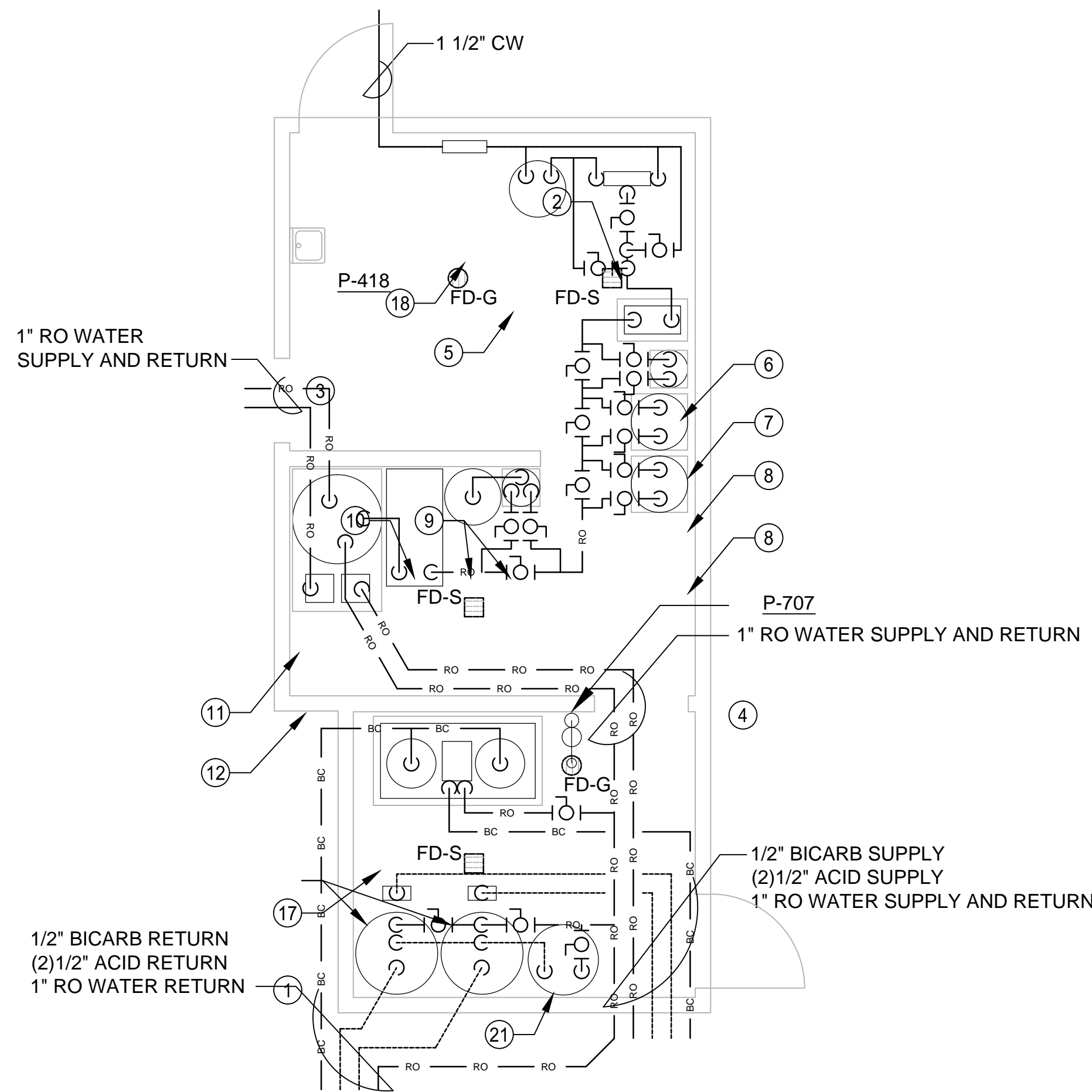


A
three inches = one foot
1
one and one half inches = one foot
B
2
one inch = one foot
C
three quarters inch = one foot
D
one half inch = one foot
E
three eighths inch = one foot
F
one quarter inch = one foot
7
one eighth inch = one foot



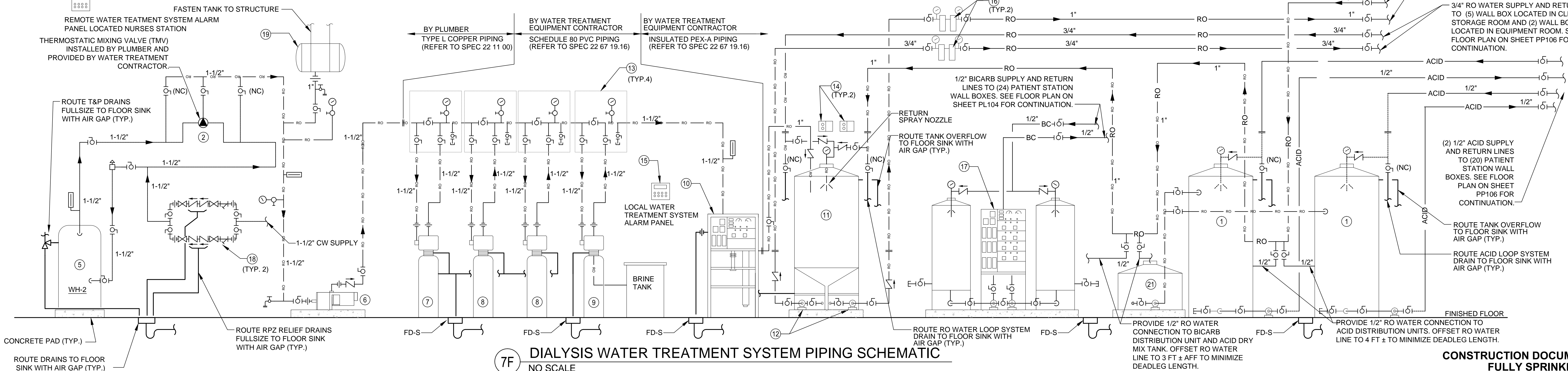
**ENLARGED WATER TREATMENT ROOM
GENERAL ARRANGEMENT PLAN**

**1/4"=1'-0"
PROCESS WATER HEATER CAPACITY**

| | |
|------------------------|---------------------|
| STEAM WATER HEATER: | (1) CEMLINE V120SWH |
| STORAGE TANK CAPACITY | 120 GALLONS TOTAL |
| RECOVERY RATE @ 100 °F | 820 GPH TOTAL |
| ELECTRIC INPUT | 35 KW TOTAL |

GENERAL NOTE

1. ALL ACID, BICARB, RO, EQUIPMENT, AND CONTROLS WILL BE INSTALLED UNDER SEPERATE CONTRACT USING VETERANS AFFAIRS NATIONAL SERVICE CONTRACT PROVIDER. CONTRACTOR SHALL PROVIDE ALL ELECTRICAL, PLUMBING, AND OTHER NECESSARY ROUGH INS FOR INSTALLATION OF THE WATER TREATMENT SYSTEM. THE GOVERNMENT'S RO WATER TREATMENT CONTRACTOR WILL INSTALL ALL AND CONNECT ALL RO, BICARB, AND ACID LINES.



**7F DIALYSIS WATER TREATMENT SYSTEM PIPING SCHEMATIC
NO SCALE**

| | | | | | | |
|--------------------------------|--|-------------------------------------|------------------------------|---|--|-----------------------------|
| Approved: Patient Safety Nurse | Approved: Energy Engineer | Approved: Safety Manager | Approved: Service Chief | Drawing Title DIALYSIS WATER TREATMENT SYSTEM SCHEMATIC | Project Title RELOCATE AND EXPAND RENAL DIALYSIS | Date 2016.01.22 |
| | Approved: Chief of Police | Approved: Infection Control Officer | Approved: Chief of Staff | Approved: Chief of Facility Management Svc. | Building Number 2 | Project No. 658-315 |
| | Approved: Chief of Mental Health Service | Approved: GEMS Coordinator | Approved: Associate Director | Approved: Medical Center Director | Checked WB | Drawn AH |
| 4 ADDENDUM #4 | 5/16/16 | | | Approved: Medical Center Director | Location SALEM VA MEDICAL CENTER | Drawing No. PP601 |
| Revisions: | Date | | | | | Sheet 102 of 144 |



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WATER TREATMENT EQUIPMENT SCHEDULE

(FOR COORDINATION PURPOSES ONLY, NIC)

| EQUIP. TAG | EQUIPMENT DESCRIPTION | ELECTRICAL | MANUFACTURER / MODEL NUMBER |
|------------|--|--|---|
| 1 | ACID DISTRIBUTION SYSTEM, FLAT BOTTOM, 300 GALLON POLYPROPYLENE TANK AND PUMP ASSEMBLY (QTY 2) | 120V/ 1 PH / 5AMP | AMERI WATER / 00AS300 |
| 2 | BLEND VALVE ASSEMBLY, THERMOSTATIC MIXING VALVE WITH ADJUSTABLE SUPPLY TEMPERATURE. SET TO 77 °F ±5°F WITH MINIMUM FLOW OF 5 GPM AND MAXIMUM FLOW OF 37 GPM (MAXIMUM 10 PSI PRESSURE DROP). SCHEDULE 80 PVC. | N/A | AMERI WATER / 0054-0037 (PROVIDED BY WATER TREATMENT CONTRACTOR AND INSTALLED BY PLUMBER) |
| 3 | LAVATORY, REFER TO PLUMBING FIXTURE SCHEDULE ON SHEET PP602 FOR SPECIFICATION. | N/A | N/A |
| 4 | EMERGENCY EYE WASH, REFER TO PLUMBING FIXTURE SCHEDULE ON SHEET PP602 FOR SPECIFICATION. | N/A | N/A |
| 5 | 120 GALLON STEAM WATER HEATER WITH 35kW ELECTRIC BACKUP, REFER TO WATER HEATER SCHEDULE ON SHEET PP602 FOR SPECIFICATION. | N/A | CEMLINE / V120SWH |
| 6 | RO WATER BOOSTER PUMP, VARIABLE FREQUENCY DRIVE, STAINLESS STEEL VOLUTE AND IMPELLER, INTEGRAL PUMP CONTROLLER WITH PRESSURE SENSOR, BY-PASS HEADER WITH ISOLATION VALVES, SCHEDULE 80 PVC, OUTLET PRESSURE GAUGE AND PRESSURE SENSOR. MAX PUMP SPEED 2800 RPM. | 230V/ 1 PH / 15 A (1 1/2 HP MOTOR) | AMERI WATER / 0080190 CME 5-3 (PROVIDED BY WATER TREATMENT CONTRACTOR AND INSTALLED BY PLUMBER) |
| 7 | MULTI MEDIA FILTER 16"x65", FLECK SERIES 2850 CONTROL HEAD ELECTRONIC 7-DAY TIMER WITH PROGRAMMABLE BACKWASH TIME. FILTER EFFICIENCY TO 20 MICRONS. FILTER INTERFACE WITH LOCKOUT TO RO SYSTEM WHEN IN BACKWASH CYCLE. 1-1/2" FULL VALVE FOR MAXIMUM FLOW RATE OF 35 GPM. | 115V/ 1 PH / 5 A | AMERI WATER / 0095043 |
| 8 | CARBON FILTER, GRANULAR ACTIVATED CARBON, 24"x72", FLECK SERIES 2850 CONTROL HEAD ELECTRONIC 7-DAY TIMER WITH PROGRAMMABLE BACKWASH TIME. 12X40 FILTER MESH WITH IODINE NUMBER GREATER THAN 1,000. LOCKOUT TO RO SYSTEM WHEN IN BACKWASH CYCLE. 1-1/2" FULL VALVE FOR MAXIMUM FLOW RATE OF 35 GPM. PROVIDE LOCAL INDICATION OF CHLORINE AND CHLORAMINE LEVELS AND LOCAL ALARM INDICATION. PROVIDE EQUIPMENT STATUS OUTPUT FOR REMOTE MONITORING. (QTY 2) | 115V/ 1 PH / 5 A | AMERI WATER / 0095032 |
| 9 | WATER SOFTNER, 16"x65" FRP SOFTNER TANK, FLECK 7000 CONTROL HEAD, 24"x50" POLYETHYLENE BRINE TANK, SCHEDULE 80 PIPING. PROGRAMMABLE ELECTRONIC CONTROLLER. | 115V/ 1 PH / 5 A | AMERI WATER / 0095013 |
| 10 | PACKAGED REVERSE OSMOSIS SYSTEM MOUNTED ON STEEL FRAME. MICROPROCESSOR CONTROLS WITH BACKLIT LCD DISPLAY PANEL. PROGRAMMABLE FLUSH FOR STORAGE TANK, SALT LEVEL INDICATOR AND HARDNESS LEVEL INDICATOR. PROVIDE EQUIPMENT STATUS OUTPUT FOR REMOTE MONITORING. | CONTROLS GFCI OUTLET (120V/ 1 PH / 15 A) PUMP (208V/ 3 PH / 10 A) | AMERI WATER / 00MRO5Z402 |
| 11 | RO WATER STORAGE TANK, 250 GALLON, 43"x38"x105", POLYETHYLENE TANK WITH CONE BOTTOM, SCHEDULE 80 PVC FITTINGS, RETURN LOOP MANIFOLD. | N/A | AMERI WATER / 00CT250-1 |
| 12 | RO WATER DISTRIBUTION PUMP, MOUNTED ON CONCRETE PAD, 304 STAINLESS STEEL VOLUTE AND IMPELLER, CONTROL PANEL 18 GPM @ 80 PSI. (QTY 2) | 208V/ 3 PH / 10 A PUMP 2 HP | AMERI WATER / 0080457 |
| 13 | 1 1/4" BYPASS HEADER, SCHEDULE 80 PVC (QTY 4) | N/A | AMERI WATER |
| 14 | RO WATER DISTRIBUTION PUMP CONTROLLER (QTY 2) | N/A | *CONTROLLER PACKAGED WITH RO WATER PUMP. |
| 15 | WATER TREATMENT SYSTEM ALARM PANEL/GOOD WATER / RO ALARM / STORAGE TANK LOW / RO CONDUCTIVITY ALARM / BICARB LOW / ACID PH LEVEL INDICATOR / EQUIPMENT STATUS / MULTI-MEDIA PRESSURE DROP/ CHLORINE AND CHLORAMINE LEVELS | 115V/ 1 PH/ 5 A | AMERI WATER / 00850253 |

CONTINUED

| EQUIPMENT TAG | EQUIPMENT DESCRIPTION | ELECTRICAL | MANUFACTURER / MODEL NUMBER |
|---------------|---|---|---|
| 16 | 1" TRIPLE, 20"; PRE-DISTRIBUTION DUAL LOOP FILTER HOUSING PLEATED ENDOTOXIN FILTER CARTRIDGES, SCHEDULE 80 CPVC (QTY 2) | N/A | AMERI WATER / 0021007 |
| 17 | BICARB MIX AND DISTRIBUTION SYSTEM, 100 GALLON POLYETHYLENE MIX TANK, PACKAGED STAINLESS STEEL PUMP. | CONTROLS GFCI OUTLET 115V / 1 PH / 20 A | AMERI WATER / 00BC100-100 |
| 18 | 1-1/2" REDUCED PRESSURE ZONE ASSEMBLY, BACKFLOW PREVENTER (QTY 2) | N/A | WATTS / 909 |
| 19 | 8 GALLON EXPANSION TANK, TANK ACCEPTANCE VOLUME 3.1 GALLON | N/A | WATTS / DETA-20 |
| 20 | PRESSURE DROP SENSOR FOR HIGH PRESSURE DROP ALARM AT MULTIMEDIA FILTERS FOR REMOTE MONITORING | N/A | N/A |
| 21 | 50 GALLON DRY ACID MIXING TANK, AND STAND ASSEMBLY | CONTROLS GFI OUTLET 115V / 1 PH / 20 A | ROCKWELL MEDICAL/ DRI-STATE DRY ACID CONCENTRATE MIX SYSTEM |

PIPING SCHEMATIC SYMBOLS LEGEND

| | | | |
|--|--------------------|--|------------------------------|
| | DIRECTION OF FLOW | | STRAINER |
| | SIDE CONNECTION | | THERMOMETER |
| | CAPPED OUTLET | | PRESSURE GAGE |
| | UNION | | VACUUM BREAKER |
| | FLANGED CONNECTION | | HOSE BIB |
| | PIPE UP | | CHECK VALVE |
| | PIPE DOWN | | BALL VALVE |
| | | | PRESSURE DROP SENSOR |
| | | | PRESSURE RELIEF VALVE |
| | | | VACUUM BREAKER |
| | | | BALANCING VALVE |
| | | | NEW WORK NOTE (SEE SCHEDULE) |
| | | | NORMALLY CLOSED |

GENERAL NOTES

1. ALL CHANGES IN PIPE SIZE NECESSARY TO MATCH EQUIPMENT SHALL BE MADE AS CLOSE POSSIBLE TO EQUIPMENT.
2. MOUNT BACKFLOW PREVENTERS WITH SERVICE CLEARANCE REQUIRED TO ALLOW MAINTENANCE.
3. ALL PVC PIPING CUTS SHALL BE MADE WITH PVC SHEARS TO ENSURE THAT THERE ARE NO BURRS.
4. CONTRACTOR SHALL FOLLOW ASTM INSTRUCTIONS FOR PROPER INSTALLATION PIPING
5. FOR THREADED FITTINGS USE ONLY TEFLON TAPE. DO NOT USE PIPE DOPE.
6. ALL PIPING SHALL BE PROPERLY LABELED FOR IDENTIFICATION AT 5 FT INTERVALS AND AT EACH CHANGE OF DIRECTION.
7. CONTRACTOR SHALL TAG ALL VALVES. REFER TO PLUMBING SPECIFICATIONS.
8. ACID LOOPS SHALL BE POLYPROPYLENE TUBING.
9. BI-CARBONATE LOOP SHALL BE POLYPROPYLENE TUBING.
10. BI-CARB AND ACID LOOP TUBING SHALL BE COLOR CODED TO CONFORM TO AAMI RECOMMENDATIONS.
11. RO WATER LOOP SHALL BE INSULATED PEX-A PIPING TO ALLOW FUTURE CONVERSION OF SYSTEM TO HEAT DISINFECTION TYPE.
12. FILTERED WATER UPSTREAM OF THE RO WATER MACHINE SHALL BE SCHEDULE 80 PVC PIPE. REFER TO SCHEMATIC ON THIS SHEET FOR POINT OF CHANGE IN MATERIAL (COPPER TO PVC & PVC TO PEX-A) AND SPECIFICATION 22 67 19.18 & 22 11 00.
13. REMOTE DIALYSIS SYSTEM MONITORS TO BE LOCATED AND INSTALLED AT THE NURSES STATION, AS INDICATED
13. THE DIALYSIS SYSTEM EQUIPMENT AND COMPONENTS SHALL MEET FOOD AND DRUG ADMINISTRATION (FDA) STANDARD 510(K) APPROVAL AND THE REQUIREMENTS OF CLASS II MEDICAL DEVICES.
14. THE TREATED WATER SYSTEM SHALL MEET THE REQUIREMENTS OF ANSI/AAMI/ISO 26722: WATER TREATMENT EQUIPMENT FOR RENAL DIALYSIS APPLICATIONS AND RELATED THERAPIES.
15. THE TREATED WATER SYSTEM SHALL MEET THE CURRENT REQUIREMENTS OF ANSI/AAMI/ISO 13959: GUIDELINES FOR WATER QUALITY.
16. DIALYSIS SYSTEM EQUIPMENT SPECIFICATIONS AND LOOP CONSTRUCTION SHALL BE IN ACCORDANCE WITH ANSI/AAMI/ISO RD52: DIALYSATE FOR RENAL DIALYSIS.
17. ALL RENAL DIALYSIS DISTRIBUTION PIPING SHALL BE READILY ACCESSIBLE FOR INSPECTION AND MAINTENANCE.
18. NO DIALYSIS DISTRIBUTION PIPING OUTSIDE OF THE MECHANICAL ROOM SHALL BE EXPOSED OVERHEAD OR ON WALLS WHERE POSSIBLE ACCUMULATION OF DUST OR SOIL MAY CREATE A CLEANING PROBLEM OR WHERE LEAKS COULD CREATE CONTAMINATION.
19. DIALYSIS SYSTEM DRAIN AND VENT PIPING SHALL BE SOLID SCHEDULE 40 PVC. REFER TO FACILITY SANITARY AND VENT SPECIFICATION 22 13 00.

1" RO WATER SUPPLY AND RETURN TO (5) WALL BOX LOCATED IN CLEAN STORAGE ROOM AND (2) WALL BOXES LOCATED IN OPEN BAY PATIENT ROOM. SEE FLOOR PLAN ON SHEET PP106 FOR CONTINUATION.

3/4" RO WATER SUPPLY AND RETURN TO (5) WALL BOX LOCATED IN CLEAN STORAGE ROOM AND (2) WALL BOXES LOCATED IN OPEN BAY PATIENT ROOM. SEE FLOOR PLAN ON SHEET PP106 FOR CONTINUATION.

ACID 1/2" ACID 1/2" ACID 1/2"

(2) 1/2" ACID SUPPLY AND RETURN LINES TO (20) PATIENT STATION WALL BOXES. SEE FLOOR PLAN ON SHEET PP106 FOR CONTINUATION.

ROUTE TANK OVERFLOW TO FLOOR SINK WITH AIR GAP (TYP.)

ROUTE ACID LOOP SYSTEM DRAIN TO FLOOR SINK WITH AIR GAP (TYP.)

FINISHED FLOOR.

PROVIDE 1/2" RO WATER CONNECTION TO BICARB DISTRIBUTION UNIT AND ACID DRY MIX TANK. OFFSET RO WATER LINE TO 4 FT ± TO MINIMIZE DEADLEG LENGTH.

PROVIDE 1/2" RO WATER CONNECTION TO ACID DISTRIBUTION UNITS. OFFSET RO WATER LINE TO 4 FT ± TO MINIMIZE DEADLEG LENGTH.

4 ADDENDUM #4