PLUMBING PIPING LEGEND

- PD — PUMP DISCHARGE
- CD — CONDENSATE DRAIN
- NG — NATURAL GAS
- SAN — SANITARY
- SAN — SANITARY (UNDERGROUND)
- LCWS — LOW CONDUCTIVITY WATER SUPPLY
- LCWR — LOW CONDUCTIVITY WATER RETURN
- V — VENT
- V — VENT (UNDERGROUND)
- DOMESTIC COLD WATER
- DOMESTIC HOT WATER
- UD — UNDERDRAIN

VALVE SYMBOLS

- BALL VALVE
- GATE VALVE
- HOSE END BALL DRAIN VALVE
- HOSE END GATE DRAIN VALVE
- PLUG VALVE OR COCK
- RELIEF VALVE
- SWING CHECK VALVE

PIPING SYMBOLS

- DIRT POCKET
- UNION
- BLIND FLANGE OR PLUG
- CAP
- HOSE END DRAIN
- THERMOMETER OR TEMPERATURE GAUGE
- PRESSURE GAUGE ASSEMBLY
- DIRECTION OF FLOW
- PITCH DOWN IN DIRECTION OF ARROW
- CONNECTION, SIDE
- CONNECTION, BOTTOM
- CONNECTION, TOP
- OFFSET
- ELBOW TURNED UP OR TEE UP & DOWN
- ELBOW TURNED DOWN OR TEE UP & DOWN
- VALVE IN VERTICAL RISER
- CONCENTRIC REDUCER
- ECCENTRIC REDUCER
- VENT THRU ROOF
- FUNNEL DRAIN
- PIPE SLEEVE
- MANUAL AIR VENT
- DRAIN VALVE

PLUMBING EQUIPMENT SYMBOLS

- P-TRAP (PLAN)
- P-TRAP (ELEVATION)
- AIR CHAMBER
- VB — VACUUM BREAKER
- FD — FLOOR DRAIN
- CO — CLEANOUT FLUSH WITH FLOOR
- CO — SUSPENDED CLEANOUT
- CO — CLEANOUT FLUSH WITH WALL
- HB — HOSE BIBB WITH VACUUM BREAKER
- WH — WALL HYDRANT FLUSH WITH WALL W/VB

TAGS AND TITLES

DETAIL SEQUENCE NUMBER
DETAIL TITLE
SCALE 1
DETAIL SHEET NUMBER
DETAIL TITLE

EQUIPMENT TAG
EQUIPMENT NUMBER
EQUIPMENT IDENTIFICATION TAG (SEE SCHEDULE FOR CAPACITIES)

CONNECTION TO EXISTING

ABBREVIATIONS

AC	AIR CONDITIONING, AIR COMPRESSOR	KW	KILOWATT
AFF	ABOVE FINISHED FLOOR	KWH	KILOWATT HOUR
BFP	BACK FLOW PREVENTER	LAV	LAVATORY
BLDG	BUILDING	LBS	POUNDS
BOP	BOTTOM OF PIPE	MAX	MAXIMUM
BOS	BOTTOM OF STEEL	MBH	THOUSAND BTU'S PER HOUR
BTU	BRITISH THERMAL UNIT	MECH	MECHANICAL
BTUH	BRITISH THERMAL UNIT PER HOUR	MIN	MINIMUM
CD	CONDENSATE DRAIN	N/A	NOT APPLICABLE
CLG	CEILING, CEILING	NC	NORMALLY CLOSED, NOISE CRITERIA
CI	CAST IRON	NIC	NOT IN CONTRACT
CL	CENTERLINE	NO (#)	NUMBER
CO	CLEANOUT	NTS	NOT TO SCALE
COL	COLUMN	OC	ON CENTER
CONN	CONNECTION	OHD	OPEN HUB DRAIN
CONT	CONTINUATION	%	PERCENT
D, DIA	DIAMETER	P	PUMP
DEG	DEGREES	PD	PUMP DISCHARGE
DN	DOWN	PH	PHASE
DWG	DRAWING	PLBG	PLUMBING
DWS	DOMESTIC WATER SUPPLY	PS(G)	POUNDS PER SQUARE INCH (GAUGE)
EL	ELEVATION	RB	RETENTION BASIN
ELEC	ELECTRIC, ELECTRICAL	RPM	REVOLUTIONS PER MINUTE
ENT	ENTERING	RPBFP	REDUCED PRESSURE BACKFLOW PREVENTOR
EQUIP	EQUIPMENT	SAN	SANITARY
EWC	ELECTRIC WATER COOLER	SP	SUMP PUMP
FCO	FLOOR CLEANOUT	SPEC	SPECIFICATION
FD	FLOOR DRAIN	SS	STAINLESS STEEL, SERVICE SINK
FL	FLOOR	STD	STANDARD
FL MTD	FLOOR MOUNTED	TEMP	TEMPERATURE
FT (')	FEET	TYP	TYPICAL
FV	FLUSH VALVE	UR	URINAL
GA	GAUGE	VERT	VERTICAL
GAL	GALLONS	V	VENT, VOLTS
GPH	GALLONS PER HOUR	VA	VALVE
GPM	GALLONS PER MINUTE	VB	VACUUM BREAKER
HORIZ	HORIZONTAL	VEL	VELOCITY
HP	HORSEPOWER	VTR	VENT THRU ROOF
HR	HOUR	W/	WITH
HB	HOSE BIBB	W	WATT, WIDTH, WASTE
HWH	HOT WATER HEATER	WC	WATER CLOSET
HZ	HERTZ	WCO	WALL CLEANOUT
IE	INVERT ELEVATION	WH	WALL HYDRANT
IN (")	INCH		

FIXTURE ROUGH-IN PIPE SIZES

FIXTURE	TAG	RISER AND AIR CHAMBER FOR FIXTURE		FIXTURE NIPPLE (VALVE INLET)		CODE REQUIREMENTS		MOUNTING HEIGHT (FLR. TO RIM)	ELECTRICAL	REMARKS	
		HW	CW	HW	CW	WASTE	VENT				MAX. FLOW RATES
WATER CLOSET	WC-1	–	1"	–	1"	4"	2"	18"	–	WALL MOUNTED-FLUSH VALVE BARRIER FREE	1.6 GAL./FLUSH
URINAL	UR-1	–	1"	–	3/4"	2"	1 1/2"	17"	–	WALL MOUNTED-FLUSH VALVE BARRIER FREE	1.0 GAL./FLUSH
LAVATORY	LAV-1	3/4"	3/4"	1/2"	1/2"	1 1/2"	1 1/2"	34"	–	WALL HUNG – BARRIER FREE 11 1/2" ABV. RIM	0.5 GAL./MIN. @ 60 PSI
SERVICE SINK	SS-1	3/4"	3/4"	1/2"	1/2"	3"	2"	26"	–	WALL MOUNTED	
ELECTRIC WATER COOLER	EWC-1	–	3/4"	–	1/2"	1 1/2"	1 1/2"	36"	1/5 HP, 115V	WALL MOUNTED SPOUT HEIGHT – 36"AFF BARRIER FREE	
WALL HYDRANT	WH-1	–	3/4"	–	3/4"	–	–	–	–	RECESSED BOX TYPE NON-FREEZE WITH VACUUM BREAKER	
HOSE BIBB	HB-1	–	3/4"	–	3/4"	–	–	–	–	INTERIOR WITH VACUUM BREAKER	

NOTE: SEE SPECIFICATION FOR COMPLETE DESCRIPTION.

PUMP SCHEDULE

UNIT NO.	LOCATION	TYPE	GPM	HEAD FT. WG	ELECTRICAL HP	VOLT	PH	HZ	RPM	BASIS OF DESIGN	REMARKS
SP-1	EXPERIMENTAL HALL	DUPLEX SUBMERSIBLE	175	29	2	460	3	60	1150	WEIL 3A-150318-2	UNDERDRAIN FIBERGLASS BASIN 48" DIA. x 96" DEEP
SP-2	NM-3A	DUPLEX SUBMERSIBLE	50	21	1/2	460	3	60	1750	WEIL 2A-150114-1/2	UNDERDRAIN FIBERGLASS BASIN 48" DIA. x 88" DEEP

NOTE: SEE SPECIFICATION FOR COMPLETE DESCRIPTION.

RETENTION BASIN SCHEDULE

UNIT NO.	TYPE	LOCATION	DIAMETER IN.	DEPTH IN.	REMARKS
RB-1	RETENTION ONLY	EXPERIMENTAL HALL	30"	36"	FIBERGLASS BASIN IN CONCRETE ENCASEMENT WITH SHIMMED UP COVER AND WATER LEVEL ALARM AS MANUFACTURED BY MAGNETEK.
RB-2	RETENTION ONLY	EXPERIMENTAL HALL	30"	36"	FIBERGLASS BASIN IN CONCRETE ENCASEMENT WITH SHIMMED UP COVER AND WATER LEVEL ALARM AS MANUFACTURED BY MAGNETEK.
RB-3	RETENTION ONLY	DECAY	30"	36"	FIBERGLASS BASIN IN CONCRETE ENCASEMENT WITH SHIMMED UP COVER AND WATER LEVEL ALARM AS MANUFACTURED BY MAGNETEK.
RB-4	RETENTION ONLY	NM43	30"	36"	FIBERGLASS BASIN IN CONCRETE ENCASEMENT WITH SHIMMED UP COVER AND WATER LEVEL ALARM AS MANUFACTURED BY MAGNETEK.

NOTE: SEE SPECIFICATION FOR COMPLETE DESCRIPTION.

WATER HEATER SCHEDULE

UNIT NO.	LOCATION	STORAGE CAPACITY GALLONS	ELECTRICAL TOTAL KW	VOLTS	PHASE	NO. OF ELEMENTS	MAX BTU INPUT	STEAM LB/HR	RECOVERY RATE AT 100 DEG F. TEMP. RISE (GPH)	BASIS OF DESIGN	REMARKS
HWH-1	BUILDING SERVICES R44	30	–	–	–	–	30,000	–	–	STATE MODEL 538-30-NAS	SHORT MODEL, FLOOR MOUNTED W/4" FLUE BY HVAC CONTR.

NOTE: SEE SPECIFICATION FOR COMPLETE DESCRIPTION.

FLOOR DRAIN SCHEDULE

SYMBOL	DESCRIPTION
FD-1	FINISHED AREA FLOOR DRAIN, 2 PIECE CAST IRON BODY WITH REVERSIBLE COLLAR, ADJUSTABLE 8" SQUARE NICKEL BRONZE GRATE
FD-2	EQUIPMENT AREA FLOOR DRAIN, CAST IRON BODY WITH SEDIMENT BUCKET AND ROUND CAST IRON GRATE
FD-3	EQUIPMENT AREA FLOOR DRAIN, DEEP CAST IRON BODY WITH SEDIMENT BUCKET AND ROUND CAST IRON GRATE, WITH FUNNEL

NOTE: SEE SPECIFICATION FOR COMPLETE DESCRIPTION.

No.	Date	Previous Issue Description	By

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SCALE:

FERMI NATIONAL ACCELERATOR LABORATORY
UNITED STATES DEPARTMENT OF ENERGY

KTeV EXPERIMENTAL AREA
ABBREVIATIONS, SYMBOLS, & SCHED'S.

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