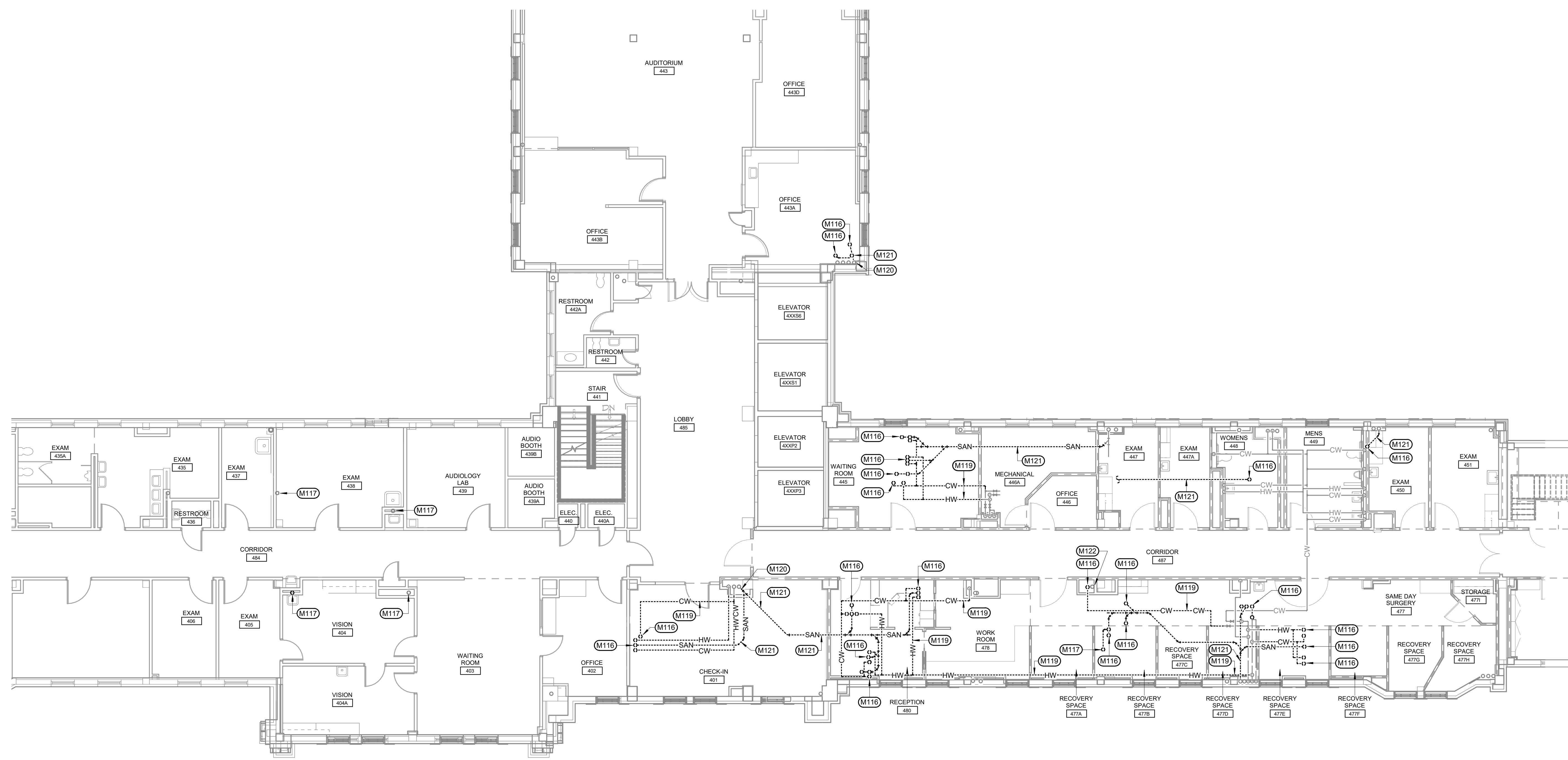
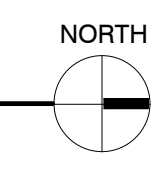


KEYNOTES:

- MECHANICAL SPECIFIC NOTES**
- M116 REMOVE EXISTING WASTE AND WATER UP THRU FLOOR TO EXISTING PLUMBING FIXTURE INDICATED AS DASHED. VERIFY EXACT SIZE AND LOCATION OF EXISTING. PATCH FLOOR TO MATCH EXISTING. COORDINATE WITH GENERAL CONTRACTOR. COORDINATE CHASE REPAIR WITH GENERAL CONTRACTOR.
 - M117 REMOVE EXISTING VENT UP THRU FLOOR. PREPARE REMAINING VENT FOR RECONNECTION WITH NEW VENT. PATCH FLOOR TO MATCH EXISTING. COORDINATE WITH GENERAL CONTRACTOR. SEE PLUMBING PLAN - FOURTH FLOOR FOR NEW VENT ROUTING.
 - M119 REMOVE EXISTING CW/HW/V BACK TO NEAREST MAIN. CAP AT MAIN.
 - M120 PREPARE EXISTING WASTE PIPING FOR NEW CONNECTION. SEE PLUMBING PLAN - FOURTH FLOOR FOR NEW WASTE ROUTING. COORDINATE CHASE REPAIR WITH GENERAL CONTRACTOR.
 - M121 REMOVE EXISTING WASTE BACK TO NEAREST MAIN. CAP AT MAIN.
 - M122 REMOVE EXISTING WASTE UP THRU FLOOR TO DRINKING FOUNTAIN. PREPARE REMAINING PIPING FOR NEW CONNECTION. EXISTING WASTE PIPING TRANSITIONS TO VENT FOR REMAINING DRINKING FOUNTAINS ON LOWER LEVELS. PATCH FLOOR TO MATCH EXISTING. COORDINATE WITH GENERAL CONTRACTOR. COORDINATE CHASE REPAIR WITH GENERAL CONTRACTOR. SEE PLUMBING PLAN - FOURTH FLOOR FOR NEW VENT ROUTING.



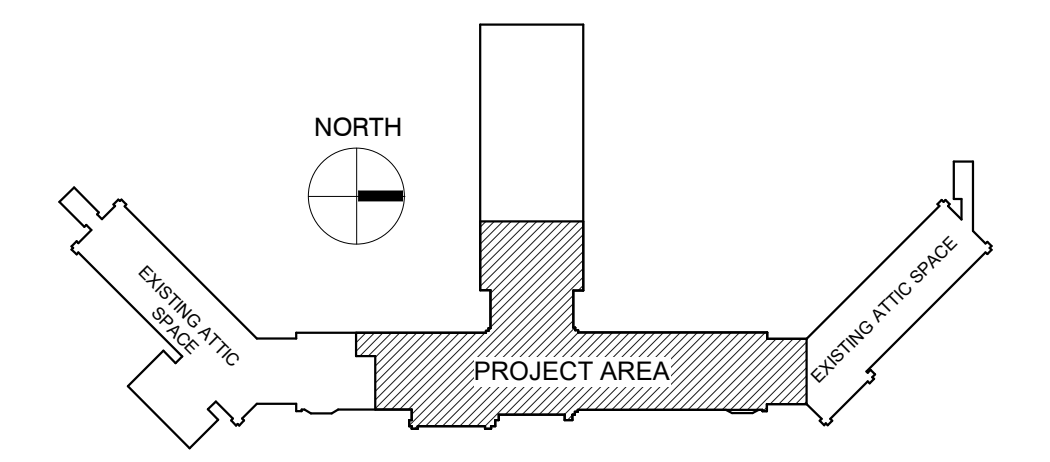
DEMOLITION PLUMBING PLAN - FOURTH FLOOR
 SCALE: 1/8" = 1'-0"



GENERAL NOTES:

- A ALL PIPING AND DUCTS IN FINISHED ROOMS OR SPACES SHALL BE CONCEALED IN A FURRED CHASE OR ABOVE THE HARD SUSPENDED CEILING.
- B THE FIRST FIGURE OF DUCT SIZE INDICATES DIMENSION OF FACE SHOWN OR INDICATED.
- C DUCT SIZES ARE NET INSIDE DIMENSIONS.
- D ACCESS PANELS IN HARD SUSPENDED CEILINGS ARE REQUIRED FOR ALL VALVES, TRAPS, DAMPERS, CLEANOUTS, CONTROLS, ETC. ACCESS PANELS SHALL BE FURNISHED AND INSTALLED UNDER THE ARCHITECTURAL SPECIFICATIONS.
- E TOTAL STATIC PRESSURE NOTED IN THE SCHEDULES INCLUDES DUCT SYSTEM, TERMINAL UNITS, FILTERS, COILS, ETC.
- F FOR TYPICAL STEAM AND WATER PIPING CONNECTIONS TO EQUIPMENT, SEE STANDARD EQUIPMENT DETAILS.
- G DIFFUSER, REGISTER AND GRILLE SIZES SHOWN ON FLOOR PLANS ARE NECK SIZES.
- H WATER PIPE CONNECTIONS TO AIR HEATING AND COOLING COILS SHALL BE MADE TO PROVIDE COUNTER FLOW BETWEEN WATER AND AIR.
- I WALL TYPE EXHAUST REGISTERS NOTED AS "BR" ON DRAWINGS ARE TO BE INSTALLED WITH BOTTOM ELEVATION OF REGISTER AT 7" (175MM) ABOVE FINISHED FLOOR.
- J REFER TO ARCHITECTURAL REFLECTED CEILING PLANS FOR EXACT LOCATIONS OF CEILING DIFFUSERS, REGISTERS, AND GRILLES.
- K ALL PRESSURES LISTED ARE GAGE PRESSURE UNLESS OTHERWISE NOTED.
- L ALL PIPE PENETRATIONS THROUGH FLOOR OR MASONRY WALLS SHALL BE CORE DRILLED. SEE SPECIFICATIONS.

KEY PLAN:



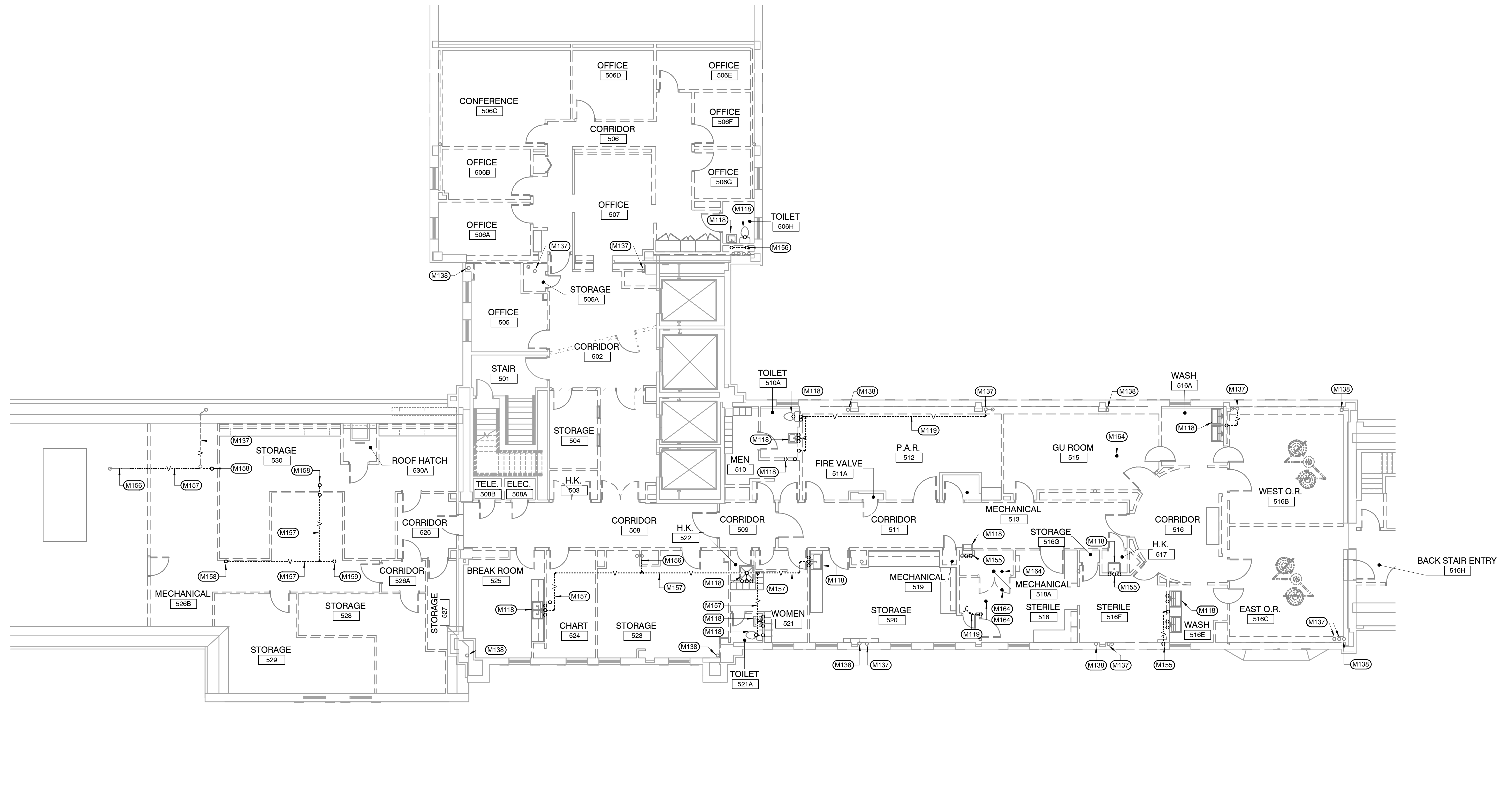
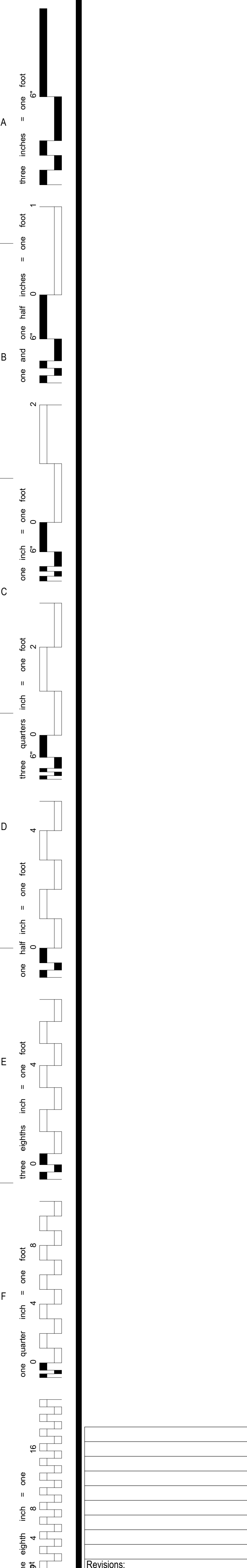
PHASING PLAN NOTE:
 SEE ARCHITECTURAL PLANS
 FOR PHASING OF PROJECT

100% CONSTRUCTION DRAWINGS

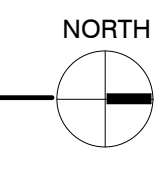
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one eighth inch = one foot
 one quarter inch = one foot
 three eighths inch = one foot
 one half inch = one foot
 three quarters inch = one foot
 one and one half inches = one foot
 three inches = one foot
 one foot = one foot

- KEYNOTES:**
- MECHANICAL SPECIFIC NOTES**
- M118 REMOVE EXISTING PLUMBING FIXTURE. REMOVE PIPING BACK TO NEAREST MAIN. CAP AT MAIN. ABOVE CEILING, BELOW FLOOR OR IN WALL.
 - M119 REMOVE EXISTING CW/HW/V BACK TO NEAREST MAIN. CAP AT MAIN.
 - M137 EXISTING PLUMBING VENT TO REMAIN. VERIFY EXACT SIZE AND LOCATION.
 - M138 EXISTING DOWNSPOUT TO REMAIN. VERIFY EXACT SIZE AND LOCATION.
 - M155 REMOVE EXISTING VENT PIPING UP THRU FLOOR. PATCH FLOOR TO MATCH EXISTING. COORDINATE WITH GENERAL CONTRACTOR. SEE DEMOLITION PLUMBING PLAN - PENTHOUSE FOR CONTINUATION.
 - M156 PREPARE EXISTING VENT PIPING FOR NEW CONNECTION. SEE PLUMBING PLAN - FIFTH FLOOR FOR NEW VENT ROUTING.
 - M157 REMOVE EXISTING VENT INDICATED AS DASHED.
 - M158 REMOVE EXISTING VENT DN THRU FLOOR. SEE DEMOLITION PLUMBING PLAN - FOURTH FLOOR FOR CONTINUATION.
 - M159 REMOVE EXISTING VENT DN THRU FLOOR AND UP TO VENT THRU ROOF. PREPARE EXISTING VENT THRU ROOF FOR NEW CONNECTION. SEE DEMOLITION PLUMBING PLAN - FOURTH FLOOR FOR CONTINUATION. SEE PLUMBING PLAN - FIFTH FLOOR FOR NEW VENT PIPE ROUTING.
 - M164 REMOVE EXISTING FLOOR DRAIN AND ASSOCIATED WASTEVENT UP THRU FLOOR. CAP WASTE BELOW FLOOR ABOVE FOURTH FLOOR CEILING. REMOVE VENT TO 5TH FLOOR CEILING. PATCH FLOOR TO MATCH EXISTING. COORDINATE WITH GENERAL CONTRACTOR. SEE DEMOLITION PLUMBING PLAN - FOURTH FLOOR.

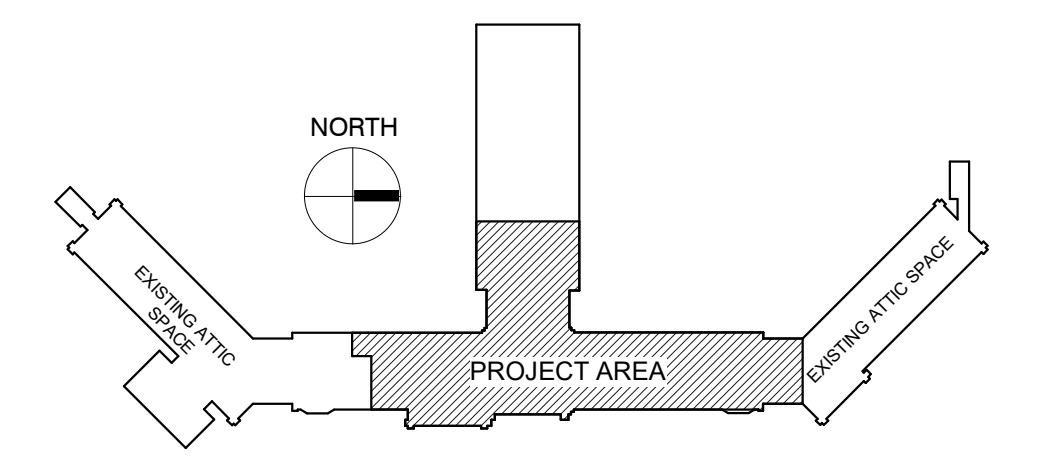


DEMOLITION PLUMBING PLAN - FIFTH FLOOR
SCALE: 1/8" = 1'-0"



- GENERAL NOTES:**
- A ALL PIPING AND DUCTS IN FINISHED ROOMS OR SPACES SHALL BE CONCEALED IN A FURRED CHASE OR ABOVE THE HARD SUSPENDED CEILING.
 - B THE FIRST FIGURE OF DUCT SIZE INDICATES DIMENSION OF FACE SHOWN OR INDICATED.
 - C DUCT SIZES ARE NET INSIDE DIMENSIONS.
 - D ACCESS PANELS IN HARD SUSPENDED CEILINGS ARE REQUIRED FOR ALL VALVES, TRAPS, DAMPERS, CLEANOUTS, CONTROLS, ETC. ACCESS PANELS SHALL BE FURNISHED AND INSTALLED UNDER THE ARCHITECTURAL SPECIFICATIONS.
 - E TOTAL STATIC PRESSURE NOTED IN THE SCHEDULES INCLUDES DUCT SYSTEM, TERMINAL UNITS, FILTERS, COILS, ETC.
 - F FOR TYPICAL STEAM AND WATER PIPING CONNECTIONS TO EQUIPMENT, SEE STANDARD EQUIPMENT DETAILS.
 - G DIFFUSER, REGISTER AND GRILLE SIZES SHOWN ON FLOOR PLANS ARE NECK SIZES.
 - H WATER PIPE CONNECTIONS TO AIR HEATING AND COOLING COILS SHALL BE MADE TO PROVIDE COUNTER FLOW BETWEEN WATER AND AIR.
 - I WALL TYPE EXHAUST REGISTERS NOTED AS 'BR' ON DRAWINGS ARE TO BE INSTALLED WITH BOTTOM ELEVATION OF REGISTER AT 7" (175MM) ABOVE FINISHED FLOOR.
 - J REFER TO ARCHITECTURAL REFLECTED CEILING PLANS FOR EXACT LOCATIONS OF CEILING DIFFUSERS, REGISTERS, AND GRILLES.
 - K ALL PRESSURES LISTED ARE GAGE PRESSURE UNLESS OTHERWISE NOTED.
 - L ALL PIPE PENETRATIONS THROUGH FLOOR OR MASONRY WALLS SHALL BE CORE DRILLED. SEE SPECIFICATIONS.

KEY PLAN:



PHASING PLAN NOTE:
SEE ARCHITECTURAL PLANS FOR PHASING OF PROJECT

100% CONSTRUCTION DRAWINGS

<p>Revisions:</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50px;"> </td> <td style="width: 50px;"> </td> </tr> <tr> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> </tr> </table>									<p>CONSULTANTS:</p> <p>WPE WEST PLAINS ENGINEERING, INC. WPE #: BS15052 4609 SOUTH TECHLINK CIRCLE • SIOUX FALLS, SD 57106 PHONE: (605) 362-3753 • FAX: (605) 362-3759 WWW.WESTPLAINSENGINEERING.COM RAPID CITY, SD • SIOUX FALLS, SD • CASPER, WY • CEDAR RAPIDS, IA • BISMARCK, ND</p>	<p>RISE STRUCTURAL ASSOCIATES, INC. 101 Railroad Ave. - PO Box 39 Harrisburg, SD 57032 (605) 743-2510 fax(605) 743-2513</p>	<p>ARCHITECTS/ ENGINEERS:</p> <p>MSH ARCHITECTS 625 S. MINNESOTA AVENUE, SUITE 204 SIOUX FALLS, SOUTH DAKOTA 57104-4873 TELE: (605) 332-7850 FAX: (605) 332-3539</p>	<p>Drawing Title DEMOLITION PLUMBING PLAN - FIFTH FLOOR</p> <p>Approved: Project Director</p>	<p>Project Title V.A. HEALTH CARE SYSTEM RENOVATE 5TH FLOOR SURGERY</p> <p>Project Number 438-15-201</p> <p>Building Number 5</p> <p>Drawing Number 5-PD102</p> <p>Dwg. 26 of 60</p>	<p>Office of Construction and Facilities Management</p>

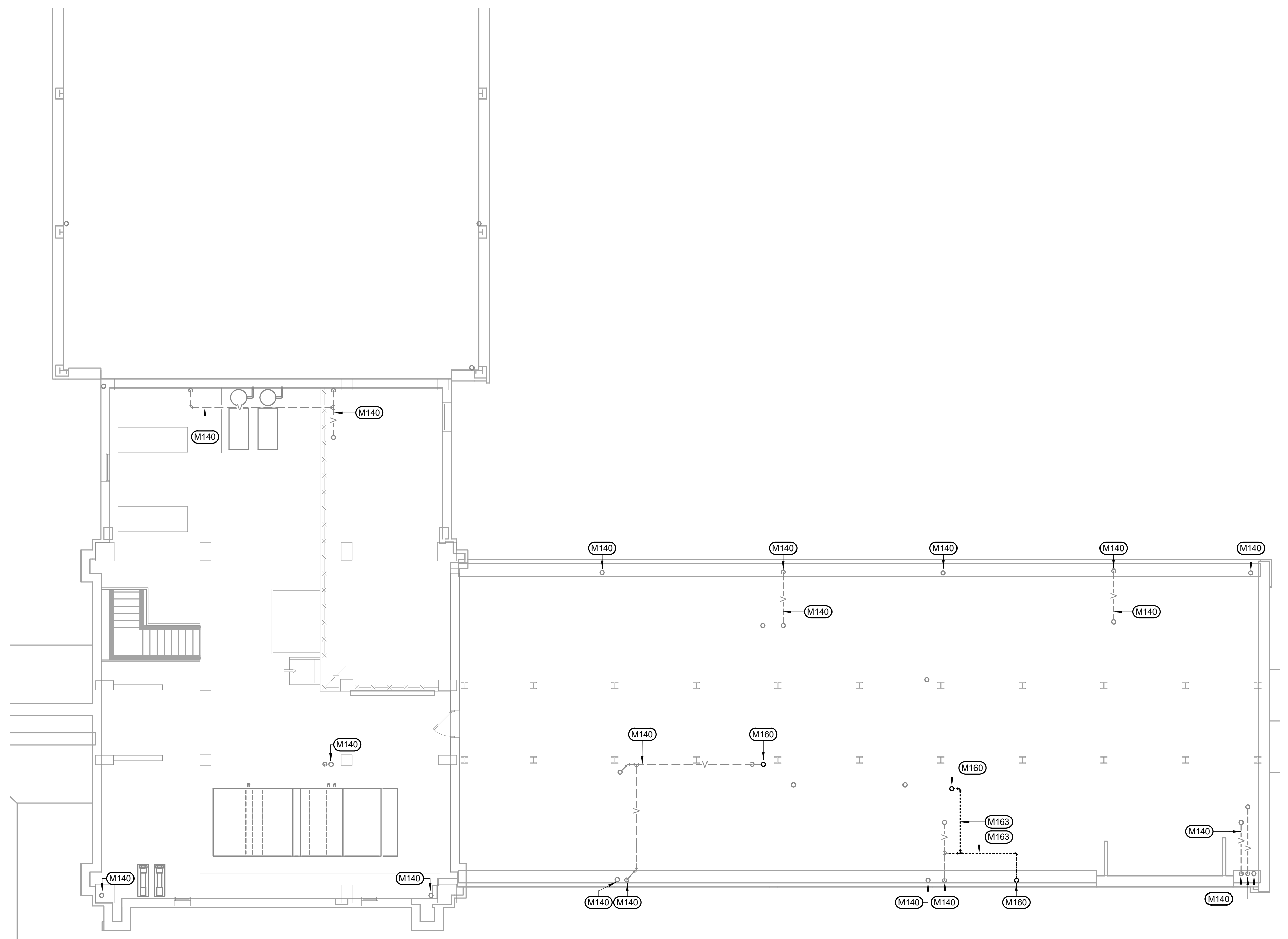
KEYNOTES:

M **MECHANICAL SPECIFIC NOTES**

M140 EXISTING PLUMBING TO REMAIN. VERIFY EXACT SIZE AND LOCATION.

M160 REMOVE EXISTING VENT DN THRU FLOOR. PATCH FLOOR TO MATCH EXISTING. COORDINATE WITH GENERAL CONTRACTOR. SEE DEMOLITION PLUMBING PLAN - FIFTH FLOOR FOR CONTINUATION.

M163 REMOVE EXISTING VENT BACK TO NEAREST MAIN. CAP AT MAIN.



DEMOLITION PLUMBING PLAN - PENTHOUSE
SCALE: 1/8" = 1'-0"

GENERAL NOTES:

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

B THE FIRST FIGURE OF DUCT SIZE INDICATES DIMENSION OF FACE SHOWN OR INDICATED.

C DUCT SIZES ARE NET INSIDE DIMENSIONS.

D ACCESS PANELS IN HARD SUSPENDED CEILINGS ARE REQUIRED FOR ALL VALVES, TRAPS, DAMPERS, CLEANOUTS, CONTROLS, ETC. ACCESS PANELS SHALL BE FURNISHED AND INSTALLED UNDER THE ARCHITECTURAL SPECIFICATIONS.

E TOTAL STATIC PRESSURE NOTED IN THE SCHEDULES INCLUDES DUCT SYSTEM, TERMINAL UNITS, FILTERS, COILS, ETC.

F FOR TYPICAL STEAM AND WATER PIPING CONNECTIONS TO EQUIPMENT, SEE STANDARD EQUIPMENT DETAILS.

G DIFFUSER, REGISTER AND GRILLE SIZES SHOWN ON FLOOR PLANS ARE NECK SIZES.

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

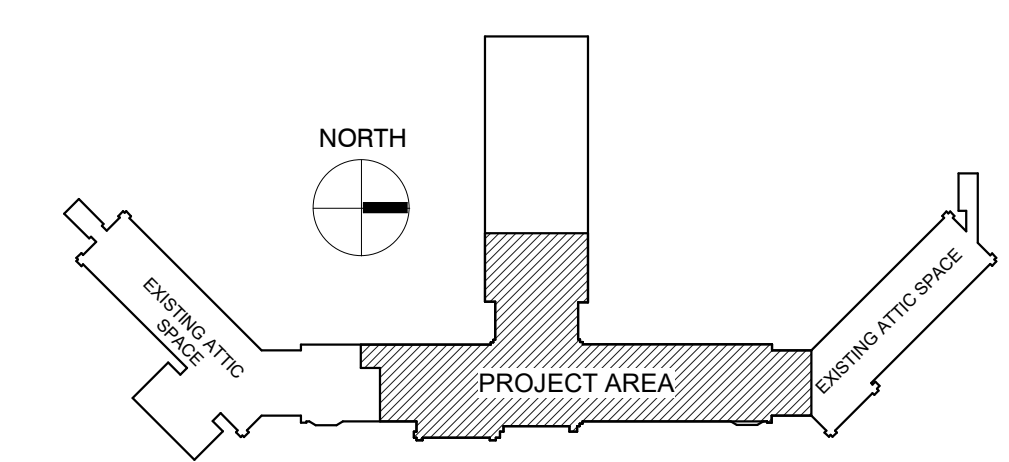
I WALL TYPE EXHAUST REGISTERS NOTED AS "BR" ON DRAWINGS ARE TO BE INSTALLED WITH BOTTOM ELEVATION OF REGISTER AT 7" (175MM) ABOVE FINISHED FLOOR.

J REFER TO ARCHITECTURAL REFLECTED CEILING PLANS FOR EXACT LOCATIONS OF CEILING DIFFUSERS, REGISTERS, AND GRILLES.

K ALL PRESSURES LISTED ARE GAGE PRESSURE UNLESS OTHERWISE NOTED.

L ALL PIPE PENETRATIONS THROUGH FLOOR OR MASONRY WALLS SHALL BE CORE DRILLED. SEE SPECIFICATIONS.

KEY PLAN:



PHASING PLAN NOTE:
SEE ARCHITECTURAL PLANS FOR PHASING OF PROJECT

100% CONSTRUCTION DRAWINGS

Revisions:	Date

CONSULTANTS:

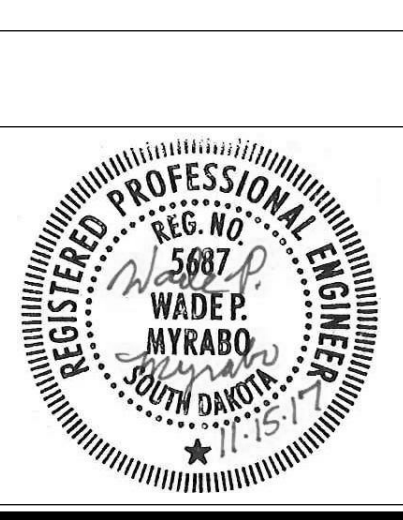
WPE WEST PLAINS ENGINEERING, INC. WPE #: BS15052

4609 SOUTH TECHLINK CIRCLE • SIOUX FALLS, SD 57106
PHONE: (605) 362-3753 • FAX: (605) 362-3759
WWW.WESTPLAINSENGINEERING.COM

RAPID CITY, SD • SIOUX FALLS, SD • CASPER, WY • CEDAR RAPIDS, IA • BISMARCK, ND

RISE STRUCTURAL ASSOCIATES, INC.

101 Railroad Ave. - PO Box 39
Harrisburg, SD 57032
(605) 743-2510
fax(605) 743-2513



ARCHITECTS/ ENGINEERS:

MSH ARCHITECTS

625 S. MINNESOTA AVENUE, SUITE 204
SIOUX FALLS, SOUTH DAKOTA 57104-4873
TELE: (605) 332-7850 FAX: (605) 332-3539

Drawing Title
DEMOLITION PLUMBING PLAN - PENTHOUSE

Approved: Project Director

Project Title
V.A. HEALTH CARE SYSTEM RENOVATE 5TH FLOOR SURGERY

Project Number
438-15-201

Building Number
5

Location
SIOUX FALLS, SOUTH DAKOTA

Date
OCTOBER 17, 2017

Checked
WM

Drawn
DNT

Drawing Number
5-PD103

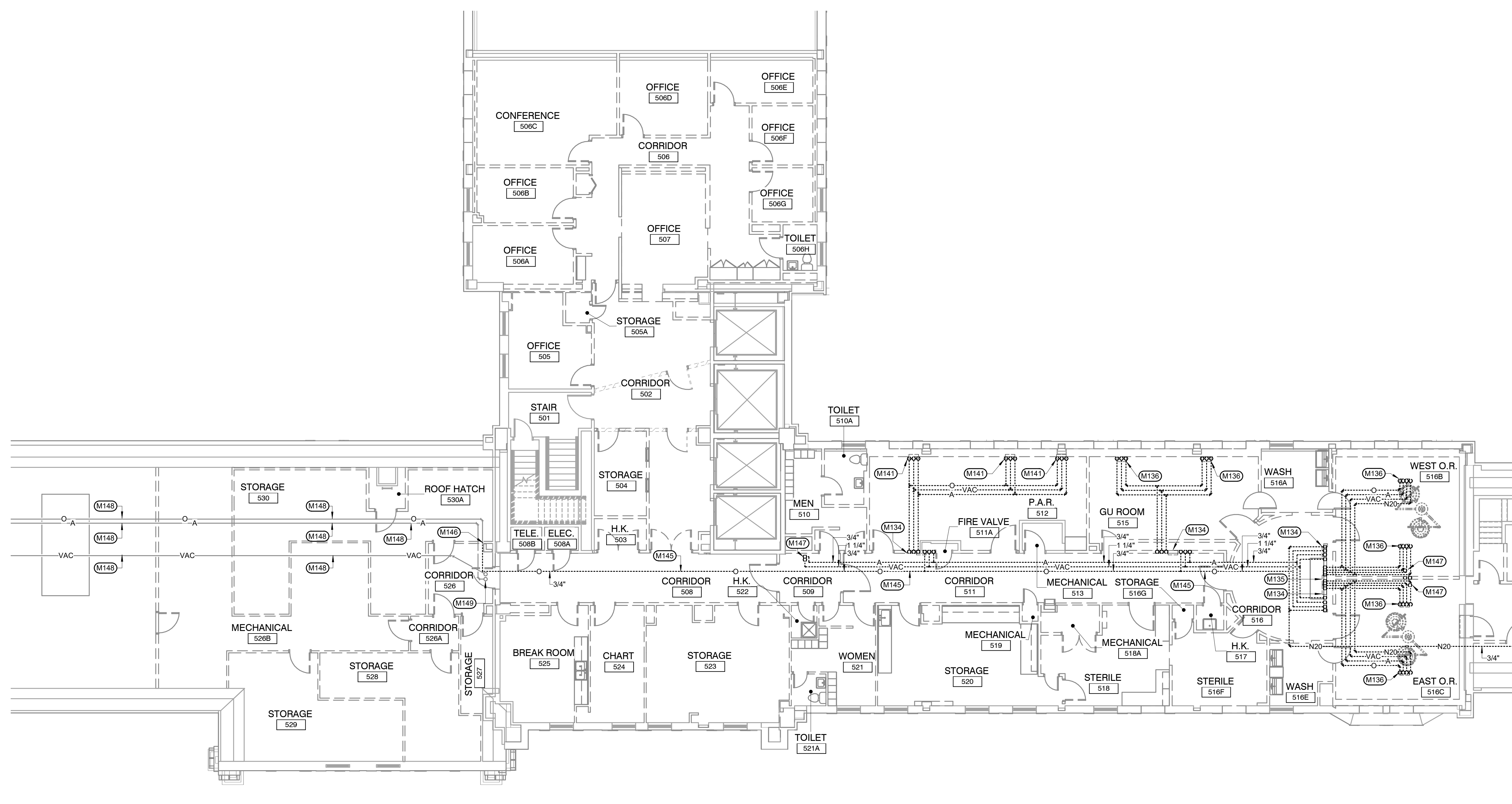
Dwg. 27 of 60

Office of Construction and Facilities Management

KEYNOTES:

- MECHANICAL SPECIFIC NOTES**
- M134 REMOVE EXISTING MEDICAL GAS ZONE VALVE BOX AND ALL ASSOCIATED PIPING UPSTREAM TO MEDICAL GAS OUTLETS. VERIFY EXACT LOCATION OF EXISTING PIPING TO BE REMOVED.
 - M135 REMOVE EXISTING MEDICAL GAS ALARM PANEL. VERIFY EXACT LOCATION OF EXISTING.
 - M136 REMOVE EXISTING MEDICAL GAS CEILING OUTLETS AND ALL ASSOCIATED PIPING BACK TO EXISTING ZONE VALVE BOX. VERIFY EXACT LOCATION OF EXISTING PIPING TO BE REMOVED.
 - M141 REMOVE EXISTING MEDICAL GAS WALL OUTLETS AND ALL ASSOCIATED PIPING BACK TO EXISTING ZONE VALVE BOX. VERIFY EXACT LOCATION OF EXISTING PIPING TO BE REMOVED.
 - M145 REMOVE EXISTING MEDICAL GAS PIPING AS INDICATED AS DASHED. VERIFY EXACT LOCATION OF EXISTING.
 - M146 PREPARE EXISTING OXYGEN PIPE FOR RECONNECTION TO NEW. SEE MEDICAL GAS PIPING PLAN - FIFTH FLOOR FOR NEW PIPE ROUTING.
 - M147 REMOVE EXISTING MEDICAL GAS PIPING UP THRU FLOOR INTO PENTHOUSE. PATCH FLOOR TO MATCH EXISTING. COORDINATE WITH GENERAL CONTRACTOR. SEE DEMOLITION MEDICAL GAS PLAN - PENTHOUSE FOR CONTINUATION.
 - M148 EXISTING MEDICAL GAS PIPING TO REMAIN. VERIFY EXACT LOCATION OF EXISTING.
 - M149 EXISTING MEDICAL GAS PIPING UP THRU FLOOR INTO PENTHOUSE TO REMAIN. SEE DEMOLITION MEDICAL GAS PLAN - PENTHOUSE FOR CONTINUATION.

A three inches = one foot
 B one and one half inches = one foot
 C one inch = one foot
 D three quarters inch = one foot
 E one half inch = one foot
 F three eighths inch = one foot
 G one quarter inch = one foot
 H one eighth inch = one foot
 I one eighth inch = one foot

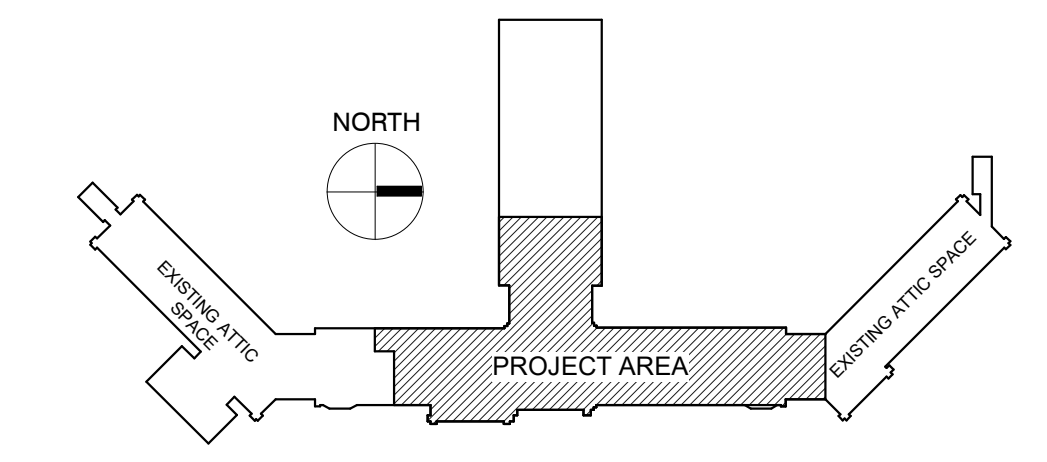


DEMOLITION MEDICAL GAS PLAN - FIFTH FLOOR
 SCALE: 1/8" = 1'-0"

GENERAL NOTES:

- A ALL PIPING AND DUCTS IN FINISHED ROOMS OR SPACES SHALL BE CONCEALED IN A FURRED CHASE OR ABOVE THE HARD SUSPENDED CEILING.
- B THE FIRST FIGURE OF DUCT SIZE INDICATES DIMENSION OF FACE SHOWN OR INDICATED.
- C DUCT SIZES ARE NET INSIDE DIMENSIONS.
- D ACCESS PANELS IN HARD SUSPENDED CEILINGS ARE REQUIRED FOR ALL VALVES, TRAPS, DAMPERS, CLEANOUTS, CONTROLS, ETC. ACCESS PANELS SHALL BE FURNISHED AND INSTALLED UNDER THE ARCHITECTURAL SPECIFICATIONS.
- E TOTAL STATIC PRESSURE NOTED IN THE SCHEDULES INCLUDES DUCT SYSTEM, TERMINAL UNITS, FILTERS, COILS, ETC.
- F FOR TYPICAL STEAM AND WATER PIPING CONNECTIONS TO EQUIPMENT, SEE STANDARD EQUIPMENT DETAILS.
- G DIFFUSER, REGISTER AND GRILLE SIZES SHOWN ON FLOOR PLANS ARE NECK SIZES.
- H WATER PIPE CONNECTIONS TO AIR HEATING AND COOLING COILS SHALL BE MADE TO PROVIDE COUNTER FLOW BETWEEN WATER AND AIR.
- I WALL TYPE EXHAUST REGISTERS NOTED AS "BR" ON DRAWINGS ARE TO BE INSTALLED WITH BOTTOM ELEVATION OF REGISTER AT 7" (175MM) ABOVE FINISHED FLOOR.
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- K ALL PRESSURES LISTED ARE GAGE PRESSURE UNLESS OTHERWISE NOTED.
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KEY PLAN:

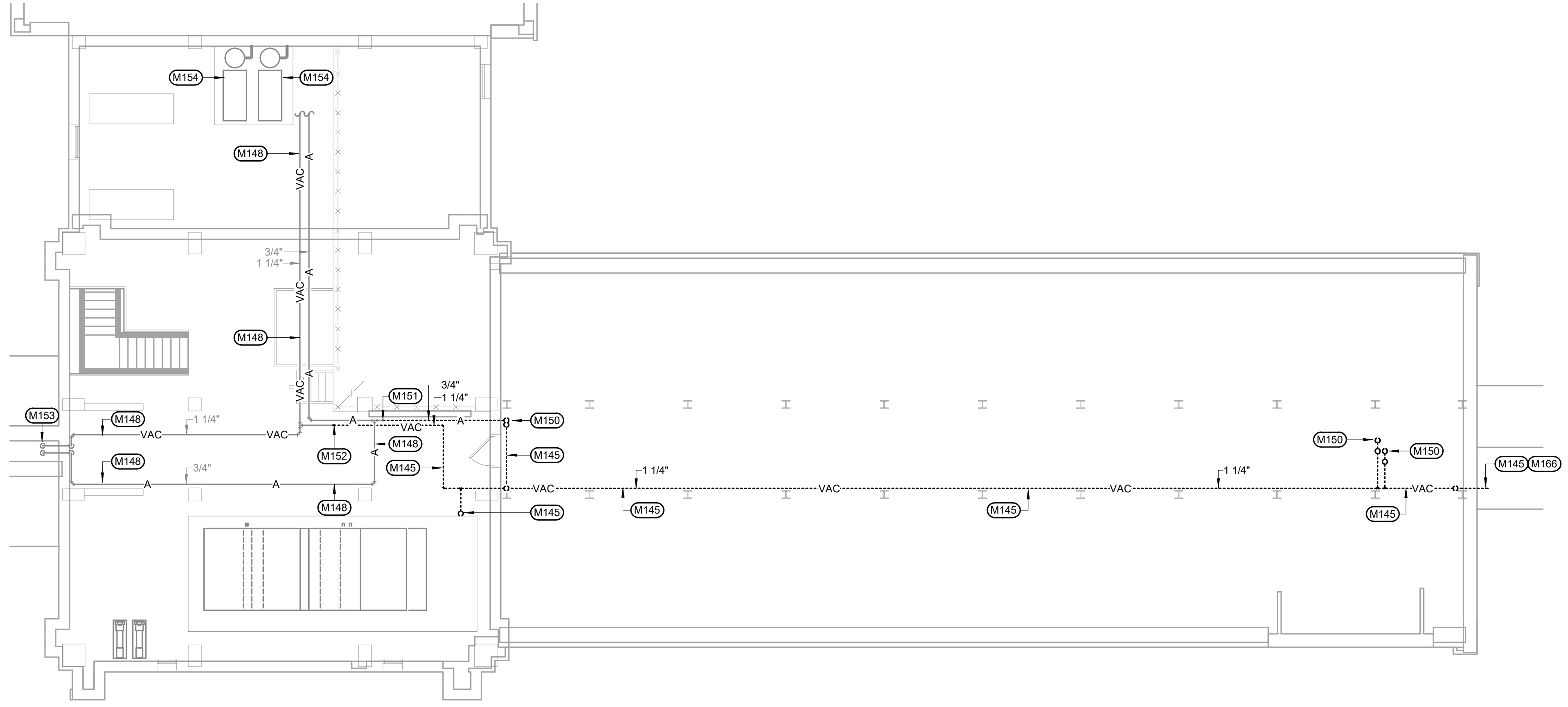


PHASING PLAN NOTE:
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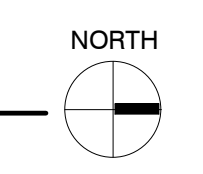
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<p>CONSULTANTS:</p> <p>WPE WEST PLAINS ENGINEERING, INC. WPE #: BS15052 4609 SOUTH TECHLINK CIRCLE • SIOUX FALLS, SD 57106 PHONE: (605) 362-3753 • FAX: (605) 362-3759 WWW.WESTPLAINSENGINEERING.COM RAPID CITY, SD • SIOUX FALLS, SD • CASPER, WY • CEDAR RAPIDS, IA • BISMARCK, ND</p>	<p>RISE STRUCTURAL ASSOCIATES, INC. 101 Railroad Ave. - PO Box 39 Hamburg, SD 57032 (605) 743-2510 fax(605) 743-2513</p>	<p>ARCHITECTS/ ENGINEERS:</p> <p>MSH ARCHITECTS 625 S. MINNESOTA AVENUE, SUITE 204 SIOUX FALLS, SOUTH DAKOTA 57104-4873 TELE: (605) 332-7850 FAX: (605) 332-3539</p>	<p>Drawing Title DEMOLITION MEDICAL GAS PLAN - FIFTH FLOOR</p> <p>Approved: Project Director</p>	<p>Project Title V.A. HEALTH CARE SYSTEM RENOVATE 5TH FLOOR SURGERY</p> <p>Project Number 438-15-201</p> <p>Building Number 5</p> <p>Location SIOUX FALLS, SOUTH DAKOTA</p> <p>Date OCTOBER 17, 2017</p> <p>Checked WM</p> <p>Drawn DNT</p>	<p>Drawing Number 5-PD104</p> <p>Dwg. 28 of 60</p>	<p>Office of Construction and Facilities Management</p>
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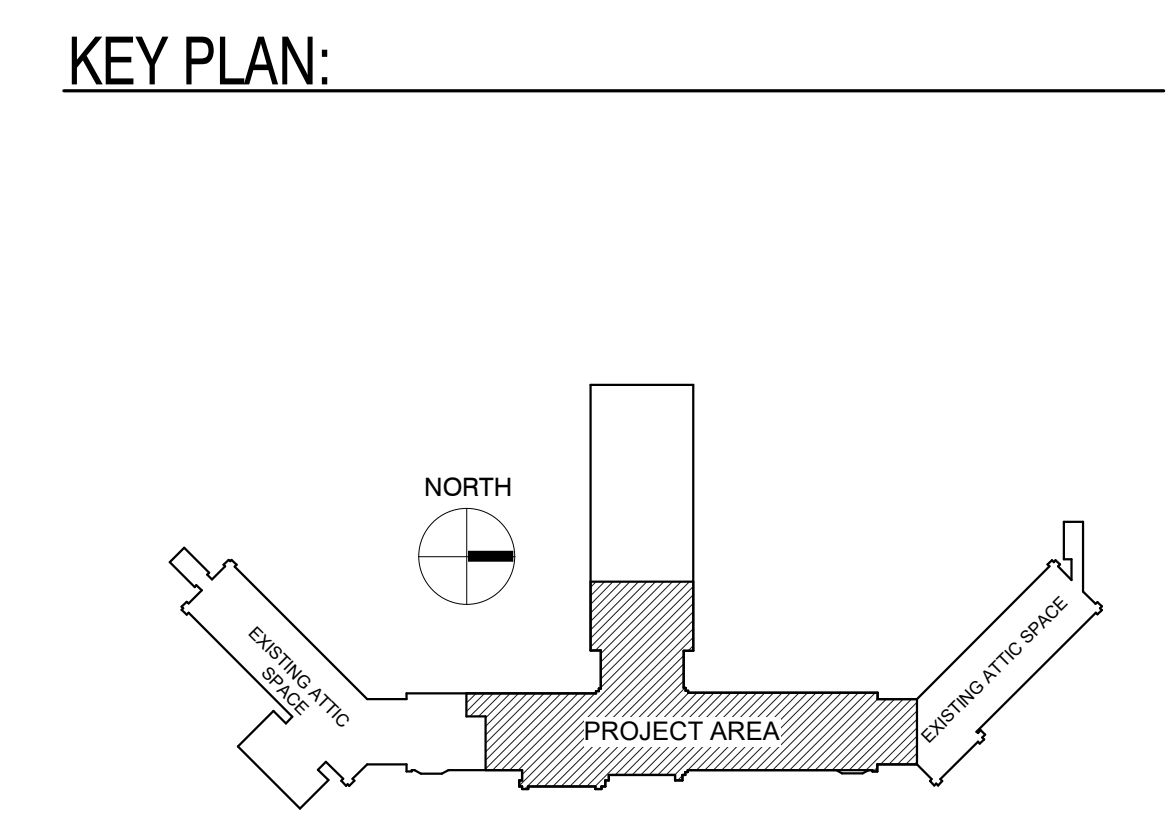
- KEYNOTES:**
- MECHANICAL SPECIFIC NOTES**
- M145 REMOVE EXISTING MEDICAL GAS PIPING AS INDICATED AS DASHED. VERIFY EXACT LOCATION OF EXISTING.
 - M148 EXISTING MEDICAL GAS PIPING TO REMAIN. VERIFY EXACT LOCATION OF EXISTING.
 - M150 REMOVE EXISTING MEDICAL GAS PIPING DN THRU FLOOR. SEE DEMOLITION MEDICAL GAS PLAN - FIFTH FLOOR FOR CONTINUATION.
 - M151 CAP EXISTING MEDICAL AIR PIPING AT THIS LOCATION. VERIFY EXACT SIZE AND LOCATION OF EXISTING PIPING.
 - M152 CAP EXISTING MEDICAL VACUUM PIPING AT THIS LOCATION. VERIFY EXACT SIZE AND LOCATION OF EXISTING PIPING.
 - M153 EXISTING MEDICAL GAS PIPING ON THRU FLOOR TO REMAIN. SEE DEMOLITION MEDICAL GAS PLAN - FIFTH FLOOR FOR CONTINUATION.
 - M154 EXISTING MEDICAL GAS EQUIPMENT TO REMAIN.
 - M166 REMOVE EXISTING MEDICAL VACUUM PIPING THAT IS CAPPED ABOVE STAIR TOWER THIS AREA. PATCH WALL TO MATCH EXISTING. COORDINATE WITH GENERAL CONTRACTOR. VERIFY EXACT SIZE AND LOCATION OF EXISTING PIPING.



DEMOLITION MEDICAL GAS PLAN - PENTHOUSE
SCALE: 1/8" = 1'-0"



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 - G DIFFUSER, REGISTER AND GRILLE SIZES SHOWN ON FLOOR PLANS ARE NECK SIZES.
 - H WATER PIPE CONNECTIONS TO AIR HEATING AND COOLING COILS SHALL BE MADE TO PROVIDE COUNTER FLOW BETWEEN WATER AND AIR.
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PHASING PLAN NOTE:
SEE ARCHITECTURAL PLANS FOR PHASING OF PROJECT

100% CONSTRUCTION DRAWINGS

<p>Revisions:</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th style="width: 5%;">No.</th> <th style="width: 85%;">Description</th> <th style="width: 10%;">Date</th> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> </table>	No.	Description	Date				<p>CONSULTANTS:</p> <p>WPE WEST PLAINS ENGINEERING, INC. WPE #: BS15052 4609 SOUTH TECHLINK CIRCLE • SIOUX FALLS, SD 57106 PHONE: (605) 362-3753 • FAX: (605) 362-3759 WWW.WESTPLAINSENGINEERING.COM RAPID CITY, SD • SIOUX FALLS, SD • CASPER, WY • CEDAR RAPIDS, IA • BISMARCK, ND</p>	<p>RISE STRUCTURAL ASSOCIATES, INC. 101 Railroad Ave. - PO Box 39 Harrisburg, SD 57032 (605) 743-2510 fax(605) 743-2513</p>	<p>ARCHITECTS/ ENGINEERS:</p> <p>MSH ARCHITECTS 625 S. MINNESOTA AVENUE, SUITE 204 SIOUX FALLS, SOUTH DAKOTA 57104-4873 TELE: (605) 332-7850 FAX: (605) 332-3539</p>	<p>Drawing Title DEMOLITION MEDICAL GAS PLAN - PENTHOUSE</p> <p>Approved: Project Director</p>	<p>Project Title V.A. HEALTH CARE SYSTEM RENOVATE 5TH FLOOR SURGERY</p> <p>Project Number 438-15-201</p> <p>Building Number 5</p> <p>Location SIOUX FALLS, SOUTH DAKOTA</p> <p>Date OCTOBER 17, 2017</p> <p>Checked WM</p> <p>Drawn DNT</p> <p>Drawing Number 5- PD105</p> <p>Dwg. 29 of 60</p>	<p>Office of Construction and Facilities Management</p>
No.	Description	Date										

A three inches = one foot
 B one and one half inches = one foot
 C one inch = one foot
 D three quarters inch = one foot
 E one half inch = one foot
 F three eighths inch = one foot
 G one quarter inch = one foot
 H one eighth inch = one foot
 I one eighth inch = one foot

PLUMBING ABBREVIATIONS

A/E ARCHITECT / ENGINEER	EL ELEVATION
AD AREA DRAIN/ACCESS DOOR	EMCS ENERGY MONOSERRAT
AF ABOVE FINISH FLOOR	AND CENTRAL SYSTEM
AFS ABOVE FINISH GRADE	EPA ENVIRONMENTAL PROTECTION AGENCY
AG AIR GAP	EPACT ENERGY POLICY ACT
AP ACCESS PANEL	ESC ESCUTCHEON
AS AUTOMATIC SPRINKLER	ESH EMERGENCY SHOWER
ASD ADJUSTABLE SPEED DRIVES	ET EXPANSION TANK
ASD AUTOMATIC SPRINKLER DRAIN	EWH ELECTRIC WATER HEATER
ASHRAE AMERICAN SOCIETY OF HEATING, REFRIGERATION, AIR CONDITIONING ENGINEERS	EWS EYE WASH STATION
ASME AMERICAN SOCIETY OF MECHANICAL ENGINEERS	EWS/SH EYE WASH/DRENCH SHOWER
ASPE AMERICAN SOCIETY OF PLUMBING ENGINEERS	EX EXISTING
ASR AUTOMATIC SPRINKLER RISER	
AV ACID VENT	
AW ACID WASTE	
	F FAHRENHEIT
BFP REDUCED PRESSURE BACKFLOW PREVENTER	FC FAN COIL
BHP BREAK HORSEPOWER	FCO FLOOR CLEANOUT
BSP BLACK STEEL PIPE	FCW FILTERED COLD WATER
BT BATHTUB	FD FLOOR DRAIN
BTU BRITISH THERMAL UNIT	FDC FIRE DEPARTMENT (HOSE) CONNECTION
BTUH BRITISH THERMAL UNIT PER HOUR	FM FLOW METER
	FOP FUEL OIL PUMP
C CELSIUS	FOR FUEL OIL RETURN
CA COMPRESSED AIR	FOS FUEL OIL SUPPLY
CGA COMPRESSED GAS ASSOCIATION	FOV FUEL OIL VENT
CFM CUBIC FEET PER MINUTE	FS FLOOR SINK
CI CAST IRON	FS FLOW SWITCH
CO CLEANOUT	FU FIXTURE UNITS
CS CLINICAL SINK	
CV CONTROL VALVE	
DCW DOMESTIC COLD WATER	
DFU DRAINAGE FIXTURE UNITS	
DHW DOMESTIC HOT WATER	
DHWR DOMESTIC HOT WATER RETURN	
DHWS DOMESTIC HOT WATER SUPPLY	
DI DEIONIZED WATER	
DN DOWN	
DOE DEPARTMENT OF ENERGY	
DS DOWNSPOUT	
DW DISHWASHER	
DWG DRAWING	
DWH DOMESTIC WATER HEATER	
DWR DRINKING WATER RETURN	
DWS DRINKING WATER SUPPLY	
DVV DRAIN WASTE VENT	

PLUMBING ABBREVIATIONS

GAL GALLON	M METER
GCO GRADE CLEANOUTS	MA MEDICAL AIR
GPD GALLONS PER DAY	MAY MANUAL AIR VENT
GPH GALLONS PER HOUR	MBH 1000 BTUH
GPM GALLONS PER MINUTE	MED MEDICAL
GPR GAS PRESSURE REGULATOR	MER MECHANICAL EQUIPMENT ROOM
GRS GAS REGULATOR STATION	MH MANHOLE
GT GREASE TRAP	MOU MEMORANDUM OF UNDERSTANDING
GVTR GAS VENT THROUGH ROOF	MSB MOP SERVICE BASIN
GWH GAS FIRED WATER HEATER	MV MEDICAL VACUUM
H&W HOT AND COLD WATER	
HB HOSE BIBB	N2 NITROGEN
HD HUB DRAIN	N2O NITROUS OXIDE
HEX HEAT EXCHANGER	NC NORMALLY CLOSED
HP HORSEPOWER	NG NATURAL GAS
HS HAND SINK	NIC NOT IN CONTRACT
HST HOT WATER STORAGE TANK (DOMESTIC)	NO NORMALLY OPEN
HWB HOT WATER BOILER	NOM NOMINAL
HWCP HOT WATER CIRCULATING PUMP	NPW NON POTABLE WATER
HWP HOT WATER PUMP	NTS NOT TO SCALE
HYD HYDRANT	O2 OXYGEN
ID INSIDE DIAMETER	OC ON CENTER
IE INVERT ELEVATION	OD OUTSIDE DIAMETER
ICW INDUSTRIAL COLD WATER	OF OVERFLOW DRAIN
IHW INDUSTRIAL HOT WATER	OR OPERATING ROOM
INV INVERT	OSD OVERFLOW STORM DRAIN
IPC INTERNATIONAL PLUMBING CODE	OVFL OVERFLOW
IRW IRRIGATION WATER	
IW INDIRECT WASTE	
IWH INSTANTANEOUS WATER HEATER	
IWR INDUSTRIAL WATER RETURN	
IWS INDUSTRIAL WATER SUPPLY	
KW KILOWATT	
KWH KILOWATT-HOUR	
L/S LITER PER SECOND	
LA LABORATORY AIR	
LAV LAVATORY	
LEHR LBS/HR POUNDS PER HOUR	
LCW LABORATORY COLD WATER	
LHW LABORATORY HOT WATER	
LNG LIQUID NATURAL GAS	
LOX LIQUID OXYGEN	
LV LABORATORY VACUUM	
LW LOW WATER	

PLUMBING ABBREVIATIONS

IPC INTERNATIONAL PLUMBING CODE	V VENT
PA PASCAL	VAC VACUUM
PD PRESSURE DROP OR DIFFERENCE	VB VACUUM BREAKER
PDI PLUMBING AND DRAINAGE INSTITUTE	VCO VACUUM CLEANER OUTLET
PG PRESSURE GAGE	VP VACUUM PUMP
PP PLUMBING PUMP	VS VENT STACK
PPM PARTS PER MILLION	VSD VARIABLE SPEED DRIVE
PRS PRESSURE REDUCING STATION	VTR VENT THROUGH ROOF
PRV PRESSURE REDUCING VALVE UNDERSTADING	W WASTE
PSI POUNDS PER SQUARE INCH	WC WATER CLOSET
PSIA POUNDS PER SQUARE INCH ATMOSPHERE	WCO WALL CLEANOUT
PSIG POUNDS PER SQUARE INCH GAGE	WG WATER GAGE
PTRV PRESSURE TEMPERATURE RELIEF VALVE	WH WALL HYDRANT
PW POTABLE WATER	WH WATER HEATER
RD ROOF DRAIN	WHA WATER HAMMER ARRESTER
RDL ROOF DRAIN LEADER	WL WATER LINE
RL ROOF LEADER	WM WATER METER
RP RECIRCULATION PUMP	WPD WATER PRESSURE DROP
RO REVERSE OSMOSIS WATER	WS WASTE STACK
RWL RAIN WATER LEADER	WSFU WATER SUPPLY FIXTURE UNITS
SAN SANITARY SEWER	YCO YARD CLEANOUT
SMACNA SHEET METAL AND AIR CONDITIONING CONTRACTORS NATIONAL ASSOCIATION	YH YARD HYDRANT
SCFM STANDARD CUBIC FOOT/MINUTE	
SCW SOFTENED COLD WATER	
SDMH STORM DRAIN MANHOLE	
SMH SANITARY MANHOLE	
SP SUMP PUMP	
SPR SPRINKLER LINE	
SQFT/SF SQUARE FEET	
SS STAINLESS STEEL	
ST STORAGE TANK	
SW STORM WATER	
TCV TEMPERATURE CONTROL VALVE	
TD TEMPERATURE DIFFERENCE	
TD TRENCH DRAIN	
TDH TOTAL DYNAMIC HEAD	
TEMP TEMPERATURE	
TMV THERMOSTATIC MIXING VALVE	
TP TRAP PRIMER	
TSTAT THERMOSTAT	
TWR TEMPERED WATER RETURN	
TWS TEMPERED WATER SUPPLY	
TYP TYPICAL	

PLUMBING PIPING SYMBOLS

— — — — —	DOMESTIC COLD WATER, COLD WATER
— — — — —	DOMESTIC HOT WATER, HOT WATER
— — — — —	DOMESTIC HOW WATER RETURN, HOT WATER RETURN
— MA — MA — MA —	MEDICAL AIR
— MV — MV — MV —	MEDICAL VACUUM
— LA — LA — LA —	LABORATORY AIR
— LV — LV — LV —	LABORATORY VACUUM
— OA — OA — OA —	ORAL EVACUATION
— IA — IA — IA —	INDUSTRIAL AIR
— D — D — D —	DRAIN
— SAN — SAN — SAN —	SANITARY SEWER
— SS — SS — SS —	SANITARY SEWER (OPTIONAL)
— SAN — SAN — SAN —	SANITARY SEWER, BELOW GRADE
— SD — SD — SD —	STORM WATER
— SD — SD — SD —	STORM WATER, BELOW GRADE
— OSD — OSD — OSD —	OVERFLOW STORM WATER
— SCW — SCW — SCW —	SOFTEN COLD WATER
— FCW — FCW — FCW —	FILTERED COLD WATER
— DWS — DWS — DWS —	DRINKING WATER SUPPLY
— DWR — DWR — DWR —	DRINKING WATER RETURN
— TWS — TWS — TWS —	TEMPERED WATER SUPPLY
— TWR — TWR — TWR —	TEMPERED WATER RETURN
— N ₂ — N ₂ — N ₂ —	NITROUS OXIDE
— O — O — O —	OXYGEN
— N ₂ — N ₂ — N ₂ —	NITROGEN
— NG — NG — NG —	NATURAL GAS
— NG — NG — NG —	NATURAL GAS, BELOW GRADE
— FOD — FOD — FOD —	FUEL OIL DISCHARGE
— FOS — FOS — FOS —	FUEL OIL SUPPLY
— FOV — FOV — FOV —	FUEL OIL VENT
— FOR — FOR — FOR —	FUEL OIL RETURN

GENERAL PLUMBING SYMBOLS

	DIRECTION OF PIPE PITCH (DOWN)
	DIRECTION OF FLOW
	ANCHOR
	REDUCER OR INCREASER
	ECCENTRIC REDUCER
	TOP CONNECTION, 45° OR 90°
	BOTTOM CONNECTION, 45° OR 90°
	SIDE CONNECTION
	CAPPED OUTLET
	RISE OR DROP IN PIPE
	UNION
	PIPE UP
	PIPE DOWN
	POINT OF CONNECTION BETWEEN NEW AND EXISTING WORK
	LIMIT OF DEMOLITION
	INVERTED BUCKET TRAP SET INCLUDING PIPING ACCESSORIES
	FLOAT & THERMOSTATIC TRAP SET INCLUDING PIPING ACCESSORIES
	STRAINER
	THERMOMETER
	PRESSURE GAGE
	FLOW ELEMENT
	CLEAN OUT
	HOSE BIB

PLUMBING VALVE SYMBOLS

	GATE VALVE
	GLOBE VALVE
	CHECK VALVE
	ANGLE GLOBE VALVE
	BUTTERFLY VALVE
	BALL VALVE
	MODULATING CONTROL VALVE
	TWO POSITION CONTROL VALVE
	THREE-WAY MODULATING CONTROL VALVE
	THREE-WAY TWO POSITION CONTROL VALVE
	PRESSURE REGULATING VALVE
	AUTOMATIC FLOW CONTROL VALVE
	PRESSURE RELIEF VALVE
	MANUAL AIR VENT
	TEST PLUG (PRESSURE/TEMPERATURE)
	AUTOMATIC AIR VENT

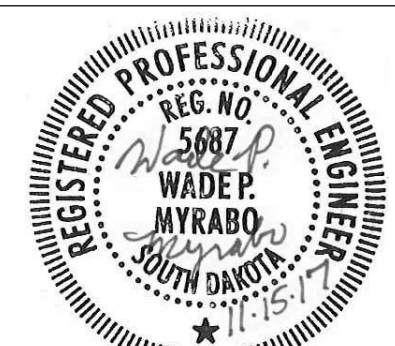
DRAWING SYMBOLS

	DETAIL NUMBER
	DRAWING NUMBER WHERE DRAWN
	SECTION LETTER
	DRAWING NUMBER WHERE SHOWN
	BUILDING NO. WHERE EQUIPMENT IS LOCATED.
	EQUIPMENT ABBREVIATION (SUPPLY FAN)
	SUPPLY FAN NO. 3 IN BUILDING NO. 26
	TYPICAL UNIT NO.
	BUILDING NO. WHERE EQUIPMENT IS LOCATED
	ITEM (TERMINAL UNIT SHOWN)
	ITEM NUMBER (TERMINAL UNIT NO. 1)
	SERVED BY AIR HANDLER UNIT NO. 1

CONSULTANTS:

WPE WEST PLAINS ENGINEERING, INC.
 WPE #: BS15052
 4609 SOUTH TECHLINK CIRCLE • SIOUX FALLS, SD 57106
 PHONE: (605) 362-3753 • FAX: (605) 362-3759
 WWW.WESTPLAINSENGINEERING.COM
 RAPID CITY, SD • SIOUX FALLS, SD • CASPER, WY • CEDAR RAPIDS, IA • BISMARCK, ND

RISE STRUCTURAL ASSOCIATES, INC.
 101 Railroad Ave. - PO Box 39
 Harrisburg, SD 57032
 (605) 743-2510
 fax(605) 743-2513



ARCHITECTS/ ENGINEERS:

MSH ARCHITECTS
 625 S. MINNESOTA AVENUE, SUITE 204
 SIOUX FALLS, SOUTH DAKOTA 57104-4873
 TELE: (605) 332-7850 FAX: (605) 332-3539

Drawing Title MECHANICAL PLUMBING SYMBOLS AND ABBREVIATIONS	Project Number 438-15-201
Approved: Project Director	Building Number 5
	Drawing Number 5- PL001
	Dwg. 30 of 60

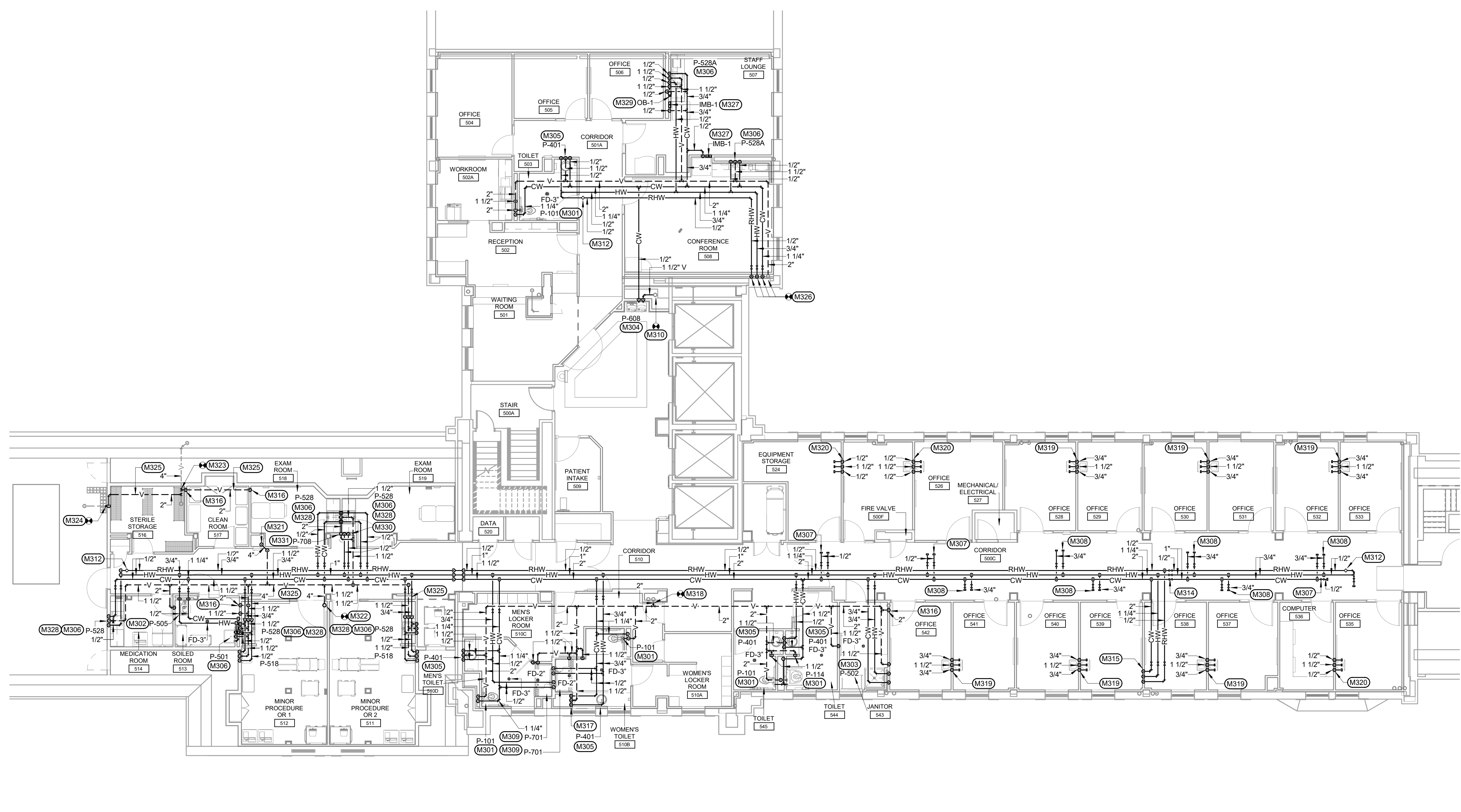
100% CONSTRUCTION DRAWINGS

Drawing Title V.A. HEALTH CARE SYSTEM RENOVATE 5TH FLOOR SURGERY	Project Number 438-15-201
Location SIOUX FALLS, SOUTH DAKOTA	Building Number 5
Date OCTOBER 17, 2017	Drawing Number 5- PL001
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Office of Construction and Facilities Management



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PLUMBING PLAN - FIFTH FLOOR
SCALE: 1/8" = 1'-0"

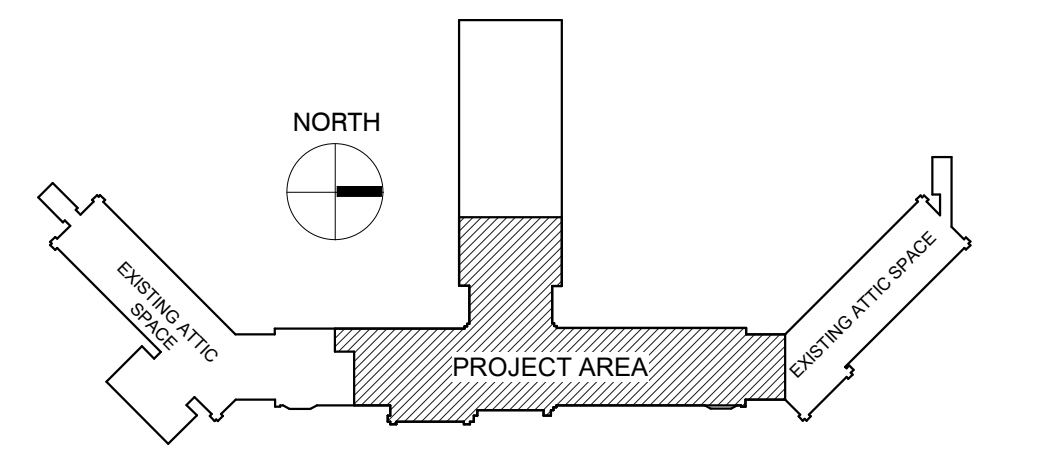
KEYNOTES:

- MECHANICAL SPECIFIC NOTES**
- M301 1-1/4" CW, 4" WASTE, 2" VENT TO WATER CLOSET.
 - M302 3/4" CW, 3/4" HW, 4" WASTE, AND 2" VENT TO CLINICAL SERVICE SINK. 1-1/4" CW TO FLUSH VALVE.
 - M303 3/4" CW, 3/4" HW, 3" WASTE, 1-1/2" VENT TO MOP SINK.
 - M304 1/2" CW, 2" WASTE, 1-1/2" VENT TO ELECTRIC WATER COOLER.
 - M305 1/2" CW, 1/2" HW, 2" WASTE, 1-1/2" VENT TO LAVATORY.
 - M306 1/2" CW, 1/2" HW, 2" WASTE, 1-1/2" VENT TO SINK.
 - M307 1/2" CW, 1/2" HW CAPPED FOR FUTURE CONNECTION. PROVIDE ISOLATION VALVE ABOVE CEILING IN ACCESSIBLE LOCATION. VALVE MUST BE INSTALLED NO MORE THAN 6" OFF MAIN. PIPING TO BE OMITTED UNDER ALTERNATE #1.
 - M308 3/4" CW, 1/4" HW CAPPED FOR FUTURE CONNECTION. PROVIDE ISOLATION VALVE ABOVE CEILING IN ACCESSIBLE LOCATION. VALVE MUST BE INSTALLED NO MORE THAN 6" OFF MAIN. PIPING TO BE OMITTED UNDER ALTERNATE #1.
 - M309 1/2" CW, 1/2" HW DN TO SHOWER.
 - M310 CONNECT NEW 1-1/2" VENT TO EXISTING 4" VENT. CONTRACTOR SHALL FIELD VERIFY EXACT SIZE AND LOCATION OF EXISTING PRIOR TO CONNECTION.
 - M312 INSTALL MANUAL BALANCING VALVE ABOVE CEILING IN ACCESSIBLE LOCATION. BALANCE TO 0.5GPM.
 - M314 PIPING DOWN STREAM OF SHUT OFF VALVES TO BE OMITTED UNDER ALTERNATE #1.
 - M315 2" CW, 1-1/4" HW, AND 1/2" RHW DN THRU FLOOR. SEE PLUMBING PLAN - FOURTH FLOOR FOR CONTINUATION.
 - M316 2" VENT DN THRU FLOOR. SEE PLUMBING PLAN - FOURTH FLOOR FOR CONTINUATION.
 - M317 1/2" CW, 1/2" HW, AND 1-1/2" VENT DN IN CHASE. ROUTE PIPING BELOW COUNTERTOP TO LAVATORY.
 - M318 CONNECT NEW 2" VENT TO EXISTING 4" VENT IN CHASE. CONTRACTOR SHALL FIELD VERIFY EXACT SIZE AND LOCATION OF EXISTING PRIOR TO CONNECTION.
 - M319 3/4" CW, 3/4" HW, 1-1/2" VENT, AND 2" WASTE ROUGH-IN FOR FUTURE BACK TO BACK EXAM ROOM SINKS. CAP WATER AND VENT PIPING ABOVE THE CEILING. CAP WASTE PIPING BELOW FLOOR. SEE PLUMBING PLAN - FOURTH FLOOR FOR CONTINUATION. VERIFY EXACT LOCATION. PIPING TO BE OMITTED UNDER ALTERNATE #1.
 - M320 1/2" CW, 1/2" HW, 1-1/2" VENT, AND 2" WASTE ROUGH-IN FOR FUTURE EXAM ROOM SINK. CAP WATER AND VENT PIPING ABOVE THE CEILING. CAP WASTE PIPING BELOW FLOOR. SEE PLUMBING PLAN - FOURTH FLOOR FOR CONTINUATION. VERIFY EXACT LOCATION. PIPING TO BE OMITTED UNDER ALTERNATE #1.
 - M321 4" VENT DN THRU FLOOR. COORDINATE 4" VENT ROUTING WITH EXISTING STRUCTURE. SEE PLUMBING PLAN - FOURTH FLOOR FOR CONTINUATION. VERIFY EXACT LOCATION. PIPING TO BE OMITTED UNDER ALTERNATE #1.
 - M322 CONNECT NEW 4" VENT TO EXISTING 5" VENT THRU ROOF. CONTRACTOR SHALL FIELD VERIFY EXACT SIZE AND LOCATION OF EXISTING PRIOR TO CONNECTION.
 - M323 CONNECT (2) NEW 2" VENT TO EXISTING 4" VENT. CONTRACTOR SHALL FIELD VERIFY EXACT SIZE AND LOCATION OF EXISTING PRIOR TO CONNECTION.
 - M324 CONNECT NEW 2" VENT TO EXISTING 2" VENT. CONTRACTOR SHALL FIELD VERIFY EXACT SIZE AND LOCATION OF EXISTING PRIOR TO CONNECTION.
 - M325 ROUTE NEW PIPING THRU SOFIT.
 - M326 CONNECT NEW 2" VENT, 1-1/4" CW, 3/4" HW, AND 1/2" RHW TO EXISTING VENT, CW, HW, AND RHW. CONTRACTOR SHALL FIELD VERIFY EXACT SIZE AND LOCATION OF EXISTING PRIOR TO CONNECTION.
 - M327 1/2" CW DN TO ICE MAKER FOR REFRIGERATOR. INSTALL SHUT-OFF VALVE AND COMPRESSION FITTING FOR CONNECTION TO OWNER-PROVIDED REFRIGERATOR. PROVIDE PRESSURE REDUCING VALVE AS REQUIRED. MAXIMUM PRESSURE SERVING ICE MAKE SHALL BE 40PSI.
 - M328 PROVIDE FOOT PEDAL CONTROLS AT SINK. SEE DOUBLE FAUCET CONTROL DETAIL 2/PL01.
 - M329 1/2" CW, 1-1/2" VENT, AND 2" WASTE TO OUTLET BOX FOR ICE MAKER. INSTALL SHUT-OFF VALVE AND COMPRESSION FITTING ON CW FOR CONNECTION TO OWNER-PROVIDED ICE MAKER. PROVIDE PRESSURE REDUCING VALVE AS REQUIRED. MAXIMUM PRESSURE SERVING ICE MAKE SHALL BE 40PSI. ROUTE DRAIN FROM OWNER PROVIDED ICE MAKER TO OUTLET BOX.
 - M330 1/2" HW, 1/2" CW DN TO THERMOSTATIC MIXING VALVE. ROUTE 1/2" TEMPERED WATER FROM THERMOSTATIC MIXING VALVE DN TO EMERGENCY EYE/FACE WASH.
 - M331 2" TEMPERED WATER, 1-1/2" VENT, AND 2" WASTE TO EMERGENCY EYE/FACE WASH. ROUTE 2" WASTE LOW THRU WALL AND CONNECT TO 2" WASTE RISER FOR SINKS.

GENERAL NOTES:

- A ALL PIPING AND DUCTS IN FINISHED ROOMS OR SPACES SHALL BE CONCEALED IN A FURRED CHASE OR ABOVE THE HARD SUSPENDED CEILING.
- B THE FIRST FIGURE OF DUCT SIZE INDICATES DIMENSION OF FACE SHOWN OR INDICATED.
- C DUCT SIZES ARE NET INSIDE DIMENSIONS.
- D ACCESS PANELS IN HARD SUSPENDED CEILINGS ARE REQUIRED FOR ALL VALVES, TRAPS, DAMPERS, CLEANOUTS, CONTROLS, ETC. ACCESS PANELS SHALL BE FURNISHED AND INSTALLED UNDER THE ARCHITECTURAL SPECIFICATIONS.
- E TOTAL STATIC PRESSURE NOTED IN THE SCHEDULES INCLUDES DUCT SYSTEM, TERMINAL UNITS, FILTERS, COILS, ETC.
- F FOR TYPICAL STEAM AND WATER PIPING CONNECTIONS TO EQUIPMENT, SEE STANDARD EQUIPMENT DETAILS.
- G DIFFUSER, REGISTER AND GRILLE SIZES SHOWN ON FLOOR PLANS ARE NECK SIZES.
- H WATER PIPE CONNECTIONS TO AIR HEATING AND COOLING COILS SHALL BE MADE TO PROVIDE COUNTER FLOW BETWEEN WATER AND AIR.
- I WALL TYPE EXHAUST REGISTERS NOTED AS "BR" ON DRAWINGS ARE TO BE INSTALLED WITH BOTTOM ELEVATION OF REGISTER AT 7' (175MM) ABOVE FINISHED FLOOR.
- J REFER TO ARCHITECTURAL REFLECTED CEILING PLANS FOR EXACT LOCATIONS OF CEILING DIFFUSERS, REGISTERS, AND GRILLES.
- K ALL PRESSURES LISTED ARE GAGE PRESSURE UNLESS OTHERWISE NOTED.
- L PROVIDE WATER HAMMER ARRESTORS WITH INLET ISOLATION VALVES AT EACH NEW SINK AND LAVATORY HOT WATER AND COLD WATER BRANCH, AND BOTH NEW WATER CLOSETS.
- M ALL PIPE PENETRATIONS THROUGH FLOOR OR MASONRY WALLS SHALL BE CORE DRILLED. SEE SPECIFICATIONS.

KEY PLAN:



PHASING PLAN NOTE:
SEE ARCHITECTURAL PLANS FOR PHASING OF PROJECT

100% CONSTRUCTION DRAWINGS

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<p>Revisions: _____ Date _____</p>		<p>Date: OCTOBER 17, 2017</p>		<p>Checked: WM Drawn: DNT</p>	