LEGEND

CONCRETE
STONE FILL
CONCRETE MASONRY
BRICK
STEEL
ALUMINUM
PLYWOOD
FINISH WOOD
GYPSUM WALLBOARD
EARTH
BATT. INSULATION
RIGID INSULATION
BLOCKING

NORTH ARROW
CENTERLINE
COLUMN CENTERLINE
ELEVATION LEVEL
SPOT ELEVATION
REVISION AREA
REVISION NUMBER
CEILING ELEVATION

ELEVATION REFERENCE
SHEET NO.
DRAWING NO.
ELEVATION REFERENCE
DRAWING NO.
SHEET NO.
SECTION REFERENCE
DRAWING NO.
SHEET NO.
DETAIL REFERENCE
DRAWING NO.
SHEET NO.

SPACE TAG
ROOM NAME
ROOM NO.
ROOM INFO.
ROOM TAG
ROOM NAME
ROOM NO.
DOOR TAG
WINDOW TAG
WALL TAG

ABBREVIATIONS

A.B.	ANCHOR BOLT	E	EAST	INT.	INTERIOR	REQD.	REQUIRED
ACOUST.	ACOUSTICAL	EA	EACH	J.B.	JOIST BEARING	RESIL.	RESILIENT
ACT	ACOUSTICAL CEILING TILE	E.B.	EXPANSION BOLT	JT.	JOINT	REV.	REVISION
A.F.F.	ABOVE FINISH FLOOR	E.I.F.S.	EXTERIOR INSULATION FINISH SYSTEM	LAM.	LAMINATED	RM	ROOM
ALUM.	ALUMINUM	E.J.	EXPANSION JOINT	LF	LINEAR FEET	R.O.	ROUGH OPENING
APPROX.	APPROXIMATELY	EL.	ELEVATION (FLOOR)	LG	LONG, LARGE	RQMTS.	REQUIREMENTS
ARCH.	ARCHITECT, ARCHITECTURAL	ELEV.	ELEVATION	LLH	LONG LEG HORIZONTAL	RTU	ROOF TOP UNIT
BD.	BOARD	ELEC.	ELECTRICAL	LLV	LONG LEG VERTICAL	R.W.L.	RAIN WATER LEADER
BLDNG.	BUILDING	EQ.	EQUAL	L.P.	LOW POINT	SCHED.	SCHEDULE
BLK.	BLOCK	EQUIP.	EQUIPMENT	MAS.	MASONRY	S.F.	SQUARE FEET
BM.	BEAM	E/W	EACH WAY	MATL.	MATERIAL	SHT.	SHEET
B.O.S.	BOTTOM OF STEEL	EWC	ELECTRIC WATER COOLER	MAX.	MAXIMUM	SIM.	SIMILAR
BRG.	BEARING	EXIST.	EXISTING	MECH.	MECHANICAL	S.M.S.	SHEET METAL SCREW
BS	BOTH SIDES	EXP.	EXPOSED, EXPANSION	MED.	MEDIUM	SPECS	SPECIFICATIONS
BTM.	BOTTOM	EXT.	EXTERIOR	MFR.	MANUFACTURER	SQ.	SQUARE
BUR	BUILT-UP ROOF	F.D.	FLOOR DRAIN	MIN.	MINIMUM	S.S.	STAINLESS STEEL
C.I.	CAST IRON	F.E.	FIRE EXTINGUISHER	MISC.	MISCELLANEOUS	STD.	STANDARD
C.J.	CONTROL JOINT	F.F.E.	FINISH FLOOR ELEVATION	M.O.	MASONRY OPENING	STL.	STEEL
C.T.	CERAMIC TILE	F/O	FACE OF	M.R.	MOISTURE-RESISTANT	STOR.	STORAGE
CAB.	CABINET	FIN.	FINISH	M.R.G.B.	MOISTURE-RESISTANT GYPSUM BOARD	STRUCT.	STRUCTURAL
CEM.	CEMENTITIOUS	FL./FLR.	FLOOR	MTD.	MOUNTED	SUSP.	SUSPENDED
CG	CORNER GUARD	FLUOR.	FLUORESCENT	MTL.	METAL	T	TREAD
CLR.	CLEAR	FDN.	FOUNDATION	N.	NORTH	T/B	TOP & BOTTOM
CLNG.	CEILING	F.S.	FLOOR SINK	N.I.C.	NOT IN CONTRACT	TEL.	TELEPHONE
CMU	CONCRETE MASONRY UNIT	FTG.	FOOTING	NO., #	NUMBER	T/O	TOP OF
CO	CLEAN OUT	G.C.	GENERAL CONTRACTOR	NTS	NOT TO SCALE	T.O.M.	TOP OF MASONRY
COL	COLUMN	GA.	GAUGE	O/A	OVERALL	T.O.S.	TOP OF STEEL
CONC.	CONCRETE	GALV.	GALVANIZED	O.F.D.	OVERFLOW DRAIN	TH	THICK(NESS)
CONST.	CONSTRUCTION	GEN.	GENERAL	O/H	OVERHEAD	TYP.	TYPICAL
CONT.	CONTINUOUS	GL.	GLASS/GLAZING	O/O	OUT TO OUT	U.L.	UNDERWRITERS LABORATORY
CONTR.	CONTRACTOR	GWB	GYPSUM WALLBOARD	O.C.	ON CENTER	U.O.N.	UNLESS OTHERWISE NOTED
CPT.	CARPET	GYP.	GYPSUM	O.D.	OUTSIDE DIAMETER	V	VOLT
CR	CARTRAIL/CHAIRRAIL	H	HIGH	OPNG.	OPENING	VCT	VINYL COMPOSITION TILE
CSK	COUNTERSUNK	HB	HOSE BIBB	OPP.	OPPOSITE	VERT.	VERTICAL
D	DEPTH	HC	HANDICAPPED	P	PAINT	W	WEST, WIDTH, WASTE, WIRE
DBL.	DOUBLE	HDW	HARDWARE	PC.	PIECE	W/	WITH
DEMO	DEMOLITION	H.M.	HOLLOW METAL	PL.	PLATE	W.C.	WATER CLOSET
DET.	DETAIL	HORIZ.	HORIZONTAL	PLAS.	PLASTER, PLASTIC	WD.	WOOD
DIA.	DIAMETER	H.P.	HIGH POINT	PLYWD.	PLYWOOD	WT	WEIGHT
DN.	DOWN	HT.	HEIGHT	PTD.	PAINTED	WH, W/H	WATER HEATER
DIM.	DIMENSION	HVAC	HEATING, VENTILATION & AIR CONDITIONING	QUAN.	QUANTITY	W/I	WITHIN
D.O.	DOOR OPENING	I.D.	INTERIOR DIAMETER	Q.T.	QUARRY TILE	W/O	WITHOUT
D.S.	DOOR SWING	INCL.	INCLUDE	R	RADIUS, RISER	WWF	WELDED WIRE FABRIC
DWG.	DRAWING	INSUL.	INSULATION	R.D.	ROOF DRAIN	X	EXISTING TO REMAIN
				REINF.	REINFORCING	XTR	EXISTING TO BE REMOVED

GENERAL NOTES

1. GENERAL CONTRACTOR SHALL NOTIFY ARCHITECT OF ANY DISCREPANCIES FOUND IN THE PLANS, DETAILS AND/OR SPECIFICATIONS PRIOR TO PROCEEDING WITH CONSTRUCTION.

2. CONTRACTOR SHALL BEAR RESPONSIBILITY FOR VERIFYING COMPLIANCE OF SHOP DRAWINGS WITH THE CONTRACT DOCUMENTS PRIOR TO ORDERING MATERIALS OR BEGINNING FABRICATION.

3. GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING ALL WORK INCLUDED IN THE CONTRACT DOCUMENTS. ALL CORRESPONDENCE FROM THE SUBCONTRACTORS SHALL BE THROUGH THE GENERAL CONTRACTOR.

4. CONTRACTOR SHALL BE RESPONSIBLE FOR COMPLYING WITH ALL APPLICABLE CODES AND STATUTES, WHETHER SPECIFICALLY REFERENCED BY THE PLANS OR NOT.

5. CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL REQUIRED PERMITS AND SECURING REQUIRED INSPECTIONS.

6. BUILDING SIGNAGE IS TO BE PROVIDED UNDER SEPARATE CONTRACT BY OTHERS.

7. GENERAL CONTRACTOR IS RESPONSIBLE FOR PROVIDING ALL SIGNAGE IN COMPLIANCE WITH THE AMERICANS WITH DISABILITIES ACT (A.D.A.), ICC/ANSI A117.1-2009, AND THE LATEST EDITION OF THE NORTH CAROLINA BUILDING CODE.

8. ALL MATERIALS ARE TO BE NEW UNLESS OTHERWISE NOTED.

9. ANY DEFECTIVE WORK AND ANY DAMAGE RESULTING THEREFROM SHALL BE REPAIRED AT NO COST TO THE OWNER.

10. ALTHOUGH THESE DRAWINGS ARE DRAWN TO SCALE, NO DIMENSIONS ARE TO BE DETERMINED BY SCALING THE DRAWINGS. ANY QUESTIONS OR DISCREPANCIES ARE TO BE BROUGHT TO THE ATTENTION OF THE ARCHITECT.

11. CONTRACTOR IS RESPONSIBLE FOR REMOVING AND LEGALLY DISPOSING OF ALL REFUSE FROM THE PROJECT.

12. NO SMOKING WILL BE PERMITTED INSIDE THE PROJECT AREA.

13. CONTRACTOR SHALL PROVIDE BLOCKING AS REQUIRED TO SUPPORT ALL CONTRACTOR-SUPPLIED AND OWNER-SUPPLIED WALL-HUNG EQUIPMENT OR CASEWORK. CONFIRM LOCATIONS WITH OWNER PRIOR TO INSTALLATION.

14. THE ADJACENT SITE MAY BE OCCUPIED BY THE PUBLIC DURING CONSTRUCTION. THE G.C. SHALL TAKE ALL PRECAUTIONS NECESSARY TO SAFEGUARD THE HEALTH AND WELFARE OF THE PUBLIC. ALL REQUIRED MEANS OF EGRESS SHALL BE KEPT CLEAR AND ACCESSIBLE AT ALL TIMES.

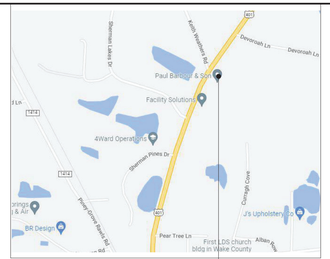
15. THE GENERAL CONTRACTOR SHALL THOROUGHLY REVIEW MANUFACTURER'S LITERATURE AND SHOP DRAWINGS FOR ALL FIXTURES AND/OR EQUIPMENT (WHETHER PROVIDED BY THE OWNER, TENANT OR CONTRACTOR) PRIOR TO ROUGH-IN FOR UTILITIES. CONFIRM ANY DISCREPANCIES PRIOR TO COMMENCEMENT OF WORK.

16. LABEL ALL FIRE-RATED WALLS ABOVE CEILING AS REQUIRED BY NC BUILDING CODE 2018, SECTION 703.7. SUGGESTED WORDING: "__- HR RATED FIRE AND/OR SMOKE BARRIER. PROTECT ALL OPENINGS."

17. G.C. SHALL PROVIDE KNOX BOX, IF REQUIRED BY LOCAL JURISDICTION.

NEW BUILDING for PAUL BARBOUR & SONS

11496 HWY 401N FUQUAY-VARINA, NC 27526



PROJECT SITE

VICINITY MAP

SEPARATE CONTRACTS:

INCLUDING, BUT NOT LIMITED TO:

SECURITY AND TELECOMMUNICATIONS: THE OWNER SHALL CONTRACT WITH SEPARATE FIRMS TO PROVIDE SECURITY AND TELECOMMUNICATIONS EQUIPMENT AND INSTALLATION. GENERAL CONTRACTOR SHALL PROVIDE BOXES AND CONDUIT AS INDICATED IN THESE DRAWINGS.

INDEX OF DRAWINGS

Sheet #	DESCRIPTION	ISSUED FOR CONSTRUCTION	LATEST REVISION
GENERAL			
G101	COVER SHEET	5/24/2022	
G102	BUILDING CODE SUMMARY	5/24/2022	
G103	LIFE SAFETY PLANS	5/24/2022	
G104	UL DETAILS	5/24/2022	
ARCHITECTURAL			
A101	1st FLOOR PLAN	5/24/2022	
A102	2nd FLOOR PLAN	5/24/2022	
A103	ENLARGED FLOOR PLAN	5/24/2022	
A301	REFLECTED CEILING PLAN	5/24/2022	
A401	DOOR and WINDOW SCHEDULES	5/24/2022	
A501	BUILDING ELEVATIONS	5/24/2022	
A502	BUILDING ELEVATIONS	5/24/2022	
A601	BUILDING SECTION	5/24/2022	
A701	EXTERIOR STAIR	5/24/2022	
A702	INTERIOR STAIRS	5/24/2022	
PLUMBING			
P1	PLUMBING NOTES AND SCHEDULES	5/24/2022	
P2	PLUMBING WASTE PLANS AND RISER	5/24/2022	
P3	PLUMBING SUPPLY PLANS AND RISER	5/24/2022	
MECHANICAL			
M1	MECHANICAL NOTES AND SCHEDULES	5/24/2022	
M2	MECHANICAL PLANS	5/24/2022	
ELECTRICAL			
E1	ELECTRICAL NOTES, SCHEDULES AND RISER	5/24/2022	
E2	ELECTRCIAL POWER PLANS	5/24/2022	
E3	ELECTRICAL LIGHTING PLANS	5/24/2022	
E4	ELECTRCIAL DETAILS	5/24/2022	

CIVIL AND STRUCTURAL DRAWINGS BY OTHERS

NOTICE TO CONTRACTOR
All construction must comply with current NC Building Codes and is subject to field inspection and verification.

Reviewed for Code Compliance

06/09/2022

Harnett COUNTY NORTH CAROLINA

GONTRAM ARCHITECTURE, INC.
5100 UNICON DR. SUITE 103
WAKE FOREST, NC 27587
PHONE: 919.876.5331
eddie@gontramarchitecture.com
www.gontramarchitecture.com

EDMUND J. GONTRAM III
7177
REGISTERED ARCHITECT
RALEIGH, N.C.
5-24-2022

GONTRAM ARCHITECTURE, INC
CERT. NO. 51355
REGISTERED ARCHITECTURAL CORPORATION
NORTH CAROLINA
RALEIGH, N.C.

NEW BUILDING for PAUL BARBOUR & SONS
11496 HWY 401N FUQUAY-VARINA, NC 27526

PLOT DATE: 5/24/2022
ISSUED: 5/24/2022 FOR CONSTRUCTION

Rev.	Date	Description

DRAWN BY: PJA
APPROVED: EJG
PROJECT NO.: 22039
RECORD:
CONTENTS: COVER SHEET

SHEET: G101

BUILDING CODE SUMMARY

2018 APPENDIX B
BUILDING CODE SUMMARY FOR ALL COMMERCIAL PROJECTS

(EXCEPT FOR 1 AND 2- FAMILY DWELLINGS AND TOWNHOUSES)

NAME OF PROJECT: NEW OFFICE BUILDING for PAUL BARBOUR AND SONS
ADDRESS: 11496 HWY 401 N. ZIP CODE: 27526
PROPOSED USE: OFFICE
OWNER OR AUTHORIZED AGENT: BARRY BARBOUR PHONE: 910-520-8205 E-MAIL: barbourb@pbarbourandson.com
OWNED BY: ☐ CITY/COUNTY ■ PRIVATE ☐ STATE
CODE ENFORCEMENT JURISDICTION: CITY_____ ■ COUNTY_HARNETT ☐ STATE

CONTACT: EDMUND J. GONTRAM III, AIA GONTRAM ARCHITECTURE INC.

DESIGNER:	FIRM	NAME	LICENSE#	TELEPHONE #	E-MAIL
ARCHITECT:	GONTRAM ARCHITECTURE INC.	EDMUND J. GONTRAM III, AIA	7177	(919) 876-5331	eddie@gontramarchitecture.com
CIVIL:	(NOT APPLICABLE)	(NOT APPLICABLE)			
ELECTRICAL:	KILIAN ENGINEERS	MICHAEL KILIAN, PE	17304	(252) 438-8778	mkilian@kilianengineering.com
FIRE ALARM:	(NOT APPLICABLE)				
PLUMBING:	KILIAN ENGINEERS	MICHAEL KILIAN, PE	17304	(252) 438-8778	mkilian@kilianengineering.com
MECHANICAL:	KILIAN ENGINEERS	MICHAEL KILIAN, PE	17304	(252) 438-8778	mkilian@kilianengineering.com
SPRK-STNDP:	(NOT APPLICABLE)	(NOT APPLICABLE)			
STRUCTURAL:	STONEWALL ENGINEERING	CHARLES LAVERDIERE	037767	(919) 407-8663	
RET.WAL>5' H:	(NOT APPLICABLE)	(NOT APPLICABLE)			
OTHER:	(NOT APPLICABLE)	(NOT APPLICABLE)			

2018 NC BUILDING CODE: ■ NEW BUILDING ☐ ADDITION ☐ RENOVATION ☐ 1st TIME INTERIOR COMPLETION ☐ SHELL/CORE ☐ PHASED CONSTRUCTION - SHELL/CORE

2018 NC EXISTING BUILDING CODE: ☐ PRESCRIPTIVE ☐ REPAIR ☐ CHAPTER 14 ☐ ALTERATION -LEVEL _____ ☐ HISTORIC PROPERTY ☐ CHANGE OF USE

CONSTRUCTED: (date)_____ CURRENT OCCUPANCY(S) (Ch.3) _____
RENOVATED: (date)_____ PROPOSED OCCUPANCY(S) (Ch.3) B
OCCUPANCY CATEGORY (Table 1604.5): Current: Proposed: II

SCOPE OF WORK: NEW TWO-STORY WOOD FRAMED BUILDING, APPROXIMATELY 2200 GSF PER FLOOR TO BE USED FOR BUSINESS OFFICES

BASIC BUILDING DATA

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

SPRINKLERS: ■ NO ☐ PARTIAL ☐ YES ☐ NFPA 13 ☐ NFPA 13R ☐ NFPA 13D
STANDPIPES: ■ NO ☐ YES CLASS: ☐ I ☐ II ☐ III ☐ WET ☐ DRY
FIRE DISTRICT: ■ NO ☐ YES FLOOD HAZARD AREA: ☐ NO ☐ YES
SPECIAL INSPECTIONS REQUIRED: NO

GROSS BUILDING AREA TABLE

FLOOR	EXISTING (SQ. FT.)	NEW (SQ. FT.)	SUB-TOTAL
4TH FLOOR			
3RD FLOOR			
2ND FLOOR		2,206	
1ST FLOOR		2,206	
BASEMENT			
TOTAL		4,412	

PROJECT AREA: 4,412 SF

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
HIGH-HAZARD: ☐ 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
☐ 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 ☐ 1-HR ☐ 2-HR ☐ 3-HR ☐ 4-HR
EXCEPTION _____

☐ NON-SEPARATED MIXED OCCUPANCY (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 MIXED OCCUPANCY (508.4) - SEE BELOW FOR AREA CALCULATIONS
For each story, the area of the occupancy 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

_____ + _____ ≤ 1

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 FLOOR AREA OR UNLIMITED [2,3]
1	BUSINESS (B)	2,206	9,000		9,000
2	BUSINESS (B)	2,206	9,000		9,000
					18,000

[1] Frontage area increases from Section 506.3 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 $I_f = 100[F/P - 0.25] \times W/30 =$ _____ (%)

[2] Unlimited area applicable under conditions of Section 507.
[3] Maximum Building Area = total number of stories in the building x D (maximum3 stories) (506.2).
[4] The maximum area of open parking garages must comply with Table 406.5.4.
[5] Frontage increase is based on the unsprinklered area value in Table 506.2.

ALLOWABLE HEIGHT

	ALLOWABLE	SHOWN ON PLANS	CODE REFERENCE[1]
BUILDING HEIGHT IN FEET (TABLE 504.3)[2]	H= 40	24'-11"	
BUILDING HEIGHT IN STORIES (TABLE 504.4)[3]	S= 2	2	

[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/ ____ o REDUCTION)	DETAIL # AND SHEET #	DESIGN # FOR RATED ASSEMBLY	DESIGN # FOR RATED PENETRATION	DESIGN # FOR RATED JOINTS
STRUCTURAL FRAME- INCLUDING: COLUMNS, GIRDERS, AND TRUSSES							
BEARING WALLS							
EXTERIOR							
NORTH		0	0				
EAST		N/A					
WEST		N/A					
SOUTH		0	0				
INTERIOR		0	0				
NONBEARING WALLS AND PARTITIONS EXTERIOR WALLS							
NORTH		N/A	0				
EAST		0 & 1	1	1/G103	UL U344		
WEST		0	0				
SOUTH		N/A	0				
INTERIOR WALLS AND PARTITIONS		0	0				
FLOOR CONSTRUCTION- INCLUDING SUPPORTING BEAMS AND JOISTS.		0	0				
FLOOR CEILING ASSEMBLY		N/A					
COLUMNS SUPPORTING FLOORS		N/A					
ROOF CONSTRUCTION- INCLUDING: SUPPORTING BEAMS AND JOISTS		0	0				
ROOF CEILING ASSEMBLY		N/A					
COLUMNS SUPPORTING ROOF		N/A					
SHAFT ENCLOSURES - EXIT							
SHAFTS ENCLOSURES- OTHER		N/A					
CORRIDOR SEPARATION		N/A					
OCCUPANCY/FIRE BARRIER SEPARATION		N/A					
PARTY/FIREWALL SEPARATION		N/A					
SMOKE BARRIER SEPARATION		N/A					
SMOKE PARTITION		N/A					
TENANT/DWELLING UNIT/ SLEEPING UNIT SEPARATION		N/A					
INCIDENTAL USE SEPARATION		N/A					

* INDICATE SECTION NUMBER PERMITTING REDUCTION.

PERCENTAGE OF WALL OPENINGS CALCULATIONS

FIRE SEPARATION DISTANCE (FEET) FROM PROPERTY LINES	DEGREE OF OPENINGS PROTECTION (TABLE 705.8)	ALLOWABLE AREA (%)	ACTUAL SHOWN ON PLANS (%)
ALL 4 SIDES > 30 FT	UNSPRINKLERED, UNP	UNLIMITED	

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 #: T-103

☐ Fire and/or smoke rated wall locations (Chapter 7)
☐ Assumed and real property line locations
☐ Exterior wall opening area with respect to distance to assumed property lines (705.8)
■ Occupancy Use 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)
■ 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.
☐ Location of doors with panic hardware (1010.1.10)
☐ Location of doors with delayed egress locks and the amount of delay (1010.1.9.7)
☐ Location of doors with electromagnetic egress locks (1010.1.9.8)
☐ Location of doors equipped with hold-open devices
☐ Location of emergency escape windows (1030)
☐ The square footage of each fire area (202)
☐ The square footage of each smoke compartment for Occupancy Classification I-2 (407.5)
☐ Note any code exceptions or table notes that may have been utilized regarding the items above.

ACCESSIBLE DWELLING UNITS
(SECTION 1107) (NOT APPLICABLE)

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

ACCESSIBILITY PARKING
(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	
TOTAL						

PLUMBING FIXTURE REQUIREMENTS
(TABLE 2902.1)

USE		WATERCLOSETS MALE	WATERCLOSETS FEMALE	WATERCLOSETS UNISEX	URINALS	LAVATORIES MALE	LAVATORIES FEMALE	LAVATORIES UNISEX	SHOWERS/ TUBS	DRINKING FOUNTAINS REGULAR	DRINKING FOUNTAINS ACCESSIBLE
	EXISTING										
	NEW			3				3		1	1
	REQUIRED	1	1			1	1			1	1

SPECIAL APPROVALS

SPECIAL APPROVAL: (Local Jurisdiction, Department of Insurance, OSC, DPI, DHHS, etc. describe below)
(NOT APPLICABLE)

ENERGY SUMMARY

ENERGY REQUIREMENTS:
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 versus 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 ■ ENERGY CODE - PRESCRIPTIVE ☐ OTHER
☐ ASHRAE 90.1 - PERFORMANCE ☐ ASHRAE 90.1 - PRESCRIPTIVE
If "other" specify source here _____

THERMAL ENVELOPE (Prescriptive method only)

ROOF/CEILING ASSEMBLY (each assembly)
DESCRIPTION OF ASSEMBLY: Wood trusses with spray foam insulation, exterior sheathing, shingles
U-VALUE OF TOTAL ASSEMBLY: R-.024
R-VALUE OF INSULATION: R-42
SKYLIGHTS IN EACH ASSEMBLY: N/A
U-VALUE OF SKYLIGHT: N/A
TOTAL SQUARE FOOTAGE OF SKYLIGHTS IN EACH ASSEMBLY: _____

EXTERIOR WALLS (each assembly)
DESCRIPTION OF ASSEMBLY: Wood studs with spray foam insulation, exterior sheathing, Air barrier, siding
U-VALUE OF TOTAL ASSEMBLY: .064
R-VALUE OF INSULATION: R-20
OPENINGS (windows or doors with glazing)
U-VALUE OF ASSEMBLY: .45
SOLAR HEAT GAIN COEFFICIENT: .25
PROJECTION FACTOR: _____
DOOR R-VALUES: 2

WALLS BELOW GRADE (each assembly)
DESCRIPTION OF ASSEMBLY: N/A
U-VALUE OF TOTAL ASSEMBLY: _____
R-VALUE OF INSULATION: _____

FLOORS OVER UNCONDITIONED SPACE (each assembly)
DESCRIPTION OF ASSEMBLY: N/A
U-VALUE OF TOTAL ASSEMBLY: _____
R-VALUE OF INSULATION: _____

FLOORS SLAB ON GRADE (each assembly)
DESCRIPTION OF ASSEMBLY: 4" THICK CONCRETE SLAB WITH TURN DOWN
U-VALUE OF TOTAL ASSEMBLY: _____
R-VALUE OF INSULATION: R-15 FOR 24"
HORIZONTAL/VERTICAL REQUIREMENT: _____
SLAB HEATED: UNHEATED

STRUCTURAL DESIGN

DESIGN LOADS:
IMPORTANCE FACTORS: SNOW (Is) 1.0; SEISMIC (Ie) 1.0
LIVE LOADS: ROOF 20 (reducible) PSF; MEZZANINE n/a PSF; FLOOR 50 (office) 80 (corridor) PSF
GROUND SNOW LOAD: 15 PSF
WIND LOAD: BASIC WIND SPEED 115 MPH (ASCE-7); EXPOSURE CATEGORY B

SEISMIC DESIGN CATEGORY ☐ A ■ B ☐ C ☐ D
Provide the following Seismic Design Parameters:
Risk Category (Table 1604.5) ☐ I ■ II ☐ III ☐ IV
Spectral Response Acceleration Ss .172 %g S1 .083 %g
Site Classification (ASCE 7) ☐ A ☐ B ☐ C ■ D ☐ E ☐ F
Data Source: ☐ Field Test ☐ Presumptive ☐ Historical Data
Basic Structural System: ■ Bearing Wall ☐ Building Frame ☐ Moment Frame ☐ Dual w/Special Moment Frame ☐ Dual w/Intermediate R/C or Special Steel ☐ Inverted Pendulum
Analysis Procedure ☐ Simplified ■ Equiv. 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 2000 psf
Pile size, type, and capacity _____

ELECTRICAL SYSTEM AND EQUIPMENT
(SEE ELECTRICAL DRAWINGS FOR ELECTRICAL ENERGY CODE CALCULATIONS.)

MECHANICAL SYSTEMS, SERVICE SYSTEMS AND EQUIPMENT
(SEE MECHANICAL DRAWINGS FOR MECHANICAL ENERGY CODE CALCULATIONS.)

GONTRAM ARCHITECTURE, INC.
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EDMUND J. GONTRAM III REGISTERED ARCHITECT 7177 NORTH CAROLINA RALEIGH, N.C. 5.24.2022

GONTRAM ARCHITECTURE, INC. CERT. NO. 51355 REGISTERED ARCHITECTURAL CORPORATION NORTH CAROLINA RALEIGH, N.C.

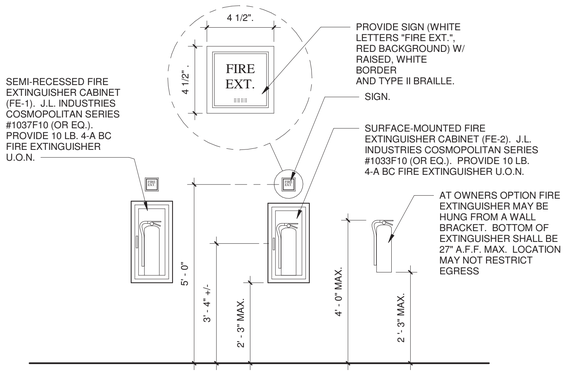
NEW BUILDING for PAUL BARBOUR & SONS
11496 HWY 401N
FUQUAY-VARINA, NC 27526

PLOT DATE: 5/24/2022
ISSUED: 5/24/2022 FOR CONSTRUCTION

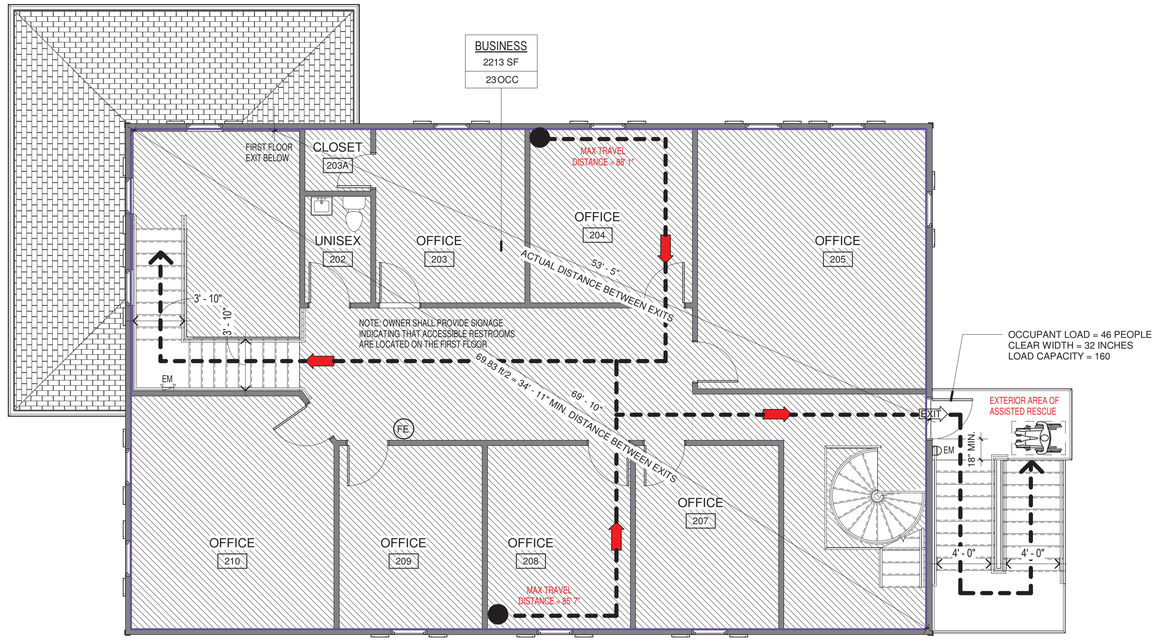
Rev.	Date	Description

DRAWN BY: PJA
APPROVED: EJG
PROJECT NO.: 22039
RECORD:
CONTENTS: BUILDING CODE SUMMARY

SHEET: G102



3 FIRE EXTINGUISHER DETAIL
1/2" = 1'-0"



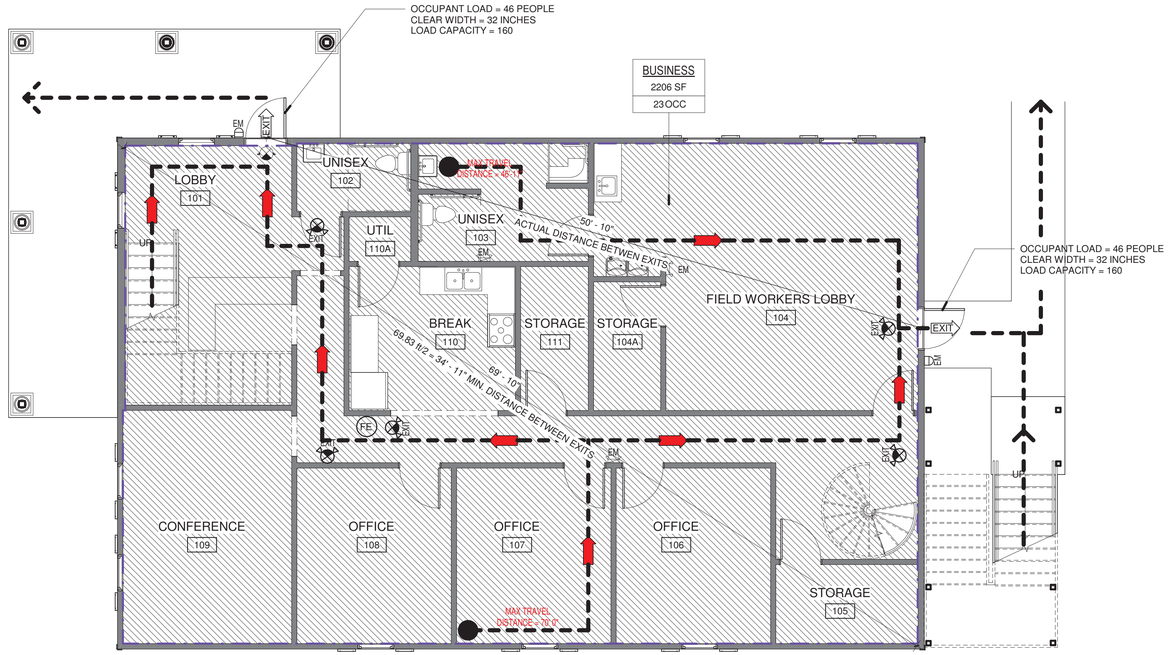
2 2ND FLR LIFE SAFETY PLAN
3/16" = 1'-0"

LIFE SAFETY PLAN LEGEND

BUSINESS (B) - 100 GROSS

NAME
XX SF
X OCC

- AREA NAME
- SQUARE FOOTAGE
- OCCUPANCY
- PATH OF EGRESS
- FE — WALL MOUNTED FIRE EXTINGUISHER
  NOTE: CONFIRM FIRE EXTINGUISHER LOCATIONS WITH AUTHORITY HAVING JURISDICTION PRIOR TO INSTALLING
- EXIT — EXIT SIGN WITH EMERGENCY LIGHTS
- EM — INTERIOR EMERGENCY LIGHT
- EM — EXTERIOR EMERGENCY LIGHT



1 1ST FLR LIFE SAFETY PLAN
3/16" = 1'-0"

GONTRAM ARCHITECTURE, INC.
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NEW BUILDING for PAUL BARBOUR & SONS

11496 HWY 401N
FUQUAY-VARINA, NC 27526

PLOT DATE: 5/24/2022
ISSUED: 5/24/2022 FOR CONSTRUCTION

Rev.	Date	Description

DRAWN BY: PJA
APPROVED: EJG
PROJECT NO.: 22039
RECORD:
CONTENTS: LIFE SAFETY PLANS

SHEET: G103

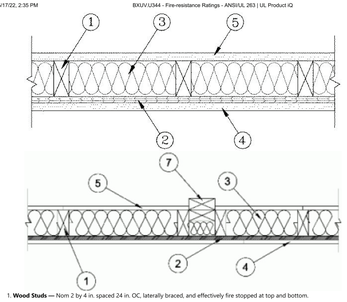
Design No. **U344**

March 25, 2022

Bearing Wall Rating — 1 Hr.
Finish Rating — 26 Min.

This design was evaluated using a load design method other than the Limit States Design Method (e.g., Working Stress Design Method). For jurisdictions employing the Limit States Design Method, such as Canada, a load restriction factor shall be used — See Guide BXUV or BXUV7

*** Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.**



1. **Wood Studs —** Nom 2 by 4 in. spaced 24 in. OC, laterally braced, and effectively fire stopped at top and bottom.

2. **Wood Structural Panel Sheathing —** Nom 15/32 in. thick, 4 ft wide APA Rated Sheathing 32/16. Exposure 1, plywood or oriented strand board (OSB) per PS1, PS2 or APA Standard PRP-108. Installed with long dimension of sheet (strength axis) or face grain of plywood, parallel with studs. Vertical joints centered on studs, and staggered one stud space from wallboard joints. Horizontal joints backed with nom 2 by 4 in. wood backing. Attached to studs on exterior side of wall with 6d cement coated steel box nails spaced 12 in. OC along interior studs and 6 in. OC at perimeter of panels.

3. **Batts and Blankets* —** 3-1/2 in. thick foil-faced glass fiber batts. Supplied in rolls 23 in. wide. Density to be nom 0.70 pcf. Friction-fitted to completely fill the stud cavity.
See **Batts and Blankets*** (BZJZ) category for names of Classified Companies.

3A. **Fiber, Sprayed* —** As an alternate to Batts and Blankets (Item 3) — Spray applied cellulose material. The fiber is applied with water to completely fill the enclosed cavity in accordance with the application instructions supplied with the product with a nominal dry density of 2.7 lb/ft^3. Alternate Application Method. The fiber is applied without water or adhesive at a nominal dry density of 3.5 lb/ft^3, in accordance with the application instructions supplied with the product.
U S GREENFIBER L L C — INS735, INS745 and INS750LD for use with wet or dry application. INSS15LD, INSS41LD, INS735, INS765LD, and INS773LD are to be used for dry application only.

3B. **Fiber, Sprayed* —** As an alternate to Item 3 and 3A — Spray applied cellulose material. The fiber is applied with water to completely fill the enclosed cavity in accordance with the application instructions supplied with the product. Nominal dry density of 4.58 lb/ft^3.
NU-WOOL CO INC — Cellulose Insulation

3C. **Fiber, Sprayed* —** As an alternate to Batts and Blankets (Item 3) - Spray applied cellulose fiber. The fiber is applied with water t completely fill the enclosed cavity in accordance with the application instructions supplied with the product. The minimum dry dens shall be 4.30 lbs/ft^3.
INTERNATIONAL CELLULOSE CORP — Cellser-RL

4. **Gypsum Board* —** 5/8 in. thick, 4 ft wide, applied horizontally or vertically. Attached to studs through plywood sheathing with 8 cement coated nails 2-3/8 in. long, 0.113 in. shank diam, 9/32 in. diam head nails spaced 7 in. OC along studs and at perimeter of panels. When used in widths other than 48 in., wallboard is to be installed horizontally. Joints exposed or covered with tape and compound.
Steel Framing Members* (Items 6 or any alternate clips) is used, gypsum panels attached to furring channels with 1 in. long Type S bugle-hea steel screws spaced 12 in. OC.

AMERICAN GYPSUM CO — Types AGX-1, M-Glass, AG-C, LightRoc

CABOT MANUFACTURING ULC — 5/8 Type X, Type Blueglass Exterior Sheathing

CERTAINTEED GYPSUM INC — Type C, Type X or Type X-1 (Finished Rating is 23 minutes); Type EGRG, Type GlasRoc, GlasRoc-2, Easi-Lite Type 2, SilentFX.

CGC INC — Type AR, C, IP-X2, IPC-AR, SCX, SHX, ULIX, ULX, USGX, WRC, WRX.

CERTAINTEED GYPSUM INC — Types LGFC6, LGFC6A, LGFC-C, LGFC-C/A.

GEORGIA-PACIFIC GYPSUM L L C — Types TG-C, Type X, Veneer Plaster Base - Type X, Water Rated - Type X, Sheathing - Type X, Soffit - Type ; GreenGlas Type X, Type UWX, Veneer Plaster Base-Type UWX, Water Rated-Type UWX, Sheathing Type-UWX, Soffit-Type UWX, Type DGUW, Water Rated-Type DGUW, Sheathing Type- DGUW, Soffit-Type DGUW, Type UWZX, Veneer Plaster Base - Type UWZX, Water Rated - Type UWZX, Sheathin Type UWZX, Soffit - Type UWZX, Type DGLZW, Water Rated - Type DGLZW, Sheathing - Type DGLZW, Type DGG, Type DAP, Type DS.

NATIONAL GYPSUM CO — Types FSK, FSK-G, FSW, FSW-3, FSW-5 FSW-G, FSK-C, FSW-C, FSMR-C, FSW-6, FSL, FSW-8

NATIONAL GYPSUM CO — Riyadh, Saudi Arabia — Type FR, or WR.

PABCO BUILDING PRODUCTS L L C, DBA PABCO GYPSUM — Types PG-11, PGS-WRS, PGI

THAI GYPSUM PRODUCTS PCL — Type C or Type X

UNITED STATES GYPSUM CO — Types AR, C, FRX-G, IP-X2, IPC-AR, WRC, SCX, SHX, ULIX, ULX, USGX or WRX

USG BORAL DRYWALL SFZ LLC — Types C, SCX, USGX

USG MEXICO S A DE C V — Type AR, C, IP-X2, IPC-AR, SCX, SHX, ULIX, ULX, USGX, WRC or WRX.

4A. **Gypsum Board* —** (As an alternate to Item 4) — 5/8 in. thick, 4 ft. wide, paper surfaced applied vertically and secured as described in Item 4.
GEORGIA-PACIFIC GYPSUM L L C — Type X ComfortGuard Sound Deadening Gypsum Board (finish rating 27 min).

4B. **Gypsum Board* —** (As an alternate to Items 4, 4A) — Nominal 5/8 in. thick, 4 ft wide panels, applied vertically only and secured as described in Item 4.
PABCO BUILDING PRODUCTS L L C, DBA PABCO GYPSUM — Type QuietRock ES.

4C. **Wall and Partition Facings and Accessories* —** (As an alternate to Items 4, 4A, 4B) — Nominal 5/8 in. thick, 4 ft wide panels, applied vertically only and secured as described in Item 4.
PABCO BUILDING PRODUCTS L L C, DBA PABCO GYPSUM — Type QuietRock 527.

4D. **Gypsum Board* —** (As an alternate to Item 4) — 5/8 in. thick gypsum panels, with beveled, square, or tapered edges, applied either horizontally or vertically. Gypsum panels fastened to framing with 1-1/4 in. long Type W coarse thread gypsum panel steel screws spaced a maximum 10 in. OC with the last two screws 4 and 1 in. from the edges of the board. When used in widths other than 48 in., gypsum panels are to be installed horizontally.
CERTAINTEED GYPSUM INC — Type LGFC6A (finish rating 21 min), Type LGFC6A, Type LGFC-C/A, Type LGFC-WD, Type LGLLX

4E. **Gypsum Board* —** (As an alternate to Item 4) - 5/8 in. thick, 4 ft wide, applied horizontally or vertically. Attached to studs through plywood sheathing with 8d cement coated nails 2-3/8 in. long, 0.113 in. shank diam, 9/32 in. diam head nails spaced 7 in. OC along studs and at perimeter of panels. When used in widths other than 48 in., wallboard is to be installed horizontally. Joints exposed or covered with tape and compound.
Steel Framing Members* (Items 6 or any alternate clips) is used, gypsum panels attached to furring channels with 1 in. long Type S bugle-head steel screws spaced 7 in. OC.

PANEL REY S A — Type PRX2

5. **Gypsum Board* —** 5/8 in. thick, 4 ft wide applied horizontally or vertically. Attached to studs or blocking at 7 in. OC with 6d cement coated nails, 1-7/8 in. long, 0.0915 in. shank diam and 1/4 in. diam heads. When used in widths other than 48 in., wallboard to be installed horizontally. Joints exposed or covered with tape and compound.
When Item 6-6D, **Steel Framing Members***, is used, gypsum panels attached to furring channels with 1 in. long Type S bugle-head steel screws spaced 12 in. OC.

AMERICAN GYPSUM CO — Types AGX-1, M-Glass, AG-C, LightRoc

CABOT MANUFACTURING ULC — 5/8 Type X, Type Blueglass Exterior Sheathing

CGC INC — Type AR, C, IP-X1, IP-X2, IPC-AR, SCX, ULX, USGX, WRX

CERTAINTEED GYPSUM INC — Types LGFC6, LGFC6A, LGFC-C, LGFC-C/A

GEORGIA-PACIFIC GYPSUM L L C — Type TG-C, GreenGlass Type X, Type DGG

NATIONAL GYPSUM CO — Types FSK, FSK-G, FSW, FSW-3, FSW-5, FSW-G, FSK-C, FSW-C, FSMR-C, FSW-6, FSL, FSW-8

PABCO BUILDING PRODUCTS L L C, DBA PABCO GYPSUM — Types PG-11, PGS-WRS, PGI

UNITED STATES GYPSUM CO — Type AR, C, FRX-G, IP-X1, IP-X2, IPC-AR, SCX, ULX, ULX, USGX or WRX

USG BORAL DRYWALL SFZ LLC — Types C, SCX, USGX

USG MEXICO S A DE C V — Type AR, C, IP-X1, IP-X2, IPC-AR, SCX, ULX, USGX or WRX

5A. **Gypsum Board* —** As an alternate to Item 5 — (not shown) - 5/8 in. thick gypsum panels, with beveled, square, or tapered edges, applied either horizontally or vertically. Gypsum panels fastened to framing with 1-1/4 in. long Type W coarse thread gypsum panel steel screws spaced a max 8 in. OC, with last screw 1 in. from edge of board. When used in widths of other than 48 in., gypsum boards are to be installed horizontally. Joints exposed or covered with tape and compound.
AMERICAN GYPSUM CO — Types AGX-1, M-Glass, AG-C (Finished Rating is 25 minutes), LightRoc.

CERTAINTEED GYPSUM INC — Type C, Type X or Type X-1 (Finished Rating is 23 minutes); Type EGRG, Type GlasRoc, GlasRoc-2.

CGC INC — Type AR, C, IP-X2, IPC-AR, SCX, SHX, ULIX, ULX, USGX, WRC or WRX. (Finished Rating is 24 minutes).

NATIONAL GYPSUM CO — Type FSK, Type FSK-G, Type FSW, Type FSW-3, Type FSW-5, Type FSW-G, Type FSK-C, Type FSW-C, Type FSMR-C, Type FSW-6, Type FSL

THAI GYPSUM PRODUCTS PCL — Type C or Type X

UNITED STATES GYPSUM CO — Type AR, C, FRX-G, IP-X1, IP-X2, IPC-AR, SCX, ULX, USGX or WRX. (Finished Rating is 24 minutes)

USG BORAL DRYWALL SFZ LLC — Types C, SCX, USGX

USG MEXICO S A DE C V — Type AR, C, IP-X1, IP-X2, IPC-AR, SCX, ULX, USGX or WRX. (Finished Rating is 24 minutes)

5B. **Gypsum Board* —** (As an alternate to Items 5 and 5A) — 5/8 in. thick gypsum panels, with square edges, applied either horizontally or vertically. Gypsum panels fastened to framing with 1-1/4 in. long Type W coarse thread gypsum panel steel screws spaced a max 8 in. OC, with last 2 screws 1 and 4 in. from edge of board or nailed as described in Item 5. When used in widths of other than 48 in., gypsum boards are to be installed horizontally.
GEORGIA-PACIFIC GYPSUM L L C — GreenGlas Type X, Type DGG.

5C. **Gypsum Board* —** (As an alternate to Items 5 through 5B) — 5/8 in. thick, 4 ft. wide, paper surfaced applied vertically and secured as described in Item 5.
GEORGIA-PACIFIC GYPSUM L L C — Type X ComfortGuard Sound Deadening Gypsum Board (finish rating 27 min)

5D. **Gypsum Board* —** (As an alternate to Items 5 through 5C) — Nominal 5/8 in. thick, 4 ft wide panels, applied vertically only and secured as described in Item 5.
PABCO BUILDING PRODUCTS L L C, DBA PABCO GYPSUM — Type QuietRock ES.

5E. **Wall and Partition Facings and Accessories* —** (As an alternate to Items 5 through 5D) — Nominal 5/8 in. thick, 4 ft wide panels, applied vertically only and secured as described in Item 5.
PABCO BUILDING PRODUCTS L L C, DBA PABCO GYPSUM — Type QuietRock 527

5F. **Gypsum Board* —** (As an alternate to Items 5 through 5E) — Nominal 5/8 in. thick, 4 ft wide panels, applied vertically only and secured as described in Item 5.
NATIONAL GYPSUM CO — Type SBWB

5G. **Gypsum Board* —** (As an alternate to Item 5) — 5/8 in. thick gypsum panels, with beveled, square, or tapered edges, applied either horizontally or vertically. Gypsum panels fastened to framing with 1-1/4 in. long Type W coarse thread gypsum panel steel screws spaced a maximum 10 in. OC with the last two screws 4 and 1 in. from the edges of the board. When used in widths other than 48 in., gypsum panels are to be installed horizontally.
CERTAINTEED GYPSUM INC — Type LGFC6A (finish rating 21 min), Type LGFC2A, Type LGFC-C/A, Type LGFC-WD, Type LGLLX

5H. **Gypsum Board* —** — (As an alternate to Item 5-5G) — 5/8 in. thick, 4 ft. wide, paper surfaced applied vertically or horizontally and secured with 1-1/4 in. Type W coarse thread gypsum panel steel screws spaced a maximum of 12 in. OC.
CERTAINTEED GYPSUM INC — Type SilentFX

5I. **Gypsum Board* —** (As an alternate to Item 5. For use with Item 6E) - Any 5/8 in. thick, 4 ft. wide, Gypsum Board UL Classified for Fire Resistance (CKNX) eligible for use in Design Nos. U305, U501 or G512. Two layers, applied vertically, and attached to furring channels (Item 6EA). Vertical gypsum board side joints offset 24 inches between layers. Horizontal butt joints offset 48 inches from adjacent board horizontal joints and 24 inches from base layer butt joint. Vertical joints staggered one stud cavity on opposite sides of studs. Type S steel screws used to attach gypsum board to furring channels. First layer - 1 in. long, 3 inches from the edge and 24 in. OC. Second layer- 1-5/8 in. long, spaced 1 inch from the edge and 12 in. OC.

5J. **Gypsum Board* —** 5/8 in. thick, 4 ft wide applied horizontally or vertically. Attached to studs or blocking at 7 in. OC with 6d cement coated nails, 1-7/8 in. long, 0.0915 in. shank diam and 1/4 in. diam heads. When used in widths other than 48 in., wallboard to be installed horizontally. Joints exposed or covered with tape and compound.

When Item 6-6D, **Steel Framing Members***, is used, gypsum panels attached to furring channels with 1 in. long Type S bugle-head steel screws spaced 7 in. OC.

PANEL REY S A — Type PRX2

6. **Steel Framing Members* —** (Optional, Not Shown) — Furring Channels and Steel Framing Members as described below:
a. **Furring Channels —** Formed of No. 25 MSG galv steel. 2-9/16 in. or 2-23/32 in. wide by 7/8 in. deep, spaced 24 in. OC perpendicular to studs. Channels secured to studs as described in Item b. Ends of adjoining channels are overlapped 6 in. and tied together with double strand of No. 18 SWG galv steel wire near each end of overlap. As an alternate, ends of adjoining channels may be overlapped 6 in. and secured together with two self-tapping #6 framing screws, min. 7/16 in. long at the midpoint of the overlap, with one screw on each flange of the channel. Gypsum board attached to furring channels as described in Items 4 and 5.

b. **Steel Framing Members* —** Used to attach furring channels (Item 6a) to studs . Clips spaced 48 in. OC., and secured to studs with No. 8 x 2-1/2 in. coarse drywall screw through the center grommet. Furring channels are friction fitted into clips. . RSIC-1 clip for use with 2-9/16 in. wide furring channels. RSIC-1 (2.75) clip for use with 2-23/32 in. wide furring channels.
PAC INTERNATIONAL L L C — Types RSIC-1, RSIC-1 (2.75).

6A. **Steel Framing Members* —** (Optional, Not Shown, As an alternate to Item 6) — Furring channels and Steel Framing Members as described below:
a. **Furring Channels —** Formed of No. 25 MSG galv steel. 2-3/8 in. wide by 7/8 in. deep, spaced 24 in. OC perpendicular to studs. Channels secured to studs as described in Item b. Ends of adjoining channels are overlapped 6 in. and tied together with double strand of No. 18 SWG galv steel wire near each end of overlap. As an alternate, ends of adjoining channels may be overlapped 6 in. and secured together with two self-tapping #6 framing screws, min. 7/16 in. long at the midpoint of the overlap, with one screw on each flange of the channel. Gypsum board attached to furring channels as described in Item 5.

b. **Steel Framing Members* —** Used to attach furring channels (Item a) to studs. Clips spaced 48 in. OC. Genie clips secured to studs with No. 8 x 1-1/2 in. coarse drywall screw through the center hole. Furring channels are friction fitted into clips.
PLITEQ INC — Type Genie Clip

6B. **Steel Framing Members* —** (Optional, Not Shown, As an alternate to Item 6) — Furring channels and Steel Framing Members as described below:
a. **Furring Channels —** Formed of No. 25 MSG galv steel. Spaced 24 in. OC perpendicular to studs. Channels secured to studs as described in Item b. Ends of adjoining channels overlapped 6 in. and tied together with double strand of No. 18 AWG galvanized steel wire.Gypsum board attached to furring channels as described in Item 5.

b. **Steel Framing Members* —** Used to attach furring channels (Item 6Ba) to studs. Clips spaced 48 in. OC., and secured to studs with 2 in. coarse drywall screw with 1 in. diam washer through the center hole. Furring channels are friction fitted into clips.
STUDCO BUILDING SYSTEMS — RESILMOUNT Sound Isolation Clips - Type A2378.

6C. **Steel Framing Members* —** (Optional, Not Shown, As an alternate to Item 6) — Furring channels and Steel Framing Members as described below:
a. **Furring Channels —** Formed of No. 25 MSG galv steel. Spaced 24 in. OC perpendicular to studs. Channels secured to studs as described in Item 6Cb. Ends of adjoining channels overlapped 6 in. and tied together with double strand of No. 18 AWG galvanized steel wire.Gypsum board attached to furring channels as described in Item 5.

b. **Steel Framing Members* —** Used to attach furring channels (Item 6Ca) to studs. Clips spaced 48 in. OC., and secured to studs with No. 8 x 2-1/2 in. coarse drywall screw through the center hole. Furring channels are friction fitted into clips.
REGUPOL AMERICA — Type SonusClip

6D. **Steel Framing Members* —** (Optional, Not Shown, As an alternate to Item 6) — Resilient channels and Steel Framing Members as described below:
a. **Resilient Channels —** Formed of No. 25 MSG galv steel, spaced 24 in. OC, and perpendicular to studs. Channels secured to studs as described in Item b. Ends of adjoining channels overlapped 6 in. and secured in place with two No. 8 15 x 1/2 in. Philips Modified Truss screws spaced 2-1/2 in. from the center of the overlap. Gypsum board attached to resilient channels as described in Item 5.

b. **Steel Framing Members* —** Used to attach resilient channels (Item 6Da) to studs. Clips spaced 48 in. OC, and secured to studs with No. 8 x 2-1/2 in. coarse drywall screw through the center hole. Resilient channels are secured to clips with one No. 10 x 1/2 in. pan-head self-drilling screw.
KEENE BUILDING PRODUCTS CO INC — Type RC+ Assurance Clip

6E. **Steel Framing Members* —** (Optional, Not Shown, As an alternate to Item 6) — Furring channels and Framing Members as described below:
a. **Furring Channels —** Formed of No. 25 MSG galv steel. Spaced 24 in. OC perpendicular to studs. Channels secured to studs as described in Item 6Eb. Ends of adjoining channels overlapped 6 in. and tied together with double strand of No. 18 AWG galvanized steel wire. As an alternate, ends of adjoining channels may be overlapped 6 in. and secured together with two self-tapping No. 6 framing screws, min. 7/16 in. long at the midpoint of the overlap, with one screw on each flange of the channel. Two layers of gypsum board attached to furring channels as described in 5I.

b. **Framing Members* —** Used to attach furring channels (Item 6Ea) to studs (Item 1). Rafts secured to stud, spaced a maximum of 24 in. OC. horizontally, vertically spaced 3 in. from the top and bottom and 24 inch on center along each stud and secured with two 1-1/4 inch (No. 6) Type W drywall screws. One on each side of the core. Fasteners should not be placed closer than 1/4 inch to the edges of the mounts.
BCD LLC — Type HushFrame Raft Connector

6F. **Steel Framing Members* —** (Optional, Not Shown, As an alternate to Item 6) — Used as an alternate method to attach resilient channels to wall studs. A resilient sound isolation accessory shall be used at each attachment point of the resilient channels and spaced max 24 in. OC. Channel ends butted and centered under the structural members and attached with one accessory at each end. Additional accessories used to hold resilient channels that support the gypsum board end joints. The accessory envelops the mounting edge of the resilient channel. The accessory and resilient channel are fastened to the structural members with the screws supplied with the accessory and per the accessory manufacturer's installation instructions.
PAC INTERNATIONAL L L C — Type RC-1 Boost

6G **Steel Framing Members* —** (Optional, Not Shown, As an alternate to Item 6) — Furring channels and Steel Framing Members as described below:
a **Furring Channels —** Formed of No. 25 MSG galv steel. 2-23/32 in. wide by 7/8 in. deep, spaced 24 in. OC perpendicular to studs. Channels secured to studs as described in Item b. Ends of adjoining channels are overlapped 6 in. and tied together with double strand of No. 18 SWG galv steel wire near each end of overlap. As an alternate, ends of adjoining channels may be overlapped 6 in. and secured together with two self-tapping #6 framing screws, min. 7/16 in. long at the midpoint of the overlap, with one screw on each flange of the channel. Gypsum board attached to furring channels as described in Items 4 and 5.

b **Steel Framing Members* —** Used to attach furring channels (Item 6Ga) to studs. Clips spaced maximum 48 in. OC. Clips secured to studs with No. 8 x 2-1/2 in. coarse drywall screw through the center grommet. Furring channels are friction fitted into clips.

CLARKDIETRICH BUILDING SYSTEMS — Type ClarkDietrich Sound Clip

7. **Non-Bearing Wall Partition Intersection —** (Optional) — Two nominal 2 by 4 in. stud or nominal 2 by 6 in. stud nailed together with two 3-1/2 in. long 10d nails spaced a max. 16 in. OC. vertically and fastened to one side of the minimum 2 by 4 in. stud with 3 in. long 10d nails spaced a max 16 in. OC. vertically. Intersection between partition wood studs to be flush with the 2 by 4 in. studs. The wall partition wood studs are to be framed by with a second 2 by 4 in. wood stud fastened with 3 in. long 10d nails spaced a max. 16 in. OC, vertically. Maximum one non-bearing wall partition intersection per stud cavity. Non-bearing wall partition stud depth shall be at a minimum equal to the depth of the bearing wall.

*** Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.**

Last Updated on 2022-03-25

1 UL U344 1-hr RATED WALL

GONTRAM ARCHITECTURE, INC.
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www.gontramarchitecture.com

EDMUND J. GONTRAM III — REGISTERED ARCHITECT — RALEIGH, NC — 5.24.2022

GONTRAM ARCHITECTURE, INC — CERT. NO. 51355 — REGISTERED ARCHITECTURAL CORPORATION — NORTH CAROLINA — RALEIGH, N.C.

NEW BUILDING for PAUL BARBOUR & SONS

11496 HWY 401N
FUQUAY-VARINA, NC 27526

PLOT DATE: 5/24/2022

ISSUED: 5/24/2022
FOR CONSTRUCTION

Rev.	Date	Description

DRAWN BY: PJA
APPROVED: EJG
PROJECT NO.: 22039
RECORD:

CONTENTS: UL DETAILS

SHEET: G104

INTERIOR PARTITION SCHEDULE

Type	Plan Detail	Section Components	Description
1	5/8", 3 1/2", 4 3/4", 5/8"	CEILING WHERE SCHEDULED; 2 x 4 WOOD STUDS; 5/8" GWB EACH SIDE.; SOUND BATT INSULATION	NEW UNRATED INTERIOR PARTITION: 2x4 WOOD STUDS AT 16" O.C. TO BOTTOM OF TRUSSES, (10'-0" AFF) , WITH ONE LAYER 5/8" GWB ON EACH SIDE. FINISH AS SCHEDULED. PROVIDE SOUND BATT INSULATION (R-11 UNFACED BATT INSULATION)
2	5/8", 5 1/2", 6 3/4", 5/8"	CEILING WHERE SCHEDULED; 2 x 6 WOOD STUDS; 5/8" GWB EACH SIDE.; SOUND BATT INSULATION	NEW UNRATED INTERIOR PARTITION: 2x6 WOOD STUDS AT 16" O.C. TO BOTTOM OF TRUSSES (11'-6" AFF), BRACE TO STRUCTURE ABOVE, WITH ONE LAYER 5/8" GWB ON EACH SIDE. FINISH AS SCHEDULED. PROVIDE SOUND BATT INSULATION (R-11 UNFACED BATT INSULATION)

1. PARTITION TYPE #1 IS TYPICAL THROUGHOUT PROJECT, UNLESS OTHERWISE NOTED.

2. WHERE PARTITIONS OF VARIOUS THICKNESS MEET, MAINTAIN A FLUSH SURFACE ON THE SIDE WHERE FACES ARE STRAIGHT AND CONTINUOUS, UNLESS OTHERWISE NOTED.

3. PARTITIONS IN ALL TOILET ROOMS TO HAVE WATER RESISTANT TYPE "X" GYPSUM BOARD IN THICKNESS TO MATCH SCHEDULED. WHERE TILE IS SCHEDULED FOR WALLS, PROVIDE CEMENTITIOUS BACKERBOARD OF SAME THICKNESS.

EXTERIOR WALL SCHEDULE

Type	Plan Detail	Section Components	Description
A	1/2", 4 5/8", 3 1/2", 5/8"	5/8" GWB; R-20 FOAM INSUL.; 2 x 4 WOOD STUDS; EXTERIOR SHEATHING; TYVEK AIR INFILTRATION BARRIER; SIDING	NEW UNRATED WALL: 2x4 WOOD STUDS AT 16" O.C. TO TRUSS ABOVE , R-20 SPRAY FOAMED INSULATION, TYVEK AIR INFILTRATION BARRIER OVER EXTERIOR SHEATHING, SIDING
B	1/2", 5/8", 5 1/4", 3 1/2", 5/8"	5/8" GWB; R-20 FOAM INSUL.; 2 x 4 WOOD STUDS; EXTERIOR GYPSUM SHEATHING; 5/8" EXTERIOR GWB; TYVEK AIR INFILTRATION BARRIER; SIDING	NEW 1-HR RATED WALL: 2x4 WOOD STUDS AT 16" O.C. TO TRUSS ABOVE , R-20 SPRAY FOAMED INSULATION, TYVEK AIR INFILTRATION BARRIER OVER TYPE X GYPSUM SHEATHING, SIDING UL U344
C	1/2", 6 5/8", 5 1/2", 5/8"	5/8" GWB; R-20 FOAM INSUL.; 2 x 6 WOOD STUDS; EXTERIOR SHEATHING; TYVEK AIR INFILTRATION BARRIER; SIDING	NEW UNRATED LOAD BEARING WALL: 2x6 WOOD STUDS AT 16" O.C. TO TRUSS ABOVE , R-20 SPRAY FOAMED INSULATION, TYVEK AIR INFILTRATION BARRIER OVER EXTERIOR SHEATHING, SIDING

1. PARTITION TYPE A IS TYPICAL AT EXTERIOR WALLS THROUGHOUT PROJECT, UNLESS OTHERWISE NOTED.

2. WHERE PARTITIONS OF VARIOUS THICKNESS MEET, MAINTAIN A FLUSH SURFACE ON THE SIDE WHERE FACES ARE STRAIGHT AND CONTINUOUS, UNLESS OTHERWISE NOTED.

PLAN NOTES:

1. EXTERIOR DIMENSIONS SHOWN ARE FROM EXTERIOR FACE OF STUD TO WALL CENTERLINE TO CENTERLINE OF OPENING TO EXTERIOR FACE OF STUD.

2. INTERIOR DIMENSIONS SHOWN ARE FROM CENTERLINE OF STUD TO CENTERLINE OF NEW STUD.

3. DIMENSIONS INDICATED AS "CLEAR" OR "CLR" ARE FROM FINISHED SURFACE TO FINISHED SURFACE. CLEAR DIMENSIONS ARE INDICATED WITH OPEN ARROWS

4. DIMENSIONS INDICATED AS "MIN." OR "MINIMUM" ARE ABSOLUTE MINIMUM DIMENSIONS AND ARE NOT TO BE DECREASED. DIMENSIONS INDICATED AS "MAX." OR "MAXIMUM" ARE ABSOLUTE MAXIMUM DIMENSIONS AND ARE NOT TO BE INCREASED.

5. ALTHOUGH THESE DRAWINGS ARE DRAWN TO SCALE, NO DIMENSIONS ARE TO BE DETERMINED BY SCALING THE DRAWINGS. ANY QUESTIONS OR DISCREPANCIES ARE TO BE BROUGHT TO THE ATTENTION OF THE ARCHITECT.

FINISH SCHEDULE- 1st FLOOR

ROOM		FLOOR		WALLS				CEILING		NOTES
NUMBER	NAME	FLOOR	BASE	NORTH	EAST	SOUTH	WEST	TYPE	HEIGHT	
101	LOBBY	LVT	RB	GWB/PTD	GWB/PTD	GWB/PTD	GWB/PTD	GWB/PTD	20'-0"	
102	UNISEX	LVT	RB	MR-GWB/PTD	MR-GWB/PTD	MR-GWB/PTD	MR-GWB/PTD	ACT	9'-0"	
103	UNISEX	LVT	RB	MR-GWB/PTD	MR-GWB/PTD	MR-GWB/PTD	MR-GWB/PTD	ACT	9'-0"	
104	FIELD WORKERS LOBBY	LVT	RB	GWB/PTD	GWB/PTD	GWB/PTD	GWB/PTD	ACT	9'-0"	
104A	STORAGE	LVT	RB	GWB/PTD	GWB/PTD	GWB/PTD	GWB/PTD	ACT	9'-0"	
105	STORAGE	LVT	RB	GWB/PTD	GWB/PTD	GWB/PTD	GWB/PTD	ACT	9'-0"	
106	OFFICE	CPT	RB	GWB/PTD	GWB/PTD	GWB/PTD	GWB/PTD	ACT	9'-0"	
107	OFFICE	CPT	RB	GWB/PTD	GWB/PTD	GWB/PTD	GWB/PTD	ACT	9'-0"	
108	OFFICE	CPT	RB	GWB/PTD	GWB/PTD	GWB/PTD	GWB/PTD	ACT	9'-0"	
109	CONFERENCE	CPT	RB	GWB/PTD	GWB/PTD	GWB/PTD	GWB/PTD	ACT	9'-0"	
110	BREAK	LVT	RB	GWB/PTD	GWB/PTD	GWB/PTD	GWB/PTD	ACT	9'-0"	
110A	UTIL	CONCRETE	RB	GWB/PTD	GWB/PAINT	GWB/PAINT	GWB/PAINT	ACT	9'-0"	
111	STORAGE	LVT	RB	GWB/PTD	GWB/PTD	GWB/PTD	GWB/PTD	ACT	9'-0"	
112	CORRIDOR	LVT	RB	GWB/PTD	GWB/PTD	GWB/PTD	GWB/PTD	ACT	9'-0"	

NOTE: NORTH, EAST, SOUTH AND WEST ARE BASED ON PLAN NORTH , EAST, SOUTH, AND WEST

GENERAL FINISH NOTES:

1. ALL EXPOSED STRUCTURAL STEEL, MECHANICAL DUCTWORK. ELECTRICAL CONDUIT, ETC. IS TO BE PAINTED. COLOR TO BE CONFIRMED BY OWNER.

2. INTERIOR FINISHES SHALL NOT HAVE A FLAME SPREAD RATING EXCEEDING THAT ALLOWED FOR TYPE VB CONSTRUCTION.

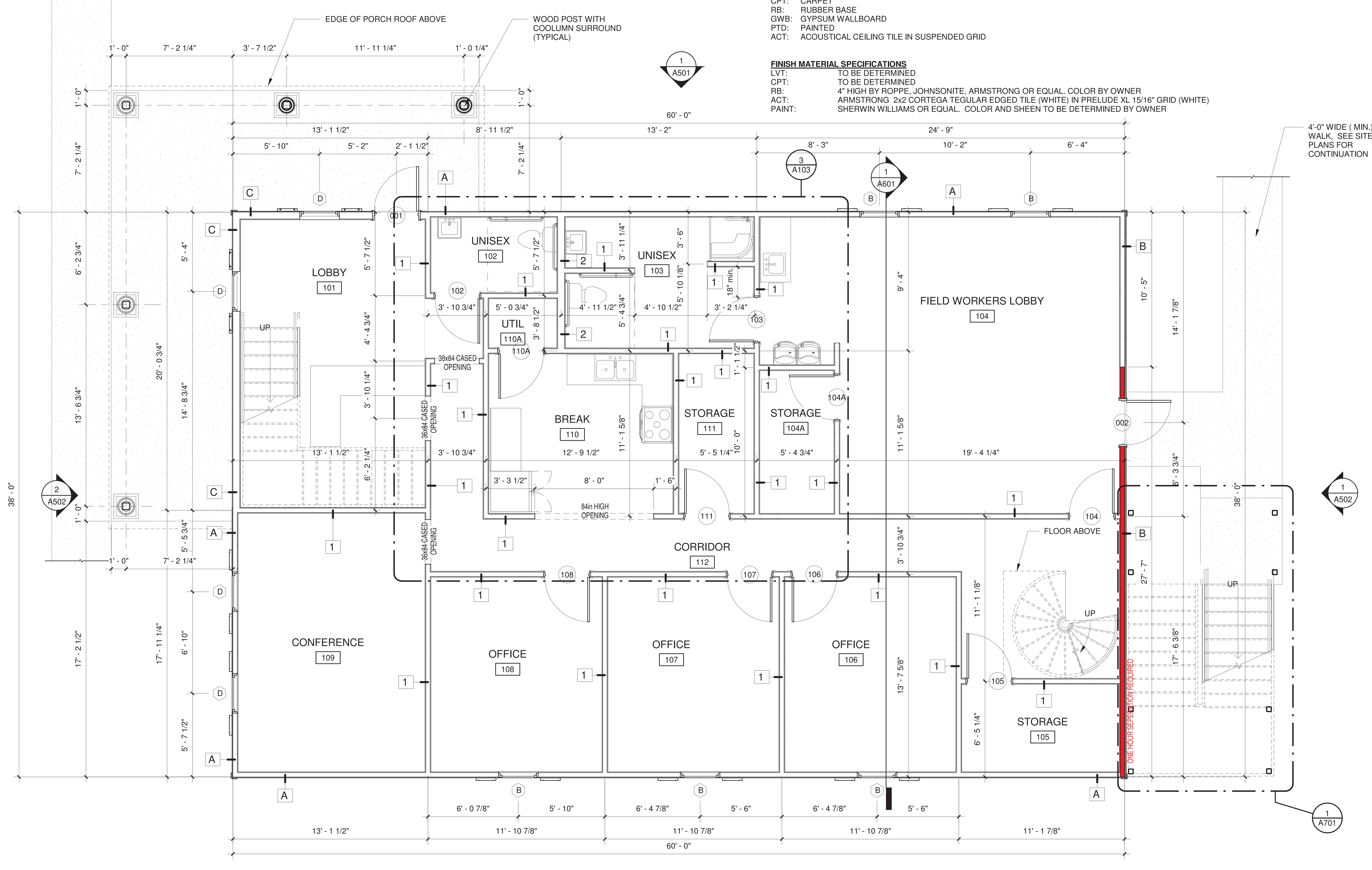
3. ALL FINISH MATERIALS TO BE INSTALLED IN STRICT COMPLIANCE WITH MANUFACTURER'S SPECIFICATIONS.

4. ALL GYPSUM WALL BOARD (GWB) TO BE PAINTED. **GYPSUM WALL BOARD IN PUBLIC RESTROOMS TO BE EPOXY PAINT**

6. CONFIRM ALL FINISHES WITH OWNER, PRIOR TO CONSTRUCTION.

ABBREVIATIONS:
LVT: LUXURY VINYL TILE
CPT: CARPET
RB: RUBBER BASE
GWB: GYPSUM WALLBOARD
PTD: PAINTED
ACT: ACOUSTICAL CEILING TILE IN SUSPENDED GRID

FINISH MATERIAL SPECIFICATIONS
LVT: TO BE DETERMINED
CPT: TO BE DETERMINED
RB: 4" HIGH BY ROPPE, JOHNSONITE, ARMSTRONG OR EQUAL. COLOR BY OWNER
ACT: ARMSTRONG 2x2 CORTEGA TEGULAR EDGED TILE (WHITE) IN PRELUDE XL 15/16" GRID (WHITE)
PAINT: SHERWIN WILLIAMS OR EQUAL. COLOR AND SHEEN TO BE DETERMINED BY OWNER



1 1st FLOOR PLAN
1/4" = 1'-0"

GONTRAM ARCHITECTURE, INC.
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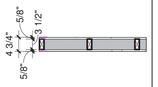
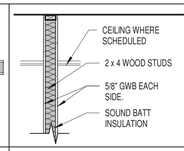
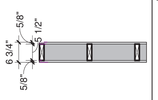
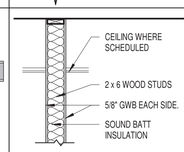
NEW BUILDING
for PAUL BARBOUR & SONS
11496 HWY 401N
FUQUAY-VARINA, NC 27526

PLOT DATE: 5/24/2022
ISSUED: 5/24/2022 FOR CONSTRUCTION

Rev.	Date	Description

DRAWN BY: PJA
APPROVED: EJG
PROJECT NO.: 22039
RECORD:
CONTENTS: 1st FLOOR PLAN
SHEET: A101

INTERIOR PARTITION SCHEDULE

1			NEW UNRATED INTERIOR PARTITION: 2x4 WOOD STUDS AT 16" O.C. TO BOTTOM OF TRUSSES, (10'-0" AFF) , WITH ONE LAYER 5/8" GWB ON EACH SIDE. FINISH AS SCHEDULED. PROVIDE SOUND BATT INSULATION (R-11 UNFACED BATT INSULATION)
2			NEW UNRATED INTERIOR PARTITION: 2x6 WOOD STUDS AT 16" O.C. TO BOTTOM OF TRUSSES (11'-6" AFF), BRACE TO STRUCTURE ABOVE, WITH ONE LAYER 5/8" GWB ON EACH SIDE. FINISH AS SCHEDULED. PROVIDE SOUND BATT INSULATION (R-11 UNFACED BATT INSULATION)

1. PARTITION TYPE #1 IS TYPICAL THROUGHOUT PROJECT, UNLESS OTHERWISE NOTED.

2. WHERE PARTITIONS OF VARIOUS THICKNESS MEET, MAINTAIN A FLUSH SURFACE ON THE SIDE WHERE FACES ARE STRAIGHT AND CONTINUOUS, UNLESS OTHERWISE NOTED.

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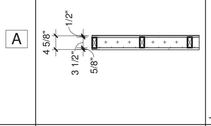
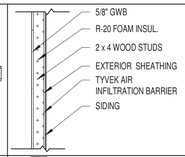
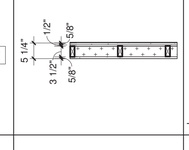
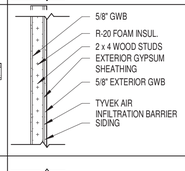
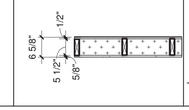
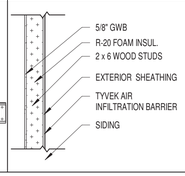
EXTERIOR WALL SCHEDULE

A			NEW UNRATED WALL: 2x4 WOOD STUDS AT 16" O.C. TO TRUSS ABOVE , R-20 SPRAY FOAMED INSULATION, TYVEK AIR INFILTRATION BARRIER OVER EXTERIOR SHEATHING, SIDING
B			NEW 1-HR RATED WALL: 2x4 WOOD STUDS AT 16" O.C. TO TRUSS ABOVE , R-20 SPRAY FOAMED INSULATION, TYVEK AIR INFILTRATION BARRIER OVER TYPE X GYPSUM SHEATHING, SIDING UL U344
C			NEW UNRATED LOAD BEARING WALL: 2x6 WOOD STUDS AT 16" O.C. TO TRUSS ABOVE , R-20 SPRAY FOAMED INSULATION, TYVEK AIR INFILTRATION BARRIER OVER EXTERIOR SHEATHING, SIDING

1. PARTITION TYPE A IS TYPICAL AT EXTERIOR WALLS THROUGHOUT PROJECT, UNLESS OTHERWISE NOTED.

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PLAN NOTES:

1. EXTERIOR DIMENSIONS SHOWN ARE FROM EXTERIOR FACE OF STUD TO WALL CENTERLINE TO CENTERLINE OF OPENING TO EXTERIOR FACE OF STUD.

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3. DIMENSIONS INDICATED AS "CLEAR" OR "CLR" ARE FROM FINISHED SURFACE TO FINISHED SURFACE. CLEAR DIMENSIONS ARE INDICATED WITH OPEN ARROWS

4. DIMENSIONS INDICATED AS "MIN." OR "MINIMUM" ARE ABSOLUTE MINIMUM DIMENSIONS AND ARE NOT TO BE DECREASED. DIMENSIONS INDICATED AS "MAX." OR "MAXIMUM" ARE ABSOLUTE MAXIMUM DIMENSIONS AND ARE NOT TO BE INCREASED.

5. ALTHOUGH THESE DRAWINGS ARE DRAWN TO SCALE, NO DIMENSIONS ARE TO BE DETERMINED BY SCALING THE DRAWINGS. ANY QUESTIONS OR DISCREPANCIES ARE TO BE BROUGHT TO THE ATTENTION OF THE ARCHITECT.

FINISH SCHEDULE - 2nd FLOOR

ROOM		FLOOR		WALLS				CEILING		
NUMBER	NAME	FLOOR	BASE	NORTH	EAST	SOUTH	WEST	TYPE	HEIGHT	NOTES
201	OPEN FILE ROOM	LVT	RB	GWB/PTD	GWB/PTD	GWB/PTD	GWB/PTD	GWB/PTD	9'-0"	
202	UNISEX	LVT	RB	MR-GWB/PTD	MR-GWB/PTD	MR-GWB/PTD	MR-GWB/PTD	GWB/PTD	9'-0"	
203	OFFICE	CPT	RB	GWB/PTD	GWB/PTD	GWB/PTD	GWB/PTD	GWB/PTD	9'-0"	
203A	CLOSET	CPT	RB	GWB/PTD	GWB/PTD	GWB/PTD	GWB/PTD	GWB/PTD	9'-0"	
204	OFFICE	CPT	RB	GWB/PTD	GWB/PTD	GWB/PTD	GWB/PTD	GWB/PTD	9'-0"	
205	OFFICE	CPT	RB	GWB/PTD	GWB/PTD	GWB/PTD	GWB/PTD	GWB/PTD	9'-0"	
206	HALL	LVT	RB	GWB/PTD	GWB/PTD	GWB/PTD	GWB/PTD	GWB/PTD	9'-0"	
207	OFFICE	CPT	RB	GWB/PTD	GWB/PTD	GWB/PTD	GWB/PTD	GWB/PTD	9'-0"	
208	OFFICE	CPT	RB	GWB/PTD	GWB/PTD	GWB/PTD	GWB/PTD	GWB/PTD	9'-0"	
209	OFFICE	CPT	RB	GWB/PTD	GWB/PTD	GWB/PTD	GWB/PTD	GWB/PTD	9'-0"	
210	OFFICE	CPT	RB	GWB/PTD	GWB/PTD	GWB/PTD	GWB/PTD	GWB/PTD	9'-0"	

NOTE: NORTH, EAST, SOUTH AND WEST ARE BASED ON PLAN NORTH , EAST, SOUTH, AND WEST

GENERAL FINISH NOTES:

1. ALL EXPOSED STRUCTURAL STEEL, MECHANICAL DUCTWORK. ELECTRICAL CONDUIT, ETC. IS TO BE PAINTED. COLOR TO BE CONFIRMED BY OWNER.

2. INTERIOR FINISHES SHALL NOT HAVE A FLAME SPREAD RATING EXCEEDING THAT ALLOWED FOR TYPE VB CONSTRUCTION.

3. ALL FINISH MATERIALS TO BE INSTALLED IN STRICT COMPLIANCE WITH MANUFACTURER'S SPECIFICATIONS.

4. ALL GYPSUM WALL BOARD (GWB) TO BE PAINTED. **GYPSUM WALL BOARD IN PUBLIC RESTROOMS TO BE EPOXY PAINT**

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ABBREVIATIONS:
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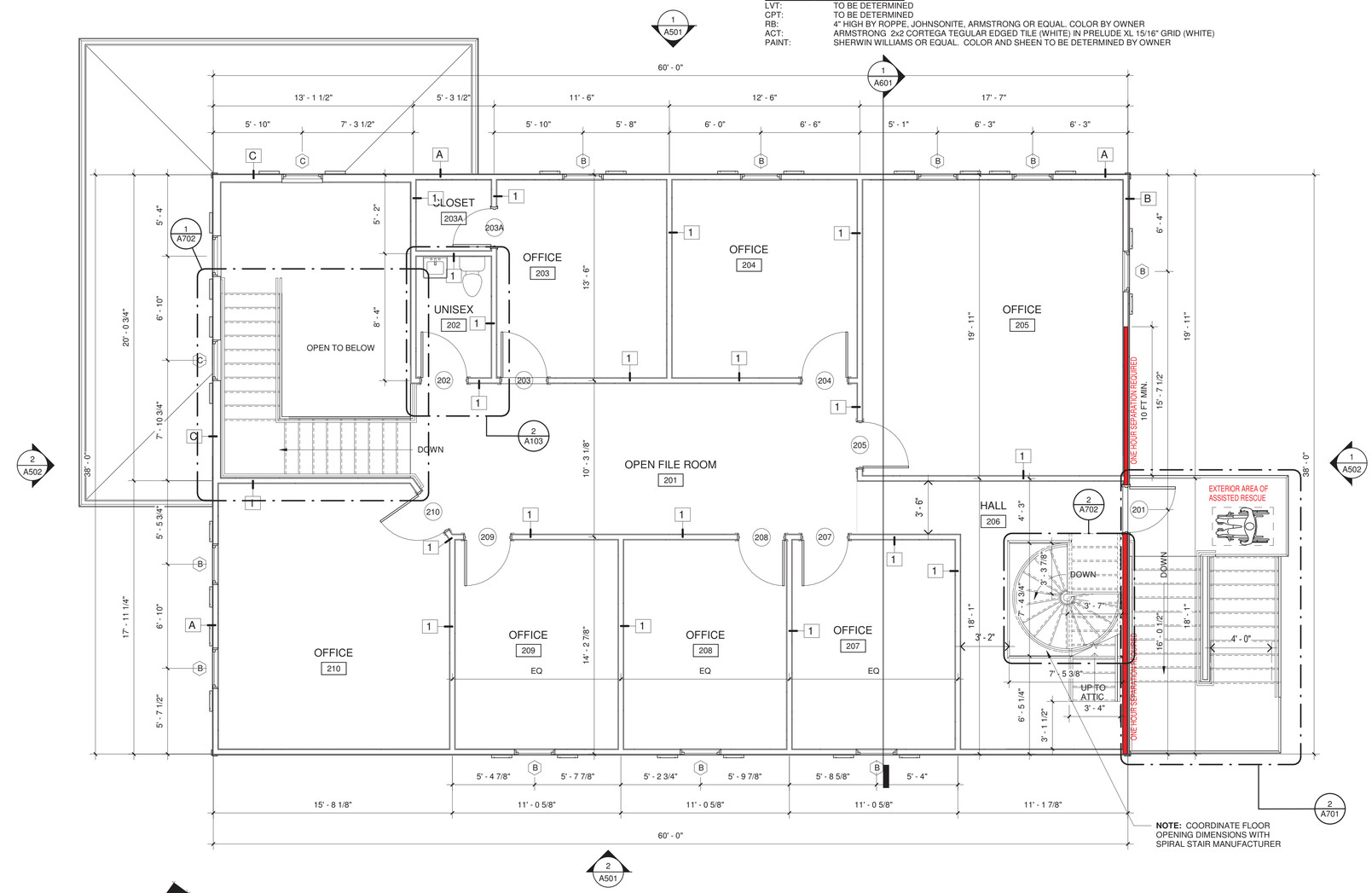
ACT: ACOUSTICAL CEILING TILE IN SUSPENDED GRID

FINISH MATERIAL SPECIFICATIONS
LVT: TO BE DETERMINED
CPT: TO BE DETERMINED
RB: 4" HIGH BY ROPPE, JOHNSONITE, ARMSTRONG OR EQUAL, COLOR BY OWNER
ACT: ARMSTRONG 2x2 CORTEGA TEGULAR EDGED TILE (WHITE) IN PRELUDE XL 15/16" GRID (WHITE)
PAINT: SHERWIN WILLIAMS OR EQUAL. COLOR AND SHEEN TO BE DETERMINED BY OWNER



1 2nd FLOOR PLAN
1/4" = 1'-0"

GONTRAM ARCHITECTURE, INC.
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eddie@gontramarchitecture.com
www.gontramarchitecture.com

EDMUND J. GONTRAM III REGISTERED ARCHITECT 7177 NORTH CAROLINA RALEIGH, N.C. 5-24-2022

GONTRAM ARCHITECTURE, INC. CERT. NO. 51355 REGISTERED ARCHITECTURAL CORPORATION NORTH CAROLINA RALEIGH, N.C.

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11496 HWY 401N
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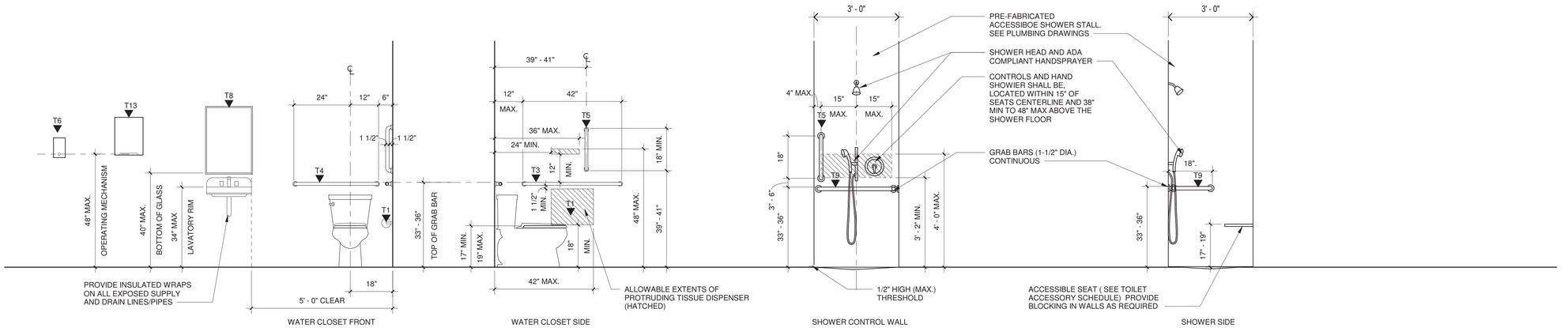
Rev.	Date	Description

DRAWN BY: PJA
APPROVED: EJG
PROJECT NO.: 22039
RECORD:
CONTENTS: 2nd FLOOR PLAN

SHEET: A102



1 ACCESSIBLE FIXTURE REQUIREMENTS

1/2" = 1'-0"

PLAN NOTES:

1. EXTERIOR DIMENSIONS SHOWN ARE FROM EXTERIOR FACE OF STUD TO WALL CENTERLINE TO CENTERLINE OF OPENING TO EXTERIOR FACE OF STUD.

2. INTERIOR DIMENSIONS SHOWN ARE FROM CENTERLINE OF STUD TO CENTERLINE OF NEW STUD.

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TOILET ACCESSORY LEGEND

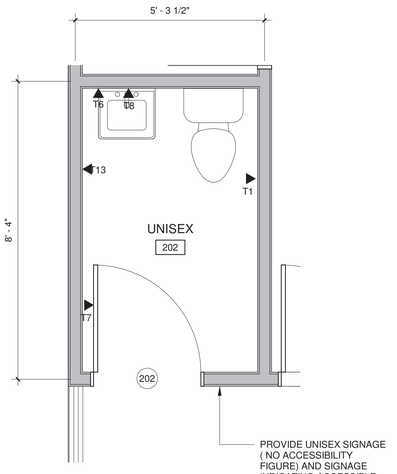
MARK	DESCRIPTION	MODEL #
T1 ▶	TOILET TISSUE DISPENSER	BOBRICK B-6867
T2 ▶	*NOT USED*	
T3 ▶	42" GRAB BAR (HORIZONTAL)	BOBRICK B-6806.99 x 42
T4 ▶	36" GRAB BAR (HORIZONTAL)	BOBRICK B-6806.99 x 36
T5 ▶	18" GRAB BAR (VERTICAL)	BOBRICK B-6806.99 x 18
T6 ▶	SOAP DISPENSER	BY OWNER
T7 ▶	COAT HOOK	BOBRICK B-542
T8 ▶	MIRROR	BOBRICK B-165 2436
T9 ▶	HORIZONTAL TWO-WALL GRAB BAR FOR 36 X 36 SHOWER	BOBRICK B-6861
T10 ▶	WALL MOUNTED ACCESSIBLE SHOWER SEAT	BOBRICK B-5181
T11 ▶	*NOT USED*	
T12 ▶	RESTROOM SIGNAGE	UNISEX/ACCESSIBLE, . SEE DETAIL : 1 / A401
T13 ▶	WALL MOUNTED PAPER TOWEL DISPENSER	BOBRICK B-262

NOTES:

1. ALL TOILET ACCESSORIES MODEL NUMBERS IN THIS SCHEDULE ARE BASED ON BOBRICK WASHROOM EQUIPMENT. INC, UNLESS NOTED OTHERWISE, AND SHALL COMPLY WITH ADA. ALL WALL MOUNTED ACCESSORIES SHALL NOT INTERFERE W/ REQUIRED CLEARANCES PER 2010 ADA STANDARDS FOR ACCESSIBLE DESIGN. EQUALS APPROVED BY OWNER ARE ACCEPTABLE

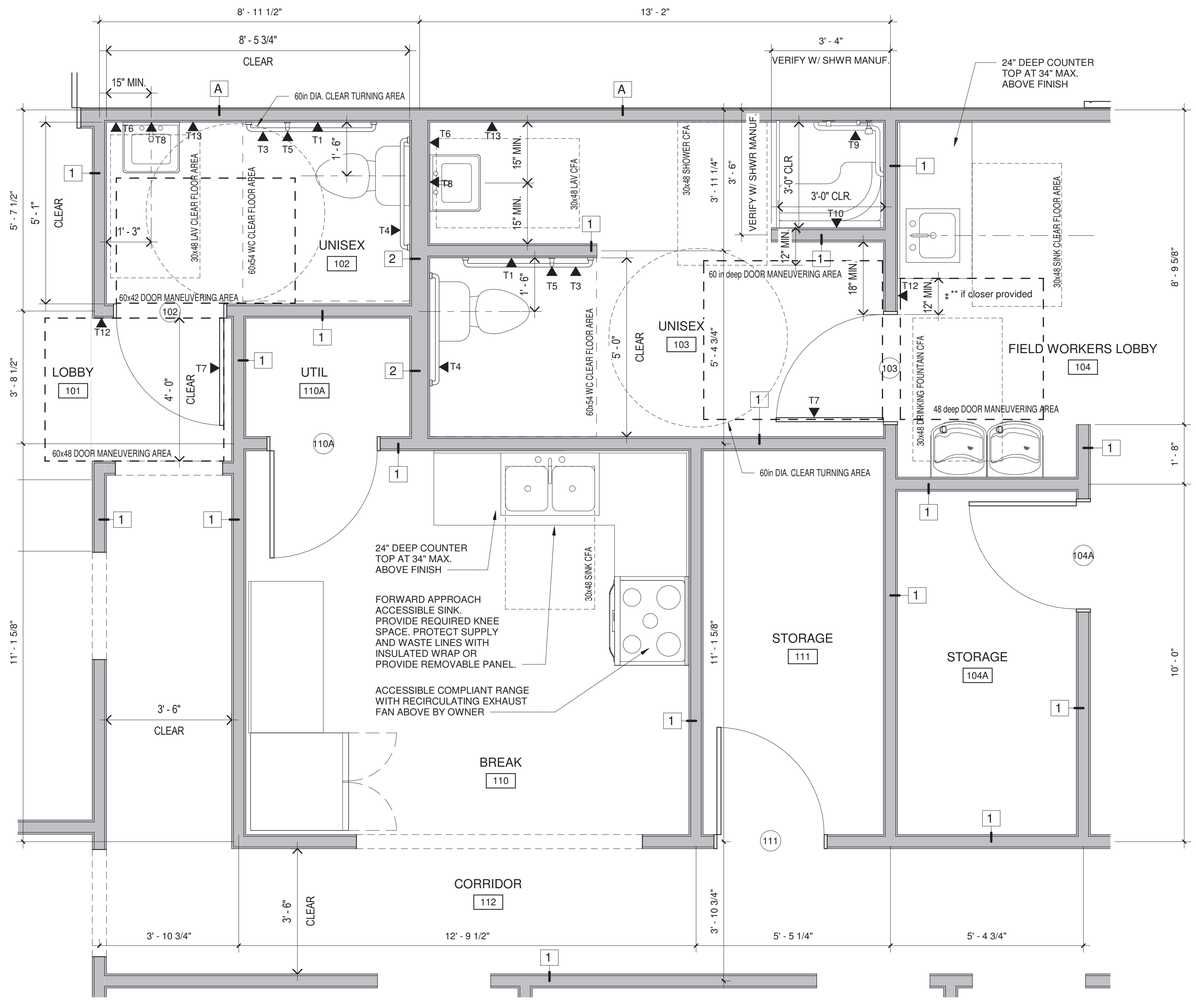
2. ACCESSORY MOUNTING HEIGHT TO BE ADJUSTED AS REQUIRED TO COORDINATE WITH PLUMBING FIXTURES.

3. INSTALL FIRE RETARDANT TREATED WOOD FOR ALL WALL MOUNTED TOILET ACCESSORIES



2 ENLARGED PLAN -RESTROOM

1/2" = 1'-0"



3 ENLARGED PLAN -1st FLOOR

1/2" = 1'-0"

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EDMUND J. GONTRAM III — REGISTERED ARCHITECT — NO. 7477 — STATE OF NORTH CAROLINA — RALEIGH, N.C. — 5-24-2022

GONTRAM ARCHITECTURE, INC — REGISTERED ARCHITECTURAL CORPORATION — CERT. NO. 51355 — NORTH CAROLINA — RALEIGH, N.C.

NEW BUILDING for PAUL BARBOUR & SONS

11496 HWY 401N
FUQUAY-VARINA, NC 27526

PLOT DATE: 5/24/2022

ISSUED: 5/24/2022 FOR CONSTRUCTION

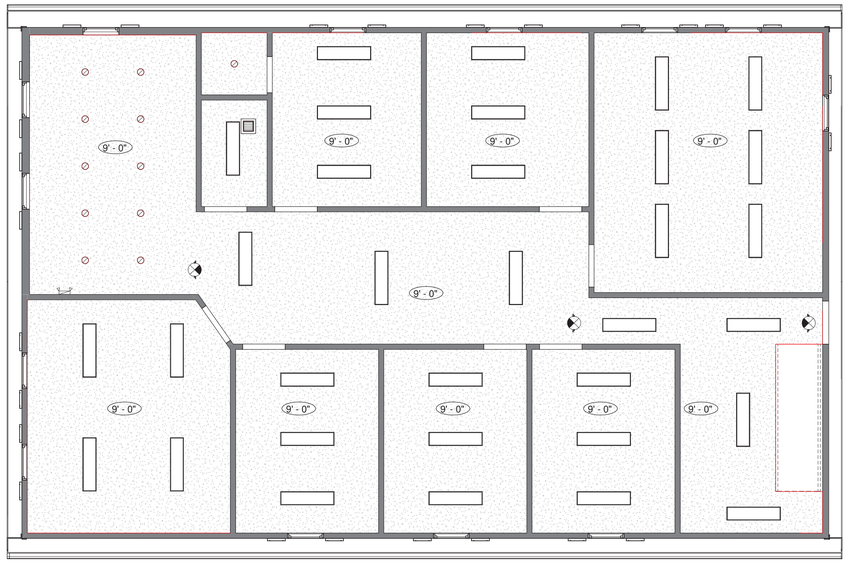
Rev.	Date	Description

DRAWN BY: PJA | APPROVED: EJG

PROJECT NO.: 22039 | RECORD:

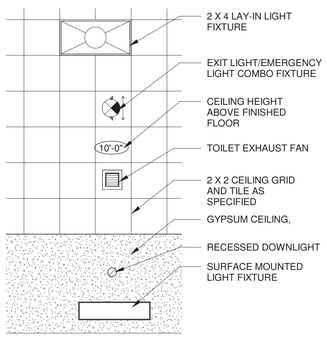
CONTENTS: ENLARGED FLOOR PLAN

SHEET: A103

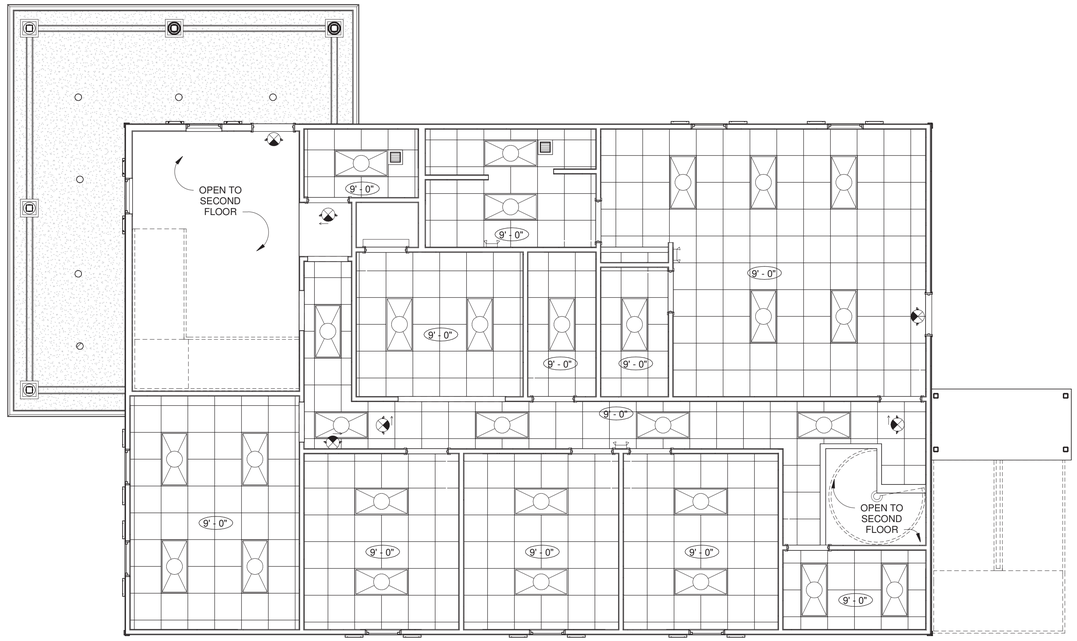


2 2nd FLOOR REFLECTED CEILING PLAN
3/16" = 1'-0"

REFLECTED CEILING PLAN LEGEND



NOTE: ITEMS SHOWN IN CEILING PLAN ARE FOR GENERAL INFORMATION. SEE MECHANICAL AND ELECTRICAL DRAWINGS FOR ADDITIONAL INFORMATION



1 1st FLOOR REFLECTED CEILING PLAN
3/16" = 1'-0"

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GONTRAM ARCHITECTURE, INC
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CERT. NO. 51355
NORTH CAROLINA
RALEIGH, N.C.

NEW BUILDING for PAUL BARBOUR & SONS

11496 HWY 401N
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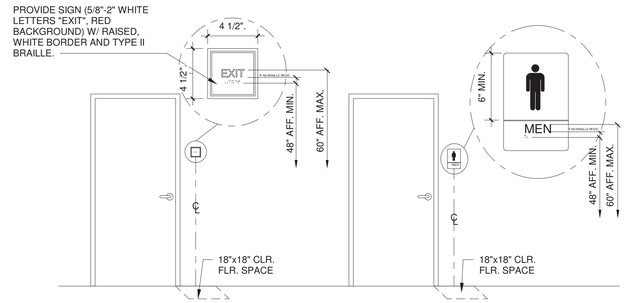
ISSUED: 5/24/2022 FOR CONSTRUCTION

Rev.	Date	Description

DRAWN BY: PJA | APPROVED: EJG
PROJECT NO.: 22039 | RECORD:
CONTENTS: REFLECTED CEILING PLAN

SHEET: A301



NOTE:
- UNISEX RESTROOM SIGNS TO INCLUDE BOTH MALE AND FEMALE PICTOGRAMS.
- IN ADDITIONAL TO MALE/FEMALE PICTOGRAMS, ACCESSIBLE RESTROOMS SHALL HAVE WHEELCHAIR PICTOGRAM.
- PROVIDE ADDITIONAL SIGNAGE AT NON-ACCESSIBLE RESTROOM STATING LOCATION OF ACCESSIBLE RESTROOMS.
- PROVIDE SIGN AT DOOR 201 STATING " EXTERIOR AREA FOR ASSISTED RESCUE"

1 TYPICAL SIGNAGE DETAILS
3/8" = 1'-0"

DOOR SCHEDULE

MARK	ROOM	DOOR WIDTH	DOOR HEIGHT	DOOR THK	DOOR TYPE	DOOR MATERIAL	DOOR FINISH	FRAME MATERIAL	FRAME FINISH	FIRE RATING	HDW SET	NOTES
001	MAIN ENTRANCE	3' - 0"	8' - 0"	1 3/4"	1	HOLLOW METAL	PAINT	HOLLOW METAL	PAINT		1	
002	REAR ENTRANCE	3' - 0"	7' - 0"	1 3/4"	4	HOLLOW METAL	PAINT	HOLLOW METAL	PAINT	45 MIN.	1	
102	UNISEX	3' - 0"	6' - 8"	1 3/8"	3	WOOD	PAINT	WOOD	PAINT		2	NO CLOSER ALLOWED
103	UNISEX	3' - 0"	6' - 8"	1 3/8"	3	WOOD	PAINT	WOOD	PAINT		2	
104	FIELD WORKERS LOBBY	3' - 0"	6' - 8"	1 3/8"	3	WOOD	PAINT	WOOD	PAINT		4	THIS DOOR CANNOT BE LOCKED
104A	STORAGE	3' - 0"	6' - 8"	1 3/8"	3	WOOD	PAINT	WOOD	PAINT		5	
105	STORAGE	3' - 0"	6' - 8"	1 3/8"	3	WOOD	PAINT	WOOD	PAINT		5	
106	OFFICE	3' - 0"	6' - 8"	1 3/8"	3	WOOD	PAINT	WOOD	PAINT		3	
107	OFFICE	3' - 0"	6' - 8"	1 3/8"	3	WOOD	PAINT	WOOD	PAINT		3	
108	OFFICE	3' - 0"	6' - 8"	1 3/8"	3	WOOD	PAINT	WOOD	PAINT		3	
110A	UTILTIY	3' - 0"	6' - 8"	1 3/8"	3	WOOD	PAINT	WOOD	PAINT		5	
111	STORAGE	3' - 0"	6' - 8"	1 3/8"	3	WOOD	PAINT	WOOD	PAINT		5	
201	REAR ENTRANCE	3' - 0"	7' - 0"	1 3/4"	4	HOLLOW METAL	PAINT	HOLLOW METAL	PAINT	45 MIN.	1	PROVDE SIGNAGE FOR EXTERIOR AREA FOR ASSISTED RESCUE
202	UNISEX	3' - 0"	6' - 8"	1 3/8"	3	WOOD	PAINT	WOOD	PAINT		2	
203	OFFICE	3' - 0"	6' - 8"	1 3/8"	3	WOOD	PAINT	WOOD	PAINT		3	
203A	CLOSET	2' - 6"	7' - 0"	1 3/4"	3	WOOD	PAINT	WOOD	PAINT		4	
204	OFFICE	3' - 0"	6' - 8"	1 3/8"	3	WOOD	PAINT	WOOD	PAINT		3	
205	OFFICE	3' - 0"	6' - 8"	1 3/8"	3	WOOD	PAINT	WOOD	PAINT		3	
207	OFFICE	3' - 0"	6' - 8"	1 3/8"	3	WOOD	PAINT	WOOD	PAINT		3	
208	OFFICE	3' - 0"	6' - 8"	1 3/8"	3	WOOD	PAINT	WOOD	PAINT		3	
209	OFFICE	3' - 0"	6' - 8"	1 3/8"	3	WOOD	PAINT	WOOD	PAINT		3	
210	OFFICE	3' - 0"	6' - 8"	1 3/8"	3	WOOD	PAINT	WOOD	PAINT		3	

HARDWARE SCHEDULE :

HARDWARE SET NO. 1 (EXTERIOR - SINGLE ENTRY DOOR):
HEAVY-DUTY HINGES NRP: (3)
ENTRANCE LOCKSET: (1)
WEATHERSTRIPPING: (1)
DRIP CAP:(1)
CLOSER: (1)
THRESHOLD: (1)

HARDWARE SET NO. 2 (INTERIOR TOILET ROOM DOOR):
HEAVY-DUTY HINGES: (3) OR PROVIDED WITH DOOR
PRIVACY LOCKSET: (1)
SILENCERS: (3)
WALL/FLOOR STOP: (1)

HARDWARE SET NO. 3 (INTERIOR OFFICE DOOR):
HEAVY-DUTY HINGES: (3) OR PROVIDED WITH DOOR
OFFICE LOCKSET: (1)
SILENCERS: (3)
WALL/FLOOR STOP: (1)

HARDWARE SET NO. 4 (INTERIOR PASSAGE DOOR):
HEAVY-DUTY HINGES: (3) OR PROVIDED WITH DOOR
PASSAGE SET: (1)
SILENCERS: (3)
WALL/FLOOR STOP: (1)

HARDWARE SET NO. 5 (INTERIOR STOREROOM DOOR):
HEAVY-DUTY HINGES: (3) OR PROVIDED WITH DOOR
STOREROOM LOCKSET: (1)
SILENCERS: (3)
WALL/FLOOR STOP: (1)

DOOR NOTES

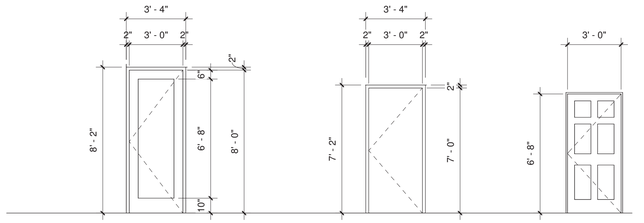
1. HARDWARE FINISH TO BE ***US26D OR US32D*** (CONFIRM W/ OWNER). HARDWARE TO BE STANDARD-DUTY, COMMERCIAL HARDWARE, SCHLAGE AL SERIES "SATURN" (OR APPROVED EQUAL).

2. PROVIDE HARDWARE THAT COMPLIES WITH THE NCBC, THE AMERICAN'S WITH DISABILITIES ACT AND ICC/ANSI A117.1.

3. ALL DOORS AND FRAMES TO BE FINISHED AS SCHEDULED.

4. G.C. TO COORDINATE. FINAL HARDWARE SELECTION/ SCHEDULING/ KEYING WITH OWNER. ALL DOORS WILL BE KEYED TO OWNER'S MASTER KEYING SYSTEM.

5. G.C. TO PROVIDE ADDITIONAL HARDWARE AS REQUIRED BY DOOR MANUFACTURER



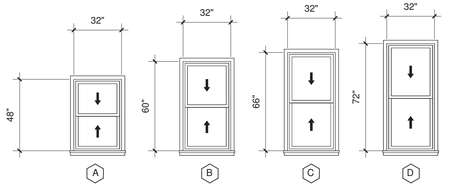
1 **EXTERIOR HOLLOW METAL DOOR**
FULL GLASS DOOR IN HOLLOW METAL FRAME. PROVIDE TEMPERED GLASS. PAINT DOOR AND FRAME

2 **EXTERIOR HOLLOW METAL DOOR**
FLUSH DOOR IN HOLLOW METAL FRAME. PAINT DOOR AND FRAME

45 MIN RATED

3 **INTERIOR WOOD DOOR**
6-PANEL DOOR IN WOOD SPLIT-CASING FRAME. PAINT DOOR AND FRAME

DOOR TYPES
1/4" = 1'-0"



1. DIMENSIONS SHOWN ARE NOT TO BE USED FOR FABRICATION. ALL DIMENSIONS ARE TO BE CONFIRMED WITH MANUFACTURERS SHOP DRAWINGS

2. PROVIDE TEMPERED GLAZING WHERE INDICATED, AND WHERE REQUIRED BY CODE.

3. GLAZING TO HAVE A MINIMUM SHGC OF 0.25. - SEE SHEET G-102 FOR MORE INFO)

4. CONFIRM COLOR WITH OWNER PRIOR TO ORDERING. CONTRACTOR TO PAINT ALL EXPOSED UNFINISHED WOOD WINDOW COMPONENTS

WINDOW TYPES
1/4" = 1'-0"

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EDMUND J. GONTRAM III — REGISTERED ARCHITECT — 9177 — RALEIGH, NC — 5-24-2022

GONTRAM ARCHITECTURE, INC — REGISTERED ARCHITECTURAL CORPORATION — CERT. NO. 51355 — NORTH CAROLINA — RALEIGH, N.C.

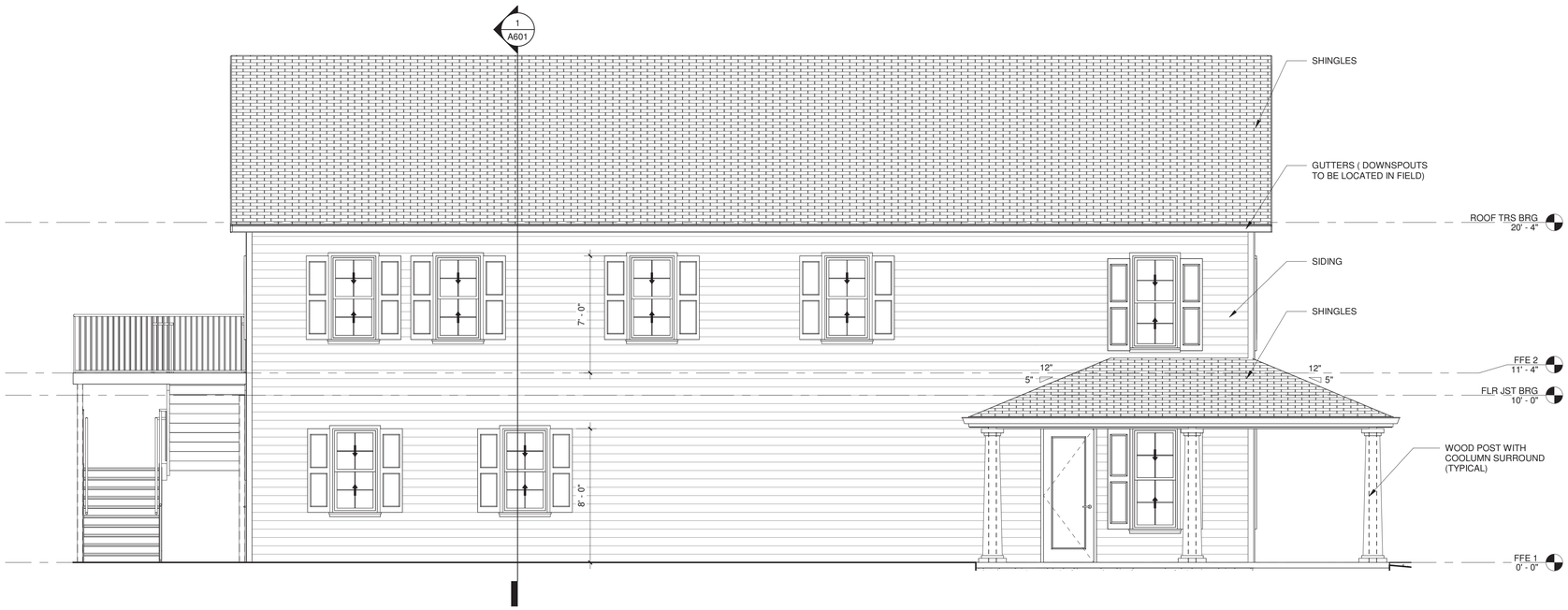
NEW BUILDING
for PAUL BARBOUR & SONS
11496 HWY 401N
FUQUAY-VARINA, NC 27526

PLOT DATE: 5/24/2022
ISSUED: 5/24/2022 FOR CONSTRUCTION

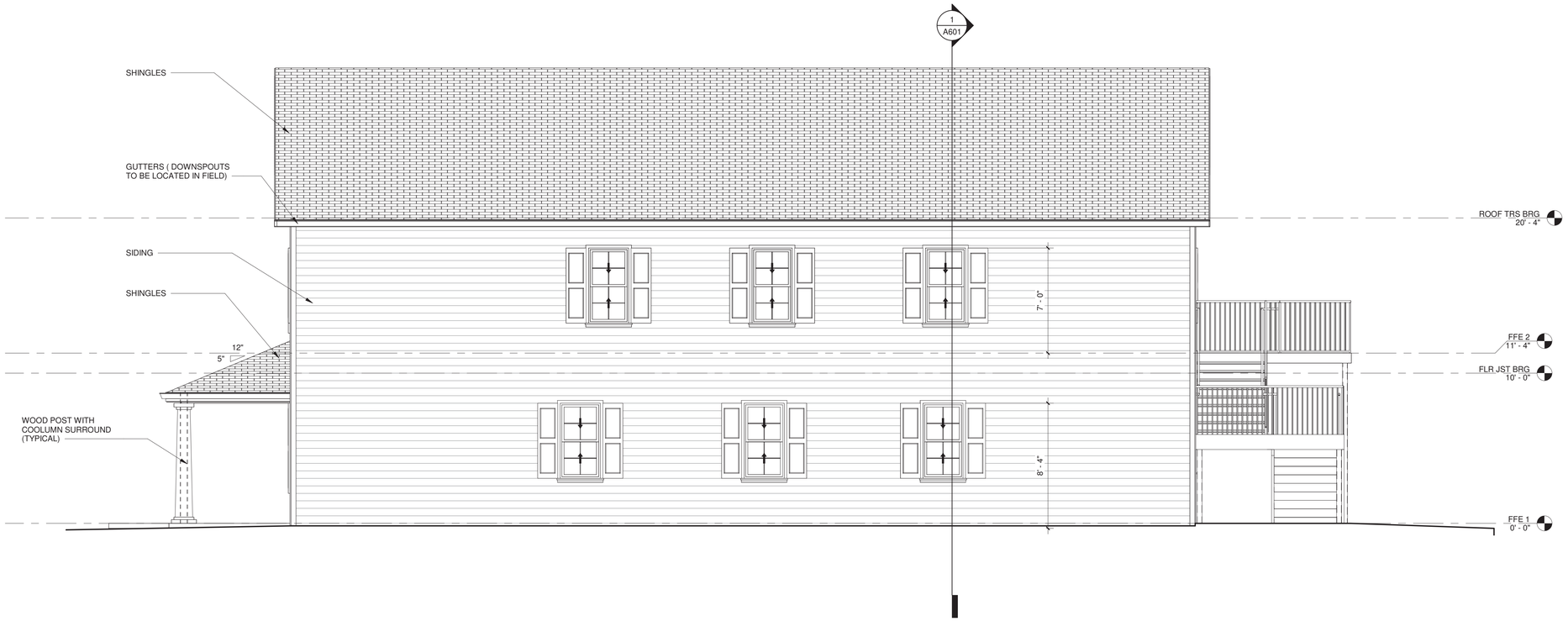
Rev.	Date	Description

DRAWN BY: PJA | APPROVED: EJG
PROJECT NO.: 22039 | RECORD:
CONTENTS: DOOR and WINDOW SCHEDULES

SHEET: A401



1 ELEVATION (FRONT)
1/4" = 1'-0"



2 ELEVATION (REAR)
1/4" = 1'-0"

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5-24-2022

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NORTH CAROLINA
RALEIGH, N.C.

NEW BUILDING
for PAUL BARBOUR & SONS
11496 HWY 401N
FUQUAY-VARINA, NC 27526

PLOT DATE:
5/24/2022
ISSUED:
5/24/2022
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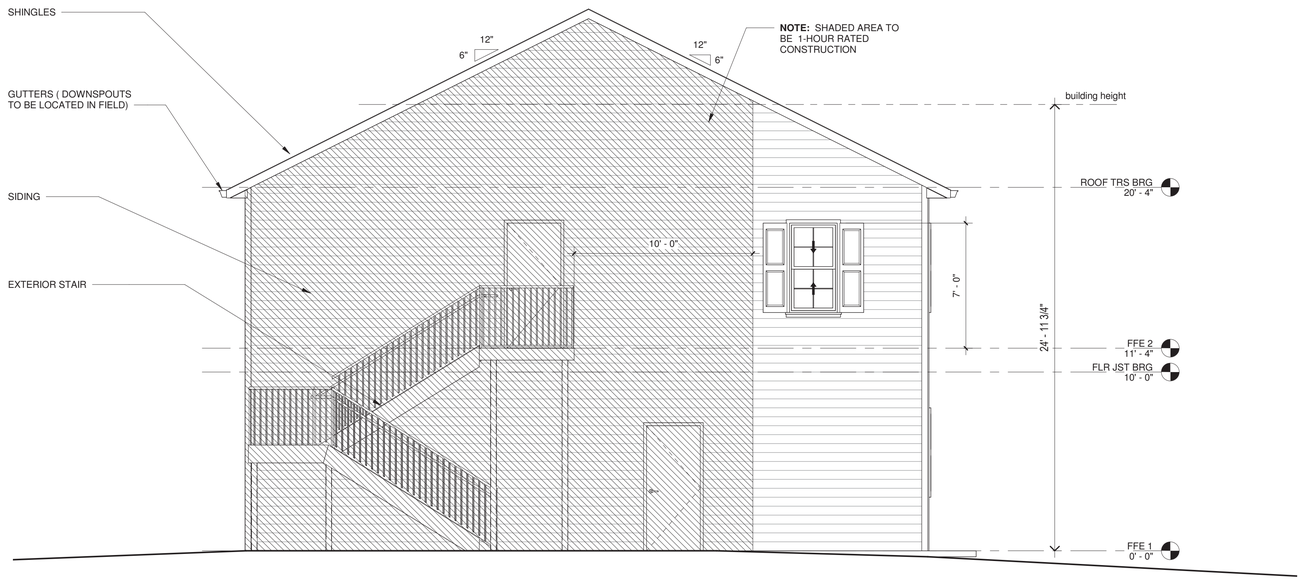
Rev.	Date	Description

DRAWN BY: PJA
APPROVED: EJG
PROJECT NO.: 22039
RECORD:
CONTENTS: BUILDING ELEVATIONS

SHEET:
A501

2 ELEVATION (RIGHT)
1/4" = 1'-0"



1 ELEVATION (LEFT)
1/4" = 1'-0"

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RALEIGH, NC
5.24.2022

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RALEIGH, N.C.

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11496 HWY 401N
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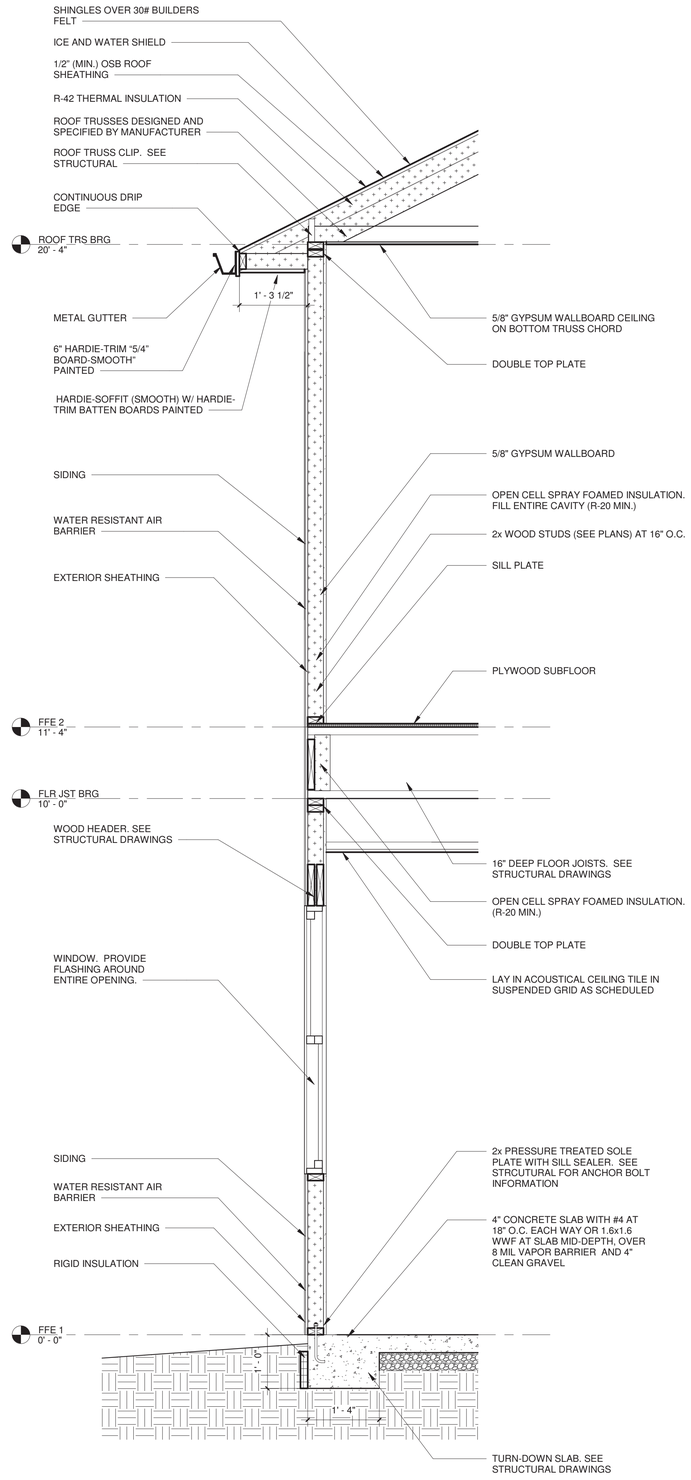
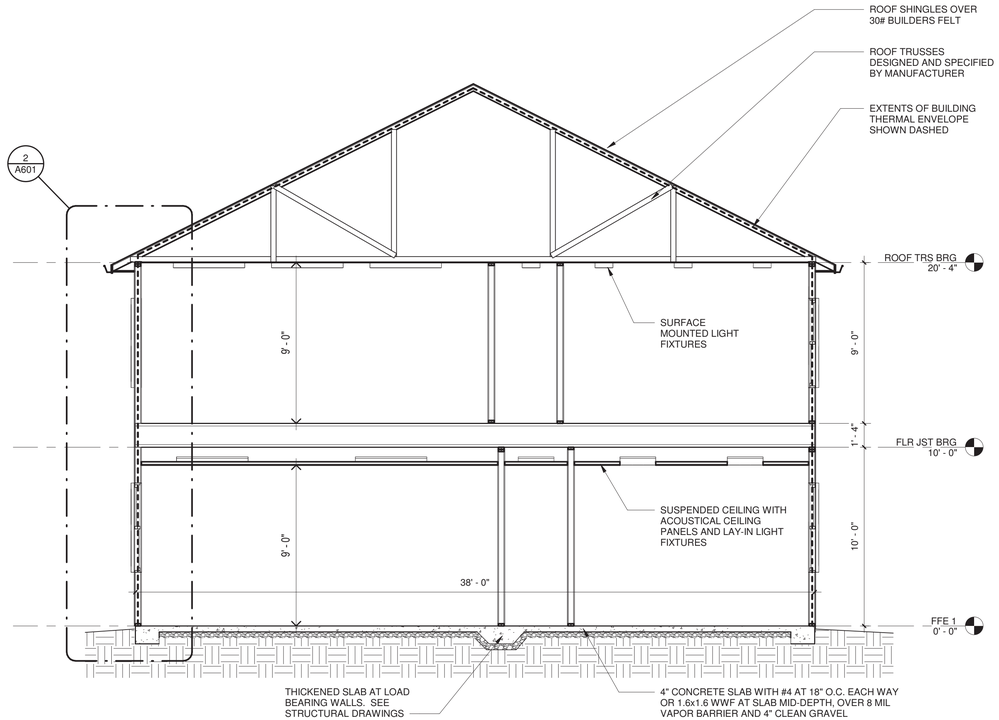
RECORD:
CONTENTS: BUILDING ELEVATIONS

SHEET: A502



2 WALL SECTION
3/4" = 1'-0"



1 BUILDING SECTION
1/4" = 1'-0"

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5-24-2022

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DRAWN BY: PJA
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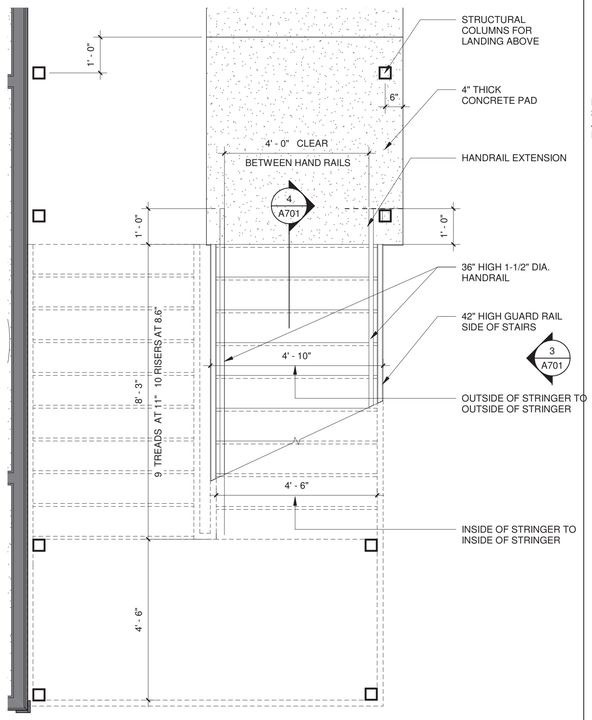
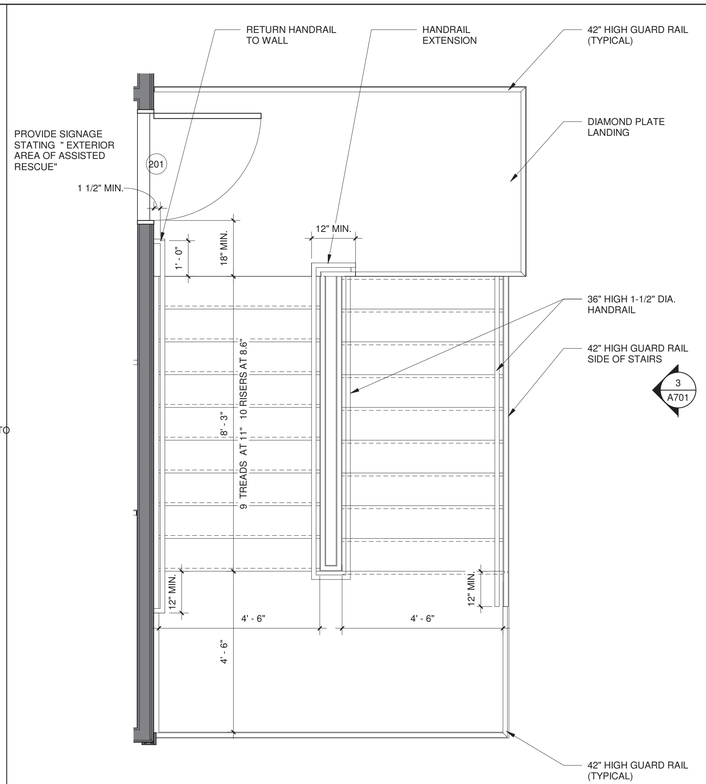
PROJECT NO.: 22039
RECORD:
CONTENTS: BUILDING SECTION

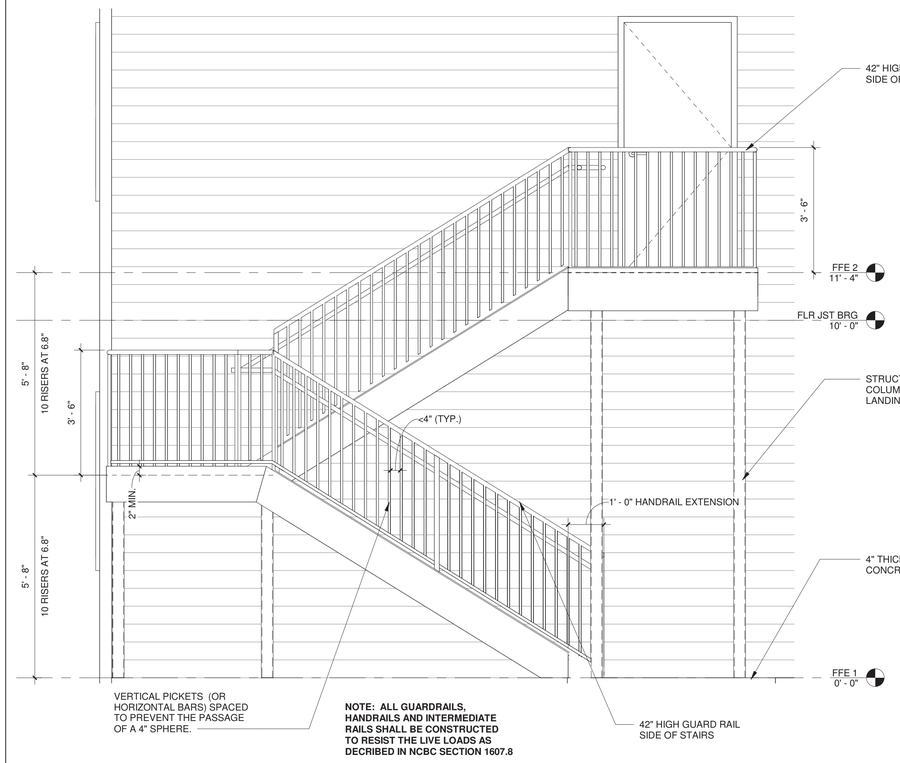
SHEET: A601



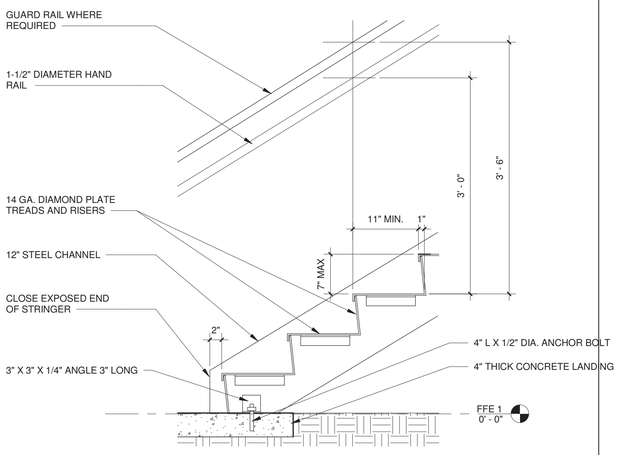
1 PLAN- EXTERIOR STAIR (1ST FLOOR)
1/2" = 1'-0"



2 PLAN- EXTERIOR STAIR (2ND FLOOR)
1/2" = 1'-0"



3 ELEVATION - EXTERIOR STAIR
1/2" = 1'-0"



4 DETAIL - STEEL STAIR
1" = 1'-0"

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EDMUND J. GONTRAM III REGISTERED ARCHITECT NORTH CAROLINA RALEIGH, N.C. 5-24-2022

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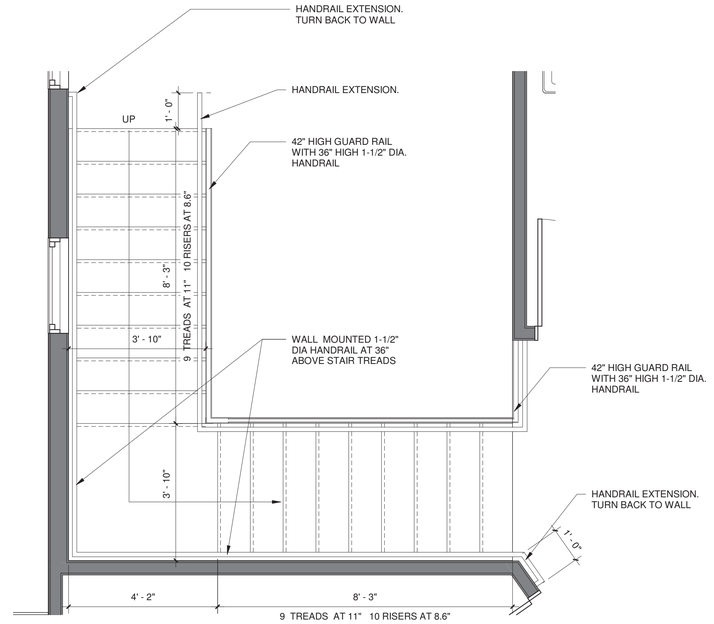
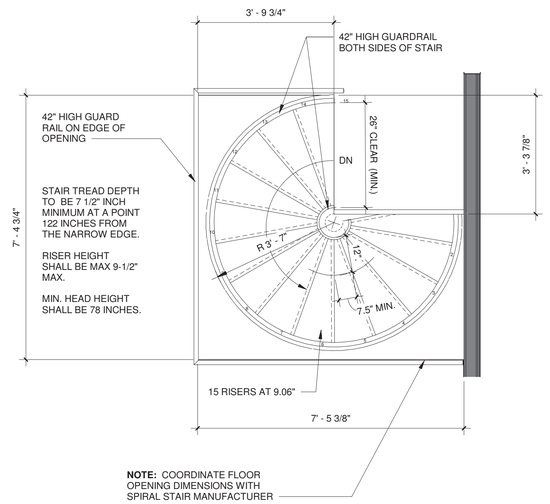
Rev.	Date	Description

DRAWN BY: PJA
APPROVED: EJG
PROJECT NO.: 22039
RECORD:
CONTENTS: EXTERIOR STAIR

SHEET: A701



1 PLAN - INTERIOR WOOD STAIR
1/2" = 1'-0"



2 PLAN - SPIRAL STAIR
1/2" = 1'-0"

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Rev.	Date	Description

DRAWN BY: PJA | APPROVED: EJG
PROJECT NO.: 22039 | RECORD:
CONTENTS: INTERIOR STAIRS

SHEET: A702

PLUMBING LINES SIZING TABLE										
FIXTURE TYPE	OCCUPANCY	QTY	DRAINAGE FIXTURE UNITS		WATER SUPPLY FIXTURE UNITS				
			EACH	TOTAL	CW	HW	CW & HW	HW TOTAL	TOTAL
WATER CLOSET (FLUSH TANK)	PUBLIC	3	4.00	12.00	5.00	0.00	5.00	0.00	15.00
SHOWER	PUBLIC	1	2.00	2.00	3.00	3.00	4.00	3.00	4.00
LAVATORY	PUBLIC	5	1.00	5.00	1.50	1.50	2.00	7.50	10.00
DRINKING FOUNTAIN	PUBLIC	1	0.50	0.50	0.25	0.00	0.25	0.00	0.25
DEMAND FIXTURE	GPM	QTY	TOTAL GPM				TOTAL DFU	19.5	
KITCHEN DISHWASHER	0	0	0.00				TOTAL WFSUs	10.5	29.3
HOSE BIBBS	5	2	10.00				GPM	15.40	23.30
							OTHER FIXTURES' GPM	0.00	5.00
							TOTAL GPM	15.40	28.30
MINIMUM BUILDING DRAIN SIZE	4"								
MINIMUM WATER LINE SIZE	1"								

ELECTRIC WATER HEATER SCHEDULE											
MARK	MFG	MODEL	TANK VOL	INPUT	RECOVERY	SET POINT	POWER		CONNECTIONS		OPTIONS
			GALS	kW	GPH @ 60° ΔT	°F	VOLTAGE	PHASE	HOT	COLD	
WH-1	RHEEM	ELD40	40	4.5	30	110	208	1	3/4	3/4	1-5

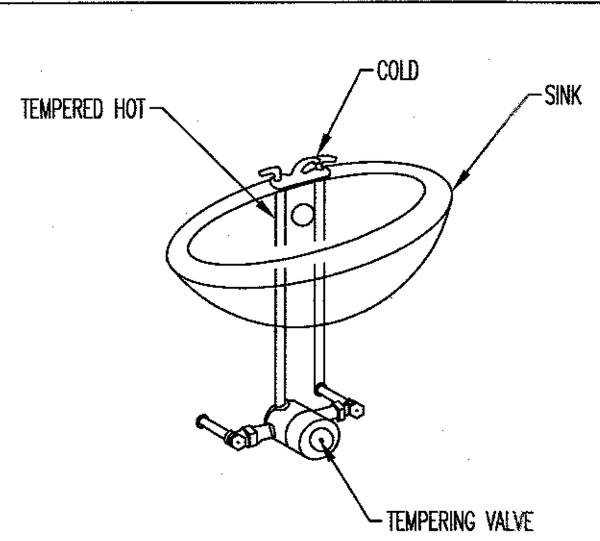
1. PROVIDE GALVANIZED STEEL SAFETY PAN
2. UL 174 LISTED
3. PROVIDE ASME LISTED TEMPERATURE AND PRESSURE RELIEF VALVE
4. MEET OR EXCEED ENERGY FACTOR REQUIREMENTS OF ASHRAE 90.1-2007
5. OR EQUAL BY A.O. SMITH, BRADFORD WHITE, OR STATE

ALL REQUIRED VALVES NOT SHOWN.
INSTALL FULL OPEN VALVES PER 2018 PC CODE 606.1.5 AND 606.1.8
INSTALL SHUT OFF VALVES PER 2018 NC PLUMBING CODE 606.2 AND 606.2.1

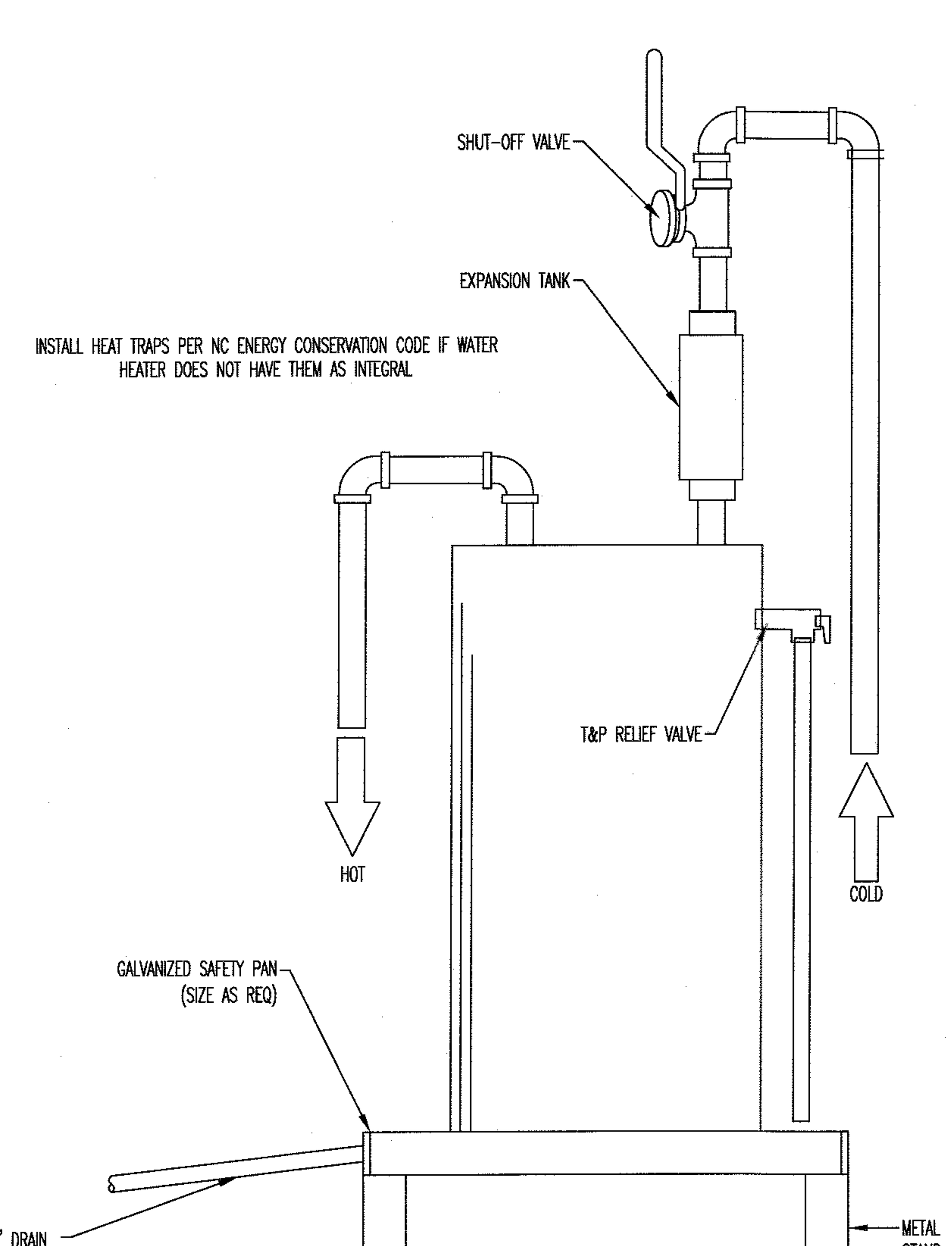
PLUMBING FIXTURE SCHEDULE						
SYMBOL	FIXTURE	MANUFACTURER	FITTING	HW	CW	WASTE
P1	TWO PIECE TANK TYPE WATER CLOSET	TOTO CST744EL OR EQUAL BY AMERICAN STANDARD OR KOHLER	TWO-PIECE VITREOUS CHINA TOILET WITH HIGH-PROFILE TANK, ELONGATED FRONT BOWL AND CHROME TRIP LEVER. 1.28 GPF. PROVIDE SC534 OPEN FRONT SEAT LESS COVER. ASME 112.19.2 COMPLIANCE.	-	1/2"	3"
P1H	TWO PIECE TANK TYPE ADA WATER CLOSET	TOTO CST744EL OR EQUAL BY AMERICAN STANDARD OR KOHLER	TWO-PIECE VITREOUS CHINA TOILET WITH HIGH-PROFILE TANK, ELONGATED FRONT BOWL AND CHROME TRIP LEVER. 1.28 GPF. PROVIDE SC534 OPEN FRONT SEAT LESS COVER. ASME 112.19.2 COMPLIANCE. TOP OF SEAT SHALL BE 17-19 INCHES AFF FOR ADA. LEVER MOUNTED ON WIDE SIDE FOR ADA	-	1/2"	3"
P2	WALL MOUNT LAVATORY	TOTO LT307.4 OR EQUAL BY AMERICAN STANDARD OR KOHLER	VITREOUS CHINA LAVATORY WITH BACKSPLASH COMPLYING WITH ASME 112.19.2. TOP OF RIM SHALL BE 34 INCHES AFF FOR ADA. PROVIDE WITH LAV-GUARD PROTECTORS FOR SUPPLY AND DRAIN LINES. PROVIDE JR SMITH 0700 (CONCEALED ARMS) WITH 19" ARMS 0800 (WALL SUPPORT PLATE). USE MOEN 8430 FAUCET.	1/2"	1/2"	2"
P3	ADA TRANSFER SHOWER	FREEDOM SHOWER 38 1/2"X37 1/8" ADA TRANSFER SHOWER APFQ3838BF1PRRFL	ADA COMPLAINT TRANSFER SHOWER, VERIFY SEAT SIDE, REVEAL SIDE, PLUMBING SIDE, PROVIDE WITH GRAB BAR, FOLDING SEAT, MIXING VALVE, PRESSURE BALANCED, LEVER HANDLE, PREPLUMBED TREE TO SUPPLY ELBOW, SOAP DISH, PROVIDE SHOWER HEAD, SHOWER SPRAY HOSE, AND ALL OTHER ACCESSORIES FOR ADA COMPLIANCE	1/2"	1/2"	2"
P4*	SINK SINGLE BOWL	ELKAY LRADQ172055 OR EQUAL BY FRANKE OR MOEN	TOP MOUNTED 18 GA STAINLESS STEEL. MAX BOWL DEPTH 6 INCHES FOR WHEEL CHAIR ACCESSIBLITY-USE DELTA FAUCET SET 340-WF OR EQUAL BY MOEN OR KOHLER.	1/2"	1/2"	2"
P5*	SINK DOUBLE BOWL	ELKAY LRADQ3319 OR EQUAL BY FRANKE OR MOEN	TOP MOUNTED 18 GA STAINLESS STEEL. MAX BOWL DEPTH 6 INCHES FOR WHEEL CHAIR ACCESSIBLITY-USE DELTA FAUCET SET 340-WF OR EQUAL BY MOEN OR KOHLER.	1/2"	1/2"	2"
P6	FREEZEPROOF HOSE BIBB	WOODFORD MODEL 68 OR EQUAL BY ZURN OR MIFAB	THE MODEL 68 IS A ASSE 1053 LISTED HYDRANT, WITH A ASSE 1052 DOUBLE CHECK BACKFLOW PREVENTER, COMES WITH A CHROME PLATED BRASS HEAD WITH STAINLESS STEEL COVER, IT DRAINS AUTOMATICALLY EVEN WITH A ATTACHED HOSE, HAS A ONE PIECE PLUNGER WHICH CONTROLS DRAIN AND FLOW FUNCTION, WORKS WITH PRESSURES UP TO 125 PSI, AND A MAX TEMPERATURE OF 120 DEGREES, TEE KEY FOR HYDRANT DOOR AND LOCK, EASIER TO INSTALL THAN STANDARD RECESSED BOX HYDRANT, WALL CLAMP IS INCLUDED, HEAD COVER FLIPS DOWN AND OUT OF THE WAY FOR UNOBSTRUCTED HYDRANT USE	-	3/4"	-
P7	WATER HAMMER ARRESTOR	ZURN Z1700 SERIES OR EQUAL BY WATTS OR SIOUX CHIEF	INSTALL ON BRANCH LINES PER MFG'S INSTRUCTIONS. PROVIDE ACCESS PANEL WHERE NECESSARY WHERE LOCATED ABOVE HARD CEILINGS OR WITHIN WALLS..	-	VARIES	-
P8	EXPANSION TANK	AMTROL ST-5 OR EQUAL BY WATTS OR BELL & GOSSETT	INSTALL ON COLD WATER LINE BETWEEN WATER HEATER AND RPZ	-	3/4"	-
P9	REFRIGERATOR VALVE BOX	OATEY OR APPROVED EQUAL	HIGH IMPACT POLYSTYRENE BOX WITH 1/4 TURN BRASS BALL VALVE. COMPLIANT WITH NSF 61, SECTION 9.	-	1/2"	-
P10	THERMOSTATIC MIXING VALVE	WATTS LFMMV OR EQUAL BY LAWLER OR LEONARD VALVE	ASSE STANDARD 1069 OR 1070 APPROVED WITH 1/2 INCH FEMALE NPT INLET AND OUTLET CONNECTIONS, BRASS BODY, AND INTEGRAL MOUNTING HOLES. TAMPER RESISTANT THERMOPLASTIC ENCLOSURE. SINGLE REPLACEABLE CARTRIDGE DESIGN.	1/2"	1/2"	-
P11	3/4" DOUBLE CHECK VALVE	WATTS 007M3QT OR EQUAL BY CONBRACO OR WILKINS	ASSEMBLY SHALL CONSIST OF TWO POSITIVE SEATING CHECK MODULES WITH CAPTURED SPRINGS AND RUBBER SEAT DISCS. THE CHECK MODULE SEATS AND SEAT DISCS SHALL BE REPLACEABLE. SERVICE OF ALL INTERNAL COMPONENTS SHALL BE THROUGH A SINGLE ACCESS COVER SECURED WITH STAINLESS STEEL BOLTS. THE ASSEMBLY SHALL ALSO INCLUDE TWO RESILIENT SEATED ISOLATION VALVES; FOUR TOP MOUNTED, RESILIENT SEATED TEST COCKS. ASSEMBLY SHALL MEET THE REQUIREMENTS OF ASSE 1015 AND AWWA C510	-	3/4"	-
P12	DRINKING FOUNTAIN	OASIS PG8ACSL OR EQUAL BY ELKAY OR STERN WILLIAMS	ADA COMPLIANT FOR ADULT AND CHILD. 8.0 GPH OF 50°F WATER AT 90°F AMBIENT. PROVIDE ACCESSORY APRON FOR ADA COMPLIANCE AS NECESSARY	-	3/8"	2"
P13	FLOOR DRAIN	WATTS FD-200-A OR EQUAL BY ZURN OR JR SMITH	ON GRADE EPOXY COATED CAST IRON FLOOR DRAIN WITH ANCHOR FLANGE, WEEP HOLES, ADJUSTABLE ROUND NICKEL BRONZE STRAINER, AND NO HUB OUTLET. PROVIDE TRAP PRIMER CONNECTION OPTION IF NOTED.	-	-	3"
P14	INTERIOR HOSE BIBB	WOODFORD MODEL 26 OR EQUAL BY ZURN OR MIFAB	PROVIDE CHECK VALVE AND ANTI-SIPHON PROTECTION IF NOT INTEGRAL TO UNIT		1/2"	
FCO	FLOOR CLEANOUT	ZURN, WATTS, JR SMITH	EPOXY COATED CAST IRON FLOOR CLEANOUT WITH ROUND ADJUSTABLE GASKETED NICKEL BRONZE TOP, REMOVABLE GAS TIGHT GASKETED BRASS CLEANOUT PLUG, AND NO HUB INLET.	-	-	4"
WCO	WALL CLEANOUT	ZURN, WATTS, OR JR SMITH	CAST IRON CLEANOUT FERRULE WITH THREADED BRASS COUNTERSUNK CLEANOUT PLUG, STAINLESS STEEL ACCESS COVER, AND VANDAL PROOF STAINLESS STEEL SCREW	-	-	4"
AAV	AIR ADMITTANCE VALVE	STUDOR REDIVENT OR APPROVED EQUAL	ANSI/ASSE 1051 LISTED. NSF STANDARD 14. PROVIDE PVC OR ABS CONNECTOR AS NECESSARY. CONNECT VALVE TO PIPING PER MANUFACTURER. INSTALL IN THE VERTICAL, UPRIGHT POSITION AFTER ROUGH-IN AND PRESSURE TESTING OF THE SYSTEM. PROVIDE WALL BOX IF NOT ABOVE CEILING OR OTHERWISE CONCEALED.	-	-	2"

* PROVIDE SUBMITTAL TO OWNER FOR APPROVAL

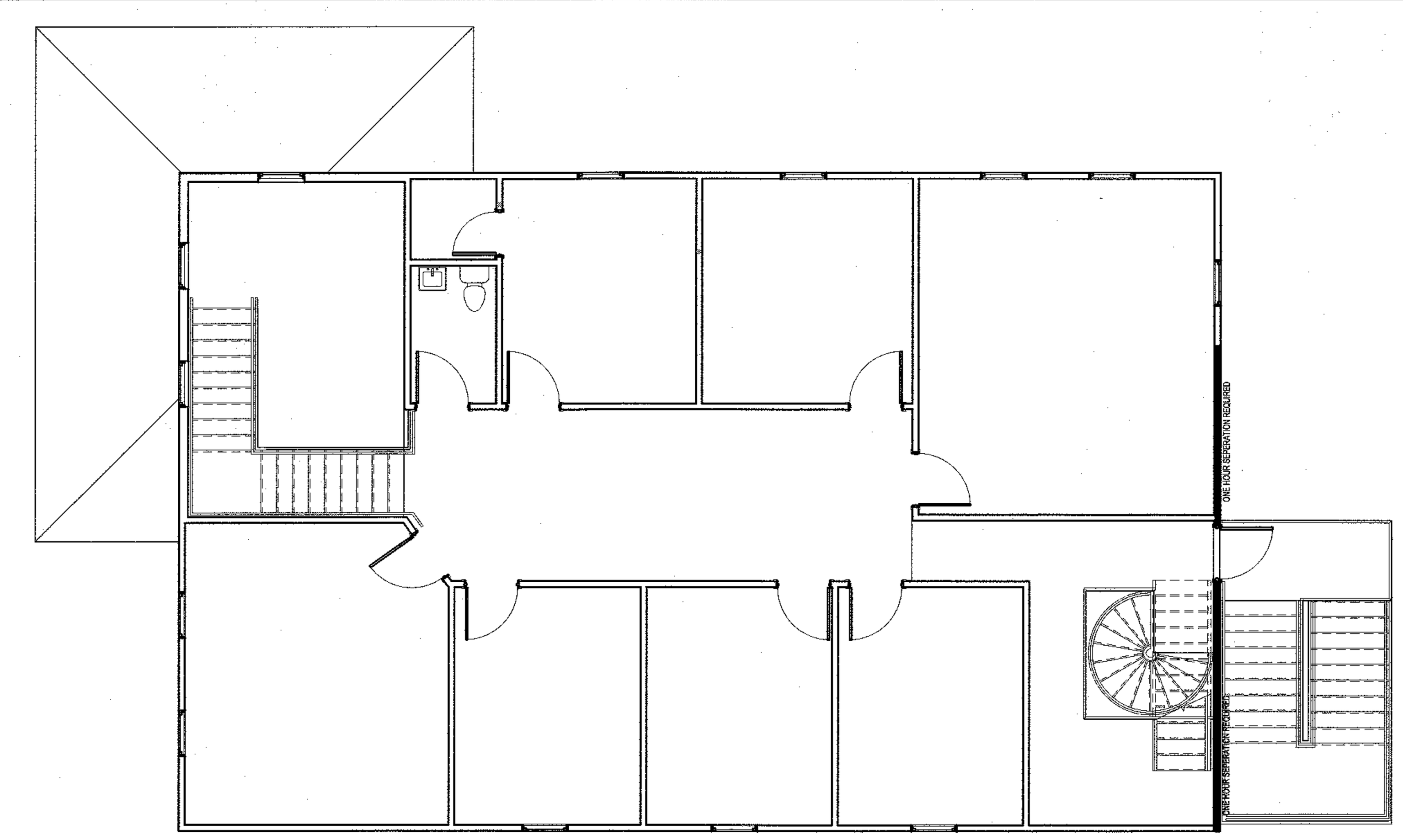
PLUMBING SCHEDULES | 1

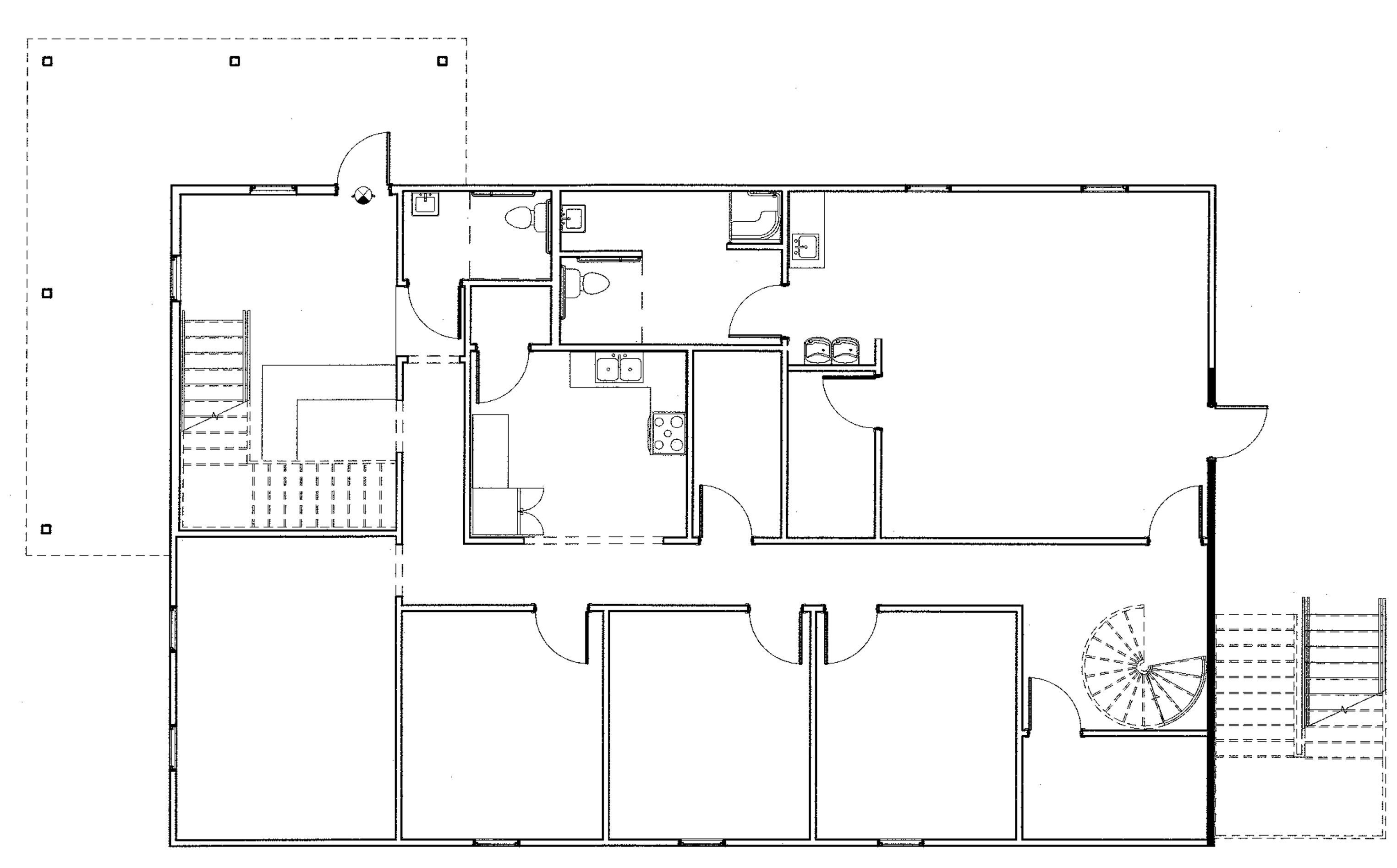


THERMOSTATIC MIXING VALVE DETAIL - NO SCALE | 2



ELECTRIC WATER HEATER DETAIL- NO SCALE | 3





PLUMBING KEY PLAN NOT TO SCALE | 4

GENERAL PLUMBING NOTES:

ADMINISTRATIVE:

1. THE FOLLOWING ABBREVIATIONS SHALL APPLY TO NOTES AND PLANS: PC – PLUMBING CONTRACTOR, EC – ELECTRICAL CONTRACTOR, MC – MECHANICAL CONTRACTOR, GC – GENERAL CONTRACTOR, FASC – FIRE ALARM SYSTEM CONTRACTOR.
2. "PROVIDE" MEANS TO FURNISH AND INSTALL. THE PLUMBING CONTRACTOR SHALL ALSO INSTALL MATERIALS FURNISHED BY OTHERS AND THE GENERAL CONTRACTOR.
3. THE PC SHALL BE RESPONSIBLE FOR A COMPLETE AND OPERATIONAL SYSTEM AS DESCRIBED BY THESE PLANS AND SPECIFICATIONS.
4. ALL MATERIALS AND EQUIPMENT SHALL BE DELIVERED TO THE SITE AND UNLOADED AT AN APPROVED LOCATION. PC SHALL PROTECT ALL MATERIALS AND EQUIPMENT FROM BREAKAGE, THEFT, AND THE ELEMENTS. ALL MATERIALS AND EQUIPMENT SHALL REMAIN THE PROPERTY OF THE PC UNTIL THE PROJECT HAS BEEN COMPLETED AND TURNED OVER TO THE OWNER.
5. ALL MATERIALS USED SHALL BE NEW AND FREE OF DEFECTS. ANY MATERIALS FOUND TO BE DEFECTIVE SHALL BE REPLACED AT NO EXPENSE TO THE OWNER. ALL MATERIALS AND EQUIPMENT SHALL BEAR APPROVAL FROM UL OR AN APPROVED THIRD PARTY AGENCY. WHERE A MANUFACTURER AND MODEL NUMBER IS GIVEN, IT IS TO ESTABLISH A STANDARD OF QUALITY AND NOT TO LIMIT PRODUCTS TO A PARTICULAR MANUFACTURER. PRODUCTS DETERMINED TO BE EQUAL BY THE ENGINEER WILL BE ACCEPTED.
6. THE PLUMBING SYSTEM SHALL BE INSTALLED IN ACCORDANCE WITH THE 2018 NORTH CAROLINA PLUMBING CODE AND ANY APPLICABLE LOCAL CODES. WHERE A CONFLICT EXISTS BETWEEN THE ABOVE REQUIREMENTS, THE CONTRACTOR SHALL OBTAIN CLARIFICATION FROM THE ENGINEER OR IN THE EVENT ANY PART OF THESE PLANS CONFLICTS WITH THE ABOVE REQUIREMENTS.
7. THE PC SHALL OBTAIN AND PAY FOR ALL PERMITS, FEES, AND INSPECTIONS NECESSARY FOR THE COMPLETION OF THE WORK UNDER THIS CONTRACT.
8. DO NOT SCALE THESE DRAWINGS–REFER TO ARCHITECTURAL SHEETS FOR DIMENSIONS.
9. THESE PLANS ARE DIAGRAMMATIC. THE PC SHALL ADJUST THE LOCATIONS OF EQUIPMENT, FIXTURES, PIPING, ETC, TO ACCOMMODATE PLANNED AND ENCOUNTERED INTERFERENCES. THE DRAWINGS DO NOT SHOW ALL BENDS, OFFSETS, AND FITTINGS THAT MAY BE REQUIRED FOR A COMPLETE AND OPERATIONAL SYSTEM. THE PC SHALL MAKE ALLOWANCES FOR SUCH DEVIATIONS AND CONTINGENCIES IN BID TO IMPLEMENT THEM WITHOUT ADDITIONAL COST TO THE OWNER. THE PC SHALL VISIT THE SITE PRIOR TO BIDDING TO BECOME FAMILIAR WITH EXISTING CONDITIONS. CONTRACTOR SHALL CONTACT THE ENGINEER TO RESOLVE ANY DISCREPANCIES BETWEEN EXISTING CONDITIONS AND THESE PLANS. TO AVOID POTENTIAL CONFLICTS, COORDINATE WITH OTHER TRADES PRIOR TO THE START OF CONSTRUCTION. ALL UNDERGROUND UTILITIES SHALL BE LOCATED PRIOR TO ANY DIGGING.
10. TRENCHING, COMPACTION, AND BACKFILL SHALL BE BY PC AND SHALL BE IN ACCORDANCE WITH SECTION 306 OF THE NC PLUMBING CODE. UNDERGROUND LINES SHALL BE LOCATED SUCH THAT THEY DO NOT ENDANGER FOOTINGS OR FOUNDATION WALLS.
11. THE PC SHALL PROVIDE FIRESTOPPING AT ALL PENETRATIONS OF RATED FLOOR/CEILING ASSEMBLIES AND RATED WALL ASSEMBLIES TO PRESERVE OR RESTORE THE FIRE RESISTANCE RATING. SEAL ALL PENETRATIONS USING A UL LISTED SYSTEM FOUND IN THE UL DIRECTORY SPECIFIC TO THE UL LISTING OF THE ASSEMBLY BEING PENETRATED. SEE ARCHITECTURAL PLANS FOR UL RATED ASSEMBLIES SPECIFIC TO THE PROJECT.
12. SYSTEM TESTING SHALL BE PERFORMED BY PLUMBING CONTRACTOR IN ACCORDANCE WITH NORTH CAROLINA PLUMBING CODE, SECTIONS 312.2, 312.3, AND 312.5.
13. PC SHALL DISINFECT THE ENTIRE DOMESTIC WATER PIPING SYSTEM IN ACCORDANCE WITH THE AMERICAN WATER WORKS ASSOCIATION'S SPECIFICATIONS AND LOCAL HEALTH DEPARTMENT REGULATIONS.
14. AT THE COMPLETION OF WORK AND PRIOR TO ACCEPTANCE BY OWNER, THE PC SHALL CLEAN ALL EXPOSED FIXTURES, MATERIALS, AND EQUIPMENT UNDER THIS CONTRACT.
15. PC SHALL COORDINATE WITH THE GENERAL CONTRACTOR TO ENSURE ALL APPLICABLE CONSTRUCTION WASTE IS RECYCLED DURING THE CONSTRUCTION PHASE OF THE PROJECT.

MATERIALS:

1. ALL OVERHEAD DOMESTIC WATER PIPING SHALL BE TYPE L COPPER WITH 95/5 LEAD FREE SOLDER, AND ALL BELOW GRADE WATER PIPING SHALL BE TYPE K COPPER WITH NO JOINTS. ALL PIPING SHALL HAVE MANUFACTURER'S NAME AND THE APPLICABLE STANDARD TO WHICH IT WAS MANUFACTURED CLEARLY MARKED ON EACH LENGTH. PIPING SHALL COMPLY WITH ASTM B-88. USE BRAZED JOINTS ON ALL COPPER PIPING 1-1/2 INCH AND LARGER. *** PC MAY USE PEX (ASTM F 877) WITH APPROVED FITTINGS (ASTM F 1807) WITH OWNER'S APPROVAL. *** CPVC PIPING (ASTM D 2846 OR ASTM F 441) WITH APPROVED FITTINGS (ASTM D 2846, ASTM F 438, OR ASTM F 439) MAY ALSO BE USED WHERE NOT LOCATED IN PLENUMS. ALL PLASTIC PIPE, FITTINGS, AND COMPONENTS SHALL BE THIRD PARTY CERTIFIED AS CONFORMING TO NSF 14. ALL PIPE AND PIPE FITTINGS, INCLUDING VALVES AND FAUCETS, USED IN THE WATER DISTRIBUTION SYSTEM SHALL HAVE A MAXIMUM LEAD CONTENT OF .25-PERCENT AND SHALL CONFORM TO NSF 61. HOT WATER DISTRIBUTION PIPE AND TUBING SHALL HAVE A MINIMUM PRESSURE RATING OF 100 PSI AT 180°F. COLD WATER DISTRIBUTION PIPE AND TUBING SHALL HAVE A MINIMUM PRESSURE RATING OF 160 PSI AT 73.4°F. DO NOT INSTALL PEX OR CPVC PIPING IN RETURN AIR PLENUMS.
2. BALL VALVES SHALL HAVE BRASS BODY, FULL PORT, CHROME PLATED BALL, WITH TEFLON SEATS, 150 PSI WSP, AND COMPLY WITH MSS SP-110. GATE VALVES SHALL HAVE BRONZE BODY, CLASS 150, AND COMPLY WITH MSS SP-80, TYPE 2 STANDARD. VALVE BODY SHALL BE ASTM B 62, BRONZE WITH INTEGRAL SEAT AND UNION RING BONNET. ENDS SHALL BE THREADED OR SOLDER WITH COPPER-SILICON BRONZE STEM AND SOLID-WEDGE BRONZE DISC. INSTALL VALVES IN LOCATIONS THAT PERMIT EASY ACCESS WITHOUT DAMAGE TO BUILDING OR FINISHED MATERIALS; PROVIDE ACCESS DOORS IF REQUIRED. VALVES SHALL BE BY NIBCO, WATTS, OR STOCKHAM.
3. COLD WATER LINES SHALL BE INSULATED WITH 1/2 INCH THICK FIBROUS GLASS INSULATION WITH A FLAME DENSITY RATING LESS THAN 25 AND A SMOKE DENSITY RATING LESS THAN 50 WHEN TESTED IN ACCORDANCE WITH ASTM E 84. HOT WATER LINES UP TO 2 INCHES DIAMETER SHALL HAVE 1 INCH THICK INSULATION CONFORMING TO THE SAME STANDARD. PIPING LARGER THAN 2 INCHES SHALL RECEIVE 1-1/2 INCH THICK INSULATION. CLOSED CELL RUBBER INSULATION MEETING THE SMOKE AND FLAME RATINGS ABOVE MAY BE SUBSTITUTED FOR FIBROUS GLASS TYPE IF SO DESIRED. INSULATION INSTALLED ON PIPING OPERATING BELOW AMBIENT TEMPERATURES MUST HAVE A CONTINUOUS VAPOR RETARDER. ALL JOINTS, SEAMS AND FITTINGS MUST BE SEALED. ON SYSTEMS OPERATING ABOVE AMBIENT, THE BUTT JOINTS SHOULD NOT BE SEALED. ON COLD SURFACES WHERE A VAPOR SEAL MUST BE MAINTAINED, INSULATION SHALL BE APPLIED WITH A CONTINUOUS, UNBROKEN MOISTURE AND VAPOR RETARDER. ALL HANGERS, SUPPORTS, ANCHORS, OR OTHER PROJECTIONS SECURED TO COLD SURFACES SHALL BE INSULATED AND VAPOR SEALED TO PREVENT CONDENSATION. ALL PIPE INSULATION SHALL BE CONTINUOUS THROUGH WALLS, CEILING OR FLOOR OPENINGS, OR SLEEVES EXCEPT WHERE FIRESTOP OR FIRESAFING MATERIALS ARE REQUIRED. INSULATION SHALL HAVE A FACTORY APPLIED ALL-SERVICE JACKET WITH SELF-SEALING LAP. WHITE-KRAFT PAPER BONDED TO ALUMINUM FOIL AND REINFORCED WITH GLASS FIBERS; CONFORMING TO ASTM C 1136 TYPE 1; VAPOR RETARDER; WITH A SELF-SEALING ADHESIVE. VERIFY THAT PIPING HAS BEEN TESTED, SURFACES ARE CLEAN AND DRY, AND ALL FOREIGN MATERIALS ARE REMOVED BEFORE APPLYING INSULATION MATERIALS. INSULATION SHALL BE BY KNAUF, ARMACELL, JOHNS-MANVILLE, OR OWENS-CORNING.
4. ALL INSULATION CONTAINING FIBROUS MATERIALS EXPOSED TO AIRFLOW SHALL BE RATED FOR THAT EXPOSURE OR SHALL BE ENCAPSULATED. INSULATING PROPERTIES FOR ALL MATERIALS SHALL MEET OR EXCEED INDUSTRY STANDARDS. POLYSTYRENE PRODUCTS SHALL MEET ASTM C578 91. ALL INSULATION SHALL BE LOW-EMITTING WITH NOT GREATER THAN 0.05 PPM FORMALDEHYDE EMISSIONS. THE MAXIMUM FLAME SPREAD AND SMOKE DEVELOPED INDEX FOR INSULATION SHALL MEET THE REQUIREMENTS OF THE LOCAL CODES AND ORDINANCES ADOPTED BY THE JURISDICTION IN WHICH THE BUILDING IS LOCATED.
5. FAUCETS AND FIXTURE FITTINGS SHALL CONFORM TO ASME A112.18.1. FAUCETS AND FIXTURE FITTINGS THAT SUPPLY DRINKING WATER FOR HUMAN CONSUMPTION SHALL CONFORM TO THE REQUIREMENTS OF NSF 61, SECTION 9. FIXTURE FITTINGS, FAUCETS, AND DIVERTERS SHALL BE INSTALLED AND ADJUSTED SO THAT THE FLOW OF HOT WATER FROM THE FITTINGS CORRESPONDS TO THE LEFT HAND SIDE OF THE FIXTURE FITTING.
6. BACKFLOW PREVENTION SHALL BE IN ACCORDANCE WITH SECTION 608.13 OF THE NC PLUMBING CODE AND THE LOCAL AUTHORITY HAVING JURISDICTION. DOUBLE CHECK VALVE ASSEMBLIES SHALL CONFORM TO ASSE 1015 OR AWWA C510. ACCESS TO BACKFLOW PREVENTERS SHALL BE PROVIDED AS SPECIFIED BY THE INSTALLATION INSTRUCTIONS OF THE APPROVED MANUFACTURER.
7. FOR BELOW GRADE SANITARY WASTE PIPING, PC SHALL USE SERVICE WEIGHT CAST IRON PIPE WITH COMPRESSION JOINTS (ASTM A 74). USE MINIMUM 2 INCH SIZE UNDERGROUND. SOLID WALL SCHEDULE 40 PVC (ASTM D 2665) WITH SCHEDULE 40 SOCKET TYPE PIPE FITTINGS (ASTM D 3311) MAY ALSO BE USED. DO NOT USE PVC PIPE FOR APPLICATIONS WHERE THE WASTE WATER TEMPERATURE EQUALS OR EXCEEDS 140°F OR IF THE BUILDING HEIGHT EXCEEDS 75 FEET.
8. FOR ABOVE GRADE SANITARY WASTE AND VENT PIPING, USE SERVICE WEIGHT CAST IRON NO-HUB TYPE WITH COUPLINGS (CISPI 301). SOLID WALL SCHEDULE 40 PVC (ASTM D 2665) WITH SCHEDULE 40 SOCKET TYPE FITTINGS (ASTM D 3311) MAY BE USED IF PERMITTED BY LOCAL CODE, EXCEPT IN BUILDINGS EXCEEDING 75 FEET IN HEIGHT. DO NOT INSTALL PVC IN RETURN AIR PLENUMS. ALL VENT AND BRANCH VENT PIPES SHALL BE SO GRADED AND CONNECTED AS TO DRAIN BACK TO THE DRAINAGE PIPE BY GRAVITY. BRANCH VENTS EXCEEDING 40 FEET IN DEVELOPED LENGTH SHALL BE INCREASED BY ONE NOMINAL SIZE FOR THE ENTIRE DEVELOPED LENGTH OF THE PIPE.
9. PC SHALL PROVIDE ALL WATER HEATERS (WATTAGE/INPUT AND CAPACITY AS NOTED IN SCHEDULE). ALL WATER HEATERS SHALL BE THIRD PARTY CERTIFIED; PROVIDE PANS FOR WATER HEATERS IN ACCORDANCE WITH 504.7 OF THE NC PLUMBING CODE. ELECTRICAL CONNECTIONS SHALL BE BY ELECTRICAL CONTRACTOR, PC SHALL COORDINATE WITH EC ON ELECTRICAL CHARACTERISTICS OF THE EQUIPMENT PROVIDED.

METHODS:

1. EXTEND DOMESTIC WATER PIPE FROM FIVE (5) FEET OUTSIDE THE BUILDING INTO THE BUILDING AS INDICATED ON THE PLANS AND INSTALL DOMESTIC WATER DISTRIBUTION PIPING TO ALL FIXTURES AND EQUIPMENT REQUIRING THE SAME. WATER SERVICE PIPE AND THE BUILDING SEWER SHALL BE SEPARATED BY 5 FEET OF UNDISTURBED OR COMPACTED EARTH IN ACCORDANCE WITH 603.2. PROVIDE ALL FITTINGS, VALVES, AND OTHER ACCESSORIES AS NECESSARY FOR A COMPLETE INSTALLATION. ALL DOMESTIC WATER PIPING SHALL BE CONCEALED IN FINISHED AREAS. ANY OPEN ENDS SHALL BE PROTECTED UNTIL FINAL CONNECTIONS ARE MADE.
2. ABOVE GRADE DOMESTIC WATER PIPING SHALL BE SLOPED AT A MINIMUM OF 1/32 INCH PER FOOT AND ARRANGED TO DRAIN AT LOW POINTS. INSTALL PIPING TO ALLOW FOR EXPANSION AND CONTRACTION WITHOUT STRESSING PIPE, JOINTS, OR CONNECTED EQUIPMENT. ROUTE PIPING IN AN ORDERLY MANNER–PARALLEL OR PERPENDICULAR TO WALLS WHEN POSSIBLE–AND MAINTAIN GRADIENT. EACH SUPPLY BRANCH LINE SERVING MORE THAN ONE FIXTURE SHALL HAVE A SHUTOFF VALVE INSTALLED TO ISOLATE ALL FIXTURES AND PIECES OF EQUIPMENT SUPPLIED BY THE BRANCH LINE. THE SHUTOFF VALVE SHALL BE LABELED AND LOCATED AS CLOSE TO THE CONNECTION TO THE SUPPLY MAIN AND RISER AS POSSIBLE. PROVIDE A FULL-OPEN VALVE ON THE BASE OF EVERY WATER RISER PIPE AND ON THE TOP OF EVERY WATER DOWN-FEED PIPE. PROVIDE VALVE HANDLE EXTENSIONS AS NECESSARY FOR INSULATION.
3. IT SHALL BE THE RESPONSIBILITY OF THE PC TO SUSPEND AND SUPPORT ALL PIPING SYSTEMS FOLLOWING RECOGNIZED ENGINEERING PRACTICES AND USING STANDARD, COMMERCIALLY ACCEPTED PIPE HANGERS AND SUSPENSION EQUIPMENT. ALL FIXTURES, DEVICES, AND EQUIPMENT SHALL BE SECURELY MOUNTED TO THE BUILDING STRUCTURE AND SHALL NOT RELY ON CEILING OR WALL SURFACES FOR SUPPORT. THE SUPPORT ATTACHMENT SHALL SUPPORT THE WEIGHT OF THE FIXTURE OR EQUIPMENT PLUS THE WEIGHT OF THE SUPPORT ATTACHMENT ITSELF. SUPPORT FROM THE TOP CHORD OF THE ROOF JOISTS, GIRDERS, AND BEAMS. THE BOTTOM CHORD IS NOT TO BE USED FOR EQUIPMENT AND PIPING SUPPORT. HANGERS SHALL NOT BE ATTACHED TO CORRUGATED STEEL DECKING. USE STEEL HANGERS FOR STEEL AND PLASTIC PIPE AND COPPER OR COPPER-PLATED HANGERS FOR COPPER PIPE. PROVIDE PROTECTION FOR COPPER PIPING IN CONTACT WITH DISSIMILAR METALS. WHERE COPPER PIPING IS SUPPORTED ON HANGERS WITH OTHER PIPING, PROVIDE A PERMANENT ELECTROLYTIC ISOLATION MATERIAL TO PREVENT CONTACT WITH OTHER METALS. IN GENERAL, HANGERS SHALL BE CLEVIS TYPE, STANDARD WEIGHT. FOR PIPING, HANGER SPACING SHALL BE IN ACCORDANCE WITH TABLE 308.5 OF THE NC PLUMBING CODE. HANGERS AND ACCESSORIES SHALL BE GRINNEL, MASON, OR B-LINE.
4. SLEEVE ALL PIPES PASSING THROUGH PARTITIONS, WALLS, AND FLOORS. SLEEVES IN FLOORS AND INTERIOR WALLS OF POURED IN PLACE CONCRETE, BRICK, TILE, OR MASONRY SHALL BE SCHEDULE 40 STEEL PIPE, MACHINE CUT. SLEEVES IN GYPSUM BOARD WALLS SHALL BE 22 GAUGE, ROLLED GALVANIZED SHEET METAL. TACK WELD ON THE LONGITUDINAL SEAM. PROVIDE SLEEVES WHERE PIPES PASS THROUGH FLOORS AND WALLS ABOVE AND BELOW CEILINGS. PROVIDE SPLIT PIPE SLEEVES IN NEW WALLS BUILT UP AROUND EXISTING PIPES. TACK WELD SPLIT SLEEVES TOGETHER. SLEEVES IN WALLS SHALL BE INSTALLED FLUSH WITH THE WALL. SLEEVES IN FLOORS SHALL EXTEND 3/4 INCH ABOVE THE FLOOR–EXCEPT THEY SHALL BE FLUSH FOR 2 HOUR RATED FLOORS–AND SHALL BE FLUSH WITH THE STRUCTURE BELOW. EACH SLEEVE SHALL HAVE AN INSIDE DIAMETER 1 INCH LARGER THAN THE OUTSIDE DIAMETER OF THE COVERING OF EACH COVERED PIPE TO ALLOW CONTINUOUS INSULATION–BUT NOT LESS THAN TWO PIPE SIZES LARGER THAN EACH UNCOVERED. ANNULAR SPACES BETWEEN SLEEVES AND PIPES SHALL BE FILLED OR CAULKED IN AN APPROVED MANNER.
5. THE TOP OF WATER PIPES INSTALLED BELOW GRADE OUTSIDE THE BUILDING SHALL BE BELOW THE FROST LINE OR A MINIMUM OF 12 INCHES BELOW FINISHED GRADE WHICHEVER IS GREATER. WATER PIPING INSTALLED IN A WALL EXPOSED TO THE EXTERIOR SHALL BE LOCATED ON THE HEATED SIDE OF THE WALL INSULATION. WATER PIPING INSTALLED IN AN UNCONDITIONED UTILITY ROOM OR UNCONDITIONED ATTIC SHALL BE INSULATED TO A MINIMUM OF R6.5 DETERMINED IN ACCORDANCE WITH ASTM C 177.
6. HOT WATER PROVIDED TO PUBLIC HAND-WASHING FACILITIES/LAVATORIES SHALL BE TEMPERED WATER DELIVERED THROUGH AN APPROVED WATER-TEMPERATURE LIMITING DEVICE THAT CONFORMS TO ASSE 1070 OR CSA B125.3.
7. INSULATE ALL EXPOSED WASTE AND SUPPLY PIPING UNDER LAVATORIES, SINKS, AND ELECTRIC WATER COOLERS WITH THE HANDI-LAV GUARD INSULATION KIT BY TRUEBRO OR EQUAL.
8. THE PC SHALL INSTALL WATER HAMMER ARRESTORS ON BRANCH LINES WITH QUICK CLOSING VALVES PER MANUFACTURER'S INSTALLATION INSTRUCTIONS. WATER HAMMER ARRESTORS SHALL CONFORM TO ASSE 1010.
9. THE PC SHALL PROVIDE CHECK VALVES AT ALL FIXTURES WITH THREADED OUTLETS AS REQUIRED BY CODE. TRAP PRIMERS SHALL BE PROVIDED AS SHOWN ON THE PLANS OR AS REQUIRED.
10. ADJUST STOPS AND VALVES FOR INTENDED FLOW RATE TO FIXTURES WITHOUT SPLASHING, NOISE, OR OVERFLOW.
11. BEFORE COMMENCING WORK, CHECK INVERT ELEVATIONS REQUIRED FOR SEWER CONNECTIONS, CONFIRM INVERTS, AND VERIFY THESE CAN BE PROPERLY CONNECTED TO WITH SLOPE FOR DRAINAGE AND COVER TO AVOID FREEZING. ONCE INVERTS AND FALL HAVE BEEN ESTABLISHED, EXTEND SANITARY SEWER PIPING TO 5 FEET OUTSIDE THE BUILDING AND INSTALL ALL DRAINS, STACKS, VENTS, FLOOR DRAINS, AND CLEANOUTS NECESSARY FOR A COMPLETE INSTALLATION.
12. ALL SANITARY SEWER PIPING IS BELOW GRADE OR WITHIN WALLS UNLESS OTHERWISE NOTED. ALL SANITARY VENT PIPING IS ABOVE THE CEILING OR WITHIN WALLS UNLESS OTHERWISE NOTED. SOIL AND WASTE PIPING SHALL BE INSTALLED TO PROVIDE PROTECTION AGAINST FREEZING PER 305.6.1. WASTE AND SOIL LINES LEAVING THE BUILDING MUST HAVE A MINIMUM COVER OF 3 INCHES.
13. SOIL AND WASTE LINES 2-1/2 INCHES AND SMALLER SHALL BE SLOPED AT 1/4 INCH PER FOOT MINIMUM. SOIL AND WASTE LINES 3 INCHES TO 6 INCHES IN DIAMETER SHALL BE SLOPED AT 1/8 INCH PER FOOT MINIMUM.
14. FOR WATER CLOSET WASTE CONNECTIONS, A 4 INCH BY 3 INCH CLOSET BEND SHALL BE ACCEPTABLE. WHERE A 3 INCH BEND IS UTILIZED ON WATER CLOSETS, A 4 INCH BY 3 INCH FLANGE SHALL BE INSTALLED TO RECEIVE THE FIXTURE HORN.
15. HORIZONTAL DRAIN PIPES SHALL HAVE CLEANOUTS IN ACCORDANCE WITH 708.10. EXTEND CLEANOUTS TO FINISHED FLOOR OR WALL SURFACE. LUBRICATE THREADED CLEANOUT PLUGS WITH A MIXTURE OF GRAPHITE AND LINSEED OIL. ENSURE CLEARANCE AT ALL CLEANOUTS FOR RODDING OF DRAINAGE SYSTEM. INSTALL FLOOR CLEANOUTS AT AN ELEVATION TO ACCOMMODATE FINISHED FLOOR. EVERY CLEANOUT SHALL BE INSTALLED TO ALLOW CLEANING IN THE DIRECTION OF FLOW OF THE DRAINAGE PIPE OR AT RIGHT ANGLES THERETO. CLEANOUTS ON 6 INCH AND SMALLER PIPES SHALL BE PROVIDED WITH A CLEARANCE OF NOT LESS THAN 18 INCHES FOR RODDING.
16. AIR ADMITTANCE VALVES SHALL BE INSTALLED AFTER THE DWV TESTING REQUIRED BY SECTIONS 312.2 AND 312.3. PROVIDE ACCESS TO ALL AIR ADMITTANCE VALVES PER CODE. INSTALLATION OF ALL AIR ADMITTANCE VALVES SHALL CONFORM TO SECTION 918 OF THE NC PLUMBING CODE. AIR ADMITTANCE VALVES SHALL CONFORM TO ASSE 1050 OR 1051.
17. THE PC SHALL PROVIDE UNIONS FOR DISASSEMBLY AND SERVICE OF ALL FIXTURES AND OTHER RELEVANT PLUMBING EQUIPMENT. UNIONS SHALL BE GROUND-JOINT WITH BRASS SEAT. PROVIDE INSULATING UNIONS AT EACH JUNCTION OF DISSIMILAR MATERIALS.
18. THE PC SHALL ACCURATELY ROUGH-IN ALL FIXTURES ACCORDING TO MANUFACTURER'S INSTALLATION DIMENSIONS AND INSTRUCTIONS. OFFSET ADAPTERS AND FLEXIBLE CONNECTORS ARE NOT ACCEPTABLE. FLUSH HANDLES SHALL BE MOUNTED ON THE WIDE SIDE OF TOILET AREAS FOR ADA COMPLIANCE. INSTALL EACH FIXTURE WITH TRAP EASILY REMOVABLE FOR SERVICING AND CLEANING. SEAL FIXTURES TO WALL AND FLOOR SURFACES WITH SEALANT. SOLIDLY ATTACH WATER CLOSETS TO FLOOR WITH LAG SCREWS. SEAL ALL SELF-RIMMING LAVATORIES AND SINKS (VITREOUS CHINA AND STAINLESS STEEL) WITH A COMMERCIAL GRADE PLUMBER'S PUTTY OR ACRYLIC LATEX CAULK APPLIED TO THE UNDERSIDE OF THE FIXTURE RIM IN A GENEROUS AMOUNT SO THAT WHEN FIXTURE IS SET, SEALANT SHALL OOZE OUT.
19. ALL VENT THRU THE ROOF (VTR) PENETRATIONS SHALL BE COORDINATED WITH THE GENERAL CONTRACTOR. PC SHALL PROVIDE FLASHING MATERIAL REQUIRED FOR VTRS. JOINTS AT THE ROOF AND AROUND VENT PIPES, SHALL BE MADE WATER TIGHT BY THE USE OF LEAD, COPPER, GALVANIZED STEEL, ALUMINUM, OR OTHER APPROVED FLASHINGS OR FLASHING MATERIAL. MAINTAIN MINIMUM 10 FEET FROM ALL OUTSIDE AIR INTAKES.
20. INSTALL FULL OPEN VALVES PER NC PLUMBING CODE 606.1, ON THE MAIN WATER LINE INTO THE BUILDING. INSTALL CUT OFF VALVES PER NCPC 606.2

GENERAL PLUMBING NOTES | 5

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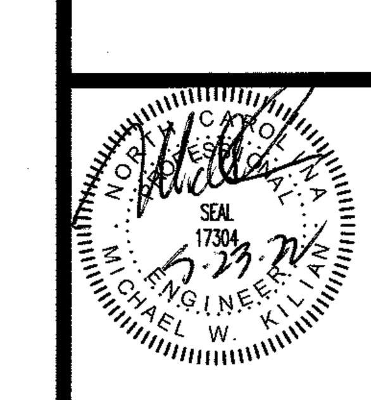


SEAL

SEAL

NEW BUILDING
for PAUL BARBOUR & SONS

11496 HWY 401N
FUQUAY VARINA, NC 27526

REVISION:

NO.	DATE	DESCRIPTION

ISSUED:

NO.	DATE	DESCRIPTION
1	5/23/22	ISSUED FOR PERMITING

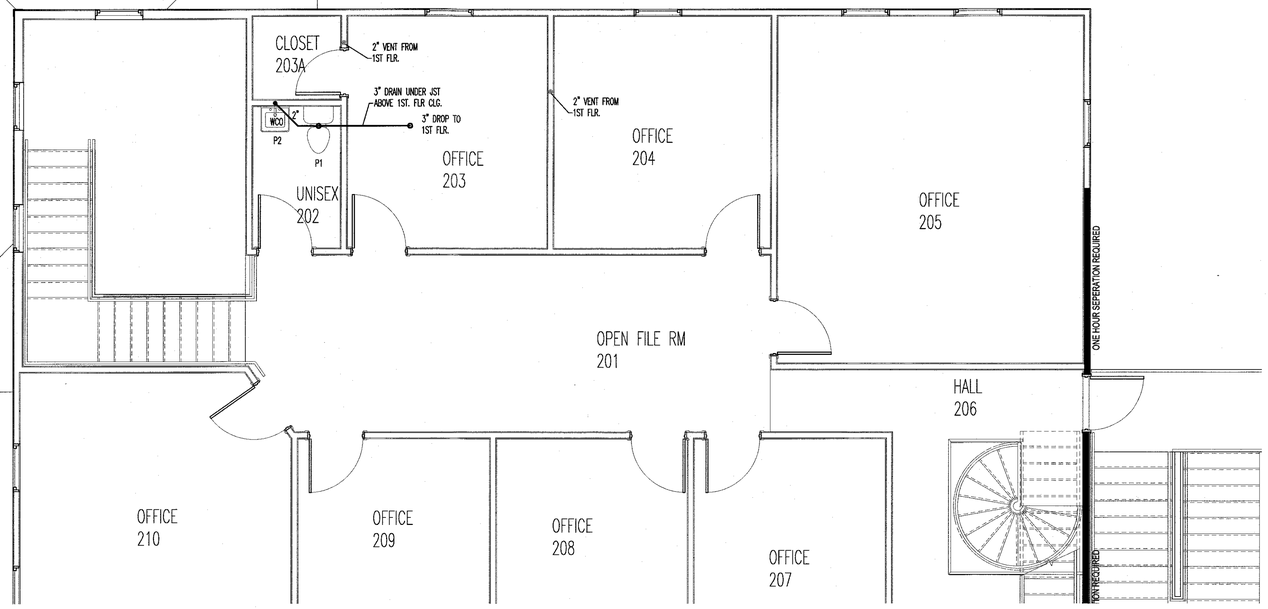
DRAWN BY: DC
CHECKED BY: MWK/KDC

PLUMBING NOTES & SCHEDULES

SHEET NO.

P1

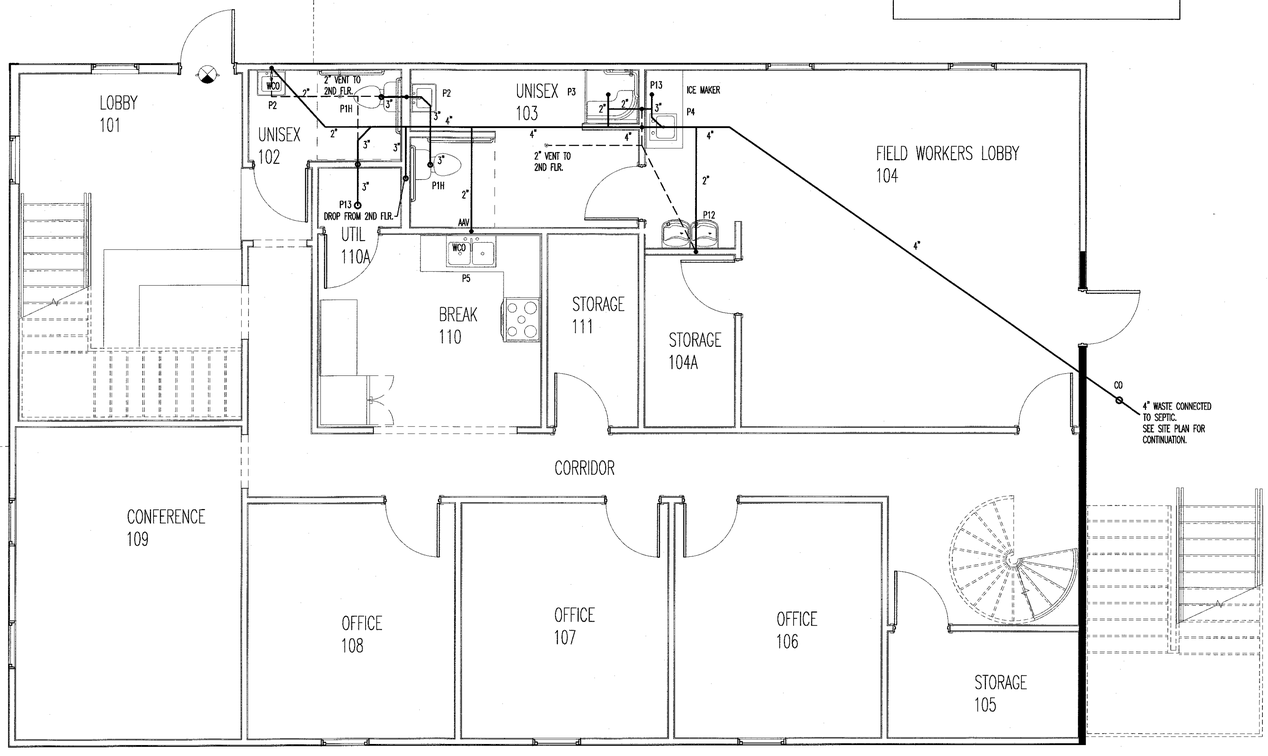
PROJECT NO: 22284



2ND FLR. PLUMBING WASTE PLAN SCALE: 1/4"=1'-0" | 1

SUPPLY PLAN HEX NOTES

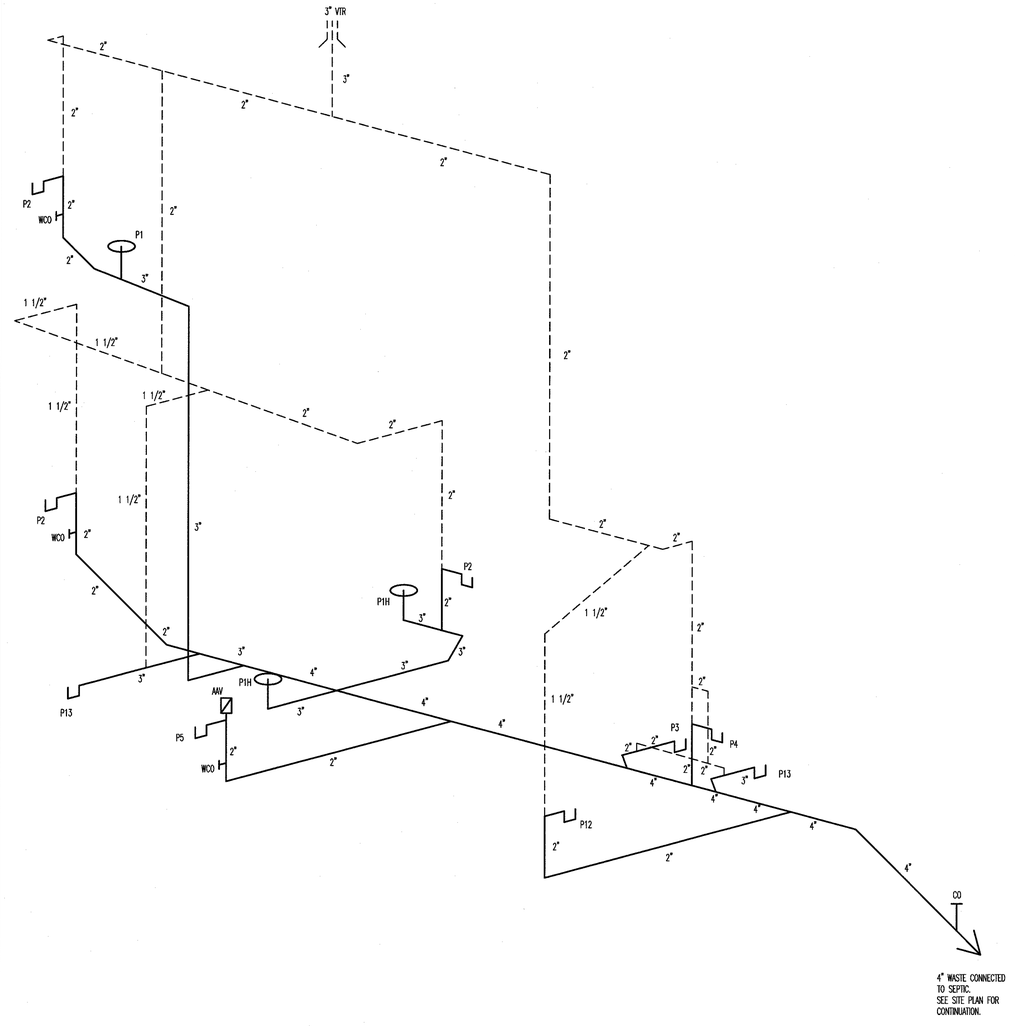
1. ROUTE 1" DRAIN FROM WATER HEATER TO FLOOR DRAIN.



IST. FLR. PLUMBING WASTE PLAN SCALE: 1/4"=1'-0" | 2

LINETYPE LEGEND

- COLD WATER SUPPLY
- HOT WATER SUPPLY
- SANITARY SEWER LINE
- VENT LINE



PLUMBING WASTE RISER SCALE: NTS | 3

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NORTH CAROLINA
SEAL

NEW BUILDING
for PAUL BARBOUR & SONS
11496 HWY 401 N
FUQUAY VARINA, NC 27526

REVISION:

NO	DESCRIPTION	DATE

ISSUED:

NO	DESCRIPTION	DATE
1	ISSUED FOR PERMITTING	5/23/22

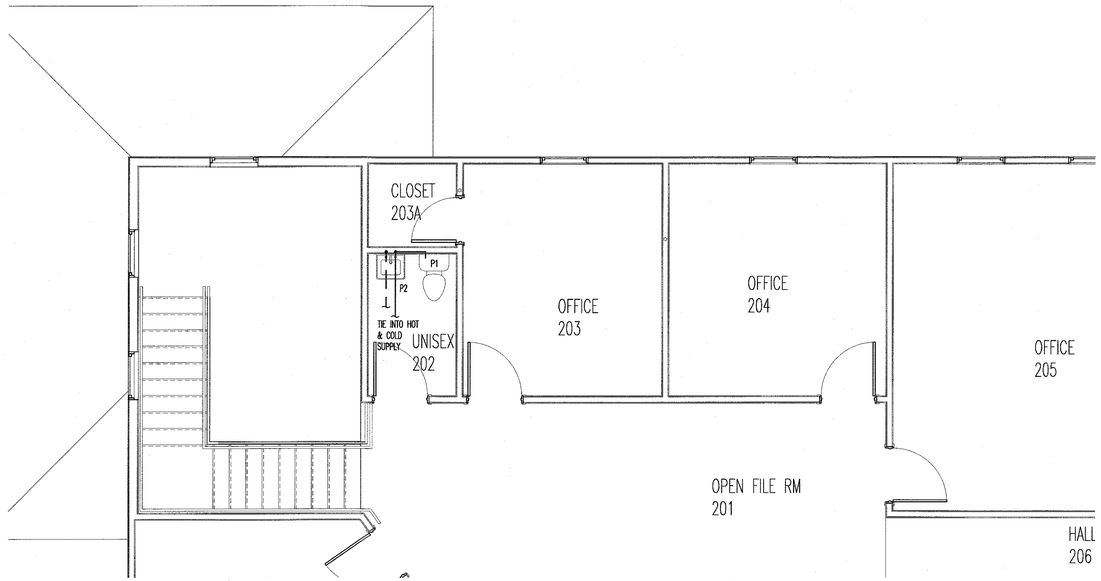
DRAWN BY: DC
CHECKED BY: MWK/KDC

PLUMBING WASTE PLANS AND RISER

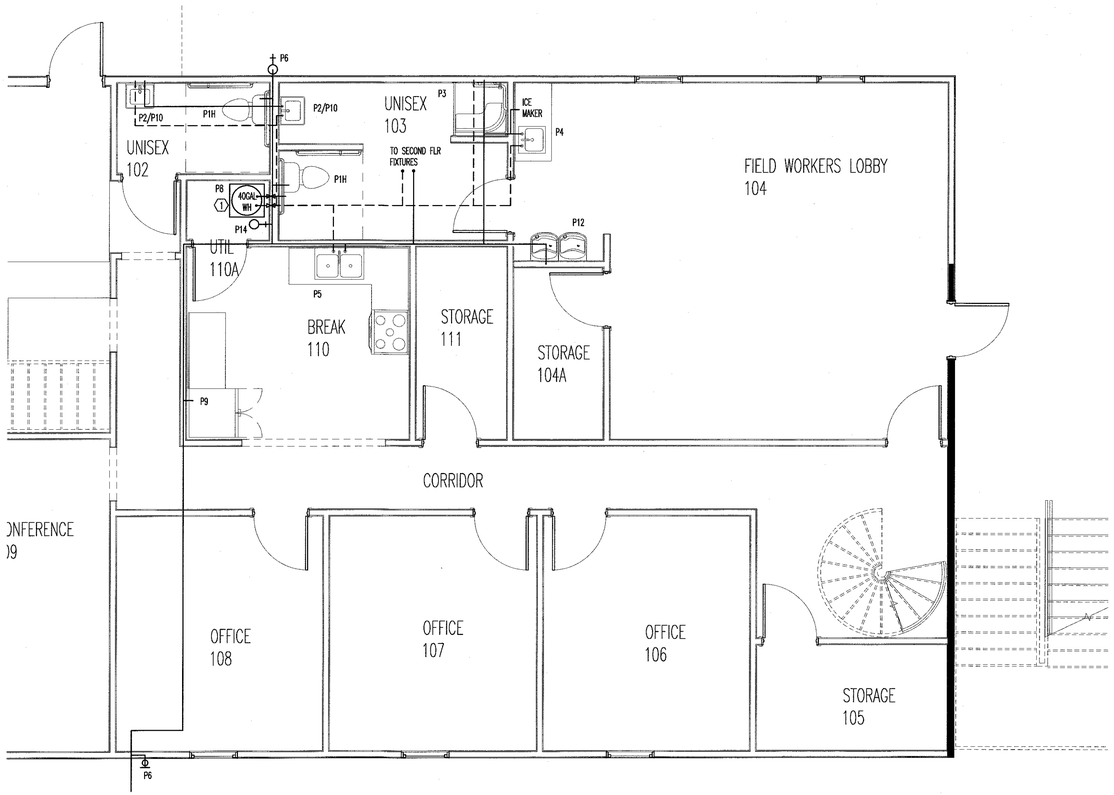
SHEET NO.

P2

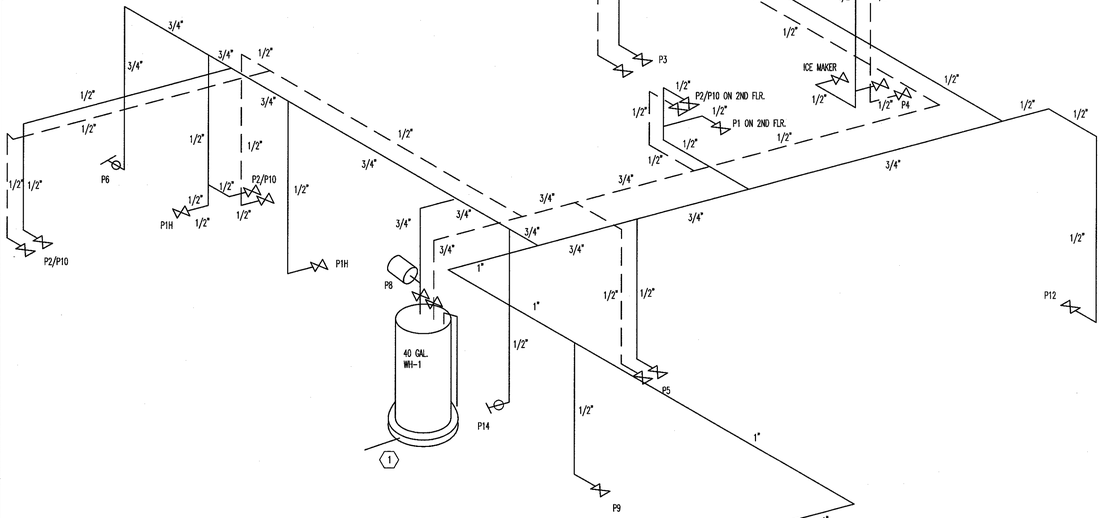
PROJECT NO: 22284



2ND FLR. PLUMBING SUPPLY PLAN SCALE: 1/4"=1'-0" | 1



1ST FLR. PLUMBING SUPPLY PLAN SCALE: 1/4"=1'-0" | 2



ALL REQUIRED VALVES NOT SHOWN.
INSTALL FULL OPEN VALVES PER 2018 PC CODE 606.1.5 AND 606.1.8
INSTALL SHUT OFF VALVES PER 2018 NC PLUMBING CODE 606.2 AND 606.2.1

DO NOT TAP WATER LINE AHEAD OF BACK FLOW PREVENTION.

LINETYPE LEGEND	
COLD WATER SUPPLY	———
HOT WATER SUPPLY	- - - - -
SANITARY SEWER LINE	———
VENT LINE	- - - - -

SUPPLY PLAN HEX NOTES
1. ROUTE 1" DRAIN LINE TO FLOOR DRAIN.

PLUMBING SUPPLY RISER SCALE: NTS | 3

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SEAL
KILIAN ENGINEERING CORPORATE SEAL INC. NORTH CAROLINA
SEAL

NEW BUILDING
for PAUL BARBOUR & SONS
11496 HWY 401N
FUQUAY VARINA, NC 27526

REVISION:

DESCRIPTION	DATE

ISSUED:

ISSUED FOR PERMITTING	5/20/22

DRAWN BY: DC
CHECKED BY: MWK/KDC

PLUMBING SUPPLY PLANS AND RISER

SHEET NO.
P3

PROJECT NO: 22284

1ST FLR.

MECHANICAL SYSTEM, SERVICE SYSTEMS, AND EQUIPMENT

METHOD OF COMPLIANCE	PRESCRIPTIVE
THERMAL ZONE	ZONE 4A
EXTERIOR DESIGN CONDITIONS	
HEATING DESIGN DRY BULB	23.1°F
COOLING DESIGN DRY BULB	91.7°F
COOLING DESIGN WET BULB	75.6°F
INTERIOR DESIGN CONDITIONS	
HEATING DESIGN DRY BULB	70°F
COOLING DESIGN DRY BULB	75°F
COOLING RELATIVE HUMIDITY	50%
HEATING LOAD	25,000 BTU/H
SENSIBLE COOLING LOAD	30,000 BTU/H
LATENT COOLING LOAD	10,000 BTU/H
MECHANICAL SPACING CONDITIONING SYSTEM:	
UNITARY	AIR COOLED DX
DESCRIPTION OF UNIT(S)	5 TON MINI SPLIT HEAT PUMP
BOILER	N/A
TOTAL BOILER OUTPUT	N/A
CHILLER	N/A
TOTAL CHILLER CAPACITY	N/A
EQUIPMENT EFFICIENCIES:	SEE SCHEDULES
EQUIPMENT SCHEDULES WITH MOTORS (MECHANICAL SYSTEMS):	SEE SCHEDULES

DESIGNER STATEMENT:

TO THE BEST OF MY KNOWLEDGE, THE MECHANICAL DESIGN FOR THIS BUILDING COMPLIES WITH MECHANICAL AND EQUIPMENT REQUIREMENTS OF THE 2018 NORTH CAROLINA STATE BUILDING CODE AND 2018 NORTH CAROLINA ENERGY CONSERVATION CODE.

2ND FLR.

MECHANICAL SYSTEM, SERVICE SYSTEMS, AND EQUIPMENT

METHOD OF COMPLIANCE	PRESCRIPTIVE
THERMAL ZONE	ZONE 4A
EXTERIOR DESIGN CONDITIONS	
HEATING DESIGN DRY BULB	23.1°F
COOLING DESIGN DRY BULB	91.7°F
COOLING DESIGN WET BULB	75.6°F
INTERIOR DESIGN CONDITIONS	
HEATING DESIGN DRY BULB	70°F
COOLING DESIGN DRY BULB	75°F
COOLING RELATIVE HUMIDITY	50%
HEATING LOAD	20,000 BTU/H
SENSIBLE COOLING LOAD	30,000 BTU/H
LATENT COOLING LOAD	9,000 BTU/H
MECHANICAL SPACING CONDITIONING SYSTEM:	
UNITARY	AIR COOLED DX
DESCRIPTION OF UNIT(S)	5 TON MINI SPLIT HEAT PUMP
BOILER	N/A
TOTAL BOILER OUTPUT	N/A
CHILLER	N/A
TOTAL CHILLER CAPACITY	N/A
EQUIPMENT EFFICIENCIES:	SEE SCHEDULES
EQUIPMENT SCHEDULES WITH MOTORS (MECHANICAL SYSTEMS):	SEE SCHEDULES

DESIGNER STATEMENT:

TO THE BEST OF MY KNOWLEDGE, THE MECHANICAL DESIGN FOR THIS BUILDING COMPLIES WITH MECHANICAL AND EQUIPMENT REQUIREMENTS OF THE 2018 NORTH CAROLINA STATE BUILDING CODE AND 2018 NORTH CAROLINA ENERGY CONSERVATION CODE.

EQUIPMENT SELECTIONS DESIGNED AND PROVIDED BY GC.

DUCTLESS SPLIT SYSTEM HEAT PUMP SCHEDULE

MARK	OUTSIDE UNIT MFG / MODEL #	BRANCH BOX MODEL #	INSIDE UNIT MODEL #	NOM CAPACITY	SEER	EER
				TONS		
OU-1	MXZ-SM60NAM	-	-	5.0	20.0	13.3
	-	PAC-MKA52BC	-	-	-	-
	-	-	(3)9,000 BTU CEILING CASSETTE	-	-	-
			(1)9,000 BTU DUCTED UNIT			
	-	PAC-MKA32BC	-	-	-	-
			(1)9,000 BTU CEILING CASSETTE			
	-	-	(2)12,000 BTU DUCTED UNIT	-	-	-
OU-2	MXZ-SM60NAM	-	-	5.0	20.0	13.3
	-	PAC-MKA52BC	-	-	-	-
	-	-	(5)6,000 BTU WALL CASSETTE	-	-	-
	-	PAC-MKA52BC	-	-	-	-
	-	-	(4)9,000 BTU WALL CASSETTE	-	-	-
	-	-	(1)12,000 BTU WALL CASSETTE	-	-	-

1. PROVIDE CONCRETE PAD FOR UNIT TO SIT ON
2. CONSULT MANUFACTURER ON LINE SET LENGTHS EXCEEDING 60FT
3. OR EQUAL BY DAIKIN,SAMSUNG, LG
4. ANY EQUIPMENT SUBSTITUTIONS MUST EQUAL OR EXCEED EFFICIENCIES LISTED (RATINGS PER ARI)
5. MAINTAIN MANUFACTURER'S RECOMMENDED CLEARANCES

NO MECHANICAL VENTILATION REQUIRED PER SECTION 402.2 THE MINIMUM OPENABLE AREA TO THE OUTDOORS SHALL BE 4 PERCENT OF THE FLOOR AREA BEING VENTILATED.

NO PENETRATIONS THROUGH THE RATED WALLS.

GENERAL MECHANICAL NOTES:

ADMINISTRATIVE:

1. THE FOLLOWING ABBREVIATIONS SHALL APPLY TO NOTES AND PLANS: PC – PLUMBING CONTRACTOR, EC – ELECTRICAL CONTRACTOR, MC – MECHANICAL CONTRACTOR, GC – GENERAL CONTRACTOR, FASC – FIRE ALARM SYSTEM CONTRACTOR, AHJ – AUTHORITY HAVING JURISDICTION.
2. "PROVIDE" MEANS TO FURNISH AND INSTALL. MC SHALL ALSO INSTALL MATERIALS FURNISHED BY OTHERS AND GENERAL CONTRACTOR AS SHOWN ON THE PLANS OR NECESSARY FOR A COMPLETE INSTALLATION.
3. THE MC SHALL BE RESPONSIBLE FOR A COMPLETE AND OPERATING SYSTEM AS DESCRIBED BY THESE PLANS AND SPECIFICATIONS.
4. ALL MATERIALS AND EQUIPMENT SHALL BE DELIVERED TO THE SITE AND UNLOADED BY THE CONTRACTOR AT AN APPROVED LOCATION. THE MC SHALL PROTECT ALL MATERIALS AND EQUIPMENT FROM BREAKAGE, THEFT, AND THE ELEMENTS. ALL MATERIALS AND EQUIPMENT SHALL REMAIN THE PROPERTY OF THE MC UNTIL THE PROJECT HAS BEEN COMPLETED AND TURNED OVER TO THE OWNER.
5. THE MC SHALL INSTALL ALL MATERIALS AND EQUIPMENT IN ACCORDANCE WITH THE 2018 NORTH CAROLINA MECHANICAL AND BUILDING CODES AND ANY APPLICABLE LOCAL CODES. WHERE A CONFLICT EXISTS BETWEEN THE ABOVE REQUIREMENTS, THE MC SHALL OBTAIN CLARIFICATION FROM THE ENGINEER OR IN THE EVENT ANY PART OF THESE PLANS CONFLICTS WITH THE ABOVE REQUIREMENTS.
6. THE MC SHALL OBTAIN AND PAY FOR ALL PERMITS, FEES, AND INSPECTIONS NECESSARY FOR THE COMPLETION OF THE WORK UNDER THIS CONTRACT.
7. DO NOT SCALE THESE DRAWINGS–REFER TO ARCHITECTURAL SHEETS FOR DIMENSIONS.
8. THE MC SHALL VISIT THE SITE PRIOR TO BIDDING TO BECOME FAMILIAR WITH EXISTING CONDITIONS. THE MC SHALL CONTACT THE ENGINEER TO RESOLVE ANY DISCREPANCIES BETWEEN EXISTING CONDITIONS AND THESE PLANS. THE MC SHALL COORDINATE WITH OTHER TRADES PRIOR TO THE START OF CONSTRUCTION.
9. ALL MECHANICAL MATERIALS SHALL BE NEW AND FREE OF DEFECT AND LISTED AND LABELED BY UL OR AN APPROVED THIRD PARTY AGENCY. ANY MATERIALS FOUND TO BE DEFECTIVE SHALL BE REPLACED BY THE MC WITHOUT ADDITIONAL COST TO THE OWNER. WHERE A MANUFACTURER AND MODEL NUMBER IS GIVEN, THE CITED EXAMPLE IS INTENDED TO ESTABLISH A STANDARD OF QUALITY AND NOT TO LIMIT PRODUCTS TO A PARTICULAR MANUFACTURER. SUCH EXAMPLES ARE USED TO CONVEY A GENERAL STYLE, TYPE, CHARACTER, AND QUALITY OF THE PRODUCT DESIRED; PRODUCTS DETERMINED TO BE EQUAL BY THE ENGINEER WILL BE ACCEPTED.
10. THESE PLANS ARE DIAGRAMMATIC. THE MC SHALL ADJUST THE LOCATIONS OF EQUIPMENT, DUCTS, REGISTERS, GRILLES, ETC, TO ACCOMMODATE PLANNED AND ENCOUNTERED INTERFERENCES. THE DRAWINGS DO NOT SHOW ALL BENDS, OFFSETS, AND FITTINGS THAT MAY BE REQUIRED FOR A COMPLETE AND OPERATIONAL SYSTEM. THE MC SHALL MAKE ALLOWANCES FOR SUCH DEVIATIONS AND CONTINGENCIES IN BID TO IMPLEMENT THEM WITHOUT ADDITIONAL COST TO THE OWNER.
11. ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR ALL POWER CONNECTIONS TO THE MECHANICAL EQUIPMENT. MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CONTROL WIRING.
12. IT IS THE MC'S RESPONSIBILITY TO VERIFY THAT ITEMS FURNISHED FOR THIS CONTRACT WILL FIT IN THE SPACE AVAILABLE. THE MC SHALL MAKE FIELD MEASUREMENTS AS NECESSARY TO DETERMINE SPACE REQUIREMENTS. IF THE MC MUST ALTER EQUIPMENT DUE TO SPACE CONSIDERATIONS, THE MC SHALL PROVIDE SIZES AND SHAPES THAT FIT THE INTENT OF THESE DRAWINGS AND SPECIFICATIONS.
13. MC SHALL COORDINATE WITH THE ELECTRICAL CONTRACTOR REGARDING THE ELECTRICAL REQUIREMENTS OF ALL EQUIPMENT BEING PROVIDED.
14. MAINTAIN CLEARANCES FOR ALL EQUIPMENT ACCORDING TO MANUFACTURER'S RECOMMENDATIONS FOR SERVICEABILITY. ALL ROOFTOP EQUIPMENT MUST BE A MINIMUM OF 10 FEET FROM ROOF EDGE.
15. MC SHALL FURNISH A BOUND SET OF OPERATING AND MAINTENANCE INSTRUCTIONS FOR ALL EQUIPMENT TO THE OWNER UPON COMPLETION OF THE PROJECT. MC SHALL PROVIDE ALL DOCUMENTATION TO THE OWNER AS NECESSARY TO SUBMIT FOR FACTORY WARRANTIES.
16. CONTRACTOR SHALL PROTECT ALL HVAC EQUIPMENT FROM CONSTRUCTION AND SHEET ROCK DUST DURING CONSTRUCTION. ALL FILTERS SHALL BE REPLACED WITH NEW AT THE COMPLETION OF THE PROJECT.
17. ALL EQUIPMENT INSTALLED ON ROOF MUST BE WITHIN THE ROOF SCREEN.
18. IF A ROOF PENETRATION IS REQUIRED AND THE ROOF IS UNDER WARRANTY, USE THE AUTHORIZED ROOFER. PROVIDE DOCUMENTATION.
19. ALL PIPING, WIRING, CONDUIT, INSULATION, EQUIPMENT, SUPPORTS, ETC. SHALL BE SUITABLE FOR INSTALLATION IN A RETURN PLENUM AS NECESSARY. COORDINATE WITH OTHER TRADES ON LOCATIONS OF ALL PLENUMS.
20. MC SHALL COORDINATE WITH THE GENERAL CONTRACTOR TO ENSURE ALL APPLICABLE CONSTRUCTION WASTE IS RECYCLED DURING THE CONSTRUCTION PHASE OF THE PROJECT.

MATERIALS:

1. THE MC SHALL PROVIDE ALL DX UNITARY HEATING AND COOLING EQUIPMENT AS SCHEDULED ON THE DRAWINGS. AIR-COOLED SPLIT SYSTEM HEAT PUMPS AND AIR-CONDITIONERS SHALL BE BY TRANE, CARRIER, OR YORK. AIR-COOLED ROOFTOP PACKAGE HEAT PUMPS, GAS-ELECTRIC UNITS, AND AIR-CONDITIONERS SHALL BE BY TRANE, CARRIER, OR YORK. GAS FURNACES SHALL BE BY TRANE, CARRIER, OR YORK. THE MC SHALL PROVIDE FACTORY AND FIELD INSTALLED ACCESSORIES AS SCHEDULED OR AS NECESSARY FOR A COMPLETE AND OPERATIONAL HVAC SYSTEM.
2. THE MC SHALL PROVIDE ALL EXHAUST AND SUPPLY FANS AS SCHEDULED. FANS SHALL BE BY GREENBECK, LOREN COOK, TWIN CITY, OR PENNBARRY.
3. DUCTWORK IS SHOWN WITH FREE AREA DIMENSIONS. ALL DUCTWORK SHALL BE FABRICATED AND INSTALLED IN ACCORDANCE WITH SMACNA LOW PRESSURE DUCT STANDARD, 2 INCH S.P.
4. EXTERNAL DUCT INSULATION AND FACTORY-INSULATED FLEXIBLE DUCT SHALL BE LEGIBLY PRINTED OR IDENTIFIED AT INTERVALS NOT GREATER THAN 36 INCHES WITH THE NAME OF THE MANUFACTURER, THE THERMAL RESISTANCE R-VALUE AT THE SPECIFIED INSTALLED THICKNESS AND THE FLAME SPREAD AND SMOKE-DEVELOPED INDEXES OF THE COMPOSITE MATERIALS. ALL DUCT INSULATION PRODUCT R-VALUES SHALL BE BASED ON INSULATION ONLY, EXCLUDING AIR FILMS, VAPOR RETARDERS OR OTHER DUCT COMPONENTS, AND SHALL BE BASED ON TESTED C-VALUES AT 75°F MEAN TEMPERATURE AT THE INSTALLED THICKNESS, IN ACCORDANCE WITH RECOGNIZED INDUSTRY PROCEDURES. THE INSTALLED THICKNESS OF DUCT INSULATION USED TO DETERMINE ITS R-VALUES SHALL BE DETERMINED AS FOLLOWS:
   4.1. FOR DUCT WRAP, THE INSTALLED THICKNESS SHALL BE ASSUMED TO BE 75 PERCENT (25-PERCENT COMPRESSION) OF NOMINAL THICKNESS.
   4.2. FOR FACTORY-MADE FLEXIBLE AIR DUCTS, THE INSTALLED THICKNESS SHALL BE DETERMINED BY DIVIDING THE DIFFERENCE BETWEEN THE ACTUAL OUTSIDE DIAMETER AND NOMINAL INSIDE DIAMETER BY TWO.
5. ALL INSULATION CONTAINING FIBROUS MATERIALS EXPOSED TO AIRFLOW SHALL BE RATED FOR THAT EXPOSURE OR SHALL BE ENCAPSULATED. INSULATING PROPERTIES FOR ALL MATERIALS SHALL MEET OR EXCEED INDUSTRY STANDARDS. POLYSTYRENE PRODUCTS SHALL MEET ASTM C578. ALL INSULATION SHALL HAVE FORMALDEHYDE EMISSIONS NOT GREATER THAN 0.05 PPM. THE MAXIMUM FLAME SPREAD AND SMOKE DEVELOPED INDEX FOR INSULATION SHALL MEET THE REQUIREMENTS OF THE LOCAL CODES AND ORDINANCES ADOPTED BY THE JURISDICTION IN WHICH THE BUILDING IS LOCATED.
6. MASTIC USED TO SEAL DUCTWORK SHALL BE LISTED AND LABELED IN ACCORDANCE WITH UL 181A-95 OR UL 181B-98. MAINTAIN AMBIENT TEMPERATURES AND CONDITIONS REQUIRED BY MANUFACTURER OF ADHESIVES, MASTICS, AND INSULATION CEMENTS. DO NOT INSTALL DUCT SEALANT WHEN TEMPERATURES ARE LESS THAT THOSE RECOMMENDED BY THE SEALANT MANUFACTURER.
7. ALL ADHESIVES AND SEALANTS SHALL HAVE VOC CONTENT BELOW 20 GRAMS PER LITER AND WHICH MEET THE REQUIREMENTS OF THE MANUFACTURER OF THE PRODUCTS BEING ADHERED OR INVOLVED. ADHESIVES AND SEALANTS SHALL CONTAIN NO HEAVY METALS OR FORMALDEHYDE.
8. FACTORY-MADE AIR DUCTS AND CONNECTORS SHALL COMPLY WITH UL 181-96.
9. FLEXIBLE DUCT SHALL BE UL LISTED CLASS 0 OR CLASS 1, INSULATED, AND COMPLY WITH UL 181. FLEXIBLE DUCT SHALL BE FACTORY FORMED, COMPOSED OF SPIRAL WOUND CORROSION RESISTANT WIRE BONDED TO AN INNER FABRIC LINER. DUCT SHALL BE FACTORY INSULATED WITH A FOIL VAPOR BARRIER JACKET. CONNECT TO RIGID DUCT WITH SPIN-IN FITTING AND DAMPER. FLEXIBLE DUCTS AND AIR CONNECTORS SHALL NOT PASS THROUGH ANY FIRE RESISTANCE RATED ASSEMBLY.
10. THE MC SHALL PROVIDE ALL DIFFUSERS GRILLES, LOUVERS, AND OTHER AIR DISTRIBUTION OUTLETS AND INLETS. LOUVERS, GRILLES, AND DIFFUSERS SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTALLATION INSTRUCTIONS. FOR LAY-IN CEILINGS, INSTALL SUPPORT FROM THE STRUCTURE FOR EACH DIFFUSER OR DAMPER. AIR DISTRIBUTION OUTLETS AND INLETS SHALL BE BY HART & COOLEY, PRICE, METAL-AIRE, NAILOR, OR CARNES.
11. AIR FILTERS SHALL BE INSTALLED IN ACCORDANCE WITH SECTION 605 OF THE 2018 NC MECHANICAL CODE.
12. THE MC SHALL PROVIDE ALL REFRIGERATION PIPING. ALL PIPE AND FITTINGS SHALL BE TYPE ACR HARD COPPER TUBING WITH SWEAT FITTINGS. REFRIGERATION LINES SHALL BE RUN NEATLY. WHERE A GROUP OF LINES ARE RUN, TRAPEZE HANGERS MAY BE USED. DO NOT USE CHAIN OR WIRE HANGERS. WRAP TUBING WITH RUBBER TAPE AT EACH CLAMP OR HANGER. FOR COVERED PIPES, HANGERS SHALL FIT AROUND THE OUTSIDE OF THE COVERING WITH 12 GAUGE GALVANIZED STEEL SHIELDS OF A LENGTH EQUAL TO THE OUTSIDE DIAMETER OF THE INSULATION AND COVERING 3/4 OF THE CIRCUMFERENCE OF THE INSULATION. SAGS SHALL NOT BE PERMISSIBLE. HORIZONTAL LINES SHALL PITCH DOWN NOT LESS THAN 1 INCH IN 40 FEET. INSULATE WITH 1 INCH CLOSED CELL ARMAFLEX TYPE INSULATION WITH A FLAME DENSITY RATING LESS THAN 25 AND A SMOKE DENSITY RATING LESS THAN 50. ALL JOINTS AND SPLICES IN INSULATION SHALL BE TAPED AND AIR TIGHT. SOLDER REFRIGERATION LINES USING 15 PERCENT SILVER SOLDER AND EVACUATE LINES TO 300 MICRONS. PROVIDE MOISTURE INDICATING SIGHT GLASS AND FILTER DRYER IN LIQUID LINE. PROVIDE OIL TRAPS AND DOUBLE RISERS IN REFRIGERANT SUCTION AND HOT GAS LINES WHERE REQUIRED TO PREVENT OIL SURGING AT THE COMPRESSOR AND INSURE PROPER LUBRICATION. MC SHALL BE RESPONSIBLE FOR SEALING LINE SET PENETRATIONS OF ANY RATED ASSEMBLIES IN ACCORDANCE WITH A SYSTEM LISTED IN THE UL DIRECTORY FOR THE SPECIFIC ASSEMBLY BEING PENETRATED. SEE ARCHITECTURAL PLANS FOR A LIST OF ALL UL FIRE RATED ASSEMBLIES.

METHODS:

1. INSULATE DUCTWORK WITH FIBERGLASS DUCT WRAP; INSTALLED R-VALUE SHALL BE A MINIMUM R-6. COVERINGS AND LININGS, INCLUDING ADHESIVES WHEN USED, SHALL HAVE A FLAME SPREAD INDEX NOT MORE THAN 25 AND A SMOKE-DEVELOPED INDEX NOT MORE THAN 50 WHEN TESTED IN ACCORDANCE WITH ASTM E 84. ALL NEW DUCTWORK SHALL RECEIVE INSULATION ON THE OUTSIDE. INSTALL DUCT WRAP INSULATION WITH FACING OUTSIDE SO THAT TAPE FLAP OVERLAPS INSULATION AND FACING OF ADJACENT PIECE OF DUCT WRAP. INSULATION SHALL BE TIGHTLY BUTTED. FOR RECTANGULAR DUCTS, INSTALL SO INSULATION IS NOT EXCESSIVELY COMPRESSED AT DUCT CORNERS. STAPLE SEAMS APPROXIMATELY 6 INCHES ON CENTER WITH OUTWARD CLINCHING STAPLES. SEAL SEAMS WITH PRESSURE SENSITIVE TAPE MATCHING THE FACING. FOR RECTANGULAR DUCTS 24 INCHES IN WIDTH OR GREATER, SECURE DUCT WRAP TO THE BOTTOM OF THE DUCT WITH MECHANICAL FASTENERS SPACED 18 INCHES ON CENTER TO PREVENT SAGGING OF INSULATION. ADJACENT SECTIONS OF DUCT WRAP SHALL BE TIGHTLY BUTTED WITH THE 2 INCH TAPE FLAP OVERLAPPING. ALL TEARS, PUNCTURES, ETC. OF THE DUCT WRAP INSULATION SHALL BE SEALED WITH TAPE OR MASTIC TO PROVIDE A VAPOR TIGHT SYSTEM. INSULATION SHALL BE BY KNAUF INSULATION, OWENS CORNING CORP, OR CERTAINTEED CORPORATION.
2. VERIFY THAT DUCTS HAVE BEEN TESTED BEFORE APPLYING INSULATION MATERIALS. VERIFY THAT DUCT SURFACES ARE CLEAN, DRY AND FREE OF FOREIGN MATERIAL PRIOR TO INSULATING. DUCT COVERINGS SHALL NOT PENETRATE A WALL OR FLOOR REQUIRED TO HAVE A FIRE-RESISTANCE RATING OR REQUIRED TO BE FIRE BLOCKED.
3. WHERE DUCTS ARE CONNECTED TO EXTERIOR WALL LOUVERS AND DUCT OUTLET IS SMALLER THAN LOUVER FRAME, PROVIDE BLANK-OUT PANELS SEALING LOUVER AREA AROUND DUCT. USE SAME MATERIAL AS DUCT, PAINTED BLACK ON EXTERIOR SIDE; SEAL TO LOUVER FRAME AND DUCT.
4. PROVIDE DUCT ACCESS DOORS FOR INSPECTION AND CLEANING BEFORE AND AFTER FILTERS, COILS, FANS, AUTOMATIC DAMPERS, AT FIRE DAMPERS, COMBINATION FIRE AND SMOKE DAMPERS.
5. CONSTRUCT T's, BENDS, AND ELBOWS WITH RADII OF NOT LESS THAN 1-1/2 TIMES THE WIDTH OF THE DUCT ON CENTERLINE WHERE NOT POSSIBLE AND WHERE RECTANGULAR ELBOWS MUST BE USED, PROVIDE TURNING VANES.
6. INCREASE DUCT SIZES GRADUALLY, NOT EXCEEDING 15 DEGREES DIVERGENCE; MAXIMUM OF 30 DEGREES DIVERGENCE UPSTREAM OF EQUIPMENT AND 45 DEGREES CONVERGENCE DOWNSTREAM.
7. IT SHALL BE THE RESPONSIBILITY OF THE MC TO SUSPEND AND SUPPORT ALL EQUIPMENT, DUCTWORK, DIFFUSERS, AND OTHER MATERIALS FOLLOWING RECOGNIZED ENGINEERING PRACTICES AND USING STANDARD, COMMERCIALLY ACCEPTED HANGERS AND SUSPENSION EQUIPMENT. ALL HVAC EQUIPMENT SHALL BE SECURELY MOUNTED TO THE BUILDING STRUCTURE AND SHALL NOT RELY ON CEILING OR WALL SURFACES FOR SUPPORT. THE SUPPORT ATTACHMENT SHALL SUPPORT THE WEIGHT OF THE EQUIPMENT PLUS THE WEIGHT OF THE SUPPORT ATTACHMENT ITSELF. SUPPORT FROM THE TOP CHORD OF THE ROOF JOISTS, GIRDERS, AND BEAMS. THE BOTTOM CHORD IS NOT TO BE USED FOR EQUIPMENT OR PIPING SUPPORT. HANGERS SHALL NOT BE ATTACHED TO CORRUGATED STEEL DECKING.
8. DUCTS SHALL BE SUPPORTED IN ACCORDANCE WITH SMACNA AT INTERVALS NOT EXCEEDING 10 FEET. DUCTS 36 INCHES OR LARGER SHALL HAVE TRAPEZE TYPE HANGERS SUSPENDED WITH THREADED ROD. SUPPORT DUCTS FROM BAR JOISTS, GIRDERS, OR BEAMS.
9. CHECK LOCATIONS OF AIR OUTLETS AND INLETS AND MAKE NECESSARY ADJUSTMENTS IN POSITION TO CONFORM WITH ARCHITECTURAL FEATURES, SYMMETRY, AND LIGHTING ARRANGEMENT. COORDINATE WITH SPRINKLER CONTRACTOR IF APPLICABLE.
10. PROVIDE BALANCING DAMPERS AT POINTS ON SUPPLY WHERE BRANCHES ARE TAKEN FROM LARGER DUCTS AS REQUIRED FOR AIR BALANCING. INSTALL MINIMUM 2 DUCT WIDTHS FROM DUCT TAKE-OFF. PROVIDE BALANCING DAMPERS ON DUCT TAKE-OFFS TO DIFFUSERS, AND REGISTERS, REGARDLESS OF WHETHER DAMPERS ARE SPECIFIED AS PART OF THE DIFFUSER OR REGISTER ASSEMBLY. ADJUST AIR HANDLING AND DISTRIBUTION SYSTEMS TO PROVIDE DESIGN SUPPLY, RETURN, AND EXHAUST AIR QUANTITIES AT SITE ALTITUDE.
11. MC SHALL INSTALL FIRE DAMPERS AT EACH PENETRATION OF A RATED WALL AS INDICATED ON THE DRAWINGS OR AS REQUIRED BY THE AUTHORITY HAVING JURISDICTION. FIRE DAMPERS SHALL BE UL LABELED (UL 555), CURTAIN TYPE, WITH INTEGRAL FACTORY SLEEVE AND BLADES LOCATED OUTSIDE THE AIR STREAM. INSTALLATION OF ALL FIRE DAMPERS SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S INSTALLATION INSTRUCTIONS AND SECTION 607 OF THE 2018 NC MECHANICAL CODE. PROVIDE ACCESS PANELS FOR TESTING AND SERVICE AS NECESSARY. MC SHALL PROVIDE RADIATION DAMPERS AND THERMAL BLANKETS FOR ALL PENETRATIONS OF RATED CEILING ASSEMBLIES. RADIATION DAMPERS SHALL BE UL LABELED (UL 555C) AND INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFIC INSTALLATION INSTRUCTIONS. FIRE DAMPERS, COMBINATION FIRE/SMOKE DAMPERS, AND CEILING RADIATION DAMPERS SHALL BE BY RUSKIN, NAILOR, OR LLOYD INDUSTRIES.
12. MC SHALL INSTALL A SMOKE DETECTOR–UL LISTED FOR DUCT INSTALLATION (UL 268A) IN EACH UNIT'S RETURN UPSTREAM OF ANY FILTERS, OUTSIDE AIR CONNECTIONS, OR DECONTAMINATION EQUIPMENT. DUCT SMOKE DETECTORS SHALL BE INSTALLED IN ACCORDANCE WITH NFPA 72. DUCT SMOKE DETECTOR SUPERVISION SHALL COMPLY WITH 606.4.1 OF THE 2018 NC MECHANICAL CODE. IF THE BUILDING IS (TO BE) EQUIPPED WITH A FIRE ALARM SYSTEM, THE FIRE ALARM SYSTEM CONTRACTOR SHALL FURNISH AND WIRE ALL DUCT SMOKE DETECTORS. IF THE BUILDING IS NOT PROVIDED WITH A FIRE ALARM SYSTEM, THE MC SHALL FURNISH AND WIRE THE DUCT SMOKE DETECTORS AND A/V DEVICE. IT SHALL BE THE RESPONSIBILITY OF THE MC TO INSTALL ALL SMOKE DUCT DETECTORS PER NFPA AND MFG'S INSTALLATION INSTRUCTIONS REGARDLESS OF WHO FURNISHES THE DEVICES.
13. MC SHALL INSTALL PROGRAMMABLE THERMOSTATS AS SHOWN ON THE PLANS. THERMOSTAT SHALL BE MOUNTED AT 48 INCHES AFF. THERMOSTATS SHALL MEET THE REQUIREMENTS OF SECTION C403.2.4 OF THE 2018 NORTH CAROLINA ENERGY CONSERVATION CODE.
14. FRESH AIR INTAKES SHALL BE INSTALLED ON ALL UNITS AS SHOWN ON DRAWINGS. MAINTAIN 10 FEET OF DISTANCE BETWEEN FRESH AIR INTAKES AND ALL EXHAUST TERMINATIONS AND PLUMBING VENT THRU ROOFS.
15. UNITS PROVIDED WITH ECONOMIZERS SHALL ALSO BE PROVIDED WITH POWERED EXHAUST AND COMPARATIVE ENTHALPY CONTROLS.
16. MC SHALL INSTALL ALL EXHAUST FANS AND VENT TO THE BUILDING'S EXTERIOR. EC SHALL SWITCH FANS WITH LIGHTS OR ON SEPARATE SWITCH AS SHOWN.
17. P-TRAPS MUST BE INSTALLED ON ALL UNITS. MC SHALL INSTALL AUXILIARY DRAIN PANS UNDER OVERHEAD AIR HANDLERS AND AN AUTOMATIC CUT-OFF FLOAT SWITCH FOR EACH. P-TRAPS AND CONDENSATE LINES SHALL BE 1 INCH. P-TRAPS AND CONDENSATE LINES MAY BE PVC WHERE NOT LOCATED IN PLENUMS; OTHERWISE, THEY SHALL BE TYPE M COPPER.
18. INSTALL BACKDRAFT DAMPERS ON FRESH AIR AND EXHAUST DUCTS WHERE THEY PENETRATE THE THERMAL ENVELOPE PER NORTH CAROLINA ENERGY CONSERVATION CODE C402.5.5

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SEAL 17314 ENGINEER MICHAEL W. KILIAN SEAL

KILIAN ENGINEERING CORPORATE SEAL NORTH CAROLINA SEAL

NEW BUILDING for PAUL BARBOUR & SONS
11496 HWY 401N
FUQUAY VARINA, NC 27526

REVISION:

ISSUED: 5/23/22 ISSUED FOR PERMITTING DC/MWK

DRAWN BY: DC
CHECKED BY: MWK/KDC

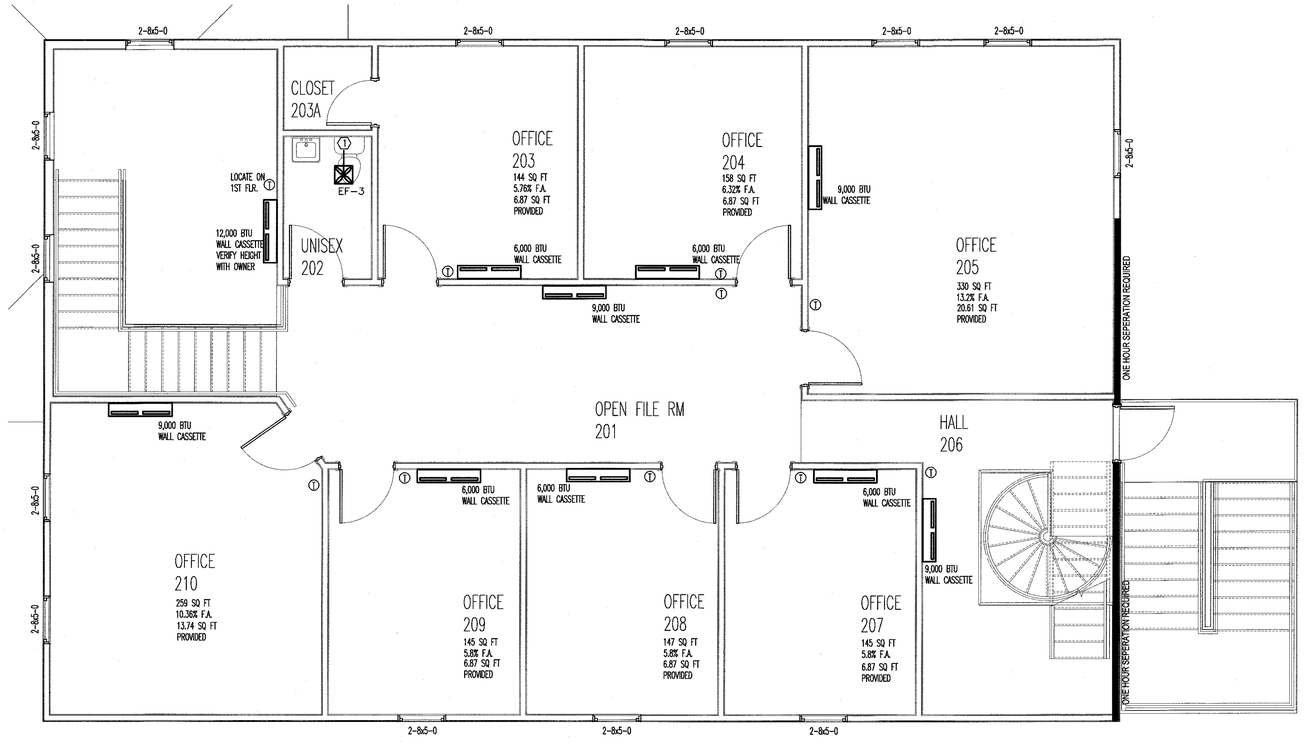
MECHANICAL NOTES & SCHEDULES

SHEET NO.
M1

PROJECT NO: 22284

MECHANICAL PLAN HEX NOTES

1. MC TO ROUTE 6"ø EXHAUST DUCT FROM EF-1 TO EXTERIOR THROUGH ROOF OR WALL. TERMINATE WITH ROOF CAP OR HOODED WALL CAP A MIN. OF 10'-0" FROM FRESH AIR LOUVER.



2ND FLR. MECHANICAL PLAN SCALE: 1/4"=1'-0" | 1

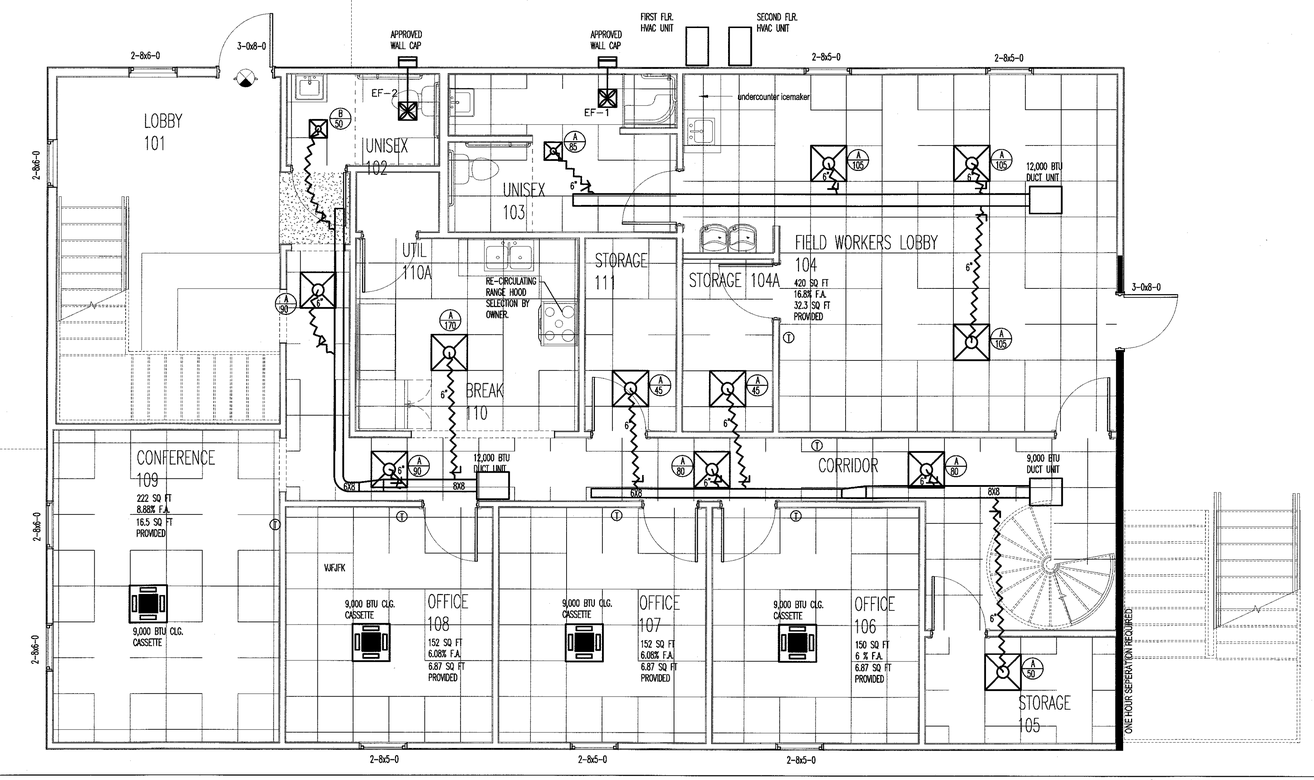
① THERMOSTAT LOCATION MOUNT AT 48" A.F.F. VERIFY LOCATION WITH OWNER

REGISTER & GRILLE SCHEDULE						
MARK	MFG	MODEL #	SIZE	MOUNTING	DESCRIPTION	NOTES
A	HART & COOLEY	HVS	24X24	LAY-IN	4-WAY DIFFUSER, BRIGHT WHITE	1
B	HART & COOLEY	HVS	12X12	LAY-IN	4-WAY DIFFUSER, BRIGHT WHITE	1
C	HART & COOLEY	SRE	12X12	SURFACE	STEEL, 4 WAY DIFFUSER, BRIGHT WHITE	1

1. OR EQUAL BY PRICE, METAL-AIRE, CARMES, TITUS OR NAILOR.
2. PROVIDE WITH FOIL LINED, MOLDED INSULATION BLANKET. (FOR USE WITH HVS OR TBAR TYPE DIFFUSERS ONLY)

EXHAUST FAN SCHEDULE								
MARK	MFG / MODEL #	TYPE	ESP (in WG)	CFM	VOLT/PH	FLA	SONES	NOTES
EF-1	GREENHECK SP-A200	CEILING	0.40	179	120/1	0.43	3.0	1-3
EF-2,3	GREENHECK SP-B110	CEILING	0.40	96	120/1	1.14	2.0	1-3

1. PROVIDE WITH PITCHED ROOF CURB & CAP FOR FLAT OR SLOPED ROOF, OR HOODED WALL WITH BACKDRAFT DAMPER CAP AS APPLICABLE.
2. PROVIDE WITH SQUARE TO ROUND DUCT ADAPTER AS NECESSARY
3. OR EQUAL BY LOREN COOK OR PENNBARRY OR TWIN CITY
4. VERIFY VOLTAGE BEFORE ORDERING.



IST FLR. MECHANICAL PLAN SCALE: 1/4"=1'-0" | 2

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SEAL 17304 5-23-22 MICHAEL W. KILIAN ENGINEER NORTH CAROLINA

SEAL

KILIAN ENGINEERING CORPORATE SEAL NORTH CAROLINA

SEAL

NEW BUILDING
for PAUL BARBOUR & SONS
11496 HWY 401N
ROLLY VARINA, NC 27526

REVISION:

DESCRIPTION	DATE

ISSUED:

DESCRIPTION	DATE
ISSUED FOR PERMITTING	5/23/22

DRAWN BY: DC
CHECKED BY: MWK/KDC

MECHANICAL PLANS

SHEET NO.

M2

PROJECT NO: 22284

				PANEL A				
CKT	LOAD	BKR	LOAD kVA	PH	LOAD kVA	BKR	LOAD	CKT
1	PANEL 1	100/2	7.80	A	5.30	100/2	PANEL 2	2
3			4.00	B	3.20			4
5	RANGE	50/2	3.99	A	2.25	30/2	ELECT. WATER HEATER	6
7			3.99	B	2.25			8
9	1ST FLR. HVAC	40/2	3.84	A	3.84	40/2	2ND FLR. HVAC	10
11			3.84	B	3.84			12
13	WAREHOUSE 1	30/2	2.88	A	2.88	30/2	WAREHOUSE 2	14
15			2.88	B	2.88			16
17	GATE OPENER	20/2	1.92	A	0.00		SPACE	18
19			1.92	B	0.00		SPACE	20
21	SPACE		0.00	A	0.00		SPACE	22
23	SPACE		0.00	B	0.00		SPACE	24
25	SPACE		0.00	A	0.00		SPACE	26
27	SPACE		0.00	B	0.00		SPACE	28
29	SPACE		0.00	A	0.00		SPACE	30
			kVA	PH	AMPS			
			34.7	A	289			
			28.8	B	240			

VOLTAGE/PHASE	120/240, 1P, 3W
BUS RATING	400A
MAIN CIRCUIT BREAKER RATING	400A MB
AIC RATING	10K AIC
SERVICE ENTRANCE RATED	YES
ENCLOSURE	NEMA 3R
MOUNTING	SURFACE

* USE GFCI BREAKER.

				PANEL 1				
CKT	LOAD	BKR	LOAD kVA	PH	LOAD kVA	BKR	LOAD	CKT
1	BRK. RM RECPT.	20/1	0.54	A	0.72	20/1	BRK. RM, LOBBY RECPT.	2
3	REFIG. RECPT.	20/1*	0.18	B	0.54	20/1	GFCI BATH RM RECPT.	4
5	OFFICE 104, GFCI C-TOP	20/1	0.36	A	0.90	20/1	OFFICE 104 RECPT.	6
7	OFFICE 104 RECPT.	20/1	0.90	B	0.36	20/1	PHONE BD. RECPT.	8
9	OFFICE 106 RECPT.	20/1	0.90	A	1.08	20/1	OFFICE 106,107,108 RECPT.	10
11	OFFICE 108, CONF. RM RECPT.	20/1	1.08	B	0.72	20/1	CONF. RM. RECPT.	12
13	CONF. RM / EXT. RECPT.	20/1	0.54	A	1.20	20/1	SIGN CKT.	14
15	WATER COOLER	20/1*	0.18	B	0.00	20/1	SPARE	16
17	1ST. FLR. LIGHTS	20/1	1.54	A	0.00	20/1	SPARE	18
19	SPACE		0.00	B	0.00		SPACE	20
21	SPACE		0.00	A	0.00		SPACE	22
23	SPACE		0.00	B	0.00		SPACE	24
25	SPACE		0.00	A	0.00		SPACE	26
27	SPACE		0.00	B	0.00		SPACE	28
29	SPACE		0.00	A	0.00		SPACE	30
31	SPACE		0.00	B	0.00		SPACE	32
33	SPACE		0.00	A	0.00		SPACE	34
35	SPACE		0.00	B	0.00		SPACE	36
37	SPACE		0.00	A	0.00		SPACE	38
39	SPACE		0.00	B	0.00		SPACE	40
41	SPACE		0.00	A	0.00		SPACE	42
			kVA	PH	AMPS			
			7.8	A	65			
			4.0	B	33			

VOLTAGE/PHASE	120/240, 1P, 3W
BUS RATING	200A
MAIN CIRCUIT BREAKER RATING	100A
AIC RATING	10K AIC
SERVICE ENTRANCE RATED	NO
ENCLOSURE	NEMA 1
MOUNTING	FLUSH

* USE GFCI BREAKER.
** USE GFPE BREAKER FOR HOT BOX CKT.

				PANEL 2				
CKT	LOAD	BKR	LOAD kVA	PH	LOAD kVA	BKR	LOAD	CKT
1	OFFICE 208,209 RECPT	20/1	0.72	A	1.08	20/1	OFFICE 210 RECPT.	2
3	OFFICE 208,209 RECPT.	20/1	0.90	B	0.90	20/1	OFFICE 207 RECPT.	4
5	OFFICE 205 RECPT.	20/1	0.72	A	0.72	20/1	OFFICE 204,205 RECPT.	6
7	OFFICE 204 RECPT.	20/1	0.72	B	0.72	20/1	OFFICE 203 RECPT.	8
9	OFFICE 203,GFCI BATH RECPT.	20/1	0.36	A	0.00	20/1	SPARE	10
11	SPARE	20/1	0.00	B	0.00	20/1	SPARE	12
13	2ND FLR. LIGHTS	20/1	1.40	A	0.35	20/1	ATTIC LIGHTS	14
15	SPACE		0.00	B	0.00		SPACE	16
17	SPACE		0.00	A	0.00		SPACE	18
19	SPACE		0.00	B	0.00		SPACE	20
21	SPACE		0.00	A	0.00		SPACE	22
23	SPACE		0.00	B	0.00		SPACE	24
25	SPACE		0.00	A	0.00		SPACE	26
27	SPACE		0.00	B	0.00		SPACE	28
29	SPACE		0.00	A	0.00		SPACE	30
31	SPACE		0.00	B	0.00		SPACE	32
33	SPACE		0.00	A	0.00		SPACE	34
35	SPACE		0.00	B	0.00		SPACE	36
37	SPACE		0.00	A	0.00		SPACE	38
39	SPACE		0.00	B	0.00		SPACE	40
41	SPACE		0.00	A	0.00		SPACE	42
			kVA	PH	AMPS			
			5.3	A	45			
			3.2	B	27			

VOLTAGE/PHASE	120/240, 1P, 3W
BUS RATING	200A
MAIN CIRCUIT BREAKER RATING	100A
AIC RATING	10K AIC
SERVICE ENTRANCE RATED	NO
ENCLOSURE	NEMA 1
MOUNTING	FLUSH

NEC ELECTRIC DEMAND SUMMARY 120/240V, 1P, 3W						
EQUIPMENT	DEMAND FACTOR	kVA A	kVA B	LOAD kVA	NEC REFERENCE	NOTES/CALCULATIONS
LIGHTING	125%	3.50	3.50	7.00	220.12	4394SF X 1.3 VA/SF X 1.25
RECEPTACLES < 10 kVA	100%	5.00	5.00	10.00	220.44	
RECEPTACLES > 10 kVA	50%	1.40	1.40	2.80	220.44	
HVAC	100%	7.68	7.68	15.36	--	BASED ON MCA
WATER HEATER	125%	2.81	2.81	5.62	422.13	STORAGE TANK <120 GAL @ 125%
WAREHOUSE 1	100%	2.88	2.88	5.76		
WAREHOUSE 2	100%	2.88	2.88	5.76		
GATE OPENER	100%	1.92	1.92	3.84		
RANGE	100%	3.96	3.96	7.92		
DEMAND kVA PER PHASE		32.03	32.03			
DEMAND AMPS PER PHASE		267	267			

THE CALCULATED LIGHTING LOAD EXCEEDS THE CONNECTED LIGHTING LOAD.

DESCRIPTION	FURN. BY	VOLT/PH	MCA	MOCP	DISC	AWG	EGC	COND
RANGE	OWNER	240/1	33.3	50	60	#8	#10	1"
WATER HEATER	PC	240/1	18.75	30	30	#10	#10	3/4"
HVAC 1ST FLR. *	MC	240/1	3.84	40	60	#8	#10	1"
HVAC 2ND FLR. *	MC	240/1	3.84	40	60	#8	#10	1"
WAREHOUSE 1	OWNER	240/1	24	30	30	#10	#10	3/4"
WAREHOUSE 2	OWNER	240/1	24	30	30	#10	#10	3/4"
GATE OPENER	OWNER	240/1	16	20	30	#12	#12	1/2"

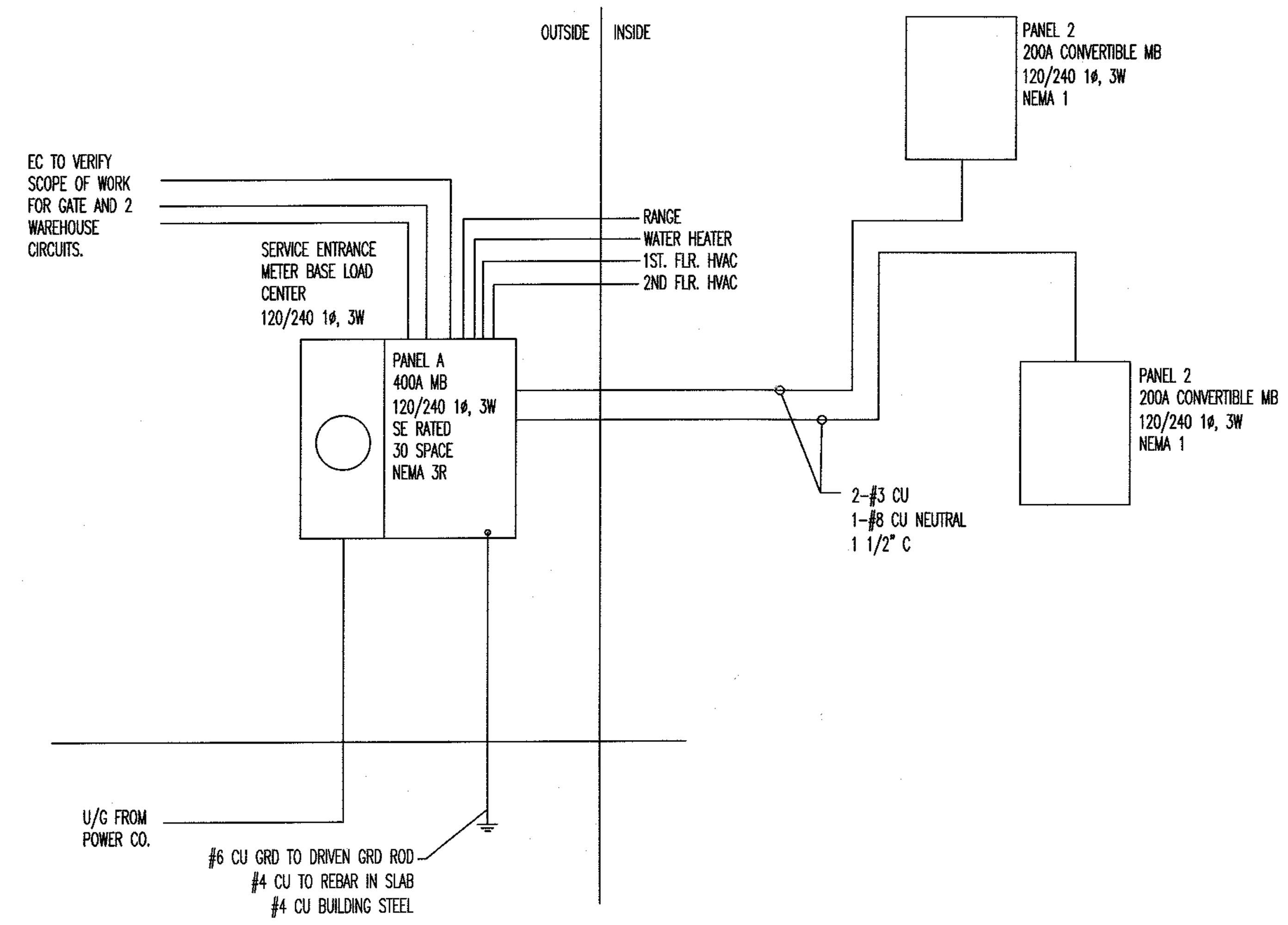
* EC TO VERIFY ALL ELECTRICAL REQUIREMENTS OF ALL ACTUAL EQUIPMENT BEFORE ROUGH IN.

ELECTRICAL DESIGNER'S STATEMENT			
ELECTRICAL SYSTEM AND EQUIPMENT METHOD OF COMPLIANCE PRESCRIPTIVE _X_ PERFORMANCE ___ ENERGY COST BUDGET ___			
LIGHTING SCHEDULE:			
LAMP TYPE REQUIRED IN FIXTURE:		SEE LIGHTING LEGEND	
NUMBER OF LAMPS PER FIXTURE:		SEE LIGHTING LEGEND	
BALLAST TYPE USED IN FIXTURE:		SEE LIGHTING LEGEND	
NUMBER OF BALLASTS IN FIXTURE:		SEE LIGHTING LEGEND	
TOTAL WATTAGE PER FIXTURE:		SEE LIGHTING LEGEND	
TOTAL INTERIOR WATTAGE SPECIFIED VS ALLOWED:		WATTS SPECIFIED: 2350.0	WATTS ALLOWED: 3603.08
OCCUPANCY	AREA (sf)	ALLOWANCE (W/sf)	WATTAGE ALLOWED
OFFICE	4394	0.82	3603.08
TOTAL	4394		3603.08
EQUIPMENT SCHEDULES WITH MOTORS (NOT USED FOR MECHANICAL SYSTEMS) MOTOR HORSEPOWER: N/A NUMBER OF PHASES: N/A MINIMUM EFFICIENCY: N/A MOTOR TYPE: N/A NUMBER OF POLES: N/A			
DESIGNER STATEMENT: TO THE BEST OF MY KNOWLEDGE AND BELIEF, THE DESIGN OF THIS BUILDING COMPLIES WITH THE 2018 NORTH CAROLINA ENERGY CONSERVATION CODE.			

FOR THE ADDITIONAL PRESCRIPTIVE REQUIREMENT REQUIRED BY C406 OF 2018 NORTH CAROLINA ENERGY CONSERVATION CODE, WE ARE CHOOSING C406.3 – REDUCED LIGHTING POWER DENSITY.

2350 W SPECIFIED <= 3242 W (3603 W ALLOWED X 90%)

ELECTRICAL SCHEDULES | 1



ELECTRICAL POWER RISER | 2

GENERAL ELECTRICAL NOTES:

ADMINISTRATIVE:

1. THE FOLLOWING ABBREVIATIONS SHALL APPLY TO NOTES AND PLANS: PC – PLUMBING CONTRACTOR, EC – ELECTRICAL CONTRACTOR, MC – MECHANICAL CONTRACTOR, GC – GENERAL CONTRACTOR, FASC – FIRE ALARM SYSTEM CONTRACTOR, AHJ – AUTHORITY HAVING JURISDICTION.
2. "PROVIDE" MEANS TO FURNISH AND INSTALL. THE ELECTRICAL CONTRACTOR SHALL ALSO INSTALL MATERIALS AND EQUIPMENT FURNISHED BY OTHERS AND THE GENERAL CONTRACTOR AS REQUIRED.
3. EC SHALL PROVIDE LABOR, MATERIALS, EQUIPMENT, AND SERVICES NECESSARY AND REASONABLY INCIDENTAL TO INSURE A COMPLETE AND OPERATIONAL ELECTRICAL SYSTEM IN ACCORDANCE WITH THESE PLANS AND SPECIFICATIONS. MINOR ITEMS, ACCESSORIES, AND DEVICES REASONABLY INFERABLE AS NECESSARY FOR THE COMPLETION AND PROPER OPERATION OF ANY ELECTRICAL SYSTEM SHALL BE PROVIDED BY THE ELECTRICAL CONTRACTOR.
4. WORKMANSHIP SHALL BE IN ACCORDANCE WITH NECA 1 "STANDARD PRACTICE FOR GOOD WORKMANSHIP IN ELECTRICAL CONTRACTING."
5. ALL MATERIALS AND EQUIPMENT SHALL BE DELIVERED TO THE SITE AND UNLOADED BY THE ELECTRICAL CONTRACTOR AT AN APPROVED LOCATION. THE ELECTRICAL CONTRACTOR SHALL PROTECT ALL MATERIALS AND EQUIPMENT FROM BREAKAGE, THEFT, AND THE ELEMENTS. ALL MATERIALS AND EQUIPMENT SHALL REMAIN THE PROPERTY OF THE ELECTRICAL CONTRACTOR UNTIL THE PROJECT HAS BEEN COMPLETED AND TURNED OVER TO THE OWNER.
6. THE ELECTRICAL CONTRACTOR SHALL OBTAIN AND PAY FOR ALL PERMITS, FEES, AND INSPECTIONS NECESSARY FOR THE COMPLETION OF THE WORK UNDER THIS CONTRACT.
7. DO NOT SCALE THESE DRAWINGS–REFER TO ARCHITECTURAL SHEETS FOR DIMENSIONS.
8. TRADE NAMES AND MANUFACTURERS ARE SPECIFIED TO ESTABLISH A QUALITY STANDARD. SUBSTITUTIONS SHALL BE PERMITTED IF APPROVED BY THE ENGINEER PRIOR TO INSTALLATION. ALL LISTED MODEL NUMBERS SHALL BE VERIFIED WITH THE MANUFACTURER FOR PROPER APPLICATION OF EQUIPMENT.
9. THE ELECTRICAL CONTRACTOR SHALL VISIT THE SITE PRIOR TO BIDDING TO BECOME FAMILIAR WITH EXISTING CONDITIONS. THE ELECTRICAL CONTRACTOR SHALL CONTACT THE ENGINEER TO RESOLVE ANY DISCREPANCIES BETWEEN EXISTING CONDITIONS AND THESE PLANS. THE ELECTRICAL CONTRACTOR SHALL COORDINATE WITH OTHER TRADES PRIOR TO THE START OF CONSTRUCTION.
10. GROUNDING AND BONDING SHALL BE PER NEC ARTICLE 250. THE RACEWAY SYSTEM SHALL NOT BE RELIED UPON FOR GROUNDING CONTINUITY. A GREEN EQUIPMENT GROUNDING CONDUCTOR, SIZED PER NEC TABLE 250–122, SHALL BE RUN IN ALL POWER RACEWAYS. FOR NON–ISOLATED GROUND CIRCUITS PROVIDE ONE EQUIPMENT GROUNDING CONDUCTOR PER CONDUIT RUN. FOR ISOLATED GROUND CIRCUITS, PROVIDE ONE NEUTRAL AND ONE ISOLATED GROUND WIRE FOR EACH CIRCUIT; IN ADDITION, PROVIDE ONE EQUIPMENT GROUNDING CONDUCTOR PER CONDUIT RUN. MAIN BONDING JUMPERS AND SYSTEM BONDING JUMPERS SHALL BE INSTALLED IN ACCORDANCE WITH 250.28 OF THE NEC. FOR BUILDINGS OR STRUCTURES SUPPLIED BY FEEDERS OR BRANCH CIRCUITS, GROUNDING AND BONDING SHALL BE IN ACCORDANCE WITH 250.32. SEPARATELY DERIVED AC SYSTEMS SHALL BE GROUNDED IN ACCORDANCE WITH 250.30. RESISTANCE TO GROUND SHALL NOT EXCEED 25 OHMS; ADDITIONAL GROUNDING ELECTRODES SHALL BE INSTALLED PER 250.56 AS NECESSARY.
11. THE ELECTRICAL CONTRACTOR SHALL ALSO COORDINATE WITH THE GENERAL CONTRACTOR REGARDING THE BONDING OF THE FOOTING REBAR, SO THAT IT WILL BE IN PLACE AND READY AT TIME OF FOOTING INSPECTION.
12. ALL MATERIALS AND EQUIPMENT SHALL COMPLY WITH THE UNDERWRITERS' LABORATORIES, INC. STANDARDS OR HAVE UL APPROVAL, OR BEAR UL RE–EXAMINATION LISTING WHERE SUCH APPROVAL HAS BEEN ESTABLISHED FOR THE TYPE OF DEVICE IN QUESTION.
13. CONDUCTORS, FUSES, CIRCUIT BREAKERS, AND DISCONNECT SWITCHES SHOWN ON THESE PLANS HAVE BEEN SIZED FOR THE SPECIFIED EQUIPMENT. BEFORE ORDERING ELECTRICAL EQUIPMENT, THE ELECTRICAL CONTRACTOR SHALL COORDINATE WITH OTHER CONTRACTORS ON THE SITE AND NOTIFY THE ENGINEER OF ANY DISCREPANCIES SHOULD CONDUCTOR, CIRCUIT BREAKER, OR FUSE SIZES REQUIRE CHANGE.
14. THE ELECTRICAL CONTRACTOR SHALL COORDINATE WITH THE GENERAL CONTRACTOR TO ENSURE THE FOLLOWING MATERIALS ARE RECYCLED DURING THE CONSTRUCTION PHASE OF THE PROJECT: LIGHT FIXTURES, INCLUDING PROPER DISPOSAL OF BALLASTS, FLUORESCENT LIGHT BULBS, AND TRANSFORMERS, WIRING AND ELECTRICAL EQUIPMENT, AND INSULATION. WASTE MATERIALS CONTAINING LEAD, ASBESTOS, PCBs (FLUORESCENT LAMP BALLASTS), OR OTHER HARMFUL SUBSTANCES SHALL BE HANDLED AND DISPOSED OF IN ACCORDANCE WITH FEDERAL AND STATE LAWS AND REQUIREMENTS CONCERNING HAZARDOUS WASTE.
15. ALL WORK SHALL CONFORM TO 2020 NATIONAL ELECTRIC CODE, 2018 STATE BUILDING CODE, AND ALL APPLICABLE LOCAL CODES.

MATERIALS:

1. THE ELECTRICAL CONTRACTOR SHALL PROVIDE ALL NECESSARY DISCONNECTS, SWITCHES, RECEPTACLES, TERMINALS, ETC, UNDER THE ELECTRICAL BID AND SHALL INCLUDE ALL NECESSARY CIRCUITS AND CONNECTIONS TO THE EQUIPMENT PROVIDED BY ALL SUPPLIERS, UNLESS NOTED OTHERWISE BY OTHER DISCIPLINES.
2. ELECTRICAL CONTRACTOR SHALL PROVIDE ALL SERVICE ENTRANCE EQUIPMENT, SUB PANELS, AND OTHER ELECTRICAL DISTRIBUTION EQUIPMENT AS NECESSARY FOR A COMPLETE INSTALLATION. ELECTRICAL CONTRACTOR SHALL COORDINATE WITH UTILITY REGARDING SERVICE AND METERING DETAILS. PRIOR TO ORDERING EQUIPMENT, THE ELECTRICAL CONTRACTOR SHALL OBTAIN THE AVAILABLE FAULT CURRENT OR TRANSFORMER SIZE AND IMPEDANCE FROM THE UTILITY AND CONTACT THE ENGINEER IF THE VALUE EXCEEDS THE EQUIPMENT SPECIFIED. PANEL BOARDS AND SWITCH BOARDS SHALL BE SQUARE D, CUTLER–HAMMER, SIEMENS, OR GE. BUSES SHALL BE COPPER UNLESS OTHERWISE APPROVED BY THE ENGINEER. RECESSED PANEL BOARDS SHALL BE INSTALLED FLUSH WITH THE WALL FINISH. METER BASES SHALL COMPLY WITH THE UTILITY'S SPECIFICATIONS AND SHALL BE MOUNTED AT A HEIGHT APPROVED BY THE UTILITY. ALL EQUIPMENT IDENTIFIED FOR SERVICE ENTRANCE USE SHALL BE SO LABELED AND UL LISTED FOR SUCH USE. ELECTRICAL CONTRACTOR SHALL INSTALL ALL ELECTRICAL EQUIPMENT WITH CLEARANCES PER NEC 110.26. ELECTRICIAN SHALL PERMANENTLY LABEL EQUIPMENT PER NEC 110.24.
3. ENCLOSED SAFETY SWITCHES SHALL BE HEAVY DUTY TYPE BY SQUARE D, EATON, OR GE. ENCLOSED SWITCHES SHALL HAVE A HANDLE LOCKABLE IN THE OFF POSITION AND SHALL HAVE A HANDLE INTERLOCKED TO PREVENT OPENING THE FRONT COVER WHILE IN THE ON POSITION. ENCLOSED SWITCHES OF THE FUSIBLE TYPE SHALL BE FUSED IN ACCORDANCE WITH NAMEPLATE DATA WITH DUAL ELEMENT TYPE FUSES BY BUSSMAN, LITTELFUSE, OR MERSEN.
4. OCCUPANCY SENSORS SHALL BE BY WATTSTOPPER, LUTRON, LEVITON, SENSOR SWITCH, HUBBELL, OR APPROVED EQUAL.
5. CIRCUIT BREAKERS SHALL BE MOLDED–CASE, THERMAL MAGNETIC TYPE WITH QUICK–MAKE, QUICK–BREAK MECHANISM, COMMON TRIP ON MULTI–POLE BREAKERS, AND UL LISTED FOR BOTH COPPER AND ALUMINUM CONDUCTORS. CIRCUIT BREAKERS IN PANELS SHALL BE SERIES RATED WITH THE MAIN BREAKER, FULLY RATED FOR THE SYSTEM, OR SERIES RATED WITH THE BREAKER FEEDING THE PANEL FROM THE FACTORY.
6. ALL WIRE, CONNECTORS, TERMINALS, AND LUGS SHALL BE PROVIDED BY THE ELECTRICAL CONTRACTOR. WHERE CONDUCTORS ARE RUN IN PARALLEL, LUGS SHALL BE LISTED FOR PARALLEL CONDUCTORS. PUSH WIRE CONNECTORS ARE NOT ALLOWED FOR BUILDING WIRE. PUSH CONNECTORS ARE ONLY ALLOWED, WHEN APPROVED, AS PART OF MANUFACTURED LISTED PRODUCTS. ALL WIRE SHALL BE INSTALLED IN CONDUIT UNLESS SPECIFICALLY NOTED OTHERWISE.
7. THE INSULATION TYPE FOR INTERIOR WIRING SHALL BE DUAL RATED THHN/THWN OR XHHW; ALL WIRING INSTALLED BELOW GRADE OR IN MOIST OR WET LOCATIONS SHALL HAVE TYPE THWN OR XHHW INSULATION. INSULATION VOLTAGE RATING SHALL BE 600 VOLTS AND A MINIMUM TEMPERATURE RATING OF 75°C. CONDUCTORS SHALL BE SOLID OR STRANDED COPPER FOR #10 AWG AND #12 AWG, AND STRANDED COPPER FOR #8 AWG AND LARGER SIZES. ALL WIRING AND CABLE SHALL BE UL LISTED. ALL TERMINATIONS AND DEVICES SHALL BE RATED FOR USE WITH 75°C CONDUCTORS. FINAL CONNECTIONS TO ALL MOTORS AND EQUIPMENT SUBJECT TO VIBRATION OR MOVEMENT SHALL BE MADE WITH STRANDED COPPER CONDUCTORS. CONDUCTORS SHALL BE BY CERRO WIRE, INC, INDUSTRIAL WIRE & CABLE, INC, ENCORE WIRE CORPORATION, OR SOUTHWIRE COMPANY.
8. JOINTS IN SOLID CONDUCTORS SHALL BE SPLICED USING IDEAL "WIRE NUTS", 3M "SCOTCH LOCK", OR T&B "PIGGY" CONNECTORS IN JUNCTION BOXES, OUTLET BOXES, AND LIGHTING FIXTURES. JOINTS IN STRANDED CONDUCTORS SHALL BE SPLICED BY APPROVED MECHANICAL CONNECTORS AND GUM RUBBER TAPE OR FRICTION TAPE. SOLDERLESS MECHANICAL CONNECTORS FOR SPLICES AND TAPS, PROVIDED WITH UL APPROVED INSULATING COVERS, MAY BE USED INSTEAD OF MECHANICAL CONNECTORS PLUS TAPE. IN ALL CASES, CONDUCTORS SHALL BE CONTINUOUS FROM OUTLET TO OUTLET AND NO SPLICING SHALL BE MADE EXCEPT WITHIN OUTLET OR JUNCTION BOXES, TROUGHS, OR GUTTERS. WHERE CONCENTRIC, ECCENTRIC, OR OVERSIZED KNOCKOUTS ARE ENCOUNTERED, A GROUNDING TYPE INSULATED BUSHING SHALL BE PROVIDED.
9. ALL LUMINAIRES SHALL BE LISTED. LUMINAIRES IN WET OR DAMP LOCATIONS SHALL BE MARKED AS SUITABLE FOR THE RESPECTIVE USE. EMERGENCY LIGHTING SHALL BE INSTALLED AS SHOWN. FINAL LOCATIONS OF ALL EXIT AND EMERGENCY LIGHTS SHALL BE VERIFIED WITH THE BUILDING INSPECTOR PRIOR TO INSTALLATION. ALL FLUORESCENT FIXTURES SHALL HAVE ELECTRONIC BALLASTS MEETING ANSI C82.11 FOR ELECTRONIC BALLAST PERFORMANCE. ALL BALLASTS SHALL BE UL LISTED AND MEET FEDERAL AND STATE EFFICIENCY REQUIREMENTS.
10. ALL CONDUIT, FITTINGS, COUPLINGS, AND SUPPORTS SHALL BE PROVIDED BY THE ELECTRICAL CONTRACTOR. CONDUIT FITTINGS AND COUPLINGS SHALL BE BY APPLETON, RACO, OR O–Z/GEDNEY. COUPLINGS SHALL BE THREADED, SET–SCREW, OR COMPRESSION TYPE. INDENTER OR CRIMP TYPE ARE NOT PERMITTED. CONDUIT FITTINGS AT ALL ELECTRICAL BOXES INCLUDING PULL, JUNCTION, AND OUTLET BOXES, SHALL HAVE INSULATED THROATS TO PREVENT INSULATION SCORING. DIE CAST FITTINGS ARE NOT PERMITTED
11. EMT SHALL BE MANUFACTURED IN ACCORDANCE WITH AMERICAN NATIONAL STANDARDS INSTITUTE–AMERICAN NATIONAL STANDARD FOR STEEL ELECTRICAL METALLIC TUBING (EMT), ANSI C80.3 AND UL 797. RIGID METAL CONDUIT SHALL BE MANUFACTURED IN ACCORDANCE WITH ANSI–AMERICAN NATIONAL STANDARD FOR ELECTRICAL RIGID STEEL CONDUIT (ERSC), ANSI C80.1 AND UL 6. INTERMEDIATE METAL CONDUIT SHALL BE MANUFACTURED IN ACCORDANCE WITH ANSI–AMERICAN NATIONAL STANDARD FOR INTERMEDIATE METAL CONDUIT ANSI C80.6 AND UL 1242.
12. METAL CONDUIT SHALL BE BY ALLIED TUBING & CONDUIT, BECK MANUFACTURING, INC, OR WHEATLAND TUBE COMPANY. FLEXIBLE METAL CONDUIT, LIQUID–TIGHT FLEXIBLE METAL CONDUIT, AND NONMETALLIC CONDUIT SHALL BE BY AFC CABLE SYSTEMS, INC, ELECTRI–FLEX COMPANY, OR INTERNATIONAL METAL HOSE.

METHODS:

1. EC SHALL REVIEW THE MECHANICAL PLANS TO ESTABLISH POINTS OF CONNECTION AND THE EXTENT OF THE ELECTRICAL WORK TO BE PROVIDED IN THE CONTRACT.
2. ALL CIRCUIT BREAKERS FEEDING HVAC EQUIPMENT SHALL BE HACR BREAKERS. ALL BRANCH CIRCUIT CONDUCTORS SHALL BE MINIMUM #12 AWG IN 3/4 in CONDUIT. EACH MULTI–WIRE BRANCH CIRCUIT SHALL BE PROVIDED WITH A MEANS TO SIMULTANEOUSLY DISCONNECT ALL UNGROUNDED CONDUCTORS AT THE SOURCE PER NEC 210.4(B). GROUP ALL CONDUCTORS OF EACH MULTI–WIRE BRANCH CIRCUIT PER 210.4(D) WITH WIRE TIES OR SIMILAR MEANS. DO NOT EXCEED THREE HOMERUNS PER CONDUIT. DO NOT INSTALL ISOLATED GROUND AND NON–ISOLATED GROUND CIRCUITS IN THE SAME CONDUIT. INSTALL CONDUCTORS OF DIFFERENT VOLTAGES IN SEPARATE CONDUITS.
3. COLOR CODE CONDUCTORS PER NEC. FEEDERS SHALL BE IDENTIFIED IN ACCORDANCE WITH NEC 215.12. USE BLACK AND RED FOR PHASES A AND B RESPECTIVELY ON 120/240 VOLT SINGLE–PHASE SYSTEMS AND WHITE FOR THE NEUTRAL; THIS IDENTIFICATION SHALL BE MADE AT EACH POINT WHERE A CONNECTION IS MADE. COLORS SHALL BE FACTORY APPLIED FOR CONDUCTORS #6 AWG AND SMALLER. ALL EQUIPMENT GROUNDING CONDUCTORS SHALL BE GREEN IN COLOR AND MINIMUM #12 AWG. THE EC SHALL PROVIDE PLENUM RATED CABLE FOR ANY ELECTRICAL, TELEPHONE, COMMUNICATION, OR OTHER CABLE THAT ENTERS CEILING RETURN PLENUMS.
4. ALL LIGHT FIXTURES SHALL BE SUPPORTED INDEPENDENTLY OF THE SUSPENDED CEILING. COORDINATE LIGHTING LAYOUT WITH CEILING GRID, MECHANICAL EQUIPMENT, DUCTWORK AND SPRINKLER HEADS AS NECESSARY. SEE REFLECTED CEILING PLAN FOR DETAILS. FLUORESCENT FIXTURES UTILIZING DOUBLE–ENDED LAMPS MUST HAVE A DISCONNECTING MEANS COMPLYING WITH NEC 410.130(G).
5. MOUNT LIGHT SWITCHES AT 48 in AFF. MULTIPLE SWITCHES AT SAME LOCATION SHALL BE UNDER ONE WALL PLATE. VERIFY WALL PLATE COLOR AND MATERIAL WITH THE ARCHITECT/OWNER. INSTALL SWITCHES WITH off POSITION DOWN. ALL SWITCHES SHALL BE HEAVY DUTY, IVORY PLASTIC WITH TOGGLE HANDLE, RATED 120–277V AC, AND COMPLYING WITH NEMA WD 6 AND WD 1. SWITCHES SHALL BE BY COOPER WIRING DEVICES, LEVITON MANUFACTURING, PASS & SEYMOUR, OR HUBBELL. PROVIDE BOX DEVICE PARTITION/DIVIDERS FOR MULTI–GANG BOXES FOR COMPLIANCE WITH NEC 404.8(B).
6. ELECTRICAL CONTRACTOR SHALL PROVIDE FIRE–STOPPING AT ALL ELECTRICAL PENETRATIONS OF RATED FLOORS AND WALLS TO PRESERVE OR RESTORE THE FIRE–RESISTANCE RATING. SEAL PENETRATIONS USING A UL LISTED SYSTEM FOUND IN THE UL DIRECTORY SPECIFIC TO THE UL LISTING OF THE ASSEMBLY BEING PENETRATED. SEE ARCHITECTURAL PLANS FOR UL RATED ASSEMBLIES SPECIFIC TO THIS PROJECT.
7. ELECTRICAL CONTRACTOR SHALL PROVIDE GFCI RECEPTACLES IN KITCHENS, RESTROOMS, OUTDOORS, AND IN SHOP AREAS AS REQUIRED BY NEC. REFRIGERATORS AND WATER COOLERS MUST HAVE A DEDICATED GFCI BREAKER. EACH OUTDOOR HVAC UNIT MUST HAVE A GFCI RECEPTACLE WITHIN 25 FEET FOR SERVICING. GFCI RECEPTACLES SHALL CONFORM TO UL 943 CLASS A AND UL 498 STANDARDS. RECEPTACLES SHALL BE BY COOPER WIRING DEVICES, LEVITON MANUFACTURING, PASS & SEYMOUR, OR HUBBELL. ALL RECEPTACLES SHALL BE 125V RATED, HEAVY DUTY, AND COMPLY WITH NEMA WD 6 AND WD 1.
8. LOCATIONS AND HEIGHTS OF ALL WALL–MOUNTED DEVICES SHALL BE COORDINATED WITH THE ARCHITECT PRIOR TO INSTALLATION.
9. CONCEAL ALL CONDUIT EXCEPT IN MECHANICAL ROOMS OR UNFINISHED AREAS AS NOTED. USE EMT CONDUIT FOR ALL BRANCH CIRCUITS AND FEEDERS INSIDE THE BUILDING. TYPE MC CABLE AND TYPE AC CABLE MAY BE INSTALLED WITHIN WALLS IF ALL NEUTRAL WIRES, ISOLATED GROUND WIRES, AND EQUIPMENT GROUND WIRES AS LISTED ABOVE ARE CONTAINED IN THE CABLE. FLEXIBLE CONNECTIONS TO MOTORS AND OTHER EQUIPMENT SHALL BE MADE USING WEATHERPROOF FLEXIBLE CONDUIT. FOR LAY–IN LIGHT FIXTURES, USE MAXIMUM OF SIX (6) FEET OF FLEXIBLE MC CABLE (OR THE FLEXIBLE CONDUIT PROVIDED BY THE FIXTURE MANUFACTURER). SCHEDULE 40 PVC CONDUIT MAY BE USED FOR THE SECONDARY UNDERGROUND SERVICE, UNDERGROUND TELEPHONE SERVICE, AND BRANCH AND FEEDER CIRCUITS UNDER SLAB OR EXTERIOR TO THE BUILDING. EXPOSED EXTERIOR CONDUIT SHALL BE SCHEDULE 80 PVC. ALL UNDERGROUND RACEWAYS SHALL BE IDENTIFIED WITH UNDERGROUND LINE MARKING TAPE 6–8 in BELOW GRADE DIRECTLY ABOVE THE RACEWAY. PROVIDE PULL WIRE IN EMPTY CONDUITS. UPSIZE CONDUIT FROM MINIMUM SIZE AS NECESSARY FOR LONGER PULLS. UNDERGROUND RACEWAYS THAT STUB INTO THE BOTTOM OF SWITCHBOARDS, OUTDOOR TRANSFORMERS, GENERATORS, ETC., SHALL RISE AT LEAST 2 in ABOVE THE FINISHED SLAB TO PREVENT WATER FROM DRAINING INTO THE RACEWAYS. RACEWAYS THAT PENETRATE EXTERIOR WALLS OR INTERIOR PARTITIONS SEPARATING SPACES THAT WILL BE AT SIGNIFICANTLY DIFFERENT TEMPERATURES SHALL BE SEALED IN ACCORDANCE WITH 300.5(G), 300.7(A), AND 300.50(E) OF THE NEC. ROUTE CONDUIT IN AND UNDER SLAB FROM POINT–TO–POINT. ROUTE EXPOSED CONDUIT AND CONDUIT INSTALLED ABOVE ACCESSIBLE CEILINGS PARALLEL AND PERPENDICULAR TO WALLS. COMPLETELY AND THOROUGHLY SWAB ALL RACEWAYS BEFORE INSTALLING WIRE. PULL ALL CONDUCTORS INTO EACH RACEWAY AT ONE TIME. USE A SUITABLE WIRE PULLING LUBRICANT FOR BUILDING WIRE #4 AWG AND LARGER.
10. CABLES, RACEWAYS, OR BOXES, INSTALLED IN EXPOSED OR CONCEALED LOCATIONS UNDER METAL–CORRUGATED SHEET ROOF DECKING, SHALL BE INSTALLED AND SUPPORTED SO THERE IS NOT LESS THAN 1–1/2 in MEASURED FROM THE LOWEST SURFACE OF THE ROOF DECKING TO THE TOP OF THE CABLE, RACEWAY, OR BOX. A CABLE, RACEWAY, OR BOX SHALL NOT BE INSTALLED IN CONCEALED LOCATIONS IN METAL–CORRUGATED, SHEET DECKING–TYPE ROOF. SEE NEC 300.4(E).
11. THE ELECTRICAL CONTRACTOR SHALL PROVIDE ALL OUTLET, JUNCTION, PULL BOXES, FITTINGS, AND SUPPORTS. ALL OUTLET AND JUNCTION BOXES SHALL BE GALVANIZED STEEL TYPE BY APPLETON, STEEL CITY, OR RACO. EXTERIOR BOXES SHALL BE TYPE FS. VAPORTITE BOXES SHALL BE TYPE GS. WHERE SURFACE MOUNTED BOXES ARE USED, THOSE BOXES AND THEIR FACEPLATES SHALL HAVE ROUNDED CORNERS. BOXES INSTALLED IN FLOORS SHALL BE RATED FOR THE APPLICATION. MOUNT JUNCTION AND OUTLET BOXES FLUSH WITH FINISH SURFACES UNLESS OTHERWISE NOTED. WHERE MOUNTING HEIGHTS ARE GIVEN, THEY SHALL BE MEASURED FROM THE FINISHED FLOOR TO THE CENTER OF THE BOX. ALL BOXES SHALL BE SIZED PER NEC ARTICLE 314. ALL OUTLET AND JUNCTION BOXES SHALL HAVE A COVER PLATE, PROVIDED BY THE ELECTRICAL CONTRACTOR. OUTLET BOXES IN RATED WALLS SHALL BE INSTALLED IN ACCORDANCE WITH NORTH CAROLINA BUILDING CODE 714.3.2 (MAXIMUM BOX SIZE IS 16 SQUARE in AND MAXIMUM OF SIX (6) BOXES PER 100 SQUARE FEET). INSTALL OUTLET BOXES IN RATED WALLS SUCH THAT OPENINGS OCCUR IN ONE SIDE ONLY WITHIN ANY GIVEN STUD SPACE. ALL CLEARANCES BETWEEN THE OUTLET BOX AND THE GYPSUM BOARD SHALL BE FILLED WITH JOINT COMPOUND OR OTHER APPROVED FIRE STOP MATERIAL. FLUSH MOUNTED JUNCTION BOXES IN ADJACENT ROOMS SHALL NOT BE MOUNTED BACK–TO–BACK. SURFACE MOUNTED FIXTURES SHALL BE FED THROUGH FLUSH MOUNTED 4X4 OCTAGONAL OR SQUARE BOXES.
12. ALL CONDUIT, BOXES, AND ELECTRICAL EQUIPMENT SHALL BE FIRMLY AND SECURELY FASTENED TO OR SUPPORTED FROM THE BUILDING STRUCTURAL MEMBERS OR EMBEDDED IN CONCRETE OR MASONRY. ELECTRICAL SUPPORTS SHALL NOT BE ATTACHED TO DUCTWORK, PIPING, OR THEIR SUPPORTS. HANGERS SHALL BE CATALOG ITEMS COMPATIBLE WITH AND SUITABLE FOR THE INTENDED USE. FOR METAL ROOF DECK INSTALLATIONS, 1 in EMT CONDUIT MAXIMUM AND 4 in JUNCTION BOXES MAXIMUM MAY BE SUPPORTED BY DECKING. THE SUSPENDED CEILING SYSTEM SHALL NOT BE USED FOR THE SUPPORT OF ELECTRICAL RACEWAY SYSTEMS OR SUPPORT OF COMMUNICATIONS OR DATA SYSTEMS WIRING. CONTRACTOR SHALL COMPLY WITH 1613 OF THE NORTH CAROLINA GENERAL CONSTRUCTION BUILDING CODE.
13. WHERE CONDUCTORS ARE RUN IN PARALLEL, THE EC SHALL COMPLY WITH NEC 310.4.
14. PROVIDE AN UNDERGROUND PVC CONDUIT SYSTEM FOR TELEPHONE SERVICE WITH PULL WIRES. ELECTRICAL CONTRACTOR SHALL COORDINATE WITH TELEPHONE UTILITY REGARDING ADDITIONAL FACILITIES REQUIRED FOR THE SERVICE INSTALLATION.
15. INSTALL ONE (1) 3/4 in FIRE RETARDANT TREATED PLYWOOD BACKBOARD WHERE INDICATED ON THE DRAWINGS FOR THE USE BY THE TELEPHONE SYSTEM. PROVIDE A 120 VOLT RECEPTACLE ADJACENT TO THE TELEPHONE BOARD. GROUND ALL TELEPHONE AND COMMUNICATIONS CIRCUITS PER NEC 800.
16. ALL TELEPHONE AND COMMUNICATIONS OUTLETS AND RACEWAYS ARE ROUGH–INS ONLY. EACH TELEPHONE AND COMMUNICATIONS OUTLET SHALL BE A 4 in SQUARE BY 2–1/8 in DEEP BOX WITH 3/4 in KNOCK–OUTS AND A 3/4 in CONDUIT STUBBED FROM THE OUTLET BOX TO ABOVE THE CEILING. PROVIDE A NON–METALLIC INSULATING BUSHING ON ALL CONDUITS STUBBED ABOVE THE CEILING. PROVIDE A BLANK COVER PLATE ON ALL OUTLET BOXES.
17. ELECTRICAL CONTRACTOR SHALL INSTALL DISCONNECT SWITCHES IN SIGHT OF ALL HARDWIRED EQUIPMENT AND APPLIANCES OR PROVIDE BREAKERS CAPABLE OF BEING LOCKED IN THE OPEN POSITION PER NEC 422.31. FOR MOTOR DRIVEN APPLIANCES, PROVIDE A DISCONNECTING MEANS PER NEC 422.31 AND 430 PART IX. WHERE AN INDIVIDUAL DISCONNECT SWITCH, CIRCUIT BREAKER, STARTER, ETC, IS SHOWN ON THE PLANS ADJACENT TO ITS LOAD AND NOT LOCATED ON A WALL, PROVIDE NECESSARY MATERIALS AND LABOR TO SUPPORT THE DEVICE.
18. ELECTRICAL CONTRACTOR SHALL FIELD IDENTIFY ALL SWITCH BOARD, PANEL BOARDS, CONTROL PANELS, METER SOCKETS, ETC., TO WARN QUALIFIED PERSONS OF POTENTIAL ELECTRICAL ARC FLASH HAZARDS PER 110.16 OF NEC.
19. ELECTRICAL CONTRACTOR SHALL PROVIDE NAMEPLATES FOR IDENTIFICATION OF ALL EQUIPMENT, SWITCHES, PANELS, ETC. THE NAMEPLATES SHALL BE LAMINATED PHENOLIC PLASTIC, BLACK FRONT, AND BACK WITH WHITE CORE, WHITE ENGRAVED LETTERS (1/4 in MINIMUM) ETCHED INTO THE WHITE CORE. ELECTRICAL CONTRACTOR SHALL PROVIDE A TYPE WRITTEN DIRECTORY CARD THAT ACCURATELY IDENTIFIES CIRCUITS INSIDE EACH PANEL. HANDWRITTEN LABELS ARE NOT ACCEPTABLE.
20. IN ACCORDANCE WITH SECTION F510 OF THE NC FIRE PREVENTION CODE, TESTING WILL BE REQUIRED TO DETERMINE SATISFACTORY FIRST RESPONDER RADIO SIGNAL STRENGTH INSIDE EACH BUILDINGS ON SITE. TESTING WILL NEED TO EITHER BE COMPLETED BY A COUNTY FIRE INSPECTOR (OBTAIN BY REQUESTING A COURTESY INSPECTION) OR A CERTIFIED 3RD PARTY. TESTING SHALL TAKE PLACE AT BOTH 80% PROJECT COMPLETION AND AGAIN AT 100% COMPLETION. IF UNACCEPTABLE SIGNAL DEGRADATION IS PRESENT AT EITHER 80% OR 100% INSPECTION, THEN AN ACCEPTABLE BOOSTER SYSTEM SHALL BE ADDED TO THE BUILDING DESIGN AT THAT TIME.

NOTES FOR EMERGENCY FIXTURES

1. FOR INTERIOR FIXTURES WITH EMERGENCY BATTERIES, WIRE THE BATTERY CHARGER ON THE SAME CIRCUIT AS THE FIXTURE BALLAST AHEAD OF ALL SWITCHES, SENSORS, ETC.
2. FOR EXTERIOR FIXTURES WITH EMERGENCY BATTERIES, WIRE THE BATTERY CHARGER ON THE SAME CIRCUIT AS THE NORMAL EXTERIOR LIGHTS AHEAD OF ALL CONTACTORS, PHOTOCELLS, ETC.
3. IN BOTH CASES, EMERGENCY POWER SHOULD INITIATE ONLY IN THE EVENT OF THE LOSS OF NORMAL POWER. ALL BATTERIES SHALL BE RATED TO POWER TWO (2) LAMPS FOR 90 MINUTES MINIMUM.

GENERAL ELECTRICAL NOTES | 3

Kilian Engineering, Inc.
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SEAL: NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 17304 MICHAEL W. KILIAN 5-23-22

SEAL: KILIAN ENGINEERING, INC. CORPORATE SEAL NORTH CAROLINA

NEW BUILDING for PAUL BARBOUR & SONS
11496 HWY 401N
FUQUAY VARINA, NC 27526

REVISION:

NO.	DATE	DESCRIPTION

ISSUED:

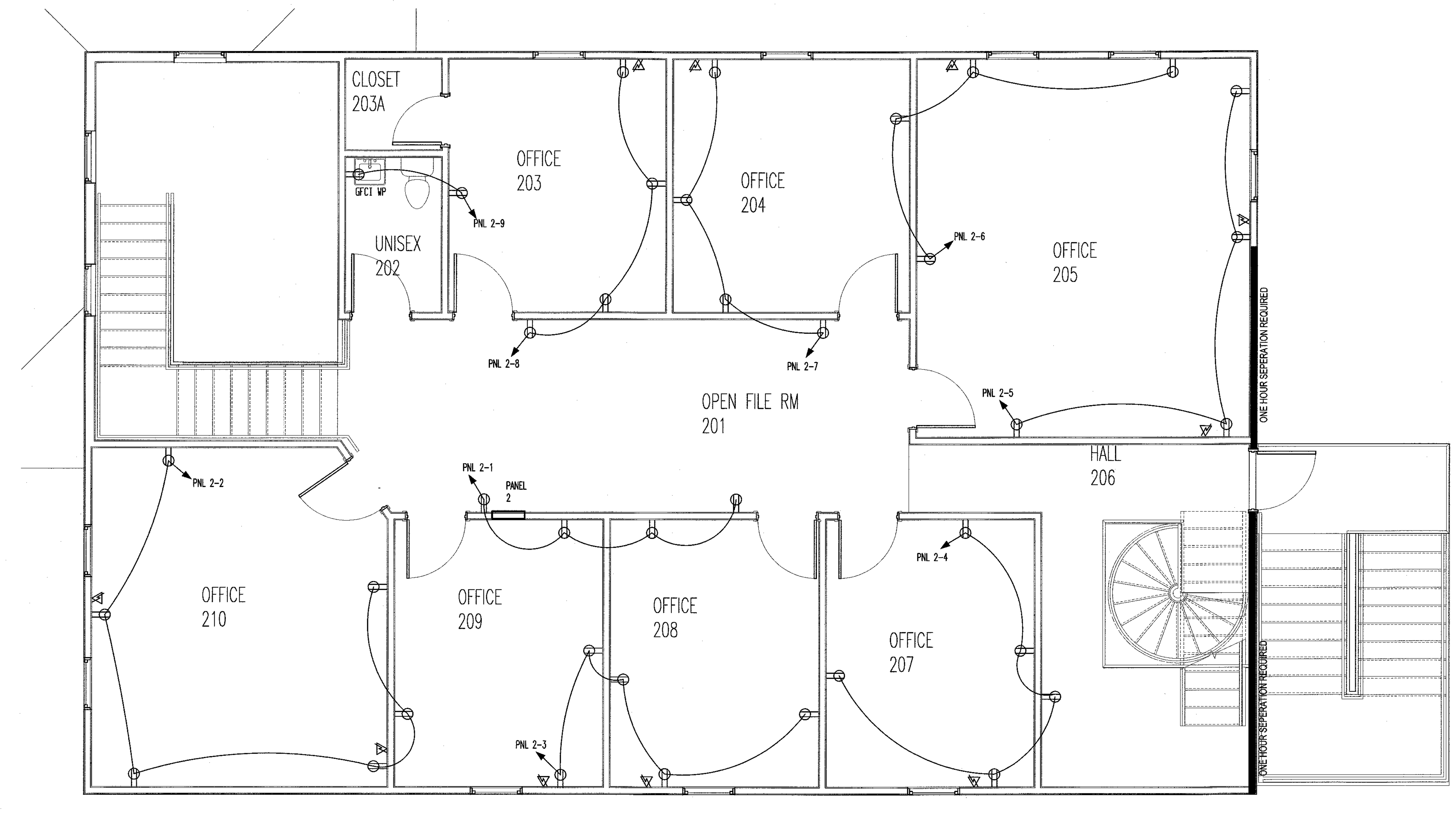
NO.	DATE	DESCRIPTION
1	5/23/22	ISSUED FOR PERMITTING

DRAWN BY: DC
CHECKED BY: MWK/KDC

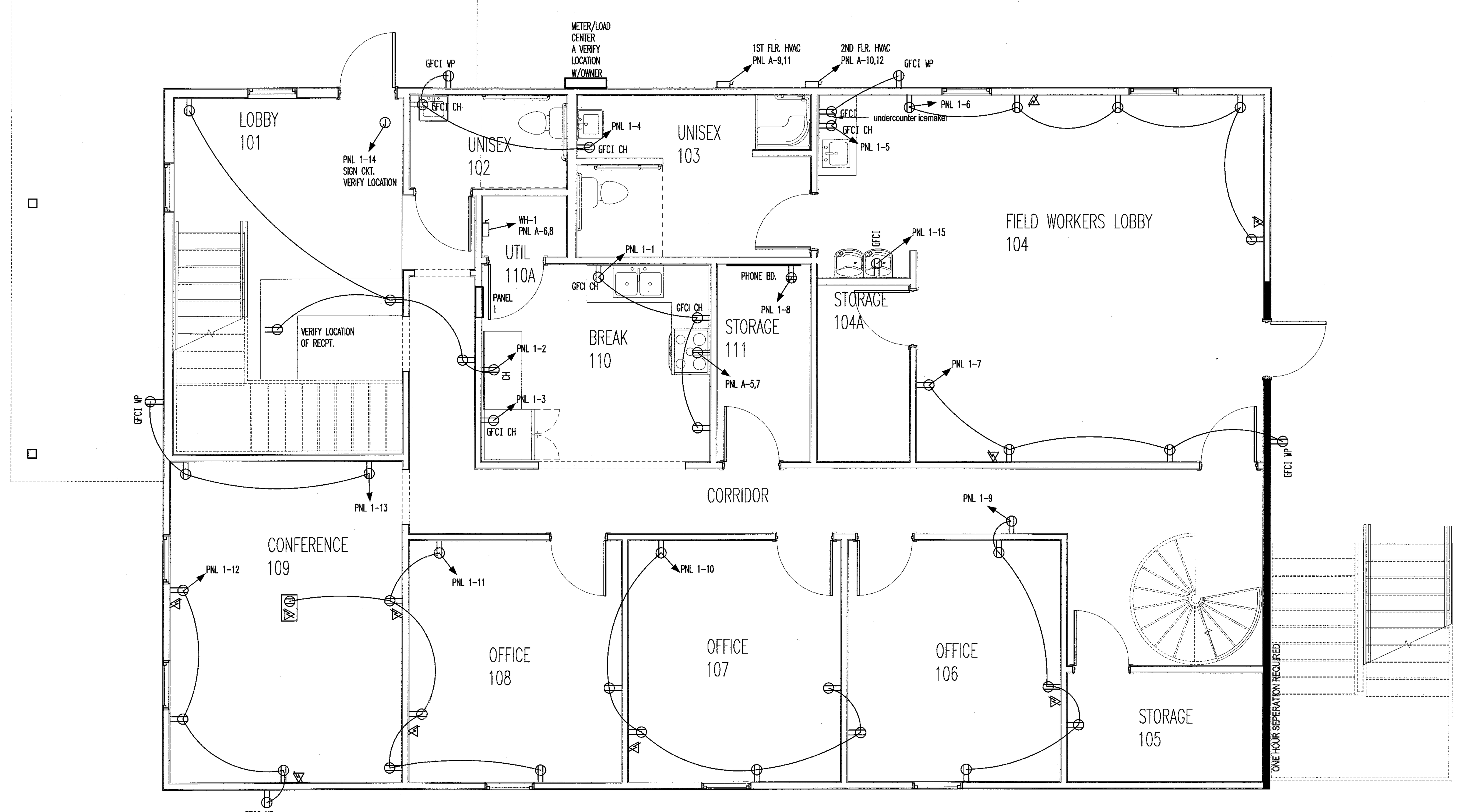
ELECTRICAL NOTES, SCHEDULES & RISER

SHEET NO. E1

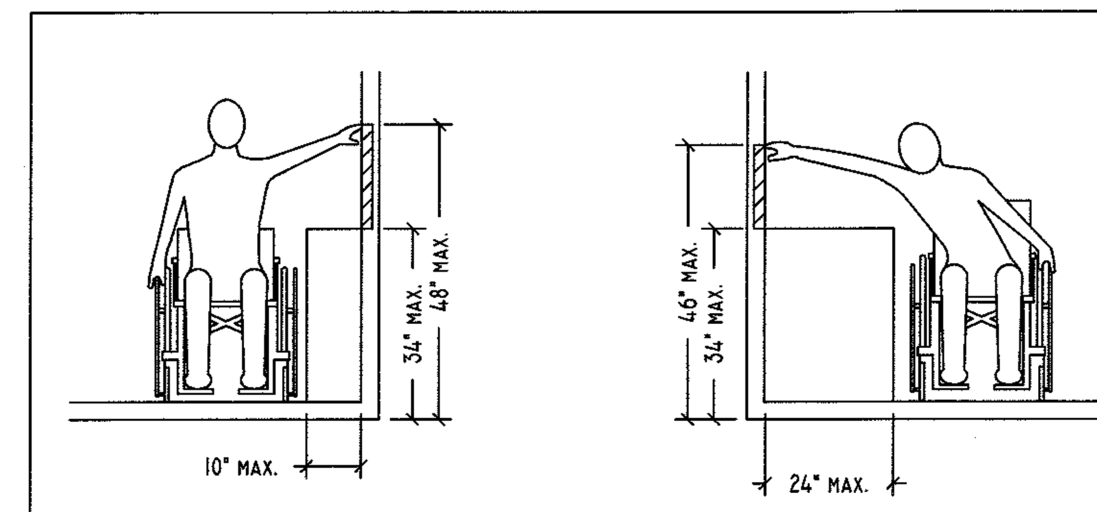
PROJECT NO: 22284



2ND FLR. ELECTRICAL POWER PLAN SCALE: 1/4"=1'-0" 1



1ST FLR. ELECTRICAL POWER PLAN SCALE: 1/4"=1'-0" 2



ANSI A117.1 FIG. 308.3.2. OBSTRUCTED HIGH REACH SIDE.
ALL SWITCHES AND CONTROLS MUST COMPLY FOR ALL COUNTERTOPS

POWER DEVICE LEGEND		
SYMBOL	DESCRIPTION	REMARKS
	DATA AND TELEPHONE JACK	PHONE/DATA OUTLET. EC TO INSTALL 3/4"C WITH PULL-STRING FROM OUTLET BOX TO ABOVE CEILING FOR FUTURE USE. JACKS AND COMMUNICATION CABLING BY OTHERS.
	DUPLEX RECEPTACLE	NEMA 5-20R, HEAVY DUTY, COMMERCIAL GRADE, 125V, 20A COMPLYING WITH NEMA WD 6 AND WD 1. GFCI OR AFCI IF NOTED. 'WP' DENOTES WEATHERPROOF COVER. 'CH' DENOTES COUNTER HEIGHT. LISTED TAMPERPROOF IF NOTED. MEET FEDERAL SPECIFICATION W-C-596.
	QUAD RECEPTACLE	QUAD RECEPTACLE OF SAME CHARACTERISTICS AS DUPLEX TYPE ABOVE.
	DUPLEX FLOOR RECEPTACLE	DUPLEX RECEPTACLE OF SAME CHARACTERISTICS AS ABOVE WITH BRASS COVER. MOUNT IN FLOOR. ALL FLOOR BOXES MUST BE LISTED FOR FLOOR APPLICATION.
	DISCONNECT SWITCH	HEAVY DUTY TYPE. TYPE 1 ENCLOSURE IN INTERIOR APPLICATIONS, TYPE 3R ENCLOSURE IN EXTERIOR APPLICATIONS.
(J)	JUNCTION BOX	GALVANIZED METAL BOX CONSTRUCTED IN ACCORDANCE WITH 314.40 OF THE NEC.

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SEAL

SEAL

NEW BUILDING
for PAUL BARBOUR & SONS
11496 HWY 401N
FUQUAY VARINA, NC 27526

REVISION:

ISSUED:

1 5/23/22 ISSUED FOR PERMITTING

DRAWN BY: DC
CHECKED BY: MWK/KDC

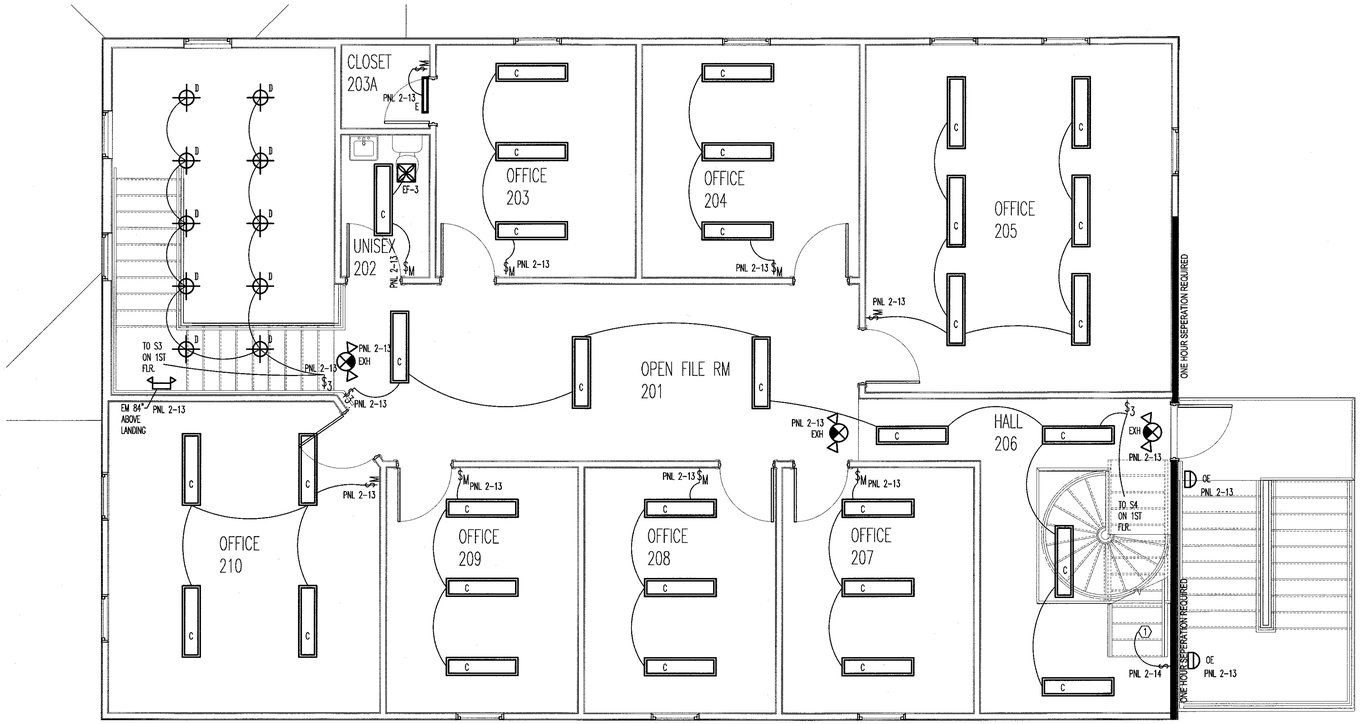
ELECTRICAL POWER PLANS

SHEET NO.
E2

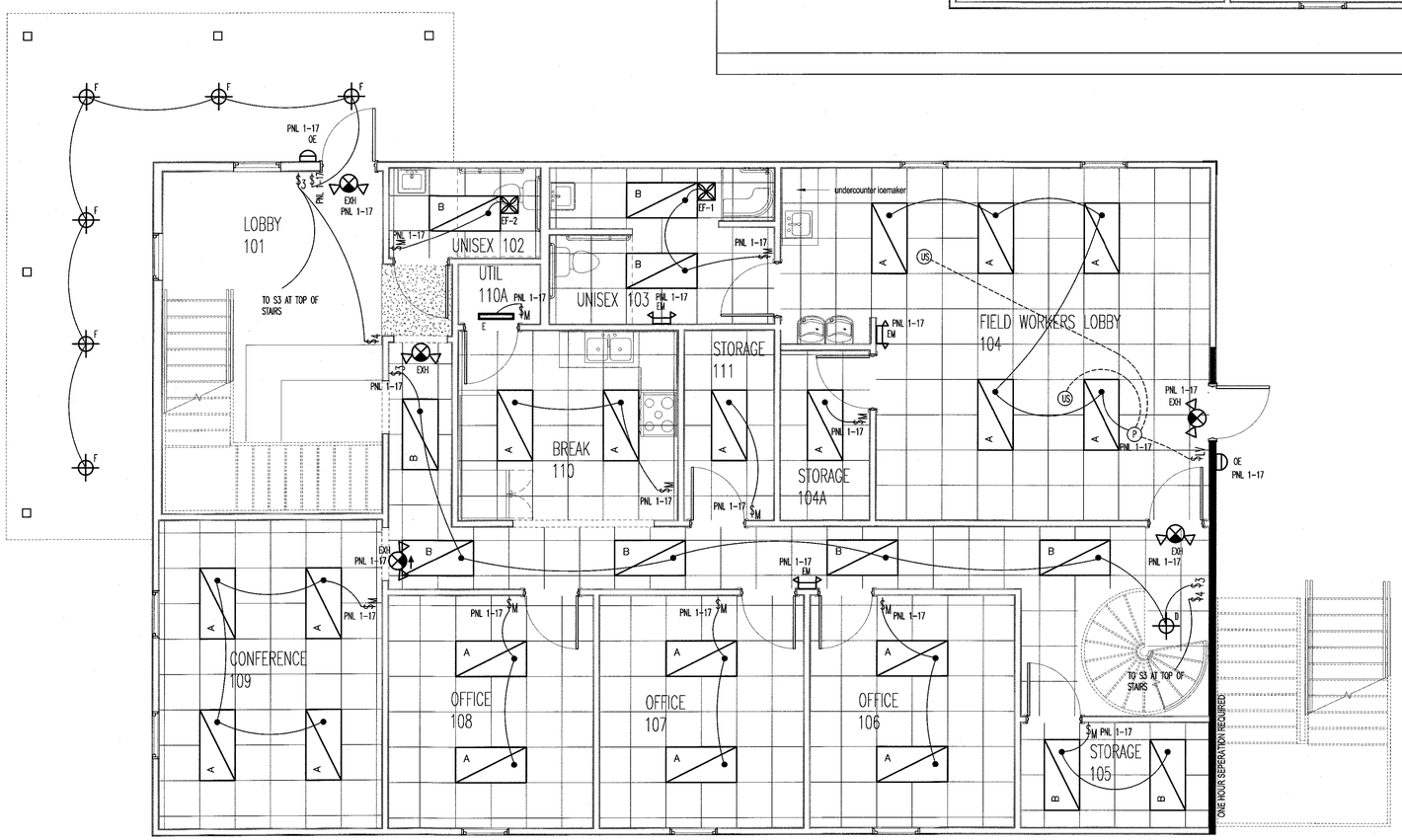
PROJECT NO: 22284

LIGHTING PLAN HEX NOTES

1. PROVIDE 6-C FIXTURES IN ATTIC. VERIFY WITH OWNER.



2ND FLR. ELECTRICAL LIGHTING PLAN SCALE: 1/4"=1'-0" | 1



IST. FLR. ELECTRICAL LIGHTING PLAN SCALE: 1/4"=1'-0" | 2

LIGHT FIXTURE SCHEDULE

MARK	DESCRIPTION	LOUVER/LENS	LAMPS			VOLTAGE	INPUT WATTAGE	MOUNTING	REMARKS	MFG	MODEL
			TYPE	WATTAGE	CCT						
A	2X4 LED TROFFER	-	LED	45	3500K	120	45	LAY-IN	2	LITHONIA	2 BLT4-48L-ADP-EZ1-LP835
B	2X4 LED TROFFER	-	LED	30	3500K	120	30	LAY-IN	2	LITHONIA	2 BLT4-30L-ADP-EZ1-LP835
C	2X4 LED WRAP AROUND	-	LED	30	3500K	120	30	SURFACE	2	LITHONIA	LBL4 33L LP835
D	6" LED DOWNLIGHT	-	LED	12.5	3500K	120	12.5	RECESSED	2	JUNO	LG-23LM-35K-120-G3
E	2X4 LED WRAPAROUND	-	LED	30	3500K	120	30	SURFACE	2	LITHONIA	BLWP2 33L ADP MVOLT GZ10 LP835
F	6" LED DOWNLIGHT (WET LOCATION)	-	LED	12.5	3000K	120	12.5	RECESSED	2	JUNO	IC22LED WD GAN DBLM 30K 90CRI 120 FRPC WET LOCTION
OE	EXTERIOR DUAL LED EMERGENCY LIGHT	POLYCARBONATE	LED	6	-	120	12	SURFACE	1,2,4	EELP	DEM-LED-BR-ACEM
EXH	LED EXIT/COMBO W/ BATTERY BACKUP	ACRYLIC	LED	N/A	N/A	120	3	VARIES	1,2,3	LITHONIA	LHQM-S-W-1-R-120/277-N-SD
EM	DUAL HEAD EMERGENCY FIXTURE	ACRYLIC	LED	N/A	N/A	120	2	VARIES	1,2	LITHONIA	ELM2L-SDRT

1. FIXTURE SHALL HAVE BATTERY BACKUP FOR 90 MINUTE ILLUMINATION
2. OR EQUAL BY COOPER OR WOBERN
3. VERIFY STYLE OF LIGHT WITH OWNER
4. CONTROLLED BY PHOTO CELL

VERIFY ALL FIXTURE COLORS AND COLOR TEMPERATURE WITH OWNER OR ARCHITECT PRIOR TO PURCHASE.

LIGHTING DEVICE LEGEND

SYMBOL	DESCRIPTION	REMARKS
$	SINGLE POLE WALL SWITCH	HEAVY DUTY, AC ONLY, COMMERCIAL GRADE GENERAL USE SNAP SWITCH COMPLYING WITH NEMA WD 6 AND WD 1. IVORY PLASTIC BODY WITH TOGGLE HANDLE. 120-277V, 20A. MEET FEDERAL SPECIFICATION W-S-896.
$D	DIMMER SWITCH	COMMERCIAL GRADE, 120V, 1500W
$M	WALL MOUNTED OCCUPANCY SENSOR	WATTSTOPPER DW-100 LINE VOLTAGE OCCUPANCY SENSOR. ULTRA SONIC AND INFRARED.
$LV	LOW VOLTAGE SWITCH	WATTSTOPPER LVS-1 LOW VOLTAGE MOMENTARY CONTROL SWITCH.
$3	3 WAY SWITCH	3-WAY TYPE SWITCH WITH SAME CHARACTERISTICS AS SINGLE POLE SWITCH ABOVE.
(US)	CEILING OCCUPANCY SENSOR	WATTSTOPPER, WT-2255 LOW VOLTAGE OCCUPANCY SENSOR. ULTRA SONIC, 90 LINEAR FT COVERAGE.
(SP)	SWITCHING PHOTOSENSOR	WATTSTOPPER, LS-102, CONSULT OWNER FOR FOOT-CANDLE SET POINT.
(P)	POWER PACK	WATTSTOPPER, BZ-150 LOW VOLTAGE POWER PACK FOR CEILING PACK SENSORS.
(J)	JUNCTION BOX	GALVANIZED METAL BOX CONSTRUCTED IN ACCORDANCE WITH 314.40 OF THE NEC.
EF	EXHAUST FAN	VENT FAN, 120V, CFM AS NOTED MC TO PROVIDE AND VENT, EC TO WIRE.

Kilian Engineering, Inc.
PO Box 2301, Henderson, NC 27536 | www.kilianengineering.com
(P) 252.438.8778 | CORPORATE LICENSE C-2277

NORTH CAROLINA SEAL 17304 ENGINEER MICHAEL W. KILIAN SEAL

KILIAN ENGINEERING CORPORATE INC. SEAL NORTH CAROLINA SEAL

NEW BUILDING
for PAUL BARBOUR & SONS
11496 HWY 401N
FUQUAY VARINA, NC 27526

REVISION:

NO.	DESCRIPTION	DATE
1	ISSUED FOR PERMITTING	12/22/22

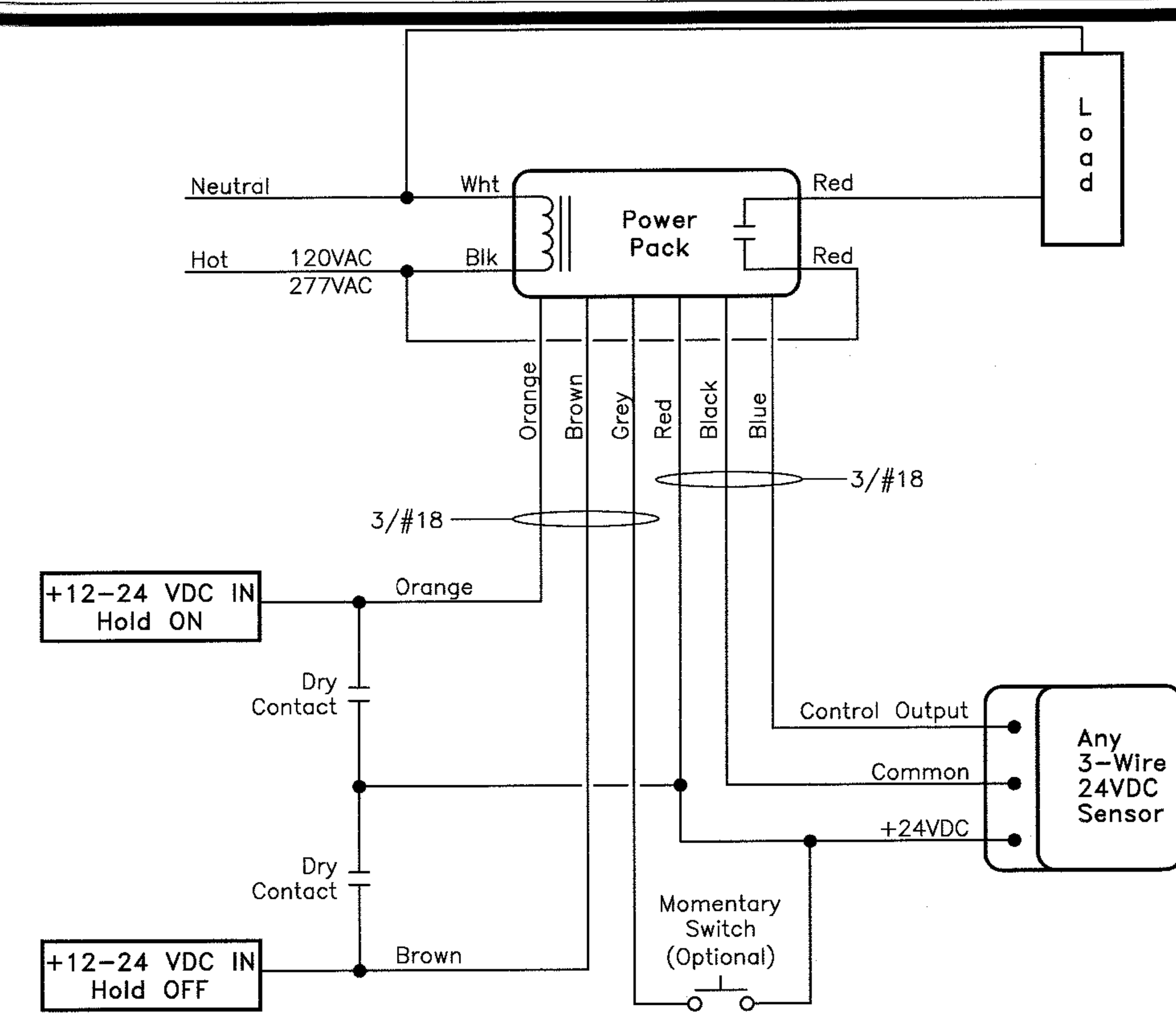
ISSUED:

DRAWN BY: DC
CHECKED BY: MWK/KDC

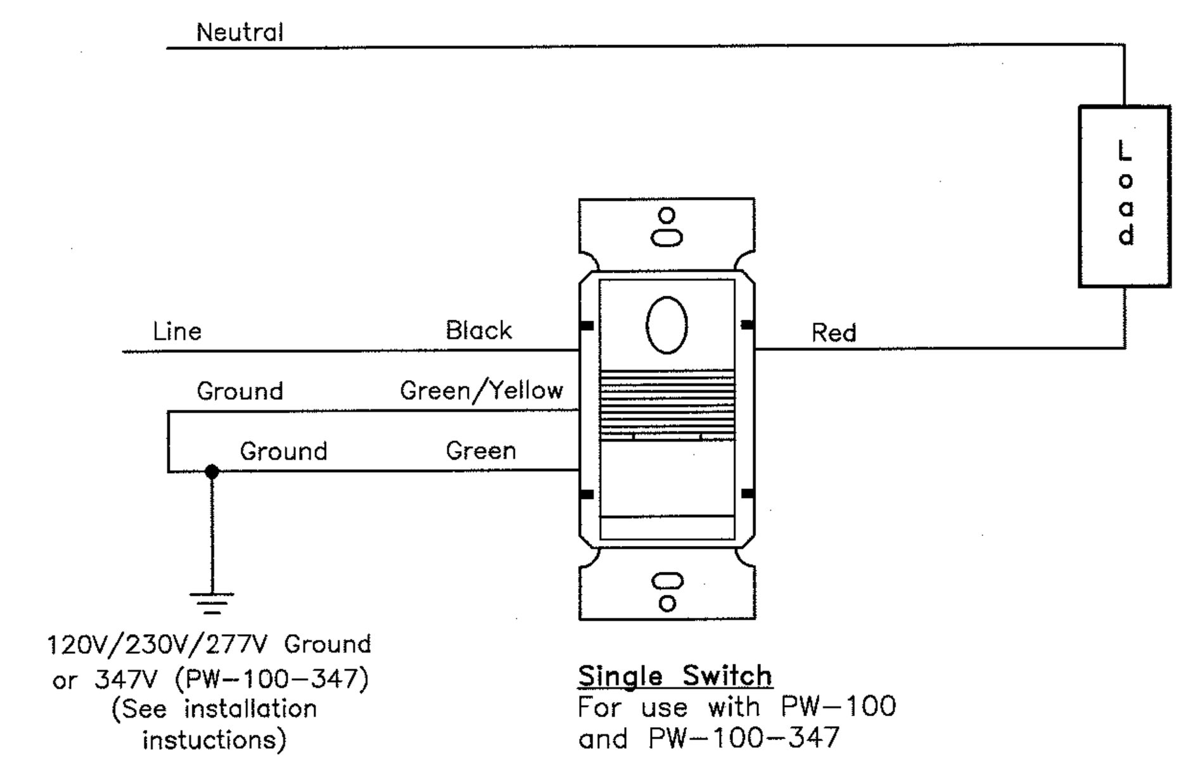
ELECTRICAL LIGHTING PLANS

SHEET NO.
E3

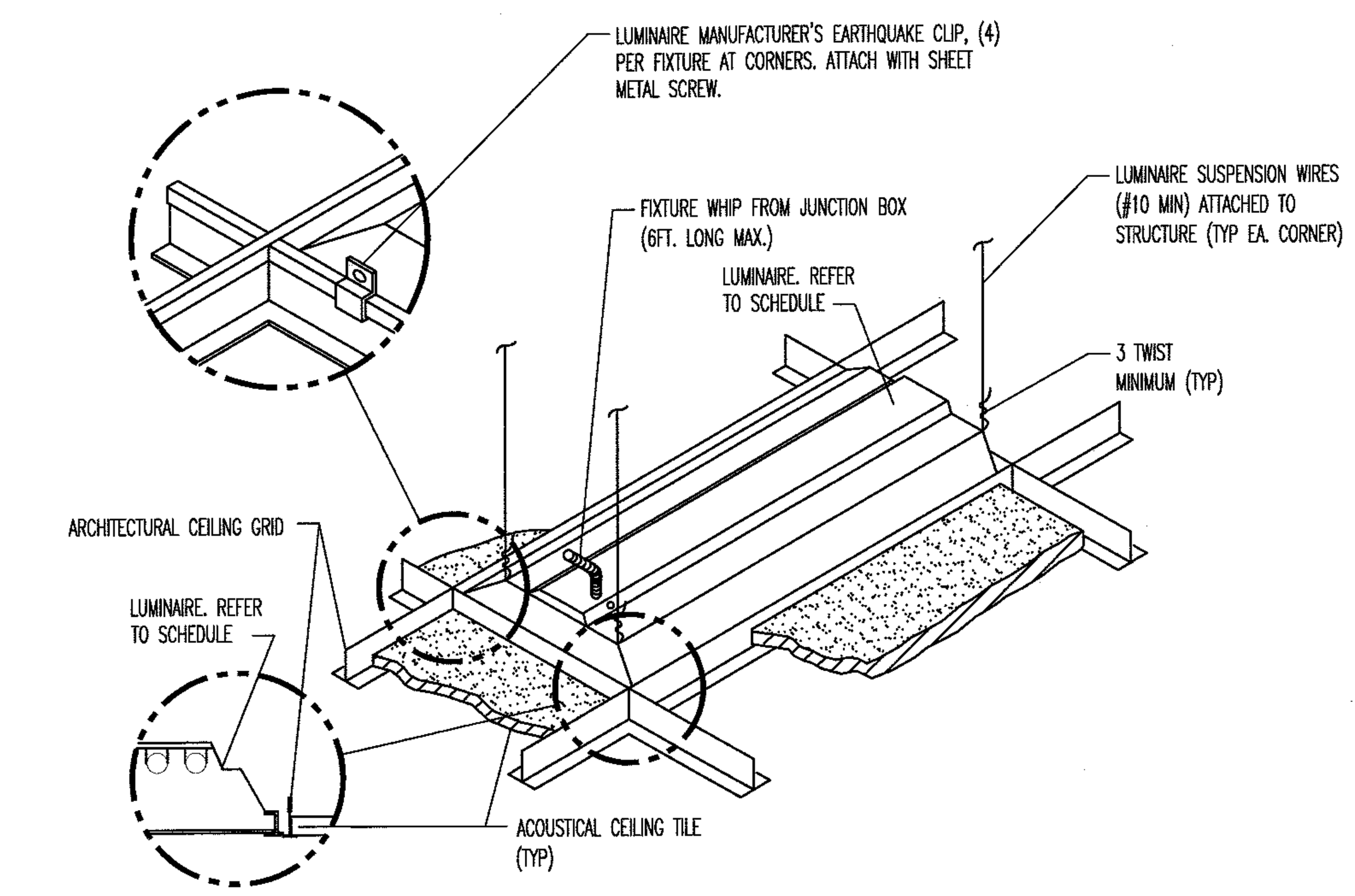
PROJECT NO: 22284



CEILING OCCUPANCY SENSOR WIRING - NO SCALE | 1



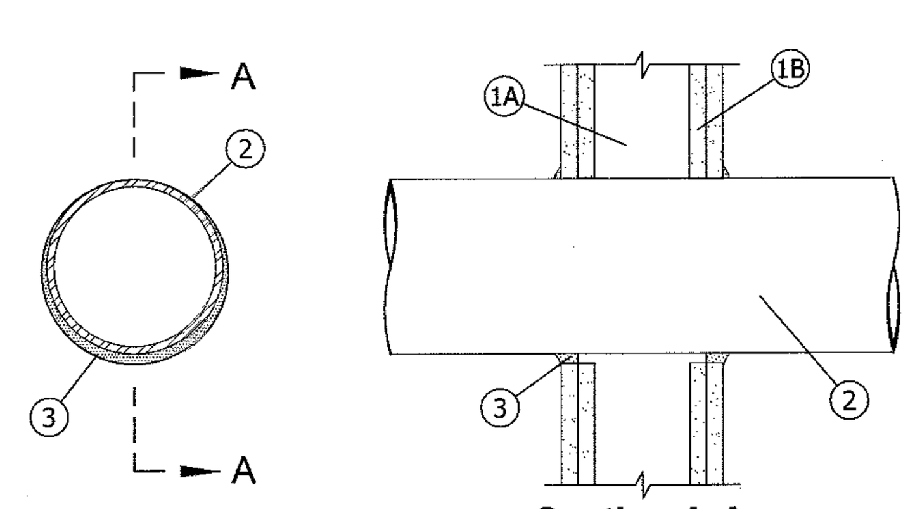
WALL OCCUPANCY SENSOR WIRING-NO SCALE | 2



LAY-IN FIXTURE SUPPORT-NO SCALE | 3

System No. W-L-1088

F Ratings - 1 & 2 Hr. (See Item 1)
T Rating - 0 Hr.



Section A-A

1. **Wall Assembly** - The 1 or 2 hr. fire-rated gypsum wallboard/stud wall assembly shall be constructed of the materials and in the manner described in the individual U300, U400 or V400 Series Wall and 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) O.C. with nom 2 by 4 in. (51 by 102 mm) lumber end plates and cross braces. Steel studs to be min. 3-1/2 in. (89 mm) wide and spaced max 24 in. (610 mm) O.C.
   B. **Gypsum Board*** - 5/8 in. (16 mm) thick, 4 ft (1.2 m) 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 6-3/4 in. (171 mm).
   The hourly F Rating of the firestop system is equal to the hourly fire rating of the wall assembly in which it is installed.
2. **Through Penetrant** - One metallic pipe, tubing or conduit to be installed either concentrically or eccentrically within the firestop system. The annular space between pipes, tubing or conduits and periphery of opening shall be min 0 in. (point contact) to max 5/8 in. (16 mm). Pipe, tubing or conduit to be rigidly supported on both sides of wall assembly. The following types and sizes of metallic pipes, tubing or conduits may be used:
   A. **Steel Pipe** - Nom 6 in. (152 mm) diam (or smaller) Schedule 10 (or heavier) steel pipe.
   B. **Iron Pipe** - Nom 6 in. (152 mm) diam (or smaller) cast or ductile iron pipe.
   C. **Copper Tubing** - Nom 6 in. (152 mm) diam (or smaller) Type M (or heavier) copper tubing.
   D. **Copper Pipe** - Nom 6 in. (152 mm) diam (or smaller) Regular (or heavier) copper pipe.
   E. **Conduit** - Nom 4 in. (102 mm) diam (or smaller) steel electrical metallic tubing, nom 4 in. (102 mm) diam (or smaller) galv steel conduit or nom 1 in. (25 mm) diam (or smaller) flexible steel conduit.
3. **Fill, Void or Cavity Material* - Sealant** - Min 5/8 in. (16 mm) thickness of fill material within annulus, flush with both surfaces of wall. Additional fill material installed such that a min 1/4 in. (6 mm) thick crown is formed around the penetrating item lapping 1/2 in. (13 mm) beyond the periphery of the opening.
   SPECIFIED TECHNOLOGIES INC - SpecSeal LC 150 Sealant, SpecSeal LE600 Sealant

*Bearing the UL Classification Mark

STI

Specified Technologies Inc. 200 Evans Way Somerville, NJ 08876
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Created or Revised: June 08, 2007
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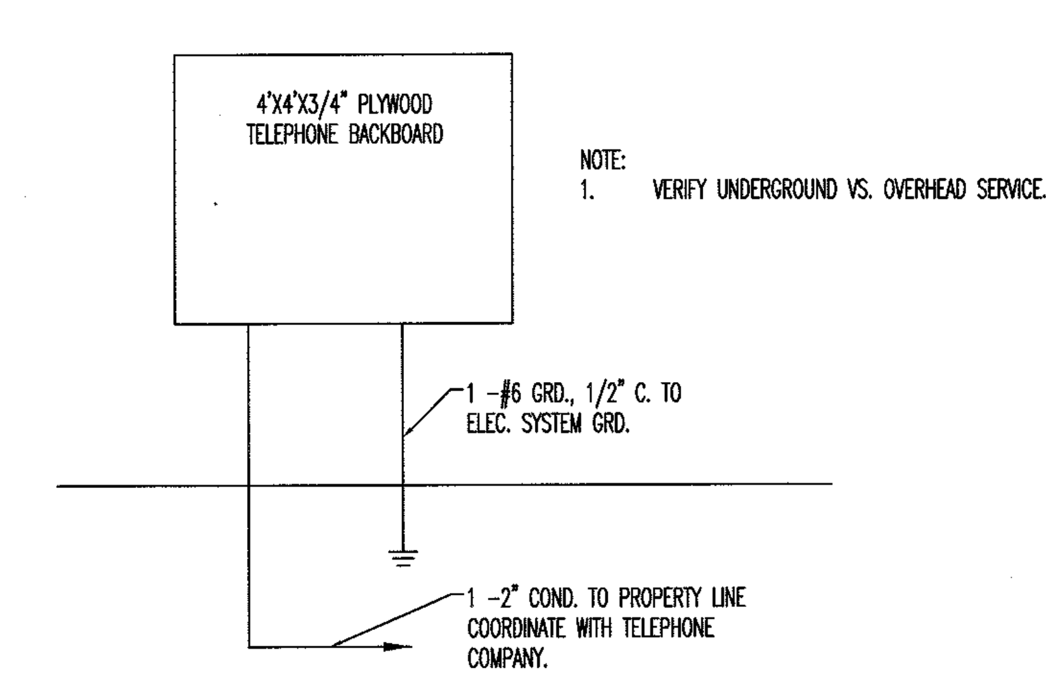
W-L-1088
PAGE 1 OF 1

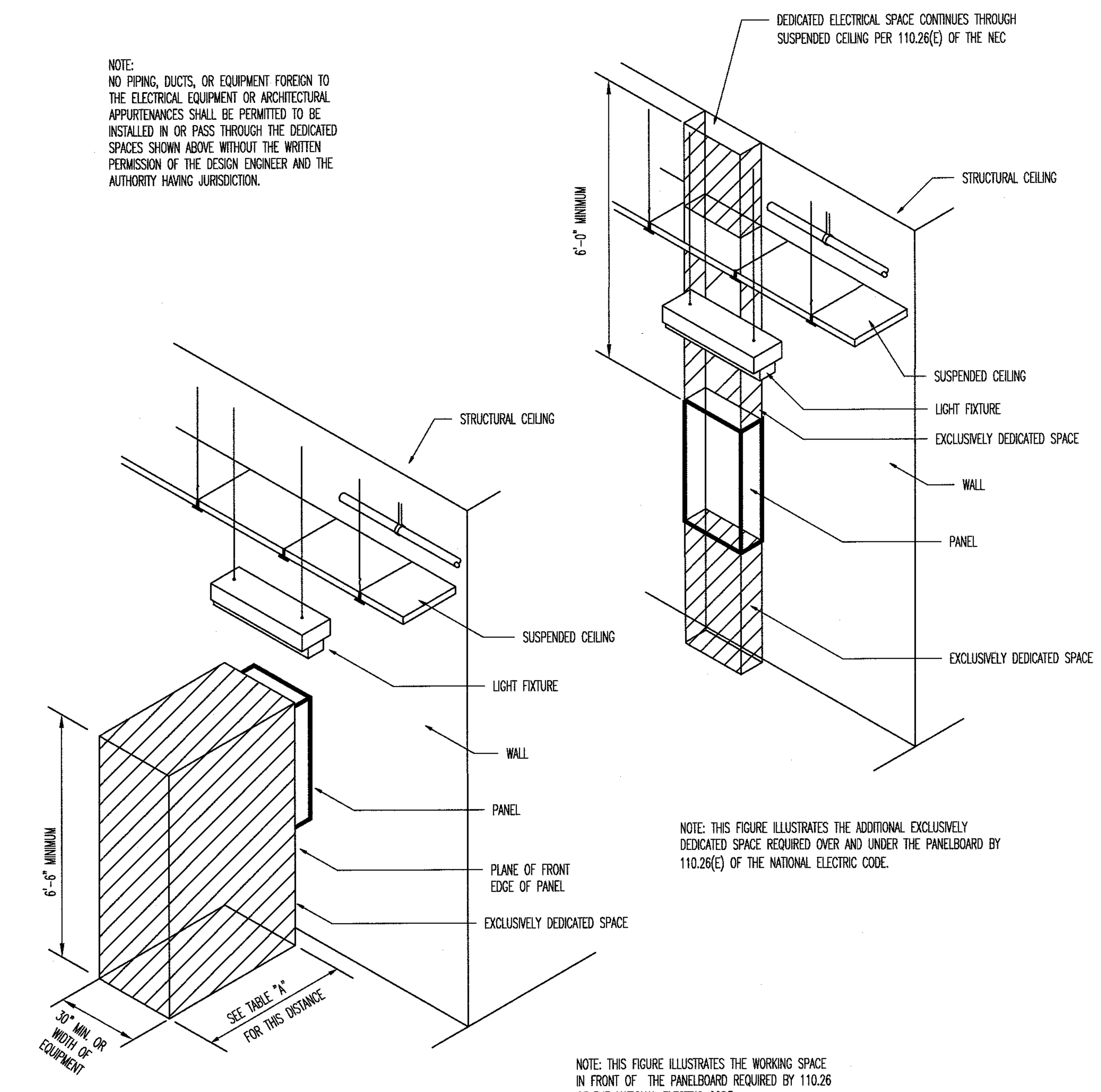
RATED WALL DETAIL - NO SCALE | 4



NOTE:
1. VERIFY UNDERGROUND VS. OVERHEAD SERVICE.

PHONE BOARD DETAIL - NO SCALE | 5

NOTE:
NO PIPING, DUCTS, OR EQUIPMENT FOREIGN TO THE ELECTRICAL EQUIPMENT OR ARCHITECTURAL APPURTENANCES SHALL BE PERMITTED TO BE INSTALLED IN OR PASS THROUGH THE DEDICATED SPACES SHOWN ABOVE WITHOUT THE WRITTEN PERMISSION OF THE DESIGN ENGINEER AND THE AUTHORITY HAVING JURISDICTION.



NOTE: THIS FIGURE ILLUSTRATES THE ADDITIONAL EXCLUSIVELY DEDICATED SPACE REQUIRED OVER AND UNDER THE PANELBOARD BY 110.26(E) OF THE NATIONAL ELECTRIC CODE.

NOTE: THIS FIGURE ILLUSTRATES THE WORKING SPACE IN FRONT OF THE PANELBOARD REQUIRED BY 110.26 OF THE NATIONAL ELECTRIC CODE.

NOTE: WHERE THE CONDITIONS ARE AS FOLLOWS:

CONDITION 1 – EXPOSED LIVE PARTS ON ONE SIDE OF THE WORKING SPACE AND NO LIVE OR GROUNDED PARTS ON THE OTHER SIDE OF THE WORKING SPACE, OR EXPOSED LIVE PARTS ON BOTH SIDES OF THE WORKING SPACE THAT ARE EFFECTIVELY GUARDED BY INSULATING MATERIALS.

CONDITION 2 – EXPOSED LIVE PARTS ON ONE SIDE OF THE WORKING SPACE AND GROUNDED PARTS ON THE OTHER SIDE OF THE WORKING SPACE. CONCRETE, BRICK, OR TILE WALLS SHALL BE CONSIDERED AS GROUNDED.

CONDITION 3 – EXPOSED LIVE PARTS ON BOTH SIDES OF THE WORKING SPACE.

TABLE 110.26(A)(1) WORKING SPACE

VOLTAGE TO GROUND, NOMINAL	MINIMUM CLEAR DISTANCE (FEET)		
	CONDITON 1	2	3
0-150	3	3	3
151-600	3	3-1/2	4

REQUIRED CLEARANCES-NO SCALE | 6

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NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 17304 MICHAEL W. KILIAN
SEAL

KILIAN ENGINEERING, INC. CORPORATE SEAL NORTH CAROLINA
SEAL

NEW BUILDING
for PAUL BARBOUR & SONS
11496 HWY 401N
FUQUAY VARINA, NC 27526

REVISION:

NO.	DATE	DESCRIPTION

ISSUED:

NO.	DATE	DESCRIPTION
1	5/23/22	ISSUED FOR PERMITING

DRAWN BY: DC
CHECKED BY: MWK/KDC

ELECTRICAL DETAILS

SHEET NO.
E4

PROJECT NO: 22284