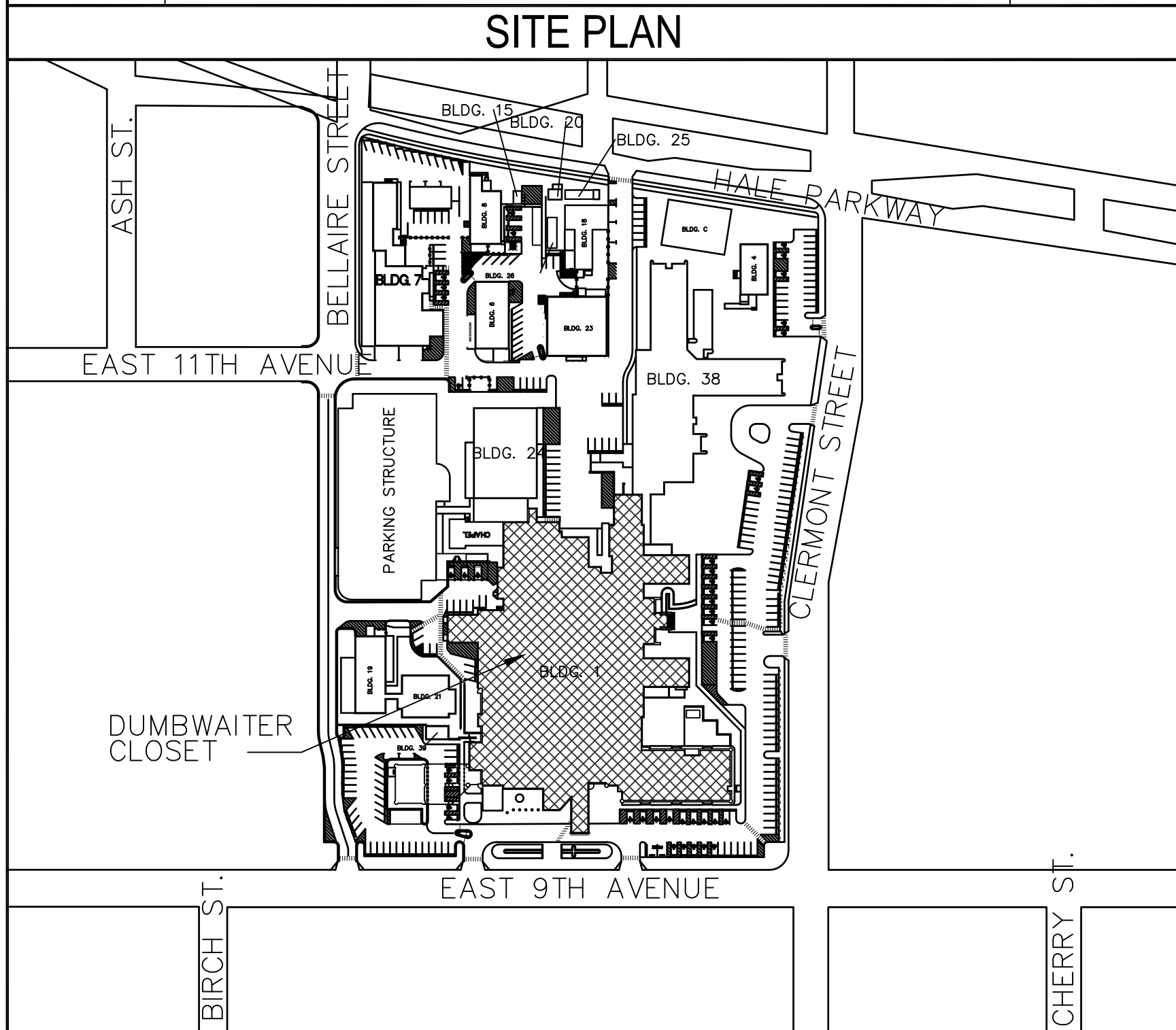




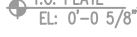
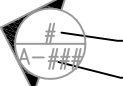

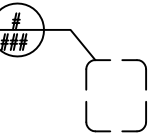








ARCHITECTURE ENGINEERING CONSTRUCTION

OI&T DUMBWAITER VENTILATION AND ELEVATOR

PROJECT 554-13-806

INDEX OF DRAWINGS		
DWG NO.	DRAWING TITLE	SHEET OF #
GI001	COVER SHEET AND SHEET INDEX	1 OF 6
MECHANICAL		
MH001	MECHANICAL LEGEND AND GENERAL NOTES	2 OF 6
MH101	MECHANICAL FLOOR PLAN	3 OF 6
MH501	MECHANICAL SCHEDULE AND DETAILS	4 OF 6
ELECTRICAL		
EP100	POWER PLAN	5 OF 6
EP400	PARTIAL ONE-LINE	6 OF 6



GRAPHIC SYMBOLS	
 DWG TITLE LINE #2 DWG TITLE LINE #1 SCALE 1:100 DRAWING TITLE	 INTERIOR ELEVATION DETAIL NUMBER SHEET NUMBER ELEVATION NUMBER
 ELEVATION TARGET	 BUILDING ELEVATION DRAWING NUMBER SHEET NUMBER CUT LINE THROUGH BUILDING
 WALL SECTION DRAWING NUMBER SHEET NUMBER CUTLINE CROSSES WALL DETAIL	 ENLARGED PLAN/ DETAIL REFERENCE
 DRAWING NUMBER SHEET NUMBER CUT LINE CROSSES ITEM	 WALL TYPE TAG
 ROOM TAG ROOM NUMBER	 DOOR TAG
 NORTH ARROW GRAPHIC	 FLAGNOTE STAGED
	 RCP MATERIAL AND HEIGHT SECURITY WALL
	 2-HR FIRE RATED WALL

GENERAL NOTES	
1.	CONTRACTOR ENCOURAGED TO VISIT ALL ARES OF WORK, INCLUDING WALKING THE SITE, MEASURING EXISTING DIMENSIONS AND OBSERVING EXISTING CONDITIONS BEFORE BIDDING WORK, ORDERING MATERIALS, AND/OR STARTING ANY CONSTRUCTION WORK.
2.	CONTRACTOR TO RECYCLE REMOVED MATERIALS WHENEVER POSSIBLE.
3.	CONTRACTOR TO COMPLETE WORK DURING BUSINESS HOURS WHENEVER POSSIBLE. THE WORK IS NOT TO INTERFERE WITH FACILITY OPERATIONS. THOSE AREAS THAT NEED TO BE COMPLETED AFTER HOURS TO BE COORDINATED WITH COR.
4.	CONTRACTOR TO CLEAN ALL AREAS OF WORK UPON COMPLETION.
5.	THERE SHALL BE NO FOOD OR DRINK PRESENT DURING THE WORK, WHILE WORKING IN THE IT CLOSETS.
6.	DO NOT USE RED MARKED (EMERGENCY) POWER OUTLETS FOR POWER TO THE FAN COIL UNITS. 110 OUTLETS MAY BE USED.
7.	UPON COMPLETION OF WORK, THERE SHALL NOT BE ANY WATER PRESENT, CONDENSATION OR OTHERWISE, AND NO "NOISE" ON THE DATA LINES.
8.	CONTRACTOR MUST BE ESCORTED AT ALL TIMES WHEN WORKING IN IT CLOSETS.
9.	WHEN PLACING ROOFTOP UNITS, ALL DAMAGE TO THE ROOFING SHALL BE REPAIRED BY A ROOFER CERTIFIED IN REPAIR OF WELDED MEMBRANE ROOFING. ROOFER TO BE APPROVED BY VA, PRIOR TO WORK.
10.	ROOFTOP HVAC EQUIPMENT REMOVAL AND SETTING: THE CONTRACTOR AT HIS OPTION, AND UPON REVIEW AND APPROVAL OF THE COR, SHALL DETERMINE THE MOST ECONOMICAL AND EFFICIENT METHOD FOR THE REMOVAL AND SETTING OF HVAC EQUIPMENT ON THE MEDICAL CENTER ROOF. REMOVAL OF THE EXISTING ROOFTOP HVAC UNIT ON THE 11TH FLOOR ROOF, SETTING THE NEW ROOFTOP UNIT ON THE 11TH FLOOR ROOF, AND SETTING OF NEW AIR COOLED CONDENSING UNIT ON THE 9TH FLOOR ROOF SHALL BE ACCOMPLISHED DURING A SINGLE LIFTING SESSION. USE OF TRUCK MOUNTED OR AERIAL CRANE WILL BE ACCEPTABLE OR OTHER METHOD AS APPROVED BY COR. CONTRACTOR WILL BE REQUIRED TO COORDINATE THE EQUIPMENT SETTING WITH THE COR. REMOVAL AND SETTING SHOULD BE ANTICIPATED TO TAKE PLACE OVER A WEEKEND.
11.	X-RAY SLAB AT LOCATIONS OF ALL NEW FLOOR PENETRATIONS PRIOR TO CORE DRILLING. AVOID CUTTING REBAR. NO PENETRATIONS ARE ALLOWED THROUGH THE EXISTING THICKENED SLAB WHICH EXTEND APPROXIMATELY SIX FEET FROM EDGE OF COLUMNS. PIPING FOR FIXTURES LOCATED ABOVE THE THICKENED SLAB SHALL BE OFFSET ABOVE FLOOR IN WALL SPACE OR BELOW CASEWORK TO AVOID STRUCTURAL SLAB PENETRATION.

FIRE PROTECTION NOTES:	
1.	EXISTING SPRINKLER HEADS TO REMAIN.
2.	PROVIDE FIRESTOPPING MATERIAL IN ABANDONED PENETRATIONS ABOVE CEILING GRID TO AREAS SPECIFIED ON DRAWINGS AND OTHER AREAS AS DEEMED NECESSARY.
3.	ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH LOCAL CODES, ORDINANCES, REGULATIONS AND NFPA 13.
INFECTION CONTROL RISK ASSESSMENT	
- LOW RISK LEVEL	
INFECTION CONTROL RISK ASSESSMENT NOTES:	
* OBTAIN INFECTION CONTROL PERMIT BEFORE CONSTRUCTION BEGINS. ISOLATE HVAC SYSTEM IN AREA WHERE WORK IS BEING DONE TO PREVENT CONTAMINATION OF THE DUCT SYSTEM. COMPLETE ALL CRITICAL BARRIERS OR IMPLEMENT CONTROL CUBE METHOD BEFORE CONSTRUCTION BEGINS. MAINTAIN NEGATIVE AIR PRESSURE WITHIN WORK SITE UTILIZING HEPA EQUIPPED AIR FILTRATION UNITS. SEAL HOLES, PIPES, CONDUITS, AND PUNCTURES APPROPRIATELY. DO NOT REMOVE BARRIERS FROM WORK AREA UNTIL COMPLETED PROJECT IS INSPECTED BY THE OWNER'S SAFETY DEPARTMENT AND THOROUGHLY CLEANED BY THE OWNER'S ENVIRONMENTAL SERVICES DEPARTMENT. REMOVE BARRIER MATERIAL CAREFULLY TO MINIMIZE SPREADING OF DIRT AND DEBRIS ASSOCIATED WITH CONSTRUCTION. CONTAIN CONSTRUCTION WASTE BEFORE TRANSPORT IN TIGHTLY COVERED CONTAINERS. COVER TRANSPORT RECEPTACLES OR CARTS. TAPE COVERING UNLESS SOLID LID. VACUUM WORK AREA WITH HEPA FILTERED VACUUMS. WET MOP AREA WITH DISINFECTANT. REMOVE ISOLATION OF HVAC SYSTEM IN AREAS WHERE WORK IS BEING PERFORMED.	
INTERIM LIFE SAFETY MEASURES NOTES (ILSM):	
IF APPLICABLE: HOT WORK PERMITS. PERMITS MUST BE OBTAINED 24 HOURS PRIOR TO COMMENCEMENT OF WORK, WHENEVER POSSIBLE. ORIGINAL PERMIT TO BE POSTED WHERE WORK IS BEING PERFORMED; CONTRACTOR MUST RETURN PERMIT TO SAFETY OFFICE WHEN WORK IS COMPLETED. FIRE WATCH. CONTRACTOR MUST INITIAL, DATE AND TIME EVERY 30 MINUTES AFTER HOT WORK HAS STARTED. CONTRACTOR TO PROVIDE WARNING SIGNAGE AND DIRECTIONAL SIGNAGE THAT SHALL BE POSTED IN CONSTRUCTION AREA WHILE WORK IS PERFORMED. CONFINED SPACE. CONTRACTOR TO OBTAIN CONFINED SPACE PERMIT PRIOR TO ENTRY INTO MECHANICAL CHASE. ENSURE IT IS APPROVED BY VA SAFETY DEPARTMENT AND COR. CONTRACTOR TO ENSURE THAT ALL EXISTING MEANS OF EGRESS ARE MAINTAINED THROUGHOUT CONSTRUCTION.	

FIRE PROTECTION NOTES:	
<div>1. EXISTING SPRINKLER HEADS TO REMAIN.</div> <div>2. PROVIDE FIRESTOPPING MATERIAL IN ABANDONED PENETRATIONS ABOVE CEILING GRID TO AREAS SPECIFIED ON DRAWINGS AND OTHER AREAS AS DEEMED NECESSARY.</div> <div>3. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH LOCAL CODES, ORDINANCES, REGULATIONS AND NFPA 13.</div>	

35% SCHEMATIC DESIGN	3/13/13
95% DESIGN DOCUMENTS	4/10/13
100% CONSTRUCTION DOCUMENTS	4/26/13
Revisions:	Date

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 COVER SHEET AND SHEET INDEX
Approved Project Director

Project Title OI&T DUMBWAITER VENTILATION AND ELEVATOR	Project Number 554-13-806
Location DENVER VA MEDICAL CENTER	Building Number BUILDING 1
Date APRIL 26, 2013	Checked R. OSTLER
Drawn A. KEOUGH	Drawing Number GI001
	Dwg. 1 of 6

Office of Construction and Facilities Management
Department of Veterans Affairs

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

one half inch = one foot

three eighths inch = one foot

one quarter inch = one foot

one eighth inch = one foot

three eighths inch = one foot
one eighth inch = one foot
one quarter inch = one foot
one half inch = one foot
three quarters inch = one foot
one inch = one foot
one and one half inches = one foot
two inches = one foot
three inches = one foot
four inches = one foot
five inches = one foot
six inches = one foot
seven inches = one foot
eight inches = one foot
nine inches = one foot
ten inches = one foot
eleven inches = one foot
twelve inches = one foot
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eighty six inches = one foot
eighty seven inches = one foot
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eighty nine inches = one foot
ninety inches = one foot
ninety one inches = one foot
ninety two inches = one foot
ninety three inches = one foot
ninety four inches = one foot
ninety five inches = one foot
ninety six inches = one foot
ninety seven inches = one foot
ninety eight inches = one foot
ninety nine inches = one foot
one hundred inches = 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
—	SIDEWALL SPRINKLER
—	DOUBLE CHECK VALVE
—	FIRE DEPT. CONNECTION
—	PUMP TEST HEADER
—	SECTIONAL VALVE W/ DRAIN
—	FIRE HOSE/VALVE CABINET
—	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
—	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	
SYMBOL	DESCRIPTION
—	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	N ₂ O NITROUS OXIDE
—	CO ₂	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 (* INDICATES EQ.)
—	FIRE DAMPER
—	COMBINATION FIRE AND SMOKE DAMPER
—	MANUAL VOLUME DAMPER W/LOCKING QUADRANT
—	MOTORIZED DAMPER

SINGLE LINE DUCTWORK	
SYMBOL	DESCRIPTION
—	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	POC	POINT OF CONNECTION
CB	CATCH BASIN	LD	LINE CLEAN OUT	SRV	SAFETY RELIEF VALVE
CE	CENTERLINE	MC	MECHANICAL CONTRACTOR	TW	THERMOSTATIC MIXING VALVE
DNZ	DOWNSPOUT NOZZLE	(N)	NEW	TY	TYPICAL
(E)	EXISTING	NC	NOT IN CONTRACT	WCD	WALL CLEAN OUT
EC	ELECTRICAL CONTRACTOR	NO	NORMALLY OPEN	VTR	VENT THROUGH ROOF
EL	ELEVATION	NTS	NOT TO SCALE		
FCD	FLOOR CLEAN OUT	PRV	PRESSURE REDUCING VALVE		

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:

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- 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

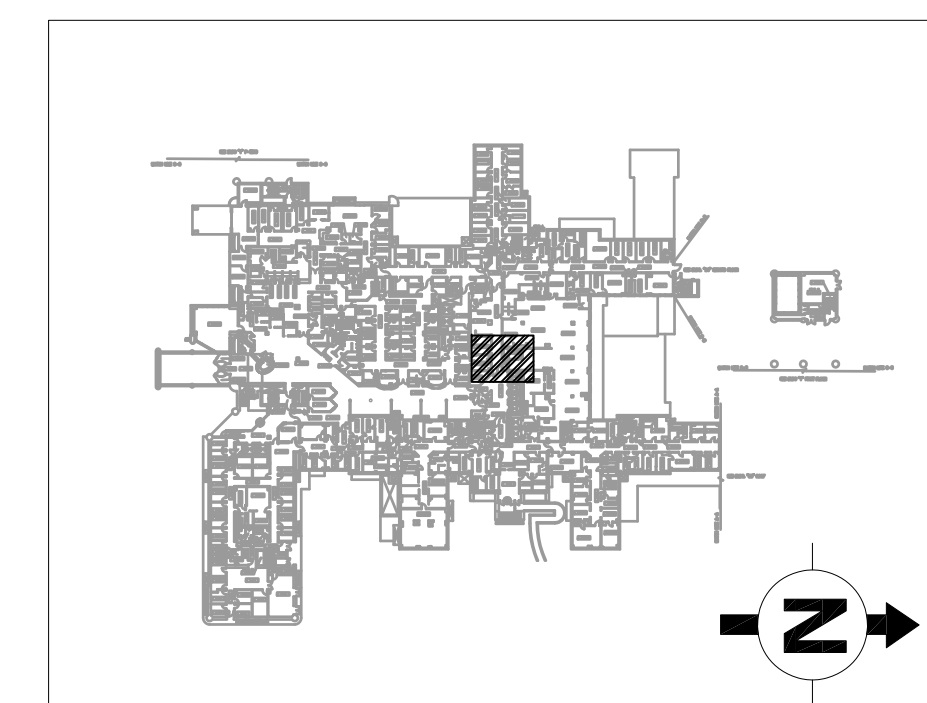
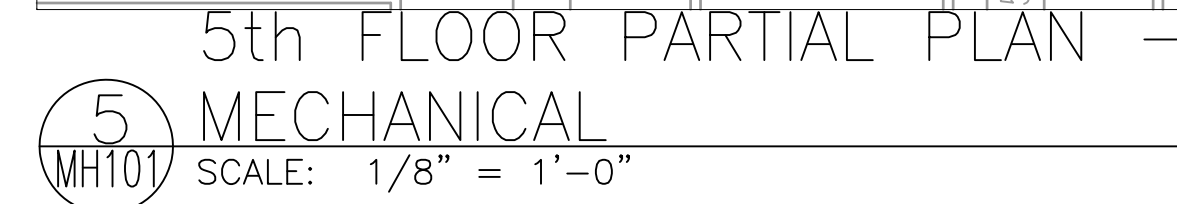
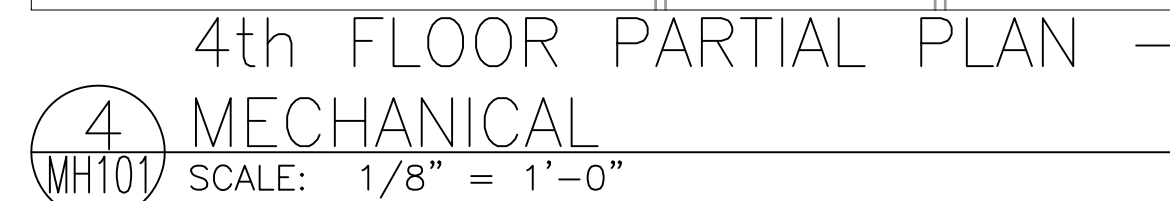
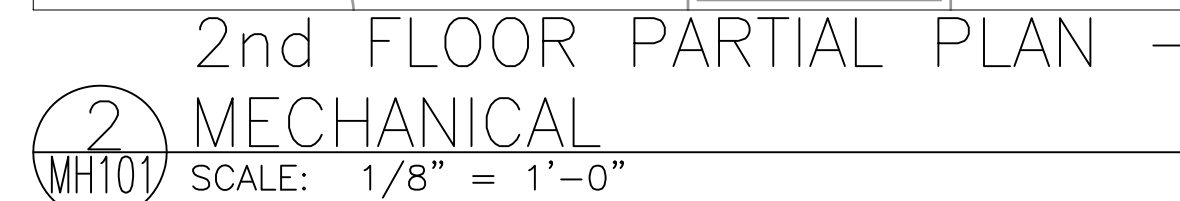
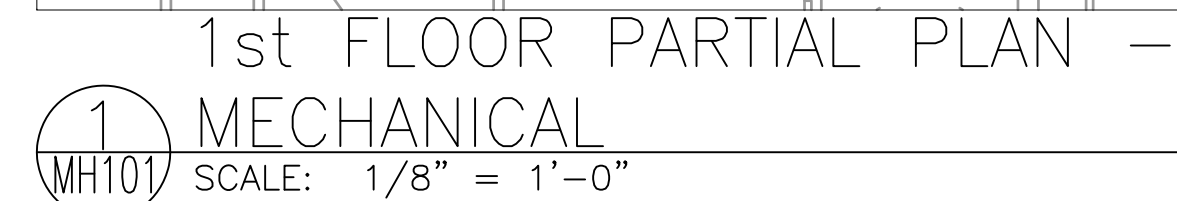
Dwg. 2 of 6

Office of
Construction
and Facilities
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Department of
Veterans Affairs

FULLY SPRINKLERED

100% CONSTRUCTION DOCUMENTS



GENERAL NOTES:

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Approved: Project Director

Location		
DENVER VA MEDICAL CENTER		
Date	Checked	Drawn
APRIL 26, 2013	R. OSTLER	P. MCDONALD

Project Number	554-13-806
Building Number	BUILDING 1
Drawing Number	MH101

 Department of
Veterans Affairs

one eighth inch = one foot
one quarter inch = one foot
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PACKAGED ROOFTOP HEATING AND COOLING UNIT SCHEDULE

SYMBOL	MFR (BASIS OF DESIGN)	MODEL (BASIS OF DESIGN)	SUPPLY FAN DATA					RETURN/EXHAUST FAN DATA					COIL DATA					NO COMPR	ELEC	MCA/ MOCF AMP	EER	FILTER DATA			APPROX ROOF CURB DIM	APPROX OPER WT LB	REMARKS												
			CFM TOTAL @ 5300'	CFM OA @ 5300'	ESP IN WC @ SL	APPROX RPM	MIN FAN HP	CFM @ 5300'	ESP IN WC @ SL	APPROX RPM	MIN FAN HP	COIL SERVICE	FACE AREA SQ FT	MBH INPUT @ SL	MBH OUTPUT @ 5300'	MBH COOL. TOTAL @ SL	KW					NO STEPS	TYPE	QUANT/ SIZE				EFF %											
RTU-3	TRANE	TSY120E3	4,005	400	0.8	1,486	3.75	---	---	---	---	HEATING	---	---	---	27	SCR	2	208V-3ø	104.5/110	11.3	PANEL	4/ 20"x25"x2"	MERV 8	84"x46"	1,400	1,2,3,4,5,7												
											COOLING				12.36	---	---											119.0	---	2									
1. COOLING COIL CAPACITY BASED ON ARI STANDARD CONDITIONS: 80 FDB/67 FWB, 95 F AMBIENT AT CONDENSER. 2. EXTERNAL STATIC PRESSURE DOES NOT INCLUDE LOSSES FOR UNIT CASING, FILTERS, OR COILS.												3. BURNER SHALL BE DESIGNED TO FIRE ON NATURAL GAS, 6" WC, 830 BTU/CF. 4. PROVIDE 100% OUTSIDE AIR ECONOMIZER												5. PROVIDE RETURN AIR DUCT SMOKE DETECTOR 6. PROVIDE RETURN AIR AND OUTSIDE AIR CO2 DETECTORS AND CONTROL FOR OUTSIDE AIR												7. PROVIDE CONDENSER COIL HAIL GUARDS			

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2. EXTERNAL STATIC PRESSURE DOES NOT INCLUDE LOSSES FOR UNIT CASING, FILTERS, OR COILS.
3. BURNER SHALL BE DESIGNED TO FIRE ON NATURAL GAS, 6" WC, 830 BTU/CF.
4. PROVIDE 100% OUTDOOR AIR ECONOMIZER
5. PROVIDE RETURN AIR DUCT SMOKE DETECTOR
6. PROVIDE RETURN AIR AND OUTDOOR AIR CO2 DETECTORS AND CONTROL FOR OUTSIDE AIR
7. PROVIDE CONDENSER COIL HAIL GUARDS

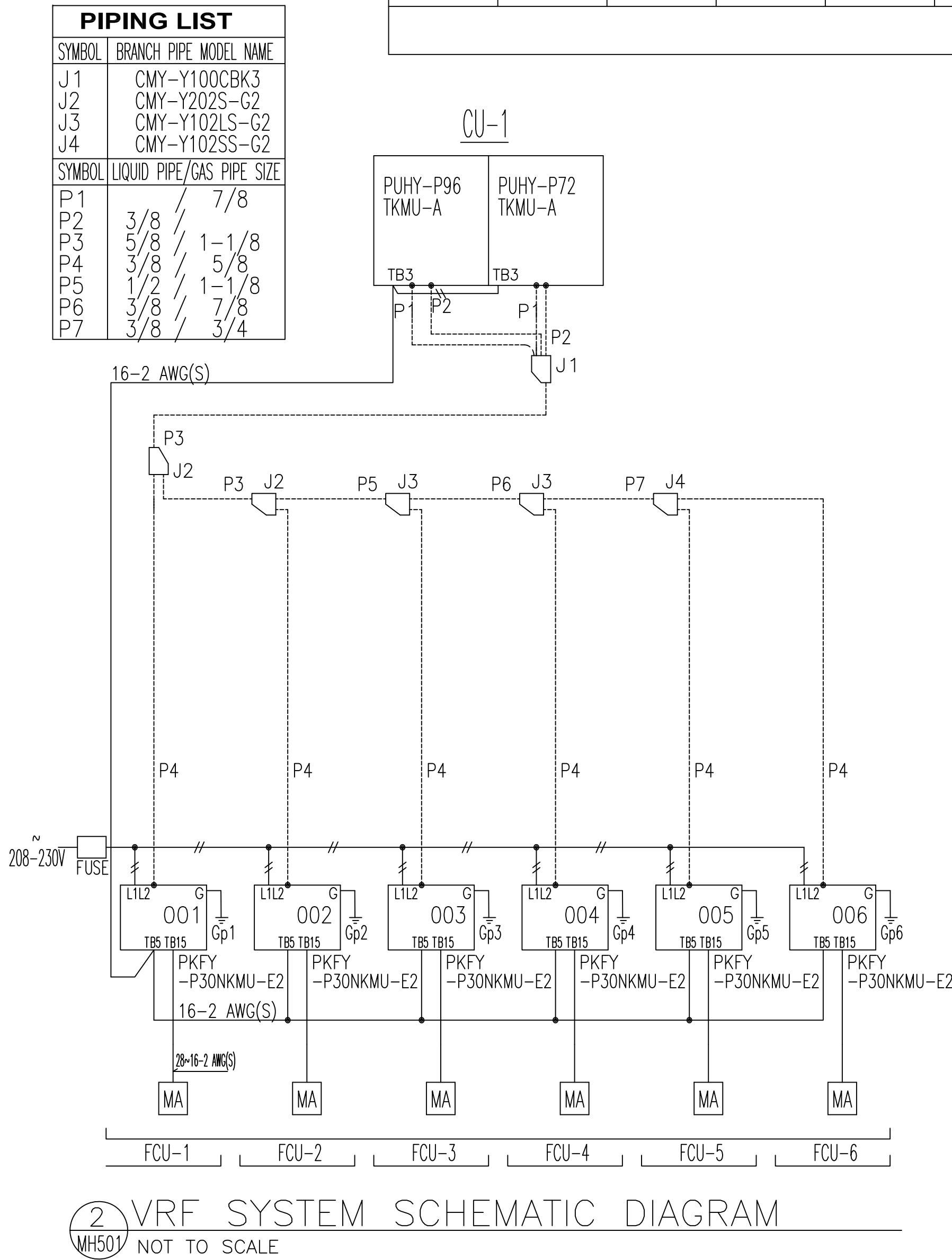
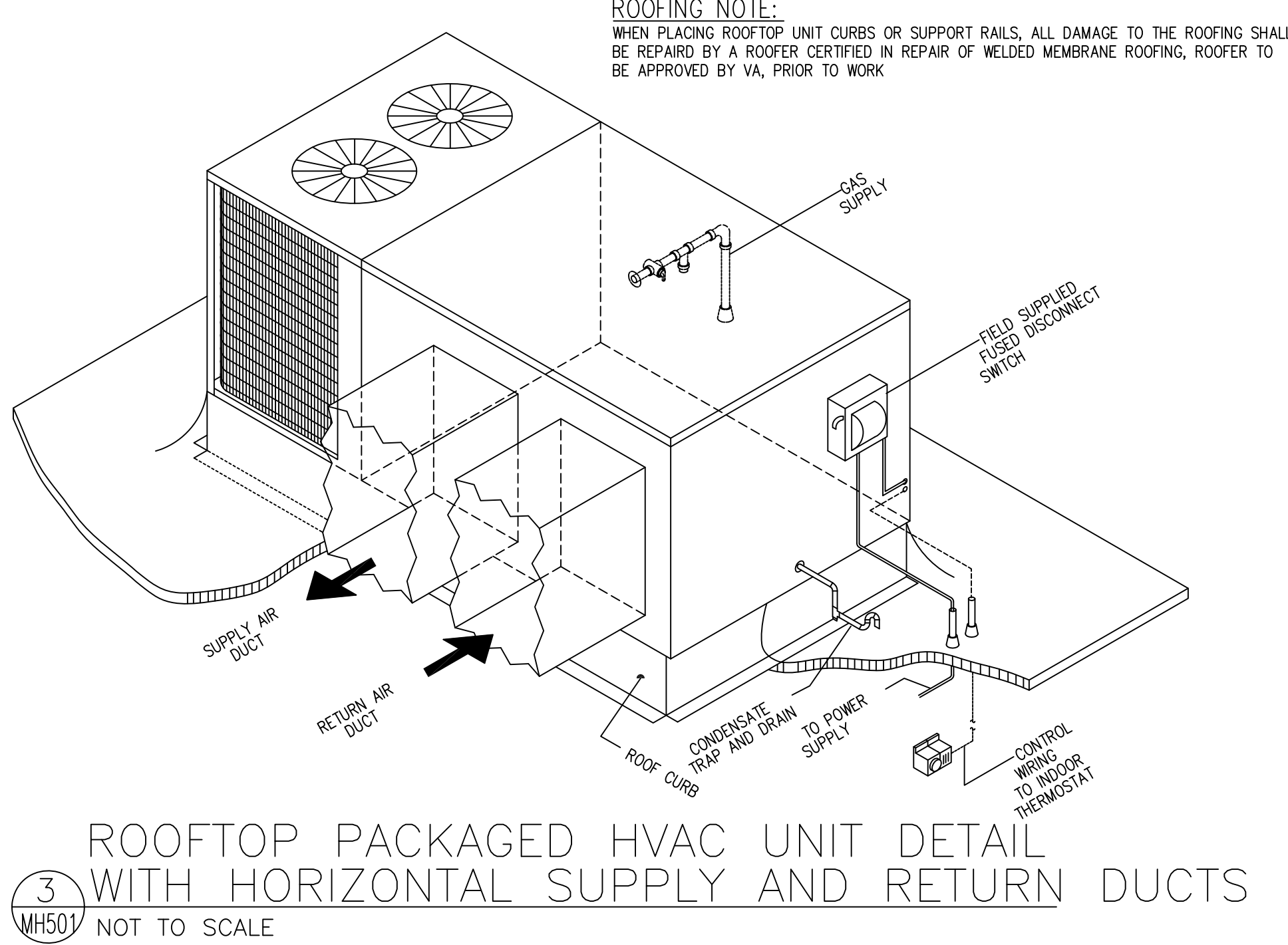
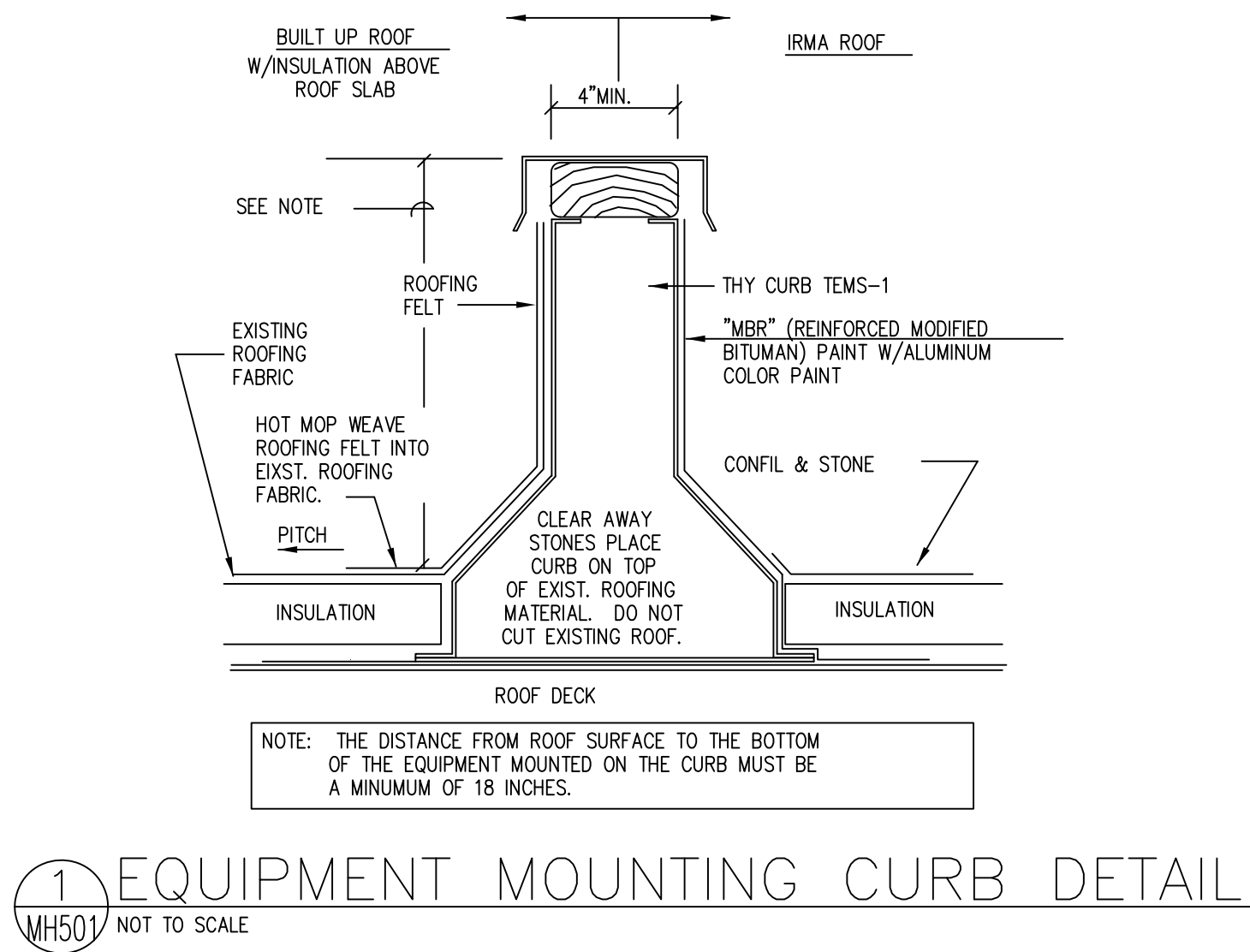
AIR COOLED CONDENSING UNIT SCHEDULE

SYMBOL	MFR (BASIS OF DESIGN)	MODEL	REFRIGERANT	EER	MBH @ SL	AMB TEMP F	MCA/ MOCF AMP	ELEC	NO CMPR	STEPS CAPACITY CONTROL	APPROX OPER WEIGHT LB	MIN AMB OPERATION F	REMARKS
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

FAN COIL UNIT SCHEDULE

SYMBOL	MFR (BASIS OF DESIGN)	MODEL (BASIS OF DESIGN)	CFM @ 5300'	ESP IN WC @ SL	ELEC	MCA/ MOCF AMPS	SERVICE	MBH TOTAL @ SL	REMARKS
FCU-1	mitsubishi	PKFY-P30NKMU	920	0.0	208V-1ø	0.63/15	HEATING COOLING	30.0	X
FCU-2	mitsubishi	PKFY-P30NKMU	920	0.0	208V-1ø	0.63/15	HEATING COOLING	30.0	X
FCU-3	mitsubishi	PKFY-P30NKMU	920	0.0	208V-1ø	0.63/15	HEATING COOLING	30.0	X
FCU-4	mitsubishi	PKFY-P30NKMU	920	0.0	208V-1ø	0.63/15	HEATING COOLING	30.0	X
FCU-5	mitsubishi	PKFY-P30NKMU	920	0.0	208V-1ø	0.63/15	HEATING COOLING	30.0	X
FCU-6	mitsubishi	PKFY-P30NKMU	920	0.0	208V-1ø	0.63/15	HEATING COOLING	30.0	X

1. XXX
2. XXX
3. XXX



35% SCHEMATIC DESIGN	3/13/13
95% DESIGN DOCUMENTS	4/10/13
100% CONSTRUCTION DOCUMENTS	4/26/13
Revisions:	Date

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)

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DEPARTMENT OF VETERANS AFFAIRS
MEDICAL CENTER
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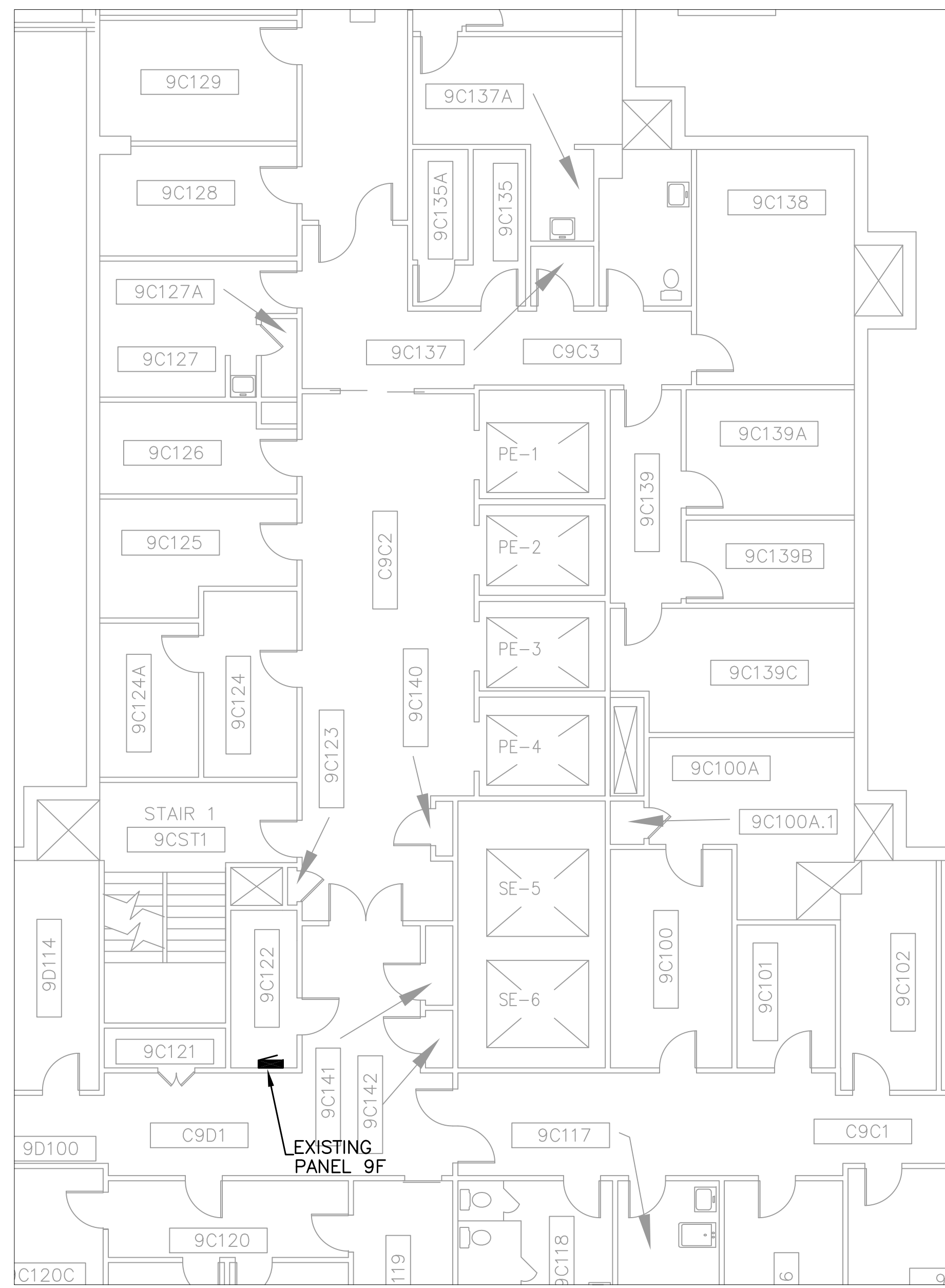
Drawing Title
MECHANICAL SCHEDULE
AND DETAILS
Approved Project Director

Project Title
OH-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
MH501
Dwg 4 of 6

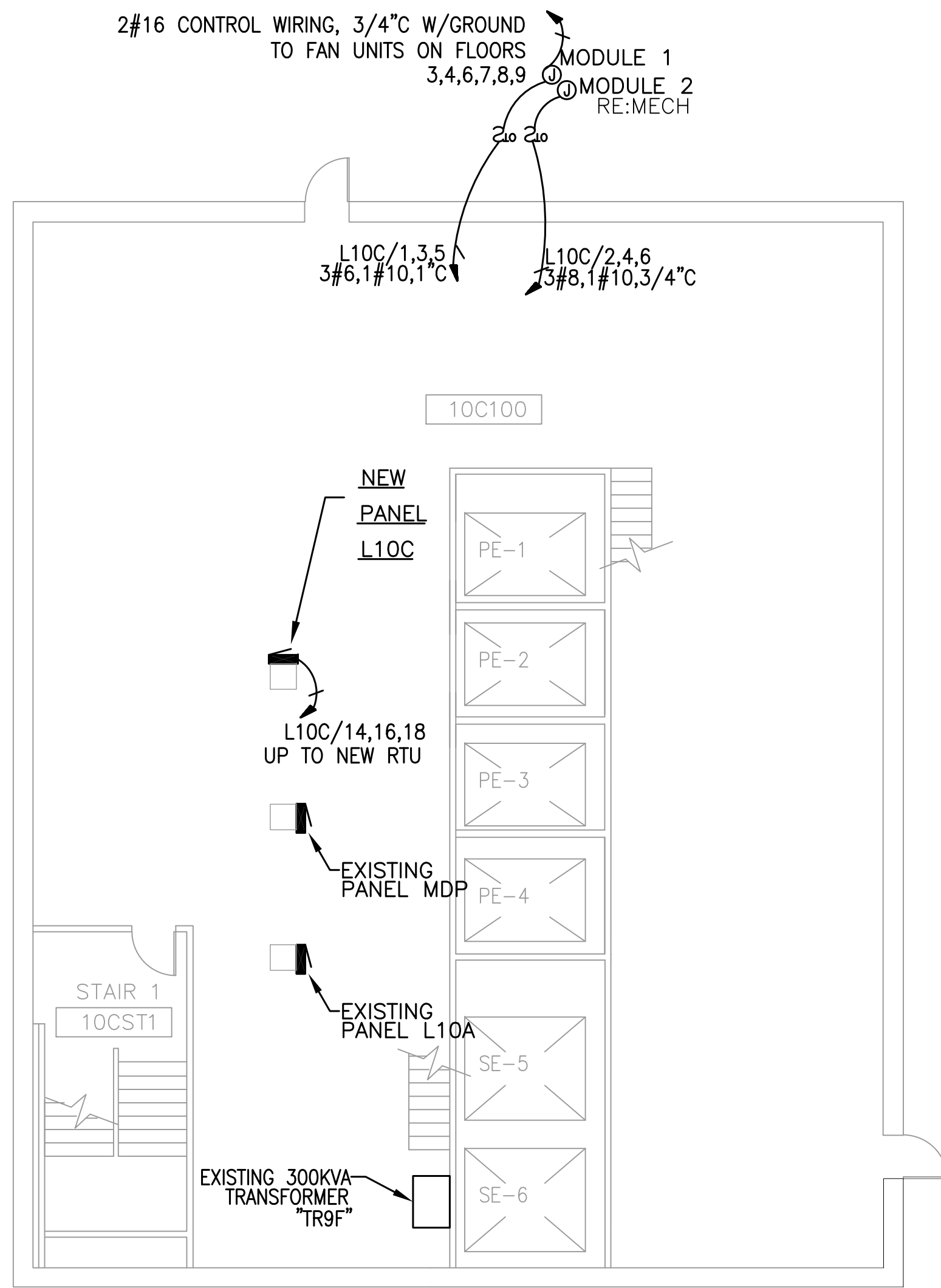
Office of
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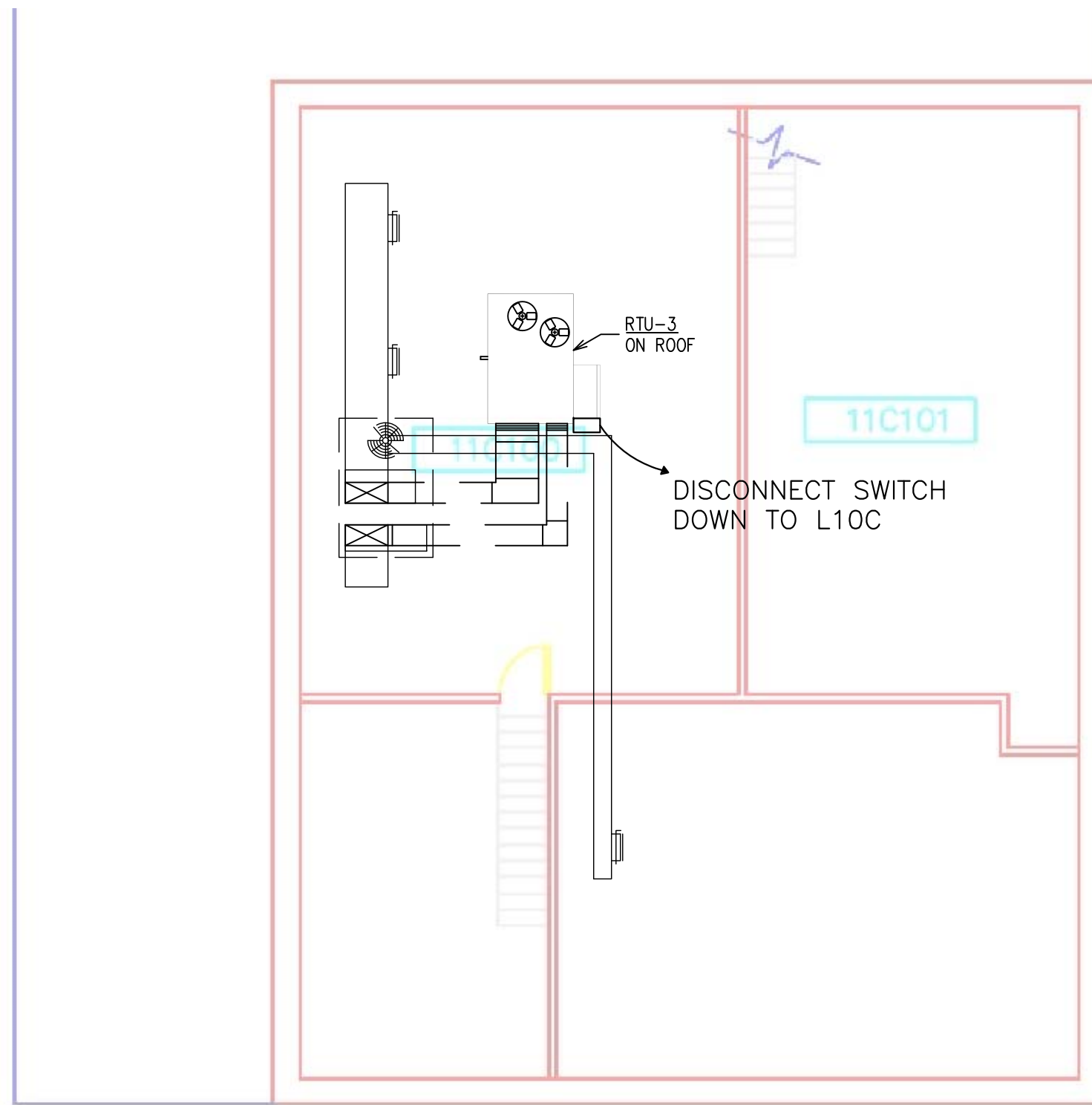
9th FLOOR POWER PLAN
EP100

0' 4' 8' 16'
SCALE: 1/8" = 1'-0"



10th FLOOR POWER PLAN
EP100

0' 4' 8' 16'
SCALE: 1/8" = 1'-0"



11th FLOOR POWER PLAN
EP100

0' 4' 8' 16'
SCALE: 1/8" = 1'-0"

Branch Panel: **9F**

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	Trip	Circuit Description	Circuit Number
1	SPARE	175	3	3	150	PANEL D	2
3		/	/	/	/		4
5		/	/	/	/		6
7	PANEL C	150	3	3	125	PANEL PP	8
9		/	/	/	/		10
11		/	/	/	/		12
13	PANEL A	175	3	3	150	PANEL B	14
15		/	/	/	/		16
17		/	/	/	/		18
19	PANEL PE	100	3	3	100	CHILLER DRUG TRIMNT	20
21		/	/	/	/	(OFF)	22
23		/	/	/	/		24
25	DISCONNECT SQ D	100	2	3	100	SPARE	26
27		/	/	/	/		28
29	SPACE	--	--	--	--		30

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:

- 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: L10C		Location: BUILDING 1 10TH FLOOR C WING.		Volts: 120/208 WYE		A.I.C. Rating: 10KAIC	
Manufacturer: PER VA		Phases: 3		Mains Type: MLO		Mains Rating: 150 A	
Mounting: SURFACE		Wires: 4		MCB Rating: NONE			
Notes:							
Circuit Number	Circuit Description	Trip	Poles	Poles	Trip	Circuit Description	Circuit Number
1	COOLING UNIT-MODULE 1	50	3	3	35	COOLING UNIT-MODULE 2	2
3	/	/	/	/	/	/	4
5	/	/	/	/	/	/	6
7	SPARE	30	3	/	/	/	8
9	/	/	/	/	/	/	10
11	/	/	/	/	/	/	12
13	/	/	3	3	60	RTU	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 150MLO 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:

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

PLOTTING NOTES:

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MEDICAL CENTER
1055 Clermont Street
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Drawing Title
POWER PLAN

Approved Project Director

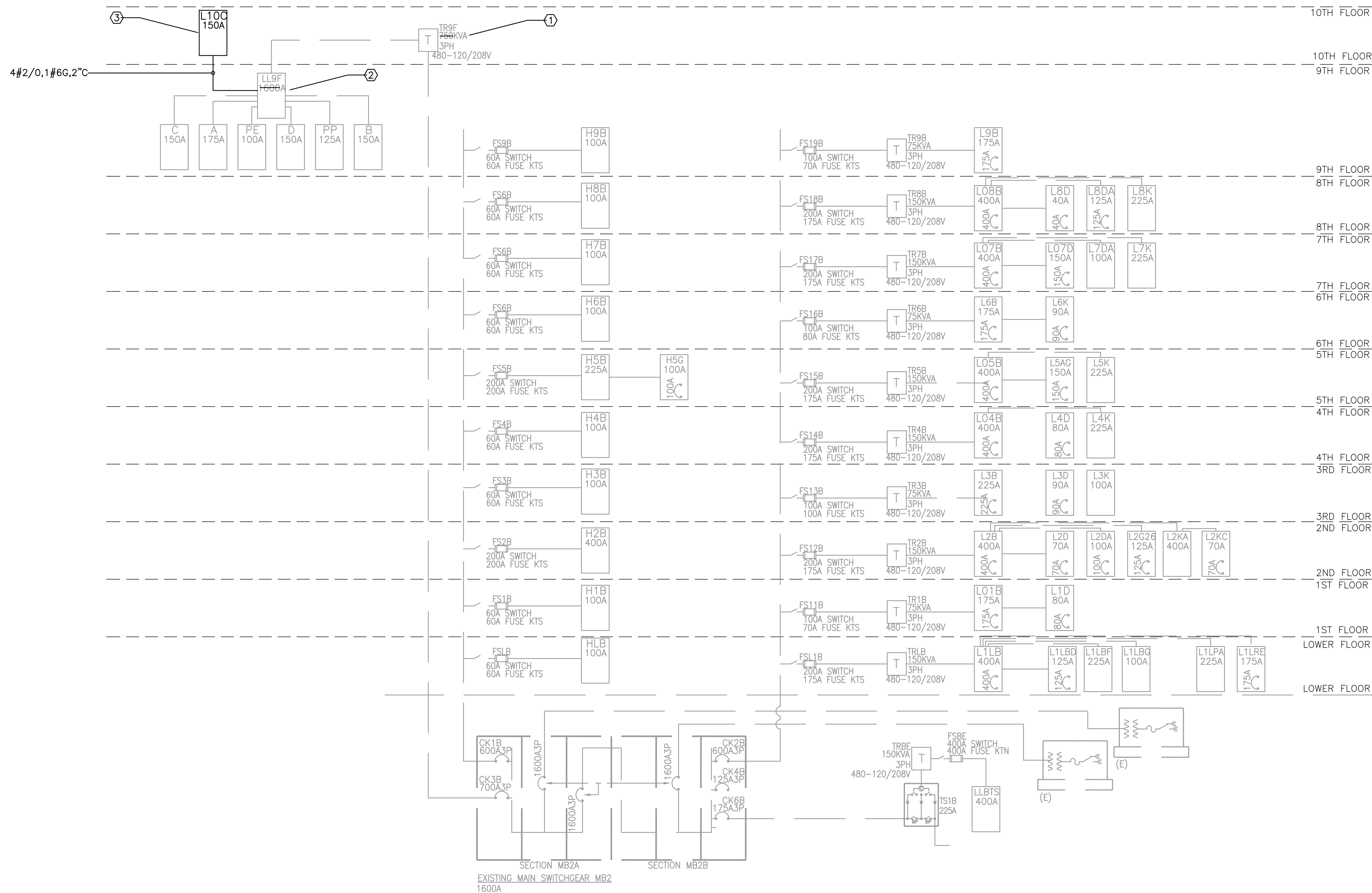
Project Title
OH-T DUMBWATER
VENTILATION AND ELEVATOR

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

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

Office of
Construction
and Facilities
Management

Department of
Veterans Affairs



- ## 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.

35% SCHEMATIC DESIGN	3/13/13
95% DESIGN DOCUMENTS	4/10/13
100% CONSTRUCTION DOCUMENTS	4/26/13
Revisions:	Date

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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-H-T DUMBWAITER VENTILATION AND ELEVATOR			Project Number 554-13-806		<div>Office of Construction and Facilities Management</div> <div>  Department of Veterans Affairs </div>
Location DENVER VA MEDICAL CENTER			Building Number BUILDING 1		
Drawing Number EP400					
Date APRIL 26, 2013			Checked R. OSTLER		
Drawn D. SILVA			Day 6 of 6		