# **SHEET INDEX:**

- COVER SHEET & INDEX TO DRAWINGS
- BCS BUILDING CODE SUMMARY
- BUILDING LIFE SAFETY EGRESS PLAN
- SITE PLAN (DEFERRED SUBMITTAL BY OTHER)
- FOUNDATION PLAN & DETAILS
- ROOF FRAMING & DETAILS
- BUILDING FLOOR PLAN & SCHEDULES
- **BUILDING ELEVATIONS**
- BUILDING SECTIONS & WALL DETAILS
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- ACCESSIBLE RESTROOM DETAILS
- MECHANICAL NOTES AND DETAILS
- MECHANICAL HVAC PLAN
- ELECTRICAL RISER, SCHEDULES & NOTES
- ELECTRICAL POWER & LIGHTING PLAN
- PLUMBING WASTE AND WATER PLAN

# PROJECT:

# TIRADO OFFICE BUILDING

US 421 SOUTH, LILLINGTON, NC 27546

# PROJECT TEAM:

# **BUILDING DEPARTMENT:**

HARNETT COUNTY PLANNING & INSPECTIONS DEPARTMENT 420 MCKINNEY PARKWAY LILLINGTON, NC 27546 910-893-7525

## BUILDING OWNER

LUIS TIRADO 3577 OLD US 421 LILLINGTON, NC 27546 919-648-3999

**CONSTRUCTION MANAGEMENT:** 

PROJECT DESIGNER:

1606 MCARTHUR ROAD

KELLY J. DODSON

**BUDDY JENKINS** 

910-822-1724

JENKINS CONSULTING ENGINEERS, P.A.

OFFICE in EUREKA SPRINGS, NC

FAYETTEVILLE, NC 28311-1002

## CODE REVIEW:

APPLICABLE CODES INCLUDE BUT ARE NOT LIMITED TO THE FOLLOWING:

2018 NC BUILDING CODE BUILDING **PLUMBING** 2018 NC PLUMBING CODE

2018 NC MECHANICAL CODE MECHANICAL 2020 NATIONAL ELECTRICAL CODE (NFPA-70) ELECTRICAL

FIRE PREVENTION 2018 NC FIRE CODE

**ENERGY** 2018 NC ENERGY CONSERVATION CODE

ICC A117.1-2009 AND THE AMERICANS WITH DISABILITIES ACT (ADAAG) **ACCESSIBILITY** 

2018 NC BUILDING CODE CHAPTER 11

# VICINITY PLAN

NOT TO SCALE

**BUILDING DATA:** 

THE PROJECT SCOPE IS TO CONSTRUCT A NEW BUILDING TO BE USED AS A BUSINESS OFFICE.

PERMITTING STAMP

**NORTH** 

BUILDING

OOFFICE SOUTH, LILLINGTON,

	FRONTAGE INCREASE WORKSHEET for CALCULATIONS:													
EXTERIOR WALL	(F) OPEN LENGTH (feet)	(P) TOTAL LENGTH (feet)	(W) (weighted average) WIDTH OF PUBLIC WAY OR OPEN SPACE (feet)	(%) FROM CALC. ABOVE	(B) FROM TABLE ABOVE	AREA INCREASE FOR COLUMN (C) ABOVE (% * TABLE AREA)								
North														
South														
East														
West														
TOTAL	1	1												

42 23,500 (.42\*23,500 = 9,870)

2 Unlimited area applicable under conditions of Sections 507

3 Maximum Building Area = total number of stories in the building x D (maximum 3 stories) (Section 506.2).

4 The maximum area of open parking garages must comply with Table 406.5.4. The maximum area of air traffic control towers must comply with Table 412.3.1

<sup>5</sup> Frontage increase is based on the unsprinklered area value in Table 506.2.

#### BUILDING CODE SUMMARY (continued)

# ALLOWABLE HEIGHT

	ALLOWABLE	SHOWN ON PLANS	REFERENCE
Building Height in Feet (Table 504.3)	40	20'-7"	-
Building Height in Stories (Table 504.4)	2	1	=
4 D 11 1 ( 15 1) #01 DI		L F04.7 F04.4	

1. Provide code reference if the "Shown on Plans" quantity is not based on Table 504.3 or 504.4.

#### FIRE PROTECTION REQUIREMENTS

	FIRE	RATING **	(TABLE 601)	DETAIL #	DECICN #	CUEET #	SHEET #
BUILDING ELEMENT	SEPARATION DISTANCE (feet)	REQ'D V-B	PROVIDED (w/* REDUCTION	AND SHEET #	DESIGN # FOR RATED ASSEMBLY	SHEET # FOR RATED PENETRATION	FOR RATE JOINTS
Structural Frame, including columns, girders, trusses		0	0	N/A	N/A	N/A	N/A
Bearing Walls Exterior		0	0	N/A	N/A	N/A	N/A
North		0	0	N/A	N/A	N/A	N/A
East		0	0	N/A	N/A	N/A	N/A
West		0	0	N/A	N/A	N/A	N/A
South		0	0	N/A	N/A	N/A	N/A
Interior		0	0	N/A	N/A	N/A	N/A
Nonbearing walls and partitions  Exterior walls		0	0	N/A	N/A	N/A	N/A
North		0	0	N/A	N/A	N/A	N/A
East		0	0	N/A	N/A	N/A	N/A
West		0	0	N/A	N/A	N/A	N/A
South		0	0	N/A	N/A	N/A	N/A
Interior Non-Bearing Walls		0	0	N/A	N/A	N/A	N/A
Floor construction including supporting beams and joist	s	0	0	N/A	N/A	N/A	N/A
Floor Ceiling Assembly		0	0	N/A	N/A	N/A	N/A
Columns Supporting Floors		0	0	N/A	N/A	N/A	N/A
Roof construction including supporting beams and joist	s	0	0	N/A	N/A	N/A	N/A
Roof Ceiling Assembly		0	0	N/A	N/A	N/A	N/A
Columns Supporting Roof		0	0	N/A	N/A	N/A	N/A
Shaft Enclosures — Exit		0	0	N/A	N/A	N/A	N/A
Shaft Enclosures - Other		0	0	N/A	N/A	N/A	N/A
Corridor Separation		0	0	N/A	N/A	N/A	N/A
Occupancy / Fire Barrier Separation		0	0	N/A	N/A	N/A	N/A
Party/Fire Wall Separation		0	0	N/A	N/A	N/A	N/A
Smoke Barrier Separation		0	0	N/A	N/A	N/A	N/A
Smoke Partition		0	0	N/A	N/A	N/A	N/A
OWNER/Dwelling Unit/ Sleeping Unit Separation		0	0	N/A	N/A	N/A	N/A
Incidental Use Separation		0	0	N/A	N/A	N/A	N/A

\* Indicate section number permitting reduction

#### PERCENTAGE OF WALL OPENING CALCULATIONS

EXTERIOR WALL	FIRE SEPARATION DISTANCE (feet) FROM PROPERTY LINE	DEGREE OF OPENINGS PROTECTION (TABLE 705.8)	ALLOWABLE AREA (%)	ACTUAL SHOWN ON PLANS (%)
North	_	-	-	-
South	-	-	-	-
East		-	-	-
West	-	_	_	_

#### LIFE SAFETY SYSTEM REQUIREMENTS

Emergency Lighting:	Yes	□ No		
Exit Signs:	Yes	□ No		
Fire Alarm:	☐ Yes	<b>☑</b> No		
Smoke Detection Systems:	☐ Yes	⊠No	<b>Partial</b>	□ Duct Detectors
Carbon Monoxide Detection:	☐ Yes	<b>☑</b> No		
Life Safety Systems Generator:	☐ Yes	<b>☑</b> No		

#### LIFE SAFETY PLAN REQUIREMENTS

☐ Fire and/or smoke rated wall locations (Chapter 7)

☐ Assumed and real property line locations (if not on the site plan)

Exterior wall opening area with respect to distance to assumed property lines (705.8)

© Occupancy Use for each area as it relates to occupant load calculation (Table 1004.1.2) Occupant loads for each area

Exit access travel distances (1017)

Life Safety Plan Sheet #: LS

☐ Common path of travel distances [1006.2.1 & 1006.3.2(1)] ☐ Dead end lengths (1020.4)

Clear exit widths for each exit door

Maximum calculated occupant load capacity each exit door can accommodate based on egress width (1005.3) Actual occupant load for each exit door

☐ A separate schematic plan indicating where fire rated floor/ceiling and/or roof structure is provided for purposes of occupancy separation

□ Location of doors with panic hardware (1010.1.10)

□ Location of doors with delayed egress locks and the amount of delay (1010.1.9.7)

□ Location of doors with electromagnetic egress locks (1010.1.9.9) ☐ Location of doors equipped with hold-open devices

☐ Location of emergency escape windows (1030)

☐ The square footage of each fire area (903) ☐ The square footage of each smoke compartment for Occupancy Classification I-II (407.5)

□ Note any code exceptions or table notes that may have been utilized regarding the items above

#### ACCESSIBLE DWELLING UNITS (SECTION 1107) ACCESSIBLE ACCESSIBLE TYPE A TYPE B TYPE B TOTAL

REQUIRED PROVIDED REQUIRED PROVIDED REQUIRED	PROVIDED	PROVIDED
NONE REQUIRED		

#### ACCESSIBLE PARKING (SECTION 1106)

	TOTAL # OF PARKING	SPACES	# OF ACCESSIB	# OF ACCESSIBLE SPACES PROVIDED							
LOT OR Parking Area	REQUIRED	PROVIDED	REGULAR WITH 5' ACCESS AISLE	VAN SPACE 132" ACCESS AISLE	S WITH 96" ACCESS AISLE	TOTAL # ACCESSIBLE PROVIDED					
EE CIVIL DRAWING											
OTAL											

BUILDING CODE SUMMARY (continued)

#### PLUMBING FIXTURE REQUIREMENTS (TABLE 2902.1)

USE	W	URINALS		LAVATORIE	:S	SHOWERS/	DRINKING	SERVICE			
USE	MALE	FEMALE	UNISEX	OKIIOLS	MALE	FEMALE	UNISEX	TUBS	REGULAR	ACCESSIBLE	SINK
OFFICE (B) : REQUIRE			1	0			1		0	0	0
OFFICE (B) : PROVIDED			1	0			1		0	0	0

SPECIAL APPROVALS:

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

#### **ENERGY SUMMARY**

#### **ENERGY REQUIREMENTS:**

The following data shall be considered minimum and any special attribute required to meet the energy code shall also be provided. Each Designer shall furnish the required portions of the project information for the plan data sheet. If performance method, state the annual energy cost for the standard reference design vs annual energy cost for the

Existing building envelope complies with code:

Climate Zone: 3A 2 4A 5A HARNETT COUNTY

Energy Code: Performance Prescriptive ASHRAE 90.1: ☐ Performance ☐ Prescriptive

Other: Performance (specify source)

Value of total assembly: -

THERMAL ENVELOPE: (Prescriptive method only)

Skylights in each assembly:

Roof/ceiling Assembly #1 (each assembly) METAL BUILDING ROOF PANEL + WOOD TRUSS ATTIC SPACE Description of assembly: U-Value of total assembly: R-Value of insulation: R-38 (EXCEPTION "e")

U-Value of skylight: Total square footage of skylights in each assembly:

Exterior Walls Assembly #1 (each assembly Description of assembly: BRICK VENEER/FIBER CEMENT BOARD + WOOD STUD FRAMING

U-Value of total assembly: R-Value of insulation:

Openings (windows or doors with glazing) U-Value of assembly: 0.31 (0.32 MAX) Solar heat gain coefficient:

0.23 (0.25 MAX) Projection factor:

Description of assembly: U-Value of total assembly: R-Value of insulation:

Description of assembly: U-Value of total assembly:

Floors slab on grade Description of assembly:

R-Value of insulation:

U-Value of total assembly R-Value of insulation: Horizontal/vertical requirement:

HARNETT COUNTY BUILDING CODE SUMMARY for:

TIRADO OFFICE BUILDING

US 421 SOUTH, LILLINGTON, NC 27546



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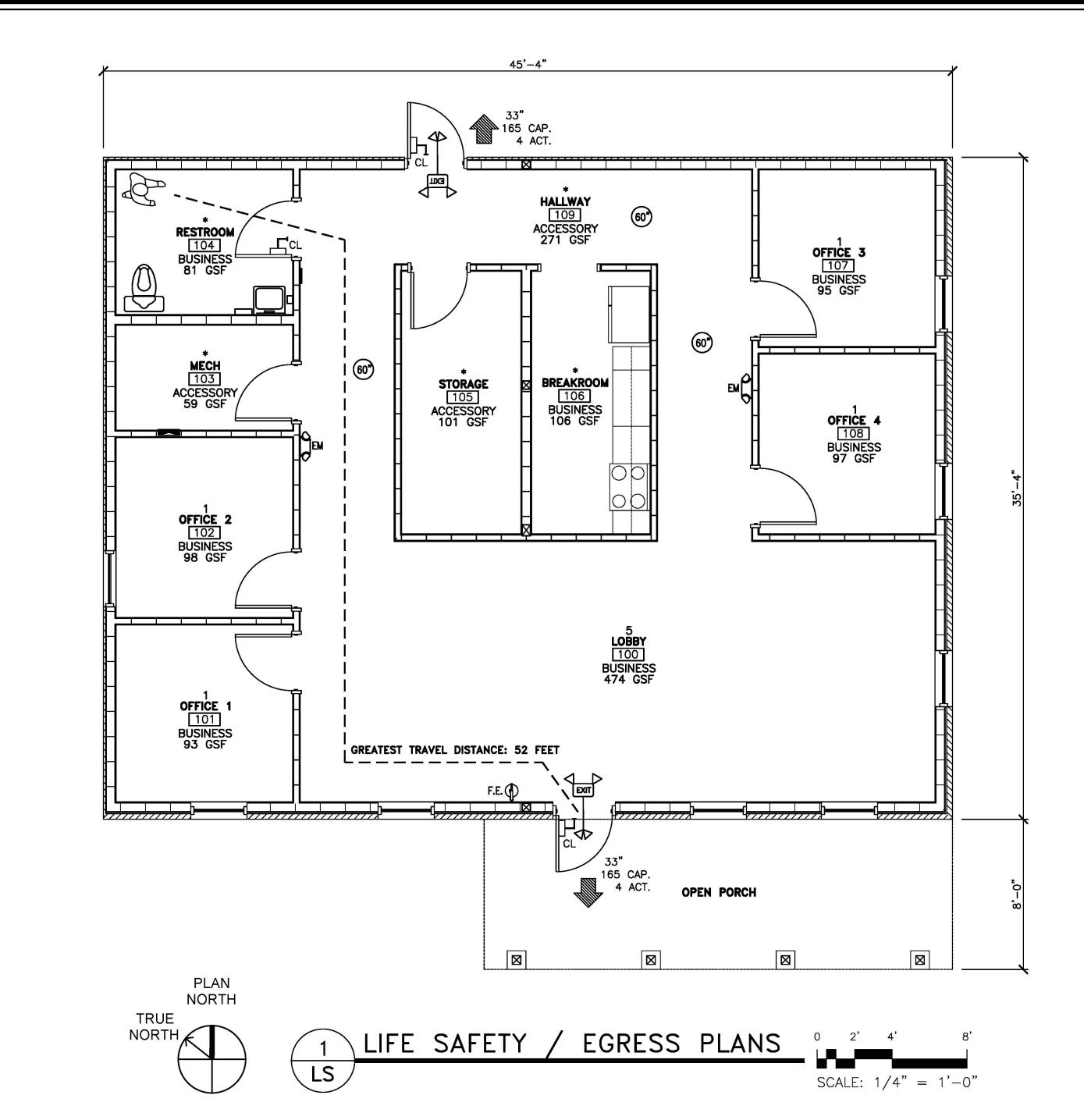
SUMMAR CODE

BUILDING OFFICE **TIRADO** 

BUILDING

PERMITTING STAMP

BCS



	OCCUPANCY	CLASSIFICA	ATION pe	er TAB	LE 1004.5	5
SPACE NUMBER	CURRENT SPACE USE	FUNCTION OF SPACE	OCCUPANT LOAD FACTOR	ROOM AREA (GROSS SF)	CALCULATED EGRESS OCCUPANCY TOTAL	
100	LOBBY	BUSINESS	100 GROSS	474	5	5
101	OFFICE 1	BUSINESS	100 GROSS	93	1	1
102	OFFICE 2	BUSINESS	100 GROSS	98	1	*
103	MECH	ACCESSORY	300 GROSS	59	*	*
104	RESTROOM	BUSINESS	100 GROSS	81		*
105	STORAGE	ACCESSORY	300 GROSS	101	*	*
106	BREAKROOM	BUSINESS	100 GROSS	106	*	*
107	OFFICE 3	BUSINESS	100 GROSS	95	1	1
108	OFFICE 4	BUSINESS	100 GROSS	97	1	1
109	HALLWAY	ACCESSORY	300 GROSS	271	*	*
TOTAL OCCUPAN	NT COUNT FOR BUILDING & EGRE	SS CAPACITY			8	
	PACITY SHALL BE BASED UPON OCCUPANT NUMBER ACCOUNTED FO		PERSONS			

<u>LEGEND</u>		TIRADO OFFICE
SYMBOL	<u>DESCRIPTION</u>	<b>BUSINESS (B):</b>
F.E. <b>(</b> )	ABC FIRE EXTINGUISHER SUGGESTED LOCATION	GROSS SQUARE FOOTAGE OF I TYPE OF CONSTRUCTION: V-B
\$	GREATEST TRAVEL DISTANCE	BUILDING IS TO BE USED AS A BI THIS BUILDING IS NOT PROTECTED OCCUPANT LOAD FOR CALCULATING
33"	EXIT WIDTH, $36^{\circ} - 3 = 33^{\circ}$ CLEAR WIDTH.	SPACE OCCUPANCY BY FUNCTION
165 CAP. 22 ACT.	EXIT CAPACITY (NUMBER OF PERSONS) ACTUAL OCCUPANT LOAD FOR EXIT DOOR	SEE TABLE ON THIS SHEET FOR II TOTAL OCCUPANT LOAD BY AREAS
EXIT	EXIT SIGN	
EM	EMERGENCY LIGHT	GREATEST TRAVEL DISTANCE SHOW MAXIMUM ALLOWABLE TRAVEL DISTA THE COMMON PATH OF TRAVEL IS THERE ARE NO DEAD END CORRID
36°)	AISLE WIDTH WHERE SHOWN	BUILDING EXIT WIDTH CALCULATION 8 PERSON * 0.2"/OCCUPANT = 1
<b>→</b>	EXIT SIGN WITH EMERGENCY LIGHTING	MIN. NO. OF EXIT REQUIRED: ONE NUMBER OF EXITS PROVIDED: TWO
h a	CL— DOOR CLOSER	EGRESS DOORS DO NOT REQUIRE DOORS DO NOT HAVE DELAYED EG DOORS DO NOT HAVE ELECTROMAG DOORS DO NOT HAVE HOLD OPEN THERE ARE NO EMERGENCY ESCAF NO. OF FIRE EXTINGUISHERS PROV
ROOM LABEL	<u>DESCRIPTION</u>	PROVIDE ONE (1) FIRE EXTINGUISH
1	OCCUPANT TOTAL	FIRE EXTINGUISHER FOR CLASS A OF MAXIMUM TRAVEL DISTANCE IN
OFFICE	ROOM NAME	OF INVALIDATION TO THE DISTRICT IN
101	ROOM NUMBER	
BUSINESS 100 SF	FUNCTION TYPE SPACE AREA	

	BUSINESS (B):
•	GROSS SQUARE FOOTAGE OF BUILDING 1,800 SQ. FT. TYPE OF CONSTRUCTION: V-B BUILDING IS TO BE USED AS A BUSINESS OFFICE. THIS BUILDING IS NOT PROTECTED BY FIRE SPRINKLERS OCCUPANT LOAD FOR CALCULATING EGRESS CAPACITY: SPACE OCCUPANCY BY FUNCTION OF SPACE SEE TABLE ON THIS SHEET FOR INDIVIDUAL SPACE TOTALS TOTAL OCCUPANT LOAD BY AREAS = 8 PERSONS
	GREATEST TRAVEL DISTANCE SHOWN: 52 FEET. (PER 1017)

MUM ALLOWABLE TRAVEL DISTANCE: 200 FEET (PER TABLE 1017.2)
COMMON PATH OF TRAVEL IS LESS THAN 75 FEET. (PER 1006.2.1) E ARE NO DEAD END CORRIDORS OVER 20 FEET. (PER 1020.4) DING EXIT WIDTH CALCULATIONS:

ERSON \* 0.2"/OCCUPANT = 1.6" REQUIRED, 66" TOTAL PROVIDED (PER 1005.1)

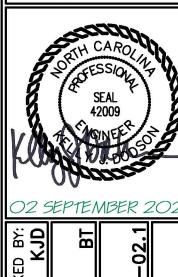
NO. OF EXIT REQUIRED: ONE (1) (PER TABLES 1006.2.1 AND 1006.3.2(2))

BER OF EXITS PROVIDED: TWO (2) ACCESSIBLE ESS DOORS DO NOT REQUIRE PANIC HARDWARE. (PER 1010.1.10) S DO NOT HAVE DELAYED EGRESS LOCKS (PER 1010.1.9.7)
S DO NOT HAVE ELECTROMAGNETIC EGRESS LOCKS (PER 1010.1.9.9)

S DO NOT HAVE HOLD OPEN DEVICES. E ARE NO EMERGENCY ESCAPE WINDOWS (PER 1030) OF FIRE EXTINGUISHERS PROVIDED:
WIDE ONE (1) FIRE EXTINGUISHER AT THIS BUILDING

EXTINGUISHER FOR CLASS A FIRE HAZARDS REQUIRE NO GREATER THAN 75 FT IAXIMUM TRAVEL DISTANCE IN LOW, ORDINARY AND EXTRA HAZARD OCCUPANCY.

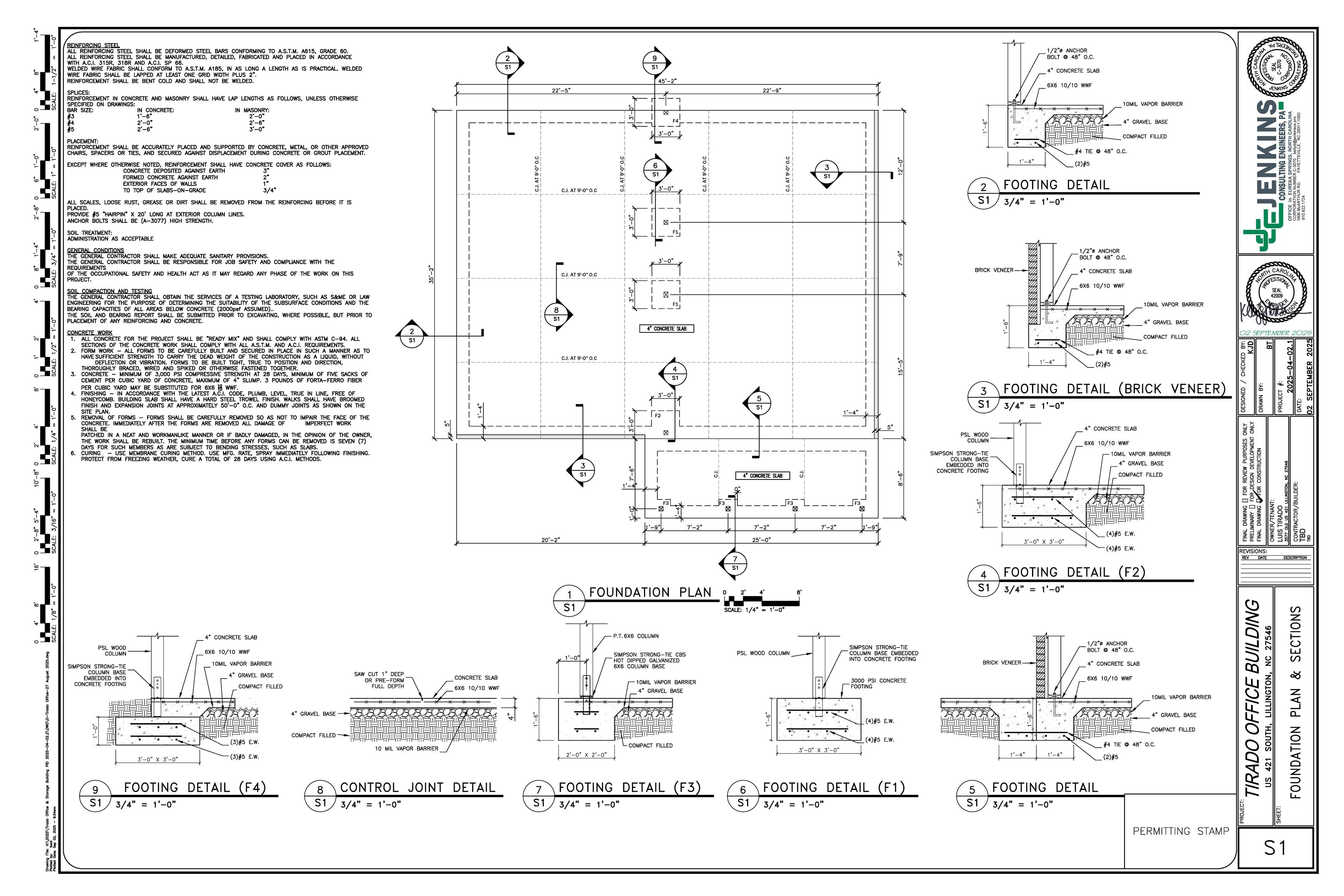
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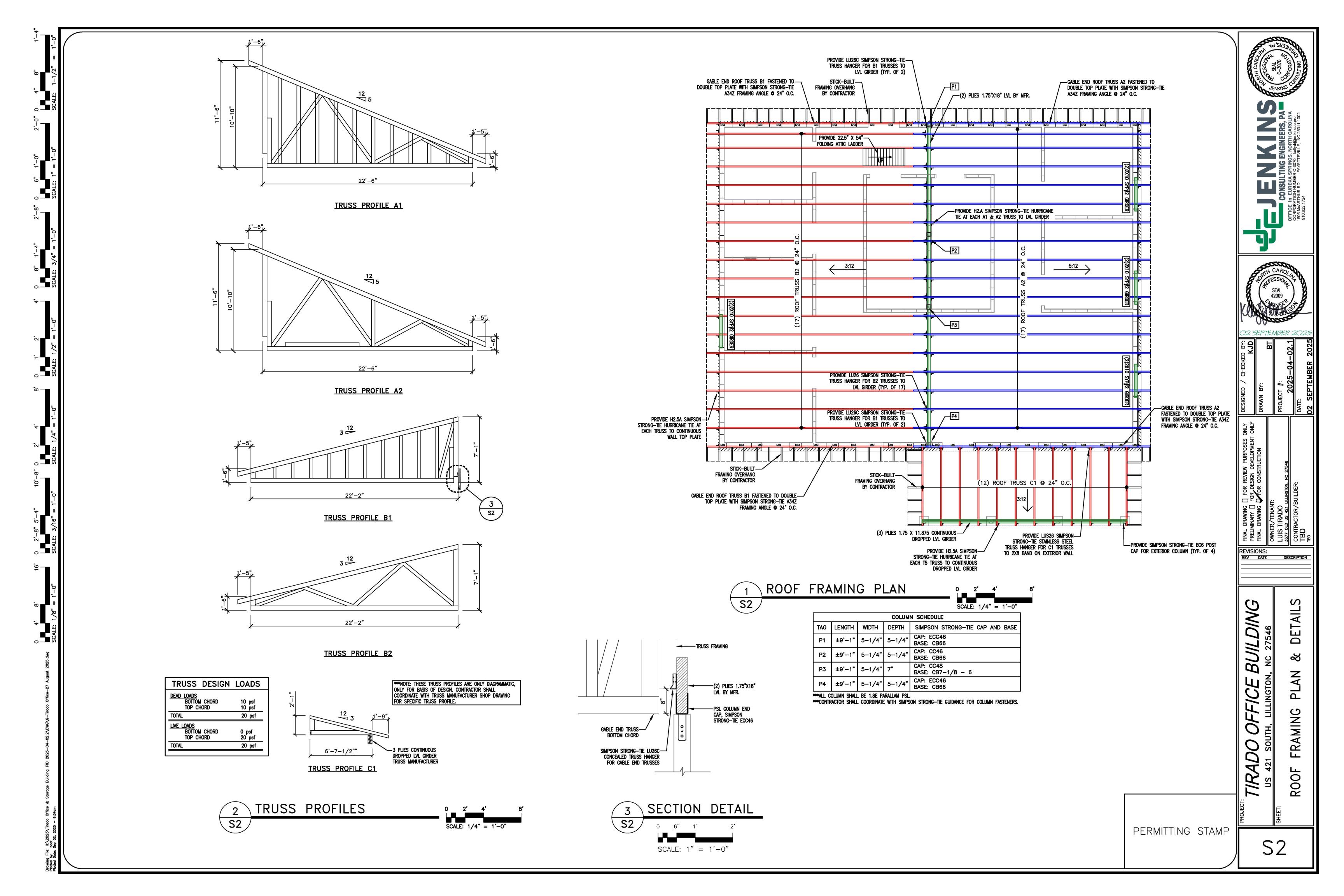


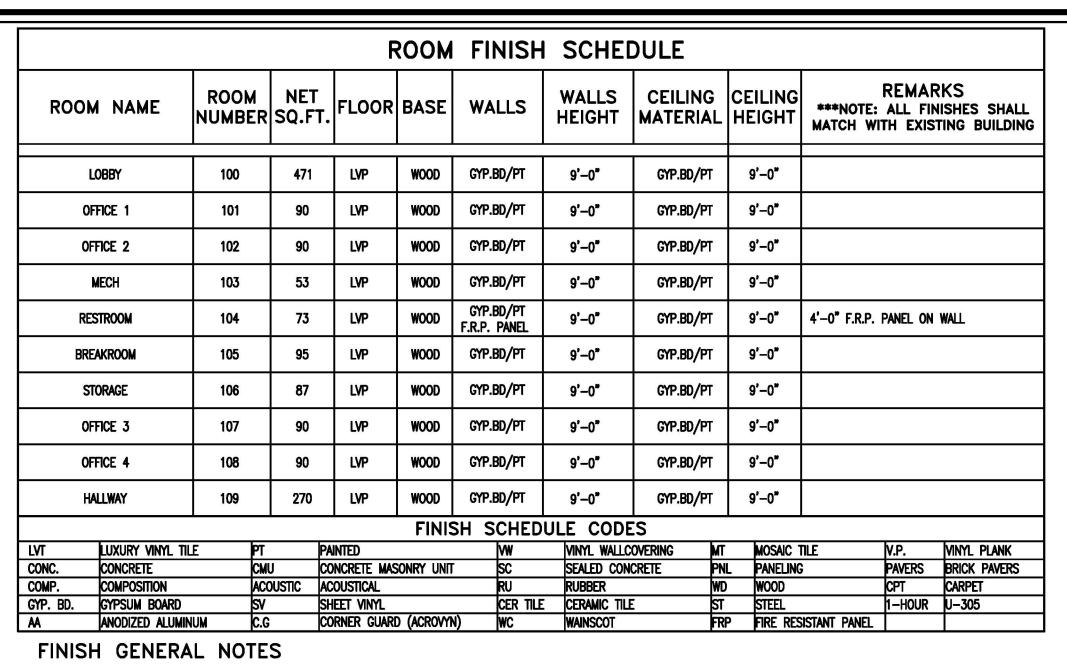
BUILDING

BUILDING LIFE EGRESS

**TIRADO** 







- 1. FINISH SCHEDULE DESCRIBES ONLY THE BASIC SURFACE FINISH.
- CASEWORK FINISHES ARE NOT SHOWN IN THE DRAWING. REFER TO SPECIFICATIONS FOR MATERIALS AND FINISHES.
- 3. PROVIDE CORNER GUARDS AS SHOWN ON FINISHES DRAWING. 4. F.R.P. WALL PANEL SHALL BE 51" TALL A.F.F.

DOOR NO		DOOR SIZ	E		DOOR		F	RAME							H/	RDWA	RE					REMARKS						
	WIDTH	НЕІСНТ	THICKNESS			FINISH	TYPE		FINISH	FIRE RATING	ENTRANCE LOCK	STOREROOM LOCK	PASSAGE SET	PRIVACY SET	PUSH/PULL	PANIC SET	CLOSER	STOP	THRESHOLD	KICK PLATES	WEATHERSTRIPPING	NOTE:  G.C. TO REVIEW ALL HARDWARE SETS, MATERIAL AND FINISHES WITH OWNER BEFORE ORDER & INSTALLATION						
D100	3'-0" X			A	НМ	Р	1	HM	Р		X						X	X	X	Х	X	EXTERIOR SINGLE DOOR, HINGED - LOBBY						
D101	3'-0" X	7'-0" X	1-3/4"	В	WD	Р	2	WD	Р		X											INTERIOR SINGLE DOOR, HINGED - OFFICE 1						
D102	3'-0" X	7'-0" X	1-3/4"	В	WD	Р	2	WD	Р		X											INTERIOR SINGLE DOOR, HINGED - OFFICE 2						
D103	3'-0" X	7'-0" X	1-3/4"	В	WD	Р	2	WD	Р		X											INTERIOR SINGLE DOOR, HINGED - MECH						
D104	3'-0" X	7'-0" X	1-3/4"	В	WD	Р	2	WD	Р					X			Χ	Χ		Х		INTERIOR SINGLE DOOR, HINGED — RESTROOM 104						
D105	3'-0" X	7'-0" X	1-3/4"	В	WD	Р	2	WD	Р		Χ											INTERIOR SINGLE DOOR, HINGED - STORAGE						
D106	3'-	-0" X 7'-	-0 <b>"</b>	-	_	-	2	WD	Р													INTERIOR CASED OPENING — BREAKROOM						
D107	3'-0" X	7'-0" X	1-3/4"	В	WD	Р	2	WD	Р		X											INTERIOR SINGLE DOOR, HINGED - OFFICE 3						
D108			1-3/4"		WD	Р	2	WD	Р		X											INTERIOR SINGLE DOOR, HINGED - OFFICE 4						
D109	1 100 100 100	II 017 TOOLS	1-3/4"	С	НМ	Р	3	НМ			X						Х	Χ	Х	Х	Х	EXTERIOR SINGLE DOOR, HINGED - HALLWAY						

- 1. APPLY 2 COATS OF SEMI-GLOSS TO ALL WOOD DOORS.
- 2. ALL EXIT DOORS TO BE OPERABLE FROM THE INSIDE WITHOUT THE USE OF A KEY, TOOL, SPECIAL KNOWLEDGE OF EFFORT. ALL HARDWARE MUST
- BE DIRECT ACTING REQUIRING NOT MORE THAN ONE OPERATION. 3. DOOR HANDLES, PULLS, LATCHES, LOCKS AND OTHER OPERABLE PARTS ON ACCESSIBLE DOORS SHALL HAVE A SHAPE THAT IS EASY TO GRASP WITH ONE HAND AND DOES NOT REQUIRE TIGHT GRASPING, PINCHING OR TWISTING OF THE WRIST TO OPERATE. OPERABLE PARTS OF SUCH HARDWARE SHALL BE 34" MINIMUM AND 48" MAXIMUM ABOVE THE FLOOR PER ICC/ANSI A117.1-2009 SECTIONS 404.2.6& 404.2.7
- 4. G.C. TO REVIEW ALL HARDWARE SETS WITH OWNER BEFORE INSTALLATION 5. PROVIDE TRANSITION STRIPS AT ALL FLOORING MATERIAL CHANGES
- PASSAGE SET: (CLOSET & HALL) PASSAGE LOCKSETS KEEP DOORS FIRMLY CLOSED, BUT DO NOT ACTUALLY LOCK. BOTH LEVERS ALWAYS TURN FREE WITH NO LOCK CYLINDER OR
- PRIVACY SET:

**ENTRANCE LOCK:** 

PROVISION FOR A KEY. (RESTROOM) PRIVACY LOCKSETS ARE LOCKED WITH AN INSIDE PUSH-BUTTON. TURNING THE INSIDE KNOB OR LEVER RELEASES THE LOCK. A SMALL SCREWDRIVER

ALL THRESHOLDS TO MEET ADA SPECIFICATIONS

CAN BE USED AS AN EMERGENCY KEY, FROM THE OUTSIDE, IF NECESSARY. (ENTRY) ENTRANCE LOCKED BY PUSHING AND TURNING A BUTTON AND UNLOCKED BY THE KEY UNTIL THE INSIDE BUTTON IS MANUALLY UNLOCKED. THEY ARE ALSO AVAILABLE WITH PUSHBUTTON LOCKING, IN WHICH PUSHING THE BUTTON LOCKS THE OUTSIDE KNOB OR LEVER UNTIL IT IS UNLOCKED BY KEY OR BY TURNING THE INSIDE KNOB OR LEVER. THE INSIDE KNOB OR LEVER IS ALWAYS FREE FOR IMMEDIATE EXIT.

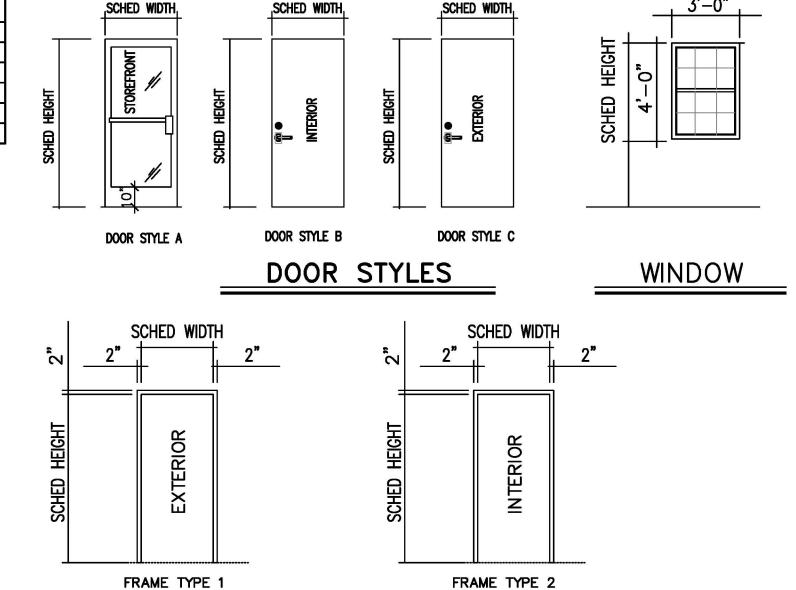
	DOOR SCHED	ULE	LEGEND
Н	HEIGHT	НМ	HOLLOW METAL KNOCK-DOWN
W	WIDE	Р	PAINT
ALUM	ALUMINUM	S	STAIN
WD	WOOD-SOLID CORE	М	METAL
T	THICKNESS	WI	WROUGHT IRON
		VA/B	VERIFY ANODIZED OR BRONZE

	WINDOW S	CHEDUI	LE
WINDOW NO	WINDOW SIZE (WIDTH X HEIGHT)	FRAME MATERIAL	REMARKS
WEO1	3'-0" X 4'-0"	ALUM	EXTERIOR WIDNOW
WE02	3'-0" X 4'-0"	ALUM	EXTERIOR WIDNOW
WE03	3'-0" X 4'-0"	ALUM	EXTERIOR WIDNOW
WEO4	3'-0" X 4'-0"	ALUM	EXTERIOR WIDNOW
WE05	3'-0" X 4'-0"	ALUM	EXTERIOR WIDNOW
WE06	3'-0" X 4'-0"	ALUM	EXTERIOR WIDNOW
WE07	3'-0" X 4'-0"	ALUM	EXTERIOR WIDNOW
WE08	3'-0" X 4'-0"	ALUM	EXTERIOR WIDNOW

#### **NOTES:**

- FINISH SELECTION PER OWNER
   WINDOWS SHALL BE ALUMINUM, SINGLE HUNG WITH LOCKING HARDWARE, PROVIDE EXTERIOR WINDOW INSECT SCREEN.
- 3. GLAZING SHALL BE 1" INSULATED, ARGON FILLED. 4. PROVIDE INTERIOR BLINDS AT EACH WINDOW.
- 5. WINDOW U-VALUE SHALL BE 0.31 (0.32 MAX). 6. WINDOW SOLAR HEAT GAIN COEFFICIENT SHALL BE 0.23 (0.25

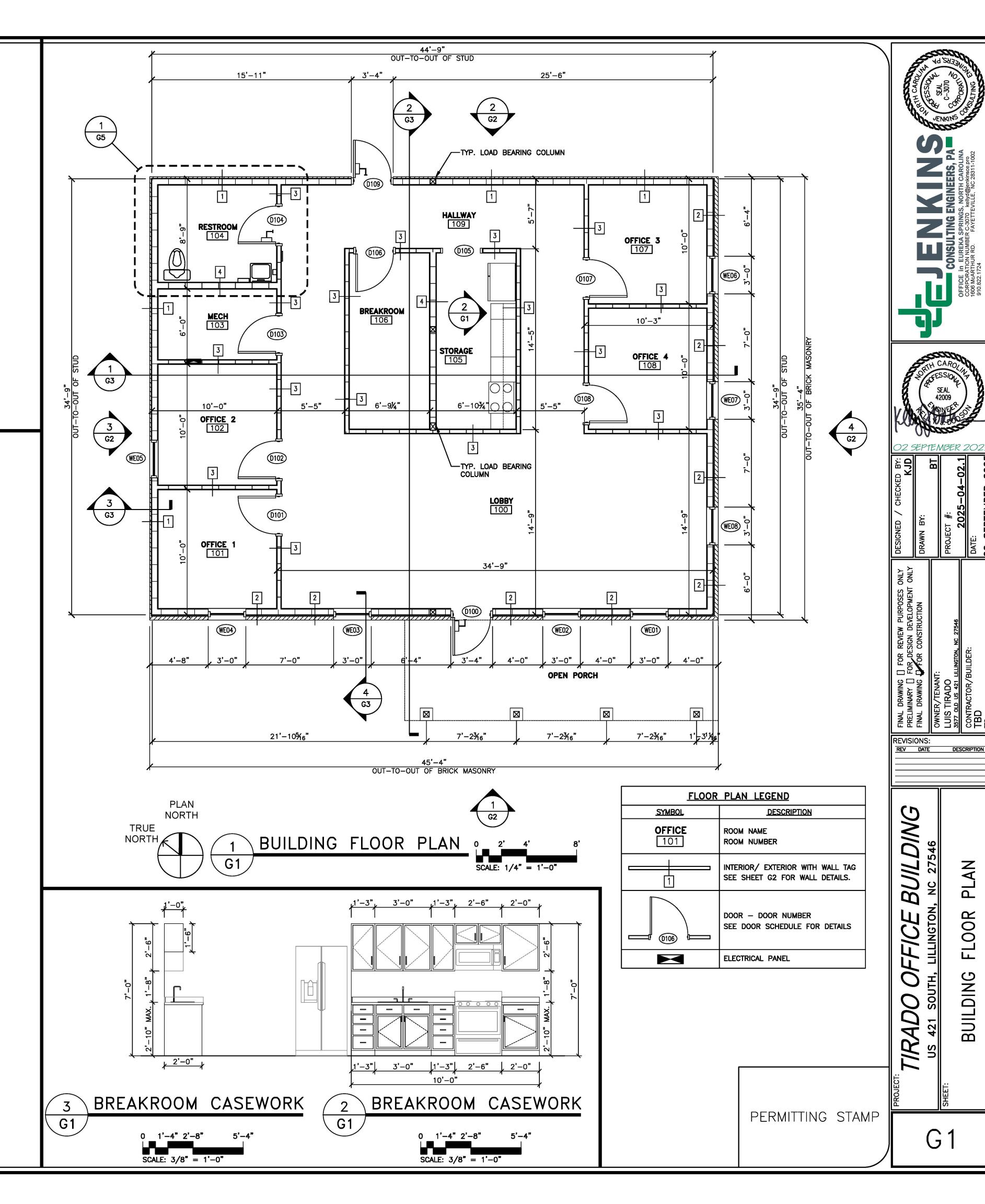
7. OPTÍONAL VINYL WINDOWS MAYBE PROVIDED IF APPROVED BY





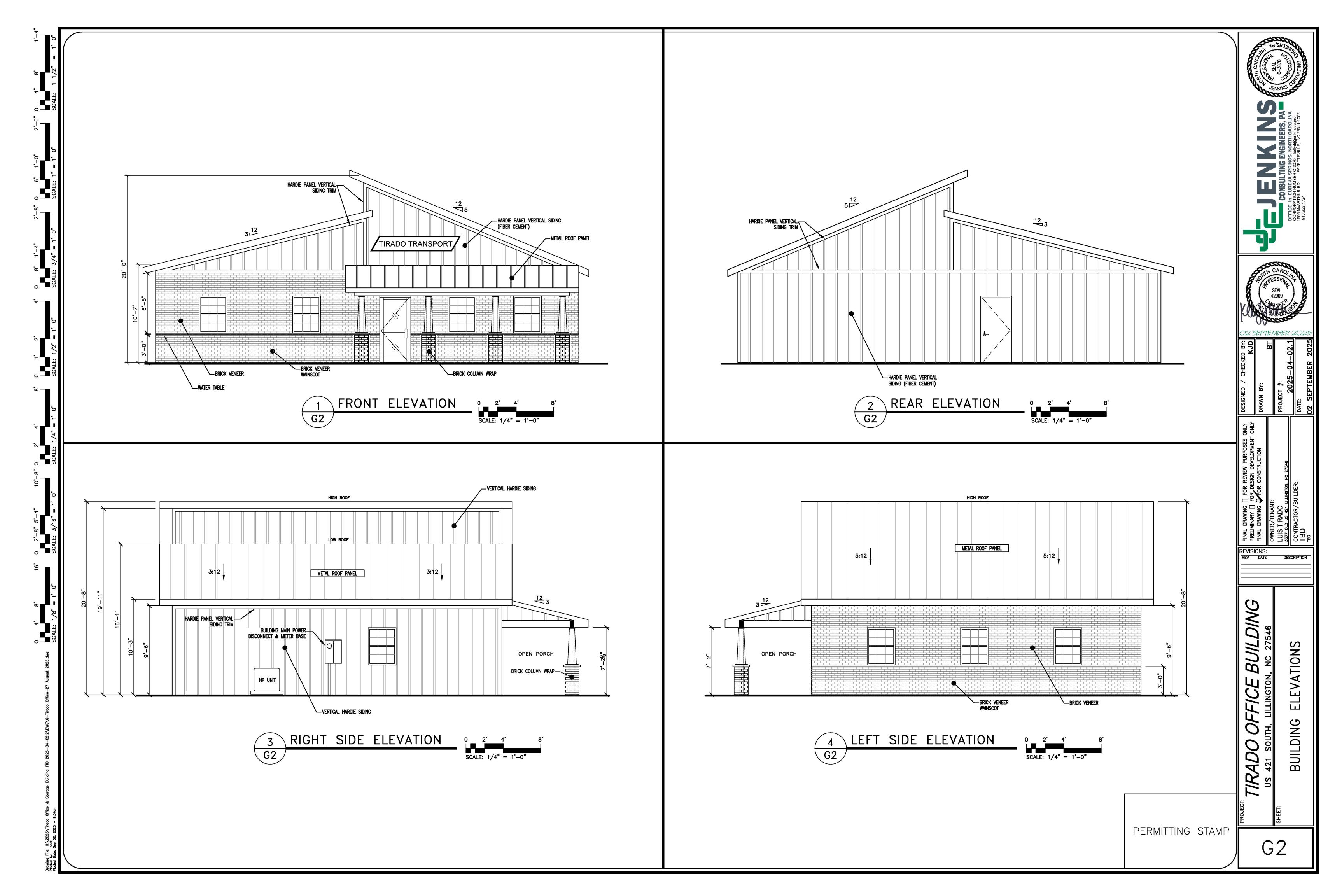
(INTERIOR WOOD)

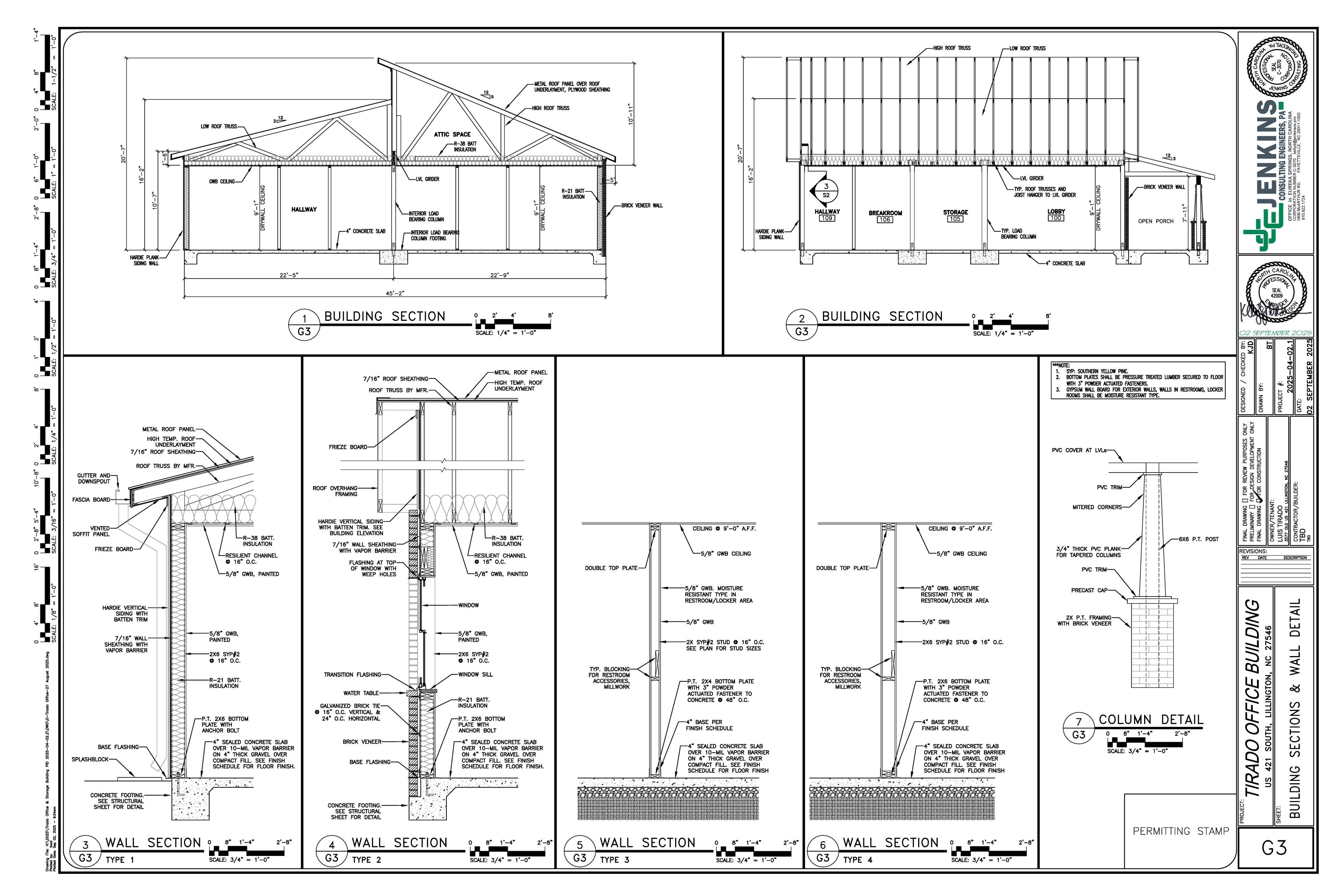
(HOLLOW METAL HINGED)

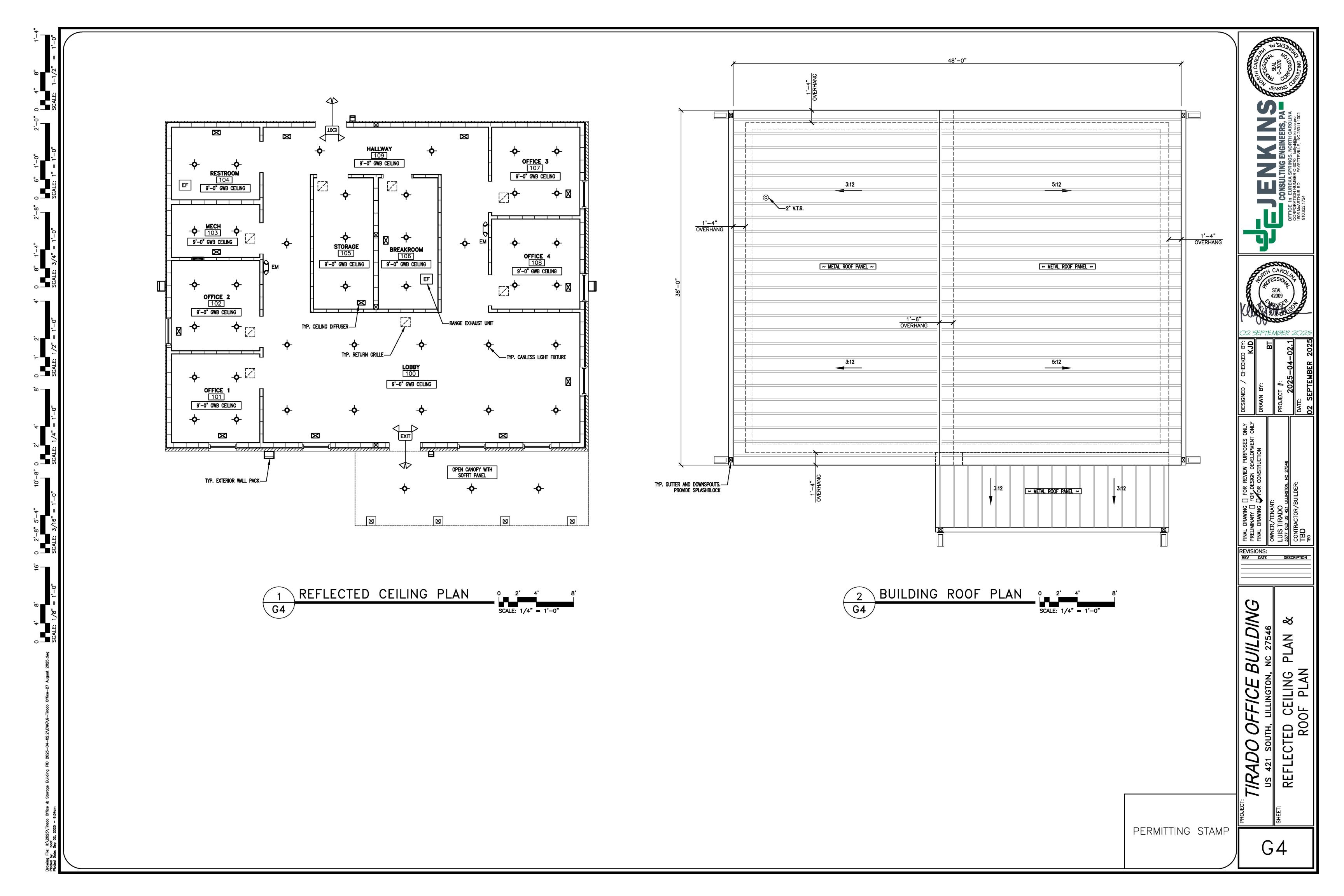


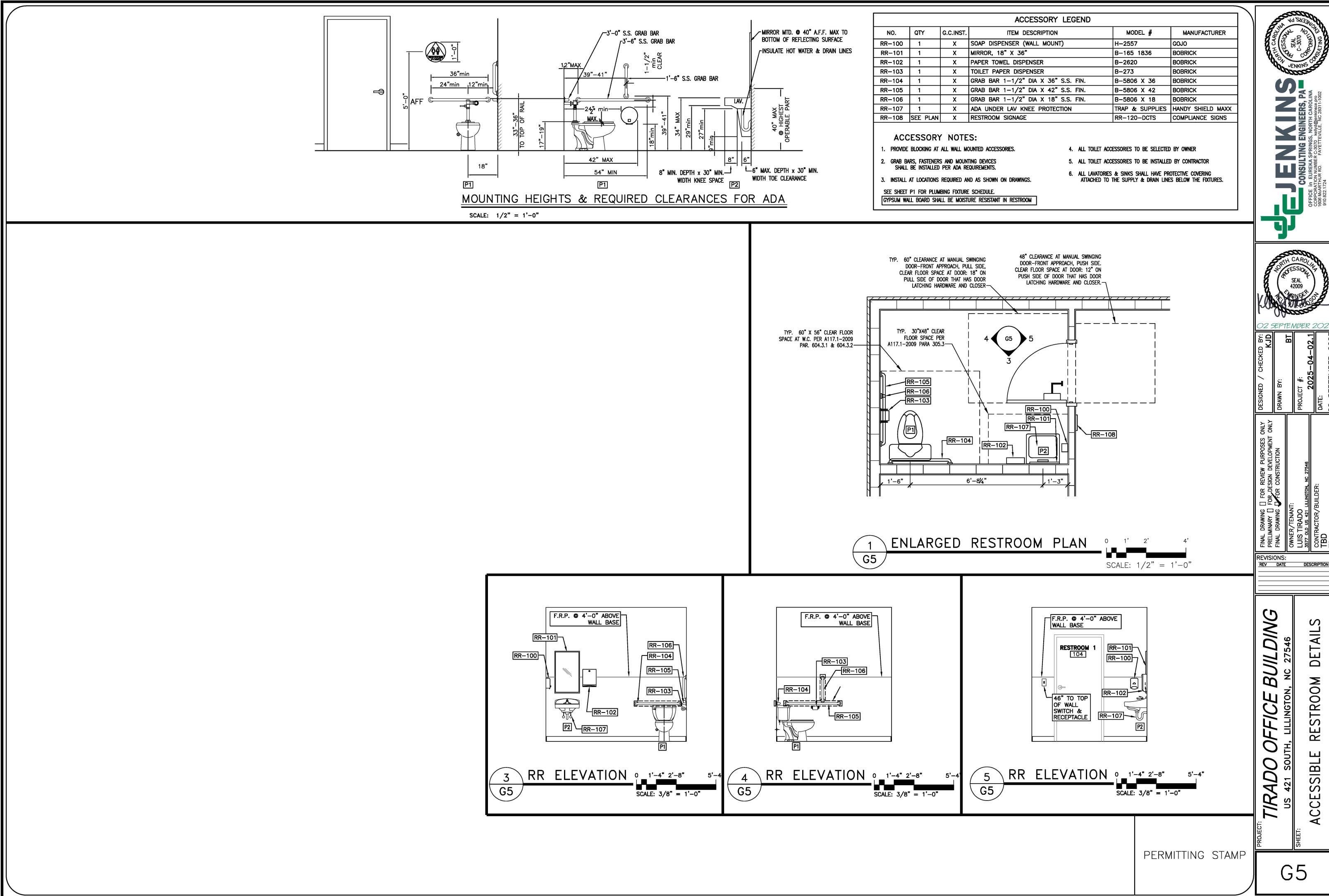
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### **GENERAL NOTES:**

ALL WORK SHALL BE IN ACCORDANCE WITH THE INTERNATIONAL MECHANICAL CODE 2018 EDITION, ASHRAE, SMACNA, AND NFPA.

STRUCTURAL MEMBERS OF THE BUILDING SHALL NOT BE CUT IN ANY MANNER FOR THE INSTALLATION OF ANY EQUIPMENT UNLESS PRIOR APPROVAL IS

THE MECHANICAL CONTRACTOR IS RESPONSIBLE FOR COORDINATING THE LOCATIONS AND ROUTING OF ALL DUCTWORK, PIPING, AND EQUIPMENT WITH OTHER TRADES TO AVOID CONFLICT.

THE MECHANICAL CONTRACTOR SHALL MAKE A COMPLETE REVIEW OF THE MECHANICAL PLANS, SCHEDULES, AND DETAILS PRIOR TO INSTALLATION OF THE MECHANICAL SYSTEMS AND REVIEW ANY CONFLICTS WITH THE GENERAL CONTRACTOR.

THE MECHANICAL CONTRACTOR SHALL COORDINATE WITH OTHER TRADES INVOLVED IN THIS PROJECT PRIOR TO INSTALLATION OF HIS EQUIPMENT, SO AS TO AVOID CONFLICTS DURING CONSTRUCTION AND ALLOW FOR OPTIMUM WORKING SPACE AND MAINTENANCE. THINK OF OTHER CONTRACTORS AND THEIR REQUIREMENTS IN VERTICAL CHASES AND WALL MOUNT SPACE.

ALL CONTRACTORS TO FOLLOW THIS ORDER OF PRIORITY:

- STORM AND SANITARY SEWER LINES
- DUCTWORK AND HVAC SYSTEMS HOT AND COLD WATER LINES
- RIGID CONDUIT

THE MECHANICAL CONTRACTOR SHALL COORDINATE SIZE AND LOCATION OF ALL PENETRATIONS (PERTAINING TO HIS WORK) THROUGH THE ROOF, WALLS, FLOORS WITH THE GENERAL CONTRACTOR. ANY WATERPROOFING AROUND THE OPENINGS TO BE COMPLETED BY THE GENERAL CONTRACTOR.

THE MECHANICAL CONTRACTOR SHALL PROVIDE AND INSTALL HIS OWN SUPPORT DEVICES. ALL LOCATIONS SHALL BE COORDINATED WITH THE GENERAL CONTRACTOR AND OTHER SUBCONTRACTORS PRIOR TO INSTALLATION. ALL PLATFORMS AND WALKWAYS IN ATTIC SPACES ARE PROVIDED BY THE GENERAL CONTRACTOR. THE MECHANICAL CONTRACTOR TO COORDINATE THE LOCATION AND DIMENSIONS OF ALL PLATFORMS IN THE ATTIC WITH THE GENERAL

ALL EQUIPMENT HAVING ROTATING OR MOVING PARTS SHALL HAVE VIBRATION ISOLATORS TO ELIMINATE TRANSMISSION OF OBJECTIONABLE NOISE TO OTHER MATERIAL OR EQUIPMENT.

WHERE OUTSIDE AIR INTAKE DUCTWORK CONNECTS TO OUTSIDE AIR LOUVER, THE INSIDE FACE OF THE DUCTWORK SHALL BE PRIMED AND PAINTED WITH (2) TWO COATS OF FLAT BLACK TO PREVENT DUCTWORK FROM BEING VISIBLE

THE MECHANICAL CONTRACTOR SHALL PROVIDE NAMEPLATES FOR IDENTIFICATION OF ALL EQUIPMENT. THE NAMEPLATES SHALL BE LAMINATED PHENOLIC PLASTIC, BLACK FRONT AND BACK WITH WHITE CORE, WHITE ENGRAVED LETTERS (1/4 INCH MINIMUM) ETCHED INTO THE WHITE CORE. NAME TAGS TO BE MOUNTED WITH SELF-TAPPING SHEET METAL SCREWS.

ALL EQUIPMENT MATERIALS AND WORKMANSHIP SHALL BE GUARANTEED TO BE FREE OF DEFECTS FOR A PERIOD OF ONE YEAR AFTER FINAL ACCEPTANCE OF THE WORK OR IN ACCORDANCE WITH THE PARTICULAR MANUFACTURER'S STANDARD GUARANTEE IF LONGER. ANY FAULTY MATERIAL OR WORKMANSHIP OR FAILURE OF ANY PART OF THE SYSTEM DURING NORMAL OPERATIONS UNDER THIS GUARANTEE SHALL BE CORRECTED WITHOUT COST TO THE OWNER.

THE MECHANICAL CONTRACTOR SHALL CLEAN ALL OF HIS EQUIPMENT PRIOR TO FINAL CLOSE OUT OF THIS PROJECT TO BE FREE OF ANY DIRT OR DEBRIS IN DRAIN PANS, CONDENSATE DRAINS, CONDENSING UNIT COILS, AND ETC.

ALL EQUIPMENT SHALL BE LOCATED AND INSTALLED TO PROVIDE MAXIMUM SPACE FOR MAINTENANCE AND SERVICE.

PROVIDE EQUIPMENT SUPPORT PAD FOR ALL BASE MOUNTED EQUIPMENT. PAD SHALL BE 4" HIGH OR PREFABRICATED CONCRETE PAD FOR ALL CONDENSING UNITS, AND PACKAGE UNITS, 4" MINIMUM FROM EQUIPMENT EDGE TO END OF PAD ON ALL SIDES.

THE MECHANICAL CONTRACTOR SHALL CONFIRM ALL BREAKER AND DISCONNECT SIZES OF HIS EQUIPMENT WITH THE ELECTRICAL CONTRACTOR PRIOR TO

CONDENSATE DRAINS SHALL BE A MINIMUM OF 3/4" Ø PVC PIPE. A P-TRAP SHALL BE INSTALLED IN PIPE AT THE UNIT. ALL CONDENSATE LINES SHALL BE ROUTED AS INDICATED ON PLANS.

INSTALL FLEXIBLE DUCT CONNECTION AT SUPPLY AND RETURN DUCTWORK CONNECTIONS TO ALL AIR HANDLING UNITS. FAN BOXES. ETC.

#### **DESIGN CRITERIA NOTES:**

ALL SUPPLY, RETURN, EXHAUST AND OUTDOOR AIR DUCTWORK (WITH THE EXCEPTION OF COMMERCIAL KITCHEN DUCTWORK) SHALL BE SIZED AT 0.08" PER 100'-0" OF DUCT FOR EXTERNAL STATIC PRESSURE. ALL DUCTWORK SHALL BE 1"WG PRESSURE CLASS.

ECONOMIZERS ARE REQUIRED FOR ANY HVAC SYSTEM WITH A COOLING CAPACITY OF 65,000 BTU/HR OR GREATER (NCECC C403.1)

CORRIDORS SHALL NOT SERVE AS SUPPLY, RETURN, EXHAUST, RELIEF OR VENTILATION AIR DUCTS: CORRIDORS MAY BE USED FOR MAKEUP AIR PROVIDED TO TOILET AREAS FOR EXHAUST MAKEUP PROVIDING THE CORRIDOR IS PROVIDED WITH AN OUTSIDE AIR RATE GREATER THAN THE MAKEUP REQUIRED FOR EXHAUST. WHERE LOCATED IN TENANT SPACES OF LESS THAN 1000 SQ/FT THE USE OF CORRIDORS FOR RETURN AIR IS PERMITTED. (NCMC 601.2.1 & 601.2.3)

HVAC SYSTEM SHALL HAVE PROGRAMMABLE THERMOSTAT CAPABLE OF OFF HOUR CONTROLS (NIGHT SETBACK) TO MAINTAIN NO MORE THAN 85°F OR NO LESS THAN 55°F (NCECC C403.2.4.2.1, C403.2.4.2.3 & C403.2.4.2.3)

THE MECHANICAL CONTRACTOR SHALL PROVIDE AND INSTALL A DUCT MOUNTED SMOKE DETECTOR IN THE RETURN AIR DUCT AT EACH UNIT IN ACCORDANCE WITH NORTH CAROLINA BUILDING CODE EDITION 2018. THE MECHANICAL CONTRACTOR TO WIRE FROM THE DETECTOR TO EACH UNIT.

### **DUCTWORK NOTES:**

ALL DUCTWORK, PIPING, EQUIPMENT, ETC. SHALL BE SUPPORTED FROM THE BUILDING SUPPORT STRUCTURE AND NOT THE ROOF.

ALL DUCT LAYOUT AND LOCATIONS ARE SHOWN DIAGRAMMATIC. THE MECHANICAL CONTRACTOR SHALL VISIT THE SITE AND FAMILIARIZE HIMSELF WITH THE BUILDING CONDITIONS AND COORDINATE THE DUCT LAYOUT WITH ALL CONTRACTORS PRIOR TO INSTALLATION.

ALL DUCTWORK SHALL BE CONSTRUCTED OF SHEET METAL IN ACCORDANCE WITH ASHRAE & SMACNA. DUCT SIZES SHOWN ARE NET FREE AREA REQUIRED.

VOLUME OR SPLITTER DAMPERS SHALL BE INSTALLED WHERE NECESSARY TO GUIDE AND CONTROL THE AIR FLOW. TURNING VANES ARE REQUIRED IN ALL ELBOWS AND AIR DEFLECTION DEVICES WILL BE INSTALLED WHERE REQUIRED FOR A BALANCED SYSTEM. PROVIDE SHEET METAL SLEEVES AND COLLARS WHERE

ALL DUCTS SHALL BE AIR TIGHT, RIGID AND FREE FROM VIBRATION AND NOISE. ALL LAP JOINTS SHALL BE IN THE DIRECTION OF FLOW AND SEALED WITH DUCT SEALER. ALL TAPES AND MASTICS USED SHALL LISTED WITH UL181A AND SHALL BE MARKED. (NCMC (603.9) & NCECC (C403.2.9)

FLEXIBLE DUCT SHALL BE SUPPORTED EVERY 5'-0". MAXIMUM SAG IS A 1/2 INCH PER FOOT OF SPACING BETWEEN SUPPORTS. SADDLE MATERIAL IN CONTACT WITH THE FLEXIBLE DUCT SHALL BE WIDE ENOUGH SO THAT IT DOES NOT REDUCE THE INTERNAL DIAMETER OF THE DUCT. THE SADDLE MUST COVER ONE-HALF THE CIRCUMFERENCE OF THE OUTSIDE DIAMETER OF THE FLEXIBLE DUCT AND FIT NEATLY AROUND. THE LOWER HALF OF THE DUCT'S OUTER

PROVIDE PERMANENT MANUAL DAMPERS IN ALL SUPPLY AND RETURN AIR DUCTS AT THE MAIN TRUNK LINE FOR SYSTEM BALANCING. THE MECHANICAL CONTRACTOR IS RESPONSIBLE FOR BALANCING THE AIR DISTRIBUTION SYSTEM AFTER THE SYSTEM HAS BEEN INSTALLED AND EQUIPMENT IS OPERATING. MANUAL DAMPERS ARE REQUIRED TO BE INSTALLED IN THE RETURN AIR DUCT IF THE DUCT IS RETURNING AIR FROM INDIVIDUAL ROOMS. MANUAL DAMPERS ARE NOT REQUIRED IF THE DUCT IS RETURNING AIR FROM CENTRALLY LOCATED FILTER/RETURN GRILLES.

THE OUTSIDE AIR INTAKE DUCTWORK SHALL BE HARD ROUND DUCT, FLEXIBLE DUCT WILL NOT BE ACCEPTED. SEE PLAN FOR DUCT SIZE.

ALL OUTSIDE AIR INTAKE DUCTS SHALL HAVE A FILTER BOX TO HOUSE A MINIMUM OF 16 IN. X 20 IN. X 2 IN. THICK FILTER, U.N.O. AT EACH AIR HANDLING UNIT EITHER IN THE ATTIC OR CRAWL SPACE. THE FILTER BOX SHALL HAVE A HINGED DOOR THAT IS GASKETED TO MAINTAIN A AIRTIGHT SEAL WITH A THUMBSCREW TO ACCESS THE FILTER.

THE OUTSIDE AIR FILTER SHALL BE THE HI-E 40 AS MANUFACTURED BY PUROLATOR PRODUCTS AIR FILTRATION COMPANY, OR APPROVED EQUAL. AIR FILTER SHALL BE (2) TWO INCHES DEEP, MEDIUM EFFICIENCY, PLEATED MEDIA, DISPOSABLE PANEL TYPE. THE FILTER MEDIA SHALL BE SELF-EXTINGUISHING NON-WOVEN COTTON AND SYNTHETIC FIBERS. THE FILTER MEDIA SHALL BE BONDED TO A 28-GAUGE CORROSION RESISTANT, EXPANDED METAL SUPPORT GRID WITH A 95% OPEN FACE AREA.

#### **DUCT/PIPING INSULATION NOTES:**

ALL SUPPLY AND RETURN AIR DUCTS SHALL BE INSULATED WITH MIN. R-6.0 INSULATION UNLESS NOTED OTHERWISE IN THE DRAWING. IECC (C403.2.9) ACCEPTABLE MANUFACTURERS ARE JOHNSON MANVILLE.

LIQUID AND SUCTION PIPING TO AND FROM AIR HANDLING UNITS SHALL BE INSULATED WITH 1-1/2" THICK PIPE INSULATION IN ACCORDANCE WITH NCECC TABLE (C403.2.10).

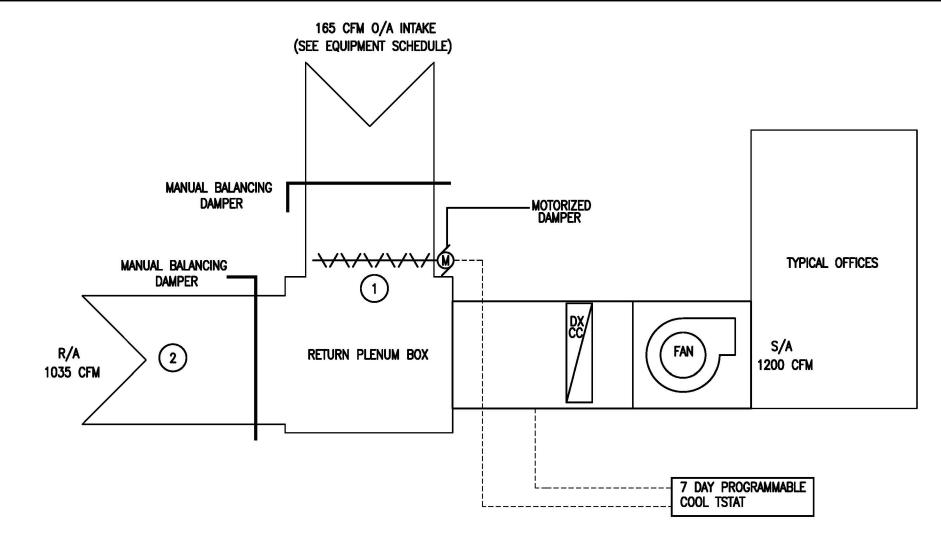
ALL FLEXIBLE DUCT REQUIRING INSULATION SHALL HAVE A VALUE OF AT LEAST R-5.0. THE FLEXIBLE DUCT SHALL BE ATCO RUBBER PRODUCTS, INC. UPC NO. 036 OR APPROVED EQUAL WITH A REINFORCED METALLIZED POLYESTER JACKET. THE INNER CORE IS AIRTIGHT AND IS DESIGNED FOR LOW TO MEDIUM OPERATING PRESSURES IN HVAC SYSTEMS. AIR DUCT CONNECTIONS AND JOINTS SHALL BE MADE PER INSTALLATION INSTRUCTIONS OUTLINED BY ATCO.

OUTSIDE AIR INTAKE DUCTWORK AND EXHAUST DUCTWORK IS TO BE UNINSULATED.

# OUTSIDE/EXHAUST AIR CALCULATION

UNIT	OCCUPANCY TYPE:	NET SF (Az)	CEILING HEIGHT (CIgHt)	VOLUME (CF) (Az*ClgHT)	SUPPLY AIR (CFM)	AIR CHANGES PER HOUR (ACH75)	OCCUPANT DENSITY #/1000	OCCUPANTS (Pz)	O.A. CFM PER PERSON (Rp)	O.A. CFM PER SF (Ra)	(RpPz)	(RaAz)	O.A. CFM REQUIRED (Vbz) (RpPz + RaAz)	ZONE O.A. AIR FLOW (Ez)	ADJUSTED O.A. Voz = <u>Vbz</u> Ez	EXHAUST CFM REQUIR	ED
	100-LOBBY	471	9'-0"	4239	300	4.25	5	5	5	0.06	25	28.26	53.26	0.8	66.575		
AHU-1	101-OFFICE 1	89	9'-0"	801	125	9.36	5	1	5	0.06	5	5.34	10.34	0.8	12.925		
AHU—1	102-OFFICE 2	91	9'-0"	819	125	9.15	5	1	5	0.06	5	5.46	10.46	8.0	13.075		
	103-MECH	53	9'-0"	477	50	6.29	N/A	N/A	N/A	0.06	N/A	3.18	3.18	8.0	3.975		
	104-RESTROOM	73	9'-0"	657	50	4.56	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	70 CFM / FIXTURE	70
	105-STORAGE	87	9'-0"	783	100	7.66	N/A	N/A	N/A	0.06	N/A	5.22	5.22	8.0	6.525		
	106-BREAKROOM	94	9'-0"	846	100	7.09	5	1	5	0.06	5	5.64	10.64	0.8	13.3		
	107-OFFICE 3	89	9'-0"	801	125	9.36	5	1	5	0.06	5	5.34	10.34	0.8	12.925		
	108-OFFICE 4	90	9'-0"	810	125	9.26	5	1	5	0.06	5	5.40	10.40	0.8	13		
	109-HALLWAY	269	9'-0"	2421	100	2.47	N/A	N/A	N/A	0.06	N/A	16.14	16.14	0.8	20.175		
												·	OUTSIDE AIR	SUB-TOTAL	162.48 (A)	EXHAUST AIR SUB-TOTAL	70 (B)

AHU-1 (OUTSIDE AIR) USE LARGEST (A OR B) VALUES MIN. OUTSIDE AIR CFM REQUIRED TOTAL EXHAUST CFM REQUIRED TOTAL OUTSIDE AIR CFM PROVIDED TOTAL EXHAUST CFM PROVIDED



### TYPICAL AIR HANDLING UNIT DIAGRAM WITH VENTILATION NOT TO SCALE

## SEQUENCE OF OPERATION: (SPLIT SYSTEM- SINGLE STAGE)

TYPICAL OPERATION (OCCUPIED MODE):

- 1) MODULATE TO ALLOW 165 CFM OF O/A
- 1035 CFM OF R/A WITH MANUAL BALANCING DAMPER

#### **UNOCCUPIED MODE:**

- (1) IN CLOSED POSITION
- 2 N/A

# APPENDIX B MECHANICAL DESIGN

# 2018 BUILDING CODE SUMMARY

PROJECT NAME: TIRADO TRUCK OFFICE BUILDING

MECHANICAL SYSTEMS, SERVICE SYSTEMS AND EQUIPMENT METHOD OF COMPLIANCE PRESCRIPTIVE X

ENERGY COST BUDGET

MECHANICAL SUMMARY

MECHANICAL SYSTEMS, SERVICE SYSTEMS AND EQUIPMENT

THERMAL ZONE: ZONE 4A NORTH CAROLINA

WINTER DRY BULB: SUMMER DRY BULB:

INTERIOR DESIGN CONDITIONS WINTER DRY BULB: SUMMER DRY BULB: RELATIVE HUMIDITY:

13,600 <u>BTU'S</u> SPACES HEATING LOAD: 14,300 SPACES COOLING LOAD:

MECHANICAL SPACING CONDITIONING SYSTEM

LIST EQUIPMENT EFFICIENCIES:

UNITARY

DESCRIPTION OF UNIT: SPLIT SYSTEM HEAT PUMP (1) 1.5 TON HEATING EFFICIENCY: 8.2 HSPF (8.2 HSPF MINIMUM STANDARD EFFICIENCY, TABLE C403.2.3 (2)) COOLING EFFICIENCY: 14.0 SEER MINIMUM STANDARD EFFICIENCY, TABLE C403.2.3 (2)) SIZE CATEGORY OF UNIT: <u>(1) 1</u> (≤ 65,000 BTU/H)

SIZE CATEGORY. IF OVERSIZED, STATE REASON.:

SIZE CATEGORY. IF OVERSIZED, STATE REASON.:

DESIGNER STATEMENT: TO THE BEST OF MY KNOWLEDGE AND BELIEF, THE DESIGN OF THIS BUILDING COMPLIES WITH THE MECHANICAL SYSTEMS, SERVICE SYSTEMS AND EQUIPMENT REQUIREMENTS OF THE INTERNATIONAL ENERGY CODE. THE HVAC UNIT QUALIFIES AS MORE EFFICIENT MECHANICAL EQUIPMENT DESCRIBED IN THE CODE.

Buddy Jenkin BUDDY JENKINS TITLE: ENGINEER

# DESCRIPTION AND SEQUENCE OF OPERATION

THE HVAC SYSTEM AT THIS BUILDING CONSISTS OF:

OCCUPIED OPERATION

THE SUPPLY FANS SHALL RUN CONTINUOUS TO PROVIDE THE REQUIRED VENTILATION RATE. IN THE COOLING MODE, A RISE IN TEMPERATURE BEYOND SET POINT OF PROGRAMMABLE T-STAT WILL RESULT IN ACTIVATION OF DX COOLING CYCLE UNTIL DESIRED TEMPERATURE IS REACHED. IN HEATING MODE, A SIGNAL FROM T-STAT WILL ACTIVATE THE HEAT PUMP TO DELIVER HEATING TO SPACES. IF OUTSIDE TEMPERATURE FALLS BELOW SET POINT, HEAT STRIPS WILL ACTIVATE TO BRING TEMPERATURE TO DESIRED SET POINT AT WHICH TIME THE HEAT STRIPS WILL TURN OFF AND HEAT PUMP SHALL BE USED TO MAINTAIN DESIRED SPACE TEMPERATURE.

PROVIDE HEAT STRIP LOCKOUT CONTROLS TO PREVENT HEAT STRIP OPERATION BETWEEN 35°F AND 40°F PER ENERGY CODE PARAGRAPH 503.2.4.1.1.

#### UNOCCUPIED OPERATION

THE SUPPLY FAN SHALL BE INDEXED OFF AND MOTORIZED OUTSIDE AIR DAMPER SHALL BE CLOSED. PROGRAMMABLE

# OF HVAC SYSTEM

(1) 3 TON SPLIT SYSTEM HEAT PUMP UNIT WHICH PROVIDE HEATING/COOLING/VENTILATION TO SPACES

THE RESTROOM EXHAUST FAN IN STAFF RESTROOM SHALL BE SWITCHED WITH LIGHTING FOR TOILET AND SHOWER UNIT.

EXHAUST FAN OPERATION

THERMOSTATS SHALL PROVIDE CONTROL OF UNIT.

PERMITTING STAMP



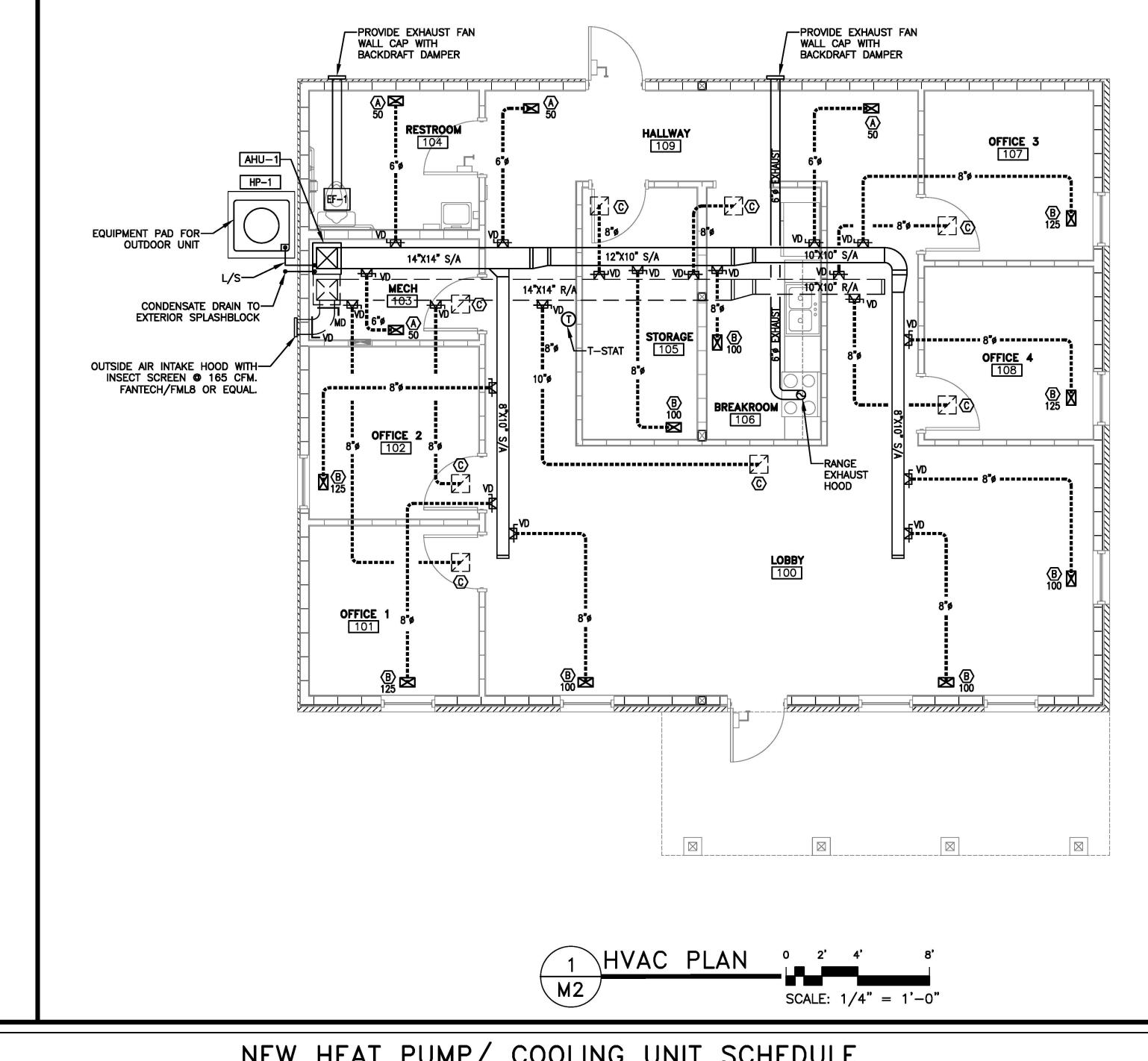
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	EQUIPMENT INFO COOLING CAPACITIES HEATING CAPACITIES COMPRESSOR/CONDENSER SECTION ELECTRICAL INFORMATION MISCELLANEOUS INFORMATION																						
TAG	TAG TYPE LOCATION NOM. TOTAL MIN. MIN. MIN. MIN. MIN. MIN. MIN. MIN.																						
HP-1	IP-1 SPLIT-SYSTEM OUTDOOR PAD 3.0 36,000 N/A N/A 15.2 N/A 36,000 7.8 1 16.4 0.97 1 1/6 240 1 21.5 35 #8 GOODMAN/GLZS4BA3610 36"X36"X36" 211 LBS																						
***BASIS	*BASIS OF DESIGN: GOODMAN EQUIPMENT. SIMILAR AND EQUAL EQUIPMENT BY TRANE, CARRIER, AND ICP MAY BE SUBSTITUTED FOR THE CARRIER EQUIPMENT. SUBMIT MANUFACTURERS LITERATURE TO ENGINEER FOR APPROVAL BEFORE SUBSTITUTING EQUIPMENT.																						

						EXH	lAUS	ST	FA	N	SCF	HED	ULE	-	
		EQUIPMENT	INFO			FAN INF	ORMATION			ELECT	RICAL IN	FORMATION	NC		
TAG	QTY.	TYPE	LOCATION	EXHAUST CFM	AREA SERVED	ESP IN WG	FAN DRIVE	SONES	RPM	FAN WATT	UNIT VOLTS	UNIT PHASE	HP	WIRE SIZE (DU. 75 C)	MFG & MODEL
EF-1	1	EXHAUST	WALL MOUNTED	70	RESTROOM	N/A	DIRECT	N/A	N/A	17	120	1	N/A	#12	GREENHECK / SP-LP0511-1 PROVIDE WALL CAP WITH BACKDRAFT DAMPER
*** R	ESTROOM	EXHAUST	FAN SHALL	L CONTROL	LED WITH RE	STROOM	LIGHT S	WITCH.							

# DUCTWORK CONVERTER

0.08 FRICTION (HEAD) LOSS PER 100 FEET OF DUCT

AIRFLOW RATE (CFM)	RECTANGULAR DUCT (W)" × (H)"	SPIRAL/ ROUND DUCT ø" (DIAMETER)
380	8 X 10	10
500	10 X 10	12
600	12 X 10	12
1200	14 X 14	16

MECI	HANICA	L CONTR	ACTOR	MAY L	JSE	ЕПН	ER I	ROUND	OR	REC	TANGULAR	DUCTWO	R
FOR	HVAC	SYSTEM,	DEPEN	DING	ON	THE	BUI	LDING	OWNE	R'S	PREFEREN	ICE.	

					NE	W	AIR	HAN	NDLI	NG	UNI	ГЅ	CH	ED	ULE	<b>-</b>			
	EQUIPMENT INFO INDOOR FAN SECTION ELECTRICAL INFORMATION MISCELLANEOUS INFORMATION																		
TAG	TAG TYPE LOCATION NOM. SUPPLY OA ESP FAN FAN FAN FAN FAN FAN STRIPS(kW) VOLTS PHASE MCA MOCP WIRE SIZE (DU. 75 C) MANUFACTURER/MODEL UNIT SIZE (H)X(W)X(D) UNIT WEIGHT																		
AHU-1	J-1 UP-FLOW SPLIT-SYSTEM CLOSET 3.0 1200 165 N/A DIRECT 3/4 VARIABLE S.7 8.0 kW 240 1 47.3 50 #8 GOODMAN/ AMST36CU13 49"X21"X21" 153 LBS																		

### REMARKS FOR AHU AND HP UNITS:

PROVIDE ELECTRICAL HEAT AS NOTED.
 PROVIDE DRAIN PAN WITH FLOAT SWITCH.

PROVIDE 7 DAY PROGRAMMABLE THERMOSTAT
 PROVIDE MOTORIZED OUTSIDE AIR DAMPER.

5. PROVIDE VIBRATION ISOLATORS.6. PROVIDE EQUIPMENT PAD FOR OUTDOOR UNITS.

		G	RILL	E/RE	TURN	SCHEDU	LE
TAG	CFM	AIR PATTERN	FACE SIZE	NECK SIZE	SERVICE	MFG & MODEL	REMARKS
(A)	50-100	3-WAY	14" X 6"	6 <b>"</b> ø	SUPPLY	TRUAIRE / 103M	SURFACE, ADJ. DAMPER, OFFWHITE, ALUM.
B	110-250	3-WAY	16" X 8"	8 <b>"</b> ø	SUPPLY	TRUAIRE / 103M	SURFACE, ADJ. DAMPER, OFFWHITE, ALUM.
(C)	100-300	LOUVERED	12" X 12"	10" X 10"	RETURN	TRUAIRE A290 OR EQUAL	SURFACE; OFF WHITE; ALUM.; FILTER

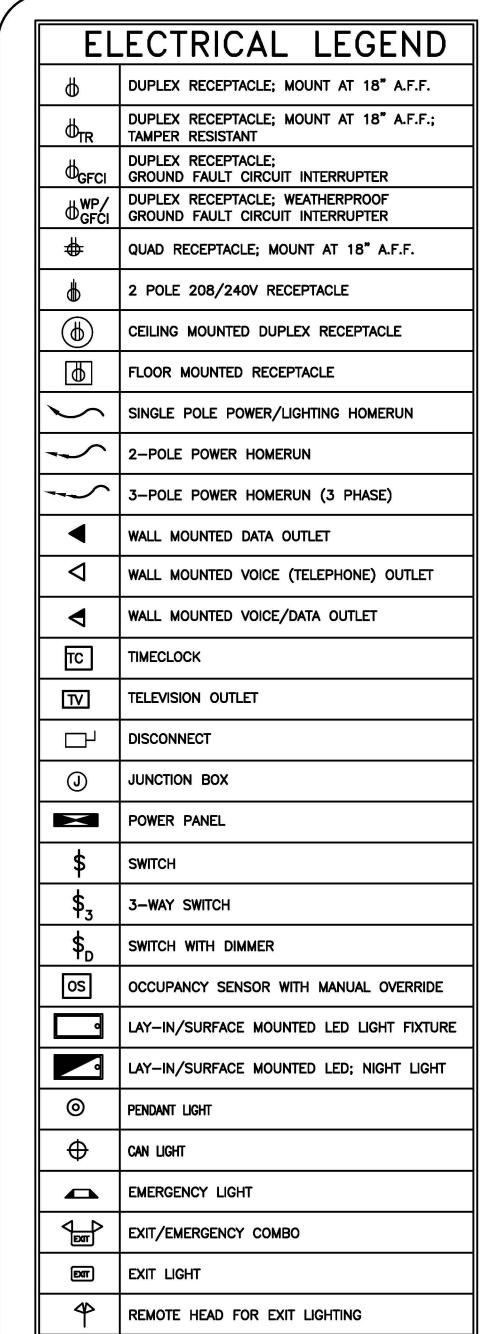
PERMITTING STAMP



BUILDING

OFFICE

MECHANICAL **TIRADO** 



EXTERIOR MOUNTED WALL PACK

ALL WORK SHALL BE IN ACCORDANCE WITH 2020 NEC. WIRE AND CABLE SHALL BE INSULATED, TYPE THHN, 600 VOLTS, WITH COPPER CONDUCTORS. CONDUCTOR SIZES NO. 8 AWG AND LARGER MAY BE STRANDED. CONDUCTOR SIZES NO. 10 AWG AND SMALLER MAY BE SOLID OR STRANDED.

ROMEX CAN NOT BE USED IN THIS PROJECT. MC CAN BE USED.

EMT SHALL BE GALVANIZED STEEL TUBING 1/2—INCH MINIMUM SIZE, EQUAL TO ELECTRUNITE BRAND OR APPROVED AND USED ONLY WITH HEXAGONAL ALL STEEL COMPRESSION FITTINGS.

MC CABLE MAY BE SUBSTITUTED FOR CONDUIT RACEWAYS WHERE PERMITTED BY THE CODE. AND APPROVED BY OWNER

PLASTIC CONDUIT SHALL BE RIGID. 3/4—INCH MINIMUM. NONMETALLIC, HEAVY DUTY. POLYVINYLCHORIDE (PVC). TYPE I WILL BE USED FOR CONCRETE ENCASEMENT. FITTINGS SHALL BE THE SAME MATERIALS AND MANUFACTURER AS THE PLASTIC CONDUIT. FLEXIBLE METAL CONDUIT SHALL BE 1/2—INCH MINIMUM SINGLE STRIP, STEEL, HOT DIPPED GALVANIZED INSIDE AND OUTSIDE, MAXIMUM LENGTH OF 72 INCHES FOR LIGHTING, AND 36 INCHES FOR MOTORS, FLEXIBLE METAL CONDUIT SHALL BE LIQUID TIGHT OR WATER TIGHT WITH PVC JACKET WHERE USED IN DAMP, WET, OR OUTSIDE AREAS, AND LIQUID TIGHT OF <u>WATER TIGHT CONNECTORS SHALL BE USED.</u>

NO RECEPTACLES OR TELEPHONE OUTLETS ARE TO BE MOUNTED BACK TO BACK, KEEP AT LEAST 1 1/2 INCHES BETWEEN RECEPTACLES AND TELEPHONE OUTLETS. ALL CONDUCTORS SHALL BE COPPER WITH A MINIMUM SIZE OF #12 AWG EXCEPT FOR FIRE

<u>ALARM. THESE CONDUCTORS SHOULD COMPLY WITH NFPA REQUÎREMENTS.</u> THE ELECTRICAL CONTRACTOR SHALL ALIGN ALL FIXTURES. SMOKE DETECTORS. CEILING DIFFUSERS. ETC. AS REQUIRED TO PROVIDE A UNIFORM PRESENTATION. FOLLOW THE REFLECTED CEILING PLAN IF PROVIDED

CIRCUIT BREAKERS AND WIRE ARE SIZED FOR SPECIFIC EQUIPMENT. BEFORE ORDERING WIRE. BREAKERS, FIXTURES, CONDUIT, AND ETC. FOR THIS PROJECT: THE ELECTRICAL CONTRACTOR SHALL COORDINATE WITH THE OTHER CONTRACTORS ON THE JOB AND VERIFY THE ELECTRICAL DATA FOR THE EQUIPMENT THAT WILL BE ACTUALLY INSTALLED. RECOMPUTE WIRE AND BREAKER SIZES IF REQUIRED BY THE NEC.

<u>THE MOUNTING HEIGHTS AND LOCATIONS OF ALL WALL MOUNTED OUTLETS AND JUNCTION</u> <u>BOXES SHALL BE REVIEWED AND COORDINATED WITH THE GENERAL CONTRACTOR AND OWNER</u> PRIOR TO INSTALLATION FOR USE WITH ACTUAL EQUIPMENT.

ALL LIGHT SWITCHES, RECEPTACLES, WALL PLATES, TELEPHONE/COMPUTER OUTLET BOXES, AND. CABLE OUTLET BOXES SHALL BE WHITE.

EACH CONTRACTOR WILL PROVIDE HIS OWN SUPPORT OF ALL DEVICES AND EQUIPMENT PROVIDED IN HIS CONTRACT AND SHALL SUPPORT SUCH EQUIPMENT PER APPROVED <u>GOVERNING CODES. UNACCEPTABLE WORKMANSHIP OR MATERIALS SHALL BE REPLACED AT</u> THE ELECTRICAL CONTRACTORS EXPENSE.

THE ELECTRICAL CONTRACTOR SHALL REFER TO THE DRAWINGS FOR FLOOR PLAN AND BUILDING ELEVATION DIMENSIONS.

ELECTRICAL CONTRACTOR SHALL COORDINATE WITH OTHER TRADES INVOLVED IN THIS PROJECT PRIOR TO INSTALLATION OF HIS EQUIPMENT, SO AS TO AVOID CONFLICTS DURING <u>CONSTRUCTION AND ALLOW FOR OPTIMUM WORKING SPACE AND MAINTENANCE. THINK OF</u> <u>OTHER CONTRACTORS AND THEIR REQUIREMENTS IN VERTICAL CHASES AND WALL MOUNT</u> SPACE, ALL CONTRACTORS TO FOLLOW THIS ORDER OF PRIORITY:

. STORM AND SANITARY SEWER LINES 2. DUCTWORK AND HVAC SYSTEMS

3. HOT AND COLD WATER LINES 4. RIGID CONDUIT

5. CABLE

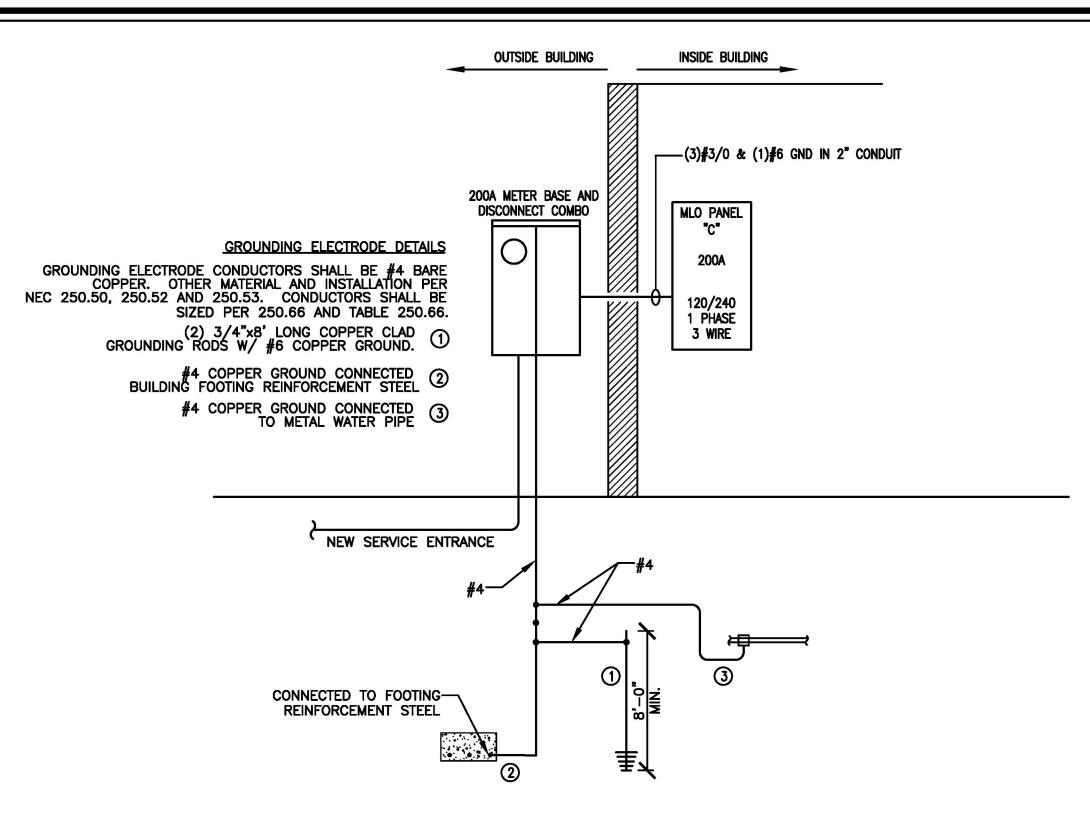
THE ELECTRICAL CONTRACTOR TO ORGANIZE HIS CONDUIT, WIRE, AND CABLE RUNS IN ATTIC SPACES AND ABOVE CEILINGS. MAKE RUNS PARALLEL, PERPENDICULAR, AND GROUPED TOGETHER WHERE POSSIBLE, LOCATE MAJOR GROUPINGS OVER HALLWAYS AND AREAS OF PUBLIC ACCESS, FREE RUNS OF PHONE, TELEVISION, SECURITY, ALARM, AND OTHER CABLES IS NOT ACCEPTABLE.

ALL DISCONNECT SWITCHES AND BREAKER SIZES SHOWN FOR MECHANICAL EQUIPMENT, KITCHEN EQUIPMENT, AND ETC. SHALL BE VERIFIED BEFORE PURCHASE AND INSTALLATION OF SAID EQUIPMENT WITH THE EQUIPMENT SUPPLIER AND MECHANICAL CONTRACTOR. <u>Where equipment penetrates exterior walls or roof, they shall be properly</u>

EXHAUST FANS ARE TO BE PROVIDED AND INSTALLED BY THE MECHANICAL CONTRACTOR. AND ELECTRICAL WIRING BY THE ELECTRICAL CONTRACTOR.

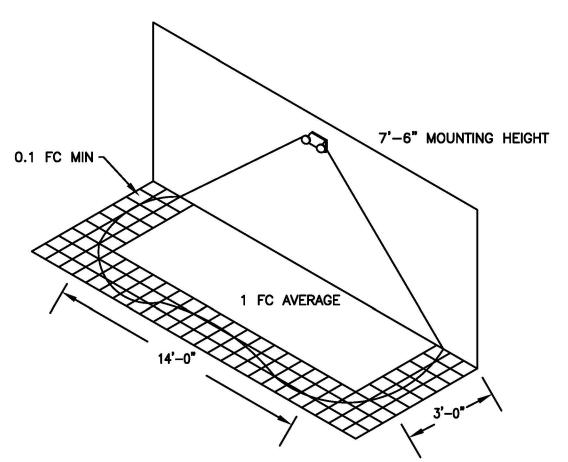
THE ELECTRICAL CONTRACTOR SHALL PROVIDE NAMEPLATES FOR IDENTIFICATION OF ALL EQUIPMENT, SWITCHES, PANELS, ETC. THE NAMEPLATES SHALL BE LAMINATED PHENOLIC PLASTIC. BLACK FRONT AND BACK WITH WHITE CORE, WHITE ENGRAVED LETTERS (1/4 INCH MINIMUM) ETCHED INTO THE WHITE CORE, NAME TAGS TO BE MOUNTED WITH SELF—TAPPING

THE ELECTRICAL CONTRACTOR IS NOT TO SCALE THE DRAWINGS FOR RECEPTACLES AND LIGHT FIXTURES TO BE INSTALLED. THE DRAWINGS ARE FOR DIAGRAMMATIC PURPOSES ONLY TO SHOW GENERAL LOCATION. THE ELECTRICAL CONTRACTOR TO COORDINATE EXACT LOCATION OF RECEPTACLES AND LIGHT FIXTURES WITH THE GENERAL CONTRACTOR AND/OR CASEWORK DRAWINGS. ALL LIGHT SWITCHES AND RECEPTACLES SHALL BE RATED FOR 20 AMP UNLESS NOTED



POWER RISER DIAGRAM

NOT TO SCALE



ASSUMES OPEN SPACE WITH NO OBSTRUCTIONS, MOUNTING HEIGHT;

7'-6	6"; CEILING HE	IGHT, AND R	EFLECTANCES	80/50/20								
EMERGENCY LIGHT FIXTURE PERFORMANCE MODEL: LITHONIA EU2L												
SINGLE LUMINAIRE MULTIPLE LUMINAIRE SPACING  MOUNTING ILLUMINATION												
HEIGHT	LEVEL	3' PATH OF EGRESS	6' PATH OF EGRESS	3' PATH OF EGRESS	6' PATH OF EGRESS							
7'-6"	1FC AVG.	14'	10'	18'	14'							

				NEMA					G: RECE		ENCLOSURE: TYPE 1		
			SHOR	CIRCU	JIT RA	TING	: 22	kA_	RMS	SYM.			
			X	GROUN	ID TER	RMIN	AL I	BAR		Χ	NEUTRAL TERMINAL BAR		
PH/ LOA A	SE DING B	DESCRIPTION	WIRE SIZE	CKT. BKR. TRIP.	CKT. NO.	A	В	CKT. NO.	CKT. BKR. TRIP	WIRE SIZE	DESCRIPTION	PHA LOAI	SE DING B
0.60		REFRIGERATOR	#12	20/1 GFCI	1			2	20/1	#12	RECEPT-RESTROOM GFCI	0.18	
	0.55	RECEPT- BREAKROOM COUNTER	100	20/1	3	Г		4	20/1	#12	RECEPT- BREAKROOM		0.55
1.00		MICROWAVE	#12	20/1 GFCI	5			6	20/1	#12	RECEPT - OFFICE 1 & 2	1.28	
	4.00	RANGE	#8	50/2	7			8	20/1	#12	RECEPT - OFFICE 3 & 4		1.28
4.00		KANGE	#0	30/2	9			10	20/1	<b>#</b> 12	RECEPT - LOBBY	1.10	
	0.32	LIGHT - LOBBY & HALL	#12	20/1	11			12	20/1	#12	RECEPT - FRONT PORCH		0.3
0.13		LIGHT - OFFICE 1, 2, RR	#12	20/1	13			14	20/1	#12	recept — exterior	0.37	
	0.15	LIGHT - BREAK, OFFICE 3, 4	#12	20/1	15			16	20/1	#12	RECEPT - MECH ROOM		0.50
0.15		LIGHT — EXTERIOR WALL PACK	#12	20/1	17			18	-	ı	SPACE	_	
	-	SPACE	<b>!—</b>	-	19			20	-	-	SPACE		1
- ]		SPACE	-	_	21			22	_	_	SPACE	-	
	-	SPACE	-	_	23			24	_	=	SPACE		
_		SPACE	1	_	25		L	26	-	1	SPACE	_	
	2.58	HP-1	#8	35/2	27	L		28	50/2	#8	AHU-1		5.67
2.58		10.1	#0	35, 2	29			30	,-	n -	,,,,,	5.67	
8.46	7.60		- SUB-	-TOTAL	(kVA)			SUB-	-TOTAL	(kVA)		8.60	8.37
							T	DTAL (	CONNEC	TED LO	OAD = 33.03 KVA		
									TOT	AL AM	PS = 137.63 AMP		

TOTAL	CONNECTE	D LOAD SUM	MARY	•	
ITEM CONI	NECTED LOAD (	KVA)	<b>ESTIMA</b>	TED LOAD	(KVA)
HVAC	16.50	<b>9</b> 100%	=	16.50	
LIGHTING	0.75	<b>9</b> 125%	=	0.93	
RECEPTACLES	6.18 (T-1	0.00 * . 60 + 10.00	) =	6.18	
MISC. EQUIPMENT	9.60 `	<b>9</b> 60%	_	5.76	
TOTAL CONNECTED	33.03 KVA	137.63 A	MPS		
ESTIMATED DEMAND	29.37 KVA	1993 1000 10 0 0 0 0			
ESTIMATED DEMAND	29.3/ KVA	122.37 A	MF3		

AVAILABLE FAULT CURRENT

UTILITY FAULT • 240 VOLTS = 100 KVA XFMR 27,800 AMPS (ASSUMED POLE MOUNTED) (1 RUN) #250 KCMIL AL. • 125 FEET TO DISCONNECT AT SERVICE ENTRANCE L-L FAULT CURRENT = 8,550 AMPS L-N FAULT CURRENT = 5,378 AMPS

3/0 COPPER • 5 FEET TO PANEL (SHORTEST RUN) L-L FAULT CURRENT = 8,319 AMPS L-N FAULT CURRENT = 5,196 AMPS

# APPENDIX B ELECTRICAL DESIGN 2018 BUILDING CODE SUMMARY

PROJECT NAME: TIRADO TRUCK OFFICE

**ELECTRICAL SUMMARY** 

ELECTRICAL SYSTEM AND EQUIPMENT

METHOD OF COMPLIANCE: ENERGY CODE: X PRESCRIPTIVE ASHRAE 90.1: PRESCRIPTIVE

LIGHTING SCHEDULE (EACH FIXTURE TYPE)

LAMP TYPE REQUIRED IN FIXTURE LED

NUMBER OF LAMPS IN FIXTURE (SEE FIXTURE SCHEDULE)

BALLAST TYPE USED IN THE FIXTURE ELECTRONIC

NUMBER OF BALLASTS IN FIXTURE 1

TOTAL WATTAGE PER FIXTURE <u>VARIES</u> PER FIXTURE TOTAL INTERIOR WATTAGE SPECIFIED VERSUS ALLOWED (WHOLE BUILDING) 1.476 ALLOWED - 750 SPECIFIED

TOTAL EXTERIOR WATTAGE SPECIFIED VERSUS ALLOWED N/A SECTION C406 ADDITIONAL EFFICIENCY PACKAGE OPTIONS

C406.1 BUILDINGS SHALL HAVE AT LEAST ONE OF THE FOLLOWING PRESCRIPTIVE COMPLIANCE (REQUIRED FOR NEW BUILDINGS, OPTIONAL FOR EXISTING BUILDINGS)

1. MORE EFFICIENT MECHANICAL EQUIPMENT PER C406.2

2. <u>REDUCED LIGHTING POWER DENSITY PER C406.3</u>
3. ENHANCED LIGHTING CONTROL SYSTEMS PER C406.4 4. ON-SITE SUPPLY OF RENEWABLE ENERGY PER C406.5 5. DEDICATED OUTDOOR AIR SYSTEM PER C406.6

SYSTEM AND EQUIPMENT REQUIREMENTS OF THE 2018 NC ENERGY CONSERVATION CODE.

6. HIGHER EFFICIENCY SERVICE WATER HEATING PER C406.7 DESIGNER STATEMENT: TO THE BEST OF MY KNOWLEDGE AND BELIEF, THE DESIGN OF THIS BUILDING COMPLIES WITH THE ELECTRICAL

NAME: BUDDY JENKINS
TITLE: PROFESSIONAL ENGINEER



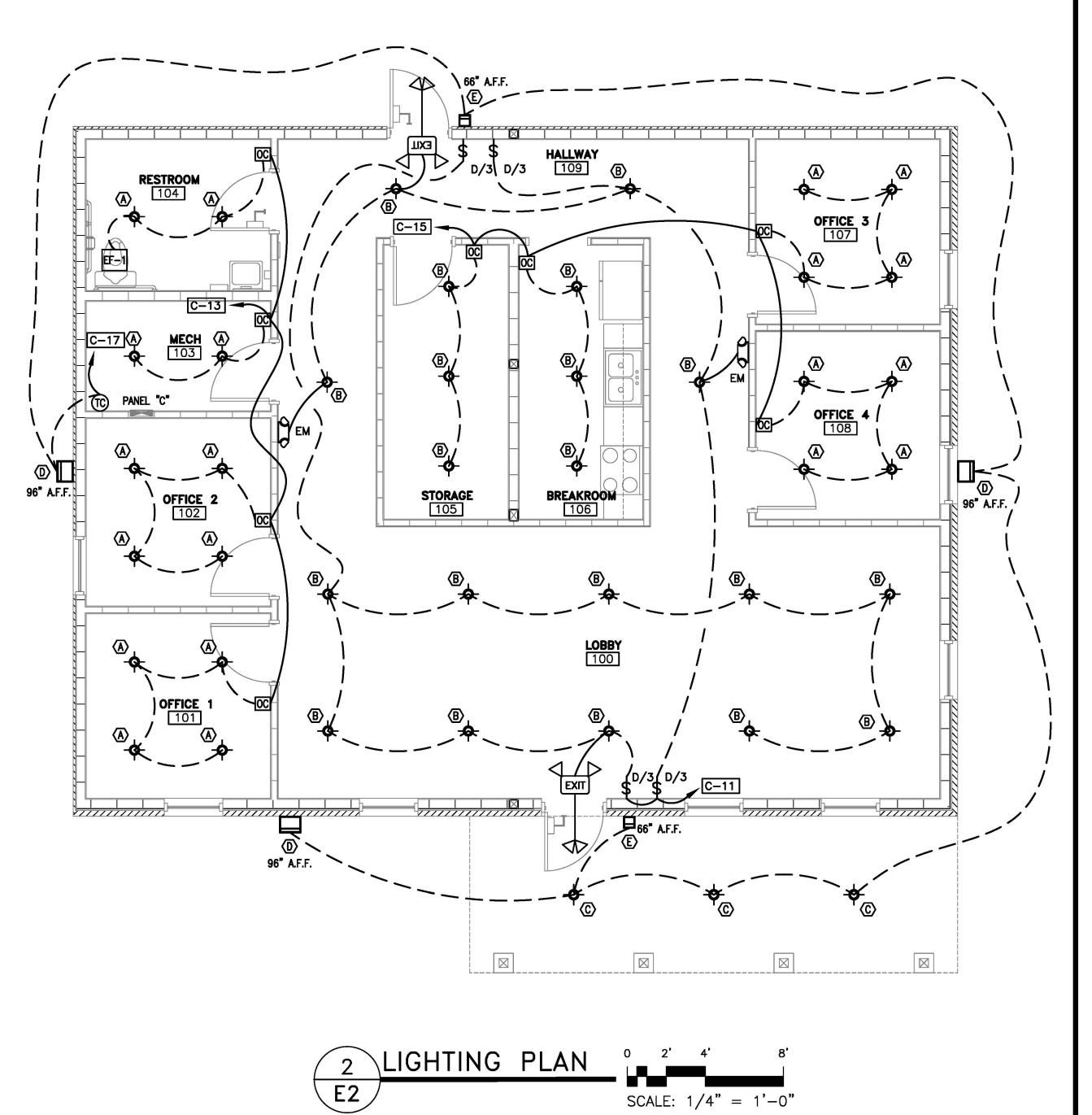


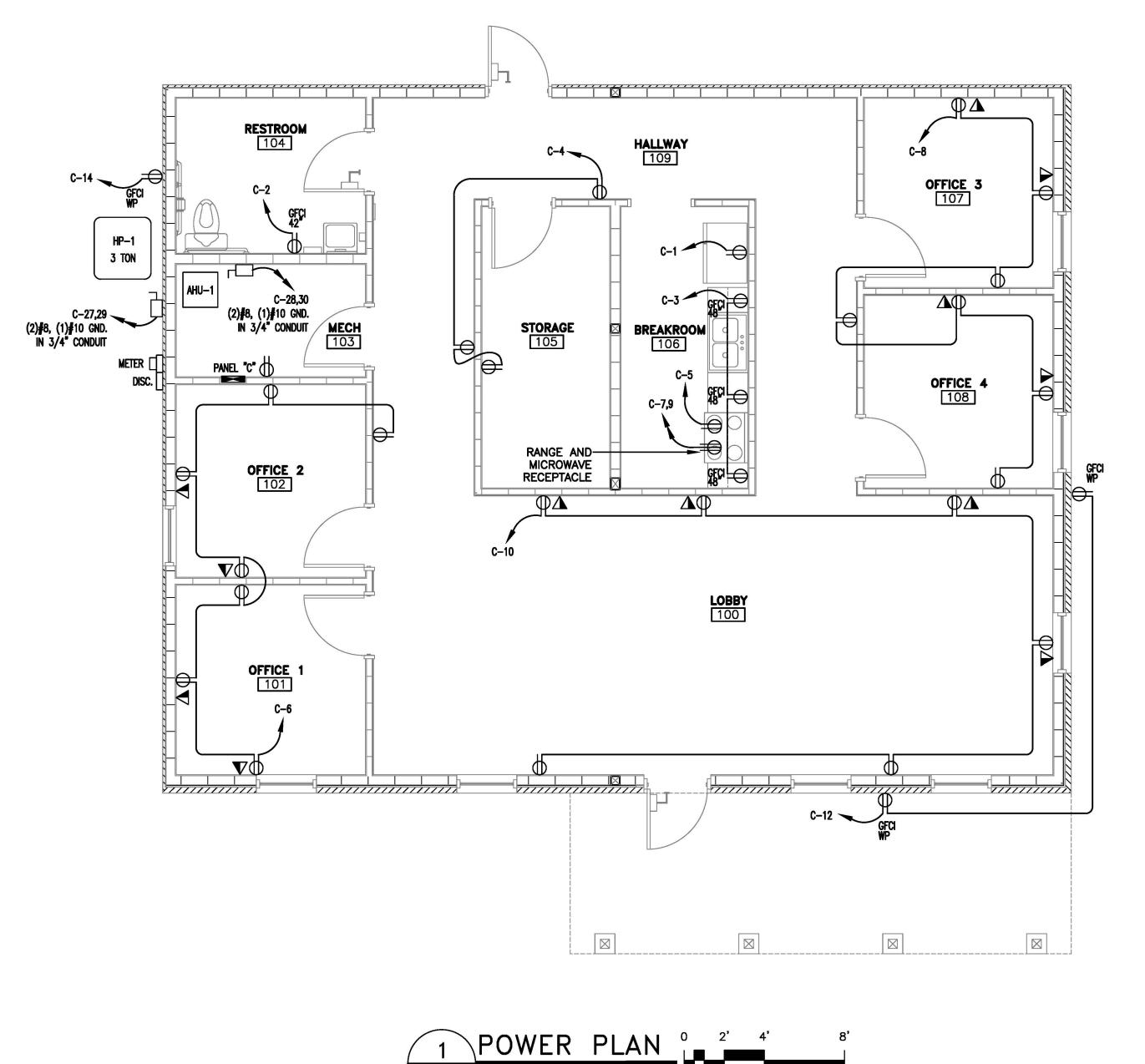
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BUILDING NOT ER S 函 O

ELECTRIC/ 00 1RA

PERMITTING STAMP





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

E2

							LIGHT	FIXTUR	E SCHE	DULE			
TAG	DESCRIPTION	SIZE	MOUNTING	LENS	COLOR	LUMENS	BULB	BALLAST TYPE	HOUSING	VOLTAGE	WATTAGE	MANU/MODEL NUMBER	REMARKS
A	LED RECESSED DOWNLIGHT	6 <b>"</b> ø	RECESSED	N/A	4000 K	1000	LED	LED DRIVER	STEEL	120	10.4	LITHONIA NO. LDN6 40/10 L06AR LSS OR EQUAL	
B	LED RECESSED DOWNLIGHT	6 <b>"</b> ø	RECESSED	N/A	4000 K	2000	Œ	LED DRIVER	STEEL	120	22.5	LITHONIA NO. LDN6 40/20 L06AR LSS OR EQUAL	
<b>©</b>	LED RECESSED DOWNLIGHT	8 <b>"</b> ø	RECESSED	N/A	4000 K	1850	LED	LED DRIVER	STEEL	120	20	LITHONIA NO. WF8 LEF 40K MVOLT 90 CRI OR EQUAL	OUTDOOR RATED
<b>(D)</b>	EXTERIOR LED WALL PACK	13" X 9"	SURFACE	N/A	4000 K	5300	LED	LED DRIVER	STEEL	120	36	LITHONIA NO. TWR1 LED ALO SWW2 UVOLT PE DDBTXD OR EQUAL	
E	EXTERIOR LED WALL CYLINDER	8" X 5"	SURFACE	N/A	4000 K	533	LED	LED DRIVER	STEEL	120	10	LITHONIA NO. OLLWD LED P1 40K MVOLT DDB OR EQUAL	
EM	EMERGENCY	N/A	WALL	N/A	N/A	N/A	(2) LAMPS	ELECTRONIC	POLYCARBONATE	120/240		LITHONIA NO. EU2L M12 OR EQUAL	6 VOLT NICAD BATTERY TEST SWITCH, POWER INDICATOR
EX	EXIT SIGN/EMERGENCY LIGHT COMBO	N/A	WALL	SINGLE	N/A	N/A	LED LIGHT	LED DRIVER	POLYCARBONATE	120/240		LITHONIA NO. LHQM LED R HO M6 OR EQUAL	6 VOLT NICAD BATTERY, (2) REMOTE HEADS

PERMITTING STAMP





PLAN LIGHTING

TIRADO OFFICE BUILDING POWER ELECTRICAL

#### **PLUMBING GENERAL NOTES:**

PLUMBING WORK SHALL BE IN ACCORDANCE WITH THE NORTH CAROLINA PLUMBING CODE 2018 EDITION AND LOCAL CODES.

ALL WORK SHALL BE COORDINATED AND PERFORMED WITH PRIOR APPROVAL FROM THE GENERAL CONTRACTOR AND OWNER TO SUIT THE OWNER'S OPERATING CONDITIONS.

PLUMBING CONTRACTOR SHALL FIELD VERIFY ALL EXISTING CONDITIONS AND NOTIFY THE GENERAL CONTRACTOR OF ANY DEVIANCIES FROM THE CONTRACT DRAWINGS PRIOR TO STARTING ANY WORK.

THE PLUMBING CONTRACTOR SHALL COORDINATE WITH OTHER TRADES INVOLVED IN THIS PROJECT PRIOR TO INSTALLATION OF HIS EQUIPMENT. SO AS TO AVOID CONFLICTS DURING CONSTRUCTION AND ALLOW FOR OPTIMUM WORKING SPACE AND MAINTENANCE. THINK OF OTHER CONTRACTORS AND THEIR REQUIREMENTS IN VERTICAL CHASES AND WALL MOUNT SPACE. ALL CONTRACTORS TO FOLLOW THIS

ORDER OF PRIORITY: 1. STORM AND SANITARY SEWER LINES

3. HOT AND COLD WATER LINES 4. RIGID CONDUIT

2. DUCTWORK AND HVAC SYSTEMS

THE PLUMBING CONTRACTOR TO ORGANIZE HIS PIPING IN ATTIC SPACES, CRAWL SPACES, AND ABOVE CEILINGS. MAKE RUNS PARALLEL, PERPENDICULAR, AND GROUPED TOGETHER WHERE POSSIBLE. LOCATE MAJOR GROUPINGS OVER HALLWAYS AND AREAS OF PUBLIC ACCESS IF POSSIBLE. FREE RUNS OF PIPING IS NOT ACCEPTABLE.

THE PLUMBING CONTRACTOR SHALL LAY OUT AND INSTALL HIS WORK IN ADVANCE OF POURING CONCRETE FLOORS OR WALLS. HE SHALL FURNISH ALL SLEEVES TO THE GENERAL CONTRACTOR FOR OPENINGS THROUGH POURED MASONRY FLOORS, OR WALLS, ABOVE GRADE REQUIRED FOR PASSAGE OF ALL PIPES TO SUPPORT HIS EQUIPMENT.

HORIZONTAL DRAINAGE AND WASTE PIPE SHALL HAVE A MINIMUM SLOPE OR FALL OF 1/8 INCH PER FOOT. ALL CHANGE OF HORIZONTAL DIRECTIONS IN SOIL WASTE PIPE SHALL BE MADE WITH LONG RADIUS FITTINGS WITH "Y" BRANCHES AND 1/8 OR 1/16 BENDS.

COLD AND HOT WATER PIPING ABOVE GRADE SHALL CAN BE CAN BE PEX PIPING (WITH OWNERS APPROVAL).

ALL HOT WATER PIPING SHALL BE INSULATED WITH 1 INCH THICK SECTIONAL INSULATION OR FIBROUS GLASS MATERIALS WITH FACTORY APPLIED COVER. COVER SHALL BE EMBOSSED VAPOR BARRIER, LAMINATED WITH PRESSURE SEALING CAP ADHESIVE.

ALL COLD WATER PIPING SHALL BE INSULATED WITH 1/2 INCH THICK SECTIONAL INSULATION OR FIBROUS GLASS MATERIALS WITH FACTORY APPLIED COVER. COVER SHALL BE EMBOSSED VAPOR BARRIER, LAMINATED WITH PRESSURE SEALING CAP ADHESIVE.

SANITARY HORIZONTAL WASTE, VENT PIPING, AND FITTINGS ABOVE GRADE SHALL BE SCHEDULE 40 PVC-DWV PIPE-CELLULAR CORE FROM CHARLOTTE PIPE AND FOUNDRY COMPANY OR APPROVED EQUAL, AND MUST MEET OR EXCEED THE REQUIREMENTS OF ASTM F-891, NSF STANDARD NO. 14, AND IAPMO UPC.

ALL WASTE STACK PIPING SHALL BE CAST IRON AND INSULATED FOR SOUND IN WALLS.

ALL WASTE AND STORM PIPING ABOVE CEILING, VERTICAL CHASES, WALLS SHALL BE INSULATED WITH 1/2 INCH THICK SECTIONAL INSULATION OR FIBROUS GLASS MATERIALS WITH FACTORY APPLIED COVER. COVER SHALL BE EMBOSSED VAPOR BARRIER, LAMINATED WITH PRESSURE SEALING CAP ADHESIVE. NO INSULATION REQUIRED IN CRAWL SPACE OR BELOW FLOOR SLAB OF ANY WASTE AND STORM

IN LIEU OF FIBERGLASS INSULATION, THE PLUMBING CONTRACTOR IS ALLOWED TO USE CLOSED CELL INSULATION, 1/2 INCH THICK ARMSTRONG/ARMAFLEX II ON ALL COLD WATER PIPES. RIGID URETHANE FOAM INSULATION, 1 INCH THICK ARMSTRONG/ARMALOK II ON ALL HOT WATER PIPING.

ALL PLUMBING EQUIPMENT SHALL BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS.

ALL FIXTURES, DRAINS, TRAPS, ETC. SHALL BE SET PLUMB AND LEVEL.

NOT TO SCALE

ALL HANDICAPPED FIXTURES AND TRIM SHALL BE INSTALLED IN ACCORDANCE WITH THE NORTH CAROLINA PLUMBING CODE 2018 EDITION.

CHROME PLATED ESCUTCHEONS SHALL BE PROVIDED AT EACH WALL PENETRATION.

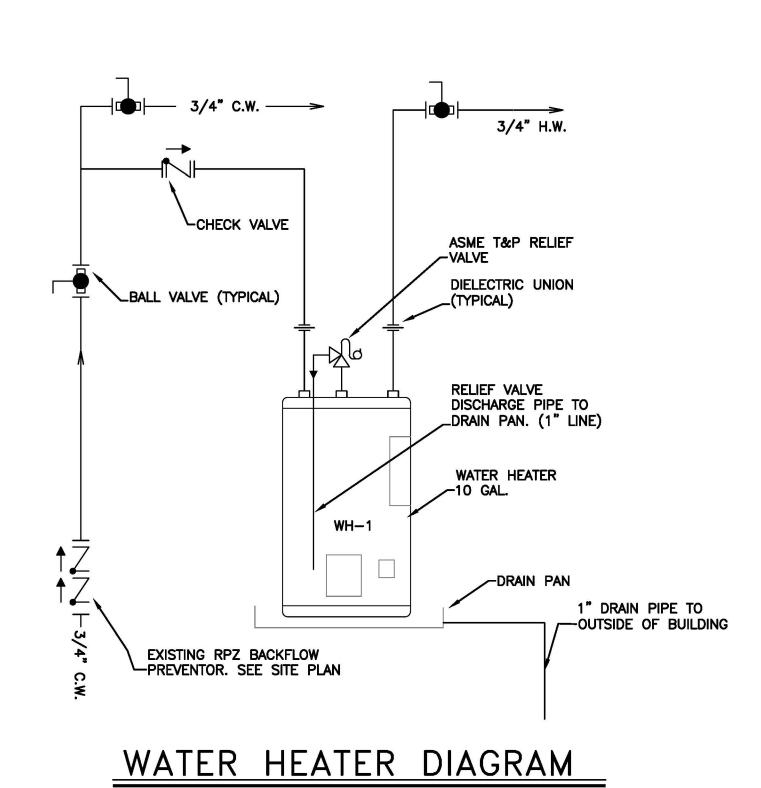
ESCUTCHEONS SHALL BE CHROME PLATED, SPRING TYPE, ON ALL PIPES PASSING THROUGH WALLS AND CEILINGS IN FINISHED AREAS. FLOOR ESCUTCHEONS SHALL BE CAST BRASS, CHROME PLATED, WITH SET SCREW.

ESCUTCHEONS SHALL BE OF SUFFICIENT SIZE TO COVER OUTSIDE DIAMETER OF THE PIPE OR THE INSULATION OF THE PIPE.

FLASHING FOR VENTS THROUGH THE ROOF SHALL BE TWO-PIECE TYPE, 16 OUNCE COPPER COUNTER FLASHING AND BASE FLASHING, OR A TWO-PIECE TYPE, 4 POUND LEAD COUNTER FLASHING AND BASE FLASHING. THE BASE FLASHING SHALL BE INSTALLED BY THE GENERAL CONTRACTOR WITH THE ROOF SYSTEM.

VENT FLASHING SHALL EXTEND DOWN AT LEAST 4 INCHES FROM THE TOP OF THE PIPE. FLASHING SHALL EXTEND AT LEAST 12 INCHES IN ALL DIRECTIONS FROM THE PIPE AND SHALL BE PARALLEL TO THE ROOF LINE.

ALL EQUIPMENT AND INSTALLED MATERIALS SHALL BE THOROUGHLY CLEAN AND FREE OF ALL DIRT, OIL, GRIT, GREASE, AND ETC. ALL PLUMBING SYSTEMS AND EQUIPMENT SHALL BE GUARANTEED FOR A PERIOD OF ONE YEAR AFTER FINAL ACCEPTANCE OF THE

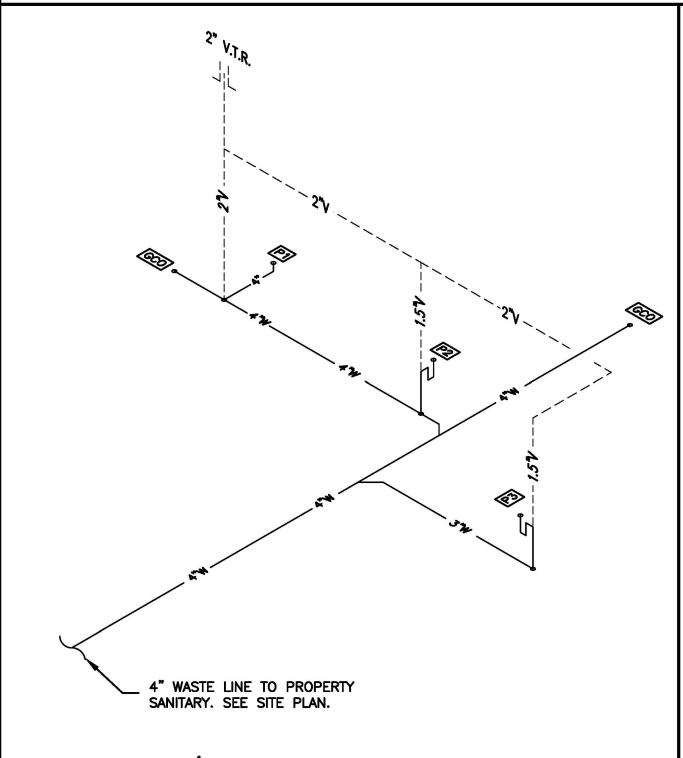


#### PLUMBING FIXTURE SCHEDULE SYMBOL WASTE **VENT ELECTRICAL** MANUFACTURER MODEL # FIXTURE DESCRIPTION FIXTURE MOUNTING **ACCESSORIES** SUPPLY REMARKS CADET ADA/ 215AA.104 ELONGATED BOWL; FLUSH TANK TOILET 4" AMERICAN STANDARD FLOOR MOUNTED SEAT: AMERICAN STANDARD / 5901.100 3/4" C.W. SELECTED MODEL OR EQUAL DELTA 501-WFHGMHDF FAUCE WALL MOUNTED AMERICAN STANDARD LUCERNE/ 0355.012 1/2" C.W. & H.W. 2" LAVATORY 1-1/2" SELECTED MODEL OR EQUAL MIXING VALVE / APOLLO 34B TBD P3 2 COMPARTMENT KITCHEN SINK DROP-IN PROVIDE KITCHEN SINK FAUCET, DRAIN CONNECTION 1/2" C.W. & H.W. 2" 1-1/2" SELECTED MODEL OR EQUAL 3/4" T & P RELIEF VALVE: SELECTED MODEL OR EQUAL RHEEM FLOOR MOUNTED XE10P06PU20U0 10 US GAL. WATER HEATER, 2.0kW 3/4" C.W. & H.W. 120V 2.0KW 120°F OUTLET TEMPERATURE MINIMUM. PROVIDE DRAIN PAN TBD WATTS WALL MOUTNED 3/4" C.W. FROST-PROOF WALL HYDRANT

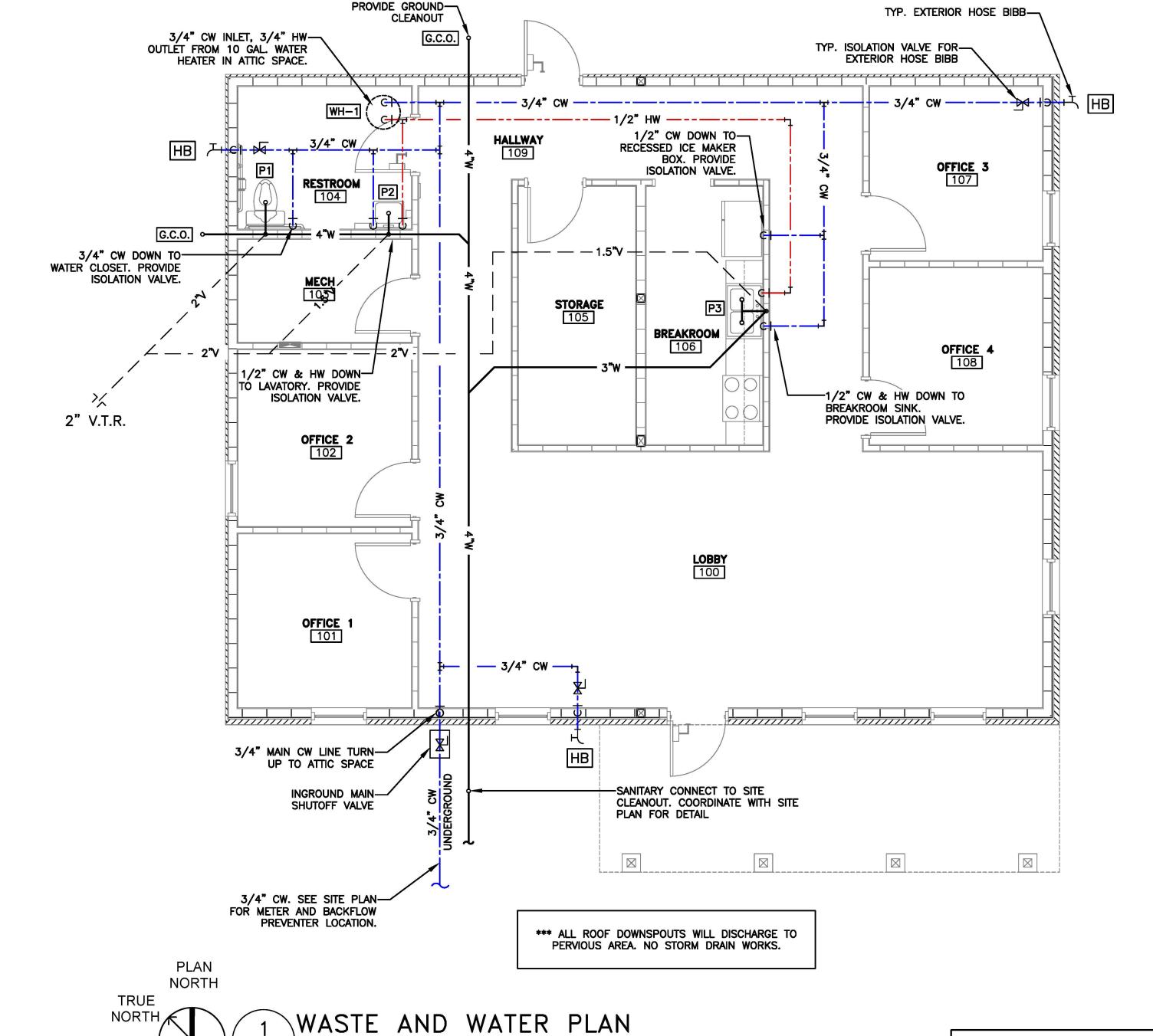
	WATER CAL	CULA	ATIONS	
QTY.	ITEM	C.W. FIXTURE UNITS		WATER SUPPLY FIXTURE UNITS TOTAL
1	WATER CLOSET	5.0	5.0	5.0
1	LAVATORY	1.5	2.0	2.0
1	KITCHEN SINK	1.5	2.0	2.0
3	HOSE BIBB	2.25	2.25	6.75
	15.75			

DRAINAGE CALCULATIONS					
QTY.	ITEM	DRAINAGE FIXTURE UNITS	DRAINAGE FIXTURE UNITS TOTAL		
1	WATER CLOSET	4.0	4.0		
1	LAVATORY	1.0	1.0		
1	KITCHEN SINK	2.0	2.0		
TOTAL DRAINAGE FIXTURE UNITS 7.0					

	PLUMBING	SYMBOL LEGEND				
		HOT WATER LINE				
		COLD WATER LINE				
1	Ю	PIPE TURNS UP				
	CI	PIPE TURNS DOWN				
J	X	SHUT OFF VALVE				
		SANITARY WASTE				
		VENT LINE				



WASTE/VENT - RISER DIAGRAM NOT TO SCALE



PERMITTING STAMP

REVISIONS:

BUILDING

OFFICE

**IRADO** 

REV DATE

PLAN

AND

PLUMBING