Reviewed for Fire Code Compliance
Harnett County North Carolina
Leslie Jackson
06/18/2024 6:32:25 AM

DRAWING INDEX

2018 APPENDIX B - BUILDING CODE SUMMARY FOR ALL COMMERCIAL PROJECTS

NAME OF PROJECT: BLUE SPRIG
BUILDING ADDRESS: 2293 NC HIGHWAY 24-87 ZIP CODE: 28326
PROPOSED USE: THERAPY OFFICE
OWNER OR AUTHORIZED AGENT: BRYANT DICKINSON PHONE: (919) 868-1427 EMAIL: BRYANT@MIDDEVLOPMENT.COM
OWNED BY: [ ] CITY/COUNTY [X] PRIVATE [ ] STATE
CODE ENFORCEMENT JURISDICTION: [X] CITY CAMERON [ ] COUNTY _____ [ ] STATE

CONTACT:

DESIGNER	COMPANY	NAME	LICENSE#	TELEPHONE#	EMAIL
ARCHITECTURAL	REDFOOT STUDIO	RICHARD REDFOOT	9231	(919) 931-7134	RICHARD@REDFOOTSTUDIO.COM
CIVIL	NA	NA	NA	NA	NA
ELECTRICAL	KILIAN ENGINEERING	JACOB HAMILTON	48012	(252) 438-8778	JHAMILTON@KILIANENGINEERING.COM
FIRE ALARM	NA	NA	NA	NA	NA
PLUMBING	KILIAN ENGINEERING	JACOB HAMILTON	48012	(252) 438-8778	JHAMILTON@KILIANENGINEERING.COM
MECHANICAL	KILIAN ENGINEERING	JACOB HAMILTON	48012	(252) 438-8778	JHAMILTON@KILIANENGINEERING.COM
SPRINKLER-STANDPIPE	NA	NA	NA	NA	NA
STRUCTURAL	NA	NA	NA	NA	NA
RETAINING WALLS > 5' HIGH	NA	NA	NA	NA	NA
OTHER	NA	NA	NA	NA	NA

2018 NC BUILDING CODE : [ ] NEW BUILDING [ ] ADDITION [ ] RENOVATION
[X] 1ST TIME INTERIOR COMPLETION
[ ] SHELLCORE - CONTACT THE LOCAL INSPECTION JURISDICTION FOR POSSIBLE ADDITIONAL PROCEDURES AND REQUIREMENTS
[ ] PHASED CONSTRUCTION - SHELLCORE- CONTACT THE LOCAL INSPECTION JURISDICTION FOR POSSIBLE ADDITIONAL PROCEDURES AND REQUIREMENTS

2018 NC EXISTING BUILDING CODE : [ ] PRESCRIPTIVE [ ] REPAIR [ ] CHAPTER 14
[ ] LEVEL I [ ] LEVEL II [ ] LEVEL III
[ ] HISTORIC PROPERTY [ ] CHANGE OF USE

CONSTRUCTED (date): 2022 CURRENT OCCUPANCY(S) (Ch. 3): NA
RENOVATED (date): NA PROPOSED OCCUPANCY(S) (Ch. 3): B

RISK CATEGORY (TABLE 1604.5): CURRENT: [ ] I [ ] II [ ] III [ ] IV
PROPOSED: [ ] I [X] II [ ] III [ ] IV

BUILDING DATA:
CONSTRUCTION TYPE: [ ] I-A [ ] II-A [ ] III-A [ ] IV [ ] V-A
[ ] I-B [X] II-B [ ] III-B [ ] V-B
SPRINKLERS: [X] NO [ ] PARTIAL [ ] YES [ ] NFPA 13 [ ] NFPA 13R [ ] NFPA 13D
STANDPIPES: [X] NO [ ] YES CLASS [ ] I [ ] II [ ] III [ ] WET [ ] DRY
FIRE DISTRICT: [X] NO [ ] YES (Primary) FLOOD HAZARD AREA: [X] NO [ ] YES
SPECIAL INSPECTIONS REQUIRED: [X] NO [ ] YES (contact the local inspection jurisdiction for additional procedures and requirements.)

GROSS BUILDING AREA:

FLOOR	EXISTING (SQ FT)	NEW (SQ FT)	SUB-TOTAL
3RD FLOOR	NA	NA	NA
2ND FLOOR	NA	NA	NA
MEZZANINE	NA	NA	NA
1ST FLOOR	17,178	4,309 (AREA OF WORK)	17,178 (4,309)
BASEMENT	NA	NA	NA
TOTAL	17,178	4,309 (AREA OF WORK)	17,178 (4,309)

ALLOWABLE AREA
OCCUPANCY:
ASSEMBLY [ ] A-1 [ ] A-2 [ ] A-3 [ ] A-4 [ ] A-5
BUSINESS [X]
EDUCATIONAL [ ]
FACTORY/INDUSTRIAL [ ] F-1 MODERATE [ ] F-2 LOW
HAZARDOUS: [ ] H-1 DETONATE [ ] H-2 DEFLAGRATE [ ] H-3 COMBUST [ ] H-4 HEALTH [ ] H-5 HPM
INSTITUTIONAL [ ] I-1 CONDITION [ ] 1 [ ] 2
[ ] I-2 CONDITION [ ] 1 [ ] 2
[ ] I-3 CONDITION [ ] 1 [ ] 2 [ ] 3 [ ] 4 [ ] 5
[ ] I-4
MERCANTILE [ ]
RESIDENTIAL [ ] R-1 [ ] R-2 [ ] R-3 [ ] R-4
STORAGE [ ] S-1 MODERATE [ ] S-2 LOW [ ] HIGH PILED
[ ] PARKING GARAGE [ ] OPEN [ ] ENCLOSED [ ] REPAIR GARAGE
UTILITY AND MISCELLANEOUS [ ]

ACCESSORY OCCUPANCY CLASSIFICATIONS: NA
INCIDENTAL USES (TABLE 509): NA
SPECIAL USES (CHAPTER 4 - LIST CODE SECTIONS): NA
SPECIAL PROVISIONS: (CHAPTER 5 - LIST CODE SECTIONS): NA
MIXED OCCUPANCY: [X] NO [ ] YES SEPARATION: NA HR. EXCEPTION NA

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

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

ACTUAL AREA OF OCCUPANCY A / *ALLOWABLE AREA OF OCCUPANCY A* + *ACTUAL AREA OF OCCUPANCY B* / *ALLOWABLE AREA OF OCCUPANCY B* ≤ 1
_____ + _____ + ... ≤ 1.00

STORY NO.	DESCRIPTION AND USE	(A) BLDG. AREA PER STORY (ACTUAL)	(B) TABLE 506.2[4] AREA	(C) AREA FOR FRONTAGE INCREASE[1,5]	(E) ALLOWABLE AREA PER STORY OR UNLIMITED[2,5]
1	B	17,178	69,000	NOT USED	69,000

[1] FRONTAGE AREA INCREASES FROM SECTION 506.2 ARE COMPUTED THUS:
A. PERIMETER WHICH FRONTS A PUBLIC WAY OR OPEN SPACE HAVING 20 FEET MINIMUM WIDTH = ____ (F)
B. TOTAL BUILDING PERIMETER = ____ (P)
C. RATIO (F/P) = ____ (F/P)
D. W = MINIMUM WIDTH OF PUBLIC WAY = ____ (W)
E. PERCENT OF FRONTAGE INCREASE 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 406.5.4. THE MAXIMUM AREA OF AIR TRAFFIC CONTROL TOWERS MUST COMPLY WITH 412.3.1
[5] FRONTAGE INCREASE BASED ON THE UNSPRINKLERED AREA VALUE IN TABLE 506.2.

ALLOWABLE HEIGHT

	ALLOWABLE	SHOWN ON PLANS	CODE REFERENCE
BUILDING HEIGHT IN FEET (TABLE 504.3)	NA - EXISTING TO REMAIN		
BUILDING HEIGHT IN STORIES (TABLE 504.4)	NA - EXISTING TO REMAIN		

FIRE PROTECTION REQUIREMENTS

BUILDING ELEMENT	FIRE SEPARATION DISTANCE (FEET)	RATING REQ'D	RATING PROVIDED (W/ "NA" REDUCTION)	DETAIL # AND SHEET #	DESIGN # FOR RATED ASSEMBLY	SHEET # FOR RATED PENETRATION	SHEET # FOR RATED JOINTS
STRUCTURAL FRAME, INCLUDING COLUMNS, GIRDERS, TRUSSES	NA	0	0	NA	NA	NA	NA
BEARING WALLS							
EXTERIOR							
NORTH	**NA**	NA	NA	NA	NA	NA	NA
EAST	**NA**	NA	NA	NA	NA	NA	NA
WEST	**NA**	NA	NA	NA	NA	NA	NA
SOUTH	**NA**	NA	NA	NA	NA	NA	NA
INTERIOR	**NA**	NA	NA	NA	NA	NA	NA
NON-BEARING WALLS AND PARTITIONS							
EXTERIOR WALLS							
NORTH	30' +	0	NA	NA	NA	NA	NA
EAST	30' +	0	NA	NA	NA	NA	NA
WEST	30' +	0	NA	NA	NA	NA	NA
SOUTH	30' +	0	NA	NA	NA	NA	NA
INTERIOR WALLS AND PARTITIONS	NA	0	0	NA	NA	NA	NA
FLOOR CONSTRUCTION, INCLUDING SUPPORTING BEAMS AND JOISTS	NA	0	0	NA	NA	NA	NA
FLOOR CEILING ASSEMBLY	NA	NA	NA	NA	NA	NA	NA
COLUMNS SUPPORTING FLOORS	NA	0	NA	NA	NA	NA	NA
ROOF CONSTRUCTION, INCLUDING SUPPORTING BEAMS AND JOISTS	NA	0	0	NA	NA	NA	NA
ROOF CEILING ASSEMBLY	NA	0	0	NA	NA	NA	NA
COLUMNS SUPPORTING ROOF	NA	0	0	NA	NA	NA	NA
SHAFT ENCLOSURES - EXIT	NA	NA	NA	NA	NA	NA	NA
SHAFT ENCLOSURES - STAIR	**NA**	NA	NA	NA	NA	NA	NA
CORRIDOR SEPARATION	NA	0	0	NA	NA	NA	NA
OCCUPANCY / FIRE BARRIER SEPARATION	NA	2	2 - EXISTING	1/A0.0	UL U419	WL 1001	NA
PARTY/FIRE WALL SEPARATION	NA	NA	NA	NA	NA	NA	NA
SMOKE BARRIER SEPARATION	NA	NA	NA	NA	NA	NA	NA
SMOKE PARTITION	NA	NA	NA	NA	NA	NA	NA
TENANT / DWELLING UNIT / SLEEPING UNIT SEPARATION	NA	1	1	1/A0.0	UL U419	WL 1001	NA
INCIDENTAL USE SEPARATION	NA	NA	NA	NA	NA	NA	NA
MEDICAL GAS CLOSET	NA	NA	NA	NA	NA	NA	NA

* INDICATES SECTION NUMBER PERMITTING REDUCTION.

PERCENTAGE OF WALL OPENING CALCULATIONS

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

LIFE SAFETY SYSTEM REQUIREMENTS
EMERGENCY LIGHTING: [ ] NO [X] YES
EXIT SIGNS: [ ] NO [X] YES
FIRE ALARM: [X] NO [ ] YES
SMOKE DETECTION SYSTEMS: [X] NO [ ] YES [ ] PARTIAL _____
CARBON MONOXIDE DETECTION: [X] NO [ ] YES

LIFE SAFETY PLAN REQUIREMENTS
LIFE SAFETY PLAN SHEET #: 2/A2.0
[X] FIRE AND SMOKE RATED WALL LOCATIONS (Chapter 7)
[ ] ASSUMED AND REAL PROPERTY LINE LOCATIONS (IF NOT ON THE SITE PLAN)
[ ] EXTERIOR WALL OPENINGS WITH RESPECT TO DISTANCE TO ASSUMED PROPERTY LINES (705.8)
[X] OCCUPANCY USE FOR EACH AREA AS IT RELATES TO OCCUPANT LOAD CALCULATION (TABLE 1004.1.2)
[X] OCCUPANT LOADS FOR EACH AREA
[X] EXIT ACCESS TRAVEL DISTANCE (1017)
[X] COMMON PATH OF TRAVEL DISTANCES (TABLES 1006.2.1 & 1006.3.2 (1))
[ ] DEAD END LENGTHS (1020.4)
[X] CLEAR EXIT WIDTHS FOR EACH EXIT DOOR
[X] MAXIMUM CALCULATED OCCUPANT LOAD CAPACITY EACH EXIT DOOR CAN ACCOMMODATE BASED ON EGRESS WIDTH (1005.3)
[X] ACTUAL OCCUPANT LOAD FOR EACH EXIT DOOR
[ ] A SEPARATE SCHEMATIC PLAN INDICATING WHERE FIRE RATED FLOOR/CEILING AND/OR ROOF STRUCTURE IS PROVIDED FOR PURPOSES OF OCCUPANCY SEPARATION
[ ] LOCATION OF DOORS WITH PANIC HARDWARE (1010.1.10)
[ ] LOCATION OF DOORS WITH DELAYED EGRESS LOCKS AND THE AMOUNT OF DELAY (1010.1.9.7)
[ ] LOCATION OF DOORS EQUIPPED WITH HOLD-OPEN DEVICES
[ ] LOCATION OF EMERGENCY ESCAPE WINDOWS (1030)
[ ] THE SQUARE FOOTAGE OF EACH FIRE AREA (202)
[ ] THE SQUARE FOOTAGE OF EACH SMOKE COMPARTMENT FOR OCCUPANCY CLASSIFICATION I-2 (407.5)
[ ] NOTE ANY CODE EXCEPTIONS OR TABLE NOTES THAT MAY HAVE BEEN UTILIZED REGARDING THE ITEMS ABOVE

ACCESSIBLE DWELLING UNITS (SECTION 1107) — NA - NO DWELLING UNITS

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

ACCESSIBLE PARKING — NA - EXISTING BUILDING AND PARKING

LOT OR PARKING AREA	TOTAL # OF PARKING SPACES		# OF ACCESSIBLE SPACES PROVIDED			TOTAL # ACCESSIBLE PROVIDED
	REQUIRED	PROVIDED	REGULAR WITH 5' ACCESS AISLE	VAN SPACES WITH 132" ACCESS AISLE	VAN SPACES WITH 8' ACCESS AISLE	
USE 1						
USE 2						
USE 3						
TOTAL						

STRUCTURAL DESIGN — NA - EXISTING BUILDING
DESIGN LOADS
IMPORTANCE FACTORS: SNOW (Is) _____
SEISMIC (Ie) _____
LIVE LOADS: ROOF _____ psf
MEZZANINE _____ psf
FLOOR _____ psf
GROUND SNOW LOAD: _____ psf
WIND LOAD: BASIC WIND SPEED _____ mph (ASCE-7)
EXPOSURE CATEGORY _____
SEISMIC DESIGN CATEGORY [ ] A [ ] B [ ] C [ ] D
PROVIDE THE FOLLOWING SEISMIC DESIGN PARAMETERS:
RISK CATEGORY (Table 1604.5) [ ] I [ ] II [ ] III [ ] IV
SPECTRAL RESPONSE ACCELERATION S_s _____ %g S_1 _____ %g [ ] F
SITE CLASSIFICATION (ASCE 7) [ ] A [ ] B [ ] C [ ] D [ ] E
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 SPECIAL STEEL
[ ] MOMENT FRAME [ ] INVERTED PENDULUM
ANALYSIS PROCEDURE [ ] SIMPLIFIED [ ] EQUIVALENT LATERAL FORCE [ ] DYNAMIC
ARCHITECTURAL, MECHANICAL, COMPONENTS ANCHORED? [ ] YES [ ] NO
LATERAL DESIGN CONTROL: EARTHQUAKE [ ] WIND [ ]
SOIL BEARING CAPACITY:
FIELD TEST (PROVIDE COPY OF TEST REPORT) _____ psf
PRESUMPTIVE BEARING CAPACITY _____ psf
PILE SIZE, TYPE, AND CAPACITY _____ psf

PLUMBING REQUIREMENTS

USE		WATER CLOSET MALE	WATER CLOSET FEMALE	URINALS	LAVATORIES MALE	LAVATORIES FEMALE	SHOWERS & TUBS	DRINKING FOUNTAINS REGULAR	DRINKING FOUNTAINS ACCESS.
SPACE	EXISTING	0	0	0	0	0	0	0	0
NEW		1	1	0	1	1	0	1	1
REQUIRED		1	1	0	1	1	0	1	1

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

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 BUDGET FOR THE STANDARD REFERENCE DESIGN VERSUS ANNUAL ENERGY COST FOR THE PROPOSED DESIGN.
EXISTING BUILDING ENVELOPE COMPLIES WITH CODE: [ ] NO [X] YES (THE REMAINDER OF THIS SECTION IS NOT APPLICABLE)
EXEMPT BUILDING: [X] NO [ ] YES (PROVIDE CODE OR STATUTORY REFERENCE) NA
CLIMATE ZONE: [ ] 3A [X] 4A [ ] 5A
METHOD OF COMPLIANCE:
ENERGY CODE [ ] PERFORMANCE [X] PRESCRIPTIVE
ASHRAE 90.1 [ ] PERFORMANCE [ ] PRESCRIPTIVE
(IF 'OTHER' SPECIFY SOURCE HERE) _____
THERMAL ENVELOPE (PRESCRIPTIVE METHOD ONLY)
ROOF/CEILING ASSEMBLY (each assembly):
DESCRIPTION OF ASSEMBLY: NA
U-VALUE OF TOTAL ASSEMBLY:
R-VALUE OF INSULATION:
SKYLIGHTS IN EACH ASSEMBLY:
U-VALUE OF SKYLIGHT:
TOTAL SQ FT OF SKYLIGHTS IN EACH ASSEMBLY:
EXTERIOR WALLS (each assembly):
DESCRIPTION OF ASSEMBLY: NA
U-VALUE OF TOTAL ASSEMBLY:
R-VALUE OF INSULATION:
OPENINGS (WINDOWS OR DOORS WITH GLAZING)
U-VALUE OF ASSEMBLY:
SOLAR HEAT GAIN COEFFICIENT:
PROJECTION FACTOR:
DOOR R-VALUES:
WALLS BELOW GRADE (each assembly):
DESCRIPTION OF ASSEMBLY: NA
U-VALUE OF TOTAL ASSEMBLY:
R-VALUE OF INSULATION:
FLOORS OVER UNCONDITIONED SPACE (each assembly):
DESCRIPTION OF ASSEMBLY: NA
U-VALUE OF TOTAL ASSEMBLY:
R-VALUE OF INSULATION:
FLOORS SLAB ON GRADE
DESCRIPTION OF ASSEMBLY: NA
U-VALUE OF TOTAL ASSEMBLY:
R-VALUE OF INSULATION:
HORIZONTAL/VERTICAL REQUIREMENT:
SLAB HEATED:

MECHANICAL SUMMARY — SEE MECHANICAL DRAWINGS
MECHANICAL SYSTEMS, SERVICE SYSTEMS AND EQUIPMENT
THERMAL ZONE
WINTER DRY BULB
SUMMER DRY BULB
INTERIOR DESIGN CONDITIONS
WINTER DRY BULB
SUMMER DRY BULB
RELATIVE HUMIDITY
BUILDING HEATING LOAD
BUILDING COOLING LOAD
MECHANICAL SPACING CONDITIONING SYSTEM
UNITARY
DESCRIPTION OF UNIT
HEATING EFFICIENCY
COOLING EFFICIENCY
SIZE CATEGORY OF UNIT
BOILER
SIZE CATEGORY. IF OVERSIZED, STATE REASON
CHILLER
SIZE CATEGORY. IF OVERSIZED, STATE REASON
LIST EQUIPMENT EFFICIENCIES

ELECTRICAL SUMMARY — SEE ELECTRICAL DRAWINGS
ELECTRICAL SYSTEM AND EQUIPMENT
METHOD OF COMPLIANCE: ENERGY CODE [ ] PRESCRIPTIVE [ ] PERFORMANCE
ASHRAE 90.1 [ ] PRESCRIPTIVE [ ] PERFORMANCE
LIGHTING SCHEDULE (each fixture type)
LAMP TYPE REQUIRED IN FIXTURE
NUMBER OF LAMPS IN FIXTURE
BALLAST TYPE USED IN FIXTURE
NUMBER OF BALLASTS IN FIXTURE
TOTAL WATTAGE PER FIXTURE
TOTAL INTERIOR WATTAGE SPECIFIED VS. ALLOWED (whole building or space by space)
TOTAL EXTERIOR WATTAGE SPECIFIED VS. ALLOWED
ADDITIONAL EFFICIENCY PACKAGE OPTIONS
(WHEN USING THE 2018 NCECC; NOT REQUIRED FOR ASHRAE 90.1)
[ ] C406.2 MORE EFFICIENT MECHANICAL EQUIPMENT
[ ] 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 HEATING

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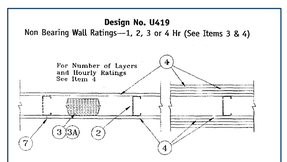
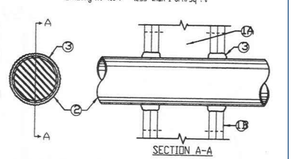
CORPORATE STAMP

RICHARD STEVEN REDFOOT — REGISTERED ARCHITECT — 9231 — NORTH CAROLINA — GRAHAM
6 JUNE 2024
ARCHITECT'S STAMP

BLUE SPRIG





System No. WL 1001
F Ratings - 1, 2, 3, & 4 Hr (See Items 2 & 3)
T Rating - 0, 1, 2, 3, & 4 Hr (See Item 3)
L Rating At Ambient - less than 1 CFM/sq ft
L Rating At 400 F - less than 1 CFM/sq ft

1. Wall Assembly - The 1, 2, 3, or 4 hr fire-rated gypsum wallboard/stud wall assembly shall be constructed of the materials and in the manner described in the individual U300 OR U400 Series Wall or Partition Designs in the UL Fire Resistance Directory and shall include the following construction features:
   - A. Studs - Wall framing may consist of either wood studs (max 2 hr fire rated assemblies) or steel channel studs. Wood studs to consist of nom 2 by 4 in. lumber spaced 16 in. OC with nom 2 by 4 in. lumber end plates and cross braces. Steel studs to be min 3-5/8 in. wide by 1-3/8 in. deep channels spaced max 24 in. OC.
   - B. Wallboard, Gypsum* - Nom 1/2 or 5/8 in. thick, 4 ft wide with square or tapered edges. The gypsum wallboard type, thickness, number of layers, fastener type and sheet orientation shall be as specified in the individual U300 or U400 Series Design in the UL Fire Resistance Directory. Max diam of opening is 13-1/2 in.
2. Pipe or Conduit - Nom 12 in. diam (or smaller) Schedule 10 (or heavier) steel pipe, nom 12 in. diam (or smaller) service weight (or heavier) cast iron soil pipe, nom 12 in. diam (or smaller) Class 50 (or heavier) ductile iron pressure pipe, nom 6 in. diam (or smaller) steel conduit, nom 4 in. diam (or smaller) steel electrical metallic tubing, nom 6 in. diam (or smaller) Type L or (or heavier copper tubing or nom 1 in. diam (or smaller) flexible steel conduit. When copper pipe is used, max F Rating of firestop system (Item 3) is 2 hr. Steel pipes or conduits larger than nom 4 in. diam may only be used in walls constructed using steel channel studs. A max of one pipe or conduit is permitted in the firestop system. Pipe or conduit to be installed near center of stud cavity width and to be rigidly supported on both sides of wall assembly.
3. Fill, Void, or Cavity Material* - Caulk - Caulk fill material installed to completely fill annular space between pipe or conduit and gypsum wallboard and with a min 1/4 in. diam bead of caulk applied to perimeter of pipe or conduit at its egress from the wall. Caulk installed symmetrically on both sides of wall assembly. The hourly F Rating of the firestop system is dependent upon the hourly fire rating of the wall assembly in which it is installed, as shown in the following table. The hourly T Rating of the firestop system is dependent upon the type or size of the pipe or conduit and the hourly fire rating of the wall assembly in which it is installed as tabulated below

Max Pipe or Conduit Diam, In.	Annular Space, In.	F Rating Hr	T Rating Hr
1	0 to 3/16	1 or 2	0+, 1, or 2
1	1/4 to 1/2	3 or 4	3 or 4
2	0 to 1/4	1 or 2	0
4	0 to 1-1/2#	1 or 2	0
6	1/4 to 1/2	3 or 4	0
12	3/16 to 3/8	1 or 2	0

+When copper is used, T Rating is 0 hr.
#0 to 1-1/2 in. annular space applies only when Type CP-25 WB+ caulk is used and only when the min thickness of the gypsum wallboard is 5/8 in. for 1 hr rated walls and 1-1/4 in. for 2 hr rated walls.
Minnesota Mining & Mfg. Co - CP 25 WB+.
*Bearing the UL Classification Marking

2 **W-L 1001**
NOT TO SCALE

Design No. U419
Non Bearing Wall Ratings—1, 2, 3 or 4 Hr (See Items 3 & 4)

1. **Floor and Ceiling Runners**—(Not shown)—Channel shaped, fabricated from min 25 MSG corrosion-protected steel, min width to accommodate stud size, with min 1 in. long legs, attached to floor and ceiling with fasteners 24 in. OC max.
2. **Steel Studs**—Channel shaped, fabricated from min 25 MSG corrosion-protected steel, min width as indicated under Item 4, min 1-1/4 in. flanges and 1/4 in. return, spaced a max of 24 in. OC. Studs to be cut 3/8 to 3/4 in. less than assembly height.
3. **Batts and Blankets***—(Required as indicated under Item 4)—Mineral wool batts, friction fitted between studs and runners. Min nom thickness as indicated under Item 4. See **Batts and Blankets (BKNV or BZJZ) Categories** for names of Classified companies.

3A. **Batts and Blankets***—(Optional)—Placed in stud cavities, any glass fiber or mineral wool insulation bearing the UL Classification Marking as to Surface Burning Characteristics and/or Fire Resistance. See **Batts and Blankets (BKNV or BZJZ) Categories** for names of Classified companies.

4. **Wallboard, Gypsum***—Gypsum panels with beveled, square or tapered edges, applied vertically or horizontally. Vertical joints centered over studs and staggered one stud cavity on opposite sides of studs. Vertical joints in adjacent layers (multilayer systems) staggered one stud cavity. Horizontal edge joints and horizontal butt joints on opposite sides of studs staggered a min of 12 in. Horizontal edge joints and horizontal butt joints in adjacent layers (multilayer systems) staggered a min of 12 in. The thickness and number of layers for the 1 hr, 2 hr, 3 hr and 4 hr ratings are as follows:

Wallboard Protection on Each Side of Wall

Rating	Min Stud Depth	No. Of Layers And Thickness Of Panels	Min Thickness Of Insulation (Item 3B)
1	3-1/2	1 layer, 5/8 in. thick	Optional
1	2-1/2	1 layer, 1/2 in. thick	1-1/2 in.
2	1-5/8	2 layers, 1/2 in. thick	Optional
2	1-5/8	2 layers, 5/8 in. thick	Optional
2	3-1/2	1 layer, 3/4 in. thick	3 in.
3	1-5/8	3 layers, 1/2 in. thick	Optional
3	1-5/8	2 layers, 3/4 in. thick	Optional
4	1-5/8	4 layers, 1/2 in. thick	Optional
4	2-1/2	2 layers, 3/4 in. thick	2 in.

Canadian Gypsum Co.—1/2 in. thick Type C, WRC or IP-X2; 5/8 in. thick Type SCX, SHX, WRX, IP-X1, AR, C, WRC or IP-X2; 3/4 in. thick ULTRACODE or Type IP-X3
United States Gypsum Co.—1/2 in. thick Type C, WRC or IP-X2; 5/8 in. thick Type SCX, SHX, WRX, IP-X1, AR, C, WRC or IP-X2; 3/4 in. thick ULTRACODE or Type IP-X3
Yeso Panamericano SA de CV—1/2 in. thick Type C, WRC or IP-X2; 5/8 in. thick Type SCX, SHX, WRX, IP-X1, AR, C, WRC or IP-X2; 3/4 in. thick ULTRACODE or Type IP-X3.

5. **Fasteners**—(Not shown)—Type S or S-12 self-drilling, self-tapping steel screws used to attach panels to studs (Item 2) or furring channels (Item 6). **Single layer systems:** 1 in. long for 1/2 and 5/8 in. thick panels or 1-1/4 in. long for 3/4 in. thick panels, spaced 8 in. OC when panels are applied horizontally, or 12 in. OC when panels are applied vertically. **Two layer systems:** First layer- 1 in. long for 1/2 and 5/8 in. thick panels or 1-1/4 in. long for 3/4 in. thick panels, spaced 16 in. OC. Second layer- 1-5/8 in. long for 1/2 in. thick panels or 2-1/4 in. long for 3/4 in. thick panels, spaced 16 in. OC with screws offset 8 in. from first layer. **Three-layer systems:** First layer- 1 in. long for 1/2 in. thick panels, spaced 24 in. OC. Second layer- 1-5/8 in. long for 1/2 in. thick panels, spaced 24 in. OC. Third layer- 2-1/4 in. long for 1/2 in. thick panels, spaced 12 in. OC. Screws offset min 6 in. from layer below. **Four-layer systems:** First layer- 1 in. long for 1/2 in. thick panels, spaced 24 in. OC. Second layer- 1-5/8 in. long for 1/2 in. thick panels, spaced 24 in. OC. Third layer- 2-1/4 in. long for 1/2 in. thick panels, spaced 24 in. OC. Fourth layer- 2-5/8 in. long for 1/2 in. thick panels, spaced 12 in. OC. Screws offset min 6 in. from layer below.
6. **Furring Channels**—(Optional, not shown, for single or double layer systems)—Resilient furring channels fabricated from min 25 MSG corrosion-protected steel, spaced vertically a max of 24 in. OC. Flange portion attached to each intersecting stud with 1/2 in. long Type S-12 panhead steel screws.
7. **Joint Tape and Compound**—Vinyl or casein, dry or premixed joint compound applied in two coats to joints and screw heads of outer layers. Paper tape, nom 2 in. wide, embedded in first layer of compound over all joints of outer panels.
8. **Siding, Brick or Stucco**—(Optional, not shown) —Aluminum, vinyl or steel siding, brick veneer or stucco, meeting the requirements of local code agencies, installed over gypsum panels. Brick veneer attached to studs with corrugated metal wall ties attached to each stud with steel screws, not more than each sixth course of brick.
9. **Caulking and Sealants***—(Optional, not shown)—A bead of acoustical sealant applied around the partition perimeter for sound control.
   United States Gypsum Co.—Type AS

*Bearing the UL Classification Marking

1 **UL #U419**
NOT TO SCALE

ROOM FINISH SCHEDULE

				WALLS						
ROOM NO	ROOM NAME	FLOOR	BASE	N	S	E	W	CEILING	CEILING HEIGHT	REMARKS
100	RECEPTION	LVP	RB	GWB	GWB	GWB	GWB	ACT	10'-0"	---
101	OPERATIONS MANAGER	LVP	RB	GWB	GWB	GWB	GWB	ACT	10'-0"	---
102	FAMILY GUIDANCE	LVP	RB	GWB	GWB	GWB	GWB	ACT	10'-0"	---
103	OBSERVATION ROOM	LVP	RB	GWB	GWB	GWB	GWB	ACT	10'-0"	---
104	WORK SPACE	LVP	RB	GWB	GWB	GWB	GWB	ACT	10'-0"	---
105	SENSORY PLAYROOM	SG	RB	GWB	GWB	GWB	GWB	ACT	10'-0"	---
106	MEDIUM THERAPY	LVP	RB	GWB	GWB	GWB	GWB	ACT	10'-0"	---
107	THERAPY LARGE	LVP	RB	GWB	GWB	GWB	GWB	ACT	10'-0"	---
108	MULTI-PURPOSE ROOM	LVP	RB	GWB	GWB	GWB	GWB	ACT	10'-0"	---
109	UNI-SEX TOILET	PFT	RB	GWB	GWB	GWB	GWB	ACT	9'-0"	---
110	LEADERSHIP WORKSPACE	LVP	RB	GWB	GWB	GWB	GWB	ACT	10'-0"	---
111	MEDIUM THERAPY	LVP	RB	GWB	GWB	GWB	GWB	ACT	10'-0"	---
112	BREAK ROOM	LVP	RB	GWB	GWB	GWB	GWB	ACT	10'-0"	---
113	STORAGE	LVP	RB	GWB	GWB	GWB	GWB	ACT	9'-0"	---
114	HALL	LVP	RB	GWB	GWB	GWB	GWB	ACT	10'-0"	---
115	UNI-SEX TOILET	PFT	RB	GWB	GWB	GWB	GWB	ACT	9'-0"	---
116	UNI-SEX TOILET	PFT	RB	GWB	GWB	GWB	GWB	ACT	9'-0"	---
117	MECHANICAL AND I.T.	LVP	RB	GWB	GWB	GWB	GWB	ACT	10'-0"	---
118	THERAPY LARGE	LVP	RB	GWB	GWB	GWB	GWB	ACT	10'-0"	---
119	MEDIUM THERAPY	LVP	RB	GWB	GWB	GWB	GWB	ACT	10'-0"	---
120	MEDIUM THERAPY	LVP	RB	GWB	GWB	GWB	GWB	ACT	10'-0"	---

GENERAL FINISH SCHEDULE NOTES

A. COORDINATE AND VERIFY FINISHES AND COLORS WITH OWNER/SMITHGROUP.
B. WALL PAINT: ONE COAT OF PRIMER TINTED TO WALL COLOR, TWO COATS OF PAINT. SATIN OR EQUIVALENT FINISH. COLOR TO BE SELECTED BY OWNER/SMITHGROUP.
C. ALL TRIM AND DOOR FRAMES TO HAVE A SEMI-GLOSS FINISH
D. ALL NEW GYPSUM WALLBOARD TO BE 5/8". PROVIDE 5/8" GREENBOARD AT ALL WET LOCATIONS.

FINISHES

LVP	LUXURY VINYL PLANK
SG	SYNTHETIC GRASS
PFT	PORCELAIN FLOOR TILE
RB	RUBBER BASE
GWB	NEW OR EXISTING GYPSUM WALLBOARD, PAINTED
ACT	2' X 2' ACOUSTIC CEILING TILE SYSTEM, DUNE 1774 TEGULAR, 15/16" GRID

ALLOWANCES (INCLUDES LABOR AND MATERIAL)

NOT USED

REMARKS

NOT USED

DOOR AND FRAME SCHEDULE

	DOOR							
	SIZE				FRAME	HARDWARE		
DOOR NO.	WD	HGT	THK	MATL	MATL	SET	KEYSIDE RM NO	REMARKS
100A	3'-0"	7'-0"	1 3/4"	WOOD	HM	P.L., D.S.	---	1
101A	3'-0"	7'-0"	1 3/4"	WOOD	HM	C.L., D.S.,C.H.	---	1
102A	3'-0"	7'-0"	1 3/4"	WOOD	HM	P.L., D.S.,C.H.	---	1
103A	3'-0"	7'-0"	1 3/4"	WOOD	HM	P.L., D.S.,C.H.	---	1
106A	3'-0"	7'-0"	1 3/4"	WOOD	HM	P.L., D.S.,C.H.	---	1
107A	3'-0"	7'-0"	1 3/4"	WOOD	HM	P.L., D.S.,C.H.	---	1
108A	3'-0"	7'-0"	1 3/4"	WOOD	HM	P.L.,D.B., D.S.,C.H.	---	1
109A	3'-0"	7'-0"	1 3/4"	WOOD	HM	PR.L., D.S.,C.H.	---	---
110A	3'-0"	7'-0"	1 3/4"	WOOD	HM	C.L., D.S.,C.H.	---	1
111A	3'-0"	7'-0"	1 3/4"	WOOD	HM	P.L., D.S.,C.H.	---	1
112A	3'-0"	7'-0"	1 3/4"	WOOD	HM	P.L., D.S.,C.H.	---	1
113A	3'-0"	7'-0"	1 3/4"	WOOD	HM	C.L., D.S.,C.H.	---	---
115A	3'-0"	7'-0"	1 3/4"	WOOD	HM	PR.L., D.S.,C.H.	---	---
116A	3'-0"	7'-0"	1 3/4"	WOOD	HM	PR.L., D.S.,C.H.	---	---
117A	3'-0"	7'-0"	1 3/4"	WOOD	HM	C.L., D.S.,C.H.	---	---
118A	3'-0"	7'-0"	1 3/4"	WOOD	HM	P.L., D.S.,C.H.	---	1
119A	3'-0"	7'-0"	1 3/4"	WOOD	HM	P.L., D.S.,C.H.	---	1
120A	3'-0"	7'-0"	1 3/4"	WOOD	HM	P.L., D.S.,C.H.	---	1

GENERAL DOOR SCHEDULE NOTES

A. DOORS WITH NO NUMBER ARE EXISTING TO REMAIN.
B. NEW DOORS TO MATCH EXISTING BUILDING STANDARD, VERIFY W/ OWNER/SMITHGROUP.
C. PROVIDE NEW COMMERCIAL GRADE ACCESSIBLE DOOR HARDWARE. VERIFY COLOR AND STYLE W/ OWNER/SMITHGROUP.
D. RE-KEY THE PROPERTY AT THE END OF THE PROJECT WITH 4 COPIES OF EACH KEY MADE AND GIVE TO BLUESPRIG AT HANDOVER; THERE SHOULD BE 2 SETS - ONE FOR INTERIOR DOORS AND ONE FOR EXTERIOR DOORS.
E. DOOR STOPS WILL BE SUPPLIED FOR ALL DOORS TO MATCH HARDWARE.

HARDWARE LEGEND

P.L.	PASSAGE LATCHSET	CR.L.	CLASSROOM LOCKSET	O.C.	OVERHEAD CLOSER	C.H.	COAT HOOK
PR.L.	PRIVACY LOCKSET	D.B.	DEADBOLT	D.H.	1 1/2 HINGES		
C.L.	CYLINDER LOCKSET	ALT	ALUMINUM THRESHOLD	W.S.	WEATHER STRIPPING		
M.L.	MORTISE LOCKSET	W.S.	WOOD THRESHOLD	D.S.	DOOR STOP		

REMARKS

1. PROVIDE VISION LITE KIT: AIR LOUVERS VSL SLIMLINE VISION KITE OR APPROVED EQUAL. TYPICAL FAC VISION KIT: 7" X 35" VISION KIT WITH GREY FRAME, 1/4" CLEAR TEMPERED CLASS FOR NON-RATED DOORS.

GENERAL NOTES

1. GENERAL NOTES APPLY TO ALL SHEETS.
2. THE DRAWINGS AND SPECIFICATIONS SHALL BE THOROUGHLY REVIEWED PRIOR TO ORDERING, PURCHASING AND INSTALLING MATERIALS AND SYSTEMS. ALL DISCREPANCIES, INTERFERENCES, AND OMISSIONS SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE ARCHITECT.
3. ANY DEVIATIONS FROM THE CONTRACT DOCUMENTS DURING CONSTRUCTION SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE ARCHITECT.
4. ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE LATEST EDITION OF THE STATE CODE, ALL LOCAL AND OTHER APPLICABLE CODES.
5. CONTRACTOR TO VISIT SITE PRIOR TO SUBMITTAL OF BID. CONTRACTOR TO ESTABLISH SCOPE OF WORK FROM CONSTRUCTION DOCUMENTS AND ACTUAL SITE VISIT. ANY OMMISSIONS, DISCREPANCIES OR CLARIFICATIONS TO BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE ARCHITECT.
6. CONTRACTOR TO ITEMIZE ALL COSTS AND SCOPE OF WORK RELATED TO ANY CHANGE ORDER. THIS INFORMATION MUST BE PRESENTED TO THE OWNER AND ARCHITECT FOR APPROVAL PRIOR TO ANY WORK BEING EXECUTED.
7. NOTED DIMENSIONS TAKE PRECEDENCE OVER OVER SCALED DIMENSIONS, DO NOT SCALE DIMENSIONS.
8. DIMENSIONS ARE TO FACE OF NEW OR EXISTING GYPSUM WALLBOARD.
9. ALL COLORS AND MATERIALS SHALL BE APPROVED BY OWNER OR OWNER'S REPRESENTATIVE PRIOR TO ORDERING MATERIALS.
10. PROVIDE BLOCKING AS REQUIRED FOR FOR INSTALLATION AND SUPPORT OF GRAB BARS, TOILET ACCESSORIES, CABINETS, TELEVISIONS, EQUIPMENT, ETC.. BLOCKING NOT ENCASED IN GYPSUM WALLBOARD TO BE FIRE-TREATED.
11. COORDINATE INSTALLATION OF ALL EQUIPMENT AND APPLIANCES, INCLUDING BOTH CONTRACTOR AND OWNER SUPPLIED ITEMS, WITH MANUFACTURER'S REQUIREMENTS AND SPECIFICATIONS.
12. AT INTERIOR PARTITIONS WHERE THERE IS EXPOSED ROOF STRUCTURE THE PARTITIONS TO EXTEND FULL HEIGHT TO BOTTOM OF ROOF DECK.
13. AT INTERIOR PARTITIONS WHERE THERE IS A DROP CEILING ASSEMBLY ON BOTH SIDES OF THE WALL, THE TOP OF PARTITIONS TO STOP 1" TO 6" ABOVE CEILING WITH LATERAL BRACING, SECURED TO TOP OF WALL AND ROOF STRUCTURE ABOVE.
14. ALL GYPSUM WALLBOARD TO BE FINISHED TO LEVEL 4 PER GYPSUM ASSOCIATION GUIDELINES AS DETAILED IN GA 214-10.
15. EXISTING BUILDING ASSEMBLIES, COMPONENTS, AND SYSTEMS TO REMAIN UNLESS OTHERWISE REQUIRED BY NEW WORK OR NOTED IN THE DOCUMENTS.

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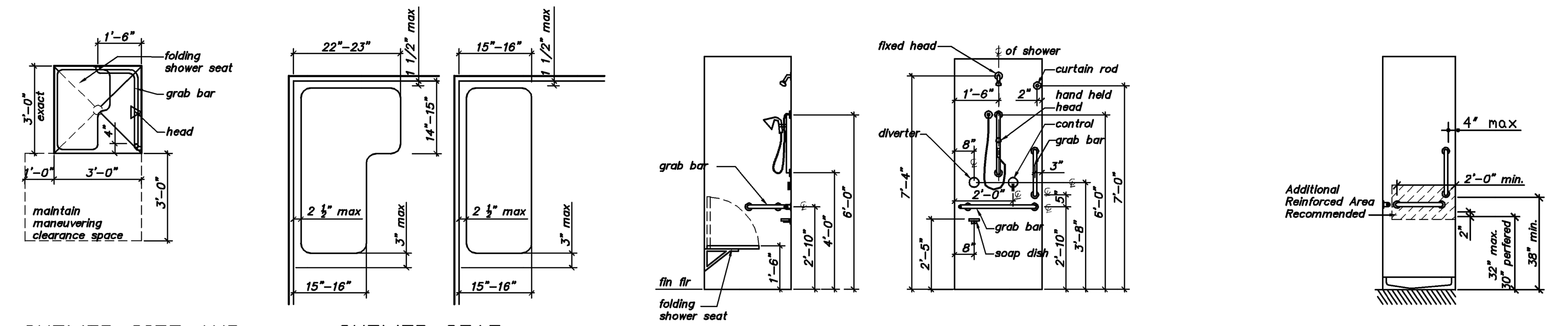
RICHARD STEVEN REDFOOT
9231
6 JUNE 2024
ARCHITECT'S STAMP

No	Rev./Submissons	Date
	PERMIT	06/06/24

SCALE AS NOTED	PROJECT NO 240407
DESIGNED RSR	DATE 6 JUNE 24
DRAWN RSR	CHECKED RSR

DRAWINGS
GENERAL NOTES, SCHEDULES AND UL DETAILS

DRAWING NO
A0.0

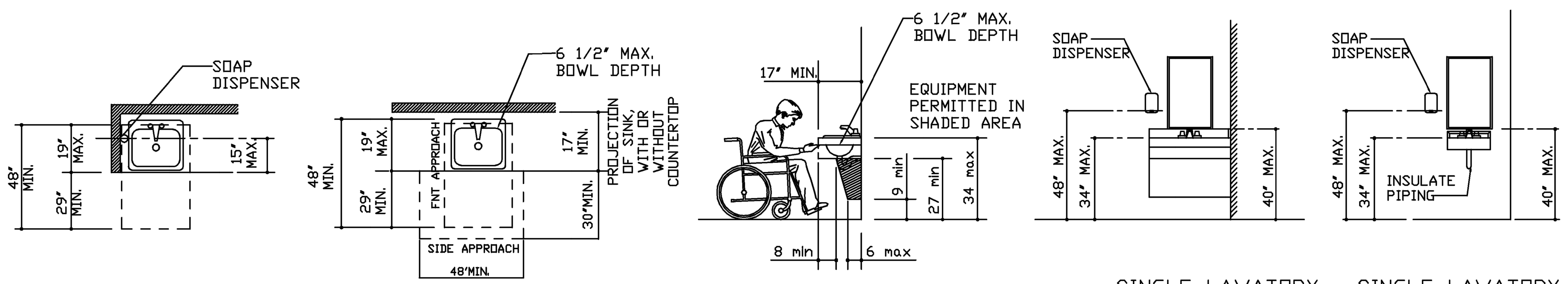


SHOWER SIZE AND CLEARANCES

SHOWER SEAT DESIGN

SHOWER CONTROLS SIDE WALL ELEVATION

SHOWER SIDE WALL BLOCKING



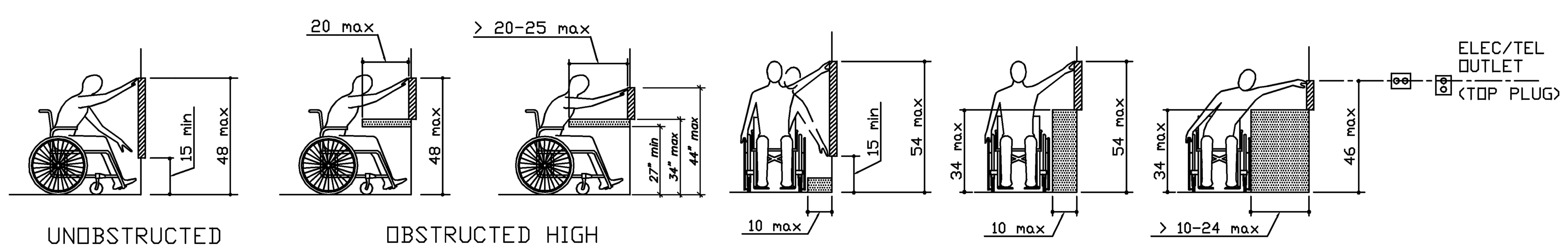
ACCESSIBLE SINK FLOOR CLEARANCE

ACCESSIBLE SINK FLOOR CLEARANCE

ACCESSIBLE SINK COUNTER HEIGHT AND KNEE CLEARANCE

SINGLE LAVATORY COUNTER W/MIRROR

SINGLE LAVATORY WALLHUNG W/MIRROR



UNOBSTRUCTED FORWARD REACH

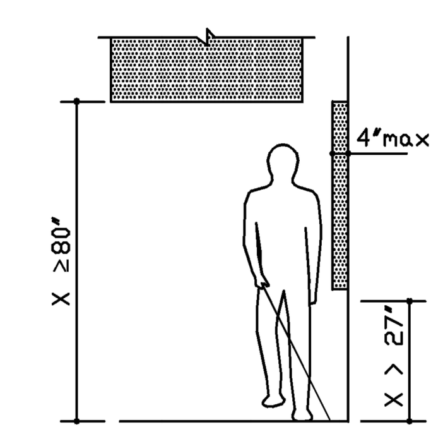
OBSTRUCTED HIGH FORWARD REACH

UNOBSTRUCTED SIDE REACH

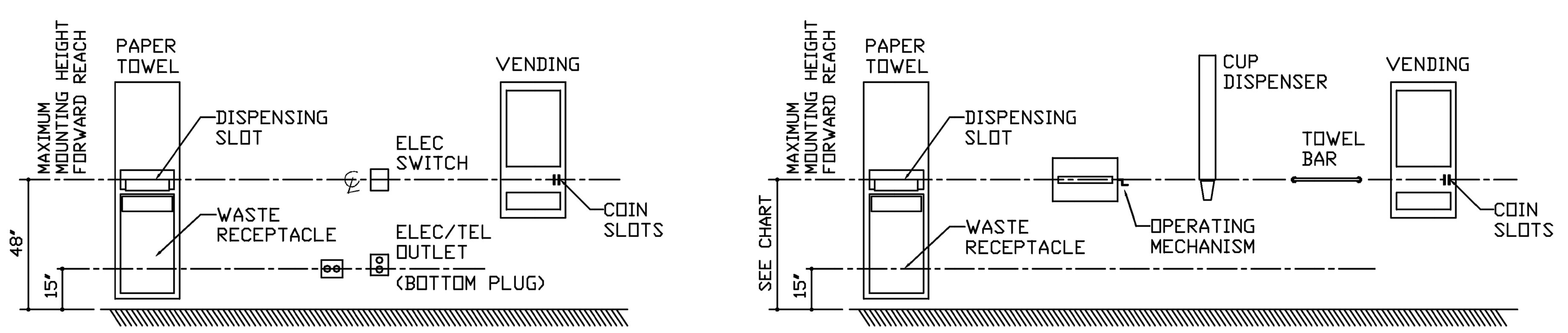
OBSTRUCTED HIGH SIDE REACH

SURFACE MOUNTED ACCESSORIES
MAXIMUM REACH DEPTH AND HEIGHT (FORWARD APPROACH)

PROJECTED DIM FROM WALL FACE	.5 INCH	2 INCHES	5 INCHES	6 INCHES	9 INCHES	11 INCHES
MAXIMUM MOUNTING HEIGHT	48 INCH	46 INCH	42 INCH	40 INCH	36 INCH	34 INCH

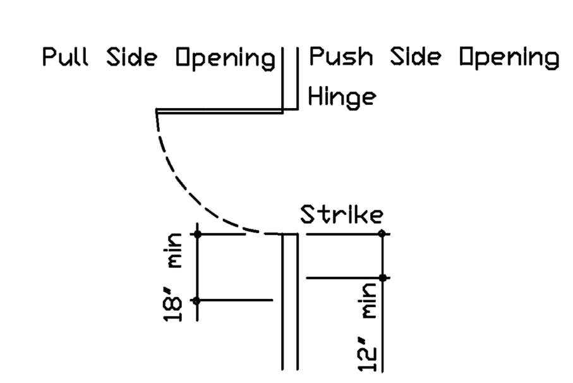


LIMIT OF PROTRUDING OBJECTS

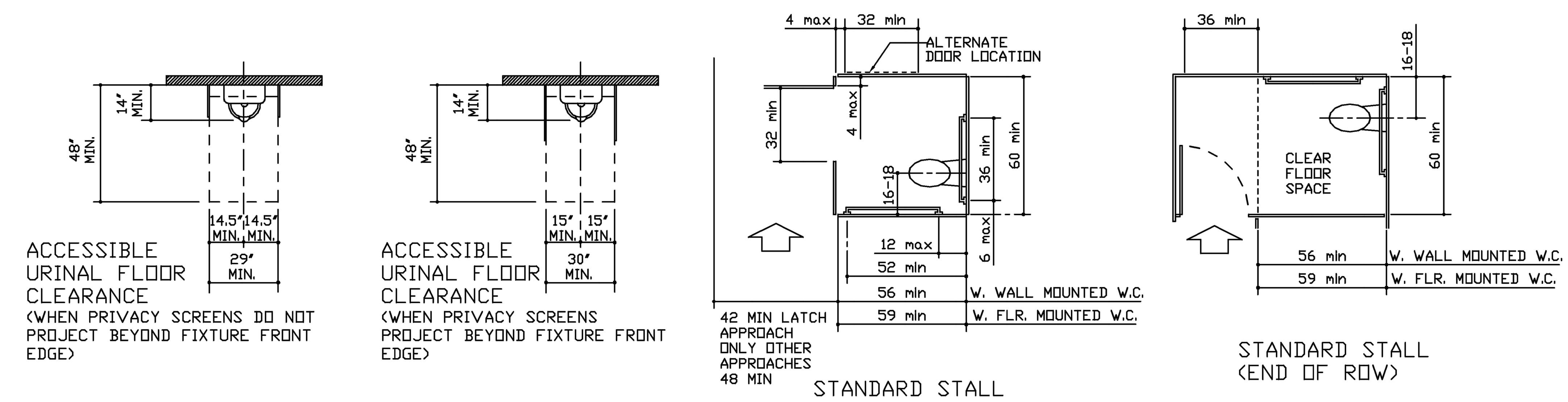


FLUSH MOUNTED EQUIPMENT
(LESS THAN 1/2" PROJECTION FROM WALL FACE)

SURFACE MOUNTED EQUIPMENT
(GREATER THAN 1/2" PROJECTION FROM WALL FACE)



CLEAR AREA OF ACCESSIBILITY FORWARD APPROACH TO ACCESS WAY

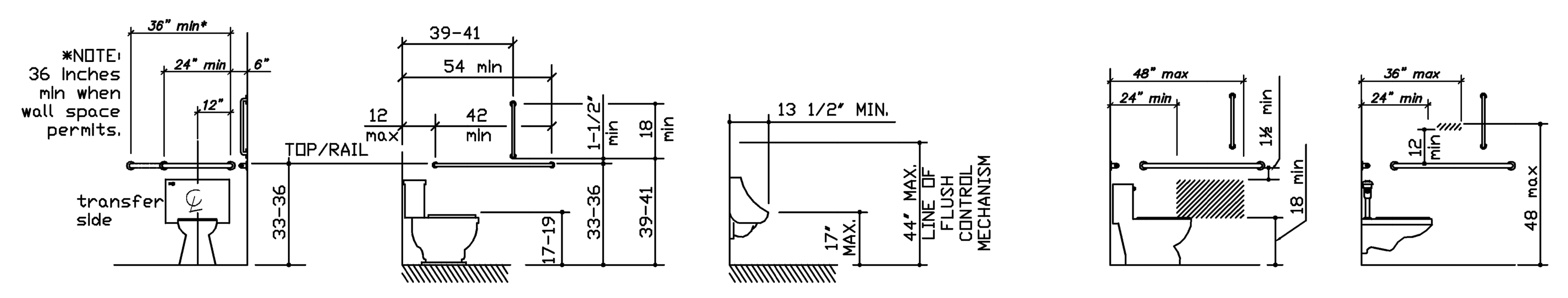


ACCESSIBLE URINAL FLOOR CLEARANCE
(WHEN PRIVACY SCREENS DO NOT PROJECT BEYOND FIXTURE FRONT EDGE)

ACCESSIBLE URINAL FLOOR CLEARANCE
(WHEN PRIVACY SCREENS PROJECT BEYOND FIXTURE FRONT EDGE)

STANDARD STALL

STANDARD STALL
(END OF ROW)



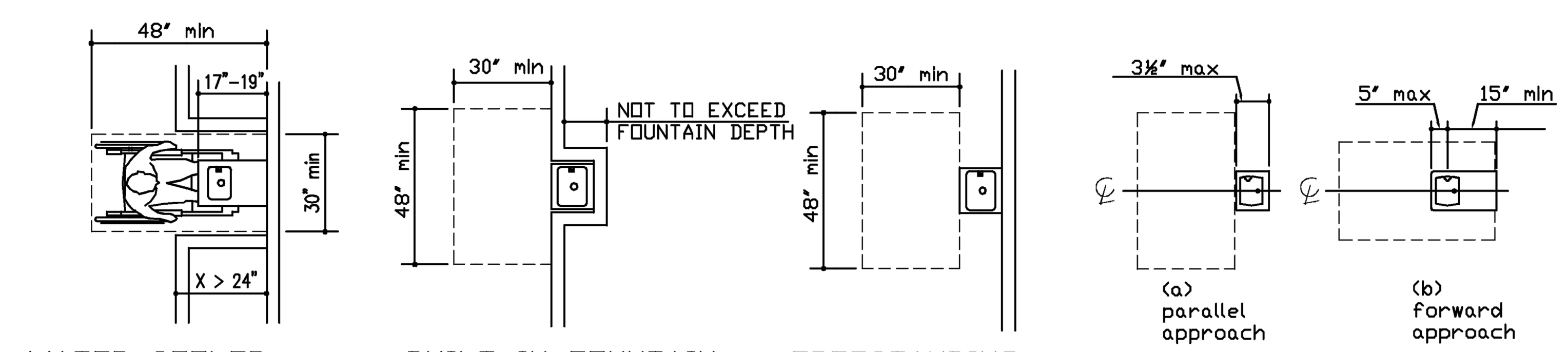
BACK WALL GRAB BARS AT WATER CLOSETS

SIDE WALL GRAB BARS AT WATER CLOSETS

SIDE WALL ACCESSIBLE WALL HUNG URINAL

below grab bar   above grab bar

TOILET PAPER DISPENSER LOCATION

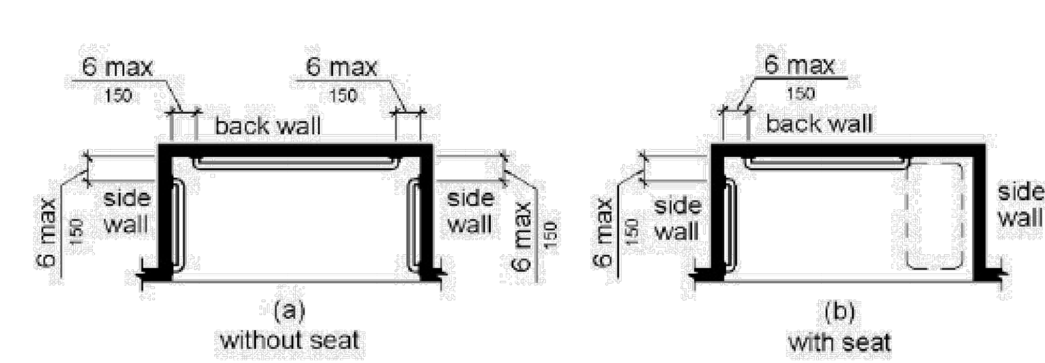


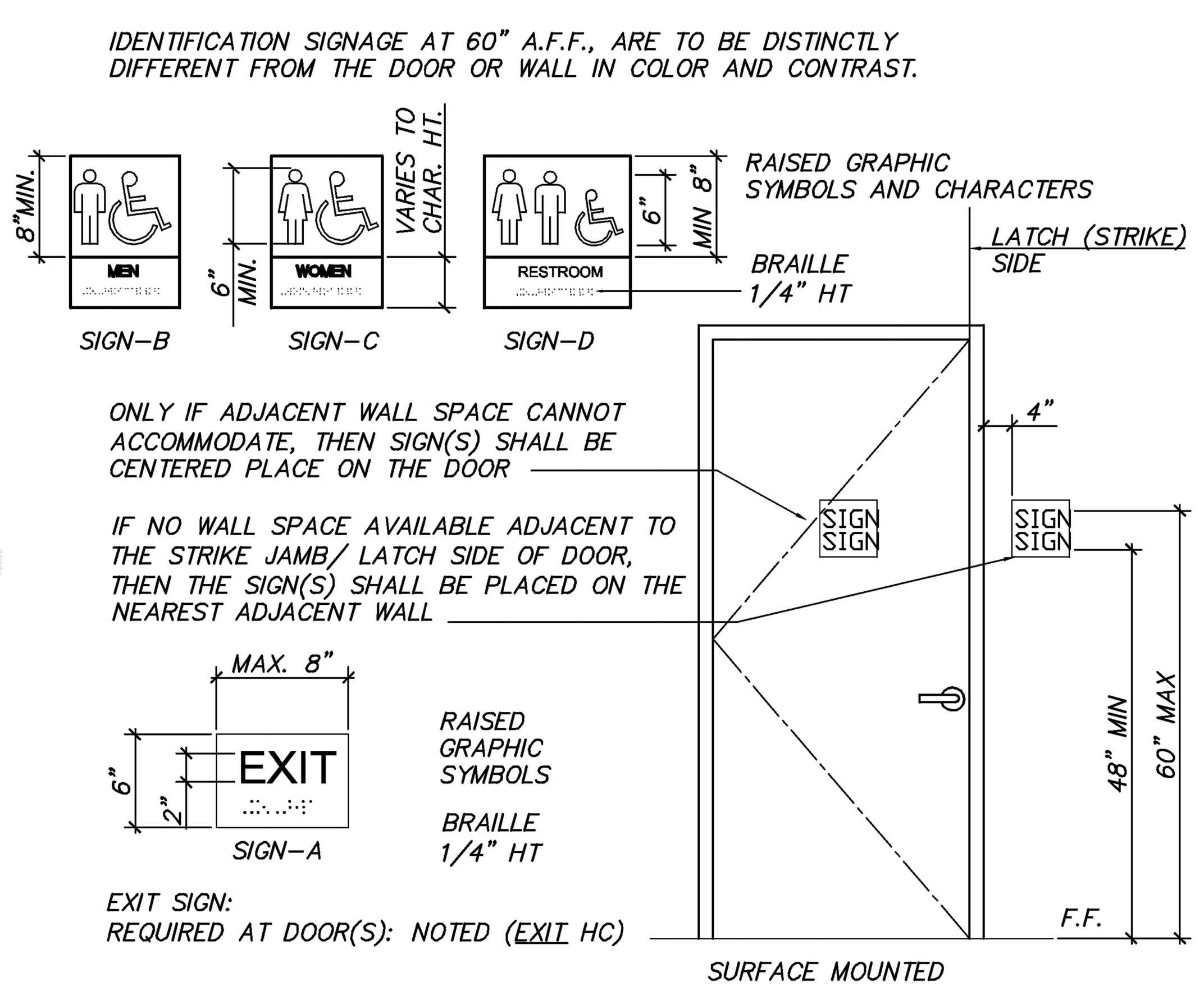
WATER COOLER CLEAR FLOOR SPACE

BUILT-IN FOUNTAIN OR COOLER

FREESTANDING FOUNTAIN OR COOLER

DRINKING FOUNTAIN SPOUT LOCATION





1 **Accessibility Details and Requirements**
SCALE 1 1/2"= 1'-0"

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Richard Steven Redfoot — Registered Architect — 9231 — Graham
6 JUNE 2024
ARCHITECT'S STAMP

No	Rev./Submissions	Date
	PERMIT	06/06/24

SCALE: AS NOTED	PROJECT NO: 240407
DESIGNED: RSR	DATE: 6 JUNE 24
DRAWN: RSR	CHECKED: RSR

DRAWINGS: ADA DETAILS

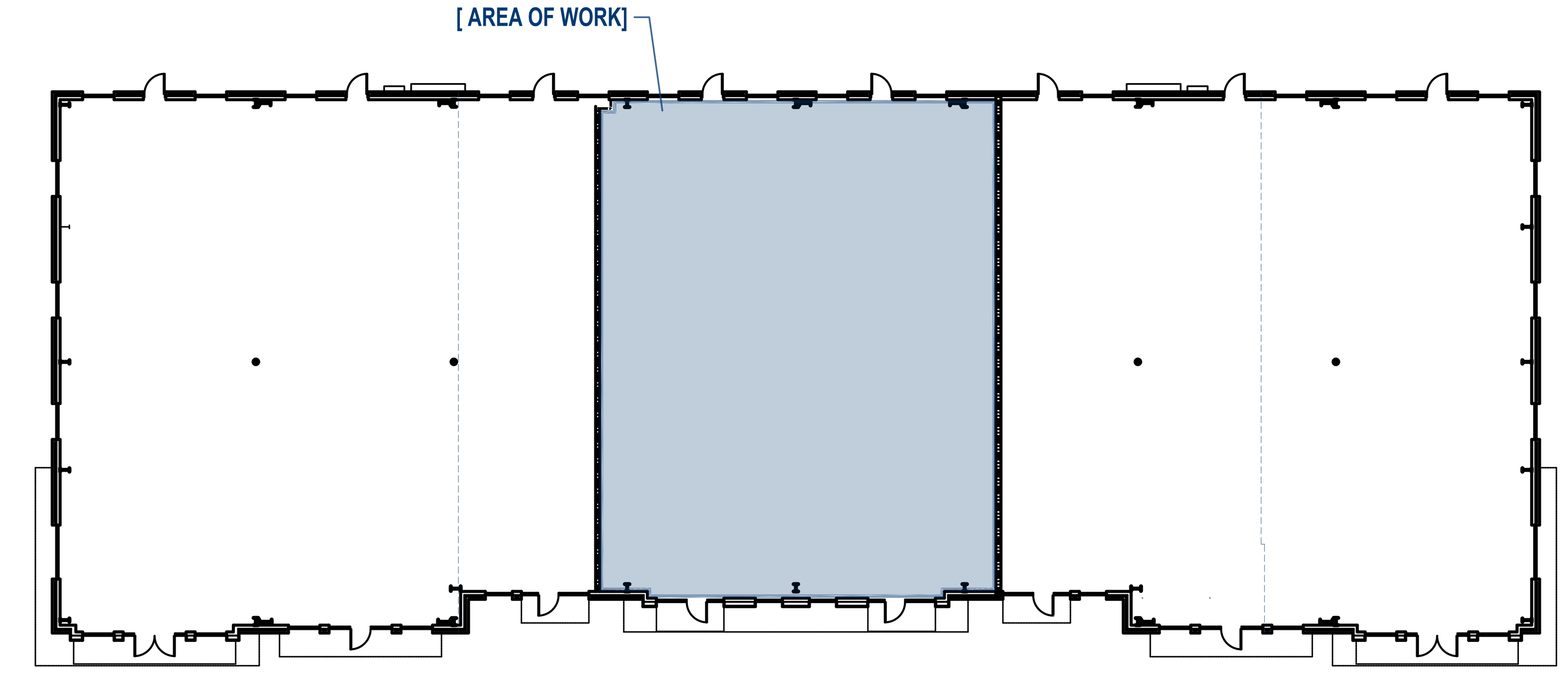
DRAWING NO: A0.1

2 **Floor Plan**
SCALE 1/4" = 1'-0"
PROJECT NORTH

CONSTRUCTION NOTES:

- C1 EXISTING INSULATED EXTERIOR WALL TO REMAIN, PROVIDE GYPSUM WALLBOARD ON INTERIOR SIDE TO DECK ABOVE, TYPICAL
- C2A EXISTING 1-HOUR FIRE-RATED DEMISING WALL TO REMAIN, ANY WORK TO WALL PER UL U419, SEE 1/A0.0, TYPICAL
- C2B EXISTING 2-HOUR FIRE-RATED DEMISING WALL TO REMAIN, ANY WORK TO WALL PER UL U419, SEE 1/A0.0, TYPICAL
- C3 EXISTING STOREFRONT WINDOW OR ENTRY ASSEMBLY TO REMAIN, CASE OPENING W/ GYPSUM WALLBOARD; REMOVE EXISTING BLINDS. ALL EXTERIOR WINDOWS SHALL HAVE REFLECTIVE TINT APPLIED. THE FOLLOWING ARE THE (2) APPROVED TINT PRODUCTS FOR THESE WINDOWS:
  A. JOHNSON WINDOW FILM NIGHTSHADE 05 AND
  B. LLUMAR DUAL REFLECTIVE SERIES DR15
- C4 EXISTING HOLLOW METAL DOOR AND FRAME ASSEMBLY TO BE CLOSED OFF WITH NON-OPERABLE HARDWARE
- C5 EXISTING STEEL COLUMN(S) TO REMAIN, ENCASE THE COLUMN W/ FRAMING AND GYPSUM WALLBOARD, KEEP ENCLOSURE AS CLOSE TO COLUMN AS FEASIBILE
- C6 EXISTING DOOR ASSEMBLY TO REMAIN
- C7 PROVIDE NEW INTERIOR 3-5/8" METAL STUD WALL, SEE 1/A3.0, TYPICAL WHERE SHOWN THUS
- C8 PROVIDE NEW INTERIOR 6" METAL STUD WALL, SIMILAR TO 1/A3.0
- C9 PROVIDE NEW OBSERVATION WINDOW: TEMPERED GLASS, ONE-WAY VISIBILITY FROM THE PARENT CONSULT ROOM INTO THE OBSERVATION ROOM, WITH NO VISIBILITY FROM THE OBSERVATION ROOM INTO THE PARENT CONSULT ROOM; WINDOW TO BE 3'-0" W X 3'-0" H, WITH SILL OF WINDOW AT 3'-6" AFF, THE APPROVED TINT PRODUCT FOR THE WINDOW IS LLUMAR REFLECTIVE SERIES RN07
- C10 PROVIDE NEW FRAMELESS MEDICAL SLIDING TEMPERED GLASS WINDOW; WINDOW TO BE 6'-6" W X 4'-0" H, WITH SILL OF WINDOW AT 2'-10" AFF MAX.
- C11 PROVIDE JANITOR MOP SINK, SEE PLUMBING DRAWINGS
- C12 COORDINATE LAVATORY TYPE WITH OWNER
- C13 ACCESSIBLE HIGH-LOW DRINKING FOUNTAINS, SEE PLUMBING AND ELECTRICAL DRAWINGS
- C14 INSTALL OWNER SUPPLIED ACCESS CONTROL SYSTEM TO EXISTING DOOR
- C15 REFRIGERATOR, SUPPLIED BY OWNER AND INSTALLED BY CONTRACTOR
- C16 DISHWASHER, SUPPLIED BY OWNER AND INSTALLED BY CONTRACTOR
- C17 ALIGN FINISHED FACE OF NEW WALLS
- C18 ALIGN FINISHED FACE OF NEW WALLS WITH FINISHED EDGE OF EXISTING WALL
- C19 MAINTAIN 18" CLEAR ON PULL SIDE OF DOOR
- C20 LINE OF BULKHEADS OR CEILING FEATURE, ABOVE, SEE REFLECTED CEILING PLAN, TYPICAL U.O.N.
- C21 EXTEND WALL TO EXISTING STOREFRONT MULLION, SEE 2/A3.0
- C22 STAFF LOUNGE CABINETS, COUNTERTOP AT 34" AFF, SIDE APPROACH ACCESSIBLE SINK WITH ACCESSIBLE FIXTURE, SEE 3/A3.0
- C23 MULTI-PURPOSE SAFE ROOM CABINETS, SEE 4/A3.0

FLOOR PLAN NOTES:
1. COORDINATE SELECTION OF ALL FINISHES AND COLORS WITH OWNER.
2. DIMENSIONS ARE TO FACE OF FRAMING EXCEPT AT DEMISING WALLS DIMENSIONS ARE TO FACE OF GYPSUM WALLBOARD.
3. 5/8" GYPSUM WALLBOARD, TYPICAL EXCEPT 5/8" GREENBOARD AT WET LOCATIONS.
4. PROVIDE GYPSUM WALLBOARD TO DECK ABOVE AT ALL EXTERIOR AND DEMISING WALLS.
5. PROVIDE TRANSITION STRIPS BETWEEN DIFFERENT FLOORING MATERIALS.
6. COORDINATE DESIGN OF ALL CABINETRY AND CASEWORK W/ OWNER. PROVIDE CABINETRY SHOP DRAWINGS FOR OWNER REVIEW.
7. ALL 3-5/8" STUD WALLS TO BE INSULATED WITH R-11 BATT INSULATION. ALL 6" METAL STUD WALLS TO BE INSULTED WITH R-19 BATT INSULATION.
8. PROVIDE TYPE 2A 10BC FIRE EXTINGUISHER AS REQUIRED FOR MAX. 75' TRAVEL DISTANCE TO EXTINGUISHER FROM ANYWHERE IN OFFICE. VERIFY FINAL LOCATION AND NUMBER OF FIRE EXTINGUISHERS WITH FIRE MARSHAL.
9. PROVIDE BLOCKING AS REQUIRED FOR ALL CABINETRY, EQUIPMENT, AND CASEWORK. PROVIDE CONTINUOUS BLOCKING FROM FLOOR TO CEILING AT ALL ADJUSTABLE SHELVING LOCATIONS.
10. INSTALL A DELAYED EGRESS BAR ON ALL DOORS WITH CLIENT ACCESS TO THE EXTERIOR. CONTRACTOR SHALL VERIFY WITH THE AUTHORITY HAVING JURISDICTION FOR ALLOWABLE MODIFICATIONS TO DOORS.
11. PROVIDE VISION KIT ON ALL DOORS, EXCEPT UNI-SEX TOILET ROOMS, STORAGE ROOMS, AND THE MECHANICAL / I.T. ROOM.
12. AT RECEPTION PROVIDE BUZZER DOOR ACCESS CONTROL FOR EXTERIOR DOOR.
13. THE SPACE CURRENTLY HAS A RIBBON SLAB AROUND THE PERIMETER AND NO OTHER EXISTING CONCRETE SLAB. WHERE NEW CONCRETE SLAB IS POURED PROVIDE #5 REBAR DOWELS @24" O.C. EMBEDDED 6" MIN. INTO EXISTING SLAB AND PROJECTING 6" MIN. FROM EXISTING SLAB. CONCRETE TO BE 3000 PSI MINIMUM, MATCH THICKNESS OF EXISTING SLAB. PROVIDE WWF MESH AND/OR MESH FIBER REINFORCING.



1 **Key Plan**
NOT TO SCALE
PROJECT NORTH

THE REDFOOT STUDIO ARCHITECTURE PC
2515 SAXAPAHAW BETHLEHEM CHURCH ROAD
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CAMERON, NORTH CAROLINA

The Redfoot Studio Architecture, P.C. — 51430 — Graham, NC
CORPORATE STAMP

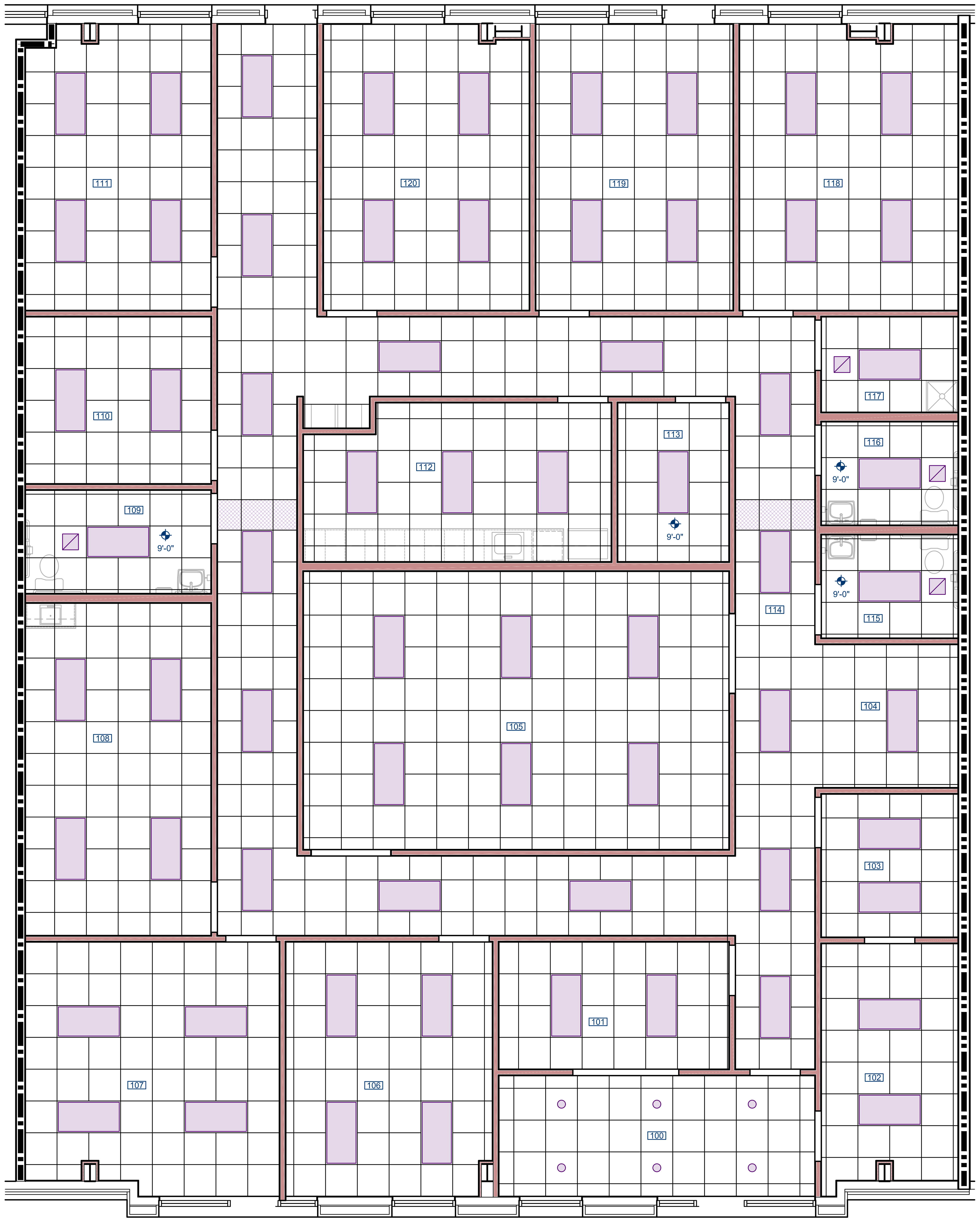
RICHARD STEVEN REDFOOT — REGISTERED ARCHITECT — 9231 — NORTH CAROLINA — GRAHAM
6 JUNE 2024
ARCHITECT'S STAMP

No	Rev./Submissions	Date
	PERMIT	06/06/24

SCALE	PROJECT NO
AS NOTED	240407
DESIGNED	**DATE**
RSR	6 JUNE 24
DRAWN	**CHECKED**
RSR	RSR

DRAWINGS
KEY PLAN AND FLOOR PLAN

DRAWING NO
A1.0



REFLECTED CEILING PLAN NOTES:
1. CEILING HEIGHT TO BE 10'-0" AFF, TYPICAL U.O.N.
2. SEE ELECTRICAL AND MECHANICAL DRAWINGS FOR ADDITIONAL NOTES AND INFORMATION.
3. BATH FANS AND LIGHTS SWITCHED SEPARATELY.
4. ALL LIGHTS ON DIMMER SWITCHES.

3 Reflected Ceiling Plan

SCALE 1/4" = 1'-0"

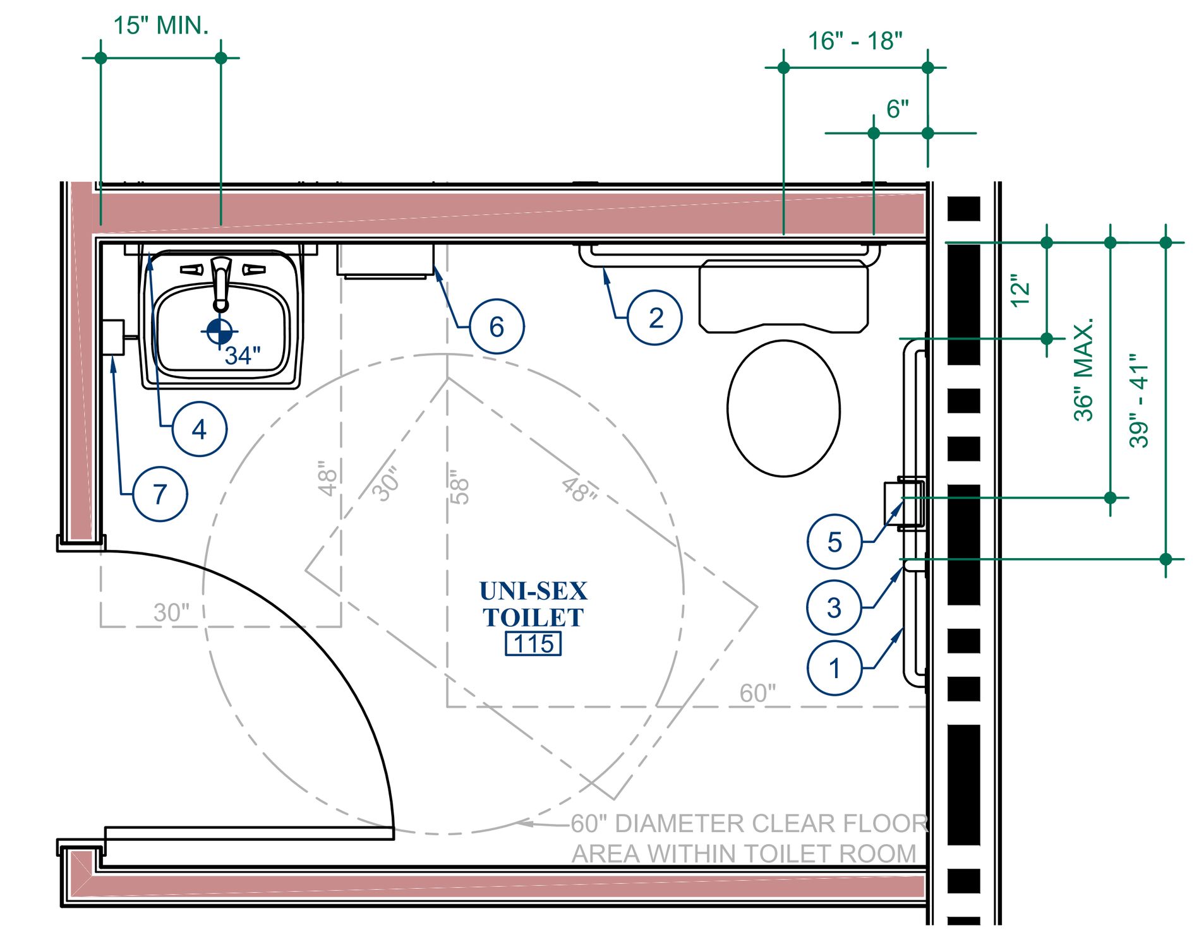
PROJECT NORTH

Legend	
	CEILING TILE CUT TO SIZE
	2X4 LED FLAT PANEL
	RECESSED CAN LIGHT
	EXHAUST FAN

Toilet Accessory Schedule

1	42" GRAB BAR, CENTERLINE OF GRAB BAR AT 34" A.F.F.
2	36" GRAB BAR, CENTERLINE OF GRAB BAR AT 34" A.F.F.
3	18" VERTICAL GRAB BAR, BOTTOM OF GRAB BAR AT 39"-41" A.F.F.
4	18" x 36" STAINLESS STEEL MIRROR, BOTTOM EDGE OF MIRROR 40" AFF, MAX.
5	TOILET PAPER DISPENSER, 19" AFF MIN. TO CENTERLINE OF TOILET PAPER ROLL
6	PAPER TOWEL DISPENSER, 48" AFF MAX. TO TOWEL DISPENSER SLOT OR OPERATING MECHANISM
7	SOAP DISPENSER, 48" AFF MAX. TO DISPENSER

SCHEDULE NOTES:
1. ALL FIXTURES AND TOILET ACCESSORIES TO MEET ADA REQUIREMENTS AND BE INSTALLED PER ADA GUIDELINES.
2. PROVIDE BLOCKING IN WALLS AS REQUIRED TO INSTALL ALL TOILET ACCESSORIES.

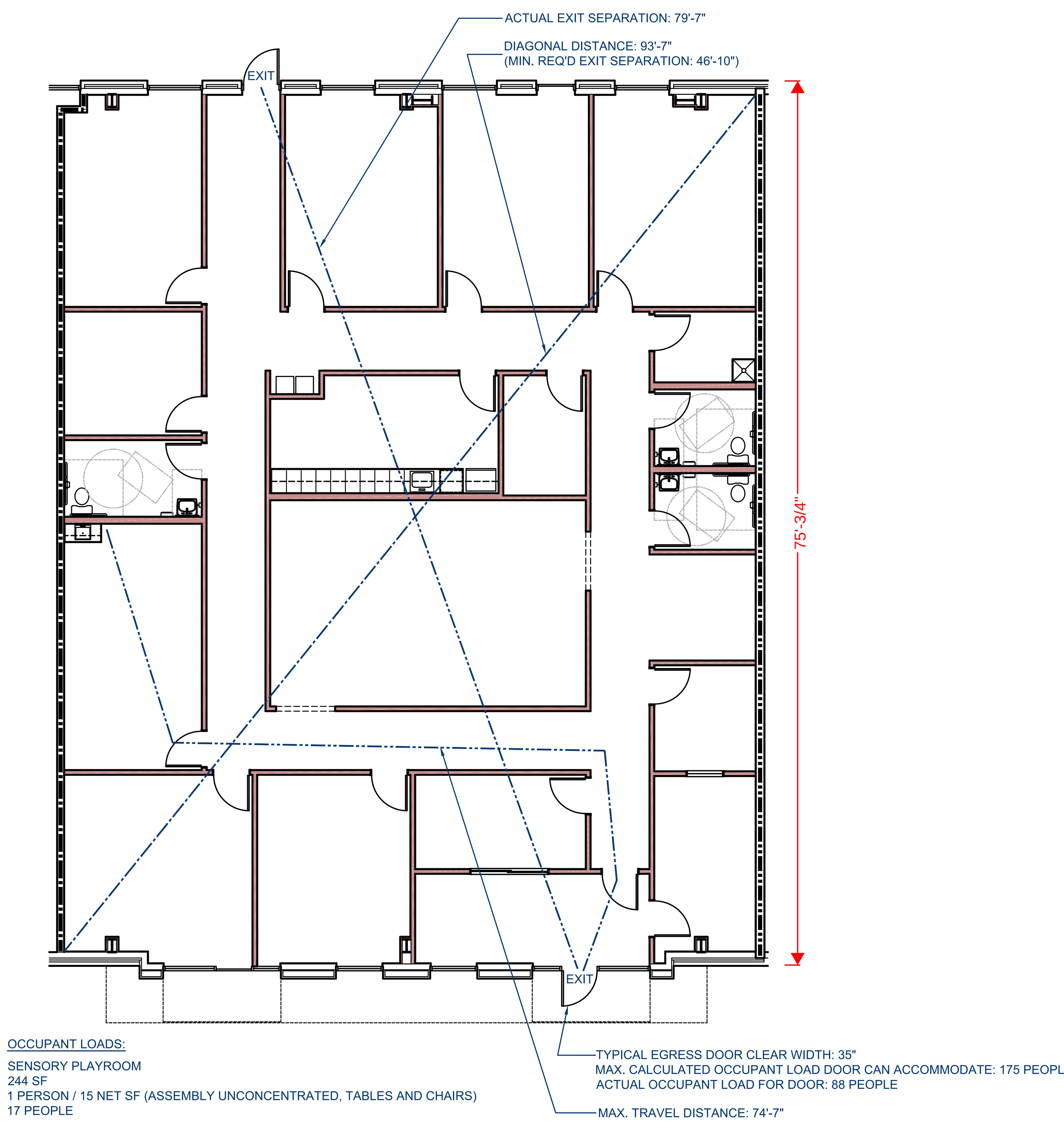


TOILET PLAN NOTES:
1. PROVIDE ALL BLOCKING REQUIRED FOR GRAB BARS AND OTHER ACCESSORIES.
2. UNI-SEX TOILET 115 IS SHOWN, ALL OTHER TOILET ROOMS ARE SIMILAR.

1 Enlarged Toilet Plan

SCALE 1/2" = 1'-0"

PROJECT NORTH



OCCUPANT LOADS:

SENSORY PLAYROOM
244 SF
1 PERSON / 15 NET SF (ASSEMBLY UNCONCENTRATED, TABLES AND CHAIRS)
17 PEOPLE

SENSORY PLAYROOM
469 SF
1 PERSON / 35 NET SF (EXERCISE ROOM WITHOUT EQUIPMENT)
14 PEOPLE

BUSINESS
3,445 SF
1 PERSON / 100 GROSS SF
35 PEOPLE

WAITING
151 SF
1 PERSON / 7 NET SF (ASSEMBLY, CONCENTRATED, CHAIRS ONLY)
22 PEOPLE

GROSS SF/PERSON = 88 PEOPLE

2 Life Safety Plan

SCALE 1/8" = 1'-0"

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RICHARD STEVEN REDFOOT
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9231
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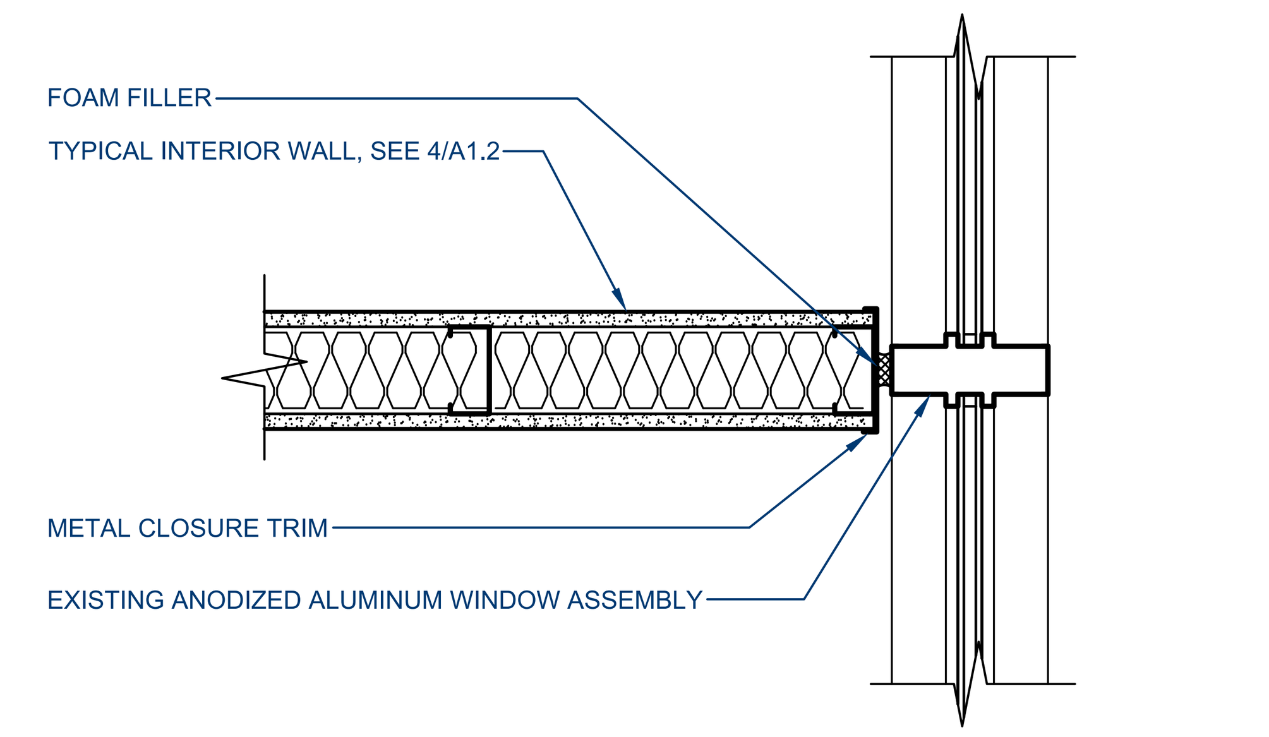
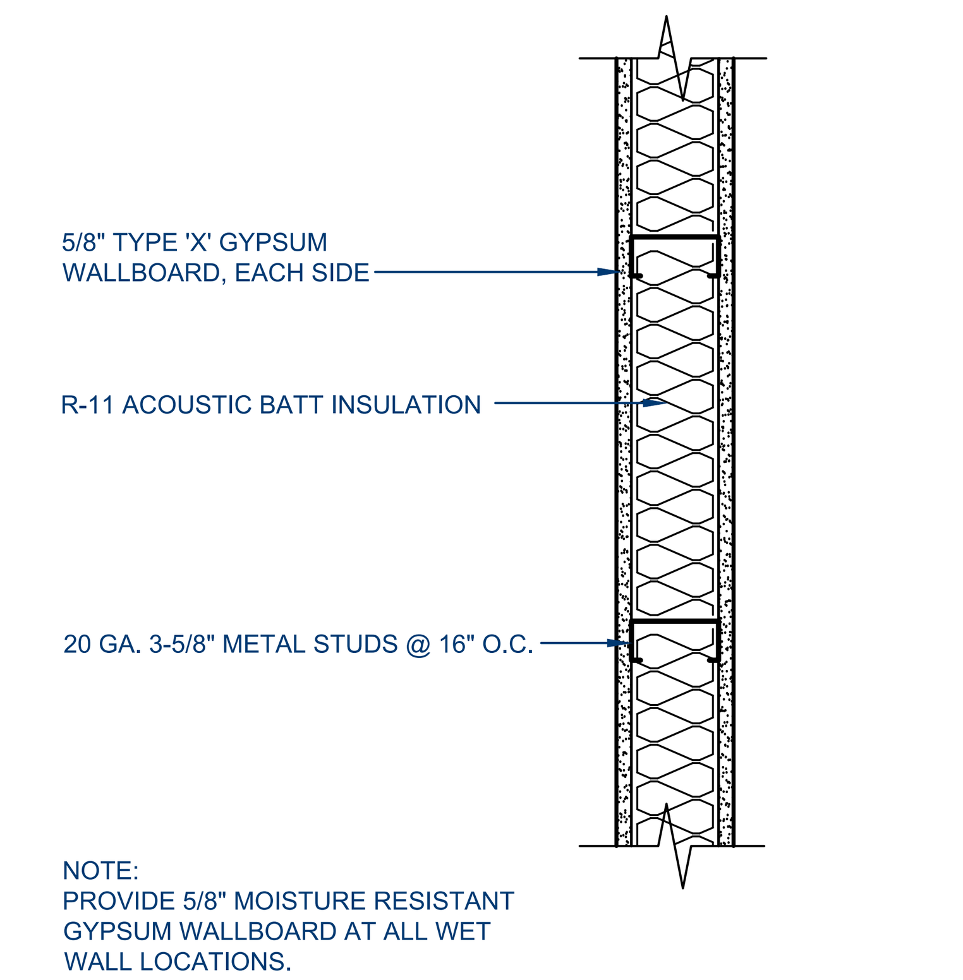
DESIGNED: RSR	DATE: 6 JUNE 24
DRAWN: RSR	CHECKED: RSR

DRAWINGS
CEILING, TOILET, AND LIFE SAFETY PLANS

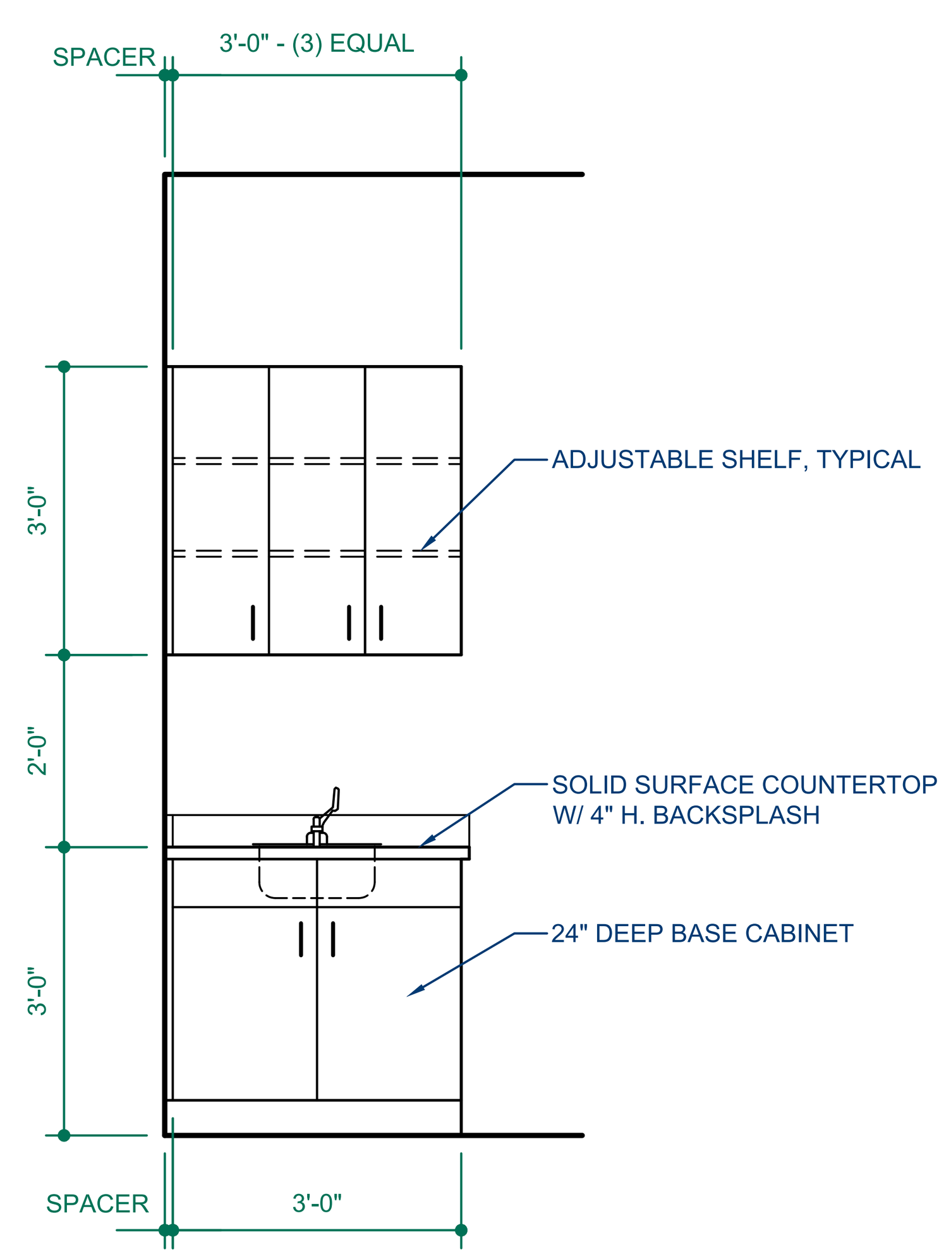
DRAWING NO
A2.0



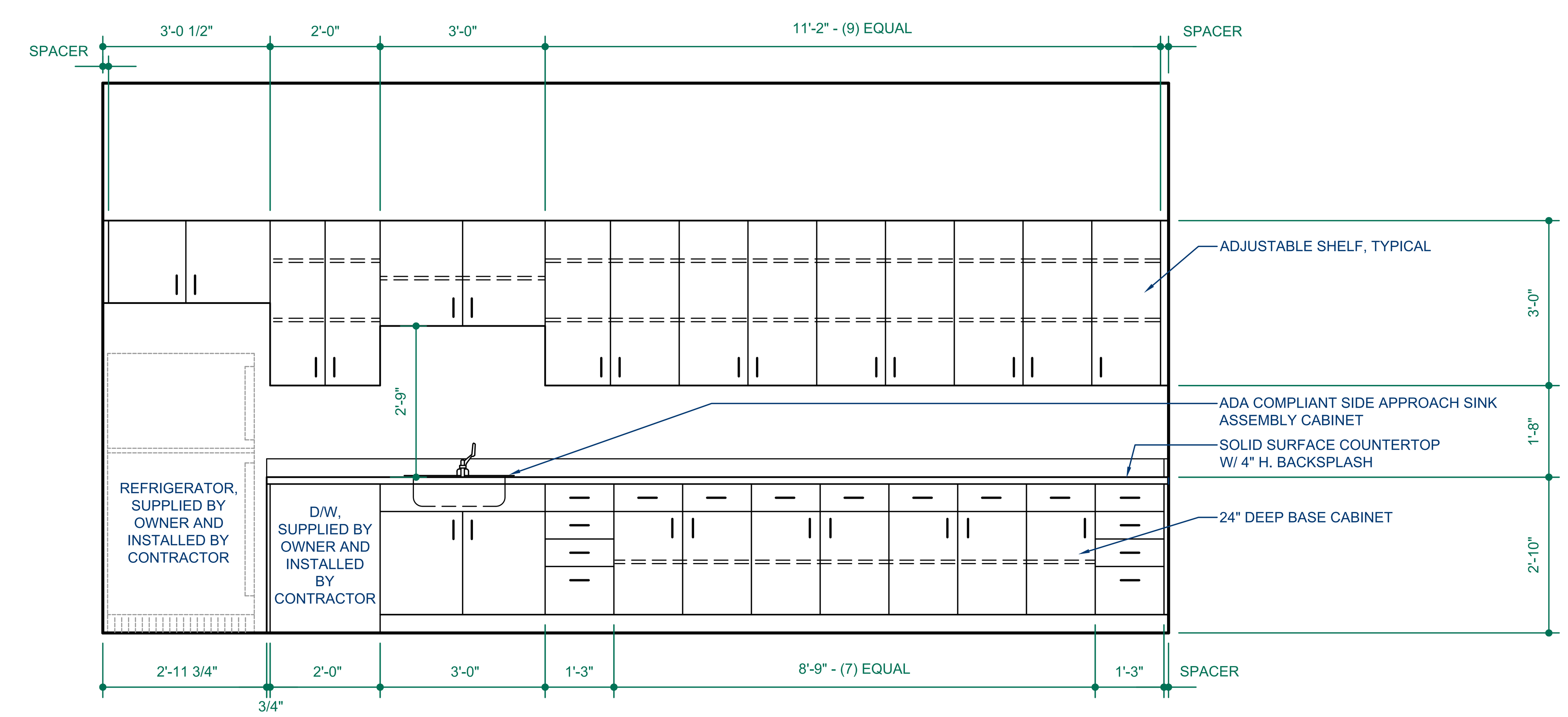
2 **Mullion / Wall Connection**
SCALE 1 1/2"= 1'-0"



1 **Interior Wall**
SCALE 1 1/2" = 1'-0"



4 **Multi-Purpose Safe Room**
SCALE 1/2" = 1'-0"



3 **Break Room**
SCALE 1/2" = 1'-0"

CABINET NOTES:
1. PROVIDE SHOP DRAWINGS FOR OWNER REVIEW OF ALL CABINETS AND CASEWORK.
2. PLASTIC LAMINATE FINISH FOR CABINET EXTERIOR FROM MANUFACTURER'S STANDARD COLORS. WHITE MELAMINE FINISH AT INTERIOR OF ALL CABINETS.
3. ALL COUNTERTOPS PLASTIC LAMINATE. PROVIDE ALTERNATE FOR LEVEL 2 SOLID SURFACE OR LEVEL 2 GRANITE FOR RECEPTION TRANSACTION COUNTER.
4. ALL CABINET HARDWARE TO BE COMMERCIAL GRADE HARDWARE TO BE SELECTED BY OWNER.

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DRAWINGS
DETAILS & CABINETS

DRAWING NO
A3.0

PLUMBING FIXTURE SCHEDULE						
SYMBOL	FIXTURE	MANUFACTURER	FITTING	HW	CW	WASTE
P1	TWO PIECE TANK TYPE ADA WATER CLOSET	TOTO CST744EL OR EQUAL BY AMERICAN STANDARD OR KOHLER	TWO-PIECE VITREOUS CHINA TOILET WITH HIGH-PROFILE TANK, ELONGATED FRONT BOWL AND CHROME TRIP LEVER. 1.28 GPF. PROVIDE SC534 OPEN FRONT SEAT LESS COVER. ASME 112.19.2 COMPLIANCE. TOP OF SEAT SHALL BE 17-19 INCHES AFF FOR ADA. LEVER MOUNTED ON WIDE SIDE FOR ADA	-	1/2"	3"
P2A	WALL MOUNT LAVATORY	NAMEEKS PINTO CERASTYLE 080000-U	FAUCET: MOEN EDGESTONE 46103	1/2"	1/2"	2"
P2B	SINK SINGLE BOWL	ELKAY LRADQ2521551 OR EQUAL BY FRANKE, JUST OR MOEN	TOP MOUNTED 18 GA STAINLESS STEEL. MAX BOWL DEPTH 6 INCHES FOR WHEEL CHAIR ACCESSIBLITY-USE ELKAY FAUCET SET LKHA1041 OR EQUAL BY MOEN, DELTA OR KOHLER.	1/2"	1/2"	2"
P2C	SINK LARGE SINGLE BOWL	ELKAY LRADQ3122551 OR EQUAL BY FRANKE, JUST OR MOEN	TOP MOUNTED 18 GA STAINLESS STEEL. MAX BOWL DEPTH 6 INCHES FOR WHEEL CHAIR ACCESSIBLITY-USE ELKAY FAUCET SET LKHA1041 OR EQUAL BY MOEN, DELTA OR KOHLER.	1/2"	1/2"	2"
P3	MOP SINK	FIAT MSB2424 OR EQUAL BY FLORESTONE OR STERN WILLIAMS	OUTSIDE DIMENSIONS OF 24X24X10. 10 INCH HIGH WALLS WITH NOT LESS THAN 1 INCH WIDE. STAINLESS STEEL DRAIN BODY DESIGNED TO PROVIDE FOR A CAULK CONNECTION OR QDC-3 JOINT TO A 3 INCH DRAIN PIPE. INCLUDE A COMBINATION DOME STRAINER AND LINT BASKET OF STAINLESS STEEL. PROVIDE 830-AA CHROME PLATED SERVICE FAUCET WITH VACUUM BREAKER, INTEGRAL STOPS, ADJUSTABLE WALL BRACE, PAIL HOOK AND 3/4 INCH HOSE THREAD ON SPOUT.	1/2"	1/2"	3"
P4	DRINKING FOUNTAIN	ELKAY EZH2O LZSTL8WSSP	ADA COMPLIANT FOR ADULT AND CHILD, 8.0 GPH OF 50°F WATER @ 90°F AMBIENT, PROVIDE ACCESSORY APRON FOR ADA COMPLIANCE AS NECESSARY - WITH BOTTLE REFILLING STATION.	-	3/8"	2"
P5	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"	-
DCV	1" DOUBLE CHECK VALVE	WATTS 007M1QT OR EQUAL BY CONBRACO OR WILKINS	ASSEMBLY SHALL CONSIST OF TWO POSITIVE SEATING CHECK MODULES WITH CAPTURED SPRINGS AND RUBBER SEAT DISCS. THE CHECK MODULE SEATS AND SEAT DISCS SHALL BE REPLACEABLE. SERVICE OF ALL INTERNAL COMPONENTS SHALL BE THROUGH A SINGLE ACCESS COVER SECURED WITH STAINLESS STEEL BOLTS. THE ASSEMBLY SHALL ALSO INCLUDE TWO RESILIENT SEATED ISOLATION VALVES; FOUR TOP MOUNTED, RESILIENT SEATED TEST COCKS. ASSEMBLY SHALL MEET THE REQUIREMENTS OF ASSE 1015 AND AWWA C510	-	1"	-
XT	EXPANSION TANK	AMTROL ST-5 OR EQUAL BY WATTS OR BELL & GOSSETT	INSTALL ON COLD WATER LINE BETWEEN WATER HEATER AND RPZ	-	3/4"	-
TMV	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"	-
RP-1	HOT WATER RE-CIRCULATION PUMP	GRUNDFOS MODEL UP15-10B7 ATLC,	2 GPM AT 2.5 FT. HEAD WITH LINE CORD, TIMER AND AQUASTAT AND CHECK VALVE.	3/4"	3/4"	-
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"

PLUMBING LINES SIZING TABLE									
FIXTURE TYPE	OCCUPANCY	QTY	DRAINAGE FIXTURE UNITS		WATER SUPPLY FIXTURE UNITS				
			EACH	TOTAL	CW	HW	CW & HW	HW TOTAL	TOTAL
WATER CLOSET (FLUSH TANK)	PUBLIC	3	4.00	12.00	5.00	0.00	5.00	0.00	15.00
LAVATORY	PUBLIC	5	1.00	5.00	1.50	1.50	2.00	7.50	10.00
DRINKING FOUNTAIN	PUBLIC	1	0.50	0.50	0.25	0.00	0.25	0.00	0.25
MOP SINK	PUBLIC	1	2.00	2.00	2.25	2.25	3.00	2.25	3.00
DEMAND FIXTURE	GPM	QTY	TOTAL GPM	TOTAL DFU				19.5	
KITCHEN DISHWASHER	2	1	2.00	TOTAL WFSUs				9.8	28.3
				GPM				14.60	22.00
				OTHER FIXTURES' GPM				0.00	0.00
				TOTAL GPM				14.60	22.00
MINIMUM BUILDING DRAIN SIZE	4"								
MINIMUM WATER LINE SIZE	1"								

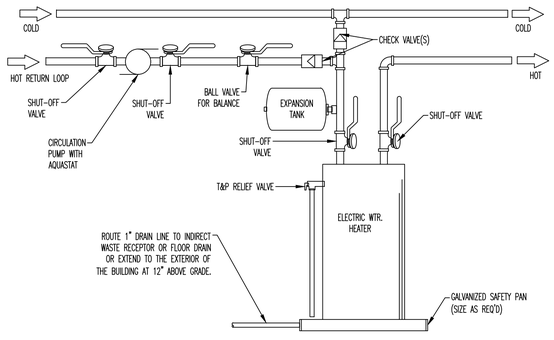
DO NOT TAP WATER LINE AHEAD OF RPZ.

LINETYPE LEGEND	
140 D HOT WATER RECIRCULATING	—— · —— · —— · ——
140 D HOT WATER RETURN	——— · · · ——— · · · ———
COLD WATER SUPPLY	— – —— – —— – —— – —
HOT WATER SUPPLY	——— · · —— · · ———
GREASE LADEN LINE	— — · — — · — — · —
SANITARY SEWER LINE	—— – – —— – – ——
VENT LINE	– – – – – – – – – – – – –

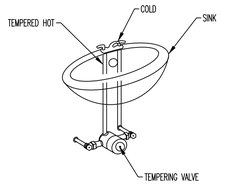
ELECTRIC WATER HEATER SCHEDULE											
MARK	MFG	MODEL	TANK VOL	INPUT	RECOVERY	SET POINT	POWER		CONNECTIONS		OPTIONS
			GALS	kW	GPH @ 90° ΔT	°F	VOLTAGE	PHASE	HOT	COLD	
WH-1	RHEEM	PROE20	19.9	2	9	110	120	1	3/4	3/4	1-5

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 RHEEM, BRADFORD WHITE, OR STATE

PLUMBING SCHEDULES 1



HOT WATER CIRCUL. LOOP ELECTRIC WH DETAIL - NO SCALE 2



THERMOSTATIC MIXING VALVE DETAIL - NO SCALE 3

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. 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.

METHODS:

1. EXTEND DOMESTIC WATER PIPE 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 AS INDICATED 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 917 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.

PLUMBING NOTES 4

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SEAL 048012
JACOB L. HAMILTON
06.06.2024
SEAL

SEAL

UPFIT
BLUE SPRIG
2287 NC 24-87 HWY., CAMERON, NORTH CAROLINA 28326

REVISION:

ISSUED:
06/06/2024 ISSUED FOR PERMITTING/CONSTRUCTION

DRAWN BY: CAT
CHECKED BY: JLH

GENERAL PLUMBING NOTES & SCHEDULES

SHEET NO.
P1

PROJECT NO: 240359

WASTE PLAN HEX NOTES

1. CONNECT DISHWASHER DRAIN TO SINK DRAIN LINE

WASTE PLAN GENERAL NOTES

1. PC TO CONFIRM EXISTING SEWER LINE LOCATION, SIZE, AND FLOW DIRECTION PRIOR TO INSTALLATION
2. SEE P1 PLUMBING FIXTURE SCHEDULE FOR BRANCH LINE SIZING

WALL LEGEND

INDICATES EXISTING 1-HOUR RATED FIREWALL.

WASTE PLAN - SCALE- 1/4" = 1'-0" | 1

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06.06.2024 SEAL

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SEAL

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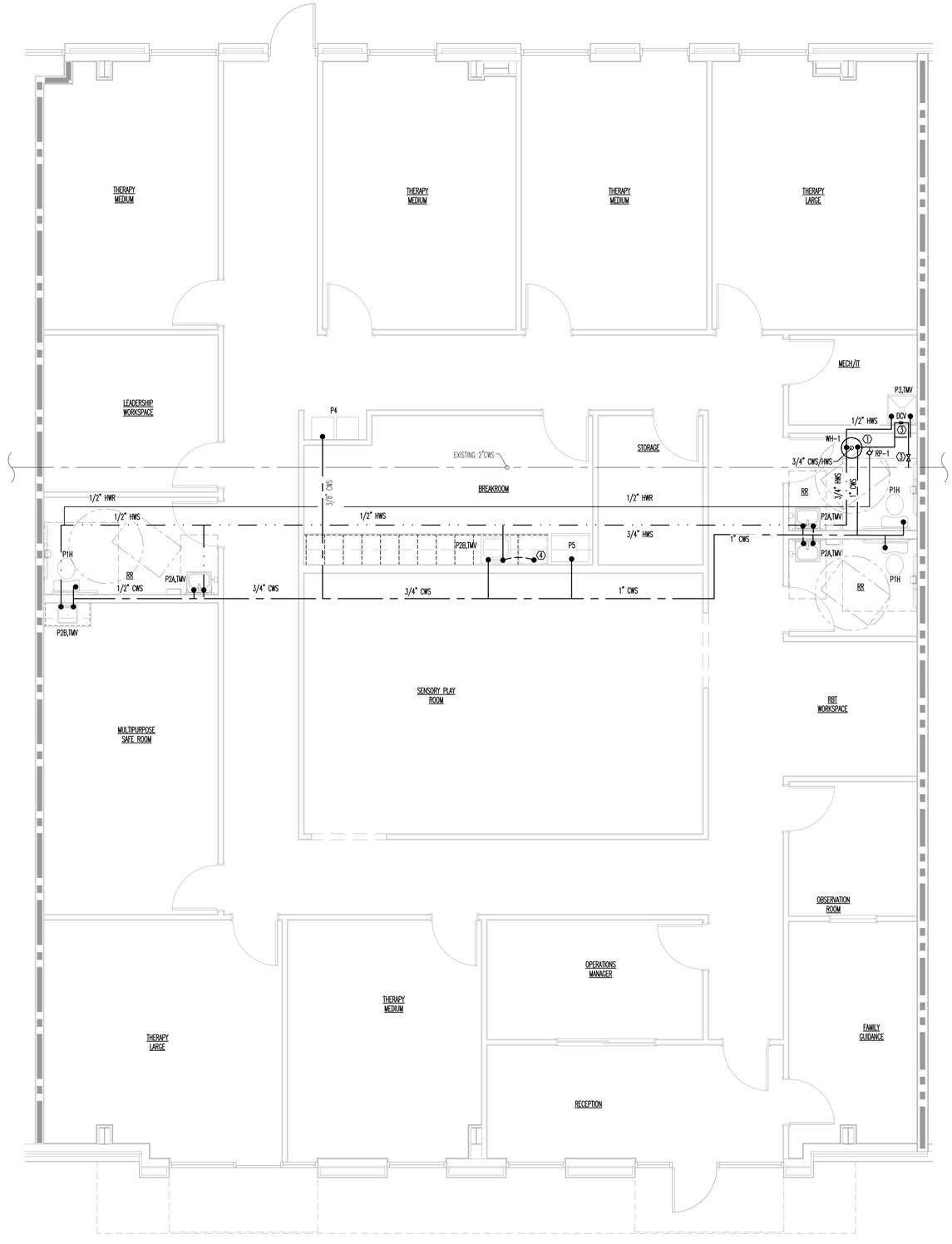
WASTE PLAN

SHEET NO.
P2

PROJECT NO: 240359



SUPPLY PLAN HEX NOTES

1. WH-1 TO BE INSTALLED ABOVE CEILING
2. CONNECT TO EXISTING WATER LINE IN THIS LOCATION
3. DCV TO BE LOCATED ABOVE MOP SINK.
4. CONNECT HWS FOR DISHWASHER TO SINK

SUPPLY PLAN GENERAL NOTES

1. PC TO CONFIRM EXISTING WATER LINE LOCATION AND SIZE PRIOR TO INSTALLATION
2. SEE P1 PLUMBING FIXTURE SCHEDULE FOR BRANCH LINE SIZING

WALL LEGEND

INDICATES EXISTING 1-HOUR RATED FIREWALL.

SUPPLY PLAN - SCALE- 1/4" = 1'-0" | 1

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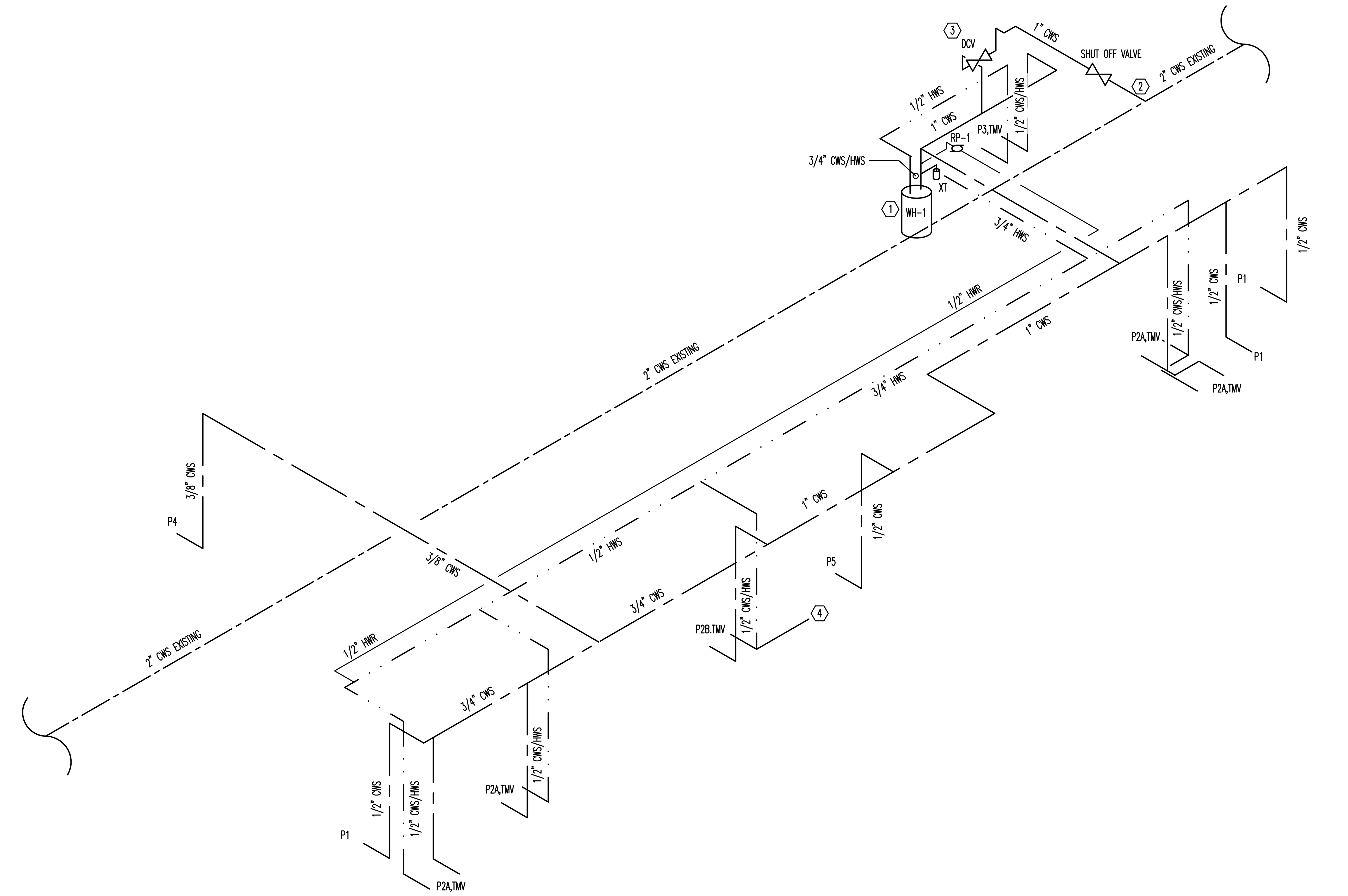
SUPPLY PLAN

SHEET NO.
P3

PROJECT NO: 240359



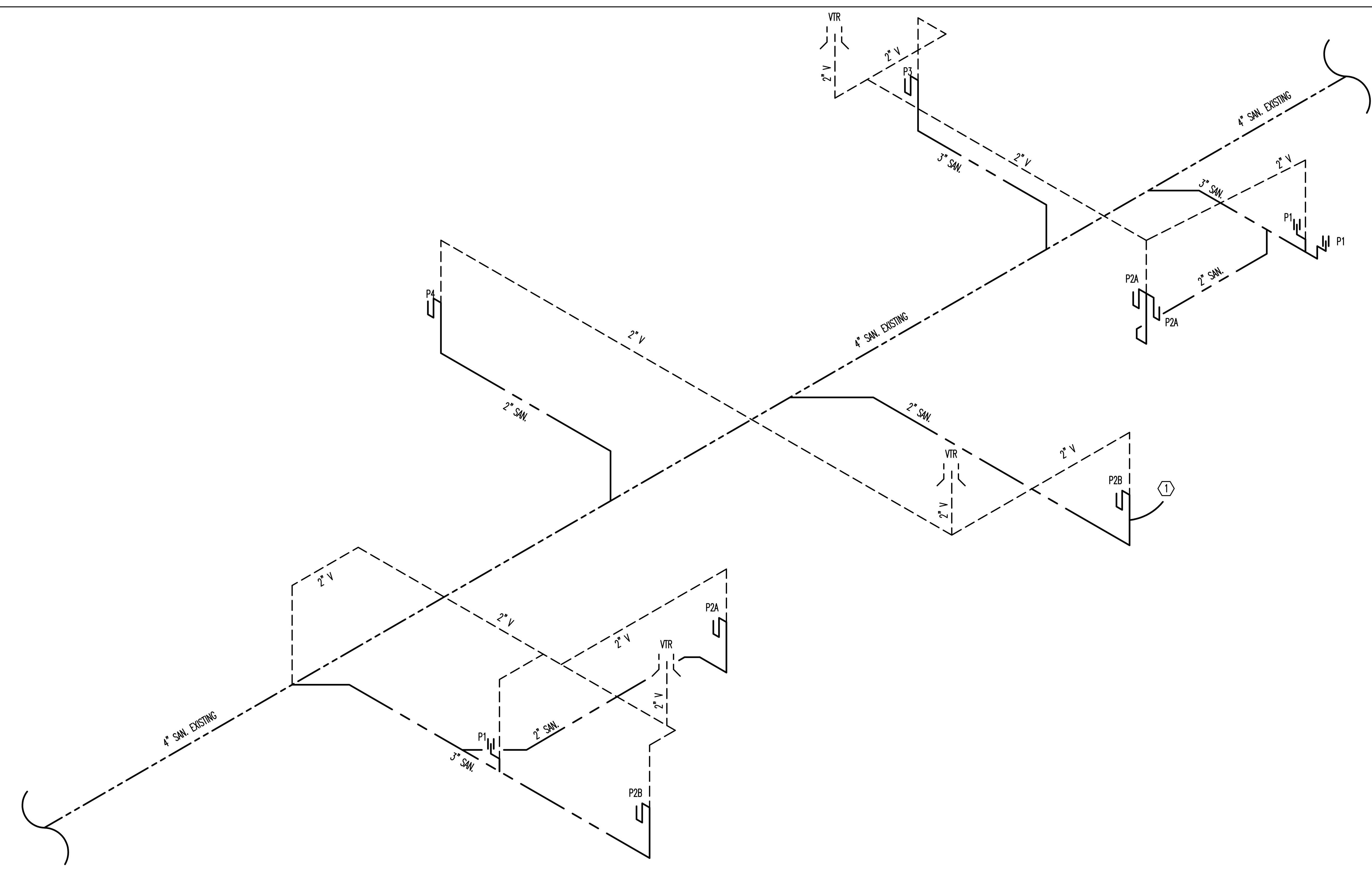
SUPPLY RISER - NOT TO SCALE 1

SUPPLY RISER HEX NOTES

1. WH-1 TO BE INSTALLED ABOVE CEILING
2. CONNECT TO EXISTING WATER LINE IN THIS LOCATION
3. DCV TO BE LOCATED ABOVE MOP SINK
4. CONNECT HWS FOR DISHWASHER TO SINK

SUPPLY RISER GENERAL NOTES

1. PC TO CONFIRM EXISTING WATER LINE LOCATION AND SIZE PRIOR TO INSTALLATION
2. SEE P1 PLUMBING FIXTURE SCHEDULE FOR BRANCH LINE SIZING



WASTE RISER - NOT TO SCALE 2

WASTE RISER HEX NOTES

1. CONNECT DISHWASHER DRAIN TO SINK DRAIN LINE

WASTE PLAN RISER NOTES

1. PC TO CONFIRM EXISTING SEWER LINE LOCATION, SIZE, AND FLOW DIRECTION PRIOR TO INSTALLATION
2. SEE P1 PLUMBING FIXTURE SCHEDULE FOR BRANCH LINE SIZING

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WASTE AND SUPPLY RISERS

SHEET NO.
P4

PROJECT NO: 240359

SPLIT SYSTEM HEAT PUMP SCHEDULE													
MARK	MFG / MODEL #	NOMINAL CAPACITY	REF LINES		MOTORS		EFFICIENCIES		ELECTRICAL			WEIGHT	REMARKS
			GAS	LIQ	COMPRESSOR	COND. FAN	SEER	HSPF	V/PH	MCA	MOCP		
		TONS			NO.	NO.	EER					LBS	
HP-1,2	CARRIER / 25HPB660A003	5	7/8"	3/8"	1	1	16/12.5	8.5	208/1	33.9	50	316	1, 6, 7, 8, 9, 10

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	
AHU-1,2	CARRIER / FV4CNF006L00	5	1975	SEE TABLE	1	.25	36.7	2.88	1	67/80	60	45	208/1	45	60	145	2, 3, 4, 5, 7, 8, 9, 10

1. PROVIDE 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. REPLACE ALL FILTERS AT PROJECT'S COMPLETION
4. PROVIDE 7-DAY PROGRAMMABLE THERMOSTAT WITH NIGHT-TIME SET BACK
5. CONSULT MANUFACTURER ON LINE SET LENGTHS EXCEEDING 60FT
6. PROVIDE HARD START KIT
7. HEATER RATED AT 208V
8. OR EQUAL BY TRANE, LENNOX, DR YORK
9. ANY EQUIPMENT SUBSTITUTIONS MUST EQUAL OR EXCEED EFFICIENCIES LISTED (RATINGS PER ARI)
10. MAINTAIN MANUFACTURER'S RECOMMENDED CLEARANCES

EXHAUST FAN SCHEDULE								
MARK	MFG / MODEL #	TYPE	ESP (in WG)	CFM	VOLT/PH	FLA	SONES	NOTES
EF-1-3	GREENHECK SP-B110	CEILING	0.40	70	120/1	1.14	2.0	1-3
EF-4	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

LOUVER SCHEDULE				
MARK	MFG / MODEL #	TYPE	SIZE	NOTES
LV-1	GREENHECK EAD-635	INTAKE	18X14	1
LV-2	GREENHECK ECD-601	EXHAUST	18X16	1

1. PROVIDE WITH BIRD/INSECT SCREEN.

REGISTER & GRILLE SCHEDULE						
MARK	MFG	MODEL #	SIZE	MOUNTING	DESCRIPTION	NOTES
A	HART & COOLEY	HVS	24X24	LAY-IN	4-WAY DIFFUSER, BRIGHT WHITE	1,2
R	HART & COOLEY	944T	24X24	LAY-IN	STEEL, LAY IN, RETURN GRILLE	1

1. OR EQUAL BY PRICE, METAL-AIRE, CARNES, TITUS OR NAILOR.
2. PROVIDE WITH FOIL LINED, MOLDED INSULATION BLANKET.

Ventilation Calculation (For Unit AHU-1)

Room Name(s)	Zone Type	Area (sq.ft.)	Rp	Ra	Default Occupancy	Pz	Ez	Airflow to Zone (cfm)
RECEPTION	Main Entry/Lobby	151	5	0.06	10	1.51	0.8	200
FAMILY GUIDANCE	Office Space	128	5	0.06	5	0.64	0.8	150
OPERATIONS MANAGER	Office Space	116	5	0.06	5	0.58	0.8	125
THERAPY MEDIUM - FRONT	Office Space	206	5	0.06	5	1.03	0.8	250
THERAPY LARGE - FRONT	Office Space	247	5	0.06	5	1.24	0.8	300
OBSERVATION ROOM	Office Space	77	5	0.06	5	0.39	0.8	100
MULTIPURPOSE SAFE ROOM	Office Space	244	5	0.06	5	1.22	0.8	275
RBT WORKSPACE	Office Space	81	5	0.06	5	0.41	0.8	100
SENSORY PLAY ROOM	Office Space	469	5	0.06	5	2.35	0.8	500
	N/A		0	0	0	0.00	0.8	
	N/A		0	0	0	0.00	0.8	
	N/A		0	0	0	0.00	0.8	
	N/A		0	0	0	0.00	0.8	
	N/A		0	0	0	0.00	0.8	
	N/A		0	0	0	0.00	0.8	

Maximum Zp: 0.103813
Ev: 1
Actual System Population: 20

K-12 School? No

Uncorrected Intake 203 cfm
Outdoor Air Intake *203 cfm*
Percent of Unit Air 10%

Ventilation Calculation (For Unit AHU-2)

Room Name(s)	Zone Type	Area (sq.ft.)	Rp	Ra	Default Occupancy	Pz	Ez	Airflow to Zone (cfm)
RRs	N/A	188	0	0	0	0.00	0.8	150
BREAKROOM	Office Space	185	5	0.06	5	0.93	0.8	225
LEADERSHIP WORKSPACE	Office Space	123	5	0.06	5	0.62	0.8	150
THERAPY MEDIUM (REAR LEFT)	Office Space	206	5	0.06	5	1.03	0.8	250
THERAPY MEDIUM (REAR CENTER)	Office Space	230	5	0.06	5	1.15	0.8	300
THERAPY MEDIUM (REAR RIGHT)	Office Space	224	5	0.06	5	1.12	0.8	300
THERAPY LARGE	Office Space	244	5	0.06	5	1.22	0.8	325
REAR CORRIDORS	Corridors	420	0	0.06	0	0.00	0.8	300

Maximum Zp: 0.105
Ev: 1
Actual System Population: 20

K-12 School? No

Uncorrected Intake 198 cfm
Outdoor Air Intake *198 cfm*
Percent of Unit Air 10%

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:	60,026 BTU/H
SENSIBLE COOLING LOAD:	81,388 BTU/H
LATENT COOLING LOAD:	17,263 BTU/H
MECHANICAL SPACING CONDITIONING SYSTEM:	
UNITARY	AIR COOLED DX
DESCRIPTION OF UNIT(S)	(2) 5T HP SS
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.

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.
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. 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. ALL INSULATION CONTAINING FIBROUS MATERIALS EXPOSED TO AIRFLOW SHALL BE RATED FOR THAT EXPOSURE OR SHALL BE ENCAPSULATED. INSULATING PROPERTIES FOR ALL MATERIALS SHALL MEET OR EXCEED INDUSTRY STANDARDS. POLYSTYRENE PRODUCTS SHALL MEET ASTM C578. ALL INSULATION SHALL HAVE FORMALDEHYDE EMISSIONS NOT GREATER THAN 0.05 PPM. THE MAXIMUM FLAME SPREAD AND SMOKE DEVELOPED INDEX FOR INSULATION SHALL MEET THE REQUIREMENTS OF THE LOCAL CODES AND ORDINANCES ADOPTED BY THE JURISDICTION IN WHICH THE BUILDING IS LOCATED.
6. MASTIC USED TO SEAL DUCTWORK SHALL BE LISTED AND LABELED IN ACCORDANCE WITH UL 181A–95 OR UL 181B–98. MAINTAIN AMBIENT TEMPERATURES AND CONDITIONS REQUIRED BY MANUFACTURER OF ADHESIVES, MASTICS, AND INSULATION CEMENTS. DO NOT INSTALL DUCT SEALANT WHEN TEMPERATURES ARE LESS THAT THOSE RECOMMENDED BY THE SEALANT MANUFACTURER.
7. ALL ADHESIVES AND SEALANTS SHALL HAVE VOC CONTENT BELOW 20 GRAMS PER LITER AND WHICH MEET THE REQUIREMENTS OF THE MANUFACTURER OF THE PRODUCTS BEING ADHERED OR INVOLVED. ADHESIVES AND SEALANTS SHALL CONTAIN NO HEAVY METALS OR FORMALDEHYDE.
8. FACTORY–MADE AIR DUCTS AND CONNECTORS SHALL COMPLY WITH UL 181–96.
9. FLEXIBLE DUCT SHALL BE UL LISTED CLASS 0 OR CLASS 1, INSULATED, AND COMPLY WITH UL 181. FLEXIBLE DUCT SHALL BE FACTORY FORMED, COMPOSED OF SPIRAL WOUND CORROSION RESISTANT WIRE BONDED TO AN INNER FABRIC LINER. DUCT SHALL BE FACTORY INSULATED WITH A FOIL VAPOR BARRIER JACKET. CONNECT TO RIGID DUCT WITH SPIN–IN FITTING AND DAMPER. FLEXIBLE DUCTS AND AIR CONNECTORS SHALL NOT PASS THROUGH ANY FIRE RESISTANCE RATED ASSEMBLY.
10. THE MC SHALL PROVIDE ALL DIFFUSERS GRILLES, LOUVERS, AND OTHER AIR DISTRIBUTION OUTLETS AND INLETS. LOUVERS, GRILLES, AND DIFFUSERS SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTALLATION INSTRUCTIONS. FOR LAY–IN CEILINGS, INSTALL SUPPORT FROM THE STRUCTURE FOR EACH DIFFUSER OR DAMPER. AIR DISTRIBUTION OUTLETS AND INLETS SHALL BE BY HART & COOLEY, PRICE, METAL–AIRE, NAILOR, OR CARNES.
11. AIR FILTERS SHALL BE INSTALLED IN ACCORDANCE WITH SECTION 605 OF THE 2018 NC MECHANICAL CODE.
12. THE MC SHALL PROVIDE ALL REFRIGERATION PIPING. ALL PIPE AND FITTINGS SHALL BE TYPE ACR HARD COPPER TUBING WITH SWEAT FITTINGS. REFRIGERATION LINES SHALL BE RUN NEATLY. WHERE A GROUP OF LINES ARE RUN, TRAPEZE HANGERS MAY BE USED. DO NOT USE CHAIN OR WIRE HANGERS. WRAP TUBING WITH RUBBER TAPE AT EACH CLAMP OR HANGER. FOR COVERED PIPES, HANGERS SHALL FIT AROUND THE OUTSIDE OF THE COVERING WITH 12 GAUGE GALVANIZED STEEL SHIELDS OF A LENGTH EQUAL TO THE OUTSIDE DIAMETER OF THE INSULATION AND COVERING 3/4 OF THE CIRCUMFERENCE OF THE INSULATION. SAGS SHALL NOT BE PERMISSIBLE. HORIZONTAL LINES SHALL PITCH DOWN NOT LESS THAN 1 INCH IN 40 FEET. INSULATE WITH 1 INCH CLOSED CELL ARMAFLEX TYPE INSULATION WITH A FLAME DENSITY RATING LESS THAN 25 AND A SMOKE DENSITY RATING LESS THAN 50. ALL JOINTS AND SPLICES IN INSULATION SHALL BE TAPED AND AIR TIGHT. SOLDER REFRIGERATION LINES USING 15 PERCENT SILVER SOLDER AND EVACUATE LINES TO 300 MICRONS. PROVIDE MOISTURE INDICATING SIGHT GLASS AND FILTER DRYER IN LIQUID LINE. PROVIDE OIL TRAPS AND DOUBLE RISERS IN REFRIGERANT SUCTION AND HOT GAS LINES WHERE REQUIRED TO PREVENT OIL 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

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NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 048012 JOSEPH L. HALL
06.06.2024
SEAL

KILIAN ENGINEERING, INC. CORPORATE SEAL NORTH CAROLINA
SEAL

UPFIT
BLUE SPRIG
2287 NC 24-87 HWY., CAMERON, NORTH CAROLINA 28326

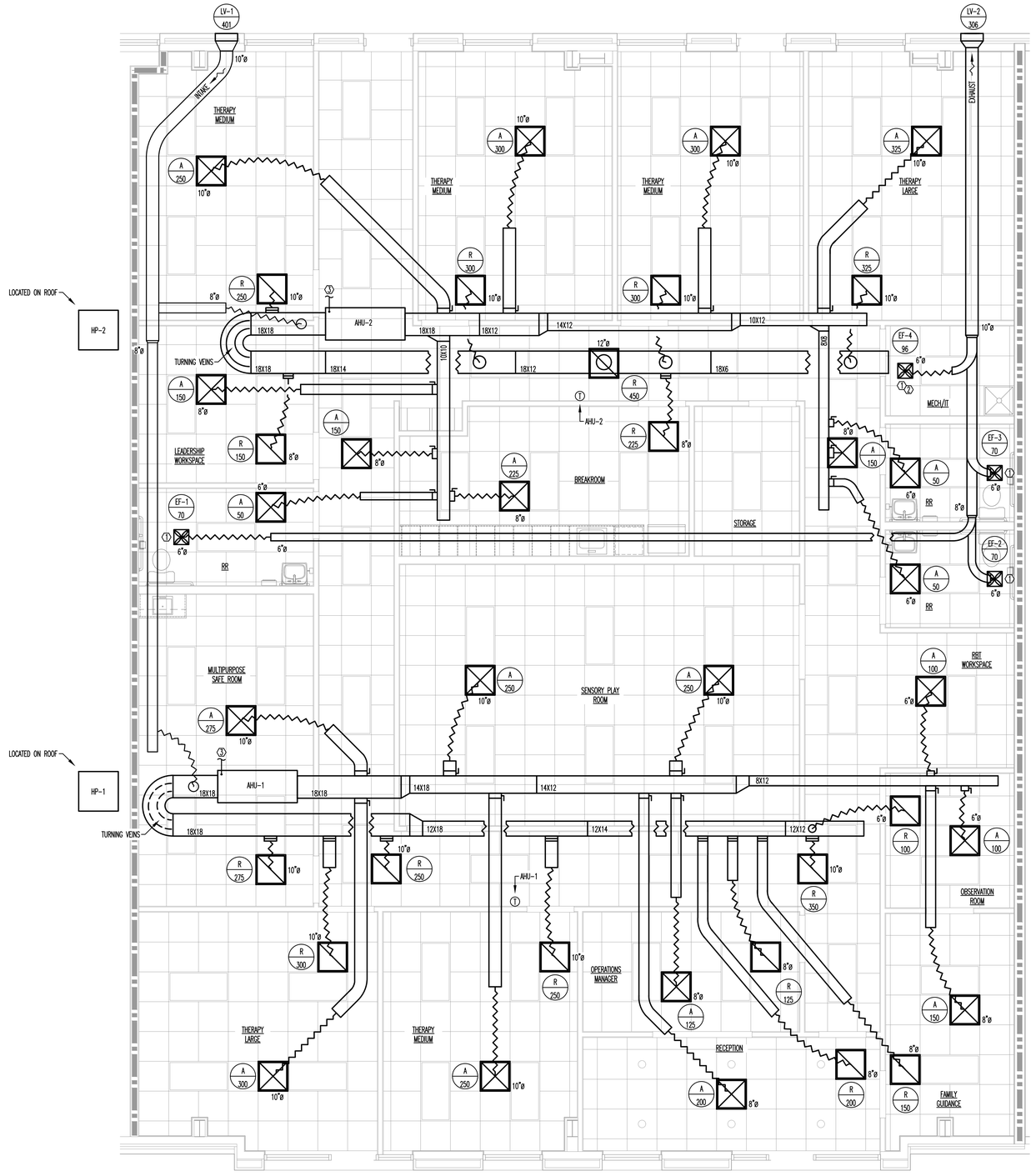
REVISION:
ISSUED FOR CONSTRUCTION 06/06/2024
ISSUED:
ISSUED FOR CONSTRUCTION 06/06/2024

DRAWN BY: CAT
CHECKED BY: JLH

GENERAL MECHANICAL NOTES & SCHEDULES

SHEET NO.
M1

PROJECT NO: 240359



HEX PLAN NOTES

1. EXHAUST FAN WITH WALL PENETRATING DUCTWORK. MINIMIZE DUCT TO EXTERIOR. PROVIDE BACKDRAFT DAMPER IF MOVING DUCT RUN WITH OTHER EXHAUST FANS. PROVIDE HOODED WALL CAP WITH INSECT SCREEN AT EXTERIOR AS SHOWN.
2. EXHAUST FAN TO BE THERMOSTATICALLY CONTROLLED. COORDINATE WITH EC.
3. ROUTE 1" CONDENSATE LINE TO DAYLIGHT AT REAR OF BUILDING.

(T) THERMOSTAT LOCATION MOUNT AT 48" A.F.F.

WALL LEGEND

INDICATES EXISTING 1-HOUR RATED FIREWALL.

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

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NORTH CAROLINA PROFESSIONAL SEAL 048012 ENGINEER JOSH L. HAMM
06.06.2024 SEAL

KILIAN ENGINEERING, INC. CORPORATE SEAL NORTH CAROLINA SEAL

UPFIT
BLUE SPRIG
2287 NC 24-87 HWY., CAMERON, NORTH CAROLINA 28326

REVISION:

NO	DATE	DESCRIPTION

ISSUED:

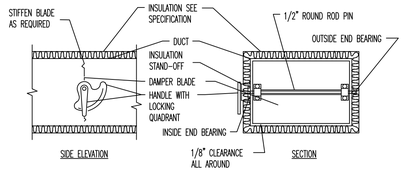
NO	DATE	DESCRIPTION
1	06/06/2024	ISSUED FOR CONSTRUCTION

DRAWN BY: CAT
CHECKED BY: JLH

MECHANICAL PLAN

SHEET NO.
M2

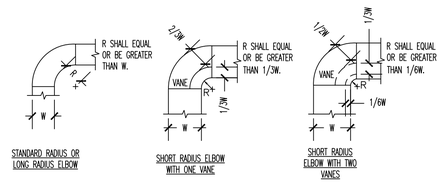
PROJECT NO: 240359



NOTE:

1. DELETE INSULATION STAND-OFF ON DUCTWORK WITHOUT EXTERIOR INSULATION.
2. DETAIL SHOWS SINGLE BLADE DAMPER. DAMPER INSTALLATION SHALL BE SIMILAR FOR MULTI-BLADE DAMPERS & ROUND DAMPERS.
3. FOR 1 in wg PRESSURE CLASS, DELETE SOLID 1/2" ROUND PIN

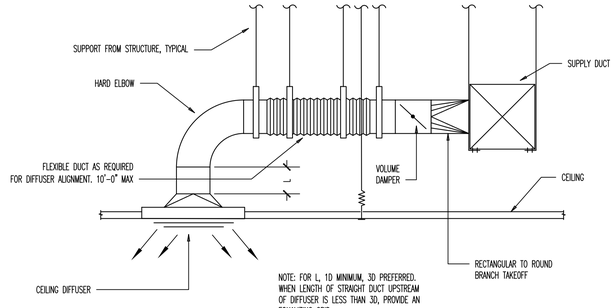
BALANCING DAMPER DETAIL-NO SCALE | 1



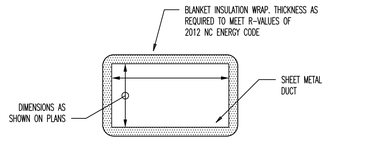
NOTES:

1. THE INTERIOR SURFACE OF ALL RADIUS ELBOWS SHALL BE MADE ROUND.
2. ALL STANDARD RADIUS ELBOWS CAN BE SUBSTITUTED WITH SHORT RADIUS ELBOWS. ALL SHORT RADIUS ELBOWS SHALL HAVE VANES. VANES SHALL BE CONSTRUCTED, SUPPORTED AND FASTENED AS RECOMMENDED BY SMACNA.

ACCEPTABLE ELBOWS-NO SCALE | 2



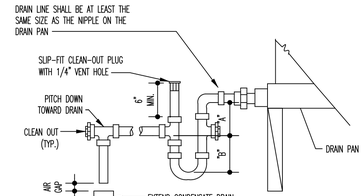
DIFFUSER RUN-OUT DETAIL-NO SCALE | 3



NOTES:

1. ALL DUCT DIMENSIONS SHOWN ON THE PLANS ARE INSIDE CLEAR.
2. PROVIDE A MINIMUM OF R-5 INSULATION WHEN DUCT IS LOCATED IN AN UNCONDITIONED SPACE
3. PROVIDE A MINIMUM OF R-8 INSULATION WHEN DUCT IS LOCATED OUTSIDE THE BUILDING ENVELOPE
4. DUCT THICKNESS GAUGE AND REINFORCEMENT SHALL BE PER SMACNA FOR 2 in w. g. STATIC PRESSURE CLASS (TABLE 1-5 OF 2005 SMACNA MANUAL, 3RD EDITION).
5. USE DUCT LINER FOR FIRST 10 FEET OF SUPPLY AND RETURN DUCTS CONNECTING TO ROOFTOP UNITS.

DUCT INSULATION DETAIL-NO SCALE | 4



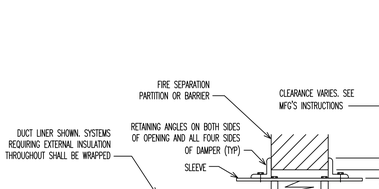
UNIT TYPE	A	B
DRAW THRU	2" + X	XB
BLOW THRU	1" MIN	2X

WHERE X = STATIC PRESSURE IN PAN

NOTES:

1. DRAIN LINE SHALL BE INSULATED WHERE MOISTURE FROM SWEATING WILL BE OBJECTIONABLE OR CAUSE DAMAGE TO AREA.
2. FOR UNITS LOCATED ABOVE CEILINGS, PROVIDE 3/4" MINIMUM SECONDARY DRAIN PIPING. ROUTE TO A POINT WHERE LEAKAGE WILL BE NOTICEABLE.
3. MINIMUM AIR GAP SHALL BE EQUAL TO TWO (2) TIMES THE INTERNAL DIAMETER OF THE CONDENSATE DRAIN PIPING.
4. DRAIN PAN SHALL HAVE A MINIMUM DEPTH OF 1.5" AND SHALL NOT BE LESS THAN 3" LARGER THAN THE UNIT DIMENSIONS.

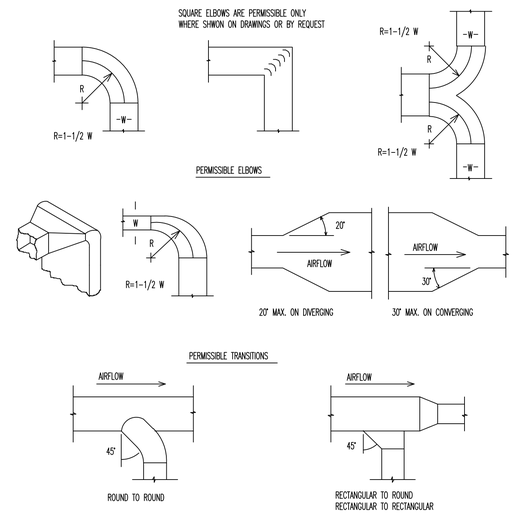
P-TRAP DETAIL-NO SCALE | 5



NOTES:

1. INSTALL PER MANUFACTURER'S INSTALLATION AND INSTRUCTIONS AND UL 555.
2. FASTEN RETAINING ANGLES AND SLEEVE PER MANUFACTURER'S INSTRUCTIONS
3. PROVIDE REMOVABLE ACCESS DOOR (16" X DUCT WIDTH – 2") WITH CAM TYPE LATCHES. ACCESS DOOR/DAMPER ORIENTATIONS TO BE FIELD VERIFIED.
4. INSTALL DAMPERS SO THAT LATCHING DEVICE, IF PRESENT, IS ACCESSIBLE FROM ACCESS DOOR.
5. ALL DUCTWORK, LATCHING DEVICES, ANGLES, GASKETS, SLEEVES, FIRE OR SMOKE DAMPERS, AND FUSIBLE LINKS ARE FURNISHED AND INSTALLED BY MECHANICAL CONTRACTOR
6. MANUFACTURER'S INSTRUCTIONS SHALL TAKE PRECEDENCE OVER THIS DETAIL IN EVENT OF CONFLICT.

FIRE DAMPER DETAIL-NO SCALE | 6



NOTE: AIRFLOW ARROWS ARE SHOWN FOR SUPPLY DUCT BY DEFAULT. AIRFLOW DIRECTION IS REVERSED FOR RETURN AND EXHAUST DUCTWORK.

ACCEPTABLE DUCT TRANSITIONS-NO SCALE | 7

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

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KILLIAN ENGINEERING CORPORATE SEAL INC. NORTH CAROLINA
SEAL

UPFIT
BLUE SPRIG
2287 NC 24-87 HWY., CAMERON, NORTH CAROLINA 28326

REVISION:

NO.	DESCRIPTION	DATE
8		
7		
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4		
3		
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0	ISSUED FOR CONSTRUCTION	06/06/2024

ISSUED:

NO.	DESCRIPTION	DATE
8		
7		
6		
5		
4		
3		
2		
1		
0	ISSUED FOR CONSTRUCTION	06/06/2024

DRAWN BY: CAT
CHECKED BY: JLH

MECHANICAL DETAILS

SHEET NO.
M3

PROJECT NO: 240359

LIGHT FIXTURE SCHEDULE												
MARK	DESCRIPTION	LENS	LUMENS	CCT	TYPE	BALLAST	VOLTAGE	INPUT WATTAGE	MOUNTING	REMARKS	MFG	MODEL
A	2X4 LED PANEL	PARABOLIC	4000	3500K	LED	DRIVER	120	36	LAY-IN	2	LITHONIA	CPANL 2X4 AL06 SWW7 M2
B	6" LED CAN	-	4000	3500K	LED	DRIVER	120	44.3	LAY-IN/RECESSED	2	LITHONIA	LDN6
EM	DUAL HEAD EMERGENCY FIXTURE	ACRYLIC	-	N/A	LED	-	120	2	VARIES	1-2	LITHONIA	ELM6L
EX	DIRECTIONAL EXIT SIGN	ACRYLIC	-	N/A	LED	-	120	2	VARIES	1-2	LITHONIA	LQM
EXH	EXIT W/ BATTERY BACKUP RED ILLUMINATED	-	-	-	LED	-	120/277	1.2	VARIES	1-2	LITHONIA	LHQM

1. FIXTURE SHALL HAVE BATTERY BACKUP FOR 90 MINUTE ILLUMINATION.
2. OR EQUAL BY COOPER, PHILIPS OR DAY-BRITE 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.

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	WATTSOPPER LVS-1 LOW VOLTAGE MOMENTARY CONTROL SWITCH.
$ $	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" WITH PULL-STRING FROM OUTLET BOX TO ABOVE CEILING FOR FUTURE USE. JACKS AND COMMUNICATION CAGELING 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
		2606.0	3521.90
OCCUPANCY	AREA (sf)	ALLOWANCE (W/sf)	WATTAGE ALLOWED
OFFICE	4295	0.82	3521.90
TOTAL	4295		3521.90
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.

2606 W SPECIFIED <= 3170 W (3522 W ALLOWED X 90%)

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.
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. 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.
12. 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.
13. 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.
14. 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, 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. ISOLATED GROUND WIRES SHALL BE GREEN WITH YELLOW BANDS OR STRIPES. THIS IDENTIFICATION SHALL BE MADE AT EACH POINT WHERE A CONNECTION IS MADE. COLORS SHALL BE FACTORY APPLIED FOR CONDUCTORS #6 AWG AND SMALLER. ALL EQUIPMENT GROUNDING CONDUCTORS SHALL BE GREEN IN COLOR AND MINIMUM #12 AWG. THE EC SHALL PROVIDE PLENUM RATED CABLE FOR ANY ELECTRICAL, TELEPHONE, COMMUNICATION, OR OTHER CABLE THAT ENTERS CEILING RETURN PLENUMS.
4. ALL LIGHT FIXTURES SHALL BE SUPPORTED INDEPENDENTLY OF THE SUSPENDED CEILING. COORDINATE LIGHTING LAYOUT WITH CEILING GRID, MECHANICAL EQUIPMENT, DUCTWORK AND SPRINKLER HEADS AS NECESSARY. SEE REFLECTED CEILING PLAN FOR DETAILS. FLUORESCENT FIXTURES UTILIZING DOUBLE–ENDED LAMPS MUST HAVE A DISCONNECTING MEANS COMPLYING WITH NEC 410.130(G).
5. MOUNT LIGHT SWITCHES AT 48 in AFF. MULTIPLE SWITCHES AT SAME LOCATION SHALL BE UNDER ONE WALL PLATE. VERIFY WALL PLATE COLOR AND MATERIAL WITH THE ARCHITECT/OWNER. INSTALL SWITCHES WITH off POSITION DOWN. ALL SWITCHES SHALL BE HEAVY DUTY, IVORY PLASTIC WITH TOGGLE HANDLE, RATED 120–277V AC, AND COMPLYING WITH NEMA WD 6 AND WD 1. SWITCHES SHALL BE BY COOPER WIRING DEVICES, LEVITON MANUFACTURING, PASS & SEYMOUR, OR HUBBELL. PROVIDE BOX DEVICE PARTITION/DIVIDERS FOR MULTI–GANG BOXES FOR COMPLIANCE WITH NEC 404.8(B).
6. ELECTRICAL CONTRACTOR SHALL PROVIDE FIRE–STOPPING AT ALL ELECTRICAL PENETRATIONS OF RATED FLOORS AND WALLS TO PRESERVE OR RESTORE THE FIRE–RESISTANCE RATING. SEAL PENETRATIONS USING A UL LISTED SYSTEM FOUND IN THE UL DIRECTORY SPECIFIC TO THE UL LISTING OF THE ASSEMBLY BEING PENETRATED. SEE ARCHITECTURAL PLANS FOR UL RATED ASSEMBLIES SPECIFIC TO THIS PROJECT.
7. ELECTRICAL CONTRACTOR SHALL PROVIDE GFCI RECEPTACLES IN KITCHENS, RESTROOMS, OUTDOORS, AND IN SHOP AREAS AS REQUIRED BY NEC. REFRIGERATORS AND WATER COOLERS MUST HAVE A DEDICATED GFCI BREAKER. EACH OUTDOOR HVAC UNIT MUST HAVE A GFCI RECEPTACLE WITHIN 25 FEET FOR SERVICING. GFCI RECEPTACLES SHALL CONFORM TO UL 943 CLASS A AND UL 498 STANDARDS. RECEPTACLES SHALL BE BY COOPER WIRING DEVICES, LEVITON MANUFACTURING, PASS & SEYMOUR, OR HUBBELL. ALL RECEPTACLES SHALL BE 125V RATED, HEAVY DUTY, AND COMPLY WITH NEMA WD 6 AND WD 1.
8. LOCATIONS AND HEIGHTS OF ALL WALL–MOUNTED DEVICES SHALL BE COORDINATED WITH THE ARCHITECT PRIOR TO INSTALLATION.
9. CONCEAL ALL CONDUIT EXCEPT IN MECHANICAL ROOMS OR UNFINISHED AREAS AS NOTED. USE EMT CONDUIT FOR ALL BRANCH CIRCUITS AND FEEDERS INSIDE THE BUILDING. TYPE MC CABLE AND TYPE AC CABLE MAY BE INSTALLED WITHIN WALLS IF ALL NEUTRAL WIRES, ISOLATED GROUND WIRES, AND EQUIPMENT GROUND WIRES AS LISTED ABOVE ARE CONTAINED IN THE CABLE. FLEXIBLE CONNECTIONS TO MOTORS AND OTHER EQUIPMENT SHALL BE MADE USING WEATHERPROOF FLEXIBLE CONDUIT. FOR LAY–IN LIGHT FIXTURES, USE MAXIMUM OF SIX (6) FEET OF FLEXIBLE MC CABLE (OR THE FLEXIBLE CONDUIT PROVIDED BY THE FIXTURE MANUFACTURER). SCHEDULE 40 PVC CONDUIT MAY BE USED FOR THE SECONDARY UNDERGROUND SERVICE, UNDERGROUND TELEPHONE SERVICE, AND BRANCH AND FEEDER CIRCUITS UNDER SLAB OR EXTERIOR TO THE BUILDING. EXPOSED EXTERIOR CONDUIT SHALL BE SCHEDULE 80 PVC. ALL UNDERGROUND RACEWAYS SHALL BE IDENTIFIED WITH UNDERGROUND LINE MARKING TAPE 6–8 in BELOW GRADE DIRECTLY ABOVE THE RACEWAY. PROVIDE PULL WIRE IN EMPTY CONDUITS. UPSIZE CONDUIT FROM MINIMUM SIZE AS NECESSARY FOR LONGER PULLS. UNDERGROUND RACEWAYS THAT STUB INTO THE BOTTOM OF SWITCHBOARDS, OUTDOOR TRANSFORMERS, GENERATORS, ETC., SHALL RISE AT LEAST 2 in ABOVE THE FINISHED SLAB TO PREVENT WATER FROM DRAINING INTO THE RACEWAYS. RACEWAYS THAT PENETRATE EXTERIOR WALLS OR INTERIOR PARTITIONS SEPARATING SPACES THAT WILL BE AT SIGNIFICANTLY DIFFERENT TEMPERATURES SHALL BE SEALED IN ACCORDANCE WITH 300.5(G), 300.7(A), AND 300.50(E) OF THE NEC. ROUTE CONDUIT IN AND UNDER SLAB FROM POINT–TO–POINT. ROUTE EXPOSED CONDUIT AND CONDUIT INSTALLED ABOVE ACCESSIBLE CEILINGS PARALLEL AND PERPENDICULAR TO WALLS. COMPLETELY AND THOROUGHLY SWAB ALL RACEWAYS BEFORE INSTALLING WIRE. PULL ALL CONDUCTORS INTO EACH RACEWAY AT ONE TIME. USE A SUITABLE WIRE PULLING LUBRICANT FOR BUILDING WIRE #4 AWG AND LARGER.
10. CABLES, RACEWAYS, OR BOXES, INSTALLED IN EXPOSED OR CONCEALED LOCATIONS UNDER METAL–CORRUGATED SHEET ROOF DECKING, SHALL BE INSTALLED AND SUPPORTED SO THERE IS NOT LESS THAN 1–1/2 in MEASURED FROM THE LOWEST SURFACE OF THE ROOF DECKING TO THE TOP OF THE CABLE, RACEWAY, OR BOX. A CABLE, RACEWAY, OR BOX SHALL NOT BE INSTALLED IN CONCEALED LOCATIONS IN METAL–CORRUGATED, SHEET DECKING–TYPE ROOF. SEE NEC 300.4(E).
11. THE ELECTRICAL CONTRACTOR SHALL PROVIDE ALL OUTLET, JUNCTION, PULL BOXES, FITTINGS, AND SUPPORTS. ALL OUTLET AND JUNCTION BOXES SHALL BE GALVANIZED STEEL TYPE BY APPLETON, STEEL CITY, OR RACO. EXTERIOR BOXES SHALL BE TYPE FS. VAPORTITE BOXES SHALL BE TYPE GS. WHERE SURFACE MOUNTED BOXES ARE USED, THOSE BOXES AND THEIR FACEPLATES SHALL HAVE ROUNDED CORNERS. BOXES INSTALLED IN FLOORS SHALL BE RATED FOR THE APPLICATION. MOUNT JUNCTION AND OUTLET BOXES FLUSH WITH FINISH SURFACES UNLESS OTHERWISE NOTED. WHERE MOUNTING HEIGHTS ARE GIVEN, THEY SHALL BE MEASURED FROM THE FINISHED FLOOR TO THE CENTER OF THE BOX. ALL BOXES SHALL BE SIZED PER NEC ARTICLE 314. ALL OUTLET AND JUNCTION BOXES SHALL HAVE A COVER PLATE, PROVIDED BY THE ELECTRICAL CONTRACTOR. OUTLET BOXES IN RATED WALLS SHALL BE INSTALLED IN ACCORDANCE WITH NORTH CAROLINA BUILDING CODE 712.3.2 (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. ISOLATED–GROUND TYPE RECEPTACLES SHALL BE INSTALLED IN ACCORDANCE WITH 250.146(D). ISOLATED GROUND RECEPTACLES SHALL BE ORANGE IN COLOR.
15. PROVIDE AN UNDERGROUND PVC CONDUIT SYSTEM FOR TELEPHONE SERVICE WITH PULL WIRES. ELECTRICAL CONTRACTOR SHALL COORDINATE WITH TELEPHONE UTILITY REGARDING ADDITIONAL FACILITIES REQUIRED FOR THE SERVICE INSTALLATION.
16. INSTALL ONE (1) 3/4 in FIRE RETARDANT TREATED PLYWOOD BACKBOARD WHERE INDICATED ON THE DRAWINGS FOR THE USE BY THE TELEPHONE SYSTEM. PROVIDE A 120 VOLT RECEPTACLE ADJACENT TO THE TELEPHONE BOARD. GROUND ALL TELEPHONE AND COMMUNICATIONS CIRCUITS PER NEC 800.
17. 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.
18. 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.
19. 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.
20. 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.
21. TAMPER–RESISTANT RECEPTACLES SHALL BE INSTALLED THROUGHOUT ACCORDING TO NEC 406.12.

ELECTRICAL NOTES 2

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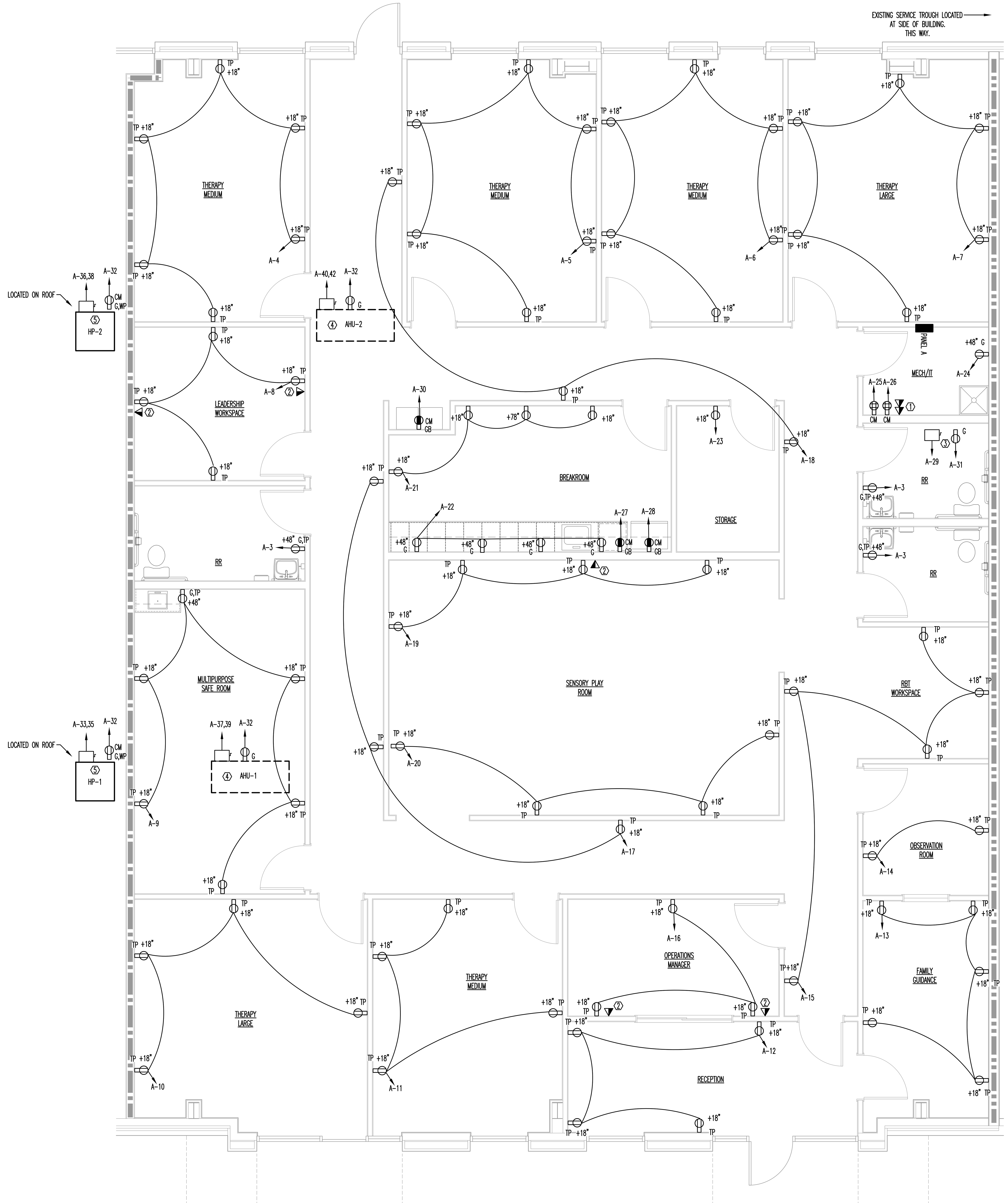
GENERAL ELECTRICAL NOTES & SCHEDULES

SHEET NO.
E1

PROJECT NO: 240359



POWER PLAN HEX NOTES

1. PROVIDE FIRE RATED PLYWOOD FOR TELE/DATA BOARD. PROVIDE #6 CU BONDING WIRE TO BUILDING GROUNDING SYSTEM.
2. PROVIDE (1) 2" CONDUIT WITH PULL STRING TO BUILDING TELE/DATA BOARD LOCATION. COORDINATE WITH GC AND OWNER.
3. 120V, 20A, SINGLE PHASE DISCONNECT FOR WH-1 ABOVE CEILING. PROVIDE 120V POWER FOR RECIRCULATION PUMP NEAR WATER HEATER.
4. 208V, 60A. SINGLE PHASE DISCONNECT FOR AHU ABOVE CEILING. INSTALL SERVICE RECEPTACLE NEAR UNIT AS INDICATED.
5. 208V, 50A, SINGLE PHASE DISCONNECT FOR HP ON ROOF. INSTALL SERVICE RECEPTACLE NEAR UNIT AS INDICATED.

WALL LEGEND

INDICATES EXISTING 1-HOUR RATED FIREWALL.

+Y X,...

X- RECEPTACLE NOTE

G-	GFCI PROTECTED IN ACCORDANCE WITH NEC 210.8
GB-	GFCI BREAKER FOR MAINTENANCE APPLIANCES: WATER FOUNTAINS, REFRIGERATORS, RESIDENTIAL DISHWASHERS, OR BY MFG
W-	WET LISTED: EXTERIOR, WASH-BAYS
A-	AFCI PROTECTED
AB-	AFCI BREAKER
CH-	COUNTER HEIGHT
GF-	GFPE BREAKER
TP-	TAMPER PROOF RECEPTACLE

Y- MOUNTING NOTE

6" AC-	MOUNT AT 6" ABOVE COUNTER-TOP
42"-	MOUNT AT 42" ABOVE FINISHED FLOOR
CM-	CONFIRM MOUNTING HEIGHT PRIOR TO INSTALL

EXAMPLE

+80" G,W

G-	GFCI PROTECTED
W-	WET LISTED
80"-	MOUNT AT 80" ABOVE FINISHED FLOOR

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

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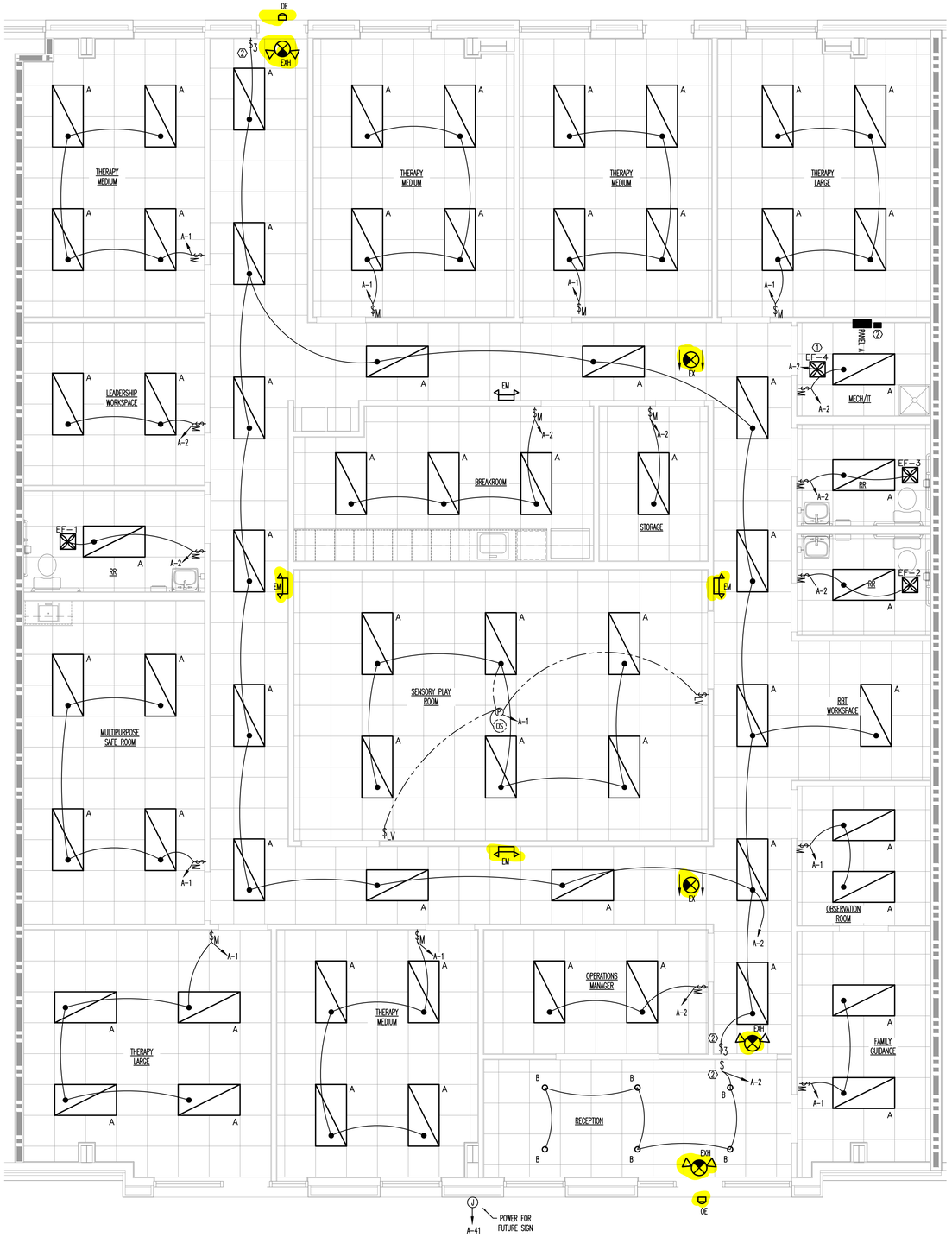
POWER PLAN

SHEET NO.

E2

PROJECT NO: 240359



LIGHTING PLAN HEX NOTES

1. THERMOSTATIC EXHAUST FAN FOR IT ROOM. COORDINATE WITH MC.
2. TIME-CLOCK FOR CORRIDORS AND WAITING ROOM. CIRCUIT A-34.

LIGHTING PLAN GENERAL NOTES

1. EMERGENCY EGRESS FIXTURES TO BE WIRED TO NEAREST LIGHTING CIRCUIT IN AREA THEY SERVE. WIRED AHEAD OF ALL CONTROLS.

WALL LEGEND

INDICATES EXISTING 1-HOUR RATED FIREWALL.

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LIGHTING PLAN

SHEET NO.

E3

PROJECT NO: 240359

PANEL A							
CKT	LOAD	BKR	LOAD kVA	PH	LOAD kVA	BKR	LOAD	CKT
1	THERAPY ROOM LIGHTS	20/1	1.36	A	1.73	20/1	INTERIOR LIGHTING	2
3	BATHROOM RECEPTS	20/1	0.54	B	1.08	20/1	THERAPY ROOM 1 RECEPTS	4
5	THERAPY ROOM 2 RECEPTS	20/1	1.08	C	1.08	20/1	THERAPY ROOM 3 RECEPTS	6
7	THERAPY ROOM 4 RECEPTS	20/1	1.08	A	0.72	20/1	LEADERSHIP OFFICE RECEPTS	8
9	SAFE ROOM RECEPTS	20/1	1.08	B	0.72	20/1	THERAPY ROOM 5 RECEPTS	10
11	THERAPY ROOM 6 RECEPTS	20/1	1.08	C	0.72	20/1	RECEPTION RECEPTS	12
13	FAMILY GUIDANCE RECEPTS	20/1	0.90	A	0.36	20/1	OBSERVATION RECEPTS	14
15	HALLWAY RECEPTS 1	20/1	0.90	B	0.54	20/1	EMPLOYEE RECEPTION RECEPTS	16
17	HALLWAY RECEPTS 2	20/1	0.54	C	0.54	20/1	HALLWAY RECEPTS 3	18
19	SENSORY PLAYROOM RECEPTS 1	20/1	0.72	A	0.72	20/1	SENSORY PLAYROOM RECEPTS 2	20
21	BREAKROOM RECEPTS	20/1	0.72	B	0.72	20/1	BREAKROOM COUNTER RECEPTS	22
23	STORAGE RECEPT	20/1	0.18	C	0.18	20/1	MECH/IT RECEP	24
25	SERVER QUAD 1	20/1	0.36	A	0.36	20/1	SERVER QUAD 2	26
27	BREAKROOM DISHWASHER	20/1	1.50	B	0.90	20/1	BREAKROOM FRIDGE	28
29	WH-1	20/1	1.70	C	0.75	20/1	DRINKING FOUNTAIN	30
31	RP-1	20/1	0.18	A	0.72	20/1	SERVICE RECEPTACLES	32
33	HP-1	50/2	3.53	B	0.18	20/1	TIME-CLOCK	34
35			3.53	C	3.53	50/2	HP-2	36
37	AHU-1	60/2	4.68	A	3.53			38
39			4.68	B	4.68	60/2	AHU-2	40
41	SIGN	20/1	1.20	C	4.68			42
			kVA	PH	AMPS			
			17.4	A	145			
			21.8	B	181			
			20.8	C	173			

VOLTAGE/PHASE	208Y/120V, 3P, 4W
BUS RATING	200A
MAIN CIRCUIT BREAKER RATING	MLO
AIC RATING	22K
SERVICE ENTRANCE RATED	NO
ENCLOSURE	NEMA 1
MOUNTING	RECESSED

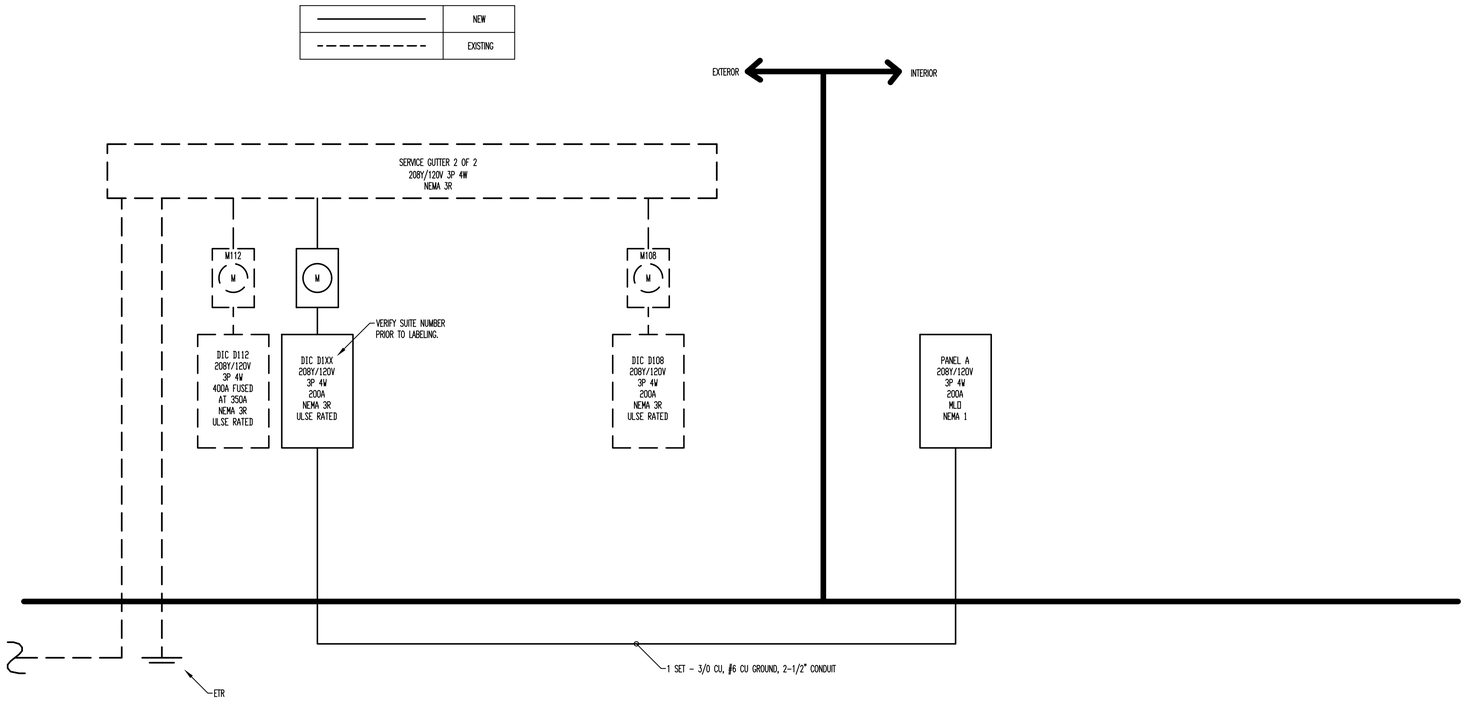
☐ INDICATES GFCI BREAKER

NEC ELECTRIC DEMAND SUMMARY 208Y/120V, 3P, 4W							
EQUIPMENT	DEMAND FACTOR	kVA A	kVA B	kVA C	LOAD kVA	NEC REFERENCE	NOTES/CALCULATIONS
LIGHTING	125%	1.86	1.86	1.86	5.58	220.12	4295 SF X 1.3 VA/SF
RECEPTACLES < 10 kVA	100%	6.12	8.70	6.15	20.97	220.44	
RECEPTACLES > 10 kVA	50%	0.00	0.00	0.00	0.00	220.44	
HVAC	100%	8.21	12.89	11.74	32.84	--	BASED ON MCA
WATER HEATER	125%	2.13	0.00	0.00	2.13	422.13	STORAGE TANK (120 GAL @ 125%
SIGN	100%	0.00	0.00	1.20	1.20	220.14(F)	
DEMAND kVA PER PHASE		18.32	23.45	20.95			
DEMAND AMPS PER PHASE		153	195	175			

THE CALCULATED LIGHTING LOAD EXCEEDS THE CONNECTED LIGHTING LOAD.

BREAKER FEEDER SCHEDULE			
AMPS	WIRE SIZE	GROUND SIZE	CONDUIT SIZE
20A	#12	#12	1/2"
30A	#10	#10	3/4"
50A	#8	#10	1"
60A	#6	#10	1 1/4"
200A	3/0	#6	2 1/2"

1 CONDUCTOR PER POLE PLUS NEUTRAL PER SET. E.C. TO VERIFY NECESSITY OF NEUTRAL FOR EACH CIRCUIT. NEUTRAL MAY BE DELETED IF NOT REQUIRED FOR INDIVIDUAL PIECES.



PANEL SCHEDULE | 1

ELECTRICAL RISER - NOT TO SCALE | 2

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ELECTRICAL RISERS & SCHEDULE

SHEET NO.
E4

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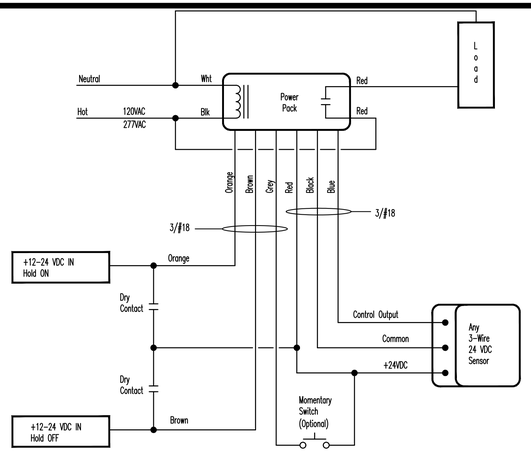
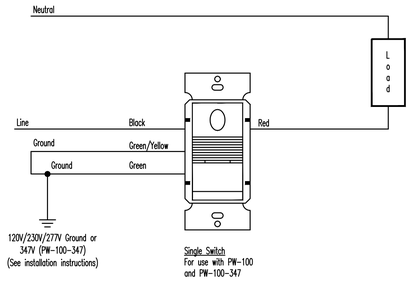
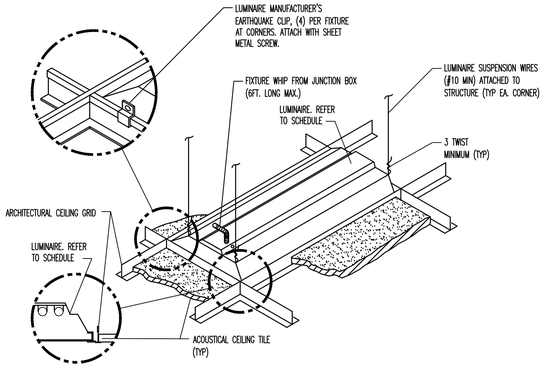


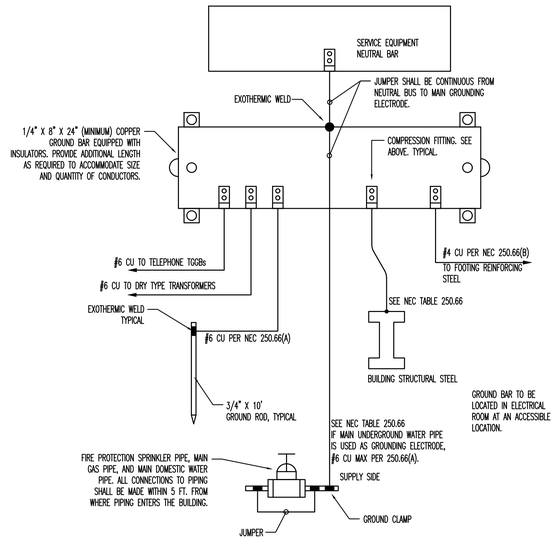
CEILING OCCUPANCY SENSOR WIRING - NO SCALE | 1



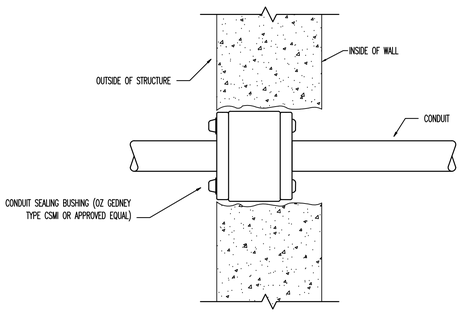
WALL OCCUPANCY SENSOR WIRING-NO SCALE | 2



LAY-IN FIXTURE SUPPORT-NO SCALE | 3

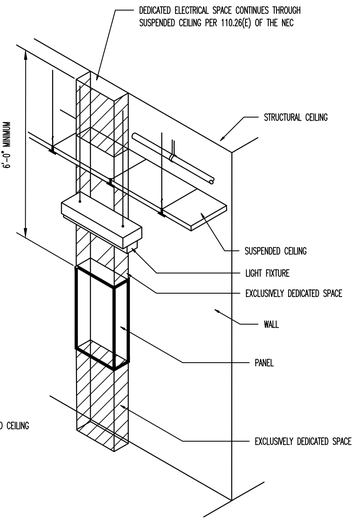


GROUNDING DETAIL-NO SCALE | 4

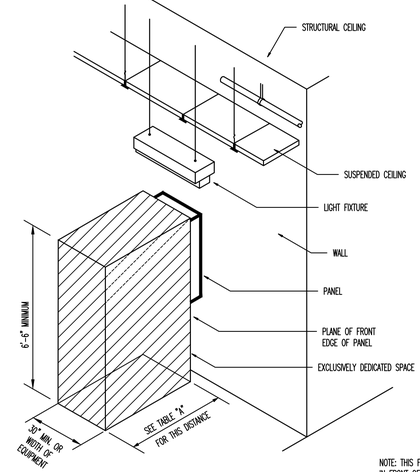


EXTERIOR WALL PENETRATION-NO SCALE | 5

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



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



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

NOTE: WHERE THE CONDITIONS ARE AS FOLLOWS:

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

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

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

TABLE 110.26(A)(1) WORKING SPACE			
VOLTAGE TO GROUND, NOMINAL	MINIMUM CLEAR DISTANCE (FEET)		
	CONDITION 1	2	3
0-150	3	3	3
151-600	3	3-1/2	4

REQUIRED CLEARANCES-NO SCALE | 6

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BLUE SPRIG
2287 NC 24-87 HWY., CAMERON, NORTH CAROLINA 28326

REVISION:

NO.	DATE	DESCRIPTION

ISSUED:

NO.	DATE	DESCRIPTION
0	06.06.2024	ISSUED FOR CONSTRUCTION

DRAWN BY: CAT
CHECKED BY: JLH

ELECTRICAL DETAILS

SHEET NO.
E5

PROJECT NO: 240359