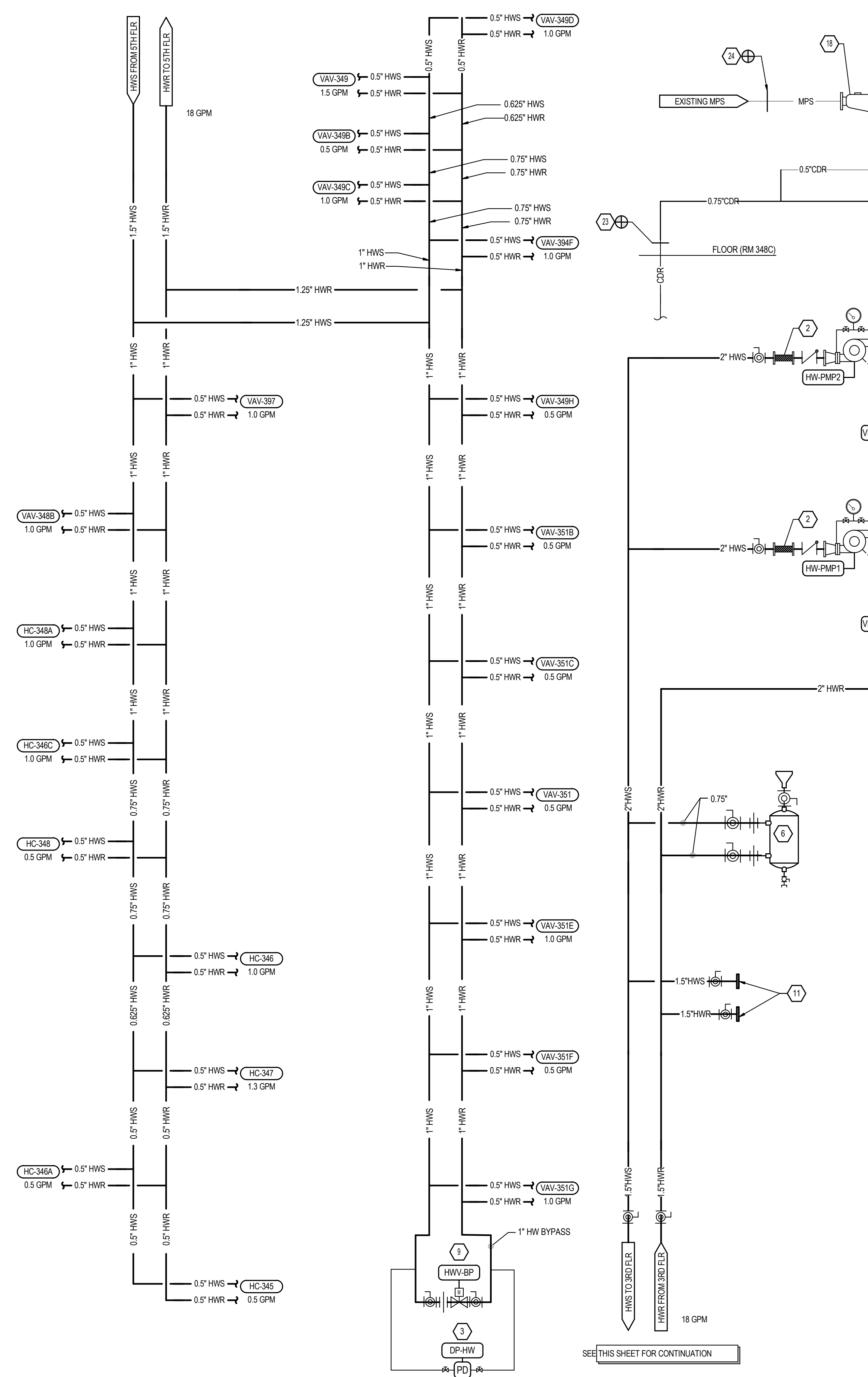
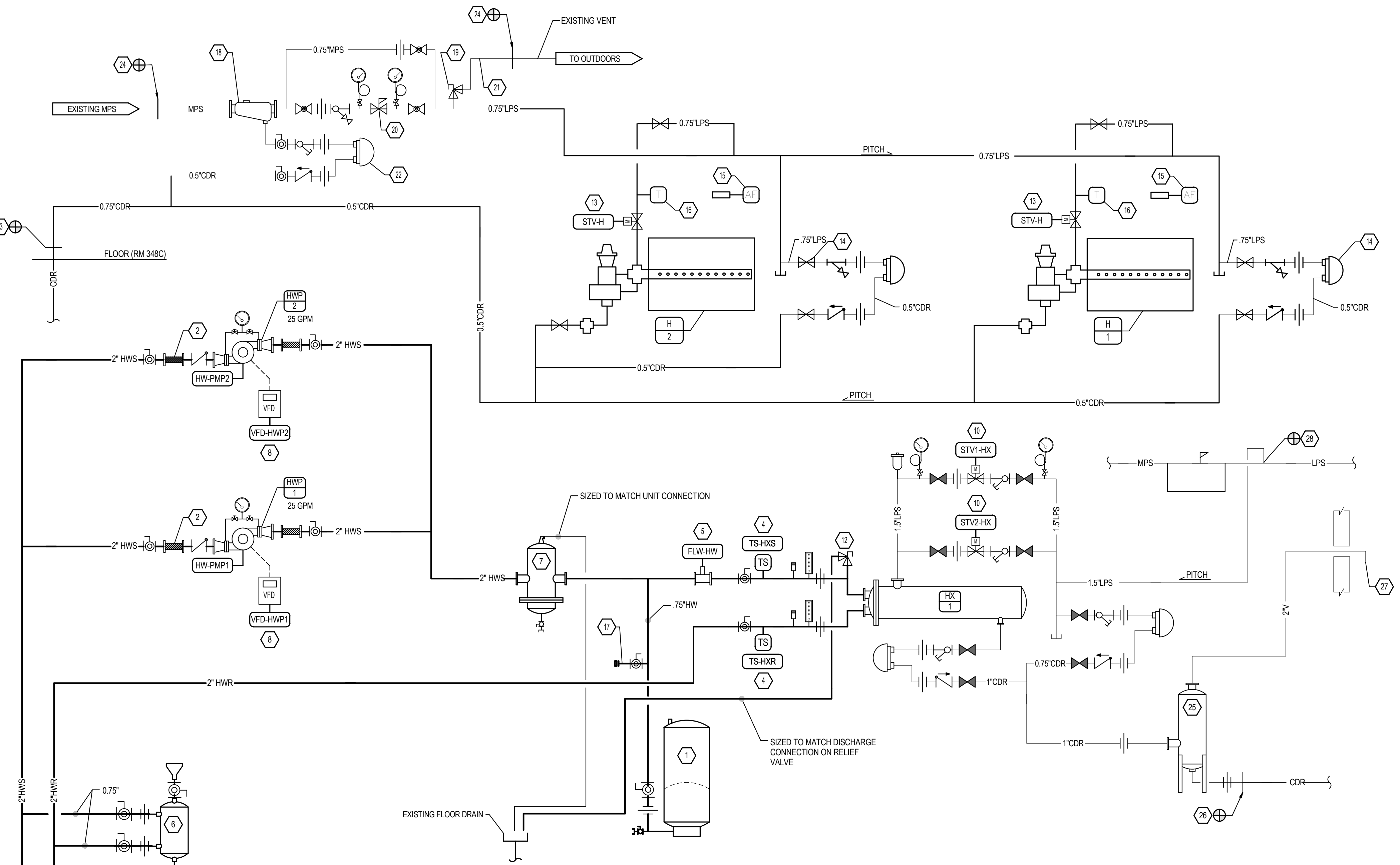


Vertical scale bars: three eighths inch = one foot, one half inch = one foot, one quarter inch = one foot, one eighth inch = one foot. Date: 3/13/2017 4:16:34 PM. File path: C:\Local\rent\Files\16166\_Sioux Falls VA Chapel\_MP\_Central\_2016\_rmbhmm\...

SEE THIS SHEET FOR CONTINUATION



SEE THIS SHEET FOR CONTINUATION



### SEQUENCE OF OPERATION

**PRIMARY HOT WATER PUMPS (HWP-1 AND HWP-2)**

- GENERAL: THE PUMPS SHALL BE SET UP IN A DUTY/STAND BY ARRANGEMENT. BAS SHALL ENABLE AND ALTERNATE PUMP OPERATION TO EQUALIZE RUNTIME.
- OCCURRED MODE: THE PUMPS SHALL RUN CONTINUOUSLY. THE VARIABLE FREQUENCY DRIVE SHALL MODULATE THE PUMPS SPEED TO MAINTAIN THE MINIMUM PRESSURE DIFFERENTIAL AT THE REMOTE HOT WATER SYSTEM PRESSURE DIFFERENTIAL SENSOR.
- UNOCCURRED MODE: THE PUMPS SHALL RUN INTERMITTENTLY AS REQUIRED TO MAINTAIN THE BUILDINGS UNOCCURRED TEMP. SET-POINTS.
- MIN FLOW: WHEN THE SYSTEM FLOWRATE FALLS BELOW THE MINIMUM FLOW REQUIRED AT HWP-1/HWP-2, THE HOT WATER BYPASS VALVE SHALL MODULATE TO MAINTAIN THE MINIMUM SET POINT.

**STEAM TO HOT WATER HEAT EXCHANGER**

- THE HEAT EXCHANGER SHALL BE CONTROLLED BY TWO STEAM VALVES. VALVE 1 SHALL CONTROL 1/3 OF THE HEAT EXCHANGER CAPACITY. VALVE 2 SHALL CONTROL 2/3 OF THE HEAT EXCHANGER CAPACITY.
- IF THE SUPPLY WATER TEMPERATURE FALLS BELOW SET POINT, VALVE 1 SHALL MODULATE IN AN ATTEMPT TO SATISFY THE SUPPLY WATER SET POINT.
- IF VALVE 1 IS 100% OPEN FOR 3 MINUTES AND THE SUPPLY WATER SET-POINT HAS NOT BEEN SATISFIED, VALVE 1 SHALL BEGIN TO OPEN AND MODULATE IN AN ATTEMPT TO MAINTAIN THE SUPPLY WATER TEMP. SET-POINT. ONCE VALVE 2 BEGINS TO OPEN, VALVE 1 SHALL CLOSE.
- IF VALVE 2 IS 100% OPEN FOR 3 MINUTES AND THE SUPPLY WATER SET-POINT HAS STILL NOT BEEN SATISFIED, VALVE 1 SHALL BEGIN TO OPEN AND MODULATE TO MAINTAIN THE SUPPLY WATER TEMP. SET-POINT.
- THE ORDER OF VALVE SEQUENCING SHALL BE REVERSED AS THE CAPACITY REQUIREMENT FALLS.

**DUCT HUMIDIFIERS (H-1 & H-2)**

- THE HUMIDIFIER CONTROL VALVE SHALL MODULATE TO MAINTAIN A 40% RH (ADJ) AS MEASURED AT THE DUCT MOUNTED HUMIDITY SENSOR NEAR THE EXHAUST GRILLE FOR THE SPACE. AN ALARM SHALL BE SENT TO THE BAS IF THE RELATIVE HUMIDITY EXCEEDS 55% RH.

### POINT LIST AND SET POINTS

CONTROL PLAN MARK	ITEM DESCRIPTION	UNITS (GRAPHIC DISPLAY)	SET-POINT (DEG F)	NORMAL OR FAILED POSITION	ANALOG INPUT	BINARY INPUT	ANALOG OUTPUT	BINARY OUTPUT	ALARM POINT	LOW LIMIT ALARM SET POINT	ALARM POINT SPECIFIC	SPEED, FLOW, OR CAPACITY	DIRECT INTERLOCK SWITCH	STATUS (ON/OFF)	LOGIC ENABLE	POSITION INDICATION	COMMUNICATION LINK	LOGIC CALCULATED ITEM	NOTES
DP-HWP	HOT WATER PUMP FLOW VERIFICATION	PSIG	-	-															
TS-HXS	HWS TEMPERATURE SET-POINT	DEG F	150	-						180	100								
TS-HXR	HWR TEMPERATURE	DEG F	-	-						180	100								
FLW-HW	HOT WATER FLOW RATE MONITOR	GPM	-	-						30	5								
STV1-HX	HX STEAM CONTROL VALVE-1	PERCENT	-	NC															
STV2-HX	HX STEAM CONTROL VALVE-2	PERCENT	-	NC															
HWP-BP	HWP BYPASS CONTROL VALVE	PERCENT	-	NC															
VFD-HWP1	HWP-1 VARIABLE FREQUENCY DRIVE	PERCENT	-	NC															2
VFD-HWP2	HWP-2 VARIABLE FREQUENCY DRIVE	PERCENT	-	NC															2
PMP-HWP1	HOT WATER PUMP HWP-1	ON/OFF	-	NC															1
PMP-HWP2	HOT WATER PUMP HWP-2	ON/OFF	-	NC															1
STV-H	STEAM HUMIDIFIER CONTROL VALVE	PERCENT	-	NC															

**NOTES:**

- CURRENT SWITCH
- REFER TO EQUIPMENT SCHEDULE, OPERATING SEQUENCE AND SPECIFICATIONS FOR ADDITIONAL CONTROL, DDC INTERFACE, AND BACKNET/WORKS REQUIREMENTS.

- ### KEYED NOTES
- 25 GALLON ASME DIAPHRAGM TYPE EXPANSION TANK WITH 20 GALLON ACCEPTANCE VOLUME.
  - STAINLESS STEEL BRAIDED VIBRATION ISOLATOR
  - PRESSURE DIFFERENTIAL SENSOR (PUMP FLOW STATUS)
  - PROBE TYPE TEMPERATURE SENSOR WITH SENSING WELL AND THERMALLY CONDUCTIVE NON-HARDENING PASTE
  - FLOW METER
  - 3 GALLON POT FEEDER
  - 2" COMBINATION AIR / DIRT SEPARATOR
  - VARIABLE SPEED PUMP PROVIDED BY PUMP MANUFACTURER
  - MODULATING BYPASS VALVE SIZED TO MAINTAIN MIN FLOW AT THE HOT WATER PUMP (APPROXIMATELY 6 GPM).
  - MODULATING STEAM CONTROL VALVE
  - 1" HWS WITH SHUT-OFF VALVE AND BLIND FLANGE FOR FUTURE CONNECTION
  - 50 PSIG PRESSURE RELIEF VALVE
  - HUMIDIFIER CONTROL VALVE PROVIDED WITH THE HUMIDIFIER AND CONTROLLED BY THE BAS
  - AIRFLOW AND THERMOSTATIC TRAP PROVIDED WITH THE HUMIDIFIER
  - AIRFLOW SWITCH TO SHUT DOWN HUMIDIFIER IF NO AIRFLOW IS PRESENT
  - AQUA STAT TO SHUT DOWN HUMIDIFIER IF STEAM IS NOT PRESENT
  - MANUAL FILL HOSE-BIB CONNECTION. SEE PLUMBING PLANS FOR LOCATION OF MAKE-UP WATER
  - CAST IRON MOISTURE SEPARATOR
  - 15 PSIG PRESSURE RELIEF VALVE
  - 35 PSIG TO 5 PSIG SELF CONTAINED, DIRECT ACTING, PRESSURE REGULATING VALVE
  - SIZE RELIEF VALVE DISCHARGE TO MATCH OUTLET SIZE OF VALVE
  - FLOAT AND THERMOSTATIC TRAP. SEE TRAP SCHEDULE FOR ZIE AND MODEL.
  - REMOVE EXISTING PRESSURE REDUCING STATION AND ASSOCIATED VALVING ABOVE CEILING IN THE CORRIDOR ON THIRD FLOOR. CONNECT NEW MEDIUM PRESSURE STEAM TO EXISTING STEAM MAIN SIZED TO MATCH EXISTING TO ALLOW FOR INSTALLATION OF NEW PRESSURE REDUCING STATION AS SHOWN.
  - ARMSTRONG MODEL AFT-6 FLASH TANK. 150 PSIG ASME CODED, OR APPROVED EQUAL.
  - CONNECT TO EXISTING STEAM CONDENSATION RETURN.
  - VENT FLASH TANK TO OUTDOORS
  - CONNECT TO EXISTING LOW PRESSURE STEAM MAIN.
  - CONNECT TO EXISTING VENT TO THE OUTDOORS.

- ### GENERAL NOTES
- PROVIDE ALL TEMPERATURE CONTROL COMPONENTS, RELAYS, CONDUIT, WIRING, AUXILIARY CONTACTS, JUNCTION BOXES, ETC AS REQUIRED TO PROVIDE THE SPECIFIED SEQUENCE OF OPERATION.
  - THE DDC SYSTEM SHALL BE CAPABLE OF PROVIDING TRENDS LOGS ON ALL LISTED POINTS.
  - THE DDC SYSTEM GRAPHIC INTERFACE SHALL INCLUDE GRAPHICS FOR ALL LISTED POINTS.
  - DAMPER AND VALVE OPERATORS TO BE 24V.

### ENGINEERS/CONSULTANTS:

**WOOLPERT, INC.**  
343 FOUNTAINS PARKWAY  
SUITE 100  
FAIRVIEW HEIGHTS, IL 62208  
314-436-0865  
314-436-0884 fax

**SCI ENGINEERING, INC**  
130 POINT WEST BLVD.  
ST. CHARLES, MO 63301  
636-949-8200  
636-949-8269 fax

SEAL

FINAL SUBMITTAL FOR CONSTRUCTION

MICHELLE C. BERTRAM  
Professional Engineer  
STATE OF ILLINOIS  
3/13/17

### ARCHITECT:

**Chiodini ARCHITECTS**  
Architecture / Interior Design / Graphics  
1401 S. Brentwood Blvd / Suite 575 / St. Louis, Missouri 63144  
314-725-5588 / info@chiodini.com

THE ARCHITECT EXPRESSLY RESERVES HIS COPYRIGHT AND STATUTORY LAW RIGHTS FOR THESE ARCHITECTURAL PLANS AND TECHNICAL DOCUMENTS AND ANY DERIVATIVES THEREOF. THESE DRAWINGS AND DOCUMENTS ARE NOT TO BE REPRODUCED, CHANGED OR COPIED IN ANY MANNER WITHOUT THE EXPRESS WRITTEN CONSENT OF CHIODINI ARCHITECTS. NO PART OF THESE DRAWINGS OR DOCUMENTS ARE TO BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS WITHOUT THE EXPRESS WRITTEN PERMISSION AND CONSENT OF CHIODINI ARCHITECTS.

Drawing Title  
**MECHANICAL PIPING AND CONTROL DIAGRAMS**

Approved: Project Director  
Approver

Project Title  
**VA HEALTH CARE SYSTEM**

Project Number  
438-16-104 2016.052

Building Number  
5

Drawing Number  
**M702**

Location  
VAS 438-16-104 BLDG. 5 CHAPEL  
SIOUX FALLS, SD 57105

Date  
2017.03.13

Checked  
AWS

Drawn  
MCB

OWNER

## PROJECT PLUMBING NOTES

- GENERAL PLUMBING NOTES:**
- PLUMBING CONTRACTOR SHALL SECURE AND PAY FOR ALL FEES AND PERMITS ASSOCIATED WITH HIS PORTION OF THE WORK.
  - EQUIPMENT, MATERIAL AND WORKMANSHIP TO BE WARRANTED FOR ONE YEAR MIN. FROM DATE OF SUBSTANTIAL COMPLETION EXCEPT WHERE NOTED AS MORE STRINGENT IN PROJECT MANUAL.
  - PLUMBING CONTRACTOR SHALL COORDINATE ALL ASPECTS OF WORK WITH OTHER TRADES PRIOR TO AND DURING CONSTRUCTION/INSTALLATION.
  - WORK PLANS TO BE CONSIDERED AS DIAGRAMMATIC AND ALONG WITH THE SPECIFICATIONS, REFLECT A MINIMUM ACCEPTABLE STANDARD. ALL WORK SHALL CONFORM TO THE INTERNATIONAL PLUMBING CODE, THE VETERANS AFFAIRS PLUMBING DESIGN MANUAL, AND THE AMERICANS WITH DISABILITIES ACT GUIDELINES.
  - PLUMBING CONTRACTOR SHALL FIELD VERIFY LOCATION AND SIZES OF EXISTING AND NEW SUPPLY AND DWV LINES AND FIELD CONDITIONS PRIOR TO STARTING WORK.
  - PRIOR TO ANY CORE DRILLING OR DESTRUCTIVE REMOVAL OF EXISTING FLOOR AREAS, PLUMBING CONTRACTOR SHALL ELECTRONICALLY SCAN FLOOR FOR POSSIBLE CONDUIT, PIPING OR ANCILLARY MATERIALS WHICH MAY BE ENCOUNTERED AND BRING POTENTIAL CONFLICTS TO THE ATTENTION OF THE ENGINEER WHERE IN CONFLICT WITH PLUMBING INSTALLATION.
  - WHEN A CONFLICT BETWEEN PLANS AND SPECIFICATIONS OR NOTES OCCURS, THE ENGINEER SHALL DECIDE WHICH GOVERNS, GENERALLY, THE MORE RESTRICTIVE, MORE SPECIFIC, OR STRICTER PROVISION SHALL GOVERN. IF ANY DISCREPANCIES ARE DISCOVERED ON THE PLANS OR BETWEEN THE PLANS AND THE SPECIFICATIONS, THE CONTRACTOR SHALL NOTIFY THE ENGINEER AND OBTAIN CLARIFICATION OF THE INTENT FROM THE ENGINEER PRIOR TO CONSTRUCTION OR INSTALLATION OF PROPOSED IMPROVEMENTS.
  - UNLESS OTHERWISE NOTED, ALL FLOOR DRAINS SHALL BE THREE (3") INCH IN SIZE.
  - SEE ARCHITECTURAL DRAWINGS FOR FIXTURE HEIGHTS AND ACCESSIBILITY REQUIREMENTS.
  - NOT ALL HANGER TYPES, LABEL DESIGNATIONS, OR LEGEND REFERENCES WILL NECESSARILY BE USED FOR THIS PROJECT. STANDARD INDUSTRY PRACTICE, SPECIFICATIONS, AND PLANS INDICATE THE MAGNITUDE OF APPLICATION.

- PIPING NOTES:**
- WHERE EXISTING PLUMBING SYSTEMS ARE MODIFIED OR WHERE NEW PLUMBING SYSTEMS INTERFACE WITH EXISTING SYSTEMS, THE PLUMBING CONTRACTOR SHALL CLEAN AND FLUSH THE EXISTING PIPING SYSTEM. CONTRACTOR SHALL ENSURE THAT DRAINAGE LINES ALLOW PROPER FLOWS AND LINE CARRY, BRING ANY UNRESOLVED ADVERSE CONDITIONS TO THE ATTENTION OF THE ON SITE REPRESENTATIVE.
  - FIXTURES AND ROUGH-IN FIXTURES SHALL BE COMPLETE WITH SUPPLY PIPES WITH STOPS, SUPPLIES AND STOPS TO BE CHROME PLATE ESCUTCHEONS. WHERE EXPOSED TO VIEW ESCUTCHEONS SHALL BE SET SCREW TYPE.
  - ACCESSIBLE SHUTOFF VALVES TO BE PROVIDED FOR EACH TOILET ROOM. PLUMBING CONTRACTOR TO PROVIDE 8"x6" (MIN.) ACCESS PANELS FOR SHUTOFF VALVES WHERE REQUIRED, COORDINATE TYPE AND FINISH WITH ARCHITECTURAL REQUIREMENTS.
  - ALL ABOVE CEILING ISOLATION/SHUT-OFF VALVES SHALL BE INSTALLED SUCH THAT THEY MAY BE EASILY SEEN & REACHED FROM FLOOR OR STEP LADDER.
  - PROVIDE SHOCK ARRESTORS PER FIXTURE GROUP AS RECOMMENDED BY PDI INSTITUTE AND MANUFACTURER.
  - INTERIOR WATER SUPPLY PIPING TO BE TYPE "L" COPPER WITH LEAD-FREE SOLDER JOINTS. SEE SCHEDULE FOR ADDITIONAL INFORMATION.
  - DRAIN, WASTE AND VENT PIPING TO BE NO-HUB CAST IRON. SEE PIPE SCHEDULE AND SPECIFICATIONS FOR ADDITIONAL INFORMATION.
  - PROVIDE CLEANOUTS AT BASE OF ALL DWV RISERS AND AS REQUIRED BY CODE, WHETHER OR NOT DIRECTLY (AS DWGS. CLARITY ALLOWS) INDICATED ON PLUMBING PLAN.
  - DRAINAGE (SANITARY) PIPE SHALL BE STANDARD, CODE APPROVED, DWV PATTERN FITTINGS WITH THE MINIMUM SIZE DRAINAGE PIPING BELOW FLOOR BEING 2". FOR SIZES SEE PLANS AND SCHEMATICS.
  - HUBLESS CAST IRON MUST BE SUPPORTED WITHIN 16" OF HUB COUPLING. ALL OTHER PIPING SHALL BE SUPPORTED AS NOTED IN SPECIFICATIONS UNLESS MORE STRINGENT SUPPORT IS REQUIRED BY MFR. SUPPORT ALL PLUMBING PIPING FROM ROOF/FLOOR STRUCTURAL MEMBERS OR STRUCTURAL WALLS ONLY, NOT CEILING. WHERE STRUCTURE SUPPORT FOR LONG VERTICAL RUNS IS NOT POSSIBLE, PIPING SHALL BE SUPPORTED AND BRACED AT UPPER DECK, FRAMING AND FLOOR. MULTIPLE VERTICAL PIPES SHALL ALSO BE SECURED TOGETHER AT INTERMEDIATE POINTS USING STRUT SUPPORT CHANNEL AND CLAMPS.
  - ROUTE WATER PIPING AS HIGH AS POSSIBLE, COORDINATE WITH OTHER TRADES AND OFFSET WHERE IN CONFLICT WITH HVAC AND ELECTRICAL TRADES.
  - DWV AND SUPPLY PIPING ROUTED THROUGH FINISHED AREAS SHALL BE CONCEALED ABOVE CEILING OR IN FURRED-OUT WALL. DWV AND SUPPLY PIPING SHALL NOT BE EXPOSED IN FINISHED AREAS.
  - PLUMBING CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ALL NECESSARY PIPE SLEEVES TO THE GENERAL CONTRACTOR & COORDINATING ALL PIPE SLEEVE LOCATIONS (ABOVE AND BELOW GRADE).
  - CONTRACTOR SHALL PROVIDE ALL DRAINAGE LINES FROM EQUIPMENT TO FLOOR DRAINS, FLOOR SINKS AND/OR HUB DRAINS. INSTALL DRAINAGE LINES WITH AN AIR GAP, A MINIMUM OF 2 TIMES THE DRAINAGE PIPE DIAMETER.
  - WHERE NEW PLUMBING VENTS THRU ROOF ARE PROVIDED, VENT TERMINALS SHALL BE A MINIMUM OF 12'-0" FROM ANY HVAC OUTDOOR AIR OPENINGS OR WINDOWS. VENT THRU ROOF SHALL BE PAINTED WITH 1 COAT OF WATER BASED LATEX EXTERIOR PAINT, AND SHALL MATCH ROOF COLOR.
  - PIPE PENETRATIONS THRU ROOF SHALL MEET THE REQUIREMENTS OF THE ROOFING MANUFACTURER'S ROOFING WARRANTY.
  - MEDICAL AIR AND OXYGEN PIPING NEEDS TO BE THOROUGHLY CLEANED AND FLUSHED PRIOR TO RETURNING THE SYSTEM TO OPERATION.
  - PROVIDE EXTENSIONS ON VALVES TO EXTEND VALVES HANDLES PAST THE INSULATION AND ALLOW PROPER OPERATION WITHOUT DAMAGING THE INSULATION.

- FINISH NOTES:**
- WHERE EXISTING PIPE INSULATION HAS BEEN REMOVED OR DAMAGED IN THE COURSE OF THIS PROJECT, THE CONTRACTOR SHALL REPLACE WITH LIKE KIND, INCLUDING ANY AND ALL TAPE, WIRES, BANDS AND APPURTENANCES.
  - PAINT ALL UNPAINTED/FERROUS FLOOR MOUNTED PLUMBING SUPPORTS, WITH A RUST INHIBITIVE PRIMER AND TWO COATS OF GRAY/BLACK ENAMEL OR ACRYLIC PAINT.
  - CONTRACTOR SHALL PROVIDE ALL FIRESTOPPING AND/OR ACOUSTICAL SEALANTS FOR PLUMBING PIPE PENETRATIONS THAT PENETRATE RATED AND SMOKE AND FIRE RATED ASSEMBLIES. SEE ARCHITECTURAL DRAWINGS FOR LOCATIONS OF ALL RATED ASSEMBLIES. ALL RATED PENETRATIONS SHALL BE ACOUSTICALLY SEALED AND/OR FIRESTOPPED TO ORIGINAL ASSEMBLY RATING. ALL NON-RATED FLOOR PENETRATIONS SHALL BE SEALED WATER TIGHT WITH A FLEXIBLE SEALANT.
  - PLUMBING CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CUTTING AND PATCHING AND SLEEVES REQUIRED FOR HIS TRADE. FLOORS, WALLS AND SURFACES SHALL BE RETURNED TO ORIGINAL CONDITION WHERE PENETRATED OR DAMAGED. FINAL FINISHES SHALL BE THE RESPONSIBILITY OF GENERAL CONTRACTOR.
  - THE PLUMBING CONTRACTOR SHALL PROVIDE ROOF PATCHING FOR ANY PLUMBING ROOF PENETRATIONS NOT SPECIFICALLY IDENTIFIED ON THE ARCHITECTURAL DRAWINGS. ALL PATCHING SHALL BE PERFORMED IN A MANNER CONSISTENT WITH THE ROOF SYSTEM WARRANTY REQUIREMENTS.
  - PLUMBING VENT THRU ROOF SHALL BE PAINTED WITH 1 COAT OF WATER BASED LATEX EXTERIOR PAINT, AND SHALL MATCH ROOF COLOR. EXCEPTION: WHERE ROOF IS BLACK IN COLOR, VENT PIPING SHALL BE PAINTED GREY.
  - PROVIDE CEILING TILE MARKERS INDICATING THE LOCATION OF ABOVE CEILING PLUMBING VALVES.

### GENERAL NOTES: (DWG P001 - P901)

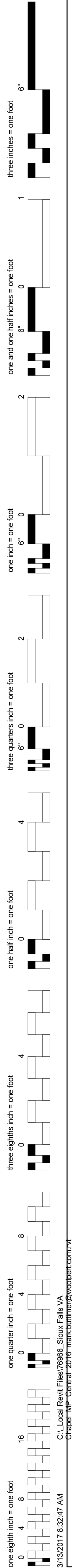
- NOT ALL HANGER TYPES, LABEL DESIGNATIONS, OR LEGEND REFERENCES WILL NECESSARILY BE USED FOR THIS PROJECT. STANDARD INDUSTRY PRACTICE, SPECIFICATIONS, AND PLANS INDICATE THE MAGNITUDE OF APPLICATION.
- PLUMBING PIPE, FITTINGS, VALVES, TRIM AND ETC. IN CONTACT WITH POTABLE WATER, SHALL BE MADE OF LEAD FREE MATERIALS IN COMPLIANCE WITH NSF/ANSI 61, SECTION 8 AND NSF/ANSI 372, IN CONFORMANCE WITH PUBLIC LAW 111-380 (S3874) ALSO KNOWN AS THE "REDUCTION IN LEAD IN DRINKING WATER ACT" EFFECTIVE JANUARY 4, 2014.

## PIPE SYMBOL LEGEND

	DOMESTIC COLD WATER (CW) PIPING
	DOMESTIC COLD WATER (CW) PIPING BELOW FLOOR
	DOMESTIC HOT WATER (HW) PIPING
	DOMESTIC HOT WATER (HW) PIPING BELOW FLOOR
	HEAT TRACED, DOMESTIC HOT WATER (HT) PIPING
	UNDERGROUND WATER SERVICE
	DOMESTIC TEMPERED WATER (T) PIPING
	DOMESTIC CIRCULATED HOT WATER (HWC) PIPING
	SANITARY WASTE/SEWER (SAN) PIPING
	SANITARY WASTE/SEWER (SAN) PIPING BELOW FLOOR
	STORM SEWER (SS) PIPING
	STORM SEWER (SS) PIPING BELOW FLOOR
	VENT (V) PIPING
	VENT (V) PIPING BELOW FLOOR
	ACID WASTE (AW) PIPING BELOW FLOOR - POLYPROPYLENE
	ACID WASTE (AW) PIPING BELOW FLOOR - CPVC (PLENUM RATED)
	ACID WASTE VENT (AWV) PIPING - CPVC (PLENUM RATED)
	SANITARY SEWER (GT) PIPING TO GREASE TRAP
	NATURAL GAS (G) PIPING
	COMPRESSED AIR (CIA) PIPING
	PIPE DOWN
	PIPE UP
	TEE DOWN
	TEE UP
	PIPE BREAK (FOR CLARITY)
	CAPPED PIPE
	GAS SHUT-OFF VALVE
	BALL VALVE
	BUTTERFLY VALVE
	UNION
	PRESSURE REGULATING VALVE
	GLOBE VALVE
	GATE VALVE
	STRAINER WITH BLOW DOWN VALVE
	STRAINER
	WALL CLEANOUT
	TEMPERATURE AND PRESSURE RELIEF VALVE
	CHECK VALVE
	SHOCK ARRESTER
	CALIBRATED BALANCE VALVE

PLBG ABBREVIATION LEGEND*	
ADA	AMERICANS WITH DISABILITIES ACT GUIDELINES
AFF	ABOVE FINISHED FLOOR
BFF	BELOW FINISHED FLOOR
BFP	BACKFLOW PREVENTER
CB	CATCH BASIN
CF	CUBIC FEET
CI	CAST IRON
CO	CLEANOUT
DBL-CHK	DOUBLE CHECK (BACKFLOW PREVENTER)
DDC	DOUBLE DETECTOR CHECK (BACKFLOW PREVENTER)
DS	DOWNSPOUT
DT	DILUTION TANK
DWV	DRAINWASTE/VENT
EWC	ELECTRIC WATER COOLER
FCO	FLOOR CLEANOUT
FD/CO	FLOOR DRAIN W/ CLEANOUT
FD	FLOOR DRAIN
FFD	FUNNEL FLOOR DRAIN
FS	FLOOR SINK
G	NATURAL GAS
GCO	GRADE CLEANOUT
GD	GARBAGE DISPOSAL
GPM	GALLONS PER MINUTE
GT	GREASE TRAP
IPC	INTERNATIONAL PLUMBING CODE
LAV	LAVATORY
MBH	1,000 BTUH
MS	MOP SINK
NT	NEUTRALIZATION TANK
OS	OIL SEPARATOR
PRV	PRESSURE REGULATING VALVE
PT	PLASTER TRAP
RD	ROOF DRAIN
RDO	ROOF DRAIN OVERFLOW
RI	ROUGH-IN
RPZ	REDUCED PRESSURE ZONE (BACKFLOW PREVENTER)
SK	SINK
TP	TEMPERATURE AND PRESSURE
TD	TRENCH DRAIN
TMV	THERMOSTATIC MIXING VALVE
TOJ	TOP OF JOIST
TOS	TOP OF STEEL
UR	URINAL
USB	UTILITY SERVICE BOX
VTR	VENT THRU ROOF
WC	WATER CLOSET
WCO	WALL CLEANOUT
WH	WATER HEATER
WHB	WALL HYDRANT HOSE BIBB
X	DESIGNATION FOR EXISTING EQUIPMENT/FIXTURE/PIPE
YCO	YARD CLEANOUT

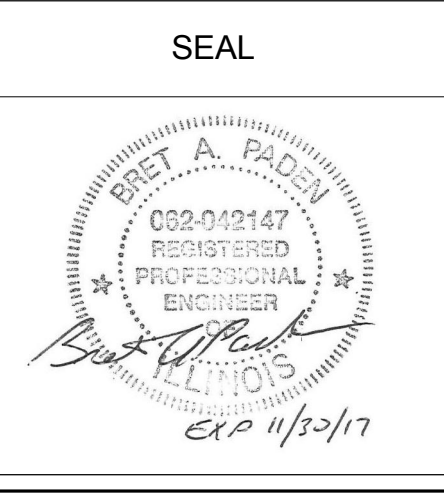
\* SEE PLUMBING SCHEDULES FOR ADDITIONAL KEY MARK (ABBREVIATIONS) OF FIXTURE CALLOUTS



**ENGINEERS/CONSULTANTS:**

WOOLPERT, INC. 343 FOUNTAINS PARKWAY SUITE 100 FAIRVIEW HEIGHTS, IL 62208 314-436-0865 314-436-0884 fax	SCI ENGINEERING, INC 130 POINT WEST BLVD. ST. CHARLES, MO 63301 636-949-8200 636-949-8269 fax
------------------------------------------------------------------------------------------------------------------------	-----------------------------------------------------------------------------------------------------------

FINAL SUBMITTAL FOR CONSTRUCTION



**ARCHITECT:**

**Chiodini**  
ARCHITECTS

Architecture / Interior Design / Graphics  
1401 S. Brentwood Blvd. / Suite 075 / St. Louis, Missouri 63144  
314-725-5588 / aro@chiodini.com

THE ARCHITECT EXPRESSLY RESERVES HIS COPYRIGHT AND STATUTORY LAW RIGHTS FOR THESE ARCHITECTURAL PLANS AND DOCUMENTS AND ANY DERIVATIVES THEREOF. THESE DRAWINGS AND DOCUMENTS ARE NOT TO BE REPRODUCED, CHANGED OR COPIED IN ANY MANNER WITHOUT THE EXPRESS WRITTEN CONSENT OF CHIODINI ARCHITECTS. PERMISSION IS NOT GRANTED TO ANY PARTY WITHOUT FIRST OBTAINING WRITTEN PERMISSION AND CONSENT.

Drawing Title  
**PLUMBING LEGENDS AND NOTES**

Approved: Project Director  
Approver

Project Title  
**VA HEALTH CARE SYSTEM**

Project Number  
438-16-104 2016.052

Building Number  
5

Location  
VAS 438-16-104 BLDG. 5 CHAPEL  
SIOUX FALLS, SD 57105

Date  
2017.03.13

Checked  
VAA

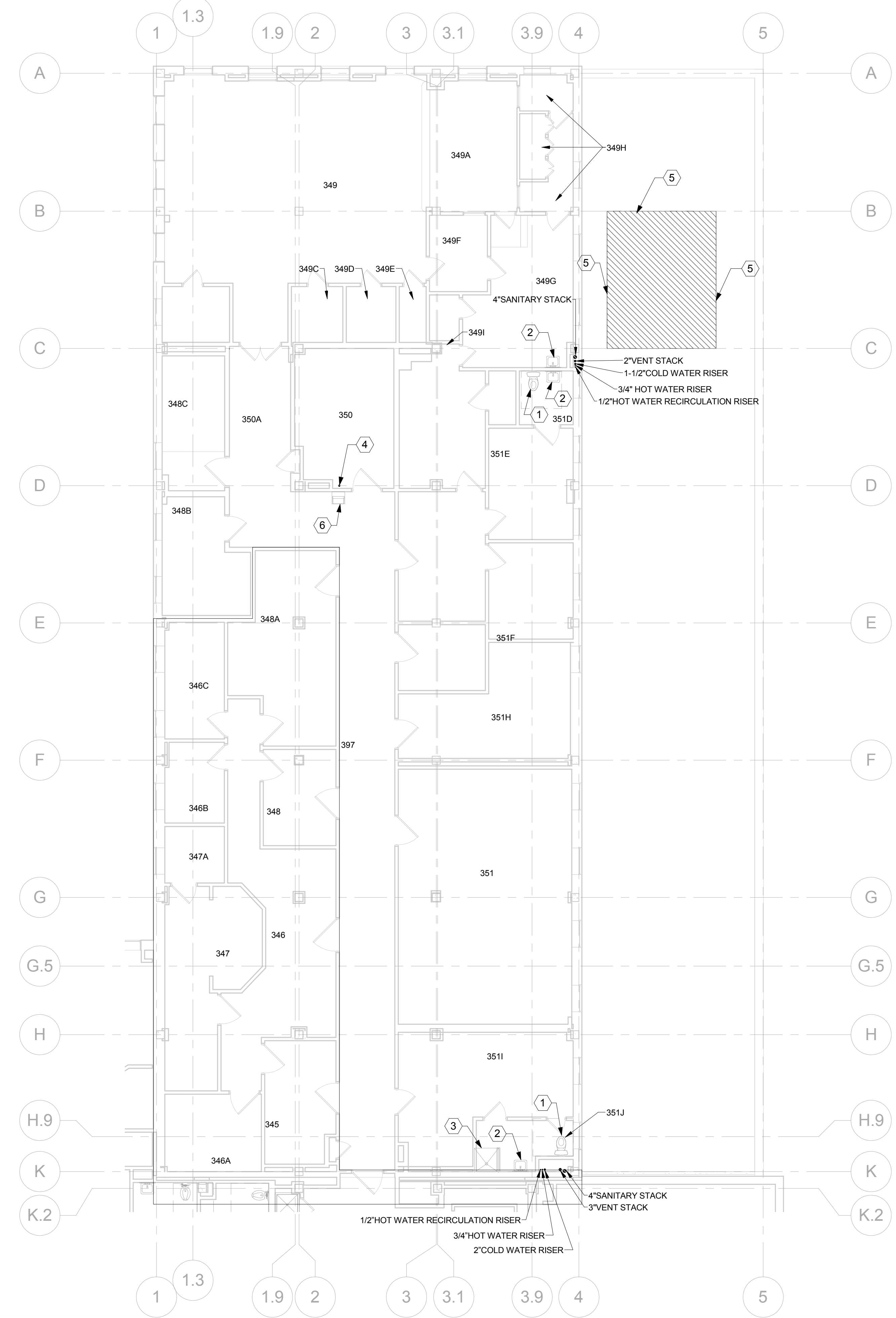
Drawn  
MFB

Drawing Number  
**P001**

**OWNER**

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

three inches = one foot  
one and one half inches = one foot  
one inch = one foot  
three quarters inch = one foot  
one half inch = one foot  
three eighths inch = one foot  
one quarter inch = one foot  
one eighth inch = one foot  
3/13/2017 8:32:59 AM  
C:\Local Revit Files\78961\_Sioux Falls VA  
ChangeSet\_Calendar\_2016\_mfrincmim@gorp.com



KEYED NOTES	
1	DEMOLISH AND LEGALLY DISPOSE OF THE EXISTING WALL HUNG WATER CLOSET, TRIM AND ASSOCIATED DWV AND SUPPLY PIPING. BELOW FLOOR SANITARY PIPING AND SUPPLY PIPING SHALL BE DEMOLISHED TO WITHIN 12" OF THE ACTIVE PIPING SYSTEM AND PREPARED FOR SUBSEQUENT CONNECTIONS. VENT PIPING SHALL BE DEMOLISHED AND ABANDONED AND CAPPED WITHIN WALL CAVITY.
2	DEMOLISH AND LEGALLY DISPOSE OF THE EXISTING WALL HUNG LAVATORY, TRIM AND ASSOCIATED DWV AND SUPPLY PIPING. BELOW FLOOR SANITARY PIPING AND SUPPLY PIPING SHALL BE DEMOLISHED TO WITHIN 12" OF THE ACTIVE PIPING SYSTEM AND PREPARED FOR SUBSEQUENT CONNECTIONS. VENT PIPING SHALL BE DEMOLISHED AND ABANDONED AND CAPPED WITHIN WALL CAVITY.
3	DEMOLISH AND LEGALLY DISPOSE OF THE EXISTING SHOWER, TRIM AND ASSOCIATED DWV AND SUPPLY PIPING. BELOW FLOOR SANITARY PIPING AND SUPPLY PIPING SHALL BE DEMOLISHED TO WITHIN 12" OF THE ACTIVE PIPING SYSTEM AND PREPARED FOR SUBSEQUENT CONNECTIONS. VENT PIPING SHALL BE DEMOLISHED AND ABANDONED AND CAPPED WITHIN WALL CAVITY.
4	DEMOLISH EXISTING COPPER SANITARY FROM EXISTING ELECTRIC WATER COOLER INTO EXISTING COPPER HUB DRAIN. PREPARE SANITARY PIPING FOR HARD CONNECTION UNDER THE MODIFICATION PORTION OF THIS PROJECT.
5	NEW ROOF TOP UNIT WILL BE INSTALLED. ANY VENT THROUGH ROOF'S WILL NEED TO BE RE-LOCATED. COORDINATE WITH MECHANICAL CONTRACTOR AND ENSURE THE NEW LOCATIONS ARE GREATER THAN 12 FOOT FROM SUPPLY AIR OPENING ON THE UNIT.
6	REMOVE AND TEMPORARILY STORE EXISTING ELECTRIC WATER COOLER. DWV AND SUPPLY PIPING SHALL BE ADJUSTED AS NECESSARY TO ACCOMMODATE THE SUBSEQUENT REINSTALLATION OF ELECTRIC WATER COOLER.

1 PLUMBING THIRD FLOOR DEMOLITION PLAN  
PD103 1/8" = 1'-0"

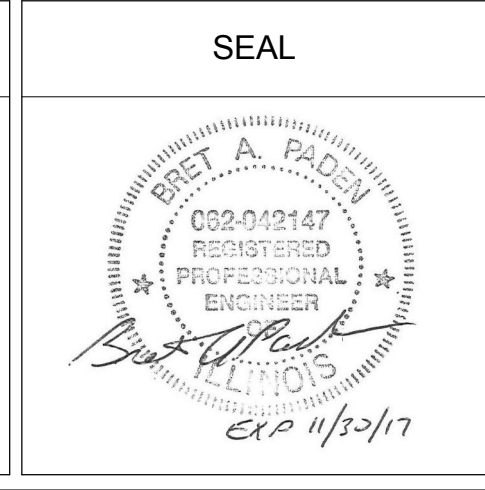
Revisions:	Date

**ENGINEERS/CONSULTANTS:**

WOOLPERT, INC.  
343 FOUNTAINS PARKWAY  
SUITE 100  
FAIRVIEW HEIGHTS, IL 62208  
314-436-0865  
314-436-0884 fax

SCI ENGINEERING, INC  
130 POINT WEST BLVD.  
ST. CHARLES, MO 63301  
636-949-8200  
636-949-8269 fax

FINAL SUBMITTAL FOR CONSTRUCTION



**ARCHITECT:**

*Chiodini*  
**ARCHITECTS**  
Architecture / Interior Design / Graphics  
1401 S. Brentwood Blvd. / Suite 575 / St. Louis, Missouri 63144  
314-725-5088 / arch@chiodini.com

Drawing Title  
**PLUMBING THIRD FLOOR DEMOLITION PLAN**

Approved: Project Director  
Approver

Project Title VA HEALTH CARE SYSTEM		Project Number 438-16-104 2016.052	OWNER
Location VAS 438-16-104 BLDG. 5 CHAPEL SIOUX FALLS, SD 57105		Building Number 5	
Date 2017.03.13	Checked VAA	Drawn MFB	Drawing Number <b>PD103</b>

A

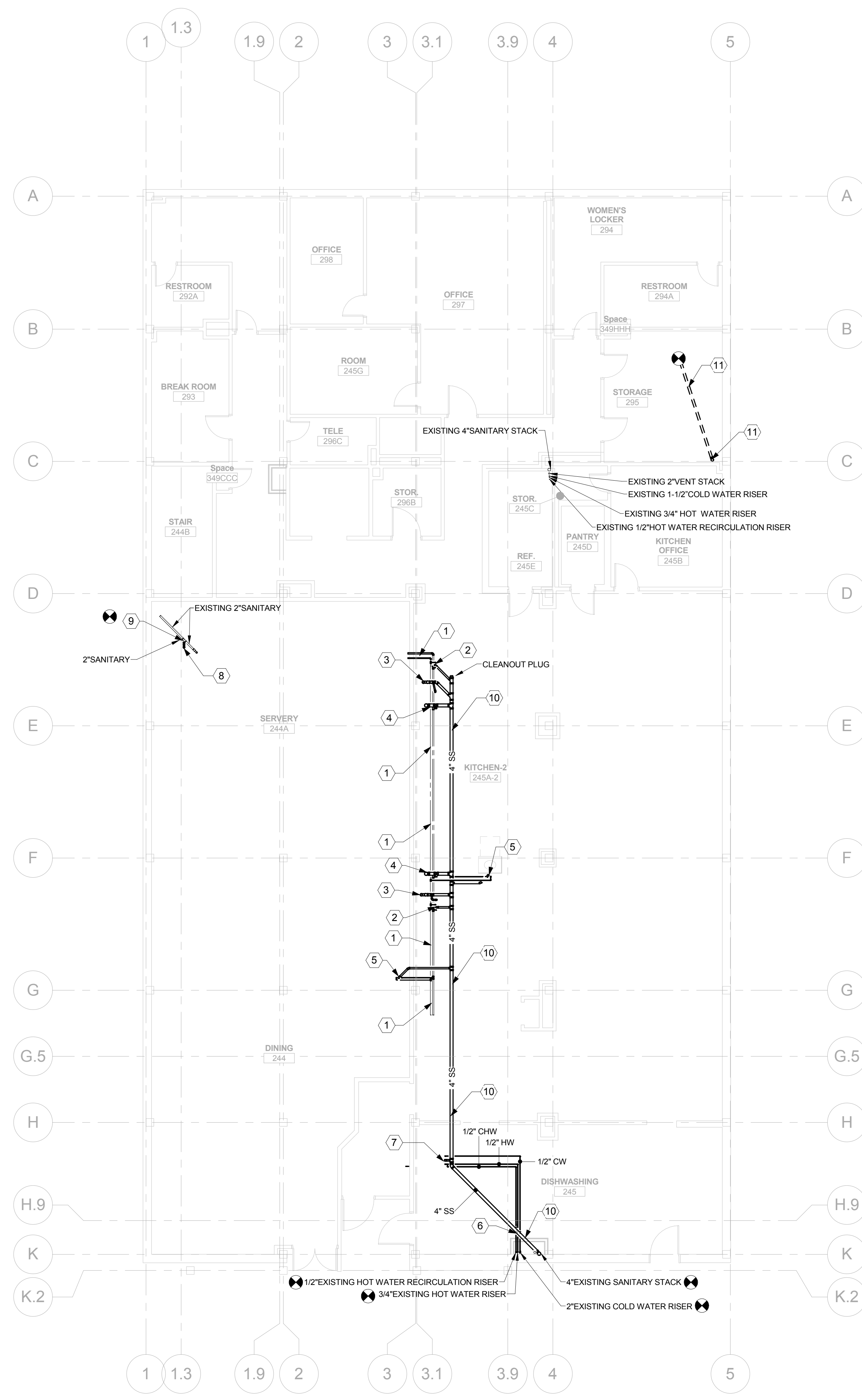
B

C

D

E

F



- ### GENERAL NOTES
- SEE DRAWING P001 FOR PROJECT NOTES AND SPECIFICATIONS FOR ADDITIONAL CONTRACTOR INFORMATION.
  - IN GENERAL, COLD AND HOT WATER PIPING AND SANITARY PIPING ARE LOCATED ABOVE CEILING ON THE SECOND FLOOR AND IN CHASE/WALL CAVITIES. VENT PIPING IN GENERAL IS LOCATED ABOVE CEILING ON THE THIRD FLOOR AND IN CHASE/WALL CAVITIES. EXCEPTIONS AS NOTED IN PLANS.
  - SEE ARCHITECTURAL DRAWINGS FOR ELEVATIONS AND FIXTURE HEIGHT REQUIREMENTS.
  - THIS CONTRACTOR SHALL BE RESPONSIBLE FOR ALL WALL/FLOOR/CEILING ROOF CUTTING AND PATCHING AS REQUIRED FOR THIS TRADE (PLUMBING) WORK.
  - FINAL FINISHES SHALL BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR.
  - WHERE EXISTING PLUMBING SYSTEMS ARE MODIFIED OR WHERE NEW PLUMBING SYSTEMS INTERFACE WITH EXISTING SYSTEMS, THE PLUMBING CONTRACTOR SHALL CLEAN AND FLUSH THE EXISTING PLUMBING LINES AS REQUIRED TO ENSURE PROPER FLOWS AND/OR LINE CARRY.
  - DURING THE COURSE OF DEMOLITION WORK, THE CONTRACTOR SHALL KEEP IN MIND THE POSSIBILITY OF FUTURE RECONNECTION OR EXTENSION OF THE EXISTING PLUMBING SYSTEMS AND ITS COMPONENTS.
  - COORDINATE WITH THE MECHANICAL CONTRACTOR, ELECTRICAL CONTRACTOR AND SPRINKLER CONTRACTOR PRIOR TO AND DURING THE DEMOLITION OF PLUMBING SYSTEMS AND COMPONENTS THAT MAY HAVE APPLICATIONS INVOLVING THESE TRADES.

### KEYED NOTES

Key	Description
1	EXISTING 1" HOT WATER PIPING AND EXISTING 2" COLD WATER PIPING IN SECOND FLOOR CEILING.
2	1/2" HOT AND COLD WATER PIPING UP TO NEW LAVATORY ON THIRD FLOOR. 2" SANITARY PIPING DOWN FROM NEW LAVATORY ON THIRD FLOOR.
3	3" SANITARY PIPING DOWN FROM NEW FLOOR DRAIN ON THIRD FLOOR.
4	1-1/4" COLD WATER PIPING UP TO NEW WATER CLOSET ON THIRD FLOOR. 4" SANITARY DOWN FROM NEW WATER CLOSET ON THIRD FLOOR.
5	1/2" HOT AND COLD WATER PIPING UP TO NEW SINK ON THIRD FLOOR. 2" SANITARY PIPING DOWN FROM NEW SINK ON THIRD FLOOR.
6	INSTALL NEW ISOLATION BALL VALVES WITHIN 24" OF THE EXISTING RISERS. INSTALL NEW CIRCUIT SETTER SET TO 5 GPM IN NEW 1/2" HOT WATER RECIRCULATION PIPING. LEAVE ISOLATION VALVES CLOSED UNTIL FUTURE SINK IS INSTALLED TO PREVENT DEAD-END RUNS.
7	PROVIDE ROUGH-IN FOR FUTURE SINK ROUTE. 1/2" HOT AND COLD WATER UP FROM SECOND FLOOR AND 2" SANITARY DOWN TO SECOND FLOOR.
8	2" SANITARY DOWN FROM MOP SINK ON THIRD FLOOR.
9	INSTALL NEW MOP SINK AND ANCILLARY TRIM AS SCHEDULED. MOP SINK SHALL HAVE HIGH QUALITY BASKET STRAINER. CLEAN AND ROD EXISTING SANITARY PIPING PRIOR TO CONNECTING MOP SINK INTO EXISTING SYSTEM.
10	WHEN ROUTING, KEEP SANITARY PIPING AS HIGH AS POSSIBLE.
11	NEW ROOF TOP UNIT WILL BE INSTALLED. ANY VENT THROUGH ROOF'S WILL NEED TO BE RELOCATED. COORDINATE WITH MECHANICAL CONTRACTOR AND ENSURE THE NEW LOCATIONS ARE GREATER THAN 12 FOOT FROM SUPPLY AIR OPENING ON THE UNIT.

three inches = one foot  
 one and one half inches = one foot  
 one inch = one foot  
 three quarters inch = one foot  
 one half inch = one foot  
 three eighths inch = one foot  
 one quarter inch = one foot  
 one eighth inch = one foot

1 P102 PLUMBING SECOND FLOOR PLAN  
 1/8" = 1'-0"

Scale: 1/8" = 1'-0"

**ENGINEERS/CONSULTANTS:**  
 WOOLPERT, INC.  
 343 FOUNTAINS PARKWAY  
 SUITE 100  
 FAIRVIEW HEIGHTS, IL 62208  
 314-436-0865  
 314-436-0884 fax

SCI ENGINEERING, INC  
 130 POINT WEST BLVD.  
 ST. CHARLES, MO 63301  
 636-949-8200  
 636-949-8269 fax

SEAL  
 FINAL SUBMITTAL FOR CONSTRUCTION

**ARCHITECT:**  
**Chiodini**  
 ARCHITECTS  
 Architecture / Interior Design / Graphics  
 1401 S. Brentwood Blvd. / Suite 575 / St. Louis, Missouri 63144  
 314-725-5588 / arch@chiodini.com

Drawing Title  
**PLUMBING SECOND FLOOR PLAN**

Approved: Project Director  
 Approver

Project Title  
**VA HEALTH CARE SYSTEM**

Location  
 VAS 438-16-104 BLDG. 5 CHAPEL  
 SIOUX FALLS, SD 57105

Project Number  
 438-16-104 2016.052

Building Number  
 5

Drawing Number  
**P102**

Date  
 2017.03.13

Checked  
 VAA

Drawn  
 MFB

OWNER