

# OFFICE CHANGE OF USE

## 216 CONNIE COURT SPRING LAKE, N.C. 28390

### GENERAL NOTES:

- THE FOLLOWING SPECIFICATIONS ARE AN OUTLINE OF MINIMUM REQUIREMENTS AND THEIR APPLICATION. MANUFACTURER SPECIFICATIONS AND LOCAL CODE REQUIREMENTS, WHEN IN EXCESS OF MINIMUM SPECIFICATION, SHALL CONTROL.
- THE CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS AND CONDITIONS AT THE JOB SITE PRIOR TO BEGINNING THIS PROJECT AND REPORT ANY DISCREPANCIES TO THE ARCHITECT BEFORE STARTING THE WORK. THE FAILURE TO DO SO WILL IN NO WAY RELIEVE THE CONTRACTOR OF FURNISHING ALL MATERIALS AND PERFORMING ALL WORK REQUIRED FOR COMPLETION OF THE WORK IN CONFORMANCE WITH THE DRAWINGS OR AS REQUIRED BY SITE CONDITIONS. CONTRACTORS SHALL ASSUME RESPONSIBILITY FOR ERRORS THAT ARE NOT REPORTED.
- THE CONTRACTOR SHALL BE RESPONSIBLE TO CHECK AND COORDINATE DIMENSIONS, CLEARANCES, ETC. WITH THE WORK OF ALL OTHER TRADES.
- ALL SUBSTITUTIONS AND/OR CHANGES AFFECTING THE DESIGN OF THIS STRUCTURE SHALL BE SUBJECT TO ARCHITECT AND ENGINEER APPROVAL.
- ALL WORK SHALL BE PERFORMED IN STRICT ACCORDANCE WITH NATIONAL, STATE & LOCAL CODES.
- CONTRACTOR SHALL COORDINATE THE SIZE AND LOCATION OF ALL OPENINGS IN FLOORS, WALLS AND ROOF CONSTRUCTION AS REQUIRED WHETHER SHOWN OR NOT ON THE ARCHITECTURAL AND/OR OTHER DRAWINGS AND PROVIDE LINTELS OR HEADERS AS REQUIRED.
- WHERE ALUMINUM IS ADJACENT TO STEEL, PROVIDE ADEQUATE BARRIER TO PREVENT OXIDATION OF ALUMINUM. TYPICAL FOR OTHER DISSIMILAR METALS.
- ALL ACCESSORIES NOT SHOWN ON THE DRAWINGS OR SPECIFICALLY CALLED FOR SUCH AS BLOCKING, BULKHEADS, CATS, FASTENERS, FLASHINGS, MISCELLANEOUS TRIM, ETC., REQUIRED AND NECESSARY AND CONSIDERED GENERAL PRACTICE FOR CONSTRUCTION SHALL BE CONSIDERED PART OF THE BUILDING CONTRACT.
- WHEN THE PROJECT IS AN ADDITION OR REMODELING JOB, THE CONTRACTOR SHALL FAMILIARIZE HIMSELF WITH EXISTING CONDITIONS (TRIM, TEXTURES, MATERIALS, METHODS OF CONSTRUCTION, ETC.) AND MATCH EXISTING UNLESS OTHERWISE NOTED.
- THE CONTRACTOR IS RESPONSIBLE FOR THE SAFETY OF THE EXISTING STRUCTURE. THE CONTRACTOR IS RESPONSIBLE FOR ALL DEMOLITION REQUIRED TO COMPLETE THE WORK WHETHER SHOWN ON DRAWINGS NOT INCLUDING OR LIMITED TO PARTITIONS, FLOORS FLOOR COVERINGS, CEILINGS, ROOF AND/OR STRUCTURE, LIGHTING, ELECTRICAL, PLUMBING, HVAC, ETC., AS REQUIRED. REPLACE AND RELOCATE AS REQUIRED.
- CONTRACTOR SHALL INSURE COMPATIBILITY OF THE BUILDING WITH ALL SITE REQUIREMENTS.
- THE CONTRACTOR SHALL FURNISH OWNERS WITH INSURANCE CERTIFICATION AND WAIVERS OF MECHANICS LIENS BEFORE PROCEEDING WITH THE WORK.
- ALL MATERIALS, WORK AND EQUIPMENT AND ITS INSTALLATION BY THE CONTRACTOR SHALL BE IN COMPLIANCE WITH THE MOST RECENT VERSIONS OF THE CODES LISTED IN THIS SET, AND ALL LOCAL CODES AND CURRENT ORDINANCES.
- CONTRACTOR SHALL INSTALL ALL MANUFACTURED ITEMS, MATERIALS AND EQUIPMENT IN STRICT ACCORDANCE WITH THE MANUFACTURERS RECOMMENDED SPECIFICATIONS, EXCEPT THE SPECIFICATIONS HEREIN, WHERE MORE STRINGENT SHALL BE COMPLIED WITH.
- THE CONTRACTOR SHALL PROVIDE PROTECTION FOR OWNER AND THE GENERAL PUBLIC IN AND AROUND THE CONSTRUCTION AREA. ADEQUATE BARRIERS SHALL BE PROVIDED TO EXERCISE CONTROL OF SAFE INGRESS AND EGRESS OF CONSTRUCTION AREA.
- WORK NOT IDENTIFIED IN A CERTAIN LOCATION ON A DRAWING BUT RESPONSIBLY IMPLIED TO BE SIMILAR TO THAT SHOWN IN A CORRESPONDING LOCATION SHALL BE CONSIDERED TO BE PART OF THIS CONTRACT.
- ITEMS IDENTIFIED AS "EXISTING" ARE EXISTING TO REMAIN (UNO.)
- EXISTING ITEMS TO REMAIN THAT ARE DAMAGED OR DISTURBED AS A RESULT OF WORK PERFORMED UNDER THIS CONTRACT SHALL BE REPAIRED AND/OR REPLACED TO THE SATISFACTION OF THE ARCHITECT AND WITHOUT ADDITIONAL COST TO THE OWNER.
- THE CONTRACTOR SHALL LEGALLY DISPOSE OF ALL UNUSED MATERIAL AND DEBRIS OFF THE PREMISES.
- PROVIDE CONTROL OR EXPANSION JOINTS IN ALL CONSTRUCTION AS REQUIRED BY JOB CONDITION CODES AND MANUFACTURERS' RECOMMENDATIONS.
- ALL ELECTRICAL WORK SHALL COMPLY WITH THE NATIONAL ELECTRICAL CODE, THE FIRE PROTECTION ASSOCIATION AND ALL GOVERNING CODES AND ADMINISTRATION BY LOCAL BUILDING OFFICIALS AND SHALL BE CONSIDERED PART OF THE CONSTRUCTION DOCUMENTS.
- PROVIDE ICE DAM PROTECTION AT ALL ROOF PENETRATIONS.
- PROVIDE JOIST HANGERS AT HEADERS AND TAILS OF ALL FRAMING CONNECTIONS.
- RADON TESTING AND CORRECTIVE MEASURES (IF ANY) ARE THE RESPONSIBILITY OF THE OWNER.
- ALL DIMENSIONS SHOULD BE READ OR CALCULATED AND NEVER SCALED.
- ALL INTERIOR AND EXTERIOR FINISH AND COLOR SELECTION ARE THE RESPONSIBILITY OF THE CONTRACTOR AND OWNER, AND SHALL COMPLY WITH CODES FOR FLAME SPREAD RATING AND SMOKE GENERATION FACTOR.
- THE GENERAL CONTRACTOR IS RESPONSIBLE FOR INITIATING, MAINTAINING AND SUPERVISING ALL SAFETY PRECAUTIONS AND PROGRAMS NECESSARY FOR THE COMPLETION OF THE WORK.
- THE ARCHITECT AND/OR ENGINEER SHALL HAVE NO RESPONSIBILITY FOR THE SAFETY OF ANY WORKMAN OR CONTRACTOR. THIS RESPONSIBILITY SHALL BE THAT OF EACH WORKMAN AND /OR CONTRACTOR.
- ALL HVAC WORK SHALL BE IN STRICT ACCORDANCE WITH NORTH CAROLINA MECHANICAL CODE AND ALL APPLICABLE ORDINANCES IN EFFECT.
- ALL DUCTWORK, WIRING AND PLUMBING SHALL BE CONCEALED WITHIN WALLS AND /OR CEILING IN FINISHED SPACES, UNO.
- HEATING, VENTILATING, AIR CONDITIONING (HVAC), PLUMBING AND ELECTRICAL DESIGN IS BY OTHERS.
- PROVIDE MOISTURE-RESISTANT GYPSUM BOARD IN BATHROOMS.

### GENERAL NOTES FOR DEMOLITION:

- THE OWNER HAS THE RIGHT OF FIRST REFUSAL FOR ALL EQUIPMENT AND FIXTURES (CABINETS, SHELVING, ETC.) REMOVED UNDER CONTRACT. IF THE OWNER DOES NOT EXERCISE THIS RIGHT FOR AN INDIVIDUAL PIECE OF EQUIPMENT, THE GENERAL CONTRACTOR SHALL REMOVE SAID EQUIPMENT FROM SITE.
- MARK LOCATION OF ALL UTILITIES TO REMAIN PRIOR TO DEMOLITION.
- NOTIFY ARCHITECT/OWNER PRIOR TO START OF DEMOLITION WORK.
- CEASE OPERATIONS IMMEDIATELY IF STRUCTURE APPEARS TO BE IN DANGER. NOTIFY ARCHITECT/OWNER IMMEDIATELY. DO NOT RESUME OPERATIONS UNTIL DIRECTED.
- MAINTAIN PROTECTED EGRESS AND ACCESS TO WORK.
- DISCONNECT, CAP AND IDENTIFY DESIGNATED UTILITIES WITHIN DEMOLITION AREAS.
- ALL DEMOLITION IS TO BE DONE IN AN ORDERLY AND CAREFUL MANNER. PROTECT EXISTING SUPPORTING STRUCTURAL MEMBERS.
- REMOVE ALL DEMOLISHED MATERIALS FROM SITE AND LEGALLY DISPOSE.
- UTILIZE OSHA SAFETY PRECAUTIONS AS REQUIRED.
- ALL NEW EQUIPMENT MUST MEET LOCAL NOISE ORDINANCES.
- ITEMS SHOWN TO BE DEMOLISHED ON PLAN ARE FOR REFERENCE ONLY. THE CONTRACTOR MUST INSPECT THE SITE AND COMPLETELY FAMILIARIZE HIM/HERSELF WITH THE ITEMS TO BE REMOVED. QUESTIONS ABOUT ITEMS TO BE REMOVED OR TO REMAIN MUST BE GIVEN TO THE ARCHITECT IN WRITING PRIOR TO REMOVAL.
- NOTIFY ARCHITECT IMMEDIATELY OF ANY DISCREPANCY OR DEVIATION BETWEEN DUGS, AND ANY FIELD VERIFIED CONDITIONS PRIOR TO COMMENCING WORK.
- DO NOT SCALE DUGS. ALL MEASUREMENTS MUST BE CONFIRMED IN FIELD. DIMENSIONS SHOWN ARE FOR REFERENCE ONLY.
- ALL PLUMBING, MECHANICAL OR ELECTRICAL DISCONNECTS SHALL BE MADE BY THE RESPECTIVE TRADES. REFER TO DEMOLITION DRAWINGS OF HVAC, PLUMBING AND ELECTRICAL TRADES FOR SPECIFIC SCOPE OF DEMOLITION FOR THESE TRADES. NOTE: IF THERE IS AN EXISTING FIRE ALARM SYSTEM, IT SHALL NOT BE INTERRUPTED NOR SHALL EXISTING FIRE ALARM DEVICES BE REMOVED UNTIL NEW DEVICES ARE READY FOR SWITCHOVER.
- THE CONTRACTOR SHALL MAKE EVERY EFFORT TO PROTECT PORTIONS OF EXISTING CONSTRUCTION WHICH ARE ADJACENT TO AREAS TO BE DEMOLISHED. MAKE ALL CUTS AS NEATLY AS POSSIBLE.
- IF NOT OTHERWISE NOTED OR DETAILED, ALL SURFACES LEFT ROUGH OR UNFINISHED BY DEMOLITION, AND WHICH ARE EXPOSED TO VIEW SHALL BE PATCHED TO MATCH ADJACENT FINISHES TO PROVIDE A UNIFORM APPEARANCE W/ REGARD TO SIZE, SHAPE, COLOR, TEXTURE AND MATERIAL.
- THE GENERAL CONTRACTOR SHALL PROVIDE A PHYSICAL BARRIER TO CONTAIN DUST AROUND THE DEMOLITION AREA AND SHALL MAKE EVERY EFFORT TO KEEP THE DEMOLITION SITE AND SURROUNDING AREAS AS CLEAN AS POSSIBLE.
- EACH CONTRACTOR SHALL PROVIDE ADEQUATE FIRE PROTECTION DURING THE COURSE OF THE WORK IN ACCORDANCE WITH THE GENERAL REQUIREMENTS AND AUTHORITIES HAVING JURISDICTION.
- ALL WINDOWS ARE EXIST'G EXTERIOR WINDOWS TO REMAIN, UNLESS OTHERWISE NOTED. TYPICAL.
- ALL EXISTING LOOSE FURNITURE IN SCHEDULED AREAS OF DEMOLITION SHALL BE PROTECTED DURING DEMOLITION.
- CONTRACTOR TO VERIFY LOCATION OF ALL EXIST'G SWITCHES AND OUTLETS. REFER TO RCP FOR PROPOSED LOCATION OF NEW SWITCHES AND OUTLETS. EXIST'G ELECTRICAL OUTLETS AND SWITCHES ARE TO BE REMOVED AS REQUIRED FOR NEW CONSTRUCTION. JUNCTION BOXES NOT TO BE USED SHOULD BE REMOVED IN THEIR ENTIRETY.

### PROJECT INFORMATION

THE BUILDING SHALL BE IN COMPLIANCE WITH THE MOST RECENT VERSION OF THE FOLLOWING NORTH CAROLINA EDITION CODES, WHERE APPLICABLE TO THE SCOPE OF WORK:

2018 BUILDING CODE  
2018 EXISTING BUILDING CODE  
2018 ENERGY CONSERVATION CODE  
2018 FIRE CODE  
2018 FUEL GAS CODE  
2018 MECHANICAL CODE  
2018 PLUMBING CODE  
2020 ELECTRIC CODE  
2009 ICC/ANSI A111

### SCOPE OF WORK:

THIS BUILDING IS AN EXISTING PRE-MANUFACTURED RESIDENCE, 1 STORY, OVER CRAWL SPACE (R-5) USE. THE NEW SCOPE OF WORK PROPOSES A CHANGE OF USE TO A OFFICE (B-USE).

### CLASSIFICATION OF WORK:

CHANGE OF OCCUPANCY AND ALTERATION LEVEL 3 (NCEBC CHAPTER 9 & 10)

### EXISTING USE:

RESIDENTIAL (R-5)

### PROPOSED USE:

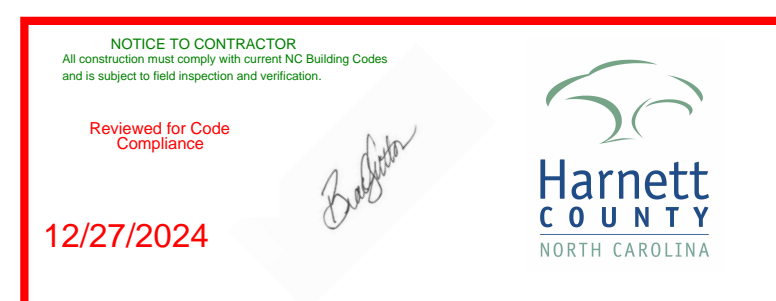
OFFICE (B)-BUSINESS

### CONSTRUCTION CLASSIFICATION (NCBC 6.02):

TYPE VB (COMBUSTIBLE UNPROTECTED)- NON-SPRINKLERED

### BUILDING AREA CALCULATION

EXIST'G FIRST FLOOR AREA APPROX. 1016 SF.



### CHANGE OF OCCUPANCY (NCEBC CHAPTER 10)

**STRUCTURAL (1007.1) GRAVITY LOADS**  
BUILDINGS OR PORTIONS SUBJECT TO A CHANGE IN OCCUPANCY WHERE SUCH CHANGE IN THE NATURE OF THE OCCUPANCY RESULTS IN HIGHER UNIFORM OR CONCENTRATED LOADS BASED ON TABLE 1007.1 OF THE NCBC, SHALL COMPLY W/ GRAVITY LOAD PROVISIONS OF THE NCBC.  
EXCEPTION 1: STRUCTURAL ELEMENTS WHOSE STRESS IS NOT INCREASED BY MORE THAN 10 PERCENT

**ELECTRICAL (1008.3) SERVICE UPGRADE**  
WHERE THE OCCUPANCY OF THE EXISTING BUILDING IS CHANGED SUCH THAT THE NEW LOAD REQUIRES AN INCREASE IN SERVICE, THE ELECTRICAL SERVICE SHALL BE UPGRADED TO MEET THE REQUIREMENTS OF NFPA 70 FOR THE NEW OCCUPANCY.

**ELECTRICAL (1008.4) NUMBER OF ELECTRICAL OUTLETS**  
WHERE THE OCCUPANCY OF THE EXISTING BUILDING IS CHANGED, THE NUMBER OF OUTLETS SHALL COMPLY WITH NFPA 70 FOR THE NEW OCCUPANCY.

**MECHANICAL (1009.1)**  
WHERE THE OCCUPANCY OF THE EXISTING BUILDING IS CHANGED SUCH THAT THE NEW OCCUPANCY IS SUBJECT TO DIFFERENT KITCHEN EXHAUST REQUIREMENTS OR TO INCREASED MECHANICAL VENTILATION REQUIREMENTS IN ACCORDANCE WITH THE IMC, THE NEW OCCUPANCY SHALL COMPLY WITH THE RESPECTIVE IMC PROVISIONS

**PLUMBING (1010) INCREASED DEMAND**  
WHERE THE OCCUPANCY OF THE EXISTING BUILDING IS CHANGED SUCH THAT THE NEW OCCUPANCY IS SUBJECT TO INCREASED OR DIFFERENT PLUMBING FIXTURE REQUIREMENTS OR TO INCREASED WATER SUPPLY REQUIREMENTS IN ACCORDANCE WITH IPC, THE NEW OCCUPANCY SHALL COMPLY WITH THE INTENT OF THE RESPECTIVE IPC PROVISIONS.

**COMPLIANCE WITH CHAPTER 9 (1012.1)**  
WHERE ALTERATION WORK IS REQUIRED BY THE CHANGE OF OCCUPANCY CLASSIFICATION, THE REQUIREMENTS OF CHAPTER 9 SHALL BE APPLICABLE THROUGHOUT THE BUILDING FOR THE MOST RESTRICTIVE OCCUPANCY CLASSIFICATION.

### TABLE 1012.1 SPRINKLER HAZARD CATEGORY

EXISTING USE CLASSIFICATION R-5; RELATIVE HAZARD: 6  
PROPOSED USE CLASSIFICATION B; RELATIVE HAZARD: 6

1. WHEN A CHANGE IN USE IS MADE TO AN EQUAL OR LESSER HAZARD CATEGORY, THERE IS NO REQUIREMENT TO INSTALL AN AUTOMATIC FIRE SUPPRESSION SYSTEM

### TABLE 1012.4 MEANS OF EGRESS HAZARD CATEGORY

EXISTING USE CLASSIFICATION R-5; RELATIVE HAZARD: 5  
PROPOSED USE CLASSIFICATION B; RELATIVE HAZARD: 4

1. WHEN A CHANGE IN USE IS MADE TO A HIGHER HAZARD CATEGORY, THE MEANS OF EGRESS SHALL COMPLY WITH THE REQUIREMENTS OF CHAPTER 10 OF THE NCBC.

EXCEPTIONS:  
2. EXISTING STAIRWAYS, INCLUDING HANDRAILS AND GUARDS COMPLYING WITH THE REQUIREMENTS OF CHAPTER 9 SHALL BE PERMITTED FOR CONTINUED USE SUBJECT TO APPROVAL OF THE CODE OFFICIAL.

### 1012.4.3 EGRESS CAPACITY

EGRESS CAPACITY SHALL MEET OR EXCEED THE OCCUPANT LOAD SPECIFIED IN THE NCBC FOR THE NEW OCCUPANCY.

### TABLE 1012.5 HEIGHTS AND AREAS HAZARD CATEGORY

EXISTING USE CLASSIFICATION R-5; RELATIVE HAZARD: 4  
PROPOSED USE CLASSIFICATION B; RELATIVE HAZARD: 4

1. WHEN A CHANGE IN USE IS MADE TO AN EQUAL OR LESSER HAZARD CATEGORY, THE HEIGHT AND AREA OF THE EXISTING BUILDING SHALL BE DEEMED ACCEPTABLE.

### TABLE 1012.6 EXPOSURE OF EXTERIOR WALLS CATEGORY

EXISTING USE CLASSIFICATION R-5; RELATIVE HAZARD: 3  
PROPOSED USE CLASSIFICATION B; RELATIVE HAZARD: 3

1. WHEN A CHANGE IN USE IS MADE TO AN EQUAL OR LESSER HAZARD CATEGORY, EXISTING EXTERIOR WALLS, INCLUDING OPENINGS, SHALL BE ACCEPTED.

### 1012.9 ACCESSIBILITY

(1012.9.2) COMPLETE CHANGE OF OCCUPANCY  
WHERE AN ENTIRE BUILDING UNDERGOES OF CHANGE OF OCCUPANCY, IT SHALL COMPLY WITH SECTION 1012.9.1, AND SHALL HAVE ALL THE FOLLOWING ACCESSIBLE FEATURES:

- AT LEAST ONE ACCESSIBLE BUILDING ENTRANCE
- AT LEAST ONE ACCESSIBLE ROUTE FROM AN ACCESSIBLE ENTRANCE TO PRIMARY FUNCTION AREAS

3. SIGNAGE COMPLYING WITH SECTION 1111 OF THE IBC
  4. ACCESSIBLE PARKING, WHERE PARKING IS PROVIDED
  5. AT LEAST ONE ACCESSIBLE PASSENGER LOADING ZONE, WHERE LOADING ZONES ARE PROVIDED
  6. AT LEAST ONE ACCESSIBLE ROUTE CONNECTING ACCESSIBLE PARKING AND ACCESSIBLE LOADING ZONES TO AN ACCESSIBLE ENTRANCE
- WHERE IT IS TECHNICALLY INFEASIBLE TO COMPLY WITH THE NEW CONSTRUCTION STANDARDS FOR ANY OF THESE REQUIREMENTS FOR A CHANGE OF GROUP OCCUPANCY, THE ABOVE ITEMS SHALL CONFORM TO THE REQUIREMENTS TO THE MAXIMUM EXTENT TECHNICALLY FEASIBLE.

### ALTERATION LEVEL 3 (NCEBC CHAPTER 9)

**ACCESSIBILITY (806.2) ALTERATIONS AFFECTING AN AREA OF PRIMARY FUNCTION**  
WHERE AN ALTERATION AFFECTS THE ACCESSIBILITY TO A, OR CONTAINS AN AREA OF PRIMARY FUNCTION, THE ROUTE TO THE PRIMARY FUNCTION AREA SHALL BE ACCESSIBLE. THE ACCESSIBLE ROUTE TO THE PRIMARY FUNCTION AREA SHALL INCLUDE TOILET AND DRINKING FOUNTAINS SERVING THE AREA OF PRIMARY FUNCTION.

EXCEPTION 1: THE COSTS OF PROVIDING THE ACCESSIBLE ROUTE ARE NOT REQUIRED TO EXCEED 20 PERCENT OF THE COSTS OF THE ALTERATIONS AFFECTING THE AREA OF PRIMARY FUNCTION.

### SINGLE EXIT BUILDINGS (805.3.1)

ONE EXIT IS REQUIRED FROM BUILDINGS IN OCCUPANCY (B) WHEN THE OCCUPANT LOAD OF THE STORY DOES NOT EXCEED 49 AND EXIT ACCESS TRAVEL DISTANCE DOES NOT EXCEED 15 FEET.

### DEAD END CORRIDORS (805.6)

DEAD END CORRIDORS IN ANY WORK AREA SHALL NOT EXCEED 35 FEET.

### NORTH CAROLINA BUILDING CODE

#### INTERIOR WALL AND CEILING FINISH REQUIREMENTS BY OCCUPANCY: (TABLE 803.1)

GROUP	NON-SPRINKLERED		
	EXIT ENCL. AND EXIT PASSAGEWAYS	CORRIDORS	ROOMS AND ENCLOSED SPACES
B	A	B	C

#### OCCUPANCY LOAD: (1024.12)

AREA	FUNCTION	AREA	EGRESS BASIS	OCCUPANT LOAD
FIRST FLOOR	BUSINESS	1016 SF	100 SF/GROSS/OCC	11
TOTAL				11

THE TOTAL OCCUPANT LOAD IS 11.

TOTAL OCCUPANT LOAD: 11 OCCUPANTS  
EGRESS WIDTH (1005.3.2): 11 OCCUPANTS = 11x(2) = 22" MIN. (SEE EGRESS PLAN)  
MIN. CORRIDOR WIDTH (1020.2): 36" MIN. (OCC. LOAD LESS THAN 50)  
DOOR SWING (1010.12.1): DOORS SHALL SWING IN THE DIRECTION OF TRAVEL WHERE SERVING AN OCCUPANT LOAD OF 50 OR MORE (FROM THE ROOM THEY SERVE)  
MIN. DOOR WIDTH (1010.11): 32" MIN. CLEAR BETWEEN FACE OF DOOR AND STOP (36" DOORS PROVIDED)  
PANIC HARDWARE (1010.11.0): NOT REQUIRED FOR (B) USE

FIRE PROTECTION SYSTEMS:  
MANUAL FIRE ALARM (907.2.2) (REQUIRED) NO (PROVIDED) NO  
SPRINKLER SYSTEM (903): GROUP B (REQUIRED) NO (PROVIDED) NO  
PORTABLE FIRE EXTINGUISHER (906): (REQUIRED) YES (PROVIDED) YES

### PLUMBING FIXTURE CALCULATION (PLUMBING CODE 2018):

11 (PER OCC. LOAD ABOVE)

#### FROM TABLE 403.1 (BUSINESS USE)

WATER CLOSETS/JURNALS: 1 UNISEX (SEE EXC. BELOW) 2 PROVIDED  
LAVATORIES REQUIRED: 1 UNISEX (SEE EXC. BELOW) 2 PROVIDED  
DRINKING FOUNTAIN: NOT REQUIRED WITH OCC. LOAD OF 30 OR FEWER  
SERVICE SINK: NOT REQUIRED WITH OCC. LOAD OF 30 OR FEWER

#### 403.2 SEPARATE FACILITIES:

EXCEPTION 2: SEPARATE FACILITIES SHALL NOT BE REQUIRED IN STRUCTURES OR SPACES WITH A TOTAL OCCUPANT LOAD, INCLUDING BOTH EMPLOYEES AND CUSTOMERS, OF 30 OR FEWER.

#### 1092 TOILET FACILITIES:

EXCEPTION 3: WHERE MULTIPLE SINGLE-USER TOILET ROOMS ARE CLUSTERED AT A SINGLE LOCATION, AT LEAST 50 PERCENT BUT NOT LESS THAN ONE ROOM FOR EACH USE AT EACH CLUSTER SHALL BE ACCESSIBLE.

### DRAWING LIST

#### ARCHITECTURAL

C5 COVER SHEET  
A-0 APPENDIX B  
A-1 DEMOLITION PLAN  
A-2 FLOOR PLAN LIFE SAFETY PLAN AND PARTITION TYPE  
A-3 DESIGN ELEVATIONS AND DETAILS  
A-4 ACCESSIBLE BATHROOM PLAN AND DETAILS

#### STRUCTURAL

S1 STRUCTURAL PLANS AND DETAILS

#### PLUMBING, MECHANICAL, ELECTRICAL

P01 PLUMBING LEGENDS AND NOTES  
P02 PLUMBING DEMO PLAN  
M1 PLUMBING PLAN  
M01 MECHANICAL LEGENDS AND NOTES  
M02 MECHANICAL DEMO PLAN  
M11 MECHANICAL PLAN  
E01 ELECTRICAL LEGENDS AND NOTES  
E02 ELECTRICAL DEMO PLAN  
E11 ELECTRICAL PLAN  
E21 PANEL SCHEDULE AND ONE-LINE DIAGRAM  
E31 ELECTRICAL DETAILS



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Office Change of Use  
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Spring Lake, NC 28390

#### REVISION/ISSUE

10-04-2024\_PERMIT SET

DATE: 10-04-2024

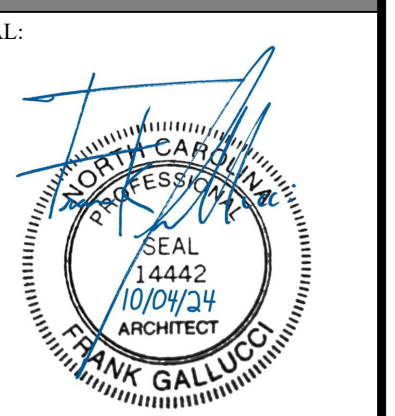
DRAWN BY: JR

JOB NUMBER: 24-95

COVER SHEET AND GENERAL NOTES

SHEET:

CS



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

Name of Project: Office Change of Use Address: 216 Connie Court, Spring Lake, NC Zip Code: 28390 Owner/Authorized Agent: Harold Moreland Phone: (281)889-4825 E-Mail: harold.moreland@brindevelopment.com

CONTACT: DESIGNER: FGA Associates PLLC ARCHITECT: Frank Gallucci LICENSE # 14442 TELEPHONE # (919)819-4635 E-MAIL: Frank@FrankGArchitect.com

2018 NC CODE FOR: New Construction Addition Renovation 1st Time Interior Completion Shell/Corer Phased Construction - Shell/Corer

Table with 4 columns: LOT OR PARKING AREA, TOTAL # OF PARKING SPACES REQUIRED, TOTAL # OF ACCESSIBLE SPACES PROVIDED, TOTAL # ACCESSIBLE UNITS PROVIDED.

Table with 4 columns: USE, WATERCLOSURES, URINALS, LAVATORIES, SHOWERS, DRINKING FOUNTAINS.

SPECIAL APPROVALS: Special approval: (Local Jurisdiction, Department of Insurance, SCO, DPI, DHHS, ICC, etc., describe below)

2018 NC Administrative Code and Policies Appendix B for Building

Table with 5 columns: FLOOR, EXISTING (SQ FT), NEW (SQ FT), RENO/ALTER (SQ FT), SUB-TOTAL. Rows for 6th Floor, 5th Floor, 4th Floor, 3rd Floor, 2nd Floor, Mezzanine, 1st Floor, Basement.

ALLOWABLE AREA Primary Occupancy Classification: SELECT ONE Assembly: A-1 A-2 A-3 A-4 A-5 Business: B-1 B-2 B-3 B-4 B-5

2018 NC Administrative Code and Policies Appendix B for Building

Table with 5 columns: STORY NO., DESCRIPTION AND USE, (A) BLDG AREA PER STORY (ACTUAL) AREA, (B) TABLE 506.2\* AREA, (C) AREA FOR PENETRATION INCREASE\*\* AREA, (D) ALLOWABLE AREA PER STORY (OR UNDEVELOPED\*\*)

NOT APPLICABLE (EXISTING BUILDING) 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)

Table with 4 columns: ALLOWABLE HEIGHT, ALLOWABLE (TABLE 504), SHOWN ON PLANS, CODE REFERENCE. Rows for Building Height in Feet (Table 504.3) and Building Height in Stories (Table 504.4).

2018 NC Administrative Code and Policies Appendix B for Building

Table with 10 columns: BUILDING ELEMENT, FIRE SEPARATION DISTANCE (FEET), PROTECTIVE MEASURES, RATING, DETAIL # AND ASSEMBLY #, DESIGN # FOR RATED ASSEMBLY, DESIGN # FOR RATED PENETRATION, DESIGN # FOR RATED JOINTS.

Table with 4 columns: FIRE SEPARATION DISTANCE (FEET) FROM PROPERTY LINES, DEGREES OF OPENINGS PROTECTION (TABLE 703.5), ALLOWABLE AREA (%), ACTUAL SHOWN ON PLANS (%).

2018 NC Administrative Code and Policies Appendix B for Building

LIFE SAFETY SYSTEM REQUIREMENTS Emergency Lighting: No Yes Exit Signs: No Yes Fire Alarm: No Yes Smoke Detection Systems: No Yes Partial Carbon Monoxide Detector: No Yes

LIFE SAFETY PLAN REQUIREMENTS Life Safety Plan Sheet #: A-2 Fire and/or smoke rated wall locations (Chapter 7) Assumed and real property line locations (if not on the site plan)

2018 NC Administrative Code and Policies Appendix B for Building

2018 APPENDIX B BUILDING CODE SUMMARY FOR ALL COMMERCIAL PROJECTS (PROVIDE ON THE STRUCTURAL SHEETS IF APPLICABLE)

DESIGN LOADS: Importance Factors: Snow (Is) Sismic (Is) Live Loads: Roof Mezzanine Floor Ground Snow Load: psf Wind Load: Ultimate Wind Speed Exposure Category

SEISMIC DESIGN CATEGORY: Provide the following Seismic Design Parameters: Occupancy Category (Table 1604.5) Spectral Response Acceleration Ss S1 Site Classification (ASCE 7) Data Source

2018 NC Administrative Code and Policies Appendix B for Building

2018 APPENDIX B BUILDING CODE SUMMARY FOR ALL COMMERCIAL PROJECTS (PROVIDE ON THE MECHANICAL SHEETS IF APPLICABLE)

MECHANICAL SUMMARY Thermal Zone: winter dry bulb, summer dry bulb Interior design conditions: winter dry bulb, summer dry bulb, relative humidity

Mechanical Spacing Conditioning System (Unitary) description of unit: heating efficiency, cooling efficiency, size category of unit

2018 NC Administrative Code and Policies Appendix B for Building

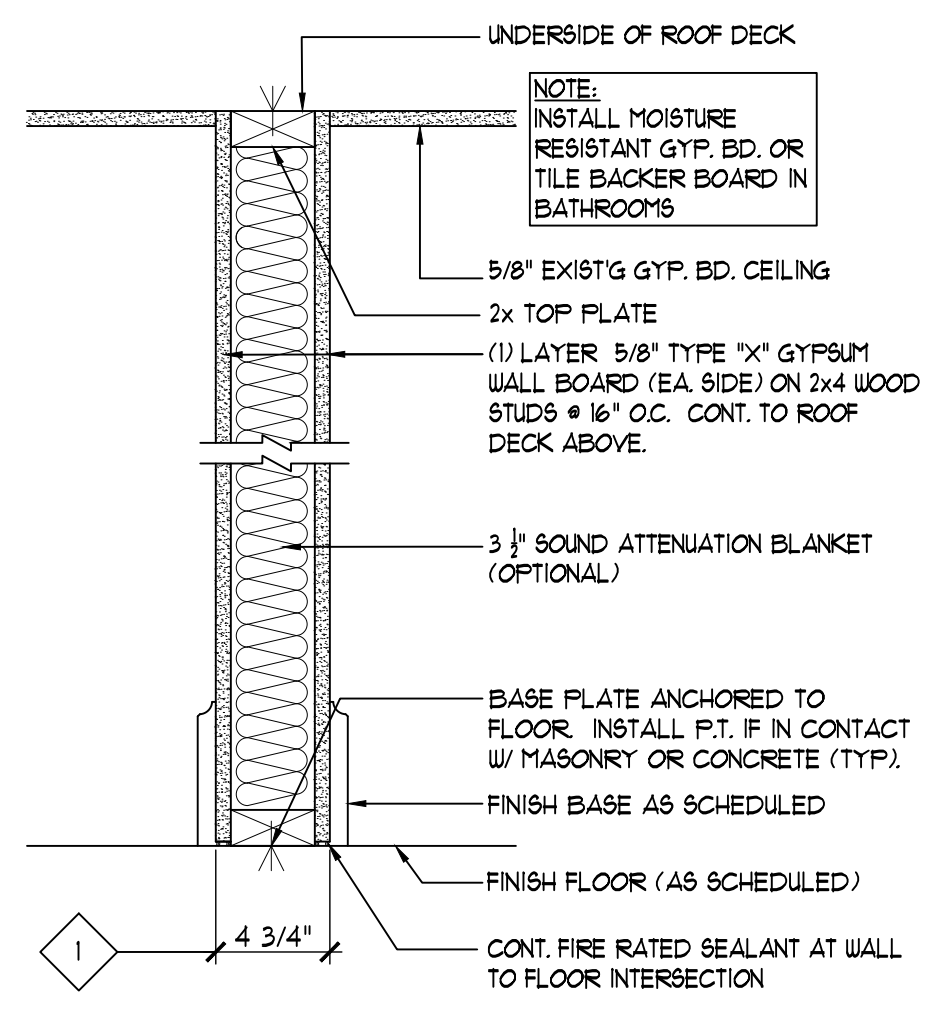
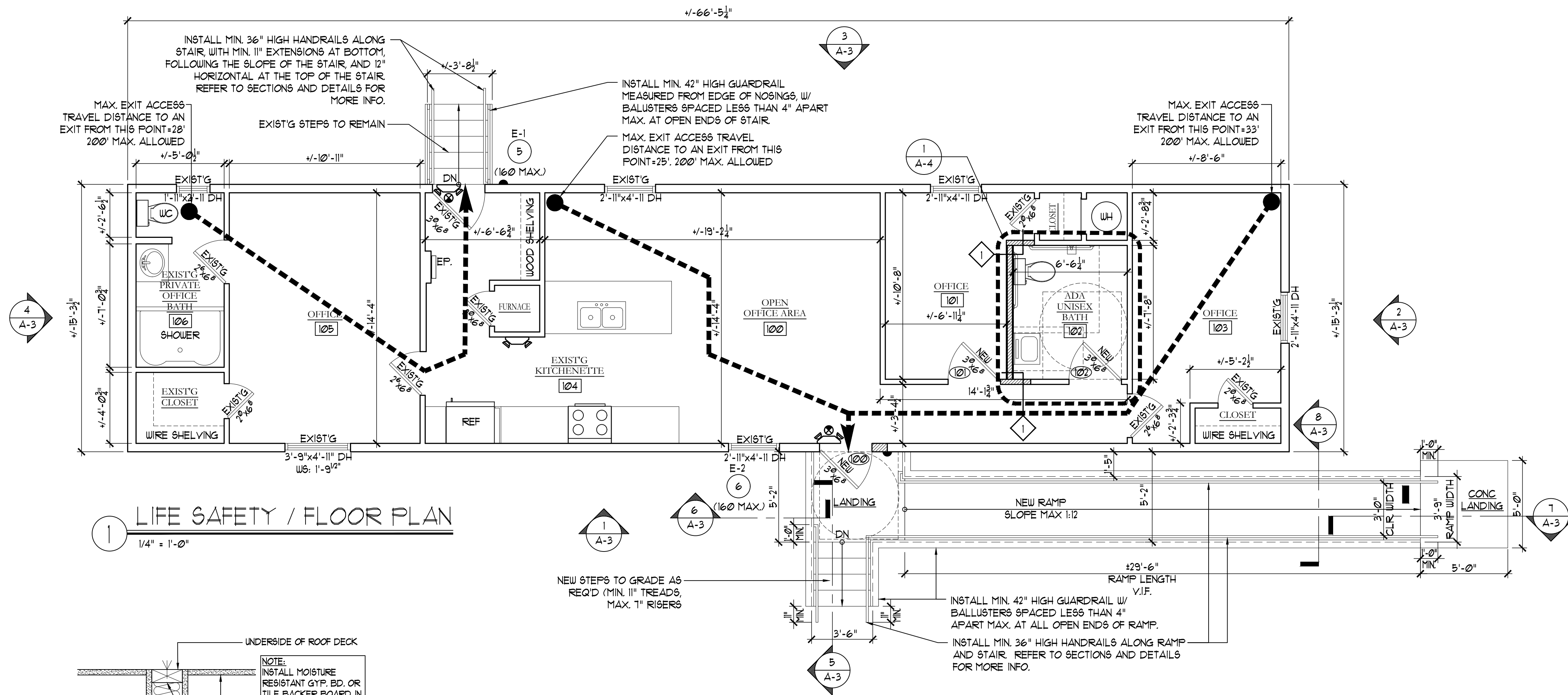
2018 APPENDIX B BUILDING CODE SUMMARY FOR ALL COMMERCIAL PROJECTS (PROVIDE ON THE ELECTRICAL SHEETS IF APPLICABLE)

ELECTRICAL SUMMARY Electrical System and Equipment Method of Compliance: Energy Code ASHRAE 90.1 Prescriptive Performance

Lighting schedule (each fixture type) Lamp type required in fixture number of lamps in fixture ballast type used in the fixture

2018 NC Administrative Code and Policies Appendix B for Building





ROOM FINISH SCHEDULE						
NO.	ROOM	FLOOR	BASE	WALLS	CEILING	REMARKS
		LUXURY VINYL PLANK		DRYWALL - PAINTED	DRYWALL - PAINTED	
100	OPEN OFFICE	●	●	●	●	
101	OFFICE	●	●	●	●	
102	ADA UNISEX BATH	●	●	●	●	
103	OFFICE	●	●	●	●	
104	EXIST'G KITCHENETTE	●	●	●	●	
105	OFFICE	●	●	●	●	
106	EXIST'G PRIVATE BATH	●	●	●	●	

**INTERIOR FINISH SPECIFICATION**

ALL INTERIOR FINISHES TO BE SUBMITTED TO OWNER AND/OR ARCHITECT FOR FINAL COLOR APPROVAL (TYP.)

CONTRACTOR TO REMOVE ALL WALLS AS INDICATED AND PATCH ALL EXISTING WALLS, AND FLOORS.

NOTE: FLOORING IS TO BE SLIP RESISTANT W/ MINIMUM COEFFICIENT OF FRICTION OF 0.6 OR GREATER TYPICAL FOR COMMERCIAL INSTALLATION TO MEET ADA REQUIREMENTS

FLOORING WALL BASES  
4" WOOD (PROFILE TBD)

INTERIOR WALL PAINT  
2-COATS BENJAMIN MOORE (COLOR AS SELECTED BY OWNER) AND ONE COAT PRIMER (TYP. ALL WALL SURFACES)  
2- COATS BENJAMIN MOORE (COLOR AS SELECTED BY OWNER) AND ONE COAT PRIMER- (DOORS AND FRAMES)

CEILING:  
BEADBOARD STAINED/ PRIMED AND PAINTED

OPENING NUMBER	DOOR & FRAME SCHEDULE								REMARKS	
	DOOR				FRAME					
	MAT.	TYPE	WIDTH	HEIGHT	MAT.	TYPE	GL	HDW	LBL	
100	VL	G	3'-0"	6'-8"	VL	S	TEMP.	LEVER/LATCH		INSTALL KEYED LOCK HARDWARE
101	WD	F	3'-0"	6'-8"	WD	S		LEVER/LATCH		INSTALL PRIVACY LOCK HARDWARE
102	WD	F	3'-0"	6'-8"	WD	S		LEVER/LATCH		INSTALL PRIVACY LOCK HARDWARE

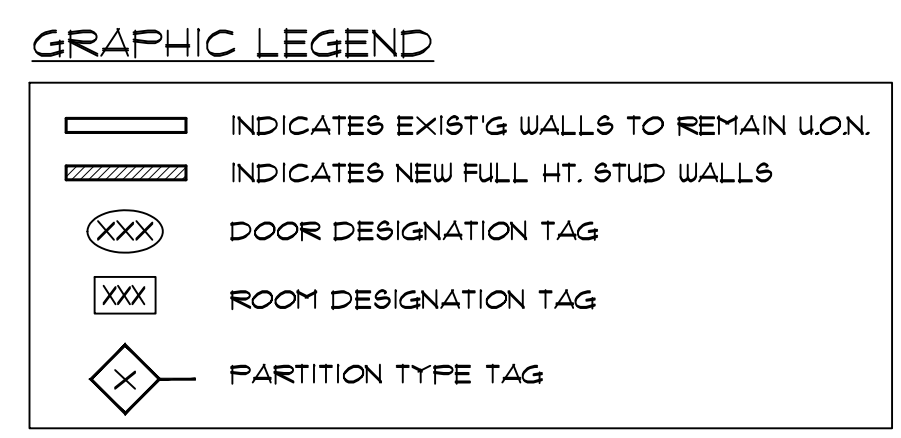
**HARDWARE SETS**  
HINGES 1218 45X45 - HAGER COMPANIES  
EACH LEVER LOCKSET - ARROW  
(3) 1 1/2" SR 2 3/4" ASA EACH WALL STOP - IVES  
(1) 401-1/2

**DOOR NOTES:** ALL DOOR HARDWARE TO BE ADA APPROVED LEVER TYPE  
1. CONTRACTOR TO REVIEW ALL HARDWARE OPTIONS WITH OWNER. CONTRACTOR MUST SUBMIT A COMPLETE DOOR PACKAGE TO OWNER AND ARCHITECT FOR REVIEW AND APPROVAL PRIOR TO ORDER. DOOR PACKAGE TO INCLUDE ALL DOOR TYPES, STYLES, AND HARDWARE.  
2. ALL DOOR OPERATION HARDWARE TO BE APPROVED ADA LEVER-TYPE UNLESS STATED OTHERWISE, IN STYLE AND FINISH AS SELECTED AND APPROVED BY OWNER AND ARCHITECT. HINGES TO BE COMMERCIAL GRADE IN FINISH AS SELECTED BY OWNER AND ARCHITECT.  
3. EXTERIOR DOORS TO BE INSULATED, FULLY WEATHER-STRIPPED, AND PROVIDED WITH AN ADA SILL (WHERE APPLICABLE).  
4. BASE BID FOR INTERIOR DOORS IS FLUSH PANEL. CONTRACTOR TO PROVIDE ALLOWANCE FOR UPGRADED DOOR PANELS AS SELECTED BY OWNER.  
5. GLAZING IN EXTERIOR DOORS TO BE INSTALLED WITH "HIGH-PERFORMANCE LOW-E" TYPE GLAZING (TYP) ON EXTERIOR DOORS, AND BE TEMPERED (TYP)  
6. DOOR EXTERIOR COLOR TO BE APPROVED BY OWNER AND/OR ARCHITECT.

TEMP. GLAZING REQ'D

AS PER SCH.

G F S  
DOOR AND FRAME TYPES



**LIFE SAFETY LEGEND**

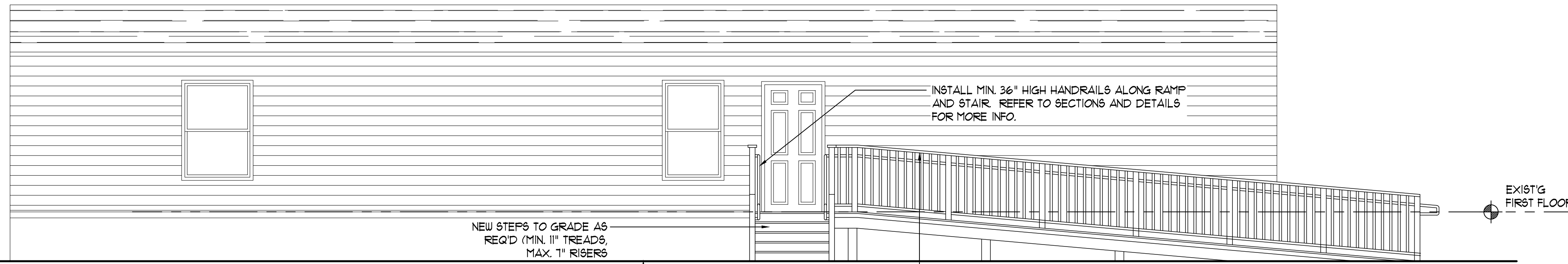
- EVACUATION ROUTE
- OCCUPANT LOAD PER EXIT DOOR. SEE OCCUPANT LOAD TABLE
- EMERGENCY LIGHT FIXTURE
- EXIT SIGN/EMERGENCY LIGHT FIXTURE COMBO
- EXTERIOR WALL MOUNTED EMERGENCY LIGHT
- SUGGESTED LOCATION OF PORTABLE FIRE EXTINGUISHER TYPE "ABC". FIELD LOCATE W/ FIRE MARSHAL

EXIT CAPACITY			
EXIT #	OCCUPANT LOAD	MIN. WIDTH REQUIRED (OCC X 0.2) + UNIT WIDTH, INCHES	PROVIDED WIDTH
E-1	5	1	32
E-2	6	12	32

NOTE: (E) INDICATES FIXTURE EXIST'G TO REMAIN

TOTAL AREA = 1016 SQFT  
AT 1 OCC/100 SQFT (GROSS)

THE TOTAL OCCUPANT LOAD IS 11.



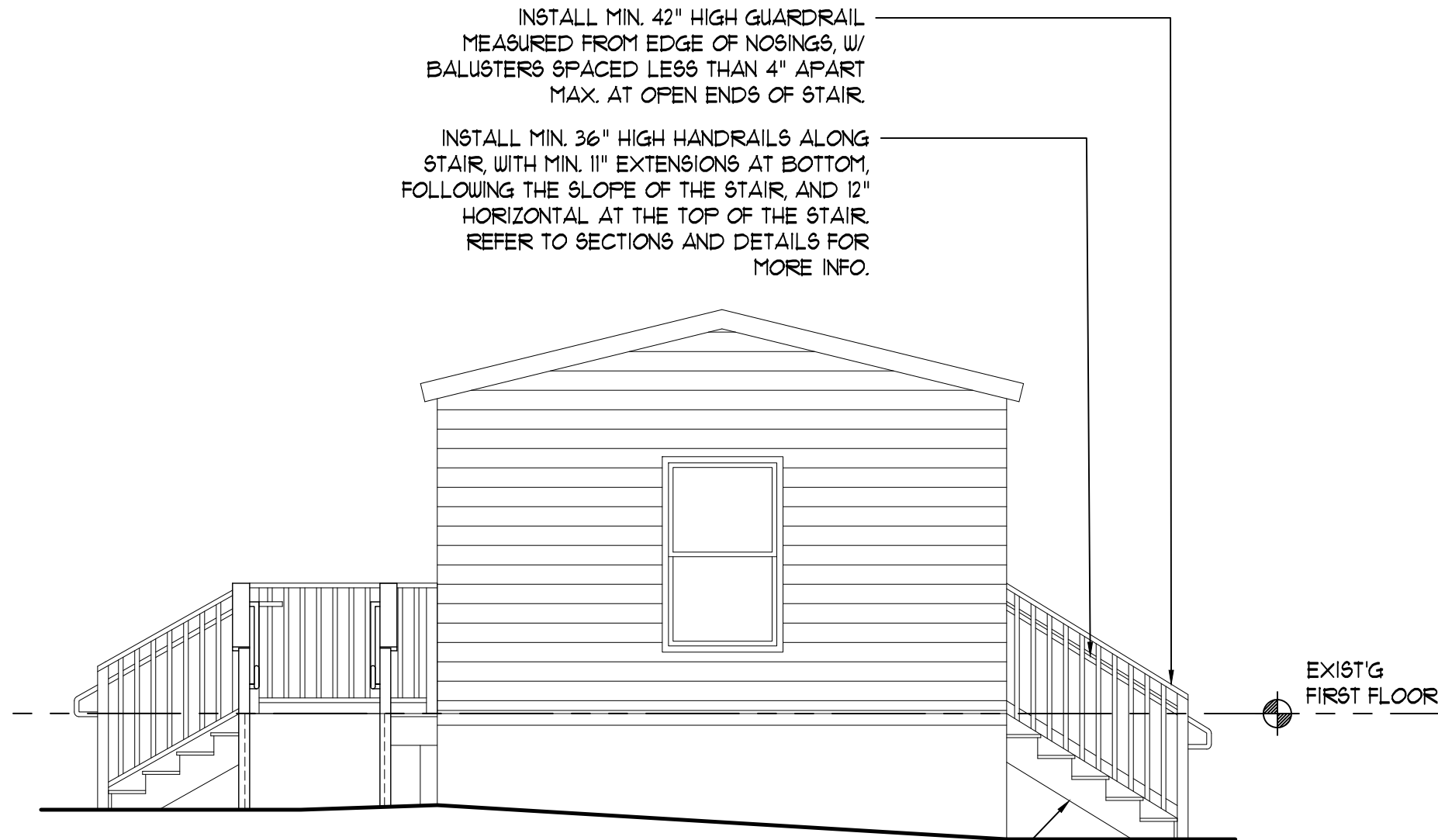
NEW STEPS TO GRADE AS REQ'D (MIN. 1" TREADS, MAX. 1" RIGERS)

APPROX. GRADE, V.I.F.

INSTALL MIN. 42" HIGH GUARDRAIL W/ BALUSTERS SPACED LESS THAN 4" APART MAX. AT ALL OPEN ENDS OF RAMP.

EXIST'G FIRST FLOOR

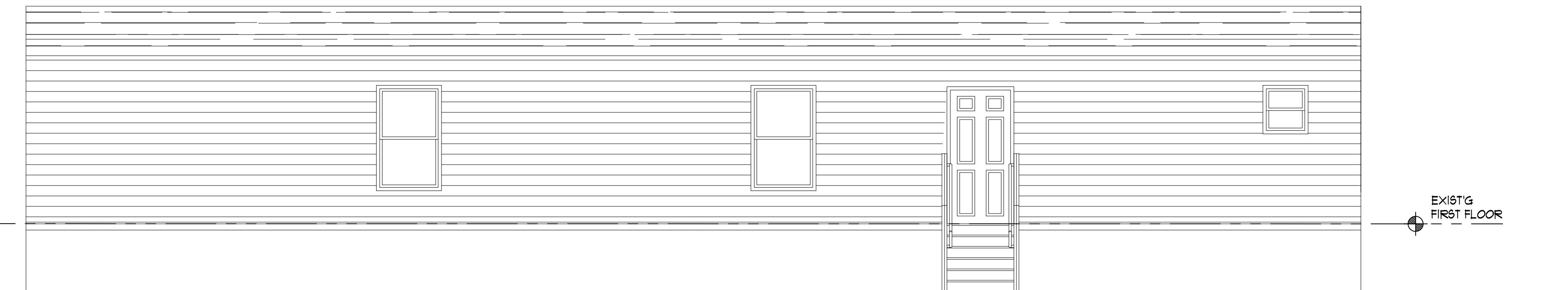
1 FRONT ELEVATION  
1/4" = 1'-0"



EXIST'G FIRST FLOOR

EXIST'G STEPS TO REMAIN

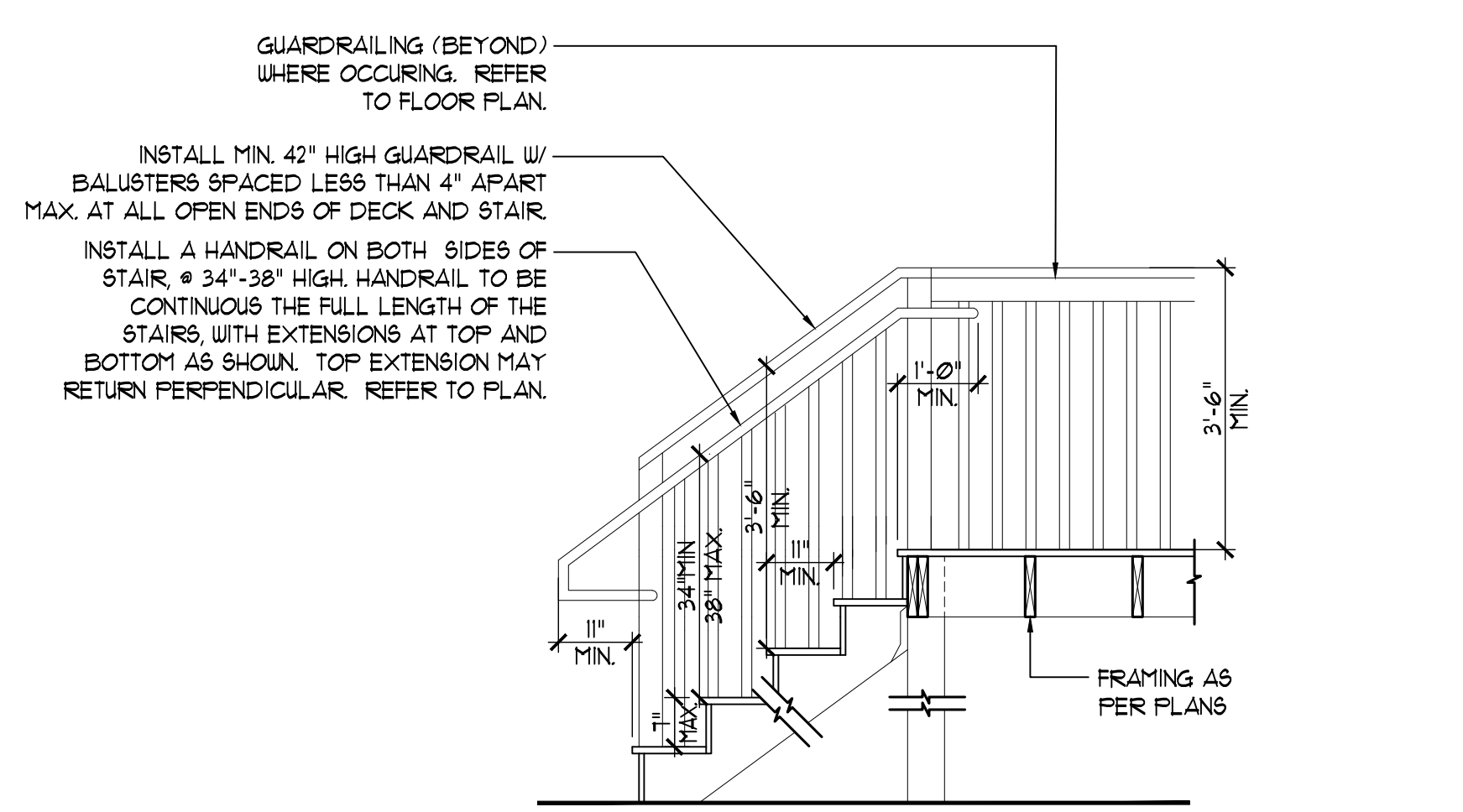
2 LEFT ELEVATION  
1/4" = 1'-0"



3 REAR ELEVATION  
1/4" = 1'-0"

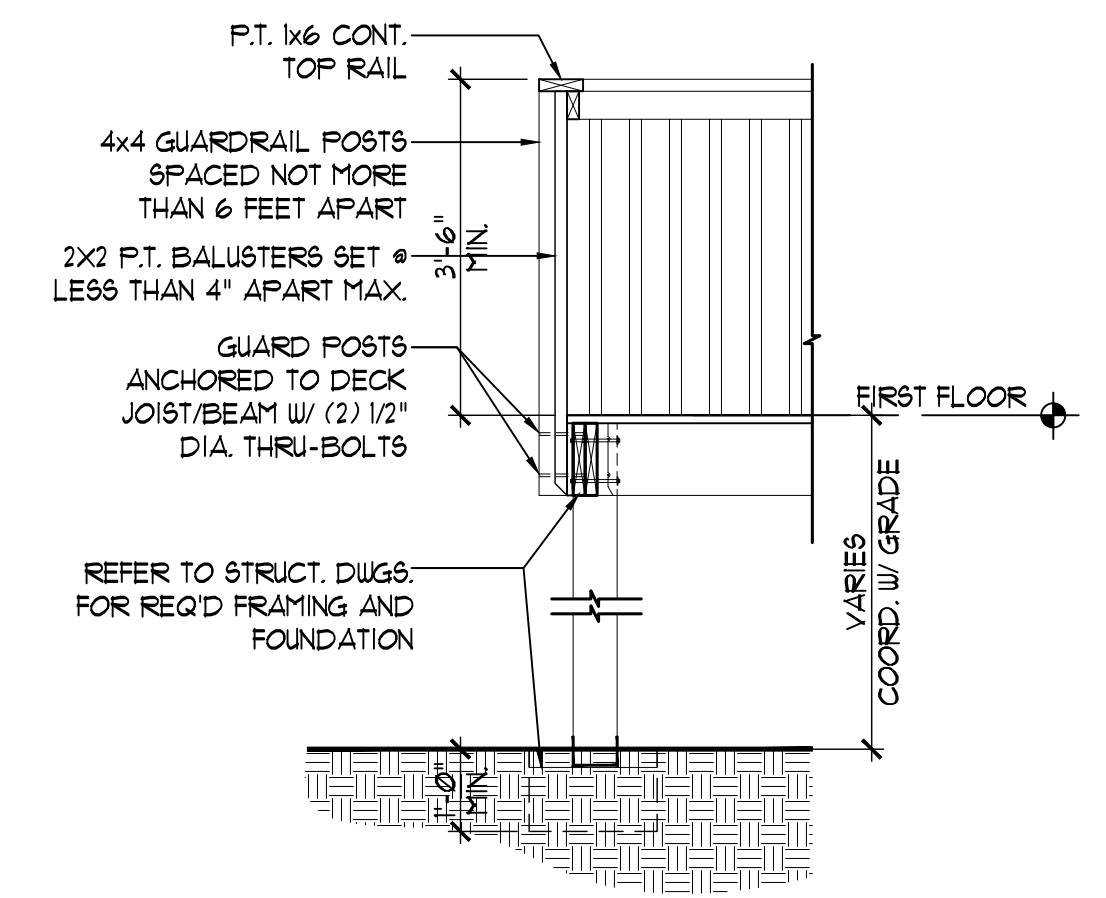


4 RIGHT ELEVATION  
1/4" = 1'-0"

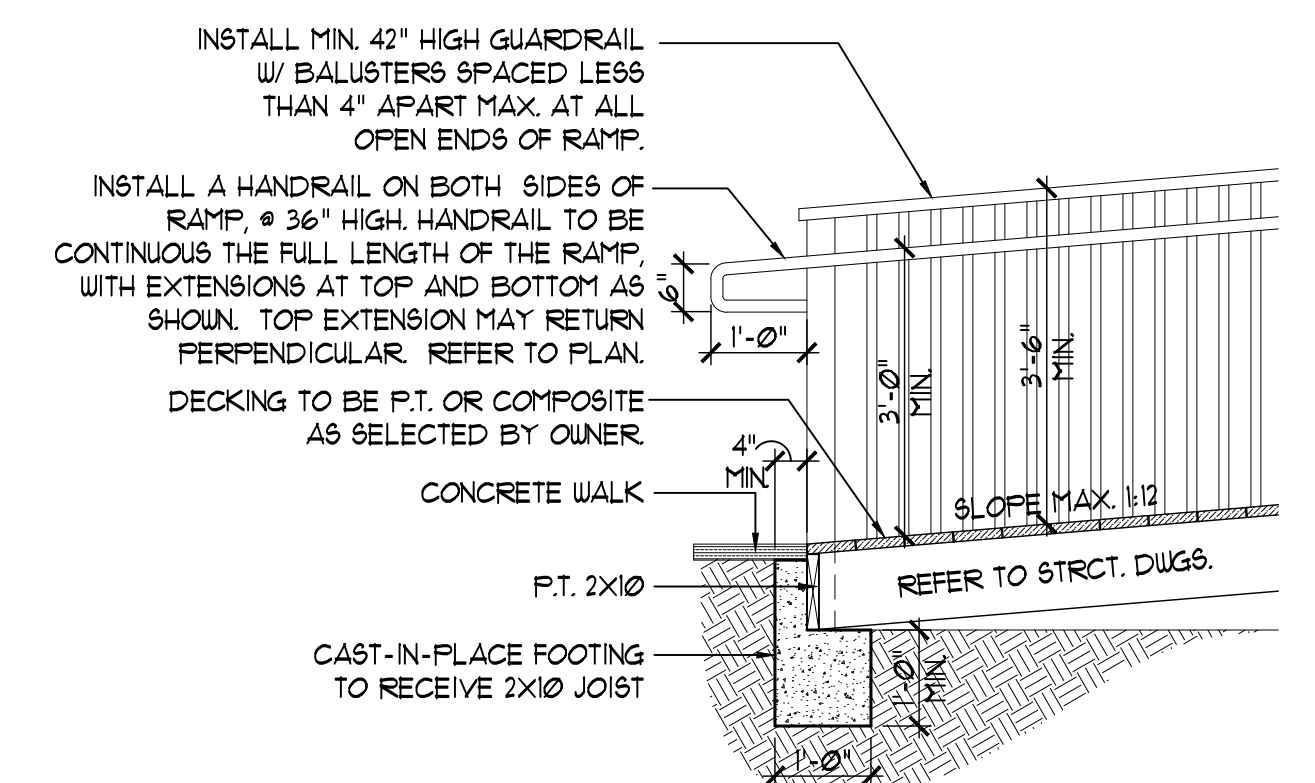


**HANDRAILING NOTE**  
HANDRAILS TO BE BRACKET MOUNTED TO WALL, MIN. 1 1/4" FROM FACE OF WALL, (EA. SIDE), OR RETURN TO NEWEL POST. HANDRAILS WITH A CIRCULAR CROSS SECTION SHALL HAVE AN OUTSIDE DIAMETER OF AT LEAST 1 1/4 INCHES AND NOT GREATER THAN 2 INCHES. IF THE HANDRAIL IS NOT CIRCULAR, IT SHALL HAVE A PERIMETER DIMENSION OF AT LEAST 4 INCHES AND NOT GREATER THAN 6 1/4 INCHES WITH A MAXIMUM CROSS-SECTION DIMENSION OF 2 1/4 INCHES. EDGES SHALL HAVE A MINIMUM RADIUS OF 0.01 INCH

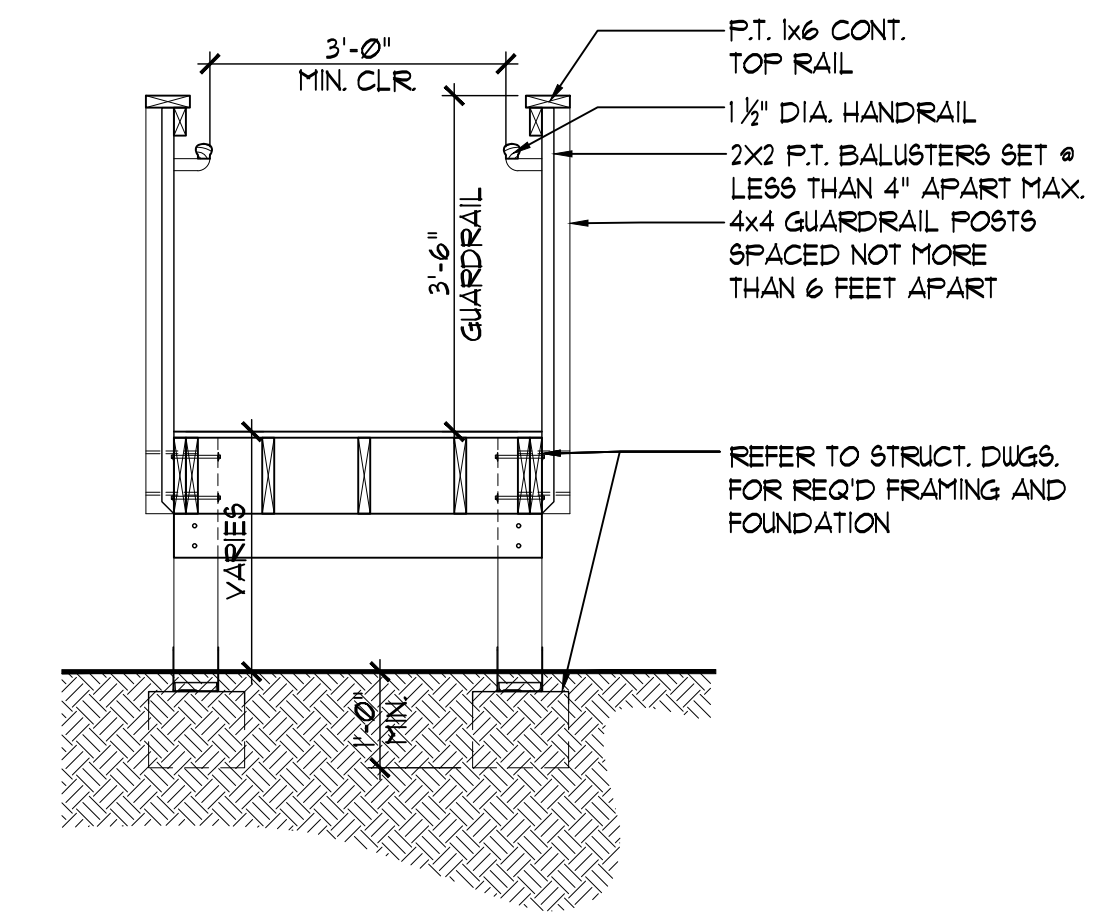
5 STAIR DETAIL  
1/2" = 1'-0"



6 LANDING SECTION  
1/2" = 1'-0"



7 RAMP BASE DETAIL  
1/2" = 1'-0"



8 RAMP CROSS SECTION  
1/2" = 1'-0"





## PLUMBING GENERAL NOTES

### GENERAL REQUIREMENTS:

- GENERAL AND SPECIAL CONDITIONS: GENERAL AND SPECIAL CONDITIONS ARE HEREBY MADE AN INTEGRAL PART OF THIS DIVISION OF THE SPECIFICATIONS INsofar AS SAME ARE APPLICABLE TO THE WORK UNDER THIS DIVISION AND UNLESS OTHERWISE SPECIFIED.
- SCOPE: PROVIDE ALL LABOR, MATERIAL AND EQUIPMENT REQUIRED FOR THE COMPLETION AND OPERATION OF ALL SYSTEMS IN THIS SECTION OF WORK IN ACCORDANCE WITH ALL APPLICABLE CODES.
- PERMITS: APPLY FOR AND PAY FOR ALL NECESSARY PERMITS, FEES, AND INSPECTIONS REQUIRED BY ANY PUBLIC AUTHORITY HAVING JURISDICTION.
- WARRANTY: PROVIDE ALL MATERIALS AND EQUIPMENT UNDER THIS SECTION OF THE SPECIFICATIONS WITH A ONE YEAR WARRANTY FROM THE DATE OF ACCEPTANCE OF WORK BY THE OWNER.
- COORDINATION: VERIFY ALL ROUGH-IN LOCATIONS AND COORDINATE PIPING AND EQUIPMENT LOCATIONS WITH WORK UNDER OTHER DIVISIONS OF THE SPECIFICATIONS TO AVOID CONFLICTS. CONTRACTOR MUST COORDINATE WITH OTHER TRADES FOR ALL STRUCTURES, PIPING, CONDUIT, DUCTWORK, LIGHTING, ETC. TO PROPERLY BE INSTALLED. ANY CONFLICTS SHALL BE RESOLVED AT NO CHARGE TO THE OWNER. COORDINATE INSTALLATION OF ALL PLUMBING LINES AT CMU WALLS SO THAT PLUMBING LINES ARE PLACED IN WALL DURING CMU WALL CONSTRUCTION. CUTTING AND PATCHING OF CMU WALLS IN PLACE WILL NOT BE PERMITTED.
- FIELD VERIFICATION: FIELD VERIFY EXISTING CONDITIONS BEFORE STARTING CONSTRUCTION AND NOTIFY THE ARCHITECT/ENGINEER OF RECORD OF ANY DISCREPANCIES BETWEEN THE CONSTRUCTION DOCUMENTS AND EXISTING CONDITIONS AND/OR ANY POTENTIAL PROBLEMS OBSERVED BEFORE CONTINUING WORK IN THE EFFECTED AREAS.
- PLUMBING SYSTEMS INCLUDE, BUT ARE NOT LIMITED TO:
  - PLUMBING FIXTURES AND EQUIPMENT
  - FIRE STOPPING
  - DOMESTIC WATER SYSTEM
  - SANITARY WASTE AND VENT SYSTEM
  - GAS SYSTEM
  - STORM DRAIN/SEWER SYSTEM
- PLUMBING DRAWINGS ARE DIAGRAMMATIC/SCHEMATIC IN NATURE AND REPRESENT THE GENERAL SCOPE OF WORK. DRAWINGS MAY NOT COMPLETELY DESCRIBE EVERY DETAIL OF THE INSTALLATION. HOWEVER, CONTRACTOR IS RESPONSIBLE FOR FURNISHING COMPLETE SYSTEMS INCLUDING ALL REQUIRED FIXTURES AND ACCESSORIES TO OBTAIN FULLY FUNCTIONING PLUMBING SYSTEMS.
- NO ALLOWANCE SHALL BE MADE FOR CONTRACTORS FAILURE TO COORDINATE WITH ALL TRADES PRIOR TO ANY WORK INCLUDING BUT NOT LIMITED TO ARCHITECTURAL, STRUCTURAL, MECHANICAL, ELECTRICAL, UTILITIES, AND SITE WORK.

### FIXTURES:

- PROVIDE COMPLETE FIXTURES AND INCLUDE SUPPLIES, STOPS, VALVES, FAUCETS, DRAINS, TRAPS, TAIL PIECES, ESCUTCHEONS, ETC.

### FIRE STOPPING:

- FIRE STOP ALL PENETRATIONS, BY PIPING OR CONDUITS, OF FIRE RATED WALLS, FLOORS AND PARTITIONS. PROVIDE A DEVICE(S) OR SYSTEM(S) WHICH HAS BEEN TESTED AND LISTED AS COMPLYING WITH ASTM E-814 AND INSTALL IN ACCORDANCE WITH THE CONDITIONS OF THEIR LISTING. PROVIDE A DEVICE(S) OR SYSTEM(S) WITH AN "F" RATING EQUAL TO THE RATING OF THE ASSEMBLY BEING PENETRATED.

### DOMESTIC WATER:

- FURNISH AND INSTALL A COMPLETE SYSTEM OF HOT AND COLD WATER, AND WASTE PIPING FROM EXISTING SUPPLIES TO ALL FIXTURES AND/OR EQUIPMENT REQUIRING THIS SERVICE. VERIFY LOCATION OF BEGINNING POINTS.
- DOMESTIC WATER PIPING BELOW GRADE:
  - SOFT ANNEALED SEAMLESS COPPER TUBING, TYPE "K" WITH NO JOINTS BELOW GRADE (ASTM B 88).
- DOMESTIC WATER PIPING AND JOINTS ABOVE GRADE:
  - HARD DRAWN SEAMLESS COPPER TUBING, TYPE "L" WITH 95-5 SILVER SOLDERED JOINTS (ASTM B 88), CPVC AND OR CROSS-LINKED POLYETHYLENE (PEX TYPE A) (ASTM F877) PLASTIC HOT AND COLD WATER DISTRIBUTION IS ALLOWED WHERE PERMISSIBLE AND PRE-APPROVED.
- STERILIZE DOMESTIC WATER PIPING IN ACCORDANCE WITH THE AMERICAN WATER WORKS ASSOCIATION'S SPECIFICATIONS AND LOCAL HEALTH DEPARTMENT REGULATIONS.
- INSULATE DOMESTIC WATER PIPING ABOVE GRADE (EXCEPT EXPOSED CONNECTIONS TO PLUMBING FIXTURES) WITH ENGINEERED POLYMER FOAM INSULATION OR FIBERGLASS WITH FITTING INSERTS AND PVC COVERS. FOLLOW THIS SCHEDULE:

SERVICE	PIPE SIZE	INS. THICKNESS
DOMESTIC HOT WATER (105-140 DEG F)	1/2" - 1-1/2"	1/2"
DOMESTIC HOT WATER (105-140 DEG F)	2" AND UP	3/4"
DOMESTIC HOT WATER (140-160 DEG F)	ALL	1"
DOMESTIC HOT WATER CIRCULATION	ALL	1/2"
DOMESTIC COLD WATER	ALL	1/2"

- DOMESTIC WATER PIPING INSULATION, JACKETS, COVERINGS, SEALERS, MASTICS AND ADHESIVES ARE REQUIRED TO MEET A FLAME-SPREAD RATING OF 25 OR LESS AND A SMOKE-DEVELOPED RATING OF 50 OR LESS, AS TESTED BY ASTM E84 (NFPA 255) METHOD.
- DO NOT INSTALL DOMESTIC WATER PIPING IN AREAS SUBJECT TO FREEZING TEMPERATURES. INSTALL WATER PIPING IN EXTERIOR WALLS ON THE CONDITIONED SIDE OF THE WALL INSULATION.
- SHUT OFF VALVES: PROVIDE FULL PORT, BALL TYPE, AND INSTALL IN A LOCATION THAT PERMITS ACCESS FOR SERVICE WITHOUT DAMAGE TO THE BUILDING OR FINISHED MATERIALS. PROVIDE ACCESS DOORS IF REQUIRED.
- PROTECT COPPER PIPING AGAINST CONTACT WITH DISSIMILAR METALS. ALL HANGERS, SUPPORTS, ANCHORS, AND CLIPS SHALL BE COPPER OR COPPER PLATED. WHERE COPPER PIPING IS CARRIED ON IRON TRAPEZOID HANGERS WITH OTHER PIPING, PROVIDE A PERMANENT ELECTROLYTIC ISOLATION MATERIAL TO PREVENT CONTACT WITH OTHER METALS.
- PROTECT COPPER PIPING AGAINST CONTACT WITH ALL MASONRY. WHERE

- COPPER IS SLEEVED THROUGH MASONRY. PROVIDE COPPER OR RED BRASS SLEEVES WHERE COPPER MUST BE CONCEALED IN OR AGAINST MASONRY PARTITIONS. PROVIDE A HEAVY COATING OF ASPHALTIC ENAMEL ON THE COPPER PIPING AND 15# ASPHALT SATURATED FELT BETWEEN THE PIPING AND THE MASONRY PARTITION.
- HOSE BIBS SHALL BE PROVIDED WITH A NON-REMOVABLE VACUUM BREAKER.
- FURNISH BURST PROOF BRAIDED FLEXIBLE CONNECTORS FOR SINK CONNECTIONS AND CONNECTIONS TO EQUIPMENT.
- PROVIDE ZURN WILKINS MODEL 740 (OR EQUAL) BACKFLOW PREVENTION TYPE VACUUM BREAKER FOR ICE MACHINE, CARBONATOR AND OTHER EQUIPMENT AS REQUIRED BY CODE.
- P.C. SHALL VERIFY THE INCOMING WATER PRESSURE AND PROVIDE A PRESSURE REDUCING VALVE IF PRESSURE IS 80 PSI OR GREATER.
- P.C. SHALL INSTALL HAMMER ARRESTORS ON PROJECTS THAT USE QUICK CLOSING DEVICES SUCH AS FLUSH VALVES, ICE MAKER, WASHER MACHINES, ETC., SIZED PER MANUFACTURER RECOMMENDATIONS.
- 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.
- ALL PUMPS SHALL BE RATED FOR TRANSPORT OF POTABLE WATER. PUMPS IN AN INDIVIDUAL WATER SUPPLY SYSTEM SHALL BE CONSTRUCTED AND INSTALLED SO AS TO PREVENT CONTAMINATION FROM ENTERING THE WATER SUPPLY SYSTEM.

### SANITARY WASTE AND VENT PIPING:

- FURNISH AND INSTALL COMPLETE SYSTEMS OF SOIL, WASTE, AND VENT PIPING FROM ALL PLUMBING FIXTURES, AND/OR OTHER EQUIPMENT. ALL SOIL, WASTE AND VENT LINES SHALL BE CONCEALED IN THE BUILDING CONSTRUCTION WHERE POSSIBLE.
- INVERT ELEVATIONS SHALL BE ESTABLISHED AND VERIFIED BEFORE WASTE PIPING IS INSTALLED IN ORDER THAT PROPER SLOPES WILL BE MAINTAINED.
- SANITARY WASTE AND VENT PIPING AND FITTINGS: SERVICE WEIGHT CAST IRON, HUB AND SPIGOT TYPE WITH COMPRESSION JOINTS (ASTM A 74) OR NO-HUB PIPING WITH COUPLINGS (CISPI 301).

- IF PERMITTED BY LOCAL CODES, SCHEDULE 40 PVC (ASTM D 2665) WITH SCHEDULE 40 SOCKET-TYPE PIPE FITTINGS (ASTM D 3311) MAY BE USED. DO NOT INSTALL PVC PIPING IN RETURN AIR FLENUMS. PVC FOAM CORE DWV PIPING NOT PERMITTED.
- SLOPE SANITARY WASTE PIPING 2-1/2" AND SMALLER AT 1/4" PER FOOT MIN. SLOPE SANITARY WASTE PIPING 3" AND LARGER AT 1/8" PER FOOT MINIMUM.
- WHERE WASTE PIPING IS EXPOSED IN REST ROOM AREAS, PROVIDE CHROME PLATED BRASS PIPING, WITH MATCHING STOPS AND ESCUTCHEONS. PROVIDE REMOVABLE TRAPS WITH INTEGRAL CLEAN-OUT PLUG FOR ALL LAVATORIES.

- INSTALL CLEAN-OUTS IN A LOCATION THAT PERMITS ACCESS FOR SERVICE WITHOUT DAMAGE TO THE BUILDING OR FINISHED MATERIALS. PROVIDE CLEAN-OUTS AT THE BASE OF ALL WASTE STACKS. AT ALL CHANGE IN DIRECTION OF PIPING IN EXCESS OF 45 DEGREES AND EVERY 100 FEET.
- ALL INDIRECT WASTE CONNECTIONS TO BE INSTALLED WITH AN AIR GAP BETWEEN INDIRECT WASTE PIPE AND THE FLOOD RIM OF THE WASTE RECEPTOR SHALL BE MINIMUM OF TWICE THE EFFECTIVE OPENING OF THE INDIRECT WASTE PIPE.
- ROOF PENETRATIONS SHALL MAINTAIN A MINIMUM CLEARANCE OF 16" BETWEEN PENETRATIONS.
- PLUMBING VENTS SHALL BE INSTALLED WITH MINIMUM HEIGHTS AS REQUIRED BY LOCAL JURISDICTION HAVING AUTHORITY.

### BACKFLOW PREVENTION:

- VERIFY BACKFLOW PREVENTOR REQUIREMENTS OF LOCAL AUTHORITY AND PROVIDE BACKFLOW PREVENTION DEVICES AS REQUIRED. COORDINATE LOCATION WITH OTHER TRADES.

### WATER METER:

- VERIFY DOMESTIC WATER METER REQUIREMENTS OF LOCAL AUTHORITY AND PROVIDE DOMESTIC WATER METER AS REQUIRED. COORDINATE LOCATION WITH OTHER TRADES.

### SEISMIC REQUIREMENTS:

- PROPERLY SUPPORT AND BRACE VERTICALLY AND HORIZONTALLY ALL PIPING, APPARATUS, EQUIPMENT, ETC. IN ACCORDANCE WITH APPLICABLE CODES TO PREVENT EXCESSIVE MOVEMENT DURING SEISMIC CONDITIONS.
- ALL WORK SHALL BE IN ACCORDANCE WITH ALL APPLICABLE LOCAL CODE REQUIREMENTS AND THE PROVISIONS OF NFPA-54 AND NFPA-58.
- THE CONTRACTOR SHALL SUPPLY ALL PERMITS, FEES AND LICENSES REQUIRED FOR THE WORK AND FOR ALL INSPECTIONS REQUIRED.
- PIPE 3" AND SMALLER SHALL BE SCHEDULE 40 STEEL WITH THREADED MALLEABLE FITTINGS.
- VALVES SHALL BE GAS COCKS MANUFACTURED BY NIBCO.
- ALL PIPING EXPOSED TO THE OUTDOORS OR RUN IN UNCONDITIONED SPACES SHALL BE PAINTED WITH TWO COATS OF RUST RESISTANT ENAMEL.
- ALL GAS PIPING WITH A SERVICE PRESSURE GREATER THAN 0.5PSI MUST BE IDENTIFIED PER NCFGC 410.2.
- PRESSURE TEST PORTS MUST BE PROVIDED AT ALL MP REGULATORS IN ACCORDANCE TO NCFGC 410.2.
- ALL GAS PIPING MUST COMPLY WITH NCFGC T.415.1.

### GAS PIPING:

- WORK TO INCLUDE PIPING FROM GAS METER TO GAS FIRED EQUIPMENT. PLUMBING CONTRACTOR TO PROVIDE SHUT-OFF VALVE, DIRT TRAP AND PRESSURE REGULATOR AT THE GAS FIRED EQUIPMENT.
- ALL WORK SHALL BE IN ACCORDANCE WITH ALL APPLICABLE LOCAL CODE REQUIREMENTS AND THE PROVISIONS OF NFPA-54 AND NFPA-58.
- THE CONTRACTOR SHALL SUPPLY ALL PERMITS, FEES AND LICENSES REQUIRED FOR THE WORK AND FOR ALL INSPECTIONS REQUIRED.
- PIPE 3" AND SMALLER SHALL BE SCHEDULE 40 STEEL WITH THREADED MALLEABLE FITTINGS.
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## PLUMBING FIXTURE SCHEDULE

MARK	DESCRIPTION	REMARKS	FIXTURE CONNECTIONS			
			CW	HW	WASTE	VENT
WC-1	WATER CLOSET - TANK TYPE (ADA)	AMERICAN STANDARD - CHAMPION PRO (1.28 GPF) # 211A004.020. TWO PIECE FLOOR MOUNTED WATER CLOSET. ADA HEIGHT. COLOR: WHITE. PROFLOW PFTSCOF2000WH ELONGATED BOWL SEAT. COLOR: WHITE. PROVIDED AND INSTALLED BY PLUMBING CONTRACTOR.	1/2"	-	3"	2"
LV-1	LAVATORY (ADA) - WALL HUNG	WALL HUNG LAVATORY (AMERICAN STANDARD "LUCERNE" 0355012020) WITH CONCEALED ARM CARRIER MOUNTING. PROVIDE PROFLO PFW52840CP FAUCET. HANDICAP DRAIN OFFSET W/GRID DRAIN (ZURN Z8746-PC) AND CHROME PLATED P-TRAP (ZURN Z8701-PC). INQUIRE MODEL LF2165, CHROME PLATED BRASS ANGLE SUPPLY STOPS WITH BRASS STEMS, WHEEL HANDLES, 1/2" IPS INLETS, 3/8" COMPRESSION OUTLETS, 1/2" CHROME PLATED FLEXIBLE SUPPLY RISERS. INSULATE TRAP AND SUPPLY LINES (TRUEBRO "LAVGUARD" #103 E-Z). PLUMBING CONTRACTOR SHALL FURNISH AND INSTALL AN ASSE 1070 COMPLAINT THERMOSTATIC MIXING VALVE SET AT 105 DEGREES.	1/2"	1/2"	2"	2"

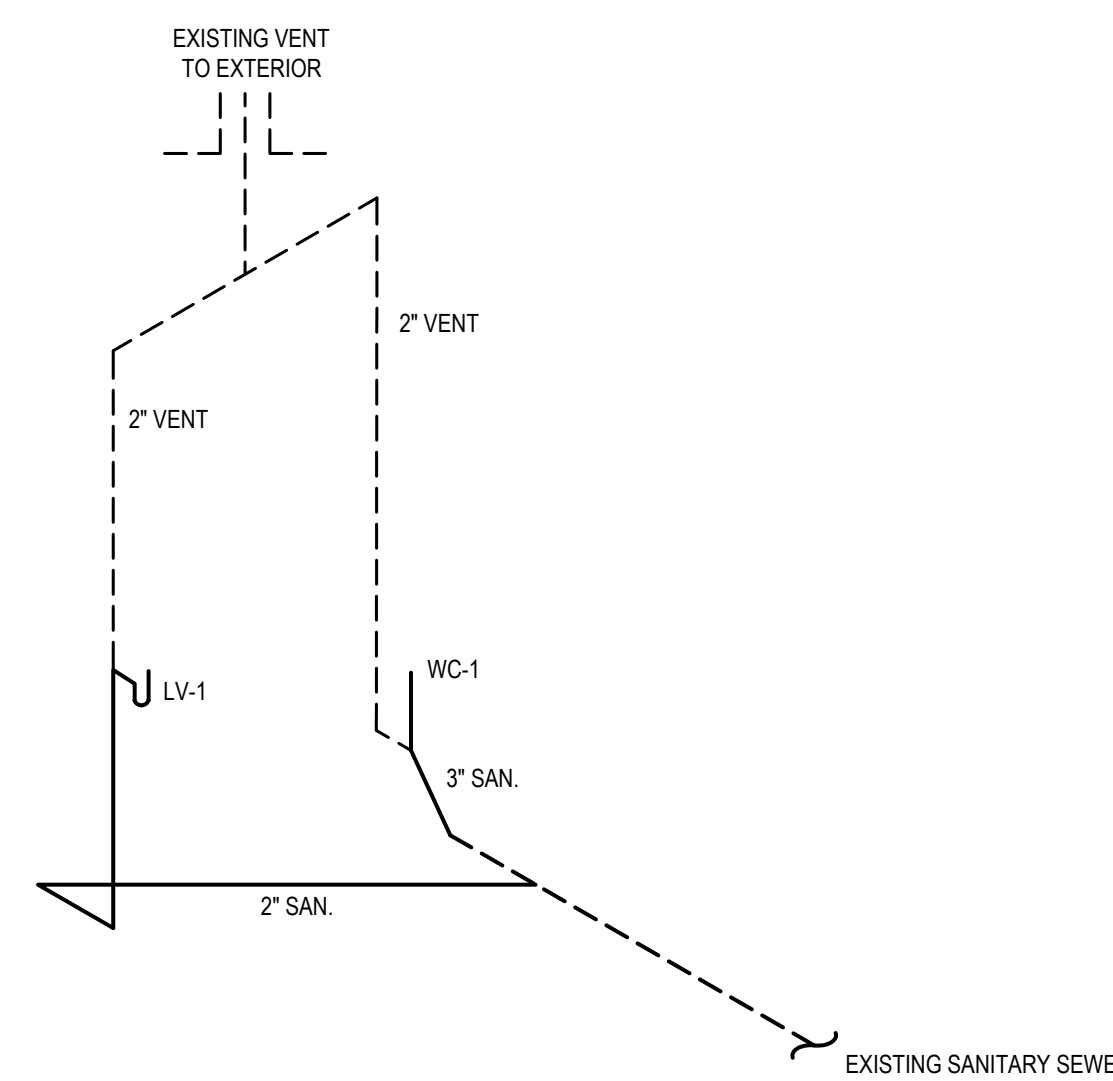
NOTE: CONTRACTOR SHALL COORDINATE FINAL FIXTURE SELECTIONS WITH OWNER AND ARCHITECT PRIOR TO PURCHASE AND INSTALLATION

## PLUMBING LEGEND

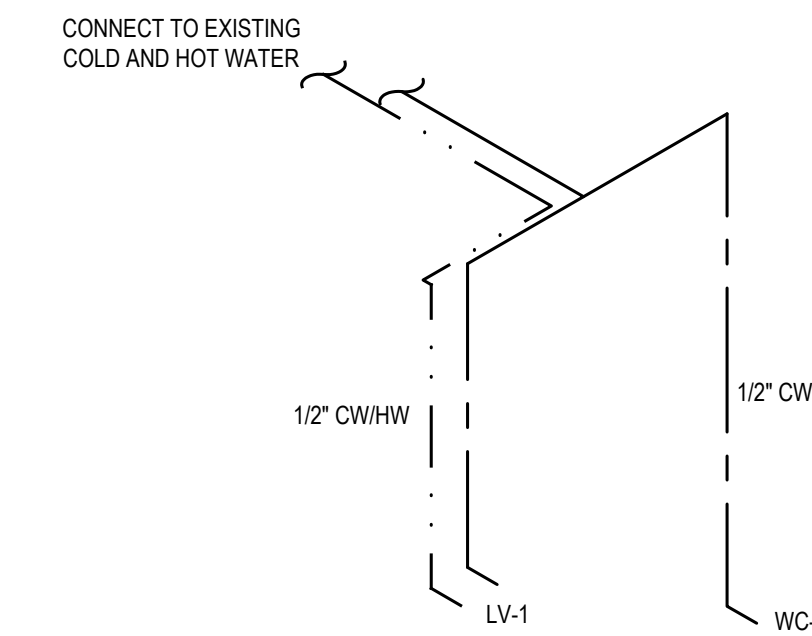
	DOMESTIC COLD WATER PIPING (CW)
	DOMESTIC HOT WATER PIPING (HW)
	SANITARY PIPING
	GREASE PIPING
	VENT PIPING
	FLOOR CLEANOUT
	PIPE CONTINUES
	PIPE DOWN
	PIPE UP
	BALL VALVE
	PRESSURE REDUCING VALVE
	METER
	PLUMBING CONTRACTOR
	DOMESTIC COLD WATER PIPING
	DOMESTIC HOT WATER PIPING
	DOMESTIC HOT WATER RECIRCULATING
	SANITARY WASTE PIPING
	VENT THROUGH ROOF

## SEE ARCHITECTURAL PLANS FOR MINIMUM FACILITIES CALCULATIONS

CONNECTED LOADS	
SOIL AND WASTE	9 DFU
COLD WATER	15 WFSU
DEMAND	17.5 GPM

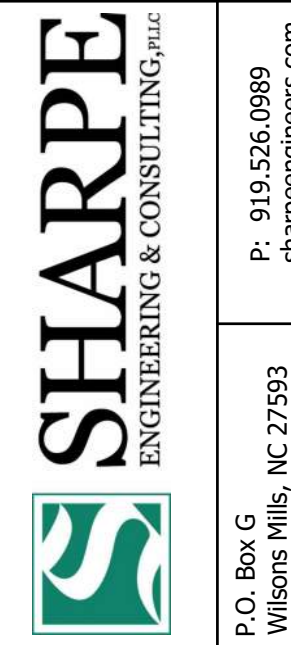


1 SANITARY SEWER RISER DIAGRAM  
NOT TO SCALE



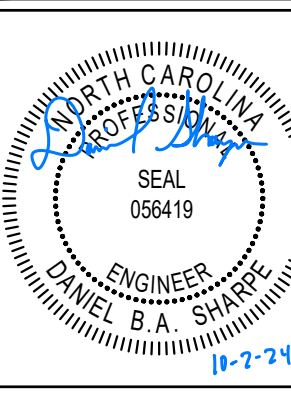
2 DOMESTIC WATER RISER DIAGRAM  
NOT TO SCALE

PLUMBING DRAWING INDEX	
P0.1	PLUMBING LEGENDS AND NOTES
P0.2	PLUMBING DEMO PLAN
P1.1	PLUMBING PLANS



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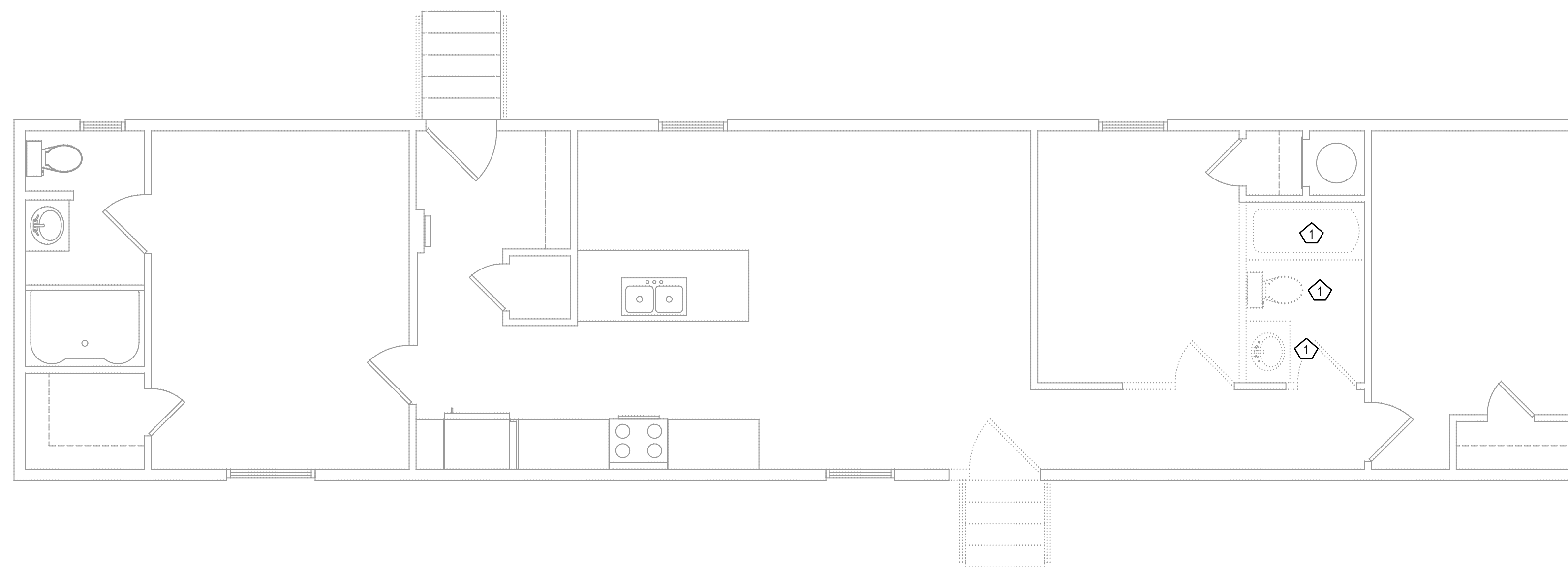
REV. NO.	DATE	DESCRIPTION
1		
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ISS. NO.	DATE	DESCRIPTION
1	10-2-24	FOR PERMITTING
2		
3		
4		
5		
6		
7		

PROJECT NO.: 24-110  
DRAWN BY: OMS  
CHECKED BY: OMS  
PLUMBING LEGENDS AND NOTES

P0.1





1 PLUMBING DEMO PLAN  
SCALE - 1/4" = 1'0"

◇ DEMO KEYNOTE LEGEND	
KEY VALUE	KEYNOTE TEXT
1	DEMO EXISTING FIXTURE AND DEMO PLUMBING TO BELOW FINISHED FLOOR IN CRAWL SPACE AREA.

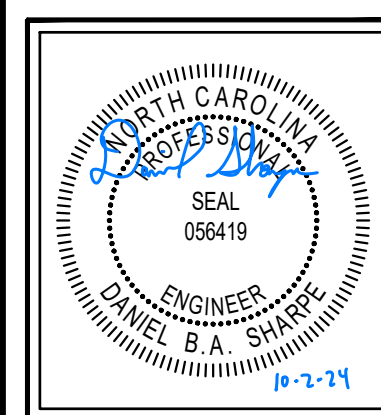
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SPRING LAKE, NC

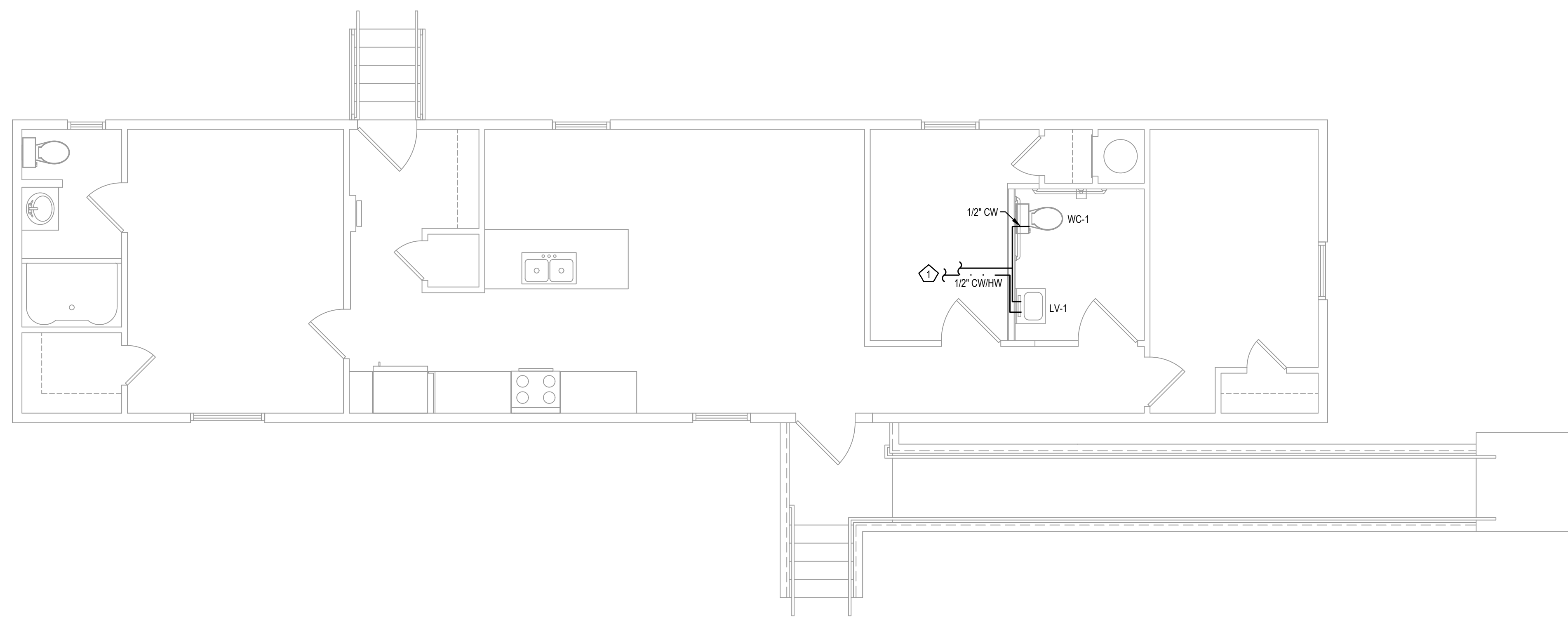
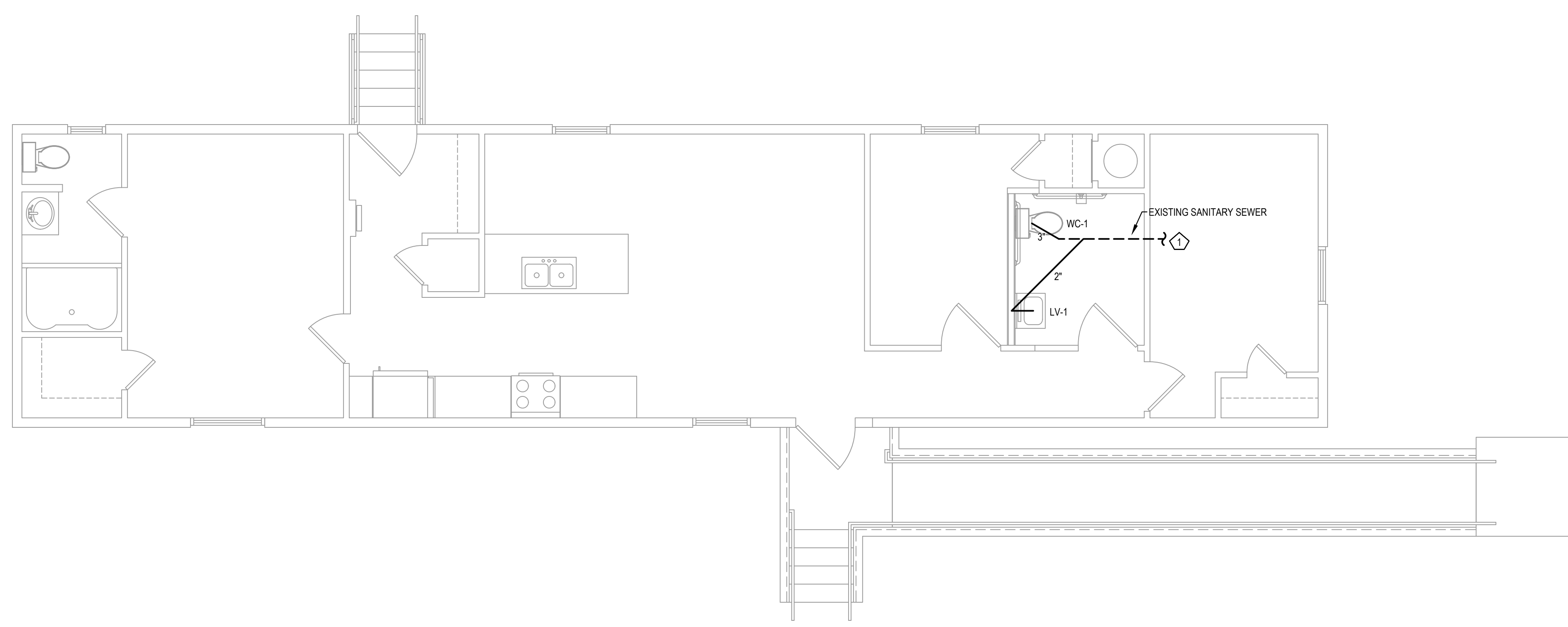
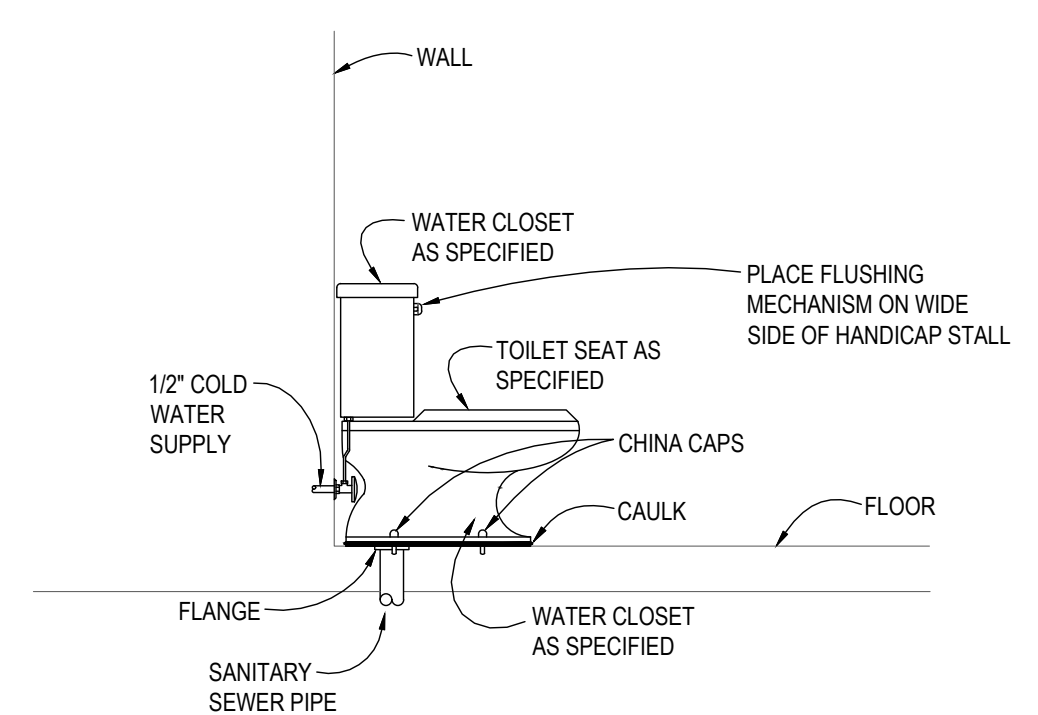
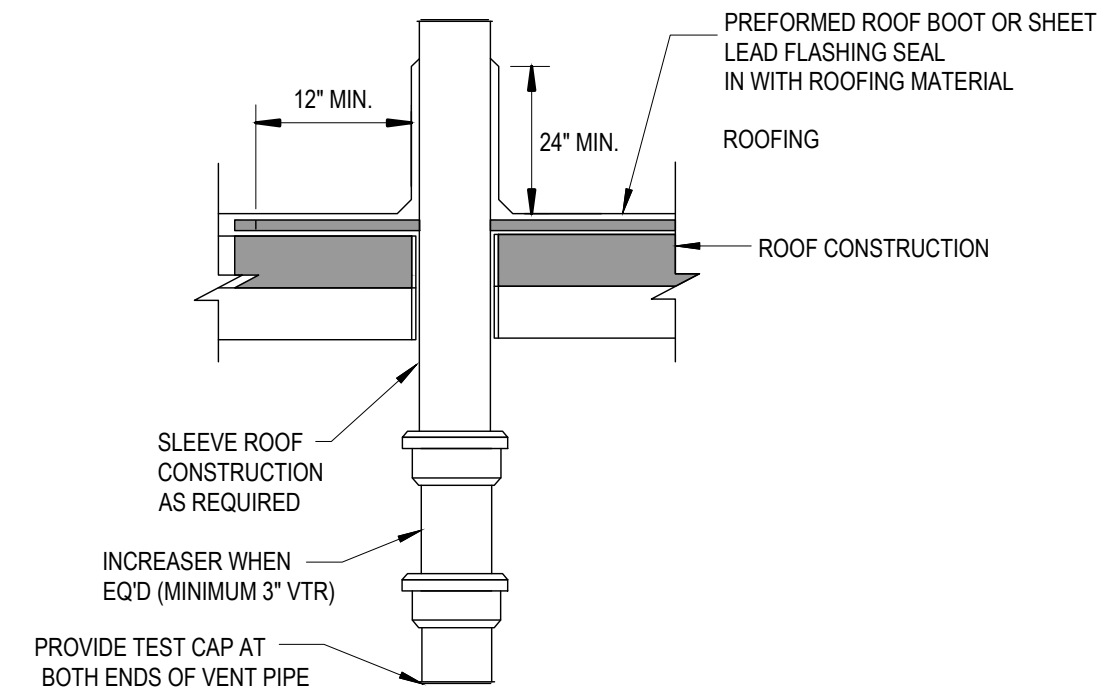
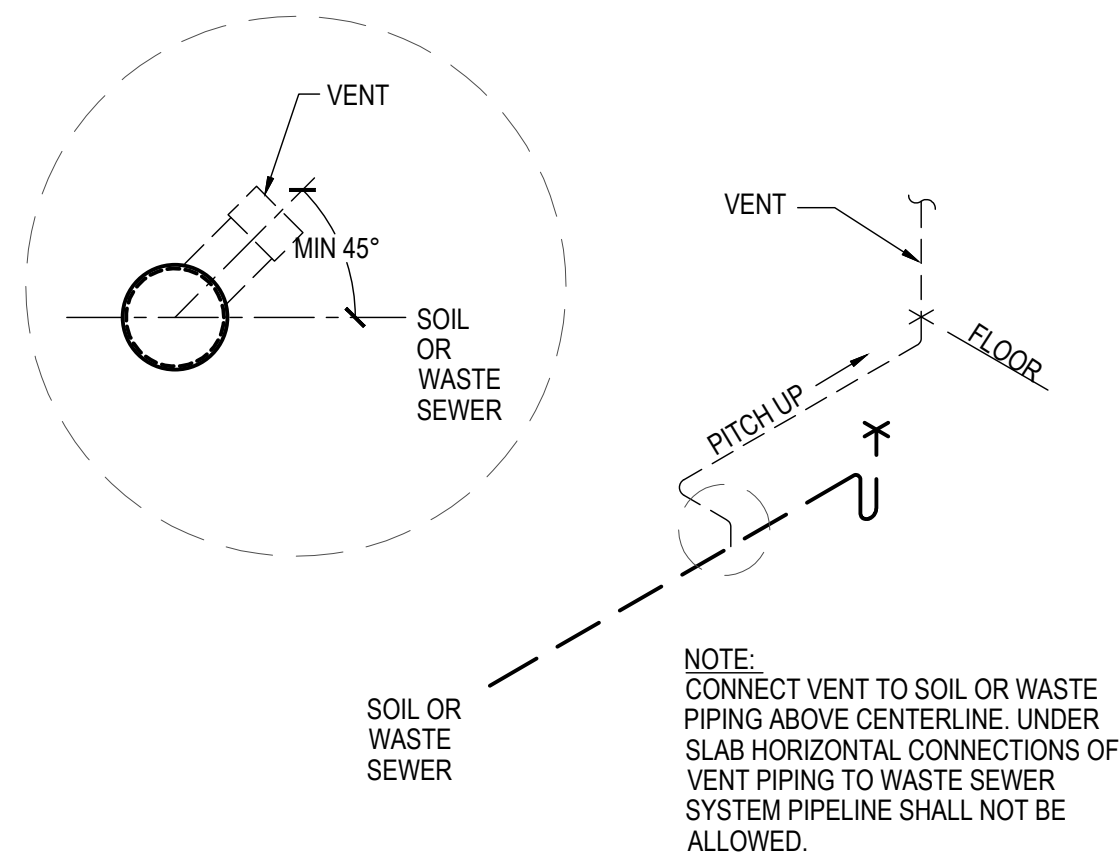
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PROJECT NO.: 24-110	DRAWN BY: DBAS	CHECKED BY: DBAS
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PLUMBING DEMO PLAN

**P0.2**



SANITARY KEYNOTE LEGEND	
KEY VALUE	KEYNOTE TEXT
1	CONTINUES TO EXISTING SANITARY SEWER.

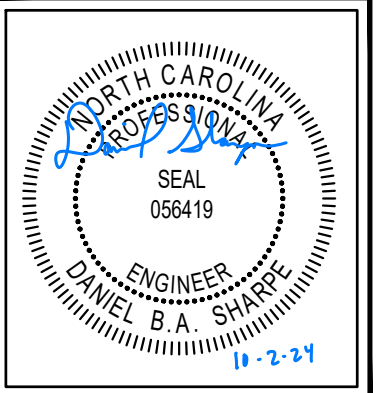
NOTE:  
SCOPE OF WORK IS LIMITED TO RE-WORKING EXISTING BATHROOM TO BE ACCESSIBLE PER NCBC. ALL OTHER FIXTURES, SYSTEMS, ETC. ARE EXISTING TO REMAIN UNLESS NOTED OTHERWISE.  
CONTRACTOR TO FIELD VERIFY EXACT LOCATION OF EXISTING SANITARY AND WATER LINES FOR TIE IN FOR NEW FIXTURES PRIOR TO BEGINNING WORK. CONTACT ENGINEER OF RECORD WITH ANY MAJOR DISCREPANCIES WITH EXISTING CONDITIONS.

WATER KEYNOTE LEGEND	
KEY VALUE	KEYNOTE TEXT
1	CONTINUES TO EXISTING DOMESTIC COLD AND HOT WATER.

NOTE:  
SCOPE OF WORK IS LIMITED TO RE-WORKING EXISTING BATHROOM TO BE ACCESSIBLE PER NCBC. ALL OTHER FIXTURES, SYSTEMS, ETC. ARE EXISTING TO REMAIN UNLESS NOTED OTHERWISE.  
CONTRACTOR TO FIELD VERIFY EXACT LOCATION OF EXISTING SANITARY AND WATER LINES FOR TIE IN FOR NEW FIXTURES PRIOR TO BEGINNING WORK. CONTACT ENGINEER OF RECORD WITH ANY MAJOR DISCREPANCIES WITH EXISTING CONDITIONS.

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

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**DESIGN FOR:**  
**MANUFACTURED HOME OFFICE CONVERSION**  
216 CONNIE COURT,  
SPRING LAKE, NC

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PROJECT NO.: **24-110**  
DRAWN BY: **DBS**  
CHECKED BY: **DBS**

PLUMBING PLANS

**P1.1**

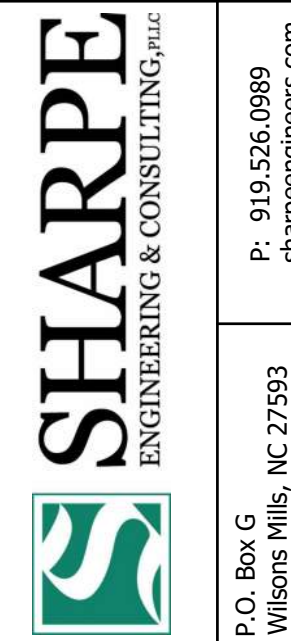
## HVAC GENERAL NOTES

- MECHANICAL CONTRACTOR SHALL FURNISH ALL LABOR, MATERIAL AND EQUIPMENT REQUIRED FOR THE COMPLETE INSTALLATION AND OPERATION OF ALL SYSTEMS IN THIS SECTION OF WORK IN ACCORDANCE WITH RECOMMENDED PRACTICE, 2018 NORTH CAROLINA MECHANICAL CODE AND ALL APPLICABLE CODES ADOPTED BY THE AUTHORITY HAVING JURISDICTION.
- DO NOT SCALE DRAWINGS. SEE ARCHITECTURAL DRAWINGS FOR EXACT LOCATION OF WALLS, DOORS, WINDOWS, FURNITURE, LIGHTS, CEILING DIFFUSERS, ETC.
- ALL MECHANICAL PERMITS AND INSPECTION FEES SHALL BE OBTAINED AND PAID FOR BY THE MECHANICAL CONTRACTOR.
- MECHANICAL CONTRACTOR SHALL GUARANTEE ALL WORK AND MATERIALS FOR ONE YEAR. REFRIGERANT COMPRESSORS SHALL BE GUARANTEED FOR FIVE YEARS. WARRANTY PERIOD SHALL BE EFFECTIVE THE DAY THE PROJECT IS ACCEPTED BY THE OWNER.
- DRAWINGS ARE DIAGRAMMATIC AND MAY NOT SHOW ALL REQUIRED FITTINGS. MECHANICAL CONTRACTOR IS RESPONSIBLE FOR COORDINATING THE TYPE, SIZE AND LOCATION OF ALL AIR DEVICES, DUCTWORK, PIPING AND EQUIPMENT WITH THE CEILING PLAN, LIGHTS, STRUCTURAL ELEMENTS AND OTHER TRADES. MECHANICAL CONTRACTOR TO FURNISH AND INSTALL ALL BENDS, OFFSETS, ELBOWS, ETC. AS REQUIRED TO OBTAIN FULLY FUNCTIONING MECHANICAL AND HVAC SYSTEMS. VERIFY ALL CLEARANCES PRIOR TO FABRICATING DUCTWORK, OR ORDERING ANY EQUIPMENT, PIPING, ETC.
- MECHANICAL CONTRACTOR IS RESPONSIBLE FOR PROVIDING MATERIALS AND INSTALLING THE WORK IN ACCORDANCE WITH ALL APPLICABLE LOCAL, STATE AND NATIONAL CODES ADOPTED BY THE AUTHORITY HAVING JURISDICTION.
- 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.
- NO ALLOWANCE SHALL BE MADE FOR CONTRACTORS FAILURE TO COORDINATE WITH ALL TRADES PRIOR TO ANY WORK INCLUDING BUT NOT LIMITED TO ARCHITECTURAL, STRUCTURAL, ELECTRICAL, PLUMBING, UTILITIES, AND SITE WORK.
- ALL EQUIPMENT LISTED IN PROJECT SCHEDULES IS TO BE CONSIDERED DESIGN BASIS EQUIPMENT. ALL COST ASSOCIATED WITH SUBSTITUTED NON-DESIGN BASIS EQUIPMENT TO COMPLY WITH BASIS OF DESIGN, INCLUDING PROVIDING MAINTENANCE ACCESS, CLEARANCE, PIPING, SHEET METAL, ELECTRICAL, REPLACEMENT OF OTHER SYSTEM COMPONENTS, BUILDING ALTERATIONS, ETC., SHALL BE INCLUDED IN THE ORIGINAL BASE BID. NO ADDITIONAL COST ASSOCIATED WITH SUBSTITUTED NON-DESIGN BASIS EQUIPMENT WILL BE APPROVED DURING CONSTRUCTION AND ALL COST WILL BE THE RESPONSIBILITY OF THE MECHANICAL CONTRACTOR. THIS INCLUDES ANY MODIFICATIONS TO ANY ASSOCIATED MECHANICAL, PLUMBING, OR ELECTRICAL SYSTEMS REQUIRED BY THE SPECIFIC MANUFACTURER'S INSTALLATION INSTRUCTIONS.
- INSTALL ALL EQUIPMENT IN ACCORDANCE WITH THE RESPECTIVE MANUFACTURER'S WRITTEN INSTALLATION INSTRUCTIONS, AT A LEVEL OF QUALITY AND WORKMANSHIP CONSISTENT WITH THE SPECIFICATIONS. ANY ISSUES AS A RESULT OF DEVIATION FROM THE MANUFACTURER'S INSTALLATION INSTRUCTIONS IS THE RESPONSIBILITY OF THE CONTRACTOR.
- CONTRACTOR SHALL BE FINANCIALLY LIABLE FOR ANY REQUIRED ENGINEERING REVIEW AND/OR DESIGN WORK DUE TO ANY PROPOSED PRODUCT CHANGE AND/OR "VALUE ENGINEERING" AFTER PLANS HAVE BEEN PERMITTED. ANY PROPOSED PRODUCT CHANGES AND/OR "VALUE ENGINEERING" IS TO BE BROUGHT TO THE ATTENTION OF THE ENGINEER PRIOR TO PLANS BEING COMPLETED AND SUBMITTED FOR PERMITTING.
- THE MC SHALL VERIFY THE FUNCTIONALITY AND OPERATION OF ALL EXISTING MECHANICAL EQUIPMENT IN THE AREA OF WORK. REPLACE FILTERS, LEAK TEST AND RECHARGE REFRIGERANT LINES, REPLACE OR LUBRICATE BEARINGS, CHECK LINKAGES AND ACTUATORS, AND PERFORM OTHER MAINTENANCE SERVICE AS NECESSARY TO GET THE EQUIPMENT IN PROPER WORKING ORDER.
- DUCTWORK**
  - RESIDENTIAL/DWELLING AREAS: ALL DUCTWORK SHALL BE FIBROUS GLASS DUCT BOARD FACED ON THE OUTSIDE WITH A FIRE RETARDANT, REINFORCED FOIL-SCRIM-KRAFT FACING, CONSTRUCTED IN ACCORDANCE WITH SMACNA STANDARDS. DUCT INSULATION IS TO BE MIN. R-6 WHEN LOCATED WITHIN THE CONDITIONED BUILDING ENVELOPE; MIN. R-8 WHEN LOCATED IN THE ATTIC, OUTSIDE THE BUILDING ENVELOPE OR UNCONDITIONED SPACES.
  - ALL SQUARE ELBOWS SHALL HAVE TURNING VANES.
  - ALL DUCT DIMENSIONS SHOWN ARE INTERNAL CLEAR DIMENSIONS.
  - PROVIDE A MANUAL BALANCING DAMPER AT ALL SUPPLY AND RETURN BRANCH TAKEOFFS, AS WELL AS ALL OUTSIDE AIR MAIN & BRANCH DUCTS.
  - FLEXIBLE DUCT, IF SHOWN ON DRAWINGS, SHALL BE INSULATED ROUND DUCT WITH AN OUTER GLASS REINFORCED SILVER MYLAR JACKET ENCLOSING MIN. 1-1/2" THICK GLASS FIBER INSULATION AROUND A CONTINUOUS INNER LINER, AND SHALL CONFORM TO THE REQUIREMENTS OF U.L. 181 FOR CLASS 1 FLEXIBLE AIR DUCTS. MAXIMUM LENGTH OF FLEXIBLE DUCT SHALL BE 6 FEET FOR COMMON AREA SYSTEMS; MAXIMUM LENGTH OF FLEXIBLE DUCT SHALL NOT BE LIMITED FOR DWELLING UNIT SYSTEMS. "R" VALUE TO MEET EXCEED ENERGY CODE (NECCO SECTION C.403.2.9). DUCT INSULATION IS TO BE MIN. R-6 WHEN LOCATED WITHIN THE CONDITIONED BUILDING ENVELOPE; MIN. R-8 WHEN LOCATED IN THE ATTIC, OUTSIDE THE BUILDING ENVELOPE OR UNCONDITIONED SPACES.
  - ALL SHEET METAL DUCTWORK WITHIN 10' OF THE AIR HANDLING UNIT SHALL BE PROVIDED WITH ACOUSTICAL DUCT LINER. THIS IS IN ADDITION TO THERMAL INSULATION REQUIREMENTS.
  - ALL DUCT SYSTEMS ARE TO BE PER U.L. STANDARDS. DUCTS ARE TO BE INSTALLED WITH NO RESTRICTIONS AND AN ABSOLUTE MINIMUM AMOUNT OF AIR LEAKAGE.
  - ALL DUCT INSULATION SHALL BE RUN CONTINUOUSLY THROUGH FLOORS AND PARTITIONS.
  - ALL DUCTWORK SHALL BE GALVANIZED SHEET METAL CONSTRUCTED IN ACCORDANCE WITH THE LATEST SMACNA STANDARDS. ALL SUPPLY, RETURN, AND OUTSIDE AIR DUCTWORK SHALL BE WRAPPED WITH 2" THICK DUCT WRAP WITH VAPOR BARRIER. INSULATION (INCLUDING FLEXIBLE DUCT INSULATION) SHALL HAVE A MINIMUM INSTALLED R-VALUE OF 6. ROOFTOP UNIT RETURN DUCT SHALL BE LINED WITH 1" THICK FIBERGLASS DUCT LINER FOR ACOUSTICAL PURPOSES. DUCT DIMENSIONS ON PLANS ARE FREE AREA SIZE.
  - ALL DUCTWORK SHALL BE SEALED PER THE REQUIREMENTS OF THE CURRENT APPLICABLE MECHANICAL CODE. SEAL LOW PRESSURE SUPPLY, RETURN, AND EXHAUST DUCTWORK FOR POSITIVE/NEGATIVE 2" PRESSURE CLASS, SMACNA SEAL CLASS A, SMACNA LEAKAGE CLASS 4.
- PIPING**
  - CONDENSATE DRAINS SHALL BE SCHEDULE 40 PVC OR TYPE L COPPER WITH SOLDERED JOINTS WHEN INSTALLED BELOW CEILING LEVEL. DRAINS INSTALLED IN A RETURN AIR PLENUM SHALL BE TYPE L COPPER WITH SOLDERED JOINTS OR SCHEDULE 40 CPVC.
  - REFRIGERANT PIPING SHALL BE TYPE ACR WROUGHT COPPER WITH WROUGHT COPPER FITTINGS AND BRAZED JOINTS.
  - REFRIGERANT COMPONENTS SHALL BE PRESSURE TESTED IN ACCORDANCE WITH ASHRAE 15.
  - MECHANICAL CONTRACTOR SHALL PROVIDE REFRIGERANT PIPING FOR ALL MECHANICAL SYSTEMS WITHIN THIS SCOPE OF WORK. COORDINATE ROUTING AND INSTALLATION WITH THE GENERAL CONTRACTOR. SIZE REFRIGERANT LINES PER MANUFACTURER'S REQUIREMENTS.
  - ALL PIPING AND DUCTWORK LOCATIONS SHALL BE COORDINATED WITH THE WORK UNDER OTHER TRADES/CONTRACTORS TO AVOID INTERFERENCE.
  - LOCATE PIPING, DUCTWORK, AND MECHANICAL EQUIPMENT AWAY FROM THE SPACE ABOVE ELECTRICAL PANELS, RACEWAYS, TRANSFORMERS AND OTHER ELECTRICAL EQUIPMENT.
- INSULATION**
  - DUCT LINER - FIBROUS GLASS DUCT LINER, WITH COATED SURFACE EXPOSED TO AIR STREAM. APPLY WITH MECHANICAL FASTENERS AND 100% COVERAGE OF ADHESIVE. LINER TO BE COATED WITH AN EPA REGISTERED ANTI-MICROBIAL AGENT. DUCT INSULATION VALUE IS TO BE MIN. R-6 WHEN LOCATED WITHIN THE CONDITIONED BUILDING ENVELOPE; MIN. R-8 WHEN LOCATED IN THE ATTIC, OUTSIDE THE BUILDING ENVELOPE OR UNCONDITIONED SPACES. DUCT LINER USED FOR ACOUSTICAL PURPOSES ONLY SHALL BE 1" THICK.
  - DUCT WRAP - MINERAL FIBER BLANKET, WITH REINFORCED FOIL AND PAPER VAPOR RETARDANT JACKET. APPLY WITH MECHANICAL FASTENERS AND ADHESIVE. DUCT INSULATION IS TO BE MIN. R-6 WHEN LOCATED WITHIN THE CONDITIONED BUILDING ENVELOPE; MIN. R-8 WHEN LOCATED IN THE ATTIC, OUTSIDE THE BUILDING ENVELOPE OR UNCONDITIONED SPACES.
  - INTERIOR CONDENSATE DRAINS - INSULATE CONDENSATE DRAINS LOCATED IN THE ATTIC, EXTERIOR WALLS OR UNCONDITIONED SPACES WITH 1/2" THICK FLEXIBLE ELASTOMERIC PIPE INSULATION.
  - REFRIGERANT SUCTION LINES - INSULATE WITH 1" THICK FLEXIBLE ELASTOMERIC PIPE INSULATION. PROVIDE ALUMINUM JACKET OVER INSULATION FOR ALL EXTERIOR REFRIGERANT PIPING.
- AIR DISTRIBUTION - INSULATE THE TOP-SIDE OF ALL AIR DISTRIBUTION DEVICES.
- ALL PIPING, DUCTS, VENTS, ETC., EXTENDING THROUGH WALLS & ROOF SHALL BE FLASHED & COUNTER-FLASHED IN A WATERPROOF MANNER.
- PROVIDE SLEEVES AND/OR OPENINGS TO RUN PIPES AND DUCTS THROUGH FOUNDATIONS, FLOORS, WALLS, AND ROOF.
- EXTEND ALL CONDENSATE DRAINS TO JANITORS SINK, FLOOR DRAIN, SPLASH BLOCK OR AS REQUIRED PER CODE. DRAINS FROM MECHANICAL EQUIPMENT SHALL BE PROVIDED W/ A DEEP SEAL TRAP. SLOPE CONDENSATE DRAIN PIPING AT MIN. 1/8" PER FOOT.
- NON-RESIDENTIAL AREAS: LOCATE ALL THERMOSTATS, SWITCHES AND OTHER CONTROL DEVICES AT 4'-0" ABOVE FINISHED FLOOR. FURNISH A THERMOSTATIC CONTROL DEVICE FOR EVERY DEVICE REQUIRING ONE WHETHER SHOWN ON DRAWINGS OR NOT. RESIDENTIAL/DWELLING AREAS: LOCATE ALL THERMOSTATS, SWITCHES AND OTHER CONTROL DEVICES AT 4'-0" TO ABOVE FINISHED FLOOR FOR STANDARD DWELLING UNITS; 4'-0" TO TOP OF DEVICE FOR ACCESSIBLE UNIT TYPES. FURNISH THERMOSTATIC CONTROL DEVICE FOR EVERY DEVICE REQUIRING ONE WHETHER SHOWN ON DRAWINGS OR NOT. ANY DEVICE ON A PERIMETER WALL SHALL BE MOUNTED ON A FOAM-FILLED ELECTRICAL BOX, WITH ALL GAPS BETWEEN BOX AND WALL SEALED TO PREVENT INFILTRATION.
- ALL EQUIPMENT SHALL BE INSTALLED PER CODE & MANUFACTURER'S REQUIREMENTS FOR PROPER OPERATION AND SERVICE/ACCESS CLEARANCES.
- ALL ROOF MOUNTED EQUIPMENT SHALL BE A MINIMUM 100" FROM EDGE OF ROOF, UNLESS NOTED OTHERWISE.
- ALL MECHANICAL EQUIPMENT SHALL BE U.L. LISTED AND LABELED AS A COMPLETE PACKAGE, NOT THROUGH INDIVIDUAL COMPONENTS OR PARTS. PROVIDE REQUIRED 3RD PARTY FIELD UL LISTING SERVICES AS REQUIRED TO COMPLY.
- THE MECHANICAL CONTRACTOR SHALL BALANCE ALL MECHANICAL SYSTEMS TO THE PERFORMANCE SPECIFICATIONS INDICATED ON PLANS AND PROVIDE THE ENGINEER WITH A DIGITAL COPY OF A COMPLETE TEST AND BALANCE REPORT. THE REPORT IS TO BE ISSUED A MINIMUM OF TWO WEEKS PRIOR TO PROJECT COMPLETION. THE TEST AND BALANCE REPORT WILL BE SUBJECT TO REVIEW AND APPROVAL BY THE ENGINEER. ANY ADDITIONAL TESTING, ADJUSTING AND BALANCING REQUIRED (AT ENGINEER'S REQUEST) AFTER REVIEW OF THE INITIAL REPORT SHALL BE PROVIDED AT NO ADDITIONAL COST. TESTING AND BALANCING CONTRACTOR TO CONFIRM FILTERS ARE CLEAN, AND FREE OF DEBRIS PRIOR TO BEGINNING WORK. THE MECHANICAL CONTRACTOR SHALL REPLACE ANY DIRTY FILTERS, AS NEEDED. TEST AND BALANCE REPORT TO BE COMPLETED BY AN INDEPENDENT, CERTIFIED TEST AND BALANCE CONTRACTOR.
- CONTROL WIRING FOR ALL MECHANICAL SYSTEMS WITHIN THIS SCOPE OF WORK SHALL BE BY THE MECHANICAL CONTRACTOR.
- DUCT SMOKE DETECTORS SHALL BE INSTALLED IN THE RETURN AIR DUCT OR PLENUM UPSTREAM OF ANY FILTERS OR DECONTAMINATION EQUIPMENT UPON ACTIVATION THE SMOKE DETECTOR SHALL SHUT DOWN THE AIR HANDLING UNIT AS REQUIRED BY 2018 NORTH CAROLINA MECHANICAL CODE 606. \* IF THERE IS A FIRE ALARM SYSTEM, DETECTORS SHALL BE FURNISHED AND WIRED BY THE ELECTRICAL CONTRACTOR. INSTALLED BY THE MECHANICAL CONTRACTOR. ACTIVATION OF THE DUCT SMOKE DETECTOR SHALL INITIATE A VISIBLE AND AUDIBLE SUPERVISORY SIGNAL AT A CONSTANTLY ATTENDED LOCATION. \* IF THERE IS NOT A FIRE ALARM SYSTEM, DETECTORS SHALL BE FURNISHED, WIRED AND INSTALLED BY THE MECHANICAL CONTRACTOR. ACTIVATION OF THE DUCT SMOKE DETECTOR SHALL INITIATE A VISIBLE AND AUDIBLE SUPERVISORY SIGNAL AT A CONSTANTLY ATTENDED LOCATION.
- PROVIDE A CLEAN SET OF FILTERS FOR ALL AIR HANDLING EQUIPMENT AT SUBSTANTIAL COMPLETION.
- MAINTAIN A MINIMUM 10'-0" BETWEEN OUTDOOR AIR INTAKES AND EXHAUST FAN DISCHARGE AND PLUMBING VENTS, ETC. FIELD COORDINATE FINAL LOCATIONS.
- PROVIDE 4" THICK CONCRETE PAD FOR ALL GROUND MOUNTED OUTDOOR MECHANICAL UNITS. PADS SHALL BE MINIMUM 6" LARGER THAN UNIT ON ALL SIDES.
- RUN DUCT UP WITHIN STRUCTURE OR THROUGH JOIST WEBS WHERE POSSIBLE & WHERE REQUIRED TO MAINTAIN CEILING HEIGHTS. PROVIDE OFFSETS AND/OR TRANSITIONS IN DUCT WHERE REQUIRED WITH MAX. 45° DEG. ELBOWS. MAKE BRANCH TAPS OFF TOP, SIDES OR BOTTOM AS REQUIRED. NO BACK TO BACK 90° DEG. ELBOWS ALLOWED.
- REFRIGERANT PIPING SHALL BE SIZED & INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS AND INSTALLATION INSTRUCTIONS.
- ALL EQUIPMENT SHALL BE LABELED ACCORDING TO NUMBERING / IDENTIFICATION SYSTEM PER PLANS.
- MECHANICAL CONTRACTOR SHALL PROVIDE PRE-PRINTED COLOR-CODED PIPE LABELS WITH 1-1/2" HIGH LETTERING INDICATING SERVICE AND FLOW DIRECTION. PLASTIC PIPE LABELS UTILIZED IN A RETURN AIR PLENUM SHALL BE LISTED/APPROVED FOR USE IN A RETURN AIR PLENUM. ALL PIPING TO MATCH EXISTING FACILITIES STANDARD (IF APPLICABLE).
- ALL EQUIPMENT SUPPORTS ARE REQUIRED TO MEET ASCE 9.6.
- THE MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING RESTRAINTS TO RESIST THE EARTHQUAKE EFFECTS ON THE MECHANICAL SYSTEMS. THE REQUIREMENTS FOR THOSE RESTRAINTS ARE FOUND IN THE LOCAL BUILDING CODE AND ASCE 7. THE ANCHORAGE OF THE MECHANICAL SYSTEMS SHALL COMPLY WITH THE REQUIREMENTS OF THE LOCAL BUILDING CODE AND ASCE 7.
- MECHANICAL CONTRACTOR SHALL PROVIDE U.L. LISTED FIRE DAMPERS, RADIATION DAMPERS AND/OR FIRE/SMOKE DAMPERS WHERE REQUIRED FOR FIRE PROTECTION AS REQUIRED BY LOCAL CODES. M.C. SHALL PROVIDE A MEANS OF ACCESS TO TEST & RESET ALL SUCH DAMPERS AND/OR ACTUATORS.
- ON MAKING PIPE CONNECTIONS TO EQUIPMENT, CARE SHOULD BE TAKEN TO ARRANGE PIPES SO AS NOT TO INTERFERE WITH OPENING OF ACCESS DOORS.
- THE VENDOR AND/OR CONTRACTOR IS RESPONSIBLE FOR THE CONFIGURATION AND SETUP OF ALL THE CONTROL SYSTEM. VENDOR/CONTRACTOR SHALL PROVIDE A CONTROL SYSTEM NARRATIVE. THIS NARRATIVE SHALL DEFINE THE OPERATION AND COMPLETE FUNCTIONALITY OF THE CONTROL SYSTEM.
- ELECTRICAL CONTRACTOR TO PROVIDE ALL HIGH VOLTAGE (120V AND GREATER) ELECTRICAL WIRING, CONDUIT, DISCONNECT SWITCHES, FUSES, ETC. TO ALL MECHANICAL EQUIPMENT WITHIN THIS SCOPE OF WORK. ALL FINAL ELECTRICAL CONNECTIONS ARE BY ELECTRICAL CONTRACTOR. MECHANICAL CONTRACTOR SHALL COORDINATE ELECTRICAL REQUIREMENTS FOR ALL APPROVED MECHANICAL EQUIPMENT WITH THE ELECTRICAL CONTRACTOR.
- PRIOR TO BEGINNING ANY WORK, MECHANICAL CONTRACTOR IS RESPONSIBLE TO NOTIFY THE OWNER'S REPRESENTATIVE, ARCHITECT OR ENGINEER IF THE MECHANICAL DESIGN CONFLICTS WITH EXISTING OR UNFORESEEN FIELD CONDITIONS.
- MECHANICAL CONTRACTOR SHALL PROVIDE A MIN. OF FOUR COPIES OF SHOP DRAWINGS TO THE ARCHITECT/ENGINEER FOR ALL INSTALLED EQUIPMENT AND MATERIALS NEEDING APPROVAL PRIOR TO PURCHASING. IN ADDITION, M.C. SHALL PROVIDE THE OWNER WITH TWO COPIES OF OPERATION & MAINTENANCE MANUALS FOR ALL INSTALLED EQUIPMENT, MANUFACTURER'S & INSTALLER'S WARRANTIES AND TRAINING FOR CONTROLS OF ALL SUCH EQUIPMENT.

## MECHANICAL LEGEND

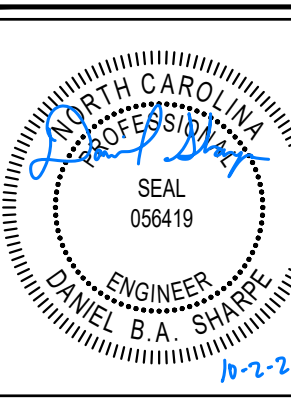
SYMBOL	DESCRIPTION
	THERMOSTAT (HONEYWELL VISION PRO 8000 OR EQUAL) WITH KEY LOCKING GUARD COVER
	CEILING SUPPLY DIFFUSER
	CEILING RETURN DIFFUSER
	SPIRAL DUCT SUPPLY DIFFUSER
	RECTANGULAR METAL DUCT
	ROUND METAL/SPIRAL DUCT
	MAIN TRUNK AND BRANCH DUCT TAKEOFF WITH VOLUME DAMPER
	FLEX DUCT
	1" DOOR UNDER CUT
	TURNING VANES
	SMOKE DUCT DETECTOR
SA	SUPPLY AIR
RA	RETURN AIR
EA	EXHAUST AIR
OA	OUTSIDE AIR
CFM	CUBIC FEET PER MINUTE
AH	AIR HANDLER
HP	HEAT PUMP
AC	AIR CONDITIONING UNIT
RTU	ROOFTOP UNIT
BDD	BACK DRAFT DAMPER
REL	RELOCATE
VD	VOLUME DAMPER
AFF	ABOVE FINISHED FLOOR
GC	GENERAL CONTRACTOR
MC	MECHANICAL CONTRACTOR

MECHANICAL DRAWING INDEX	
M0.1	MECHANICAL LEGENDS AND NOTES
M0.2	MECHANICAL DEMO PLAN
M1.1	MECHANICAL PLAN



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 SPRING LAKE, NC

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PROJECT NO.: **24-110**  
 DRAWN BY: **DBS**  
 CHECKED BY: **DBS**  
 MECHANICAL LEGENDS AND NOTES

# M0.1

## SPLIT-SYSTEM HEAT PUMP SCHEDULE

TAG	MANUFACTURER / MODEL	NOMINAL CAPACITY (TONS)	COMPRESSOR #	COND. FAN #	SEER	HSPF	VOLT / PHASE / HZ	MCA (AMPS)	MOCP	WEIGHT(LBS)	REMARKS
HP-1	EXISTING TO REMAIN	2	1	1	-	-	230/1/60	-	-	-	1

## SPLIT-SYSTEM AIR HANDLING UNIT SCHEDULE

TAG	MANUFACTURER / MODEL	NOMINAL CAPACITY (TONS)	ELEC. HEAT (KW)	AIRFLOW (CFM)	OUTDOOR AIR (CFM)	E.S.P. IN W.G	SENSIBLE CAPACITY (MBH)	LATENT CAPACITY (MBH)	VOLT / PHASE / HZ	MCA (AMPS)	MOCP	WEIGHT(LBS)	REMARKS
AHU-1	EXISTING TO REMAIN	2	-	-	-	-	-	-	230/1/60	-	-	-	1

1. UNIT IS EXISTING TO REMAIN. MC TO CLEAN AND INSPECT AND VERIFY IN GOOD AND WORKING ORDER.

## FAN SCHEDULE

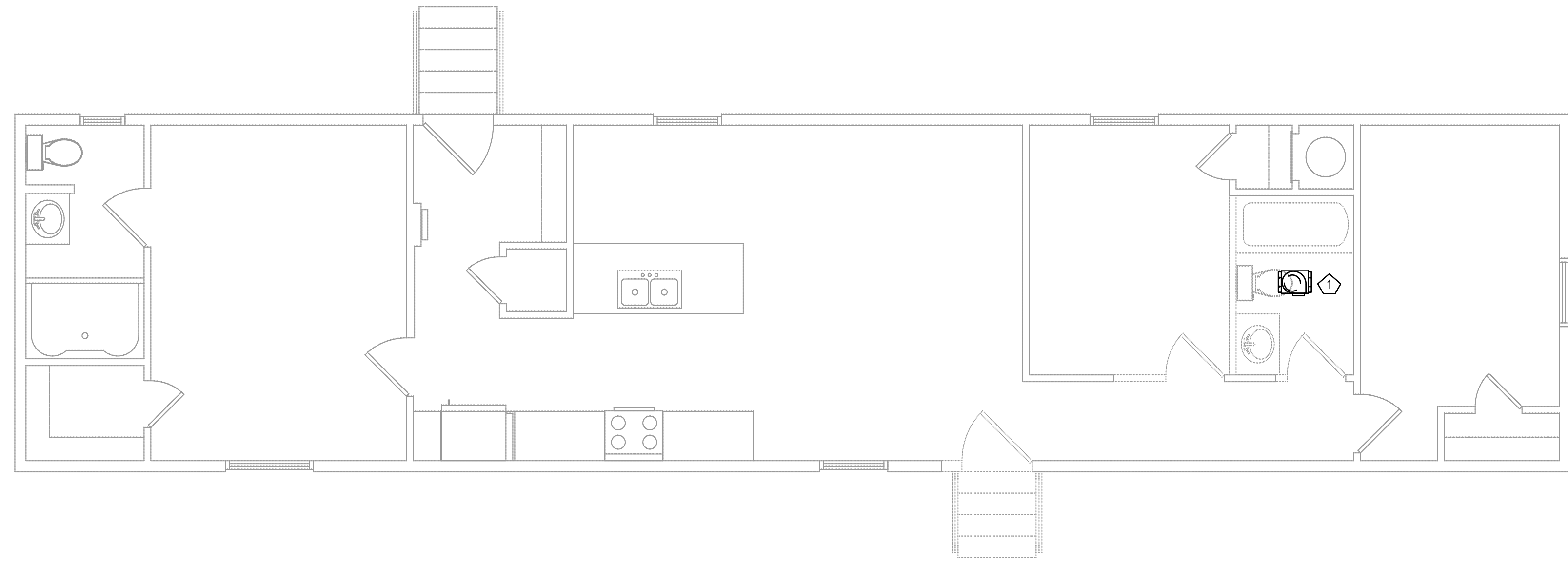
TAG	MANUFACTURER	MODEL	AIRFLOW (CFM)	E.S.P. IN W.G	SONES	FAN TYPE	MOUNT	VOLT/PHASE/HZ	MCA (AMPS)	CONTROL	REMARKS
EF-1	GREENHECK	SP-A90	75	0.125	1.4	EXHAUST	CEILING MOUNT	115 / 1 / 60	0.3	WALL SWITCH / OCC. SENSOR	1,2,3

- PROVIDE INTEGRAL BACKDRAFT DAMPER
- PROVIDE FAN SPEED CONTROL IF REQUIRED TO MEET SPECIFIED CFM RATING.
- COORDINATE LINE VOLTAGE AND CONTROL WIRING TERMINATIONS WITH ELECTRICAL CONTRACTOR PRIOR TO ROUGH-IN INSTALLATION

## VENTILATION SUMMARY

AREA	SQUARE FOOTAGE (FT <sup>2</sup> )	OPERABLE OPEN AREA REQUIRED PER NCMC 402.2	OPERABLE OPEN AREA PROVIDED BY DOORS/WINDOWS
OFFICE/TOILET	938	37.52	116.00

DEMO KEYNOTE LEGEND	
KEY VALUE	KEYNOTE TEXT
1	DEMO EXISTING EXHAUST FAN AND DUCTWORK. MAINTAIN EXISTING PENETRATION TO EXTERIOR.



1 MECHANICAL DEMO PLAN  
SCALE - 1/4" = 1'0"

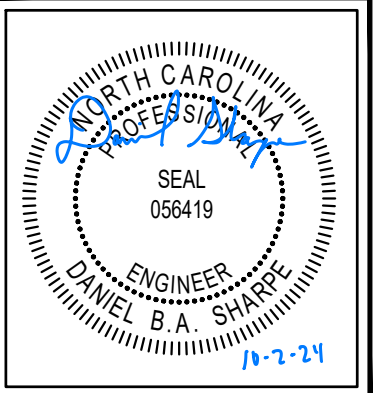
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**DESIGN FOR:**  
**MANUFACTURED HOME OFFICE CONVERSION**  
216 CONNIE COURT,  
SPRING LAKE, NC

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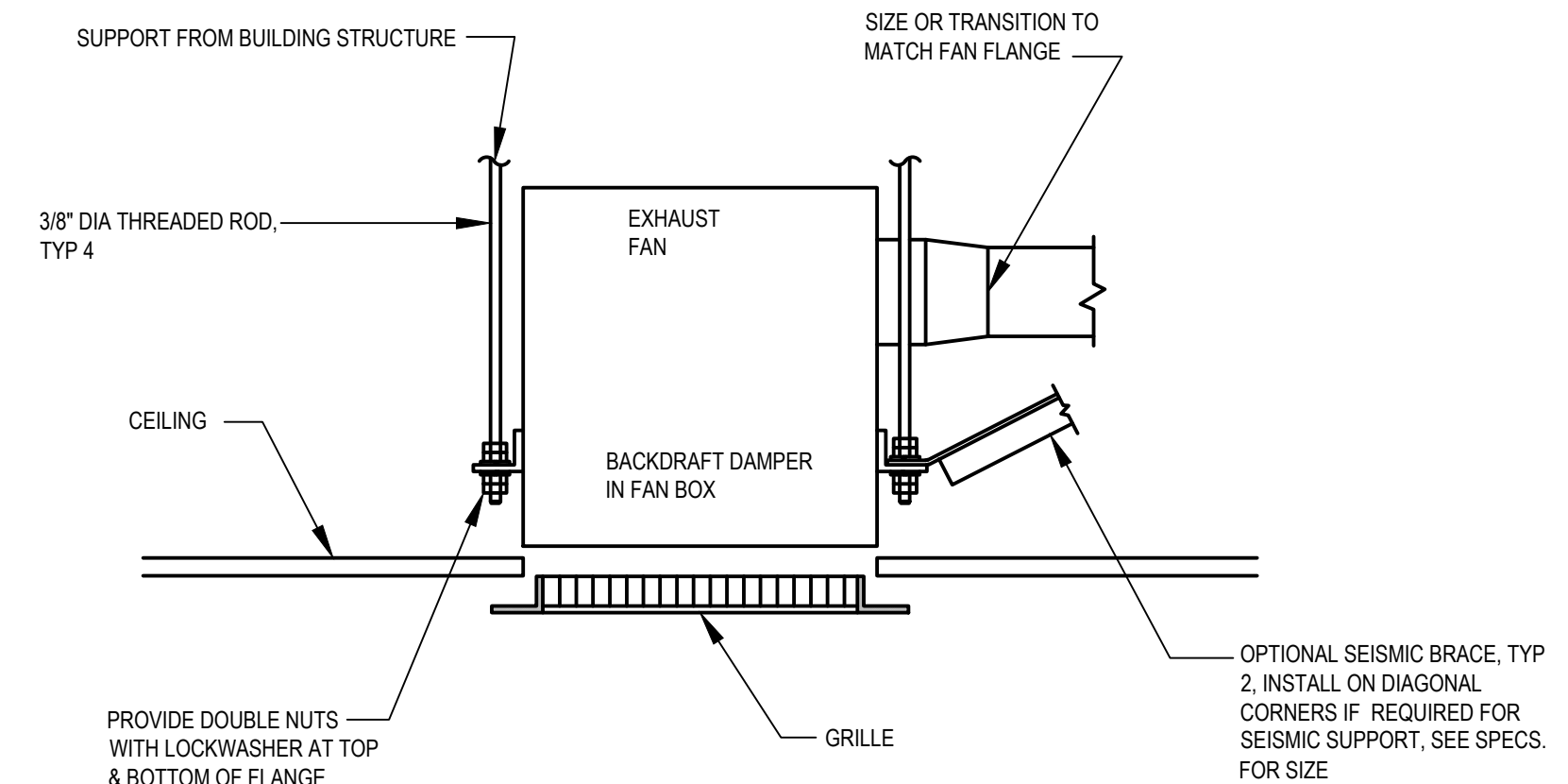
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PROJECT NO.: 24-110  
DRAWN BY: OMS  
CHECKED BY: OMS  
MECHANICAL DEMO PLAN

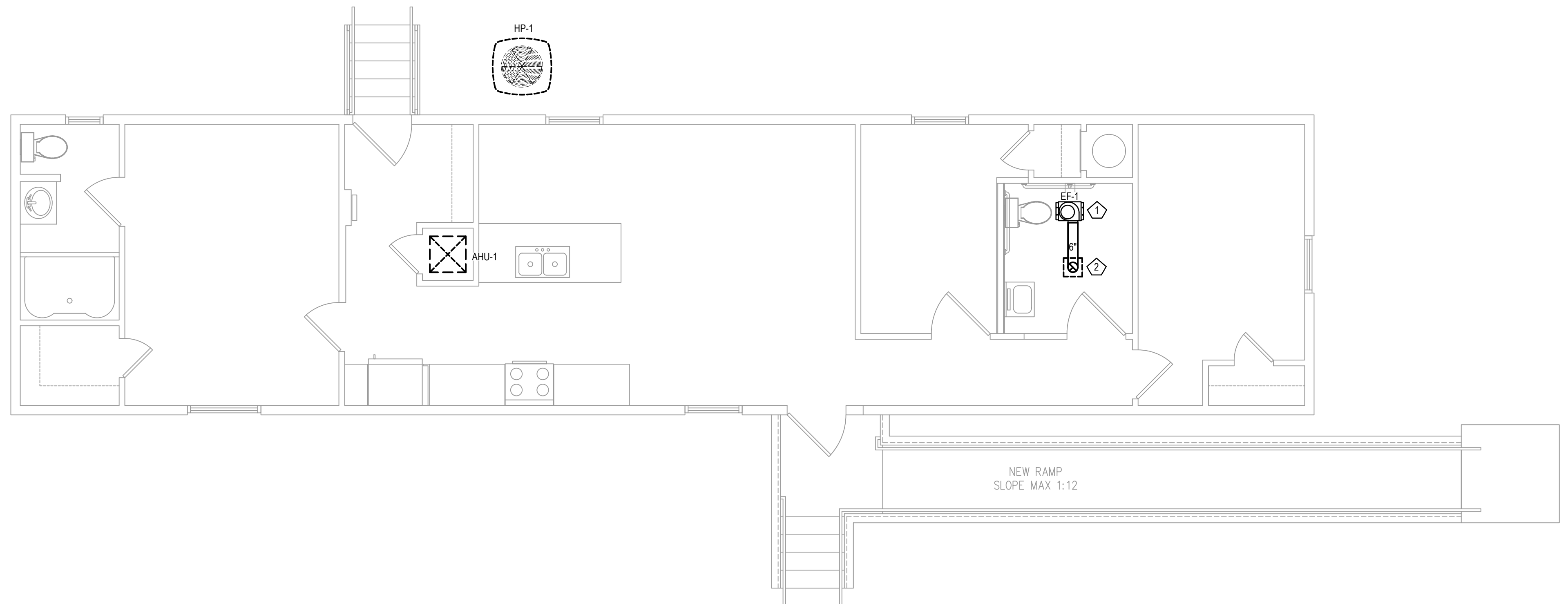
**M0.2**

NOTE:  
SCOPE OF WORK IS LIMITED TO RE-WORKING EXISTING BATHROOM EXHAUST FAN. ALL OTHER HVAC, SYSTEMS, ETC. ARE EXISTING TO REMAIN UNLESS NOTED OTHERWISE.

MECHANICAL KEYNOTE LEGEND	
KEY VALUE	KEYNOTE TEXT
1	CONTRACTOR TO INSTALL NEW EXHAUST FAN AS SHOWN.
2	ROUTE EXHAUST DUCT IN ATTIC SPACE TO EXISTING ROOF PENETRATION FROM PREVIOUS FAN.



2 CEILING EXHAUST FAN DETAIL  
NOT TO SCALE



1 MECHANICAL PLAN  
SCALE - 1/4" = 10"

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SEAL  
066419  
ENGINEER  
DANIEL B. A. SHARPE  
10-1-21

**DESIGN FOR:**  
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PROJECT NO.: 24-110  
DRAWN BY: DBAS  
CHECKED BY: DBAS

MECHANICAL PLAN

M1.1

## GENERAL ELECTRICAL NOTES

- G1. ALL ELECTRICAL WORK SHALL BE IN ACCORDANCE WITH 2020 NATIONAL ELECTRICAL CODE WITH N.C. AMENDMENTS AND ALL APPLICABLE LOCAL AND STATE CODES.
- G2. ALL MATERIAL, EQUIPMENT AND APPLIANCES SHALL BE NEW, LABELED AND LISTED FOR ITS INTENDED USE BY A QUALIFIED THIRD-PARTY ELECTRICAL TESTING LABORATORY (I.E. UL, ETL, ETC.) AND THE NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION PER NEC ARTICLES 90.7, 110.2 AND 110.3. WHERE UNDERWRITERS LABORATORIES LABELING IS AVAILABLE FOR THE CLASS OF MATERIAL INVOLVED, MATERIALS SHALL BE FURNISHED WITH A UL LABEL OR LISTING, OR THE ELECTRICAL CONTRACTOR SHALL PROVE IT IS NOT REQUIRED.
- G3. ALL ELECTRICAL PERMITS AND INSPECTION FEES SHALL BE OBTAINED AND PAID FOR BY THE ELECTRICAL CONTRACTOR.
- G4. ELECTRICAL CONTRACT DRAWINGS ARE DIAGRAMMATIC AND INDICATE THE GENERAL ARRANGEMENT OF ELECTRICAL EQUIPMENT. DO NOT SCALE ELECTRICAL PLANS. OBTAIN ALL DIMENSIONS FROM THE ARCHITECT'S DIMENSIONED DRAWINGS AND FIELD MEASUREMENTS. THE CONTRACTOR SHALL REVIEW ARCHITECTURAL PLANS FOR DOOR SWINGS AND BUILT-IN EQUIPMENT; CONDITIONS INDICATED ON THOSE PLANS SHALL GOVERN FOR THIS WORK. IT IS NOT WITHIN THE SCOPE OF WORK TO SHOW ALL NECESSARY RACEWAY ROUTING, BENDS, OFFSETS, PULL BOXES AND OBSTRUCTIONS. CONTRACTOR SHALL COORDINATE THE FINAL LOCATION OF EQUIPMENT AND WIRING DEVICES WITH OTHER TRADES PRIOR TO INSTALLATION AND INSTALL ALL WORK TO CONFORM TO THE OWNER REQUIREMENTS.
- G5. NO ALLOWANCE SHALL BE MADE FOR CONTRACTORS FAILURE TO COORDINATE WITH ALL TRADES PRIOR TO ANY WORK INCLUDING BUT NOT LIMITED TO ARCHITECTURAL, STRUCTURAL, MECHANICAL, PLUMBING, UTILITIES, AND SITE WORK.
- G6. VERIFY ALL UTILITY REQUIREMENTS FOR ELECTRICAL SERVICE (PRIOR TO STARTING ANY WORK) SUCH AS VOLTAGE, PHASES, FAULT CURRENT, ETC., AND COORDINATE EXACT LOCATION OF INCOMING ELECTRICAL SERVICE WITH LOCAL POWER COMPANY PRIOR TO PROJECT START. NOTIFY ENGINEER OF ANY DIFFERENCES FROM WHAT IS SHOWN ON PLANS.
- G7. ELECTRICAL CONTRACTOR SHALL GUARANTEE ALL WORK AND MATERIALS FOR ONE YEAR EFFECTIVE FROM THE DATE OF SUBSTANTIAL COMPLETION.
- G8. A COMPLETE GROUNDING SYSTEM SHALL BE PROVIDED AND INSTALLED IN ACCORDANCE WITH ARTICLE 250 OF THE NEC, AND AS SHOWN ON THE DRAWINGS.
- G9. ALL CUTTING AND PATCHING REQUIRED FOR INSTALLATION OF ELECTRICAL EQUIPMENT SHALL BE THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR. DO NOT CUT ANY MATERIAL THAT WILL WEAKEN THE STRUCTURE WITHOUT WRITTEN PERMISSION OF THE ARCHITECT. PATCHING SHALL BE ACCOMPLISHED TO MATCH ADJACENT SURFACES IN EVERY RESPECT. ENGAGE ORIGINAL INSTALLER FOR CUTTING/PATCHING OF ROOFS.
- G10. PROVIDE A TYPED DIRECTORY IN ALL PANELBOARDS CLEARLY DESCRIBING THE LOCATION AND TYPE OF LOAD SERVED FOR ALL CIRCUITS.
- G11. THE ELECTRICAL CONTRACTOR SHALL REQUEST A SELECTIVE BREAKER COORDINATION STUDY FROM THE ELECTRICAL GEAR MANUFACTURER PER NEC 700 REQUIREMENTS.
- G12. PROVIDE ENGRAVED PHENOLIC NAMEPLATES FOR ALL PANELBOARDS AND DISCONNECT SWITCHES. WHITE LETTERS ON BLACK BACKGROUND. NAMEPLATE SHALL CONTAIN EQUIPMENT DESIGNATION, VOLTAGE, FEEDER SOURCE, AIC RATING & DATE INSTALLED.
- G13. PROVIDE "FLASH HAZARD" LABELS FOR ALL PANELBOARDS IN ACCORDANCE WITH NEC REQUIREMENTS.
- G14. ALL TERMINAL SLUGS SHALL BE 60 DEGREE/75 DEGREE RATED.
- G15. FUSES 0-600 AMPS SHALL BE UL CLASS "RK-5" LOW PEAK DUAL ELEMENT TIME DELAY WITH 200,000 AMPERE INTERRUPTING RATING AS MANUFACTURED BY BUSSMANN UNLESS NOTED OTHERWISE.
- G16. ALL WATER HEATERS SHALL HAVE DISCONNECT SIZED PER 422.11(E)(3).
- G17. ELECTRICAL CONTRACTOR SHALL MAKE ALL FINAL ELECTRICAL CONNECTIONS TO EQUIPMENT REGARDLESS OF WHO SUPPLIES THE EQUIPMENT. THIS INCLUDES ALL HVAC, PLUMBING AND OWNER FURNISHED EQUIPMENT CONNECTIONS OF 120V OR HIGHER.
- G18. RACEWAYS SHALL BE INSTALLED CONCEALED IN NEW WALL CONSTRUCTION, ABOVE CEILINGS, BELOW FLOOR, AND IN OTHER CAVITIES TO THE GREATEST EXTENT POSSIBLE. WHERE EXPOSED RACEWAYS MUST BE USED, LAYOUT RACEWAYS TO MINIMIZE THE NUMBER OF VERTICAL RUNS.
- G19. ALL EXPOSED RACEWAY SHALL BE RUN PARALLEL OR PERPENDICULAR TO THE BUILDING SURFACES AND SHALL BE PAINTED AS DIRECTED BY THE ARCHITECT. NO EXPOSED CONDUIT SHALL BE ALLOWED IN FINISHED SPACES EXCEPT AS PERMITTED BY OWNER OR ARCHITECT. EXPOSED RACEWAY IN FINISHED SPACES SHALL BE WIREMOLD TYPE.
- G20. BEFORE COMMENCING WITH ANY ROUGH-IN, COORDINATE THE EXACT LOCATION AND MOUNTING HEIGHT OF ALL WALL MOUNTED DEVICES WITH THE ARCHITECTURAL INTERIOR ELEVATIONS, CASEWORK SHOP DRAWINGS, AND EXISTING CONDITIONS. IF ANY DISCREPANCIES ARE DISCOVERED, NOTIFY THE ARCHITECT FOR FURTHER DIRECTION. MINOR ADJUSTMENTS IN DEVICE LOCATION, I.E. 5'-0" IN ANY DIRECTION SHALL BE DONE AT NO ADDITIONAL COST TO THE CONTRACT.
- G21. ALL WIRING SHALL BE INSTALLED IN IMC, RMC, EMT OR TYPES AC AND MC FLEXIBLE CABLES. RNC CONDUIT (PVC) SHALL ONLY BE USED UNDERGROUND AND OUTDOORS, WHERE NOT SUBJECT TO PHYSICAL DAMAGE. MINIMUM SIZE CONDUIT SHALL BE 3/4". AC AND MC FLEXIBLE CABLES SHALL BE USED ONLY IN AREAS PERMITTED BY CODE. INDOOR BRANCH CIRCUIT WIRING MAY BE TYPE NM, NMC, OR NMS FOR DWELLING UNITS OR OTHER BUILDINGS PERMITTED TO BE OF TYPES III, IV OR V CONSTRUCTION. DWELLING UNIT SERVICE FEEDERS MAY BE TYPE SE OR USE CABLES IN AREAS PERMITTED BY CODE. AMPACITY FOR SE AND USE CABLES SHOWN ON THE SER FEEDER SCHEDULE INCLUDED IN THESE DRAWINGS IS BASED ON THE 60 C AMPACITY OF TABLE 310.15(B)(16) FOR INSTALLATION IN INSULATION. SHOULD SER CABLE NOT BE IN CONTACT WITH INSULATION CONTACT ENGINEER FOR REVISED FEEDER SIZES (IN INSULATION SHALL BE AS DEFINED IN ARTICLE 310.15(A)(2) AND AS DETERMINED BY THE LOCAL AHJ). ALL SER FEEDERS LOCATED WITHIN TYPE I AND/OR II BUILDING AREAS (NONCOMBUSTIBLE CONSTRUCTION) SHALL BE RUN IN EMT CONDUIT PER NEC. ONCE THE CONDUIT PENETRATES THE TRANSITION SLAB AND ENTER INTO THE TYPE III, IV OR V CONSTRUCTION THE SER CABLE MAY BE RUN FREELY AS ALLOWED PER NEC. ALL OTHER WIRING IN DWELLING UNITS EXCEEDING 50 AMPERES SHALL BE INSTALLED IN EMT INDOORS OR PVC OUTDOORS, WHERE NOT SUBJECT TO PHYSICAL DAMAGE.
- G22. ALL FLEX SHALL BE LIQUID TIGHT FLEXIBLE METAL.
- G23. PROVIDE A PULL WIRE OR FISH TAPE IN ALL EMPTY CONDUITS. PROVIDE A BLANK COVER PLATE OVER ALL UNUSED BOXES INCLUDING DATA/COMM BOXES.
- G24. WHERE A SINGLE HOMERUN IS SHOWN THE CIRCUIT SHALL BE INSTALLED IN A DEDICATED CONDUIT, DO NOT COMBINE WITH OTHER CIRCUITS. WHERE A CIRCUIT HOMERUN IS NOT SHOWN THE CONTRACTOR SHALL COMBINE CIRCUITS AS FOLLOWS AND IN ACCORDANCE WITH THE NEC:
- A MAXIMUM OF THREE 20A, 1 POLE BRANCH CIRCUITS MAY BE COMBINED IN COMMON HOMERUN SHARING A COMMON NEUTRAL OR WITH SEPARATE NEUTRALS, FOR A TOTAL OF SIX CURRENT CARRYING CONDUCTORS. ALL BRANCH CIRCUITS LARGER THAN 20A SHALL BE SEPARATELY HOMERUN TO PANEL.
  - EACH MULTIWIRE BRANCH CIRCUIT SHARING A COMMON NEUTRAL SHALL BE PROVIDED WITH A MEANS THAT WILL SIMULTANEOUSLY DISCONNECT ALL UNGROUNDED CONDUCTORS AT THE POINT WHERE THE BRANCH CIRCUIT ORIGINATES.
- G25. CONDUCTORS SHALL BE COPPER, RATED AT NOT LESS THAN 600 VOLTS. MINIMUM SIZE SHALL BE NO. 12 AWG UNLESS OTHERWISE NOTED ON THE DRAWINGS. ALL WIRE #8 AWG AND LARGER SHALL BE STRANDED, #10 THRU #12 AWG CONDUCTORS SHALL BE SOLID. ALL INSULATION TYPES SHALL BE THW/THHN. FEEDER CIRCUIT CONDUCTORS MAY BE COPPER OR ALUMINUM.
- G26. 20A/120V BRANCH CIRCUITS EXTENDING UP TO 56' IN LENGTH, FROM PANEL TO FARTHEST DEVICE, SHALL USE AT MINIMUM NO. 12 (CU) CONDUCTORS AND 3/4" FOR 20A/120V BRANCH CIRCUITS EXTENDING UP TO 99' IN LENGTH, FROM PANEL TO FARTHEST DEVICE, SHALL USE NO. 10 (CU) CONDUCTORS AND 3/4". ANY BRANCH CIRCUIT LENGTHS THAT EXCEED 99', THE ELECTRICAL CONTRACTOR SHALL CONTACT THE ENGINEER IMMEDIATELY FOR UPDATED CONDUCTOR AND CONDUIT SIZES.
- G27. TO PREVENT UNDER-VOLTAGE, THE FEEDERS SHOWN ON THE VOLTAGE DROP TABLE(S) HAVE BEEN SIZED TO COMPENSATE FOR WHEREVER A MAXIMUM TOTAL VOLTAGE DROP ON BOTH FEEDERS AND BRANCH CIRCUITS TO THE FARTHEST DEVICE DOES NOT EXCEED 5%. FOR FEEDER LENGTHS EXCEEDING THE ONE-WAY DISTANCES PROVIDED ON THE VOLTAGE DROP TABLE(S) THE ELECTRICAL CONTRACTOR SHALL IMMEDIATELY CONTACT THE ENGINEER PRIOR TO BIDDING, PURCHASING AND ROUGHING-IN FOR UPDATED CONDUCTOR AND CONDUIT SIZES BASED ON UPDATED VOLTAGE DROP CALCULATIONS.
- G28. FOR EVERY WIRING DEVICE MARK THE BRANCH CIRCUIT TO WHICH IT IS CONNECTED ON THE BACK OF EACH DEVICE PLATE, USING AN INDELEBIL MARKER PEN.
- G29. COORDINATE ALL DEVICE AND DEVICE PLATE COLORS WITH OWNER/ARCHITECT. DEVICES AND DEVICE PLATES LOCATED IN CABINETRY SHALL BE A DARK COLOR TO MATCH CABINETRY FINISH.
- G30. EXACT LOCATION OF ALL FLOOR-MOUNTED OUTLETS SHALL BE COORDINATED WITH THE OWNER/ARCHITECT BEFORE ROUGH-IN.
- G31. TWO OR MORE ADJACENT POWER OR COMMUNICATION RECEPTACLES SHALL BE GANGED WITH A COMMON FACEPLATE - IF THEY CANNOT BE GANGED THEY SHALL BE INSTALLED WITH A MINIMUM DISTANCE BETWEEN UNITS.
- G32. WALL RECEPTACLES SHOWN BACK TO BACK MAY BE OFFSET BUT SHALL BE INSTALLED DIRECTLY ADJACENT TO ONE ANOTHER.
- G33. LIGHT SWITCHES SHALL BE NO MORE THAN 6" FROM EDGE OF DOOR FRAME.
- G34. WHERE PENETRATIONS ARE MADE THROUGH A REQUIRED FIRE-RESISTIVE WALL, FLOOR, OR PARTITION FOR THE PURPOSE OF RUNNING RACEWAY CARRYING ELECTRICAL, TELEPHONE, TELEVISION, OR LOCAL COMMUNICATION AND/OR SIGNALING CIRCUITS, THE OPENING AROUND THE RACEWAY SHALL BE FIRE STOPPED PER THE STATE BUILDING CODE. COORDINATION WITH THE GENERAL CONTRACTOR SHALL BE MAINTAINED TO ENSURE THAT THIS FIRE STOPPING IS ACCOMPLISHED. USE APPROVED ASSEMBLIES SUCH AS THE FOLLOWING:
- \* CONDUIT PENETRATIONS OF 1, 2, 3 & 4 HOUR GYP BOARD WALLS - U.L.#WL1001
  - \* CONDUIT PENETRATIONS OF 2, 3 & 4 HOUR CONCRETE OR BLOCK WALLS - U.L.#CAJ1001
  - \* CONDUIT PENETRATIONS OF 2, 3 & 4 HOUR CONCRETE FLOORS - U.L.#CAJ1001
  - \* CONDUIT PENETRATIONS OF 1 HOUR GYPBOARD CEILING ASSEMBLY - L526
  - \* MULT. CONDUIT PENETRATIONS OF 2, 3 & 4 HOUR CONCRETE OR BLOCK WALL OR FLOOR - CAJ1042
- G35. IN REQUIRED FIRE RATED WALLS AND PARTITIONS, OPENINGS FOR INSTALLATION OF BOXES SHALL BE IN ACCORDANCE WITH THE APPLICABLE BUILDING CODE AND THE MANUFACTURER'S INSTALLATION INSTRUCTIONS INCLUDED WITH THE BOX LISTING. COORDINATE CLOSELY WITH THE GENERAL CONTRACTOR TO ENSURE THAT THE INTEGRITY OF THE U.L. RATING IS MAINTAINED.
- G36. OUTLET BOXES FOR DEVICES MOUNTED ON OPPOSITE SIDES OF FIRE RATED PARTITIONS SHALL NOT BE MOUNTED IN THE SAME WALL CAVITY. SEPARATE WALL PENETRATIONS BY MOUNTING ON OPPOSITE SIDES OF WALL STUDS OR OTHER VERTICAL STRUCTURAL MEMBER IN THE WALL.

- G37. PRIOR TO ORDERING ANY EQUIPMENT THE ELECTRICAL CONTRACTOR SHALL PROVIDE SHOP DRAWING SUBMITTALS TO THE OWNER, ARCHITECT AND ELECTRICAL ENGINEER FOR THE LIGHTING FIXTURES, ELECTRICAL GEAR, FIRE ALARM SYSTEM AND OTHER SIMILAR SYSTEMS. SHOP DRAWING SUBMITTALS SHALL BE PROVIDED REGARDLESS IF THE EQUIPMENT BEING SUPPLIED IS THE SAME AS WHAT IS SPECIFIED ON THE PLANS.
- G38. THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING RESTRAINTS TO RESIST THE EARTHQUAKE EFFECTS ON THE ELECTRICAL SYSTEM. THE REQUIREMENTS FOR THOSE RESTRAINTS ARE FOUND IN THE IBC, THE ANCHORING OF THE EQUIPMENT SHALL COMPLY WITH IBC SECTION 1613.
- G39. IF DURING THE COURSE OF WORK THE ELECTRICAL CONTRACTOR DISCOVERS A PROBLEM WITH THE PERFORMANCE OF THE INSTALLATION RELATIVE TO THE PLANS AND SPECIFICATIONS OR NEC OR OTHER CODES, THE ELECTRICAL CONTRACTOR SHALL IMMEDIATELY BRING THE PROBLEM TO THE ATTENTION OF THE ARCHITECT AND ENGINEER FOR RESOLUTION PRIOR TO THE EXECUTION OF THE WORK.
- G40. SEE PANEL SCHEDULES FOR BRANCH CIRCUIT CONDUCTOR SIZES. THE "WIRE SIZE" COLUMN INDICATES THE SIZE OF THE PHASE (IE HOT) AND NEUTRAL CONDUCTORS. THE EC SHALL SIZE THE EQUIPMENT GROUNDING CONDUCTORS PER NEC TABLE 250.122, THE EC SHALL SIZE THE CONDUIT (IF REQUIRED) PER NEC ANNEX C. THE QUANTITY OF CONDUCTORS IS BASED ON THE "POLE" COLUMN AND FOLLOWS THE PROCESS BELOW, PARALLEL SET QUANTITIES ARE MULTIPLIED BY THE NUMBER OF SETS:
- 120V/277V - 1 POLE  
 1 - PHASE (IE HOT) - CONDUCTOR SIZE PER "WIRE SIZE" COLUMN IN PANEL SCHEDULE  
 1 - NEUTRAL - CONDUCTOR SIZE PER "WIRE SIZE" COLUMN IN PANEL SCHEDULE  
 1 - GROUND - PER NEC TABLE 250.122  
 CONDUIT SIZED PER NEC ANNEX C (IF REQUIRED)
- 208V/240V/480V - 2 POLE  
 2 - PHASE (IE HOT) - CONDUCTOR SIZE PER "WIRE SIZE" COLUMN IN PANEL SCHEDULE  
 1 - NEUTRAL (EC VERIFY IF REQUIRED FOR INSTALLED EQUIPMENT) - CONDUCTOR SIZE PER "WIRE SIZE" COLUMN IN PANEL SCHEDULE  
 1 - GROUND - PER NEC TABLE 250.122  
 CONDUIT SIZED PER NEC ANNEX C (IF REQUIRED)
- 208V/240V/480V - 3 POLE  
 3 - PHASE (IE HOT) - CONDUCTOR SIZE PER "WIRE SIZE" COLUMN IN PANEL SCHEDULE  
 1 - NEUTRAL (EC VERIFY IF REQUIRED FOR INSTALLED EQUIPMENT) - CONDUCTOR SIZE PER "WIRE SIZE" COLUMN IN PANEL SCHEDULE  
 1 - GROUND - PER NEC TABLE 250.122  
 CONDUIT SIZED PER NEC ANNEX C (IF REQUIRED)
- G41. ELECTRICAL CONTRACTOR SHALL COORDINATE WITH GEAR MANUFACTURER WHERE THE HIGHEST CONTINUOUS TRIP SETTING FOR WHICH THE ACTUAL DEVICE INSTALLED IN A CIRCUIT BREAKER IS RATED OR CAN BE ADJUSTED IS 1200A OR HIGHER SHALL HAVE ARC ENERGY REDUCTION IN ACCORDANCE WITH NEC 240.87.
- G42. 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. USE BLACK, RED, AND BLUE FOR PHASES A, B, AND C RESPECTIVELY ON 208Y/120 VOLT THREE-PHASE Y SYSTEMS AND WHITE FOR THE NEUTRAL. ISOLATED GROUND WIRES SHALL BE GREEN WITH YELLOW BANDS OR STRIPES. USE BROWN, ORANGE, AND YELLOW FOR PHASES A, B, AND C RESPECTIVELY FOR 480Y/277 VOLT THREE-PHASE Y SYSTEMS AND GRAY FOR THE NEUTRAL. ON 4 WIRE DELTA CONNECTED SYSTEMS WHERE THE MIDPOINT OF ONE PHASE WINDING IS GROUND, THE PHASE CONDUCTOR HAVING THE HIGHER PHASE TO GROUND VOLTAGE SHALL BE PERMANENTLY IDENTIFIED WITH AN OUTER FINISH THAT IS ORANGE IN COLOR; 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.
- G43. ABANDONED CONDUIT AND BOXES SHALL HAVE ALL ELECTRICAL WIRING REMOVED COMPLETELY AND NOT JUST "MADE SAFE." CONDUIT AND BOXES SHALL BE REMOVED WHERE PRACTICAL WITHOUT CREATING ADDITIONAL DEMOLITION/RESTITUTION WORK FOR OTHER TRADES.
- G44. WHERE CONDUCTORS ARE RUN IN PARALLEL, THE EC SHALL COMPLY WITH NEC 310.4.
- G45. ALL 15 AND 20 AMPERE, 125 AND 250 VOLT NONLOCKING-TYPE RECEPTACLES IN THE AREAS SPECIFIED IN NEC 406.12(1) THROUGH (8) SHALL BE LISTED TAMPER-RESISTANT RECEPTACLES.

## ELECTRICAL SYMBOL LEGEND

	DUPLEX RECEPTACLE, 20A, 120 VOLT, +18" A.F.F. (U.N.O.)
	*"GFCI" INDICATES GROUND FAULT PROTECTION *"WP" INDICATES WEATHERPROOF
	DEDICATED DUPLEX RECEPTACLE, 20A, 120 VOLT, +18" A.F.F. (U.N.O.)
	QUADPLEX RECEPTACLE, 20A, 120 VOLT, +18" A.F.F. (U.N.O.)
	SIMPLEX RECEPTACLE, 20A, 120 VOLT, +18" A.F.F. (U.N.O.)
	208/230 VOLT 10 RECEPTACLE
	208/230 VOLT 30 RECEPTACLE
	DUPLEX RECEPTACLE RECESSED IN FLOOR WITH BRASS COVER
	QUADPLEX RECEPTACLE RECESSED IN FLOOR WITH BRASS COVER
	DUPLEX RECEPTACLE MOUNTED IN CEILING
	QUADPLEX RECEPTACLE MOUNTED IN CEILING
	JUNCTION BOX
	DISCONNECT SWITCH, FUSED, HEAVY DUTY, NEMA 1 FOR INTERIOR, NEMA 3R FOR EXTERIOR. FUSE ACCORDING TO NAMEPLATE DATA
	NON-FUSED PULL DISCONNECT SWITCH, NEMA 1 FOR INTERIOR, NEMA 3R FOR EXTERIOR.
	TELEPHONE/DATA JACK (JUNCTION BOX WITH 1" CONDUIT STUBBED TO ABOVE CEILING) CONDUCTORS AND TERMINATIONS PROVIDED AND INSTALLED BY COMMUNICATIONS CONTRACTOR.
	SINGLE POLE SWITCH
	3 WAY SWITCH
	WALL MOUNT INFRARED OCCUPANCY SENSOR WITH UP TO 30 MINUTE TIME-ON SETTING AND MANUAL OVERRIDE, MIN. COVERAGE 500+ SQFT. WATSTOPPER MODEL WS-250 OR EQUAL, 120/277V RATED
	MOTOR RATED SWITCH RATED AT 20 AMPS, VOLTAGE TO MATCH EQUIPMENT
	20 AMP SWITCH IN WEATHERPROOF BOX WITH WEATHERPROOF COVER
	ELECTRICAL PANEL
	DUSK/DAWN PHOTOCCELL
	GENERAL CONTRACTOR
	ELECTRICAL CONTRACTOR
	ABOVE FINISHED FLOOR
	ABOVE FINISHED GRADE
	RECEPTACLE
	LIGHTS
	ISOLATED GROUND
	WEATHER PROOF (DEVICE TO HAVE WEATHERPROOF IN-USE COVER)
	GROUND FAULT CIRCUIT INTERRUPTER
	ARC FAULT CIRCUIT INTERRUPTER

ELECTRICAL DRAWING INDEX	
E0.1	ELECTRICAL LEGENDS AND NOTES
E0.2	ELECTRICAL DEMO PLAN
E1.1	ELECTRICAL PLANS
E2.1	PANEL SCHEDULE AND ONE-LINE DIAGRAM
E3.1	ELECTRICAL DETAILS

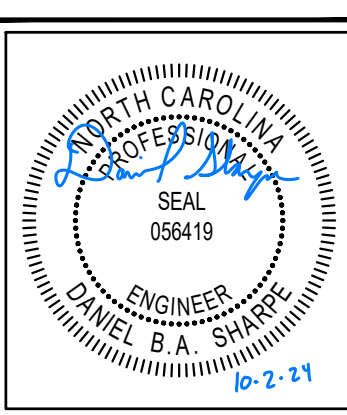
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### LIGHTING FIXTURE SCHEDULE

MARK	DESCRIPTION	MANUFACTURER	MODEL	CCT	MOUNTING	MAX WATTS	BALLAST/DRIVER	REMARKS
A	CAN LIGHT	LITHONIA	WF6-LED-30K40K50K-90CRI-MW	VARIABLES	RECESSED	14	LED	2
B	LED WALLPACK	LITHONIA	ARC1LED-P1-30K-MVOLT-E4WH-PE-DOBXD	3000K	SURFACE	11	LED	1,3
	EXIT UNIT COMBO LIGHT	EXITRONIX	VLED-1-WH-EL90-R	-	VARIABLES	2	LED	1
	EMERGENCY WALL LIGHT	EXITRONIX	LED-90-G2	-	VARIABLES	2	LED	1
	REMOTE LED LAMP HEAD / WP	EXITRONIX	2CLEW-WP	-	SURFACE	2	LED	1

- PROVIDE WITH 90 MINUTE BATTERY BACKUP ILLUMINATION.
- FIXTURE EQUIPPED WITH SELECTABLE COLOR TEMPERATURE.
- FIXTURE EQUIPPED WITH PHOTOCCELL FOR DUSK TO DAWN OPERATION.

NOTE:  
CONTRACTOR TO VERIFY ALL FIXTURE SELECTIONS AND FINISHES WITH OWNER PRIOR TO PURCHASE.

- GENERAL NOTES:
- THE CONTRACTOR SHALL VERIFY THE LEAD TIME OF ALL PRODUCTS SPECIFIED IN THIS SCHEDULE AT THE TIME OF PACKAGE QUOTE.
  - DURING THE BID PROCESS, THE CONTRACTOR SHALL NOTIFY THE ARCHITECT/ENGINEER OF ANY DELIVERY/SCHEDULING ISSUES.
  - NO SUBSTITUTIONS WILL BE ALLOWED DUE TO THE LACK OF COORDINATION OF DELIVERY DATES AND CONSTRUCTION SCHEDULE AFTER BID.
  - ALL EXPEDITED EXPENSES SHALL BE THE RESPONSIBILITY OF THE CONTRACTORS.
  - FIXTURES TO BE INSTALLED IN CEILINGS, INDICATE ON THE ARCHITECTURAL PLANS AS HAVING INSULATION IN CONTACT WITH THE CEILING SURFACE. SHALL BE IC RATED BY MANUFACTURER.
  - LIGHTING FIXTURES SHALL MEET THE AESTHETICS, DESCRIPTION AND SPECIFICATIONS, SUBSTITUTIONS SHALL INCLUDE FT. BY FT. CALCULATIONS.
  - LIGHTING FIXTURES, AS SPECIFIED, HAVE BEEN SO SELECTED TO ACHIEVE REQUIRED/DESIRED FOOTCANDLE LEVELS IN THEIR RESPECTIVE AREA. HENCE SPECIFIC FIXTURE CHARACTERISTICS WHICH MAY CREATE PARTICULAR ILLUMINATION RESULTS ARE ESSENTIAL. ANY DEVIATIONS FROM SPECIFIED FIXTURES SHALL DEEM THE SUBMITTING AGENT AND CONTRACTORS RESPONSIBLE IN PROVIDING SUCH DEVIATION FOR THE ARCHITECT/ENGINEER AND OWNER TO MAKE AN INFORMED DECISION.
  - SUBSTITUTIONS APPROVED BY THE ENGINEER PREVIOUS TO BID ARE ACCEPTABLE AS LONG AS THEY ARE EQUAL TO THE FIXTURE SPECIFIED, UNLESS OTHERWISE NOTED. THIS INCLUDES LENS, COLORS, REFLECTORS, PHOTOMETRICS, HOUSING MATERIAL, FINISHES, ETC. ALL SUBSTITUTIONS SHALL BE SUBMITTED TO THE ENGINEER WITH CUT SHEETS FOR APPROVAL. SUBSTITUTE FIXTURES SHALL BE PRICED WITH THE SPECIFIED FIXTURE AND LISTED SEPARATELY SO THE ARCHITECT, ENGINEER AND OWNER CAN MAKE AN INFORMED DECISION.
  - ANY FIXTURE WITH THE TEXT "NL" ADJACENT TO IT SHALL INDICATE THAT THAT FIXTURE IS A NIGHT LIGHT (24HR LIGHT), THE FIXTURE SHALL BE CONNECTED TO THE UNSWITCHED HOT LEG OF THE INDICATED CIRCUIT.
  - ACRYLIC PRISMATIC LENSES SHALL BE 0.156" NOMINAL MINIMUM THICKNESS.
  - ALL EXIT AND EMERGENCY FIXTURES SHALL COMPLY WITH NCSBC STANDARDS AND HAVE AUTOMATIC TESTING DEVICES.
  - LED EMERGENCY BATTERY SHALL PROVIDE 1400 MINIMUM LUMENS OUTPUT FROM 1 LAMP FOR 90 MINUTES MINIMUM.
  - ELECTRICAL CONTRACTOR SHALL CONNECT ALL LED EMERGENCY FIXTURES TO CLOSEST AVAILABLE LIGHTING CIRCUIT UNLESS NOTED OTHERWISE.
  - LED MODULES SHALL BE REPLACEABLE.
  - ELECTRICAL CONTRACTOR SHALL RECEIVE APPROVAL FOR ALL LIGHTING FIXTURES FROM ARCHITECT/OWNER PRIOR TO PURCHASE AND ROUGH-IN. THE ABOVE FIXTURE TYPES ARE LISTED AS THE DESIGN BASIS.

**ELECTRICAL SYSTEM AND EQUIPMENT METHOD OF COMPLIANCE SUMMARY**

**ELECTRICAL SYSTEM AND EQUIPMENT**

Method of Compliance: Energy Code - Prescriptive

**Lighting schedule:**

lamp type required in fixture number of lamps in fixture  
 ballast type used in the fixture number of ballasts in fixture  
 total wattage per fixture  
 total interior wattage specified vs. allowed: 25 Watts Specified vs. 743 Watts Allowed  
 total exterior wattage specified vs. allowed: NA

See Light Fixture Schedule on sheet

**Additional Efficiency Package Options (When using the 2018 NCEC; not required for ASHRAE 90.1)**

- C406.2 More Efficient HVAC Equipment Performance
- C406.3 Reduced Digital Power Density
- C406.4 Enhanced Digital Lighting Controls
- C406.5 On-Site Renewable Energy
- C406.6 Dedicated Outdoor Air System
- C406.7 Reduced Energy Use in Service Water Heating

**DESIGNER STATEMENT:**

To the best of my knowledge and belief, the design of this building/space complies with the electrical system and equipment requirements of the 2018 North Carolina Energy Conservation Code.

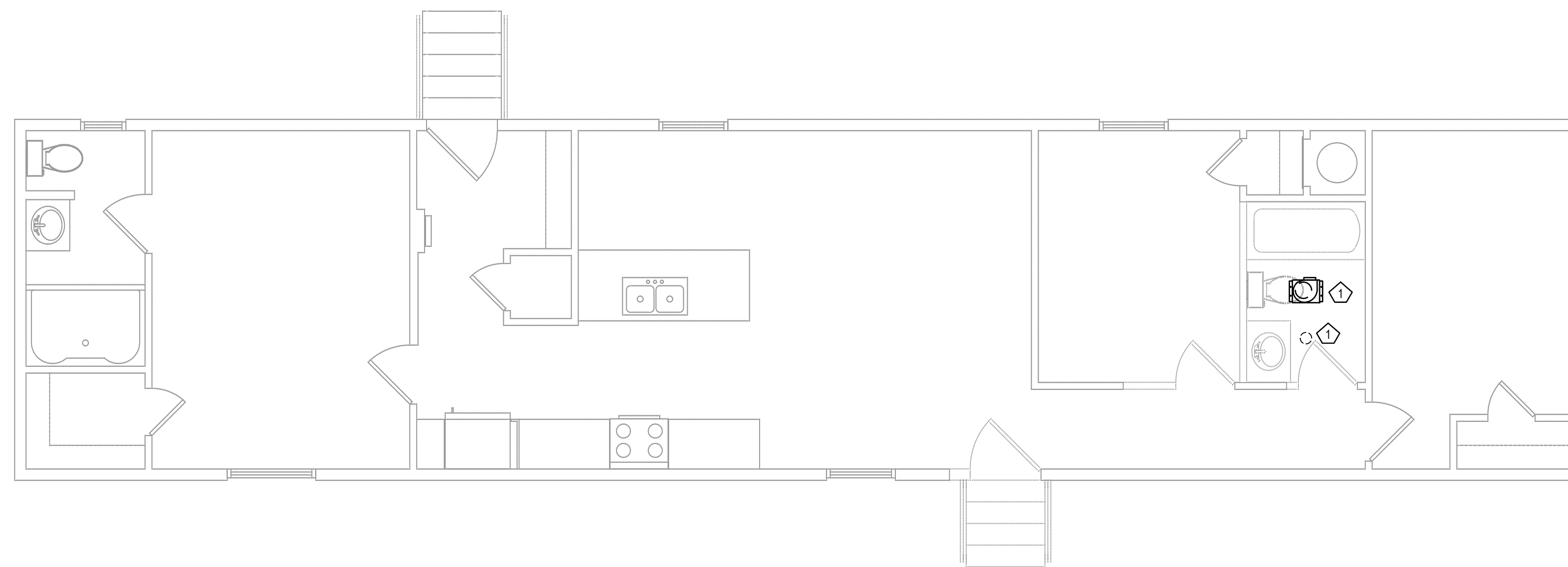
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CHECKED BY: GMS	

**ELECTRICAL LEGENDS AND NOTES**

# E0.1



DEMOS	
KEY VALUE	KEYNOTE TEXT
1	DEMO EXISTING LIGHT AND EXHAUST FAN. MAINTAIN EXISTING CIRCUIT.

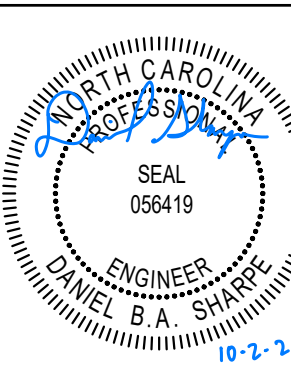
**1** ELECTRICAL DEMO PLAN  
SCALE - 1/4" = 1'0"



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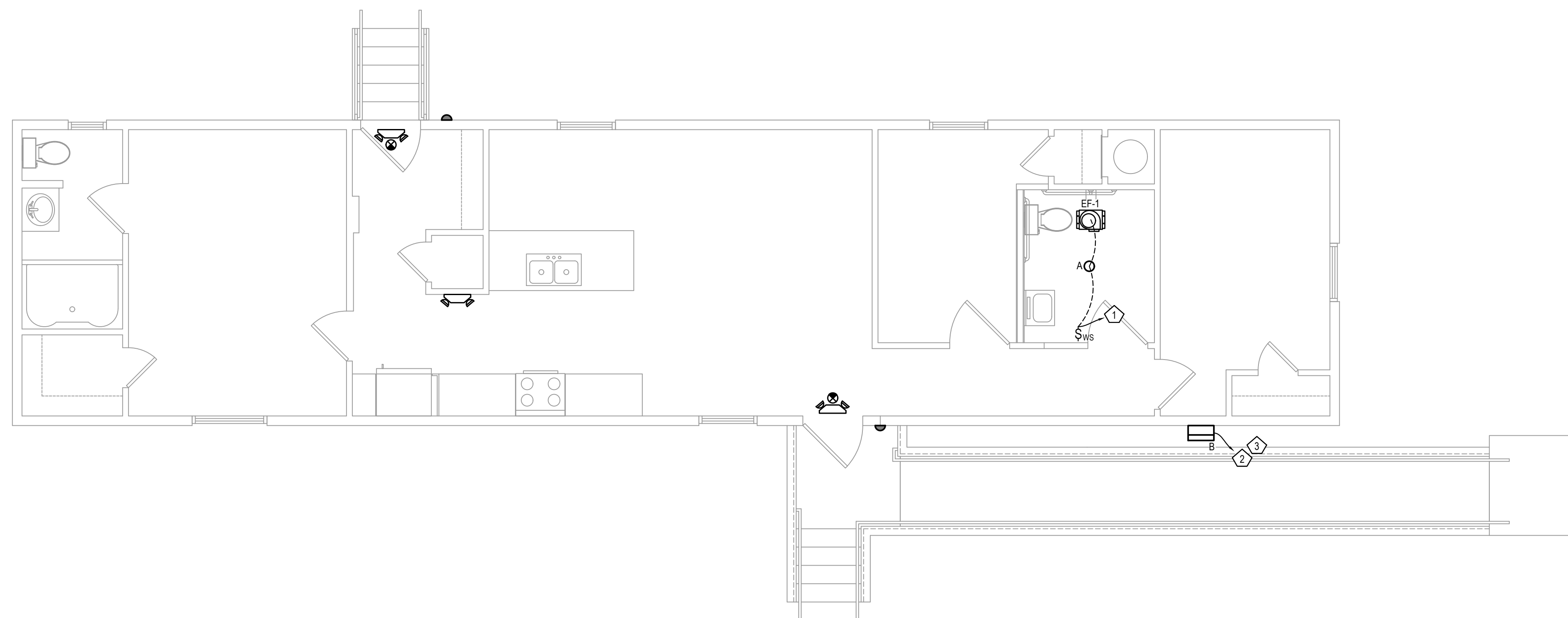
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DRAWN BY: DBAS  
CHECKED BY: DBAS

ELECTRICAL  
DEMO PLAN

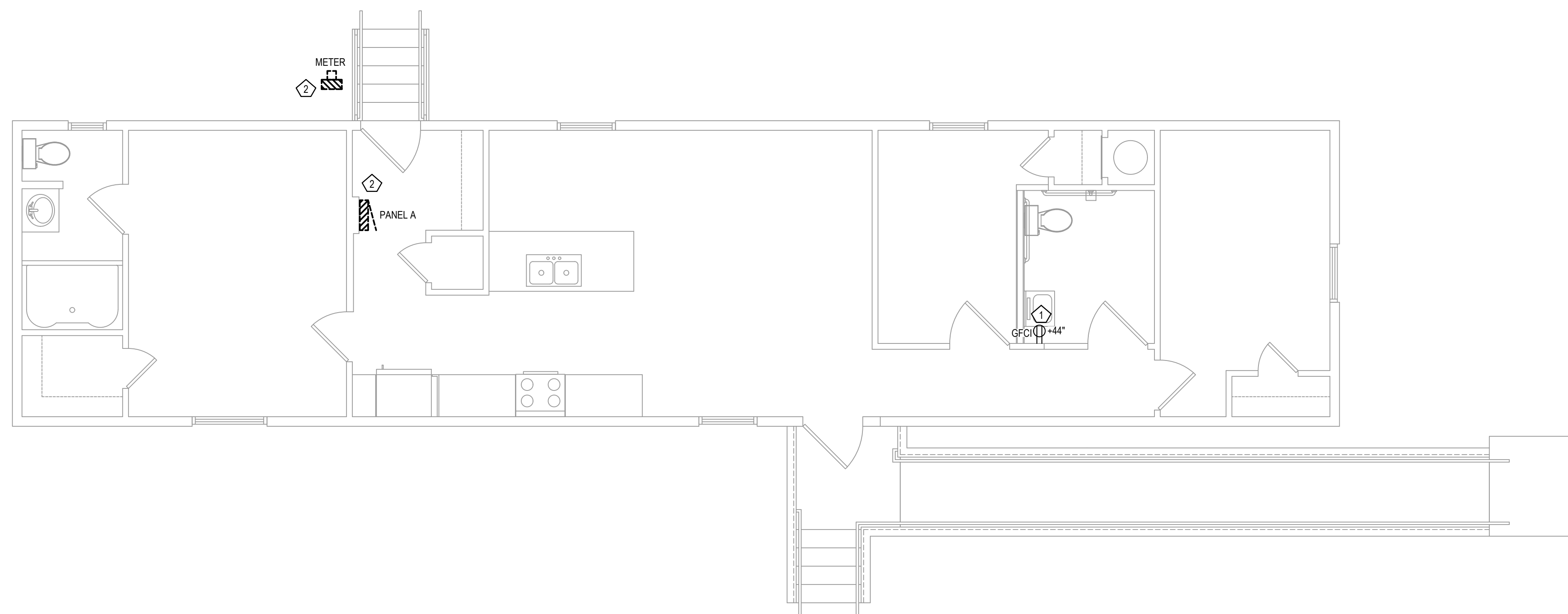
**E0.2**



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

LIGHTING KEYNOTE LEGEND	
KEY VALUE	KEYNOTE TEXT
1	CONNECT TO EXISTING LIGHTING CIRCUIT FROM EXISTING BATHROOM.
2	CIRCUIT NEW WALLPACK LIGHT TO CLOSEST AVAILABLE EXISTING LIGHTING CIRCUIT.
3	FIXTURE EQUIPPED WITH INTEGRAL BUTTON TYPE PHOTOCELL FOR DUSK TO DAWN OPERATION.

NOTE:  
SCOPE OF WORK IS LIMITED TO RE-WORKING EXISTING BATHROOM EXHAUST FAN, LIGHTING, AND PROVIDING EGRESS LIGHTING. ALL OTHER POWER DISTRIBUTION AND LIGHTING SYSTEMS, ETC. ARE EXISTING TO REMAIN UNLESS NOTED OTHERWISE.

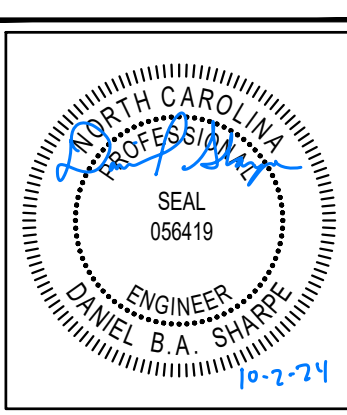


1 ELECTRICAL DEMO PLAN  
SCALE - 1/4" = 1'0"

POWER KEYNOTE LEGEND	
KEY VALUE	KEYNOTE TEXT
1	CONNECT TO EXISTING RECEPTACLE CIRCUIT FROM EXISTING BATHROOM.
2	PANEL AND METER ARE EXISTING TO REMAIN. SHOWN FOR REFERENCE ONLY.

NOTE:  
SCOPE OF WORK IS LIMITED TO RE-WORKING EXISTING BATHROOM EXHAUST FAN, LIGHTING, AND PROVIDING EGRESS LIGHTING. ALL OTHER POWER DISTRIBUTION AND LIGHTING SYSTEMS, ETC. ARE EXISTING TO REMAIN UNLESS NOTED OTHERWISE.

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ELECTRICAL PLANS

**E1.1**

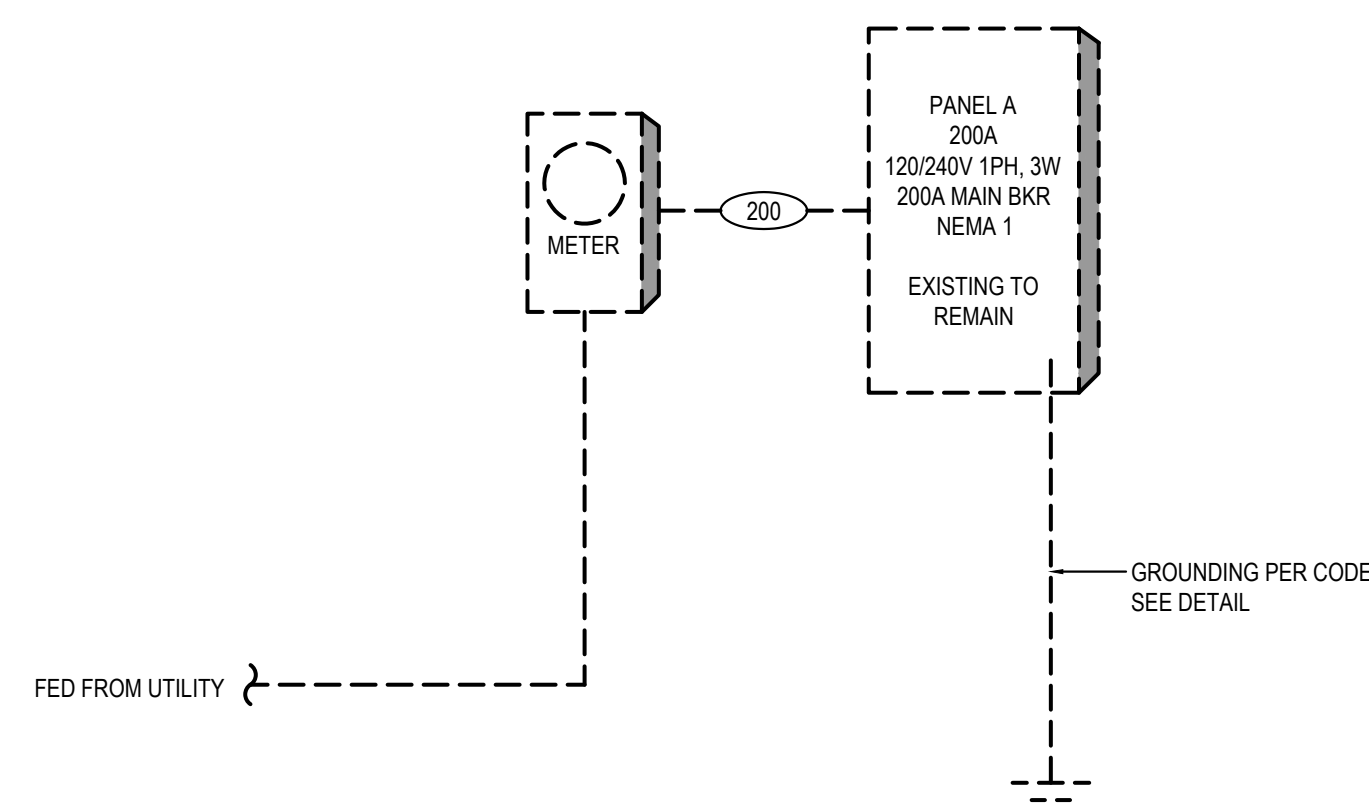


200 AMP MAIN BREAKER		EXISTING PANELBOARD A				LOCATION: OFFICE	
200 AMP BUS RATING		16 POLES				ENCLOSURE RATING: NEMA 1	
120/240 VOLTS		1 PHASE 3 WIRE 60 HZ				MOUNTING: RECESSED	
10 KA SHORT CIRCUIT RATING		LOAD KVA		BREAKER		DESCRIPTION	
CIRCUIT NO.	DESCRIPTION	BREAKER AMPS/POLES	PHASE A	PHASE B	AMPS/POLES		CIRCUIT NO.
1							2
3							4
5							6
7							8
9							10
11							12
13							14
15							16
17	SPARE						18
19	SPARE						20
TOTAL PHASE KVA PER PHASE			0	0		DEMAND KVA: 18.13	
TOTAL CONNECTED KVA			0	0		DEMAND AMPS: 76	
AMPS PER PHASE			0	0			

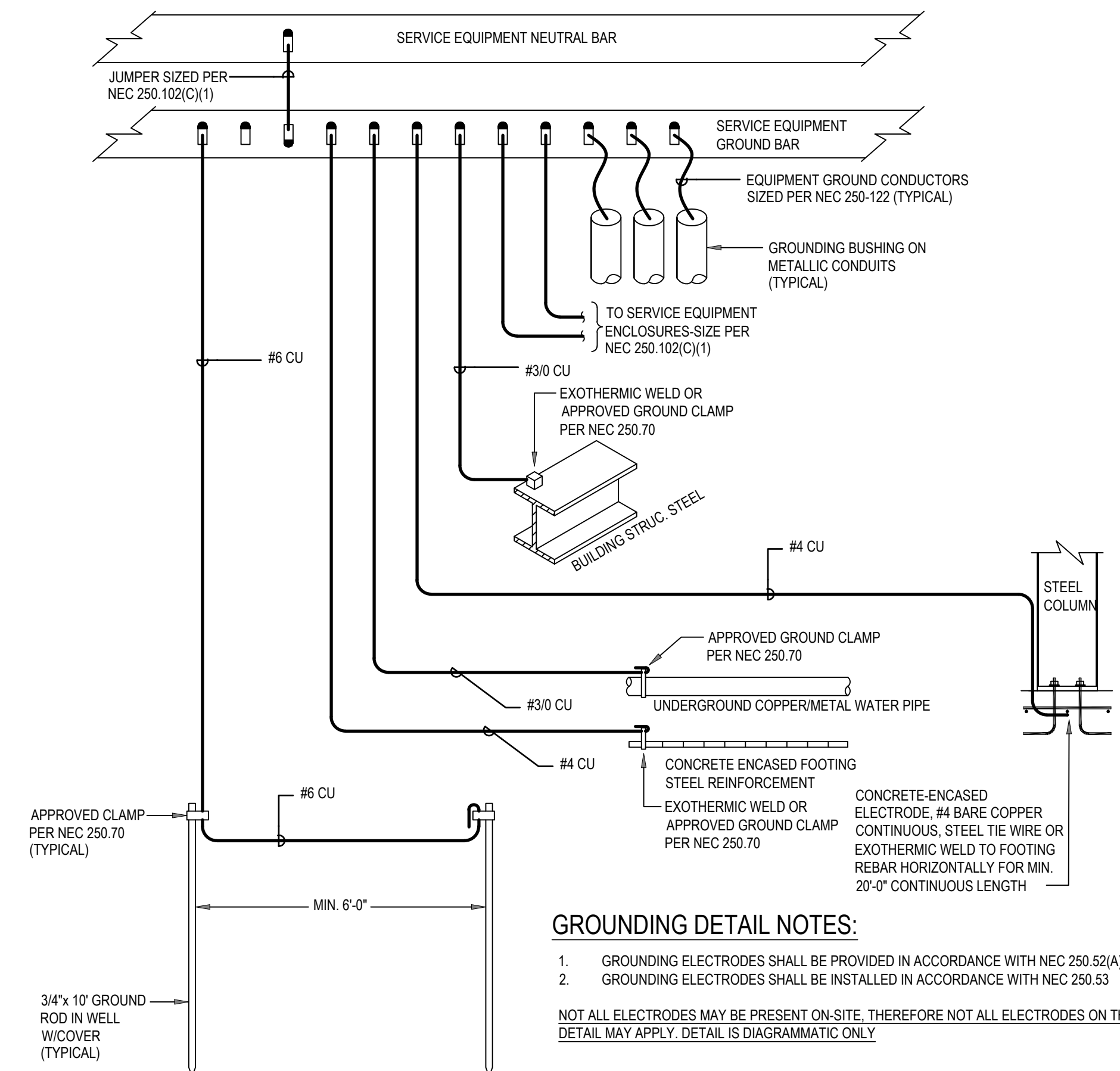
NOTES:  
 1 PANEL IS EXISTING TO REMAIN. NO ADDITIONAL CIRCUITS ADDED.  
 2  
 3  
 4

SUMMARY OF LOADS			
DESCRIPTION	CONNECTED (KVA)	DEMAND FACTOR	DEMAND (KVA)
EXISTING LOADS	18.13	1.00	18.13
TOTAL KVA	18.1		18.1
TOTAL AMPS	76		76

ALL CONDUCTORS AND EQUIPMENT ARE EXISTING TO REMAIN UNLESS NOTED OTHERWISE. SHOWN FOR REFERENCE ONLY.



1 ONE-LINE DIAGRAM  
NOT TO SCALE



GROUNDING DETAIL NOTES:  
 1. GROUNDING ELECTRODES SHALL BE PROVIDED IN ACCORDANCE WITH NEC 250.52(A).  
 2. GROUNDING ELECTRODES SHALL BE INSTALLED IN ACCORDANCE WITH NEC 250.53  
 NOT ALL ELECTRODES MAY BE PRESENT ON-SITE. THEREFORE NOT ALL ELECTRODES ON THIS DETAIL MAY APPLY. DETAIL IS DIAGRAMMATIC ONLY.

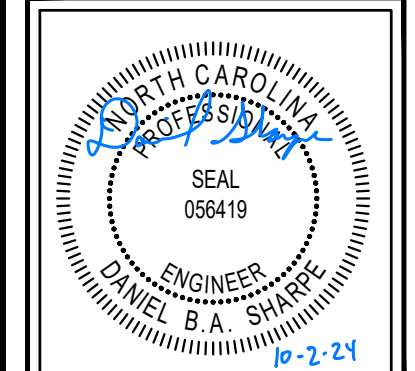
2 SERVICE GROUNDING DETAIL  
NOT TO SCALE

STANDARD OVERCURRENT PROTECTION SIZE	FEEDER WIRE - # SETS (CONDUCTOR SIZE, EQUIP. GND., CONDUIT SIZE)				CONDUCTOR TYPE: THHN - DRY; THWN - WET			
	COPPER WIRE		ALUMINUM WIRE		COPPER WIRE		ALUMINUM WIRE	
	WIRE	GEC	WIRE	GEC	WIRE	GEC	WIRE	GEC
30"	1 [3 #10, #10G, 3/4"C]		1 [3 #8, #8G, 3/4"C]					
35"	1 [3 #8, #10G, 3/4"C]		1 [3 #6, #6G, 1"C]					
40"	1 [3 #8, #10G, 3/4"C]		1 [3 #6, #6G, 1"C]					
45"	1 [3 #6, #10G, 1"C]		1 [3 #4, #8G, 1-1/4"C]					
50"	1 [3 #6, #10G, 1"C]		1 [3 #4, #8G, 1-1/4"C]					
60"	1 [3 #4, #10G, 1-1/4"C]	#8	1 [3 #3, #8G, 1-1/4"C]	#6				
70"	1 [3 #4, #8G, 1-1/4"C]	#8	1 [3 #2, #6G, 1-1/4"C]	#6				
80"	1 [3 #3, #8G, 1-1/4"C]	#8	1 [3 #1, #6G, 1-1/2"C]	#6				
90"	1 [3 #2, #8G, 1-1/4"C]	#8	1 [3 #10, #6G, 2"C]	#6				
100"	1 [3 #1, #6G, 1-1/2"C]	#8	1 [3 #10, #6G, 2"C]	#6				
110"	1 [3 #1, #6G, 1-1/2"C]	#8	1 [3 #10, #4G, 2"C]	#6				
125"	1 [3 #1, #6G, 1-1/2"C]	#6	1 [3 #20, #4G, 2"C]	#4				
150"	1 [3 #10, #6G, 2"C]	#6	1 [3 #30, #4G, 2"C]	#4				
175"	1 [3 #20, #6G, 2"C]	#4	1 [3 #40, #4G, 2-1/2"C]	#2				
200"	1 [3 #30, #6G, 2"C]	#4	1 [3 #250KCMIL, #4G, 2-1/2"C]	#2				
225"	1 [3 #40, #4G, 2-1/2"C]	#2	1 [3 #300KCMIL, #2G, 3"C]	#10				
250"	1 [3 #250KCMIL, #4G, 2-1/2"C]	#2	1 [3 #350KCMIL, #2G, 3"C]	#10				
300"	1 [3 #300KCMIL, #4G, 3"C]	#2	1 [3 #500KCMIL, #2G, 3"C]	#10				
350"	2 [3 #20, #3G, 2"C]	#2	2 [3 #40, #1G, 2-1/2"C]	#10				
400"	2 [3 #30, #3G, 2"C]	#2	2 [3 #250KCMIL, #1G, 2-1/2"C]	#10				
450"	2 [3 #40, #2G, 2-1/2"C]	#10	2 [3 #300KCMIL, #10G, 3"C]	#30				
500"	2 [3 #250KCMIL, #2G, 2-1/2"C]	#10	2 [3 #350KCMIL, #10G, 3"C]	#30				
600"	2 [3 #350KCMIL, #1G, 3"C]	#20	2 [3 #500KCMIL, #20G, 3"C]	#40				
700"	2 [3 #500KCMIL, #10G, 3"C]	#20	3 [3 #350KCMIL, #30G, 3"C]	#40				
800"	3 [3 #300KCMIL, #10G, 3"C]	#30	3 [3 #400KCMIL, #30G, 3"C]	#40				
1000"	3 [3 #400KCMIL, #20G, 3"C]	#30	4 [3 #350KCMIL, #40G, 3"C]	#40				

FEEDER SCHEDULE NOTES:  
 1. ALL FEEDER SIZES MAY NOT BE LISTED IN ONE-LINE DIAGRAM  
 2. ELECTRICAL CONTRACTOR TO VERIFY CONDUIT SIZE REQUIRED IF WIRE TYPES OTHER THAN THOSE LISTED ABOVE ARE USED. REFER TO APPLICABLE TABLE IN ANNEX C OF NEC.  
 3. IF CONDUIT OTHER THAN EMT IS REQUIRED, BASE BID ON NEXT TRADE SIZE ABOVE THAT INDICATED.  
 4. 'GEC' DENOTES GROUNDING ELECTRODE CONDUCTOR PER NEC TABLE 250.66.  
 5. DO NOT PULL EQUIPMENT GROUNDING CONDUCTOR PRIOR TO FIRST MEANS OF DISCONNECT WHERE GROUNDING ELECTRODE CONDUCTOR IS PULLED.  
 \* EC SHALL VERIFY WITH AUTHORITY HAVING JURISDICTION AND UTILITY COMPANY THAT ALUMINUM CONDUCTORS ARE ACCEPTABLE FOR USE AS UTILITY TRANSFORMER SECONDARIES AND FEEDER CIRCUITS.

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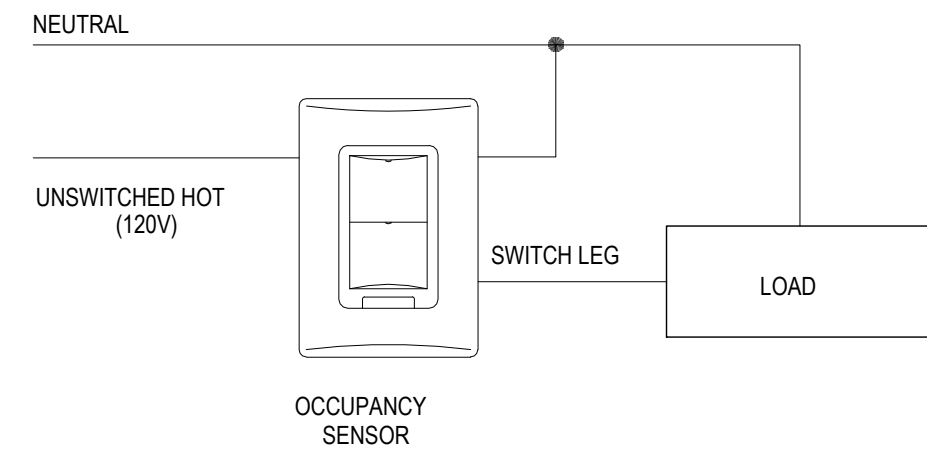
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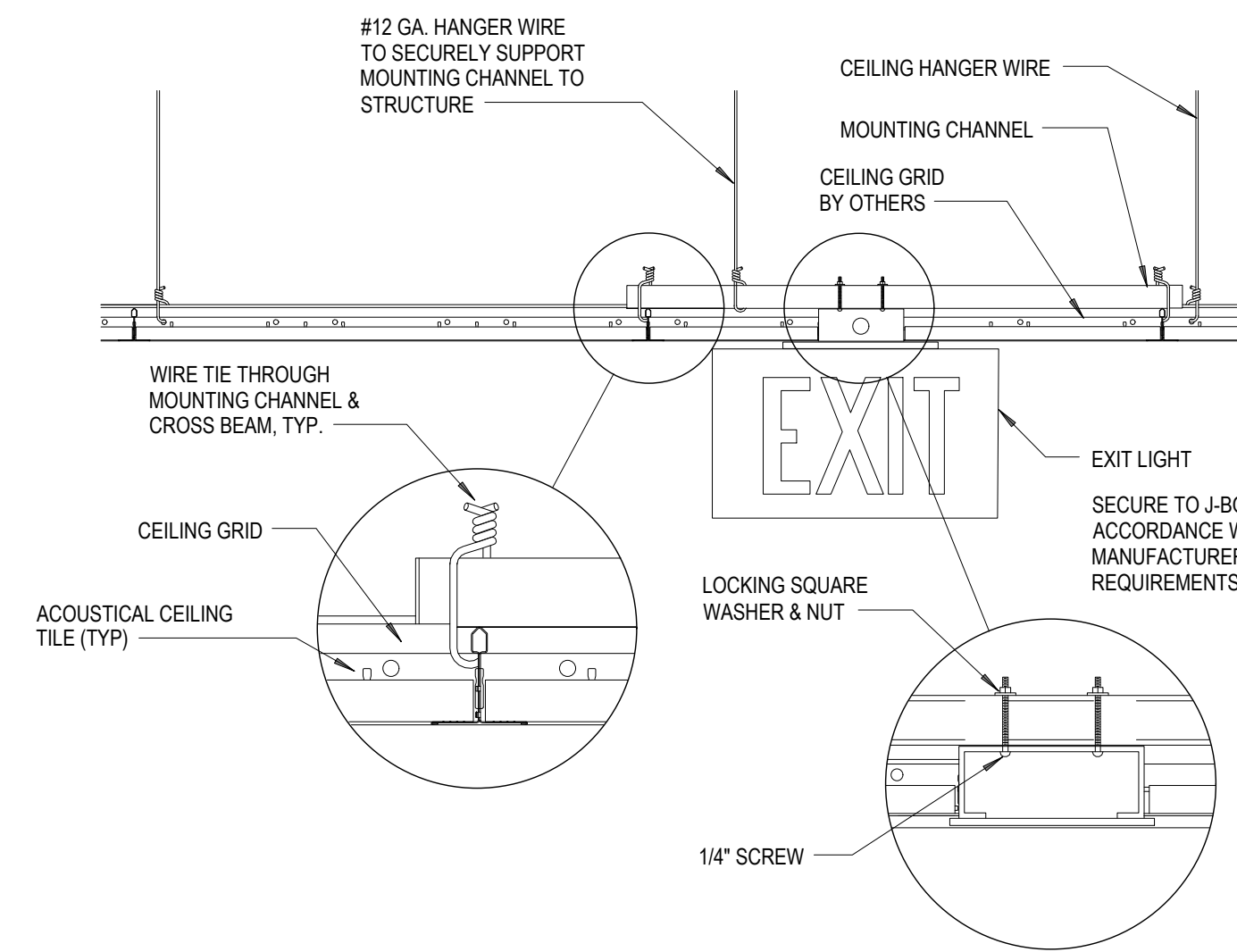
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PANEL SCHEDULE AND ONE-LINE DIAGRAM

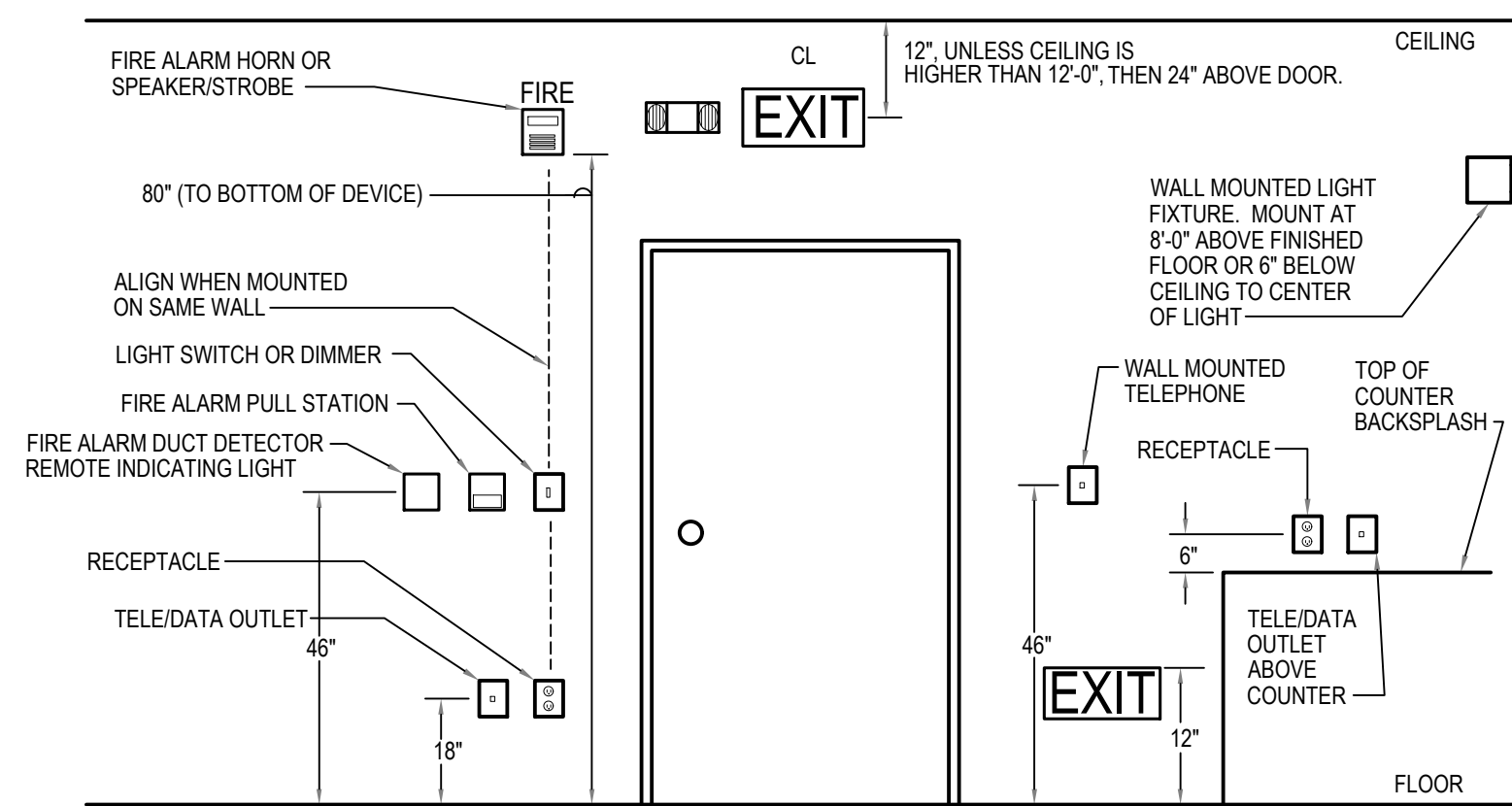
E2.1



**1 WALL MOUNTED LINE VOLTAGE OCCUPANCY SENSOR**  
NOT TO SCALE

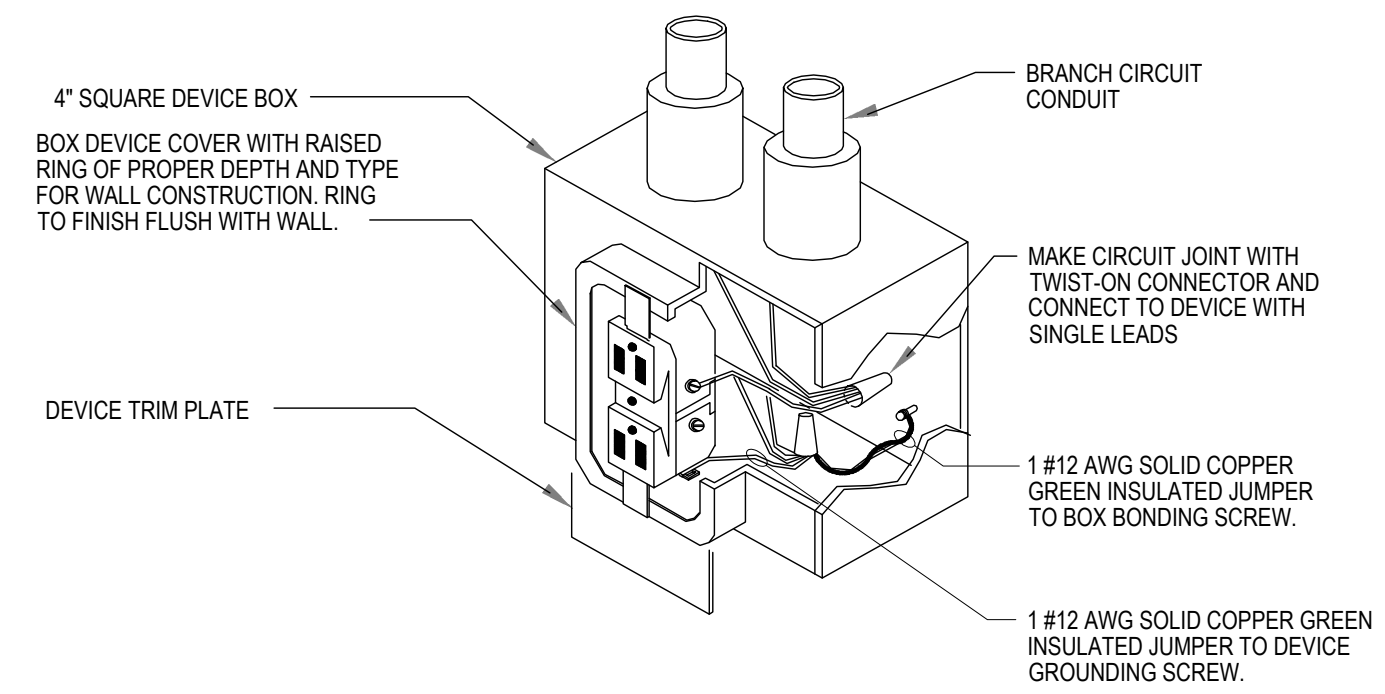


**2 TYPICAL EXIT LIGHT CEILING INSTALLATION DETAIL**  
NOT TO SCALE

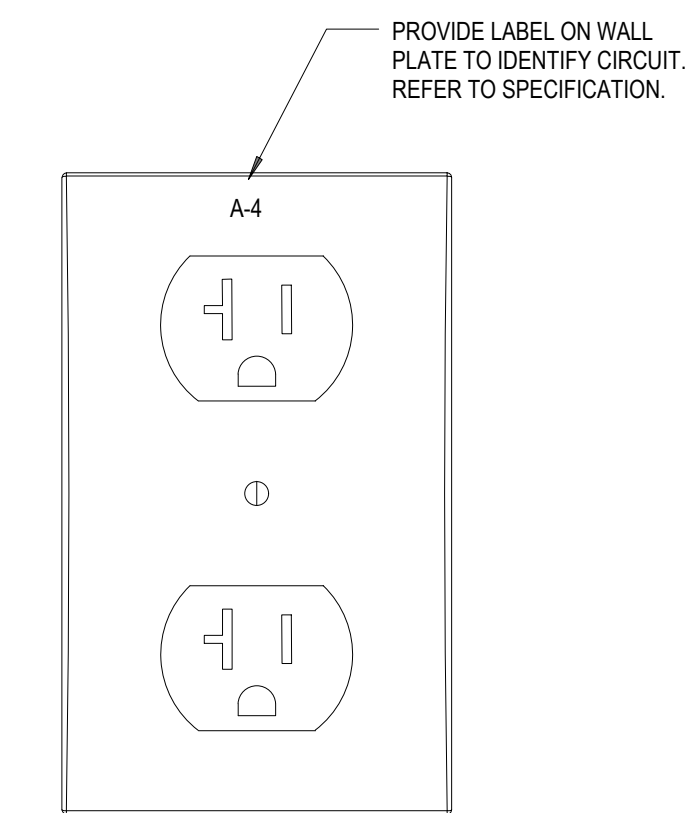


NOTES:  
1. ALL DIMENSIONS ARE TO CENTER LINE OF DEVICE, UNLESS OTHERWISE NOTED.

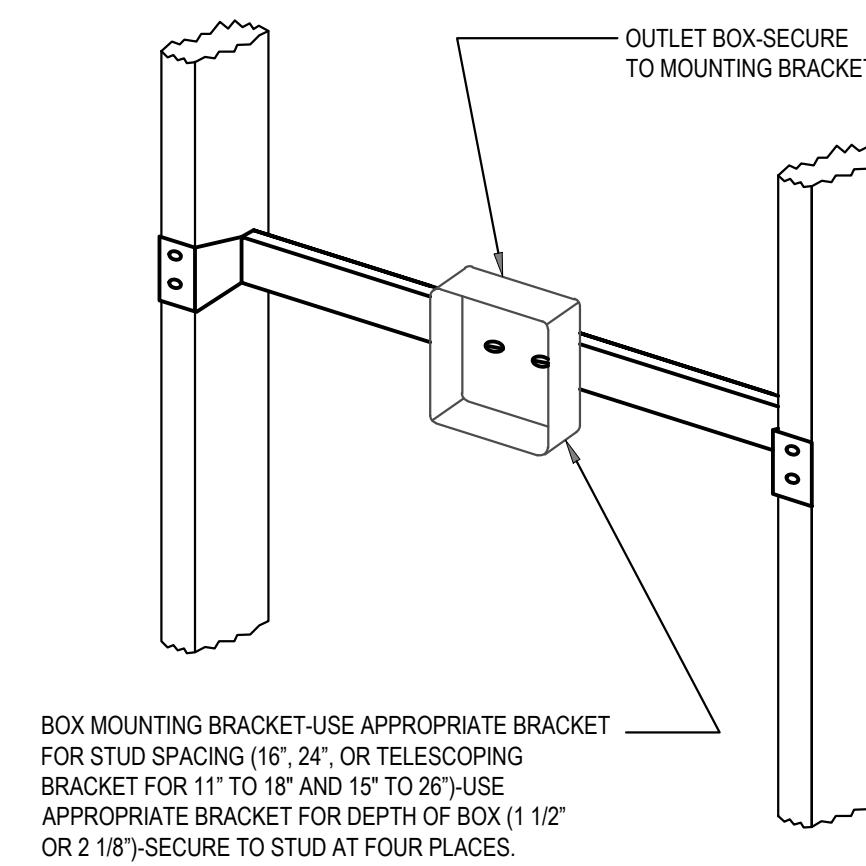
**3 TYPICAL DEVICE MOUNTING ELEVATION**  
NOT TO SCALE



**4 RECEPTACLE GROUNDING DETAIL**  
NOT TO SCALE



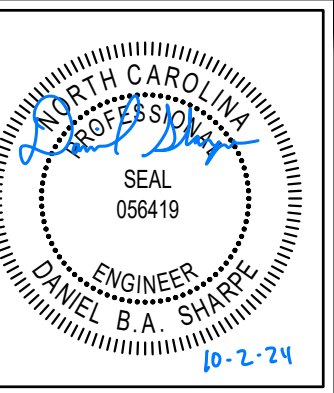
**5 RECEPTACLE FACEPLATE LABEL DETAIL**  
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**6 OUTLET BOX MOUNTING DETAIL**  
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ELECTRICAL DETAILS

**E3.1**