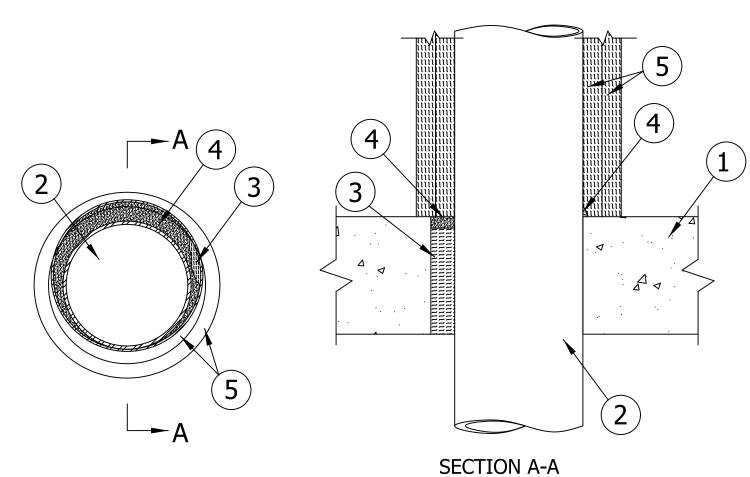
SYSTEM NO. CAJ1601

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



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 OPERNING 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 ½ 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%4) 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.	PIPE/TUBE TYPE	MIN INSULATION HEIGHT, IN. (MM)	MIN INSULATION HEIGHT, IN. (MM)	T RATING	
(MM)	1112,1002 1112	INNER LAYER	T IOTINO		
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 TOTAL CONNECTED	LOAD
DRAINAGE FIXTURE UNITS	29.5
WATER FIXTURE UNITS	29.0
GPM	42.0

<u>NOTES:</u>

1. SUPPLY SYSTEM PREDOMINATLY FOR FLUSH VALVES

	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 FINSHED FLOOR HEIGHT, W/ COMMERCIAL GRADE EPDM TRAP SEAL				
P-7	ANTI-FREEZE HYDRANT	-	3/4"	1	FREEZELESS WALL HYDRANT, AUTOMATIC DRAINING W/ HOSE CONNECTION AND ANTI-SIPHON VACUUM BREAKER				
P-8	FLOOR CLEANOUT	3"	-	1	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"	1	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 SUPLY, 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	А	33-60	1"	5"				

NOTES:

1. REFER TO MANUFACTURES RECOMMENDATIONS FOR SIZING OF SHOCK ARRESTORS ON PIPE LENGTHS GREATER THAN 25'

2. SHOCK ARRESTORS TO BE ALL STAINLESS STEEL CONSTRUCTION3. SHOCK ARRESTORS TO BE BELLOWS TYPE

/MBOL		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
•	со	CLEAN OUT
	FD	FLOOR DRAIN
	VTR	VENT THRU ROOF
\bowtie		GATE VALVE
<u>LO</u>		BALL VALVE
Ö		CIRCUIT SETTER
$\overline{\otimes}$	SA-	SHOCK ARRESTOR
		LINE TURNING DOWN
		LINE UP
		DIRECTIONAL ARROW
\overline{V}		CHECK VALVE
1		END OF LINE CLEANOUT
Ĭ,		HOSE BIBB, ANTI-FREEZE HYDRANT
]		PIPE CAP
P-6		PLUMBING FIXTURE NUMBER
1 1		PIPE UNION
Ō		RECIRCULATION PUMP
_	AFF	ABOVE FINISHED FLOOR
	AFG	ABOVE FINISHED GRADE
	DN	DOWN
	HWR	HOT WATER RETURN
	BFF	BELOW FINISHED FLOOR
	BFG	BELOW FINISHED GRADE
		EMERGENCY SHOWER W/ EYEWASH STATION

PLUMBING GENERAL NOTES:

1. COORDINATE FLOOR DRAIN AND CLEANOUT LOCATIONS IN MECHANICAL ROOMS WITH OTHER TRADES PRIOR TO INSTALLATION

2. SET FLOOR DRAINS 1/2" LOWER THAN FINISHED FLOOR ELEVATION, PROVIDE TRAP SEAL OF COMMERCIAL GRADE

3. COORDINATE ALL PLUMBING BELOW SLAB PIPING WITH GENERAL CONTRACTOR PRIOR TO FOOTING

INSTALLATION TO ASSURE COORDINATION OF PIPE INVERTS WITH FOOTING ELEVATIONS

4. ALL ABOVE SLAB PIPING SHALL BE FIELD COORDINATED WITH OTHER TRADES PRIOR TO INSTALLATION. INSTALLATION DISCREPANCIES SHALL BE DISCUSSED WITH ENGINEER PRIOR TO INSTALLATION.

5. 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.

6. 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".

7. 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

VALVES AND OTHER APPURTENANCES REQUIRED FOR A COMPLETE OPERATIONAL PLUMBING SYSTEM. PROVISION

OR HINDER THE SPECIFIED WORK FROM BEING COMPLETED.

8. 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,

OF THESE ITEMS SHALL BE PROVIDED IN THIS CONTRACT AT NO ADDITIONAL COST TO THE OWNER.

9. CONTRACTOR SHALL INVESTIGATE THE STRUCTURE & FINISH CONDITIONS AFFECTING PLUMBING WORK AND SHALL ARRANGE WORK ACCORDINGLY, PROVIDING ACCESSORIES, HANGERS, ANCHORS AS MAY BE REQUIRED TO

10. 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.

11. 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 PROLITED.

12. CONTRACTOR SHALL COORDINATE WORK WITH OTHER TRADES PRIOR TO INSTALLATION AND ARRANGE INSTALLATION OF WORK AS NECESSARY

13. ALL PLUMBING PIPING SHALL BE TEMPORARILY CAPPED DURING ROUGH-INS.

MEET SUCH CONDITIONS WITHOUT ADDITIONAL COST TO THE OWNER.

14. 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.

15. COMPETENT AND SKILLED WORKMEN SHALL DO ALL WORK IN A FINISHED, AND CRAFTMANLIKE MANNER.



Docusigned by:
SEAL
Bo39852

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D. BO

CON

DESIGNED BY:
GDB

DRAWN BY:
GDB

CHECKED BY:
LHM

PROJECT NO.:
3081-AB

DATE:
JUNE 7, 2020

SCALE:
AS NOTED

SHEET <u>43</u> OF <u>18</u>

P100

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HE WOOTEN COMPANY
Onth Boylan Avenue Raleigh NC 27603-1423
919.828.0531 fax 919.834.3589
License Number: F-0115

BRUNSWICK COUNTY

CONTRACT No. 4

REVERSE OSMOSIS WATER TREATMENT PLANT

DISTRIBUTION

PLUMBING

BE CAROLLING THE CAROLUNG THE CA

DESIGNED BY:

GDE

DRAWN BY:

GDE

CHECKED BY:

LHM

PROJECT NO.:

3081-AE

DATE:

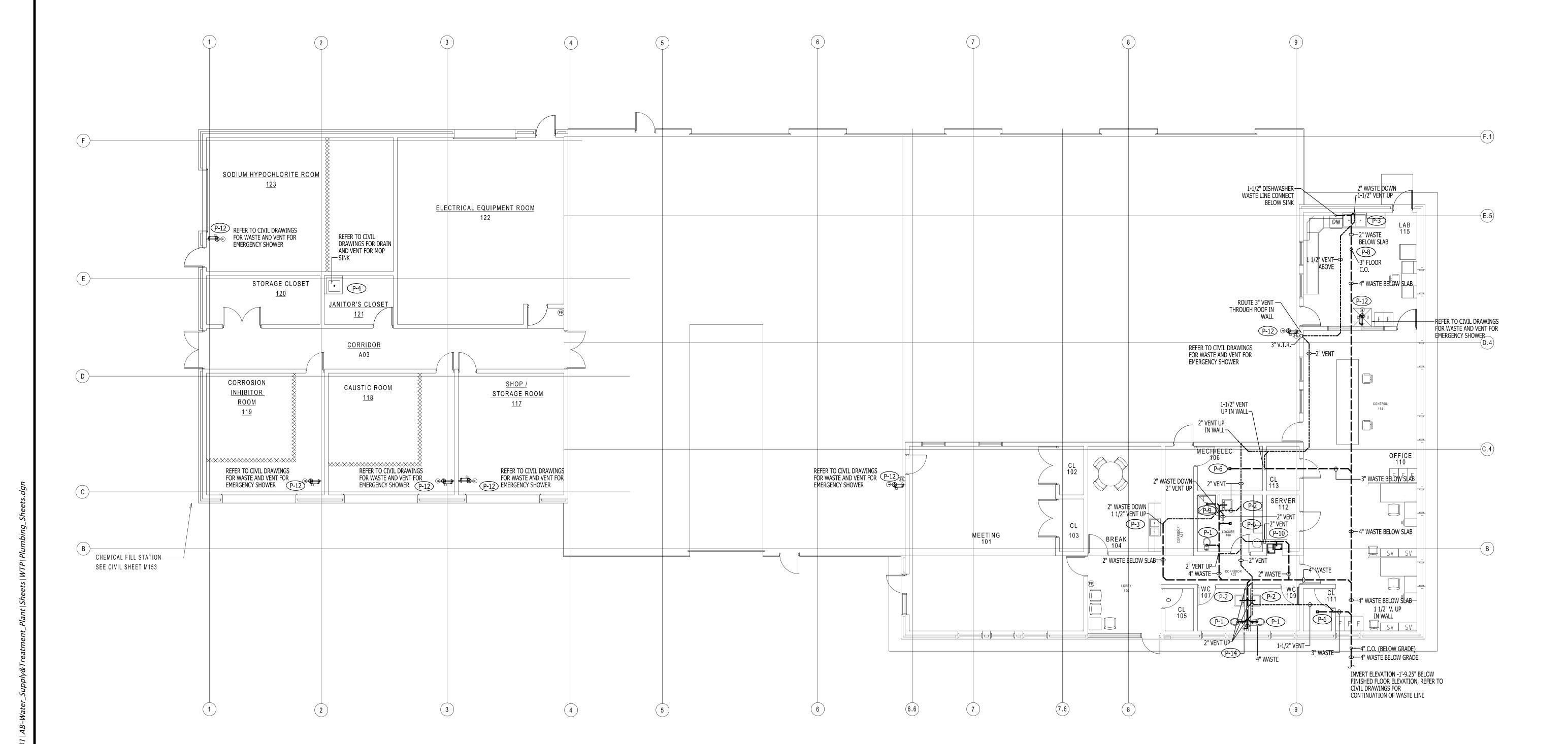
JUNE 7, 2020

SCALE:

SHEET <u>44</u> OF <u>181</u>

AS NOTED

P110



PLUMBING WASTE AND VENT PLAN

P120 NOT TO SCALE

HE WOOTEN COMPANY
10 North Boylan Avenue Raleigh NC 27603-1423
919.828.0531 fax 919.834.3589
License Number: F-0115

BRUNSWICK COUNTY

CONTRACT No. 4

REVERSE OSMOSIS WATER TREATMENT PLANT

PLUMBING WASTE AND VENT PLAN

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SEAL

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DESIGNED BY:	GDB
DRAWN BY:	GDB
CHECKED BY:	LHM
PROJECT NO.:	3081-AB
DATE:	UNE 7, 2020
SCALE:	AS NOTED

SHEET <u>45</u> OF <u>181</u>

P120

CON PLUM

DESIGNED BY: DRAWN BY: CHECKED BY: PROJECT NO.: 3081-AI JUNE 7, 202

SCALE: AS NOTED

SHEET <u>46</u> OF <u>18</u>

P150

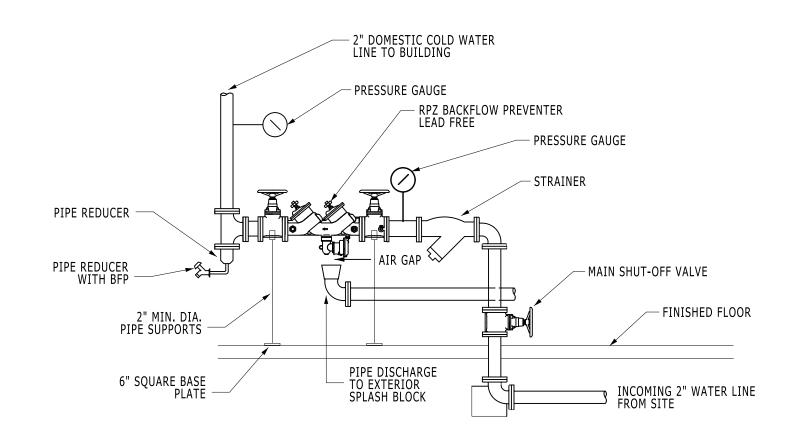
IN-LINE EXPANSION TANK -SHALL BE FURNISHED WITH WATER HEATER.— HOT WATER SUPPLY ATMOSPHERIC VACUUM BREAKER MIXING VALVE EQUAL TO LEONARD MODEL TM-20 1" HW — HEAT TRAP 60-100°F TEPID WATER — HOT WATER SUPPLY TO EYWASH/EMERGENCY SHOWERS (MINIMUM 27") 1 1/2" HW — PIPE THERMOMETER— (TYPICAL) HEAT TRAP (MINIMUM 27") DIELECTRIC UNION (TYPICAL)— T & P VALVE — TEPID WATER CIRUCULATION PUMP **HEATED WATER NOTES:**

 ➡
 PIPE TO 6" ABOVE FINISHED FLOOR −

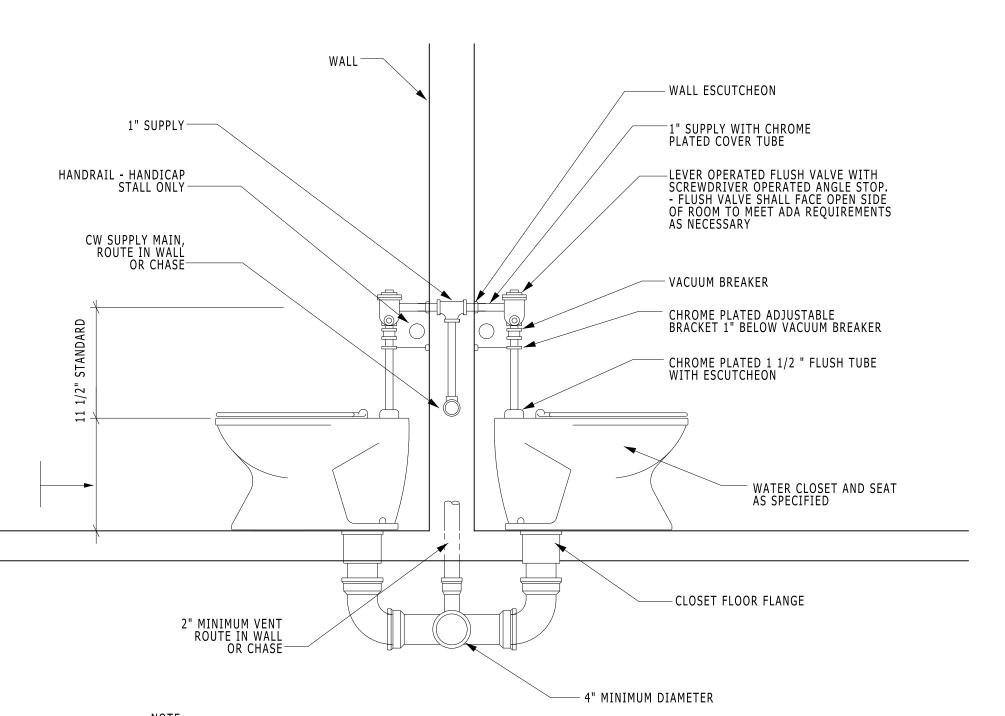
 1. WATER HEATER SHALL BE 120 GALLON COMMERCIAL, ELECTRIC PER SPECIFICATIONS 2. WATER HEATER PIPING SCHEMATIC IS TYPICAL. PIPING ARRANGEMENT SHALL BE INSTALLED WITH RECIRCULATION PUMP & MIXING VALVE MOUNTED ON WALL BESIDE WATER HEATER PER MANUFACTURERS RECOMMENDATIONS, ALL PIPING SHALL BE INSTALLED IN A ORDERLY FASHION <u>'-----</u> 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' X 4' X 4" CONCRETE HOUSEKEEPING PAD BY GENERAL CONTRACTOR.

24" x 24" x 8" THICK CONCRETE PAD FINISHED GRADE PVC COMBINATION Y & 1/8" BEND

AS AN OPTION PRE-CAST CONCRETE CLEANOUT PADS SHALL BE ACCEPTED IN ALL EXTERIOR NON-VEHICULAR TRAFFIC AREAS EXTERIOR CLEANOUT INSTALLATION DETAIL NOT TO SCALE



INTERIOR RPZ BACKFLOW PREVENTER INSTALLATION DETAIL P150 NOT TO SCALE



FLOOR MOUNTED WATER CLOSET INSTALLATION DETAIL P150 NOT TO SCALE

PLUMBING CONTRACTOR SHALL INSTALL SHOCK ARRESTORS ON FIXTURES PER PLANS

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

PROVIDE A WATERPROOFING — MEMBRANE EXTENDING MIN. 12" FROM DRAN IN ALL DIRECTIONS EXTEND WATERPROOFING MEMBRANE — INTO SEAPAGE PAN & SECURE WITH CLAMPING COLLAR UNDER DECK CLAMP, SEE NOTE -**PROVIDE** SUPPORT FOR TRAP NOTES:

1. PROVIDE UNDER DECK CLAMP ON THIN SLAB INSTALLATIONS OF 5" OR LESS, ABOVE GRADE INSTALLATIONS ONLY. SECURE CLAMP TO DRAIN, REF.

FINISHED FLOOR,

CLAMPING COLLAR

DEEP SEAL P-TRAP

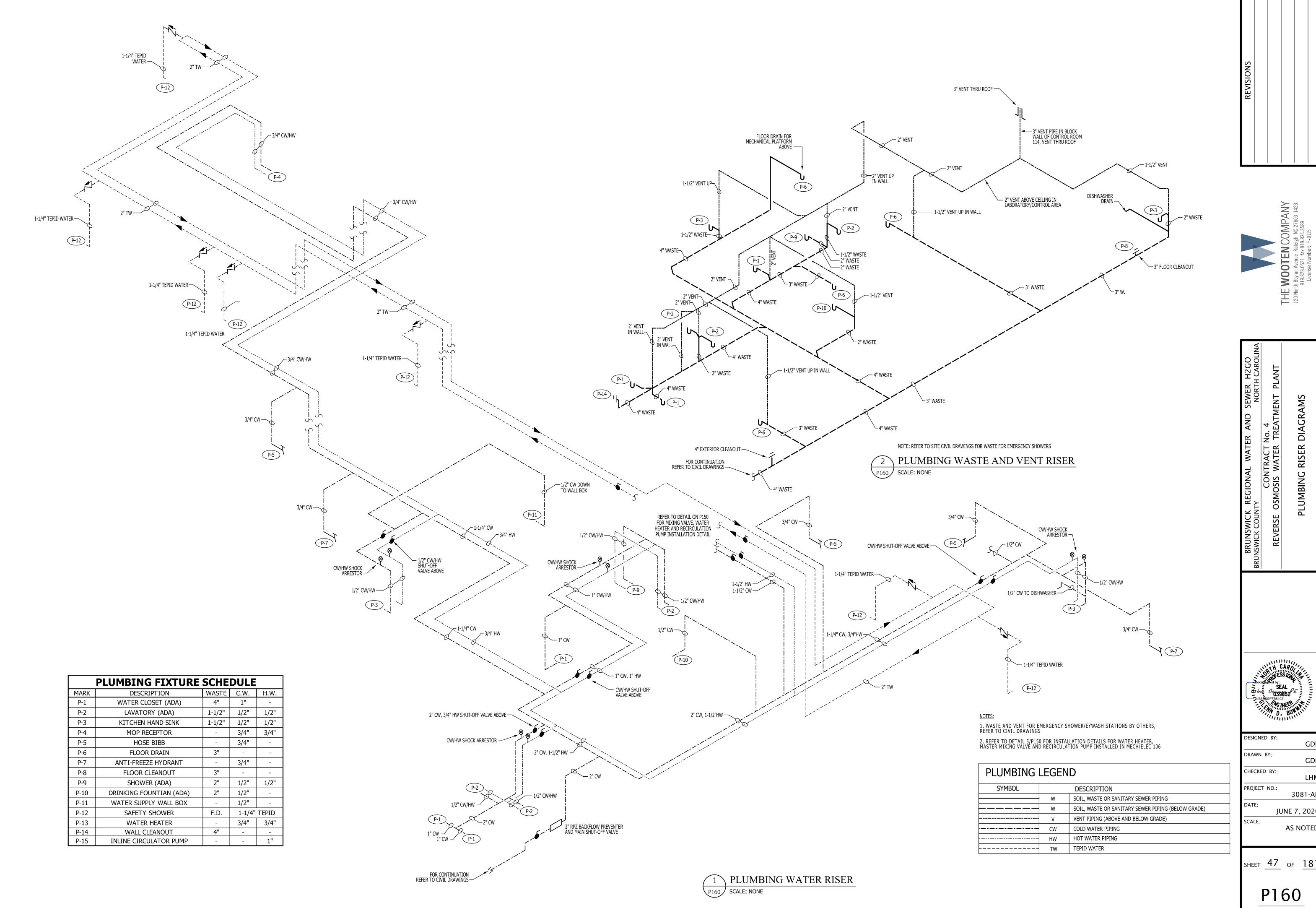
SLOPE TO DRAIN.

-----SUPPORT AT THIS POINT

2. PROVIDE COMMERCIAL GRADE TRAP SEAL WITH FLOOR DRAIN

FLOOR DRAIN -

1 FLOOR DRAIN INSTALLATION DETAIL P150 NOT TO SCALE



P160

3081-AE

JUNE 7, 202

AS NOTED

DIAGRAMS

CONTRACT No. 4
OSMOSIS WATER TREATMENT

2. THE SUPPLY FAN SHALL RUN CONTINUOUSLY TO MIX AIR IN THE SPACE

SPLIT SYSTEM DEHUMIDIFICATION UNIT SEQUENCE OF OPERATIONS

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

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

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

SYMBOL	DESCRIPTION
D	CONDENSATE DRAIN PIPING
	INDICATES DIRECTION OF FLOW
	INDICATES DIRECTION OF SLOPE
X	PIPE ANCHOR
	BALL VALVE
1	CHECK VALVE
	BALANCING VALVE
 -	ELBOW DOWN
— ю	ELBOW UP
	STRAINER
—	UNION
(T)	THERMOSTAT OR TEMPERATURE SENSOR
	MANUAL VOLUME DAMPER (V.D.)
+ +	MOTOR OPERATED DAMPER (MOD)
\boxtimes	CEILING SUPPLY DIFFUSER
	CEILING RETURN GRILLE
	CEILING EXHAUST GRILLE
C.O.	CLEAN OUT
\oplus	HUMIDISTAT OR HUMIDITY SENSOR
<u> </u>	FIRE DAMPER AT WALL
*	SMOKE DAMPER AT WALL
A.D.	ACCESS DOOR
DN	DOWN
	FLEXIBLE DUCT
F.D.	FLOOR DRAIN
•	INDICATES CONNECT TO WORK PROVIDED BY OTHER TRADE
	INDICATES END POINT OF DEMOLITION
	BUTTERFLY VALVE (G INDICATES GEAR OPERATED)
12 x 6	RECTANGLE DUCT SIZE (W x H)
44/24	FLAT OVAL DUCT SIZE (MAJOR AXIS / MINOR AXIS)
	COMB. MAGNETIC MOTOR STARTER & DISCONNECT
<u>\$</u> —	DUCT MOUNTED SMOKE DETECTOR
©	UNIT CONTROLLER

ABBRE	EVIATIONS
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

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

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 "AABC" 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 O 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

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.

ANY CASE, SAID REPORT SHALL BE SUBMITTED TO THE ENGINEER UPON REQUEST.

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

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

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

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.

CON

MECHANICAL SUMMARY

SEE MECHANICAL EQUIPMENT SCHEDULES

SEE MECHANICAL EQUIPMENT SCHEDULES

MECHANICAL SYSTEMS, SERVICE SYSTEMS AND EQUIPMENT

Thermal Zone 3A

winter dry bulb: 26°F

winter dry bulb: 70°F

summer dry bulb:75°F

relative humidity: 50%

Mechanical Spacing Conditioning System

description of unit: heating efficiency:

cooling efficiency:

size category of unit:

Size category. If oversized, state reason.

Size category. If oversized, state reason.

Building heating load: 47.9 MBH

Building cooling load:88.8 MBH

Boiler N/A

Chiller N/A

List equipment efficiencies:

Unitary

Interior design conditions

summer dry bulb:92.3°F

DESIGNED BY: DRAWN BY: CHECKED BY: PROJECT NO .: 3081-AE JUNE 7, 2020

AS NOTED

SHEET 48 OF 18

SCALE:

1 HVAC DUCTWORK PLAN-GROUND LEVEL

H110 SCALE: 1/8" = 1'

B-225



CON

12" OUTSIDE AIR DUCT DOWN FROM GRAVITY VENTILATOR (GV-01)ON

16x16 EXHAUST AIR
LOUVER, REFER TO
ARCHITECTURAL
ELEVATIONS FOR
PLACEMENT
B

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

OFFICE 110

HVAC KEY NOTES:

.,	771111
DESIGNED BY	r: GDB
DRAWN BY:	GDB
CHECKED BY	: LHM
PROJECT NO.	: 3081-AB
DATE:	JUNE 7, 2020
l	

AS NOTED

SHEET <u>49</u> OF <u>181</u>

24"Ø 26"Ø ¦ INSTALL FRP DUCTWORK AT PERIMETER OF ROOM WITH BOTTOM OF DUCT 18'3" AFF INSTALL FRP DUCTWORK IN FILTER ROOM, PROVIDE FRP DUCTWORK, FITTINGS AND DAMPERS, PROVIDE CORROSION RESISTANT HANGERS TO SUSPEND DUCTWORK FROM ROOF STRUCTURE DIFFUSER, DAMPER AND TAKE-OFF ARE DIRECTED DOWNWARD ON A 30° ANGLE FROM THE DUCT CENTERLINE IN THE DIRECTION INDICATED Θ CONTOUR AND COORDINATE DUCTWORK ROUTING WITH FILTER EQUIPMENT DIFFUSER, DAMPER AND TAKE-OFF ARE DIRECTED UPWARD ON A 30° ANGLE FROM THE DUCT CENTERLINE IN THE DIRECTION INDICATED E-575 \odot 28"Ø 26"Ø E-575 INSTALL RETURN LOUVER WITH —BOTTOM 12' AFF INSTALL FRP DUCTWORK AT CENTER OF ROOM WITH BOTTOM OF DUCT 24' AFF— 30x30 DUCT UP, TURN INTO SPACE AND CONVERT TO 30"Ø— INSTALL RETURN LOUVER WITH BOTTOM 12 AFF -INSTALL RETURN LOUVER WITH BOTTOM 12' AFF— DD-6750 12x18 OUTSIDE AIR
LOUVER, REFER TO
ARCHITECTURAL
ELEVATIONS FOR
PLACEMENT INSTALL FRP DUCTWORK AT PERIMETER OF ROOM WITH BOTTOM OF DUCT 18'3" AFF — 30x30 TURN OUTSIDE AIR DUCT— UP, ROUTE ALONG ROOF AND DROP DOWN INTO RETURNS FOR UNITS COMBINATION TEMPERTURE AND HUMIDITY SENSOR 30"Ø E-490 E-490 E-490 MECHANICAL PLATFORM COMBINATION— TEMPERTURE AND HUMIDITY SENSOR DUCT TURNS UP —

1 HVAC MECHANICAL PLATFORM PLAN

SCALE: 1/8" = 1'

Docusigned by:

Boossess

Glena Boossess

GAB68860FFB84C7...

HVAC KEY NOTES:

PROVIDE GARAGE DOOR END SWITCHS, 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

REFER TO DETAIL 5/H150 FOR DIFFUSER INSTALLATION IN DUCTOWRK FOR DHU-01 AND DHU-03

ROUTE OUTSIDE AIR DUCT TIGHT TO STRUCTURE TO MAINTAIN CLEARANCE IN FRONT OF DOOR OPENING

DESIGNED BY:

GDB

DRAWN BY:

GDB

CHECKED BY:

LHM

PROJECT NO.:

3081-AB

DATE:

JUNE 7, 2020

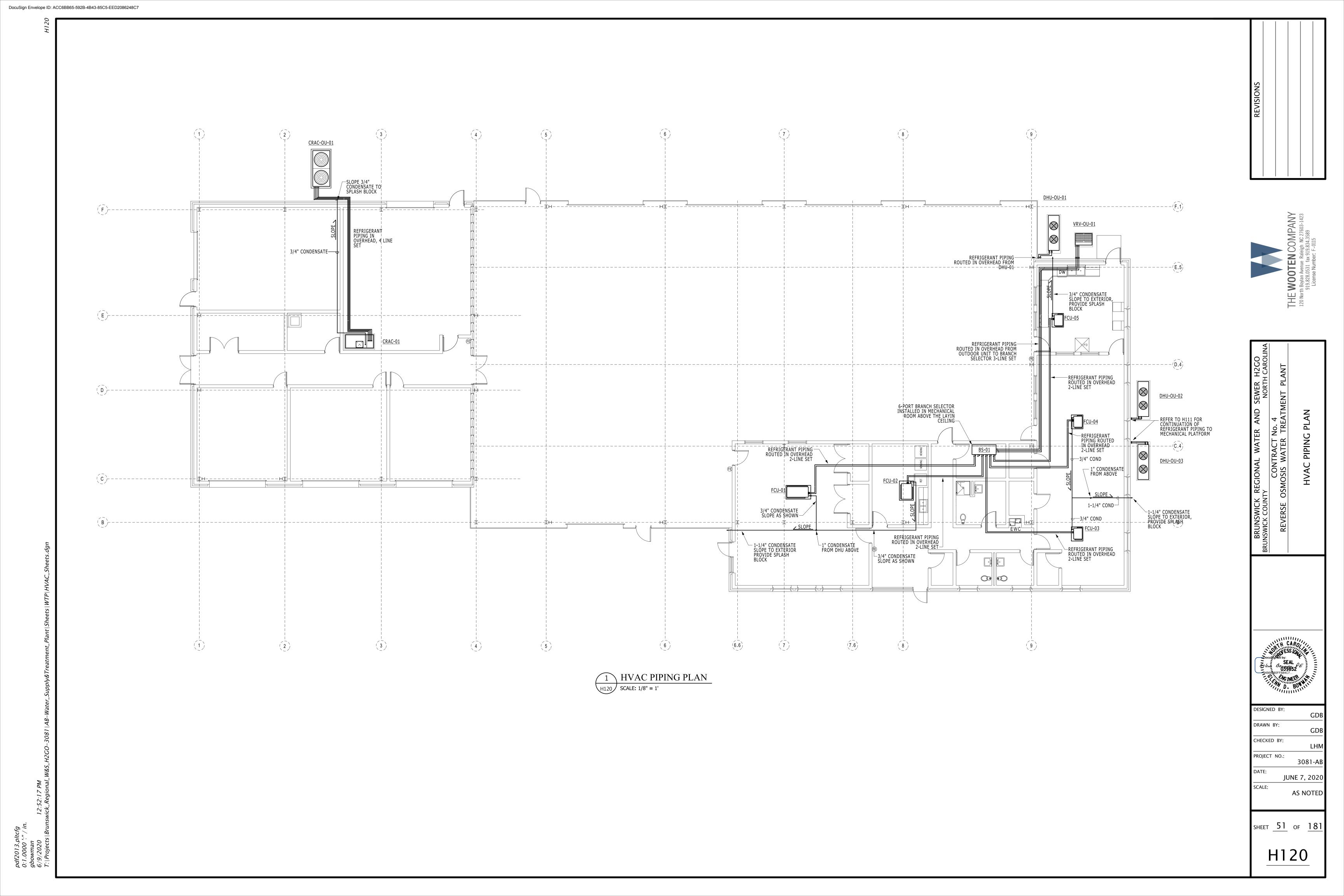
AS NOTED

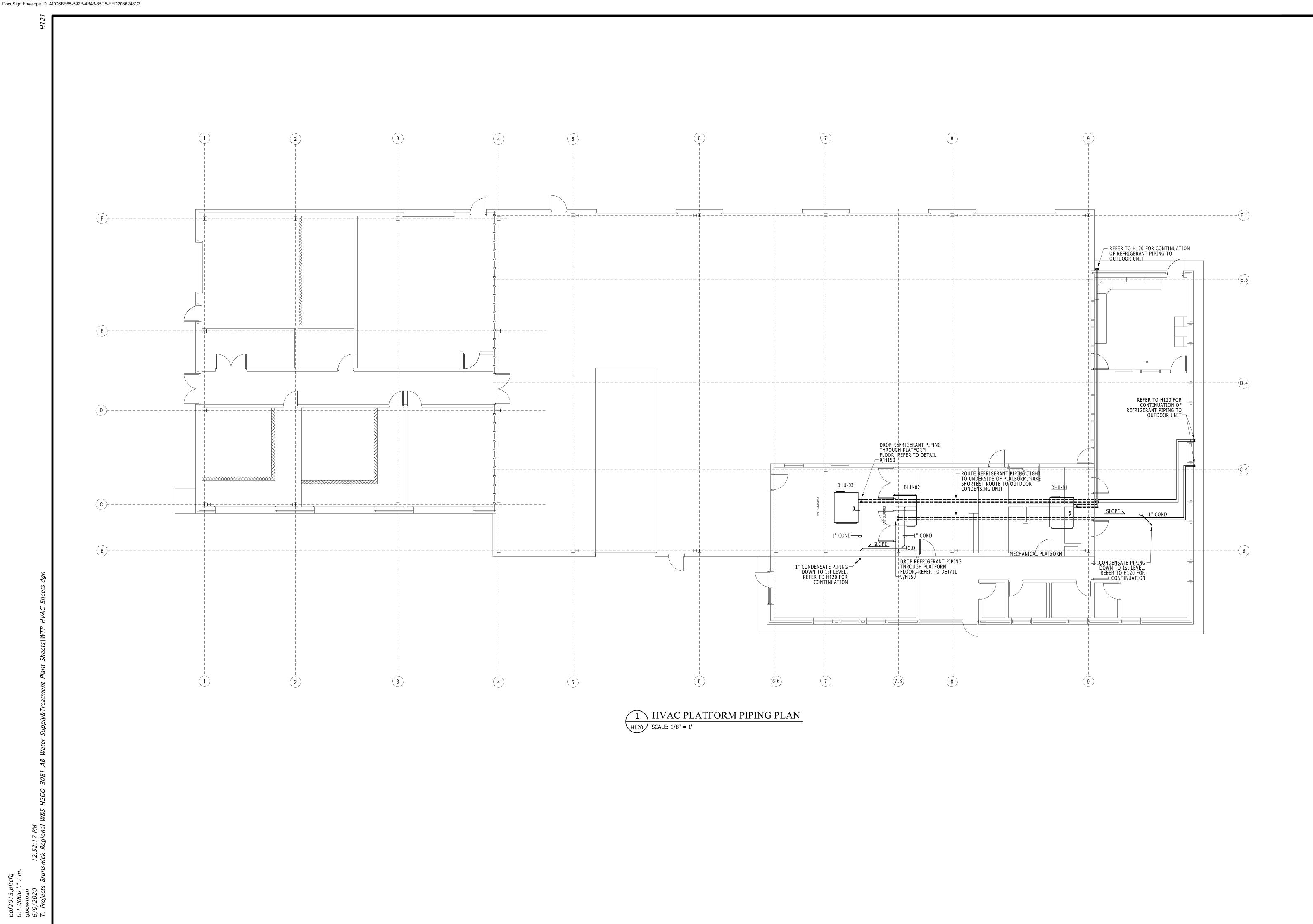
SHEET <u>50</u> OF <u>18</u>

SCALE:

H111

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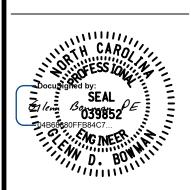


WOOTEN COMPANY
h Boylan Avenue Raleigh NC 27603-1423
919.828.0531 fax 919.834.3589
License Number: F-0115

CONTRACT No. 4

REVERSE OSMOSIS WATER TREATMENT PLA

HVAC PLATFORM PIPING PLAN



DESIGNED BY:

GDB

DRAWN BY:

GDB

CHECKED BY:

LHM

PROJECT NO.:

3081-AB

DATE:

JUNE 7, 2020

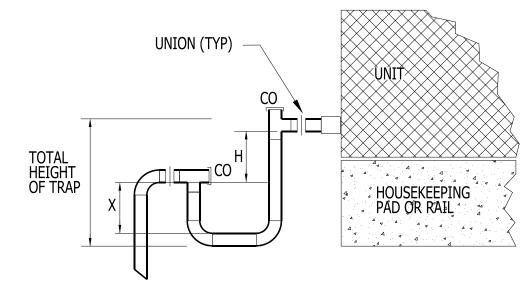
SCALE:

AS NOTED

SHEET <u>52</u> OF <u>181</u>

7 SHUTTER MOUNTED EF INSTALLATION DETAIL

H150 NOT TO SCALE

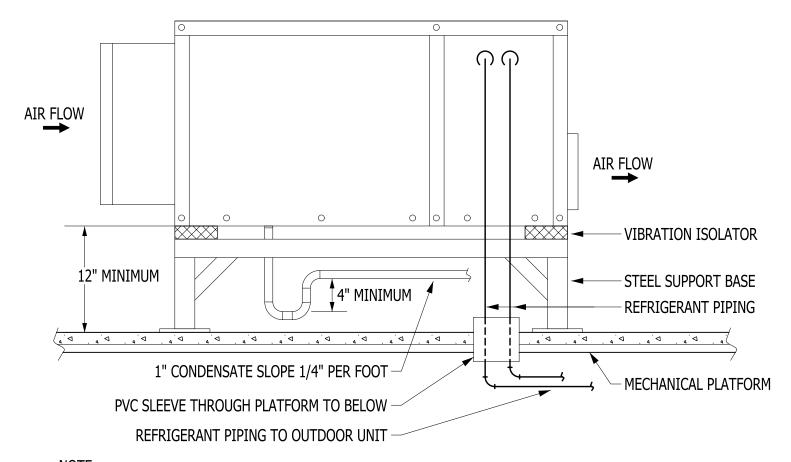


TOTAL HEIGHT OF TRAP = X+H+(1-1/2 x PIPE DIAMETER) (WITHOUT INSULATION)

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

8 COIL DRAIN PIPING DETAIL

NOT TO SCALE



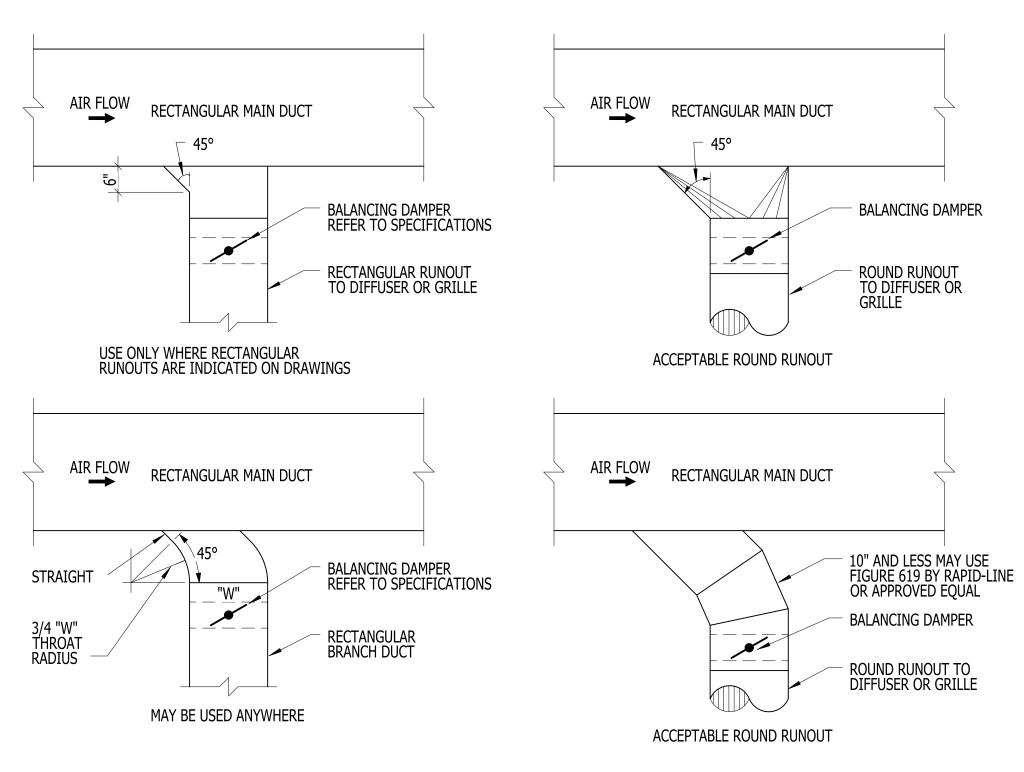
NOTE:

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

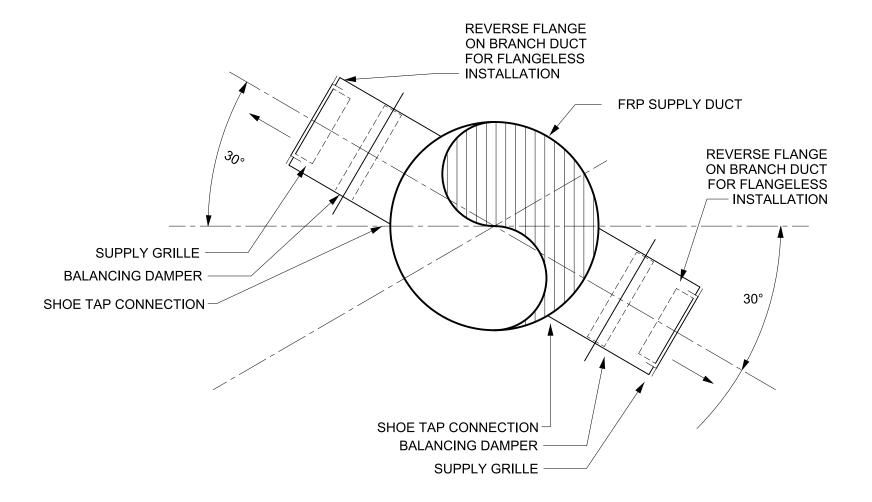
9 DEHUMIDIFICATION UNIT INSTALLATION DETAIL

NOT TO SCALE



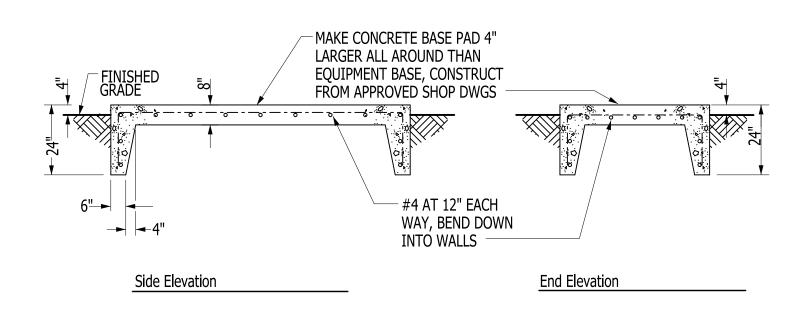
4 RUN OT AND BRANCH CONNECTION DETAIL

NOT TO SCALE



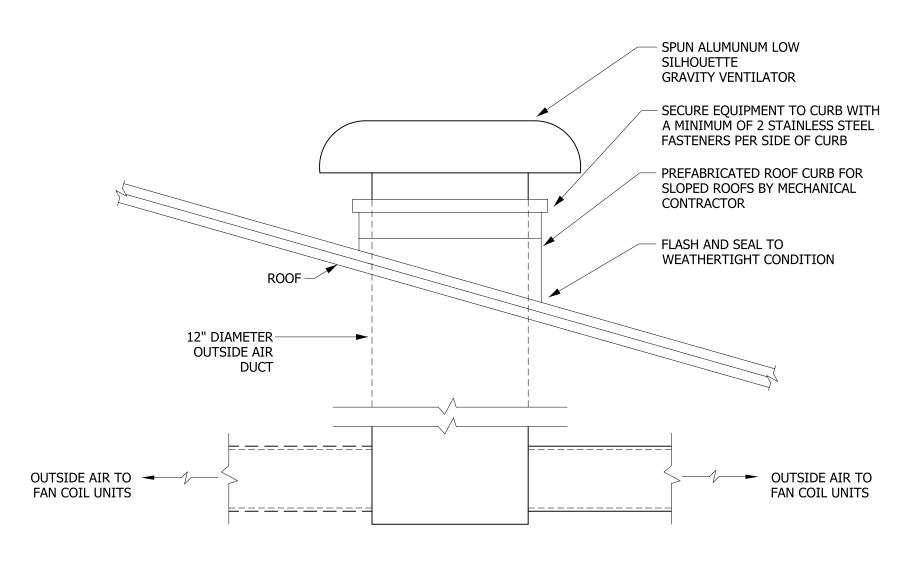
5 PROCESS ROOM DUCT AND DIFFUSER INSTALLATION DETAIL

NOT TO SCALE



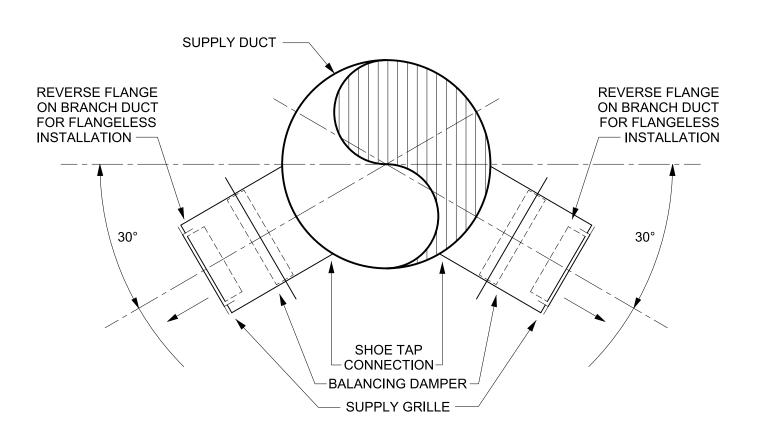
6 CONCRETE EQUIPMENT PAD INSTALLATION DETAIL

NOT TO SCALE



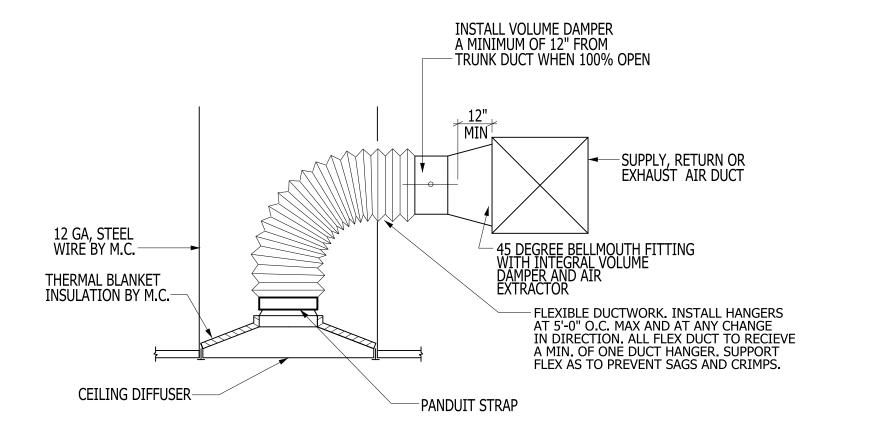
GRAVITY VENTILATOR INSTALLATION DETAIL

NOT TO SCALE



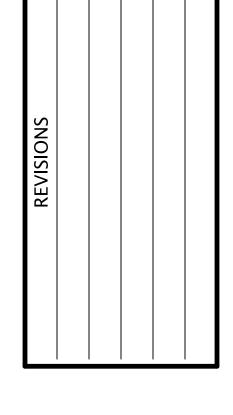
2 ELECTRICAL ROOM DUCT AND DIFFUSER INSTALLATION DETAIL

H150 NOT TO SCALE



3 FLEXIBLE DUCT TAKEOFF INSTALLATION DETAIL

H150 NOT TO SCALE



THE **WOOTEN** COMPANY
120 North Boylan Avenue Raleigh NC 27603-1423
919.828.0531 fax 919.834.3589
License Number: F-0115

ERSE OSMOSIS WATER TREATMENT PLANT

Docusigned by:

SEAL

DABOOSOFFB84C7...

JG NEE

DESIGNED BY:

GDB

DRAWN BY:

GDB

CHECKED BY:

LHM

PROJECT NO.:

3081-AE

DATE:

JUNE 7, 2020

SCALE:

AS NOTED

SHEET 53 OF 18

H150

gbowman 6/9/2020 T:\Projects\Brunswick_Regional_W&S_H2GO-3081\AB-Water_Supply&Treatment_Plant\Sheets\WTP\HV

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		ROOM				OUTSIDE AI	R		
ROOM NAME	OCCUPA NTS	AREA (ft2)	SA (cfm)	RA (cfm)	ROOM TYPE	cfm/person	cfm/sq ft	OA (cfm)	EA (cfm)
101 Meeting	40	785	1,130		CONFERENCE	5	5 0.06	247	0
102 Closet	0	32	NA		STORAGE	0	0.12	4	0
103 Closet	0	34	NA		STORAGE	0	0.12	4	0
FCU-01			1,130			_		255	
100 Lobby	2	153	280	250	OFFICE	5	0.06	19	0
104 Break Room	4	208	250	250	MULTI-PURPOSE	5	0.06	32	50
105 Closet	0	23	0	0	STORAGE	0	0.12	3	0
107 Toilet	0	53	0	0	RESTROOM	0	0	0	50
108 Locker	0	100	50	0	RESTROOM	STROOM 0		0	50
109 Toilet	0	56	0	0	RESTROOM	0	0	0	50
111 Closet	0	32	0	0	STORAGE	0	0.12	4	0
113 Closet	0	39	0	0	STORAGE	0	0.12	5	0
A01 Corridor	0	84	100	125	CORRIDOR 0 0.06		5	0	
106 Mech/Elec	0	78	50	0	MECH/ELEC	MECH/ELEC 0 0		0	0
A02 Corridor	0	106	150	0	CORRIDOR 0		0.06	6	0
FCU-02			880	625				74	200
			T	T T			T		Γ
112 Server	0	50	0	50	MECH/ELEC	0	0	0	0
110 Office	2	410	340	200	OFFICE	5	0.06	35	0
FCU-03			340	250			<u> </u>	35	
444.0		166	240	200	0.557.05		2.25	20	•
114 Control Room	2	466	340	300	OFFICE	5	0.06	38	0
FCU-04			340	300				38	
115 Lab	2	348	340	300	OFFICE	5	0.06	31	0
FCU-05			340			31			

	REGISTER AND DIFFUSER SCHEDULE										
				9	SUPPLY		RET	URN/ EXHA	LUST		
LETTER	MA NI IEA CTI IDED	MODEL	DIFFU	SER		674	_		674	MAX NC	REMARKS
DESIG MANUFACTURER	NUMBER	R NECK SIZE BLOW PANEL DIMS CHM RANGE	NECK SIZE	PA NEL DIMS	CFM RANGE	LEVELS	REMARKS				
А	TITUS	TDC	6"	4-WAY	24x24	10-100				30	1
В	TITUS	TDC	8"	4-WAY	24x24	101-235				30	1
С	TITUS	TDC	10"	4-WAY	24x24	236-400				30	1
D	TITUS	TDC	6"	4-WAY	12x12	0-150				30	1
Е	TITUS	DL	20" x 10"	2-WAY	23x12	438-875				20	1,3
F	ACCORD	956	10"	PERF	24x24	0-200				NA	2,5
AA	TITUS	PAR					6"	12x12	10-100	<13	1,2
BB	TITUS	PAR					8"	24x24	101-235	21	1,2
CC	TITUS	PAR					10"	24x24	236-382	20	1,2
DD	AWV	LE-27					44x44	48x48	6900	NA	4,5
EE	ACCORD	956					6"	24x24	0-100	NA	2,5

REMARKS:

- 1. FACE OF DIFFUSER/REGISTER/GRILLE TO BE WHITE
- 2. PROVIDE TRANSITION FROM SQUARE NECK SIZE TO BRANCH SIZE INDICATED ON PLANS.
- 3. PROVIDE ALUMINUM GRILLE WITH CORROSION RESISTANT COATING APPLIED BY THE MANUFACTURER
- 4. ALUMINUM BAR GRILLE, FINISH TO BE PICKED FROM STANDARD FINISHES BY ARCHITECT.
- 5. PROVIDE CORROSION RESISTANT PAINT COATING APPLIED BY MANUFACTURER

					FAN SCH	DULE							
FAN	MA NUFA CTURER	M/N	TYPE	SIZE	SERVICE	СЕМ	SP (IN	MOTOR	мото	OR DATA	INSTALLATION	CONTROL METHOD	NOTES
	INTOINCIONEN	,	2	J.L.	SERV 1SE	0	H20)	RPM	MOTOR Hp	VOLTS/HZ/PH	HEIGHT	CONTROL HEITIGE	110125
EF-01	DAYTON	1BLH8	SHUTTER MOUNT EXHAUST FAN	12"ø	VENTILATION	975	0.1	1,625	1/8	115/60/1	10'-0" AFF	THERMOSTAT	1,2,3
EF-02	DAYTON	1BLH6	SHUTTER MOUNT EXHAUST FAN	10"ø	VENTILATION	540	0.1	1,550	1/20	115/60/1	10'-0" AFF	THERMOSTAT	1,2,3
EF-03	DAYTON	1BLH6	SHUTTER MOUNT EXHAUST FAN	10"ø	VENTILATION	500	0.1	1,550	1/20	115/60/1	10'-0" AFF	THERMOSTAT	1,2,3
EF-04	DAYTON	1BLH6	SHUTTER MOUNT EXHAUST FAN	10"ø	VENTILATION	560	0.1	1,550	1/20	115/60/1	2'-0" AFF	THERMOSTAT	1,2,3
EF-05	GREENHECK	SQ-85-D	INLINE	12"ø	GENERAL/TOILET	200	0.539	1,550	1/12	115/60/1	ABOVE CEILING	INTERLOCKED	3,4,5
EF-06	TWIN CITY	7SA2	WALL VENTILATOR	7"	GENERAL	190	0.25	1,550	1/15	115/60/1	14'-0" AFF	CONTINUOUS	3,4

REMARKS:

- 1. PROVIDE CORROSION RESISTANT SHUTTER MOUNT EXHAUST FAN
- 2. PROVIDE WALL MOUNTED LINE VOLTAGE THERMOSTAT WITH HAND, OFF, AUTO SETTINGS COORDINATE WITH THE ELECTRICAL CONTRACTOR
- 3. PROVIDE SPEED CONTROLLER FOR ALL DIRECT DRIVE FANS.
- 4. PROVIDE FLEXIBLE DUCT CONNECTION FOR INLET AND OUTLET OF FAN
- 5. PROVIDE HARD WIRED INTERLOCK WITH SUPPLY FAN FOR FCU-02 (WHEN FCU-02 IS ON, EF-05 IS ON; WHEN FCU-02 IS OFF, EF-05 IS OFF)

				LOUVER S	CHEDULE						
137.44	MODEL NUMBER	77/05	DECORPTION		SIZE (INCHES)		VOLUBAT (of mo)	VELOCITY (frame)	DEF 4 DE4 (5:2)	INSTALLATION	DEMA DVC
LV #	MODEL NUMBER	ТҮРЕ	DESCRIPTION	HEIGHT	WIDTH	DEPTH	VOLUME (cfm)	VELOCITY (TPM)	FREE AREA (ft ²)	HEIGHT	REMARKS
LV-01	CUSTOM	INTAKE	FIXED BLADE FRP LOUVER	24	24	4	940	631	1.49	9'-4" AFF	
LV-02	CUSTOM	INTAKE	FIXED BLADE FRP LOUVER	24	24	4	540	362	1.49	2'-0" AFF	1,2
LV-03	CUSTOM	INTAKE	FIXED BLADE FRP LOUVER	24	24	4	500	336	1.49	2'-0" AFF	1,2
LV-04	CUSTOM	INTAKE	FIXED BLADE FRP LOUVER	24	24	4	560	376	1.49	9'-4" AFF	
LV-05	GREENHECK/ESD-403	EXHAUST	FIXED BLADE LOUVER	12	16	4	225	1007	0.66	10'-6" AFF	4,5
LV-06	GREENHECK/ESD-403	INTAKE	FIXED BLADE LOUVER	12	18	4	450	896	0.50	20'-6"	4,5

- 1. PROVIDE FLUSH MOUNTED RAIN RESISTANT FRP LOUVER, COORDINATE COLOR WITH GENERAL CONTRACTOR
- 2. PROVIDE INSECT SCREEN, FRP BACKDRAFT DAMPER AND RAIN HOOD
- 3. PROVIDE FRP DUCT TO INTERIOR PORTION OF ROOM, REFER TO MECHANICAL FLOOR PLAN
- 4. PROVIDE INSECT SCREEN, BACKDRAFT DAMPER, COORDINATE COLOR WITH ARCHITECT
- 5. COORDINATE COLOR WITH ARCHITECT

				GRAVITY VE	NTILATOR SO	CHEDULE				
	LV #	MA NUFA CTURER	ТҮРЕ	MODEL NUMBER	DIAMETER (in)	THROAT AREA (ft2)	VOLUME (cfm)	VELOCITY (fpm)	REMARKS	
Ī	GV-01	GREENHECK	INTAKE	GRSI-12	12	0.82	600	732	1,2,3	
Ī	GV-02	GREENHECK	INTAKE	GRSI-8	12	0.37	190	324	1,2	

REMARKS:

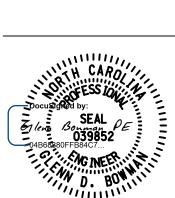
- 1. PROVIDE ROOF CURB, INSECT SCREEN AND BACKDRAFT DAMPER
- 2. COORDINATE LOUVER COLOR WITH ARCHITECT
- 2. PROVIDE MANUAL VOLUME DAMPER IN OUTSIDE AIR DUCT TO TO EACH FCU

LINET NO		N4 / N1	LOCA TTON	DOOM A DEA (6:2)		HEATER ELEMENT		HEATING DENSITY	DEMA DVC	
UNIT NO.	MA NUFA CTURER	M/N	LOCATION	ROOM AREA (ft ²)	KW	VOLTS	PHASE	(Watts/ft ²)	REMARKS	
ERH-01	RAYWALL	343-60-THSS-480V	CODIUM LIVEOCLII ODIDE		7.5	480	1		1,3,4,6	
ERH-02	RAYWALL	343-60-THSS-480V	SODIUM HYPOCHLORIDE ROOM 123	674	7.5	480	1	33.4	1,3,4,6	
ERH-03	RAYWALL	343-60-THSS-480V	1.001.1		7.5	480	1		1,3,4,6	
ERH-04	RAYWALL	222-60-THSS-277V	CAUSTIC ROOM 119	400	3.2	277	1	16.0	1,2,3,5,6	
ERH-05	RAYWALL	222-60-THSS-277V	CAUSTIC ROOM 119	400	3.2	277	1	10.0	1,2,3,5,6	
ERH-06	RAYWALL	222-60-THSS-277V	CORROSION INHIBITOR	360	3.2	277	1	17.8	1,2,3,5,6	
ERH-07	RAYWALL	222-60-THSS-277V	ROOM 118	300	3.2	277	1	17.6	1,2,3,5,6	
ERH-08	RAYWALL	222-60-THSS-277V	SHOP/STORAGE ROOM	400	3.2	277	1	16.0	1,2,3,5,6	
ERH-09	RAYWALL	222-60-THSS-277V	118	400	3.2	277	1	10.0	1,2,3,5,6	
ERH-10	RAYWALL	CP705	STORAGE CLOSET 120	149	0.5	277	1	3.4	1,3,4	
ERH-11	RAYWALL	CP705	3 TORAGE CLOSET 120	149	0.5	277	1	6.7	1,3,4	
ERH-12	RAYWALL	CP705	JANITOR CLOSET 121	90	0.5	277	1		1,3,6	
ERH-13	RAYWALL	CP707			0.75 277		1		1,3,6	
ERH-14	RAYWALL	CP707	A03 CORRIDOR	391	0.75	277	1	7.7	1,3,6	
ERH-15	RAYWALL	CP707	AU3 CURRIDUR	391	0.75	277	1		1,3,6	
ERH-16	RAYWALL	CP707]		0.75	277	1		1,3,6	

<u>REMARKS</u>

- 1. MAINTAIN MANUFACTURERS RECOMMENDED CLEARANCE FROM COMBUSTIBLES
- 2. PROVIDE WALL MOUNTING BRACKET AND HARDWARE FOR INSTALLATION 10" AFF
- 3. PROVIDE SILICON SEALED METAL PARTS FOR HIGH HUMIDITY APPLICATION
- 4. PROVIDE MOUNTING BRACKET AND HARDWARE FOR SUSPENDED INSTALLATION AT 12" AFF
- 5. UNIT SHALL HAVE 60° ASYMMETRIC REFLETOR PATTERN
- 6. PROVIDE A SINGLE LINE VOLTAGE THERMOSTAT FOR MULTIPLE HEATER CONTROL





DESIGNED BY: DRAWN BY: CHECKED BY: PROJECT NO.: 3081-AB JUNE 7, 2020 AS NOTED

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ıman			
2020	12:52:33 PM		
ojects	Brunswick_Regional_W&.	S_H2GO-3081	ojects Brunswick_Regional_W&S_H2GO–3081 AB–Water_Supply&Treatment_Plant Si

FAN COIL UNIT SCHEDULE AIRFLOW FILTERS BTUH COOLING BTUH SA (cfm) RA (cfm) OA (cfm) S.P. FCU | MANUFACTURER | **TYPE** ELECTRICAL SERVICE ROOM SERVED REMARKS **MOTOR** HEATING SIZE TYPE (in w.c.) TOTAL SENSIBLE VOLTS PHASE MCA MFA FCU-01 DAIKIN FXMQ36 SUSPENDED, DUCTED MEETING 101 1130 870 260 0.2 0.35 208 15 | 30,440 | 24,950 | 41,492 | 1" | MERV-8 | 1,2,3 BREAKROOM/LOBBY/TOILETS FCU-02 SUSPENDED, DUCTED 0.2 0.35 208 2.3 25,370 20,712 1,2,3 DAIKIN FXMQ30 15 FCU-03 FXMQ12 SUSPENDED, DUCTED OFFICE 110 0.2 0.09 208 10,158 8,455 13,990 1,2,3 DAIKIN 15 0.2 0.09 FCU-04 DAIKIN FXMQ12 SUSPENDED, DUCTED CONTROL 114 340 208 0.6 15 10,158 8,455 13,990 1,2,3 300 1" | MERV-8 | FCU-05 FXMQ12 SUSPENDED, DUCTED LAB 115 340 300 0.2 0.09 208 0.6 15 10,158 8,455 13,990 1,2,3 <u>REMARKS</u> 1. PROVIDE SECONDARY DRAIN PAN AND FLOAT SWITCH INTERLOCKED WITH ON/OFF CONTROL FOR UNIT 2. INSTALL WITHIN 12" OF DROP CEILING FOR MAINTENACE ACCESS THROUGH CEILING

- 3. INSTALL IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS AND RECOMMENDED CLEARANCE
- 4. PROVIDE FILTER ON SUCTION SIDE OF UNIT, ACCESIBLE FOR REPLACEMENT THROUGH CEILING TILE

			VR	N OUTDO	OOR UNI	SCHE	DULE					
			CAPA	CAPACITY		POWE	R					
DESIGNATION	MA NUFA CTURER	M/N	TOTAL COOLING MBH	COOLING HEATING		E PHASE MCA MI		MFA	REFFRIGERANT	EER	REMARKS	
VRV-OU-01	DAIKIN	REYQ144	116,915 124,943		460	3 31.9		40.0	R-410A	12.9	1,2,3	

- 1. LOCATE OUTDOOR UNITS ON 4" THICK CONCRETE EQUIPMENT PAD, REFER TO EQUIPMENT PAD DETAIL
- 2. PROVIDE FACTORY SEA COAST COATING FOR OUTDOOR COIL
- 3. INSTALL IN ACCORDANCE WITH MANUFACTURERS RECOMMENDED CLEARANCE

			VRV	BRANCH	SELECTO	R UNI	T SCHI	EDULE				
			CAPA	CITY	POWER		R					
DESIGNATION	MA NUFA CTURER	M/N	TOTAL COOLING MBH	TOTAL HEATING MBH	VOLTAGE PHASE		MCA	MFA	REFFRIGERA NT	DIMENSIONS (in.)	REMARKS	
BS-01	DAIKIN	BS6Q54TVJ	116,915	124,943	230	1	0.6	15.0	R-410A	22.8 X 11.7 X 18.9	1,2	

REMARKS:

- 1. INSTALL IN OVERHEAD SPACE OF MECHANICAL ROOM ABOVE LAYIN CEILING
- 2. INSTALL IN ACCORDANCE WITH MANUFACTURERS RECOMMEND ORIENTATION AND CLEARANCE

							D	EHUMI	DIFIC	ATION	UNIT S	CHEDU	JLE									
						AIRFLOW												FILT	ERS			
DHU	MA NUFA CTURER	M/N	ТҮРЕ	ROOM SERVED	SA (cfm)	RA (cfm)	OA (cfm)	ESP	HP	MOTOR Kw	E	ELECTRICAL SERVICE (II				COOLIN	IG (MBH)	REHEAT CAPACITY (MBH)	REFRIGERA NT	SIZE	ТҮРЕ	REMA RKS
											VOLTS	OLTS PHASE MCA MFA				TOTAL	SENSIBLE					
DHU-01	DESERT AIRE	LW12	SUSPENDED, DUCTED	FILTER ROOM	6,900	6,750	150	0.5	5.0	19.3	460	3	36	50	41.5	122.0	77.7	84.6	R-407C	1"	MERV-8	1,2,3,4
DHU-02	DESERT AIRE	LW12	SUSPENDED, DUCTED	FILTER ROOM	6,900	6,750	150	0.5	5.0	19.3	460	3	36	50	41.5	122.0	77.7	84.6	R-407C	1"	MERV-8	1,2,3,4
DHU-03	DESERT AIRE	LW12	SUSPENDED, DUCTED	FILTER ROOM	6,900	6,750	150	0.5	5.0	19.3	460	3	36	50	41.5	122.0	77.7	84.6	R-407C	1"	MERV-8	1,2,3,4

- 1. INSTALL IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS AND RECOMMENDED CLEARANCE
- 2. PROVIDE DUCT MOUNTED TEMPERTURE AND HUMIDITY SENSOR
- 3. PROVIDE REMOTE DISPLAY TOUCHSCREEN MONITOR IN CONTROL ROOM AS INDICATED ON PLANS
- 4. PROVIDE UNIT WITH DEFROST CYCLE

			DEHUMIDIFIC	ATION U	NIT OU	TDOO	R UNIT	SCHE	DULE				
			CAPACITY			POWI	ER					REMARKS	
DESIGNATION	MA NUFA CTURER	M/N	TOTAL HEAT REJECTION (MBH)	VOLTAGE	PHASE	FLA	MCA	МОР	Kw	REFFRIGERANT	EER		
DHU-OU-01	DESERT AIRE	RC5S079K	168	460	3	4.0	6	8	2.1	R-407C	12.0	1,2,3	
DHU-OU-02	DESERT AIRE	RC5S079K	168	460	3	4.0	6	8	2.1	R-407C	12.0	1,2,3	
DHU-OU-O3	DESERT AIRE	RC5S079K	168	460	3	4.0	6	8	2.1	R-407C	12.0	1,2,3	

- 1. LOCATE OUTDOOR UNITS ON 4" THICK CONCRETE EQUIPMENT PAD, REFER TO EQUIPMENT PAD DETAIL
- 2. PROVIDE FACTORY APPLIED ELECTROFIN E-COAT COATING FOR OUTDOOR COIL
- 3. INSTALL IN ACCORDANCE WITH MANUFACTURERS RECOMMENDED CLEARANCE
- 4. PROVIDE UNITARY CONTROLLER EQUAL TO CM3540 SERIES REMOTE DISPLAY TERMINAL, AND DUCT MOUNTED TEMPERTURE AND RH SENSOR

								COMPUT	ER ROOM	I AIR CO	NDITION	ING UN	IITS							
					INDOOF	DOOR UNIT										OUTDOOR UNIT				
						SUPPLY FAN		со	OLING CAPAC	ΊΤΥ		POWER					Р	OWER		
DESIGNATION	MA NUFA CTURER	M/N	DISCHA RGE	LOCATION	СЕМ	ESP (in. w.c.)	НР	TOTAL COOLING MBH	SENSIBLE COOLING MBH	ROOM DB/WB	VOLTA GE	PHASE	FLA	DESIGNATION	MA NUFA CTURER	M/N	VOLTA GE	PHASE	FLA	REMARKS
CRAC-01	LIEBERT	VS035	UPFLOW	ELECTRICAL 122	5,200	0.5	5.0	130.8	123.2	80/63	480	3	27.6	CRAC-OU-01	LIEBERT	MCM056	460	3	2.8	1,2,3,4

- 1. LOCATE INDOOR AND OUTDOOR UNITS ON 4" THICK CONCRETE EQUIPMENT PAD
- 2. PROVIDE FACTROY INSTALLED CONDENSATE PUMP WITH INDOOR UNIT 3. PROVIDE E-COAT EPOXY COIL COATING TO OUTDOOR CONDENSING UNIT
- 4. PROVIDE UNIT WITH SEMI-HERMETIC COMPRESSOR WITH FOUR-STEP COOLING



DESIGNED BY:	
	GDB
DRAWN BY:	CD.D
	GDB
CHECKED BY:	
	LHM
PROJECT NO.:	2001 AB
	3081-AB
DATE:	INE 7 2020
	JNE 7, 2020
SCALE:	AC NOTED
	AS NOTED

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