MECHANICAL LEGEND

ALL SYMBOLS INDICATED MAY NOT APPEAR ON THESE CONTRACT DRAWINGS

GENERAL

- EXISTING
- EXISTING TO BE REMOVED
- ITEM TO BE PROVIDED
- "DEMOLITION TO THIS POINT" SYMBOL / "NEW CONSTRUCTION AT THIS POINT" SYMBOL
- REGISTER/GRILLE/DIFFUSER (MARK/CFM)
- EXISTING REGISTER/GRILLE/DIFFUSER (CFM SHOWN)
- SUPPLY DIFFUSER 4-WAY
- SUPPLY DIFFUSER 3-WAY
- SUPPLY DIFFUSER 2-WAY
- SUPPLY DIFFUSER 2-WAY CORNER
- SUPPLY DIFFUSER 1-WAY
- SUPPLY GRILLE OR REGISTER
- RETURN GRILLE
- EXHAUST GRILLE
- HORIZONTAL FIRE DAMPER
- VERTICAL FIRE DAMPER
- HORIZONTAL FIRE AND SMOKE DAMPER
- VERTICAL FIRE AND SMOKE DAMPER
- HORIZONTAL SMOKE DAMPER
- VERTICAL SMOKE DAMPER
- VOLUME DAMPER
- VOLUME DAMPER W/ REMOTE DAMPER OPERATOR
- MOTOR OPERATED DAMPER
- OUTSIDE AIR DUCT (NEGATIVE PRESSURE)
- SUPPLY DUCT SECTION (POSITIVE PRESSURE)
- RETURN DUCT SECTION (NEGATIVE PRESSURE)
- EXHAUST DUCT SECTION (NEGATIVE PRESSURE)
- FLEXIBLE DUCT
- 22x14 — DUCT SIZE (INCHES), FIRST FIGURE IS SIDE SHOWN
- 12ø — ROUND DUCT SIZE (INCHES)
- 24x12ø — OVAL DUCT SIZE (INCHES), FIRST FIGURE IS SIDE SHOWN
- DN — CHANGE OF ELEVATION-RISE (UP)-DROP (DN)
- AFS — AIR FLOW STATION
- VAV BOX WITH HOT WATER COIL
- RADIANT CEILING PANEL
- AD — ACCESS DOOR, VERTICAL OR HORIZONTAL
- UC — 3/4" DOOR UNDERCUT
- DG — DOOR GRILLE

DUCTWORK AND ACCESSORIES

CONTROLS

- ELECTRIC THERMOSTAT (MOUNT 48" AFF U.O.N)
- PNEUMATIC THERMOSTAT (MOUNT 48" AFF U.O.N)
- SMOKE DETECTOR
- STATIC PRESSURE SENSOR
- NO_2 — NITROGEN DIOXIDE SENSOR
- CO — CARBON MONOXIDE SENSOR
- PS — PRESSURE SWITCH
- FS — FLOW SWITCH
- L DP H — DIFFERENTIAL PRESSURE TRANSDUCER

PIPING

- DOMESTIC COLD WATER
- A — COMPRESSED AIR
- BBD — BOILER BLOW DOWN
- CD — CONDENSATE DRAIN
- CR — CONDENSER WATER RETURN
- CS — CONDENSER WATER SUPPLY
- CWR — CHILLED WATER RETURN
- CWS — CHILLED WATER SUPPLY
- FOR — FUEL OIL RETURN
- FOS — FUEL OIL SUCTION
- FOV — FUEL OIL TANK VENT
- G — NATURAL GAS
- HPC — HIGH PRESSURE CONDENSATE
- HPS — HIGH PRESSURE STEAM
- HWR — HEATING WATER RETURN
- HWS — HEATING WATER SUPPLY
- LPC — LOW PRESSURE CONDENSATE
- LPG — LIQUEFIED PETROLEUM GAS (PROPANE)
- LPS — LOW PRESSURE STEAM
- MPC — MEDIUM PRESSURE CONDENSATE
- MPS — MEDIUM PRESSURE STEAM
- PC — PUMPED CONDENSATE
- RL — REFRIGERANT LIQUID
- RS — REFRIGERANT SUCTION
- STM — STEAM
- SW — SOFT WATER

PIPE FITTINGS

- PIPE CAP
- PIPE TURNING UP
- PIPE TURNING DOWN
- TEE AND ELBOW UP
- TEE AND ELBOW DOWN
- TEE UP
- TEE DOWN
- UNION
- CONCENTRIC PIPE REDUCER/INCREASER
- ECCENTRIC PIPE REDUCER/INCREASER
- PIPE FIXED ANCHOR POINT
- PIPE GUIDE LOCATION

VALVE SYMBOLS

- GATE VALVE - THREADED/FLANGED
- GLOBE VALVE - THREADED/FLANGED
- GATE VALVE WITH 3/4" HOSE ADAPTER
- CHECK VALVE
- WYE STRAINER (WITH BALL VALVE & HOSE CONNECTION)
- WYE STRAINER WITH VALVED DRAIN AND QUICK-COUPLE HOSE CONNECTOR
- FLEXIBLE CONNECTION
- ANGLE GLOBE VALVE
- BUTTERFLY VALVE
- BALL VALVE
- MODULATING CONTROL VALVE
- MODULATING CONTROL BUTTERFLY VALVE
- TWO POSITION CONTROL VALVE
- THREE-WAY MODULATING CONTROL VALVE
- THREE-WAY TWO POSITION CONTROL VALVE
- PRESSURE REGULATING VALVE
- PRESSURE SAFETY VALVE
- AUTOMATIC BALANCING CONTROL VALVE
- WATER BALANCE DEVICE
- CIRCUIT SETTER VALVE
- GATE VALVE WITH GLOBE-VALVED BYPASS
- PLUG VALVE
- CONTROL VALVE (CV) - FLOAT-OPERATED
- PRESSURE REDUCING VALVE (PRV)
- LC — WATER LEVEL CONTROLLER
- M — FLOW METER

MECHANICAL ABBREVIATIONS

ALL ABBREVIATIONS INDICATED MAY NOT APPEAR ON THESE CONTRACT DRAWINGS

AMP	AMPERE
A/C	AIR CONDITIONING
A/E	ARCHITECT / ENGINEER
AAHX	AIR TO AIR HEAT EXCHANGER
AAV	AUTOMATIC AIR VENT
AB	AIR BLENDER
ABV	ABOVE
ACC	AIR COOLED CONDENSER
ACCH	AIR COOLED CHILLER
ACCU	AIR COOLED CONDENSING UNIT
ACD	AUTOMATIC CONTROL DAMPER, MODULATING
ACD-TP	AUTOMATIC CONTROL DAMPER, TWO POSITION
ACU	AIR CONDITIONING UNIT
AD	ACCESS DOOR
AF	AIR FILTER
AFC	ABOVE FINISHED CEILING
AFCV	AIR FLOW CONTROL VALVE
AFF	ABOVE FINISHED FLOOR (18" UON)
AFG	ABOVE FINISHED GRADE (18" UON)
AFMS	AIR FLOW MEASURING STATION
AFW	AIR FOIL WHEEL (FAN)
AHU	AIR-HANDLING UNIT
ALT	ALTERNATE
AMB	AMBIENT
AMP	AMPERE
ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE
AP	ACCESS PANEL
APD	AIR PRESSURE DROP
APPROX	APPROXIMATE
AQST	AQUASTAT
ARI	AIR CONDITIONING AND REFRIGERATION INSTITUTE
AS	AIR SEPARATOR
ASHRAE	AMERICAN SOCIETY OF HEATING REFRIGERATION AIR CONDITIONING ENGINEERS
ASME	AMERICAN SOCIETY OF MECHANICAL ENGINEERS
AVG	AVERAGE
AW	AIR WASHER
AXF	AXIAL FLOW
B	BOILER
BD	BUTTERFLY DAMPER
BDD	BACKDRAFT DAMPER
BDR	BASE BOARD RADIATOR
BEL	BELOW
BFT	BOILER PLANT FIRE TUBE
BG	BOTTOM GRILL
BHP	BRAKE HORSEPOWER
BHW	HOT WATER HEATING BOILER
BHX	BOILER BLOWDOWN HEAT EXCHANGER
BIW	BACKWARD INCLINED WHEEL (FAN)
BLDG	BUILDING
BMT	BONE MARROW TRANSPLANT
BR	BOTTOM REGISTER
BSC	BIOLOGICAL SAFETY CABINETS
BT	BLOWOFF TANK
BTC	BLOWOFF TANK CONTROL VALVE
BTUH	BRITISH THERMAL UNIT PER HOUR
BWT	BOILER PLANT WATER TUBE
C	CENTIGRADE (CELSIUS)
CAV	CONSTANT AIR VOLUME
CC	COOLING COIL
CCD	COOLING COIL CONDENSATE DRAIN
CD	CEILING DIFFUSER
CD-1	CONSTRUCTION DOCUMENTS (SUBMISSION1)
CD-2	CONSTRUCTION DOCUMENTS (SUBMISSION2)
CENT	CENTRIFUGAL
CFH	CUBIC FEET PER HOUR
CFM	CUBIC FEET PER MINUTE
CFT	CUBIC FEET
CFP	CHEMICAL FEED PUMP
CG	CEILING GRILL
CH	CHILLER
CHP	CHILLER WATER PUMP
CHW	CHILLER WATER
CHR	CHILLER WATER RETURN
CHS	CHILLER WATER SUPPLY
CI	CAST IRON
CLG	CEILING
CM	CARBON MONOXIDE
CM	CUBIC METER
CMS	CUBIC METER PER SECOND
CO	CLEAN OUT
CO2	CARBON DIOXIDE
COMP	COMPRESSOR UNIT
COP	COEFFICIENT OF PERFORMANCE
COR	CONTRACTING OFFICERS REPRESENTATIVE
CP	CONDENSATE PUMP
CR	CEILING REGISTER
CS	CONDENSATE STORAGE TANK
CSG	CLEAN STEAM GENERATOR
CT	COOLING TOWER
CU	CONDENSING UNIT
CUH	CABINET UNIT HEATER
CV	CONSTANT VOLUME
CW	COLD WATER (POTABLE)
CWCC	CHILLED WATER COOLING COIL
CWP	CONDENSER WATER RETURN
CWR	CONDENSER WATER RETURN (TO COOLING TOWER)
CWS	CONDENSER WATER SUPPLY (FROM COOLING TOWER)
D	DAMPER - AUTOMATIC
Db	DRY-BULB TEMPERATURE
dB	DECIBELS
DCW	DOMESTIC COLD WATER
DD-1	DEIGN DEVELOPMENT (SUBMISSION 1)
DD-2	DEIGN DEVELOPMENT (SUBMISSION 2)
DDC	DIRECT DIGITAL CONTROLS
DEG	DEGREE
DF	DIFFUSER
DEMO	DEMOLITION
DHW	DOMESTIC HOT WATER
DHWR	DOMESTIC HOT WATER RETURN
DIA	DIAMETER
DIW	DEMONIZED WATER
DN	DOWN
DP	DEW POINT TEMPERATURE
DP	DIFFUSER PLATE
DPA	DIFFERENTIAL PRESSURE ASSEMBLY
DPS	DIFFERENTIAL PRESSURE SENSOR
DWG	DRAWING
DX	DIRECT EXPANSION
DXCC	DIRECT EXPANSION COOLING COIL
EA	EXHAUST AIR
EAT	ENTERING AIR TEMPERATURE
EC	ELECTRICAL CONTRACTOR
EC	EVAPORATIVE COOLER
ECC	ENGINEER CONTROL CENTER
ECU	EVAPORATIVE CONDENSER UNIT
EDH	ELECTRIC DUCT HEATER
EER	ENERGY EFFICIENCY RATIO
EF	EXHAUST FAN
EG	EXHAUST GRILLE
EGS	EMERGENCY GAS SHUTOFF
EGT	ENTERING GLYCOL TEMPERATURE
EH	EXHAUST HOOD
EJ	EXPANSION JOINT
EMD	END OF MAIN DRIP (STEAM)
ENT	ENTERING
EQUIP	EQUIPMENT
ER	EXHAUST REGISTER
ER	EXISTING RELOCATED
ERC	ELECTRIC REHEAT COIL
ERP	ELECTRIC RADIANT PANEL
ESP	EXTERNAL STATIC PRESSURE
ET	EXPANSION TANK
ETO	ETHYLENE OXIDE
ETR	EXISTING TO REMAIN
EUH	ELECTRIC UNIT HEATER
EWC	EVAPORATIVE WATER COOLER
EWH	ELECTRIC WATER HEATER
EWT	ENTERING WATER TEMPERATURE
EX	EXISTING
F	FAHRENHEIT
F&T	FLOAT AND THERMOSTATIC
F/SDPR	COMBINATION FIRE SMOKE DAMPER
FA	FREE AREA
FBO	FURNISHED BY OTHERS
FC	FLEXIBLE CONNECTION
FCU	FAN COIL UNIT (4 PIPE)
FCUC	FAN COIL UNIT COOLING ONLY
FCUH	FAN COIL UNIT HEATING ONLY
FCW	FORWARD CURVED WHEEL (FAN)
FD	FLOOR DRAIN
FD	FIRE DAMPER
FF	FINAL FILTER
FHX	FLUE GAS/FEEDWATER HEAT EXCHANGER
FLEX	FLEXIBLE
FLR	FLOOR
FM	FLOW METER
FOB	FLAT ON BOTTOM
FOP	FUEL OIL PUMP
FOT	FUEL OIL TANK
FOT	FLAT ON TOP
FOHX	FUEL OIL HEAT EXCHANGER
FPM	FEET PER MINUTE
FPTU	FAN POWERED TERMINAL UNIT
FR	FLOOR REGISTER
FRP	FIBER REINFORCED POLYESTER
FS	FLOW SWITCH
FSTST	FREEZESTAT
FT	FEET
FT WC	FEET OF WATER COLUMN
FT-LB	FOOT-POUND
FTR	FIN TUBE RADIATION
FV	FACE VELOCITY
GA	GAUGE
GAL	GALLON
GC	GENERAL CONTRACTOR
GH	GRAVITY HOOD
GPD	GALLONS PER DAY
GPH	GALLONS PER HOUR
GPM	GALLONS PER MINUTE
GPR	GAS PRESSURE REGULATOR
GS	GALVANIZED STEEL
H	HUMIDIFIER
HAC	HOUSEKEEPING AID CLOSET
HB	HOSE BIBB
HC	HEATING COIL
HD	HOOD
HGT	HEIGHT
HGT	HEIGHT
HOA	HAND/OFF/AUTOMATIC
HORZ	HORIZONTAL
HP	HEAT PUMP
HP	HORSEPOWER
HPC	HIGH PRESSURE STEAM CONDENSATE RETURN
HPDT	HIGH PRESSURE DRIP TRAP
HPR	HIGH PRESSURE RETURN (STEAM CONDENSATE)
HPS	HIGH PRESSURE SUPPLY (STEAM)
HRC	HEAT RECOVERY COIL
HRD	HEAT RECOVERY DEVICE
HRP	HYDRONIC RADIANT (CEILING) PANEL
HRW	HEAT RECOVERY WHEEL
HSTAT	HUMIDISTAT
HTM	HUMIDIFIER TERMINAL
HUM	HUMIDIFIER UNIT MOUNTED
HVU	HEATING AND VENTILATING UNIT
HW	HOT WATER
HWC	HOT WATER COIL
HWHC	HOT WATER HEATING COIL
HWP	HEATING HOT WATER PUMP
HWR	HEATING HOT WATER RETURN
HWS	HEATING HOT WATER SUPPLY
HWUH	HOT WATER UNIT HEATER
HVAC	HEATING, VENTILATION, AND AIR CONDITIONING
HVD	HOISTWAY VENT DAMPER
HX	HEAT EXCHANGER
HZ	HERTZ
I/O	INPUT/OUTPUT
IAQ	INDOOR AIR QUALITY
IBT	INVERTED BUCKET TRAP
ICF	IN-LINE CENTRIFUGAL FAN
ICU	INTENSIVE CARE UNIT
ID	INSIDE DIAMETER
I.E.	INVERT ELEVATION
IFB	INTEGRAL FACE AND BYPASS
IN	INCHES
IN HG	INCHES OF MERCURY
IN WC	INCH WATER COLUMN
IN WG	INCH WATER GAUGE
IN-LB	INCH POUND
IPLV	INTEGRATED PART LOAD VALUE
IRH	INTRARED HEATER
IS	INSECT SCREEN
IU	INDUCTION UNIT
I.V.	INLET VANES
J	INTESTINALLY LEFT BANK
KG	KILOGRAM
KG/HR	KILOGRAM PER HOUR
kPa	KILOPASCAL
KW	KILOWATTS
KWH	KILOWATT HOUR
L	LITER
L/h	LITER PER HOUR (OR LITER/HOUR)
L/m	LITER PER MINUTE (OR LITER/MINUTE)
L/S	LITER PER SECOND (OR LITER/SECOND)
LAT	LEAVING AIR TEMPERATURE
LBS	POUNDS
LBS/HR	POUNDS PER HOUR
LF	LINEAR FOOT (FEET)
LGT	LEAVING GLYCOL TEMPERATURE
LH	LATENT HEAT
LLHX	LIQUID TO LIQUID HEAT EXCHANGER
LPC	LOW PRESSURE STEAM CONDENSATE RETURN
LPG	LIQUEFIED PETROLEUM GAS
LPR	LOW PRESSURE RETURN (STEAM CONDENSATE)
LPRC	LOW PRESSURE STEAM RETURN (CLEAN)
LPS	LOW PRESSURE STEAM
LPSC	LOW PRESSURE STEAM (CLEAN)
LSD	LINEAR SLOT DIFFUSER
LTCP	LOCAL TEMPERATURE CONTROL PANEL
LVG	LEAVING
LVR	LOUVER
LWT	LEAVING WATER TEMPERATURE
M	METER, SI UNIT
M/S	METER PER SECOND (OR METER/SECOND)
MA	MIXED AIR
MAT	MIXED AIR TEMPERATURE
MAU	MAKE-UP AIR UNIT
MAV	MANUAL AIR VENT
MAX.	MAXIMUM
MB	MIXING BOX
MBH	1,000 BTUH
MC	MECHANICAL CONTRACTOR
MCA	MINIMUM BRANCH CIRCUIT AMPACITY
MER	MECHANICAL EQUIPMENT ROOM
MFR	MANUFACTURER
MH	MANHOLE
MHP	MOTOR HORSEPOWER
MIN.	MINIMUM
MM	MILLIMETER
MOD	MOTOR OPERATED DAMPER
MOV	MOTOR OPERATED VALVE
MPC	MEDIUM PRESSURE STEAM CONDENSATE RETURN
MPR	MEDIUM PRESSURE RETURN (STEAM CONDENSATE)
MPS	MEDIUM PRESSURE STEAM
MRI	MAGNETIC RESONANCE IMAGING
MTD	MEAN TEMPERATURE DIFFERENCE
MVD	MANUAL VOLUME DAMPER
MZ	MULTI-ZONE
NA	NOT APPLICABLE
NC	NOISE CRITERIA
NC	NORMALLY CLOSED
NIC	NOT IN CONTRACT
NG	NATURAL GAS
NGFM	NATURAL GAS FLOWMETER
Nm	NEWTON METER
NO	NORMALLY OPEN
NOAA	NATIONAL OCEANIC & ATMOSPHERIC ADMINISTRATION
NOM.	NOMINAL
NPLV	NON-STANDARD PART LOAD VALUE
NPSH	NET POSITIVE SUCTION HEAD
NPSHA	NET POSITIVE SUCTION HEAD AVAILABLE
NPSHR	NET POSITIVE SUCTION HEAD REQUIRED
NTS	NOT TO SCALE
OA	OUTSIDE AIR
OAD	OUTDOOR AIR DAMPER
OAG	OUTSIDE AIR GRILLE
OAI	OUTSIDE AIR INTAKE
OD	OUTSIDE DIAMETER
OFM	OIL FLOWMETER
OR	OPERATING ROOM
P	PUMP
Pa	PASCAL
PC	PUMPED CONDENSATE
PCF	POUNDS PER CUBIC FOOT (FEET)
PD	PRESSURE DROP
PEF	PROPELLER (TYPE) EXHAUST FAN
PF	PRE-FILTER
PG	PRESSURE GAGE
PGW	PROPYENE GLYCOL-WATER (SOLUTION)
PHC	PREHEAT COIL
PPM	PARTS PER MILLION
PRS	PRESSURE REGULATING (VALVE) STATION
PRV	PRESSURE REGULATING VALVE
PSI	POUND PER SQUARE INCH
PSIA	POUND PER SQUARE INCH - ABSOLUTE
PSIG	POUND PER SQUARE INCH - GAGE
PSE	POUNDS PER SQUARE INCH
PSS	PRIMARY SECONDARY SYSTEM
PSV	PRESSURE SAFETY VALVE
P/T	PRESSURE/TEMERATURE TAP
PTAC	PACKAGED TERMINAL AIR CONDITIONER
R/E	RETURN OR EXHAUST
RA	RETURN AIR
RAD	RETURN AIR DAMPER
RAF	RADIO FREQUENCY
RAHX	ROTARY AIR HEAT EXCHANGER
RAT	RETURN AIR TEMPERATURE
RCCH	REMOTE CONDENSER CHILLER
RCU	RECIPROCATING CHILLER UNIT
RD	ROOF DRAIN
RDS	ROOM DATA SHEETS
REA	RELIEF AIR
RELAD	RELIEF AIR DAMPER
RF	RETURN FAN
RG	RETURN GRILLE
RH	RELATIVE HUMIDITY
RHC	REHEAT COIL
RHG	REHEAT GRILLE
RL	REFRIGERANT HOT GAS
RLA	RUN LOAD AMPERE
RO	REVERSE OSMSIS
RPM	REVOLUTIONS PER MINUTE
RR	RETURN REGISTER
RS	REFRIGERANT SUCTION
RTU	ROOF TOP UNIT
RV	RELIEF VALVE
SA	SUPPLY AIR
SAD	SUPPLY AIR DAMPER
SAT	SUPPLY AIR TEMPERATURE
SC	SHADING COEFFICIENT
SCFM	STANDARD CUBIC FEET PER MINUTE
SCI	SPINAL CODE INJURY
SD	SMOKE DETECTOR
SD	SUPPLY AIR DIFFUSER
SD-1	SCHEMATIC DESIGN (SUBMISSION1)
SD-2	SCHEMATIC DESIGN (SUBMISSION2)
SDPR	SMOKE DAMPER
SDR	SMOKE DAMPER (RETURN)
SDS	SMOKE DAMPER (SUPPLY)
SEN	SENSIBLE HEAT
SF	SUPPLY FAN
SF	SQUARE FEET
SG	SUPPLY AIR GRILLE
SH	STEAM HUMIDIFIER
SHC	STEAM HEATING COIL
SI	SQUARE INCHES
SP	STATIC PRESSURE
SP GR	SPECIFIC GRAVITY
SPD	SUPPLY PROCESS AND DISTRIBUTION
SPRV	STEAM PRESSURE REDUCING VALVE
SPS	STATIC PRESSURE SENSOR
SPEC	SPECIFICATION
SQ FT	SQUARE FOOT (FEET)
SR	SUPPLY AIR REGISTER
SS	STAINLESS STEEL
SSHX	STEAM TO STEAM HEAT EXCHANGER
SSR	SOLID SEPARATOR
ST	STEAM TRAP
STD	STANDARD
SUH	STEAM UNIT HEATER
SV	STEAM PRESSURE REDUCING VALVE
SVS	STEAM VENT SILENCER
SW	SOFTENED WATER
SWHX	STEAM TO WATER HEAT EXCHANGER
T&PCV	TEMPERATURE AND PRESSURE CONTROL VALVE
TAB	TESTING, ADJUSTING, BALANCE,
TD	TEMPERATURE DIFFERENCE
TDH	TOTAL DYNAMIC HEAD
TDS	TOTAL DISSOLVED SOLIDS
TEMP	TEMPERATURE
TG	TRANSFER GRILLE
TOF	TOP OF FOOTER
TP	TRAP
TR	TOP REGISTER
TSP	TOTAL STATIC PRESSURE
TSTAT	THERMOSTAT
TU	TERMINAL UNIT
TWU	THRU-WALL UNIT
TYP	TYPICAL
UC	UNDERCOUNTER
UC	UNDER CUT
UC	UNIT COOLER
UH	UNIT HEATER
UL	UNDERWRITERS LABORATORY
U.O.N	UNLESS OTHERWISE NOTED
URV	UPBLAST UNIT VENTILATOR
V	VALVE
VAF	VANE-AXIAL FAN
VAV	VARIABLE AIR VOLUME
VD	VOLUME DAMPER (MANUAL OPPOSED BLADE)
VERT	VERTICAL
VFD	VARIABLE FREQUENCY DRIVE
VHA	VETERANS HEALTH ADMINISTRATION
VI	VIBRATION ISOLATOR
VP	VACUUM PUMP
VPS	VARIABLE PRIMARY SYSTEM
VR	VACUUM (STEAM CONDENSATE) RETURN
VSD	VARIABLE SPEED DRIVE
VUH	VERTICAL HEAT UNIT
W	WATTS
W/	WITH
W/O	WITH OUT
WAG	WASTE ANEESIA GAS
Wb	WET BULB (TEMPERATURE)
WC	WATER COOLED
WCCH	WATER COOLED CHILLER
WCCU	WATER COOLER CONDENSING UNIT
WCHP	WATER COOLED HEAT PUMP
WCPU	WATER COOLED PACKAGE UNIT
WEF	WALL EXHAUST FAN
WF	WATER FILTER
WFCV	WATER FLOW CONTROL VALVE
WMF	WATER FLOWMETER
WFMD	WATER FLOW MEASURING DEVICE
WG	WATER GAGE
WPD	WATER SIDE PRESSURE DROP
WTR	WATER
WWM	WELDED WIRE MESH
YR	YEAR

MPE DESIGN SUMMARY

PROJECT INFORMATION

PROJECT NAME:	CHILLED WATER LINE REPLACEMENT BLDG 500
ADDRESS:	510 BUTLER AVE., MARTINSBURG WV, 25405
PROPOSED USE:	INSTITUTIONAL I-2
OWNER:	MARTINSBURG VA MEDICAL CENTER
OWNER CONTACT:	SAMUEL GUDEX
VE PROJ NO.:	11764-6

APPLICABLE CODES

BUILDING CODE:	INTERNATIONAL BUILDING CODE: 2015
	INTERNATIONAL EXISTING BUILDING CODE: 2015
MECHANICAL CODE:	INTERNATIONAL MECHANICAL CODE: 2015
PLUMBING CODE:	INTERNATIONAL PLUMBING CODE: 2015
ELECTRICAL CODE:	NFPA 70 NATIONAL ELECTRICAL CODE: 2014
LIFE SAFETY CODE:	NFPA 101 LIFE SAFETY CODE: 2015
ENERGY CODE:	ASHRAE/IESNA 90.1-2010 ENERGY STANDARD FOR BUILDINGS EXCEPT LOW-RISE RESIDENTIAL BUILDINGS
	INTERNATIONAL ENERGY CONSERVATION CODE: 2009
FM INSURED:	N/A
MEDICAL GAS & VACUUM SYSTEMS:	NFPA 99 STANDARD FOR HEALTH CARE FACILITIES: 2015

PROJECT TEAM

PROJECT MANAGER:	PHIL GENTRY
PROJECT TEAM:	
HVAC ENGINEER	BRENT KUHN
PLUMBING ENGINEER	
ELECTRICAL ENGINEER	SCOTT BENNETT
REVIT/CAD PROJECT LEAD	JEFF HALBEISEN

PIPE CHANGEOVER NOTES

1. WORK IS OCCURRING IN AN ACTIVE HOSPITAL. CONTRACTOR SHALL COORDINATE ALL WORK, INCLUDING NEW PIPE INSTALLATION, CLEANING, FILLING, AND WATER TREATMENT, TO MINIMIZE CHILLER PLANT SHUTDOWNS.
2. CONTRACTOR SHALL PROVIDE 1-1/2" VALVED HOSE CONNECTIONS AND ISOLATION VALVES LOCATED AS NEEDED TO PERFORM THE NECESSARY PROCEDURES AND COMPLETE THE DESIGN INDICATED.
3. WHEN SHUTDOWNS ARE UNAVOIDABLE, WORK SHALL BE SCHEDULED FOR TIMES WHEN THE AMBIENT TEMPERATURE IS BELOW 50°F FOR THE DURATION OF THE SHUTDOWN. NOTIFY THE COR TWO WEEKS IN ADVANCE OF PLANNED SHUTDOWNS.
4. CONTRACTOR SHALL ATTAIN THE SERVICES OF THE VA HOSPITAL'S CONTRACTED CHEMICAL TREATMENT VENDOR, WTS FIRST DEFENSE, FOR THE PURCHASE OF PIPE CLEANING AND WATER TREATMENT CHEMICALS.
   WTS FIRST DEFENSE CONTACT INFORMATION: BILL CAMPBELL, 800.817.5116 X708
5. PERFORM PIPE FLUSHING, CLEANING, AND WATER TREATMENT PROCEDURES AFTER EACH PHASE OF PIPE INSTALLATION IN THE TUNNEL AREAS.

GENERAL BID NOTE

1. EXISTING DUCTWORK AND PIPING IS BASED ON ORIGINAL CONSTRUCTION DRAWINGS AND MAY NOT REFLECT CURRENT DUCT/PIPING/TERMINAL DEVICE LAYOUT. CONTRACTOR SHALL FIELD VERIFY ACTUAL CONDITIONS PRIOR TO PRICING AND BEFORE PROCEEDING WITH WORK. NOTIFY ENGINEER IN THE EVENT THAT EXISTING MAIN DUCTWORK OR PIPING SHOWN TO REMAIN IS SIGNIFICANTLY DIFFERENT FROM EXISTING CONDITIONS.
2. CONTRACTORS SHALL BE RESPONSIBLE FOR MATCHING EXISTING BUILDING SYSTEMS WHERE REQUIRED BY DEMOLITION AND NEW WORK. ITEMS INCLUDING BUT NOT LIMITED TO: WALL TYPES, INSULATION, GLASS, CONCRETE, REBAR, ETC. SHALL MATCH EXISTING DESIGN CONDITIONS WHEN REPLACED OR REPAIRED.
3. CONTRACTOR SHALL IDENTIFY AND COORDINATE WITH THE OWNER ALL WORK AREAS REQUIRING CONSTRUCTION EFFORTS DURING FACILITY "OFF" HOURS. "OFF" HOUR WORK SHALL BE INCLUDED IN THE CONTRACTOR'S BID/SCOPE OF WORK.
4. CONTRACTOR IS RESPONSIBLE FOR PROVIDING ALL ISOLATION VALVES NECESSARY TO COMPLETE THE DESIGN INDICATED.
5. CONTRACTOR IS RESPONSIBLE FOR RELOCATION OF DOMESTIC WATER PIPING, ELECTRICAL CONDUIT, VAV BOXES, AND OTHER EXISTING COMPONENTS AS REQUIRED TO ACCOMMODATE NEW WORK. CONTRACTOR SHALL FIELD VERIFY THE EXTENT OF RELOCATION WORK PRIOR TO PRICING. COORDINATE SITE VISITS WITH COR.

GENERAL NOTES

1. THE DRAWINGS ILLUSTRATE GENERAL SCOPE AND ARRANGEMENT OF MECHANICAL SYSTEMS. THEY SHALL BE FOLLOWED AS CLOSELY AS ACTUAL CONDITIONS ALLOW. MECHANICAL CONTRACTOR SHALL PROVIDE FITTINGS AND OFFSETS IN DUCTWORK AND PIPING TO AVOID FIELD INTERFERENCES.
2. ALL WORK SHALL CONFORM TO THE REGULATIONS OF APPLICABLE FEDERAL, STATE, LOCAL LAWS, ORDINANCES AND CODES. MECHANICAL WORK SHALL BE IN ACCORDANCE WITH THE LATEST ADOPTED EDITION OF THE INTERNATIONAL MECHANICAL CODE AND ANY APPROVED SUPPLEMENTS TO THAT CODE.
3. DRAWINGS, SPECIFICATIONS, AND SCHEDULES TOGETHER FORM THE BASIS OF DESIGN.
4. PROVIDE FIRESTOPPING WHERE NECESSARY. WHERE FIRE STOPPING IS NECESSARY, COMPLETE WORK PER RESPECTIVE UL DETAILS. PROVIDE UL DETAILS FOR PRODUCTS USED PRIOR TO FINAL INSEPCTION.
5. DIMENSIONS AND DUCT/PIPING/EQUIPMENT SIZES INDICATED ON THE DRAWINGS MAY NOT REFLECT ACTUAL FIELD CONDITIONS IN ALL LOCATIONS. FIELD VERIFY DUCT, PIPING AND EQUIPMENT SIZES AND LOCATIONS PRIOR TO FABRICATION OF DUCTWORK OR PIPING SUCH THAT DUCTWORK, PIPING, AND EQUIPMENT WILL FIT IN APPROXIMATELY THE LOCATION SHOWN ON THE DRAWING.

MECHANICAL GENERAL DEMOLITION NOTES

1. COORDINATE ALL MECHANICAL UTILITY AND HVAC UNIT SHUT DOWNS WITH OWNER. ANY SHUT DOWNS NECESSARY TO ACHIEVE THE OBJECTIVE OF THIS DESIGN SHALL BE COMPLETED DURING "OFF HOURS" AND SHALL COMPLY WITH OWNER'S UTILITY SHUT DOWN POLICIES.
2. CONTRACTOR IS RESPONSIBLE FOR ALL CUTTING, PATCHING AND DEMOLITION OF ALL BUILDING SYSTEMS PER THEIR MEANS-AND-METHODS AS NECESSARY TO PROVIDE THE DESIGN INDICATED.

BID DOCUMENTS SUBMISSION

Revisions:	Date

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PHILLIP L. GENTRY — LICENSED PROFESSIONAL ENGINEER — 14289 — COMMONWEALTH OF VIRGINIA — 04/22/2022

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Scale: AS NOTED

Drawing Title: MECHANICAL LEGENDS, ABBREVIATIONS, AND NOTES

Approved: Project Director: BID DOCUMENTS

Project Title: CHILLED WATER LINE REPLACEMENT BLDG 500

Location: VAMC - Martinsburg, WV

Date: 04/22/2022 | Checked: BK | Drawn: JCH

Project Number: 613-16-302

Building Number: 500

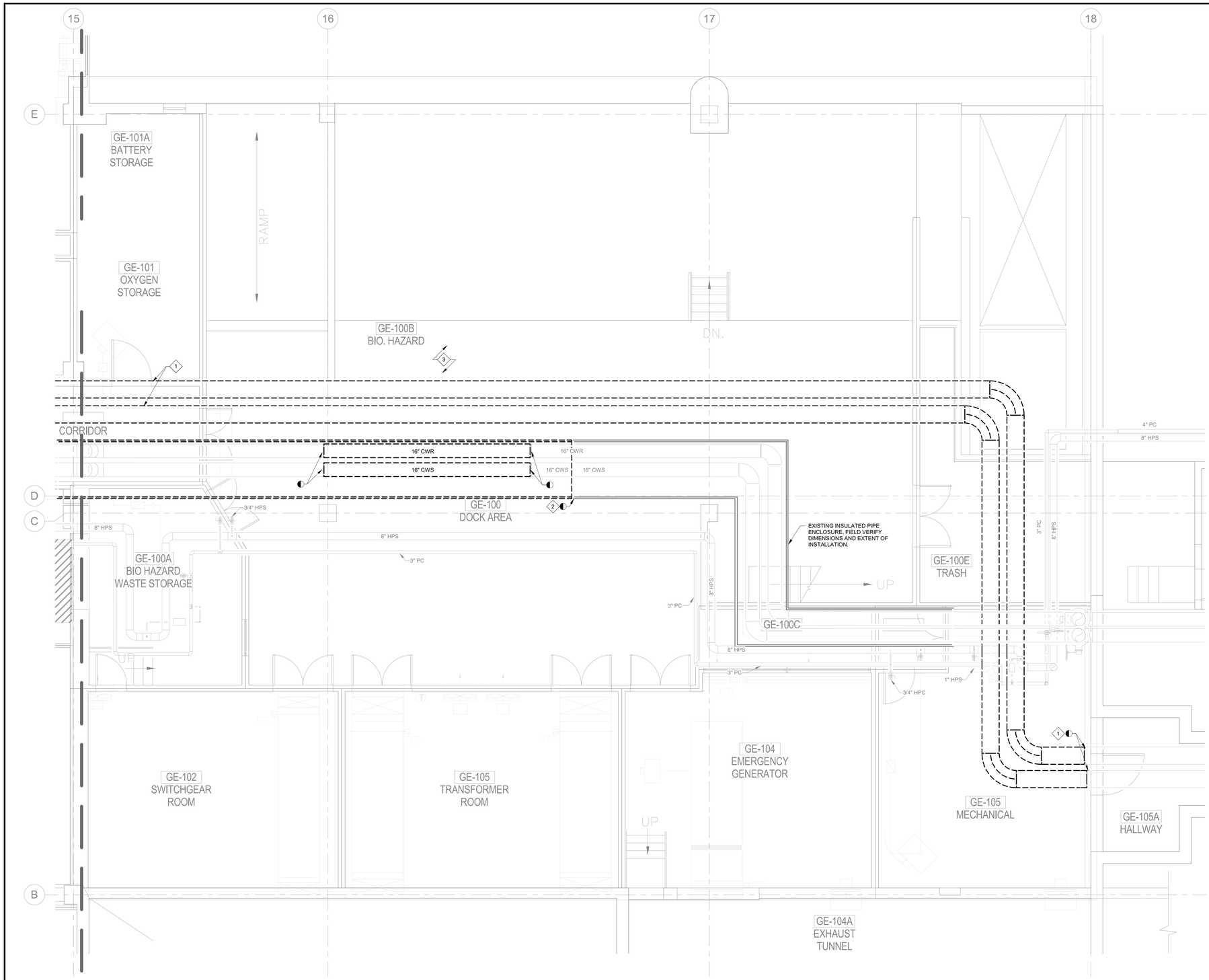
Drawing Number: M0.01

Dwg. 24 of 67

Office of Construction and Facilities Management

Department of Veterans Affairs

VA FORM 08-6231



GENERAL NOTES

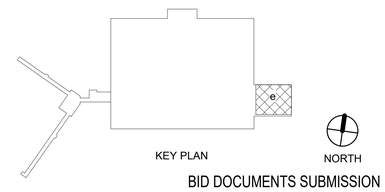
1. REMOVE PIPE HANGERS ASSOCIATED WITH PIPING SHOWN TO BE REMOVED. HANGERS SHALL NOT BE ABANDONED IN PLACE.
2. COORDINATE ALL MECHANICAL UTILITY AND HVAC UNIT SHUT DOWNS WITH OWNER. ANY SHUT DOWNS NECESSARY TO ACHIEVE THE OBJECTIVE OF THIS DESIGN SHALL BE COMPLETED DURING "OFF HOURS" AND SHALL COMPLY WITH OWNER'S UTILITY SHUT DOWN POLICIES.
3. CONTRACTOR IS RESPONSIBLE FOR ALL CUTTING, PATCHING AND DEMOLITION OF ALL BUILDING SYSTEMS PER THEIR MEANS-AND-METHODS AS NECESSARY TO PROVIDE THE DESIGN INDICATED.
4. LISTED ROOMS ARE IN THE FLOOR BELOW THE INTERSTITIAL SPACE.
5. RELOCATE DOMESTIC WATER PIPING, ELECTRICAL CONDUIT, AND ANCILLARY COMPONENTS AS REQUIRED DUE TO NEW WORK.
6. WORK IS OCCURING IN AN ACTIVE HOPITAL. ALL SYSTEMS EXISTING IN BUILDING MUST REMAIN ACTIVE UNLESS PLANS ARE MADE FOR A SHUTDOWN. ALL SHUTDOWN OCCURENCES MUST BE KEPT TO A MINIMUM AND DURATION OF SHUTDOWNS KEPT AS SHORT AS POSSIBLE.
7. DRYWALL WORK IS PART OF PROJECT.
8. REPAIR ANY BARRIER THAT IS PENETRATED OR DAMAGED DURING THIS WORK EVEN IF EXISTING OPENINGS HAVE NOT BEEN REPAIRED NEARBY. REPAIR WITH LIKE CONSTRUCTION OR BETTER.
9. NO NEW CONSTRUCTION CAN TOUCH EXISTING OR NEW SPRINKLER LINES.
10. INFORM CHILLED WATER PLANT OF ALL TESTING WHICH WILL INCREASE LOAD SO PLANT CAN MAKE CHILLER ADJUSTMENTS AS NECCESSARY.
11. CONTRACTOR SHALL BE RESPONSIBLE FOR BLEADING AIR INTRODUCED IN THE NEW PIPING AND EXISTING PIPING. BLEAD AND PURGING OF AIR, WHEN THE SYSTEM IS FILLED, IS NOT LIMITED TO NEW WORK. IT IS INCLUSIVE OF ALL CHILLED WATER SUPPLY AND RETURN PIPING ON THE CAMPUS.
12. CONTRACTOR SHALL PROVIDE 1.5" VALVED DRAINS WITH HOSE CONNECTIONS LOCATED AS NEEDED TO FILL PIPING AND PERFORM FLUSHING AND CLEANING PROCEDURES.

◇ DEMOLITION NOTES

1. REMOVE ALL ABANDONED LAUNDRY AND TRASH DUCTWORK FROM THE BASEMENT INTERSTITIAL SPACE AT COLUMN-LINE 14 TO THE GE105 HALLWAY. CAP THE REMAINING DUCT OPENING AT THE POINT OF DEMOLITION. PATCH ALL WALL PENETRATIONS. CONSTRUCTION MUST MATCH UL RATINGS OF EXISTING WALL.
2. REMOVE INSULATED PIPE ENCLOSURE FROM THE ENCLOSURE'S BEGINNING AT COLUMN LINE 15 TO THE POINT INDICATED. PROVIDE TEMPORARY COVER DURING DEMOLITION AND CONSTRUCTION TO PROTECT ENCLOSED PIPES FROM FREEZING TEMPERATURES. SEE NEW WORK PLANS FOR DIRECTION ON SEALING THE OPENING.
3. REMOVE 12"x12" METAL CEILING TILES AS NEEDED TO PERFORM WORK. STORE REMOVED TILES IN A SAFE LOCATION AND REPLACE EXISTING TILES AFTER NEW WORK IS COMPLETE. REPAIR OR REPLACE ANY CEILING TILES AND CEILING TILE SUPPORT SYSTEMS THAT ARE DAMAGED DURING WORK.

MECHANICAL DEMOLITION PIPING - FIRST FLOOR PLAN-e

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



BID DOCUMENTS SUBMISSION

Revisions:	Date

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Scale: AS NOTED

Drawing Title: MECHANICAL DEMOLITION PIPING - FIRST FLOOR PLAN-e

Approved: Project Director: BID DOCUMENTS

Project Title: CHILLED WATER LINE REPLACEMENT BLDG 500

Location: VAMC - Martinsburg, WV

Date: 04/22/2022 | Checked: BK | Drawn: JCH

Project Number: 613-16-302

Building Number: 500

Drawing Number: M1.01e

Dwg. 25 of 67

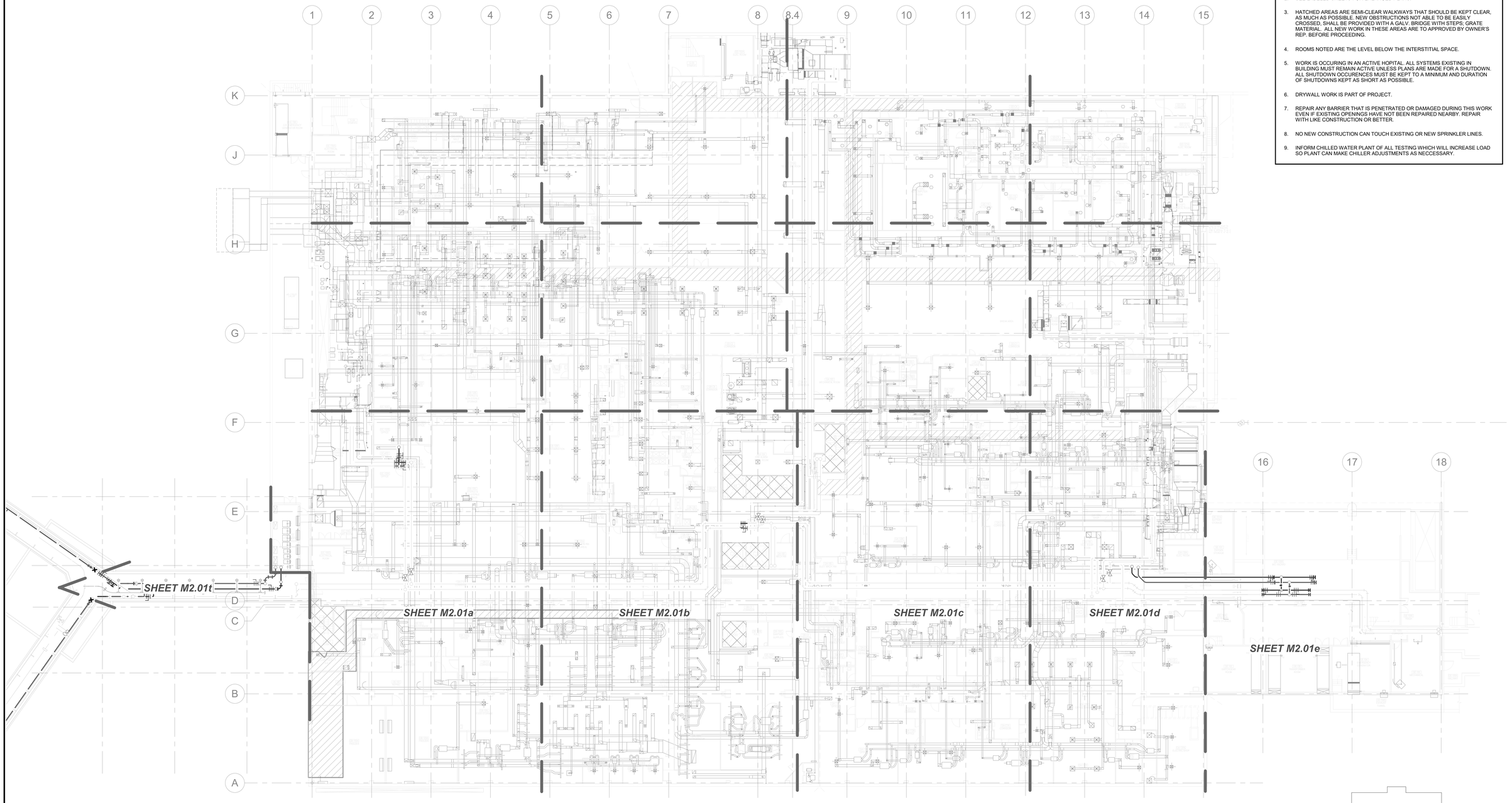
Office of Construction and Facilities Management

Department of Veterans Affairs

VA FORM 08-6231

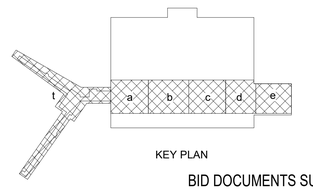
GENERAL NOTES

1. COLUMN LINES ARE MARKED ON BEAMS AT EACH COLUMN, i.e., F7.
2. SEE LABELED SHEETS FOR ENLARGED PLANS.
3. HATCHED AREAS ARE SEMI-CLEAR WALKWAYS THAT SHOULD BE KEPT CLEAR, AS MUCH AS POSSIBLE. NEW OBSTRUCTIONS NOT ABLE TO BE EASILY CROSSED, SHALL BE PROVIDED WITH A GALV. BRIDGE WITH STEPS; GRATE MATERIAL. ALL NEW WORK IN THESE AREAS ARE TO APPROVED BY OWNER'S REP. BEFORE PROCEEDING.
4. ROOMS NOTED ARE THE LEVEL BELOW THE INTERSTITIAL SPACE.
5. WORK IS OCCURING IN AN ACTIVE HOPITAL. ALL SYSTEMS EXISTING IN BUILDING MUST REMAIN ACTIVE UNLESS PLANS ARE MADE FOR A SHUTDOWN. ALL SHUTDOWN OCCURENCES MUST BE KEPT TO A MINIMUM AND DURATION OF SHUTDOWNS KEPT AS SHORT AS POSSIBLE.
6. DRYWALL WORK IS PART OF PROJECT.
7. REPAIR ANY BARRIER THAT IS PENETRATED OR DAMAGED DURING THIS WORK EVEN IF EXISTING OPENINGS HAVE NOT BEEN REPAIRED NEARBY; REPAIR WITH LIKE CONSTRUCTION OR BETTER.
8. NO NEW CONSTRUCTION CAN TOUCH EXISTING OR NEW SPRINKLER LINES.
9. INFORM CHILLED WATER PLANT OF ALL TESTING WHICH WILL INCREASE LOAD SO PLANT CAN MAKE CHILLER ADJUSTMENTS AS NECCESSARY.



MECHANICAL PIPING - BASEMENT INTERSTITIAL KEY PLAN

SCALE: 1/16" = 1'-0"



KEY PLAN

NORTH

BID DOCUMENTS SUBMISSION

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Scale: AS NOTED

Drawing Title: MECHANICAL PIPING - BASEMENT INTERSTITIAL KEY PLAN

Approved: Project Director: BID DOCUMENTS

Project Title: CHILLED WATER LINE REPLACEMENT BLDG 500

Location: VAMC - Martinsburg, WV

Date: 04/22/2022 | Checked: BK | Drawn: JCH

Project Number: 613-16-302

Building Number: 500

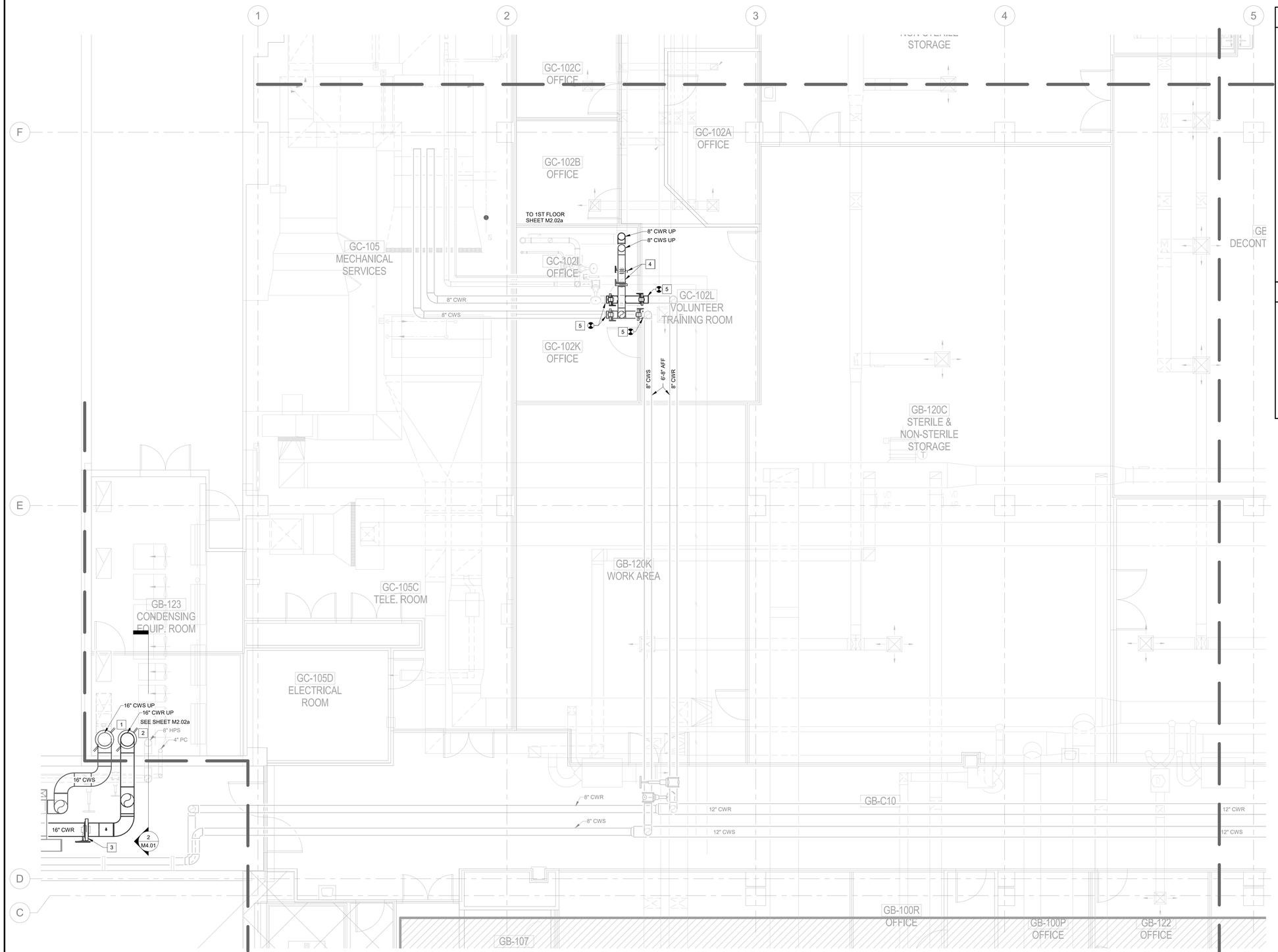
Drawing Number: M2.01

Dwg. 26 of 67

Office of Construction and Facilities Management

Department of Veterans Affairs

VA FORM 08-6231



MECHANICAL PIPING - BASEMENT INTERSTITIAL PLAN-a

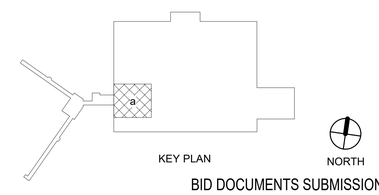
SCALE: 1/4" = 1'-0"

GENERAL NOTES

1. REMOVE PIPE HANGERS ASSOCIATED WITH PIPING SHOWN TO BE REMOVED. HANGERS SHALL NOT BE ABANDONED IN PLACE.
2. COORDINATE ALL MECHANICAL UTILITY AND HVAC UNIT SHUT DOWNS WITH OWNER. ANY SHUT DOWNS NECESSARY TO ACHIEVE THE OBJECTIVE OF THIS DESIGN SHALL BE COMPLETED DURING "OFF HOURS" AND SHALL COMPLY WITH OWNER'S UTILITY SHUT DOWN POLICIES.
3. CONTRACTOR IS RESPONSIBLE FOR ALL CUTTING, PATCHING AND DEMOLITION OF ALL BUILDING SYSTEMS PER THEIR MEANS-AND-METHODS AS NECESSARY TO PROVIDE THE DESIGN INDICATED.
4. LISTED ROOMS ARE IN THE FLOOR BELOW THE INTERSTITIAL SPACE.
5. RELOCATE DOMESTIC WATER PIPING, ELECTRICAL CONDUIT, AND ANCILLARY COMPONENTS AS REQUIRED DUE TO NEW WORK.
6. WORK IS OCCURING IN AN ACTIVE HOPITAL. ALL SYSTEMS EXISTING IN BUILDING MUST REMAIN ACTIVE UNLESS PLANS ARE MADE FOR A SHUTDOWN. ALL SHUTDOWN OCCURENCES MUST BE KEPT TO A MINIMUM AND DURATION OF SHUTDOWNS KEPT AS SHORT AS POSSIBLE.
7. DRYWALL WORK IS PART OF PROJECT.
8. REPAIR ANY BARRIER THAT IS PENETRATED OR DAMAGED DURING THIS WORK EVEN IF EXISTING OPENINGS HAVE NOT BEEN REPAIRED NEARBY. REPAIR WITH LIKE CONSTRUCTION OR BETTER.
9. NO NEW CONSTRUCTION CAN TOUCH EXISTING OR NEW SPRINKLER LINES.
10. INFORM CHILLED WATER PLANT OF ALL TESTING WHICH WILL INCREASE LOAD SO PLANT CAN MAKE CHILLER ADJUSTMENTS AS NECCESSARY.
11. CONTRACTOR SHALL BE RESPONSIBLE FOR BLEADING AIR INTRODUCED IN THE NEW PIPING AND EXISTING PIPING. BLEAD AND PURGING OF AIR, WHEN THE SYSTEM IS FILLED, IS NOT LIMITED TO NEW WORK. IT IS INCLUSIVE OF ALL CHILLED WATER SUPPLY AND RETURN PIPING ON THE CAMPUS.
12. CONTRACTOR SHALL PROVIDE 1.5" VALVED DRAINS WITH HOSE CONNECTIONS LOCATED AS NEEDED TO FILL PIPING AND PERFORM FLUSHING AND CLEANING PROCEDURES.

☐ CONSTRUCTION NOTES

1. RELOCATE CONDUIT, REFRIGERANT PIPING, AND ANCILLARY COMPONENTS AS NEEDED TO ACCOMPLISH THE DESIGN INDICATED. COORDINATE FINAL LOCATION OF RELOCATED DEVICES WITH THE COR.
2. ROUTE NEW PIPING THROUGH TUNNEL WALL INTO UPPER LEVEL CONDENSER BUILDING AND UP THROUGH ROOF.
3. COORDINATE VALVE LOCATIONS WITH EXISTING LIGHT FIXTURES AND CONDUITS.
4. ROUTE NEW 8" CHILLED WATER PIPES TO EXISTING 8" PIPES AND TEMPORARILY TERMINATE WITH A BUTTERFLY VALVE AND BLIND FLANGE FOR FUTURE INTERFACE WITH EXISTING PIPE. ONCE THE NEW CHILLED WATER MAINS ARE ACTIVE, SCHEDULE SHUTDOWN OF IMPACTED EQUIPMENT WITH OWNER AND MAKE FINAL CONNECTIONS AS SHOWN.
5. TIE NEW CHILLED WATER PIPES INTO EXISTING. PROVIDE BUTTERFLY VALVES FOR ISOLATION.



KEY PLAN

NORTH

BID DOCUMENTS SUBMISSION

Revisions:	Date

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Scale: AS NOTED

Drawing Title: MECHANICAL PIPING - BASEMENT INTERSTITIAL PLAN-a

Approved: Project Director: BID DOCUMENTS

Project Title: CHILLED WATER LINE REPLACEMENT BLDG 500

Location: VAMC - Martinsburg, WV

Date: 04/22/2022 | Checked: BK | Drawn: JCH

Project Number: 613-16-302

Building Number: 500

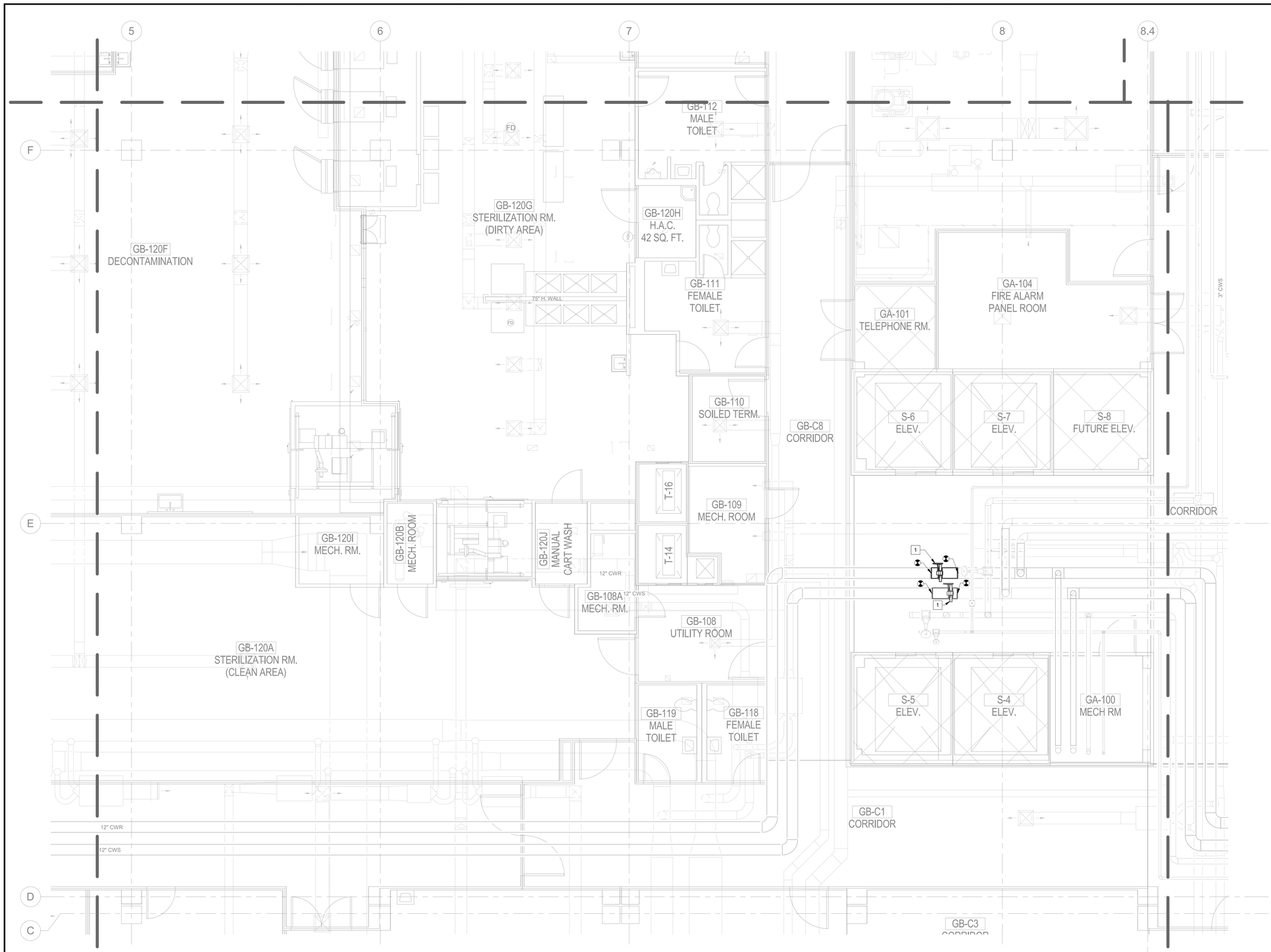
Drawing Number: M2.01a

Dwg. 27 of 67

Office of Construction and Facilities Management

Department of Veterans Affairs

VA FORM 08-6231



GENERAL NOTES

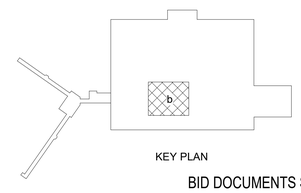
1. REMOVE PIPE HANGERS ASSOCIATED WITH PIPING SHOWN TO BE REMOVED. HANGERS SHALL NOT BE ABANDONED IN PLACE.
2. COORDINATE ALL MECHANICAL UTILITY AND HVAC UNIT SHUT DOWNS WITH OWNER. ANY SHUT DOWNS NECESSARY TO ACHIEVE THE OBJECTIVE OF THIS DESIGN SHALL BE COMPLETED DURING "OFF HOURS" AND SHALL COMPLY WITH OWNER'S UTILITY SHUT DOWN POLICIES.
3. CONTRACTOR IS RESPONSIBLE FOR ALL CUTTING, PATCHING AND DEMOLITION OF ALL BUILDING SYSTEMS PER THEIR MEANS-AND-METHODS AS NECESSARY TO PROVIDE THE DESIGN INDICATED.
4. LISTED ROOMS ARE IN THE FLOOR BELOW THE INTERSTITIAL SPACE.
5. RELOCATE DOMESTIC WATER PIPING, ELECTRICAL CONDUIT, AND ANCILLARY COMPONENTS AS REQUIRED DUE TO NEW WORK.
6. WORK IS OCCURING IN AN ACTIVE HOPITAL. ALL SYSTEMS EXISTING IN BUILDING MUST REMAIN ACTIVE UNLESS PLANS ARE MADE FOR A SHUTDOWN. ALL SHUTDOWN OCCURENCES MUST BE KEPT TO A MINIMUM AND DURATION OF SHUTDOWNS KEPT AS SHORT AS POSSIBLE.
7. DRYWALL WORK IS PART OF PROJECT.
8. REPAIR ANY BARRIER THAT IS PENETRATED OR DAMAGED DURING THIS WORK EVEN IF EXISTING OPENINGS HAVE NOT BEEN REPAIRED NEARBY. REPAIR WITH LIKE CONSTRUCTION OR BETTER.
9. NO NEW CONSTRUCTION CAN TOUCH EXISTING OR NEW SPRINKLER LINES.
10. INFORM CHILLED WATER PLANT OF ALL TESTING WHICH WILL INCREASE LOAD SO PLANT CAN MAKE CHILLER ADJUSTMENTS AS NECCESSARY.
11. CONTRACTOR SHALL BE RESPONSIBLE FOR BLEADING AIR INTRODUCED IN THE NEW PIPING AND EXISTING PIPING. BLEAD AND PURGING OF AIR, WHEN THE SYSTEM IS FILLED, IS NOT LIMITED TO NEW WORK. IT IS INCLUSIVE OF ALL CHILLED WATER SUPPLY AND RETURN PIPING ON THE CAMPUS.
12. CONTRACTOR SHALL PROVIDE 1.5" VALVED DRAINS WITH HOSE CONNECTIONS LOCATED AS NEEDED TO FILL PIPING AND PERFORM FLUSHING AND CLEANING PROCEDURES.

☐ CONSTRUCTION NOTES

1. PROVIDE NEW 12" BUTTERFLY VALVES FOR FUTURE DEMOLITION OF DOWNSTREAM PIPING.

MECHANICAL PIPING - BASEMENT INTERSTITIAL PLAN-b

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



KEY PLAN

NORTH

BID DOCUMENTS SUBMISSION

Revisions:	Date

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Scale: AS NOTED

Drawing Title: MECHANICAL PIPING - BASEMENT INTERSTITIAL PLAN-b

Approved: Project Director: BID DOCUMENTS

Project Title: CHILLED WATER LINE REPLACEMENT BLDG 500

Location: VAMC - Martinsburg, WV

Date: 04/22/2022 | Checked: BK | Drawn: JCH

Project Number: 613-16-302

Building Number: 500

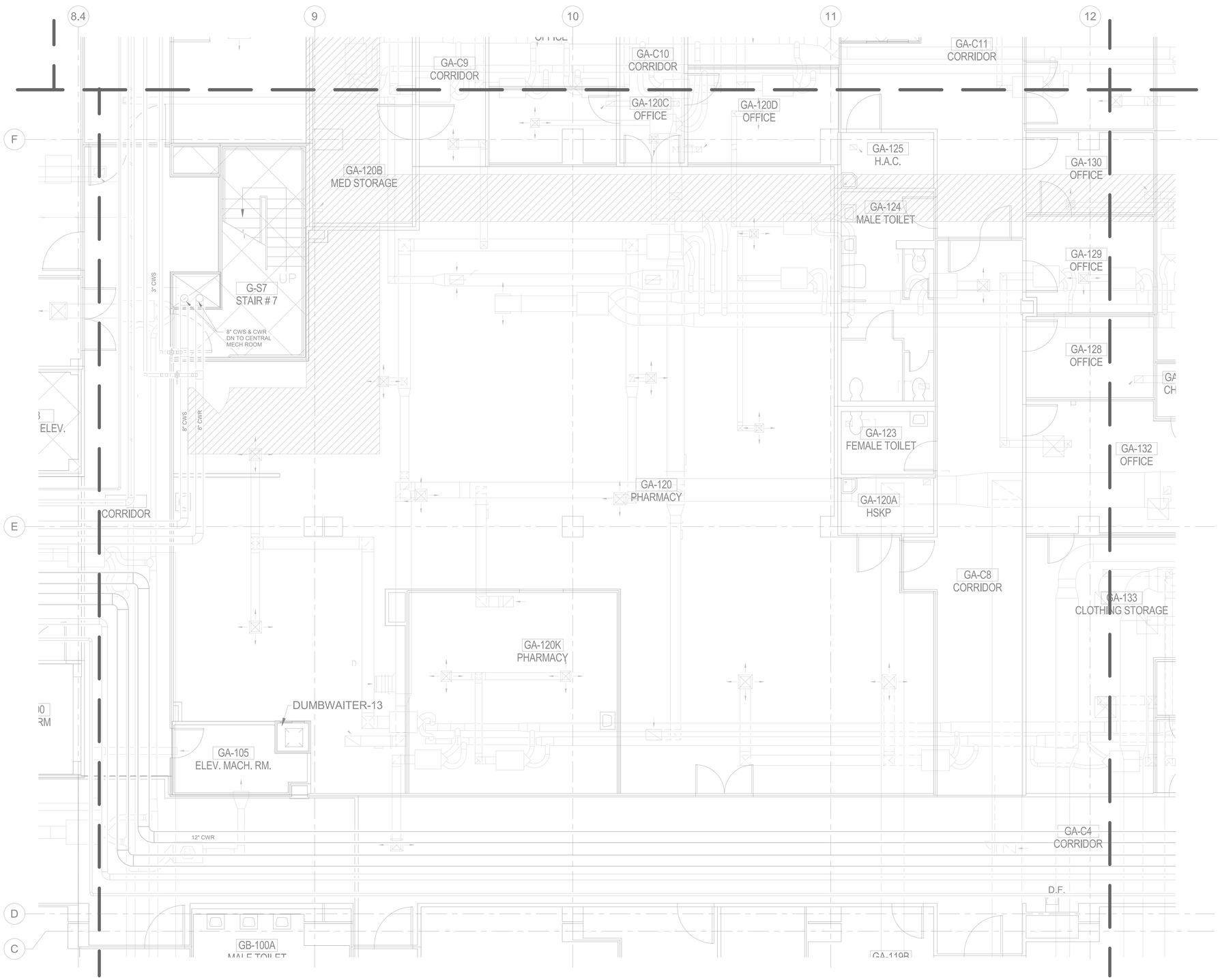
Drawing Number: M2.01b

Dwg. 28 of 67

Office of Construction and Facilities Management

Department of Veterans Affairs

VA FORM 08-6231



GENERAL NOTES

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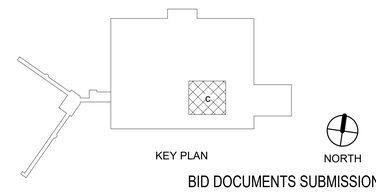
12. CONTRACTOR SHALL PROVIDE 1.5" VALVED DRAINS WITH HOSE CONNECTIONS LOCATED AS NEEDED TO FILL PIPING AND PERFORM FLUSHING AND CLEANING PROCEDURES.

MECHANICAL PIPING - BASEMENT INTERSTITIAL PLAN-c

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

INFORMATION ONLY - NO WORK ON THIS SHEET



BID DOCUMENTS SUBMISSION

Revisions:	Date

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Scale: AS NOTED

Drawing Title: MECHANICAL PIPING - BASEMENT INTERSTITIAL PLAN-c

Approved: Project Director: BID DOCUMENTS

Project Title: CHILLED WATER LINE REPLACEMENT BLDG 500

Location: VAMC - Martinsburg, WV

Date: 04/22/2022 | Checked: BK | Drawn: JCH

Project Number: 613-16-302

Building Number: 500

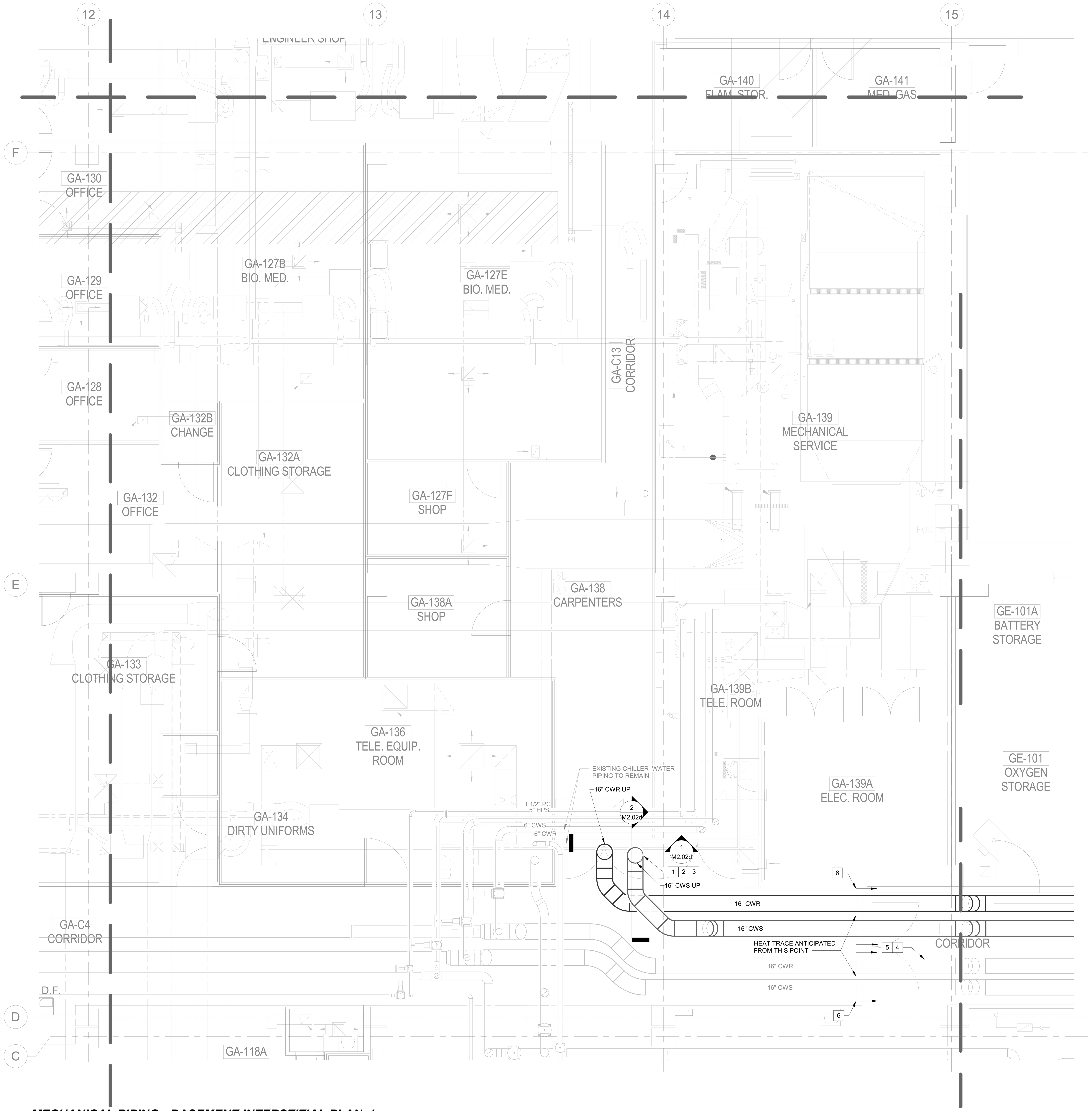
Drawing Number: M2.01c

Dwg. 29 of 67

Office of Construction and Facilities Management

Department of Veterans Affairs

VA FORM 08-6231



MECHANICAL PIPING - BASEMENT INTERSTITIAL PLAN-d

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

GENERAL NOTES

1. REMOVE PIPE HANGERS ASSOCIATED WITH PIPING SHOWN TO BE REMOVED. HANGERS SHALL NOT BE ABANDONED IN PLACE.
2. COORDINATE ALL MECHANICAL UTILITY AND HVAC UNIT SHUT DOWNS WITH OWNER. ANY SHUT DOWNS NECESSARY TO ACHIEVE THE OBJECTIVE OF THIS DESIGN SHALL BE COMPLETED DURING "OFF HOURS" AND SHALL COMPLY WITH OWNER'S UTILITY SHUT DOWN POLICIES.
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8. REPAIR ANY BARRIER THAT IS PENETRATED OR DAMAGED DURING THIS WORK EVEN IF EXISTING OPENINGS HAVE NOT BEEN REPAIRED NEARBY. REPAIR WITH LIKE CONSTRUCTION OR BETTER.
9. NO NEW CONSTRUCTION CAN TOUCH EXISTING OR NEW SPRINKLER LINES.
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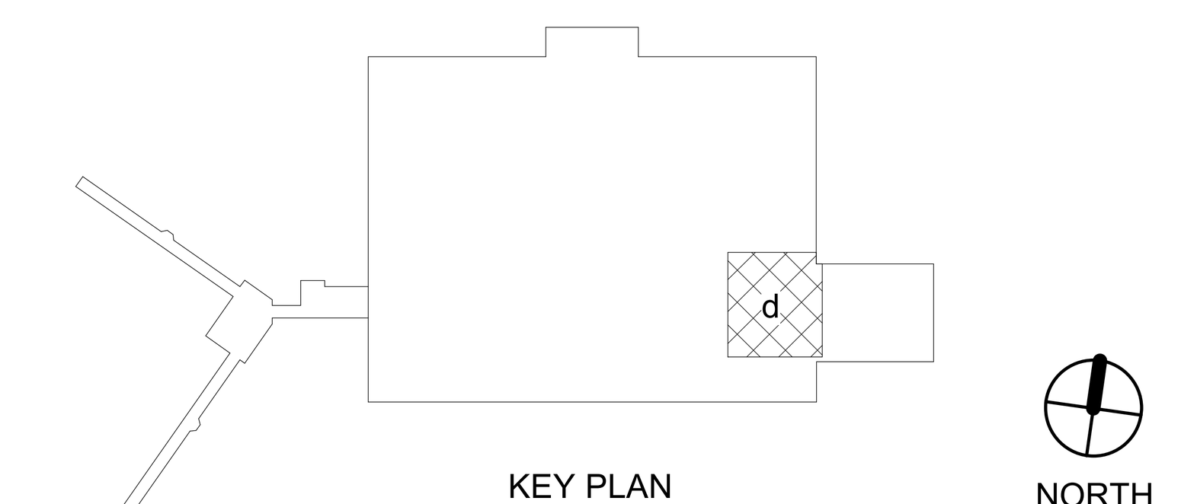
11 CONTRACTOR SHALL BE RESPONSIBLE FOR BLEADING AIR INTRODUCED IN THE NEW PIPING AND EXISTING PIPING. BLEAD AND PURGING OF AIR, WHEN THE SYSTEM IS FILLED, IS NOT LIMITED TO NEW WORK. IT IS INCLUSIVE OF ALL CHILLED WATER SUPPLY AND RETURN PIPING ON THE CAMPUS.
12 CONTRACTOR SHALL PROVIDE 1.5" VALVED DRAINS WITH HOSE CONNECTIONS LOCATED AS NEEDED TO FILL PIPING AND PERFORM FLUSHING AND CLEANING PROCEDURES.

☐ CONSTRUCTION NOTES

1. ROUTE NEW 16" CHILLED WATER PIPES UP THROUGH 1A-187 STORAGE ROOM ABOVE. SEE M2.02d FOR CONTINUATION.
2. RELOCATE CONDUIT, ABANDONED DUCTWORK, AND ANCILLARY COMPONENTS AS NEEDED TO ACCOMPLISH THE DESIGN INDICATED.
3. PROVIDE FIRE STOPPING ON PIPE PENETRATION THROUGH FLOOR. COORDINATE SPECIFIC LOCATION AND SPACING OF PIPE RISERS WITH THE UL LISTED PENETRATIONS USED, AND REQUIRED PIPE SUPPORTS.
4. REMOVE AND REPLACE INSULATION ON CHW PIPING LEFT EXPOSED DUE TO THE REMOVAL OF THE INSULATED ENCLOSURE.
5. PROVIDE HEAT TRACE ON ALL CHW PIPING EXPOSED TO AMBIENT TEMPERATURES OR INSTALLED IN UNTEMPERED SPACES, SUCH AS ABOVE THE LOADING DOCK CEILING. 11.8 W/FT HEAT OUTPUT, 277V.
6.



KEY PLAN

NORTH

BID DOCUMENTS SUBMISSION

Revisions:	Date

CONSULTANTS:

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04/22/2022

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Scale: AS NOTED

Drawing Title: MECHANICAL PIPING - BASEMENT INTERSTITIAL PLAN-d

Approved: Project Director: BID DOCUMENTS

Project Title: CHILLED WATER LINE REPLACEMENT BLDG 500

Location: VAMC - Martinsburg, WV

Date: 04/22/2022 | Checked: BK | Drawn: JCH

Project Number: 613-16-302

Building Number: 500

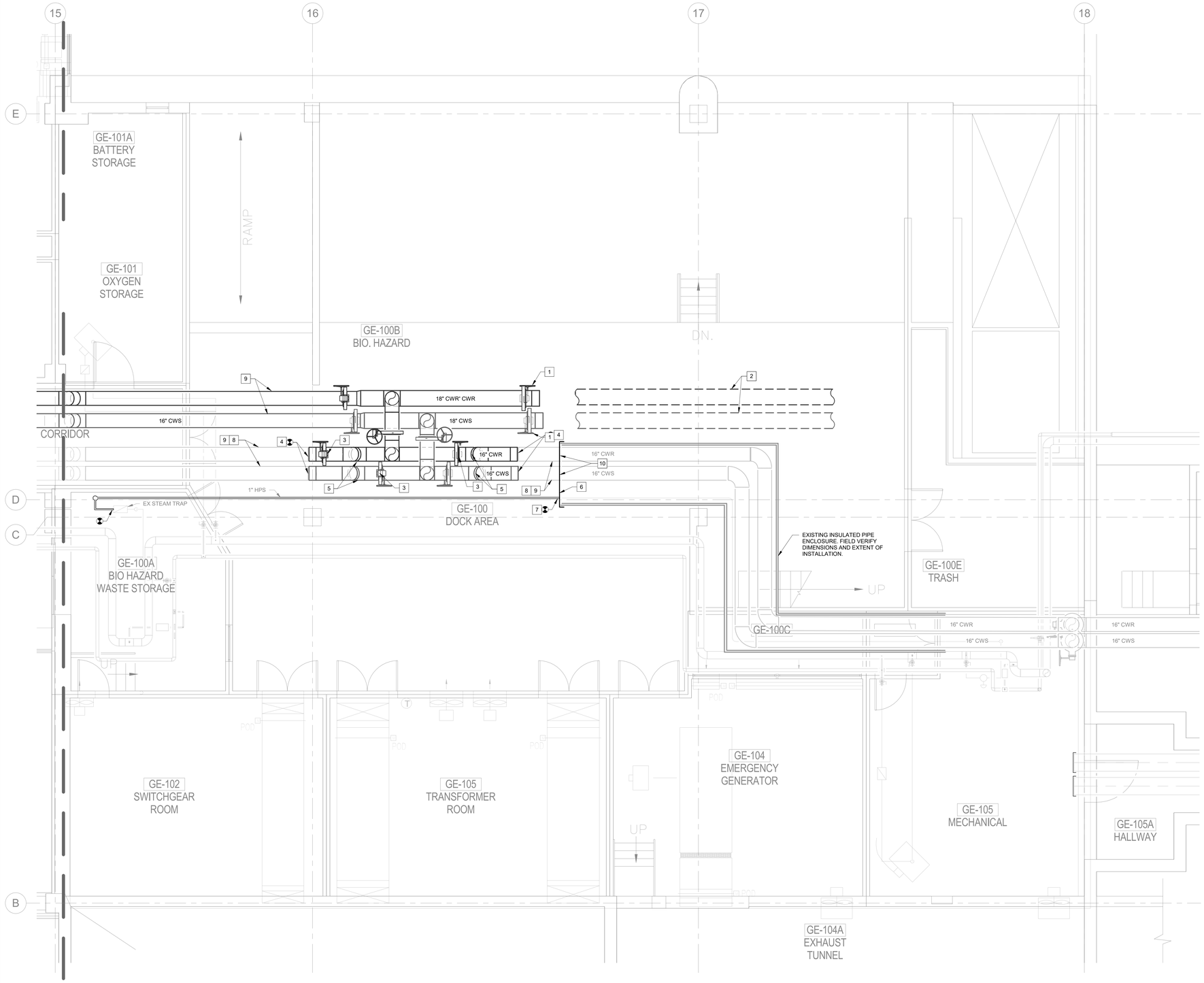
Drawing Number: M2.01d

Dwg. 30 of 67

Office of Construction and Facilities Management

Department of Veterans Affairs

VA FORM 08-6231



MECHANICAL PIPING - BASEMENT INTERSTAITIAL PLAN-e

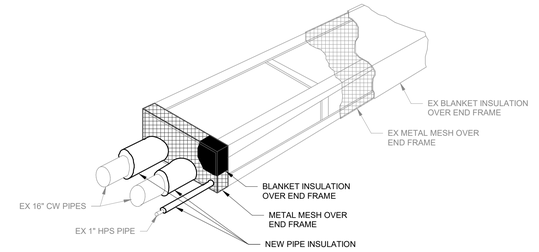
SCALE: 1/4" = 1'-0"

GENERAL NOTES

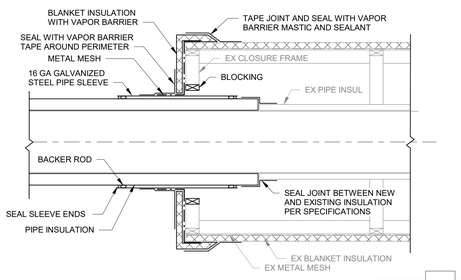
1. REMOVE PIPE HANGERS ASSOCIATED WITH PIPING SHOWN TO BE REMOVED. HANGERS SHALL NOT BE ABANDONED IN PLACE.
2. COORDINATE ALL MECHANICAL UTILITY AND HVAC UNIT SHUT DOWNS WITH OWNER. ANY SHUT DOWNS NECESSARY TO ACHIEVE THE OBJECTIVE OF THIS DESIGN SHALL BE COMPLETED DURING "OFF HOURS" AND SHALL COMPLY WITH OWNER'S UTILITY SHUT DOWN POLICIES.
3. CONTRACTOR IS RESPONSIBLE FOR ALL CUTTING, PATCHING AND DEMOLITION OF ALL BUILDING SYSTEMS PER THEIR MEANS-AND-METHODS AS NECESSARY TO PROVIDE THE DESIGN INDICATED.
4. LISTED ROOMS ARE IN THE FLOOR BELOW THE INTERSTITIAL SPACE.
5. RELOCATE DOMESTIC WATER PIPING, ELECTRICAL CONDUIT, AND ANCILLARY COMPONENTS AS REQUIRED DUE TO NEW WORK.
6. WORK IS OCCURING IN AN ACTIVE HOPITAL. ALL SYSTEMS EXISTING IN BUILDING MUST REMAIN ACTIVE UNLESS PLANS ARE MADE FOR A SHUTDOWN. ALL SHUTDOWN OCCURENCES MUST BE KEPT TO A MINIMUM AND DURATION OF SHUTDOWNS KEPT AS SHORT AS POSSIBLE.
7. DRYWALL WORK IS PART OF PROJECT.
8. REPAIR ANY BARRIER THAT IS PENETRATED OR DAMAGED DURING THIS WORK EVEN IF EXISTING OPENINGS HAVE NOT BEEN REPAIRED NEARBY. REPAIR WITH LIKE CONSTRUCTION OR BETTER.
9. NO NEW CONSTRUCTION CAN TOUCH EXISTING OR NEW SPRINKLER LINES.
10. INFORM CHILLED WATER PLANT OF ALL TESTING WHICH WILL INCREASE LOAD SO PLANT CAN MAKE CHILLER ADJUSTMENTS AS NECCESSARY.
11. CONTRACTOR SHALL BE RESPONSIBLE FOR BLEADING AIR INTRODUCED IN THE NEW PIPING AND EXISTING PIPING. BLEAD AND PURGING OF AIR, WHEN THE SYSTEM IS FILLED, IS NOT LIMITED TO NEW WORK. IT IS INCLUSIVE OF ALL CHILLED WATER SUPPLY AND RETURN PIPING ON THE CAMPUS.
12. CONTRACTOR SHALL PROVIDE 1.5" VALVED DRAINS WITH HOSE CONNECTIONS LOCATED AS NEEDED TO FILL PIPING AND PERFORM FLUSHING AND CLEANING PROCEDURES.

☐ CONSTRUCTION NOTES

1. NEW BUTTERFLY VALVES WITH BLIND FLANGE FOR FUTURE 18" CHILLED WATER MAIN REPLACEMENT.
2. PATH FOR FUTURE 18" CHW MAINS. MAINS NOT INSTALLED UNDER THIS CONTRACT.
3. NEW BUTTERFLY VALVES FOR ISOLATION SERVICE DURING FUTURE 18" CHILLED WATER MAIN REPLACEMENT.
4. INSTALL NEW SECTION OF PIPE INTO EXISTING CHILLED WATER MAINS FOR BRANCH PIPE INSTALLATION.
5. INSTALL ELBOWS TO ADJUST PIPE ELEVATION AS NEEDED TO INSTALL BRANCH CONNECTIONS AND VALVES.
6. COVER OPENING OF PIPE ENCLOSURE WITH METAL MESH AND INSULATION. MESH AND INSULATING MATERIALS TO MATCH EXISTING. PROVIDE VAPOR BARRIER, AND SEAL VAPOR BARRIER BETWEEN NEW AND EXISTING INSULATION. SEE DETAILS ON THIS SHEET.
7. PROVIDE NEW, CONTINUOUS INSULATION ON 1" HPS FROM THE CHILLED WATER PIPE ENCLOSURE TO EXISTING STEAM TRAP.
8. REMOVE AND REPLACE INSULATION ON CHW PIPING LEFT EXPOSED DUE TO THE REMOVAL OF THE INSULATED ENCLOSURE.
9. PROVIDE HEAT TRACE ON ALL CHW PIPING EXPOSED TO AMBIENT TEMPERATURES OR INSTALLED IN UNTEMPERED SPACES, SUCH AS ABOVE THE LOADING DOCK CEILING. 11.8 W/FT HEAT OUTPUT, 277V.
10. EXTEND HEAT TRACE 3" INTO PIPE ENCLOSURE.

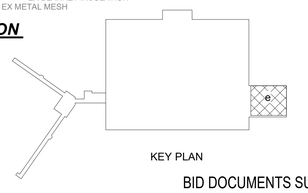


PIPE ENCLOSURE REPAIR DETAIL



PIPE ENCLOSURE SECTION

SCALE: 3/4" = 1'-0"



BID DOCUMENTS SUBMISSION

Revisions:	Date

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Scale: AS NOTED

Drawing Title: MECHANICAL PIPING - BASEMENT INTERSTAITIAL PLAN-e

Approved: Project Director: BID DOCUMENTS

Project Title: CHILLED WATER LINE REPLACEMENT BLDG 500

Location: VAMC - Martinsburg, WV

Date: 04/22/2022 | Checked: BK | Drawn: JCH

Project Number: 613-16-302

Building Number: 500

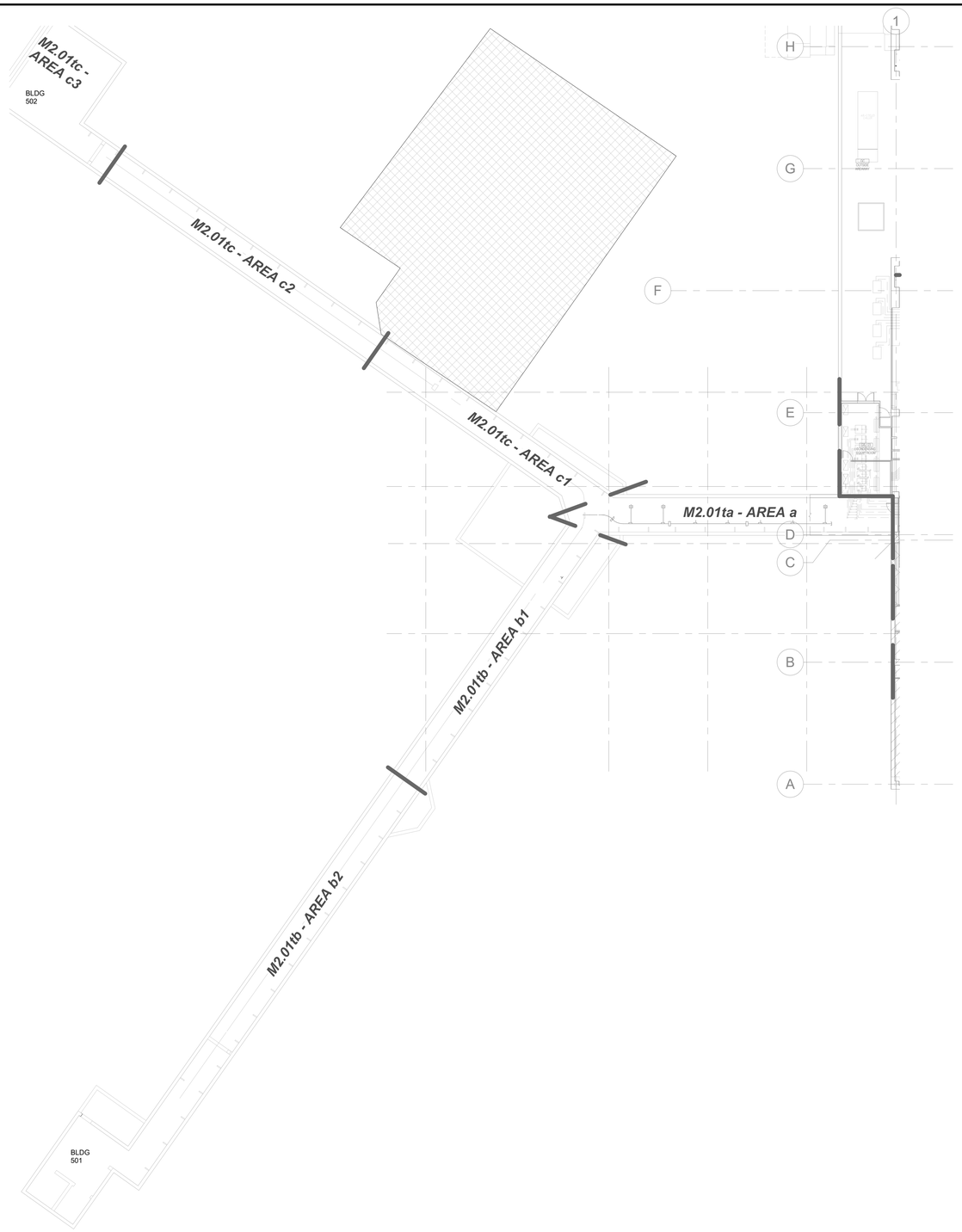
Drawing Number: M2.01e

Dwg. 31 of 67

Office of Construction and Facilities Management

Department of Veterans Affairs

VA FORM 08-6231

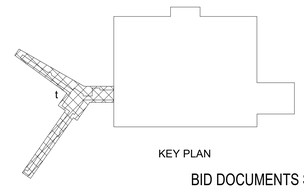


GENERAL NOTES

1. REMOVE PIPE HANGERS ASSOCIATED WITH PIPING SHOWN TO BE REMOVED. HANGERS SHALL NOT BE ABANDONED IN PLACE.
2. COORDINATE ALL MECHANICAL UTILITY AND HVAC UNIT SHUT DOWNS WITH OWNER. ANY SHUT DOWNS NECESSARY TO ACHIEVE THE OBJECTIVE OF THIS DESIGN SHALL BE COMPLETED DURING "OFF HOURS" AND SHALL COMPLY WITH OWNER'S UTILITY SHUT DOWN POLICIES.
3. CONTRACTOR IS RESPONSIBLE FOR ALL CUTTING, PATCHING AND DEMOLITION OF ALL BUILDING SYSTEMS PER THEIR MEANS-AND-METHODS AS NECESSARY TO PROVIDE THE DESIGN INDICATED.
4. LISTED ROOMS ARE IN THE FLOOR BELOW THE INTERSTITIAL SPACE.
5. RELOCATE DOMESTIC WATER PIPING, ELECTRICAL CONDUIT, AND ANCILLARY COMPONENTS AS REQUIRED DUE TO NEW WORK.
6. WORK IS OCCURING IN AN ACTIVE HOPITAL. ALL SYSTEMS EXISTING IN BUILDING MUST REMAIN ACTIVE UNLESS PLANS ARE MADE FOR A SHUTDOWN. ALL SHUTDOWN OCCURENCES MUST BE KEPT TO A MINIMUM AND DURATION OF SHUTDOWNS KEPT AS SHORT AS POSSIBLE.
7. DRYWALL WORK IS PART OF PROJECT.
8. REPAIR ANY BARRIER THAT IS PENETRATED OR DAMAGED DURING THIS WORK EVEN IF EXISTING OPENINGS HAVE NOT BEEN REPAIRED NEARBY. REPAIR WITH LIKE CONSTRUCTION OR BETTER.
9. NO NEW CONSTRUCTION CAN TOUCH EXISTING OR NEW SPRINKLER LINES.
10. INFORM CHILLED WATER PLANT OF ALL TESTING WHICH WILL INCREASE LOAD SO PLANT CAN MAKE CHILLER ADJUSTMENTS AS NECCESSARY.
11. CONTRACTOR SHALL BE RESPONSIBLE FOR BLEADING AIR INTRODUCED IN THE NEW PIPING AND EXISTING PIPING. BLEAD AND PURGING OF AIR, WHEN THE SYSTEM IS FILLED, IS NOT LIMITED TO NEW WORK. IT IS INCLUSIVE OF ALL CHILLED WATER SUPPLY AND RETURN PIPING ON THE CAMPUS.
12. CONTRACTOR SHALL PROVIDE 1.5" VALVED DRAINS WITH HOSE CONNECTIONS LOCATED AS NEEDED TO FILL PIPING AND PERFORM FLUSHING AND CLEANING PROCEDURES.

MECHANICAL PIPING - BASEMENT PLAN-TUNNEL

SCALE: 1/16" = 1'-0"



KEY PLAN

NORTH

BID DOCUMENTS SUBMISSION

Revisions:	Date

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Scale: AS NOTED

Drawing Title: MECHANICAL PIPING - BASEMENT PLAN-TUNNEL

Approved: Project Director: BID DOCUMENTS

Project Title: CHILLED WATER LINE REPLACEMENT BLDG 500

Location: VAMC - Martinsburg, WV

Date: 04/22/2022 | Checked: BK | Drawn: JCH

Project Number: 613-16-302

Building Number: 500

Drawing Number: M2.01t

Dwg. 32 of 67

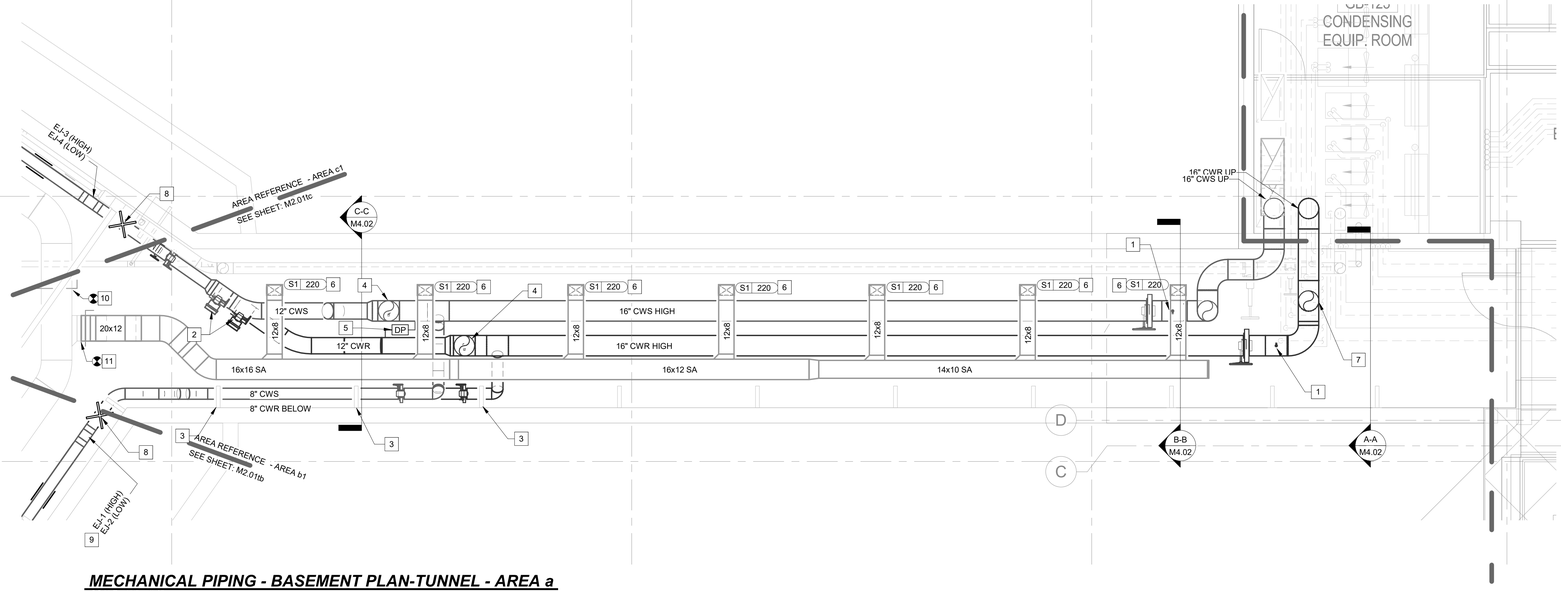
Office of Construction and Facilities Management

Department of Veterans Affairs

VA FORM 08-6231

MECHANICAL PIPING - BASEMENT DEMO PLAN-TUNNEL - AREA a

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



MECHANICAL PIPING - BASEMENT PLAN-TUNNEL - AREA a

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

GENERAL NOTES

1. REMOVE PIPE HANGERS ASSOCIATED WITH PIPING SHOWN TO BE REMOVED. HANGERS SHALL NOT BE ABANDONED IN PLACE.
2. COORDINATE ALL MECHANICAL UTILITY AND HVAC UNIT SHUT DOWNS WITH OWNER. ANY SHUT DOWNS NECESSARY TO ACHIEVE THE OBJECTIVE OF THIS DESIGN SHALL BE COMPLETED DURING "OFF HOURS" AND SHALL COMPLY WITH OWNER'S UTILITY SHUT DOWN POLICIES.
3. CONTRACTOR IS RESPONSIBLE FOR ALL CUTTING, PATCHING AND DEMOLITION OF ALL BUILDING SYSTEMS PER THEIR MEANS-AND-METHODS AS NECESSARY TO PROVIDE THE DESIGN INDICATED.
4. LISTED ROOMS ARE IN THE FLOOR BELOW THE INTERSTITIAL SPACE.
5. RELOCATE DOMESTIC WATER PIPING, ELECTRICAL CONDUIT, AND ANCILLARY COMPONENTS AS REQUIRED DUE TO NEW WORK.
6. WORK IS OCCURING IN AN ACTIVE HOPITAL. ALL SYSTEMS EXISTING IN BUILDING MUST REMAIN ACTIVE UNLESS PLANS ARE MADE FOR A SHUTDOWN. ALL SHUTDOWN OCCURENCES MUST BE KEPT TO A MINIMUM AND DURATION OF SHUTDOWNS KEPT AS SHORT AS POSSIBLE.
7. DRYWALL WORK IS PART OF PROJECT.
8. REPAIR ANY BARRIER THAT IS PENETRATED OR DAMAGED DURING THIS WORK EVEN IF EXISTING OPENINGS HAVE NOT BEEN REPAIRED NEARBY. REPAIR WITH LIKE CONSTRUCTION OR BETTER.
9. NO NEW CONSTRUCTION CAN TOUCH EXISTING OR NEW SPRINKLER LINES.
10. INFORM CHILLED WATER PLANT OF ALL TESTING WHICH WILL INCREASE LOAD SO PLANT CAN MAKE CHILLER ADJUSTMENTS AS NECCESSARY.
11. CONTRACTOR SHALL BE RESPONSIBLE FOR BLEADING AIR INTRODUCED IN THE NEW PIPING AND EXISTING PIPING. BLEAD AND PURGING OF AIR, WHEN THE SYSTEM IS FILLED, IS NOT LIMITED TO NEW WORK. IT IS INCLUSIVE OF ALL CHILLED WATER SUPPLY AND RETURN PIPING ON THE CAMPUS.
12. CONTRACTOR SHALL PROVIDE 1.5" VALVED DRAINS WITH HOSE CONNECTIONS LOCATED AS NEEDED TO FILL PIPING AND PERFORM FLUSHING AND CLEANING PROCEDURES.

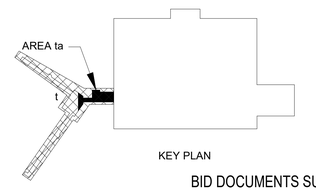
◇ DEMOLITION NOTES

1. AS PART OF THE PRE-DEMOLITION TAB PROCEDURES, PERFORM AN AIRFLOW TEST OF THE 20X12 SUPPLY DUCT BRANCH AND ASSOCIATED AIR DEVICES INDICATED FOR DEMOLITION. DUCT AIRFLOW TEST SHALL MEASURE BOTH AIR VOLUME AND STATIC PRESSURE. INFORM THE COR AND A/E IF THE MEASURED AIRFLOW DEVIATES BY MORE THAN 10% BELOW 1,540 CFM.
2. REMOVE SUPPLY DUCT, AIR DEVICES, AND DUCT HANGERS TO POINTS INDICATED.
3. AS PART OF THE PRE-DEMOLITION TAB PROCEDURES, PERFORM AN AIRFLOW TEST OF THE SUPPLY DUCT BRANCH SERVING THE TUNNEL TO BLDG 502. LOCATE THE TEST BETWEEN THE 20X12 SUPPLY DUCT BRANCH AND THE NEXT AIR DEVICE. AIRFLOW TEST SHALL MEASURE BOTH AIR VOLUME AND STATIC PRESSURE.

□ CONSTRUCTION NOTES

1. PROVIDE 1" DRAIN VALVE UP-STREAM OF ISOLATION VALVE. SEE DETAIL ON SHEET M5.01
2. 8" CWS AND CWR BRANCHES VALVED AND CAPPED FOR FUTURE USE.
3. INSTALL NEW CWS AND CWR LINES THROUGH EXISTING WALL MOUNTED PIPE SUPPORTS. SEE DETAILS ON M4.02 AND M4.03 FOR MORE INFORMATION, AND AND M6 SERIES PLANS FOR DIRECITON ON RELOCATING EXISING CONDUITS.
4. CHILLED WATER DIRT LEG AT END OF 16" MAIN. INSTALL PER CHILLED WATER DIRT LEG DETAIL.
5. DIFFERENTIAL PRESSURE ASSEMBLY FOR BMS MONITORING AND CONTROL. MECHANICAL CONTRACTOR SHALL ATTAIN THE SERVICES OF THE VA HOSPITAL'S CONTRACTED CONTROLS VENDOR, JCI, FOR CONTROLS WORK, INCLUDING INSTALLATION, WIRING/ CONNECTION TO EXISTING BUILDING CONTROLLER, INTEGRATING THE DP SENSOR INTO EXISTING CHILLED WATER PUMP CONTROL LOGIC, AND ADDING THE PRESSURE READING TO THE BAS WORKSTATION GRAPHICS. COORDINATE SPECIFIC AREAS OF RESPONSIBILITY WITH THE JCI VENDOR DURING THE BIDDING PHASE. MECHANICAL CONTRACTOR SHALL PROVIDE 277-24 VOLT STEP-DOWN TRANSFORMER AND POWER WIRING, UNLESS SPECIFICALLY DIRECTED OTHERWISE BY JCI.
6. SUSPEND SUPPLY REGISTER LEVEL WITH BOTTOM OF NEW CHW PIPING. COORDINATE EXACT LOCATION OF EACH SUPPLY REGISTER WITH EXISTING CONDITIONS INCLUDING LIGHTING, WALL MOUNTED PIPE SUPPORTS, CONDUITS, AND ANCILLARY COMPONENTS.
7. EXISTING 12X12 JUNCTION BOX WITH 6 CONDUIT CONNECTIONS IN THIS LOCATION. RELOCATE JUNCTION BOX AND REROUTE CONDUIT AND WIRING TO AVOID CONFLICT WITH CHILLED WATER PIPING ROUTING. IDENTIFY EQUIPMENT SERVICED BY THE EXISTING CONDUIT AND COORDINATE SHUTDOWN WITH THE COR. SEE A-A ON M4.02 FOR SECTION VIEW. COORDINATE FINAL LOCATION OF RELOCATED DEVICES WITH THE COR.
8. ANCHOR CWS AND CWR PIPES TO WALL. SEE LARGE PIPE ANCHOR DETAIL ON M5.01.
9. INSTALL PIPE EXPANSION JOINT PER MANUFACTURER'S REQUIREMENTS AND EJMA STANDARDS. SEE SCHEDULE FOR ANCHOR AND GUIDE DISTANCES.
10. AFTER CONSTRUCTION, REBALANCE BRANCH DUCT TO THE AIRFLOW AND STATIC PRESSURE TEST VALUES RECORDED IN THE PRE-DEMOLITION BALANCE. INSTALL NEW VOLUME DAMPER IF NEEDED FOR BALANCING, AND REPAIR INSULATION AND VAPOR BARRIER.
11. BALANCE AIRFLOW IN NEW SUPPLY AIR BRANCH TO THE VALUE MEASURED IN THE PRE-DEMOLITION AIRFLOW TEST. BALANCE EACH SUPPLY REGISTER FOR AN EQUAL DISTRIBUTION OF AIRFLOW. INFORM COR AND A/E IF AIRFLOW DEVIATES BY MORE THAN 10% BELOW THE AIRFLOW VALUES LISTED ON THE PLANS.

X = CHILLED WATER PIPE FIXED ANCHOR POINT



KEY PLAN

BID DOCUMENTS SUBMISSION

Revisions:	Date

CONSULTANTS:

SEAL:

04/22/2022

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Scale: AS NOTED

Drawing Title: MECHANICAL PIPING - BASEMENT PLAN-TUNNEL - AREA a

Approved: Project Director: BID DOCUMENTS

Project Title: CHILLED WATER LINE REPLACEMENT BLDG 500

Location: VAMC - Martinsburg, WV

Date: 04/22/2022 | Checked: BK | Drawn: JCH

Project Number: 613-16-302

Building Number: 500

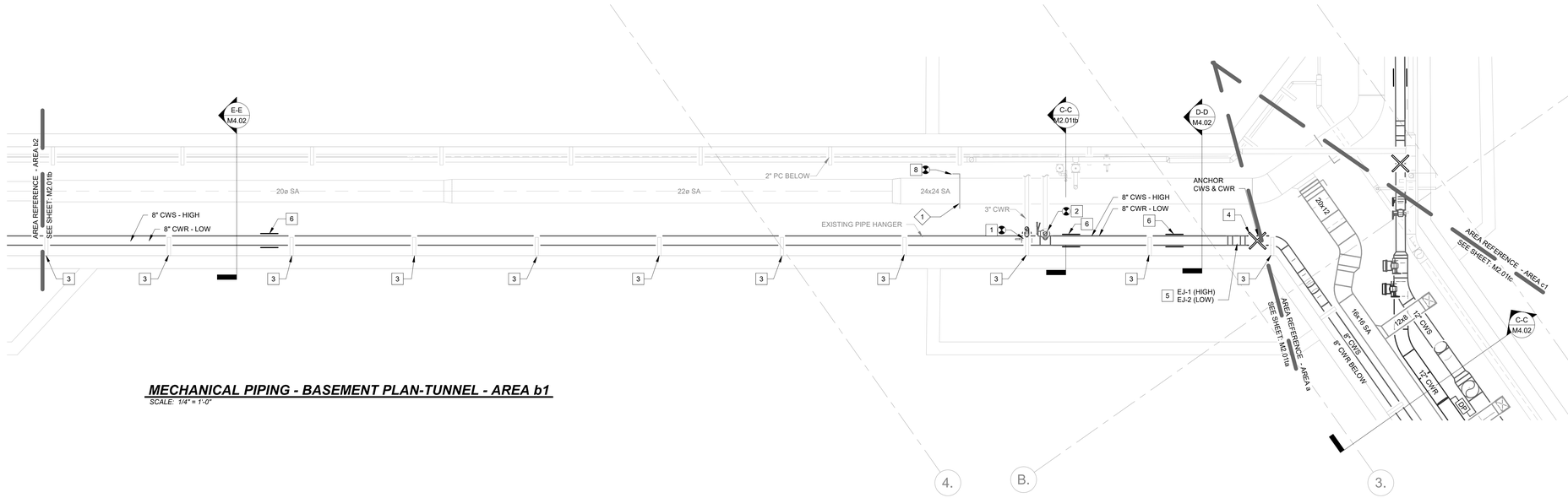
Drawing Number: M2.01ta

Dwg. 33 of 67

Office of Construction and Facilities Management

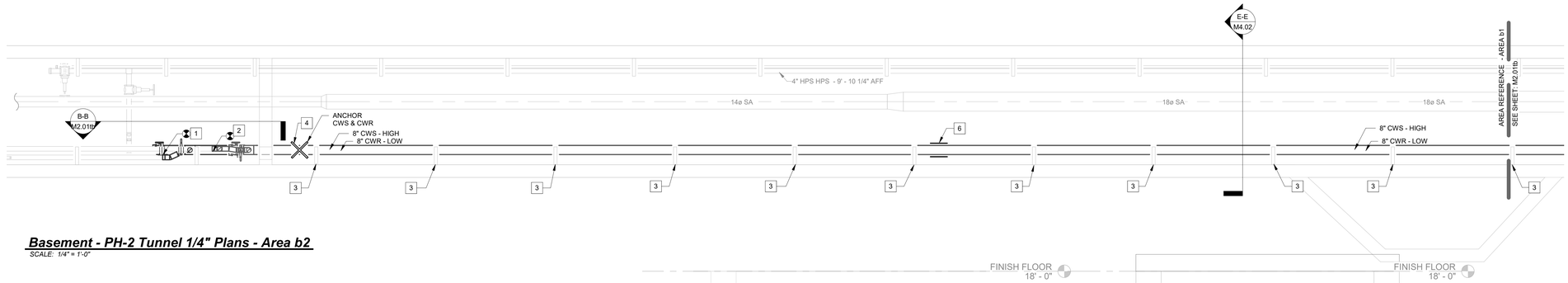
Department of Veterans Affairs

VA FORM 08-6231



MECHANICAL PIPING - BASEMENT PLAN-TUNNEL - AREA b1

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



Basement - PH-2 Tunnel 1/4" Plans - Area b2

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

GENERAL NOTES

1. REMOVE PIPE HANGERS ASSOCIATED WITH PIPING SHOWN TO BE REMOVED. HANGERS SHALL NOT BE ABANDONED IN PLACE.
2. COORDINATE ALL MECHANICAL UTILITY AND HVAC UNIT SHUT DOWNS WITH OWNER. ANY SHUT DOWNS NECESSARY TO ACHIEVE THE OBJECTIVE OF THIS DESIGN SHALL BE COMPLETED DURING "OFF HOURS" AND SHALL COMPLY WITH OWNER'S UTILITY SHUT DOWN POLICIES.
3. CONTRACTOR IS RESPONSIBLE FOR ALL CUTTING, PATCHING AND DEMOLITION OF ALL BUILDING SYSTEMS PER THEIR MEANS-AND-METHODS AS NECESSARY TO PROVIDE THE DESIGN INDICATED.
4. LISTED ROOMS ARE IN THE FLOOR BELOW THE INTERSTITIAL SPACE.
5. RELOCATE DOMESTIC WATER PIPING, ELECTRICAL CONDUIT, AND ANCILLARY COMPONENTS AS REQUIRED DUE TO NEW WORK.
6. WORK IS OCCURING IN AN ACTIVE HOPITAL. ALL SYSTEMS EXISTING IN BUILDING MUST REMAIN ACTIVE UNLESS PLANS ARE MADE FOR A SHUTDOWN. ALL SHUTDOWN OCCURENCES MUST BE KEPT TO A MINIMUM AND DURATION OF SHUTDOWNS KEPT AS SHORT AS POSSIBLE.
7. DRYWALL WORK IS PART OF PROJECT.
8. REPAIR ANY BARRIER THAT IS PENETRATED OR DAMAGED DURING THIS WORK EVEN IF EXISTING OPENINGS HAVE NOT BEEN REPAIRED NEARBY. REPAIR WITH LIKE CONSTRUCTION OR BETTER.
9. NO NEW CONSTRUCTION CAN TOUCH EXISTING OR NEW SPRINKLER LINES.
10. INFORM CHILLED WATER PLANT OF ALL TESTING WHICH WILL INCREASE LOAD SO PLANT CAN MAKE CHILLER ADJUSTMENTS AS NECCESSARY.
11. CONTRACTOR SHALL BE RESPONSIBLE FOR BLEADING AIR INTRODUCED IN THE NEW PIPING AND EXISTING PIPING. BLEAD AND PURGING OF AIR, WHEN THE SYSTEM IS FILLED, IS NOT LIMITED TO NEW WORK. IT IS INCLUSIVE OF ALL CHILLED WATER SUPPLY AND RETURN PIPING ON THE CAMPUS.
12. CONTRACTOR SHALL PROVIDE 1.5" VALVED DRAINS WITH HOSE CONNECTIONS LOCATED AS NEEDED TO FILL PIPING AND PERFORM FLUSHING AND CLEANING PROCEDURES.

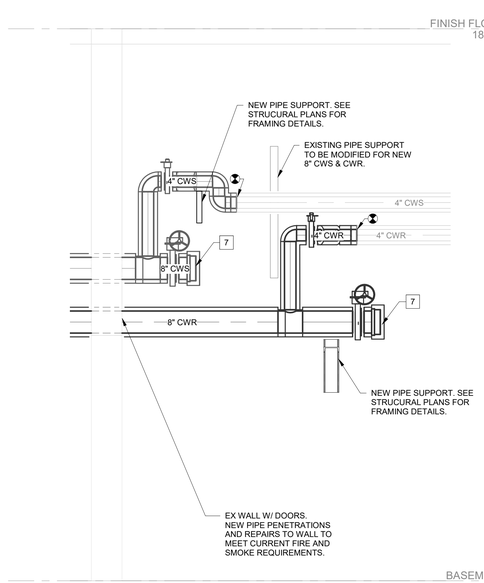
◇ DEMOLITION NOTES

1. AS PART OF THE PRE-DEMOLITION TAB PROCEDURES, PERFORM AN AIRFLOW TEST OF THE SUPPLY DUCT BRANCH SERVING THE TUNNEL TO BLDG 501. LOCATE THE TEST BETWEEN AIR HANDLER DISCHARGE DUCT AND THE FIRST SUPPLY REGISTER IN TUNNEL 501. AIRFLOW TEST SHALL MEASURE BOTH AIR VOLUME AND STATIC PRESSURE.

□ CONSTRUCTION NOTES

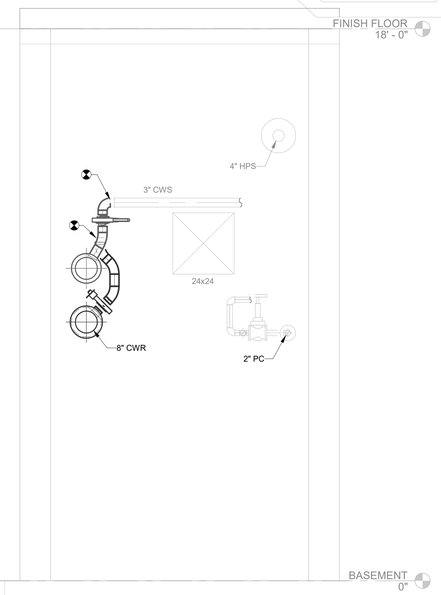
1. TIE NEW CHILLED WATER RETURN PIPE INTO EXISTING DURING PHASE-1.
2. TIE NEW CHILLED WATER SUPPLY PIPE INTO EXISTING DURING PHASE-2.
3. EXISTING PIPE SUPPORT RACK. SEE M4.02 AND M4.03 FOR MODIFICATIONS TO EXISTING RACKS AND M6 SERIES PLANS FOR DIRECITON ON RELOCATING EXISING CONDUITS AND LIGHTING.
4. ANCHOR CWS AND CWR PIPES TO WALL. SEE LARGE PIPE ANCHOR DETAIL ON M5.01.
5. INSTALL PIPE EXPANSION JOINT PER MANUFACTURER'S REQUIREMENTS AND EJMA STANDARDS. SEE SCHEDULE FOR ANCHOR AND GUIDE DISTANCES.
6. INSTALL PIPE GUIDES PER MANUFACTURER'S REQUIREMENTS AND EJMA STANDARDS. SEE STRUCTURAL PLANS FOR GUIDE SUPPORT FRAMING. MAINTAIN APPROPRIATE SPACING FOR PIPE SIZE AND SYSTEM PRESSURE.
7. 8" CHW BRANCH VALVED AND CAPPED WITH BLIND FLANGE FOR FUTURE USE.
8. AFTER CONSTRUCTION, REBALANCE BRANCH DUCT TO THE AIRFLOW AND STATIC PRESSURE TEST VALUES RECORDED IN THE PRE-DEMOLITION BALANCE. INSTALL NEW VOLUME DAMPER IF NEEDED FOR BALANCING, AND REPAIR INSULATION AND VAPOR BARRIER.

= CHILLED WATER PIPE FIXED ANCHOR POINT



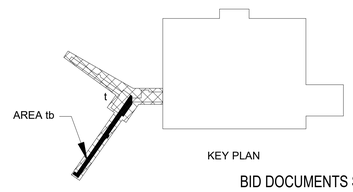
TUNNEL B PIPE ELEVATION - B-B

SCALE: 1/2" = 1'-0"



TUNNEL B PIPE SECTION - C-C

SCALE: 1/2" = 1'-0"



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Frederick, MD 21701

Scale: AS NOTED

Drawing Title: MECHANICAL PIPING - BASEMENT PLAN-TUNNEL - AREA b

Approved: Project Director: BID DOCUMENTS

Project Title: CHILLED WATER LINE REPLACEMENT BLDG 500

Location: VAMC - Martinsburg, WV

Date: 04/22/2022 | Checked: BK | Drawn: JCH

Project Number: 613-16-302

Building Number: 500

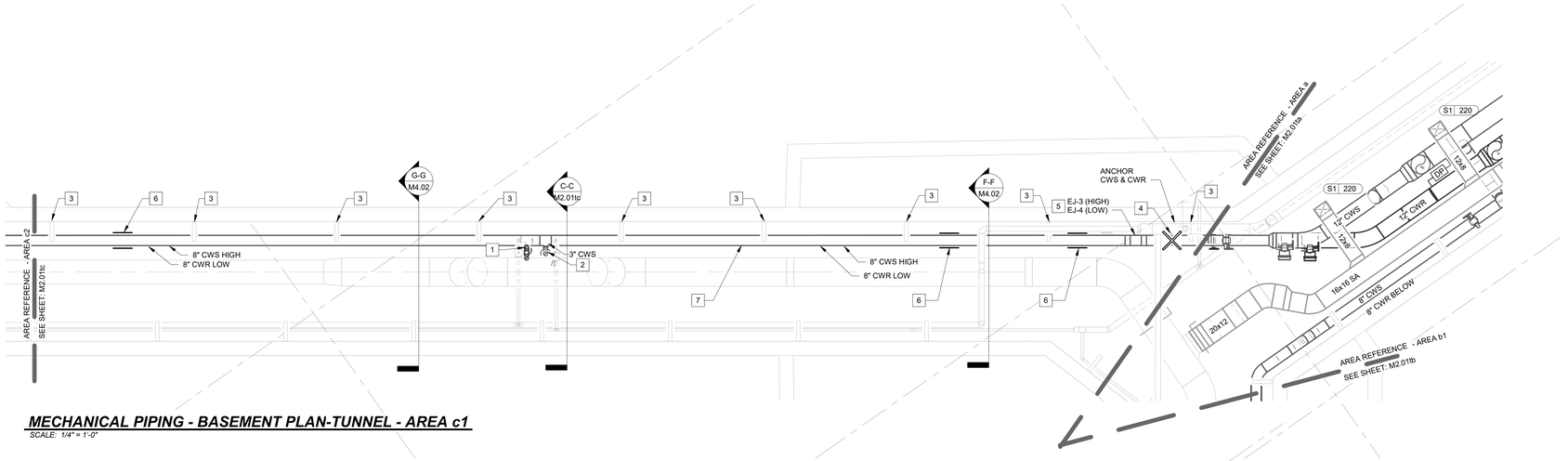
Drawing Number: M2.01tb

Dwg. 34 of 67

Office of Construction and Facilities Management

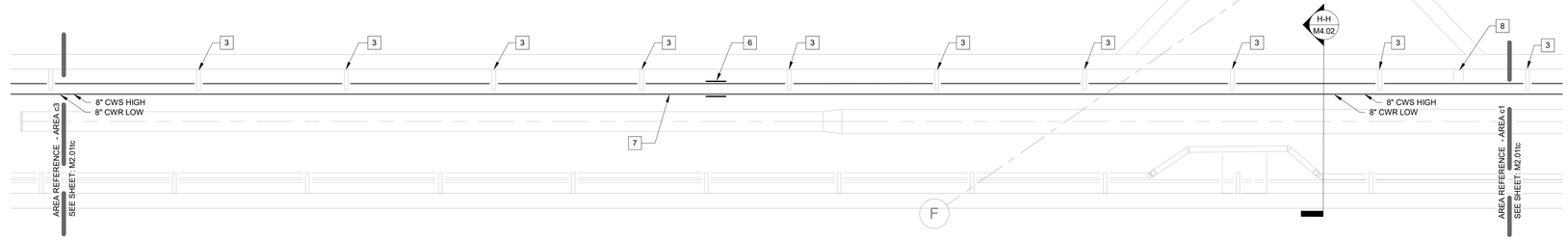
Department of Veterans Affairs

VA FORM 08-6231



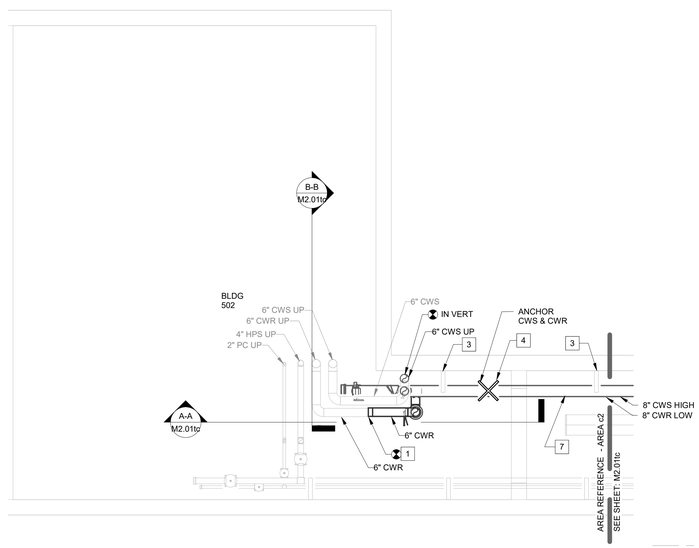
MECHANICAL PIPING - BASEMENT PLAN-TUNNEL - AREA c1

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



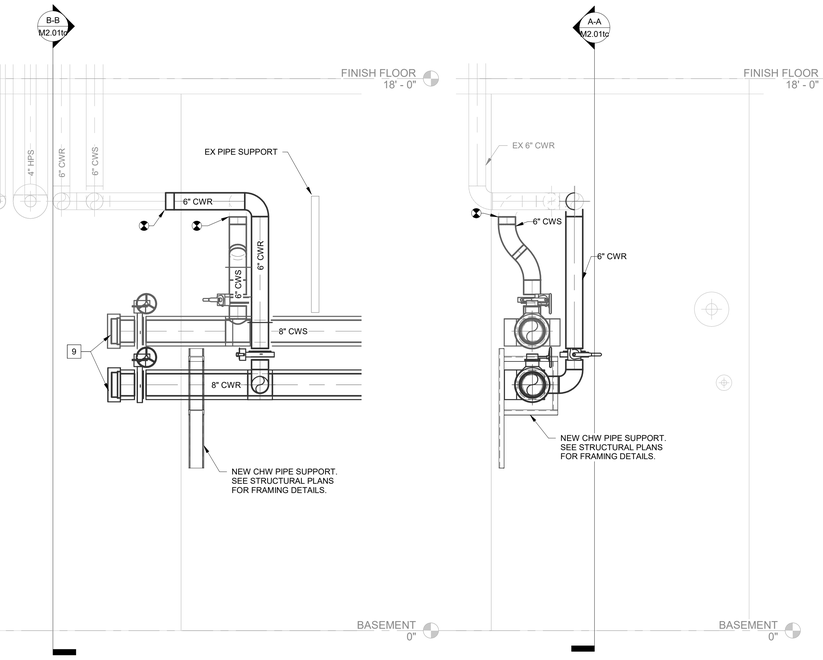
MECHANICAL PIPING - BASEMENT PLAN-TUNNEL - AREA c2

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



MECHANICAL PIPING - BASEMENT PLAN-TUNNEL - AREA c3

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

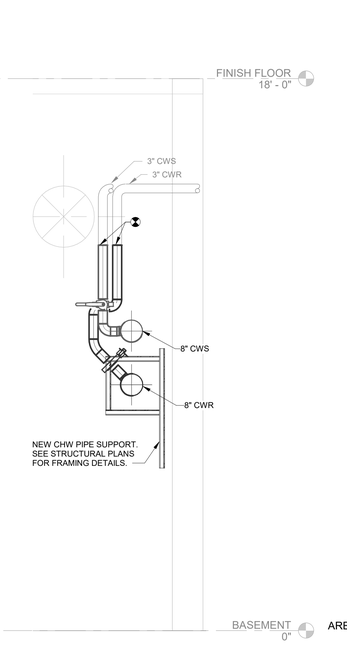


TUNNEL C PIPE ELEVATION - A-A

SCALE: 1/2" = 1'-0"

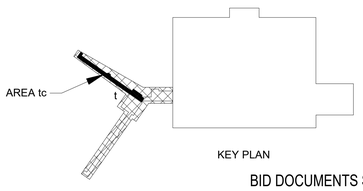
TUNNEL C PIPE ELEVATION - B-B

SCALE: 1/2" = 1'-0"



TUNNEL C PIPE SECTION - C-C

SCALE: 1/2" = 1'-0"



GENERAL NOTES

1. REMOVE PIPE HANGERS ASSOCIATED WITH PIPING SHOWN TO BE REMOVED. HANGERS SHALL NOT BE ABANDONED IN PLACE.
2. COORDINATE ALL MECHANICAL UTILITY AND HVAC UNIT SHUT DOWNS WITH OWNER. ANY SHUT DOWNS NECESSARY TO ACHIEVE THE OBJECTIVE OF THIS DESIGN SHALL BE COMPLETED DURING "OFF HOURS" AND SHALL COMPLY WITH OWNER'S UTILITY SHUT DOWN POLICIES.
3. CONTRACTOR IS RESPONSIBLE FOR ALL CUTTING, PATCHING AND DEMOLITION OF ALL BUILDING SYSTEMS PER THEIR MEANS-AND-METHODS AS NECESSARY TO PROVIDE THE DESIGN INDICATED.
4. LISTED ROOMS ARE IN THE FLOOR BELOW THE INTERSTITIAL SPACE.
5. RELOCATE DOMESTIC WATER PIPING, ELECTRICAL CONDUIT, AND ANCILLARY COMPONENTS AS REQUIRED DUE TO NEW WORK.
6. WORK IS OCCURING IN AN ACTIVE HOPITAL. ALL SYSTEMS EXISTING IN BUILDING MUST REMAIN ACTIVE UNLESS PLANS ARE MADE FOR A SHUTDOWN. ALL SHUTDOWN OCCURENCES MUST BE KEPT TO A MINIMUM AND DURATION OF SHUTDOWNS KEPT AS SHORT AS POSSIBLE.
7. DRYWALL WORK IS PART OF PROJECT.
8. REPAIR ANY BARRIER THAT IS PENETRATED OR DAMAGED DURING THIS WORK EVEN IF EXISTING OPENINGS HAVE NOT BEEN REPAIRED NEARBY. REPAIR WITH LIKE CONSTRUCTION OR BETTER.
9. NO NEW CONSTRUCTION CAN TOUCH EXISTING OR NEW SPRINKLER LINES.
10. INFORM CHILLED WATER PLANT OF ALL TESTING WHICH WILL INCREASE LOAD SO PLANT CAN MAKE CHILLER ADJUSTMENTS AS NECCESSARY.
11. CONTRACTOR SHALL BE RESPONSIBLE FOR BLEADING AIR INTRODUCED IN THE NEW PIPING AND EXISTING PIPING. BLEAD AND PURGING OF AIR, WHEN THE SYSTEM IS FILLED, IS NOT LIMITED TO NEW WORK. IT IS INCLUSIVE OF ALL CHILLED WATER SUPPLY AND RETURN PIPING ON THE CAMPUS.
12. CONTRACTOR SHALL PROVIDE 1.5" VALVED DRAINS WITH HOSE CONNECTIONS LOCATED AS NEEDED TO FILL PIPING AND PERFORM FLUSHING AND CLEANING PROCEDURES.

☐ CONSTRUCTION NOTES

1. TIE NEW CHILLED WATER RETURN PIPE INTO EXISTING DURING PHASE-1.
2. TIE NEW CHILLED WATER SUPPLY PIPE INTO EXISTING DURING PHASE-2.
3. EXISTING PIPE SUPPORT RACK. SEE M4.02 AND M4.03 FOR MODIFICATIONS TO EXISTING RACKS AND M6 SERIES PLANS FOR DIRECITON ON RELOCATING EXISING CONDUITS AND LIGHTING.
4. ANCHOR CWS AND CWR PIPES TO WALL. SEE LARGE PIPE ANCHOR DETAIL ON M5.01.
5. INSTALL PIPE EXPANSION JOINT PER MANUFACTURER'S REQUIREMENTS AND EJMA STANDARDS. SEE SCHEDULE FOR ANCHOR AND GUIDE DISTANCES.
6. INSTALL PIPE GUIDES PER MANUFACTURER'S REQUIREMENTS AND EJMA STANDARDS. SEE STRUCTURAL PLANS FOR GUIDE SUPPORT FRAMING. MAINTAIN APPROPRIATE SPACING FOR PIPE SIZE AND SYSTEM PRESSURE.
7. SEE STRUCTURAL PLANS FOR PIPE SUPPORT FRAMING.
8. EXISTING CHILLED WATER FLOW METER SYSTEM TO REMAIN. REMOVE FLOW METERING DEVICES FROM EXISTING CHW PIPING AND INSTALL IN NEW CHW LINE. VERIFY REQUIREMENTS FOR REMOVAL AND REINSTALLATION PRIOR TO BID.
9. 8" CHW BRANCH VALVED AND CAPPED WITH BLIND FLANGE FOR FUTURE USE.

⨯ = CHILLED WATER PIPE FIXED ANCHOR POINT

BID DOCUMENTS SUBMISSION

Revisions:	Date

CONSULTANTS:

SEAL:

ARCHITECT/ENGINEERS:

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Valley Engineering
4901 Crowe Drive
Mount Crawford, VA 22841

STRUCTURAL ENGINEERS
ADTEK Engineers, Inc.
150 South East Street, Suite 201
Frederick, MD 21701

Scale: AS NOTED

Drawing Title: MECHANICAL PIPING - BASEMENT PLAN-TUNNEL - AREA c

Approved: Project Director: BID DOCUMENTS

Project Title: CHILLED WATER LINE REPLACEMENT BLDG 500

Location: VAMC - Martinsburg, WV

Date: 04/22/2022 | Checked: BK | Drawn: JCH

Project Number: 613-16-302

Building Number: 500

Drawing Number: M2.01tc

Dwg. 35 of 67

Office of Construction and Facilities Management

Department of Veterans Affairs

VA FORM 08-6231

GENERAL NOTES

1. COLUMN LINES ARE MARKED ON BEAMS AT EACH COLUMN, i.e., F7.
2. SEE LABELED SHEETS FOR ENLARGED PLANS.
3. HATCHED AREAS ARE SEMI-CLEAR WALKWAYS THAT SHOULD BE KEPT CLEAR, AS MUCH AS POSSIBLE. NEW OBSTRUCTIONS NOT ABLE TO BE EASILY CROSSED, SHALL BE PROVIDED WITH A GALV. BRIDGE WITH STEPS; GRATE MATERIAL. ALL NEW WORK IN THESE AREAS ARE TO APPROVED BY OWNER'S REP. BEFORE PROCEEDING.
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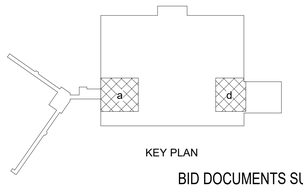
9. INFORM CHILLED WATER PLANT OF ALL TESTING WHICH WILL INCREASE LOAD SO PLANT CAN MAKE CHILLER ADJUSTMENTS AS NECCESSARY.

SHEET M2.02a

SHEET M2.02d

MECHANICAL PIPING - FIRST FLOOR KEY PLAN
SCALE: 1/16" = 1'-0"



KEY PLAN

NORTH

BID DOCUMENTS SUBMISSION

Revisions:	Date

CONSULTANTS:

SEAL:

PHILLIP L. GENTRY — 14228 — LICENSED — STATE OF — PROFESSIONAL ENGINEER — COMMONWEALTH OF VIRGINIA
04/22/2022

ARCHITECT/ENGINEERS:

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ADTEK Engineers, Inc.
150 South East Street, Suite 201
Frederick, MD 21701

Scale: AS NOTED

Drawing Title: MECHANICAL PIPING - FIRST FLOOR KEY PLAN

Approved: Project Director: BID DOCUMENTS

Project Title: CHILLED WATER LINE REPLACEMENT BLDG 500

Location: VAMC - Martinsburg, WV

Date: 04/22/2022 | Checked: BK | Drawn: JCH

Project Number: 613-16-302

Building Number: 500

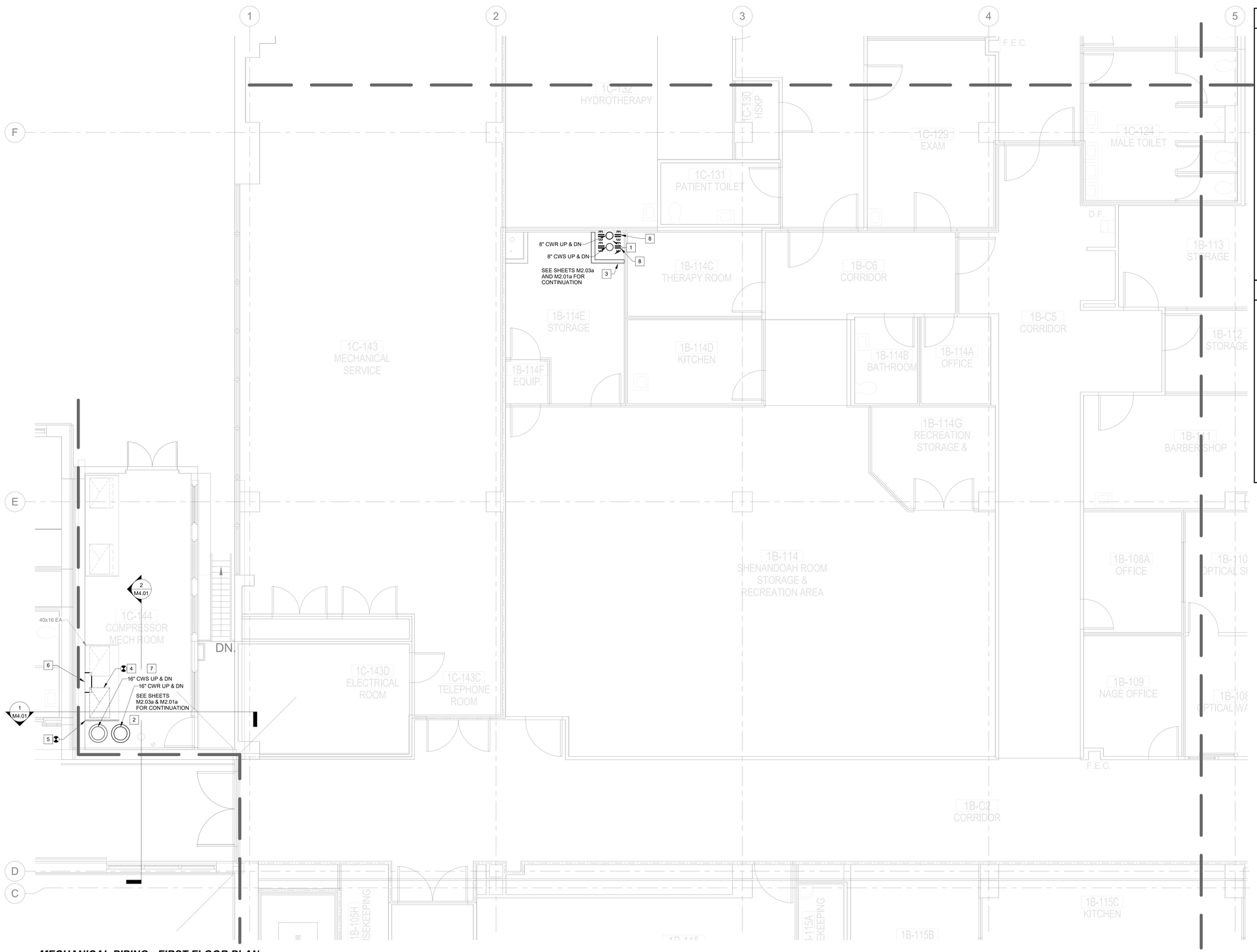
Drawing Number: M2.02

Dwg. 36 of 67

Office of Construction and Facilities Management

Department of Veterans Affairs

VA FORM 08-6231



GENERAL NOTES

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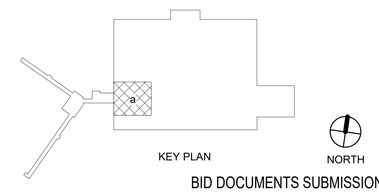
12. CONTRACTOR SHALL PROVIDE 1.5" VALVED DRAINS WITH HOSE CONNECTIONS LOCATED AS NEEDED TO FILL PIPING AND PERFORM FLUSHING AND CLEANING PROCEDURES.

☐ CONSTRUCTION NOTES

1. CORE DRILL SLAB FOR INSTALLATION OF NEW CHILLED WATER PIPES DOWN TO BASEMENT INTERSTITIAL SPACE. PROVIDE UL LISTED FIRESTOP AT EACH PENETRATION.
2. ROUTE NEW PIPING THROUGH TUNNEL WALL INTO UPPER LEVEL CONDENSER BUILDING AND UP THROUGH ROOF.
3. 4" METAL STUD WALL WITH SHEET ROCK AND FINISH TO MATCH SURROUNDINGS. TERMINATE WALL ABOVE ACOUSTICAL CEILING.
4. RELOCATE EXHAUST DUCT RISER TO ACCOMMODATE NEW CHW PIPING AND RECONNECT TO EXISTING EXHAUST PLENUM ABOVE.
5. REMOVE PORTION OF EXHAUST PLENUM AS NEEDED TO ACCOMMODATE NEW CHW PIPING AND PATCH OPENING AIR TIGHT.
6. RELOCATE EXISTING REFRIGERANT LEAK DETECTOR AND ANCILLARY COMPONENTS. PROVIDE NEW LENGTHS OF POLYMER TUBING BETWEEN ALL EXISTING SENSORS AND THE RELOCATED DETECTOR. ROUTE TUBING IN CONDUIT. PROVIDE NEW POWER AND CONTROL WIRING, CONDUIT, AND OTHER ACCESSORIES AS NEEDED TO COMPLETE RELOCATION AND RETURN THE LEAK DETECTION FAN CONTROL SYSTEM TO ORIGINAL WORKING ORDER.
7. RELOCATE CONDUIT, CONDENSING UNITS, REFRIGERANT PIPING, AND ANCILLARY COMPONENTS, AS NEEDED, TO ACCOMPLISH THE DESIGN INDICATED.
8. HEAVY DUTY RISER CLAMP WITH PIPE GUIDES. REFER TO RISER GUIDE DETAIL ON M5.02.

MECHANICAL PIPING - FIRST FLOOR PLAN-a

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



BID DOCUMENTS SUBMISSION

Revisions:	Date

CONSULTANTS:

SEAL:

PHILIP L. GENTRY — 142015 — LICENSED — STATE OF VIRGINIA — PROFESSIONAL ENGINEER
04/22/2022

ARCHITECT/ENGINEERS:

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Valley Engineering
4901 Crowe Drive
Mount Crawford, VA 22841

STRUCTURAL ENGINEERS
ADTEK Engineers, Inc.
150 South East Street, Suite 201
Frederick, MD 21701

Scale: AS NOTED

Drawing Title: MECHANICAL PIPING - FIRST FLOOR PLAN-a

Approved: Project Director: BID DOCUMENTS

Project Title: CHILLED WATER LINE REPLACEMENT BLDG 500

Location: VAMC - Martinsburg, WV

Date: 04/22/2022 | Checked: BK | Drawn: JCH

Project Number: 613-16-302

Building Number: 500

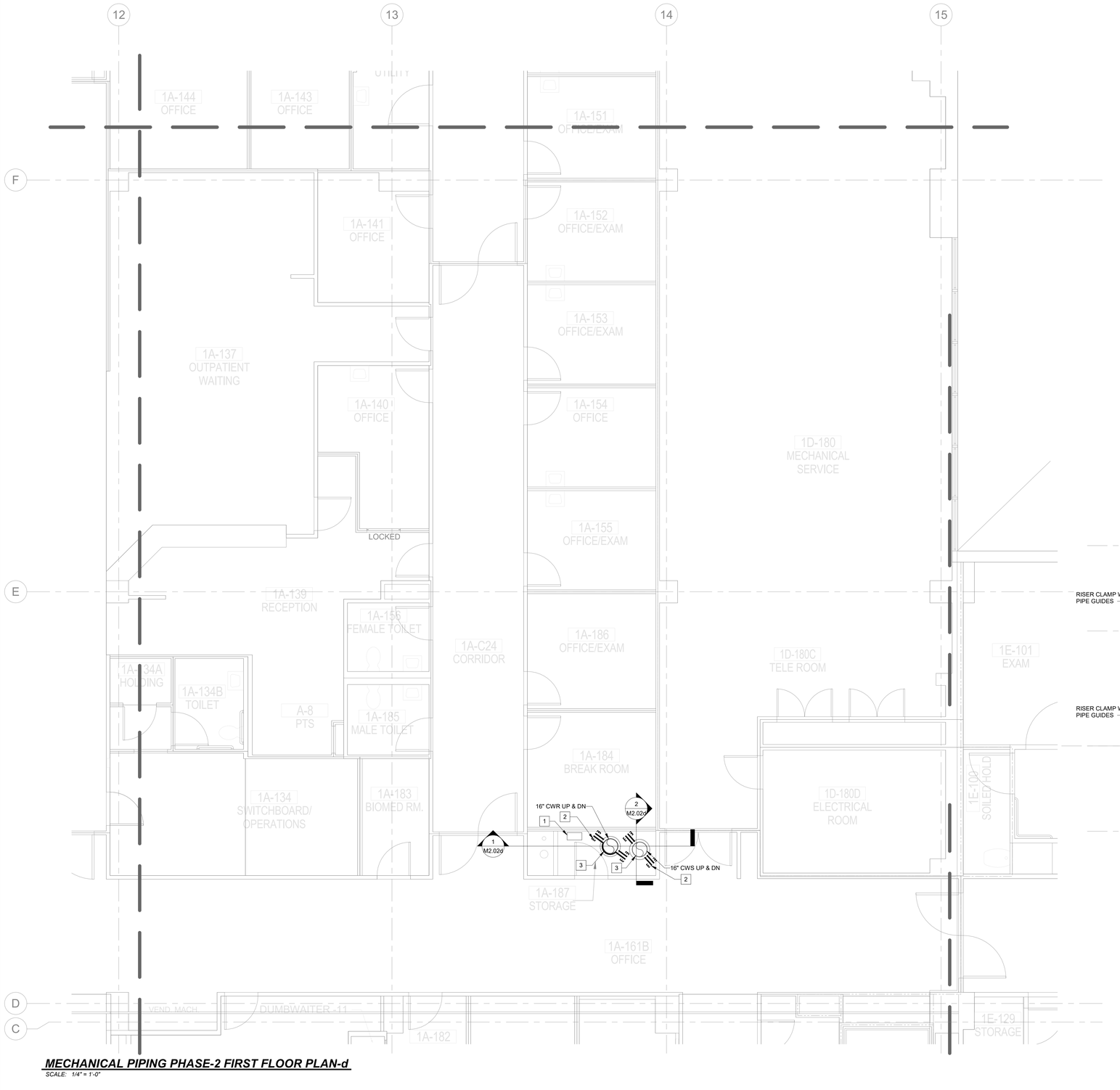
Drawing Number: M2.02a

Dwg. 37 of 67

Office of Construction and Facilities Management

Department of Veterans Affairs

VA FORM 08-6231



GENERAL NOTES

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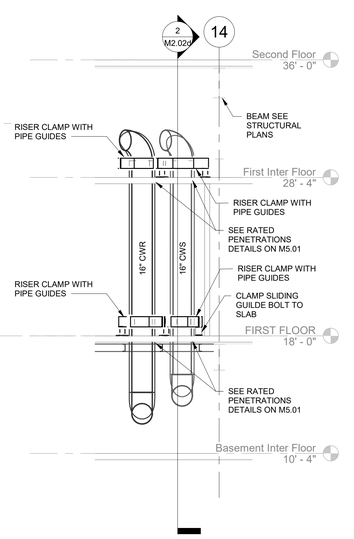
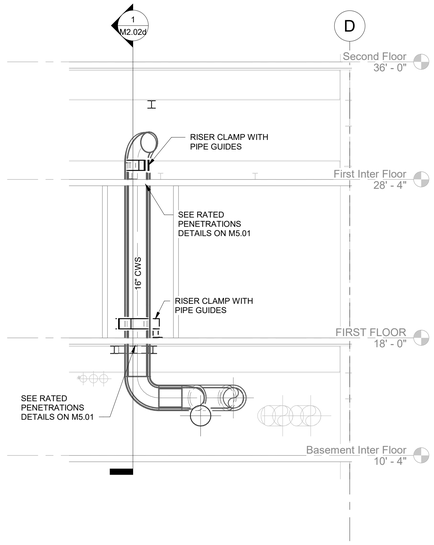
12. CONTRACTOR SHALL PROVIDE 1.5" VALVED DRAINS WITH HOSE CONNECTIONS LOCATED AS NEEDED TO FILL PIPING AND PERFORM FLUSHING AND CLEANING PROCEDURES.

☐ CONSTRUCTION NOTES

1. RELOCATE SUPPLY DUCT AND PROVIDE NEW 8"X4" CEILING GRILLE. REBALANCE TO 50 CFM.
2. HEAVY DUTY RISER CLAMP WITH PIPE GUIDES. REFER TO RISER GUIDE DETAIL ON M5.02.
3. CORE DRILL SLAB FOR INSTALLATION OF NEW CHILLED WATER PIPES DOWN TO BASEMENT INTERSTITIAL SPACE. PROVIDE UL LISTED FIRESTOP AT EACH PENETRATION.



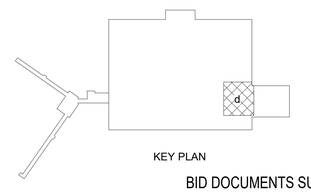
1 / M2.01d **RISER SECTION AT CLOSET**
SCALE: 1/4" = 1'-0"



2 / M2.01d **RISER SECTION AT CLOSET**
SCALE: 1/4" = 1'-0"

MECHANICAL PIPING PHASE-2 FIRST FLOOR PLAN-d

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



KEY PLAN

BID DOCUMENTS SUBMISSION

Revisions:	Date

CONSULTANTS:

SEAL:

PHILIP L. GERR — 14228 — LICENSED PROFESSIONAL ENGINEER — COMMONWEALTH OF VIRGINIA
04/22/2022

ARCHITECT/ENGINEERS:

MEP ENGINEERS
Valley Engineering
4901 Crowe Drive
Mount Crawford, VA 22841

STRUCTURAL ENGINEERS
ADTEK Engineers, Inc.
150 South East Street, Suite 201
Frederick, MD 21701

Scale: AS NOTED

Drawing Title: MECHANICAL PIPING PHASE-2 FIRST FLOOR PLAN-d

Approved: Project Director: BID DOCUMENTS

Project Title: CHILLED WATER LINE REPLACEMENT BLDG 500

Location: VAMC - Martinsburg, WV

Date: 04/22/2022 | Checked: BK | Drawn: JCH

Project Number: 613-16-302

Building Number: 500

Drawing Number: M2.02d

Dwg. 38 of 67

Office of Construction and Facilities Management

Department of Veterans Affairs

VA FORM 08-6231

GENERAL NOTES

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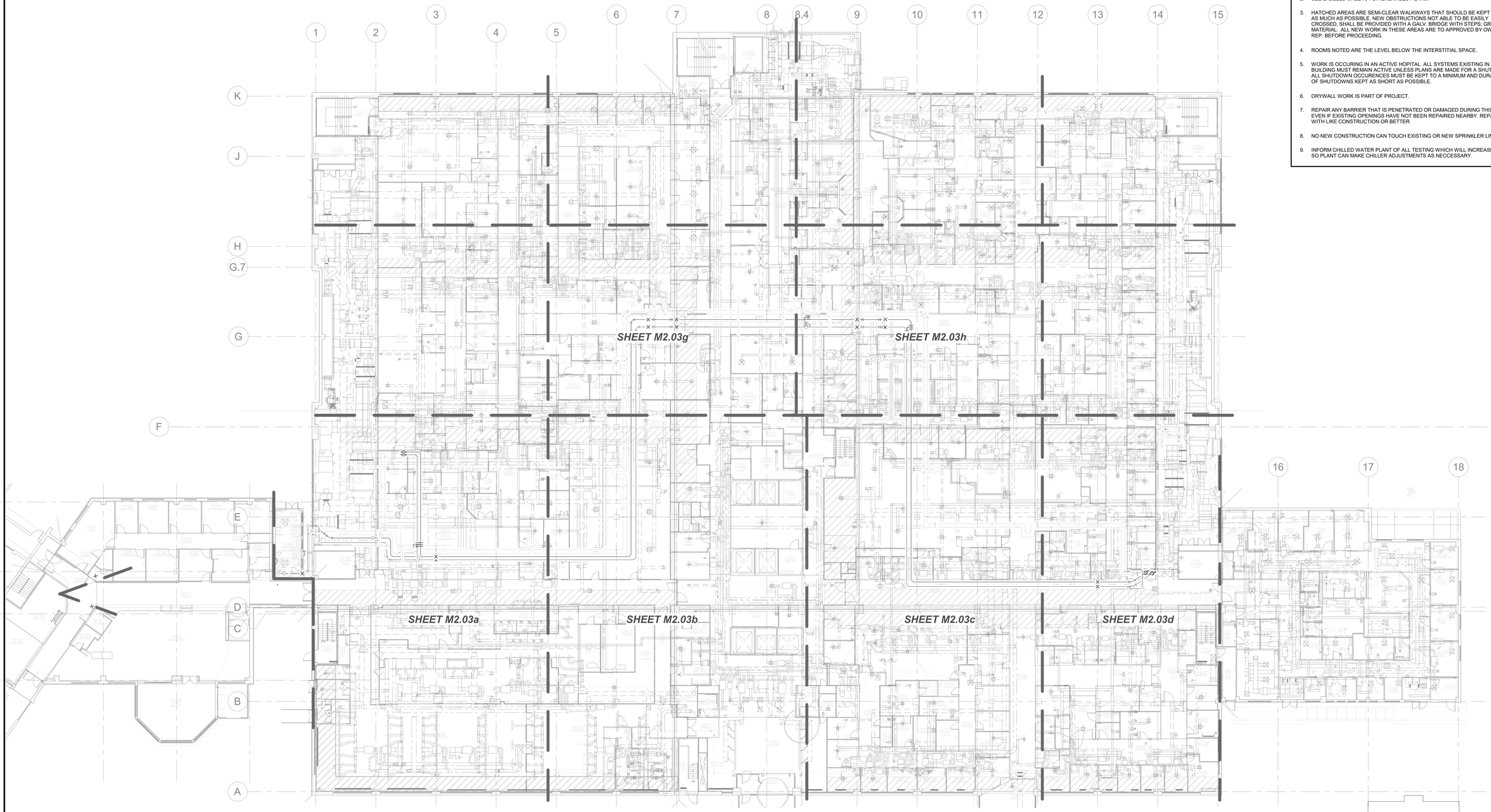

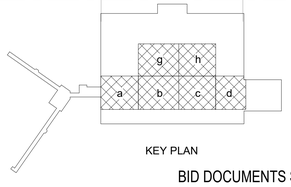

KEY PLAN

NORTH

MECHANICAL PIPING - FIRST FLOOR INTERSTITIAL KEY PLAN

SCALE: 1/16" = 1'-0"

BID DOCUMENTS SUBMISSION

Revisions:	Date

CONSULTANTS:

SEAL:

PHILIP L. GEORGE — REGISTERED — 24291 — STATE OF — PROFESSIONAL ENGINEER
04/22/2022

ARCHITECT/ENGINEERS:

MEP ENGINEERS
Valley Engineering
4901 Crowe Drive
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STRUCTURAL ENGINEERS
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150 South East Street, Suite 201
Frederick, MD 21701

Scale: AS NOTED

Drawing Title: MECHANICAL PIPING - FIRST FLOOR INTERSTITIAL KEY PLAN

Approved: Project Director: BID DOCUMENTS

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Location: VAMC - Martinsburg, WV

Date: 04/22/2022 | Checked: BK | Drawn: JCH

Project Number: 613-16-302

Building Number: 500

Drawing Number: M2.03

Dwg. 39 of 67

Office of Construction and Facilities Management

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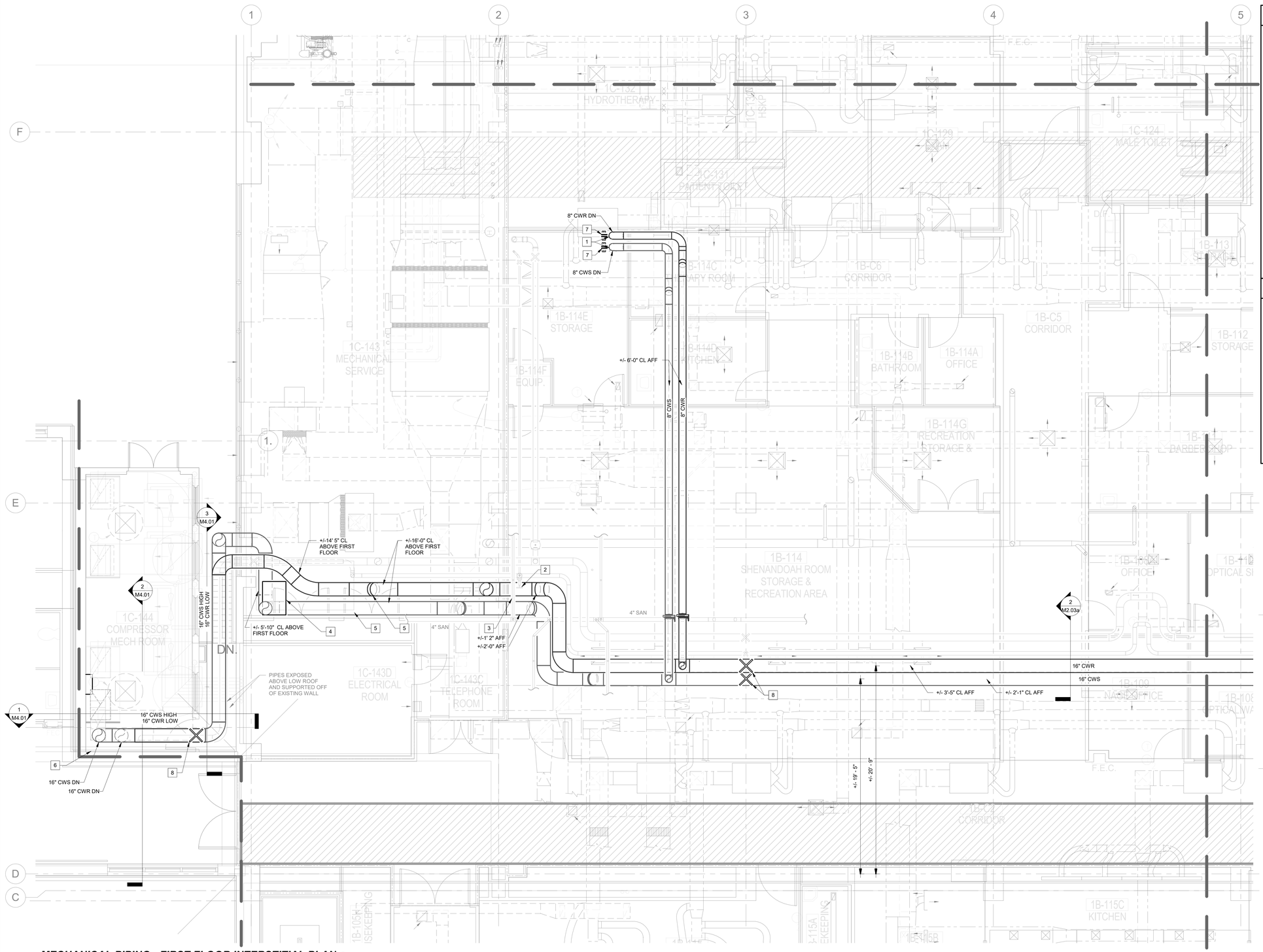

MECHANICAL PIPING - FIRST FLOOR INTERSTITIAL PLAN-a

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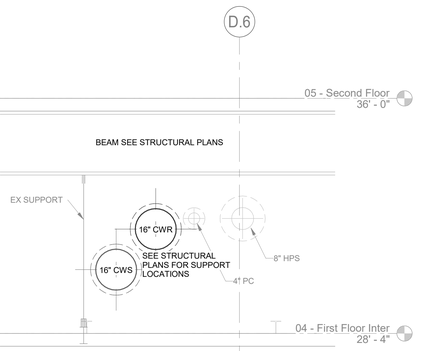
7. DRYWALL WORK IS PART OF PROJECT.
8. REPAIR ANY BARRIER THAT IS PENETRATED OR DAMAGED DURING THIS WORK EVEN IF EXISTING OPENINGS HAVE NOT BEEN REPAIRED NEARBY. REPAIR WITH LIKE CONSTRUCTION OR BETTER.
9. NO NEW CONSTRUCTION CAN TOUCH EXISTING OR NEW SPRINKLER LINES.
10. INFORM CHILLED WATER PLANT OF ALL TESTING WHICH WILL INCREASE LOAD SO PLANT CAN MAKE CHILLER ADJUSTMENTS AS NECCESSARY.
11. CONTRACTOR SHALL BE RESPONSIBLE FOR BLEADING AIR INTRODUCED IN THE NEW PIPING AND EXISTING PIPING. BLEAD AND PURGING OF AIR, WHEN THE SYSTEM IS FILLED, IS NOT LIMITED TO NEW WORK. IT IS INCLUSIVE OF ALL CHILLED WATER SUPPLY AND RETURN PIPING ON THE CAMPUS.
12. CONTRACTOR SHALL PROVIDE 1.5" VALVED DRAINS WITH HOSE CONNECTIONS LOCATED AS NEEDED TO FILL PIPING AND PERFORM FLUSHING AND CLEANING PROCEDURES.

☐ CONSTRUCTION NOTES

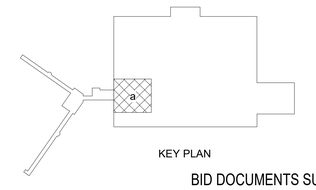
1. CORE DRILL SLAB FOR INSTALLATION OF NEW CHILLED WATER PIPES DOWN TO BASEMENT INTERSTITIAL SPACE. PROVIDE UL LISTED FIRESTOP AT EACH PENETRATION.
2. MAINTAIN ACCESS TO PUMPED CONDENSATE SHUT-OFF VALVE.
3. RELOCATE PNEUMATIC TUBING AND WALL-MOUNTED PULL BOX TO ACCOMMODATE CHW PIPE INSTALLATION.
4. RELOCATE FAN COIL UNIT AS NEEDED TO MAINTAIN SERVICE CLEARANCE. PROVIDE NEW DUCTWORK, INSULATION, PIPING, SUPPORTS, AND ANCILLARY COMPONENTS AS NEEDED TO RELOCATE THE UNIT AND RETURN IT TO WORKING ORDER.
5. COORDINATE PIPE ROUTE THROUGH MECHANICAL ROOM WITH EXISTING CONDITIONS. RELOCATE LIGHTING, DOMESTIC WATER PIPING, ELECTRICAL CONDUIT AND OTHER COMPONENTS AS REQUIRED DUE TO NEW WORK.
6. RELOCATE (2) TEMPERATURE SENSORS ON WALL ABOVE THE COMPRESSOR MECHANICAL ROOM ROOF AS REQUIRED FOR NEW WORK. MAINTAIN ACCESS TO JUNCTION BOXES.
7. HEAVY DUTY RISER CLAMP WITH PIPE GUIDES. REFER TO RISER GUIDE DETAIL ON M5.02.
8. CHW PIPE ANCHOR POINT. SEE STRUCTURAL PLANS FOR DETAILS.

X = CHILLED WATER PIPE FIXED ANCHOR POINT



2 M2.03a **CHILLED WATER PIPE SECTION**

SCALE: 1/2" = 1'-0"



BID DOCUMENTS SUBMISSION

Revisions:	Date

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Scale: AS NOTED

Drawing Title: MECHANICAL PIPING - FIRST FLOOR INTERSTITIAL PLAN-a

Approved: Project Director: BID DOCUMENTS

Project Title: CHILLED WATER LINE REPLACEMENT BLDG 500

Location: VAMC - Martinsburg, WV

Date: 04/22/2022 | Checked: BK | Drawn: JCH

Project Number: 613-16-302

Building Number: 500

Drawing Number: M2.03a

Dwg. 40 of 67

Office of Construction and Facilities Management

Department of Veterans Affairs

VA FORM 08-6231

GENERAL NOTES

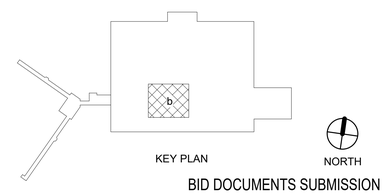
1. REMOVE PIPE HANGERS ASSOCIATED WITH PIPING SHOWN TO BE REMOVED. HANGERS SHALL NOT BE ABANDONED IN PLACE.
2. COORDINATE ALL MECHANICAL UTILITY AND HVAC UNIT SHUT DOWNS WITH OWNER. ANY SHUT DOWNS NECESSARY TO ACHIEVE THE OBJECTIVE OF THIS DESIGN SHALL BE COMPLETED DURING "OFF HOURS" AND SHALL COMPLY WITH OWNER'S UTILITY SHUT DOWN POLICIES.
3. CONTRACTOR IS RESPONSIBLE FOR ALL CUTTING, PATCHING AND DEMOLITION OF ALL BUILDING SYSTEMS PER THEIR MEANS-AND-METHODS AS NECESSARY TO PROVIDE THE DESIGN INDICATED.
4. LISTED ROOMS ARE IN THE FLOOR BELOW THE INTERSTITIAL SPACE.
5. RELOCATE DOMESTIC WATER PIPING, ELECTRICAL CONDUIT, AND ANCILLARY COMPONENTS AS REQUIRED DUE TO NEW WORK.
6. WORK IS OCCURING IN AN ACTIVE HOPITAL. ALL SYSTEMS EXISTING IN BUILDING MUST REMAIN ACTIVE UNLESS PLANS ARE MADE FOR A SHUTDOWN. ALL SHUTDOWN OCCURENCES MUST BE KEPT TO A MINIMUM AND DURATION OF SHUTDOWNS KEPT AS SHORT AS POSSIBLE.
7. DRYWALL WORK IS PART OF PROJECT.
8. REPAIR ANY BARRIER THAT IS PENETRATED OR DAMAGED DURING THIS WORK EVEN IF EXISTING OPENINGS HAVE NOT BEEN REPAIRED NEARBY. REPAIR WITH LIKE CONSTRUCTION OR BETTER.
9. NO NEW CONSTRUCTION CAN TOUCH EXISTING OR NEW SPRINKLER LINES.
10. INFORM CHILLED WATER PLANT OF ALL TESTING WHICH WILL INCREASE LOAD SO PLANT CAN MAKE CHILLER ADJUSTMENTS AS NECCESSARY.
11. CONTRACTOR SHALL BE RESPONSIBLE FOR BLEADING AIR INTRODUCED IN THE NEW PIPING AND EXISTING PIPING. BLEAD AND PURGING OF AIR, WHEN THE SYSTEM IS FILLED, IS NOT LIMITED TO NEW WORK. IT IS INCLUSIVE OF ALL CHILLED WATER SUPPLY AND RETURN PIPING ON THE CAMPUS.
12. CONTRACTOR SHALL PROVIDE 1.5" VALVED DRAINS WITH HOSE CONNECTIONS LOCATED AS NEEDED TO FILL PIPING AND PERFORM FLUSHING AND CLEANING PROCEDURES.

☐ CONSTRUCTION NOTES

1. ROUTE CHW PIPE BELOW EXISTING STEEL GRATE BRIDGE.
2. RELOCATE SUPPLY DUCT TO CLEAR A PATH FOR CHILLED WATER SUPPLY AND RETURN. MATCH EXISTING INSULATION.

MECHANICAL PIPING - FIRST FLOOR INTERSTITIAL PLAN-b

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



KEY PLAN NORTH

BID DOCUMENTS SUBMISSION

Revisions:	Date

CONSULTANTS:

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PHILIP L. GERR, 14295, STATE OF, PROFESSIONAL ENGINEER
04/22/2022

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150 South East Street, Suite 201
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Scale: AS NOTED

Drawing Title: MECHANICAL PIPING - FIRST FLOOR INTERSTITIAL PLAN-b

Approved: Project Director: BID DOCUMENTS

Project Title: CHILLED WATER LINE REPLACEMENT BLDG 500

Location: VAMC - Martinsburg, WV

Date: 04/22/2022 | Checked: BK | Drawn: JCH

Project Number: 613-16-302

Building Number: 500

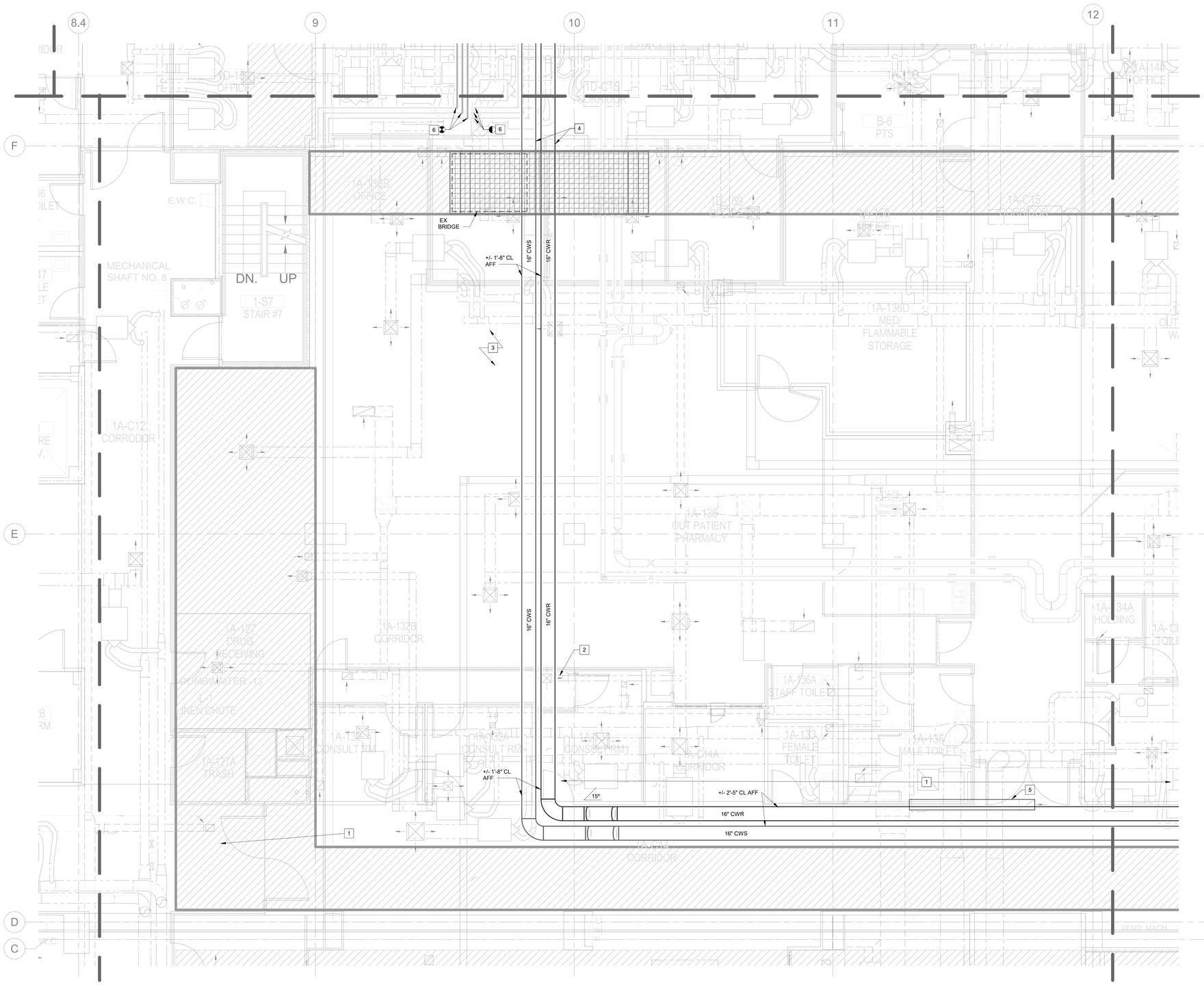
Drawing Number: M2.03b

Dwg. 41 of 67

Office of Construction and Facilities Management

Department of Veterans Affairs

VA FORM 08-6231



GENERAL NOTES

1. REMOVE PIPE HANGERS ASSOCIATED WITH PIPING SHOWN TO BE REMOVED. HANGERS SHALL NOT BE ABANDONED IN PLACE.
2. COORDINATE ALL MECHANICAL UTILITY AND HVAC UNIT SHUT DOWNS WITH OWNER. ANY SHUT DOWNS NECESSARY TO ACHIEVE THE OBJECTIVE OF THIS DESIGN SHALL BE COMPLETED DURING "OFF HOURS" AND SHALL COMPLY WITH OWNER'S UTILITY SHUT DOWN POLICIES.
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4. LISTED ROOMS ARE IN THE FLOOR BELOW THE INTERSTITIAL SPACE.
5. RELOCATE DOMESTIC WATER PIPING, ELECTRICAL CONDUIT, AND ANCILLARY COMPONENTS AS REQUIRED DUE TO NEW WORK.
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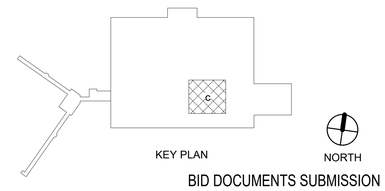
8. REPAIR ANY BARRIER THAT IS PENETRATED OR DAMAGED DURING THIS WORK EVEN IF EXISTING OPENINGS HAVE NOT BEEN REPAIRED NEARBY. REPAIR WITH LIKE CONSTRUCTION OR BETTER.
9. NO NEW CONSTRUCTION CAN TOUCH EXISTING OR NEW SPRINKLER LINES.
10. INFORM CHILLED WATER PLANT OF ALL TESTING WHICH WILL INCREASE LOAD SO PLANT CAN MAKE CHILLER ADJUSTMENTS AS NECCESSARY.
11. CONTRACTOR SHALL BE RESPONSIBLE FOR BLEADING AIR INTRODUCED IN THE NEW PIPING AND EXISTING PIPING. BLEAD AND PURGING OF AIR, WHEN THE SYSTEM IS FILLED, IS NOT LIMITED TO NEW WORK. IT IS INCLUSIVE OF ALL CHILLED WATER SUPPLY AND RETURN PIPING ON THE CAMPUS.
12. CONTRACTOR SHALL PROVIDE 1.5" VALVED DRAINS WITH HOSE CONNECTIONS LOCATED AS NEEDED TO FILL PIPING AND PERFORM FLUSHING AND CLEANING PROCEDURES.

☐ CONSTRUCTION NOTES

1. TEN ELECTRICAL TROUGH BOXES CONFLICT WITH CHILLED WATER ROUTE BETWEEN COLUMN LINES 10 AND 14. REMOVE LENGTHS OF TROUGH BOXES SUFFICIENT TO INSTALL CHILLED WATER LINES AS SHOWN. RELOCATE ANY CONDUITS IMPACTED BY THE TROUGH BOX REMOVAL.
2. RELOCATE EXISTING CEILING DIFFUSER AND SUPPLY DUCT. INSTALL NEW FIRE DAMPER IN SLAB PENETRATION AND PATCH THE REMAINING SLAB OPENING TO MATCH EXISTING SLAB CONSTRUCTION.
3. REROUTE CONDUIT, LOW PRESSURE DUCTWORK, VAV BOXES, MEDICAL GAS PIPING, DOMESTIC WATER PIPING, AND ANCILLARY COMPONENTS AS NEEDED TO ACCOMPLISH THE DESIGN INDICATED.
4. ROUTE CHW PIPE BELOW EXISTING STEEL GRATE BRIDGE.
5. RELOCATE RETURN DUCT TO ACCOMMODATE NEW CHW PIPING.
6. RELOCATE VACUUM, OXYGEN, AND MEDICAL AIR PIPING PRIOR TO INSTALLATION OF CHILLED WATER SUPPLY AND RETURN. COORDINATE RELOCATION SHUT DOWN PERIODS WITH OWNER'S REPRESENTATIVE. PROVIDE THE NECESSARY ADAPTERS, FITTINGS, VALVES, DEVICES, ETC TO COMPLETE THE RELOCATION

MECHANICAL PIPING - FIRST FLOOR INTERSTITIAL PLAN-c

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



BID DOCUMENTS SUBMISSION

Revisions:	Date

CONSULTANTS:

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04/22/2022

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Scale: AS NOTED

Drawing Title: MECHANICAL PIPING - FIRST FLOOR INTERSTITIAL PLAN-c

Approved: Project Director: BID DOCUMENTS

Project Title: CHILLED WATER LINE REPLACEMENT BLDG 500

Location: VAMC - Martinsburg, WV

Date: 04/22/2022 | Checked: BK | Drawn: JCH

Project Number: 613-16-302

Building Number: 500

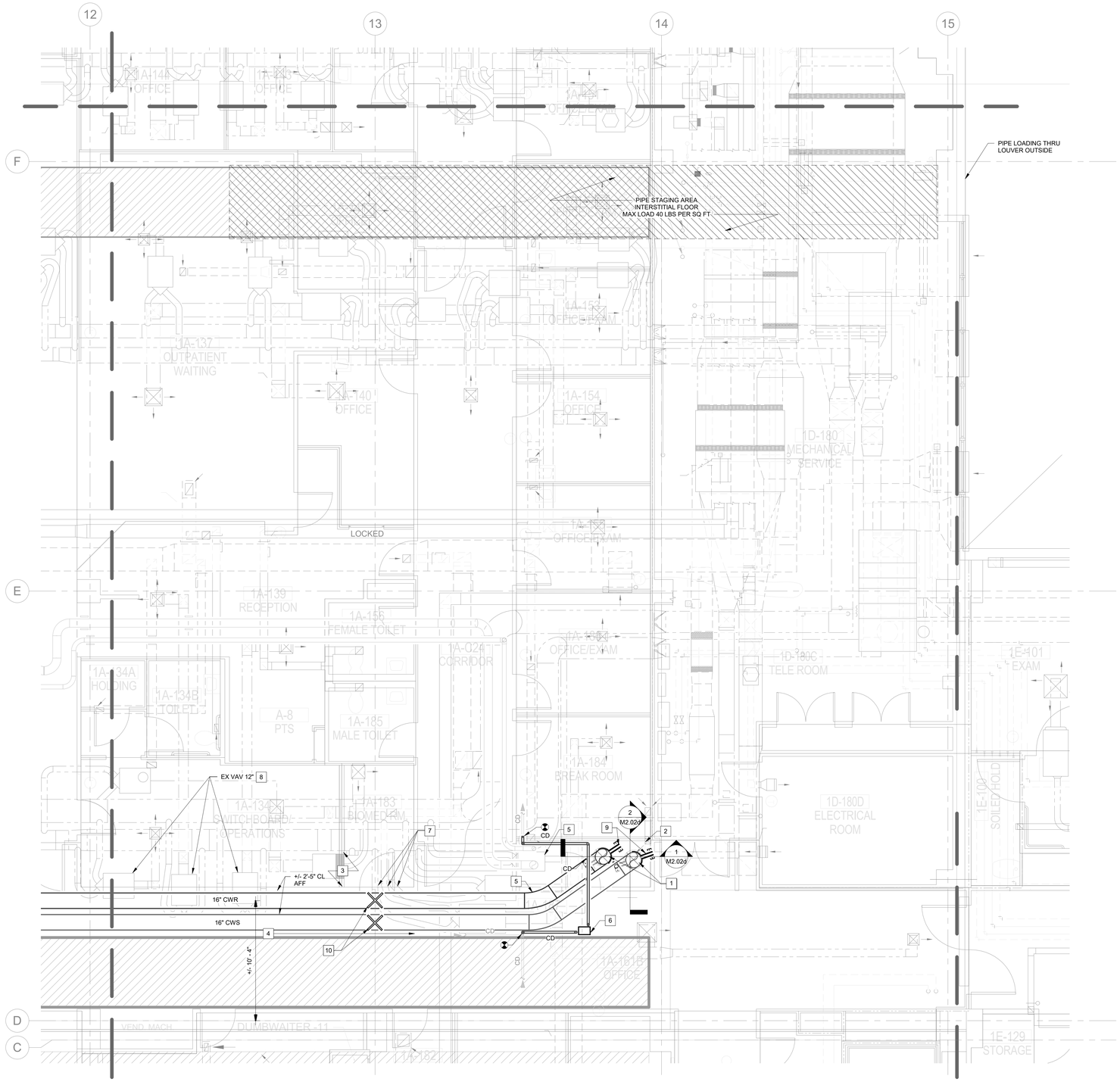
Drawing Number: M2.03c

Dwg. 42 of 67

Office of Construction and Facilities Management

Department of Veterans Affairs

VA FORM 08-6231



GENERAL NOTES

1. REMOVE PIPE HANGERS ASSOCIATED WITH PIPING SHOWN TO BE REMOVED. HANGERS SHALL NOT BE ABANDONED IN PLACE.
2. COORDINATE ALL MECHANICAL UTILITY AND HVAC UNIT SHUT DOWNS WITH OWNER. ANY SHUT DOWNS NECESSARY TO ACHIEVE THE OBJECTIVE OF THIS DESIGN SHALL BE COMPLETED DURING "OFF HOURS" AND SHALL COMPLY WITH OWNER'S UTILITY SHUT DOWN POLICIES.
3. CONTRACTOR IS RESPONSIBLE FOR ALL CUTTING, PATCHING AND DEMOLITION OF ALL BUILDING SYSTEMS PER THEIR MEANS-AND-METHODS AS NECESSARY TO PROVIDE THE DESIGN INDICATED.
4. LISTED ROOMS ARE IN THE FLOOR BELOW THE INTERSTITIAL SPACE.
5. RELOCATE DOMESTIC WATER PIPING, ELECTRICAL CONDUIT, AND ANCILLARY COMPONENTS AS REQUIRED DUE TO NEW WORK.
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7. DRYWALL WORK IS PART OF PROJECT.
8. REPAIR ANY BARRIER THAT IS PENETRATED OR DAMAGED DURING THIS WORK EVEN IF EXISTING OPENINGS HAVE NOT BEEN REPAIRED NEARBY. REPAIR WITH LIKE CONSTRUCTION OR BETTER.
9. NO NEW CONSTRUCTION CAN TOUCH EXISTING OR NEW SPRINKLER LINES.
10. INFORM CHILLED WATER PLANT OF ALL TESTING WHICH WILL INCREASE LOAD SO PLANT CAN MAKE CHILLER ADJUSTMENTS AS NECCESSARY.
11. CONTRACTOR SHALL BE RESPONSIBLE FOR BLEADING AIR INTRODUCED IN THE NEW PIPING AND EXISTING PIPING. BLEAD AND PURGING OF AIR, WHEN THE SYSTEM IS FILLED, IS NOT LIMITED TO NEW WORK. IT IS INCLUSIVE OF ALL CHILLED WATER SUPPLY AND RETURN PIPING ON THE CAMPUS.
12. CONTRACTOR SHALL PROVIDE 1.5" VALVED DRAINS WITH HOSE CONNECTIONS LOCATED AS NEEDED TO FILL PIPING AND PERFORM FLUSHING AND CLEANING PROCEDURES.

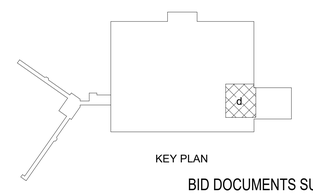
☐ CONSTRUCTION NOTES

1. CORE DRILL SLAB FOR INSTALLATION OF NEW CHILLED WATER PIPES DOWN TO BASEMENT INTERSTITIAL SPACE. PROVIDE UL LISTED FIRESTOP AT EACH PENETRATION.
2. RELOCATE SUPPLY DUCT TO NEW CEILING GRILLE LOCATION AND BALANCE TO 50 CFM. MATCH EXISTING CEILING GRILLE.
3. REROUTE CONDUIT, LOW PRESSURE DUCTWORK, VAV BOXES AND ANCILLARY COMPONENTS AS NEEDED TO ACCOMPLISH THE DESIGN INDICATED.
4. TEN ELECTRICAL TROUGH BOXES CONFLICT WITH CHILLED WATER ROUTE BETWEEN COLUMN LINES 10 AND 14. REMOVE LENGTHS OF TROUGH BOXES SUFFICIENT TO INSTALL CHILLED WATER LINES AS SHOWN. RELOCATE ANY CONDUITS IMPACTED BY THE TROUGH BOX REMOVAL.
5. RELOCATE VAV SUPPLY DUCTWORK TO ACCOMMODATE THE CHILLED WATER PIPING INSTALLATION.
6. PROVIDE NEW CONDENSATE PUMP AND RELOCATE EXISTING CONDENSATE DRAIN ABOVE NEW CONSTRUCTION. PIPE AND INSULATION MATERIALS AND SIZE TO MATCH EXISTING. SLOPE NO LESS THAN 1/8" PER FOOT. COORDINATE INSTALLATION WITH EXISTING CONDITIONS. CONDENSATE PUMP SHALL INCLUDE 1 GALLON CAST ALUMINUM RESERVOIR AND STAINLESS STEEL FLOAT, AND 6 FOOT POWER CORD WITH PLUG. MOTOR SHALL INCLUDE MAINTENANCE-FREE BALL BEARINGS AND THERMAL PROTECTION. 120V POWER, 3.1 FLA. DESIGN BASED ON HARTEL A2-SA. PROVIDE B.O.D. OR APPROVED EQUAL.
7. REMOVE AND REPLACE DUCTWORK TO ACCOMMODATE NEW CHILLED WATER PIPING. PROVIDE INSULATION AND VAPOR BARRIER TO MATCH EXISTING.
8. RAISE EXISTING VAV BOXES 12" AND REWORK DUCTWORK TO ACCOMMODATE CHILLED WATER PIPING INSTALLATION. PROVIDE INSULATION AND VAPOR BARRIER TO MATCH EXISTING.
9. HEAVY DUTY RISER CLAMP WITH PIPE GUIDES. REFER TO RISER GUIDE DETAIL ON M5.02.
10. CHW PIPE ANCHOR POINT. SEE STRUCTURAL PLANS FOR DETAILS.

X = CHILLED WATER PIPE FIXED ANCHOR POINT

MECHANICAL PIPING - FIRST FLOOR INTERSTITIAL PLAN-d

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



KEY PLAN

NORTH

BID DOCUMENTS SUBMISSION

Revisions:	Date

CONSULTANTS:

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04/22/2022

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Scale: AS NOTED

Drawing Title: MECHANICAL PIPING - FIRST FLOOR INTERSTITIAL PLAN-d

Approved: Project Director: BID DOCUMENTS

Project Title: CHILLED WATER LINE REPLACEMENT BLDG 500

Location: VAMC - Martinsburg, WV

Date: 04/22/2022 | Checked: BK | Drawn: JCH

Project Number: 613-16-302

Building Number: 500

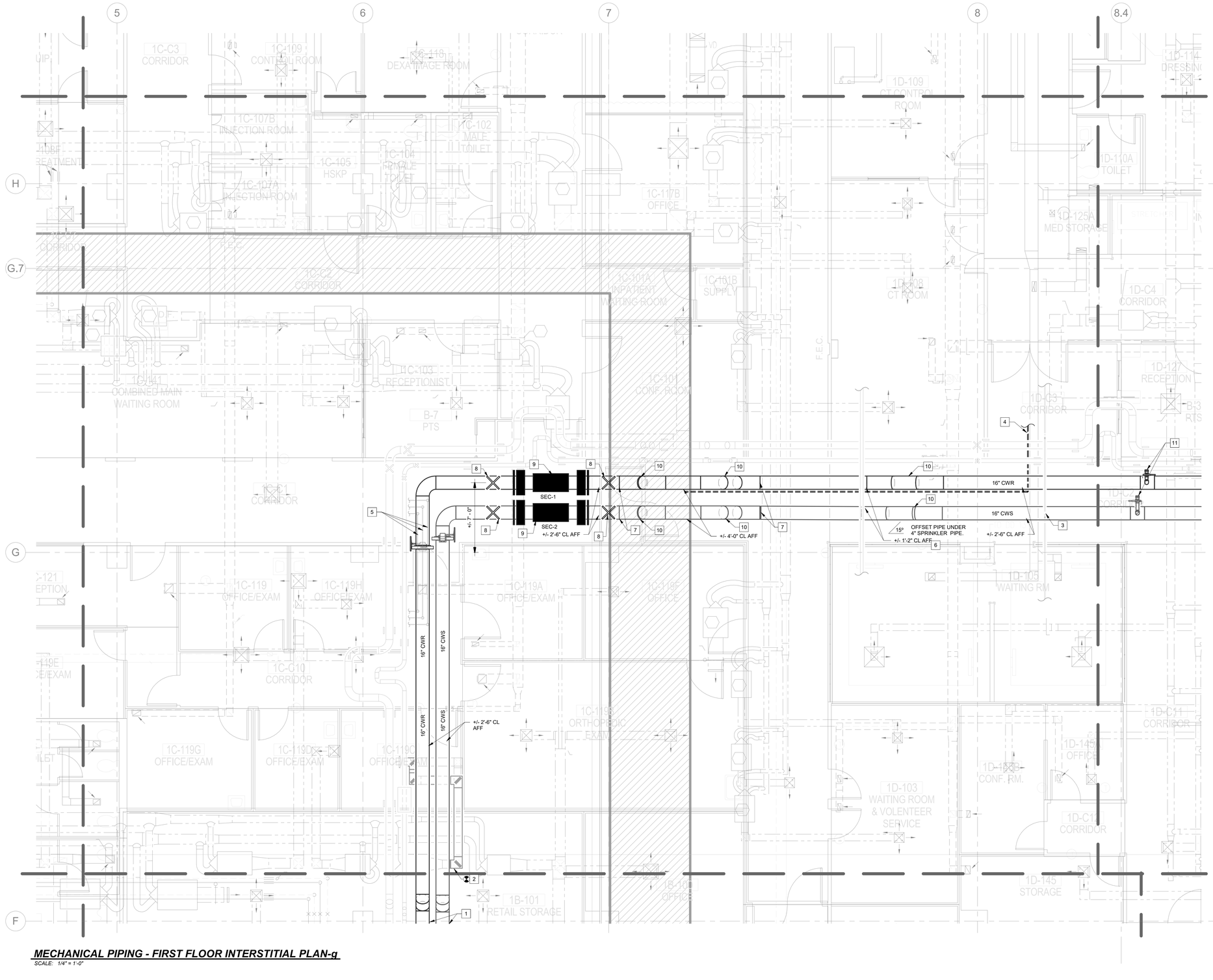
Drawing Number: M2.03d

Dwg. 43 of 67

Office of Construction and Facilities Management

Department of Veterans Affairs

VA FORM 08-6231



GENERAL NOTES

1. REMOVE PIPE HANGERS ASSOCIATED WITH PIPING SHOWN TO BE REMOVED. HANGERS SHALL NOT BE ABANDONED IN PLACE.
2. COORDINATE ALL MECHANICAL UTILITY AND HVAC UNIT SHUT DOWNS WITH OWNER. ANY SHUT DOWNS NECESSARY TO ACHIEVE THE OBJECTIVE OF THIS DESIGN SHALL BE COMPLETED DURING "OFF HOURS" AND SHALL COMPLY WITH OWNER'S UTILITY SHUT DOWN POLICIES.
3. CONTRACTOR IS RESPONSIBLE FOR ALL CUTTING, PATCHING AND DEMOLITION OF ALL BUILDING SYSTEMS PER THEIR MEANS-AND-METHODS AS NECESSARY TO PROVIDE THE DESIGN INDICATED.
4. LISTED ROOMS ARE IN THE FLOOR BELOW THE INTERSTITIAL SPACE.
5. RELOCATE DOMESTIC WATER PIPING, ELECTRICAL CONDUIT, AND ANCILLARY COMPONENTS AS REQUIRED DUE TO NEW WORK.
6. WORK IS OCCURING IN AN ACTIVE HOPITAL. ALL SYSTEMS EXISTING IN BUILDING MUST REMAIN ACTIVE UNLESS PLANS ARE MADE FOR A SHUTDOWN. ALL SHUTDOWN OCCURENCES MUST BE KEPT TO A MINIMUM AND DURATION OF SHUTDOWNS KEPT AS SHORT AS POSSIBLE.
7. DRYWALL WORK IS PART OF PROJECT.
8. REPAIR ANY BARRIER THAT IS PENETRATED OR DAMAGED DURING THIS WORK EVEN IF EXISTING OPENINGS HAVE NOT BEEN REPAIRED NEARBY. REPAIR WITH LIKE CONSTRUCTION OR BETTER.
9. NO NEW CONSTRUCTION CAN TOUCH EXISTING OR NEW SPRINKLER LINES.
10. INFORM CHILLED WATER PLANT OF ALL TESTING WHICH WILL INCREASE LOAD SO PLANT CAN MAKE CHILLER ADJUSTMENTS AS NECCESSARY.
11. CONTRACTOR SHALL BE RESPONSIBLE FOR BLEADING AIR INTRODUCED IN THE NEW PIPING AND EXISTING PIPING. BLEAD AND PURGING OF AIR, WHEN THE SYSTEM IS FILLED, IS NOT LIMITED TO NEW WORK. IT IS INCLUSIVE OF ALL CHILLED WATER SUPPLY AND RETURN PIPING ON THE CAMPUS.
12. CONTRACTOR SHALL PROVIDE 1.5" VALVED DRAINS WITH HOSE CONNECTIONS LOCATED AS NEEDED TO FILL PIPING AND PERFORM FLUSHING AND CLEANING PROCEDURES.

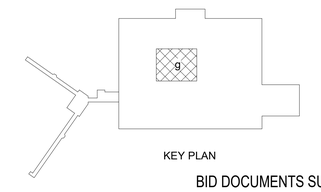
☐ CONSTRUCTION NOTES

1. ROUTE CHW PIPE BELOW EXISTING STEEL GRATE BRIDGE.
2. RELOCATE SUPPLY DUCT TO CLEAR A PATH FOR CHILLED WATER SUPPLY AND RETURN. MATCH EXISTING INSULATION.
3. RELOCATE SOFT WATER PIPING TO CLEAR A PATH FOR CHILLED WATER SUPPLY AND RETURN. MATCH EXISTING INSULATION.
4. REMOVE ABANDONED SILVER RECOVERY PIPING AS REQUIRED PRIOR TO THE INSTALLATION OF CHILLED WATER SUPPLY AND RETURN AND REPAIR ANY OPENINGS IN STRUCTURE THAT REMAIN.
5. RELOCATE EXISTING DCW, HWS, AND HWR PIPING. MATCH EXISTING INSULATION. COORDINATE RELOCATION SHUT DOWN PERIODS WITH OWNER'S REPRESENTATIVE. PROVIDE THE NECESSARY ADAPTERS, FITTINGS, VALVES, DEVICES, ETC TO COMPLETE THE RELOCATION.
6. PROVIDE OFFSET AS INDICATED TO LOCATE PIPE UNDER EXISTING 4" SPRINKLER LINE. INSTALL DRAIN VALVE CONNECTION AT LOW POINT.
7. PROVIDE 45 DEGREE OFFSETS AS SHOWN TO LIMIT WALKWAY OBSTRUCTION AND TO ABSORB PIPE CONTRACTION DURING INITIAL FILL. RELOCATE PNEUMATIC CARRIER TUBES AND OTHER OBSTRUCTIONS TO ALLOW FOR OFFSET.
8. CHW PIPE ANCHOR POINT. SEE STRUCTURAL PLANS FOR DETAILS. ANCHOR PIPE WITHIN TWO FEET OF SEISMIC EXPANSION COMPENSATOR
9. SUSPEND SEISMIC EXPANSION COMPENSATOR FROM STRUCTURAL STEEL ABOVE.
10. PIPE OFFSET TO ABSORB PIPE CONTRACTION BETWEEN ANCHORS. DO NOT INSTALL PIPE STRAIGHT BETWEEN ANCHORS.
11. 3" CWS AND CWR LINES CAPPED AND VALVED FOR FUTURE USE.

⨯ = CHILLED WATER PIPE FIXED ANCHOR POINT

MECHANICAL PIPING - FIRST FLOOR INTERSTITIAL PLAN-g

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



BID DOCUMENTS SUBMISSION

Revisions:	Date

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Scale: AS NOTED

Drawing Title: MECHANICAL PIPING - FIRST FLOOR INTERSTITIAL PLAN-g

Approved: Project Director: BID DOCUMENTS

Project Title: CHILLED WATER LINE REPLACEMENT BLDG 500

Location: VAMC - Martinsburg, WV

Date: 04/22/2022 | Checked: BK | Drawn: JCH

Project Number: 613-16-302

Building Number: 500

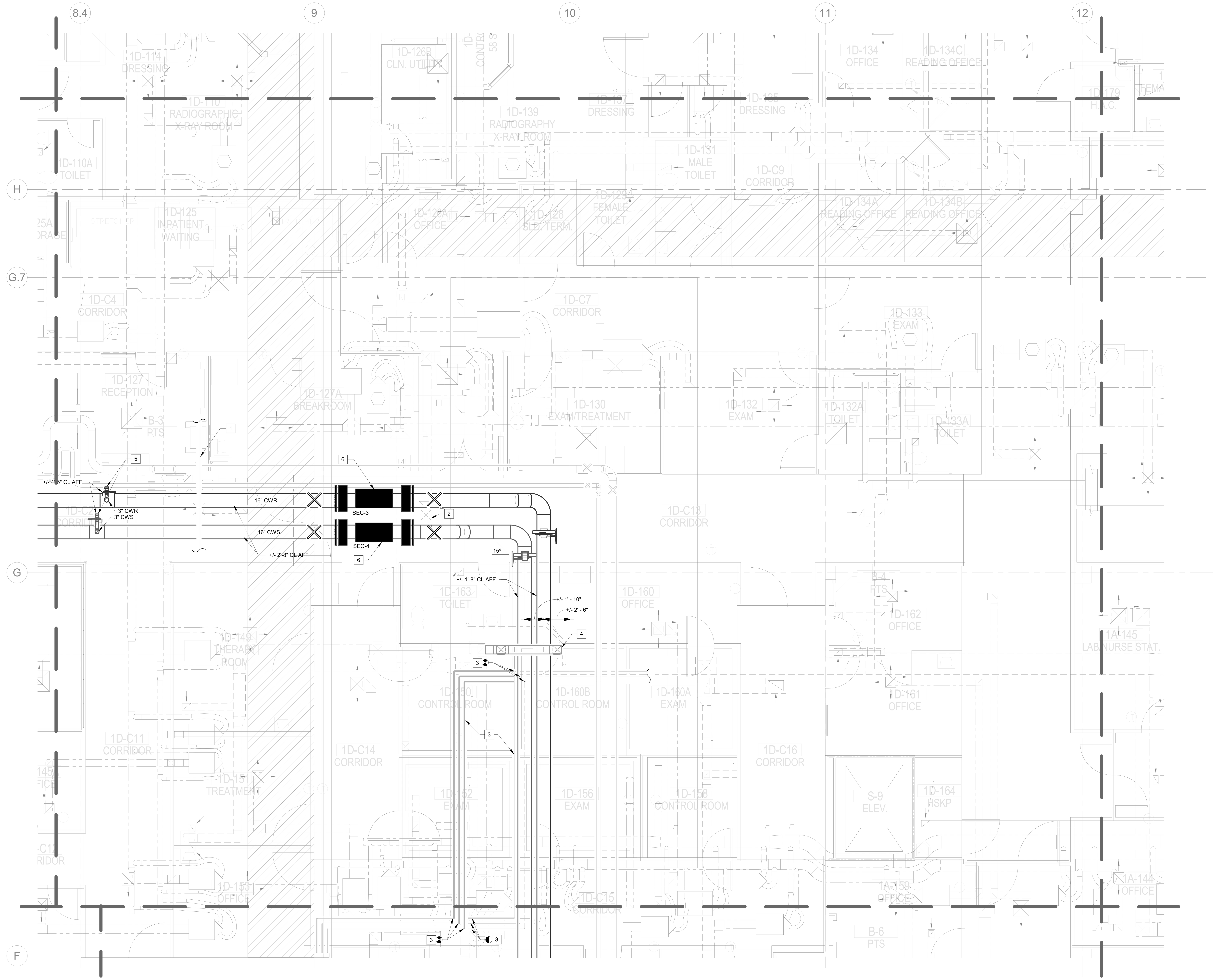
Drawing Number: M2.03g

Dwg. 44 of 67

Office of Construction and Facilities Management

Department of Veterans Affairs

VA FORM 08-6231



MECHANICAL PIPING - FIRST FLOOR INTERSTITIAL PLAN-h

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

GENERAL NOTES

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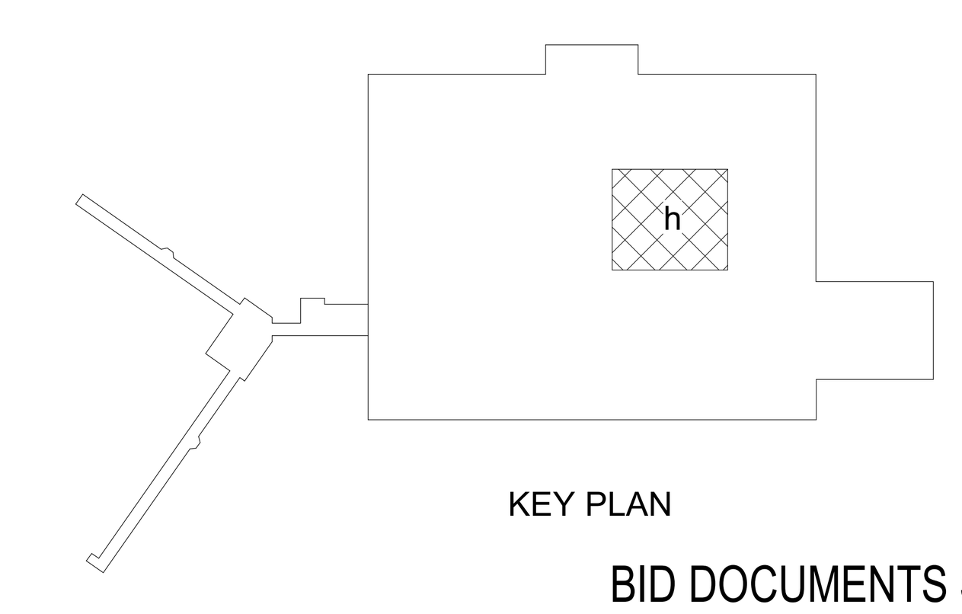
8. REPAIR ANY BARRIER THAT IS PENETRATED OR DAMAGED DURING THIS WORK EVEN IF EXISTING OPENINGS HAVE NOT BEEN REPAIRED NEARBY. REPAIR WITH LIKE CONSTRUCTION OR BETTER.
9. NO NEW CONSTRUCTION CAN TOUCH EXISTING OR NEW SPRINKLER LINES.
10. INFORM CHILLED WATER PLANT OF ALL TESTING WHICH WILL INCREASE LOAD SO PLANT CAN MAKE CHILLER ADJUSTMENTS AS NECCESSARY.
11 CONTRACTOR SHALL BE RESPONSIBLE FOR BLEADING AIR INTRODUCED IN THE NEW PIPING AND EXISTING PIPING. BLEAD AND PURGING OF AIR, WHEN THE SYSTEM IS FILLED, IS NOT LIMITED TO NEW WORK. IT IS INCLUSIVE OF ALL CHILLED WATER SUPPLY AND RETURN PIPING ON THE CAMPUS.
12 CONTRACTOR SHALL PROVIDE 1.5" VALVED DRAINS WITH HOSE CONNECTIONS LOCATED AS NEEDED TO FILL PIPING AND PERFORM FLUSHING AND CLEANING PROCEDURES.

☐ CONSTRUCTION NOTES

1. RELOCATE SANITARY VENT PIPING TO CLEAR A PATH FOR CHILLED WATER SUPPLY AND RETURN.
2. INSTALL CHILLED WATER SUPPLY AND RETURN TO CLEAR DUCT RISER.
3. RELOCATE VACUUM, OXYGEN, AND MEDICAL AIR PIPING PRIOR TO INSTALLATION OF CHILLED WATER SUPPLY AND RETURN. COORDINATE RELOCATION SHUT DOWN PERIODS WITH OWNER'S REPRESENTATIVE. PROVIDE THE NECESSARY ADAPTERS, FITTINGS, VALVES, DEVICES, ETC TO COMPLETE THE RELOCATION
4. RELOCATE EXHAUST DUCT TO CLEAR A PATH FOR CHILLED WATER SUPPLY AND RETURN.
5. 3" CWS AND CWR LINES CAPPED AND VALVED FOR FUTURE USE.
6. SUSPEND SEISMIC EXPANSION COMPENSATOR FROM STRUCTURAL STEEL ABOVE.

X = CHILLED WATER PIPE FIXED ANCHOR POINT



KEY PLAN

NORTH

BID DOCUMENTS SUBMISSION

Revisions:	Date

CONSULTANTS:

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PHILLIP L. GENTRY REGISTERED 14226 STATE OF WEST VIRGINIA PROFESSIONAL ENGINEER 04/22/2022

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Scale: AS NOTED

Drawing Title: MECHANICAL PIPING - FIRST FLOOR INTERSTITIAL PLAN-h

Approved: Project Director: BID DOCUMENTS

Project Title: CHILLED WATER LINE REPLACEMENT BLDG 500

Location: VAMC - Martinsburg, WV

Date: 04/22/2022 | Checked: BK | Drawn: JCH

Project Number: 613-16-302

Building Number: 500

Drawing Number: M2.03h

Dwg. 45 of 67

Office of Construction and Facilities Management

Department of Veterans Affairs

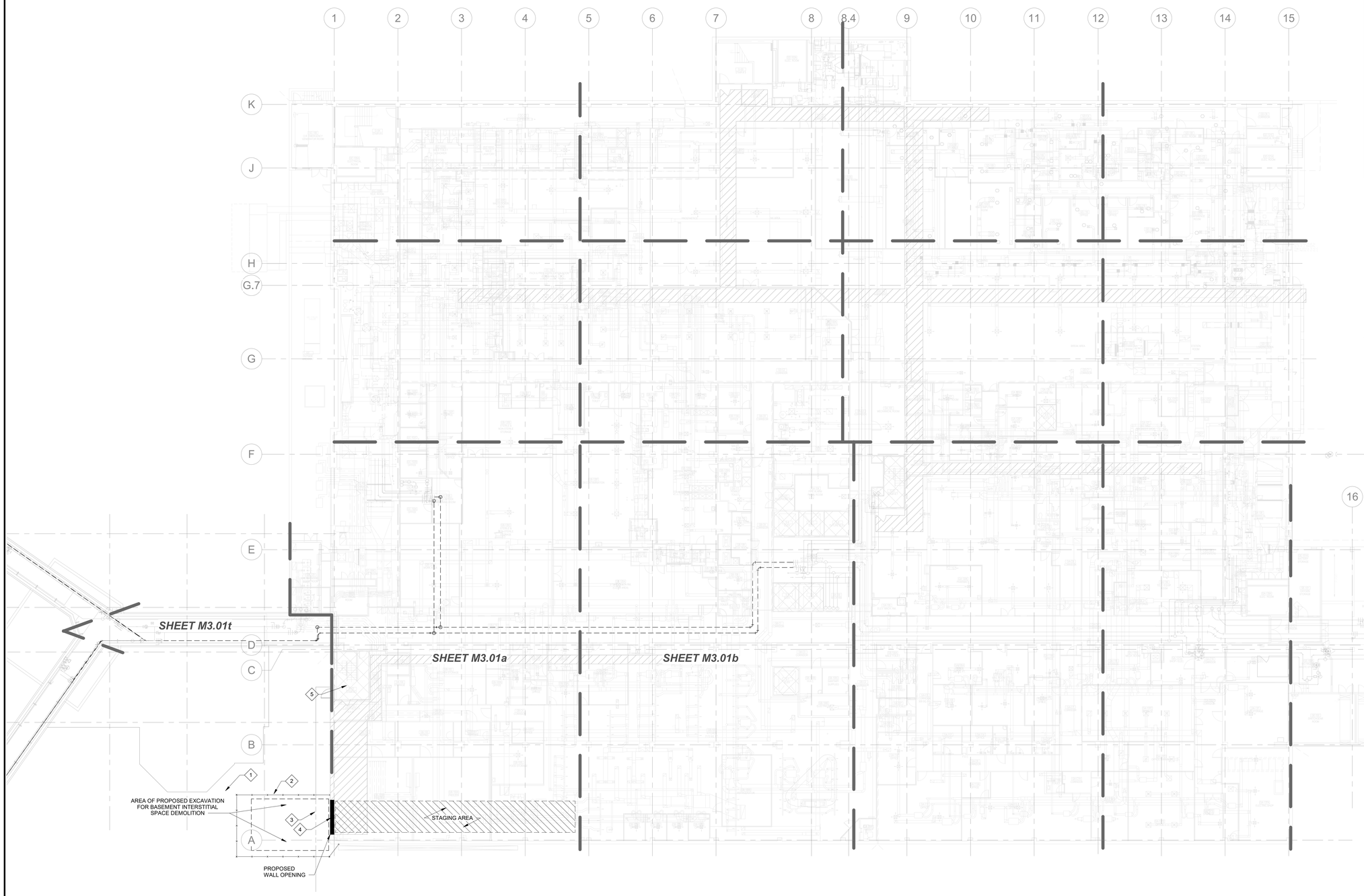
VA FORM 08-6231

GENERAL NOTES

1. COLUMN LINES ARE MARKED ON BEAMS AT EACH COLUMN, i.e., F7.
2. SEE LABELED SHEETS FOR ENLARGED PLANS.
3. HATCHED AREAS ARE SEMI-CLEAR WALKWAYS THAT SHOULD BE KEPT CLEAR, AS MUCH AS POSSIBLE. NEW OBSTRUCTIONS NOT ABLE TO BE EASILY CROSSED, SHALL BE PROVIDED WITH A GALV. BRIDGE WITH STEPS; GRATE MATERIAL. ALL NEW WORK IN THESE AREAS ARE TO APPROVED BY OWNER'S REP. BEFORE PROCEEDING.
4. ROOMS NOTED ARE THE LEVEL BELOW THE INTERSTITIAL SPACE.
5. WORK IS OCCURING IN AN ACTIVE HOPITAL. ALL SYSTEMS EXISTING IN BUILDING MUST REMAIN ACTIVE UNLESS PLANS ARE MADE FOR A SHUTDOWN. ALL SHUTDOWN OCCURENCES MUST BE KEPT TO A MINIMUM AND DURATION OF SHUTDOWNS KEPT AS SHORT AS POSSIBLE.
6. DRYWALL WORK IS PART OF PROJECT.
7. REPAIR ANY BARRIER THAT IS PENETRATED OR DAMAGED DURING THIS WORK EVEN IF EXISTING OPENINGS HAVE NOT BEEN REPAIRED NEARBY. REPAIR WITH LIKE CONSTRUCTION OR BETTER.
8. NO NEW CONSTRUCTION CAN TOUCH EXISTING OR NEW SPRINKLER LINES.
9. INFORM CHILLED WATER PLANT OF ALL TESTING WHICH WILL INCREASE LOAD SO PLANT CAN MAKE CHILLER ADJUSTMENTS AS NECCESSARY.

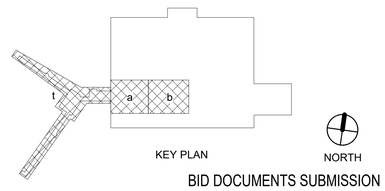
◇ DEMOLITION NOTES

1. CREATE A TEMPORARY EGRESS PATH, PRIOR TO ANY DEMO OF SIDEWALK AND EXCAVATION FOR TEMPORARY BASEMENT ACCESS.
2. PROVIDE 7 FOOT SECURITY FENCE AT ALL EXCAVATION POINTS.
3. DEMO SIDEWALK IN EXCAVATION AREA. ONCE REMOVAL OF PIPE IS COMPLETE AND WALL OPENING IS REPAIRED. FILL EXCAVATED AREA AND REPLACE SIDEWALK TO MATCH EXISTING SIDEWALKS.
4. EXCAVATE AND SHORE WALL PRIOR TO DEMO TO CREATE 48" X 48" ACCESS TO BASEMENT INTERSTITIAL, MAKE OPENING SECURE, REMOVE ALL DEMOED PIPE AND EQUIPMENT, AND REPAIR WALL AND SITE TO MATCH PRIOR TO EXCAVATION. TAMP AND RESEED TO MATCH SURROUNDINGS. EXCAVATION AND CREATION OF OPENING, TO BE SCHEDULED WITH THE OWNER.
5. DEDUCT ALTERNATE: IN LIEU OF EXCAVATION AND WALL DEMOLITION, REMOVE DEMOED PIPE AND EQUIPMENT BY WAY OF STAIRWELL #3. COORDINATE REMOVAL AND STAIRWELL USE WITH THE COR.



MECHANICAL PIPING - BASEMENT INTERSTITIAL DEMOLITION KEY PLAN

SCALE: 1/16" = 1'-0"



KEY PLAN

NORTH

BID DOCUMENTS SUBMISSION

Revisions:	Date

CONSULTANTS:

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Scale: AS NOTED

Drawing Title: MECHANICAL PIPING - BASEMENT INTERSTITIAL DEMOLITION KEY PLAN

Approved: Project Director: BID DOCUMENTS

Project Title: CHILLED WATER LINE REPLACEMENT BLDG 500

Location: VAMC - Martinsburg, WV

Date: 04/22/2022 | Checked: BK | Drawn: JCH

Project Number: 613-16-302

Building Number: 500

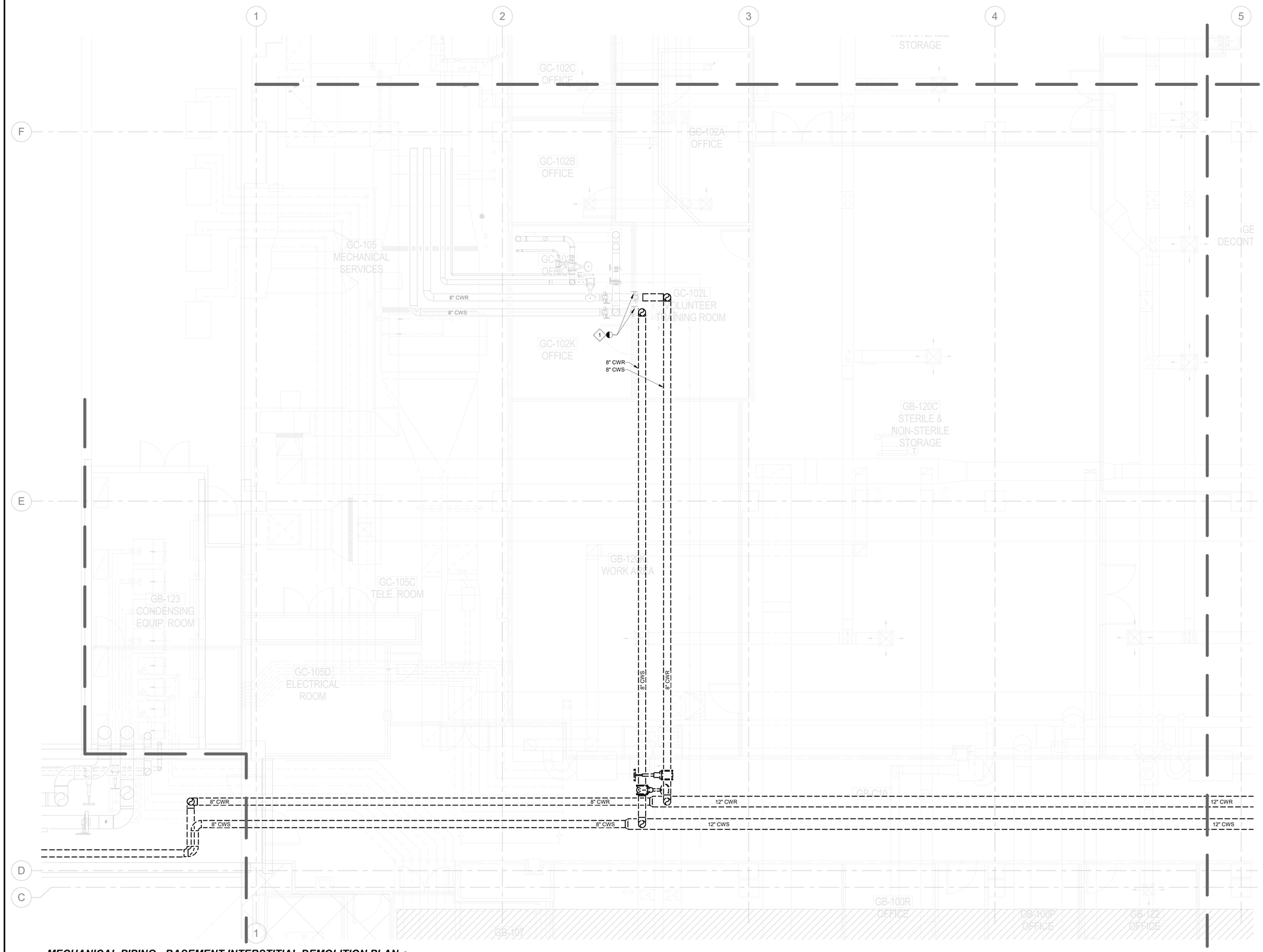
Drawing Number: M3.01

Dwg. 46 of 67

Office of Construction and Facilities Management

Department of Veterans Affairs

VA FORM 08-6231



GENERAL NOTES

1. REMOVE PIPE HANGERS ASSOCIATED WITH PIPING SHOWN TO BE REMOVED. HANGERS SHALL NOT BE ABANDONED IN PLACE.
2. COORDINATE ALL MECHANICAL UTILITY AND HVAC UNIT SHUT DOWNS WITH OWNER. ANY SHUT DOWNS NECESSARY TO ACHIEVE THE OBJECTIVE OF THIS DESIGN SHALL BE COMPLETED DURING "OFF HOURS" AND SHALL COMPLY WITH OWNERS UTILITY SHUT DOWN POLICIES.
3. CONTRACTOR IS RESPONSIBLE FOR ALL CUTTING, PATCHING AND DEMOLITION OF ALL BUILDING SYSTEMS PER THEIR MEANS-AND-METHODS AS NECESSARY TO PROVIDE THE DESIGN INDICATED.
4. LISTED ROOMS ARE IN THE FLOOR BELOW THE INTERSTITIAL SPACE.
5. RELOCATE DOMESTIC WATER PIPING, ELECTRICAL CONDUIT, AND ANCILLARY COMPONENTS AS REQUIRED DUE TO NEW WORK.
6. WORK IS OCCURING IN AN ACTIVE HOPITAL. ALL SYSTEMS EXISTING IN BUILDING MUST REMAIN ACTIVE UNLESS PLANS ARE MADE FOR A SHUTDOWN. ALL SHUTDOWN OCCURENCES MUST BE KEPT TO A MINIMUM AND DURATION OF SHUTDOWNS KEPT AS SHORT AS POSSIBLE.
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10. INFORM CHILLED WATER PLANT OF ALL TESTING WHICH WILL INCREASE LOAD SO PLANT CAN MAKE CHILLER ADJUSTMENTS AS NECCESSARY.
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12. CONTRACTOR SHALL PROVIDE 1.5" VALVED DRAINS WITH HOSE CONNECTIONS LOCATED AS NEEDED TO FILL PIPING AND PERFORM FLUSHING AND CLEANING PROCEDURES.

◇ DEMOLITION NOTES

1. AFTER ALL CHW BRANCH CONNECTIONS HAVE BEEN MADE AND THE NEW CHW MAINS ARE IN SERVICE, REMOVE CHW PIPING AS INDICATED. CAP END-SERVICE BUTTERFLY VALVES WITH BLIND FLANGE.

MECHANICAL PIPING - BASEMENT INTERSTITIAL DEMOLITION PLAN-a

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

KEY PLAN

NORTH

BID DOCUMENTS SUBMISSION

Revisions:	Date

CONSULTANTS:

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Scale: AS NOTED

Drawing Title: MECHANICAL PIPING - BASEMENT INTERSTITIAL DEMOLITION PLAN-a

Approved: Project Director: BID DOCUMENTS

Project Title: CHILLED WATER LINE REPLACEMENT BLDG 500

Location: VAMC - Martinsburg, WV

Date: 04/22/2022 | Checked: BK | Drawn: JCH

Project Number: 613-16-302

Building Number: 500

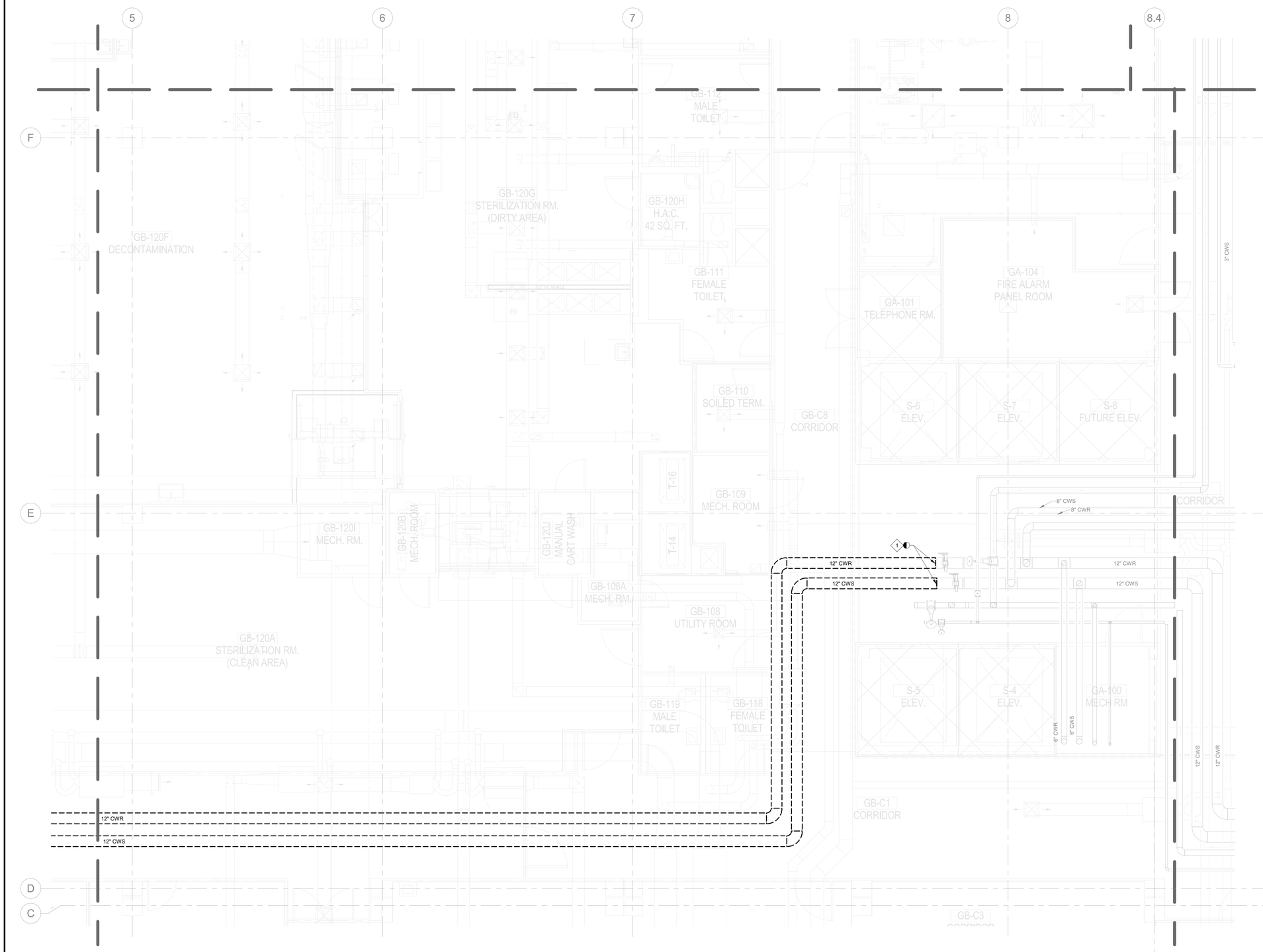
Drawing Number: M3.01a

Dwg. 47 of 67

Office of Construction and Facilities Management

Department of Veterans Affairs

VA FORM 08-6231



GENERAL NOTES

1. REMOVE PIPE HANGERS ASSOCIATED WITH PIPING SHOWN TO BE REMOVED. HANGERS SHALL NOT BE ABANDONED IN PLACE.
2. COORDINATE ALL MECHANICAL UTILITY AND HVAC UNIT SHUT DOWNS WITH OWNER. ANY SHUT DOWNS NECESSARY TO ACHIEVE THE OBJECTIVE OF THIS DESIGN SHALL BE COMPLETED DURING "OFF HOURS" AND SHALL COMPLY WITH OWNERS UTILITY SHUT DOWN POLICIES.
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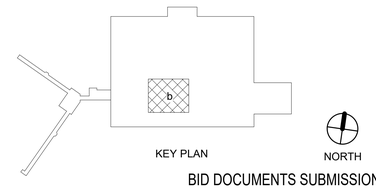
12. CONTRACTOR SHALL PROVIDE 1.5" VALVED DRAINS WITH HOSE CONNECTIONS LOCATED AS NEEDED TO FILL PIPING AND PERFORM FLUSHING AND CLEANING PROCEDURES.

◇ DEMOLITION NOTES

1. AFTER ALL CHW BRANCH CONNECTIONS HAVE BEEN MADE AND THE NEW CHW MAINS ARE IN SERVICE, REMOVE CHW PIPING AS INDICATED. CAP END-SERVICE BUTTERFLY VALVES WITH BLIND FLANGE.

MECHANICAL PIPING - BASEMENT INTERSTITIAL DEMOLITION PLAN-b

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



BID DOCUMENTS SUBMISSION

Revisions:	Date

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Scale: AS NOTED

Drawing Title: MECHANICAL PIPING - BASEMENT INTERSTITIAL DEMOLITION PLAN-b

Approved: Project Director: BID DOCUMENTS

Project Title: CHILLED WATER LINE REPLACEMENT BLDG 500

Location: VAMC - Martinsburg, WV

Date: 04/22/2022 | Checked: BK | Drawn: JCH

Project Number: 613-16-302

Building Number: 500

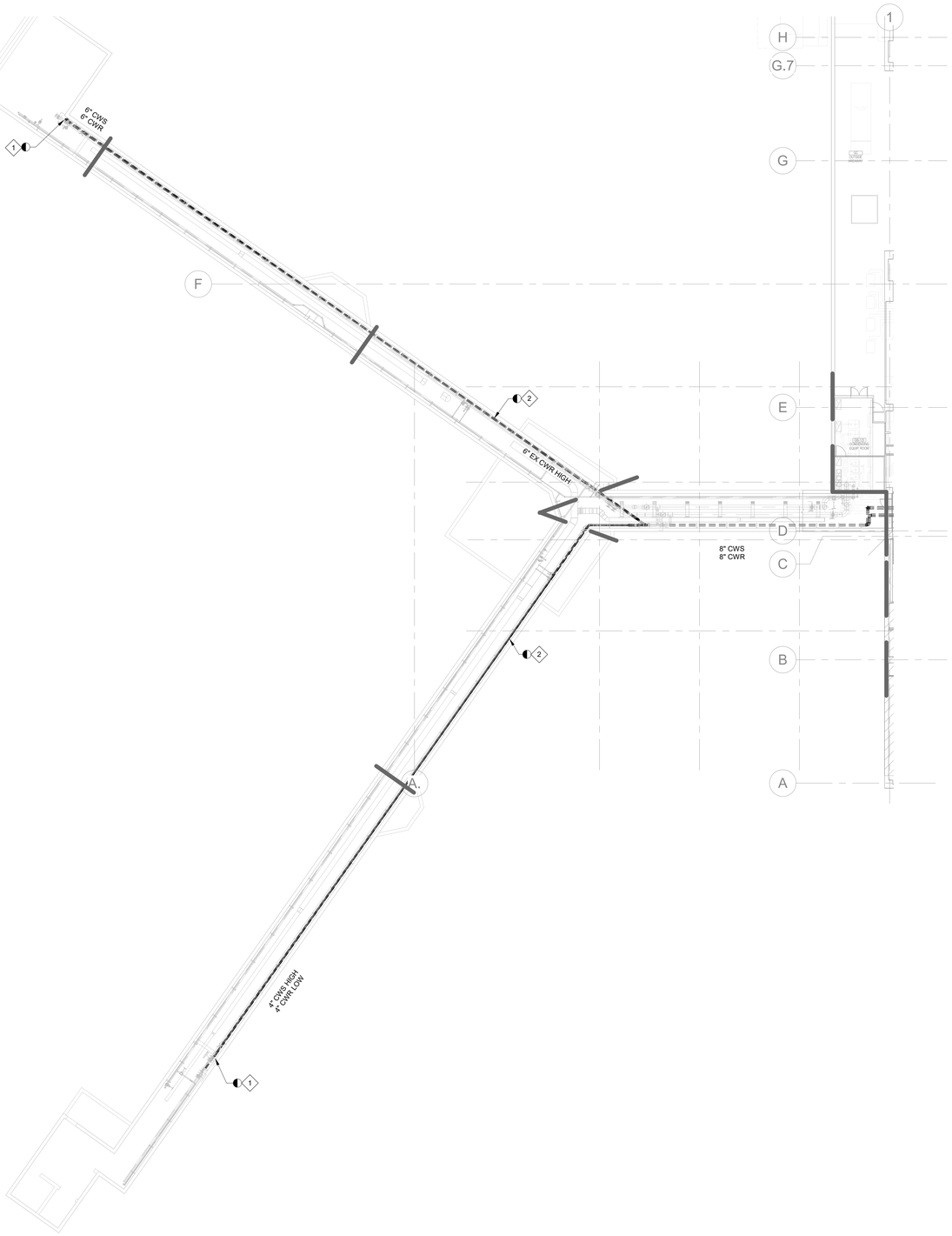
Drawing Number: M3.01b

Dwg. 48 of 67

Office of Construction and Facilities Management

Department of Veterans Affairs

VA FORM 08-6231



GENERAL NOTES

1. REMOVE PIPE HANGERS ASSOCIATED WITH PIPING SHOWN TO BE REMOVED. HANGERS SHALL NOT BE ABANDONED IN PLACE.
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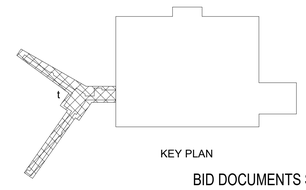
12 CONTRACTOR SHALL PROVIDE 1.5" VALVED DRAINS WITH HOSE CONNECTIONS LOCATED AS NEEDED TO FILL PIPING AND PERFORM FLUSHING AND CLEANING PROCEDURES.

◇ DEMOLITION NOTES

1. REMOVE CHW PIPING AS INDICATED.
2. REMOVAL OF CWS AND CWR PIPING IN THE TUNNELS WILL BE PHASED WITH THE INSTALLATION OF NEW PIPING TO LIMIT EQUIPMENT DOWNTIME. SEE M2.01t SERIES, M4.01, AND M4.02 FOR MORE INFORMATION ON PHASED INSTALLATION.

MECHANICAL PIPING - TUNNEL DEMOLITION PLAN

SCALE: 1/16" = 1'-0"



KEY PLAN

NORTH

BID DOCUMENTS SUBMISSION

Revisions:	Date

CONSULTANTS:

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Scale: AS NOTED

Drawing Title: MECHANICAL PIPING - TUNNEL DEMOLITION PLAN

Approved: Project Director: BID DOCUMENTS

Project Title: CHILLED WATER LINE REPLACEMENT BLDG 500

Location: VAMC - Martinsburg, WV

Date: 04/22/2022 | Checked: BK | Drawn: JCH

Project Number: 613-16-302

Building Number: 500

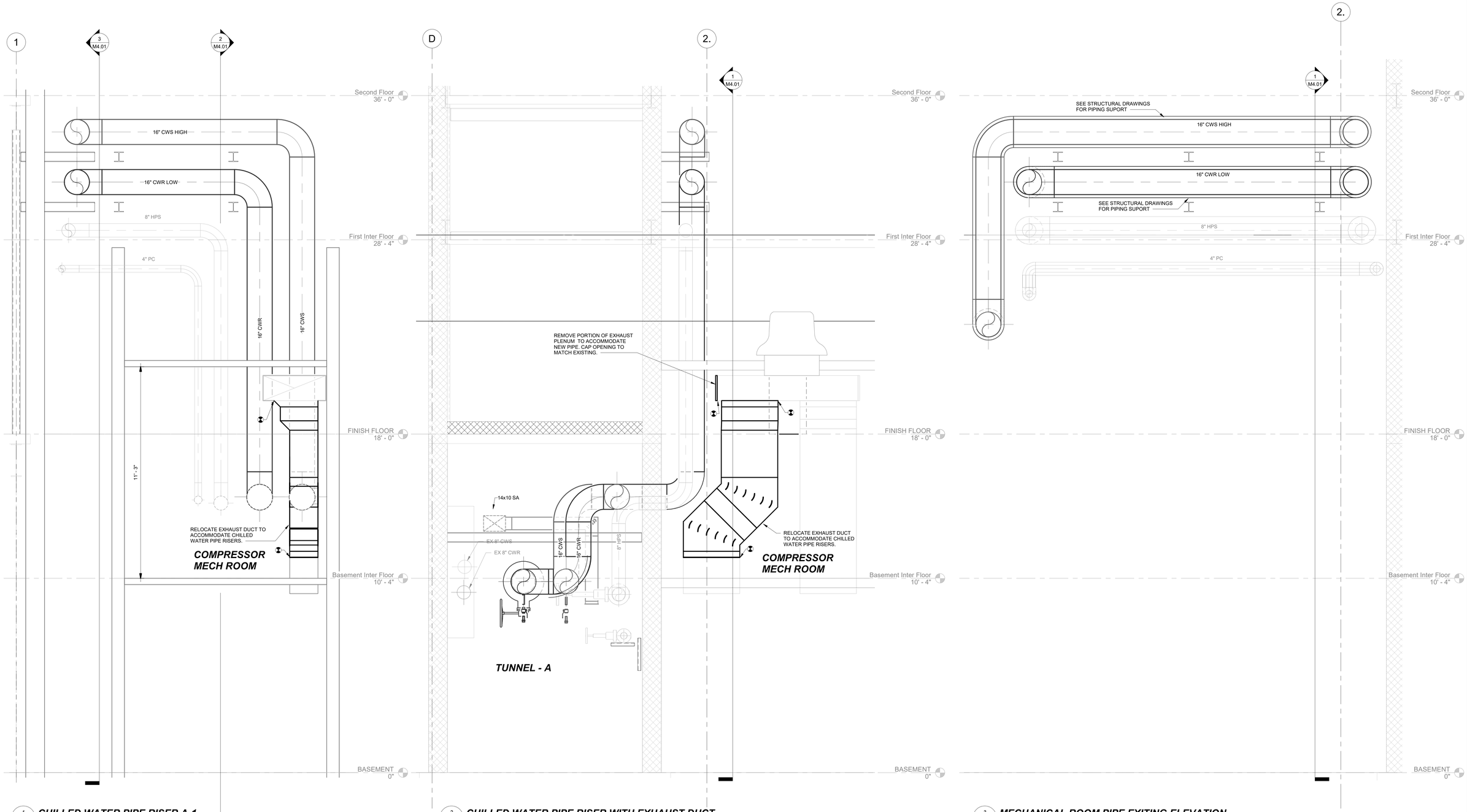
Drawing Number: M3.01t

Dwg. 49 of 67

Office of Construction and Facilities Management

Department of Veterans Affairs

VA FORM 08-6231



1 M2.02a **CHILLED WATER PIPE RISER A-1**
SCALE: 1/2" = 1'-0"

2 M2.01a **CHILLED WATER PIPE RISER WITH EXHAUST DUCT**
SCALE: 1/2" = 1'-0"

3 M2.03a **MECHANICAL ROOM PIPE EXITING ELEVATION**
SCALE: 1/2" = 1'-0"

BID DOCUMENTS SUBMISSION

Revisions:	Date

CONSULTANTS:

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PHILIP L. GENTRY — 14226 — STATE OF — PROFESSIONAL ENGINEER
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Frederick, MD 21701

Scale: AS NOTED

Drawing Title: PIPE RISERS

Approved: Project Director: BID DOCUMENTS

Project Title: CHILLED WATER LINE REPLACEMENT BLDG 500

Location: VAMC - Martinsburg, WV

Date: 04/22/2022 | Checked: BK | Drawn: JCH

Project Number: 613-16-302

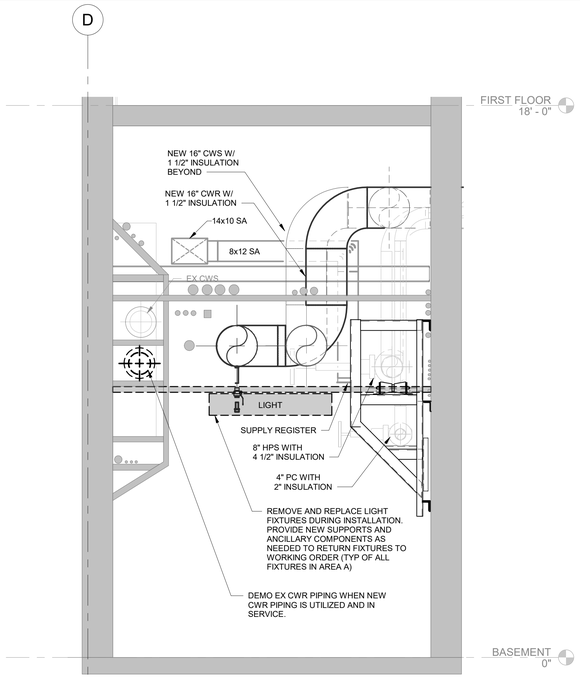
Building Number: 500

Drawing Number: M4.01
Dwg. 50 of 67

Office of Construction and Facilities Management

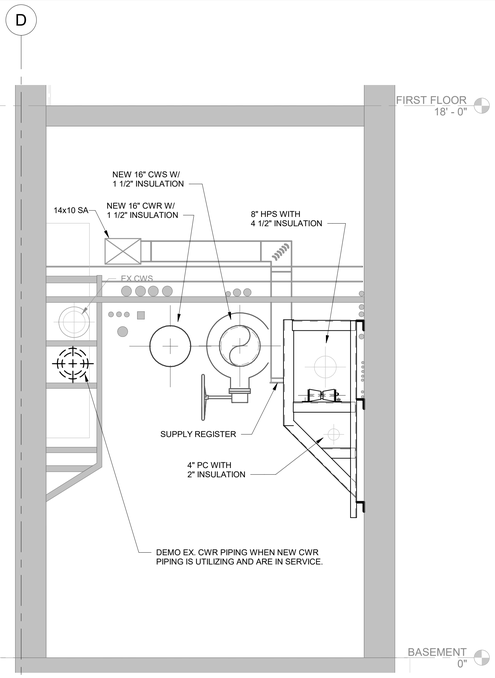
Department of Veterans Affairs

VA FORM 08-6231



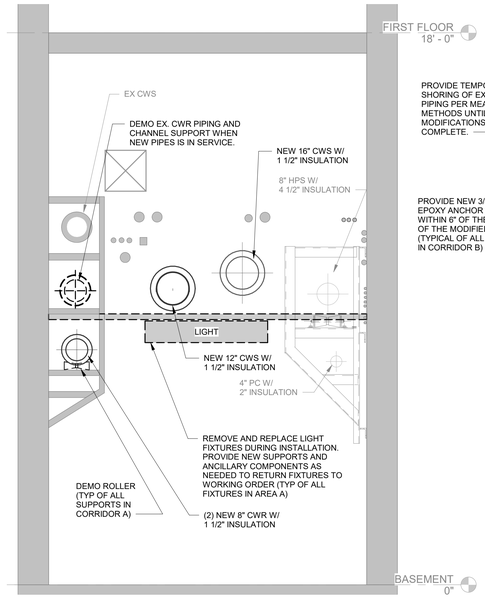
TUNNEL SECTION A-A - PHASE 1

SCALE: 1/2" = 1'-0"



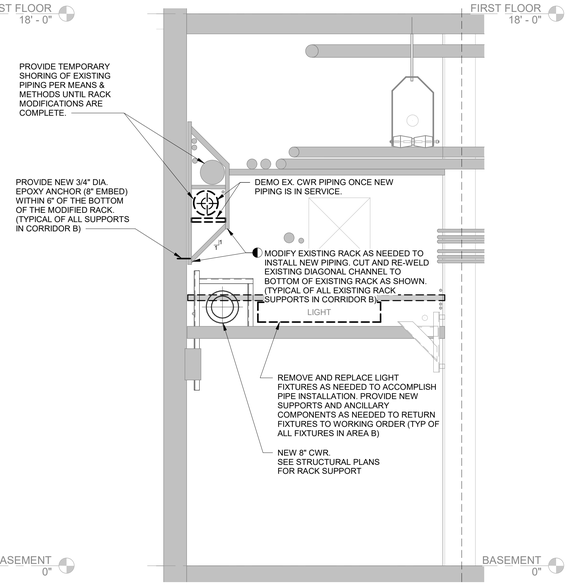
TUNNEL SECTION B-B - PHASE-1

SCALE: 1/2" = 1'-0"



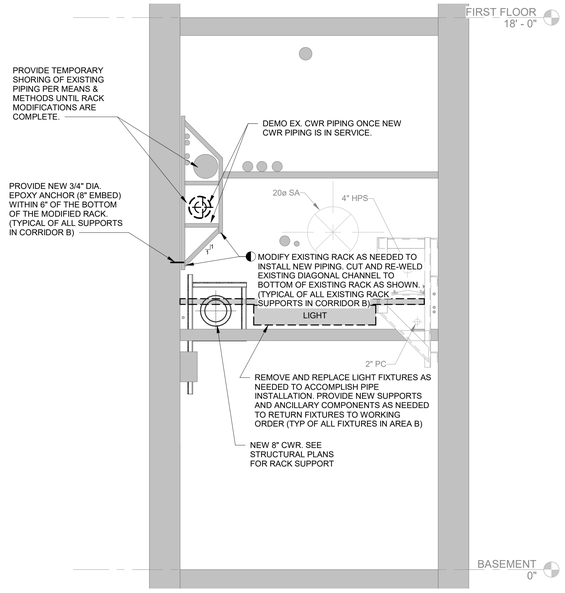
TUNNEL SECTION C-C - PHASE 1

SCALE: 1/2" = 1'-0"



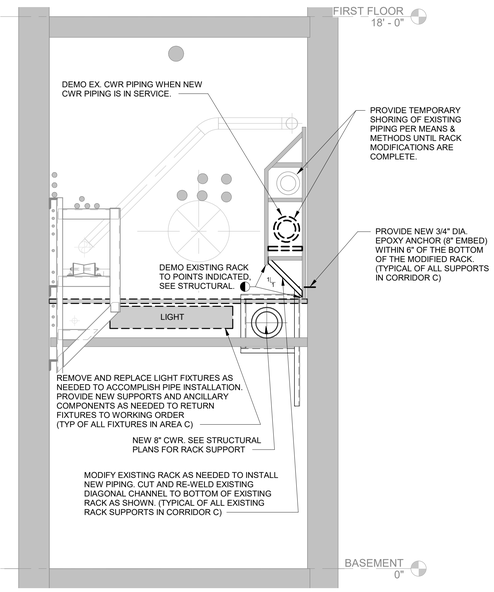
TUNNEL SECTION D-D - PHASE 1

SCALE: 1/2" = 1'-0"



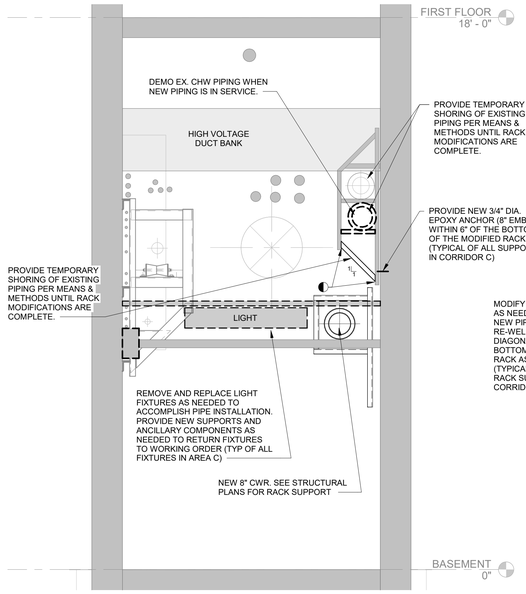
TUNNEL SECTION E-E - PHASE-1

SCALE: 1/2" = 1'-0"



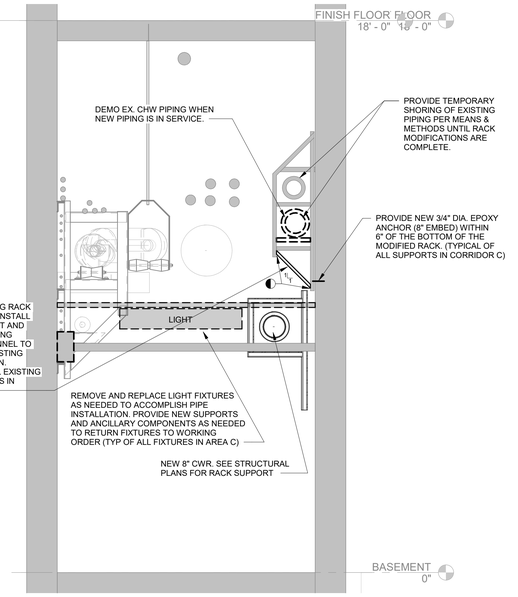
TUNNEL SECTION F-F PHASE-1

SCALE: 1/2" = 1'-0"



TUNNEL SECTION G-G PHASE-1

SCALE: 1/2" = 1'-0"



TUNNEL SECTION H-H PHASE-1

SCALE: 1/2" = 1'-0"

BID DOCUMENTS SUBMISSION

Revisions:	Date

CONSULTANTS:

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Frederick, MD 21701

Scale: AS NOTED

Drawing Title: PIPE SECTIONS AT TUNNEL

Approved: Project Director: BID DOCUMENTS

Project Title: CHILLED WATER LINE REPLACEMENT BLDG 500

Location: VAMC - Martinsburg, WV

Date: 04/22/2022 | Checked: BK | Drawn: JCH

Project Number: 613-16-302

Building Number: 500

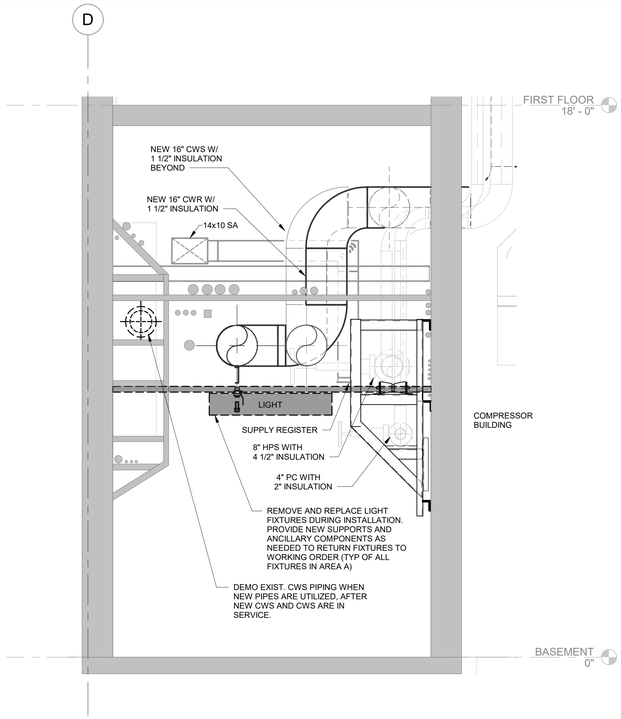
Drawing Number: M4.02

Dwg. 51 of 67

Office of Construction and Facilities Management

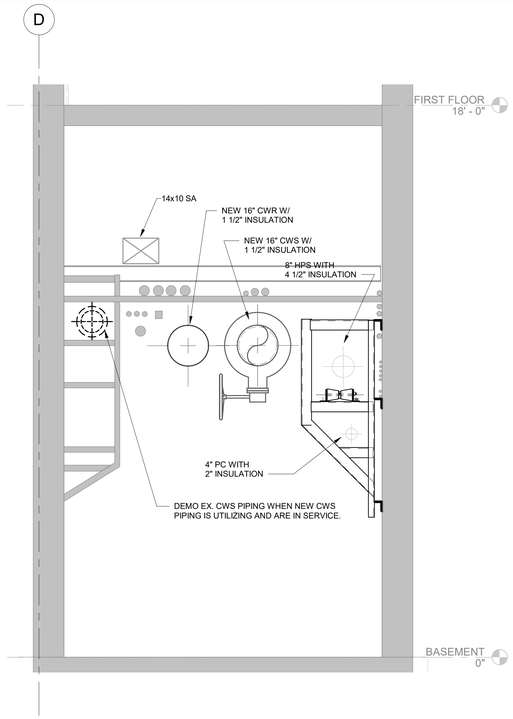
Department of Veterans Affairs

VA FORM 08-6231



TUNNEL SECTION A-A - PHASE 2

SCALE: 1/2" = 1'-0"



TUNNEL SECTION B-B - PHASE-2

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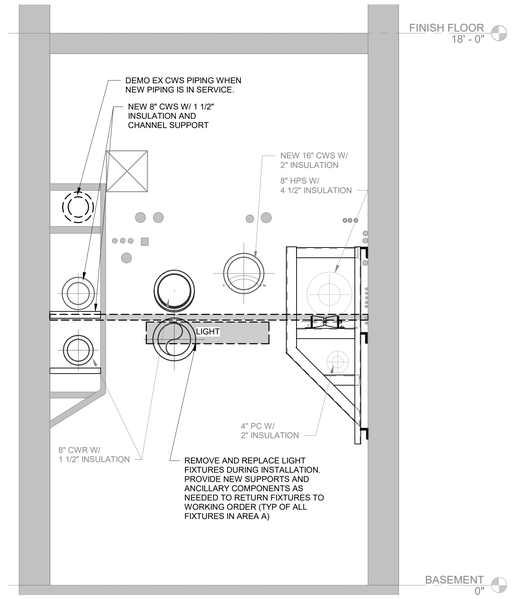

TUNNEL SECTION C-C - PHASE 2

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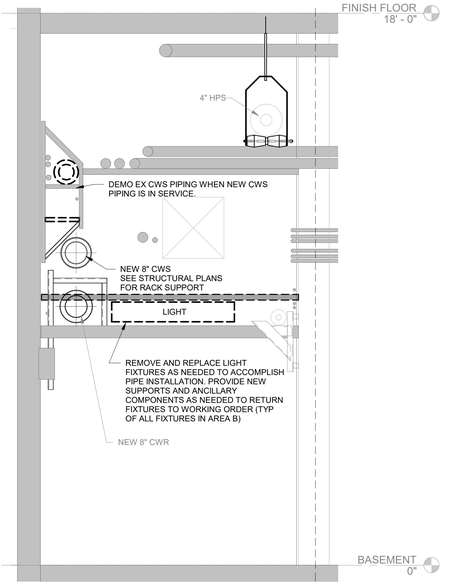
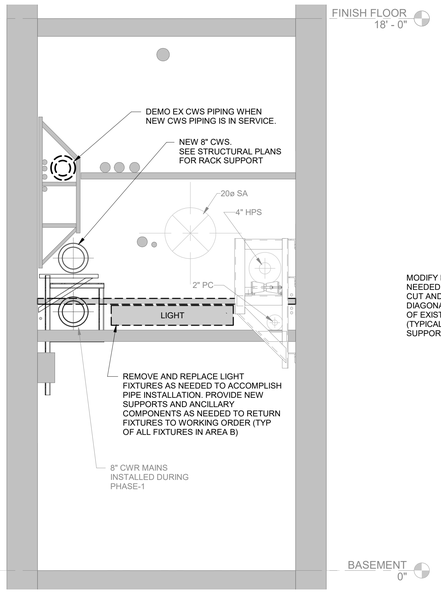


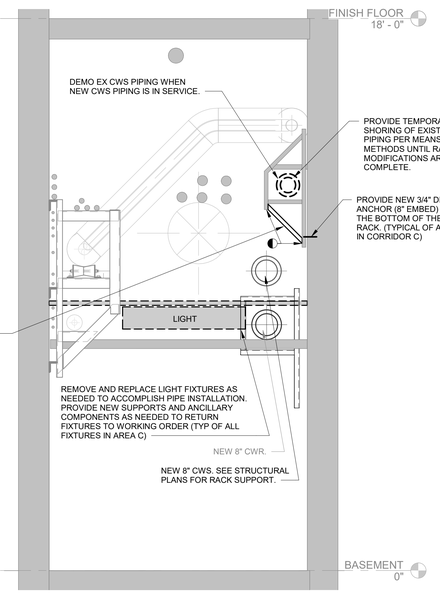
TUNNEL SECTION D-D - PHASE 2

SCALE: 1/2" = 1'-0"



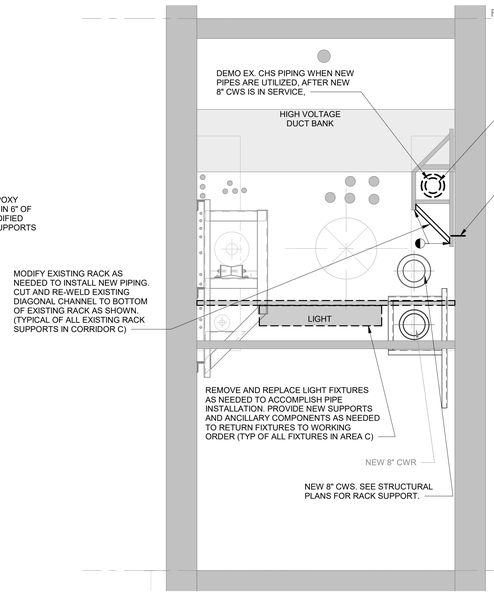
TUNNEL SECTION E-E - PHASE-2

SCALE: 1/2" = 1'-0"



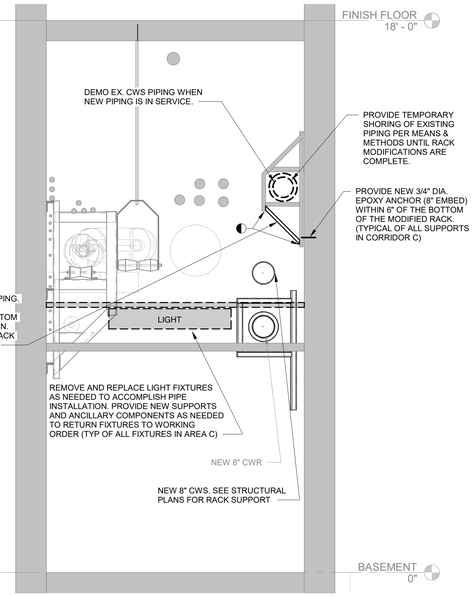
TUNNEL SECTION F-F PHASE-2

SCALE: 1/2" = 1'-0"



TUNNEL SECTION G-G PHASE-2

SCALE: 1/2" = 1'-0"



TUNNEL SECTION H-H PHASE-2

SCALE: 1/2" = 1'-0"

BID DOCUMENTS SUBMISSION

Revisions:	Date

CONSULTANTS:

SEAL:

04/22/2022

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STRUCTURAL ENGINEERS
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Frederick, MD 21701

Scale: AS NOTED

Drawing Title: PIPE SECTIONS AT TUNNEL

Approved: Project Director: BID DOCUMENTS

Project Title: CHILLED WATER LINE REPLACEMENT BLDG 500

Location: VAMC - Martinsburg, WV

Date: 04/22/2022 | Checked: BK | Drawn: JCH

Project Number: 613-16-302

Building Number: 500

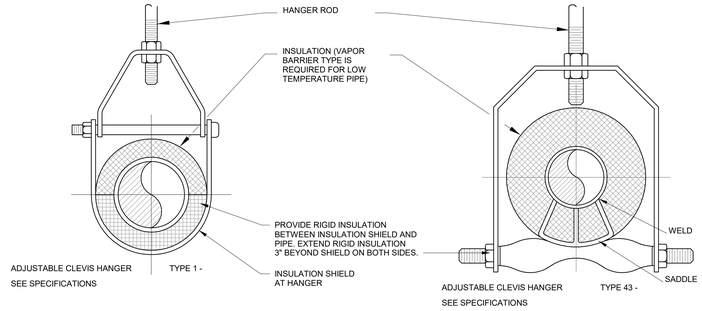
Drawing Number: M4.03

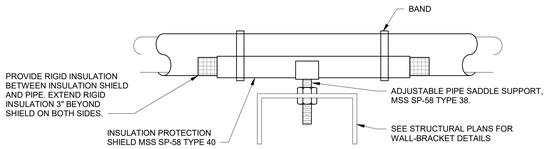
Dwg. 52 of 67

Office of Construction and Facilities Management

Department of Veterans Affairs

VA FORM 08-6231





WALL-BRACKET SUPPORT

MAXIMUM PIPE/TUBING SUPPORT SPACING																			
NOM. SIZE	mm [IN]	THRU 20 [THRU 3/4]	25 [1]	32 [1 1/4]	40 [1 1/2]	50 [2]	65 [2 1/2]	75 [3]	100 [4]	125 [5]	150 [6]	200 [8]	250 [10]	300 [12]	350 [14]	400 [16]	450 [18]	500 [20]	600 [24]
PIPE	mm [FT]	2100 [7]	2100 [7]	2100 [7]	2700 [9]	3000 [10]	3400 [11]	3700 [12]	4100 [14]	4900 [16]	5200 [17]	5800 [19]	6700 [22]	7000 [23]	7600 [25]	8200 [27]	8500 [28]	9100 [30]	9600 [32]
TUBING	mm [FT]	1500 [5]	1800 [6]	2100 [7]	2400 [8]	2400 [8]	2700 [9]	3000 [10]	3700 [12]	4000 [13]	4100 [14]	4900 [16]	- -	- -	- -	- -	- -	- -	- -
NOTE: FOR TRAPEZE HANGER TAKE SPACING OF SMALLEST SIZE ON TRAPEZE.																			

PIPE HANGERS

SCALE: NTS

BELLOWS EXPANSION JOINT SCHEDULE

EXPANSION COMPENSATOR SCHEDULE	SERVICE	PIPE SIZE (IN.)	PRESSURE CLASS	END FITTING	FREE LENGTH (IN.)	MOVEMENT (IN.)	MAX DISTANCE TO FIRST GUIDE AND ANCHOR	DISTANCE FROM FIRST TO SECOND GUIDE	MAX DISTANCE TO ADDITIONAL GUIDES	MAX ANCHOR FORCE (LBF)	NOTES
EJ-1	CWS	8.0	150	FLANGED	9.25	0.8	2' - 8"	9' - 4"	62'	8,455	1-8
EJ-2	CWR	8.0	150	FLANGED	9.25	0.65	2' - 8"	9' - 4"	62'	8,455	1-8
EJ-3	CWS	8.0	150	FLANGED	9.25	0.82	2' - 8"	9' - 4"	62'	8,455	1-8
EJ-4	CWR	8.0	150	FLANGED	9.25	0.67	2' - 8"	9' - 4"	62'	8,455	1-8

NOTES:
1. BASIS OF DESIGN IS METAFLEX MNLC 150. PROVIDE BASIS OF DESIGN OR APPROVED EQUAL.
2. MAXIMUM WORKING PRESSURE 150 PSIG.
3. MAXIMUM WORKING TEMPERATURE 800º F
4. TEST PRESSURE 225 PSIG.
5. BELLOWS MATERIAL: 316 STAINLESS STEEL. FLANGE MATERIAL: CARBON STEEL.
6. DESIGN BASED ON PRE-INSULATED SPIDER-TYPE ALIGNMENT GUIDES.
7. MAX ANCHOR FORCE BASED ON 100 PSIG AND MAX BELLOWS MOVEMENT OF 1.5 IN.
8. PRECOMPRESS BELLOWS TO 0.8 IN. PRIOR TO INSTALLATION FOR AXIAL CONTRACTION OF CHILLED WATER PIPE.

REGISTER, GRILLE, AND DIFFUSER SCHEDULE

MARK	CFM	P.D. (IN. W.G.)	RUNOUT SIZE (DIA. IN.)	NECK SIZE (IN.)	AIR PATTERN	PANEL SIZE (IN.)	TYPE	MATERIAL	FINISH	ACCESSORIES								MODEL			NOTES
										A	B	C	D	E	F	G	H	T&B	PRICE	TITUS	
S1	220-225	0.006	AS INDICATED	12x8	DOUBLE DEFL.	-	DUCT MTD SUPPLY	ALUMINUM	WHITE	X			X					A54	620	300 FL	1, 2

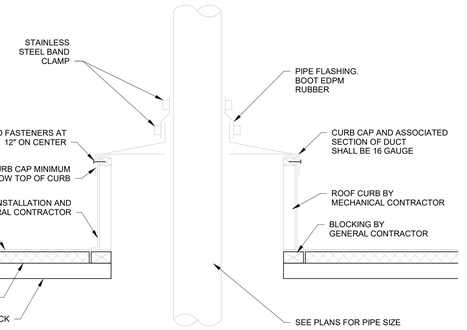
GENERAL NOTES:
1. SELECTIONS BASED ON PRICE, TUTTLE & BAILEY, AND TITUS.
2. MAXIMUM 30 NC RATING

ACCESSORIES:
A. OPPOSED BLADE DAMPERS (SQUARE/RECT NECK).
B. RADIAL DAMPER (ROUND NECK).
C. SQUARE TO ROUND ADAPTERS (AS REQUIRED).
D. DOUBLE DEFLECTION WITH ADJUSTABLE VANES.
E. ADJUSTABLE AIR PATTERN VANES.
F. PLASTER FRAME.
G. PROVIDE DIFFUSER WITH MULTI-ORIFICED JET INDUCTION AND AIR MIXING DIFFUSING VANES.

SEISMIC EXPANSION COMPENSATOR SCHEDULE

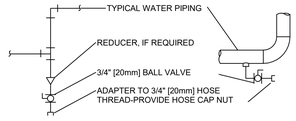
TAG	SERVICE	PIPE SIZE (IN.)	PRESSURE CLASS	END FITTING	FREE LENGTH (IN.)	MOVEMENT (IN.)	MAX DISTANCE TO ANCHORS	MAX ANCHOR FORCE (LBF)	WEIGHT (LB)	NOTES
SEC-1	CHW	16	150	FLANGED	91.25	2.0	24	47,100	1500	1,2,3,4,5,6
SEC-2	CHW	16	150	FLANGED	91.25	2.0	24	47,100	1500	1,2,3,4,5,6
SEC-3	CHW	16	150	FLANGED	91.25	2.0	24	47,100	1500	1,2,3,4,5,6
SEC-4	CHW	16	150	FLANGED	91.25	2.0	24	47,100	1500	1,2,3,4,5,6

NOTES:
1. METAFLEX SEISMIC GATOR OR APPROVED EQUAL
2. MAXIMUM WORKING PRESSURE 150 PSIG.
3. MAXIMUM WORKING TEMPERATURE 400º F
4. TEST PRESSURE 225 PSIG.
5. FLANGE MATERIAL - CARBON STEEL.
6. INSTALL PIPE ANCHORS WITHIN 24" OF THE EXPANSION COMPENSATOR ON BOTH SIDES.



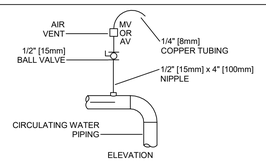
PIPE THROUGH ROOF DETAIL

NOT TO SCALE



TYPICAL CHILLED AND HOT WATER PIPING DRAIN VALVE CONNECTIONS

NOTES:
1. DRAIN ALL LOW POINTS AS INDICATED ABOVE.
2. WHERE SCALE POCKETS ARE SHOWN ON PIPE RISER DIAGRAMS AND/OR PLANS LOCATE DRAIN AT BOTTOM OF SCALE POCKET.

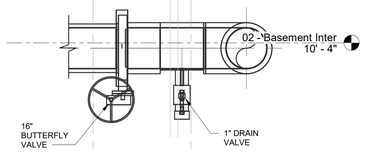


TYPICAL MANUAL AIR VENT

NOTES:
1. VENT ALL HIGH POINTS INDICATED ABOVE.
2. IF AUTOMATIC AIR VENTS ARE USED, PIPE DISCHARGE TO DRAIN.

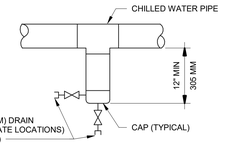
DRAIN VALVE AND AIR VENT CONNECTIONS (HYDRONIC SYSTEMS)

SCALE: NTS



VALVE & DRAIN VALVE ON M2.01ta

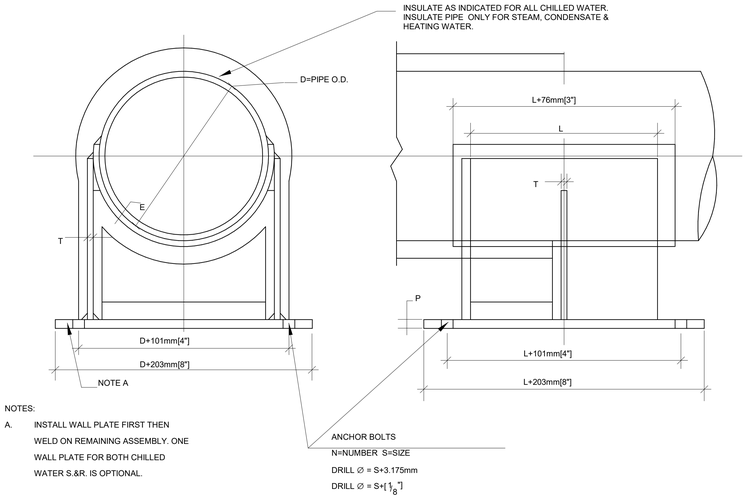
SCALE: 1/2" = 1'-0"



CHILLED WATER DIRT LEG DETAIL

NOTE:
DIRT LEG PIPE SIZE SAME AS CHILLED WATER MAIN UNLESS OTHERWISE NOTED.

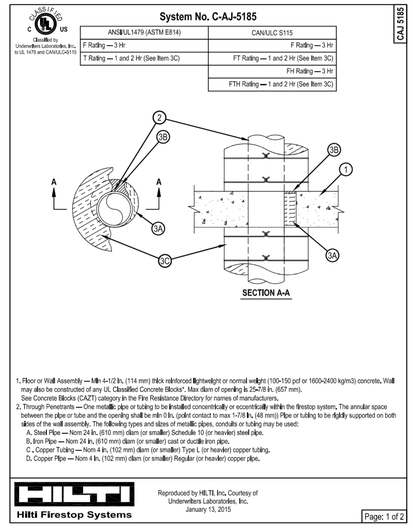
PIPE ANCHOR SCHEDULE															
D		L		P		T		E		N		S		BOLT PATTERN
mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	
152	6	216	8 1/2	19	3/4	10	3/8	6	1/4	102	4	22	7/8		
203	8	254	10	19	3/4	13	1/2	6	1/4	102	4	22	7/8		
254	10	305	12	19	3/4	13	1/2	6	1/4	102	4	22	7/8		
305	12	356	14	19	3/4	13	1/2	6	1/4	102	4	22	7/8		
356	14	406	16	19	3/4	13	1/2	13	1/2	102	4	22	7/8		
406	16	457	18	19	3/4	13	1/2	13	1/2	102	4	22	7/8		
457	18	508	20	25	1	13	5/8	13	1/2	152	6	25	1		

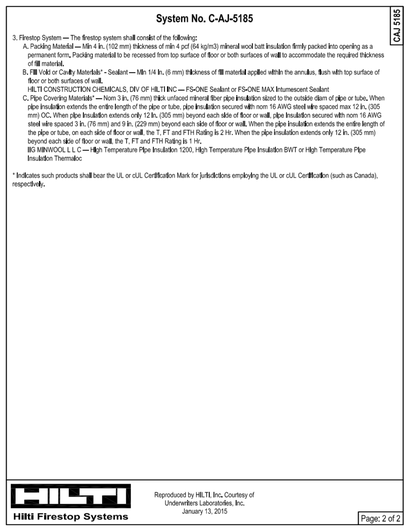


NOTES:
A. INSTALL WALL PLATE FIRST THEN WELD ON REMAINING ASSEMBLY. ONE WALL PLATE FOR BOTH CHILLED WATER S.&R. IS OPTIONAL.

LARGE PIPE ANCHOR 152-457mm [6" -18"]

SCALE: NTS





RATED PENETRATION DETAIL

SCALE: NTS

BID DOCUMENTS SUBMISSION

Revisions:	Date

CONSULTANTS:

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Scale: AS NOTED

Drawing Title: MECHANICAL DETAILS

Approved: Project Director: BID DOCUMENTS

Project Title: CHILLED WATER LINE REPLACEMENT BLDG 500

Location: VAMC - Martinsburg, WV

Date: 04/22/2022 | Checked: BK | Drawn: JCH

Project Number: 613-16-302

Building Number: 500

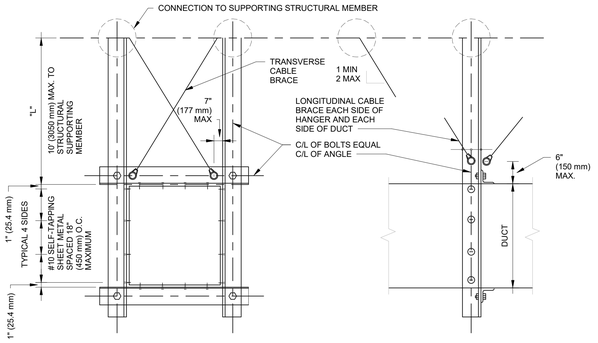
Drawing Number: M5.01

Dwg. 53 of 67

Office of Construction and Facilities Management

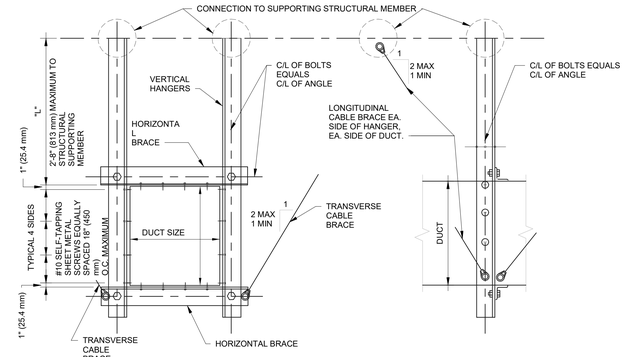
Department of Veterans Affairs

VA FORM 08-6231



NOTES:
1. DETAIL IS FOR INFORMATION ONLY. SEE SPECIFICATIONS FOR DELEGATED SEISMIC DESIGN AND INSTALLATION REQUIREMENTS.

CABLE CENTER BRACING FOR RECTANGULAR DUCTS
NOT TO SCALE



NOTES:
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CABLE SIDE BRACING FOR RECTANGULAR DUCTS
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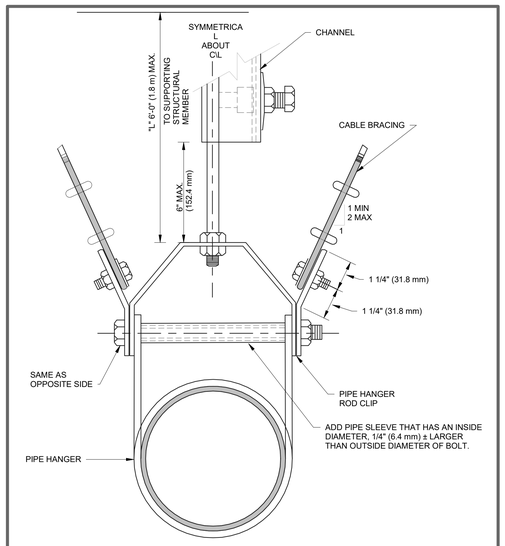
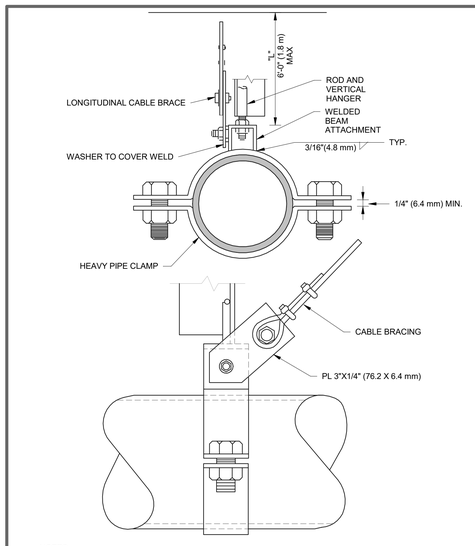


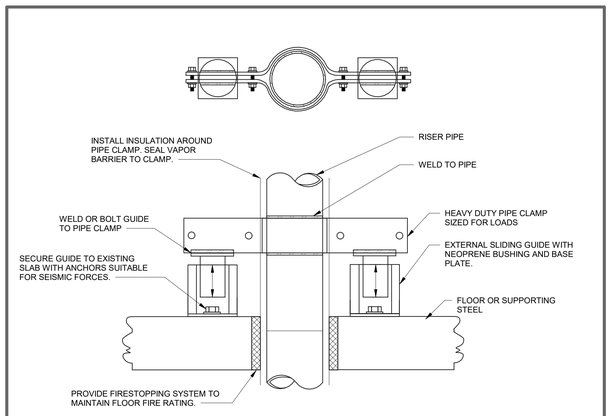
NOTES:
1. DETAIL IS FOR INFORMATION ONLY. SEE SPECIFICATIONS FOR DELEGATED SEISMIC DESIGN AND INSTALLATION REQUIREMENTS.

CABLE BRACING FOR PIPES
NOT TO SCALE



NOTES:
1. DETAIL IS FOR INFORMATION ONLY. SEE SPECIFICATIONS FOR DELEGATED SEISMIC DESIGN AND INSTALLATION REQUIREMENTS.

LONGITUDINAL CABLE BRACING FOR PIPES
NOT TO SCALE



RISER GUIDE DETAIL
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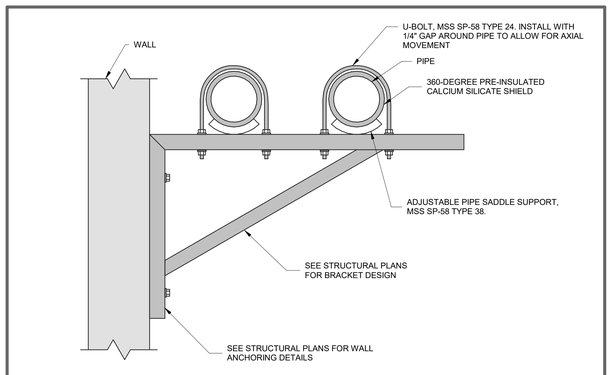

NOTES:
1. DETAIL IS FOR INFORMATION ONLY. SEE SPECIFICATIONS FOR DELEGATED SEISMIC DESIGN AND INSTALLATION REQUIREMENTS.

SIDE BRACING FOR WALL-BRACKET MOUNTED PIPE DETAIL
NOT TO SCALE

BID DOCUMENTS SUBMISSION

Revisions:	Date

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Scale: AS NOTED

Drawing Title: SEISMIC DETAILS

Approved: Project Director: BID DOCUMENTS

Project Title: CHILLED WATER LINE REPLACEMENT BLDG 500

Location: VAMC - Martinsburg, WV

Date: 04/22/2022 | Checked: Checker | Drawn: Author

Project Number: 613-16-302

Building Number: 500

Drawing Number: M5.02

Dwg. 54 of 67

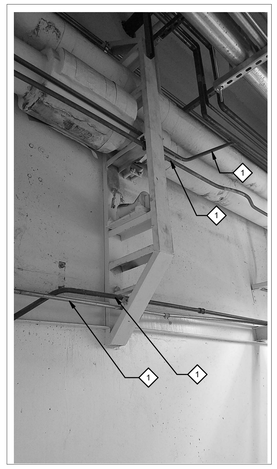
Office of Construction and Facilities Management

Department of Veterans Affairs

VA FORM 08-6231

TUNNEL b - FRAME 01 •

TUNNEL b - FRAME 02 •



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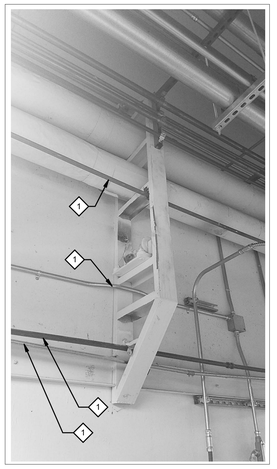

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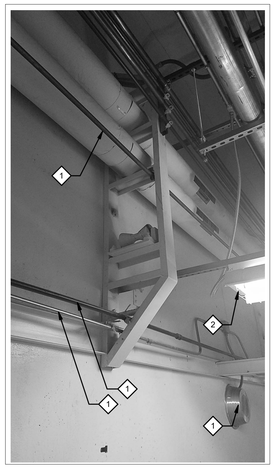

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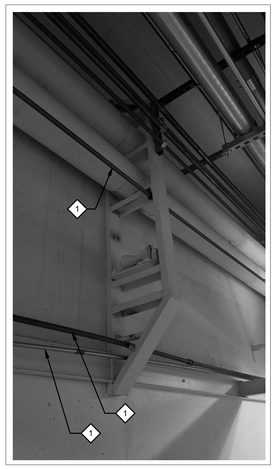

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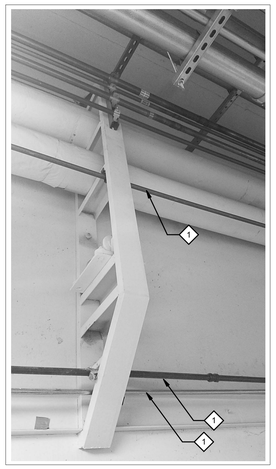
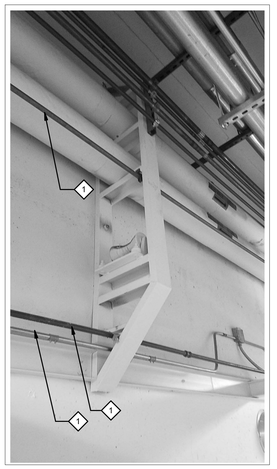


TUNNEL b - FRAME 07 •

TUNNEL b - FRAME 08 •



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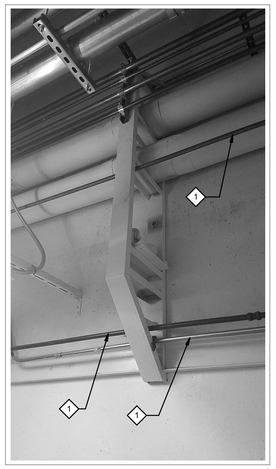

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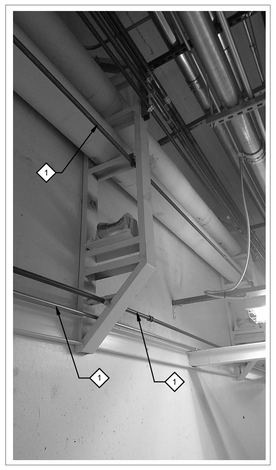

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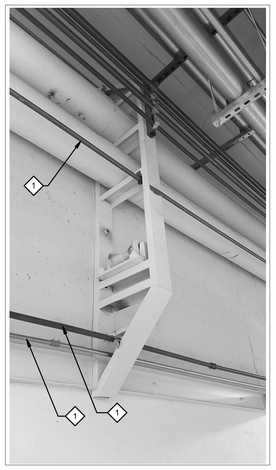

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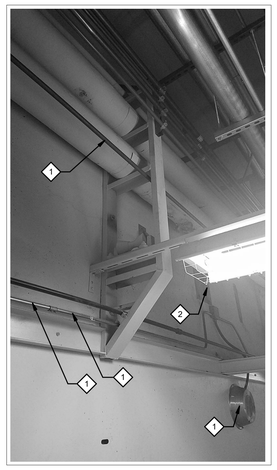
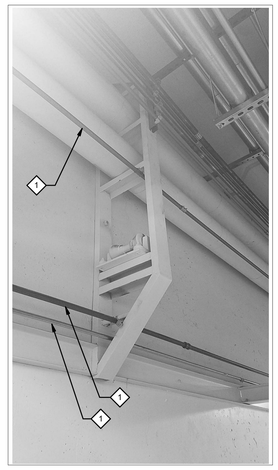


TUNNEL b - FRAME 13 •

TUNNEL b - FRAME 14 •



TUNNEL b - FRAME 15 •

◇ DEMOLITION NOTES

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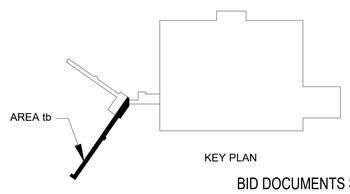

KEY PLAN

BID DOCUMENTS SUBMISSION

Revisions:	Date

CONSULTANTS:

SEAL:

PHILIP L. GEIER
REGISTERED
14268
STATE OF
VIRGINIA
PROFESSIONAL ENGINEER
04/22/2022

ARCHITECT/ENGINEERS:

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Valley Engineering
4901 Crowe Drive
Mount Crawford, VA 22841

STRUCTURAL ENGINEERS
ADTEK Engineers, Inc.
150 South East Street, Suite 201
Frederick, MD 21701

Scale: AS NOTED

Drawing Title: TUNNEL PHOTOS

Approved: Project Director: BID DOCUMENTS

Project Title: CHILLED WATER LINE REPLACEMENT BLDG 500

Location: VAMC - Martinsburg, WV

Date: 04/22/2022 | Checked: BK | Drawn: JCH

Project Number: 613-16-302

Building Number: 500

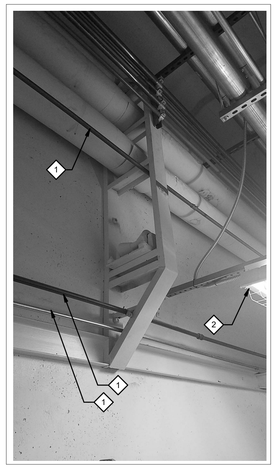
Drawing Number: M6.01

Dwg. 55 of 67

Office of Construction and Facilities Management

Department of Veterans Affairs

VA FORM 08-6231



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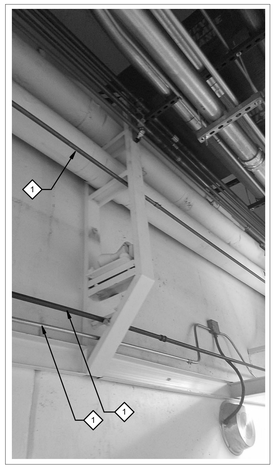

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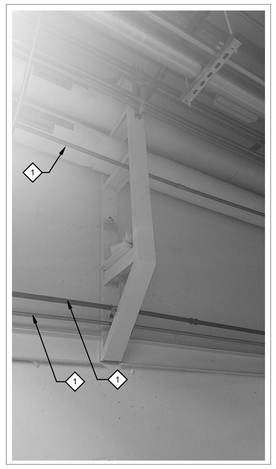

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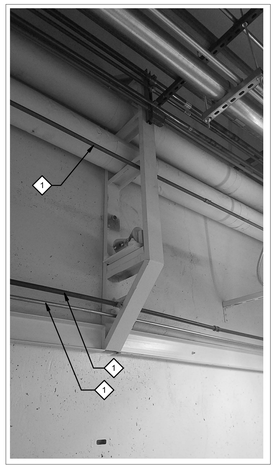

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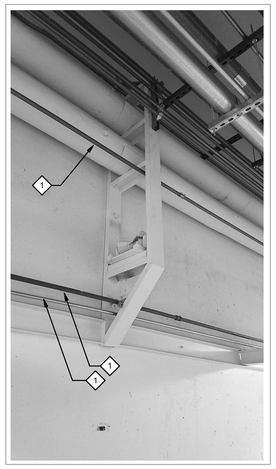

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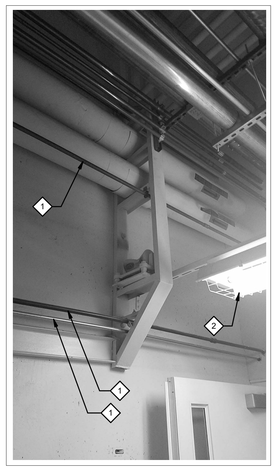

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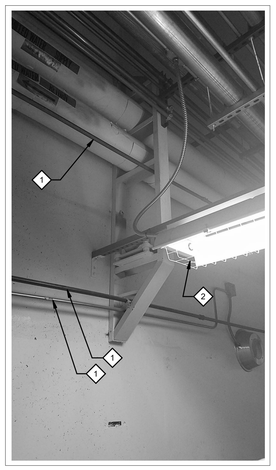

TUNNEL b - FRAME 22 •

TUNNEL a - FRAME 01 •

◇ DEMOLITION NOTES

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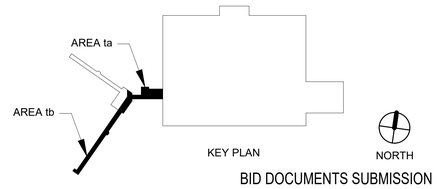

KEY PLAN

NORTH

BID DOCUMENTS SUBMISSION

Revisions:	Date

CONSULTANTS:

SEAL:

PHILLIP L. GENTRY
LICENSED PROFESSIONAL ENGINEER
14228
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04/22/2022

ARCHITECT/ENGINEERS:

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STRUCTURAL ENGINEERS
ADTEK Engineers, Inc.
150 South East Street, Suite 201
Frederick, MD 21701

Scale: AS NOTED

Drawing Title: TUNNEL PHOTOS

Approved: Project Director: BID DOCUMENTS

Project Title: CHILLED WATER LINE REPLACEMENT BLDG 500

Location: VAMC - Martinsburg, WV

Date: 04/22/2022 | Checked: BK | Drawn: JCH

Project Number: 613-16-302

Building Number: 500

Drawing Number: M6.02

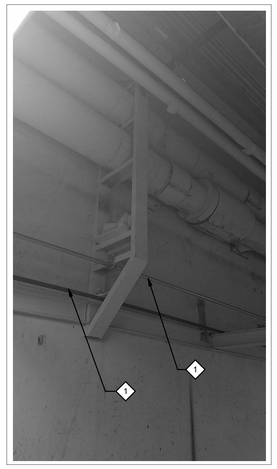
Dwg. 56 of 67

Office of Construction and Facilities Management

Department of Veterans Affairs

VA FORM 08-6231

TUNNEL c - FRAME 01 •



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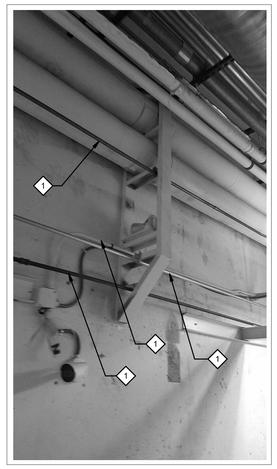

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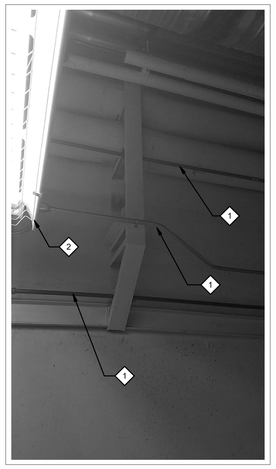

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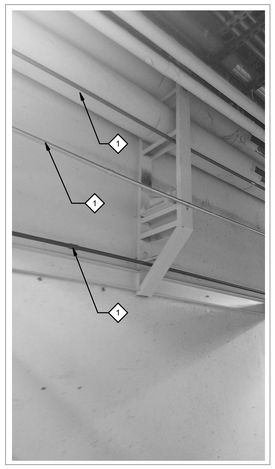

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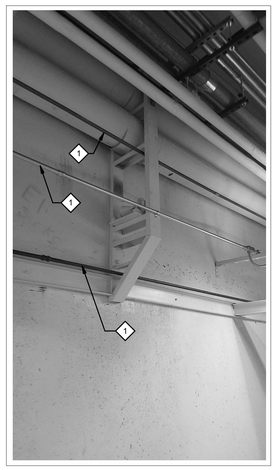

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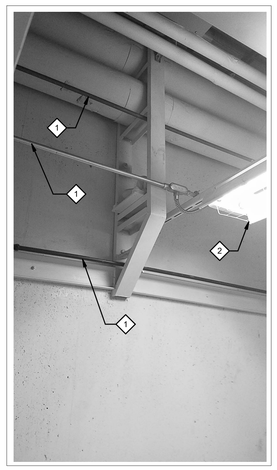

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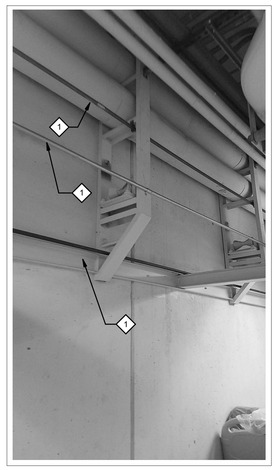

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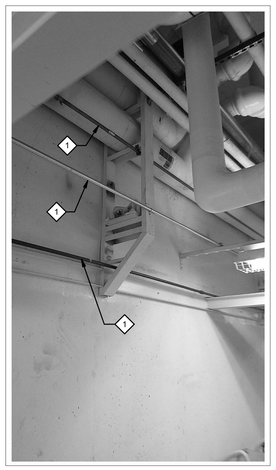

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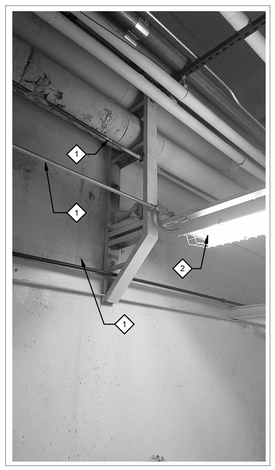

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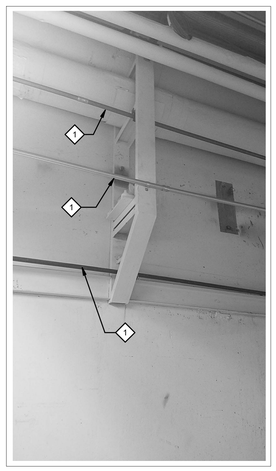

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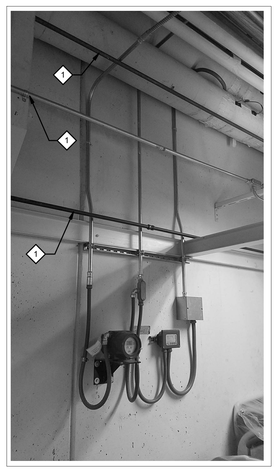

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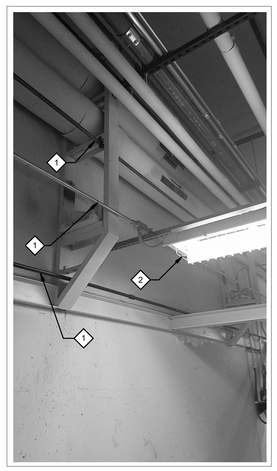

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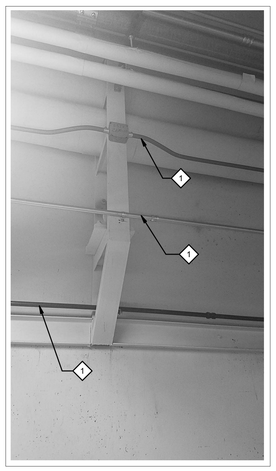

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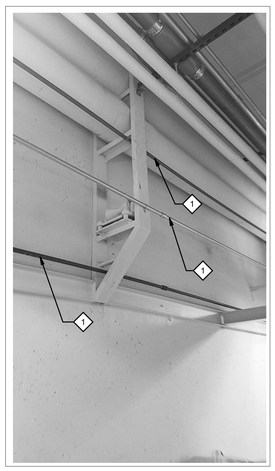

TUNNEL c - FRAME 14 •

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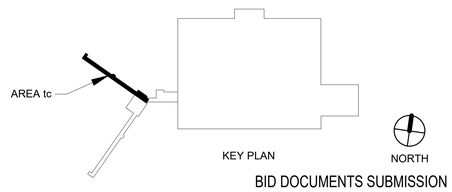

BID DOCUMENTS SUBMISSION

Revisions:	Date

CONSULTANTS:

SEAL:

PHILIP L. GENTRY — LICENSED PROFESSIONAL ENGINEER — 24298 — COMMONWEALTH OF VIRGINIA — 04/22/2022

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150 South East Street, Suite 201
Frederick, MD 21701

Scale: AS NOTED

Drawing Title: TUNNEL PHOTOS

Approved: Project Director: BID DOCUMENTS

Project Title: CHILLED WATER LINE REPLACEMENT BLDG 500

Location: VAMC - Martinsburg, WV

Date: 04/22/2022 | Checked: BK | Drawn: JCH

Project Number: 613-16-302

Building Number: 500

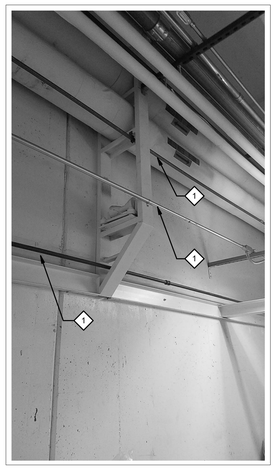
Drawing Number: M6.03

Dwg. 57 of 67

Office of Construction and Facilities Management

Department of Veterans Affairs

VA FORM 08-6231



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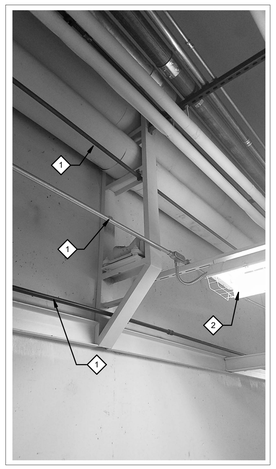

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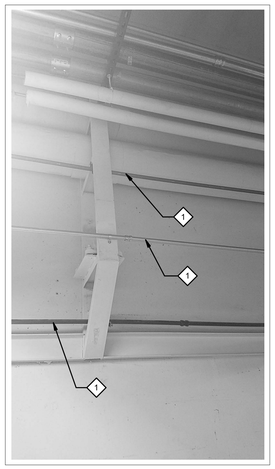

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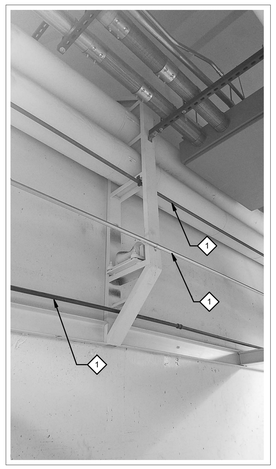

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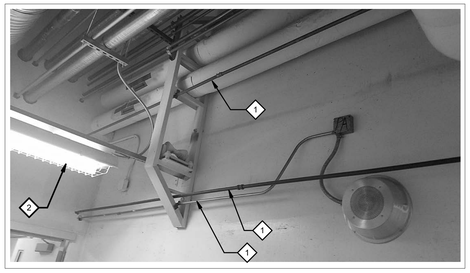

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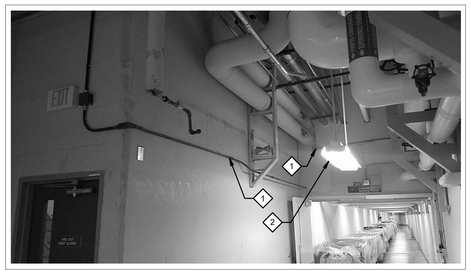

TUNNEL c - FRAME 20 •

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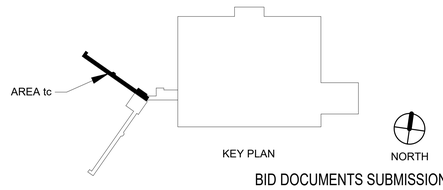

BID DOCUMENTS SUBMISSION

Revisions:	Date

CONSULTANTS:

SEAL:

PHILIP L. GERR
14228
LICENSED
STATE OF
PROFESSIONAL ENGINEER
04/22/2022

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STRUCTURAL ENGINEERS
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150 South East Street, Suite 201
Frederick, MD 21701

Scale: AS NOTED

Drawing Title: TUNNEL PHOTOS

Approved: Project Director: BID DOCUMENTS

Project Title: CHILLED WATER LINE REPLACEMENT BLDG 500

Location: VAMC - Martinsburg, WV

Date: 04/22/2022 | Checked: BK | Drawn: JCH

Project Number: 613-16-302

Building Number: 500

Drawing Number: M6.04

Dwg. 58 of 67

Office of Construction and Facilities Management

Department of Veterans Affairs

VA FORM 08-6231