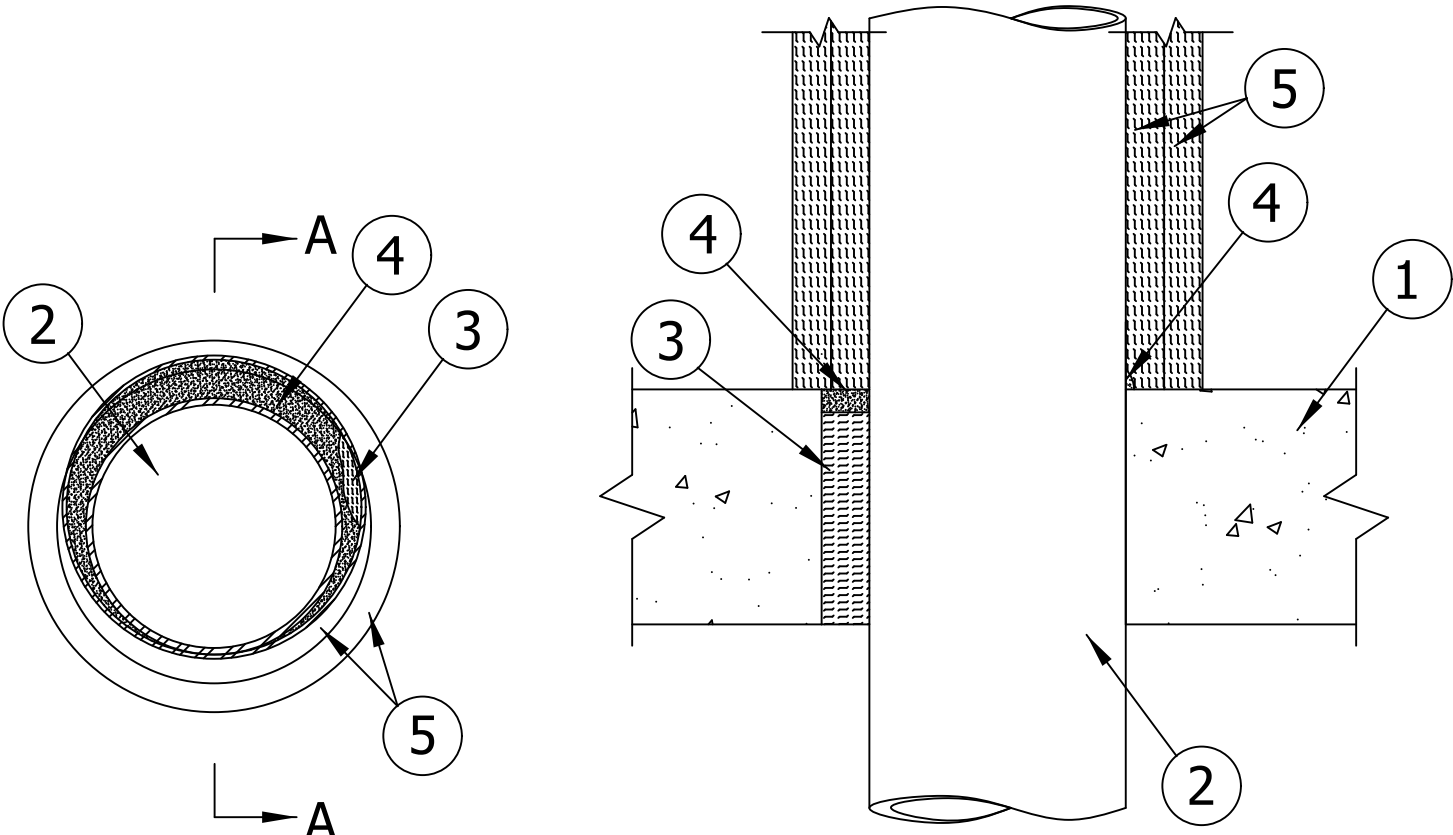


SYSTEM NO. CAJ1601
SEPTEMBER 14, 2010
F RATING - 3 HR
T RATING - 2 AND 3 HR
L RATING AT AMBIENT - 1 CFM/SQ FT
L RATING AT 400 F - LESS THAN 1 CFM/SQ FT



SECTION A-A

1. FLOOR OR WALL ASSEMBLY - MIN 4-1/2 IN. (114 MM) THICK REINFORCED LIGHTWEIGHT OR BE CONSTRUCTED OF ANY UL CLASSIFIED CONCRETE BLOCKS*, MAX DIAM OF OPENING 12 IN. (305 MM).

2. THROUGH-PENETRANT - ONE METALLIC PIPE OR CONDUIT TO BE INSTALLED EITHER CONCENTRICALLY OR ECCENTRICALLY WITHIN THE FIRESTOP SYSTEM. THE ANNULAR SPACE BETWEEN THE THROUGH PENETRANT AND THE PERIPHERY OF OPENING SHALL BE MIN 0 IN. (POINT CONTACT) TO A MAX 1-7/8 IN. (48 MM). PENETRANT TO BE RIGIDLY SUPPORTED ON BOTH SIDES OF FLOOR OR WALL ASSEMBLY. THE FOLLOWING TYPES AND SIZES OF METALLIC PIPE OR CONDUIT MAY BE USED:

- A. STEEL PIPE - NOM 10 IN. (254 MM) DIAM (OR SMALLER) SCHEDULE 10 (OR HEAVIER) STEEL PIPE.
B. IRON PIPE - NOM 10 IN. (254 MM) DIAM (OR SMALLER) CAST OR DUCTILE IRON PIPE.
C. STEEL CONDUIT - NOM 6 IN. (152 MM) DIAM (OR SMALLER) RIGID STEEL CONDUIT OR NOM 4 IN. (102 MM) DIAM (OR SMALLER) ELECTRICAL METALLIC TUBING.
D. COPPER TUBE - NOM 6 IN. (152 MM) DIAM (OR SMALLER) TYPE L (OR HEAVIER) COPPER TUBE.
E. COPPER PIPE - NOM 6 IN. (152 MM) DIAM (OR SMALLER) REGULAR (OR HEAVIER) COPPER PIPE.

3. PACKING MATERIAL - MIN 4 IN. (102 MM) THICKNESS OF MIN 4 PCF MINERAL WOOL FIRMLY PACKED INTO OPENING AS A PERMANENT FORM. PACKING MATERIAL TO BE RECESSED OF WALL TO ACCOMMODATE THE REQUIRED THICKNESS OF FILL MATERIAL (ITEM 4).

4. FILL, VOID OR CAVITY MATERIALS* - CAULK - FILL MATERIAL APPLIED TO A MIN DEPTH OF 1/2 IN. (13 MM) FLUSH WITH TOP SURFACE OF FLOOR OR WITH BOTH SURFACES OF WALL. A MIN. IN. (6 MM) BEAD OF FILL MATERIAL TO BE APPLIED AT AREA OF POINT CONTACT.

5. DUCT WRAP MATERIAL* - TWO LAYERS OF NOM 2 IN. (51 MM) THICK FIBERGLASS DUCT WRAP, MIN 1 PCF (16KG/M³) TIGHTLY WRAPPED AROUND PENETRANT AND TIGHTLY BUTTED TO THE TOP SURFACE OF THE FLOOR OR BOTH SIDES OF WALL TO EXTEND ABOVE FLOOR OR PAST BOTH SIDES OF WALL AS SHOWN IN THE TABLE BELOW. ALL LONGITUDINAL SEAMS OF BOTH LAYERS OF DUCT WRAP ARE SEALED WITH FOIL TAPE.

WHEN DUCT WRAP IS USED, T RATING IS DEPENDENT ON THE CRITERIA SHOWN IN THE TABLE BELOW.

MAX PIPE SIZE, IN. (MM)	PIPE/TUBE TYPE	MIN INSULATION HEIGHT, IN. (MM)	MIN INSULATION HEIGHT, IN. (MM)	T RATING
		INNER LAYER	OUTER LAYER	
4 (102)	STEEL, IRON OR CONDUIT	12 (305)	12 (305)	3
4 (102)	COPPER	24 (610)	12 (305)	3
6 (152)	ALL	24 (610)	12 (305)	2
10 (254)	STEEL OR IRON	24 (610)	24 (610)	2

SEE BATTS AND BLANKETS (BKNV) CATEGORY IN THE BUILDING MATERIALS DIRECTORY FOR NAMES AND MANUFACTURERS. ANY BATTS AND BLANKETS MATERIAL MEETING THE ABOVE SPECIFICATIONS AND BEARING THE UL CLASSIFICATION MARKING WITH FLAME SPREAD INDEX OF 25 OR LESS AND A SMOKE DEVELOPED INDEX OF 50 OR LESS MAY BE USED.

*BEARING THE UL CLASSIFICATION MARK



PLUMBING FIXTURE SCHEDULE					
MARK	DESCRIPTION	WASTE	C.W.	H.W.	REMARKS
P-1	WATER CLOSET (ADA)	4"	1"	-	FLOOR MOUNTED, VITREOUS CHINA, MOUNT LIP 17-19" AFF, USE LOW CONSUMPTION (1.6 gpf) FLUSHOMETER FOR TOP SPUD MOUNTING
P-2	LAVATORY (ADA)	1-1/2"	1/2"	1/2"	WALL MOUNTED CAST IRON BATHROOM SINK, INSTALL W/ LIP 34" AFF, SINGLE HANDLE CHROME FAUCET, SOLID BRASS BODY, MAX FLOW 1.5 gpm
P-3	KITCHEN HAND SINK	1-1/2"	1/2"	1/2"	DOUBLE BOWL COUNTERTOP SINK, REFER TO SPECIFICATIONS FOR BOWL CONSTRUCTION, W/ DECK MOUNTED SINGLE LEVER FAUCET
P-4	MOP RECEPTOR	-	3/4"	3/4"	36x36x12 MOP SERVICE BASIN, SHOULDERS NOT LESS THAN 9-3/4" HIGH INSIDE, 6" DROP AT THRESHOLD
P-5	HOSE BIBB	-	3/4"	-	WALL FAUCET, ANTI-SIPHON VACUUM BREAKER PROTECTED, PROVIDE CHROME WALLBOX/DOOR ASSEMBLY
P-6	FLOOR DRAIN	3"	-	-	FLOOR DRAIN, ROUND TOP STRAINER HEAD, REVERSIBLE FLASHING COLLAR, INSTALL 1/2" BELOW FINISHED FLOOR HEIGHT, W/ COMMERCIAL GRADE EPDM TRAP SEAL
P-7	ANTI-FREEZE HYDRANT	-	3/4"	-	FREEZELESS WALL HYDRANT, AUTOMATIC DRAINING W/ HOSE CONNECTION AND ANTI-SIPHON VACUUM BREAKER
P-8	FLOOR CLEANOUT	3"	-	-	ADJUSTABLE LEVELING FLOOR CLEANOUT, COATED CAST IRON BODY, GAS AND WATERTIGHT TAPERED THREAD PLUG, SCORIATED NICKEL BRONZE COVER
P-9	SHOWER (ADA)	2"	1/2"	1/2"	SINGLE HANDLE PRESSURE BALANCING MIXING SHOWER UNIT, CONTROL CARTRIDGE W/ STAINLESS STEEL BALANCING PISTON
P-10	DRINKING FOUNTIAN (ADA)	2"	1/2"	-	BI-LEVEL DRINKING FOUNTAIN, ONE PIECE NON-CORROSIVE STAINLESS STEEL, ONE PIECE CHROME VANDAL RESISTANT BUBBLER, PUSHBUTTON ACTIVATION
P-11	WATER SUPPLY WALL BOX	-	1/2"	-	RECESSED ICE MAKER SUPPLY VALVE BOX, 2-3/8" DEEP, 1/2" VALVE NSF61 COMPLIANT
P-12	SAFETY SHOWER	F.D.	1-1/4"	TEPID	EMERGENCY SHOWER/EYEWASH, SHOWER INSTALLATION IN ACCORDANCE WITH ANSI 358.1
P-13	WATER HEATER	-	3/4"	3/4"	120 GALLON COMMERCIAL WATER HEATER, GLASS LINED TANK W/ , 480 VOLTS 3-PHASE POWER SUPPLY, ADJUSTABLE THERMOSTAT SET AT 130°F, 12KW SIMULTANEOUS OPERATION
P-14	WALL CLEANOUT	4"	-	-	INTERIOR FINISHED WALL AREA LINE TYPE CLENOUT,LAQUERED CAST IRON ROUND ADJUSTABLE WITH TAPER THREAD BRONZE PLUG, SCORIATED NICKEL BRONZE COVER
P-15	INLINE CIRCULATOR PUMP	-	-	1"	BRONZE CASING INLINE CIRCULATION PUMP, RATED FOR 125psig WORKING PRESSURE, 8 gpm AT 15 ft. HEAD, 115 VOLTS SINGLE PHASE, 1-1/2 hp MOTOR
P-16	SAFETY SHOWER (PLASTIC)	F.D.	1-1/4"	TEPID	CORROSION RESISTANT PLASTIC EMERGENCY SHOWER/EYEWASH, SHOWER INSTALLATION IN ACCORDANCE WITH ANSI 358.1, WITH INSTANTANEOUS WATER HEATER 54 kW, 480 VOLTS, 65 AMPS
P-17	TANKLESS WATER HEATER	EXT	2"	-	54 Kw TANKLESS WATER HEATER, 25 gpm, 480 VOLTS, MAX AMPERAGE 65, ASME HEAT EXCHANGER, ANSI COMPLIANT, NEMA 4 ENCLOSURE

SHOCK ARRESTOR SCHEDULE

MANUFACTURER	M/N	P.D.I. UNITS	WFU	PIPE SIZE	ARRSTOR LENGTH
ZURN SHOCKTROL	Z-1700 SERIES #300	A	33-60	1"	5"

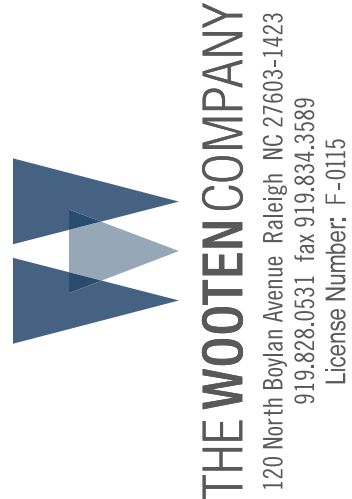
NOTES:

- REFER TO MANUFACTURES RECOMMENDATIONS FOR SIZING OF SHOCK ARRESTORS ON PIPE LENGTHS GREATER THAN 25'
- SHOCK ARRESTORS TO BE ALL STAINLESS STEEL CONSTRUCTION
- SHOCK ARRESTORS TO BE BELLOWS TYPE

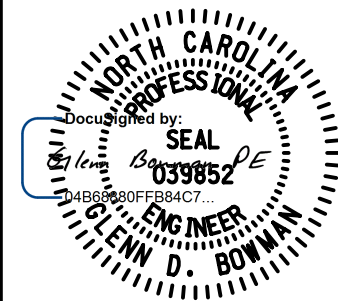
PLUMBING GENERAL NOTES:

- COORDINATE FLOOR DRAIN AND CLEANOUT LOCATIONS IN MECHANICAL ROOMS WITH OTHER TRADES PRIOR TO INSTALLATION
- SET FLOOR DRAINS 1/2" LOWER THAN FINISHED FLOOR ELEVATION, PROVIDE TRAP SEAL OF COMMERCIAL GRADE EPDM
- COORDINATE ALL PLUMBING BELOW SLAB PIPING WITH GENERAL CONTRACTOR PRIOR TO FOOTING INSTALLATION TO ASSURE COORDINATION OF PIPE INVERTS WITH FOOTING ELEVATIONS
- ALL ABOVE SLAB PIPING SHALL BE FIELD COORDINATED WITH OTHER TRADES PRIOR TO INSTALLATION. INSTALLATION DISCREPANCIES SHALL BE DISCUSSED WITH ENGINEER PRIOR TO INSTALLATION.
- ALL ABOVE CEILING PIPING SHALL BE SUPPORTED BY BAR JOIST WITH ANGLE OR CHANNEL. ABSOLUTELY NO PIPING SHALL BY SUPPORTED BY BAR JOIST BRIDGING OR ROOF DECK.
- ALL EXTERIOR PIPING INVERTS SHALL BE COORDINATED WITH UTILITIES & FINAL GRADES. THIS CONTRACTOR SHALL ADJUST INVERTS AS NECESSARY TO MAINTAIN A MINIMUM COVER OF 1'-6".
- THIS CONTRACTOR SHALL: VISIT THE PREMISES AND THOROUGHLY FAMILIARIZE HIMSELF WITH ALL DETAILS OF THE WORK AND WORKING CONDITIONS, VERIFY CONDITIONS IN THE FIELD, DETERMINE THE EXACT LOCATIONS OF LINES, PIPE MATERIALS AND STRUCTURES, AND ADVISE THE ENGINEER OF ANY DISCREPANCY THAT MAY PREVENT OR HINDER THE SPECIFIED WORK FROM BEING COMPLETED.
- ALL WORK SHALL CONFORM TO THE REQUIREMENTS OF THE NORTH CAROLINA STATE BUILDING CODE AND LOCAL CODES. THIS WORK SHALL INCLUDE ADDITIONAL CLEANOUTS, SHOCK ARRESTORS, VACUUM BREAKERS, FITTINGS, VALVES AND OTHER APPURTENANCES REQUIRED FOR A COMPLETE OPERATIONAL PLUMBING SYSTEM. PROVISION OF THESE ITEMS SHALL BE PROVIDED IN THIS CONTRACT AT NO ADDITIONAL COST TO THE OWNER.
- CONTRACTOR SHALL INVESTIGATE THE STRUCTURE & FINISH CONDITIONS AFFECTING PLUMBING WORK AND SHALL ARRANGE WORK ACCORDINGLY , PROVIDING ACCESSORIES, HANGERS, ANCHORS AS MAY BE REQUIRED TO MEET SUCH CONDITIONS WITHOUT ADDITIONAL COST TO THE OWNER.
- ANY DAMAGE INCURRED ON STRUCTURAL STEEL FIRE PROOFING OR FIRE RATED PARTITIONS DUE TO THE INSTALLATION OF PLUMBING PIPING SHALL BE REPAIRED BY OTHERS AT THE EXPENSE OF THIS CONTRACTOR.
- UNLESS OTHERWISE INDICATED THIS CONTRACTOR IS RESPONSIBLE FOR ALL CORE DRILLING AND PATCHING REQUIRED TO INSTALL PLUMBING WORK. THIS WORK SHALL INCLUDE SAW CUTTING CONCRETE AND PATCHING AS REQUIRED.
- CONTRACTOR SHALL COORDINATE WORK WITH OTHER TRADES PRIOR TO INSTALLATION AND ARRANGE INSTALLATION OF WORK AS NECESSARY
- ALL PLUMBING PIPING SHALL BE TEMPORARILY CAPPED DURING ROUGH-INS.
- ALL PIPING PENETRATIONS THROUGH FIRE RATED FLOORS OR PARTITIONS/WALLS SHALL BE SEALED IN ACCORDANCE WITH PROPER UL LISTED SYSTEMS. ALL PENETRATIONS THROUGH NEW NON-RATED WALLS SHALL BE SEALED TO PREVENT SOUND TRANSFER.
- COMPETENT AND SKILLED WORKMEN SHALL DO ALL WORK IN A FINISHED, AND CRAFTMANLIKE MANNER.

REVISIONS				



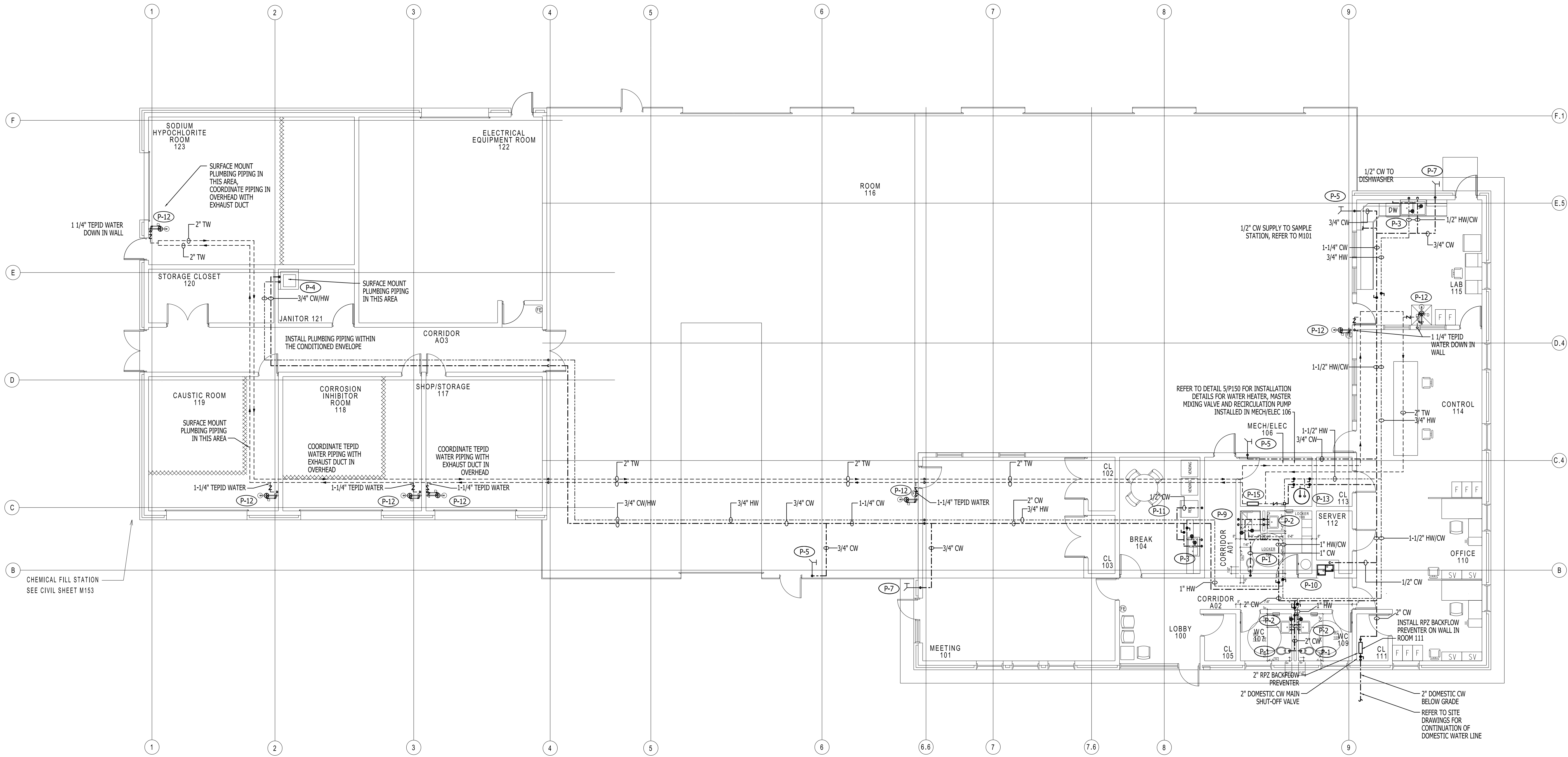
BRUNSWICK REGIONAL WATER AND SEWER H2GO BRUNSWICK COUNTY NORTH CAROLINA	CONTRACT No. 4 REVERSE OSMOSIS WATER TREATMENT PLANT PLUMBING COVER SHEET
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DRAWN BY:	GDB
CHECKED BY:	LHM
PROJECT NO.:	3081-AB
DATE:	JUNE 7, 2020
SCALE:	AS NOTED

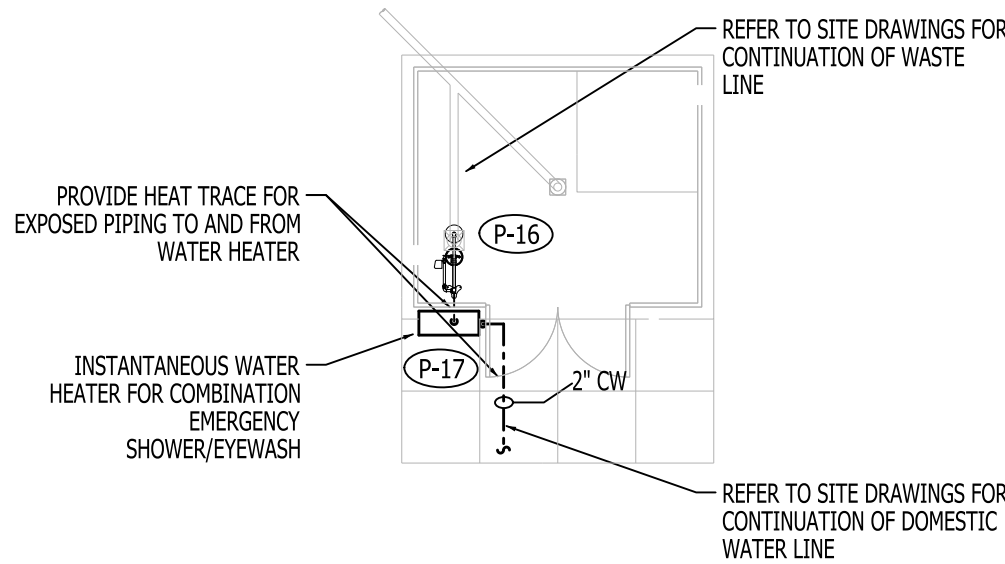
SHEET 43 OF 181

P100



1 PLUMBING WATER DISTRIBUTION PLAN
P110 SCALE: 1/8" = 1'

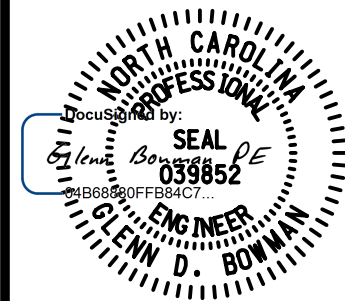
1 FLOURIDE FEED BUILDING PLUMBING PLAN
P110 SCALE: 1/8" = 1'



REVISIONS

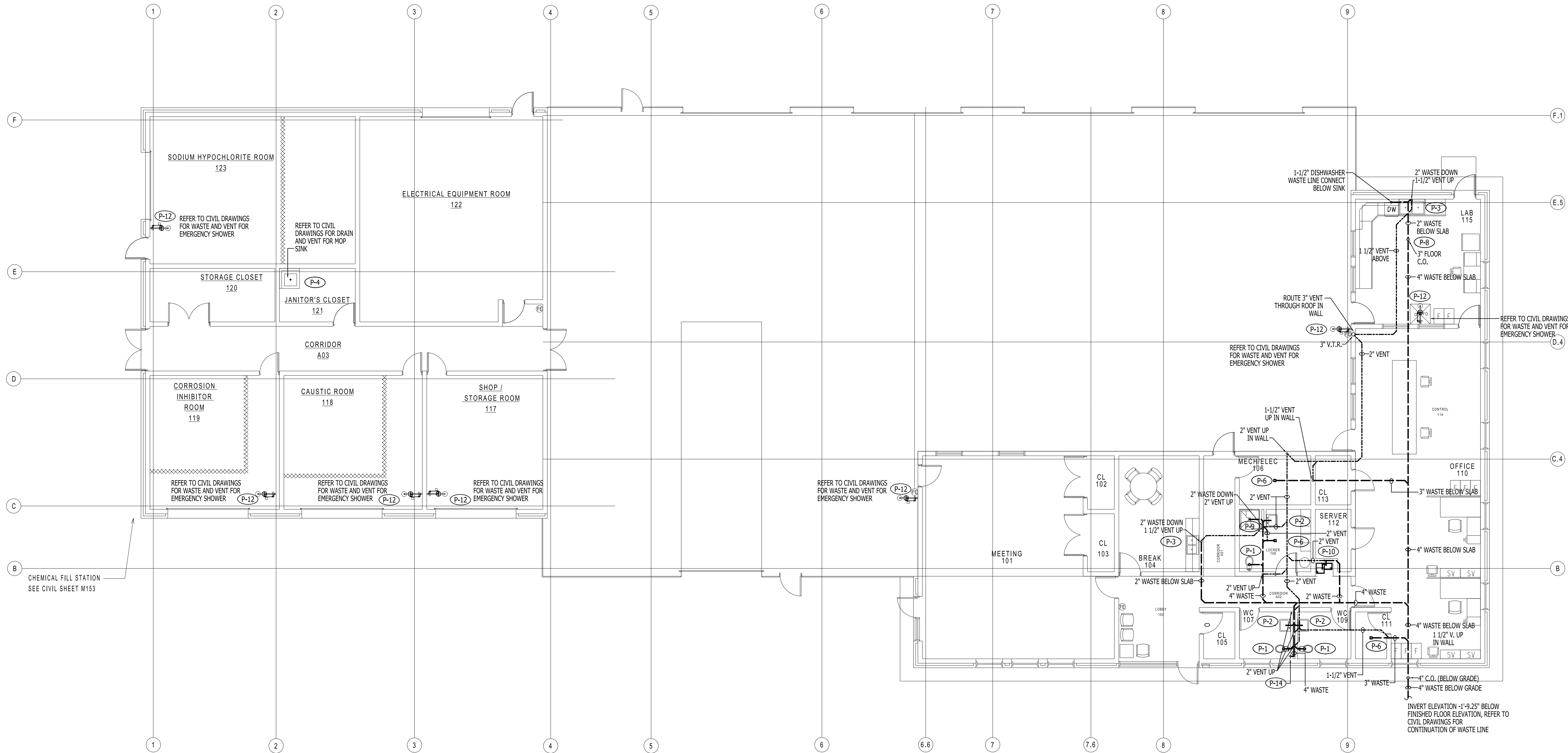
THE WOOTEN COMPANY
120 North Bayview Avenue Raleigh, NC 27603-1423
919.628.0531 fax 919.834.5385
License Number: F-0015

BRUNSWICK REGIONAL WATER AND SEWER H2GO
BRUNSWICK COUNTY NORTH CAROLINA
CONTRACT No. 4
REVERSE OSMOSIS WATER TREATMENT PLANT
PLUMBING WATER DISTRIBUTION PLAN



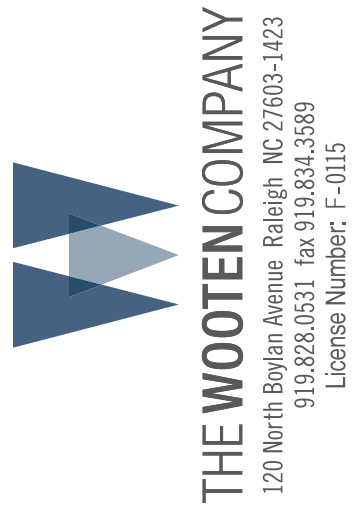
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SCALE: AS NOTED

SHEET 44 OF 181

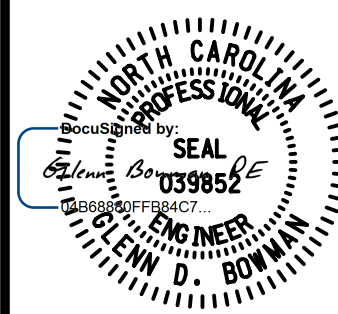


1 PLUMBING WASTE AND VENT PLAN
P120 NOT TO SCALE

REVISIONS

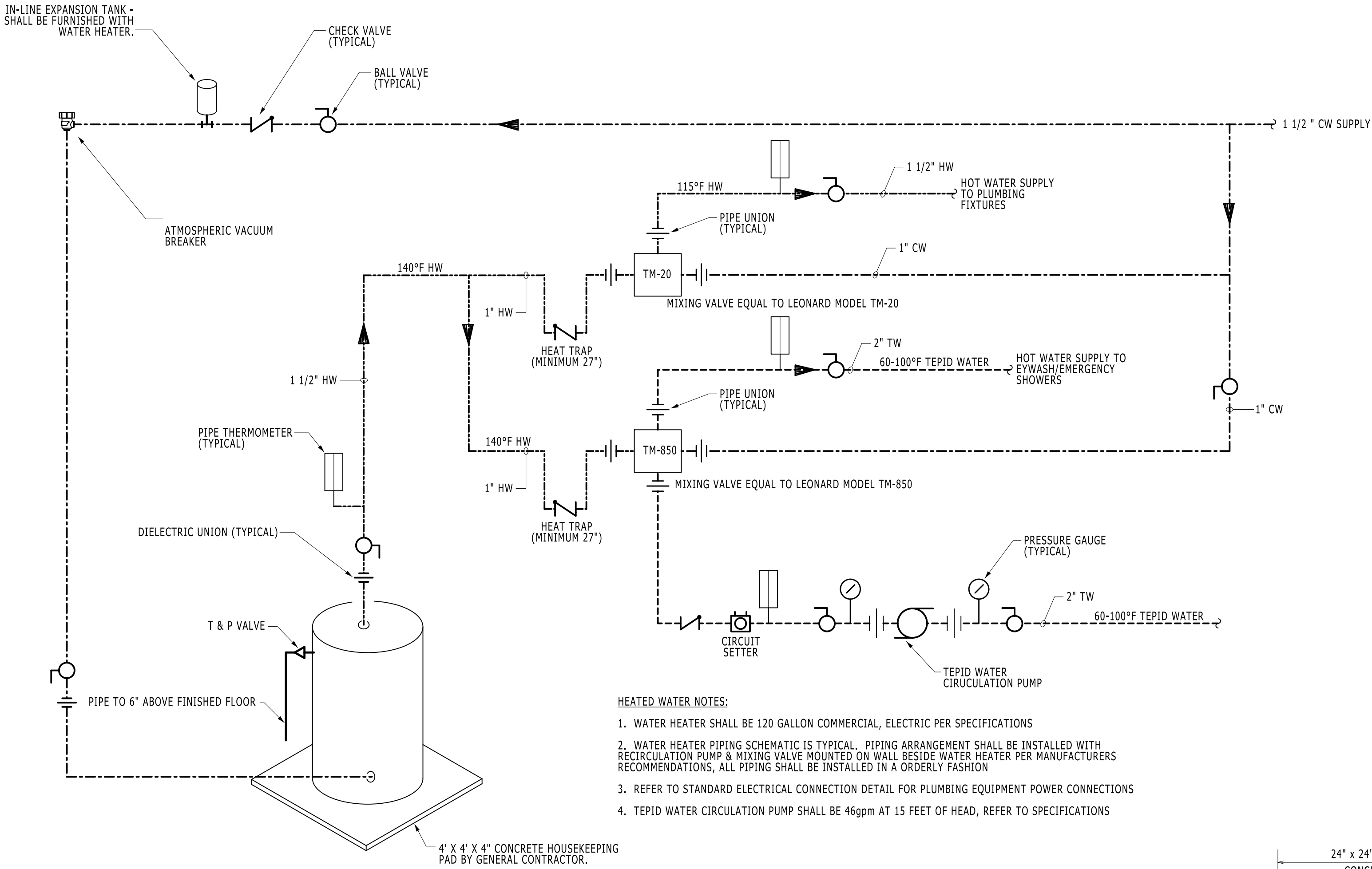


BRUNSWICK REGIONAL WATER AND SEWER H2GO
BRUNSWICK COUNTY NORTH CAROLINA
CONTRACT No. 4
REVERSE OSMOSIS WATER TREATMENT PLANT
PLUMBING WASTE AND VENT PLAN



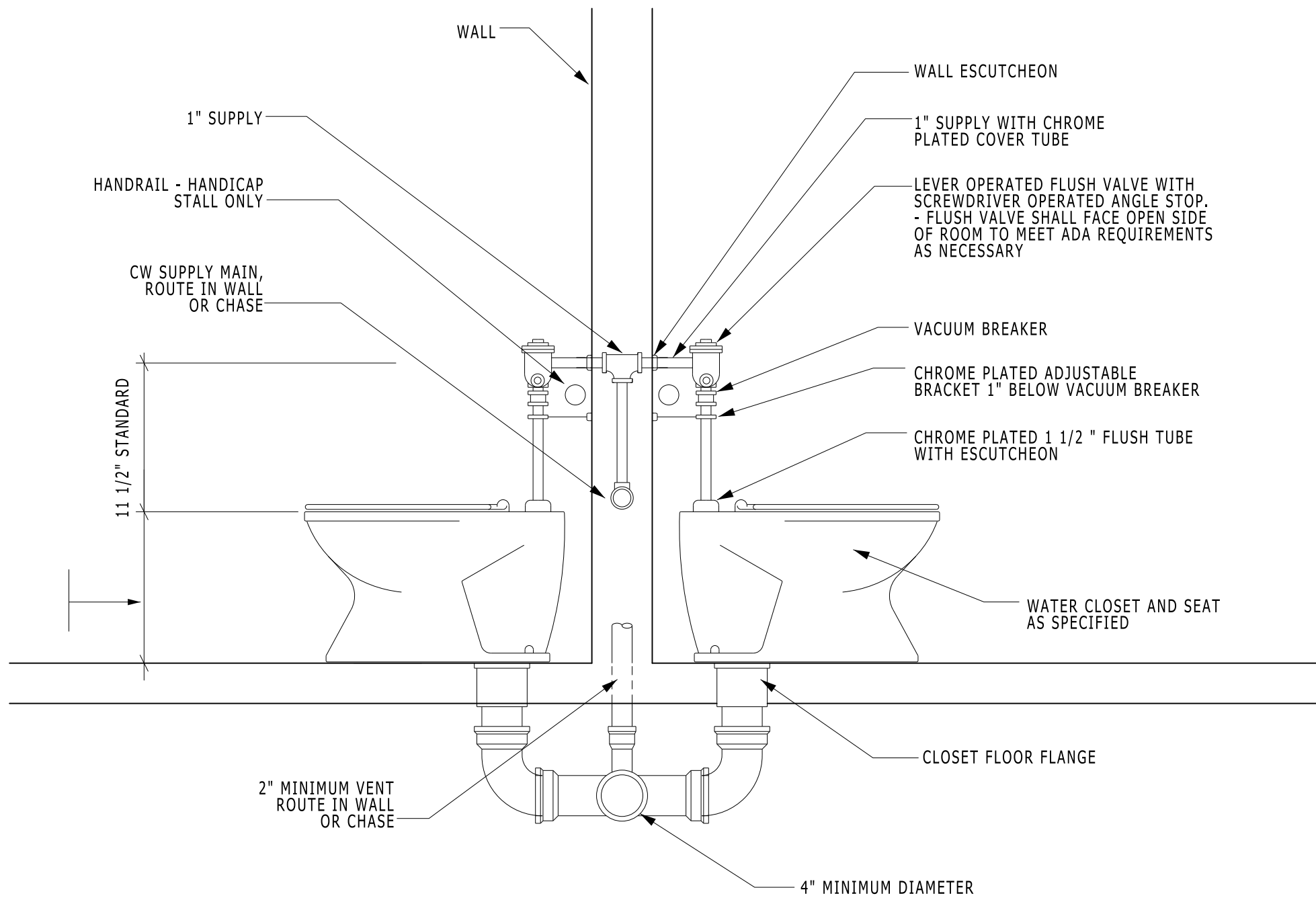
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PROJECT NO.: 3081-AB
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SHEET 45 OF 181



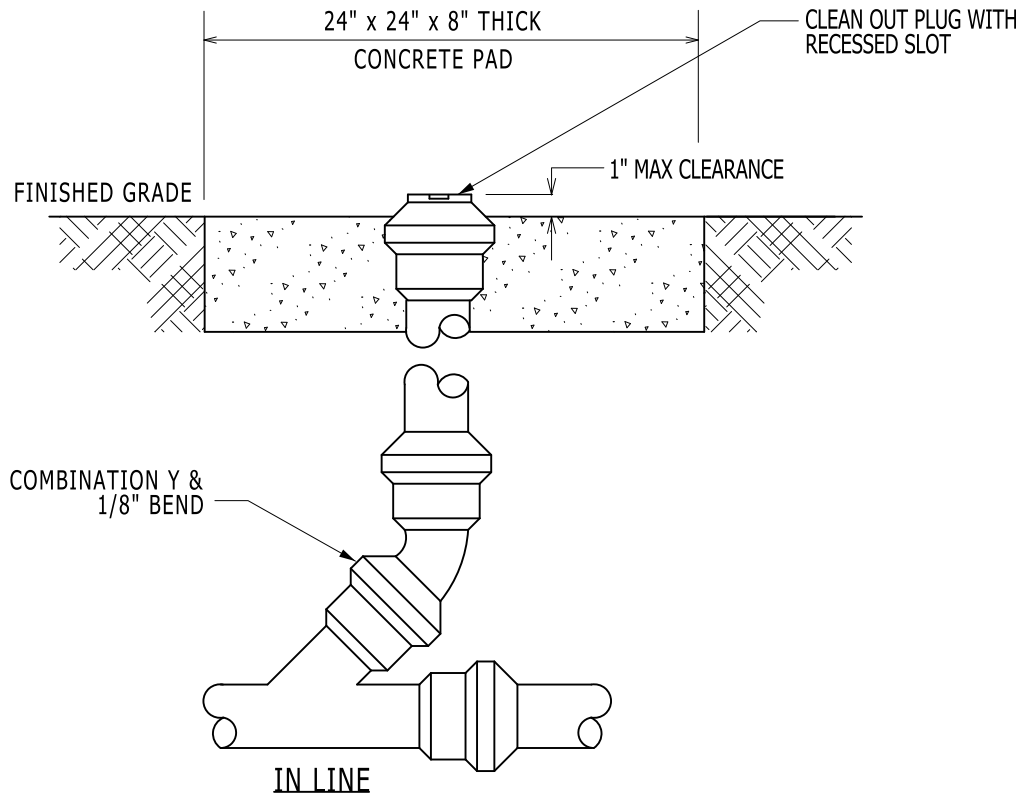
- HEATED WATER NOTES:
1. WATER HEATER SHALL BE 120 GALLON COMMERCIAL, ELECTRIC PER SPECIFICATIONS
 2. WATER HEATER PIPING SCHEMATIC IS TYPICAL. PIPING ARRANGEMENT SHALL BE INSTALLED WITH RECIRCULATION PUMP & MIXING VALVE MOUNTED ON WALL BESIDE WATER HEATER PER MANUFACTURERS RECOMMENDATIONS, ALL PIPING SHALL BE INSTALLED IN A ORDERLY FASHION
 3. REFER TO STANDARD ELECTRICAL CONNECTION DETAIL FOR PLUMBING EQUIPMENT POWER CONNECTIONS
 4. TEPID WATER CIRCULATION PUMP SHALL BE 46gpm AT 15 FEET OF HEAD, REFER TO SPECIFICATIONS

4 WATER HEATER AND RECIRCULATION LOOP INSTALLATION DETAIL
P150 NOT TO SCALE



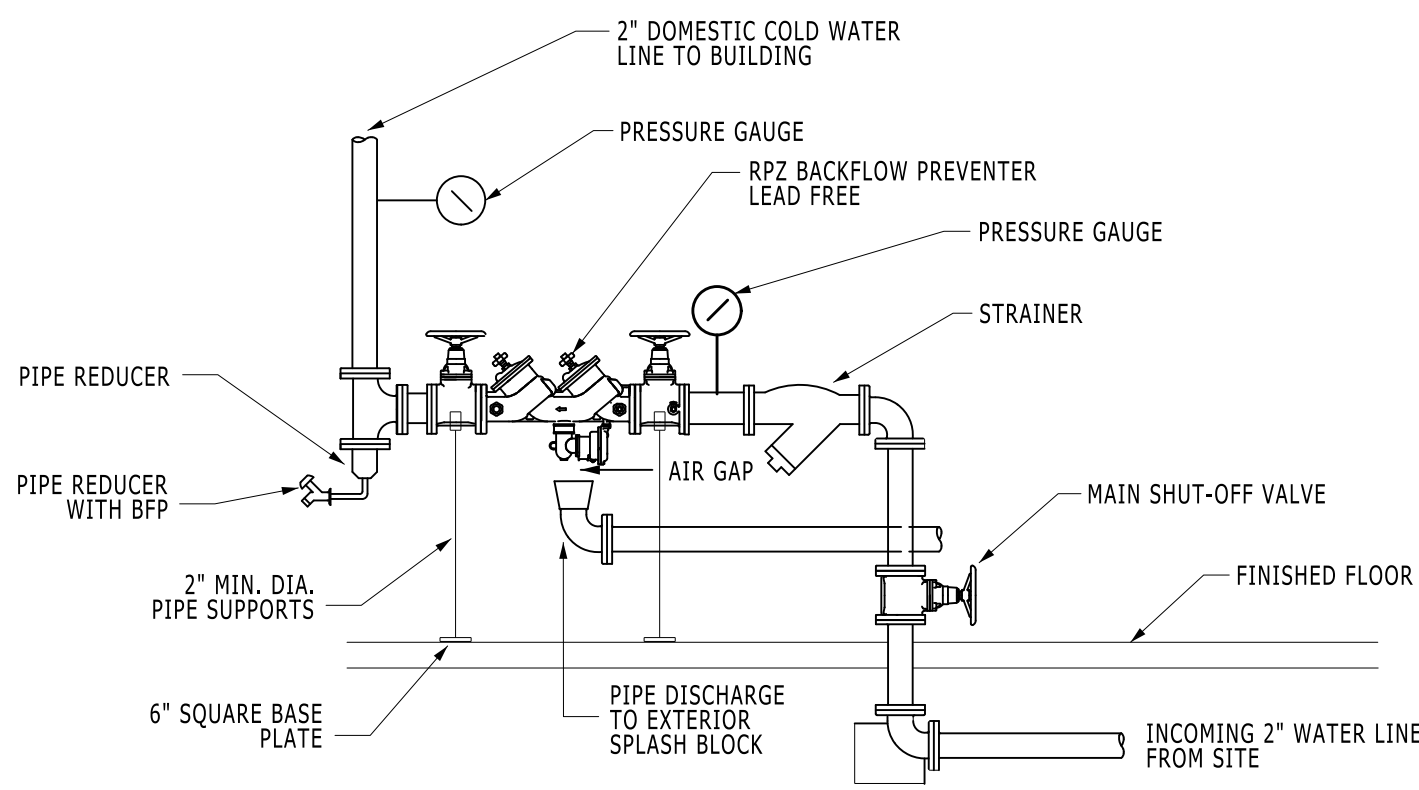
NOTE:
PLUMBING CONTRACTOR SHALL INSTALL SHOCK ARRESTORS ON FIXTURES PER PLANS

5 FLOOR MOUNTED WATER CLOSET INSTALLATION DETAIL
P150 NOT TO SCALE

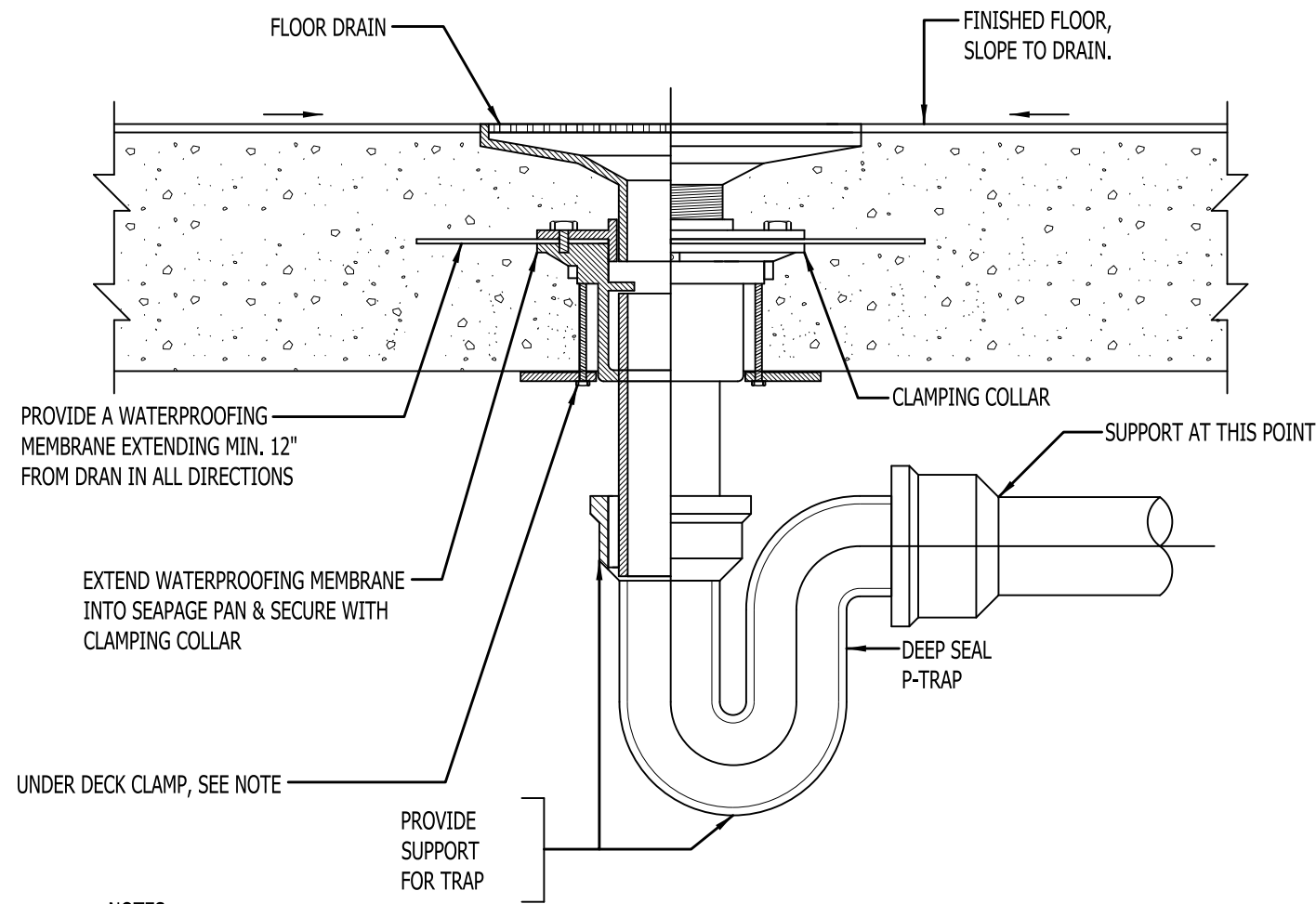


AS AN OPTION PRE-CAST CONCRETE CLEANOUT PADS SHALL BE ACCEPTED IN ALL EXTERIOR NON-VEHICULAR TRAFFIC AREAS

2 EXTERIOR CLEANOUT INSTALLATION DETAIL
P150 NOT TO SCALE



3 INTERIOR RPZ BACKFLOW PREVENTER INSTALLATION DETAIL
P150 NOT TO SCALE

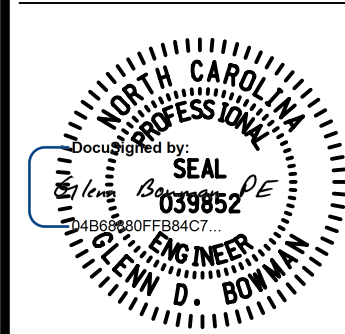


1 FLOOR DRAIN INSTALLATION DETAIL
P150 NOT TO SCALE

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120 North Bayview Avenue Raleigh, NC 27603-1423
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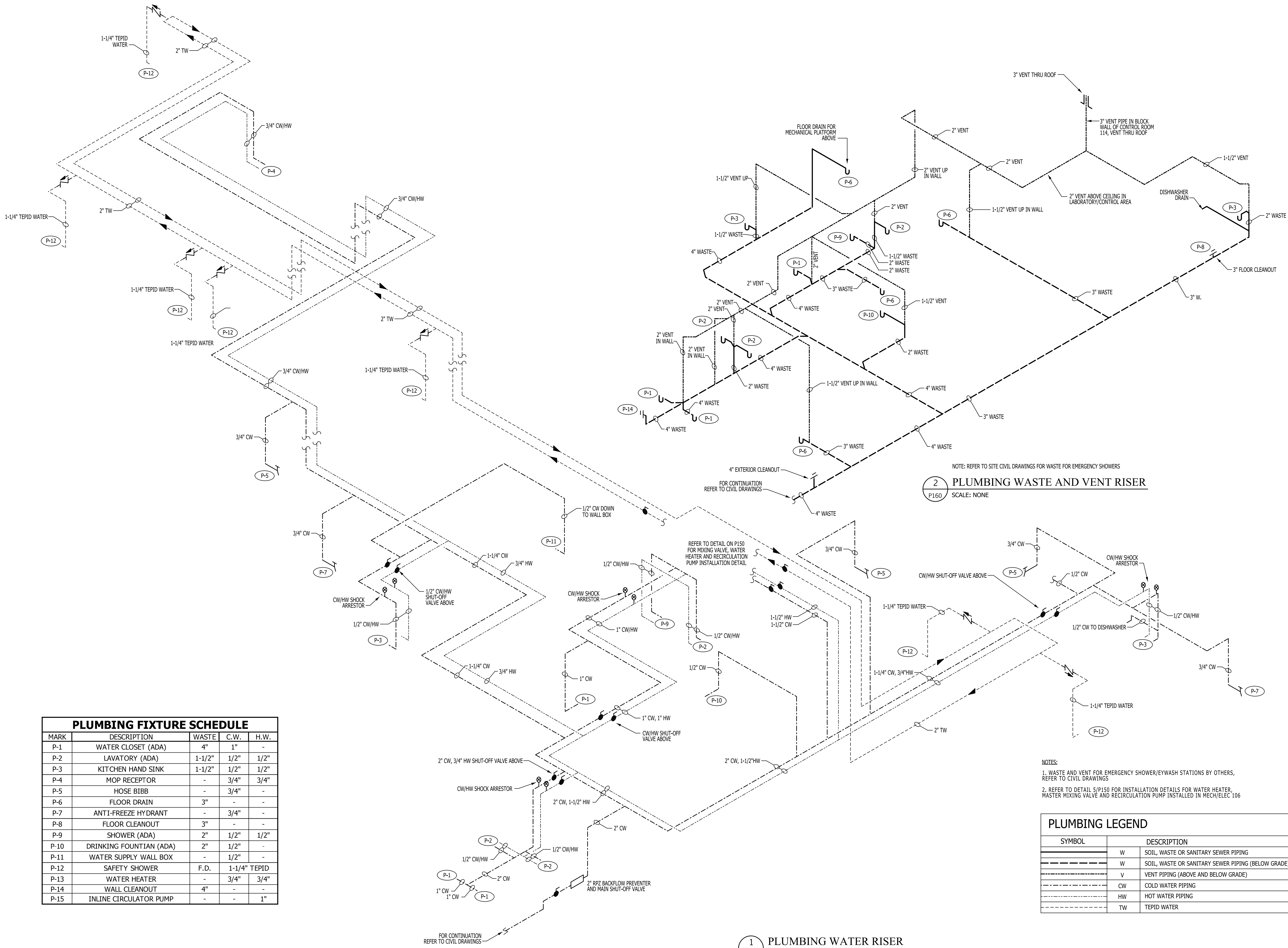
BRUNSWICK REGIONAL WATER AND SEWER H2GO
BRUNSWICK COUNTY NORTH CAROLINA
CONTRACT No. 4
REVERSE OSMOSIS WATER TREATMENT PLANT
PLUMBING DETAILS



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CHECKED BY: LHM
PROJECT NO.: 3081-AB
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SCALE: AS NOTED

SHEET 46 OF 181

P150



PLUMBING FIXTURE SCHEDULE				
MARK	DESCRIPTION	WASTE	C.W.	H.W.
P-1	WATER CLOSET (ADA)	4"	1"	-
P-2	LAVATORY (ADA)	1-1/2"	1/2"	1/2"
P-3	KITCHEN HAND SINK	1-1/2"	1/2"	1/2"
P-4	MOP RECEPTOR	-	3/4"	3/4"
P-5	HOSE BIBB	-	3/4"	-
P-6	FLOOR DRAIN	3"	-	-
P-7	ANTI-FREEZE HYDRANT	-	3/4"	-
P-8	FLOOR CLEANOUT	3"	-	-
P-9	SHOWER (ADA)	2"	1/2"	1/2"
P-10	DRINKING FOUNTIAN (ADA)	2"	1/2"	-
P-11	WATER SUPPLY WALL BOX	-	1/2"	-
P-12	SAFETY SHOWER	F.D.	1-1/4" TEPID	-
P-13	WATER HEATER	-	3/4"	3/4"
P-14	WALL CLEANOUT	4"	-	-
P-15	INLINE CIRCULATOR PUMP	-	-	1"

PLUMBING LEGEND	
SYMBOL	DESCRIPTION
W	SOIL, WASTE OR SANITARY SEWER PIPING
W	SOIL, WASTE OR SANITARY SEWER PIPING (BELOW GRADE)
V	VENT PIPING (ABOVE AND BELOW GRADE)
CW	COLD WATER PIPING
HW	HOT WATER PIPING
TW	TEPID WATER

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THE WOOTEN COMPANY
120 North Bayview Avenue Raleigh, NC 27603-1423
919.628.0531 fax 919.834.5585
License Number: F-0015

BRUNSWICK REGIONAL WATER AND SEWER H2GO
BRUNSWICK COUNTY

CONTRACT No. 4
REVERSE OSMOSIS WATER TREATMENT PLANT

PLUMBING RISER DIAGRAMS

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SHEET 47 OF 181

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SPLIT SYSTEM DEHUMIDIFICATION UNIT SEQUENCE OF OPERATIONS

1. EACH ONE OF THREE SPLIT SYSTEM DEHUMIDIFICATION UNITS ARE STAND ALONE AND WILL OPERATE WITH THE MATCHING OUTDOOR UNIT ON A UNITARY CONTROLLER LOCATED IN CONTROL ROOM 114
2. THE SUPPLY FAN SHALL RUN CONTINUOUSLY TO MIX AIR IN THE SPACE
3. THE OUTDOOR UNIT WILL CYCLE ON AND OFF TO MEET THE TEMPERATURE AND HUMIDITY SETPOINTS
SUMMER AND WINTER TEMPERATURE SETPOINT 70°F (ADJUSTABLE)
SUMMER AND WINTER RELATIVE HUMIDITY SETPOINT 45% (ADJUSTABLE)
4. TEMPERATURE AND HUMIDITY WILL BE MONITORED IN THE RETURN DUCT WORK WITH COMBINATION TEMPERATURE AND HUMIDITY SENSORS
5. ALARMS WILL BE GENERATED AND REPORT TO THE CONTROL PANEL LOCATED IN THE CONTROL ROOM, ALARMS WILL BE GENERATED FOR THE FOLLOWING BUT NOT LIMITED TO:

A. TEMPERATURE AND/OR HUMIDITY OUT OF RANGE

B. FAN COMMANDED TO RUN AND DOES NOT RUN

C. COMPRESSOR IS COMMANDED TO RUN AND DOES NOT RUN

D. HIGH COMPRESSOR HEAD PRESSURE

E. UNIT COMMANDED TO DEFROST AND DEFROST CYCLE NOT ENERGIZED

F. GENERAL ALARM FOR OUTDOOR UNIT FAULT
6. HOT GAS REHEAT WILL BE ENERGIZED AS NEEDED TO CONTROL TEMPERATURE AND HUMIDITY
7. DEHUMIDIFICATION UNIT DHU-01 SHALL BE INTERLOCKED WITH GARAGE DOOR SWITCHES, THE SWITCHES WILL INDICATE WHEN ANY GARAGE DOOR IS OPEN AND DE-ENERGIZE DHU-01

VRV SYSTEM

1. THE VARIABLE REFRIGERANT SYSTEM (VRV) CONSISTS OF (5) INDOOR UNITS (FCU), A SINGLE OUTDOOR (OU) UNIT, (1) BRANCH SELECTOR (BS) SOLENOID VALVE BOX LOCATED IN MECHANICAL ROOM 106, TOUCH SCREEN UNITARY CONTROLLER FOR THE SYSTEM, 7-DAY PROGRAMMABLE CONTROLLERS FOR EACH FAN COIL, CONNECTING REFRIGERANT PIPING AND INTERCONNECTING CONTROL WIRING
2. ALL FCU WILL BE EQUIPPED WITH 7-DAY PROGRAMMABLE THERMOSTATS LOCATED IN EACH ZONE. THE FCU WILL COMMUNICATE WITH THE OUTDOOR UNIT AND THE BRANCH SELECTOR BOX
3. THE INDOOR UNIT SUPPLY FAN SHALL RUN CONTINUOUSLY DURING OCCUPIED HOURS TO DELIVER VENTILATION AIR TO OCCUPIED AREAS
5. EF-05 TOILET EXHAUST FAN SHALL BE HARDWIRED INTERLOCKED WITH FCU-02, EF-05 SHALL BE ENERGIZED WHEN FCU-02 IS ENERGIZED, AND EF-05 SHALL BE DE-ENERGIZED WHEN FCU-02 SUPPLY FAN IS OFF FOR ANY REASON
4. THE OUTDOOR UNIT WILL BE ENERGIZED WHEN ANY COMBINATION OF INDOOR UNITS CALL FOR HEATING OR COOLING
6. THE BRANCH SELECTOR SHALL DETERMINE IF HEATING OR COOLING IS REQUIRED AT EACH FCU AND CONTROL REFRIGERANT FLOW ACCORDINGLY
7. THE VRV SYSTEM WILL BE EQUIPPED WITH A TOUCH SCREEN SYSTEM LEVEL CONTROLLER LOCATED IN THE LOBBY, THE SYSTEM CONTROLLER WILL BE CAPABLE OF OVERRIDING OF THE FCU, CHANGING SETPOINTS AND DISPLAYING ALARMS
8. THE SYSTEM WILL GENERATE THE FOLLOWING ALARMS THAT WILL BE REPORTED TO THE SYSTEM LEVEL CONTROLLER IN THE LOBBY:

A. TEMPERATURE IS OUT OF RANGE

B. FCU COMMANDED TO RUN AND DOES NOT RUN

C. OUTDOOR UNIT IS COMMANDED TO RUN AND DOES NOT RUN

D. HIGH COMPRESSOR HEAD PRESSURE

E. GENERAL ALARM FOR OUTDOOR UNIT FAULT
9. THE FCU SHALL INTAKE OUTDOOR AIR THROUGH OUTSIDE AIR DUCTWORK CONNECTED TO THE RETURN SIDE OF THE UNIT
10. THE SYSTEM SHALL BE PROGRAMMED WITH THE FOLLOWING INDOOR TEMPERATURE SETPOINTS
SUMMER OCCUPIED 74°F (ADJUSTABLE)
WINTER OCCUPIED 68°F (ADJUSTABLE)
SUMMER UNOCCUPIED 80°F (ADJUSTABLE)
WINTER UNOCCUPIED 62°F (ADJUSTABLE)

11. THE SYSTEM SHALL BE ENERGIZED DURING UNOCCUPIED HOURS IF THE SPACE TEMPERATURE DRIFTS ABOVE OR BELOW THE UNOCCUPIED SETPOINT

ELECTRICAL ROOM AIR CONDITIONING UNIT

1. THE COMPUTER ROOM AIR CONDITIONER (CRAC) SHALL OPERATE IN A STAND ALONE MANOR TO MAINTAIN ROOM TEMPERATURE IN THE ELECTRICAL ROOM 122
2. THE INDOOR AN OUTDOOR UNITS SHALL OPERATE AND COMMUNICATE TOGETHER AS A SYSTEM
3. THE SYSTEM SHALL MAINTAIN THE ROOM TEMPERATURE SETPOINT OF 75°F (ADJUSTABLE)

ELECTRIC RADIANT HEATERS

1. THE RADIANT HEATERS SHALL OPERATE AS A SINGLE SYSTEM IN EACH ROOM
2. A SPACE TEMPERATURE SENSOR SHALL ENERGIZE THE ALL RADIANT HEATERS IN A SPACE SIMULTANEOUSLY
- 3 THE SPACE TEMPERATURE POINT TO ENERGIZE THE RADIANT HEATERS SHALL BE 40°F (ADJUSTABLE)
4. THE RADIANT HEATERS SHALL BE DE-ENERGIZED WHEN THE SPACE TEMPERATURE IS ABOVE 40°F (ADJUSTABLE)

STORAGE ROOM EXHAUST FANS

1. EACH EXHAUST FAN SHALL OPERATE INDEPENDENTLY BASED ON SPACE TEMPERATURE
2. THE EXHAUST FAN SHALL BE NORMALLY OFF
3. THE EXHAUST FAN SHALL BE ENERGIZED WHEN SPACE TEMPERATURE REACHES 75°F (ADJUSTABLE) AND REMAIN ON UNTIL SPACE TEMPERATURE DROPS BELOW 75°F

EXHAUST FAN EF-06

1. EF-06 SHALL RUN CONTINUOUSLY

LEGEND	
SYMBOL	DESCRIPTION
	CONDENSATE DRAIN PIPING
	INDICATES DIRECTION OF FLOW
	INDICATES DIRECTION OF SLOPE
	PIPE ANCHOR
	BALL VALVE
	CHECK VALVE
	BALANCING VALVE
	ELBOW DOWN
	ELBOW UP
	STRAINER
	UNION
	THERMOSTAT OR TEMPERATURE SENSOR
	MANUAL VOLUME DAMPER (V.D.)
	MOTOR OPERATED DAMPER (MOD)
	CEILING SUPPLY DIFFUSER
	CEILING RETURN GRILLE
	CEILING EXHAUST GRILLE
	CLEAN OUT
	HUMIDISTAT OR HUMIDITY SENSOR
	FIRE DAMPER AT WALL
	SMOKE DAMPER AT WALL
	ACCESS DOOR
	DOWN
	FLEXIBLE DUCT
	FLOOR DRAIN
	INDICATES CONNECT TO WORK PROVIDED BY OTHER TRADE
	INDICATES END POINT OF DEMOLITION
	BUTTERFLY VALVE (G INDICATES GEAR OPERATED)
	RECTANGLE DUCT SIZE (W x H)
	FLAT OVAL DUCT SIZE (MAJOR AXIS / MINOR AXIS)
	COMB. MAGNETIC MOTOR STARTER & DISCONNECT
	DUCT MOUNTED SMOKE DETECTOR
	UNIT CONTROLLER

ABBREVIATIONS

AFC	ABOVE FINISHED CEILING
AFF	ABOVE FINISHED FLOOR
BAS	BUILDING AUTOMATION SYSTEM
BTUH	BRITISH THERMAL UNIT PER HOUR
CFM	CUBIC FEET PER MINUTE
CHW	CHILLED WATER PIPING
DB	DRY BULB
EA	EXHAUST AIR FLOW
EAT	ENTERING AIR TEMPERATURE
ESP	EXTERNAL STATIC PRESSURE
W.G.	INCHES OF WATER GAUGE
EWT	ENTERING WATER TEMPERATURE
F	FAHRENHEIT
FOT	FLAT ON TOP
HP	HORSEPOWER
HZ	HERTZ
IN. WC	INCHES OF WATER COLUMN
KW	TOTAL POWER INPUT, KILOWATTS
LAT	LEAVING AIR TEMPERATURE
LBS	POUNDS
LRA	LOCKED ROTOR AMPS
LWT	LEAVING WATER TEMPERATURE
MC	MECHANICAL CONTRACTOR
MFG	MANUFACTURER
MCA	MINIMUM CIRCUIT AMPS
MOCP	MAXIMUM OVER CURRENT PROTECTION
MVD	MANUAL VOLUME DAMPER
OA	OUTSIDE AIR FLOW
PH	PHASE
PSI	POUNDS PER SQUARE INCH
RA	RETURN AIR FLOW
RLA	RATED LOAD AMPS
RPM	REVOLUTIONS PER MINUTE
SA	SUPPLY AIR FLOW
SP	STATIC PRESSURE
TA	TRANSFER AIR FLOW
TEMP	TEMPERATURE
TON	12,000 BTUH OF COOLING CAPACITY
TYP	TYPICAL
TRX	TRANSFER
VAV	VARIABLE AIR VOLUME
VFD	VARIABLE FREQUENCY DRIVE
WB	WET BULB TEMPERATURE

GENERAL REQUIREMENTS

1. THE HEATING AND AIR CONDITIONING CONTRACTOR (THE CONTRACTOR) SHALL PROVIDE ALL SPECIFIED AND MISCELLANEOUS MATERIAL AND LABOR AS REQUIRED FOR A COMPLETE AND OPERATING SYSTEM AS DESCRIBED BY THESE PLANS AND SPECIFICATIONS.
2. ALL EQUIPMENT AND MATERIALS SHALL BE INSTALLED IN ACCORDANCE WITH ALL LOCAL, STATE, AND NATIONAL CODES AND RECOMMENDATIONS OF THE MANUFACTURERS. IF THERE IS A CONFLICT IN THE ABOVE REQUIREMENTS, THE MORE STRINGENT SHALL BE USED.
3. THE CONTRACTOR SHALL OBTAIN ALL PERMITS AND INSPECTIONS NECESSARY TO COMPLETE HIS WORK UNDER THIS CONTRACT.
4. THE CONTRACTOR SHALL VISIT THE SITE TO FAMILIARIZE HIMSELF WITH CONDITIONS AND RESOLVE ANY CONFLICTS WITH THESE PLANS WITH THE ENGINEER.
5. ALL DUCTWORK AND EQUIPMENT SHOWN ON THESE DRAWINGS IS STRICTLY DIAGRAMMATIC. ALL DUCTWORK SIZES SHOWN ARE FREE AREA SIZES. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO ENSURE THAT ITEMS FURNISHED UNDER THIS CONTRACT WILL FIT IN THE SPACE AVAILABLE. THE CONTRACTOR SHALL MAKE NECESSARY FIELD MEASUREMENTS TO ASCERTAIN SPACE REQUIREMENTS, INCLUDING THOSE FOR CONNECTIONS, AND SHALL PROVIDE SUCH SIZES AND SHAPES OF EQUIPMENT THAT ARE THE TRUE INTENT AND MEANING OF THESE DRAWINGS AND SPECIFICATIONS. ANY CONFLICTS SHALL BE RESOLVED WITH THE ENGINEER.
6. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL COORDINATE HIS WORK WITH ALL OTHER TRADES. ALL DRAWINGS INDICATE THE GENERAL ARRANGEMENT DESIRED. THE EXACT LOCATIONS AND DETAILS OF CONSTRUCTION MAY BE SUCH THAT VARIANCES ARE REQUIRED. THE DRAWINGS DO NOT SHOW ALL BENDS, OFFSETS, AND FITTINGS THAT MAY BE REQUIRED FOR THE COMPLETE EXECUTION OF THIS CONTRACT. SUCH VARIANCES AND CONTINGENCIES SHALL BE ALLOWED FOR IN THE CONTRACTOR'S BID AND SHALL BE ACCOMPLISHED WITHOUT ADDITIONAL COST TO THE OWNER. PRIOR TO ORDERING EQUIPMENT, THE CONTRACTOR SHALL PREPARE COORDINATION DRAWINGS SHOWING HOW HIS EQUIPMENT IS TO BE LOCATED IN THE SPACE INDICATED. THIS DRAWING SHALL SHOW THE NEW AND EXISTING WORK OF ALL OTHER TRADES. THE CONTRACTOR SHALL CONTACT THE OTHER CONTRACTORS INVOLVED FOR DIMENSIONS, LOCATIONS, AND REQUIRED CLEARANCES OF THE EQUIPMENT THEY INTEND TO PROVIDE FOR THIS JOB. THE AFOREMENTIONED COORDINATION DRAWINGS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL.
7. DO NOT SCALE THESE DRAWINGS. REFER TO THE ARCHITECTURAL PLANS FOR DIMENSIONS.
8. ALL EQUIPMENT SHALL BE LOCATED AND INSTALLED TO PROVIDE MAXIMUM SPACE FOR MAINTENANCE AND SERVICE.
9. ALL MATERIALS USED SHALL BE NEW AND FREE OF DEFECTS. WHERE TRADE NAMES ARE MENTIONED, THEY ARE GIVEN AS A REFERENCE TO THE QUALITY OF THE APPARATUS REQUIRED. ALL MATERIALS AND EQUIPMENT SHALL BEAR THE UL LABEL OR EQUIVALENT WHERE APPLICABLE. OTHER MAKES MAY BE USED IF APPROVED IN WRITING BY THE ENGINEER. A COMPLETE LIST OF MATERIALS AND EQUIPMENT PROPOSED FOR USE IN THIS CONTRACT TO THE ENGINEER WITHIN TEN DAYS FOLLOWING THE AWARD OF CONTRACT. IF SUCH LIST IS NOT SUBMITTED, THE CONTRACTOR SHALL SUPPLY THE MATERIALS AND EQUIPMENT SPECIFIED OR AS DIRECTED BY THE ENGINEER. THE CONTRACTOR SHALL PROVIDE FOUR COPIES OF SUBMITTALS TO THE ENGINEER FOR REVIEW AND APPROVAL PRIOR TO ORDERING EQUIPMENT.
10. WORKMANSHIP SHALL BE FIRST-CLASS AND PERFORMED BY EXPERIENCED AND SKILLED CRAFTSMEN.
11. COORDINATE EXACT LOCATION OF ALL DIFFUSERS WITH LIGHTS, SPRINKLER HEADS, AND OTHER CEILING MOUNTED DEVICES. SEE THE REFLECTED CEILING PLAN.
12. UPON COMPLETION OF THE WORK, A TEST AND BALANCE SHALL BE PERFORMED IN ACCORDANCE WITH TABC REQUIREMENTS. FURNISH FINAL COPY OF ALL TESTING, ADJUSTING, AND BALANCING REPORTS AS A PART OF THE OPERATING AND MAINTENANCE MANUALS. INDICATE DEFICIENCIES PREVENTING PROPER TESTING, ADJUSTING AND BALANCING OF SYSTEMS AND EQUIPMENT TO ACHIEVE SPECIFIED PERFORMANCE. ADJUST AIR HANDLING SYSTEMS TO WITHIN PLUS OR MINUS 10 PERCENT OF DESIGN. ADJUST TOTAL AIR TO ALL AIR OUTLETS AND INLETS TO WITHIN PLUS 10 PERCENT AND MINUS 5 PERCENT OF DESIGN TO SPACE. ADJUST INDIVIDUAL OUTLETS AND INLETS IN SPACE TO WITHIN PLUS OR MINUS 10 PERCENT OF DESIGN. ADJUST AIR HANDLING AND DISTRIBUTION SYSTEMS TO OBTAIN REQUIRED OR DESIGN SUPPLY, RETURN AND EXHAUST AIR QUANTITIES. MEASURE AIR QUANTITIES AT AIR INLETS AND OUTLETS. VARY TOTAL SYSTEM AIR QUANTITIES BY ADJUSTMENT OF FAN SPEEDS. PROVIDE SHEAVE DRIVE CHANGES TO VARY FAN SPEED IF REQUIRED. VARY BRANCH AIR QUANTITIES BY DAMPER REGULATION. MEASURE STATIC AIR PRESSURE CONDITIONS ON AIR SUPPLY UNITS, INCLUDING FILTER AND COIL PRESSURE DROPS AND TOTAL PRESSURE ACROSS FAN. MAKE ALLOWANCES FOR 50 PERCENT LOADING OF FILTERS. ADJUST OUTSIDE AIR AUTOMATIC DAMPERS, OUTSIDE AIR, RETURN AIR, AND EXHAUST DAMPERS FOR DESIGN CONDITIONS. AT MODULATING DAMPER LOCATIONS, TAKE MEASUREMENTS AND BALANCE AT EXTREME CONDITIONS.
13. AS APPLICABLE, THE CONTRACTOR SHALL VERIFY THE OPERATION OF ALL EXISTING MECHANICAL EQUIPMENT IN THE AREA OF WORK. ALL MEASUREMENTS SHALL BE RECORDED NECESSARY TO ASCERTAIN THE PROPER OPERATION OF THE EQUIPMENT INCLUDING, BUT NOT LIMITED TO, AMPERAGE, GPM FLOW, INLET AND OUTLET TEMPERATURES, AIR FLOW, AND INLET AND OUTLET STATIC PRESSURES. ANY DEFICIENCY IN THE RATED OUTPUT OF THE EQUIPMENT SHALL BE REPORTED TO THE ENGINEER. IN ANY CASE, SAID REPORT SHALL BE SUBMITTED TO THE ENGINEER UPON REQUEST.
14. ALL EQUIPMENT SHALL BE PROVIDED WITH PERMANENT LABELS FOR IDENTIFICATION. ALL PIPE SHALL BE LABELED TO INDICATE PIPE FUNCTION AND DIRECTION OF FLOW. PROVIDE VALVE TAGS FOR ALL VALVES. COORDINATE NOMENCLATURE AND NUMBERING WITH OWNER PRIOR TO INSTALLATION.
15. THE CONTRACTOR SHALL FURNISH A BOUND SET OF OPERATING AND MAINTENANCE INSTRUCTIONS FOR ALL EQUIPMENT TO THE OWNER UPON COMPLETION OF PROJECT.
16. THE CONTRACTOR SHALL, AT THE COMPLETION OF THE WORK, CLEAN, POLISH, AND/OR WASH ALL EXPOSED ITEMS OF MATERIALS, EQUIPMENT, AND FIXTURES IN HIS CONTRACT TO LEAVE SUCH ITEMS BRIGHT AND CLEAN. THE CONTRACTOR SHALL KEEP THE PREMISES CLEAR OF DEBRIS FROM HIS WORK DURING CONSTRUCTION AND LEAVE THE AREA AND BUILDING CLEAN AT COMPLETION OF THE CONTRACT.
17. MECHANICAL AND ELECTRICAL EQUIPMENT SHALL OPERATE WITHOUT OBJECTIONABLE NOISE OR VIBRATION, AS DETERMINED BY THE ENGINEER. IF SUCH OBJECTIONABLE NOISE OR VIBRATION SHOULD BE PRODUCED AND TRANSMITTED TO OCCUPIED PORTIONS OF THE BUILDING, THE CONTRACTOR SHALL MAKE THE NECESSARY CHANGES TO CORRECT THE NOISE OR VIBRATION WITHOUT ADDITIONAL COST TO THE OWNER.
18. THE CONTRACTOR SHALL PROVIDE A COMPLETE 1-YEAR WARRANTY ON ALL LABOR AND MATERIALS UNDER THIS CONTRACT. REFRIGERATION COMPRESSORS PROVIDED UNDER THIS CONTRACT SHALL CARRY THE MANUFACTURER'S PUBLISHED 5-YEAR NON-PRORATED WARRANTY.
19. THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR ALL POWER CONNECTIONS TO THE EQUIPMENT PROVIDED UNDER HIS CONTRACT.
20. THE MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CONTROL WIRING FOR HIS EQUIPMENT.
21. OUTSIDE AIR INTAKES SHALL BE LOCATED A MINIMUM OF 10 FEET FROM ALL EXHAUST DISCHARGE AND PLUMBING VENTS.
22. REPLACE ALL FILTERS JUST PRIOR TO ACCEPTANCE BY THE OWNER.
23. CONTRACTORS AND SUB-CONTRACTORS SHALL CAREFULLY REVIEW THE CONSTRUCTION DOCUMENTS. INFORMATION REGARDING THE COMPLETE WORK IS DISPERSED THROUGHOUT THE DOCUMENT SET AND CANNOT BE ACCURATELY DETERMINED WITHOUT REFERENCE TO THE COMPLETE DOCUMENT SETS.
24. ROUTE REFRIGERANT LINES FROM OUTDOOR CONDENSING UNITS IN THE MOST DIRECT PATH TO AIR HANDLER LOCATED ABOVE CEILING. INSULATE WITH FOAM INSULATION. PROVIDE LONG LINE REFRIGERATION KIT AS REQUIRED.
25. PROVIDE AN AUXILIARY DRAIN PAN FOR ANY AIR CONDITIONING EQUIPMENT LOCATED ABOVE A CEILING OR WHERE CONDENSATE OVERFLOW WOULD DAMAGE BUILDING COMPONENTS. THE AUXILIARY DRAIN PAN SHOULD BE PROVIDED WITH A FLOAT SWITCH THAT STOPS THE FAN UPON ACCUMULATION OF CONDENSATE IN THE PAN. LOCATE ALL EQUIPMENT ABOVE THE CEILING SO THAT ADEQUATE SLOPE IS PROVIDED FOR ALL DRAIN LINES. IF A CONDENSATE PUMP IS SPECIFIED, EXTEND THE AUXILIARY DRAIN PAN UNDER THE CONDENSATE PUMP. CONDENSATE DRAIN LINES IN RETURN AIR PLenums SHALL BE MADE OF TYPE "K" COPPER PIPE. INSULATE DRAIN LINES TO PREVENT SWEATING. ROUTE CONDENSATE DRAINS AS DIRECTED ON PLANS.

MECHANICAL SUMMARY

MECHANICAL SYSTEMS, SERVICE SYSTEMS AND EQUIPMENT

Thermal Zone 3A	
winter dry bulb: 26°F	
summer dry bulb: 92.3°F	
Interior design conditions	
winter dry bulb: 70°F	
summer dry bulb: 75°F	
relative humidity: 50%	
Building heating load: 47.9 MBH	
Building cooling load: 88.8 MBH	
Mechanical Spacing Conditioning System	
Unitary	
description of unit:	
heating efficiency:	SEE MECHANICAL EQUIPMENT SCHEDULES
cooling efficiency:	
size category of unit:	
Boiler	N/A
Size category, If oversized, state reason.	
Chiller	N/A
Size category, If oversized, state reason.	
List equipment efficiencies:	SEE MECHANICAL EQUIPMENT SCHEDULES

REVISIONS

THE WOOTEN COMPANY

120 North Bayview Avenue Raleigh, NC 27603-1423

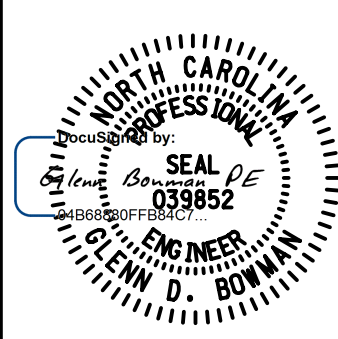
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BRUNSWICK REGIONAL WATER AND SEWER H2GO
BRUNSWICK COUNTY NORTH CAROLINA

CONTRACT No. 4
REVERSE OSMOSIS WATER TREATMENT PLANT

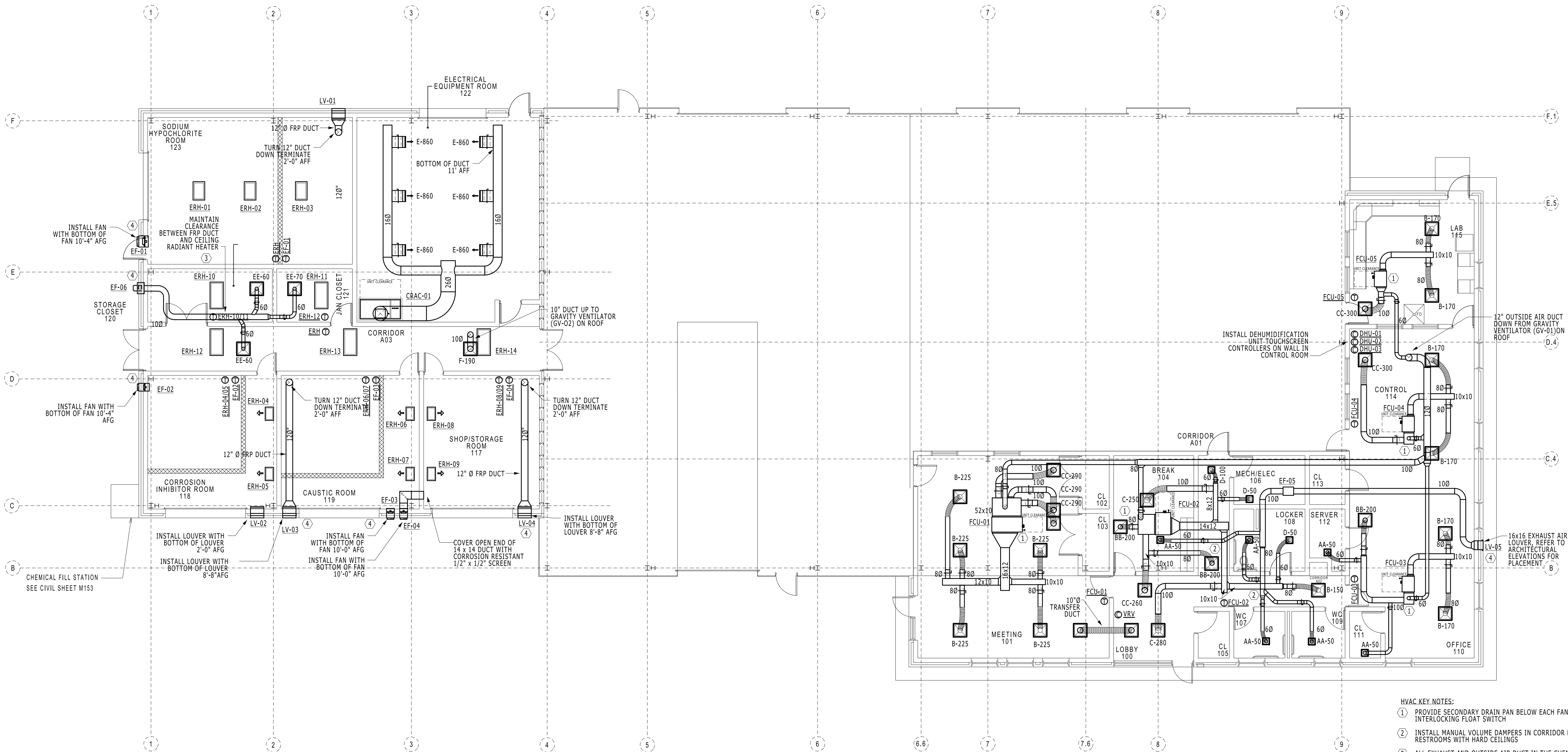
HVAC COVER SHEET



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CHECKED BY:	LHM
PROJECT NO.:	3081-AB
DATE:	JUNE 7, 2020
SCALE:	AS NOTED

SHEET 48 OF 181

H100



1 HVAC DUCTWORK PLAN-GROUND LEVEL
H110 SCALE: 1/8" = 1'

- HVAC KEY NOTES:
- 1 PROVIDE SECONDARY DRAIN PAN BELOW EACH FAN COIL UNIT WITH INTERLOCKING FLOAT SWITCH
 - 2 INSTALL MANUAL VOLUME DAMPERS IN CORRIDOR FOR EXHAUST IN RESTROOMS WITH HARD CEILINGS
 - 3 ALL EXHAUST AND OUTSIDE AIR DUCT IN THE CHEMICAL STORAGE AREA TO BE FABRICATED FROM FRP, REFER TO SPECIFICATIONS
 - 4 REFER TO ARCHITECTURAL ELEVATIONS FOR LOUVER AND FAN ELEVATIONS

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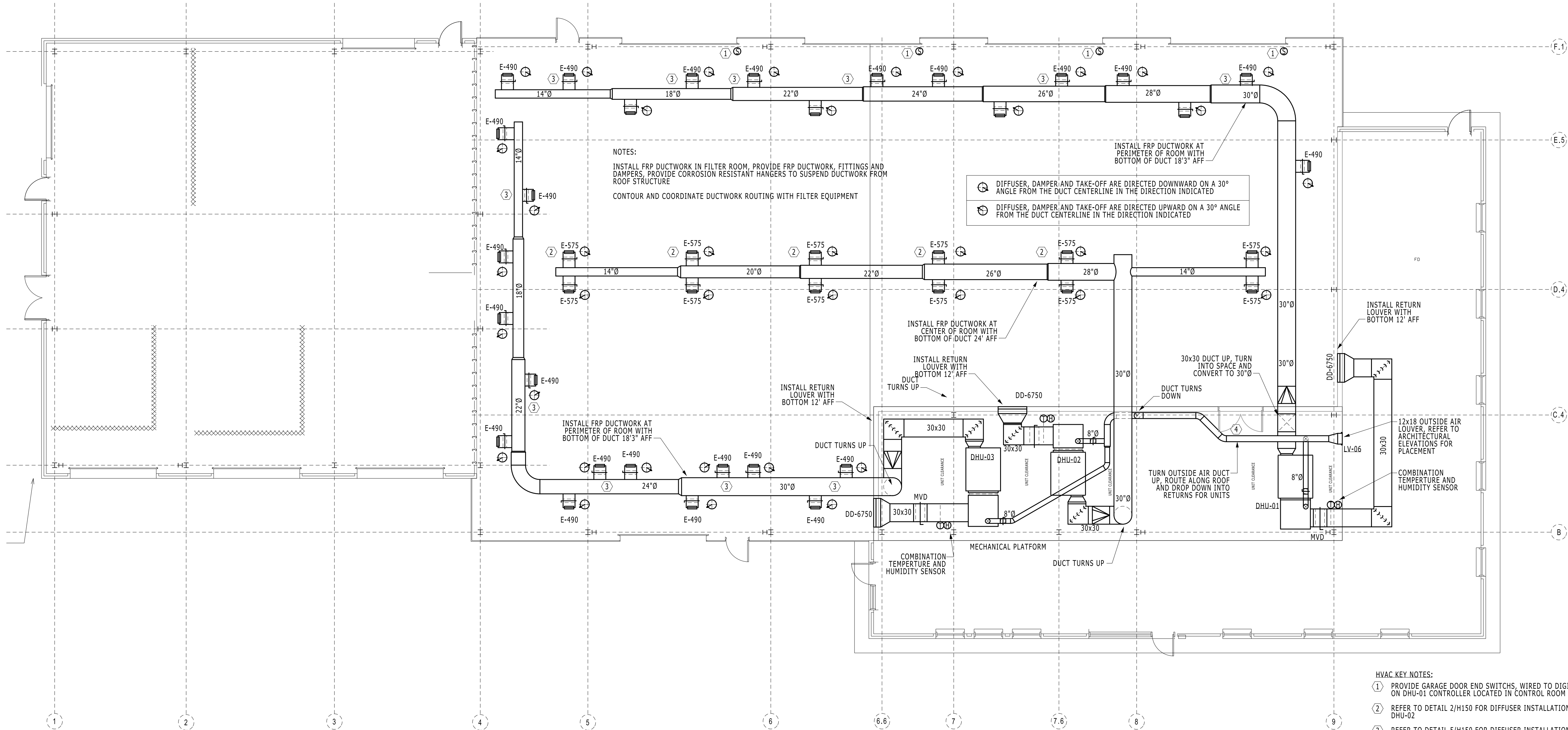
HVAC DUCTWORK PLAN



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H110



1 HVAC MECHANICAL PLATFORM PLAN
H111 SCALE: 1/8" = 1'

- HVAC KEY NOTES:
- 1 PROVIDE GARAGE DOOR END SWITCHES, WIRED TO DIGITAL INPUT POINT ON DHU-01 CONTROLLER LOCATED IN CONTROL ROOM 114
 - 2 REFER TO DETAIL 2/H150 FOR DIFFUSER INSTALLATION IN DUCTWORK FOR DHU-02
 - 3 REFER TO DETAIL 5/H150 FOR DIFFUSER INSTALLATION IN DUCTWORK FOR DHU-01 AND DHU-03
 - 4 ROUTE OUTSIDE AIR DUCT TIGHT TO STRUCTURE TO MAINTAIN CLEARANCE IN FRONT OF DOOR OPENING

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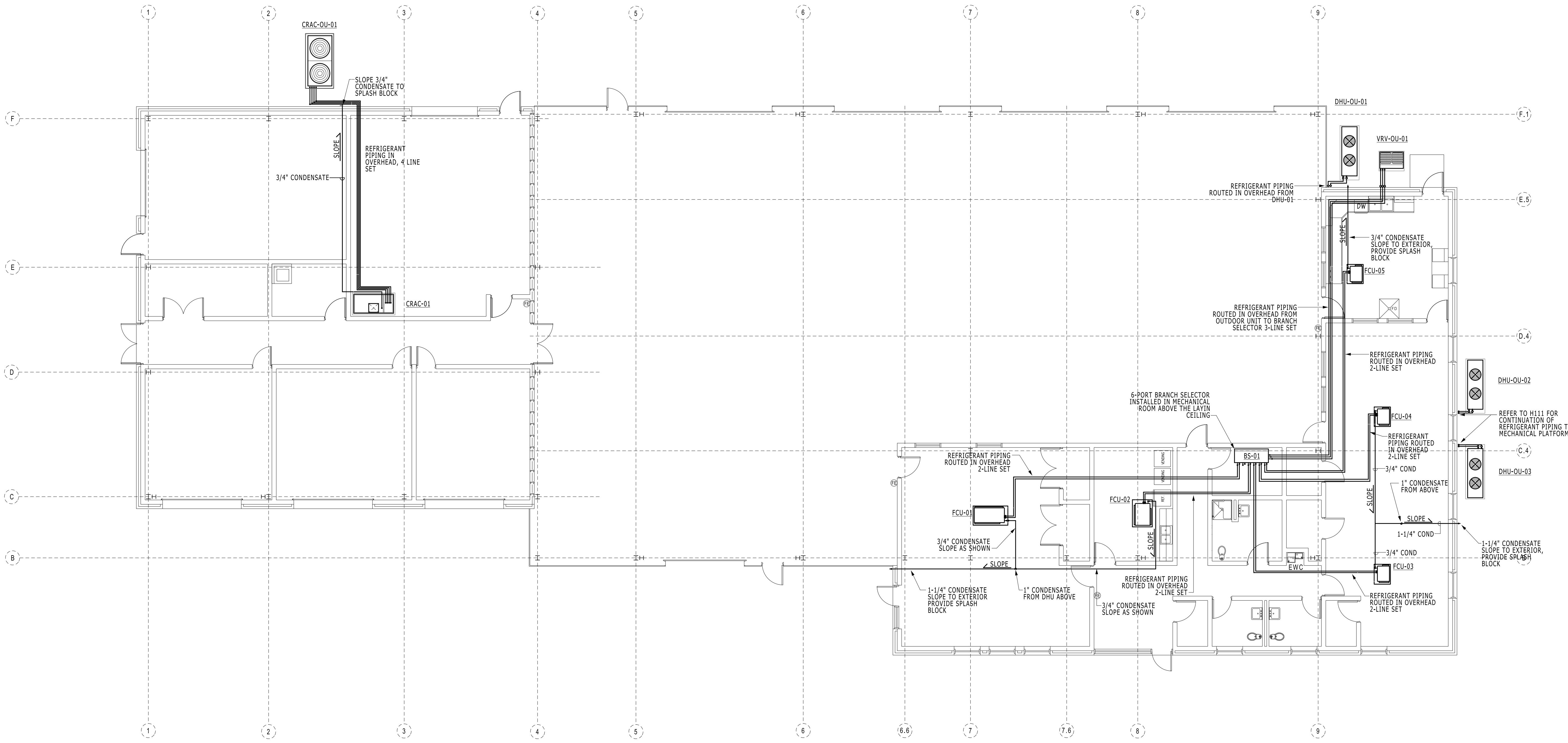
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HVAC MECHANICAL PLATFORM PLAN



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H111



1 HVAC PIPING PLAN
H120 SCALE: 1/8" = 1'

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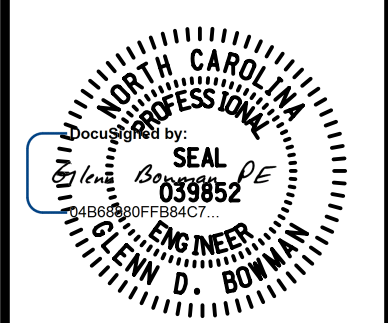
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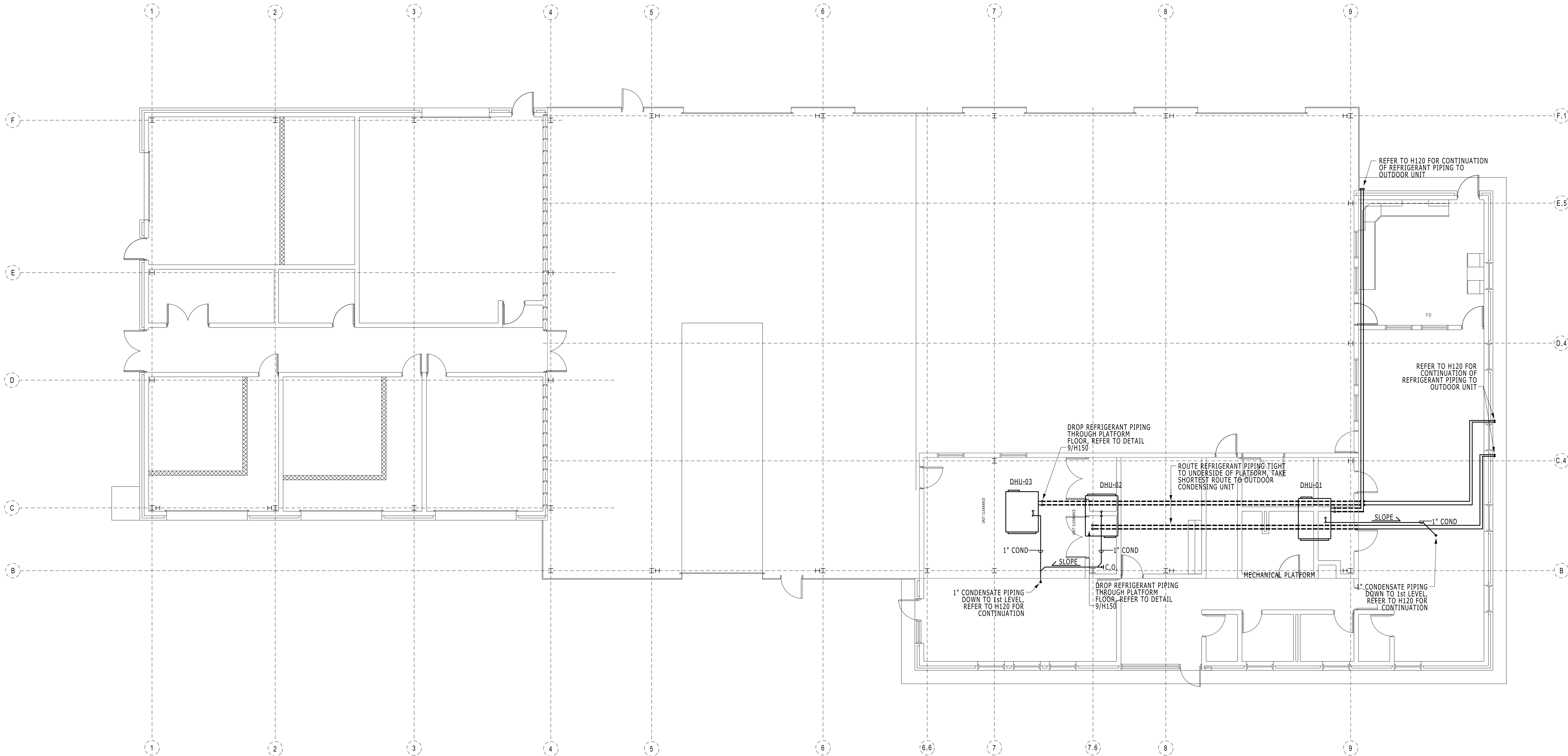
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HVAC PIPING PLAN



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1 HVAC PLATFORM PIPING PLAN
H120 SCALE: 1/8" = 1'

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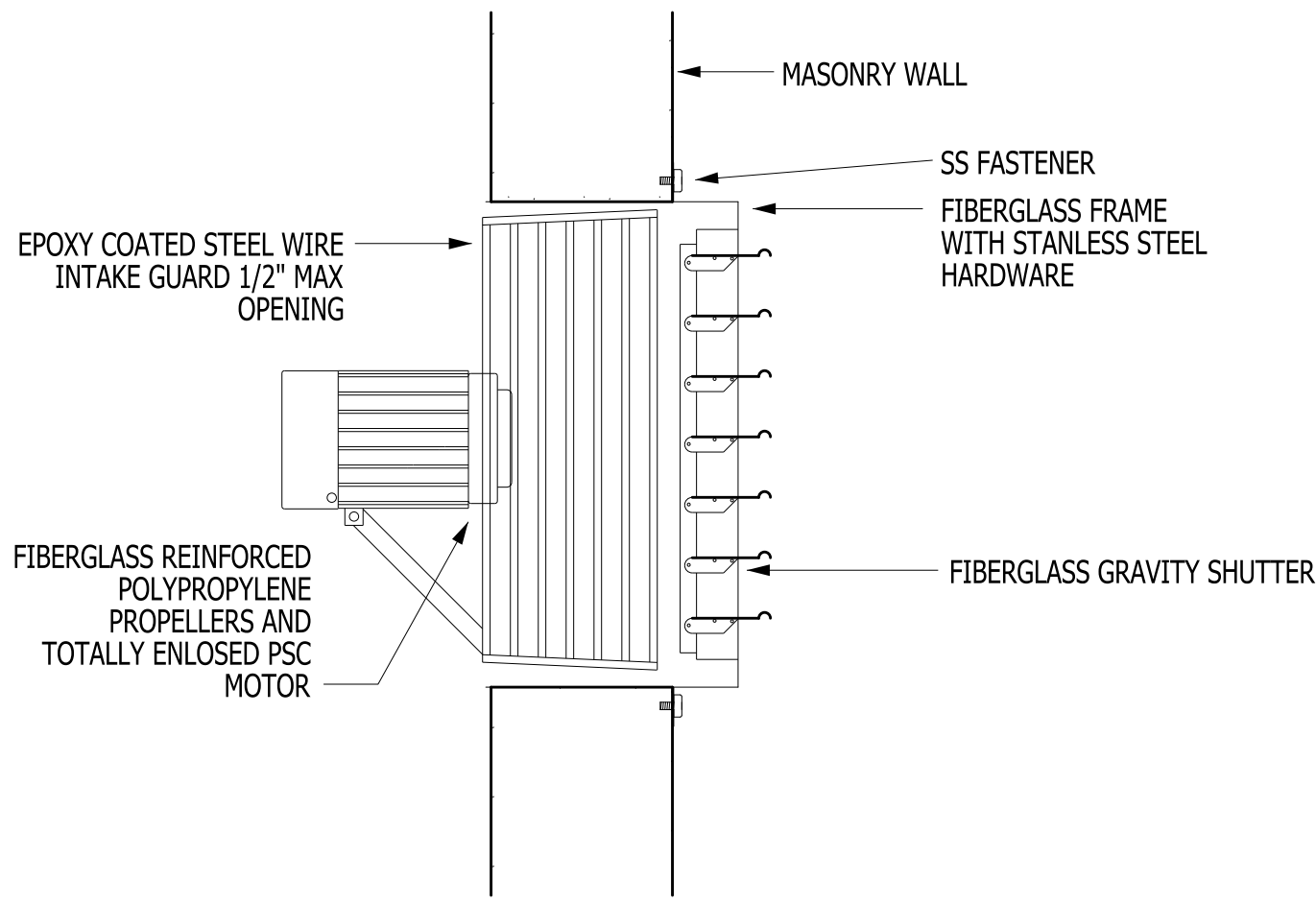
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CONTRACT No. 4
REVERSE OSMOSIS WATER TREATMENT PLANT
HVAC PLATFORM PIPING PLAN



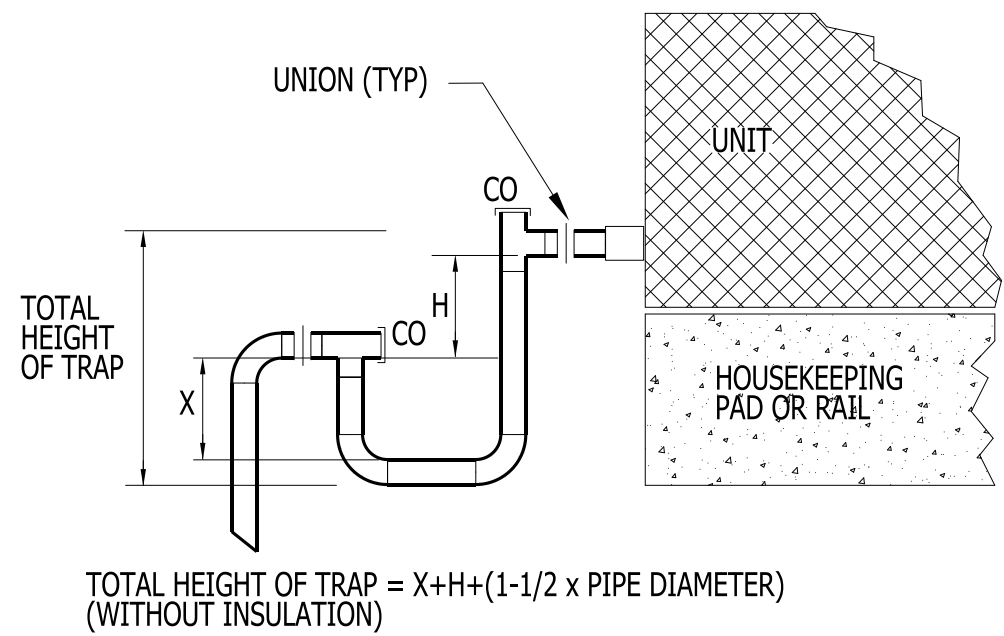
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H121

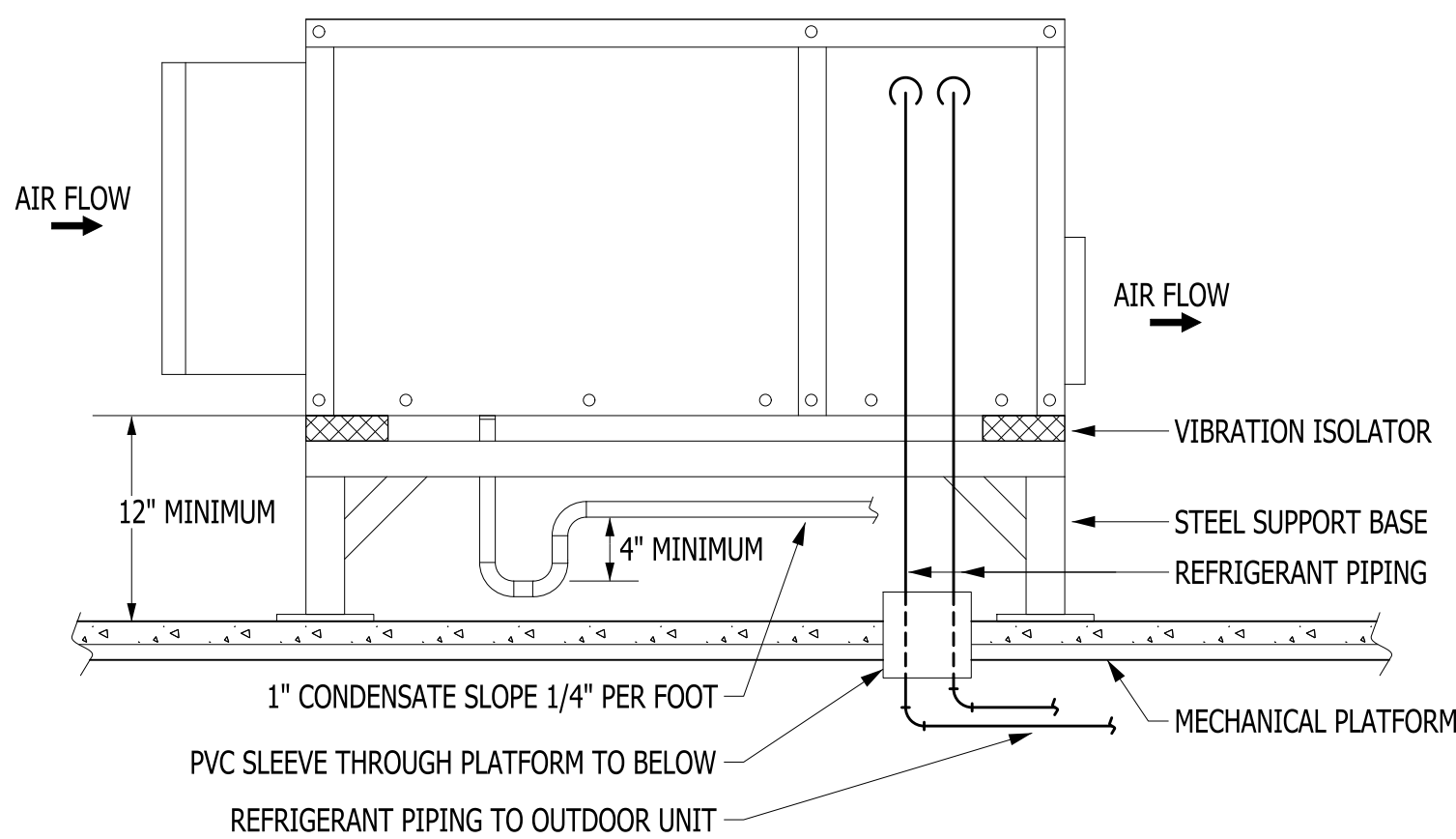


7 SHUTTER MOUNTED EF INSTALLATION DETAIL
H150 NOT TO SCALE



BLOW THROUGH	DRAW THROUGH
X = MIN. 1" PLUS CASING STATIC PRESSURE	X = 1/2 "H"
H = MIN. 1"	H = MIN. 1" PLUS CASING STATIC PRESSURE

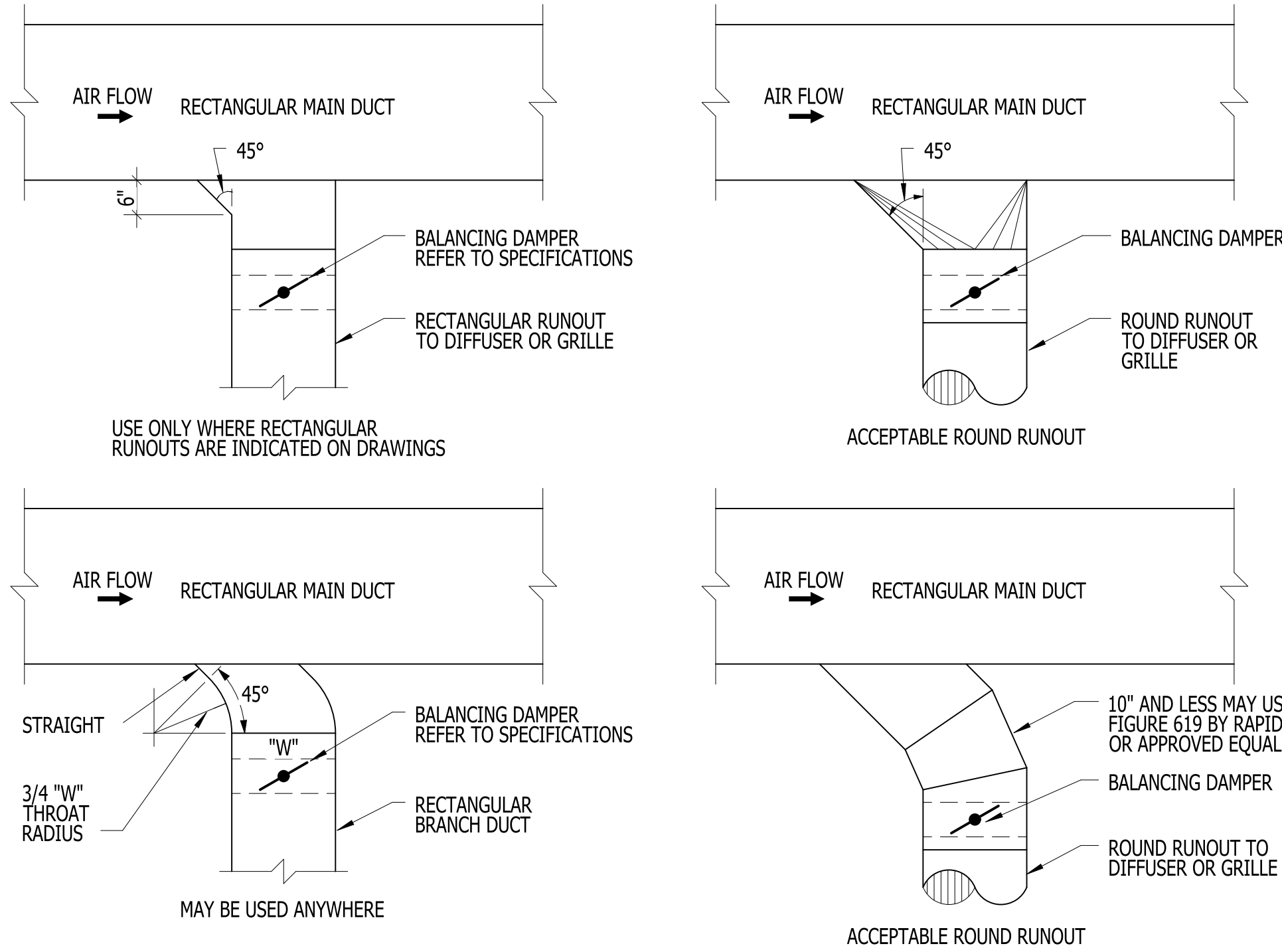
8 COIL DRAIN PIPING DETAIL
H150 NOT TO SCALE



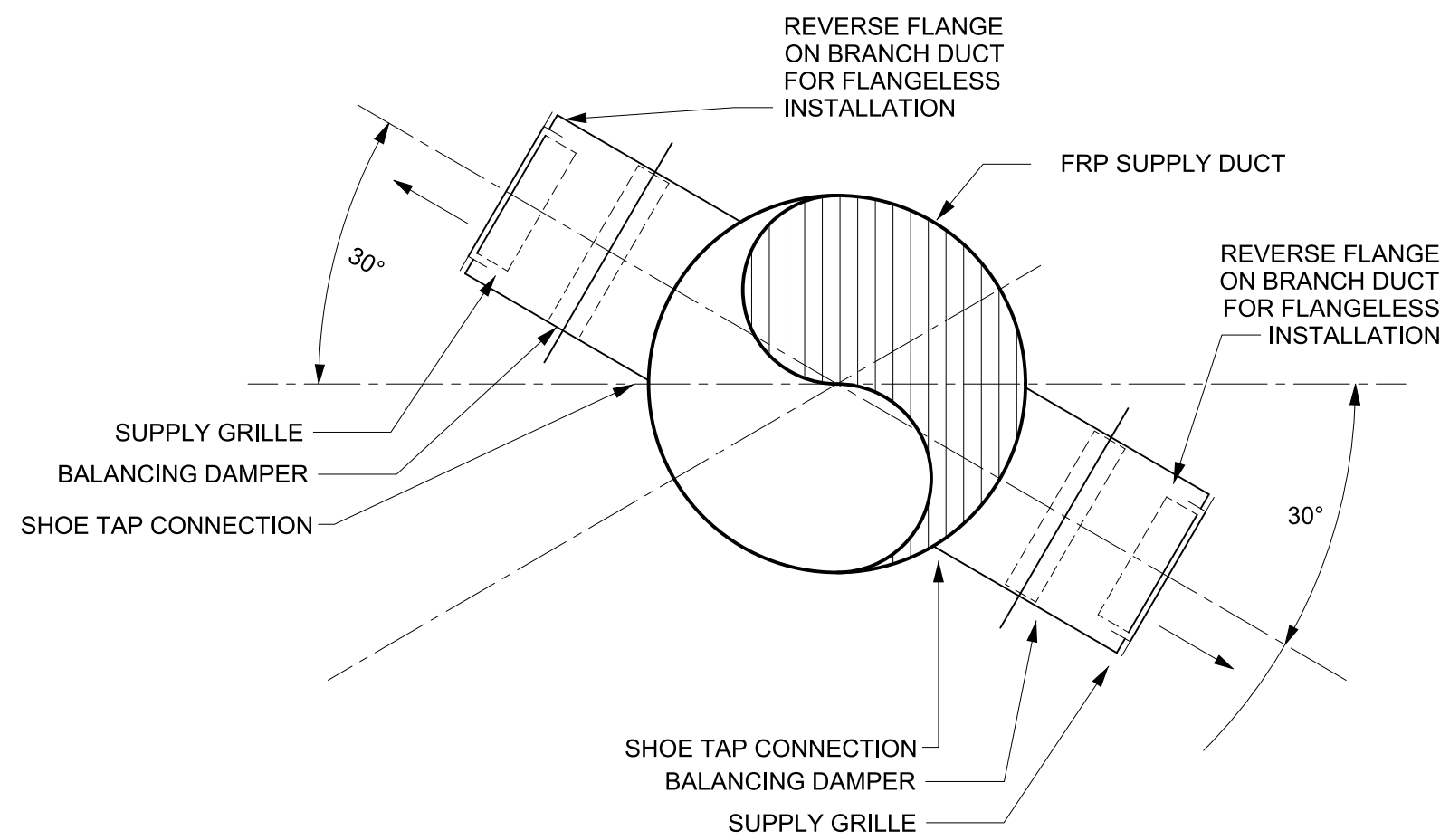
NOTE:

1. MAINTAIN A 2" MINIMUM LIP ABOVE THE PLATFORM FLOOR FOR PVC SLEEVE
2. FABRICATE SUPPORT BASE FROM STEEL, REFER TO DIVISION 9 FOR PAINTING REQUIREMENTS

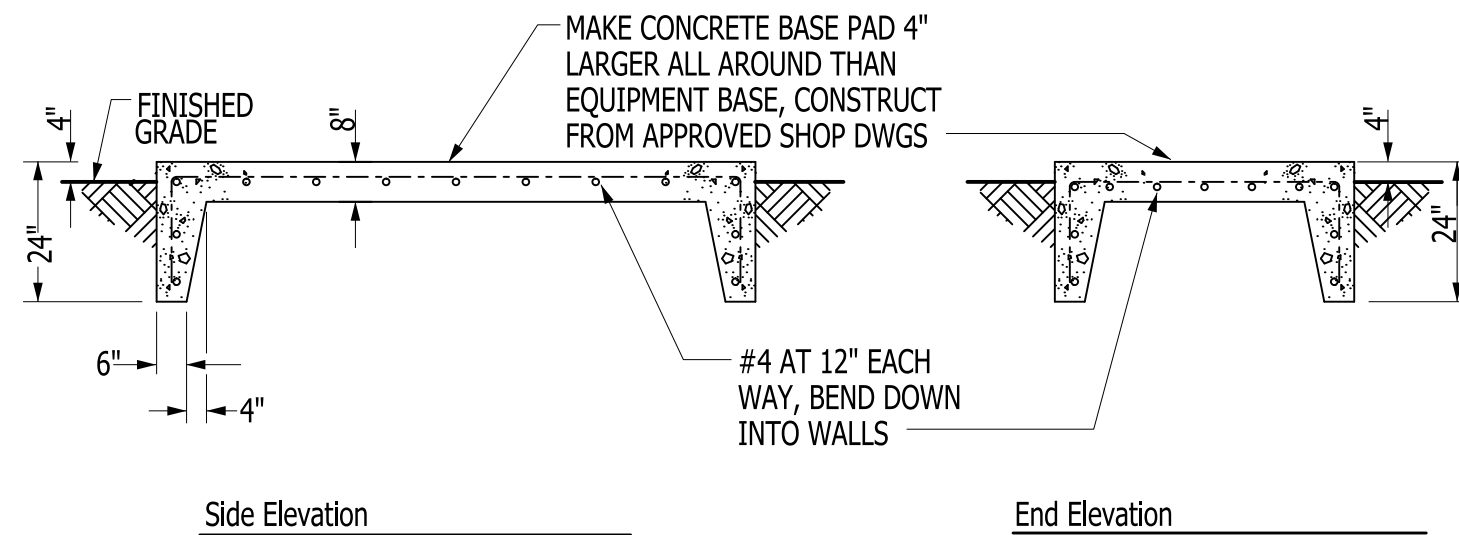
9 DEHUMIDIFICATION UNIT INSTALLATION DETAIL
H150 NOT TO SCALE



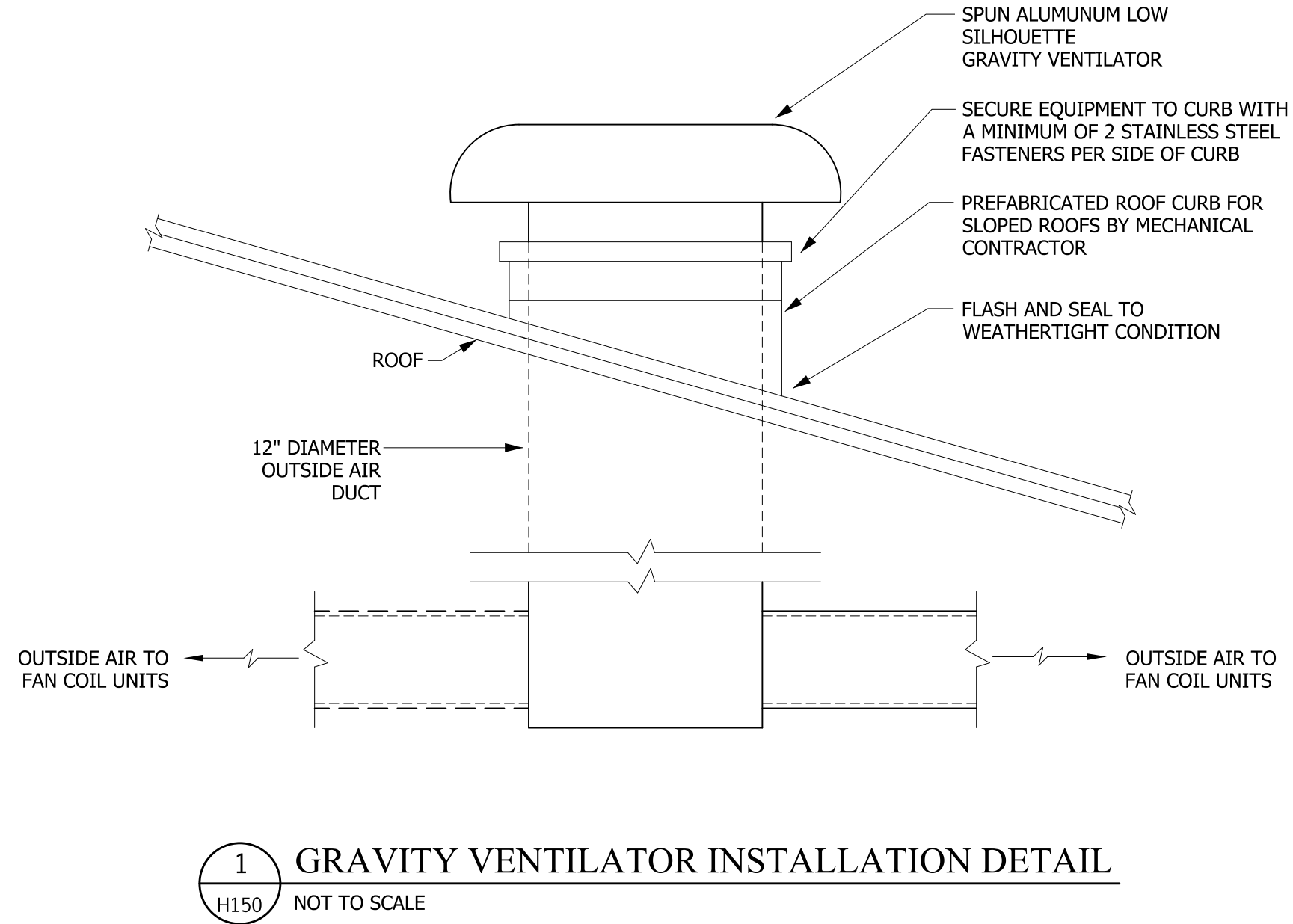
4 RUN OUT AND BRANCH CONNECTION DETAIL
H150 NOT TO SCALE



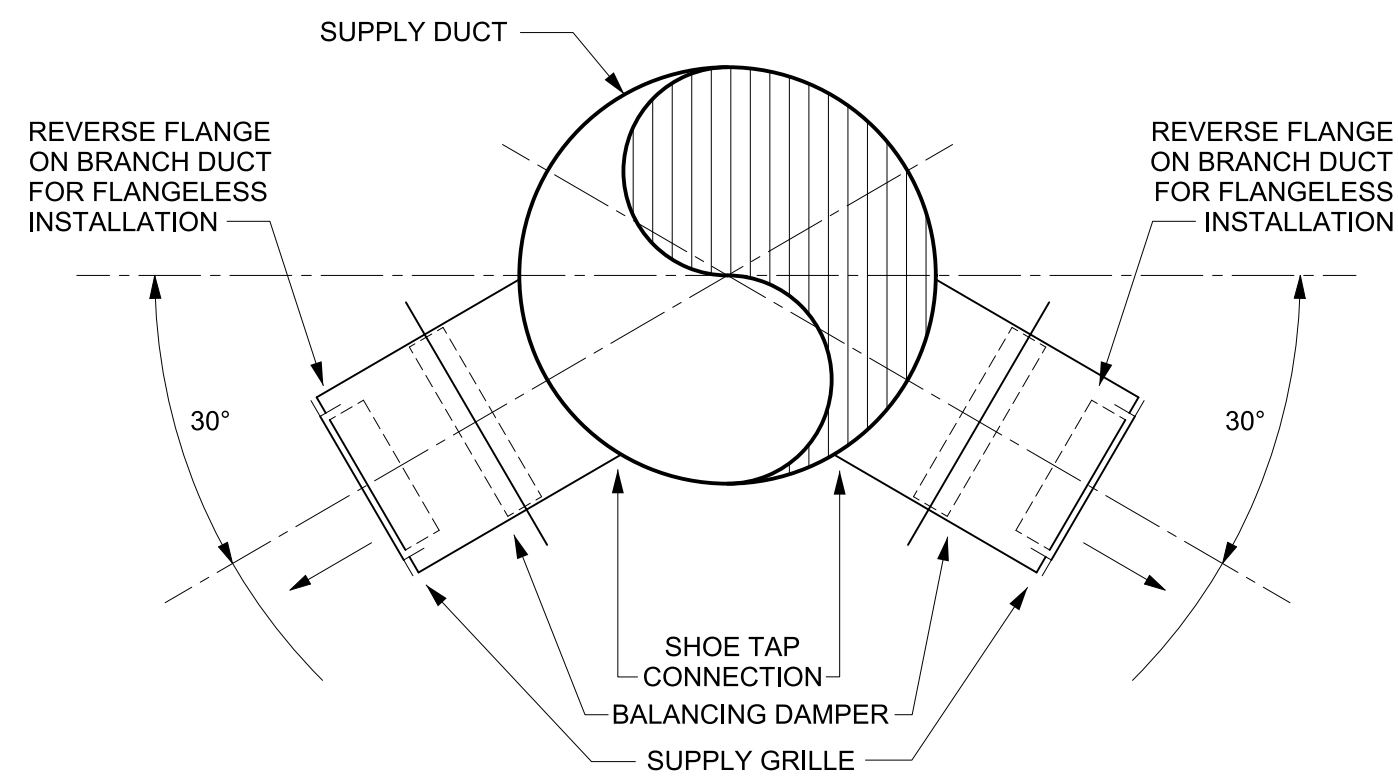
5 PROCESS ROOM DUCT AND DIFFUSER INSTALLATION DETAIL
H150 NOT TO SCALE



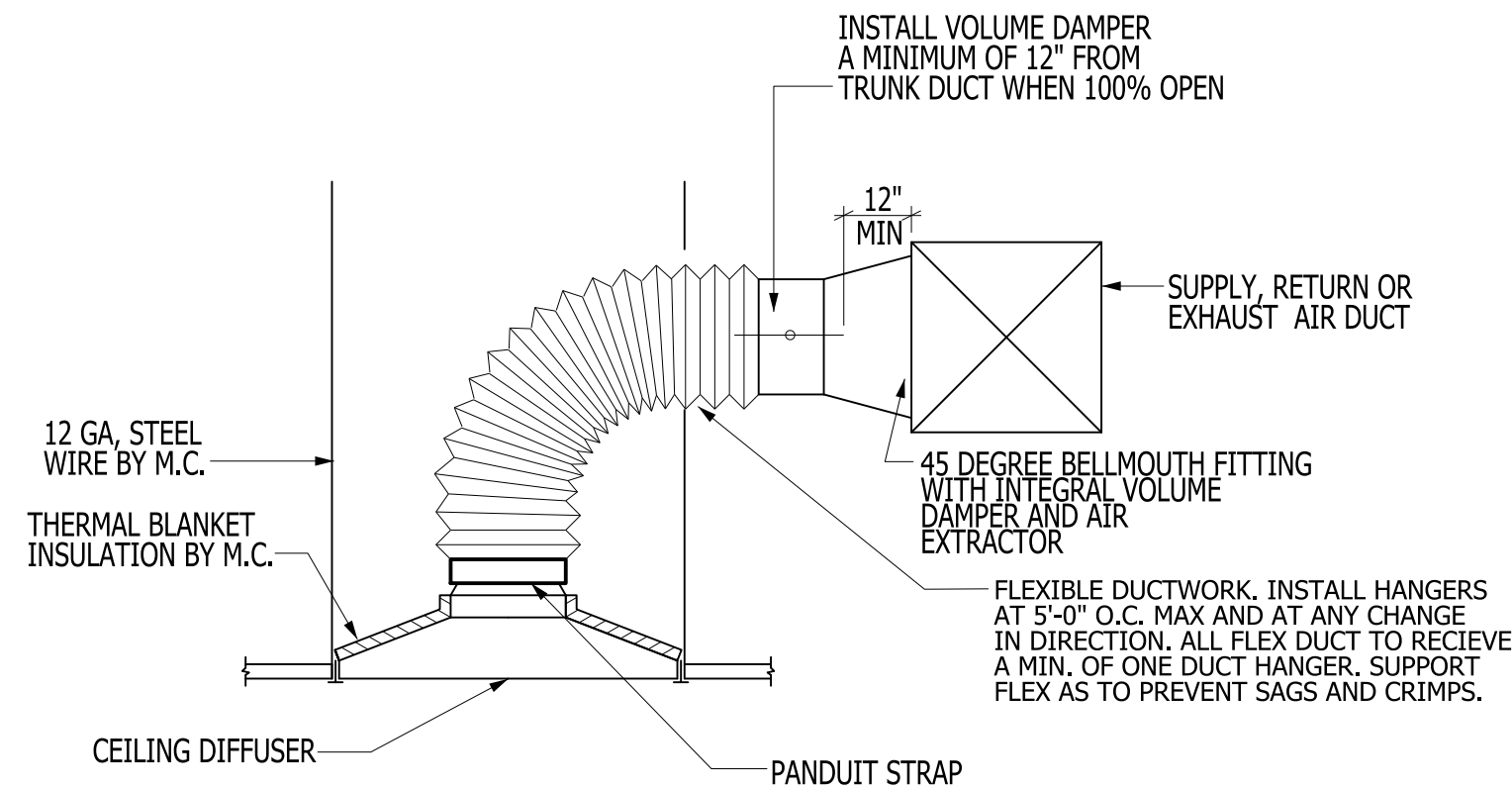
6 CONCRETE EQUIPMENT PAD INSTALLATION DETAIL
H150 NOT TO SCALE



1 GRAVITY VENTILATOR INSTALLATION DETAIL
H150 NOT TO SCALE



2 ELECTRICAL ROOM DUCT AND DIFFUSER INSTALLATION DETAIL
H150 NOT TO SCALE

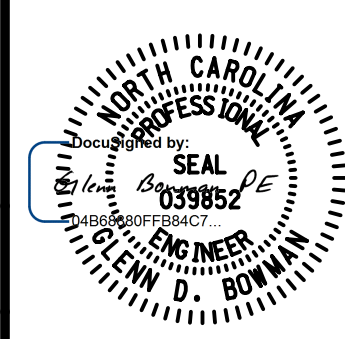


3 FLEXIBLE DUCT TAKEOFF INSTALLATION DETAIL
H150 NOT TO SCALE

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BRUNSWICK REGIONAL WATER AND SEWER H2GO
BRUNSWICK COUNTY CONTRACT No. 4 NORTH CAROLINA
REVERSE OSMOSIS WATER TREATMENT PLANT
HVAC DETAILS



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H150

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