCRIPTION AND USE	(A) BLDG AREA PER STORY (ACTUAL)	(B) TABLE 506.2[4] AREA	(C) AREA FOR FRONTAGE INCREASE[1,5]	(D) ALLOWABLE AREA PER STORY OR UNLIMITED[2,3]
1	FACTORY	3,750			
FACTORY	BUSINESS	1,250 *			
TOTAL		5,000	12,000	-	12,000

* NO WORK

[1] FRONTAGE AREA INCREASES FROM SECTION 506.2 ARE COMPUTED THUS:

A. PERIMETER WHICH FRONTS A PUBLIC WAY OR OPEN SPACE HAVING 20 FEET MINIMUM WIDTH = _____(F)
B. TOTAL BUILDING PERIMETER =_____(P)
C. RATIO (F/P) = _____ (F/P)
D. W = MINIMUM WIDTH OF PUBLIC WAY = _____ (W)
E. PERCENT OF FRONTAGE INCREASE ½ = 100[F/P-0.25] X W/30= _____ (%)

[2] UNLIMITED AREA APPLICABLE UNDER CONDITIONS OF SECTION 507.

[3] MAXIMUM BUILDING AREA = TOTAL NUMBER OF STORIES IN THE BUILDING x D (MAXIMUM 3 STORIES) (506.2).

[4] THE MAXIMUM AREA OF OPEN PARKING GARAGES MUST COMPLY WITH 406.5.4.

[5] FRONTAGE INCREASE IS BASED ON THE UNSPRINKLERED AREA VALUE IN TABLE 506.2.

NOTICE TO CONTRACTOR
All construction must comply with current NC Building Codes and is subject to field inspection and verification.
Reviewed for Code Compliance
01/06/2022
Harnett COUNTY NORTH CAROLINA

ALLOWABLE HEIGHT

	ALLOWABLE	SHOWN ON PLANS	CODE REFERENCE[1]
BUILDING HEIGHT IN FEET (TABLE 504.3)[2]	FEET 55	32	
BUILDING HEIGHT IN STORIES (TABLE 504.4)[3]	STORIES 2	STORIES 1	

1. PROVIDE CODE REFERENCE IF THE "SHOWN ON PLANS" QUANTITY IS NOT BASED ON TABLE 504.3 OR 504.4.
2. THE MAXIMUM HEIGHT OF AIR TRAFFIC CONTROL TOWERS MUST COMPLY WITH TABLE 412.3.1.
3. THE MAXIMUM HEIGHT OF OPEN PARKING GARAGES MUST COMPLY WITH TABLE 406.5.4.

FIRE PROTECTION REQUIREMENTS

BUILDING ELEMENT	FIRE SEPARATION DISTANCE (FEET)	RATING REQ'D	RATING PROVIDED (W/ REDUCTION)	DETAIL AND SHEET # *	DESIGN # FOR RATED ASSEMBLY	DESIGN # FOR RATED PENETRATION	DESIGN # FOR RATED JOINTS
STRUCTURAL FRAME, INCLUDING COLUMNS, GIRDERS, TRUSSES	-	0	-	-	-	-	-
BEARING WALLS	-	-	-	-	-	-	-
EXTERIOR	-	-	-	-	-	-	-
NORTH		0	-	-	-	-	-
EAST		0	-	-	-	-	-
WEST		0	-	-	-	-	-
SOUTH		0	-	-	-	-	-
INTERIOR	-	0	-	-	-	-	-
NONBEARING WALLS & PARTITIONS	-	-	-	-	-	-	-
EXTERIOR	-	0	-	-	-	-	-
NORTH	-	0	-	-	-	-	-
EAST	-	0	-	-	-	-	-
WEST	-	0	-	-	-	-	-
SOUTH	-	0	-	-	-	-	-
INTERIOR	-	0	-	-	-	-	-
FLOOR CONSTRUCTION INCLUDING SUPPORTING BEAMS AND JOISTS	-	0	-	-	-	-	-
FLOOR CEILING ASSEMBLY	-	-	-	-	-	-	-
COLUMNS SUPPORTING FLOORS	-	-	-	-	-	-	-
ROOF CONSTRUCTION INCLUDING SUPPORTING BEAMS AND JOISTS	-	0	-	-	-	-	-
ROOF CEILING ASSEMBLY	-	-	-	-	-	-	-
COLUMNS SUPPORTING ROOF	-	-	-	-	-	-	-
SHAFT ENCLOSURES-EXIT	-	-	-	-	-	-	-
SHAFT ENCLOSURES-OTHER	-	-	-	-	-	-	-
CORRIDOR SEPARATION		0	-				-
OCCUPANCY SEPARATION	-	-	-	-	-	-	-
PARTY/FIRE WALL SEPARATION	-	-	-	-	-	-	-
SMOKE BARRIER SEPARATION	-	-	-	-	-	-	-
TENANT/DWELLING UNIT/ SLEEPING UNIT SEPARATION	0	2	2	-	-	-	-
INCIDENTAL USE SEPARATION							

*INDICATE SECTION NUMBER PERMITTING REDUCTION

THIS IS AN EXISTING 2 HR TENANT SEPARATION WALL. NOT REQUIRED.

PERCENTAGE OF WALL OPENING CALCULATIONS-EXISTING NO CHANGE-SEE SHEET LS-1 OF 1

FIRE SEPARATION DISTANCE (FEET) FROM PROPERTY LINES	DEGREE OF OPENINGS PROTECTION (TABLE 705.8)	ALLOWABLE AREA (%)	ACTUAL SHOWN ON PLANS (%)
-	-	-	-

LIFE SAFETY SYSTEM REQUIREMENTS:

EMERGENCY LIGHTING: ☐ NO ☒ YES

EXIT SIGNS: ☐ NO ☒ YES

FIRE ALARM: ☒ NO ☐ YES

SMOKE DETECTION SYSTEMS: ☐ NO ☐ YES ☐ PARTIAL _____

CARBON MONOXIDE DETECTION: ☐ NO ☐ YES

LIFE SAFETY PLAN REQUIREMENTS:

LIFE SAFETY PLAN SHEET #, IF PROVIDED LS-1

ACCESSIBLE DWELLING UNITS N/A
(SECTION 1107)

TOTAL UNITS	ACCESSIBLE UNITS REQUIRED	ACCESSIBLE UNITS PROVIDED	TYPE A UNITS REQUIRED	TYPE A UNITS PROVIDED	TYPE B UNITS REQUIRED	TYPE B UNITS PROVIDED	TOTAL ACCESSIBLE UNITS PROVIDED

ACCESSIBLE PARKING-EXISTING SREET PARKING BY CITY
(SECTION 1106)

LOT OR PARKING AREA	TOTAL # OF PARKING SPACES		# OF ACCESSIBLE SPACES PROVIDED			TOTAL # ACCESSIBLE PROVIDED
	REQUIRED	PROVIDED	REGULAR WITH 5' ACCESS AISLE	VAN SPACES WITH 132" ACCESS AISLE	VAN SPACES WITH 8' ACCESS AISLE	

PLUMBING FIXTURE REQUIREMENTS
(TABLE 2902.1)

USE		WATERCLOSETS			URINALS	LAVATORIES			SHOWERS /TUBS	SERVICE SINKS	DRINKING FOUNTAINS	
		MALE	FEMALE	UNISEX		MALE	FEMALE	UNISEX			REGULAR	ACCESSIBLE
SPACE	REQUIRED	1	1	-		1	1	-		1	1	1
	PROVIDED	-	-	1		-	-	1		1	1	1

2018 NCBC 2902.2 EXC. 2; PROVIDING ONE UNISEX TOILET ROOM TO MEET REQUIREMENT.

THE MAXIMUM NUMBER OF OCCUPANTS FOR THE FACILITY IS 15.

See attached Owners Affidavit

SPECIAL APPROVALS

SPECIAL APPROVAL: (LOCAL JURISDICTION, DEPARTMENT OF INSURANCE, OSC, DPI, DHHS, ICC, ETC., DESCRIBE BELOW)

_____

_____

_____

DESIGN LOADS: STRUCTURAL DESIGN (EXISTING BUILDING-NO CHANGE)

SNOW (I_S) -

SEISMIC (I_E) -

LIVE LOADS: ROOF - PSF; MEZZANINE N/A PSF; FLOOR - PSF

GROUND SNOW LOAD: - PSF

WIND LOAD: BASIC WIND SPEED - MPH (ASCE-7)

EXPOSURE CATEGORY -

SEISMIC DESIGN CATEGORY ☐ A ☐ B ☐ C ☐ D

PROVIDE THE FOLLOWING SEISMIC DESIGN PARAMETERS:

OCCUPANCY CATEGORY (TABLE 1604.5) ☐ I ☐ II ☐ III

SPECTRAL RESPONSE ACCELERATION S_S -%g S_1 -% ☐ IV

SITE CLASSIFICATION (ASCE 7): ☐ A ☐ B ☐ C ☐ D %g

DATA SOURCE: ☐ FIELD TEST ☐ PRESUMPTIVE ☐ E ☐ F ☐ HISTORICAL DATA

BASIC STRUCTURAL SYSTEM (CHECK ONE)

☐ BEARING WALL ☐ DUAL W/SPECIAL MOMENT FRAME

☐ BUILDING FRAME ☐ DUAL W/INTERMEDIATE R/C OR SPECIAL STEEL

☐ MOMENT FRAME ☐ INVERTED PENDULUM

ANALYSIS PROCEDURE ☐ SIMPLIFIED ☐ EQUIVALENT LATERAL FORCE ☐ DYNAMIC

ARCHITECTURAL, MECHANICAL, COMPONENTS ANCHORED? ☐ YES ☐ NO

LATERAL DESIGN CONTROL: EARTHQUAKE ☐ WIND ☐

SOIL BEARING CAPACITIES:

FIELD TEST (PROVIDE COPY OF TEST REPORT) _____ PSF

PRESUMPTIVE BEARING CAPACITY - PSF

PILE SIZE, TYPE, AND CAPACITY _____

ENERGY REQUIREMENTS: EXISTING BUILDING, NO ENVELOPE CHANGES.

THE FOLLOWING DATA SHALL BE CONSIDERED MINIMUM AND ANY SPECIAL ATTRIBUTE REQUIRED TO MEET THE ENERGY CODE SHALL ALSO BE PROVIDED. EACH DESIGNER SHALL FURNISH THE REQUIRED PORTIONS OF THE PROJECT INFORMATION FOR THE PLAN DATA SHEET. IF PERFORMANCE METHOD, STATE THE ANNUAL ENERGY COST FOR THE STANDARD REFERENCE DESIGN VS THE ANNUAL ENERGY COST FOR THE PROPOSED DESIGN.

EXISTING BUILDING ENVELOPE COMPLIES WITH CODE: ☐ NO ☐ YES (THE REMAINDER OF THIS SECTION IS NOT APPLICABLE)

EXEMPT BUILDING ☐ NO ☐ YES PROVIDE CODE OR STATUTORY REFERENCE: _____

CLIMATE ZONE: ☐ 3A ☐ 4A ☐ 5A

METHOD OF COMPLIANCE: ENERGY CODE ☐ PERFORMANCE ☐ PRESCRIPTIVE

ASHRAE 90.1 ☐ PERFORMANCE ☐ PRESCRIPTIVE

OTHER: ☐ PERFORMANCE (SPECIFY SOURCE) _____

THERMAL ENVELOPE (PRESCRIPTIVE METHOD ONLY)

ROOF/CEILING ASSEMBLY (EACH ASSEMBLY):

DESCRIPTION OF ASSEMBLY _____

U-VALUE OF TOTAL ASSEMBLY: _____

R-VALUE OF INSULATION: _____

SKYLIGHTS IN EACH ASSEMBLY _____

U-VALUE OF SKYLIGHT: _____

TOTAL SQUARE FOOTAGE OF SKYLIGHTS IN EACH ASSEMBLY _____

EXTERIOR WALLS (EACH ASSEMBLY):

DESCRIPTION OF ASSEMBLY _____

U-VALUE OF TOTAL ASSEMBLY: _____

R-VALUE OF INSULATION: _____

OPENINGS (WINDOWS OR DOORS WITH GLAZING) _____

U-VALUE OF ASSEMBLY _____ SOLAR HEAT GAIN COEFFICIENT: _____

PROJECTION FACTOR _____ DOOR R-VALUES _____

WALLS BELOW GRADE (EACH ASSEMBLY):

DESCRIPTION OF ASSEMBLY _____

U-VALUE OF TOTAL ASSEMBLY _____ R-VALUE OF INSULATION: _____

FLOORS OVER UNCONDITIONED SPACE (EACH ASSEMBLY):

DESCRIPTION OF ASSEMBLY _____

U-VALUE OF TOTAL ASSEMBLY _____ R-VALUE OF INSULATION: _____

FLOOR SLAB ON GRADE

DESCRIPTION OF ASSEMBLY _____

R-VALUE OF INSULATION: _____

U-VALUE OF TOTAL ASSEMBLY -

HORIZONTAL / VERTICAL REQUIREMENT -

SLAB HEATED ? _____

SUMMARY:

ENERGY CODE:	2018 NORTH CAROLINA STATE BUILDING CODE: ENERGY CONSERVATION CODE
BUILDING CODE:	2018 NORTH CAROLINA STATE BUILDING CODE: BUILDING CODE
MECHANICAL CODE:	2018 NORTH CAROLINA STATE BUILDING CODE: MECHANICAL CODE
PLUMBING CODE:	2018 NORTH CAROLINA STATE BUILDING CODE: PLUMBING CODE
ELECTRICAL CODE:	2020 NATIONAL ELECTRIC CODE
ACCESSIBILITY CODE:	ICC/ANSI 117.1-2009 AMERICAN NATIONAL STANDARD ACCESSIBLE AND USABLE BUILDINGS AND FACILITIES
CONSTRUCTION:	III-B
OCCUPANCY:	F-1

SHEET INDEX

NORTH CAROLINA PROFESSIONAL SEAL 18909 ENGINEER RANDY L. CRUSE 12/15/21

PLANS FOR:
J & L MANUFACTURING
252 JARCO DRIVE, FUQUAY VARINA, NORTH CAROLINA

REVISIONS

NO.	

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

DATE 12/15/21
DRAWN BY BAM
JOB NO. 21-54

SHEET NO.
BD-1 OF 1

EXIT WIDTH

USE GROUP OR SPACE DESCRIPTION	(a)	(b)		(c)		EXIT WIDTH (in)			
	AREA[1] SQ. FT.	AREA[1] PER OCCUPANT (TABLE 1004.1.2)	CALCULATED OCCUPANT LOAD (a/b)	EGRESS WIDTH PER OCCUPANT (TABLE 1005.1)		REQUIRED WIDTH (SECTION 1005.1) (a/b) x c		ACTUAL WIDTH SHOWN ON PLANS	
				STAIR	LEVEL	STAIR	LEVEL	STAIR	LEVEL
FACTORY (F-1)	3,750	100 GROSS	38	N/A	.2	N/A	7.6"	N/A	N/A

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)

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
FACTORY (F-1)	2	5	200'	77'-6"	44'-7"	81'-3"

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)

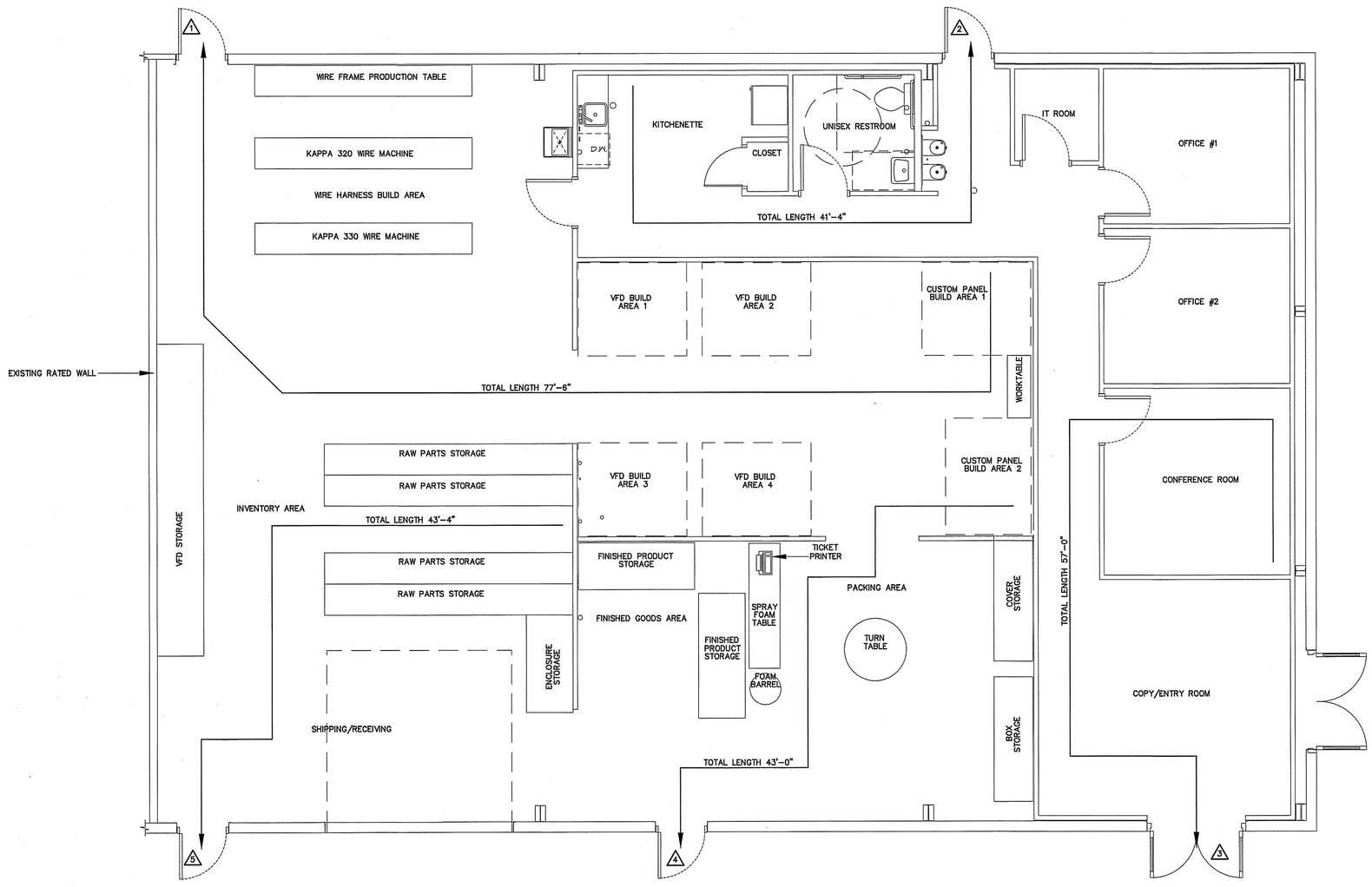
LIFE SAFETY PLAN REQUIREMENTS:

- ☒ 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 (1010.1.10) – SEE NOTE 6
- ☒ LOCATION OF DOORS WITH DELAYED EGRESS LOCKS AND AND THE AMOUNT OF DELAY (1010.1.9.7) – SEE NOTE 7
- ☒ LOCATION OF DOORS WITH ELECTROMAGNETIC EGRESS LOCKS (1010.1.9.9) – SEE NOTE 7
- ☒ LOCATION OF DOORS EQUIPPED WITH HOLD-OPEN DEVICES – SEE NOTE 7
- ☒ LOCATION OF EMERGENCY ESCAPE WINDOWS (1030) – SEE NOTE 7
- ☒ THE SQUARE FOOTAGE OF EACH FIRE AREA (202) – 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. TENANT SEPARATION WALL TO REMAIN
2. DISTANCE TO ALL ASSUMED & REAL PROPERTY LINES > 19'. EXISTING STRUCTURE–NO CHANGE IN FOOTPRINT
3. DISTANCE TO ASSUMED PROPERTY LINES > 19'; EXISTING STRUCTURE–NO ADDITIONAL OPENINGS IN EXTERIOR WALLS.
4. NO DEAD ENDS > 20'; 20' ALLOWED
5. NO RATING REQUIRED IN THIS STRUCTURE.
6. PANIC HARDWARE NOT REQUIRED; BUT EXISTING
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

DO WE HAVE A SITEPLAN



LIFE SAFETY PLAN
SCALE: 1/4" = 1'-0"

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

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

1. 35" CLEAR WIDTH DIVIDED BY .2" = 175 OCCUPANTS CALCULATED OCCUPANCY PER EXIT = 7 PEOPLE CALCULATED OCCUPANCY DOES NOT EXCEED MAXIMUM CAPACITY OF EXIT.
2. 35" CLEAR WIDTH DIVIDED BY .2" = 175 OCCUPANTS CALCULATED OCCUPANCY PER EXIT = 7 PEOPLE CALCULATED OCCUPANCY DOES NOT EXCEED MAXIMUM CAPACITY OF EXIT.
3. 70" CLEAR WIDTH DIVIDED BY .2" = 350 OCCUPANTS CALCULATED OCCUPANCY PER EXIT = 8 PEOPLE CALCULATED OCCUPANCY DOES NOT EXCEED MAXIMUM CAPACITY OF EXIT.
4. 35" CLEAR WIDTH DIVIDED BY .2" = 175 OCCUPANTS CALCULATED OCCUPANCY PER EXIT = 8 PEOPLE CALCULATED OCCUPANCY DOES NOT EXCEED MAXIMUM CAPACITY OF EXIT.
5. 35" CLEAR WIDTH DIVIDED BY .2" = 175 OCCUPANTS CALCULATED OCCUPANCY PER EXIT = 8 PEOPLE CALCULATED OCCUPANCY DOES NOT EXCEED MAXIMUM CAPACITY OF EXIT.

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 42909 ANDY L. CRUSE 12/15/21

PLANS FOR:
J & L MANUFACTURING
252 JARCO DRIVE, FUQUAY VARINA, NORTH CAROLINA

REVISIONS	
NO.	

Cruse And Associates, P.A.
414 EAST EDGERTON STREET
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TEL: (910) 892-4458
FAX: (910) 892-5162
LICENSE NO.: C-1721

DATE	12/15/21
DRAWN BY	BAM
JOB NO.	21-54

SHEET NO.
LS-1 OF 1

DOOR SCHEDULE

DOOR NO.	DOOR SIZE WIDE	HIGH	THICK.	REMARKS
01	3'-0"	7'-0"	1 3/4"	EXISTING EXTERIOR METAL DOOR WITH HM FRAME
02	3'-0"	7'-0"	1 3/4"	EXISTING EXTERIOR METAL DOOR WITH HM FRAME
03	6'-0"	7'-0"	1 3/4"	EXISTING EXTERIOR GLASS DOORS WITH HM FRAME
04	6'-0"	7'-0"	1 3/4"	EXISTING EXTERIOR GLASS DOORS WITH HM FRAME
05	3'-0"	7'-0"	1 3/4"	EXISTING EXTERIOR METAL DOOR WITH HM FRAME
06	12'-0"	12'-0"	–	EXISTING METAL ROLL UP DOOR
07	3'-0"	7'-0"	1 3/4"	EXISTING EXTERIOR METAL DOOR WITH HM FRAME
08	3'-0"	6'-8"	1 5/8"	INTERIOR WOOD DOOR WITH 6 PANEL H.C., PREHUNG
09	2'-6"	6'-8"	1 5/8"	INTERIOR WOOD DOOR WITH 6 PANEL H.C., PREHUNG
10	3'-0"	6'-8"	1 5/8"	INTERIOR WOOD DOOR WITH 6 PANEL H.C., PREHUNG
11	3'-0"	6'-8"	1 5/8"	INTERIOR WOOD DOOR WITH 6 PANEL H.C., PREHUNG
12	3'-0"	6'-8"	1 5/8"	INTERIOR WOOD DOOR WITH 6 PANEL H.C., PREHUNG
13	3'-0"	6'-8"	1 5/8"	INTERIOR WOOD DOOR WITH 6 PANEL H.C., PREHUNG
14	3'-0"	6'-8"	1 5/8"	INTERIOR WOOD DOOR WITH 6 PANEL H.C., PREHUNG

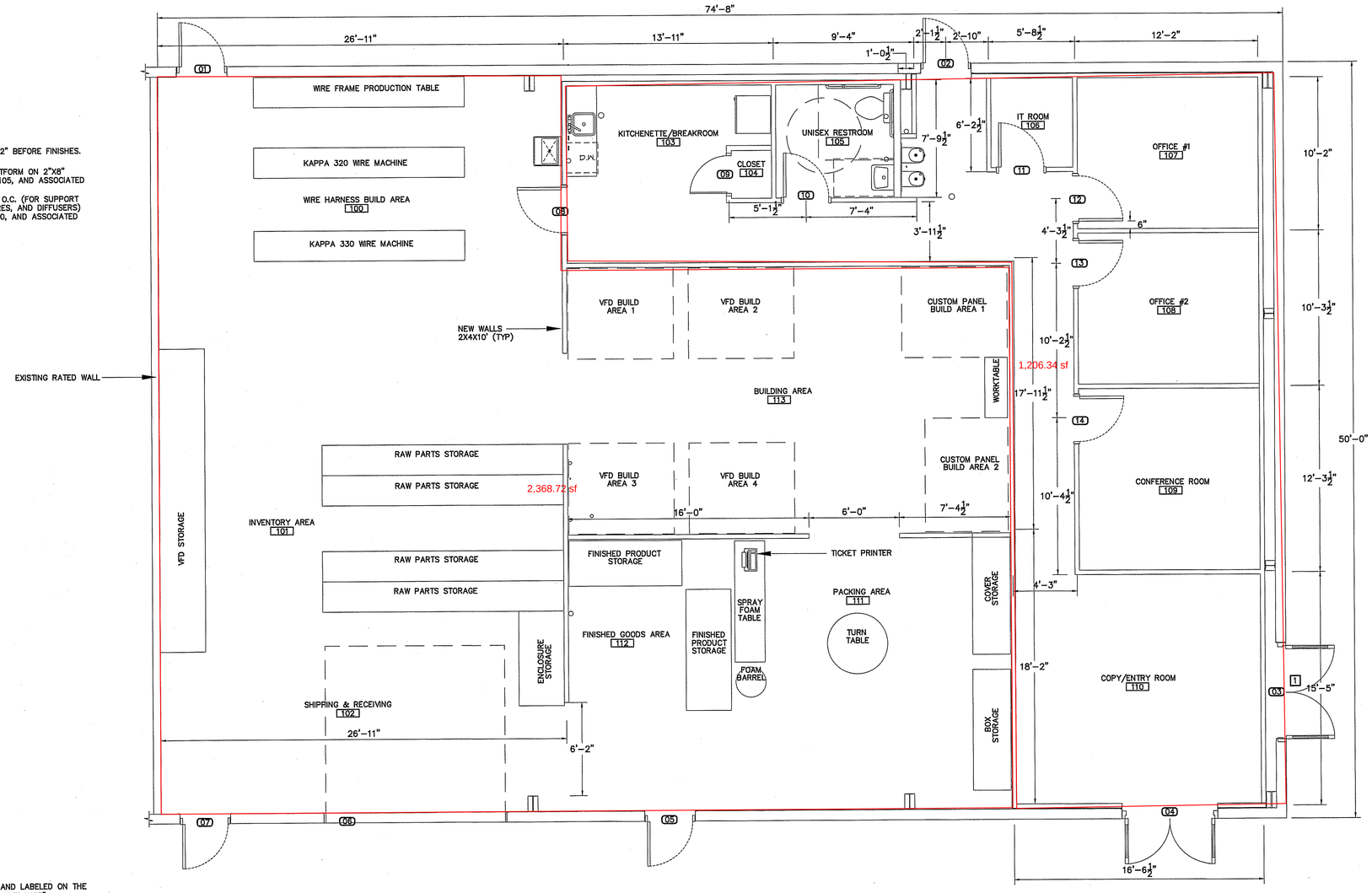
VERIFY TYPES AND SIZES WITH OWNER BEFORE ORDERING.
PROVIDE ALL HARDWARE AS REQUIRED. ALL HARDWARE TO BE A.D.A. COMPLIANT.
VERIFY HARDWARE FINISHES & STYLES WITH OWNER BEFORE ORDERING.
PROVIDE CLOSERS ON ALL EXTERIOR DOORS & RESTROOM DOORS.

ROOM NO.	ROOM NAME	FLOOR: CONCRETE	CARPET	TILE	VCT	RUBBER	BASE: WOOD	CERAMIC TILE	RUBBER BASE	NONE	WALLS: BRICK	1/2" DRYWALL	CERAMIC TILE	FRP	CEIL. HT.	CLG.: 2X2 CEILING TILE	NONE	DRYWALL	VINYL	REMARKS
100	WIRE HARNESS BUILDING AREA	X													16'-0"+/-		X			
101	INVENTORY AREA	X													16'-0"+/-		X			
102	SHIPPING & RECEIVING	X													16'-0"+/-		X			
103	KITCHENETTE/BREAKROOM	X									X				9'-0"	X				
104	CLOSET			X							X				9'-0"	X				
105	UNISEX RESTROOM			X							X				9'-0"	X				FRP TO 48" A.F.F.
106	IT ROOM			X							X				9'-0"	X				
107	OFFICE #1		X								X				9'-0"	X				
108	OFFICE #2		X								X				9'-0"	X				
109	CONFERENCE ROOM		X								X				9'-0"	X				
110	COPY/ENTRY ROOM		X								X				9'-0"	X				
111	PACKING AREA	X													16'-0"+/-		X			APPROX. 10' HIGH WALLS
112	FINISHED GOODS AREA	X													16'-0"+/-		X			APPROX. 10' HIGH WALLS
113	BUILDING AREA	X													16'-0"+/-		X			APPROX. 10' HIGH WALLS

OWNER TO VERIFY ALL COLORS AND FINISHES BEFORE ORDERING MATERIALS

NOTES:

1. ALL INTERIOR WALLS SHOWN AT 3-1/2" BEFORE FINISHES.
2. NO STORAGE ABOVE 12' A.F.F.
3. PROVIDE 3/4" PLYWOOD SERVICE PLATFORM ON 2"X8" @ 12" O.C. ABOVE ROOMS 103, 104, 105, AND ASSOCIATED CORRIDOR AREA. (APPROX. 22'X12')
4. PROVIDE 2"X6" CEIILNG JOISTS @ 16" O.C. (FOR SUPPORT OF ACOUSTICAL CEILING, LIGHT FIXTURES, AND DIFFUSERS) ABOVE ROOMS 106, 107, 108, 109, 110, AND ASSOCIATED CORRIDOR AREA. (APPROX. 50'X17')

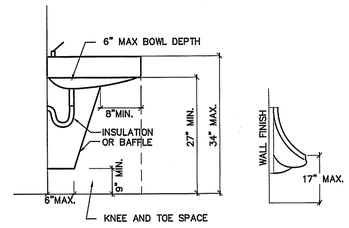


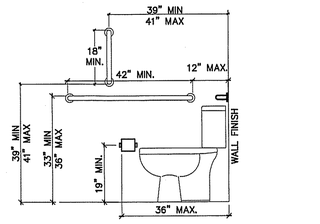
KEYNOTES:

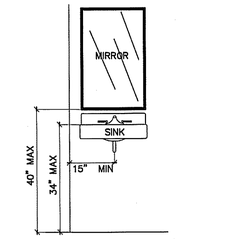
1 DOOR TO BE PERMANANTLY LOCKED AND LABELED ON THE EXTERIOR OF THE BUILDING "NOT AN ENTRANCE"

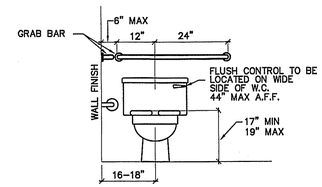
NOTE:
OWNER TO SELECT ALL COLORS, TEXTURES & FINISHES

PROPOSED FLOOR PLAN
SCALE: 1/4" = 1'-0"









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

NORTH CAROLINA PROFESSIONAL SEAL 18909 ENGINEER RANDY L. CRUSE

PLANS FOR:
J & L MANUFACTURING
252 JARCO DRIVE, FUQUAY VARINA, NORTH CAROLINA

REVISIONS

NO.	

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

DATE	12/15/21
DRAWN BY	BAM
JOB NO.	21-54

SHEET NO.
F-1 OF 1

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 4869.008 LAVATORY	WALL HUNG ENAMELED CAST IRON LAVATORY RIM @ 31" A.F.F.	2385.004 FAUCET. PROVIDE W/BASKET DRAIN
P-3	JUST	SL-ADA-1613-A-GR	1 COMPARTMENT SINK	PROVIDE W/J1174-KS J-35 DRAIN; 6-1/2" DEEP
P-4	23" SINGLE BASIN FREE STANDING MOP SINK			
P-5	DISHWASHER SELECTED BY OWNER			
P-6	OASIS	PG8ACSL	SPLIT LEVEL ELECTRIC WATER COOLER	BARRIER - FREE
P-7	REFRIGERATOR SELECTED BY OWNER			
P-8	STATE	PCE 30 20LSA	30 GAL 4.5 KW WATER HEATER	HEATER IS 32-1/4" TALL; ALLOW FOR MINIMUM CLEARANCES DURING INSTALLATION

* VERIFY ALL FIXTURES WITH OWNER BEFORE PURCHASE OR INSTALLATION

PLUMBING CALCULATIONS

ITEM	# OF	FIXTURE UNITS (EACH) COLD	HOT	TOTAL	FIXTURE UNITS (TOTAL) COLD	HOT	TOTAL	FIXTURE UNITS (WASTE)
FLUSH TANK WATER CLOSET	1	5.0	-	5.0	5.0	-	5.0	4/4
LAVATORY	1	1.5	1.5	2.0	1.5	1.5	2.0	1/1
1 COMP. SINK	1	1.0	1.0	1.4	1.0	1.0	1.4	2/2
SERVICE SINK	1	2.25	2.25	3.0	2.25	2.25	3.0	2/2
DISHWASHER	1	-	1.4	1.4	-	1.4	1.4	2/2
DRINKING FOUNTAIN	1	.25	-	.25	.25	-	.25	0.5/.05
TOTAL		-	-	-	16.75	9.0	13.05	11.5

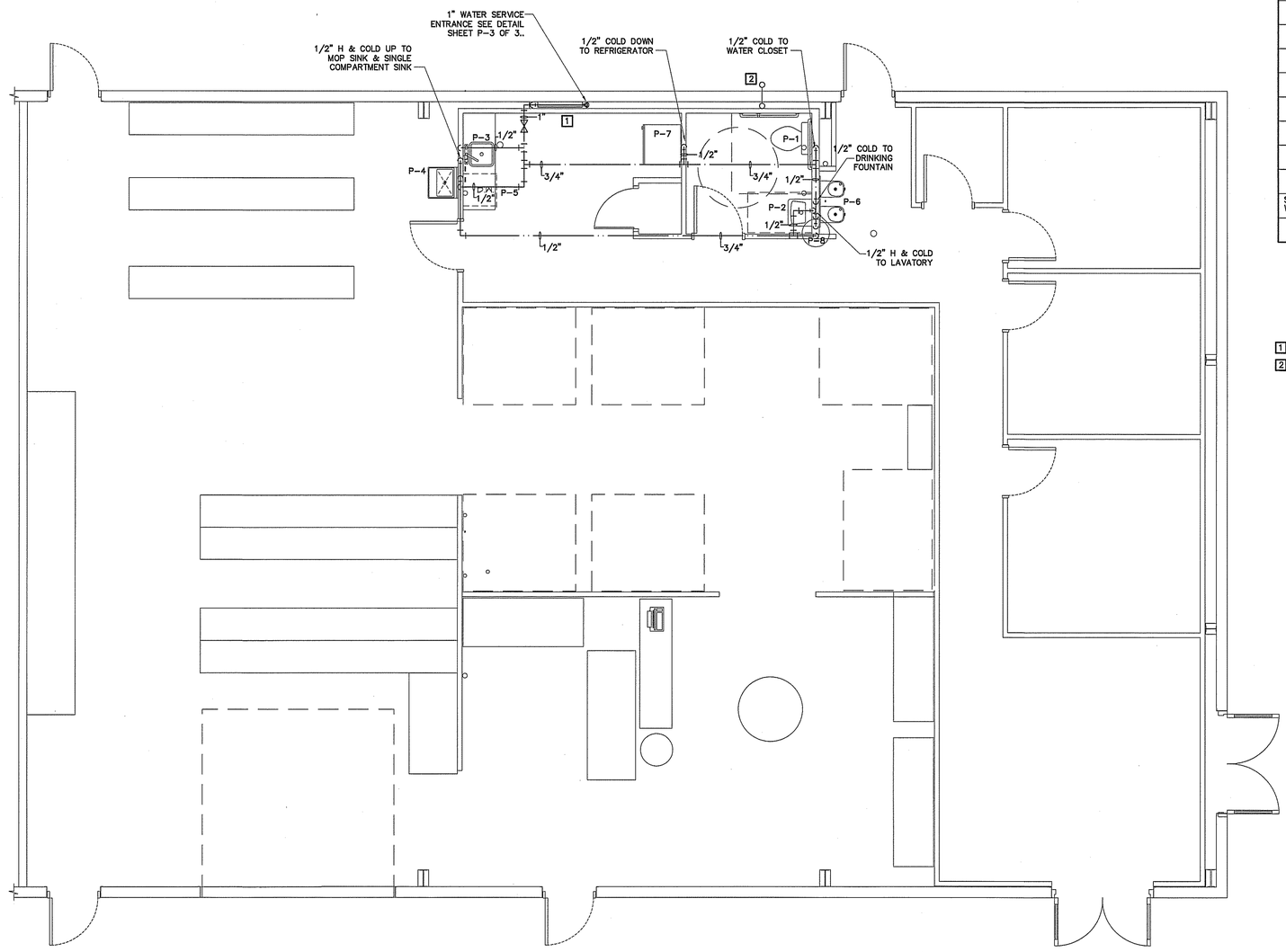
16.5 GPM

WATER SUPPLY PIPE SIZE: MINIMUM 1"

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"
DISHWASHER	1/2"	1/2"	2"	2"
FLOOR DRAIN			3"	2"
KITCHEN SINKS	1/2"	1/2"	3"	2"

NOTE: P.C. TO VERIFY EXISTING WATER LINE LOCATION AND ROUTING BEFORE BEGINNING CONSTRUCTION.



PLUMBING SUPPLY PIPING PLAN

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

PLUMBING LEGEND

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

KEYNOTES:

1. PROVIDE ACCESS DOORS IN WALL.
2. WATER HEATER PAN DRAIN DOWN IN WALL CAVITY AND OUT OF WALL ABOVE GRADE.

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 8909 CANDY L. CRUSE

PLANS FOR:
J & L MANUFACTURING
252 JARCO DRIVE, FUQUAY VARINA, NORTH CAROLINA

REVISIONS

NO.	

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FAX: (910) 892-2162
LICENSE NO.: C-1721

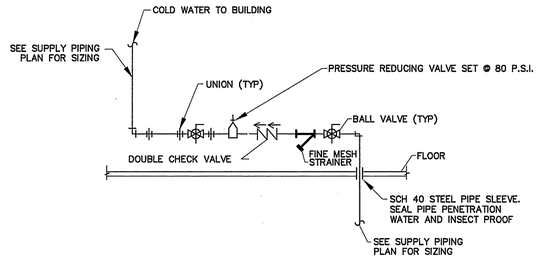
DATE 12/15/21
DRAWN BY BAM
JOB NO. 21-54

SHEET NO.
P-1 OF 2

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 4869.008 LAVATORY	WALL HUNG ENAMELED CAST IRON LAVATORY RIM @ 31" A.F.F.	2385.004 FAUCET. PROVIDE W/BASKET DRAIN
P-3	JUST	SL-ADA-1613-A-GR	1 COMPARTMENT SINK	PROVIDE W/J1174-KS J-35 DRAIN; 6-1/2" DEEP
P-4	23" SINGLE BASIN FREE STANDING MOP SINK			
P-5	DISHWASHER SELECTED BY OWNER			
P-6	OASIS	PGBACSL	SPLIT LEVEL ELECTRIC WATER COOLER	BARRIER - FREE
P-7	REFRIGERATOR SELECTED BY OWNER			
P-8	STATE	PCE 30 20LSA	30 GAL 4.5 KW WATER HEATER	HEATER IS 32-1/4" TALL; ALLOW FOR MINIMUM CLEARANCES DURING INSTALLATION

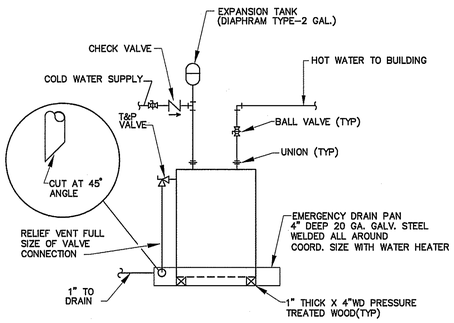
* VERIFY ALL FIXTURES WITH OWNER BEFORE PURCHASE OR INSTALLATION



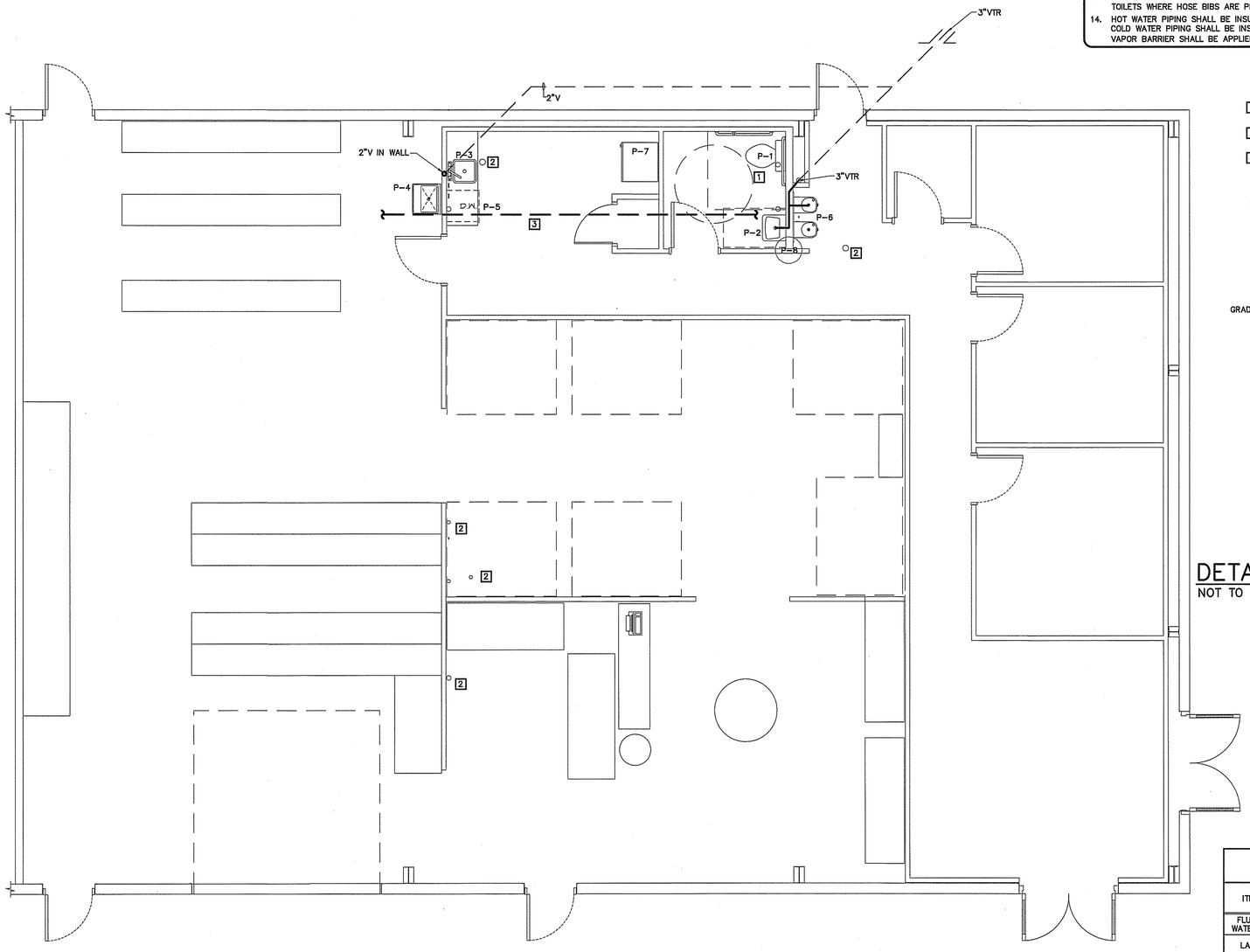
DETAIL-WATER SERVICE ENTRANCE
NOT TO SCALE

GENERAL PLUMBING NOTES

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



DETAIL-WATER HEATER
NOT TO SCALE



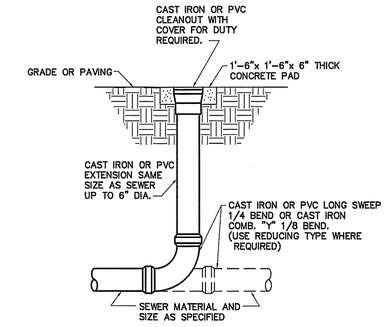
PLUMBING WASTE & VENT PIPING PLAN
SCALE: 1/4" = 1'-0"

KEYNOTES:

1. TIE WATER CLOSET INTO EXISTING WASTE PIPING. CUT & PATCH CONCRETE AS REQUIRED.
2. CAP ALL UNUSED SUPPLY & WASTE PIPING BELOW FLOOR. PATCH CONCRETE AS REQUIRED.
3. APPROXIMATE LOCATION OF EXISTING 4" WASTE PIPING.

NOTES:

1. UTILIZE EXISTING WASTE PIPING FOR UP-FIT REQUIREMENTS.



DETAIL-CLEAN OUT AT GRADE
NOT TO SCALE

PLUMBING LEGEND

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

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"
DISHWASHER	1/2"	1/2"	2"	2"
FLOOR DRAIN			3"	2"
KITCHEN SINKS	1/2"	1/2"	3"	2"

PLUMBING CALCULATIONS

ITEM	# OF	FIXTURE UNITS (EACH) COLD	HOT	TOTAL	FIXTURE UNITS (TOTAL) COLD	HOT	TOTAL	FIXTURE UNITS (WASTE)
FLUSH TANK WATER CLOSET	1	5.0	-	5.0	5.0	-	5.0	4/4
LAVATORY	1	1.5	1.5	2.0	1.5	1.5	2.0	1/1
1 COMP. SINK	1	1.0	1.0	1.4	1.0	1.0	1.4	2/2
SERVICE SINK	1	2.25	2.25	3.0	2.25	2.25	3.0	2/2
DISHWASHER	1	-	1.4	1.4	-	1.4	1.4	2/2
DRINKING FOUNTAIN	1	.25	-	.25	.25	-	.25	0.5/.05
TOTAL		-	-	-	16.75	9.0	13.05	11.5

16.5 GPM
WATER SUPPLY PIPE SIZE: MINIMUM 1"

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 18909 ENGINEER CINDY L. CRUSE 12/15/21

PLANS FOR:
J & L MANUFACTURING
252 JARCO DRIVE, FUQUAY VARINA, NORTH CAROLINA

Cruse And Associates, P.A.
414 EAST EDGERTON STREET
Dunn, North Carolina 28334
PH: (910) 892-4848
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LICENSE NO.: C-1721

REVISIONS

NO.	

DATE 12/15/21
DRAWN BY BAM
JOB NO. 21-54

SHEET NO.
P-2 OF 2

KEY NOTES:

1. PROVIDE 10" X 10" DUCT FROM L1. TIE (2) 8"ø O.A. DUCTS W/MANUAL BALANCING DAMPER FROM AHU-1 & AHU-2 INTO 10" X 10" DUCT. COORDINATE HEIGHT OF L1 WITH HEIGHT OF RETURN DUCT TO AVOID CONFLICT.
2. RUN RETURN DUCT DOWN TO FLOOR. INSTALL RETURN GRILLES AS LOW AS POSSIBLE.
3. PROVIDE GUARD RAIL; 42" HIGH; WITH ACCESS DOOR AROUND SERVICE PLATFORM.

NOTE:

1. FILTER RETURN AIR AT EACH AHU.

MECHANICAL SYMBOL LEGEND

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

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

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

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

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 68 DEG. F.

SUMMER DRY BULB 78 DEG. F.

RELATIVE HUMIDITY 55%

BUILDING HEATING LOAD 57.5 MBH

BUILDING COOLING LOAD 10.0 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

DESCRIPTION OF UNIT – HEAT PUMP
HEATING EFFICIENCY – 3.3 COP
COOLING EFFICIENCY – 11.0 EER
SIZE CATEGORY OF UNIT – ≥ 65,000 BTUH AND < 135,000 BTUH

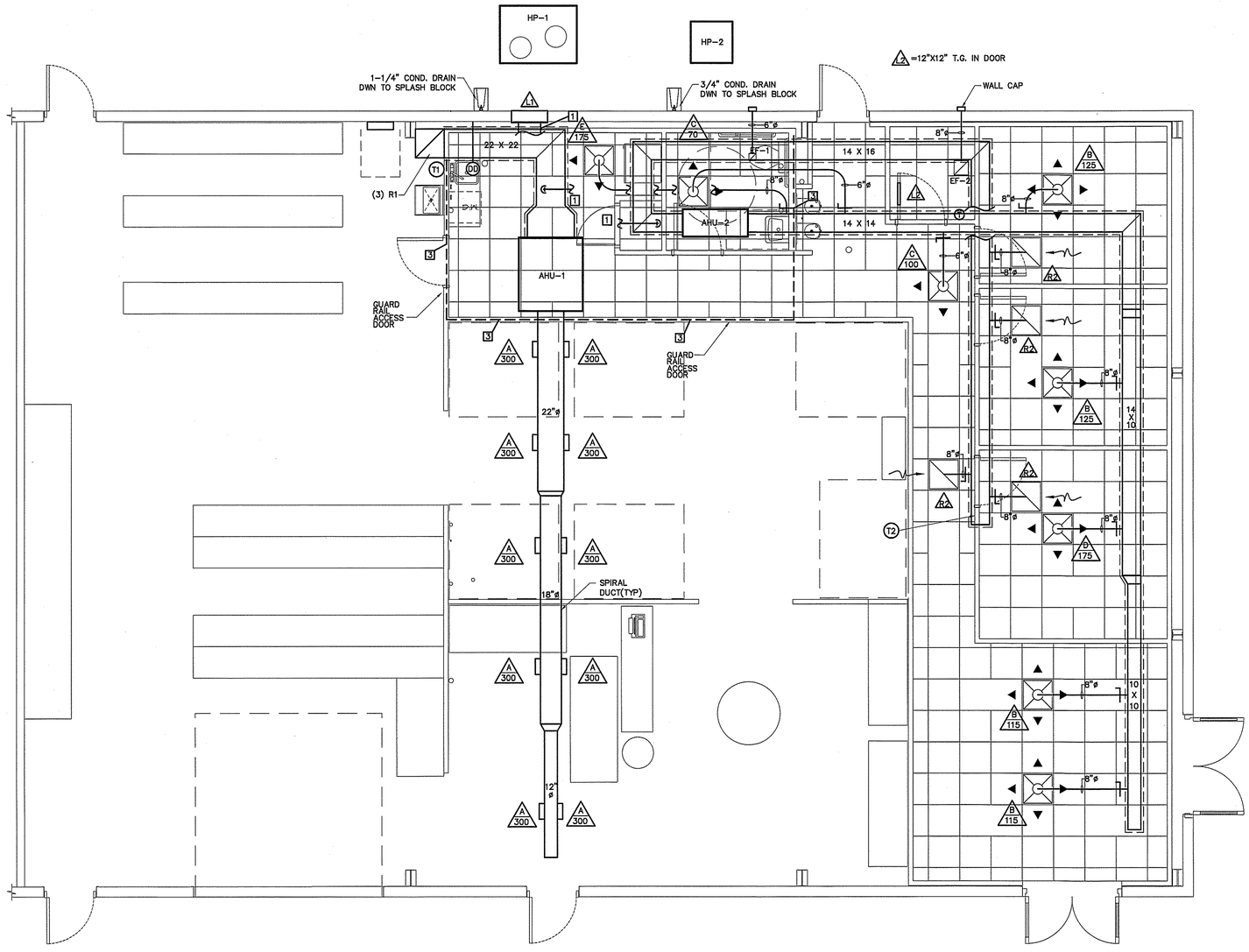
BOILER
SIZE CATEGORY. IF OVERSIZED, STATE REASON: N/A

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

LIST EQUIPMENT EFFICIENCIES SEE SCHEDULE

MECHANICAL NOTES (GENERAL)

1. DUCTWORK LAYOUTS ARE SCHEMATIC. ALL RISES, DROPS, OFFSETS, AND TRANSITIONS REQUIRED BUT ARE NOT SHOWN SHALL BE PROVIDED AND INSTALLED BY THE CONTRACTOR AT NO ADDITIONAL EXPENSE TO THE OWNER.
2. DUCTWORK SHALL BE GALVANIZED STEEL AND SHALL BE CONSTRUCTED IN COMPLIANCE WITH SMACNA STANDARDS FOR LOW VELOCITY DUCTWORK. DUCT SIZES SHOWN ARE INSIDE CLEAR DIMENSIONS. FLEXIBLE RUNOUTS SHALL NOT EXCEED 14' AND SHALL NOT BE USED TO FORM ELBOWS. CONNECTIONS FROM RECTANGULAR TO ROUND DUCT SHALL BE MADE WITH MANUFACTURED 45 DEG. LATERAL TAPS.
3. ALL DUCTWORK SHALL BE SEALED AIR TIGHT WITH SEALING COMPOUND.
4. ALL ELBOWS IN DUCTWORK SHALL BE RADIUS ELBOWS, UNLESS NOTED OTHERWISE. WHERE SQUARE ELBOWS ARE SHOWN, INSTALL TURNING VANES.
5. THIS CONTRACTOR SHALL COORDINATE HIS WORK WITH THAT OF OTHER TRADES PRIOR TO INSTALLATION OF ANY OF HIS PIPING, DUCTWORK, OR EQUIPMENT.
6. THE MECHANICAL CONTRACTOR SHALL MAKE A COMPLETE REVIEW OF THE MECHANICAL PLANS, SCHEDULES, AND DETAILS PRIOR TO INSTALLATION OF THE MECHANICAL SYSTEMS AND REVIEW ANY CONFLICTS THAT ARE NOTED WITH THE ENGINEER.
7. IT WILL BE THE RESPONSIBILITY OF THE MECHANICAL CONTRACTOR TO ENSURE THAT ITEMS TO BE FURNISHED UNDER HIS CONTRACT WILL FIT THE SPACE AVAILABLE. HE SHALL MAKE NECESSARY FIELD MEASUREMENTS TO ASCERTAIN SPACE REQUIREMENTS, INCLUDING THOSE FOR CONNECTIONS AND SHALL FURNISH AND INSTALL SUCH SIZES AND SHAPES OF EQUIPMENT THAT ARE THE TRUE AND INTENT MEANING OF THE PLANS AND SPECIFICATIONS. HE SHALL PROVIDE THE ENGINEER SCALED DRAWINGS OF ALL MECHANICAL DRAWINGS.
8. ALL EQUIPMENT SHALL BE LOCATED AND INSTALLED TO PROVIDE MAXIMUM SPACE FOR MAINTENANCE AND SERVICE.
9. ALL PENETRATIONS OF FIRE WALLS SHALL BE SEALED WITH APPROVED SEALING MATERIALS TO MAINTAIN THE FIRE RATING OF THE WALLS.
10. 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 AS ALLOWED BY CURRENT MECHANICAL CODE.
11. IN UNCONDITIONED AREAS: SUPPLY AND RETURN DUCTWORK SHALL BE INSULATED WITH FIBERGLASS INSULATION WITH A MINIMUM THERMAL RESISTANCE OF R-6.0 AND AN ATTACHED VAPOR BARRIER. DIFFUSERS SHALL BE INSULATED WITH FIBERGLASS INSULATION WITH VAPOR BARRIER. ALL JOINTS SHALL BE TAPED TO PROVIDE A CONTINUOUS VAPOR BARRIER.
12. MECHANICAL WORK INCLUDES DEMOLITION, RELOCATION, IN EXISTING & NEW WORK AS APPLICABLE. MECHANICAL CONTRACTOR TO SUPPLY A COMPLETE SYSTEM IN EACH AREA.
13. DUCT SIZES SHOWN ARE NET DIMENSIONS.
14. INSTALL METAL DUCT HANGERS/STRAPS FOR METAL DUCT IAW N.C. MECHANICAL CODE.



NOTE: MAINTAIN 10' HORIZONTAL MINIMUM SEPARATION BETWEEN INTAKE AND EXHAUST LOUVERS.

HVAC MECHANICAL PLAN
SCALE: 1/4" = 1'-0"

THIS FACILITY IS DESIGNED AS A WAREHOUSE FACILITY.
IT IS NOT INTENDED TO BE USED AS VEHICLE PARKING, STORAGE OR REPAIR. THIS FACILITY WILL UTILIZE AN ELECTRIC FORK LIFT.

NORTH CAROLINA PROFESSIONAL SEAL 17552 ENGINEER RANDY L. CRUSE

PLANS FOR:
J & L MANUFACTURING
252 JARCO DRIVE, FUQUAY VARINA, NORTH CAROLINA

REVISIONS

NO.	

Cruse And Associates, P.A.
414 EAST THOMPSON STREET
SMITHFIELD, NORTH CAROLINA 27577
PH: (919) 989-4429
FAX: (919) 989-4168
LICENSE NO.: C-1721

DATE	12/15/21
DRAWN BY	BAM
JOB NO.	21-54

SHEET NO.
M-1 OF 2

AIR HANDLER UNIT

AHU NO.	MANUFACTURER	MODEL	VOLTAGE	E.S.P.	OUTSIDE AIR (CFM)	CFM	UNIT FLA	REF LINES		SEER/ EER	HTR KW (208)	COOLING CAPACITY (MBH)		HEATING CAPACITY (MBH)		HSPF	MIN. CIRC. AMPACITY	M.O.C.P.
								GAS	LIQ.			TOTAL	SENS.	HIGH	LOW			
AHU-1	TEMPSTAR	FHS091MAAA0A0	208/3/60	0.46	175	3000	39.6	1-3/4	1-1/8	11.0	11.3	88.84	68.78	87.0	42.0	3.3/2.4	46	50
AHU-2	TEMPSTAR	FXM4X3600AL	208/1/60	0.52	100	1070	29.3	3/4	3/8	15.0	6.1	27.3	21.5	27.6	16.7	9.5	45	45

* SEE OUTSIDE AIR CHART ON MECHANICAL SHEETS
** PROVIDE OUTDOOR THERMOSTAT TO LOCK OUT SUPPLEMENTAL ELECTRIC HEAT AT OUTDOOR TEMPERATURES ABOVE 40°F.

SPLIT SYSTEM HEAT PUMP UNITS

MARK	MANUF.	MODEL	VOLTAGE	# COMP.	MIN. CIRC. AMPACITY	M.O.C.P.	UNIT FLA.	ACCESSORIES
HP-1	TEMPSTAR	CHS091HGA0A004	208/3/60	SINGLE CIRCUIT 2 STAGE	35	50	28.25	EXCLUDE 8,18
HP-2	TEMPSTAR	N4H430GKP	208/1/60	1	19	30	14.7	EXCLUDE 8,18

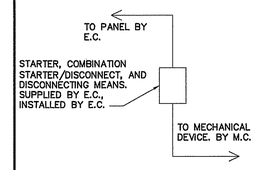
ACCESSORIES

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

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

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

CONNECTION SCHEDULE



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

EXHAUST FAN SCHEDULE

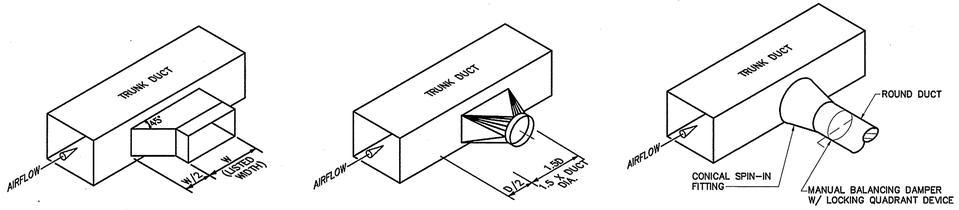
MARK	MAKE	MODEL	TYPE	CFM	EXTERNAL S.P. IN (W.G.)	WATTS	ELECTRICAL			NOTES
							VOLT	PH	HZ	
EF-1	GREENHECK	SP-B90	CEILING FAN	72	.25	21.1	115	1ø	60	PITCHED RROF CAP, INSECT SCREEN W/BACK DRAFT DAMPER
EF-2	GREENHECK	SP-B150	CEILING FAN	154	.25	128	115	1ø	60	PITCHED RROF CAP, INSECT SCREEN W/BACK DRAFT DAMPER

1. VERIFY ELECTRICAL REQUIREMENTS WITH MANUFACTURER AND ELECTRICAL CONTRACTOR BEFORE BEGINNING CONSTRUCTION.
2. EF-2 THERMOSTATICALLY CONTROLLED.

LOUVER SCHEDULE

MARK	DESCRIPTION	SERVES	CFM	APPROXIMATE OUTSIDE DIMENSIONS (W X H)	MODEL
L1	OUTSIDE AIR LOUVER	VARIES	*	18"X18"	HART & COOLEY 15302F 18X18 W/ INSECT SCREEN

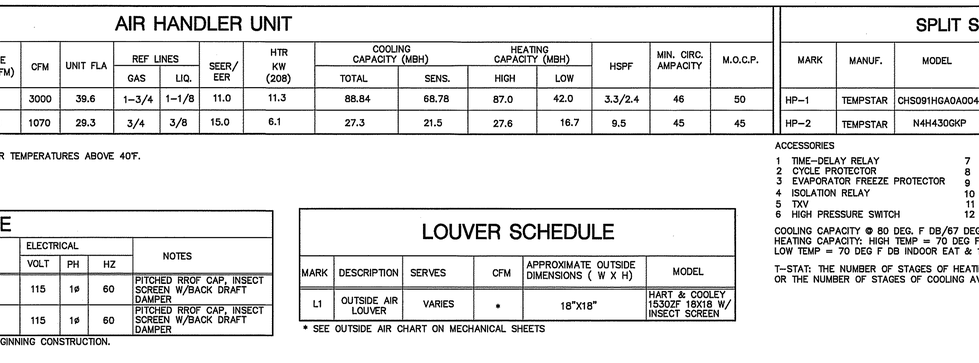
* SEE OUTSIDE AIR CHART ON MECHANICAL SHEETS



RECTANGULAR ROUND DIFFUSER

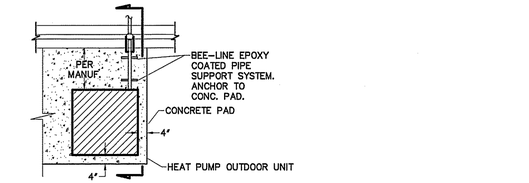
TYPICAL LATERAL TO REGISTER OR BRANCH DUCT

NOT TO SCALE

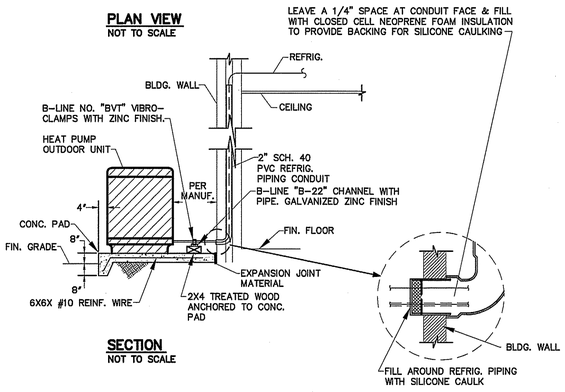


TYPICAL DETAIL AT AIR HANDLING UNITS

NOT TO SCALE



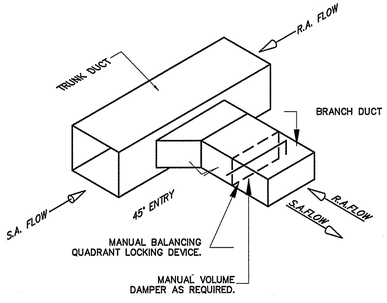
PLAN VIEW
NOT TO SCALE



SECTION
NOT TO SCALE

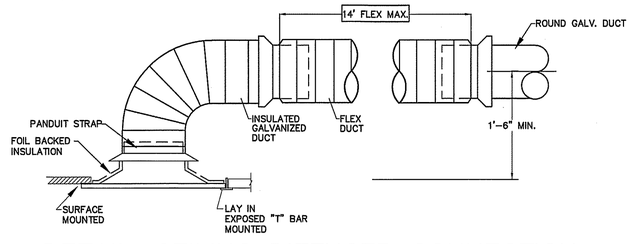
DETAIL-TYPICAL HEAT PUMP OUTDOOR UNIT

NOT TO SCALE



BRANCH DUCT TAKE-OFF DETAIL

NOT TO SCALE



DETAIL-CEILING DIFFUSER CONNECTION

NOT TO SCALE

REGISTER, GRILLE, & DIFFUSER SCHEDULE

MARK	DESCRIPTION	MAX. NC	NECK	BORDER TYPE	MODULE SIZE	MATERIAL	FINISH	MANUFACTURER	MODEL NUMBER	ACCESSORIES / NOTES
A	SPIRAL DUCT DIFFUSER	30	–	–	14" X 6"	ALUMINUM	MATCH DUCT	TITUS	US301FS	WITH EXTRACTOR
B	DIFFUSER 4 WAY	30	6" X 6"	LAY-IN	24" X 24"	STEEL	WHITE	TITUS	TDC 6X6 3 26 4	SQUARE TO ROUND
C	DIFFUSER 2 WAY	30	6" X 6"	LAY-IN	24" X 24"	STEEL	WHITE	TITUS	TDC 6X6 1 26 2	SQUARE TO ROUND
D	DIFFUSER 4 WAY	30	9" X 9"	LAY-IN	24" X 24"	STEEL	WHITE	TITUS	TDC 9X9 3 26 4	SQUARE TO ROUND
E	DIFFUSER 2 WAY	30	9" X 9"	LAY-IN	24" X 24"	STEEL	WHITE	TITUS	TDC 9X9 3 26 2	SQUARE TO ROUND
R1	RETURN GRILLE	30	14"X14"	SURFACE		STEEL	WHITE	TITUS	23RL 14X14 1 26	SQUARE TO ROUND
R2	RETURN GRILLE	30	10"X10"	LAY-IN	24" X 24"	STEEL	WHITE	TITUS	23RL 10X10 24X24 3 26	SQUARE TO ROUND

1. VERIFY CEILING TYPE BEFORE ORDERING, NARROW TEE REQUIREMENTS, PLASTER FRAMES ETC. TO BE INCLUDED WITH DIFFUSERS AT NO ADDITIONAL COST TO OWNER
2. PROVIDE WITH FIRE DAMPER AT EACH RATED PENETRATION (RUSKIN MOD. CFD7T OR CFDR7T)

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 19909 ANDY L. CRUSE 7/15/21

PLANS FOR:
J & L MANUFACTURING
252 JARCO DRIVE, FUQUAY VARINA, NORTH CAROLINA

REVISIONS	
NO.	

Cruse And Associates, P.A.
414 EAST EDGERTON STREET
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TEL. (910) 892-4158
FAX. (910) 892-5182
LICENSE NO.: C-1721

DATE 12/15/21
DRAWN BY BAM
JOB NO. 21-54

SHEET NO.
M-2 OF 2

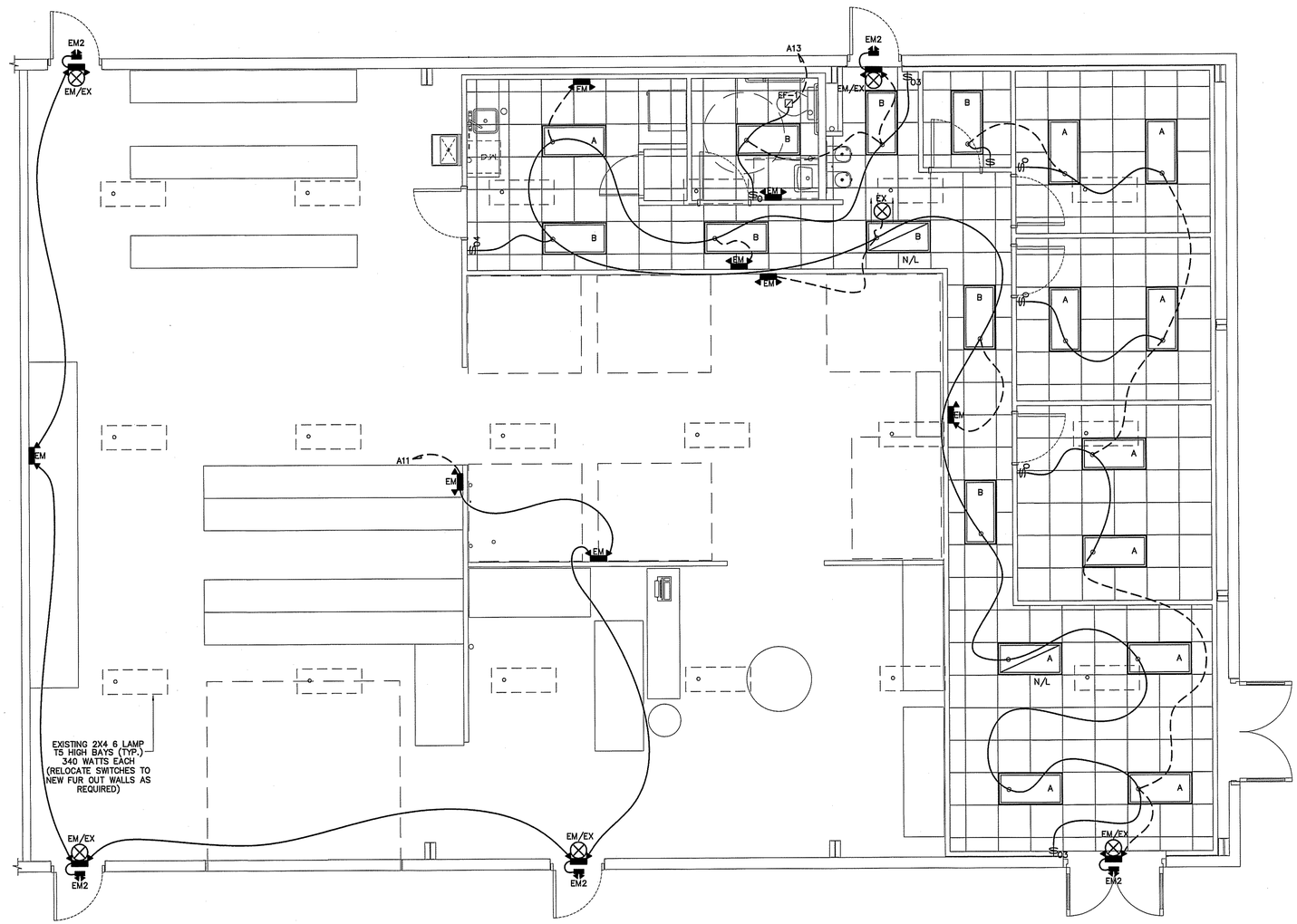
LIGHT FIXTURE SCHEDULE

MARK	DESCRIPTION	MANUFACTURER	CATALOG NUMBER	LAMPS	BALLASTS	WATTAGE	REMARKS
A	2X4 LED FLAT PANEL LAY-IN	LITHONIA	CPANL 2X4 40/50/60LM 35K-40LM	LED		42.0	INCLUDE WSX D DIMMING OCCUPANCY WALL SWITCH
B	2X4 LED FLAT PANEL LAY-IN	LITHONIA	CPANL 2X4 40/50/60LM 35K-40LM	LED		32.0	INCLUDE WSX D DIMMING OCCUPANCY WALL SWITCH
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

LIGHTING DATA FOR N.C. ENERGY CODE

AREA USE	AREA FT^2	WATTS PER FT^2 ALLOWED	TOTAL WATTS ALLOWED	TOTAL WATTS USED	TOTAL WATTS LEFT OVER
STORAGE	3,750	2.2	8,250	6,816	1,434
TOTAL	8,000		8,250	6,816	1,434



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

ELECTRICAL LEGEND

MARK	DESCRIPTION
	QUAD RECEPTACLE
	DUPLEX RECEPTACLE
T	TIMER WITH NO HOLD MECHANISM
	CEILING MOUNTED DUPLEX RECEPTACLE
	FLUORESCENT FIXTURE
	SWITCHED BRANCH CIRCUIT
	UNSWITCHED BRANCH CIRCUIT
	120/208 VOLT CIRCUIT
$M	MOTION DETECTING SINGLE-POLE SWITCH ON TIMER
⊗	'EXIT' LIGHT FIXTURE, TYPE 'EX'
	BATTERY OPERATED EMERG. LT. (2-HEAD, WALL MTD.)
$3(4)	MOTION DETECTING 3-WAY SWITCH (4-WAY SWITCH) WITH TIMER
	FUSED DISCONNECT SWITCH
	CEILING MOUNTED FUSED DISCONNECT SWITCH
	TELEPHONE
J	JUNCTION BOX
$	SINGLE POLE SWITCH OR TIMER AS APPLICABLE
N/L	UNSWITCHED FIXTURE
$O	OCCUPANCY SENSING SINGLE-POLE SWITCH NOT ON TIMER
	DUPLEX RECEPTACLE
	EMERGENCY LIGHT REMOTE WEATHERHEAD(S)

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 36909 ENGINEER RANDY L. CRUSE 12/15/21

PLANS FOR:
J & L MANUFACTURING
252 JARCO DRIVE, FUQUAY VARINA, NORTH CAROLINA

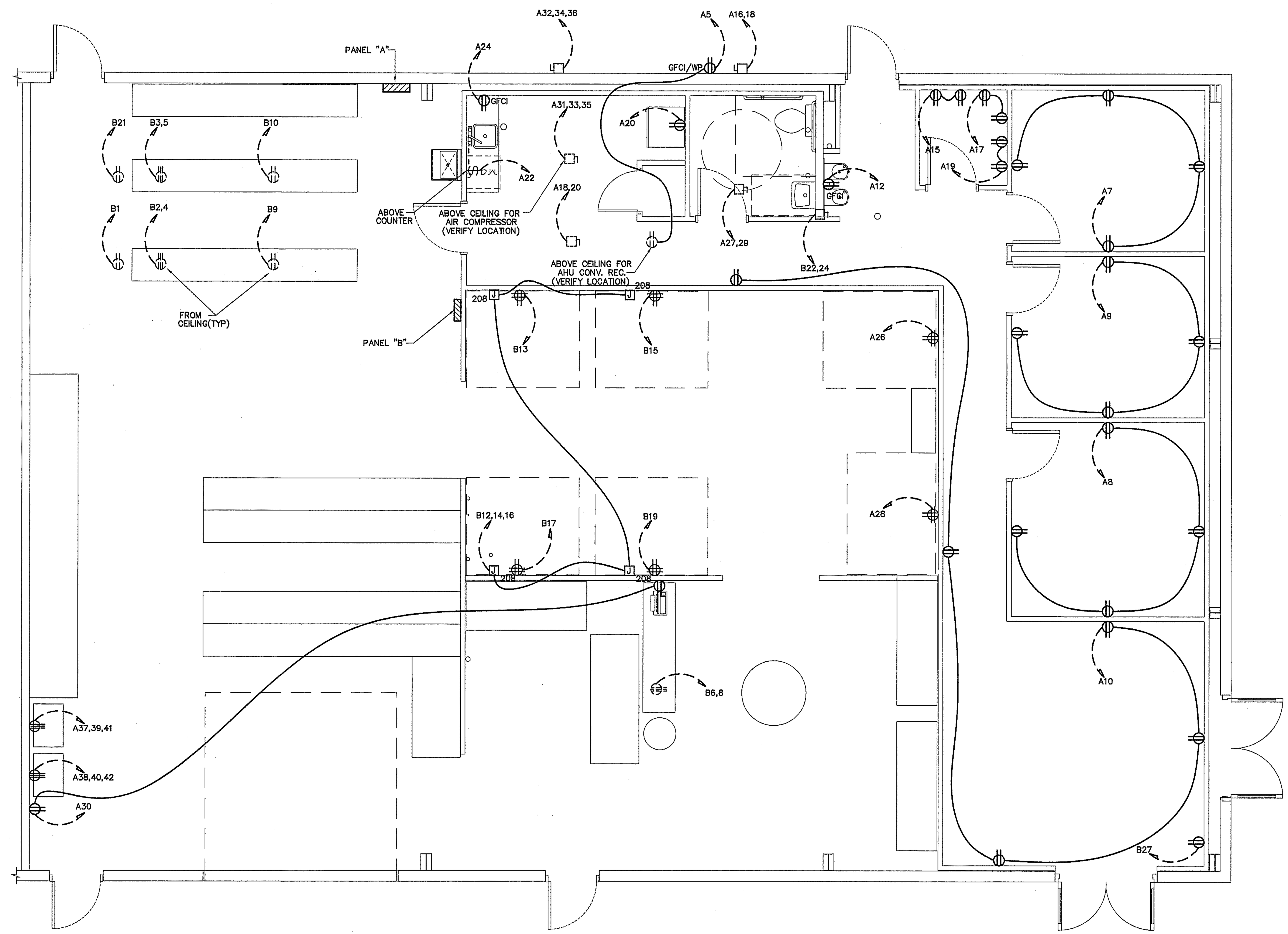
REVISIONS

NO.	

Cruse And Associates, P.A.
414 EAST EDGERTON STREET
Dunn, North Carolina 28334
TEL. (910) 892-4668
FAX. (910) 892-5102
LICENSE NO.: C-1721

DATE	12/15/21
DRAWN BY	BAM
JOB NO.	21-54

SHEET NO.
E-1 OF 3



ELECTRICAL POWER PLAN

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

ELECTRICAL LEGEND

MARK	DESCRIPTION
	QUAD RECEPTACLE
	DUPLEX RECEPTACLE
T	TIMER WITH NO HOLD MECHANISM
	POWER TO EXTEND FROM CEILING FIELD VERIFY LOCATION
	FLUORESCENT FIXTURE
	SWITCHED BRANCH CIRCUIT
	UNSWITCHED BRANCH CIRCUIT
	120/208 VOLT CIRCUIT
$M	MOTION DETECTING SINGLE-POLE SWITCH ON TIMER
⊗	'EXIT' LIGHT FIXTURE, TYPE 'EX'
	BATTERY OPERATED EMERG. LT. (2-HEAD, WALL MTD.)
$3(4)	MOTION DETECTING 3-WAY SWITCH (4-WAY SWITCH) WITH TIMER
	FUSED DISCONNECT SWITCH
	DISCONNECT SWITCH OVER BREAKROOM/KITCHENETTE
◁	TELEPHONE
J	JUNCTION BOX
$	SINGLE POLE SWITCH OR TIMER AS APPLICABLE
N/L	UNSWITCHED FIXTURE
$O	OCCUPANCY SENSING SINGLE-POLE SWITCH NOT ON TIMER
	208V RECEPTACLE
	EMERGENCY LIGHT REMOTE WEATHERHEAD(S)
J 208	3ø JUNCTION BOX WITH VOLTAGE

NOTES:
1. COORDINATE DATA SYSTEM REQUIREMENTS AND OUTLET LOCATIONS WITH OWNER BEFORE BEGINNING CONSTRUCTION.
2. VERIFY ALL EQUIPMENT LOCATIONS AND SPACE REQUIREMENTS BEFORE BEGINNING CONSTRUCTION.

NORTH CAROLINA PROFESSIONAL SEAL 18909 ENGINEER RANDY L. CRUSE
12/15/21

PLANS FOR:
J & L MANUFACTURING
252 JARCO DRIVE, FUQUAY VARINA, NORTH CAROLINA

REVISIONS	
NO.	

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Dunn, North Carolina 28334
PH: (910) 892-4429
FAX: (910) 892-5162
LICENSE NO.: C-1721

DATE 12/15/21
DRAWN BY BAM
JOB NO. 21-54

SHEET NO.
E-2 OF 3

EXISTING PANEL

PANEL: A SCHEDULE: ____ MANUFACTURER: SQ. D NO. OF SPACES 42
VOLTS: 120/208 AMPS: 400 TYPE: "NQOD" MOUNTING: SURFACE
ENCLOSURE: NEMA 1 Ø: 3 SHORT CIRCUIT RATING: 22K
MAIN☐ MLO:☒ TOP FEED:☒ BOTTOM FEED:☐ COPPER BUS:☒ GROUND BAR KIT:☒ NEUTRAL BAR KIT:☒

L1	L2	L3	CIRCUIT	POLES	TRIP	ASSIGNMENT	PHASE L1	PHASE L2	PHASE L3	ASSIGNMENT	TRIP	POLES	CIRCUIT	L1	L2	L3
12.8	*	*	1	1	20	LIGHTS	o			LIGHTS	20	1	2	12.8	*	*
*	12.8	*	3	1	20	LIGHTS		o		OUTSIDE LIGHTS	20	1	4	*	5.0	*
*	*	3.0	5	1	20	HVAC CONV. RECEPTACLES			o	LIGHTS	20	1	6	*	*	12.8
6.0	*	*	7	1	20	OFFICE #1 RECEPTACLES	o			CONFERENCE RM. RECEPTACLES	20	1	8	6.0	*	*
*	6.0	*	9	1	20	OFFICE #2 RECEPTACLES		o		ENTRY/CORRIDOR RECS.	20	1	10	*	7.5	*
*	*	2.0	11	1	20	EXT LIGHTS			o	DRINKING FOUNTAIN	20	1	12	*	*	5.6
7.0	*	*	13	1	20	LAY-IN CEILING LIGHTS	o			DOOR OPERATOR	20	1	14	10.0	*	*
*	3.0	*	15	1	20	IT SERVER ROOM RECEPTS.		o		HEAT PUMP UNIT #2	30	2	16	*	14.7	*
*	*	3.0	17	1	20	IT SERVER ROOM RECEPTS.			o				18	*	*	14.7
3.0	*	*	19	1	20	IT SERVER ROOM RECEPTS.	o			REFRIGERATOR	20	1	20	8.0	*	*
*	66.4	*	21	3	100	PANEL "B"		o		DISHWASHER	20	1	22	*	10.0	*
*	*	72.6	23						o	COUNTER RECEPTACLE	20	1	24	*	*	1.5
64.0	*	*	25				o			CUS. PANEL BUILD AREA RECS.	20	1	26	3.0	*	*
*	29.3	*	27	2	45	AIR HANDLING UNIT #2		o		CUS. PANEL BUILD AREA RECS.	20	1	28	*	3.0	*
*	*	29.3	29						o	TICKET PRINTER/RECEPTACLE	20	1	30	*	*	3.0
39.6	*	*	31	3	50	AIR HANDLING UNIT #1	o			HEAT PUMP UNIT #1	50	3	32	28.3	*	*
*	39.6	*	33					o					34	*	28.3	*
*	*	39.6	35						o				36	*	*	28.3
28.0	*	*	37	3	45	BATTERY CHARGER #1	o			BATTERY CHARGER #2	45	3	38	28.0	*	*
*	28.0	*	39					o					40	*	28.0	*
*	*	28.0	41						o				42	*	*	28.0

L1 = 256.5 A
L2 = 281.6 A
L3 = 271.4 A

NEW PANEL

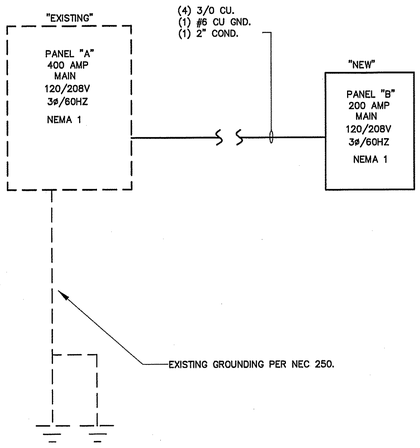
PANEL: B SCHEDULE: ____ MANUFACTURER: SQ. D NO. OF SPACES 42
VOLTS: 120/208 AMPS: 200 TYPE: "NQOD" MOUNTING: SURFACE
ENCLOSURE: NEMA 1 Ø: 3 SHORT CIRCUIT RATING: 22K
MAIN:☐ MLO:☒ TOP FEED:☒ BOTTOM FEED:☐ COPPER BUS:☒ GROUND BAR KIT:☒ NEUTRAL BAR KIT:☒

L1	L2	L3	CIRCUIT	POLES	TRIP	ASSIGNMENT	PHASE L1	PHASE L2	PHASE L3	ASSIGNMENT	TRIP	POLES	CIRCUIT	L1	L2	L3
10.0	*	*	1	1	20	WIRE PRE FED STATION	o			WRAPTOR LABELER	20	2	2	2.0	*	*
*	2.0	*	3	2	20	WRAPTOR LABELER		o					4	*	2.0	*
*	*	2.0	5						o	FOAM GUN	30	2	6	*	*	18.0
X	*	*	7	1	20	SPARE	o						8	18.0	*	*
*	2.5	*	9	1	20	CUTTER KAPPA 320		o		CUTTER KAPPA 330	20	1	10	*	4.3	*
*	*	X	11	1	20	SPARE			o	208V 3ø TESTING CIRCUIT	20	3	12	*	*	11.0
3.0	*	*	13	1	20	VFD BUILD AREA 1 QUAD REC.	o						14	11.0	*	*
*	3.0	*	15	1	20	VFD BUILD AREA 2 QUAD REC.		o					16	*	11.0	*
*	*	3.0	17	1	20	VFD BUILD AREA 3 QUAD REC.			o	AIR COMPRESSOR	35	2	18	*	*	17.0
3.0	*	*	19	1	20	VFD BUILD AREA 3 QUAD REC.	o						20	17.0	*	*
*	10.0	*	21	1	20	WIRE PRE FED STATION		o		WATER HEATER	30	2	22	*	21.6	*
*	*	X	23	2	45	SPARE			o	SPARE			24	*	*	X
X		*	25	1	20	SPARE	o			SPARE			26	X		*
*	10.0	*	27	1	20	COPIER		o		SPARE			28	*	X	*
*	*	X	29	1	20	SPARE			o	SPARE			30	*	*	X
X	*	*	31	1	20	SPARE	o			SPARE			32	X	*	*
*	X	*	33	1	20	SPARE		o		SPARE			34	*	X	*
*	*	X	35	1	20	SPARE			o	SPARE			36	*	*	X
X	*	*	37	1	20	SPARE	o			SPARE			38	X	*	*
*	X	*	39	1	20	SPARE		o		SPARE			40	*	X	*
*	*	X	41	1	20	SPARE			o	SPARE			42	*	*	X

L1 = 64.0 A
L2 = 66.4 A
L3 = 72.6 A

FEEDER SCHEDULE

UNIT	FEEDERS	FUSED DISCONNECT	CONDUIT
AHU-1	(3)#8CU,(1)#10CU GND	60	3/4"
AHU-2	(2)#8CU,(1)#10CU GND	60	3/4"
HP-1	(3)#8CU,(1)#10CU GND	60	3/4"
HP-2	(2)#10CU,(1)#12CU GND	60	3/4"
WATER HEATER	(2)#10CU,1#12CU GND	30	3/4"
AIR COMPRESSOR	(2)#10CU,1#12CU GND	60	3/4"
208V MOTOR TESTER	(3)#12CU,1#12CU GND	30	3/4"
BATTERY CHARGER	(3)#8CU,1#10CU GND	60	3/4"



ELECTRICAL RISER DIAGRAM
NOT TO SCALE

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

NOTE:
MATCH NUMBER OF LUGS IN PANEL WITH NUMBER OF CONDUCTORS SHOWN.

ELECTRICAL SYSTEM AND EQUIPMENT METHOD OF COMPLIANCE:

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

REFER TO DRAWINGS FOR RISER DIAGRAM AND PANEL SCHEDULES

LIGHTING SCHEDULE

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

ADDITIONAL PRESCRIPTIVE COMPLIANCE

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

ELECTRICAL LOAD CALCULATIONS

3,620 SQUARE FEET	VA
NONCONTINUOUS LOADS:	
33 RECEPTACLES @ 180 VA EA.	5,940
1ST 10000	5,940
REMAINDER @ 50%	0
TOTAL	5,940
CONTINUOUS LOADS:	
GENERAL LIGHTING LOAD VA/SQ. FT.	
3,620 SQ. FT. 1.9	6,878
6,879 x 1.25	8,598
AIR HANDLER UNIT	20,344
HEAT PUMPS	13,601
EQUIPMENT:	33,235
25% OF LARGEST MOTOR	2,635
GRAND TOTAL	84,353

235 AMPS @ 120/208V, 3ø, 60HZ

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. ALL PENETRATIONS OF FIRE WALLS SHALL BE SEALED WITH APPROVED SEALING MATERIALS TO MAINTAIN THE FIRE RATING OF THE WALLS.

5. THE CONTRACTOR SHALL VERIFY WIRE AND FUSE/CIRCUIT BREAKER SIZING FOR ALL MECHANICAL EQUIPMENT PRIOR TO PURCHASING MATERIALS AND INSTALLING BRANCH CIRCUITS.

6. 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.

7. 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.

8. 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.

9. ALL RACEWAYS, EQUIPMENT, ETC., ABOVE A SUSPENDED CEILING SHALL BE MOUNTED A MINIMUM OF 18" ABOVE THE CEILING SO AS NOT TO BLOCK ANY TILE OR FIXTURE ACCESS.

10. THE MINIMUM ALLOWABLE SIZE FOR ANY CONDUIT, IMC, OR EMT SHALL BE 1/2" AND MAY BE USED FOR 2#12 WIRE SWITCHLEGS ONLY. A SWITCHLEG SHALL BE DEFINED AS THE RUN OF CONDUIT FROM THE SWITCH OUTLET BOX TO THE FIRST OUTLET BEING SWITCHED.

11. 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.

12. ALL WIRE AND CABLE SHALL BE COPPER AND HAVE 600 VOLT THHN-THWN INSULATION. ALUMINUM WIRING SHALL NOT BE PERMITTED.

13. THE MINIMUM WIRE SIZE SHALL BE #12 AWG EXCEPT FOR CONTROL WIRING, WHICH MAY BE #14 AWG. CONTROL WIRING SHALL USE STRANDED CONDUCTORS UNLESS OTHERWISE NOTED.

14. 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.

15. THE ELECTRICAL CONTRACTOR SHALL COORDINATE FUSE AND DISCONNECT SWITCH SIZES WITH THE MECHANICAL EQUIPMENT SUPPLIER PRIOR TO PURCHASE AND INSTALLATION OF BRANCH CIRCUIT EQUIPMENT. IF EQUIPMENT SIZING CHANGES FROM DESIGN SIZES, CIRCUITS SHALL BE RESIZED ACCORDINGLY.

16. LIGHT FIXTURES FOR INSTALLATION IN A SUSPENDED CEILING SHALL BE SECURELY FASTENED TO THE CEILING SUSPENSION SYSTEM IN A MANNER TO PREVENT FIXTURES FROM FALLING. IN ADDITION, 16 GAGE WIRE HANGERS SHALL BE FASTENED TO THE FOUR CORNERS OF THE FIXTURES.

17. CONNECTIONS TO FIXTURES INSTALLED IN SUSPENDED CEILINGS SHALL BE MADE WITH FLEXIBLE METAL CONDUIT TO ALLOW THE FIXTURE TO BE LIFTED OUT OF THE GRID AND MOVED TO AN ADJACENT GRID LOCATION.

18. BREAKERS SUPPLYING HVAC OR REFRIGERATION EQUIPMENT SHALL BE HACR TYPE.

19. 3/4" CONDUIT IS MINIMUM ALLOWABLE SIZE EXCEPT AS INDICATED IN #10. CONDUIT FILL NOT TO EXCEED 40% AS PERMITTED BY THE NATIONAL ELECTRIC CODE.

20. ALL CONDUCTORS TO BE INSTALLED IN CONDUIT (EXCEPT WHERE ROMEX IS INSTALLED). EMT FITTINGS TO BE COMPRESSION TYPE, INSULATED THROAT.

21. NOT USED

22. DATA, SECURITY, THEATRICAL, AND VIDEO SYSTEMS TO BE PROVIDED BY OWNER. ROUGH-IN OF OUTLETS AND CONDUIT WILL BE BY CONTRACTOR AS SHOWN ON DRAWINGS.

23. NOT USED

24. NO. 10 AWG CONDUCTORS SHALL BE USED FOR 20 AMP BRANCH CIRCUIT HOME RUNS EXCEEDING 50 FT. TO THE JUNCTION POINT. 20 AMP BRANCH CIRCUIT WIRING SHALL BE NO. 10 AWG THROUGHOUT IF THE CIRCUIT IS LONGER THAN 100 FEET TOTAL LENGTH.

25. CONDUCTORS SHALL BE CONTINUOUS FROM OUTLET TO OUTLET. SPLICES WILL NOT BE MADE EXCEPT WITHIN ACCESSIBLE OUTLET OR JUNCTION BOXES, TROUGHS, OR GUTTERS.

26. MAKE CONDUCTOR LENGTHS FOR PARALLEL CIRCUITS EQUAL.

27. INSTALL TELEPHONE OUTLETS WITH 3/4" EMPTY CONDUIT AND PULL CORD. STUB OUT ABOVE CEILING. PHONE SYSTEM INSTALLED BY OWNER.

28. ALL CONDUIT WITHOUT CONDUCTORS SHALL HAVE NYLON PULLCORDS INSTALLED.

29. THE CONTRACTOR SHALL MAKE A COMPLETE REVIEW OF THE PLANS, SCHEDULES, AND DETAILS PRIOR TO INSTALLATION, AND REVIEW ANY CONFLICTS THAT ARE NOTED WITH THE ENGINEER.

30. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL FEES FOR PERMITS AND INSPECTIONS. THE CONTRACTOR WILL ALSO BE RESPONSIBLE FOR ELECTRIC UTILITY CONNECTION FEES AND LINE EXTENSION FEES.

31. ELECTRICAL CONNECTIONS TO EQUIPMENT SUBJECT TO VIBRATION WHICH DEVELOPS OBJECTIONABLE NOISES SHALL BE MADE FROM THE CONDUIT SYSTEM WITH SHORT LENGTHS OF FLEXIBLE "LIQUID-TITE" CONDUIT.

32. ALL WIRE TERMINATIONS AND EQUIPMENT TO BE RATED FOR 75° C MINIMUM.

33. ELECTRICAL CONTRACTOR TO MAINTAIN 2' OF SEPARATION ON RECEPTACLES ON OPPOSITE SIDES OF ANY FIRE RATED WALL PER 2021 N.E.C. 300.21.

34. WIRING TO DISCONNECT SWITCH AND DISCONNECT SWITCH SHALL BE FURNISHED BY THE ELECTRICAL CONTRACTOR. WIRING FROM THE DISCONNECT TO THE EQUIPMENT SHALL BE BY THE MECHANICAL CONTRACTOR.

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 40999 ENGINEER RANDY L. CRUSE 11/15/21

PLANS FOR:
J & L MANUFACTURING
252 JARCO DRIVE, FUQUAY VARINA, NORTH CAROLINA

REVISIONS	
NO.	

Cruse And Associates, P.A.
414 EAST ROGERSON STREET
Dunn, North Carolina 28334
PH: (910) 892-4182
FAX: (910) 892-4182
LICENSE NO.: C-1721

DATE 12/15/21
DRAWN BY BAM
JOB NO. 21-54

SHEET NO.
E-3 OF 3

J & L Manufacturing, Inc.

192 Jarco Dr., Fuquay-Varina, NC 27526
P.O. Box 687, Fuquay-Varina, NC 27526
Phone: 984-225-2900

Mr. Cruse,

This letter is intended to inform you that the occupancy for the J & L Manufacturing facility located at 252 Jarco Drive Fuquay Varina will not exceed 15 persons.

Regards,

Jim Thomas, President

Due to the fact that code changes now allow up to 30 Occupants with a single unisex bathroom, and this building total occupant load is only 38, it is not infeasible to allow a single bathroom in this facility as it is designed.

Brad Sutton