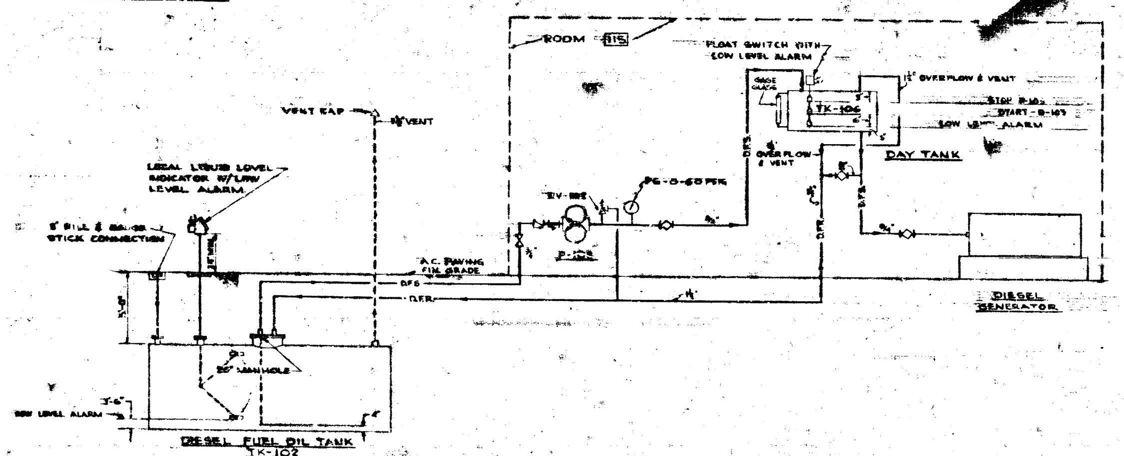
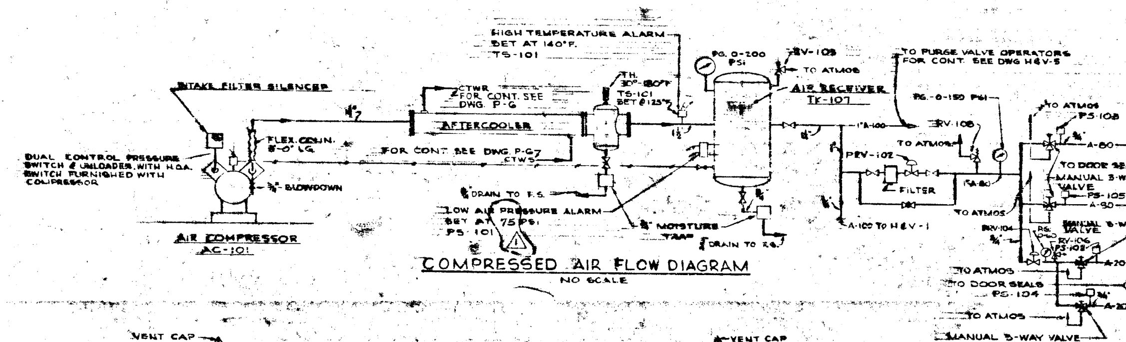
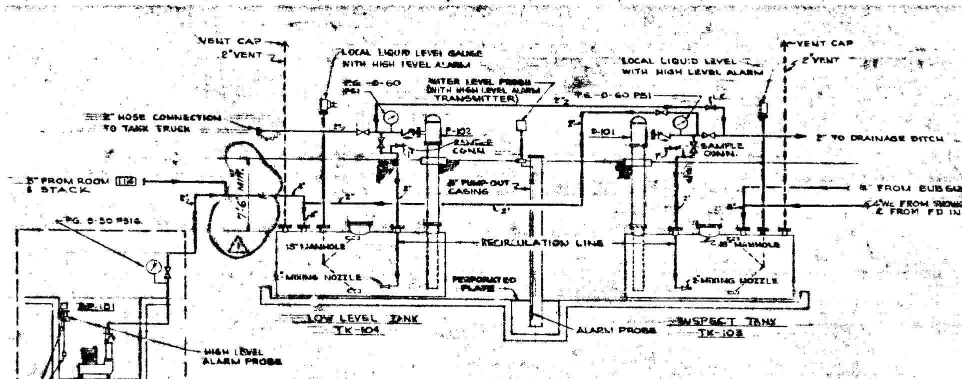
1403-2-11-P-1



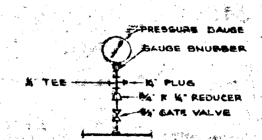
DIESEL FUEL OIL FLOW DIAGRAM
NO SCALE



COMPRESSED AIR FLOW DIAGRAM
NO SCALE

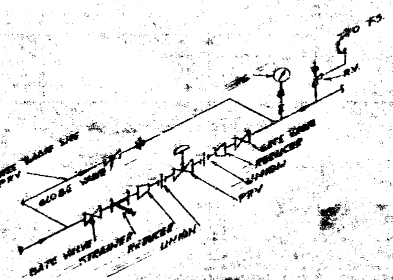


SUSPECT & LOW LEVEL W_c SYSTEM FLOW DIAGRAM
NO SCALE



DETAIL 1
TYP. PRESS. GAGE CONN.
NO SCALE

DETAIL 2
TYP. AIR PRV
NO SCALE



DETAIL 3
TYP. WATER PRV
NO SCALE

PUMPS

ITEM NO.	SERVICE	TEMPERATURE & VISCOSITY	SPECIFIC GRAVITY	CAPACITY	TOTAL HEAD	MOTOR HP	MOTOR RPM	REMARKS
P-101	CONTAMINATED WASTE	50°F 1.3 CENTIPOISE	1.00	40 GPM	45 FT	1	1750	VERTICAL TURBINE TYPE ON TANK-103
P-102	CONTAMINATED WASTE	50°F 1.3 CENTIPOISE	1.00	40 GPM	35 FT.	1	1750	VERTICAL TURBINE TYPE ON TANK-104
P-103	DIESEL FUEL	50°F 100 SSU	0.95	5 GPM	30 PSI	1/3	1750	POSITIVE DISPLACEMENT ROTARY PUMP
P-104	200°F WATER	200°F 0.32 CENTISTOKE	0.963	60 GPM	25 FT	3/4	1750	END SUCTION CENTRIFUGAL
P-105 A&B	DISTILLED WATER	100°F 0.68 CENTIPOISE	1.00	35 GPM	185 FT.	5	3500	END SUCTION CENTRIFUGAL
P-106 A&B	COOLING TOWER WATER	85°F 0.68 CENTIPOISE	1.00	242 GPM	90 FT.	7 1/2	1800	VERTICAL TURBINE TYPE

SUMP PUMPS

ITEM NO.	LOCATION	CAPACITY G.P.M.	TOTAL DISCH. HEAD	MOTOR H.P.	MOTOR R.P.M.	REMARKS
SP-101	ACCESS AREA	40	40	2	1750	SUBMERSIBLE

VACUUM CLEANER

ITEM NO.	SERVICE	ACTUAL CAPACITY	PRESSURE	MAX. PUMP R.P.M.	MOTOR H.P.	MOTOR R.P.M.	REMARKS
VC-101	VACUUM CLEANER	200 CFM	10" Hg VAC.	DIRECT COUPLED	20	3500	VACUUM PRODUCER FOR VAC. CLEANING SYS.

AIR COMPRESSORS

ITEM NO.	SERVICE	MIN. PISTON DISPLACEMENT	DISCHARGE PRESSURE	MAX. COMP. R.P.M.	MOTOR H.P.	MOTOR R.P.M.	REMARKS
AC-101	INST. AIR & DOOR SEALS	56 CFM	100 PSIG	1250	10	1750	2 STAGE
AC-102 A&B	CONTAM. AIR HOLD UP	4.5 CFM	150 PSIG	1210	1	1750	1 STAGE

COOLING TOWER

ITEM NO.	CELLS	G.P.M.	DESIGN TEMP. (WET BULB)	WATER TEMP. IN	WATER TEMP. OUT	FAN H.P.	REMARKS
CT-101	1	242	75°F	95°F	85°F	2	INDUCED DRAFT TYPE

RELIEF & SAFETY VALVES

ITEM NO.	SERVICE	CAPACITY	PRESS. SETTING	REMARKS
RV-101	WATER	50 GPM	60 PSIG	RELIEF VALVE FOR PRV-101
RV-102	DIESEL FUEL	5 GPM	30 PSIG	RELIEF VALVE FOR P-103
RV-103	AIR	60 SCFM	110 PSIG	SAFETY VALVE FOR AC-101, TK-107
RV-104	WATER	25 GPM	60 PSIG	RELIEF VALVE FOR PRV-106
RV-105	NITROGEN	85 SCFM	2 PSIG	SAFETY VALVE FOR PRV-103
RV-106	AIR	24 SCFM	25 PSIG	SAFETY VALVE FOR PRV-104
RV-107	HOT WATER	20,000 BTU/HR	70 PSIG	COMB. TEMP. & PRESS. R.V. FOR EWH-101
RV-108	AIR	30 SCFM	90 PSIG	SAFETY VALVE FOR PRV-102

PLUMBING FIXTURE CONNECTIONS SCHEDULE

FIXTURE	ABBREV.	SOIL OR WASTE	TRAP	VENT*	C.W.	H.W.	REMARK
WATER CLOSET	W.C.	4"	INT.	2"-4"	1/2"		TANK TYPE
URINAL	U.	2"	INT	1 1/2"	1"		1" VALVE
LAVATORY	LAV.	1 1/2"	1 1/2"	1 1/2"	1/2"	1/2"	
SERVICE SINK	SERV. S.	3"	3"	1 1/2"	1/2"	1/2"	
ELECTRIC WATERCOOLER	E.W.C.	1 1/4"	1 1/4"	1 1/4"	1/2"		
SHOWER	SHO.	2"	2"	1 1/2"	1/2"	1/2"	
FLOOR SINK *	F.S.	3"	3"	2"			
FLOOR DRAIN *	F.D.	2"	2"	2"			

* EXCEPT AS OTHERWISE INDICATED.

ELECTRIC WATER HEATER

ITEM No	TYPE	CAPACITY	HEATING ELEMENT UPPER	HEATING ELEMENT LOWER	TEMP. RISE	REMARKS
EWH-101	DOMESTIC	80 GAL	5000 WATTS	5000 WATTS	60°-140°	

PRESSURE REDUCING VALVES

ITEM No	SERVICE	PRESSURE INITIAL	PRESSURE FINAL	ADJUSTABLE RANGE	CAPACITY	REMARKS
PRV-101	WATER	150-500 PSIG	60 PSIG	25-75 PSIG	50 GPM	IN ROOM 104 SINGLE SEAT VALVE WITH STAINLESS STEEL TRIM
PRV-102	AIR	100 PSIG	80 PSIG	55-80 PSIG	24 SCFM	IN ROOM 115
PRV-103	NITROGEN	40 PSIG	1 PSIG	1-25 PSIG	85 SCFM	LOCATED ON P&ID
PRV-104	AIR	80 PSIG	20 PSIG	15-30 PSIG	24 SCFM	IN ROOM B-101 SINGLE SEAT VALVE WITH STAINLESS STEEL TRIM
PRV-105	NITROGEN	1 PSIG	10" H_2O	3"-15" H_2O		IN TRENCH IN ROOM 114
PRV-107	C_6	75 PSIG	1/2 PSIG	1/4-2 PSIG	25 GPM	ROOM 114 TRENCH

LEGEND

SYMBOL	ABBREV.	DESCRIPTION
	R.V.	RELIEF VALVE - VACUUM R.V. (ELEVATION)
	R.V.	RELIEF VALVE - VACUUM R.V. (PLAN)
	P.R.V.	PRESSURE REDUCING VALVE
	T.C.V.	TEMPERATURE CONTROL VALVE
	T.C.V.	3 WAY TEMPERATURE CONTROL VALVE
	SOL.V.	SOLENOID VALVE
	R.S.V.	REMOTE SHUT-OFF VALVE
		STRAINER
	TH.	THERMOMETER
	P.G.	PRESSURE OR VACUUM GAUGE
		P-TRAP
	F.D.	FLOOR DRAIN (WITH TRAP)
	F.S.	FLOOR SINK (WITH TRAP)
	S.F.I.	SIGHT FLOW INDICATOR
	C.O.	FLOOR CLEANOUT
	C.O.	CLEANOUT ABOVE FLOOR
		UNION
		DIRECTION OF FLOW IN LINE
		PITCH DOWN
	H.B.	HOSE BIBB
		SCREWED CAP
	S.S.	SANITARY SEWER
— Wc —	Wc	CONTAMINATED WASTE (LIQUID)
	V.	SANITARY & DRAIN LINE VENT
	C.W.	COLD WATER
	H.W.	HOT WATER
— A-100 —	A-100	COMPRESSED AIR 100 PSIG
— CTWS —	CTWS	COOLING TOWER WATER SUPPLY
— CTWR —	CTWR	COOLING TOWER WATER RETURN
— D.F.S. —	D.F.S.	DIESEL FUEL SUPPLY
— D.F.R. —	D.F.R.	DIESEL FUEL RETURN
— IA —	I.A.	INSTRUMENT AIR
— A 80 —	A 80	COMPRESSED AIR 80 PSIG
— A.S. —	A.S.	AIR SAMPLING
— F.P. —	F.P.	FIRE PROTECTION
— HWS —	HWS	HEATING WATER SUPPLY
— HWR —	HWR	HEATING WATER RETURN
— A-20 —	A-20	COMPRESSED AIR 20 PSIG
	G.V.	GATE VALVE
	GL.V.	GLOBE VALVE
	P.V.	PLUG VALVE
	CK.V.	CHECK VALVE
		CAPILLARY LINE
		ELECTRICAL LINE
	V.T.R.	VENT THRU ROOF
	INV. EL.	INVERT ELEVATION
	L.C.	LOCK CLOSED
— VC —	V.C.	VACUUM CLEANING
— VCR —	V.C.R.	VACUUM CLEANING RETURN
— SCW —	SCW	SHIELD COOLING WATER
— SCWR —	SCWR	SHIELD COOLING WATER RETURN
— Gc —	Gc	CONTAMINATED GAS
— INF.A. —	INF. A.	INFILTRATION AIR
	P.A.	PURGE AIR
	V.T.A.	VENT TO ATMOSPHERE
— N_2 I —	N_2 I	NITROGEN 1 PSIG
	H.O.A.	HAND-OFF-AUTOMATIC

TANKS

ITEM No	SERVICE	CAPACITY	DIA	APPROX. LENGTH	DESIGN PRESS.	REMARKS
TK-101	DIESEL FUEL OIL	1500 GAL	4'-6"	13'-0"	ATMOS.	WITH UNDERWRITERS LABEL
TK-102	DIESEL FUEL OIL	550 GAL	4'-0"	6'-0"	ATMOS.	WITH UNDERWRITERS LABEL
TK-103	CONTAMINATED SUSPECT LEVEL	550 GAL	4'-0"	6'-0"	ATMOS.	SPECIAL COATING-SEE SPEC.
TK-104	CONTAM. WASTE LOW LEVEL	550 GAL	4'-0"	5'-0"	ATMOS.	SPECIAL COATING-SEE SPEC.
TK-105 A/C	CONTAM. GAS HOLD-UP	110 CU. FT.	6'-0"	10'-0"	250 PSIG	WITH A.S.M.E. STAMP
TK-106	DIESEL DAY TANK	30 GAL.	1'-6"	2'-4"	ATMOS.	
TK-107	AIR RECEIVER	31 CU. FT	3'-6"	7'-0"	125 PSIG	WITH A.S.M.E. STAMP
TK-108	HOT WATER EXPANSION	15 GAL.	1'-0"	2'-6"	80 PSIG	
TK-109	SCW COMPRESSION TANK	15 GAL	1'-0"	2'-6"	80 PSIG	ALUMINUM CONSTRUCTION
TK-110	LIQUID NITROGEN	1000 GAL	SEE SPECIFICATIONS			

NOTES:
1. ALL MOTOR SIZES AND POWER REQUIREMENTS SHOWN IN EQUIPMENT SCHEDULES ARE MINIMUM ALLOWABLE SIZES. THE CONTRACTOR IS RESPONSIBLE FOR ALL ELECTRICAL CHANGES IF LARGER MOTORS OR POWER REQUIREMENTS ARE USED ON EQUIPMENT SELECTED.
2. ALL TYPICAL DETAILS SHOWN SHALL BE USED THROUGHOUT JOB.

HALF SIZE PRINT

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AS BUILT

ISSUED FOR CLIENT APPROVAL

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