

PIPING LEGEND

	GLOBE VALVE (OUTSIDE SCREW & YOKE UNLESS SPECIFIED OTHERWISE)
	BALL VALVE
	BUTTERFLY VALVE
	HOSE END BALL VALVE WITH CAP AND CHAIN
	PLUG VALVE
	PRESSURE REDUCING VALVE
	ANGLE VALVE (SECTION VIEW)
	ANGLE VALVE (PLAN VIEW)
	GLOBE ANGLE VALVE
	CHECK VALVE (SILENT CHECK TYPE ON PUMP DISCHARGE)
	STRAINER WITH HOSE END BLOWOFF VALVE, CAP AND CHAIN
	SUCTION DIFFUSER/STRAINER (NON-REDUCING) WITH BLOWOFF
	STRAINER, BASKET TYPE WITH DRAIN VALVE, HOSE BIBB & CAP
	STRAINER, DUPLEX BASKET
	SOLENOID VALVE
	2-WAY MODULATING PRESSURE INDEPENDENT ACV
	2-WAY AUTOMATIC CONTROL VALVE (MODULATING)
	2-WAY AUTOMATIC CONTROL VALVE (TWO POSITION)
	3-WAY AUTOMATIC CONTROL VALVE (MODULATING)
	3-WAY AUTOMATIC CONTROL VALVE (TWO POSITION)
	AUTOMATIC FLOW LIMITING VALVE (PRESSURE INDEPENDENT)
	COMBINATION FLOW METER/SHUT-OFF/BALANCING VALVE (CIRCUIT SETTER)
	TRIPLE DUTY PUMP VALVE, CHECK, BALANCING (FLOW METER), SHUT-OFF
	FLOW METER/TRANSMITTER (HOT TAP TYPE WITH VALVE)
	FLOW SWITCH
	RELIEF/SAFETY VALVE
	UNION
	BLIND FLANGE
	PIPE - CAPPED
	PRESSURE GAUGE (W/ BALL VALVE(S), SNUBBER, AND FOR STEAM, SIPHON)
	PRESSURE SWITCH
	THERMOMETER
	VACUUM BREAKER
	PRESSURE/THERMOMETER WELL
	AIR VENT - AUTOMATIC
	AIR VENT - MANUAL
	THERMOSTATIC AIR VENT (STEAM ONLY)
	DIRECTION OF FLOW
	EXPANSION LOOP
	EXPANSION JOINT
	FLEXIBLE CONNECTOR
	PIPE ANCHOR
	PIPE GUIDE
	PIPE CONNECTION - TOP
	PIPE CONNECTION - BOTTOM
	PIPE - DOWN
	PIPE - UP
	PITCH OF PIPE - (R) RISE OR (D) DROP
	REDUCER - CONCENTRIC
	REDUCER - ECCENTRIC
	CLEANOUT FOR CONDENSATE DRAIN
	DIRT LEG
	RISE (DOUBLE LINE - PLAN VIEW)
	DROP (DOUBLE LINE - PLAN VIEW)
	PIPE BREAK (DOUBLE LINE)
	PIPE BREAK (SINGLE LINE)

DUCTWORK

SINGLE LINE	DOUBLE LINE	SINGLE LINE	DOUBLE LINE
	RECTANGULAR SUPPLY DUCT W=WIDTH, D=DEPTH (INCHES UNLESS NOTED OTHERWISE) AS VIEWED		RECTANGULAR RETURN/EXHAUST DUCT W=WIDTH, D=DEPTH (INCHES UNLESS NOTED OTHERWISE) AS VIEWED
	ROUND SUPPLY DUCT (DIA=INSIDE DIAMETER)		ROUND RETURN/EXHAUST DUCT (DIA=INSIDE DIAMETER)
	ROUND SUPPLY DUCT UP		STANDARD RADIUS ELBOW (R = W) SUPPLY/RETURN/EXHAUST
	ROUND SUPPLY DUCT DOWN		FULL LENGTH SPLITTER VANES (R < W) SUPPLY/RETURN/EXHAUST
	SUPPLY DUCT UP		SPLIT TAKE-OFF
	SUPPLY DUCT DOWN		RECTANGULAR WYE SUPPLY
	ROUND RETURN DUCT UP		HORIZONTAL OFFSET SUPPLY/RETURN/EXHAUST
	ROUND RETURN DUCT DOWN		CHANGE OF ELEVATION (R)RISE OR (D)DROP SUPPLY/RETURN/EXHAUST
	RETURN DUCT UP		45° TAP TAKE-OFF
	RETURN DUCT DOWN		45° TAKE-OFF TRANSITION TO ROUND
	ROUND EXHAUST DUCT UP		90° TAP TAKE-OFF
	ROUND EXHAUST DUCT DOWN		SQUARE TO ROUND CONNECTION
	EXHAUST DUCT UP		BELLMOUTH CONNECTION
	EXHAUST DUCT DOWN		CONVERGE RETURN/EXHAUST W/45° TAKE-OFFS
	RECTANGULAR DUCT TO ROUND SUPPLY/RETURN/EXHAUST		SIDEWALL DUCT MOUNTED REGISTER/GRILLE
	CEILING DUCT MOUNTED DIFFUSER/GRILLE		SUPPLY SIDEWALL LINEAR DIFFUSER (W/ SHEETMETAL PLENUM, LINING & BRANCH CONN. FOR EVERY 4' OF LINEAR.)
	TAKE-OFF TO DIFFUSER/GRILLE		SUPPLY CEILING LINEAR DIFFUSER (W/SHEETMETAL PLENUM, LINING & BRANCH CONN. FOR EVERY 4' OF LINEAR.)
	HARD ELBOW		PLENUM BY LD MFR
	CEILING DUCT MOUNTED DIFFUSER/GRILLE		OPEN END DUCT W/ 1/2"x1/2" WMS
	ACOUSTICALLY LINED DUCT		
	FLEXIBLE DUCT		

DUCTWORK

	AFMS AIR FLOW MONITORING STATION
	ACD AUTOMATIC CONTROL DAMPER W/ ACCESS DOOR
	SGD SLIDE GATE DAMPER
	VD MANUAL VOLUME DAMPER
	FD SELF-CLOSING FIRE DAMPER W/ ACCESS DOOR
	SD AUTOMATIC SMOKE DAMPER W/ ACCESS DOOR
	SFD COMBINATION SMOKE/FIRE DAMPER W/ ACCESS DOOR
	SDET DUCT MOUNTED SMOKE DETECTOR
	BDD BACKDRAFT DAMPER
	STANDARD 4-WAY BLOW SUPPLY DIFFUSER
	3-WAY BLOW SUPPLY DIFFUSER
	2-WAY BLOW SUPPLY DIFFUSER
	ONE-WAY BLOW SUPPLY DIFFUSER
	RETURN/EXHAUST GRILLE OR REGISTER
	ROOF EXHAUST FAN SHOWN ON ROOF
	ROOF EXHAUST FAN SHOWN ON FLOORPLAN
	UNDERCUT DOOR
	LOUVERED DOOR (FREE AREA)
	RETURN OR EXHAUST AIR FLOW
	SUPPLY AIR FLOW

PIPING ABBREVIATIONS

	ATV ATMOSPHERIC VENT
	BBD BOILER BLOWDOWN
	D DRAIN
	HWR HOT WATER RETURN
	HWS HOT WATER SUPPLY
	MU MAKE-UP WATER
	PC PUMPED CONDENSATE
	V VENT

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SCALE
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SIGNATURE/BLOCK:

PROJECT TITLE
REPAIR FACILITY

TOWN
ROCKY HILL

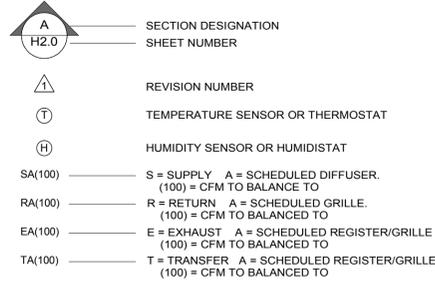
DRAWING TITLE
MECHANICAL LEGEND

PROJECT NO.
118-0167

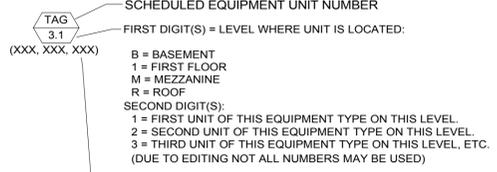
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MEC-002

SHEET NO.
10. 02

CALLOUT SYMBOLS



EQUIPMENT REQUIRING ELECTRICAL SERVICE.
SEE SCHEDULE FOR PERFORMANCE REQUIREMENTS:



UNIT CAPACITY INFORMATION (IF APPLICABLE-DATA
VARIES DEPENDING ON TYPE OF EQUIPMENT)
i.e. FOR FAN POWERED VAV BOXES:
FIRST NUMBER = MAX. CFM
SECOND NUMBER = MIN. CFM OR PERCENT OF MAX. CFM
THIRD NUMBER = COIL GPM OR KW

EQUIPMENT NOT REQUIRING ELECTRICAL SERVICE.
SEE SCHEDULE FOR PERFORMANCE REQUIREMENTS:

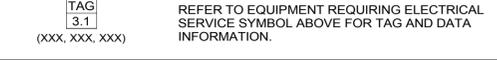
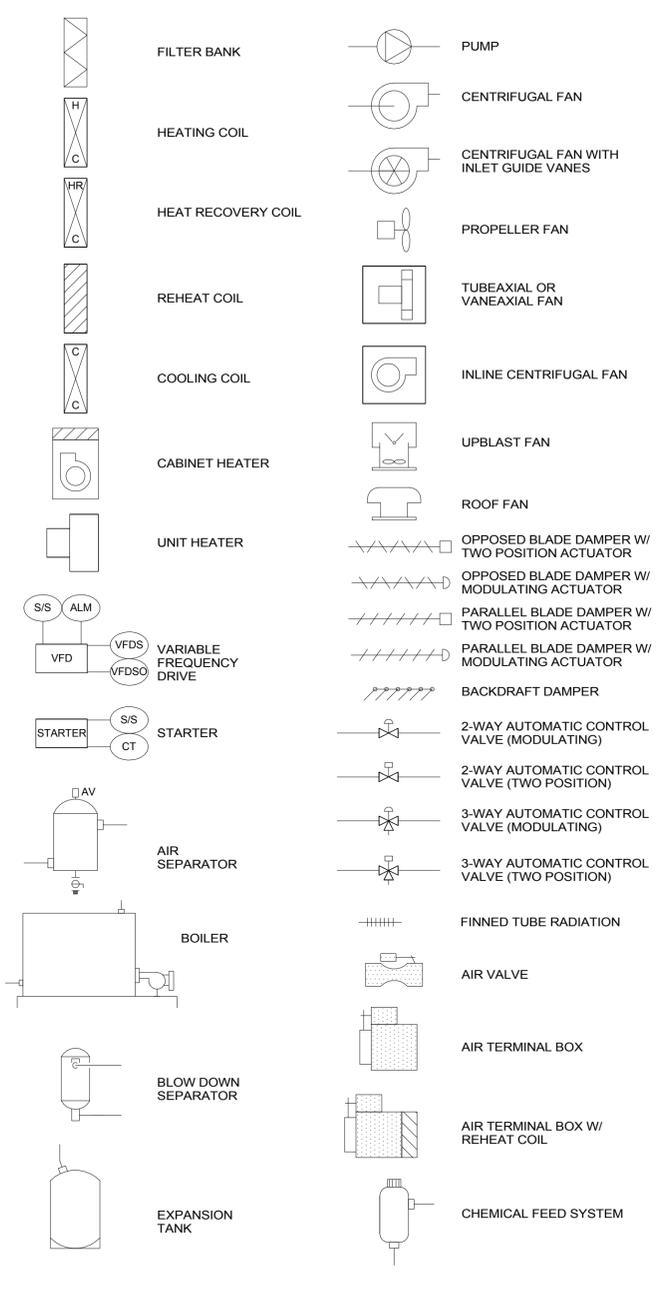


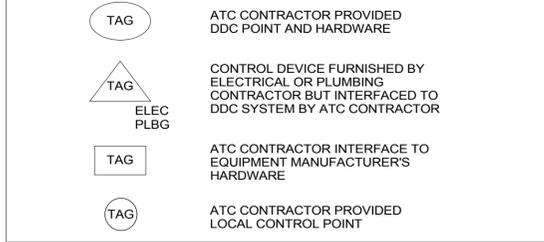
DIAGRAM EQUIPMENT SYMBOLS



CONTROL ABBREVIATIONS

ACD	AUTOMATIC CONTROL DAMPER
ACV	AUTOMATIC CONTROL VALVE
AFMS	AIR FLOW MEASURING STATION
ALM	ALARM
ATC	AUTOMATIC TEMPERATURE CONTROL
BCV	BASEBOARD CONTROL VALVE
BDD	BACKDRAFT DAMPER (ADJUSTABLE COUNTERWEIGHT)
BV	BYPASS VALVE
C	CARBON DIOXIDE SENSOR
CAP	CAPACITY CONTROL
%CAP	PERCENT OF FULL LOAD CAPACITY
CO	CARBON MONOXIDE SENSOR
CT	CURRENT TRANSFORMER (STATUS FEEDBACK)
CV	COOLING COIL CONTROL VALVE
DAT	DISCHARGE AIR TEMPERATURE SENSOR
DDC	DIRECT DIGITAL CONTROL
DDCFP	DIRECT DIGITAL CONTROL FIELD PANEL
DL	DEMAND LIMIT
DPS	DIFFERENTIAL PRESSURE SWITCH
DPT	DIFFERENTIAL PRESSURE SENSOR/TRANSMITTER
DPV	DIFFERENTIAL PRESSURE BYPASS VALVE
DSP	DISCHARGE STATIC PRESSURE SENSOR
DWDI	DOUBLE WIDTH DOUBLE INLET
EAD	EXHAUST AIR DAMPER
EHRET	EXHAUST HEAT RECOVERY COIL ENTERING AIR TEMPERATURE SENSOR
EHRLT	EXHAUST HEAT RECOVERY COIL LEAVING AIR TEMPERATURE SENSOR
EHRV	EXHAUST HEAT RECOVERY COIL CONTROL VALVE
ES	END SWITCH
FA	FAULT ALARM
FID	FAN ISOLATION DAMPER
FMT	FLOW METER/TRANSMITTER
FS	FLOW SWITCH
FZ	FREEZESTAT
H	HUMIDITY SENSOR
HCLT	HEATING COIL LEAVING AIR TEMPERATURE SENSOR
HGB	HOT GAS BYPASS
HHL	HIGH HUMIDITY LIMIT SENSOR
HIV	HUMIDIFIER ISOLATION VALVE
HLH	HIGH/LOW HUMIDITY LIMIT SENSOR
HOA	HANDS-OFF AUTOMATIC SWITCH
HR	HUMIDITY SENSOR (ROOM)
HRET	HEAT RECOVERY COIL ENTERING AIR TEMPERATURE SENSOR
HRLT	HEAT RECOVERY COIL LEAVING AIR TEMPERATURE SENSOR
HRT	HEAT RECOVERY LOOP TEMPERATURE SENSOR
HRCV	HEAT RECOVERY COIL CONTROL VALVE
HRV	HEAT RECOVERY LOOP CONTROL VALVE
HS	HAND SWITCH
HSPS	HIGH STATIC PRESSURE SWITCH
HSS	HOOD SASH SWITCH
HV	HEATING COIL CONTROL VALVE
HWRT	HOT WATER RETURN TEMPERATURE SENSOR
HWST	HOT WATER SUPPLY TEMPERATURE SENSOR
IFBD	INTEGRAL FACE & BYPASS DAMPER
IGV	INLET GUIDE VANES
LAT	LEAVING AIR TEMPERATURE SENSOR
LSPS	LOW STATIC PRESSURE SWITCH
LS	LEVEL SENSOR OR LIGHT SWITCH INTERFACE
LSHA	LEVEL SENSOR HIGH ALARM
LSHS	LEVEL SENSOR HIGH SWITCH
LSLA	LEVEL SENSOR LOW ALARM
LSLS	LEVEL SENSOR LOW SWITCH
MAT	MIXED AIR TEMPERATURE SENSOR
MUWV	MAKE-UP WATER VALVE
MD	MOTION DETECTOR
NC	NORMALLY CLOSED (ON LOSS OF POWER)
NO	NORMALLY OPEN (ON LOSS OF POWER)
OAD	OUTSIDE AIR DAMPER
OAH	OUTSIDE AIR HUMIDITY SENSOR (FOR WET BULB READING)
OAT	OUTSIDE AIR TEMPERATURE SENSOR (DRY BULB)
PAD	PRIMARY AIR DAMPER
PR	PRESSURE SENSOR (ROOM)
RAD	RETURN AIR DAMPER
RAH	RETURN AIR HUMIDITY SENSOR
RAT	RETURN AIR TEMPERATURE SENSOR
RV	REHEAT CONTROL VALVE
RH	RELATIVE HUMIDITY
RI	RUN INDICATOR
RSID	RETURN SMOKE ISOLATION DAMPER
S	SWITCH
SAD	SUPPLY AIR DAMPER
SCHRT	SECONDARY CHILLED WATER RETURN TEMPERATURE
SCHST	SECONDARY CHILLED WATER SUPPLY TEMPERATURE
SCLAT	STEAM COIL LEAVING AIR TEMPERATURE SENSOR
SCV	STEAM COIL VALVE
SD	SMOKE DAMPER
SDET	SMOKE DETECTOR
SFD	SMOKE/FIRE DETECTOR
SP	STATIC PRESSURE SENSOR
SPD	SPEED CONTROL
S/S	START/STOP
S/S H	START/STOP HIGH SPEED/CAPACITY
S/S L	START/STOP LOW SPEED/CAPACITY
SSID	SUPPLY SMOKE ISOLATION DAMPER
SSP	SUCTION STATIC PRESSURE SENSOR
T	TEMPERATURE SENSOR/THERMOSTAT
TR	TEMPERATURE SENSOR/THERMOSTAT (ROOM)
VFDS	VARIABLE FREQUENCY DRIVE SPEED
VFDO	VARIABLE FREQUENCY DRIVE SPEED OUTPUT (FEEDBACK)
VS	VIBRATION SWITCH
WC	WATER COLUMN
X	REMOVE EXISTING ITEM

CONTROL POINT DESCRIPTOR LEGEND



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REPAIR FACILITY

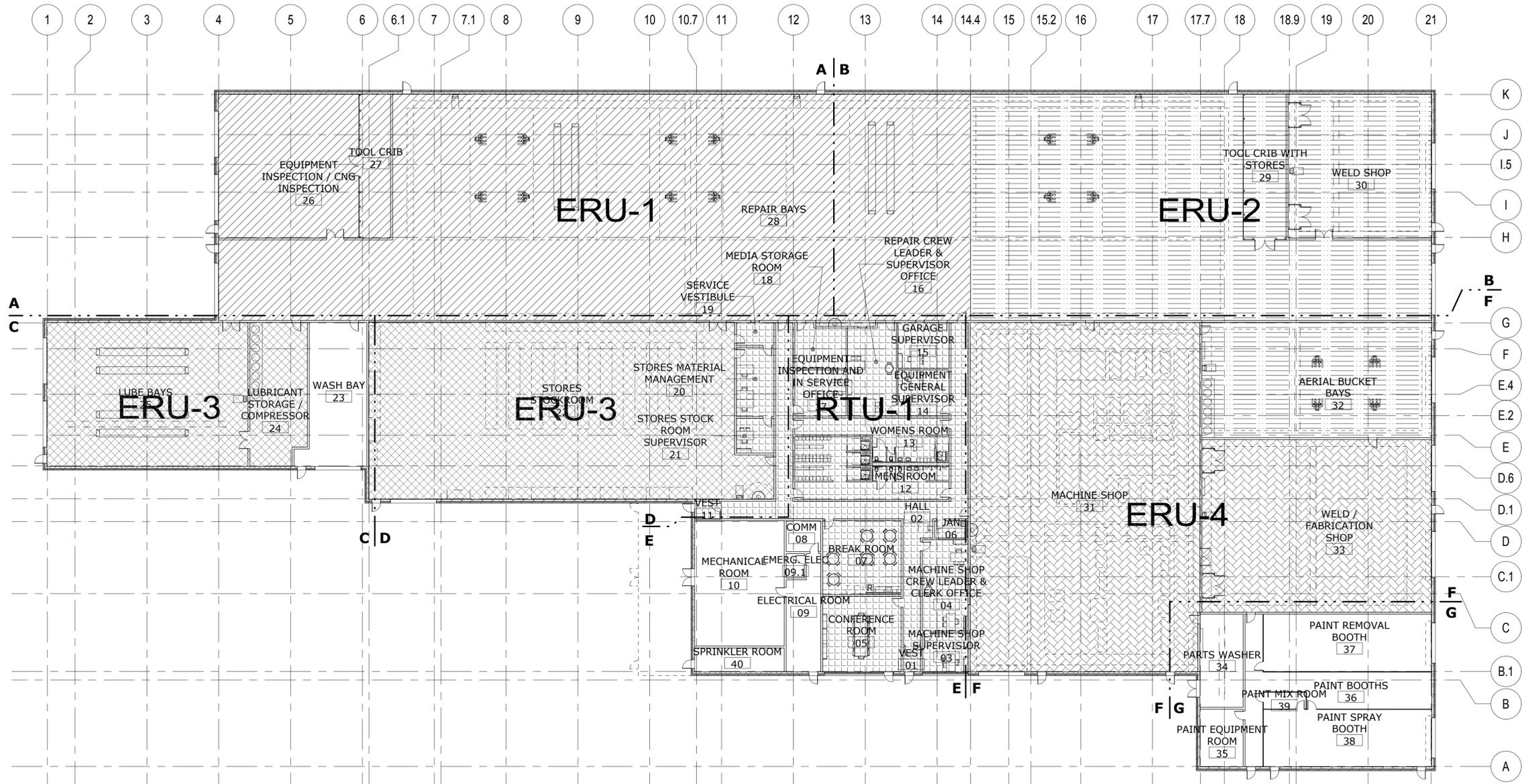
TOWN
ROCKY HILL

DRAWING TITLE
MECHANICAL LEGEND II

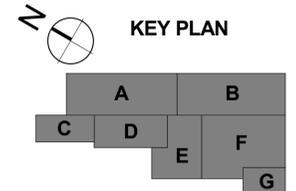
PROJECT NO.
118-0167

DRAWING NO.
MEC-003

SHEET NO.
10. 03



1 MECHANICAL ZONE PLAN
SCALE: 3/64" = 1'-0"



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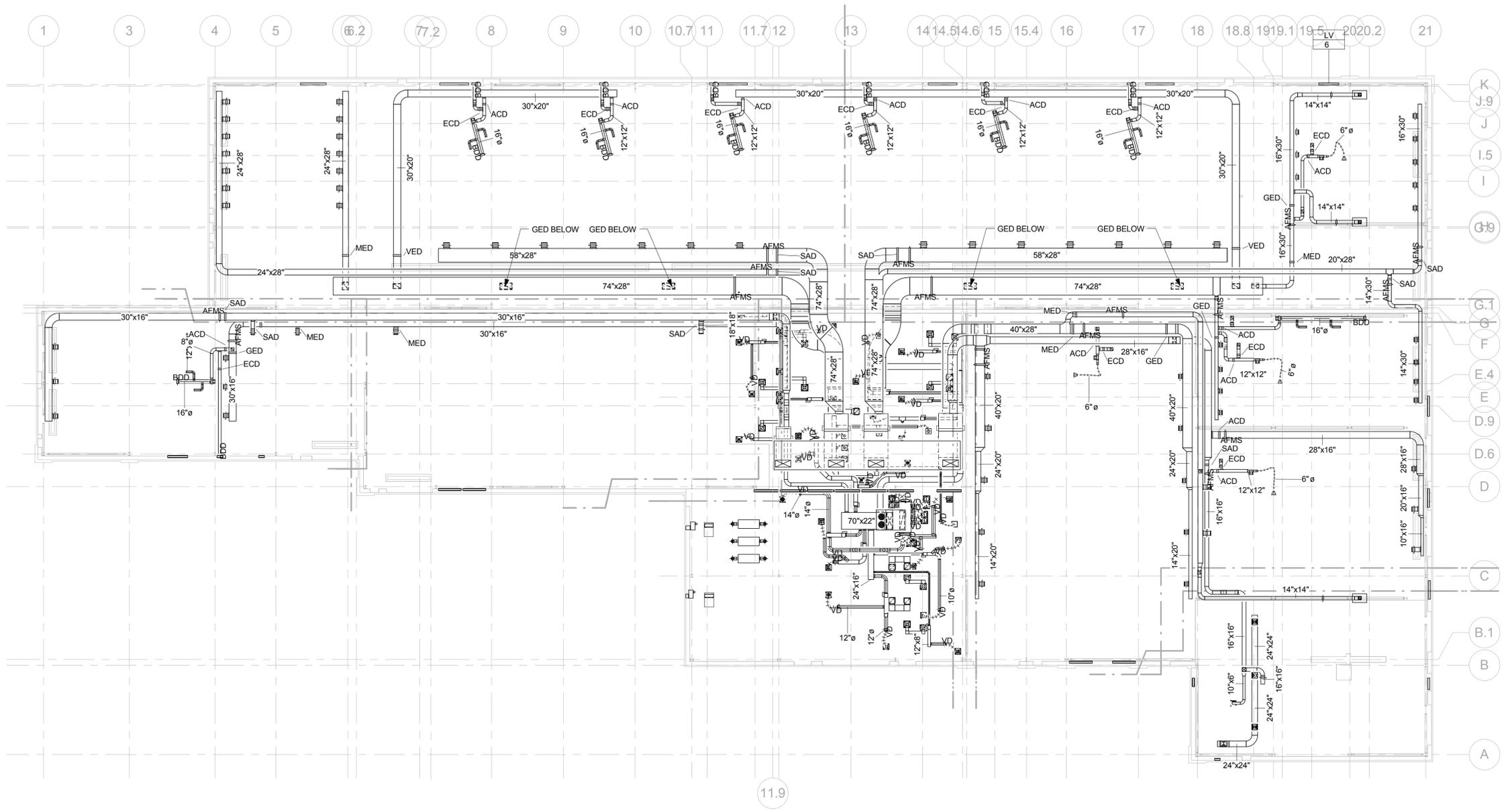
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ROCKY HILL

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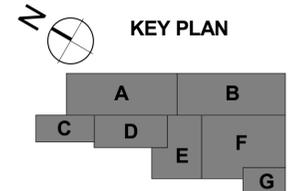
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118-0167

DRAWING NO.
MEC-100

SHEET NO.
10. 04



1 HVAC - 00 DUCT OVERALL
SCALE: 3/64" = 1'-0"



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SCALE
3/64" = 1'-0"

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STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION



File Name: MPPP_CTDOT_Rocky Hill Repair Facility_Central.rvt

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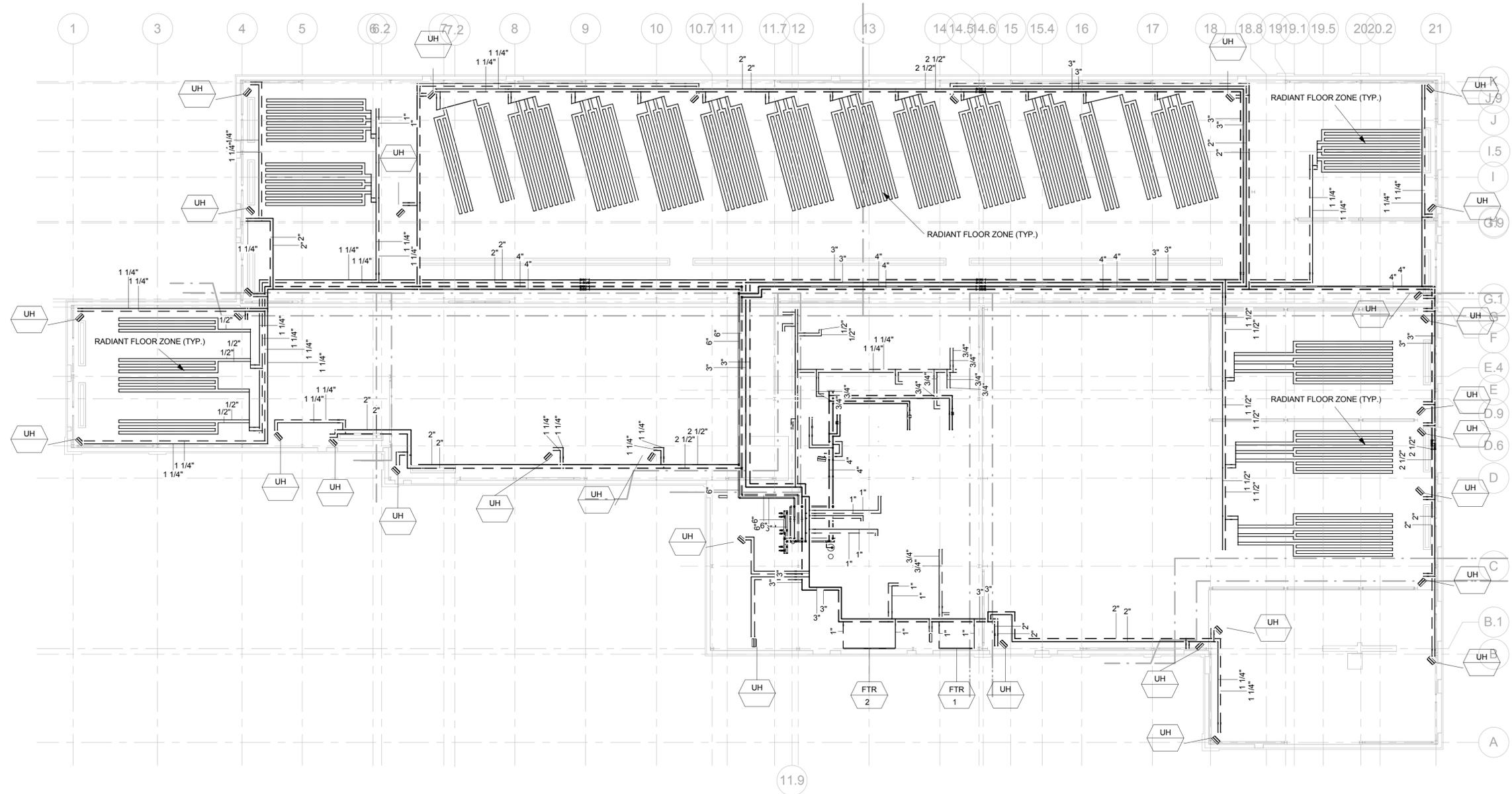
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ROCKY HILL

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OVERALL DUCT PLAN

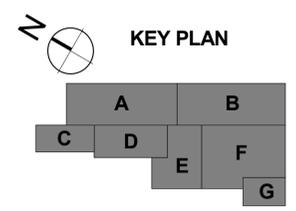
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118-0167

DRAWING NO.
MEC-200

SHEET NO.
10. 05



1 HVAC - 00 PIPING OVERALL
SCALE: 3/64" = 1'-0"



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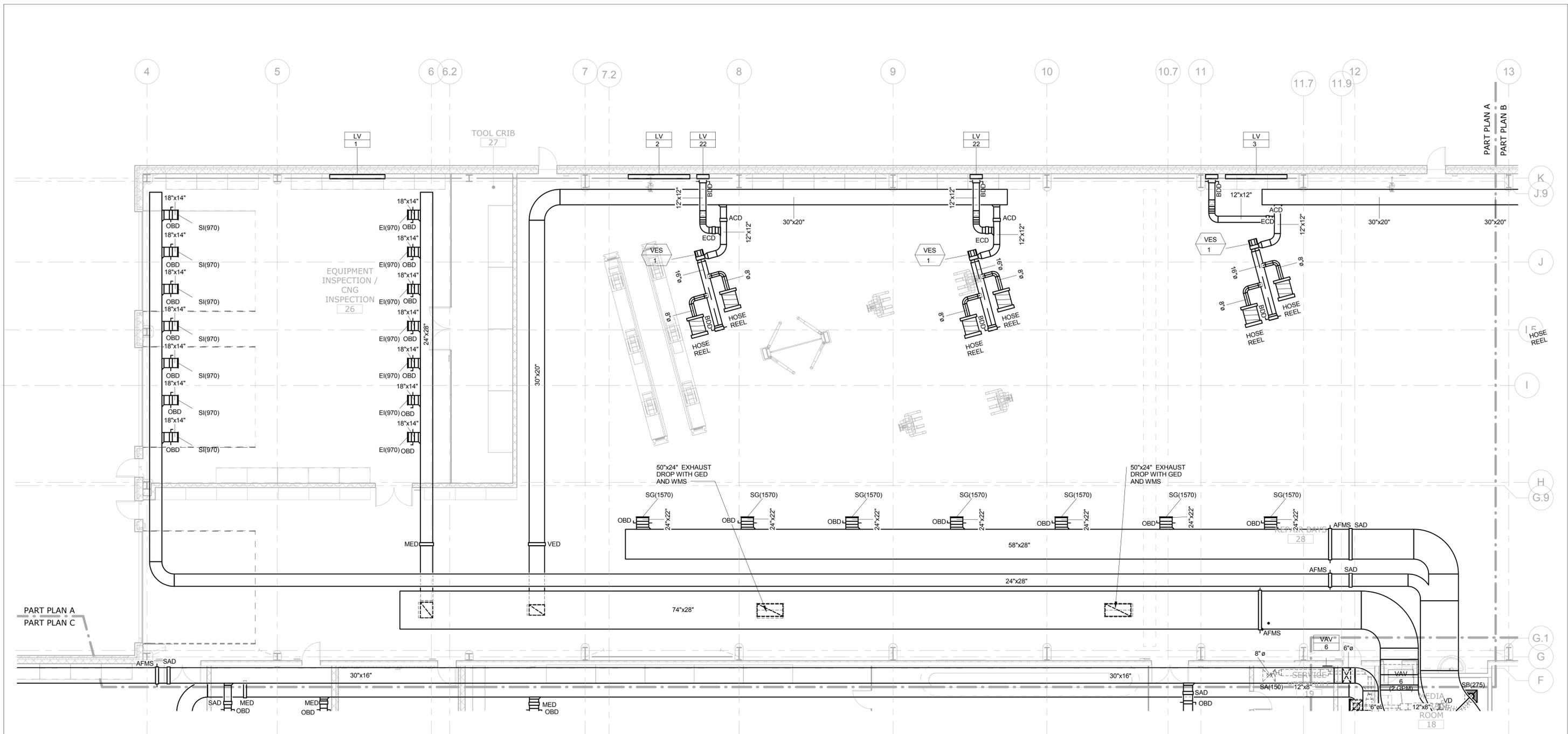
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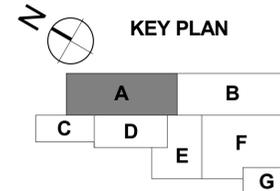
REPAIR FACILITY

TOWN
ROCKY HILL
DRAWING TITLE
OVERALL PIPE PLAN

PROJECT NO.
118-0167
DRAWING NO.
MEC-200P
SHEET NO.
10. 06



1 HVAC - DUCTWORK - PART PLAN A - NORTH REPAIR BAYS
SCALE: 1/8" = 1'-0"



NO.	Revision Description	Date

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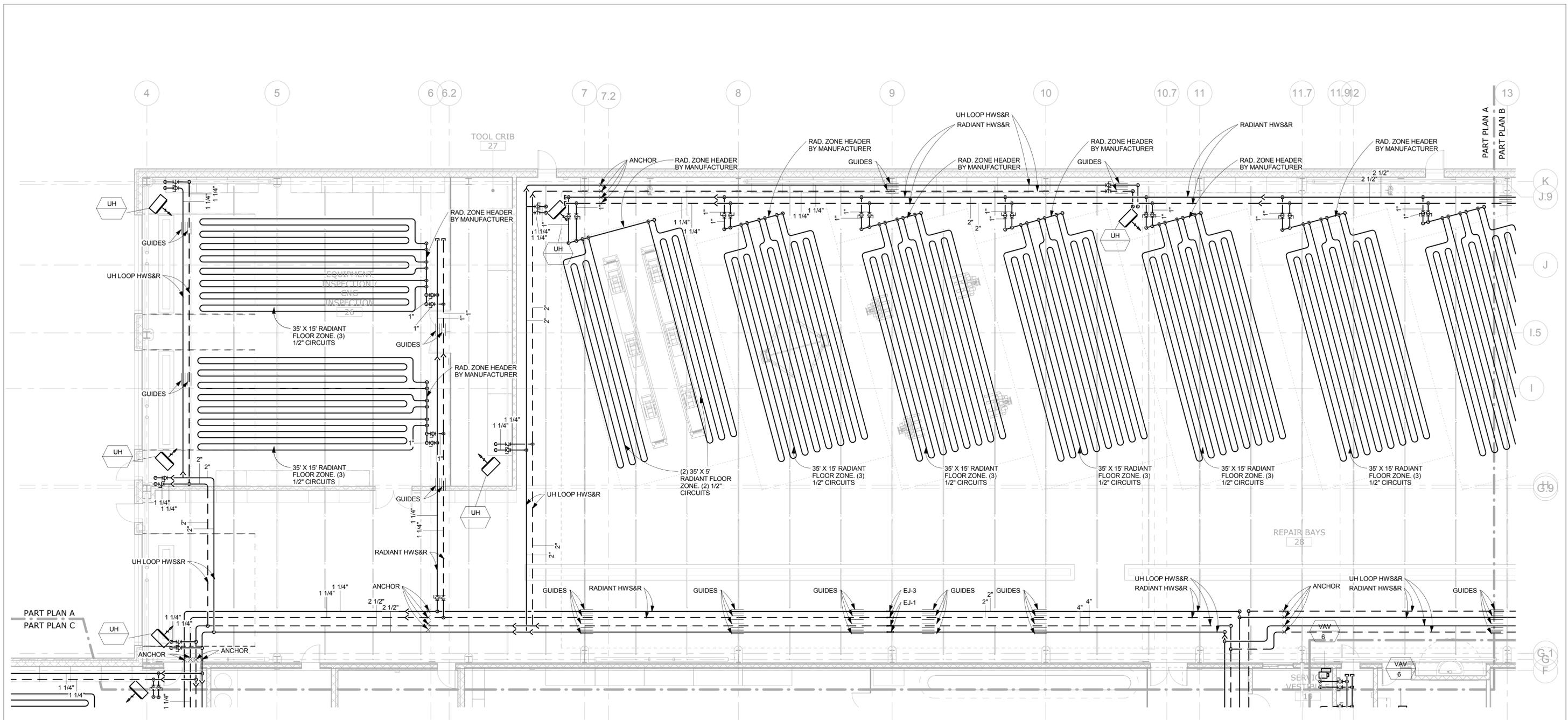


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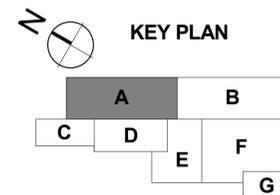
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ROCKY HILL
DRAWING TITLE
MECHANICAL - PART PLAN A

PROJECT NO.
118-0167
DRAWING NO.
MEC-201
SHEET NO.
10. 07

Plotted: 6/9/2014 4:11:55 PM



1 HVAC - PIPING - PART PLAN A - NORTH REPAIR BAYS
SCALE: 1/8" = 1'-0"



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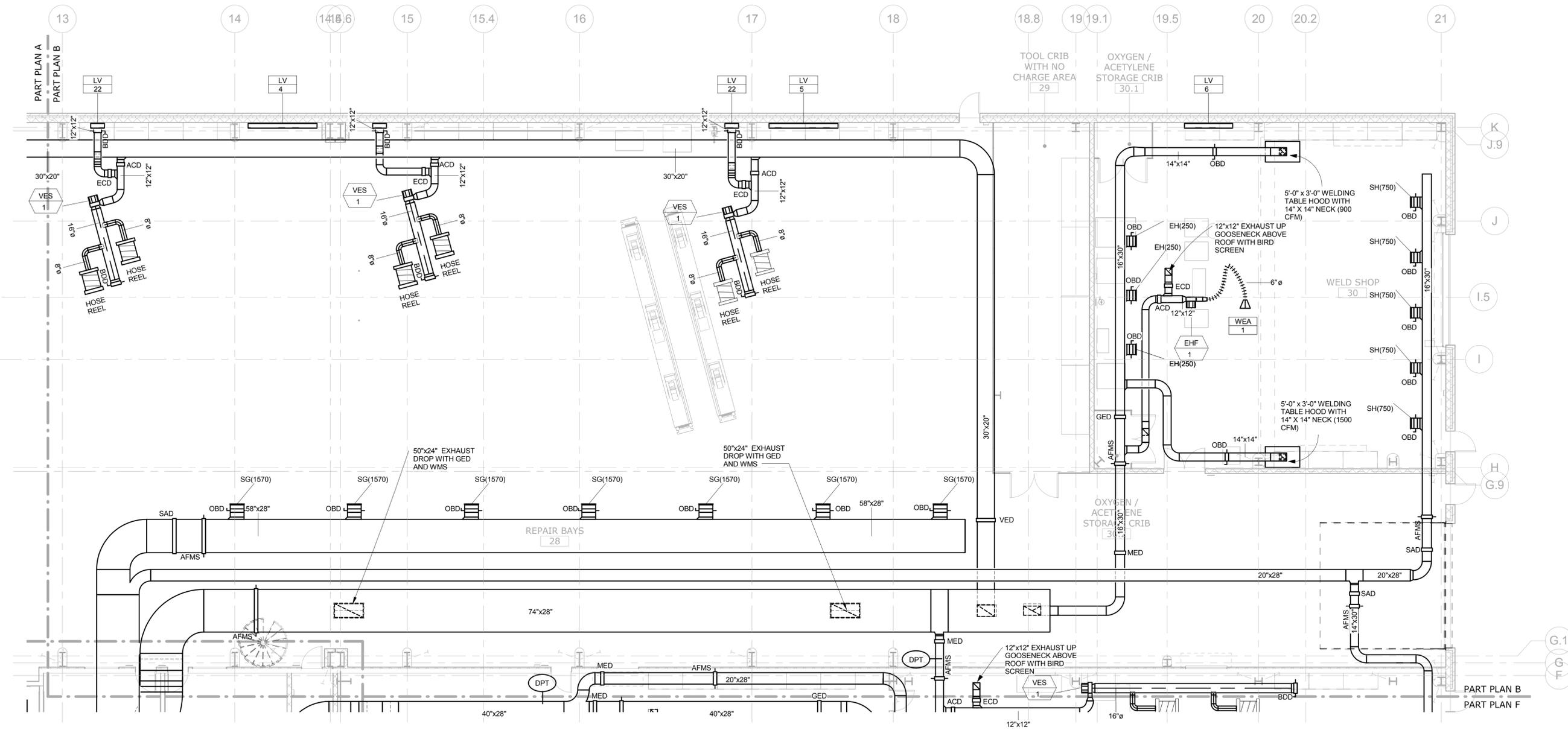
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ROCKY HILL

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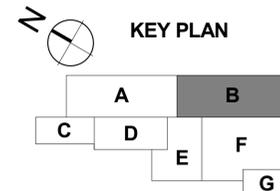
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118-0167

DRAWING NO.
MEC-201P

SHEET NO.
10. 08



1 HVAC - DUCTWORK - PART PLAN B - SOUTH REPAIR BAYS
SCALE: 1/8" = 1'-0"



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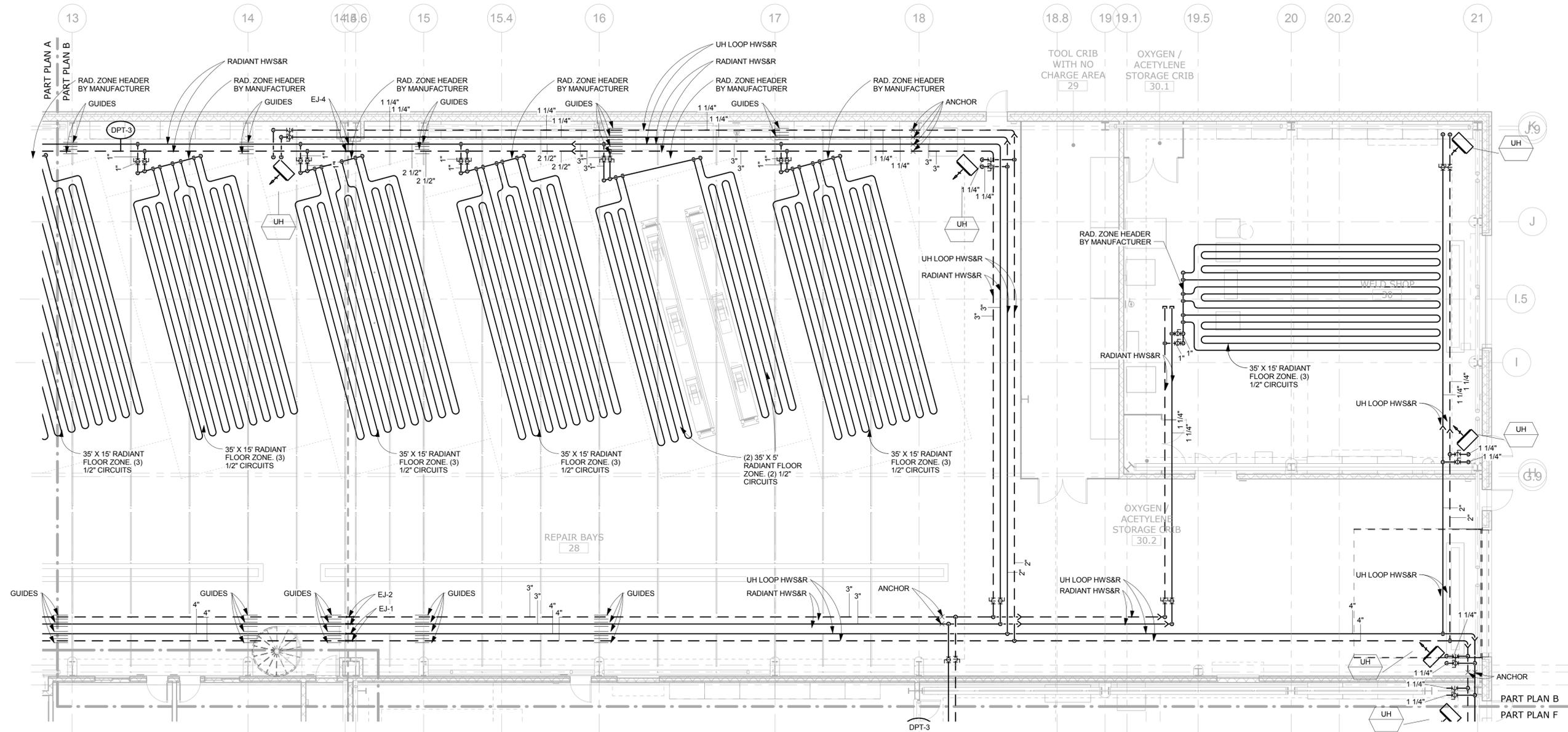
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REPAIR FACILITY

TOWN
ROCKY HILL
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MECHANICAL - PART PLAN B

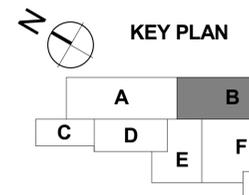
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118-0167
DRAWING NO.
MEC-202
SHEET NO.
10. 09

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1 HVAC - PIPING - PART PLAN B - SOUTH REPAIR BAYS
SCALE: 1/8" = 1'-0"



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SCALE
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REPAIR FACILITY

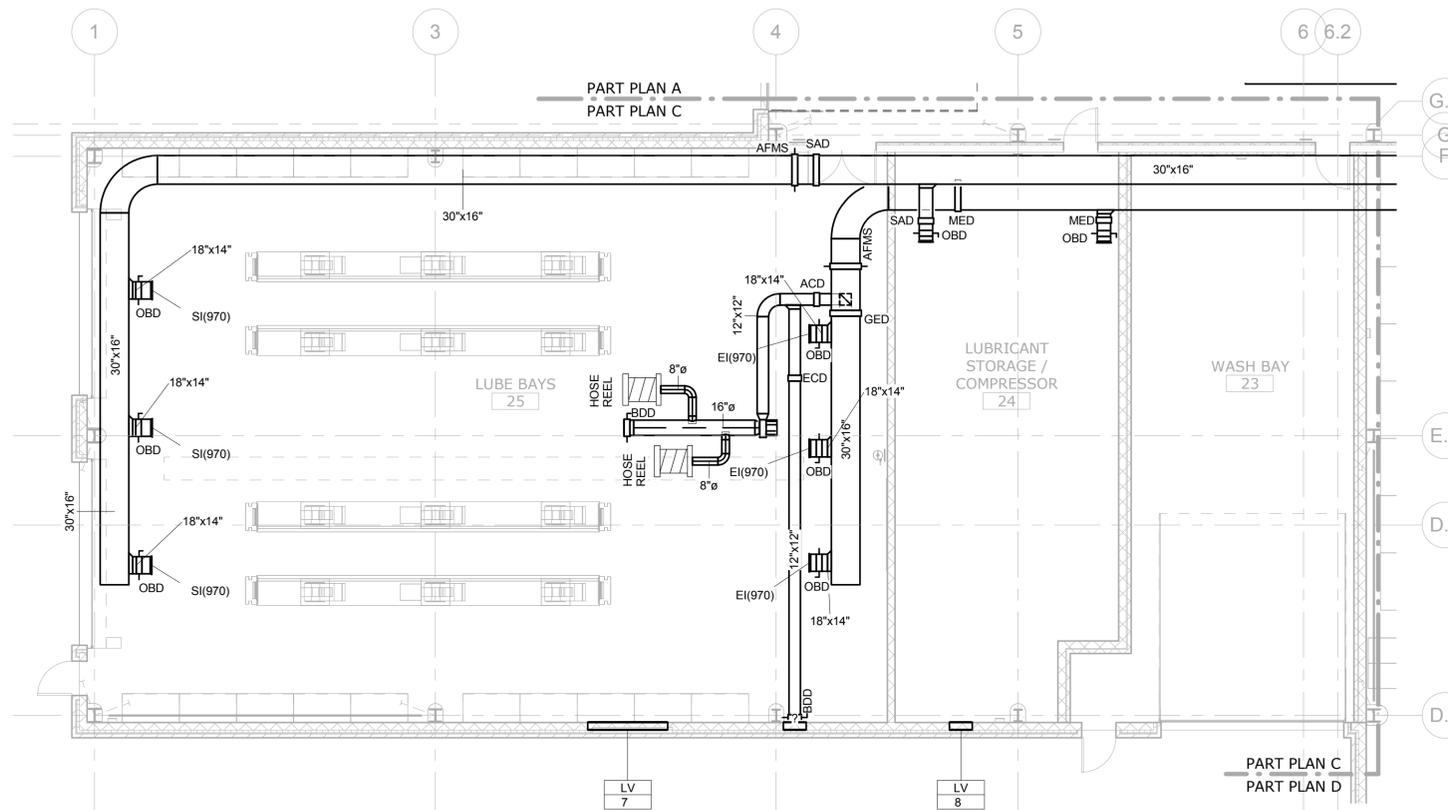
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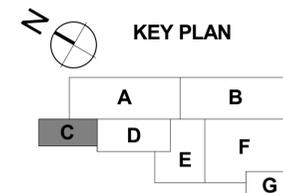
PROJECT NO.
118-0167

DRAWING NO.
MEC-202P

SHEET NO.
10.10



1 HVAC - DUCTWORK - PART PLAN C - LUBE & WASH BAYS
SCALE: 1/8" = 1'-0"



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SCALE
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PROJECT TITLE
REPAIR FACILITY

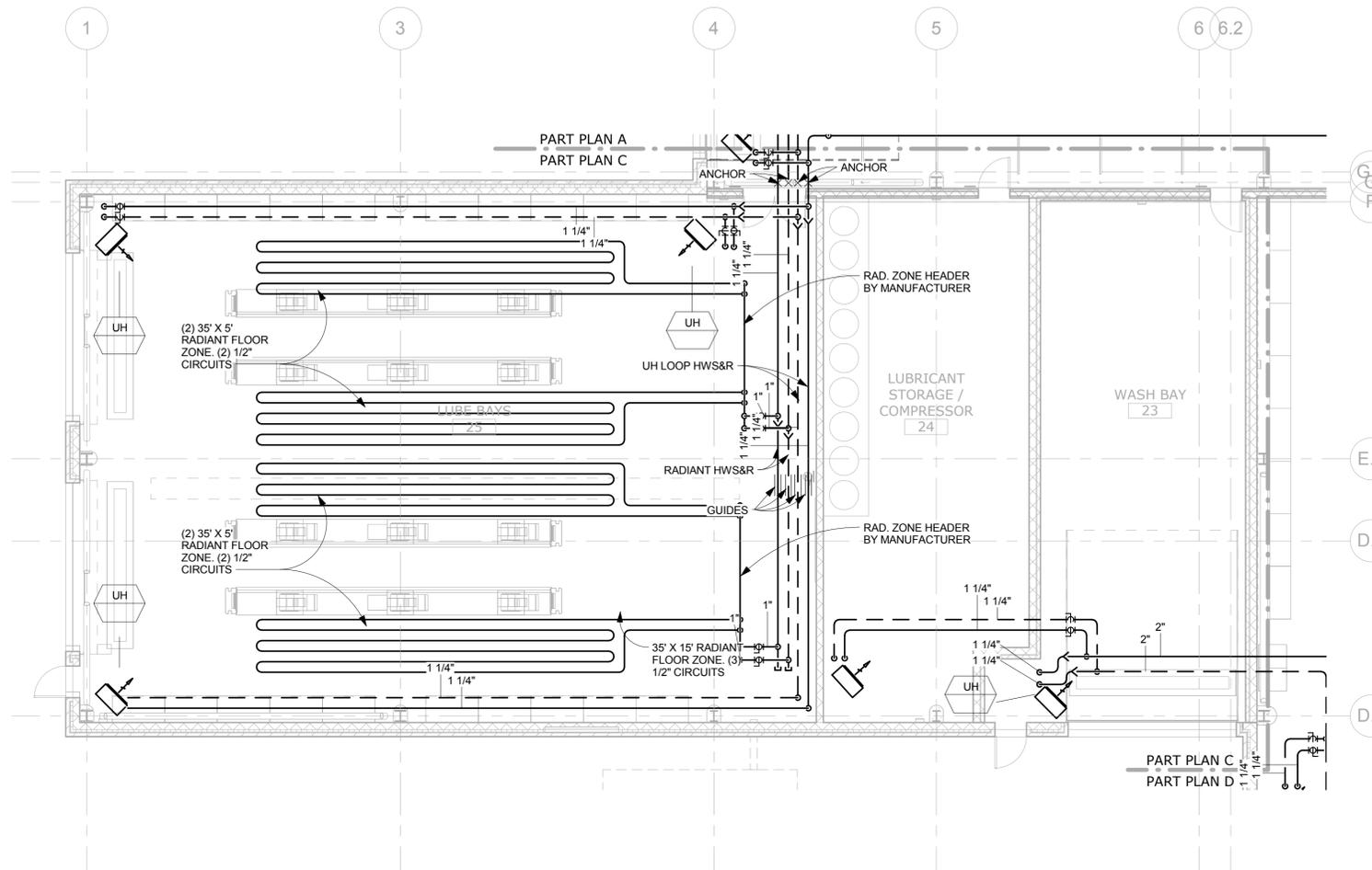
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MECHANICAL - PART PLAN C

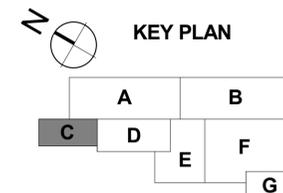
PROJECT NO.
118-0167

DRAWING NO.
MEC-203

SHEET NO.
10.11



1 HVAC - PIPING - PART PLAN C - LUBE & WASH BAYS
SCALE: 1/8" = 1'-0"



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REPAIR FACILITY

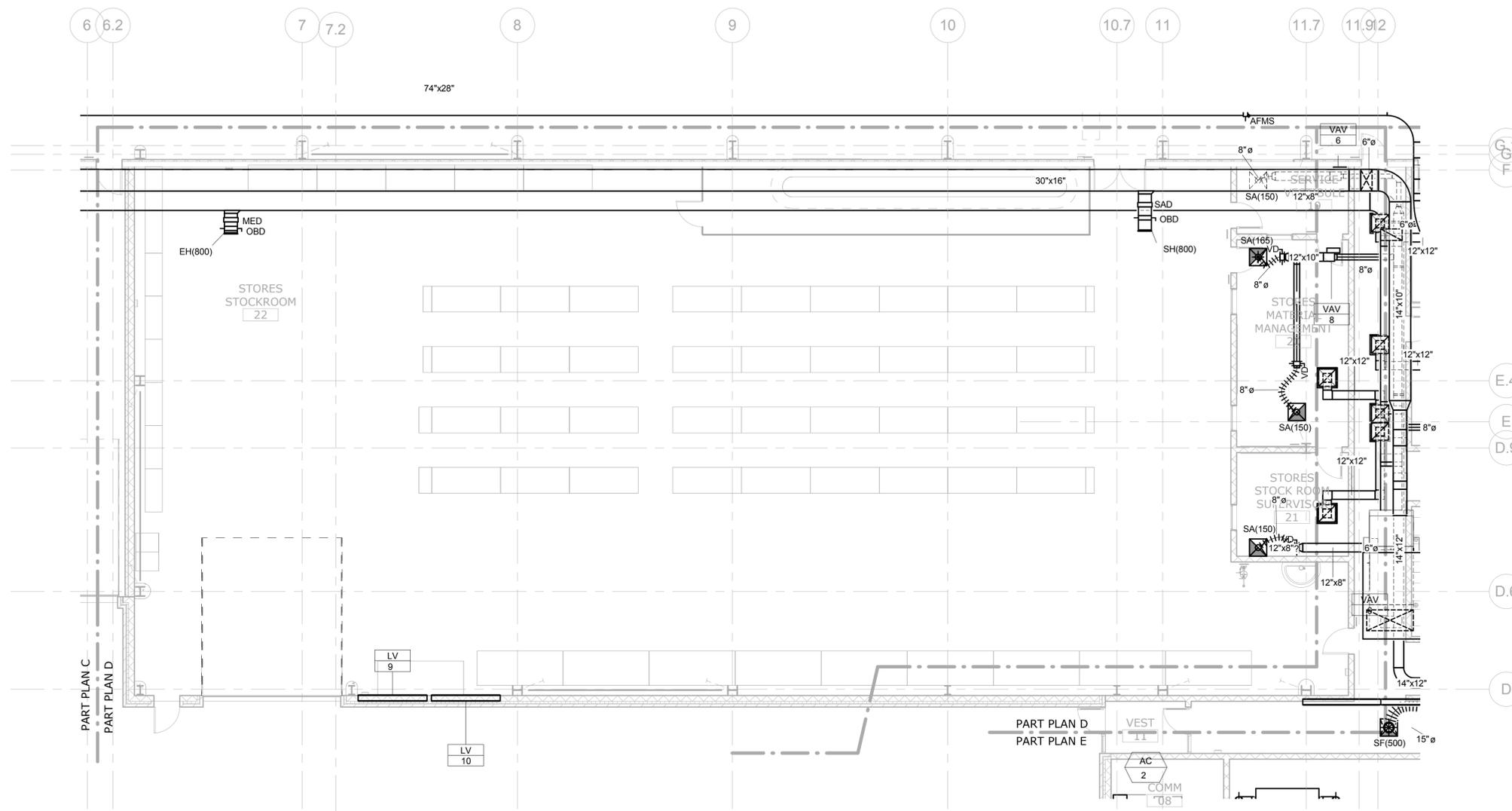
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ROCKY HILL

DRAWING TITLE
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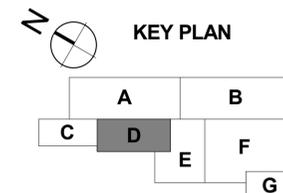
PROJECT NO.
118-0167

DRAWING NO.
MEC-203P

SHEET NO.
10.12



1 HVAC - DUCTWORK - PART PLAN D - STORES
SCALE: 1/8" = 1'-0"



NO.	Revision Description	Date

THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.

Plotted: 6/9/2014 4:12:09 PM

DESIGNER/DRAFTER
WJS

CHECKED BY:
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PROJECT TITLE
REPAIR FACILITY

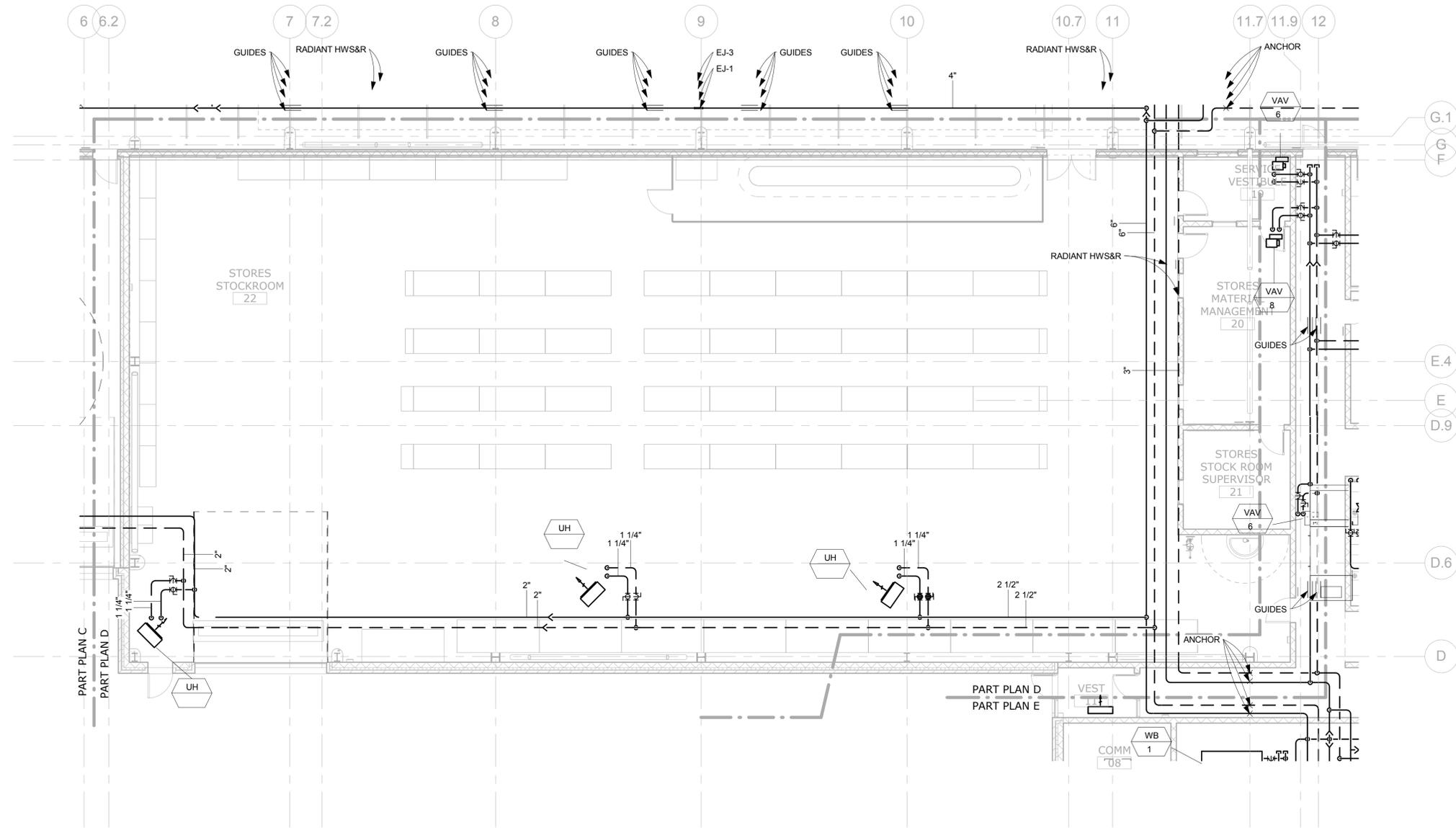
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ROCKY HILL

DRAWING TITLE
MECHANICAL - PART PLAN D

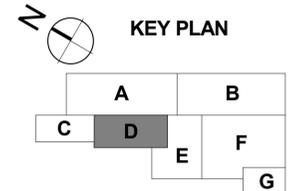
PROJECT NO.
118-0167

DRAWING NO.
MEC-204

SHEET NO.
10.13



1 HVAC - PIPING - PART PLAN D - STORES
SCALE: 1/8" = 1'-0"



NO.	Revision Description	Date

THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.

Plotted: 6/9/2014 4:12:12 PM

DESIGNER/DRAFTER
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CHECKED BY:
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PROJECT TITLE
REPAIR FACILITY

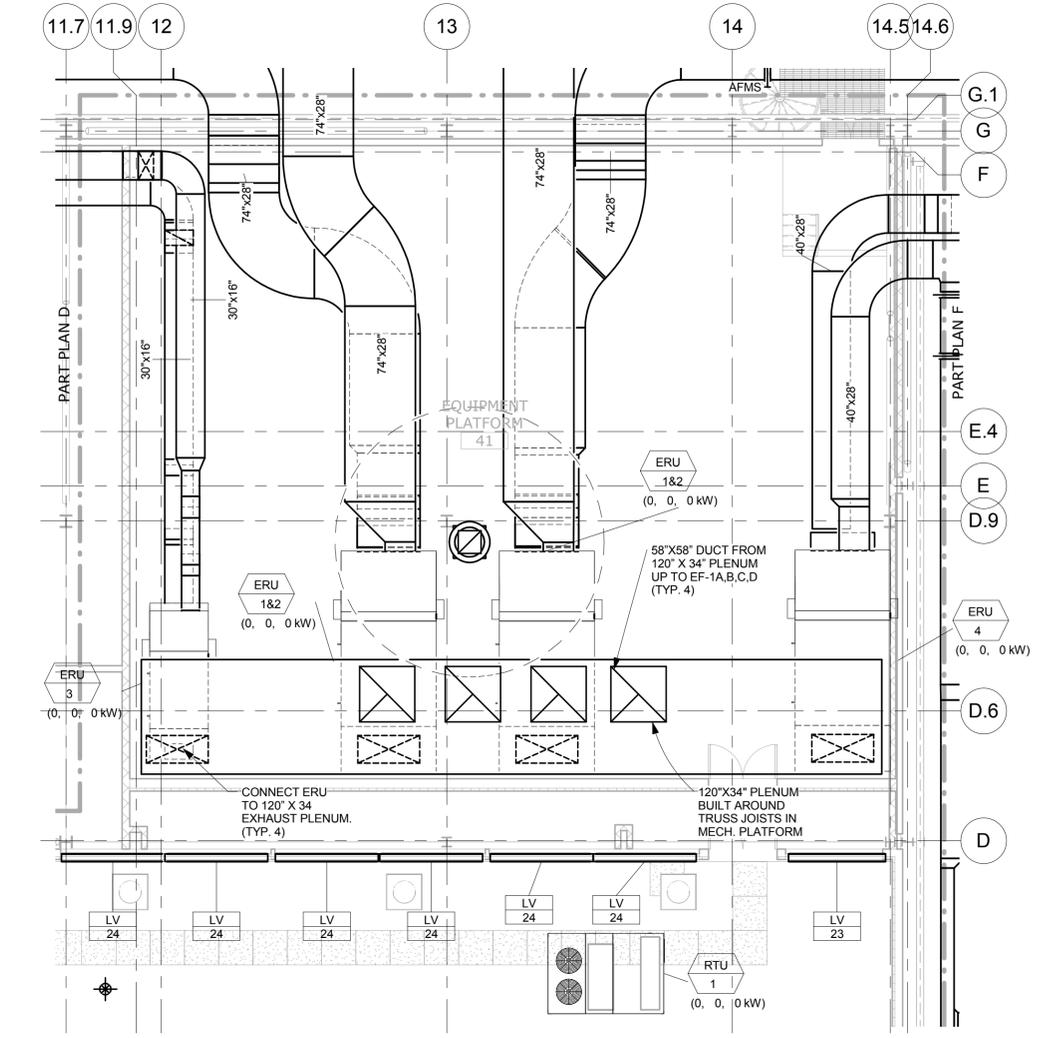
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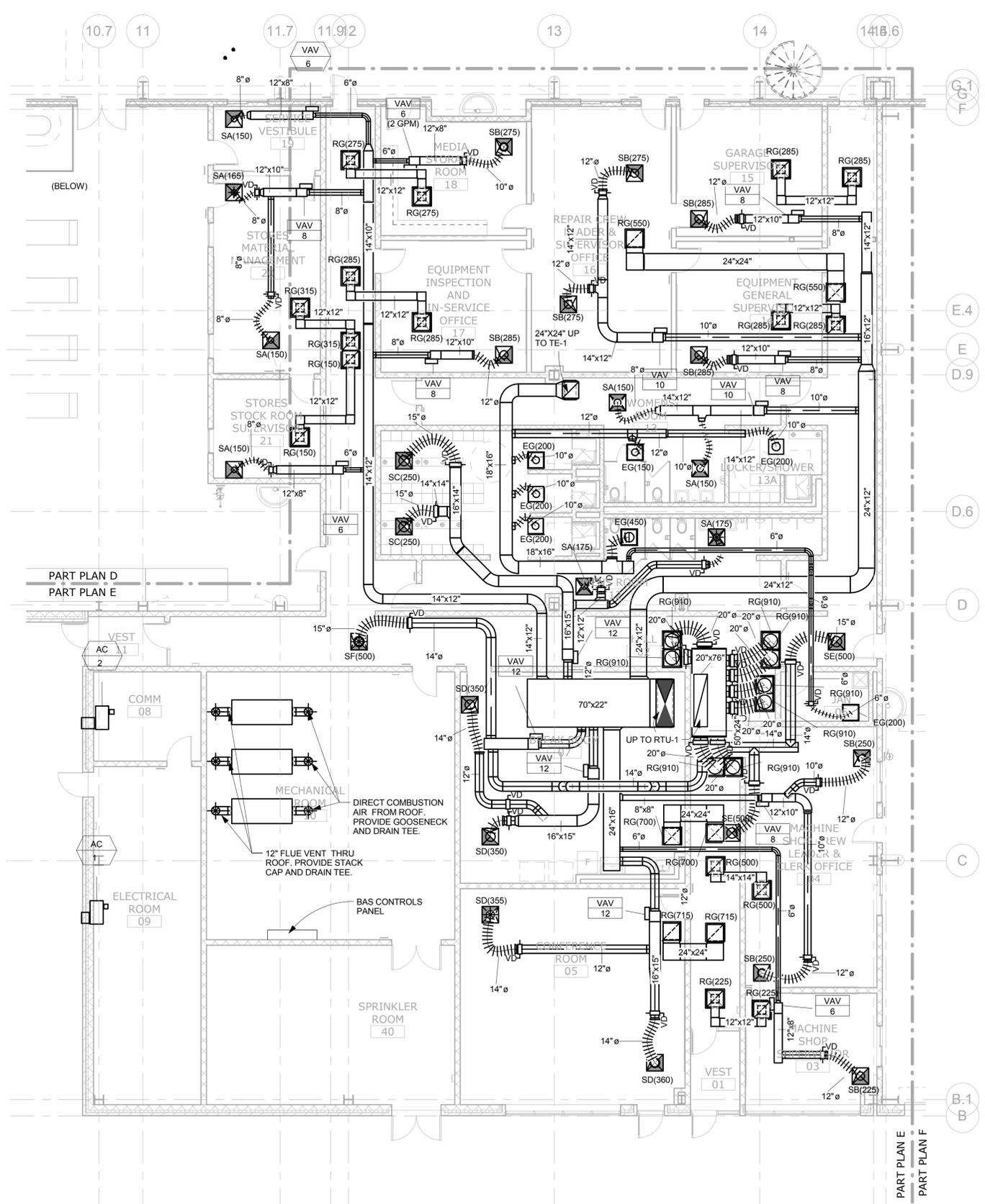
PROJECT NO.
118-0167

DRAWING NO.
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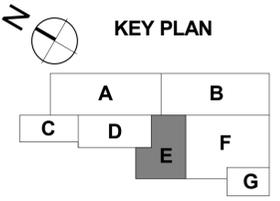
SHEET NO.
10.14



2 HVAC - DUCTWORK - EQUIPMENT PLATFORM
SCALE: 1/8" = 1'-0"



1 HVAC - DUCTWORK - PART PLAN E - OFFICE AREA
SCALE: 1/8" = 1'-0"



NO.	Revision Description	Date

THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.

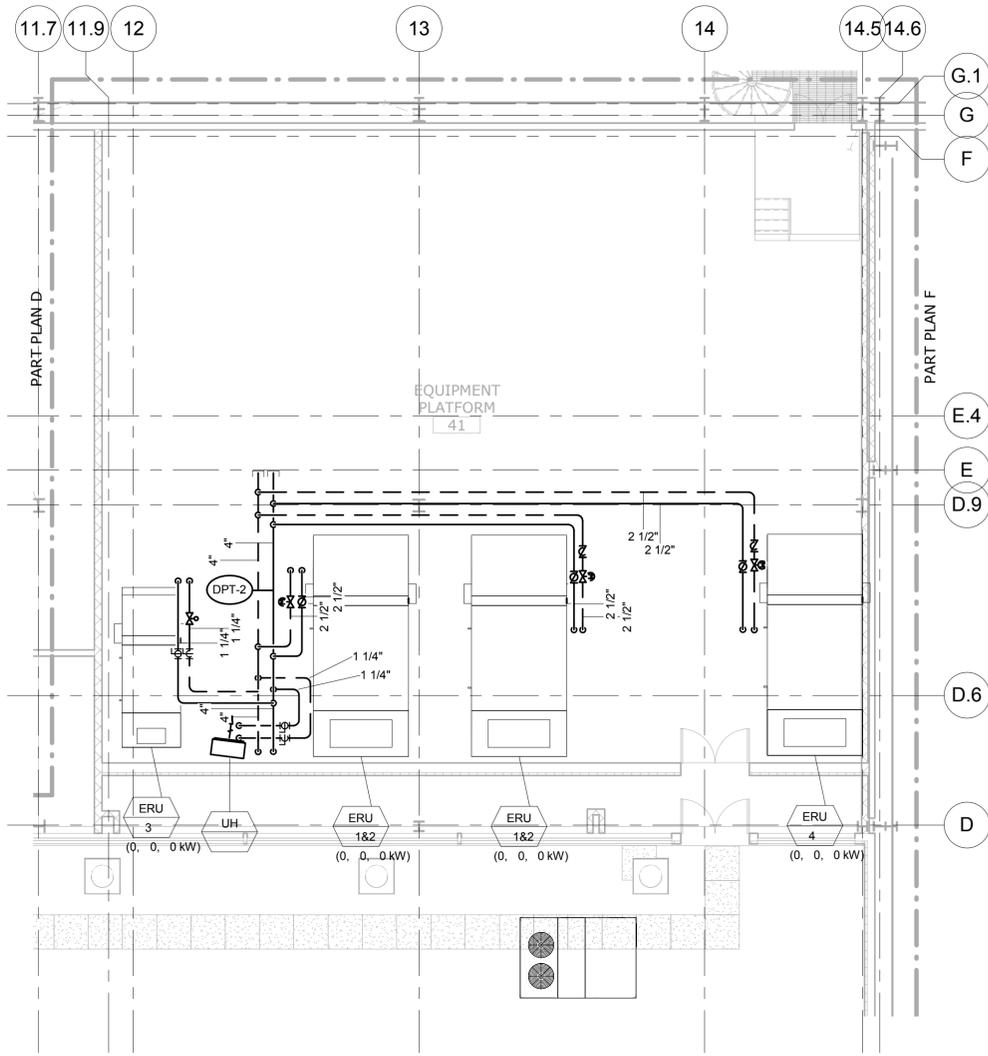
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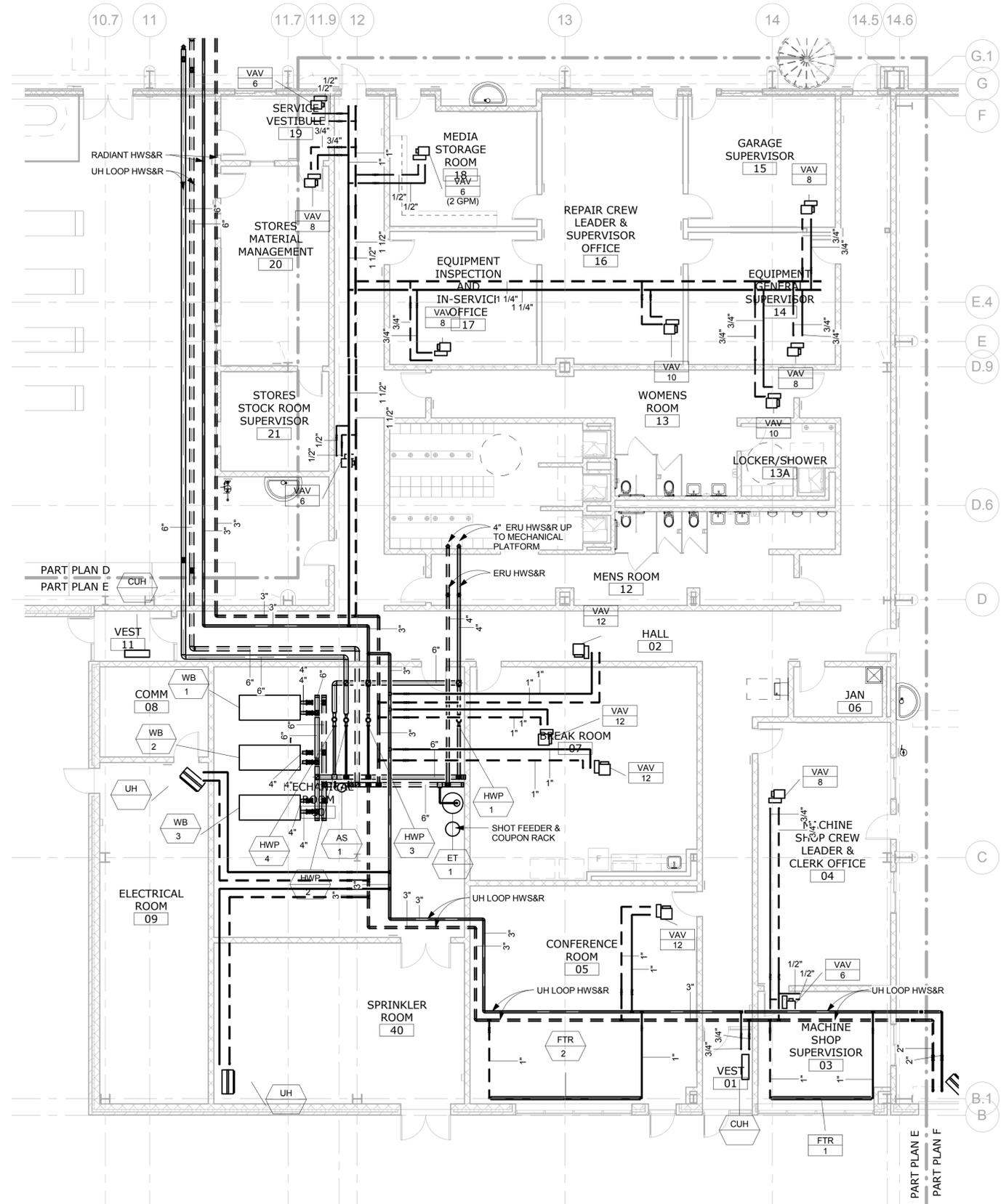
SIGNATURE/BLOCK:
PROJECT TITLE
REPAIR FACILITY

TOWN
ROCKY HILL
DRAWING TITLE
MECHANICAL - PART PLAN E & EQUIP. PLATFORM

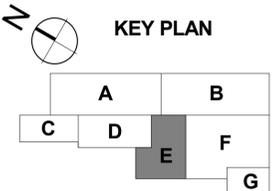
PROJECT NO.
118-0167
DRAWING NO.
MEC-205
SHEET NO.
10.15



2 HVAC - PIPING - EQUIPMENT PLATFORM
SCALE: 1/8" = 1'-0"



1 HVAC - PIPING - PART PLAN E - OFFICE AREA
SCALE: 1/8" = 1'-0"



NO.	Revision Description	Date

THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.

Plotted: 6/9/2014 4:12:21 PM

DESIGNER/DRAFTER
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CHECKED BY:
TFC

SCALE
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SIGNATURE/BLOCK:

PROJECT TITLE
REPAIR FACILITY

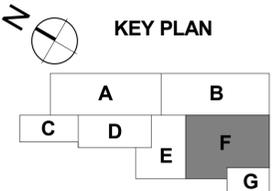
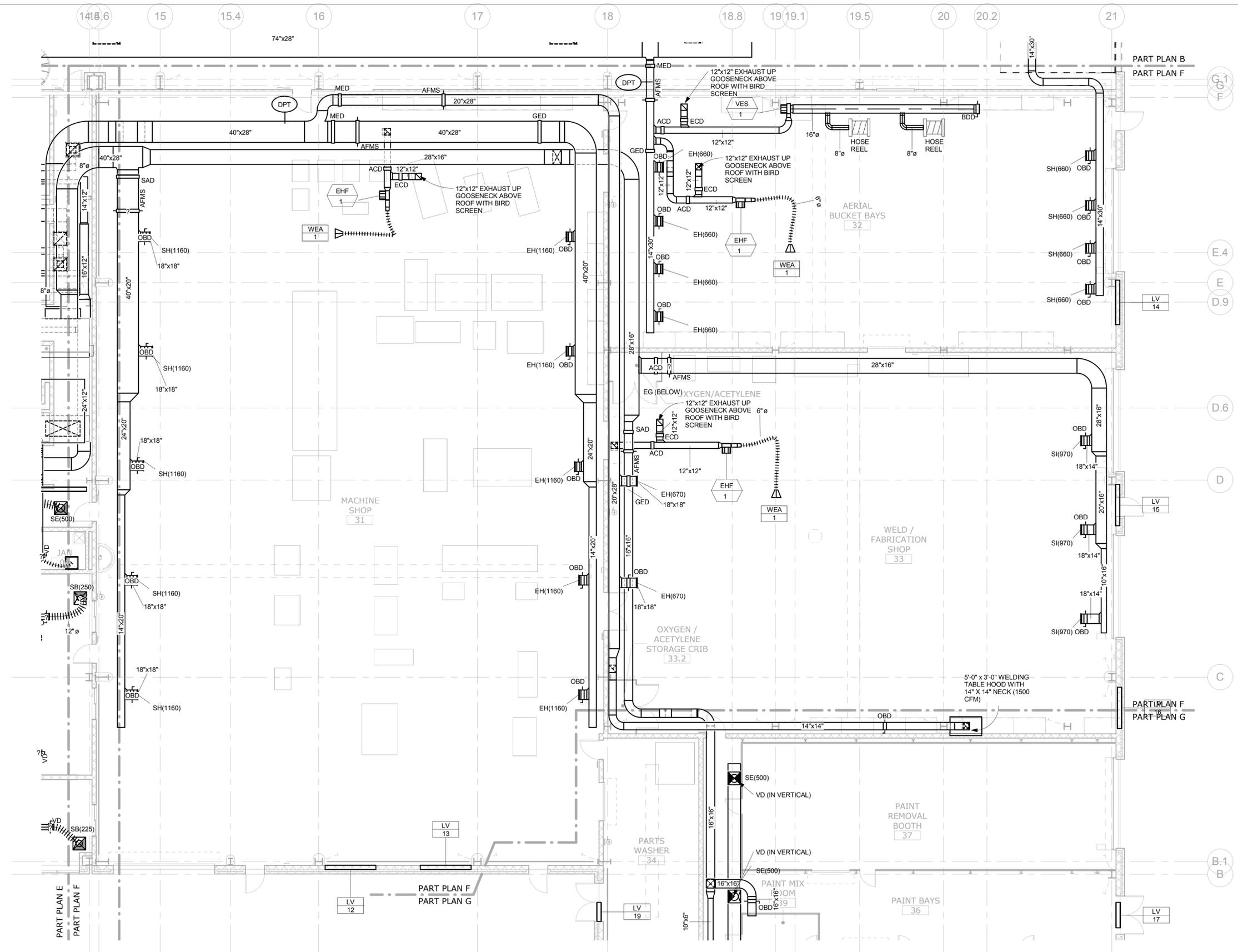
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ROCKY HILL

DRAWING TITLE
MECHANICAL PIPE - PART PLAN E & EQUIP. PLATFORM

PROJECT NO.
118-0167

DRAWING NO.
MEC-205P

SHEET NO.
10.16



1 HVAC - DUCTWORK - PART PLAN F - MACHINE SHOP
SCALE: 1/8" = 1'-0"

NO.	Revision Description	Date

THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.

Plotted: 6/9/2014 4:12:23 PM

DESIGNER/DRAFTER
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CHECKED BY:
TFC

SCALE
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SIGNATURE/BLOCK:

PROJECT TITLE
REPAIR FACILITY

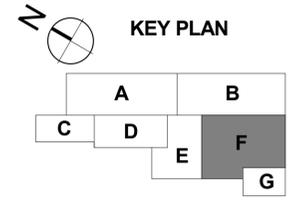
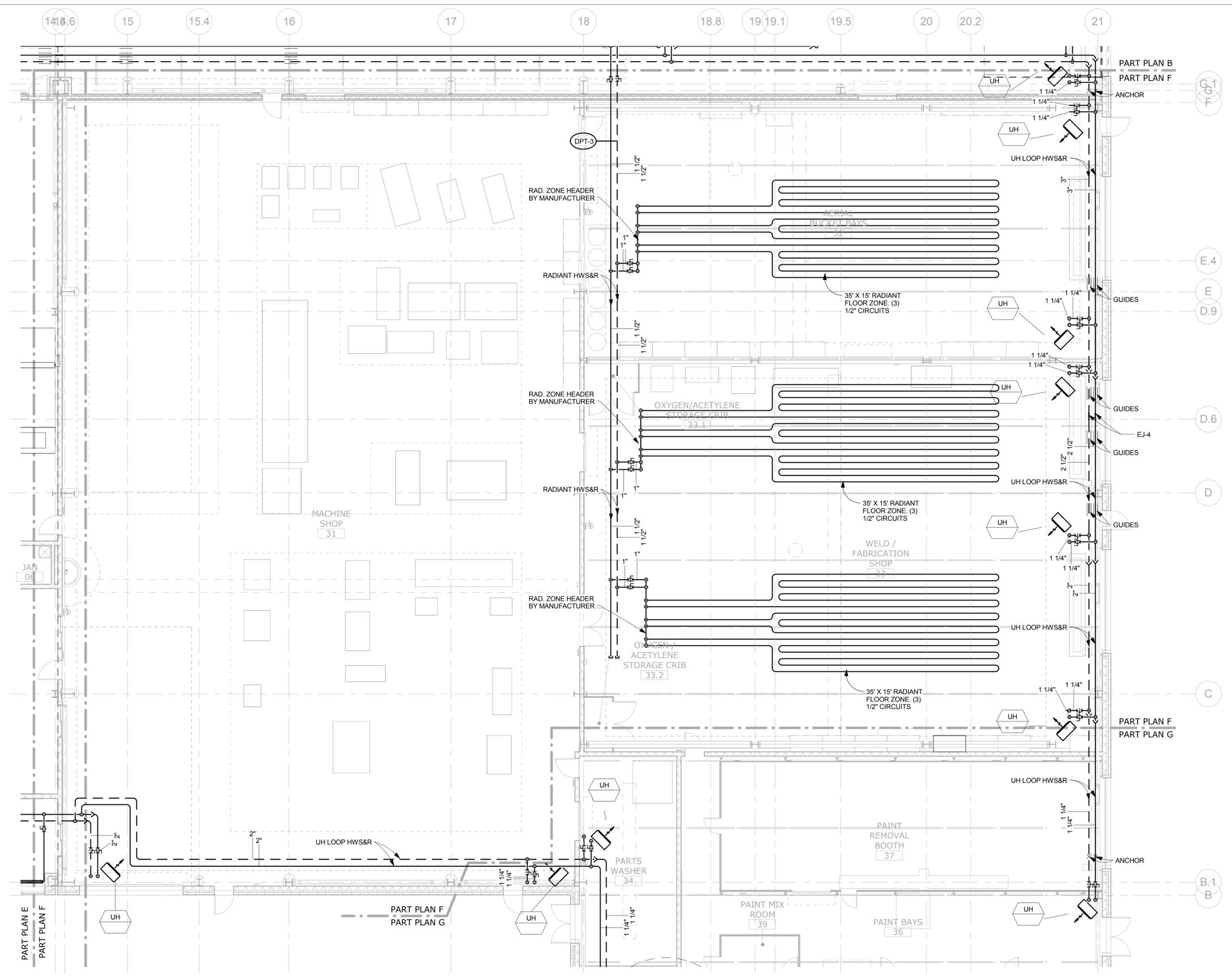
TOWN
ROCKY HILL

DRAWING TITLE
MECHANICAL - PART PLAN F

PROJECT NO.
118-0167

DRAWING NO.
MEC-206

SHEET NO.
10.17



1 HVAC - PIPING - PART PLAN F - MACHINE SHOP
SCALE: 1/8" = 1'-0"

NO.	Revision Description	Date

THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.

DESIGNER/DRAFTER
WJS
CHECKED BY:
TFC
SCALE
1/8" = 1'-0"



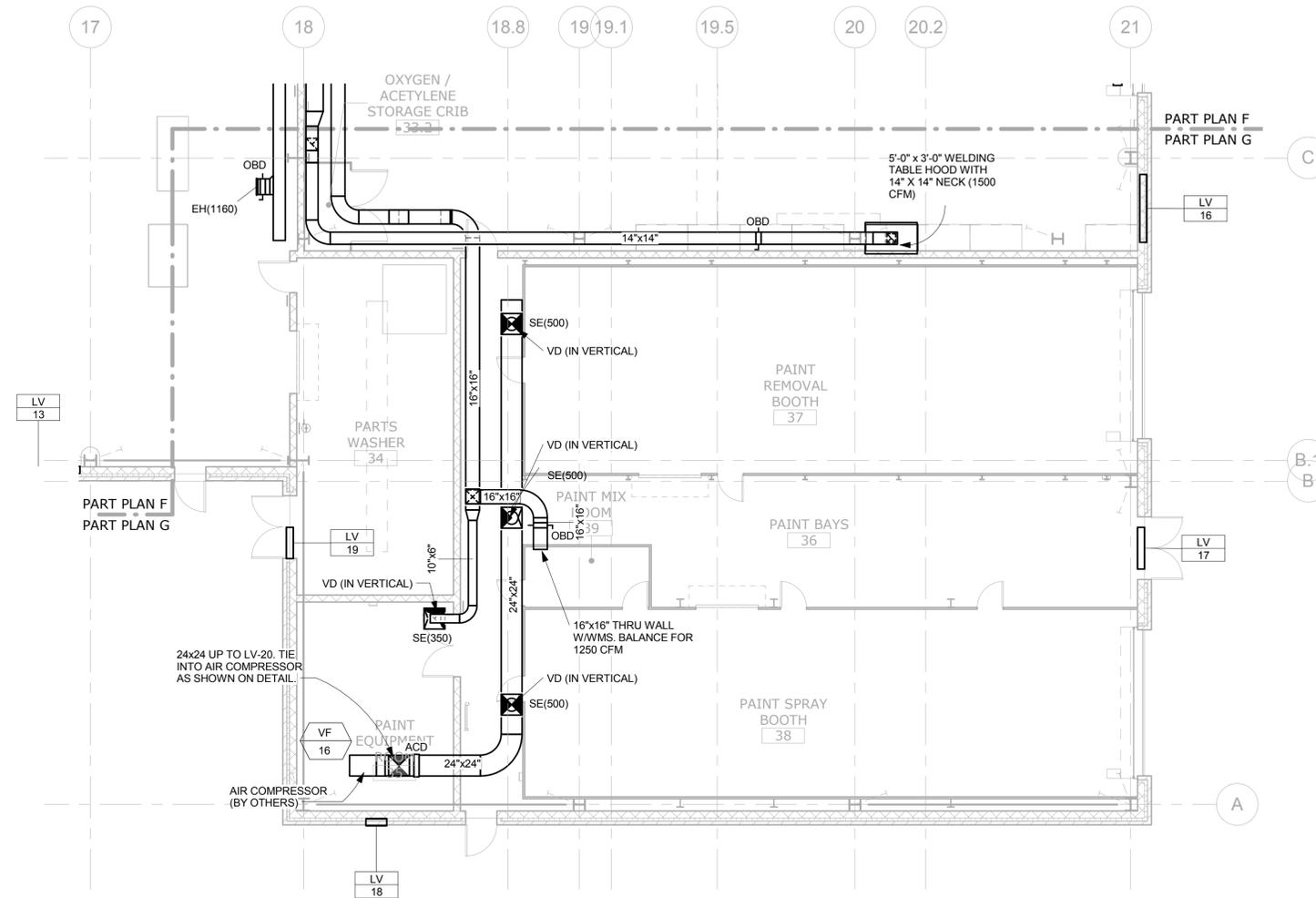
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PROJECT TITLE
REPAIR FACILITY

TOWN
ROCKY HILL
DRAWING TITLE
MECHANICAL PIPE - PART PLAN F

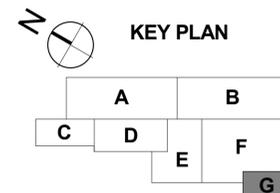
PROJECT NO.
118-0167
DRAWING NO.
MEC-206P
SHEET NO.
10.18

Plotted: 6/9/2014 4:12:26 PM

File Name: MPPP_CTDOT_Rocky Hill Repair Facility_Central.rvt



1 HVAC - DUCTWORK - PART PLAN G - PAINT AREA
SCALE: 1/8" = 1'-0"



NO.	Revision Description	Date

THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.

Plotted: 6/9/2014 4:12:28 PM

DESIGNER/DRAFTER
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CHECKED BY:
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SCALE
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PROJECT TITLE
REPAIR FACILITY

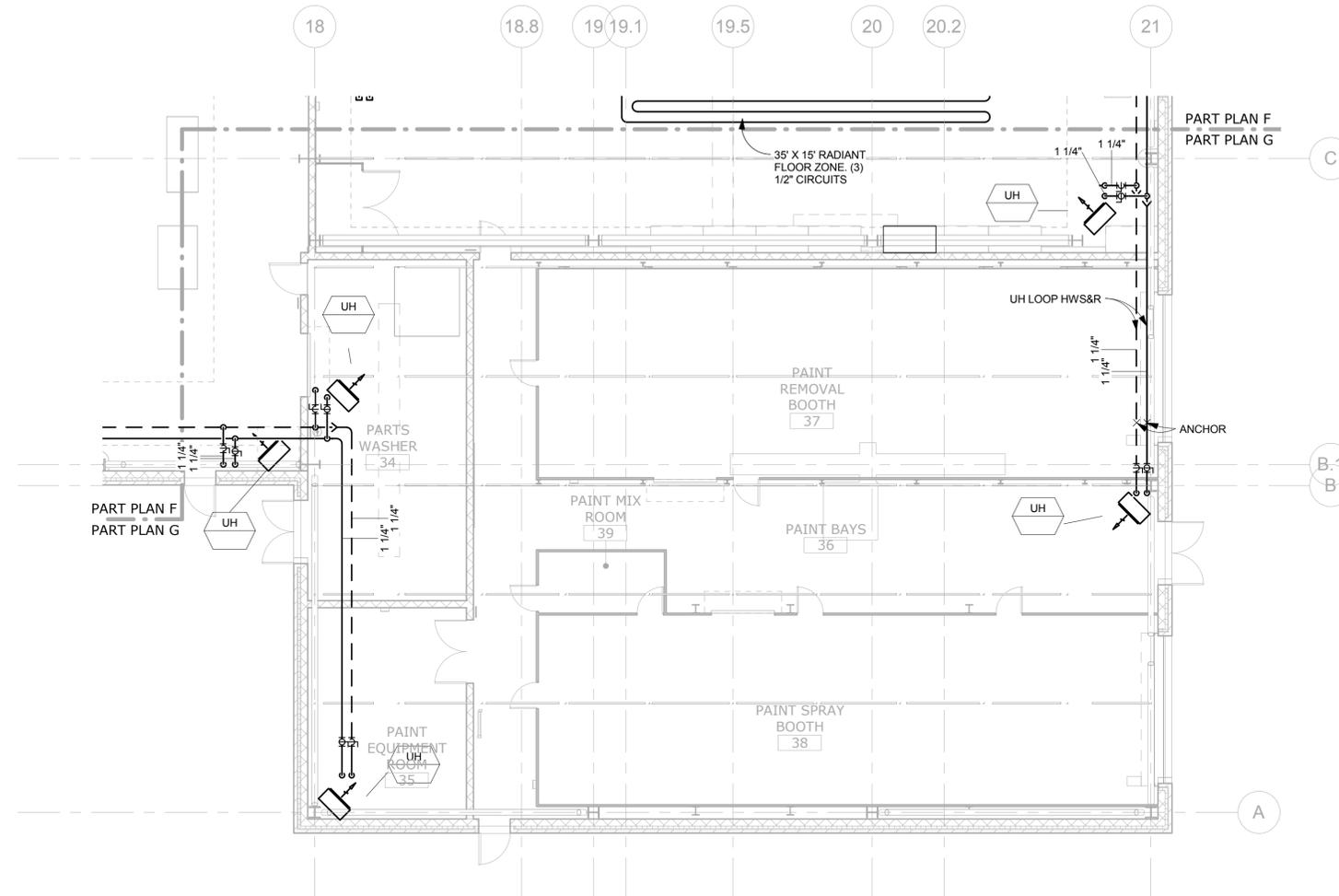
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ROCKY HILL

DRAWING TITLE
MECHANICAL - PART PLAN G

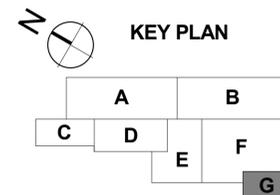
PROJECT NO.
118-0167

DRAWING NO.
MEC-207

SHEET NO.
10.19



1 HVAC - PIPING - PART PLAN G - PAINT AREA
SCALE: 1/8" = 1'-0"



NO.	Revision Description	Date

THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.

Plotted: 6/9/2014 4:12:30 PM

DESIGNER/DRAFTER
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CHECKED BY:
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SCALE
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PROJECT TITLE
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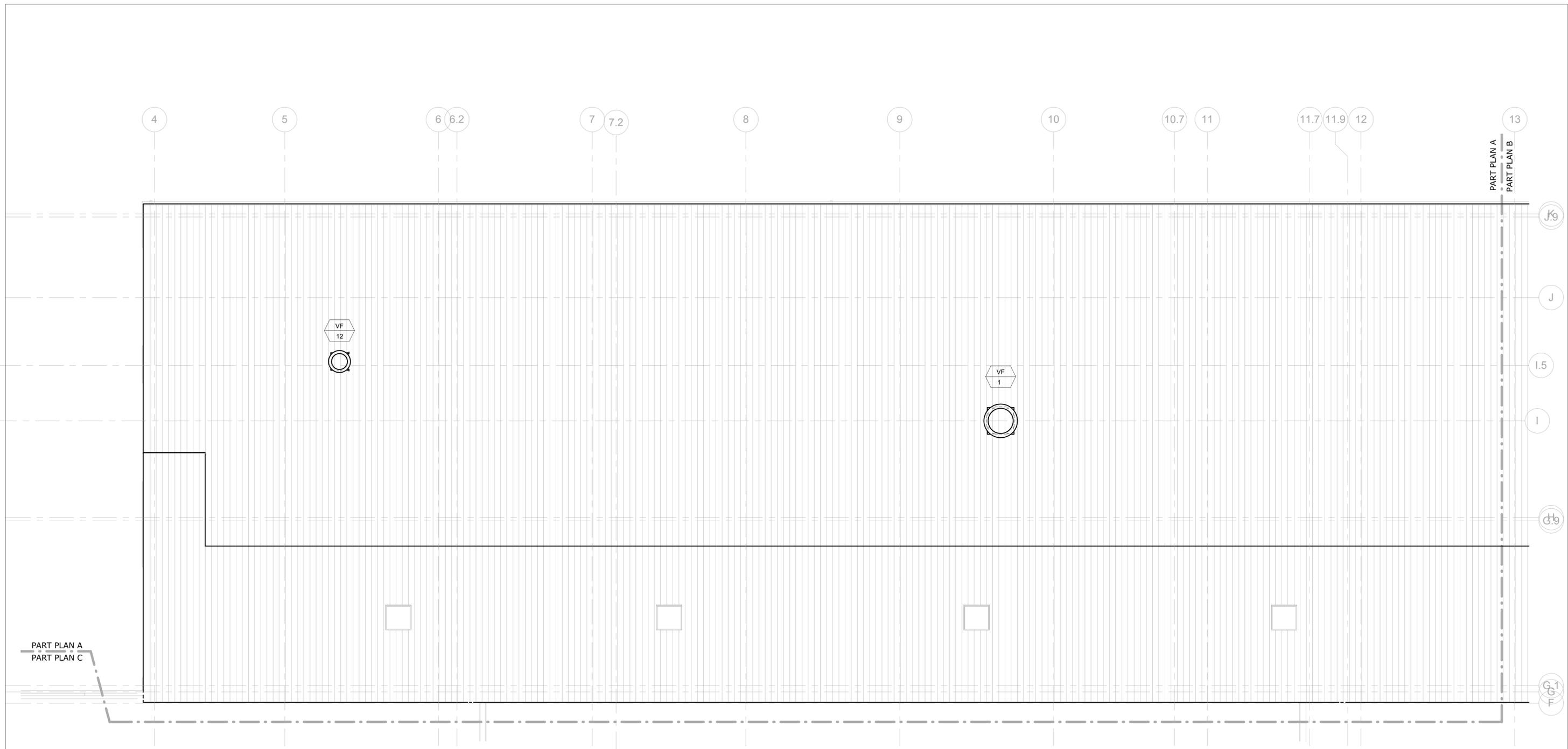
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ROCKY HILL

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MECHANICAL PIPE - PART PLAN G

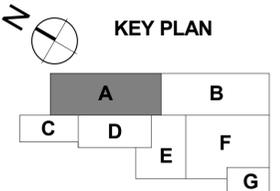
PROJECT NO.
118-0167

DRAWING NO.
MEC-207P

SHEET NO.
10.20



1 HVAC - DUCTWORK - ROOF LEVEL - PART PLAN A
 SCALE: 1/8" = 1'-0"



NO.	Revision Description	Date

THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.

Plotted: 6/9/2014 4:12:32 PM

DESIGNER/DRAFTER
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CHECKED BY:
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SCALE
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SIGNATURE/BLOCK:

PROJECT TITLE
REPAIR FACILITY

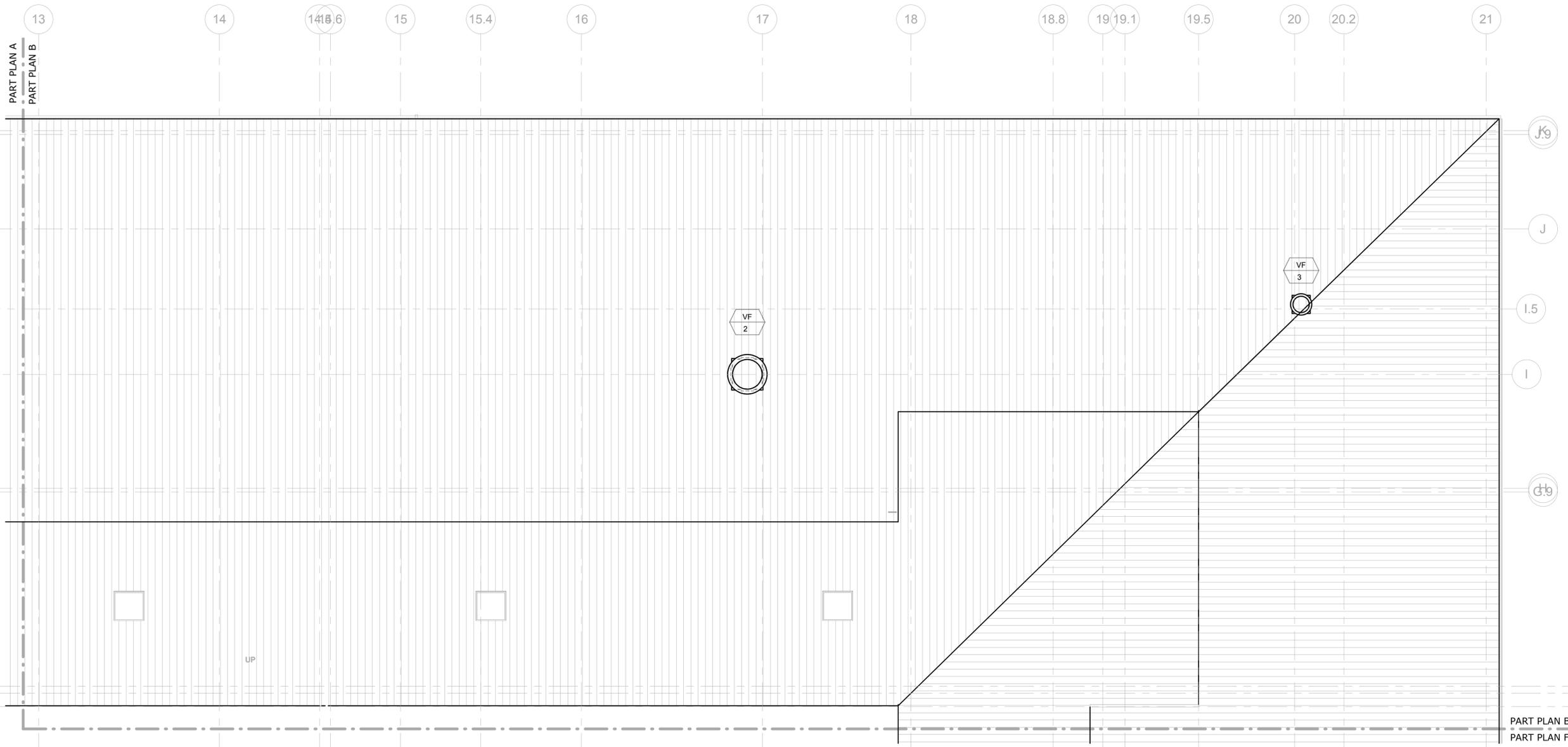
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DRAWING TITLE
MECHANICAL ROOF - PART PLAN A

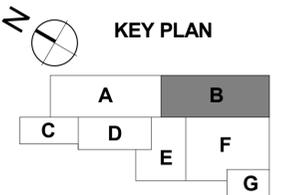
PROJECT NO.
118-0167

DRAWING NO.
MEC-301

SHEET NO.
10.21



1 HVAC - DUCTWORK - ROOF LEVEL - PART PLAN B
SCALE: 1/8" = 1'-0"



NO.	Revision Description	Date

THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.

Plotted: 6/9/2014 4:12:34 PM

DESIGNER/DRAFTER
WJS

CHECKED BY:
TFC

SCALE
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SIGNATURE/BLOCK:

PROJECT TITLE
REPAIR FACILITY

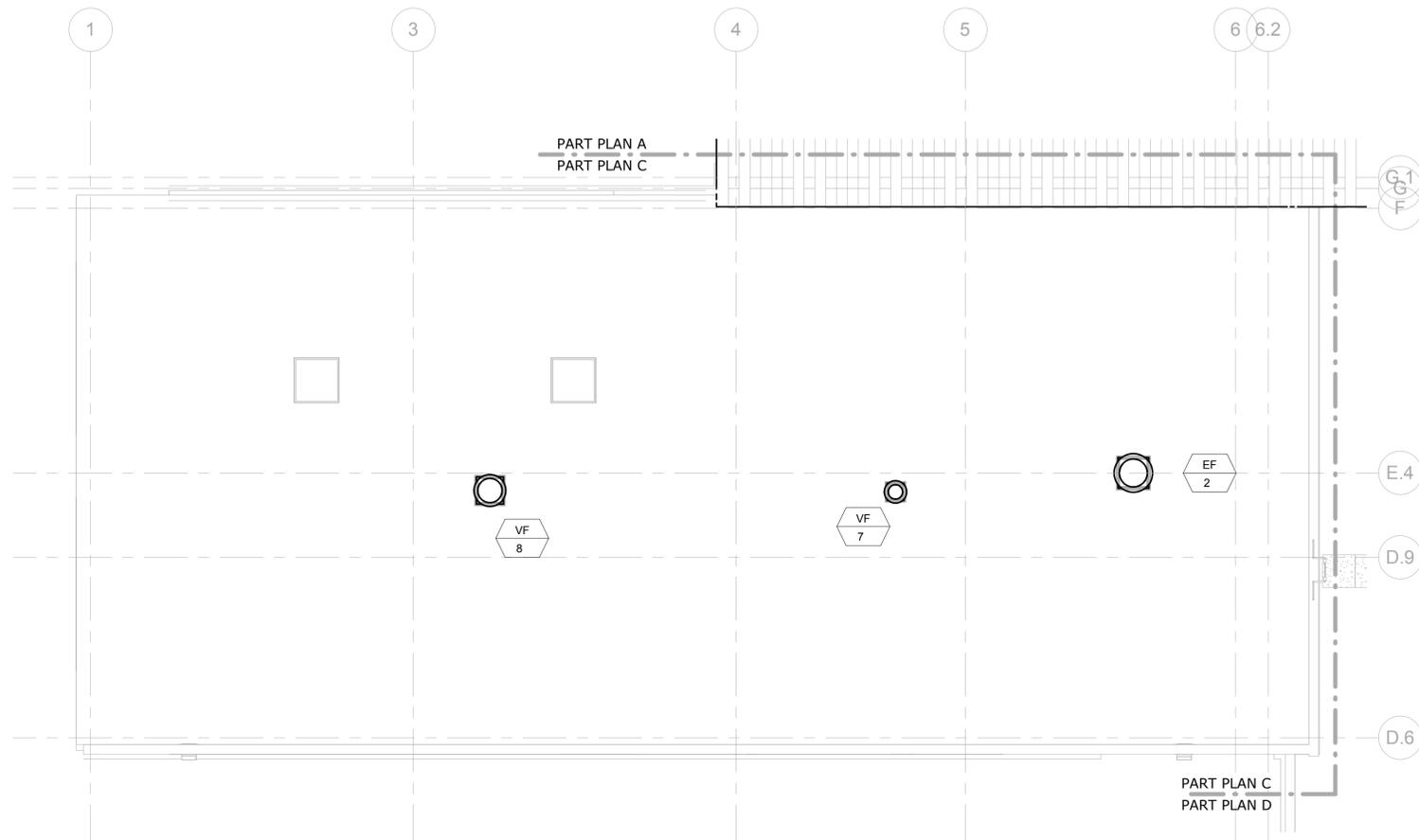
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DRAWING TITLE
MECHANICAL ROOF - PART PLAN B

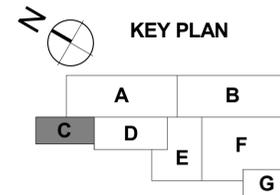
PROJECT NO.
118-0167

DRAWING NO.
MEC-302

SHEET NO.
10.22



1 HVAC - DUCTWORK - ROOF LEVEL - PART PLAN C
SCALE: 1/8" = 1'-0"



NO.	Revision Description	Date

THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.

Plotted: 6/9/2014 4:12:35 PM

DESIGNER/DRAFTER
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CHECKED BY:
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SCALE
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SIGNATURE/BLOCK:

PROJECT TITLE
REPAIR FACILITY

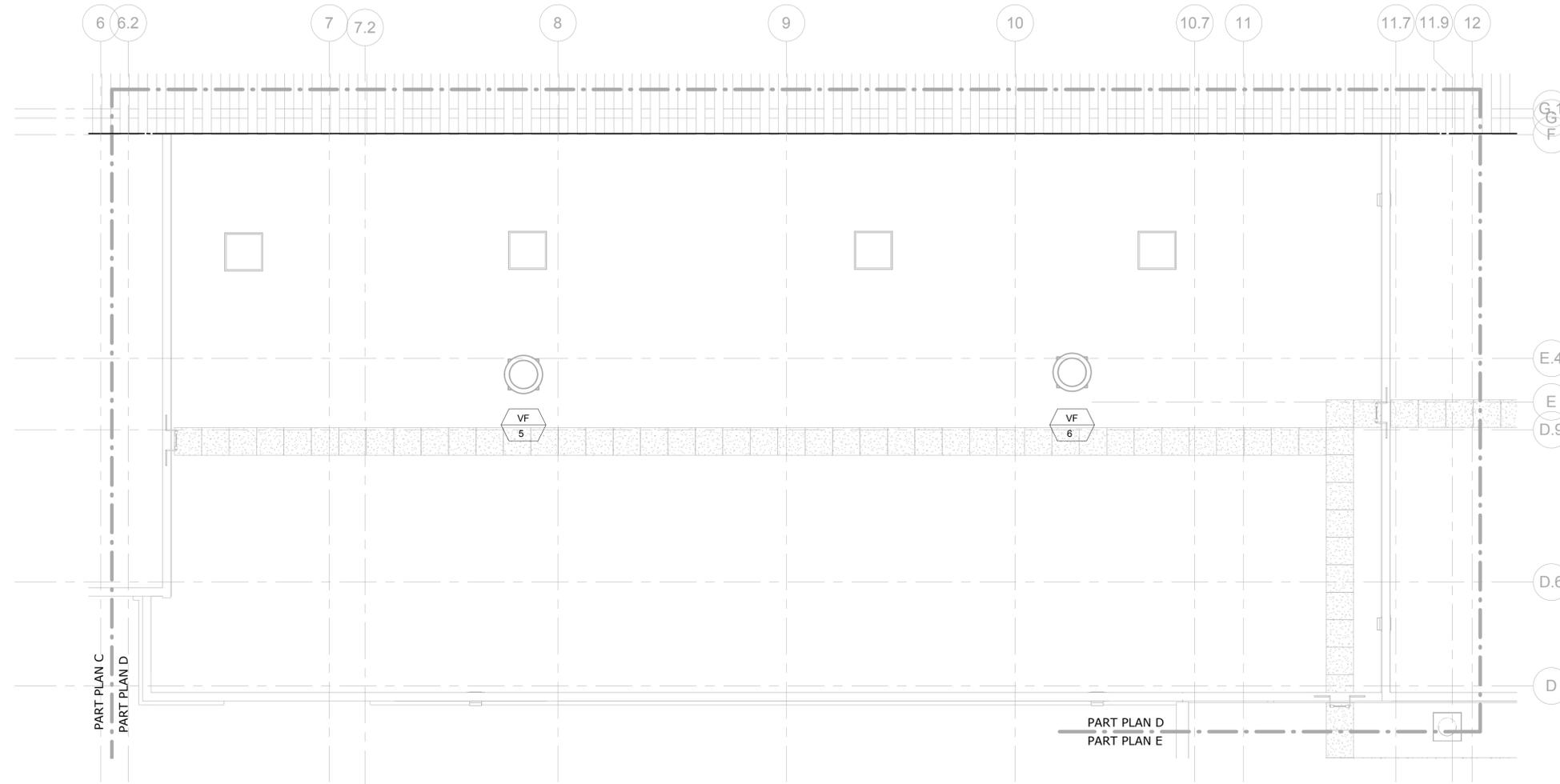
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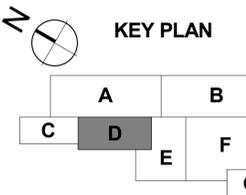
PROJECT NO.
118-0167

DRAWING NO.
MEC-303

SHEET NO.
10.23



1 HVAC - DUCTWORK - ROOF LEVEL - PART PLAN D
SCALE: 1/8" = 1'-0"



NO.	Revision Description	Date

THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.

Plotted: 6/9/2014 4:12:37 PM

DESIGNER/DRAFTER
WJS

CHECKED BY:
TFC

SCALE
1/8" = 1'-0"



SIGNATURE/BLOCK:

PROJECT TITLE
REPAIR FACILITY

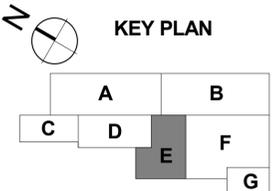
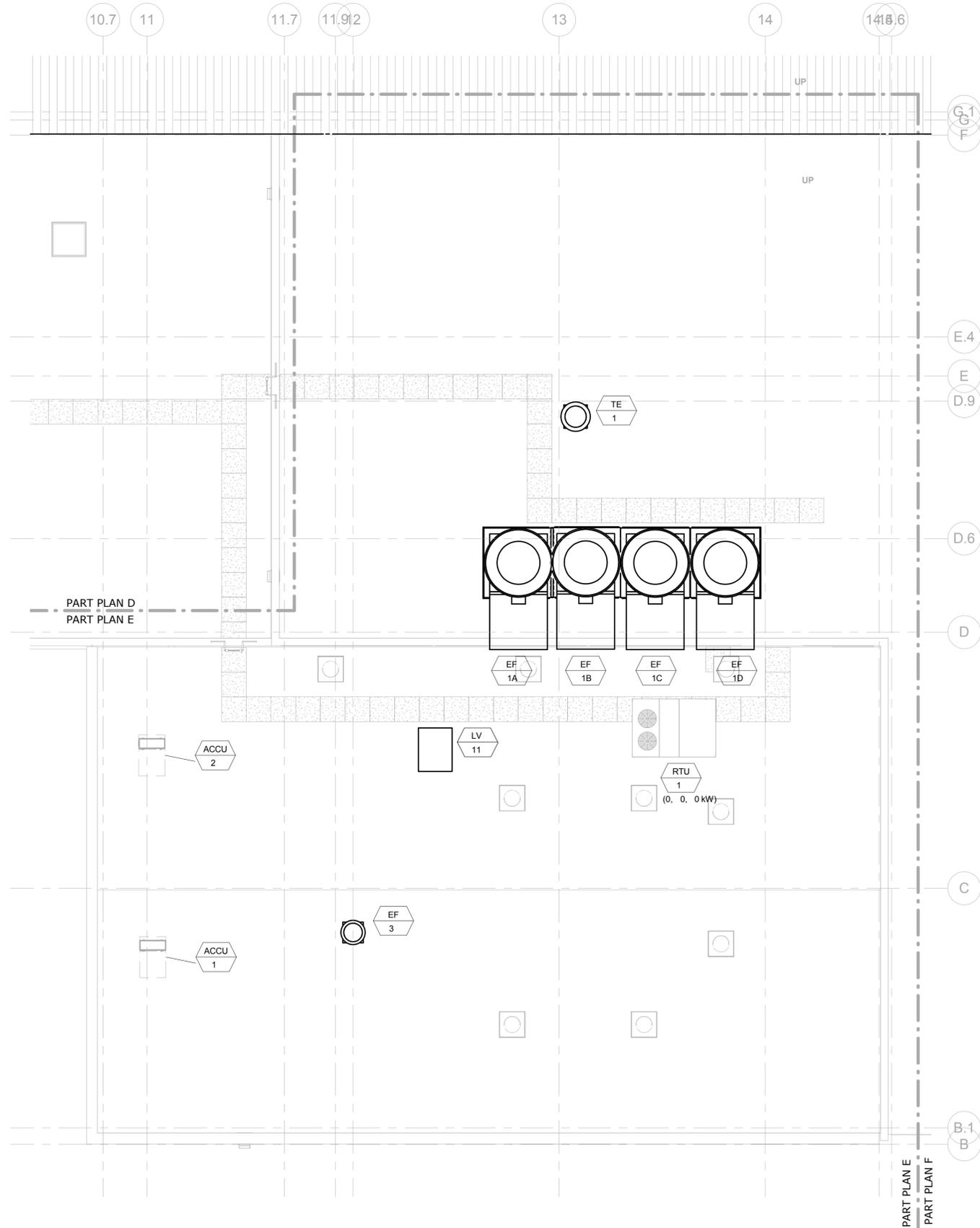
TOWN
ROCKY HILL

DRAWING TITLE
MECHANICAL ROOF - PART PLAN D

PROJECT NO.
118-0167

DRAWING NO.
MEC-304

SHEET NO.
10.24



1 HVAC - DUCTWORK - ROOF LEVEL - PART PLAN E
SCALE: 1/8" = 1'-0"

NO.	Revision Description	Date

THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.

Plotted: 6/9/2014 4:12:39 PM

DESIGNER/DRAFTER
WJS

CHECKED BY:
TFC

SCALE
1/8" = 1'-0"



SIGNATURE/BLOCK:

PROJECT TITLE
REPAIR FACILITY

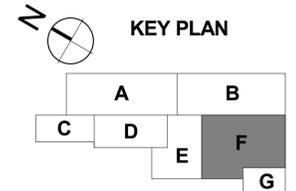
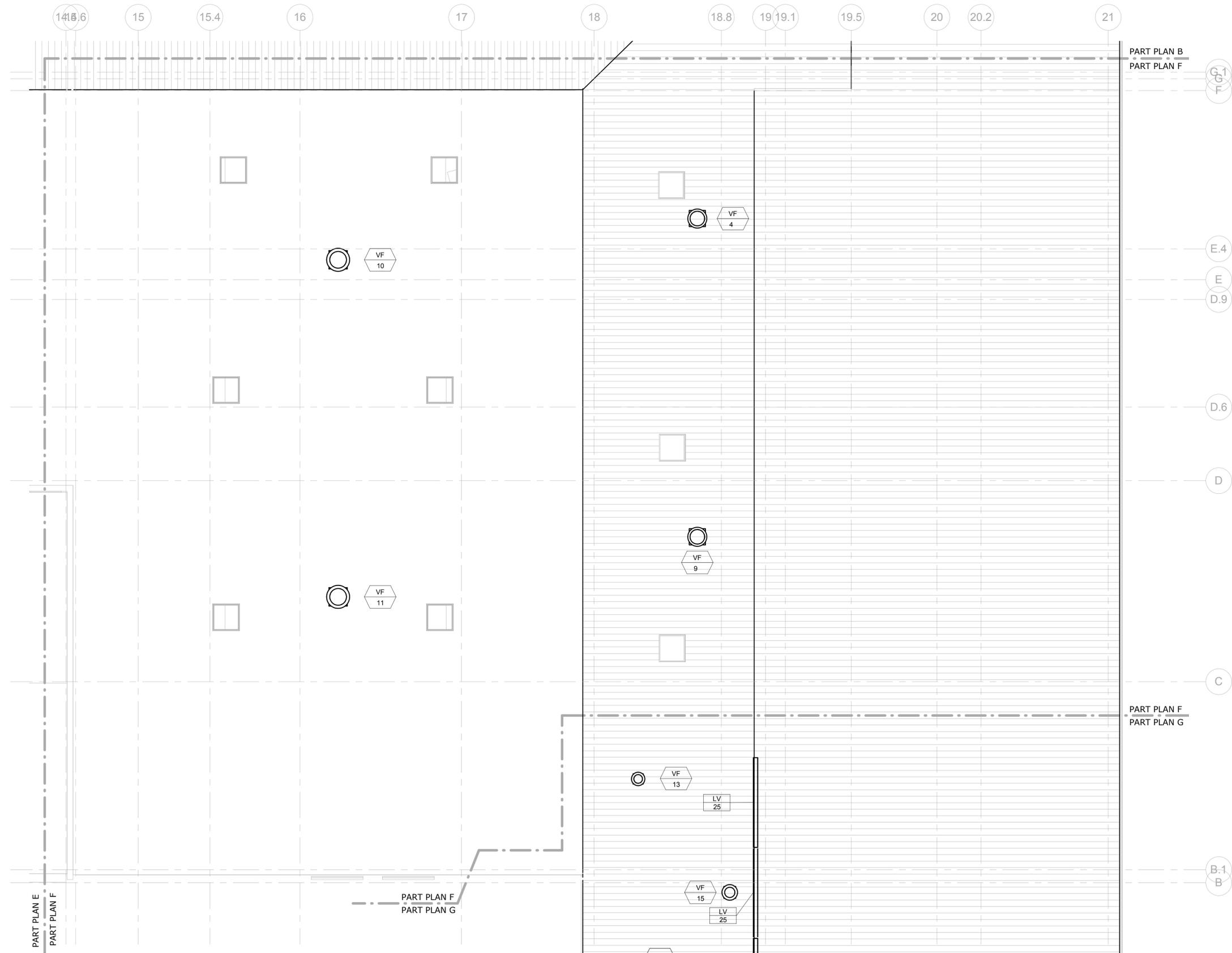
TOWN
ROCKY HILL

DRAWING TITLE
MECHANICAL ROOF - PART PLAN E

PROJECT NO.
118-0167

DRAWING NO.
MEC-305

SHEET NO.
10.25



1 HVAC - DUCTWORK - ROOF LEVEL - PART PLAN F
SCALE: 1/8" = 1'-0"

NO.	Revision Description	Date

THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.

DESIGNER/DRAFTER
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CHECKED BY:
TFC
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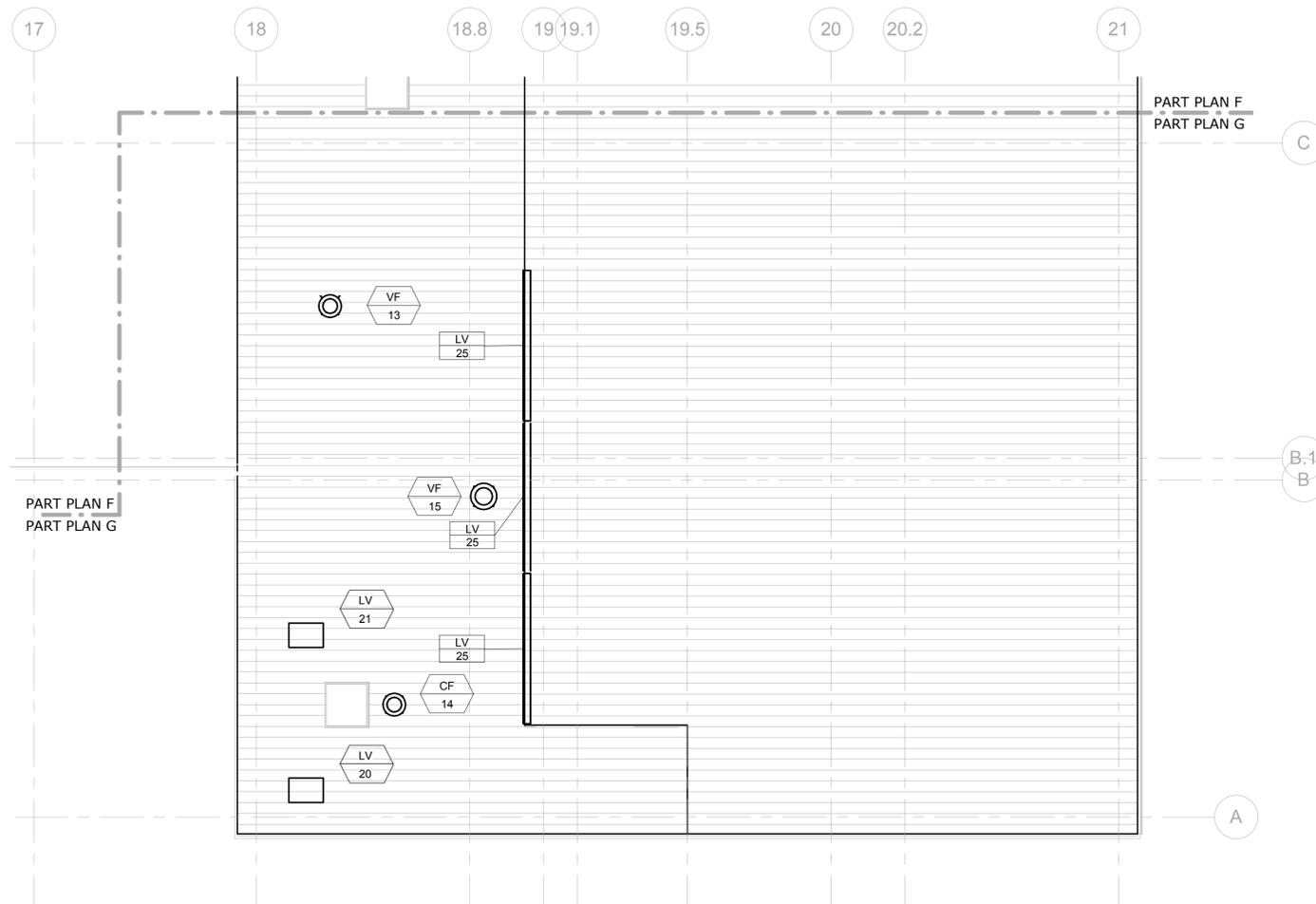
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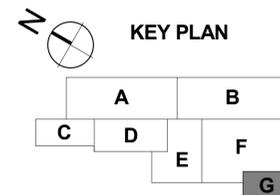
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DRAWING TITLE
MECHANICAL ROOF - PART PLAN F

PROJECT NO.
118-0167
DRAWING NO.
MEC-306
SHEET NO.
10.26

Plotted: 6/9/2014 4:12:40 PM



1 HVAC - DUCTWORK - ROOF LEVEL - PART PLAN G
SCALE: 1/8" = 1'-0"



NO.	Revision Description	Date

THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.

DESIGNER/DRAFTER
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CHECKED BY:
TFC
SCALE
1/8" = 1'-0"



SIGNATURE/BLOCK:

PROJECT TITLE
REPAIR FACILITY

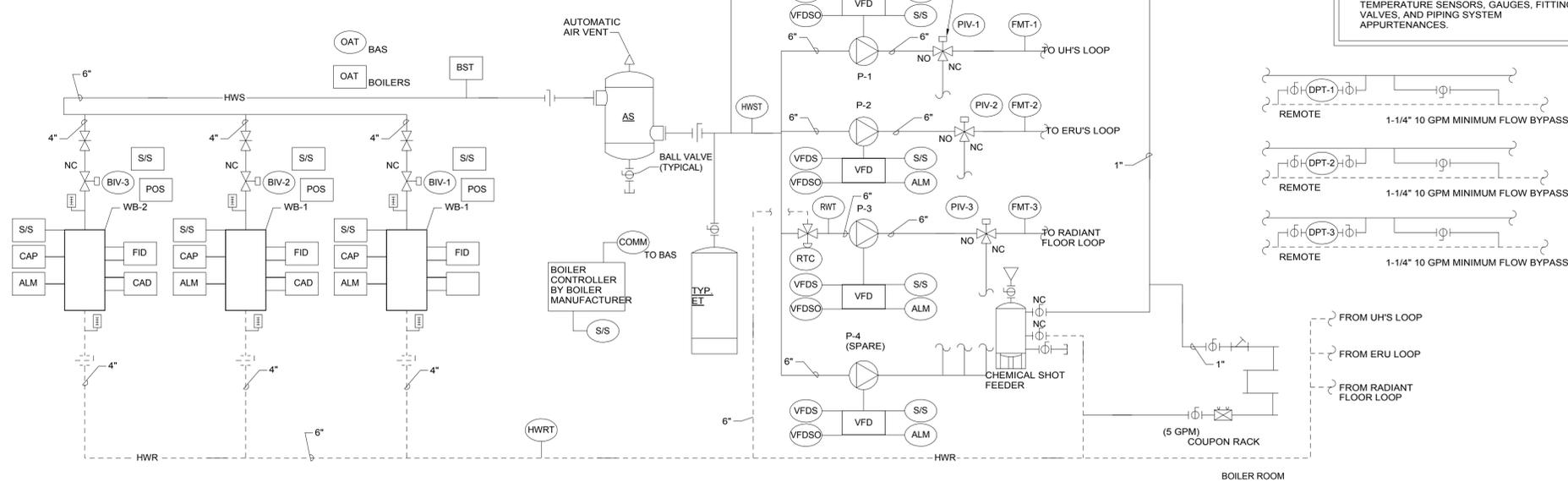
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DRAWING TITLE
MECHANICAL ROOF - PART PLAN G

PROJECT NO.
118-0167
DRAWING NO.
MEC-307
SHEET NO.
10.27

Plotted: 6/9/2014 4:12:42 PM

File Name: MPPP_CTDOT_Rocky Hill Repair Facility_Central.rvt

NOTE:
1. ALL BOILER RELIEF VALVES SHALL BE PIPED TO FLOOR DRAIN. COORDINATE LOCATION IN FIELD.



GENERAL

1. BOILER MANUFACTURER SHALL PROVIDE BOILER CONTROLLER TO SEQUENCE AND MODULATE ALL BOILERS, AND PROVIDE MODBUS, BACNET, OR LONTALK 2-WAY COMMUNICATIONS, INCLUDING ALARMS, BETWEEN THE BOILER CONTROLLER AND THE BAS. BOILER CONTROLS SHALL BE SET-UP BY THE MANUFACTURER TO INTERLOCK WITH ANY ASSOCIATED COMBUSTION AIR DAMPERS, ISOLATION VALVES, AND VENT DAMPERS. BAS CONTRACTOR SHALL INSTALL AND WIRE REMOTE SENSORS FURNISHED BY THE BOILER MANUFACTURER, PROVIDE LINE SIZED 2-POSITION BOILER ISOLATION VALVES (WITH POSITION INDICATION AND CONTROL SIGNALS INTERFACED WITH BOILER CONTROLS), PROVIDE ALL PUMP CONTROLS, AND PROVIDE DYNAMIC GRAPHICS (ALL DATA) OF THE BOILER SYSTEM AT THE OPERATOR'S WORKSTATION.
2. BAS CONTRACTOR SHALL MEET WITH BOILER CONTROLS MANUFACTURER TO COORDINATE THE REQUIRED CONTROL SIGNALS, STATUS SIGNALS (FOR THE GRAPHICS), AND ALARMS FOR THE BOILER SYSTEM. BAS CONTRACTOR IS RESPONSIBLE FOR IMPLEMENTATION OF ALL NECESSARY CONTROL SEQUENCES INCLUDING ALL CONTROL DEVICES AND LOGISTICS REQUIRED TO MEET THE DESIGN INTENT REGARDLESS OF WHAT MAY OR MAY NOT BE PROVIDED BY EQUIPMENT MANUFACTURERS.
3. ALL SET POINTS AND TIME DELAYS SHALL BE ADJUSTABLE WITHOUT ANY PROGRAM CHANGES. ALL ACTUATORS SHALL BE ELECTRONIC. PROVIDE FOR LOCAL EQUIPMENT OVERRIDE OF CONTROL SYSTEM.
4. BOILERS HAVE DUCTED COMBUSTION AIR. INDIVIDUAL COMBUSTION AIR DAMPERS (CAD) PROVIDED BY BOILER MANUFACTURER SHALL PROVE AT LEAST 85% OPEN BEFORE BURNER CAN START AND PROVE CLOSED AFTER BURNER STOPS. IF ANY CAD OR FID FAILS, AN ALARM SHALL BE SENT TO THE BAS AND, IF NEEDED, THE NEXT BOILER IN SEQUENCE SHALL BE ENERGIZED.
5. PROVIDE TEMPERATURE SENSORS AND OTHER DEVICES SHOWN AND COORDINATE ALL SENSOR INSTALLATION LOCATIONS WITH THE MECHANICAL CONTRACTOR. COORDINATE AND INSURE MANUFACTURER'S RECOMMENDED UPSTREAM AND DOWNSTREAM PIPE DIAMETERS ARE PROVIDED - ESPECIALLY FOR FLOW METERS. WIRE BOILER MANUFACTURER'S CONTROLLER TO EACH BOILER AND SENSOR PER MANUFACTURER'S DIAGRAMS. COORDINATE TO OBTAIN ALL INFO FOR BAS GRAPHICS.
6. BAS CONTRACTOR SHALL PROVIDE AND WIRE INDIVIDUAL FIRESTATS (NOT SHOWN) TO SHUTDOWN EACH BOILER AND INSURE THE BOILER EMERGENCY SHUT-OFF SWITCHES STOP ALL BOILERS.

HOT WATER CONTROL

1. THE BOILER SYSTEM SHALL NORMALLY BE ON AND SHALL BE CAPABLE OF BEING AUTOMATICALLY STARTED AND STOPPED BY THE BAS. THE CONTROL OF BOILER STAGING AND CAPACITY SHALL BE BY THE BOILER MANUFACTURER.
2. BEFORE THE BOILERS ARE STARTED, THE LEAD BOILERS ISOLATION VALVE (BIV) SHALL BE OPENED AND THE HOT WATER PUMP ASSOCIATED WITH THE SYSTEM CALLING FOR HEAT SHALL BE STARTED AT LOW SPEED BY THE BAS. IF PUMP FAILS, THE BAS SHALL ALARM.
3. OPERATING SPEED FOR THE PUMP SHALL BE THE LOWEST REQUIRED TO MAINTAIN THE SET POINT OF THE ASSOCIATED REMOTE DIFFERENTIAL PRESSURE SENSOR (DPT) LOCATED NEAR THE FURTHEST EQUIPMENT (TYP OF 3). MINIMUM BOILER FLOW (CONTRACTOR TO VERIFY FOR SUBMITTED BOILERS) SHALL BE MAINTAINED AT ALL TIMES. INITIAL SET POINT OF REMOTE DPT SHALL BE 15 PSI WITH FINAL SET POINT COORDINATED WITH THE BALANCING CONTRACTOR TO THE LOWEST NEEDED TO GET FULL FLOW TO THE MOST REMOTE EQUIPMENT (WITH THE EQUIPMENT CONTROL VALVE NO MORE THAN 90% OPEN).
4. THE BOILER SUPPLY WATER TEMPERATURE AT SENSOR BST SHALL BE INITIALLY SET TO A MAXIMUM OF 140°F. BOILERS SHALL STAGE CAPACITY AT OPTIMAL EFFICIENCY TO MAINTAIN COMMON SUPPLY WATER TEMPERATURE CONTROL.

BOILER CONTROL SYSTEM

1. WHEN A BOILER IS NEEDED TO OPERATE, THE ASSOCIATED COMBUSTION AIR DAMPER (CAD), AND BOILER ISOLATION VALVE (BIV) SHALL PROVE OPEN FIRST. WHEN A BOILER IS NOT NEEDED THE CAD, FID, AND BIV SHALL CLOSE 20 SECONDS (ADJ.) AFTER THE BURNER IS STOPPED. AN EXCEPTION IS THE LEAD BOILER WHOSE BIV SHALL ALWAYS REMAIN OPEN TO ALLOW PUMP FLOW. AS PROVIDED BY CONTROLS CONTRACTOR.
2. ON A CALL FOR HEATING, THE LEAD BOILER SHALL START ON LOW FIRE. THE BOILER HOT SUPPLY WATER TEMPERATURE AT BST SHALL BE MAINTAINED BY STAGING OF BOILERS AND MODULATING THE BURNERS. MANUFACTURER'S BOILER CONTROLLER SHALL START AND OPERATE THE LAG BOILERS WHEN NEEDED TO MAINTAIN EITHER THE SYSTEM SUPPLY TEMPERATURE AT BST OR WHEN THE SYSTEM WOULD OPERATE MORE EFFICIENTLY WITH MORE BOILERS ON.
3. THE BOILER CONTROLLER SHALL ROTATE THE LEAD AND LAG BOILERS TO ASSURE THAT ALL BOILERS RECEIVE EQUAL RUN TIME.
4. WHEN LOAD DROPS (BASED ON BOILER CAPACITY AND EFFICIENCY) LAG BOILERS SHALL BE STOPPED AS REQUIRED.
5. THE BOILER CONTROLLER SHALL ENABLE/DISABLE, MONITOR STATUS, AND DISPLAY ALARM SIGNALS FOR FLAME FAILURE AND LOW WATER ALARM. UPON A BOILER FAILURE ALARM, FLAME FAILURE ALARM, OR LOW WATER ALARM, THE RESPECTIVE BOILER SHALL BE DE-ENERGIZED, THE NEXT BOILER IN THE LEAD/LAG SEQUENCE OF OPERATION SHALL BE ENERGIZED, AND EACH ALARM SHALL BE COMMUNICATED TO THE BAS FOR ALARM/DISPLAY AT THE OPERATOR'S WORKSTATION.

BOILER MOUNTED CONTROLS (BY BOILER MANUFACTURER)

1. ALL CONTROLS SHALL BE LOCATED IN A HINGED LOCKING METAL CABINET WITH NEMA 1A ENCLOSURE AND NEOPRENE DUST SEAL. CONTROLS SHALL BE ELECTRONIC. ALL WIRING SHALL BE COLOR CODED. PROVIDE CONTROL TRANSFORMER, AND FUSING IN ACCORDANCE WITH ALL CODE REQUIREMENTS. PROVIDE DUAL ADJUSTABLE HIGH LIMIT CONTROLS WITH ONE SET AT 190°F WITH MANUAL RESET AND ALARM CONTACT, AND ONE SET AT 180°F WITH AUTO RESET AFTER AN ADJUSTABLE DIFFERENTIAL; ADJUSTABLE, RESETTABLE OPERATING CONTROL (WITH INITIAL RESET SCHEDULE BETWEEN 140°F AND 100°F BASED ON OAT); AND LOW WATER CUT OFF DEVICE WITH MANUAL RESET. BURNER CONTROLS SHALL HAVE MINIMUM 5:1 TURNDOWN.
2. THE SEQUENCE OF BURNER OPERATION SHALL BE CONTROLLED BY A PROGRAMMING RELAY OF THE ELECTRONIC TYPE PROVIDING PRE-PURGE AND POST-PURGE CYCLES AND WITH FULL PROTECTION AGAINST FLAME FAILURE DURING BOTH IGNITION AND NORMAL BURNER OPERATING PERIODS. OPERATING OF THE PROGRAMMING RELAY SHALL BE GOVERNED BY EXCESS TEMPERATURE LIMIT SWITCH, AN ELECTRONIC FLAME FAILURE PROTECTION DEVICE AND THE LOW WATER CUT-OFF TO SHUT DOWN THE BOILER. AFTER THE SAFETY SHUTDOWN MANUAL RESET SHALL BE REQUIRED. THE BURNER BLOWER CONTROLS SHALL BE INTERLOCKED TO PREVENT BURNER OPERATION WITHOUT FORCED DRAFT. MEANS SHALL BE PROVIDED FOR AUTOMATICALLY DELAYING BURNER OPERATION WHILE ALLOWING FAN TO SCAVENGE BOILER PASSES OF COMBUSTION GASES AFTER FLAME OR OTHER BURNER STOPPAGE. EACH BURNER SHALL BE PROVIDED WITH COMBUSTION AIR, FLUE DAMPER, AND ISOLATION VALVE OPEN/CLOSE CONTACTS AND ALARM.

REPORTING FUNCTIONS

1. HISTORIES/TRENDING
 - a. THE BAS SHALL PRINT OUT ANY TEMPERATURE OR DATA FROM ANY SENSOR OR DEFINED VARIABLE ON REQUEST OF OPERATOR. THIS SHALL BE PROVIDED FOR BOTH INDIVIDUAL BOILERS AND COMMON SENSORS.
 - b. THE BAS SHALL BE PROGRAMMED TO RECORD HISTORIES OF ALL TEMPERATURES (BOILER WATER SUPPLY AND RETURN TEMPERATURES, HOT WATER SUPPLY AND RETURN TEMPERATURES, ETC.), STATUS, FLOW RATE, HOUR OF DAY, HOURS OF OPERATION ASSOCIATED WITH EACH PIECE OF EQUIPMENT. IN ADDITION, RECORD HISTORIES OF ANY OTHER ITEM OVER ANY TIME PERIOD REQUESTED BY OPERATOR. COORDINATE WITH OWNER FOR INITIAL LIST OF HISTORY ITEMS.
 - c. THE BAS SHALL PRINT OUT ALL CHANGES IN EQUIPMENT STATUS AS THEY OCCUR.
 - d. INITIALLY THE BAS SHALL TREND AND LOG BOILER PLANT CAPACITY (FLOW AT FMT AND DIFFERENTIAL TEMPERATURE BETWEEN MATCHED SENSORS HWST AND HWRT), PUMP SPEED, REMOTE DPT READING, OAT, WHICH BOILERS ARE ON AND AT WHAT CAPACITY, ALONG WITH TIME OF DAY.
2. ALARMS
 - a. ALARM MESSAGES SHALL BE DISPLAYED AND PRINTED AT THE OPERATOR'S WORKSTATION.
 - b. IN ADDITION TO THE ALARMS PREVIOUSLY LISTED, ALL SENSORS AND VARIABLES SHALL BE CAPABLE OF HIGH/LOW ALARM BETWEEN. AS A MINIMUM, THE FOLLOWING SHALL BE ALARMED AFTER APPROPRIATE TIME DELAYS:
 - 1) IF ANY PIECE OF EQUIPMENT IS INDICATED AS OFF WHEN IT SHOULD BE ON.
 - 2) IF HWST IS 10 DEGREES ABOVE OR BELOW THE SET POINT DURING HEATING CYCLE. IGNORE THIS ALARM IF CYCLE HAS JUST BEEN STARTED WITHIN 20 MINUTES.
 - 3) IF ANY PIECE OF EQUIPMENT IS ON THAT IS INDICATED AS OFF OR FAILS.
3. GRAPHICS
 - a. PROVIDE OVERALL SYSTEM, INDIVIDUAL BOILER AND PUMP GRAPHICS WITH REAL TIME UPDATING OF CONDITIONS (STATUS, TEMPERATURES, FLOWS, ETC.).
 - b. PROVIDE FLOW DIAGRAMS FOR EVERY SYSTEM WITH ALL INSTRUMENTATION AND DATA (IN SPECIFICATIONS).

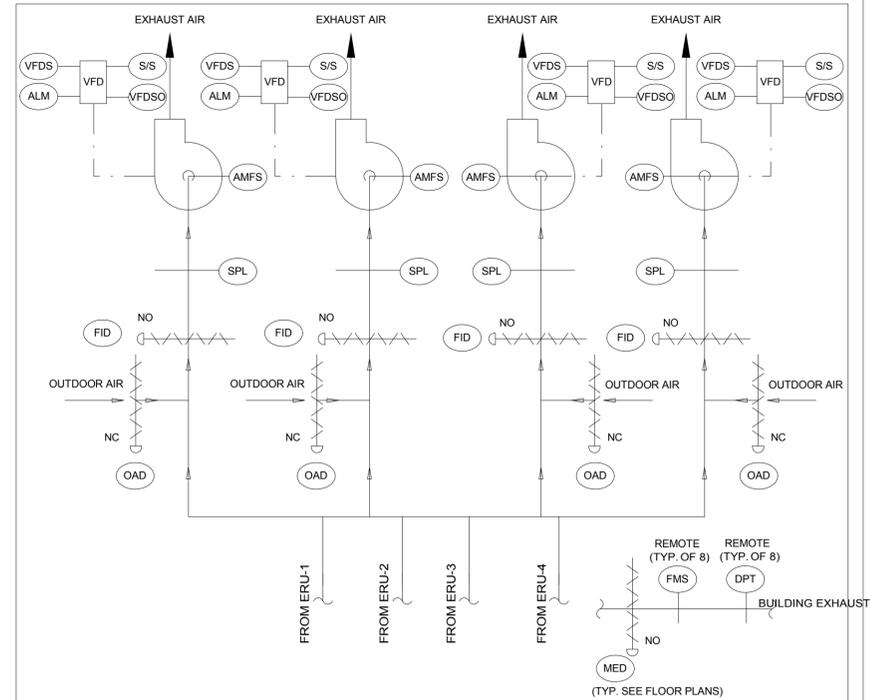
USER INTERFACE

1. BAS CONTRACTOR SHALL PROVIDE PROGRAMMING TO PROVIDE A MENU ALLOWING THE OPERATOR TO EASILY OPEN ALL CONTROL VALVES CONNECTED TO THE HOT WATER SYSTEM ON A FLOOR BY FLOOR BASIS AND GLOBALLY (ALL VALVES) FOR USE DURING CLEANING/FLUSHING, TESTING AND BALANCING WORK, AND FOR AIR PURGING.

STAND-BY POWER

1. BOILERS, ALL BOILER CONTROLS, AND THE HW PUMPS SHALL BE ON STANDBY POWER AND SHALL AUTOMATICALLY RESTART AND OPERATE NORMALLY DURING A POWER FAILURE AFTER THE GENERATOR HAS STARTED.
2. PROVIDE AUTOMATIC RE-START OF BOILER PLANT UPON RETURN TO NORMAL POWER.

RDK CONDENSING BOILER PLANT CONTROL / FLOW DIAGRAM AND SEQUENCE OF OPERATION **BLR01**



GENERAL

1. EACH EXHAUST FAN SHALL BE STARTED, STOPPED, AND CONTROLLED VIA DEDICATED FULLY PROGRAMMABLE DDC CONTROLLER AND SHALL BE CAPABLE OF STAND-ALONE OPERATION SHOULD ONE FAN OR CONTROLLER FAIL. ALL SET POINTS SHALL BE ADJUSTABLE. ALL ACTUATORS SHALL BE ELECTRONIC. NO = NORMALLY (FAIL) OPEN ON LOSS OF POWER. NC = NORMALLY (FAIL) CLOSED ON LOSS OF POWER. VFD SHALL MODULATE FAN SPEED TO MAINTAIN DUCT STATIC PRESSURE IN EACH OF THE 4 EXHAUST DUCTS AS DETERMINED BY BALANCER.

2. ALL SAFETIES SHALL BE ACTIVE IN BOTH "H" AND "A" POSITIONS OF THE FAN'S HAND-OFF-AUTOMATIC SWITCHES (H-O-A).
3. ALL TEMPERATURES LISTED ARE FAHRENHEIT.
4. ALL TEMPERATURE SENSORS IN THE UNIT AND DUCTWORK SHALL BE AVERAGING TYPE.

FAN CONTROL

1. THE LEAD EXHAUST FAN SHALL NORMALLY OPERATE CONTINUOUSLY.
2. WHILE AN EXHAUST FAN IS EITHER OFF ON SAFETY OR MANUAL DISCONNECT, THE ASSOCIATED OUTSIDE AIR AND FAN ISOLATION DAMPERS (OAD & FID) SHALL BE CLOSED.
3. WHEN AN EXHAUST FAN IS TO BE STARTED, THE FID SHALL OPEN AND THE FAN SHALL START AT MINIMUM SPEED.
4. THE EXHAUST FAN VFD SHALL SLOWLY INCREASE IN SPEED TO MAINTAIN HIGHEST SETPOINT OF ALL REMOTE EXHAUST DIFFERENTIAL PRESSURE SENSORS (DPT) OF THE CURRENTLY RUNNING ERU'S AS DETERMINED BY BALANCER. INITIAL SETPOINT SHALL BE NEGATIVE 1.0" W.G. WITH FINAL SETPOINT DETERMINED BY THE BALANCING CONTRACTOR.
5. EACH ACTIVE FAN SHALL MAINTAIN A MINIMUM 3,000 FPM EXIT VELOCITY, BASED ON ITS AIRFLOW MEASURING STATION (AMFS), BY SLOWLY MODULATING THE ASSOCIATED OAD OPEN AS REQUIRED.
6. THE LEAD AND STANDBY EXHAUST FANS SHALL BE ROTATED BIWEEKLY.

MAIN EXHAUST DAMPERS (TYP OF 8)

1. MAIN EXHAUST DAMPERS (MED) SHALL ALL MODULATE TO THE OPEN POSITION UPON THE START OF THE FAN. DAMPERS WILL THEN CLOSE RESPECTIVELY UPON DETECTION OF UNOCCUPIED SPACES ASSOCIATED WITH THOSE DAMPERS.
2. WHILE A ROOM IS OCCUPIED AND THE ASSOCIATED ERU IS RUNNING THE MAIN EXHAUST DAMPER (MED) ASSOCIATED WITH THAT ERU SHALL MODULATE TO MAINTAIN THE FLOW AS PREVIOUSLY BALANCED. THE DUPLEX EXHAUST FAN SET SHALL MODULATE TO MAINTAIN THE CFM REQUIRED BY ALL ACTIVE ZONES AS TOTALED BY THEIR RESPECTIVE FLOW MEASURING STATIONS (FMS).
3. WHILE A ROOM IS UNOCCUPIED AND THE ASSOCIATED ERU IS OFF, THE MAIN EXHAUST DAMPER (MED) ASSOCIATED WITH THOSE SYSTEMS SHALL BE SHUT.

EXHAUST FAN FAILURE OR MAINTENANCE SHUTDOWN

1. IF THE LEAD EXHAUST FAN FAILS, STOPS ON A SAFETY TRIP, OR IS SHUTDOWN FOR ROUTINE MAINTENANCE, A STANDBY EXHAUST FAN SHALL BE STARTED AFTER IT'S EAD OPENS AND SHALL OPERATE UNDER NORMAL CONTROL.

SAFETIES

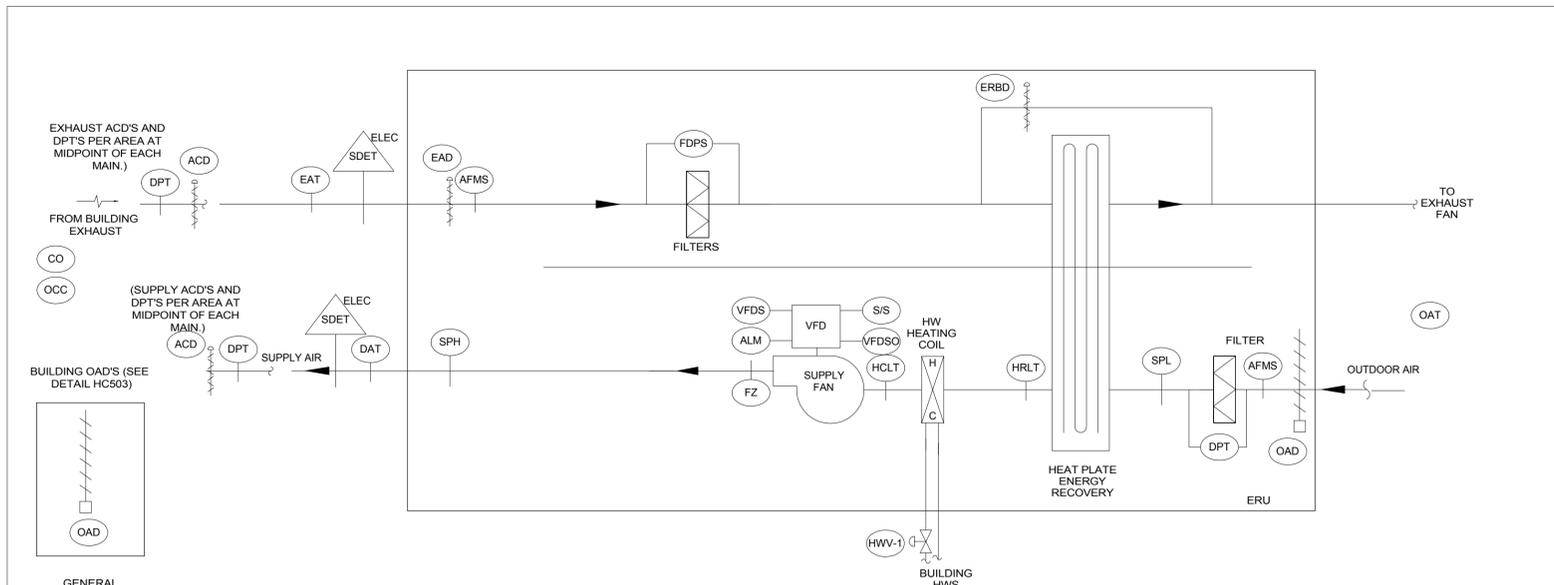
1. THE FOLLOWING SAFETY, WITH ITS OWN MANUAL RESET BUTTON, SHALL SHUT DOWN THE ASSOCIATED EXHAUST FAN BEFORE THE H-O-A.
 - a. WHEN THE PRESSURE AT STATIC PRESSURE LOW LIMIT (SPL) DROPS BELOW NEGATIVE 4 INCHES W.G.
 - b. ON TOTAL FAILURE OF ALL ERU'S.
6. IF AN EXHAUST FAN FAILS OR IF ANY SAFETY IS TRIPPED, THE EXHAUST FAN'S CONTROLLER SHALL GIVE A DETAILED ALARM SIGNAL TO THE FRONT END.

STAND-BY POWER

1. UNIT AND ALL COMPONENTS AND CONTROLS SHALL BE WIRED TO STAND-BY POWER. PROVIDE AUTOMATIC RE-START UPON POWER FAILURE AND UPON RETURN TO NORMAL POWER.

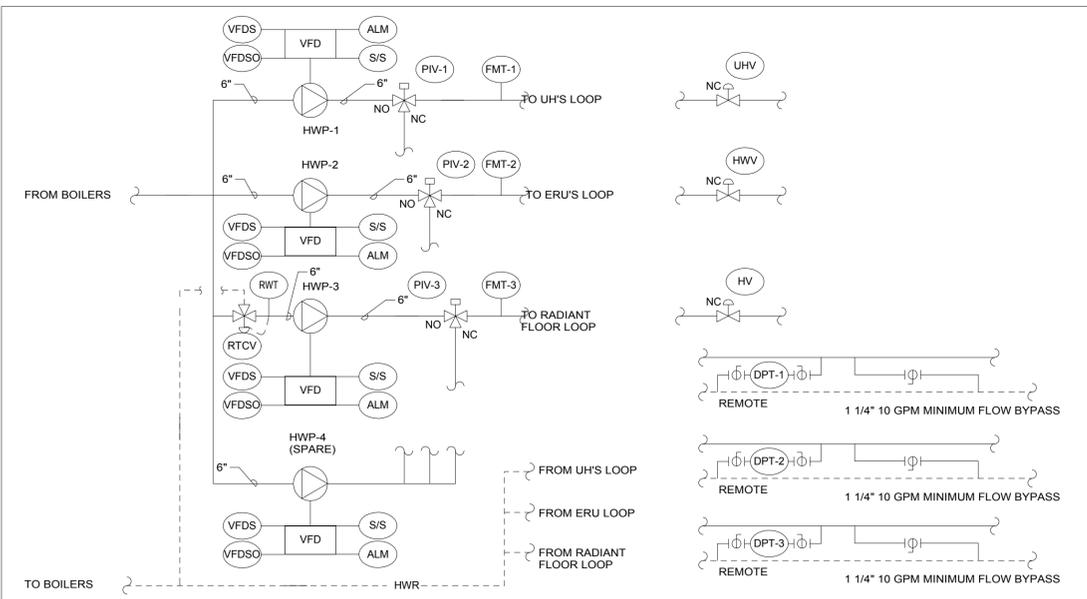
QUADRA PLEX EXHAUST FAN AIR CONTROL SEQUENCES (EF-1A,1B,1C,1D)

NO.	Revision Description	Date	Plotted: 6/9/2014 4:12:43 PM	DESIGNER/DRAFTER WJS	CHECKED BY: TFC	SCALE 1/8" = 1'-0"	<p>STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION</p> <p>File Name: MPPP_CTDOT_Rocky Hill Repair Facility_Central.rvt</p>	SIGNATURE/BLOCK:	PROJECT TITLE REPAIR FACILITY	TOWN ROCKY HILL	PROJECT NO. 118-0167
DRAWING TITLE MECHANICAL CONTROLS I											
DRAWING NO. MEC-500											
SHEET NO. 10.28											



- GENERAL**
- EACH AIR HANDLING UNIT SHALL BE STARTED, STOPPED, AND CONTROLLED VIA DEDICATED FULLY PROGRAMMABLE DDC CONTROLLER AND SHALL BE CAPABLE OF STAND-ALONE OPERATION. UNITS SHALL OPERATE WHEN ASSOCIATED SPACES ARE EITHER OCCUPIED (AS DETERMINED BY OCCUPANCY SENSORS (OCC)), MANUAL OVER RIDE BY USER COMMAND, OR AT BUILDING SCHEDULED TIMES (ADJ.). ALL SET POINTS SHALL BE ADJUSTABLE. ALL ACTUATORS SHALL BE ELECTRONIC. NO = NORMALLY (FAIL) OPEN ON LOSS OF POWER. NC = NORMALLY (FAIL) CLOSED ON LOSS OF POWER.
 - ALL SAFETIES SHALL BE ACTIVE IN BOTH "H" AND "A" POSITIONS OF THE FAN'S HAND-OFF-AUTOMATIC SWITCHES (H-O-A).
 - ALL TEMPERATURES LISTED ARE FAHRENHEIT.
 - ALL TEMPERATURE SENSORS IN THE UNIT AND DUCTWORK SHALL BE AVERAGING TYPE.
- FAN CONTROL**
- WHILE AN AHU IS EITHER OFF ON SAFETY OR MANUAL DISCONNECT, THE AHU SUPPLY FAN SHALL BE OFF WITH THE OUTSIDE AIR AND UNIT DISCHARGE AIR DAMPERS (OAD & EAD) CLOSED.
 - THE HEATING COIL CONTROL VALVE (HVV) SHALL ALWAYS (WHETHER THE AHU IS OFF OR ON) BE CONTROLLED BY THE HEATING COIL LEAVING AIR TEMPERATURE SENSOR (HCLT) TO MAINTAIN 70°F LEAVING AIR TEMPERATURE IN THE CASING.
 - WHEN AN AHU IS TO BE STARTED, THE OAD AND DAD SHALL OPEN AND THE SUPPLY FAN SHALL START AT MINIMUM SPEED AFTER PROOF OF DAMPER OPENING.
 - THE SUPPLY FAN VFD SHALL SLOWLY INCREASE IN SPEED TO MAINTAIN SETPOINT OF REMOTE SUPPLY DIFFERENTIAL PRESSURE SENSOR (DPT). INITIAL SETPOINT SHALL BE 1.0" W.G. WITH FINAL SETPOINT DETERMINED BY THE BALANCING CONTRACTOR TO BE AS LOW AS NEEDED TO PROVIDE FULL AIRFLOW TO THE FURTHEST DIFFUSER WITH THE OPPOSING BLADE DAMPERS AT LEAST 90% OPEN.
 - EVERY DPT SHALL HAVE ITS SETPOINT MET AT ALL TIMES.
- HEATING CONTROL**
- UPON A DROP IN DISCHARGE AIR TEMPERATURE (AT DAT) BELOW THE DAT SET POINT OF 70°F, DAT SHALL MODULATE HEATING CONTROL VALVE TO MAINTAIN DAT SETPOINT AT 70-75°F (ADJ).
 - THE FIRST STAGE OF HEATING SHALL BE THE HEAT PLATE. WHEN OA IS COOLER THAN EXHAUST AIR TEMPERATURE AS MEASURED AT EXHAUST AIR TEMPERATURE SENSOR (EAT), HRLT SHALL MODULATE THE ENERGY RECOVERY BYPASS DAMPER (ERBD) CLOSED AS REQUIRED TO MAINTAIN SET POINT. WHEN ADDITIONAL HEATING IS NEEDED, ERBD SHALL REMAIN CLOSED AND THE HEATING COIL HEATING WATER VALVE (HVV) SHALL BE MODULATED OPEN AS REQUIRED. THE REVERSE SHALL OCCUR ON A RISE IN HCLT ABOVE HEATING SET POINT.
- EXHAUST CONTROL DAMPER CONTROL**
- SEE EXHAUST FAN SEQUENCES FOR EXHAUST CONTROL DAMPER (ECD) CONTROL
- BYPASS MODE**
- WHEN THE OAT IS ABOVE 65°F (ADJ.) THE EXHAUST AIR DAMPER (EAD) SHALL SHUT AND THE ENERGY RECOVERY BYPASS DAMPER (ERBD) SHALL OPEN SIMULTANEOUSLY. THE REVERSE SHALL OCCUR UPON A DROP IN OUTDOOR AIR TEMPERATURE (OAT) BELOW 60°F (ADJ.). ONCE THE OAD'S IN THE BUILDING SPACES HAVE BEEN PROVED OPEN, THE SUPPLY FAN SHALL BE COMMANDED OFF, AND THE OAD FOR THE UNIT SHALL SHUT.
- PURGE MODE**
- UPON A CO ALARM IN A SPACE SERVED BY AN ERU, THE ASSOCIATED ERU SHALL BE COMMANDED ON AND TO RUN AT MAXIMUM CAPACITY FOR AFFECTED ZONE. THE UNIT SHALL ALARM AT THE BMS AND UNIT SHALL AUTOMATICALLY RESET WHEN THE CO ALARM CEASES.
- AHU FAILURE OR MAINTENANCE SHUTDOWN**
- IF ANY AHU FAILS, STOPS ON A SAFETY TRIP, OR IS SHUTDOWN FOR ROUTINE MAINTENANCE, THE REMAINING AHU'S SHALL RAMP UP IN SPEED (WITHIN 30 SECONDS) TO SUPPLY 100% OF THE REQUIRED AIRFLOW.
- SAFETIES**
- THE FOLLOWING SAFETIES, EACH WITH ITS OWN MANUAL RESET BUTTON, SHALL SHUT DOWN THE AHU BEFORE THE H-O-A.
 - WHEN THE SMOKE DETECTOR (SDET) IS ACTIVATED.
 - WHEN THE PRESSURE AT STATIC PRESSURE HIGH LIMIT (SPH) RISES ABOVE 4 INCHES W.G.
 - WHEN THE PRESSURE AT STATIC PRESSURE LOW LIMIT (SPL) DROPS BELOW NEGATIVE 4 INCHES W.G.
 - ON TOTAL FAILURE OF PRIMARY EXHAUST SYSTEM, AHU SHALL SHUT DOWN.
- ALARMS**
- IF THE SUPPLY FAN FAILS OR IF ANY UNIT SAFETY IS TRIPPED, THE AHU CONTROLLER SHALL GIVE A DETAILED ALARM SIGNAL TO THE FRONT END.
 - IF, FOR 10 MINUTES, A PRE-FILTER PRESSURE DROP EXCEEDS SET POINT (INITIALLY 0.6") OR THE FINAL-FILTER PRESSURE DROP EXCEEDS SET POINT (INITIALLY 1.0"), THE AHU CONTROLLER SHALL GIVE A DETAILED ALARM SIGNAL TO THE FRONT END.
 - IF THE OUTDOOR AIR TEMPERATURE IS BELOW 35°F, UPON FAILURE OF BOILER PLANT OR HWP-2, AN ALARM SHALL BE SENT TO THE FRONT END. THE UNITS SHALL ENTER STANDBY MODE AND THE OUTDOOR AIR DAMPER (OAD) AND EXHAUST AIR DAMPER (EAD) SHALL BE SHUT.
- STAND-BY POWER**
- UNIT FAN AND CONTROLS SHALL BE WIRED TO STAND-BY POWER. PROVIDE RE-START UPON POWER FAILURE AS INDICATED IN EMERGENCY OPERATION CONTROL SEQUENCES AND UPON RETURN TO NORMAL POWER.

GENERAL SUPPLY AIR HANDLING UNIT WITH HEAT-PLATE ENERGY RECOVERY CONTROL SEQUENCES (ERU-1,2,3,4)



- GENERAL**
- EACH PUMP SHALL BE STARTED, STOPPED, AND CONTROLLED VIA DEDICATED FULLY PROGRAMMABLE DDC CONTROLLER AND SHALL BE CAPABLE OF STAND-ALONE OPERATION. ALL SET POINTS SHALL BE ADJUSTABLE. ALL ACTUATORS SHALL BE ELECTRONIC. NO = NORMALLY (FAIL) OPEN ON LOSS OF POWER. NC = NORMALLY (FAIL) CLOSED ON LOSS OF POWER.
 - ALL SAFETIES SHALL BE ACTIVE IN BOTH "H" AND "A" POSITIONS OF THE HAND-OFF-AUTOMATIC SWITCHES (H-O-A).
 - ALL TEMPERATURE SENSORS SHALL BE AVERAGING TYPE.
- UNIT HEATER LOOPS PUMP CONTROLS (HWP-1)**
- UPON A CALL FOR HEAT BY ANY UNIT HEATER CONTROL VALVE (UHV), HWP-1 SHALL START.
 - PUMP SHALL MODULATE ITS VFD TO MAINTAIN BALANCED DESIGN SETPOINT AT REMOTE DIFFERENTIAL PRESSURE SENSORS (DPT-1) LOCATED ON THE FURTHEST RUN OF EQUIPMENT.
 - UPON PUMP FAILURE, AN ALARM SHALL BE SENT TO THE BMS.
 - IF FMT-1 READS ZERO FLOW AND ASSOCIATED PUMP IS LISTED AS RUNNING, AN ALARM SHALL BE SENT TO THE BMS.
- ENERGY RECOVERY UNIT PUMP CONTROLS (HWP-2)**
- UPON A CALL FOR HEAT BY ANY ERU HEATING WATER VALVE (HWV), HWP-2 SHALL START.
 - PUMP SHALL MODULATE ITS VFD TO MAINTAIN BALANCED DESIGN SETPOINT AT REMOTE DIFFERENTIAL PRESSURE SENSORS (DPT-2) LOCATED ON MEZZANINE ABOVE.
 - UPON PUMP FAILURE, AN ALARM SHALL BE SENT TO THE BMS AND THE ERU'S SHALL ENTER STANDBY MODE.
 - UPON FAILURE OF ALL ERU'S, PUMP SHALL ENTER STANDBY MODE.
 - IF FMT-2 READS ZERO FLOW AND ASSOCIATED PUMP IS LISTED AS RUNNING, AN ALARM SHALL BE SENT TO THE BMS.
- RADIANT FLOOR PUMP CONTROLS (HWP-3)**
- UPON A CALL FOR HEAT BY ANY RADIANT FLOOR VALVE (RWV), HWP-3 SHALL START.
 - PUMP SHALL MODULATE ITS VFD TO MAINTAIN BALANCED DESIGN SETPOINT AT REMOTE DIFFERENTIAL PRESSURE SENSORS (DPT-3) LOCATED ON THE FURTHEST RUN OF EQUIPMENT.
 - UPON PUMP FAILURE, AN ALARM SHALL BE SENT TO THE BMS AND THE ERU'S SHALL ENTER STANDBY MODE.
 - RADIANT TEMPERATURE CONTROL VALVE SHALL MODULATE AS REQUIRED TO MAINTAIN 107° LEAVING WATER TEMPERATURE AS SENSED AT RADIANT WATER TEMPERATURE SENSOR (RWT).
 - IF FMT-3 READS ZERO FLOW AND ASSOCIATED PUMP IS LISTED AS RUNNING, AN ALARM SHALL BE SENT TO THE BMS.
- SPARE PUMP CONTROLS (HWP-4)**
- UPON FAILURE OF ONE OTHER PUMP, THE 3-WAY, 2 POSITION PUMP ISOLATION VALVE (PIV) ASSOCIATED WITH THAT PUMP SHALL SWITCH THE NORMALLY OPEN AND NORMALLY CLOSED SIDES OF THE VALVE. THE SPARE PUMP (HWP-4) SHALL THEN START. THIS SEQUENCE SHALL SEND A NOTIFICATION TO THE BMS AND SHALL BE REVERSIBLE ON USER COMMAND.
 - PUMP SHALL MODULATE ITS VFD TO MAINTAIN BALANCED DESIGN SETPOINT FOR THE SYSTEM BEING BACKED UP AT REMOTE DIFFERENTIAL PRESSURE SENSOR (DPT) LOCATED ON THE FURTHEST RUN OF EQUIPMENT.
 - UPON PUMP FAILURE, AN ALARM SHALL BE SENT TO THE BMS.
 - IF THE ASSOCIATED SYSTEM'S FMS READS ZERO FLOW AND ASSOCIATED PUMP IS LISTED AS RUNNING, AN ALARM SHALL BE SENT TO THE BMS.
- ALARMS**
- PROVIDE ALARM ON FAILURE TO MEET SETPOINT FOR 10 MINUTES OR ANY EQUIPMENT FAILURE.

HEATING WATER PUMP CONTROL SEQUENCES

HWC01

NO.	Revision Description	Date

THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.

DESIGNER/DRAFTER
WJS
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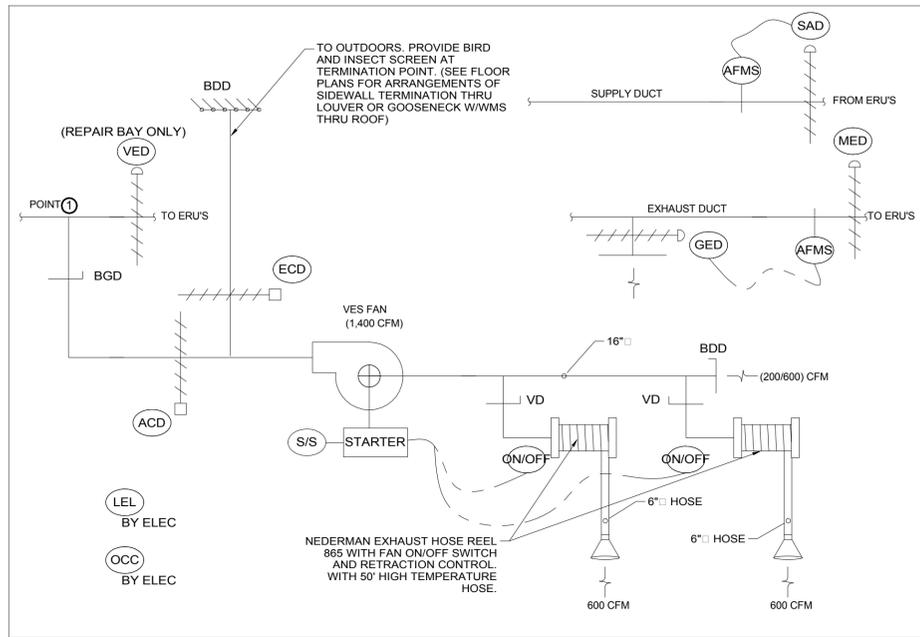
SIGNATURE/BLOCK:

PROJECT TITLE
REPAIR FACILITY

TOWN
ROCKY HILL
DRAWING TITLE
MECHANICAL CONTROLS II

PROJECT NO.
118-0167
DRAWING NO.
MEC-501
SHEET NO.
10.29

File Name: MPPP_CTDOT_Rocky Hill Repair Facility_Central.rvt



HOSE REELS AND VES FANS

1. WHEN BOTH HOSE REELS ARE RETRACTED THE VES FAN SHALL BE OFF.
2. WHILE EITHER HOSE REEL IS IN USE, FAN SHALL BE COMMANDED ON TO RUN AT BALANCED VALUE OF 1400 CFM.
3. COUNTER BALANCED BACKDRAFT DAMPER (BDD) SHALL BE BALANCED FOR NO MORE THAN 200 CFM LEAKAGE WHILE THE VES FAN IS RUNNING AND BOTH VES HOSE REELS ARE EXHAUSTING 600 CFM EACH. THE BACKDRAFT DAMPER SHALL PROVIDE 600 CFM OF AIR WHILE ONLY ONE ASSOCIATED EXHAUST HOSE IS IN USE.
4. PROVIDE HARDWARE, WIRING, PROGRAMMING, AND GRAPHICS TO THE BUILDING BAS.
5. THE BLAST GATE DAMPER (BGD) SHALL BE MANUALLY BALANCED TO ENSURE THE PRESSURE AT POINT 1 IS ALWAYS NEGATIVE.

GENERAL EXHAUST DAMPER (GED)

1. THE GENERAL EXHAUST DAMPER (GED) SHALL BE INITIALLY BALANCED FOR FULL GENERAL EXHAUST FLOW (AS SHOWN ON THE FLOOR PLANS) WITH ALL ASSOCIATED VES FANS IN THE OFF POSITION.
2. UNDER NORMAL OPERATION THE AIR FLOW MEASURING STATION (AFMS) SHALL MODULATE THE GENERAL EXHAUST DAMPER (GED) TO MAINTAIN THE CFM GENERAL EXHAUST FLOW WHICH WAS INITIALLY BALANCED AS DESCRIBED ABOVE, LESS THE OPERATING VEHICLE EXHAUST SYSTEM (VES) TOTALS. IN THE MAIN REPAIR BAY, THE EXHAUST AIR FLOW FROM THE MAIN REPAIR BAY SHALL BE OBTAINED BY TAKING THE AFMS READING IN THAT ZONE LESS ALL OTHER EXHAUST ZONES CURRENTLY IN OPERATION ON THE SAME EXHAUST MAIN.
3. PROVIDE HARDWARE, WIRING, PROGRAMMING, AND GRAPHICS TO THE BUILDING BAS.

ACD AND ECD

1. ACD SHALL BE NORMALLY OPEN. ECD SHALL BE NORMALLY CLOSED.
2. UPON FAILURE OR SUMMER SHUTDOWN OF THE MAIN EXHAUST FANS, EMERGENCY CONTROL DAMPER (ECD) SHALL OPEN, AUTOMATIC CONTROL DAMPER (ACD) SHALL SHUT. UPON MAIN EXHAUST FAN RE-START, DAMPERS SHALL RESUME NORMAL OPERATION.

3. WHILE THE VENTILATION FAN (VF) IS IN OPERATION THE ACD SHALL BE SHUT, AND ECD SHALL BE OPEN.

MED - MAIN EXHAUST DAMPER

1. WHILE ASSOCIATED VENTILATION FAN (VF) IS IN OPERATION, OR THE ZONE IS UNOCCUPIED AS DETERMINED BY OCCUPANCY SENSOR (OCC) THE MAIN EXHAUST DAMPER (MED) SHALL BE SHUT.

SAD - SUPPLY AIR DAMPER

1. WHILE ASSOCIATED VENTILATION FAN (VF) IS IN OPERATION, OR THE ZONE IS UNOCCUPIED AS DETERMINED BY OCCUPANCY SENSOR (OCC) THE SUPPLY AIR DAMPER (SUPPLY AIR) SHALL BE SHUT.
2. UPON A ZONE BECOMING ACTIVE DUE TO OCCUPANCY OR NORMAL SCHEDULING, SAD SHALL MODULATE OPEN. AFMS SHALL MODULATE SAD TO MAINTAIN BALANCED AIRFLOW FOR THE ZONE AFFECTED.

VED - VEHICLE EXHAUST DAMPER (MAIN REPAIR BAY ONLY)

1. WHILE THE VEHICLE EXHAUST SYSTEMS ARE NOT IN OPERATION, THE VEHICLE EXHAUST DAMPER SHALL BE SHUT.
2. IF A VEHICLE EXHAUST SYSTEM FAN IS ON, AND THE ASSOCIATED ECD IS SHUT, VED SHALL MODULATE OPEN.

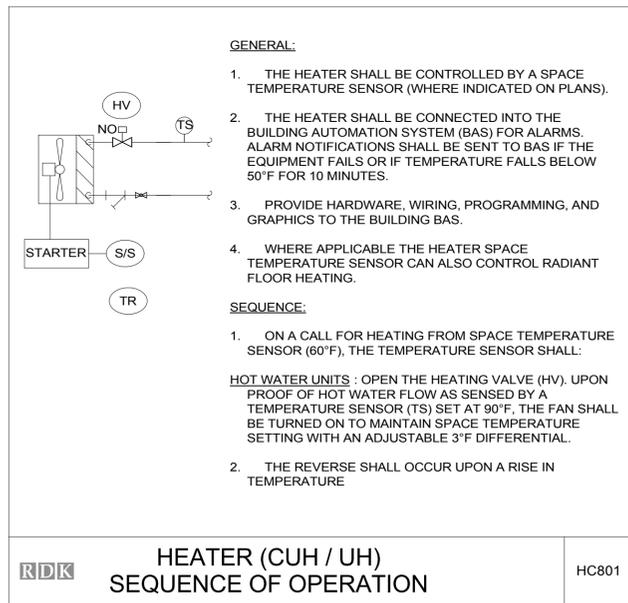
LOWER EXPLOSIVE LIMIT (LEL) SEQUENCE (CNG BAY ONLY)

1. UPON LEL DETECTION, ASSOCIATED MED SHALL OPEN FULLY, AND SAD SHALL OPEN FULLY. ERU'S AND MAIN EXHAUST FANS SHALL PROVIDE/EVACUATE PURGE AIR AT ROOM BALANCE VALUE UNTIL LEL HAS BEEN SILENCED.

RDk

**EXHAUST SYSTEMS SEQUENCE OF OPERATION
(CNG INSPECTION, LUBE BAYS, WELDING, MAIN REPAIR BAYS, AERIAL BUCKET)**

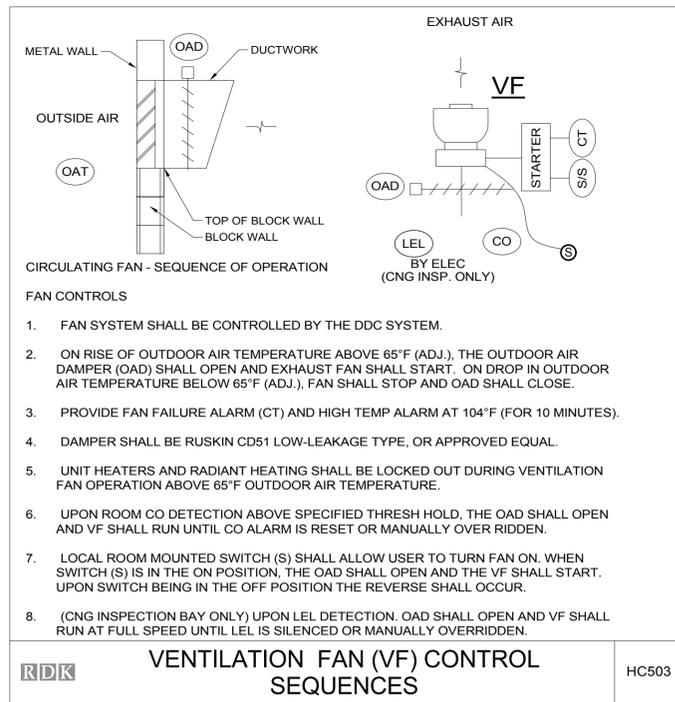
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**HEATER (CUH / UH)
SEQUENCE OF OPERATION**

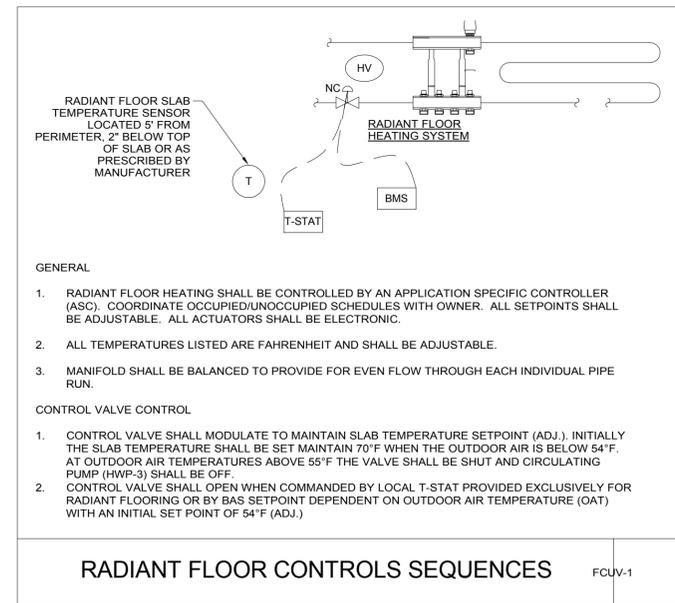
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**VENTILATION FAN (VF) CONTROL
SEQUENCES**

HC503



RADIANT FLOOR CONTROLS SEQUENCES

FCUV-1

NO.	Revision Description	Date

DESIGNER/DRAFTER WJS
CHECKED BY: TFC
SCALE 1/8" = 1'-0"

**STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION**

File Name: MPPP_CTDOT_Rocky Hill Repair Facility_Central.rvt

SIGNATURE/BLOCK:

PROJECT TITLE
REPAIR FACILITY

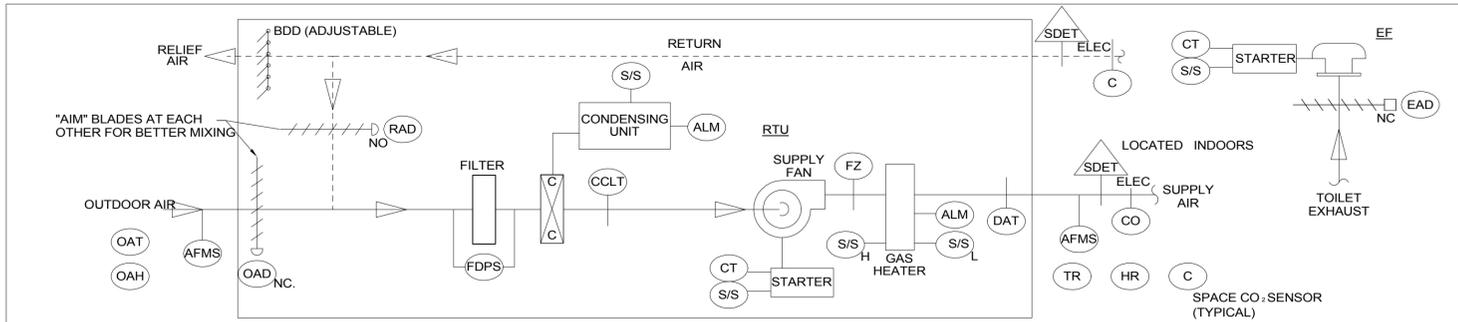
TOWN
ROCKY HILL

DRAWING TITLE
MECHANICAL CONTROLS III

PROJECT NO.
118-0167

DRAWING NO.
MEC-502

SHEET NO.
10.30



ROOFTOP UNIT CONTROL SEQUENCES (CV, <15,000 CFM)

ROOF TOP UNIT CONTROLS

GENERAL

- ROOFTOP UNIT AND EXHAUST FAN SHALL BE STARTED AND STOPPED VIA DDC CONTROLLER. COORDINATE OCCUPIED AND UNOCCUPIED SCHEDULES WITH OWNER. ALL SETPOINTS SHALL BE ADJUSTABLE. ALL ACTUATORS SHALL BE ELECTRONIC.
- LOCAL HAND-OFF-AUTOMATIC SWITCH (H-O-A) FOR FANS SHALL OVERRIDE DDC START/STOP (S/S) COMMANDS. ALL HARDWIRED SAFETIES SHALL BE ACTIVE IN BOTH "H" AND "A" POSITIONS.
- ALL TEMPERATURES LISTED ARE FAHRENHEIT.
- ALL TEMPERATURE SENSORS IN THE UNIT AND DUCTWORK SHALL BE AVERAGING TYPE EXCEPT FOR FREEZESTATS WHICH SHALL BE LOW POINT READING TYPE.
- PROVIDE APPROPRIATE ANTI-RECYCLE TIME DELAYS AND SAFETIES ON COMPRESSOR AND GAS HEATER STAGING.

FAN CONTROL

- WHILE IN UNOCCUPIED MODE (OR OFF ON SAFETY OR MANUAL DISCONNECT) THE SUPPLY AND EXHAUST FAN (EF) SHALL BE OFF WITH THE OUTSIDE AIR DAMPER (OAD) AND EXHAUST AIR DAMPER (EAD) CLOSED, THE CONDENSING UNIT AND GAS HEATER OFF, AND THE RETURN AIR DAMPER (RAD) OPEN.
- WHEN STARTED IN OCCUPIED MODE, THE SUPPLY FAN SHALL START IN RECIRCULATION MODE. THEN THE OAD AND RAD SHALL OPEN TO THE MINIMUM OUTDOOR AIR POSITION AS CONTROLLED BY AIR FLOW MONITORING STATION (AFMS - SEE CO2 CONTROL), THE EAD SHALL OPEN, AND THE EXHAUST FAN (EF) SHALL START.

OCCUPIED CARBON DIOXIDE CONTROL

- THE ACTUAL MINIMUM OUTDOOR AIRFLOW SHALL VARY BETWEEN 40% AND 100% OF THE SCHEDULED MINIMUM OUTDOOR AIR VOLUME. NORMAL MINIMUM OUTDOOR AIR (OA) QUANTITY SHALL BE CONTROLLED BY THE OUTDOOR AIR AFMS TO 40% OF THE SCHEDULED MINIMUM OA. IF EITHER OF THE FOLLOWING OCCURS, THE OUTDOOR AIR AFMS SHALL SLOWLY MODULATE THE OAD AND RAD AS REQUIRED TO MAINTAIN THE MAXIMUM CO2 WITHIN 50 PPM OF THE LISTED LIMIT:
 - IF ANY VARIABLE OCCUPANCY SPACE CO2 SENSOR SERVED BY THE UNIT RISES ABOVE THE LIMIT OF 1200 PPM FOR 5 MINUTES.
 - IF THE RETURN AIR CO2 LEVEL AT SENSOR (C) RISES ABOVE LIMIT OF 1000 PPM.

OCCUPIED HEATING CONTROL

- UPON A DROP IN ROOM TEMPERATURE BELOW THE ROOM HEATING SETPOINT OF 70°F, GAS HEATER SHALL BE STAGED TO MAINTAIN THE SPACE TEMPERATURE SETPOINT. THE REVERSE SHALL OCCUR ON A RISE IN SPACE TEMPERATURE.
- DISCHARGE AIR TEMPERATURE SENSOR DAT SHALL STAGE THE GAS HEATER TO MAINTAIN A MINIMUM TEMPERATURE OF 50°F DURING THE HEATING SEASON.

OCCUPIED COOLING CONTROL

- UPON A RISE IN ROOM TEMPERATURE ABOVE THE ROOM COOLING SETPOINT OF 75°F, THE COOLING CYCLE SHALL BE ACTIVATED.
- THE FIRST MEANS OF COOLING SHALL BE ACTIVATION OF THE ECONOMIZER. IF THE OUTSIDE AIR ENTHALPY IS BELOW THE ROOM ENTHALPY, THE OUTSIDE AND RETURN AIR DAMPERS SHALL BE PROPORTIONALLY MODULATED UP TO 100% OUTDOOR AIR TO MAINTAIN SPACE TEMPERATURE SETPOINT. DAT SHALL OVERRIDE, IF REQUIRED, TO LIMIT SUPPLY AIR TEMPERATURE TO 55°F MINIMUM DURING ECONOMIZER COOLING (LIMIT SHALL NOT RESULT IN REDUCTION OF THE MINIMUM OUTDOOR AIRFLOW). IF ADDITIONAL COOLING IS REQUIRED, THE CONDENSING UNIT'S COMPRESSORS SHALL BE STAGED ON AS REQUIRED. FOR LOW LOAD OPERATION, HGB SHALL BE USED. THE REVERSE SHALL OCCUR ON A DROP IN SPACE TEMPERATURE BELOW COOLING SETPOINT.

- IF THE OUTSIDE AIR ENTHALPY RISES ABOVE THE ROOM AIR ENTHALPY THE ECONOMIZER SHALL BE POSITIONED TO PROVIDE MINIMUM OUTDOOR AIRFLOW AND THE CONDENSING UNIT STAGED TO MAINTAIN ROOM COOLING SETPOINT TEMPERATURE. DAT SHALL LIMIT SUPPLY AIR TO 48°F MINIMUM, DURING MECHANICAL COOLING.

OCCUPIED DEHUMIDIFICATION CONTROL

- IF ROOM RELATIVE HUMIDITY (RH) RISES ABOVE 62% FOR TEN MINUTES AS MEASURED BY HR, DEHUMIDIFICATION CYCLE SHALL BE ACTIVATED.
- WHEN ACTIVATED, COOLING COIL LEAVING AIR TEMPERATURE SENSOR (CCLT) SHALL STAGE THE CONDENSING UNIT TO MAINTAIN 56°F. ROOM TEMPERATURE SENSOR TR SHALL STAGE GAS HEATER AS REQUIRED TO MAINTAIN HEATING SETPOINT OF 70°F.
- WHEN RH FALLS BELOW 58% FOR TEN MINUTES, DEHUMIDIFICATION CYCLE SHALL END.

UNOCCUPIED CONTROL

- IF, WHEN THE UNIT IS OFF, THE ROOM TEMPERATURE FALLS BELOW 56°F, THE UNIT SHALL START WITH RAD OPEN AND OAD CLOSED AND GAS HEATER SHALL BE CONTROLLED BY DAT TO SUPPLY 90°F AIR. WHEN ROOM TEMPERATURE RISES ABOVE 60°F, THE UNIT SHALL SHUT DOWN. EF SHALL REMAIN OFF WITH EAD CLOSED.
- BUTTON ON TR SHALL ALLOW 2-HOUR OVERRIDE FROM UNOCCUPIED TO OCCUPIED CONTROL.

WARM-UP CONTROL

- DDC CONTROLLER SHALL PROVIDE OPTIMUM START CAPABILITY. IF SPACE TEMPERATURE IS BELOW 63°F, WARM-UP SHALL BE DONE WITH RAD OPEN, OAD CLOSED, AND GAS HEATER CONTROLLED BY DAT TO SUPPLY 90°F AIR. WHEN ROOM TEMPERATURE RISES ABOVE 69°F, OCCUPIED MODE SHALL START. EF SHALL REMAIN OFF WITH EAD CLOSED.

SAFETIES

- IN ADDITION TO THE CO SAFETY SHOWN ABOVE (FOR BUILDINGS WITH RESIDENTIAL UNITS), THE FOLLOWING SAFETIES EACH WITH ITS OWN MANUAL RESET BUTTON, SHALL SHUT DOWN THE UNIT VIA HARDWARE BEFORE H-O-A.
 - ANY FREEZESTAT (FZ) SHALL SHUTDOWN THE UNIT WHENEVER THE TEMPERATURE IS LESS THAN 35°F.
 - WHEN ANY SMOKE DETECTOR (SDET) IS ACTIVATED THE UNIT SHALL SHUT DOWN.

ALARMS

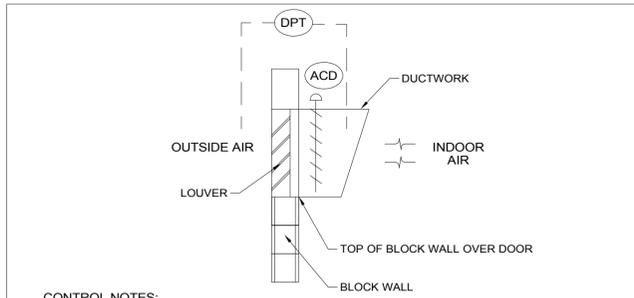
- IF EITHER THE SUPPLY OR EXHAUST FAN FAILS OR IF ANY SAFETY IS TRIPPED, THE DDC CONTROLLER SHALL GIVE A DETAILED ALARM SIGNAL TO THE FRONT END.
- IF FILTER PRESSURE DROP EXCEEDS SETPOINT (INITIALLY 0.6") FOR 10 MINUTES, THE DDC CONTROLLER SHALL GIVE A DETAILED ALARM SIGNAL TO THE FRONT END.

STAND-BY POWER

- UNIT AND CONTROLS SHALL BE WIRED TO STAND-BY POWER. PROVIDE AUTOMATIC RE-START UPON POWER FAILURE AND UPON RETURN TO NORMAL POWER.

ROOFTOP UNIT CONTROL SEQUENCES (CV, <15,000 CFM)

HC002

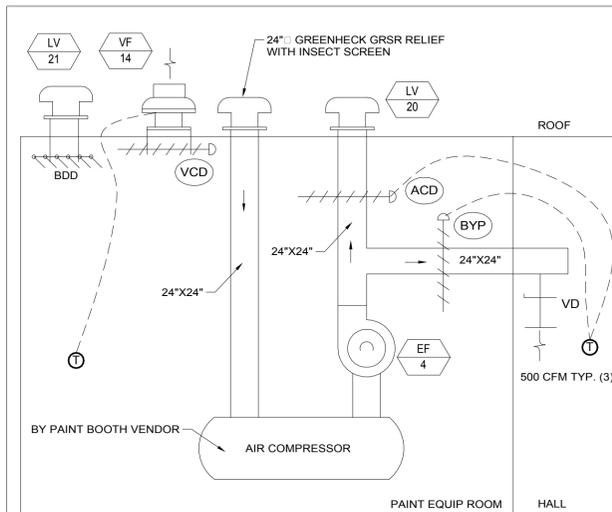


CONTROL NOTES:

- ACD SHALL MODULATE AS REQUIRED TO MAINTAIN A DIFFERENTIAL PRESSURE OF +/- 0.05" W.C. BETWEEN INTERIOR AND EXTERIOR SPACES.
- DAMPER SHALL BE RUSKIN CD51 LOW-LEAKAGE TYPE, OR APPROVED EQUAL.

LOUVER 17 (LV-17) CONTROL DETAIL

HC002

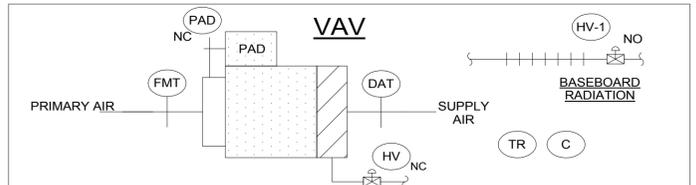


CONTROL NOTES:

- UPON A RISE IN OUTDOOR AIR TEMPERATURE ABOVE 65°F BYP SHALL MODULATE OPEN AND ACD SHALL SHUT.
- T-STAT IN HALLWAY SHALL MODULATE DAMPERS TO MAINTAIN SPACE TEMPERATURE SET POINT.
- WHILE AIR COMPRESSOR IS ON, EXHAUST FAN (EF-4) SHALL RUN AT BALANCED VALUE OF 3,000 CFM
- WHEN PAINT EQUIP ROOM TEMP EXCEEDS 70°F (ADJ.) VENTILATION CONTROL DAMPER (VCD) SHALL OPEN. FAN SHALL RUN TO MAINTAIN TEMPERATURE SET POINT. UPON A DROP IN TEMPERATURE BELOW 70°F (ADJ.), VCD SHALL SHUT AND FAN SHALL TURN OFF.

PAINT EQUIP ROOM CONTROLS

HC002



VAV BOX WITH HW COIL, CO2, AND RADIATION CONTROL SEQUENCES

GENERAL

- VAV BOX SHALL BE CONTROLLED BY A PROGRAMMABLE APPLICATION SPECIFIC CONTROLLER (ASC). COORDINATE OCCUPIED/UNOCCUPIED SCHEDULES WITH OWNER. ALL SETPOINTS SHALL BE ADJUSTABLE. ALL ACTUATORS SHALL BE ELECTRONIC.
- ALL TEMPERATURES LISTED ARE FAHRENHEIT AND SHALL BE ADJUSTABLE.
- AIRFLOW SHALL BE MEASURED BY THE FLOW MEASURING TRANSMITTER (FMT) AND DISPLAYED ON THE GRAPHICS.
- OCCUPIED HEATING SETPOINT SHALL BE 70°F. OCCUPIED COOLING SETPOINT SHALL BE 5°F WARMER THAN HEATING SETPOINT.
- ROOM TEMPERATURES SHALL BE SET BY THE BUILDING AUTOMATION SYSTEM (BAS) AND CAPABLE OF LOCAL +/- 2°F ADJUSTMENT.
- MINIMUM AND MAXIMUM PRIMARY AIRFLOWS ARE SHOWN ON DRAWINGS.

OCCUPIED CO2 CONTROL

- WHEN CO2 LEVEL AT SENSOR (C) RISES ABOVE 1150 PPM THE CONTROLLER SHALL OVERRIDE THE COOLING SIGNAL TO THE PAD TO INCREASE PRIMARY AIR (UP TO MAXIMUM AIRFLOW) AS REQUIRED TO MAINTAIN THE CO2 LEVEL AT 1150 PPM.
- IF THE PAD IS AT MAXIMUM AIRFLOW AND THE CO2 LEVEL RISES ABOVE 1200 PPM FOR 5 MINUTES, THEN THE OA DAMPER ON THE ASSOCIATED INTERLOCKED AIR HANDLER SHALL MODULATE TO PROVIDE MORE OA AS REQUIRED TO MAINTAIN A MAXIMUM ROOM CO2 LEVEL OF 1200 PPM (SEE THE ASSOCIATED AIR HANDLER CONTROLS). THIS SEQUENCE SHALL BE REVERSIBLE. THE DDC SYSTEM SHALL GIVE A DETAILED SIGNAL TO THE FRONT END INDICATING THAT THIS OVERRIDE HAS OCCURRED.

OCCUPIED HEATING CONTROL

- UPON A CALL FOR HEATING FROM THE ROOM TEMPERATURE SENSOR (TR), THE PAD SHALL MODULATE TO ITS MINIMUM AIRFLOW (UNLESS IN CO2 OVERRIDE) AND THE HEATING CONTROL VALVE (HV) SHALL MODULATE AS REQUIRED (UP TO 72°F AT DAT) TO MAINTAIN THE HEATING SETPOINT. ON A CONTINUED DROP IN ROOM TEMPERATURE, BASEBOARD HEATING CONTROL VALVE (HV-1) SHALL MODULATE AS REQUIRED TO MAINTAIN HEATING SETPOINT. THE REVERSE SHALL OCCUR ON A RISE IN SPACE TEMPERATURE.

OCCUPIED COOLING CONTROL

- UPON A CALL FOR COOLING FROM THE ROOM TEMPERATURE SENSOR (TR), THE PAD SHALL MODULATE BETWEEN MINIMUM AND MAXIMUM AIRFLOWS AS REQUIRED TO MAINTAIN COOLING SETPOINT WITH THE HEATING COIL CONTROL VALVE (HV) CLOSED (UNLESS HEATING IS NEEDED DUE TO CO2 OVERRIDE) AND, WHERE APPLICABLE THE RADIATION CONTROL VALVE (HV-1) CLOSED.

UNOCCUPIED HEATING CONTROL

- THE HEATING COIL CONTROL VALVE (HV) AND PAD SHALL BE CLOSED. HEATING SHALL BE BY BASEBOARD RADIATION WITH HEATING CONTROL VALVE (HV-1) MODULATING AS REQUIRED TO MAINTAIN UNOCCUPIED TEMPERATURE SETPOINT OF 55°F.
- THERE SHALL BE NO UNOCCUPIED COOLING.

UNOCCUPIED OVERRIDE

- BUTTON ON TR SHALL ALLOW 2-HOUR (ADJ) OVERRIDE FROM UNOCCUPIED TO OCCUPIED CONTROL. WHEN ANY ROOM IS IN THIS OVERRIDE, THE DDC SYSTEM SHALL ENSURE THAT ENOUGH "UNOCCUPIED" ZONES ARE ALSO OVERRIDDEN SO THAT THE ASSOCIATED AIR HANDLER CAN OPERATE AT MINIMUM AIRFLOW IN THIS MODE.

WARM-UP CONTROL

- PROVIDE OPTIMUM START CAPABILITY. IF ROOM TEMPERATURE IS BELOW 65°F, WARM-UP SHALL BE DONE BY MODULATING THE BASEBOARD RADIATION HEATING CONTROL VALVE (HV-1). PAD AND HEATING COIL CONTROL VALVE (HV) SHALL BE CLOSED. WHEN ROOM TEMPERATURE RISES ABOVE 69°F, OCCUPIED MODE SHALL START.

ALARMS

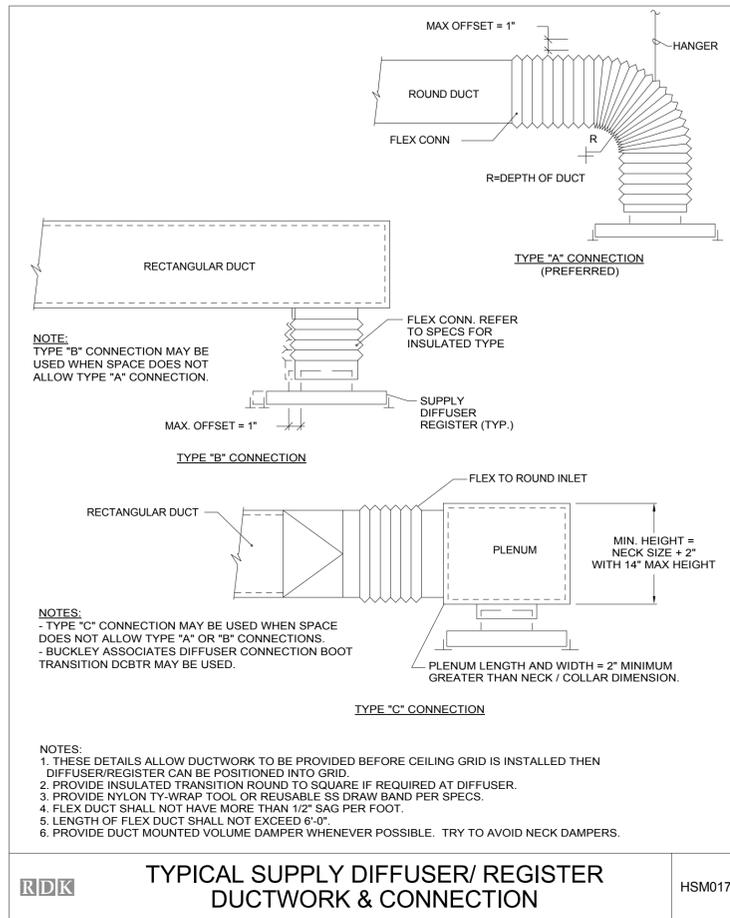
- IF, DURING OCCUPIED MODE, THE ROOM TEMPERATURE SENSOR TR SENSES A TEMPERATURE MORE THAN 5°F ABOVE OR BELOW THE SETPOINT FOR 5 MINUTES, OR BELOW 50°F DURING UNOCCUPIED CONTROL, THE DDC SYSTEM SHALL GIVE A DETAILED ROOM "HIGH" OR "LOW" TEMPERATURE ALARM SIGNAL.

VARIABLE AIR VOLUME BOX WITH HOT WATER HEATING COIL, CO2, AND RADIATION CONTROL SEQUENCES

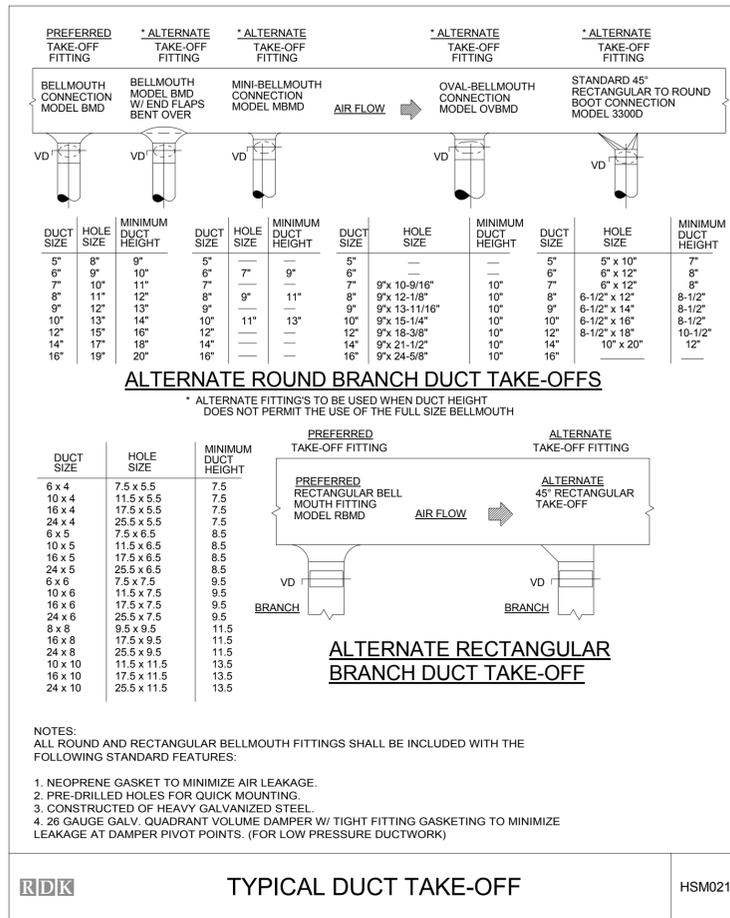
HC711



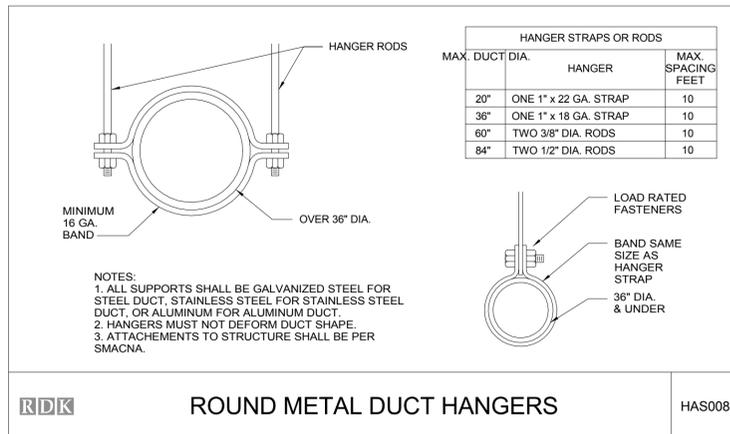
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									SHEET NO. 10.31	



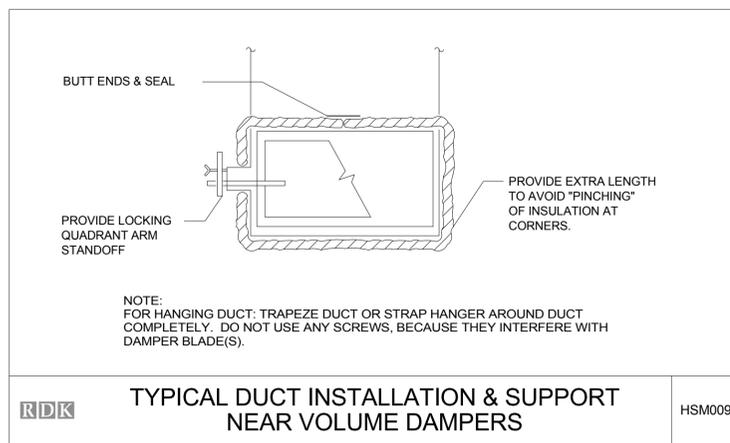
RDk TYPICAL SUPPLY DIFFUSER/ REGISTER DUCTWORK & CONNECTION HSM017



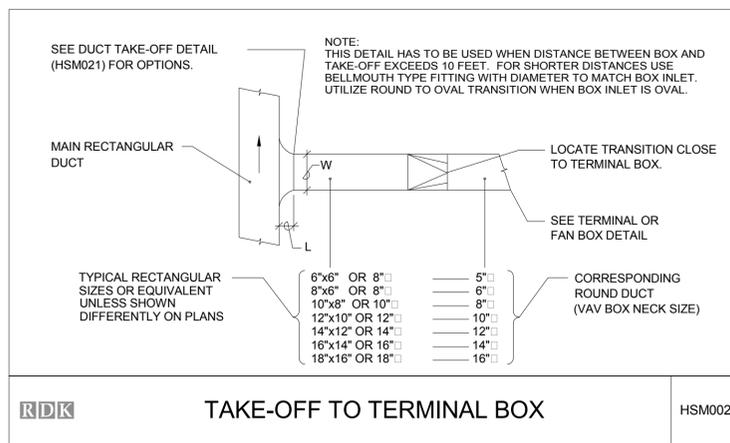
RDk TYPICAL DUCT TAKE-OFF HSM021



RDk ROUND METAL DUCT HANGERS HAS008



RDk TYPICAL DUCT INSTALLATION & SUPPORT NEAR VOLUME DAMPERS HSM009



RDk TAKE-OFF TO TERMINAL BOX HSM002

NO.	Revision Description	Date

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TFC

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PROJECT TITLE
REPAIR FACILITY

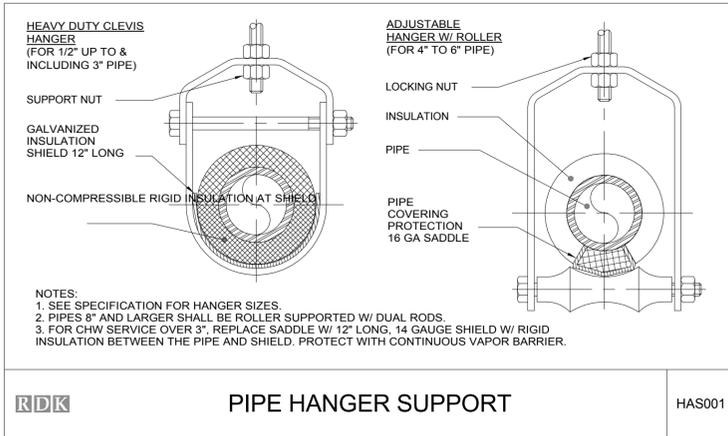
TOWN
ROCKY HILL

DRAWING TITLE
MECHANICAL DETAILS I

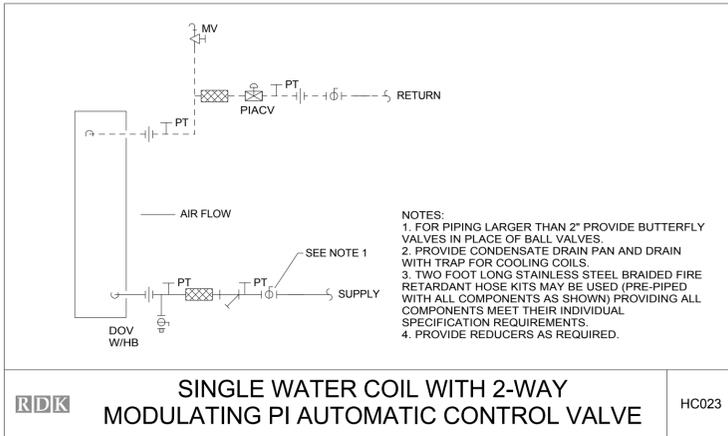
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118-0167

DRAWING NO.
MEC-600

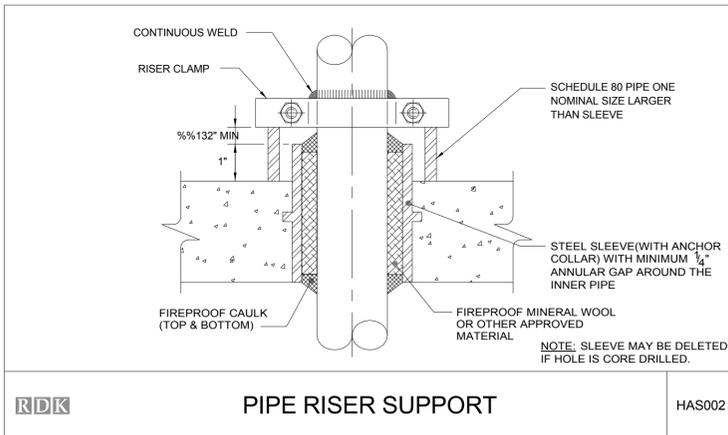
SHEET NO.
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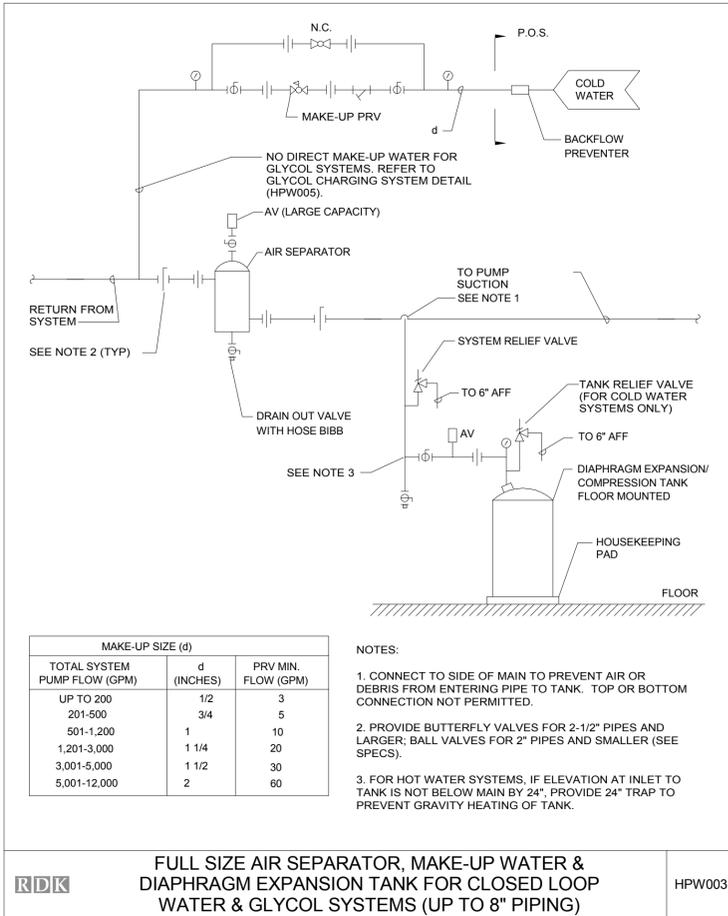
RD&K PIPE HANGER SUPPORT **HAS001**



RD&K SINGLE WATER COIL WITH 2-WAY MODULATING PI AUTOMATIC CONTROL VALVE **HC023**



RD&K PIPE RISER SUPPORT **HAS002**



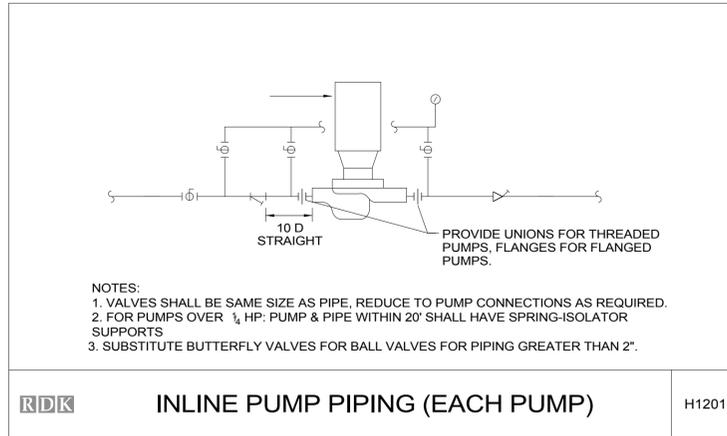
MAKE-UP SIZE (d)

TOTAL SYSTEM PUMP FLOW (GPM)	d (INCHES)	PRV MIN. FLOW (GPM)
UP TO 200	1/2	3
201-500	3/4	5
501-1,200	1	10
1,201-3,000	1 1/4	20
3,001-5,000	1 1/2	30
5,001-12,000	2	60

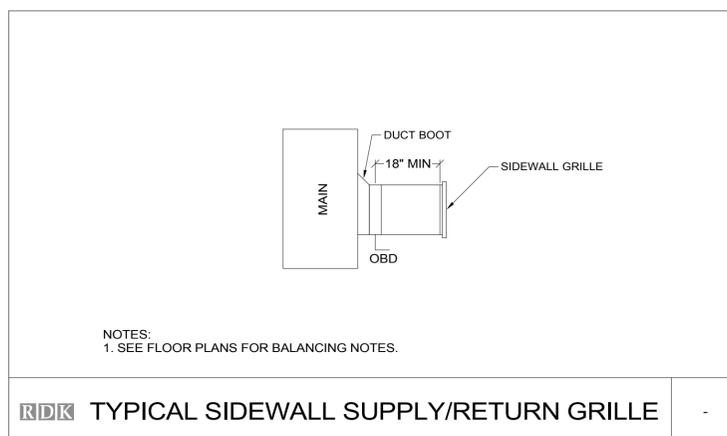
NOTES:

- CONNECT TO SIDE OF MAIN TO PREVENT AIR OR DEBRIS FROM ENTERING PIPE TO TANK. TOP OR BOTTOM CONNECTION NOT PERMITTED.
- PROVIDE BUTTERFLY VALVES FOR 2-1/2" PIPES AND LARGER; BALL VALVES FOR 2" PIPES AND SMALLER (SEE SPECS).
- FOR HOT WATER SYSTEMS, IF ELEVATION AT INLET TO TANK IS NOT BELOW MAIN BY 24", PROVIDE 24" TRAP TO PREVENT GRAVITY HEATING OF TANK.

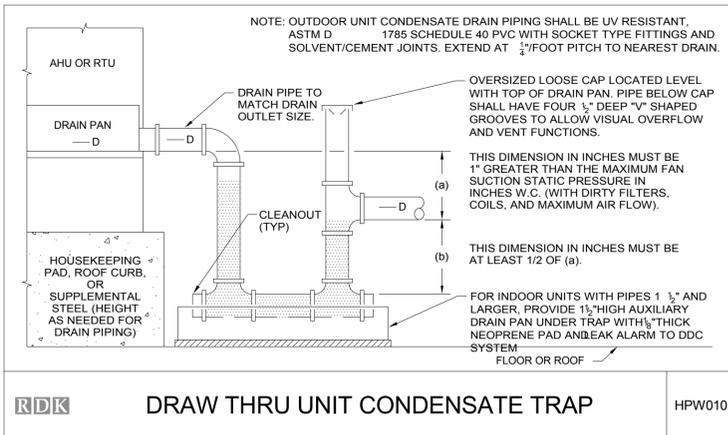
RD&K FULL SIZE AIR SEPARATOR, MAKE-UP WATER & DIAPHRAGM EXPANSION TANK FOR CLOSED LOOP WATER & GLYCOL SYSTEMS (UP TO 8" PIPING) **HPW003**



RD&K INLINE PUMP PIPING (EACH PUMP) **H1201**



RD&K TYPICAL SIDEWALL SUPPLY/RETURN GRILLE



RD&K DRAW THRU UNIT CONDENSATE TRAP **HPW010**

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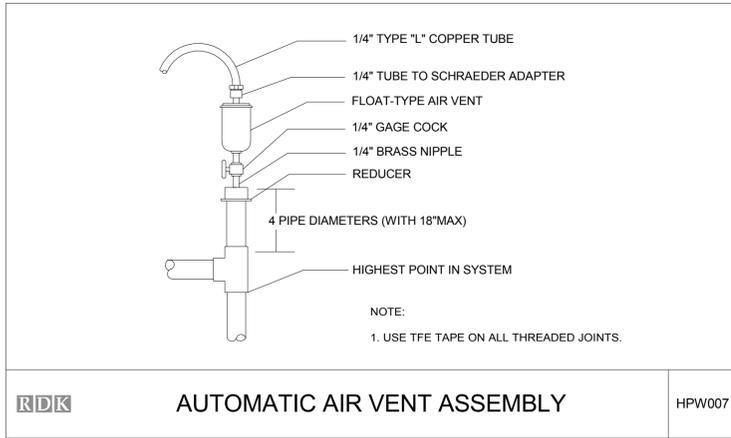


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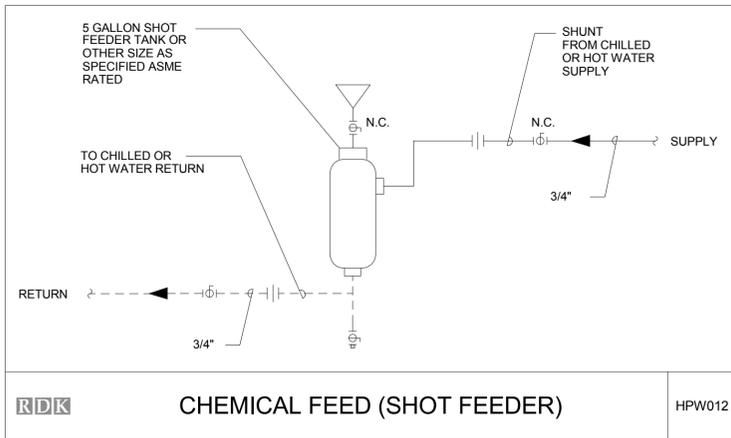
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TOWN: **ROCKY HILL**
 DRAWING TITLE: **MECHANICAL DETAILS II**

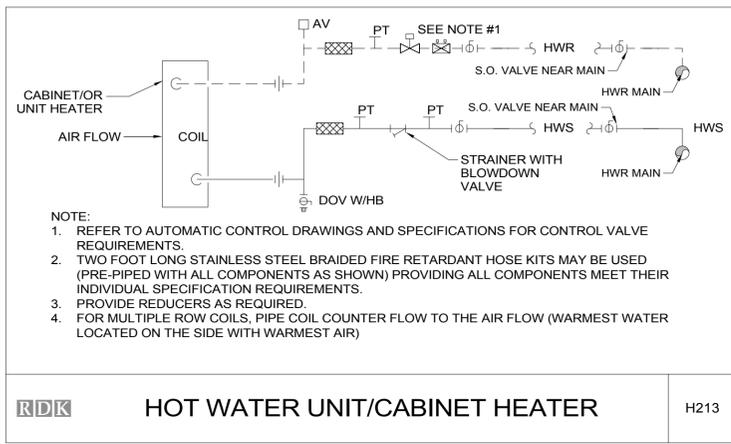
PROJECT NO.: **118-0167**
 DRAWING NO.: **MEC-601**
 SHEET NO.: **10.33**



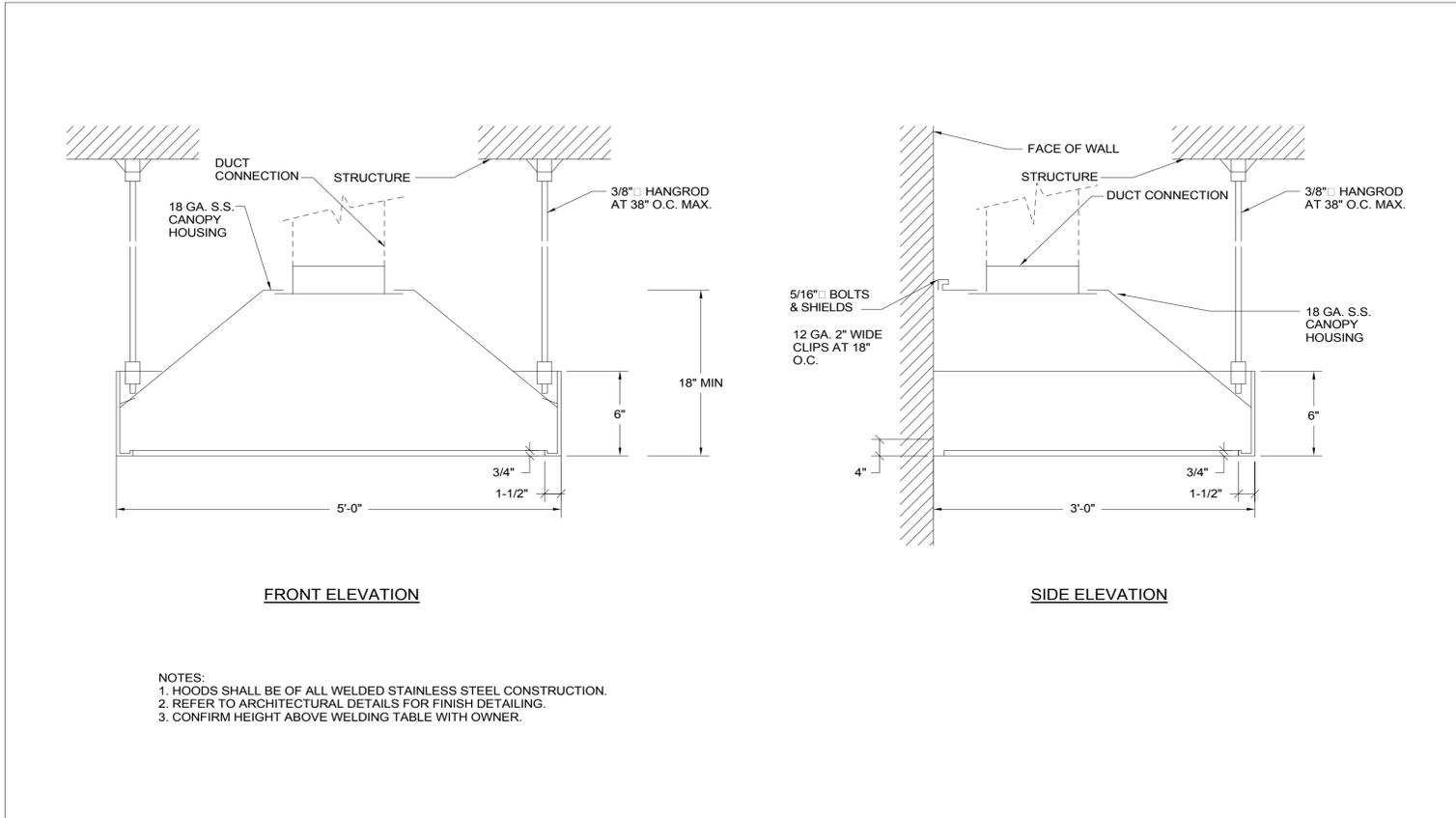
RDK AUTOMATIC AIR VENT ASSEMBLY HPW007



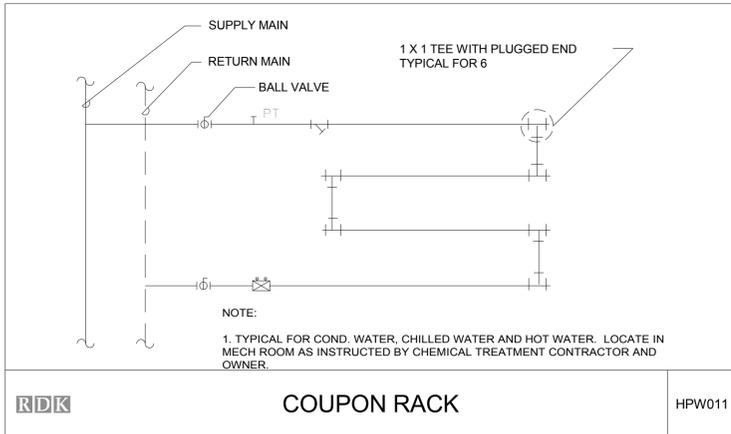
RDK CHEMICAL FEED (SHOT FEEDER) HPW012



RDK HOT WATER UNIT/CABINET HEATER H213



RDK WELD TABLE HOOD ELEVATIONS (NOT TO SCALE) H703



RDK COUPON RACK HPW011

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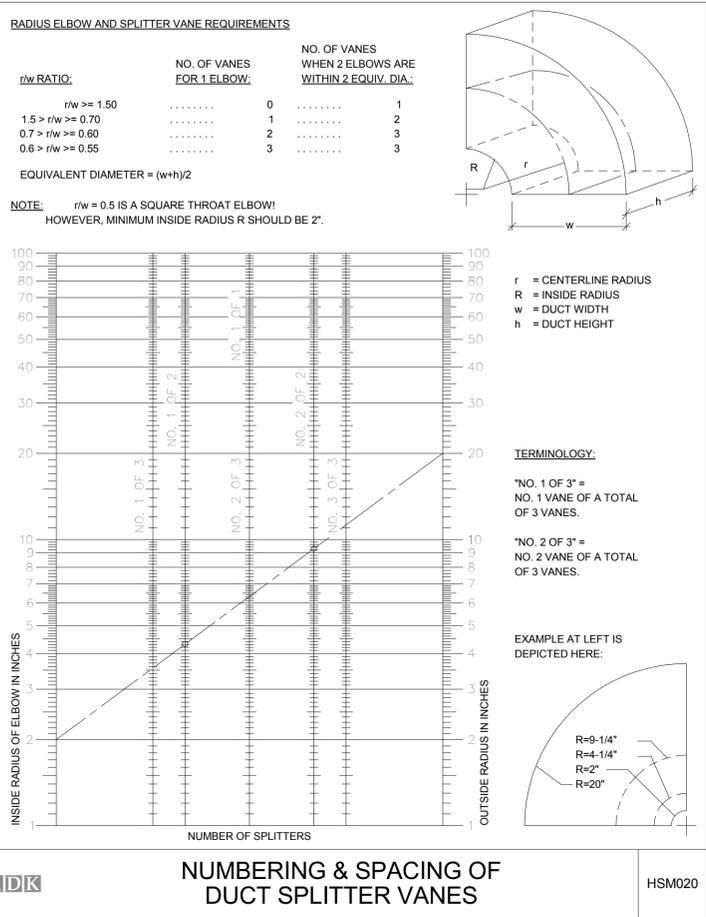


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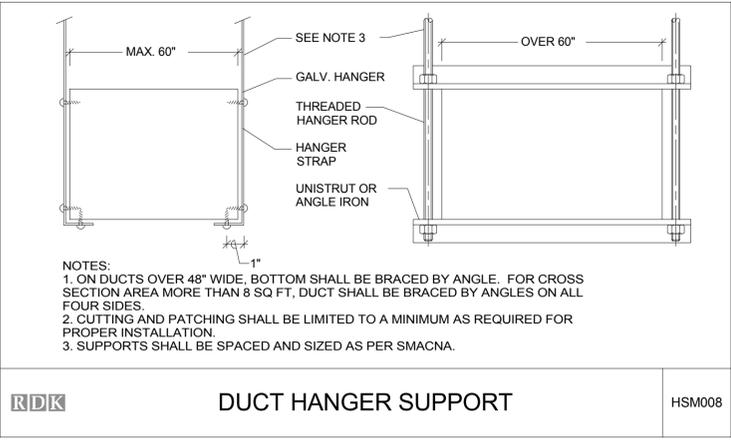
PROJECT TITLE
REPAIR FACILITY

TOWN
ROCKY HILL
 DRAWING TITLE
MECHANICAL DETAILS III

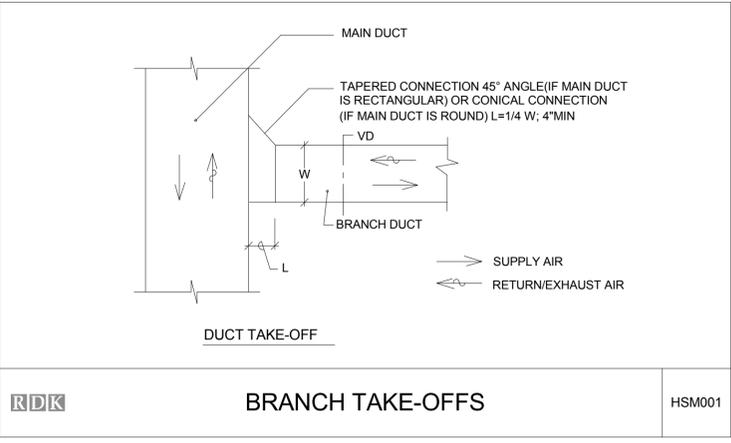
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118-0167
 DRAWING NO.
MEC-602
 SHEET NO.
10.34



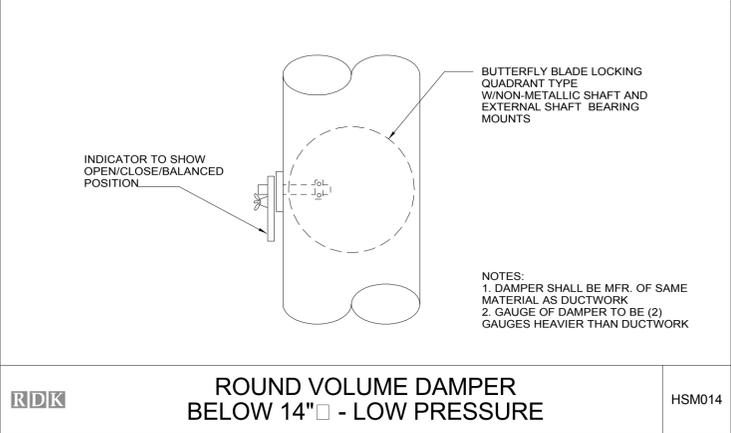
NUMBERING & SPACING OF DUCT SPLITTER VANES HSM020



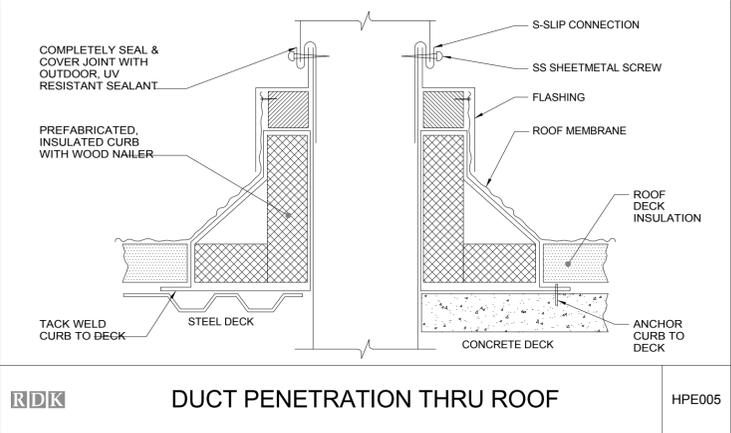
DUCT HANGER SUPPORT HSM008



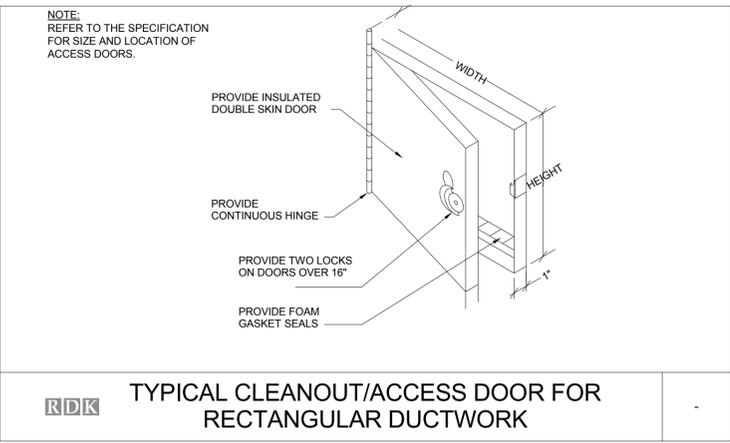
BRANCH TAKE-OFFS HSM001



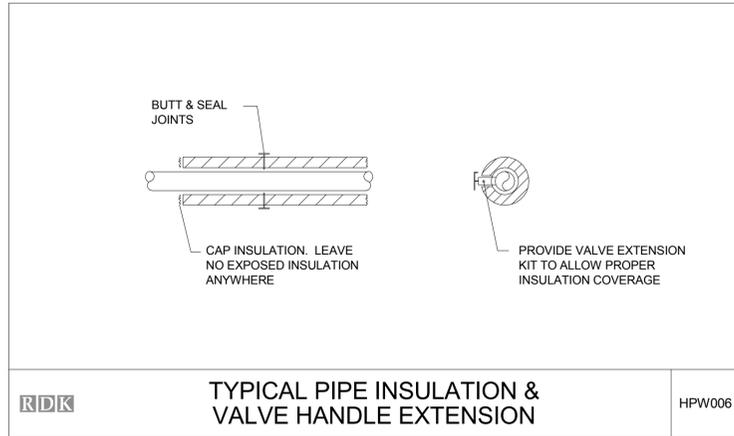
ROUND VOLUME DAMPER BELOW 14" □ - LOW PRESSURE HSM014



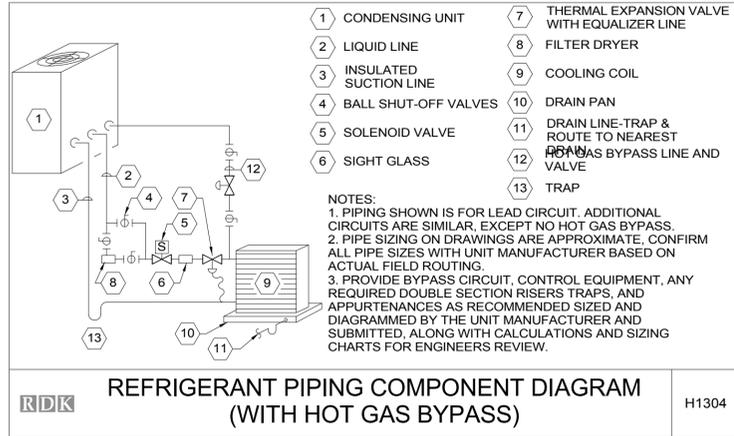
DUCT PENETRATION THRU ROOF HPE005



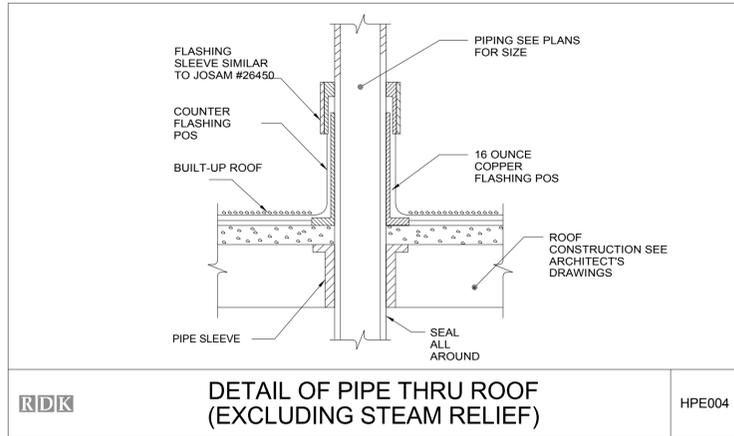
TYPICAL CLEANOUT/ACCESS DOOR FOR RECTANGULAR DUCTWORK



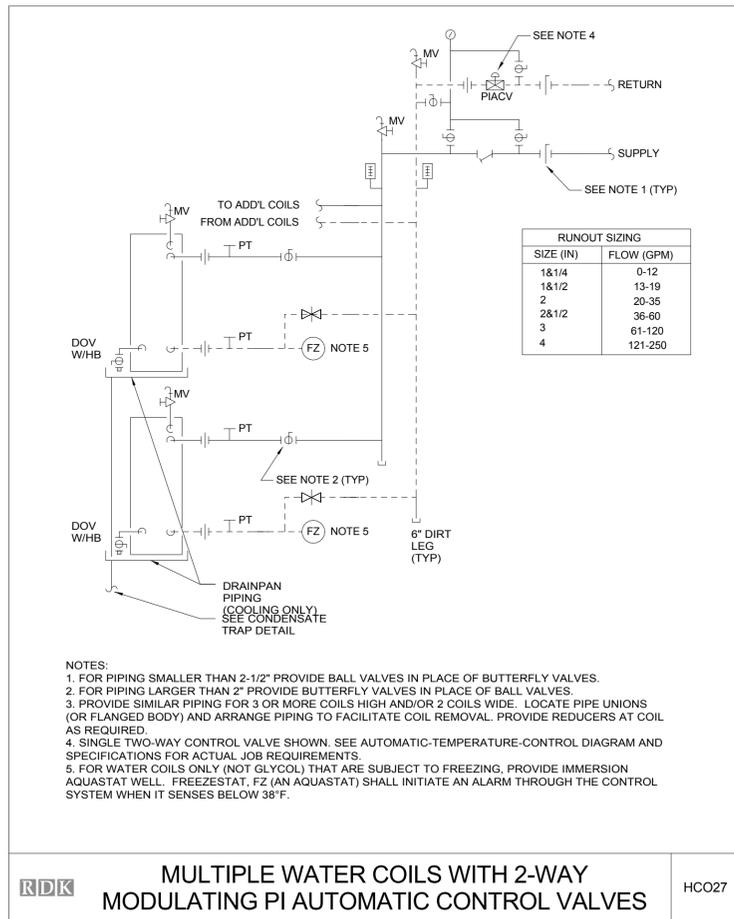
RDk **TYPICAL PIPE INSULATION & VALVE HANDLE EXTENSION** HPW006



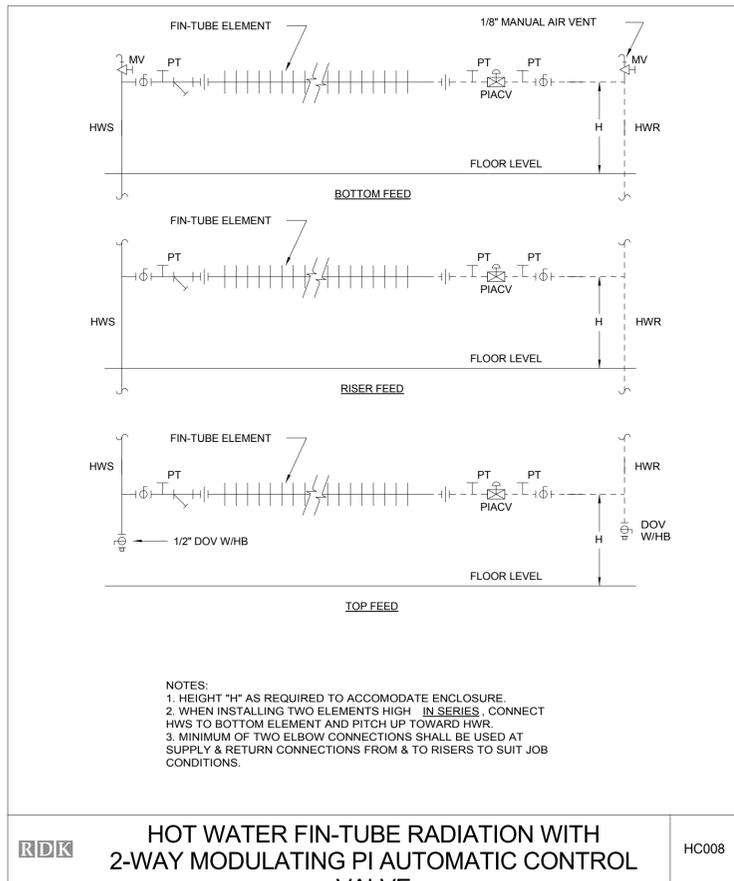
RDk **REFRIGERANT PIPING COMPONENT DIAGRAM (WITH HOT GAS BYPASS)** H1304



RDk **DETAIL OF PIPE THRU ROOF (EXCLUDING STEAM RELIEF)** HPE004



RDk **MULTIPLE WATER COILS WITH 2-WAY MODULATING PI AUTOMATIC CONTROL VALVES** HCO27



RDk **HOT WATER FIN-TUBE RADIATION WITH 2-WAY MODULATING PI AUTOMATIC CONTROL VALVE** HC008

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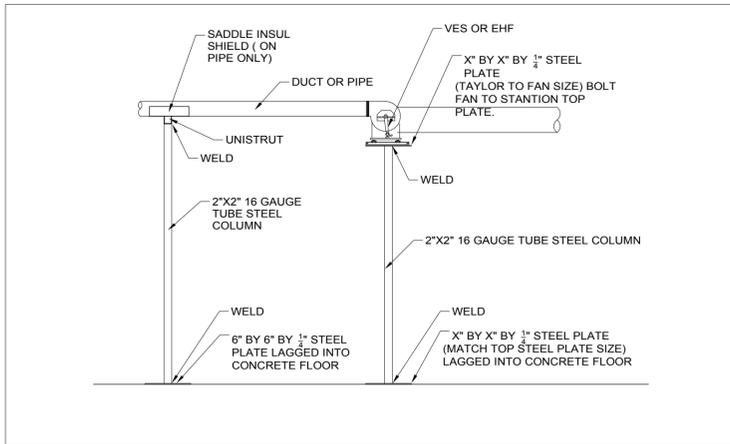


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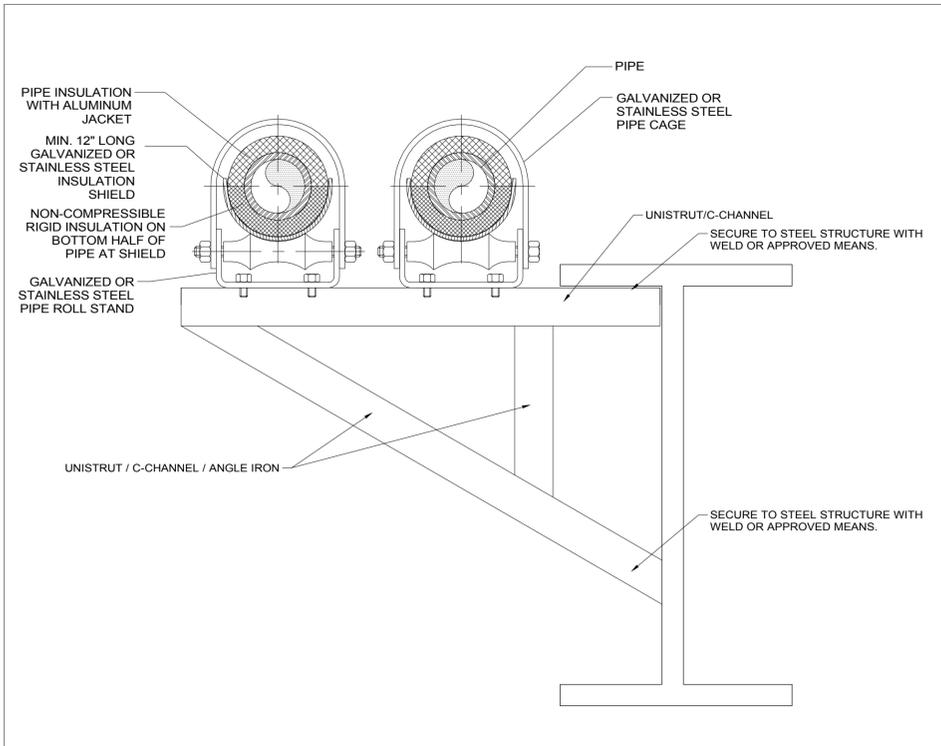
TOWN: **ROCKY HILL**

DRAWING TITLE: **MECHANICAL DETAILS V**

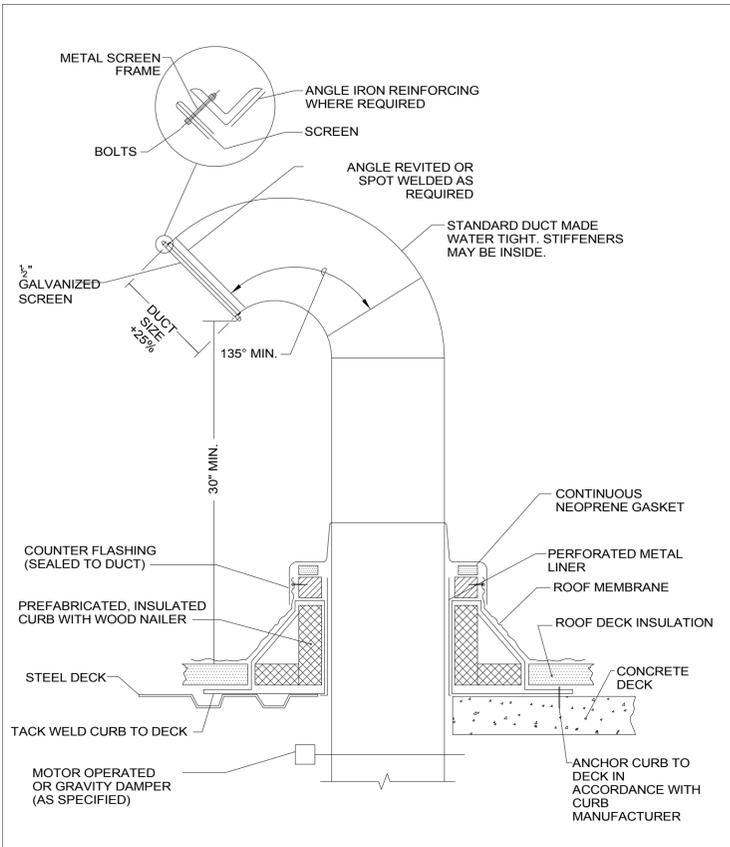
PROJECT NO.: **118-0167**
 DRAWING NO.: **MEC-604**
 SHEET NO.: **10.36**



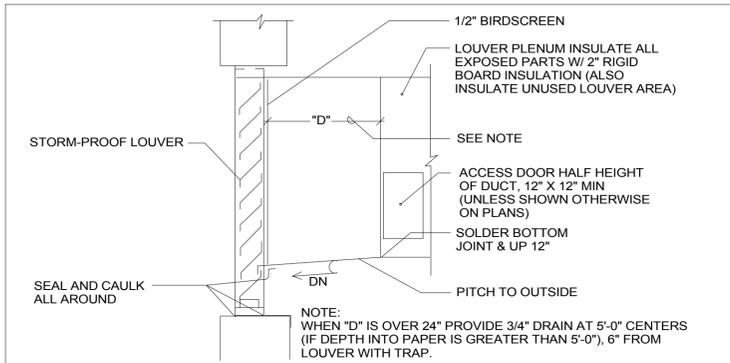
RDK FAN, DUCT AND PIPE STANTION DETAIL



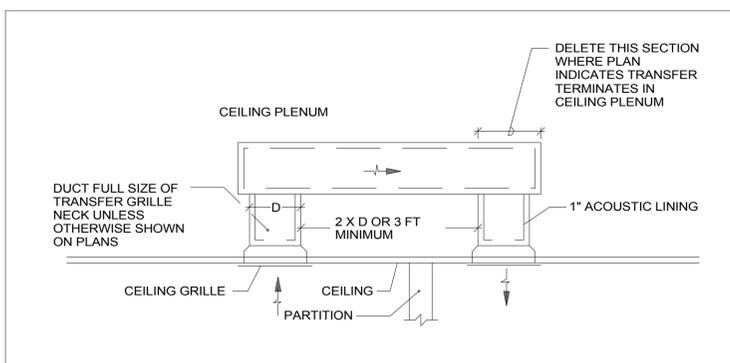
RDK ANGLE BRACKET PIPING SUPPORT H010



RDK GOOSENECK DETAIL H1523



RDK LOUVER CONNECTION H1519



RDK TRANSFER BOOT W/ GRILLES H1505

NO.	Revision Description	Date

THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.

Plotted: 6/9/2014 4:12:50 PM

DESIGNER/DRAFTER
WJS

CHECKED BY:
TFC

SCALE
1/8" = 1'-0"



SIGNATURE/BLOCK:

PROJECT TITLE
REPAIR FACILITY

TOWN
ROCKY HILL

DRAWING TITLE
MECHANICAL DETAILS VI

PROJECT NO.
118-0167

DRAWING NO.
MEC-605

SHEET NO.
10.37

EXHAUST FAN SCHEDULE																	
TAG	SERVICE	LOCATION	CFM	FAN TYPE	E.S.P. (IN.WG)	WHEEL			OUTLET VELOCITY (FPM)	MOTOR					WEIGHT (LBS)	MANUFACTURER AND MODEL NUMBER (AS STANDARD)	REMARKS
						DIA. (IN.)	TYPE	DRIVE		RPM	BHP	HP	V	PH			
EF-1A,B,C,D	ERU-1,2,3,4	ROOF	11,250	HIGH PLUME	5	-	-	BELT	4000	1725	16.08	25	208	3	10,880	GREENHECK VEKTOR-MD-27-2-85	1,2,3,4,5
EF-2	WASH BAY	ROOF	6,000	CENT UPBLAST	.5	-	-	BELT	-	866	1.61	2	208	3	150	GREENHECK CUBE-220-20	1,2,3,4,5
EF-3	MECHANICAL RM	ROOF	6,000	CENT DNBLAST	.25	-	-	BELT	-	1140	1.72	2	208	3	107	GREENHECK G-203-B	1,2,3,4,5
EF-4	PAINT EQUIP RM	ROOF	3,500	INLINE	1	-	-	DIRECT	-	1725	1.84	2	208	3	164	GREENHECK SQ-160-A	1,2,3,4,5
VF-1	REPAIR BAY	ROOF	17,000	CENT UPBLAST	.75	-	-	BELT	-	1725	4.3	5	208	3	363	GREENHECK CUBE-420-50	1,2,3,4,5
VF-2	REPAIR BAY	ROOF	17,000	CENT UPBLAST	.75	-	-	BELT	-	1725	4.3	5	208	3	363	GREENHECK CUBE-420-50	1,2,3,4,5
VF-3	WELD SHOP	ROOF	3,500	CENT UPBLAST	.5	-	-	BELT	-	1725	0.7	.75	208	3	103	GREENHECK CUBE-180-7	1,2,3,4,5
VF-4	AERIAL BUCKET	ROOF	4,000	CENT UPBLAST	.5	-	-	BELT	-	1725	0.9	1	208	3	117	GREENHECK CUBE-200-10	1,2,3,4,5
VF-5	STORES STOCKROOM	ROOF	8,000	CENT UPBLAST	.5	-	-	BELT	-	1725	1.2	1.5	208	3	194	GREENHECK CUBE-300-15	1,2,3,4,5
VF-6	STORES STOCKROOM	ROOF	8,000	CENT UPBLAST	.5	-	-	BELT	-	1725	1.2	1.5	208	3	194	GREENHECK CUBE-300-15	1,2,3,4,5
VF-7	LUBE/COMPRESSOR	ROOF	500	CENT UPBLAST	.5	-	-	BELT	-	1725	.14	.5	208	3	61	GREENHECK CUBE-101HP-4	1,2,3,4,5
VF-8	LUBE BAYS	ROOF	4,500	CENT UPBLAST	.5	-	-	BELT	-	1725	1.15	1.5	208	3	122	GREENHECK CUBE-200-15	1,2,3,4,5
VF-9	WELD/FABRICATION SHOP	ROOF	7,500	CENT UPBLAST	.5	-	-	BELT	-	1725	0.7	2	208	3	184	GREENHECK CUBE 240-20	1,2,3,4,5
VF-10	MACHINE SHOP	ROOF	7,500	CENT UPBLAST	.5	-	-	BELT	-	1725	0.7	2	208	3	184	GREENHECK CUBE 240-20	1,2,3,4,5
VF-11	MACHINE SHOP	ROOF	7,500	CENT UPBLAST	.5	-	-	BELT	-	1725	0.7	2	208	3	184	GREENHECK CUBE 240-20	1,2,3,4,5
VF-12	CNG INSPECTION	ROOF	6,000	CENT UPBLAST	.5	-	-	BELT	-	1725	1.3	1.5	208	3	143	GREENHECK CUBE 240-15	1,2,3,4,5
VF-13	PARTS WASHER	ROOF	900	CENT UPBLAST	.5	-	-	BELT	-	1725	0.18	0.25	208	3	56	GREENHECK CUBE 101-4	1,2,3,4,5
VF-14	PAINT EQUIP. RM	ROOF	600	CENT UPBLAST	.5	-	-	BELT	-	1725	0.18	0.25	208	3	56	GREENHECK CUBE-101HP-4	1,2,3,4,5
VF-15	PAINT BOOTH HALL	ROOF	2,000	CENT UPBLAST	.5	-	-	BELT	-	1725	0.7	2	208	3	184	GREENHECK CUBE-240-20	1,2,3,4,5
VES-1	VARIES	IN-ROOM	1,400	UTILITY SET	4.5	-	-	BELT	-	3733	2.0	2	208	3	159	GREENHECK 10-RIW-21-10-1-20	1,2,3,4,5
TE-1	MENS RM, WOMENS RM, JANITOR CLOSET	ROOF	2,000	CENT DNBLAST	1	-	-	BELT	-	1725	.59	.75	208	3	62	GREENHECK G-133-A	1,2,3,4,5
EHF-1	VARIOUS	IN-ROOM	600	UTILITY SET	4	-	-	BELT	-	3600	-	1.5	208	3	158	GREENHECK 8-BISW-21-10-1-15	1,2,3,4,5

NOTES:
1 PROVIDE WITH FACTORY ROOF CURB
2 PROVIDE WITH BACKDRAFT DAMPER
3 PROVIDE NEMA-3R RATED DISCONNECT SWITCH.
4 PROVIDE WITH BMS START/STOP AND SCHEDULING.
5 PROVIDE WITH VFD

DUCTLESS SPLIT AIR-CONDITIONING UNIT SCHEDULE																		
TAG	LOCATION	INDOOR UNIT				REFRIGERANT		OUTDOOR CONDENSING UNIT							REMARKS			
		CFM	MANUFACTURER AND MODEL NUMBER (INDOOR UNIT)	CAPACITY(MBH)		TYPE	MANUFACTURER AND MODEL NUMBER (OUTDOOR UNIT)	TAG	LOCATION	SOUND PRESSURE DB(A)	DESIGN AMBIENT TEMP (°F)	MINIMUM AMBIENT TEMP (°F)	ELECTRIC (OUTDOOR)					
				BTU'S/HR	COND. (GPM)							MCA	HZ	V	PH	EFFICIENCY (SEER)		
AC-1	ELEC. RM.	1,025	MITSUBISHI PCA	24,000	0.02	R410A	PUY-A24NH4	ACCU-1	ROOF	48	95°	0°	18	60	208	1	16.8	1 THRU 8
AC-2	TELECOM	670	MITSUBISHI PCA	42,000	0.03	R410A	PUYA42NH4	ACCU-2	ROOF	51	95°	0°	26	60	208	1	15.8	1 THRU 8

NOTES:
1 REFER TO SPECIFICATIONS, DETAILS, AND CONTROL DRAWINGS FOR ADDITIONAL INFORMATION.
2 SEE DRAWINGS FOR UNIT QUALITIES.
3 PROVIDE 1-1/4" CONDENSATE DRAIN TO LOCAL FLOOR DRAIN.
4 PROVIDE REFRIGERANT PIPING BETWEEN INDOOR AND OUTDOOR UNITS SIZED AS PER MANUFACTURERS RECOMMENDATIONS FOR LENGTH OF RUN.
5 PROVIDE FIELD SUPPLIED INTERCONNECTED POWER WIRING FROM OUTDOOR UNIT TO INDOOR UNIT.
6 PROVIDE WITH ROOM MOUNTED T-STAT.
7 PROVIDE WITH DISCONNECT SWITCH.
8 PROVIDE WITH FACTORY WIND BAFFLE ACCESSORY INSTALLED.

UNIT HEATER (UH) AND CABINET UNIT HEATER (CUH) SCHEDULE (HOT WATER)																		
TAG	LOCATION	TYPE	OUTPUT MBH	AIR			MOTOR			WATER				MANUFACTURER AND MODEL NUMBER (AS STANDARD)	REMARKS			
				CFM	EAT (°F)	LAT (°F)	RPM	HP	AMPS	V	PH	FLUID	GPM			EWT (°F)	LWT (°F)	P.D. (FT.)
UH	VARIOUS	HORIZ	153.9	5500	0	105	1075	3/4	2.6	208	3	H2O	15.6	140	110	0.85	TRANE S-360 SERIES	1 THRU 5
CUH	VESTIBULE	FLOOR	29.8	609	45	90	1050	3/8	.27	208	3	H2O	2.55	140	110	0.3	TRANE FORCE-FLO FFJB7MOC0H10AG2M0000D	1 THRU 5

NOTES:
1 REFER TO SPECIFICATIONS, DETAILS, AND CONTROL DRAWINGS FOR ADDITIONAL INFORMATION.
2 PROVIDE MINIMUM OF 20 GAUGE STEEL CASING PAINTED WITH A CORROSION RESISTANT, BAKED, POLYESTER POWDER COATED FINISH.
3 PROVIDE FULLY ADJUSTABLE AIR DEFLECTORS AND OSHA APPROVED FAN GUARD.
4 PROVIDE ALUMINUM FINS AND COPPER TUBE COILS.
5 PROVIDE FACTORY WALL MOUNTED THERMOSTAT.

WELD EXHAUST ARM (WEA) SCHEDULE									
TAG	LOCATION	AIR		DIMENSIONAL DATA			MANUFACTURER AND MODEL NUMBER (AS STANDARD)	REMARKS	
		CFM	P.D. (IN. W.G.)	DIAMETER	REACH				
WEA	VARIES	600	0	6"ø	14'-0"	-	NEDERMAN NEX MD 4	1,2	

NOTES:
1 REFER TO SPECIFICATIONS, DETAILS, AND CONTROL DRAWINGS FOR ADDITIONAL INFORMATION.
2 PURCHASE WITH MOUNTING BRACKET.

ENERGY RECOVERY UNIT SCHEDULE																																		
TAG	LOCATION	OA CFM TOTAL	FAN DATA										HEATING COIL (HOT WATER)										ENERGY RECOVERY PLATE				WT (LBS)	MFR AND MODEL NO. (AS STANDARD)	REMARKS					
			CAPACITY CONTROL		STATIC PRESS. (IN. WG)		WHEEL		MOTOR				CAPACITY		FACE VEL. (FPM)		AIR DATA			HOT WATER DATA				NO. OF COILS/ROWS		FIN/FT.								
			RANGE (%)	TYPE	EXTERNAL	TOTAL W/DIRTY FILTERS	OUTLET VEL. (FPM)	DIA. (IN.)	TYPE	RPM	BHP	HP	V	PH	CAPACITY (MBH)	FACE VEL. (FPM)	EAT (°F)	LAT (°F)	P.D. (IN.WG)	GPM	EWT (°F)	LWT (°F)	P.D. (FT.)	WINTER	EXHAUST									
																									EAT					LAT	EAT	LAT		
ERU-1	ROOF	17,500	100	VFD	1.5	-	2512	-	PLENUM	1408	14.4	-	208	3	704	499	42	80	0.15	47	140	110	2.75	2	87	804	0.87	0	42	70	29	8871	TRANE CLIMATE CHANGER CSA035UA	1-7
ERU-2	ROOF	17,500	100	VFD	1.5	-	2512	-	PLENUM	1408	14.4	-	208	3	704	499	42	80	0.15	47	140	110	2.75	2	87	804	0.87	0	42	70	29	8871	TRANE CLIMATE CHANGER CSA035UA	1-7
ERU-3	ROOF	4,200	100	VFD	1.5	-	2032	-	PLENUM	1745	2.7	-	208	3	168	418	42	80	0.11	11.2	140	110	0.75	2	86	192	0.26	0	42	70	29	3324	TRANE CLIMATE CHANGER CSA010UA	1-7
ERU-4	ROOF	9,000	100	VFD	1.5	-	3121	-	PLENUM	2039	7.9	-	208	3	369	432	42	80	0.12	24.5	140	110	1.41	2	84	453	0.6	0	42	70	29	5248	TRANE CLIMATE CHANGER CSA021UA	1-7

NOTES:
1 REFER TO SPECIFICATIONS, AND DETAILS FOR ADDITIONAL INFORMATION.
2 UNITS TO BE DOUBLE WALLED WITH INSUL. PROVIDE INSULATED DOUBLE WALL ACCESS DOORS (WITH MULT-POINT DOOR LATCH AND VISION PANELS) FOR EACH SECTION. OUTDOOR AIR DAMPERS SHALL BE INSULATED ULTRA LOW LEAKAGE DAMPERS WITH BLADE SEALS. SUPPLY AIR FAN ASSEMBLY TO BE PROVIDED WITH INTERNAL VIBRATION ISOLATORS (WITH 2" INCH DEFLECTION SPRING ISOLATORS).
3 PROVIDE ALL UNITS WITH FACTORY VFD AND PREMIUM EFFICIENCY VFD COMPATIBLE MOTORS.
4 PROVIDE STAINLESS STEEL DRAIN PAN THAT EXTENDS 10" BEYOND FACE OF COIL.
5 PROVIDE DISCHARGE PLENUM SECTION.
6 PROVIDE FACTORY DISCONNECT SWITCH AND SINGLE POINT POWER.
7 M.C. TO VERIFY LOCATION OF COIL CONNECTION, ACCESS DOORS, FILTER PULL, MOTOR ACCESS, ETC. PRIOR TO ORDERING UNITS. REFER TO PLANS.

AIR SEPARATOR SCHEDULE									
TAG	SERVICE	LOCATION	TYPE	WATER FLOW (GPM)	PIPE SIZE (IN)	WEIGHT (LBS)	MANUFACTURER AND MODEL NUMBER (AS STANDARD)	REMARKS	
AS-1	HEATING WATER	MECH RM	TANGENTIAL	610	6"	236	TACO ACT06F-125	1 THRU 4	

NOTES:
1 REFER TO SPECIFICATIONS, AND DETAILS FOR ADDITIONAL INFORMATION.
2 PROVIDE HIGH CAPACITY AIR VENT.
3 PROVIDE FACTORY FLANGED INLET/OUTLET.
4 PROVIDE UNIT LESS STRAINER.

PIPE EXPANSION JOINT SCHEDULE						
TAG	SERVICE	LOCATION	TYPE	PIPE SIZE (IN)	MANUFACTURER AND MODEL NUMBER (AS STANDARD)	REMARKS
EJ-1	HEATING WATER	VARIOUS	BELLOWS	4"	HYPAN 1500 SERIES	1
EJ-2	HEATING WATER	VARIOUS	BELLOWS	3"	HYPAN 1500 SERIES	1
EJ-3	HEATING WATER	VARIOUS	BELLOWS	2"	HYPAN 1500 SERIES	1
EJ-4	HEATING WATER	VARIOUS	BELLOWS	2-1/2"	HYPAN 1500 SERIES	1

NOTES:
REFER TO SPECIFICATIONS, AND DETAILS FOR ADDITIONAL INFORMATION.

PUMP SCHEDULE																		
TAG	SERVICE	LOCATION	CASING TYPE	FLUID		GPM	NPSHR (FT.)	HEAD (FT.)	SHUT-OFF HEAD (FT.)	MPELLER SIZE (IN.)	WORKING PRESS. (PSIG)	MOTOR					MANUFACTURER AND MODEL NUMBER (AS STANDARD)	REMARKS
				TYPE	TEMP (°F)							RPM	BHP	HP	V	PH		
HWP-1	ENERGY RECOVERY UNITS	MECH RM	CAST IRON	H2O	140	150	-	70	-	9.25	1760	-	5	208	3	TACO KS-2009	1,2	
HWP-2	UH'S/FTR	MECH RM	CAST IRON	H2O	140	350	-	75	-	9.25	1760	-	10	208	3	TACO KS-4009	1,2	
HWP-3	RADIANT FLOORING	MECH RM	CAST IRON	H2O	107	110	-	120	-	11.25	1760	-	10	208	3	TACO KS-2011	1,2	
HWP-4	SPARE	MECH RM	CAST IRON	H2O	140/107	300	-	65	-	12.13	1160	-	20	208	3	TACO KS-2013	1,2	

NOTES:
1 REFER TO SPECIFICATIONS, AND DETAILS FOR ADDITIONAL INFORMATION.
2 PROVIDE WITH SUCTION DIFFUSER (ONLY IF REQUIRED STRAIGHT LENGTHS UNACHIEVABLE), TRIPLE DUTY VALVE, FLEX CONNECTORS, STRAINERS, GAUGES AND ISOLATION VALVES.

CONDENSING BOILER SCHEDULE (HOT WATER)																		
TAG	LOCATION	CAPACITY				PRESS. (PSIG)		WATER			BREECHING		BURNER		MANUFACTURER AND MODEL NUMBER (AS STANDARD)	REMARKS		
		OUTPUT (GROSS I=B=R)		NATURAL GAS		MAX DESIGN	RELIEF VALVE	ENT (°F)	LVG (°F)	GPM	°F	SCFM	TYPE	TURN DOWN			WEIGHT (LBS)	
		MBH	BHP	INPUT (MBH)	PRESSURE (IN.WG)	EFFICIENCY (%)												
WB-1	MECH RM	2,190	65.4	2,200	-	98	-	-	110	140	-	-	-	NATURAL GAS	15:1	3,300	BUDERUS SB625WS-640	1 THRU 5
WB-2	MECH RM	2,190	65.4	2,200	-	98	-	-	110	140	-	-	-	NATURAL GAS	15:1	3,300	BUDERUS SB625WS-640	1 THRU 5
WB-3	MECH RM	2,190	65.4	2,200	-	98	-	-	110	140	-	-	-	NATURAL GAS	15:1	3,300	BUDERUS SB625WS-640	1 THRU 5

NOTES:
1 REFER TO SPECIFICATIONS, AND DETAILS FOR ADDITIONAL INFORMATION.
2 PROVIDE CONDENSATE NEUTRALIZATION KIT WITH PIPED DRAIN FROM EACH FLUE.
3 PROVIDE SIDEWALL VENT AND COMBUSTION AIR TERMINATION KIT.
4 PROVIDE FACTORY LOW WATER CUT-OFF, HIGH TEMPERATURE LIMIT, FLOW SWITCH, RELIEF VALVE, TEMPERATURE PRESSURE GAUGE.
5 PROVIDE MANUFACTURER CONTROL PACKAGE.

NO.	Revision Description	Date	Plotted: 6/9/2014 4:12:50 PM	DESIGNER/DRAFTER WJS	CHECKED BY: TFC	SCALE 1/8" = 1'-0"	 STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION	SIGNATURE/BLOCK:	PROJECT TITLE REPAIR FACILITY	TOWN ROCKY HILL	PROJECT NO. 118-0167
DRAWING TITLE MECHANICAL SCHEDULES											DRAWING NO. MEC-700
											SHEET NO. 10.38

File Name: MPPP_CTDOT_Rocky Hill Repair Facility_Central.rvt

PACKAGED DX ROOFTOP AIR HANDLING UNIT SCHEDULE																									
TAG	SERVICE	LOCATION	REFRIGERANT		SUPPLY FAN						UNIT COOLING COIL	AIR-COOLED CONDENSING UNIT			GAS HEATING COIL				ELECTRIC SERVICE				WEIGHT (LBS)	MANUFACTURER AND MODEL NUMBER (AS STANDARD)	REMARKS
			TYPE	CHARGE (LBS)	CFM		CAPACITY CONTROL		WHEEL		MOTOR HP	NOMINAL CAPACITY (TONS)	COMPRESSOR(S)		INPUT (MBH)	MAX INPUT PRESS. (WC)	MCA	MOCP	V	PH					
					TOTAL	MIN. O.A.	RANGE	TYPE	DIA. (IN.)	TYPE			TYPE	NO.							STEPS OF UNLOAD				
RTU-1	OFFICES	ROOF	R-410	21.4	7,500	-	-	VFD			7.5	20	SCROLL	2		350	14"	112	125	208	3		TRANE YHD240F3RVA-HH1A1B	1 THRU 4	

NOTES:
1 REFER TO FLOOR PLANS FOR ADDITIONAL INFORMATION.
2 REFER TO DETAILS FOR ADDITIONAL INFORMATION.
3 PROVIDE VIBRATION ISOLATION CURB WITH SUPPLY AND RETURN SOUND ATTENUATORS.
4 PROVIDE SOFTWARE INTERFACE TO CONNECT TO BMS.

DIFFUSER AND GRILLE SCHEDULE									
TAG	SELECTION RANGE (CFM)	NECK SIZE (IN.)	OVERALL SIZE (IN.)	SERVICE	MOUNTING	TYPE	NOTES	MANUFACTURER AND MODEL NUMBER (AS STANDARD)	REMARKS
SA	0-150	8"ø	22x22	SUPPLY	CEILING	LAY-IN OR SURFACE	-	TITUS TMS	1 THRU 7
SB	0-285	12"ø	22x22	SUPPLY	CEILING	LAY-IN OR SURFACE	-	TITUS TMS	1 THRU 7
SC	0-250	15"ø	22x22	SUPPLY	CEILING	LAY-IN OR SURFACE	-	TITUS TMS	1 THRU 7
SD	0-360	14"ø	22x22	SUPPLY	CEILING	LAY-IN OR SURFACE	-	TITUS TMS	1 THRU 7
SE	0-500	15"ø	22x22	SUPPLY	CEILING	LAY-IN OR SURFACE	-	TITUS TMS	1 THRU 7
SF	0-500	12"ø	22x22	SUPPLY	CEILING	LAY-IN OR SURFACE	-	TITUS TMS	1 THRU 7
SG	0-1700	24"x22"	25 1/2"x23 1/2"	SUPPLY	DUCT	SIDEWALL GRILLE	DOUBLE DEFLECTION	TITUS 300FL	1,4,7
SH	0-800	18"x18"	19 1/4"x19 1/4"	SUPPLY	DUCT	SIDEWALL GRILLE	DOUBLE DEFLECTION	TITUS 300FL	1,4,7
SI	0-700	18"x14"	19 1/4"x15 1/4"	SUPPLY	DUCT	SIDEWALL GRILLE	DOUBLE DEFLECTION	TITUS 300FL	1,4,7
SJ	0-500	14"x14"	15 1/2"x15 1/2"	SUPPLY	DUCT	SIDEWALL GRILLE	DOUBLE DEFLECTION	TITUS 300FL	1,4,7
EG	0-1700	24"x24"	24"x24"	RETURN	CEILING	LAY-IN OR SURFACE	-	TITUS 23RS	1,3,4,5,7
EH	0-800	18"x18"	19 1/4"x19 1/4"	EXHAUST	DUCT	SIDEWALL GRILLE	-	TITUS 350FL	1,4,7
EI	0-700	18"x14"	19 1/4"x15 1/4"	EXHAUST	DUCT	SIDEWALL GRILLE	-	TITUS 350FL	1,4,7
EJ	0-500	14"x14"	15 1/2"x15 1/2"	EXHAUST	DUCT	SIDEWALL GRILLE	-	TITUS 350FL	1,4,7

NOTES:
1 REFER TO SPECIFICATIONS AND DETAILS FOR ADDITIONAL INFORMATION.
2 RUNOUTS TO DIFFUSERS SHALL BE THE SAME SIZE AS INLET/NECK SIZE.
3 PROVIDE 24"x24" LAY-IN BORDER.
4 PROVIDE FACTORY POWDER COAT FINISH. COORDINATE FINAL COLOR WITH ARCHITECT/OWNER.
5 NC RATING NOT TO EXCEED 30.
6 COORDINATE BLOW PATTERN WITH HVAC PLANS. USE BAFFLES FROM MANUFACTURER AS REQUIRED TO OBTAIN FLOW PATTERNS FOR 1-WAY, 2-WAY, AND 3-WAY TYPES.
7 CONTRACTOR SHALL VERIFY QUANTITY OF DIFFUSERS, GRILLES, REGISTERS, ETC... REQUIRED. REFER TO PLANS.

FINNED TUBE RADIATOR SCHEDULE															
TAG	WATER TEMP.		PIPE		FINS			ROWS HIGH	BTUH /FT AT 140°F	LENGTH	COVER			MANUFACTURER AND MODEL NUMBER (AS STANDARD)	REMARKS
	ENT (°F)	LVG (°F)	TYPE	SIZE	TYPE	SIZE	FINS /FT				TYPE	DEPTH	HEIGHT		
FTR-1	140	110	COP.	3/4"	ALUM.	3/2"x2 1/2"	34	2	340	12'-0"	SLOPE-TOP	3-5/8"	14"	MODINE SP-14	1
FTR-2	140	110	COP.	3/4"	ALUM.	3/2"x2 1/2"	34	2	340	18'-0"	SLOPE-TOP	3-5/8"	14"	MODINE SP-14	1

NOTES:
1 REFER TO SPECIFICATIONS, DETAILS, AND CONTROL DRAWINGS FOR ADDITIONAL INFORMATION.

LOUVER AND VENTILATOR SCHEDULE							
TAG	DIMENSIONS			MOUNTING	FREE AREA (SQFT)	MANUFACTURER AND MODEL NUMBER (AS STANDARD)	REMARKS
	W	H	D				
LV-1	108"	108"	6"	WALL	45.43	GREENHECK EDJ-601 SERIES	1,2,3
LV-2	120"	120"	6"	WALL	57.41	GREENHECK EDJ-601 SERIES	1,2,3
LV-3	120"	120"	6"	WALL	57.41	GREENHECK EDJ-601 SERIES	1,2,3
LV-4	120"	120"	6"	WALL	57.41	GREENHECK EDJ-601 SERIES	1,2,3
LV-5	120"	120"	6"	WALL	57.41	GREENHECK EDJ-601 SERIES	1,2,3
LV-6	84"	84"	6"	WALL	27.56	GREENHECK EDJ-601 SERIES	1,2,3
LV-7	84"	84"	6"	WALL	27.56	GREENHECK EDJ-601 SERIES	1,2,3
LV-8	24"	24"	6"	WALL	1.7	GREENHECK EDJ-601 SERIES	1,2,3
LV-9	96"	84"	6"	WALL	31.71	GREENHECK EDJ-601 SERIES	1,2,3
LV-10	96"	84"	6"	WALL	31.71	GREENHECK EDJ-601 SERIES	1,2,3
LV-11	48"	48"	34.75"	ROOF	20.03	GREENHECK WRH	1,2,3
LV-12	96"	108"	6"	WALL	40.77	GREENHECK EDJ-601 SERIES	1,2,3
LV-13	96"	108"	6"	WALL	40.77	GREENHECK EDJ-601 SERIES	1,2,3
LV-14	84"	78"	6"	WALL	25.29	GREENHECK EDJ-601 SERIES	1,2,3
LV-15	78"	78"	6"	WALL	23.39	GREENHECK EDJ-601 SERIES	1,2,3
LV-16	78"	78"	6"	WALL	23.39	GREENHECK EDJ-601 SERIES	1,2,3
LV-17	48"	48"	6"	WALL	8.32	GREENHECK EDJ-601 SERIES	1,2,3
LV-18	36"	24"	6"	WALL	2.66	GREENHECK EDJ-601 SERIES	1,2,3
LV-19	36"	36"	6"	WALL	4.39	GREENHECK EDJ-601 SERIES	1,2,3
LV-20	36"	36"	34.75"	ROOF	15.86	GREENHECK WRH	1,2,3
LV-21	18"	18"	12.25"	ROOF	3.19	GREENHECK WRH	1,2,3
LV-22	12"	12"	6"	WALL	1.84	GREENHECK EDJ-601 SERIES	1,2,3
LV-23	102"	120"	6"	WALL	50.14	GREENHECK EDJ-601 SERIES	1,3
LV-24	108"	120"	6"	WALL	54.31	GREENHECK EDJ-601 SERIES	1,3
LV-25	166"	75"	6"	WALL	49.53	GREENHECK EDJ-601 SERIES	1,3

NOTES:
1 REFER TO SPECIFICATIONS, DETAILS, AND CONTROL DRAWINGS FOR ADDITIONAL INFORMATION.
2 PROVIDE WITH ACTUATOR AND RUSKIN CD51 LOW-LEAKAGE CD51 TYPE DAMPER OR APPROVED EQUAL.
3 PROVIDE WITH BIRD AND INSECT SCREEN.

EXPANSION TANK SCHEDULE															
TAG	SERVICE	LOCATION	TYPE	FLUID	SYSTEM TEMP (°F)		SYSTEM PRESSURE (PSIG) AT TANK		VOLUME (GALLONS)		DIMENSIONS		INITIAL TANK AIR CHARGE (PSIG)	MANUFACTURER AND MODEL NUMBER (AS STANDARD)	REMARKS
					MIN	MAX	MIN	MAX	TANK	ACCEPTANCE	DIA	H			
ET-1	HEATING WATER	MECH RM	FULL ACCEPTANCE	H2O	90	140	20	40	1.32	.366	24	86	20	TACO CA500-125	1

NOTES:
1 REFER TO SPECIFICATIONS AND DETAILS FOR ADDITIONAL INFORMATION.

TERMINAL VOLUME BOX WITH HOT WATER SCHEDULE																			
TAG	TYPE	SELECTION RANGE (CFM)	INLET SIZE (IN.)	DISCHARGE SIZE (IN.)			MAX. S.P. DROP W/ COIL (IN.WG)	NC RATING					HOT WATER COIL DATA					MANUFACTURER AND MODEL NUMBER (AS STANDARD)	REMARKS
				W	H			RAD	DISCH	MBH	EWT (°F)	LWT (°F)	EAT (°F)	LAT (°F)	GPM	MAX P.D. (FT.)	ROWS		
VAV-6	SINGLE DUCT	60-500	6	11.5	9.5	0.11	23	20	5.5	140	110	55	85	.5	0.5	1	TRANE VCW SERIES	1 THRU 3	
VAV-8	SINGLE DUCT	105-900	8	12.5	11.5	0.10	23	16	9.3	140	110	55	85	1.5	4.63	1	TRANE VCW SERIES	1 THRU 3	
VAV-10	SINGLE DUCT	165-1400	10	15.5	13.5	0.25	22	23	27	140	110	55	85	2.0	0.67	2	TRANE VCW SERIES	1 THRU 3	
VAV-12	SINGLE DUCT	240-2000	12	19.5	15.5	0.5	23	27	50	140	110	55	85	5	1.34	2	TRANE VCW SERIES	1 THRU 3	

NOTES:
1 REFER TO SPECIFICATIONS, AND DETAILS FOR ADDITIONAL INFORMATION.
2 PROVIDE PRESSURE SWITCH TO PROVE AIRFLOW.
3 COIL HEATING CAPACITY SHALL BE BASED ON MINIMUM CFM AND WATER FLOW LISTED ON DRAWINGS FOR EACH BOX (EXCEPT FOR BOXES WITH CO2 CONTROLS, IN WHICH CASE 75% OF MAXIMUM AIR FLOW SHALL BE USED).

NO.	Revision Description	Date

THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.

DESIGNER/DRAFTER
WJS
CHECKED BY:
TFC
SCALE
1/8" = 1'-0"



SIGNATURE/BLOCK:

PROJECT TITLE
REPAIR FACILITY

TOWN
ROCKY HILL
DRAWING TITLE
MECHANICAL SCHEDULES II

PROJECT NO.
118-0167
DRAWING NO.
MEC-701
SHEET NO.
10.39

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File Name: MPPP_CTDOT_Rocky Hill Repair Facility_Central.rvt