DOI FORMAT

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

Name of Project: LAKESIDE SELF STORAGE
Address: 5556 NC 210 N ANGIER, NC Zip Code 27501
Proposed Use: SELF STORAGE FACILITY

Owner or Authorized Agent: JOHN AUTON Telephone 919 369-9872 Email: jauton@ssdinc.com
Owned By: ☐ City/County ☑ Private ☐ State
Code Enforcement Jurisdiction: ☑ City ☑ County ☐ State

LEAD DESIGN PROFESSIONAL		G. CLEVELAND PATE, PLLC ARCHITECTURE-PLANNING		
Designer	FIRM	NAME	LICENSE #	TELEPHONE # EMAIL
Architectural	G. CLEVELAND PATE, PLLC	CLEVE PATE	NC 4895	919 851-0052 PATEARCHITECTURE@GMAIL.COM
Civil	PREVIOUS SUBMITTAL PACKAGE	(CURRY ENGINEERING)		
Electrical	KILIAN ENGINEERING	JACOB BENDER	NC046202	252 425-4967 KILIANENGINEERING.ONMICROSOFT.COM
Fire Alarm	NA	"		
Plumbing	KILIAN ENGINEERING	JACOB BENDER	NC046202	252 425-4967 KILIANENGINEERING.ONMICROSOFT.COM
Mechanical	KILIAN ENGINEERING	JACOB BENDER	NC046202	252 425-4967 KILIANENGINEERING.ONMICROSOFT.COM
Sprinkler-Standpipe	NA			
Structural	HAUSER-CREECH INC.	ADRIAN CREECH	NC037376	919 817-7579 ADRIAN@HAUSER-CREECH.COM
Retaining Walls > 5' High	NA			
Pre Eng. Truss	NA			

2018 NC BUILDING CODE ☑ New Building ☐ Addition ☐ Renovation
☐ 1st Time Interior Completion
☐ Shell/Core-Contact the local inspection jurisdiction for possible additional procedures and requirements
☐ Phased Construction-Shell/Core-Contact the local inspection jurisdiction for possible additional procedures and requirements.

2018 NC EXISTING BUILDING CODE: EXISTING: ☐ Prescriptive ☐ Repair ☐ Chapter 14
Alteration: ☐ Level 1 ☐ Level II ☐ Level III
☐ Historic Proerty ☐ Change of Use

CONSTRUCTED: (date) NA CURRENT OCCUPANCIES (CH.3): NA
RENOVATED: (date) NA PROPOSED OCCUPANCIES (CH.3): S1 SELF STORAGE

RISK CATEGORY (TABLE 1604.5): CURRENT ☐ I ☐ II ☐ III ☐ IV
PROPOSED ☐ I ☑ II ☐ III ☐ IV

BASIC BUILDING DATA

Construction Type: (check all that apply) ☐ I-A ☐ II-A ☐ III-A ☐ IV ☐ V-A ☐ I-B ☑ II-B ☐ III-B ☐ V-B
Sprinklers: ☑ No ☐ Partial ☐ Yes ☑ NFPA13 ☐ NFPA 13R ☐ NFPA 13D
Standpipes: ☑ No ☐ Yes Class: ☐ I ☐ II ☐ III Wet ☐ Dry
Fire District: ☑ No ☐ Yes (Primary) Flood Hazard Area: ☒ No ☐ Yes
Special Inspections Req: ☐ No ☑ Yes Contact the local inspection jurisdiction for additional procedures and requirements.
NOTE: SEE STRUCTURAL DRAWINGS FOR SPECIAL INSPECTION FORM WHICH MAY BE IMPLEMENTED IF REQUESTED BY LOCAL INSPECTIONS OR STRUCTURAL.

Gross Building Area: (OUT TO OUT OF BEARING WALLS)

FLOOR	EXISTING (SQ FT)	NEW (SQ FT)	SUB-TOTAL
FIRST		17,000	17,000
TOTAL			17,000

ALLOWABLE AREA
PRIMARY OCCUPANCY CLASSIFICATION

Assembly ☐ A-1 ☐ A-2 ☐ A-3 ☐ A-4 ☐ A-5
Business ☐
Educational ☐
Factory ☐ F-1 Moderate ☐ F-2 Low
Hazardous ☐ H-1 Detonate ☐ H-2 Deflagrate ☐ H-3 Combust ☐ H-4 Health ☐ H-5 HPM
Institutional ☐ I-1 ☐ I-2 ☐ I-3 ☐ I-4
I-3 Condition ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5
Mercantile ☐
Residential ☐ R-1 ☐ R-2 ☐ R-3 ☐ R-4
Storage ☑ S-1 Moderate ☐ S-2 Low ☐ High-Piled
☐ Parking Garage ☐ Open ☐ Enclosed ☐ Repair Garage
Utility and Miscellaneous ☐

ACCESSORY OCCUPANCY CLASSIFICATIONS: NA

INCIDENTAL USES (TABLE 509): NA

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

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

MIXED OCCUPANCIES: ☒ No ☐ Yes Separation ____ Hr. Exception ____

☐ Incidental Use Seperation (508.2.5)
This separation is not exempt as a Non-Separated Use (see exception)

☐ Non-Separate Use (508.3)
The required type of construction for the building shall be determined by applying the height and area limitations for each of the applicable occupancies to the entire building. The most restrictive type of construction, so determined shall apply to the entire building.

☐ Separated Use (508.4)-see below for area calculations
For each story, the area of the occupancy shall be such that the sum of the ratiosn of the actual floor area of each use divided by the allowable floor area for each use shall not exceed 1.

$$\frac{\text{Actual Area of Occupancy A}}{\text{Allowable Area of Occupancy A}} + \frac{\text{Actual Area of Occupancy B}}{\text{Allowable Area of Occupancy B}} \leq 1$$

_____ + _____ + ___ = _____ ≤ 1

Story No.	Description And Use	(A) Bldg. Area Per Story (Actual)	(B) Table 506.2 d Area	(C) Area For Frontage Increase[1,2]	(D) Allowable Floor Area [2,3] or Unlim[2,3]	
1	S1	17,000	17,500	NA	12,000MAX	WITHIN 3 HR. FIREWALLS

1 Frontage area increases from Section 506.2 are computed thus:
a. Perimeter which fronts a public way or open space having 20 feet min. width=____ft.(F)
b. Total Building Perimeter =____ft(P)
c. Ratio (F/P)=____(F/P)
d. W=Minimum with of public way =____ft(W)
e. Percent of frontage increase I_f = 100(F/P-0.25) x W/30 =____(%)
2 Unlimited area applicable under conditions of Section 507
3 Maximum Building Area=total number of stories in the building x D (maximum 3 stories) (506.2)
4 The maximum area of open parking garages must comply with Table 406.5.4
5.Frontage increase is based on the unsprinkled area value in Table 506.2

ALLOWABLE HEIGHT

	ALLOWABLE	SHOWN ON PLANS	CODE REFERENCE [1]
building ht. in feet (table 504.3)2	55'	11'-8" +-	
building ht. in stories(table 504.4)3	2	1	

1.Provide code reference if the "Shown on Plans" quantity is not based on Table 504.3 or 504.4
2. The maximum height of th air traffic control towers must comply with Table 412.3.1
3.The maximum height of open parking garages must comply with Table 406.5.4

FIRE PROTECTION REQUIREMENTS
THIS SECTION REQUIRED FOR ALL PROJECTS

Life safety Plan Sheet #, If Provided A-2

BUILDING ELEMENT	FIRE SEPARATION DISTANCE (FEET)	RATING REQ'D	RATING PROVIDED (W/___HRY REDUCTION	DETAIL # AND SHEET#	DESIGN # FOR RATED ASSEM.	DESIGN # FOR RATED PENE. SEE PME	DESIGN # FOR RATED JOINTS SEE UL DETAILS
Structural Frame, Including columns, girders, trusses						NA	NA
BEARING WALLS (EXT)							
NORTH EAST	NO RATE	0	0				
SOUTH EAST		0	0				
SOUTHWEST		0	0				
NORTHWEST		0	0				
Interior Bearing Walls	NA	NA					
NON BEARING WALLS/PARTEXT	NO RATE						
North		0	0				
East		0	0				
West		0	0				
South		0	0				
Interior Non Bearing Walls							
Floor construction Including supporting beams and joists List const. types.							
Floor ceiling assembly							
Columns supporting floors							
roof construction including supporting beams and joists							
Roof Ceiling Assembly							
Columns Supporting Roof							
Shaft Enclosures-Exit	NA						
Shaft Enclosures-other							
Corridor Separation							
~~Occupancy~~/Fire barrier sep.							
~~Party~~/fire wall separation	NA	3 HR.	3 HR.	A-2	U419 ALT.U263 #455	SEE PME	SEE DET.
smoke barrier separation	NA	NA	NA				
Smoke Partition							
Tenant Dwelling Unit/ Sleeping Unit separation							
Incidental Use Separation							

* Indicate section number permitting reduction

PERCENTAGE OF WALL OPENING CALCULATION

FIRE SEPARATION DISTANCE (FT) FROM PROPERTY LINE	DEGREE OF OPENINGS PROTECTION(705.8)	ALLOWABLE AREA (%)	ACTUAL SHOWN ON PLANS (%)
NA-EXCEEDS DISTANCE REQ. FOR ALL PROP. LINES. SEE CIVIL			

LIFE SAFETY SYSTEM REQUIREMENTS

Emergency Lighting	☐ No	☑ Yes
Exit Signs:	☐ No	☑ Yes
Fire Alarm:	☑ No	☐ Yes
Smoke Detection Systems:	☑ No	☐ Yes
Carbon Monoxide Detection	☑ No	☐ Yes
Panic Hardware:	☐ No	☑ Yes

LIFE SAFETY PLAN REQUIREMENTS
SEE LIFE SAFETY PLANS (ON SMALLER BLDGS INCORP INTO FLOOR PLAN)

☐ Fire and/or smoke rated wall locations (Chapter 7) NA
☐ Assumed and real property line locations NA SEE SITE/CIVIL
☐ Exterior wall opening area with respect to distance to assumed property lines (705.8) NA
☐ Existing Structures within 30' of the proposed building NA
☐ Occupancy Types for each area as it relates to occupant load calculation (Table 1004.1.1) NA
☑ Occupant Load for each area= LEVEL
☑ Exit access travel distances (1016) ALL MEET MIN.
☑ Common Path of travel distances (1014.3 & 1028.8)
☑ Dead End Lengths (1018.4) ALL LESS THAN 20'
☑ Clear exit widths for each door EXCEEDS MIN, ALL LOC.
☑ Maximum calculated occup load capacity for each exit door can accom based on exit width(1005.1)
☑ Actual occupant load for each exit door MEETS MIN, REQ. LOW OCCUPANCY
☐ A separate schematic plan indicating where the fire rated floor/ceiling and or roof struct is provided for purposes of occupancy separation NA
☑ Location of doors with panic hardware NOTED ON DOOR SCHEDULE
☐ Location of doors with electromagnetic egress locks (1008.1.9.8) NA
☑ Location of doors with hold open devices SEE ELEC.
☐ Location of emergency escape windows (1029) NA
☐ The square footage of each fire area (902) (12,000 MAX OR LESS)
☐ The square footage of each smoke compartment (407.4) SEE ABOVE
☐ Note any code exemptions or table notes that may have been utilized regarding the items above NA

ACCESSIBLE DWELLING UNITS NA
(SECTION 1107)

Total Units	Access. Units Req.	Access. Units Provided	Type A Units Req.	TYPE A Units Provided	Type B Units Provided	Type B Units Req.	Total Accessible Units Provided.
NA							

ACCESSIBLE PARKING
(SECTION 1106)

LOT OR PARKING AREA	TOTAL # OF PARK. SPACES	# OF ACCESSIBLE SPACES				TOTAL # ACCESSIBLE PROVIDED
	REQUIRED	PROVIDED	REG. W/5' ACCESS AISLE	132" ACCESS AISLE	VAN SPACE W/8' ACCESS AISLE	
TOTAL	SEE SITE SUBMITTAL	SEE		YES	YES	SEE SITE PLAN SUBMITTAL

PLUMBING FIXTURE REQUIREMENTS

USE		WATER CLOSET			URINALS	LAVS.			SHOWERS & TUBS	DRINKING FOUNTAINS	NOT REQ.
SELF STOR. EMPLOYEE		MALE	FEMALE	UNISEX		MALE	FEMALE	UNISEX		REGULAR	ACCESSIBLE
SPACE	EXISTING								____		____
	NEW										
	REQUIRED TOTAL REQ.			1				1			
	TOTAL PROV.			1				1			

SPECIAL APPROVALS

Special Approval: (Local Jurisdiction, Department of Insurance, OSC, DPI, DHHS, ICC, etc. describe below)
SEE STRUCTURAL FOR SPECIAL INSPECTIONS FORM

STRUCTURAL DESIGN (SEE STRUCTURAL FOR ADDITIONAL DATA)

DESIGN LOADS

Importance Factor: Wind (Iw) 1.0
Snow(Is) 1.0
Seismic(Ie) 1.0

Live Loads: Roof 20 PSF
Mezzanine NA PSF
Floor NA PSF
Floor 125 PSF

Ground Snow Load: 15 PSF

Wind Load Basic Wind Speed 115 mph (ASCE-7)
Exposure Category C
Wind Base Shears(for MWFRS) Vx= 119KIP Vy= 92KIP

Seismic Design Category: ☐ A ☑ B ☐ C ☐ D

Provide the following Seismic Design Parameters:
Occupancy Category (Table 1604.5) ☐ I ☐ II ☐ III ☐ IV
Special Response Acceleration Ss 15.4 %g S1 7.8 %g
Site Classification (table 161.3,5.2) ☐ A ☐ B ☐ C ☑ D ☐ E ☐ F
Data Source: ☐ Field Test ☑ Presumptive ☐ Historical Data

Basic Structural System (check one)
☑ Bearing Wall ☐ Dual w/Special Moment Frame
☐ Building Frame ☐ Dual w/Intermediate R/C or Speical Steel
☐ Moment Frame ☐ Inverted Pendulum

Seismic base shear: Vx= 78.3KIPS Vy= 78.3KIPS
Analysis Procedure: ☐ Simplified ☑ Equiv. Lateral force ☐ Dynamic

Architectural, Mechanical, Components Anchored? ☑ Yes ☐ No

Lateral Design Control: ☐ Earthquake ☒ Wind

Soil Bearing Capacities:
Field Test(provide copy of test report) SEE SOIL REPORT PSF
Presumptive Bearing Capacity 2000 PSF
Pile Size, type and capacity

Special Inspections Required: ☑ Yes ☐ No
POSSIBLY TBD

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 proposed project.

This is a new building

Existing building envelope complies with code: ☐ No ☐ Yes the remainder of this section is N/A
Exempt Building: ☐ No ☑ Yes(Provide code or statutory reference): ENERGY CODE 101.12 SENATE BILL 131
CLIMATE ZONE: ☐ 3A ☒ 4 ☐ 4A ☐ 5
METHOD OF COMPLIANCE:
☐ Prescriptive (Energy Code) ☐ Performance (Energy Code)
☐ Prescriptive (ASHRAE 90.1) ☐ Performance (ASHRAE 90.1)
(If "Other" specify source here) SEE ABOVE

THERMAL ENVELOPE

S OCCUPANCY DOES NOTE REQUIRE INSULATION BUT THE OWNER RESERVES THE RIGHT TO INSULATE PER NOTES ON THESE DRAWINGS WALL SECTIONS.

ROOF/CEILING ASSEMBLY (EACH ASSEMBLY)
Description of Assembly LIGHT FRAMING AND METAL ROOFING
U-Value of total assembly
R-Value of insulation
Skylights in each assembly NA
U-Value of skylight
Total square footage of skylights in each assembly NA

EXTERIOR WALLS (EACH ASSEMBLY)
Description of Assembly STUD BEARING SHEATHING, BRICK, & MTL. SIDING
U-Value of total assembly
R-Value of insulation
Openings (windows or doors with glazing)
U-Value of assembly .064
Solar Heat Gain Coeff. .25
Projection factor LESS THAN .25
Low-e required, if applicable TINTED GLS.
Door R-Values R15

WALLS BELOW GRADE (EACH ASSEMBLY) SEE SECTIONS
Description of assembly
U-Value of total assembly
R-Value of insulation

FLOORS OVER UNCONDITIONED SPACE (EACH ASSEMBLY)
Description of assembly NA

FLOORS OVER UNCONDITIONED SPACE (EACH ASSEMBLY)
Description of assembly NA
U-Value of total assembly
R-Value of insulation

FLOORS SLAB ON GRADE (EACH ASSEMBLY)
Description of assembly CONC SLAB OVER VB & 4" OF CLEAN STONE
U-Value of total assembly
R-Value of insulation
Horizontal/Vertical requirement
Slab heated NO

MECHANICAL SUMMARY
MECHANICAL SYSTEMS, SERVICE SYSTEMS AND EQUIPMENT

THERMAL ZONE SEE HVAC DRAWINGS
Winter dry bulb
Summer dry bulb
INTERIOR DESIGN CONDITIONS
Winter dry bulb
Summer dry bulb
Relative humidity
BUILDING HEATING LOAD SEE HVAC DRAWINGS
BUILDING COOLING LOAD SEE HVAC DRAWINGS
MECHANICAL SPACING CONDITIONING SYSTEM
Unitary SEE M1
Description of unit
Heating efficiency
Cooling efficiency
Size Category of unit
Boiler
Size Category. If oversized, state reason: NA
Chiller
Size Category. If oversized, state reason:
LIST EQUIPMENT EFFICIENCIES SEE TABLE M1

ELECTRICAL SUMMARY
ELECTRICAL SYSTEM AND EQUIPMENT

Method of Compliance: SEE ABOVE
Energy Code: ☒ Prescriptive ☐ Performance
ASHRAE 90.1: ☐ Prescriptive ☐ Performance

Lighting schedule (each fixture type) SEE E1 (ELECTRICAL DWGS)
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 (whole build. or space by space)
total exterior wattage specified vs. allowed

Additional Prescriptive Compliance NOT REQ. PER STATUE 131 BUT EFFICIENT EQUIPMENT PROVIDED
☒ C406.2 MOREE EFFICIENT HVAC EQUIP. PERFORM.
☒ C406.3 REDUCED LIGHTING 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 HTG.

LAKESIDE STORAGE

ANGIER, NC
BLDG. A

GENERAL NOTES:

NOTICE TO CONTRACTOR
All construction shall comply with Building Codes and is subject to field inspection and verification.
Reviewed for Code Compliance
08/15/2022
Harnett COUNTY NORTH CAROLINA

REV. DATE:	REVISION DESCRIPTION

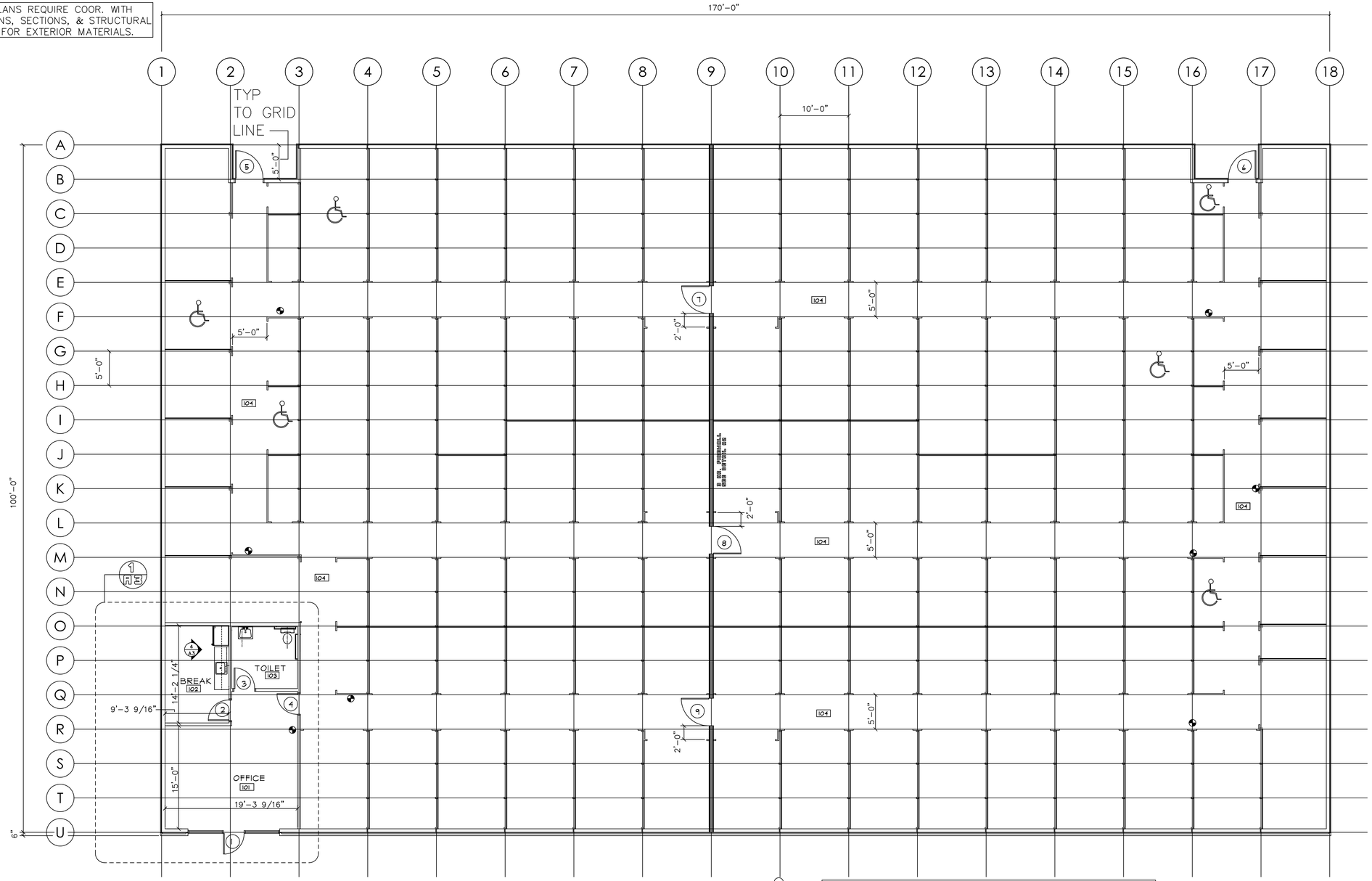
G. CLEVELAND PATE, PLLC
Architecture • Planning
6013 Fordland Drive, Raleigh, NC 27606
919-851-0052

SEALS:
GROVER CLEVELAND PATE III REGISTERED ARCHITECT 4895 NORTH CAROLINA CARY, N.C.
6/27/22

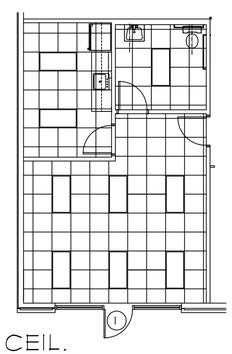
APPENDIX B

GCP	GCP	SHEET:
DESIGNED BY:	DRAWN BY:	
GCP	GCP	APPXB
CHECKED BY:	APPROVED BY:	OF:
LAKESIDE	LAKESIDEANG	6/27/22
CAD FILE NAME:	PROJECT #	DATE:

FLOOR PLANS REQUIRE COOR. WITH ELEVATIONS, SECTIONS, & STRUCTURAL FRAMING FOR EXTERIOR MATERIALS.



1/A-1 FLOOR PLAN
1/8" = 1'-0"



2/A-1 REF. CEIL.
1/8" = 1'-0"

TOTAL 105 UNITS (ADA 5% TOTAL)
6 TOTAL ADA UNITS

PARTITION SCHED. OFFICE, BREAK, TOILET

OFF/TOIL: INSULATE WALLS IN OFFICE, BREAK, TOILETS FOR SOUND PURPOSES. INSULATION THESE LOCATIONS R15

NOTE: SEE STRUCTURAL STUD PLAN. STRUCT. STUDS ARE TO SUPERCEED ALL LOCATIONS. FOR OFFICE, BREAK, TOILET IF NOT STRUCT. STUDS, 3 5/8" REAL 22 GA. STUDS @ 16" O.C. MAY BE USED TO DECK W/ONE ROW OF MANUF. PURLIN.(VERIFY HT. LIMITATION). SEE DOOR SCHED. NOTES. GYP. TO BE 5/8"; IF NO LAY IN TO DECK. IF LAY IN TO GYP. TO BE 5/8"; IF NO LAY IN RUN TO DECK. IF LAY RUN TO 6" ABOVE LAY IN CEILING. AT OFFICE, BREAK, TOILET RUN ONE SIDE OF GYP. MIN. TO DECK FOR SECURITY/SOUND. VERIFY ON SITE ALL WALL DEPTHS FOR H.M. JAMB DEPTHS.

FIRE EXTINGUISHERS

NOTE: INFORMATION SHOWN IS GENERAL AND SUBJECT TO BE REVISED PER TYPE AND LOCATIONS BY THE LOCAL FIRE MARSHALL. CONSULT WITH FIRE MARSHALL PRIOR TO FINAL PLACEMENT.

2A 10 BC

MAX TRAVEL DISTANCE TO UNIT 75' OR 150' BETWEEN UNITS, ONE UNIT MUST ALWAYS BE VISIBLE FROM ANY LOCATION.

ALL F.E. SHALL MEET THE AB CRITERIA

LESS THAN 40# HANDLE HT. 5'-0 AFF MAX.

MORE THAN 40# HANDLE HT. 3'-6" AFF MAX.

CAB. AND/OR RELEASE MAX. 48" AFF

FE MAY BE WALL MT. W/MANUF. WALL BRACKET.

PROVIDE CLEAR INSTRUCTIONS AT EACH EXTINGUISHER REGARDING INSTRUCTIONAL USE.

ALL EXTERIOR FE UNITS TO BE EXTERIOR GRADE CABINETS W/ALL EXT. GRADE HARDWARE PER MANUF.

F.E.

TOTAL BLDG. 17,000 SF

OFFICE/TOILET SPACE 548 SF DIV. X 100 SF PER OCCUPANT= 6 OCCUPANTS

STORAGE SPACE 16,432 SF DIV. X 500 SF PER OCCUPANT= 33 OCCUPANTS

4'-0 DOORS @ .2" PER PERSON WILL ACCOMODATE 235 PEOPLE

3'-0 DOORS @ .2" PER PERSON WILL ACCOMODATE 175 PEOPLE

ALL DOORS THIS BUILDING INDIVIDUALLY GREATLY EXCEED THE STATED OCCUPANCY LOAD AND AND REQUIRED EGRESS SIZING

.2" IS USED AS EXCEPTION 1 (1005.3.2) NOT FULLY MET FOR .15"

LAKESIDE STORAGE

ANGIER, NC

BLDG. A

GENERAL NOTES:

REV.	DATE:	REVISION DESCRIPTION
1		

G. CLEVELAND PATE, PLLC
Architecture • Planning
6013 Fordland Drive, Raleigh, NC 27606
919-851-0052

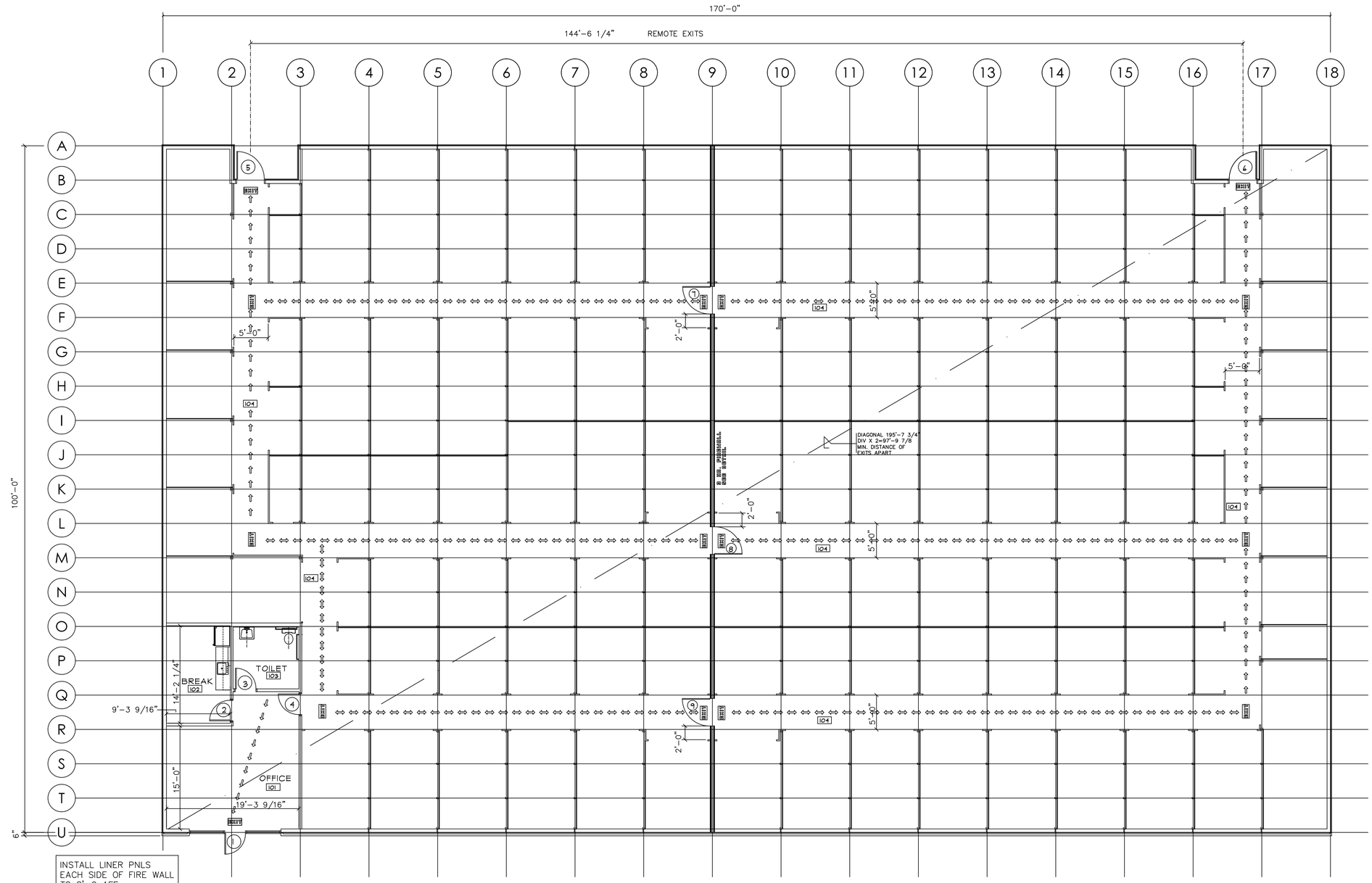
SEALS:

GROVER CLEVELAND PATE III REGISTERED ARCHITECT 4895 NORTH CAROLINA CARY, N.C.

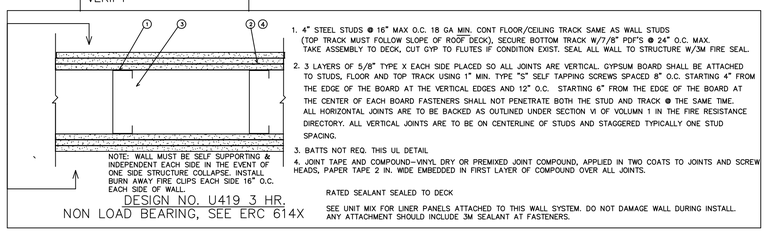
6/27/22

FLOOR PLAN

GCP	GCP	SHEET: A-1
DESIGNED BY:	DRAWN BY:	
GCP	GCP	
CHECKED BY:	APPROVED BY:	OF:
LAKESIDE	LAKESIDEANG	6/27/22
CAD FILE NAME:	PROJECT #	DATE:



INSTALL LINER PNLS
EACH SIDE OF FIRE WALL
TO 8'-9 AFF
VERIFY



NOTE: WALL MUST BE SELF SUPPORTING & INDEPENDENT EACH SIDE IN THE EVENT OF ONE SIDE STRUCTURE COLLAPSE. INSTALL BURN AWAY FIRE CLIPS EACH SIDE 16" O.C. EACH SIDE OF WALL.

DESIGN NO. U419 3 HR.
NON LOAD BEARING, SEE ERC 614X

1. 4" STEEL STUDS @ 16" MAX O.C. 18 GA MIN. CONT FLOOR/CEILING TRACK SAME AS WALL STUDS (TOP TRACK MUST FOLLOW SLOPE OF ROOF DECK), SECURE BOTTOM TRACK W/7/8" PDF'S @ 24" O.C. MAX. TAKE ASSEMBLY TO DECK, CUT GYP TO FLUTES IF CONDITION EXIST. SEAL ALL WALL TO STRUCTURE W/3M FIRE SEAL.
2. 3 LAYERS OF 5/8" TYPE X EACH SIDE PLACED SO ALL JOINTS ARE VERTICAL. GYPSUM BOARD SHALL BE ATTACHED TO STUDS, FLOOR AND TOP TRACK USING 1" MIN. TYPE "S" SELF TAPPING SCREWS SPACED 8" O.C. STARTING 4" FROM THE EDGE OF THE BOARD AT THE VERTICAL EDGES AND 12" O.C. STARTING 6" FROM THE EDGE OF THE BOARD AT THE CENTER OF EACH BOARD FASTENERS SHALL NOT PENETRATE BOTH THE STUD AND TRACK @ THE SAME TIME. ALL HORIZONTAL JOINTS ARE TO BE BACKED AS OUTLINED UNDER SECTION VI OF VOLUMN 1 IN THE FIRE RESISTANCE DIRECTORY. ALL VERTICAL JOINTS ARE TO BE ON CENTERLINE OF STUDS AND STAGGERED TYPICALLY ONE STUD SPACING.
3. BATTS NOT REQ. THIS UL DETAIL
4. JOINT TAPE AND COMPOUND-VINYL DRY OR PREMIXED JOINT COMPOUND, APPLIED IN TWO COATS TO JOINTS AND SCREW HEADS, PAPER TAPE 2 IN. WIDE EMBEDDED IN FIRST LAYER OF COMPOUND OVER ALL JOINTS.

RATED SEALANT SEALED TO DECK

SEE UNIT MIX FOR LINER PANELS ATTACHED TO THIS WALL SYSTEM. DO NOT DAMAGE WALL DURING INSTALL. ANY ATTACHMENT SHOULD INCLUDE 3M SEALANT AT FASTENERS.

FIRE CLIPS: INSTALL BREAK AWAY (MELT) CLIPS EACH SIDE OF FIRE WALL @ 5' O.C. MAX. CLIPS BREAK AWAY UNDER INTENSE HEAT, ALLOWING THE FIRE DAMAGES STRUCURE TO COLLAPSE ONE SIDE WHILE KEEPING THE FIRE WALL IN PLACE FOR OPP SIDE PROTECTION.

GEN NOTE: WRAP ANY STRUCTURAL STUD MEMBERS IN RATED WALL LINE TO MATCH REQ. UL DETAILS.

NOTE: COOR ACTUAL FIRE WALL THICKNESS WITH UNIT MIX FINAL LAYOUT ON SITE.

ALT. DETAIL: 3 HR. UL263 DESIGN #455

1 / A-2 LIFE SAFETY PLAN
1/8" = 1'-0"

MAXIMUM TRAVEL DISTANCE TO EXIT- 154'-11 1/2"
MAXIMUM TRAVEL DISTANCE ALLOWED- 200'
UNSPRINKLED

TOTAL BLDG. 17,000 SF

OFFICE/TOILET SPACE 568 SF DIV. X 100 SF PER OCCUPANT= 6 OCCUPANTS

STORAGE SPACE 16,432 SF DIV. X 500 SF PER OCCUPANT= 33 OCCUPANTS

4'-0 DOORS @ .2" PER PERSON WILL ACCOMODATE 235 PEOPLE
3'-0 DOORS @ .2" PER PERSON WILL ACCOMODATE 175 PEOPLE
ALL DOORS THIS BUILDING INDIVIDUALLY GREATLY EXCEED THE STATED OCCUPANCY LOAD AND AND REQUIRED EGRESS SIZING
.2" IS USED AS EXCEPTION 1 (1005.3.2) NOT FULLY MET FOR .15"

LAKESIDE STORAGE

ANGIER, NC
BLDG. A

GENERAL NOTES:

REV.	DATE:	REVISION DESCRIPTION
1		

G. CLEVELAND PATE, PLLC
Architecture • Planning
6013 Fordland Drive, Raleigh, NC 27606
919-851-0052

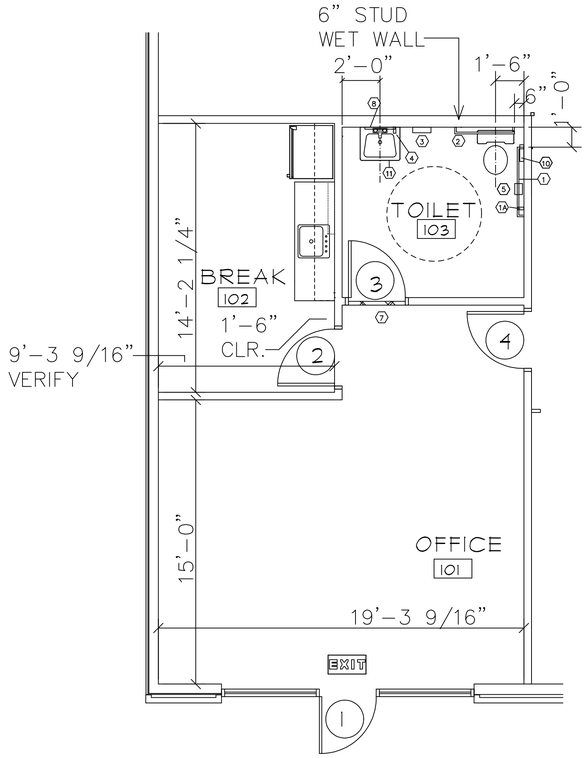
SEALS:

GROVER CLEVELAND PATE III REGISTERED ARCHITECT 4895 SOUTH CAROLINA CARY, N.C.

6/27/22

LIFE SAFETY FLOOR PLAN

GCP	GCP	SHEET: A-2
DESIGNED BY:	DRAWN BY:	
GCP	GCP	
CHECKED BY:	APPROVED BY:	OF:
LAKESIDE	LAKESIDEANG	6/27/22
CAD FILE NAME:	PROJECT #	DATE:



1 / A-3 OFFICE-BREAK-TOILET PLAN
3/16" = 1'-0"

VERIFY DIM. OF ALL STUDS/WALLS WITH STRUCTURAL STUD LAYOUT. VERIFY STUD SIZE AND GAUGE. STUDS/GYP(5/8") FOR OFFICE BREAK AND TOILETS TO DECK. INSTALL MIN. R11 FIBERGLASS BATTS IN OFFICE, BREAK,TOILET FOR SOUND ATTENUATION. STUD MIN. 3 5/8" 20 GA. BUT STRUCTURAL LINES WILL BE DIFF. AND MUST BE COOR. PRIOR TO BUY AND INSTALL.

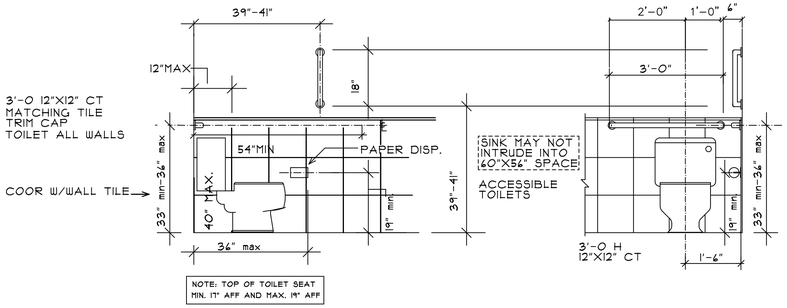
TOILET ACCESSORY SCHEDULE

MARK	DESCRIPTION	REMARKS	
⟨1⟩	42" GRAB BAR	3700, TYPE 01, MTD 34" CL AFF	
⟨1A⟩	18" VERT. GRAB BAR	3700, TYPE 01, SEE DWG.	
⟨2⟩	36" GRAB BAR	3700, TYPE 01 MTD 34" CL AFF	
⟨3⟩	PAPER TOWEL DISP.	0215 W/OPER. 40"AFF	
⟨4⟩	SOAP DISPENSER	WALL MT. OPER. @ 40"MAX. AFF	
⟨5⟩	TOILET PAPER HOLDER	7403-SD MTD. AT 19" CL AFF, FRONT 36" FROM WALL	
⟨6⟩	NOT ASSIGNED		
⟨7⟩	MARBLE OR SYNTHETIC THRESH	ADA BEVELED EDGE	
⟨8⟩	MIRROR	0624 24" X 48" MT. BOT. 40" AFF	
⟨9⟩	FEMININE NAPKIN DISPENSER	MT TOP @ 16" AFF	OWNER OPTION
⟨10⟩	FEMININE NAPKIN DISPOSAL	MT TOP @ 16" AFF	WOMEN & UNISEX
⟨11⟩	HANDILAV TRAP COVERS	MT. ON LAV TRAPS	

WITH EXCEPTION OF WOMEN'S SPECIFIC ITEMS EACH TOILET ROOM TO RECEIVE THE SAME ITEMS EVEN IF NOT CALLED SPECIFICALLY & ALL TIMES INDICATED ON SCHEDULE.

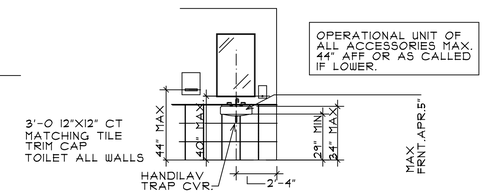
NOTE:

1. ALL ACCESSORIES TO BE ASI OR APPROVED EQUAL.
2. PROVIDE POSITIVE BLOCKING INSIDE WALL FOR ALL FIXTURES 250 LB MINIMUM DOWNFORCE.
3. INSTALL ALL ACCESSORIES PER NC VOL 1-C
4. SUBMIT SHOP DWGS IF REQ. BY OWNER



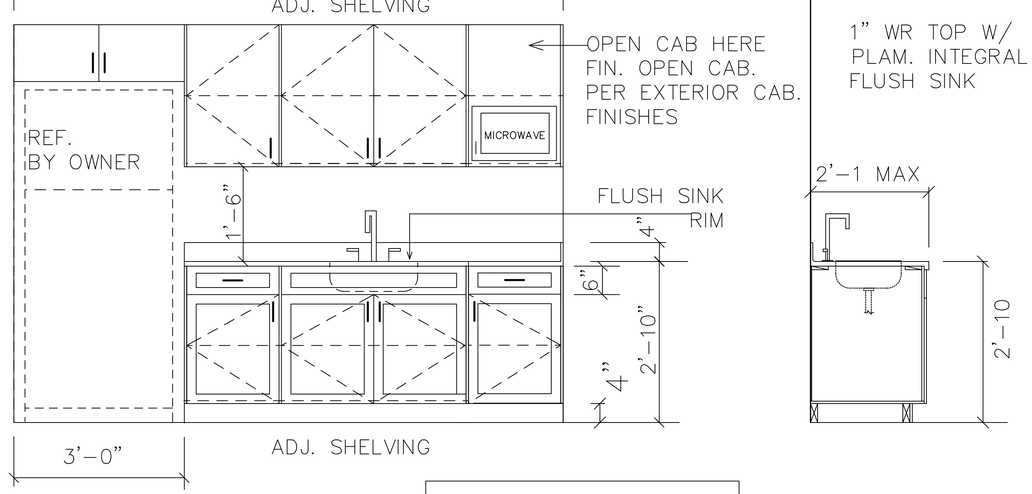
2 / A-3 W.C. GRAB BAR LOCATIONS
NTS

CABINET NOTES:
MDF ALL EXPOSED SURFACES PLAM. INTERIOR WHITE MELAMINE. ALL SHELVES 3/4" PLYWOOD/SOLID EDGE, SHELF SURFACE MELAMINE. OFFSET CONCEALED HINGES, BRUSHED ALUM WIRE PULLS.



SEE PLAN AND ACCESSORY SCHEDULE

3 / A-3 TYPICAL SINK-MIRROR
NTS



COOR W/ELEC. & PLUMB.

4 / A-3 BREAK ROOM MILWORK
NTS

LAKESIDE STORAGE

ANGIER, NC
BLDG. A

GENERAL NOTES:

REV.	DATE:	REVISION DESCRIPTION

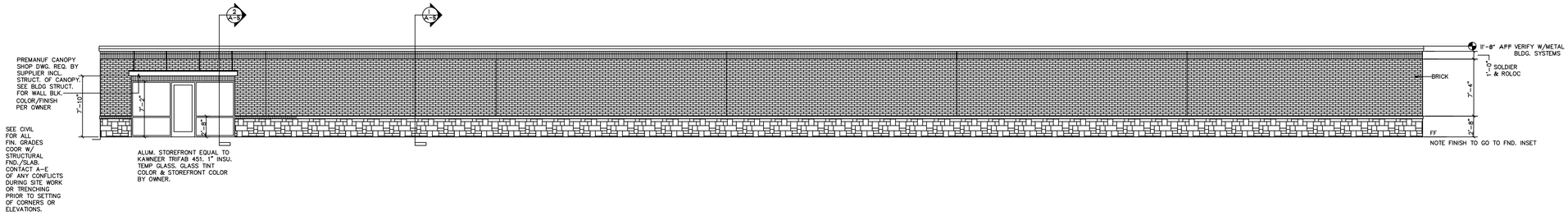
G. CLEVELAND PATE, PLLC
Architecture • Planning
6013 Fordland Drive, Raleigh, NC 27606
919-851-0052

SEALS:

GROVER CLEVELAND PATE III REGISTERED ARCHITECT 4895 NORTH CAROLINA CARY, N.C.
6/27/22

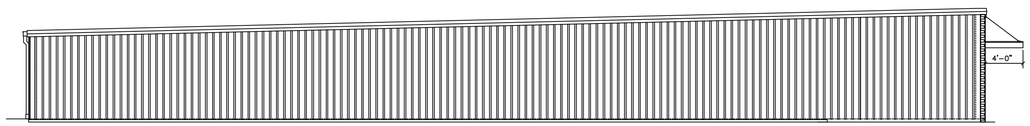
ENLARGED PLAN/SCHD

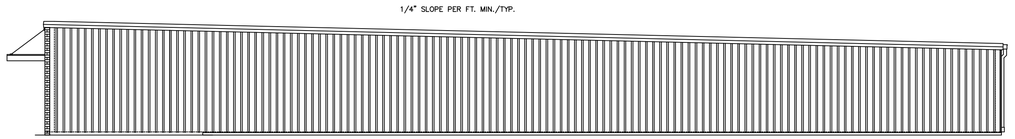
GCP	GCP	SHEET: A-3
DESIGNED BY:	DRAWN BY:	
GCP	GCP	
CHECKED BY:	APPROVED BY:	OF:
LAKESIDE	LAKESIDEANG	6/27/22
CAD FILE NAME:	PROJECT #	DATE:



1 / A-4 FRONT ELEVATION

1/8" = 1'-0"



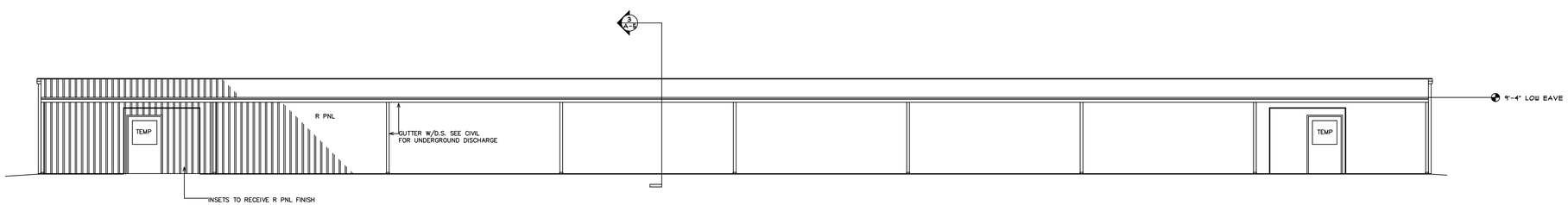


2 / A-4 LEFT SIDE ELEVATION

1/8" = 1'-0"

3 / A-4 RIGHT SIDE ELEVATION

1/8" = 1'-0"



4 / A-4 REAR ELEVATION

1/8" = 1'-0"

LAKESIDE STORAGE

ANGIER, NC

BLDG. A

GENERAL NOTES:

REV.	DATE:	REVISION DESCRIPTION

G. CLEVELAND PATE, PLLC
Architecture • Planning
6013 Fordland Drive, Raleigh, NC 27606
919-851-0052

SEALS:

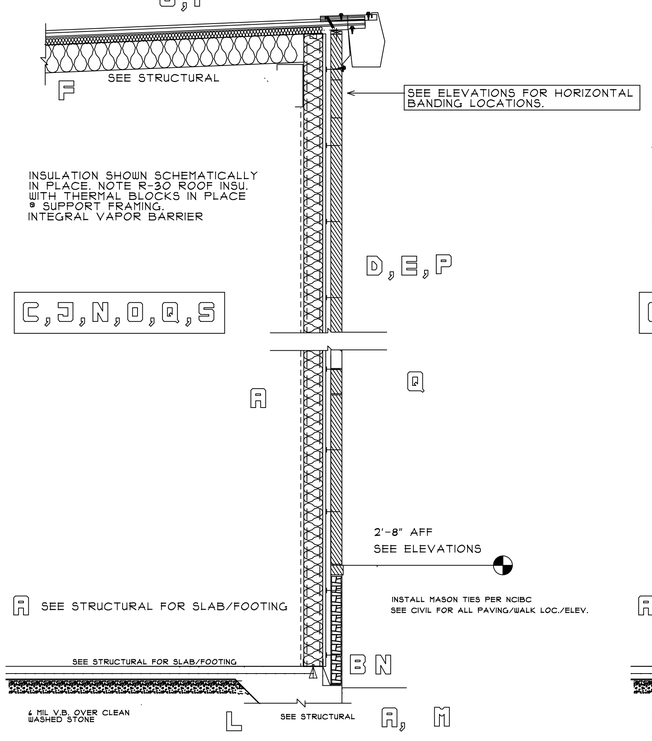
ENLARGED ELEVATIONS

GCP	GCP	SHEET: A-4
DESIGNED BY:	DRAWN BY:	
GCP	GCP	
CHECKED BY:	APPROVED BY:	OF:
LAKESIDE	LAKESIDEANG	6/27/22
CAD FILE NAME:	PROJECT #	DATE:

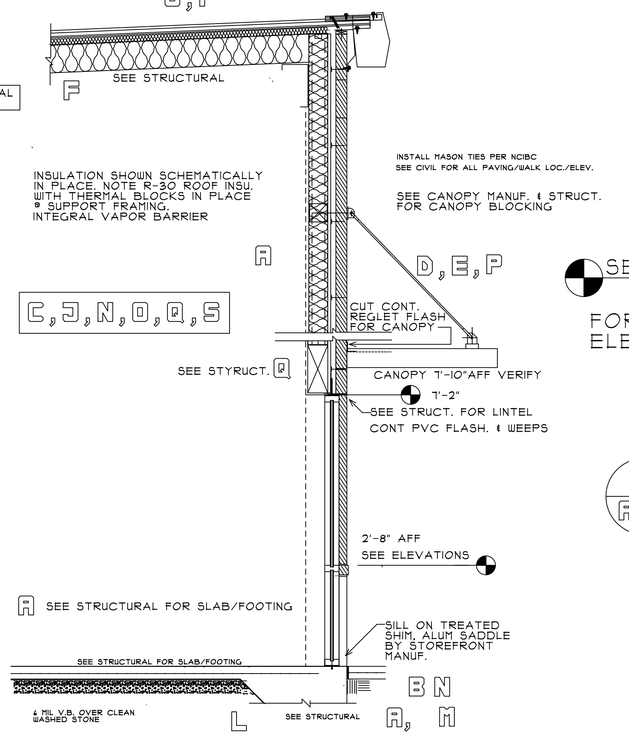
COOR. W/STRUCTURAL

SECTION KEYS: ALL WALL SECTIONS

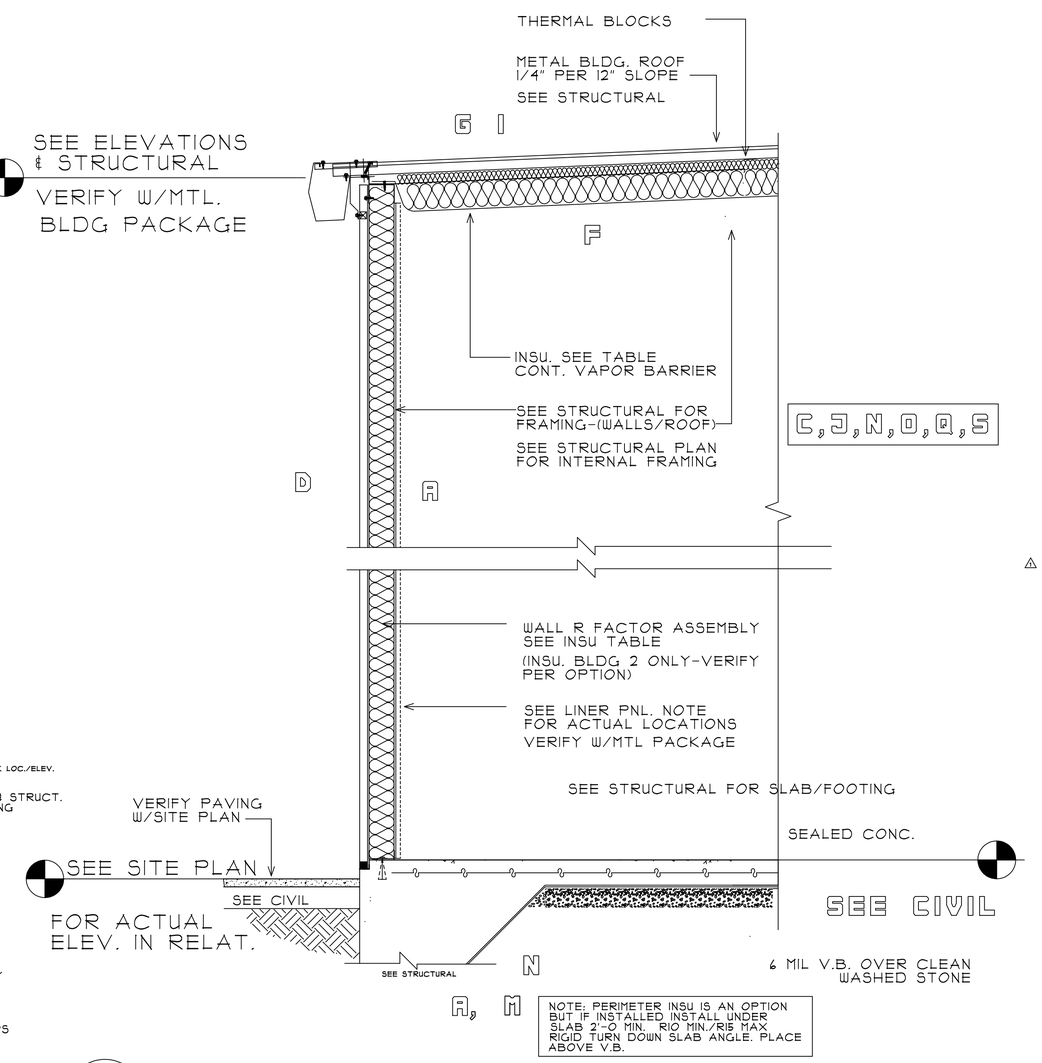
- A SEE STRUCTURAL FOR STUDS, END. WALLS & TYCA. STRUCTURAL COMPONENTS, FLOOR SYSTEMS, BEAMS/HEADERS/LINTELS.
- B CONT. PVC FLASHING TO PVC HEAD JT. WEEPS @ 2'-0 O.C. HORIZ.
- C ADA/ANSI 117 THRESHOLD AT ALL MAN DOORS. AT 4'-0 LOADING DOORS 1/4" H. WITH RETURN CLOSED ENDS. SET IN FULL BED OF MASTIC. 3'-0 MAN DOORS MIN 1/2", 8TH RCE IN FULL MASTIC BED
- D DENS GLASS GOLD SHEATHING. WATER PROOF NOTE: OWNER MAY SUBSTITUTE WP BLDG WRAP
- E FIBERGLASS BATT INSU. SEE SECTION KEY FOR ALL INSU/VB (INSULATION IS AN OPTION FOR S OCCUPANCY)
- F ROOF INSU. THERMAL BLOCKS & CONT. VB. SEE GENERAL INSU. KEY SECT. SHEETS FOR ALL VALUES. (SEE TABLE THIS SHT)
- G METAL ROOFING & METAL SIDING. SEE STRUCT FOR TYP. FLASHING DETAIL ASSEMBLY. NOTE THAT ALL INSTALL TO MEET MANUF. STANDARD SPECS/DETAILS
- H SEE DOOR SCHEDULE FOR ALL DOOR TYPES
- I PREMANUF MTL COPING, 24 GA. MIN. CONCEAL. LOCK. CLEATS VERIFY PARAPET DEPTHS. PROVIDE KYNAR METAL COLOR SELECTION OR METAL ROOFING/SIDING COLOR STANDARDS & MANUF. TYP. TRIM COMPONENTS
- J FLASH & WEEP ALL DOOR HEADS. INSTALL JAMB ANCHORS ALL FRAMES SEAL WITH MIN. A PART SEALANT. BACKING ROD @ OVER 1/4" JT. COLOR TO MATCH SIDING (OR ADJ. MATERIAL)
- K SLAB OVER CLEAN WASHED STONE & CONT. 6 MIL VB SEE STRUCTURAL
- L PERIMETER INSULATION IS AN OPTION FOR S OCCUPANCY. FOR TYP. FOOTINGS SEE STRUCTURAL.
- M DAMP PROOF ALL SHALLOW END FACES OF CONC. FOOTING NOT WATER PROOFED
- N SEE FOUNDATION PLANS/DETAILS FOR RECESSED EDGE @ SIDING AND OVERHEAD DOOR LOCATIONS. INSTALL MANUF STANDARD CLOSURE COMPONENT AT ALL OPEN FLUTES.
- O SEE PLAN AND ELEV. FOR GUTTER & DS LOCATIONS. COOR WITH CIVIL
- P PREFAB CANOPY & STRUTS W/CONNECTIONS INCL. D.S. VERIFY FIN. COLOR (SHOP DWG REQ) COOR. W/STRUCTURAL ANY BLOCKING DURING FRAMING DETAIL SHOWN TO COOR W/SHOP DWGS. VERIFY W/STRUCT. SEE STRUCTURAL FOR WALL BLOCKING (SEE ELEVATIONS)
- Q SEE STRUCTURAL FOR ALL LINTEL/SUPPORT CORBO AT ENTRY & LOADING AREAS. SEE STRUCTURAL FOR BOX BEAM OR STEEL BEAM @ OPENINGS. DOORS & ROLL UPS.
- R FACIA BREAKMETAL PREFINISHED KYNAR CONCEALED ROLLED JTS, MATCHING TRIM (MIN. 24 GA)
- S SIDING TYPES/PROFILES TO BE VERIFIED ON SHOP DWGS. VERIFY ALL COLORS.



1 A-5 SECTION AT FRONT FACADE
DO NOT SCALE



2 A-5 SECTION AT STOREFRONT
DO NOT SCALE



3 A-5 SECTION REAR OF BLDG.
DO NOT SCALE

FRONT ELEVATION/HIGH EAVE
SIMILAR. SEE BUILDING ELEV.

INSULATION TABLE-ALL BLDGS.

STORAGE NON CONDITIONED:

ROOF-2" INSULATION, INTEGRAL VAPOR BARRIER, THERMAL BLOCKS.
WALLS- NO INSULATION WITH VAPOR BARRIER INSTALLED. OWNER OPTION- R11 BATTS
FOUNDATION- NO PERIMETER INSULATION INSTALL 6 MIL V.B.

STORAGE CONDITIONED:

ROOF- R30 (R19 + R11 LS (LINER SYSTEM USING R3 MIN. THERMAL BLOCKS)
WALLS-R11 BATTS WITH VAPOR BARRIER'
FOUNDATION-R15 24" FLAT SLAB, TURN DN. @ LUG UNDER SLAB (VERIFY) W/6MIL VB
NOTE:@ BELOW GRADE CONDITION NO PERIMETER FOUNDATION REQ. WHERE 4'-0 OR MORE BELOW GRADE. VERIFY GRADES @ FOUNDATION.

OFFICE:

ROOF- R30 (R19 + R11 LS (LINER SYSTEM USING R3 MIN. THERMAL BLOCKS)
WALLS- R13 + R7.5 CI (CONT. INSULATION) WITH VAPOR BARRIER ON OUTSIDE OF S.F.
FOUNDATION-R15 24" FLAT SLAB. TURN DN @ LUG UNDER SLAB. SEE SECTIONS
INSTALL 6 MIL VB

LAKESIDE STORAGE

ANGIER, NC
BLDG. A

GENERAL NOTES:

REV.	DATE:	REVISION DESCRIPTION

G. CLEVELAND PATE, PLLC
Architecture • Planning
6013 Fordland Drive, Raleigh, NC 27606
919-851-0052

SEALS:

GROVER CLEVELAND PATE III REGISTERED ARCHITECT 4895 NORTH CAROLINA CARY, N.C.
6/27/22

BUILDING SECTIONS

GCP	GCP	SHEET: A-5
DESIGNED BY:	DRAWN BY:	
GCP	GCP	
CHECKED BY:	APPROVED BY:	OF:
LAKESIDE	LAKESIDEANG	6/27/22
CAD FILE NAME:	PROJECT #	DATE:

DOOR SCHEDULE

(ALL EXTERIOR DOORS TO HAVE WEATHER STRIPS)
(SEE PLANS FOR ADA/ANSI 117 ALL ACCESSIBLE UNITS)
SEE ACCESSIBILITY NOTE THIS SHEET)

ON STORAGE ACCESS DOORS COOR. W/OWNER ANY CARD READERS

	MARK	WIDTH	HEIGHT	THICK	TYPE	FRAME	HDWR	REMARKS
BUILDING A	1	3'-0	7'-0	1 3/4"	ALUMINUM STOREFRONT FULL GLASS TEMP	ALUMINUM	ACTIVE PUSH BAR/LEVER HNDL, CLSR, LOCKSET, ADA THRESH RCE, WEATHER STRIP	KAWNEER MED STILE STOREFRONT KAWNEER TRIFAB 451
	2	3'-0	7'-0	1 3/4"	SOLID CORE WOOD	HOLLOW MTL.	LEVER HANDLE, OFFICE LOCK SET, CLSR	
	3	3'-0	7'-0	1 3/4"	SOLID CORE WOOD	HOLLOW MTL.	LEVER HANDLE, THUMB LATCH, CLSR.	TILE OR MARBLE ADA THRESH
	4	3'-0	7'-0	1 3/4"	SOLID CORE WOOD 3X33 VP VISIBLE(TEMP)	HOLLOW MTL.	LEVER HANDLE, OFFICE LOCK SET, CLSR	
	5, 6	4'-0	7'-0	1 3/4"	H.M. INSULATED 1/2 GLASS TEMP.	HOLLOW MTL.	PUSH BAR, SS KICK, CLSR LOCK SET (COOR W/OWNER)	WEATHER STRIP ALL EXT. DOORS 1/8" H. BEVELED THRESH RCE
	7,8,9	4'-0	7'-0	1 3/4"	SOLID CORE WOOD 3 HR	HOLLOW MTL WRAP AROUND 3 HR.	PANIC DEVICE, CLOSER, OFFSET HINGES, SS KICK	VERIFY W/OWNER 7'-0 HT IS ACCEP.
BUILDING B	5, 6 5a,6a	4'-0	7'-0	1 3/4"	H.M. INSULATED 1/2 GLASS TEMP.	HOLLOW MTL.	PUSH BAR, SS KICK, CLSR LOCK SET (COOR W/OWNER)	WEATHER STRIP ALL EXT. DOORS 1/8" H. BEVELED THRESH RCE
	7,8,9	4'-0	7'-0	1 3/4"	SOLID CORE WOOD 3 HR	HOLLOW MTL WRAP AROUND 3 HR.	PANIC DEVICE, CLOSER, OFFSET HINGES, SS KICK	VERIFY W/OWNER 7'-0 HT IS ACCEP.

NOTE: OTHER DOORS ARE BY JANUS AND TO BE APPROVED PER SHOP DRAWINGS. JANUS SWING DOORS ARE SHOWN AND OTHERS ARE ROLL UP. SEE PLAN FOR ACCESSIBLE DOORS AND ACCESSIBLE DOOR DETAILS THIS SHEET. SEE ELECTRICAL

DOOR & HARDWARE NOTES:

D1. COOR. ALL DOORS WITH FRAMES AND ALL HARDWARE TO MEET ANSI 117/ADA ACCESSIBILITY REQ.
D2. INTERIOR DOORS TO BE EQ. TO EGGERS SOLID CORE (STAIN PER TENANT/OWN) 1 1/2 PAIR OF BUTTS TYP. HARDWARE TO BE SCHLAGE ELAN COMMERICAL GRADE, FINISH PER FRANCHISE. ALL LEVER HANDLES OR OTHER IF CALLED. CLOSERS LCN. ALL HARDWARE TO MEET ANSI 117/ADA. MASTER KEY PER PER OWNER'S CONSULTATION AS INITIATED BY HARDWARE SUPPLIER. PROVIDE TWO KEY SETS EA. DOOR
D3. CONTACT ARCHITECT OF DISCREPENCIES PRIOR TO ORDER.
D4. ALL FRAMES TO HAVE MUTES
ALL DOORS TO HAVE WALL OR BUTT STOPS
D5 HARDWARE SHOULD BE PURCHASED FROM EXPERIENCE HARDWARE CONSULTANT/SUPPLIER. OWNER/TENANT SHOULD REVIEW LOCKING AND FUNCTION PRIOR TO ORDER.
D6. STUD FRAMING AT DOORS TYPICAL; INSTALL PER MANUF. SPECIFICATIONS.
D7. ALL HARDWARE THOUGH LOCKED SHOULD BE OPERABLE FROM INSIDE (TO EXIT AS REQ.)
TYPICAL; MIN. REQ. & FRAMING THIS PROJECT MAY EXCEED -SEE STRUCTURAL
A. DOOR JAMB FRAMING MIN. DOUBLE STUDS PER FRAMING PACKAGE BY STRUCTURAL.
B. DOOR HEAD FRAMING PER FRAMING PACKAGE BY STRUCTURAL. NOTE LINTEL LOCATIONS BY STRUCT.
C. INSTALL JAMB AND FLOOR ANCHORS PER HOLLOW FRAME MANUF. AND SHOP DRAWING APPROVAL.

GENERAL CONSTRUCTION NOTES FOR DOOR, WINDOW FRAMES, JAMBS/HEADS

1. TYPICAL ROUGH OPENINGS. TYPICAL ALL FRAMES TO HAVE MIN. ROUGH OPNG 1/4" BUT NOT LESS THAN 3/16" FOR EA. JAMB/HEAD. SHIM AS REQ (TREATED SHIMS @ MASONRY OR CONCRETE CONTACT.
2. REVIEW FULL DRAWING SET WHEN DOING TAKE OFFS FOR FRAMES AND DOORS. CONTACT A-E IF ANY DISCREPENCIES EXIST PRIOR TO SUBMITTING PRICING AND/OR SHOP DRAWINGS.
3. SEE SCHEDULES AND SHOP DWGS FOR FRAME SIZES. IN MASONRY COURSING TAKE ANY STEEL LINTELS INTO ACCOUNT W/DOORS, WINDOW FRAMES. SEE SECTIONS AND STRUCTURAL AS ALL NOTES MAY NOT APPLY AND ARE GENERAL IN NATURE.
4. SEE PLAN FOR ACCESSIBLE UNITS. SEE DOOR ELEVATIONS THIS SHEET
5. PRIME AND PAINT ALL HOLLOW METAL. SEMIGLOSS FINISH.

ROOM FINISH SCHEDULE

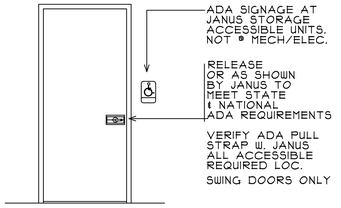
SEE PLANS AND WALL SECTIONS

	SPACE	FLOOR	BASE	WALLS	CEILING	CLG HGT	SPEC NOTE	REMARKS
BUILDING A	101	LUX. VT	4" RUB COVE ROPPE	GYP. PRIME/PT.	PAINT STRUCT. & NON FACT.FIN. PME-BLACK	9'-0 VERIFY	PER MANUF	VERIFY ALL MECH/ELEC/PLUMB HTS W/LAY IN CEIL
	102	LUX. VT	4" RUB COVE ROPPE	GYP. PRIME/PT.	ACCOUST. LAY IN CORTEGA WHITE	9'-0 VERIFY		
	103	CT 12X12	CT	GYP. PRIME PT. CT WAINSCOAT ON TILE BACKER *	ACCOUST. LAY IN TILE CORTEGA WHITE	9'-0 VERIFY		OWNER ALT. WALLS-FRP OVER GYP. * SEE INTERIOR TOILET ELEVATIONS
	104	SEALED CONC	———	SEE JANUS FOR LINER PANELS	EXPOSED STRUCT.	EXPOSED STRUCT.		
	ALL UNITS	SEALED CONC	———	↓	EXPOSED STRUCT.	EXPOSED STRUCT.		
BLDG. B	104	SEALED CONC	———	SEE JANUS FOR LINER PANELS	EXPOSED STRUCT.	EXPOSED STRUCT.		
	ALL UNITS	SEALED CONC	———	↓	EXPOSED STRUCT.	EXPOSED STRUCT.	↓	

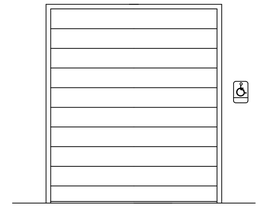
GENERAL LINER PANEL NOTES FOR JANUS PANELS

-

LINER PANELS WITH STORAGE FACILITY TO BE INSTALLED IN LOCATIONS AS INDICATED ON PLANS GRAPHICALLY AND EXTERIOR WALLS UNLESS CALLED OTHERWISE. REVIEW ALL SPACES AND CONTACT A-E WITH QUESTIONS WHEN DETERMINING SCOPE. SUBMIT SHOP DWG FOR FINAL APPROVAL



SWING DOOR
(MECH & ELEC. RMS)
(DESIGNATED STORAGE UNITS WITH 3'-0/180 DEG.SWING)



AUTOMATIC ROLL UP W/ BATTERY BACK-UP

ALL DOORS REQ. MAX.5# FORCE TO OPERATE
SIGN HT. IS 48" TO 60"C.L. ABFF. REF ADA CH.2 SECTION 703
STORAGE REQUIRED ADA / ANSI 117 SIGNAGE

*

SIGN HT. IS 48" TO 60"C.L. ABFF. REF ADA CH.2 SECTION 703
ACCESSIBLE SIGNAGE AT ALL ACCESSIBLE STORAGE UNITS

ADA COMPLIANT DOORS
INTERIOR STORAGE/MECH/ELEC

(JANUS SHOP DRAWING PACKAGE APPROVAL REQUIRED)

(GFSN) GENERAL FINISH SCHED. NOTES

1. ALL INTERIOR PARTITIONS AND EXTERIOR WALL INTERIOR GYP. TO BE PAINTED, ONE PRIME COAT AND TWO FINISH COATS MIN. (LATEX EGGSHELL) PAINT TO BE SHERWIN WILLIAMS PREMIUM INTERIOR. SUBMIT COLOR CHOICES TO OWNER. NOTE ALL PAINT TO BE WASHABLE PER MANUF.GYP LOC. ONLY.
-FRAMES/TRIM ONE PRIME COAT & TWO FIN. COATS SEMIGLOSS
2. SUBMIT ALL COLORS/FINISHES TO OWN/TENANT FOR APPROVAL
3. PATCH ALL MISC. HOLES IN WALLS OR FLOORS TO MATCH ADJ. CONST.
4. COOR WITH ALL PME DWGS AND ALL TRADES PRIOR TO ADVANCING WORK.
5. CONTACT ARCHITECT/ENGINEER OF CONFLICTS PRIOR TO WORK.
6. INSTALL ALL FINISHES/MATERIALS PER MANUF. SPECIFICATIONS
7. PROVIDE FULL RANGE OF FINISH PRODUCT FOR OWNER SELECTION.
8. VERIFY PREFINISHED LINER PANELS AND EXPOSED STRUCTURE. VERIFY WITH OWNER/GC IS ADDITIONAL FINISHING OF EXPOSED STRUCTURE IS REQ.
9. WHERE NON FACTORY FIN. PME IS CALLED TO PAINT. DO NOT PT. GALV. METALS. VERIFY PAINTING WITH OWNER/GC.
10. WHERE EXPOSED CEILINGS ARE CALLED TO BE PAINTED, PAINT ALL DUCT, CONDUIT, HANGERS ETC..

LAKESIDE STORAGE

ANGIER, NC

BLDG. A

GENERAL NOTES:

REV. DATE:	REVISION DESCRIPTION

G. CLEVELAND PATE, PLLC
Architecture • Planning
6013 Fordland Drive, Raleigh, NC 27606
919-851-0052

SEALS:

GROVER CLEVELAND PATE III REGISTERED ARCHITECT 4895 NORTH CAROLINA CARY, N.C.

6/27/22

DOOR/FIN. SCHEDULE

GCP	GCP	SHEET: A-6
DESIGNED BY:	DRAWN BY:	
GCP	GCP	
CHECKED BY:	APPROVED BY:	OF:
LAKESIDE	LAKESIDEANG	6/27/22
CAD FILE NAME:	PROJECT #	DATE:

NEW FACILITY:

BUILDING A

LAKESIDE STORAGE - ANGIER

STRUCTURAL PLANS FOR SELF STORAGE FACILITY

ANGIER, NORTH CAROLINA

STRUCTURAL DRAWING SCHEDULE

SHEET NO.	SHEET NAME	ORIGINAL DATE	RE-ISSUE DATE
SN1	COVER SHEET	07-07-2022	---
SN2	SPECIAL INSPECTIONS	07-07-2022	---
S1.1	FOUNDATION PLAN	07-07-2022	---
S2.1	ROOF FRAMING PLAN	07-07-2022	---
S2.1a	ROOF PLAN	07-07-2022	---
S2.4	ROOF DETAILS	07-07-2022	---
S3.1	ELEVATIONS	07-07-2022	---
S4	FOUNDATION DETAILS	07-07-2022	---
S5	FRAMING DETAILS	07-07-2022	---
S6	FRAMING DETAILS	07-07-2022	---

STRUCTURAL DESIGN DATA SHEET:

RISK CATEGORY:
II

IMPORTANCE FACTORS:
I seismic 1.0
I snow 1.0

DEAD LOADS:
ROOF 5 psf
ELEVATED FLOOR 60 psf

LIVE LOADS:
ROOF 20 psf
FLOOR 125 psf

SNOW LOAD:
Pg 15 psf

WIND LOAD:
Basic Wind Speed 120 MPH
Exposure Category C

SEISMIC LOAD:
Spectral Response
Ss 0.176
S1 0.084
Sds 0.188
Sd1 0.134
Seismic Design Category C
Seismic Site Class D - Default
Structural System Light framed walls w/ Steel Sheets
R-Factor 6.5
Analysis Procedure Equivalent Lateral Force

SEISMIC ANCHORAGE OF NON-STRUCTURAL COMPONENTS:
SEISMIC ANCHORING NOT REQUIRED

LATERAL DESIGN CONTROL:
X-Direction WIND
Y-Direction WIND

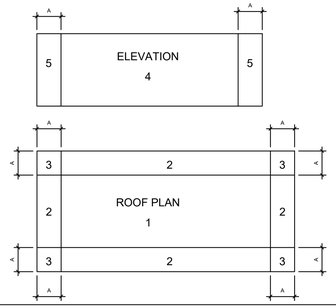
SOIL BEARING PROPERTIES:
Allowable Bearing Capacity = 2000 psf

BASE SHEAR SCHEDULE				
	WIND BASE SHEAR[1]		SEISMIC BASE SHEAR[2]	
	Vx	Vy	Vx	Vy
BUILDING A	22.7 K	17.4 K	2.4 K	2.4 K
BUILDING B	22.7 K	17.4 K	2.4 K	2.4 K
BUILDING D	51.6 K	4.0 K	1.4 K	1.4 K

1. WIND BASE SHEAR INCLUDES A 0.6 WIND FACTOR.
2. SEISMIC BASE SHEAR INCLUDES A 0.7 SEISMIC FACTOR.

WIND LOAD SCHEDULE					
COMPONENTS & CLADDING	ROOF WIND LOAD			WALL WIND LOADS	
	ROOF AREA			WALL AREA	
	1	2	3	4	5
PRESSURE (PSF)	+10.2	+10.2	+10.2	+27.5	+27.5
SUCTION (PSF)	-27.1	-36.4	-43.8	-30.0	-35.8

1. CORNER DISTANCE, A=15 FEET, ROOF = 50 SF, WALL = 20 S.F. C&C



COLD-FORMED STEEL:

1. ALL MEMBERS SHALL CONFORM TO THE AISI "SPECIFICATION FOR THE DESIGN OF COLD-FORMED STEEL STRUCTURAL MEMBERS," NAS-01 AND SHALL BE OF THE TYPE AND SIZE AS INDICATED ON THE PLANS. ALL STRUCTURAL MEMBERS SHALL MEET THE REQUIREMENTS OF 2007 A.I.S.I. GENERAL PROVISIONS. STRUCTURAL MEMBER MATERIAL IS EITHER ASTM A653-06 GR 55 OR A1011-04 HSLAS GR. 55 CI-L. ALL MEMBERS SHALL BE ZINC COATED MEETING ASTM A1003, G-60 OR EQUAL.
2. THE PHYSICAL AND STRUCTURAL PROPERTIES AS LISTED BY BUILDING VENDOR SHALL BE THE MINIMUM PERMITTED FOR FRAMING MEMBERS. WE HAVE ASSUMED SSMA LISTED SIZES OR EQUIVALENT SUBSTITUTIONS MUST BE SUBMITTED THROUGH SHOP DRAWINGS AND APPROVED PRIOR TO CONSTRUCTION BY THE ENGINEER.
3. FASTENING OF COMPONENTS SHALL BE WITH SELF-DRILLING SCREWS OR WELDING IN COMPLIANCE WITH C1513. SCREWS AND WELDS SHALL BE OF SUFFICIENT SIZE TO ENSURE THE STRENGTH OF THE CONNECTION. ALL SCREWS SHALL NOT BE LESS THAN 3/4" O.C. OR FROM EDGE. ALL WELDS SHALL BE TOUCHED-UP WITH ZINC-RICH PAINT. U.N.O. ALL SCREW ATTACHMENTS SHALL BE #12 OR BETTER.
4. ALL POWER-ACTUATED FASTENERS (PAF) SHALL BE 0.177" DIA., U.N.O.
5. STRUCTURAL MATERIAL IS NOT DESIGNED TO BE PUNCHED. IF MATERIAL IS PUNCHED, CONSULT EOR FOR REMEDIATION.
6. TOP AND BOTTOM TRACKS SHALL BE THE SAME DEPTH AND GAGE, ALL TRACKS SHALL BE CONNECTED TO SUPPORTS WITH (2) FASTENERS OR PAFs AT EACH 30" O.C., MAXIMUM.
7. U.N.O, FLANGES SHOULD 2-1/2".
8. SPLICES IN FRAMING COMPONENTS, OTHER THAN RUNNER TRACK, SHALL NOT BE PERMITTED.
9. TEMPORARY BRACING, WHERE REQUIRED, SHALL BE PROVIDED UNTIL ERECTION IS COMPLETE.
10. ALL FRAMING COMPONENTS SHALL BE CUT SQUARELY FOR ATTACHMENT TO PERPENDICULAR MEMBERS OR, AS REQUIRED, FOR AN ANGULAR FIT AGAINST ABUTTING MEMBERS.
11. PROVIDE ADDITIONAL STUDS, WHEN NECESSARY, TO RESIST VERTICAL COMPONENTS OF LOADS.
12. THE QUANTITY OF STUDS AT HEADER OPENINGS SHALL BE MINIMUM AMOUNT OF STUDS DISPLACED DUE TO OPENING WITH HALF ON EACH SIDE OF OPENING.
13. MULTIPLE STUDS AT STUD PACKS SHALL BE ATTACHED AT (2) ROWS, STAGGERED WITH #10 TEKS SCREWS AT 24" O.C., IN A BACK-TO-BACK CONFIGURATION. WHEN FLANGE-TO-FLANGE IS REQUIRED GUSSET PLATES OR TRACKS SHALL BE INSTALLED AT THE ABOVE MENTIONED SPACING.
14. STUDS SHALL BE INSTALLED SO THE ENDS ARE POSITIONED AGAINST THE INSIDE OF THE RUNNER TRACK WEB PRIOR TO FASTENING AND SHALL BE ATTACHED TO BOTH FLANGES OF THE UPPER AND LOWER RUNNER TRACKS.
15. PROVIDE STIFFENERS IN HEADERS AT EACH POINT LOAD AND AT BEARING LOCATIONS, AS DESIGNATED ON PLANS.
16. ATTACH ALL CONNECTION PER PLANS OR AS DETAILED AND NOTED IN MANUFACTURER TECHNICAL MANUALS, PROVIDE SCREW OR POWDER ACTUATED FASTENER (PAF) ATTACHMENTS AS SPECIFIED.
17. LAYOUTS AS INDICATED ON PLANS IS FOR GRAPHICAL REPRESENTATION PURPOSES ONLY. ACTUAL STUD LOCATIONS MUST BE SUBMITTED WITH SHOP DRAWINGS.

STRUCTURAL STEEL:

1. ALL STRUCTURAL STEEL WORK SHALL CONFORM TO THE A.I.S.C. "STEEL CONSTRUCTION MANUAL" 360-05.
2. STRUCTURAL STEEL SHALL BE ASTM A-992.
3. STRUCTURAL TUBES SHALL BE ASTM A500, GRADE B.
4. STEEL FRAMING CONNECTIONS SHALL BE BOLTED OR WELDED. BOLTS SHALL BE 3/4" DIAMETER MINIMUM AND SHALL BE ASTM A-325-N U.N.O., SNUG TIGHT ALL CONNECTIONS.
5. ANCHOR BOLTS SHALL BE ASTM F1554 HEADED BOLTS. MINIMUM ANCHOR BOLT EMBEDMENT LENGTH SHALL BE 12 BOLT DIAMETERS U.N.O. CLEAN ANCHOR BOLTS OF ALL GREASE, DIRT, ETC., BEFORE INSTALLATION.
6. WELDS SHOWN ON THE STRUCTURAL DRAWINGS ARE THE MINIMUM REQ'D BY DESIGN, THE FABRICATOR'S DRAWINGS SHALL SHOW WELDS AND THEY SHALL CONFORM TO A.W.S. SPECIFICATIONS. ALL WELDING SHALL BE DONE WITH E-70 SERIES ELECTRODES.
7. PAINT ALL STRUCTURAL STEEL WITH ONE COAT OF RED OXIDE RUST-INHIBITIVE PRIMER 2.5 MILS IN THICKNESS. THE COMPATABILITY OF PRIMER AND ANY TOP COAT SHALL BE VERIFIED BEFORE ANY PAINTING IS PERFORMED. TOUCH-UP ALL EXPOSED METAL AFTER FIELD INSTALLATION. ALL STRUCTURAL STEEL WHICH IS EXPOSED TO THE ELEMENTS SHALL RECEIVE TWO COATS OF EXTERIOR ENAMEL WHICH IS COMPATIBLE TO THE PRIMED SURFACE.
8. THE SHOP DRAWINGS SHALL INCLUDE COMPLETE DETAILS AND SCHEDULES FOR FABRICATION AND ASSEMBLY OF STRUCTURAL STEEL MEMBERS. SUBMIT FOUR PRINTS OF EACH DRAWING. REPRODUCTION OF STRUCTURAL DRAWINGS FOR SHOP DRAWINGS IS NOT PERMITTED. CONTRACTOR TO REVIEW AND STAMP DRAWINGS PRIOR TO SUBMISSION TO THE EOR.

DESIGN AND CODE INFORMATION:

1. ALL CONSTRUCTION SHALL CONFORM TO THE 2018 NORTH CAROLINA BUILDING CODE AND ASCE 7-10.
2. VERIFY EXISTING CONDITIONS AND NOTIFY ARCHITECT OF ANY CONDITIONS WHICH DO NOT COMPLY WITH PLANS AND SPECIFICATIONS. STRUCTURAL DRAWINGS MUST BE WORKED WITH ARCHITECTURAL DWGS.
3. THE DESIGN ADEQUACY, SAFETY OF ERECTION BRACING, SHORING, TEMPORARY SUPPORTS, ETC. IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
4. FOR LOCATION OF MISCELLANEOUS ITEMS (SUCH AS INSERTS, ETC.) AFFECTING STRUCTURAL WORK, SEE ARCHITECTURAL, MECHANICAL, PLUMBING AND ELECTRICAL DRAWINGS.
5. THIS PROJECT CONTAINS A SERIES OF DETAILS CONSIDERED "TYPICAL DETAILS". THESE SHALL APPLY AT ALL SITUATIONS THAT ARE THE SAME OR SIMILAR AS THESE DETAILS. THESE "TYPICAL DETAILS" SHALL APPLY WHETHER OR NOT THEY ARE INDICATED OR CUT AT EACH LOCATION.
6. USE OF STRUCTURAL DRAWINGS FOR SHOP DRAWINGS IS NOT PERMITTED. CONTRACTOR TO REVIEW AND STAMP DRAWINGS ACCORDINGLY PRIOR TO SUBMITTING TO THE ENGINEER. THE OMISSION OF ITEMS FROM SHOP DRAWINGS SHALL NOT RELIEVE CONTRACTOR OF RESPONSIBILITY OF FURNISHING AND INSTALLING ITEMS REGARDLESS OF WHETHER SHOP DWGS. HAVE BEEN REVIEWED AND APPROVED.

FOUNDATION NOTES:

1. FOUNDATION DESIGN IS BASED UPON ASSUMED SOIL VALUES. CONTRACTOR/OWNER SHALL VERIFY PRIOR TO CONSTRUCTION.
2. FOOTINGS ARE DESIGNED TO BEAR ON UNIFORM SUITABLE SOIL CAPABLE OF SUPPORTING 2000 PSF.
3. THE SOIL BEARING CAPACITY AND CONSISTENCY SHALL BE VERIFIED FOR THE BUILDING LIMITS BY A REGISTERED GEOTECHNICAL ENGINEER WHEN FOUNDATION EXCAVATIONS HAVE BEEN CARRIED DOWN TO THE PROPOSED ELEVATIONS. THE BOTTOM OF ALL EXTERIOR FOOTINGS SHALL BE -1'-4" MINIMUM BELOW FINISHED GRADE. (U.N.O.)
4. WHERE FOOTING EXCAVATIONS ARE TO REMAIN OPEN AND MAY BE EXPOSED TO RAINFALL, THE EXCAVATIONS SHALL BE UNDERCUT AND A 3" THICK MUD MAT OF 2000 PSI CONCRETE SHALL BE PLACED OR CLEAN SHALL BE PLACED IN THE BOTTOM TO PROTECT THE BEARING SOILS.
5. WHERE FOOTING STEPS ARE NECESSARY, THEY SHALL BE NO STEEPER THAN 1 VERTICAL TO 2 HORIZONTAL, UNLESS SHOWN OTHERWISE ON PLANS.

REINFORCED CONCRETE:

1. ALL CONCRETE WORK SHALL CONFORM TO THE "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE," (ACI 318, 05)
2. REINFORCING STEEL SHALL BE DEFORMED BARS ASTM A-615 (GRADE 60)
3. FOUNDATIONS AND SLAB-ON-GRADE COMPRESSIVE STRENGTH AT 28 DAYS SHALL BE 3000 P.S.I. (SEE CIVIL DRAWINGS FOR SITE CONCRETE] KEEP COPY OF CONC. TEST REPORTS ON SITE AT ALL TIMES.
4. WALL AND ELEVATED SLAB COMPRESSIVE STRENGTH AT 28 DAYS SHALL BE 4000 P.S.I. (SEE CIVIL DRAWINGS FOR SITE CONCRETE] KEEP COPY OF CONC. TEST REPORTS ON SITE AT ALL TIMES
5. LAP SPLICES FOR #5 REINFORCING BARS SHALL BE 36" MIN., AND #6 REINFORCING BARS SHALL BE 43" MIN., UNLESS SUBMITTED AND APPROVED OTHERWISE.
6. CLEAR CONCRETE COVER FOR REINFORCING STEEL:
   WALLS: 3" CAST AGAINST GROUND; 2" FORMED EDGES
   FOOTINGS: 2" FORMED EDGES; 3" CAST AGAINST GROUND
   SLAB ON GRADE: MID-HEIGHT OF SLAB
6. THE LONGITUDINAL REINFORCING STEEL IN WALLS AND FOOTINGS SHALL BE CONTINUOUS AROUND CORNERS. SEE TYPICAL DETAILS.
7. SLUMP LIMIT IS 5 INCHES FOR CONCRETE WITH VERIFIED SLUMP OF 2 TO 4 INCHES BEFORE ADDING HIGH-RANGE WATER-REDUCING ADMIXTURE OR PLASTICIZING ADMIXTURE, PLUS OR MINUS 1 INCH
8. AIR CONTENT: 6 PERCENT, PLUS OR MINUS 1.5 PERCENT AT POINT OF DELIVERY FOR 3/4-INCH NOMINAL MAXIMUM AGGREGATE SIZE. EXCEPTION TROWEL-FINISHED FLOOR SHALL NOT EXCEED 3 PERCENT.
9. MAXIMUM COARSE-AGGREGATE SIZE: 3/4 INCH NOMINAL.
10. PORTLAND CEMENT: ASTM C 150/C 150M, TYPE I.
11. COLD-WEATHER PLACEMENT: COMPLY WITH ACI 306.1.
12. HOT-WEATHER PLACEMENT: COMPLY WITH ACI 301.
13. DESIGN, ERECT, SHORE, BRACE, AND MAINTAIN FORMWORK, ACCORDING TO ACI 301, TO SUPPORT VERTICAL, LATERAL, STATIC, AND DYNAMIC LOADS, AND CONSTRUCTION LOADS THAT MIGHT BE APPLIED, UNTIL STRUCTURE CAN SUPPORT SUCH LOADS. PLACE FORMWORK SO CONCRETE MEMBERS AND STRUCTURES ARE OF SIZE, SHAPE, ALIGNMENT, ELEVATION, AND POSITION INDICATED, WITHIN TOLERANCE LIMITS OF ACI 117. CHAMFER EXTERIOR CORNERS AND EDGES OF PERMANENTLY EXPOSED CONCRETE
14. BEFORE PLACING CONCRETE, VERIFY THAT INSTALLATION OF FORMWORK, REINFORCEMENT, AND EMBEDDED ITEMS IS COMPLETE AND THAT REQUIRED INSPECTIONS ARE COMPLETED. DEPOSIT CONCRETE CONTINUOUSLY IN ONE LAYER OR IN HORIZONTAL LAYERS OF SUCH THICKNESS THAT NO NEW CONCRETE IS PLACED ON CONCRETE THAT HAS HARDENED ENOUGH TO CAUSE SEAMS OR PLANES OF WEAKNESS. IF A SECTION CANNOT BE PLACED CONTINUOUSLY, PROVIDE CONSTRUCTION JOINTS AS INDICATED. DEPOSIT CONCRETE TO AVOID SEGREGATION. CONSOLIDATE PLACED CONCRETE WITH MECHANICAL VIBRATING EQUIPMENT ACCORDING TO ACI 301.

CONCRETE MASONRY:

1. CONCRETE MASONRY SHALL CONFORM TO THE NATIONAL CONCRETE MASONRY ASSOCIATION SPECIFICATIONS, AND HAVE A DENSITY OF125 P.C.F, AND SHALL HAVE A MINIMUM PRISM STRENGTH (F'm) OF 1500 P.S.I.
2. GROUT FOR FILLING CONCRETE MASONRY CELLS SHALL CONFORM TO STANDARD SPECIFICATIONS FOR "GROUT FOR MASONARY", ASTM C-476-02, AND SHALL HAVE A COMPRESSIVE PRISM STRENGTH (F'm) OF 3000 P.S.I. AT 28 DAYS. THE SLUMP SHALL BE BETWEEN 9" AND 11". WHERE THE MINIMUM DIMENSION OF ANY CONTINUOUS VERTICAL CELL IS 3" OR LESS, USE FINE GROUT, OTHERWISE USE COARSE (PEA GRAVEL) GROUT.
3. MORTAR FOR CONCRETE MASONRY SHALL BE TYPE "S" AND SHALL CONFORM TO ASTM C-270-04.
4. GROUT PROCEDURES AND REBAR INSTALLATION SHALL PER ASTM ACI 530 1-99. LAP SPLICES FOR REINFORCING BARS SHALL BE 24" MIN., U.N.O.
5. BRICK LINTELS - SEE SCHEDULE ON STRUCTURAL "S" SHEETS
6. ALL METAL BRICK TIES FOR BRICK VENEER SHALL BE A 2-PIECE, 3/16" DIAMETER ADJUSTABLE TIE, SPACED AT EACH STUD LOCATION, 24" O.C. (MAX) HORIZONTALLY, AND 16" O.C. VERTICALLY. METAL TIES SHALL BE EMBEDDED AT LEAST 2" INTO THE BRICK WYTHE. TIE MUST BE HOT DIPPED GALVANIZED IN ACCORDANCE WITH ASTM A153, CLASS B. IN ADDITION, TIES SHOULD NOT HAVE MECHANICAL PLAY IN EXCESS OF 0.05" AND SHOULD NOT DEFORM OVER 0.05" FOR 100 LB LOAD IN EITHER TENSION OR COMPRESSION. METAL TIES SHOULD BE INSTALLED WITH 1/4-14 FASTENERS

HAUSER-CREECH, INC.
PROJECT #: 22-10X-00X

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 035814 MICHAEL GABRIEL HAUSER
MICHAEL GABRIEL HAUSER
NORTH CAROLINA PE NO. 035814

HAUSER CREECH
HAUSER-CREECH, INC.
P.919.817.7579
P.919.817.7676
F.919.404.2427
4506 PEARCES RD.
ZEBULON,NC
27597

G. CLEVELAND PATE, PLLC
6013 FORTLAND DRIVE
RALEIGH, NC 27606

BUILDING A
LAKESIDE STORAGE - ANGIER
ANGIER, NC

ISSUE DATE: 07.07.2022

REV	DATE

PROJECT DATA & SPECS

SN1

STATEMENT OF SPECIAL INSPECTIONS:

Project Name: LAKESIDE STORAGE - ANGIER

Building Permit Number: _____

Project Address: 5556 NC-210, Angier, North Carolina, 27501

The following information is being submitted in accordance with the Special Inspection provisions of the International Building Code. Attached is the Schedule of Special Inspections (SSI) required for this project.

The Special Inspection program outlined herein does not relieve the Contractor or any other entity of contractual duties, including quality control, quality assurance or safety. The contractor is soley responsible for construction means, methods and job site safety.

Respectfully submitted,
The Structural Engineer of Record

Signature: _____ Date: 7/7/2022

SCHEDULE OF SPECIAL INSPECTIONS:

Project Name: LAKESIDE STORAGE - ANGIER
Construction divisions which require inspections for this project are as follows:

INSPECTION TASK	CONTINUOUS (C) OR PERIODIC (P) INSPECTIONS		SPECIAL INSPECTIONS FIRM	NOTES & SCOPE
	C	P		
1. VERIFICATION OF SOILS (Table 1704.7)				
Verify materials below shallow Foundations are adequate to achieve the design bearing capacity.		P	Testing Agency (TA)	Testing Agency shall provide soils report
Verify excavations are extended to proper depth.		P	Testing Agency (TA)	
Perform Classification and testing of compacted fill materials.		P	Testing Agency (TA)	
Verify use of proper materials, densities and lift thickness during placement and compaction of compacted fill.	C		Testing Agency (TA)	
Prior to placement of compacted fill, observe sub-grade and verify that site has been prepared properly.		P	Testing Agency (TA)	
2. REINFORCED CONCRETE (Table 1704.4)				
Inspection of reinforcing steel, including prestressing tendons, and placement. ACI 318:3.5, 7.1-7.7		P	Testing Agency (TA)	ACI 318: 3.5,7.1-7.7 IBC: 1913.4
Verifying use of required design mix: ACI 318: Ch. 4, 5.2-5.4		P	Testing Agency (TA)	ACI 318: Ch. 4, 5.2-5.4 IBC: 1904.2.2, 1913.2, 1913.3
At the time fresh concrete is sampled to fabricate specimens for strength tests, slump, air content, and temperature of concrete.	C		Testing Agency (TA)	ASTM C 172, C 31 ACI: 318: 5.6, 5.8 IBC: 1913.10

SCHEDULE OF SPECIAL INSPECTIONS (Continued):

Project Name: 6917 NC 55 HIGHWAY
Construction divisions which require inspections for this project are as follows:

INSPECTION TASK	CONTINUOUS (C) OR PERIODIC (P) INSPECTIONS		SPECIAL INSPECTIONS FIRM	NOTES & SCOPE
	C	P		
3. STRUCTURAL STEEL (Table 1704.3)				
Material verification of high strength bolts, nuts and washers.		P	Special Inspector (SI)	AISC 360, A3.3
Inspection of high strength bolting, snug tight joints		P	Special Inspector (SI)	AISC 360, M2.5 IBC 1704.3.3
Material verification of structural steel.		P	Special Inspector (SI)	Fabricator's bill of materials verification is acceptable.
All field welding.		P	Special Inspector (SI)	AWS D1.1 IBC 1704.3.1
4. RETAINING WALLS (Table 1704.12)				
Inspect all retaining walls over 5 feet in height per NCSBC.		P	Testing Agency (TA)	
5. MASONRY (Table 1704.4)				
As masonry construction begins, the following shall be verified to ensure compliance: (A) Proportions of site mixed mortar. (B) Construction of mortar joints. (C) Location of reinforcement and connectors.		P	Testing Agency (TA)	ACI 318: 3.5,7.1-7.7 IBC: 1913.4
The inspection program shall verify: (A) Size and location of structural elements. (B) Size, grade, type of reinforcement. (C) Protection of masonry during cold weather (temperature below 40 degrees F) or hot weather (temperature above 90 degrees F)		P	Testing Agency (TA)	Sec. 2108.9.2.11, Item 2, Sec. 2104.3, 2104.4, ACI Sec. 1.15.4, 2.1.2, Sec, 1.12, Sec 2.1.8.6, 2.1.8.6.2, ACI 3.3G, Art 2.4,3.4, Art 1.8
Prior to grouting, the following shall be verified to ensure compliance: (A) Grout space is clean. (B) Placement of reinforcement and connectors. (C) Proportions of site-prepared grout. (D) Construction of mortar joints		P	Testing Agency (TA)	Sec. 1.12, Art. 3.2D, Art 3.4, Art. 2.6B, Art. 3.3B
Grout Placement shall be verified to ensure compliance with code and construction provisions.		P	Testing Agency (TA)	Art. 3.5

HAUSER-CREECH, INC.
PROJECT #: 22-10X-00X

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 035814 MICHAEL GABRIEL HAUSER
7/7/2022
MICHAEL GABRIEL HAUSER
NORTH CAROLINA PE NO. 035814

HAUSER CREECH
HAUSER-CREECH,INC.
P.919.817.7579
P.919.817.7676
F.919.404.2427
4506 PEARCES RD.
ZEBULON,NC
27597

G. CLEVELAND PATE, PLLC
6013 FORTLAND DRIVE
RALEIGH, NC 27606

BUILDING A
LAKESIDE STORAGE - ANGIER
ANGIER, NC

ISSUE DATE: 07.07.2022

REV	DATE

SPECIAL INSPECTIONS
SN2

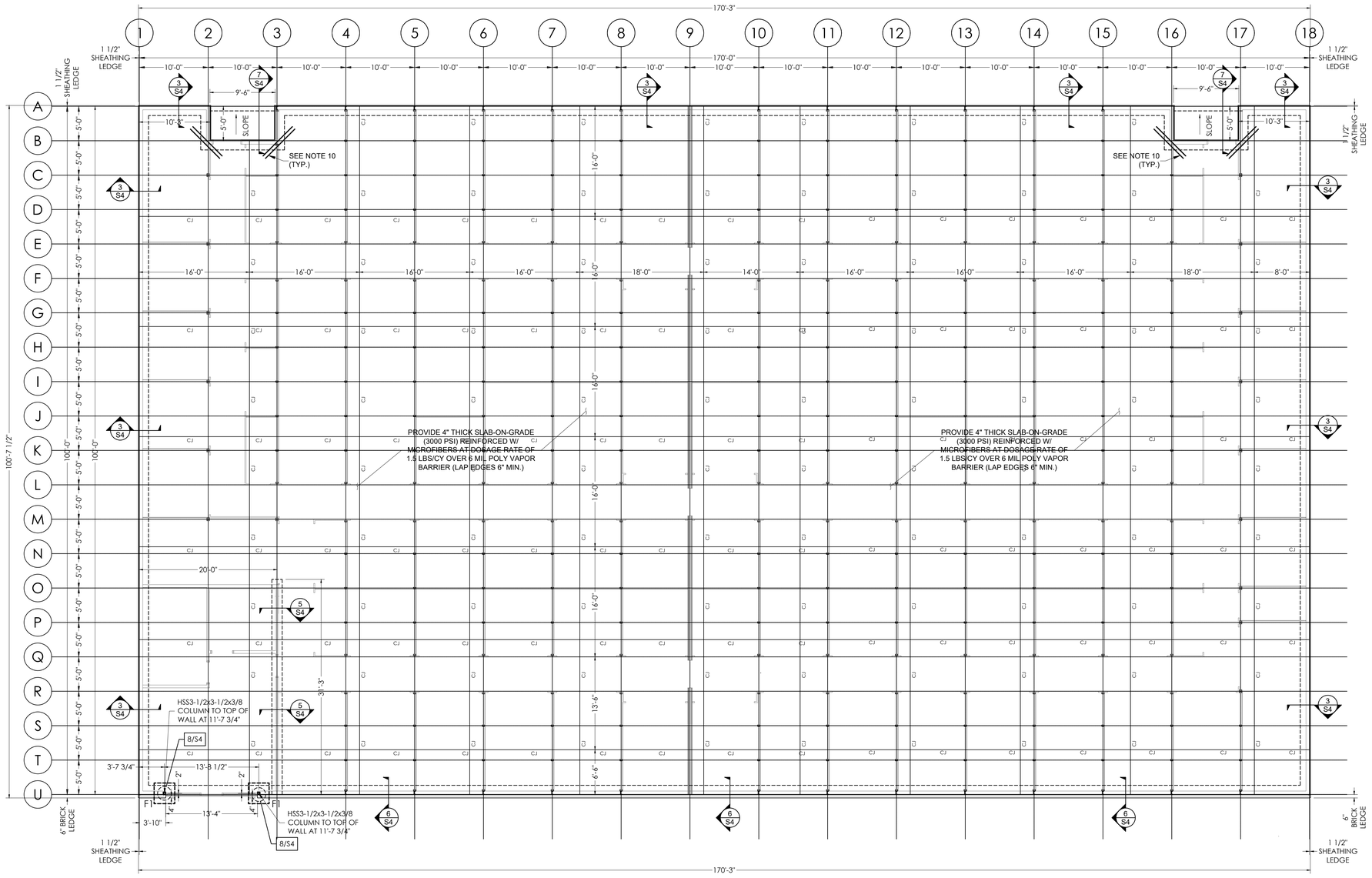
FOUNDATION NOTES:

1. PROVIDE COMPACTED BUILDING PAD (95% MIN COMPACTION). CONTRACTOR MUST VERIFY WITH GEOTECHNICAL ENGINEER AND SPECIAL INSPECTOR ONSITE IF MOISTURE CONTENT IN SOILS WARRANTS 4" POROUS BASE UNDER SLAB (CLEAN NO. 57 STONE, SAND, OR EQUIVALENT).
2. ALL DIMENSIONS REFERENCED TO SLAB EDGE, AND CENTERLINE OF INTERIOR BEARING WALLS. SEE ARCHITECTURAL PLANS FOR DIMENSIONS NOT SHOWN. VERIFY DIMENSIONS PRIOR TO CONSTRUCTION.
3. MIN. TOP OF EXTERIOR FTG. = F.F.E. -SEE PLAN.
4. SEE DETAIL 1/S4 FOR SLAB CONTROL JOINTS (CJ). ALTERNATE LAYOUT PLANS MAY BE SUBMITTED FOR APPROVAL.
5. PROVIDE POSITIVE DRAINAGE FROM ALL PERIMETER WALLS.
6. SEE DETAILS AND SCHEDULES FOR FOOTING SIZES AND REINFORCING.
7. PROVIDE 1'-6" MINIMUM DISTANCE BETWEEN THE NEW ANCHOR BOLTS AND THE CONCRETE EDGE, EXPANSION JOINT, CONTROL JOINT, MIS-ALIGNED/ABANDONED BOLT HOLE.
8. PROVIDE DRAINAGE FOR EXPOSED EARTH SURROUNDED BY FOOTINGS UNTIL SLAB IS POURED.
9. ALL CONCRETE FOOTINGS AND SLABS SHALL HAVE A MINIMUM DESIGN STRENGTH OF F'c=3000 PSI.
10. PROVIDE (2) 6'-0" LONG #5 BARS AT RE-ENTRANT CORNERS, PLACE AT MID-DEPTH OF SLAB, ONE IN EACH DIRECTION.
11. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING THE SERVICES OF A QUALIFIED TESTING LABORATORY TO PERFORM ALL COMPACTION TESTING
12. FOOTING STEP LOCATIONS ARE BASED ON THE SITE CIVIL DRAWINGS AND SHOULD BE VERIFIED BY THE CONTRACTOR PRIOR TO CONSTRUCTION.

ABBREVIATIONS:

A.	COLUMN
EX.	EXISTING
S.O.G.	SLAB ON GRADE
T.O.S.	TOP OF STEEL
T.O.P.	TOP OF PARAPET
T.O.M.	TOP OF MASONRY
O.C.	ON CENTERS SPACING
T+B	TOP AND BOTTOM
F.F.E.	FINISH FLOOR ELEVATION
TYP.	TYPICAL
DEMO.	DEMOLITION
CONT.	CONTINUOUS
CMU	CONCRETE MASONRY UNIT
STD.	STANDARD
XS.	EXTRA STRONG
XXS.	DOUBLE EXTRA STRING
GALV.	GALVANIZED

FOOTING SCHEDULE		
TYPE	SIZE	REBAR
F1	3'-0"-x3'-0"x1'-0"	(3) #5 BARS (2'-6" LONG) E.W., B



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

HAUSER-CREECH, INC.
PROJECT #: 22-10X-00X

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 035814 MICHAEL GABRIEL HAUSER
MICHAEL G. HAUSER, PE
NORTH CAROLINA PE NO. 035814

HAUSER CREECH
HAUSER-CREECH,INC.
P.919.817.7579
P.919.817.7676
F.919.404.2427
4506 PEARCES RD.
ZEBULON,NC
27597

G. CLEVELAND PATE, PLLC
6013 FORTLAND DRIVE
RALEIGH, NC 27606

BUILDING A
LAKESIDE STORAGE - ANGIER
ANGIER, NC

ISSUE DATE: 07.07.2022

REV	DATE

FOUNDATION PLAN

S1.1

FRAMING NOTES:

1. MAXIMUM ZEE JOIST SPACING IS INDICATED ON THE PLANS. SPACE JOIST AT ACCESS DOORS TO ALLOW FOR PROPER INSTALLATION. REFER TO ARCHITECTURAL PLANS FOR LOCATIONS.
2. MATERIAL SUPPLIER SHALL VERIFY ALL DIMENSIONS, LAYOUTS AND COORDINATE WITH BEARING WALL AND BEAM LOCATIONS. SUBMIT SHOP DRAWINGS FOR APPROVAL. ALTERNATE LAYOUT PLANS MAY BE SUBMITTED FOR APPROVAL.
3. REFER TO FOUNDATION PLAN FOR DIMENSIONS AND TO ARCHITECTURAL PLANS FOR DIMENSIONS NOT SHOWN.
4. SEE DETAIL 1/S2.3 FOR ROOF PANEL SIZE AND ATTACHMENT..
5. VERIFY LOCATIONS AND AMOUNTS OF ALL HEADERS.
6. METAL STUD WALL SHOP DRAWINGS SHALL PROVIDED FOR REVIEW AND APPROVAL.
7. STUD SPACING SHALL NOT EXCEED 60" O.C. ON UPPER LEVEL (OR SINGLE STORY BUILDING) AND 30" ON LOWER LEVEL. ADDITIONALLY POINTS LOADS FROM STUDS ARE DESIGNED TO STACK FROM FLOOR-TO-FLOOR. CONTACT EOR IF STUDS DO NOT ALIGN.
8. STUD WALL SIZES AND CONNECTIONS DIFFERING FROM THOSE SHOWN ON THESE PLANS MAY BE SUBMITTED FOR APPROVAL. PROVIDED THE ALTERNATES ARE PROVIDED IN THE FORM OF A SIGNED AND SEALED SHOP DRAWING BY A LICENSED PROFESSIONAL. NOTE THAT ANY PARTS OMITTED FROM THESE PLANS SHALL BE CONSIDERED THE DESIGNATED ENGINEER RESPONSIBILITY THROUGH SHOP DRAWINGS.
9. EXTERIOR WALL PANELS REQUIRE MID-HEIGHT WALL GIRT OR BRACING AT THIRD POINTS FOR SUPPORT. SEE DETAIL 2 ON S6
10. SEE DETAIL 3 ON S6 FOR PARTITION WALL INTERSECTION W/ BEARING WALL.

BUILDING 1 - LIGHT GAGE METAL STUD SCHEDULE

LOCATION	STUD HEIGHT	SIZE	SPACING	LATERAL BRACING LOCATIONS
FIRST FLOOR EXTERIOR WALLS - METAL PANELS	VARIES	4Cx2 1/2x16GA (50 KSI)	60" MAX.	60" O.C. BRACING
FIRST FLOOR INTERIOR BEARING WALLS	VARIES	4Cx2 1/2x16GA (50 KSI)	60" MAX.	SHEATHED ONE SIDE

CLADDING SCHEDULE

PANEL TYPE	LOCATION	MATERIAL	GIRT/PURLIN - WALL/ROOF PANEL BRACE SPACING
U PANEL BY VENDOR	INTERIOR WALL	29 GA.	INTERIOR STUD SPACING = 5.0 FT O.C
R PANEL BY VENDOR	EXTERIOR WALL	26 GA.	CORNER ZONE = 5.0 FT O.C INTERIOR ZONE = 5.0 FT O.C.
24 GA. STANDING SEEM BY VENDOR	ROOF	24 GA.	CORNER ZONE = 5.0 FT O.C. PERIMETER ZONE = 5.0 FT O.C INTERIOR ZONE = 5.0 FT O.C

1. SUBMIT VENDOR CUT SHEETS/SHOP DRAWING INFORMATION FOR APPROVAL.
2. SEE MANUFACTURER REQUIREMENTS FOR INSTALLATION COMPONENTS AND TRIM COMPONENTS TO RESIST CLADDING PRESSURES

LINTEL SCHEDULE

SIZE	NOTES
L3-1/2x3-1/2x5/16	UP TO 4'-0" OPENINGS
L4x4x3/8	4'-0" TO 6'-0" OPENINGS
L6x4x3/8 (LLV)	6'-0" TO 8'-0" OPENINGS
L7x4x7/16 (LLV)	8'-0" TO 10'-0" OPENINGS
CONTACT EOR	OPENINGS > 10'-0"

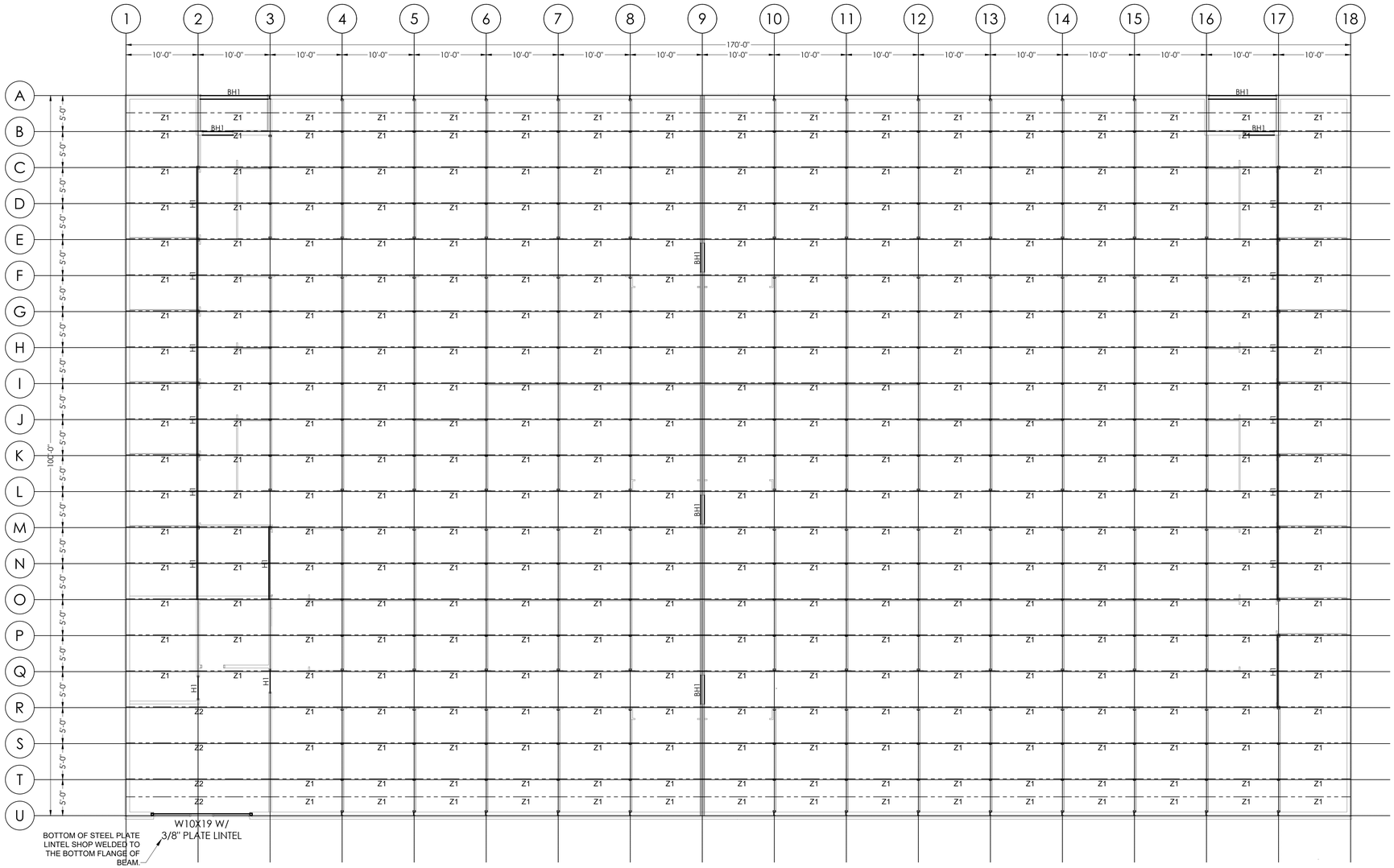
1. NO EXPANSION JOINTS MAY BE POSITIONED ON EITHER SIDE OF OPENING OF ABOVE OPENING. LINTEL IS DESIGNED WITH ARCHING AFFECT OF MASONRY ACCOUNTED.

2. FOR OPENINGS UP TO 8'-0" PROVIDE 6" BEARING ON EACH SIDE. FOR OPENING 8'-0" TO 10'-0", PROVIDE 8" BEARING ON EACH SIDE.

3. NO CONCENTRATED LOADS SHALL BE INSTALLED ABOVE LINTELS. IE, AWNING CONNECTIONS, ARCH FEATURES ETC.

LIGHT GAGE HEADER AND PURLIN SCHEDULE

LABEL	SIZE	MATERIAL	NOTES
H1	SINGLE 8Cx3-1/2x14GA	50 KSI	SEE DETAILS 5 AND 6 ON S5
DH1	DOUBLE 6Cx2x14GA (50 KSI) W/ CRIPPLE STUDS AT 24" O.C.	50 KSI	SEE DETAIL 4 ON S6
DH2	DOUBLE 12Cx3-1/2x12GA (50 KSI) W/ CRIPPLE STUDS AT 24" O.C.	50 KSI	SEE DETAIL 4 ON S6
DH3	DOUBLE 8Cx2-1/2x16GA (50 KSI) W/ CRIPPLE STUDS AT 24" O.C.	50 KSI	SEE DETAIL 4 ON S6
BH1	DOUBLE 6Cx2x16GA (50 KSI) W/ T&B TRACK TO FORM BOX HEADER	50 KSI	SEE DETAILS 5 AND 6 ON S6
BH2	DOUBLE 6Cx2x14GA (50 KSI) W/ T&B TRACK TO FORM BOX HEADER	50 KSI	SEE DETAILS 5 AND 6 ON S6
Z1	4"x2 1/2"x16 GA Zee Purlins SEE SHOP DRAWINGS	50 KSI	SEE DETAILS 2,3,4, AND 5 ON S5
Z2	12"x3 1/2"x14 GA Zee Purlins SEE SHOP DRAWINGS	50 KSI	SEE DETAILS 2,3,4, AND 5 ON S5



N

BUILDING A ROOF FRAMING PLAN

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

HAUSER-CREECH, INC.
PROJECT #: 22-10X-00X

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 035814 MICHAEL GABRIEL HAUSER
7/7/2022
MICHAEL GABRIEL HAUSER
NORTH CAROLINA PE NO. 035814

HAUSER CREECH
HAUSER-CREECH,INC.
P.919.817.7579
P.919.817.7676
F.919.404.2427
4506 PEARCES RD.
ZEBULON,NC
27597

G. CLEVELAND PATE, PLLC
6013 FORTLAND DRIVE
RALEIGH, NC 27606

BUILDING A
LAKESIDE STORAGE - ANGIER
ANGIER, NC

ISSUE DATE: 07.07.2022

REV	DATE

ROOF FRAMING PLAN

S2.1

FRAMING NOTES:

1. MAXIMUM ZEE JOIST SPACING IS INDICATED ON THE PLANS. SPACE JOIST AT ACCESS DOORS TO ALLOW FOR PROPER INSTALLATION. REFER TO ARCHITECTURAL PLANS FOR LOCATIONS.
2. MATERIAL SUPPLIER SHALL VERIFY ALL DIMENSIONS, LAYOUTS AND COORDINATE WITH BEARING WALL AND BEAM LOCATIONS. SUBMIT SHOP DRAWINGS FOR APPROVAL. ALTERNATE LAYOUT PLANS MAY BE SUBMITTED FOR APPROVAL.
3. REFER TO FOUNDATION PLAN FOR DIMENSIONS AND TO ARCHITECTURAL PLANS FOR DIMENSIONS NOT SHOWN.
4. SEE DETAIL 1/S2.3 FOR ROOF PANEL SIZE AND ATTACHMENT..
5. VERIFY LOCATIONS AND AMOUNTS OF ALL HEADERS.
6. METAL STUD WALL SHOP DRAWINGS SHALL PROVIDED FOR REVIEW AND APPROVAL.
7. STUD SPACING SHALL NOT EXCEED 60" O.C. ON UPPER LEVEL (OR SINGLE STORY BUILDING) AND 30" ON LOWER LEVEL. ADDITIONALLY POINTS LOADS FROM STUDS ARE DESIGNED TO STACK FROM FLOOR-TO-FLOOR. CONTACT EOR IF STUDS DO NOT ALIGN.
8. STUD WALL SIZES AND CONNECTIONS DIFFERING FROM THOSE SHOWN ON THESE PLANS MAY BE SUBMITTED FOR APPROVAL. PROVIDED THE ALTERNATES ARE PROVIDED IN THE FORM OF A SIGNED AND SEALED SHOP DRAWING BY A LICENSED PROFESSIONAL. NOTE THAT ANY PARTS OMITTED FROM THESE PLANS SHALL BE CONSIDERED THE DESIGNATED ENGINEER RESPONSIBILITY THROUGH SHOP DRAWINGS.
9. EXTERIOR WALL PANELS REQUIRE MID-HEIGHT WALL GIRT OR BRACING AT THIRD POINTS FOR SUPPORT. SEE DETAIL 2 ON S6
10. SEE DETAIL 3 ON S6 FOR PARTITION WALL INTERSECTION W/ BEARING WALL.

BUILDING 1 - LIGHT GAGE METAL STUD SCHEDULE

LOCATION	STUD HEIGHT	SIZE	SPACING	LATERAL BRACING LOCATIONS
FIRST FLOOR EXTERIOR WALLS - METAL PANELS	VARIES	4Cx2 1/2x16GA (50 KSI)	60" MAX.	60" O.C. BRACING
FIRST FLOOR INTERIOR BEARING WALLS	VARIES	4Cx2 1/2x16GA (50 KSI)	60" MAX.	SHEATHED ONE SIDE

CLADDING SCHEDULE

PANEL TYPE	LOCATION	MATERIAL	GIRT/PURLIN - WALL/ROOF PANEL BRACE SPACING
U PANEL BY VENDOR	INTERIOR WALL	29 GA.	INTERIOR STUD SPACING = 5.0 FT O.C
R PANEL BY VENDOR	EXTERIOR WALL	26 GA.	CORNER ZONE = 5.0 FT O.C INTERIOR ZONE = 5.0 FT O.C.
24 GA. STANDING SEEM BY VENDOR	ROOF	24 GA.	CORNER ZONE = 5.0 FT O.C. PERIMETER ZONE = 5.0 FT O.C INTERIOR ZONE = 5.0 FT O.C

1. SUBMIT VENDOR CUT SHEETS/SHOP DRAWING INFORMATION FOR APPROVAL.
2. SEE MANUFACTURER REQUIREMENTS FOR INSTALLATION COMPONENTS AND TRIM COMPONENTS TO RESIST CLADDING PRESSURES

LINTEL SCHEDULE

SIZE	NOTES
L3-1/2x3-1/2x5/16	UP TO 4'-0" OPENINGS
L4x4x3/8	4'-0" TO 6'-0" OPENINGS
L6x4x3/8 (LLV)	6'-0" TO 8'-0" OPENINGS
L7x4x7/16 (LLV)	8'-0" TO 10'-0" OPENINGS
CONTACT EOR	OPENINGS > 10'-0"

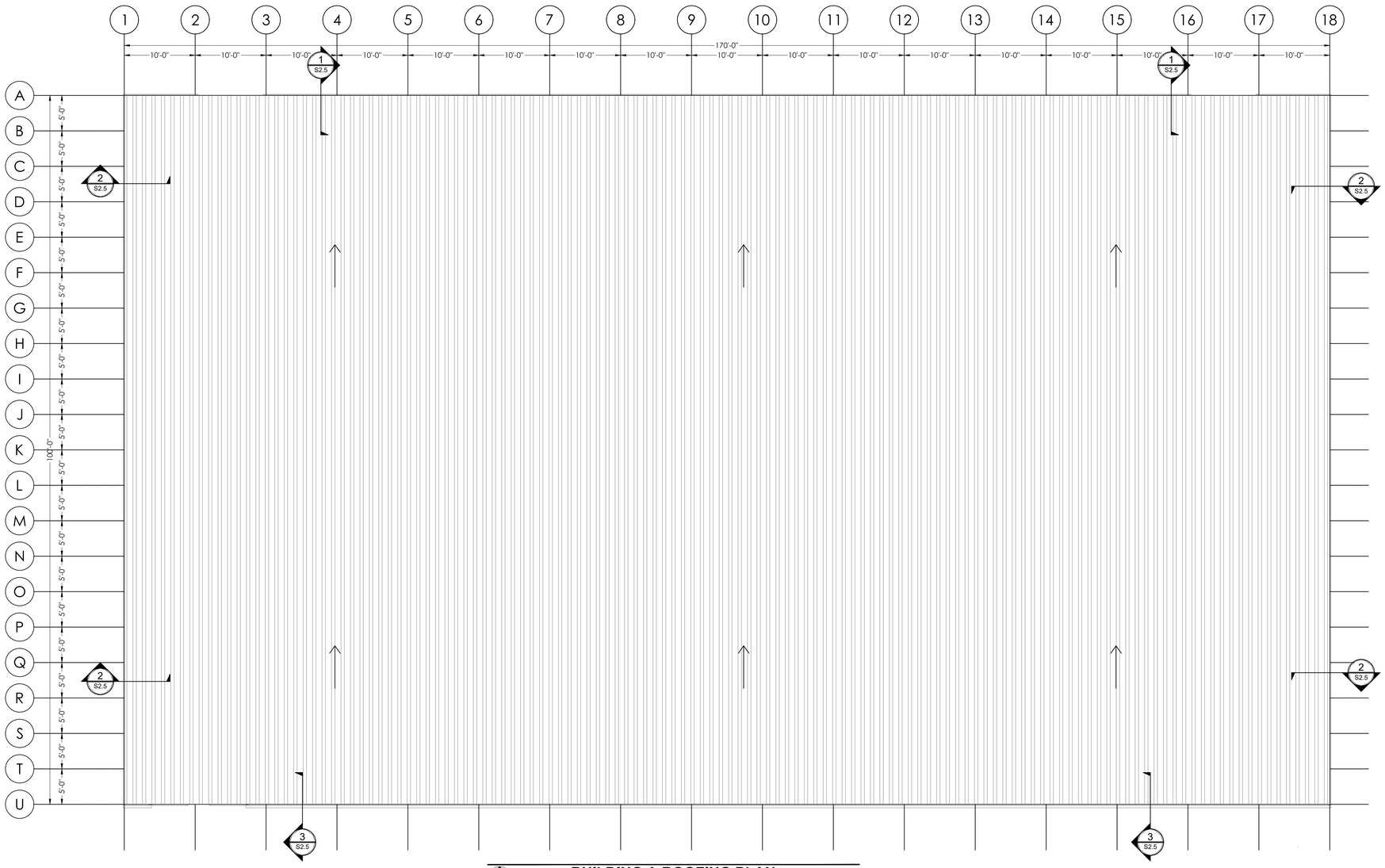
1. NO EXPANSION JOINTS MAY BE POSITIONED ON EITHER SIDE OF OPENING OF ABOVE OPENING. LINTEL IS DESIGNED WITH ARCHING AFFECT OF MASONRY ACCOUNTED.

2. FOR OPENINGS UP TO 8'-0" PROVIDE 6" BEARING ON EACH SIDE. FOR OPENING 8'-0" TO 10'-0", PROVIDE 8" BEARING ON EACH SIDE.

3. NO CONCENTRATED LOADS SHALL BE INSTALLED ABOVE LINTELS. IE, AWNING CONNECTIONS, ARCH FEATURES ETC.

LIGHT GAGE HEADER AND PURLIN SCHEDULE

LABEL	SIZE	MATERIAL	NOTES
H1	SINGLE 8Cx3-1/2x14GA	50 KSI	SEE DETAILS 5 AND 6 ON S5
DH1	DOUBLE 6Cx2x14GA (50 KSI) W/ CRIPPLE STUDS AT 24" O.C.	50 KSI	SEE DETAIL 4 ON S6
DH2	DOUBLE 12Cx3-1/2x12GA (50 KSI) W/ CRIPPLE STUDS AT 24" O.C.	50 KSI	SEE DETAIL 4 ON S6
DH3	DOUBLE 8Cx2-1/2x16GA (50 KSI) W/ CRIPPLE STUDS AT 24" O.C.	50 KSI	SEE DETAIL 4 ON S6
BH1	DOUBLE 6Cx2x16GA (50 KSI) W/ T&B TRACK TO FORM BOX HEADER	50 KSI	SEE DETAILS 5 AND 6 ON S6
BH2	DOUBLE 6Cx2x14GA (50 KSI) W/ T&B TRACK TO FORM BOX HEADER	50 KSI	SEE DETAILS 5 AND 6 ON S6
Z1	4"x2 1/2"x16 GA Zee Purlins SEE SHOP DRAWINGS	50 KSI	SEE DETAILS 2,3,4, AND 5 ON S5
Z2	12"x3 1/2"x14 GA Zee Purlins SEE SHOP DRAWINGS	50 KSI	SEE DETAILS 2,3,4, AND 5 ON S5



N

BUILDING A ROOFING PLAN

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

HAUSER-CREECH, INC.
PROJECT #: 22-10X-00X

NORTH CAROLINA PROFESSIONAL SEAL 035814 ENGINEER MICHAEL GABRIEL HAUSER

MICHAEL GABRIEL HAUSER
NORTH CAROLINA PE NO. 035814

HAUSER CREECH

HAUSER-CREECH,INC.

P.919.817.7579
P.919.817.7676
F.919.404.2427

4506 PEARCES RD.
ZEBULON,NC
27597

G. CLEVELAND PATE, PLLC
6013 FORTLAND DRIVE
RALEIGH, NC 27606

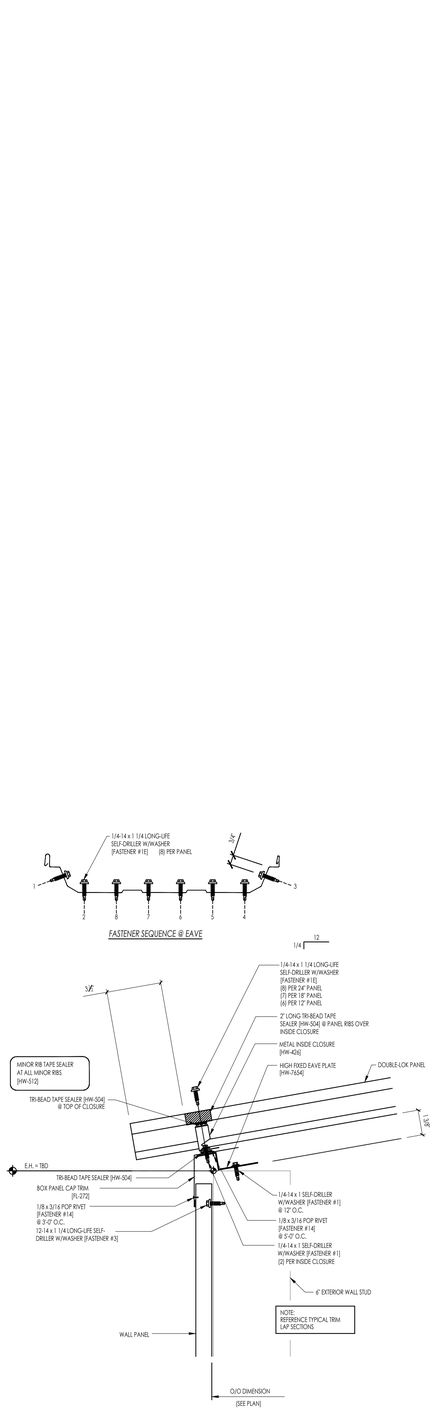
BUILDING A
LAKESIDE STORAGE - ANGIER
ANGIER, NC

ISSUE DATE: 07.07.2022

REV	DATE

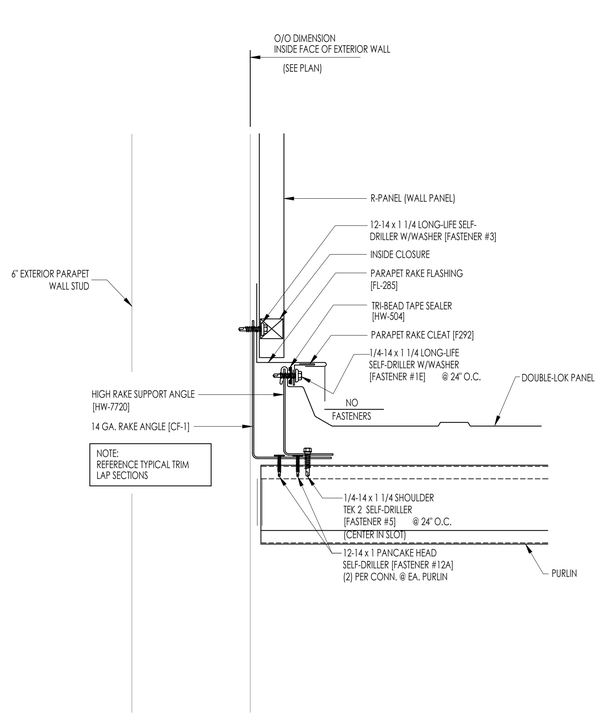
ROOFING PLAN

S2.1a



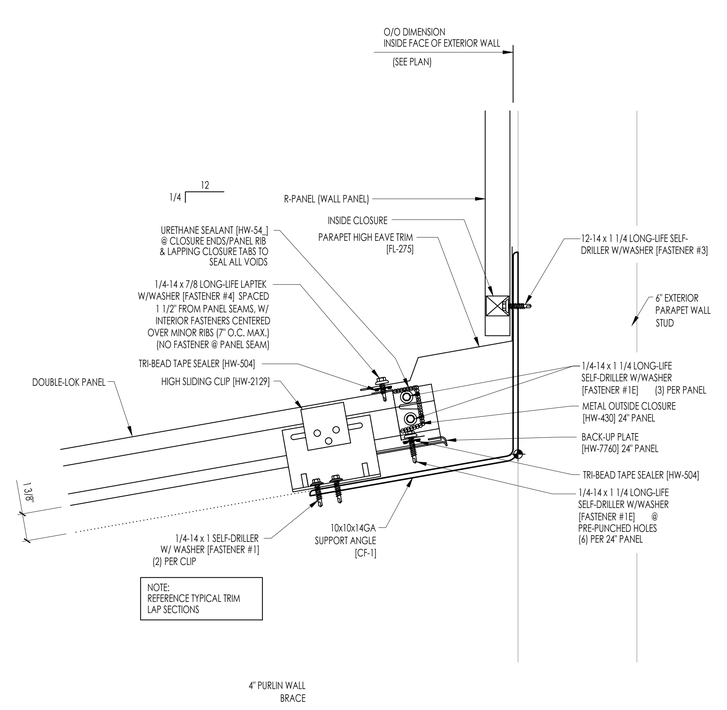
1 S2.4 LOW EAVE NO GUTTER SECTION

SCALE: N/A



2 S2.4 PARAPET RAKE TRIM SECTION

SCALE: N/A



3 S2.4 PARAPET HIGH EAVE TRIM SECTION

SCALE: N/A

HAUSER-CREECH, INC.
PROJECT #: 22-10X-00X

NORTH CAROLINA PROFESSIONAL SEAL 035814 ENGINEER MICHAEL GABRIEL HAUSER

MICHAEL GABRIEL HAUSER
NORTH CAROLINA PE NO. 035814

HAUSER CREECH

HAUSER-CREECH,INC.

P.919.817.7579
P.919.817.7676
F.919.404.2427

4506 PEARCES RD.
ZEBULON,NC
27597

G. CLEVELAND PATE, PLLC
6013 FORTLAND DRIVE
RALEIGH, NC 27606

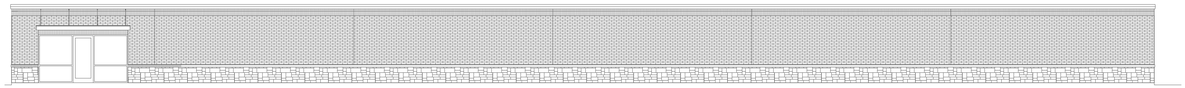
BUILDING A
LAKESIDE STORAGE - ANGIER
ANGIER, NC

ISSUE DATE: 07.07.2022

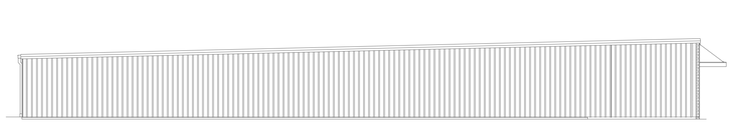
REV	DATE

ROOF DETAILS

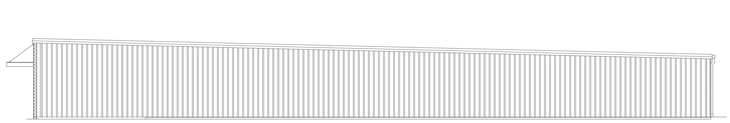
S2.4



FRONT ELEVATION



LEFT SIDE ELEVATION



RIGHT SIDE ELEVATION

REAR ELEVATION

HAUSER-CREECH, INC.
PROJECT #: 22-10X-00X

NORTH CAROLINA PROFESSIONAL SEAL 035814 ENGINEER MICHAEL GABRIEL HAUSER

MICHAEL GABRIEL HAUSER
NORTH CAROLINA PE NO. 035814

HAUSER CREECH

HAUSER-CREECH, INC.

P.919.817.7579
P.919.817.7676
F.919.404.2427

4506 PEARCES RD.
ZEBULON,NC
27597

G. CLEVELAND PATE, PLLC
6013 FORTLAND DRIVE
RALEIGH, NC 27606

BUILDING A
LAKESIDE STORAGE - ANGIER
ANGIER, NC

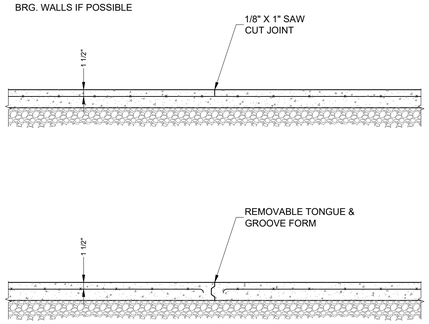
ISSUE DATE: 07.07.2022

REV	DATE

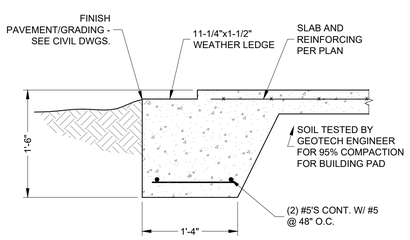
BUILDING A ELEVATIONS

S3.1

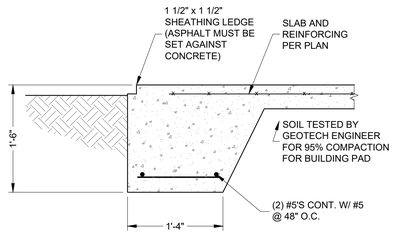
NOTE:
MAXIMUM JOINT SPACING SHALL
BE 20 FT. IN EACH DIRECTION
UNLESS SHOWN OTHERWISE ON PLAN
LOCATED UNDER NON-LOAD
BRG. WALLS IF POSSIBLE



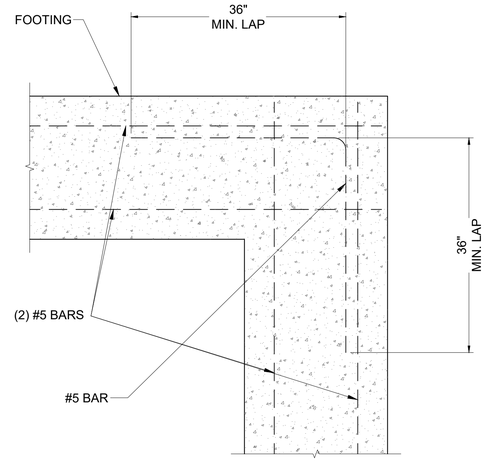
1 SLAB ON GRADE JOINTS
SCALE: NONE



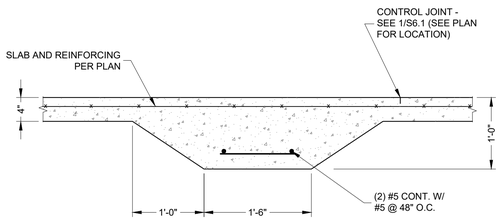
2 SECTION @ EXTERIOR WALL (WEATHER LEDGE)
SCALE: NONE



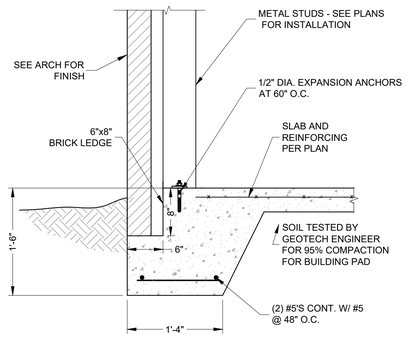
3 SECTION @ SHEATHING NOTCH
SCALE: NONE



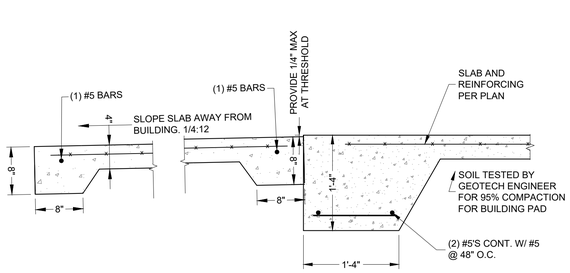
4 CONTINUITY CORNERS - ALL BUILDING CORNERS
SCALE: NONE



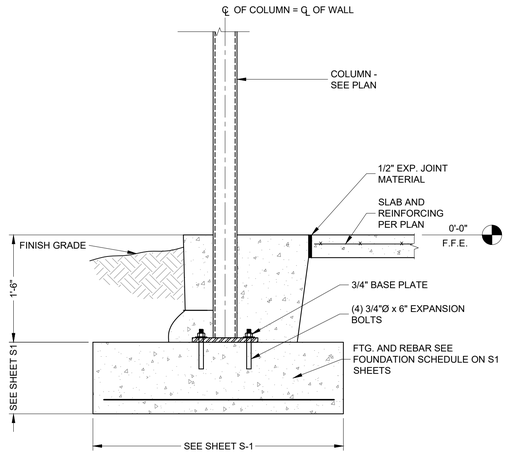
5 THICKENED SLAB
SCALE: NONE



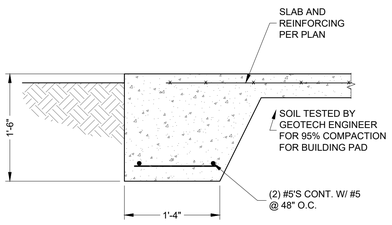
6 SECTION @ EXTERIOR WALL (BRICK LEDGE)
SCALE: NONE



7 EXTERIOR ENTRY/ALCOVE PAD
SCALE: NONE



8 EXTERIOR STEEL COLUMN
SCALE: NONE



9 EXTERIOR AT TURN-DOWN
SCALE: NONE

HAUSER-CREECH, INC.
PROJECT #: 22-10X-00X

NORTH CAROLINA
PROFESSIONAL
SEAL
035814
ENGINEER
MICHAEL GABRIEL HAUSER
MICHAEL GABRIEL HAUSER
NORTH CAROLINA PE NO. 035814

HAUSER CREECH

HAUSER-CREECH, INC.
P.919.817.7579
P.919.817.7676
F.919.404.2427
4506 PEARCES RD.
ZEBULON,NC
27597

G. CLEVELAND PATE, PLLC
6013 FORTLAND DRIVE
RALEIGH, NC 27606

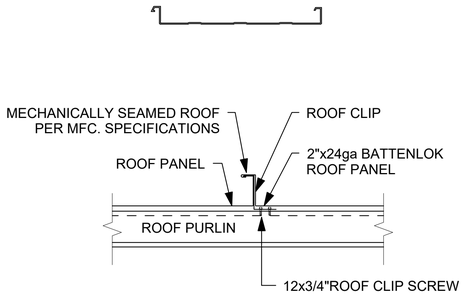
BUILDING A
LAKESIDE STORAGE - ANGIER
ANGIER, NC

ISSUE DATE: 07.07.2022

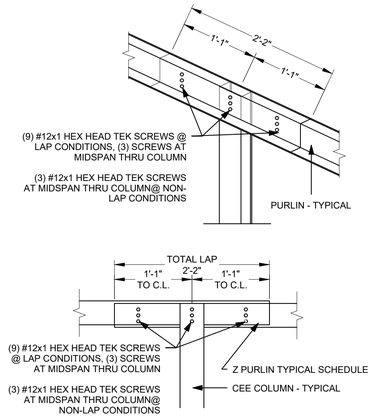
REV	DATE

FOUNDATION DETAILS

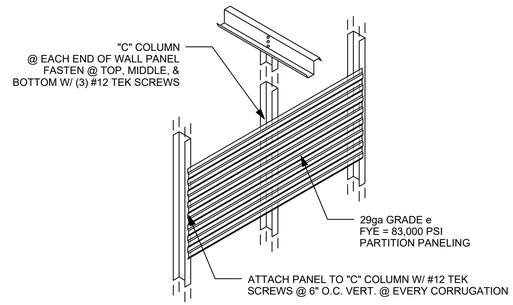
S4



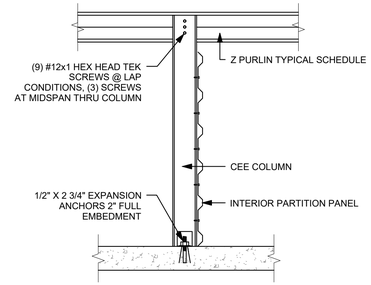
1 STANDING SEAM ROOF PANEL DETAIL
SCALE: NONE



2 PURLIN CONNECTION/LAP
SCALE: NONE



3 PURLIN SUPPORT WALL FRAMING
SCALE: NONE



4 PURLIN SUPPORT WALL CONNECTION
SCALE: NONE

5 PURLIN SUPPORT - HEADER CONNECTION
SCALE: NONE

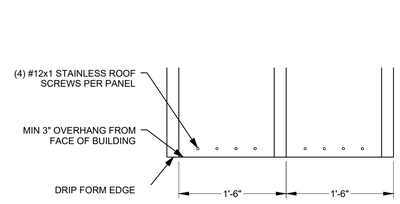
6 PURLIN SUPPORT - HEADER CONNECTION
SCALE: NONE

7 DETAIL NOT USED
SCALE: NONE

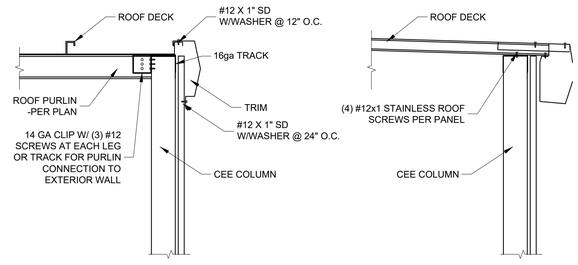
8 DETAIL NOT USED
SCALE: NONE

9 DETAIL NOT USED
SCALE: NONE

10 DETAIL NOT USED
SCALE: NONE



11 ROOF PANEL CONNECTION AT EAVE
SCALE: NONE



12 ROOF CONNECTION AT EXTERIOR
SCALE: NONE

HAUSER-CREECH, INC.
PROJECT #: 22-10X-00X

NORTH CAROLINA
PROFESSIONAL
SEAL
035814
ENGINEER
MICHAEL GABRIEL HAUSER
MICHAEL GABRIEL HAUSER
NORTH CAROLINA PE NO. 035814

HAUSER CREECH
HAUSER-CREECH,INC.
P.919.817.7579
P.919.817.7676
F.919.404.2427
4506 PEARCES RD.
ZEBULON,NC
27597

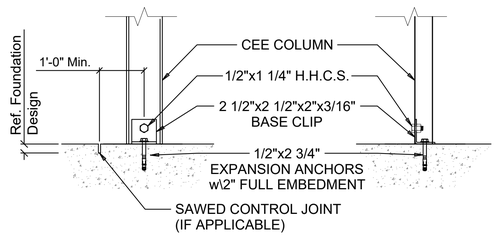
G. CLEVELAND PATE, PLLC
6013 FORTLAND DRIVE
RALEIGH, NC 27606

BUILDING A
LAKESIDE STORAGE - ANGIER
ANGIER, NC

ISSUE DATE: 07.07.2022

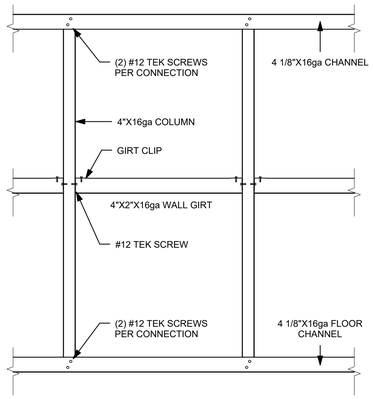
REV	DATE

FRAMING DETAILS
S5



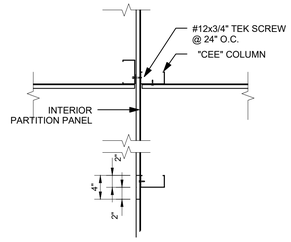
1 FIRST FLOOR - LATERAL WALL BRACING

SCALE: NONE



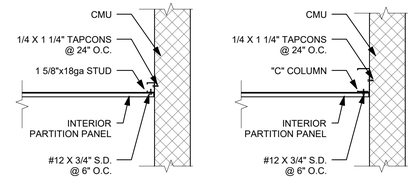
2 SECTION

SCALE: NONE



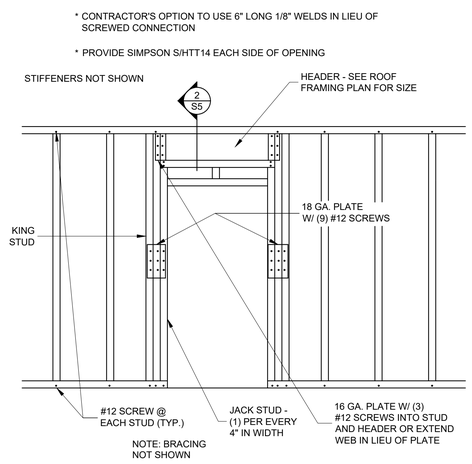
3 PARTITION WALL INTERSECTION W/ BEARING WALL

SCALE: NONE



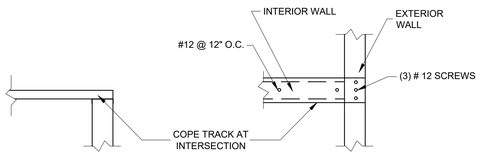
4 METAL WALL @ SHAFT

SCALE: NONE



5 DOUBLE HEADER - COMPOSITE SLAB LATERAL SUPPORT

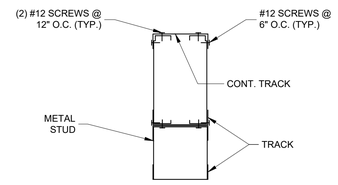
SCALE: NONE



ELEVATION VIEW PLAN VIEW

INTERSECTION OF INTERIOR AND EXTERIOR WALLS

ATTACH SHEATHING AND WALLBOARD TO STUDS @ 7" O.C. U.N.O.
PROVIDE DETAIL AT WALL BETWEEN EACH UNIT



6 PURLIN SUPPORT - HEADER CONNECTION

SCALE: NONE

HAUSER-CREECH, INC.
PROJECT #: 22-10X-00X

NORTH CAROLINA PROFESSIONAL SEAL 035814 ENGINEER MICHAEL GABRIEL HAUSER

MICHAEL GABRIEL HAUSER
NORTH CAROLINA PE NO. 035814

HAUSER CREECH

HAUSER-CREECH, INC.
P.919.817.7579
P.919.817.7676
F.919.404.2427
4506 PEARCES RD.
ZEBULON, NC
27597

G. CLEVELAND PATE, PLLC
6013 FORTLAND DRIVE
RALEIGH, NC 27606

BUILDING A
LAKESIDE STORAGE - ANGIER
ANGIER, NC

ISSUE DATE: 07.07.2022

REV	DATE

FRAMING DETAILS

S6

SPLIT SYSTEM HEAT PUMP SCHEDULE														
MARK	MFG / MODEL #	NOMINAL CAPACITY	REF LINES		MOTORS		EFFICIENCIES			ELECTRICAL			WEIGHT	REMARKS
		TONS	GAS	LIQ	COMPRESSOR NO.	COND. FAN NO.	SEER EER	COP @ 17°	HSPF	V/PH	MCA	MOCP	LBS	
HP-1	TRANE 4TWR4024D1000	2	5/8	3/8	1	1	14/11.5	2.5	8.5	208/1	12	20	222	1,4,9-11
HP-2	TRANE 4TWR5036	3	7/8	3/8	1	1	15/12.5	2.50	8.50	208/1	18	30	199	1,4,9-11
HP-(3-5)	TRANE 3TWR4048	4	7/8	3/8	1	1	15/12.5	2.50	8.50	208/1	26	45	266	1,4,9-11

SPLIT SYSTEM AIR HANDLER SCHEDULE																	
MARK	MFG / MODEL #	NOMINAL CAPACITY	AIR FLOW		FAN MOTORS		HEATING CAPACITY			COOLING CAPACITY			ELECTRICAL			WEIGHT	REMARKS
			SUPPLY	MIN. OA	SUPPLY	ESP	OUTPUT	AUX ELEC HEAT		EAT WB/DB	TOTAL	SENSIBLE	V/PH	MCA	MOCP		
		TONS	CFM	CFM	NO.	in wg	MBH	kW	STAGES	°F	MBH	MBH				LBS	
AH-1	TRANE TAM4A0A24S-1S	2	800	75	1	.25	14.7	3.6	1	67/80	23.6	17.5	208/1	23	25	116	2,3,5-11
AH-2	TRANE GAM5A0B36M21EA	3	1200	200	1	.25	21.6	2.88	1	67/80	35.3	26.9	208/1	22	25	142	2,3,5-11
AH-(3-5)	TRANE GAM5A0C48M41SA	4	1600	375	1	.25	29.2	2.88	1	67/80	48.2	35.4	208/1	25	25	166	2,3,5-11

1. PROVIDE CONCRETE PAD FOR UNIT TO SIT ON
2. PROVIDE HEAT STRIP OUTDOOR TEMPERATURE LOCKOUT TO PREVENT SUPPLEMENTAL HEAT OPERATION IN RESPONSE TO THE THERMOSTAT BEING CHANGED TO A WARMER SETTING. SET NO LOWER THAN 35°F AND NO HIGHER THAN 40°F
3. PROVIDE HINGED ACCESS DOORS
4. PROVIDE HAIL GUARDS FOR COIL
5. REPLACE ALL FILTERS AT PROJECT'S COMPLETION
6. PROVIDE 7-DAY PROGRAMMABLE THERMOSTAT WITH NIGHT-TIME SET BACK
7. CONSULT MANUFACTURER ON LINE SET LENGTHS EXCEEDING 60FT
8. HEATER RATED AT 208V
9. OR EQUAL BY CARRIER, LENNOX, OR YORK
10. ANY EQUIPMENT SUBSTITUTIONS MUST EQUAL OR EXCEED EFFICIENCIES LISTED (RATINGS PER ARI)
11. MAINTAIN MANUFACTURER'S RECOMMENDED CLEARANCES

Ventilation Calculation									
Room Name(s)	**Zone Type**	**Area (sq.ft.)**	**Rp**	**Ra**	**Default Occupancy**	**Pz**	**Ez**	**Airflow to Zone (cfm)**	
	Office Space	300	5	0.06	5	1.50	0.8	800	
	Storage	16431	0	0.12	0	0.00	0.8	7500	
	N/A	0	0	0	0	0.00	0.8	0	
	N/A	0	0	0	0	0.00	0.8	0	
	N/A	0	0	0	0	0.00	0.8	0	
		Maximum Zp:	0.32862						
K-12 School?	No	**Ev:**	0.8						
		Actual System Population:	2						
Uncorrected Intake	2000 cfm								
Outdoor Air Intake	*2500 cfm*								
Percent of Unit Air	30%								

RECTANGULAR/SQUARE TO ROUND DUCT EQUIVALENT	
RECTANGULAR DUCT	ROUND DUCT
30"X26"	30"ø
20"X26"	24"ø
18"X18"	20"ø
18"X20"	20"ø
20"X16"	18"ø
16"X16"	16"ø
10"X16"	14"ø
10"X20"	16"ø
16"X14"	16"ø
16"X12"	14"ø

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

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

REGISTER & GRILLE SCHEDULE						
MARK	MFG	MODEL #	SIZE	MOUNTING	DESCRIPTION	NOTES
A	HART & COOLEY	VHD	10X6	SURFACE	ALUMINUM DOUBLE DEFLECTION REGISTER	1,3
R	HART & COOLEY	RH45	28X14	SURFACE	ALUMINUM SURFACE MOUNT RETURN GRILLE	1
R2	HART & COOLEY	RH45T	24X24	LAY-IN	ALUMINUM, LAY IN RETURN GRILLE	1

1. OR OWNER APPROVED EQUAL.
2. PROVIDE WITH FOIL LINED, MOLDED INSULATION BLANKET.
3. PROVIDE WITH ADJUSTABLE DAMPER.
4. PROVIDE WITH BIRD SCREEN

Ⓣ	THERMOSTAT LOCATION MOUNT AT 48" A.F.F.
(A/V)	AUDIO VISUAL ANNUNCIATOR WITH RESET FOR DUCT DETECTOR, WALL MOUNT.
Ⓢ---	DUCT DETECTOR
(CO_2)	CO_2 SENSOR LOCATION. INSTALL NEXT TO THERMOSTAT

MECHANICAL SYSTEM, SERVICE SYSTEMS, AND EQUIPMENT

METHOD OF COMPLIANCE	PRESCRIPTIVE
THERMAL ZONE	ZONE 4A
EXTERIOR DESIGN CONDITIONS	
HEATING DESIGN DRY BULB	23.1°F
COOLING DESIGN DRY BULB	91.7°F
COOLING DESIGN WET BULB	75.6°F
INTERIOR DESIGN CONDITIONS	
HEATING DESIGN DRY BULB	70°F
COOLING DESIGN DRY BULB	75°F
COOLING RELATIVE HUMIDITY	50%
HEATING LOAD:	235057 BTU/H
SENSIBLE COOLING LOAD:	133994 BTU/H
LATENT COOLING LOAD:	79565 BTU/H
MECHANICAL SPACING CONDITIONING SYSTEM:	
UNITARY	AIR COOLED DX
DESCRIPTION OF UNIT(S)	
BOILER	N/A
TOTAL BOILER OUTPUT	N/A
CHILLER	N/A
TOTAL CHILLER CAPACITY	N/A
EQUIPMENT EFFICIENCIES:	SEE SCHEDULES
EQUIPMENT SCHEDULES WITH MOTORS (MECHANICAL SYSTEMS):	SEE SCHEDULES

DESIGNER STATEMENT:

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

MECHANICAL SCHEDULES 1

GENERAL MECHANICAL NOTES:

ADMINISTRATIVE:

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

MATERIALS:

1. THE MC SHALL PROVIDE ALL DX UNITARY HEATING AND COOLING EQUIPMENT AS SCHEDULED ON THE DRAWINGS. AIR-COOLED SPLIT SYSTEM HEAT PUMPS AND AIR-CONDITIONERS SHALL BE BY TRANE, CARRIER, OR YORK. AIR-COOLED ROOFTOP PACKAGE HEAT PUMPS, GAS-ELECTRIC UNITS, AND AIR-CONDITIONERS SHALL BE BY TRANE, CARRIER, OR YORK. GAS FURNACES SHALL BE BY TRANE, CARRIER, OR YORK. THE MC SHALL PROVIDE FACTORY AND FIELD INSTALLED ACCESSORIES AS SCHEDULED OR AS NECESSARY FOR A COMPLETE AND OPERATIONAL HVAC SYSTEM.
2. THE MC SHALL PROVIDE ALL EXHAUST AND SUPPLY FANS AS SCHEDULED. FANS SHALL BE BY GREENHECK, LOREN COOK, TWIN CITY, OR PENNBARRY.
3. DUCTWORK IS SHOWN WITH FREE AREA DIMENSIONS. ALL DUCTWORK SHALL BE FABRICATED AND INSTALLED IN ACCORDANCE WITH SMACNA LOW PRESSURE DUCT STANDARD, 2 INCH S.P.
4. EXTERNAL DUCT INSULATION AND FACTORY-INSULATED FLEXIBLE DUCT SHALL BE LEGIBLY PRINTED OR IDENTIFIED AT INTERVALS NOT GREATER THAN 36 INCHES WITH THE NAME OF THE MANUFACTURER, THE THERMAL RESISTANCE R-VALUE AT THE SPECIFIED INSTALLED THICKNESS AND THE FLAME SPREAD AND SMOKE-DEVELOPED INDEXES OF THE COMPOSITE MATERIALS. ALL DUCT INSULATION PRODUCT R-VALUES SHALL BE BASED ON INSULATION ONLY, EXCLUDING AIR FILMS, VAPOR RETARDERS OR OTHER DUCT COMPONENTS, AND SHALL BE BASED ON TESTED C-VALUES AT 75°F MEAN TEMPERATURE AT THE INSTALLED THICKNESS, IN ACCORDANCE WITH RECOGNIZED INDUSTRY PROCEDURES. THE INSTALLED THICKNESS OF DUCT INSULATION USED TO DETERMINE ITS R-VALUES SHALL BE DETERMINED AS FOLLOWS:
   - 4.1. FOR DUCT BOARD, DUCT LINER AND FACTORY-MADE RIGID DUCTS NOT NORMALLY SUBJECTED TO COMPRESSION, THE NOMINAL INSULATION THICKNESS SHALL BE USED.
   - 4.2. FOR DUCT WRAP, THE INSTALLED THICKNESS SHALL BE ASSUMED TO BE 75 PERCENT (25-PERCENT COMPRESSION) OF NOMINAL THICKNESS.
   - 4.3. FOR FACTORY-MADE FLEXIBLE AIR DUCTS, THE INSTALLED THICKNESS SHALL BE DETERMINED BY DIVIDING THE DIFFERENCE BETWEEN THE ACTUAL OUTSIDE DIAMETER AND NOMINAL INSIDE DIAMETER BY TWO.
5. DUCT LINER MAY BE SUBSTITUTED FOR EXTERIOR DUCT WRAP. DUCT LINER INSULATION MATERIALS SHALL MEET THE REQUIREMENTS OF ASTM C 1071, AND ASTM G 21. EXTERIOR DUCT R-VALUE SHALL BE R-8 AND INTERIOR R-VALUE SHALL BE R-6 IN ACCORDANCE WITH THE 2018 NORTH CAROLINA ENERGY CONSERVATION CODE. NOMINAL DUCT SIZES SHALL BE ADJUSTED AS NECESSARY SO THAT FREE AREA DIMENSIONS ARE PRESERVED AS SHOWN ON THE PLANS. FABRICATION AND INSTALLATION SHALL CONFORM TO THE MANUFACTURER'S INSTALLATION RECOMMENDATIONS AND TO THE REQUIREMENTS OF THE LATEST EDITION OF THE NORTH AMERICAN INSULATION MANUFACTURERS ASSOCIATION FIBROUS GLASS DUCT LINER STANDARDS AND/OR SMACNA HVAC DUCT CONSTRUCTION STANDARDS. DUCT LINER SHALL HAVE A BLACK PIGMENTED MAT ON THE AIRSTREAM SIDE TO RESIST DAMAGE DURING INSTALLATION AND SERVICE. EDGES SHALL BE FACTORY COATED WITH BLACK PIGMENTED COATING TO COMPLY WITH SMACNA DCS REQUIREMENTS. ALL PORTIONS OF DUCT DESIGNATED TO RECEIVE DUCT LINER SHALL BE COMPLETELY COVERED WITH DUCT LINER. TRANSVERSE JOINTS SHALL BE NEATLY BUTTED AND THERE SHALL BE NO INTERRUPTIONS OR GAPS. THE BLACK PIGMENTED OR MAT FACED SURFACES SHALL FACE THE AIRSTREAM. DUCT LINER SHALL BE ADHERED TO THE SHEET METAL WITH 90 PERCENT COVERAGE OF ADHESIVE COMPLYING WITH REQUIREMENTS OF ASTM C 916. ALL EXPOSED LEADING EDGES AND TRANSVERSE JOINTS SHALL BE FACTORY COATED OR COATED WITH ADHESIVE DURING FABRICATION. DUCT LINER SHALL BE ADDITIONALLY SECURED WITH MECHANICAL FASTENERS, EITHER WELD-SECURED OR IMPACT DRIVEN, WHICH SHALL COMPRESS THE DUCT LINER SUFFICIENTLY TO HOLD IT FIRMLY IN PLACE. ADHESIVE BONDED PINS ARE NOT PERMITTED DUE TO LONG-TERM ADHESIVE AGING CHARACTERISTICS. LININGS SHALL BE INTERRUPTED AT THE AREA OF OPERATION OF A FIRE DAMPER AND AT A MINIMUM OF 6 INCHES UPSTREAM AND 6 INCHES DOWNSTREAM OF ELECTRIC RESISTANCE AND FUEL-BURNING HEATERS IN A DUCT SYSTEM. METAL NOSINGS OR SLEEVES SHALL BE INSTALLED OVER EXPOSED DUCT LINER THAT FACE OPPOSITE THE DIRECTION OF AIRFLOW. UPON COMPLETION OF INSTALLATION OF DUCT LINER AND BEFORE OPERATION IS TO COMMENCE, VISUALLY INSPECT SYSTEM AND VERIFY THAT THE DUCT LINER IS PROPERLY INSTALLED. OPEN ALL SYSTEM DAMPERS AND TURN ON FANS TO BLOW ALL SCRAPS AND OTHER LOOSE PIECES OF MATERIAL OUT OF THE DUCT SYSTEM. ALLOW FOR A MEANS OF REMOVAL OF SUCH MATERIAL.
6. ALL INSULATION CONTAINING FIBROUS MATERIALS EXPOSED TO AIRFLOW SHALL BE RATED FOR THAT EXPOSURE OR SHALL BE ENCAPSULATED. INSULATING PROPERTIES FOR ALL MATERIALS SHALL MEET OR EXCEED INDUSTRY STANDARDS. POLYSTYRENE PRODUCTS SHALL MEET ASTM C578. ALL INSULATION SHALL HAVE FORMALDEHYDE EMISSIONS NOT GREATER THAN 0.05 PPM. THE MAXIMUM FLAME SPREAD AND SMOKE DEVELOPED INDEX FOR INSULATION SHALL MEET THE REQUIREMENTS OF THE LOCAL CODES AND ORDINANCES ADOPTED BY THE JURISDICTION IN WHICH THE BUILDING IS LOCATED.
7. MASTIC USED TO SEAL DUCTWORK SHALL BE LISTED AND LABELED IN ACCORDANCE WITH UL 181A-95 OR UL 181B-98. MAINTAIN AMBIENT TEMPERATURES AND CONDITIONS REQUIRED BY MANUFACTURER OF ADHESIVES, MASTICS, AND INSULATION CEMENTS. DO NOT INSTALL DUCT SEALANT WHEN TEMPERATURES ARE LESS THAT THOSE RECOMMENDED BY THE SEALANT MANUFACTURER.
8. ALL ADHESIVES AND SEALANTS SHALL HAVE VOC CONTENT BELOW 20 GRAMS PER LITER AND WHICH MEET THE REQUIREMENTS OF THE MANUFACTURER OF THE PRODUCTS BEING ADHERED OR INVOLVED. ADHESIVES AND SEALANTS SHALL CONTAIN NO HEAVY METALS OR FORMALDEHYDE.
9. FACTORY-MADE AIR DUCTS AND CONNECTORS SHALL COMPLY WITH UL 181-96.
10. FLEXIBLE DUCT SHALL BE UL LISTED CLASS 0 OR CLASS 1, INSULATED, AND COMPLY WITH UL 181. FLEXIBLE DUCT SHALL BE FACTORY FORMED, COMPOSED OF SPIRAL WOUND CORROSION RESISTANT WIRE BONDED TO AN INNER FABRIC LINER. DUCT SHALL BE FACTORY INSULATED WITH A FOIL VAPOR BARRIER JACKET. CONNECT TO RIGID DUCT WITH SPIN-IN FITTING AND DAMPER. FLEXIBLE DUCTS AND AIR CONNECTORS SHALL NOT PASS THROUGH ANY FIRE RESISTANCE RATED ASSEMBLY.
11. THE MC SHALL PROVIDE ALL DIFFUSERS GRILLES, LOUVERS, AND OTHER AIR DISTRIBUTION OUTLETS AND INLETS. LOUVERS, GRILLES, AND DIFFUSERS SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTALLATION INSTRUCTIONS. FOR LAY-IN CEILINGS, INSTALL SUPPORT FROM THE STRUCTURE FOR EACH DIFFUSER OR DAMPER. AIR DISTRIBUTION OUTLETS AND INLETS SHALL BE BY HART & COOLEY, PRICE, METAL-AIRE, NAILOR, OR CARNES.
12. AIR FILTERS SHALL BE INSTALLED IN ACCORDANCE WITH SECTION 605 OF THE 2018 NC MECHANICAL CODE.
13. THE MC SHALL PROVIDE ALL REFRIGERATION PIPING. ALL PIPE AND FITTINGS SHALL BE TYPE ACR HARD COPPER TUBING WITH SWEAT FITTINGS. REFRIGERATION LINES SHALL BE RUN NEATLY. WHERE A GROUP OF LINES ARE RUN, TRAPEZE HANGERS MAY BE USED. DO NOT USE CHAIN OR WIRE HANGERS. WRAP TUBING WITH RUBBER TAPE AT EACH CLAMP OR HANGER. FOR COVERED PIPES, HANGERS SHALL FIT AROUND THE OUTSIDE OF THE COVERING WITH 12 GAUGE GALVANIZED STEEL SHIELDS OF A LENGTH EQUAL TO THE OUTSIDE DIAMETER OF THE INSULATION AND COVERING 3/4 OF THE CIRCUMFERENCE OF THE INSULATION. SAGS SHALL NOT BE PERMISSIBLE. HORIZONTAL LINES SHALL PITCH DOWN NOT LESS THAN 1 INCH IN 40 FEET. INSULATE WITH 1 INCH CLOSED CELL ARMAFLEX TYPE INSULATION WITH A FLAME DENSITY RATING LESS THAN 25 AND A SMOKE DENSITY RATING LESS THAN 50. ALL JOINTS AND SPLICES IN INSULATION SHALL BE TAPED AND AIR TIGHT. SOLDER REFRIGERATION LINES USING 15 PERCENT SILVER SOLDER AND EVACUATE LINES TO 300 MICRONS. PROVIDE MOISTURE INDICATING SIGHT GLASS AND FILTER DRYER IN LIQUID LINE. PROVIDE OIL TRAPS AND DOUBLE RISERS IN REFRIGERANT SUCTION AND HOT GAS LINES WHERE REQUIRED TO PREVENT OIL SLUGGING AT THE COMPRESSOR AND INSURE PROPER LUBRICATION. MC SHALL BE RESPONSIBLE FOR SEALING LINE SET PENETRATIONS OF ANY RATED ASSEMBLIES IN ACCORDANCE WITH A SYSTEM LISTED IN THE UL DIRECTORY FOR THE SPECIFIC ASSEMBLY BEING PENETRATED. SEE ARCHITECTURAL PLANS FOR A LIST OF ALL UL FIRE RATED ASSEMBLIES.

METHODS:

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

GENERAL MECHANICAL NOTES 2

Kilian Engineering, Inc.
PO Box 3301, Henderson, NC 27536 | www.kilianengineering.com
(P) 252.438.8778 | CORPORATE LICENSE C-2277

JACOB A. BENDER

CLEVE PATE
LAKESIDE STORAGE
BUILDING A
ANGIER, NORTH CAROLINA

REVISION:

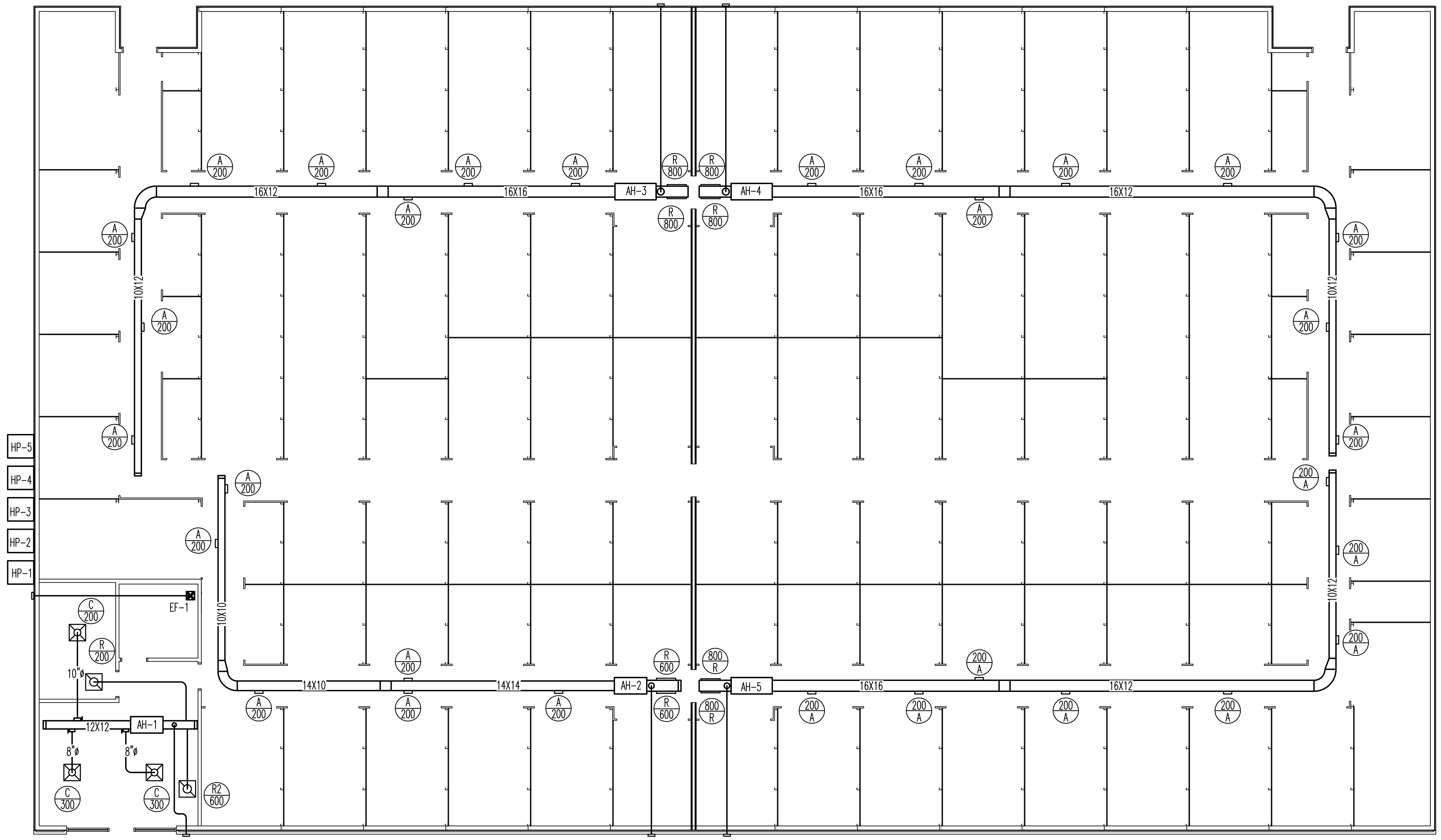
ISSUED:
1 6/24/22 FOR PERMITTING

DRAWN BY: JMB
CHECKED BY: MWK

MECHANICAL NOTES AND SCHEDULES

SHEET NO.
M1

PROJECT NO: 22214



MECHANICAL PLAN-SCALE: 1/8"=1' | 2

Kilian Engineering, Inc.
PO Box 3301, Henderson, NC 27536 | www.kilianengineering.com
(P) 252.438.8778 | CORPORATE LICENSE C-2277

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 046202 JACOB A. BENDER 6/24/22

KILIAN ENGINEERING, INC. CORPORATE SEAL NORTH CAROLINA

CLEVE PATE
LAKESIDE STORAGE
BUILDING A
ANGIER, NORTH CAROLINA

REVISION:

NO.	DATE	DESCRIPTION

ISSUED:

NO.	DATE	DESCRIPTION
0	6/24/22	FOR PERMITTING

DRAWN BY: -JMB
CHECKED BY: MWK-

MECHANICAL PLAN

SHEET NO.
M2

PROJECT NO: 22214

LIGHT FIXTURE SCHEDULE												
MARK	DESCRIPTION	LOUVER/LENS	LAMPS		BALLAST		VOLTAGE	INPUT WATTAGE	MOUNTING	REMARKS	MFG	MODEL
			TYPE	CCT	TYPE	QTY						
A	4' LED FIXTURE	ACRYLIC	LED	3500K	LED DRIVER	1	120	41	SURFACE	2	LITHONIA	ZL1D-L48-5000LM-FST-MVOLT-35K-80CRI
AE	4' LED FIXTURE W/ EM	ACRYLIC	LED	3500K	LED DRIVER	1	120	41	SURFACE	1,2	LITHONIA	ZL1D-L48-5000LM-FST-MVOLT-35K-80CRI-E7W
B	2X4 LED LENSED TROFFER DIMMING	ACRYLIC	LED	3500K	LED DRIVER	1	120	55	LAY-IN	2	LITHONIA	2GTL-4-60L-EZ1-LP835
WP	LED WALLPACK	ACRYLIC	LED	4000K	LED DRIVER	1	120	54	SURFACE	2,3	LITHONIA	TWX2-LED-ALO-40K-MVOLT
PE	EXTERIOR OVAL LED EMERGENCY LIGHT	POLYCARBONATE	LED	-	LED DRIVER	1	120	2	SURFACE	1,2	EELP	DEM-EM
EM	DUAL HEAD EMERGENCY FIXTURE	ACRYLIC	LED	N/A	-	-	120	2	VARIES	1,2	LITHONIA	ELM2-LED-SD
EX	LED EXIT SIGN W/ BATTERY BACKUP	ACRYLIC	LED	N/A	-	-	120	1	VARIES	1,2	LITHONIA	LQM-S-W-1-R-120/277-EL-N-SD

1. FIXTURE SHALL HAVE BATTERY BACKUP FOR 90 MINUTE ILLUMINATION.
2. OR EQUAL BY COOPER, MOBERN, OR CURRENT BY GE LIGHTING

OCCUPANCY SENSORS SEQUENCE OF OPERATION WITH LOW-VOLTAGE MOMENTARY SWITCH

1. OCCUPANCY SENSOR DETECTS MOTION AND TURNS THE LIGHTS ON. SENSOR HOLDS LIGHTS ON AS LONG AS MOTION IS DETECTED. IF AFTER THE SET TIME DELAY, NO MOTION IS DETECTED, LIGHTS TURN OFF. CONSULT OWNER FOR DESIRED TIME DELAY SETTING.
2. THE LOAD CAN BE TURNED ON USING THE MANUAL SWITCH AND IT STAYS ON ACCORDING TO THE OCCUPANCY LOGIC SETTING. THE TIME DELAY OPERATES AS PROGRAMMED. WHEN THE LOAD TURNS OFF DUE TO LACK OF OCCUPANCY DETECTION, IT CAN BE TURNED ON AGAIN BY OCCUPANCY DETECTION OR THE SWITCH.
3. ACTIVATING THE MANUAL SWITCH WHILE THE LOAD IS ON TURNS THE LOAD OFF.
   - 3.1. WHEN THE LOAD IS TURNED OFF MANUALLY, AS LONG AS THE SENSOR CONTINUES TO DETECT OCCUPANCY THE LOAD STAYS OFF. FIVE MINUTES AFTER THE LAST OCCUPANCY DETECTION, THE LIGHTS STAY OFF AND THE SENSOR REVERTS TO THE AUTOMATIC-ON MODE.
   - 3.2. WHEN THE LOAD IS TURNED OFF MANUALLY, PRESSING THE SWITCH AGAIN TURNS THE LOAD ON AND THE SENSOR REVERTS TO THE AUTOMATIC-ON MODE.
   - 3.3. ONCE RETURNING TO AUTOMATIC-ON MODE, EITHER THE SWITCH OR OCCUPANCY DETECTION CAN TURN THE LOAD ON.
4. LOW-VOLTAGE INPUT SIGNAL FROM TIME CLOCK HOLDS LIGHTS ON DURING RETAIL HOURS REGARDLESS OF OCCUPANCY DETECTION.

OCCUPANCY SENSORS SEQUENCE OF OPERATIONS WITH LINE-VOLTAGE SWITCH

1. LINE VOLTAGE SWITCH MUST BE TURNED ON OR IN ON POSITION.
2. OCCUPANCY SENSOR DETECTS MOTION AND TURNS THE LIGHTS ON. SENSOR HOLDS LIGHTS ON AS LONG AS MOTION IS DETECTED. IF AFTER THE SET TIME DELAY, NO MOTION IS DETECTED, LIGHTS TURN OFF. CONSULT OWNER FOR DESIRED TIME DELAY SETTING.
3. THE LOAD CAN BE TURNED OFF USING THE MANUAL LINE VOLTAGE SWITCH AND IT STAYS OFF UNTIL THE SWITCH IS TURNED TO ON POSITION AND THE OCCUPANCY SENSOR DETECTS OCCUPANCY.

NOTES FOR EMERGENCY FIXTURES

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

VOLTAGE DROP SCHEDULE

120V CIRCUITS < 8 AMPS (1.0 kVA)

DISTANCE TO 1ST LOAD			AWG SIZE
0'	-	120'	#12
121'	-	190'	#10
191'	-	300'	#8
301'	-	470'	#6

120V CIRCUITS 9 TO 14 AMPS (1.0–1.7 kVA)

DISTANCE TO 1ST LOAD			AWG SIZE
0'	-	65'	#12
66'	-	110'	#10
111'	-	170'	#8
171'	-	270'	#6

LIGHTING DEVICE LEGEND		
SYMBOL	DESCRIPTION	REMARKS
$	SINGLE POLE WALL SWITCH	HEAVY DUTY, AC ONLY, COMMERCIAL GRADE GENERAL USE SNAP SWITCH COMPLYING WITH NEMA WD 6 AND WD 1. IVORY PLASTIC BODY WITH TOGGLE HANDLE. 120-277V, 20A. MEET FEDERAL SPECIFICATION W-S-896.
$_D	DIMMER SWITCH	COMMERCIAL GRADE, 120V, 1500W
$_M	WALL MOUNTED OCCUPANCY SENSOR	WATTSTOPPER DW-100 LINE VOLTAGE OCCUPANCY SENSOR. ULTRA SONIC AND INFRARED.
$_LV	LOW VOLTAGE SWITCH	WATTSOPPER LVS-1 LOW VOLTAGE MOMENTARY CONTROL SWITCH.
$_3	3 WAY SWITCH	3-WAY TYPE SWITCH WITH SAME CHARACTERISTICS AS SINGLE POLE SWITCH ABOVE.
$$	2-SINGLE POLE SWITCHES	INDICATES BI-LEVEL SWITCHING. INNER LAMPS SWITCHED INDEPENDENTLY OF OUTER LAMPS.
(DT)	CEILING OCCUPANCY SENSOR	WATTSTOPPER, DT-300 LOW VOLTAGE OCCUPANCY SENSOR. 360° ULTRA SONIC AND INFRARED.
(US)	CEILING OCCUPANCY SENSOR	WATTSTOPPER, WT-2255 LOW VOLTAGE OCCUPANCY SENSOR. ULTRA SONIC, 90 LINEAR FT COVERAGE.
(SP)	SWITCHING PHOTOSENSOR	WATTSTOPPER, LS-102, CONSULT OWNER FOR FOOT-CANDLE SET POINT.
Ⓟ	POWER PACK	WATTSTOPPER, BZ-150 LOW VOLTAGE POWER PACK FOR CEILING PACK SENSORS.
Ⓙ	JUNCTION BOX	GALVANIZED METAL BOX CONSTRUCTED IN ACCORDANCE WITH 314.40 OF THE NEC.
⊠	EXHAUST FAN	VENT FAN, 120V, CFM AS NOTED MC TO PROVIDE AND VENT, EC TO WIRE.

POWER DEVICE LEGEND		
SYMBOL	DESCRIPTION	REMARKS
▶	DATA AND TELEPHONE JACK	PHONE/DATA OUTLET. EC TO INSTALL 3/4"C WITH PULL-STRING FROM OUTLET BOX TO ABOVE CEILING FOR FUTURE USE. JACKS AND COMMUNICATION CABLING BY OTHERS.
⊖	DUPLEX RECEPTACLE	NEMA 5-20R, HEAVY DUTY, COMMERCIAL GRADE, 125V, 20A COMPLYING WITH NEMA WD 6 AND WD 1. GFCI OR AFCI IF NOTED. 'WP' DENOTES WEATHERPROOF COVER. 'CH' DENOTES COUNTER HEIGHT. LISTED TAMPERPROOF IF NOTED. MEET FEDERAL SPECIFICATION W-C-596.
⊕	QUAD RECEPTACLE	QUAD RECEPTACLE OF SAME CHARACTERISTICS AS DUPLEX TYPE ABOVE.
●	DEDICATED RECEPTACLE	NEMA 5-20R, HEAVY DUTY, COMMERCIAL GRADE, 125V, 20A COMPLYING WITH NEMA WD 6 AND WD 1 UNLESS OTHERWISE NOTED ON PLANS. VERIFY PLUG TYPE PRIOR TO PURCHASE & INSTALLATION. GFCI OR AFCI IF NOTED. 'WP' DENOTES WEATHERPROOF COVER. 'CH' DENOTES COUNTER HEIGHT. LISTED TAMPERPROOF IF NOTED. MEET FEDERAL SPECIFICATION W-C-596. MAY BE EITHER SIMPLEX, DUPLEX, OR QUAD.
⦶	DUPLEX FLOOR RECEPTACLE	DUPLEX RECEPTACLE OF SAME CHARACTERISTICS AS ABOVE WITH BRASS COVER. MOUNT IN FLOOR. ALL FLOOR BOXES MUST BE LISTED FOR FLOOR APPLICATION.
⊕	QUAD FLOOR RECEPTACLE	QUAD RECEPTACLE OF SAME CHARACTERISTICS AS ABOVE WITH BRASS COVER. MOUNT IN FLOOR. ALL FLOOR BOXES MUST BE LISTED FOR FLOOR APPLICATION.
⧄	FUSIBLE DISCONNECT SWITCH	HEAVY DUTY TYPE. TYPE 1 ENCLOSURE IN INTERIOR APPLICATIONS, TYPE 3R ENCLOSURE IN EXTERIOR APPLICATIONS, FUSE ACCORDING TO NAMEPLATE DATA.
☐	DISCONNECT SWITCH	HEAVY DUTY TYPE. TYPE 1 ENCLOSURE IN INTERIOR APPLICATIONS, TYPE 3R ENCLOSURE IN EXTERIOR APPLICATIONS.
Ⓙ	JUNCTION BOX	GALVANIZED METAL BOX CONSTRUCTED IN ACCORDANCE WITH 314.40 OF THE NEC.

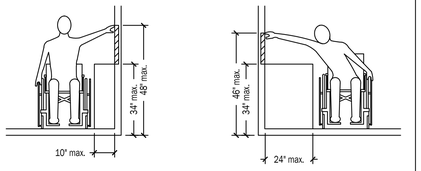
ELECTRICAL DESIGNER'S STATEMENT			
ELECTRICAL SYSTEM AND EQUIPMENT METHOD OF COMPLIANCE PRESCRIPTIVE _X_ PERFORMANCE ___ ENERGY COST BUDGET ___			
LIGHTING SCHEDULE:			
LAMP TYPE REQUIRED IN FIXTURE:	SEE LIGHTING LEGEND		
NUMBER OF LAMPS PER FIXTURE:	SEE LIGHTING LEGEND		
BALLAST TYPE USED IN FIXTURE:	SEE LIGHTING LEGEND		
NUMBER OF BALLASTS IN FIXTURE:	SEE LIGHTING LEGEND		
TOTAL WATTAGE PER FIXTURE:	SEE LIGHTING LEGEND		
TOTAL INTERIOR WATTAGE SPECIFIED VS ALLOWED:	WATTS SPECIFIED	WATTS ALLOWED	
	3315.0	11042.4600	
OCCUPANCY	AREA (sf)	ALLOWANCE (W/sf)	WATTAGE ALLOWED
STORAGE	16731	0.66	11042.46
TOTAL	16731		11042.46

EQUIPMENT SCHEDULES WITH MOTORS (NOT USED FOR MECHANICAL SYSTEMS)
MOTOR HORSEPOWER: N/A
NUMBER OF PHASES: N/A
MINIMUM EFFICIENCY: N/A
MOTOR TYPE: N/A
NUMBER OF POLES: N/A

DESIGNER STATEMENT: TO THE BEST OF MY KNOWLEDGE AND BELIEF, THE DESIGN OF THIS BUILDING COMPLIES WITH THE 2018 NORTH CAROLINA ENERGY CONSERVATION CODE.

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

3315 W SPECIFIED <= 9938.214 W (11042.46 W ALLOWED X 90%)



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

ELECTRICAL SCHEDULES 1

GENERAL ELECTRICAL NOTES:

ADMINISTRATIVE:

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

MATERIALS:

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

METHODS:

1. EC SHALL REVIEW THE MECHANICAL PLANS TO ESTABLISH POINTS OF CONNECTION AND THE EXTENT OF THE ELECTRICAL WORK TO BE PROVIDED IN THE CONTRACT.
2. ALL CIRCUIT BREAKERS FEEDING HVAC EQUIPMENT SHALL BE HACR BREAKERS. ALL BRANCH CIRCUIT CONDUCTORS SHALL BE MINIMUM #12 AWG IN 3/4 in CONDUIT. EACH MULTI–WIRE BRANCH CIRCUIT SHALL BE PROVIDED WITH A MEANS TO SIMULTANEOUSLY DISCONNECT ALL UNGROUNDED CONDUCTORS AT THE SOURCE PER NEC 210.4(B). GROUP ALL CONDUCTORS OF EACH MULTI–WIRE BRANCH CIRCUIT PER 210.4(D) WITH WIRE TIES OR SIMILAR MEANS. DO NOT EXCEED THREE HOMERUNS PER CONDUIT. DO NOT INSTALL ISOLATED GROUND AND NON–ISOLATED GROUND CIRCUITS IN THE SAME CONDUIT. INSTALL CONDUCTORS OF DIFFERENT VOLTAGES IN SEPARATE CONDUITS.
3. COLOR CODE CONDUCTORS PER NEC. FEEDERS SHALL BE IDENTIFIED IN ACCORDANCE WITH NEC 215.12. USE BLACK, RED, AND BLUE FOR PHASES A, B, AND C RESPECTIVELY ON 208Y/120 VOLT THREE–PHASE Y SYSTEMS AND WHITE FOR THE NEUTRAL. COLORS SHALL BE FACTORY APPLIED FOR CONDUCTORS #6 AWG AND SMALLER. ALL EQUIPMENT GROUNDING CONDUCTORS SHALL BE GREEN IN COLOR AND MINIMUM #12 AWG. THE EC SHALL PROVIDE PLENUM RATED CABLE FOR ANY ELECTRICAL, TELEPHONE, COMMUNICATION, OR OTHER CABLE THAT ENTERS CEILING RETURN PLENUMS.
4. ALL LIGHT FIXTURES SHALL BE SUPPORTED INDEPENDENTLY OF THE SUSPENDED CEILING. COORDINATE LIGHTING LAYOUT WITH CEILING GRID, MECHANICAL EQUIPMENT, DUCTWORK AND SPRINKLER HEADS AS NECESSARY. SEE REFLECTED CEILING PLAN FOR DETAILS. FLUORESCENT FIXTURES UTILIZING DOUBLE–ENDED LAMPS MUST HAVE A DISCONNECTING MEANS COMPLYING WITH NEC 410.130(G).
5. MOUNT LIGHT SWITCHES AT 48 in AFF. MULTIPLE SWITCHES AT SAME LOCATION SHALL BE UNDER ONE WALL PLATE. VERIFY WALL PLATE COLOR AND MATERIAL WITH THE ARCHITECT/OWNER. INSTALL SWITCHES WITH off POSITION DOWN. ALL SWITCHES SHALL BE HEAVY DUTY, IVORY PLASTIC WITH TOGGLE HANDLE, RATED 120–277V AC, AND COMPLYING WITH NEMA WD 6 AND WD 1. SWITCHES SHALL BE BY COOPER WIRING DEVICES, LEVITON MANUFACTURING, PASS & SEYMOUR, OR HUBBELL. PROVIDE BOX DEVICE PARTITION/DIVIDERS FOR MULTI–GANG BOXES FOR COMPLIANCE WITH NEC 404.8(B).
6. ELECTRICAL CONTRACTOR SHALL PROVIDE FIRE–STOPPING AT ALL ELECTRICAL PENETRATIONS OF RATED FLOORS AND WALLS TO PRESERVE OR RESTORE THE FIRE–RESISTANCE RATING. SEAL PENETRATIONS USING A UL LISTED SYSTEM FOUND IN THE UL DIRECTORY SPECIFIC TO THE UL LISTING OF THE ASSEMBLY BEING PENETRATED. SEE ARCHITECTURAL PLANS FOR UL RATED ASSEMBLIES SPECIFIC TO THIS PROJECT.
7. ELECTRICAL CONTRACTOR SHALL PROVIDE GFCI RECEPTACLES IN KITCHENS, RESTROOMS, OUTDOORS, AND IN SHOP AREAS AS REQUIRED BY NEC. REFRIGERATORS AND WATER COOLERS MUST HAVE A DEDICATED GFCI BREAKER. EACH OUTDOOR HVAC UNIT MUST HAVE A GFCI RECEPTACLE WITHIN 25 FEET FOR SERVICING. GFCI RECEPTACLES SHALL CONFORM TO UL 943 CLASS A AND UL 498 STANDARDS. SHOW WINDOW RECEPTACLES SHALL BE PROVIDED IN ACCORDANCE WITH 210.62 OF THE NEC. RECEPTACLES SHALL BE BY COOPER WIRING DEVICES, LEVITON MANUFACTURING, PASS & SEYMOUR, OR HUBBELL. ALL RECEPTACLES SHALL BE 125V RATED, HEAVY DUTY, AND COMPLY WITH NEMA WD 6 AND WD 1.
8. LOCATIONS AND HEIGHTS OF ALL WALL–MOUNTED DEVICES SHALL BE COORDINATED WITH THE ARCHITECT PRIOR TO INSTALLATION.
9. CONCEAL ALL CONDUIT EXCEPT IN MECHANICAL ROOMS OR UNFINISHED AREAS AS NOTED. USE EMT CONDUIT FOR ALL BRANCH CIRCUITS AND FEEDERS INSIDE THE BUILDING. TYPE MC CABLE AND TYPE AC CABLE MAY BE INSTALLED WITHIN WALLS IF ALL NEUTRAL WIRES, ISOLATED GROUND WIRES, AND EQUIPMENT GROUND WIRES AS LISTED ABOVE ARE CONTAINED IN THE CABLE. FLEXIBLE CONNECTIONS TO MOTORS AND OTHER EQUIPMENT SHALL BE MADE USING WEATHERPROOF FLEXIBLE CONDUIT. FOR LAY–IN LIGHT FIXTURES, USE MAXIMUM OF SIX (6) FEET OF FLEXIBLE MC CABLE (OR THE FLEXIBLE CONDUIT PROVIDED BY THE FIXTURE MANUFACTURER). SCHEDULE 40 PVC CONDUIT MAY BE USED FOR THE SECONDARY UNDERGROUND SERVICE, UNDERGROUND TELEPHONE SERVICE, AND BRANCH AND FEEDER CIRCUITS UNDER SLAB OR EXTERIOR TO THE BUILDING. EXPOSED EXTERIOR CONDUIT SHALL BE SCHEDULE 80 PVC. ALL UNDERGROUND RACEWAYS SHALL BE IDENTIFIED WITH UNDERGROUND LINE MARKING TAPE 6–8 in BELOW GRADE DIRECTLY ABOVE THE RACEWAY. PROVIDE PULL WIRE IN EMPTY CONDUITS. UPSIZE CONDUIT FROM MINIMUM SIZE AS NECESSARY FOR LONGER PULLS. UNDERGROUND RACEWAYS THAT STUB INTO THE BOTTOM OF SWITCHBOARDS, OUTDOOR TRANSFORMERS, GENERATORS, ETC., SHALL RISE AT LEAST 2 in ABOVE THE FINISHED SLAB TO PREVENT WATER FROM DRAINING INTO THE RACEWAYS. RACEWAYS THAT PENETRATE EXTERIOR WALLS OR INTERIOR PARTITIONS SEPARATING SPACES THAT WILL BE AT SIGNIFICANTLY DIFFERENT TEMPERATURES SHALL BE SEALED IN ACCORDANCE WITH 300.5(G), 300.7(A), AND 300.50(E) OF THE NEC. ROUTE CONDUIT IN AND UNDER SLAB FROM POINT–TO–POINT. ROUTE EXPOSED CONDUIT AND CONDUIT INSTALLED ABOVE ACCESSIBLE CEILINGS PARALLEL AND PERPENDICULAR TO WALLS. COMPLETELY AND THOROUGHLY SWAB ALL RACEWAYS BEFORE INSTALLING WIRE. PULL ALL CONDUCTORS INTO EACH RACEWAY AT ONE TIME. USE A SUITABLE WIRE PULLING LUBRICANT FOR BUILDING WIRE #4 AWG AND LARGER.
10. CABLES, RACEWAYS, OR BOXES, INSTALLED IN EXPOSED OR CONCEALED LOCATIONS UNDER METAL–CORRUGATED SHEET ROOF DECKING, SHALL BE INSTALLED AND SUPPORTED SO THERE IS NOT LESS THAN 1–1/2 in MEASURED FROM THE LOWEST SURFACE OF THE ROOF DECKING TO THE TOP OF THE CABLE, RACEWAY, OR BOX. A CABLE, RACEWAY, OR BOX SHALL NOT BE INSTALLED IN CONCEALED LOCATIONS IN METAL–CORRUGATED, SHEET DECKING–TYPE ROOF. SEE NEC 300.4(E).
11. THE ELECTRICAL CONTRACTOR SHALL PROVIDE ALL OUTLET, JUNCTION, PULL BOXES, FITTINGS, AND SUPPORTS. ALL OUTLET AND JUNCTION BOXES SHALL BE GALVANIZED STEEL TYPE BY APPLETON, STEEL CITY, OR RACO. EXTERIOR BOXES SHALL BE TYPE FS. VAPORTITE BOXES SHALL BE TYPE GS. WHERE SURFACE MOUNTED BOXES ARE USED, THOSE BOXES AND THEIR FACEPLATES SHALL HAVE ROUNDED CORNERS. BOXES INSTALLED IN FLOORS SHALL BE RATED FOR THE APPLICATION. MOUNT JUNCTION AND OUTLET BOXES FLUSH WITH FINISH SURFACES UNLESS OTHERWISE NOTED. WHERE MOUNTING HEIGHTS ARE GIVEN, THEY SHALL BE MEASURED FROM THE FINISHED FLOOR TO THE CENTER OF THE BOX. ALL BOXES SHALL BE SIZED PER NEC ARTICLE 314. ALL OUTLET AND JUNCTION BOXES SHALL HAVE A COVER PLATE, PROVIDED BY THE ELECTRICAL CONTRACTOR. OUTLET BOXES IN RATED WALLS SHALL BE INSTALLED IN ACCORDANCE WITH NORTH CAROLINA BUILDING CODE 714.3.2 (MAXIMUM BOX SIZE IS 16 SQUARE in AND MAXIMUM OF SIX (6) BOXES PER 100 SQUARE FEET). INSTALL OUTLET BOXES IN RATED WALLS SUCH THAT OPENINGS OCCUR IN ONE SIDE ONLY WITHIN ANY GIVEN STUD SPACE. ALL CLEARANCES BETWEEN THE OUTLET BOX AND THE GYPSUM BOARD SHALL BE FILLED WITH JOINT COMPOUND OR OTHER APPROVED FIRE STOP MATERIAL. FLUSH MOUNTED JUNCTION BOXES IN ADJACENT ROOMS SHALL NOT BE MOUNTED BACK–TO–BACK. SURFACE MOUNTED FIXTURES SHALL BE FED THROUGH FLUSH MOUNTED 4X4 OCTAGONAL OR SQUARE BOXES.
12. ALL CONDUIT, BOXES, AND ELECTRICAL EQUIPMENT SHALL BE FIRMLY AND SECURELY FASTENED TO OR SUPPORTED FROM THE BUILDING STRUCTURAL MEMBERS OR EMBEDDED IN CONCRETE OR MASONRY. ELECTRICAL SUPPORTS SHALL NOT BE ATTACHED TO DUCTWORK, PIPING, OR THEIR SUPPORTS. HANGERS SHALL BE CATALOG ITEMS COMPATIBLE WITH AND SUITABLE FOR THE INTENDED USE. FOR METAL ROOF DECK INSTALLATIONS, 1 in EMT CONDUIT MAXIMUM AND 4 in JUNCTION BOXES MAXIMUM MAY BE SUPPORTED BY DECKING. THE SUSPENDED CEILING SYSTEM SHALL NOT BE USED FOR THE SUPPORT OF ELECTRICAL RACEWAY SYSTEMS OR SUPPORT OF COMMUNICATIONS OR DATA SYSTEMS WIRING. CONTRACTOR SHALL COMPLY WITH 1613 OF THE NORTH CAROLINA GENERAL CONSTRUCTION BUILDING CODE.
13. WHERE CONDUCTORS ARE RUN IN PARALLEL, THE EC SHALL COMPLY WITH NEC 310.4.
14. ALL TELEPHONE AND COMMUNICATIONS OUTLETS AND RACEWAYS ARE ROUGH–INS ONLY. EACH TELEPHONE AND COMMUNICATIONS OUTLET SHALL BE A 4 in SQUARE BY 2–1/8 in DEEP BOX WITH 3/4 in KNOCK–OUTS AND A 3/4 in CONDUIT STUBBED FROM THE OUTLET BOX TO ABOVE THE CEILING. PROVIDE A NON–METALLIC INSULATING BUSHING ON ALL CONDUITS STUBBED ABOVE THE CEILING. PROVIDE A BLANK COVER PLATE ON ALL OUTLET BOXES.
15. ELECTRICAL CONTRACTOR SHALL INSTALL DISCONNECT SWITCHES IN SIGHT OF ALL HARDWIRED EQUIPMENT AND APPLIANCES OR PROVIDE BREAKERS CAPABLE OF BEING LOCKED IN THE OPEN POSITION PER NEC 422.31. FOR MOTOR DRIVEN APPLIANCES, PROVIDE A DISCONNECTING MEANS PER NEC 422.31 AND 430 PART IX. WHERE AN INDIVIDUAL DISCONNECT SWITCH, CIRCUIT BREAKER, STARTER, ETC, IS SHOWN ON THE PLANS ADJACENT TO ITS LOAD AND NOT LOCATED ON A WALL, PROVIDE NECESSARY MATERIALS AND LABOR TO SUPPORT THE DEVICE.
16. ELECTRICAL CONTRACTOR SHALL FIELD IDENTIFY ALL SWITCH BOARD, PANEL BOARDS, CONTROL PANELS, METER SOCKETS, ETC., TO WARN QUALIFIED PERSONS OF POTENTIAL ELECTRICAL ARC FLASH HAZARDS PER 110.16 OF NEC.
17. ELECTRICAL CONTRACTOR SHALL PROVIDE NAMEPLATES FOR IDENTIFICATION OF ALL EQUIPMENT, SWITCHES, PANELS, ETC. THE NAMEPLATES SHALL BE LAMINATED PHENOLIC PLASTIC, BLACK FRONT, AND BACK WITH WHITE CORE, WHITE ENGRAVED LETTERS (1/4 in MINIMUM) ETCHED INTO THE WHITE CORE. ELECTRICAL CONTRACTOR SHALL PROVIDE A TYPE WRITTEN DIRECTORY CARD THAT ACCURATELY IDENTIFIES CIRCUITS INSIDE EACH PANEL. HANDWRITTEN LABELS ARE NOT ACCEPTABLE.
18. IN ACCORDANCE WITH SECTION F510 OF THE NC FIRE PREVENTION CODE, TESTING WILL BE REQUIRED TO DETERMINE SATISFACTORY FIRST RESPONDER RADIO SIGNAL STRENGTH INSIDE EACH BUILDINGS ON SITE. TESTING WILL NEED TO EITHER BE COMPLETED BY A COUNTY FIRE INSPECTOR (OBTAIN BY REQUESTING A COURTESY INSPECTION) OR A CERTIFIED 3RD PARTY. TESTING SHALL TAKE PLACE AT BOTH 80% PROJECT COMPLETION AND AGAIN AT 100% COMPLETION. IF UNACCEPTABLE SIGNAL DEGRADATION IS PRESENT AT EITHER 80% OR 100% INSPECTION, THEN AN ACCEPTABLE BOOSTER SYSTEM SHALL BE ADDED TO THE BUILDING DESIGN AT THAT TIME.

GENERAL ELECTRICAL NOTES 2

Kilian Engineering, Inc.
PO Box 3301, Henderson, NC 27536 | www.kilianengineering.com
(P) 252.438.8778 | CORPORATE LICENSE C-2277

SEAL 046202
JACOB A. BENDER
6/24/22

KILIAN ENGINEERING, INC. CORPORATE SEAL NORTH CAROLINA

CLEVE PATE
LAKESIDE STORAGE
BUILDING A
ANGIER, NORTH CAROLINA

REVISION:

NO.	DATE	DESCRIPTION

ISSUED:

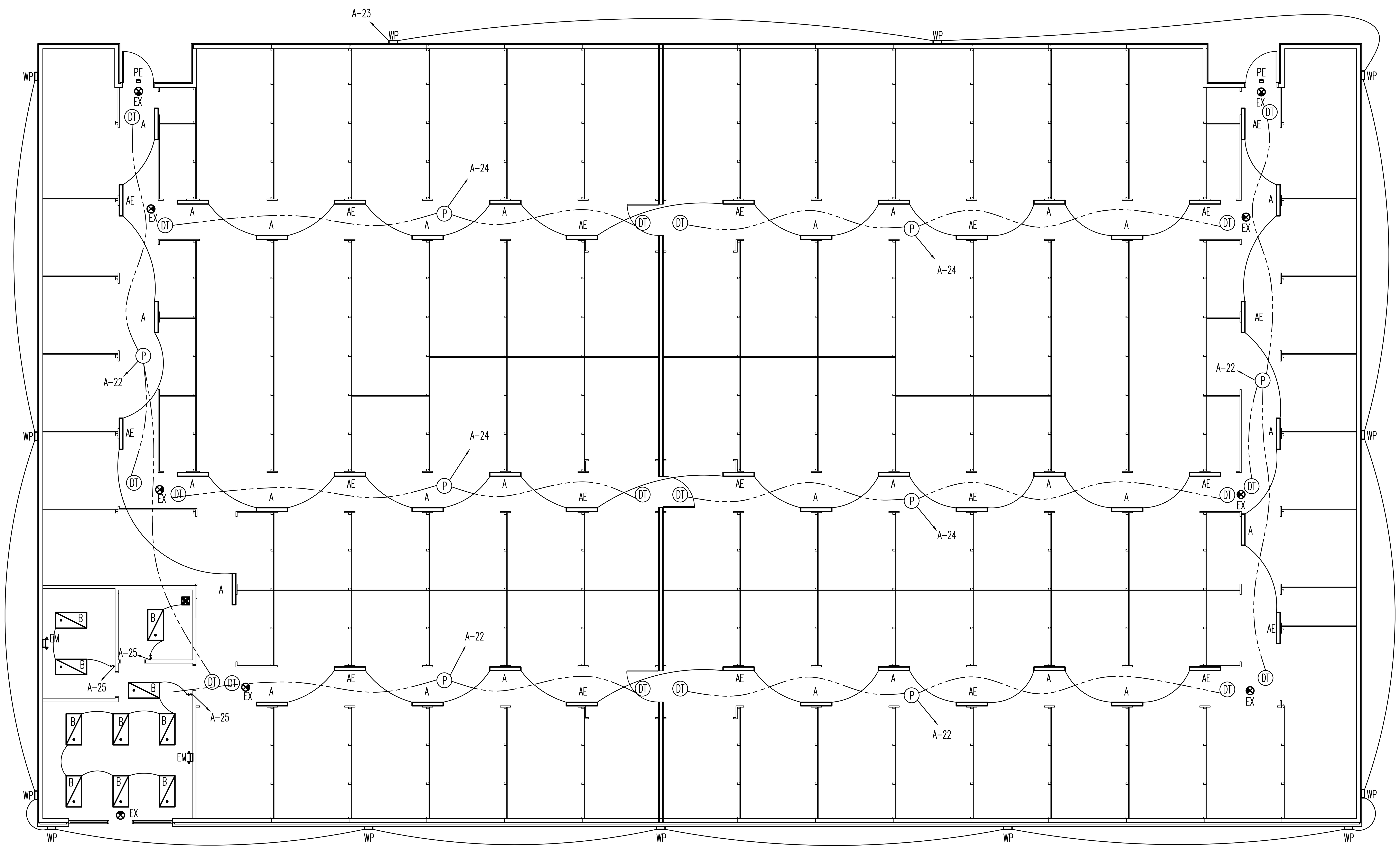
NO.	DATE	DESCRIPTION
0	6/24/22	FOR PERMITTING

DRAWN BY: JMB
CHECKED BY: MWK-

ELECTRICAL NOTES AND SCHEDULES

SHEET NO.
E1

PROJECT NO: 22214



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

Kilian Engineering, Inc.
PO Box 3301, Henderson, NC 27536 | www.kiliananengineering.com
(P) 252.438.8778 | CORPORATE LICENSE C-2277

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL JACOB A. BENDER

KILIAN ENGINEERING, INC. CORPORATE SEAL NORTH CAROLINA

CLEVE PATE
LAKESIDE STORAGE
BUILDING A
ANGIER, NORTH CAROLINA

REVISION:

ISSUED:

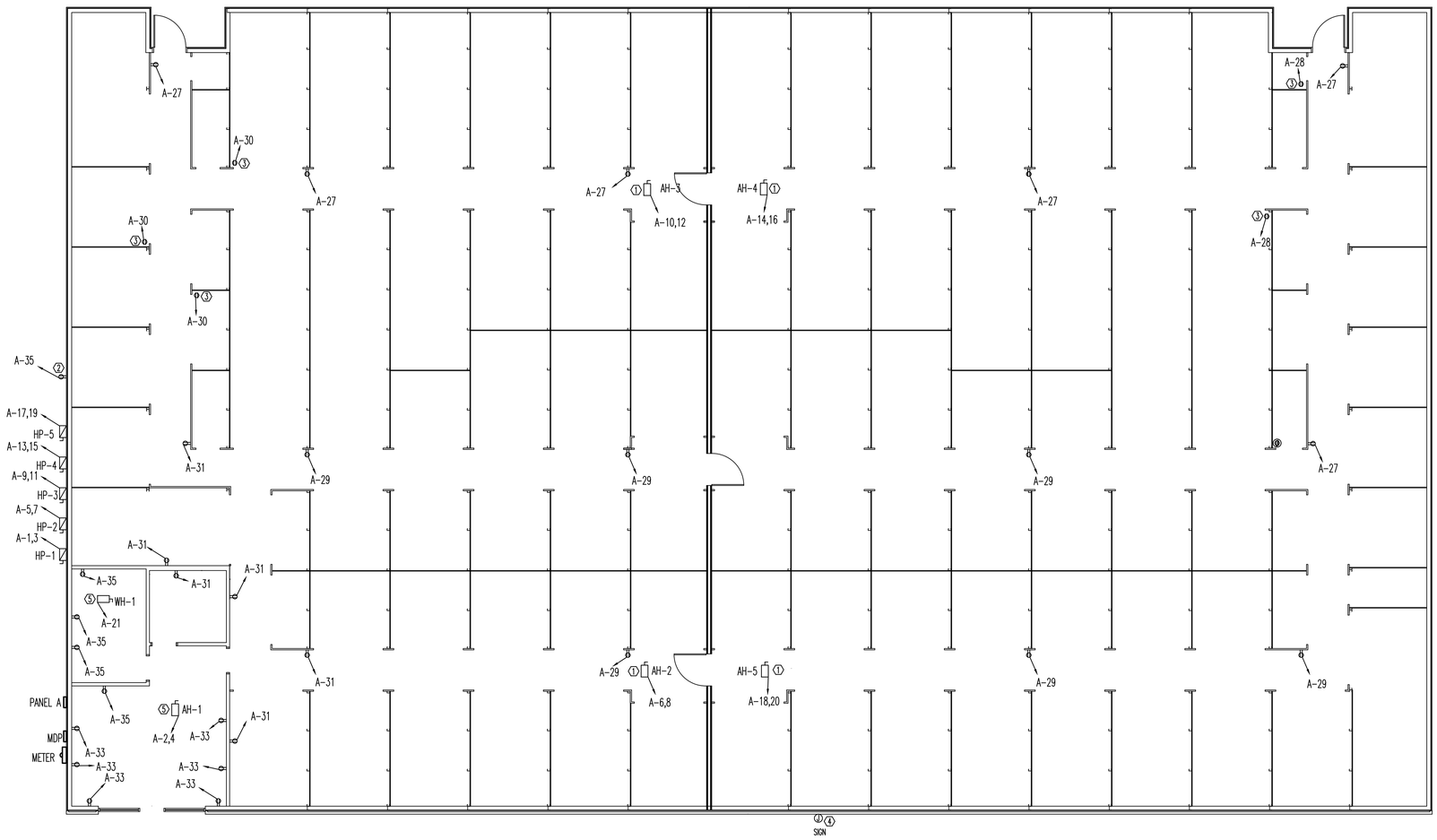
#	DATE	DESCRIPTION
0	6/24/22	FOR PERMITTING

DRAWN BY: JMB
CHECKED BY: MWK

ELECTRICAL LIGHTING PLAN

SHEET NO.
E2

PROJECT NO: 22214



POWER PLAN HEX NOTES

1. AIR HANDLER DISCONNECT LOCATED WITH UNIT OVERHEAD IN CORRIDOR
2. EXTERIOR SERVICE RECEPTACLE TO BE GFCI WITH WEATHERPROOF COVER
3. VERIFY LOCATION OF ADA UNIT POWERED DOOR MOTOR WITH INSTALLER, PROVIDE 120V OUTLET WITH BATTERY BACKUP BANK PER NCDOI REQUIREMENTS
4. COORDINATE SIGN MOUNTING HEIGHT WITH OWNER AND ARCHITECTURAL ELEVATIONS
5. WATER HEATER AND OFFICE AIR HANDLER DISCONNECTS LOCATED ABOVE CEILINGS

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

Kilian Engineering, Inc.
PO Box 3301 Henderson, NC 27536 | www.kilianengineering.com
(P) 252.438.8778 | CORPORATE LICENSE C-2277

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 045207 JACOB A. BENDER
KILIAN ENGINEERING, INC. CORPORATE SEAL NORTH CAROLINA

CLEE PATE
LAKESIDE STORAGE
BUILDING A
ANGIER, NORTH CAROLINA

REVISION:

NO	DESCRIPTION	DATE

ISSUED:

NO	DESCRIPTION	DATE
0	FOR PERMITTING	6/24/22

DRAWN BY: JMB
CHECKED BY: MWK

ELECTRICAL POWER PLAN

SHEET NO.
E3

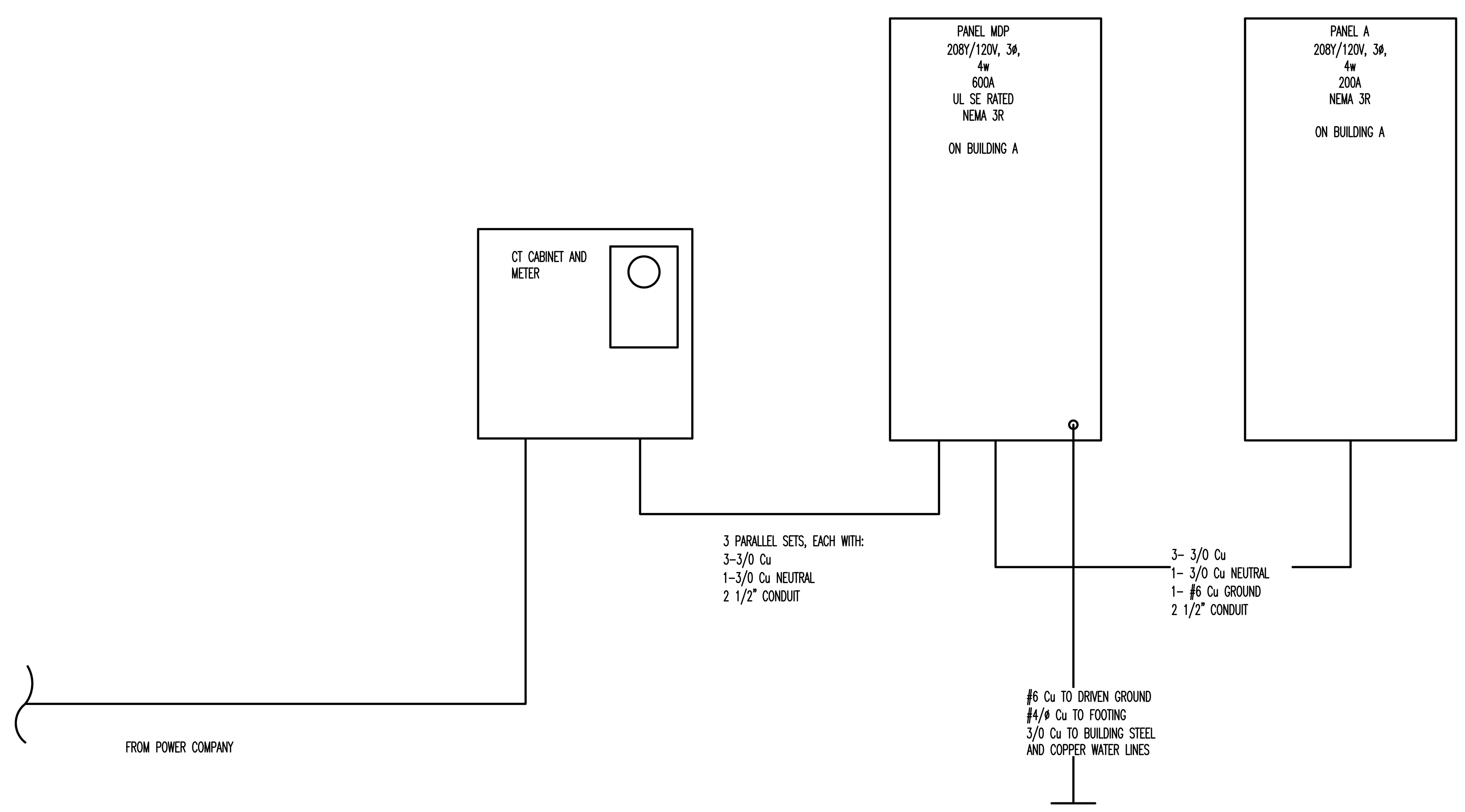
PROJECT NO: 22214

PANEL								
CKT	LOAD	BKR	LOAD kVA	PH	LOAD kVA	BKR	LOAD	CKT
1	PANEL A	200/3	17.30	A	0.70	100/3	PANEL E	2
3			18.20	B	1.50			4
5			17.60	C	1.80			6
7	PANEL B	200/3	14.90	A	3.00	100/3	PANEL F	8
9			13.60	B	0.70			10
11			12.20	C	0.40			12
13	SPACE		0.00	A	0.00		SPACE	14
15			0.00	B	0.00			16
17			0.00	C	0.00			18
			kVA	PH	AMPS			
			35.9	A	299			
			34.0	B	283			
			32.0	C	267			

VOLTAGE/PHASE	208Y/120V, 3P, 4W
BUS RATING	600A
MAIN CIRCUIT BREAKER RATING	600A
AIC RATING	44K
SERVICE ENTRANCE RATED	YES
ENCLOSURE	NEMA 3R
MOUNTING	SURFACE

PANEL A								
CKT	LOAD	BKR	LOAD kVA	PH	LOAD kVA	BKR	LOAD	CKT
1	HP-1	20/2	1.25	A	2.39	25/2	AH-1	2
3			1.25	B	2.39			4
5	HP-2	30/2	1.87	C	2.29	25/2	Ah-2	6
7			1.87	A	2.29			8
9	HP-3	45/2	1.25	B	2.60	25/2	AH-3	10
11			1.25	C	2.60			12
13	HP-4	45/2	1.25	A	2.60	25/2	AH-4	14
15			1.25	B	2.60			16
17	HP-5	45/2	1.25	C	2.60	25/2	AH-5	18
19			1.25	A	2.60			20
21	WH-1	30/1	2.50	B	1.18	20/1	OUTER CORRIDOR LIGHTING	22
23	EXTERIOR LIGHTS	20/1	0.88	C	1.33	20/1	INNER CORRIDOR LIGHTING	24
25	OFFICE LIGHTING	20/1	0.69	A	0.00		SPACE	26
27	RECEPTS	20/1	1.08	B	1.00	20/1	ADA UNIT POWER	28
29	RECEPTS	20/1	1.08	C	1.50	20/1	ADA UNIT POWER	30
31	RECEPTS	20/1	1.08	A	0.00		SPACE	32
33	RECEPTS	20/1	1.08	B	0.00		SPACE	34
35	RECEPTS	20/1	0.90	C	0.00		SPACE	36
37	SPACE		0.00	A	0.00		SPACE	38
39	SPACE		0.00	B	0.00		SPACE	40
41	SPACE		0.00	C	0.00		SPACE	42
			kVA	PH	AMPS			
			17.3	A	144			
			18.2	B	152			
			17.6	C	146			

VOLTAGE/PHASE	208Y/120V, 3P, 4W
BUS RATING	200A
MAIN CIRCUIT BREAKER RATING	200A
AIC RATING	22K
SERVICE ENTRANCE RATED	NO
ENCLOSURE	NEMA-3R
MOUNTING	SURFACE



ELECTRICAL RISER AND PANEL SCHEDULES-NO SCALE 1

Kilian Engineering, Inc.
PO Box 3301, Henderson, NC 27536 | www.kilianengineering.com
(P) 252.438.8778 | CORPORATE LICENSE C-2277

NORTH CAROLINA PROFESSIONAL SEAL 046202 ENGINEER JACOB A. BENDER 6/24/22

KILIAN ENGINEERING, INC. CORPORATE SEAL NORTH CAROLINA

CLEVE PATE
LAKESIDE STORAGE
BUILDING A
ANGIER, NORTH CAROLINA

REVISION:

NO.	DATE	DESCRIPTION

ISSUED:

NO.	DATE	DESCRIPTION
0	6/24/22	FOR PERMITTING

DRAWN BY: JMB
CHECKED BY: MWK-

ELECTRICAL RISER AND PANEL SCHEDULES

SHEET NO.
E4

PROJECT NO: 22214

PLUMBING FIXTURE SCHEDULE						
SYMBOL	FIXTURE	MANUFACTURER	FITTING	HW	CW	WASTE
P1H	ADA FLUSH VALVE WATER CLOSET	TOTO CT705ELN OR EQUAL BY AMERICAN STANDARD OR KOHLER	FLOOR MOUNTED, VITREOUS CHINA, 1.28 GPF LOW CONSUMPTION SIPHON JET FLUSHING TOILET COMPLYING WITH ASME 112.19.2. TOILET SHALL BE ELONGATED FRONT BOWL. PROVIDE SC534 OPEN FRONT SEAT LESS COVER. SLOAN CROWN 111-1.28 FLUSHOMETER OR EQUAL BY ZURN OR TOTO. TOP OF SEAT SHALL BE 17-19 INCHES AFF FOR ADA.	-	1"	3"
P2	WALL MOUNT LAVATORY	TOTO LT307.4 OR EQUAL BY AMERICAN STANDARD OR KOHLER	VITREOUS CHINA LAVATORY WITH BACKSPLASH COMPLYING WITH ASME 112.19.2. TOP OF RIM SHALL BE 34 INCHES AFF FOR ADA. PROVIDE WITH LAV-GUARD PROTECTORS FOR SUPPLY AND DRAIN LINES. PROVIDE JR SMITH 0700 (CONCEALED ARMS) WITH 19" ARMS 0800 (WALL SUPPORT PLATE). USE MOEN 8430 FAUCET.	1/2"	1/2"	2"
P2A	SINK SINGLE BOWL	JUST MFG SL-ADA-2125-A-GR OR EQUAL BY FRANKE, ELKAY OR MOEN	TOP MOUNTED 18 GA STAINLESS STEEL. MAX BOWL DEPTH 6 INCHES FOR WHEEL CHAIR ACCESSIBLITY-USE JUST MFG FAUCET SET JPO-1550 OR EQUAL BY MOEN, DELTA OR KOHLER.	1/2"	1/2"	2"
P3	EXPANSION TANK	AMTROL ST-5 OR EQUAL BY WATTS OR BELL & GOSSETT	INSTALL ON COLD WATER LINE BETWEEN WATER HEATER AND RPZ	-	3/4"	-
P4	REFRIGERATOR VALVE BOX	OATEY OR APPROVED EQUAL	HIGH IMPACT POLYSTYRENE BOX WITH 1/4 TURN BRASS BALL VALVE. COMPLIANT WITH NSF 61, SECTION 9.	-	1/2"	-
P5	THERMOSTATIC MIXING VALVE	WATTS LFMMV OR EQUAL BY LAWLER OR LEONARD VALVE	ASSE STANDARD 1069 OR 1070 APPROVED WITH 1/2 INCH FEMALE NPT INLET AND OUTLET CONNECTIONS, BRASS BODY, AND INTEGRAL MOUNTING HOLES. TAMPER RESISTANT THERMOPLASTIC ENCLOSURE. SINGLE REPLACEABLE CARTRIDGE DESIGN.	1/2"	1/2"	-
FCO	FLOOR CLEANOUT	ZURN, WATTS, JR SMITH	EPOXY COATED CAST IRON FLOOR CLEANOUT WITH ROUND ADJUSTABLE GASKETED NICKEL BRONZE TOP, REMOVABLE GAS TIGHT GASKETED BRASS CLEANOUT PLUG, AND NO HUB INLET.	-	-	4"
WCO	WALL CLEANOUT	ZURN, WATTS, OR JR SMITH	CAST IRON CLEANOUT FERRULE WITH THREADED BRASS COUNTERSUNK CLEANOUT PLUG, STAINLESS STEEL ACCESS COVER, AND VANDAL PROOF STAINLESS STEEL SCREW	-	-	4"
RD	ROOF DRAIN	ZURN Z121 OR APPROVED EQUAL	12 in DIAMETER ROOF DRAIN. DURA-COATED CAST IRON BODY WITH COMBINATION MEMBRANE FLASHING CLAMP/GRAVEL GUARD AND LOW SILHOUETTE CAST IRON DOME.	-	-	4"
AAV	AIR ADMITTANCE VALVE	STUDOR REDIVENT OR APPROVED EQUAL	ANSI/ASSE 1051 LISTED. NSF STANDARD 14. PROVIDE PVC OR ABS CONNECTOR AS NECESSARY. CONNECT VALVE TO PIPING PER MANUFACTURER. INSTALL IN THE VERTICAL, UPRIGHT POSITION AFTER ROUGH-IN AND PRESSURE TESTING OF THE SYSTEM. PROVIDE WALL BOX IF NOT ABOVE CEILING OR OTHERWISE CONCEALED.	-	-	2"

PLUMBING LINES SIZING TABLE									
FIXTURE TYPE	OCCUPANCY	QTY	DRAINAGE FIXTURE UNITS		WATER SUPPLY FIXTURE UNITS				
			EACH	TOTAL	CW	HW	CW & HW	HW TOTAL	TOTAL
WATER CLOSET (FLUSH TANK)	PUBLIC	1	4.00	4.00	5.00	0.00	5.00	0.00	5.00
LAVATORY	PUBLIC	2	1.00	2.00	1.50	1.50	2.00	3.00	4.00
DEMAND FIXTURE	GPM	QTY	TOTAL GPM	TOTAL DFU				6.0	
KITCHEN DISHWASHER	0	1	0.00	TOTAL WFSUs				3.0	9.0
HOSE BIBBS	0	1	0.00	GPM				6.50	13.70
				OTHER FIXTURES' GPM				0.00	0.00
				TOTAL GPM				6.50	13.70
MINIMUM BUILDING DRAIN SIZE	4"								
MINIMUM WATER LINE SIZE	1"								

ELECTRIC WATER HEATER SCHEDULE											
MARK	MFG	MODEL	TANK VOL	INPUT	RECOVERY	SET POINT	POWER		CONNECTIONS		OPTIONS
			GALS	kW	GPH @ 60° ΔT	°F	VOLTAGE	PHASE	HOT	COLD	
WH-1	RHEEM	XE20P06 PU20U0	20	4.5	30	110	240	1	3/4	3/4	1-5

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

DO NOT TAP WATER
LINE AHEAD OF RPZ.

PLUMBING FIXTURE SCHEDULES 1

GENERAL PLUMBING NOTES:

ADMINISTRATIVE:

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

MATERIALS:

1. ALL OVERHEAD DOMESTIC WATER PIPING SHALL BE TYPE L COPPER WITH 95/5 LEAD FREE SOLDER, AND ALL BELOW GRADE WATER PIPING SHALL BE TYPE K COPPER WITH NO JOINTS. ALL PIPING SHALL HAVE MANUFACTURER'S NAME AND THE APPLICABLE STANDARD TO WHICH IT WAS MANUFACTURED CLEARLY MARKED ON EACH LENGTH. PIPING SHALL COMPLY WITH ASTM B-88. USE BRAZED JOINTS ON ALL COPPER PIPING 1-1/2 INCH AND LARGER. *** PC MAY USE PEX (ASTM F 877) WITH APPROVED FITTINGS (ASTM F 1807) WITH OWNER'S APPROVAL. *** CPVC PIPING (ASTM D 2846 OR ASTM F 441) WITH APPROVED FITTINGS (ASTM D 2846, ASTM F 438, OR ASTM F 439) MAY ALSO BE USED WHERE NOT LOCATED IN PLENUMS. ALL PLASTIC PIPE, FITTINGS, AND COMPONENTS SHALL BE THIRD PARTY CERTIFIED AS CONFORMING TO NSF 14. ALL PIPE AND PIPE FITTINGS, INCLUDING VALVES AND FAUCETS, USED IN THE WATER DISTRIBUTION SYSTEM SHALL HAVE A MAXIMUM LEAD CONTENT OF .25-PERCENT AND SHALL CONFORM TO NSF 61. HOT WATER DISTRIBUTION PIPE AND TUBING SHALL HAVE A MINIMUM PRESSURE RATING OF 100 PSI AT 180°F. COLD WATER DISTRIBUTION PIPE AND TUBING SHALL HAVE A MINIMUM PRESSURE RATING OF 160 PSI AT 73.4°F. DO NOT INSTALL PEX OR CPVC PIPING IN RETURN AIR PLENUMS.
2. BALL VALVES SHALL HAVE BRASS BODY, FULL PORT, CHROME PLATED BALL, WITH TEFLON SEATS, 150 PSI WSP, AND COMPLY WITH MSS SP-110. GATE VALVES SHALL HAVE BRONZE BODY, CLASS 150, AND COMPLY WITH MSS SP-80, TYPE 2 STANDARD. VALVE BODY SHALL BE ASTM B 62, BRONZE WITH INTEGRAL SEAT AND UNION RING BONNET. ENDS SHALL BE THREADED OR SOLDER WITH COPPER-SILICON BRONZE STEM AND SOLID-WEDGE BRONZE DISC. INSTALL VALVES IN LOCATIONS THAT PERMIT EASY ACCESS WITHOUT DAMAGE TO BUILDING OR FINISHED MATERIALS; PROVIDE ACCESS DOORS IF REQUIRED. VALVES SHALL BE BY NIBCO, WATTS, OR STOCKHAM.
3. COLD WATER LINES SHALL BE INSULATED WITH 1/2 INCH THICK FIBROUS GLASS INSULATION WITH A FLAME DENSITY RATING LESS THAN 25 AND A SMOKE DENSITY RATING LESS THAN 50 WHEN TESTED IN ACCORDANCE WITH ASTM E 84. HOT WATER LINES UP TO 2 INCHES DIAMETER SHALL HAVE 1 INCH THICK INSULATION CONFORMING TO THE SAME STANDARD. PIPING LARGER THAN 2 INCHES SHALL RECEIVE 1-1/2 INCH THICK INSULATION. CLOSED CELL RUBBER INSULATION MEETING THE SMOKE AND FLAME RATINGS ABOVE MAY BE SUBSTITUTED FOR FIBROUS GLASS TYPE IF SO DESIRED. INSULATION INSTALLED ON PIPING OPERATING BELOW AMBIENT TEMPERATURES MUST HAVE A CONTINUOUS VAPOR RETARDER. ALL JOINTS, SEAMS AND FITTINGS MUST BE SEALED. ON SYSTEMS OPERATING ABOVE AMBIENT, THE BUTT JOINTS SHOULD NOT BE SEALED. ON COLD SURFACES WHERE A VAPOR SEAL MUST BE MAINTAINED, INSULATION SHALL BE APPLIED WITH A CONTINUOUS, UNBROKEN MOISTURE AND VAPOR RETARDER. ALL HANGERS, SUPPORTS, ANCHORS, OR OTHER PROJECTIONS SECURED TO COLD SURFACES SHALL BE INSULATED AND VAPOR SEALED TO PREVENT CONDENSATION. ALL PIPE INSULATION SHALL BE CONTINUOUS THROUGH WALLS, CEILING OR FLOOR OPENINGS, OR SLEEVES EXCEPT WHERE FIRESTOP OR FIRESAFING MATERIALS ARE REQUIRED. INSULATION SHALL HAVE A FACTORY APPLIED ALL-SERVICE JACKET WITH SELF-SEALING LAP. WHITE-KRAFT PAPER BONDED TO ALUMINUM FOIL AND REINFORCED WITH GLASS FIBERS; CONFORMING TO ASTM C 1136 TYPE 1; VAPOR RETARDER; WITH A SELF-SEALING ADHESIVE. VERIFY THAT PIPING HAS BEEN TESTED, SURFACES ARE CLEAN AND DRY, AND ALL FOREIGN MATERIALS ARE REMOVED BEFORE APPLYING INSULATION MATERIALS. INSULATION SHALL BE BY KNAUF, ARMACELL, JOHNS-MANVILLE, OR OWENS-CORNING.
4. ALL INSULATION CONTAINING FIBROUS MATERIALS EXPOSED TO AIRFLOW SHALL BE RATED FOR THAT EXPOSURE OR SHALL BE ENCAPSULATED. INSULATING PROPERTIES FOR ALL MATERIALS SHALL MEET OR EXCEED INDUSTRY STANDARDS. POLYSTYRENE PRODUCTS SHALL MEET ASTM C578 91. ALL INSULATION SHALL BE LOW-EMITTING WITH NOT GREATER THAN 0.05 PPM FORMALDEHYDE EMISSIONS. THE MAXIMUM FLAME SPREAD AND SMOKE DEVELOPED INDEX FOR INSULATION SHALL MEET THE REQUIREMENTS OF THE LOCAL CODES AND ORDINANCES ADOPTED BY THE JURISDICTION IN WHICH THE BUILDING IS LOCATED.
5. FAUCETS AND FIXTURE FITTINGS SHALL CONFORM TO ASME A112.18.1. FAUCETS AND FIXTURE FITTINGS THAT SUPPLY DRINKING WATER FOR HUMAN CONSUMPTION SHALL CONFORM TO THE REQUIREMENTS OF NSF 61, SECTION 9. FIXTURE FITTINGS, FAUCETS, AND DIVERTERS SHALL BE INSTALLED AND ADJUSTED SO THAT THE FLOW OF HOT WATER FROM THE FITTINGS CORRESPONDS TO THE LEFT HAND SIDE OF THE FIXTURE FITTING.
6. BACKFLOW PREVENTION SHALL BE IN ACCORDANCE WITH SECTION 608.13 OF THE NC PLUMBING CODE AND THE LOCAL AUTHORITY HAVING JURISDICTION. REDUCED PRESSURE PRINCIPLE BACKFLOW PREVENTERS SHALL CONFORM TO ASSE 1013 OR AWWA C511. THE RELIEF OPENING SHALL DISCHARGE BY AIR GAP. AIR GAPS SHALL COMPLY WITH ASME A112.1.1 AND AIR GAP FITTINGS WITH ASME A112.1.3. DOUBLE CHECK VALVE ASSEMBLIES SHALL CONFORM TO ASSE 1015 OR AWWA C510. ACCESS TO BACKFLOW PREVENTERS SHALL BE PROVIDED AS SPECIFIED BY THE INSTALLATION INSTRUCTIONS OF THE APPROVED MANUFACTURER.
7. FOR BELOW GRADE SANITARY WASTE PIPING, PC SHALL USE SERVICE WEIGHT CAST IRON PIPE WITH COMPRESSION JOINTS (ASTM A 74). USE MINIMUM 2 INCH SIZE UNDERGROUND. SOLID WALL SCHEDULE 40 PVC (ASTM D 2665) WITH SCHEDULE 40 SOCKET TYPE PIPE FITTINGS (ASTM D 3311) MAY ALSO BE USED. DO NOT USE PVC PIPE FOR APPLICATIONS WHERE THE WASTE WATER TEMPERATURE EQUALS OR EXCEEDS 140°F OR IF THE BUILDING HEIGHT EXCEEDS 75 FEET.
8. FOR ABOVE GRADE SANITARY WASTE AND VENT PIPING, USE SERVICE WEIGHT CAST IRON NO-HUB TYPE WITH COUPLINGS (CISPI 301). SOLID WALL SCHEDULE 40 PVC (ASTM D 2665) WITH SCHEDULE 40 SOCKET TYPE FITTINGS (ASTM D 3311) MAY BE USED IF PERMITTED BY LOCAL CODE, EXCEPT IN BUILDINGS EXCEEDING 75 FEET IN HEIGHT. DO NOT INSTALL PVC IN RETURN AIR PLENUMS. ALL VENT AND BRANCH VENT PIPES SHALL BE SO GRADED AND CONNECTED AS TO DRAIN BACK TO THE DRAINAGE PIPE BY GRAVITY. BRANCH VENTS EXCEEDING 40 FEET IN DEVELOPED LENGTH SHALL BE INCREASED BY ONE NOMINAL SIZE FOR THE ENTIRE DEVELOPED LENGTH OF THE PIPE.
9. PC SHALL PROVIDE ALL WATER HEATERS (WATTAGE/INPUT AND CAPACITY AS NOTED IN SCHEDULE). ALL WATER HEATERS SHALL BE THIRD PARTY CERTIFIED; PROVIDE PANS FOR WATER HEATERS IN ACCORDANCE WITH 504.7 OF THE NC PLUMBING CODE. ELECTRICAL CONNECTIONS SHALL BE BY ELECTRICAL CONTRACTOR, PC SHALL COORDINATE WITH EC ON ELECTRICAL CHARACTERISTICS OF THE EQUIPMENT PROVIDED.
10. 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.

METHODS:

1. EXTEND DOMESTIC WATER PIPE FROM FIVE (5) FEET OUTSIDE THE BUILDING INTO THE BUILDING AS INDICATED ON THE PLANS AND INSTALL DOMESTIC WATER DISTRIBUTION PIPING TO ALL FIXTURES AND EQUIPMENT REQUIRING THE SAME. WATER SERVICE PIPE AND THE BUILDING SEWER SHALL BE SEPARATED BY 5 FEET OF UNDISTURBED OR COMPACTED EARTH IN ACCORDANCE WITH 603.2. PROVIDE ALL FITTINGS, VALVES, AND OTHER ACCESSORIES AS NECESSARY FOR A COMPLETE INSTALLATION. ALL DOMESTIC WATER PIPING SHALL BE CONCEALED IN FINISHED AREAS. ANY OPEN ENDS SHALL BE PROTECTED UNTIL FINAL CONNECTIONS ARE MADE.
2. ABOVE GRADE DOMESTIC WATER PIPING SHALL BE SLOPED AT A MINIMUM OF 1/32 INCH PER FOOT AND ARRANGED TO DRAIN AT LOW POINTS. INSTALL PIPING TO ALLOW FOR EXPANSION AND CONTRACTION WITHOUT STRESSING PIPE, JOINTS, OR CONNECTED EQUIPMENT. ROUTE PIPING IN AN ORDERLY MANNER–PARALLEL OR PERPENDICULAR TO WALLS WHEN POSSIBLE–AND MAINTAIN GRADIENT. EACH SUPPLY BRANCH LINE SERVING MORE THAN ONE FIXTURE SHALL HAVE A SHUTOFF VALVE INSTALLED TO ISOLATE ALL FIXTURES AND PIECES OF EQUIPMENT SUPPLIED BY THE BRANCH LINE. THE SHUTOFF VALVE SHALL BE LABELED AND LOCATED AS CLOSE TO THE CONNECTION TO THE SUPPLY MAIN AND RISER AS POSSIBLE. PROVIDE A FULL-OPEN VALVE ON THE BASE OF EVERY WATER RISER PIPE AND ON THE TOP OF EVERY WATER DOWN-FEED PIPE. PROVIDE VALVE HANDLE EXTENSIONS AS NECESSARY FOR INSULATION.
3. IT SHALL BE THE RESPONSIBILITY OF THE PC TO SUSPEND AND SUPPORT ALL PIPING SYSTEMS FOLLOWING RECOGNIZED ENGINEERING PRACTICES AND USING STANDARD, COMMERCIALLY ACCEPTED PIPE HANGERS AND SUSPENSION EQUIPMENT. ALL FIXTURES, DEVICES, AND EQUIPMENT SHALL BE SECURELY MOUNTED TO THE BUILDING STRUCTURE AND SHALL NOT RELY ON CEILING OR WALL SURFACES FOR SUPPORT. THE SUPPORT ATTACHMENT SHALL SUPPORT THE WEIGHT OF THE FIXTURE OR EQUIPMENT PLUS THE WEIGHT OF THE SUPPORT ATTACHMENT ITSELF. SUPPORT FROM THE TOP CHORD OF THE ROOF JOISTS, GIRDERS, AND BEAMS. THE BOTTOM CHORD IS NOT TO BE USED FOR EQUIPMENT AND PIPING SUPPORT. HANGERS SHALL NOT BE ATTACHED TO CORRUGATED STEEL DECKING. USE STEEL HANGERS FOR STEEL AND PLASTIC PIPE AND COPPER OR COPPER-PLATED HANGERS FOR COPPER PIPE. PROVIDE PROTECTION FOR COPPER PIPING IN CONTACT WITH DISSIMILAR METALS. WHERE COPPER PIPING IS SUPPORTED ON HANGERS WITH OTHER PIPING, PROVIDE A PERMANENT ELECTROLYTIC ISOLATION MATERIAL TO PREVENT CONTACT WITH OTHER METALS. IN GENERAL, HANGERS SHALL BE CLEVIS TYPE, STANDARD WEIGHT. FOR PIPING, HANGER SPACING SHALL BE IN ACCORDANCE WITH TABLE 308.5 OF THE NC PLUMBING CODE. HANGERS AND ACCESSORIES SHALL BE GRINNEL, MASON, OR B-LINE.
4. SLEEVE ALL PIPES PASSING THROUGH PARTITIONS, WALLS, AND FLOORS. SLEEVES IN FLOORS AND INTERIOR WALLS OF POURED IN PLACE CONCRETE, BRICK, TILE, OR MASONRY SHALL BE SCHEDULE 40 STEEL PIPE, MACHINE CUT. SLEEVES IN GYPSUM BOARD WALLS SHALL BE 22 GAUGE, ROLLED GALVANIZED SHEET METAL. TACK WELD ON THE LONGITUDINAL SEAM. PROVIDE SLEEVES WHERE PIPES PASS THROUGH FLOORS AND WALLS ABOVE AND BELOW CEILINGS. PROVIDE SPLIT PIPE SLEEVES IN NEW WALLS BUILT UP AROUND EXISTING PIPES. TACK WELD SPLIT SLEEVES TOGETHER. SLEEVES IN WALLS SHALL BE INSTALLED FLUSH WITH THE WALL. SLEEVES IN FLOORS SHALL EXTEND 3/4 INCH ABOVE THE FLOOR–EXCEPT THEY SHALL BE FLUSH FOR 2 HOUR RATED FLOORS–AND SHALL BE FLUSH WITH THE STRUCTURE BELOW. EACH SLEEVE SHALL HAVE AN INSIDE DIAMETER 1 INCH LARGER THAN THE OUTSIDE DIAMETER OF THE COVERING OF EACH COVERED PIPE TO ALLOW CONTINUOUS INSULATION–BUT NOT LESS THAN TWO PIPE SIZES LARGER THAN EACH UNCOVERED. ANNULAR SPACES BETWEEN SLEEVES AND PIPES SHALL BE FILLED OR CAULKED IN AN APPROVED MANNER.
5. THE TOP OF WATER PIPES INSTALLED BELOW GRADE OUTSIDE THE BUILDING SHALL BE BELOW THE FROST LINE OR A MINIMUM OF 12 INCHES BELOW FINISHED GRADE WHICHEVER IS GREATER. WATER PIPING INSTALLED IN A WALL EXPOSED TO THE EXTERIOR SHALL BE LOCATED ON THE HEATED SIDE OF THE WALL INSULATION. WATER PIPING INSTALLED IN AN UNCONDITIONED UTILITY ROOM OR UNCONDITIONED ATTIC SHALL BE INSULATED TO A MINIMUM OF R6.5 DETERMINED IN ACCORDANCE WITH ASTM C 177.
6. HOT WATER PROVIDED TO PUBLIC HAND-WASHING FACILITIES/LAVATORIES SHALL BE TEMPERED WATER DELIVERED THROUGH AN APPROVED WATER-TEMPERATURE LIMITING DEVICE THAT CONFORMS TO ASSE 1070 OR CSA B125.3.
7. INSULATE ALL EXPOSED WASTE AND SUPPLY PIPING UNDER LAVATORIES, SINKS, AND ELECTRIC WATER COOLERS WITH THE HANDI-LAV GUARD INSULATION KIT BY TRUEBRO OR EQUAL.
8. POTABLE WATER OUTLETS SHALL BE PROTECTED FROM BACKFLOW IN ACCORDANCE WITH 608.15. PRESSURE TYPE VACUUM BREAKERS SHALL CONFORM TO ASSE 1020 AND SPILPROOF VACUUM BREAKERS SHALL COMPLY WITH ASSE 1056. HOSE-CONNECTION VACUUM BREAKERS SHALL CONFORM TO ASSE 1011, ASSE 1019, ASSE 1035, OR ASSE 1052. CONNECTIONS TO BEVERAGE DISPENSERS, COFFEE MACHINES, AND NON-CARBONATED BEVERAGE DISPENSERS SHALL BE PROTECTED BY A BACKFLOW PREVENTER IN ACCORDANCE WITH ASSE 1022.
9. THE PC SHALL INSTALL WATER HAMMER ARRESTORS ON BRANCH LINES WITH QUICK CLOSING VALVES PER MANUFACTURER'S INSTALLATION INSTRUCTIONS. WATER HAMMER ARRESTORS SHALL CONFORM TO ASSE 1010.
10. THE PC SHALL PROVIDE CHECK VALVES AT ALL FIXTURES WITH THREADED OUTLETS AS REQUIRED BY CODE. TRAP PRIMERS SHALL BE PROVIDED AS SHOWN ON THE PLANS OR AS REQUIRED.
11. ADJUST STOPS AND VALVES FOR INTENDED FLOW RATE TO FIXTURES WITHOUT SPLASHING, NOISE, OR OVERFLOW.
12. BEFORE COMMENCING WORK, CHECK INVERT ELEVATIONS REQUIRED FOR SEWER CONNECTIONS, CONFIRM INVERTS, AND VERIFY THESE CAN BE PROPERLY CONNECTED TO WITH SLOPE FOR DRAINAGE AND COVER TO AVOID FREEZING. ONCE INVERTS AND FALL HAVE BEEN ESTABLISHED, EXTEND SANITARY SEWER PIPING TO 5 FEET OUTSIDE THE BUILDING AND INSTALL ALL DRAINS, STACKS, VENTS, FLOOR DRAINS, AND CLEANOUTS NECESSARY FOR A COMPLETE INSTALLATION.
13. ALL SANITARY SEWER PIPING IS BELOW GRADE OR WITHIN WALLS UNLESS OTHERWISE NOTED. ALL SANITARY VENT PIPING IS ABOVE THE CEILING OR WITHIN WALLS UNLESS OTHERWISE NOTED. SOIL AND WASTE PIPING SHALL BE INSTALLED TO PROVIDE PROTECTION AGAINST FREEZING PER 305.6.1. WASTE AND SOIL LINES LEAVING THE BUILDING MUST HAVE A MINIMUM COVER OF 3 INCHES.
14. SOIL AND WASTE LINES 2-1/2 INCHES AND SMALLER SHALL BE SLOPED AT 1/4 INCH PER FOOT MINIMUM. SOIL AND WASTE LINES 3 INCHES TO 6 INCHES IN DIAMETER SHALL BE SLOPED AT 1/8 INCH PER FOOT MINIMUM.
15. FOR WATER CLOSET WASTE CONNECTIONS, A 4 INCH BY 3 INCH CLOSET BEND SHALL BE ACCEPTABLE. WHERE A 3 INCH BEND IS UTILIZED ON WATER CLOSETS, A 4 INCH BY 3 INCH FLANGE SHALL BE INSTALLED TO RECEIVE THE FIXTURE HORN.
16. FOR PLASTIC PIPE SIZES GREATER THAN 6 INCHES, AND OTHER PIPE SIZES GREATER THAN 4 INCHES, RESTRAINTS SHALL BE PROVIDED FOR DRAIN PIPES AT ALL CHANGES IN DIRECTION AND AT ALL CHANGES IN DIAMETER GREATER THAN TWO PIPE SIZES. BRACES, BLOCKS, RODDING, BACKFILL AND OTHER SUITABLE METHODS AS SPECIFIED BY THE COUPLING MANUFACTURER SHALL BE UTILIZED.
17. BASES OF STACKS SHALL BE SUPPORTED BY THE BUILDING STRUCTURE, VIRGIN OR COMPACTED EARTH, OR OTHER SUITABLE MATERIAL TO SUPPORT THE WEIGHT OF THE PIPING.
18. HORIZONTAL DRAIN PIPES SHALL HAVE CLEANOUTS IN ACCORDANCE WITH 708.10. EXTEND CLEANOUTS TO FINISHED FLOOR OR WALL SURFACE. LUBRICATE THREADED CLEANOUT PLUGS WITH A MIXTURE OF GRAPHITE AND LINSEED OIL. ENSURE CLEARANCE AT ALL CLEANOUTS FOR RODDING OF DRAINAGE SYSTEM. INSTALL FLOOR CLEANOUTS AT AN ELEVATION TO ACCOMMODATE FINISHED FLOOR. EVERY CLEANOUT SHALL BE INSTALLED TO ALLOW CLEANING IN THE DIRECTION OF FLOW OF THE DRAINAGE PIPE OR AT RIGHT ANGLES THERETO. CLEANOUTS ON 6 INCH AND SMALLER PIPES SHALL BE PROVIDED WITH A CLEARANCE OF NOT LESS THAN 18 INCHES FOR RODDING.
19. DRAINAGE PIPING FOR FUTURE FIXTURES SHALL TERMINATE WITH AN APPROVED CAP OR PLUG.
20. AIR ADMITTANCE VALVES SHALL BE INSTALLED AFTER THE DWV TESTING REQUIRED BY SECTIONS 312.2 AND 312.3. PROVIDE ACCESS TO ALL AIR ADMITTANCE VALVES PER CODE. INSTALLATION OF ALL AIR ADMITTANCE VALVES SHALL CONFORM TO SECTION 918 OF THE NC PLUMBING CODE. AIR ADMITTANCE VALVES SHALL CONFORM TO ASSE 1050 OR 1051.
21. INDIRECT WASTE PIPING THAT EXCEEDS 2 FEET IN DEVELOPED LENGTH MEASURED HORIZONTALLY, OR 4 FEET IN TOTAL DEVELOPED LENGTH, SHALL BE TRAPPED. THE AIR GAP BETWEEN THE INDIRECT WASTE PIPE AND THE FLOOD LEVEL RIM OF THE WASTE RECEPTOR SHALL BE A MINIMUM OF TWICE THE EFFECTIVE OPENING OF THE INDIRECT WASTE PIPE.
22. THE PC SHALL PROVIDE UNIONS FOR DISASSEMBLY AND SERVICE OF ALL FIXTURES AND OTHER RELEVANT PLUMBING EQUIPMENT. UNIONS SHALL BE GROUND-JOINT WITH BRASS SEAT. PROVIDE INSULATING UNIONS AT EACH JUNCTION OF DISSIMILAR MATERIALS.
23. THE PC SHALL ACCURATELY ROUGH-IN ALL FIXTURES ACCORDING TO MANUFACTURER'S INSTALLATION DIMENSIONS AND INSTRUCTIONS. OFFSET ADAPTERS AND FLEXIBLE CONNECTORS ARE NOT ACCEPTABLE. FLUSH HANDLES SHALL BE MOUNTED ON THE WIDE SIDE OF TOILET AREAS FOR ADA COMPLIANCE. INSTALL EACH FIXTURE WITH TRAP EASILY REMOVABLE FOR SERVICING AND CLEANING. SEAL FIXTURES TO WALL AND FLOOR SURFACES WITH SEALANT. SOLIDLY ATTACH WATER CLOSETS TO FLOOR WITH LAG SCREWS. SEAL ALL SELF-RIMMING LAVATORIES AND SINKS (VITREOUS CHINA AND STAINLESS STEEL) WITH A COMMERCIAL GRADE PLUMBER'S PUTTY OR ACRYLIC LATEX CAULK APPLIED TO THE UNDERSIDE OF THE FIXTURE RIM IN A GENEROUS AMOUNT SO THAT WHEN FIXTURE IS SET, SEALANT SHALL OOZE OUT.
24. ALL VENT THRU THE ROOF (VTR) PENETRATIONS SHALL BE COORDINATED WITH THE GENERAL CONTRACTOR. PC SHALL PROVIDE FLASHING MATERIAL REQUIRED FOR VTRS. JOINTS AT THE ROOF AND AROUND VENT PIPES, SHALL BE MADE WATER TIGHT BY THE USE OF LEAD, COPPER, GALVANIZED STEEL, ALUMINUM, OR OTHER APPROVED FLASHINGS OR FLASHING MATERIAL. MAINTAIN MINIMUM 10 FEET FROM ALL OUTSIDE AIR INTAKES.
25. INSTALL FULL OPEN VALVES PER NC PLUMBING CODE 606.1, ON THE MAIN WATER LINE INTO THE BUILDING. INSTALL CUT OFF VALVES PER NCPC 606.2

GENERAL PLUMBING NOTES 2

Kilian
Engineering,
Inc.
PO Box 3301, Henderson, NC 27536 | www.kilianengineering.com
(P) 252.438.8778 | CORPORATE LICENSE C-2277

SEAL 046202
JACOB A. BENDER
6/24/22

CLEVE PATE
LAKESIDE STORAGE
BUILDING A
ANGIER, NORTH CAROLINA

REVISION:

NO.	DATE	DESCRIPTION

ISSUED:

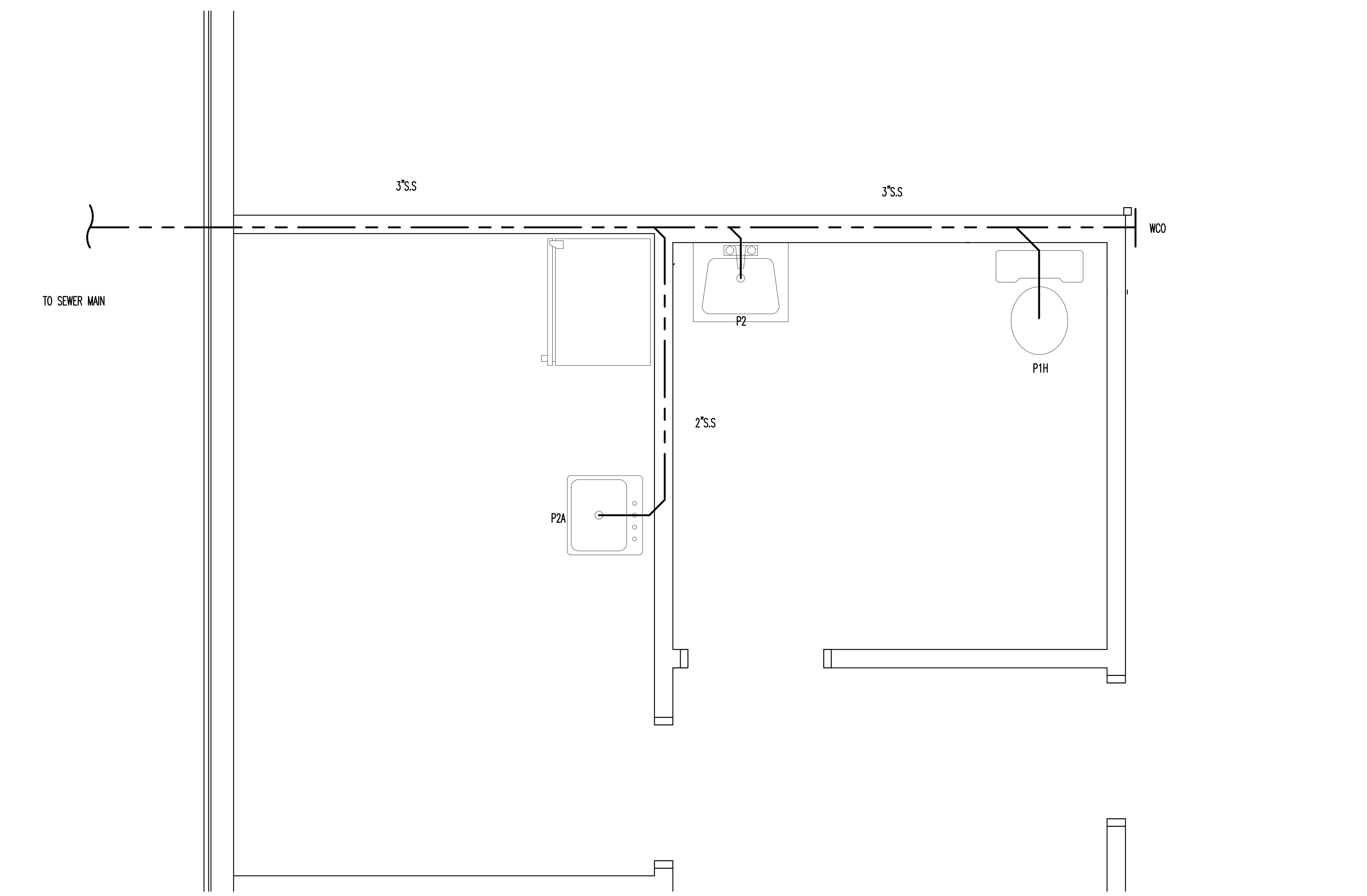
NO.	DATE	DESCRIPTION
0	6/24/22	FOR PERMITTING

DRAWN BY: JMB
CHECKED BY: MWK

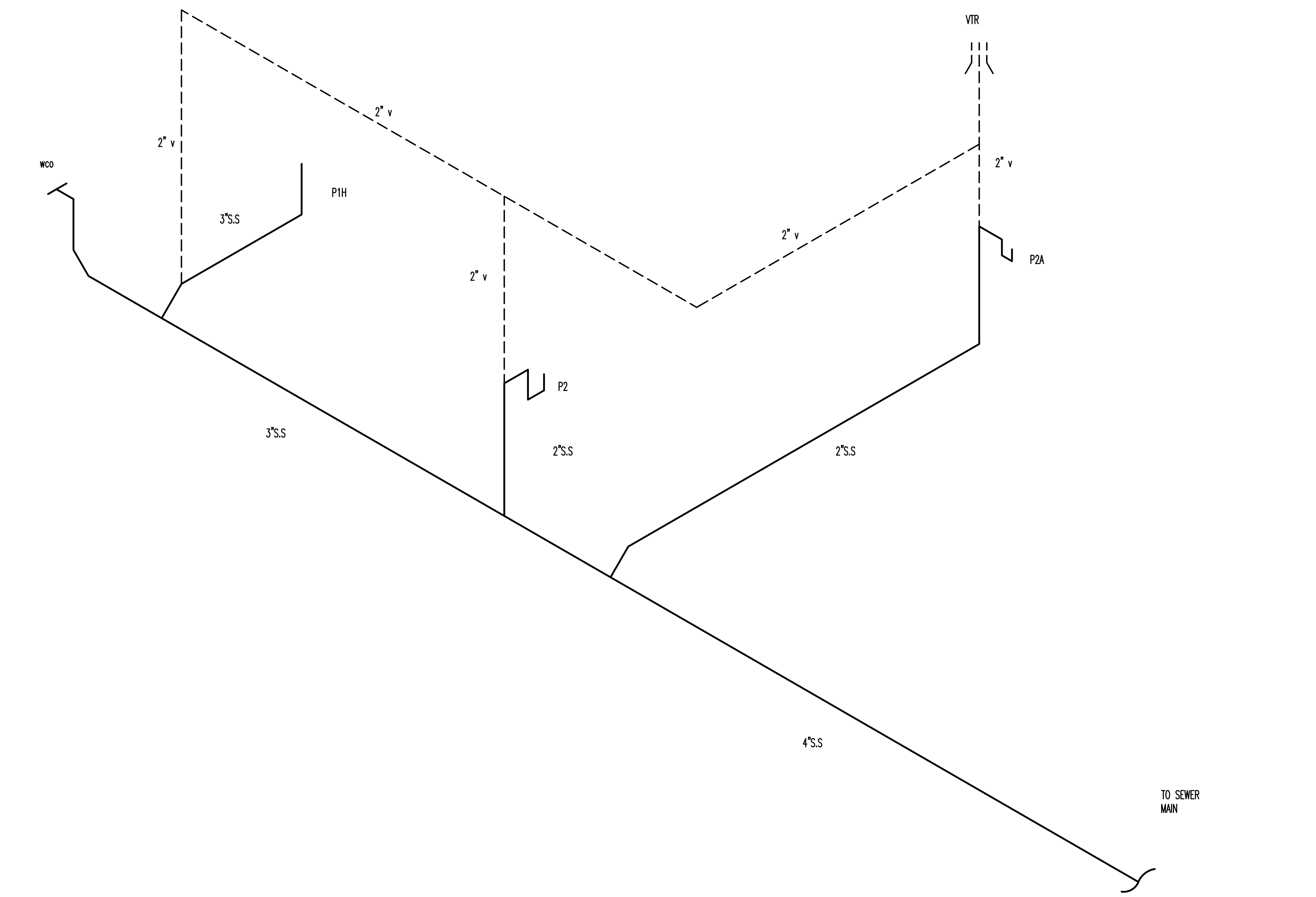
PLUMBING NOTES AND SCHEDULES

SHEET NO.
P1

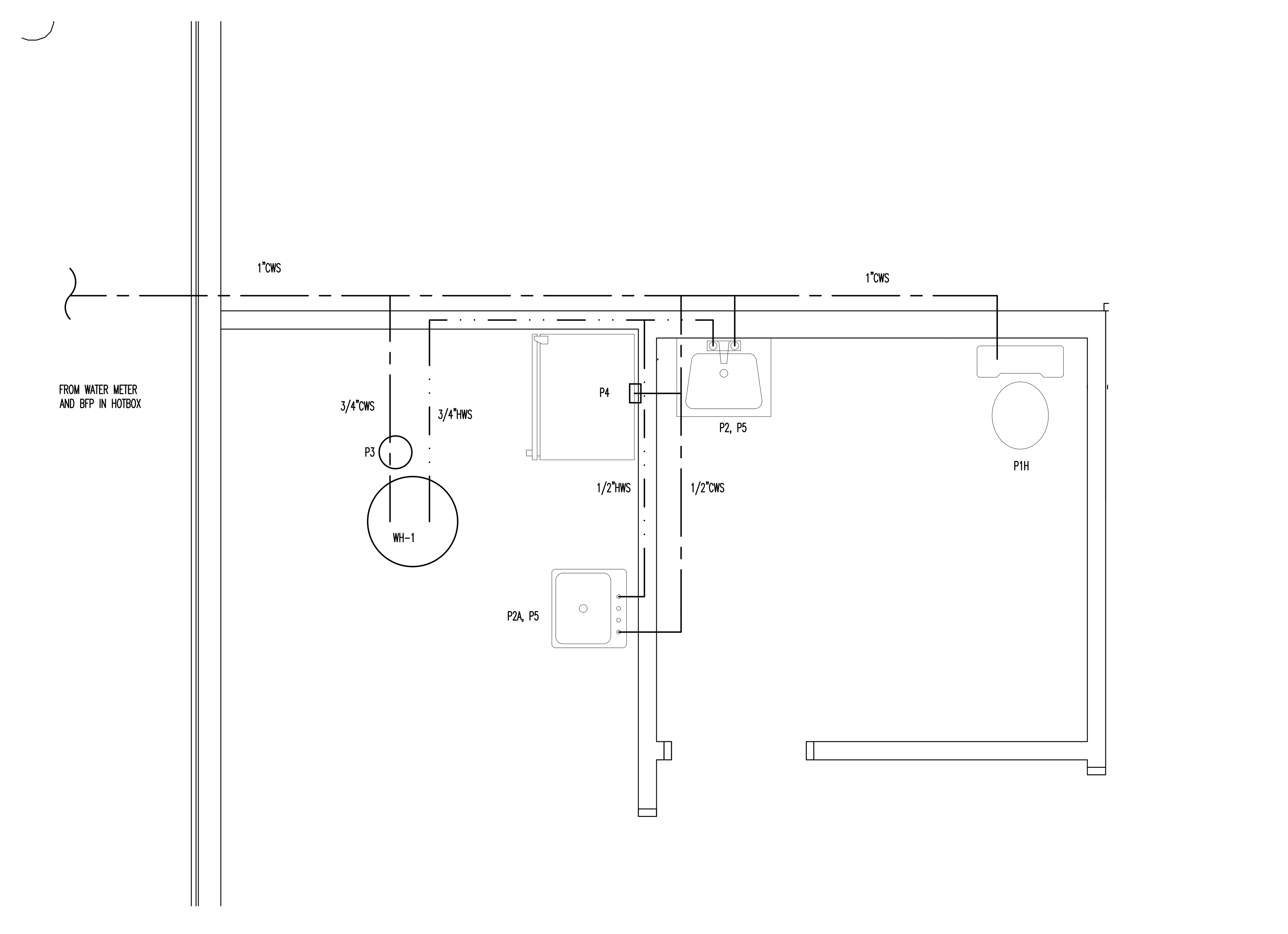
PROJECT NO: 22214



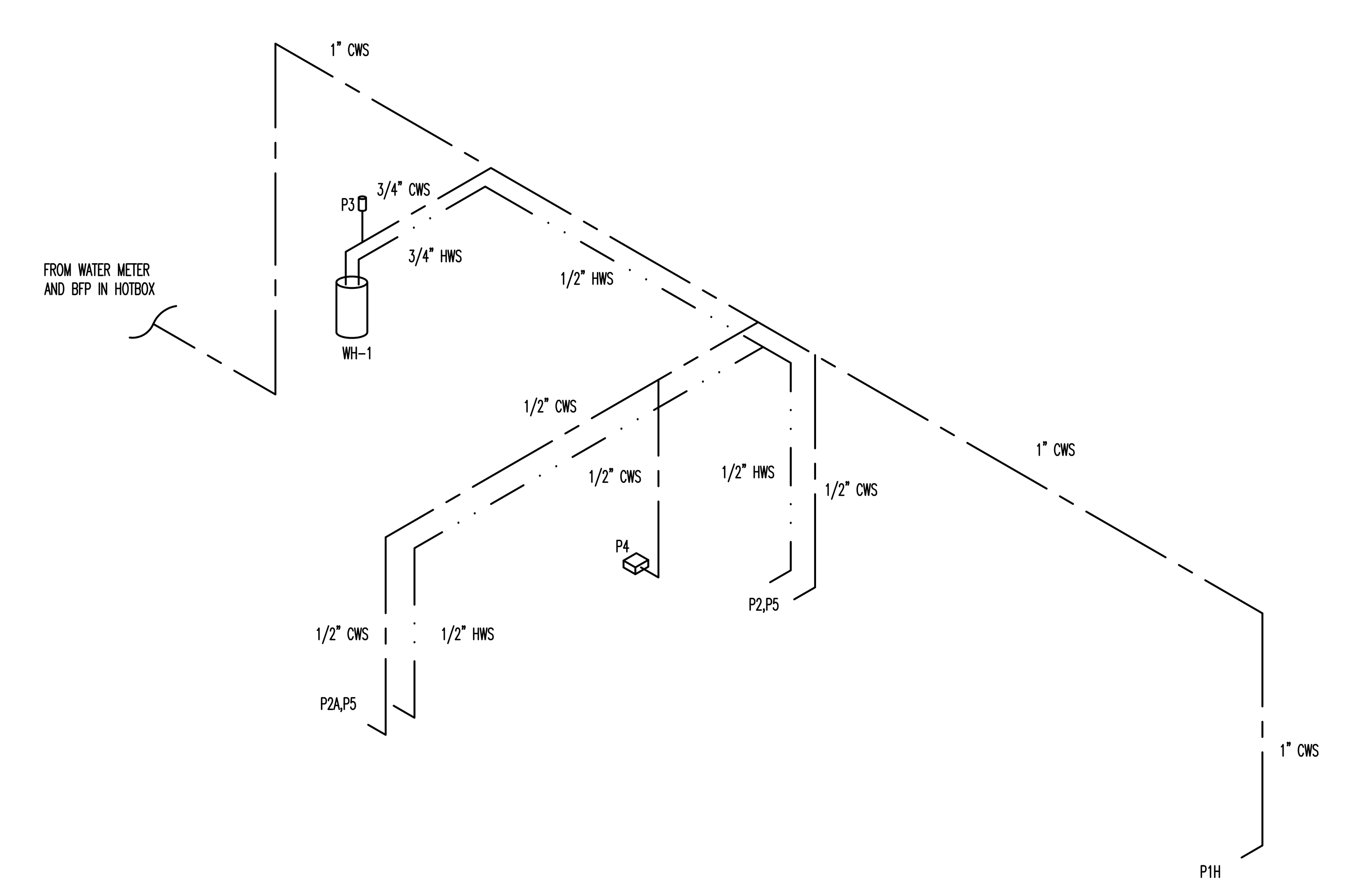
PLUMBING WASTE PLAN-SCALE: 1/2"=1' | 1



PLUMBING WASTE RISER-NO SCALE | 2



PLUMBING SUPPLY PLAN-SCALE: 1/2"=1' | 3



PLUMBING SUPPLY RISER-NO SCALE | 4

Kilian Engineering, Inc.
PO Box 3301, Henderson, NC 27536 | www.kilianengineering.com
(P) 252.438.8778 | CORPORATE LICENSE C-2277

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 046202 JACOB A. BENDER 6/24/22

KILIAN ENGINEERING, INC. CORPORATE SEAL NORTH CAROLINA

CLEVE PATE
LAKESIDE STORAGE
BUILDING A
ANGIER, NORTH CAROLINA

REVISION:

NO.	DATE	DESCRIPTION

ISSUED:

NO.	DATE	DESCRIPTION
0	6/24/22	FOR PERMITTING

DRAWN BY: -JMB
CHECKED BY: MWK-

PLUMBING WASTE AND SUPPLY PLANS AND RISERS

SHEET NO.
P2

PROJECT NO: 22214