REPLACE HOSPITAL STEAM HEATING SYSTEMS

DEPARTMENT OF VETERANS AFFAIRS MEDICAL CENTER
3200 VINE STREET
CINCINNATI, OHIO 45220

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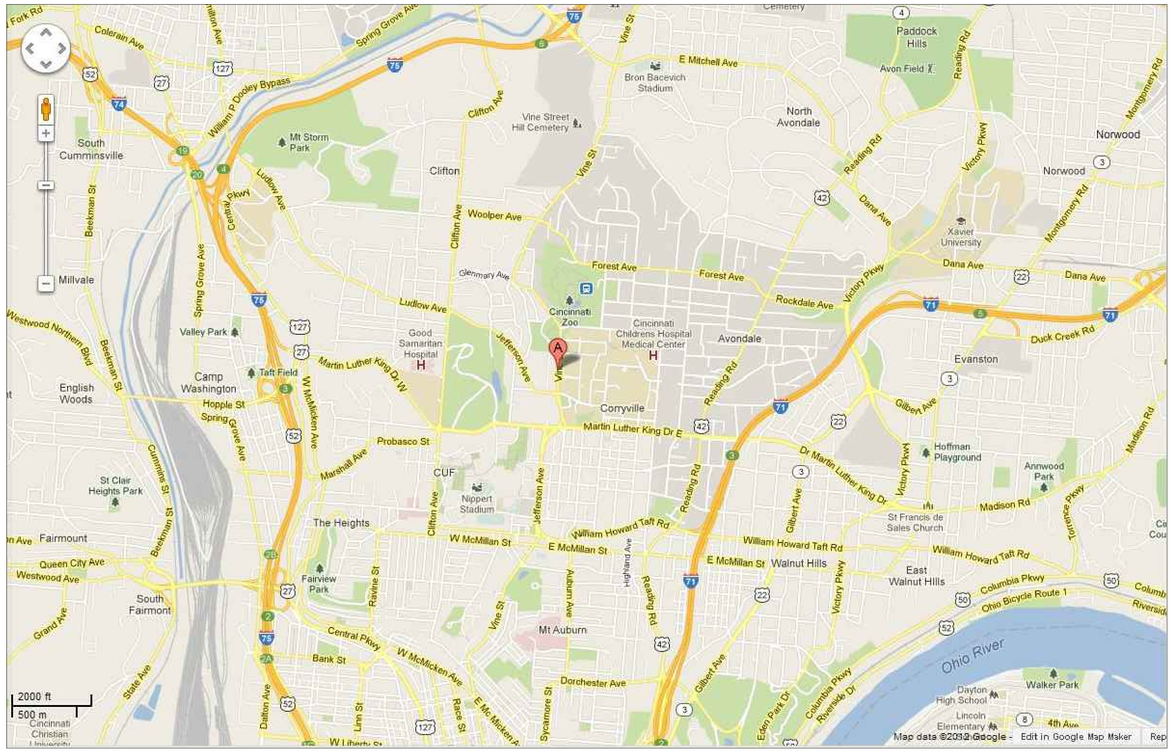

VICINITY MAP

SCALE: NTS

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Drawing Title: COVER SHEET AND INDEX

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Dwg. 1 of 47

Office of Construction and Facilities Management

Department of Veterans Affairs

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DRAWING SYMBOLS

1–MS4 — SHEET NUMBER WHERE DRAWN

A / H7 — SECTION LETTER / DRAWING NUMBER WHERE DRAWN

1–SF3 — BUILDING NO. WHERE EQUIPMENT IS LOCATED. EQUIPMENT ABBREVIATION (SUPPLY FAN) SUPPLY FAN NO.3 IN BUILDING NO.1

TYPICAL UNIT NO.

1–01 — TERMINAL UNIT DESIGNATION

AIR HANDLING UNIT NUMBER

DUCTWORK SYMBOLS

UP DN — SUPPLY DUCT (UP & DOWN)

UP DN — RETURN DUCT (UP & DOWN)

UP DN — EXHAUST DUCT (UP & DOWN)

CEILING DIFFUSERS (FOUR WAY BLOW UNLESS OTHERWISE NOTED)

EXHAUST OR RETURN CEILING REGISTER OR GRILLE

SUPPLY TOP REGISTER OR GRILLE (WALL TYPE)

EXHAUST OR RETURN BOTTOM REGISTER OR GRILLE, (WALL TYPE)

EXHAUST OR RETURN TOP REGISTER OR GRILLE, (WALL TYPE)

VANED ELBOW & AIR SPLIT TYPE DUCT TAKE–OFF

R — INCLINED RISE, IN DIRECTION OF AIR FLOW

D — INCLINED DROP, IN DIRECTION OF AIR FLOW

FC — FLEXIBLE CONNECTION

VANED ELBOW (PROVIDE ALL SQUARE OR RECTANGULAR ELBOWS WITH VANES EVEN IF SYMBOL IS MISSING)

STANDARD RADIUS ELBOW

10/8 — NEW DUCT – WIDTH X DEPTH

STAINLESS STEEL DUCT

ACOUSTICAL DUCT LINING

MANUAL VOLUME DAMPER

FIRE DAMPER

9'–6" — APPROXIMATE ELEVATION FROM FLOOR TO CENTER OF LISTED SIZE OF DUCT, PIPE, DEVICE OR EQUIPMENT ITEM. (TO BE USED AS AN AID IN COORDINATING THE VARIOUS TRADES.)

U/C — DOOR UNDERCUT BY GENERAL CONTRACTOR

PIPING SYMBOLS

GENERAL

W — DOMESTIC COLD WATER

HEATING

DHW — DOMESTIC HOT WATER SUPPLY

DHWR — DOMESTIC HOT WATER RECIRCULATION

HPS (125) — HIGH PRESSURE STEAM (60 PSIG AND ABOVE) NUMBER INDICATES STEAM PRESSURE

HPR — HIGH PRESSURE STEAM CONDENSATE RETURN

FS(5) — FREE STEAM (LOW PRESSURE STEAM)

MPS (30) — MEDIUM PRESSURE STEAM (16 PSIG THRU 59 PSIG) NUMBER INDICATES STEAM PRESSURE

MPR — MEDIUM PRESSURE STEAM CONDENSATE RETURN

LPS (5) — LOW PRESSURE STEAM (15 PSIG & BELOW) NUMBER INDICATES STEAM PRESSURE

LPR — LOW PRESSURE STEAM CONDENSATE RETURN

PC — PUMPED CONDENSATE RETURN

HWS — HEATING HOT WATER SUPPLY

HWR — HEATING HOT WATER RETURN

V — VENT LINE

GHS — HOT GLYCOL WATER SUPPLY

GHR — HOT GLYCOL WATER RETURN

AIR CONDITIONING

CHS — CHILLED WATER SUPPLY

CHR — CHILLED WATER RETURN

D — DRAIN LINE

HWS/CHS — COMBINATION HOT/CHILLED WATER SUPPLY

HWR/CHR — COMBINATION HOT/CHILLED WATER RETURN

MU — TREATED DOMESTIC MAKE–UP WATER FOR HUMIDIFIER

GMU — GLYCOL MAKEUP WATER

GENERAL

FLOW METER

DIRECTION OF PIPE PITCH (DOWN)

DIRECTION OF FLOW

PIPE ANCHOR

PIPE GUIDE

REDUCER OR INCREASER

ECCENTRIC REDUCER

TOP CONNECTION, 45 DEG. OR 90 DEG.

BOTTOM CONNECTION, 45 DEG. OR 90 DEG.

SIDE CONNECTION

CAPPED OUTLET

RISE OR DROP IN PIPE

UNION

ORIFICE UNION

PIPE UP

PIPE DOWN

POINT OF CONNECTION BETWEEN NEW AND EXISTING WORK.

INVERTED BUCKET TRAP SET INCLUDING PIPING ACCESSORIES (SEE STANDARD DETAIL)

FLOAT AND THERMOSTATIC TRAP SET INCLUDING PIPING ACCESSORIES (SEE STANDARD DETAIL)

THERMODYNAMIC TRAP

STRAINER

THERMOMETER

PRESSURE GAGE

EXISTING PIPE TO BE REMOVED

TEST PLUG (PRESSURE/TEMPERATURE)

ET — EXPANSION TANK PIPE

PIPE MOUNTED DDC TEMPERATURE SENSOR

VALVES

GATE VALVE

GLOBE VALVE

GATE VALVE WITH 3/4" HOSE END ADAPTER

CHECK VALVE

ANGLE GLOBE VALVE

BUTTERFLY VALVE

BALL VALVE

COMBINATION BALANCING/SHUT–OFF VALVE

CIRCUIT SETTER

STRAIGHT–THRU MODULATING CONTROL VALVE

STRAIGHT–THRU TWO–POSITION CONTROL VALVE

THREE–WAY MODULATING CONTROL VALVE

AUTOMATIC FLOW CONTROL VALVE

SAFETY VALVE OR PRESSURE RELIEF

PRESSURE REDUCING VALVE

MANUAL AIR VENT

CONTROLS

T H — ROOM CONTROL: THERMOSTAT, HUMIDISTAT

T — REMOTE BULB THERMOSTAT

T — DUCT OR PIPE THERMOSTAT (NOTE 1: PROVIDE 12" MIN. LENGTH IN DUCT WHEN SPACE PERMITS)

T — DUCT THERMOSTAT WITH AVERAGING ELEMENT

T H — ROOM SENSOR: TEMPERATURE, HUMIDITY

T — DUCT OR PIPE TEMP. SENSOR

H — DUCT HUMIDITY SENSOR

SP — DUCT STATIC PRESSURE SENSOR

T — DUCT TEMPERATURE SENSOR WITH AVERAGING ELEMENT

F S — SMOKE DETECTOR (SEE ELECTRICAL SPECIFICATIONS)

H1 N — CONTROL CIRCUIT CONN.

dP — DIFFERENTIAL PRESSURE SWITCH

DP SP — DIFFERENTIAL OR STATIC PRESSURE TRANSMITTER

CS — CURRENT SENSING RELAY

ABBREVIATIONS

A/BCW	COMBINATION AXIAL/BACKWARD CURVED WHEEL
AD	ACCESS DOOR
AF	AFTER FILTER
AFF	ABOVE FINISHED FLOOR
AFM	AIR FLOW MEASURING DEVICE
AFW	AIR FOIL WHEEL (FAN)
AHU	AIR HANDLING UNIT
AI	ANALOG INPUT
AO	ANALOG OUTPUT
APD	AIR PRESSURE DROP
AS	AIR SEPARATOR
ATC	AUTOMATIC TEMPERATURE CONTROLS
BG	BOTTOM GRILLE (WALL TYPE)
BHP	BRAKE HORSEPOWER
BIW	BACKWARD INCLINED WHEEL (FAN)
BR	BOTTOM REGISTER (WALL TYPE)
BTU	BRITISH THERMAL UNIT
BTUH	BRITISH THERMAL UNIT PER HOUR
C	CONVERTOR
CC	COOLING COIL
CCF	CABINET CEILING FAN
CCU	CENTRIFUGAL OR HELICAL ROTARY SCREW CHILLER UNIT
CD	CEILING DIFFUSER
CF	CENTRIFUGAL FAN
CFM	CUBIC FEET PER MINUTE
CG	CEILING GRILLE
CHR	CHILLED WATER RETURN
CHS	CHILLED WATER SUPPLY
CO	CLEAN OUT
CONV	CONVECTOR
COTR	CONTRACTING OFFICER'S TECHNICAL REPRESENTATIVE
CP	CONDENSATE PUMP
CR	CEILING REGISTER
CUH	CABINET UNIT HEATER
CW	COLD WATER (POTABLE)
D	AUTOMATIC CONTROL DAMPER
Db	DRY BULB TEMPERATURE, DEG. F
DB	DECIBELS
DDC	DIRECT DIGITAL CONTROLS
DEG	DEGREE
DHW	DOMESTIC HOT WATER SUPPLY
DHWR	DOMESTIC HOT WATER RECIRCULATION
DI	DIGITAL INPUT
DIA	DIAMETER
DO	DIGITAL OUTPUT
DPS	DIFFERENTIAL PRESSURE SENSOR
DWDI	DOUBLE WIDTH DOUBLE INLET (FAN)
DX	DIRECT EXPANSION
E.A.	EXHAUST AIR
EAT	ENTERING AIR TEMPERATURE
ECC	ENGINEERING CONTROL CENTER
E.C.L.	ETCHED CLEAR LACQUER
EER	ENERGY EFFICIENCY RATIO
EF	EXHAUST FAN
ENT	ENTERING
ESP	EXTERNAL STATIC PRESSURE
ET	EXPANSION TANK
EWT	ENTERING WATER TEMPERATURE
EX.	EXISTING
F	FAHRENHEIT
FC	FLEXIBLE CONNECTION
FCU	FAN COIL UNIT
FCW	FOWARD CURVED WHEEL (FAN)
FD	FLOOR DRAIN
F&T	FLOAT AND THERMOSTATIC

ABBREVIATIONS

FLR.	FLOOR
FPM	FEET PER MINUTE
FT	FEET
GPM	GALLONS PER MINUTE
HC	HEATING COIL
HD	HEAD
HP	HORSEPOWER
HPR	HIGH PRESSURE STEAM CONDENSATE RETURN
HPS	HIGH PRESSURE STEAM SUPPLY (60 PSIG & ABOVE)
HWR	HEATING HOT WATER RETURN
HWS	HEATING HOT WATER SUPPLY
ICF	IN–LINE CENTRIFUGAL FAN
IN	INCHES
IN WC	INCHES WATER COLUMN
IN WG	INCHES WATER GAUGE
LAT	LEAVING AIR TEMPERATURE
LBS/HR	POUNDS PER HOUR
LPR	LOW PRESSURE STEAM CONDENSATE RETURN
LPS	LOW PRESSURE STEAM SUPPLY (15 PSIG & BELOW)
LVG	LEAVING
LWT	LEAVING WATER TEMPERATURE
MAX	MAXIMUM
MB	MIXING BOX
MBH	1000 BTUH
MCA	MINIMUM BRANCH CIRCUIT AMPACITY
MERV	MINIMUM EFFICIENCY REPORTING VALUE
MIN	MINIMUM
MPR	MEDIUM PRESSURE STEAM CONDENSATE RETURN
MPS	MEDIUM PRESSURE STEAM SUPPLY (16 PSIG THRU 59 PSIG)
MV	MANUAL AIR VENT
NC	NOISE CRITERIA
N.C.	NORMALLY CLOSED
N.O.	NORMALLY OPEN
NOM	NOMINAL
O.A.	OUTSIDE AIR
OD	OUTSIDE DIAMETER
P	PUMP
PC	PUMPED CONDENSATE
PD	PRESSURE DROP (FEET OF WATER)
PEF	PROPELLER TYPE EXHAUST FAN
PF	PRE–FILTER
PH	PREHEAT COIL
PRV	PRESSURE REDUCING VALVE
PUH	PROPELLER UNIT HEATER
R.A.	RETURN AIR
RF	RETURN FAN
Rh	RELATIVE HUMIDITY
RPM	REVOLUTIONS PER MINUTE
RV	POWER TYPE ROOF VENTILATOR
S.A.	SUPPLY AIR
SAT	SUPPLY AIR TEMPERATURE
SD	SMOKE DETECTOR
SDR	SMOKE DAMPER (RETURN)
SDS	SMOKE DAMPER (SUPPLY)
SF	SUPPLY FAN
SH	STEAM HUMIDIFIER
S.P.	STATIC PRESSURE (INCHES OF WATER)
SP. GR.	SPECIFIC GRAVITY
SPRV	STEAM PRESSURE REDUCING VALVE
SPS	STATIC PRESSURE SENSOR
SWSI	SINGLE WIDTH SINGLE INLET (FAN)
TG	TOP GRILLE (WALL TYPE)
TG	TRANSFER GRILLE
TR	TOP REGISTER (WALL TYPE)
TSTAT	THERMOSTAT
TSP	TOTAL STATIC PRESSURE
U/C	DOOR UNDERCUT BY GENERAL CONTRACTOR
UH	UNIT HEATER
USF	UTILITY SET FAN
V	VALVE
VAV	VARIABLE AIR VOLUME
VD	VOLUME DAMPER
VFD	VARIABLE FREQUENCY DRIVE
W	WATTS
Wb	WET BULB TEMPERATURE, DEG. F
W.B.E.	WHITE BAKED ENAMEL
WF	WATER FILTER
WG	WATER GAUGE
WV	POWER TYPE WALL VENTILATOR

GENERAL NOTES

1 ALL PIPING IN FINISHED ROOMS OR SPACES SHALL BE CONCEALED IN A FURRED CHASE OR ABOVE THE SUSPENDED CEILING.

2 ACCESS PANELS IN NON ACCESSIBLE SUSPENDED CEILINGS ARE REQUIRED FOR ALL VALVES, TRAPS, DAMPERS, CLEANOUTS, CONTROLS, ETC.

3 FOR TYPICAL STEAM, WATER AND REFRIGERANT PIPING CONNECTIONS TO EQUIPMENT, SEE STANDARD DETAILS AND PIPING SCHEMATICS.

4 PIPE CONNECTIONS TO AIR HEATING AND COOLING COILS SHALL BE MADE TO PROVIDE COUNTER FLOW BETWEEN HEATING MEDIUM AND AIR.

5 WHERE DUCTS OR PIPES ARE REMOVED THRU WALL/FLOOR/ROOF THAT IS TO REMAIN, PATCH WALL/FLOOR/ROOF OPENING TO MATCH EXISTING WHERE OPENING IS NOT RE–USED.

6 ALL PRESSURES LISTED ARE GAGE PRESSURE UNLESS OTHERWISE NOTED.

7 ALL CUTTING AND PATCHING REQUIRED FOR THE PROJECT WORK SHALL BE INCLUDED IN THE CONTRACT. REFINISH ANY SURFACE DISTURBED UNDER THIS WORK TO MATCH EXISTING.

8 IN GENERAL, KEEP PIPING MAINS NEXT TO UNDERSIDE OF STRUCTURE.

9 ANNULAR SPACE OF ALL PIPE, CONDUIT, DUCT & OTHER SIMILAR PENETRATIONS OF FIRE RATED ASSEMBLIES SHALL BE FIRESTOPPED. IN ADDITION, PENETRATIONS THROUGH 0–HOUR RATED WALLS & FLOORS SHALL BE FIRESTOPPED TO RETARD PASSAGE OF FIRE & SMOKE.

10 UPON THE DISCOVERY OF ANY ASBESTOS MATERIAL, STOP WORK IMMEDIATELY AND REPORT IT TO THE COTR. THE COTR WILL NOTIFY CONTRACTOR WHEN WORK IS SAFE TO PROCEED.

11 ANY REMOVED EQUIPMENT SHALL BE TURNED OVER TO THE VA. ITEMS NOT DESIRED BY THE VA SHALL BE REMOVED FROM THE PREMISES AND DISPOSED OF PROPERLY BY THE CONTRACTOR.

12 REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION.

13 THE CONTRACT DRAWINGS ARE NOT INTENDED TO SHOW EVERY VERTICAL OR HORIZONTAL OFFSET WHICH MAY BE NECESSARY TO COMPLETE THE SYSTEMS. COORDINATE WORK IN ADVANCE WITH ALL OTHER TRADES AND REPORT IMMEDIATELY ANY DIFFICULTIES WHICH CAN BE ANTICIPATED.

14 FIELD VERIFY EXISTING CONDITIONS, INCLUDING DUCT, PIPE AND EQUIPMENT SIZES, SERVICES AND LOCATIONS PRIOR TO PERFORMING WORK.

15 HEPA FILTERED EXHAUST IS REQUIRED TO MAINTAIN A MINIMUM OF 0.01" W.G. NEGATIVE PRESSURE IN CONSTRUCTION AREAS. COORDINATE WITH COTR.

16 ALL ABANDONED EXTRANEOUS PIPING, DUCTWORK, SUPPORTS, CONTROLS, ETC. SHALL BE REMOVED.

17 WHERE CONTROL DEVICES ARE REMOVED, PNEUMATIC LINES SHALL BE REMOVED BACK TO MAIN AND CAPPED, AND CONTROL WIRING AND CONDUIT SHALL BE REMOVED BACK TO SOURCE.

18 ALL ITEMS THAT REQUIRE ACCESS, SUCH AS FOR OPERATING, CLEANING, SERVICING, MAINTENANCE, AND CALIBRATION, SHALL BE EASILY AND SAFELY ACCESSIBLE BY PERSONS STANDING AT FLOOR LEVEL, OR STANDING ON PERMANENT PLATFORMS, WITHOUT THE USE OF PORTABLE LADDERS. EXAMPLES OF THESE ITEMS INCLUDE, BUT ARE NOT LIMITED TO: ALL TYPES OF VALVES, FILTERS AND STRAINER, TRANSMITTERS, CONTROL DEVICES.

19 WHERE ROOFING WORK IS REQUIRED, THE EXISTING ROOFING MEMBRANE AND INSULATION SHALL BE CUT, REMOVED AND RESTORED AS REQUIRED TO ATTAIN A WATERTIGHT CONDITION. THE ROOFING SUB–CONTRACTOR SHALL BE A CERTIFIED INSTALLER FOR SUCH INSTALLATION TO MAINTAIN THE EXISTING WARRANTY ON THE ROOF.

20 ALL EXISTING DUCTWORK, PIPING, EQUIPMENT, CONTROLS, ETC. SHOWN DASHED SHALL BE REMOVED. THE MAJORITY OF WORK TO BE REMOVED IS SHOWN. REMOVE ALL INCIDENTAL ABANDONED DUCTWORK, PIPING, ETC., THAT MAY NOT BE SHOWN BUT IS ASSOCIATED WITH THE REMOVAL WORK.

21 INCLUDE ALL WORK NECESSARY TO ACCOMMODATE PHASING. REFER TO GENERAL REQUIREMENTS SECTION 01 00 00.

22 WHERE EXISTING HVAC UTILITIES IN SERVICE WILL BE DISRUPTED DURING THE CONSTRUCTION OF THIS PROJECT, THIS WORK SHALL BE PERFORMED ON WEEKENDS OR WEEK NIGHTS, IF REQUIRED BY THE COTR. DOWNTIME SHALL BE KEPT TO A MINIMUM, AND SHALL BE COORDINATED AND SCHEDULED WELL IN ADVANCE WITH THE COTR.

23 INSTALL ALL STRAINERS IN STEAM PIPING SIDEWAYS, WITH CLEANOUT LEG PARALLEL TO THE GROUND.

24 THESE NOTES APPLY EQUALLY TO THE FULL SET OF DOCUMENTS.

25 INSULATE DUCTWORK AND PIPING WHERE EXISTING INSULATION HAS BEEN DAMAGED AND/OR REMOVED IN THE PERFORMANCE OF WORK IN THIS PROJECT.

26 IN ACCORDANCE WITH GENERALLY ACCEPTED CONSTRUCTION PRACTICES, THE CONTRACTOR WILL BE SOLELY AND COMPLETELY RESPONSIBLE FOR THE CONDITIONS ON THE JOB SITE, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY DURING PERFORMANCE OF THE WORK. THIS WILL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS. SEE SPECIFICATIONS FOR MORE SPECIFIC DETAILS ON RESPONSIBILITIES.

27 ALL WORK MUST BE COORDINATED WITH THE CONTRACTING OFFICER AND COTR TO MAINTAIN OPERATION OF THE EXISTING FACILITY.

28 EXISTING CONDITIONS SHOWN HAVE BEEN BASED UPON AVAILABLE DRAWING INFORMATION, AND MAY BE AT VARIANCE WITH ACTUAL WORK IN PLACE. THE CONTRACTOR SHALL TAKE ALL NECESSARY FIELD MEASUREMENTS AND FIELD VERIFY ALL CONDITIONS AFFECTING THE EXECUTION OF THE WORK. ANY DISCREPANCIES BETWEEN EXISTING CONDITIONS AND THE WORK SHOWN ON THE CONTRACT DOCUMENTS WHICH MAY IMPACT THE PROGRESS OF THE WORK SHALL BE BROUGHT TO THE ATTENTION OF THE CONTRACTING OFFICER IN WRITING FOR RESOLUTION BEFORE PROCEEDING WITH THE WORK.

29 ABATEMENT, REMOVAL OR ENCAPSULATION OF EXISTING MATERIALS CONTAINING ASBESTOS IS INCLUDED IN THIS CONSTRUCTION CONTRACT. REFER TO DRAWINGS AND/OR SPECIFICATIONS FOR LOCATION OF ASBESTOS. ANY ASBESTOS WORK PERFORMED AS PART OF THIS PROJECT SHALL BE COMPLETED PRIOR TO STARTING ANY OTHER PROJECT SITE WORK. REFER TO SPECIFICATIONS FOR ASBESTOS ABATEMENT.

30 TERMINATE PIPING AND DUCTWORK BELOW FLOORS, ABOVE CEILINGS, ETC., IN CONCEALED SPACES. ALL CUTTING AND PATCHING SHALL MATCH EXISTING FINISHES.

31 CONTRACTOR IS RESPONSIBLE TO VISIT THE SITE, EXAMINE AND ACCEPT EXISTING CONDITIONS PRIOR TO BIDDING. SITE VISITS TO BE COORDINATED WITH THE CONTRACTING OFFICER'S REPRESENTATIVE.

32 CONTRACTOR IS RESPONSIBLE TO REPAIR AND/OR REFINISH, TO MATCH ADJACENT EXISTING SURFACES AND ANY EXISTING MATERIALS TO REMAIN THAT ARE DAMAGED DURING THE COURSE OF DEMOLITION OR NEW WORK.

33 WHERE REMOVAL OF EXISTING WORK IS REQUIRED FOR INSTALLATION OF NEW WORK, CONTRACTOR SHALL REPAIR EXISTING CONSTRUCTION TO REMAIN OR PROVIDE NEW CONSTRUCTION TO MATCH EXISTING ADJACENT SURFACES TO REMAIN.

Revisions	Date
ADDENDUM #1	08/28/2013

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Drawing Title: LEGEND AND GENERAL NOTES

Approved Project Director

Project Title: HOSPITAL STEAM SYSTEM RECORD DRAWINGS

Project Number: 539-13-107

Building Number: –

Location: CINCINNATI, OHIO

Date: 01/04/2013 | Checked: JAC | Drawn: DRV

Drawing Number: H1

Dwg. 2 of 47

Office of Construction and Facilities Management

Department of Veterans Affairs

VA FORM 08–6231

INLINE VARIABLE AREA STEAM METER SCHEDULE

MARK	LOCATION	SHEET	SYSTEM AND/OR SERVICE	MAX. LOAD LB/HR	OUTPUT SIGNAL	LINE PRESSURE PSIG	FLOW RANGE LB/HR	MINIMUM TURNDOWN	METER SIZE IN.	PIPE SIZE	NOTES
1–SSM1	BASEMENT CRAWL SPACE NEAR PIT	1–MB1	4TH FLOOR PENTHOUSE	7,660	4–20mA AND PULSE	120	190 – 19,012	100:1	5"	5"	1
1–SSM2	10TH FLOOR PENTHOUSE	1–MD101	10TH FLOOR PENTHOUSE	1,945	4–20mA AND PULSE	120	55 – 5,471	100:1	3"	3"	1
1–SSM3	SUB–BASEMENT SERVICE ROOM	1–DS4 1–MS4	SPS	2,262	4–20mA AND PULSE	120	55 – 5,471	100:1	3"	3"	1,2
1–SSM4	SUB–BASEMENT SERVICE ROOM	1–DS4 1–MS4	KITCHEN	1,365	4–20mA AND PULSE	120	14 – 1,385	100:1	2"	3"	1,2
1–SSM5	B15 BASEMENT MECHANICAL ROOM	1–DS4 15–MB1	BLDG. 15	6,112	4–20mA AND PULSE	120	110 – 10,978	100:1	4"	4"	1,2

NOTES:

1 CONTRACTOR SHALL COORDINATE POWER & SIGNAL REQUIREMENTS WITH METER MANUFACTURER.

2 RELOCATED METER – INCLUDED HERE TO INDICATE NEW PERFORMANCE, FOR REFERENCE ONLY. REFER TO DEMOLITION AND NEW WORK FLOOR PLANS.

STEAM HUMIDIFIER SCHEDULE

HUMID. NO.	SYSTEM	LOCATION	SHEET	CFM	ABSORP. DISTANCE (MAX.)	LEAVING AIR °F	STEAM PSIG		ON–OFF & CONTROL VALVE LBS/HR	TRAP LBS/HR
						Db	ENT. ON–OFF VALVE	ENT. CONTROL VALVE		
1–SH1	AHU–12 ZONE 1	5TH FLOOR PENTHOUSE	1–MD51	5,545	36"	55	30	24	146	22
1–SH2	AHU–12 ZONE 2	5TH FLOOR PENTHOUSE	1–MD51	3,635	36"	55	30	24	96	15
1–SH3	AHU–12 ZONE 3	5TH FLOOR PENTHOUSE	1–MD51	3,905	36"	55	30	24	103	16

SHELL & TUBE STEAM TO HOT WATER CONVERTER SCHEDULE

CONVERTER NO.	LOCATION	SHEET	CIRCULATING FLUID					STEAM PSIG		MINIMUM HEATING SURFACE	HEATING CAPACITY MBH	CONTROL VALVE LBS/HR	TRAP LBS/HR	NOTES
			FLUID	GPM	TEMP IN° F	TEMP OUT° F	MAX. LOSS FT. FLUID	ENTERING CONTROL VALVE	ENTERING CONVERTER					
1–STC1	10TH FLOOR PENTHOUSE	1–MD101	WATER	50	150	180	7	30	15	24.8 S.F.	733.8	776	1,552	1,2,3

NOTES:

1 CONVERTER SIZED TO HANDLE 50 PERCENT OF THE TOTAL CURRENTLY CONNECTED HEATING LOAD.
2 CONVERTER SHALL BE SIZED WITH .001 FOULING FACTOR.
3 APPROXIMATE SIZE: 8" DIA X 48" LONG.

PLATE & FRAME STEAM TO HOT WATER CONVERTER SCHEDULE

CONVERTER NO.	LOCATION	SHEET	CIRCULATING FLUID				STEAM PSIG		HEATING CAPACITY MBH	NOTES
			FLUID	GPM	TEMP IN° F	TEMP OUT° F	ENTERING CONTROL VALVE	ENTERING CONVERTER		
1–PFC1A 1–PFC1B	C–SECTION BASEMENT MECHANICAL ROOM	1–MB1	WATER	330	150	180	30	24	4,950	1,2,3
15–PFC1A 15–PFC1B	BUILDING 15 BASEMENT MECHANICAL ROOM	15–MB1	WATER	50	150	180	30	24	750	1,2,4
1–PFC2B	SUB BASEMENT SERVICE ROOM	1–MS4	WATER	240	160	180	30	24	2,345	1,2

NOTES:

1 CONVERTER SIZED TO HANDLE 100 PERCENT OF THE TOTAL LOAD.
2 CONVERTER SHALL BE SIZED WITH .0005 FOULING FACTOR.
3 APPROXIMATE SKID SIZE: 70" TALL X 80" LONG X 34" WIDE.
4 APPROXIMATE SKID SIZE: 50" TALL X 60" LONG X 25" WIDE.
5 TRAP MAXIMUM DIFFERENTIAL PRESSURE RATING SHALL EXCEED STEAM PRESSURE UPSTREAM OF STEAM CONVERTER CONTROL VALVE.
6 IN ADDITION TO SPECIALTIES REQUIRED BY SPEC SECTION 23 22 13, THIS HEAT EXCHANGER SHALL ALSO BE PROVIDED WITH 1/3 AND 2/3 CAPACITY PRESSURE REDUCING VALVES, FURNISHED WITH SKID BY MANUFACTURER, INSTALLED BY CONTRACTOR. REFER TO PRESSURE REDUCING STATION PIPING DETAIL ON SHEET H3.

HVAC PUMP SCHEDULE

PUMP NO.	LOCATION	SHEET	SYSTEM	CIRCULATING FLUID					MIN. % EFF.	TYPE	MOTOR			VSMC	NOTES
				FLUID	GPM	PUMP HEAD FT. FLUID	TEMP °F	SP. GR.			NOM. HP	VOLT.–PHASE	RPM		
1–P1	B1 BASEMENT. MECH. ROOM	1–MB1	HOT WATER	WATER	330	65	180	1	69	VERTICAL IN–LINE	10	460–3	1,725	YES	1,2,4,5
1–P2	B1 BASEMENT. MECH. ROOM	1–MB1	HOT WATER	WATER	330	65	180	1	69	VERTICAL IN–LINE	10	460–3	1,725	YES	1,2,4,5
15–P1	B15 BASEMENT MECH. ROOM	15–MB1	HOT WATER	WATER	50	45	180	1	52	VERTICAL IN–LINE	2	460–3	1,725	YES	1,2,4,6
15–P2	B15 BASEMENT MECH. ROOM	15–MB1	HOT WATER	WATER	50	45	180	1	52	VERTICAL IN–LINE	2	460–3	1,725	YES	1,2,4,6
1–P3	B1 10TH FLOOR PENTHOUSE	1–MD101	HOT WATER	WATER	50	85	180	1	50	VERTICAL IN–LINE	5	460–3	1,725	YES	1,3,4,7
1–P4	B1 10TH FLOOR PENTHOUSE	1–MD101	HOT WATER	WATER	50	85	180	1	50	VERTICAL IN–LINE	5	460–3	1,725	YES	1,3,4,7
1–P5	B1 10TH FLOOR PENTHOUSE	1–MD101	HOT WATER	WATER	50	85	180	1	50	VERTICAL IN–LINE	5	460–3	1,725	YES	1,3,4,7

NOTES:

1 MOTOR SHALL BE ENERGY EFFICIENT TYPE.
2 PUMP SIZED FOR 100 PERCENT OF LOAD.
3 PUMP SIZED FOR 50 PERCENT OF LOAD.
4 REFER TO ELECTRICAL DRAWINGS FOR VARIABLE SPEED MOTOR CONTROLLER ASSOCIATED WITH THIS PUMP.
5 PUMP SHALL BE CAPABLE OF STABLE OPERATION DOWN TO 110 GPM MINIMUM FLOW.
6 PUMP SHALL BE CAPABLE OF STABLE OPERATION DOWN TO 20 GPM MINIMUM FLOW.
7 PUMP SHALL BE CAPABLE OF STABLE OPERATION DOWN TO 10 GPM MINIMUM FLOW.

DOMESTIC HOT WATER RECIRCULATING PUMP SCHEDULE

PUMP NO.	LOCATION	SHEET	SYSTEM	CIRCULATING FLUID					% EFF.	TYPE	MOTOR			VSMC	NOTES
				FLUID	GPM	PUMP HEAD FT. FLUID	TEMP °F	SP. GR.			NOM. HP	VOLT.–PHASE	RPM		
1–DWRP1	B1 BASEMENT. MECH. ROOM	1–MS4	DOMESTIC HOT WATER	WATER	20	35	120	1	34	VERTICAL IN–LINE	2/5	120–1	3250	NO	1

NOTES:

1 MOTOR SHALL BE ENERGY EFFICIENT TYPE.

STEAM HEATING COIL SCHEDULE

COIL NO.	TYPE	SYSTEM	LOCATION	SHEET	CFM	MAX. FACE VEL. FPM	MAX. S.P. LOSS IN	TEMP. AIR °F		MIN. BTUH	STEAM PSIG		CONTROL VALVE LBS/HR	TRAP LBS/HR (NOTE 1)	COIL SUPPLY/ RETURN RUNOUT SIZE
								ENT.	LVG.		ENT. CONTROL VALVE	ENT. COIL			
1–RH2	STEAM DIST.	AHU–2 REHEAT	10TH FLOOR PENTHOUSE	1–MD101	1,630			55	101	81,200	30	10	85	170	1"/0.75"
11–PH1	STEAM IFB	AHU–11 PREHEAT	5TH FLOOR PENTHOUSE	1–MD51	3,450			–3	60	239,000	30	15	253	506	1.5"/1"
11–HC1	STEAM DIST.	AHU–11 HEATING	5TH FLOOR PENTHOUSE	1–MD51	3,450			60	100	132,000	30	15	139	278	1.25"/0.75"
12–PH1	STEAM IFB	AHU–12 PREHEAT	5TH FLOOR PENTHOUSE	1–MD51	18,440			37	60	458,000	30	15	485	970	2"/1.25"
2–1	STEAM DIST.	AHU–12 REHEAT	5TH FLOOR PENTHOUSE	1–MD51	220			55	88	7,900	30	8	8.2	16.5	0.75"/0.75"
2–2	STEAM DIST.	AHU–12 REHEAT	5TH FLOOR PENTHOUSE	1–MD51	1,000			55	88	38,000	30	8	39.7	79.4	0.75"/0.75"
2–3	STEAM DIST.	AHU–12 REHEAT	5TH FLOOR PENTHOUSE	1–MD51	160			55	88	6,900	30	8	7.3	14.5	0.75"/0.75"
2–4	STEAM DIST.	AHU–12 REHEAT	5TH FLOOR PENTHOUSE	1–MD51	215			55	88	8,900	30	8	9.3	18.5	0.75"/0.75"
2–5	STEAM DIST.	AHU–12 REHEAT	5TH FLOOR PENTHOUSE	1–MD51	1,250			55	88	44,800	30	8	46.8	93.6	0.75"/0.75"
2–6	STEAM DIST.	AHU–12 REHEAT	5TH FLOOR PENTHOUSE	1–MD51	260			55	88	9,300	30	8	9.7	19.5	0.75"/0.75"
2–7	STEAM DIST.	AHU–12 REHEAT	5TH FLOOR PENTHOUSE	1–MD51	530			55	88	23,000	30	8	24.1	48.1	0.75"/0.75"
1–8	STEAM DIST.	AHU–12 REHEAT	5TH FLOOR PENTHOUSE	1–MD51	85			55	88	5,300	30	8	5.5	11.0	0.75"/0.75"
1–9	STEAM DIST.	AHU–12 REHEAT	5TH FLOOR PENTHOUSE	1–MD51	3,250			55	88	41,400	30	8	43.3	86.6	0.75"/0.75"
1–10	STEAM DIST.	AHU–12 REHEAT	5TH FLOOR PENTHOUSE	1–MD51	420			55	88	22,300	30	8	23.4	46.7	0.75"/0.75"
1–11	STEAM DIST.	AHU–12 REHEAT	5TH FLOOR PENTHOUSE	1–MD51	900			55	88	31,200	30	8	32.7	65.4	0.75"/0.75"
1–12	STEAM DIST.	AHU–12 REHEAT	5TH FLOOR PENTHOUSE	1–MD51	750			55	88	31,000	30	8	32.3	64.7	0.75"/0.75"
1–13	STEAM DIST.	AHU–12 REHEAT	5TH FLOOR PENTHOUSE	1–MD51	140			55	88	4,700	30	8	4.9	9.9	0.75"/0.75"

NOTES:

1 ALL COILS ARE EXISTING TO REMAIN – INCLUDED HERE TO INDICATE PERFORMANCE, FOR REFERENCE ONLY TO SIZE NEW COIL PIPING SPECIALTIES (DDC STEAM CONTROL VALVE, F&T STEAM TRAP, ETC.). REFER TO CONTROL DIAGRAM & SEQUENCES, AND FLOOR PLANS FOR MORE INFORMATION. CONTROL VALVE AND TRAP SUBMITTALS SHALL REFERENCE COIL TAGS INDICATED IN THIS SCHEDULE.

FLASH TANK SCHEDULE

UNIT NO.	LOCATION	SHEET	APPROX. LENGTH IN.	APPROX. DIAMETER IN.
1–FT1	SUB–BASEMENT SERVICE ROOM	1–MS4	48	36
1–FT2	BSMT. C–SECTION MECHANICAL RM.	1–MB1	39	14
8–FT1	BOILER PLANT BASEMENT	8–M1	38	16

AUTOMATIC PUMP TRAP SCHEDULE

GENERAL NOTES:
- SIZING AND APPLICATION OF PUMPS SHALL BE PER MANUFACTURER'S INSTRUCTIONS.
- DIFFERENT MANUFACTURERS HAVE VARYING ACCESSORIES AND COMPONENTS. THE HVAC CONTRACTOR IS RESPONSIBLE FOR COORDINATING WITH SUPPLIER.
- CONNECTION SIZES LISTED ARE APPROXIMATE.

UNIT NO.	SERVICE	SHEET	LBS/HR (NOTE 1)	MOTIVE STEAM (PSIG)	BACK PRESURE (PSIG)	COND. INLET	COND. DISCH.	MOTIVE INLET	EXH. DISCH.	NOTES
1–APT1	AHU–17	1–MDB2	318	30	10	0.75"	0.75"	0.5"	0.75"	1
1–APT2	AHU–26	1–MB1	816	30	6	1.5"	1"	0.5"	0.75"	1
1–APT3	AHU–27	1–MB1	102	30	6	0.75"	0.75"	0.5"	0.75"	1

NOTES:

1 LISTED LBS/HR IS ACTUAL DUTY. ACTUAL TRAP CAPACITY SHALL BE A MIN. OF 2 TIMES LISTED DUTY.

STEAM UNIT HEATER SCHEDULE

UNIT NO.	LOCATION	SHEET	TYPE UNIT	CFM	MIN. MBH	ENT AIR	STEAM PSIG		TRAP LBS/HR (NOTE 2)	RUNOUT SIZE S/R	APPROX. CABINET DIMS.			MOTOR HP (WATTS)	VOLT.–PHASE	NOTES
							CONTROL VALVES	UNIT			LENGTH	WIDTH	HEIGHT			
1–PUH1	5TH FLOOR PENTHOUSE	1–MD51	PROPELLER	550	32.7	50	30	24	37	.75"/1"	15"	10"	18"	(25 W)	115–1	1,3
8–PUH1	BOILER PLANT GENERATOR RM.	8–M1	PROPELLER	1,100	72	60	120	100	73	.75"/1"	19"	12"	22"	1/20	115–1	1

NOTES:

1 VERIFY/COORDINATE CABINET DIMENSIONS, MOUNTING & RECESS REQUIREMENTS PRIOR TO ORDERING.
2 TRAP MAXIMUM DIFFERENTIAL PRESSURE RATING SHALL EXCEED STEAM PRESSURE UPSTREAM OF STEAM UNIT HEATER CONTROL VALVE.
3 REFER TO PLANS FOR QUANTITY OF UNITS.

STEAM PRESSURE REDUCING VALVE/SAFETY RELIEF VALVE SCHEDULE

PRV NUMBER	LOCATION	EQUIPMENT/ AREA SERVED	SHEET	STEAM PRESSURE PSIG		CAPACITY LBS/HR		SAFETY RELIEF PRESSURE	PIPE SIZES		SAFETY RELIEF VALVE	
				INLET	OUTLET	REQUIRED	MAXIMUM		D1	D2	MIN. CAPACITY LB/HR	SET PRESSURE PSIG
1–PRV1A	BASEMENT C–SECTION MECH. ROOM	AHU– 26 / 27 PREHEAT	1–MB1	120	30	900	1,130	40 PSI	2"	2.5"	1,130	40 PSI
1–PRV1B	BASEMENT C–SECTION MECH. ROOM	AHU– 26 / 27 PREHEAT	1–MB1	120	30	450	560	N/A	1.5"	2"	N/A	N/A
1–PRV2	BASEMENT C–SECTION MECH. ROOM	O.R. STERILIZERS	1–MB1	120	60	192	240	70 PSI	1.25"	1.5"	240	70 PSI
1–PRV3	SUB BASEMENT SERVICE ROOM	LOW PRESSURE ZONE STEAM TO RADIATORS	1–MS4	120	30	10,000	12,500	40 PSI	6"	8"	12,500	40 PSI
1–PRV4	SUB BASEMENT SERVICE ROOM	LOW PRESSURE ZONE STEAM TO RADIATORS	1–MS4	30	10	10,000	12,500	15 PSI	8"	14"	12,500	15 PSI
1–PRV5	SUB BASEMENT SERVICE ROOM	KITCHEN (DISH WASH, CART WASH, KETTLES	1–MS4	120	30	1,365	1,710	40 PSI	2"	3"	1,710	40 PSI
1–PRV6	SUB BASEMENT SERVICE ROOM	SPS	1–MS4	120	85	2,262	2,830	95 PSI	3"	3"	2,830	95 PSI
1–PRV7A	4TH FLOOR PENTHOUSE	PENTHOUSE EQUIP. O.R. ZONE HUMIDIF, AHU–10	1–M41	120	30	4,940	6,170	40 PSI	4"	5"	6,170	40 PSI
1–PRV7B	4TH FLOOR PENTHOUSE	PENTHOUSE EQUIP. O.R. ZONE HUMIDIF, AHU–10	1–M41	120	30	2,470	3,085	N/A	3"	4"	N/A	N/A
1–PRV8	5TH FLOOR PENTHOUSE	4TH FLOOR PERIMETER CONVECTORS	1–MD51	30	5	51	70	10 PSI	1.25"	2"	70	10 PSI
1–PRV9A	9TH FLOOR PENTHOUSE	AHU–37, MISC. CONVECTORS, AHU–1 REHEAT COIL	1–MD92	30	15	240	300	25 PSI	1.5"	2.5"	300	25 PSI
1–PRV9B	9TH FLOOR PENTHOUSE	AHU–37, MISC. CONVECTORS, AHU–1 REHEAT COIL	1–MD92	30	15	120	150	N/A	1"	1.5"	N/A	N/A
1–PRV10A	BASEMENT C–SECTION MECH. ROOM	AHU–17 PREHEAT, AHU–28 / 29 HUM. P&F CONVERTERS	1–MB1	120	30	3,965	4,950	40 PSI	4"	5"	4,950	40 PSI
1–PRV10B	BASEMENT C–SECTION MECH. ROOM	AHU–17 PREHEAT, AHU–28 / 29 HUM. P&F CONVERTERS	1–MB1	120	30	1,980	2,475	N/A	3"	4"	N/A	N/A
15–PRV1A	B15 BASEMENT MECHANICAL RM.	STERILIZER, BOTTLE & CAGE WASHERS, AUTOCLAVE	15–MB1	120	60	4,075	5,100	70 PSI	4"	5"	5,100	70 PSI
15–PRV1B	B15 BASEMENT MECHANICAL RM.	STERILIZER, BOTTLE & CAGE WASHERS, AUTOCLAVE	15–MB1	120	60	2,040	2,550	N/A	3"	4"	N/A	N/A
15–PRV2A	B15 BASEMENT MECHANICAL RM.	HOT WATER HX'S, AHU–30 / 31 PREHEAT & HUMID.	15–MB1	60	30	2,960	3,700	40 PSI	4"	5"	3,700	40 PSI
15–PRV2B	B15 BASEMENT MECHANICAL RM.	HOT WATER HX'S, AHU–30 / 31 PREHEAT & HUMID.	15–MB1	60	30	1,480	1,850	N/A	3"	4"	N/A	N/A
13–PRV1	B13 PUMP ROOM	PROPELLER UNIT HEATERS, LOCKER ROOM FCU	8–M1	120	15	1,125	1,410	25 PSI	2"	3"	1,410	25 PSI
13–SRV1	B13 CHILLER RM.	PRESSURE STEAM MAIN	8–M1								40,000	125

NOTE: REDUCING VALVE AND RELIEF VALVE TO BE SIZED BY SUPPLIER. ASSEMBLY SHALL BE INSTALLED PER DETAIL AND MANUFACTURER'S RECOMMENDATIONS.

WATER FILTER SCHEDULE

UNIT NO.	SYSTEM	SHEET	FILTER GPM	AUTOMATIC VALVE PRESSURE RANGE	REMARKS
1–WF1 (1)	HEATING HOT WATER	1–MB1	17	4–57 PSI	0.75" VALVE
15–WF1	HEATING HOT WATER	15–MB1	3	4–57 PSI	0.75" VALVE

NOTES:

1 EXISTING TO BE RELOCATED – REFER TO FLOOR PLANS.

EXPANSION TANK SCHEDULE

UNIT NO.	SHEET	LOCATION	SYSTEM	APPROX. SYSTEM VOLUME GAL.	SYSTEM TEMP. RANGE °F		INITIAL PRESS. IN TANK PSIG.	FILL PRESS. AT TANK PSIG.	MAX. OPER. PRESS.		MIN. VOL. GAL.	MIN. ACCEPT. VOLUME GAL.	AIR SEPARATOR					PIPE SIZE TO TANK IN.	COLD WATER FILL SIZE IN.
					MIN.	MAX.			RELIEF VALVE PSIG.	AT TANK PSIG.			UNIT NO.	SIZE IN.	GPM	MAX. P.D. FT.	BUILT–IN STRAINER REQUIRED		
15–ET1	15–MB1	B15 BASEMENT MECH ROOM	HEATING HOT WATER	175	50	180	15	15	30	30	21.7	11.3	15–AS1	2"	50	1.2	NO	1"	1"

MOISTURE SEPARATOR SCHEDULE

UNIT NO.	LOCATION	SHEET	SYSTEM AND/ OR SERVICE	SEPARATOR TYPE	CAPACITY LBS/HR	INLET PRESSURE PSIG	F&T TRAP CAPAC. LB/HR
13–MS1	CHILLER PLANT CHILLER ROOM	8–M1	HIGH PRESSURE STEAM MAIN	BAFFLE	40,000	120	500
1–MS1	SUB–BASEMENT SERVICE ROOM	1–MS4	HIGH PRESSURE STEAM MAIN	BAFFLE	30,000	120	500

Revisions	Date
ADDENDUM #1	08/28/2013

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Drawing Title: SCHEDULES

Approved Project Director

Project Title: HOSPITAL STEAM SYSTEM RECORD DRAWINGS

Location: CINCINNATI, OHIO

Date: 01/04/2013 | Checked: JAC | Drawn: DRV

Project Number: 539-13-107

Building Number: -

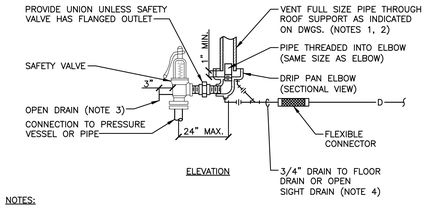
Drawing Number: H2

Dwg. 3 of 47

Office of Construction and Facilities Management

Department of Veterans Affairs

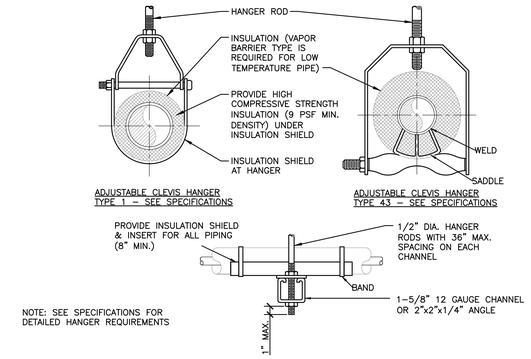
VA FORM 08-6231



NOTES:

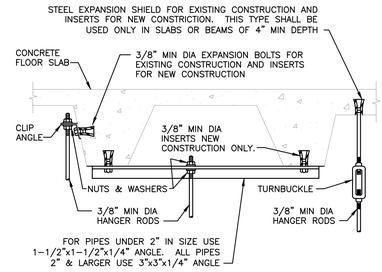
1. UNLESS OTHERWISE SHOWN ON THE DRAWINGS, SIZE THE VENT PIPE SO THAT STEAM IS NOT BLOWN OUT AT THE VENT PIPE ENTRANCE. UTILIZE THE CALCULATION METHOD CONTAINED IN ANSI B31.1. POWER PIPING CODE, APPENDIX II.
2. VENT PIPE SHALL TERMINATE 6' MIN. ABOVE FINISHED ROOF.
3. DISCHARGE OF DRAIN MUST BE DIRECTED AWAY FROM PLATFORMS OR OTHER AREAS WHICH PERSONNEL MAY OCCUPY.
4. DO NOT CONNECT ANY OTHER DRAIN TO THE DRIP PAN ELBOW DRAIN PIPE.

STEAM SAFETY VALVE

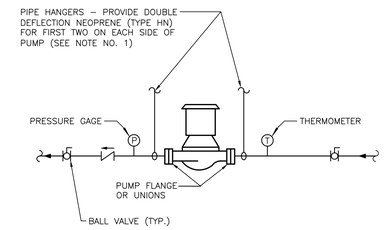


MAXIMUM PIPE/TUBING SUPPORT SPACING																		
NOM. SIZE IN.	THRU 3/4	1	1 1/4	1 1/2	2	2 1/2	3	4	5	6	8	10	12	14	16	18	20	24
PIPE FT.	7	7	7	9	10	11	12	14	16	17	19	22	23	25	27	28	30	32
TUBING FT.	5 FT	6	7	8	8	9	10	12	13	14	16	–	–	–	–	–	–	–
NOTE: FOR TRAPEZE HANGER TAKE SPACING OF SMALLEST SIZE ON TRAPEZE.																		

PIPE HANGERS



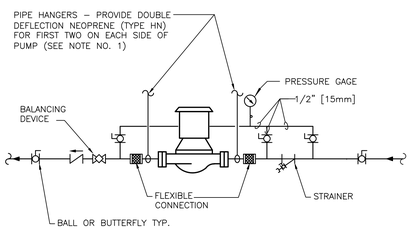
SECURING HANGER RODS IN CONCRETE



NOTES:

1. SUPPORT PUMP FROM PIPING ONLY. DO NOT SUPPORT PUMP FROM MOTOR.

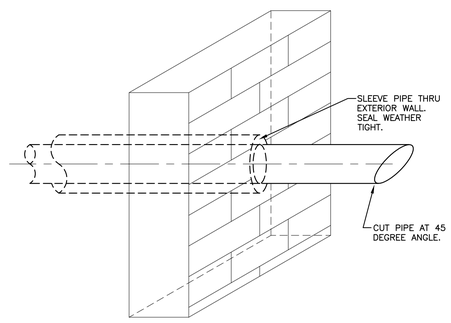
DOMESTIC HOT WATER RECIRCULATING PUMP – CONNECTIONS



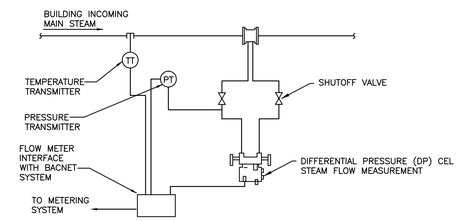
NOTES:

1. SUPPORT PUMP FROM PIPING ONLY. DO NOT SUPPORT PUMP FROM MOTOR.

IN-LINE PUMPS – CONNECTIONS



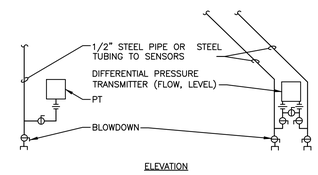
SIDEWALL STEAM RELIEF VENT



NOTE:

1. MAINTAIN UPSTREAM AND DOWN STREAM DISTANCES RECOMMENDED BY METER MANUFACTURERS

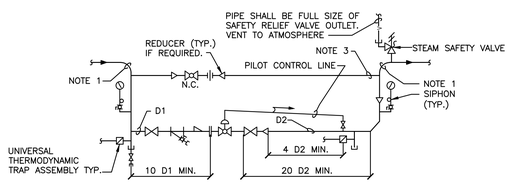
STEAM METER DETAIL



NOTES:

1. INSTALLATION OF SENSORS AND TRANSMITTERS SHALL CONFORM TO RECOMMENDATIONS OF MANUFACTURERS OF TRANSMITTERS.

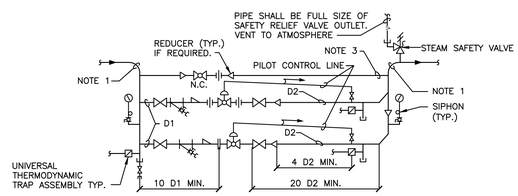
PRESSURE TRANSMITTER INSTALLATION



NOTE:

1. SEE FLOOR PLANS FOR PIPE SIZES.
2. SEE EQUIPMENT SCHEDULES FOR VALVE DATA AND PIPE SIZES D1 AND D2. INSTALL VALVES AS RECOMMENDED BY MANUFACTURER.
3. MAKE BYPASS VALVE DISCHARGE PIPE THE SAME SIZE AS D2.
4. PROVIDE NECESSARY UNIONS FOR THE REMOVAL OF VALVE WITH SCREWED CONNECTIONS.

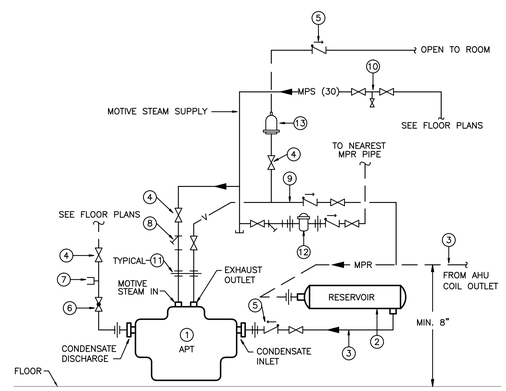
STEAM PRESSURE REDUCING STATION SINGLE VALVE



NOTE:

1. SEE FLOOR PLANS FOR PIPE SIZES.
2. SEE EQUIPMENT SCHEDULES FOR VALVE DATA AND PIPE SIZES D1 AND D2. INSTALL VALVES AS RECOMMENDED BY MANUFACTURER.
3. MAKE BYPASS VALVE DISCHARGE PIPE THE SAME SIZE AS D2 FOR THE LARGEST PRV.
4. PROVIDE NECESSARY UNIONS FOR THE REMOVAL OF VALVE WITH SCREWED CONNECTIONS.

STEAM PRESSURE REDUCING STATION DOUBLE VALVE (1/3 AND 2/3)



NOTES

1. AUTOMATIC PUMP TRAP, SIZED BY MANUFACTURER FOR DUTY IMPOSED.
2. RESERVOIR, SIZED BY MANUFACTURER.
3. CONDENSATE RETURN PIPING, FULL SIZE OF TRAP INLET UNLESS NOTED OTHERWISE ON PLANS.
4. SHUT-OFF VALVE.
5. CHECK VALVE.
6. GLOBE VALVE.
7. PRESSURE/TEMPERATURE TEST PLUG.
8. STRAINER (MIN. 100 MESH, OR AS RECOMMENDED BY MANUFACTURER) WITH BLOWDOWN VALVE.
9. EQUALIZING PIPING FOR CLOSED LOOP OPERATION.
10. DOUBLE BLOCK AND BLEED VALVE ARRANGEMENT. AS RECOMMENDED BY MANUFACTURER.
11. UNION.
12. END OF MAIN DRIP ASSEMBLY WITH .75" THERMODYNAMIC TRAP.
13. THERMOSTATIC AIR VENT.

AUTOMATIC PUMP TRAP

SCALE: NONE

Revisions	Date
ADDENDUM #1	08/28/2013

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PROJECT NO. 2012-04005 FIRM LICENSE: 01528

Drawing Title: DETAILS

Approved Project Director

Project Title: HOSPITAL STEAM SYSTEM RECORD DRAWINGS

Location: CINCINNATI, OHIO

Date: 01/04/2013 | Checked: JAC | Drawn: DRV

Project Number: 539-13-107

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Drawing Number: H3

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Office of Construction and Facilities Management

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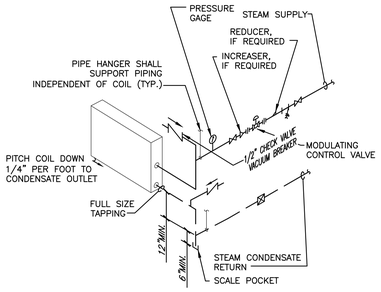
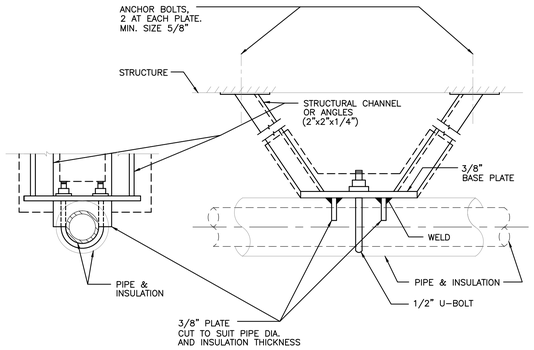


NOTES:

1. WHEN COIL IS INCLUDED IN CASING MOUNTED ON VIBRATION ISOLATOR UNITS, THE RUNOUT PIPING FOR CONNECTIONS TO COIL SHALL BE INSTALLED WITH SWING JOINTS TO ALLOW FOR THE VIBRATION.
2. PIPING SHALL BE INSTALLED IN SUCH MANNER THAT IT WILL NOT BLOCK THE SWING OR USE OF ACCESS DOORS OR PANELS; NEITHER SHALL IT BLOCK THE SERVICING OF FILTERS, VALVES, OR EQUIPMENT.
3. TRAP EACH COIL SEPARATELY WHEN INSTALLED IN A BANK OF TWO OR MORE HIGH. ALSO PROVIDE SEPARATE VACUUM BREAKER FOR EACH COIL.
4. SUPPLY & RETURN PIPES ARE SHOWN FROM SAME END. PREHEAT COIL MAY HAVE SUPPLY & RETURN PIPES FROM OPPOSITE ENDS.
5. WHERE THE DISTANCE FROM THE INTAKE OF TRAP TO BOTTOM OF COIL IS RESTRICTED, FLOAT AND THERMOSTATIC TRAP CAPACITIES SHALL BE SELECTED ON A LOWER PRESSURE DROP SUITED TO THE DISTANCE BETWEEN BOTTOM OF COIL AND TRAP INLET.

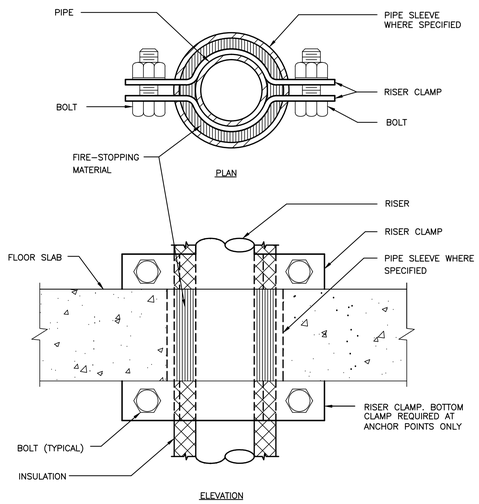
STEAM HEATING COIL – PIPING CONNECTIONS



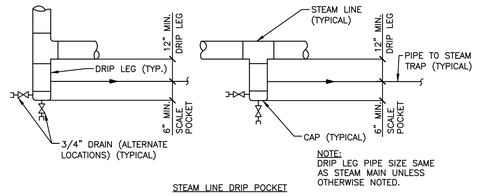
NOTE:

INSULATE ANCHOR AS INDICATED FOR COLD PIPING.

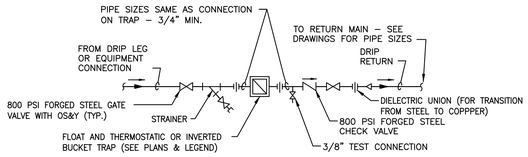
HORIZONTAL PIPE ANCHOR DETAIL



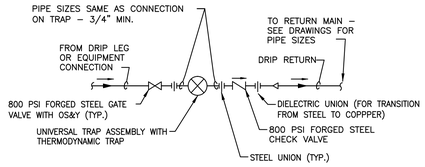
SUPPORT/ANCHOR FOR PIPE RISERS



STEAM LINE DRIP POCKET

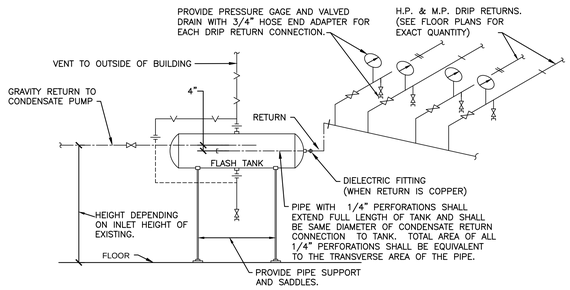


STEAM TRAP ASSEMBLY

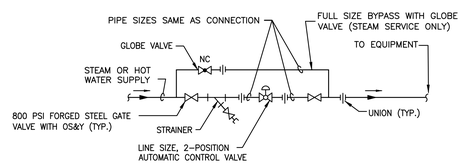


STEAM DRIP ASSEMBLY WITH UNIVERSAL TRAP

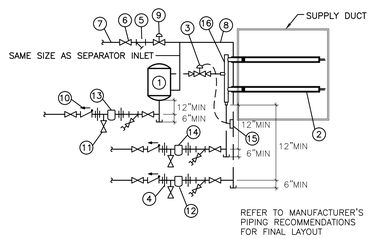
STEAM LINE DRIP POCKET STEAM TRAP ASSEMBLY



TYPICAL CONNECTIONS TO FLASH TANK

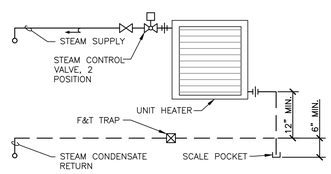


TWO-POSITION SEASONAL CONTROL VALVE PIPING CONNECTIONS

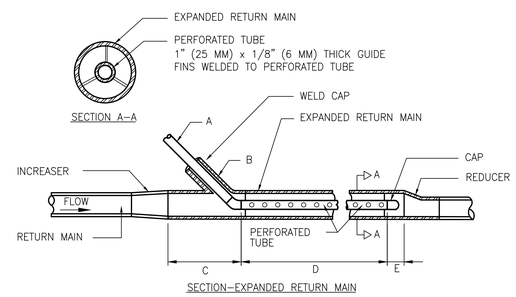


1. SEPARATOR. FURNISHED BY HUMIDIFIER MANUFACTURER.
2. STEAM JACKETED HUMIDIFIER DISPERSION TUBES. FURNISHED BY HUMIDIFIER MANUFACTURER. TYPE, QTY, SIZE AND SPACING PER MANUFACTURER.
3. MODULATING HUMIDIFIER CONTROL VALVE. FURNISHED BY HUMIDIFIER MANUFACTURER.
4. UNION.
5. STRAINER. TYPICALLY PROVIDED WITH HUMIDIFIER.
6. SHUT-OFF GATE VALVE.
7. STEAM SUPPLY PIPE.
8. STEAM JACKET PIPING.
9. LINE SIZE AUTOMATIC TWO-POSITION ISOLATION VALVE BY ATC. REFER TO SHEET H7 FOR CONTROL SEQUENCE.
10. CHECK VALVE.
11. 0.375" TEST CONNECTION.
12. STEAM JACKET TRAP. TYPE AS RECOMMENDED BY MANFACTURER. SOME MANUFACTURERS PROVIDE WITH HUMIDIFIER.
13. SEPARATOR TRAP. TYPE AS RECOMMENDED BY MANFACTURER. SOME MANUFACTURERS PROVIDE WITH HUMIDIFIER.
14. HEADER TRAP. TYPE AS RECOMMENDED BY MANFACTURER. SOME MANUFACTURERS PROVIDE WITH HUMIDIFIER.
15. TEMPERATURE SWITCH. FURNISHED BY HUMIDIFIER MANUFACTURER.
16. HEADER. FACTORY OR FIELD FABRICATED. COORDINATE WITH FIELD CONDITIONS, QTY OF TUBES, ROUND VS RECTANGULAR DUCTWORK, ETC.

DUCT MOUNTED STEAM HUMIDIFIER



STEAM UNIT HEATER – PIPING CONNECTIONS



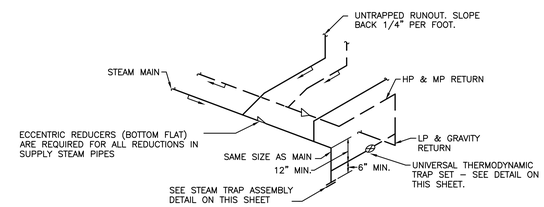
HIGH & MEDIUM PRESSURE STEAM TRAP DISCHARGE INTO PUMPED CONDENSATE RETURN LINE

A	SIZE, TRAP DISCHARGE LINE	3/4" (20 MM)
B	SIZE, 45° WELDING NIPPLE	1-1/4" (32 MM)
C	LENGTH OF EXPANDED MAIN AHEAD OF TRAP DISCHARGE PIPE	7" (175 MM)
D	LENGTH OF PERFORATED PIPE	16-1/2" (415 MM)
E	LENGTH OF EXPANDED MAIN OF FOLLOWING PERFORATED PIPE	2" (50 MM)

RETURN MAIN SIZE	UP TO 2" (50 MM)	3" (75 MM) & OVER
EXPANDED RETURN MAIN SIZE	2-1/2" (65 MM)	SAME SIZE

NOTES:

1. 3/4" (20 MM) PERFORATED TUBE SHALL HAVE 78 – 1/8" (6 MM) DIAMETER HOLES SPACED 1-1/2" (40 MM) O.C. IN 6 ROWS.
2. HOLES IN TUBE SHALL BE SPACED EQUALLY AROUND PERIMETER.



NOTES :

1. SLOPE MAINS AND BRANCHES DOWN 1" PER 40 FEET IN DIRECTION OF FLOW UNLESS SHOWN OTHERWISE.
2. LIMIT UNTRAPPED, COUNTERFLOW, RUNOUTS TO 10 FEET MAXIMUM.
3. END OF MAIN SHOWN, LOW POINT IN STEAM MAIN SIMILAR.

TYPICAL STEAM LINE & DRIP PIPING

Revisions:	Date
ADDENDUM #1	08/28/2013

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Drawing Number: H4

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Office of Construction and Facilities Management

Department of Veterans Affairs

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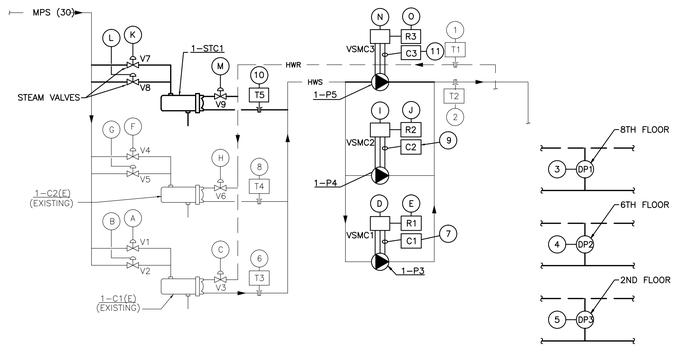
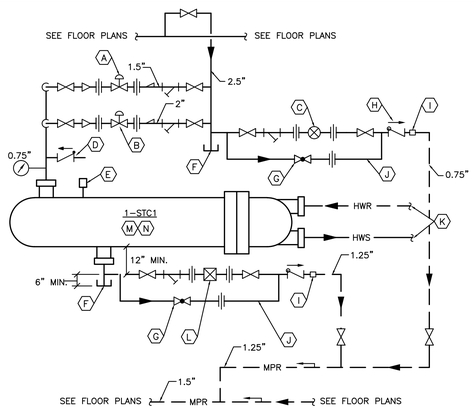


10TH FLOOR PENTHOUSE SHELL & TUBE HOT WATER CONVERTORS AND CIRCULATING PUMPS



NEW CONVERTER 1-STC1 STEAM PIPING SCHEMATIC

SCALE: NONE

HOT WATER CONVERTER AND PUMP CONTROL SEQUENCE

1 GENERAL

1.1 TWO STEAM TO HOT WATER CONVERTERS ARE EXISTING. CONSTANT SPEED HOT WATER PUMPS ASSOCIATED WITH EXISTING CONVERTERS ARE BEING REMOVED AND REPLACED WITH NEW, VARIABLE SPEED HOT WATER PUMPS UNDER THIS PROJECT. ADDITIONALLY, A THIRD CONVERTER AND PUMP ARE BEING ADDED UNDER THIS PROJECT. LIGHT LINEWEIGHT INDICATES EXISTING EQUIPMENT/CONTROL DEVICES, HEAVIER LINEWEIGHT INDICATES NEW WORK.

1.2 SEQUENCE SHALL HAVE THE ABILITY TO BE INITIATED BY THE DCP OR REMOTELY AT THE ECC. EACH CONVERTER AND PUMP IS SIZED FOR 50% OF THE CURRENT TOTAL SYSTEM LOAD.

2 HOT WATER CIRCULATING PUMPS

2.1 CONVERTERS AND PUMPS SHALL OPERATE IN A LEAD-LAG-LAG ARRANGEMENT (NO "STANDBY" EQUIPMENT-ALL THREE SHALL HAVE THE ABILITY TO RUN AT THE SAME TIME, AS DICTATED BY SYSTEM DEMAND). THE LEAD HOT WATER PUMP 1-P3 SHALL RUN CONTINUOUSLY IN CONJUNCTION WITH LEAD HOT WATER CONVERTER 1-C1(E) AND THE TWO LAG HOT WATER PUMPS 1-P4 AND 1-P5 WITH CONVERTERS 1-C2(E) AND 1-STC1, RESPECTIVELY, TO PROVIDE YEAR-ROUND HOT WATER FOR SPACE TEMPERATURE CONTROL. START LAG PUMP 1-P4 UPON FAILURE OF LEAD PUMP, AND LAG PUMP 1-P5 UPON FAILURE OF LAG PUMP 1-P4. A SEQUENCE PROGRAM SHALL ROTATE THE LEAD AND THE TWO LAG CONVERTERS AND PUMPS ON A MONTHLY BASIS.

2.2 EACH PUMP SHALL INCLUDE A CURRENT SENSING RELAY TO INDICATE PUMP STATUS.

2.3 PROVIDE THREE NEW DIFFERENTIAL PRESSURE SENSORS (DP1 THRU DP3). LOCATE BETWEEN HOT WATER SUPPLY AND RETURN PIPES WHERE INDICATED ON FLOOR PLAN. MODULATE THE HOT WATER PUMP VARIABLE SPEED MOTOR CONTROLLER(S) TO MAINTAIN DIFFERENTIAL PRESSURE SETPOINT. IN ORDER TO MAINTAIN MANUFACTURER'S REQUIRED PUMP MINIMUM FLOWS AT ALL TIMES, WHENEVER TWO OR MORE PUMPS ARE RUNNING, ALL PUMPS SHALL OPERATE AT THE SAME SPEED, AS REQUIRED TO MAINTAIN SYSTEM DIFFERENTIAL PRESSURE SETPOINTS. ALL THREE SYSTEM DIFFERENTIAL PRESSURE SENSORS SHALL BE SATISFIED AT ALL TIMES.

3 HOT WATER CONVERTER

3.1 MODULATING STEAM CONTROL VALVES V1 & V2 (AND V4 & V5, V7 & V8 - SIZED FOR 1/3 AND 2/3 LOAD) ALONG WITH HOT WATER ISOLATION CONTROL VALVE V3 (AND V6 & V9) ARE ASSOCIATED WITH THE HOT WATER HEATING SYSTEM. THE STEAM CONTROL VALVES SHALL FAIL CLOSED. THE HOT WATER ISOLATION VALVE SHALL FAIL OPEN. VALVES V1 & V2 (AND V4 & V5, V7 & V8, SMALLER VALVES TO BE THE LEAD VALVES) SHALL BE CONTROLLED FROM OUTDOOR AIR TEMPERATURE AND COMMON LEAVING WATER TEMPERATURE SENSOR T2 TO DELIVER SUPPLY WATER VARYING AS FOLLOWS:

OUTDOOR AIR TEMP	HOT WATER TEMP
0 DEG. F	180 DEG. F
70 DEG. F	95 DEG. F.

3.2 CONTROL SEQUENCE, BASED ON VALVES V1 & V2 (V4 & V5, V7 & V8 SIMILAR), SHALL BE AS FOLLOWS: MODULATE VALVE V1 IN RESPONSE TO DCP. ONCE VALVE IS FULL OPEN, MODULATE VALVE V2 OPEN AND CLOSE VALVE V1. ONCE VALVE V2 IS FULL OPEN, AGAIN MODULATE VALVE V1 IN RESPONSE TO ADDITIONAL STEAM REQUIREMENT. REVERSE CONTROL SEQUENCE ON A DROP IN STEAM CONSUMPTION. ALL VALVES SHALL BE SEPARATE CONTROL POINTS OF THE DCP.

3.3 ISOLATION CONTROL VALVE V3 (AND V6 & V8) SHALL OPEN PRIOR TO ITS RESPECTIVE HOT WATER PUMP STARTING, AND CLOSE WHEN PUMP IS OFF.

A AUTOMATIC CONTROL VALVE. SIZE FOR 1/3 STEAM LOAD CAPACITY.

B AUTOMATIC CONTROL VALVE. SIZE FOR 1/3 STEAM LOAD CAPACITY.

C PROVIDE NEW 0.75" UNIVERSAL TRAP ASSEMBLY WITH THERMODYNAMIC TRAP ON STEAM DRIP. REFER TO DETAIL ON SHEET H4.

D 0.5" CHECK VALVE VACUUM BREAKER.

E THERMOSTATIC AIR VENT.

F SCALE POCKET.

G GLOBE VALVE.

H SPRING LOADED CHECK VALVE.

I DIELECTRIC FITTING.

J INSTALL BYPASS IN HORIZONTAL PLANE LEVEL WITH TRAP, OR VERTICAL PLANE AND BELOW TRAP.

K REFER TO HOT WATER PIPING SCHEMATIC ON THIS SHEET FOR CONTINUATION.

L F&T TRAP ASSEMBLY. REFER TO DETAIL ON SHEET H4.

M PROVIDE SADDLE SUPPORTS AND ANGLE FRAME, AND SUPPORT HEAT EXCHANGER OFF FLOOR.

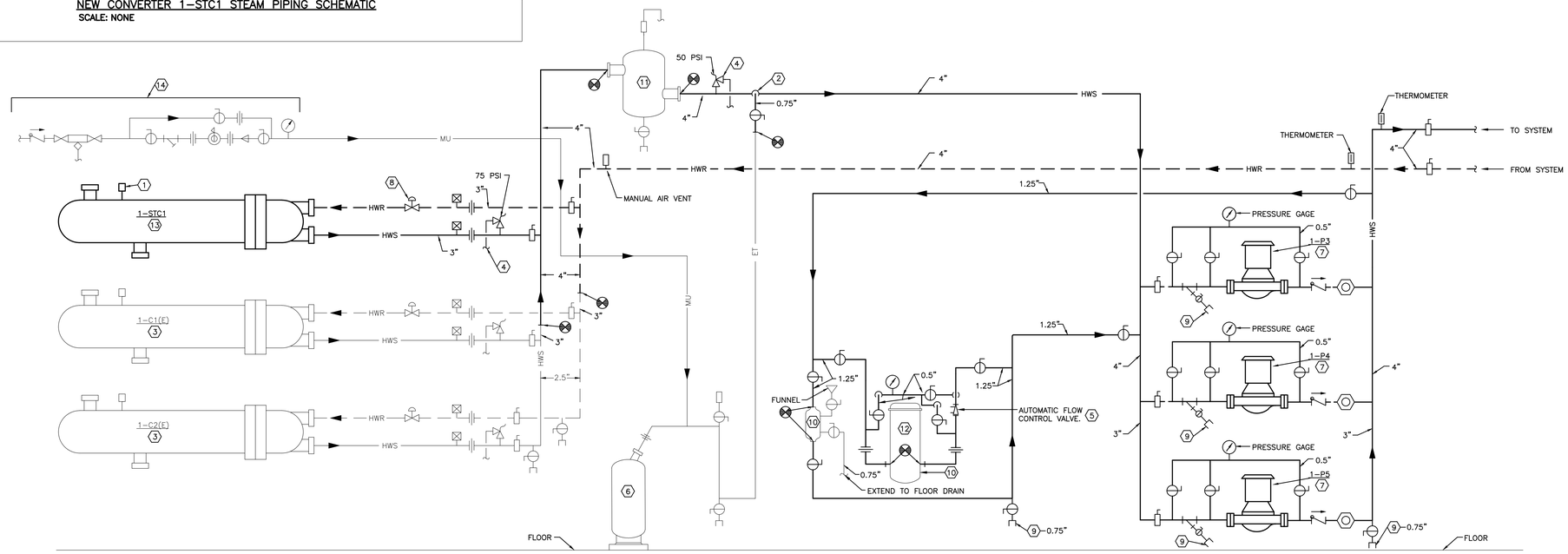
N CONVERTER SHALL BE SUSPENDED HIGH ENOUGH TO ALLOW GRAVITY DRAINAGE OF CONDENSATE TO EXISTING RISER SHAFT, AS SHOWN ON FLOOR PLANS.

10TH FLOOR PENTHOUSE POINTS LIST

POINT ID	DEVICE TAG	DEVICE DESCRIPTION	POINT TYPE DI	DO	AI	AO
1	T1	COMMON HOT WATER RETURN TEMPERATURE SENSOR			X	
2	T2	COMMON HOT WATER SUPPLY TEMPERATURE SENSOR			X	
3	DP1	HOT WATER SYSTEM DIFFERENTIAL PRESSURE			X	
4	DP2	HOT WATER SYSTEM DIFFERENTIAL PRESSURE			X	
5	DP3	HOT WATER SYSTEM DIFFERENTIAL PRESSURE			X	
6	T3	1-C1(E) LEAVING WATER TEMPERATURE SENSOR			X	
7	C1	HOT WATER PUMP 1-P3 STATUS CURRENT SWITCH	X			
8	T4	1-C2(E) LEAVING WATER TEMPERATURE SENSOR			X	
9	C2	HOT WATER PUMP 1-P4 STATUS CURRENT SWITCH	X			
10	T5	1-STC1 LEAVING WATER TEMPERATURE SENSOR			X	
11	C3	HOT WATER PUMP 1-P5 STATUS CURRENT SWITCH	X			
A	V1	CONVERTER 1-C1(E)-1/3 STEAM CONTROL VALVE				X
B	V2	CONVERTER 1-C1(E)-2/3 STEAM CONTROL VALVE				X
C	V3	CONVERTER 1-C1(E) HOT WATER ISOLATION VALVE		X		
D	VSMC1	HOT WATER PUMP 1-P3 VARIABLE SPD. MTR. CONTROLLER W/ STARTER				X
E	R1	HOT WATER PUMP 1-P3 START/STOP		X		
F	V4	CONVERTER 1-C2(E)-1/3 STEAM CONTROL VALVE				X
G	V5	CONVERTER 1-C2(E)-2/3 STEAM CONTROL VALVE				X
H	V6	CONVERTER 1-C2(E) HOT WATER ISOLATION VALVE		X		
I	VSMC2	HOT WATER PUMP 1-P4 VARIABLE SPD. MTR. CONTROLLER W/ STARTER				X
J	R2	HOT WATER PUMP 1-P4 START/STOP		X		
K	V7	CONVERTER 1-STC1-1/3 STEAM CONTROL VALVE				X
L	V8	CONVERTER 1-STC1-2/3 STEAM CONTROL VALVE				X
M	V9	CONVERTER 1-STC1 HOT WATER ISOLATION VALVE		X		
N	VSMC3	HOT WATER PUMP 1-P5 VARIABLE SPD. MTR. CONTROLLER W/ STARTER				X
O	R3	HOT WATER PUMP 1-P5 START/STOP		X		

LEGEND (APPLIES TO 10TH FLOOR PENTHOUSE)

C1	PUMP 1-P3 CURRENT SENSING RELAY	TRANSMITS MOTOR CURRENT TO DCP TO INDICATE STATUS OF PUMP 1-P3.
C2	PUMP 1-P4 CURRENT SENSING RELAY	TRANSMITS MOTOR CURRENT TO DCP TO INDICATE STATUS OF PUMP 1-P4.
C3	PUMP 1-P5 CURRENT SENSING RELAY	TRANSMITS MOTOR CURRENT TO DCP TO INDICATE STATUS OF PUMP 1-P5.
DCP	DISTRIBUTED CONTROL PANEL	CONTROLS SEQUENCE OF HVAC SYSTEMS IN ACCORDANCE WITH THE SEQUENCE OF OPERATION.
DP1 DP2 DP3	HEATING HOT WATER SYSTEM DIFFERENTIAL PRESSURE SENSORS	TRANSMITS HEATING HOT WATER DIFFERENTIAL PRESSURE TO DCP FOR CONTROL OF PUMP VARIABLE SPEED MOTOR CONTROLLER(S).
ECC	ENGINEERING CONTROL CENTER	EXISTING HOSPITAL FRONT END/SERVER, ETC.
R1	PUMP 1-P3 START/STOP RELAY	CONTROLS STARTING & STOPPING OF PUMP 1-P3.
R2	PUMP 1-P4 START/STOP RELAY	CONTROLS STARTING & STOPPING OF PUMP 1-P4.
R3	PUMP 1-P5 START/STOP RELAY	CONTROLS STARTING & STOPPING OF PUMP 1-P5.
T1	COMMON HOT WATER RETURN WATER TEMPERATURE SENSOR	SENSES AND TRANSMITS COMMON HOT WATER RETURN TEMPERATURE TO DCP FOR INDICATION ONLY.
T2	COMMON HOT WATER SUPPLY WATER TEMPERATURE SENSOR	SENSES AND TRANSMITS COMMON HOT WATER SUPPLY TEMPERATURE TO DCP FOR CONTROL AND INDICATION.
T3	CONVERTER 1-C1(E) LEAVING WATER TEMPERATURE SENSOR	SENSES AND TRANSMITS CONVERTER LEAVING HOT WATER TEMPERATURE TO DCP FOR INDICATION ONLY.
T4	CONVERTER 1-C2(E) LEAVING WATER TEMPERATURE SENSOR	SENSES AND TRANSMITS CONVERTER LEAVING HOT WATER TEMPERATURE TO DCP FOR INDICATION ONLY.
T5	CONVERTER 1-STC1 LEAVING WATER TEMPERATURE SENSOR	SENSES AND TRANSMITS CONVERTER LEAVING HOT WATER TEMPERATURE TO DCP FOR INDICATION ONLY.
V1	MODULATING STEAM CONTROL VALVE (1/3 CAPACITY)	PROPORTIONS FLOW OF STEAM TO CONVERTER 1-C1(E) IN RESPONSE TO DCP.
V2	MODULATING STEAM CONTROL VALVE (2/3 CAPACITY)	PROPORTIONS FLOW OF STEAM TO CONVERTER 1-C1(E) IN RESPONSE TO DCP.
V3	TWO-POSITION ISOLATION CONTROL VALVE	ISOLATES HOT WATER FLOW TO CONVERTER 1-C1(E) IN RESPONSE TO DCP.
V4	MODULATING STEAM CONTROL VALVE (1/3 CAPACITY)	PROPORTIONS FLOW OF STEAM TO CONVERTER 1-C2(E) IN RESPONSE TO DCP.
V5	MODULATING STEAM CONTROL VALVE (2/3 CAPACITY)	PROPORTIONS FLOW OF STEAM TO CONVERTER 1-C2(E) IN RESPONSE TO DCP.
V6	TWO-POSITION ISOLATION CONTROL VALVE	ISOLATES HOT WATER FLOW TO CONVERTER 1-C2(E) IN RESPONSE TO DCP.
V7	MODULATING STEAM CONTROL VALVE (1/3 CAPACITY)	PROPORTIONS FLOW OF STEAM TO CONVERTER 1-STC1 IN RESPONSE TO DCP.
V8	MODULATING STEAM CONTROL VALVE (2/3 CAPACITY)	PROPORTIONS FLOW OF STEAM TO CONVERTER 1-STC1 IN RESPONSE TO DCP.
V9	TWO-POSITION ISOLATION CONTROL VALVE	ISOLATES HOT WATER FLOW TO CONVERTER 1-STC1 IN RESPONSE TO DCP.
VSMC1	VARIABLE SPEED MOTOR CONTROLLER WITH MOTOR STARTER.	CONTROLS SPEED OF PUMP 1-P3 IN RESPONSE TO DCP.
VSMC2	VARIABLE SPEED MOTOR CONTROLLER WITH MOTOR STARTER.	CONTROLS SPEED OF PUMP 1-P4 IN RESPONSE TO DCP.
VSMC3	VARIABLE SPEED MOTOR CONTROLLER WITH MOTOR STARTER.	CONTROLS SPEED OF PUMP 1-P5 IN RESPONSE TO DCP.



10TH FLOOR PENTHOUSE HEATING HOT WATER SYSTEM SCHEMATIC

SCALE: NONE

GENERAL NOTES

A HEAVIER LINEWEIGHTS ON THIS SHEET INDICATE NEW WORK TO BE PROVIDED AS PART OF THIS PROJECT. LIGHTER LINEWEIGHTS INDICATE EXISTING WORK TO REMAIN, OR EXISTING TO BE RELOCATED AS PART OF THIS PROJECT.

B ALL EXISTING CONTROLS ASSOCIATED WITH EXISTING HEATING HOT WATER SYSTEM (PUMPS, CONVERTERS, ETC.) IN 10TH FLOOR PENTHOUSE ARE SERVED FROM THE EXISTING HONEYWELL CONTROL SYSTEM. ALL EXISTING CONTROLS SHALL BE DISCONNECTED FROM THE HONEYWELL SYSTEM AND TIED INTO THE EXISTING HOSPITAL JOHNSON CONTROLS METASYS FRONT-END. ALL NEW CONTROLS SHALL ALSO BE TIED INTO THE METASYS FRONT-END TO OPERATE IN CONJUNCTION WITH THE EXISTING EQUIPMENT AS A SINGLE, NEW, COMPLETE SYSTEM.

NOTES

1 THERMOSTATIC AIR VENT.

2 CONNECT TO SIDE OF MAIN TO PREVENT AIR OR DEBRIS FROM ENTERING PIPE TO TANK. TOP OR BOTTOM CONNECTION NOT PERMITTED.

3 EXISTING SHELL & TUBE CONVERTER TO REMAIN.

4 EXTEND SAFETY RELIEF VALVE DISCHARGE TO FLOOR DRAIN.

5 AUTOMATIC FLOW CONTROL VALVE. PROVIDE CARTRIDGE TO BALANCE TO 7.5 GPM FLOW.

6 EXISTING EXPANSION TANK TO REMAIN. RECONNECT PIPING AS INDICATED.

7 PROVIDE AN ANGLE FRAME TO SUPPORT PUMPS AND PIPING OFF FLOOR.

8 AUTOMATIC TWO POSITION ISOLATION CONTROL VALVE.

9 PROVIDE HOSE CONNECTION AND SCREW-ON CAP.

10 EXISTING CHEMICAL POT FEEDER TO REMAIN. RECONNECT PIPING AS INDICATED.

11 EXISTING AIR SEPARATOR AND ASSOCIATED HIGH CAPACITY AUTO AIR VENT, DRAIN PIPING, ETC. TO REMAIN. RECONNECT PIPING AS INDICATED.

12 EXISTING SIDESTREAM WATER FILTER TO REMAIN. RECONNECT PIPING AS INDICATED.

13 PROVIDE SADDLE SUPPORTS AND ANGLE FRAME, AND SUPPORT HEAT EXCHANGER OFF FLOOR. CONVERTER SHALL BE SUSPENDED HIGH ENOUGH TO ALLOW GRAVITY DRAINAGE OF CONDENSATE TO EXISTING RISER SHAFT, AS SHOWN ON SHEET 1-MD101.

14 EXISTING HEATING HOT WATER SYSTEM MAKEUP ASSEMBLY WITH BACKFLOW PREVENTER AND PRESSURE REDUCING ASSEMBLY TO REMAIN.

Revisions	Date
ADDENDUM #1	08/28/2013

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Drawing Title: 10TH FLOOR PENTHOUSE PIPING SCHEMATIC, CONTROLS AND AUTOMATION

Approved Project Director

Project Title: HOSPITAL STEAM SYSTEM RECORD DRAWINGS

Location: CINCINNATI, OHIO

Date: 01/04/2013 | Checked: JAC | Drawn: DRV

Project Number: 539-13-107

Building Number: 1

Drawing Number: H5

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Office of Construction and Facilities Management

Department of Veterans Affairs

VA FORM 08-6231

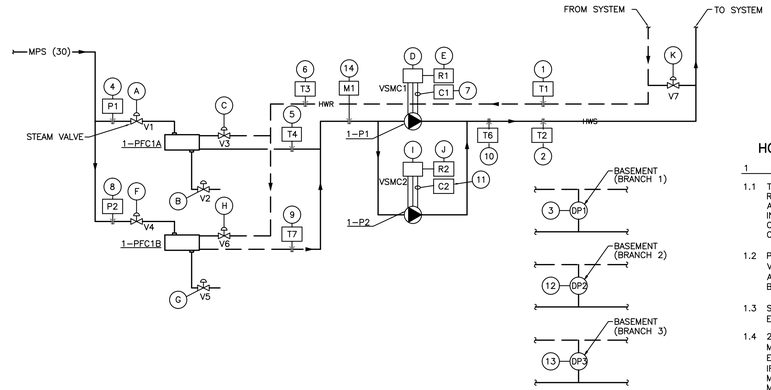
LEGEND (APPLIES TO BASEMENT C–SECTION MECHANICAL ROOM)

C1	PUMP 1–P1 CURRENT SENSING RELAY	TRANSMITS MOTOR CURRENT TO DCP TO INDICATE STATUS OF PUMP 1–P1.
C2	PUMP 1–P2 CURRENT SENSING RELAY	TRANSMITS MOTOR CURRENT TO DCP TO INDICATE STATUS OF PUMP 1–P2.
DCP	DISTRIBUTED CONTROL PANEL (INTEGRAL TO EQUIPMENT)	CONTROLS SEQUENCE OF HVAC SYSTEMS IN ACCORDANCE WITH THE SEQUENCE OF OPERATION.
DP1 DP2 DP3	HEATING HOT WATER SYSTEM DIFFERENTIAL PRESSURE SENSOR	TRANSMITS HEATING HOT WATER DIFFERENTIAL PRESSURE TO DCP FOR CONTROL OF PUMP VARIABLE SPEED MOTOR CONTROLLER(S).
ECC	ENGINEERING CONTROL CENTER	EXISTING HOSPITAL FRONT END/SERVER, ETC.
M1	HEATING HOT WATER SYSTEM FLOW METER (RELOCATED)	TRANSMITS HEATING HOT WATER SYSTEM FLOW TO DCP FOR CONTROL OF 2–WAY MODULATING BYPASS VALVE AND FOR BTUH CALCULATION.
P1	STEAM SUPPLY PRESSURE SENSOR	TRANSMITS 1–PFC1A STEAM SUPPLY PRESSURE TO DCP FOR CONTROL, INDICATION, AND ALARM.
P2	STEAM SUPPLY PRESSURE SENSOR	TRANSMITS 1–PFC1B STEAM SUPPLY PRESSURE TO DCP FOR CONTROL, INDICATION, AND ALARM.
R1	PUMP 1–P1 START/STOP RELAY	CONTROLS STARTING & STOPPING OF PUMP 1–P1.
R2	PUMP 1–P2 START/STOP RELAY	CONTROLS STARTING & STOPPING OF PUMP 1–P2.
T1	COMMON HOT WATER RETURN WATER TEMPERATURE SENSOR	SENSES AND TRANSMITS COMMON HOT WATER RETURN TEMPERATURE TO DCP FOR INDICATION ONLY.
T2	COMMON HOT WATER SUPPLY WATER TEMPERATURE SENSOR	SENSES AND TRANSMITS COMMON HOT WATER SUPPLY TEMPERATURE TO DCP FOR INDICATION ONLY.
T3	SYSTEM HOT WATER RETURN TEMPERATURE SENSOR (RELOCATED)	SENSES AND TRANSMITS SYTEM HOT WATER RETURN TEMPERATURE TO DCP FOR BTUH CALCULATION.
T4	CONVERTER 1–PFC1A LEAVING WATER TEMPERATURE SENSOR	SENSES AND TRANSMITS CONVERTER LEAVING HOT WATER TEMPERATURE TO DCP FOR CONTROL AND INDICATION.
T5	CONVERTER 1–PFC1B LEAVING WATER TEMPERATURE SENSOR	SENSES AND TRANSMITS CONVERTER LEAVING HOT WATER TEMPERATURE TO DCP FOR CONTROL AND INDICATION.
T6	SYSTEM HOT WATER SUPPLY TEMPERATURE SENSOR (RELOCATED)	SENSES AND TRANSMITS SYTEM HOT WATER SUPPLY TEMPERATURE TO DCP FOR BTUH CALCULATION.
V1	TWO–POSITION STEAM CONTROL VALVE	OPENS/CLOSES FLOW OF STEAM TO CONVERTER 1–PFC1A IN RESPONSE TO DCP.
V2	MODULATING CONDENSATE CONTROL VALVE	PROPORTIONS FLOW OF CONDENSATE OUT OF CONVERTER 1–PFC1A IN RESPONSE TO DCP.
V3	TWO–POSITION HOT WATER ISOLATION CONTROL VALVE	ISOLATES HOT WATER FLOW TO CONVERTER 1–PFC1A IN RESPONSE TO DCP.
V4	TWO–POSITION STEAM CONTROL VALVE	OPENS/CLOSES FLOW OF STEAM TO CONVERTER 1–PFC1B IN RESPONSE TO DCP.
V5	MODULATING CONDENSATE CONTROL VALVE	PROPORTIONS FLOW OF CONDENSATE OUT OF CONVERTER 1–PFC1B IN RESPONSE TO DCP.
V6	TWO–POSITION HOT WATER ISOLATION CONTROL VALVE	ISOLATES HOT WATER FLOW TO CONVERTER 1–PFC1B IN RESPONSE TO DCP.
V7	TWO–WAY, MODULATING HOT WATER BYPASS CONTROL VALVE	BYPASSES HOT WATER TO MAINTAIN PUMP MINIMUM FLOW, IN RESPONSE TO DCP.
VSMC1	VARIABLE SPEED MOTOR CONTROLLER WITH MOTOR STARTER.	CONTROLS SPEED OF PUMP 1–P1 IN RESPONSE TO DCP.
VSMC2	VARIABLE SPEED MOTOR CONTROLLER WITH MOTOR STARTER.	CONTROLS SPEED OF PUMP 1–P2 IN RESPONSE TO DCP.

BASEMENT C–SECTION MECHANICAL ROOM POINTS LIST

	POINT ID	DEVICE TAG	DEVICE DESCRIPTION	POINT TYPE DI	DO	AI	AO
	1	T1	COMMON HOT WATER RETURN TEMPERATURE SENSOR			X	
	2	T2	COMMON HOT WATER SUPPLY TEMPERATURE SENSOR			X	
	3	DP1	HOT WATER SYSTEM DIFFERENTIAL PRESSURE			X	
	4	P1	1–PFC1A STEAM SUPPLY INLET PRESSURE SENSOR			X	
	5	T4	1–PFC1A LEAVING WATER TEMPERATURE SENSOR			X	
*	6	T3	SYSTEM HOT WATER RETURN TEMPERATURE SENSOR			X	
	7	C1	HOT WATER PUMP 1–P1 STATUS CURRENT SWITCH	X			
	8	P2	1–PFC1B STEAM SUPPLY INLET PRESSURE SENSOR			X	
	9	T5	1–PFC1B LEAVING WATER TEMPERATURE SENSOR			X	
*	10	T6	SYSTEM HOT WATER SUPPLY TEMPERATURE SENSOR			X	
	11	C2	HOT WATER PUMP 1–P2 STATUS CURRENT SWITCH	X			
	12	DP2	HOT WATER SYSTEM DIFFERENTIAL PRESSURE			X	
	13	DP3	HOT WATER SYSTEM DIFFERENTIAL PRESSURE			X	
*	14	M1	HOT WATER SYSTEM FLOW METER			X	
	A	V1	CONVERTER 1–PFC1A TWO POSITION STEAM CONTROL VALVE		X		
	B	V2	CONVERTER 1–PFC1A MODULATING STEAM CONDENSATE CONTROL VALVE				X
	C	V3	CONVERTER 1–PFC1A HEATING HOT WATER ISOLATION VALVE		X		
	D	VSMC1	HOT WATER PUMP 1–P1 VARIABLE SPD. MTR. CONTROLLER W/ STARTER				X
	E	R1	HOT WATER PUMP 1–P1 START/STOP		X		
	F	V4	CONVERTER 1–PFC1B TWO POSITION STEAM CONTROL VALVE		X		
	G	V5	CONVERTER 1–PFC1B MODULATING STEAM CONDENSATE CONTROL VALVE				X
	H	V6	CONVERTER 1–PFC1B HEATING HOT WATER ISOLATION VALVE		X		
	I	VSMC2	HOT WATER PUMP 1–P2 VARIABLE SPD. MTR. CONTROLLER W/ STARTER				X
	J	R2	HOT WATER PUMP 1–P2 START/STOP		X		
	K	V7	2–WAY, MODULATING BYPASS VALVE				X

* INDICATES EXISTING CONTROL DEVICE/SENSOR TO BE RELOCATED UNDER THIS PROJECT – SEE FLOOR PLANS.



BASEMENT C–SECTION MECHANICAL ROOM PLATE & FRAME HOT WATER CONVERTERS AND CIRCULATING PUMPS

HOT WATER CONVERTER AND PUMP CONTROL SEQUENCE

1 GENERAL

1.1 TWO EXISTING SHELL & TUBE STEAM TO HOT WATER CONVERTERS AND ASSOCIATED PUMPS, SPECIALTIES, ETC. ARE BEING REMOVED UNDER THIS PROJECT AND REPLACED WITH TWO NEW PLATE & FRAME STEAM TO HOT WATER CONVERTERS AND ASSOCIATED VARIABLE SPEED HOT WATER PUMPS UNDER THIS PROJECT. NEW PLATE AND FRAME SKID PACKAGES SHALL INCLUDE INTEGRAL CONTROL PANELS BY SKID MANUFACTURER, TO ACCOMPLISH THIS SEQUENCE OF CONTROLS IN CONJUNCTION WITH THE BUILDING CONTROL SYSTEM. INTEGRAL CONTROL PANELS SHALL HAVE BACNET COMMUNICATIONS CAPABILITY, AND SHALL BE INTEGRATED INTO THE BUILDING CONTROL SYSTEM.

1.2 PLATE & FRAME SKID PACKAGES SHALL BE FURNISHED WITH MODULATING STEAM CONDENSATE CONTROL VALVE V2 (AND V5), TWO–POSITION STEAM SUPPLY CONTROL VALVE V1 (AND V4), STEAM INLET SUPPLY PRESSURE SENSOR P1 (AND P2) AND HEATING HOT WATER LEAVING TEMPERATURE SENSOR T4 (AND T7). ALL VALVES & TEMPERATURE SENSORS PROVIDED BY SKID MANUFACTURER SHALL BE PRE–PIPED AND PRE–WIRED TO INTEGRAL SKID CONTROL PANEL.

1.3 SEQUENCE SHALL HAVE THE ABILITY TO BE INITIATED BY THE INTEGRAL SKID CONTROL PANEL, OR REMOTELY AT THE ECC. EACH CONVERTER AND PUMP IS SIZED FOR 100% OF THE ANTICIPATED FUTURE SYSTEM LOAD (FULL REDUNDANCY).

1.4 2–WAY, MODULATING CONTROL VALVE V7 SHALL BE PROVIDED IN LOCATION SHOWN ON SHEET 1–MB1, IN ORDER TO MAINTAIN MANUFACTURER'S REQUIRED PUMP MINIMUM FLOW AT ALL TIMES. ATC SHALL RELOCATE AND RECALIBRATE EXISTING HOT WATER FLOW METER PER MANUFACTURER'S INSTRUCTIONS, AS INDICATED ON SHEET 1–DB1 AND 1–MB1. IF SYSTEM HOT WATER FLOW, AS INDICATED BY RELOCATED FLOW METER, IS AT OR ABOVE PUMP MANUFACTURER'S MINIMUM RECOMMENDED FLOW RATE, VALVE V7 SHALL REMAIN CLOSED. IF SYSTEM FLOW RATE DROPS BELOW PUMP MINIMUM FLOW RATE, VALVE V7 SHALL MODULATE OPEN TO MAINTAIN PUMP MINIMUM FLOW WITHIN MINUS ZERO TO PLUS 5 GPM OF PUMP MINIMUM FLOW RATE. COORDINATE PROGRAMMING WITH PUBLISHED MINIMUM FLOW OF PUMP UTILIZED.

1.5 RELOCATED FLOW METER M1 AND PIPE TEMPERATURE SENSORS T3 & T6 SHALL BE UTILIZED TO CALCULATE HEATING HOT WATER SYSTEM BTUH (INSTANTANEOUS AND TOTALIZED) THROUGH THE BUILDING CONTROL SYSTEM.

2 HOT WATER CIRCULATING PUMPS

2.1 CONVERTERS AND PUMPS SHALL OPERATE IN A LEAD–LAG ARRANGEMENT. THE LEAD HOT WATER PUMP 1–P1 SHALL RUN CONTINUOUSLY IN CONJUNCTION WITH LEAD HOT WATER CONVERTER 1–PFC1A AND THE LAG HOT WATER PUMP 1–P2 WITH CONVERTER 1–PFC1B, TO PROVIDE YEAR–ROUND HOT WATER FOR SPACE TEMPERATURE CONTROL. START LAG PUMP 1–P2 UPON FAILURE OF LEAD PUMP. A SEQUENCE PROGRAM SHALL ROTATE THE LEAD AND LAG CONVERTERS AND PUMPS ON A MONTHLY BASIS.

2.2 EACH PUMP SHALL INCLUDE A CURRENT SENSING RELAY TO INDICATE PUMP STATUS.

2.3 PROVIDE THREE NEW DIFFERENTIAL PRESSURE SENSORS DP1, DP2, AND DP3 IN EXISTING PIPING. LOCATE BETWEEN HOT WATER SUPPLY AND RETURN PIPES WHERE INDICATED ON SHEET 1–MDV2. MODULATE THE HOT WATER PUMP VARIABLE SPEED MOTOR CONTROLLER TO MAINTAIN DIFFERENTIAL PRESSURE SETPOINTS. ALL THREE DIFFERENTIAL PRESSURE SENSORS SHALL BE SATISFIED AT ALL TIMES WHEN PUMP IS RUNNING.

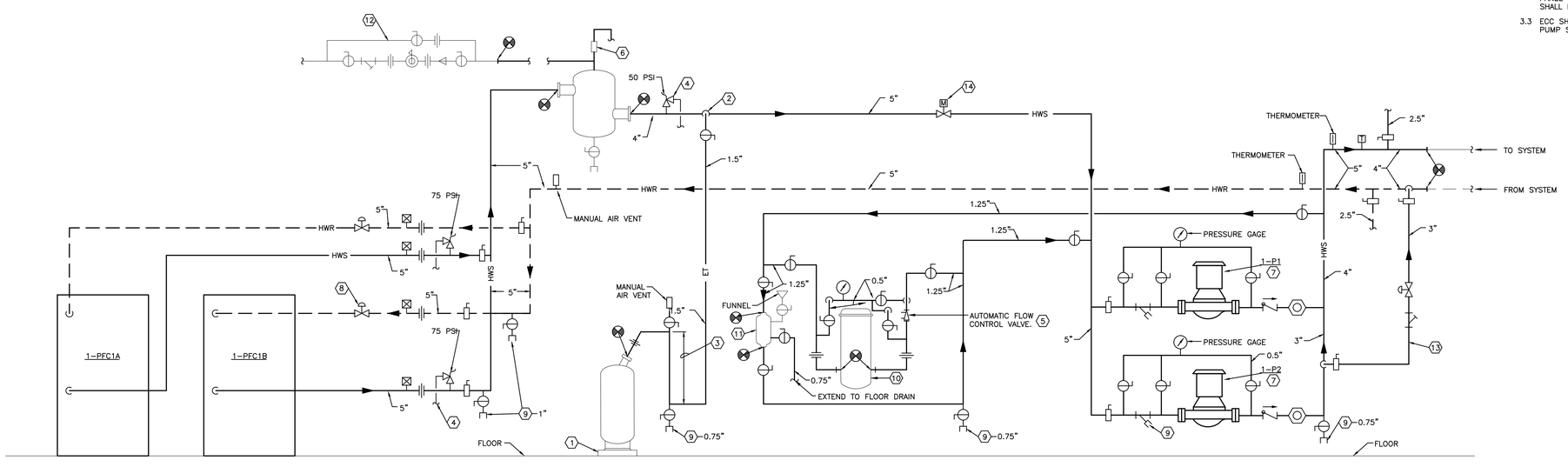
3 HOT WATER CONVERTER

3.1 TWO–POSITION STEAM SUPPLY VALVE V1 (AND V4), AS WELL AS MODULATING CONDENSATE CONTROL VALVE V2 (AND V5), SHALL FAIL CLOSED. THE HOT WATER ISOLATION VALVE V3 (AND V6) SHALL FAIL OPEN. VALVES V1 & V4 AND V2 & V5 SHALL BE CONTROLLED BY INTEGRAL SKID CONTROL PANEL, TO MAINTAIN HEATING HOT WATER SUPPLY TEMPERATURE AT SETPOINT. SKID CONTROL PANEL SHALL RECEIVE SETPOINT FROM ECC. ECC SHALL CALCULATE HOT WATER SUPPLY TEMPERATURE SETPOINT BASED UPON THE FOLLOWING RESET SCHEDULE, FROM OUTDOOR AIR TEMPERATURE:

OUTDOOR AIR TEMP	HOT WATER TEMP
0 DEG. F	180 DEG. F
70 DEG. F	95 DEG. F.

3.2 CONTROL SEQUENCE, BASED ON VALVES V1 & V4 AND V2 & V5, SHALL BE AS FOLLOWS: UPON DEMAND FOR HEATING HOT WATER, OPEN VALVE V1 (OR V4) IN RESPONSE TO DCP. MODULATING CONDENSATE CONTROL VALVE V2 (OR V5) SHALL REMAIN CLOSED, TO ALLOW CONDENSATE SUBCOOLING WITHIN HEAT EXCHANGER, TO BELOW FLASH TEMPERATURE. IN RESPONSE TO INTEGRAL SKID CONTROL PANEL, CONDENSATE CONTROL VALVE SHALL MODULATE OPEN TO MAINTAIN HEATING HOT WATER SUPPLY TEMPERATURE SETPOINT, ALLOWING CONDENSATE TO DRAIN FROM HEAT EXCHANGER. UPON INCREASE IN HEATING HOT WATER SUPPLY TEMEPRATURE ABOVE SETPOINT, V2 (OR V5) SHALL MODULATE CLOSED. TWO–POSITION STEAM INLET VALVE V1 (OR V4) SHALL SERVE AS SAFETY SHUTOFF VALVES, AND SHALL CLOSE IN THE EVENT OF HIGH STEAM PRESSURE (40 PSIG OR HIGHER, ADJ.) AS DETECTED BY INLET STEAM PRESSURE SENSOR P1 (OR P2), OR HIGH OUTLET WATER SUPPLY TEMPERATURE AS DETECTED BY SENSOR T4 (OR T7). INTEGRAL SKID CONTROL PANEL SHALL GENERATE ALARM AT ECC UPON HIGH OUTLET WATER SUPPLY TEMPERATURE AT T4 (OR T7). ALL VALVES SHALL BE SEPARATE CONTROL POINTS.

3.3 ECC SHALL OPEN HEATING HOT WATER ISOLATION CONTROL VALVE V3 (OR V6) PRIOR TO ITS RESPECTIVE HOT WATER PUMP STARTING, AND CLOSE WHEN PUMP IS OFF.



BASEMENT C–SECTION MECHANICAL ROOM HEATING HOT WATER SYSTEM SCHEMATIC

SCALE: NONE

GENERAL NOTES

A HEAVIER LINEWEIGHTS ON THIS SHEET INDICATE NEW WORK TO BE PROVIDED AS PART OF THIS PROJECT. LIGHTER LINEWEIGHTS INDICATE EXISTING WORK TO REMAIN, OR EXISTING TO BE RELOCATED AS PART OF THIS PROJECT.

NOTES

1 CONCRETE BASE.

2 CONNECT TO SIDE OF MAIN TO PREVENT AIR OR DEBRIS FROM ENTERING PIPE TO TANK. TOP OR BOTTOM CONNECTION NOT PERMITTED.

3 PROVIDE 12" MINIMUM DROP ANTI–THERMOSYPHON LOOP TO PREVENT GRAVITY HEATING OF TANK.

4 EXTEND SAFETY RELIEF VALVE DISCHARGE TO FLOOR DRAIN.

5 AUTOMATIC FLOW CONTROL VALVE SHALL BE SIZED FOR 24 GPM FLOW. PROVIDE CARTRIDGE TO BALANCE TO 12.2 GPM UNDER THIS PROJECT.

6 EXISTING HIGH CAPACITY AUTO AIR VENT TO BE RELOCATED WITH AIR SEPARATOR, AS INDICATED ON SHEETS 1–DB1 AND 1–MB1. EXTEND DISCHARGE TO FLOOR DRAIN.

7 PROVIDE AN ANGLE FRAME TO SUPPORT PUMPS AND PIPING OFF FLOOR.

8 AUTOMATIC ISOLATION CONTROL VALVE.

9 PROVIDE HOSE CONNECTION AND SCREW–ON CAP.

10 EXISTING SIDESTREAM FILTER TO BE RELOCATED AS INDICATED ON SHEETS 1–DB1 AND 1–MB1. ALLOW SPACE FOR INSULATING FILTER AND PIPING.

11 EXISTING CHEMICAL POT FEEDER TO BE RELOCATED AS INDICATED ON SHEETS 1–DB1 AND 1–MB1. INSTALL TOP OF CHEMICAL POT FEEDER TANK NO MORE THAN 3'–0" ABOVE FLOOR.

12 EXISTING WATER MAKEUP ASSEMBLY TO BE RE–USED. REFER TO FLOOR PLAN ON SHEET 1–MB1 FOR NEW WATER MAKEUP PIPE ROUTING.

13 BYPASS LINE WITH CONTROL VALVE TO ENSURE PUMP MINIMUM FLOW.

14 RELOCATED FLOW METER – REFER TO FLOOR PLANS & CONTROL DIAGRAMS & SEQUENCES.

Revisions	Date
ADDENDUM #1	08/28/2013

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PROJECT NO. 2012-04005 FIRM LICENSE: 01528

Drawing Title: BASEMENT C-SECTION MECHANICAL ROOM PIPING SCHEMATIC, CONTROLS AND AUTOMATION

Approved Project Director

Project Title: HOSPITAL STEAM SYSTEM RECORD DRAWINGS

Location: CINCINNATI, OHIO

Date: 01/04/2013 | Checked: JAC | Drawn: DRV

Project Number: 539-13-107

Building Number: 1

Drawing Number: H6

Dwg. 7 of 47

Office of Construction and Facilities Management

Department of Veterans Affairs

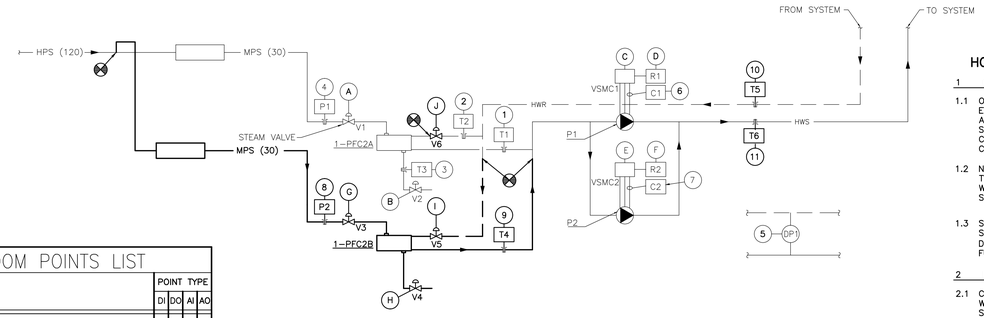
VA FORM 08–6231

LEGEND (APPLIES TO SUB-BASEMENT SERVICE ROOM)

C1	PUMP P1 CURRENT SENSING RELAY	TRANSMITS MOTOR CURRENT TO DCP TO INDICATE STATUS OF PUMP P1.
C2	PUMP P2 CURRENT SENSING RELAY	TRANSMITS MOTOR CURRENT TO DCP TO INDICATE STATUS OF PUMP P2.
DCP	DISTRIBUTED CONTROL PANEL (INTEGRAL TO EQUIPMENT)	CONTROLS SEQUENCE OF HVAC SYSTEMS IN ACCORDANCE WITH THE SEQUENCE OF OPERATION.
DP1	HEATING HOT WATER SYSTEM DIFFERENTIAL PRESSURE SENSOR	TRANSMITS HEATING HOT WATER DIFFERENTIAL PRESSURE TO DCP FOR CONTROL OF PUMP VARIABLE SPEED MOTOR CONTROLLER(S).
ECC	ENGINEERING CONTROL CENTER	EXISTING HOSPITAL FRONT END/SERVER, ETC.
P1	STEAM SUPPLY PRESSURE SENSOR	TRANSMITS 1-PFC2A STEAM SUPPLY PRESSURE TO DCP FOR CONTROL, INDICATION, AND ALARM.
P2	**STEAM SUPPLY PRESSURE SENSOR**	**TRANSMITS 1-PFC2B STEAM SUPPLY PRESSURE TO DCP FOR CONTROL, INDICATION, AND ALARM.**
R1	PUMP P1 START/STOP RELAY	CONTROLS STARTING & STOPPING OF PUMP P1.
R2	PUMP P2 START/STOP RELAY	CONTROLS STARTING & STOPPING OF PUMP P2.
T1	CONVERTER 1-PFC2A LEAVING WATER TEMPERATURE SENSOR	SENSES AND TRANSMITS CONVERTER ENTERING HOT WATER TEMPERATURE TO DCP FOR CONTROL AND INDICATION.
T2	CONVERTER 1-PFC2A ENTERING WATER TEMPERATURE SENSOR	SENSES AND TRANSMITS CONVERTER LEAVING HOT WATER TEMPERATURE TO DCP FOR CONTROL AND INDICATION.
T3	CONVERTER 1-PFC2A LEAVING CONDENSATE TEMPERATURE SENSOR	SENSES AND TRANSMITS CONVERTER LEAVING CONDENSATE TEMPERATURE TO DCP FOR CONTROL AND INDICATION.
T4	**CONVERTER 1-PFC2B LEAVING WATER TEMPERATURE SENSOR**	**SENSES AND TRANSMITS CONVERTER LEAVING HOT WATER TEMPERATURE TO DCP FOR CONTROL AND INDICATION.**
T5	**COMMON HOT WATER RETURN WATER TEMPERATURE SENSOR**	**SENSES AND TRANSMITS COMMON HOT WATER RETURN TEMPERATURE TO DCP FOR INDICATION ONLY.**
T6	**COMMON HOT WATER SUPPLY WATER TEMPERATURE SENSOR**	**SENSES AND TRANSMITS COMMON HOT WATER SUPPLY TEMPERATURE TO DCP FOR INDICATION ONLY.**
V1	TWO-POSITION STEAM CONTROL VALVE	OPENS/CLOSES FLOW OF STEAM TO CONVERTER 1-PFC2A IN RESPONSE TO DCP.
V2	MODULATING CONDENSATE CONTROL VALVE	PROPORTIONS FLOW OF CONDENSATE OUT OF CONVERTER 1-PFC2A IN RESPONSE TO DCP.
V3	**TWO-POSITION STEAM CONTROL VALVE**	**OPENS/CLOSES FLOW OF STEAM TO CONVERTER 1-PFC2B IN RESPONSE TO DCP.**
V4	**MODULATING CONDENSATE CONTROL VALVE**	**PROPORTIONS FLOW OF CONDENSATE OUT OF CONVERTER 1-PFC2B IN RESPONSE TO DCP.**
V5	**TWO-POSITION HOT WATER ISOLATION CONTROL VALVE**	**ISOLATES HOT WATER FLOW TO CONVERTER 1-PFC2B IN RESPONSE TO DCP.**
V6	**TWO-POSITION HOT WATER ISOLATION CONTROL VALVE**	**ISOLATES HOT WATER FLOW TO CONVERTER 1-PFC2A IN RESPONSE TO DCP.**
VSMC1	VARIABLE SPEED MOTOR CONTROLLER WITH MOTOR STARTER.	CONTROLS SPEED OF PUMP P1 IN RESPONSE TO DCP.
VSMC2	VARIABLE SPEED MOTOR CONTROLLER WITH MOTOR STARTER.	CONTROLS SPEED OF PUMP P2 IN RESPONSE TO DCP.

SUB-BASEMENT SERVICE ROOM POINTS LIST

POINT ID	DEVICE TAG	DEVICE DESCRIPTION	POINT TYPE DI	DO	AI	AO
1	T1	1-PFC2A LEAVING WATER TEMPERATURE SENSOR			X	
2	T2	1-PFC2A ENTERING WATER TEMPERATURE SENSOR			X	
3	T3	1-PFC2A LEAVING CONDENSATE TEMPERATURE SENSOR			X	
4	P1	1-PFC2A STEAM SUPPLY INLET PRESSURE SENSOR			X	
5	DP1	HOT WATER SYSTEM DIFFERENTIAL PRESSURE			X	
6	C1	HOT WATER PUMP P1 STATUS CURRENT SWITCH	X			
7	C2	HOT WATER PUMP P2 STATUS CURRENT SWITCH	X			
8	**P2**	**1-PFC2B STEAM SUPPLY INLET PRESSURE SENSOR**			**X**	
9	**T4**	**1-PFC2B LEAVING WATER TEMPERATURE SENSOR**			**X**	
10	**T5**	**COMMON HOT WATER RETURN TEMPERATURE SENSOR**			**X**	
11	**T6**	**COMMON HOT WATER SUPPLY TEMPERATURE SENSOR**			**X**	
A	V1	CONVERTER 1-PFC2A TWO POSITION STEAM CONTROL VALVE		X		
B	V2	CONVERTER 1-PFC2A MODULATING STEAM CONDENSATE CONTROL VALVE				X
C	VSMC1	HOT WATER PUMP P1 VARIABLE SPD. MTR. CONTROLLER W/ STARTER				X
D	R1	HOT WATER PUMP P1 START/STOP		X		
E	VSMC2	HOT WATER PUMP P2 VARIABLE SPD. MTR. CONTROLLER W/ STARTER				X
F	R2	HOT WATER PUMP P2 START/STOP		X		
G	**V3**	**CONVERTER 1-PFC2B TWO POSITION STEAM CONTROL VALVE**		**X**		
H	**V4**	**CONVERTER 1-PFC2B MODULATING STEAM CONDENSATE CONTROL VALVE**				**X**
I	**V5**	**CONVERTER 1-PFC2B HEATING HOT WATER ISOLATION VALVE**		**X**		
J	**V6**	**CONVERTER 1-PFC2A HEATING HOT WATER ISOLATION VALVE**		**X**		



SUB-BASEMENT SERVICE ROOM PLATE & FRAME HOT WATER CONVERTERS AND CIRCULATING PUMPS

HOT WATER CONVERTER AND PUMP CONTROL SEQUENCE

1 GENERAL

1.1 ONE EXISTING PLATE & FRAME STEAM TO HOT WATER CONVERTER AND TWO EXISTING BASE MOUNTED PUMPS, SPECIALTIES, ETC. ARE EXISTING TO REMAIN UNDER THIS PROJECT. ONE ADDITIONAL PLATE & FRAME STEAM TO HOT WATER CONVERTER AND ASSOCIATED SPECIALTIES IS BEING PROVIDED AS PART OF THIS PROJECT. NEW PLATE AND FRAME SKID PACKAGE SHALL INCLUDE INTEGRAL CONTROL PANEL BY SKID MANUFACTURER, TO ACCOMPLISH THIS SEQUENCE OF CONTROLS IN CONJUNCTION WITH THE BUILDING CONTROL SYSTEM. INTEGRAL CONTROL PANEL SHALL HAVE BACNET COMMUNICATIONS CAPABILITY, AND SHALL BE INTEGRATED INTO THE EXISTING BUILDING CONTROL SYSTEM.

1.2 NEW PLATE & FRAME SKID PACKAGE SHALL BE FURNISHED WITH MODULATING STEAM CONDENSATE CONTROL VALVE V4, TWO-POSITION STEAM SUPPLY CONTROL VALVE V3, STEAM INLET SUPPLY PRESSURE SENSOR P2, AND HEATING HOT WATER LEAVING TEMPERATURE SENSOR T4. ALL VALVES & TEMPERATURE SENSORS PROVIDED BY SKID MANUFACTURER SHALL BE PRE-PIPED AND PRE-WIRED TO INTEGRAL SKID CONTROL PANEL

1.3 SEQUENCE SHALL HAVE THE ABILITY TO BE INITIATED BY THE INTEGRAL SKID CONTROL PANEL, OR REMOTELY AT THE ECC. SEQUENCING PROGRAMMING SHALL BE ADDED SUCH THAT CONVERTERS CAN RUN SIMULTANEOUSLY AS LOAD DEMAND DICTATES (LEAD-STANDBY ARRANGEMENT) – EACH CONVERTER AND PUMP IS SIZED FOR 50% OF THE ANTICIPATED FUTURE SYSTEM LOAD.

2 HOT WATER CIRCULATING PUMPS

2.1 CONVERTERS AND PUMPS SHALL BE REPROGRAMMED TO OPERATE IN A LEAD-STANDBY ARRANGEMENT. THE LEAD HOT WATER PUMP P1 SHALL RUN CONTINUOUSLY IN CONJUNCTION WITH LEAD HOT WATER CONVERTER 1-PFC2A AND THE STANDBY HOT WATER PUMP P2 WITH CONVERTER 1-PFC2B, TO PROVIDE YEAR-ROUND HOT WATER FOR SPACE TEMPERATURE CONTROL. START STANDBY PUMP UPON FAILURE OF LEAD PUMP. A SEQUENCE PROGRAM SHALL ROTATE THE LEAD AND STANDBY CONVERTERS AND PUMPS ON A MONTHLY BASIS.

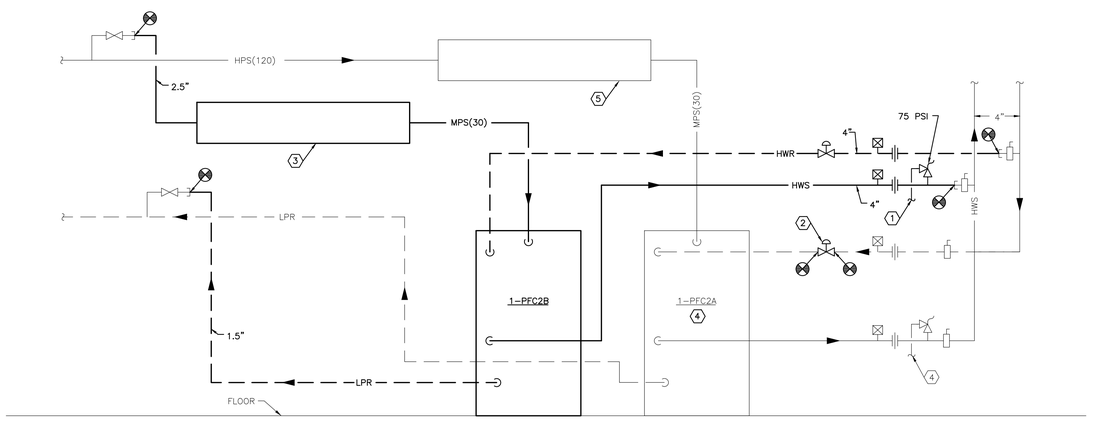
3 HOT WATER CONVERTER

3.1 TWO-POSITION STEAM SUPPLY VALVE V3, AS WELL AS MODULATING CONDENSATE CONTROL VALVE V4, SHALL FAIL CLOSED. HOT WATER ISOLATION VALVE V5 (AND V6) SHALL FAIL OPEN. VALVES V3 AND V4 SHALL BE CONTROLLED BY INTEGRAL SKID CONTROL PANEL, TO MAINTAIN HEATING HOT WATER SUPPLY TEMPERATURE AT SETPOINT. SKID CONTROL PANEL SHALL RECEIVE SETPOINT FROM ECC. ECC SHALL CALCULATE HOT WATER SUPPLY TEMPERATURE BASED UPON THE FOLLOWING RESET SCHEDULE, FROM OUTDOOR AIR TEMPERATURE:

OUTDOOR AIR TEMP	HOT WATER TEMP
0 DEG. F	180 DEG. F
70 DEG. F	95 DEG. F.

3.2 CONTROL SEQUENCE, BASED ON VALVES V3 AND V4, SHALL BE AS FOLLOWS: UPON DEMAND FOR HEATING HOT WATER, OPEN VALVE V3 IN RESPONSE TO DCP. MODULATING CONDENSATE CONTROL VALVE V4 SHALL REMAIN CLOSED, TO ALLOW CONDENSATE SUBCOOLING WITHIN HEAT EXCHANGER, TO BELOW FLASH TEMPERATURE. IN RESPONSE TO INTEGRAL SKID CONTROL PANEL, CONDENSATE CONTROL VALVE SHALL MODULATE OPEN TO MAINTAIN HEATING HOT WATER SUPPLY TEMPERATURE SETPOINT, ALLOWING CONDENSATE TO DRAIN FROM HEAT EXCHANGER. UPON INCREASE IN HEATING HOT WATER SUPPLY TEMEPRATURE ABOVE SETPOINT, V4 SHALL MODULATE CLOSED. STEAM INLET VALVE V3 SHALL SERVE AS SAFETY SHUTOFF VALVE, AND SHALL CLOSE IN THE EVENT OF HIGH STEAM PRESSURE (40 PSIG OR HIGHER, ADJUSTABLE) AS DETECTED BY INLET STEAM PRESSURE SENSOR P2, OR HIGH OUTLET WATER SUPPLY TEMPERATURE AS DETECTED BY SENSOR T4. INTEGRAL SKID CONTROL PANEL SHALL GENERATE ALARM AT ECC UPON HIGH OUTLET WATER SUPPLY TEMPERATURE. ALL VALVES SHALL BE SEPARATE CONTROL POINTS.

3.3 ECC SHALL OPEN HEATING HOT WATER ISOLATION CONTROL VALVE V5 (OR V6) PRIOR TO ITS RESPECTIVE HOT WATER PUMP STARTING, AND CLOSE WHEN PUMP IS OFF.



SUB-BASEMENT SERVICE ROOM STEAM/HEATING HOT WATER SYSTEM SCHEMATIC
SCALE: NONE

GENERAL NOTES

A HEAVIER LINEWEIGHTS ON THIS SHEET INDICATE NEW WORK TO BE PROVIDED AS PART OF THIS PROJECT. LIGHTER LINEWEIGHTS INDICATE EXISTING WORK TO REMAIN, OR EXISTING TO BE RELOCATED AS PART OF THIS PROJECT.

NOTES

1 EXTEND SAFETY RELIEF VALVE DISCHARGE TO FLOOR DRAIN.

2 FULL SIZE AUTOMATIC TWO-POSITION ISOLATION CONTROL VALVE.

3 1/3-2/3 CAPACITY PRESSURE REDUCING STATION, PRESSURE REDUCING VALVES SHALL BE FURNISHED WITH SKID BY MANUFACTURER. STATIONS SHALL BE INSTALLED BY CONTRACTOR, PER PRESSURE REDUCING STATION PIPING DETAIL ON SHEET H3.

4 EXISTING PLATE & FRAME HEAT EXCHANGER SKID PACKAGE TO REMAIN.

5 EXISTING 1/3-2/3 STEAM PRESSURE REDUCING STATION ASSOCIATED WITH 1-PFC2A TO REMAIN.

Revisions	Date
ADDENDUM #1	08/28/2013

CONSULTANTS:

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PROJECT NO. 2012-04005 FIRM LICENSE: 01528

Drawing Title: SUB-BASEMENT SERVICE ROOM PIPING SCHEMATIC, CONTROLS AND AUTOMATION

Approved Project Director

Project Title: HOSPITAL STEAM SYSTEM RECORD DRAWINGS

Location: CINCINNATI, OHIO

Date: 01/04/2013 | Checked: JAC | Drawn: DRV

Project Number: 539-13-107

Building Number: 1

Drawing Number: H7

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Office of Construction and Facilities Management

Department of Veterans Affairs

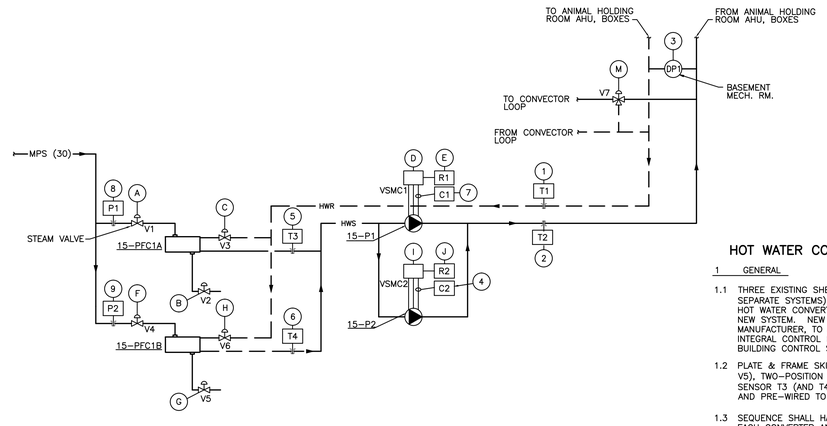
VA FORM 08-6231

LEGEND (APPLIES TO BUILDING 15 BASEMENT MECHANICAL ROOM)

C1	PUMP 15–P1 CURRENT SENSING RELAY	TRANSMITS MOTOR CURRENT TO DCP TO INDICATE STATUS OF PUMP 15–P1.
C2	PUMP 15–P2 CURRENT SENSING RELAY	TRANSMITS MOTOR CURRENT TO DCP TO INDICATE STATUS OF PUMP 15–P2.
DCP	DISTRIBUTED CONTROL PANEL (INTEGRAL TO EQUIPMENT)	CONTROLS SEQUENCE OF HVAC SYSTEMS IN ACCORDANCE WITH THE SEQUENCE OF OPERATION.
DP1	HEATING HOT WATER SYSTEM DIFFERENTIAL PRESSURE SENSOR	TRANSMITS HEATING HOT WATER DIFFERENTIAL PRESSURE TO DCP FOR CONTROL OF PUMP VARIABLE SPEED MOTOR CONTROLLER(S).
ECC	ENGINEERING CONTROL CENTER	EXISTING HOSPITAL FRONT END/SERVER, ETC.
P1	STEAM SUPPLY PRESSURE SENSOR	TRANSMITS 15–PFC1A STEAM SUPPLY PRESSURE TO DCP FOR CONTROL, INDICATION, AND ALARM.
P2	STEAM SUPPLY PRESSURE SENSOR	TRANSMITS 15–PFC1B STEAM SUPPLY PRESSURE TO DCP FOR CONTROL, INDICATION, AND ALARM.
R1	PUMP 15–P1 START/STOP RELAY	CONTROLS STARTING & STOPPING OF PUMP 15–P1.
R2	PUMP 15–P2 START/STOP RELAY	CONTROLS STARTING & STOPPING OF PUMP 15–P2.
T1	COMMON HOT WATER RETURN WATER TEMPERATURE SENSOR	SENSES AND TRANSMITS COMMON HOT WATER RETURN TEMPERATURE TO DCP FOR INDICATION ONLY.
T2	COMMON HOT WATER SUPPLY WATER TEMPERATURE SENSOR	SENSES AND TRANSMITS COMMON HOT WATER SUPPLY TEMPERATURE TO DCP FOR INDICATION ONLY.
T3	CONVERTER 15–PFC1A LEAVING WATER TEMPERATURE SENSOR	SENSES AND TRANSMITS CONVERTER LEAVING HOT WATER TEMPERATURE TO DCP FOR CONTROL AND INDICATION.
T4	CONVERTER 15–PFC1B LEAVING WATER TEMPERATURE SENSOR	SENSES AND TRANSMITS CONVERTER LEAVING HOT WATER TEMPERATURE TO DCP FOR CONTROL AND INDICATION.
V1	TWO–POSITION STEAM CONTROL VALVE	OPENS/CLOSES FLOW OF STEAM TO CONVERTER 15–PFC1A IN RESPONSE TO DCP.
V2	MODULATING CONDENSATE CONTROL VALVE	PROPORTIONS FLOW OF CONDENSATE OUT OF CONVERTER 15–PFC1A IN RESPONSE TO DCP.
V3	TWO–POSITION HOT WATER ISOLATION CONTROL VALVE	ISOLATES HOT WATER FLOW TO CONVERTER 15–PFC1A IN RESPONSE TO DCP.
V4	TWO–POSITION STEAM CONTROL VALVE	OPENS/CLOSES FLOW OF STEAM TO CONVERTER 15–PFC1B IN RESPONSE TO DCP.
V5	MODULATING CONDENSATE CONTROL VALVE	PROPORTIONS FLOW OF CONDENSATE OUT OF CONVERTER 15–PFC1B IN RESPONSE TO DCP.
V6	TWO–POSITION HOT WATER ISOLATION CONTROL VALVE	ISOLATES HOT WATER FLOW TO CONVERTER 15–PFC1B IN RESPONSE TO DCP.
V7	3–WAY, TWO–POSITION HOT WATER ISOLATION CONTROL VALVE	DIVERTS FLOW OF HEATING HOT WATER TO CONVECTOR LOOP OR TO BYPASS LEG IN RESPONSE TO DCP, TO ENSURE PUMP MINIMUM FLOW IS MAINTAINED AT ALL TIMES.
VSMC1	VARIABLE SPEED MOTOR CONTROLLER WITH MOTOR STARTER.	CONTROLS SPEED OF PUMP 15–P1 IN RESPONSE TO DCP.
VSMC2	VARIABLE SPEED MOTOR CONTROLLER WITH MOTOR STARTER.	CONTROLS SPEED OF PUMP 15–P2 IN RESPONSE TO DCP.

BUILDING 15 BASEMENT MECHANICAL ROOM POINTS LIST

POINT ID	DEVICE TAG	DEVICE DESCRIPTION	POINT TYPE DI	DO	AI	AO
1	T1	COMMON HOT WATER RETURN TEMPERATURE SENSOR			X	
2	T2	COMMON HOT WATER SUPPLY TEMPERATURE SENSOR			X	
3	DP1	HOT WATER SYSTEM DIFFERENTIAL PRESSURE			X	
4	C2	HOT WATER PUMP 15–P2 STATUS CURRENT SWITCH	X			
5	T3	15–PFC1A LEAVING WATER TEMPERATURE SENSOR			X	
6	T4	15–PFC1B LEAVING WATER TEMPERATURE SENSOR			X	
7	C1	HOT WATER PUMP 15–P1 STATUS CURRENT SWITCH	X			
8	P1	15–PFC1A STEAM SUPPLY INLET PRESSURE SENSOR			X	
9	P2	15–PFC1B STEAM SUPPLY INLET PRESSURE SENSOR			X	
A	V1	CONVERTER 15–PFC1A TWO POSITION STEAM CONTROL VALVE		X		
B	V2	CONVERTER 15–PFC1A MODULATING STEAM CONDENSATE CONTROL VALVE				X
C	V3	CONVERTER 15–PFC1A HEATING HOT WATER ISOLATION VALVE		X		
D	VSMC1	HOT WATER PUMP 15–P1 VARIABLE SPD. MTR. CONTROLLER W/ STARTER				X
E	R1	HOT WATER PUMP 15–P1 START/STOP		X		
F	V4	CONVERTER 15–PFC1B TWO POSITION STEAM CONTROL VALVE		X		
G	V5	CONVERTER 15–PFC1B MODULATING STEAM CONDENSATE CONTROL VALVE				X
H	V6	CONVERTER 15–PFC1B HEATING HOT WATER ISOLATION VALVE		X		
I	VSMC2	HOT WATER PUMP 15–P2 VARIABLE SPD. MTR. CONTROLLER W/ STARTER				X
J	R2	HOT WATER PUMP 15–P2 START/STOP		X		
K	V7	3–WAY, TWO–POSITION CONVECTOR LOOP BYPASS VALVE		X		



BUILDING 15 BASEMENT MECHANICAL ROOM PLATE & FRAME HOT WATER CONVERTERS AND CIRCULATING PUMPS

HOT WATER CONVERTER AND PUMP CONTROL SEQUENCE

1 GENERAL

1.1 THREE EXISTING SHELL & TUBE STEAM TO HOT WATER CONVERTERS AND ASSOCIATED PUMPS, SPECIALTIES, ETC. (TWO SEPARATE SYSTEMS) ARE BEING REMOVED UNDER THIS PROJECT AND REPLACED WITH TWO NEW PLATE & FRAME STEAM TO HOT WATER CONVERTERS AND ASSOCIATED VARIABLE SPEED HOT WATER PUMPS UNDER THIS PROJECT TO FORM A SINGLE NEW SYSTEM. NEW PLATE AND FRAME SKID PACKAGES SHALL INCLUDE INTEGRAL CONTROL PANELS BY SKID MANUFACTURER, TO ACCOMPLISH THIS SEQUENCE OF CONTROLS IN CONJUNCTION WITH THE BUILDING CONTROL SYSTEM. INTEGRAL CONTROL PANELS SHALL HAVE BACNET COMMUNICATIONS CAPABILITY, AND SHALL BE INTEGRATED INTO THE BUILDING CONTROL SYSTEM.

1.2 PLATE & FRAME SKID PACKAGES SHALL BE FURNISHED WITH MODULATING STEAM CONDENSATE CONTROL VALVE V2 (AND V5), TWO–POSITION STEAM SUPPLY CONTROL VALVE V1 (AND V4), AND HEATING HOT WATER LEAVING TEMPERATURE SENSOR T3 (AND T4). ALL VALVES & TEMPERATURE SENSORS PROVIDED BY SKID MANUFACTURER SHALL BE PRE–PIPED AND PRE–WIRED TO INTEGRAL SKID CONTROL PANEL.

1.3 SEQUENCE SHALL HAVE THE ABILITY TO BE INITIATED BY THE INTEGRAL SKID CONTROL PANEL, OR REMOTELY AT THE ECC. EACH CONVERTER AND PUMP IS SIZED FOR 100% OF THE CURRENT TOTAL SYSTEM LOAD.

1.4 3–WAY, TWO POSITION CONTROL VALVE V7 SHALL BE PROVIDED IN LOCATION SHOWN ON SHEET 15–MB1, IN ORDER TO MAINTAIN MANUFACTURER'S REQUIRED PUMP MINIMUM FLOW AT ALL TIMES. WHEN OUTSIDE AIR TEMPERATURE IS AT OR ABOVE 50 DEGREES F (ADJUSTABLE), VALVE SHALL BE OPEN TO THE CONVECTOR LOOP AND CLOSED TO THE BYPASS. WHEN OUTSIDE AIR TEMPERATURE IS BELOW 50 DEGREES F (ADJUSTABLE), VALVE SHALL BE CLOSED TO THE CONVECTOR LOOP AND OPEN TO THE BYPASS.

2 HOT WATER CIRCULATING PUMPS

2.1 CONVERTERS AND PUMPS SHALL OPERATE IN A LEAD–LAG ARRANGEMENT. THE LEAD HOT WATER PUMP 15–P1 SHALL RUN CONTINUOUSLY IN CONJUNCTION WITH LEAD HOT WATER CONVERTER 15–PFC1A AND THE LAG HOT WATER PUMP 15–P2 WITH CONVERTER 15–PFC1B, TO PROVIDE YEAR–ROUND HOT WATER FOR SPACE TEMPERATURE CONTROL. START LAG PUMP 15–P2 UPON FAILURE OF LEAD PUMP. A SEQUENCE PROGRAM SHALL ROTATE THE LEAD AND LAG CONVERTERS AND PUMPS ON A MONTHLY BASIS.

2.2 EACH PUMP SHALL INCLUDE A CURRENT SENSING RELAY TO INDICATE PUMP STATUS.

2.3 PROVIDE ONE NEW DIFFERENTIAL PRESSURE SENSOR DP1. LOCATE BETWEEN HOT WATER SUPPLY AND RETURN PIPES WHERE INDICATED ON SHEET 15–MB1. MODULATE THE HOT WATER PUMP VARIABLE SPEED MOTOR CONTROLLER TO MAINTAIN DIFFERENTIAL PRESSURE SETPOINT. DIFFERENTIAL PRESSURE SENSOR SHALL BE SATISFIED AT ALL TIMES WHEN EITHER PUMP IS RUNNING.

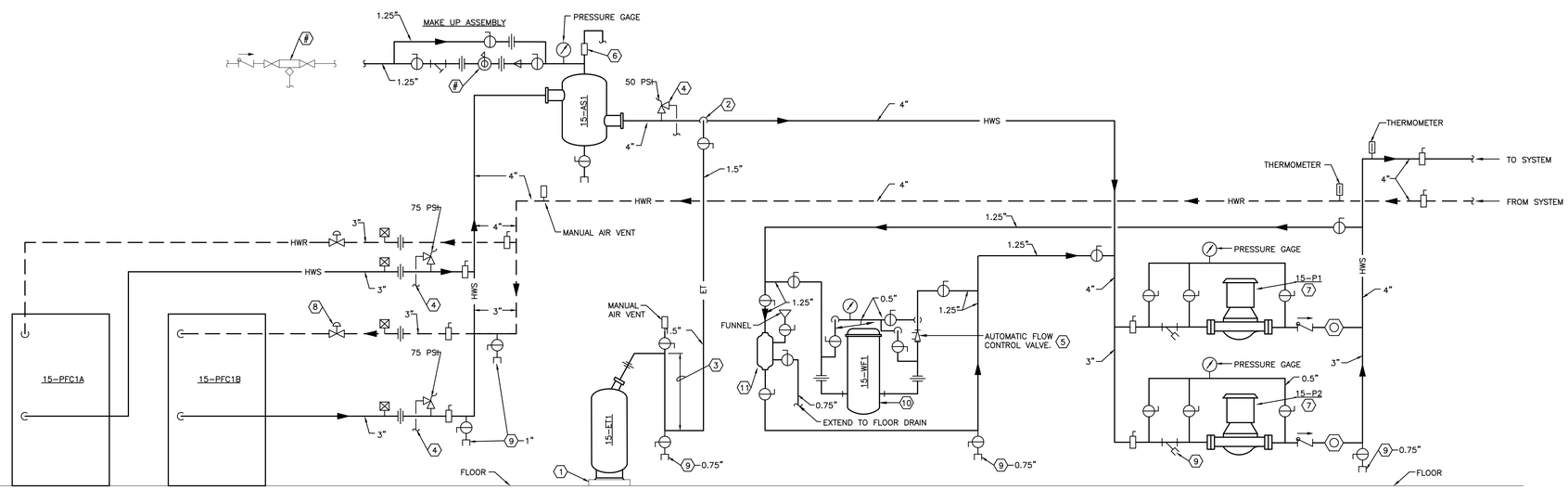
3 HOT WATER CONVERTER

3.1 TWO–POSITION STEAM SUPPLY VALVE V1 (AND V4), AS WELL AS MODULATING CONDENSATE CONTROL VALVE V2 (AND V5), SHALL FAIL CLOSED. THE HOT WATER ISOLATION VALVE V3 (AND V6) SHALL FAIL OPEN. VALVES V1 & V4 AND V2 & V5 SHALL BE CONTROLLED BY INTEGRAL SKID CONTROL PANEL, TO MAINTAIN HEATING HOT WATER SUPPLY TEMPERATURE AT SETPOINT. SKID CONTROL PANEL SHALL RECEIVE SETPOINT FROM ECC. ECC SHALL CALCULATE HOT WATER SUPPLY TEMPERATURE SETPOINT BASED UPON THE FOLLOWING RESET SCHEDULE, FROM OUTDOOR AIR TEMPERATURE::

OUTDOOR AIR TEMP	HOT WATER TEMP
0 DEG. F	180 DEG. F
70 DEG. F	95 DEG. F.

3.2 CONTROL SEQUENCE, BASED ON VALVES V1 & V4 AND V2 & V5, SHALL BE AS FOLLOWS: UPON DEMAND FOR HEATING HOT WATER, OPEN VALVE V1 (OR V4) IN RESPONSE TO DCP. MODULATING CONDENSATE CONTROL VALVE V2 (OR V5) SHALL REMAIN CLOSED, TO ALLOW CONDENSATE SUBCOOLING WITHIN HEAT EXCHANGER, TO BELOW FLASH TEMPERATURE. IN RESPONSE TO INTEGRAL SKID CONTROL PANEL, CONDENSATE CONTROL VALVE SHALL MODULATE OPEN TO MAINTAIN HEATING HOT WATER SUPPLY TEMPERATURE SETPOINT, ALLOWING CONDENSATE TO DRAIN FROM HEAT EXCHANGER. UPON INCREASE IN HEATING HOT WATER SUPPLY TEMEPRATURE ABOVE SETPOINT, V2 (OR V5) SHALL MODULATE CLOSED. TWO–POSITION STEAM INLET VALVE V1 (OR V4) SHALL SERVE AS SAFETY SHUTOFF VALVES, AND SHALL CLOSE IN THE EVENT OF HIGH STEAM PRESSURE (40 PSIG OR HIGHER, ADJ.) AS DETECTED BY INLET STEAM PRESSURE SENSOR P1 (OR P2), OR HIGH OUTLET WATER SUPPLY TEMPERATURE AS DETECTED BY SENSOR T3 (OR T4). INTEGRAL SKID CONTROL PANEL SHALL GENERATE ALARM AT ECC UPON HIGH OUTLET WATER SUPPLY TEMPERATURE AT T3 (OR T4). ALL VALVES SHALL BE SEPARATE CONTROL POINTS.

3.3 ECC SHALL OPEN HEATING HOT WATER ISOLATION CONTROL VALVE V3 (OR V6) PRIOR TO ITS RESPECTIVE HOT WATER PUMP STARTING, AND CLOSE WHEN PUMP IS OFF.



BUILDING 15 BASEMENT MECHANICAL ROOM HEATING HOT WATER SYSTEM SCHEMATIC

SCALE: NONE

GENERAL NOTES

A HEAVIER LINEWEIGHTS ON THIS SHEET INDICATE NEW WORK TO BE PROVIDED AS PART OF THIS PROJECT. LIGHTER LINEWEIGHTS INDICATE EXISTING WORK TO REMAIN, OR EXISTING TO BE RELOCATED AS PART OF THIS PROJECT.

NOTES

1 CONCRETE BASE.

2 CONNECT TO SIDE OF MAIN TO PREVENT AIR OR DEBRIS FROM ENTERING PIPE TO TANK. TOP OR BOTTOM CONNECTION NOT PERMITTED.

3 PROVIDE 12" MINIMUM DROP ANTI–THERMOSYPHON LOOP TO PREVENT GRAVITY HEATING OF TANK.

4 EXTEND SAFETY RELIEF VALVE DISCHARGE TO FLOOR DRAIN.

5 AUTOMATIC FLOW CONTROL VALVE SHALL BE SIZED FOR 24 GPM FLOW. PROVIDE CARTRIDGE TO BALANCE TO 12.2 GPM UNDER THIS PROJECT.

6 PROVIDE NEW HIGH CAPACITY AUTO AIR VENT. EXTEND DISCHARGE TO FLOOR DRAIN.

7 PROVIDE AN ANGLE FRAME TO SUPPORT PUMPS AND PIPING OFF FLOOR.

8 AUTOMATIC ISOLATION CONTROL VALVE.

9 PROVIDE HOSE CONNECTION AND SCREW–ON CAP.

10 PROVIDE NEW SIDESTREAM FILTER. ALLOW SPACE FOR INSULATING FILTER AND PIPING.

11 PROVIDE NEW CHEMICAL POT FEEDER. INSTALL TOP OF CHEMICAL POT FEEDER TANK NO MORE THAN 3'–0" ABOVE FLOOR.

Revisions	Date
ADDENDUM #1	08/28/2013

CONSULTANTS:

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PROJECT NO. 2012-04005 FIRM LICENSE: 01528

Drawing Title: BUILDING 15 BASEMENT MECHANICAL ROOM PIPING SCHEMATIC, CONTROLS AND AUTOMATION

Approved Project Director

Project Title: HOSPITAL STEAM SYSTEM RECORD DRAWINGS

Location: CINCINNATI, OHIO

Date: 01/04/2013 | Checked: JAC | Drawn: DRV

Project Number: 539-13-107

Building Number: 15

Drawing Number: H8

Dwg. 9 of 47

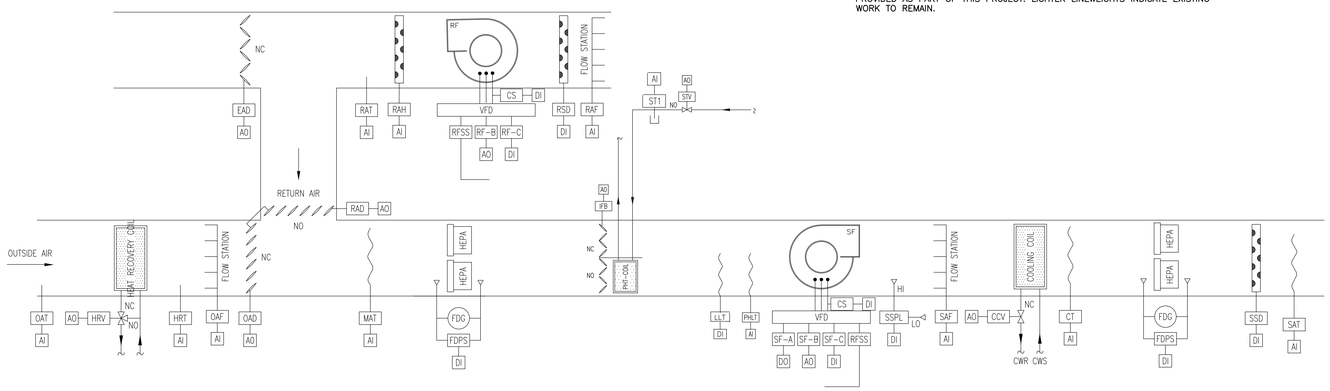
Office of Construction and Facilities Management

Department of Veterans Affairs

VA FORM 08-6231

GENERAL NOTES

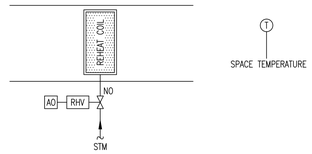
A EXISTING CONTROL SEQUENCE FOR AHU-12 SHOWN ON THIS SHEET FOR REFERENCE. HEAVIER LINEWEIGHTS ON THIS SHEET INDICATE NEW WORK TO BE PROVIDED AS PART OF THIS PROJECT. LIGHTER LINEWEIGHTS INDICATE EXISTING WORK TO REMAIN.



AHU-12 CONTROL SCHEMATIC

INPUT/OUTPUT SUMMARY TABLE

POINT NAME	DESCRIPTION	POINT TYPE: INPUT ANALOG: 4-20 mA TEMPERATURE	INPUT ANALOG: RELATIVE HUMIDITY	INPUT ANALOG: PRESSURE	INPUT ANALOG: OTHER	INPUT DIGITAL: CONTACT	INPUT DIGITAL: FLOW SWITCH	INPUT DIGITAL: PRESSURE SWITCH	INPUT DIGITAL: PULSE	INPUT DIGITAL: OTHER	OUTPUT ANALOG: PNEUMATIC	OUTPUT ANALOG: 4-20 mA	OUTPUT ANALOG: ELECTRONIC	OUTPUT ANALOG: OTHER	OUTPUT DIGITAL: CONTROL RELAY	OUTPUT DIGITAL: E/P SOLENOID	OUTPUT DIGITAL: CONTACTOR	OUTPUT DIGITAL: OTHER	SOFTWARE APPLICATIONS: TOTALIZE	SOFTWARE APPLICATIONS: DIGITAL ALARM	SOFTWARE APPLICATIONS: LOW LIMIT ALARM	SOFTWARE APPLICATIONS: HIGH LIMIT ALARM					FIELD DEVICES ACCESS. FEATURES: BACKUP CONTROL	FIELD DEVICES ACCESS. FEATURES: MANUAL CONTROL		FIELD DEVICES ACCESS. FEATURES: MANUAL RESET	FIELD DEVICES ACCESS. FEATURES: FAIL SAFE LAST POSITION	FIELD DEVICES ACCESS. FEATURES: FAIL SAFE ON/OPEN	FIELD DEVICES ACCESS. FEATURES: FAIL SAFE OFF/CLOSED	REFER TO NOTE NO.
OAT	OUTSIDE AIR TEMPERATURE	•																																	
HRV	HEAT RECOVERY COIL VALVE							•																									•		
HRT	HEAT RECOVERY COIL LEAVING AIR TEMPERATURE	•																																	
OAF	OUTSIDE AIR FLOW				•																•	•													
OAD	OUTSIDE AIR DAMPER															•																	•		
RAD	RETURN AIR DAMPER												•																•		•				
MAT	MIXED AIR TEMPERATURE	•																			•	•													
FDPS1	FILTER DIFFERENTIAL PRESSURE							•											•																
IFB	INTERNAL FACE AND BYPASS												•																		•				
ST1	PREHEAT STEAM TEMPERATURE	•																																	
STV	PREHEATING COIL STEAM VALVE												•																		•				
LLT	LOW LIMIT FREEZESTAT						•												•										•						
PHT	PREHEAT COIL LEAVING AIR TEMPERATURE	•																			•	•													
SF-A	SUPPLY FAN START/STOP															•																	•		
SF-B	SUPPLY FAN SPEED CONTROL											•																					•		
SF-C	SUPPLY FAN SPEED DRIVE FAULT						•												•										•						
RFSS	SUPPLY FAN SPEED FEEDBACK				•																•	•													
SSPL	SUPPLY AIR STATIC PRESSURE LIMIT							•											•										•						
SAF	SUPPLY AIR FLOW				•																•	•													
CCV	COOLING COIL CONTROL VALVE												•																		•				
CT	COOLING COIL LEAVING AIR TEMPERATURE	•																			•	•													
FDPS2	FILTER DIFFERENTIAL PRESSURE							•											•																
SSD	SUPPLY AIR DUCT SMOKE						•												•										•						
SAT	SUPPLY AIR TEMPERATURE	•																			•	•													
RAF	RETURN AIR FLOW				•																•	•													
RSD	RETURN AIR DUCT SMOKE						•												•										•						
REF-A	RETURN FAN START/STOP															•																	•		
REF-B	RETURN FAN SPEED CONTROL											•																					•		
REF-C	RETURN FAN SPEED DRIVE FAULT						•												•										•						
RFSS	RETURN FAN SPEED FEEDBACK				•																•	•													
RAH	RETURN AIR RELATIVE HUMIDITY		•																		•	•													
RAT	RETURN AIR TEMPERATURE	•																			•	•													
EAD	EXHAUST AIR DAMPER												•																				•		
T	SPACE TEMPERATURE	•																			•	•													
H	ZONE RETURN DUCT RELATIVE HUMIDITY		•																		•	•													
RHV	REHEAT COIL VALVE (TYPICAL OF 13)												•																		•				
HUV	STEAM HUMIDIFIER CONTROL VALVE (TYPICAL OF 3)												•																				•		



ZONE CONTROLS TYPICAL OF 13

SEQUENCE OF CONTROL

AHU-12:

THE AIR HANDLING UNIT WILL BE STARTED AND STOPPED VIA THE DDC PANEL AND ASSOCIATED CONTROL RELAYS AS SCHEDULED THROUGH THE BUILDING AUTOMATION SYSTEM. A SEPARATE DIGITAL OUTPUT AND RELAY IS PROVIDED FOR EACH SUPPLY AND RETURN FAN TO PROVIDE FOR INDIVIDUAL FAN CONTROL. DURING NORMAL OPERATION, BOTH SUPPLY FANS AND BOTH RETURN FANS OPERATE. A HAND-OFF-AUTO SWITCH AT THE VFD WILL PROVIDE LOCAL START/STOP CONTROL OF THE FANS. CURRENT SENSING RELAYS LOCATED AT THE VFD WILL INDICATE INDIVIDUAL FAN STATUS TO THE DDC PANEL. THE SUPPLY FAN SPEED SHALL BE CONTROLLED TO MAINTAIN 13,085 CFM DURING OCCUPIED MODE AND THE RETURN FAN SHALL BE CONTROLLED TO MAINTAIN 12,000 CFM DURING OCCUPIED MODE.

THE AHU WILL OPERATE IN AN ECONOMIZER MODE WHENEVER THE OUTSIDE AIR TEMPERATURE FALLS 6°F BELOW THE RETURN AIR TEMPERATURE. WHEN IN ECONOMIZER MODE, THE OUTSIDE AIR DAMPER, RETURN AIR DAMPER AND RELIEF AIR DAMPER ARE MODULATED TO MAINTAIN THE SUPPLY AIR TEMPERATURE (SAT) SETPOINT AT 55°F (ADJ) USING PID CONTROL. IF THE SAT FALLS BELOW THE SETPOINT AND THE OUTSIDE AIR DAMPER IS AT MINIMUM POSITION, THE HEAT RECOVERY COIL, THEN THE HEATING COIL VALVES WILL MODULATE TO MAINTAIN SAT SETPOINT. IF THE SUPPLY AIR TEMPERATURE RISES ABOVE THE SETPOINT AND THE OUTSIDE AIR DAMPER IS FULLY OPEN, THE COOLING COIL VALVE WILL BE MODULATED TO MAINTAIN THE SETPOINT. WHEN THE UNIT IS NOT IN ECONOMIZER MODE, THE OUTSIDE AIR DAMPERS SHALL BE IN THE MINIMUM POSITION. WHENEVER THE UNIT ECONOMIZER IS OPERATING AT MINIMUM POSITION, THE OAD, RAD, AND EAD SHALL BE MODULATED TO MAINTAIN A MINIMUM OA FLOW SETPOINT OF 8645 CFM (ADJ).

THE SAT SETPOINT SHALL BE MAINTAINED BY MODULATING THE HEAT RECOVERY COIL, HEATING COIL, ECONOMIZER, AND COOLING COIL, IN SEQUENCE, WITHOUT OVERLAP. ONCE THE ECONOMIZER IS IN MINIMUM POSITION AND AS THE OUTSIDE AIR TEMPERATURE FALLS, THE HEAT RECOVERY COIL WILL BE MODULATED TO MAINTAIN SETPOINT. ONCE THE HEAT RECOVERY COIL IS FULLY OPEN, THE HEATING COIL SHALL OPERATE AS FOLLOWS. BELOW 35°F OAT (ADJ), THE HEATING COIL VALVE WILL BE OPENED FULLY AND THE IFB DAMPERS WILL MODULATE TO MAINTAIN SETPOINT. ABOVE 35°F (ADJ), THE IFB DAMPERS SHALL BE OPEN TO THE COIL AND THE HEATING VALVE MODULATED TO MAINTAIN SETPOINT. ON A RISE IN SAT ABOVE SETPOINT, THE HEATING COIL VALVE WILL MODULATE CLOSED AND THE IFB DAMPERS WILL OPEN TO THE BYPASS. THE HEAT RECOVERY COIL WILL MODULATE CLOSED, AND THE ECONOMIZER WILL THEN WORK TO MAINTAIN SETPOINT. THEN THE COOLING COIL VALVE WILL MODULATE OPEN TO MAINTAIN SAT SETPOINT.

THE COOLING COIL VALVE AND HEATING COIL VALVE SHALL NOT BE PERMITTED TO BE OPEN AT THE SAME TIME.

NEW ZONE REHEAT COIL CONTROLS:

THE AHU SUPPLY AIR TEMPERATURE SETPOINT SHALL BE RESET BASED ON THE ZONE WITH THE GREATEST CALL FOR COOLING. THIS IS DETERMINED BY POLLING ALL ZONE REHEAT VALVES EVERY 10 MINUTES. IF NO VALVE IS CLOSED, RESET SUPPLY AIR TEMPERATURE UP BY 1°F. CONTINUE UNTIL AT LEAST ONE ZONE VALVE IS CLOSED. IF ANY ZONE WITH A CLOSED REHEAT VALVE IS 1°F OR MORE ABOVE ITS SETPOINT, THE SUPPLY AIR TEMPERATURE SETPOINT SHALL BE REDUCED BY 1°F.

NEW ZONE HUMIDIFIER CONTROLS:

A HUMIDIFIER IS LOCATED IN EACH OF THE THREE MAIN ZONE SUPPLY DUCTS. MODULATE THE STEAM HUMIDIFIER CONTROL VALVE THROUGH PID CONTROL TO MAINTAIN THE DESIRED SPACE AIR HUMIDITY OF 50% (ADJ). IF THE SUPPLY AIR HUMIDITY RISES ABOVE 95% (ADJ), THE DUCT HUMIDITY HIGH LIMIT HUMIDISTAT SHALL OVERRIDE THE DDC AND CLOSE THE HUMIDIFIER ISOLATION VALVE TO PREVENT THE HUMIDIFIER FROM SATURATING THE SUPPLY AIR. THE MODULATING HUMIDIFIER VALVE SHALL BE CLOSED WHENEVER THE FAN IS OFF OR WHEN THE COOLING VALVE IS OPEN. MODULATING HUMIDIFIER VALVE SHALL ALSO BE INTERLOCKED WITH CONDENSATE TEMPERATURE SWITCH TO KEEP VALVE CLOSED UNTIL CONDENSATE TEMPERATURE APPROACHES STEAM TEMPERATURE. ON-OFF ISOLATION CONTROL VALVE V-1 SHALL REMAIN CLOSED WHENEVER THE OUTSIDE AIR TEMPERATURE IS ABOVE 55 DEG. F (ADJ.) OR WHENEVER THE SUPPLY FAN IS OFF.

THE DDC SYSTEM SHOULD CONTINUOUSLY MONITOR THE RETURN DUCT HUMIDITY SENSORS. IF ANY ZONE RETURN AIR RELATIVE HUMIDITY RISES ABOVE 50%, THE COOLING COIL CONTROL VALVE SHALL MODULATE OPEN TO DEHUMIDIFY THE SUPPLY AIR UNTIL THE SPACE HUMIDITY FALLS BELOW 50%. THIS ACTION WILL TAKE PRIORITY OVER THE SUPPLY AIR TEMPERATURE RESET ROUTINE. THE ZONE REHEAT COILS SHALL MODULATE TO MAINTAIN SPACE TEMPERATURE SETPOINT.

A FREEZESTAT LOCATED IN THE HEATING COIL DISCHARGE WILL SHUT DOWN THE UNIT AND PRODUCE AN ALARM MESSAGE AT THE B.A.S. WHENEVER THE SENSED AIR TEMPERATURE FALLS BELOW 37°F (ADJ). MANUAL RESETTING THE FREEZESTAT IS REQUIRED TO RESTART THE UNIT.

ALARM CONTACTS OF THE SUPPLY AND RETURN AIR SMOKE DETECTORS ARE MONITORED BY THE DDC PANEL. UPON INDICATION OF THE SUPPLY OR RETURN AIR SMOKE DETECTOR TRIP, THE DDC PANEL WILL SHUT DOWN THE UNIT, CLOSING THE OUTSIDE AND RELIEF AIR DAMPERS. THE DETECTORS MUST BE RESET THROUGH THE FIRE ALARM SYSTEM TO RESTART THE UNIT.

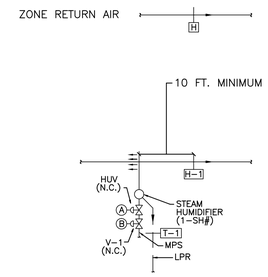
DIFFERENTIAL PRESSURE SWITCHES ARE PROVIDED AT THE PRE-FILTER AND FINAL FILTER TO MONITOR THE FILTER CONDITION. WHENEVER THE SENSED PRESSURE DROP EXCEEDS 1"WC (ADJ), A MAINTENANCE ALARM WILL BE INITIATED VIA THE B.A.S.

WHENEVER THE UNIT IS SHUT DOWN, THE OUTSIDE AND RELIEF DAMPERS CLOSE, THE RETURN DAMPER OPENS, THE CHILLED WATER VALVE CLOSES TO THE COIL, AND THE HUMIDIFIER ISOLATION VALVE CLOSES. THE HEATING COIL STEAM VALVE WILL CYCLE TO MAINTAIN A 55°F MIXED AIR TEMPERATURE.

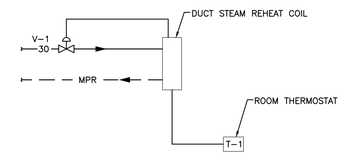
ALL SAFETIES SHALL BE WIRED SUCH THAT THE UNIT CANNOT BE STARTED IN HAND MODE IF A SAFETY IS TRIPPED.

THIS UNIT SHALL BE INTERLOCKED WITH AN EXISTING PUSHBUTTON LOCATED IN THE MAINTENANCE DEPARTMENT. WHEN THIS BUTTON IS PUSHED, THIS UNIT SHALL CONTINUE TO RUN BUT THE OA DAMPERS AND EA DAMPERS SHALL CLOSE AND THE RETURN DAMPERS SHALL OPEN.

AN ELECTRIC SUBMETER SHALL BE PROVIDED FOR THE SUPPLY AND RETURN FAN MOTORS. INSTALLATION SHALL BE COORDINATED WITH THE ELECTRICAL CONTRACTOR. SUBMETER READINGS SHALL BE DISPLAYED ON THE GRAPHICS.

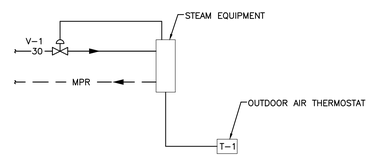


HUMIDIFIER CONTROLS (TYP. OF 3)



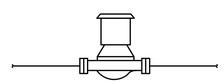
STEAM REHEAT COIL (10TH FLOOR PENTHOUSE)

DDC ROOM THERMOSTAT T-1 SHALL CONTROL VALVE V-1. ON A DROP IN TEMPERATURE BELOW SETPOINT, THERMOSTAT T-1 SHALL MODULATE COIL CONTROL VALVE OPEN TO THE COIL TO MAINTAIN ROOM TEMPERATURE SETPOINT.



DDC ROOM THERMOSTAT T-1 SHALL CONTROL VALVE V-1. ON A DROP IN TEMPERATURE BELOW 50 DEG.F (ADJ.) THERMOSTAT T-1 SHALL OPEN TWO-POSITION COIL CONTROL VALVE TO ALLOW STEAM FLOW TO EQUIPMENT.

TWO-POSITION SEASONAL STEAM CONTROL VALVES



DOMESTIC HOT WATER RECIRCULATING PUMP STATUS

NEW DOMESTIC WATER RECIRCULATING PUMP SHALL HAVE CURRENT SENSING RELAY ON ELECTRICAL FEEDER, TO INDICATE STATUS OF PUMP TO ECC AT ALL TIMES.

Revisions:	Date
ADDENDUM #1	08/28/2013

CONSULTANTS:

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PROJECT NO. 2012-04005 FIRM LICENSE: 01528

Drawing Title: CONTROLS AND AUTOMATION

Approved Project Director:

Project Title: HOSPITAL STEAM SYSTEM RECORD DRAWINGS

Location: CINCINNATI, OHIO

Date: 01/04/2013 | Checked: JAC | Drawn: DRV

Project Number: 539-13-107

Building Number: 1

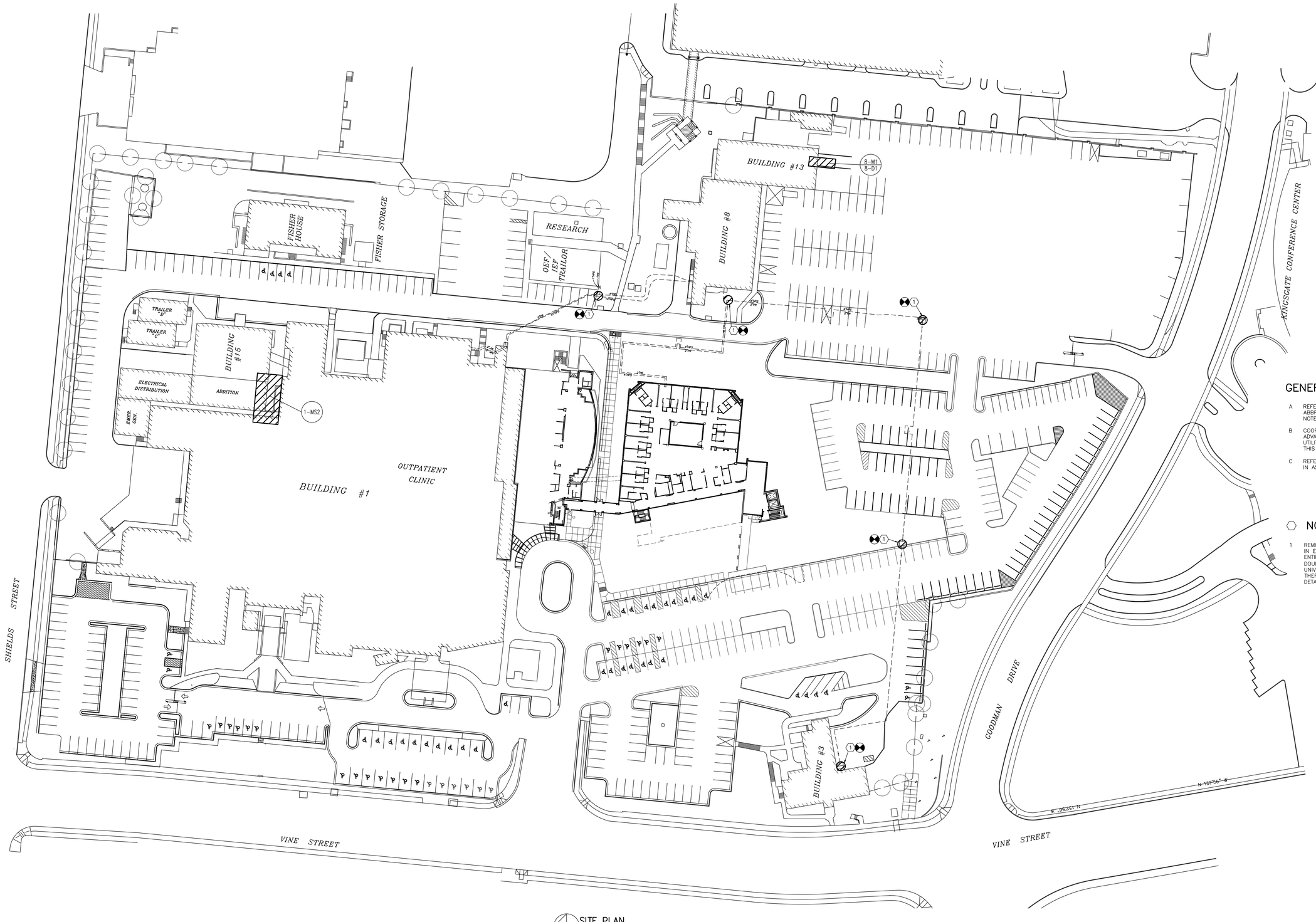
Drawing Number: H9

Dwg. 10 of 47

Office of Construction and Facilities Management

Department of Veterans Affairs

VA FORM 08-6231



GENERAL NOTES

A REFER TO SHEET H1 FOR LEGEND, ABBREVIATIONS, AND ADDITIONAL GENERAL NOTES.

B COORDINATE AND SCHEDULE WELL IN ADVANCE WITH COTR, DOWNTIME OF ALL UTILITIES REQUIRED FOR PERFORMANCE OF THIS WORK.

C REFER TO INDICATED PLAN(S) FOR WORK IN ASSOCIATED AREAS.

NOTES

1 REMOVE ALL STEAM TRAP STATIONS IN EXISTING MANHOLES IN THEIR ENTIRETY, AND REPLACE WITH NEW, DOUBLE (PARALLEL), 0.75" UNIVERSAL TRAP STATIONS WITH THERMODYNAMIC TRAPS. REFER TO DETAIL ON SHEET H4.

SITE PLAN
SCALE: 1" = 40'

Revisions:	Date
ADDENDUM #1	08/28/2013

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PROJECT NO. 2012-04005 FIRM LICENSE: 01528

Drawing Title: SITE PLAN

Approved: Project Director

Project Title: HOSPITAL STEAM SYSTEM RECORD DRAWINGS

Location: CINCINNATI, OHIO

Date: 01/04/2013 | Checked: JAC | Drawn: DRV

Project Number: 539-13-107

Building Number: SITE

Drawing Number: S-MD1

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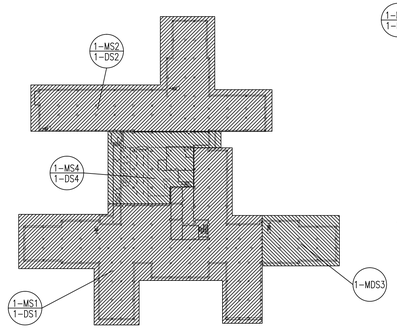
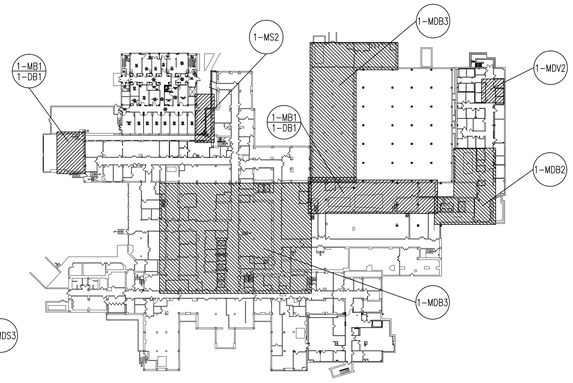
Office of Construction and Facilities Management

Department of Veterans Affairs

VA FORM 08-6231



SUB BASEMENT KEYPLAN
SCALE: 1/64" = 1'-0"



BASEMENT KEYPLAN
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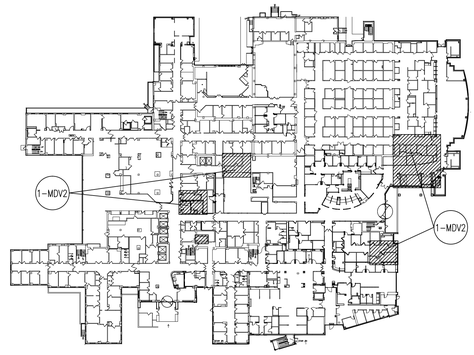
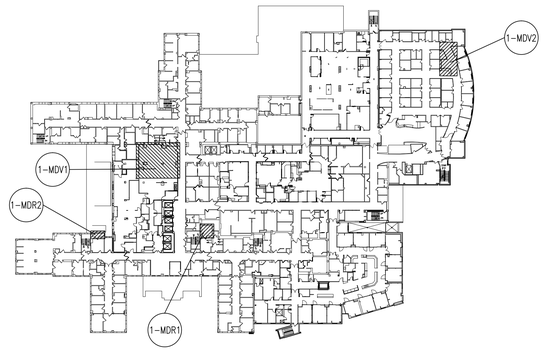


FIRST FLOOR KEYPLAN
SCALE: 1/64" = 1'-0"

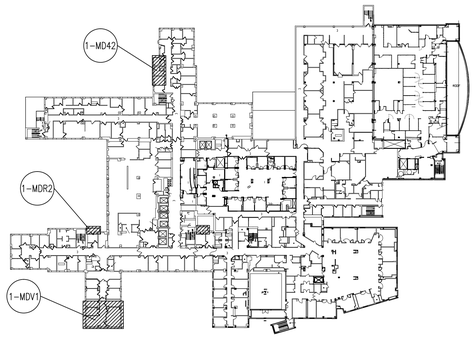


SECOND FLOOR KEYPLAN
SCALE: 1/64" = 1'-0"

GENERAL NOTES

A REFER TO SHEET H1 FOR LEGEND, ABBREVIATIONS, AND ADDITIONAL GENERAL NOTES.

B REFER TO INDICATED PLAN(S) FOR WORK IN ASSOCIATED AREAS.



THIRD FLOOR KEYPLAN
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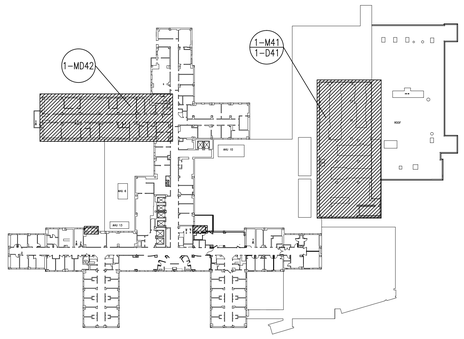

FOURTH FLOOR KEYPLAN
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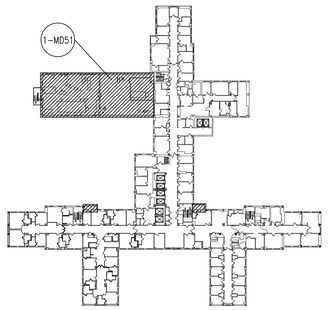

FIFTH FLOOR KEYPLAN
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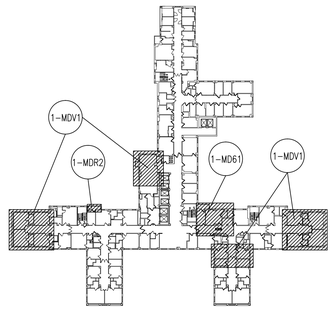

SIXTH FLOOR KEYPLAN
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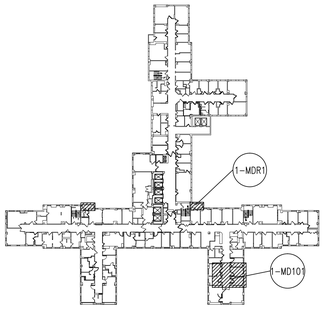

SEVENTH FLOOR KEYPLAN
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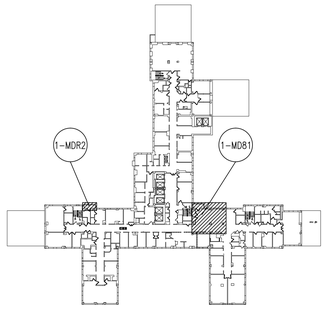

EIGHTH FLOOR KEYPLAN
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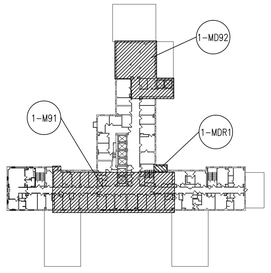

NINTH FLOOR KEYPLAN
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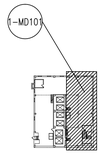

TENTH FLOOR KEYPLAN
SCALE: 1/64" = 1'-0"

Revisions	Date
ADDENDUM #1	08/28/2013

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PROJECT NO. 2012-04005 FIRM LICENSE 01528

Drawing Title: BUILDING 1 CONSTRUCTION AREA KEYPLANS

Approved Project Director

Project Title: HOSPITAL STEAM SYSTEM RECORD DRAWINGS

Location: CINCINNATI, OHIO

Date: 01/04/2013 | Checked: JAC | Drawn: DRV

Project Number: 539-13-107

Building Number: 1

Drawing Number: 1-MD1

Dwg. 12 of 47

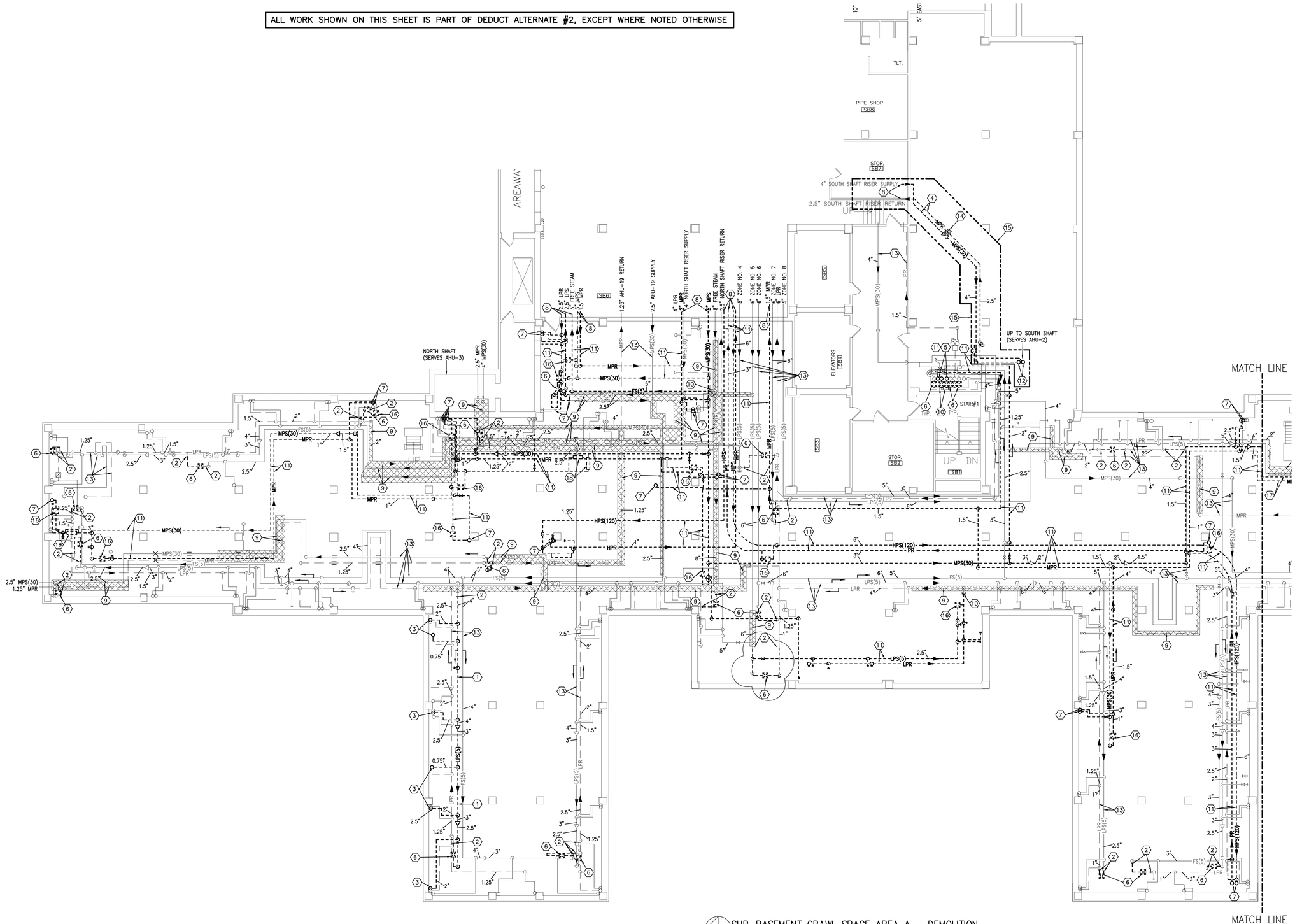
Office of Construction and Facilities Management

Department of Veterans Affairs

VA FORM 08-6231

PROJECT NO. 2012-04005
PLOTTED BY:
PLOT DATE:
PLOT SCALE: one eighth inch = one foot
QUATTRONE & COLLINS, OHIO & INDIANAPOLIS, INDIANA
ARCHITECTS ENGINEERS

ALL WORK SHOWN ON THIS SHEET IS PART OF DEDUCT ALTERNATE #2, EXCEPT WHERE NOTED OTHERWISE



SUB-BASEMENT CRAWL SPACE AREA A – DEMOLITION
SCALE: 1/8" = 1'-0"

GENERAL NOTES

A REFER TO SHEET H1 FOR LEGEND, ABBREVIATIONS, AND ADDITIONAL GENERAL NOTES.

B COORDINATE AND SCHEDULE WELL IN ADVANCE WITH COTR, DOWNTIME OF ALL UTILITIES REQUIRED FOR PERFORMANCE OF THIS WORK.

NOTES

1 REMOVE EXISTING PIPING FOR REPLACEMENT IN NEW WORK. WORK SHALL BE PERFORMED BETWEEN APRIL 1ST & OCTOBER 1ST, WHEN LOW PRESSURE ZONE STEAM SUPPLY IS INACTIVE.

2 REMOVE EXISTING PIPING TO THIS POINT FOR RECONNECTION IN NEW WORK.

3 CUT EXISTING PIPING IN VERTICAL RISE, NEAR UNDERSIDE OF FLOOR SLAB, FOR RECONNECTION IN NEW WORK.

4 REMOVE EXISTING PIPING AND ASSOCIATED VALVES, TRAPS, HANGERS, ETC. FOR REPLACEMENT IN NEW WORK.

5 REFER TO SHEET 1-MDB3 FOR CONTINUATION.

6 REMOVE EXISTING TRAP ASSEMBLY IN ITS ENTIRETY, INCLUDING BYPASSES, ISOLATION SHUTOFF VALVES, ETC, FOR REPLACEMENT IN NEW WORK.

7 REMOVE EXISTING PIPING TO NEAR UNDERSIDE OF SLAB AND CAP.

8 REFER TO SUB-BASEMENT SERVICE ROOM DEMOLITION PLAN ON SHEET 1-DS4 FOR CONTINUATION.

9 REMOVE FIBERGLASS INSULATION ON THESE PIPES WITHIN HATCH REGION, FOR REPLACEMENT IN NEW WORK.

10 REMOVE EXISTING PIPE BACK TO THIS POINT AND CAP.

11 REMOVE EXISTING PIPING AND ASSOCIATED VALVES, TRAPS, HANGERS, ETC.

12 REMOVE EXISTING 4" STEAM AND 2.5" CONDENSATE PIPES UP TO 2ND FLOOR. REFER TO SOUTH RISER SHAFT DEMOLITION PLAN ON SHEET 1-MDR1 FOR CONTINUATION.

13 EXISTING PIPING TO REMAIN.

14 CAREFULLY REMOVE EXISTING STEAM METER FOR REINSTALLATION IN NEW WORK.

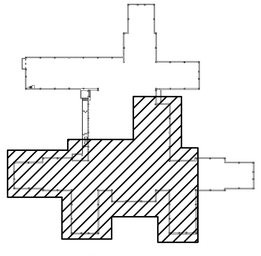
15 THIS PIPING WORK SHALL BE INCLUDED EVEN IF DEDUCT ALTERNATE #2 IS ACCEPTED.

16 REMOVE EXISTING TRAP ASSEMBLY IN ITS ENTIRETY, INCLUDING BYPASSES, ISOLATION SHUTOFF VALVES, ETC.

17 REFER TO SUB-BASEMENT CRAWL SPACE AREA C DEMOLITION PLAN ON SHEET 1-MDS3 FOR CONTINUATION.

18 REMOVE EXISTING STEAM PRESSURE REDUCING STATION IN ITS ENTIRETY, INCLUDING ALL VALVES, PIPING, BYPASSES, REMOTE PANEL MOUNTED PRESSURE GAUGES, PIPE MOUNTED PRESSURE GAUGES, SAFETY RELIEF VALVES, AND OTHER SPECIALTIES, ETC.

19 REMOVE EXISTING PNEUMATIC CONTROL VALVE AND ASSOCIATED PIPING, ACCESSORIES, BYPASSES, TUBING, ETC. REMOVE PNEUMATIC CONTROL LINES BACK TO POINT OF ACTIVE MAIN AND CAP.



KEYPLAN

Revisions	Date
ADDENDUM #1	08/28/2013

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PROJECT NO. 2012-04005 FIRM LICENSE: 01528

Drawing Title: SUB-BASEMENT CRAWL SPACE AREA A - DEMOLITION

Approved Project Director:

Project Title: HOSPITAL STEAM SYSTEM RECORD DRAWINGS

Location: CINCINNATI, OHIO

Date: 01/04/2013 | Checked: JAC | Drawn: DRV

Project Number: 539-13-107

Building Number: 1

Drawing Number: 1-DS1

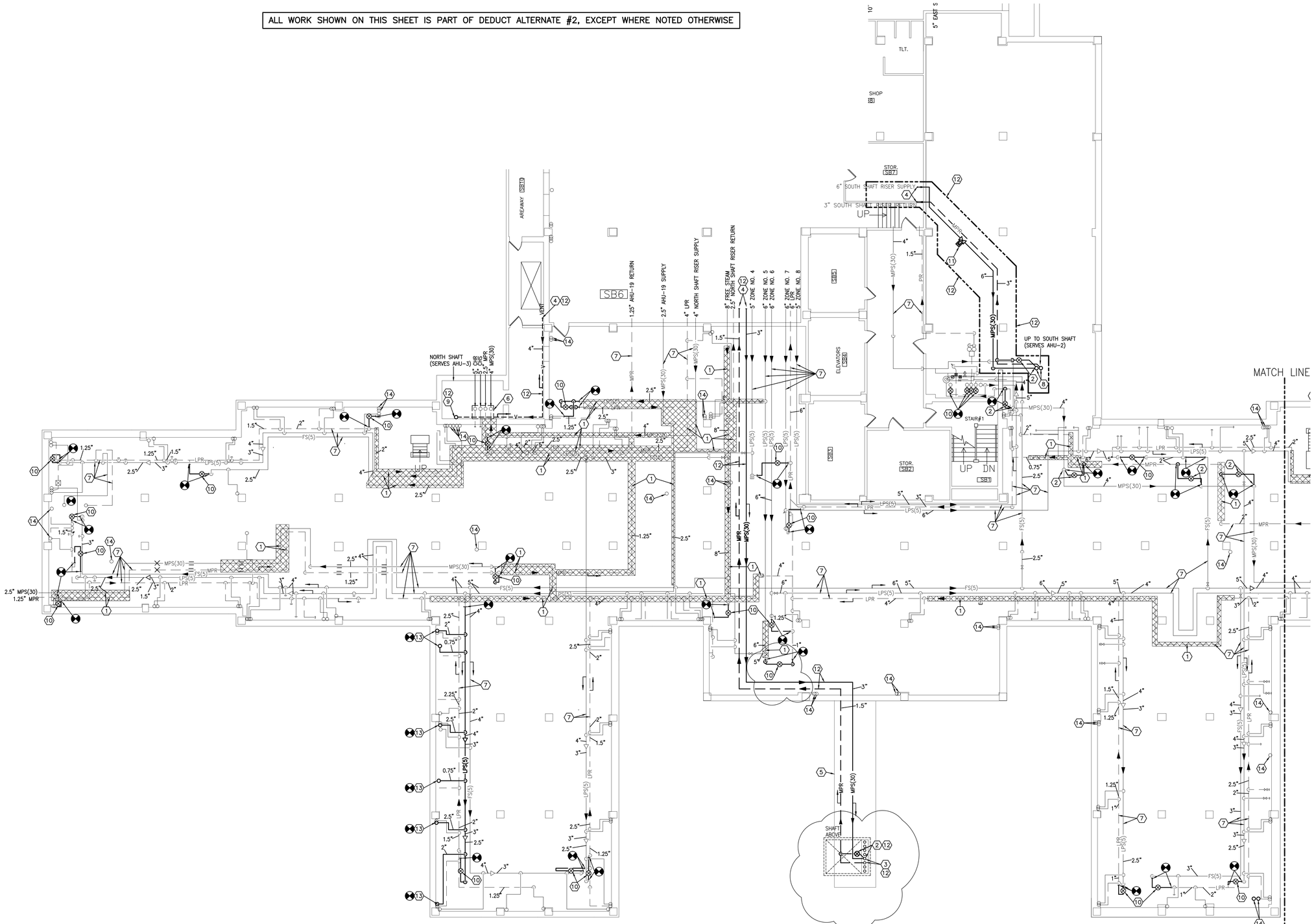
Dwg. 13 of 47

Office of Construction and Facilities Management

Department of Veterans Affairs

VA FORM 08-6231

ALL WORK SHOWN ON THIS SHEET IS PART OF DEDUCT ALTERNATE #2, EXCEPT WHERE NOTED OTHERWISE



SUB-BASEMENT CRAWL SPACE AREA A – NEW WORK
SCALE: 1/8" = 1'-0"

GENERAL NOTES

A REFER TO SHEET H1 FOR LEGEND, ABBREVIATIONS, AND ADDITIONAL GENERAL NOTES.

B COORDINATE AND SCHEDULE WELL IN ADVANCE WITH COTR, DOWNTIME OF ALL UTILITIES REQUIRED FOR PERFORMANCE OF THIS WORK.

NOTES

1 REINSULATE INDICATED PIPES WITHIN HATCH REGIONS. PROVIDE PVC JACKET OVER NEW FIBERGLASS INSULATION, COLOR CODED BY SYSTEM PER SCHEDULE ON SHEET 1–MS4. REFER TO SPEC SECTION 23 07 11 FOR REQUIRED THICKNESSES.

2 PROVIDE NEW DIRT LEG ON RISE (DIAMETER FULL SIZE OF MAIN, MINIMUM LENGTH 18") AND 0.75" UNIVERSAL TRAP ASSEMBLY WITH THERMODYNAMIC TRAP. REFER TO DETAIL ON SHEET H4 AND SPECIFICATION SECTION 23 22 13.

3 MEDIUM PRESSURE STEAM SUPPLY AND CONDENSATE RETURN PIPES UP IN EXISTING CHASE. EXTEND PIPES UP TO NEAR UNDERSIDE OF FIRST FLOOR SLAB AND CAP FOR FUTURE CONNECTION.

4 REFER TO SUB–BASEMENT SERVICE ROOM NEW WORK PLAN ON SHEET 1–MS4 FOR CONTINUATION.

5 EXISTING TUNNEL FROM BUILDING 1 CRAWL SPACE TO KITCHEN/IMAGING CENTER ADDITION.

6 PROVIDE NEW PIPE INSULATION ON EXISTING STEAM & CONDENSATE AND CHILLED WATER SUPPLY & RETURN PIPING IN AREA INDICATED (APPROX. 8 LINEAR FEET AND ONE 90 DEGREE ELBOW PER PIPE). REFER TO SPECIFICATION SECTION 23 07 11.

7 EXISTING PIPING TO REMAIN.

8 NEW 6" MEDIUM PRESSURE STEAM AND 3" CONDENSATE RETURN UP TO 2ND FLOOR. REFER TO NORTH RISER SHAFT PLANS ON SHEET 1–MDR1 FOR CONTINUATION.

9 VENT PIPE UP TO 3RD FLOOR. REFER TO NORTH RISER SHAFT PLANS ON SHEET 1–MDR2 FOR CONTINUATION.

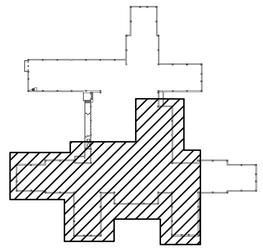
10 PROVIDE NEW 0.75" UNIVERSAL TRAP ASSEMBLY WITH THERMODYNAMIC TRAP ON STEAM DRIP. REFER TO SPEC SECTION 23 22 13 AND DETAIL ON SHEET H4.

11 REINSTALL EXISTING STEAM METER IN NEW PIPE. PROVIDE TRANSITIONS, FITTINGS, ETC. AND STRAIGHT PIPE LENGTHS REQUIRED, AND RECALIBRATE FOR A 6 IN. PIPE PER MANUFACTURER'S INSTRUCTIONS.

12 THIS PIPING WORK SHALL BE INCLUDED, EVEN IF DEDUCT ALTERNATE #2 IS TAKEN.

13 CONNECT NEW PIPE TO EXISTING NEAR UNDERSIDE OF FLOOR SLAB.

14 ABANDONED PIPE, CAPPED NEAR UNDERSIDE OF SLAB.



KEYPLAN

ADDENDUM #1	08/20/2013
ADDENDUM #1	08/28/2013
Revisions	Date

CONSULTANTS:

STATE OF OHIO — JOHN A. BLACK 49341 — REGISTERED PROFESSIONAL ENGINEER

ARCHITECT/ENGINEERS:

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1400 W Dorothy Lane, Dayton OH 45409-1310
Ph: 937-224-0861 Fax: 937-224-5777 www.heapy.com
PROJECT NO. 2012-04005 FIRM LICENSE: 01528

Drawing Title: SUB-BASEMENT CRAWL SPACE AREA A - NEW WORK

Approved Project Director

Project Title: HOSPITAL STEAM SYSTEM RECORD DRAWINGS

Location: CINCINNATI, OHIO

Date: 01/04/2013 | Checked: JAC | Drawn: DRV

Project Number: 539-13-107

Building Number: 1

Drawing Number: 1-MS1

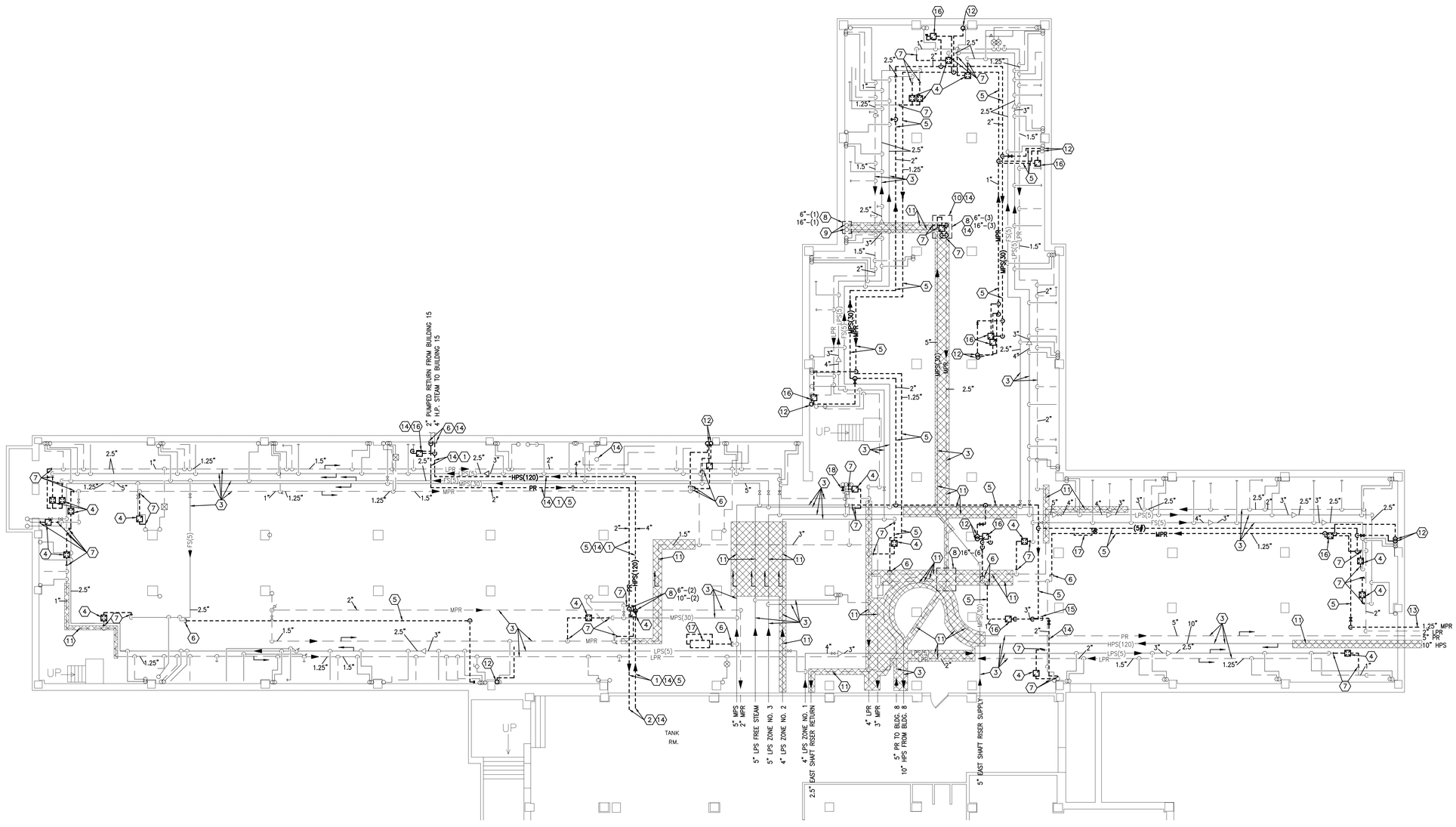
Dwg. 14 of 47

Office of Construction and Facilities Management

Department of Veterans Affairs

VA FORM 08–6231

ALL WORK SHOWN ON THIS SHEET IS PART OF DEDUCT ALTERNATE #2, EXCEPT WHERE NOTED OTHERWISE



SUB-BASEMENT CRAWL SPACE AREA B – DEMOLITION
SCALE: 1/8" = 1'-0"

GENERAL NOTES

A REFER TO SHEET H1 FOR LEGEND, ABBREVIATIONS, AND ADDITIONAL GENERAL NOTES.

B COORDINATE AND SCHEDULE WELL IN ADVANCE WITH COTR, DOWNTIME OF ALL UTILITIES REQUIRED FOR PERFORMANCE OF THIS WORK.

⬡ NOTES

1 REMOVE EXISTING PIPING FOR REPLACEMENT IN NEW WORK. COORDINATE WITH NEW WORK TO INSTALL NEW BUILDING 15 STEAM AND CONDENSATE PIPES PRIOR TO DEMOLITION OF THESE PIPES. REFER TO SHEETS 1–MS2 AND 15–MB1 FOR NEW PIPES.

2 REFER TO SERVICE ROOM DEMOLITION PLAN ON SHEET 1–DS4 FOR CONTINUATION.

3 EXISTING PIPING TO REMAIN.

4 REMOVE EXISTING TRAP ASSEMBLY IN ITS ENTIRETY, INCLUDING BYPASSES, ISOLATION SHUTOFF VALVES, ETC., FOR REPLACEMENT IN NEW WORK.

5 REMOVE EXISTING PIPING AND ASSOCIATED VALVES, TRAPS, HANGERS, ETC.

6 REMOVE EXISTING PIPING TO THIS POINT AND CAP.

7 REMOVE EXISTING PIPING TO THIS POINT FOR RECONNECTION IN NEW WORK.

8 EXISTING STEAM & CONDENSATE PIPE FITTINGS WITH ASBESTOS–CONTAINING HARD FITTINGS. APPROXIMATE OUTSIDE DIAMETER OF PIPE INSULATION AND QUANTITY OF FITTINGS INDICATED. CONTRACTOR SHALL PROVIDE ABATEMENT AND REMOVAL OF ASBESTOS INSULATION AS PART OF THIS CONTRACT. REFER TO SPECIFICATION SECTION 02 82 13.13.

9 EXISTING STEAM & CONDENSATE PIPES UP IN EAST SHAFT TO AHU–1 ON ROOF TO REMAIN.

10 SAW CUT SLAB AROUND EXISTING INVERTED BUCKET TRAP. REMOVE ENTIRE TRAP ASSEMBLY, INCLUDING ISOLATION VALVES, FOR REPLACEMENT IN NEW WORK. REMOVE DIRT UNDER SLAB TO 6" BENEATH LOWEST POINT OF NEW TRAP ASSEMBLY TO ALLOW FUTURE SERVICE ACCESS, AND POUR NEW CONCRETE IN LOW AREA.

11 REMOVE FIBERGLASS INSULATION ON THESE PIPES WITHIN HATCH REGION, FOR REPLACEMENT IN NEW WORK.

12 REMOVE EXISTING PIPING TO NEAR UNDERSIDE OF SLAB AND CAP.

13 REFER TO HIGH CRAWL SPACE DEMOLITION PLAN ON SHEET 1–MDB3 FOR CONTINUATION.

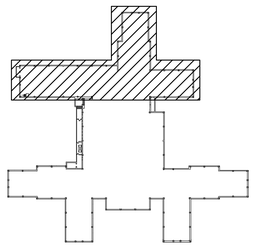
14 THIS PIPING WORK SHALL BE INCLUDED, EVEN IF DEDUCT ALTERNATE #2 IS ACCEPTED.

15 CAP PIPE AT THIS LOCATION IF DEDUCT ALTERNATE #2 IS ACCEPTED.

16 REMOVE EXISTING TRAP ASSEMBLY IN ITS ENTIRETY, INCLUDING BYPASSES, ISOLATION SHUTOFF VALVES, ETC.

17 REMOVE EXISTING STEAM PRESSURE REDUCING STATION IN ITS ENTIRETY, INCLUDING ALL VALVES, PIPING, BYPASSES, REMOTE PANEL MOUNTED PRESSURE GAUGES, PIPE MOUNTED PRESSURE GAUGES, SAFETY RELIEF VALVES, AND OTHER SPECIALTIES, ETC.

18 REMOVE EXISTING GATE VALVE FOR REPLACEMENT IN NEW WORK.



KEYPLAN

Revisions	Date
ADDENDUM #1	08/28/2013

CONSULTANTS:

STATE OF OHIO — JOHN A. BLACK 49341 — REGISTERED PROFESSIONAL ENGINEER

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PROJECT NO. 2012-04005 FIRM LICENSE: 01528

Drawing Title: SUB-BASEMENT CRAWL SPACE AREA B - DEMOLITION

Approved Project Director

Project Title: HOSPITAL STEAM SYSTEM RECORD DRAWINGS

Location: CINCINNATI, OHIO

Date: 01/04/2013 | Checked: JAC | Drawn: DRV

Project Number: 539-13-107

Building Number: 1

Drawing Number: 1-DS2

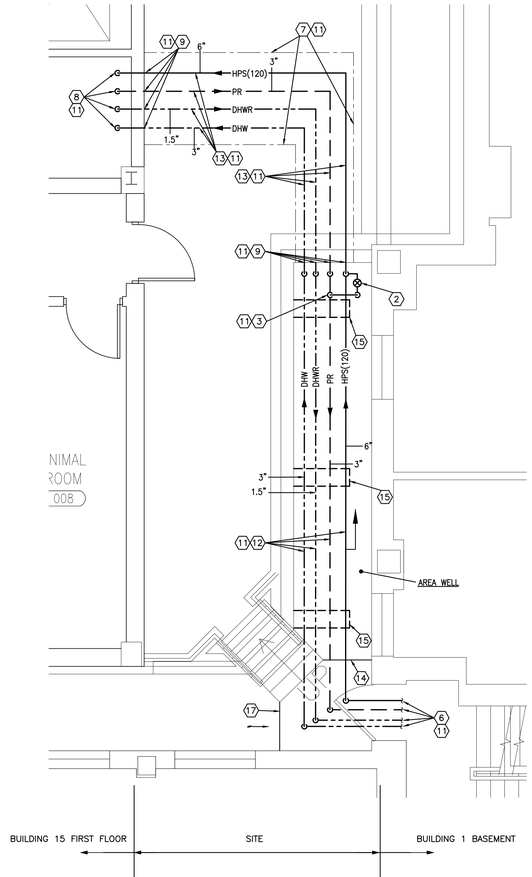
Dwg. 15 of 47

Office of Construction and Facilities Management

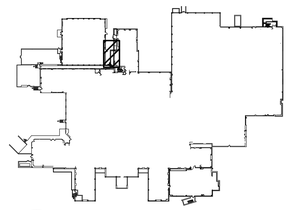
Department of Veterans Affairs

VA FORM 08-6231

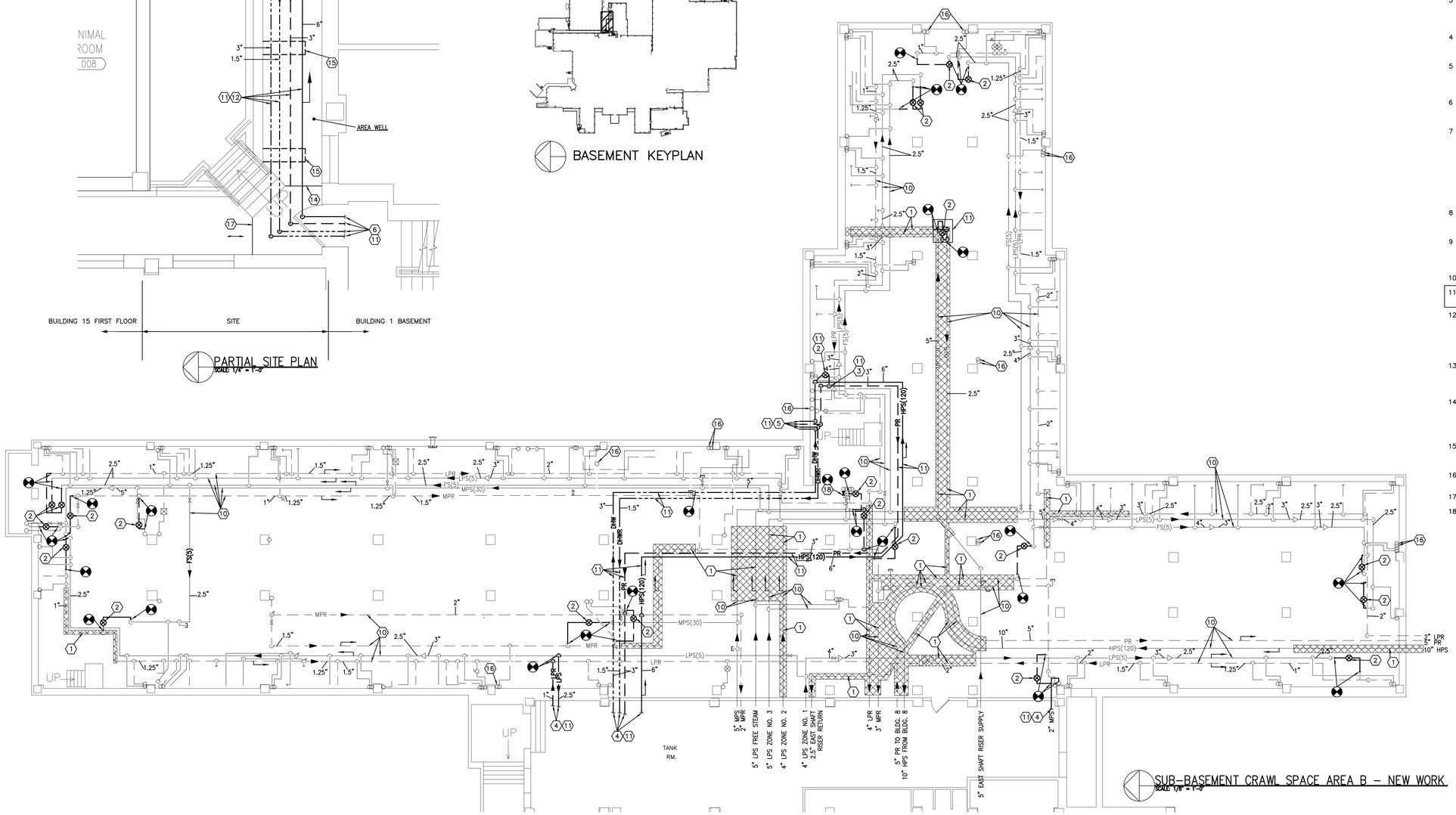
ALL WORK SHOWN ON THIS SHEET IS PART OF DEDUCT ALTERNATE #2, EXCEPT WHERE NOTED OTHERWISE



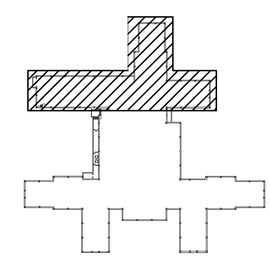
PARTIAL SITE PLAN
SCALE: 1/4" = 1'-0"



BASEMENT KEYPLAN



SUB-BASEMENT CRAWL SPACE AREA B - NEW WORK
SCALE: 1/8" = 1'-0"



SUB-BASEMENT KEYPLAN

GENERAL NOTES

A REFER TO SHEET H1 FOR LEGEND, ABBREVIATIONS, AND ADDITIONAL GENERAL NOTES.

B COORDINATE AND SCHEDULE WELL IN ADVANCE WITH COTR. DOWNTIME OF ALL UTILITIES REQUIRED FOR PERFORMANCE OF THIS WORK.

NOTES

1 REINSULATE INDICATED PIPES WITHIN HATCH REGIONS. PROVIDE PVC JACKET OVER NEW FIBERGLASS INSULATION, COLOR CODED BY SYSTEM PER SCHEDULE ON SHEET 1-MS4. REFER TO SPEC SECTION 23 07 11 FOR REQUIRED THICKNESSES.

2 PROVIDE NEW 0.75" UNIVERSAL TRAP ASSEMBLY WITH THERMODYNAMIC TRAP ON STEAM DRIP. REFER TO SPEC SECTION 23 22 13 AND DETAIL ON SHEET H4.

3 DISCHARGE HIGH PRESSURE STEAM DRIP RETURN INTO PUMPED CONDENSATE RETURN PIPE WITH PERFORATED TUBE (SPARGE PIPE). REFER TO DETAIL ON SHEET H4.

4 REFER TO SUB-BASEMENT SERVICE ROOM NEW WORK PLAN ON SHEET 1-MS4 FOR CONTINUATION.

5 ROUTE PIPES OUT OF CRAWL SPACE THROUGH EXISTING OPENING IN FOUNDATION WALL. REFER TO PARTIAL SITE PLAN ON THIS SHEET FOR CONTINUATION.

6 PIPES FROM SUB-BASEMENT CRAWL SPACE. REFER TO SUB-BASEMENT CRAWL SPACE AREA B PLAN ON THIS SHEET FOR CONTINUATION.

7 SAW CUT EXISTING SIDEWALK AND REMOVE SLAB AND BICYCLE RACK(S) AS REQUIRED TO DIRECT BURY NEW DOMESTIC HOT WATER SUPPLY AND RETURN AND STEAM AND CONDENSATE PIPING BETWEEN BUILDING 1 AND BUILDING 15. REINSTALL REMOVED BICYCLE RACK(S) AND PROVIDE NEW CONCRETE SLAB OF CONSTRUCTION AND FINISH TO MATCH EXISTING. AFTER PIPING INSTALLATION IS COMPLETE. REFER TO 31 20 00 FOR DETAILED REQUIREMENTS.

8 PIPES DOWN TO BUILDING 15 BASEMENT MECHANICAL ROOM IN EXISTING SHAFT. SEE SHEET 15-MB1 FOR CONTINUATION.

9 SLEEVE NEW PIPES THROUGH EXISTING WALL AND PROVIDE MODULAR RUBBER LINK SEAL AT WALL PENETRATION TO BELOW GRADE. ENSURE WATER TIGHT SEAL.

10 EXISTING PIPING TO REMAIN.

11 THIS PIPING WORK SHALL BE INCLUDED, EVEN IF DEDUCT ALTERNATE #2 IS ACCEPTED.

12 PROVIDE DOUBLE THICKNESS INSULATION ON ALL EXPOSED OUTDOOR PIPING, IN MULTIPLE LAYERS AS REQUIRED. PROVIDE ALUMINUM JACKET OVER INSULATION. REFER TO SPECIFICATION SECTIONS 23 07 11 AND 22 07 11 FOR THICKNESS AND JACKET REQUIREMENTS.

13 PROVIDE INSULATION AND JACKET PER 22 07 11 AND 23 07 11 FOR UNDERGROUND PIPING. REFER TO 31 20 00 FOR ADDITIONAL PIPE BEDDING REQUIREMENTS.

14 REMOVE EXISTING LOUVER AND ROUTE NEW PIPES THROUGH EXISTING VENTILATION OPENING. SEAL REMAINING OPENING AROUND PIPES WITH 2" THICK DOUBLE WALL INSULATED STAINLESS STEEL PANEL.

15 PROVIDE ANGLE SUPPORTS TO SUPPORT NEW PIPING FROM EXISTING CONCRETE FOUNDATION WALL.

16 ABANDONED PIPE CAPPED NEAR UNDERSIDE OF SLAB.

17 EXISTING LOUVER TO REMAIN.

18 PROVIDE NEW GATE SHUTOFF VALVE IN EXISTING 1.5" MEDIUM PRESSURE STEAM SUPPLY PIPE.

Revisions	Date
ADDENDUM #1	08/28/2013

CONSULTANTS:

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PROJECT NO. 2012-04005 FIRM LICENSE: 01528

Drawing Title: SUB-BASEMENT CRAWL SPACE AREA B - NEW WORK

Approved Project Director

Project Title: HOSPITAL STEAM SYSTEM RECORD DRAWINGS

Location: CINCINNATI, OHIO

Date: 01/04/2013 | Checked: JAC | Drawn: DRV

Project Number: 539-13-107

Building Number: 1

Drawing Number: 1-MS2

Dwg. 16 of 47

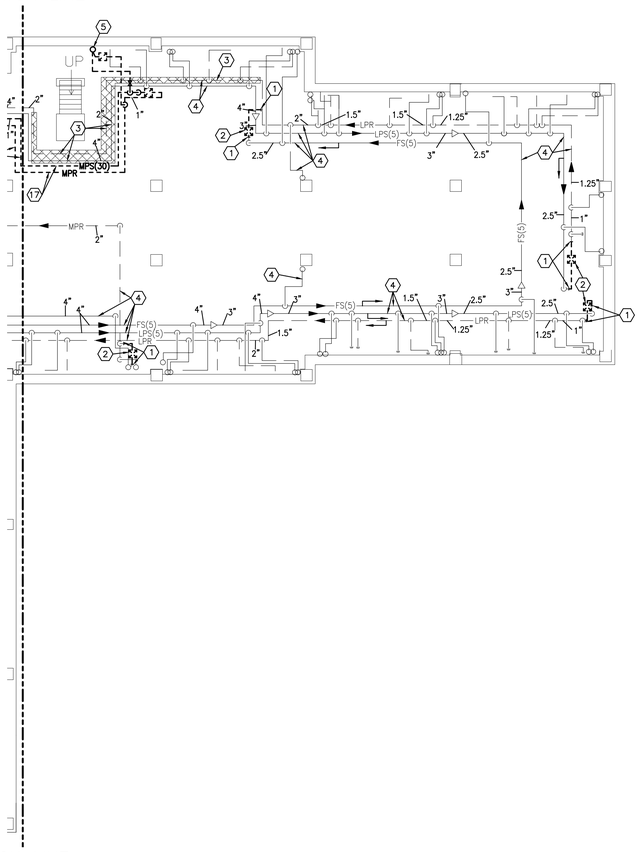
Office of Construction and Facilities Management

Department of Veterans Affairs

VA FORM 08-6231

ALL WORK SHOWN ON THIS SHEET IS PART OF DEDUCT ALTERNATE #2

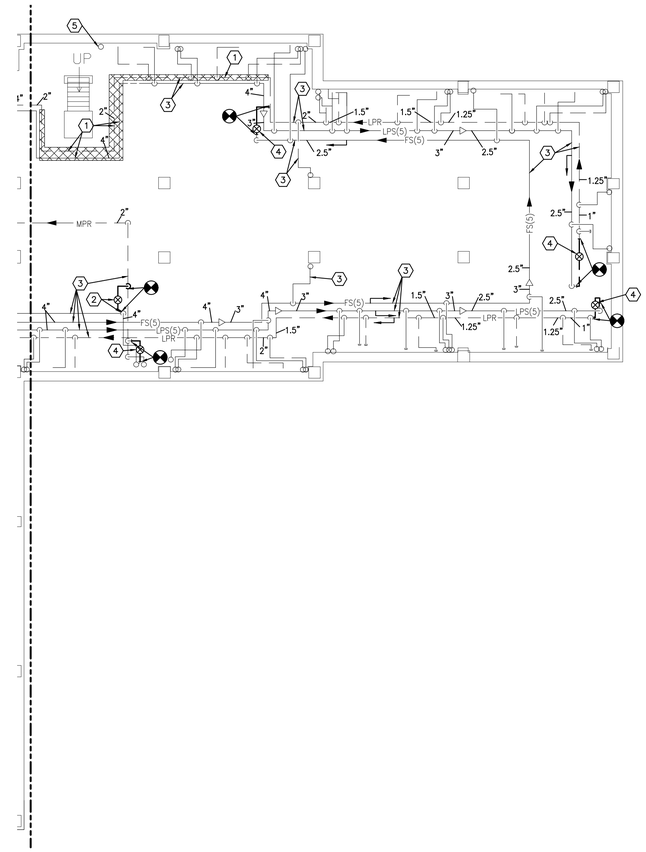
MATCH LINE



MATCH LINE

SUB-BASEMENT CRAWL SPACE AREA C – DEMOLITION
SCALE: 1/8" = 1'-0"

MATCH LINE



MATCH LINE

SUB-BASEMENT CRAWL SPACE AREA C – NEW WORK
SCALE: 1/8" = 1'-0"

GENERAL NOTES

A REFER TO SHEET H1 FOR LEGEND, ABBREVIATIONS, AND ADDITIONAL GENERAL NOTES.

B COORDINATE AND SCHEDULE WELL IN ADVANCE WITH COTR, DOWNTIME OF ALL UTILITIES REQUIRED FOR PERFORMANCE OF THIS WORK.

⬡ NOTES – DEMOLITION

1 REMOVE EXISTING PIPING TO THIS POINT FOR RECONNECTION IN NEW WORK.

2 REMOVE EXISTING TRAP ASSEMBLY IN ITS ENTIRETY, INCLUDING BYPASSES, ISOLATION SHUTOFF VALVES, ETC. FOR REPLACEMENT IN NEW WORK.

3 REMOVE FIBERGLASS INSULATION ON THESE PIPES WITHIN HATCH REGION, FOR REPLACEMENT IN NEW WORK.

4 EXISTING PIPING TO REMAIN.

5 REMOVE EXISTING PIPING TO NEAR UNDERSIDE OF SLAB AND CAP.

⬡ NOTES – NEW WORK

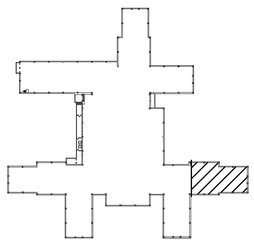
1 REINSULATE INDICATED PIPES WITHIN HATCH REGIONS. PROVIDE PVC JACKET OVER NEW FIBERGLASS INSULATION, COLOR CODED BY SYSTEM PER SCHEDULE ON SHEET 1–MS4. REFER TO SPEC SECTION 23 07 11 FOR REQUIRED THICKNESSES.

2 PROVIDE NEW DRIP LEG ON RISE (DIAMETER FULL SIZE OF MAIN, MINIMUM LENGTH 18") AND 0.75" UNIVERSAL TRAP ASSEMBLY WITH THERMODYNAMIC TRAP. REFER TO SPEC SECTION 23 22 13, AND DETAIL ON SHEET H4.

3 EXISTING PIPING TO REMAIN.

4 PROVIDE NEW 0.75" UNIVERSAL TRAP ASSEMBLY WITH THERMODYNAMIC TRAP ON STEAM DRIP. REFER TO SPEC SECTION 23 22 13 AND DETAIL ON SHEET H4.

5 CAP EXISTING ABANDONED PIPE NEAR UNDERSIDE OF SLAB.



KEYPLAN

Revisions:	Date
ADDENDUM #1	08/28/2013

CONSULTANTS:

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PROJECT NO. 2012-04005 FIRM LICENSE: 01528

Drawing Title: SUB-BASEMENT CRAWL SPACE AREA C - DEMOLITION AND NEW WORK

Approved Project Director

Project Title: HOSPITAL STEAM SYSTEM RECORD DRAWINGS

Location: CINCINNATI, OHIO

Date: 01/04/2013 | Checked: JAC | Drawn: DRV

Project Number: 539-13-107

Building Number: 1

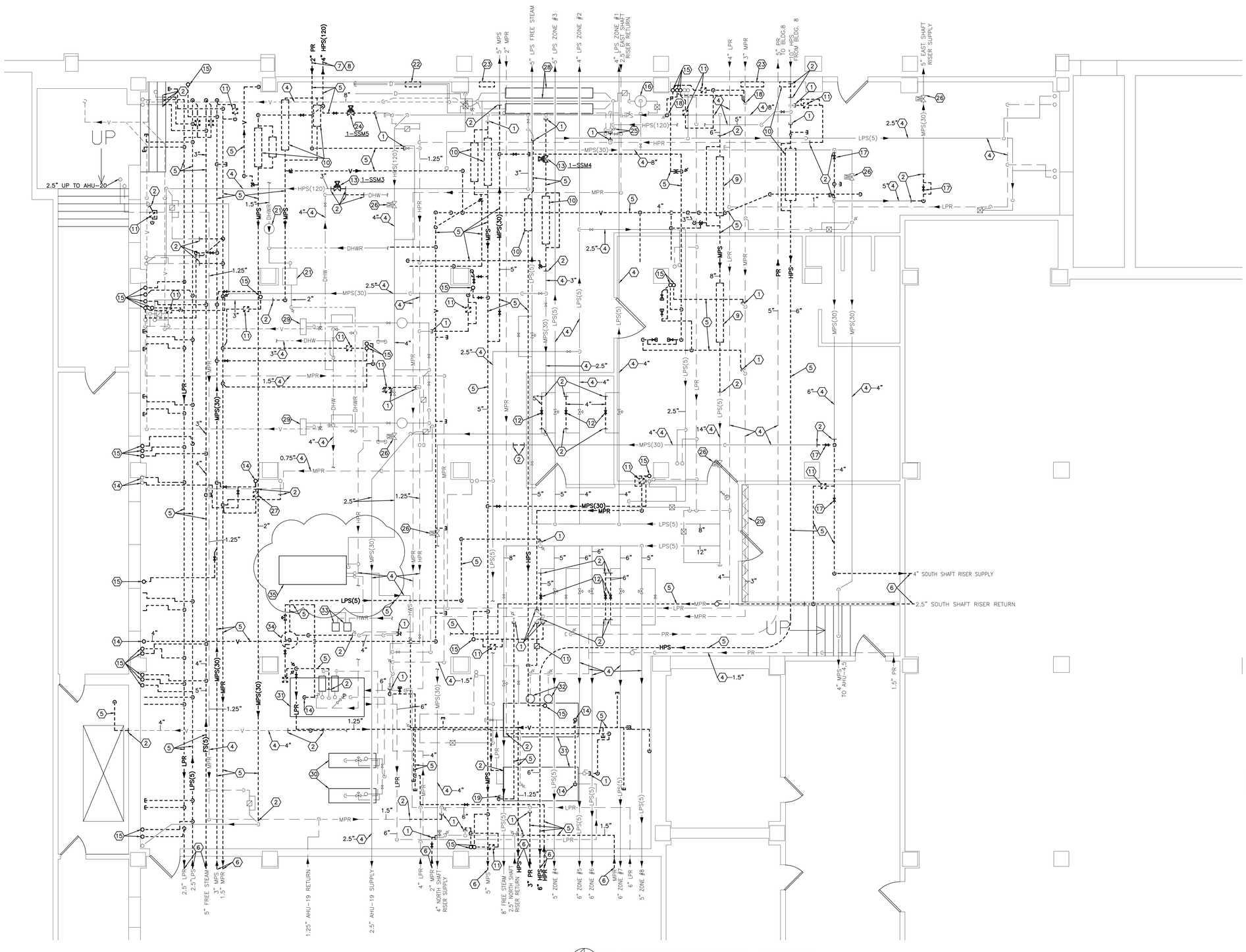
Drawing Number: 1-MDS3

Dwg. 17 of 47

Office of Construction and Facilities Management

Department of Veterans Affairs

VA FORM 08–6231



SUB-BASEMENT SERVICE ROOM – DEMOLITION
SCALE: 1/4" = 1'-0"

GENERAL NOTES

A REFER TO SHEET H1 FOR LEGEND, ABBREVIATIONS, AND ADDITIONAL GENERAL NOTES.

B COORDINATE AND SCHEDULE WELL IN ADVANCE WITH COTR, DOWNTIME OF ALL UTILITIES REQUIRED FOR PERFORMANCE OF THIS WORK.

NOTES

1 REMOVE EXISTING PIPING TO THIS POINT AND CAP.

2 REMOVE EXISTING PIPING TO THIS POINT FOR RECONNECTION IN NEW WORK.

3 REMOVE EXISTING TRAP ASSEMBLY IN ITS ENTIRETY, INCLUDING BYPASS, ISOLATION SHUTOFF VALVES, ETC. FOR REPLACEMENT IN NEW WORK.

4 EXISTING PIPING TO REMAIN.

5 REMOVE EXISTING PIPING AND ASSOCIATED VALVES, TRAPS, HANGERS, ETC.

6 REFER TO SUB-BASEMENT CRAWL SPACE AREA A DEMOLITION PLAN ON SHEET 1-DS1 FOR CONTINUATION.

7 REFER TO SUB-BASEMENT CRAWL SPACE AREA B DEMOLITION PLAN ON SHEET 1-DS2 FOR CONTINUATION.

8 REMOVE EXISTING PIPING FOR REPLACEMENT IN NEW WORK. TO MINIMIZE DOWNTIME, COORDINATE WITH NEW WORK TO INSTALL NEW PARALLEL PIPES PRIOR TO DEMOLITION OF EXISTING PIPES.

9 REMOVE EXISTING STEAM PRESSURE REDUCING STATION IN ITS ENTIRETY, INCLUDING ALL VALVES, PIPING, BYPASSES, REMOTE PANEL MOUNTED PRESSURE GAUGES, PIPE MOUNTED PRESSURE GAUGES, SAFETY RELIEF VALVES, AND OTHER SPECIALTIES, ETC. FOR REPLACEMENT IN NEW WORK.

10 REMOVE EXISTING STEAM PRESSURE REDUCING STATION IN ITS ENTIRETY, INCLUDING ALL VALVES, PIPING, BYPASSES, REMOTE PANEL MOUNTED PRESSURE GAUGES, PIPE MOUNTED PRESSURE GAUGES, SAFETY RELIEF VALVES, AND OTHER SPECIALTIES, ETC.

11 REMOVE EXISTING TRAP ASSEMBLY IN ITS ENTIRETY, INCLUDING BYPASS, ISOLATION SHUTOFF VALVES, ETC.

12 REMOVE EXISTING BYPASS GLOBE VALVE FOR REPLACEMENT IN NEW WORK. CONTRACTOR SHALL INCLUDE ABATEMENT OF ASBESTOS GASKETS IN THE SCOPE OF THIS PROJECT.

13 CAREFULLY REMOVE EXISTING STEAM METER AND ALL ASSOCIATED ELECTRONICS, ACCESSORIES, ETC. FOR RELOCATION IN NEW WORK. REFER TO SHEET 1-MS4 FOR NEW LOCATION, AND TO SCHEDULE ON SHEET H2 FOR MORE INFORMATION.

14 REMOVE EXISTING PIPING BEYOND ELBOW, TO VERTICAL PORTION, FOR RECONNECTION IN NEW WORK.

15 REMOVE EXISTING PIPING TO NEAR UNDERSIDE OF SLAB AND CAP.

16 EXISTING FLASH TANK TO REMAIN.

17 REMOVE EXISTING GATE VALVE FOR REPLACEMENT IN NEW WORK. CONTRACTOR SHALL INCLUDE ABATEMENT OF ASBESTOS VALVE GASKETS IN THE SCOPE OF THIS PROJECT.

18 CAP PIPE IN VERTICAL, AT MAIN.

19 REMOVE EXISTING PIPING BACK TO CONDENSATE RECEIVER TANK AND CAP.

20 REMOVE EXISTING INSULATION ON PIPING WITHIN HATCHED REGION FOR REPLACEMENT IN NEW WORK.

21 EXISTING DOMESTIC HOT WATER RECIRCULATION PUMP TO REMAIN.

22 REMOVE EXISTING PANEL MOUNTED PRESSURE GAUGES INCLUDING ALL PIPING BACK TO STEAM MAIN(S) AND CAP.

23 REMOVE EXISTING PANEL MOUNTED PRESSURE GAUGES AND ALL ASSOCIATED PIPING, SUPPORTS, ETC. ASSOCIATED WITH PRV.

24 CAREFULLY REMOVE EXISTING STEAM METER AND ALL ASSOCIATED ELECTRONICS, ACCESSORIES, ETC. FOR RELOCATION IN NEW WORK. REFER TO SHEET 15-MB1 FOR NEW LOCATION, AND TO SCHEDULE ON SHEET H2 FOR MORE INFORMATION.

25 ENSURE BOTH VALVES ARE OPEN AT COMPLETION OF THIS WORK.

26 EXISTING STEAM METER TO REMAIN.

27 TRAP TO BE RE-USED IN NEW WORK REFER TO SHEET 1-MS4.

28 EXISTING STEAM PRESSURE REDUCING STATION TO REMAIN.

29 EXISTING DOMESTIC HOT WATER HEATER TO REMAIN.

30 EXISTING SHELL AND TUBE HEAT EXCHANGER TO REMAIN.

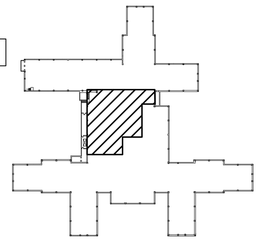
31 EXISTING CONDENSATE RECEIVER TO REMAIN.

32 EXISTING CONDENSATE PUMP TO REMAIN.

33 EXISTING HEATING HOT WATER PUMPS TO REMAIN.

34 REMOVE EXISTING FLASH TANK AND ASSOCIATED SPECIALTIES, ETC. AND TURN OVER TO VA. PLACE WHERE DIRECTED BY COTR.

35 EXISTING PLATE AND FRAME HEAT EXCHANGER TO REMAIN.



KEYPLAN

Revisions	Date
ADDENDUM #1	08/28/2013

CONSULTANTS:

STATE OF OHIO — JOHN A. BLACK 49341 — REGISTERED PROFESSIONAL ENGINEER

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PROJECT NO. 2012-04005 FIRM LICENSE: 01528

Drawing Title: SUB-BASEMENT SERVICE ROOM - DEMOLITION

Approved Project Director

Project Title: HOSPITAL STEAM SYSTEM RECORD DRAWINGS

Location: CINCINNATI, OHIO

Date: 01/04/2013 | Checked: JAC | Drawn: DRV

Project Number: 539-13-107

Building Number: 1

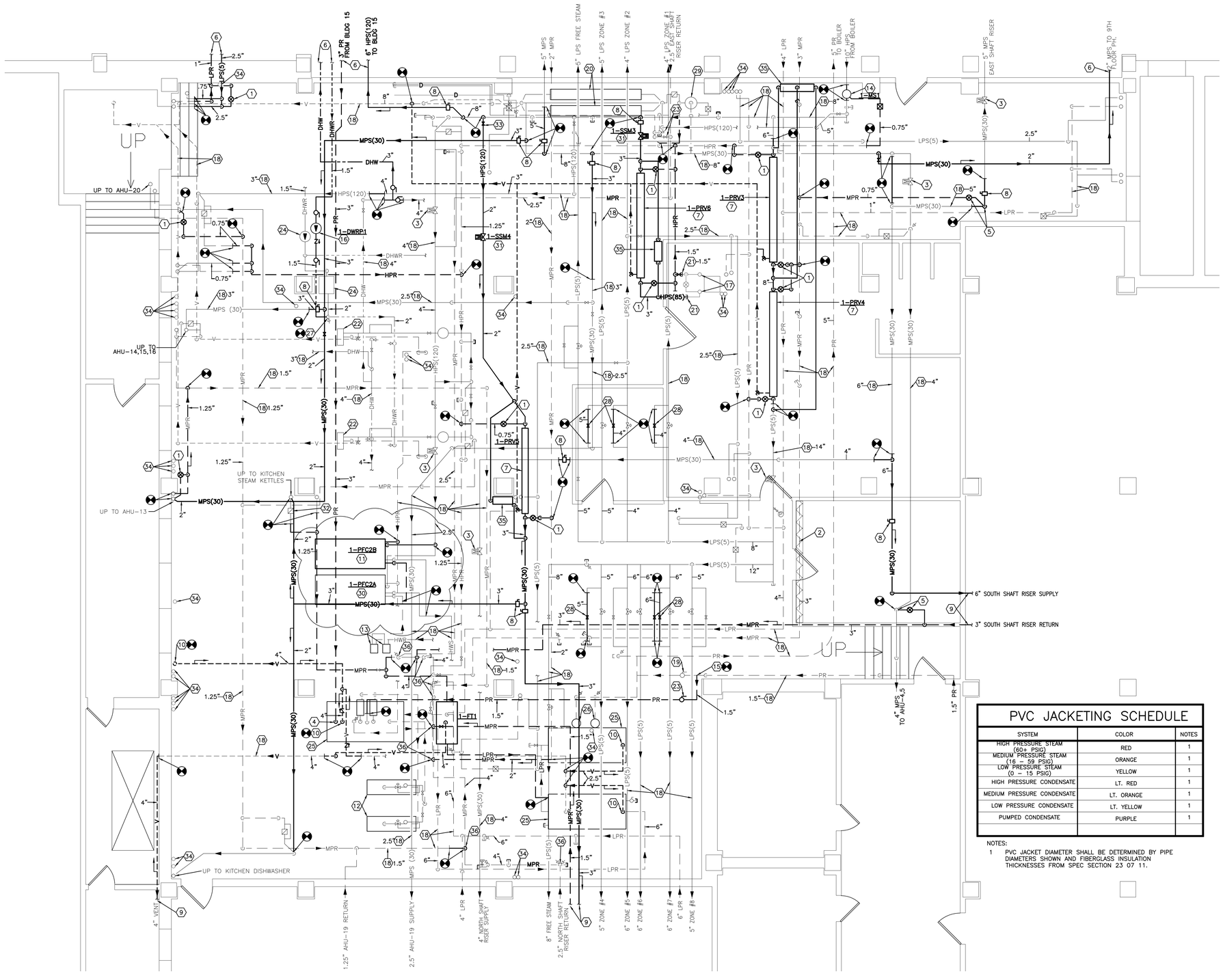
Drawing Number: 1-DS4

Dwg. 18 of 47

Office of Construction and Facilities Management

Department of Veterans Affairs

VA FORM 08-6231



SUB-BASEMENT SERVICE ROOM – NEW WORK
SCALE: 1/4" = 1'-0"

GENERAL NOTES

A REFER TO SHEET H1 FOR LEGEND, ABBREVIATIONS, AND ADDITIONAL GENERAL NOTES.

B COORDINATE AND SCHEDULE WELL IN ADVANCE WITH COTR. DOWNTIME OF ALL UTILITIES REQUIRED FOR PERFORMANCE OF THIS WORK.

C PROVIDE COLOR CODED PVC JACKET ON ALL EXISTING STEAM AND CONDENSATE PIPING IN SERVICE ROOM. REFER TO SCHEDULE ON THIS SHEET. PROVIDE NEW PIPE LABELING ON OUTSIDE OF NEW PVC JACKETS PER SPECS. ALL COLOR CODED PVC JACKETING IN SERVICE ROOM IS INCLUDED IN DEDUCT ALTERNATE #1.

NOTES

1 PROVIDE NEW 0.75" UNIVERSAL TRAP ASSEMBLY WITH THERMODYNAMIC TRAP ON STEAM DRIP. REFER TO SPEC SECTION 23 22 13 AND DETAIL ON SHEET H4.

2 PROVIDE NEW FIBERGLASS INSULATION ON EXISTING CONDENSATE PIPE. MATCH ADJACENT THICKNESS.

3 EXISTING STEAM METER TO REMAIN.

4 CONNECT NEW PUMPED CONDENSATE RETURN PIPE TO EXISTING CONDENSATE RECEIVER TANK.

5 PROVIDE NEW DIRT LEG ON RISE (DIAMETER FULL SIZE OF MAIN, MINIMUM LENGTH 18") AND 0.75" UNIVERSAL TRAP ASSEMBLY WITH THERMODYNAMIC TRAP. REFER TO SPEC SECTION 23 22 13, AND DETAIL ON SHEET H4.

6 REFER TO SUB-BASEMENT CRAWL SPACE AREA B NEW WORK PLAN ON SHEET 1-MS2 FOR CONTINUATION.

7 PROVIDE NEW STEAM PRESSURE REDUCING STATION. REFER TO DETAIL ON SHEET H3 AND SCHEDULE ON SHEET H2.

8 PROVIDE NEW HIGH PERFORMANCE BUTTERFLY TYPE SHUT OFF VALVE WITH CHAIN WHEEL OPERATOR. PROVIDE 1" WARM-UP BYPASS LINE WITH GLOBE VALVE AROUND NEW BUTTERFLY VALVE. REFER TO SPEC SECTION 23 22 13.

9 REFER TO SUB-BASEMENT CRAWL SPACE AREA A NEW WORK PLAN ON SHEET 1-MS1 FOR CONTINUATION.

10 RECONNECT TO EXISTING VENT PIPE IN VERTICAL.

11 PROVIDE NEW PLATE AND FRAME STEAM TO HOT WATER HEAT EXCHANGER TO SERVE KITCHEN & HEMODIALYSIS ADDITION (2 OF 2 FOR SYSTEM). REFER TO SCHEDULE AND PIPING SCHEMATICS FOR MORE INFORMATION.

12 EXISTING SHELL AND TUBE HEAT EXCHANGER TO REMAIN.

13 EXISTING HEATING HOT WATER PUMPS TO REMAIN.

14 PROVIDE BAFFLE TYPE MOISTURE SEPARATOR IN EXISTING HIGH PRESSURE STEAM SUPPLY PIPING. REFER TO SCHEDULE ON SHEET H2. PROVIDE AIR VENT ON TOP OUTLET OF SEPARATOR. PROVIDE REMOVABLE INSULATION JACKET ON SEPARATOR.

15 TEE INTO SIDE OF EXISTING PUMPED CONDENSATE RETURN LINE UPSTREAM OF EXISTING BALL VALVE, AS SHOWN.

16 PROVIDE NEW DOMESTIC HOT WATER RECIRCULATION PUMP 1-DWRP1.
CAPACITY: 20 GPM @ 35 FT. HEAD
MOTOR: 0.4 HP @ 120V-1PH
ALL BRONZE BODY CONSTANT RUNNING PUMP MOUNTED AT CEILING.
1.5" FLANGE. 150 PSI MAX W.P. REFER TO DETAIL ON SHEET H3.

17 FUTURE DESIGN TO SERVE SPS.

18 EXISTING PIPING TO REMAIN.

19 ENSURE VALVE IS CLOSED AT COMPLETION OF THIS WORK.

20 EXISTING STEAM PRESSURE REDUCING STATION TO REMAIN.

21 CAP PIPING AT THIS POINT FOR FUTURE CONNECTION.

22 EXISTING DOMESTIC HOT WATER HEATER TO REMAIN.

23 ENSURE VALVE IS OPEN AT COMPLETION OF THIS WORK.

24 EXISTING DOMESTIC HOT WATER RECIRCULATION PUMP TO REMAIN.

25 EXISTING CONDENSATE RECEIVER TO REMAIN.

26 EXISTING CONDENSATE PUMP TO REMAIN.

27 CONNECT TO EXISTING VALVED STUB ON 2" DHWR PIPE AT TOP OF RISER.

28 PROVIDE NEW GLOBE VALVE IN BYPASS.

29 EXISTING FLASH TANK TO REMAIN.

30 EXISTING PLATE AND FRAME HEAT EXCHANGER TO REMAIN.

31 REINSTALL EXISTING STEAM METER AND ALL ASSOCIATED ELECTRONICS, ACCESSORIES, ETC. TO THIS LOCATION.

32 REINSTALL EXISTING TRAP (NOTE 27 ON SHEET 1-DS4) TO THIS LOCATION.

33 PROVIDE SHUT OFF GATE VALVE WITH CHAIN WHEEL OPERATOR. PROVIDE 1" WARM-UP BYPASS LINE WITH GLOBE VALVE AROUND NEW VALVE.

34 CAP EXISTING ABANDONED PIPE NEAR UNDERSIDE OF SLAB.

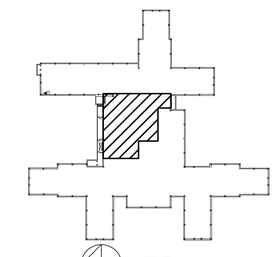
35 PROVIDE PANEL-MOUNTED PRESSURE GAUGES ON WALL TO INDICATE PRESSURES UPSTREAM AND DOWNSTREAM OF PRESSURE REDUCING STATION. PROVIDE DRAIN COCK AT BOTTOM OF SENSING LINES DROPPING TO PANEL.

36 REFER TO FLASH TANK DETAIL ON SHEET H4 FOR SPECIALTIES TO BE PROVIDED UNDER THIS PROJECT AT ALL TEES INTO HEADER (PRESSURE GAUGE, DRAIN TEE WITH VALVE, ISOLATION SHUTOFF VALVE.)

PVC JACKETING SCHEDULE

SYSTEM	COLOR	NOTES
HIGH PRESSURE STEAM (60+ PSIG)	RED	1
MEDIUM PRESSURE STEAM (16 – 59 PSIG)	ORANGE	1
LOW PRESSURE STEAM (0 – 15 PSIG)	YELLOW	1
HIGH PRESSURE CONDENSATE	LT. RED	1
MEDIUM PRESSURE CONDENSATE	LT. ORANGE	1
LOW PRESSURE CONDENSATE	LT. YELLOW	1
PUMPED CONDENSATE	PURPLE	1

NOTES:
1 PVC JACKET DIAMETER SHALL BE DETERMINED BY PIPE DIAMETERS SHOWN AND FIBERGLASS INSULATION THICKNESSES FROM SPEC SECTION 23 07 11.



KEYPLAN

Revisions	Date
ADDENDUM #1	08/28/2013

CONSULTANTS:

STATE OF OHIO — JOHN A. BLACK 49341 — REGISTERED PROFESSIONAL ENGINEER

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Ph: 937-224-0861 Fax: 937-224-5777 www.heapy.com
PROJECT NO. 2012-04005 FIRM LICENSE: 01528

Drawing Title: SUB-BASEMENT SERVICE ROOM - NEW WORK

Approved Project Director

Project Title: HOSPITAL STEAM SYSTEM RECORD DRAWINGS

Location: CINCINNATI, OHIO

Date: 01/04/2013 | Checked: JAC | Drawn: DRV

Project Number: 539-13-107

Building Number: 1

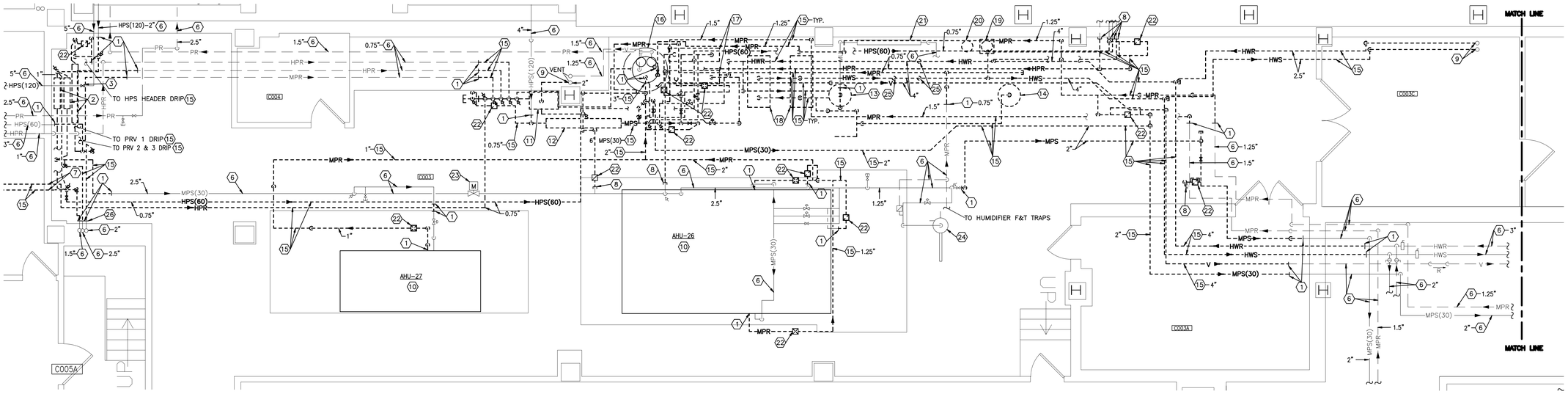
Drawing Number: 1-MS4

Dwg. 19 of 47

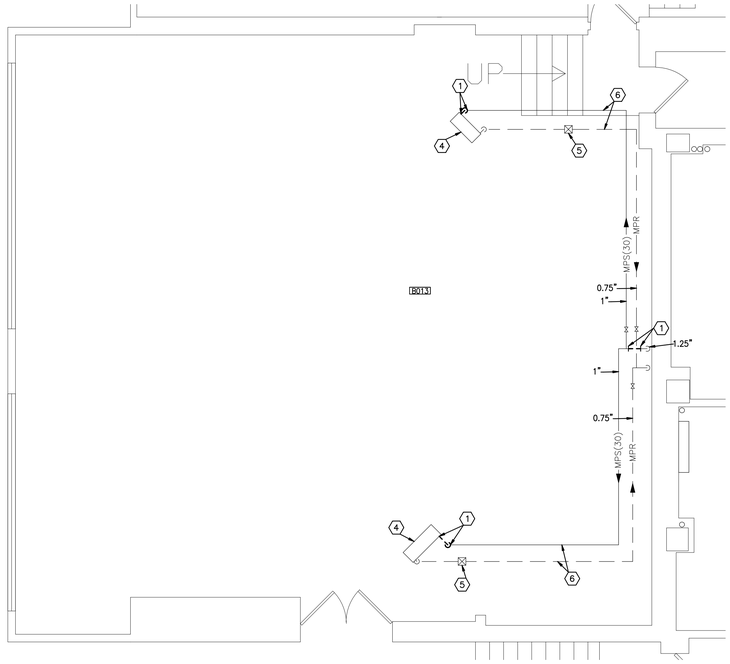
Office of Construction and Facilities Management

Department of Veterans Affairs

VA FORM 08-6231



BASEMENT MECHANICAL ROOM – DEMOLITION
SCALE: 1/4" = 1'-0"



BASEMENT GENERATOR ROOM – DEMOLITION
SCALE: 1/4" = 1'-0"

GENERAL NOTES

A REFER TO SHEET H1 FOR LEGEND, ABBREVIATIONS, AND ADDITIONAL GENERAL NOTES.

B COORDINATE AND SCHEDULE WELL IN ADVANCE WITH COTR, DOWNTIME OF ALL UTILITIES REQUIRED FOR PERFORMANCE OF THIS WORK.

NOTES

1 REMOVE EXISTING PIPING TO THIS POINT FOR RECONNECTION IN NEW WORK.

2 REMOVE EXISTING STEAM PRESSURE REDUCING STATION IN ITS ENTIRETY, INCLUDING ALL VALVES, PIPING, BYPASSES, REMOTE PANEL MOUNTED PRESSURE GAUGES, PIPE MOUNTED PRESSURE GAUGES, SAFETY RELIEF VALVES, AND OTHER SPECIALTIES, ETC. FOR REPLACEMENT IN NEW WORK. DOWNTIME OF THESE STATIONS FOR ALL WORK REQUIRED (REMOVAL OF EXISTING, INSTALLATION OF NEW) SHALL NOT EXCEED SEVEN CONSECUTIVE CALENDAR DAYS. COORDINATE DOWNTIME WELL IN ADVANCE WITH COTR.

3 REMOVE EXISTING GATE VALVE FOR REPLACEMENT IN NEW WORK. CONTRACTOR SHALL INCLUDE ABATEMENT OF ASBESTOS GASKETS IN THE SCOPE OF THIS PROJECT – REFER TO SPEC SECTION 02 82 13.13.

4 EXISTING STEAM PROPELLER UNIT HEATER TO REMAIN.

5 EXISTING F&T TRAP ASSEMBLY TO REMAIN.

6 EXISTING PIPING TO REMAIN.

7 REFER TO BASEMENT DEMOLITION PLAN ON SHEET 1–MDB3 FOR CONTINUATION.

8 REMOVE EXISTING PIPE BACK TO THIS POINT AND CAP.

9 REMOVE PIPING BEYOND ELBOW, TO VERTICAL PORTION, FOR RECONNECTION IN NEW WORK.

10 EXISTING AIR HANDLING UNIT TO REMAIN.

11 REMOVE EXISTING FLASH TANK AND ASSOCIATED PIPING, SUPPORTS, ACCESSORIES, ETC. FOR REPLACEMENT IN NEW WORK.

12 REMOVE EXISTING STEAM PRESSURE REDUCING STATION IN ITS ENTIRETY, INCLUDING ALL VALVES, PIPING, BYPASSES, REMOTE PANEL MOUNTED PRESSURE GAUGES, PIPE MOUNTED PRESSURE GAUGES, SAFETY RELIEF VALVES, AND OTHER SPECIALTIES, ETC. FOR REPLACEMENT IN NEW WORK.

13 REMOVE EXISTING AIR SEPARATOR AND ASSOCIATED AUTOMATIC AIR VENT, ACCESSORIES, ETC. FOR RELOCATION IN NEW WORK. REFER TO SHEET 1–MB1 FOR NEW LOCATION.

14 REMOVE EXISTING EXPANSION TANK FOR RELOCATION IN NEW WORK. REFER TO SHEET 1–MB1 FOR NEW LOCATION.

15 REMOVE EXISTING PIPING AND ASSOCIATED VALVES, TRAPS, HANGERS, ETC.

16 EXISTING DUPLEX CONDENSATE PUMP IN PIT TO REMAIN.

17 REMOVE EXISTING SHELL AND TUBE CONVERTER AND ASSOCIATED PIPING, SUPPORTS, CONTROLS, ACCESSORIES, ETC. FOR REPLACEMENT IN NEW WORK.

18 REMOVE EXISTING BASE MOUNTED PUMPS AND ASSOCIATED PIPING, WIRING, CONTROLS, CONCRETE BASE, ETC. FOR REPLACEMENT IN NEW WORK. PATCH FLOOR TO MATCH EXISTING. EXISTING ELECTRICAL FEEDERS AND VFD'S TO BE RE–USED IN NEW WORK – REFER TO ELECTRICAL DRAWINGS.

19 REMOVE EXISTING SIDESTREAM FILTER FOR RELOCATION IN NEW WORK. REMOVE EXISTING CONCRETE BASE AND PATCH FLOOR TO MATCH EXISTING. REFER TO SHEET 1–MB1 AND PIPING SCHEMATIC ON SHEET H6.

20 REMOVE EXISTING CHEMICAL POT FEEDER FOR RELOCATION IN NEW WORK. REFER TO SHEET 1–MB1 AND PIPING SCHEMATIC ON SHEET H6.

21 EXISTING WATER MAKEUP ASSEMBLY, INCLUDING PRESSURE REDUCING VALVE AND SPECIALTIES, TO REMAIN.

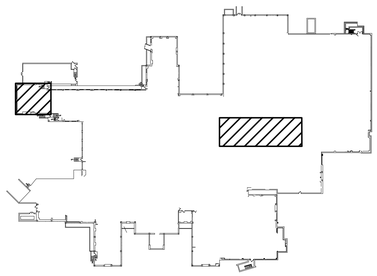
22 REMOVE EXISTING TRAP ASSEMBLY IN ITS ENTIRETY, INCLUDING BYPASSES, ISOLATION SHUTOFF VALVES, ETC.

23 EXISTING STEAM METER TO REMAIN.

24 EXISTING STEAM HUMIDIFIER TO REMAIN.

25 REMOVE EXISTING HEATING HOT WATER FLOW METER, PIPE TEMPERATURE SENSORS, AND BTUH METER FOR RELOCATION IN NEW WORK. REFER TO SHEET 1–MB1 FOR NEW LOCATION.

26 REMOVE EXISTING PIPING TO THIS POINT AND LEAVE END OPEN.



KEYPLAN

Revisions	Date
ADDENDUM #1	08/28/2013

CONSULTANTS:

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PROJECT NO. 2012-04005 FIRM LICENSE: 01528

Drawing Title: PARTIAL BASEMENT FLOOR PLANS - DEMOLITION

Approved Project Director

Project Title: HOSPITAL STEAM SYSTEM RECORD DRAWINGS

Location: CINCINNATI, OHIO

Date: 01/04/2013 | Checked: JAC | Drawn: DRV

Project Number: 539-13-107

Building Number: 1

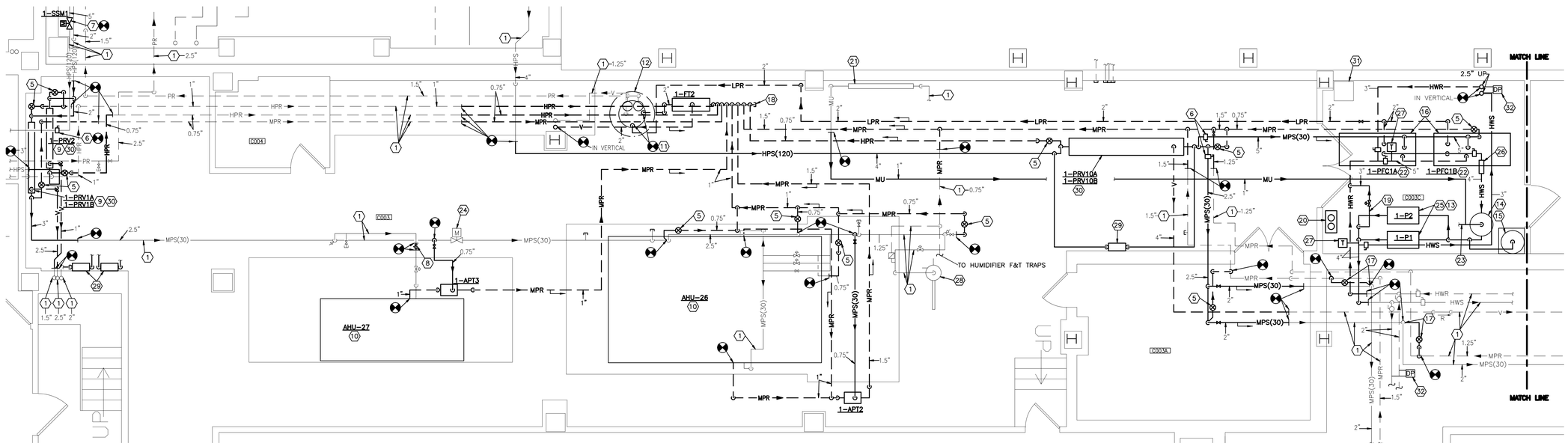
Drawing Number: 1-DB1

Dwg. 20 of 47

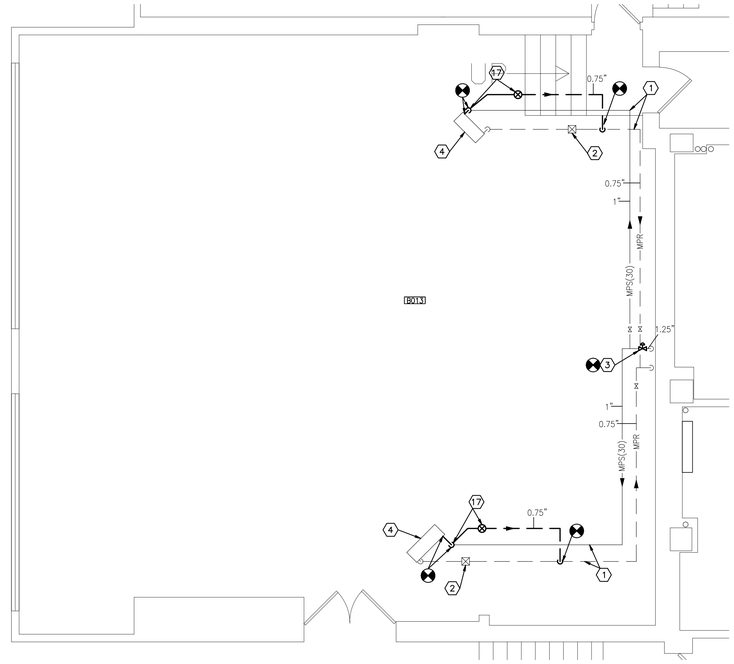
Office of Construction and Facilities Management

Department of Veterans Affairs

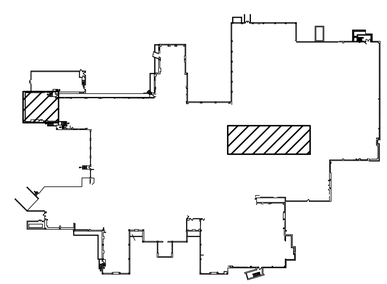
VA FORM 08-6231



BASEMENT MECHANICAL ROOM – NEW WORK
SCALE 1/4" = 1'-0"



BASEMENT GENERATOR ROOM – NEW WORK
SCALE 1/4" = 1'-0"



KEYPLAN

GENERAL NOTES

A REFER TO SHEET H1 FOR LEGEND, ABBREVIATIONS, AND ADDITIONAL GENERAL NOTES.

B COORDINATE AND SCHEDULE WELL IN ADVANCE WITH COTR, DOWNTIME OF ALL UTILITIES REQUIRED FOR PERFORMANCE OF THIS WORK.

NOTES

1 EXISTING PIPING TO REMAIN.

2 EXISTING F&T TRAP ASSEMBLY TO REMAIN.

3 PROVIDE NEW LINE SIZE TWO-POSITION DDC CONTROL VALVE FOR SEASONAL AUTOMATIC STEAM CONTROL. REFER TO PIPING DETAIL ON SHEET H4, CONTROL DIAGRAM & SEQUENCES ON SHEET H9, AND SPEC SECTION 23 09 23.

4 EXISTING STEAM PROPELLER UNIT HEATER TO REMAIN.

5 PROVIDE NEW 0.75" UNIVERSAL TRAP ASSEMBLY WITH THERMODYNAMIC TRAP ON STEAM DRIP. REFER TO SPEC SECTION 23 22 13 AND DETAIL ON SHEET H4.

6 PROVIDE NEW HIGH PERFORMANCE BUTTERFLY TYPE SHUT OFF VALVE WITH CHAIN WHEEL OPERATOR. PROVIDE 1" WARM-UP BYPASS LINE WITH GLOBE VALVE AROUND NEW BUTTERFLY VALVE. REFER TO SPEC SECTION 23 22 13.

7 PROVIDE NEW IN-LINE VARIABLE AREA METER IN EXISTING HIGH PRESSURE STEAM SUPPLY PIPE. REFER TO DETAIL ON SHEET H3 AND SCHEDULE ON SHEET H2.

8 PROVIDE NEW LINE SIZE STRAINER IN EXISTING STEAM SUPPLY PIPE, UPSTREAM OF EXISTING CONTROL VALVE.

9 DOWNTIME OF THESE STATIONS FOR ALL WORK REQUIRED (REMOVAL OF EXISTING, INSTALLATION OF NEW) SHALL NOT EXCEED SEVEN CONSECUTIVE CALENDAR DAYS. COORDINATE DOWNTIME WELL IN ADVANCE WITH COTR.

10 EXISTING AIR HANDLING UNIT TO REMAIN.

11 CONNECT NEW LOW PRESSURE CONDENSATE RETURN PIPE TO EXISTING VENTED CONDENSATE PIT PUMP RECEIVER.

12 EXISTING DUPLEX CONDENSATE PUMP IN PIT TO REMAIN.

13 PROVIDE NEW INLINE HEATING HOT WATER PUMP. REFER TO SCHEDULE ON SHEET H2 AND DETAIL ON SHEET H3.

14 RELOCATED AIR SEPARATOR AND SPECIALTIES. REFER TO PIPING SCHEMATIC ON SHEET H6.

15 RELOCATED EXPANSION TANK AND SPECIALTIES. PROVIDE 4" HIGH CONCRETE HOUSEKEEPING PAD. CHAMFER EDGES, AND OVERHANG TANK BY 6" ON ALL SIDES. REFER TO PIPING SCHEMATIC ON SHEET H6.

16 NEW PLATE AND FRAME HYDRONIC WATER HEATING PACKAGE. REFER TO SPEC SECTION 23 22 13 AND SCHEDULE ON SHEET H2.

17 PROVIDE NEW DIRT LEG ON RISE (DIAMETER FULL SIZE OF MAIN, MINIMUM LENGTH 18") AND 0.75" UNIVERSAL TRAP ASSEMBLY WITH THERMODYNAMIC TRAP. REFER TO DETAIL ON SHEET H4 AND SPECIFICATION SECTION 23 22 13.

18 PROVIDE NEW 4" DIAMETER SCH. 80 PIPE HEADER AT INLET OF FLASH TANK, MIN. LENGTH 48". REFER TO FLASH TANK DETAIL ON SHEET H4 FOR SPECIALTIES REQUIRED AT CONNECTION TO HEADER.

19 BYPASS PIPE WITH MODULATING CONTROL VALVE TO ENSURE PUMP MINIMUM FLOW. REFER TO PIPING SCHEMATIC AND CONTROLS ON SHEET H6.

20 RELOCATED SIDESTREAM FILTER AND CHEMICAL POT FEEDER AND ASSOCIATED SPECIALTIES FOR HEATING HOT WATER SYSTEM. PROVIDE 4" HIGH CONCRETE HOUSEKEEPING PAD. CHAMFER EDGES AND OVERHANG EQUIPMENT BY 6" ON ALL SIDES. REFER TO PIPING SCHEMATIC ON SHEET H6.

21 EXISTING WATER MAKEUP ASSEMBLY, INCLUDING PRESSURE REDUCING VALVE, BACKFLOW PREVENTER AND SPECIALTIES, TO REMAIN.

22 REFER TO SCHEDULE ON SHEET H2 AND PIPING SCHEMATIC ON SHEET H6. INSTALL PER MANUFACTURER'S RECOMMENDATIONS.

23 EXTEND DRAIN PIPE FROM AIR VENT TO NEAREST FLOOR DRAIN.

24 EXISTING STEAM METER TO REMAIN.

25 REFER TO ELECTRICAL DRAWINGS FOR VFD'S ASSOCIATED WITH NEW PUMPS.

26 RELOCATED HEATING HOT WATER METER AND BTUH METER. REINSTALL AND CALIBRATE PER MANUFACTURER'S INSTRUCTIONS. EXTEND POWER, COMMUNICATIONS, AND CONTROL WIRING FROM PREVIOUS LOCATION AND RECONNECT.

27 RELOCATED PIPE TEMPERATURE SENSORS ASSOCIATED WITH RELOCATED FLOW METER AND BTUH METER. REINSTALL IN LOCATION SHOWN TO MEASURE MIXED SUPPLY AND RETURN TEMPERATURES TO/FROM ALL BRANCHES. PROVIDE CONTROL WIRING PER BTUH METER MANUFACTURER'S INSTRUCTIONS.

28 EXISTING STEAM HUMIDIFIER TO REMAIN.

29 PROVIDE PANEL-MOUNTED PRESSURE GAUGES ON WALL TO INDICATE PRESSURES UPSTREAM AND DOWNSTREAM OF PRESSURE REDUCING STATION. PROVIDE DRAIN COCK AT BOTTOM OF SENSING LINES DROPPING TO PANEL.

30 PROVIDE NEW STEAM PRESSURE REDUCING STATION. REFER TO DETAIL ON SHEET H3 AND SCHEDULE ON SHEET H2.

31 INSTALLATION OF NEW PLATE AND FRAME CONVERTER SKIDS SHALL MAINTAIN NEC REQUIRED CLEARANCE (36") AROUND EXISTING TRANSFORMER AND ELECTRICAL PANEL IN THIS LOCATION, AS WELL AS FOR REMOVAL AND REPLACEMENT OF TRANSFORMER.

32 PROVIDE NEW DIFFERENTIAL PRESSURE SENSOR ASSOCIATED WITH C-SECTION BASEMENT MECHANICAL ROOM PUMPS AND VFDS, BETWEEN 3" HEATING HOT WATER SUPPLY AND RETURN PIPES IN VERTICAL PRIOR TO TRANSITION.

Revisions	Date
ADDENDUM #1	08/28/2013

CONSULTANTS:

STATE OF OHIO — JOHN A. BLACK 49341 — REGISTERED PROFESSIONAL ENGINEER

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PROJECT NO. 2012-04005 FIRM LICENSE: 01528

Drawing Title: PARTIAL BASEMENT FLOOR PLANS - NEW WORK

Approved Project Director

Project Title: HOSPITAL STEAM SYSTEM RECORD DRAWINGS

Location: CINCINNATI, OHIO

Date: 01/04/2013 | Checked: JAC | Drawn: DRV

Project Number: 539-13-107

Building Number: 1

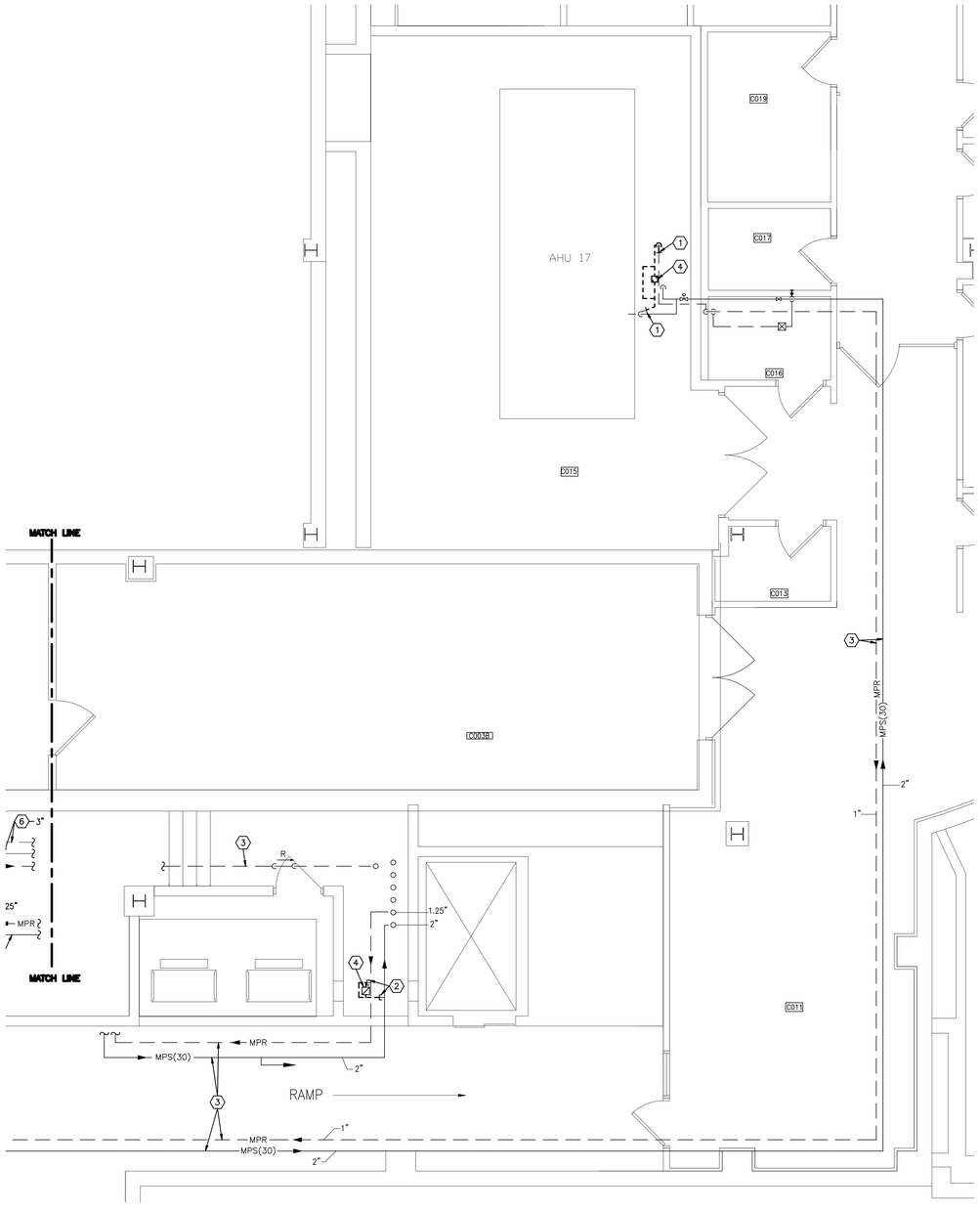
Drawing Number: 1-MB1

Dwg. 21 of 47

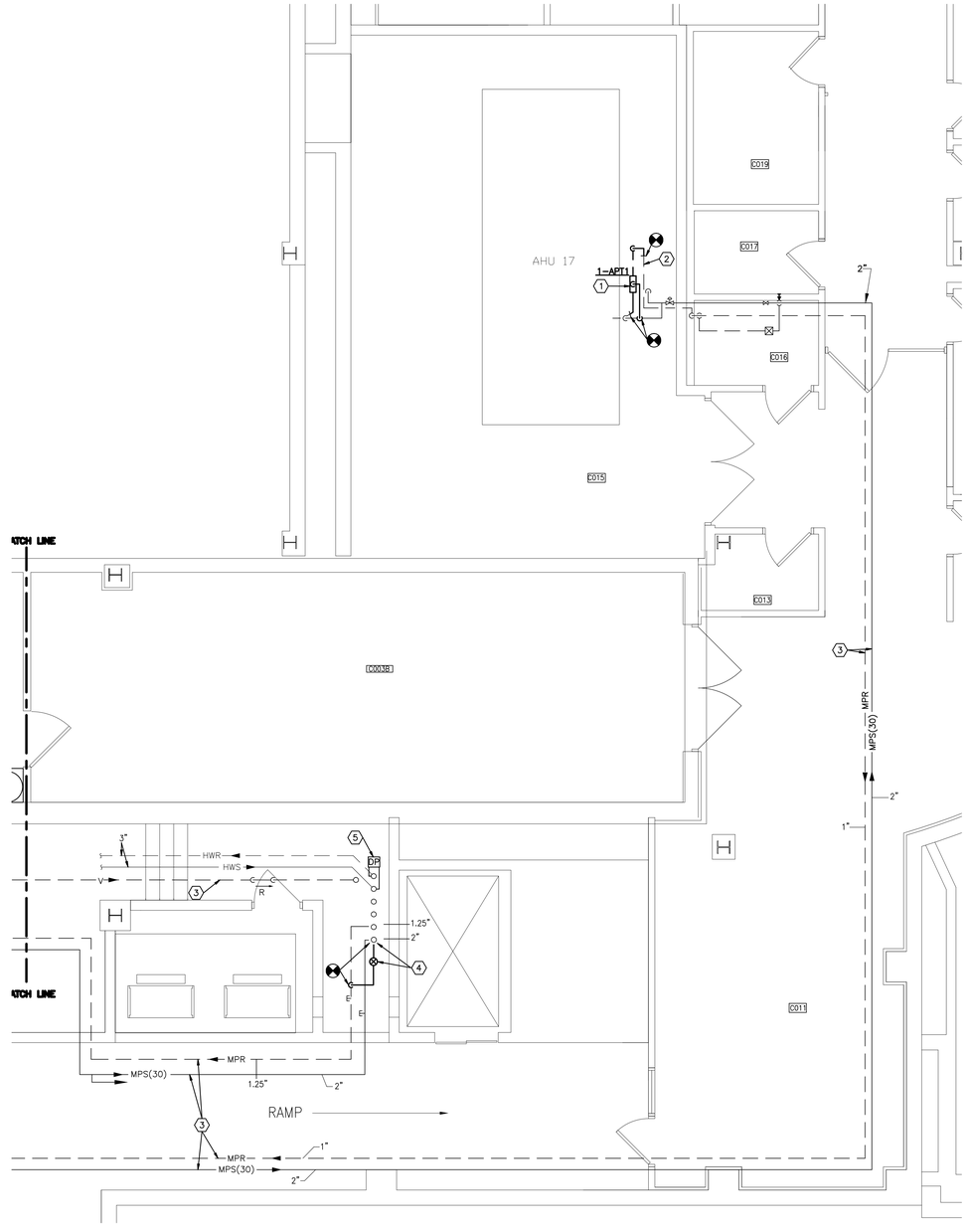
Office of Construction and Facilities Management

Department of Veterans Affairs

VA FORM 08-6231



BASEMENT C SECTION – DEMOLITION
SCALE: 1/4" = 1'-0"



BASEMENT C SECTION – NEW WORK
SCALE: 1/4" = 1'-0"

GENERAL NOTES

A REFER TO SHEET H1 FOR LEGEND, ABBREVIATIONS, AND ADDITIONAL GENERAL NOTES.

B COORDINATE AND SCHEDULE WELL IN ADVANCE WITH COTR, DOWNTIME OF ALL UTILITIES REQUIRED FOR PERFORMANCE OF THIS WORK.

NOTES – DEMOLITION

1 REMOVE EXISTING PIPING TO THIS POINT FOR RECONNECTION IN NEW WORK.

2 REMOVE EXISTING PIPING TO THIS POINT AND CAP.

3 EXISTING PIPING TO REMAIN.

4 REMOVE EXISTING TRAP ASSEMBLY IN ITS ENTIRETY, INCLUDING BYPASSES, ISOLATION SHUTOFF VALVES, ETC.

NOTES – NEW WORK

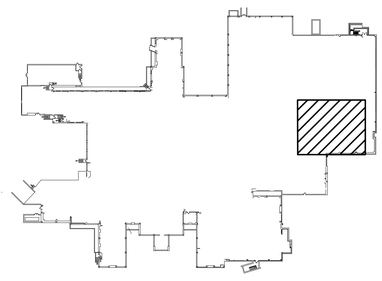
1 PROVIDE NEW AUTOMATIC PUMP TRAP. REFER TO DETAIL ON SHEET H3 AND SCHEDULE ON SHEET H2.

2 INSULATE EXISTING UN–INSULATED CONDENSATE PIPE PER SPECS.

3 EXISTING PIPING TO REMAIN.

4 PROVIDE NEW DIRT LEG ON RISE (DIAMETER FULL SIZE OF MAIN, MINIMUM LENGTH 18") AND 0.75" UNIVERSAL TRAP ASSEMBLY WITH THERMODYNAMIC TRAP. REFER TO SPEC SECTION 23 22 13 AND DETAIL ON SHEET H4.

5 PROVIDE NEW DIFFERENTIAL PRESSURE SENSOR ASSOCIATED WITH C–SECTION BASEMENT MECHANICAL ROOM PUMPS AND VFDS, BETWEEN HEATING HOT WATER SUPPLY AND RETURN PIPES AT THIS APPROXIMATE LOCATION.



KEYPLAN

Revisions	Date
ADDENDUM #1	08/28/2013

CONSULTANTS:

STATE OF OHIO
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PROJECT NO. 2012-04005 FIRM LICENSE: 01528

Drawing Title: PARTIAL BASEMENT FLOOR PLANS - DEMOLITION AND NEW WORK

Approved Project Director

Project Title: HOSPITAL STEAM SYSTEM RECORD DRAWINGS

Location: CINCINNATI, OHIO

Date: 01/04/2013 | Checked: JAC | Drawn: DRV

Project Number: 539-13-107

Building Number: 1

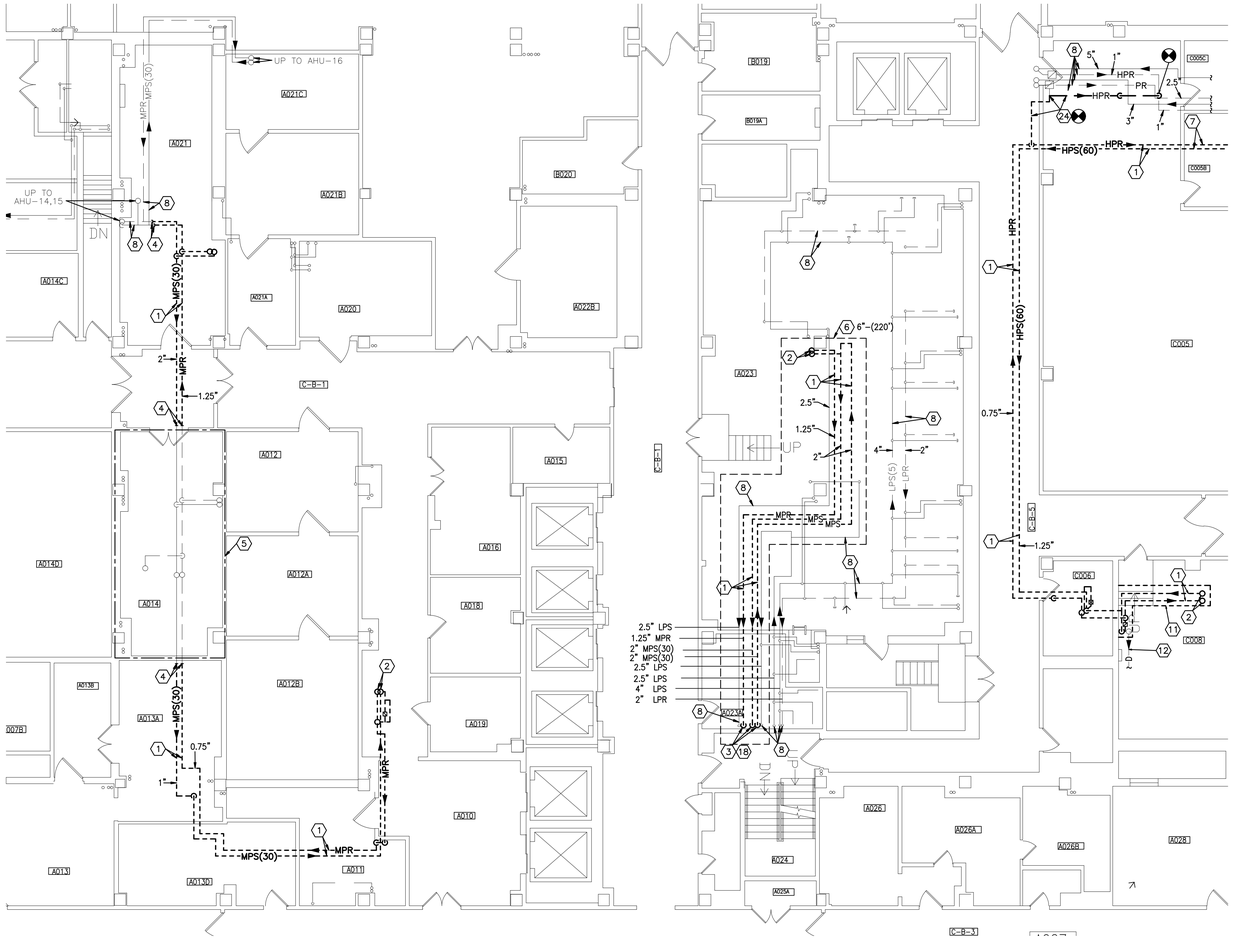
Drawing Number: 1-MDB2

Dwg. 22 of 47

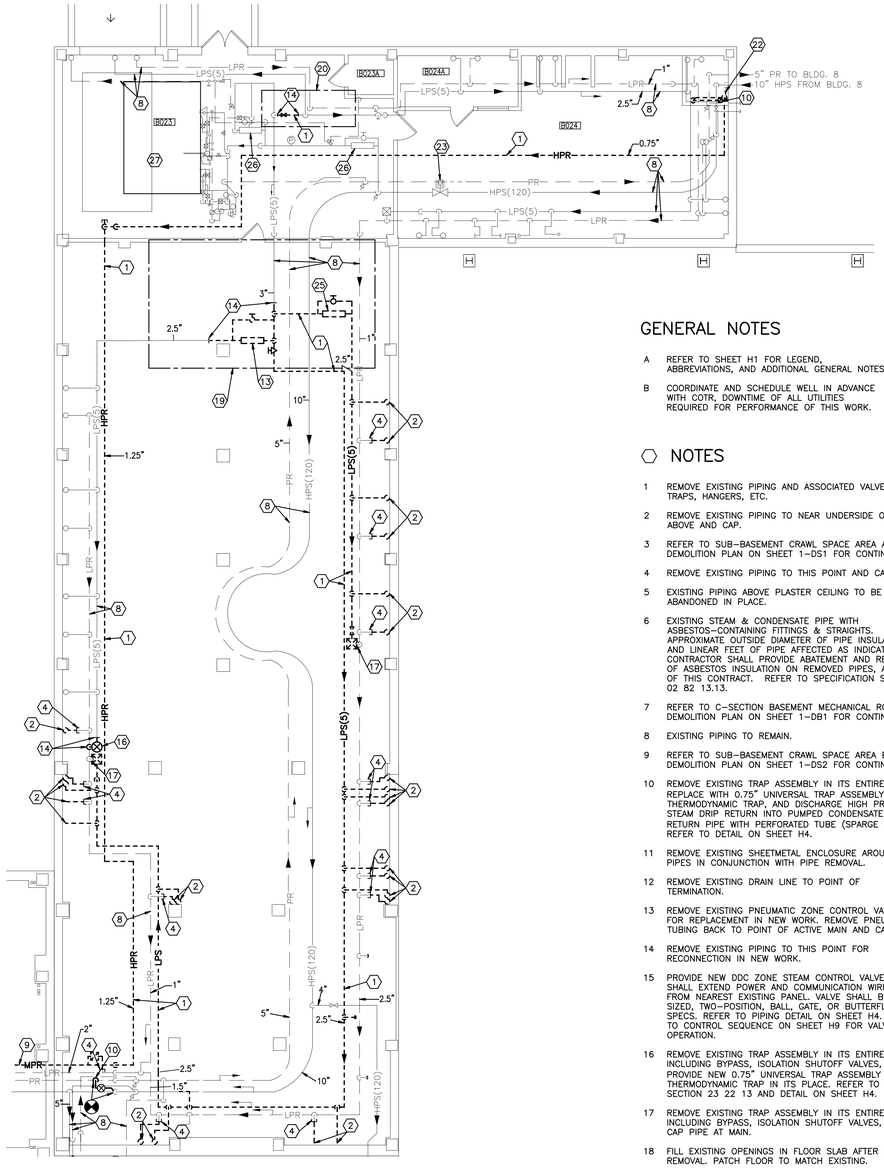
Office of Construction and Facilities Management

Department of Veterans Affairs

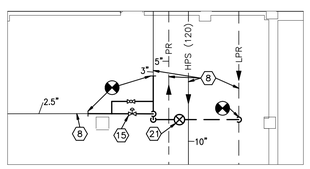
VA FORM 08–6231



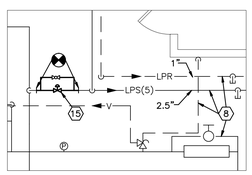
BASEMENT PLAN – DEMOLITION & NEW WORK
SCALE: 1/8" = 1'-0"



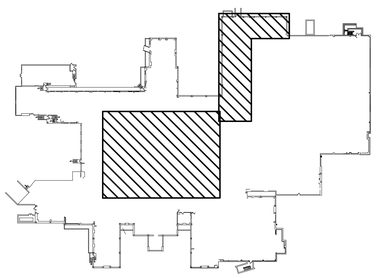
HIGH CRAWL SPACE PLAN – DEMOLITION & NEW WORK
SCALE: 1/8" = 1'-0"



PARTIAL HIGH CRAWL SPACE PLAN "A" – NEW WORK
SCALE: 1/8" = 1'-0"



PARTIAL HIGH CRAWL SPACE PLAN "B" – NEW WORK
SCALE: 1/4" = 1'-0"



BASEMENT KEYPLAN

GENERAL NOTES

A REFER TO SHEET H1 FOR LEGEND, ABBREVIATIONS, AND ADDITIONAL GENERAL NOTES.

B COORDINATE AND SCHEDULE WELL IN ADVANCE WITH COTR, DOWNTIME OF ALL UTILITIES REQUIRED FOR PERFORMANCE OF THIS WORK.

NOTES

1 REMOVE EXISTING PIPING AND ASSOCIATED VALVES, TRAPS, HANGERS, ETC.

2 REMOVE EXISTING PIPING TO NEAR UNDERSIDE OF SLAB ABOVE AND CAP.

3 REFER TO SUB-BASEMENT CRAWL SPACE AREA A DEMOLITION PLAN ON SHEET 1-DS1 FOR CONTINUATION.

4 REMOVE EXISTING PIPING TO THIS POINT AND CAP.

5 EXISTING PIPING ABOVE PLASTER CEILING TO BE ABANDONED IN PLACE.

6 EXISTING STEAM & CONDENSATE PIPE WITH ASBESTOS-CONTAINING FITTINGS & STRAIGHTS. APPROXIMATE OUTSIDE DIAMETER OF PIPE INSULATION AND LINEAR FEET OF PIPE AFFECTED AS INDICATED. CONTRACTOR SHALL PROVIDE ABATEMENT AND REMOVAL OF ASBESTOS INSULATION ON REMOVED PIPES, AS PART OF THIS CONTRACT. REFER TO SPECIFICATION SECTION 02 82 13.13.

7 REFER TO C-SECTION BASEMENT MECHANICAL ROOM DEMOLITION PLAN ON SHEET 1-DB1 FOR CONTINUATION.

8 EXISTING PIPING TO REMAIN.

9 REFER TO SUB-BASEMENT CRAWL SPACE AREA B DEMOLITION PLAN ON SHEET 1-DS2 FOR CONTINUATION.

10 REMOVE EXISTING TRAP ASSEMBLY IN ITS ENTIRETY. REPLACE WITH 0.75" UNIVERSAL TRAP ASSEMBLY WITH THERMODYNAMIC TRAP, AND DISCHARGE HIGH PRESSURE STEAM DRIP RETURN INTO PUMPED CONDENSATE RETURN PIPE WITH PERFORATED TUBE (SPARGE PIPE). REFER TO DETAIL ON SHEET H4.

11 REMOVE EXISTING SHEETMETAL ENCLOSURE AROUND PIPES IN CONJUNCTION WITH PIPE REMOVAL.

12 REMOVE EXISTING DRAIN LINE TO POINT OF TERMINATION.

13 REMOVE EXISTING PNEUMATIC ZONE CONTROL VALVE FOR REPLACEMENT IN NEW WORK. REMOVE PNEUMATIC TUBING BACK TO POINT OF ACTIVE MAIN AND CAP.

14 REMOVE EXISTING PIPING TO THIS POINT FOR RECONNECTION IN NEW WORK.

15 PROVIDE NEW DDC ZONE STEAM CONTROL VALVE. ATC SHALL EXTEND POWER AND COMMUNICATION WIRING FROM NEAREST EXISTING PANEL. VALVE SHALL BE LINE SIZED, TWO-POSITION, BALL, GATE, OR BUTTERFLY, PER SPECS. REFER TO PIPING DETAIL ON SHEET H4. REFER TO CONTROL SEQUENCE ON SHEET H9 FOR VALVE OPERATION.

16 REMOVE EXISTING TRAP ASSEMBLY IN ITS ENTIRETY, INCLUDING BYPASS, ISOLATION SHUTOFF VALVES, ETC. PROVIDE NEW 0.75" UNIVERSAL TRAP ASSEMBLY WITH THERMODYNAMIC TRAP IN ITS PLACE. REFER TO SPEC SECTION 23 22 13 AND DETAIL ON SHEET H4.

17 REMOVE EXISTING TRAP ASSEMBLY IN ITS ENTIRETY, INCLUDING BYPASS, ISOLATION SHUTOFF VALVES, ETC. CAP PIPE AT MAIN.

18 FILL EXISTING OPENINGS IN FLOOR SLAB AFTER PIPE REMOVAL. PATCH FLOOR TO MATCH EXISTING.

19 FOR NEW WORK IN THIS AREA, REFER TO PARTIAL HIGH CRAWL SPACE PLAN "A" ON THIS SHEET.

20 FOR NEW WORK IN THIS AREA. REFER TO PARTIAL HIGH CRAWL SPACE PLAN "B" ON THIS SHEET.

21 PROVIDE NEW 0.75" UNIVERSAL TRAP ASSEMBLY WITH THERMODYNAMIC TRAP ON STEAM DRIP. REFER TO SPEC SECTION 23 22 13 AND DETAIL ON SHEET H4.

22 REMOVE EXISTING PIPING TO THIS POINT FOR RECONNECTION IN NEW WORK.

23 EXISTING STEAM METER TO REMAIN.

24 REMOVE EXISTING TRAP DISCHARGE PIPING TO THIS POINT. ALL EXISTING STEAM TRAP STATION PIPING SPECIALTIES TO REMAIN. (VALVES, STRAINERS, CHECK VALVES, ETC.) RECONNECT AT THIS POINT AND EXTEND NEW 0.75" HIGH PRESSURE RETURN PIPE TO CONNECT TO EXISTING 1" HIGH PRESSURE RETURN PIPE AS SHOWN.

25 REMOVE EXISTING PNEUMATIC CONTROL VALVE AND ASSOCIATED PIPING, TUBING, ACCESSORIES, ETC. REMOVE PNEUMATIC TUBING BACK TO POINT OF ACTIVE MAIN AND CAP.

26 EXISTING STEAM PRESSURE REDUCING STATION TO REMAIN.

27 EXISTING AIR HANDLING UNIT TO REMAIN.

Revisions	Date
ADDENDUM #1	08/28/2013

CONSULTANTS:

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PROJECT NO. 2012-04005 FIRM LICENSE: 01528

Drawing Title: PARTIAL BASEMENT PLANS - DEMOLITION & NEW WORK

Approved Project Director

Project Title: HOSPITAL STEAM SYSTEM RECORD DRAWINGS

Location: CINCINNATI, OHIO

Date: 01/04/2013 | Checked: JAC | Drawn: DRV

Project Number: 539-13-107

Building Number: 1

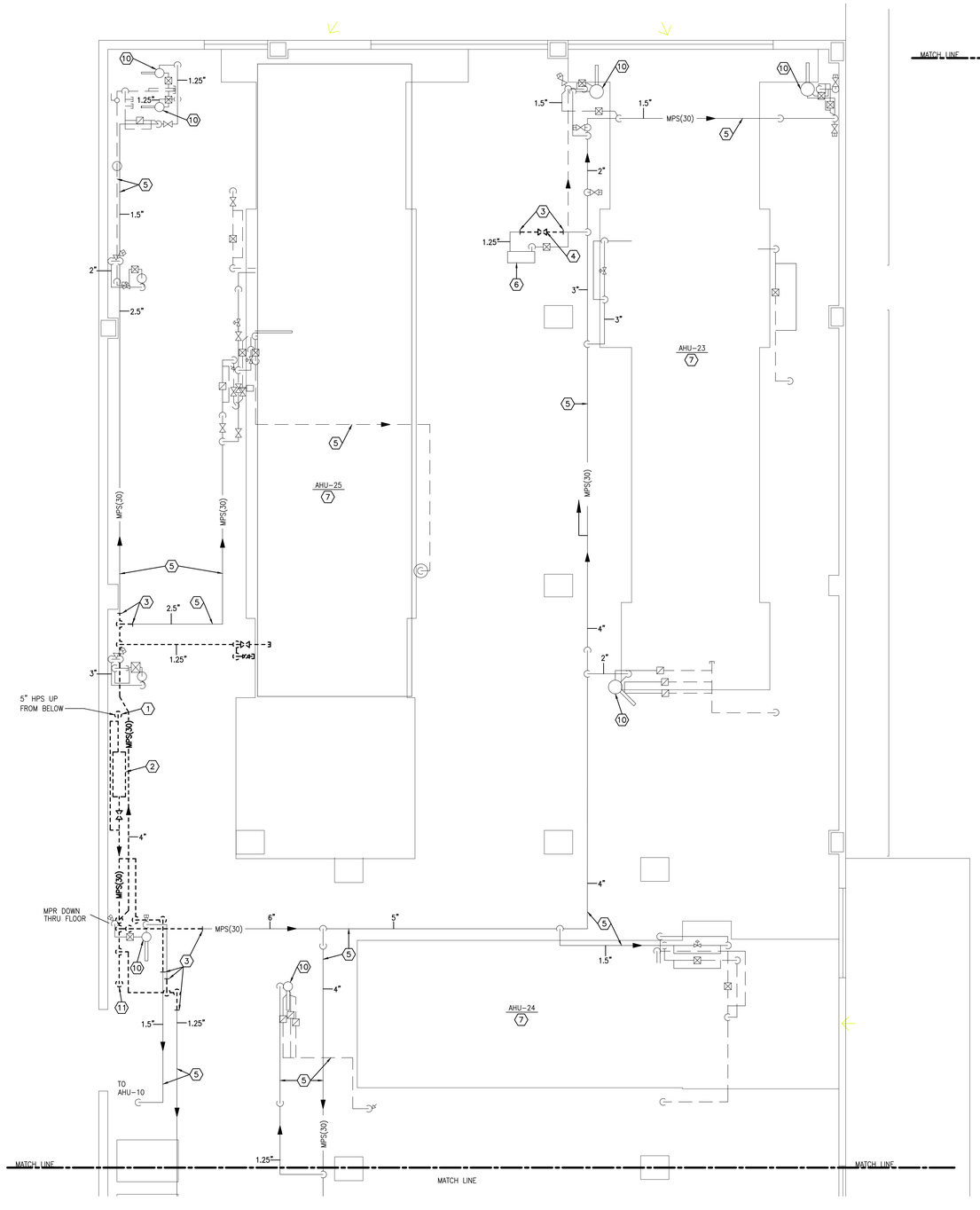
Drawing Number: 1-MDB3

Dwg. 23 of 47

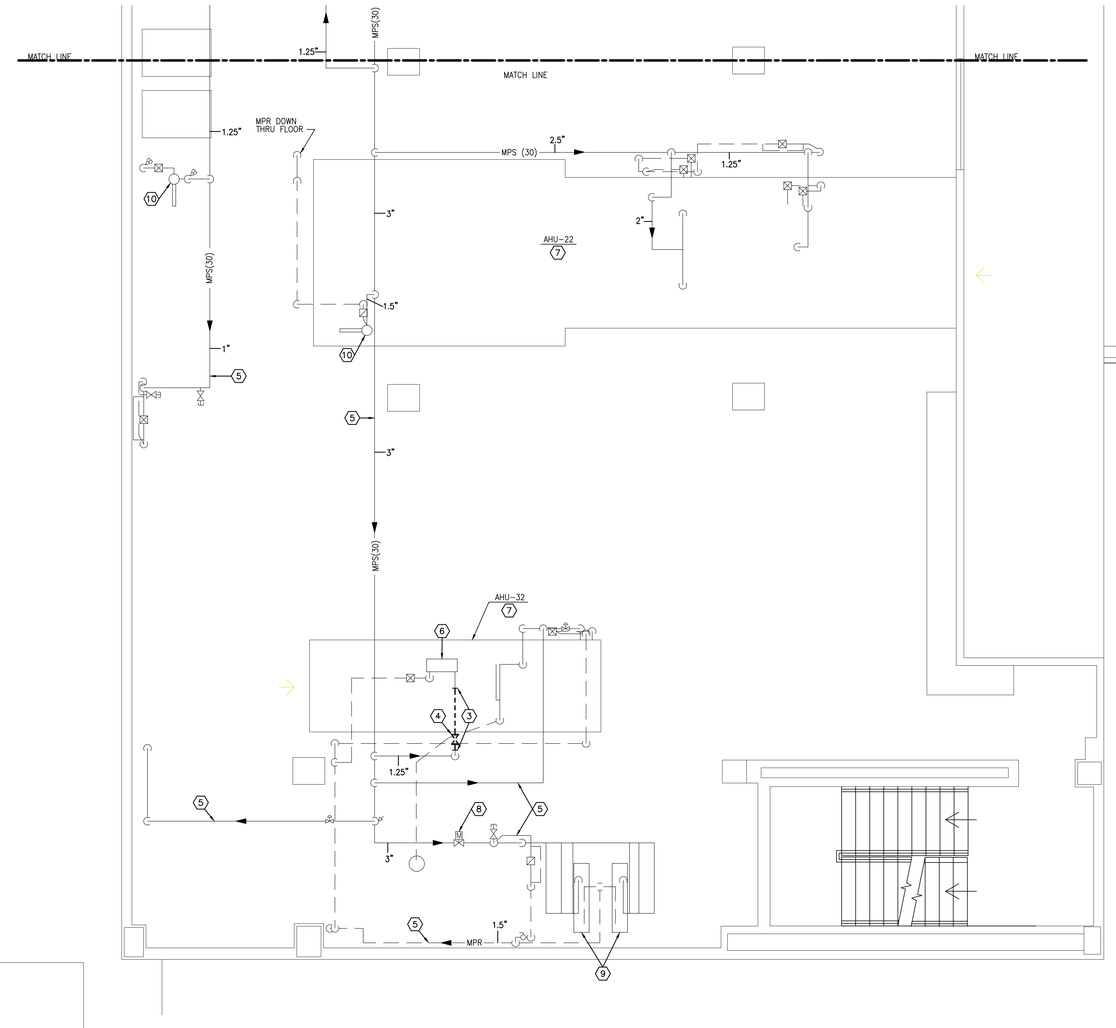
Office of Construction and Facilities Management

Department of Veterans Affairs

VA FORM 08-6231



FOURTH FLOOR PENTHOUSE EAST – DEMOLITION
SCALE 1/4" = 1'-0"



FOURTH FLOOR PENTHOUSE WEST – DEMOLITION
SCALE 1/4" = 1'-0"

GENERAL NOTES

A REFER TO SHEET H1 FOR LEGEND, ABBREVIATIONS, AND ADDITIONAL GENERAL NOTES.

B COORDINATE AND SCHEDULE WELL IN ADVANCE WITH COTR, DOWNTIME OF ALL UTILITIES REQUIRED FOR PERFORMANCE OF THIS WORK.

NOTES

1 REMOVE EXISTING STEAM PIPE IN VERTICAL NEAR FLOOR FOR RECONNECTION IN NEW WORK.

2 REMOVE EXISTING PRESSURE REDUCING STATION IN ITS ENTIRETY, INCLUDING ALL VALVES, PIPING, BYPASSES, REMOTE PANEL MOUNTED PRESSURE GAUGES, PIPE MOUNTED PRESSURE GAUGES, SAFETY RELIEF VALVES, AND OTHER SPECIALTIES, ETC., FOR REPLACEMENT IN NEW WORK. DOWNTIME FOR THIS STATION FOR ALL WORK REQUIRED (REMOVAL OF EXISTING, INSTALLATION OF NEW) SHALL NOT EXCEED SEVEN CONSECUTIVE CALENDAR DAYS. COORDINATE DOWNTIME WELL IN ADVANCE WITH COTR.

3 REMOVE EXISTING PIPING TO THIS POINT FOR RECONNECTION IN NEW WORK.

4 REMOVE EXISTING PNEUMATIC CONTROL VALVE. REMOVE PNEUMATIC LINE BACK TO POINT OF ACTIVE MAIN AND CAP.

5 EXISTING PIPING TO REMAIN.

6 EXISTING STEAM PROPELLER UNIT HEATER TO REMAIN.

7 EXISTING AIR HANDLING UNIT TO REMAIN.

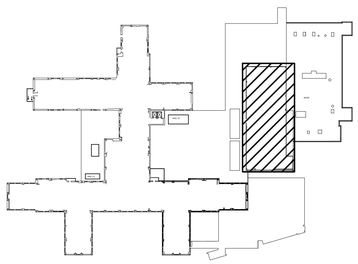
8 EXISTING STEAM METER TO REMAIN.

9 EXISTING SHELL AND TUBE HOT WATER CONVERTER TO REMAIN.

10 EXISTING HUMIDIFIER TO REMAIN.

11 REMOVE EXISTING VENT PIPE TO POINT IN VERTICAL AS REQUIRED FOR RECONNECTION IN NEW WORK.

ALL WORK SHOWN ON THIS SHEET IS INCLUDED IN DEDUCT ALTERNATE #1



KEYPLAN

Revisions	Date
ADDENDUM #1	08/28/2013

CONSULTANTS:

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PROJECT NO. 2012-04005 FIRM LICENSE: 01528

Drawing Title: FOURTH FLOOR PENTHOUSE - DEMOLTION

Approved: Project Director

Project Title: HOSPITAL STEAM SYSTEM RECORD DRAWINGS

Location: CINCINNATI, OHIO

Date: 01/04/2013 | Checked: JAC | Drawn: DRV

Project Number: 539-13-107

Building Number: 1

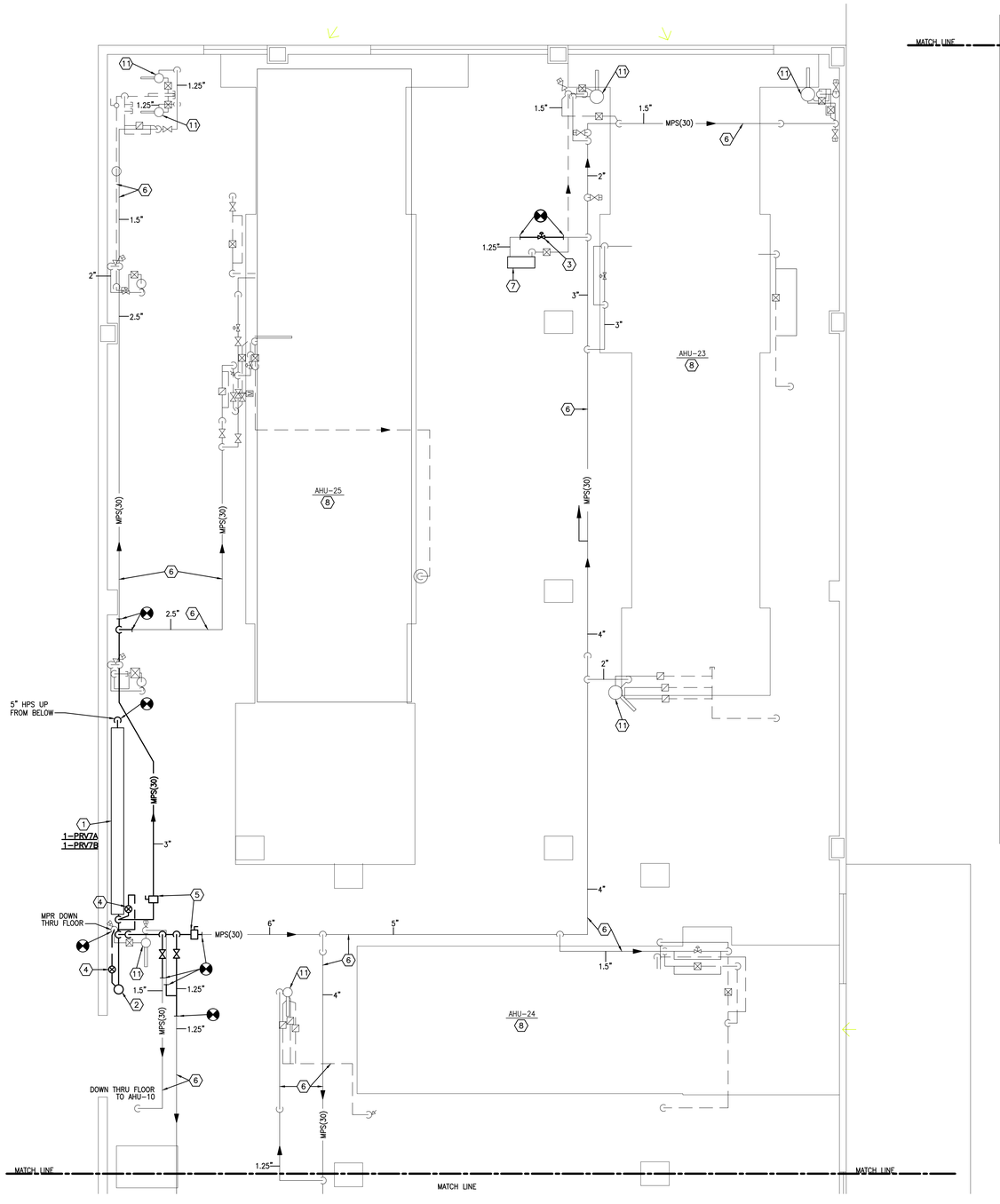
Drawing Number: 1-D41

Dwg. 24 of 47

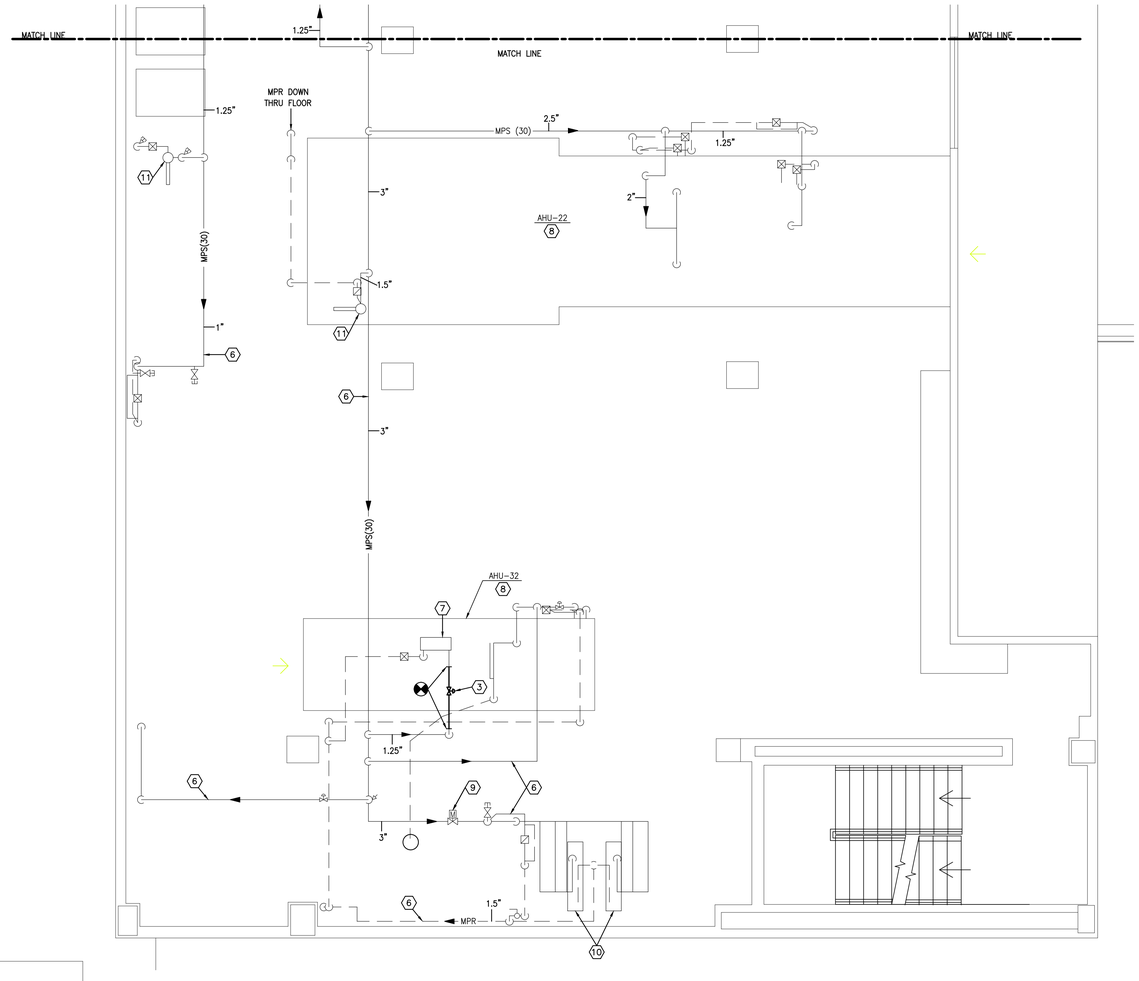
Office of Construction and Facilities Management

Department of Veterans Affairs

VA FORM 08-6231



FOURTH FLOOR PENTHOUSE EAST – NEW WORK
SCALE 1/4" = 1'-0"



FOURTH FLOOR PENTHOUSE WEST – NEW WORK
SCALE 1/4" = 1'-0"

GENERAL NOTES

A REFER TO SHEET H1 FOR LEGEND, ABBREVIATIONS, AND ADDITIONAL GENERAL NOTES.

B COORDINATE AND SCHEDULE WELL IN ADVANCE WITH COTR, DOWNTIME OF ALL UTILITIES REQUIRED FOR PERFORMANCE OF THIS WORK.

NOTES

1 PROVIDE NEW PRESSURE REDUCING STATION. REFER TO DETAIL ON SHEET H3 AND SCHEDULE ON SHEET H2.

2 PROVIDE NEW SAFETY RELIEF VALVE ASSOCIATED WITH NEW PRESSURE REDUCING STATION AT END OF MEDIUM PRESSURE HEADER. ALIGN WITH EXISTING VENT PIPE THRU ROOF AND CONNECT TO EXISTING IN VERTICAL.

3 PROVIDE NEW LINE SIZE, TWO-POSITION DDC CONTROL VALVE FOR SEASONAL AUTOMATIC STEAM CONTROL. REFER TO PIPING DETAIL ON SHEET H4, CONTROL DIAGRAM & SEQUENCES ON SHEET H9, AND SPEC SECTION 23 09 23.

4 PROVIDE NEW 0.75" UNIVERSAL TRAP ASSEMBLY WITH THERMODYNAMIC TRAP ON STEAM DRIP. REFER TO SPEC SECTION 23 22 13 AND DETAIL ON SHEET H4.

5 PROVIDE NEW HIGH PERFORMANCE BUTTERFLY TYPE SHUT OFF VALVE WITH CHAIN WHEEL OPERATOR. PROVIDE 1" WARM-UP BYPASS LINE WITH GLOBE VALVE AROUND NEW BUTTERFLY VALVE. REFER TO SPEC SECTION 23 22 13.

6 EXISTING PIPING TO REMAIN.

7 EXISTING STEAM PROPELLER UNIT HEATER TO REMAIN.

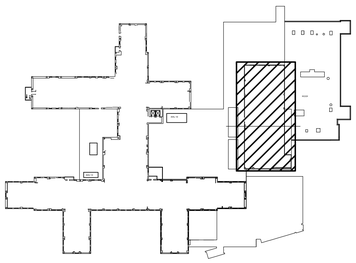
8 EXISTING AIR HANDLING UNIT TO REMAIN.

9 EXISTING STEAM METER TO REMAIN.

10 EXISTING SHELL AND TUBE HOT WATER CONVERTER TO REMAIN.

11 EXISTING HUMIDIFIER TO REMAIN.

ALL WORK SHOWN ON THIS SHEET IS INCLUDED IN DEDUCT ALTERNATE #1



KEYPLAN

Revisions	Date
ADDENDUM #1	08/28/2013

CONSULTANTS:

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PROJECT NO. 2012-04005 FIRM LICENSE: 01528

Drawing Title: FOURTH FLOOR PENTHOUSE - NEW WORK

Approved Project Director

Project Title: HOSPITAL STEAM SYSTEM RECORD DRAWINGS

Location: CINCINNATI, OHIO

Date: 01/04/2013 | Checked: JAC | Drawn: DRV

Project Number: 539-13-107

Building Number: 1

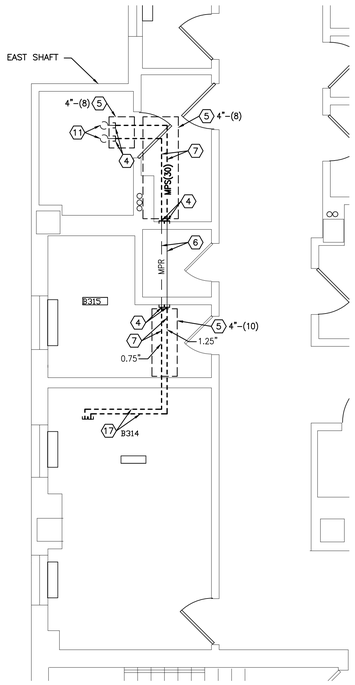
Drawing Number: 1-M41

Dwg. 25 of 47

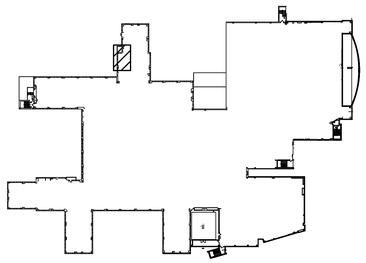
Office of Construction and Facilities Management

Department of Veterans Affairs

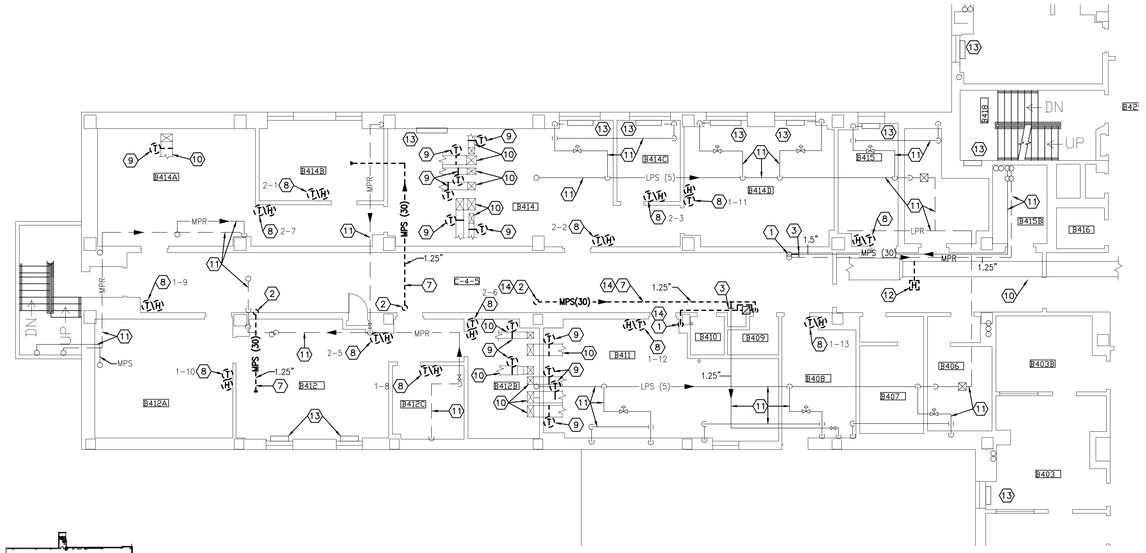
VA FORM 08-6231



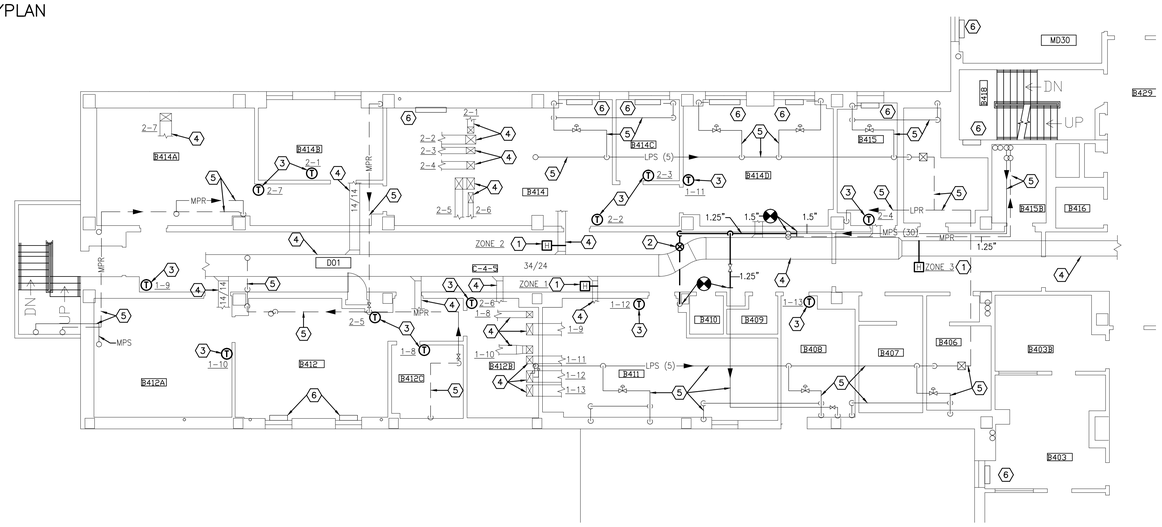
PARTIAL THIRD FLOOR PLAN – DEMOLITION
SCALE: 1/4" = 1'-0"



THIRD FLOOR KEYPLAN



PARTIAL FOURTH FLOOR PLAN – DEMOLITION
SCALE: 1/8" = 1'-0"



PARTIAL FOURTH FLOOR PLAN – NEW WORK
SCALE: 1/8" = 1'-0"

GENERAL NOTES

A REFER TO SHEET H1 FOR LEGEND, ABBREVIATIONS, AND ADDITIONAL GENERAL NOTES.

B COORDINATE AND SCHEDULE WELL IN ADVANCE WITH COTR, DOWNTIME OF ALL UTILITIES REQUIRED FOR PERFORMANCE OF THIS WORK.

C TAGS ON ZONE SUPPLY DUCTS AND ASSOCIATED WALL THERMOSTATS INDICATE ZONE NUMBER FIRST (1 OR 2), THEN REHEAT COIL NUMBER. REFER TO SHEET 1–MD51 FOR REHEAT COILS IN PENTHOUSE.

NOTES – DEMOLITION

1 REMOVE EXISTING PIPING BEYOND ELBOW, TO VERTICAL PORTION, FOR RECONNECTION IN NEW WORK.

2 REMOVE EXISTING PIPE UP TO PENTHOUSE ABOVE. REFER TO FIFTH FLOOR PENTHOUSE DEMOLITION PLAN ON SHEET 1–MD51 FOR CONTINUATION.

3 REMOVE EXISTING PIPING TO THIS POINT FOR RECONNECTION IN NEW WORK.

4 REMOVE EXISTING PIPING TO THIS POINT AND CAP.

5 EXISTING STEAM AND CONDENSATE PIPE FITTINGS WITH ASBESTOS–CONTAINING HARD FITTINGS. APPROXIMATE OUTSIDE DIAMETER OF PIPE INSULATION AND QUANTITY OF FITTINGS INDICATED. CONTRACTOR SHALL PROVIDE ABATEMENT AND REMOVAL OF ASBESTOS INSULATION AS PART OF THIS CONTRACT. REFER TO SPECIFICATION SECTION 02 82 13.13.

6 EXISTING PIPING ABOVE PLASTER CEILING TO BE ABANDONED IN PLACE.

7 REMOVE EXISTING PIPING AND ASSOCIATED VALVES, TRAPS, SUPPORTS, ETC.

8 REMOVE EXISTING WALL MOUNTED PNEUMATIC THERMOSTAT AND HUMIDISTAT AND ASSOCIATED WIRING, TUBING, ETC. ASSOCIATED WITH EXISTING REHEAT COIL IN FIFTH FLOOR PENTHOUSE. REMOVE EXISTING PNEUMATIC LINES BACK TO POINT OF ACTIVE MAIN AND CAP. PATCH AND REFINISH WALL TO MATCH EXISTING.

9 REMOVE EXISTING DUCT DISCHARGE TEMPERATURE SENSOR AND ASSOCIATED WIRING, TUBING, CONTROLS ETC. ASSOCIATED WITH STEAM ZONE REHEAT COILS IN FIFTH FLOOR PENTHOUSE. REMOVE PNEUMATIC LINES BACK TO POINT OF ACTIVE MAIN AND CAP. SEAL EXISTING OPENINGS N DUCTWORK TO SEAL CLASS "A" STANDARDS. PATCH AND SEAL DUCT INSULATION.

10 EXISTING DUCTWORK TO REMAIN.

11 EXISTING PIPING TO REMAIN.

12 REMOVE EXISTING ZONE 3 RETURN DUCT HUMIDISTAT AND ASSOCIATED WIRING, TUBING, ETC. REMOVE PNEUMATIC LINES BACK TO POINT OF ACTIVE MAIN AND CAP.

13 EXISTING STEAM CONVECTOR TO REMAIN.

14 REMOVE EXISTING STEAM PIPE TO AUTOCLAVE FOR REPLACEMENT IN NEW WORK. TO MINIMIZE DOWNTIME, COORDINATE WITH NEW WORK TO INSTALL NEW PARALLEL PIPES PRIOR TO DEMOLITION OF EXISTING PIPES. COORDINATE DOWNTIME WELL IN ADVANCE WITH COTR.

NOTES – NEW WORK

1 PROVIDE NEW RETURN DUCT HUMIDISTAT ASSOCIATED WITH NEW HUMIDIFIERS IN FIFTH FLOOR PENTHOUSE. REFER TO PENTHOUSE PLAN ON SHEET 1–MD51 AND CONTROL DIAGRAM AND SEQUENCE ON SHEET H9.

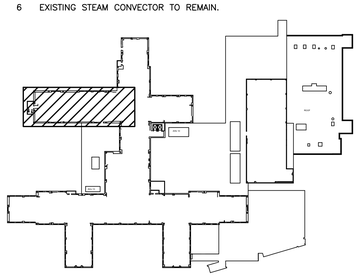
2 PROVIDE NEW 0.75" UNIVERSAL TRAP ASSEMBLY WITH THERMODYNAMIC TRAP ON STEAM DRIP. REFER TO SPEC SECTION 23 22 13 AND DETAIL ON SHEET H4.

3 PROVIDE NEW WALL MOUNTED DDC THERMOSTAT ASSOCIATED WITH EXISTING STEAM ZONE REHEAT COIL IN FIFTH FLOOR PENTHOUSE. REFER TO SHEETS 1–MD51 AND H9 AND SPEC SECTION 23 09 23 FOR MORE INFORMATION.

4 EXISTING DUCTWORK TO REMAIN.

5 EXISTING PIPING TO REMAIN.

6 EXISTING STEAM CONVECTOR TO REMAIN.



FOURTH FLOOR KEYPLAN

Revisions:	Date
ADDENDUM #1	08/28/2013

CONSULTANTS:

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PROJECT NO. 2012-04005 FIRM LICENSE: 01528

Drawing Title: PARTIAL FOURTH FLOOR PLANS - DEMOLITION AND NEW WORK

Approved Project Director

Project Title: HOSPITAL STEAM SYSTEM RECORD DRAWINGS

Project Number: 539-13-107

Building Number: 1

Location: CINCINNATI, OHIO

Drawing Number: 1-MD42

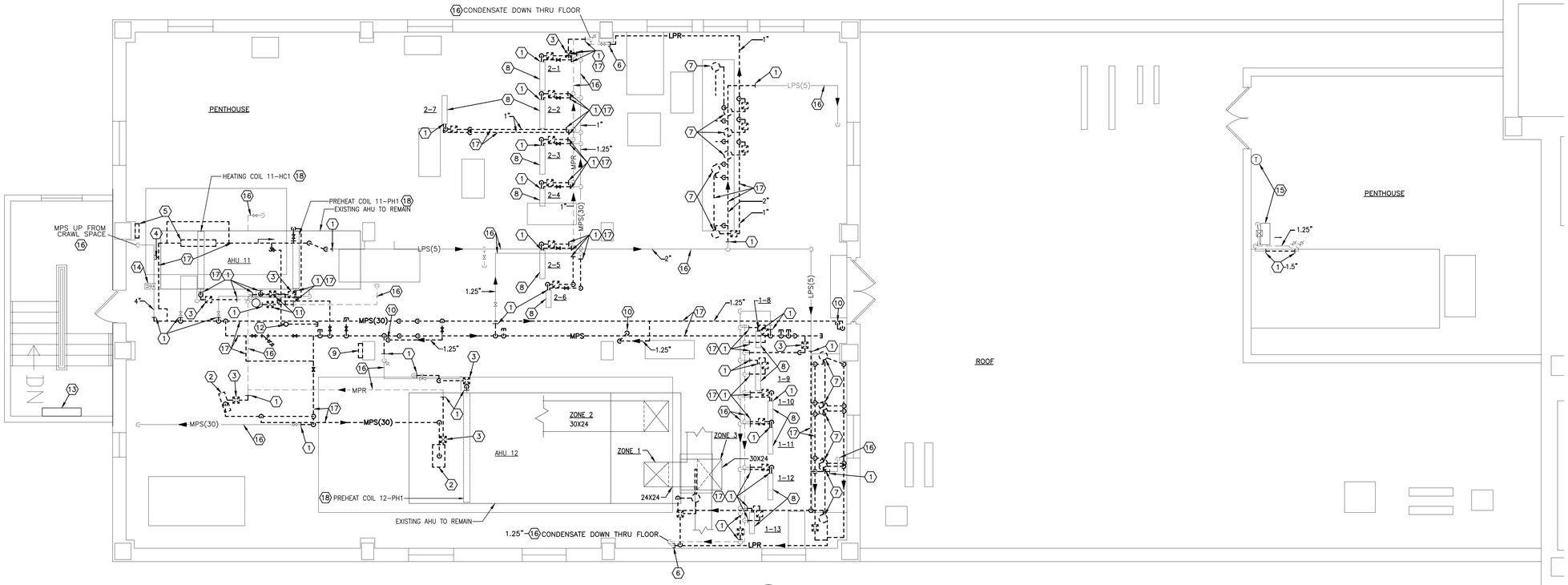
Date: 01/04/2013 | Checked: JAC | Drawn: DRV

Dwg. 26 of 47

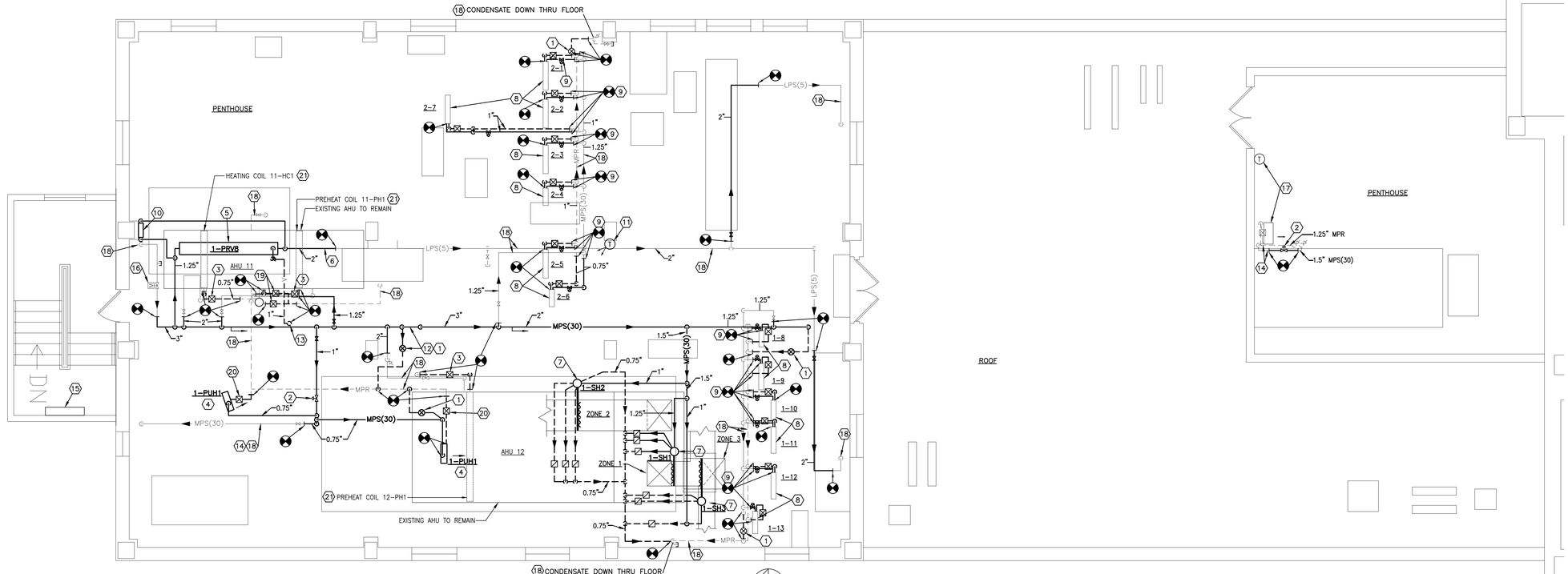
Office of Construction and Facilities Management

Department of Veterans Affairs

VA FORM 08-6231



FIFTH FLOOR PENTHOUSE – DEMOLITION
SCALE 1/4" = 1'-0"



FIFTH FLOOR PENTHOUSE – NEW WORK
SCALE 1/4" = 1'-0"

GENERAL NOTES

A REFER TO SHEET H1 FOR LEGEND, ABBREVIATIONS, AND ADDITIONAL GENERAL NOTES.

B COORDINATE AND SCHEDULE WELL IN ADVANCE WITH COTR, DOWNTIME OF ALL UTILITIES REQUIRED FOR PERFORMANCE OF THIS WORK.

NOTES – DEMO

1 REMOVE EXISTING PIPING TO THIS POINT FOR RECONNECTION IN NEW WORK.

2 REMOVE EXISTING STEAM PROPELLER UNIT HEATER AND ASSOCIATED PIPING, VALVES, SUPPORTS, CONTROLS, ETC. FOR REPLACEMENT IN NEW WORK.

3 REMOVE EXISTING TRAP ASSEMBLY IN ITS ENTIRETY, INCLUDING BYPASSES, ISOLATION SHUTOFF VALVES, ETC, FOR REPLACEMENT IN NEW WORK.

4 REMOVE EXISTING PIPE BYPASSING METER AND CAP AT MEDIUM PRESSURE MAIN.

5 REMOVE EXISTING STEAM PRESSURE REDUCING STATION IN ITS ENTIRETY, FOR REPLACEMENT IN NEW WORK, INCLUDING ALL VALVES, PIPING, BYPASSES, REMOTE PANEL MOUNTED PRESSURE GAUGES, PIPE MOUNTED PRESSURE GAUGES, SAFETY RELIEF VALVES, AND OTHER SPECIALTIES, ETC.

6 REMOVE EXISTING PIPING TO THIS POINT AND CAP.

7 REMOVE EXISTING HUMIDIFIER AND ASSOCIATED PIPING, VALVES, TRAPS, CONTROLS, ETC. SEAL EXISTING OPENINGS IN DUCTWORK TO SEAL CLASS "A" STANDARDS. PATCH AND SEAL DUCT INSULATION.

8 EXISTING DUCT MOUNTED ZONE STEAM REHEAT COIL TO REMAIN. REMOVE EXISTING PIPING AND ASSOCIATED VALVES, STRAINERS, UNIONS, PNEUMATIC CONTROL VALVE SERVING COIL, ETC. FOR REPLACEMENT AND RETROFIT WITH DDC CONTROLS IN NEW WORK. REFER TO SHEET MD42 FOR LOCATION OF EXISTING WALL THERMOSTATS TO BE REMOVED. REMOVE ALL EXISTING PNEUMATIC CONTROL LINES BACK TO POINT OF ACTIVE MAIN AND CAP.

9 REMOVE EXISTING PANEL MOUNTED PRESSURE GAUGES AND ASSOCIATED PIPING, SUPPORTS, ACCESSORIES, ETC.

10 REMOVE EXISTING PIPE TO FOURTH FLOOR. PATCH FLOOR TO MATCH EXISTING. REFER TO 4TH FLOOR DEMOLITION PLAN ON SHEET 1-MD42 FOR CONTINUATION.

11 REMOVE EXISTING F&T TRAP FOR REINSTALLATION IN NEW WORK.

12 REMOVE EXISTING VENT PIPING TO VERTICAL PORTION, FOR RECONNECTION IN NEW WORK.

13 EXISTING STEAM CONVECTOR TO REMAIN.

14 EXISTING STEAM METER TO REMAIN.

15 EXISTING STEAM PROPELLER UNIT HEATER AND ASSOCIATED CONTROLS TO REMAIN.

16 EXISTING PIPING TO REMAIN.

17 REMOVE EXISTING PIPING AND ASSOCIATED VALVES, TRAPS, SUPPORTS, ETC.

18 EXISTING AHU HEATING COIL TO REMAIN.

NOTES – NEW WORK

1 PROVIDE NEW 0.75" UNIVERSAL TRAP ASSEMBLY WITH THERMODYNAMIC TRAP ON STEAM DRIP. REFER TO SPEC SECTION 23 22 13 AND DETAIL ON SHEET H4.

2 PROVIDE NEW LINE SIZE TWO-POSITION DDC CONTROL VALVE FOR SEASONAL AUTOMATIC STEAM CONTROL. REFER TO PIPING DETAIL ON SHEET H4, CONTROL DIAGRAM & SEQUENCES ON SHEET H9, AND SPEC SECTION 23 09 23.

3 PROVIDE NEW F&T TRAP ASSEMBLY. REFER TO DETAIL ON SHEET H4 AND STEAM HEATING COIL SCHEDULE ON SHEET H2.

4 PROVIDE NEW STEAM PROPELLER UNIT HEATER. REFER TO SCHEDULE ON SHEET H2 AND DETAIL ON SHEET H4.

5 PROVIDE NEW STEAM PRESSURE REDUCING STATION. REFER TO DETAIL ON SHEET H3 AND SCHEDULE ON SHEET H2.

6 INSTALL NEW LOW PRESSURE STEAM SUPPLY PIPE AT SAME ELEVATION OR HIGHER THAN EXISTING PIPE BEING CONNECTED TO, SO AS TO ELIMINATE EXISTING RISE IN DIRECTION OF FLOW.

7 PROVIDE NEW DIRECT INJECTION STEAM HUMIDIFIER. INSTALL IN EXISTING DUCT. REFER TO SCHEDULE ON SHEET H2, DETAIL ON SHEET H4, AND CONTROL DIAGRAMS & SEQUENCES ON SHEET H9.

8 EXISTING DUCT MOUNTED ZONE REHEAT STEAM COIL TO REMAIN.

9 PROVIDE NEW COIL PIPING AND SPECIALTIES TO RECONNECT EXISTING COIL. REFER TO COIL PIPING DETAIL ON SHEET H4, CONTROL DIAGRAM & SEQUENCES ON SHEET H9, AND STEAM HEATING COIL SCHEDULE ON SHEET H2 FOR CONTROL VALVE AND TRAP CAPACITIES AND PIPE SIZES.

10 PROVIDE PANEL-MOUNTED PRESSURE GAUGES ON WALL TO INDICATE PRESSURES UPSTREAM AND DOWNSTREAM OF PRESSURE REDUCING STATION. PROVIDE DRAIN COCK AT BOTTOM OF SENSING LINES DROPPING TO PANEL.

11 PROVIDE NEW LINE VOLTAGE THERMOSTAT ASSOCIATED WITH NEW PROPELLER UNIT HEATERS. REFER TO ELECTRICAL DRAWINGS, AND CONTROL DIAGRAM AND SEQUENCES ON SHEET H9.

12 PROVIDE 45 DEGREE OFFSET RISE (IF REQUIRED). PROVIDE NEW DIRT LEG ON RISE, (DIAMETER FULL SIZE OF MAIN, MINIMUM LENGTH OF 18") AND UNIVERSAL TRAP ASSEMBLY WITH THERMODYNAMIC TRAP.

13 RECONNECT TO EXISTING VENT PIPING IN VERTICAL. PROVIDE DRIP PAN ELBOW PER SAFETY RELIEF VALVE DETAIL ON SHEET H3.

14 PROVIDE NEW FIBERGLASS INSULATION ON ENTIRE LENGTH OF EXPOSED EXISTING STEAM AND CONDENSATE PIPES. REFER TO 23 07 11 FOR REQUIRED THICKNESS.

15 EXISTING STEAM CONVECTOR TO REMAIN.

16 EXISTING STEAM METER TO REMAIN.

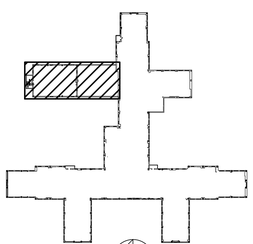
17 EXISTING STEAM PROPELLER UNIT HEATER AND ASSOCIATED CONTROLS TO REMAIN.

18 EXISTING PIPING TO REMAIN.

19 REINSTALL EXISTING F&T TRAP WITH ALL SPECIALTIES REQUIRED PER DETAIL ON SHEET H4.

20 PROVIDE NEW F&T TRAP ASSEMBLY. REFER TO DETAIL ON SHEET H4 AND STEAM UNIT HEATER SCHEDULE ON SHEET H2.

21 EXISTING AHU HEATING COIL TO REMAIN.



KEYPLAN

Revisions:	Date
ADDENDUM #1	08/28/2013

CONSULTANTS:

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Ph: 937-224-0861 Fax: 937-224-5777 www.heapy.com
PROJECT NO. 2012-04005 FIRM LICENSE: 01528

Drawing Title: FIFTH FLOOR PENTHOUSE - DEMOLITION AND NEW WORK

Approved Project Director

Project Title: HOSPITAL STEAM SYSTEM RECORD DRAWINGS

Location: CINCINNATI, OHIO

Date: 01/04/2013 | Checked: JAC | Drawn: DRV

Project Number: 539-13-107

Building Number: 1

Drawing Number: 1-MD51

Dwg. 27 of 47

Office of Construction and Facilities Management

Department of Veterans Affairs

VA FORM 08-6231

GENERAL NOTES

A REFER TO SHEET H1 FOR LEGEND, ABBREVIATIONS, AND ADDITIONAL GENERAL NOTES.

B COORDINATE AND SCHEDULE WELL IN ADVANCE WITH COTR, DOWNTIME OF ALL UTILITIES REQUIRED FOR PERFORMANCE OF THIS WORK.

⬡ NOTES – DEMO

1 REMOVE EXISTING PIPING TO THIS POINT FOR RECONNECTION IN NEW WORK.

2 EXISTING PIPING TO REMAIN.

3 REMOVE EXISTING 0.75" HEATING HOT WATER SUPPLY AND RETURN PIPING UP TO 8TH FLOOR. REFER TO 7TH AND 8TH FLOOR DEMOLITION PLANS ON SHEETS 1–MDR1 AND 1–MD81 FOR CONTINUATION.

4 REMOVE EXISTING PIPING AND ASSOCIATED VALVES, HANGERS, ETC.

5 REMOVE EXISTING 4" MEDIUM PRESSURE STEAM AND 2.5" CONDENSATE RETURN PIPES FROM 2ND FLOOR TO 9TH FLOOR. REFER TO DEMOLITION PLANS ON SHEETS 1–MDR1 AND 1–MD81 FOR CONTINUATION.

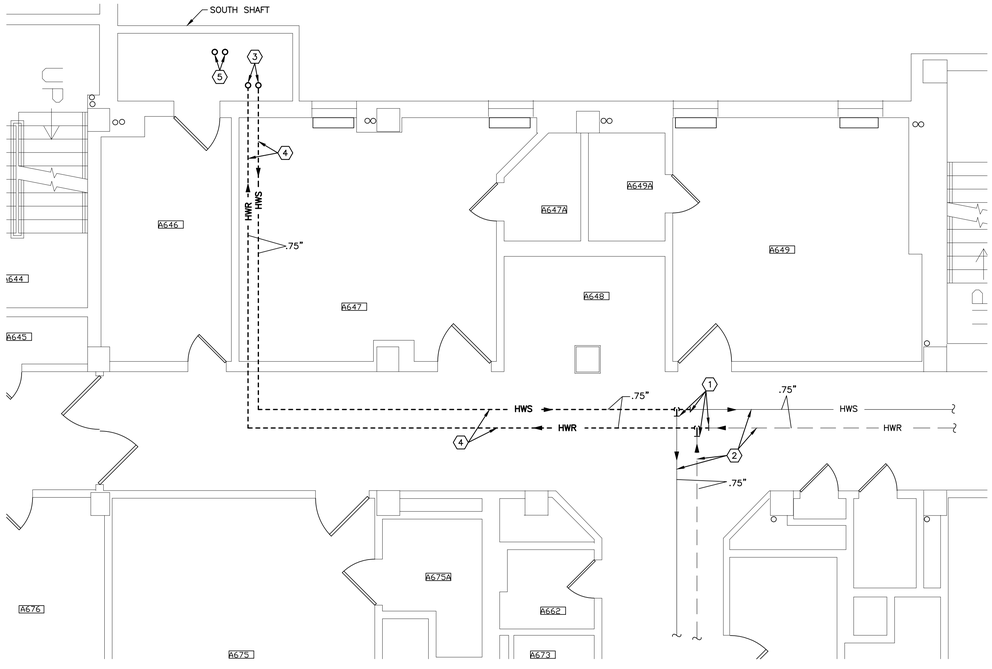
⬡ NOTES – NEW WORK

1 PROVIDE NEW 1.25" HEATING HOT WATER SUPPLY AND RETURN PIPES UP TO 9TH FLOOR. REFER TO 7TH, 8TH AND 9TH FLOOR NEW WORK PLANS ON SHEETS 1–MDR1, 1–MD81 AND 1–M91 FOR CONTINUATION.

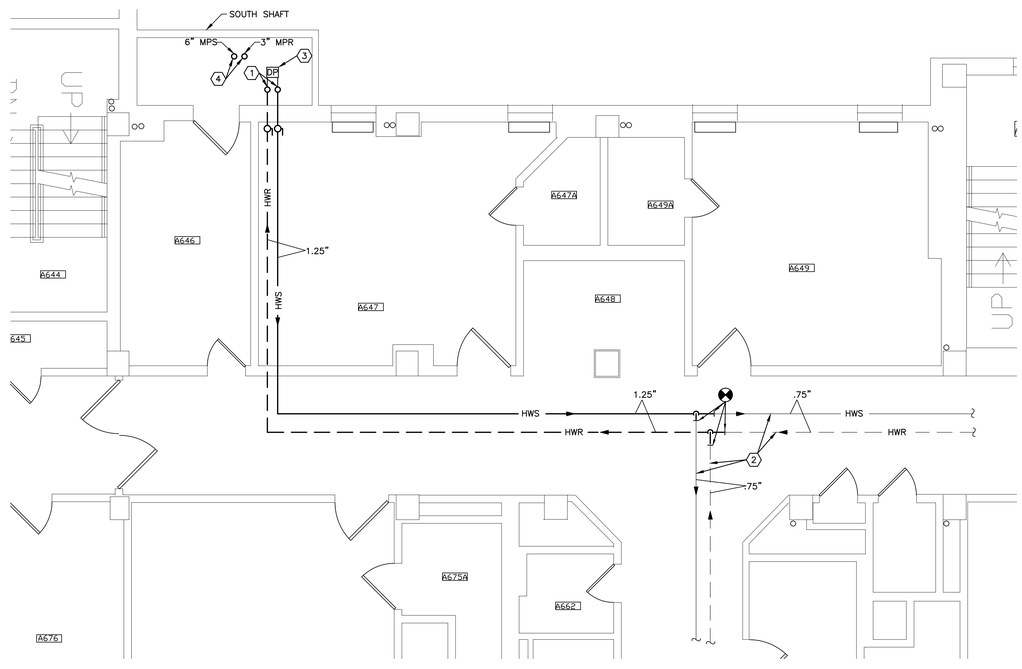
2 EXISTING PIPING TO REMAIN.

3 PROVIDE NEW DIFFERENTIAL PRESSURE SENSOR ASSOCIATED WITH NEW 10TH FLOOR PENTHOUSE PUMPS AND VFDS, BETWEEN HEATING HOT WATER SUPPLY AND RETURN PIPES. SENSING POINTS SHALL BE NEAR BASE OF RISE, AND SHALL BE IN VERTICAL PORTION OF PIPING.

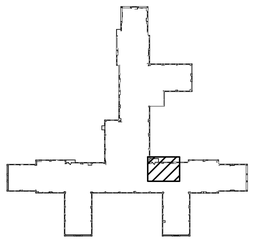
4 PROVIDE NEW 6" MEDIUM PRESSURE STEAM SUPPLY AND 3" CONDENSATE RETURN PIPES FROM 2ND FLOOR TO 9TH FLOOR. REFER TO NEW WORK PLANS ON SHEETS 1–MDR1, 1–MD81 AND 1–M91 FOR CONTINUATION.



SIXTH FLOOR PLAN – DEMOLITION
SCALE: 1/4" = 1'-0"



SIXTH FLOOR PLAN – NEW WORK
SCALE: 1/4" = 1'-0"



KEYPLAN

Revisions	Date
ADDENDUM #1	08/28/2013

CONSULTANTS:

STATE OF OHIO — JOHN A. BLACK 49341 — REGISTERED PROFESSIONAL ENGINEER

ARCHITECT/ENGINEERS:

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Ph: 937-224-0861 Fax: 937-224-5777 www.heapy.com
PROJECT NO. 2012-04005 FIRM LICENSE: 01528

Drawing Title: PARTIAL SIXTH FLOOR PLANS - DEMOLITION AND NEW WORK

Approved Project Director

Project Title: HOSPITAL STEAM SYSTEM RECORD DRAWINGS

Location: CINCINNATI, OHIO

Date: 01/04/2013 | Checked: JAC | Drawn: DRV

Project Number: 539-13-107

Building Number: 1

Drawing Number: 1-MD61

Dwg. 28 of 47

Office of Construction and Facilities Management

Department of Veterans Affairs

VA FORM 08-6231

GENERAL NOTES

A REFER TO SHEET H1 FOR LEGEND, ABBREVIATIONS, AND ADDITIONAL GENERAL NOTES.

B COORDINATE AND SCHEDULE WELL IN ADVANCE WITH COTR, DOWNTIME OF ALL UTILITIES REQUIRED FOR PERFORMANCE OF THIS WORK.

⬡ NOTES – DEMO

1 EXISTING PIPING TO REMAIN.

2 REMOVE EXISTING 4" MEDIUM PRESSURE STEAM SUPPLY AND 2.5" CONDENSATE RETURN PIPES DOWN TO 2ND FLOOR AND UP TO 9TH FLOOR. REFER TO DEMOLITION PLANS ON SHEETS 1–MDR1 AND 1–MD61 FOR CONTINUATION.

3 REMOVE EXISTING PIPING BACK TO THIS POINT FOR RECONNECTION IN NEW WORK.

4 REMOVE EXISTING PIPING BACK TO THIS POINT AND CAP.

5 REMOVE EXISTING PRESSURE REDUCING STATION IN ITS ENTIRETY, INCLUDING ALL VALVES, PIPING, BYPASSES, REMOTE PANEL MOUNTED PRESSURE GAUGES, PIPE MOUNTED PRESSURE GAUGES, SAFETY RELIEF VALVES, AND OTHER SPECIALTIES, ETC.

6 REMOVE EXISTING 0.75" HEATING HOT WATER PIPING DOWN TO 6TH FLOOR. REFER TO SHEETS 1–MDR1 AND 1–MD61 FOR CONTINUATION.

7 REMOVE EXISTING VENT PIPE THRU EXTERIOR WALL. PATCH WALL OPENING TO MATCH EXISTING.

8 REMOVE EXISTING PIPING AND ASSOCIATED VALVES, HANGERS, ETC. FOR REPLACEMENT IN NEW WORK.

9 REMOVE EXISTING PIPING AND ASSOCIATED VALVES, HANGERS, ETC.

⬡ NOTES – NEW WORK

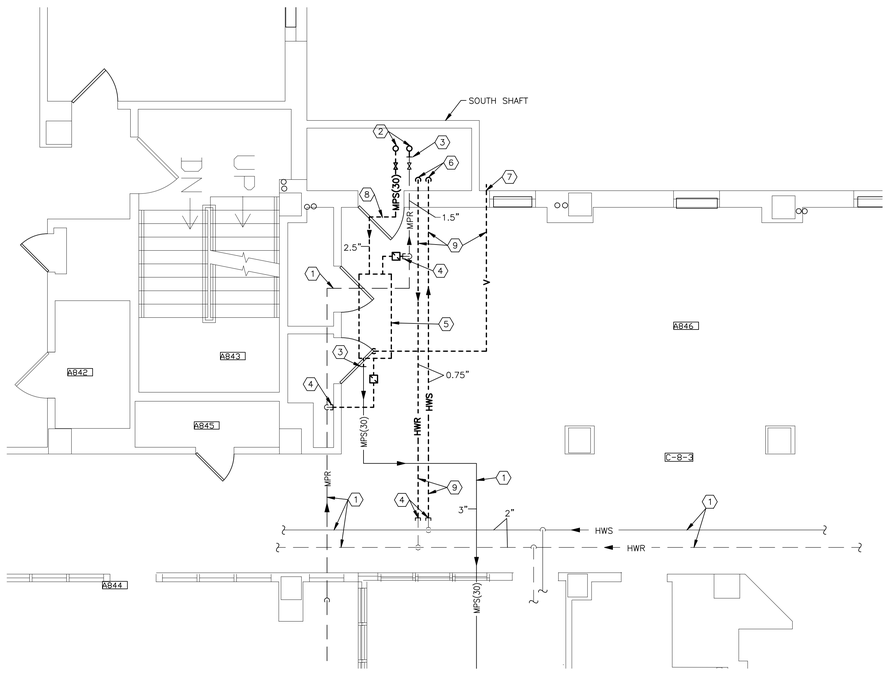
1 EXISTING PIPING TO REMAIN.

2 PROVIDE NEW 6" MEDIUM PRESSURE STEAM SUPPLY PIPE AND 3" CONDENSATE RETURN PIPE UP FROM 2ND FLOOR TO 9TH FLOOR. REFER TO NEW WORK PLANS ON SHEETS 1–MDR1, 1–MD61 AND 1–M91 FOR CONTINUATION.

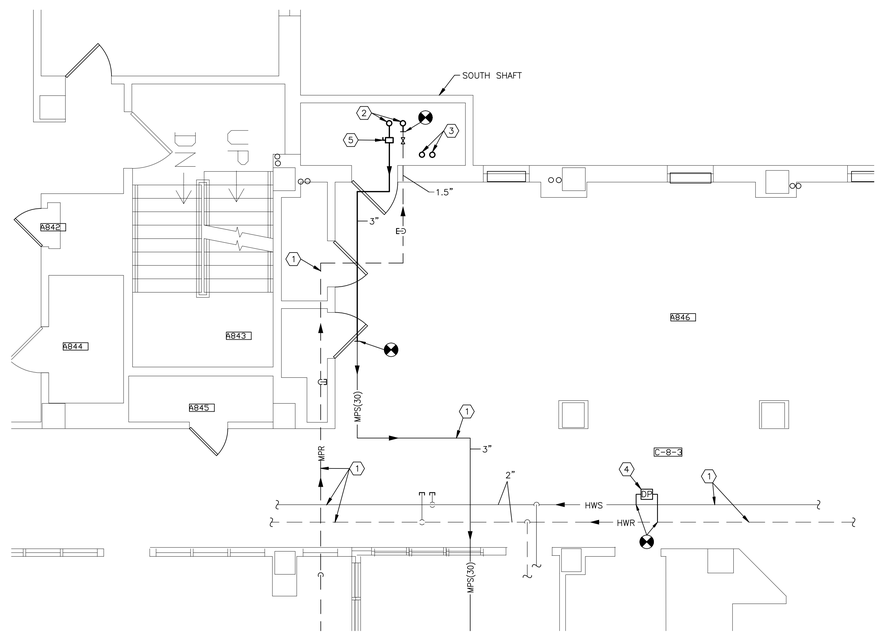
3 PROVIDE NEW 1.25" HEATING HOT WATER SUPPLY AND RETURN PIPES FROM 9TH FLOOR TO 6TH FLOOR. REFER TO 6TH, 7TH AND 9TH FLOOR NEW WORK PLANS ON SHEETS 1–MDR1, 1–MD61 AND 1–M91 FOR CONTINUATION.

4 PROVIDE NEW DIFFERENTIAL PRESSURE SENSOR ASSOCIATED WITH 10TH FLOOR PENTHOUSE PUMPS AND VFDS, BETWEEN EXISTING HEATING HOT WATER SUPPLY AND RETURN PIPES IN THIS LOCATION.

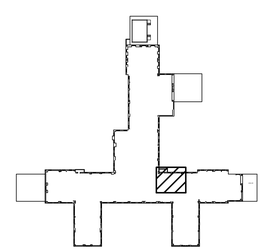
5 PROVIDE NEW HIGH PERFORMANCE BUTTERFLY TYPE SHUT OFF VALVE WITH CHAIN WHEEL OPERATOR. PROVIDE 1" WARM–UP BYPASS LINE WITH GLOBE VALVE AROUND NEW BUTTERFLY VALVE. REFER TO SPEC SECTION 23 22 13.



EIGHTH FLOOR PLAN – DEMOLITION
SCALE 1/4" = 1'-0"



EIGHTH FLOOR PLAN – NEW WORK
SCALE 1/4" = 1'-0"



KEYPLAN

Revisions	Date
ADDENDUM #1	08/28/2013

CONSULTANTS:

STATE OF OHIO — JOHN A. BLACK 49341 — REGISTERED PROFESSIONAL ENGINEER

ARCHITECT/ENGINEERS:

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Ph: 937-224-0861 Fax: 937-224-5777 www.heapy.com
PROJECT NO. 2012-04005 FIRM LICENSE: 01528

Drawing Title: PARTIAL EIGHTH FLOOR PLANS - DEMOLITION AND NEW WORK

Approved: Project Director

Project Title: HOSPITAL STEAM SYSTEM RECORD DRAWINGS

Location: CINCINNATI, OHIO

Date: 01/04/2013 | Checked: JAC | Drawn: DRV

Project Number: 539-13-107

Building Number: 1

Drawing Number: 1-MD81

Dwg. 29 of 47

Office of Construction and Facilities Management

Department of Veterans Affairs

VA FORM 08–6231

GENERAL NOTES

A REFER TO SHEET H1 FOR LEGEND, ABBREVIATIONS, AND ADDITIONAL GENERAL NOTES.

B COORDINATE AND SCHEDULE WELL IN ADVANCE WITH COTR, DOWNTIME OF ALL UTILITIES REQUIRED FOR PERFORMANCE OF THIS WORK.

⬡ NOTES

1 2.5" HEATING HOT WATER SUPPLY AND RETURN PIPES DOWN TO 6TH FLOOR. PROVIDE MANUAL AIR VENT AT PIPE DROPS. REFER TO SHEET 1-MDR2 FOR CONTINUATION.

2 FOR REMOVALS IN SHAFT, REFER TO SOUTH RISER SHAFT PLANS ON SHEET 1-MDR1.

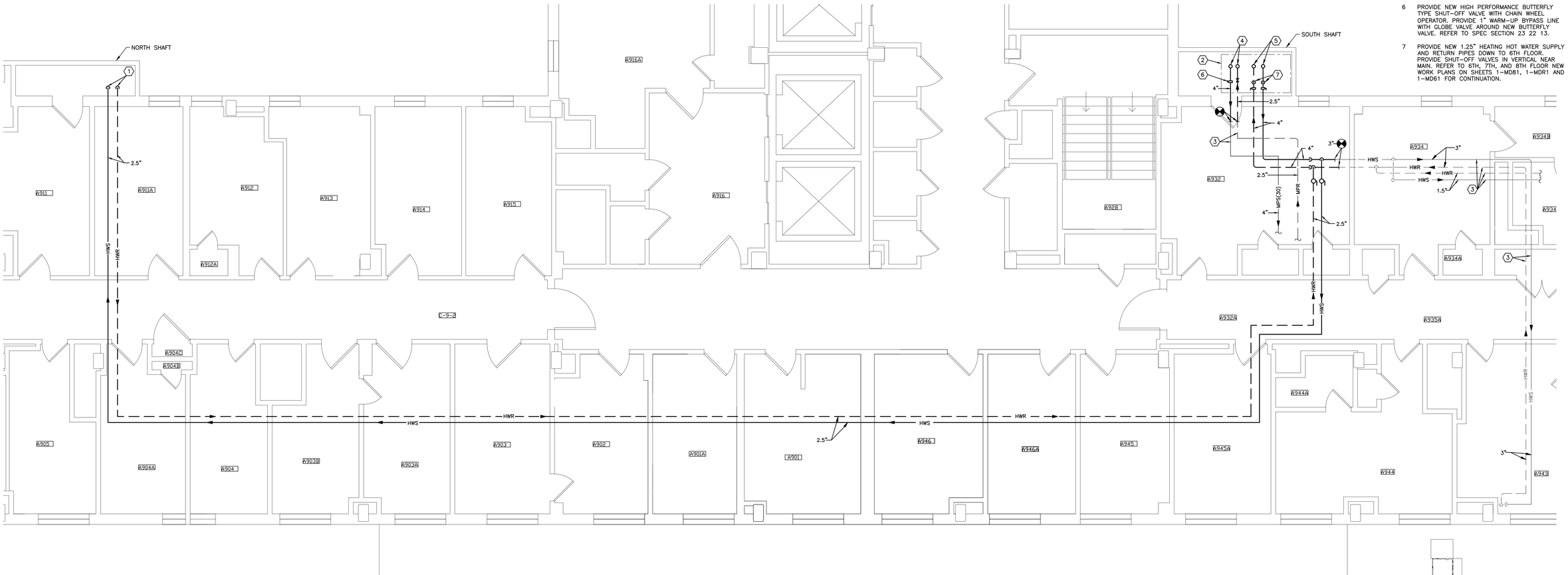
3 EXISTING PIPING TO REMAIN.

4 6" MEDIUM PRESSURE STEAM AND 3" CONDENSATE RETURN PIPES DOWN TO 2ND FLOOR. 3" MPS AND 1.5" CONDENSATE PIPES UP. REFER TO 10TH FLOOR PENTHOUSE PLAN ON SHEET 1-MD101 FOR CONTINUATION ABOVE, AND 8TH FLOOR PLAN ON SHEET 1-MD81 FOR CONTINUATION BELOW.

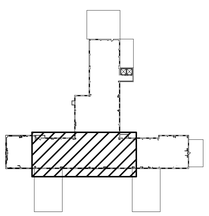
5 NEW 4" HEATING HOT WATER SUPPLY AND RETURN PIPES DOWN FROM 10TH FLOOR PENTHOUSE ABOVE. REFER TO NEW WORK PLAN ON SHEET 1-MD101 FOR CONTINUATION.

6 PROVIDE NEW HIGH PERFORMANCE BUTTERFLY TYPE SHUT-OFF VALVE WITH CHAIN WHEEL OPERATOR. PROVIDE 1" WARM-UP BYPASS LINE WITH GLOBE VALVE AROUND NEW BUTTERFLY VALVE. REFER TO SPEC SECTION 23 22 13.

7 PROVIDE NEW 1.25" HEATING HOT WATER SUPPLY AND RETURN PIPES DOWN TO 6TH FLOOR. PROVIDE SHUT-OFF VALVES IN VERTICAL NEAR MAIN. REFER TO 6TH, 7TH, AND 8TH FLOOR NEW WORK PLANS ON SHEETS 1-MD81, 1-MDR1 AND 1-MD61 FOR CONTINUATION.



NINTH FLOOR PLAN – NEW WORK
SCALE: 1/4" = 1'-0"



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Revisions	Date
ADDENDUM #1	08/28/2013

CONSULTANTS:

STATE OF OHIO — JOHN A. BLACK 49341 — REGISTERED PROFESSIONAL ENGINEER

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PROJECT NO. 2012-04005 FIRM LICENSE: 01528

Drawing Title: PARTIAL NINTH FLOOR PLAN - NEW WORK

Approved Project Director

Project Title: HOSPITAL STEAM SYSTEM RECORD DRAWINGS

Location: CINCINNATI, OHIO

Date: 01/04/2013 | Checked: JAC | Drawn: DRV

Project Number: 539-13-107

Building Number: 1

Drawing Number: 1-M91

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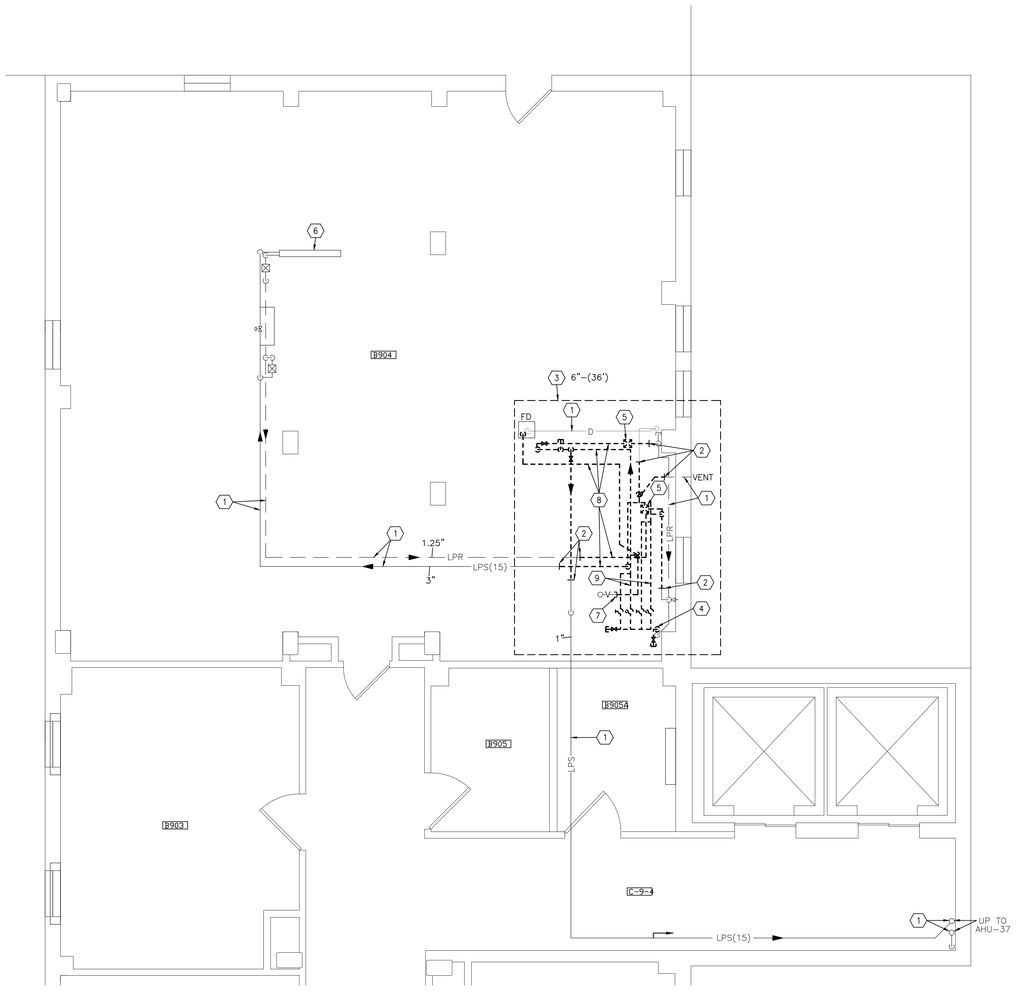
Office of Construction and Facilities Management

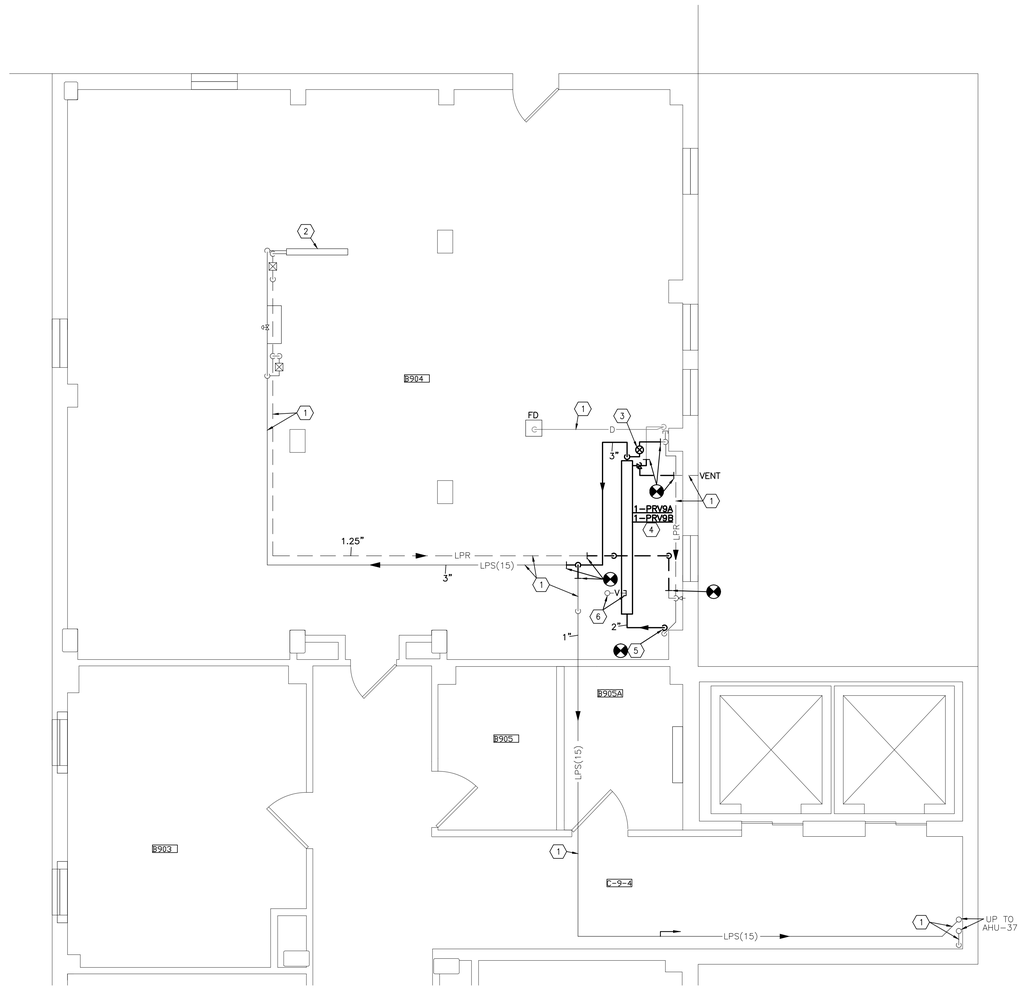
Department of Veterans Affairs

VA FORM 08-6231

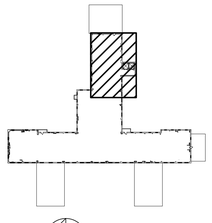
ALL WORK SHOWN ON THIS SHEET IS PART OF DEDUCT ALTERNATE #1



NINTH FLOOR MECHANICAL ROOM – DEMOLITION
SCALE: 1/4" = 1'-0"



NINTH FLOOR MECHANICAL ROOM – NEW WORK
SCALE: 1/4" = 1'-0"



KEYPLAN

GENERAL NOTES

A REFER TO SHEET H1 FOR LEGEND, ABBREVIATIONS, AND ADDITIONAL GENERAL NOTES.

B COORDINATE AND SCHEDULE WELL IN ADVANCE WITH COTR. DOWNTIME OF ALL UTILITIES REQUIRED FOR PERFORMANCE OF THIS WORK.

⬡ NOTES – DEMO

1 EXISTING PIPING TO REMAIN.

2 REMOVE EXISTING PIPING TO THIS POINT FOR RECONNECTION IN NEW WORK.

3 EXISTING STEAM & CONDENSATE PIPE WITH ASBESTOS–CONTAINING FITTINGS & STRAIGHTS. APPROXIMATE OUTSIDE DIAMETER OF PIPE INSULATION AND LINEAR FEET OF PIPE AFFECTED AS INDICATED. CONTRACTOR SHALL PROVIDE ABATEMENT AND REMOVAL OF ASBESTOS INSULATION AS PART OF THIS CONTRACT. REFER TO SPECIFICATION SECTION 02 82 13.13.

4 REMOVE EXISTING MEDIUM PRESSURE STEAM PIPE TO BELOW LOWEST EXISTING TAKEOFF, FOR RECONNECTION IN NEW WORK.

5 REMOVE EXISTING TRAP ASSEMBLY IN ITS ENTIRETY, INCLUDING BYPASS, ISOLATION SHUTOFF VALVES, ETC.

6 EXISTING DUCT STEAM REHEAT COIL TO REMAIN.

7 REMOVE EXISTING PIPING TO THIS POINT AND CAP.

8 REMOVE EXISTING PIPING AND ASSOCIATED VALVES, TRAPS, HANGERS, ETC.

9 REMOVE EXISTING STEAM PRESSURE REDUCING STATION IN ITS ENTIRETY, INCLUDING ALL VALVES, PIPING, BYPASSES, PRESSURE GAUGES, SAFETY RELIEF VALVES, AND OTHER SPECIALTIES, ETC., FOR REPLACEMENT IN NEW WORK.

⬡ NOTES – NEW WORK

1 EXISTING PIPING TO REMAIN.

2 EXISTING DUCT STEAM REHEAT COIL TO REMAIN.

3 PROVIDE NEW 0.75" UNIVERSAL TRAP ASSEMBLY WITH THERMODYNAMIC TRAP ON STEAM DRIP. REFER TO SPEC SECTION 23 22 13 AND DETAIL ON SHEET H4.

4 PROVIDE NEW STEAM PRESSURE REDUCING STATION. REFER TO DETAIL ON SHEET H3 AND SCHEDULE ON SHEET H2.

5 CONNECT NEW PIPE TO EXISTING IN VERTICAL.

6 CAP BOTH ENDS OF EXISTING ABANDONED VENT PIPE – INSIDE MECHANICAL ROOM AND ABOVE ROOF.

Revisions	Date
ADDENDUM #1	08/28/2013

CONSULTANTS:

STATE OF OHIO — JOHN A. BLACK 49341 — REGISTERED PROFESSIONAL ENGINEER

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Ph: 937-224-0861 Fax: 937-224-5777 www.heapy.com
PROJECT NO. 2012-04005 FIRM LICENSE: 01528

Drawing Title: NINTH FLOOR MECHANICAL ROOM - DEMOLITION AND NEW WORK

Approved: Project Director

Project Title: HOSPITAL STEAM SYSTEM RECORD DRAWINGS

Location: CINCINNATI, OHIO

Date: 01/04/2013 | Checked: JAC | Drawn: DRV

Project Number: 539-13-107

Building Number: 1

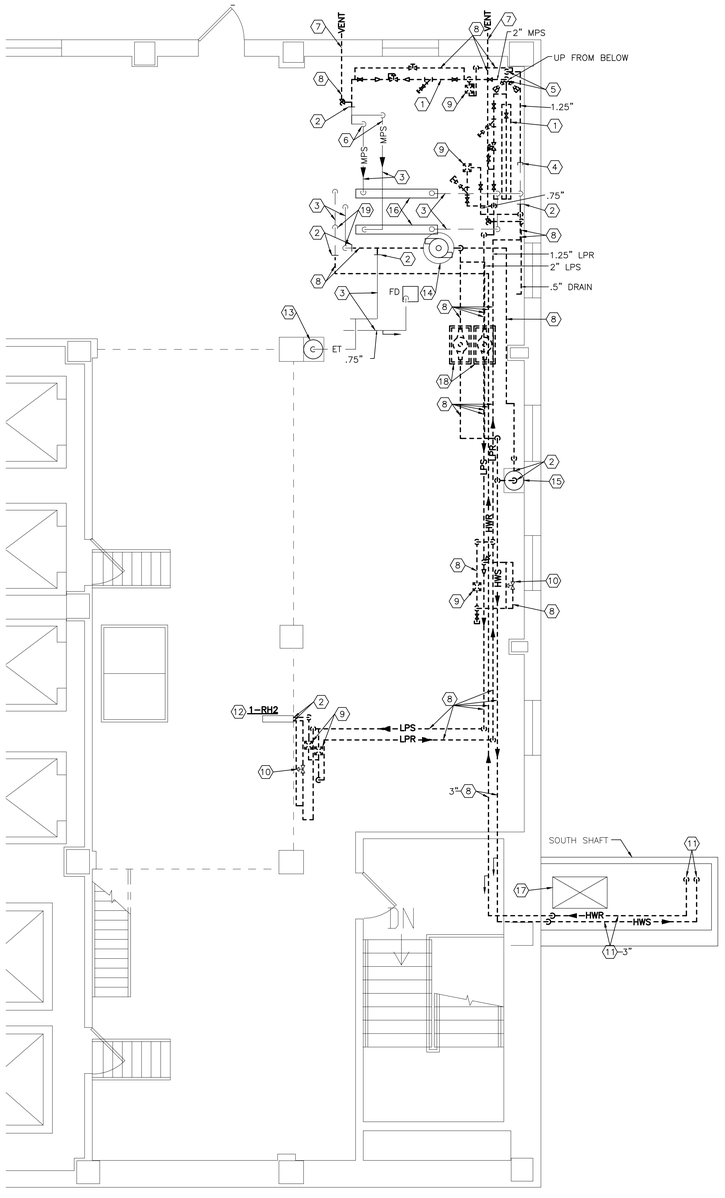
Drawing Number: 1-MD92

Dwg. 31 of 47

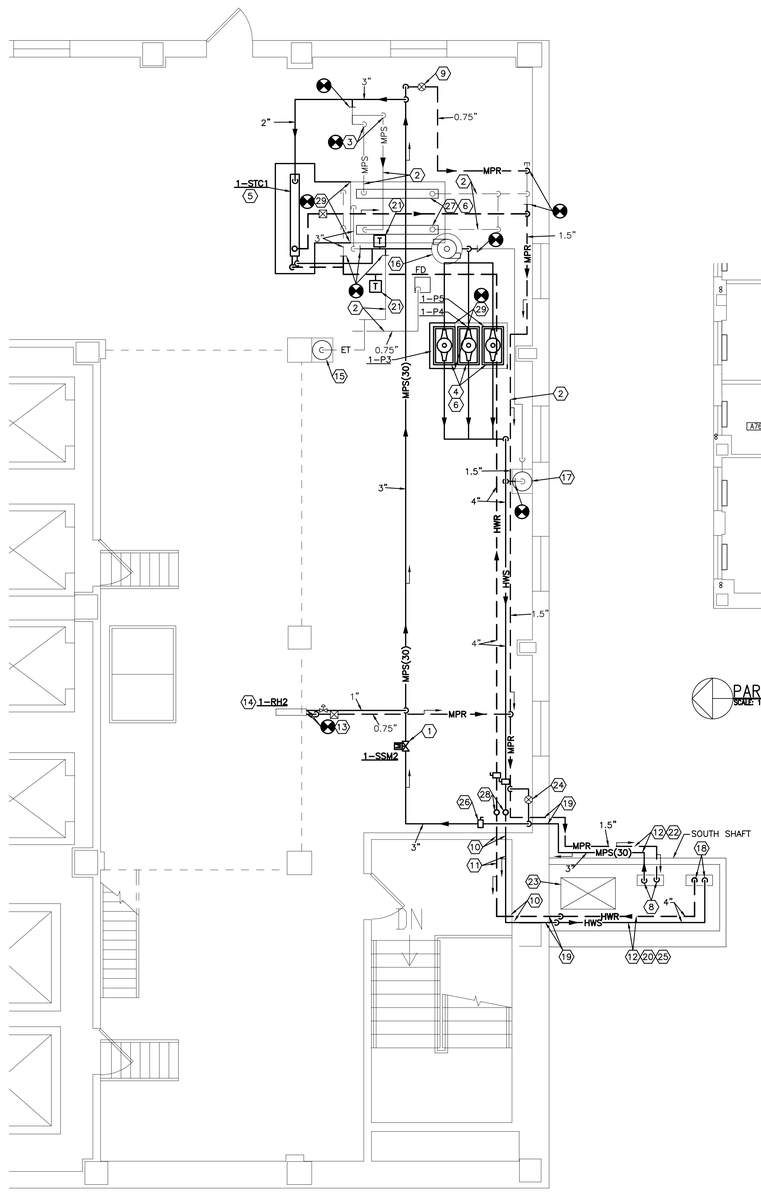
Office of Construction and Facilities Management

Department of Veterans Affairs

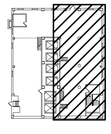
VA FORM 08-6231



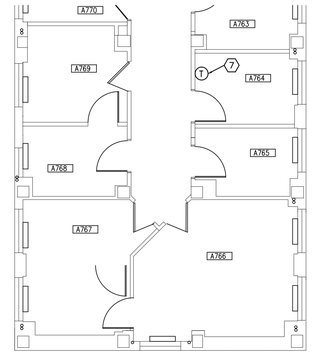
TENTH FLOOR PENTHOUSE – DEMOLITION
SCALE 1/4" = 1'-0"



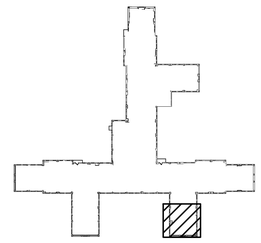
TENTH FLOOR PENTHOUSE – NEW WORK
SCALE 1/4" = 1'-0"



10TH FLOOR KEYPLAN



PARTIAL SEVENTH FLOOR PLAN – NEW WORK
SCALE 1/8" = 1'-0"



7TH FLOOR KEYPLAN

GENERAL NOTES

A REFER TO SHEET H1 FOR LEGEND, ABBREVIATIONS, AND ADDITIONAL GENERAL NOTES.

B COORDINATE AND SCHEDULE WELL IN ADVANCE WITH COTR, DOWNTIME OF ALL UTILITIES REQUIRED FOR PERFORMANCE OF THIS WORK.

NOTES – DEMO

1 REMOVE EXISTING STEAM PRESSURE REDUCING STATION IN ITS ENTIRETY, INCLUDING ALL VALVES, PIPING, BYPASSES, PIPE MOUNTED PRESSURE GAUGES, SAFETY RELIEF VALVES, AND OTHER SPECIALTIES, ETC.

2 REMOVE EXISTING PIPING TO THIS POINT FOR RECONNECTION IN NEW WORK.

3 EXISTING PIPING TO REMAIN.

4 REMOVE EXISTING PIPING TO THIS POINT AND CAP.

5 REMOVE EXISTING 2" MEDIUM PRESSURE STEAM AND 1.25" MEDIUM PRESSURE RETURN RISERS DOWN TO NEAR FLOOR SLAB AND CAP.

6 REMOVE EXISTING STRAINER INSTALLED BACKWARDS FOR REINSTALLATION IN NEW WORK.

7 REMOVE EXISTING VENT PIPE THRU EXTERIOR WALL. PATCH WALL OPENING TO MATCH EXISTING.

8 REMOVE EXISTING PIPING AND ASSOCIATED VALVES, HANGERS, ETC

9 REMOVE EXISTING TRAP ASSEMBLY IN ITS ENTIRETY, INCLUDING BYPASS, ISOLATION SHUTOFF VALVES, ETC.

10 REMOVE EXISTING CONTROL VALVE AND ASSOCIATED CONTROLS, ETC. REMOVE EXISTING PNEUMATIC CONTROL LINES BACK TO POINT OF ACTIVE MAIN AND CAP.

11 REMOVE EXISTING 3" HEATING HOT WATER SUPPLY AND RETURN PIPING TO 9TH FLOOR BELOW. CAREFULLY REMOVE EXISTING HEAT TAPE FOR REINSTALLATION IN NEW WORK. REFER TO NINTH FLOOR DEMOLITION PLAN ON SHEET 1–MDR1 FOR CONTINUATION.

12 EXISTING DUCT STEAM REHEAT COIL TO REMAIN.

13 EXISTING EXPANSION TANK TO REMAIN.

14 EXISTING AIR SEPARATOR TO REMAIN.

15 EXISTING CHEMICAL POT FEEDER & SIDESTREAM FILTER TO REMAIN.

16 EXISTING CONVERTER TO REMAIN.

17 EXISTING DUCT TO REMAIN.

18 REMOVE EXISTING PUMP AND ASSOCIATED PIPING, VALVES, CONTROLS, ETC. FOR REPLACEMENT IN NEW WORK.

19 REMOVE EXISTING THERMOMETER FOR RELOCATION IN NEW WORK.

NOTES – NEW WORK

1 PROVIDE NEW STEAM METER. REFER TO DETAIL ON SHEET H3 AND SCHEDULE ON SHEET H2. INSTALL PER MANUFACTURERS INSTRUCTIONS.

2 EXISTING PIPING TO REMAIN.

3 REINSTALL EXISTING STRAINER IN CORRECT ORIENTATION. THOROUGHLY CLEAN SCREEN INSIDE & OUT PRIOR TO REINSTALLATION.

4 PROVIDE NEW INLINE HEATING HOT WATER PUMP. REFER TO SCHEDULE ON SHEET H2 & DETAIL ON SHEET H3.

5 PROVIDE NEW SHELL AND TUBE HEATING HOT WATER CONVERTER. REFER TO SCHEDULE ON SHEET H2 AND DETAILS & PIPING SCHEMATICS ON SHEET H5.

6 EXISTING DDC CONTROLS TO BE EXTENDED AND MODIFIED FOR LEAD–LAG–LAG OPERATION. PER CONTROL DIAGRAMS & SEQUENCES ON SHEET H5. RE–USE EXISTING SENSORS AND ADD NEW AS REQUIRED TO PERFORM THE SPECIFIED SEQUENCE OF OPERATIONS. EXISTING CONTROLS ARE HONEYWELL. NEW CONTROLS SHALL BE INTEGRATED WITH THE EXISTING HOSPITAL JOHNSON CONTROLS FRONT END AND COMPLETELY DISCONNECTED FROM THE EXISTING HONEYWELL SYSTEM.

7 PROVIDE NEW WALL MOUNTED DDC THERMOSTAT ASSOCIATED WITH EXISTING SUPPLY DUCT REHEAT COIL 1–RH2 IN 10TH FLOOR PENTHOUSE. REFER TO SHEET H9 AND SPEC SECTION 23 09 23 FOR MORE DETAILS.

8 3" MEDIUM PRESSURE STEAM AND 1.5" CONDENSATE RETURN PIPES UP FROM 9TH FLOOR. PROVIDE PIPE PENETRATION ROOF CURB WHERE PIPES EXIT TOP OF SHAFT. REFER TO SHEET 1–M91 FOR CONTINUATION.

9 PROVIDE NEW 0.75" UNIVERSAL TRAP ASSEMBLY WITH THERMODYNAMIC TRAP ON STEAM DRIP. REFER TO SPEC SECTION 23 22 13 AND DETAIL ON SHEET H4.

10 SLEEVE PIPES THRU WALL. SEAL PENETRATIONS OF EXISTING SHAFT WALL AND FIRESTOP TO MAINTAIN 2–HR RATING.

11 ROUTE NEW PIPING ABOVE FIRE RATED GYPSUM CEILING. PATCH AND REPAIR CEILING TO MATCH EXISTING AND MAINTAIN FIRE RATING. PAINT TO MATCH EXISTING.

12 PROVIDE DOUBLE THICKNESS INSULATION ON ALL EXPOSED OUTDOOR PIPING, IN MULTIPLE LAYERS AS REQUIRED. PROVIDE ALUMINUM JACKET OVER INSULATION. REFER TO SPECIFICATION SECTION 23 07 11 FOR THICKNESS AND JACKET REQUIREMENTS.

13 PROVIDE NEW COIL PIPING VALVES AND SPECIALTIES TO RECONNECT TO EXISTING COIL. REFER TO STEAM COIL PIPING DETAIL ON SHEET H4, CONTROL DIAGRAM & SEQUENCES ON SHEET H9, AND STEAM REHEAT COIL SCHEDULE ON SHEET H2 FOR CONTROL VALVE AND TRAP CAPACITIES.

14 EXISTING DUCT STEAM REHEAT COIL TO REMAIN.

15 EXISTING EXPANSION TANK TO REMAIN.

16 EXISTING AIR SEPARATOR TO REMAIN.

17 EXISTING CHEMICAL POT FEEDER & SIDESTREAM FILTER TO REMAIN.

18 PROVIDE NEW 4" HEATING HOT WATER SUPPLY AND RETURN PIPES DOWN TO 9TH FLOOR. PROVIDE PIPE PENETRATION ROOF CURB WHERE PIPES ENTER TOP OF SHAFT. REFER TO SHEET 1–M91 FOR CONTINUATION.

19 SLEEVE PIPES THRU EXTERIOR WALL AND SEAL WEATHERTIGHT.

20 REINSTALL EXISTING HEAT TAPE ON OUTSIDE OF NEW PIPING, PRIOR TO INSULATING.

21 REINSTALL EXISTING THERMOMETER IN LOCATION TO INCLUDE TEMPERATURE OF NEW CONVERTER.

22 PROVIDE ANGLE FRAMING AS REQUIRED TO SUPPORT PIPES OFF EXTERIOR WALL AND SHAFT.

23 EXISTING DUCT TO REMAIN.

24 PROVIDE DIRT LEG ON RISE (DIAMETER FULL SIZE OF MAIN, MINIMUM LENGTH 18") AND 0.75" UNIVERSAL TRAP ASSEMBLY WITH THERMODYNAMIC TRAP. REFER TO DETAIL ON SHEET H4 AND SPECIFICATION SECTION 23 22 13.

25 PROVIDE PIPE SUPPORT ROOF CURBS TO SUPPORT PIPING OFF SHAFT ROOF.

26 PROVIDE HIGH PERFORMANCE BUTTERFLY TYPE SHUTOFF VALVE WITH CHAIN WHEEL OPERATOR. PROVIDE 1" WARM–UP BYPASS LINE WITH GLOBE VALVE AROUND BUTTERFLY VALVE. REFER TO SPEC SECTION 23 22 13.

27 EXISTING CONVERTOR TO REMAIN.

28 PROVIDE MANUAL AIR VENT.

29 CONNECT TO AND EXTEND EXISTING CONCRETE HOUSEKEEPING PADS TO ACCOMODATE THIRD PUMP AND THIRD CONVERTER.

Revisions	Date
ADDENDUM #1	08/28/2013

CONSULTANTS:

STATE OF OHIO — JOHN A. BLACK 49341 — REGISTERED PROFESSIONAL ENGINEER

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PROJECT NO. 2012-04005 FIRM LICENSE: 01528

Drawing Title: TENTH FLOOR PENTHOUSE - DEMOLITION AND NEW WORK

Approved Project Director

Project Title: HOSPITAL STEAM SYSTEM RECORD DRAWINGS

Project Number: 539-13-107

Building Number: 1

Location: CINCINNATI, OHIO

Drawing Number: 1-MD101

Date: 01/04/2013 | Checked: JAC | Drawn: DRV

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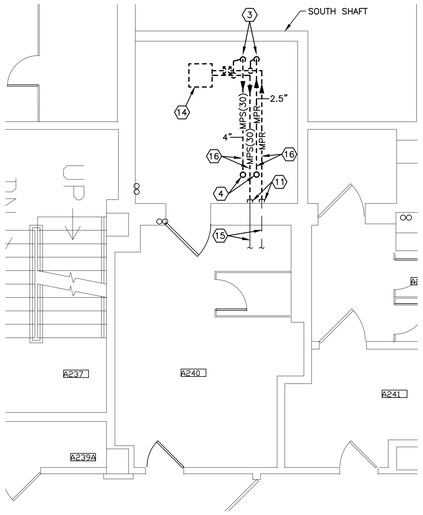
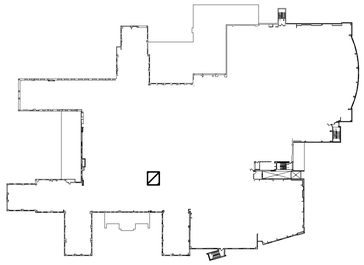
Office of Construction and Facilities Management

Department of Veterans Affairs

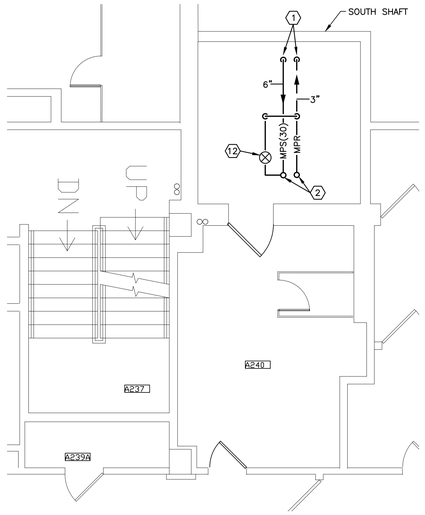
VA FORM 08-6231



SECOND FLOOR PLAN – DEMOLITION
SCALE: 1/4" = 1'-0"



2ND FLOOR KEYPLAN



SECOND FLOOR PLAN – NEW WORK
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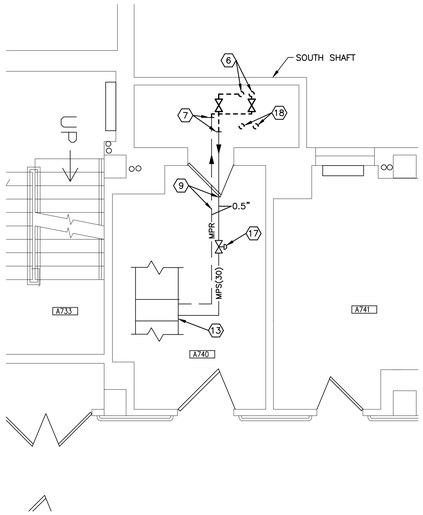

SEVENTH FLOOR PLAN – DEMOLITION
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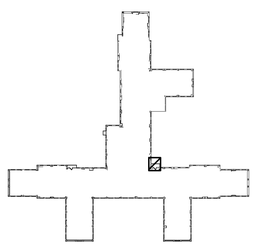
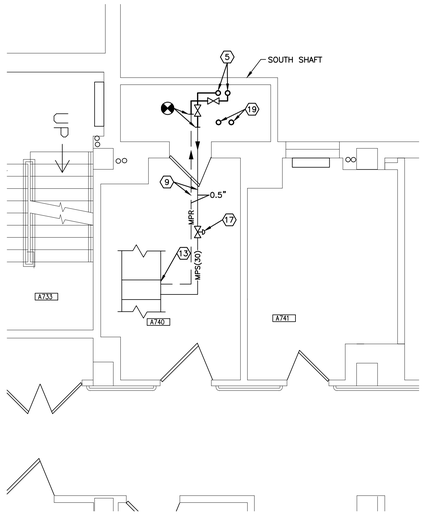


7TH FLOOR KEYPLAN



SEVENTH FLOOR PLAN – NEW WORK
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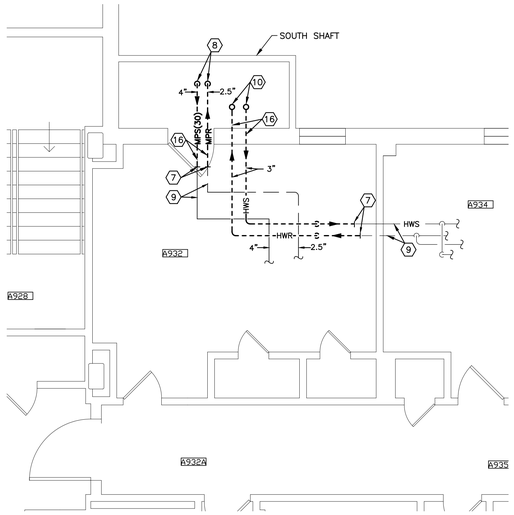
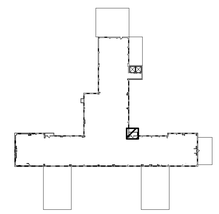


NINTH FLOOR PLAN – DEMOLITION
SCALE: 1/4" = 1'-0"
(REFER TO SHEET 1–M91 FOR NINTH FLOOR NEW WORK)



9TH FLOOR KEYPLAN

GENERAL NOTES

A REFER TO SHEET H1 FOR LEGEND, ABBREVIATIONS, AND ADDITIONAL GENERAL NOTES.

B COORDINATE AND SCHEDULE WELL IN ADVANCE WITH COTR, DOWNTIME OF ALL UTILITIES REQUIRED FOR PERFORMANCE OF THIS WORK.

NOTES

1 PROVIDE NEW 6" MEDIUM PRESSURE STEAM SUPPLY AND 3" CONDENSATE RETURN PIPES UP FROM SUB–BASEMENT. REFER TO SUB–BASEMENT CRAWL SPACE AREA A NEW WORK PLAN ON SHEET 1–MS1 FOR CONTINUATION.

2 PROVIDE NEW 6" MEDIUM PRESSURE STEAM SUPPLY AND 3" CONDENSATE RETURN PIPES UP TO 9TH FLOOR. REFER TO NEW WORK PLANS ON SHEETS 1–MD61, 1–MD81 AND 1–M91 FOR CONTINUATION.

3 REMOVE EXISTING 4" MEDIUM PRESSURE STEAM SUPPLY AND 2.5" CONDENSATE RETURN DOWN TO SUB–BASEMENT. REFER TO SUB–BASEMENT CRAWL SPACE AREA A DEMOLITION PLAN ON SHEET 1–DS1 FOR CONTINUATION.

4 REMOVE EXISTING 4" MEDIUM PRESSURE STEAM SUPPLY AND 2.5" CONDENSATE RETURN UP TO 9TH FLOOR. REFER TO DEMOLITION PLANS ON THIS SHEET AND SHEETS 1–MD61 AND 1–MD81 FOR CONTINUATION.

5 PROVIDE NEW 6" MEDIUM PRESSURE STEAM SUPPLY AND 3" CONDENSATE RETURN PIPES UP TO 9TH FLOOR AND DOWN TO 2ND FLOOR. REFER TO 2ND FLOOR PLAN ON THIS SHEET AND NEW WORK PLANS ON SHEETS 1–MD61, 1–MD81 AND 1–M91 FOR CONTINUATION.

6 REMOVE EXISTING 4" MEDIUM PRESSURE STEAM AND 2.5" CONDENSATE RETURN PIPES UP TO 9TH FLOOR AND DOWN TO 2ND FLOOR. REFER TO DEMOLITION PLANS ON THIS SHEET AND SHEETS 1–MD61 AND 1–MD81 FOR CONTINUATION.

7 REMOVE EXISTING PIPING TO THIS POINT FOR RECONNECTION IN NEW WORK.

8 REMOVE EXISTING 4" MEDIUM PRESSURE STEAM AND 2.5" CONDENSATE RETURN PIPES DOWN TO 2ND FLOOR. REFER TO 2ND FLOOR DEMOLITION PLAN ON THIS SHEET AND SHEETS 1–MD61 AND 1–MD81 FOR CONTINUATION.

9 EXISTING PIPING TO REMAIN.

10 REMOVE EXISTING 3" HOT WATER PIPING DOWN FROM 10TH FLOOR PENTHOUSE ABOVE. REFER TO DEMOLITION PLAN ON SHEET 1–MD101 FOR CONTINUATION.

11 REMOVE PIPING TO THIS POINT AND CAP.

12 PROVIDE NEW 0.75" UNIVERSAL TRAP ASSEMBLY WITH THERMODYNAMIC TRAP ON STEAM DRIP. REFER TO SPEC SECTION 23 22 13 AND DETAIL ON SHEET H4.

13 EXISTING DUCT STEAM REHEAT COIL AND ASSOCIATED CONTROLS TO REMAIN.

14 REMOVE EXISTING ABANDONED STEAM PROPELLER UNIT HEATER AND ASSOCIATED PIPING, SUPPORTS, ACCESSORIES, CONTROLS, WIRING, ETC.

15 EXISTING ABANDONED PIPING TO REMAIN.

16 REMOVE EXISTING PIPING AND ASSOCIATED VALVES, TRAPS, HANGERS, ETC.

17 EXISTING CONTROL VALVE TO REMAIN.

18 REMOVE EXISTING 0.75" HEATING HOT WATER SUPPLY AND RETURN PIPING BETWEEN 6TH AND 8TH FLOORS. REFER TO DEMOLITION PLANS ON SHEETS 1–MD61 AND 1–MD81 FOR CONTINUATION.

19 PROVIDE NEW 1.25" HEATING HOT WATER SUPPLY AND RETURN PIPES BETWEEN 6TH AND 9TH FLOORS. REFER TO NEW WORK PLANS ON SHEETS 1–MD61, 1–MD81 AND 1–M91 FOR CONTINUATION.

Revisions	Date
ADDENDUM #1	08/28/2013

CONSULTANTS:

STATE OF OHIO — JOHN A. BLACK 49341 — REGISTERED PROFESSIONAL ENGINEER

ARCHITECT/ENGINEERS:

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Ph: 937-224-0861 Fax: 937-224-5777 www.heapy.com
PROJECT NO. 2012-04005 FIRM LICENSE: 01528

Drawing Title: SOUTH (AHU-2) RISER SHAFT FLOOR PLANS - DEMOLITION AND NEW WORK

Approved Project Director

Project Title: HOSPITAL STEAM SYSTEM RECORD DRAWINGS

Location: CINCINNATI, OHIO

Date: 01/04/2013 | Checked: JAC | Drawn: DRV

Project Number: 539-13-107

Building Number: 1

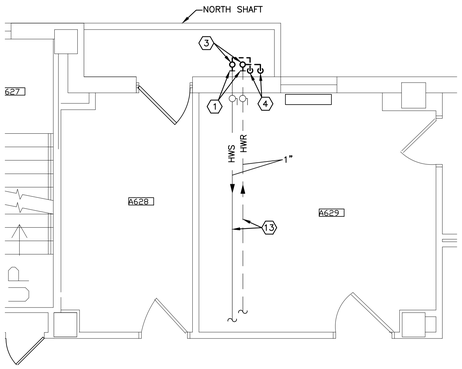
Drawing Number: 1-MDR1

Dwg. 33 of 47

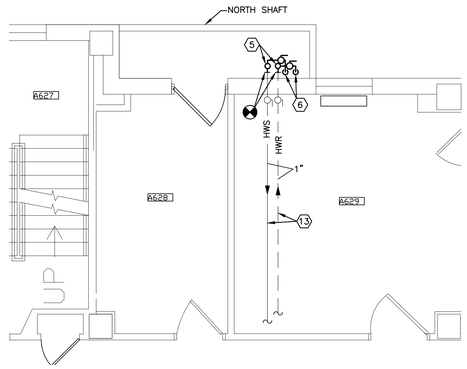
Office of Construction and Facilities Management

Department of Veterans Affairs

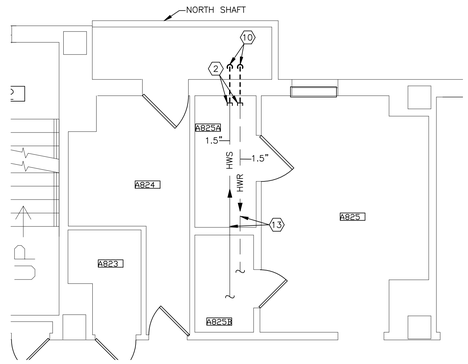
VA FORM 08–6231



SIXTH FLOOR PLAN – DEMOLITION
SCALE 1/4" = 1'-0"



SIXTH FLOOR PLAN – NEW WORK
SCALE 1/4" = 1'-0"



EIGHTH FLOOR PLAN – DEMOLITION
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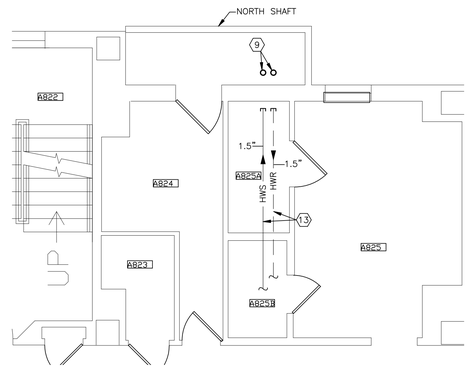
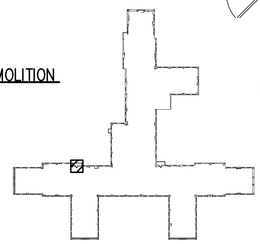
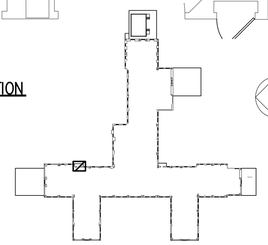


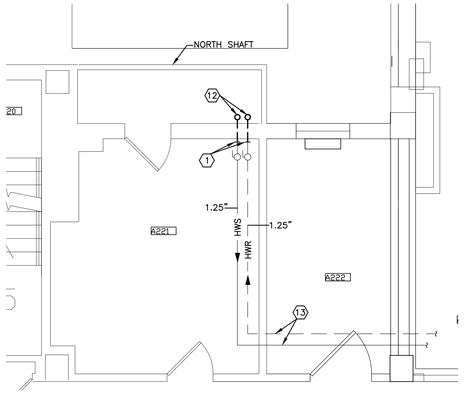
EIGHTH FLOOR PLAN – NEW WORK
SCALE 1/4" = 1'-0"



6TH FLOOR KEYPLAN



8TH FLOOR KEYPLAN



SECOND FLOOR PLAN – DEMOLITION
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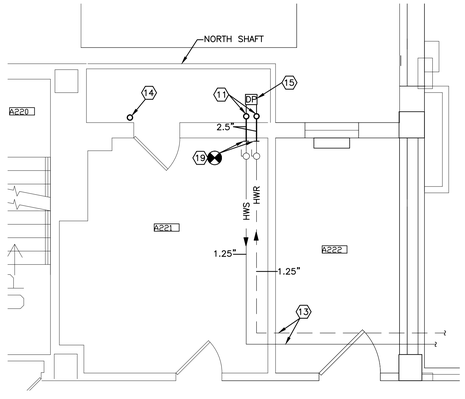
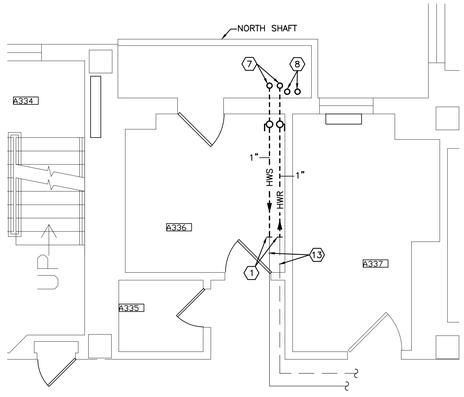


SECOND FLOOR PLAN – NEW WORK
SCALE 1/4" = 1'-0"



THIRD FLOOR PLAN – DEMOLITION
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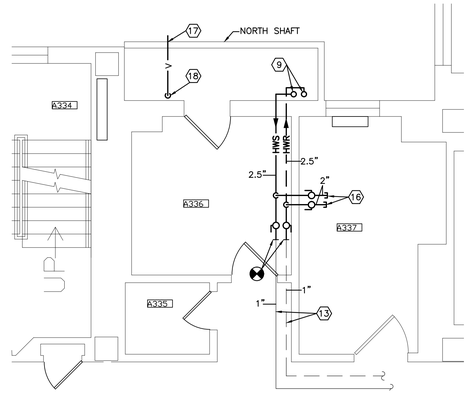
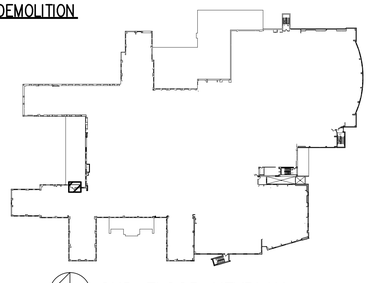
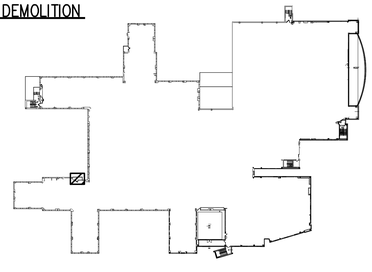


THIRD FLOOR PLAN – NEW WORK
SCALE 1/4" = 1'-0"



2ND FLOOR KEYPLAN



3RD FLOOR KEYPLAN

GENERAL NOTES

A REFER TO SHEET H1 FOR LEGEND, ABBREVIATIONS, AND ADDITIONAL GENERAL NOTES.

B COORDINATE AND SCHEDULE WELL IN ADVANCE WITH COTR, DOWNTIME OF ALL UTILITIES REQUIRED FOR PERFORMANCE OF THIS WORK.

NOTES

1 REMOVE EXISTING PIPING TO THIS POINT FOR RECONNECTION IN NEW WORK.

2 REMOVE EXISTING PIPING TO THIS POINT AND CAP.

3 REMOVE EXISTING 1.5" HEATING HOT WATER SUPPLY AND RETURN PIPES UP TO 8TH FLOOR AND 1.0" HEATING HOT WATER SUPPLY AND RETURN PIPES DOWN TO THIRD FLOOR. REFER TO PARTIAL EIGHTH AND THIRD FLOOR DEMOLITION PLANS ON THIS SHEET FOR CONTINUATION.

4 REMOVE EXISTING 1.25" HEATING HOT WATER SUPPLY AND RETURN PIPES DOWN TO SECOND FLOOR. REFER TO PARTIAL SECOND AND THIRD FLOOR DEMOLITION PLANS ON THIS SHEET FOR CONTINUATION.

5 PROVIDE NEW 2.5" HEATING HOT WATER SUPPLY AND RETURN PIPES UP TO 9TH FLOOR. REFER TO EIGHTH FLOOR NEW WORK PLAN ON THIS SHEET AND NINTH FLOOR PLAN ON SHEET 1–M91 FOR CONTINUATION.

6 PROVIDE NEW 2.5" HEATING HOT WATER SUPPLY AND RETURN PIPES DOWN TO 2ND FLOOR. REFER TO PARTIAL SECOND AND THIRD FLOOR NEW WORK PLANS ON THIS SHEET FOR CONTINUATION.

7 REMOVE EXISTING 1" HEATING HOT WATER SUPPLY AND RETURN PIPES UP TO 6TH FLOOR. REFER TO PARTIAL SIXTH FLOOR DEMOLITION PLAN ON THIS SHEET FOR CONTINUATION.

8 REMOVE EXISTING 1.25" HEATING HOT WATER SUPPLY AND RETURN PIPES UP TO 6TH FLOOR AND DOWN TO 2ND FLOOR. REFER TO PARTIAL SECOND AND SIXTH FLOOR DEMOLITION PLANS ON THIS SHEET FOR CONTINUATION.

9 PROVIDE NEW 2.5" HEATING HOT WATER SUPPLY AND RETURN PIPES UP AND DOWN. REFER TO PARTIAL FLOOR PLANS ON THIS SHEET AND 9TH FLOOR PLAN ON SHEET 1–M91 FOR CONTINUATION.

10 REMOVE EXISTING 1.5" HEATING HOT WATER SUPPLY AND RETURN PIPES DOWN TO 6TH FLOOR. REFER TO PARTIAL SIXTH FLOOR DEMOLITION PLAN ON THIS SHEET FOR CONTINUATION.

11 PROVIDE NEW 2.5" HEATING HOT WATER SUPPLY AND RETURN PIPES UP TO 6TH FLOOR. REFER TO PARTIAL THIRD AND SIXTH FLOOR NEW WORK PLANS ON THIS SHEET FOR CONTINUATION.

12 REMOVE EXISTING 1.25" HEATING HOT WATER SUPPLY AND RETURN PIPES UP TO 6TH FLOOR. REFER TO PARTIAL THIRD AND SIXTH FLOOR DEMOLITION PLANS ON THIS SHEET FOR CONTINUATION.

13 EXISTING PIPING TO REMAIN.

14 PROVIDE NEW 4" DIAMETER VENT PIPE UP FROM PIPE BASEMENT TO 3RD FLOOR. REFER TO THIRD FLOOR PLAN ON THIS SHEET AND SHEET 1–M51 FOR CONTINUATION.

15 PROVIDE NEW DIFFERENTIAL PRESSURE SENSOR ASSOCIATED WITH NEW 10TH FLOOR PENTHOUSE PUMPS AND VFDS, BETWEEN HEATING HOT WATER SUPPLY AND RETURN PIPES. SENSING POINTS SHALL BE NEAR BASE OF RISE, AND SHALL BE IN VERTICAL PORTION OF PIPING.

16 CAP 2" VALVED STUBS AT THIS LOCATION FOR FUTURE CONNECTION.

17 SLEEVE NEW SAFETY RELIEF VENT PIPE THRU EXTERIOR WALL. TERMINATE PER DETAIL ON SHEET H3.

18 PROVIDE NEW 4" VENT PIPE FROM NEW FLASH TANK 1–FT1 IN SUB–BASEMENT SERVICE ROOM. REFER TO PARTIAL 2ND FLOOR PLAN ON THIS SHEET FOR CONTINUATION.

19 PROVIDE PIPE REDUCER AND CONNECT NEW PIPE TO EXISTING.

Revisions	Date
ADDENDUM #1	08/28/2013

CONSULTANTS:

STATE OF OHIO
JOHN A. BLACK
49341
REGISTERED PROFESSIONAL ENGINEER

ARCHITECT/ENGINEERS:

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Ph: 937-224-0861 Fax: 937-224-5777 www.heapy.com
PROJECT NO. 2012-04005 FIRM LICENSE: 01528

Drawing Title: NORTH (AHU-3) RISER SHAFT FLOOR PLANS - DEMOLITION AND NEW WORK

Approved Project Director

Project Title: HOSPITAL STEAM SYSTEM RECORD DRAWINGS

Location: CINCINNATI, OHIO

Date: 01/04/2013 | Checked: JAC | Drawn: DRV

Project Number: 539-13-107

Building Number: 1

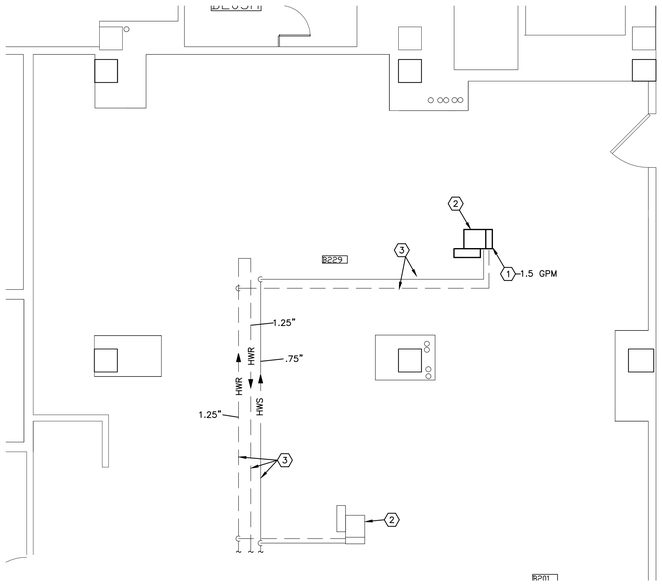
Drawing Number: 1-MDR2

Dwg. 34 of 47

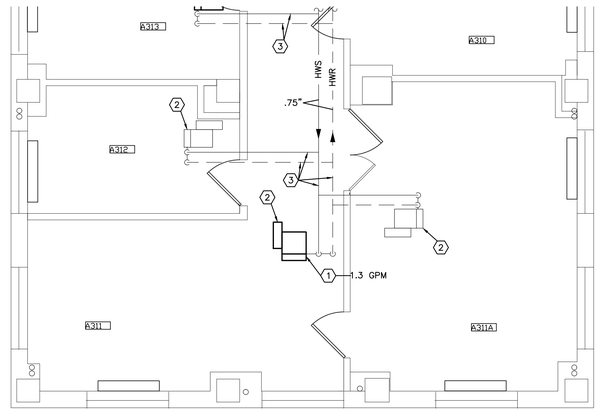
Office of Construction and Facilities Management

Department of Veterans Affairs

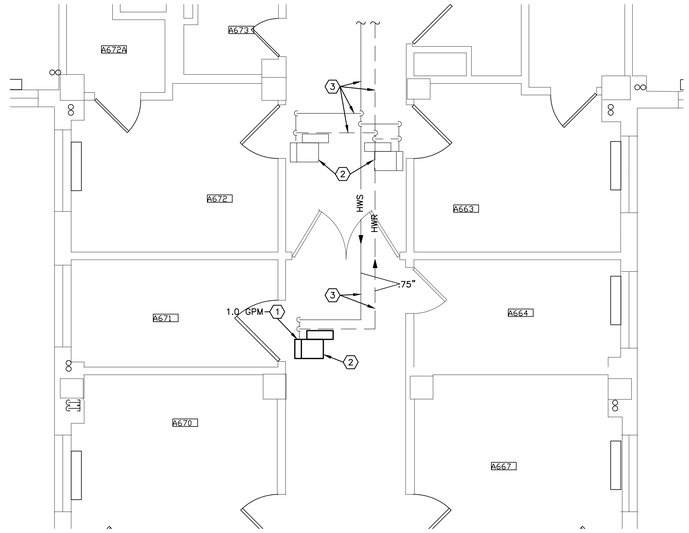
VA FORM 08–6231



SECOND FLOOR PLAN – NEW WORK
SCALE 1/4" = 1'-0"



THIRD FLOOR PLAN – NEW WORK
SCALE 1/4" = 1'-0"



SIXTH FLOOR PLAN – NEW WORK
SCALE 1/4" = 1'-0"

GENERAL NOTES

A REFER TO SHEET H1 FOR LEGEND, ABBREVIATIONS, AND ADDITIONAL GENERAL NOTES.

B COORDINATE AND SCHEDULE WELL IN ADVANCE WITH COTR, DOWNTIME OF ALL UTILITIES REQUIRED FOR PERFORMANCE OF THIS WORK.

C REFER TO SHEET 1–MD1 FOR DETAILED KEYPLANS INDICATING AREAS OF WORK SHOWN ON THIS SHEET.

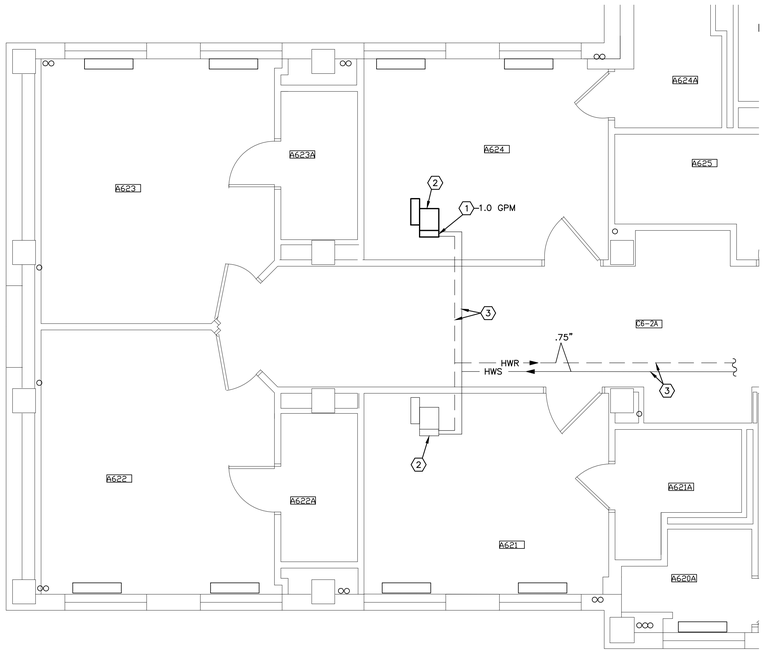
D ALL AIR TERMINAL UNITS SHOWN ON THIS SHEET ARE SERVED FROM 10TH FLOOR PENTHOUSE HEATING HOT WATER CONVERTORS.

NOTES

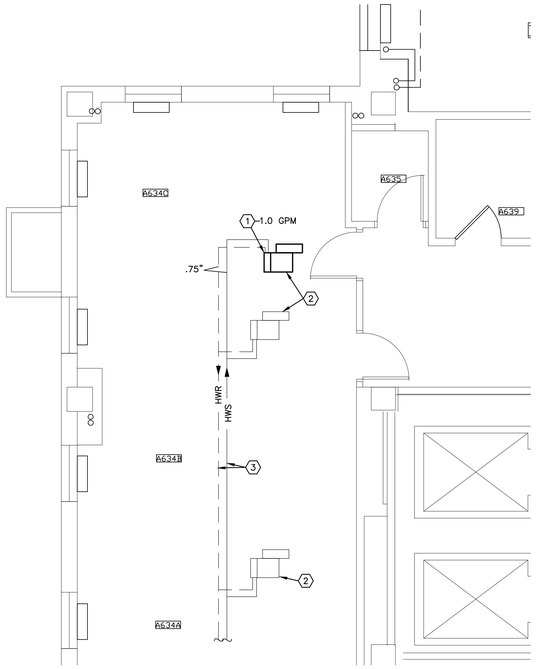
1 EXISTING AIR TERMINAL UNIT REHEAT COIL HAS ASSOCIATED 2–WAY CONTROL VALVE. REMOVE EXISTING 2–WAY CONTROL VALVE AND REPLACE WITH 3–WAY CONTROL VALVE. RECONNECT TO EXISTING PIPING AND CONTROLS.

2 EXISTING AIR TERMINAL UNIT TO REMAIN.

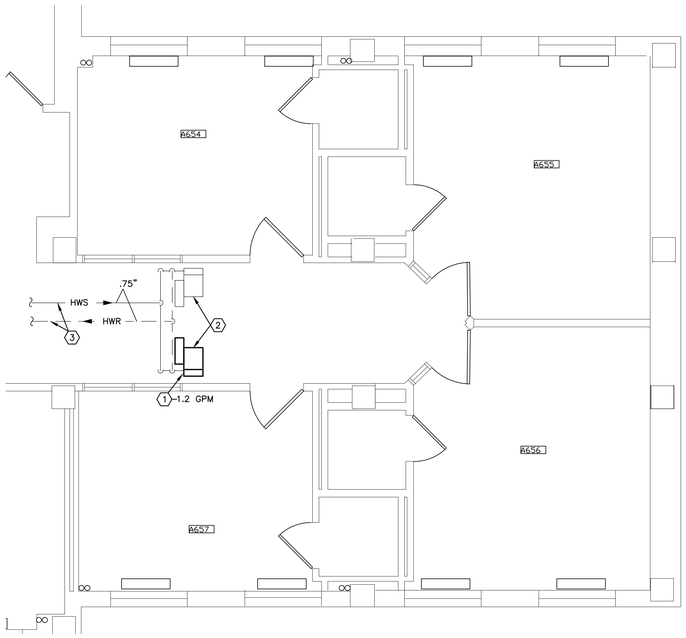
3 EXISTING PIPING TO REMAIN.



SIXTH FLOOR PLAN – NEW WORK
SCALE 1/4" = 1'-0"



SIXTH FLOOR PLAN – NEW WORK
SCALE 1/4" = 1'-0"



SIXTH FLOOR PLAN – NEW WORK
SCALE 1/4" = 1'-0"

Revisions:	Date
ADDENDUM #1	08/28/2013

CONSULTANTS:

STATE OF OHIO · JOHN A. BLACK · 49341 · REGISTERED PROFESSIONAL ENGINEER

ARCHITECT/ENGINEERS:

Heapy Engineering
Mechanical Electrical Commissioning Technology
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Ph: 937-224-0861 Fax: 937-224-5777 www.heapy.com
PROJECT NO. 2012-04005 FIRM LICENSE: 01528

Drawing Title: PARTIAL FLOOR PLANS - TERMINAL UNIT CONTROL VALVE REPLACEMENTS

Approved Project Director

Project Title: HOSPITAL STEAM SYSTEM RECORD DRAWINGS

Location: CINCINNATI, OHIO

Date: 01/04/2013 | Checked: JAC | Drawn: DRV

Project Number: 539-13-107

Building Number: 1

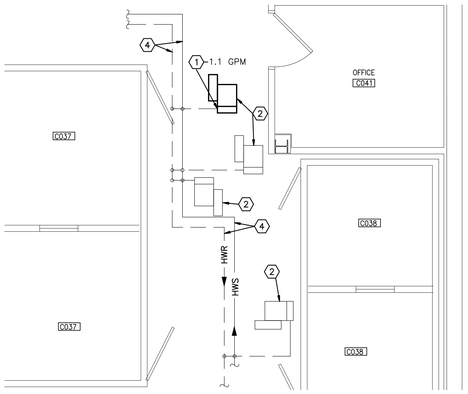
Drawing Number: 1-MDV1

Dwg. 35 of 47

Office of Construction and Facilities Management

Department of Veterans Affairs

VA FORM 08–6231



PARTIAL BASEMENT FLOOR PLAN – NEW WORK
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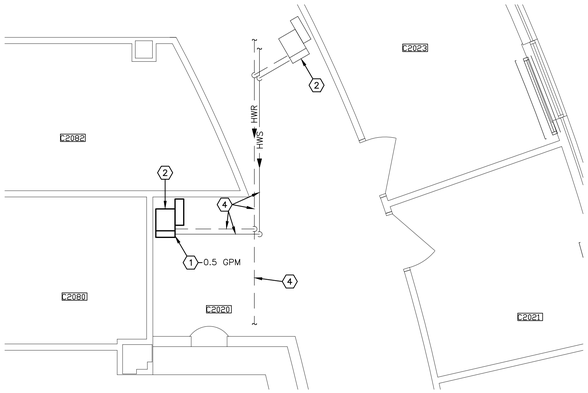

PARTIAL SECOND FLOOR PLAN – NEW WORK
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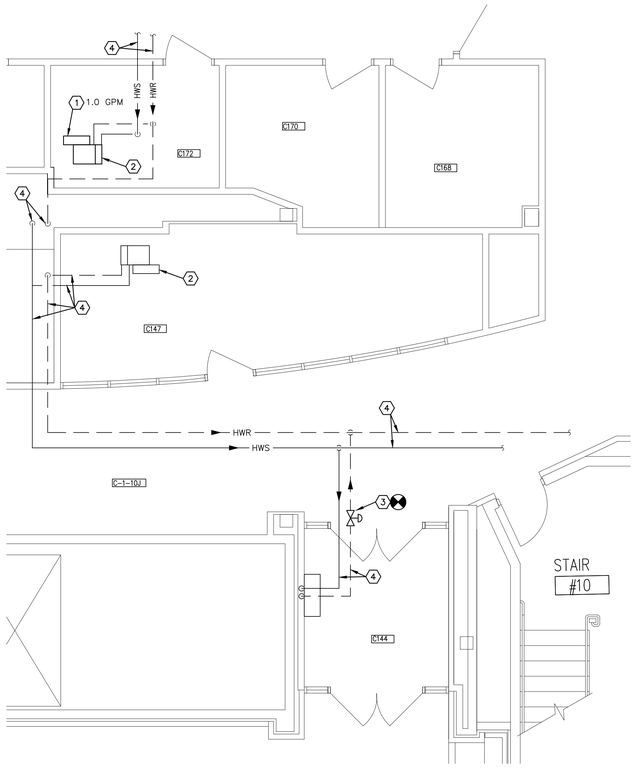

PARTIAL FIRST FLOOR PLAN – NEW WORK
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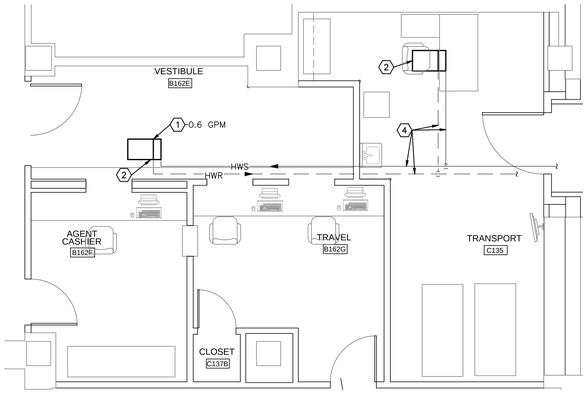

PARTIAL FIRST FLOOR PLAN – NEW WORK
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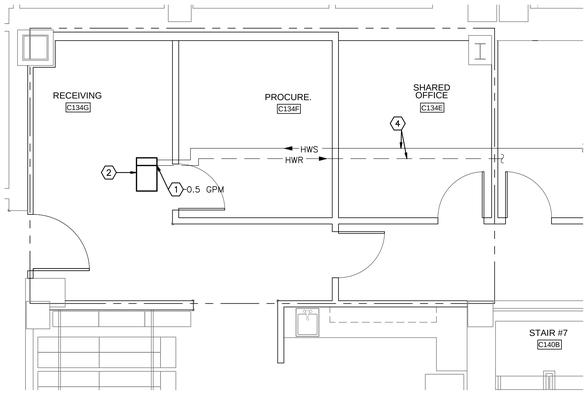

PARTIAL FIRST FLOOR PLAN – NEW WORK
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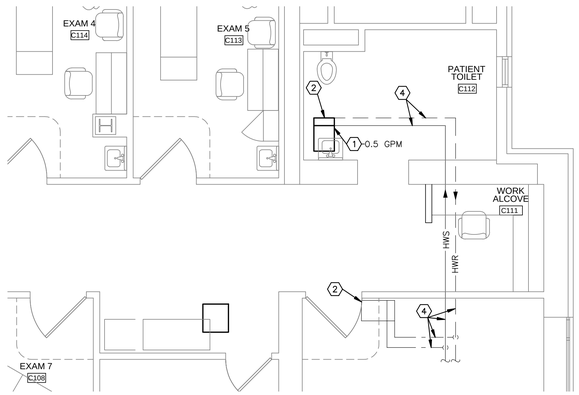
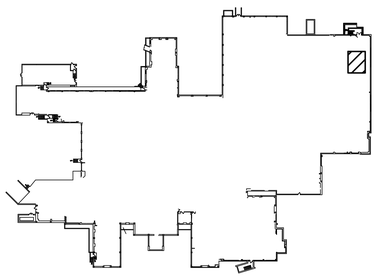
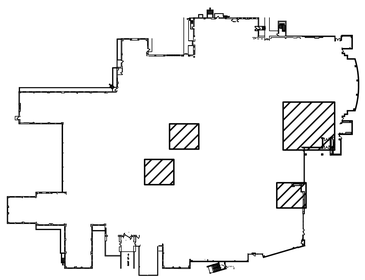


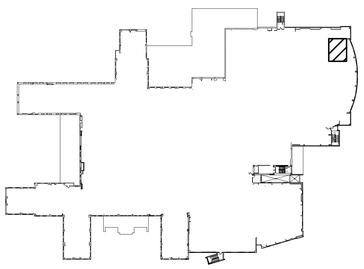
PARTIAL FIRST FLOOR PLAN – NEW WORK
SCALE 1/4" = 1'-0"



BASEMENT KEYPLAN



FIRST FLOOR KEYPLAN



SECOND FLOOR KEYPLAN

GENERAL NOTES

A REFER TO SHEET H1 FOR LEGEND, ABBREVIATIONS, AND ADDITIONAL GENERAL NOTES.

B COORDINATE AND SCHEDULE WELL IN ADVANCE WITH COTR, DOWNTIME OF ALL UTILITIES REQUIRED FOR PERFORMANCE OF THIS WORK.

C ALL AIR TERMINAL UNITS SHOWN ON THIS SHEET ARE SERVED FROM C-SECTION BASEMENT MECHANICAL ROOM HEATING HOT WATER CONVERTORS.

NOTES

1 EXISTING AIR TERMINAL UNIT REHEAT COIL HAS ASSOCIATED 2-WAY CONTROL VALVE. REMOVE EXISTING 2-WAY CONTROL VALVE AND REPLACE WITH 3-WAY CONTROL VALVE. RECONNECT TO EXISTING PIPING AND CONTROLS.

2 EXISTING AIR TERMINAL UNIT TO REMAIN.

3 PROVIDE NEW LINE SIZE, 2-POSITION DDC CONTROL VALVE FOR SEASONAL AUTOMATIC HOT WATER SHUTOFF. REFER TO PIPING DETAIL ON SHEET H4, CONTROL DIAGRAM & SEQUENCES ON SHEET H9, AND SPEC SECTION 23 09 23.

4 EXISTING PIPING TO REMAIN.

Revisions	Date
ADDENDUM #1	08/28/2013

CONSULTANTS:

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PROJECT NO. 2012-04005 FIRM LICENSE: 01528

Drawing Title: PARTIAL FLOOR PLANS - TERMINAL UNIT CONTROL VALVE REPLACEMENTS

Approved Project Director

Project Title: HOSPITAL STEAM SYSTEM RECORD DRAWINGS

Location: CINCINNATI, OHIO

Date: 01/04/2013 | Checked: JAC | Drawn: DRV

Project Number: 539-13-107

Building Number: 1

Drawing Number: 1-MDV2

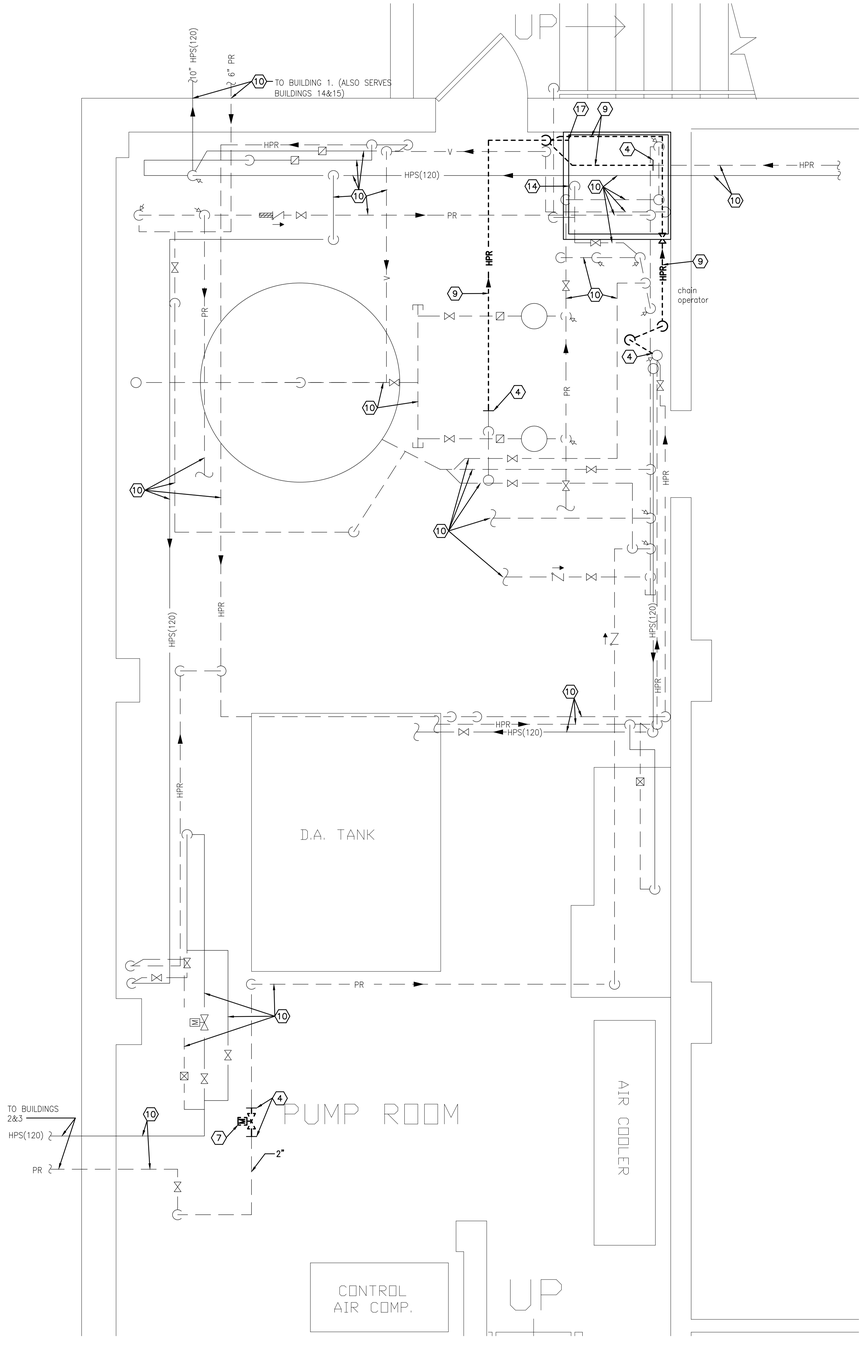
Dwg. 36 of 47

Office of Construction and Facilities Management

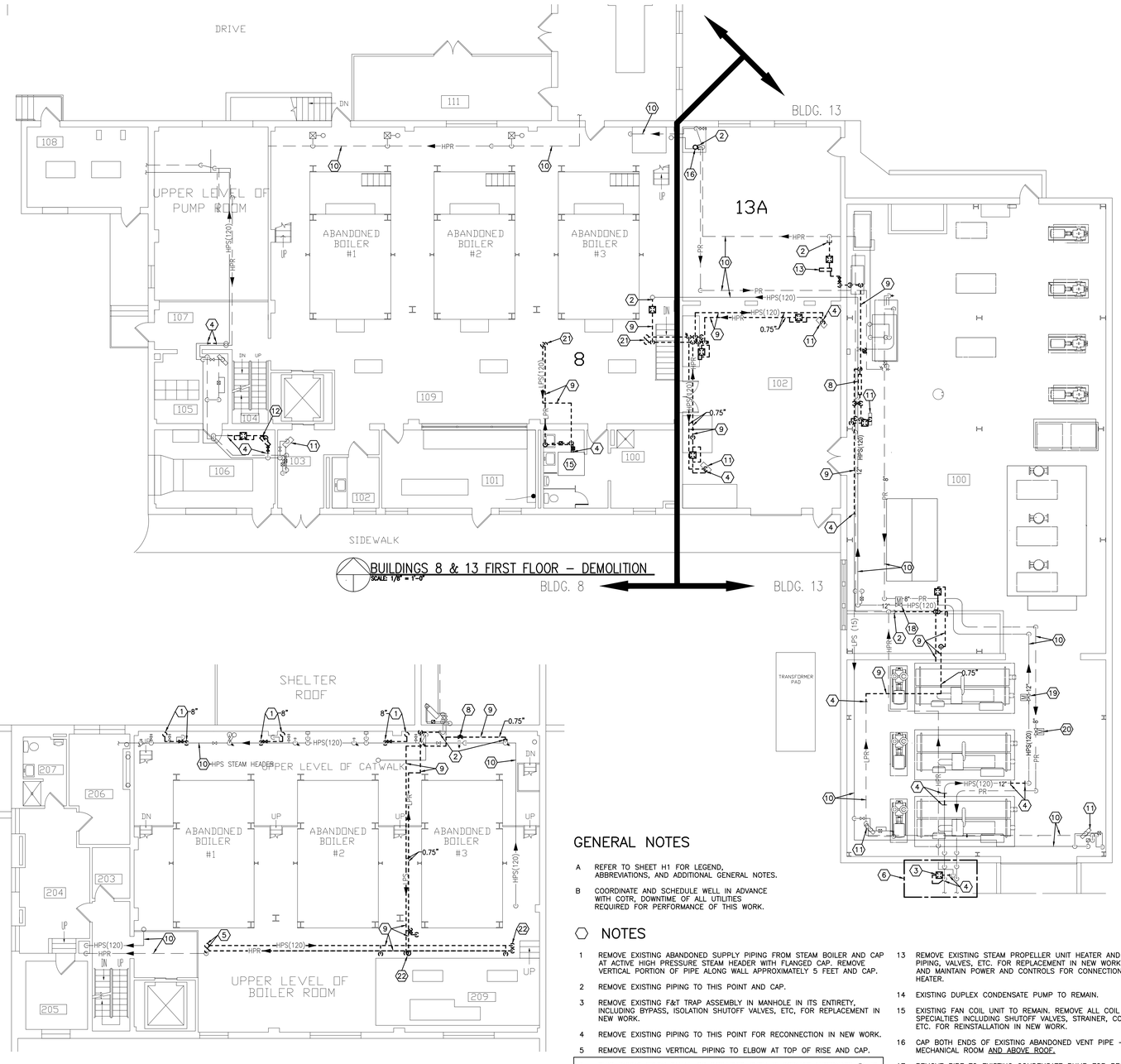
Department of Veterans Affairs

VA FORM 08-6231

ALL WORK SHOWN ON THIS SHEET IS PART OF DEDUCT ALTERNATE #1, EXCEPT WHERE NOTED OTHERWISE.



BUILDING 8 BASEMENT – DEMOLITION
SCALE: 1/2" = 1'-0"



BUILDINGS 8 & 13 FIRST FLOOR – DEMOLITION
SCALE: 1/8" = 1'-0"

BUILDING 8 SECOND FLOOR – DEMOLITION
SCALE: 1/8" = 1'-0"

GENERAL NOTES

A REFER TO SHEET H1 FOR LEGEND, ABBREVIATIONS, AND ADDITIONAL GENERAL NOTES.

B COORDINATE AND SCHEDULE WELL IN ADVANCE WITH COTR, DOWNTIME OF ALL UTILITIES REQUIRED FOR PERFORMANCE OF THIS WORK.

NOTES

1 REMOVE EXISTING ABANDONED SUPPLY PIPING FROM STEAM BOILER AND CAP AT ACTIVE HIGH PRESSURE STEAM HEADER WITH FLANGED CAP. REMOVE VERTICAL PORTION OF PIPE ALONG WALL APPROXIMATELY 5 FEET AND CAP.

2 REMOVE EXISTING PIPING TO THIS POINT AND CAP.

3 REMOVE EXISTING F&T TRAP ASSEMBLY IN MANHOLE IN ITS ENTIRETY, INCLUDING BYPASS, ISOLATION SHUTOFF VALVES, ETC, FOR REPLACEMENT IN NEW WORK.

4 REMOVE EXISTING PIPING TO THIS POINT FOR RECONNECTION IN NEW WORK.

5 REMOVE EXISTING VERTICAL PIPING TO ELBOW AT TOP OF RISE AND CAP.

6 THIS PIPING WORK SHALL BE INCLUDED EVEN IF DEDUCT ALTERNATE #1 IS ACCEPTED.

7 REMOVE EXISTING CONDENSATE METER AND ASSOCIATED PIPING, WIRING, REDUCERS, EXPANDERS, ETC.

8 REMOVE EXISTING PRESSURE REDUCING STATION IN ITS ENTIRETY, INCLUDING ALL VALVES, PIPING, BYPASSES, PRESSURE GAUGES, SAFETY RELIEF VALVES, AND OTHER SPECIALTIES, ETC.

9 REMOVE EXISTING PIPING AND ASSOCIATED VALVES, TRAPS, HANGERS, ETC.

10 EXISTING PIPING TO REMAIN.

11 EXISTING STEAM PROPELLER UNIT HEATER TO REMAIN.

12 REMOVE EXISTING STEAM PROPELLER UNIT HEATER AND ASSOCIATED PIPING, VALVES, ETC. FOR RELOCATION IN NEW WORK. DISCONNECT AND MAINTAIN POWER AND CONTROLS FOR CONNECTION TO NEW UNIT HEATER.

13 REMOVE EXISTING STEAM PROPELLER UNIT HEATER AND ASSOCIATED PIPING, VALVES, ETC. FOR REPLACEMENT IN NEW WORK. DISCONNECT AND MAINTAIN POWER AND CONTROLS FOR CONNECTION TO NEW UNIT HEATER.

14 EXISTING DUPLEX CONDENSATE PUMP TO REMAIN.

15 EXISTING FAN COIL UNIT TO REMAIN. REMOVE ALL COIL PIPING SPECIALTIES INCLUDING SHUTOFF VALVES, STRAINER, CONTROL VALVES, ETC. FOR REINSTALLATION IN NEW WORK.

16 CAP BOTH ENDS OF EXISTING ABANDONED VENT PIPE – INSIDE MECHANICAL ROOM AND ABOVE ROOF.

17 REMOVE PIPE TO EXISTING CONDENSATE PUMP FOR RECONNECTION IN NEW WORK.

18 EXISTING VA STEAM METER TO REMAIN.

19 EXISTING UNIVERSITY OF CINCINNATI STEAM METER TO REMAIN.

20 EXISTING UNIVERSITY OF CINCINNATI CONDENSATE METER TO REMAIN.

21 REMOVE EXISTING PIPING TO SECOND FLOOR. REFER TO SECOND FLOOR PLAN ON THIS SHEET FOR CONTINUATION.

22 REMOVE EXISTING PIPING TO FIRST FLOOR. REFER TO FIRST FLOOR PLAN ON THIS SHEET FOR CONTINUATION.

Revisions	Date
ADDENDUM #1	08/28/2013

CONSULTANTS:

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PROJECT NO. 2012-04005 FIRM LICENSE: 01528

Drawing Title: BUILDINGS 8 & 13 DEMOLITION PLANS

Approved Project Director

Project Title: HOSPITAL STEAM SYSTEM RECORD DRAWINGS

Project Number: 539-13-107

Building Number: 8,13

Location: CINCINNATI, OHIO

Date: 01/04/2013 | Checked: JAC | Drawn: DRV

Drawing Number: 8-D1

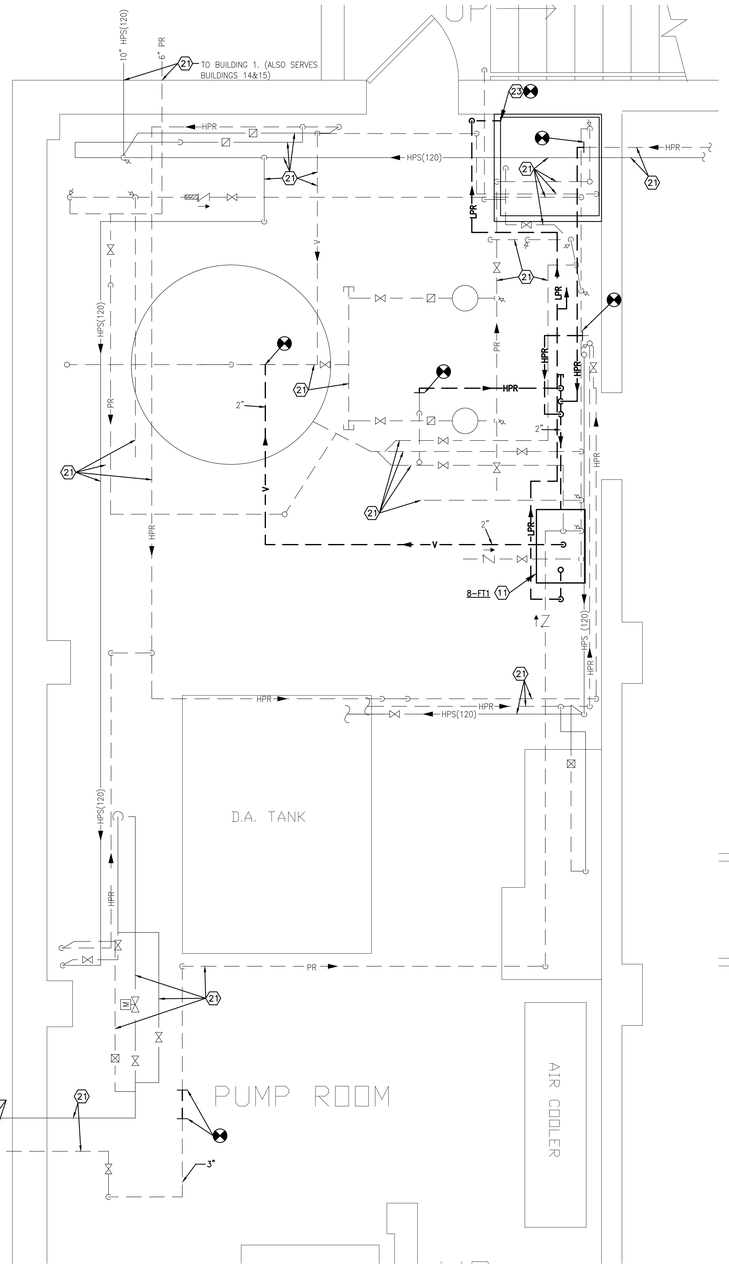
Dwg. 37 of 47

Office of Construction and Facilities Management

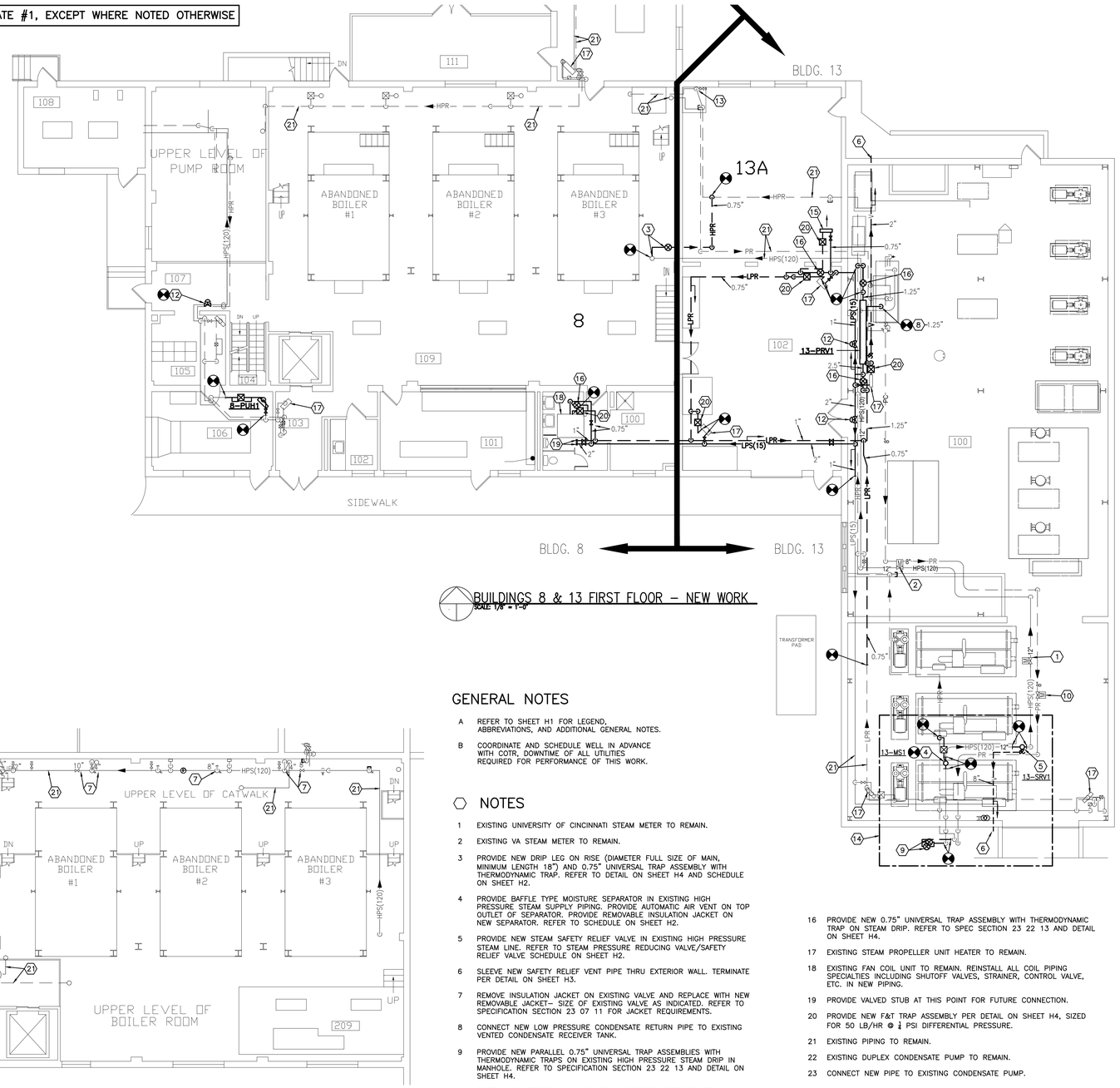
Department of Veterans Affairs

VA FORM 08-6231

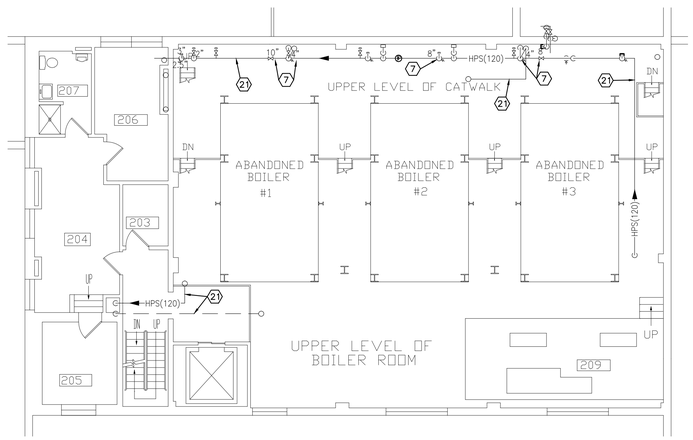
ALL WORK SHOWN ON THIS SHEET IS PART OF DEDUCT ALTERNATE #1, EXCEPT WHERE NOTED OTHERWISE



BUILDING 8 BASEMENT – NEW WORK
SCALE: 1/2" = 1'-0"



BUILDINGS 8 & 13 FIRST FLOOR – NEW WORK
SCALE: 1/8" = 1'-0"



BUILDING 8 SECOND FLOOR – NEW WORK
SCALE: 1/8" = 1'-0"

GENERAL NOTES

A REFER TO SHEET H1 FOR LEGEND, ABBREVIATIONS, AND ADDITIONAL GENERAL NOTES.

B COORDINATE AND SCHEDULE WELL IN ADVANCE WITH COTR. DOWNTIME OF ALL UTILITIES REQUIRED FOR PERFORMANCE OF THIS WORK.

NOTES

1 EXISTING UNIVERSITY OF CINCINNATI STEAM METER TO REMAIN.

2 EXISTING VA STEAM METER TO REMAIN.

3 PROVIDE NEW DRIP LEG ON RISE (DIAMETER FULL SIZE OF MAIN, MINIMUM LENGTH 18") AND 0.75" UNIVERSAL TRAP ASSEMBLY WITH THERMODYNAMIC TRAP. REFER TO DETAIL ON SHEET H4 AND SCHEDULE ON SHEET H2.

4 PROVIDE BAFFLE TYPE MOISTURE SEPARATOR IN EXISTING HIGH PRESSURE STEAM SUPPLY PIPING. PROVIDE AUTOMATIC AIR VENT ON TOP OUTLET OF SEPARATOR. PROVIDE REMOVABLE INSULATION JACKET ON NEW SEPARATOR. REFER TO SCHEDULE ON SHEET H2.

5 PROVIDE NEW STEAM SAFETY RELIEF VALVE IN EXISTING HIGH PRESSURE STEAM LINE. REFER TO STEAM PRESSURE REDUCING VALVE/SAFETY RELIEF VALVE SCHEDULE ON SHEET H2.

6 SLEEVE NEW SAFETY RELIEF VENT PIPE THRU EXTERIOR WALL. TERMINATE PER DETAIL ON SHEET H3.

7 REMOVE INSULATION JACKET ON EXISTING VALVE AND REPLACE WITH NEW REMOVABLE JACKET– SIZE OF EXISTING VALVE AS INDICATED. REFER TO SPECIFICATION SECTION 23 07 11 FOR JACKET REQUIREMENTS.

8 CONNECT NEW LOW PRESSURE CONDENSATE RETURN PIPE TO EXISTING VENTED CONDENSATE RECEIVER TANK.

9 PROVIDE NEW PARALLEL 0.75" UNIVERSAL TRAP ASSEMBLIES WITH THERMODYNAMIC TRAPS ON EXISTING HIGH PRESSURE STEAM DRIP IN MANHOLE. REFER TO SPECIFICATION SECTION 23 22 13 AND DETAIL ON SHEET H4.

10 EXISTING UNIVERSITY OF CINCINNATI CONDENSATE METER TO REMAIN.

11 PROVIDE NEW HORIZONTAL FLASH TANK ADJACENT TO EXISTING DUPLEX ELECTRIC CONDENSATE PUMP. EXTEND AND CONNECT VENT PIPE TO EXISTING VENT PIPE AS SHOWN. REFER TO DETAIL ON SHEET H4 AND SCHEDULE ON SHEET H2.

12 PROVIDE NEW LINE SIZE TWO–POSITION DDC CONTROL VALVE FOR SEASONAL AUTOMATIC STEAM CONTROL. REFER TO PIPING DETAIL ON SHEET H4, CONTROL DIAGRAM & SEQUENCES ON SHEET H9, AND SPEC SECTION 23 09 23.

13 PROVIDE FIBERGLASS INSULATION ON VERTICAL PORTION OF EXISTING PIPE. REFER TO 23 07 11 FOR REQUIRED THICKNESS.

14 THIS PIPING WORK SHALL BE INCLUDED EVEN IF DEDUCT ALTERNATE #1 IS ACCEPTED.

15 INSTALL RELOCATED STEAM PROPELLER UNIT HEATER (FROM GENERATOR ROOM 106) IN THIS LOCATION. RECONNECT TO EXISTING POWER AND CONTROL WIRING AND REUSE EXISTING CONTROLS.

16 PROVIDE NEW 0.75" UNIVERSAL TRAP ASSEMBLY WITH THERMODYNAMIC TRAP ON STEAM DRIP. REFER TO SPEC SECTION 23 22 13 AND DETAIL ON SHEET H4.

17 EXISTING STEAM PROPELLER UNIT HEATER TO REMAIN.

18 EXISTING FAN COIL UNIT TO REMAIN. REINSTALL ALL COIL PIPING SPECIALTIES INCLUDING SHUTOFF VALVES, STRAINER, CONTROL VALVE, ETC. IN NEW PIPING.

19 PROVIDE VALVED STUB AT THIS POINT FOR FUTURE CONNECTION.

20 PROVIDE NEW F&T TRAP ASSEMBLY PER DETAIL ON SHEET H4, SIZED FOR 50 LB/HR @ ½ PSI DIFFERENTIAL PRESSURE.

21 EXISTING PIPING TO REMAIN.

22 EXISTING DUPLEX CONDENSATE PUMP TO REMAIN.

23 CONNECT NEW PIPE TO EXISTING CONDENSATE PUMP.

Revisions	Date
ADDENDUM #1	08/28/2013

CONSULTANTS:

STATE OF OHIO — JOHN A. BLACK 49341 — REGISTERED PROFESSIONAL ENGINEER

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PROJECT NO. 2012-04005 FIRM LICENSE: 01528

Drawing Title: BUILDINGS 8 & 13 NEW WORK PLANS

Approved Project Director

Project Title: HOSPITAL STEAM SYSTEM RECORD DRAWINGS

Location: CINCINNATI, OHIO

Date: 01/04/2013 | Checked: JAC | Drawn: DRV

Project Number: 539-13-107

Building Number: 8,13

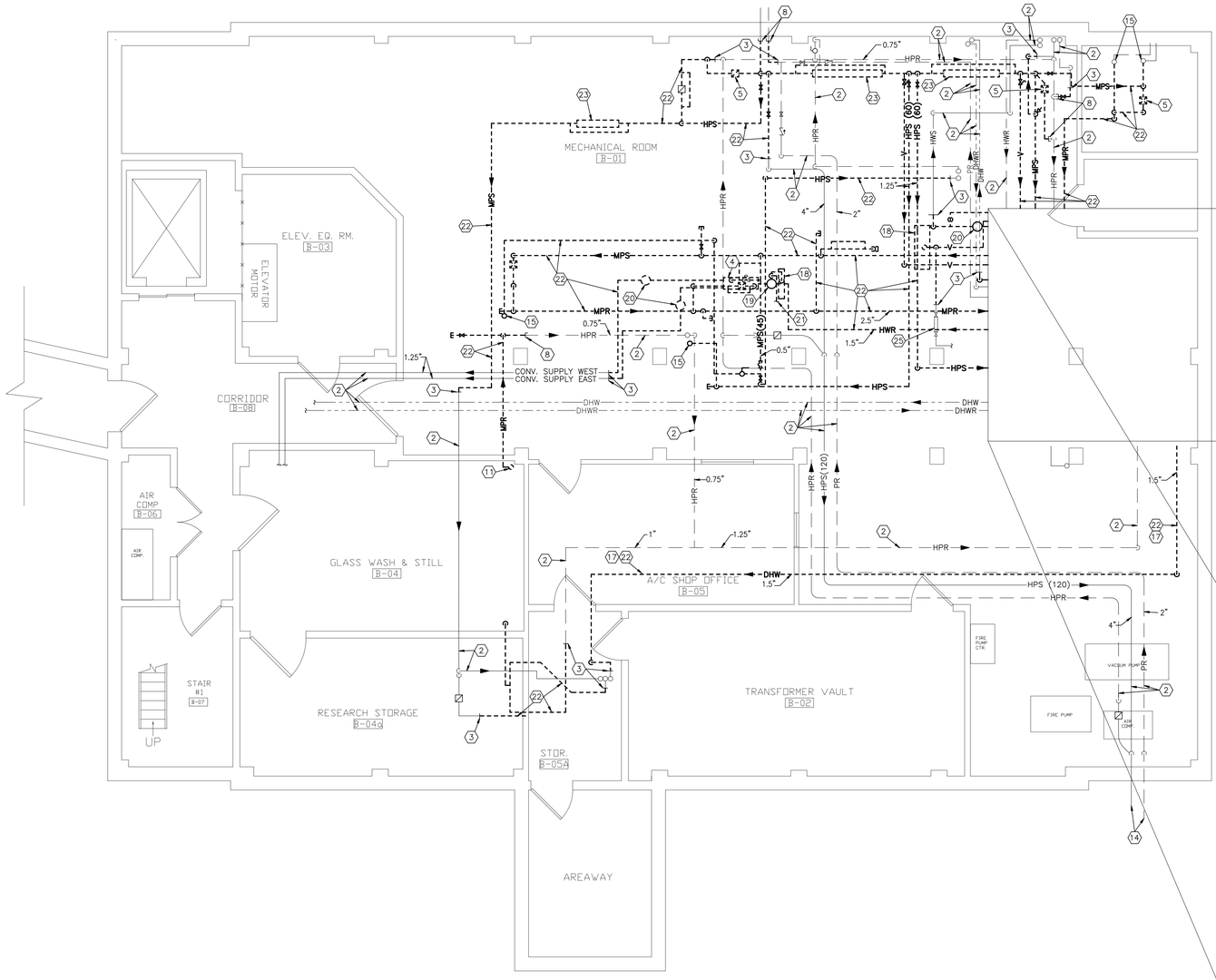
Drawing Number: 8-M1

Dwg. 38 of 47

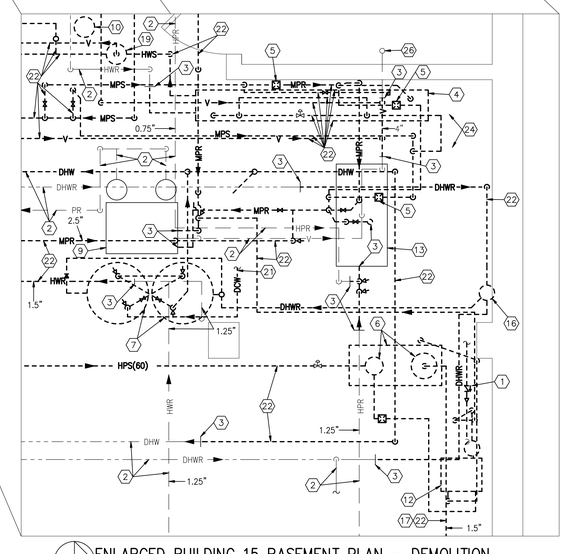
Office of Construction and Facilities Management

Department of Veterans Affairs

VA FORM 08-6231



BUILDING 15 BASEMENT – DEMOLITION
SCALE: 1/4" = 1'-0"



ENLARGED BUILDING 15 BASEMENT PLAN – DEMOLITION
SCALE: 1/2" = 1'-0"

GENERAL NOTES

A REFER TO SHEET H1 FOR LEGEND, ABBREVIATIONS, AND ADDITIONAL GENERAL NOTES.

B COORDINATE AND SCHEDULE WELL IN ADVANCE WITH COTR. DOWNTIME OF ALL UTILITIES REQUIRED FOR PERFORMANCE OF THIS WORK.

C ALL WORK ON THIS SHEET SHALL WAIT TO BE PERFORMED UNTIL NEW STEAM, CONDENSATE, AND DOMESTIC HOT WATER PIPES FROM BUILDING 1 TO BUILDING 15 HAVE BEEN INSTALLED.

D DUE TO CRITICAL LAB CONDITIONS IN THIS BUILDING ALL WORK SHOWN ON THIS SHEET IS TO BE DONE DURING THE MONTH OF MAY.

E TO MINIMIZE DOWNTIME, COORDINATE WITH NEW WORK TO INSTALL NEW PARALLEL PIPES PRIOR TO DEMOLITION OF EXISTING PIPES TO ALL EQUIPMENT USING 60 LB STEAM. DOWNTIME FOR THESE SYSTEMS SHALL NOT EXCEED 3 CALENDAR DAYS OVER A WEEKEND.

NOTES

1 REMOVE EXISTING DOMESTIC COLD WATER METER, CHECK VALVE AND PRESSURE REGULATING VALVE AND ALL EXTRANEOUS PIPING BACK TO DOMESTIC HOT WATER MAINS AND CAP.

2 EXISTING PIPING TO REMAIN.

3 REMOVE EXISTING PIPING TO THIS POINT FOR RECONNECTION IN NEW WORK.

4 REMOVE EXISTING HOT WATER CONVERTOR AND ALL ASSOCIATED PIPING SPECIALTIES, SUPPORTS, CONTROLS, ETC. REMOVE ALL PNEUMATIC LINES BACK TO POINT OF ACTIVE MAIN AND CAP.

5 REMOVE EXISTING TRAP ASSEMBLY IN ITS ENTIRETY, INCLUDING BYPASS, ISOLATION SHUTOFF VALVES, ETC.

6 REMOVE EXISTING STEAM DOMESTIC WATER HEATER AND STORAGE TANK AND ALL ASSOCIATED PIPING, WIRING, CONTROLS, CONCRETE BASE, ETC. AND TURN OVER TO VA. PLACE WHERE DIRECTED BY COTR.

7 REMOVE EXISTING ELECTRIC DOMESTIC WATER HEATERS AND ALL EXTRANEOUS PIPING BACK TO MAINS AND CAP.

8 REMOVE EXISTING PIPING TO THIS POINT AND CAP.

9 EXISTING DUPLEX CONDENSATE PUMP TO REMAIN.

10 REMOVE EXISTING CHEMICAL POT FEEDER AND ASSOCIATED PIPING, SUPPORTS, ETC.

11 REMOVE EXISTING PIPING TO NEAR UNDERSIDE OF SLAB AND CAP.

12 REMOVE EXISTING ELECTRIC CONDENSATE PUMP AND ASSOCIATED PIPING, WIRING, CONTROLS, SPECIALTIES, ETC., AND TURN OVER TO VA. PLACE WHERE DIRECTED BY COTR.

13 EXISTING FLASH TANK TO REMAIN.

14 EXISTING HIGH PRESSURE STEAM AND PUMPED CONDENSATE TO BUILDING 14.

15 REMOVE EXISTING PIPING BEYOND ELBOW, TO VERTICAL PORTION, FOR RECONNECTION IN NEW WORK.

16 REMOVE EXISTING DOMESTIC HOT WATER RECIRCULATION PUMP ALONG WALL AND ALL PIPING, WIRING, CONTROLS, SUPPORTS, ETC.

17 REMOVE EXISTING DOMESTIC HOT WATER PIPING TO CAGE WASHER AFTER NEW PIPING HAS BEEN INSTALLED.

18 REMOVE EXISTING HEATING HOT WATER SYSTEM EXPANSION TANK AND ASSOCIATED PIPING, SUPPORTS, ETC.

19 REMOVE EXISTING AIR SEPARATOR AND ASSOCIATED PIPING, SUPPORTS, ETC.

20 REMOVE EXISTING INLINE HEATING HOT WATER PUMP AND ASSOCIATED PIPING, WIRING, SUPPORTS, CONTROLS, ETC.

21 REMOVE EXISTING DOMESTIC WATER MAKEUP LINE AND ASSOCIATED BACKFLOW PREVENTER, VALVES, SUPPORTS, ETC. BACK TO DOMESTIC COLD WATER MAIN AND CAP.

22 REMOVE EXISTING PIPING AND ASSOCIATED VALVES, TRAPS, HANGERS, ETC.

23 REMOVE EXISTING STEAM PRESSURE REDUCING STATION IN ITS ENTIRETY, INCLUDING ALL VALVES, PIPING, BYPASSES, REMOTE PANEL MOUNTED PRESSURE GAUGES, PIPE MOUNTED PRESSURE GAUGES, SAFETY RELIEF VALVES, AND OTHER SPECIALTIES, ETC. FOR REPLACEMENT IN NEW WORK.

24 REMOVE ALL EXTRANEOUS DRAIN PIPING, ETC. IN THIS AREA, ASSOCIATED WITH VENT PIPE DRIP PAN ELBOWS THAT ARE BEING REMOVED.

25 EXISTING 0.75" BACKFLOW PREVENTER FOR HEATING HOT WATER SYSTEM MAKEUP TO REMAIN, FOR RE-USE IN NEW WORK.

26 EXISTING STEAM VENT PIPE UP TO ROOF TO REMAIN.

Revisions	Date
ADDENDUM #1	08/28/2013

CONSULTANTS:

STATE OF OHIO — JOHN A. BLACK 49341 — REGISTERED PROFESSIONAL ENGINEER

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Ph: 937-224-0861 Fax: 937-224-5777 www.heapy.com
PROJECT NO. 2012-04005 FIRM LICENSE: 01528

Drawing Title: BUILDING 15 BASEMENT - DEMOLITION

Approved: Project Director

Project Title: HOSPITAL STEAM SYSTEM RECORD DRAWINGS

Location: CINCINNATI, OHIO

Date: 01/04/2013 | Checked: JAC | Drawn: DRV

Project Number: 539-13-107

Building Number: 15

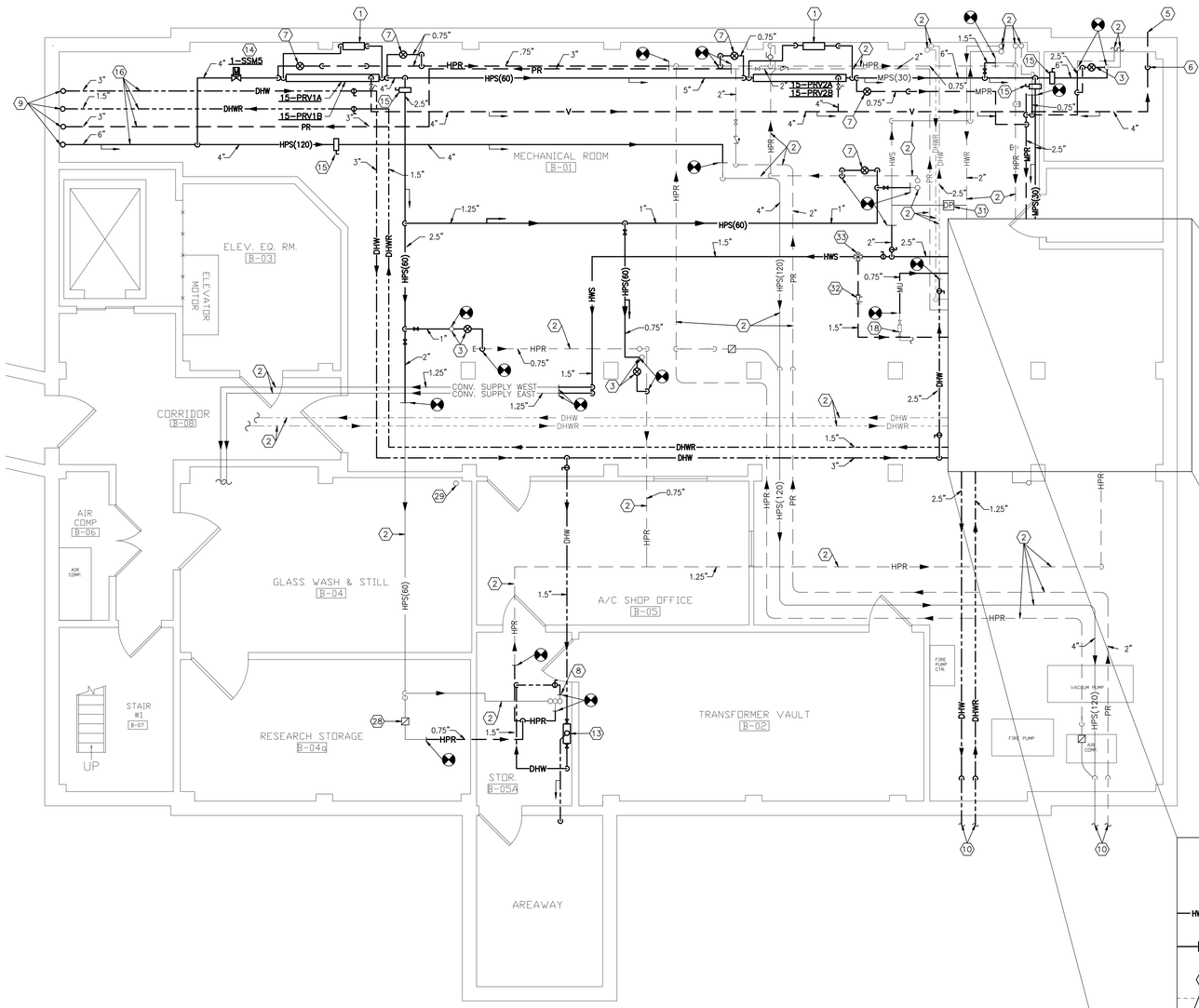
Drawing Number: 15-DB1

Dwg. 39 of 47

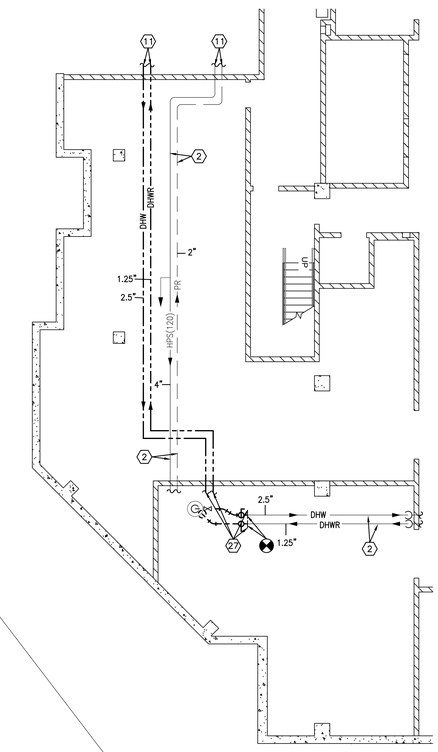
Office of Construction and Facilities Management

Department of Veterans Affairs

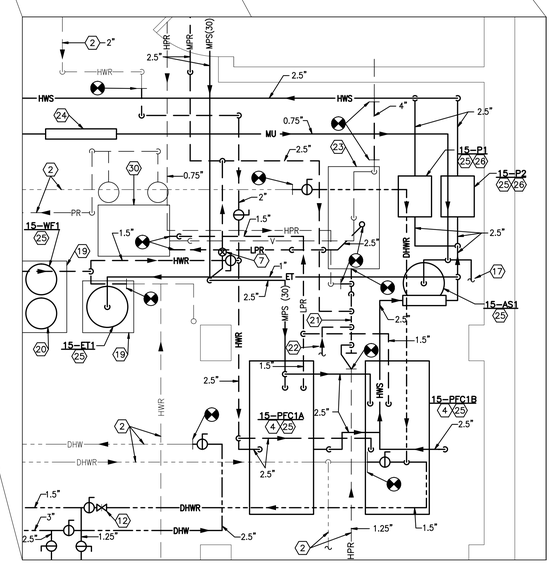
VA FORM 08-6231



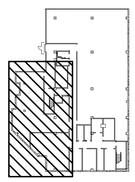
BUILDING 15 BASEMENT – NEW WORK
SCALE: 1/8" = 1'-0"



PARTIAL BUILDING 14 BASEMENT PLAN – NEW WORK
SCALE: 1/8" = 1'-0"



ENLARGED BUILDING 15 BASEMENT PLAN – NEW WORK
SCALE: 1/2" = 1'-0"



BUILDING 14 KEYPLAN

GENERAL NOTES

A REFER TO SHEET H1 FOR LEGEND, ABBREVIATIONS, AND ADDITIONAL GENERAL NOTES.

B COORDINATE AND SCHEDULE WELL IN ADVANCE WITH COTR. DOWNTIME OF ALL UTILITIES REQUIRED FOR PERFORMANCE OF THIS WORK.

C ALL WORK ON THIS SHEET SHALL WAIT TO BE PERFORMED UNTIL NEW STEAM, CONDENSATE, AND DOMESTIC HOT WATER PIPES FROM BUILDING 1 TO BUILDING 15 HAVE BEEN INSTALLED.

D DUE TO CRITICAL LAB CONDITIONS IN THIS BUILDING ALL WORK SHOWN ON THIS SHEET IS TO BE DONE DURING THE MONTH OF MAY.

E TO MINIMIZE DOWNTIME, COORDINATE WITH NEW WORK TO INSTALL NEW PARALLEL PIPES PRIOR TO DEMOLITION OF EXISTING PIPES TO ALL EQUIPMENT USING 60 LB STEAM. DOWNTIME OF THESE SYSTEMS SHALL NOT EXCEED 3 CALENDAR DAYS OVER A WEEKEND.

NOTES

1 PROVIDE PANEL–MOUNTED PRESSURE GAUGES ON WALL TO INDICATE PRESSURES UPSTREAM AND DOWNSTREAM OF PRESSURE REDUCING STATION. PROVIDE DRAIN COCK AT BOTTOM OF SENSING LINES DROPPING TO PANEL.

2 EXISTING PIPING TO REMAIN.

3 PROVIDE NEW DIRT LEG ON RISE (DIAMETER FULL SIZE OF MAIN, MINIMUM LENGTH 18") AND 0.75" UNIVERSAL TRAP ASSEMBLY WITH THERMODYNAMIC TRAP. REFER TO DETAIL ON SHEET H4.

4 NEW PLATE AND FRAME HYDRONIC WATER HEATING PACKAGE. REFER TO SPEC SECTION 23 22 13 AND SCHEDULE ON SHEET H2.

5 SLEEVE NEW SAFETY RELIEF VENT PIPE THRU EXTERIOR WALL. TERMINATE PER DETAIL ON SHEET H3.

6 PROVIDE DRIP PAN ELBOW ON BOTTOM OF RISE. REFER TO SAFETY RELIEF VALVE DETAIL ON SHEET H3.

7 PROVIDE NEW 0.75" UNIVERSAL TRAP ASSEMBLY WITH THERMODYNAMIC TRAP ON STEAM DRIP. REFER TO SPEC SECTION 23 22 13 AND DETAIL ON SHEET H4.

8 CONNECT TO EXITING DOMESTIC HOT WATER LINE SERVING CAGE WASHER ON FLOOR ABOVE.

9 PROVIDE NEW PIPES DOWN FROM ABOVE IN EXISTING FRESH AIR SHAFT. REFER TO SHEET 1–MS2 FOR CONTINUATION.

10 PIPES TO BUILDING 14. SEE BUILDING 14 PLAN ON THIS SHEET FOR CONTINUATION.

11 PIPES TO BUILDING 15. SEE BUILDING 15 PLAN ON THIS SHEET FOR CONTINUATION.

12 PROVIDE COMBINATION BALANCING/SHUTOFF VALVE. SET UNIT TO MAINTAIN 8 GPM FLOW.

13 1.5" SIZE REDUCED PRESSURE TYPE BACKFLOW PREVENTER COMPLETE WITH VALVES AND GAUGES. MOUNT UNIT ON WALL AT 48" ABOVE FINISHED FLOOR AND PIPE RELIEF DISCHARGE FULL SIZE TO EXTERIOR AND DISCHARGE ON AREAWAY FLOOR.

14 RELOCATED STEAM METER FROM BUILDING 1 SUB–BASEMENT SERVICE ROOM. (SHEET 1–DS4)

15 PROVIDE NEW HIGH PERFORMANCE BUTTERFLY TYPE SHUT OFF VALVE WITH CHAIN WHEEL OPERATOR. PROVIDE 1" WARM–UP BYPASS LINE WITH GLOBE VALVE AROUND NEW BUTTERFLY VALVE. REFER TO SPEC SECTION 23 22 13.

16 ROUTE NEW PIPES ABOVE EXISTING DAMPER AND RUN TIGHT TO UNDERSIDE OF BEAM THAT IS ALONG NORTH EDGE OF SHAFT. REMOVE DAMPER AS REQUIRED FOR PERFORMANCE OF THIS WORK, AND REINSTALL WHEN COMPLETE, INCLUDING ALL CONTROLS ACCESSORIES, ETC.

17 EXTEND DRAIN PIPE FROM AIR VENT TO NEAREST FLOOR DRAIN.

18 EXISTING 0.75" DOMESTIC WATER BACKFLOW PREVENTER TO REMAIN, FOR HEATING HOT WATER SYSTEM MAKEUP.

19 PROVIDE 4" CONCRETE HOUSEKEEPING PAD. CHAMFER EDGES, AND OVERHANG EQUIPMENT BY 6" ON ALL SIDES.

20 PROVIDE NEW CHEMICAL POT FEEDER, PER SPECIFICATIONS AND PIPING SCHEMATIC ON SHEET H8.

21 PROVIDE NEW 4" DIAMETER SCH. 80 PIPE HEADER AT INLET OF FLASH TANK, MIN. LENGTH 36". REFER TO FLASH TANK DETAIL ON SHEET H4 FOR SPECIALTIES REQUIRED AT CONNECTION TO HEADER.

22 EXTEND 0.75" MEDIUM PRESSURE RETURN PIPE TO PLATE AND FRAME CONVERTER SKID MEDIUM PRESSURE CONDENSATE RETURN SOURCES.

23 EXISTING FLASH TANK TO REMAIN. REFER TO DETAIL ON SHEET H4 FOR TYPICAL PIPING CONNECTIONS.

24 PROVIDE NEW HEATING HOT WATER SYSTEM MAKEUP ASSEMBLY, INCLUDING PRESSURE REDUCING VALVE & SPECIALTIES. REFER TO PIPING SCHEMATIC ON SHEET H8.

25 REFER TO SCHEDULE ON SHEET H2 & PIPING SCHEMATIC ON SHEET H8.

26 PROVIDE NEW INLINE HEATING HOT WATER PUMP. REFER TO SCHEDULE ON SHEET H2 & DETAIL ON SHEET H3.

27 REMOVE EXISTING DOMESTIC HOT WATER PIPING TO THIS POINT FOR RECONNECTION. ABANDON EXISTING DOMESTIC WATER HEATER & STORAGE TANK SYSTEM IN PLACE, EXTEND NEW DOMESTIC HOT WATER PIPING, VALVE & CONNECT TO EXISTING PIPING.

28 OPEN UPSTREAM AND DOWNSTREAM TRAP ISOLATION VALVES AND CLOSE BYPASS VALVE ONCE NEW PIPING IS INSTALLED.

29 ABANDONED PIPE, CAP NEAR UNDERSIDE OF SLAB.

30 EXISTING DUPLEX CONDENSATE PUMP TO REMAIN.

31 PROVIDE NEW DIFFERENTIAL PRESSURE SENSOR ASSOCIATED WITH NEW HOT WATER PUMPS, BETWEEN HEATING HOT WATER SUPPLY AND RETURN PIPES.

32 AUTOMATIC FLOW CONTROLLER WITH 20 GPM FLOW CARTRIDGE. REFER TO SCHEMATIC ON SHEET H8.

33 3–WAY, 2–POSTION CONTROL VAVLE. REFER TO DIAGRAM ON SHEET H8.

Revisions	Date
ADDENDUM #1	08/28/2013

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Approved: Project Director

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Dwg. 40 of 47

Office of Construction and Facilities Management

Department of Veterans Affairs

VA FORM 08-6231

TECHNOLOGY SYMBOLS

AP	CEILING MOUNTED WIRELESS ACCESS POINT WITH DATA DROP ABOVE CEILING. PROVIDE 20' COIL IN DATA CABLE TO FACILITATE RELOCATION OF WAP. WAP PROVIDED BY OWNER.
cond	CONDUIT SLEEVE / FIRE RATED SLEEVE ASSEMBLY THRU WALL (1-2" SLEEVE UNLESS NOTED OTHERWISE).
D	WALL MOUNTED VOICE/DATA OUTLET (18" MH UNLESS NOTED OTHERWISE). BOX WITH CONDUIT(S) TO ABOVE CORRIDOR CEILING. JACKS, FACEPLATE AND CABLE. REFER TO FACEPLATE DETAILS.
D X	WALL MOUNTED AV OUTLET (18" MH UNLESS NOTED OTHERWISE). BOX WITH CONDUITS TO ABOVE ACCESSIBLE CEILING. REFER TO FACEPLATE DETAILS. PROVIDE JACKS, FACEPLATE AND CABLING. SUBSCRIPT "X" INDICATES ALTERNATE CONFIGURATION.
T	TELECOM BOX AND CONDUIT, REFER TO PLANS.
TP	WALL MOUNTED PHONE OUTLET (46" MH UNLESS NOTED OTHERWISE). BOX WITH CONDUIT TO ABOVE ACCESSIBLE CEILING. JACKS, FACEPLATE AND CABLE. REFER TO FACEPLATE DETAILS.
TV X	WALL MOUNTED AV OUTLET (84" MH UNLESS NOTED OTHERWISE). BOX WITH CONDUIT. REFER TO FACEPLATE DETAILS. PROVIDE JACKS, FACEPLATE AND CABLING. SUBSCRIPT "X" INDICATES ALTERNATE CONFIGURATION.
W X	WALL MOUNTED AV OUTLET (44" MH UNLESS NOTED OTHERWISE). BOX WITH CONDUIT. REFER TO FACEPLATE DETAILS. PROVIDE JACKS, FACEPLATE AND CABLING. SUBSCRIPT "X" INDICATES ALTERNATE CONFIGURATION.
W	CUSTOM OUTLET IN SURFACE RACEWAY. OUTLET JACKS, FACEPLATE AND CABLING.
X	TECHNOLOGY FLOOR BOX. PROVIDE APPROPRIATE CONNECTOR PLATE AND HINGED COVER. "#" INDICATES OUTLET TYPE. SUBSCRIPT "X" INDICATES ALTERNATE CONFIGURATION. REFER TO FACEPLATE DETAILS.

AV SYMBOLS

15 W	SINGLE FACED, WALL MOUNTED CLOCK (102" MH UNLESS NOTED OTHERWISE). 12" DIAMETER FACE UNLESS SUBSCRIPT "15" FOR 15" DIAMETER FACE. SUBSCRIPT "W" INDICATES WIREGUARD.
15	DOUBLE FACED, WALL MOUNTED CLOCK (102" MH UNLESS NOTED OTHERWISE). 12" DIAMETER FACE UNLESS SUBSCRIPT "15" FOR 15" DIAMETER FACE.
42	FLAT PANEL DISPLAY WITH WALL MOUNTING HARDWARE (84" MH UNLESS NOTED OTHERWISE). # INDICATES NOMINAL SCREEN DIAGONAL SIZE.
PS	CEILING MOUNTED MANUAL PROJECTION SCREEN.
PS	WALL MOUNTED MANUAL PROJECTION SCREEN.
PR X	CEILING MOUNTED PROJECTOR. SUBSCRIPT "X" INDICATES CONFIGURATION TYPE, REFER TO FACEPLATE DETAILS.
SC	CEILING MOUNTED PAGING/INTERCOM SYSTEM SPEAKER.
S	HORN TYPE PAGING/INTERCOM SYSTEM SPEAKER (90" MH UNLESS NOTED OTHERWISE). 1-GANG BOX WITH 0.75" CONDUIT TO ABOVE ACCESSIBLE CEILING. GROMMETED FACEPLATE, SPEAKER, INSTALLATION AND WIRING.
S H	SURFACE MOUNTED PAGING/INTERCOM SPEAKER (90" MH UNLESS NOTED OTHERWISE). SUBSCRIPT "H" INDICATES HANGING CEILING SPEAKER. 1-GANG BOX WITH 0.75" CONDUIT TO ABOVE ACCESSIBLE CEILING, SPEAKER, INSTALLATION AND CABLING.
V	PAGING/INTERCOM SYSTEM WALL MOUNTED SPEAKER VOLUME CONTROLLER (46" MH UNLESS NOTED OTHERWISE). 1-GANG BOX AND 0.75" CONDUIT TO ABOVE ACCESSIBLE CEILING, VOLUME CONTROLLER WITH FACEPLATE, INSTALLATION AND WIRING.

SECURITY SYMBOLS

CC X	CCTV SYSTEM CEILING MOUNTED CAMERA. REFER TO CAMERA SCHEDULE FOR MOUNTING HEIGHT AND CAMERA SPECIFICATIONS. SUBSCRIPT "X" INDICATES ENTRY IN CAMERA SCHEDULE.
CE	PROVIDE INTERFACE FROM CARD ACCESS SYSTEM INTO ELEVATOR CONTROLLER INCLUDING ALL NECESSARY HARDWARE, PROGRAMMING AND CABLING AS COORDINATED WITH ELEVATOR CONTRACTOR.
GB	GLASS BREAK.
IM	DESK MOUNTED INTERCOM MASTER STATION.
MD	CEILING MOUNTED MOTION DETECTOR.
PB	DESK MOUNTED PUSH BUTTON FOR LOCAL ELECTRONIC DOOR RELEASE.
PP	DESK MOUNTED PANIC/DURESS BUTTON.
CC X	CCTV SYSTEM WALL MOUNTED CAMERA (REFER TO CAMERA SCHEDULE FOR MOUNTING HEIGHT AND CAMERA SPECIFICATIONS). SUBSCRIPT "X" INDICATES ENTRY IN CAMERA SCHEDULE. 1-GANG BOX WITH 0.75" CONDUIT TO ABOVE ACCESSIBLE CEILING, CAMERA AND CABLING.
CR	FUTURE WALL MOUNTED PROXIMITY CARD READER (46" MH UNLESS NOTED OTHERWISE). PROVIDE 1-GANG BOX WITH CONDUIT TO COMMON SMS JUNCTION BOX ABOVE ACCESSIBLE CEILING.
CR EL	ELEVATOR CAB MOUNTED CARD READER. READER TO BE INSTALLED IN ELEVATOR CAB AS COORDINATED WITH ELEVATOR CONTRACTOR. WIRING FROM CAB THRU TRAVELING CABLE TO ELEVATOR CONTROLLER IN ELEVATOR MACHINE ROOM AND INTERFACE WITH ELEVATOR CONTROLLER AND SMS. COORDINATE WITH ELEVATOR CONTRACTOR. REFER TO SECURITY ROUGH-IN DETAILS.
DC	LOCAL IP BASED 2-DOOR ACCESS CONTROL PANEL SERVING LOCAL CARD READER/SECURITY CONTROLLED DOORS. LOCATE ABOVE ADJACENT ACCESSIBLE CEILING. PROVIDE DATA DROP IN 0.75" CONDUIT TO LOCAL DATA CLOSET. EXTEND 1" CONDUIT WITH DOOR SECURITY WIRING TO LOCAL SECURITY SYSTEM JUNCTION BOX. REFER TO SECURITY ROUGH-IN DETAILS FOR WORK.
DM	FUTURE DOOR POSITION SWITCH. PROVIDE CONDUIT PATHWAYS FROM DOOR FRAME TO COMMON SMS JUNCTION BOX ABOVE ACCESSIBLE CEILING.
EL	ELECTRONIC DOOR LOCK AND INSTALLATION BY OTHERS. LOW VOLTAGE WIRING. CONDUIT PATHWAYS FROM DOOR FRAME TO COMMON SMS JUNCTION BOX ABOVE ACCESSIBLE CEILING. REFER TO SECURITY ROUGH-IN DETAILS.
EM	ELECTRONIC MAG LOCK AND INSTALLATION BY OTHERS. LOW VOLTAGE WIRING. CONDUIT PATHWAYS FROM DOOR FRAME TO COMMON SMS JUNCTION BOX ABOVE ACCESSIBLE CEILING. REFER TO SECURITY ROUGH-IN DETAILS.
ES	FUTURE ELECTRONIC STRIKE. PROVIDE CONDUIT PATHWAYS FROM DOOR FRAME TO COMMON SMS JUNCTION BOX ABOVE ACCESSIBLE CEILING.
HA	WALL/PEDESTAL MOUNT HANDICAP DOOR ACTUATOR BUTTON, FURNISHED BY OTHERS. BOX AS REQUIRED BY SYSTEM MANUFACTURER WITH INSTALLATION AND CONDUIT TO COMMON SMS JUNCTION BOX ABOVE ACCESSIBLE CEILING . ALL LOW VOLTAGE WIRING AND INTERFACE WITH SMS AND DOOR MOTOR. REFER TO SECURITY ROUGH-IN DETAILS.
HD	HANDICAP DOOR OPERATOR MOTOR ASSEMBLY BY OTHERS. 120V POWER CONNECTION AND CONDUIT FROM DOOR FRAME TO COMMON SMS JUNCTION BOX ABOVE ACCESSIBLE CEILING. LOW VOLTAGE WIRING AND INTERFACE WITH SMS AND DOOR ACTUATOR BUTTONS. REFER TO SECURITY ROUGH-IN DETAILS.
IC	WALL MOUNTED INTERCOM DOOR STATION (46" MH UNLESS NOTED OTHERWISE). 1-GANG BOX WITH 0.75" CONDUIT TO ABOVE ACCESSIBLE CEILING. INTERCOM AND CABLING.
JB	SECURITY SYSTEM JUNCTION BOX TO BE LOCATED ABOVE ACCESSIBLE CEILING (MIN 6"X6"X4"). ROUTE LOCAL DOOR SECURITY WIRING CONDUITS/RACEWAYS TO JUNCTION BOX. EXTEND 1" CONDUIT WITH DOOR SECURITY WIRING TO LOCAL 2-DOOR CONTROL PANEL/REMOTE DOOR CONTROL PANEL AS INDICATED ON DRAWINGS. REFER TO SECURITY ROUGH-IN DETAILS FOR WORK.
K	WALL MOUNTED SECURITY KEYPAD ENTRY STATION (46" MH UNLESS NOTED OTHERWISE). 1-GANG BOX WITH 0.75" CONDUIT TO COMMON SMS JUNCTION BOX ABOVE ACCESSIBLE CEILING, KEYPAD AND CABLING.
KC	WALL MOUNTED COMBINATION KEYPAD/CARDREADER (46" MH UNLESS NOTED OTHERWISE). 2-GANG BOX WITH 0.75" CONDUIT TO COMMON SMS JUNCTION BOX ABOVE ACCESSIBLE CEILING, DEVICE AND CABLING.
MD	CEILING MOUNTED MOTION DETECTOR. 1-GANG BOX MOUNTED IN CEILING, DETECTOR AND CABLING.
MD	WALL MOUNTED MOTION DETECTOR (90" MH UNLESS NOTED OTHERWISE). 1-GANG BOX WITH 0.75" CONDUIT TO ABOVE ACCESSIBLE CEILING. MOTION DETECTOR, WALL MOUNT HARDWARE, AND CABLING.
PB W	WALL MOUNTED PUSH BUTTON FOR LOCAL ELECTRONIC DOOR RELEASE (46" MH UNLESS NOTED OTHERWISE). 1-GANG BOX WITH 0.75" CONDUIT TO ABOVE ACCESSIBLE CEILING, BUTTON AND CABLING.
PP W	WALL MOUNTED PANIC/DURESS BUTTON (46" MH UNLESS NOTED OTHERWISE). 1-GANG BOX WITH 0.75" CONDUIT TO ABOVE ACCESSIBLE CEILING, BUTTON AND CABLING.
PS X	LOCAL LOW VOLTAGE POWER SUPPLY FOR EXTERIOR CAMERA. SUBSCRIPT "X" INDICATES ASSOCIATED CAMERA. 120V POWER INTO LOCAL JUNCTION BOX ABOVE CEILING AND CONNECTION TO POWER SUPPLY. POWER SUPPLY MOUNTED ABOVE CEILING AND LOW VOLTAGE WIRING TO LOCAL CAMERA.
RX	FUTURE WALL MOUNTED REQUEST TO EXIT PIR DETECTOR. PROVIDE CONDUIT PATHWAYS FROM DOOR FRAME TO COMMON SMS JUNCTION BOX ABOVE ACCESSIBLE CEILING.
X	WALL MOUNTED SECURITY SYSTEM WIRING OUTLET MOUNTED BELOW COUNTER TOP. 2-GANG BOX WITH 2-1" CONDUITS TO COMMON SMS JUNCTION BOX ABOVE ACCESSIBLE CEILING. GROMMETED FACEPLATE AND SECURITY SYSTEM CABLING.

ELECTRICAL SYMBOLS

3 $	DASH SYMBOL INDICATES PARTICULAR OUTLET OR DEVICE TO BE REMOVED AND CIRCUITRY MADE CONTINUOUS WHERE REQUIRED.
3 $	EXISTING OUTLET OR DEVICE TO REMAIN. MAINTAIN EXISTING CIRCUITING.
	ELECTRICAL CONNECTION.
	20A-125V DUPLEX RECEPTACLE, NEMA 5-20R (18" MH UNLESS NOTED OTHERWISE).
	20A-125V SINGLE RECEPTACLE, NEMA 5-20R (18" MH UNLESS NOTED OTHERWISE).
	SPECIAL PURPOSE RECEPTACLE. REFER TO NOTE ON PLAN.
	20A-125V DOUBLE DUPLEX RECEPTACLE. NEMA 5-20R, (18" MH UNLESS NOTED OTHERWISE) TWO GANG ASSEMBLY.
T	20A-125V DUPLEX RECEPTACLE, NEMA 5-20R WITH BOTTOM OUTLET CONTROLLED BY WALL SWITCH. (18" MH UNLESS NOTED OTHERWISE).
	20A-125V DUPLEX RECEPTACLE, NEMA 5-20R (46" MH UNLESS NOTED OTHERWISE).
GF T	20A-125V DUPLEX RECEPTACLE, NEMA 5-20R, WITH GROUND FAULT CIRCUIT INTERRUPTER (18" MH UNLESS NOTED OTHERWISE).
WP T	20A-125V WEATHERPROOF DUPLEX RECEPTACLE, NEMA 5-20R (HORIZONTAL 18" MH UNLESS NOTED OTHERWISE) WITH WEATHERPROOF COVER, VERTICAL MOUNT.
WP/GF	20A-125V WEATHERPROOF DUPLEX RECEPTACLE, NEMA 5-20R WITH GROUND FAULT CIRCUIT INTERRUPTER (18" MH UNLESS NOTED OTHERWISE), WITH WEATHERPROOF COVER, VERTICAL MOUNT.
EM T	20A-125V DUPLEX RECEPTACLE, NEMA 5-20R, ON EMERGENCY POWER (18" MH UNLESS NOTED OTHERWISE).
T	20A-125V POWERLOCK GROUNDING TYPE RECEPTACLE, HOSPITAL USE (66" MH UNLESS NOTED OTHERWISE).
	20A-125V DUPLEX PEDESTAL TYPE FLOOR RECEPTACLE. PROVIDE CARPET FLANGE WHERE REQUIRED.
	20A-125V DUPLEX RECEPTACLE IN FLOOR BOX. PROVIDE CARPET FLANGE WHERE REQUIRED.
G	20-125V DUPLEX RECEPTACLE, NEMA 5-20R, WITH ISOLATED GROUND (18" MH UNLESS NOTED OTHERWISE).
20A	20A-125/250V-1PH-4W SINGLE RECEPTACLE, NEMA 14-20R (18" MH UNLESS NOTED OTHERWISE).
30A	30A-125/250V-1PH-4W SINGLE RECEPTACLE, NEMA 14-30R (18" MH UNLESS NOTED OTHERWISE).
50A	50A-125/250V-1PH-4W SINGLE RECEPTACLE, NEMA 14-50R (18" MH UNLESS NOTED OTHERWISE).
20A	20A-250V-3PH-4W SINGLE RECEPTACLE, NEMA 15-20R (18" MH UNLESS NOTED OTHERWISE).
30A	30A-250V-3PH-4W SINGLE RECEPTACLE, NEMA 15-30R (18" MH UNLESS NOTED OTHERWISE).
50A	50A-250V-3PH-4W SINGLE RECEPTACLE, NEMA 15-50R (18" MH UNLESS NOTED OTHERWISE).
J	JUNCTION BOX.
	MULTI-OUTLET RECEPTACLES ASSEMBLY, NEMA 5-15R (SINGLE OUTLETS ON 18" CENTERS) (46" MH UNLESS NOTED OTHERWISE).
C	CLOCK HANGER OUTLET, SINGLE NEMA 5-15R RECESSED IN COVER PLATE (84" MH UNLESS NOTED OTHERWISE).
$	SINGLE POLE SWITCH (46" MH UNLESS NOTED OTHERWISE).
2 $	TWO POLE WALL SWITCH (46" MH UNLESS NOTED OTHERWISE).
3 $	THREE-WAY WALL SWITCH (46" MH UNLESS NOTED OTHERWISE).
4 $	FOUR-WAY WALL SWITCH (46" MH UNLESS NOTED OTHERWISE).
P $	SWITCH WITH NEON PILOT LIGHT. ONE-GANG ASSEMBLY (46" MH UNLESS NOTED OTHERWISE).
K $	KEY OPERATED WALL SWITCH (46" MH UNLESS NOTED OTHERWISE).
L $	LOW-VOLTAGE MOMENTARY WALL SWITCH (46" MH UNLESS NOTED OTHERWISE).
DM $	LIGHTING DIMMER SWITCH (46" MH UNLESS NOTED OTHERWISE) 1000 WATTS UNLESS OTHERWISE INDICATED.
R $	SWITCH WITH RECEPTACLE (46" MH UNLESS NOTED OTHERWISE) STANDARD TWO-GANG ASSEMBLY OF SWITCH AND RECEPTACLE.
M $	FLUSH FRACTIONAL HORSEPOWER MOTOR STARTER WITH NEON PILOT LIGHT. ONE-GANG ASSEMBLY (46" MH UNLESS NOTED OTHERWISE).
H $	HP RATED WALL SWITCH (46" MH UNLESS NOTED OTHERWISE).
	ELECTRICAL PANEL OR SWITCHBOARD PER DRAWINGS.
P/B	PULL BOX.
J	DISCONNECT SWITCH.
	MOTOR STARTER.
J	COMBINATION MOTOR STARTER AND DISCONNECT SWITCH.
	ELECTRIC MOTOR.
UH	UNIT HEATER.
FC	FAN COIL.
AC	AIR CONDITIONER.
CU	CONDENSING UNIT.
UV	UNIT VENTILATOR.
CR	CORD REEL.
PP	POWER POLE.
T	LINE VOLTAGE THERMOSTAT.
DH	DUCT HEATER.
EB	ELECTRIC BASEBOARD HEATER.
M	INTERCOM SYSTEM DESK MOUNTED MASTER CONTROL STATION. SUBSCRIPT "W" INDICATES WALL MOUNT (46" MH UNLESS NOTED OTHERWISE).
I	INTERCOM STAFF STATION (46" MH UNLESS NOTED OTHERWISE).
H	INTERCOM HORN TYPE SPEAKER (84" MH UNLESS NOTED OTHERWISE).
S	INTERCOM SPEAKER FLUSH MOUNT IN CEILING.
	PUSHBUTTON (46" MH UNLESS NOTED OTHERWISE).
	BUZZER (90" MH UNLESS NOTED OTHERWISE).
B	4" DIAMETER BELL (90" MH UNLESS NOTED OTHERWISE).
	ELAPSED TIME INDICATOR CLOCK (90" MH UNLESS NOTED OTHERWISE) WITH RESET SWITCH (46" MH UNLESS NOTED OTHERWISE).
PC	PHOTOELECTRIC SENSOR.
LC	LIGHTING CONTACTOR.
OS	CEILING MOUNTED OCCUPANCY SENSOR.
OS	WALL MOUNTED OCCUPANCY SENSOR.
DS	CEILING MOUNTED DAYLIGHT SENSOR.
OP	OCCUPANCY SENSOR POWER PACK.

FIRE ALARM SYMBOLS

FACP	FIRE ALARM CONTROL PANEL.
15 F	FIRE ALARM SPEAKER & SIGNAL LIGHT (80" AFF). (# WHEN SHOWN INDICATES CANDELA RATING OF STROBE. WHEN A # IS NOT SHOWN, THE STROBE SHALL BE RATED 75 CANDELA.
15 F	FIRE ALARM BELL & SIGNAL LIGHT (80" AFF). (# WHEN SHOWN INDICATES CANDELA RATING OF STROBE. WHEN A # IS NOT SHOWN, THE STROBE SHALL BE RATED 75 CANDELA.
15 F	FIRE ALARM CHIME & SIGNAL LIGHT (80" AFF). (# WHEN SHOWN INDICATES CANDELA RATING OF STROBE. WHEN A # IS NOT SHOWN, THE STROBE SHALL BE RATED 75 CANDELA.
15 F	FIRE ALARM HORN & SIGNAL LIGHT (80" AFF). (# WHEN SHOWN INDICATES CANDELA RATING OF STROBE. WHEN A # IS NOT SHOWN, THE STROBE SHALL BE RATED 75 CANDELA.
15 F	FIRE ALARM SIGNALING LIGHT (80" AFF). (# WHEN SHOWN INDICATES CANDELA RATING OF STROBE. WHEN A # IS NOT SHOWN, THE STROBE SHALL BE RATED 75 CANDELA.
S F	CEILING MOUNTED FIRE ALARM SPEAKER.
F K	FIRE ALARM MANUAL STATION (46" MH UNLESS NOTED OTHERWISE). SUBSCRIPT "K" INDICATES KEY OPERATED.
S	CEILING MOUNTED SMOKE DETECTOR.
H	CEILING MOUNTED HEAT DETECTOR.
S S/R	DUCT MOUNTED SMOKE DETECTOR. SUBSCRIPT "S" INDICATES SUPPLY. SUBSCRIPT "R" INDICATES RETURN.
H S/R	DUCT MOUNTED HEAT DETECTOR. SUBSCRIPT "S" INDICATES SUPPLY. SUBSCRIPT "R" INDICATES RETURN.
C	ELECTRIC RELEASE DOOR CLOSER.
D	ELECTRO-MAGNETIC DOOR HOLDER.
FS	WATER FLOW SWITCH.
V	VALVE SUPERVISORY SWITCH.
R W	DUCT MOUNTED DETECTOR REMOTE TEST STATION AND ALARM INDICATOR LIGHT. SUBSCRIPT "W" INDICATES WALL MOUNTED.
SD	SMOKE DAMPER.
FT	FIRE FIGHTER'S TELEPHONE (60" MH UNLESS NOTED OTHERWISE).
PS	PRESSURE SWITCH.
AM I/O	ADDRESSABLE MODULE. SUBSCRIPT "I" INDICATES INPUT. SUBSCRIPT "C" INDICATES CONTROL.
PIV	POST INDICATOR VALVE.
K	KNOX BOX.

LUMINAIRE SYMBOLS

A a	LIGHTING FIXTURE. CAPITAL LETTER DENOTES FIXTURE TYPE, LOWER CASE LETTER DENOTES SWITCHING ARRANGEMENT.
	LIGHTING FIXTURE ON NIGHT LIGHT OR EMERGENCY CIRCUIT.
	EXIT LIGHTING FIXTURE, ARROWS AS INDICATED.

NURSE CALL SYMBOLS

NCCP	NURSE CALL CONTROL PANEL.
NM W	NURSE CALL DESK MOUNTED MASTER CONTROL STATION (OUTLET AT 18" MH UNLESS NOTED OTHERWISE). SUBSCRIPT "W" INDICATES WALL MOUNT (46" MH UNLESS NOTED OTHERWISE).
NS	NURSE CALL STAFF STATION (46" MH UNLESS NOTED OTHERWISE).
ND	NURSE CALL DUTY STATION (46" MH UNLESS NOTED OTHERWISE).
N L	NURSE CALL STATION WITH PULL CORD FOR PATIENT USE (33" MH IN TOILET ROOMS, 90" M.H. IN SHOWERS AND WET AREAS, 46" MH UNLESS NOTED OTHERWISE IN ALL OTHER AREAS).
NC	PATIENT NURSE CALL UTILITY CONSOLE (46" MH UNLESS NOTED OTHERWISE).
N	PATIENT NURSE CALL STATION (ONE OR TWO CORDS AS INDICATED, 46" MH UNLESS NOTED OTHERWISE).
N	CEILING MOUNTED NURSE CALL DOME LIGHT.
H N	WALL MOUNTED NURSE CALL DOME LIGHT (90" MH UNLESS NOTED OTHERWISE).
N B	CEILING MOUNTED COMBINATION DOME LIGHT AND BUZZER.
N Z	CEILING MOUNTED NURSE CALL ZONE LIGHT.
N E	NURSE CALL EMERGENCY BUTTON (46" MH UNLESS NOTED OTHERWISE).
N B	EMERGENCY CODE BLUE BUTTON (46" MH UNLESS NOTED OTHERWISE).

NOTE : ALL SYMBOLS AND ABBREVIATIONS ARE SUBJECT TO MODIFICATIONS ON OTHER DRAWINGS.

ALL SYMBOLS OR ABBREVIATIONS MIGHT NOT NECESSARILY BE USED ON THIS PROJECT.

ABBREVIATIONS

AAP - AREA ALARM PANEL - MEDICAL GAS
CC - ACCESS
ADJ - ADJUSTABLE
AF - ARC FAULT CIRCUIT INTERUPTER
AFCI - ARC FAULT CIRCUIT INTERUPTER
AFF - ABOVE FINISHED FLOOR TO BOTTOM OF ITEM
AFG - ABOVE FINISHED GRADE TO BOTTOM OF ITEM
ALT - ALTERNATE
AP - ACCESS PANEL
APPROX - APPROXIMATE
ARCH - ARCHITECT OR ARCHITECTURAL
ASSY - ASSEMBLY
ATS - AUTOMATIC TRANSFER SWITCH

BLDG - BUILDING
BOE - BOTTOM OF EQUIPMENT
BOT - BOTTOM
BTWN - BETWEEN

CFCI - CONTRACTOR FURNISHED CONTRACTOR INSTALLED
CKT - CIRCUIT
CLG - CEILING
CMU - CONCRETE MASONRY UNIT
CONN - CONNECT OR CONNECTION
CONTR - CONTRACTOR
CORR - CORRIDOR
CTR - CENTER

D - DEPTH
DET - DETAIL
DIA - DIAMETER
DIM - DIMENSION
DIV - DIVISION
DN - DOWN
DWG - DRAWING

EA - EACH
EC - ELECTRICAL CONTRACTOR (DIVISION 26)
EJ - EXPANSION JOINT
ELEC - ELECTRICAL
ELEV - ELEVATION OR ELEVATOR
EM - EMERGENCY
EQ - EQUAL
EQS - EQUIPMENT SUPPLIER
EQUIP - EQUIPMENT
ETR - EXISTING TO REMAIN
EX - EXISTING
EXP - EXPANSION
EXT - EXTERIOR
EX/R - EXISTING TO BE RELOCATED
FCE - FIRE CONTROL EQUIPMENT
FF - FINISHED FLOOR ELEVATION
FLR - FLOOR
FSC - FIRE SUPPRESSION CONTRACTOR (DIVISION 21)
FT - FEET
FTG - FOOTING
EX/R- EXISTING TO BE RELOCATED
GC - GENERAL CONTRACTOR
GF - GROUND FAULT CIRCUIT INTERRUPTER
GFCI - GROUND FAULT CIRCUIT INTERRUPTER OR GOVERNMENT FURNISHED CONTRACTOR INSTALLED
GFFT - GROUND FAULT FEED THRU

HC - HVAC CONTRACTOR (DIVISION 23)
HP - HORSE POWER OR HIGH POINT
HVAC - HEATING, VENTILATING, AND AIR CONDITIONING

ID - INSIDE DIAMETER
IN - INCHES

KEC - KITCHEN EQUIPMENT CONTRACTOR

L - LENGTH
LBS - POUNDS

MAP - MASTER ALARM PANEL (MEDICAL GAS)
MAX - MAXIMUM
MEZZ - MEZZANINE
MFR - MANUFACTURER
MH - MANHOLE OR MOUNTING HEIGHT TO CENTER LINE OF ITEM
MIN - MINIMUM OR MINUTE
MISC - MISCELLANEOUS
MTD - MOUNTED
MTG - MOUNTING

NIC - NOT IN CONTRACT
NOM - NOMINAL
NTS - NOT TO SCALE

OD - OUTSIDE DIAMETER
OFCI - OWNER FURNISHED CONTRACTOR INSTALLED
OFOI - OWNER FURNISHED OWNER INSTALLED

PC - PLUMBING CONTRACTOR (DIVISION 22)
PLBG - PLUMBING

RAD - RADIUS
REC - RECESSED
REQD - REQUIRED
RI - ROUGH-IN

S - SURFACE MOUNTED
SC - SECURITY CONTRACTOR
SCH - SCHEDULE
SHT - SHEET
SMS - SECURITY MANAGEMENT SYSTEM
SPEC - SPECIFICATIONS
SQ - SQUARE
SS - STAINLESS STEEL
STD - STANDARD
STRUC - STRUCTURAL OR STRUCTURE
SUC - SITE UTILITY CONTRACTOR

TC - TECHNOLOGY CONTRACTOR
TEMP - TEMPERATURE
TOE - TOP OF EQUIPMENT
TYP - TYPICAL

UNO - UNLESS NOTED OTHERWISE

VFD - VARIABLE FREQUENCY DRIVE
VOL - VOLUME

W/ - WITH
W/0 - WITHOUT
WP - WEATHERPROOF

ZVC - ZONE VALVE CABINET

GENERAL FLOOR PLAN NOTES

B / E2	DETAIL: B = DETAIL DESIGNATION E2 = SHEET WHERE DETAIL IS LOCATED
1 / E2	SECTION: 1 = SECTION DESIGNATION E2 = SHEET WHERE DETAIL IS LOCATED
3	PLAN NOTE. APPLIES ONLY TO THE SHEET WHICH IT IS SHOWN.
3	DETAIL NOTE. APPLIES ONLY TO THE ASSOCIATED DETAIL.
	CABLE TRAY, 12" x 4" DEEP UNLESS NOTED OTHERWISE.
	WIRE & CONDUIT IN WALL OR ABOVE CEILING.
	WIRE & CONDUIT IN OR BELOW SLAB OR GRADE.
	CONDUIT TO BE REMOVED.
E	EXISTING WIRE & CONDUIT TO REMAIN.
DAT	CONDUIT FOR DATA CIRCUITRY.
EM	WIRE & CONDUIT FOR EMERGENCY CIRCUITRY.
FA	WIRE & CONDUIT FOR FIRE ALARM CIRCUITRY.
I	WIRE & CONDUIT FOR INTERCOM SYSTEM CIRCUITRY.
NC	WIRE & CONDUIT FOR NURSE CALL CIRCUITRY.
NL	WIRE & CONDUIT FOR NIGHT LIGHT CIRCUITRY.
PHO	CONDUIT FOR PHONE CIRCUITRY.
S	WIRE & CONDUIT FOR SOUND SYSTEM CIRCUITRY.
SEC	WIRE & CONDUIT FOR SECURITY SYSTEM CIRCUITRY.
TV	WIRE & CONDUIT FOR TELEVISION SYSTEM CIRCUITRY.
W	WIRE RUN IN SURFACE WIREWAY.
CM	CABLE MANAGEMENT SYSTEM PATHWAY.
X - 1,2	EACH ARROWHEAD REPRESENTS ONE COMPLETE CIRCUIT; "X" DENOTES PANEL NAME; NUMBER(S) DENOTES CIRCUIT(S).

INDEX OF DRAWINGS

SHEET	DESCRIPTION
E1	SYMBOLS, AND INDEX
E2	SCHEDULES & DETAILS
1-EB1	BASEMENT FLOOR PLAN
1-E51	FIFTH FLOOR PENTHOUSE PLAN
1-E101	TENTH FLOOR PENTHOUSE PLANS
1-ES1	SERVICE ROOM PLAN
15-EB1	BUILDING 15 BASEMENT PLAN

Revisions	Date
ADDENDUM #1	08/28/2013

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PROJECT NO. 2012-04005 FIRM LICENSE: 01528

Drawing Title: LEGEND AND INDEX

Approved: Project Director

Project Title: HOSPITAL STEAM SYSTEM RECORD DRAWINGS

Project Number: 539-13-107

Building Number:

Location: CINCINNATI, OHIO

Date: 01/04/2013 | Checked: MSG | Drawn: SC

Drawing Number: E1

Dwg. 41 of 47

Office of Construction and Facilities Management

Department of Veterans Affairs

VA FORM 08-6231

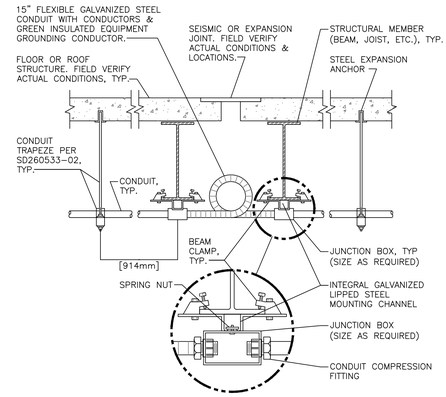
MOTORS, STARTERS, DISCONNECTS & CONTROLS

MOTOR										STARTER												DISCONNECT MEANS										CONTROL				FEEDER				
			CHARACTERISTICS								TYPE					LOCATION						TYPE				LOCATION														
MOTOR NUMBER	CIRCUIT NO.	NAMEPLATE	HP (KVA OR FLA)	120V-1PH	208V-3PH	277V-1PH	480V-1PH	480V-3PH	LOCATION	NEMA SIZE	MANUAL	MAGNETIC	BUILT-IN V.A.	2-SPEED WINDING	VFD	SEE NOTE	NEAR MOTOR	MOTOR CONT. CENTER	REMOTE CONT. PANEL	ROOM NUMBER	SEE NOTE	FURNISHED BY	DISC. SWITCH	MANUAL MOTOR	RECEPTACLE	FEEDER SW. OR BREAKER	NEAR MOTOR	MOTOR CONT. CENTER	VFD	PANELBOARD	SEE NOTE	FURNISHED BY	INTERLOCK WITH A.H.U. BY E.C.	MANUAL AT STARTER	MANUAL WITH EQUIPMENT	DIV. 23	SEE NOTE	NUMBER OF CONDUCTORS	WIRE SIZE	GRD. SIZE	CONDUIT SIZE	SEE NOTE
1-P2	MCC	HOT WATER PUMP	10					●	BASEMENT	–					●		●					EX/R	●						●			EX/R				●		3	10	10	.75	
1-P3	MCC	HOT WATER PUMP	10					●	BASEMENT	–					●		●					EX/R	●						●			EX/R				●		3	10	10	.75	
1-P3	LSA10A	HOT WATER PUMP	5		●				10TH PENTHOUSE	–					●		●					DIV 26	●						●	●		DIV 26				●		3	10	10	.75	
1-P4	LSA10A	HOT WATER PUMP	5		●				10TH PENTHOUSE	–					●		●					DIV 26	●						●	●		DIV 26				●		3	10	10	.75	
1-P5	LSA10A	HOT WATER PUMP	5		●				10TH PENTHOUSE	–					●		●					DIV 26	●						●	●		DIV 26				●		3	10	10	.75	
DWCP	CSB	DOM. WAT. RECIRC. PUMP	2/5	●					SERVICE ROOM	0		●					●					DIV 26	●					●				DIV 26						2	12	12	.75	
15-P1	15E1	HOT WATER PUMP	2		●				B15 BASEMENT	–					●		●					DIV 26	●						●			DIV 26				●		3	12	12	.75	
15-P2	15E1	HOT WATER PUMP	2		●				B15 BASEMENT	–					●		●					DIV 26	●						●			DIV 26				●		3	12	12	.75	

10 KAIC PANEL: LSA10A (NEW)		MOUNTING: SURFACE	
CONN. LOAD: 18.2 KVA		DEMAND LOAD: 12 KVAD (33A)	
MAINS: 100A M.L.O.		VOLTAGE: 208Y/120V-3PH-4W	

REMARKS	KVA	BKR.	CKT. NO.		BKR.	KVA	REMARKS
HWP	6.0-M	30/3	1	2	30/3	6.0-M	HWP
			3	4			
			5	6			
HWP	6.0-M	30/3	7	8	20/1	0.2-C	METER
			9	10			SPARE
			11	12			
SPACE			13	14			
			15	16	15/3		
			17	18			
			19	20			
			21	22	15/3		
			23	24			
TVSS		30/3	25	26			
			27	28	15/2		
			29	30			
			31	32			
			33	34			
			35	36			
			37	38			
			39	40			
			41	42			

ABBREVIATIONS: L-LIGHTS, R-RECEPTACLES, M-MOTORS, H-RESISTANCE HEAT, C-CONTROL, M.L.O.-MAIN LUGS ONLY, D.S.L.-DOUBLE SET OF LUGS, M.B.-MAIN BREAKER, L.C.- LOCKING CLIP ON BREAKER



CONDUIT JOINT CROSSING DETAIL

NTS

ELECTRICAL GENERAL NOTES

A. THESE NOTES APPLY EQUALLY TO THE FULL SET OF DOCUMENTS.

B. SITE VISIT(S) SHALL BE AS OUTLINED IN PROJECT SPECIFICATIONS.

C. INCLUDE ALL WORK NECESSARY TO ACCOMMODATE PHASING. REFER TO ARCHITECTURAL DRAWINGS AND GENERAL REQUIREMENTS SECTION 01 00 00.

D. ALL WORK MUST BE COORDINATED WITH THE CONTRACTING OFFICER AND COTR TO MAINTAIN OPERATION OF THE EXISTING FACILITY.

E. ALL WORK SHALL BE PERFORMED IN COMPLETE COMPLIANCE WITH ALL CURRENT GOVERNING CODES AND STANDARDS.

F. EXISTING CONDITIONS SHOWN HAVE BEEN BASED UPON AVAILABLE DRAWING INFORMATION, AND MAY BE AT VARIANCE WITH ACTUAL WORK IN PLACE. THE CONTRACTOR SHALL TAKE ALL NECESSARY FIELD MEASUREMENTS AND FIELD VERIFY ALL CONDITIONS AFFECTING THE EXECUTION OF THE WORK. ANY DISCREPANCIES BETWEEN EXISTING CONDITIONS AND THE WORK SHOWN ON THE CONTRACT DOCUMENTS WHICH MAY IMPACT THE PROGRESS OF THE WORK SHALL BE BROUGHT TO THE ATTENTION OF THE CONTRACTING OFFICER IN WRITING FOR RESOLUTION BEFORE PROCEEDING WITH THE WORK.

G. ALL PENETRATIONS THROUGH FIRE-RATED ASSEMBLIES SHALL BE PROTECTED AND/OR FIRE-STOPPED AS REQUIRED TO MAINTAIN FIRE-RATINGS INDICATED. COORDINATE WITH ALL TRADES TO ENSURE FIRE-RATED PENETRATION REQUIREMENTS AND DETAILS ARE MET.

H. ANNULAR SPACE OF ALL PIPE, CONDUIT, DUCT & OTHER SIMILAR PENETRATIONS OF FIRE RATED ASSEMBLIES SHALL BE FIRESTOPPED. IN ADDITION, PENETRATIONS THROUGH 0-HOUR RATED WALLS & FLOORS SHALL BE FIRESTOPPED TO RETARD PASSAGE OF FIRE & SMOKE.

I. ALL CONDUITS IN FINISHED ROOMS, CORRIDORS, ETC. SHALL BE CONCEALED IN A WALL OR ABOVE CEILING.

J. ACCESS PANELS IN NON ACCESSIBLE CEILINGS SHALL BE PROVIDED FOR ALL ELECTRICAL ITEMS REQUIRING ACCESS.

K. ALL CUTTING AND PATCHING REQUIRED FOR THIS PROJECT SHALL BE INCLUDED IN THE CONTRACT. REFINISH ANY SURFACE DISTURBED UNDER THIS WORK TO MATCH EXISTING.

L. ANY REMOVED EQUIPMENT SHALL BE TURNED OVER TO THE VA. ITEMS NOT DESIRED BY THE VA SHALL BE REMOVED FROM THE PREMISES AND DISPOSED OF PROPERLY BY THE CONTRACTOR.

M. THE CONTRACT DRAWINGS ARE NOT INTENDED TO SHOW EVERY VERTICAL OR HORIZONTAL OFFSET WHICH MAY BE NECESSARY TO COMPLETE THE SYSTEMS. COORDINATE WORK IN ADVANCE WITH ALL OTHER TRADES AND REPORT IMMEDIATELY AND DIFFICULTIES WHICH CAN BE ANTICIPATED.

N. ALL ABANDONED EXTRANEOUS CONDUITS, WIRING, DEVICES, ETC. SHALL BE REMOVED.

O. REFER TO MECHANICAL DRAWINGS FOR ADDITIONAL INFORMATION CONCERNING MECHANICAL EQUIPMENT THAT REQUIRES ELECTRICAL CONNECTIONS.

Revisions:	Date
ADDENDUM #1	08/28/2013

VA FORM 08-6231

CONSULTANTS:

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PROJECT NO. 2012-04005 FIRM LICENSE: 01528

Drawing Title: SCHEDULES AND DETAIL

Approved: Project Director

Project Title: HOSPITAL STEAM SYSTEM RECORD DRAWINGS

Location: CINCINNATI, OHIO

Date: 01/04/2013 | Checked: MSG | Drawn: SC

Project Number: 539-13-107

Building Number

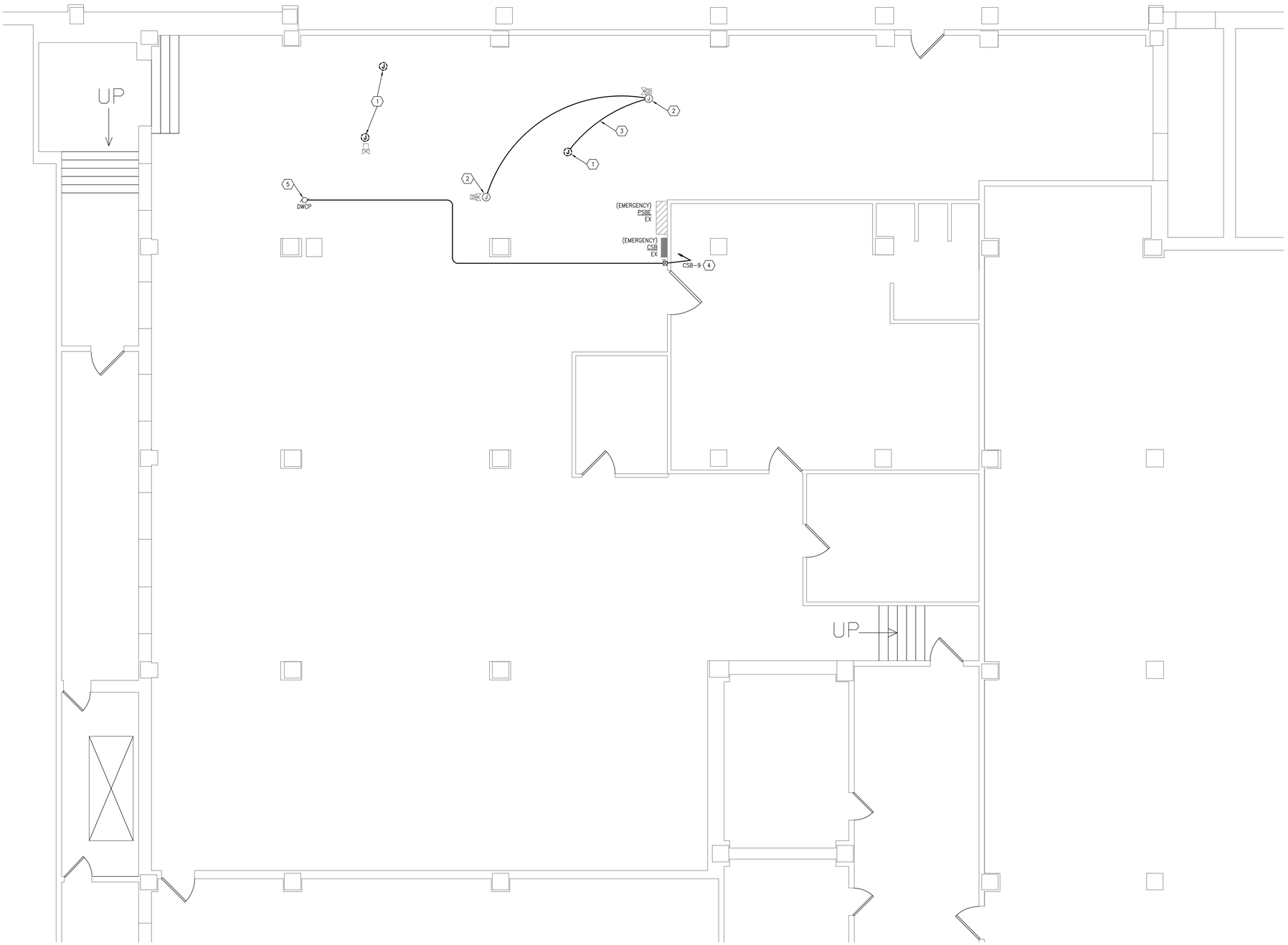
Drawing Number: E2

Dwg. 42 of 47

Office of Construction and Facilities Management

Department of Veterans Affairs

E:\2012\2012-04005\AutoCAD\2012\CVAMC REPLACE HOSPITAL STEAM AND HEATING SYSTEM\E2 SCHEDULES.dwg 8-29-13 10:21:19 AM DRVanWinkle
HEAPY ENGINEERING DAYTON/COLUMBUS, OHIO & INDIANAPOLIS, INDIANA MECHANICAL ELECTRICAL COMMISSIONING TECHNOLOGY
PLOTTED BY: DRVanWinkle DATE: August 29, 2013



SERVICE ROOM PLAN
SCALE: 1/4" = 1'-0"

GENERAL NOTES

A MAINTAIN ALL LIGHTING AND RECEPTACLE CIRCUITS FOR NEW WORK (WHERE INDICATED OR REQUIRED).

B REMOVE ALL ACCESSIBLE ABANDONED WIRING OF ALL TYPES, OR CAP AND LABEL IN JUNCTION BOX FOR RE-USE, IN COMPLIANCE WITH THE NATIONAL ELECTRIC CODE.

C MAINTAIN AND RESTORE, IF INTERRUPTED, ALL CONDUITS AND CONDUCTORS PASSING THROUGH RENOVATED AREAS AND SERVICING UNDISTURBED AREA.

D REMOVE ALL LIGHTING FIXTURES WIRING DEVICES, DATA OUTLETS, FIRE ALARM, CONDUIT, WIRE, ETC. AS REQUIRED TO ACCOMMODATE NEW WORK. NOT ALL ITEMS NECESSARILY SHOWN.

NOTES

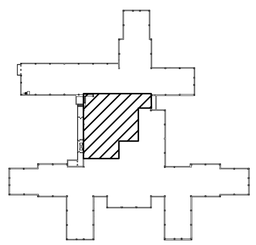
1 DISCONNECT 120V STEAM METER AND MAINTAIN CIRCUIT FOR NEW WORK.

2 PROVIDE 120V CONNECTION TO STEAM METER.

3 CONNECT TO EXISTING 120V STEAM METER CIRCUIT.

4 UTILIZE SPARE 120V-20A/1P CIRCUIT BREAKER IN EXISTING PANEL.

5 NEW DOMESTIC WATER RECIRC. PUMP.



KEYPLAN

ADDENDUM #1	08/28/2013
Revisions	Date

CONSULTANTS:

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PROJECT NO. 2012-04005 FIRM LICENSE: 01528

Drawing Title: SERVICE ROOM PLAN

Approved: Project Director

Project Title: HOSPITAL STEAM SYSTEM RECORD DRAWINGS

Location: CINCINNATI, OHIO

Date: 01/04/2013 | Checked: MSG | Drawn: SC

Project Number: 539-13-107

Building Number: 1

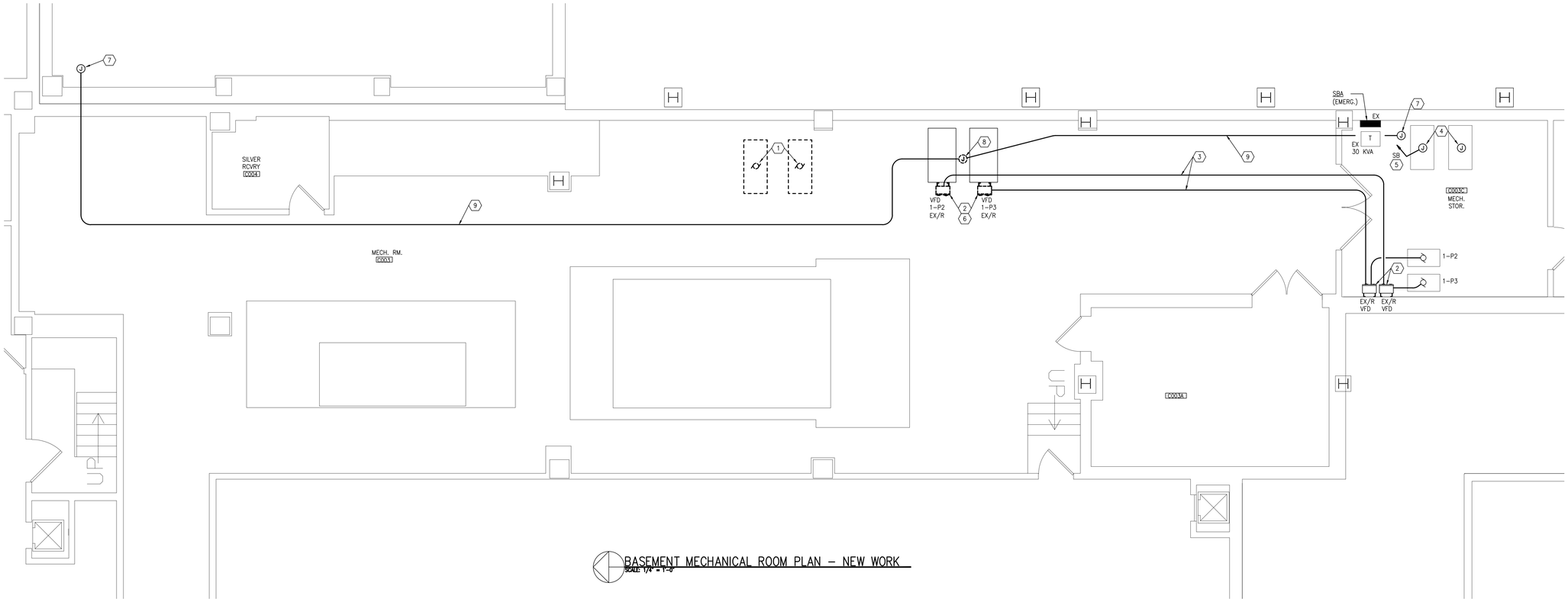
Drawing Number: 1-ES1

Dwg. 43 of 47

Office of Construction and Facilities Management

Department of Veterans Affairs

VA FORM 08-6231



BASEMENT MECHANICAL ROOM PLAN – NEW WORK
SCALE: 1/4" = 1'-0"

GENERAL NOTES

A MAINTAIN ALL LIGHTING AND RECEPTACLE CIRCUITS FOR NEW WORK (WHERE INDICATED OR REQUIRED).

B REMOVE ALL ACCESSIBLE ABANDONED WIRING OF ALL TYPES, OR CAP AND LABEL IN JUNCTION BOX FOR RE-USE, IN COMPLIANCE WITH THE NATIONAL ELECTRIC CODE.

C MAINTAIN AND RESTORE, IF INTERRUPTED, ALL CONDUITS AND CONDUCTORS PASSING THROUGH RENOVATED AREAS AND SERVICING UNDISTURBED AREA.

D REMOVE ALL LIGHTING FIXTURES WIRING DEVICES, DATA OUTLETS, FIRE ALARM, CONDUIT, WIRE, ETC. AS REQUIRED TO ACCOMMODATE NEW WORK. NOT ALL ITEMS NECESSARILY SHOWN.

NOTES

1 DISCONNECT PUMP MOTOR AND REMOVE CIRCUITRY BACK TO VFD.

2 REMOVE AND RELOCATE 480V-10HP VFD TO NEW LOCATION.

3 INTERCEPT AND EXTEND CIRCUITRY TO NEW LOCATION. REFER TO MOTOR STARTER SCHEDULE, SHEET E2.

4 PLATE AND FRAME HEAT EXCHANGER WITH CONTROL PANEL. PROVIDE 120V. CONNECTION.

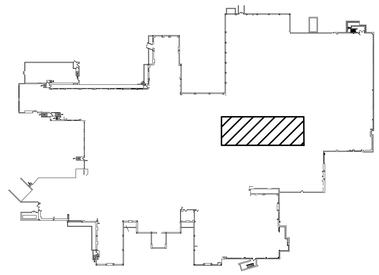
5 UTILIZE SPARE 120V-20A/1P CIRCUIT BREAKER IN EXISTING PANEL.

6 REMOVE UNISTRUT FRAMING.

7 PROVIDE 120V CONNECTION TO STEAM METER.

8 DISCONNECT 120V HEATING HOT WATER METER AND MAINTAIN CIRCUIT FOR NEW WORK.

9 CONNECT TO EXISTING HEATING HOT WATER METER CIRCUIT.



KEYPLAN

Revisions	Date
ADDENDUM #1	08/28/2013

CONSULTANTS:

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PROJECT NO. 2012-04005 FIRM LICENSE: 01528

Drawing Title: BASEMENT FLOOR PLAN

Approved Project Director

Project Title: HOSPITAL STEAM SYSTEM RECORD DRAWINGS

Location: CINCINNATI, OHIO

Date: 01/04/2013 | Checked: MSG | Drawn: SC

Project Number: 539-13-107

Building Number: 1

Drawing Number: 1-EB1

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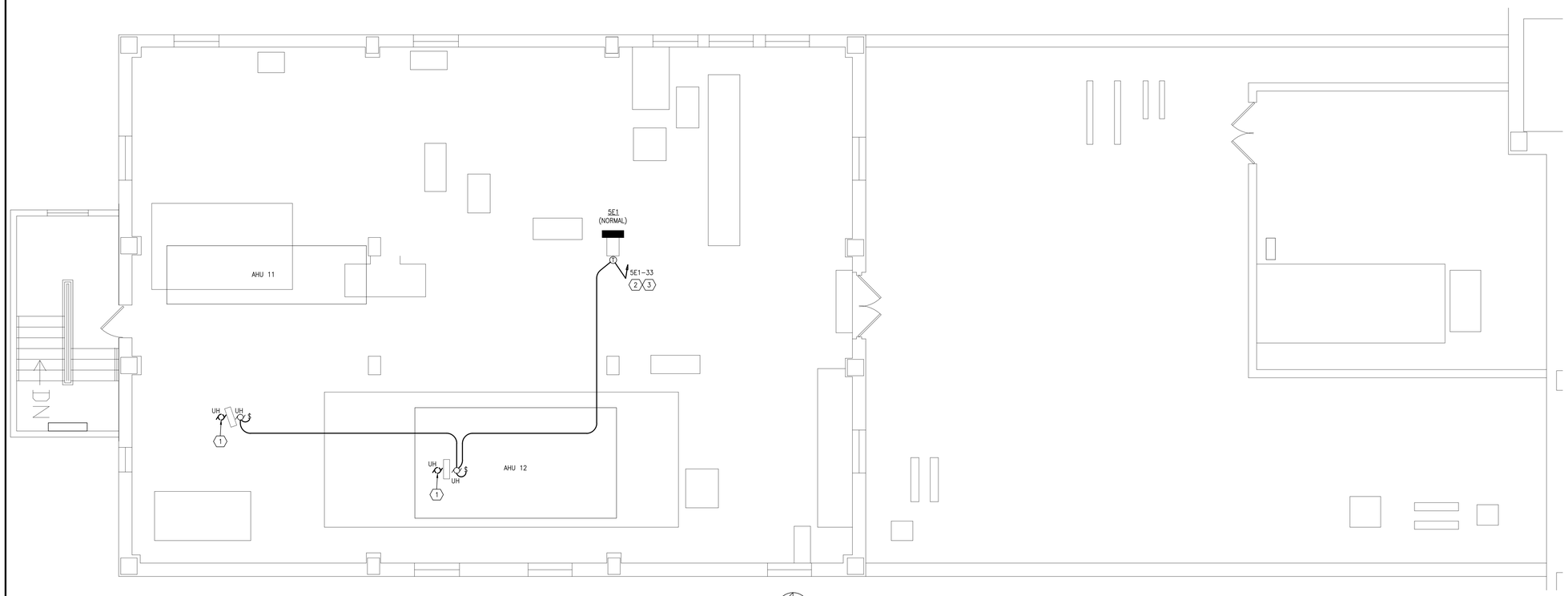
Office of Construction and Facilities Management

Department of Veterans Affairs

VA FORM 08-6231

H:\HEAPY ENGINEERING\2012-04005\AutoCAD2012\CVAMC REPLACE HOSPITAL STEAM AND HEATING SYSTEM\1-EB1 BASEMENT MECHANICAL ROOM DEMOLITION AND NEW WORK.dwg 8-29-13 10:21:33 AM DRVanWinkle
PLOTTED BY: DRVanWinkle
PLOT/EDIT DATE: August 29, 2013
DAYTON/COLUMBUS, OHIO & INDIANAPOLIS, INDIANA
MECHANICAL ELECTRICAL COMMISSIONING TECHNOLOGY
one eighth inch = one foot
one quarter inch = one foot
three eighths inch = one foot
one half inch = one foot
three quarters inch = one foot
one inch = one foot
one and one half inches = one foot
three inches = one foot



FIFTH FLOOR PENTHOUSE PLAN – NEW WORK
SCALE 1/4" = 1'-0"

GENERAL NOTES

A MAINTAIN ALL LIGHTING AND RECEPTACLE CIRCUITS FOR NEW WORK (WHERE INDICATED OR REQUIRED).

B REMOVE ALL ACCESSIBLE ABANDONED WIRING OF ALL TYPES, OR CAP AND LABEL IN JUNCTION BOX FOR RE-USE, IN COMPLIANCE WITH THE NATIONAL ELECTRIC CODE.

C MAINTAIN AND RESTORE, IF INTERRUPTED, ALL CONDUITS AND CONDUCTORS PASSING THROUGH RENOVATED AREAS AND SERVICING UNDISTURBED AREA.

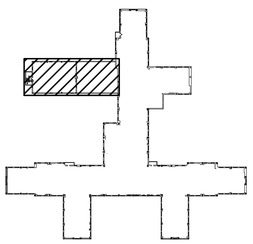
D REMOVE ALL LIGHTING FIXTURES WIRING DEVICES, DATA OUTLETS, FIRE ALARM, CONDUIT, WIRE, ETC. AS REQUIRED TO ACCOMMODATE NEW WORK. NOT ALL ITEMS NECESSARILY SHOWN.

NOTES

1 DISCONNECT 120V UNIT HEATER.

2 UTILIZE SPARE 120V-20A/1P CIRCUIT BREAKER IN EXISTING PANEL.

3 RUN THROUGH LINE VOLTAGE THERMOSTAT FOR CONTROL.



KEYPLAN

Revisions	Date
ADDENDUM #1	08/28/2013

VA FORM 08-6231

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PROJECT NO. 2012-04005 FIRM LICENSE: 01528

Drawing Title: FIFTH FLOOR PENTHOUSE PLAN

Approved: Project Director

Project Title: HOSPITAL STEAM SYSTEM RECORD DRAWINGS

Location: CINCINNATI, OHIO

Date: 01/04/2013 | Checked: MSG | Drawn: SC

Project Number: 539-13-107

Building Number: 1

Drawing Number: 1-E51

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Office of Construction and Facilities Management

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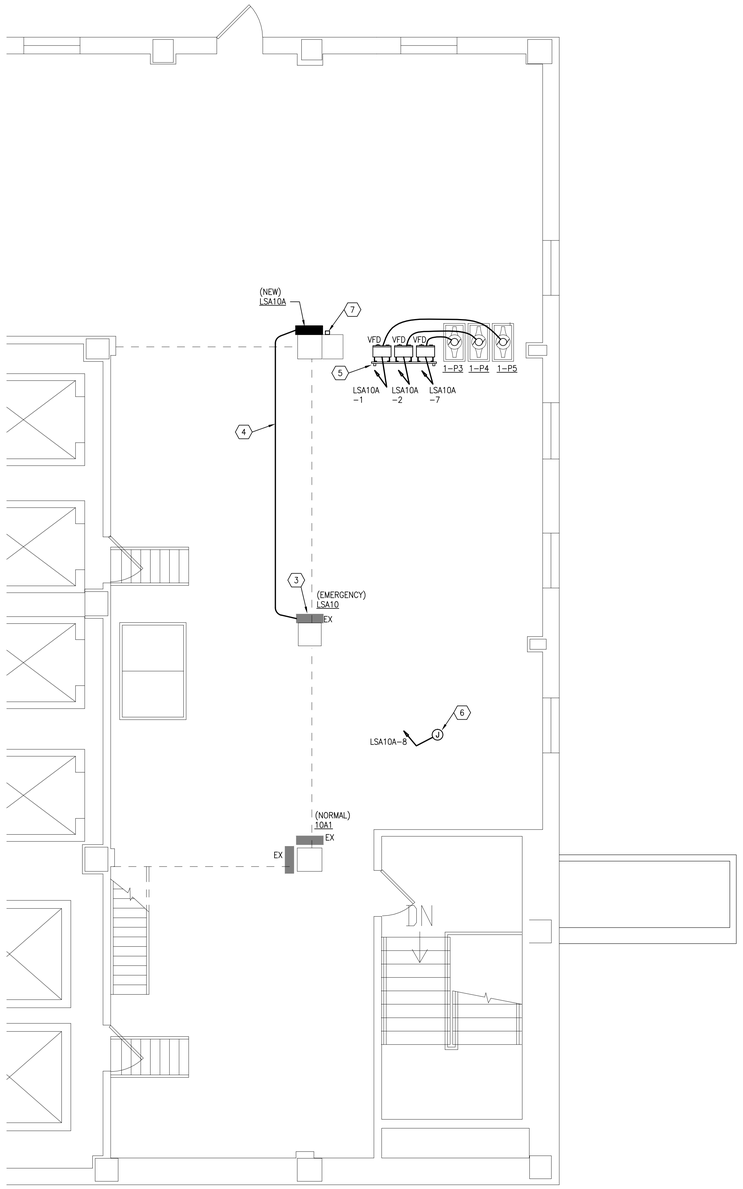
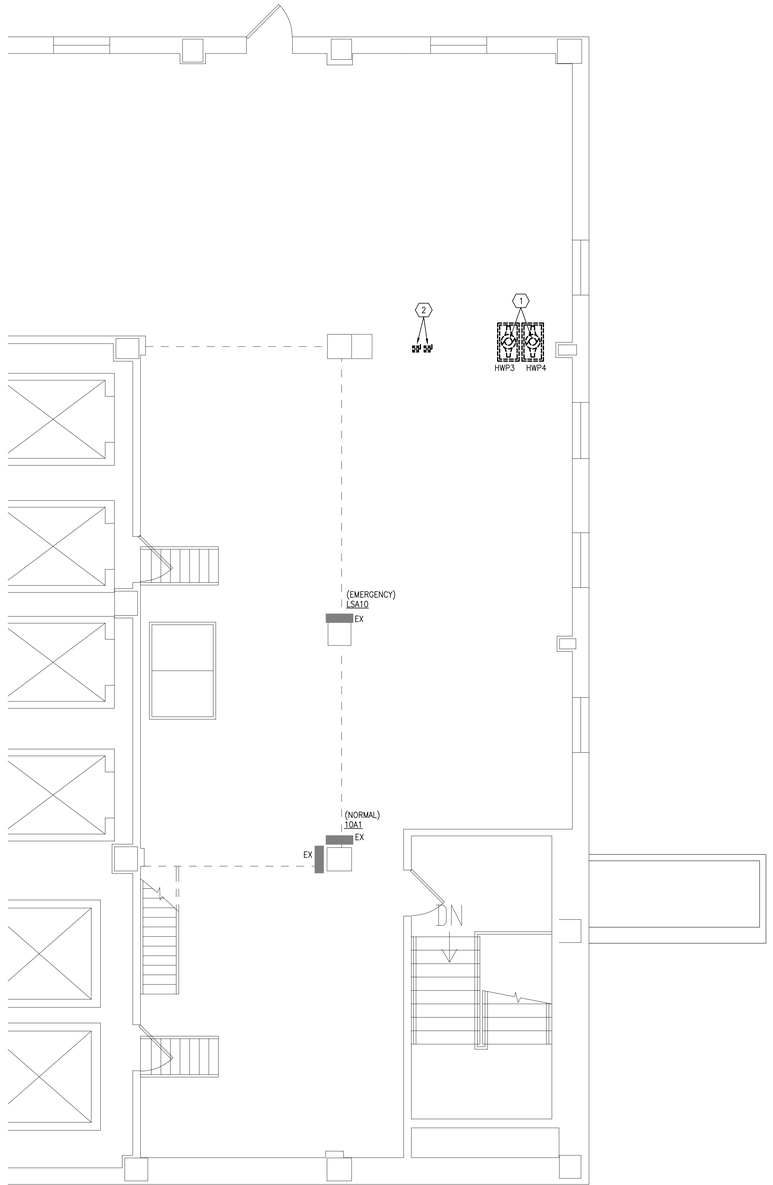


TENTH FLOOR PENTHOUSE PLAN – NEW WORK
SCALE: 1/4" = 1'-0"



TENTH FLOOR PENTHOUSE PLAN – REMOVALS
SCALE: 1/4" = 1'-0"

GENERAL NOTES

A MAINTAIN ALL LIGHTING AND RECEPTACLE CIRCUITS FOR NEW WORK (WHERE INDICATED OR REQUIRED).

B REMOVE ALL ACCESSIBLE ABANDONED WIRING OF ALL TYPES, OR CAP AND LABEL IN JUNCTION BOX FOR RE-USE, IN COMPLIANCE WITH THE NATIONAL ELECTRIC CODE.

C MAINTAIN AND RESTORE, IF INTERRUPTED, ALL CONDUITS AND CONDUCTORS PASSING THROUGH RENOVATED AREAS AND SERVICING UNDISTURBED AREA.

D REMOVE ALL LIGHTING FIXTURES WIRING DEVICES, DATA OUTLETS, FIRE ALARM, CONDUIT, WIRE, ETC. AS REQUIRED TO ACCOMMODATE NEW WORK. NOT ALL ITEMS NECESSARILY SHOWN.

NOTES

1 DISCONNECT PUMP MOTOR AND REMOVE CIRCUITRY BACK TO PANEL LSA10.

2 DISCONNECT MOTOR STARTER AND REMOVE CIRCUITRY BACK TO PANEL LSA10.

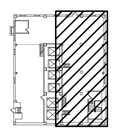
3 PROVIDE NEW 208V-80A/3P CIRCUIT BREAKER IN EXISTING PANEL.

4 RUN 4-#3, #8 GRD. IN 1.25"C.

5 PROVIDE NEW UNISTRUT FRAME.

6 PROVIDE 120V CONNECTION TO STEAM METER.

7 NEW EXTERNAL TVSS.



10TH FLOOR KEYPLAN

Revisions	Date
ADDENDUM #1	08/28/2013

CONSULTANTS:

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PROJECT NO. 2012-04005 FIRM LICENSE: 05528

Drawing Title: TENTH FLOOR PENTHOUSE PLANS

Approved: Project Director

Project Title: HOSPITAL STEAM SYSTEM RECORD DRAWINGS

Location: CINCINNATI, OHIO

Date: 01/04/2013 | Checked: MSG | Drawn: SC

Project Number: 539-13-107

Building Number: 1

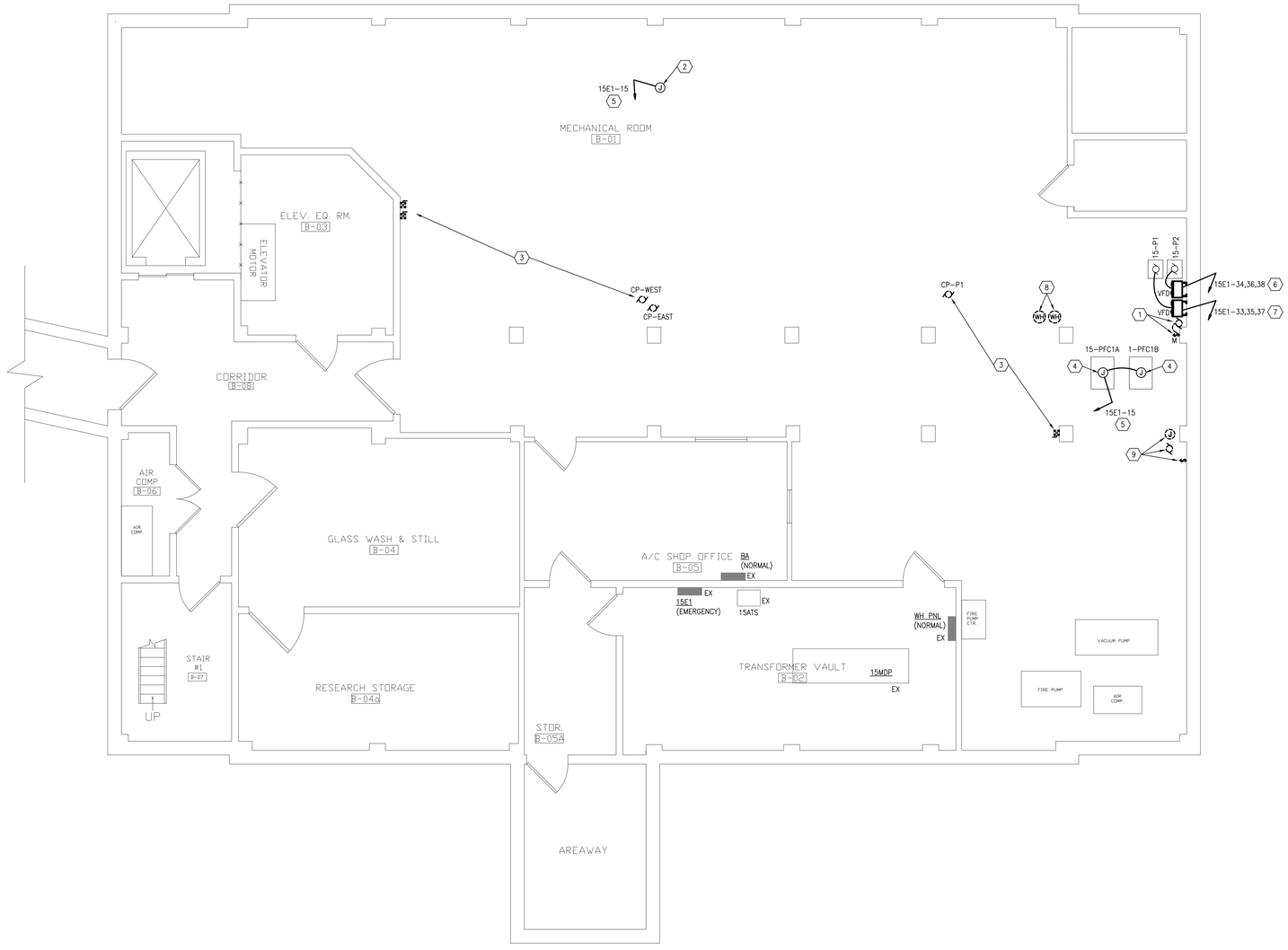
Drawing Number: 1-E101

Dwg. 46 of 47

Office of Construction and Facilities Management

Department of Veterans Affairs

VA FORM 08-6231



BUILDING 15 BASEMENT PLAN
SCALE: 1/4" = 1'-0"

GENERAL NOTES

A MAINTAIN ALL LIGHTING AND RECEPTACLE CIRCUITS FOR NEW WORK (WHERE INDICATED OR REQUIRED).

B REMOVE ALL ACCESSIBLE ABANDONED WIRING OF ALL TYPES, OR CAP AND LABEL IN JUNCTION BOX FOR RE-USE, IN COMPLIANCE WITH THE NATIONAL ELECTRIC CODE.

C MAINTAIN AND RESTORE, IF INTERRUPTED, ALL CONDUITS AND CONDUCTORS PASSING THROUGH RENOVATED AREAS AND SERVICING UNDISTURBED AREA.

D REMOVE ALL LIGHTING FIXTURES WIRING DEVICES, DATA OUTLETS, FIRE ALARM, CONDUIT, WIRE, ETC. AS REQUIRED TO ACCOMMODATE NEW WORK. NOT ALL ITEMS NECESSARILY SHOWN.

NOTES

1 DISCONNECT HOT WATER RECIRC. PUMP AND REMOVE CIRCUITRY BACK TO SOURCE.

2 PROVIDE 120V CONNECTION TO NEW STEAM METER.

3 DISCONNECT PUMP MOTOR AND REMOVE CIRCUITRY BACK TO SOURCE.

4 PROVIDE 120V CONNECTION TO NEW PLATE AND FRAME HEAT EXCHANGER.

5 UTILIZE SPARE 120V-20A/1P CIRCUIT BREAKER IN EXISTING PANEL.

6 UTILIZE 208V-20A/3P BREAKER SERVING EXISTING PUMP TO BE REMOVED.

7 PROVIDE NEW 208V-20A/3P CIRCUIT BREAKER IN EXISTING PANEL.

8 DISCONNECT ELECTRIC WATER HEATER AND REMOVE SAFETY SWITCH AND CIRCUITRY BACK TO SOURCE.

9 DISCONNECT STEAM HEATER (PUMP AND RECIRC. PUMP AND REMOVE CIRCUITRY BACK TO SOURCE.

Revisions	Date
ADDENDUM #1	08/28/2013

CONSULTANTS:

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REGISTERED
PROFESSIONAL ENGINEER

ARCHITECT/ENGINEERS:

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PROJECT NO. 2012-04005 FIRM LICENSE: 01528

Drawing Title: BUILDING 15 BASEMENT PLAN

Approved: Project Director

Project Title: HOSPITAL STEAM SYSTEM RECORD DRAWINGS

Project Number: 539-13-107

Building Number: 15

Location: CINCINNATI, OHIO

Drawing Number: 15-EB1

Date: 01/04/2013 | Checked: MSG | Drawn: SC

Dwg. 47 of 47

Office of Construction and Facilities Management

Department of Veterans Affairs

VA FORM 08-6231