LEGEND

NOTE: NOT ALL SYMBOLS INDICATED MAY APPEAR ON THESE CONTRACT DRAWINGS

MISCELLANEOUS SYMBOLS

SYMBOL	DESCRIPTION
	EXISTING BACKGROUND
	NEW CONNECTION TO EXISTING
T	THERMOSTAT
H	HUMIDISTAT
S	SWITCH
XX	SHEET NOTE (NUMBER), APPLIES ONLY ON THE SHEET IT APPEARS ON
XX	COORDINATION POINT BETWEEN FLOOR PLANS AND DIAGRAMS (NUMBER)
X	DEMOLITION NOTE (NUMBER)
	PLENUM LIGHT
	DIRECTION OF VIEW
X / X	SECTION NUMBER / DRAWING ON WHICH SECTION OR DETAIL IS SHOWN
X / X	DETAIL OR SECTION NUMBER / DRAWING FROM WHICH SECTION OR DETAIL IS TAKEN
XXX / XX/XX	EQUIPMENT SYMBOL (SEE SCHEDULE) / EQUIPMENT IDENTITY ABBREVIATION / EQUIPMENT REFERENCE NUMBER / SYSTEM NUMBER IF APPLICABLE

DUCTWORK SYMBOLS

DOUBLE LINE	DESCRIPTION	SINGLE LINE
	EXISTING TO REMAIN	
	EXISTING TO BE REMOVED	
	NEW WORK	
	SUPPLY AIR UP	
	SUPPLY AIR DOWN	
	EXHAUST OR RETURN AIR UP	
	EXHAUST OR RETURN AIR DOWN	
	ROUND DUCT UP	
	ROUND DUCT DOWN	
24x36	RECTANGULAR DUCT SIZE (FIRST FIGURE-SIDE SHOWN)	24x36
36x14ø	FLAT OVAL DUCT SIZE (FIRST FIGURE-SIDE SHOWN)	36x14ø
	DIRECTION OF FLOW	
UP DN	DUCT INCLINED RISE OR DROP IN DIRECTION OF FLOW	UP DN
	90° ELBOW WITH TURNING VANES	
	45°ELBOW (NO VANES)	
	SUPPLY OR RETURN BRANCH CONNECTION	
	SUPPLY BRANCH WITH SPLITTER DAMPER	
	SUPPLY BRANCH WITH AIR EXTRACTOR	
	SUPPLY BRANCH WITH SPIN COLLAR CONNECTION	
	LATERAL CONNECTION ROUND DUCTWORK	
	CONICAL TEE ROUND DUCTWORK	

DOUBLE LINE	DESCRIPTION	SINGLE LINE
TYPE CFM SIZE	DIFFUSER (D) IF SIZE IS NOT LISTED SEE SCHEDULE	TYPE CFM SIZE
TYPE CFM SIZE	EXHAUST OR RETURN REGISTER (R) GRILLE (G) IF SIZE IS NOT LISTED SEE SCHEDULE	TYPE CFM SIZE
AD	AUTOMATIC DAMPER	AD
BD	BALANCING DAMPER	BD
BDD	BACK DRAFT DAMPER	BDD
SD	SMOKE DAMPER WITH ACCESS DOOR	SD
FD	FIRE DAMPER WITH ACCESS DOOR	FD
FSD	COMBINATION FIRE & SMOKE DAMPER WITH ACCESS DOOR	FSD
T	DUCT TEMPERATURE SENSOR	T
H	DUCT HUMIDITY SENSOR	H
SDT	DUCT SMOKE DETECTOR	SDT
ADR	ACCESS DOOR	ADR
	FLEXIBLE CONNECTION	
AFS	AIR FLOW STATION	AFS
	FLEXIBLE DUCTWORK	
	DUCT PRESSURE CLASS DESIGNATION - OMIT IF DUCT MATERIALS AND CONSTRUCTION SCHEDULE IS USED	
SP	SECURITY PENETRATION	SP

PIPING SYMBOLS

SYMBOL	DESCRIPTION
	GATE VALVE
	GLOBE VALVE
	CHECK VALVE
	BALANCING VALVE
	BALL VALVE
	ANGLE GATE VALVE
	RELIEF OR SAFETY VALVE
S	SOLENOID VALVE
	THERMAL EXPANSION VALVE
	BACK PRESSURE VALVE
	BUTTERFLY VALVE
	BUTTERFLY CONTROL VALVE
	2-WAY CONTROL VALVE
	3-WAY CONTROL VALVE
	PRESSURE REDUCING VALVE
	UNION
	STRAINER
	STRAINER W/BLOW-OFF & CAP
	FLOW SENSOR
	SIGHT GLASS
	PIPE GUIDE
	PIPE ANCHOR
	FLEXIBLE CONNECTOR
	EXPASION JOINT
	THERMOMETER
	PRESSURE GAGE W/COCK
	AIR VENT W/COCK
	FLOAT AND THERMOSTATIC TRAP
	BUCKET TRAP

SYMBOL	DESCRIPTION
	EXISTING TO REMAIN
	EXISTING TO BE REMOVED
	NEW WORK
	DIRECTION OF FLOW
	DIRECTION OF PITCH
BBD	BOILER BLOWDOWN - CONTINUOUS
BF	BOILER FEED WATER
CA	COMPRESSED AIR
CF	CHEMICAL FEED
DCHS	DEDICATED CHILLED WATER SUPPLY
DCHR	DEDICATED CHILLED WATER RETURN
HCHS	HOUSE CHILLED WATER SUPPLY
HCHR	HOUSE CHILLED WATER RETURN
D	CONDENSATE DRAIN OR DRAIN
FOR	FUEL OIL RETURN
FOS	FUEL OIL SUPPLY
FOV	FUEL OIL TANK VENT
GWR	GLYCOL WATER RETURN
GWS	GLYCOL WATER SUPPLY
HG	HOT GAS
HPR	HIGH PRESSURE CONDENSATE RETURN
HPS	HIGH PRESSURE STEAM SUPPLY
HWR	HEATING WATER RETURN
HWS	HEATING WATER SUPPLY
LPCS	LOW PRESSURE CLEAN STEAM
LPR	LOW PRESSURE CONDENSATE RETURN
LPS	LOW PRESSURE STEAM SUPPLY
MPR	MEDIUM PRESSURE CONDENSATE RETURN
MPS	MEDIUM PRESSURE STEAM SUPPLY
MU	MAKE UP WATER
PCR	PUMPED CONDENSATE RETURN
RL	REFRIGERANT LIQUID
RS	REFRIGERANT SUCTION
V	VENT LINE
	CONCENTRIC REDUCER
	ECCENTRIC REDUCER
	ELBOW - UP
	ELBOW - DOWN
	BOTTOM TAKE-OFF
	TOP TAKE-OFF

CONTROL DIAGRAM SYMBOLS

SYMBOL	DESCRIPTION
AC INV	AC INVERTER
AFS	AIRFLOW STATION
AMS	AIR MEASURING STATION
DO	DAMPER OPERATOR
DPS	DIFFERENTIAL PRESSURE SWITCH
DPT	DIFFERENTIAL PRESSURE TRANSMITTER
EP	ELECTRIC - PNEUMATIC SWITCH
ES	END SWITCH
FS	FLOW SWITCH
FT	FLOW TRANSMITTER
FZ	FREEZESTAT
H	HUMIDIFIER
H	HUMIDITY SENSOR
HL	HIGH LIMIT SWITCH
HC	HUMIDITY CONTROLLER
HOA	HAND-OFF-AUTOMATIC SWITCH
MS / H O A	COMBINED MOTOR STARTER AND HAND-OFF-AUTOMATIC SWITCH
M	MOTOR
MS	MOTOR STARTER
NC	NORMALLY CLOSED
NO	NORMALLY OPEN
P	PRESSURE SENSOR
PC	PRESSURE CONTROLLER
PE	PNEUMATIC - ELECTRIC SWITCH
PT	PRESSURE TRANSMITTER
R	RELAY
SDT	SMOKE DETECTOR
SP	STATIC PRESSURE W/ PITOT TUBE
SPT	STATIC PRESSURE TRANSMITTER
SR	SWITCHING RELAY
SS	SIGNAL SELECTOR
T	TEMPERATURE SENSOR
T	TEMPERATURE SENSOR W/ BULB
TC	TEMPERATURE CONTROLLER
TDR	TIME DELAY RELAY
VSD	VARIABLE SPEED DRIVE
VP	VELOCITY PRESSURE SENSOR
VC	VOLUME CONTROLLER
VT	VOLUME TRANSMITTER
	REFERENCE STATIC PRESSURE
	GAGE
	LIGHT
	ON-OFF SWITCH
	3 POSITION SWITCH
ATC	AUTOMATIC TEMPERATURE CONTROL PANEL
	CRT DISPLAY
	PC WITH PRINTER
M	MAIN AIR
H	HUMIDISTAT
T	THERMOSTAT

ABBREVIATIONS

NOTE: NOT ALL ABBREVIATIONS INDICATED MAY APPEAR ON THESE CONTRACT DRAWINGS

A	ANCHOR
AC	AIR CONDITIONING
AD	AUTOMATIC DAMPER
ADR	ACCESS DOOR
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AL	ALUMINUM
AMB	AMBIENT
AMP	AMPERE
AP	ACCESS PANEL
APPROX	APPROXIMATE
ARR	ARRANGEMENT
ATC	AUTOMATIC TEMPERATURE CONTROL
AUTO	AUTOMATIC
AUX	AUXILIARY
AV	AIR VENT
AVG	AVERAGE
BBD	BOILER BLOW DOWN
BD	BALANCING DAMPER
BDD	BACK DRAFT DAMPER
BF	BOILER FEED
BFW	BOILER FEED WATER
BHP	BOILER HORSEPOWER OR BRAKE HORSEPOWER
BI	BLACK IRON
BOD	BOTTOM OF DUCT
BOP	BOTTOM OF PIPE
BOT	BOTTOM
BP	BACK PRESSURE
BSMT	BASEMENT
BT	BUCKET TRAP
BTU	BRITISH THERMAL UNIT
C TO C	CENTER TO CENTER
CA	COMPRESSED AIR
CAP	CAPACITY
CF	CHEMICAL FEED
CFM	CUBIC FOOT (FEET) PER MINUTE
CH	CHILLED WATER
CHR	CHILLED WATER RETURN
CHS	CHILLED WATER SUPPLY
CI	CAST IRON
CIR	CIRCLE
CL	CENTER LINE
COMP	COMPRESSOR
CNDS	CONDENSATE
CO	CLEANOUT
COL	COLUMN
CONC	CONCRETE OR CONCENTRIC
CONN	CONNECT OR CONNECTION
CONT	CONTINUATION
CWR	CONDENSER WATER RETURN
CWS	CONDENSER WATER SUPPLY
CTR	CENTER
CU FT	CUBIC FOOT (FEET)
D	DRAIN OR DEEP
DB	DRY BULB
DDC	DIGITALLY DIRECTED CONTROL
DEG	DEGREE
DET	DETAIL
DGTL	DIGITAL
DIA,ø	DIAMETER
DISC	DISCONNECT
DN	DOWN
DWG	DRAWING
EA	EACH
EAT	ENTERING AIR TEMPERATURE
EDR	EQUIVALENT DIRECT RADIATION
EER	ENERGY EFFICIENCY RATIO
EFF	EFFICIENCY
EJ	EXPANSION JOINT
EL	ELEVATION
ELEC	ELECTRICAL
ELL	ELBOW
ENT	ENTERING
ESP	EXTERNAL STATIC PRESSURE
EVAP	EVAPORATOR
EWT	ENTERING WATER TEMPRATURE
EXH	EXHAUST
EXP	EXPANSION
EXT	EXTERNAL
F&T	FLOAT & THERMOSTATIC
FC	FLEXIBLE CONNECTOR / FLEXIBLE CONNECTION
FD	FIRE DAMPER WITH ACCESS DOOR
FDW	FEED WATER
FL	FLOOR
FLA	FULL LOAD AMPS
FO	FUEL OIL
FOB	FLAT ON BOTTOM
FOG	FUEL OIL GAGE
FOR	FUEL OIL RETURN
FOS	FUEL OIL SUPPLY
FOT	FLAT ON TOP
FOV	FUEL OIL VENT
FPM	FOOT (FEET) PER MINUTE
FPS	FOOT (FEET) PER SECOND
FS	FLOW SWITCH
FSD	COMBINATION FIRE AND SMOKE DAMPER WITH ACCESS DOOR
FT	FOOT (FEET)
G	GUIDE
GA	GAGE
GAL	GALLONS
GALV	GALVANIZED
GND	GROUND
GPH	GALLONS PER HOUR
GPM	GALLONS PER MINUTE
GPS	GALLONS PER SECOND
GR	GRAIN
GWR	GLYCOL WATER RETURN
GWS	GLYCOL WATER SUPPLY
HD	HEAD
HG	HOT GAS
HGT	HEIGHT
HTD	HEATED
HTR	HEATER
HMD	HUMIDITY
HORIZ	HORIZONTAL
HP	HORSEPOWER
HPR	HIGH PRESSURE CONDENSATE RETURN
HPS	HIGH PRESSURE STEAM SUPPLY
HW	HEATING WATER
HWR	HEATING WATER RETURN
HWS	HEATING WATER SUPPLY
Hz	HERTZ
INSUL	INSULATION
INTL	INTERNAL
LAT	LEAVING AIR TEMPERATURE
LBS	POUNDS
LIN	LINEAL
LP	LOW PRESSURE
LPCS	LOW PRESSURE CLEAN STEAM
LPR	LOW PRESSURE CONDENSATE RETURN
LPS	LOW PRESSURE STEAM
LPS	LOW PRESSURE STEAM
LRA	LOCKED ROTOR AMPS
LVL	LEVEL
LVR	LOUVER
LWT	LEAVING WATER TEMPERATURE
MAN	MANUAL
MAX	MAXIMUM
MBH	THOUSAND BRITISH THERMAL UNITS PER HOUR
MU	MAKEUP
MI	MALLEABLE IRON
MIN	MINIMUM
MOD	MODEL
MOUNT	MOUNTING
MTD	MOUNTED
MPR	MEDIUM PRESSURE CONDENSATE RETURN
MPS	MEDIUM PRESSURE STEAM SUPPLY
NA	NOT APPLICABLE
NC	NORMALLY CLOSED
NEG	NEGATIVE
NIC	NOT IN CONTRACT
NO	NORMALLY OPEN
NTS	NOT TO SCALE
OA	OUTSIDE AIR
OED	OPEN END DUCT
OF	OVERFLOW
OFCI	OWNER FURNISHED CONTRACTOR INSTALLED
OV	OUTLET VELOCITY
PCR	PUMPED CONDENSATE RETURN
PD	PRESSURE DROP
PG	PRESSURE GAGE
PL	PLATE
PNEU	PNEUMATIC
PRESS	PRESSURE
PROP	PROPELLER
PSIG	POUNDS PER SQUARE INCH GAGE
QTY	QUANTITY
RECOV	RECOVERY
REF	REFERENCE
REQD	REQUIRED
REV	REVISION
RL	REFRIGERANT LIQUID
RM	ROOM
RS	REFRIGERANT SUCTION
RTN	RETURN
S	SWITCH
SCHED	SCHEDULE
SD	SMOKE DAMPER WITH ACCESS DOOR
SEC	SECONDARY,SECONDS
SENS	SENSIBLE
SEP	SEPARATE
SEQ	SEQUENCE
SER	SERIES
SERV	SERVICE
SH	SHEET
SOL	SOLENOID
SP	STATIC PRESSURE OR SECURITY PENETRATION
SST	STAINLESS STEEL
STL	STEEL
SUCT	SUCTION
SUP	SUPPLY
TD	TEMPERATURE DIFFERENTIAL
TEMP	TEMPERATURE
TH	THERMOMETER
THK	THICK
TSP	TOTAL STATIC PRESSURE
V	VENT OR VOLT
VAC	VACUUM
VAV	VARIABLE AIR VOLUME
VB	VACUUM BREAKER
VEL	VELOCITY
VERT	VERTICAL
VIB	VIBRATION
VOL	VOLUME
VSD	VARIABLE SPEED DRIVE
VTR	VENT THRU ROOF
W	WATT, WIDTH OR WIDE
W/	WITH
WB	WET BULB
WMS	WIRE MESH SCREEN

EQUIPMENT ABBREVIATIONS

XXX / XX/XX — EQUIPMENT SYMBOL (SEE SCHEDULE) / EQUIPMENT IDENTITY ABBREVIATION / EQUIPMENT REFERENCE NUMBER / SYSTEM NUMBER IF APPLICABLE

NOTE: NOT ALL EQUIPMENT INDICATED MAY APPEAR ON THESE CONTRACT DRAWINGS

ACC	AIR COOLED CONDENSER
ACCU	AIR COOLED CONDENSING UNIT
ACU	PACKAGED AIR CONDITIONING UNIT
AFM	TERMINAL AIR FLOW MODULE
AFS	AIR FLOW STATION
AHU	AIR HANDLING UNIT
B	BOILER
BFP	BOILER FEED PUMP
BFS	BOILER FEED SET
C	CONVECTOR
CC	COOLING COIL
CF	CHARCOAL FILTER
CFP	CHEMICAL FEED PUMP
CFU	CHEMICAL FEED UNIT
CH	CHILLER
CHP	CHILLED WATER PUMP
CP	CONDENSATE PUMP
CRAC	COMPUTER ROOM AIR CONDITIONING UNIT
CSG	CLEAN STEAM GENERATOR
CT	COOLING TOWER
DA	DEAERATOR
DAC	DOOR AIR CURTAIN
DC	DUCT COIL
DEH	DEHUMIDIFIER
DUC	DUST COLLECTOR
EUH	ELECTRIC UNIT HEATER
ET	EXPANSION TANK
F	FAN
FCU	FAN COIL UNIT
FM	FLOW METER
FMB	FILTER MIXING BOX
FOP	FUEL OIL PUMP
FT	FLASH TANK
GC	GLYCOL COOLER
H	HUMIDIFIER
HC	HEATING COIL
HE	HEAT EXCHANGER
HEF	HIGH EFFICIENCY FILTER
HEPA	HIGH EFFICIENCY PARTICULATE AIR FILTER
HP	HEAT PUMP
HRC	HEAT RECOVERY COIL
HRU	HEAT RECOVERY UNIT
HV	HEATING & VENTILATING UNIT
LFM	LAMINAR FLOW MODULE
MB	MIXING BOX
MAH	MAKE-UP AIR HEATER
OAI	OUTSIDE AIR INTAKE
P	PUMP
PF	PRE-FILTER
PHC	PREHEAT COIL
PRV	PRESSURE REDUCING VALVE
PSG	PURE STEAM GENERATOR
PTAC	PACKAGED TERMINAL AIR CONDITIONER
RV	RELIEF VALVE
SC	STEAM COIL
UH	UNIT HEATER
V	VARIABLE AIR VOLUME BOX
VF	VARIABLE AIR VOLUME BOX -FAN POWERED
WF	WALL FIN RADIATION

THESE ORIGINAL CONSTRUCTION DOCUMENTS FROM THE 1993 BUILDING CONSTRUCTION AND 2001 ADDITION ARE BEING PROVIDED AS A SUPPLEMENT TO THE 2026 KEYSTONE REGIONAL YOUTH CENTER RENOVATION DESIGN DRAWINGS AS A REFERENCE FOR EXISTING CONDITIONS THAT ARE NOT SHOWN ON THE PROPOSED DESIGN DRAWINGS. REFER TO THE NOTES INDICATED IN RED ON THESE DRAWINGS FOR SCOPE NOT INDICATED ON THE PROPOSED DESIGN DRAWINGS.

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BERKS YOUTH CENTER
TOWNSHIP OF BERN
COUNTY OF BERKS, PENNSYLVANIA

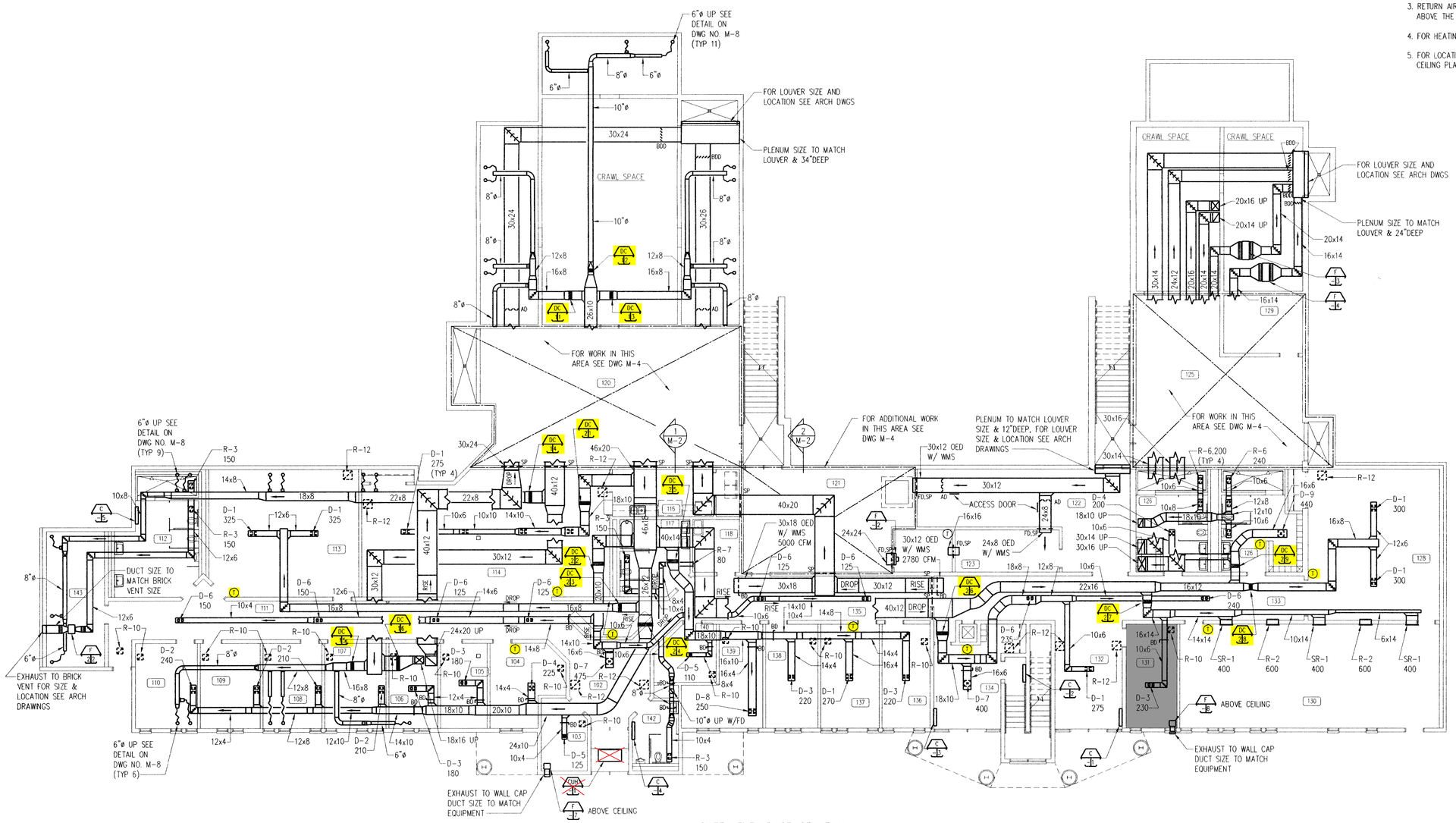
No.	Date	Issue or Revision

Drawing Title: LEGEND AND ABBREVIATIONS

Scale: AS NOTED	Project No.: 93003
Datum Elev.	
Dwg. Date: 8-13-93	Drawing No.: M-1
Drawn By: G.COOPER	
Chkd. By: B.KLINE	Sheet No.: 37 of 65

NOTES:

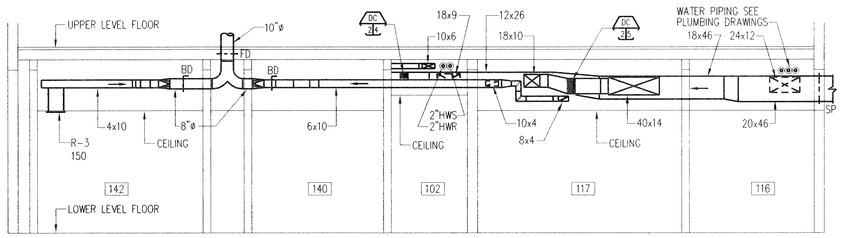
1. FOR LEGEND AND ABBREVIATIONS SEE DWG NO. M-1.
2. FOR DUCT COIL ARRANGEMENT DETAIL SEE DWG NO. M-7.
3. RETURN AIR PLENUM ABOVE CEILING, FOR WALL OPENINGS ABOVE THE CEILING SEE ARCHITECTURAL DRAWINGS.
4. FOR HEATING WATER & REFRIGERANT PIPING SEE DWG NO. M-5.
5. FOR LOCATIONS OF REGISTERS AND DIFFUSERS SEE REFLECTED CEILING PLAN.



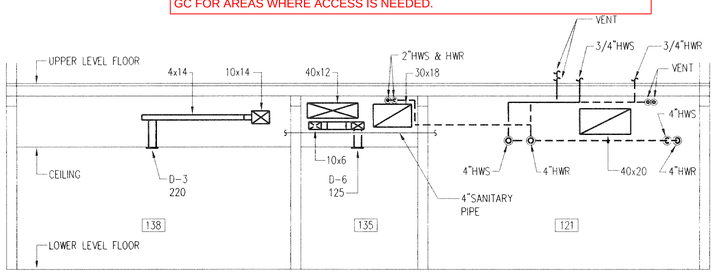
LOWER LEVEL DUCTWORK PLAN
SCALE: 1/8"=1'-0"

BALANCING NOTES:
1. CONTRACTOR SHALL REBALANCE AIRFLOWS THROUGHOUT THE ENTIRE BUILDING. REFER TO THESE ORIGINAL CONSTRUCTION DRAWINGS FOR THE ORIGINAL AIRFLOWS IN AREAS WHERE THEY ARE NOT BEING MODIFIED BY THE PROPOSED CONSTRUCTION. AREAS SHADED IN GRAY INDICATE AREAS WHERE AIRFLOWS ARE BEING MODIFIED BY THE 2026 KEYSTONE REGIONAL YOUTH CENTER RENOVATION DESIGN DRAWINGS. REFER TO THE 2026 KEYSTONE REGIONAL YOUTH CENTER RENOVATION DESIGN DRAWINGS FOR AIRFLOWS IN SHADED AREAS.
2. MC MUST COMPLETE CONTROLS INSTALLATION AND BALANCING PRIOR TO THE COMPLETION OF SECURE OR INACCESSIBLE CEILINGS TO ENSURE ACCESS TO CONTROL AND BALANCING DEVICES ABOVE CEILINGS. COORDINATE WITH GC FOR AREAS WHERE ACCESS IS NEEDED.

DUCT COIL NOTES:
1. MECHANICAL CONTRACTOR SHALL REMOVE THE EXISTING DUCT COILS, CLEAN THE FINS OF ANY DIRT OR DEBRIS, AND REINSTALL THE DUCT COILS BACK IN THE EXISTING DUCTWORK. REPLACE ANY INSULATION THAT NEEDED TO BE REMOVED TO ACCESS THE DUCT COILS.
2. ACCESS PANELS WILL BE REQUIRED WHERE DUCT COILS ARE LOCATED ABOVE SECURE OR RIGID CEILINGS.FOR FUTURE MAINTENANCE OF CONTROL VALVES. CORDINATE WITH ARCHITECTURAL DRAWINGS OF THE 2026 KEYSTONE REGIONAL YOUTH CENTER RENOVATION DESIGN DRAWINGS TO DETERMINE QUANTITY AND LOCATION OF ACCESS PANELS. MECHANICAL CONTRACTOR SHALL IDENTIFY LOCATIONS OF ACCESS PANELS. GENERAL CONTRACTOR SHALL PROVIDE AND INSTALL ACCESS PANELS. ACCESS PANELS SHOULD BE 2'x2' SQUARE.



SECTION 1/M-2
SCALE: 1/4"=1'-0"



SECTION 2/M-2
SCALE: 1/4"=1'-0"

THESE ORIGINAL CONSTRUCTION DOCUMENTS FROM THE 1993 BUILDING CONSTRUCTION AND 2001 ADDITION ARE BEING PROVIDED AS A SUPPLEMENT TO THE 2026 KEYSTONE REGIONAL YOUTH CENTER RENOVATION DESIGN DRAWINGS AS A REFERENCE FOR EXISTING CONDITIONS THAT ARE NOT SHOWN ON THE PROPOSED DESIGN DRAWINGS. REFER TO THE NOTES INDICATED IN RED ON THESE DRAWINGS FOR SCOPE NOT INDICATED ON THE PROPOSED DESIGN DRAWINGS.

GRAPHIC SCALE:

1/8"=1'-0" 0 5' 10' 15' 20'

1/4"=1'-0" 0 1' 2' 3' 4' 5' 6' 7' 8' 9' 10'

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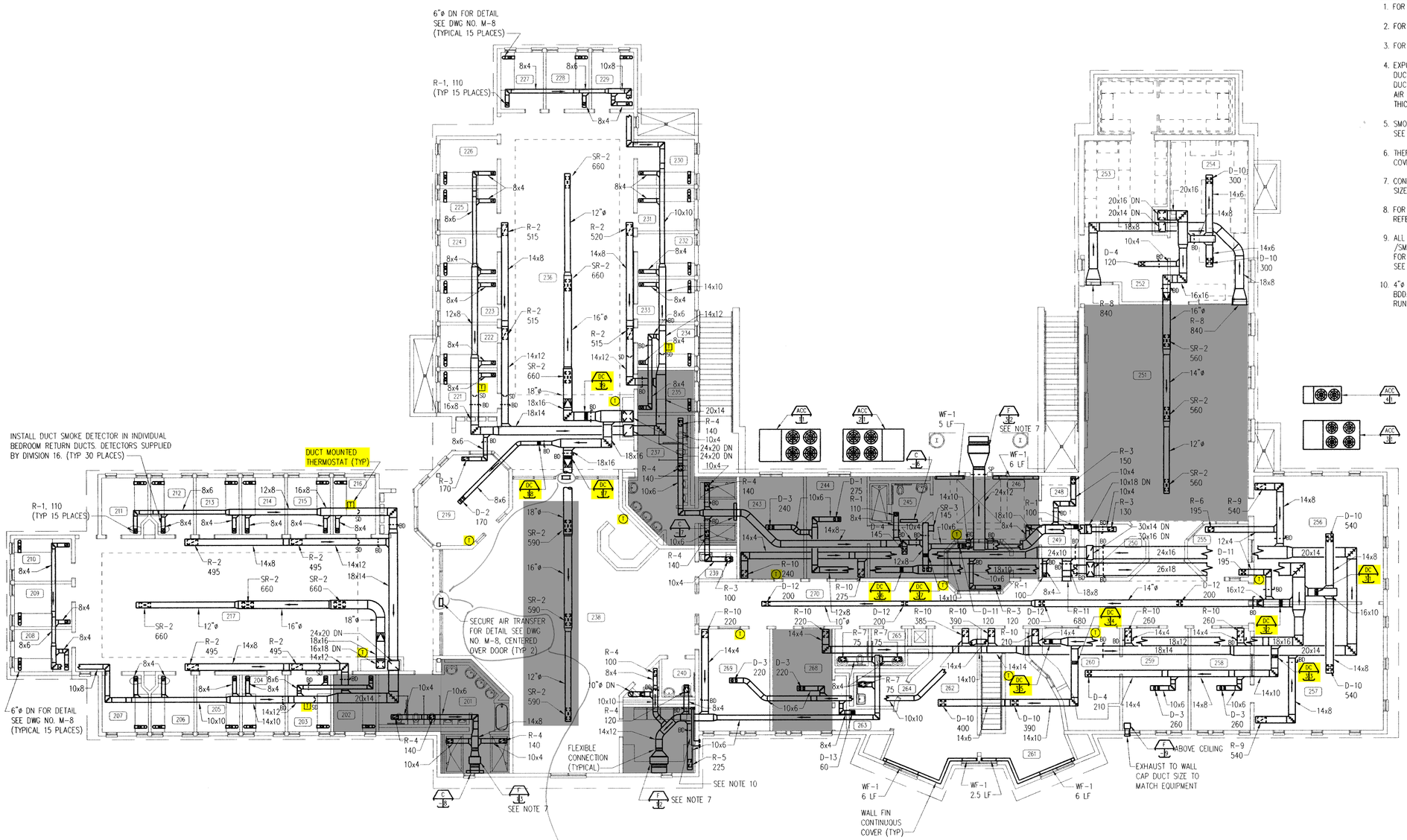
Pottstown, PA Jackson, NJ
Huntingdon Valley, PA

BERKS YOUTH CENTER
TOWNSHIP OF BERN
COUNTY OF BERKS, PENNSYLVANIA

No.	Date	Issue or Revision

Drawing Title: LOWER LEVEL DUCTWORK PLAN

Scale: AS NOTED	Project No.: 93003
Datum Elev.	
Dwg. Date: 8-13-93	Drawing No.: M-2
Drawn By: G.COOPER	
Chkd. By: B.KLINE	Sheet No.: 32 of 65



UPPER LEVEL DUCTWORK PLAN

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

10/25/93
Smoke Dampers will be installed, interconnected to automatic alarm system.
ok'ed
Kevin Bombay, P.E.
&
Armand Christopher, Jr., R.A.

BALANCING NOTES:
1. CONTRACTOR SHALL REBALANCE AIRFLOWS THROUGHOUT THE ENTIRE BUILDING. REFER TO THESE ORIGINAL CONSTRUCTION DRAWINGS FOR THE ORIGINAL AIRFLOWS IN AREAS WHERE THEY ARE NOT BEING MODIFIED BY THE PROPOSED CONSTRUCTION. AREAS SHADED IN GRAY INDICATE AREAS WHERE AIRFLOWS ARE BEING MODIFIED BY THE 2026 KEYSTONE REGIONAL YOUTH CENTER RENOVATION DESIGN DRAWINGS. REFER TO THE 2026 KEYSTONE REGIONAL YOUTH CENTER RENOVATION DESIGN DRAWINGS FOR AIRFLOWS IN SHADED AREAS.
2. MC MUST COMPLETE CONTROLS INSTALLATION AND BALANCING PRIOR TO THE COMPLETION OF SECURE OR INACCESSIBLE CEILINGS TO ENSURE ACCESS TO CONTROL AND BALANCING DEVICES ABOVE CEILINGS. COORDINATE WITH GC FOR AREAS WHERE ACCESS IS NEEDED.

NOTES:

1. FOR LEGEND AND ABBREVIATIONS SEE DWG NO. M-1.
2. FOR DUCT COIL ARRANGEMENT DETAIL SEE DWG NO. M-7.
3. FOR HEATING WATER PIPING SEE DWG NO. M-6.
4. EXPOSED ROUND DUCTWORK SHALL BE 18 GAGE SPIRAL WOUND. DUCTWORK SHALL BE PAINTED TO ARCHITECTURAL SPECIFICATIONS. DUCT DIMENSIONS INDICATE NET INSIDE DIMENSION REQUIRED FOR AIR FLOW. INCREASE DUCTWORK TO ALLOW FOR INTERIOR LINER THICKNESS.
5. SMOKE DAMPER (SD) USED IN SMOKE EVACUATION SYSTEM. SEE DWG NO. M-9 FOR SMOKE EVACUATION CONTROL DIAGRAM.
6. THERMOSTAT SHALL BE MOUNTED 5'-0" AFF WITH SECURITY COVER UNLESS OTHERWISE NOTED.
7. CONNECT FAN DISCHARGE TO LOUVER WITH PLENUM. FOR LOUVER SIZE, LOCATION & CONFIGURATION SEE ARCH DWGS.
8. FOR LOCATION OF CEILING MOUNTED REGISTERS & DIFFUSERS REFER TO REFLECTED CEILING PLANS.
9. ALL DUCTWORK PENETRATING THE TOP OF THE CHASE (EXCLUDING RETURN /SMOKE EVACUATION DUCTWORK) SHALL CONTAIN A HORIZONTAL FIRE DAMPER FOR HORIZONTAL FIRE DAMPER DETAIL SEE DWG NO. M-8. FOR CHASE DETAIL SEE ARCH DWGS.
10. 4"ø DRYER VENT DUCT, RUN TO DRYER VENT CAP THRU WALL W/ BDD. TERMINATE DUCT 6"AFF FOR FLEX CONNECTION FROM DRYER. RUN DUCT EXPOSED ALONG WALL TO ABOVE CEILING. (TYP TWO)

DUCT COIL NOTES:
1. MECHANICAL CONTRACTOR SHALL REMOVE THE EXISTING DUCT COILS, CLEAN THE FINS OF ANY DIRT OR DEBRIS, AND REINSTALL THE DUCT COILS BACK IN THE EXISTING DUCTWORK. REPLACE ANY INSULATION THAT NEEDED TO BE REMOVED TO ACCESS THE DUCT COILS.
2. ACCESS PANELS WILL BE REQUIRED WHERE DUCT COILS ARE LOCATED ABOVE SECURE OR RIGID CEILINGS FOR FUTURE MAINTENANCE OF CONTROL VALVES. CORDINATE WITH ARCHITECTURAL DRAWINGS OF THE 2026 KEYSTONE REGIONAL YOUTH CENTER RENOVATION DESIGN DRAWINGS TO DETERMINE QUANTITY AND LOCATION OF ACCESS PANELS. MECHANICAL CONTRACTOR SHALL IDENTIFY LOCATIONS OF ACCESS PANELS. GENERAL CONTRACTOR SHALL PROVIDE AND INSTALL ACCESS PANELS. ACCESS PANELS SHOULD BE 2'x2' SQUARE.

THESE ORIGINAL CONSTRUCTION DOCUMENTS FROM THE 1993 BUILDING CONSTRUCTION AND 2001 ADDITION ARE BEING PROVIDED AS A SUPPLEMENT TO THE 2026 KEYSTONE REGIONAL YOUTH CENTER RENOVATION DESIGN DRAWINGS AS A REFERENCE FOR EXISTING CONDITIONS THAT ARE NOT SHOWN ON THE PROPOSED DESIGN DRAWINGS. REFER TO THE NOTES INDICATED IN RED ON THESE DRAWINGS FOR SCOPE NOT INDICATED ON THE PROPOSED DESIGN DRAWINGS.

GRAPHIC SCALE:
1/8"=1'-0" 0 5' 10' 15' 20'

USA ARCHITECTS, PLANNERS, & INTERIOR DESIGNERS, P.A.
20 N. Doughty Ave., Somerville, N.J. 08876

ARNALDO UNTORIA, A.I.A.
PAUL R. SWARTZ, A.I.A.
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WILLIAM R. MILLER III, A.I.A.
MARK A. COAN, A.I.A.

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL KEVIN D. BOMBOY ENGINEER No. 019084 E
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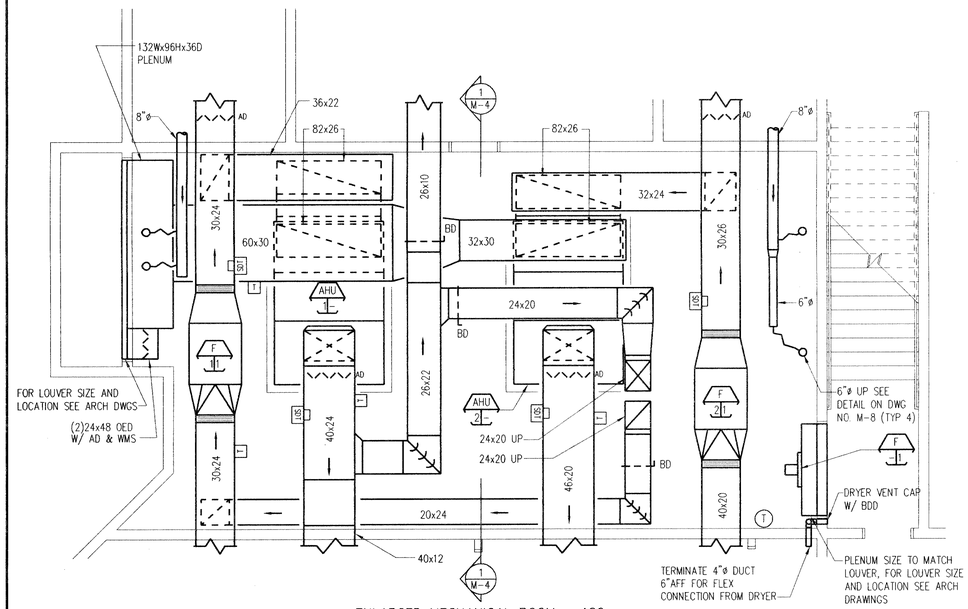
BERKS YOUTH CENTER
TOWNSHIP OF BERN
COUNTY OF BERKS, PENNSYLVANIA

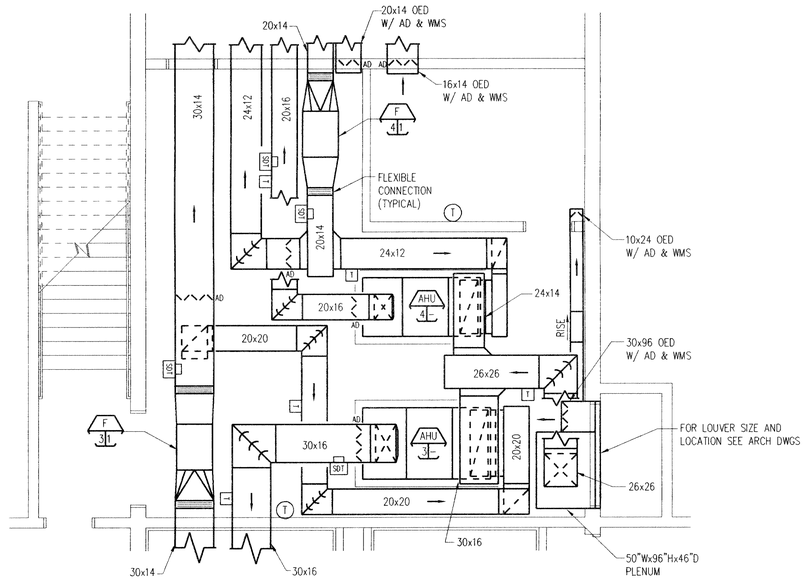
No.	Date	Issue or Revision

Drawing Title: UPPER LEVEL DUCTWORK PLAN

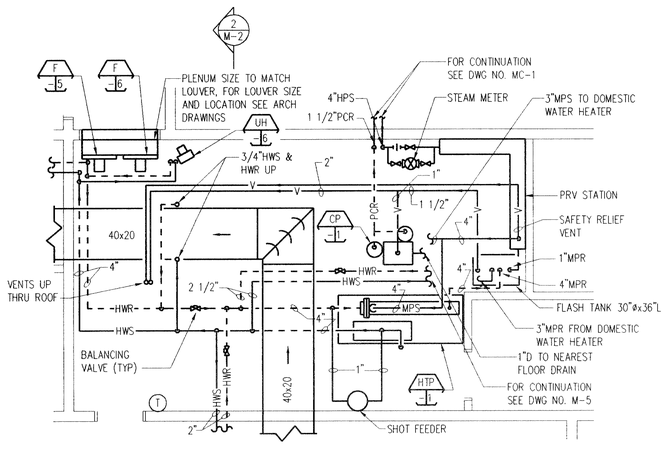
Scale: AS NOTED	Project No.: 93003
Datum Elev.	
Dwg. Date: 8-13-93	Drawing No.: M-3
Drawn By: SCOOPER	
Chkd. By: B.KLINE	Sheet No. 39 of 65



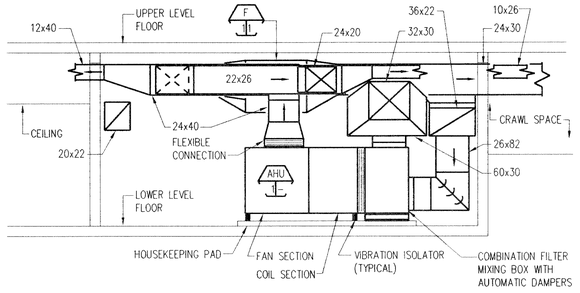
ENLARGED MECHANICAL ROOM – 120
SCALE: 1/4"=1'-0"



ENLARGED MECHANICAL ROOM – 125
SCALE: 1/4"=1'-0"



ENLARGED MECHANICAL ROOM – 121
SCALE: 1/4"=1'-0"



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

NOTES:

1. FOR LEGEND AND ABBREVIATIONS SEE DWG NO. M-1.
2. SUPPLY AND RETURN DUCTWORK SHALL BE INTERNALLY LINED FOR 20 FEET ON EACH SIDE OF THE AHU. DUCT DIMENSIONS INDICATE NET INSIDE DIMENTION REQUIRED FOR AIRFLOW. INCREASE DUCTWORK TO ALLOW FOR LINER THICKNESS.
3. FOR LOUVER SIZES AND LOCATIONS SEE ARCHITECTURAL DRAWINGS.
4. AUTOMATIC DAMPERS (AD) SHALL BE PROVIDED WITH ACCESS DOORS.
5. FOR HEATING WATER & REFRIGERANT PIPING SEE DWG NO. M-5.

THESE ORIGINAL CONSTRUCTION DOCUMENTS FROM THE 1993 BUILDING CONSTRUCTION AND 2001 ADDITION ARE BEING PROVIDED AS A SUPPLEMENT TO THE 2026 KEYSTONE REGIONAL YOUTH CENTER RENOVATION DESIGN DRAWINGS AS A REFERENCE FOR EXISTING CONDITIONS THAT ARE NOT SHOWN ON THE PROPOSED DESIGN DRAWINGS. REFER TO THE NOTES INDICATED IN RED ON THESE DRAWINGS FOR SCOPE NOT INDICATED ON THE PROPOSED DESIGN DRAWINGS.

GRAPHIC SCALE:
1/4"=1'-0"
0 1' 2' 3' 4' 5' 6' 7' 8' 9' 10'

USA ARCHITECTS, PLANNERS, & INTERIOR DESIGNERS, P.A.
20 N. Doughty Ave., Somerville, N.J. 08876

ARNALDO UNTORIA, A.I.A.
PAUL R. SWARTZ, A.I.A.
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COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL KEVIN D. BOMBOY ENGINEER No. E049064

BERKS YOUTH CENTER
TOWNSHIP OF BERN
COUNTY OF BERKS, PENNSYLVANIA

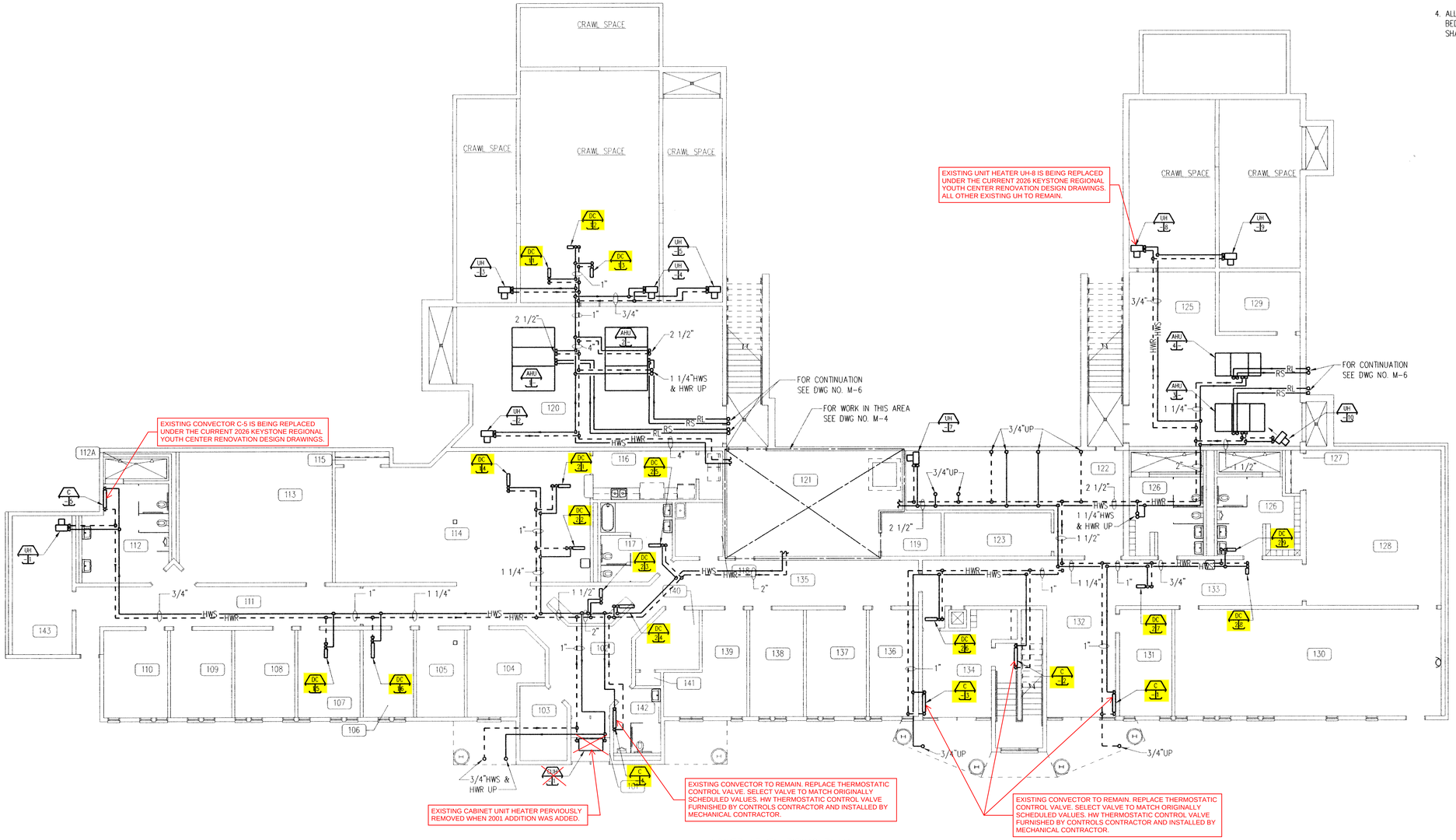
No.	Date	Issue or Revision

Drawing Title: ENLARGED MECHANICAL ROOMS AND SECTION

Scale: AS NOTED	Project No.: 93003
Datum Elev.	
Dwg Date: 8-13-93	Drawing No.: M-4
Drawn By: G.COOPER	
Chkd. By: B.KLINE	Sheet No. 40 of 65

NOTES:

1. FOR LEGEND AND ABBREVIATIONS SEE DWG NO. M-1.
2. FOR DUCT COIL ARRANGEMENT DETAIL SEE DWG NO. M-7.
3. ALL BRANCH PIPING TO INDIVIDUAL EQUIPMENT SHALL BE 3/4" UNLESS OTHERWISE NOTED.
4. ALL EXPOSED PIPING IN YOUTH HOUSING, ACTIVITY AREAS, BATHROOMS, BEDROOMS, DAYROOMS, CLASSROOMS, RECREATION ROOMS AND CORRIDORS SHALL BE PROVIDED WITH A COVER. SEE DETAIL ON DWG NO. M-8.



LOWER LEVEL PIPING PLAN

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

CONTROLS NOTES:
1. NRG CONTROLS IS THE COUNTY'S PREFERRED CONTROLS CONTRACTOR.
2. TEMPERATURE SENSORS SERVING DUCT REHEAT COILS ARE INDICATED ON THE DUCTWORK DRAWINGS.
3. WHERE TEMPERATURE SENSORS ARE REQUIRED IN AREAS ACCESSIBLE TO RESIDENTS, CONTROLS CONTRACTOR SHALL PROVIDE FLAT PLATE NO ACCESS TEMPERATURE SENSORS WHICH CAN HAVE SETPOINTS ADJUSTED FROM A CENTRAL CONTROL LOCATION. TEMPERATURE SENSORS WILL BE INSTALLED IN THE SAME LOCATIONS AS EXISTING T-STATS TO UTILIZE EXISTING IN WALL WIRE PATHWAYS. EXPOSED CONDUIT WILL BE AVOIDED.
4. IF EXPOSED CONDUIT OR SENSORS ARE NECESSARY, THEY WILL BE INSTALLED IN TAMPER PROOF ENCLOSURES.
5. IF NEW SENSORS ARE REQUIRED, THEY CAN BE INSTALLED ADJACENT TO THE DOORS IN ORDER TO UTILIZE THE CHASE IN THE DOOR FRAME TO LIMIT THE AMOUNT OF WALL THAT IS CHANNELED.

THESE ORIGINAL CONSTRUCTION DOCUMENTS FROM THE 1993 BUILDING CONSTRUCTION AND 2001 ADDITION ARE BEING PROVIDED AS A SUPPLEMENT TO THE 2026 KEYSTONE REGIONAL YOUTH CENTER RENOVATION DESIGN DRAWINGS AS A REFERENCE FOR EXISTING CONDITIONS THAT ARE NOT SHOWN ON THE PROPOSED DESIGN DRAWINGS. REFER TO THE NOTES INDICATED IN RED ON THESE DRAWINGS FOR SCOPE NOT INDICATED ON THE PROPOSED DESIGN DRAWINGS.

GRAPHIC SCALE:

1/8"=1'-0" 0 5' 10' 15' 20'

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BERKS YOUTH CENTER
TOWNSHIP OF BERN
COUNTY OF BERKS, PENNSYLVANIA

No.	Date	Issue or Revision

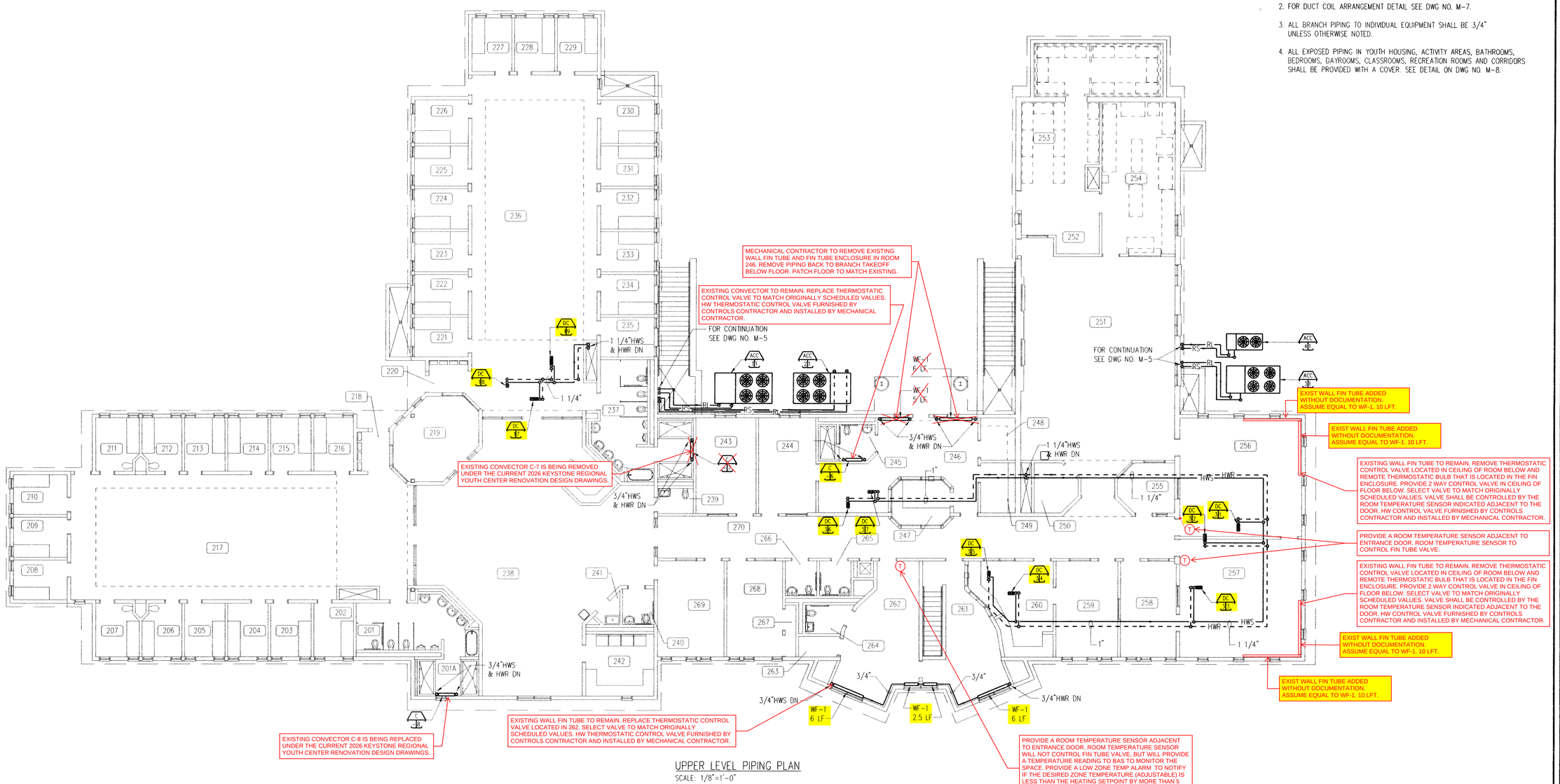
Drawing Title: LOWER LEVEL PIPING PLAN

Scale: AS NOTED	Project No.: 93003
Datum Elev.	
Dwg. Date: 8-15-93	Drawing No.: M-5
Drawn By: G.COOPER	
Chkd. By: B.KLINE	Sheet No.: 41 of 65

6791 H:\PROJECTS\6791\M-05 GIC NO1 08/05/93 14:25

NOTES:

1. FOR LEGEND AND ABBREVIATIONS SEE DWG NO. M-1.
2. FOR DUCT COIL ARRANGEMENT DETAIL SEE DWG NO. M-7.
3. ALL BRANCH PIPING TO INDIVIDUAL EQUIPMENT SHALL BE 3/4" UNLESS OTHERWISE NOTED.
4. ALL EXPOSED PIPING IN YOUTH HOUSING, ACTIVITY AREAS, BATHROOMS, BEDROOMS, DAYROOMS, CLASSROOMS, RECREATION ROOMS AND CORRIDORS SHALL BE PROVIDED WITH A COVER. SEE DETAIL ON DWG NO. M-8.



UPPER LEVEL PIPING PLAN
SCALE: 1/8"=1'-0"

CONTROLS NOTES:
1. NRG CONTROLS IS THE COUNTY'S PREFERRED CONTROLS CONTRACTOR.
2. TEMPERATURE SENSORS SERVING DUCT REHEAT COILS ARE INDICATED ON THE DUCTWORK DRAWINGS.
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4. IF EXPOSED CONDUIT OR SENSORS ARE NECESSARY, THEY WILL BE INSTALLED IN TAMPER PROOF ENCLOSURES.
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GRAPHIC SCALE:
1/8"=1'-0" 0 5' 10' 15' 20'

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MARK A. COAN, A.I.A.

KEVIN D. BOMBOY — REGISTERED PROFESSIONAL ENGINEER — No. 80900
Signature & Seal on Mylar

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BERKS YOUTH CENTER
TOWNSHIP OF BERN
COUNTY OF BERKS, PENNSYLVANIA

No.	Date	Issue or Revision

Drawing Title: UPPER LEVEL PIPING PLAN

Scale: AS NOTED	Project No.: 93003
Datum Elev.	
Dwg. Date: 8-13-93	Drawing No.: M-6
Drawn By: G.COOPER	
Chkd. By: B.KLINE	Sheet No.: 42 of 65

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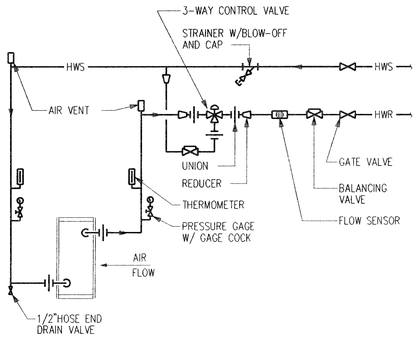
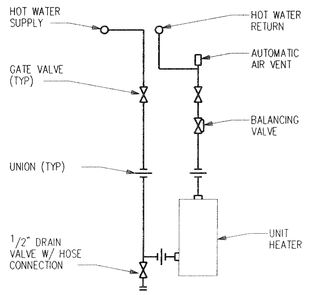


HEATING COIL PIPING DIAGRAM

NO SCALE



UNIT HEATER PIPING DIAGRAM

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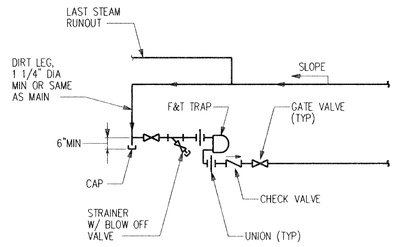

END OF STEAM MAIN DRIP PIPING DIAGRAM

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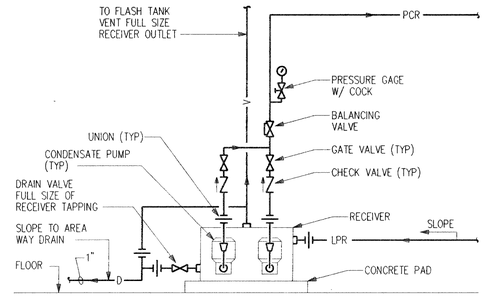

CONDENSATE PUMP PIPING DIAGRAM

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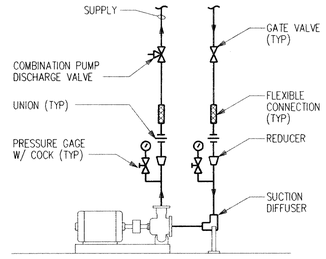
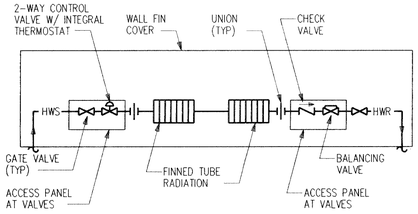


BASE MOUNTED PUMP PIPING DIAGRAM

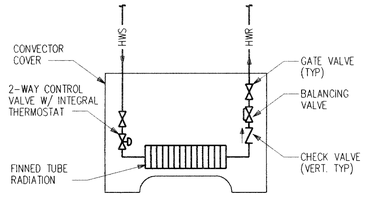
NO SCALE



NOTE: HOT WATER PIPING FROM BELOW FLOOR SLAB

HOT WATER
WALL FIN RADIATION PIPING DIAGRAM

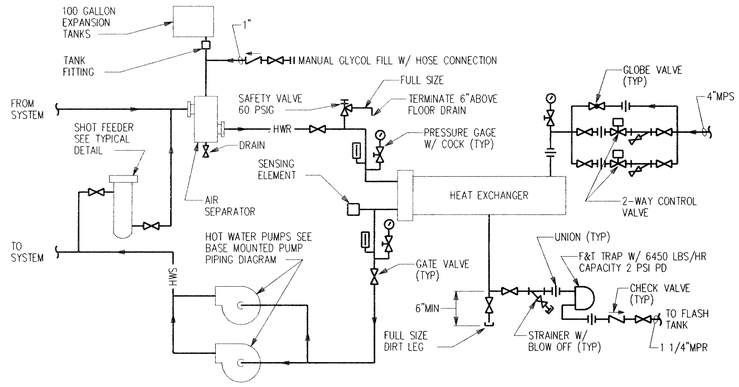
NO SCALE



NOTE: SUPPLY & RETURN PIPING FROM ABOVE OR BELOW, SEE PIPING PLANS FOR LOCATION.

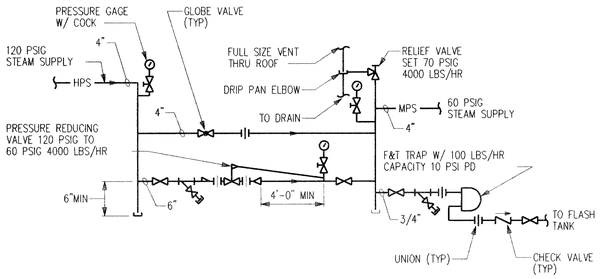
CONVECTOR PIPING

NO SCALE



HEAT EXCHANGER PIPING DIAGRAM

NO SCALE



PRESSURE REDUCING STATION PIPING DIAGRAM

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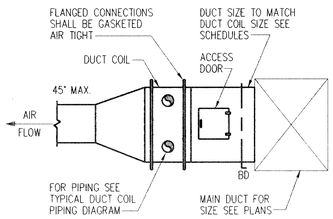

DUCT COIL ARRANGEMENT DETAIL

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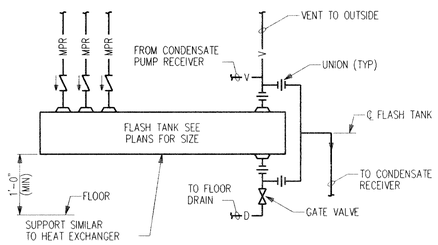

FLASH TANK PIPING DIAGRAM

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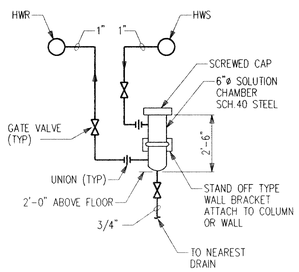

SHOT FEEDER DETAIL

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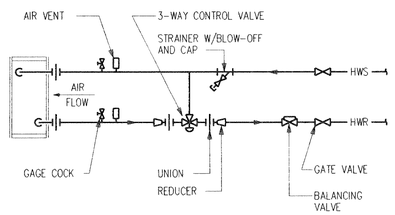

DUCT COIL PIPING DIAGRAM

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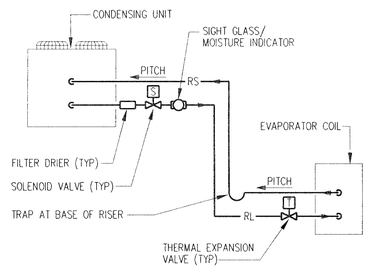

REFRIGERANT PIPING DETAIL

NO SCALE

NOTES:

1. FOR LEGEND AND ABBREVIATIONS SEE DWG NO. M-1.

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USA ARCHITECTS, PLANNERS, & INTERIOR DESIGNERS, P.A.
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MARK A. COAN, A.I.A.

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL ENGINEER KEVIN D. BOMBOY ENGINEER No. 059814

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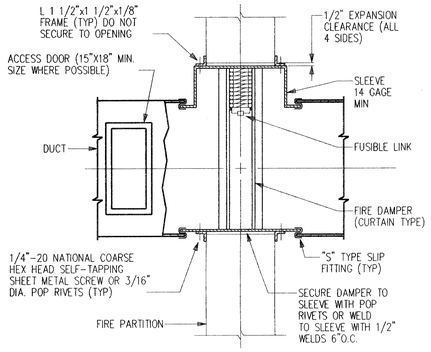
BERKS YOUTH CENTER
TOWNSHIP OF BERN
COUNTY OF BERKS, PENNSYLVANIA

No.	Date	Issue or Revision

Drawing Title

DIAGRAMS AND DETAILS

Scale: AS NOTED	Project No.: 93003
Datum Elev.	
Dwg. Date: 8-13-93	Drawing No.: M-7
Drawn By: G.COOPER	
Chkd. By: B.KLINE	Sheet No.: 43 of 65



VERTICAL FIRE DAMPER DETAIL

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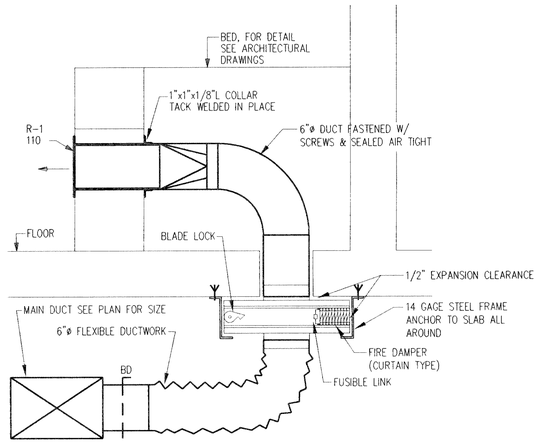
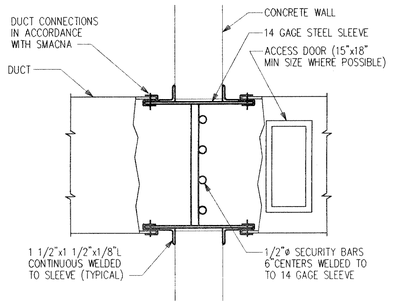


BEDROOM SUPPLY REGISTER DETAIL

NO SCALE

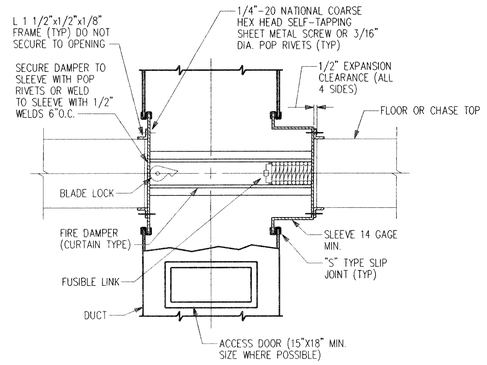


SECURITY BARRIER DETAIL

NO SCALE

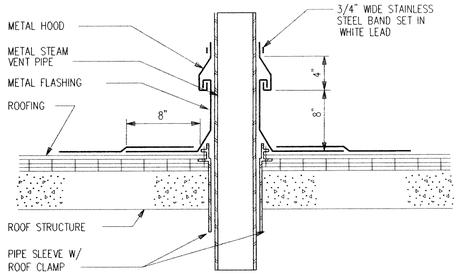
NOTES:

1. FOR LEGEND AND ABBREVIATIONS SEE DWG NO. M-1.



HORIZONTAL FIRE DAMPER DETAIL

NO SCALE

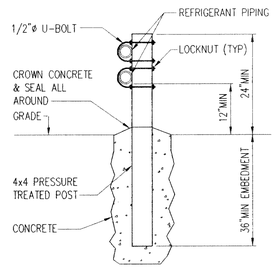


VENT THRU ROOF DETAIL

NO SCALE

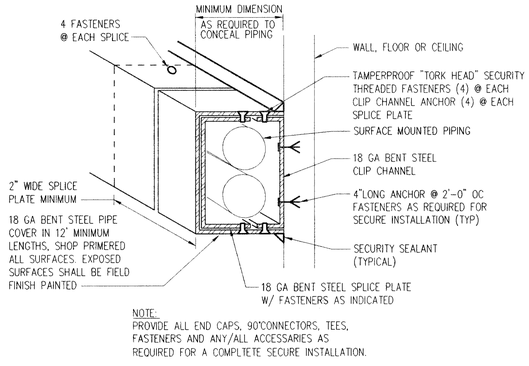
IN-LINE FAN SUPPORT DETAIL

NO SCALE



EXTERIOR REFRIGERANT PIPE SUPPORT DETAIL

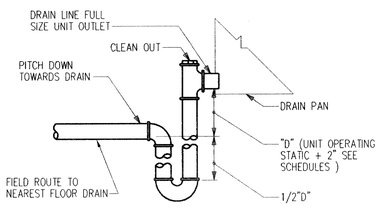
NO SCALE



NOTE:
PROVIDE ALL END CAPS, 90°CONNECTORS, TEES, FASTENERS AND ANY/ALL ACCESSARIES AS REQUIRED FOR A COMPLTETE SECURE INSTALLATION.

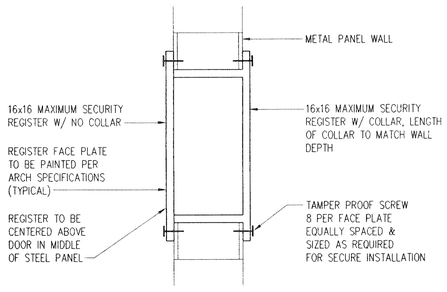
SURFACE MOUNTED PIPE COVER DETAIL

NO SCALE



DRAW THRU CONDENSATE DRAIN DETAIL

NO SCALE



SECURE AIR TRANSFER DETAIL

NO SCALE

THESE ORIGINAL CONSTRUCTION DOCUMENTS FROM THE 1993 BUILDING CONSTRUCTION AND 2001 ADDITION ARE BEING PROVIDED AS A SUPPLEMENT TO THE 2026 KEYSTONE REGIONAL YOUTH CENTER RENOVATION DESIGN DRAWINGS AS A REFERENCE FOR EXISTING CONDITIONS THAT ARE NOT SHOWN ON THE PROPOSED DESIGN DRAWINGS. REFER TO THE NOTES INDICATED IN RED ON THESE DRAWINGS FOR SCOPE NOT INDICATED ON THE PROPOSED DESIGN DRAWINGS.

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STV Group
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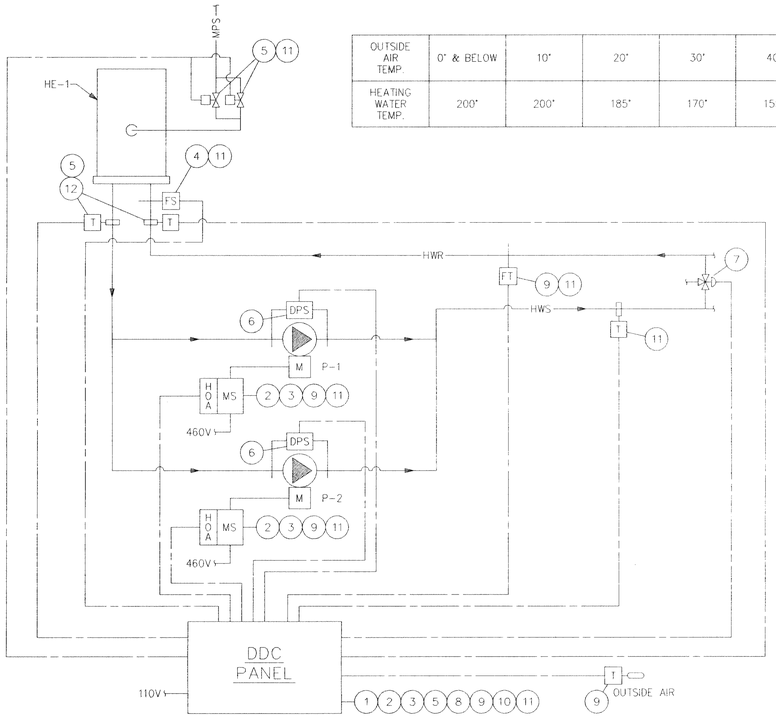
scientists/construction managers
Pottstown, PA Jackson, NJ
Huntingdon Valley, PA

BERKS YOUTH CENTER
TOWNSHIP OF BERN
COUNTY OF BERKS, PENNSYLVANIA

No.	Date	Issue or Revision

Drawing Title: DETAILS

Scale: AS NOTED	Project No.: 93003
Datum Elev.	
Dwg. Date: 8-13-93	Drawing No.: M-8
Drawn By: G.COOPER	
Chkd. By: B.KLINE	Sheet No. 44 of 65



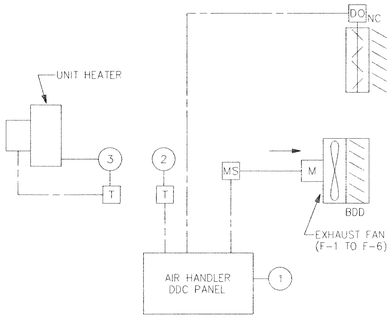
OUTSIDE AIR TEMP.	0° & BELOW	10°	20°	30°	40°	50°
HEATING WATER TEMP.	200°	200°	185°	170°	155°	140°

HEATING SYSTEM CONTROL DIAGRAM

HEATING WATER SYSTEM

SEQUENCE OF OPERATION:

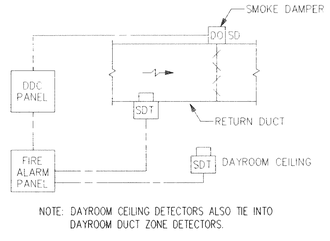
1. DDC SYSTEM SHALL CONTROL THE HEAT EXCHANGER SYSTEM. NORMAL OPERATION IS FOR THE HOT WATER SYSTEM TO RUN ONE PUMP AND HEAT EXCHANGER.
2. "HAND-OFF-AUTO" SELECTOR, IN "AUTO" POSITION THE PUMP IS CONTROLLED BY DDC CONTROLS. IN "HAND" POSITION THE PUMP SHALL RUN. THE DDC SYSTEM SHALL MONITOR THE "HAND" POSITION VIA A RELAY IN THE "HAND" CIRCUIT.
3. DDC CONTORLS SELECT "OPERATING" AND "STAND-BY" PUMP FOR OPERATION. "OPERATING" AND "STAND-BY" PUMPS SHALL BE ALTERNATED BY DDC CONTROLS BASED ON RUN TIME (ADJUSTABLE).
4. FLOW SWITCH SIGNALS CONTROL VALVE TO CONTROL WHEN FLOW IS PROVEN. ON LOSS OF FLOW CONTROL VALVE SHALL CLOSE.
5. DDC CONTROLS MODULATE PARALLEL STEAM CONTROL VALVES IN SERIES TO MAINTAIN SUPPLY WATER TEMPERATURE AT SETPOINT OF 200°F (ADJUSTABLE).
6. DIFFERENTIAL PRESSURE SWITCH PROVES PUMP OPERATION. UPON LOSS OF FLOW THE "STAND-BY" PUMP STARTS AFTER A 30 SECOND TIME DELAY AND AN ALARM SIGNAL IS SENT TO THE DDC SYSTEM, AND THE FAILED PUMP IS DISCONNECTED.
7. HOT WATER SYSTEM SHALL HAVE THREE-WAY VALVES AT EACH AIR HANDLING UNIT.
8. UPON A LOSS OF COMMERCIAL POWER THE DDC SYTEM SHALL SHUT DOWN THE "OPERATING" PUMP. UPON THE TRANSFER TO EMERGENCY POWER THE DDC SYSTEM SHALL RE-START THE "OPERATING" PUMP. UPON RESUMPTION OF COMMERCIAL POWER THE DDC SYSTEM SHALL RETURN THE SYSTEM TO OPERATION, AFTER AN ADJUSTABLE TIME DELAY.
9. THE DDC SYSTEM SHALL RESET THE SUPPLY WATER TEMPERATURE BASED ON THE OUTSIDE AIR TEMPERATURE (SEE BELOW). THE DDC GRAPHIC DISPLAY OF THE SYSTEM SHALL INCLUDE THE DESIGN SETPOINT, THE CURRENT RESET SETPOINT AND THE ACTUAL SUPPLY WATER TEMPERATURE.
10. THE HOT WATER SYSTEM PUMP SHALL BE ON WHEN EVER THE OUTSIDE AIR TEMPERATURE IS BELOW 40°F (ADJUSTABLE) OR A DEMAND FOR HEAT FROM ANY AHU SHALL ENERGIZE THE SYSTEM.
11. THE DDC SYSTEM SHALL MONITOR THE PUMP STATUS, THE SYSTEM FLOW, THE SUPPLY AND RETURN TEMPERATURES, AND THE STEAM VALVE POSITION.
12. THE DDC SYSTEM SHALL MONITOR HEAT EXCHANGER LEAVING TEMPERATURE. DDC SYSTEM SHALL ALARM IF LEAVING WATER (GLYCOL) TEMPERATURE EXCEEDS 220°F AND SHALL MODULATE THE STEAM VALVES CLOSED.



MECHANICAL ROOM VENTILATION CONTROL DIAGRAM

SEQUENCE OF OPERATION:

1. THE DDC SYSTEM SHALL CONTROL THE MECHANICAL ROOM VENTILATION.
2. UPON A RISE IN TEMPERATURE ABOVE 75°F (ADJUSTABLE) THE SUPPLY AND EXHAUST DAMPERS SHALL OPEN. ABOVE 85°F (ADJUSTABLE) THE EXHAUST FAN SHALL BE ACTIVATED. THE EXHAUST FAN SHALL BE DEACTIVATED AFTER A 10°F DROP IN ROOM TEMPERATURE TO 75°F. BELOW 70°F ALL DAMPERS SHALL CLOSE.
3. UPON A CALL FOR HEATING INDIVIDUAL UNIT HEATERS SHALL CYCLE ON THEIR INTEGRAL THERMOSTATS.

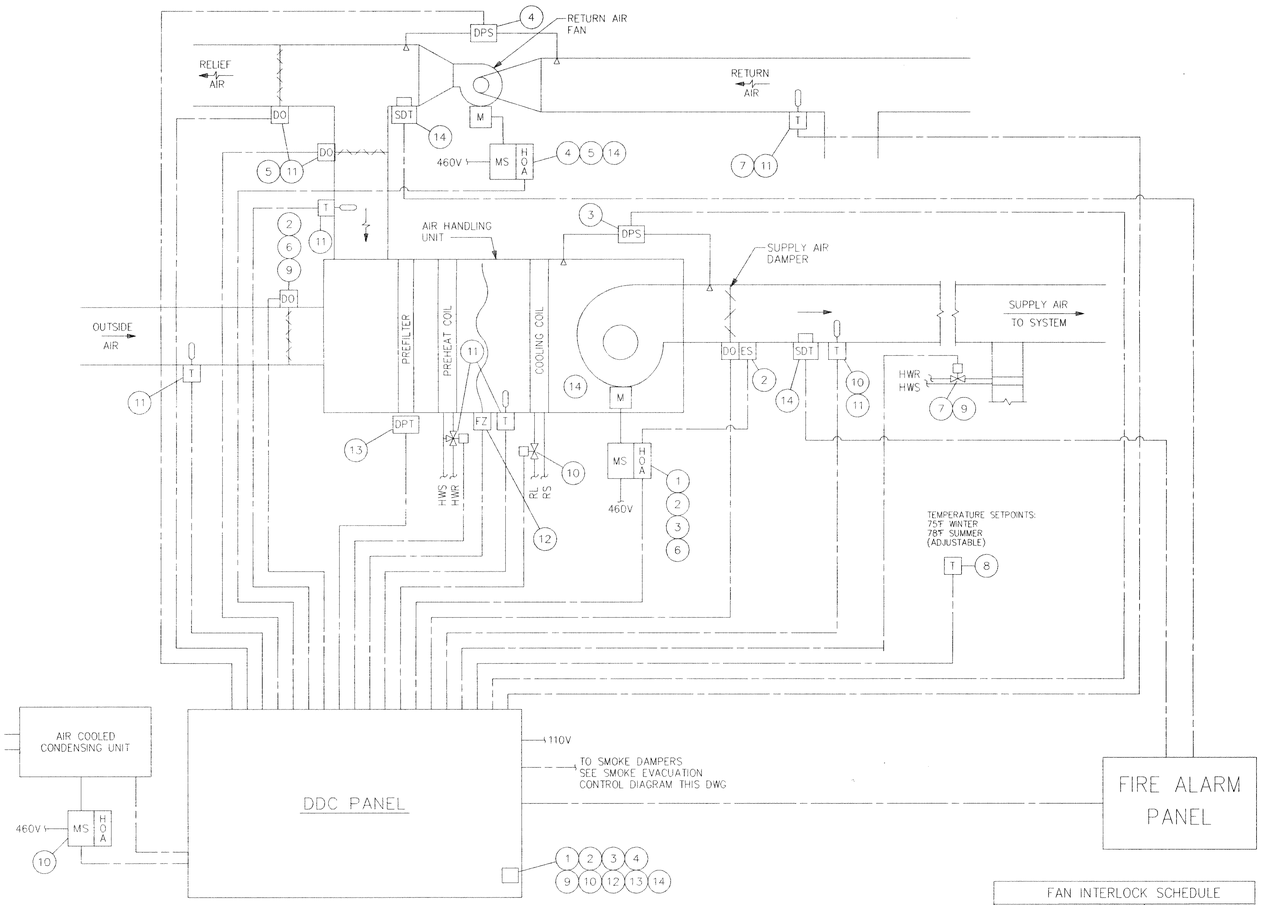


NOTE: DAYROOM CEILING DETECTORS ALSO TIE INTO DAYROOM DUCT ZONE DETECTORS.

SMOKE EVACUATION CONTROL DIAGRAM

SEQUENCE OF OPERATION:

1. SMOKE DAMPERS ARE NORMALLY OPEN EXCEPT UPON A SIGNAL FROM THE FIRE ALARM PANEL THE APPROPRIATE DAMPER SHALL CLOSE.
2. AHU-2,3,4 HAVE ONLY ONE SMOKE ZONE. AHU-1 HAS TWO SETS OF THREE SMOKE ZONES. IN EACH SET OF SMOKE ZONES WHEN A SMOKE DETECTOR IS ACTIVATED, ITS ASSOCIATED SMOKE DAMPER(S) REMAINS OPEN AND THE OTHERS CLOSE. THE SUPPLY FAN DEACTIVATES WHILE THE RETURN FAN REMAINS ACTIVE. THE DDC PANEL RECEIVES THE SMOKE DETECTOR SIGNAL THRU THE FIRE ALARM PANEL.

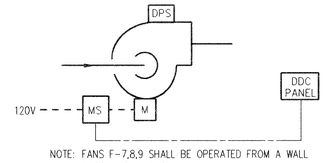


FAN INTERLOCK SCHEDULE	
AIR HANDLING UNIT	RETURN FAN
AHU-1	F-1-1
AHU-2	F-2-1
AHU-3	F-3-1
AHU-4	F-4-1

AHU-1 THRU AHU-4 ASSOCIATED RETURN FAN CONTROL DIAGRAM

SEQUENCE OF OPERATION:

1. A COMMAND FROM THE DDC SYSTEM SHALL START THE SUPPLY FAN.
2. WHEN THE "HOA" SWITCH FOR THE SUPPLY AIR HANDLING UNIT IS IN THE "HAND" POSITION, THE AHU RETURN AIR AND SUPPLY DAMPERS SHALL OPEN AND THE FAN SHALL START AFTER THE SUPPLY DAMPER END SWITCH IS PROVEN. THE DDC SYSTEM SHALL MONITOR THE POSITION OF THE "HOA" SWITCH. WHEN THE SWITCH IS IN THE "AUTO" POSITION THE SYSTEM SHALL BE ENERGIZED BY THE DDC PANEL MOUNTED CCS-OFF-LOCAL SWITCH.
3. NORMAL OPERATION SHALL HAVE THE FANS OPERATING CONTINUOUSLY. IF THE FAN SHALL FAIL AS SENSED BY THE DIFFERENTIAL PRESSURE SWITCH (DPS), THE FAN SHALL BE DISCONNECTED AND AN ALARM SHALL BE SENT TO THE DDC SYSTEM.
4. WHEN THE "HOA" SWITCH FOR THE RETURN AIR FAN IS IN THE "HAND" POSITION, THE FAN RETURN AIR DAMPER SHALL BE FULLY OPEN AND THE RELIEF DAMPER SHALL BE OPEN TO THE MINIMUM OUTSIDE AIR POSITION. THE DDC SYSTEM SHALL MONITOR THE POSITION OF THE "HOA" SWITCH. WHEN THE SWITCH IS IN THE "AUTO" POSITION THE SYSTEM SHALL BE ENERGIZED BY THE DDC SYSTEM.
5. THE RETURN FAN SHALL BE INTERLOCKED WITH THE SUPPLY FAN TO BE ON WHEN THE SUPPLY FAN IS ON AND OFF WHEN THE SUPPLY FAN IS OFF, EXCEPT UPON ACTIVATION OF A SMOKE DETECTOR (SEE 14). IF THE SUPPLY FAN FAILS THE RETURN FAN SHALL BE SHUT DOWN. IF THE RETURN FAN FAILS AS SENSED BY A DPS AN ALARM SHALL BE SENT TO THE DDC SYSTEM.
6. PREHEAT COIL CONTROL VALVE MODULATES TO MAINTAIN SUPPLY AIR SETPOINT DOWNSTREAM OF THE PREHEAT COIL AS SENSED BY A TEMPERATURE SENSOR (55°F MINIMUM). THE CONTROL VALVE SHALL BEGIN ACTUATION ONLY AFTER THE OUTSIDE AIR DAMPER IS AT THE MINIMUM SETTING OR 40°F OA TEMPERATURE IS SENSED. THE CONTROL VALVE IS ACTIVE DURING FAN SHUTDOWN. THE PREHEAT COIL SHALL MODULATE TO HOLD THE ROOM SETPOINT (75°F ADJUSTABLE) IN CASES WHERE NO REHEAT COILS ARE PROVIDED (AHU-4).
7. TEMPERATURE SENSOR OF THE TYPICAL JUVENILE BEDROOM AND ACTIVITY AREA IS LOCATED IN THE RETURN DUCT. IT SHALL MODULATE THE COOLING COIL AND PREHEAT COIL CONTROL VALVES TO HOLD SPACE TEMPERATURE (AHU-1). COOLING COIL SHALL MODULATE UNTIL ALL SPACE SETPOINTS ARE MAINTAINED.
8. ROOM TEMPERATURE SENSOR SHALL MODULATE COOLING COIL AND PREHEAT COIL CONTROL VALVE TO HOLD SPACE TEMPERATURE (AHU-4).
9. THE DDC SYSTEM SHALL HAVE THE INSTALLED CAPABILITY TO RESET THE DISCHARGE SUPPLY AIR TEMPERATURE BASED ON THE POSITION OF THE DUCT COIL CONTROL VALVES. WHEN ALL COILS ARE ACTIVE, SUPPLY AIR TEMPERATURE SHALL BE RESET WARMER UNTIL ATLEAST ONE DUCT COIL IS INACTIVE. HOT WATER CONTROL VALVE MODULATES TO MAINTAIN ROOM SETPOINT (AHU-1,2,3).
10. ON A CALL FOR COOLING BASED ON ROOM TEMPERATURE SENSOR, THE DDC SHALL START THE AIR COOLED CONDENSING UNIT. AFTER UNIT START UP IS INITIATED THE COIL SOLENOID VALVE SHALL OPEN AND THE COIL THERMAL EXPANSION VALVE SHALL CONTROL FLOW OF REFRIGERANT. THE CONDENSING UNIT INTERNAL CONTROLS SHALL CONTROL COMPRESSOR STAGING, CONDENSER FAN CYCLING AND ALL SAFETIES. FAILURE OF THE CONDENSING UNIT SHALL INDICATE ALARM TO DDC PANEL.
11. IN THE COOLING MODE, WHEN THE TEMPERATURE OF THE OUTSIDE AIR IS LESS THAN THE TEMPERATURE OF THE RETURN AIR (UP TO 75°F ADJUSTABLE) THE FREE COOLING ECONOMIZER CYCLE SHALL BE ACTIVATED. IN THE ECONOMIZER MODE THE OUTSIDE AIR AND RETURN AIR DAMPERS MODULATE FROM 100% OUTSIDE AIR TO MINIMUM OUTSIDE AIR IN ORDER TO MAINTAIN THE COOLING SETPOINT.
12. DDC SYSTEM SHALL ALARM ON EXCESSIVE LOW TEMPERATURE TO THE COOLING COIL.
13. DIFFERENTIAL PRESSURE SWITCH (DPS) PROVIDES INDICATION OF HIGH PRESSURE DROP ACROSS FILTERS TO THE DDC SYSTEM.
14. SMOKE DETECTOR SHALL SEND A SIGNAL TO THE FIRE ALARM PANEL. THE FIRE ALARM PANEL THRU THE DDC PANEL SHUTS DOWN THE SUPPLY AIR FAN UPON DETECTION OF THE PRODUCTS OF COMBUSTION. THE RETURN FAN SHALL REMAIN ACTIVATED. AHU RETURN DAMPER SHALL CLOSE AND EXHAUST DAMPER SHALL GO TO FULL OPEN. BY MANUAL COMMAND FROM THE DDC SYSTEM THE SUPPLY FAN SHALL BE RESTARTED AFTER A SHUTDOWN VIA THE FIRE ALARM PANEL. (FOR AHU-1 THRU AHU-4 SEE SMOKE DAMPER CONTROL DIAGRAM ON THIS SHEET).



NOTE: FANS F-7,8,9 SHALL BE OPERATED FROM A WALL SWITCH WITHIN THE ROOM.

EXHAUST FAN CONTROL DIAGRAM

(F-1-2,F-1-3,F-2-2,F-3-2)

SEQUENCE OF OPERATION:

1. NORMAL OPERATION SHALL HAVE THE FANS OPERATING CONTINUOUSLY. IF THE FAN SHALL FAIL AS SENSED BY THE DIFFERENTIAL PRESSURE SWITCH (DPS) THE FAN SHALL BE SHUT DOWN AND AN ALARM SHALL BE SENT TO THE DDC SYSTEM.

NOTES:

1. FOR LEGEND AND ABBREVIATIONS SEE DWG NO. M-1.

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scientists/construction managers
Pottstown, PA Jackson, NJ
Huntingdon Valley, PA

BERKS YOUTH CENTER
TOWNSHIP OF BERN
COUNTY OF BERKS, PENNSYLVANIA

No.	Date	Issue or Revision

Drawing Title: CONTROL DIAGRAMS

Scale	Project No.
AS NOTED	93003
Datum Elev.	
Dwg. Date: 8-13-93	Drawing No.: M-9
Drawn By: G.COOPER	
Chkd. By: B.KLINE	Sheet No. 45 of 65

AIR HANDLING UNIT SCHEDULE

	REF. NO.		AHU 1	AHU 2	AHU 3	AHU 4
SUPPLY FAN	CFM		9200	9500	5120	2400
	RPM		871	872	112.3	1390
	TSP		3.0	3.0	3.0	2.5
	ESP		1.9	1.9	1.8	1.2
	HP		10	10	7.5	3
	VOLTS/PHASE/Hz		460/3/60	460/3/60	460/3/60	460/3/60
* PREHEAT COIL	EAT °F		55	55	55	55
	LAT °F		96.2	95.5	95.3	106.5
	MBH		414.7	420.3	225.9	135.3
	FACE VEL FPM		424	438	451	478
	EWT °F		180	180	180	180
	LWT °F		157.2	156.9	157.4	160.2
	GPM		40	40	22	15
	PD IN WG		0.10	0.11	0.11	0.25
	PD FT HD		15.5	15.5	23.1	4.9
COOLING COIL	EAT °F	DB	80	80	80	80
		WB	66	67	67	67
	LAT °F	DB	54.4	54.5	55.2	56.2
		WB	53.3	53.5	54.1	55.1
	MBH		356.2	395.0	204.6	89.6
	FACE VEL FPM		424	438	451	478
	REFRIGERANT SUCTION TEMP °F		45	45	45	45
	REFRIGERANT TYPE		R-22	R-22	R-22	R-22
	APD IN WG		0.50	0.52	0.55	0.60
OA QTY	MIN		1665	1640	1025	550
	MAX		9200	9500	5120	2400

* INDICATES 40% GLYCOL SOLUTION BY VOLUME.
GLYCOL HAS BEEN ELIMINATED FROM THE HEATING WATER SYSTEM.

DUCT COIL SCHEDULE

	REF. NO.	DC 1	DC 2	DC 3	DC 4	DC 5	DC 6	DC 7	DC 8	DC 9	DC 10	DC 11	DC 12	DC 13	DC 14	DC 15	DC 16	DC 17	DC 18	DC 19	DC 20	DC 21	DC 22	DC 23	DC 24	DC 25	DC 26	DC 27	DC 28	DC 29	DC 30	DC 31	DC 32	DC 33	DC 34	DC 35	DC 36	DC 37
	CFM	660	330	660	990	660	1980	1770	170	1980	1100	1275	650	1580	1070	1150	1430	600	640	1080	995	730	790	500	515	510
SIZE	HEIGHT	9	9	9	12	9	18	18	6	18	12	12	9	12	12	12	18	12	9	12	12	12	12	12	12	12
SIZE	WIDTH	18	9	18	24	18	30	24	9	30	24	24	18	30	24	24	18	12	18	24	18	18	18	12	12	12
	EAT °F	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55
	LAT °F	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80
	MBH	17.9	9.0	17.9	26.8	17.9	53.5	48	4.6	53.5	30.0	34.5	17.6	43.0	29.0	31.1	39.0	16.5	17.5	30.0	30.0	20.0	25.0	15.0	15.0	14.0
	FACE VEL FPM	586	600	586	495	586	528	590	450	528	550	640	580	632	535	575	635	600	571	540	665	490	530	500	515	510
	EWT °F	180	180	180	180	180	180	180	180	180	180	180	180	180	180	180	180	180	180	180	180	180	180	180	180	180
	LWT °F	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160
	GPM *	2.0	1.0	2.0	3.0	2.0	5.5	5.0	0.5	5.5	3.0	3.5	2.0	4.5	3.0	3.5	4.0	2.0	2.0	3.0	3.0	2.0	2.5	1.5	1.5	1.5
	MAX PD IN. WG	0.25	0.15	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25
	MAX PD FT HD	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0

* INDICATES 40% GLYCOL SOLUTION BY VOLUME. GLYCOL HAS BEEN ELIMINATED FROM THE HEATING WATER SYSTEM.

REPLACE DUCT COIL HW CONTROL VALVE. SELECT VALVE TO MATCH ORIGINALLY SCHEDULED VALUES. HW CONTROL VALVE FURNISHED BY CONTROLS CONTRACTOR AND INSTALLED BY MECHANICAL CONTRACTOR. CONTROLS CONTRACTOR SHALL FURNISH AND INSTALL CONTROLLER, DAT SENSOR, WALL MOUNTED TEMPERATURE SENSOR, AND ALL CONTROL WIRING. HIGHLIGHTED DUCT COIL CONTROL VALVES TO BE REPLACED. CROSSED OUT DUCT COILS ARE BEING REPLACED UNDER THE PROPOSED DESIGN DRAWINGS.

FAN SCHEDULE

	REF. NO.	F 1	F 1,2	F 1,3	F 2,1	F 2,2	F 3,1	F 3,2	F 4,1	F -1	F -2	F -3	F -4	F -5,6	F -7,8,9
	CFM	7535	1270	560	7860	300	3875	2090	1920	2000	950	1900	1600	1525	85
	MAX O.V. FPM	980	700	895	1035	935	990	785	560	–	–	695	880	–	–
	RPM	725	1030	1150	740	1000	1040	905	1300	1140	1140	880	1125	1140	1200
	MIN WHEEL DIA	36	12	12	36	10	24	9	24	20	16	9	8	20	6
	TSP	1.0	0.60	0.50	1.0	0.375	1.0	0.5	1.0	0.425	0.25	0.50	0.50	0.50	–
MOTOR	HP	5	1/2	1/2	3	1/4	3	1	1 1/2	1/3	1/8	1	1/2	1/3	1/15
MOTOR	RPM	1750	1030	1150	1750	1000	1750	1750	1750	1140	1140	1750	1750	1140	1200
MOTOR	VOLTS	460	115	115	460	115	460	460	460	115	115	460	115	115	115
MOTOR	PHASE	3	1	1	3	1	3	3	3	1	1	3	1	1	1
MOTOR	Hz	60	60	60	60	60	60	60	60	60	60	60	60	60	60
	DRIVE	V-BELT	DIRECT	DIRECT	V-BELT	DIRECT	V-BELT	V-BELT	V-BELT	V-BELT	DIRECT	V-BELT	V-BELT	DIRECT	DIRECT
	BASIS OF DESIGN	PENN VENTILATOR CENTREX	PENN VENTILATOR ZEPHYR	PENN VENTILATOR ZEPHYR	PENN VENTILATOR CENTREX	PENN VENTILATOR CENTREX	PENN VENTILATOR CENTREX	PENN VENTILATOR ZEPHYR	PENN VENTILATOR CENTREX	PENN VENTILATOR ZEPHYR	PENN VENTILATOR BREEZEWAY	PENN VENTILATOR ZEPHYR	PENN VENTILATOR ZEPHYR	PENN VENTILATOR BREEZEWAY	PENN VENTILATOR ZEPHYRETTE

* INDICATES 40% GLYCOL SOLUTION BY VOLUME.
GLYCOL HAS BEEN ELIMINATED FROM THE HEATING WATER SYSTEM.

REGISTER SCHEDULE

BASIS OF DESIGN: TUTTLE & BAILEY

REF. NO.	R-1	R-2	R-3	R-4	R-5	R-6	R-7	R-8	R-9	R-10	R-11	R-12	SR-1	SR-2	SR-3
SIZE	6x6	24x12	12x6	12x8	16x8	12x8	8x4	30x8	18x12	12x12	18x16	18x18	24x12	24x12	12x6
TYPE	MAXIMUM SECURITY	MINIMUM SECURITY		MINIMUM SECURITY	MINIMUM SECURITY			MINIMUM SECURITY					MINIMUM SECURITY		

DIFFUSER SCHEDULE

BASIS OF DESIGN: TUTTLE & BAILEY, TYPE M

REF. NO.	D-1	D-2	D-3	D-4	D-5	D-6	D-7	D-8	D-9	D-10	D-11	D-12	D-13
SIZE	12x9	12x9	12x6	9x9	6x6	12x6	15x12	12x9	15x12	12x12	9x9	12x9	6x6
BLOW	4-WAY	3-WAY	4-WAY	4-WAY	4-WAY	2-WAY	4-WAY	2-WAY	3-WAY	4-WAY	2-WAY	2-WAY	2-WAY
STYLE	4	3S	4	4	4	2S	4	2CL	3S	4	2C	2S	2C

AIR COOLED CONDENSING UNIT SCHEDULE

	REF. NO.	ACC 1	ACC 2	ACC 3	ACC 4
	MBH	388	388	270	132
	AMB TEMP °F	95	95	95	95
	REFRIGERANT	R-22	R-22	R-22	R-22
CONDENSER FAN	CFM	22000	22000	17100	8000
CONDENSER FAN	NO.	3	3	3	2
CONDENSER FAN	FLA	9.4	9.4	7.1	4.0
CONDENSER FAN	RPM	1075	1075	1075	1075
CONDENSER FAN	HP	3/4	3/4	3/4	1/2
COMPRESSOR	NO	1	1	1	1
COMPRESSOR	KW	40.4	40.4	26.7	13.3
COMPRESSOR	FLA	60.5	60.5	40	21
	VOLTS	460	460	460	460
	PHASE	3	3	3	3
	Hz	60	60	60	60

CONDENSATE PUMP SCHEDULE

	REF. NO.	CP 1
	GPM	30
	CAP. EDR	20000
	DISCHARGE PSIG	45
	REC CAP. GAL	36
MOTOR	NO.	2
MOTOR	HP	2
MOTOR	RPM	3500
MOTOR	VOLTS	460
MOTOR	PHASE	3
MOTOR	Hz	60
	BASIS OF DESIGN	BELL & GOSSETT

HEAT TRANSFER PACKAGE SCHEDULE

	REF. NO.	HTP 1
HEAT EXCHANGER	GPM *	200
HEAT EXCHANGER	EWT °F	160
HEAT EXCHANGER	LWT °F	180
HEAT EXCHANGER	PD FT HD	1.8
SHELL & TUBE BUNDLE	STEAM PSIG	30
SHELL & TUBE BUNDLE	CAP. LBS/HR	2150
TRAP	CAP. LBS/HR	6400
TRAP	PD PSIG	2.0
PUMP	GPM	200
PUMP	PD FT HD	80.0
PUMP	OPERATING	1
PUMP	STANDBY	1
MOTOR	HP	7.5
MOTOR	RPM	1750
MOTOR	VOLTS	460
MOTOR	PHASE	3
MOTOR	Hz	60
	BASIS OF DESIGN	BELL & GOSSETT

* INDICATES 40% GLYCOL SOLUTION BY VOLUME.

EXISTING UNIT HEATERS SHALL REMAIN WITH EXISTING LOCAL THERMOSTATS.

UNIT HEATER SCHEDULE

	REF. NO.	UH 1-10
	MBH	16.2
	CFM	860
	EAT °F	65
	GPM *	1.3
	PD FT HD	0.17
	EWT °F	180
	LWT °F	160
MOTOR	HP	1/30
MOTOR	RPM	1750
MOTOR	VOLTS	115
MOTOR	PHASE	1
MOTOR	Hz	60
	THROW FT	30
	MOUNT HGT	8'
	BASIS OF DESIGN	TRANE

* INDICATES 40% GLYCOL SOLUTION BY VOLUME.
GLYCOL HAS BEEN ELIMINATED FROM THE HEATING WATER SYSTEM.

NOTE FOR REFERENCE EXISTING UNIT HEATER UH-9 IS BEING REPLACED UNDER THE CURRENT 2026 KEYSTONE REGIONAL YOUTH CENTER RENOVATION DESIGN DRAWINGS. ALL OTHER EXISTING UH TO REMAIN.

CABINET UNIT HEATER SCHEDULE

	REF. NO.	CUH 1
	MBH	4.8
	CFM	200
	EAT °F	60
	GPM *	0.5
	PD FT HD	0.07
	EWT °F	180
	LWT °F	160
MOTOR	HP	1/60
MOTOR	RPM	1750
MOTOR	VOLTS	115
MOTOR	PHASE	1
MOTOR	Hz	60
	THROW FT	8'
	MOUNT HGT	CEILING
	BASIS OF DESIGN	TRANE

* INDICATES 40% GLYCOL SOLUTION BY VOLUME.

CONVECTOR SCHEDULE

REF. NO.	C 1-8
MBH	7.0
EAT °F	72
SIZE IN HEIGHT	32
SIZE IN WIDTH	40
SIZE IN DEPTH	8
RECESS DEPTH IN	0
GPM *	1.0
WATER TEMP DROP °F	20
PD FT HD	0.32

* INDICATES 40% GLYCOL SOLUTION BY VOLUME.
GLYCOL HAS BEEN ELIMINATED FROM THE HEATING WATER SYSTEM.

EXISTING CONVECTORS 1, 2, 3, 4, & 6 TO REMAIN. REPLACE THERMOSTATIC CONTROL VALVE. SELECT VALVE TO MATCH ORIGINALLY SCHEDULED VALUES. HW THERMOSTATIC CONTROL VALVE FURNISHED BY CONTROLS CONTRACTOR AND INSTALLED BY MECHANICAL CONTRACTOR.
EXISTING CONVECTORS 5 & 8 ARE BEING REPLACED UNDER THE CURRENT 2026 KEYSTONE REGIONAL YOUTH CENTER RENOVATION DESIGN DRAWINGS.
EXISTING CONVECTOR 7 IS BEING REMOVED UNDER THE CURRENT 2026 KEYSTONE REGIONAL YOUTH CENTER RENOVATION DESIGN DRAWINGS.

WALL FIN RADIATION SCHEDULE

REF. NO.	WF-1
EAT °F	72
BTU/LF *	750
EWT °F	180
LWT °F	160
NO OF ROWS	1
MOUNT HGT	16"

* INDICATES 40% GLYCOL SOLUTION BY VOLUME.
GLYCOL HAS BEEN ELIMINATED FROM THE HEATING WATER SYSTEM.

EXISTING WALL FIN TUBE TO REMAIN WHERE INDICATED ON PLANS. REPLACE THERMOSTATIC CONTROL VALVE. SELECT VALVE TO MATCH ORIGINALLY SCHEDULED VALUES. HW THERMOSTATIC CONTROL VALVE FURNISHED BY CONTROLS CONTRACTOR AND INSTALLED BY MECHANICAL CONTRACTOR.

THESE ORIGINAL CONSTRUCTION DOCUMENTS FROM THE 1993 BUILDING CONSTRUCTION AND 2001 ADDITION ARE BEING PROVIDED AS A SUPPLEMENT TO THE 2026 KEYSTONE REGIONAL YOUTH CENTER RENOVATION DESIGN DRAWINGS AS A REFERENCE FOR EXISTING CONDITIONS THAT ARE NOT SHOWN ON THE PROPOSED DESIGN DRAWINGS. REFER TO THE NOTES INDICATED IN RED ON THESE DRAWINGS FOR SCOPE NOT INDICATED ON THE PROPOSED DESIGN DRAWINGS.

NOTES:

1. FOR LEGEND AND ABBREVIATIONS SEE DWG NO. M-1.
2. FANS F-7,8,9 SHALL BE PROVIDED WITH REMOVABLE DELUXE FACE GRILLE, WALL CAP WC-10, DAMPER AND ADJUSTABLE MOUNTING FLANGES, BY PENN VENTILATOR OR APPROVED EQUAL.

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BERKS YOUTH CENTER
TOWNSHIP OF BERN
COUNTY OF BERKS, PENNSYLVANIA

No.	Date	Issue or Revision

Drawing Title: SCHEDULES

Scale: AS NOTED	Project No.: 93003
Datum Elev.	
Dwg. Date: 8-13-93	Drawing No.: M-10
Drawn By: G.COOPER	
Chkd. By: B.KLINE	Sheet No.: 46 of 65

LEGEND

NOTE: NOT ALL SYMBOLS INDICATED MAY APPEAR ON THESE CONTRACT DRAWINGS

MISCELLANEOUS SYMBOLS

SYMBOL	DESCRIPTION
	EXISTING BACKGROUND
	NEW CONNECTION TO EXISTING
T	THERMOSTAT
H	HUMIDISTAT
S	SWITCH
XX	SHEET NOTE (NUMBER), APPLIES ONLY ON THE SHEET IT APPEARS ON
XX	COORDINATION POINT BETWEEN FLOOR PLANS AND DIAGRAMS (NUMBER)
X	DEMOLITION NOTE (NUMBER)
	PLENUM LIGHT
	DIRECTION OF VIEW
	SECTION NUMBER
	DRAWING ON WHICH SECTION OR DETAIL IS SHOWN
	DETAIL OR SECTION NUMBER
	DRAWING FROM WHICH SECTION OR DETAIL IS TAKEN
XXX	EQUIPMENT SYMBOL (SEE SCHEDULE)
XXXX	EQUIPMENT IDENTITY ABBREVIATION
	EQUIPMENT REFERENCE NUMBER
	SYSTEM NUMBER IF APPLICABLE

DUCTWORK SYMBOLS

DOUBLE LINE	DESCRIPTION	SINGLE LINE
	EXISTING TO REMAIN	
	EXISTING TO BE REMOVED	
	NEW WORK	
SA	SUPPLY AIR UP	SA
SA	SUPPLY AIR DOWN	SA
RA	EXHAUST OR RETURN AIR UP	RA
RA	EXHAUST OR RETURN AIR DOWN	RA
	ROUND DUCT UP	
	ROUND DUCT DOWN	
24x36	RECTANGULAR DUCT SIZE (FIRST FIGURE–SIDE SHOWN)	24x36
36x14ø	FLAT OVAL DUCT SIZE (FIRST FIGURE–SIDE SHOWN)	36x14ø
	DIRECTION OF FLOW	
UP DN	DUCT INCLINED RISE OR DROP IN DIRECTION OF FLOW	UP DN
	90° ELBOW WITH TURNING VANES	
	45°ELBOW (NO VANES)	
	SUPPLY OR RETURN BRANCH CONNECTION	
	SUPPLY BRANCH WITH SPLITTER DAMPER	
	SUPPLY BRANCH WITH AIR EXTRACTOR	
	SUPPLY BRANCH WITH SPIN COLLAR CONNECTION	
	LATERAL CONNECTION ROUND DUCTWORK	
	CONICAL TEE ROUND DUCTWORK	

DOUBLE LINE	DESCRIPTION	SINGLE LINE
TYPE CFM SIZE	DIFFUSER (D) IF SIZE IS NOT LISTED SEE SCHEDULE	TYPE CFM SIZE
TYPE CFM SIZE	EXHAUST OR RETURN REGISTER (R) GRILLE (G) IF SIZE IS NOT LISTED SEE SCHEDULE	TYPE CFM SIZE
AD	AUTOMATIC DAMPER	AD
BD	BALANCING DAMPER	BD
BDD	BACK DRAFT DAMPER	BDD
SD	SMOKE DAMPER WITH ACCESS DOOR	SD
FD	FIRE DAMPER WITH ACCESS DOOR	FD
FSD	COMBINATION FIRE & SMOKE DAMPER WITH ACCESS DOOR	FSD
T	DUCT TEMPERATURE SENSOR	T
H	DUCT HUMIDITY SENSOR	H
SDT	DUCT SMOKE DETECTOR	SDT
ADR	ACCESS DOOR	ADR
	FLEXIBLE CONNECTION	
AFS	AIR FLOW STATION	AFS
	FLEXIBLE DUCTWORK	
	DUCT PRESSURE CLASS DESIGNATION – OMIT IF DUCT MATERIALS AND CONSTRUCTION SCHEDULE IS USED	
SP	SECURITY PENETRATION	SP

PIPING SYMBOLS

SYMBOL	DESCRIPTION
	GATE VALVE
	GLOBE VALVE
	CHECK VALVE
	BALANCING VALVE
	BALL VALVE
	ANGLE GATE VALVE
S	RELIEF OR SAFETY VALVE
S	SOLENOID VALVE
T	THERMAL EXPANSION VALVE
	BACK PRESSURE VALVE
	BUTTERFLY VALVE
	BUTTERFLY CONTROL VALVE
	2–WAY CONTROL VALVE
	3–WAY CONTROL VALVE
	PRESSURE REDUCING VALVE
	UNION
	STRAINER
	STRAINER W/BLOW–OFF & CAP
	FLOW SENSOR
	SIGHT GLASS
	PIPE GUIDE
	PIPE ANCHOR
	FLEXIBLE CONNECTOR
	EXPASION JOINT
	THERMOMETER
	PRESSURE GAGE W/COCK
	AIR VENT W/COCK
	FLOAT AND THERMOSTATIC TRAP
	BUCKET TRAP

SYMBOL	DESCRIPTION
	EXISTING TO REMAIN
	EXISTING TO BE REMOVED
	NEW WORK
	DIRECTION OF FLOW
	DIRECTION OF PITCH
BBD	BOILER BLOWDOWN – CONTINUOUS
BF	BOILER FEED WATER
CA	COMPRESSED AIR
CF	CHEMICAL FEED
DCHS	DEDICATED CHILLED WATER SUPPLY
DCHR	DEDICATED CHILLED WATER RETURN
HCHS	HOUSE CHILLED WATER SUPPLY
HCHR	HOUSE CHILLED WATER RETURN
D	CONDENSATE DRAIN OR DRAIN
FOR	FUEL OIL RETURN
FOS	FUEL OIL SUPPLY
FOV	FUEL OIL TANK VENT
GWR	GLYCOL WATER RETURN
GWS	GLYCOL WATER SUPPLY
HC	HOT GAS
HPR	HIGH PRESSURE CONDENSATE RETURN
HPS	HIGH PRESSURE STEAM SUPPLY
HWR	HEATING WATER RETURN
HWS	HEATING WATER SUPPLY
LPCS	LOW PRESSURE CLEAN STEAM
LPR	LOW PRESSURE CONDENSATE RETURN
LPS	LOW PRESSURE STEAM SUPPLY
MPR	MEDIUM PRESSURE CONDENSATE RETURN
MPS	MEDIUM PRESSURE STEAM SUPPLY
MU	MAKE UP WATER
PCR	PUMPED CONDENSATE RETURN
RL	REFRIGERANT LIQUID
RS	REFRIGERANT SUCTION
V	VENT LINE
	CONCENTRIC REDUCER
	ECCENTRIC REDUCER
	ELBOW – UP
	ELBOW – DOWN
	BOTTOM TAKE–OFF
	TOP TAKE–OFF

CONTROL DIAGRAM SYMBOLS

SYMBOL	DESCRIPTION
AC INV	AC INVERTER
AFS	AIRFLOW STATION
AMS	AIR MEASURING STATION
DO	DAMPER OPERATOR
DPS	DIFFERENTIAL PRESSURE SWITCH
DPT	DIFFERENTIAL PRESSURE TRANSMITTER
EP	ELECTRIC – PNEUMATIC SWITCH
ES	END SWITCH
FS	FLOW SWITCH
FT	FLOW TRANSMITTER
FZ	FREEZESTAT
H	HUMIDIFIER
H	HUMIDITY SENSOR
HL	HIGH LIMIT SWITCH
HC	HUMIDITY CONTROLLER
HOA	HAND–OFF–AUTOMATIC SWITCH
MS H O A	COMBINED MOTOR STARTER AND HAND–OFF–AUTOMATIC SWITCH
M	MOTOR
MS	MOTOR STARTER
NC	NORMALLY CLOSED
NO	NORMALLY OPEN
P	PRESSURE SENSOR
PC	PRESSURE CONTROLLER
PE	PNEUMATIC – ELECTRIC SWITCH
PT	PRESSURE TRANSMITTER
R	RELAY
SDT	SMOKE DETECTOR
SP	STATIC PRESSURE W/ PITOT TUBE
SPT	STATIC PRESSURE TRANSMITTER
SR	SWITCHING RELAY
SS	SIGNAL SELECTOR
T	TEMPERATURE SENSOR
T	TEMPERATURE SENSOR W/ BULB
TC	TEMPERATURE CONTROLLER
TDR	TIME DELAY RELAY
VSD	VARIABLE SPEED DRIVE
VP	VELOCITY PRESSURE SENSOR
VC	VOLUME CONTROLLER
VT	VOLUME TRANSMITTER
	REFERENCE STATIC PRESSURE
	GAGE
	LIGHT
	ON–OFF SWITCH
	3 POSITION SWITCH
ATC	AUTOMATIC TEMPERATURE CONTROL PANEL
	CRT DISPLAY
	PC WITH PRINTER
M	MAIN AIR
H	HUMIDISTAT
T	THERMOSTAT

ABBREVIATIONS

NOTE: NOT ALL ABBREVIATIONS INDICATED MAY APPEAR ON THESE CONTRACT DRAWINGS

A	ANCHOR
AC	AIR CONDITIONING
AD	AUTOMATIC DAMPER
ADR	ACCESS DOOR
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AL	ALUMINUM
AMB	AMBIENT
AMP	AMPERE
AP	ACCESS PANEL
APPROX	APPROXIMATE
ARR	ARRANGEMENT
ATC	AUTOMATIC TEMPERATURE CONTROL
AUTO	AUTOMATIC
AUX	AUXILIARY
AV	AIR VENT
AVG	AVERAGE
BBD	BOILER BLOW DOWN
BD	BALANCING DAMPER
BDD	BACK DRAFT DAMPER
BF	BOILER FEED
BFW	BOILER FEED WATER
BHP	BOILER HORSEPOWER OR BRAKE HORSEPOWER
BI	BLACK IRON
BOD	BOTTOM OF DUCT
BOP	BOTTOM OF PIPE
BOT	BOTTOM
BP	BACK PRESSURE
BSMT	BASEMENT
BT	BUCKET TRAP
BTU	BRITISH THERMAL UNIT
C TO C	CENTER TO CENTER
CA	COMPRESSED AIR
CAP	CAPACITY
CF	CHEMICAL FEED
CFM	CUBIC FOOT (FEET) PER MINUTE
CH	CHILLED WATER
CHR	CHILLED WATER RETURN
CHS	CHILLED WATER SUPPLY
CI	CAST IRON
CIR	CIRCLE
CL	CENTER LINE
COMP	COMPRESSOR
CNDS	CONDENSATE
CO	CLEANOUT
COL	COLUMN
CONC	CONCRETE OR CONCENTRIC
CONN	CONNECT OR CONNECTION
CONT	CONTINUATION
CWR	CONDENSER WATER RETURN
CWS	CONDENSER WATER SUPPLY
CTR	CENTER
CU FT	CUBIC FOOT (FEET)
D	DRAIN OR DEEP
DB	DRY BULB
DDC	DIGITALLY DIRECTED CONTROL
DEG	DEGREE
DET	DETAIL
DGTL	DIGITAL
DIA,ø	DIAMETER
DISC	DISCONNECT
DN	DOWN
DWG	DRAWING
EA	EACH
EAT	ENTERING AIR TEMPERATURE
EDR	EQUIVALENT DIRECT RADIATION
EER	ENERGY EFFICIENCY RATIO
EFF	EFFICIENCY
EJ	EXPANSION JOINT
EL	ELEVATION
ELEC	ELECTRICAL
ELL	ELBOW
ENT	ENTERING
ESP	EXTERNAL STATIC PRESSURE
EVAP	EVAPORATOR
EWT	ENTERING WATER TEMPRATURE
EXH	EXHAUST
EXP	EXPANSION
EXT	EXTERNAL
F&T	FLOAT & THERMOSTATIC
FC	FLEXIBLE CONNECTOR / FLEXIBLE CONNECTION
FD	FIRE DAMPER WITH ACCESS DOOR
FDW	FEED WATER
FL	FLOOR
FLA	FULL LOAD AMPS
FO	FUEL OIL
FOB	FLAT ON BOTTOM
FOG	FUEL OIL GAGE
FOR	FUEL OIL RETURN
FOS	FUEL OIL SUPPLY
FOT	FLAT ON TOP
FOV	FUEL OIL VENT
FPM	FOOT (FEET) PER MINUTE
FPS	FOOT (FEET) PER SECOND
FS	FLOW SWITCH
FSD	COMBINATION FIRE AND SMOKE DAMPER WITH ACCESS DOOR
FT	FOOT (FEET)
G	GUIDE
GA	GAGE
GAL	GALLONS
GALV	GALVANIZED
GND	GROUND
GPH	GALLONS PER HOUR
GPM	GALLONS PER MINUTE
GPS	GALLONS PER SECOND
GR	GRAIN
GWR	GLYCOL WATER RETURN
GWS	GLYCOL WATER SUPPLY
HD	HEAD
HG	HOT GAS
HGT	HEIGHT
HTD	HEATED
HTR	HEATER
HMD	HUMIDITY
HORIZ	HORIZONTAL
HP	HORSEPOWER
HPR	HIGH PRESSURE CONDENSATE RETURN
HPS	HIGH PRESSURE STEAM SUPPLY
HW	HEATING WATER
HWR	HEATING WATER RETURN
HWS	HEATING WATER SUPPLY
Hz	HERTZ
INSUL	INSULATION
INTL	INTERNAL
LAT	LEAVING AIR TEMPERATURE
LBS	POUNDS
LIN	LINEAL
LP	LOW PRESSURE
LPCS	LOW PRESSURE CLEAN STEAM
LPR	LOW PRESSURE CONDENSATE RETURN
LPS	LOW PRESSURE STEAM
LRA	LOCKED ROTOR AMPS
LVL	LEVEL
LVR	LOUVER
LWT	LEAVING WATER TEMPERATURE
MAN	MANUAL
MAX	MAXIMUM
MBH	THOUSAND BRITISH THERMAL UNITS PER HOUR
MU	MAKEUP
MI	MALLEABLE IRON
MIN	MINIMUM
MOD	MODEL
MOUNT	MOUNTING
MTD	MOUNTED
MPR	MEDIUM PRESSURE CONDENSATE RETURN
MPS	MEDIUM PRESSURE STEAM SUPPLY
NA	NOT APPLICABLE
NC	NORMALLY CLOSED
NEG	NEGATIVE
NIC	NOT IN CONTRACT
NO	NORMALLY OPEN
NTS	NOT TO SCALE
OA	OUTSIDE AIR
OED	OPEN END DUCT
OF	OVERFLOW
OFCI	OWNER FURNISHED CONTRACTOR INSTALLED
OV	OUTLET VELOCITY
PCR	PUMPED CONDENSATE RETURN
PD	PRESSURE DROP
PG	PRESSURE GAGE
PL	PLATE
PNEU	PNEUMATIC
PRESS	PRESSURE
PROP	PROPELLER
PSIG	POUNDS PER SQUARE INCH GAGE
QTY	QUANTITY
RECOV	RECOVERY
REF	REFERENCE
REQD	REQUIRED
REV	REVISION
RL	REFRIGERANT LIQUID
RM	ROOM
RS	REFRIGERANT SUCTION
RTN	RETURN
S	SWITCH
SCHED	SCHEDULE
SD	SMOKE DAMPER WITH ACCESS DOOR
SENS	SENSIBLE
SEP	SEPARATE
SEQ	SEQUENCE
SER	SERIES
SERV	SERVICE
SH	SHEET
SOL	SOLENOID
SP	STATIC PRESSURE OR SECURITY PENETRATION
SST	STAINLESS STEEL
STL	STEEL
SUCT	SUCTION
SUP	SUPPLY
TD	TEMPERATURE DIFFERENTIAL
TEMP	TEMPERATURE
TH	THERMOMETER
THK	THICK
TSP	TOTAL STATIC PRESSURE
V	VENT OR VOLT
VAC	VACUUM
VAV	VARIABLE AIR VOLUME
VB	VACUUM BREAKER
VEL	VELOCITY
VERT	VERTICAL
VIB	VIBRATION
VOL	VOLUME
VSD	VARIABLE SPEED DRIVE
VTR	VENT THRU ROOF
W	WATT, WIDTH OR WIDE
W/	WITH
WB	WET BULB
WMS	WIRE MESH SCREEN

EQUIPMENT ABBREVIATIONS

XXX – EQUIPMENT SYMBOL (SEE SCHEDULE)
XXXX – EQUIPMENT IDENTITY ABBREVIATION
XXXX – EQUIPMENT REFERENCE NUMBER
SYSTEM NUMBER IF APPLICABLE

NOTE: NOT ALL EQUIPMENT INDICATED MAY APPEAR ON THESE CONTRACT DRAWINGS

ACC	AIR COOLED CONDENSER
ACCU	AIR COOLED CONDENSING UNIT
ACU	PACKAGED AIR CONDITIONING UNIT
AFM	TERMINAL AIR FLOW MODULE
AFS	AIR FLOW STATION
AHU	AIR HANDLING UNIT
B	BOILER
BFP	BOILER FEED PUMP
BFS	BOILER FEED SET
C	CONVECTOR
CC	COOLING COIL
CF	CHARCOAL FILTER
CFP	CHEMICAL FEED PUMP
CFU	CHEMICAL FEED UNIT
CH	CHILLER
CHP	CHILLED WATER PUMP
CP	CONDENSATE PUMP
CRAC	COMPUTER ROOM AIR CONDITIONING UNIT
CSG	CLEAN STEAM GENERATOR
CT	COOLING TOWER
DA	DEAERATOR
DAC	DOOR AIR CURTAIN
DC	DUCT COIL
DEH	DEHUMIDIFIER
DUC	DUST COLLECTOR
EUH	ELECTRIC UNIT HEATER
ET	EXPANSION TANK
F	FAN
FCU	FAN COIL UNIT
FM	FLOW METER
FMB	FILTER MIXING BOX
FOP	FUEL OIL PUMP
FT	FLASH TANK
GC	GLYCOL COOLER
H	HUMIDIFIER
HC	HEATING COIL
HE	HEAT EXCHANGER
HEF	HIGH EFFICIENCY FILTER
HEPA	HIGH EFFICIENCY PARTICULATE AIR FILTER
HP	HEAT PUMP
HRC	HEAT RECOVERY COIL
HRU	HEAT RECOVERY UNIT
HV	HEATING & VENTILATING UNIT
LFM	LAMINAR FLOW MODULE
MB	MIXING BOX
MAH	MAKE–UP AIR HEATER
OAI	OUTSIDE AIR INTAKE
P	PUMP
PF	PRE–FILTER
PHC	PREHEAT COIL
PRV	PRESSURE REDUCING VALVE
PSG	PURE STEAM GENERATOR
PTAC	PACKAGED TERMINAL AIR CONDITIONER
RV	RELIEF VALVE
SC	STEAM COIL
UH	UNIT HEATER
V	VARIABLE AIR VOLUME BOX
VF	VARIABLE AIR VOLUME BOX –FAN POWERED
WF	WALL FIN RADIATION

THESE ORIGINAL CONSTRUCTION DOCUMENTS FROM THE 1993 BUILDING CONSTRUCTION AND 2001 ADDITION ARE BEING PROVIDED AS A SUPPLEMENT TO THE 2026 KEYSTONE REGIONAL YOUTH CENTER RENOVATION DESIGN DRAWINGS AS A REFERENCE FOR EXISTING CONDITIONS THAT ARE NOT SHOWN ON THE PROPOSED DESIGN DRAWINGS. REFER TO THE NOTES INDICATED IN RED ON THESE DRAWINGS FOR SCOPE NOT INDICATED ON THE PROPOSED DESIGN DRAWINGS.

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ADDITIONS AND RENOVATIONS TO BERKS COUNTY YOUTH CENTER
TOWNSHIP OF BERN, COUNTY OF BERKS, PENNSYLVANIA

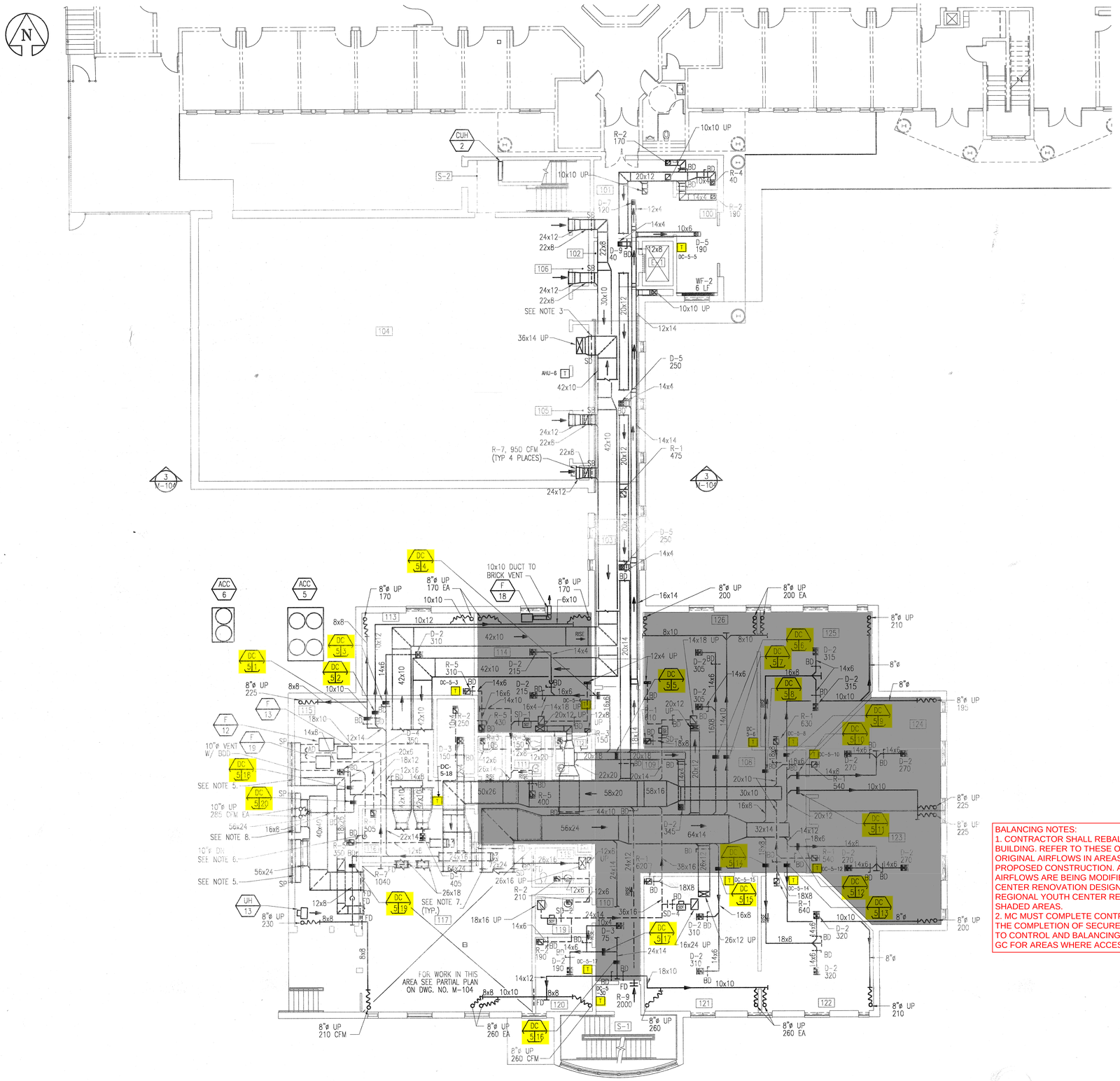
No.	Date	Issue or Revision

Drawing Title

MECHANICAL

LEGEND AND ABBREVIATIONS

Scale: NO SCALE	Project No.: 2000-100
Datum Elev.	
Dwg. Date: 03/11/01	Drawing No.: M-001
Drawn By: RBS	
Chkd. By: JSC	Sheet No. of



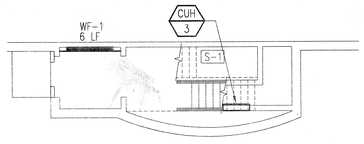
FIRST FLOOR DUCTWORK PLAN
SCALE: 1/8"=1'-0"

NOTES

1. FOR LEGEND AND ABBREVIATIONS SEE DRAWING NO. M-001.
2. FOR DUCT COIL ARRANGEMENT DETAIL SEE DWG. NO. M-500.
3. SMOKE DAMPER (SD) USED IN SMOKE EVACUATION SYSTEM. REFER TO AHU-5 AND AHU-6 & ASSOCIATED RETURN FAN CONTROL DIAGRAM ON DRAWING M-502.
4. TEMPERATURE SENSOR SHALL BE MOUNTED 5'-0" AFF METAL SECURITY PLATE.
5. PROVIDE PLENUM SIZED TO MATCH 7'-8"W x 2'-4"H x 18"D LOUVER W/ BIRDSCREEN. CONNECT FAN DISCHARGE TO PLENUM. FOR LOUVER SIZE, LOCATION AND CONFIGURATION SEE ARCH. DWGS.
6. PROVIDE 10"ø DRYER VENT DUCT WITH BACKDRAFT DAMPER DOWN IN LAUNDRY ROOM TO BEHIND NEW DRYER.
7. PROVIDE ACOUSTICAL DUCT LINING AS SHOWN.
8. PROVIDE PLENUM SIZED TO MATCH 7'W x 2'-4"H x 18"D LOUVER W/ BIRDSCREEN. CONNECT FAN DISCHARGE TO PLENUM. FOR LOUVER SIZE, LOCATION AND CONFIGURATION SEE ARCH. DWGS.

BALANCING NOTES:
1. CONTRACTOR SHALL REBALANCE AIRFLOWS THROUGHOUT THE ENTIRE BUILDING. REFER TO THESE ORIGINAL CONSTRUCTION DRAWINGS FOR THE ORIGINAL AIRFLOWS IN AREAS WHERE THEY ARE NOT BEING MODIFIED BY THE PROPOSED CONSTRUCTION. AREAS SHADED IN GRAY INDICATE AREAS WHERE AIRFLOWS ARE BEING MODIFIED BY THE 2026 KEYSTONE REGIONAL YOUTH CENTER RENOVATION DESIGN DRAWINGS. REFER TO THE 2026 KEYSTONE REGIONAL YOUTH CENTER RENOVATION DESIGN DRAWINGS FOR AIRFLOWS IN SHADED AREAS.
2. MC MUST COMPLETE CONTROLS INSTALLATION AND BALANCING PRIOR TO THE COMPLETION OF SECURE OR INACCESSIBLE CEILINGS TO ENSURE ACCESS TO CONTROL AND BALANCING DEVICES ABOVE CEILINGS. COORDINATE WITH GC FOR AREAS WHERE ACCESS IS NEEDED.

DUCT COIL NOTES:
1. MECHANICAL CONTRACTOR SHALL REMOVE THE EXISTING DUCT COILS, CLEAN THE FINS OF ANY DIRT OR DEBRIS, AND REINSTALL THE DUCT COILS BACK IN THE EXISTING DUCTWORK. REPLACE ANY INSULATION THAT NEEDED TO BE REMOVED TO ACCESS THE DUCT COILS.
2. ACCESS PANELS WILL BE REQUIRED WHERE DUCT COILS ARE LOCATED ABOVE SECURE OR RIGID CEILINGS FOR FUTURE MAINTENANCE OF CONTROL VALVES. CORDINATE WITH ARCHITECTURAL DRAWINGS OF THE 2026 KEYSTONE REGIONAL YOUTH CENTER RENOVATION DESIGN DRAWINGS TO DETERMINE QUANTITY AND LOCATION OF ACCESS PANELS. MECHANICAL CONTRACTOR SHALL IDENTIFY LOCATIONS OF ACCESS PANELS. GENERAL CONTRACTOR SHALL PROVIDE AND INSTALL ACCESS PANELS. ACCESS PANELS SHOULD BE 2'x2' SQUARE.



PARTIAL GROUND FLOOR PLAN
SCALE: 1/8"=1'-0"

THESE ORIGINAL CONSTRUCTION DOCUMENTS FROM THE 1993 BUILDING CONSTRUCTION AND 2001 ADDITION ARE BEING PROVIDED AS A SUPPLEMENT TO THE 2026 KEYSTONE REGIONAL YOUTH CENTER RENOVATION DESIGN DRAWINGS AS A REFERENCE FOR EXISTING CONDITIONS THAT ARE NOT SHOWN ON THE PROPOSED DESIGN DRAWINGS. REFER TO THE NOTES INDICATED IN RED ON THESE DRAWINGS FOR SCOPE NOT INDICATED ON THE PROPOSED DESIGN DRAWINGS.

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ADDITIONS AND RENOVATIONS TO
BERKS COUNTY YOUTH CENTER
TOWNSHIP OF BERN, COUNTY OF BERKS, PENNSYLVANIA

No.	Date	Issue or Revision

Drawing Title
MECHANICAL
FIRST FLOOR DUCTWORK PLAN

Scale: AS NOTED	Project No.: 2000-100
Datum Elev.	
Dwg. Date: 09/11/01	Drawing No.: M-100
Drawn By: RBS	
Chkd. By: JSC	Sheet No. of

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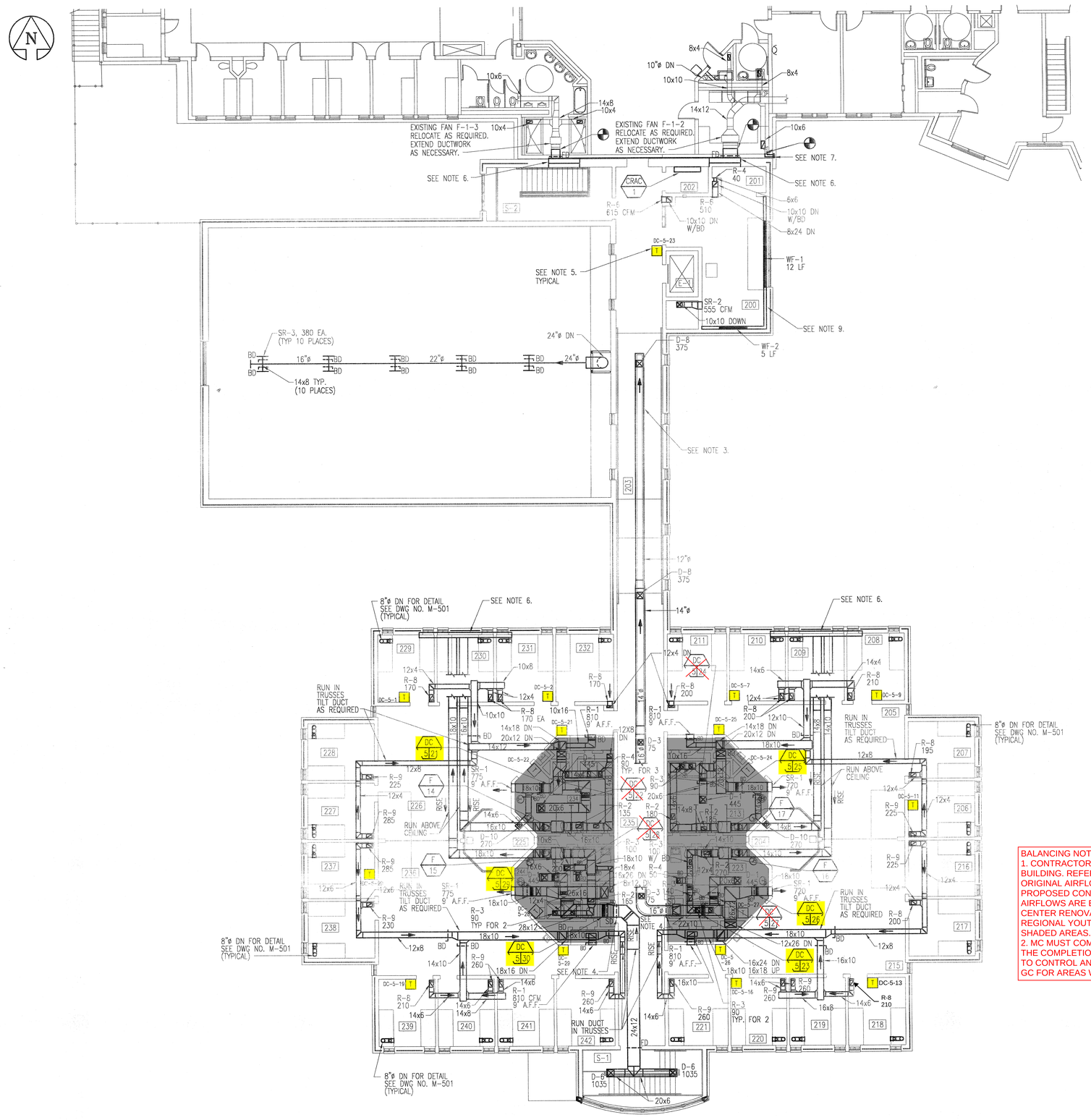
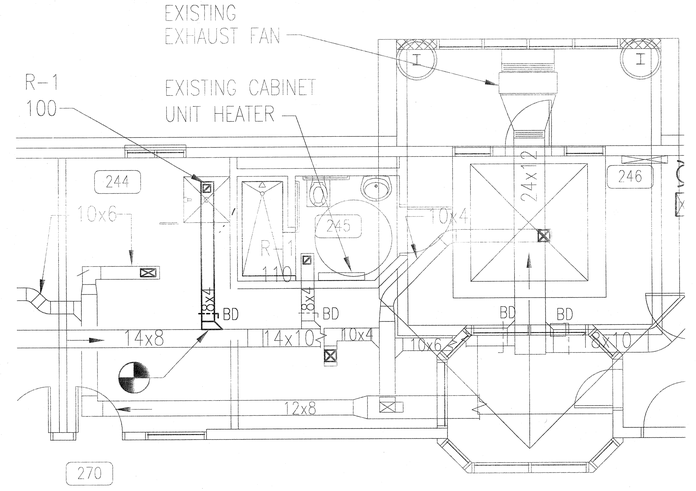


SECOND FLOOR DUCTWORK PLAN
SCALE: 1/8" = 1' - 0"



SECOND FLOOR DUCTWORK PLAN – EXISTING BUILIDNG
SCALE: 1/4" = 1' - 0"

NOTES

1. FOR LEGEND AND ABBREVIATIONS SEE DRAWING NO M-001.
2. FOR DUCT COIL ARRANGEMENT DETAIL SEE DWG. NO. M-500.
3. EXPOSED ROUND DUCTWORK SHALL BE 18 GAGE, SPIRAL WOUND LINED DUCTWORK. DUCTWORK SHALL BE PAINTED TO ARCHITECTURAL SPECIFICATIONS. DUCT DIMENSIONS INDICATE NET INSIDE DIMENSION REQUIRED FOR AIR FLOW. INCREASE DUCTWORK DIAMETER TO ALLOW FOR INTERIOR LINER THICKNESS.
4. SMOKE DAMPER (SD) USED IN SMOKE EVACUATION SYSTEM. REFER TO AHU-5 AND AHU-6 & ASSOCIATED RETURN FAN CONTROL DIAGRAM ON DRAWING M-502.
5. TEMPERATURE SENSOR SHALL BE MOUNTED 5'-0" AFF WITH METAL SECURITY COVER.
6. PROVIDE PLENUM SIZED TO MATCH TRIANGULAR 17'-2" W x 4'-6" H LOUVER W/ BIRDSCREEN. CONNECT FAN DISCHARGE TO PLENUM. RECONFIGURE DUCTWORK AS REQUIRED TO ATTACH TO NEW EXHAUST LOUVER. FOR LOUVER SIZE, LOCATION AND CONFIGURATION SEE ARCHITECTURAL DRAWINGS.
7. REMOVE EXISTING 4"ø DRYER VENT DUCT BACK TO POINT INDICATED. RUN TO NEW DRYER SOFFIT VENT WITH BDD.
8. ALL DUCTWORK PENETRATING THE FLOOR (EXCLUDING RETURN/SMOKE EVACUATION DUCTWORK) SHALL CONTAIN A HORIZONTAL FIRE DAMPER. SEE DWG. NO. M-501 FOR FIRE DAMPER DETAIL.
9. RUN PIPING IN CONTINUOUS ENCLOSURE TO MATCH WALL FIN.

BALANCING NOTES:
1. CONTRACTOR SHALL REBALANCE AIRFLOWS THROUGHOUT THE ENTIRE BUILDING. REFER TO THESE ORIGINAL CONSTRUCTION DRAWINGS FOR THE ORIGINAL AIRFLOWS IN AREAS WHERE THEY ARE NOT BEING MODIFIED BY THE PROPOSED CONSTRUCTION. AREAS SHADED IN GRAY INDICATE AREAS WHERE AIRFLOWS ARE BEING MODIFIED BY THE 2026 KEYSTONE REGIONAL YOUTH CENTER RENOVATION DESIGN DRAWINGS. REFER TO THE 2026 KEYSTONE REGIONAL YOUTH CENTER RENOVATION DESIGN DRAWINGS FOR AIRFLOWS IN SHADED AREAS.
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ADDITIONS AND RENOVATIONS TO BERKS COUNTY YOUTH CENTER
TOWNSHIP OF BERN, COUNTY OF BERKS, PENNSYLVANIA

No.	Date	Issue or Revision

Drawing Title

MECHANICAL

SECOND FLOOR DUCTWORK PLAN

Scale: AS NOTED	Project No.: 2000-100
Datum Elev.	
Dwg. Date: 09/11/01	Drawing No.: M-101
Drawn By: RBS	
Chkd. By: JSC	Sheet No. of

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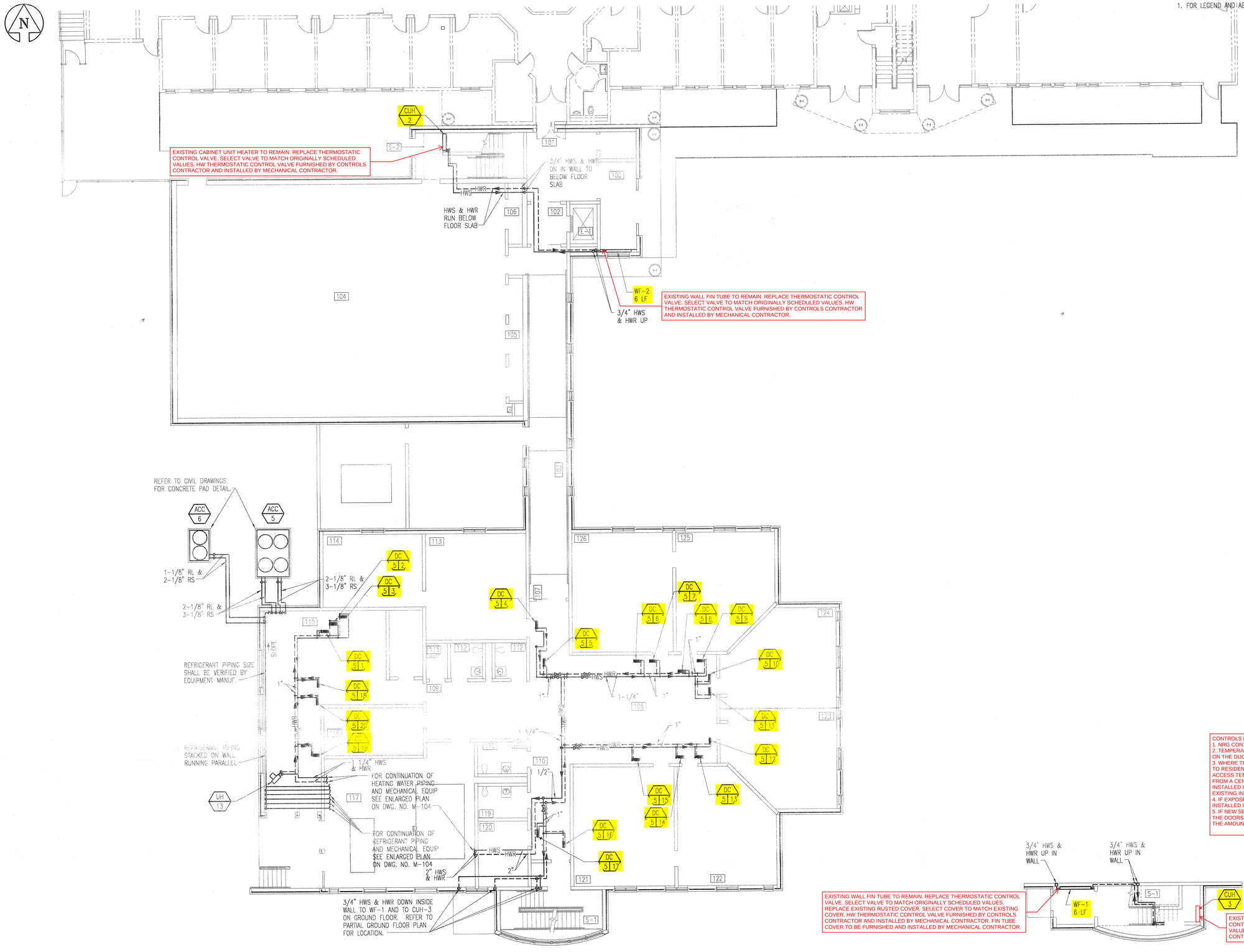
NOTES

1. FOR LEGEND AND ABBREVIATIONS SEE DRAWING NO. M-001.



FIRST FLOOR PIPING PLAN

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

EXISTING WALL FIN TUBE TO REMAIN. REPLACE THERMOSTATIC CONTROL VALVE. SELECT VALVE TO MATCH ORIGINALLY SCHEDULED VALUES. REPLACE EXISTING RUSTED COVER. SELECT COVER TO MATCH EXISTING COVER. HW THERMOSTATIC CONTROL VALVE FURNISHED BY CONTROLS CONTRACTOR AND INSTALLED BY MECHANICAL CONTRACTOR. FIN TUBE COVER TO BE FURNISHED AND INSTALLED BY MECHANICAL CONTRACTOR.

EXISTING CABINET UNIT HEATER TO REMAIN. REPLACE THERMOSTATIC CONTROL VALVE. SELECT VALVE TO MATCH ORIGINALLY SCHEDULED VALUES. HW THERMOSTATIC CONTROL VALVE FURNISHED BY CONTROLS CONTRACTOR AND INSTALLED BY MECHANICAL CONTRACTOR.

PARTIAL GROUND PIPING FLOOR PLAN

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

CONTROLS NOTES:
1. NRG CONTROLS IS THE COUNTY'S PREFERRED CONTROLS CONTRACTOR.
2. TEMPERATURE SENSORS SERVING DUCT REHEAT COILS ARE INDICATED ON THE DUCTWORK DRAWINGS.
3. WHERE TEMPERATURE SENSORS ARE REQUIRED IN AREAS ACCESSIBLE TO RESIDENTS, CONTROLS CONTRACTOR SHALL PROVIDE FLAT PLATE NO ACCESS TEMPERATURE SENSORS WHICH CAN HAVE SETPOINTS ADJUSTED FROM A CENTRAL CONTROL LOCATION. TEMPERATURE SENSORS WILL BE INSTALLED IN THE SAME LOCATIONS AS EXISTING T-STATS TO UTILIZE EXISTING IN WALL WIRE PATHWAYS. EXPOSED CONDUIT WILL BE AVOIDED.
4. IF EXPOSED CONDUIT OR SENSORS ARE NECESSARY, THEY WILL BE INSTALLED IN TAMPER PROOF ENCLOSURES.
5. IF NEW SENSORS ARE REQUIRED, THEY CAN BE INSTALLED ADJACENT TO THE DOORS IN ORDER TO UTILIZE THE CHASE IN THE DOOR FRAME TO LIMIT THE AMOUNT OF WALL THAT IS CHANNELED.

THESE ORIGINAL CONSTRUCTION DOCUMENTS FROM THE 1993 BUILDING CONSTRUCTION AND 2001 ADDITION ARE BEING PROVIDED AS A SUPPLEMENT TO THE 2026 KEYSTONE REGIONAL YOUTH CENTER RENOVATION DESIGN DRAWINGS AS A REFERENCE FOR EXISTING CONDITIONS THAT ARE NOT SHOWN ON THE PROPOSED DESIGN DRAWINGS. REFER TO THE NOTES INDICATED IN RED ON THESE DRAWINGS FOR SCOPE NOT INDICATED ON THE PROPOSED DESIGN DRAWINGS.

1/8"=1'-0" 0 5' 10' 15' 20'

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ADDITIONS AND RENOVATIONS TO BERKS COUNTY YOUTH CENTER
TOWNSHIP OF BERN, COUNTY OF BERKS, PENNSYLVANIA

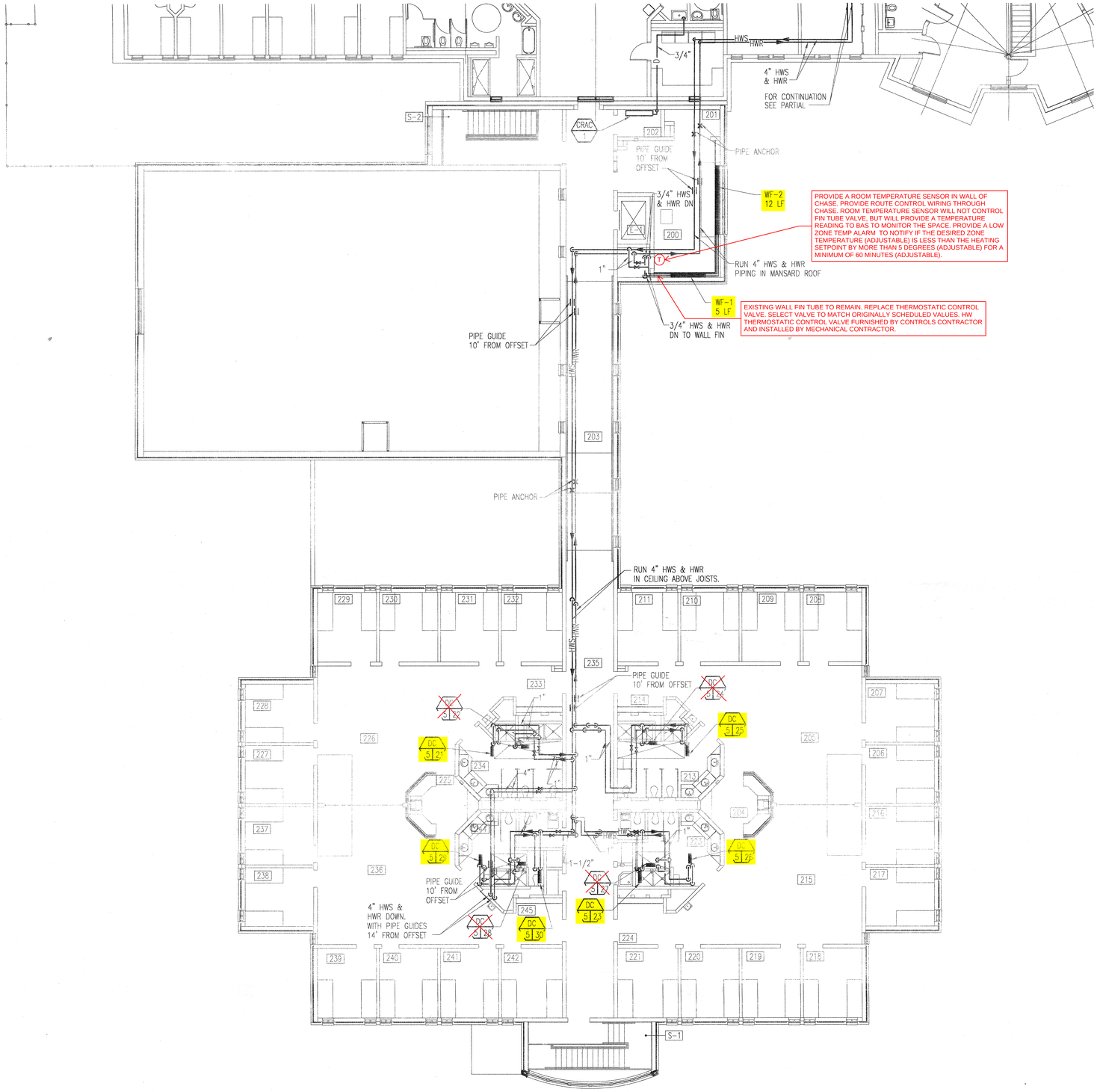
No.	Date	Issue or Revision

Drawing Title
MECHANICAL
FIRST FLOOR PIPING PLAN

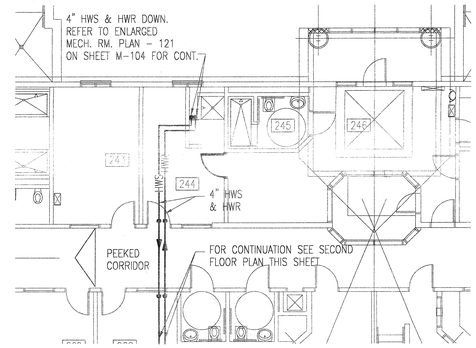
Scale: AS NOTED	Project No.: 2000-100
Datum Elev.: ---	
Dwg. Date: 09/11/01	Drawing No.: M-102
Drawn By: JWB	
Chkd. By: JSC	Sheet No. of: ---

NOTES

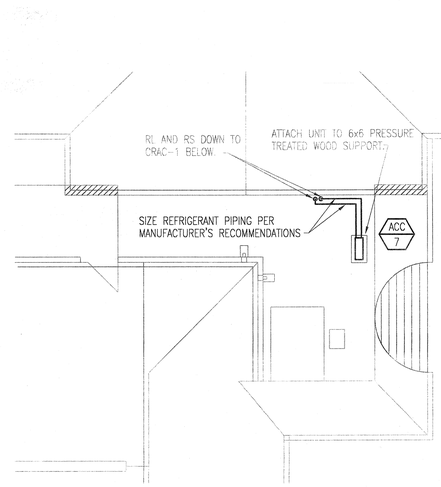
1. FOR LEGEND AND ABBREVIATIONS SEE DRAWING NO. M-001.
2. ALL HOT WATER PIPING TO BE 3/4" UNLESS OTHERWISE NOTED IN THE DRAWING.



SECOND FLOOR PIPING PLAN
SCALE: 1/8" = 1' - 0"



PARTIAL EXISTING SECOND FLOOR PIPING PLAN-(HEATING WATER CONNECTION)
SCALE: 1/8" = 1' - 0"



PARTIAL ROOF PIPING PLAN
SCALE: 1/8" = 1' - 0"

CONTROLS NOTES:
1. NRG CONTROLS IS THE COUNTY'S PREFERRED CONTROLS CONTRACTOR.
2. TEMPERATURE SENSORS SERVING DUCT REHEAT COILS ARE INDICATED ON THE DUCTWORK DRAWINGS.
3. WHERE TEMPERATURE SENSORS ARE REQUIRED IN AREAS ACCESSIBLE TO RESIDENTS, CONTROLS CONTRACTOR SHALL PROVIDE FLAT PLATE NO ACCESS TEMPERATURE SENSORS WHICH CAN HAVE SETPOINTS ADJUSTED FROM A CENTRAL CONTROL LOCATION. TEMPERATURE SENSORS WILL BE INSTALLED IN THE SAME LOCATIONS AS EXISTING T-STATS TO UTILIZE EXISTING IN WALL WIRE PATHWAYS. EXPOSED CONDUIT WILL BE AVOIDED.
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5. IF NEW SENSORS ARE REQUIRED, THEY CAN BE INSTALLED ADJACENT TO THE DOORS IN ORDER TO UTILIZE THE CHASE IN THE DOOR FRAME TO LIMIT THE AMOUNT OF WALL THAT IS CHANNELED.

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1/8"=1'-0" 0 5' 10' 15' 20'

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ADDITIONS AND RENOVATIONS TO
BERKS COUNTY YOUTH CENTER
TOWNSHIP OF BERN, COUNTY OF BERKS, PENNSYLVANIA

No.	Date	Issue or Revision

Drawing Title:
MECHANICAL
SECOND FLOOR PIPING PLAN

Scale: AS NOTED	Project No.: 2000-100
Datum Elev.: XXX	
Dwg. Date: 08/11/01	Drawing No.: M-103
Drawn By: JWB	
Chkd. By: JSC	Sheet No. of

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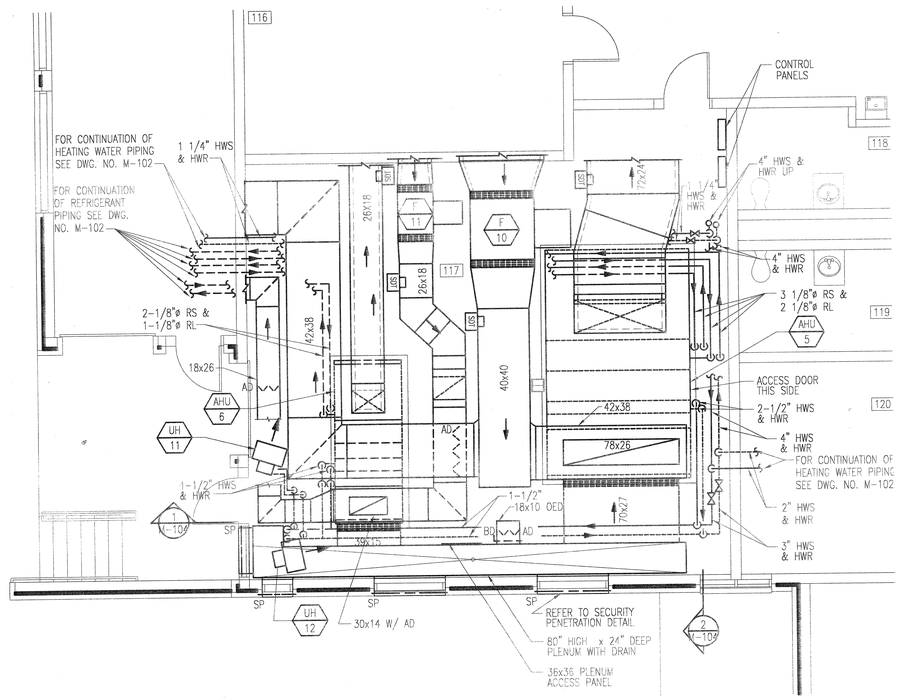

MECHANICAL ROOM 117 PLAN
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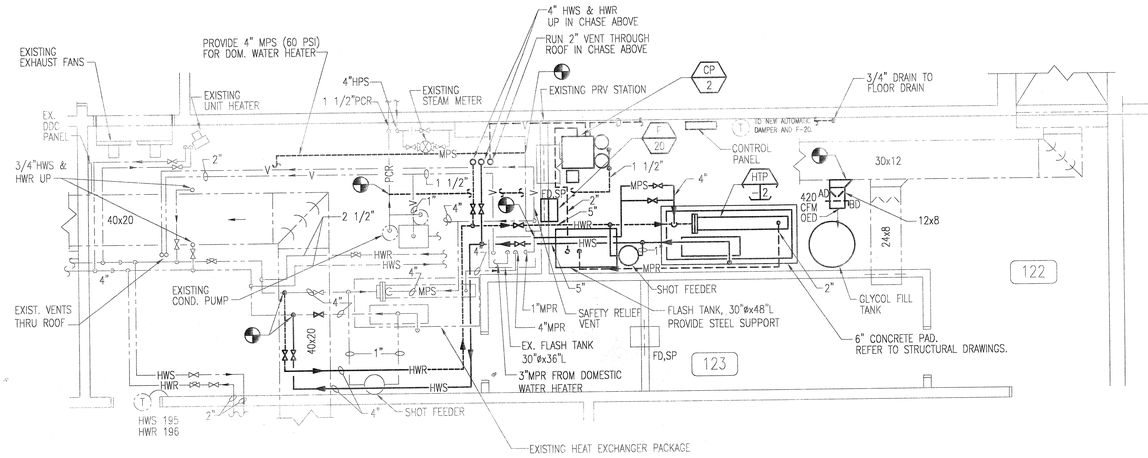
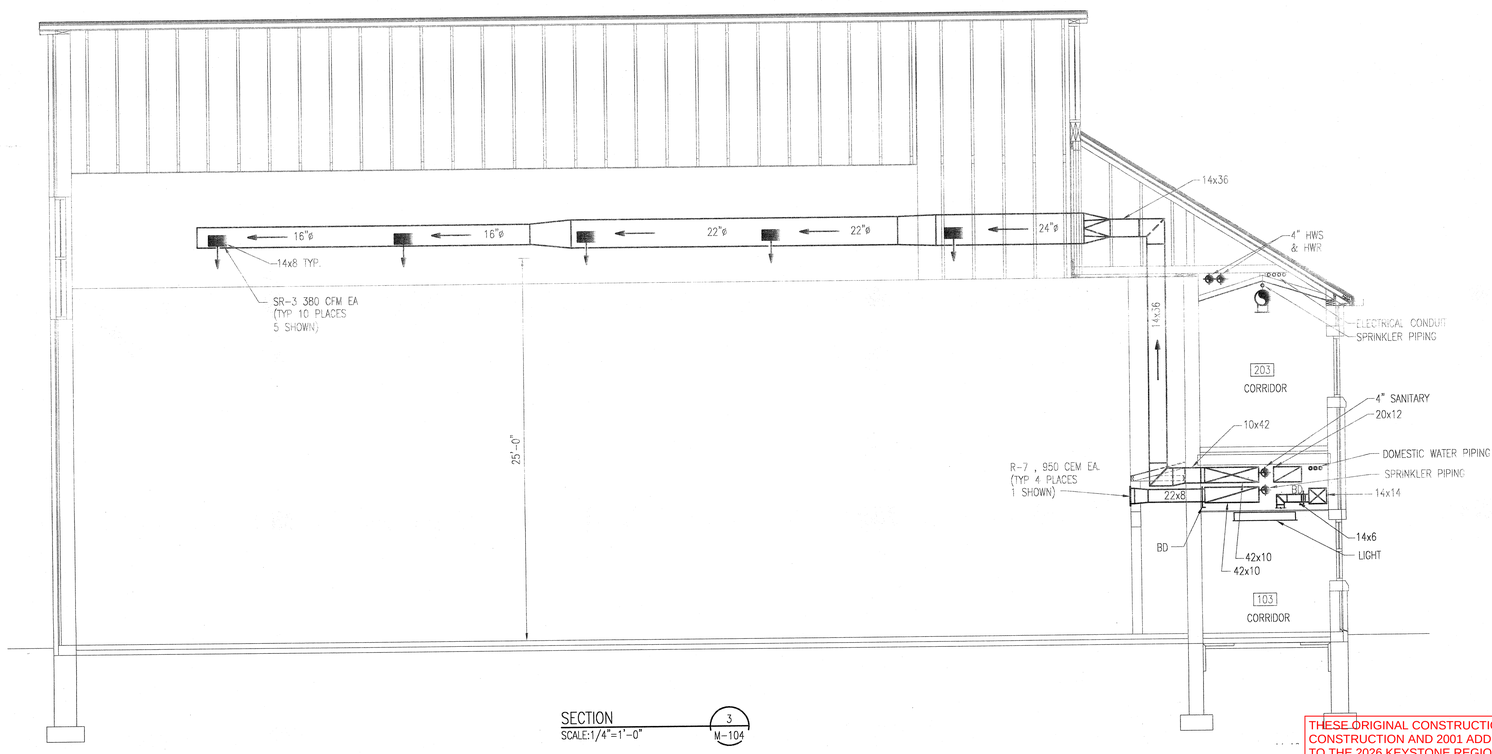
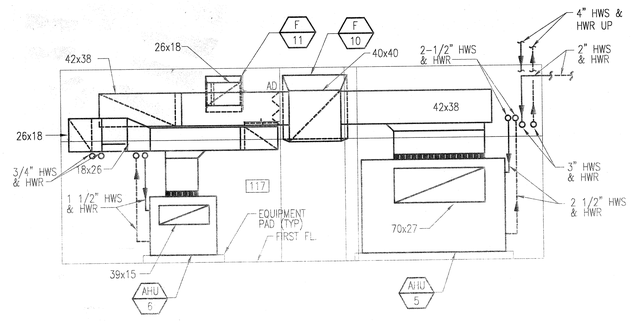


EXISTING MECHANICAL ROOM (121) PLAN
SCALE: 1/4"=1'-0"



SECTION
SCALE:1/4"=1'-0"
3 M-104



SECTION
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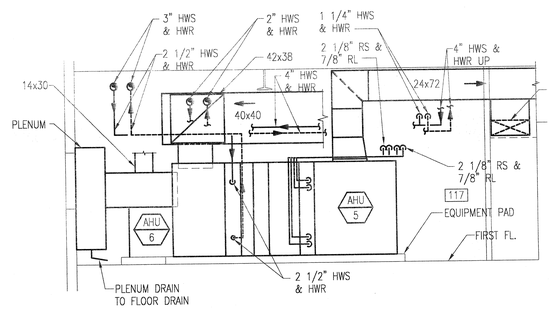
1 M-104



SECTION
SCALE: 1/4" = 1'-0"
2 M-104

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ADDITIONS AND RENOVATIONS TO
BERKS COUNTY YOUTH CENTER
TOWNSHIP OF BERN, COUNTY OF BERKS, PENNSYLVANIA

No.	Date	Issue or Revision

Drawing Title
MECHANICAL
MECHANICAL ROOM PLAN AND SECTIONS

Scale: AS NOTED	Project No.: 2000-100
Datum Elev.	
Dwg. Date: 09/11/01	Drawing No.: M-104
Drawn By: JWB	
Chkd. By: JSC	Sheet No. of

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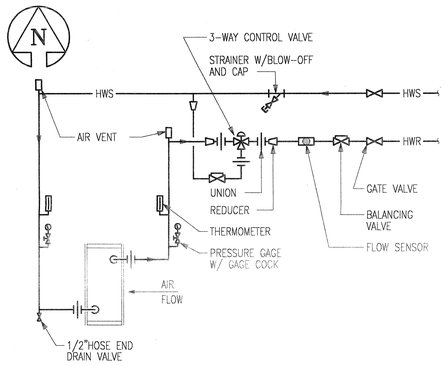

HEATING COIL PIPING DIAGRAM

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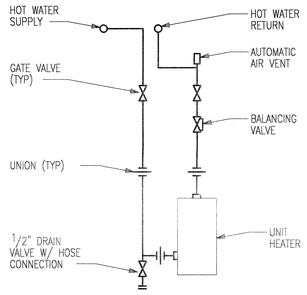
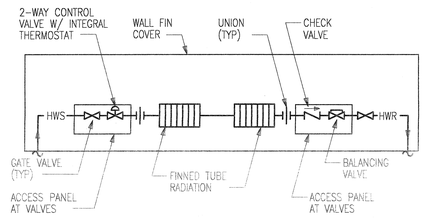


UNIT HEATER PIPING DIAGRAM

NO SCALE

NOTES:

1. FOR LEGEND AND ABBREVIATIONS SEE DWG NO. M-001.



HOT WATER
WALL FIN RADIATION PIPING DIAGRAM

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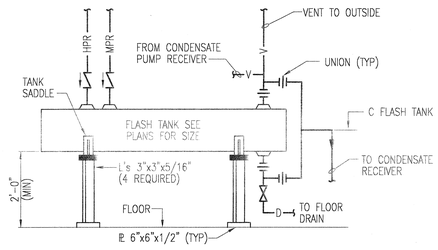


FLASH TANK PIPING DIAGRAM

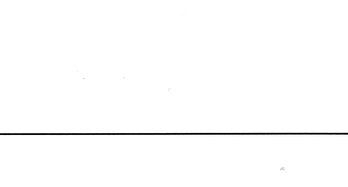
NO SCALE

DUCT COIL PIPING DIAGRAM

NO SCALE

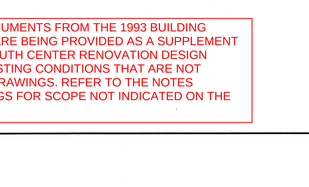
REFRIGERANT PIPING DETAIL

NO SCALE



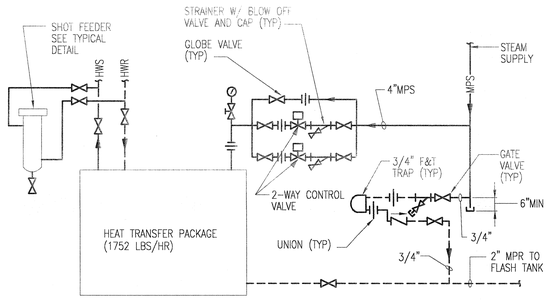
DUCT COIL ARRANGEMENT DETAIL

NO SCALE



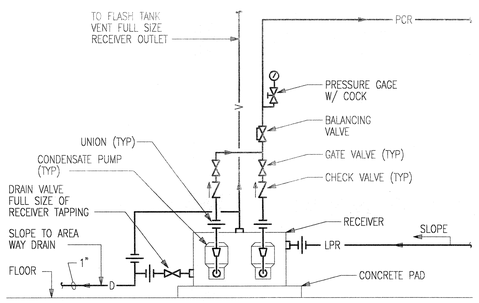
SHOT FEEDER DETAIL

NO SCALE



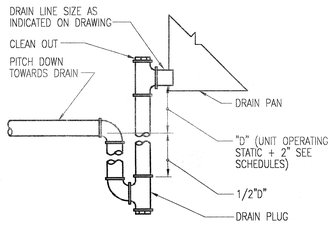
HEAT TRANSFER PACKAGE PIPING DIAGRAM

NO SCALE



CONDENSATE PUMP PIPING DIAGRAM

NO SCALE



DRAW THRU CONDENSATE DRAIN PAN DETAIL

NO SCALE

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ADDITIONS AND RENOVATIONS TO
BERKS COUNTY YOUTH CENTER
TOWNSHIP OF BERN, COUNTY OF BERKS, PENNSYLVANIA

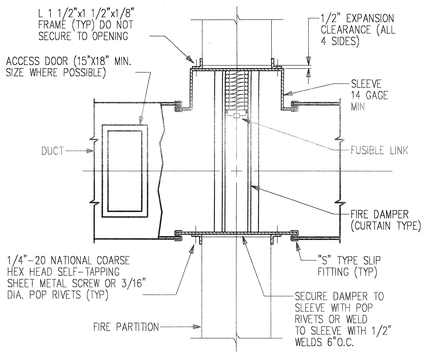
No.	Date	Issue or Revision

Drawing Title

MECHANICAL

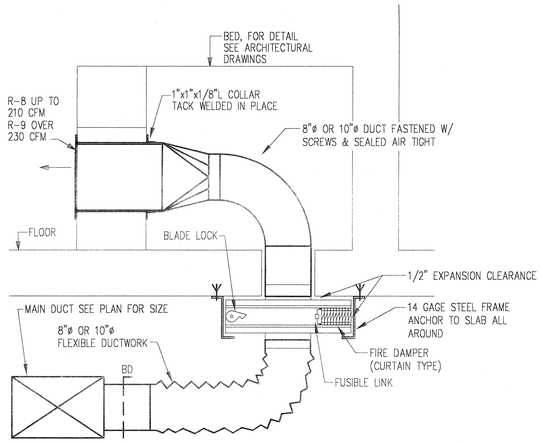
DETAILS AND DIAGRAMS

Scale: AS NOTED	Project No.: 2000-100
Datum Elev.:	
Dwg. Date: 09/11/01	Drawing No.: M-500
Drawn By: JWB	
Chkd. By: JBC	Sheet No. of



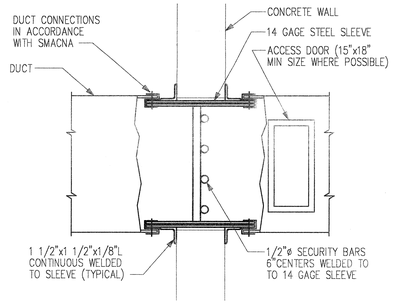
VERTICAL FIRE DAMPER DETAIL

NO SCALE



BEDROOM SUPPLY REGISTER DETAIL

NO SCALE

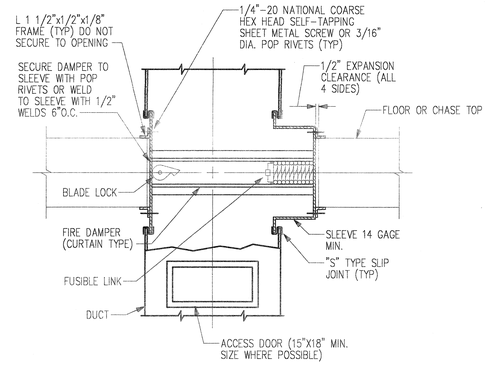


SECURITY PENETRATION DETAIL

NO SCALE

NOTES:

1. FOR LEGEND AND ABBREVIATIONS SEE DWG NO. M-001.

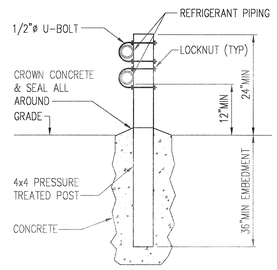


HORIZONTAL FIRE DAMPER DETAIL

NO SCALE

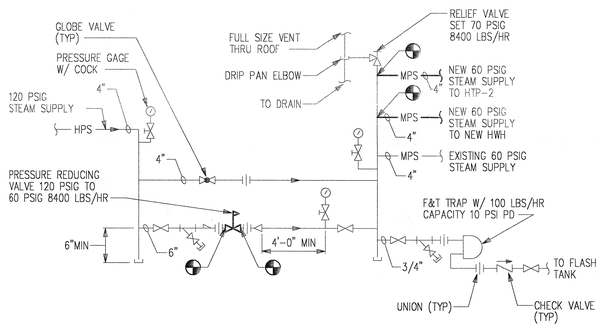
IN-LINE FAN SUPPORT DETAIL

NO SCALE



EXTERIOR REFRIGERANT PIPE SUPPORT DETAIL

NO SCALE



PRESSURE REDUCING STATION PIPING DIAGRAM

NO SCALE

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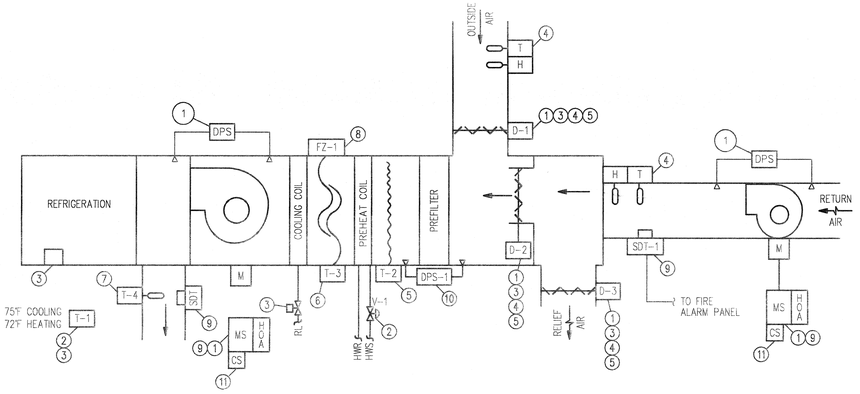
BID ALTERNATE #3 CONTROL DIAGRAM



AHU AND ACCU CONTROL DIAGRAM

SEQUENCE OF OPERATION:

1. WHEN "HAND-OFF-AUTOMATIC" SWITCH, ("HOA"), IS IN "HAND" POSITION, THE SUPPLY FAN AND RETURN FAN START IS INITIATED. WHEN "HOA" IS IN "AUTOMATIC" POSITION UNIT IS CONTROLLED BY THE DDC PANEL. AUTOMATIC DAMPERS MOVE TO MINIMUM OUTSIDE AIR POSITION ON FAN START-UP. WHEN "HOA" IS IN "OFF" POSITION UNIT IS OFF. (RELIEF DAMPER SHALL HAVE INDEPENDANT CONTROL SIGNAL.) THE RETURN FAN SHALL BE INTERLOCKED WITH THE SUPPLY FAN TO BE ON WHEN THE SUPPLY FAN IS ON AND OFF WHEN THE SUPPLY FAN IS OFF, IF THE SUPPLY FAN FAILS THE RETURN FAN SHALL BE SHUT DOWN. IF THE RETURN FAN FAILS AS SENSED BY A DPS, THEN AN ALARM SHALL BE SENT TO THE DDC SYSTEM.
2. ON A DROP IN SPACE TEMPERATURE BELOW HEATING SETPOINT AT T-1 PREHEAT COIL CONTROL VALVE SHALL MODULATE OPEN.
3. DAMPERS D-1, D-2 AND D-3 SHALL MODULATE TO INTRODUCE OUTSIDE AIR FOR COOLING ON A RISE IN SPACE TEMPERATURE ABOVE COOLING SETPOINT, ON A CONTINUED RISE IN SPACE TEMPERATURE STAGES OF COOLING ARE ACTIVATED.
4. AUTOMATIC DAMPERS D-1, D-2 AND D-3 SHALL MOVE TO MINIMUM OUTSIDE AIR POSITION WHEN TOTAL HEAT OF OUTSIDE AIR EXCEEDS TOTAL HEAT OF RETURN AIR.
5. TEMPERATURE SENSOR T-2 MAINTAINS MINIMUM MIXED AIR TEMPERATURE OF 55°F DURING ECONOMIZER COOLING.
6. TEMPERATURE SENSOR T-3 MONITORS PREHEAT COIL LEAVING AIR TEMPERATURE AND CONTROLS COIL VALVE TO MAINTAIN CASING TEMPERATURE OF 40°F DURING UNIT SHUTDOWN.
7. TEMPERATURE SENSOR T-4 MONITORS SUPPLY AIR TEMPERATURE.
8. UPON DETECTION OF A TEMPERATURE BELOW 38°F FZ-1 SHALL SHUT DOWN FANS.
9. UPON DETECTION OF PARTICLES OF COMBUSTION BY SMOKE DETECTORS SDT-1 OR SDT-2, SUPPLY FAN SHALL SHUT DOWN, RETURN AIR DAMPER CLOSES, RELIEF DAMPER OPENS AND RETURN FAN RUNS FOR SMOKE REMOVAL. AFTER SMOKE REMOVAL IS DEACTIVATED, AHU SHALL RETURN TO NORMAL OPERATION.
10. DIFFERENTIAL PRESSURE SWITCH DPS-1 MONITORS FILTER PRESSURE DROP.
11. CURRENT SENSOR MONITORS FAN RUNNING CONDITION (ON-OFF).

UNOCCUPIED CYCLE

FANS SHALL BE CYCLED TO MAINTAIN UNOCCUPIED TEMPERATURE AT SETPOINT. AUTOMATIC DAMPERS SHALL BE IN 100% RECIRCULATION POSITION.

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No.	Date	Issue or Revision

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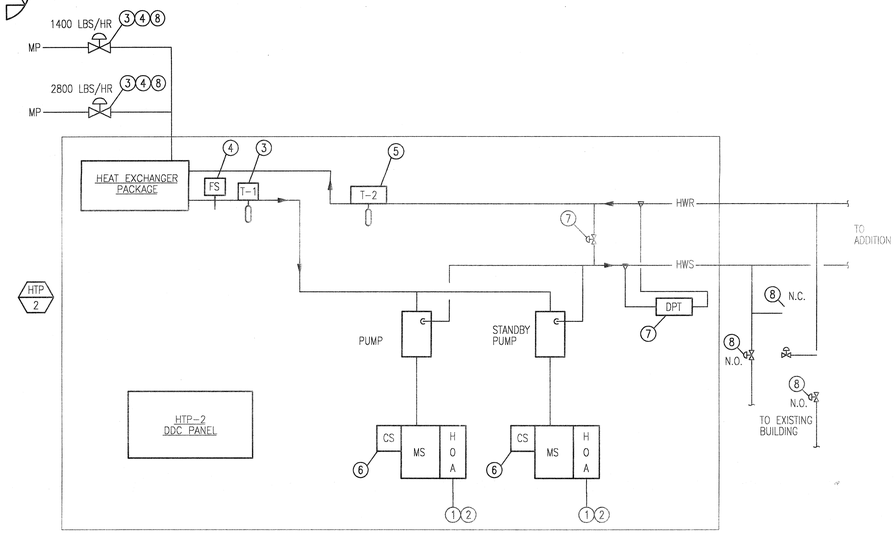
MECHANICAL

DETAILS AND BID ALTERNATE #3 CONTROL DIAGRAM

Scale: AS NOTED	Project No.: 2000-100
Datum Elev.	
Dwg. Date: 09/11/01	Drawing No.: M-501
Drawn By: JWB	
Chkd. By: JSC	Sheet No. of



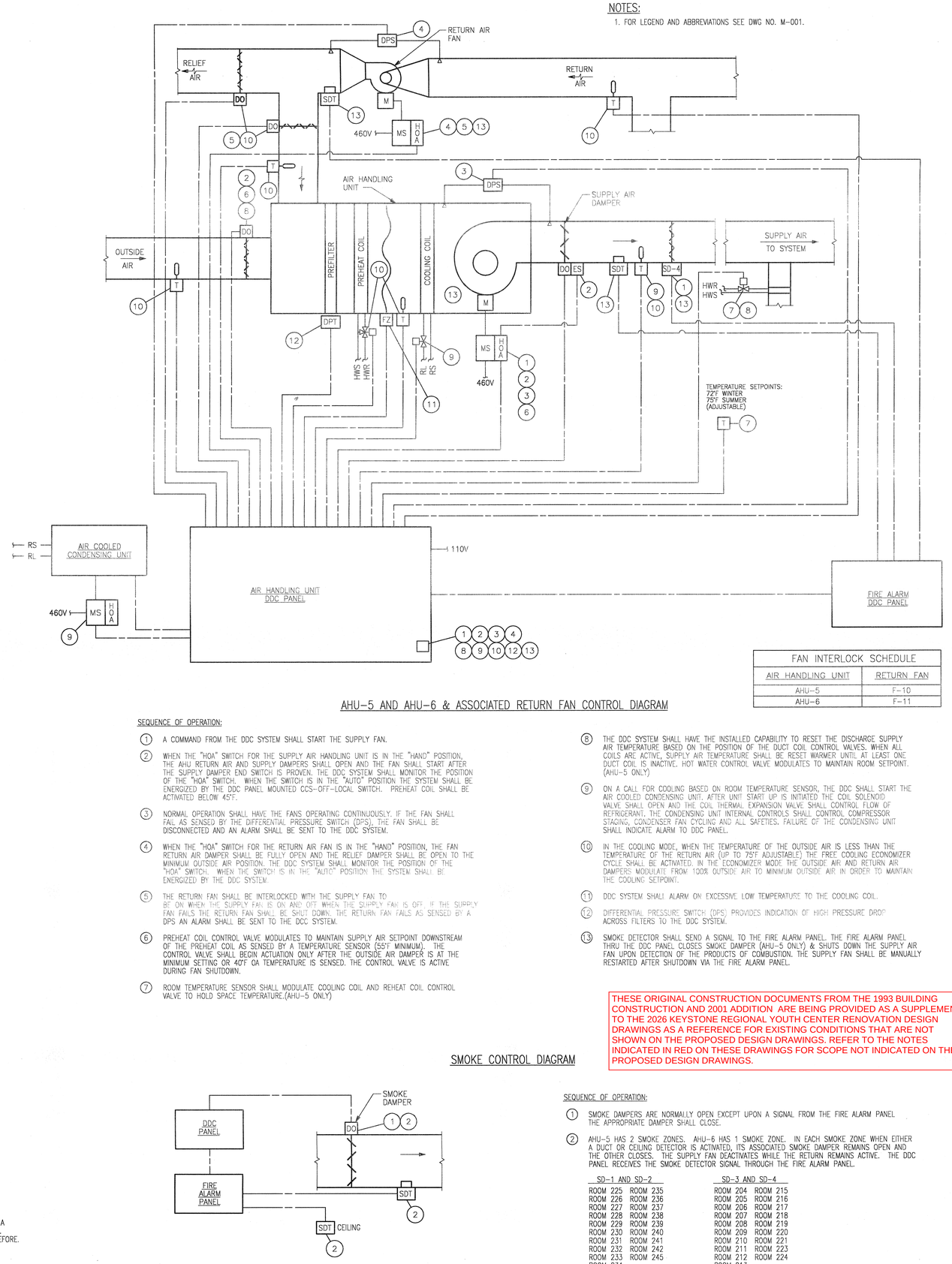
HEAT EXCHANGER CONTROL DIAGRAM HTP-2

SEQUENCE OF OPERATION:

1. WHEN "HAND-OFF-AUTO" SWITCH IS IN HAND POSITION THE PUMP RUNS. WHEN SWITCH IS IN "AUTO" POSITION PUMP IS CONTROLLED FROM THE DDC SYSTEM. IN "OFF" POSITION THE PUMP IS SHUT DOWN.
2. DDC SYSTEM STARTS SELECTED PUMP. STANDBY PUMP SHALL START AUTOMATICALLY UPON FAILURE OF OPERATING PUMP.
3. HEAT EXCHANGER CONTROL VALVE IS MODULATED TO MAINTAIN HEATING WATER SUPPLY TEMPERATURE AT SETPOINT AS SENSED BY SENSOR T-1. TEMPERATURE SETPOINT IS 180°F (ADJUSTABLE).
4. HEAT EXCHANGER CONTROL VALVES SHALL CLOSE AT LOSS OF FLOW SENSED BY FLOW SWITCH.
5. TEMPERATURE SENSOR T-2 MONITORS RETURN WATER TEMPERATURE.
6. CURRENT SENSOR PROVIDES SIGNAL TO DDC TO VERIFY PUMP RUNNING CONDITION (ON-OFF).
7. BYPASS VALVE MODULATES OPEN TO MAINTAIN PRESSURE DIFFERENTIAL BETWEEN HWS AND HWR AT SETPOINT.
8. UPON FAILURE OF HTP-2 TO OPERATE, OPEN SYSTEM STEAM CONTROL VALVE TO EXISTING HPT-1 CLOSE STEAM CONTROL VALVE TO HTP-2, OPEN N.C. HWS&R PIPING CONNECTING ADDITION TO EXISTING SYSTEM AND CLOSE N.O. HWS&R BYPASS VALVE.

NOTES:

1. FOR LEGEND AND ABBREVIATIONS SEE DWG NO. M-001.

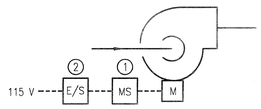


AHU-5 AND AHU-6 & ASSOCIATED RETURN FAN CONTROL DIAGRAM

FAN INTERLOCK SCHEDULE	
AIR HANDLING UNIT	RETURN FAN
AHU-5	F-10
AHU-6	F-11

SEQUENCE OF OPERATION:

1. A COMMAND FROM THE DDC SYSTEM SHALL START THE SUPPLY FAN.
2. WHEN THE "HOA" SWITCH FOR THE SUPPLY AIR HANDLING UNIT IS IN THE "HAND" POSITION, THE AHU RETURN AIR AND SUPPLY DAMPERS SHALL OPEN AND THE FAN SHALL START AFTER THE SUPPLY DAMPER END SWITCH IS PROVEN. THE DDC SYSTEM SHALL MONITOR THE POSITION OF THE "HOA" SWITCH. WHEN THE SWITCH IS IN THE "AUTO" POSITION THE SYSTEM SHALL BE ENERGIZED BY THE DDC PANEL MOUNTED CCS-OFF-LOCAL SWITCH. PREHEAT COIL SHALL BE ACTIVATED BELOW 45°F.
3. NORMAL OPERATION SHALL HAVE THE FANS OPERATING CONTINUOUSLY. IF THE FAN SHALL FAIL AS SENSED BY THE DIFFERENTIAL PRESSURE SWITCH (DPS), THE FAN SHALL BE DISCONNECTED AND AN ALARM SHALL BE SENT TO THE DDC SYSTEM.
4. WHEN THE "HOA" SWITCH FOR THE RETURN AIR FAN IS IN THE "HAND" POSITION, THE FAN RETURN AIR DAMPER SHALL BE FULLY OPEN AND THE RELIEF DAMPER SHALL BE OPEN TO THE MINIMUM OUTSIDE AIR POSITION. THE DDC SYSTEM SHALL MONITOR THE POSITION OF THE "HOA" SWITCH. WHEN THE SWITCH IS IN THE "AUTO" POSITION THE SYSTEM SHALL BE ENERGIZED BY THE DDC SYSTEM.
5. THE RETURN FAN SHALL BE INTERLOCKED WITH THE SUPPLY FAN TO BE ON WHEN THE SUPPLY FAN IS ON AND OFF WHEN THE SUPPLY FAN IS OFF. IF THE SUPPLY FAN FAILS THE RETURN FAN SHALL BE SHUT DOWN. THE RETURN FAN FAILS AS SENSED BY A DPS AN ALARM SHALL BE SENT TO THE DDC SYSTEM.
6. PREHEAT COIL CONTROL VALVE MODULATES TO MAINTAIN SUPPLY AIR SETPOINT DOWNSTREAM OF THE PREHEAT COIL AS SENSED BY A TEMPERATURE SENSOR (55°F MINIMUM). THE CONTROL VALVE SHALL BEGIN ACTUATION ONLY AFTER THE OUTSIDE AIR DAMPER IS AT THE MINIMUM SETTING OR 40°F OA TEMPERATURE IS SENSED. THE CONTROL VALVE IS ACTIVE DURING FAN SHUTDOWN.
7. ROOM TEMPERATURE SENSOR SHALL MODULATE COOLING COIL AND REHEAT COIL CONTROL VALVE TO HOLD SPACE TEMPERATURE.(AHU-5 ONLY)
8. THE DDC SYSTEM SHALL HAVE THE INSTALLED CAPABILITY TO RESET THE DISCHARGE SUPPLY AIR TEMPERATURE BASED ON THE POSITION OF THE DUCT COIL CONTROL VALVES. WHEN ALL COILS ARE ACTIVE, SUPPLY AIR TEMPERATURE SHALL BE RESET WARMER UNTIL AT LEAST ONE DUCT COIL IS INACTIVE. HOT WATER CONTROL VALVE MODULATES TO MAINTAIN ROOM SETPOINT. (AHU-5 ONLY)
9. ON A CALL FOR COOLING BASED ON ROOM TEMPERATURE SENSOR, THE DDC SHALL START THE AIR COOLED CONDENSING UNIT. AFTER UNIT START UP IS INITIATED THE COIL SOLENOID VALVE SHALL OPEN AND THE COIL THERMAL EXPANSION VALVE SHALL CONTROL FLOW OF REFRIGERANT. THE CONDENSING UNIT INTERNAL CONTROLS SHALL CONTROL COMPRESSOR STAGING, CONDENSER FAN CYCLING AND ALL SAFETIES. FAILURE OF THE CONDENSING UNIT SHALL INDICATE ALARM TO DDC PANEL.
10. IN THE COOLING MODE, WHEN THE TEMPERATURE OF THE OUTSIDE AIR IS LESS THAN THE TEMPERATURE OF THE RETURN AIR (UP TO 75°F ADJUSTABLE) THE FREE COOLING ECONOMIZER CYCLE SHALL BE ACTIVATED. IN THE ECONOMIZER MODE THE OUTSIDE AIR AND RETURN AIR DAMPERS MODULATE FROM 100% OUTSIDE AIR TO MINIMUM OUTSIDE AIR IN ORDER TO MAINTAIN THE COOLING SETPOINT.
11. DDC SYSTEM SHALL ALARM ON EXCESSIVE LOW TEMPERATURE TO THE COOLING COIL.
12. DIFFERENTIAL PRESSURE SWITCH (DPS) PROVIDES INDICATION OF HIGH PRESSURE DROP ACROSS FILTERS TO THE DDC SYSTEM.
13. SMOKE DETECTOR SHALL SEND A SIGNAL TO THE FIRE ALARM PANEL. THE FIRE ALARM PANEL THRU THE DDC PANEL CLOSES SMOKE DAMPER (AHU-5 ONLY) & SHUTS DOWN THE SUPPLY AIR FAN UPON DETECTION OF THE PRODUCTS OF COMBUSTION. THE SUPPLY FAN SHALL BE MANUALLY RESTARTED AFTER SHUTDOWN VIA THE FIRE ALARM PANEL.

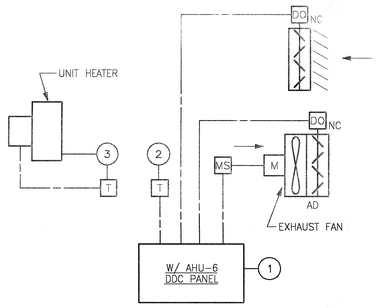


EXHAUST FAN CONTROL DIAGRAM

(F-12, F-16, F-17, F-18, F-19)
NOTE: F-14, F-15 IS 460 V

SEQUENCE OF OPERATION:

1. NORMAL OPERATION SHALL HAVE THE FANS OPERATING CONTINUOUSLY.
2. FAN SHALL BE OPERATED FROM A WALL SWITCH WITHIN THE ROOM. (F-18 ONLY)

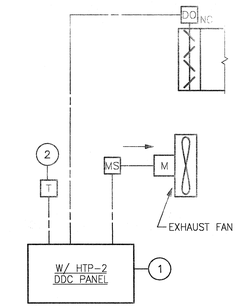


MECHANICAL ROOM VENTILATION CONTROL DIAGRAM

(F-13)

SEQUENCE OF OPERATION:

1. THE DDC SYSTEM SHALL CONTROL THE MECHANICAL ROOM VENTILATION.
2. UPON A RISE IN TEMPERATURE ABOVE 75°F (ADJUSTABLE) THE SUPPLY AND EXHAUST DAMPERS SHALL OPEN. ABOVE 85°F (ADJUSTABLE) THE EXHAUST FAN SHALL BE ACTIVATED. THE EXHAUST FAN SHALL BE DEACTIVATED AFTER A 10°F DROP IN ROOM TEMPERATURE TO 75°F. BELOW 70°F ALL DAMPERS SHALL CLOSE.
3. UPON A CALL FOR HEATING INDIVIDUAL UNIT HEATERS SHALL CYCLE ON THEIR INTEGRAL THERMOSTATS.(UH-11 & UH-12)



EXISTING STORAGE ROOM VENTILATION CONTROL DIAGRAM

(F-20)

SEQUENCE OF OPERATION:

1. THE DDC SYSTEM SHALL CONTROL THE EXISTING STORAGE ROOM (122) VENTILATION.
2. UPON A RISE IN TEMPERATURE ABOVE 75°F (ADJUSTABLE) THE EXISTING OUTSIDE AIR DAMPER AND NEW AUTOMATIC DAMPER SHALL OPEN. ABOVE 85°F (ADJUSTABLE) THE EXHAUST FAN SHALL BE ACTIVATED. THE EXHAUST FAN SHALL BE DEACTIVATED AFTER A 10°F DROP IN ROOM TEMPERATURE TO 75°F. BELOW 70°F ALL DAMPERS SHALL CLOSE. EXISTING MECHANICAL ROOM (121) VENTILATION SYSTEM SHALL BE CONTROLLED AS BEFORE.

SMOKE CONTROL DIAGRAM

SEQUENCE OF OPERATION:

1. SMOKE DAMPERS ARE NORMALLY OPEN EXCEPT UPON A SIGNAL FROM THE FIRE ALARM PANEL THE APPROPRIATE DAMPER SHALL CLOSE.
2. AHU-5 HAS 2 SMOKE ZONES. AHU-6 HAS 1 SMOKE ZONE. IN EACH SMOKE ZONE WHEN EITHER A DUCT OR CEILING DETECTOR IS ACTIVATED, ITS ASSOCIATED SMOKE DAMPER REMAINS OPEN AND THE OTHER CLOSES. THE SUPPLY FAN DEACTIVATES WHILE THE RETURN REMAINS ACTIVE. THE DDC PANEL RECEIVES THE SMOKE DETECTOR SIGNAL THROUGH THE FIRE ALARM PANEL.

SD-1 AND SD-2		SD-3 AND SD-4	
ROOM 225	ROOM 235	ROOM 204	ROOM 215
ROOM 226	ROOM 236	ROOM 205	ROOM 216
ROOM 227	ROOM 237	ROOM 206	ROOM 217
ROOM 228	ROOM 238	ROOM 207	ROOM 218
ROOM 229	ROOM 239	ROOM 208	ROOM 219
ROOM 230	ROOM 240	ROOM 209	ROOM 220
ROOM 231	ROOM 241	ROOM 210	ROOM 221
ROOM 232	ROOM 242	ROOM 211	ROOM 223
ROOM 233	ROOM 245	ROOM 212	ROOM 224
ROOM 234		ROOM 213	

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No.	Date	Issue or Revision:

Drawing Title:
MECHANICAL
CONTROL DIAGRAMS

Scale	Project No.
AS NOTED	2000-100
Datum Elev.	
Dwg. Date	Drawing No.
09/11/01	M-502
Drawn By	
JWB	
Chkd. By	Sheet No. of
JSC	

AIR HANDLING UNIT SCHEDULE

	REF. NO.	AHU 5	AHU 6
SUPPLY FAN	CFM	20900	3800
	RPM	1739	1644
	TSP	3.5	2.9
	ESP	2.0	1.5
	HP	20	5
	VOLTS/PHASE/Hz	460/3/60	460/3/60
* PREHEAT COIL	EAT °F	50	50
	LAT °F	80.3	87.4
	MBH	675.9	155.4
	FACE VEL FPM	510	497
	EWT °F	180	180
	LWT °F	160	160
	GPM	68.6	15.7
	PD IN WG	0.06	.08
	PD FT HD	6.3	4.3
COOLING COIL	EAT °F DB	78.0	79.5
	EAT °F WB	65.6	67.9
	LAT °F DB	55.1	55.2
	LAT °F WB	54.5	54.5
	MBH	692.5	159.9
	FACE VEL FPM	523	497
	REFRIGERANT SUCTION TEMP °F	44.0	41.0
	REFRIGERANT TYPE	R-22	R-22
	APD IN WG	.68	.6
OA QTY	MIN	3120	1000
	MAX	20900	3800

* INDICATES 40% GLYCOL SOLUTION BY VOLUME.

GLYCOL HAS BEEN ELIMINATED FROM THE HEATING WATER SYSTEM.

AIR COOLED CONDENSING UNIT SCHEDULE

	REF. NO.	ACC 5	ACC 6
	MBH	700.8	170
	AMB TEMP °F	95	95
	REFRIGERANT	R-22	R-22
CONDENSER FAN	CFM	11,520	10,800
	NO.	4	2
	FLA	3.8	2.1
	RPM	1140	1100
	HP	1.88	1
COMPRESSOR	NO.	4	1
	TKW	60.2	16.7
	FLA	24.2	40.5
	VOLTS	460	460
	PHASE	3	3
	Hz	60	60

HEAT TRANSFER PACKAGE SCHEDULE

	REF. NO.	HTP 2
HEAT EXCHANGER SHELL & TUBE BUNDLE	GPM *	370
	EWT °F	160
	LWT °F	180
	PD FT HD	.7
	STEAM PSIG	30
	CAP. LBS/HR	4176
TRAP	CAP. LBS/HR	17,000
	PD PSIG	2
PUMP MOTOR	GPM	370
	PD FT HD	100
	OPERATING	1
	STANDBY	1
	HP	15
	RPM	1800
	VOLTS	460
	PHASE	3
	Hz	60
BASIS OF DESIGN		BELL & GOSSETT SU14 3-2

* INDICATES 40% GLYCOL SOLUTION BY VOLUME.

EXISTING UNIT HEATERS SHALL REMAIN WITH EXISTING LOCAL THERMOSTATS.

UNIT HEATER SCHEDULE

	REF. NO.	UH 11	UH 12	UH 13
	MBH	13.2	13.2	25.2
	CFM	540	540	815
	EAT °F	60	60	60
	GPM *	1.5	1.5	2.9
	PD FT HD	.05	.05	0.19
	EWT °F	180	180	180
	LWT °F	160	160	160
MOTOR	HP	1/20	1/20	1/20
	RPM	1550	1550	1550
	VOLTS	115	115	115
	PHASE	1	1	1
	Hz	60	60	60
	THROW FT	30	30	30
	MOUNT HGT	8'	8'	8'
	BASIS OF DESIGN	TRANE 38S	TRANE 38S	TRANE 60S

* INDICATES 40% GLYCOL SOLUTION BY VOLUME.

GLYCOL HAS BEEN ELIMINATED FROM THE HEATING WATER SYSTEM.

EXISTING CABINET UNIT HEATER TO REMAIN. REPLACE THERMOSTATIC CONTROL VALVE. SELECT VALVE TO MATCH ORIGINALLY SCHEDULED VALUES. HW THERMOSTATIC CONTROL VALVE FURNISHED BY CONTROLS CONTRACTOR AND INSTALLED BY MECHANICAL CONTRACTOR.

CABINET UNIT HEATER SCHEDULE

	REF. NO.	CUH 2	CUH 3
	MBH	13.0	13.0
	CFM	210	210
	EAT °F	60	60
	GPM *	1.0	1.0
	PD FT HD	4.2	4.2
	EWT °F	180	180
	LWT °F	160	160
MOTOR	WATT	60	60
	RPM	1750	1750
	VOLTS	115	115
	PHASE	1	1
	Hz	60	60
	THROW FT	8'	8'
	MOUNT TYPE	REC. WALL	REC. WALL
	BASIS OF DESIGN	TRANE	TRANE

* INDICATES 40% GLYCOL SOLUTION BY VOLUME.

GLYCOL HAS BEEN ELIMINATED FROM THE HEATING WATER SYSTEM.

NOTES:

1. FOR LEGEND AND ABBREVIATIONS SEE DWG NO. M-001.

CONDENSATE PUMP SCHEDULE

	REF. NO.	CP 2
	GPM	30
	CAP. EDR	20000
	DISCHARGE PSIG	45
	REC CAP. GAL	36
MOTOR	NO.	2
	HP	2
	RPM	3500
	VOLTS	460
	PHASE	3
	Hz	60
	BASIS OF DESIGN	BELL & GOSSETT

WALL FIN RADIATION SCHEDULE

REF. NO.	WF 1	WF 2
EAT °F	72	72
BTUH/LF	750 *	750 *
EWT °F	180	180
LWT °F	160	160
NO OF ROWS	1	2
MOUNT HGT	16	16

* INDICATES 40% GLYCOL BY VOLUME.

GLYCOL HAS BEEN ELIMINATED FROM THE HEATING WATER SYSTEM.

EXISTING WALL FIN TUBE TO REMAIN WHERE INDICATED ON PLANS. REPLACE THERMOSTATIC CONTROL VALVE. SELECT VALVE TO MATCH ORIGINALLY SCHEDULED VALUES. HW THERMOSTATIC CONTROL VALVE FURNISHED BY CONTROLS CONTRACTOR AND INSTALLED BY MECHANICAL CONTRACTOR.

COMPUTER ROOM AIR CONDITIONER SCHEDULE

	REF. NO.	CRAC 1
SUPPLY FAN	CFM	HI/LOW
	RPM	–
	NO.	1
	ESP	.3
	HP	–
TOTAL COOLING MBH		12
SENS COOLING MBH		–
EVAP EAT °F	DB	75°
	WB	62.4°
REFRIGERANT		R-22
FILTER % EFF ASHRAE		20%
REHEAT COIL	KW	3
	STEPS	–
	VOLTS	200
	PHASE	1
	HZ	60
HUMID.	CAP.(lb/hr)	–
	KW	–
MOTOR	VOLTS	200
	PHASE	1
	Hz	60
TYPE		* WALL MOUNTED
BASIS OF DESIGN		** EMI WSP-12

* PROVIDE WITH CONDENSATE PUMP

** ENVIROMASTER INTERNATIONAL

AIR COOLED CONDENSING UNIT SCHEDULE

	REF. NO.	ACC 7
	MBH	12
	AMB TEMP °F	95°F
	REFR. SUCTION °F	45°F
	REFRIGERANT	R-22
CONDENSER FAN	CFM	–
	NO.	1
	FLA	–
	RPM	–
	HP	–
COMPRESSOR	NO.	1
	MOTOR HP	–
	FLA	–
	VOLTS	200
	PHASE	1
	Hz	60
	BASIS OF DESIGN	EMI SSC-12

SUPPLY REGISTER SCHEDULE

REF. NO.	SR-1	SR-2	SR-3
FACE SIZE	20x14	18x12	16x10
NECK SIZE	18X12	16X10	14X8
MOUNTING TYPE	HORIZONTAL	HORIZONTAL	HORIZONTAL
MAXIMUM NC	30	30	30
BASIS OF DESIGN	TUTTLE & BAILEY DQMV	TUTTLE & BAILEY DQMH	TUTTLE & BAILEY DQMV

FAN SCHEDULE

	REF. NO.	F 10	F 11	F 12 *	F 13 *	F 14 *	F 15 *	F 16 *	F 17 *	F 18 *	F 19 *	F 20 *
	CFM	18115	3800	250	1050	950	1065	545	695	630	505	420
	MAX O.V. FPM	971	823	750	795	720	807	413	527	477	256	530
	RPM	732	1259	2580	2071	1967	2087	1464	1587	1350	1269	1725
	MIN WHEEL DIA	36.5	–	–	–	–	–	–	–	–	–	–
	TSP	1.5	1.0	.75	1.0	1.0	1.0	.75	.75	.5	.75	.5
MOTOR	HP	10	2	1/8	3/4	1/2	3/4	1/4	1/2	1/4	1/4	1/4
	RPM	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
	VOLTS	460	460	115	460	460	460	115	115	115	115	115
	PHASE	3	3	1	3	3	3	1	1	1	1	1
	Hz	60	60	60	60	60	60	60	60	60	60	60
	DRIVE	BELT	BELT	DIRECT	BELT	BELT	BELT	BELT	BELT	BELT	BELT	DIRECT
	BASIS OF DESIGN	TWIN CITY SSI 365	PENN VENT SX165BC	PENN VENT REX08J	PENN VENT SX095BC	PENN VENT SX095BC	PENN VENT SX095BC	PENN VENT SX095BC	PENN VENT SX095BC	PENN VENT SX095BC	PENN VENT REX12B	PENN VENT BX12G
	LOCATION	MECH.	MECH.	STOR. 115	STOR. 115	ATTIC	ATTIC	ATTIC	ATTIC	STAFF FIT.	STOR. 115	EX. STR. 122
	AREA SERVED	AHU-5	AHU-6	ELEC. RM.	MECH. RM.	BATH 234 +	BATH 244 +	BATH 223	BATH 213	STAFF FIT.	LAUNDRY	EX. STR. 122

* WITH BACKDRAFT DAMPER

DIFFUSER SCHEDULE

BASIS OF DESIGN: TUTTLE & BAILEY, TYPE M V

REF. NO.	D-1	D-2	D-3	D-4	D-5	D-6	D-7	D-8	D-9	D-10
SIZE	18x18	12x12	9x9	18x15	12x12	24x24	9x9	18x18	6x6	12x12
BLOW	4-WAY	4-WAY	2-WAY	3-WAY	2-WAY	4-WAY	4-WAY	2-WAY	3-WAY	3-WAY
STYLE	4	4	2	3L	2	4	4	2	31S	31S

REGISTER SCHEDULE

REF. NO.	R-1 *	R-2 *	R-3 *	R-4 *	R-5 *	R-6 *	R-7 *	R-8	R-9	R-10
SIZE	16x16	12x6	8x8	6x6	12x12	8x24	24x12	15.3x15.3	17.3x17.3	36x18
TYPE	TUTTLE & BAILEY	TUTTLE & BAILEY	TUTTLE & BAILEY	TUTTLE & BAILEY	TUTTLE & BAILEY	TUTTLE & BAILEY	TUTTLE & BAILEY	ANEMOSTAT SV2-E5	ANEMOSTAT SV2-F6	TUTTLE & BAILEY

* WITH FRONT ADJUSTABLE BALANCING DAMPER

REPLACE DUCT COIL HW CONTROL VALVE. SELECT VALVE TO MATCH ORIGINALLY SCHEDULED VALUES. HW CONTROL VALVE FURNISHED BY CONTROLS CONTRACTOR AND INSTALLED BY MECHANICAL CONTRACTOR. CONTROLS CONTRACTOR SHALL FURNISH AND INSTALL CONTROLLER, DAT SENSOR, WALL MOUNTED TEMPERATURE SENSOR, AND ALL CONTROL WIRING. HIGHLIGHTED DUCT COIL CONTROL VALVES TO BE REPLACED. CROSSED OUT DUCT COILS ARE BEING REPLACED UNDER THE PROPOSED DESIGN DRAWINGS.

DUCT COIL SCHEDULE

	REF. NO.	DC 3.1	DC 3.2	DC 3.3	DC 3.4	DC 3.5	DC 3.6	DC 3.7	DC 3.8	DC 3.9	DC 3.10	DC 3.11	DC 3.12	DC 3.13	DC 3.14	DC 3.15	DC 3.16	DC 3.17	DC 3.18	DC 3.19	DC 3.20	DC 3.21	DC 3.22	DC 3.23	DC 3.24	DC 3.25	DC 3.26	DC 3.27	DC 3.28	DC 3.29	DC 3.30
	CFM	395	510	310	430	1750	610	600	630	405	540	450	540	410	640	620	1560	260	755	440	570	1045	445	900	445	720	720	445	445	775	2070
SIZE	HEIGHT	10	12	6	6	20	8	10	8	10	8	10	8	10	8	8	14	6	12	8	8	10	6	10	6	10	10	6	6	10	16
	WIDTH	10	10	14	16	18	16	14	16	10	14	10	14	10	18	16	24	12	16	12	16	22	16	22	16	18	18	16	16	18	28
	EAT °F	57	57	57	57	57	57	57	57	57	57	57	57	57	57	57	57	57	57	57	57	57	57	57	57	57	57	57	57	57	57
	LAT °F	87	87	87	87	87	87	87	87	87	87	87	87	87	87	87	87	87	87	87	87	87	87	87	87	87	87	87	87	87	87
	MBH	12.9	16.6	10.1	14.0	38.9	19.9	19.5	20.5	13.2	17.6	14.6	17.6	13.3	20.8	20.2	50.8	8.5	24.6	14.3	18.6	34.0	14.5	29.3	14.5	23.4	23.4	14.5	14.5	25.5	67.4
	FACE VEL FPM	569	612	531	645	700	686	617	709	583	694	648	694	590	640	698	669	520	566	660	641	684	668	589	668	576	576	668	668	620	665
	EWT °F	180	180	180	180	180	180	180	180	180	180	180	180	180	180	180	180	180	180	180	180	180	180	180	180	180	180	180	180	180	180
	LWT °F	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160
	GPM *	1.3	1.7	1.0	1.4	3.9	2.0	2.0	2.1	1.3	1.8	1.5	1.8	1.3	2.1	2.0	5.1	.9	2.5	1.4	1.9	3.4	1.5	2.9	1.5	2.3	2.3	1.5	1.5	2.6	6.7
	MAX PD IN. WG	.15	.15	.15	.15	.15	.15	.15	.15	.15	.15	.15	.15	.15	.15	.15	.15	.15	.15	.15	.15	.15	.15	.15	.15	.15	.15	.15	.15	.15	.15
	MAX PD FT HD	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7

* INDICATES 40% GLYCOL SOLUTION BY VOLUME.

GLYCOL HAS BEEN ELIMINATED FROM THE HEATING WATER SYSTEM.

THESE ORIGINAL CONSTRUCTION DOCUMENTS FROM THE 1993 BUILDING CONSTRUCTION AND 2001 ADDITION ARE BEING PROVIDED AS A SUPPLEMENT TO THE 2026 KEYSTONE REGIONAL YOUTH CENTER RENOVATION DESIGN DRAWINGS AS A REFERENCE FOR EXISTING CONDITIONS THAT ARE NOT SHOWN ON THE PROPOSED DESIGN DRAWINGS. REFER TO THE NOTES INDICATED IN RED ON THESE DRAWINGS FOR SCOPE NOT INDICATED ON THE PROPOSED DESIGN DRAWINGS.

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ADDITIONS AND RENOVATIONS TO BERKS COUNTY YOUTH CENTER
TOWNSHIP OF BERN, COUNTY OF BERKS, PENNSYLVANIA

No.	Date	Issue or Revision

Drawing Title: MECHANICAL SCHEDULES

Scale: AS NOTED	Project No.: 2000-100
Datum Elev.	
Dwg. Date: 03/11/21	Drawing No.: M-700
Drawn By: JWB	
Chkd. By: JSC	Sheet No. of

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GENERAL SHEET NOTES

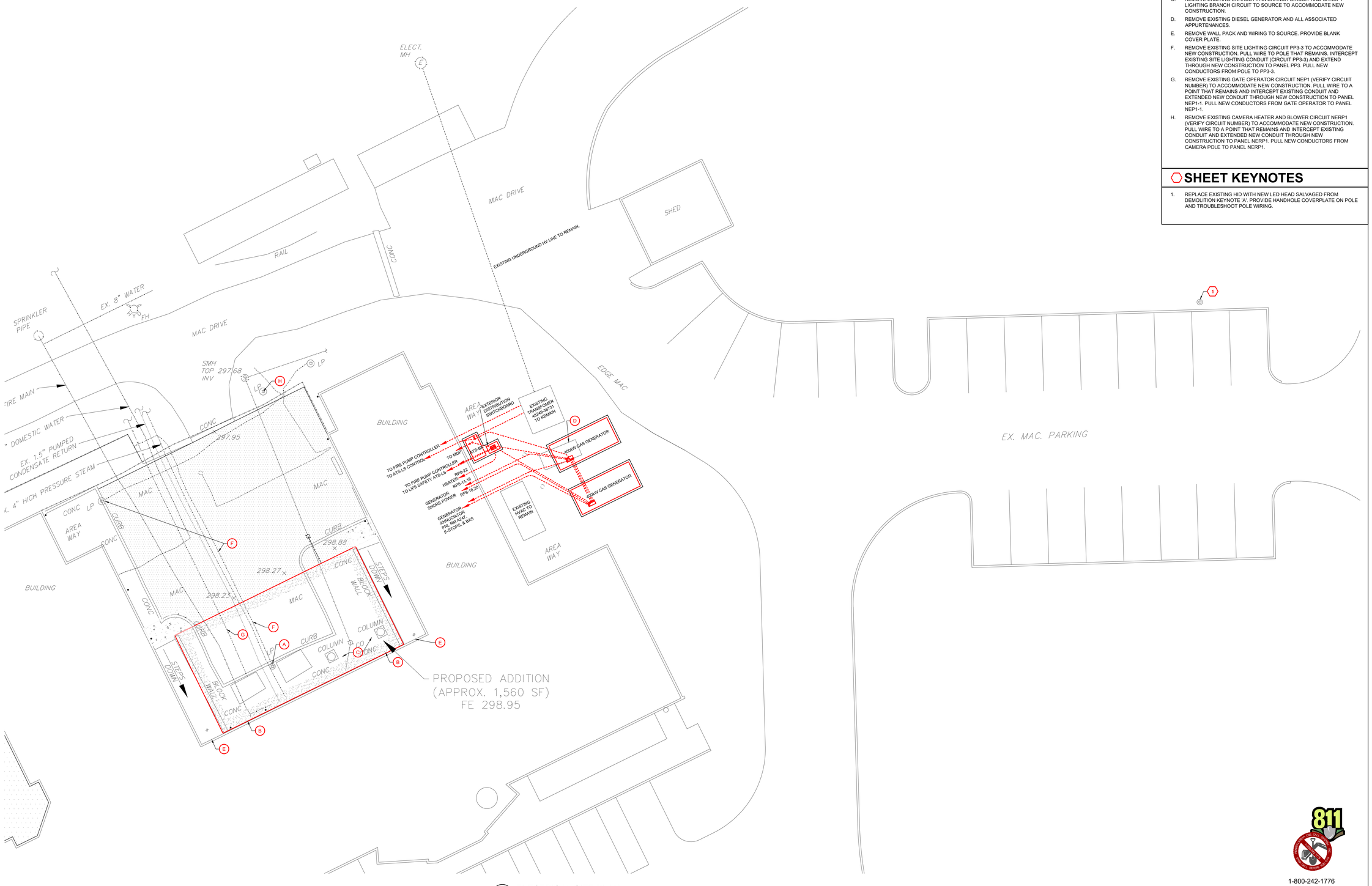
1. REFER TO E-601 FOR MORE INFORMATION.

◯ DEMOLITION KEYNOTES

A. REMOVE EXISTING LIGHT POLE BASE, POLE AND LED HEAD. RETAIN LED HEAD FOR RE-INSTALLATION AT PARKING LOT. REFER TO SHEET KEYNOTE 1 THIS DRAWING.
B. REMOVE EXISTING RECEPTACLE AND BRANCH CIRCUIT TO SOURCE TO ACCOMMODATE NEW CONSTRUCTION.
C. REMOVE EXISTING EXHAUST FAN BRANCH CIRCUIT AND CANOPY LIGHTING BRANCH CIRCUIT TO SOURCE TO ACCOMMODATE NEW CONSTRUCTION.
D. REMOVE EXISTING DIESEL GENERATOR AND ALL ASSOCIATED APPURTENANCES.
E. REMOVE WALL PACK AND WIRING TO SOURCE. PROVIDE BLANK COVER PLATE.
F. REMOVE EXISTING SITE LIGHTING CIRCUIT PP3-3 TO ACCOMMODATE NEW CONSTRUCTION. PULL WIRE TO POLE THAT REMAINS. INTERCEPT EXISTING SITE LIGHTING CONDUIT (CIRCUIT PP3-3) AND EXTEND THROUGH NEW CONSTRUCTION TO PANEL PP3. PULL NEW CONDUCTORS FROM POLE TO PP3-3.
G. REMOVE EXISTING GATE OPERATOR CIRCUIT NEP1 (VERIFY CIRCUIT NUMBER) TO ACCOMMODATE NEW CONSTRUCTION. PULL WIRE TO A POINT THAT REMAINS AND INTERCEPT EXISTING CONDUIT AND EXTENDED NEW CONDUIT THROUGH NEW CONSTRUCTION TO PANEL NEP1-1. PULL NEW CONDUCTORS FROM GATE OPERATOR TO PANEL NEP1-1.
H. REMOVE EXISTING CAMERA HEATER AND BLOWER CIRCUIT NERP1 (VERIFY CIRCUIT NUMBER) TO ACCOMMODATE NEW CONSTRUCTION. PULL WIRE TO A POINT THAT REMAINS AND INTERCEPT EXISTING CONDUIT AND EXTENDED NEW CONDUIT THROUGH NEW CONSTRUCTION TO PANEL NERP1. PULL NEW CONDUCTORS FROM CAMERA POLE TO PANEL NERP1.

⬡ SHEET KEYNOTES

1. REPLACE EXISTING HID WITH NEW LED HEAD SALVAGED FROM DEMOLITION KEYNOTE 'A'. PROVIDE HANDHOLE COVERPLATE ON POLE AND TROUBLESHOOT POLE WIRING.



1 **ELECTRICAL SITE PLAN**
Scale: 1" = 10'-0"
0 10' 20'

811 PENNSYLVANIA ONE CALL SYSTEM, INC.
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RENOVATIONS AND ADDITION

TO THE

KEYSTONE REGIONAL YOUTH CENTER

FOR

THE COUNTY OF BERKS

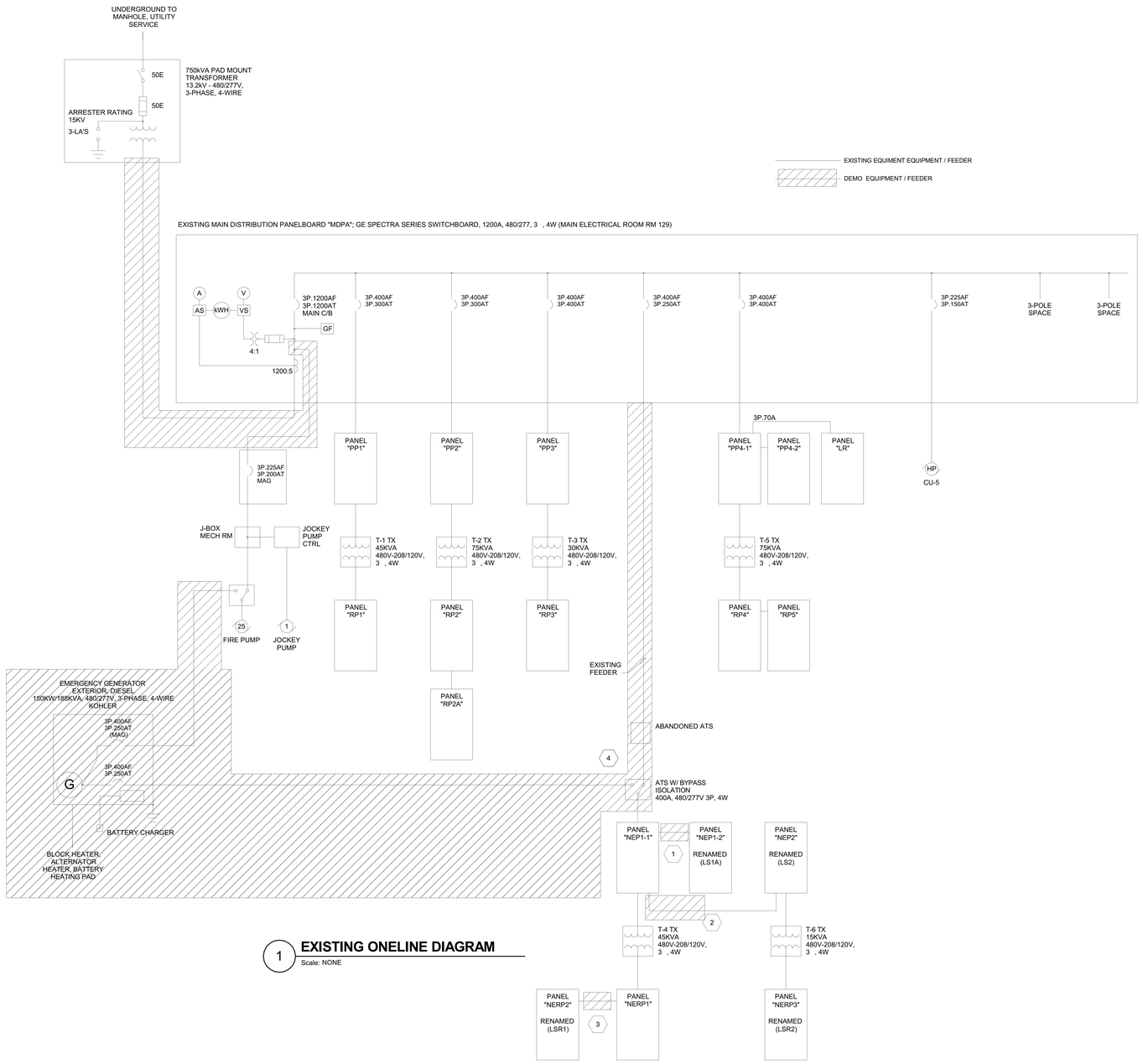
1261 COUNTY WELFARE ROAD
LEESPORT, PA 19533

No.	Date	Issue or Revision
	10.05.26	ISSUED FOR BID

Drawing Title

ELECTRICAL SITE PLAN

Scale	USA Project No.
AS NOTED	R2024.0111.01
Drawing Date: 10.05.26	Drawing No.: E-100
Drawn By: CJD	Checked By: DEM



1 **EXISTING ONELINE DIAGRAM**
Scale: NONE

GENERAL SHEET NOTES

1. ALL LIFE SAFETY LOADS SHALL BE RELOCATED TO 'LIFE SAFETY' AUTOMATIC TRANSFER SWITCH.
2. REFER TO DRAWING E-601 FOR MORE INFORMATION.

SHEET KEYNOTES

1. REMOVE WIRING CONNECTION BETWEEN NEP1-1 AND NEP1-2. RELOCATE TWO 3P.20A BREAKERS FROM NEP1-2 TO NEP1-1 FOR THE EJECTOR PUMP AND F4-1. CONNECT WITH 3 #12 & 1 #12GRD, 3/4"CONDUIT. PROVIDE BLANK PLATES IN NEP-2. EXISTING EMERGENCY LIGHTING CIRCUITS TO REMAIN. RE-LABEL PANEL 'NEP1-2' TO 'LS1A'. UPDATE PANEL SCHEDULES. REFER TO DRAWING E-601 FOR MORE INFORMATION.
2. DISCONNECT 3P.100A BREAKER FED FROM NEP1-1 FEEDING NEP2. LABEL AS SPARE. RELOCATE EXISTING FEED FROM NEP2 TO 'LSA1'. UPDATE PANEL SCHEDULES. REFER TO DRAWING E-601 FOR MORE INFORMATION.
3. DISCONNECT NERP2 FROM NERP1. RETAIN 3P.100A BREAKER FOR CONNECTION TO NEW PANEL. UPDATE PANEL SCHEDULES. REFER TO DRAWING E-601 FOR MORE INFORMATION.
4. REMOVE EXISTING GENERATOR, ATS, CONDUITS, AND CONDUCTORS FOR EXISTING EMERGENCY SYSTEM.

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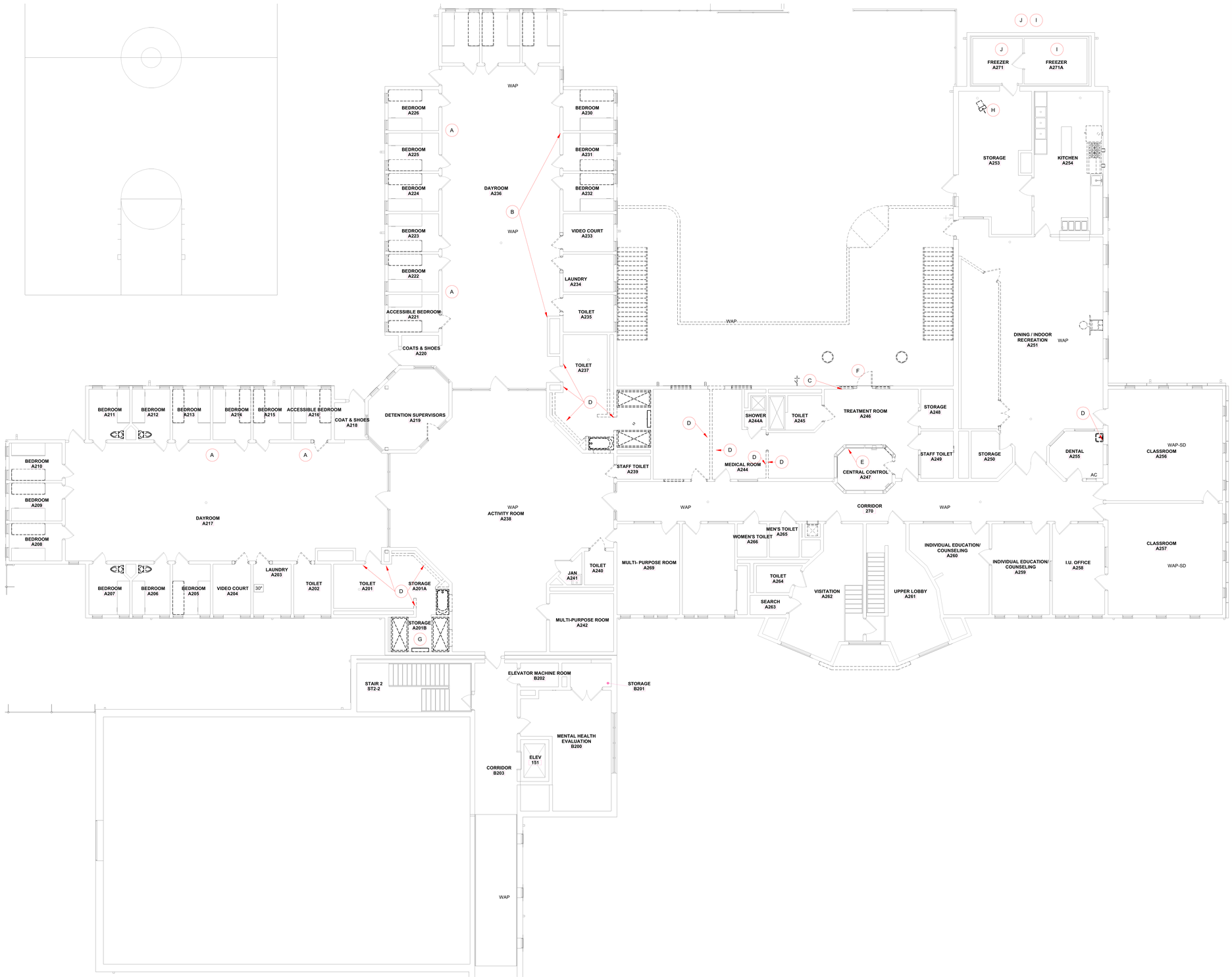
RENOVATIONS AND ADDITION
TO THE
KEYSTONE REGIONAL YOUTH CENTER
FOR
THE COUNTY OF BERKS
1261 COUNTY WELFARE ROAD
LEESPORT, PA 19533

No.	Date	Issue or Revision
	10.05.26	ISSUED FOR BID

Drawing Title
DEMOLITION ONELINE

Scale	USA Project No.
	R2024.0111.01
Drawing Date: 10.05.26	Drawing No.: ED-601
Drawn By: CJD	Checked By: DEM

9/28/2026 10:57:03 AM



2 POWER DEMO - SECOND FLOOR - AREA A

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

0 4' 8' 16'

GENERAL SHEET NOTES

1. ALL EXPOSED SURFACE MOUNTED CONDUIT (POWER AND DATA) INSTALLED IN EXISTING AREAS OF THE BUILDING WHERE DETENTION AND SHELTER OCCUPANTS HAVE ACCESS SHALL BE RIGID GALVANIZED STEEL (RGS) W/ THREADED FITTINGS. CAULK BETWEEN WALL AND CONDUIT BODY, FITTINGS, AND SUPPORTS WITH PICK RESISTANT SECURITY SEALANT. ALL RACEWAYS SHALL BE CONCEALED IN NEW CONSTRUCTION.

DEMOLITION KEYNOTES

A. REMOVE EXISTING SURFACE MOUNTED RACEWAY, CABLING, AND PHONE BACKBOX FOR TWO ABANDONED PAY PHONES IN THEIR ENTIRETY.

B. REMOVE ABANDONED EMT CONDUIT.

C. REMOVE FIRE ALARM PULL STATION.

D. REMOVE EXISTING RECEPTACLES, FIRE ALARM DEVICES, LIGHTING, SWITCHES AND DATA TO ACCOMMODATE NEW CONSTRUCTION. EXISTING RECEPTACLES ON BRANCH CIRCUIT SHALL REMAIN ENERGIZED. RETAIN/MODIFY BRANCH CIRCUIT AS REQUIRED.

E. REMOVE EXISTING GENERATOR ANNUNCIATOR PANEL AND WIRING TO GENERATOR. CONDUIT SHALL REMAIN FOR NEW GENERATOR'S COMMUNICATION CABLING.

F. DISCONNECT EXHAUST FAN SCHEDULED FOR DEMOLITION. REMOVE BRANCH CIRCUIT AND CONTROL TO SOURCE.

G. DISCONNECT EXHAUST FAN SCHEDULED FOR REPLACEMENT. RETAIN BRANCH CIRCUIT AND CONTROL WIRING FOR RE-CONNECTION TO NEW EXHAUST FAN.

H. DISCONNECT UNIT HEATER SCHEDULED FOR REPLACEMENT. RETAIN BRANCH CIRCUIT FOR RE-CONNECTION TO NEW EXHAUST FAN.

I. DISCONNECT FREEZER COMPRESSOR AND EVAPORATOR SCHEDULED FOR REPLACEMENT. REMOVE BRANCH CIRCUIT CONDUIT. DISCONNECT SWITCHES AND CONDUCTORS TO PANEL NERP1. LABEL BREAKERS AS SPARE.

J. DISCONNECT REFRIGERATOR COMPRESSOR AND EVAPORATOR SCHEDULED FOR DEMOLITION. REMOVE BRANCH CIRCUIT CONDUIT, DISCONNECT SWITCHES AND CONDUCTORS TO PANEL NERP1. LABEL BREAKERS AS SPARE.

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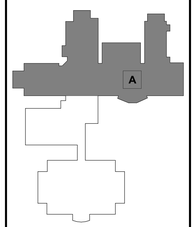

BUILDING KEY PLAN

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RENOVATIONS AND ADDITION

TO THE

KEYSTONE REGIONAL YOUTH CENTER

FOR

THE COUNTY OF BERKS

1261 COUNTY WELFARE ROAD
LEESPORT, PA 19533

No.	Date	Issue or Revision
	10.05.26	ISSUED FOR BID

Drawing Title

POWER DEMO - SECOND FLOOR - AREA A

Scale: 1/8" = 1'-0"	USA Project No.: R2024.0111.01
Drawing Date: 10.05.26	Drawing No.: EPD-103
Drawn By: CJD	Checked By: DEM

9/28/2026 10:57:04 AM



1 **LIGHTING - FIRST FLOOR PLAN - AREA A**

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

0 4' 8' 16'

GENERAL SHEET NOTES

1. LUMINAIRES SHOWN ARE REPLACED ON A ONE-FOR ONE BASIS WITH TYPE SHOWN. CONNECT TO EXISTING BRANCH CIRCUIT WIRING AND CONTROL; UNLESS OTHERWISE NOTED. PROVIDE NEW SWITCHES AND 0-10V DIMMING CONDUCTORS WHERE SHOWN.

SHEET KEYNOTES

1. REMOVE AND SALVAGE EXISTING LUMINAIRES AND RETURN TO OWNER FOR ATTIC STOCK.
2. REPLACE EXISTING NON-OPERABLE LUMINAIRE WITH SALVAGED LUMINAIRE.
3. REMOVE EXISTING WALL SWITCH AND SURFACE CONDUIT TO ABOVE DROP CEILING. MODIFY SWITCHING/LIGHTING CIRCUIT AS REQUIRED TO ACCOMMODATE NEW WALL AND LIGHT SWITCH PLACEMENTS.
4. PROVIDE 0-10V DIMMING WIRES TO EXISTING LUMINAIRES.

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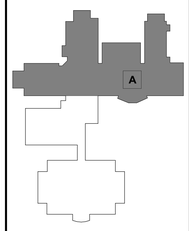

BUILDING KEY PLAN

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RENOVATIONS AND ADDITION

TO THE

KEYSTONE REGIONAL YOUTH CENTER

FOR

THE COUNTY OF BERKS

1261 COUNTY WELFARE ROAD
LEESPORT, PA 19533

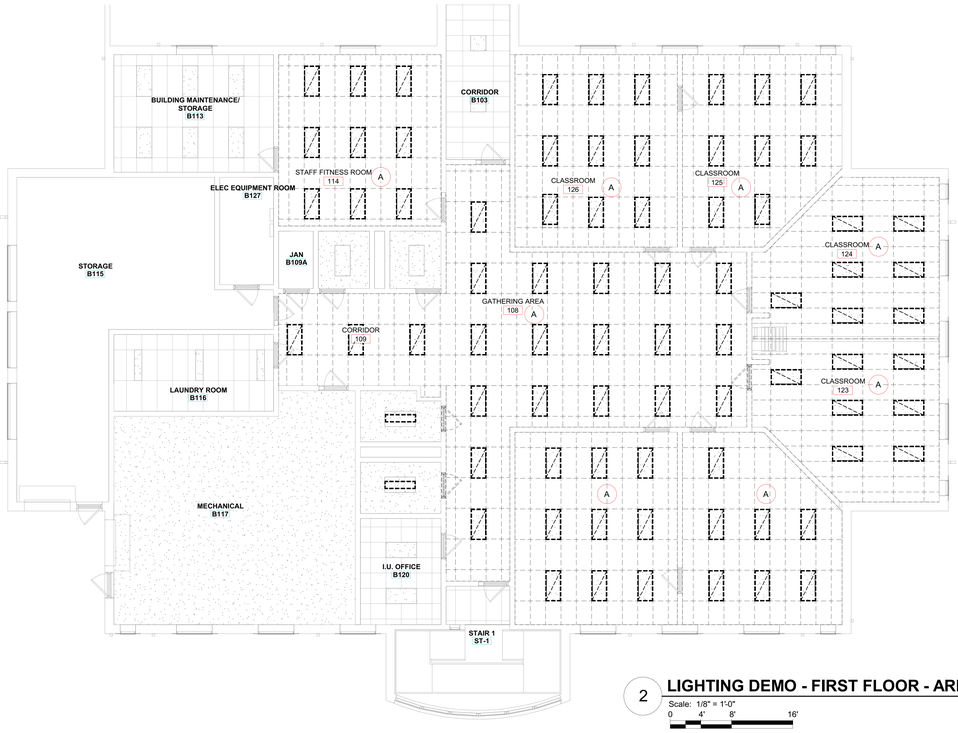
No.	Date	Issue or Revision
	10.05.26	ISSUED FOR BID

Drawing Title

LIGHTING - FIRST FLOOR - AREA A

Scale	USA Project No.
1/8" = 1'-0"	R2024.0111.01
Drawing Date: 10.05.26	Drawing No.: EL-101
Drawn By: CJD	Checked By: DEM

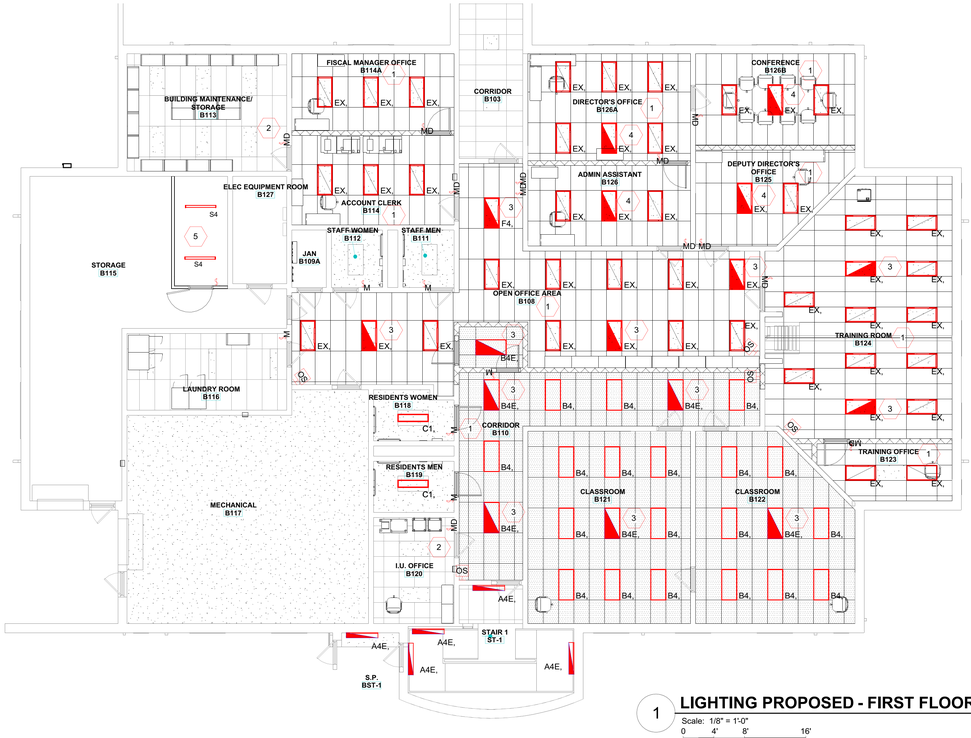
9/28/2026 10:57:09 AM



2 LIGHTING DEMO - FIRST FLOOR - AREA B

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

0 4' 8' 16'



1 LIGHTING PROPOSED - FIRST FLOOR - AREA B

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

0 4' 8' 16'

GENERAL SHEET NOTES

1. LUMINAIRES SHOWN ARE REPLACED ON A ONE-FOR ONE BASIS WITH TYPE SHOWN. CONNECT TO EXISTING BRANCH CIRCUIT WIRING AND CONTROL; UNLESS OTHERWISE NOTED. PROVIDE NEW SWITCHES AND 0-10V DIMMING CONDUCTORS WHERE SHOWN.

DEMOLITION KEYNOTES

A. REMOVE ALL EXISTING LUMINAIRES IN ROOM AND SALVAGE FOR RE-INSTALLATION. EXISTING BRANCH CIRCUIT WIRING TO REMAIN FOR CONNECTION TO NEW LIGHTING LAYOUT.

SHEET KEYNOTES

1. MODIFY EXISTING LIGHTING CIRCUIT TO ACCOMMODATE NEW LIGHTING LAYOUT AND SWITCHING. PROVIDE 0-10V DIMMING WIRES TO EXISTING LUMINAIRES.
2. PROVIDE 0-10V DIMMING WIRES TO EXISTING LUMINAIRES.
3. LUMINAIRE SHALL BE CONNECTED DIRECTLY TO LIFE SAFETY SOURCE (UN-SWITCHED) AND ENERGIZED 24/7.
4. PROVIDE EMERGENCY LIGHTING RELAY W/ LOW VOLTAGE BY PASS AND CONNECT TO 0-10V DIMMING SWITCH AND LED LUMINAIRES. PROVIDE 0-10V DIMMING WIRES FROM DIMMER SWITCH TO LED LUMINAIRES. UTILIZE EXISTING NORMAL AND LIFE SAFETY LIGHTING CIRCUIT FOR POWER TO ALL LED LUMINAIRES IN ROOM. REFER TO DRAWING E-701 FOR MORE INFORMATION. LUMINAIRE SHALL ENERGIZE ON/OFF, DIM WITH ROOM SWITCH WITH NORMAL POWER. UPON LOSS OF POWER LUMINAIRE SHALL ENERGIZE TO FULL BRIGHTNESS REGARDLESS OF SWITCH POSITION.
5. EXTEND AND CONNECT LUMINAIRES TO LIFE SAFETY CIRCUIT FROM ELECTRICAL ROOM.

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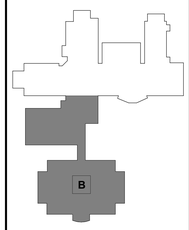

BUILDING KEY PLAN

DRAFT - NOT FOR CONSTRUCTION

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RENOVATIONS AND ADDITION

TO THE

KEYSTONE REGIONAL YOUTH CENTER

FOR

THE COUNTY OF BERKS

1261 COUNTY WELFARE ROAD
LEESPORT, PA 19533

No.	Date	Issue or Revision
	10.05.26	ISSUED FOR BID

Drawing Title

LIGHTING - FIRST FLOOR - AREA B

Scale	USA Project No.
1/8" = 1'-0"	R2024.0111.01
Drawing Date: 10.05.26	Drawing No.: EL-102
Drawn By: CJD	Checked By: DEM

9/28/2026 10:57:11 AM



1 **LIGHTING - SECOND FLOOR - AREA A**

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

0 4' 8' 16'

GENERAL SHEET NOTES

1. LUMINAIRES SHOWN ARE REPLACED ON A ONE-FOR ONE BASIS WITH TYPE SHOWN. CONNECT TO EXISTING BRANCH CIRCUIT WIRING AND CONTROL; UNLESS OTHERWISE NOTED.

DEMOLITION KEYNOTES

A. REMOVE EXIT SIGN.

B. REMOVE LIGHT SWITCH LOCATION.

C. REMOVE FIRE ALARM PULL STATION.

SHEET KEYNOTES

1. EXISTING LED LUMINAIRES TO REMAIN IN THIS ROOM.
2. NEW LUMINAIRE IN NEW CONSTRUCTION IN THIS ROOM.
3. PROVIDE EMERGENCY LIGHTING RELAY W/ LOW VOLTAGE BY PASS AND CONNECT TO 0-10V DIMMING SWITCH AND LED LUMINAIRES. PROVIDE 0-10V DIMMING WIRES FROM DIMMER SWITCH TO LED LUMINAIRES. UTILIZE EXISTING NORMAL AND LIFE SAFETY LIGHTING CIRCUIT FOR POWER TO ALL LED LUMINAIRES IN ROOM. REFER TO DRAWING E-701 FOR MORE INFORMATION. LUMINAIRE SHALL ENERGIZE ON/OFF, DIM WITH ROOM SWITCH WITH NORMAL POWER. UPON LOSS OF POWER LUMINAIRE SHALL ENERGIZE TO FULL BRIGHTNESS REGARDLESS OF SWITCH POSITION.
4. REPLACE EXISTING INCANDESCENT GLOBE WITH NEW LED LUMINAIRE. MODIFY EXISTING BRANCH CIRCUIT AS REQUIRED TO CENTER LUMINAIRE IN ROOM.
5. MODIFY EXISTING LIGHTING CIRCUIT TO NEW CONFIGURATION.
6. LUMINAIRE SHALL BE WIRED DIRECT TO LIFE SAFETY CIRCUIT SHOWN AND ENERGIZED 24/7.
7. EXISTING LUMINAIRES ARE PENDANT MOUNTED. NEW LUMINAIRES SHALL BE SURFACE MOUNTED TO CEILING IN ROOM. PROVIDE MOUNTING AS RECOMMENDED BY MANUFACTURER.
8. LUMINAIRE SHALL BE WIRED DIRECT TO EXISTING LIFE SAFETY CIRCUIT AND ENERGIZED 24/7.
9. REPLACE EXISTING 96' LUMINAIRE. PROVIDE 4' LIFE SAFTEY SECTIONS AS SHOWN AND CONNECT TO EXITING LIFE SAFTEY CIRCUIT. LIFE SAFETY SECTIONS 'LS' SHALL BE ENERGIZED 24/7. VERIFY EXISTING LUMINAIRE LENGTH PRIOR TO SHOP DRAWINGS.

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Entech Project No. 7163.002

BUILDING KEY PLAN

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No.	Date	Issue or Revision
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Drawing Title

LIGHTING - SECOND FLOOR - AREA A

Scale	USA Project No.
1/8" = 1'-0"	R2024.0111.01
Drawing Date: 10.05.26	Drawing No.: EL-103
Drawn By: CJD	Checked By: DEM

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