8 | 7 | 6 | 5 | 4 | 3 | 2 | 1

GENERAL NOTES: (UNLESS OTHERWISE SPECIFIED)

1. UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON DECIMALS ARE .XX ±.030, .XXX ± .010 FRACTIONS ± 1/8" ANGLES ± 1°.

2. REMOVE ALL BURRS AND BREAK ALL SHARP EDGES.

[3] GASKET MATERIAL SHALL BE, EPDM, 60 DUROMETER, 1/16" THICK, PER ASTM D2000-3BA-615-B13-C12-F17.

[4] GASKET MATERIAL SHALL BE, GYLON STYLE 3510, 1/16" THICK PER ASTM F104, LINE CALL OUT F451999A9B2E99K5M6.

[5] MAGNETIC FLOW METER, SIZE 2", FM APPROVED, CERAMIC LINING, ANSI 300 WAFER CONNECTION, 1/2" FNPT ELECTRICAL CONNECTION, NEMA 4X ENCLOSURE, AC POWER SUPPLY, HART COMMUNICATIONS PROTOCOL; YOKOGAWA ADMAG SERIES AE205MN-CB2-EHA-A1DH/HART/FF1/FN1.

~~[6] VALVE PART NUMBER 2CPT5166TM CLASS 150, FF, 30° V GEAR OPERATOR PART NUMBER B32.~~

[7] HEX NUTS, ITEM 55, ON FLOW METER, ITEM 11, SHALL BE TORQUED TO 239 INCH POUNDS (20 FOOT-POUNDS) (PER YOKOGAWA MFG. RECOMMENDATION).

[8] HEX NUTS, ITEM 55, ON STRAINER, ITEM 10, VALVE, ITEM 12, AND PRESSURE SENSOR, ITEM 13, SHALL BE TORQUED TO 120 FOOT POUNDS (PER GASKET MANUFACTURES RECOMMENDATION).

9. ESTIMATED WEIGHT = 1200 LBS. CENTER OF GRAVITY LOCATION IS APPROXIMATELY AT THE CENTER OF SKID, 9" ABOVE GRADE.

10. FABRICATE WELD TEST AND INSPECT PER ASME B31.3, NORMAL SERVICE; WITH THE FOLLOWING ADDITIONS:
VT ALL WELDS ON FIT UP AND FINAL PASS.
PT ALL WELDS ON FINAL PASS.
UT, RT FOR BUTT WELDS PER ASME B31.3. IN-PROCESS EXAMINATION IN ACCORDANCE WITH PARA. 344.7 MAY BE SUBSTITUTED FOR ALL OR PART OF THE RT OR UT EXAMINATION ON A WELD FOR WELD BASIS.

11. HYDROSTATIC TESTING OF CAUSTIC MANIFOLD (ITEM 2), FLUSH TEE (ITEM 4) AND AIR MANIFOLD (ITEM 3) SHALL BE IN ACCORDANCE WITH ASME B31.3, TEST PRESSURE SHALL BE 225 PSI ±10 PSI, HOLD FOR 10 MINUTES. ISOLATE INSTRUMENTATION AS REQUIRED. AFTER SUCCESFUL COMPLETION OF HYDROSTATIC TEST AND THE ASSEMBLY OF ISOLATED PARTS/COMPONENTS, PERFORM A PNEUMATIC LEAK TEST: TEST PRESSURE SHALL BE 50 PSI ±5 PSI.

[12] USE 2 FLANGE SPRAY SHIELDS (ITEM 57) TO COVER FLANGES FOR FLOW METER (ITEM 11) AND ISO RING (ITEM 15).

[13] IDENTIFY SKID IN THE LOCATION SHOWN WITH THE DRAWING NUMBER, EQUIPMENT NUMBER AND WEIGHT. EQUIPMENT LABELS ARE:

H-14-105394-1
SKID #1 - POR 52
GROSS WEIGHT 1200 LBS

H-14-105394-1
SKID #2 - POR 53
GROSS WEIGHT 1200 LBS

USE 1 1/2" BLACK LETTERS ON YELLOW BACKGROUND. PAINT SHALL BE INDUSTRIAL GRADE ENAMEL. PRIMER AND FINISH COATS SHALL BE PER MANUFACTURER'S INSTRUCTIONS. QUANTITIES FOR ASSEMBLES LISTED IN THE PARTS/MATERIAL LIST ARE FOR A SINGLE ITEM.

~~[14] RED VALVE SERIES 40 PRESSURE SENSOR, 2"ø ANSI B16.5, CLASS 150 FLANGES, 316 STAINLESS STEEL, EPDM, SILICONE OIL, 0-60 PSIG.~~

[15] IDENTIFY FLUSH TEE COUPLINGS WITH 1/4" HIGH DIE STAMP LETTERS ON 1 1/2" X 3 1/2" X 16 GAGE, ASTM A240 SST, PLACARD AS SHOWN.

[16] ADD "CAUTION" TO TOP OF ELECTRICAL ENCLOSURE AS SHOWN, USING 1" BLACK LETTERS ON YELLOW BACKGROUND. PAINT SHALL BE INDUSTRIAL GRADE ENAMEL APPLIED PER MANUFACTURES INSTRUCTIONS.

17. WHERE ASTM A53 PIPE IS CALLED OUT, ASTM A106 GR B IS ACCEPTABLE.

[18] GOSCO ENGINEERING INC. VARI-V CONTROL VALVE, 2" STANDARD PORT, 150 FLAT FACE FLANGES, VIRGIN TEFLON SEATS, SST BODY SST TRIM, CHEVRON TEFLON PACKING, GEAR OPERATED, PART NUMBER 06S150-SSSS-TFECHV-30VBNS. GEAR OPERATOR PART NUMBER 221-819020-423-500 INCLUDE MOUNTING BRACKET AND STEM COUPLING.

PARTS/MATERIAL LIST

Flag	QUANTITY -040	-030	-020	-010	PART/DASH NUMBER	NOMENCLATURE/DESCRIPTION	MATERIAL/REFERENCE	SHEET	ITEM NO.
				X	-010	CAUSTIC & AIR MANIFOLD ARRANGEMENT		2	1
			X	1	-020	CAUSTIC MANIFOLD ASSEMBLY		3	2
		X		1	-030	AIR MANIFOLD ASSEMBLY		4	3
	X				-040	FLUSH TEE ASSEMBLY		5	4
									5
				1	H-14-105393-010	SUPPORT SKID ASSEMBLY		2	6
				1	H-14-105396-010	ELECTRICAL AND INSTRUMENTATION ASSEMBLY		2	7
									8
									9
			1		MODEL 72	STRAINER, 2"ø FLANGED, W/EPDM GASKET BASKET PERFORATIONS SHALL BE 3/16"ø	HAYWARD INDUSTRIES	3	10
5			1			FLOW METER	YOKOGAWA	3	11
18			1			VALVE, BALL, 2"ø GEAR OPERATED, FLANGED	GOSCO	3	12
			1		45-1379-SS-04L-XBG-0-60	PRESSURE GAGE, 0-60 PSI	ASCROFT	3	13
			2		(K4466TSW)	BALL VALVE, 1/2"ø SOCKET WELD ENDS	(WORCESTER CONTROLS)	3	14
			1		8002-TS-04T-XCK	ISO-RING, 2"ø	ASHCROFT	3	15
									16
		2			(70-104-41)	VALVE, BALL, VENTED 3/4"ø NPT	(APOLLO)	4	17
		2			4046AT	PRESSURE REGULATOR, 3/4"ø NPT	FAIRCHILD INDUSTRIAL	4	18
		1			19MEDK020L	PRESSURE RELIEF VALVE, 90° 3/4' NPT	HYDROSEAL VALVE CO.	4	19
		2			63 1008S 02L 0-60#	PRESSURE GAGE, 0-60 PSI 1/4"ø NPT	ASHCROFT	4	20
									21
									22
	1				(2"T4466TSWV2)	VALVE, BALL, 2"ø, 3 WAY, SOCKET WELD ENDS	(WORCESTER CONTROLS)	5	23
	1				(2"K4466TSW)	VALVE, BALL, 2"ø SOCKET WELD ENDS	(WORCESTER CONTROLS)	5	24
									25
		AR				PIPE, 1"ø SCHED 40 WELDED OR SMLS	ASTM A53, TYPE S GALVANIZED, OR ASTM A106	4	26
	AR		AR			PIPE, 2"ø SCHED 40 SMLS	ASTM A312, 316L SST	3, 5	27
		AR				PIPE, 3/4"ø SCHED 40 SMLS	ASTM A53, TYPE S GALVANIZED, OR ASTM A106	4	28
			AR			PIPE, 1/2"ø SCHED 40 SMLS	ASTM A312, 316L SST	3	29
		4				PIPE NIPPLE, 3/4"ø X 3" LG, SCHED 40 TBE	ASTM A733, A106 GR B GALVANIZED	4	30
			2			PIPE NIPPLE, 1/2"ø X 2" LG, SCHED 40 TOE	ASTM A312, A733, 316L SST	3	31
		2				PIPE NIPPLE, 1/4"ø X 2" LG, SCHED 40 TBE	ASTM A733, A106 GR B GALVANIZED	4	32
		1				STREET ELBOW, 90°, 1"ø CLASS 150 NPT	ASME B16.3, HOT DIPPED GALVINIZED PER ASTM A153	4	33
			1			STREET ELBOW, 90°, 1/2"ø CLASS 150 NPT	316 SST	3	34
		1				ELBOW 90°, 3/4"ø CLASS 150 NPT	ASME B16.3, HOT DIPPED GALVINIZED PER ASTM A153	4	35
			2			ELBOW 45°, 2"ø SCHED 40, BW	ASME SA-403, CLASS WP-W 304L SST	3	36
		2				TEE, 3/4" X 3/4" X 1/4" CLASS 150 NPT	ASME B16.3, HOT DIPPED ZINC COATED PER ASTM A153	4	37
		2				TEE, 3/4", CLASS 150 NPT	ASME B16.3, HOT DIPPED ZINC COATED PER ASTM A153	4	38
		2				COUPLING, 1/4"ø CLASS 150 NPT	ASME B16.3, HOT DIPPED ZINC COATED PER ASTM A153	4	39
									40
									41
									42
									43
	3	3	4			LANYARD, 1/16"-1/8"ø STRANDED WIRE, LG AS REQ'D	ANY GRADE SST	3,4,5	44
	6	6	8			COMPRESSION SLEEVE (CRIMP)	ANY GRADE SST	3,4,5	45

PARTS/MATERIAL LIST CONTINUED

Flag	QUANTITY -040	-030	-020	-010	PART/DASH NUMBER	NOMENCLATURE/DESCRIPTION	MATERIAL/REFERENCE	SHEET	ITEM NO.
			2			FLANGE, 2" CLASS 150, SOCKET WELD	ANSI B16.5 316L SST	3	46
			2			FLANGE, 2" CLASS 300, SOCKET WELD	ANSI B16.5 316L SST	3	47
			2			FLANGE, 2" CLASS 150, FF, SOCKET WELD	ANSI B16.5 316L SST	3	48
4			3			GASKET, 2" CLASS 150, 2" ID X 6" OD	GARLOCK	3	49
3			2			GASKET, 2" CLASS 150, 2" ID X 4" OD	EPDM	3	50
4			2			GASKET, 2" CLASS 150, 2" ID X 4" OD	GARLOCK	3	51
			12			STUD, 5/8"-11 X 3 1/4" LG	ASTM A320, GR 8, 304 SST	3	52
			4			STUD, 5/8"-11 X 5" LG	ASTM A320, GR 8, 304 SST	3	53
			8			STUD, 5/8"-11 X 8" LG	ASTM A320, GR 8, 304 SST	3	54
			48			NUT, HEX, HVY, 5/8-11 UNC-2B	ASTM A194, GR 8, 304 SST	3	55
									56
			7			FLANGE SPRAY SHIELD, 2"ø 150#	(FLANGE PROTECTION AND GASKETS INC)	3	57
	1		1		(20DCSS)	DUST CAP, 2"	(EVER-TITE)	3, 5	58
	2		1		(20DPSS)	DUST PLUG, 2"	(EVER-TITE)	3, 5	59
	1		1		(20ASWSS)	ADAPTER, 2" MALE, SOCKET WELD	(EVER-TITE)	3, 5	60
	2		1		(20DSWSS)	COUPLING, 2" FEMALE, SOCKET WELD	(EVER-TITE)	3, 5	61
			2		7ASS	ADAPTER, 3/4" MALE X 1/2" FNPT	EVER-TITE	3	62
		1			(7ABR)	ADAPTER, 3/4" MALE, FNPT	(EVER-TITE)	4	63
			2		(7DCSS)	DUST CAP, 3/4"	(EVER-TITE)	3	64
		1			(7DCBR)	DUST CAP, 3/4"	(EVER-TITE)	4	65
		2			(7149K37)	COUPLING, 3/4"ø FNPT, 300 PSI	(TWIST LOCK)	4	66
		2			(RAMO)	BLANK END	(AIR KING)	4	67
				4	(B2400-2"-SS4)	PIPE CLAMP, 2"ø	(B-LINE)	2	68
				6	(B2400-3/4"-SS4)	PIPE CLAMP, 3/4"ø	(B-LINE)	2	69
				1	(B2400-1/2"-SS4)	PIPE CLAMP, 1/2"ø (MODIFIED)	(B-LINE)	2	70
				8	(N228)	SPRING NUT, 3/8"ø	(B-LINE)	2	71
				13	(N224)	SPRING NUT, 1/4"ø	(B-LINE)	2	72
				8		HEX HEAD CAP SCREW, 3/8-16 X 1"	SST	2	73
				12		HEX HEAD CAP SCREW, 1/4-20 X 1"	SST	2	74
				1		HEX HEAD CAP SCREW, 1/4-20 X 1 1/2"	SST	2	75
				1	-001	PLATE, SPACER, .75" X 1.63" X 2.00"	SST	2	76
15	3					IDENTIFICATION PLACARD		5	77
			2			BUSHING 3/4" X 1/2" NPT, 150#	304 SST	3	78
			1			TUB STEEL, 2 X 5 X 5/16, CS	ASTM A500 GR B	3	80
			1			STEM COUPLING ø1.125, CS	ASTM A108 GR 1018	3	81
			1			KEY, 1/4" SQUARE STOCK	SST	3	82
			4			HEX HD CAP SCREW ø3/8-16 UNC X 1" LG		3	83
			4			HEX HD CAP SCREW ø5/16-18 UNC X 1" LG		3	84
			4			LOCK WASHER, SPRING ø3/8		3	85
			4			LOCK WASHER, SPRING ø5/16		3	86

DRAWING TRACEABILITY LIST

DWG NO	TITLE
H-14-105396	CASTIC & AIR SKID ELECTRICAL PANEL ASSEMBLY
H-14-105395	WATER MANIFOLD SKID ARRANGEMENT
H-14-105393	WATER CONTROL SKID ASSEMBLY
H-14-105392	CAUSTIC & AIR MANIFOLD SKID ASSEMBLY
H-14-022201	CAUSTIC ADD SKID TK AN-107 O&M SYSTEM P&ID
H-14-022224	WASTE TANK CHEMICAL ADDITION O&M P&ID
H-14-020324	WASTE TANK CHEM ADDITION O&M SERVICE AIR P&ID
H-2-85433	GENERAL ARRANGEMENT CAUSTIC DELIVERY SYSTEM

REFERENCES

REF NUMBER	TITLE
VI#50232	CAUSTIC AND AIR CONTROL SKID
RPP-12392	CAUSTIC AIR AND WATER CONTROL SKID WIND LOADING ANALYSIS
RPP-10368	CALCULATION NOTES FOR 241-G CHEMICAL ADDITIONS
RPP-9438	GENERAL CHEMICAL ADDITION SYSTEM DESIGN DESCRIPTION

NEXT USED ON H-2-85433

REVISIONS

MFD / REV REL	REV NO	DESCRIPTION	REV BY DATE			ENGR / COMPANY
S / RS	1	REVISED PER ECN 720219 REV 0, REV 1, AND REV 2	JCF 4/03			TB 5/20/03 CHG

MAY 22 2003
DATE:
STA: 4
HANFORD RELEASE
ID: 8

NAME	DATE	COMPANY
DRAWN BY J FORDHAM	8/02	E2
DESIGN AUTHORITY WJ POWELL		

U.S. DEPARTMENT OF ENERGY
Office of River Protection

CAUSTIC AND AIR CONTROL SKID PARTS LIST AND NOTES

SIZE F | BLDG NO 241G | INDEX NO 4750 | DWG NO H-14-105394 | REV 1
SCALE SHOWN | EDT 635826 | SHEET 1 OF 5
24999
DOE_TB_F.DWG (01-01)

DWG NO H-14-105394 SH 1 OF 5 REV 1