ABBREVATIONS

AC	AIR CONDITIONING UNIT
AD	ACCESS DOOR
AFF	ABOVE FINISHED FLOOR
AHU	AIR HANDLING UNIT
BD	BLOW DOWN
BLDG	BUILDING
BOP	BOTTOM OF PIPE
BOS	BOTTOM OF STEEL
CHR	CHILLER
CLG	CEILING
CL	CENTERLINE
COL	COLUMN
COMP	COMPRESSOR
CONN	CONNECTION
CONT	CONTINUATION
CUH	CABINET UNIT HEATER
CWP	CHILLED WATER PUMP
D, DIA (ø)	DIAMETER
DEG (°)	DEGREES
DM	DAMPER MOTOR
DN	DOWN
DP	DIFFERENTIAL PRESSURE
DWG	DRAWING
EDH	ELECTRIC DUCT HEATER
EBH	ELECTRIC BASEBOARD HEATER
EF	EXHAUST FAN
EL	ELEVATION
ELEC	ELECTRIC, ELECTRICAL
EQUP	EQUIPMENT
EXH	EXHAUST
EUH	ELECTRIC UNIT HEATER
F	FAHRENHEIT
FD	FLOOR DRAIN
FLR	FLOOR
FT (')	FEET
GA	GAUGE
GPM	GALLONS PER MINUTE
H	HEIGHT
HORIZ	HORIZONTAL
HWH	HOT WATER HEATER
IN (")	INCH
LOV	LOUVER
MAX	MAXIMUM
MECH	MECHANICAL
MIN	MINIMUM
N/A	NOT APPLICABLE
NIC	NOT IN CONTRACT
NO (#)	NUMBER
NTS	NOT TO SCALE
OSA	OUTSIDE AIR
P	PUMP
PLBG	PLUMBING
PRV	PRESSURE RELIEF VALVE
PSI(G)	POUNDS PER SQUARE INCH (GAUGE)
SF	SUPPLY FAN
SND	SOUND ATTENUATOR
SPEC	SPECIFICATION
SS	STAINLESS STEEL
T	THERMOSTAT
TEMP	TEMPERATURE
TOS	TOP OF STEEL
TYP	TYPICAL
V	VENT
VTR	VENT THRU ROOF
W/	WITH
W	WIDTH

PIPING LEGEND

MW	MAKE-UP WATER
CHWS	CHILLED WATER SUPPLY
CHWR	CHILLED WATER RETURN
STM	STEAM 0-15 PSIG
C	CONDENSATE-GRAVITY
PC	PUMPED CONDENSATE
V	VENT
VTR	VENT THRU ROOF
BD	BLOW DOWN

VALVE/PIPING SYMBOLS

- BALL VALVE
- GATE VALVE
- GLOBE VALVE
- HOSE END DRAIN VALVE
- PRESSURE REDUCING VALVE
- PRESSURE REDUCING VALVE WITH EXTERNAL PRESSURE LINE
- RELIEF VALVE
- SOLENOID VALVE
- SPRING OPERATED CHECK VALVE
- SWING CHECK VALVE (NOTE PIN LOCATION)
- CIRCUIT SETTER
- THREE WAY CONTROL VALVE
- TWO WAY CONTROL VALVE
- STEAM TRAP (TYPE) (FT&T) — TM = THERMOSTATIC; TDY = THERMODYNAMIC; B&F = FLOAT AND THERMOSTATIC
- THERMOMETER OR TEMPERATURE GAUGE
- PRESSURE GAUGE ASSEMBLY
- HOSE CONNECTION
- MANUAL AIR VENT OR DRAIN (OR)
- VALVE IN DROP
- Y-TYPE STRAINER
- Y-TYPE STRAINER WITH DRAIN VALVE
- PIPE ANCHOR POINT
- PIPE GUIDE
- UNION
- BLIND FLANGE
- CAP
- PRESSURE AND TEMPERATURE TEST PLUG (PETES PLUG)
- DIRECTION OF FLOW
- PITCH DOWN IN DIRECTION OF ARROW
- CONNECTION, SIDE
- CONNECTION, BOTTOM
- CONNECTION, TOP
- OFFSET
- ELBOW, TURNED UP
- ELBOW, TURNED DOWN
- PUMP (DIAGRAMATIC)

DUCT & EQUIPMENT SYMBOLS

NOTES:
1) FIRST DIMENSION IS SIDE SHOWN
2) DIMENSION NOTE MAY BE OUTSIDE ON SMALLER DUCTS
3) ALL DIMENSIONS ARE NET FREE SIZES, AND DO NOT INCLUDE LINING OR INSULATION.

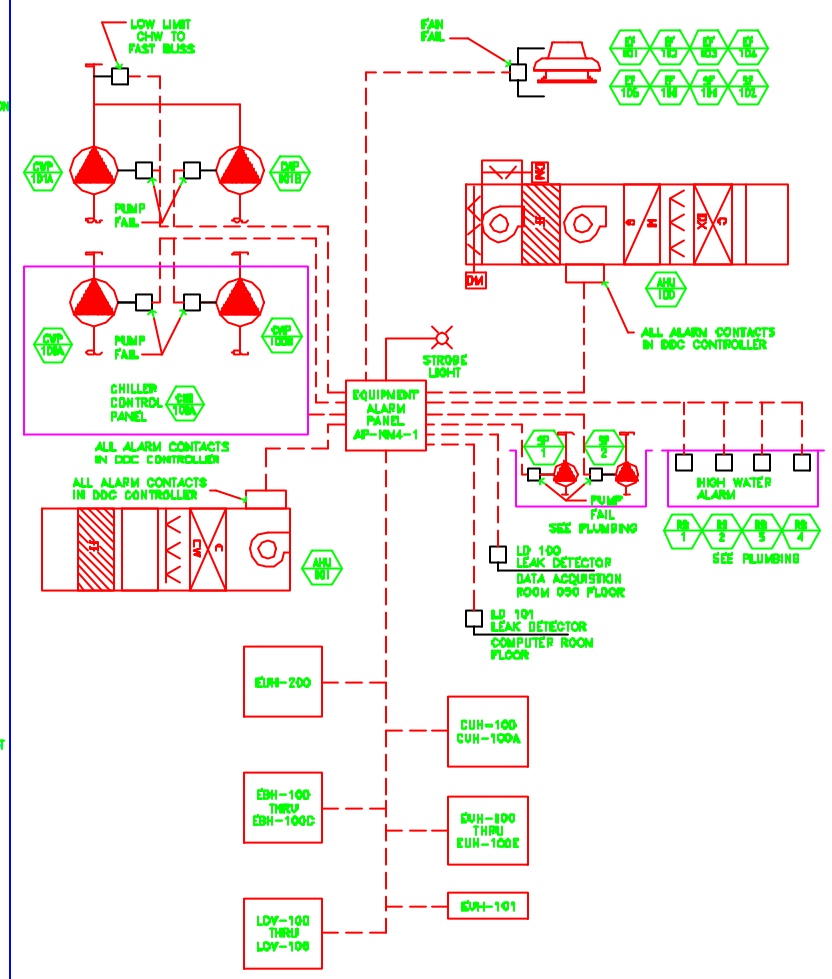
- 24x12 — ROUND DUCT
- ROUND ELBOW TURNED UP, SUPPLY AIR DUCT (DOWN / UP)
- ROUND ELBOW TURNED UP, RETURN OR EXHAUST AIR DUCT (DOWN / UP)
- RECTANGULAR ELBOW TURNED UP, SUPPLY OR OUTSIDE AIR DUCT
- RECTANGULAR ELBOW TURNED DOWN, SUPPLY OR OUTSIDE AIR DUCT
- RECTANGULAR ELBOW TURNED UP, EXHAUST OR RETURN AIR DUCT
- RECTANGULAR ELBOW TURNED DOWN, EXHAUST OR RETURN AIR DUCT
- RADIUS ELBOW
- RECTANGULAR ELBOW WITH TURNING VANES
- AD — ACCESS DOOR / PANEL
- FLEXIBLE DUCT
- FLEXIBLE CONNECTION
- EXHAUST OR RETURN AIR REGISTER OR
- SUPPLY AIR REGISTER OR GRILLE.
- (DG) DOOR GRILLE (UC) — UNDER CUT (FLOW IN DIRECTION OF ARROW)
- CEILING DIFFUSER
- DOWN FLOW AIR DIFFUSER
- XX.X / YYY.Y — TYPE - SEE SPECIFICATION; AIR DIFFUSER / RETURN GRILLE DEVICE; CFM; SEE SPECIFICATION
- DETAIL NO. / REF. DRAWING
- EQUIPMENT TAG / EQUIPMENT NO. — EQUIPMENT IDENTIFICATION TAG
- EUH — HORIZ. — UNIT HEATER — SEE SPECIFICATION
- CUH — CABINET HEATER — SEE SPECIFICATION
- BBH — BASE BOARD — SEE SPECIFICATION
- PF — PRE-FILTER
- F — FINAL FILTER

FILTERS

DUCT & EQUIPMENT SYMBOLS CONT.

- SIZE / CFM OA LOUVER — PLAN — AIR INLET LOUVER (BOTTOM OF DUCT TO DRAIN TOWARD LOUVER). FIRST DIMENSION IS SIDE SHOWN
- SIZE / CFM EXH LOUVER — PLAN — AIR EXHAUST LOUVER (BOTTOM OF DUCT TO DRAIN TOWARD LOUVER) FIRST DIMENSION IS SIDE SHOWN
- UP — DUCT RISE IN DIRECTION OF ARROW
- DOWN — DUCT DROP IN DIRECTION OF ARROW
- F.O.B. — DUCT FLAT ON BOTTOM.
- F.O.T. — DUCT FLAT ON TOP.
- DUCT SIZE TRANSITION
- STANDARD LOW VELOCITY BRANCH, NO SPLITTER WITH 30° FLARE
- EXTRACTOR WITH ADJUSTABLE OPERATOR
- FLARED OR CONICAL TAKEOFF
- 90° ANGLE MINIMUM — HEATING COIL (SHADED), PROVIDE CEILING & DUCT ACCESS ON COIL INLET SIDE
- VD — VOLUME DAMPER (MANUAL). PROVIDE CEILING ACCESS FOR ADJUSTMENT PROVIDE EXTERNAL QUADRANT & THUMB SCREW FOR SETTING & DETERMINING POSITION OF DAMPER BLADE
- FD — FIRE DAMPER PROVIDE CEILING & DUCT ACCESS
- SFD — COMBINATION SMOKE & FIRE DAMPER PROVIDE CEILING & DUCT ACCESS
- BDD — BACKDRAFT DAMPER PROVIDE CEILING AND DUCT ACCESS
- DM — MOTOR OPERATED DAMPER PROVIDE CEILING & DUCT ACCESS
- DM — OPPOSED BLADE DAMPER
- DM — PARALLEL BLADE DAMPER (MANUAL / MOTORIZED)
- C — DX = DIRECT EXPANSION; CW = CHILLED WATER
- H — E = ELECTRIC; G = GAS
- COILS
- SEE SPECIFICATION FOR LENGTH AND WIDTH — SOUND ATTENUATOR

ALARM CIRCUITS



EQUIPMENT ALARM CIRCUITS

FOR CONTROLS SEE SPECIFICATION.
FOR CONDUITS AND ROUTING SEE ELECTRICAL DRAWINGS.

GENERAL NOTES:

THE SUBCONTRACTOR SHALL PROVIDE 6" HIGH CONCRETE EQUIPMENT PADS, SIZED FOR EQUIPMENT PROVIDED. SEE STRUCTURAL DRAWING FOR TYPICAL PAD DETAILS.

No.	Date	Drawing Issue Description	By

KNIGHT
Knight Architects Engineers Planners, Inc.
540 West Randolph Street
Chicago IL 60661

	NAME	DATE
DISCIPLINE REVIEW	S. KRSTULOVICH	1/28/94
DESIGN REVIEW	J. TITUS S. DIXON	1/28/94
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FERMI NATIONAL ACCELERATOR LABORATORY
UNITED STATES DEPARTMENT OF ENERGY
KTeV EXPERIMENTAL AREA
ABBREVIATIONS & SYMBOLS
DRAWING NO. 8-6-3 M-1 REV.

28 JAN. 1994

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