

FULLY SPRINKLERED

100% CONSTRUCTION DOCUMENTS

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

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VA FORM 08-6231

MECHANICAL LEGEND

NOT ALL ITEMS LISTED BELOW ARE USED ON THIS SET OF DRAWINGS

PLUMBING PIPING		
SYMBOL	ABBY	DESCRIPTION
—	CW	DOMESTIC COLD WATER
—	HW	DOMESTIC HOT WATER
—	HWC	DOMESTIC HOT WATER CIRCULATING
—	HW	DOMESTIC HOT WATER AT TEMP. SHOWN
—	W	SOIL OR WASTE
—	BD	BUILDING DRAIN
—	BS	BUILDING SEWER
—	V	SANITARY VENT
—	SD	STORM DRAIN ABOVE FLOOR
—	SD	STORM DRAIN BELOW FLOOR
—	OD	OVERFLOW DRAIN ABOVE FLOOR
—	OD	OVERFLOW DRAIN BELOW FLOOR
—	SS	STORM SEWER
—	AW	ACID WASTE ABV. FLOOR
—	AW	ACID WASTE BEL. FLOOR
—	AV	ACID VENT
—	GW	GREASE WASTE
—	SOD	SEDIMENT & OIL DRAIN
—	G	NATURAL GAS
—	MPG	MEDIUM PRESSURE
—	LPG	PROPANE GAS
—	CA	COMPRESSED AIR
—	T	TEMPERED WATER
—	TR	TEMPERED WATER CIRCULATION
—	FD	FOOTING DRAIN
—	IW	INDIRECT WASTE
—	PD	PUMP DISCHARGE LINE
—	FM	FORCE MAIN
—	LI	LAWN IRRIGATION

PIPING SYMBOLS	
SYMBOL	DESCRIPTION
→	ARROW IN LINE INDICATES DIRECTION OF FLOW
—	INDICATES PIPE SLOPE DOWN
XXXXXXX	REMOVE EXISTING
—	BOTTOM PIPE CONNECTION
—	PIPING UP
—	PIPING DOWN
—	FIXTURE OR DRAIN TRAP
—	PIPING CAP OR PLUG
—	PUMP

HVAC PIPING	
SYMBOL	DESCRIPTION
—	HS HOT WATER SUPPLY
—	HR HOT WATER RETURN
—	CHS CHILLED WATER SUPPLY
—	CHR CHILLED WATER RETURN
—	CS CONDENSER SUPPLY
—	CR CONDENSER RETURN
—	LPS LOW PRESSURE STEAM
—	LPC LOW PRESSURE CONDENSATE
—	HPS HIGH PRESSURE STEAM
—	HPC HIGH PRESSURE CONDENSATE
—	PC PUMPED CONDENSATE EQUIPMENT DRAIN
—	RL REFRIGERANT LIQUID
—	RS REFRIGERANT SUCTION
—	RHC REFRIGERANT HOT GAS
—	FOS FUEL OIL SUPPLY
—	FOR FUEL OIL RETURN
—	FOV FUEL OIL VENT

FIRE PROTECTION PIPING	
SYMBOL	DESCRIPTION
—	F FIRE SPRINKLER
—	A/S AUTO SPRINKLER LINE
—	DSP DRY STANDPIPE
—	WSP WET STANDPIPE
—	CSP COMBINED STANDPIPE
—	FDC FIRE DEPT. CONNECTION
—	D DRAIN
—	PI POST INDICATOR VALVE
—	EXISTING SPRINKLER HEAD
—	UPRIGHT SPRINKLER HEAD
—	PENDANT SPRINKLER HEAD
—	DRY PENDANT SPRINKLER HEAD
—	REMOVE EXISTING SPRINKLER HEAD
—	REMOVE & RELOCATE EXISTING SPRINKLER HEAD
—	NEW LOCATION EXISTING SPRINKLER HEAD
—	ANGLE VALVE W/ DRAIN
—	SI SIDEWALL SPRINKLER
—	DC DOUBLE CHECK VALVE
—	FC FIRE DEPT. CONNECTION
—	PUMP TEST HEADER
—	SECTIONAL VALVE W/ DRAIN
—	FI FIRE HOSE/VALVE CABINET
—	FI FIRE HYDRANT

PIPING SYMBOLS	
SYMBOL	DESCRIPTION
—	WALL HYDRANT
—	HOSE BIBB
—	YARD HYDRANT
—	BALANCING VALVE/ FLOW MEASURING DEVICE
—	BALL VALVE
—	OS&Y GATE VALVE
—	SHUT-OFF VALVE
—	GLOBE VALVE
—	CHECK VALVE
—	BUTTERFLY VALVE
—	FLOW SWITCH
—	SOLENOID VALVE
—	PRESSURE REDUCING VALVE
—	GAS VALVE
—	MIXING VALVE
—	REDUCED PRESSURE BACKFLOW PREVENTER
—	ATMOSPHERIC VACUUM BREAKER
—	WATER HAMMER ARRESTER
—	RELIEF VALVE
—	STRAINER
—	STRAINER WITH BLOW-OFF VALVE
—	UNION
—	PRESSURE GAUGE
—	THERMOMETER
—	P/T PRESSURE AND TEMPERATURE TAP
—	CONCENTRIC REDUCER
—	ECCENTRIC REDUCER
—	FLEXIBLE CONNECTOR
—	AREA/FLOOR DRAIN
—	WALL CLEANOUT
—	LINE CLEANOUT
—	LINE CLEANOUT
—	DOWNSPOUT NOZZLE
—	EXPANSION JOINT
—	PIPE ANCHOR
—	ALIGNMENT GUIDE
—	PLUG VALVE
—	AUTOMATIC 2-WAY TEMPERATURE CONTROL VALVE
—	AUTOMATIC 3-WAY TEMPERATURE CONTROL VALVE
—	FLOW SWITCH
—	THERMOSTATIC STEAM TRAP
—	FLOAT & THERMOSTATIC STEAM TRAP
—	INVERTED BUCKET STEAM TRAP
—	MANUAL AIR VENT

DOUBLE LINE DUCTWORK	
—	RECTANGULAR SUPPLY AIR DUCT UP
—	RECTANGULAR SUPPLY AIR DUCT DOWN
—	RECT RETURN/EXH AIR DUCT UP
—	RECT RETURN/EXH AIR DUCT DOWN
—	ROUND DUCT UP
—	ROUND DUCT DOWN
—	BRANCH DUCT 45° TAKE-OFF
—	RECTANGULAR DUCT ELBOW WITH TURNING VANES
—	RADIUS ELBOW RECTANGULAR/ROUND DUCT
—	DUCT TRANSITION
—	FLEX CONNECTION
—	MANUAL VOLUME DAMPER W/LOCKING QUADRANT

PIPING SYMBOLS	
SYMBOL	DESCRIPTION
—	GATE VALVE WITH CURB BOX
—	WATER METER
—	GAS METER
—	THRUST BLOCK
—	MANHOLE
—	CATCH BASIN
—	FLOOR SINK
—	ROOF DRAIN OR OVERFLOW DRAIN
—	FLOOR CLEANOUT

MEDICAL GAS		
SYMBOL	ABBY	DESCRIPTION
—	O ₂	O ₂ OXYGEN
—	VAC	VACUUM
—	N	NITROGEN
—	N ₂ O	NITROUS OXIDE
—	CO ₂	CARBON DIOXIDE
—	MA	MEDICAL AIR
—	DI	DISTILLED WATER
—	DE	DEIONIZED WATER
—	MV	MEDICAL VACUUM
—	CV	CENTRAL VACUUM
—	LV	LAB. VACUUM
—	LA	LAB. COMPRESSED AIR
—	ALP	ALARM PANEL
—	ZV	ZONE VALVE

GENERAL	
SYMBOL	DESCRIPTION
—	REFERENCE BUBBLE
—	DETAIL NUMBER OR SECTION LETTER
—	REFERENCE DRAWING NUMBER
—	RISER BUBBLE DESIGNATION
—	MECHANICAL / PLUMBING EQUIPMENT DESIGNATION
—	POINT OF DISCONNECT / DEMO
—	CONNECT NEW TO EXISTING

CONTROL DEVICES AND DAMPERS	
SYMBOL	DESCRIPTION
—	HUMIDISTAT
—	PRESSURE SENSOR
—	SENSOR
—	WALL MOUNTED THERMOSTAT
—	UNIT MOUNTED THERMOSTAT
—	SWITCH (I INDICATES EQ.)
—	FIRE DAMPER
—	COMBINATION FIRE AND SMOKE DAMPER
—	MANUAL VOLUME DAMPER W/LOCKING QUADRANT
—	MOTORIZED DAMPER

SINGLE LINE DUCTWORK	
—	RECTANGULAR SUPPLY AIR DUCT UP
—	RECTANGULAR SUPPLY AIR DUCT DOWN
—	RECT RETURN/EXH AIR DUCT UP
—	RECT RETURN/EXH AIR DUCT DOWN
—	ROUND DUCT UP
—	ROUND DUCT DOWN
—	BRANCH DUCT 45° TAKE-OFF
—	RECTANGULAR DUCT ELBOW WITH TURNING VANES
—	RADIUS ELBOW RECTANGULAR/ROUND DUCT
—	DUCT TRANSITION
—	CONICAL SPIN-IN FITTING
—	CONICAL SPIN-IN FITTING W/DAMPER
—	FLEXIBLE DUCT

GENERAL NOTES:

- GENERAL NOTES ON THIS DRAWING ARE APPLICABLE TO EACH MECHANICAL DRAWING OF THIS SET. SEE EACH DRAWING FOR SPECIFIC NOTES APPLICABLE TO THAT DRAWING.
- OUTSIDE AIR INTAKE OPENINGS FOR VENTILATION AIR SHALL BE LOCATED 10 FEET MEASURED IN ANY DIRECTION FROM ANY FLUES, VENTS, CHIMNEYS, GAS METERS, GAS REGULATORS, PLUMBING VENTS UNLESS TOP OF SUCH INTAKE OPENING IS 2 FEET BELOW ANY OF THE LISTED ITEMS.
- OVERHEAD PIPING IN SPACES WITHOUT HUNG CEILINGS SHALL BE RUN AS CLOSE TO ROOF DECK AS PRACTICABLE, AS CLOSE TO PARALLEL JOISTS AS POSSIBLE AND ABOVE LIGHTING FIXTURES TO CONCEAL PIPING.
- OVERHEAD DUCTWORK AND PIPING IN SPACES WITH CEILINGS SHALL BE CONCEALED UNLESS OTHERWISE NOTED.
- COORDINATE LOCATION OF GRILLES, REGISTERS, DIFFUSERS, THERMOSTATS AND OTHER WALL OR CEILING MOUNTED HVAC ACCESSORIES WITH REFLECTED CEILING PLAN. COORDINATE LIGHTING FIXTURE LAYOUT AND ACCESSORIES INSTALLED BY OTHER TRADES SO AS TO PRESENT A NEAT AND ATTRACTIVE INSTALLATION THROUGHOUT THE ENTIRE BUILDING. IT IS THE INTENT FOR CEILING MOUNTED GRILLES, REGISTERS AND DIFFUSERS TO BE INSTALLED IN THE CENTER OF CEILING PANELS.
- ARRANGE PIPING AND DUCTWORK, PARTICULARLY ABOVE CEILING, AS REQUIRED TO CLEAR STRUCTURE, DUCTS, CONDUIT, ETC., ALLOWING SPACE FOR PIPE HANGERS, EXPANSION LOOPS AND ACCESS TO VALVES, FILTERS AND MAINTENANCE OF EQUIPMENT.
- THE DIAMETER OF THE SUPPLY PIPE AT ANY GAS FIRED EQUIPMENT SHALL NOT BE OF A SMALLER SIZE THAN THE INLET CONNECTION TO THE EQUIPMENT.
- EQUIPMENT WITH FILTERS SHALL BE INSTALLED SO THAT FILTERS CAN BE EASILY REMOVED AND REPLACED.
- CONTRACTOR SHALL VERIFY REFRIGERANT PIPE SIZES WITH EQUIPMENT MANUFACTURER FOR THE INDICATED INSTALLATION.
- COORDINATE LOCATION AND INSTALLATION OF EQUIPMENT WITH OTHER TRADES.
- THERMOSTATS SHALL BE LOCATED IN THE ROOMS INDICATED. INSTALL AT 4'-0" ABOVE FINISH FLOOR.
- VALVES AND SPECIALTIES SHALL BE LINE SIZE, EXCEPT FOR CONTROL & BALANCING VALVES OR UNLESS NOTED OTHERWISE.
- EXTEND DRAIN LINES TO NEAREST FLOOR DRAIN OR AS INDICATED. ROUTING SHALL NOT INTERFERE WITH PASSAGEWAYS AND MAINTENANCE. DRAINS FROM AIR CONDITIONING CONDENSATE DRAIN PANS SHALL BE TRAPPED. SLOPE SUSPENDED CONDENSATE DRAIN PIPING AT 1/8" PER FOOT (1 PER 100).
- PIPING AND DUCTWORK INSULATION SHALL BE RUN CONTINUOUSLY THROUGH NON-RATED FLOORS, WALLS AND PARTITIONS, UNLESS OTHERWISE NOTED.
- NO PIPING SHALL BE SMALLER THAN 1/2" UNLESS OTHERWISE NOTED.
- RUN-OUTS SHALL PITCH DOWN IN DIRECTION OF FLOW A MINIMUM OF 1/8" PER FOOT (1PER 100).
- FOR PIPE SIZES NOT INDICATED ON PLANS SEE EQUIPMENT CONNECTION DETAILS, FLOW DIAGRAMS, RISER DIAGRAMS AND SCHEDULES.
- PROVIDE UNION OR FLANGED CONNECTIONS AT EACH PIECE OF EQUIPMENT AND ON BOTH SIDES OF CONTROL VALVES AND PRESSURE REGULATING VALVES. PROVIDE SHUT-OFF VALVES ON BOTH SIDES OF AUTOMATIC VALVES.
- RELIEF VALVE DRAIN PIPING SHALL BE EXTENDED TO 6" ABOVE FINISHED FLOOR UNLESS OTHERWISE NOTED.
- FLOOR MOUNTED EQUIPMENT IN THE MECHANICAL ROOM SHALL BE LOCATED ON 6" THICK CONCRETE PADS WITH CHAMFERED EDGES UNLESS OTHERWISE NOTED.
- PIPING SHALL BE SUPPORTED IN ACCORDANCE WITH THE SPECIFICATION. ADDITIONAL SUPPORTS OR HANGERS SHALL BE ADJACENT TO ELBOWS, TO PREVENT WEIGHT OF PIPING BEING PLACED ON THE EQUIPMENT.
- CORRECT SETTING ON BALANCING FITTINGS SHALL BE PERMANENTLY MARKED.
- LOCATE AND SIZE CONCRETE PADS AND CURBS FOR MECHANICAL EQUIPMENT IN ACCORDANCE WITH ACTUAL EQUIPMENT PURCHASED.
- FOR LOCATION OF MOTOR STARTERS, SEE ELECTRICAL DRAWINGS.

ABBREVIATIONS			
BFP	BACKFLOW PREVENTER	GC	GENERAL CONTRACTOR
CB	CATCH BASIN	LO	LINE CLEAN OUT
C	CENTERLINE	MC	MECHANICAL CONTRACTOR
DNZ	DOWNSPOUT NOZZLE	(N)	NEW
(E)	EXISTING	NC	NOT IN CONTRACT
EC	ELECTRICAL CONTRACTOR	NO	NORMALLY OPEN
EL	ELEVATION	NTS	NOT TO SCALE
FCD	FLOOR CLEAN OUT	PRV	PRESSURE REDUCING VALVE
POC	POINT OF CONNECTION	SRV	SAFETY RELIEF VALVE
TM	TYPICAL	TM	THERMOSTATIC MIXING VALVE
WOD	WALL CLEAN OUT	VIR	VENT THROUGH ROOF

PLUMBING GENERAL NOTES

- MAKE PROPER PIPING CONNECTIONS TO ALL FIXTURES AND EQUIPMENT EVEN THOUGH ALL BRANCH MAINS, ELBOWS AND CONNECTIONS ARE NOT SHOWN.
- COORDINATE WITH ARCHITECTURAL WORKING DRAWINGS BEFORE ROUGHING-IN PLUMBING FIXTURES.
- UNLESS OTHERWISE NOTED, PIPING SHALL BE RUN AS HIGH AS POSSIBLE, CONCEALED ABOVE CEILINGS, IN WALLS AND PARTITIONS, AND IN PIPE CHASES.
- SLOPES AND INVERT ELEVATIONS SHALL BE ESTABLISHED BEFORE ANY PIPING IS INSTALLED IN ORDER THAT PROPER SLOPES WILL BE MAINTAINED.
- ALL PIPING SHALL BE LOCATED AND DETERMINED WHERE TO BE RUN TO AVOID CONFLICT WITH OTHER TRADES.
- ALL WALL HYDRANTS SHALL BE MOUNTED 24" ABOVE FINISHED GRADE UNLESS OTHERWISE SPECIFIED.
- ALL HOSE BIBBS SHALL BE MOUNTED 18" ABOVE FINISHED FLOOR UNLESS OTHERWISE SPECIFIED.
- COORDINATE WORK WITH OTHER TRADES SO AS NOT TO DISTURB NEW OR REPAIRED FINISHES.
- ALL PLUMBING VENTS IN EXTERIOR WALLS SHALL BE OFF-SET A MINIMUM OF 3'-0" AT ROOF BEFORE ROOF PENETRATION.
- ALL PLUMBING VENTS WITHIN A 10'-0" RADIUS OF EXHAUST VENTS SHALL BE EXTENDED TO A HEIGHT OF 2'-0" ABOVE EXHAUST VENT CROWN.
- ALL HOT AND COLD WATER PIPING INDICATED TO BE RUN ABOVE FINISHED CEILINGS OR IN EXTERIOR WALLS SHALL BE INSTALLED ON THE CONDITIONED SPACE SIDE OF THE BUILDING INSULATION.
- SLOPES AND INVERT ELEVATIONS OF EXTERIOR SEWERS, MANHOLES, ETC. SHALL BE ESTABLISHED AND VERIFIED BY THE CONTRACTOR BEFORE ANY PIPING IS INSTALLED IN ORDER THAT PROPER SLOPES WILL BE MAINTAINED AND NECESSARY INVERT ELEVATION OBTAINED.
- PROVIDE DEEP SEAL P-RAPS (4" MAX) WITH TRAP SEAL PRIMERS FOR ALL FLOOR DRAINS.

DEMOLITION NOTES:

- EXISTING HVAC PIPING, DUCTWORK AND EQUIPMENT SHOWN IS BASED ON EXISTING AND FIELD OBSERVATION WITHOUT DEMOLITION. DURING DEMOLITION, ANY CLARIFICATION REQUIRED TO DETERMINE SCOPE OF WORK SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT/ENGINEER.
- THE CONTRACTOR SHALL VISIT THE JOB SITE AND THOROUGHLY FAMILIARIZE HIMSELF WITH EXISTING CONDITIONS, PRIOR TO STARTING DEMOLITION.
- DRAWINGS DO NOT SHOW EVERY EXISTING PIPE, CONDUIT, DUCT, ETC. CONTRACTOR SHALL TAKE CARE TO REMOVE ONLY ITEMS REQUIRED TO BE REMOVED AND VERIFY PIPES, DUCTS, ETC. BEFORE REMOVAL.

SHEET METAL GENERAL NOTES

- INSTALL CEILING REGISTERS A MINIMUM OF 12" FROM EXTERIOR WALL.
- PROVIDE A MINIMUM OF THREE TIMES THE FAN DIAMETER OF STRAIGHT DUCTWORK OFF THE SUPPLY AIR DISCHARGE BEFORE ANY TAKEOFFS OR ELBOWS.
- PROVIDE LOCKING QUADRANT VOLUME BALANCING DAMPERS AT ALL BRANCH TAKEOFFS TO CEILING/SIDEWALL SUPPLY AND EXHAUST DEVICES
- SPACE ABOVE CEILING IS TO BE USED AS A RETURN AIR PLENUM WHERE DUCTWORK IS NOT INDICATED ABOVE RETURN AIR GRILLES.
- PROVIDE ACCESS DOORS IN DUCTWORK WHERE INDICATED OR REQUIRED FOR ACCESS TO SYSTEM COMPONENTS INCLUDING THE FOLLOWING: DAMPER MOTORS AND/OR MOTOR OPERATED DAMPERS, FIRE DAMPERS AND SMOKE DAMPERS.
- DUCT DIMENSIONS SHOWN ON DRAWINGS ARE NET FREE INTERIOR, NOT INCLUDING LINING OR INSULATION.

DESIGN CONDITIONS

ROOM DESCRIPTION	INDOOR			OUTDOOR		
	SUMMER	WINTER		SUMMER	WINTER	
	FDB	%RH	FDB	FDB	FWB	FDB
DATA CLOSETS	85	30-40	85	95	61	-1
ELEVATOR MACHINE ROOM	85	--	65	95	61	-1
--	--	--	--	--	--	--
--	--	--	--	--	--	--

PLOTTING NOTES:

- FULL SIZE V.A. "E" SHEET (AS INDICATED)
- HALF SIZE V.A. "D" SHEET (1/2 THE INDICATED SCALE)
- LETTER SIZE: (NOT SCALE)

GENERAL NOTES:

- SCALED DIMENSIONS + ARCHITECTURAL FEATURES MAY NOT BE CORRECT.
- CONTRACTORS + A/E's ARE RESPONSIBLE TO FIELD VERIFY ALL DIMENSIONS WITHIN THE PROJECT AREA.

DEPARTMENT OF VETERANS AFFAIRS
MEDICAL CENTER
1055 Clermont Street
Denver, Colorado, 80220

Drawing Title
**MECHANICAL LEGEND
AND GENERAL NOTES**

Approved Project Director

Project Title
**O/H-T DUMBWAITER
VENTILATION AND ELEVATOR**

Location
DENVER VA MEDICAL CENTER

Date
APRIL 26, 2013

Checked
R. OSTLER

Drawn
P. McDONALD

Project Number
554-13-806

Building Number
BUILDING 1

Drawing Number
MH001

Dwg. 2 of 6

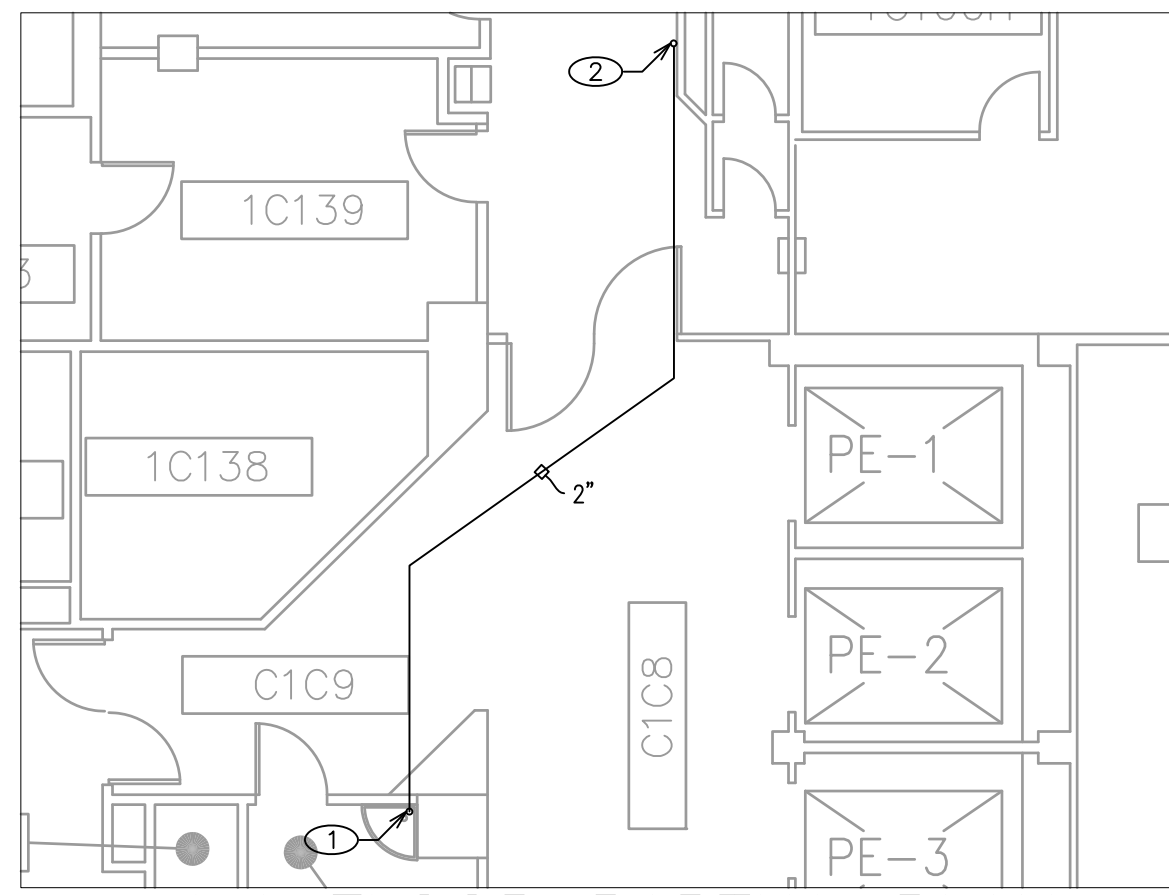
Office of
Construction
and Facilities
Management

Department of
Veterans Affairs

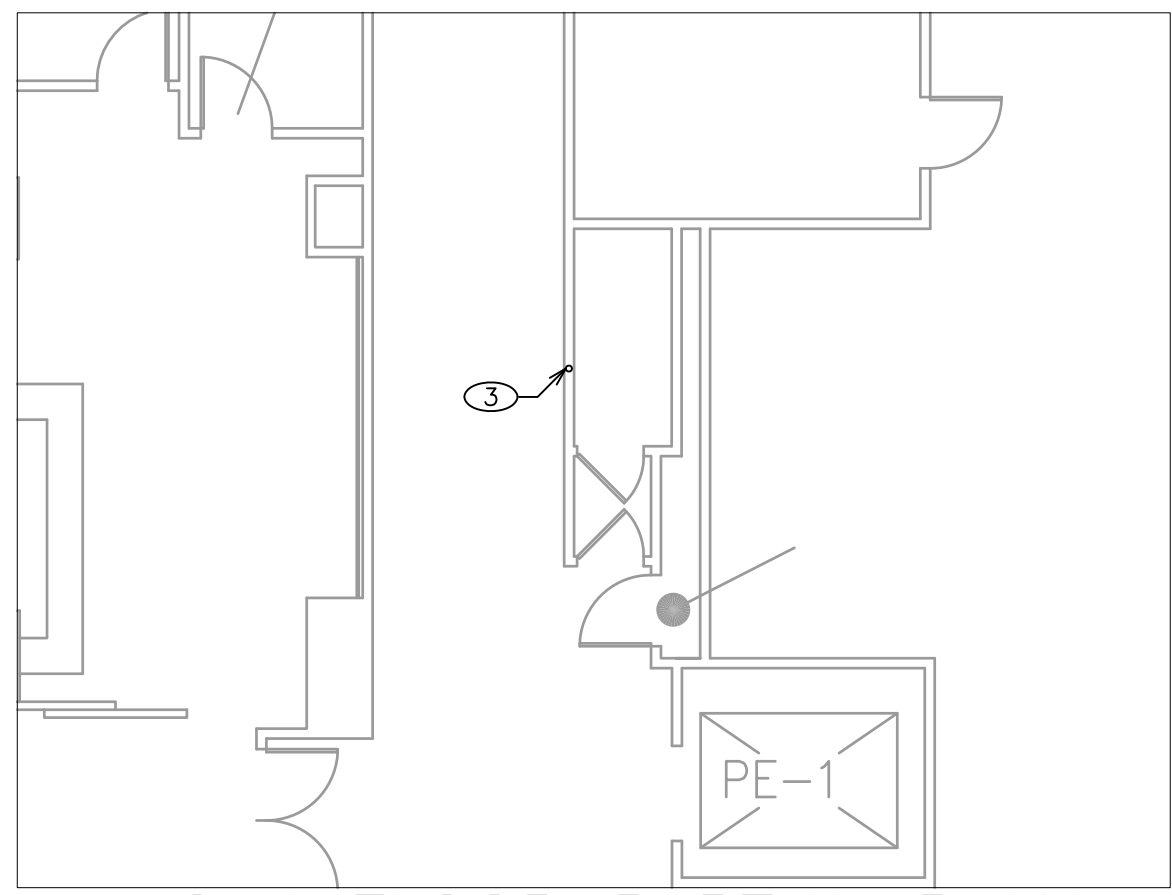
FULLY SPRINKLERED

100% CONSTRUCTION DOCUMENTS

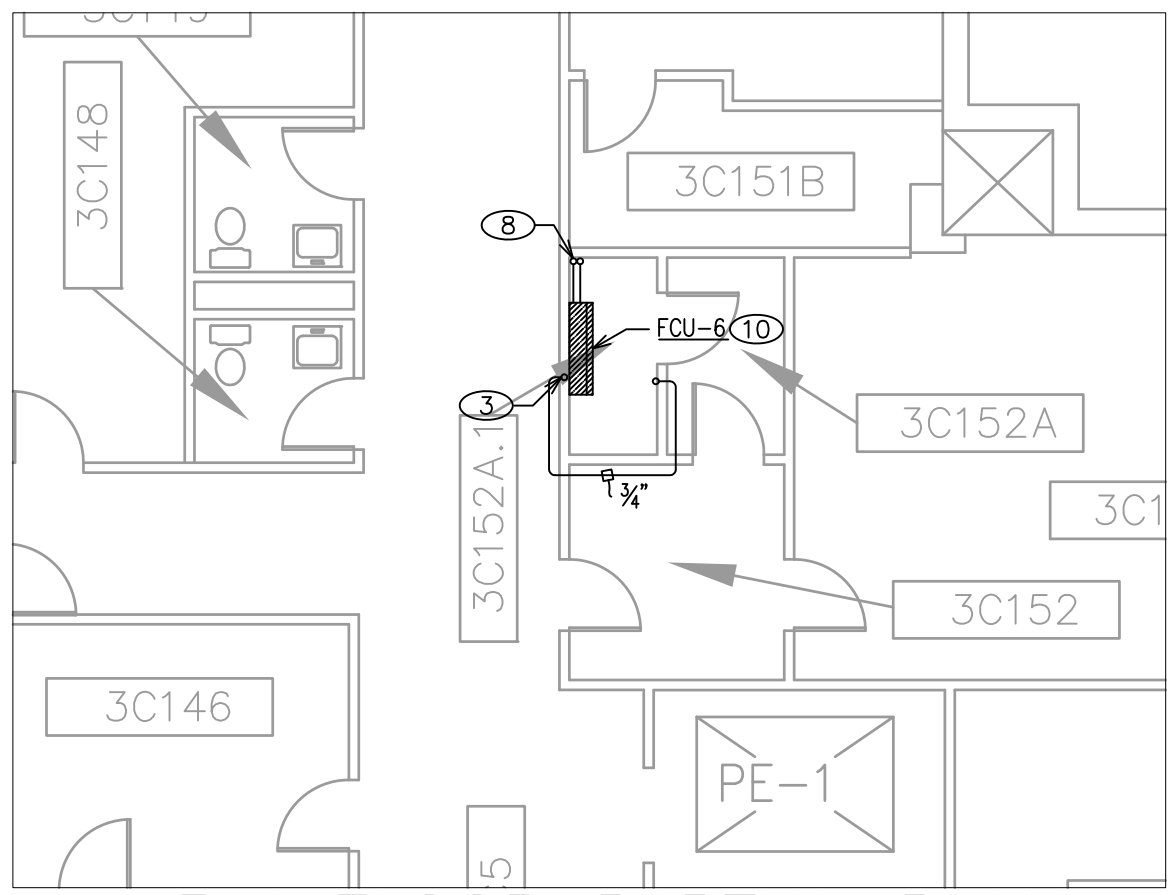
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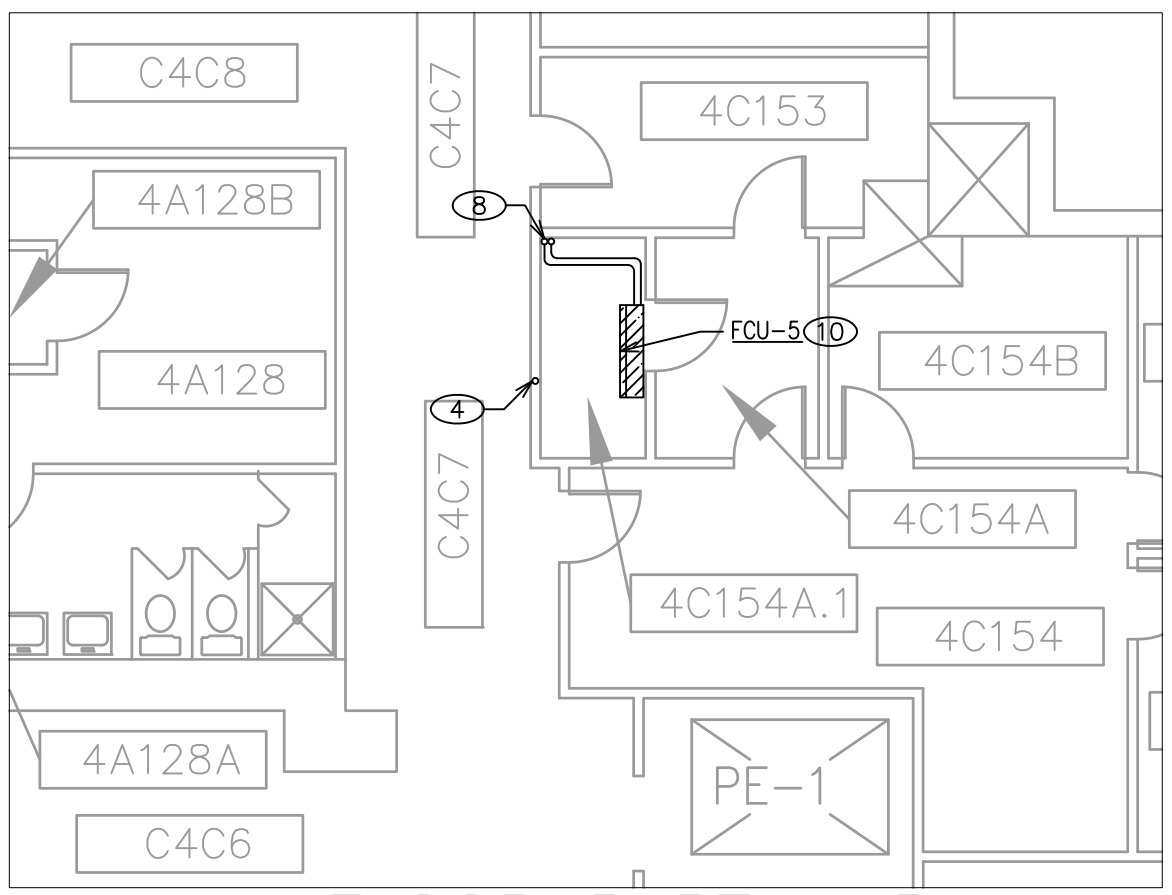
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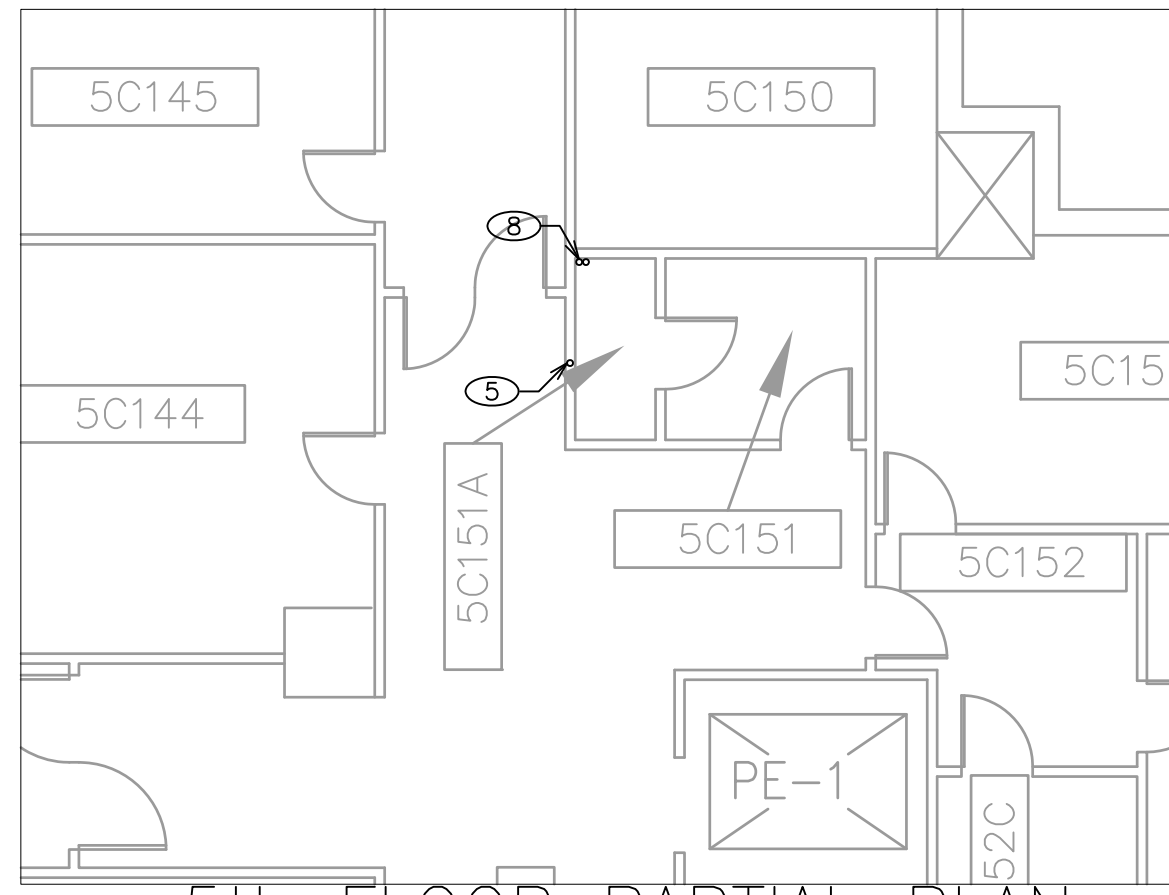
2 MECHANICAL
SCALE: 1/8" = 1'-0"



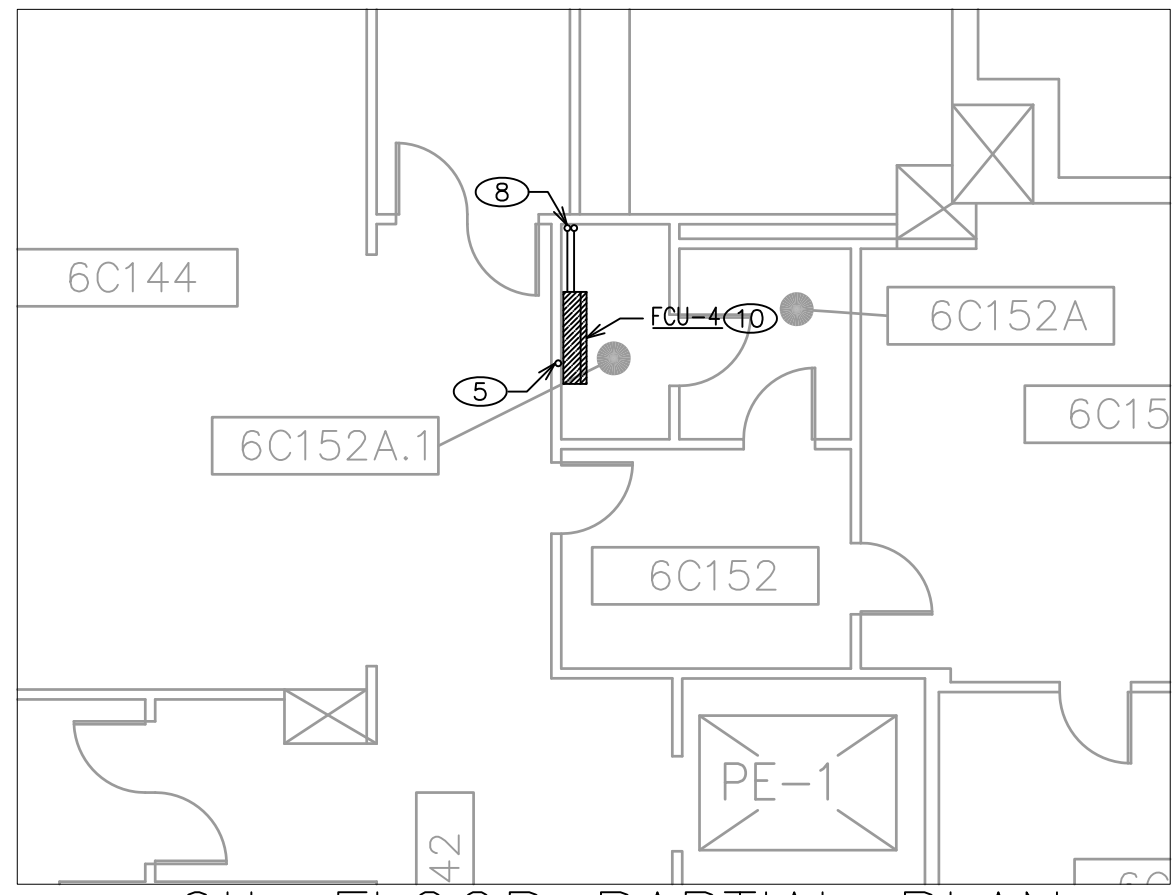
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SCALE: 1/8" = 1'-0"



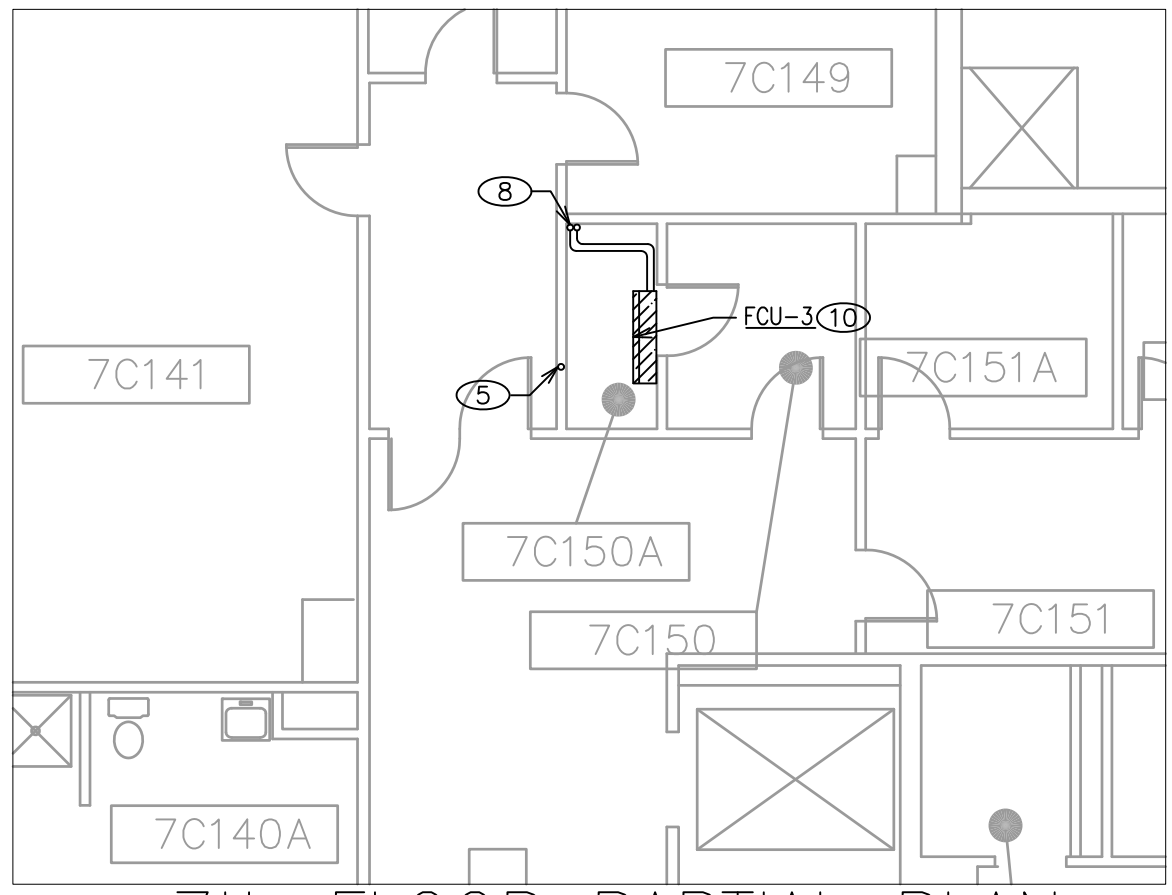
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SCALE: 1/8" = 1'-0"



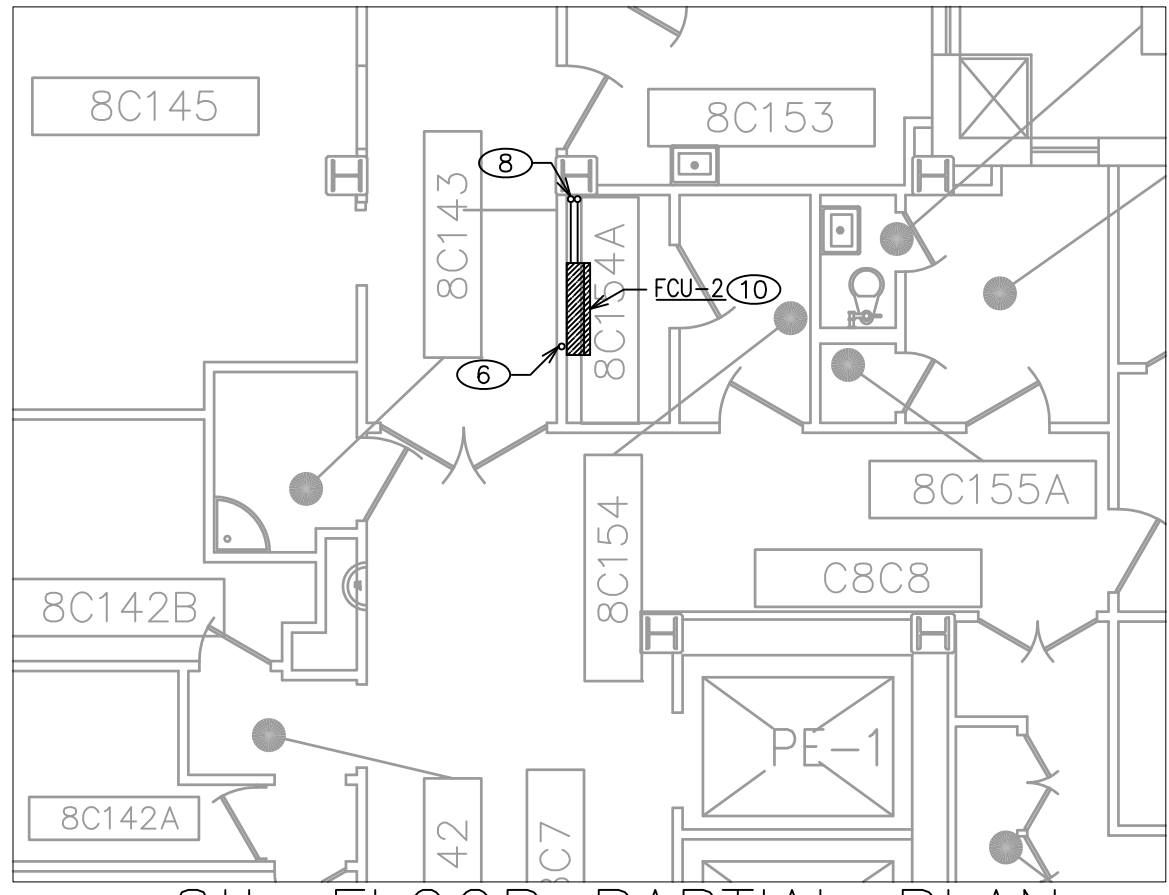
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SCALE: 1/8" = 1'-0"



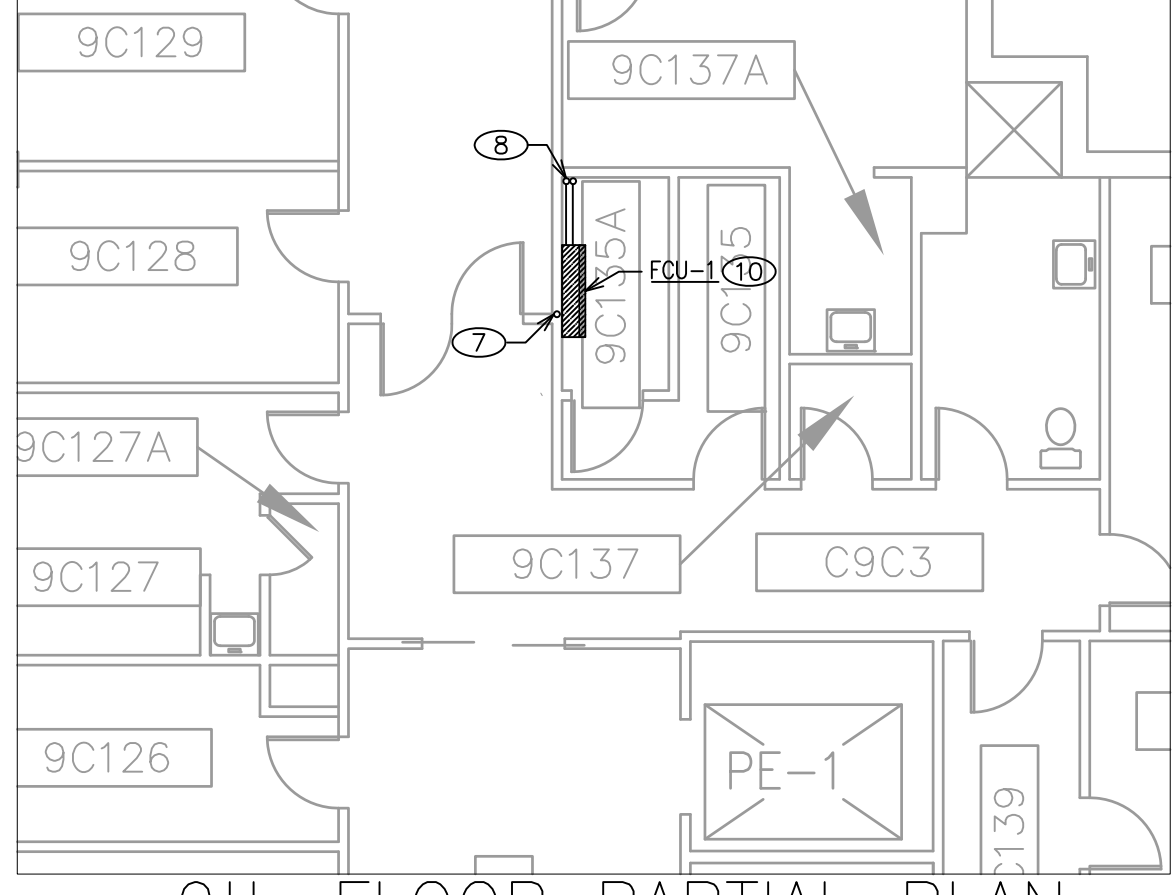
6 MECHANICAL
SCALE: 1/8" = 1'-0"



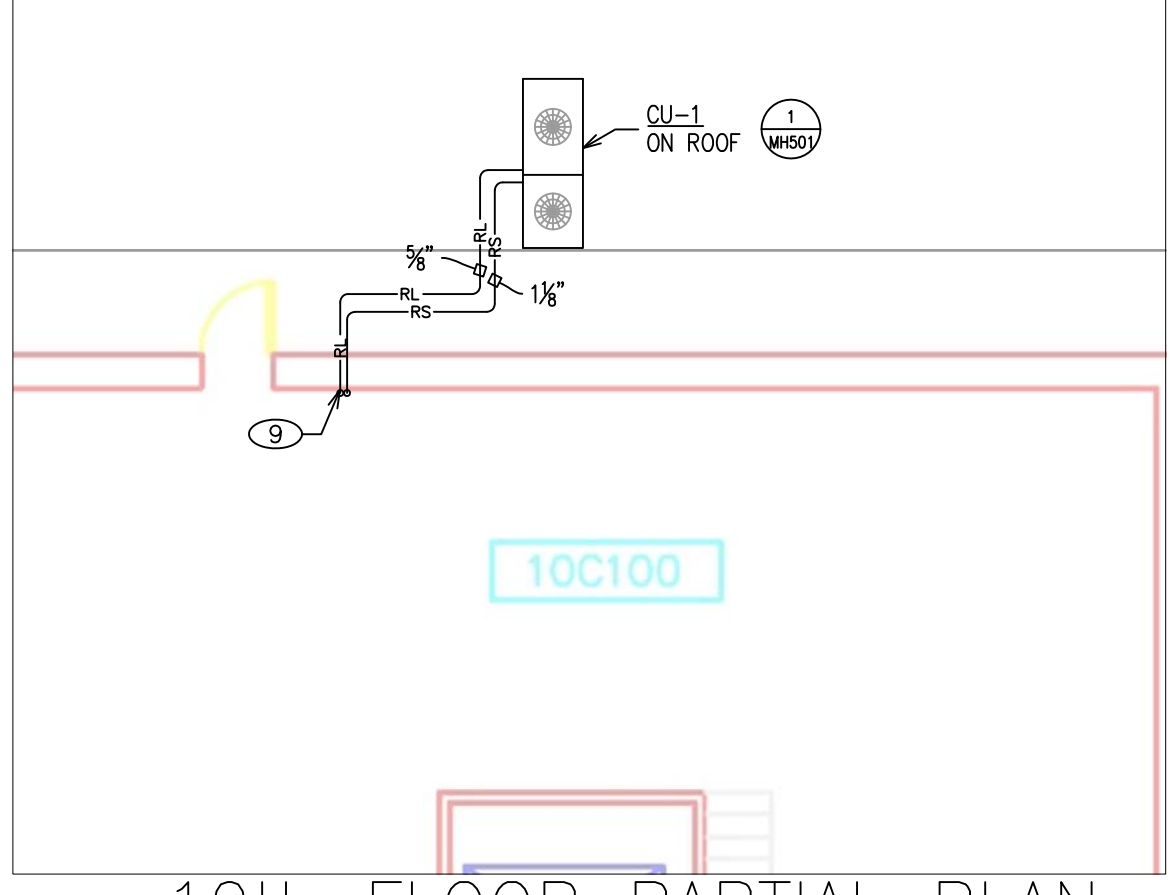
7 MECHANICAL
SCALE: 1/8" = 1'-0"



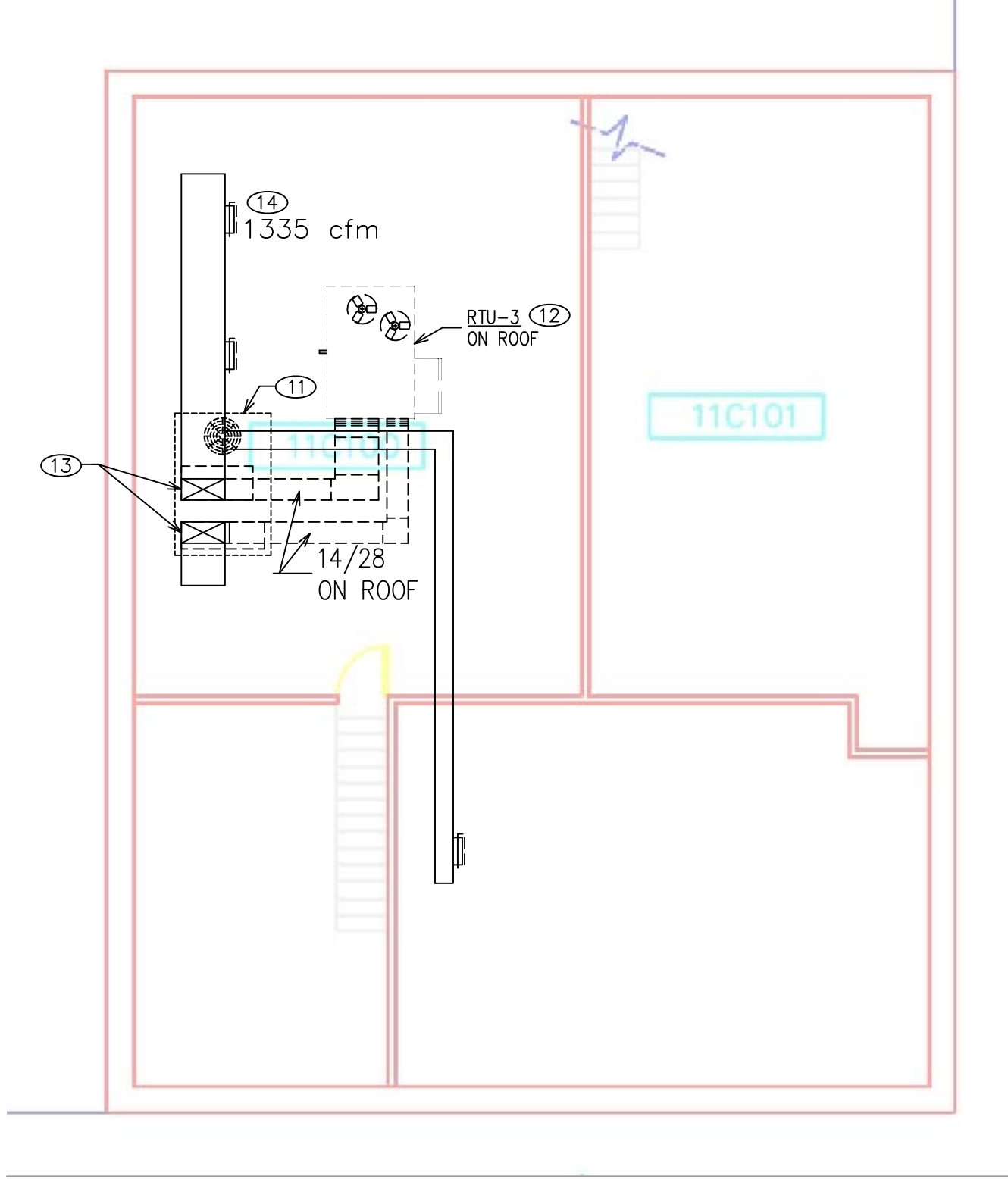
8 MECHANICAL
SCALE: 1/8" = 1'-0"



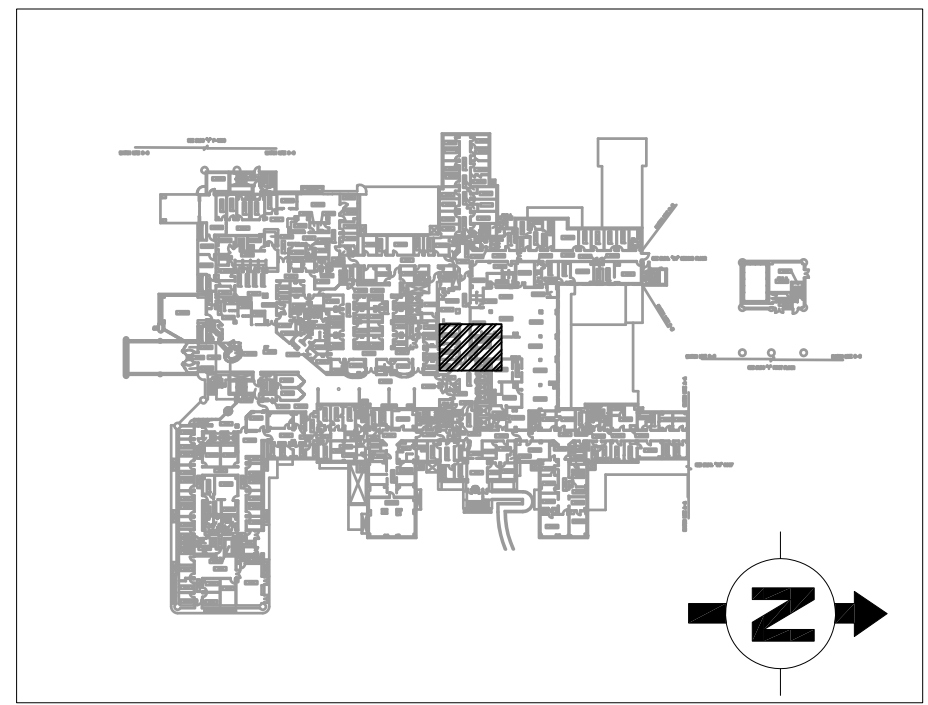
9 MECHANICAL
SCALE: 1/8" = 1'-0"



10 MECHANICAL
SCALE: 1/8" = 1'-0"



11 MECHANICAL
SCALE: 1/8" = 1'-0"



KEY PLAN
SCALE: 1/8" = 1'-0"

SHEET NOTES

1. INSTALL 2" CONDENSATE DRAIN DOWN THROUGH CEILING TO DISCHARGE OVER EXISTING MOP SINK
2. 2" CONDENSATE DRAIN DOWN FROM ABOVE, ROUTE THROUGH CEILING SPACE TO MOP SINK, FIRESTOP ALL PENETRATIONS OF WALLS AND FLOORS
3. INSTALL 2" CONDENSATE DRAIN UP AND DOWN IN WALL OF DUMBWATER SHAFT
4. INSTALL 2" CONDENSATE DRAIN DOWN, 1" CONDENSATE DRAIN UP IN WALL OF DUMBWATER SHAFT
5. INSTALL 1" CONDENSATE DRAIN UP AND DOWN IN WALL OF DUMBWATER SHAFT
6. INSTALL 1" CONDENSATE DRAIN DOWN, 3/4" CONDENSATE DRAIN UP IN WALL OF DUMBWATER SHAFT
7. INSTALL 3/4" CONDENSATE DRAIN DOWN IN WALL DUMBWATER SHAFT
8. INSTALL REFRIGERANT LIQUID AND SUCTION RISER IN CORNER OF DUMBWATER SHAFT, REFER TO RISER DIAGRAM 2/MHS01 FOR REFRIGERANT PIPE SIZING
9. INSTALL REFRIGERANT LIQUID AND SUCTION LINES FROM CONDENSING UNIT ON ROOF THROUGH MECHANICAL ROOM WALL AND DOWN THROUGH FLOOR TO DUMBWATER SHAFT BELOW, SEAL AND FIRESTOP ALL PENETRATIONS
10. INSTALL FAN COIL UNIT HIGH ON WALL/BEAM IN DUMBWATER SHAFT, MOUNT UNIT ON UNI-STRUT SUPPORTS OFF-SET FROM WALL/BEAM TO AVOID EXITING CONDUITS/CABLES, PROVIDE 3/4" CONDENSATE DRAIN FROM UNIT TO CONDENSATE RISER IN WALL
11. EXISTING ROOFTOP HVAC UNIT TO BE REMOVED, PREPARE EXISTING SUPPLY AND RETURN DUCTS FOR CONNECTION TO NEW DUCT, FILL EXISTING ROOFTOP CURB WITH INSULATION AND PROVIDE 24 GA. SHEET METAL WEATHERTIGHT CAP OVER EXISTING CURB
12. SET NEW ROOFTOP UNIT ON NEW UNIT MANUFACTURED PRE-FAB CURB ON EXISTING ROOF
13. CONNECT NEW SUPPLY AND RETURN DUCTS TO EXISTING SUPPLY AND RETURN DUCTS THROUGH ROOF, VERIFY EXACT CONNECTION SIZE IN FIELD PRIOR TO START OF WORK
14. EXISTING SUPPLY REGISTER TO BE BALANCED FOR AIRFLOW SHOWN - TYPICAL OF THREE

PLOTTING NOTES:

1. FULL SIZE V.A. "E" SHEET (AS INDICATED)
2. HALF SIZE V.A. "D" SHEET (1/2 THE INDICATED SCALE)
3. LETTER SIZE: (NOT SCALE)

GENERAL NOTES:

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2. CONTRACTORS + A/E's ARE RESPONSIBLE TO FIELD VERIFY ALL DIMENSIONS WITHIN THE PROJECT AREA.

DEPARTMENT OF VETERANS AFFAIRS
MEDICAL CENTER
1055 Clermont Street
Denver, Colorado, 80220

Drawing Title
MECHANICAL FLOOR PLAN

Approved Project Director

Project Title
OH-T DUMBWATER
VENTILATION AND ELEVATOR

Location
DENVER VA MEDICAL CENTER

Date
APRIL 26, 2013

Checked
R. OSTLER

Drawn
P. McDONALD

Project Number
554-13-806

Building Number
BUILDING 1

Drawing Number
MH101

Dwg 3 of 6

Office of
Construction
and Facilities
Management



FULLY SPRINKLERED

100% CONSTRUCTION DOCUMENTS

5. PROVIDE RETURN AIR DUCT SMOKE DETECTOR
6. PROVIDE RETURN AIR AND OUTDOOR AIR CO2 DETECTORS AND CONTROL FOR OUTSIDE AIR

CU-1	MITSUBISHI	PUHY-P168TSJMU	R-410a	12.6	168.0	95	1 @ 12/15 1 @ 17/25	480V=3ø	2	8% to 100%	950	0	X
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1. XXX
2. XXX
3. XXX

WA FORM 08-6231

Approved: Project Director

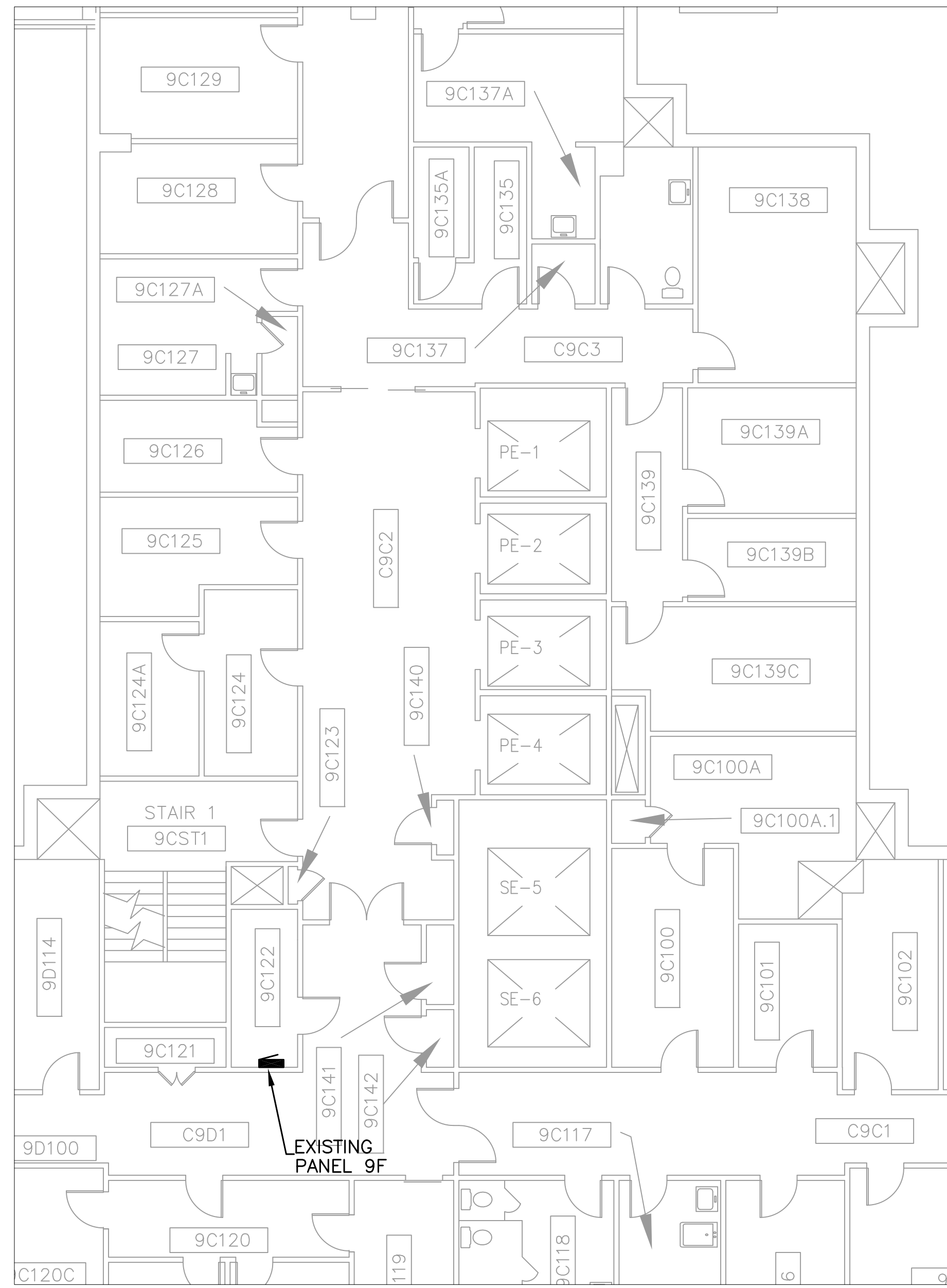
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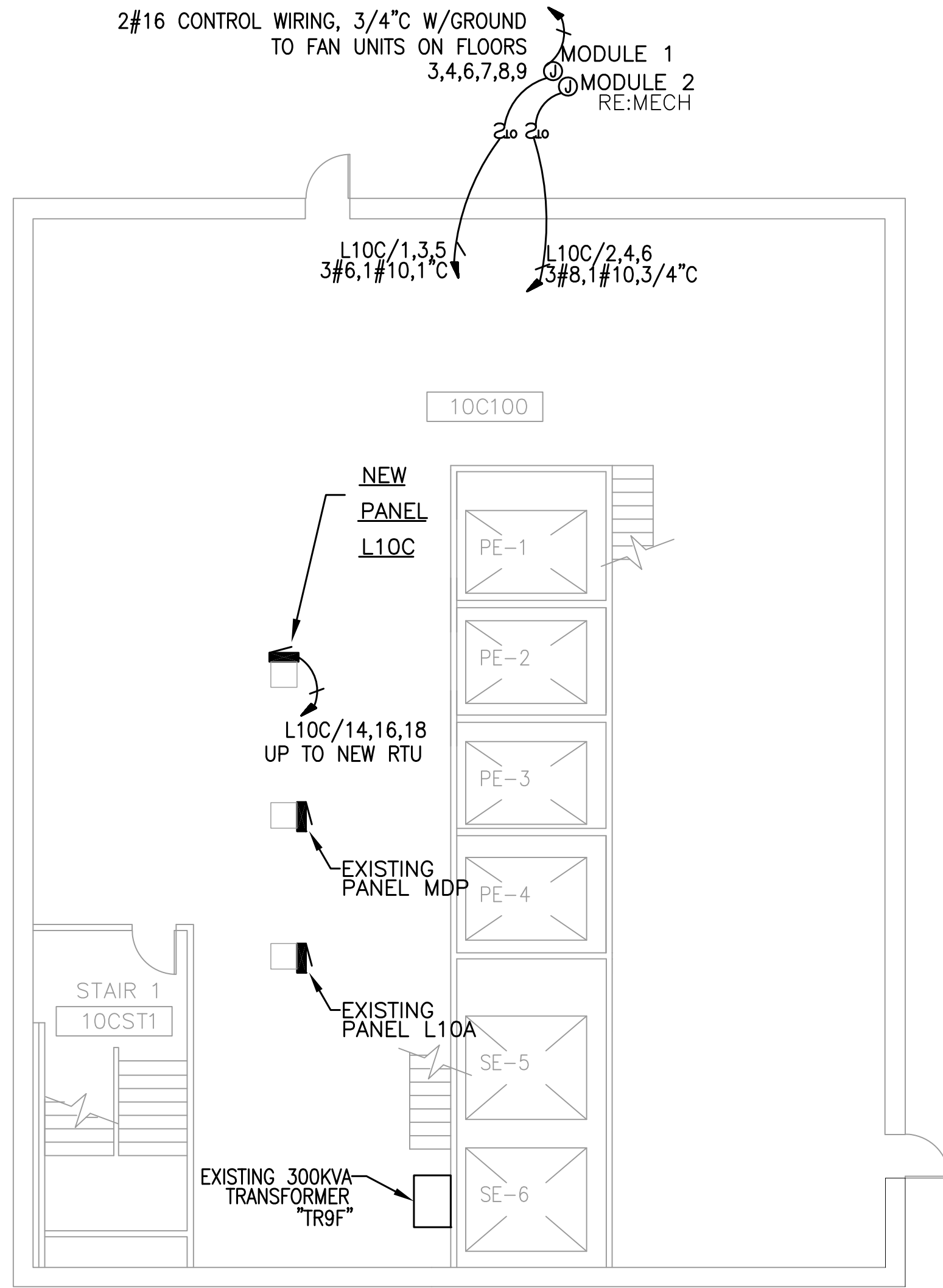
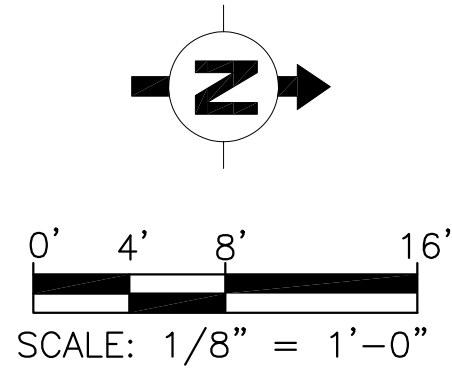
Department of
Veterans Affairs

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

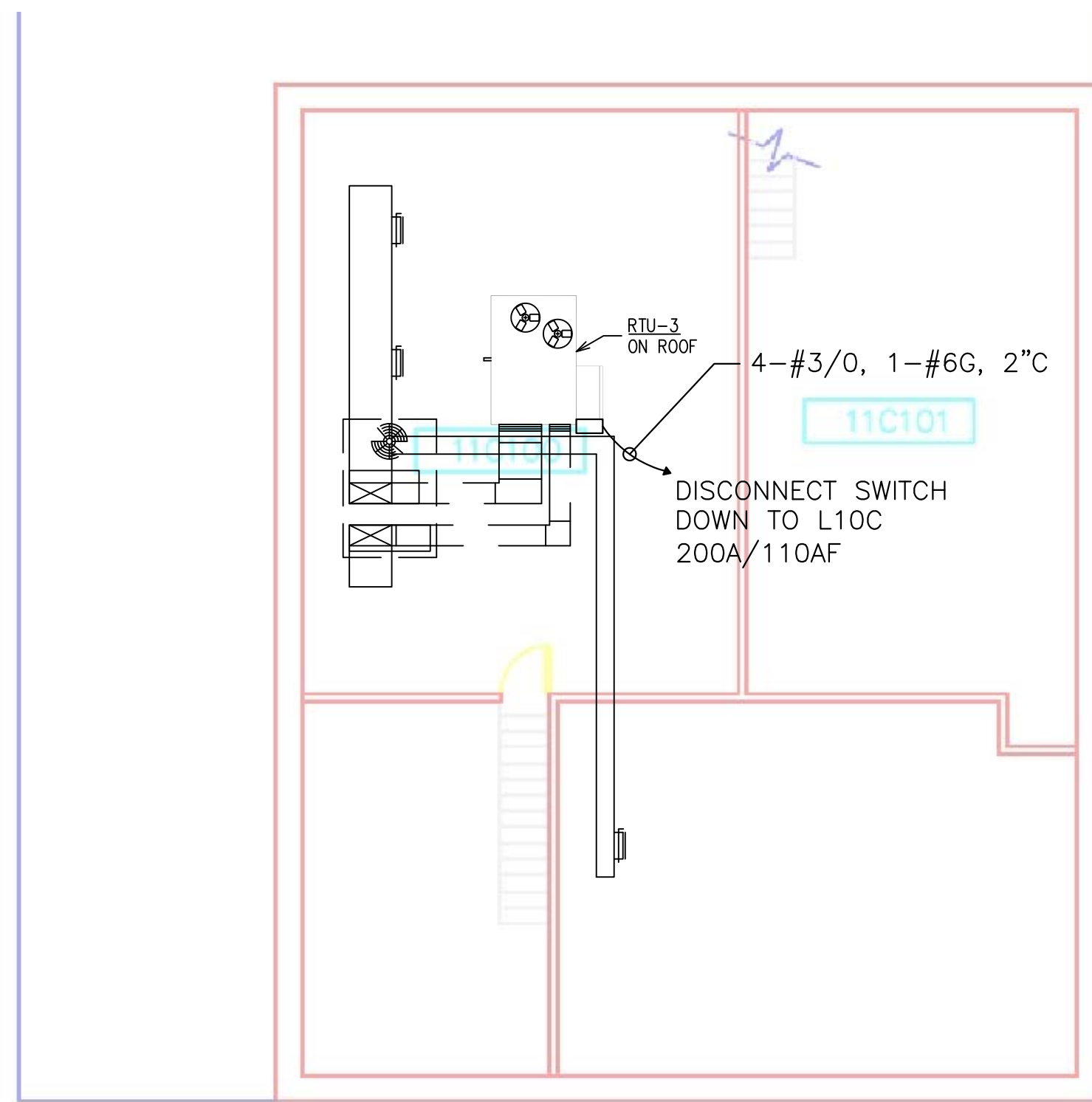
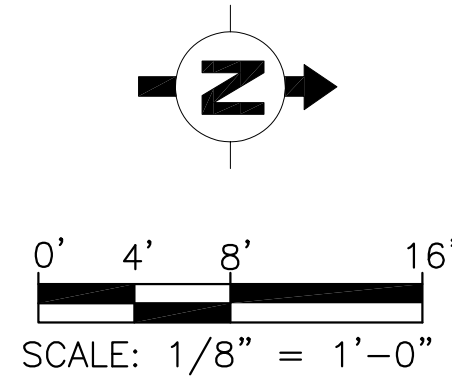
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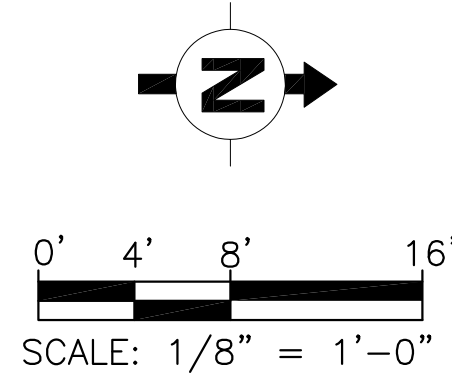
9th FLOOR POWER PLAN
EP100



10th FLOOR POWER PLAN
EP100



11th FLOOR POWER PLAN
EP100



Branch Panel: **9F①**

Location: BUILDING 1 9TH FLOOR C WING.

Manufacturer: ITE GOULD TYPE CDP

Mounting: SURFACE

Volts: 120/208 WYE

Phases: 3

Wires: 4

A.I.C. Rating: -- AIC

Mains Type: MLO

Mains Rating: 800 A

MCB Rating: NONE

Notes:

Circuit Number	Circuit Description	Trip	Poles	Poles	Circuit Description	Circuit Number
1	SPARE ②	175	3	3	PANEL D	4
3		/	/	/		6
5		/	/	/		8
7	PANEL C	150	3	3	PANEL PP	10
9		/	/	/		12
11		/	/	/		14
13	PANEL A	175	3	3	PANEL B	16
15		/	/	/		18
17		/	/	/		20
19	PANEL PE	100	3	3	CHILLER DRUG TRIMNT	22
21		/	/	/	(OFF)	24
23		/	/	/		26
25	DISCONNECT SQ D	100	2	3	SPARE	28
27		/	/	/		30
29	SPACE	--	--	--		32

Legend:

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals
LIGHTING	--	125%	--	Total Conn. Load: -- VA
RECEPTACLE	--	100%	--	
RECEPTACLE	--	50%	--	Total Est. Demand: -- VA
MOTOR	--	100%	--	Total Conn.: -- A
LARGEST MOTOR	--	25%	--	Total Est. Demand: -- A
MISCELLANEOUS	--	100%	--	
KITCHEN	--	100%	--	

Notes:

○ PANEL KEYNOTES:

- PANEL 9F IN THE FIELD OR LL9F PER THE ONE LINE IS AN EXISTING PANEL BOARD LOCATED IN 9TH FLOOR ZONE C.
- RE-USE 3PH CIRCUIT#1,3,5 SPARE BREAKER FOR NEW PANEL LOCATED IN THE 10TH FLOOR.

Branch Panel: L10C③		Location: BUILDING 1 10TH FLOOR C WING.		Volts: 120/208 WYE	A.I.C. Rating: 10KAIC	
Manufacturer: PER VA		Phases: 3		Mains Type: MLO		
Mounting: SURFACE		Wires: 4		Mains Rating: 200 A		
				MCB Rating: NONE		
Notes:						
Circuit Number	Circuit Description	Trip	Poles	Poles	Circuit Description	Circuit Number
1	COOLING UNIT-MODULE 1	50	3	3	COOLING UNIT-MODULE 2	2
3		/	/	/		4
5		/	/	/		6
7	SPARE	30	3	3		8
9		/	/	/		10
11		/	/	/		12
13		/	3	110	RTU-3	14
15		/	/	/		16
17		/	/	/		18
Legend:						
Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals		
LIGHTING	=	125%	=	Total Conn. Load: = VA		
RECEPTACLE	=	100%	=	Total Est. Demand: = VA		
RECEPTACLE	=	50%	=	Total Conn.: = A		
MOTOR	=	100%	=	Total Est. Demand: = A		
LARGEST MOTOR	=	25%	=			
MISCELLANEOUS	=	100%	=			
KITCHEN	=	100%	=			
Notes:						

○ PANEL KEYNOTES:

- PROVIDE NEW PANEL BOARD "L10C" ON THE 10TH FLOOR. PANEL L10C TO BE SURFACE MOUNTED CLOSER TO THE NEW MECHANICAL EQUIPMENT.
- PANEL SIZE WILL BE A 200 MLO FED FROM EXISTING PANEL 9F CIRCUIT 1,3,5 BREAKER 175A

ELECTRICAL REQUIREMENTS

ELECTRICAL REQUIREMENTS FOR MECHANICAL EQUIPMENT:

SYSTEM: PUHY-P168TSKMU-A (-BS)
EACH INDIVIDUAL MODULE REQUIRES A SEPARATE ELECTRICAL CONNECTION

POWER: 208V, 3-PHASE, 60HZ

COOLING CURRENT: 39.4-35.7 RLA

MIN CIRC AMPACITY: MODULE 1-34MCA
MODULE 2-25MCA

RECOMMENDED FUSE: MODULE 1-35A

/BREAKER SIZE: MODULE 2-30A

MAXIMUM FUSE SIZE: MODULE 1-50A
MODULE 2-35A

NOTE:
1. ALL ELECTRIC CONTROL WIRING FOR EXISTING RTU-3 WILL BE REMOVED AND RECONNECTED FOR NEW RTU.
2. COORDINATE WITH INTERNAL STAFF WHILE PERFORMING ELECTRICAL WORK THROUGH COR.

PLOTTING NOTES:

- FULL SIZE V.A. "E" SHEET (AS INDICATED)
- HALF SIZE V.A. "D" SHEET (1/2 THE INDICATED SCALE)
- LETTER SIZE: (NOT SCALE)

GENERAL NOTES:

- SCALED DIMENSIONS + ARCHITECTURAL FEATURES MAY NOT BE CORRECT.
- CONTRACTORS + A/E's ARE RESPONSIBLE TO FIELD VERIFY ALL DIMENSIONS WITHIN THE PROJECT AREA.

DEPARTMENT OF VETERANS AFFAIRS
MEDICAL CENTER
1055 Clermont Street
Denver, Colorado, 80220

Drawing Title
POWER PLAN

Approved Project Director

Project Title
**O&T DUMBWATER
VENTILATION AND ELEVATOR**

Location
DENVER VA MEDICAL CENTER
Date
APRIL 26, 2013
Checked
R. OSTLER
Drawn
D. SILVA

Project Number
554-13-806
Building Number
BUILDING 1
Drawing Number
EPI00
Dwg. 5 of 6

Office of
Construction
and Facilities
Management



one eighth inch = one foot
0 4 8 16
one quarter inch = one foot
0 4 8
one eighth inch = one foot
0 4 8 16
three eighths inch = one foot
0 4 8 12 16
one half inch = one foot
0 4 8 12 16
three quarters inch = one foot
0 4 8 12 16
one inch = one foot
0 4 8 12 16
one and one half inches = one foot
0 4 8 12 16 20
two inches = one foot
0 4 8 12 16 20 24
three inches = one foot
0 4 8 12 16 20 24 28 32

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VA FORM 08-6231

PLOTTING NOTES:

1. FULL SIZE V.A. "E" SHEET (AS INDICATED)
2. HALF SIZE V.A. "D" SHEET (1/2 THE INDICATED SCALE)
3. LETTER SIZE: (NOT SCALE)

GENERAL NOTES:

1. SCALED DIMENSIONS + ARCHITECTURAL FEATURES MAY NOT BE CORRECT.
2. CONTRACTORS + A/E's ARE RESPONSIBLE TO FIELD VERIFY ALL DIMENSIONS WITHIN THE PROJECT AREA.

DEPARTMENT OF VETERANS AFFAIRS
MEDICAL CENTER
1055 Clermont Street
Denver, Colorado, 80220

Drawing Title

PARTIAL ONE-LINE DIAGRAM

Approved Project Director

Project Title

O+T DUMBWAITER
VENTILATION AND ELEVATOR

Location
DENVER VA MEDICAL CENTER

Date
APRIL 26, 2013

Checked
R. OSTLER

Drawn
D. SILVA

Project Number
554-13-806

Building Number
BUILDING 1

Drawing Number
EP400

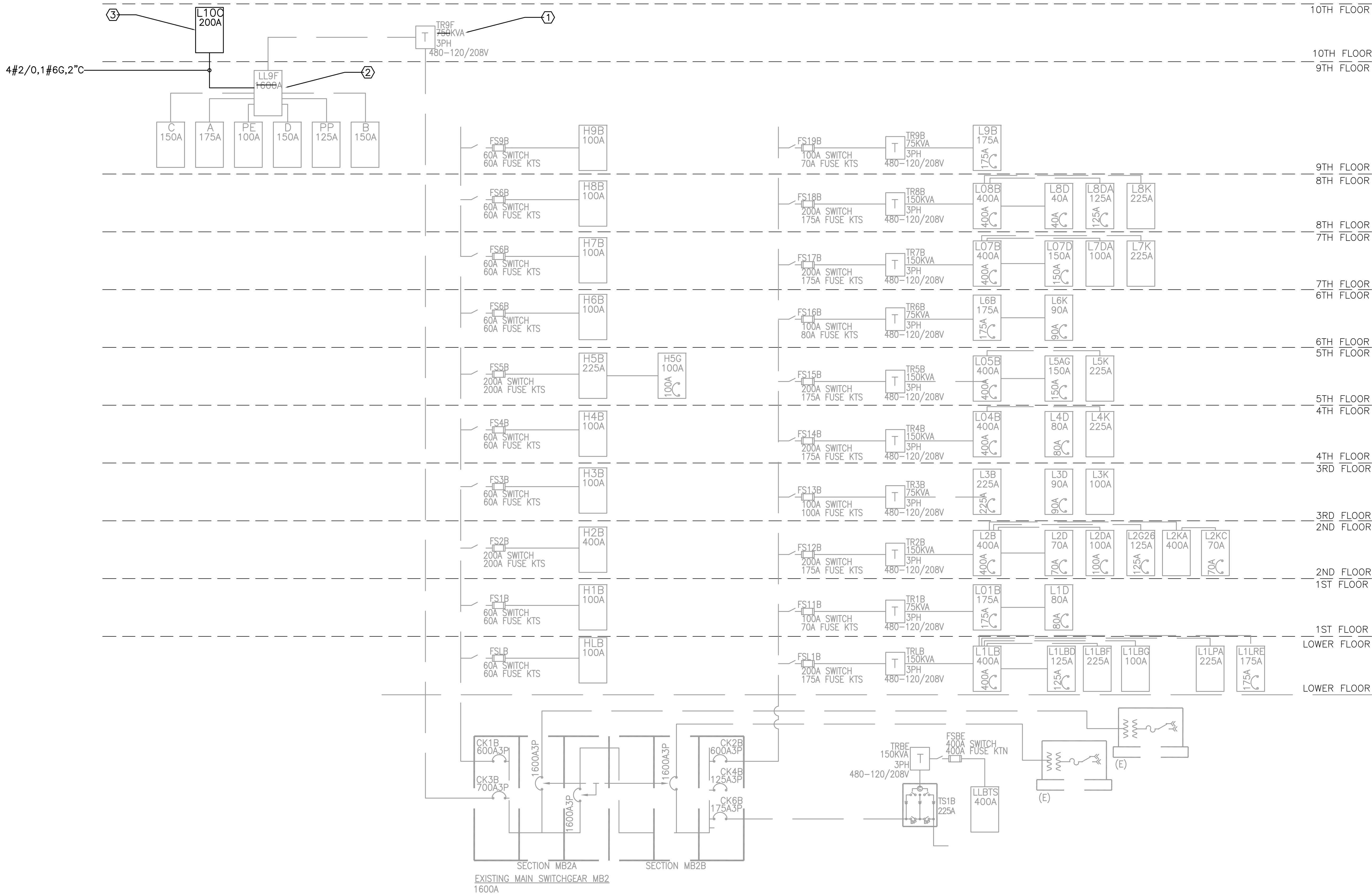
Dwg. 6 of 6

Office of
Construction
and Facilities
Management



100% CONSTRUCTION DOCUMENTS

FULLY SPRINKLERED



ELECTRICAL NOTES:

1. ELECTRICAL ONE-LINE BASED ON DRAWINGS FROM PROJECT 554.019 AUGUST 30 1982 "CLINICAL SUPPORT WING, AIR CONDITIONING AND SAFETY AND FIRE DEFICIENCIES".
2. EXISTING EQUIPMENT SHADED IN A LIGHTER TONE. NEW EQUIPMENT SHOWN IN A DARKER SHADE. ELECTRICAL ONE LINE IS EXISTING UNLESS NOTED OTHERWISE.

PANEL KEYNOTES:

1. FROM FIELD OBSERVATIONS; TRANSFORMER "TR9F" IS A 300KVA GE QL DRY TYPE TRANSFORMER.
2. FROM FIELD OBSERVATIONS; PANEL BOARD "LL9F" IS CALLED "9F" AND IT IS AN 800A ITE CDP TYPE PANEL.
3. PROVIDE NEW PANEL BOARD "L10C" ON THE 10TH FLOOR. USE EXISTING 175A/3P SPARE BREAKER IN PANEL 9F.