PLUMBING FIXTURE SCHEDULE

P-#	FIXTURES	SPECIFICATIONS	PIPING REQUIRED		
			WASTE	CW	HW
P-1	WATER CLOSET/ADA FLOOR MOUNTED TANK TYPE – 1.6 GPF	AMERICAN STANDARD "CADET RIGHT HEIGHT" MODEL 2298.012 VITREOUS CHINA TOILET WITH ELONGATED BOWL AND TANK WITH SIDE TRIP LEVER, 16 ½" RIM HEIGHT, 1.6 GPF, 12" ROUGH–IN, BOLT CAPS, COMPLIES WITH ANSI A112.19.2 & A117.1 SEAT : BEMIS/CHURCH DURAGUARD 2100 NSSC ANTI–MICROBIAL HEAVY DUTY WHITE ELONGATED OPEN FRONT SEAT WITH COVER. VALVE: McGUIRE NO. 2166 ⅜"X12" FLEX CLOSET SUPPLY WITH STOP.	3"	1/2"	--
P-2	LAVATORY – WALL MTD. AUTOMATIC FAUCET ADA	AMERICAN STANDARD "LUCERNE" 0355.012 WALL MTD. WHITE VITREOUS CHINA 20"X18" LAVATORY WITH 4" FAUCET CENTERS. FAUCET: AMERICAN STANDARD "SELECTRONIC" ELECTRONIC LAVATORY FAUCET MODEL 6057.205/6056.205 , VANDAL RESISTANT 0.5 GPM AERATOR, ⅜"O.D. COPPER INLETS, PROVIDE POWER SUPPLY AND THERMOSTATIC MIXING VALVE. SUPPLIES: McGUIRE NO. 165 ⅜"X12" FLEX ANGLE SUPPLY WITH STOP STRAINER: McGUIRE NO. 155–A GRID STRAINER WITH 1 ¼" TAILPIECE. TRAP AND SUPPLY INSULATION: McGUIRE PREWRAPED PROWRAP INSULATION KIT MODEL NO.2150	1–1/2"	1/2"	1/2"
P-3	SINGLE BOWL SINK ADA	JUST MODEL NO. SL–ADA–1613–A–GR SINGLE COMPARTMENT SINK. 16"X13", 304 STAINLESS STEEL, 18 GAUGE, 3 ½" FAUCET LEDGE WITH 4 HOLES @ 4" CENTERS. TRAP AND SUPPLIES: McGUIRE NO 151 CHROME PLATED FORGED BRASS STRAINER WITH 1–½" TAILPIECE, McGUIRE NO. 8912 1 ½" P–TRAP AND NIPPLE. McGUIRE NO. 2165 ANGLE SUPPLIES WITH STOPS. FAUCET: MOEN MODEL 8244 TWO–HANDLE KITCHEN FAUCET WITH SIDE SPRAY. CHROME PLATED BRASS CONSTRUCTION, 4" WRIST BLADE HANDLES, COMPLIES WITH LATEST ADA REQUIREMENTS.	1–1/2"	1/2"	1/2"
P-4	SERVICE SINK	E.L.MUSTEE UTILITUB MODEL NO. 19F SINGLE COMPARTMENT FLOOR MOUNTED SERVICE SINK. 24"X20", THERMOPLASTIC, PROVIDE WITH DRAIN AND FAUCET ASSEMBLY.. TRAP AND SUPPLIES: TAILPIECE, McGUIRE NO. 8912 1 ½" P–TRAP AND NIPPLE. McGUIRE NO. 2165 ANGLE SUPPLIES WITH STOPS.	1–1/2"	1/2"	1/2"
P-5	WET CARE TABLE	SELECTED BY OWNER.	1–1/2"	1/2"	1/2"
P-6	BATHING TABLE	SELECTED BY OWNER.	1–1/2"	1/2"	1/2"
P-7	ELECTRIC WATER COOLER HANDICAP/ADA DUAL HEIGHT	ELKAY MODEL LVRCHDTL8SC BARRIER–FREE DUAL–HEIGHT UNIT WITH FRONT AND SIDE PUSH BARS. SIMULATED RECESSED MODEL WITH LEAD FREE WATERWAYS, 8 GPH OF 50°F WATER AT 90AMF. HEAVY GAUGE UNIT WITH STAINLESS STEEL FINISH. TRAP AND SUPPLIES: McGUIRE NO. 8872 1 ¼" P–TRAP AND NIPPLE, McGUIRE NO. 165 ANGLE SUPPLY WITH STOP.	1–1/4"	1/2"	--
P-8	WASHING MACHINE CONNECTION	GUY GREY MODEL NO. T–200 WASHING MACHINE SUPPLY & DRAIN, 20 GAUGE STEEL PAINTED WITH WHITE SYNTHETIC ENAMEL. 9 ¼"X 14". 2" DRAIN OUTLET, ½" COMBINATION MPT BRASS SWEAT CONNECTIONS, ANGLE GATE VALVES. PANEL SHALL HAVE KNOCKOUTS IN TOP, BOTTOM, AND SIDES.	2"	1/2"	1/2"

PLUMBING LEGEND

- P-# FIXTURE NUMBER, SEE SCHEDULE
- WATER BALANCE/SHUTOFF VALVE
- FLOOR SINK
- VTR — VENT THROUGH ROOF
- AAV — AIR ADMITTANCE VALVE
- NEW GAS PIPE
- NEW COLD WATER PIPE
- NEW HOT WATER PIPE
- NEW WASTE PIPE
- NEW VENT PIPE
- HOT WATER RETURN

GENERAL PLUMBING SPECIFICATIONS

GENERAL: THE ENTIRE PLUMBING SYSTEM SHALL BE IN ACCORDANCE WITH THE CURRENT NORTH CAROLINA BUILDING PLUMBING CODE. SUBMIT THREE (3) COPIES OF PLUMBING INSPECTION CERTIFICATES TO OWNER. PLUMBING CONTRACTOR SHALL OBTAIN AND PAY FOR ALL PERMITS REQUIRED BY GOVERNING AUTHORITIES FOR WORK DONE UNDER THIS CONTRACT. PROVIDE AND INSTALL ALL SUPPORTS, BRACKETS, MATERIALS AND LABOR AS REQUIRED FOR A COMPLETE AND ACCEPTABLE PLUMBING SYSTEM. PLUMBING CONTRACTOR SHALL CLEAN ALL PLUMBING FIXTURES AFTER ALL CONSTRUCTION IS COMPLETE.

SOIL, WASTE AND VENT PIPING: WASTE PIPING AND VENT PIPING SHALL BE P.V.C. – D.W.C. SCHEDULE 40 PIPE. HOWEVER, COEXTRUDED PVC "FOAM CORE", ASTM F891, WILL NOT BE ALLOWED.

ALL PENETRATIONS THROUGH NON–COMBUSTIBLE CONSTRUCTION SHALL BE PACKED WITH NON–COMBUSTIBLE FIRE STOPPING MATERIAL.

GRADE WASTE AND VENT PIPING 1/4 INCH PER FOOT WHERE POSSIBLE BUT NOT LESS THAN 1/8 INCH PER FOOT, UNLESS SPECIFICALLY DIRECTED. MAINTAIN INVERTS WHERE INDICATED.

WATER HEATER. ALL FITTINGS SHALL BE SWEAT TYPE WROUGHT COPPER WITH WALL THICKNESS EQUAL TO PIPE WALL THICKNESS. ALL JOINTS SHALL BE MADE WITH 95–5 SOLDER OR SILVABRITE 100. NO SOLDER W/LEAD SHALL BE PERMITTED.

ALL ROUGHING–IN PIPING SHALL BE RUN CONCEALED. ALL EXPOSED WATER LINES, STOPS, TRAP AND WASTE PIPE AT THE FIXTURES SHALL BE CHROME PLATED BRASS, WHICH FOR THE MOST PART WILL BE FURNISHED WITH THE FIXTURES. CHROME PLATED ESCUTCHEON RINGS SHALL BE USED AT EACH POINT OF ENTRANCE OF CHROME PIPING INTO WALLS, FLOORS, OR CEILINGS. EXPOSED WORK SHALL BE UNIFORM IN HEIGHT AND LOCATION FOR EACH TYPE FIXTURE.

WATER PIPING UNDER GROUND OUTSIDE OF BUILDING SHALL BE AT LEAST 24 INCHES BELOW THE FINISHED GRADE SURFACE.

THERMAL INSULATION: ALL HOT AND COLD WATER PIPING INSIDE BUILDING AND IN CRAWL SPACE, ALL HOT WATER PIPING BELOW GRADE, AND COLD WATER PIPING BELOW GRADE WITHIN 3'–0" OF OUTSIDE SHALL BE INSULATED WITH 1" THICK "ARMAFLEX" OR IMCOA WITH SEALED JOINTS OR PREMOLDED FIBERGLASS WITH VAPOR BARRIER JACKET. IN LIEU OF INSULATING WATER PIPING IN HEATED WALLS PIPING MAY BE ENCASED IN BATT INSULATION WITHIN THE WALL OR FLOOR/CEILING.

WATER HEATERS: WATER HEATERS SHALL BE UL LISTED AND COMPLETE WITH ALL STANDARD FEATURES, FIVE (5) YEAR TANK WARRANTY, GLASS–LINED TANK, FOAM INSULATION ON THE TANK, ANODE ROD, AUTOMATIC TEMPERATURE CONTROL, AND AUTOMATIC HIGH–LIMIT SAFETY CUTOFF. INSTALL ASSE 1070 COMPLIANT TEMPERATURE CONTROL VALVE DOWNSTREAM OF ANY HIGH TEMPERATURE FIXTURES AND UPSTREAM OF ALL PUBLIC HANDWASHING FACILITIES.

EACH WATER HEATER SHALL BE PROVIDED WITH AN ASME APPROVED PRESSURE AND TEMPERATURE RELIEF VALVE. UNITS NOT INSTALLED WITH VACUUM BREAKER ON COLD WATER SUPPLY LINE SHALL BE PROVIDED WITH AGA CERTIFIED VACUUM RELIEF VALVE PER ANSI Z21.22. A GATE VALVE SHALL BE INSTALLED ON SAME FLOOR AS UNIT AND NO FURTHER THAN 3 FEET ON THE COLD WATER SUPPLY.

EACH WATER HEATER AND ITS INSTALLATION SHALL COMPLY WITH THE LATEST ISSUE AND ALL ADDENDA THERETO OF THE STATE BOILER INSPECTION LAWS AND REGULATIONS. ALL WIRING AND CONTROLS ASSOCIATED WITH THE HEATERS SHALL BE U.L. APPROVED AND IN ACCORDANCE WITH THE LATEST EDITION OF THE NATIONAL ELECTRICAL CODE.

EACH HEATER TANK SHALL BE FITTED WITH APPROVED "DIP" TUBE AND LABELED TO SHOW APPROVAL FOR INSTALLATION.

DISCHARGE RELIEF VALVE FROM EACH WATER HEATER SHALL BE PIPED FULL SIZE TO WITHIN SIX (6) INCHES OF THE FLOOR OVER A FLOOR DRAIN, DRIP PAN OR OTHER SAFE LOCATION. DISCHARGE PIPE SHALL BE SUPPORTED AND ANCHORED SO THAT IT WILL NOT PUT UNDUE STRAIN ON THE RELIEF VALVE BODY OR MOUNTING COUPLING.

SUBMITTAL: THE CONTRACTOR SHALL WITHIN (15) DAYS OF RECEIPT OF PROPERLY SIGNED CONTRACT SUBMIT TO THE ARCHITECT/ENGINEER FOR APPROVAL (5) COPIES OF A LIST OF SUPPLIES AND MANUFACTURER'S MATERIAL AND EQUIPMENT TO BE USED ON THIS PROJECT.

SUBSTITUTION OF MATERIALS AND/OR EQUIPMENT FOR THAT SPECIFIED WILL NOT BE ACCEPTED WITHOUT PRIOR WRITTEN APPROVAL BY THE ARCHITECT/ENGINEER PRIOR TO RECEIPT OF BIDS.

GUARANTEE: THE PLUMBING CONTRACTOR SHALL GUARANTEE ALL MATERIALS AND WORKMANSHIP FOR A PERIOD OF NOT LESS THAN ONE (1) YEAR FROM DATE OF FINAL ACCEPTANCE BY OWNER STATING THE DAY THE GUARANTEE BEGINS AND ENDS.

WATER HEATER (EWH): STATE M/N PCE 82 20RTA, 80 GALLON ELECTRIC WATER HEATER WITH ONE (1) 4500 WATT ELEMENT, 240 VOLT, SINGLE PHASE, WITH 3 YEAR WARRANTY. FURNISH WITH A.S.M.E. APPROVED RELIEF VALVE, WATERGUARD EXPANSION TANK M/N ETC–2X, AND DRAIN PAN.

NOTE: PLANS SHOULD NOT BE SCALED FOR DIMENSIONS. COORDINATE ALL ROUGH IN DIMENSIONS WITH EQUIPMENT TO BE INSTALLED AND DIMENSIONED DRAWINGS INCLUDING KITCHEN EQUIPMENT PLANS IF AVAILABLE. CONTACT ENGINEER BEFORE CONSTRUCTION WITH ANY CONFLICTS.

PLUMBING GENERAL NOTES:

BASIS OF DESIGN: UNLESS OTHERWISE NOTED THE PURPOSE OF THESE DRAWINGS IS TO PROVIDE DIRECTION AND BASIS OF DESIGN TO A COMPETENT CONTRACTOR FAMILIAR WITH THE TYPE OF SYSTEMS BEING INSTALLED SUFFICIENT TO INDICATE OWNERS REQUESTS AND CODE REQUIREMENTS. IT IS THE CONTRACTORS RESPONSIBILITY, WHEN OTHERWISE UNDIRECTED, TO FOLLOW STANDARD INDUSTRY PRACTICES AND BASIC CODE COMPLIANCE INCLUDING, BUT NOT LIMITED TO, PROVIDING MATCHING REQUIRED ACCESSORIES TO THE SYSTEMS INDICATED, COORDINATING EXACT ROUTINGS AND LOCATIONS WITH OTHER TRADES AND THE OWNER, SELECTING CODE APPROVED MATERIALS, AND MAKING MINOR OFFSETS/ADJUSTMENTS BASED ON FIELD COORDINATION AND OWNER'S FIELD REQUESTS. CHANGE OF MANUFACTURER TO EQUIVALENT SYSTEMS, WITH OWNER'S APPROVAL, IS ACCEPTABLE. CONTACT ENGINEER WITH ANY CONFLICTS NOT COVERED BY THE ABOVE INSTRUCTIONS.

1. PROVIDE ALL MATERIALS AND LABOR NECESSARY FOR COMPLETE AND PROPERLY FUNCTIONING PLUMBING SYSTEMS. WARRANTY ALL WORK AND ALL MATERIALS, EQUIPMENT AND DEVICES FOR A PERIOD OF ONE YEAR AFTER OWNER'S ACCEPTANCE.

2. WORK SHALL CONFORM TO OR MEET THE REQUIREMENTS OF THE MOST CURRENT EDITION OF:
   A. NORTH CAROLINA PLUMBING CODE
   B. ASPE
   C. UL
   D. ANSI
   E. ALL FEDERAL, STATE AND LOCAL CODES AND ORDINANCES

3. DRAWINGS ARE DIAGRAMMATIC IN NATURE AND ARE NOT INTENDED TO BE SCALED FOR DIMENSIONS, UNLESS DIMENSIONED.

4. ALL MATERIALS, EQUIPMENT AND DEVICES SHALL, AS A MINIMUM, MEET THE REQUIREMENTS OF UL WHERE UL STANDARDS ARE ESTABLISHED FOR THOSE ITEMS. ALL ITEMS SHALL BE CLASSIFIED BY UL AS SUITABLE FOR THE PURPOSE USED.

5. ALL ITEMS SHALL BE NEW, UNLESS NOTED OTHERWISE.

6. ALL MATERIALS AND EQUIPMENT SHALL BE CURRENT PRODUCTS BY MANUFACTURERS REGULARLY ENGAGED IN THE PRODUCTION OF SUCH PRODUCTS.

7. COORDINATE LOCATION OF PLUMBING WORK WITH OTHER TRADES TO AVOID CONFLICTS AND INTERFERENCES. COORDINATE WITH SITE WORK TO PROVIDE FULL OPEN WATER SERVICE VALVE WITHIN 5 FEET OF BUILDING ENTRY.

8. INSTALL ALL EQUIPMENT AND MATERIAL IN ACCORDANCE WITH MANUFACTURER'S WRITTEN PRINTED INSTRUCTIONS AND RECOMMENDATIONS. VERIFY, INCLUDING WITH OTHER TRADES, POWER AND/OR FUEL SUPPLY BEFORE ORDERING.

9. COORDINATE WITH AND OBTAIN PERMITS AND INSPECTIONS FROM AUTHORITY HAVING JURISDICTION AND INCLUDE ALL FEES IN BID.

10. PROVIDE OWNER WITH CERTIFICATES OF FINAL INSPECTION AND ACCEPTANCE FROM AUTHORITY HAVING JURISDICTION.

11. ALL EQUIPMENT AND PIPE ABOVE CEILING SHALL BE SUPPORTED FROM BUILDING STRUCTURE ABOVE, UNO.

12. WHERE PIPES PENETRATE FIRE RATED BARRIERS (WALLS, FLOORS AND CEILINGS) SEAL OPENING AROUND PIPES AND DUCTWORK WITH U.L. LISTED FIRE STOPPING MATERIAL TO MAINTAIN THE FIRE RATING OF THE BARRIER. PER NC BUILDING CODE VOLUME 1, PENETRATIONS OF NONRATED WALLS, PARTITIONS AND FLOORS OF NONCOMBUSTIBLE CONSTRUCTION SHALL BE FIRE–STOPPED WITH NONCOMBUSTIBLE MATERIAL.

13. PROVIDE EXPANSION–DEFLECTION JOINTS WHERE PIPE CROSSES BUILDING EXPANSION OR SEISMIC JOINTS. PROVIDE SLEEVES WHERE PIPING CROSSES STRUCTURAL CONCRETE WALLS/FOOTINGS.

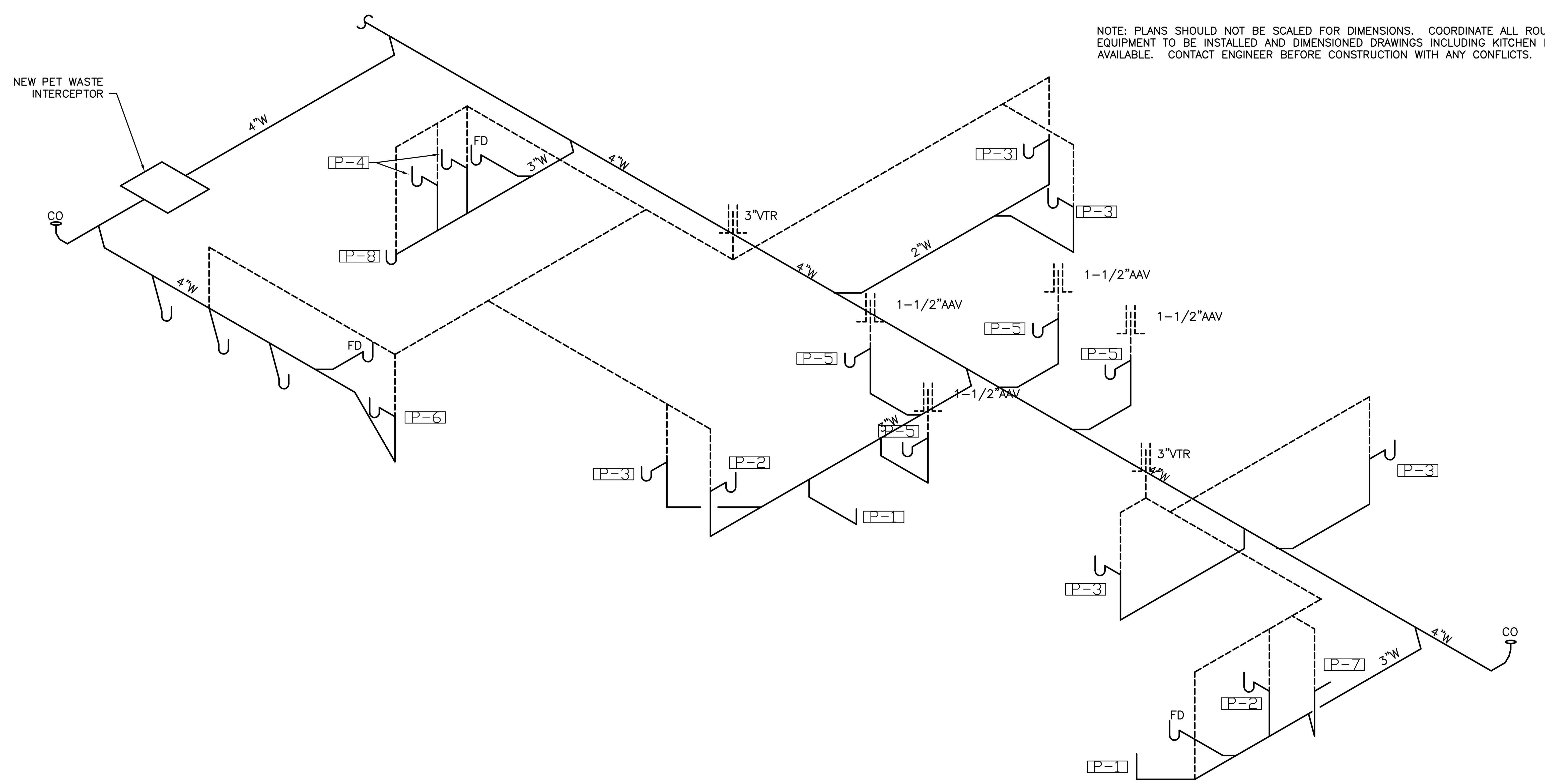
14. PRIOR TO BIDDING, THE CONTRACTOR AND HIS SUBCONTRACTORS SHALL VISIT THE JOBSITE AND SHALL FAMILIARIZE THEMSELVES WITH ALL CONDITIONS UNDER WHICH WORK IS TO BE PERFORMED AND SHALL INCLUDE IN HIS BID ALL LABOR, MATERIAL AND OPERATIONS REQUIRED FOR A COMPLETE JOB. (NOTIFY OWNER AND ENGINEER OF ANY DISCREPANCIES PRIOR TO BID.)

15. CLEANOUTS, LINE SIZE, UNO.

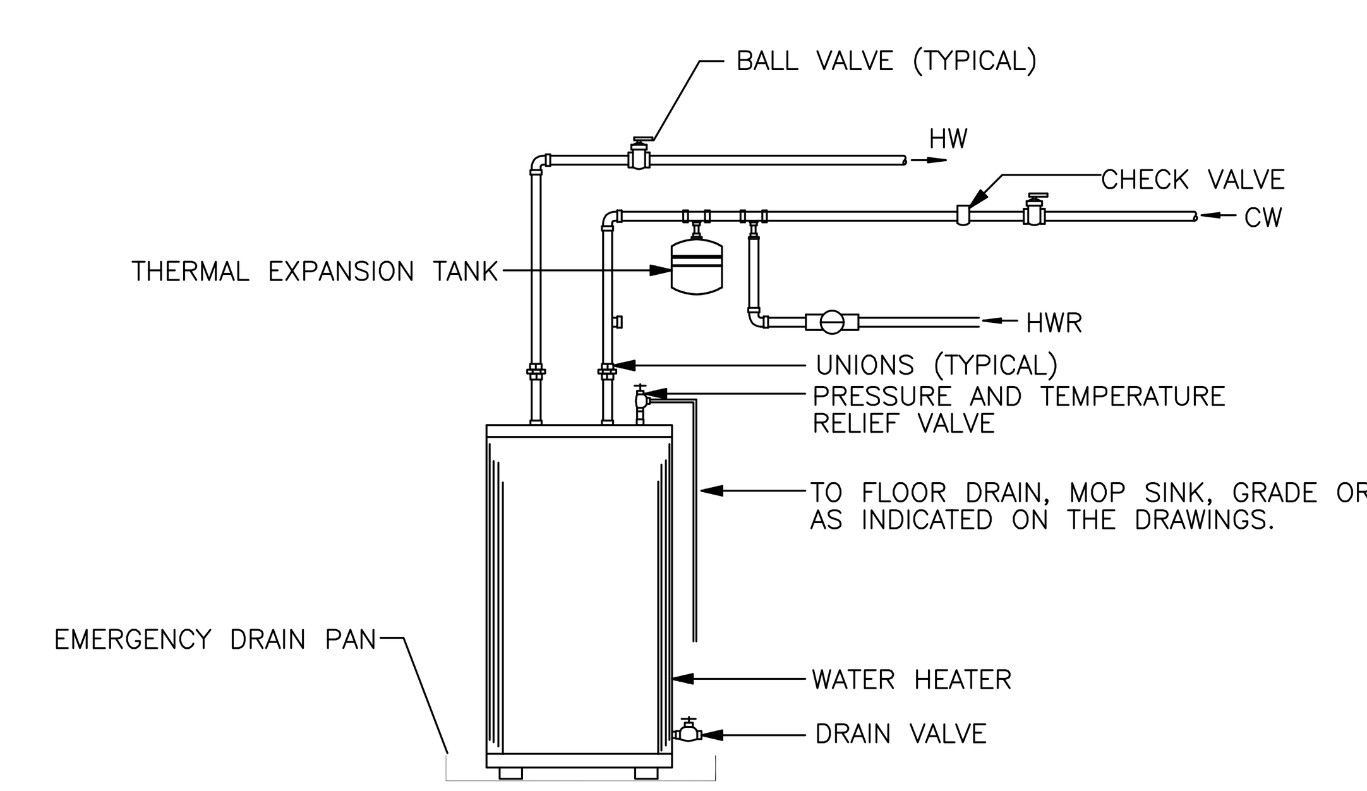
16. FLOOR DRAINS, LINE SIZE, UNO.

17. FLOOR DRAINS WITH SUBSCRIPT CO TO HAVE INTEGRAL CLEANOUT AND SHALL BE SIMILAR TO REGULAR FLOOR DRAIN SPECIFIED, UNO.

18. FLOOR DRAINS AND FLOOR SINKS SHALL BE PROVIDED WITH TRAP PRIMERS OR ALTERNATE METHODS AS APPROVED BY AUTHORITY HAVING JURSIDICTION.



WASTE RISER
SCALE: NONE



A ELECTRIC WATER HEATER
SCALE: NONE

no.	date	revision

THIS SHEET SHOWS BASIC DRAFTING STANDARDS

PROJECT NO. 19250

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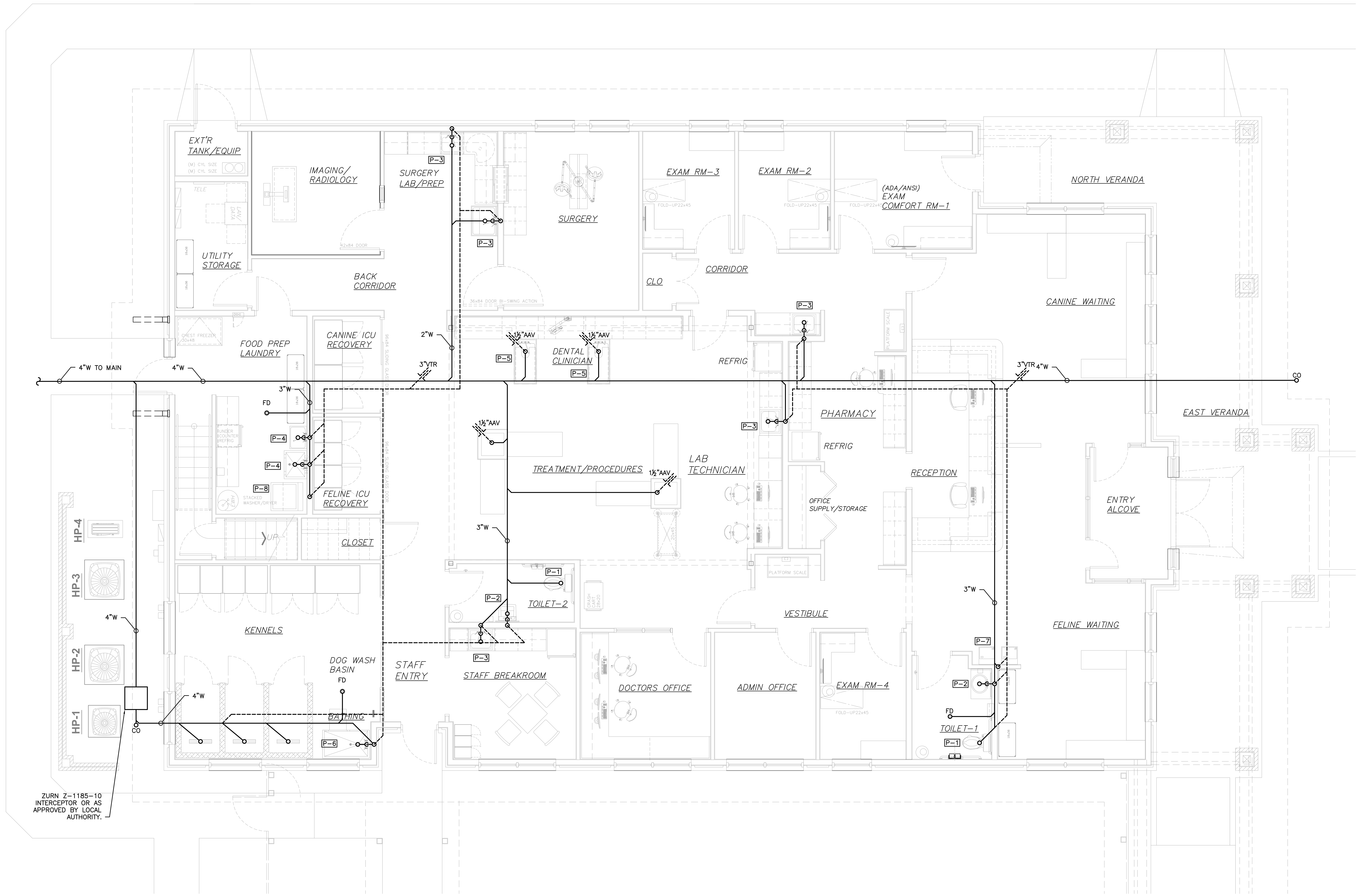
Proposed Proposed Veterinarian Facility for RiverLights Animal Hospital
5489 WATERGRASS DRIVE
WILMINGTON, NORTH CAROLINA 28412

PLUMBING SCHEDULES, NOTES & DETAILS

job status **Construction Document - Issued for Construction**

date	14 AUGUST, 2025
job no.	RIVVET/BUS/25
drawn by	
checked by	SE
drawing no.	P100
revision no.	



SITE NORTH

PLAN NORTH

1 / P200 FIRST FLOOR PLAN — PLUMBING — WASTE
SCALE: 1/4" = 1'-0"

GRAPHIC BAR SCALE (FOOT UNITS)
0 2 4 10
1 3 5

no.	date	revision

THIS SHEET SHOWS BASIC DRAFTING STANDARDS

PROJECT NO. 19250

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Proposed Proposed Veterinarian Facility for RiverLights Animal Hospital

5489 WATERGRASS DRIVE
WILMINGTON, NORTH CAROLINA 28412

FIRST FLOOR PLAN — PLUMBING — WASTE

job status **Construction Document - Issued for Construction**

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job no.	RIVVET/BUS/25
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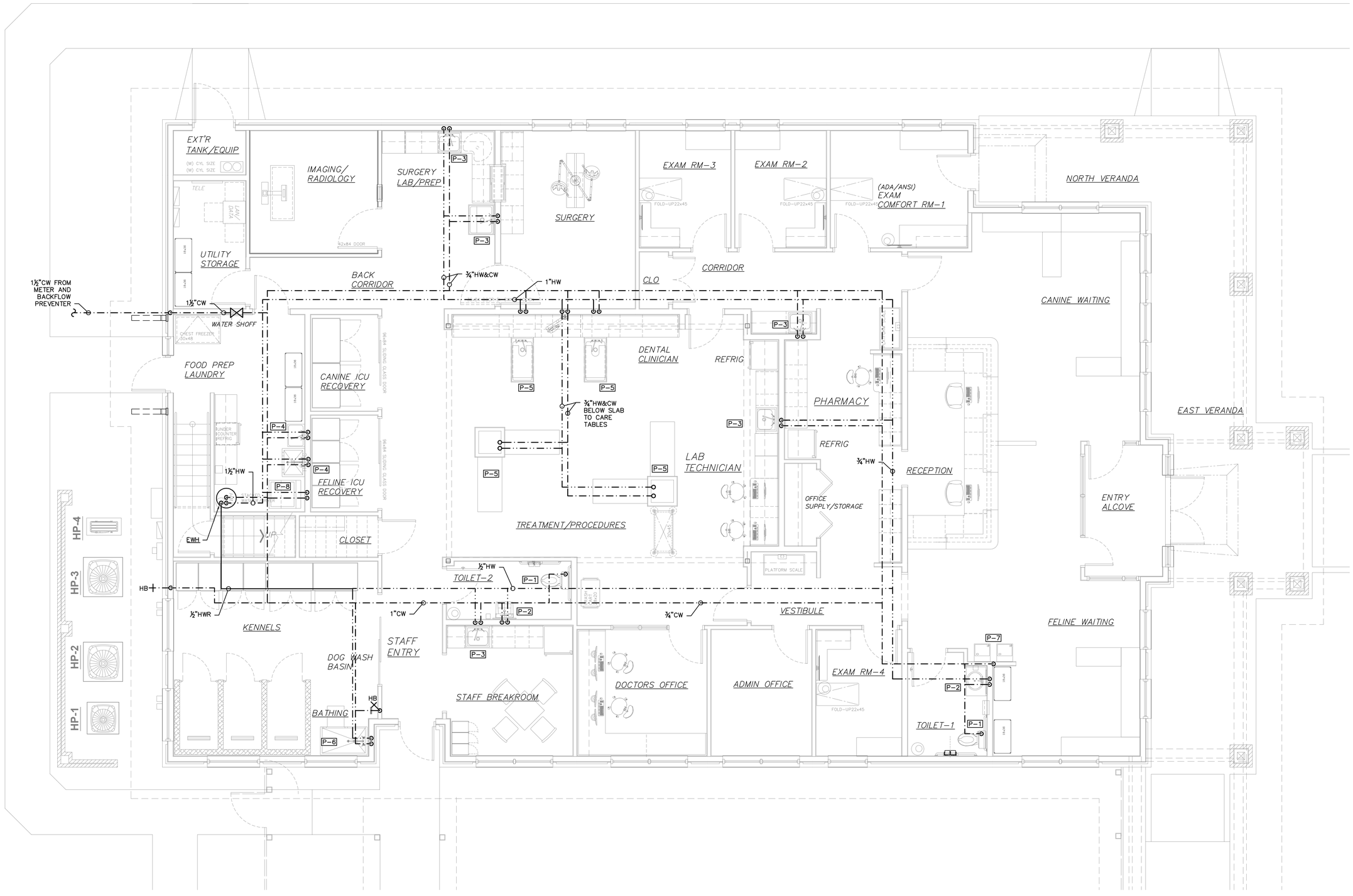

SITE NORTH

PLAN NORTH

1 FIRST FLOOR PLAN — PLUMBING — WATER

P201 SCALE: 1/4" = 1'-0"

GRAPHIC BAR SCALE (FOOT UNITS)

0 2 4 10

1 3 5

no.	date	revision

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Proposed Proposed Veterinarian Facility for
RiverLights Animal Hospital
5480 WATERGRASS DRIVE
WILMINGTON, NORTH CAROLINA 28412

FIRST FLOOR PLAN — PLUMBING — WATER

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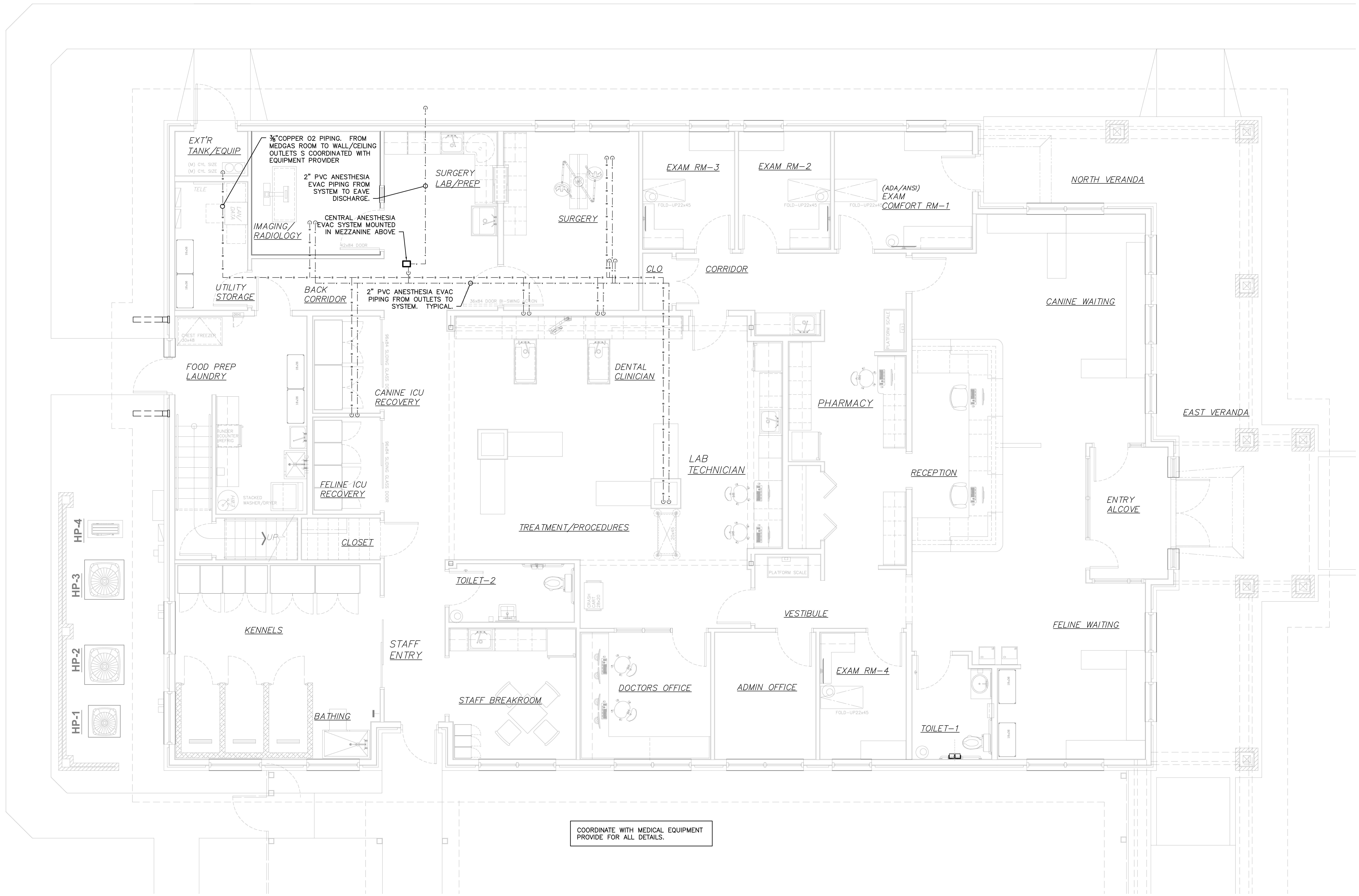
revision no.	



SITE NORTH PLAN NORTH

1 P202 FIRST FLOOR PLAN – PLUMBING – MEDGAS
SCALE: 1/4" – 1'-0"

GRAPHIC BAR SCALE (FOOT UNITS) 0 1 2 3 4 5 10

no.	date	revision

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FIRST FLOOR PLAN – PLUMBING – MEDGAS

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checked by	SE
drawing no.	P202
revision no.	

SPLIT SYSTEM HEAT PUMP SCHEDULE

		AHU-1	AHU-2,3
UNIT NUMBER		AHU-1	AHU-2,3
MANUFACTURER		TRANE	TRANE
MODEL NUMBER		TEM6A0C36	TEM6A0C48
UNIT WEIGHT (LBS)		146	151
FAN	TOTAL AIR CFM	1200	1600
	OUTSIDE AIR CFM	120	160
	FAN H.P.	1/2	3/4
	EXT. S.P. (IN H2O)	0.9	0.4
	POWER SUPPLY	208/230V-1ø-60	208/230V-1ø-60
COOLING CAPACITY	TOTAL COOLING CAPACITY (BTUH)	39,500	48,000
	SENSIBLE COOLING CAPACITY (BTUH)	26,700	35,000
	ENTERING AIR TEMP	80/67	80/67
HEATING CAPACITY	ENTERING AIR TEMP	70°F	70°F
	HIGH TEMP (BTUH) 47°F	34,500	46,500
	LOW TEMP (BTUH) 47°F	21,700	29,400
	AUXILIARY COIL CAPACITY	5.77/7.68 KW @208/240	7.21/9.6 KW @208/240
	POWER SUPPLY	208/230V-1ø-60	208/230V-1ø-60
	MINIMUM AMPACITY	40/45	51/58
	MAX. OVERCURRENT PROTECTION	40/45	60/60
AIR COOLED HEAT PUMP	UNIT NUMBER	HP-1	HP-2,3
	MODEL NUMBER	4TWR5036	4TWR5048
	UNIT WEIGHT	227	255
	ENTERING AIR TEMP	95°F	95°F
	FAN TYPE	PROPELLER	PROPELLER
	FAN H.P.	1/8	1/5
	COMPRESSOR	2 STAGE SCROLL	SCROLL
	POWER SUPPLY	208/230V-1ø-60	208/230V-1ø-60
	MINIMUM AMPACITY	21	24
	MAX. OVERCURRENT PROTECTION	35	40
ACCESSORIES		(1), (2), (3), (4)	(1), (2), (3)

(1) PROVIDE WALL MOUNTED, PROGRAMMABLE ELECTRONIC THERMOSTAT WITH AUTO CHANGEOVER.

(2) PROVIDE STRIP HEAT SHUTOFF PER C403.2.4.1.1

(3) SYSTEMS SELECTED MEET REQUIREMENTS UNDER SECTION 406 OF THE NORTH CAROLINA STATE BUILDING CODE: ENERGY CONSERVATION CODE.

(4) PROVIDE SES HUMIDITY CONTROL MODULE.

DUCTLESS SPLIT SYSTEM HEAT PUMP SCHEDULE

		DAHU-1A	DAHU-1B&1C
UNIT NUMBER		DAHU-1A	DAHU-1B&1C
AIR HANDLER TYPE		MULTI-ZONE WALL MOUNTED	MULTI-ZONE CEILING CASSETTE
MANUFACTURER		MITSUBISHI	MITSUBISHI
MODEL NUMBER		MSZ-GX09NL	SLZ-AF12NL
UNIT WEIGHT (LBS)		26	26
FAN	TOTAL AIR CFM	371	371
	OUTSIDE AIR CFM	-	-
	FAN H.P.	30 WATTS	30 WATTS
	EXT. S.P. (IN H2O)	-	-
	POWER SUPPLY	208V-1ø-60	208V-1ø-60
COOLING CAPACITY	TOTAL COOLING CAPACITY (BTUH)	8,663	11,550
	SENSIBLE COOLING CAPACITY (BTUH)	7,983	9,553
	ENTERING AIR TEMP	80/67	80/67
HEATING CAPACITY	ENTERING AIR TEMP	70°F	70°F
	HIGH TEMP (BTUH) 47°F	8,020	12,436
	LOW TEMP (BTUH) 17°F	-	-
	AUXILIARY COIL CAPACITY	N/A	N/A
	POWER SUPPLY	208V-1ø-60	208V-1ø-60
	MINIMUM AMPACITY	1	1
	MAX. OVERCURRENT PROTECTION	VIA OUTDOOR UNIT	VIA OUTDOOR UNIT
AIR COOLED HEAT PUMP	UNIT NUMBER	DHP-1	
	MODEL NUMBER	MXZ-SM36NL	
	UNIT WEIGHT	142	
	ENTERING AIR TEMP	95°F	
	FAN TYPE	PROPELLER	
	FAN H.P.	-	
	COMPRESSOR	ECM SCROLL	
	POWER SUPPLY	208V-1ø-60	
	MINIMUM AMPACITY	42	
	MAX. OVERCURRENT PROTECTION	70	
ACCESSORIES		(1), (2), (3)	

(1) PROVIDE WALL MOUNTED, PROGRAMMABLE ELECTRONIC THERMOSTAT WITH AUTO CHANGEOVER.

(2) PROVIDE STRIP HEAT SHUTOFF PER 503.2.4.1.1

(3) PROVIDE MOTOR OPERATED DAMPER IN O.A. DUCT CONTROLLED BY CO2 SENSOR IN RETURN

AIR DISTRIBUTION DEVICES

TAG	SERVICE	NECK SIZE	OVERALL SIZE	MODEL NUMBER	DESCRIPTION & ACCESSORIES
A	SUPPLY	-	12 X 6	610	1, 2, 4, 5, 6
B	SUPPLY	8"ø	12 X 12	ASCD	1, 2, 4, 7, 8
C	SUPPLY	8"ø	24 X 24	ASCD	1, 2, 3, 7, 8
D	SUPPLY	14"ø	24 X 24	80	1, 2, 3, 5
F	SUPPLY	14"ø/-	16 X 20	630	1, 2, 3, 5

(1) MODEL BASED ON PRICE AIR DISTRIBUTION; METALAIRE OR APPROVED EQUAL ACCEPTABLE.

(2) ALUMINUM CONSTRUCTION, STANDARD WHITE FINISH.

(3) T-BAR LAY-IN PANEL

(4) SURFACE MOUNT BORDER.

(5) CFM SHOWN IN GRILLE TAG IS MAXIMUM POSSIBLE WITH EXHAUST AND OUTSIDE AIR AT 0.

(6) DOUBLE DEFLECTION GRILLE.

(7) SQUARE FACE. ROUND NECK DIFFUSER

(8) BUTTERFLY STYLE VOLUME CONTROL DAMPER.

EXHAUST FAN SCHEDULE

TAG	CFM	RPM	S.P. IN W.G	WATTS/HP	SONES	ELECTRIC	CONTROL	MANUF. MODEL NUMBER	DESCRIPTION & ACCESSORIES
EF-1	75	700	0.25	50 W	3.0	120V-1ø-60	WIRED WITH LIGHT	GREENHECK SP-B90	1,2,3
EF-2	150	1050	0.25	129 W	4.5	120V-1ø-60	WIRED WITH LIGHT	GREENHECK SP-B150	1,2,3
EF-3	350	1152	0.25	135 W	1.3	120V-1ø-60	SPEED CONTROL ON WALL	GREENHECK SP-A390	1,2,3

(1) CABINET CEILING FAN, DIRECT DRIVE, CENTRIFUGAL, SPRING LOADED ALUMINUM BACKDRAFT DAMPER.

(2) ALUMINUM, WHITE ENAMEL CEILING GRILLE.

(3) ALUMINUM HOODED WALL CAP WITH BUILT-IN BIRDSCREEN AND DAMPER.

ALTERNATE BY PENNBARRY ACCEPTABLE

MECHANICAL LEGEND

- NEW DUCTWORK
- NEW SUPPLY GRILLE/DIFFUSER
- NEW RETURN GRILLE/DIFFUSER
- TS — THERMOSTAT
- A — CFM TAG
- EF-# — EXHAUST FAN
- CONDENSATE/REFRIGERANT PIPE
- AIRFLOW DIRECTION
- MANUAL VOLUME CONTROL

MECHANICAL SYSTEMS, SERVICE SYSTEMS AND EQUIPMENT
METHOD OF COMPLIANCE

Prescriptive ●— Energy Cost Budget ____

Thermal Zone 3A
Exterior design conditions
- winter dry bulb 26° F
- summer dry bulb 92° F DB/76° F WB

Interior design conditions
- winter dry bulb 70° F
- summer dry bulb 75° F
- relative humidity 50%

Building heating load 127 MBTU/H
Building cooling load 12 TONS
Mechanical Spacing Conditioning System
Unitary
- description of unit
- heating efficiency 9.0 HSPF
- cooling efficiency 15.0 SEER AVG.
- heat output of unit SEE SCHEDULES
- cooling output of unit SEE SCHEDULES

boiler
- total boiler output. If oversized, state reason. N/A

chiller
- total chiller capacity. If oversized, state reason. N/A

List equipment efficiencies N/A

Equipment schedules with motors (mechanical systems)
- motor horsepower SEE SCHEDULES
- number of phases SEE SCHEDULES
- minimum efficiency SEE SCHEDULES
- motor type ODP
- # of poles 4

Additional prescriptive compliance method : C406.2.1 More Eff. Mech Equip.

DESIGNER STATEMENT:

To the best of my knowledge and belief, the design of this building complies with the mechanical systems, service systems and equipments of the 2018 North Carolina State Energy Code.

SIGNED: [signature]
NAME: STEVEN H. EVERHART JR., P.E.
TITLE: PROFESSIONAL ENGINEER

GENERAL MECHANICAL SPECIFICATIONS

ALL WORK SHALL COMPLY WITH THE REQUIREMENTS OF THE LATEST EDITION OF THE NC MECHANICAL CODE.

BASIS OF DESIGN: UNLESS OTHERWISE NOTED THE PURPOSE OF THESE DRAWINGS IS TO PROVIDE DIRECTION AND BASIS OF DESIGN TO A COMPETENT CONTRACTOR FAMILIAR WITH THE TYPE OF SYSTEMS BEING INSTALLED SUFFICIENT TO INDICATE OWNERS REQUESTS AND CODE REQUIREMENTS. IT IS THE CONTRACTORS RESPONSIBILITY, WHEN OTHERWISE UNDIRECTED, TO FOLLOW STANDARD INDUSTRY PRACTICES AND BASIC CODE COMPLIANCE INCLUDING, BUT NOT LIMITED TO, PROVIDING MATCHING REQUIRED ACCESSORIES TO THE SYSTEMS INDICATED, COORDINATING EXACT ROUTINGS AND LOCATIONS WITH OTHER TRADES AND THE OWNER, SELECTING CODE APPROVED MATERIALS, AND MAKING MINOR OFFSETS/ADJUSTMENTS BASED ON FIELD COORDINATION AND OWNER'S FIELD REQUESTS. CHANGE OF MANUFACTURER TO EQUIVALENT SYSTEMS, WITH OWNER'S APPROVAL, IS ACCEPTABLE. CONTACT ENGINEER WITH ANY CONFLICTS NOT COVERED BY THE ABOVE INSTRUCTIONS.

SHEET METAL WORK: THIS CONTRACTOR SHALL FURNISH ALL DUCTWORK AND ASSOCIATED SHEET METAL WORK AS CALLED FOR ON THE DRAWINGS AND REQUIRED FOR A COMPLETE DUCTED AIR DISTRIBUTION SYSTEM.

DUCTWORK SHALL BE FABRICATED AND INSTALLED IN ACCORDANCE WITH BEST PRACTICES OF SHEET METAL WORK AND SMACNA STANDARDS.

ALL DUCTWORK SHALL BE GALVANIZED SHEET IRON THROUGHOUT EXCEPT WHERE OTHERWISE SHOWN AND FABRICATED IN ACCORDANCE WITH THE FOLLOWING TABLE (ALL DUCT SIZES ON CONTRACT DRAWINGS ARE SHEET METAL FABRICATION SIZES):

MAXIMUM DIMENSION OF DUCT	GAUGE U.S. STD.	TRANSVERSE JOINT	BRACING
UP TO 12"	26	DRIVE SLIPS 7'-10" CENTERS	NONE
13" TO 30"	24	DRIVE SLIPS 7'-10" CENTERS	1"X1"X1/8" ANGLES 4 FEET FROM JOINT

DUCTS 25 INCHES OR SMALLER IN MAXIMUM DIMENSION SHALL BE SUPPORTED WITH 1 INCH FLAT BAND HANGERS; DUCTS 25 INCHES AND LARGER SHALL BE SUPPORTED BY 3/4 INCH X 1-1/2 INCH ANGLE IRON AND ROUND ROD. SUPPORTS SHALL BE NOT MORE THAN 8 FEET ON CENTERS, PROPERLY FASTENED AND PLACED TO BUILDING STRUCTURES AND SHALL EXTEND AND BE RIVETED TO THE BOTTOM OF DUCTS.

UNLESS OTHERWISE SPECIFIED, FURNISH AND INSTALL ALL NECESSARY LINTELS, PROPERLY SIZED, SHEET METAL SLEEVES AND ESCUTCHEON COLLARS WHERE DUCTWORK RISES THROUGH FLOORS OR PASSES THROUGH WALLS OR CEILINGS.

FURNISH AND INSTALL FLEXIBLE COLLARS IN THE DUCTWORK CONNECTIONS TO AIR HANDLING FANS TO PREVENT NOISE TRANSMISSION BETWEEN SECTIONS.

ALL CHANGES IN DUCT DIRECTION SHALL BE LONG RADIUS ELBOWS OR SHALL BE FITTED WITH TURNING VANES.

IT IS ACCEPTABLE TO CHANGE RECTANGULAR DUCTWORK TO THE EQUIVALENT SIZE IN ROUND PROVIDED THE CONTRACTOR COORDINATES ALL CLEARANCE ISSUES.

DUCT INSULATION: ALL CONCEALED DUCTWORK SHALL BE INSULATED ON THE OUTSIDE WITH TWO INCH (2") THICK, 3/4 POUND DENSITY FIBERGLASS BLANKET INSULATION HAVING AN ALUMINUM FOIL-SCRIM VAPOR BARRIER JACKET. EXPOSED DUCTWORK SHOWN ROUND SHALL BE DOUBLE WALL SPIRAL UNLESS OWNER SPECIFICALLY ALLOWS FOR POTENTIAL SWEATING ISSUES.

EDGES OF INSULATION SHALL BE CUT STRAIGHT AND TRUE AND SHALL BE TIGHTLY BUTTED. THE VAPOR BARRIER JACKET SHALL OVERLAP THE BLANKET JOINT A MINIMUM OF THREE INCHES (3"). THE JACKET LAP SHALL BE FASTENED WITH MOISTURE RESISTANT ADHESIVE AND ALSO OUTWARD CLINCHING STAPLES SPACED TEN INCHES (10") C/C. THE VAPOR BARRIER EDGE AND STAPLES SHALL THEN BE COVERED WITH A THREE INCH (3") WIDE TAPE OF THE SAME MATERIAL AS THE JACKET AND SHALL BE FASTENED WITH MOISTURE RESISTANT ADHESIVE.

ALL CUTS, TEARS AND PENETRATIONS IN THE VAPOR BARRIER JACKET SHALL BE SEALED WITH JOINT TAPE. ALL EDGES OF INSULATING BLANKET SHALL BE SEALED FROM THE JACKET TO DUCT SURFACE WITH TAPE.

INSULATING BLANKET ON THE BOTTOM OF SURFACES IN EXCESS OF 24 INCHES WIDE SHALL BE SECURED AGAINST THE DUCT WITH ADHESIVE OVER THE ENTIRE AREA, MECHANICAL CLIPS ON 24 INCH CENTER OR BY WIRE TIES AROUND THE DUCT SPACED 24 INCHES C/C.

CONTRACTOR MAY USE FLEXIBLE DUCTWORK (MAXIMUM LENGTHS 15'-0") FOR FINAL CONNECTIONS TO DIFFUSERS/GRILLES. FLEXIBLE DUCTWORK SHALL BE CERTAFLEX 25 AS MANUFACTURED BY THE CERTAINTEED CORPORATION.

REGISTERS AND GRILLES: ALL REGISTERS AND GRILLES SHALL BE OF SIZE, STYLE AND CAPACITY CALLED FOR ON PLANS AND IN THE GRILLE SCHEDULE. PROVIDE RUBBER OR EXPANDED FOAM GASKETS COMPLETELY AROUND ALL REGISTER AND GRILLE FRAMES TO PREVENT AIR LEAKAGE BETWEEN GRILLE FRAME AND DUCT OR BETWEEN GRILLE FRAME AND SURROUNDING FINISHED SURFACE. ACCEPTABLE MGFS: PRICE, CARNES, METALAIR, KRUGER.

EQUIPMENT: MECHANICAL AND ELECTRICAL CONTRACTORS SHALL COORDINATE PRIOR TO ORDERING EQUIPMENT TO VERIFY CONSISTANT VOLTAGES. PRIOR TO EQUIPMENT BEING ENERGIZED, VOLTAGE TO EQUIPMENT CIRCUITS SHALL BE VERIFIED AS INSTALLED TO MATCH EQUIPMENT NAMEPLATE.

OPERATING INSTRUCTIONS, CERTIFICATES AND WARRANTIES: THE ORIGINAL OF ALL INSPECTION CERTIFICATES SHALL BE DELIVERED TO THE OWNER AND ONE (1) COPY EACH TO THE ENGINEER PRIOR TO REQUEST FOR FINAL PAYMENT.

THREE (3) COPIES OF OPERATING AND MAINTENANCE INSTRUCTIONS AND MANUFACTURER'S WARRANTIES FOR ALL EQUIPMENT PROVIDED UNDER THIS CONTRACT SHALL BE PROVIDED TO THE OWNER PRIOR TO SUBMITTING REQUEST FOR FINAL PAYMENT.

PRIOR TO FINAL PAYMENT TO THE CONTRACT, THE CONTRACTOR SHALL BE RESPONSIBLE TO TRAIN THE AUTHORIZED PERSONNEL ON HOW TO SERVICE, START-UP AND SHUT-DOWN THE VARIOUS SECTIONS OF THE SYSTEM. UPON COMPLETION OF THIS PHASE OF THE CONTRACT, THE CONTRACTOR SHALL SECURE A LETTER OF ACCEPTANCE FROM THE OWNER THAT HE IS SATISFIED WITH THE CONDITIONS STIPULATED HEREIN. UPON ACCEPTANCE OF THIS LETTER AND AT THE DISCRETION OF THE ENGINEER, THE FINAL PAYMENT WILL BE MADE.

THE CONTRACTOR SHALL PROVIDE A WRITTEN GUARANTEE OF ALL MATERIALS AND WORKMANSHIP FOR A PERIOD OF ONE (1) YEAR FROM DATE OF SYSTEM ACCEPTANCE.

THE WORK UNDER THIS CONTRACT WILL BE ACCEPTED ONLY AS AN ENTIRE SYSTEM UPON SATISFACTORY COMPLETION OF THE REQUIRED TESTS. NO PARTIAL ACCEPTANCE OF ANY PART OR PORTION OF APPARATUS WILL BE MADE.

INSTALL AND CONNECT ALL EQUIPMENT IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS AND DO ALL WORK IN A NEAT AND WORKMANLIKE MANNER AND IN ACCORDANCE WITH ACCEPTED GOOD PRACTICE AS JUDGED BY THE ENGINEER.

ALL EQUIPMENT AND PIPING SHALL BE SO INSTALLED THAT NO OBJECTIONABLE NOISES FROM EQUIPMENT, PIPING OR AIR DISTRIBUTION ARE AUDIBLE IN THE FINISHED AREAS.

GUARANTEE: THIS CONTRACTOR SHALL GUARANTEE ALL MATERIALS, EQUIPMENT AND WORKMANSHIP FOR ONE (1) YEAR FOLLOWING FINAL INSPECTION AND ACCEPTANCE OF THE BUILDING BY THE ENGINEER AND OWNER. THIS APPLIES TO ALL MATERIALS AND EQUIPMENT INSTALLED UNDER THIS CONTRACT, REGARDLESS OF SOURCE.

THE ONE (1) YEAR GUARANTEE PERIOD WILL START ON THE DAY OF FINAL INSPECTION AND ACCEPTANCE BY THE OWNER. THE CONTRACTOR SHALL PROVIDE THE ENGINEER A LETTER WITH TWO (2) COPIES STATING THE BEGINNING AND ENDING DATES OF THE GUARANTEE BASED ON THE AFOREMENTIONED STARTING DATES.

EXTENDED GUARANTEE: PROVIDE AN ADDITIONAL FOUR (4) YEAR GUARANTEE ON ALL COMPRESSORS BEYOND THE ABOVE MENTIONED ONE (1) YEAR GUARANTEE PERIOD.

AIR BALANCE: ALL SYSTEMS SHALL BE BALANCED BY THE CONTRACTOR PER THE REQUIREMENTS OF SECTION 408.2.2.1 OF THE NORTH CAROLINA STATE BUILDING CODE: ENERGY CONSERVATION CODE.

ENERGY CODE COMPLIANCE: HVAC EQUIPMENT SELECTED MEETS PERFORMANCE REQUIREMENTS OF THE NORTH CAROLINA STATE BUILDING CODE: ENERGY CONSERVATION CODE SECTION 406.2 ANY SUBSTITUTIONS MUST MEET THIS STANDARD AS WELL. UPON FINAL INSPECTION THE CONTRACTOR SHALL PROVIDE TO OWNER MANUALS AND EVIDENCE OF AIR BALANCE. CONTRACTOR SHALL SCHEDULE DESIGN PROFESSIONAL AND ASSIST TO COMPLETE SYSTEM INSTALLATION STATEMENT IN ACCORDANCE WITH THE NORTH CAROLINA STATE BUILDING CODE: ENERGY CONSERVATION CODE SECTION 408.1.

no.	date	revision

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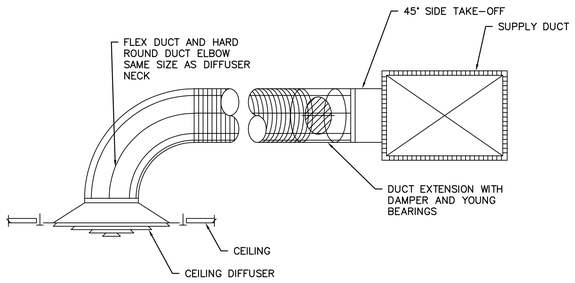
PROJECT NO. 19250

Proposed Proposed Veterinarian Facility for
RiverLights Animal Hospital
5480 WATERFRONT DRIVE
WILMINGTON, NORTH CAROLINA 28412

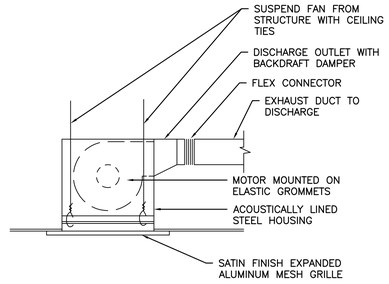
job status **Construction Document - Issued for Construction**

MECHANICAL SCHEDULES, NOTES & DETAILS

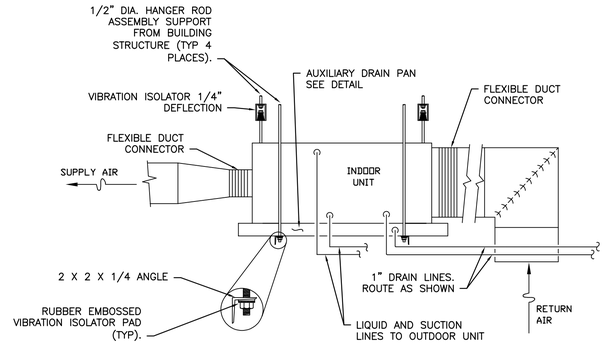
date 14 AUGUST, 2025
job no. RIVVET/BUS/25
drawn by
checked by SE
drawing no. M100
revision no.



1 DIFFUSER CONNECTIONS
SCALE: NONE



2 CEILING MOUNTED EXHAUST FAN
SCALE: NONE



3 SPLIT SYSTEM HEAT PUMP HORIZ. INSTALLATION DETAIL
SCALE: NONE

3 SPLIT SYSTEM HEAT PUMP VERT. INSTALLATION DETAIL
SCALE: NONE

no.	date	revision

THIS SHEET SHOWS BASIC DRAFTING STANDARDS

PROJECT NO. 19250

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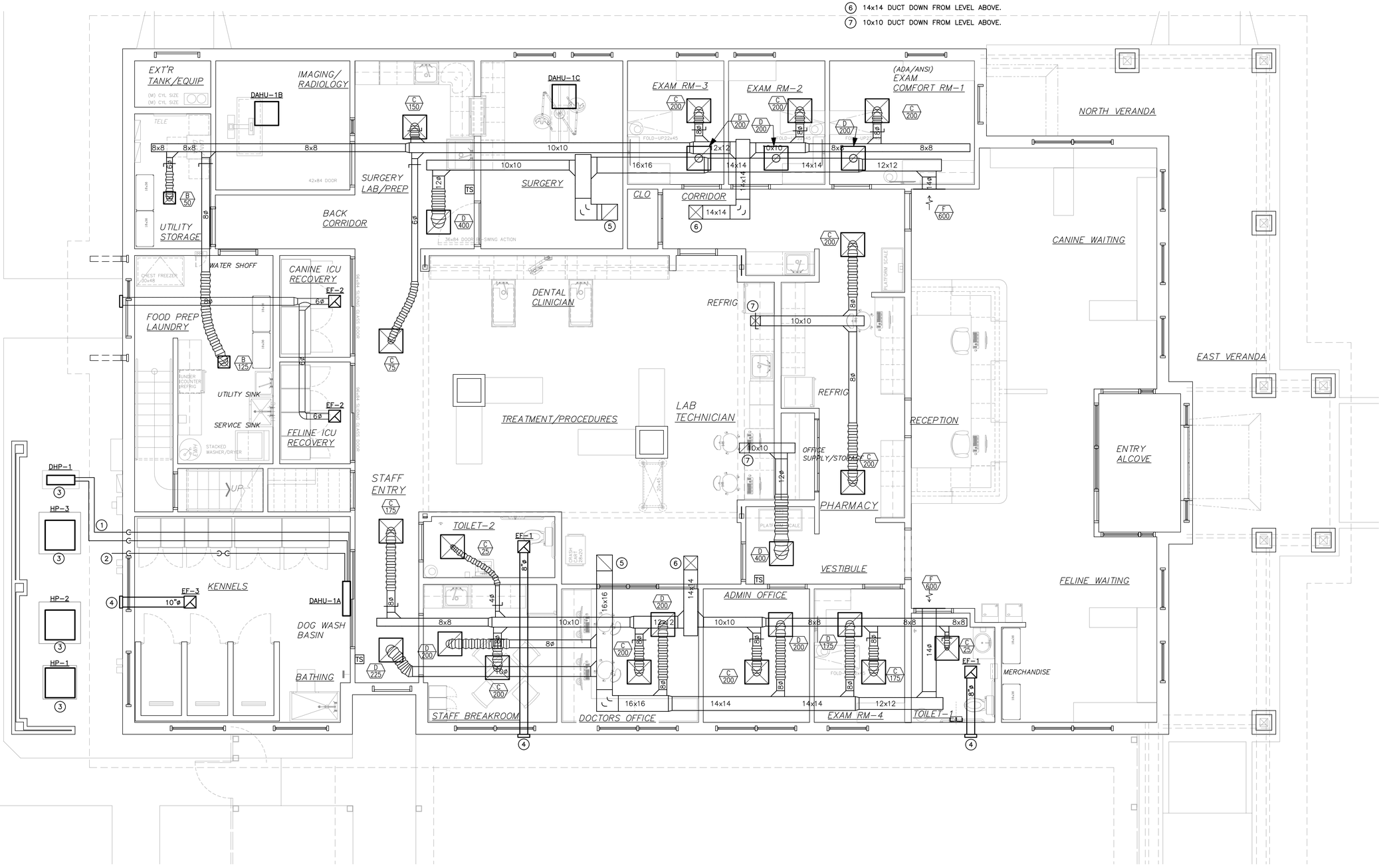
MECHANICAL DETAILS

job status **Construction Document - Issued for Construction**

date	14 AUGUST, 2025
job no.	RIVVET/BUS/25
drawn by	
checked by	SE
drawing no.	M101
revision no.	

GENERAL NOTES:

1. REFRIGERANT PIPING CONCEALED ABOVE CEILING AND IN BUILDING CONSTRUCTION, SIZE AS RECOMMENDED BY UNIT MANUFACTURER. (TYP.)
2. 1"CONDENSATE DRAIN PIPING WITH PROPER PITCH. TERMINATE OUTSIDE BUILDING, MIN. 8" ABOVE GRADE WITH ELBOW LOOKING UP. (TYP.)
3. MOUNT UNIT ON 4" CONCRETE PAD OR PAVED SURFACE.
4. DUCT CAP TO EXHAUST FAN.
5. 16x16 DUCT DOWN FROM LEVEL ABOVE.
6. 14x14 DUCT DOWN FROM LEVEL ABOVE.
7. 10x10 DUCT DOWN FROM LEVEL ABOVE.



SITE NORTH

PLAN NORTH

1 / M200 FIRST FLOOR PLAN — MECHANICAL

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

GRAPHIC BAR SCALE (FOOT UNITS)

0 2 4 10

1 3 5

no.	date	revision

THIS SHEET SHOWS BASIC DRAFTING STANDARDS

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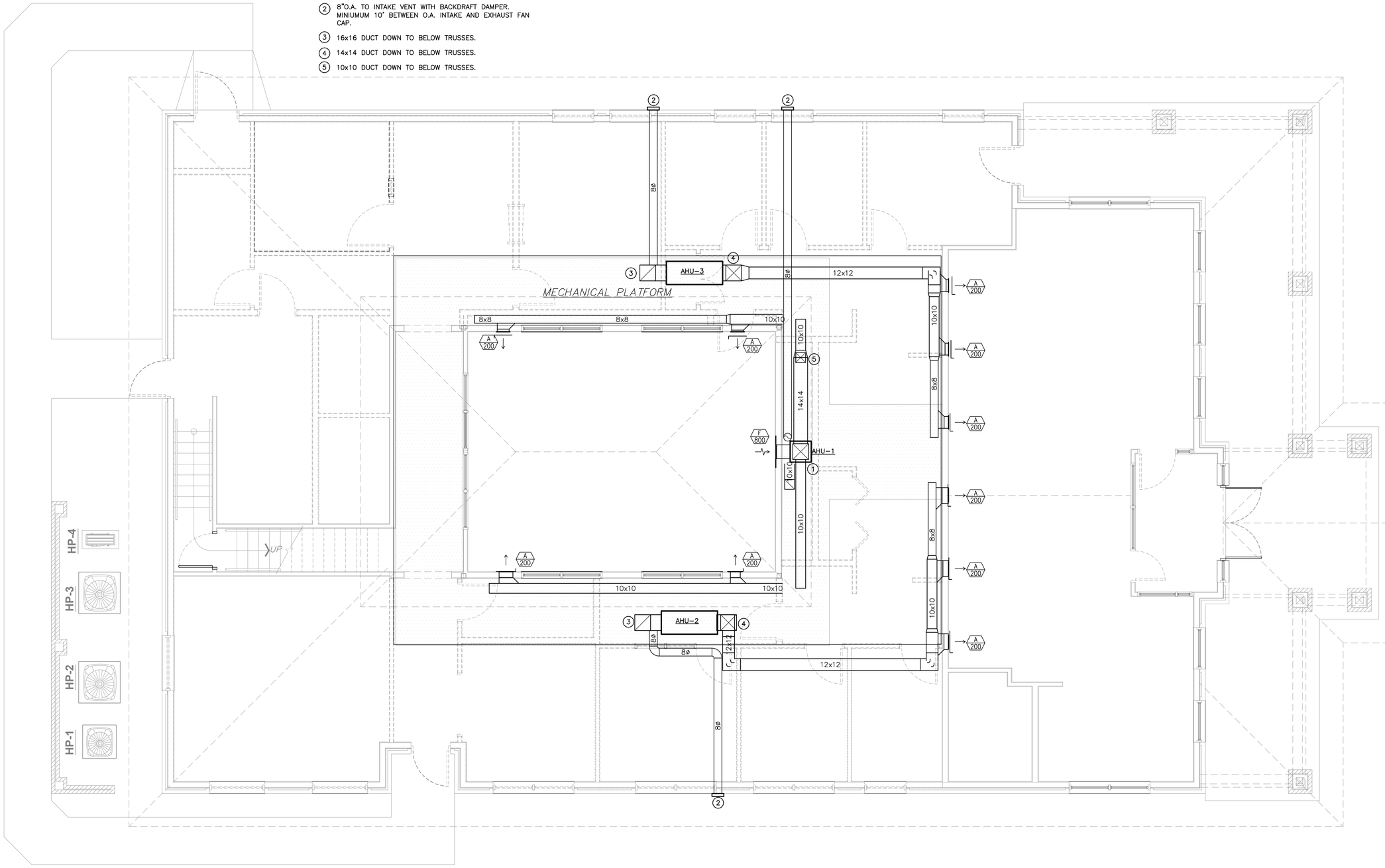
FIRST FLOOR PLAN — MECHANICAL

job status **Construction Document - Issued for Construction**

date	14 AUGUST, 2025
job no.	RIVVET/BUS/25
drawn by	
checked by	SE
drawing no.	M200
revision no.	

GENERAL NOTES:

1. AIR HANDLER INSTALLED VERTICALLY.
2. 8"O.A. TO INTAKE VENT WITH BACKDRAFT DAMPER. MINIUMUM 10' BETWEEN O.A. INTAKE AND EXHAUST FAN CAP.
3. 16x16 DUCT DOWN TO BELOW TRUSSES.
4. 14x14 DUCT DOWN TO BELOW TRUSSES.
5. 10x10 DUCT DOWN TO BELOW TRUSSES.



SITE NORTH

PLAN NORTH

1 / M201 MECHANICAL PLATFORM — MECHANICAL
SCALE: 1/4" = 1'-0"

GRAPHIC BAR SCALE (FOOT UNITS)
0 2 4 10
1 3 5

no.	date	revision

THIS SHEET SHOWS BASIC DRAFTING STANDARDS

PROJECT NO. 19250

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MECHANICAL PLATFORM — MECHANICAL

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drawn by	
checked by	SE
drawing no.	M201
revision no.	

DETAILED ELECTRICAL SPECIFICATIONS

SCOPE: FURNISH ALL MATERIALS, LABOR, TOOLS, EQUIPMENT AND SUPERVISION NECESSARY TO INSTALL COMPLETE ELECTRICAL POWER AND LIGHTING SYSTEM IN THE BUILDING AS FURTHER DESCRIBED ON THE ELECTRICAL CONTRACT DRAWINGS.

SUPPLY ALL MATERIALS, FITTINGS AND HARDWARE NECESSARY FOR COMPLETE OPERATING SYSTEMS WITHIN THE OBVIOUS INTENT OF THE DRAWINGS. NO ATTEMPT HAS BEEN MADE TO DETAIL OR LIST EACH AND EVERY ITEM OF MATERIAL. THE ELECTRICAL CONTRACTOR IS CAUTIONED TO READ THE ENTIRE PROJECT DRAWINGS AND SPECIFICATIONS TO ASSURE HIMSELF OF A THOROUGH KNOWLEDGE OF BUILDING CONSTRUCTION, STRUCTURAL RESTRICTIONS TO ELECTRICAL CONTRACT WORK AND TO ASSURE THAT NO REFERENCE ANYWHERE IN THE PROJECT DRAWINGS AND SPECIFICATIONS TO WORK BY THE ELECTRICAL CONTRACTOR IS OVERLOOKED.

CODES, PERMITS AND INSPECTIONS: THE LATEST EDITION OF THE STATE BUILDING CODE WHICH INCLUDES THE 2020 EDITION OF THE NATIONAL ELECTRICAL CODE IS HEREBY MADE A PART OF THIS SPECIFICATION. CODE REQUIREMENTS SHALL TAKE PRECEDENCE OVER THESE SPECIFICATIONS WHERE THE CODE REQUIREMENTS EXCEED THAT OF THE SPECIFICATIONS. HOWEVER, THE SPECIFICATIONS SHALL BE FOLLOWED WHERE THEY EXCEED CODE REQUIREMENTS. THE ELECTRICAL CONTRACTOR SHALL, AT NO ADDITIONAL COST TO THE OWNER, OBTAIN THE SERVICES OF THE LOCAL ELECTRICAL INSPECTOR TO MAKE ALL REQUIRED INSPECTIONS.

MATERIALS AND WORKMANSHIP: ALL MATERIAL BUILT INTO THIS PROJECT SHALL BE NEW OF EQUIVALENT OR BETTER QUALITY THAN THAT SPECIFIED. SPECIFIC NAMES AND CATALOG NUMBERS USED HEREIN ARE TO ESTABLISH THE ITEM FUNCTION, ARRANGEMENT AND QUALITY REQUIRED AND ARE NOT INTENDED TO RESTRICT COMPETITION. ALL MATERIALS SHALL BE UL LISTED AND LABELED FOR THE PARTICULAR APPLICATION AS USED ON THIS PROJECT.

CONDUCTORS: ALL CONDUCTORS SHALL BE COPPER (#10 AWG AND SMALLER SHALL BE SOLID, AND #8 AWG AND LARGER STRANDED) WITH THHN/THWN INSULATION, INSTALLED IN CONDUIT OR APPROVED CABLE ASSEMBLY. US MC CABLE FOR BRANCH CIRCUIT WIRING. NM CABLE SHALL NOT BE USED. CONDUCTORS SHALL BE #12 AWG MINIMUM EXCEPT WITHIN LIGHT FIXTURES, LOW VOLTAGE CONTROLS OR COMMUNICATION/FIRE ALARM EQUIPMENT. CONDUCTOR COLOR CODE SHALL CONFORM TO THE NEC. CONDUCTORS SHALL BE CONTINUOUS FROM TERMINAL TO TERMINAL OR PULL BOX TO PULL BOX. JOINTS SHALL BE MADE WITH IDEAL "WIRENUTS."

RACEWAYS: RACEWAYS SHALL BE ELECTRICAL METALLIC TUBING (EMT) WITH THREADED STEEL HEXAGONAL COMPRESSION FITTINGS – NEITHER INDENTOR TYPE OR DIE METAL FITTING WILL BE ACCEPTED. CONDUIT UNDER THE FLOOR SLAB AND OUTSIDE THE BUILDING MAY BE PVC. FITTINGS IN EMT SHALL BE WEATHER TIGHT (THOMAS AND BETTS SERIES #5123 WITH NYLON INSULATED THROATS), BENDS SHALL BE FACTORY FABRICATED OR MADE "COLD" WITH BENDING TOOL, FREE OF KINKS OR RESTRICTIONS. NO SINGLE BEND SHALL BE IN EXCESS OF 90 DEGREES. THERE SHALL BE NO MORE THAN THE EQUIVALENT OF THREE (3) 90 DEGREE BENDS IN A GIVEN RACEWAY FROM PULL BOX TO PULL BOX. RIGID RACEWAY THREADS SHALL BE CUT STRAIGHT AND TRUE – PIPE ENDS SHALL BE REAMED AND SMOOTHED INSIDE AND OUT.

SUPPORT 1–1/2 INCH AND LARGER CONDUIT 10 FEET O/C OR LESS, AND 1 INCH AND SMALLER 6 FEET O/C MAXIMUM. RACEWAYS SHALL BE SUPPORTED DIRECTLY FROM BUILDING STRUCTURE WITH BOLTS, SCREWS, STRAPS, HANGER RODS AND BRACKETS. ALL METALLIC HARDWARE SHALL BE GALVANIZED OR CADMIUM PLATED. NAILS, WIRE AND/OR PERFORATED STRAPS WILL NOT BE ACCEPTED.

USE THREADED LOCKNUTS OUTSIDE AND THREADED LOCKNUT AND BUSHING INSIDE ALL RACEWAY CONNECTIONS TO BOXES, DEVICES, PANELS AND GUTTERS. USE NON–METALLIC BUSHINGS ON ALL 1–1/4 INCH AND LARGER CONDUIT. EXPOSED CONDUIT SHALL BE RUN STRAIGHT AND TRUE PARALLEL AND PERPENDICULAR TO PRIMARY BUILDING LINES.

BOXES AND DEVICES: ALL BOXES, PANELS AND EQUIPMENT SHALL BE SUPPORTED DIRECTLY FROM THE BUILDING STRUCTURE AND SHALL NOT DEPEND ON THE FEEDER RACEWAYS FOR SUPPORT. ALL ITEMS SHALL BE CAREFULLY ALIGNED SO THAT COVERS WILL FINISH FLUSH AND STRAIGHT. ALL UNUSED KNOCKOUTS SHALL BE CLOSED WITH BLANKING DEVICES. BOXES IN CONCRETE OR MASONRY SHALL BE 3–1/2 INCH DEEP (MINIMUM) SQUARE 16 GAUGE GALVANIZED STEEL – STEEL CITY SERIES GW. BOXES INSTALLED IN WOOD PARTITIONS SHALL BE STEEL CITY 3–1/2 INCH DEEP GANGABLE SQUARE CORNER TYPE. DEVICES SHALL BE COMMERCIAL SPECIFICATION GRADE. COVER PLATES SHALL BE IMPACT RESISTANT. DEVICE AND PLATE FINISHES SHALL BE SELECTED BY OWNER. CONFIRM PRIOR TO ORDERING.

PULL BOXES SHALL BE 14 GAUGE GALVANIZED STEEL WITH BLANK COVER SIZED AS REQUIRED BY NATIONAL ELECTRICAL CODE.
LOCATE DEVICES AND EQUIPMENT ABOVE FINISHED FLOOR AS FOLLOWS UNLESS OTHERWISE SPECIFICALLY NOTED ON PLANS:

- WALL SWITCHES – 4'–0" OR TO NEAREST MASONRY COURSE JOINT.
- RECEPTACLES – 1'–6" TO CENTER OF BOX UNLESS OTHERWISE NOTED.
- LIGHT FIXTURES – AS NOTED ON FIXTURE SCHEDULE.

GROUNDING: THE ELECTRICAL SYSTEM AND ALL ELECTRICAL EQUIPMENT SHALL BE GROUNDED IN ACCORDANCE WITH ARTICLE 250 OF THE LATEST EDITION OF THE NATIONAL ELECTRICAL CODE. EQUIPMENT GROUND WIRE SHALL BE USED WITH ALL FEEDERS AND BRANCH CIRCUITS.

LIGHTING FIXTURES: LIGHTING FIXTURES AND LAMPS SHALL BE PROVIDED AND INSTALLED AS PER SCHEDULE. ALL FIXTURES SHALL BE CLEANED ON COMPLETION OF INSTALLATION.

TESTS: THE CONTRACTOR SHALL MEGGER ALL BUSWAYS, CABLES AND CONTROL CONNECTIONS TO PROVE INSULATION RESISTANCE IS OF ACCEPTABLE VALUE.

PANELBOARDS: PROVIDE PANELS AS SCHEDULED EQUAL TO SQUARE D I–LINE AND NQOD.

SAFETY SWITCHES: SWITCHES SHALL BE EQUAL TO SQUARE D TYPE GD WITH RATINGS AND FUSING PROVISIONS AS INDICATED.

IDENTIFICATION AND NAMEPLATES: PROVIDE ENGRAVED, LAMINATED BAKELITE (WHITE LETTERS ON BLACK SURFACE) NAMEPLATES SCREWED TO EACH PIECE OF ELECTRICAL DISTRIBUTION EQUIPMENT AS FOLLOWS:

A. PANELBOARDS, SWITCHBOARDS – DESIGNATION L1, P1, ETC.,VOLTAGE, PHASE NUMBER OF WIRES, ETC.; WORDING EXAMPLE: PANEL L1–208V–3 PHASE, 4 WIRE.

B. MOTOR STARTERS, DISCONNECT SWITCHES – UNLESS MOUNTED DIRECTLY ON OR ADJACENT TO IDENTIFY EQUIPMENT; WORDING EXAMPLE: EXHAUST FAN 1, MAKE–UP AIR UNIT.

EQUIPMENT CONNECTIONS: THIS CONTRACTOR SHALL BRING ALL REQUIRED ELECTRICAL SERVICE TO ALL EQUIPMENT ITEMS FURNISHED UNDER OTHER SECTIONS OF THESE SPECIFICATIONS OR BY THE OWNER, MAKE FINAL CONNECTIONS, AND LEAVE EQUIPMENT READY FOR OPERATION. THIS CONTRACTOR SHALL COORDINATE WITH ANY AFFECTED TRADE TO ASSURE CORRECT OPERATION OF THE EQUIPMENT ITEM.

CONTROL AND INTERLOCK WIRING: EXCEPT AS OTHERWISE INDICATED ON THE DRAWINGS, ALL CONTROL AND INTERLOCK WIRING SHALL BE PERFORMED BY THE RESPECTIVE CONTRACTORS.

THE ELECTRICAL SUBCONTRACTOR SHALL INSTALL ALL STARTERS, PILOT SWITCHES, CONTROL DEVICES AND MISCELLANEOUS ITEMS OF ELECTRICAL EQUIPMENT FURNISHED UNDER OTHER SECTIONS OF THESE SPECIFICATIONS THAT ARE NOT INTEGRALLY MOUNTED WITH THEIR ASSOCIATED EQUIPMENT.

SERVICE: THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING SERVICE WITH THE UTILITY COMPANY. PROVIDE UTILITY REQUIRED METERING PROVISIONS. EC SHALL WORK DIRECTLY WITH THE UTILITY AND SHALL COMPLETE AND SUBMIT ALL LOAD DATA SHEETS REQUIRED FOR SERVICE APPLICATION.

ELECTRICAL SUMMARY

ELECTRICAL SYSTEM AND EQUIPMENT

METHOD OF COMPLIANCE:

Energy Code: ◉ Prescriptive ☐ Performance

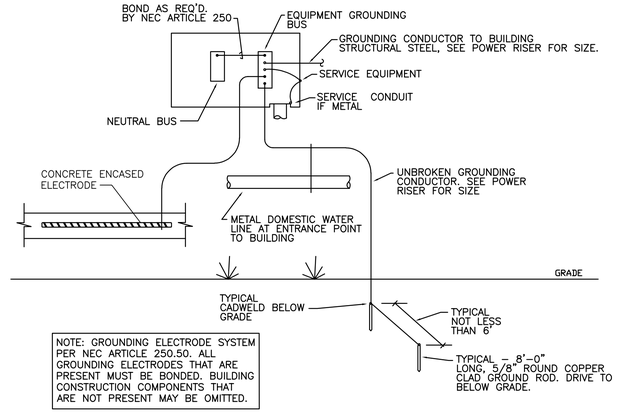
Lighting schedule
lamp type required in fixture: See Fixture Schedule
number of lamps in fixture: See Fixture Schedule
ballast type used in the fixture: See Fixture Schedule
number of ballasts in fixture: See Fixture Schedule
total wattage per fixture: See Fixture Schedule

total interior wattage specified vs allowed: 3822/4140
total exterior wattage specified vs allowed: 180/1101

Additional Efficiency Package Options
- ☐ C406.2 More Efficient HVAC Equipment Performance
- ◉ 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
- ☐ N/A EXISTING/RENOVATION

DESIGNER STATEMENT:
To the best of my knowledge and belief, the design of this building complies with the requirements of Section C405 of the 2018 North Carolina State Energy Code.

SIGNED:
NAME: Gregory McDowell
TITLE: Professional Engineer



NOTE: GROUNDING ELECTRODE SYSTEM PER NEC ARTICLE 250.50. ALL GROUNDING ELECTRODES THAT ARE PRESENT MUST BE BONDED. BUILDING CONSTRUCTION COMPONENTS THAT ARE NOT PRESENT MAY BE OMITTED.

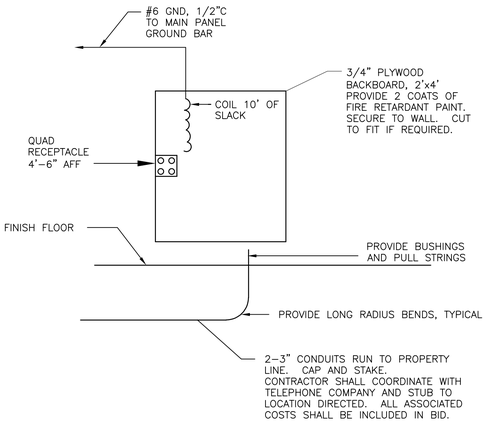
ELECTRICAL SERVICE GROUNDING DETAIL

SCALE: NTS

ELECTRICAL LEGEND

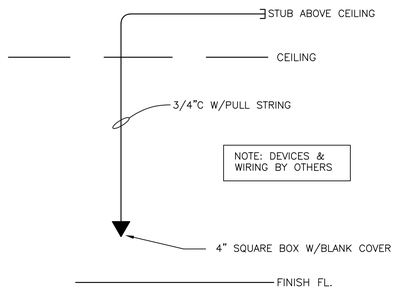
SYMBOL	DESCRIPTION
———	CONDUIT
– – – – –	CONDUIT UNDERFFLOOR OR UNDERGROUND
	ARROW INDICATES HOMERUN, TICKMARKS: NEUTRAL,PHASE,GND.
	POWER PANEL
▼	DATA/COMM OUTLET
J	JUNCTION BOX
AFF	ABOVE FINISHED FLOOR
	DUPLEX RECEPT 18" AFF UNLESS NOTED
WP, GFI	WEATHERPROOF , GROUND FAULT
	WEATHERPROOF , GROUND FAULT
	QUAD–PLEX RECEPTACLE
	DUPLEX RECEPT VIDEO OUTLET HEIGHT
V	VIDEO OUTLET. VERIFY HEIGHT
	DISCONNECT SWITCH; FUSED; NONFUSED
	FLUSH FLOOR OUTLET W/HEAVY DUTY COVER

SEE DRAWING E102 FOR ADDITIONAL SYMBOLS



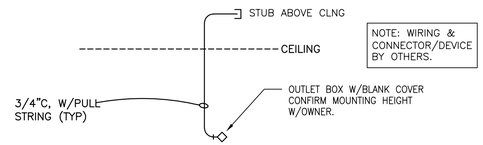
TELEPHONE SERVICE DETAIL

NTS



TYPICAL DATA/COMM OUTLET

NTS



TYPICAL VIDEO OUTLET

NTS

MDP

MOUNTING SURFACE
FED FROM UTILITY XFMR
NOTE NEMA 3R ENCLOSURE SE LABEL

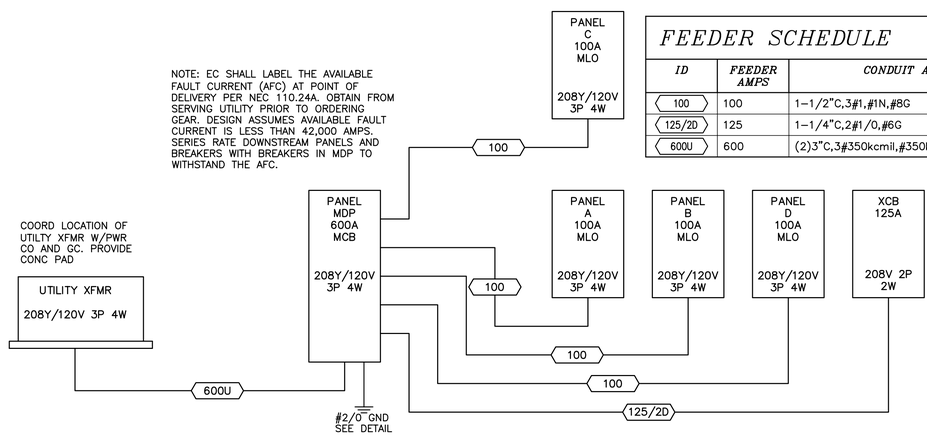
VOLTS 208Y/120V 3P 4W
BUS AMPS 600
NEUTRAL 100%

AIC 42,000
MAIN BRKR 600
LUGS STANDARD

CKT #	CKT BKR	CIRCUIT DESCRIPTION	LOAD KVA A	LOAD KVA B	LOAD KVA C	CKT #	CKT BKR	CIRCUIT DESCRIPTION	LOAD KVA A	LOAD KVA B	LOAD KVA C
1	100/3	PANEL A	9.25			2	125/2	XRAY BRKR XCB	12.5		
3	|			8.61		4	|			12.5	
5	|				7.24	6	–/1	SPACE			0
7	100/3	PANEL B	8.62			8	100/3	SPARE	0		
9	|			9.27		10	|			0	
11	|				7.26	12	|				0
13	100/3	PANEL D	7.25			14	100/3	PANEL C	8.28		
15	|			7.25		16	|			7.74	
17	|				4.18	18	|				8.71
19	–/3	100A PROVISION	0			20	–/3	100A PROVISION	0		
21	|			0		22	|			0	
23	|				0	24	|				0
25	–/3	100A PROVISION	0			26	–/3	100A PROVISION	0		
27	|			0		28	|			0	
29	|				0	30	|				0
								TOTAL CONNECTED KVA BY PHASE	45.9	45.4	27.4

	CONN KVA	CALC KVA			CONN KVA	CALC KVA	
LIGHTING	5.71	7.14	(125%)	KITCHEN EQUIPMENT	5.4	3.78	(70%)
LARGEST MOTOR	7	1.75	(25%)	CONTINUOUS	4.5	5.63	(125%)
MOTORS	0.1	0.1	(100%)	NONCONTINUOUS	36.9	36.9	(100%)
RECEPTACLES	23.5	16.7	(50%>10)	HEATING	42.6	42.6	(100%)
				COOLING	22.4	0	(0%)
				TOTAL LOAD		115	
				BALANCED 3–PHASE LOAD		318 A	

NOTE: EC SHALL LABEL THE AVAILABLE FAULT CURRENT (AFC) AT POINT OF DELIVERY PER NEC 110.24A. OBTAIN FROM SERVING UTILITY PRIOR TO ORDERING GEAR. DESIGN ASSUMES AVAILABLE FAULT CURRENT IS LESS THAN 42,000 AMPS. SERIES RATE DOWNSTREAM PANELS AND BREAKERS WITH BREAKERS IN MDP TO WITHSTAND THE AFC.



POWER RISER DIAGRAM

SCALE: NTS

FEEDER SCHEDULE

ID	FEEDER AMPS	CONDUIT AND FEEDER
100	100	1–1/2"C,3#1,#1N,#8G
125/2D	125	1–1/4"C,2#1/0,#6G
600U	600	(2)3"C,3#350kcmil,#350kcmil N

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PROJECT NO. 19250

THIS SHEET SHOWS BASIC DRAFTING STANDARDS

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 31678 8-14-25 GREGORY L. MCDOWELL

Design Elements
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1213 Culbreth Drive Suite 142
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Proposed Proposed Veterinarian Facility for
RiverLights Animal Hospital
5469 WATERGRASS DRIVE
WILMINGTON, NORTH CAROLINA 28412

ELECTRICAL SCHEDULES, NOTES & DETAILS

job status **Construction Document - Issued for Construction**

date	14 AUGUST, 2025
job no.	RIVVET/BUS/25
drawn by	RSG
checked by	GLM
drawing no.	E100
revision no.	

no.	date	revision

A

MOUNTING SURFACE
FED FROM MDP
NOTE

VOLTS 208Y/120V 3P 4W
BUS AMPS 100
NEUTRAL 100%

AIC 10,000
MAIN MLO
LUGS STANDARD

CKT #	CKT BKR	CIRCUIT DESCRIPTION	LOAD KVA A	LOAD KVA B	LOAD KVA C	CKT #	CKT BKR	CIRCUIT DESCRIPTION	LOAD KVA A	LOAD KVA B	LOAD KVA C
1	30/2	WATER HEATER	2.25			2	20/1	QUAD TEL BD	0.36		
3	|			2.25		4	20/1	QUAD DATA		0.36	
5	30/2	DRYER *			2.5	6	20/1	QUAD DATA			0.36
7	|		2.5			8	20/1	RECS UTIL RM.OUTSIDE	0.36		
9	20/1	WASHER		1.5		10	20/1	RECS EXAM 1		0.72	
11	20/1	RECS KENNELS			0.54	12	20/1	RECS EXAM2			0.72
13	20/1	RECS EXAM 4	0.72			14	20/1	RECS EXAM3	0.72		
15	20/1	RECS TLT1,VESTIBULE		0.54		16	20/1	RECS CORR,COUNTER,CLO		0.9	
17	20/1	RECS ADMIN OFFICE			0.72	18	20/1	RECS RECEPTION			0.72
19	20/1	RECS DR OFFICE	0.9			20	20/1	RECS RECEPTION	0.9		
21	20/1	RECS DR OFFICE		0.9		22	20/1	RECS WAIT,OUTSIDE		1.08	
23	20/1	RECS STAFF ENTRY,BRK,TLT			0.72	24	20/1	EWC *			0.6
25	20/1	SPARE	0			26	20/1	RECS FOOD PREP	0.54		
27	20/1	SPARE		0		28	20/1	RECS PHARMACY		0.36	
29	20/1	SPARE			0	30	20/1	RECS PHARMACY			0.36
31	20/1	SPARE	0			32	20/1	SPARE	0		
33	20/1	SPARE		0		34	20/1	SPARE		0	
35	20/1	SPARE			0	36	20/1	SPARE			0
37	20/1	SPARE	0			38	20/1	SPARE	0		
39	20/1	SPARE		0		40	20/1	SPARE		0	
41	20/1	SPARE			0	42	20/1	SPARE			0
								TOTAL CONNECTED KVA BY PHASE	9.25	8.61	7.24
								TOTAL CONNECTED AMPS BY PHASE	77.1	72.5	61.5

	CONN KVA	CALC KVA			CONN KVA	CALC KVA	
RECEPTACLES	14.1	12.1	(50%>10)	CONTINUOUS	4.5	5.63	(125%)
				NONCONTINUOUS	6.5	6.5	(100%)
				TOTAL LOAD		24.2	
				BALANCED 3-PHASE LOAD		67.1 A	

* GFCI BREAKER

B

MOUNTING SURFACE
FED FROM MDP
NOTE

VOLTS 208Y/120V 3P 4W
BUS AMPS 100
NEUTRAL 100%

AIC 10,000
MAIN MLO
LUGS STANDARD

CKT #	CKT BKR	CIRCUIT DESCRIPTION	LOAD KVA A	LOAD KVA B	LOAD KVA C	CKT #	CKT BKR	CIRCUIT DESCRIPTION	LOAD KVA A	LOAD KVA B	LOAD KVA C
1	20/1	DENTAL XRAY	1.8			2	20/1	STERILIZER	1.8		
3	20/1	DENTAL LIGHTS		0.4		4	20/1	STERILIZER		1.8	
5	20/1	RECS DENTAL COUNTER			0.36	6	20/1	RECS SURG PREP			0.36
7	20/1	REC DENTAL COUNTER	0.18			8	20/1	WALL RECS SURGERY	0.54		
9	20/1	REFRIG TREATMENT/PROC		1.2		10	20/1	COUNTER RECS SURGERY		0.36	
11	20/1	RECS LAB TECHS			0.36	12	20/1	SURGE TBL FLOOR OUTLETS			0.36
13	20/1	RECS TOWER AT LAB TECH	0.36			14	20/1	RECS CANINE RECOVER	0.54		
15	20/1	RECS TOWER AT LAB TECH		0.36		16	20/1	RECS FELINE RECOVER		0.54	
17	20/1	QUADS TREATMENT TOWERS *			0.72	18	20/1	CHEST FREEZER			1.2
19	20/1	QUADS TREATMENT TOWERS *	0.72			20	20/1	UC REFRIG *	0.6		
21	20/1	QUADS TREATMENT TOWERS *		0.72		22	20/1	REFRIG PHARMACY		1.2	
23	20/1	QUADS TREATMENT TOWERS *			0.72	24	20/1	REFRIG BRK RM			1.2
25	20/1	QUAD TREAT CRASH CART	0.36			26	20/1	REC LAB COUNTER	0.18		
27	20/1	RECS PHARMACY		0.36		28	20/1	REC FOOD PREP COUNTER		0.18	
29	20/1	LTG-EXAM,SURG,STOR			0.793	30	20/1	RECS IMAGING			0.36
31	20/1	LTG-HALL,KENNELS,LNDRY	0.918			32	20/1	EXTERIOR LTG	0.188		
33	20/1	LTG-BRK,TLTS,OFFICS		0.95		34	20/1	SIGN		1.2	
35	20/1	LTG - WAITING			0.55	36	20/1	LTG - MEZZ			0.279
37	20/1	LTG - TREATMENT	0.432			38	20/1	SPARE	0		
39	20/1	SPARE		0		40	20/1	SPARE		0	
41	20/1	SPARE			0	42	20/1	SPARE			0
								TOTAL CONNECTED KVA BY PHASE	8.62	9.27	7.26
								TOTAL CONNECTED AMPS BY PHASE	71.8	77.3	60.5

	CONN KVA	CALC KVA			CONN KVA	CALC KVA	
LIGHTING	5.71	7.14	(125%)	KITCHEN EQUIPMENT	5.4	3.78	(70%)
RECEPTACLES	8.64	8.64	(50%>10)	NONCONTINUOUS	5.4	5.4	(100%)
				TOTAL LOAD		25	
				BALANCED 3-PHASE LOAD		69.3 A	

* GFCI BREAKER

C

MOUNTING SURFACE
FED FROM MDP
NOTE

VOLTS 208Y/120V 3P 4W
BUS AMPS 100
NEUTRAL 100%

AIC 10,000
MAIN MLO
LUGS STANDARD

CKT #	CKT BKR	CIRCUIT DESCRIPTION	LOAD KVA A	LOAD KVA B	LOAD KVA C	CKT #	CKT BKR	CIRCUIT DESCRIPTION	LOAD KVA A	LOAD KVA B	LOAD KVA C
1	40/2	AHU1	3.44			2	20/1	RECS MECH LOFT	0.54		
3	|			3.44		4	20/1	SPARE		0	
5	60/2	AHU2			4.31	6	15/1	WASTE GAS EVAC FAN			0.1
7	|		4.31			8	20/1	SPARE	0		
9	60/2	AHU3		4.31		10	20/1	SPARE		0	
11	|				4.31	12	20/1	SPARE			0
13	-/1	SPACE	0			14	-/1	SPACE	0		
15	-/1	SPACE		0		16	-/1	SPACE		0	
17	-/1	SPACE			0	18	-/1	SPACE			0
19	-/1	SPACE	0			20	-/1	SPACE	0		
21	-/1	SPACE		0		22	-/1	SPACE		0	
23	-/1	SPACE			0	24	-/1	SPACE			0
								TOTAL CONNECTED KVA BY PHASE	8.28	7.74	8.71
								TOTAL CONNECTED AMPS BY PHASE	69.1	64.6	72.5

	CONN KVA	CALC KVA			CONN KVA	CALC KVA	
LARGEST MOTOR	1.4	0.35	(25%)	RECEPTACLES	0.54	0.54	(50%>10)
MOTORS	0.1	0.1	(100%)	HEATING	24.1	24.1	(100%)
				COOLING	3.9	0	(0%)
				TOTAL LOAD		25.1	
				BALANCED 3-PHASE LOAD		69.6 A	

D

MOUNTING SURFACE
FED FROM MDP
NOTE NEMA 3R ENCLOSURE

VOLTS 208Y/120V 3P 4W
BUS AMPS 100
NEUTRAL 100%

AIC 10,000
MAIN MLO
LUGS STANDARD

CKT #	CKT BKR	CIRCUIT DESCRIPTION	LOAD KVA A	LOAD KVA B	LOAD KVA C	CKT #	CKT BKR	CIRCUIT DESCRIPTION	LOAD KVA A	LOAD KVA B	LOAD KVA C
1	50/2	DHP1	3.5			2	35/2	HP1	1.75		
3	|			3.5		4	|			1.75	
5	20/1	REC AT HEAT PUMPS			0.18	6	40/2	HP2			2
7	20/1	SPARE	0			8	|		2		
9	40/2	SPARE		0		10	40/2	HP3		2	
11	|				0	12	|				2
13	-/1	SPACE	0			14	-/1	SPACE	0		
15	-/1	SPACE		0		16	-/1	SPACE		0	
17	-/1	SPACE			0	18	-/1	SPACE			0
19	-/1	SPACE	0			20	-/1	SPACE	0		
21	-/1	SPACE		0		22	-/1	SPACE		0	
23	-/1	SPACE			0	24	-/1	SPACE			0
								TOTAL CONNECTED KVA BY PHASE	7.25	7.25	4.18
								TOTAL CONNECTED AMPS BY PHASE	62.4	62.4	34.8

	CONN KVA	CALC KVA			CALC KVA
LARGEST MOTOR	7	1.75	(25%)	TOTAL LOAD	20.4
RECEPTACLES	0.18	0.18	(50%>10)	BALANCED 3-PHASE LOAD	56.7 A
HEATING	18.5	18.5	(100%)		
COOLING	18.5	0	(0%)		

PRIOR TO ENERGIZING, VERIFY BREAKER SIZES WITH ACTUAL HVAC UNITS INSTALLED

EQUIPMENT CONNECTION SCHEDULE

EQUIPMENT TAG	EQUIPMENT DESCRIPTION	SYMBOL	VOLTS	AMPS	KVA	CIRCUIT	WIRE CALLOUT	MCA	MOCP	DISCONNECT	DISCONNECT DESCRIPTION
AHU1	AHU1		208V 2P 2W	33.03	6.87	C-1,3	1/2"C,2#8,#10G	40	40	FUSED	240/60/2
AHU2	AHU2		208V 2P 2W	41.39	8.61	C-5,7	3/4"C,2#4,#10G	51	60	FUSED	240/60/2
AHU3	AHU3		208V 2P 2W	41.39	8.61	C-9,11	3/4"C,2#4,#10G	51	60	FUSED	240/60/2
DHP1	DHP1		208V 2P 2W	33.65	7	D-1,3	3/4"C,2#6,#10G	42	50	HARDWIRED CONNECTION	IN SIGHT OF PANEL
EVAC FAN	WASTE GAS EVAC FAN		120V 1P 2W	0.83	0.1	C-6	1/2"C,1#12,#12N,#12G	15	15	TOGGLE SWITCH	120V 15A TOGGLE DISC SW
EWH	WATER HEATER		208V 2P 2W	21.63	4.5	A-1,3	1/2"C,2#10,#10G	30	30	NON-FUSED	240/30/2/NF
HP1	HP1		208V 2P 2W	16.83	3.5	D-2,4	1/2"C,2#8,#10G	21	35	HARDWIRED CONNECTION	IN SIGHT OF PANEL
HP2	HP2		208V 2P 2W	19.23	4	D-6,8	1/2"C,2#8,#10G	24	40	HARDWIRED CONNECTION	IN SIGHT OF PANEL
HP3	HP3		208V 2P 2W	19.23	4	D-10,12	1/2"C,2#8,#10G	24	40	HARDWIRED CONNECTION	IN SIGHT OF PANEL
X-RAY	X-RAY		208V 2P 2W	120.19	25	XCB-1	1-1/4"C,2#1/0,#6G	125	125	HARDWIRED CONNECTION	ENCLOSED BRKR XCB

no.	date	revision

PROJECT NO. 19250

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Proposed Proposed Veterinarian Facility for
RiverLights Animal Hospital
5489 WATERGRASS DRIVE
WILMINGTON, NORTH CAROLINA 28412

ELECTRICAL SCHEDULES, NOTES & DETAILS

job status **Construction Document - Issued for Construction**

date 14 AUGUST, 2025
job no. RIVVET/BUS/25
drawn by RSG
checked by GLM
drawing no. E101
revision no.

GENERAL LUMINAIRE SCHEDULE

CALLOUT	LAMP	DESCRIPTION	MOUNTING	MODEL	TOTAL VA	VOLTS	NOTE 1
A	LED 3750/5000/6250 LUMENS	2x4 BACKLIT PANEL SELECTABLE LUMENS	LAY-IN	ALS LPA--4-BACKLIT-WH	50	120	SET TO 40W,5000L
B	LED 3750/5000/6250	2x4 BACKLIT PANEL SELECTABLE LUMENS	LAY-IN	ALS LPA--4-BACKLIT-WH	50	120	SET TO 30W,3750L
C	LED 3750/5000/6250 LUMENS	2x4 BACKLIT PANEL SELECTABLE LUMENS	LAY-IN	ALS LPA--4-BACKLIT-WH	50	120	SET TO 50W,6250L
D	LED. 4000 LUMENS	4' STRIP	SURFACE	DAY-BRITE FSS440L840-UNV-DIM	31	120	
DE	LED. 4000 LUMENS	4' STRIP	SURFACE	DAY-BRITE FSS440L840-UNV-DIM-EM10	31	120	90 MIN BATTERY
E	LED INCLUDED	EMERGENCY	WALL	ISOLITE BUG3	0	120	90 MINUTE BATTERY
ER	INCLUDED	REMOTE HEAD	WALL	ISOLITE MVH2GY/WP	0	120	
EX	LED (EXIT) INCLUDED (EM)	EXIT/EM COMBO	WALL/CEILING	ISOLITE RLC-R-LED-U-WH	0	120	90 MINUTE BATTERY
F	LED	6" ROUND DOWNLIGHT	RECESSED	PRESCOLITE LLFR-6RA-M-35L-35K-8-MD-DM1 LFR-6RA-T-SS-WT LFR-6RD-H-IC	30	120	IC RATED ADJUSTABLE CAN
G3	LED	DIRECT/INDIRECT DOWNLIGHT	PENDANT	ALLURE CT-3-XX-CM-XX	60	120	PROVIDE 168" CABLE AND MOUNT 12' AFF. COLOR TEMP AND FINISH TO BE SELECTED BY OWNER
G6	LED	DIRECT/INDIRECT DOWNLIGHT	PENDANT	ALLURE CT-6-XX-CM-XX	120	120	PROVIDE 168" CABLE AND MOUNT 12' AFF. COLOR TEMP AND FINISH TO BE SELECTED BY OWNER
H	LED 3600L	6" ROUND DOWNLIGHT	RECESSED	RAYON RBC6-LS2-CTS-UNV	48	120	
K	LED. 625 LUMENS	28" TASK LIGHT	UNDERCABINET	DAY-BRITE, LINCS100EL28935UNVWHG	8	120	
OA	LED 2000 L	6" ROUND DOWNLIGHT	RECESSED	ATLANTIC COM6-SYL20-35K-U-6CM10-SS	20	120	UL DAMP LABEL
OB	LED	EXTERIOR SCONCE	WALL	STONCO LPW7-8XX	14	120	FINISH SELECTED BY OWNER
X	LED	SINGLE FACE EXIT	WALL/CEILING	ISOLITE RL-EM-R-WH-UN	0	120	90 MINUTE BATTERY. ARROWS AS SHOWN

SWITCH SCHEDULE

SYMBOL	NOTE 1
$4	4-WAY SWITCH
HD D	SENSORWORX SWX-121-D DIMMING OCCUPANCY SENSOR
HD	SENSORWORX SWX-121 WALL SWITCH OCCUPANCY SENSOR
$	SINGLE POLE SWITCH
$D	SENSORWORX SWX-823 DIMMER SWITCH
$3	3-WAY SWITCH

no.	date	revision

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NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 31678 8-14-25 GREGORY L. MOSER

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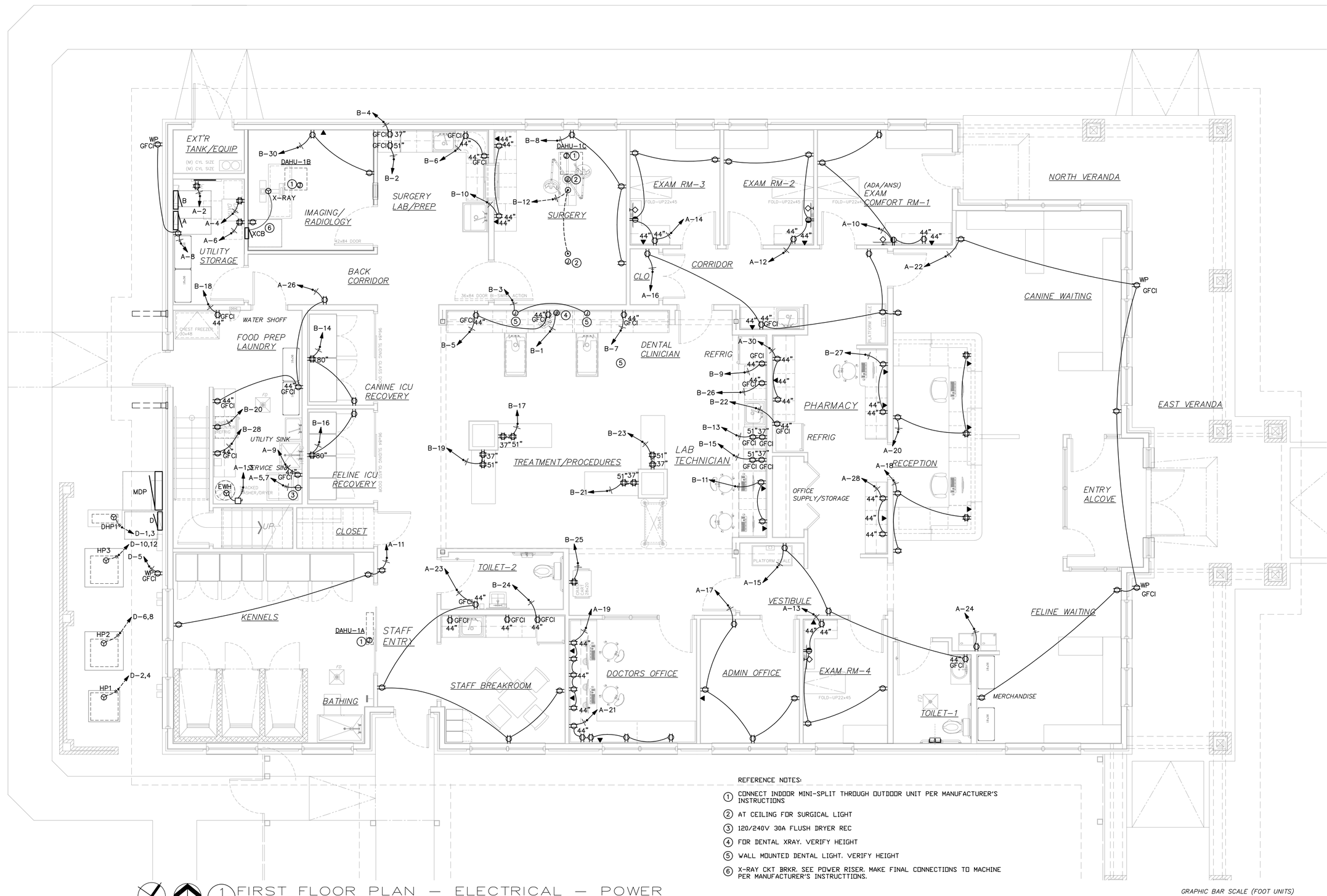

REFERENCE NOTES:

1. CONNECT INDOOR MINI-SPLIT THROUGH OUTDOOR UNIT PER MANUFACTURER'S INSTRUCTIONS
2. AT CEILING FOR SURGICAL LIGHT
3. 120/240V 30A FLUSH DRYER REC
4. FOR DENTAL XRAY. VERIFY HEIGHT
5. WALL MOUNTED DENTAL LIGHT. VERIFY HEIGHT
6. X-RAY CKT BRKR. SEE POWER RISER. MAKE FINAL CONNECTIONS TO MACHINE PER MANUFACTURER'S INSTRUCTTIONS.

SITE NORTH

PLAN NORTH

1 E200 — FIRST FLOOR PLAN — ELECTRICAL — POWER

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

GRAPHIC BAR SCALE (FOOT UNITS)

0 1 2 3 4 5 10

no.	date	revision

THIS SHEET SHOWS BASIC DRAFTING STANDARDS

PROJECT NO: 19250

TOPSAIL ENGINEERING, INC
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NC Firm P-2546
(910) 270-3747

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 31578 GREGORY L. MCSWAIN 8-14-25

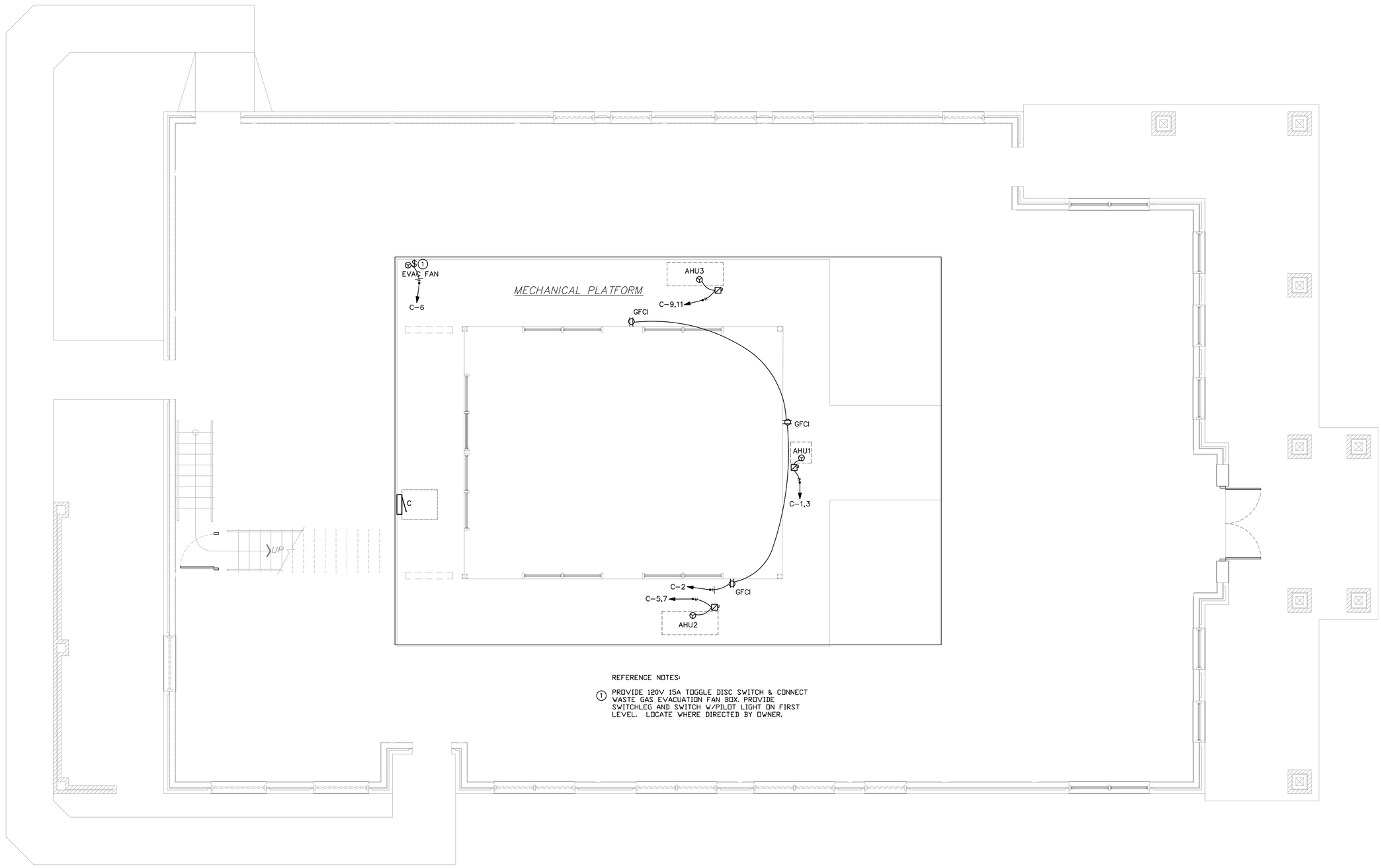
Design Elements
Michael L. Saeed, Jr., AIA, AIBD
Architect
1213 Culbreth Drive Suite 142
Wilmington, North Carolina 28405
910.509.3131

Proposed Proposed Veterinarian Facility for
RiverLights Animal Hospital
5489 WATERGRASS DRIVE
WILMINGTON, NORTH CAROLINA 28412

FIRST FLOOR PLAN — ELECTRICAL POWER

job status **Construction Document - Issued for Construction**

date	14 AUGUST, 2025
job no.	RIVVET/BUS/25
drawn by	RSG
checked by	GLM
drawing no.	E200
revision no.	



REFERENCE NOTES:

1. PROVIDE 120V 15A TOGGLE DISC SWITCH & CONNECT WASTE GAS EVACUATION FAN BOX. PROVIDE SWITCHLEG AND SWITCH W/PILOT LIGHT ON FIRST LEVEL. LOCATE WHERE DIRECTED BY OWNER.

SITE NORTH

PLAN NORTH

1 / E201 MECHANICAL PLATFORM — ELECTRICAL — POWER

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

GRAPHIC BAR SCALE (FOOT UNITS)

0 2 4 10

1 3 5

no.	date	revision

THIS SHEET SHOWS BASIC DRAFTING STANDARDS

PROJECT NO: 19250

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Proposed Proposed Veterinarian Facility for

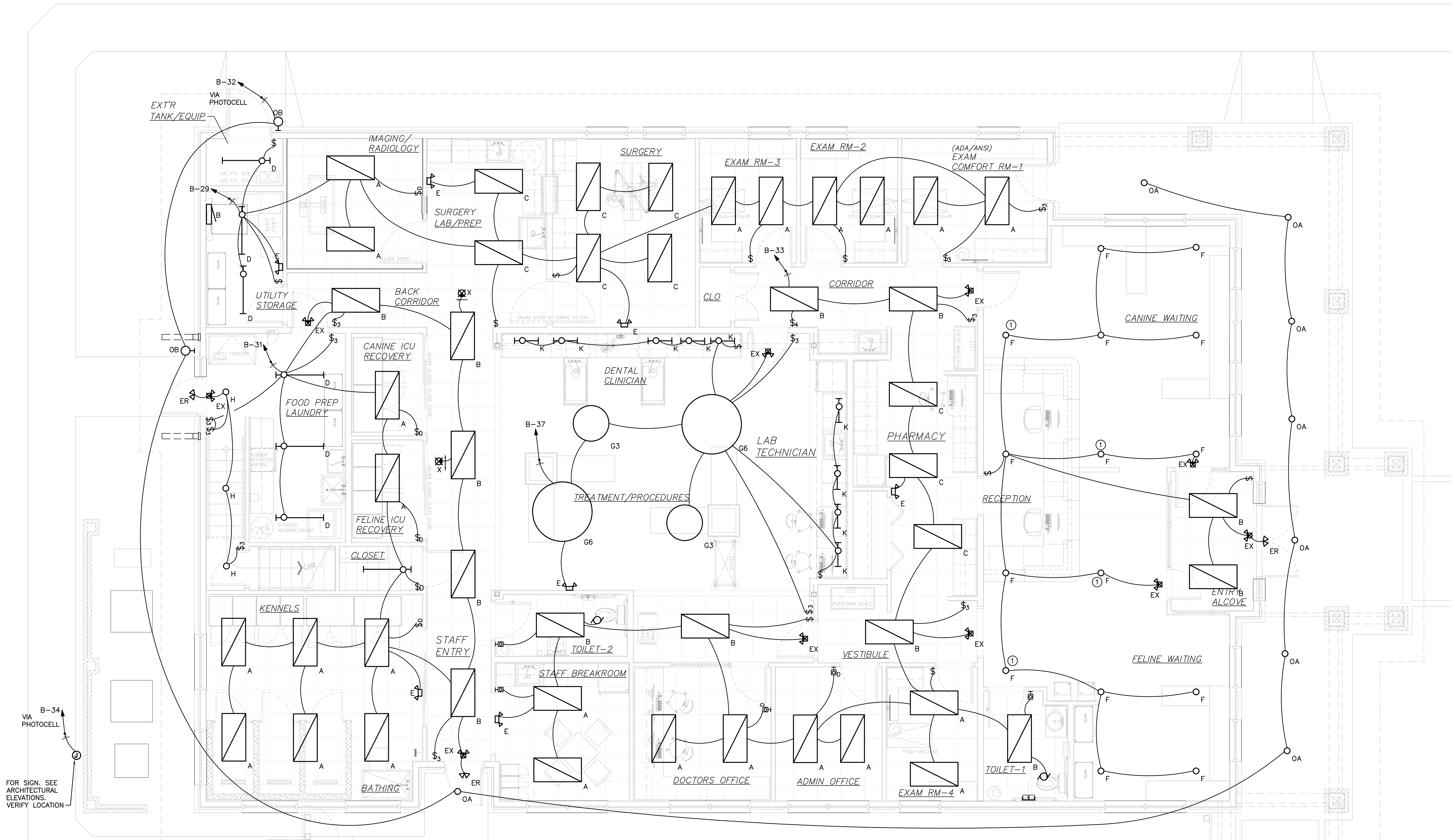
RiverLights Animal Hospital

5480 WATERGRASS DRIVE
WILMINGTON, NORTH CAROLINA 28412

MECHANICAL PLATFORM — ELECTRICAL POWER

job status **Construction Document - Issued for Construction**

date	14 AUGUST, 2025
job no.	RIVVET/BUS/25
drawn by	RSG
checked by	GLM
drawing no.	E201
revision no.	



NOTE: CONNECT EXIT AND EMERGENCY LIGHTING AHEAD OF CONTROLS

REFERENCE NOTES:

(1) UNSWITCHED NIGHT LIGHT

SITE NORTH | PLAN NORTH

1 FIRST FLOOR PLAN — ELECTRICAL — LIGHTING

E202 SCALE: 1/4" – 1'-0"

GRAPHIC BAR SCALE (FOOT UNITS)

0 2 4 10
1 3 5

no.	date	revision

PROJECT NO. 19250

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Proposed Proposed Veterinarian Facility for RiverLights Animal Hospital

5489 WATERGRASS DRIVE
WILMINGTON, NORTH CAROLINA 28412

FIRST FLOOR PLAN — ELECTRICAL LIGHTING

job status **Construction Document - Issued for Construction**

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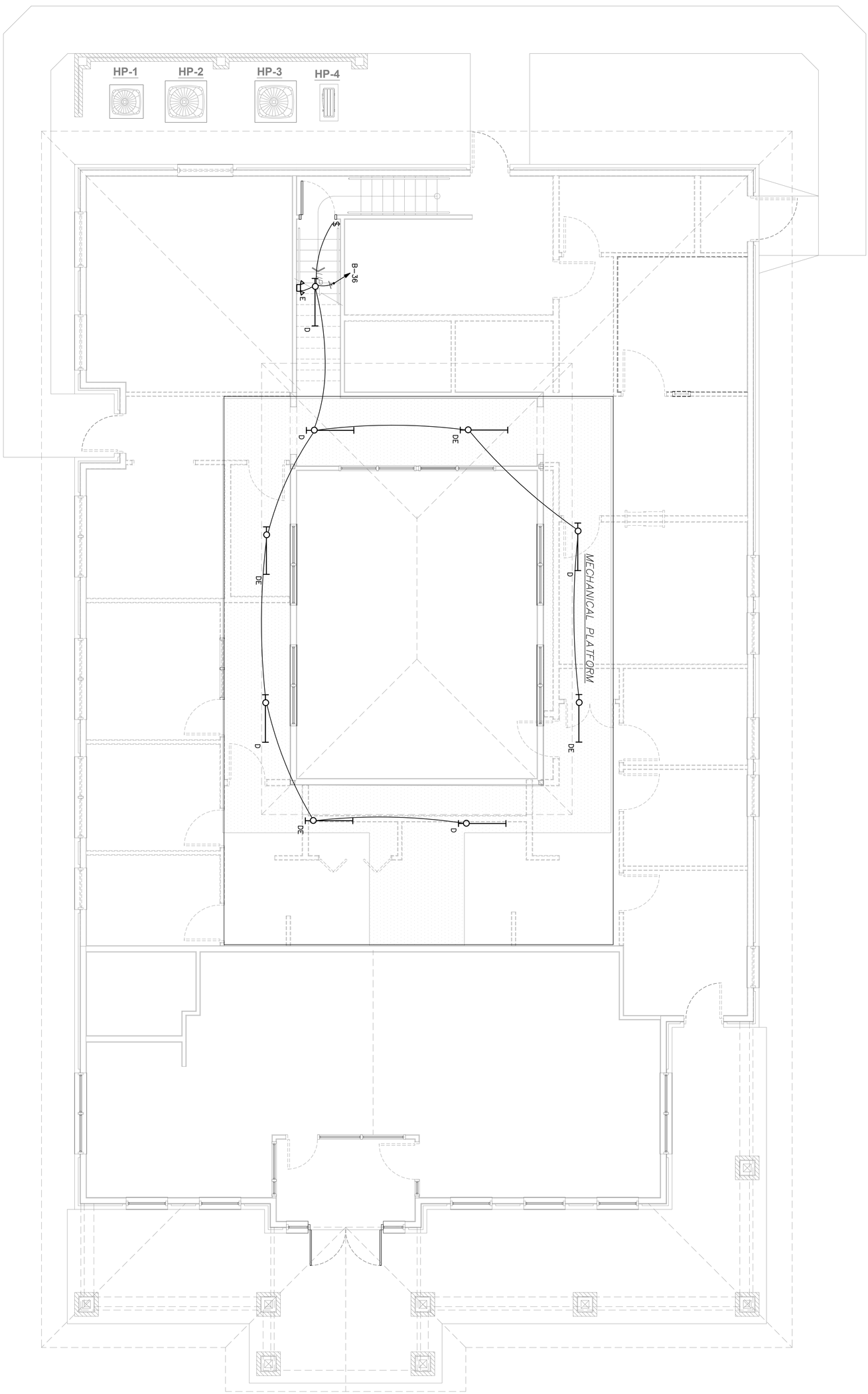
checked by	GLM
drawing no.	E202
revision no.	

no.	date	revision			



SITE NORTH

PLAN NORTH

1 E203 MECHANICAL PLATFORM — ELECTRICAL — LIGHTING

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

GRAPHIC BAR SCALE (FOOT UNITS)

0 1 2 3 4 5 10

THIS SHEET SHOWS BASIC DRAFTING STANDARDS

revision no.

E203

drawing no.

job no. RIVET2BUS/25

date 14 AUGUST, 2025

drawn by GLM

checked by RSC

Proposed Proposed Veterinarian Facility for

RiverLights Animal Hospital

5489 WATERGRASS DRIVE
WILMINGTON, NORTH CAROLINA 28412

MECHANICAL PLATFORM — ELECTRICAL LIGHTING

job status **Construction Document - Issued for Construction**

Design Elements
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NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 018518 8-14-25 REGISTERED ENGINEER GREGORY L. MCDOWELL

PROJECT NO. 19250

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