

DEPARTMENT OF VETERANS AFFAIRS MEDICAL CENTER - WADE PARK
 10701 EAST BLVD. CLEVELAND, OH. 44106

Remove Surgery Clean Steam System
 PROJECT NO. 541-17-520

Veterans Administration Medical Center



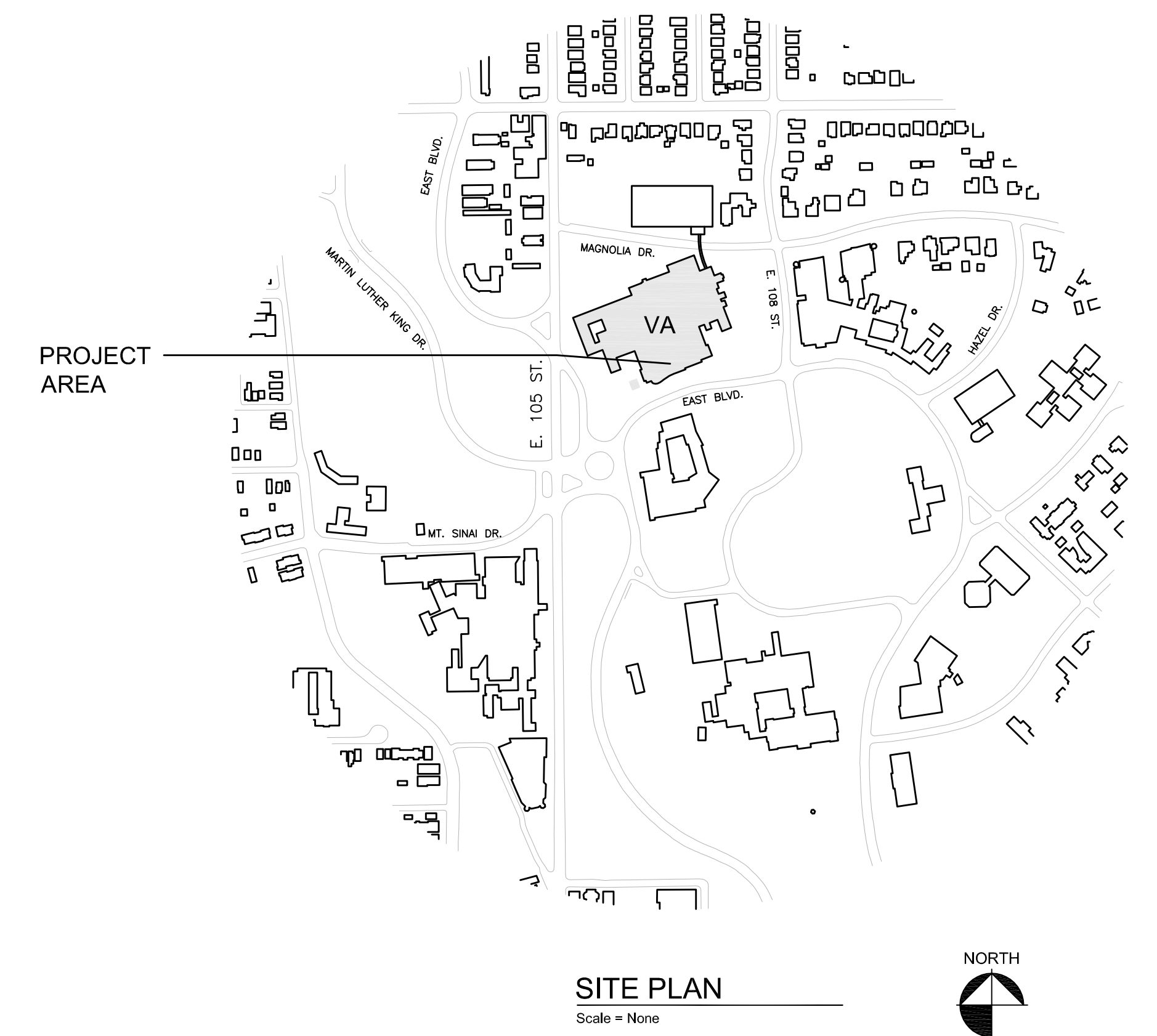
DRAWING INDEX

1-X1 COVER SHEET

MECHANICAL

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CONSTRUCTION DOCUMENTS
 August 24, 2016



Fredrick, Fredrick & Heller Engineers

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APPROVALS	DATE	APPROVALS	DATE	APPROVALS	DATE	Drawing Title	Project Title	Date	Office of Facilities Management
DIRECTOR 00		CHIEF Planning and Construction		FACILITY MANAGER		COVER SHEET	REMOVE SURGERY CLEAN STEAM SYSTEM	08-24-16	
ASSOCIATE DIRECTOR 00A (B)		CHIEF, Occupational Health & Safety		SHOP FOREMAN 138		Approved: Division Chief	Building Number 1	Checked LDH	
CHIEF, ENGINEERING 138		CHIEF, IRM				Approved: Service Director	Drawn LDH	DRAWING NO. 1-X1	
Revisions						Location 10701 EAST BLVD. CLEVELAND, OHIO		Dwg. Of	

MECHANICAL SPECIFICATIONS:

IDENTIFICATION:

- A. VALVES SHALL BE TAGGED WITH A BRASS OR PLASTIC TAG. NEW VALVES SHALL BE TAGGED IN SEQUENCE FROM EXISTING VALVE NUMBERS. UPDATE EXISTING VALVE CHARTS AND RECORD NEW VALVE NUMBERS AND LOCATIONS ON THE AS-BUILT DRAWINGS.
- B. LABEL ALL NEW PIPING. PIPE LABELING SHALL MATCH EXISTING FACILITY STANDARD.

PIPING MATERIAL:

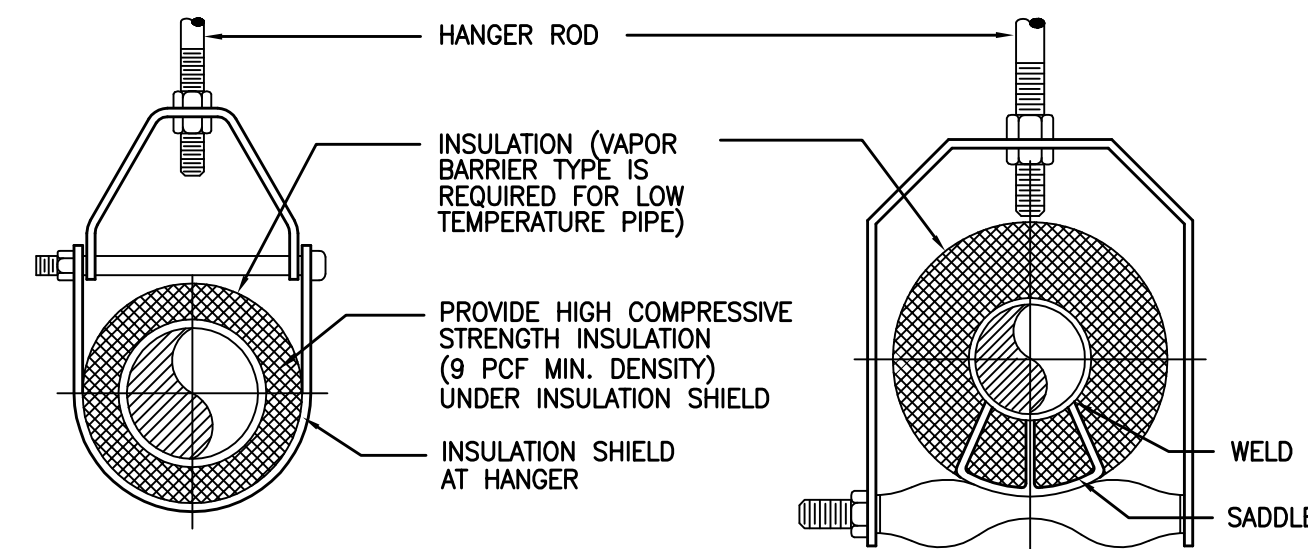
- A. STEAM PIPING SHALL BE SCHEDULE 40 BLACK STEEL WITH THREADED JOINTS. STEAM CONDENSATE PIPING SHALL BE SCHEDULE 80 BLACK STEEL WITH THREADED JOINTS.

PIPING INSTALLATION:

- A. ALL WATER OR STEAM PIPING SHALL BE INSTALLED WITH A PITCH IN THE DIRECTION OF FLOW. IT MUST BE POSSIBLE TO DRAIN EVERY PORTION OF THE PIPING SYSTEM.
 - B. UNIONS OR COMPANION FLANGES SHALL BE INSTALLED IN ALL CONNECTIONS TO EQUIPMENT, AUTOMATIC VALVES, ETC., AS NECESSARY TO PERMIT REMOVAL OF EQUIPMENT AND SPECIALTIES FOR SERVICING, REPAIRING OR CLEANING. VALVES SHALL BE PROVIDED IN SUITABLE LOCATIONS AT EACH ITEM OF EQUIPMENT, BRANCH CIRCUIT, RISER, OR SECTION OF PIPING AS INDICATED OR REQUIRED FOR PROPER AND SAFE OPERATION OF THE SYSTEM AND TO FACILITATE MAINTENANCE AND/OR REMOVAL OF ALL EQUIPMENT AND APPARATUS.
 - C. ALL HANGERS, BRACKETS, CLAMPS, ETC., SHALL BE OF STANDARD WEIGHT STEEL. PERFORATED STRAP HANGERS SHALL NOT BE USED IN ANY WORK. WHEN TWO OR MORE PIPES ARE RUN PARALLEL, THEY MAY BE SUPPORTED ON CHANNEL TYPE, TRAPEZE HANGERS. INDIVIDUAL HANGERS FOR PIPE THREE INCHES (3") IN SIZE AND SMALLER SHALL BE CLEVIS TYPE. EACH HANGER, REGARDLESS OF SIZE OR TYPE, IS TO BE SIZED TO INCLUDE PIPE INSULATION SADDLE. HANGER SPACING AND ROD SIZING FOR VARIOUS PIPE DIAMETERS IS AS FOLLOWS:
- | PIPE DIAMETER | ROD DIAMETER | SPACING |
|------------------|--------------|---------|
| 1/2" TO 1" | 3/8" | 7' |
| 1-1/4" TO 1-1/2" | 3/8" | 9' |
| 2" TO 3" | 1/2" | 10' |
| 4" TO 6" | 3/4" | 14' |
- D. NO PIPING IS TO BE SUPPORTED BY, OR IMPOSE A LOAD UPON THE EQUIPMENT TO WHICH IT IS CONNECTED.

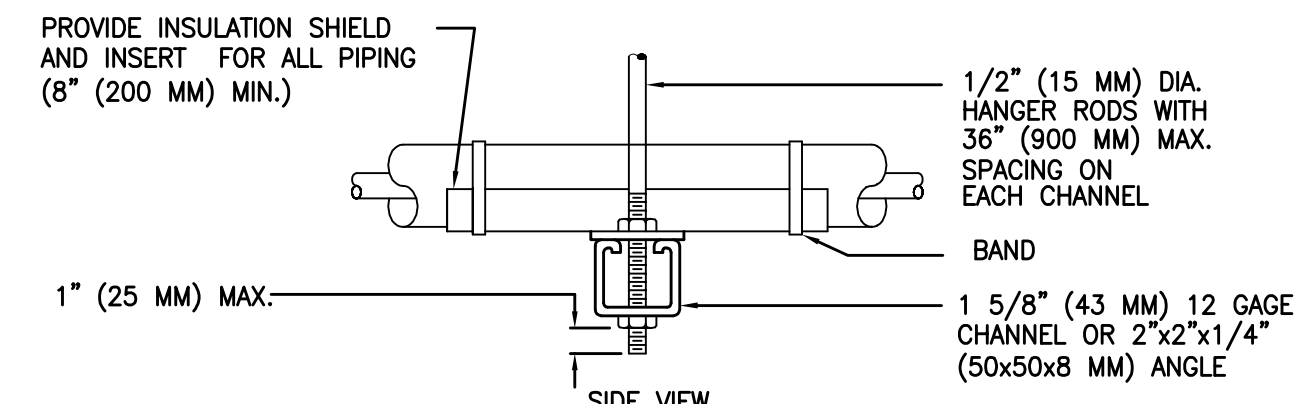
MECHANICAL INSULATION

- A. NEW STEAM PIPE SHALL BE INSULATED WITH CELLULAR GLASS OR MINERAL FIBER INSULATION, THREE (3) INCH THICK, WITH ASJ VAPOR BARRIER JACKET. SEAL ALL JOINTS WITH PRESSURE SENSITIVE, VAPOR BARRIER TAPE SECURED WITH INSULATING STAPLES. COVER FITTINGS WITH FIBERGLASS WRAP AND PVC OR PREMOLDED COVERS.



ADJUSTABLE CLEVIS HANGER
TYPE 1 - SEE SPECIFICATIONS

ADJUSTABLE CLEVIS HANGER
TYPE 43 - SEE SPECIFICATIONS



TYPICAL PIPE HANGERS
NTS

		MAXIMUM PIPE/TUBING SUPPORT SPACING											
NOM. SIZE, IN. (MM)	THRU (20)	3/4	1	1 1/4	1 1/2	2	2 1/2	3	4	5	6	8	
		(25)	(32)	(40)	(50)	(65)	(75)	(100)	(125)	(150)	(200)		
PIPE	FT. (M)	7	7	7	8	10	11	12	14	16	17	19	
TUBING	FT. (M)	5 FT (1.5)	6	7	8	8	8	9	10	12	13	14	16
			(1.8)	(2.1)	(2.4)	(2.4)	(2.7)	(3.0)	(3.7)	(4.0)	(4.1)	(4.9)	

NOTE: FOR TRAPEZE HANGER TAKE SPACING OF SMALLEST SIZE ON TRAPEZE.

GENERAL NOTES:

- A. MECHANICAL CONTRACTOR SHALL FIELD VERIFY ALL PIPE ROUTINGS PRIOR TO COMMENCEMENT OF CONSTRUCTION. NOTIFY ENGINEER OF ANY CONDITIONS WHICH WILL NOT PERMIT THE WORK TO BE PERFORMED AS INDICATED ON THESE DRAWINGS.
- B. COORDINATE ALL SHUT-DOWNS OF EXISTING MECHANICAL SYSTEMS WITH OWNER IN ADVANCE. ALL DEMOLITION AND NEW CONNECTIONS TO STEAM SYSTEM SHALL BE SCHEDULED FOR A SINGLE SHUTDOWN.
- C. PRIOR TO INSTALLATION, VERIFY PRECISE LOCATION OF NEW WALL MOUNTED DEVICES WITH OWNER AND ARCHITECT.
- D. PROVIDE ADEQUATE SERVICE CLEARANCE FOR ALL MECHANICAL EQUIPMENT AND VALVING.
- E. NEW PIPING SHALL NOT BE ROUTED ABOVE ELECTRICAL PANELS.
- F. NO TEMPERATURE SENSING CONTROL DEVICES SHALL BE LOCATED OVER HEAT PRODUCING DEVICES.
- G. WHERE EQUIPMENT IS TO BE REMOVED, REMOVE ALL ASSOCIATED PIPING, CONTROLS, CONCRETE PADS, SUPPORTS, ETC. PATCH WALL AND FLOOR OPENINGS TO MATCH ADJACENT SURFACES.

MECHANICAL SYMBOLS:

ABBREVIATIONS:

- AC AIR CONDITIONING UNIT
- AD ACCESS DOOR
- AFF ABOVE FINISHED FLOOR
- AHU AIR HANDLING UNIT
- AP ACCESS PANEL
- CF CENTRIFUGAL FAN
- CD COOLING COIL CONDENSATE DRAIN
- CO CLEAN OUT
- CP CONDENSATE PUMP
- COR CONTRACTING OFFICER'S TECHNICAL REPRESENTATIVE
- CFM CUBIC FEET PER MINUTE
- CUH CABINET UNIT HEATER
- CW COLD WATER
- Db DRY BULB TEMPERATURE
- DDC DIRECT DIGITAL CONTROL
- dB DECIBELS
- Dp DEW POINT TEMPERATURE
- DX DIRECT EXPANSION
- EA EXHAUST AIR
- EF EXHAUST FAN
- ET EXPANSION TANK
- EX EXISTING
- FC FORWARD CURVED FAN
- FSD FLOOR DRAIN
- FD FLOOR DRAIN
- FD COMBINATION FIRE/SMOKE DAMPER
- GH HOT GLYCOL WATER HEATING SUPPLY
- GHR HOT GLYCOL WATER HEATING RETURN
- GPM GALLONS PER MINUTE
- GR GLYCOL WATER RUN-AROUND SUPPLY
- GRR GLYCOL WATER RUN-AROUND RETURN
- GV GRAVITY VENTILATOR
- HC HEATING COIL
- HP HORSEPOWER
- HV HEATING AND VENTILATING UNIT
- HX HEAT EXCHANGER
- HZ ZONE HUMIDIFIER
- MAX. MAXIMUM
- MIN. MINIMUM
- N.T.S. NOT TO SCALE
- NOM. NOMINAL
- OA OUTDOOR AIR
- P PUMP
- PD PRESSURE DROP
- PF PRE-FILTER
- PH PREHEAT
- RA RETURN AIR
- RD ROOF DRAIN
- REA RELIEF AIR
- RH REHEAT COIL
- RH RELATIVE HUMIDITY
- RWC RAINWATER CONDUCTOR
- SA SUPPLY AIR
- Sp. Gr. SPECIFIC GRAVITY
- SP STATIC PRESSURE
- SPS STATIC PRESSURE SENSOR
- SS STAINLESS STEEL
- TOP TEMPERATURE CONTROL PANEL
- VAV VARIABLE AIR VOLUME TERMINAL BOX
- VD VOLUME DAMPER
- VFD VARIABLE FREQUENCY DRIVE
- Wb WET BULB TEMPERATURE
- X EXISTING
- XR EXISTING TO BE RELOCATED
- XRL EXISTING TO BE RELOCATED

HVAC PIPING:

- HPS- HIGH PRESSURE STEAM
- HPR- HIGH PRESSURE STEAM CONDENSATE
- LPS- LOW PRESSURE STEAM
- LPR- LOW PRESSURE STEAM CONDENSATE
- HHWS- HEATING HOT WATER SUPPLY
- HHWR- HEATING HOT WATER RETURN
- CHWS- CHILLED WATER SUPPLY
- CHWR- CHILLED WATER RETURN
- D- DRAIN
- V- VENT LINE
- STM- STORM WATER
- SAN- SANITARY WASTE
- CW- DOMESTIC COLD WATER SUPPLY
- HW- DOMESTIC HOT WATER SUPPLY
- HWR- DOMESTIC HOT WATER RETURN
- S- SHUTOFF VALVE
- S- SHUTOFF VALVE IN VERTICAL PIPE
- C- CHECK VALVE
- U- UNION
- R- REDUCER OR INCREASER
- P- PIPE TRANSITION
- E- ECCENTRIC REDUCER
- T- TOP CONNECTION, 45° OR 90°
- B- BOTTOM CONNECTION, 45° OR 90°
- S- SIDE CONNECTION
- >- DIRECTION OF FLOW
- S- STRAINER
- B- BALANCING VALVE
- F- FLOAT & THERMOSTATIC STEAM TRAP SET INCLUDING PIPING ACCESSORIES
- I- INVERTED BUCKET STEAM TRAP SET INCLUDING PIPING ACCESSORIES
- G- GAUGE PORT (PETE'S PLUG)
- 3- 3-WAY CONTROL VALVE
- 2- 2-WAY CONTROL VALVE
- P- PRESSURE GAUGE
- L- LOCAL DRAIN, VALVED WITH 3/4" THREADED CONNECTOR
- NO NORMALLY OPEN
- NC NORMALLY CLOSED
- MAV MANUAL AIR VENT
- P- PRESSURE RELIEF VALVE

CONTROL SYMBOLS:

- [T] TEMPERATURE SENSOR
- [H] HUMIDITY SENSOR
- [S] SENSOR

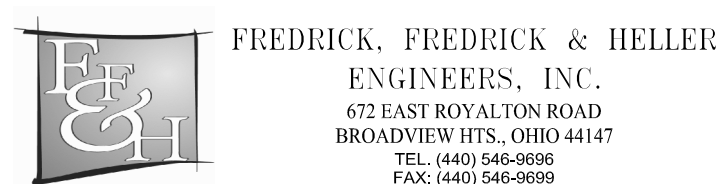
CALL OUTS:

- # REFERENCE TO CODED NOTE

GENERAL SYMBOLS:

- EXISTING TO REMAIN
- EXISTING TO BE REMOVED

CONSULTANTS:



ARCHITECT:



Drawing Title
MECHANICAL SYMBOLS, DETAILS, AND NOTES

Approved: Project Director

Project Title
REMOVE SURGERY CLEAN STEAM SYSTEM

Location
VAMC - WADE PARK

Date: 08/24/2016
Checked: LDH
Drawn: LDH

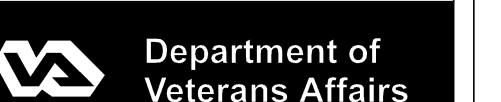
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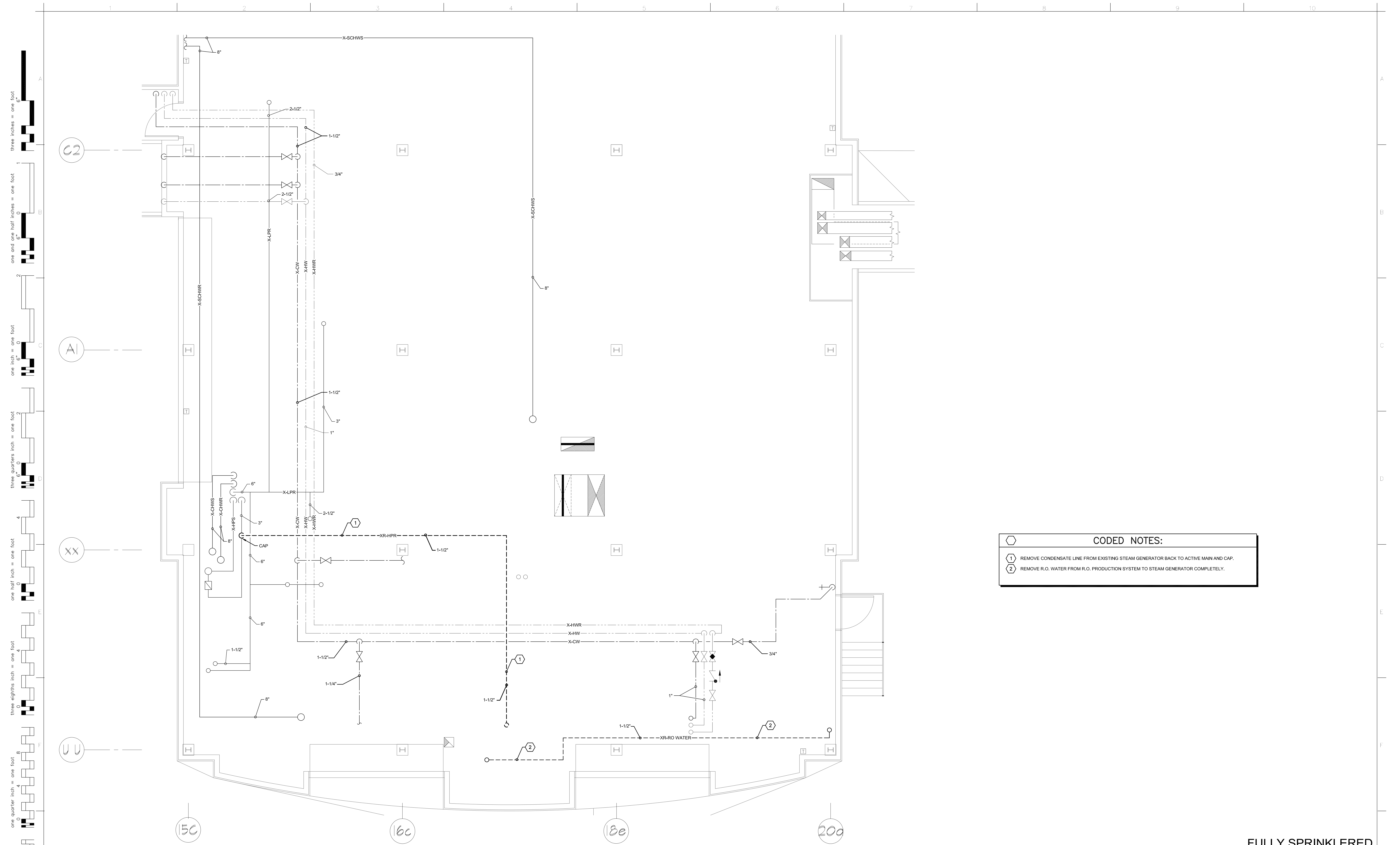
Building Number
1

Drawing Number
1-M1

Dwg. of

Office of Facilities Management






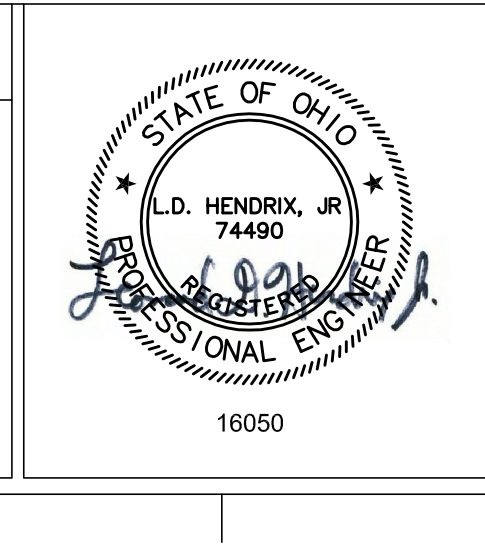
CODED NOTES:	
①	REMOVE CONDENSATE LINE FROM EXISTING STEAM GENERATOR BACK TO ACTIVE MAIN AND CAP.
②	REMOVE R.O. WATER FROM R.O. PRODUCTION SYSTEM TO STEAM GENERATOR COMPLETELY.

CD Submission	08/24/16
Revisions:	Date:

CONSULTANTS:



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ARCHITECT:

Drawing Title
**PENTHOUSE INTERSTITIAL SPACE
MECHANICAL PLAN**

Approved: Project Director

Project Title
**REMOVE SURGERY CLEAN
STEAM SYSTEM**

Location
VAMC - WADE PARK

Date	Checked	Drawn
08/24/2016	LDH	LDH


Project Number
541-17-520

Building Number
1

Drawing Number
1-M2

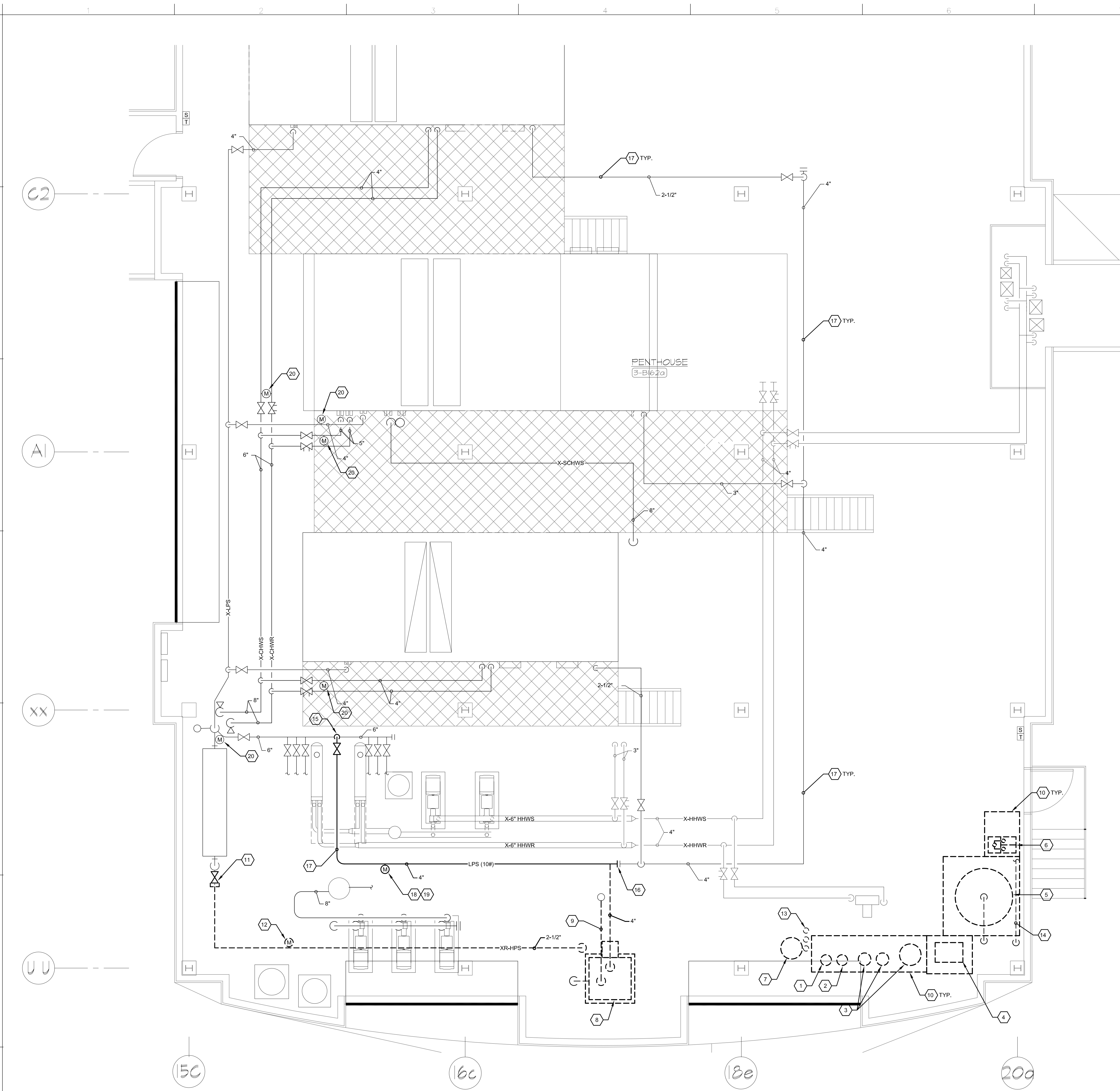
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**Office of
Facilities
Management**



Department of
Veterans Affairs

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



- CODED NOTES:**
- 1 REMOVE EXISTING AUTOMATIC DEPTH FILTER.
 - 2 REMOVE EXISTING AUTOMATIC CARBON FILTER.
 - 3 REMOVE EXISTING DUPLEX AUTOMATIC WATER SOFTENER (CONDITIONER AND BRINE TANK).
 - 4 REMOVE EXISTING REVERSE OSMOSIS SYSTEM. REMOVE ASSOCIATED POWER, CONTROLS, WIRING, DISCONNECT, ETC. COMPLETELY.
 - 5 REMOVE EXISTING R.O. WATER STORAGE TANK. REMOVE ASSOCIATED PIPING (OVERFLOW, ETC.). BREAK DOWN TANK AS NECESSARY TO REMOVE COMPLETELY.
 - 6 REMOVE EXISTING R.O. WATER TRANSFER PUMPS. REMOVE ASSOCIATED POWER, CONTROLS, WIRING, DISCONNECT, ETC. COMPLETELY.
 - 7 REMOVE EXISTING BUFFER TANK AND PUMP COMPLETELY. REMOVE ASSOCIATED POWER, CONTROLS, WIRING, ETC. COMPLETELY.
 - 8 REMOVE EXISTING STEAM GENERATOR COMPLETELY. REMOVE ASSOCIATED POWER, CONTROLS, PIPING, WIRING, CONCRETE PAD, ETC. COMPLETELY.
 - 9 REMOVE STEAM VENT UP TO ROOF. CAP VENT PIPE ABOVE AND BELOW ROOF.
 - 10 REMOVE EXISTING CONCRETE HOUSEKEEPING PAD COMPLETELY.
 - 11 REMOVE 3" HPS TO POINT INDICATED. PROVIDE A SHUTOFF VALVE AND FLANGED CAP AT POINT OF DEMOLITION.
 - 12 EXISTING STEAM METER TO BE RELOCATED. DISCONNECT POWER AND CONTROLS AND EXTEND TO NEW LOCATION. REFER TO CODED NOTE #18 FOR NEW LOCATION.
 - 13 REMOVE DOMESTIC WATER LINES BACK TO VALVING AND CAP. RECIRCULATION SHALL REMAIN ACTIVE.
 - 14 REMOVE R.O. WATER LINE FROM PUMPS TO STEAM GENERATOR COMPLETELY. PIPING ROUTES BELOW FLOOR.
 - 15 CONNECT NEW 4" LPS INTO EXISTING 6" LPS MAIN AT APPROXIMATE LOCATION. PROVIDE SHUT-OFF VALVE AT POINT OF CONNECTION.
 - 16 REMOVE EXISTING 4" STAINLESS STEEL CLEAN STEAM PIPING TO POINT INDICATED. RECONNECT STEAM PIPING TO NEW 4" LPS.
 - 17 RE-LABEL STEAM PIPING TO HUMIDIFIERS AS 'LPS' OR 'LOW PRESSURE STEAM'.
 - 18 RELOCATED STEAM METER. EXTEND POWER AND CONTROL WIRING TO NEW LOCATION. INSTALL PER MANUFACTURER'S RECOMMENDATIONS.
 - 19 RELOCATED STEAM METER SHALL BE WIRED TO EXISTING SMART BUILDING TRIDIUM IP NETWORK. PROGRAM DATA COLLECTION POINTS INTO TRIDIUM WORKSTATION IN EXISTING MECHANICAL ROOM BE260.
 - 20 EXISTING METER SHALL BE WIRED TO EXISTING SMART BUILDING TRIDIUM IP NETWORK. PROGRAM DATA COLLECTION POINTS INTO TRIDIUM WORKSTATION IN EXISTING MECHANICAL ROOM BE260.

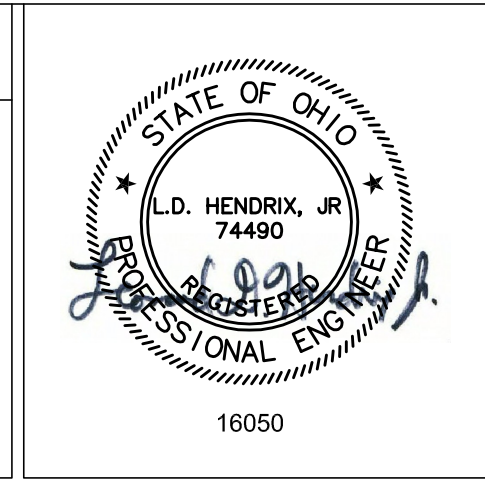
- GENERAL NOTES:**
- A. ALL INDICATED METERS SHALL HAVE POINTS RELAYED TO SMART BUILDING TRIDIUM CONTROL SYSTEM WORKSTATION.
 - B. TEST ALL EXISTING CONTROL VALVES (2-POSITION SHUT-OFF AND MODULATION CONTROL) ON HUMIDIFIER BRANCH LINES FEEDING EACH AIR HANDLING UNIT. CONFIRM OPERATION OF VALVES AND CONTROLS PRIOR TO ACTIVATION OF STEAM.
 - C. CLEAN ALL STRAINERS IN STEAM AND CONDENSATE LINES FEEDING HUMIDIFIERS PRIOR TO ACTIVATION.
 - D. CLEAN AND INSPECT HUMIDIFIER DISTRIBUTOR TUBES WITHIN AIR HANDLING UNIT.

FULLY SPRINKLERED

CD Submission	08/24/16
Revisions:	Date:

CONSULTANTS:

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PENTHOUSE MECHANICAL PLAN

Approved: Project Director

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REMOVE SURGERY CLEAN STEAM SYSTEM

Location
VAMC - WADE PARK

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Department of Veterans Affairs