



National Research Council  
Canada

Conseil national de recherches  
Canada

Administrative Services  
and Property Management  
Branch

Direction des services  
administratifs et  
gestion de l'immobilier

**NRC-CNRC**

**Addendum / Addenda**

No./N°  
2

Project Description / Description de projet		
M-6 Hot Well Piping Replacement		
Solicitation No./ No de sollicitation	Project No./N° de projet	W.O. No./N° d'ordre de travail
14-22025	M6-3562	
Departmental Representative / représentant ministériel		Date
Allan Smith		June 6, 2014
<b>Notice:</b> This addendum shall form part of the tender documents and all conditions shall apply and be read in conjunction with the original plans and specifications.		<b>Nota:</b> Cet addenda fait partie intégrale des dossiers d'appel d'offres; toutes les conditions énoncées doivent être lues et appliquées en conjonction avec les plans et les devis originaux.

The following are answers to or clarification to questions that resulted from the Project Showings on June 3rd and 5th 2014.

- 1) Can NRC provide drawings for the new Reciever and Hot Well Tanks?  
See attached AS BUILT DRAWING from Kilmarnock Enterprises.
- 2) Can NRC provide drawings of the Dearator that is being removed?  
See attached drawing from E.S.Fox.
- 3) Who is responsible for the Controls?  
R & RAutomation is to **perform all Electrical and associated Control work** including all Accesories as per the plans and specifications.  
The Mechanical Contractor is to carry within his/her quote the noted cash allowance see (section 49 90 00 1.3.2)
- 4) Can NRC provide an elevation Drawing?  
The following Elevation numbers are for reference only, it is the responsibility of the Contractor to verify all measurements ( Basement Pit Bottoms 310' 3", Basement Room B112 316' 6", Basement Room B108 315', First Floor 325' 6", Second Floor Room208 339' 7", Second Floor Mezzanine adjacent large Hot Well 352' 10", Third Floor Deareator Platform 357' 4")

- 5) What type of material is being used for the Domestic Cold Water Line?  
Refer to Specification 22 11 16
- 6) Who supplies the Identification for the Piping?  
NRC will supply the identification labels for the Contractor to install, contractor is to supply a complete list of what he/she requires for this project
- 7) Where is the "filtering" required on the VSD's?  
The filtering is to be installed ahead of the VSD.
- 8) There is no specification on the "CBV" and the "Flex Line Connector" at the pumps?  
The Pump Manufacturer is to provide the "Triple Duty Valve" as per the specification and based on the "Pump Manufacturer" requirements the "Flex Line" can be selected.
- 9) There is duplicate information regarding items required for the Control portion of the VSD's?  
**Delete** the following items from 'Section 23 22 23" page 4, 2.2.4 Controls, **Add; Interface capability with VSD Controller . VSD Controller supplied by R & R Automation**
- 10) What are the hours of work?  
All work is to be performed during normal hours unless stipulated as per the Specifications.
- 11) Timeline for concrete curing and grouting with respect to the pump alignment and operation?  
The contractor is to allow in his/her quotation (2) visits per Pump by the manufactures representative to verify the proper operation and alignment of **each** pump. One visit at the initial start up of each Pump and another at an interval determined by the NRC Representative.

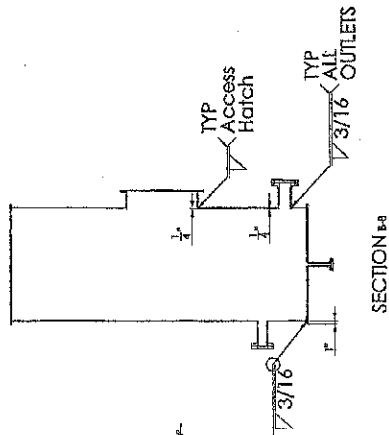
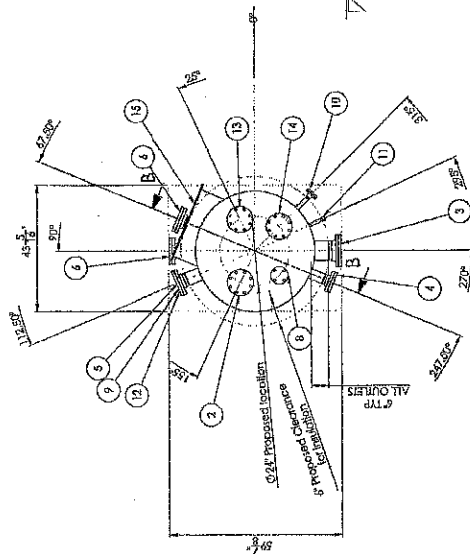
END

# NEW CONDENSATE RECEIVER LAYOUT

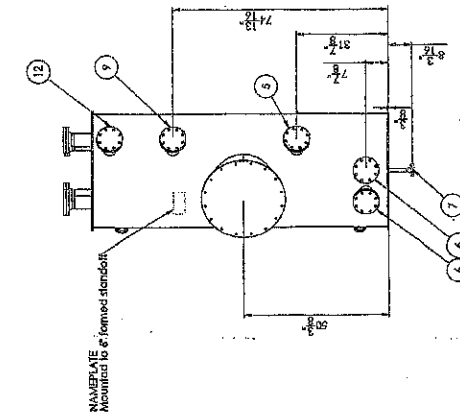
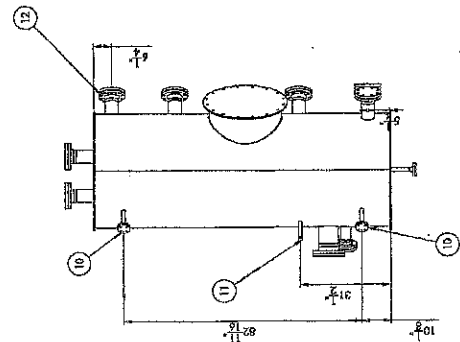
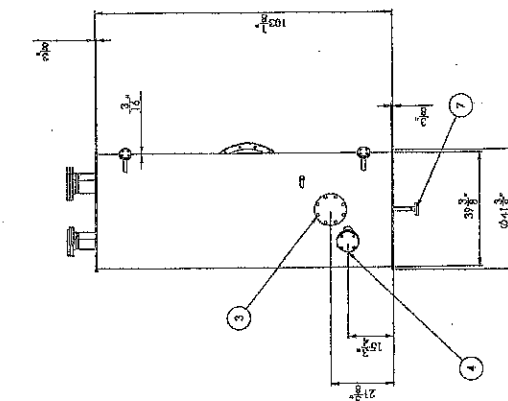
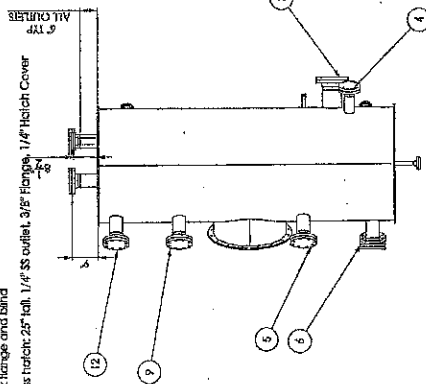
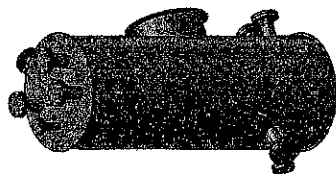
- NOTES:
- All installed to be 314 SS
  - Tank top and bottom to be 3/8" THK flat plate
  - Tank access hatch to be 1/4" THK
  - All hardware to be 316 Stainless Steel
  - All hardware to be 316 Stainless Steel
  - All hatch gratings to be neoprene

## Connection Layout

- 2- Overflow Condensate Connection from HPHW01, 4" SCH 40 - Complete with weld neck flange and blind
- 3- Tunnel Condensate Connection, 6" SCH 40 - Complete with weld neck flange and blind
- 4- Tunnel Condensate Connection, 3" SCH 40 - Complete with weld neck flange and blind
- 5- Condensate Connection, 4" SCH 40 - Complete with weld neck flange and blind
- 6- Condensate Transfer Pump Connection (TYP 2 Places); - 4" SCH 40 - Complete with weld neck flange and blind
- 7- Drain Connection, 1" SCH 40 - Complete with weld neck flange and blind
- 8- Level Transmitter Connection, 2" SCH 40 - Complete with weld neck flange and blind
- 9- Spare Connection, 4" SCH 40 - Complete with weld neck flange and blind
- 10- Magnetic Level Indicator (TYP 2 Places); 1" SCH 40 - Complete with weld neck flange and blind
- 11- RTD Connection - 3/4" SCH 40 - NPT male thread complete with cap
- 12- HPC003 Overflow Connection - 4" SCH 40 - Complete with weld neck flange and blind
- 13- Vent Connection, 4" SCH 40 - Complete with weld neck flange and blind
- 14- Overflow Connection from Decorator HPC003, 4" SCH 40 - Complete with weld neck flange and blind
- 15- Access hatch: 25" dia, 1/4" SS outlet, 3/8" Hange, 1/4" Hatch Cover

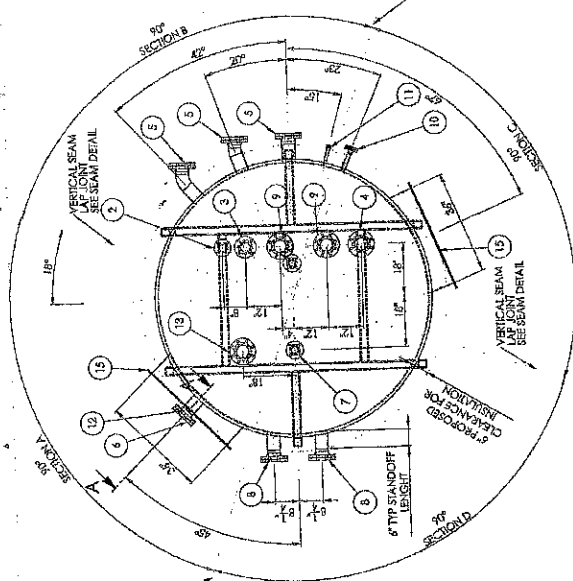
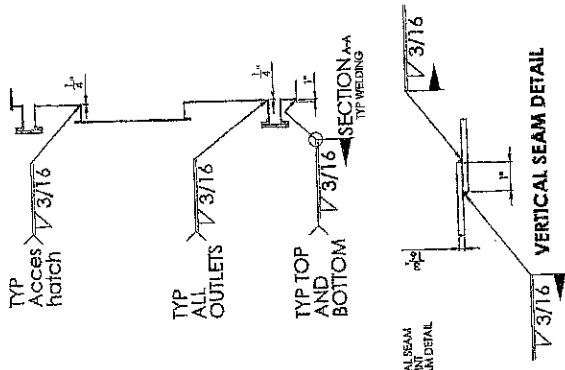
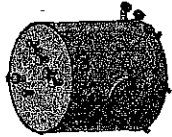


## VERTICAL SEAM DETAIL

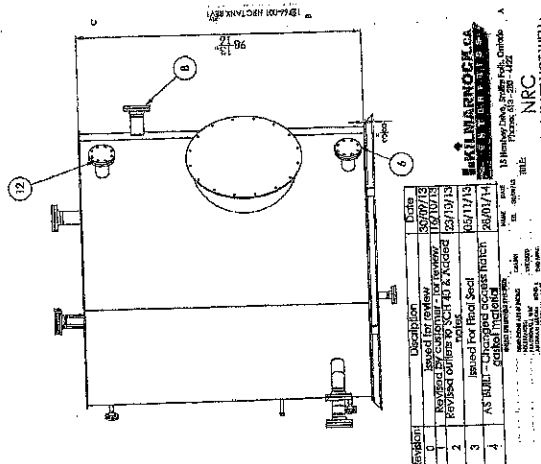


Rev	Description	Date
0	As Issued	02/07/13
1	Revised by customer - for review	02/07/13
2	Revised outlet to SCH 40 & Added	02/07/13
3	Issued for final Seal	05/11/13
4	Revised outlet to SCH 40 & Added	02/07/13

**KILWARRNOCK CO.**  
**CONDENSATE RECEIVER**  
**NRC**  
**BASEMENT CONDENSATE RECEIVER**  
**12/766-001**  
**4**



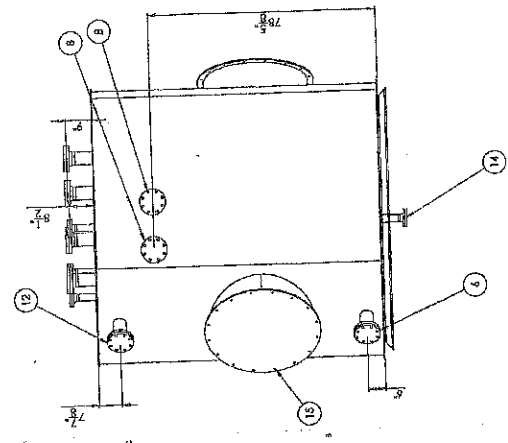
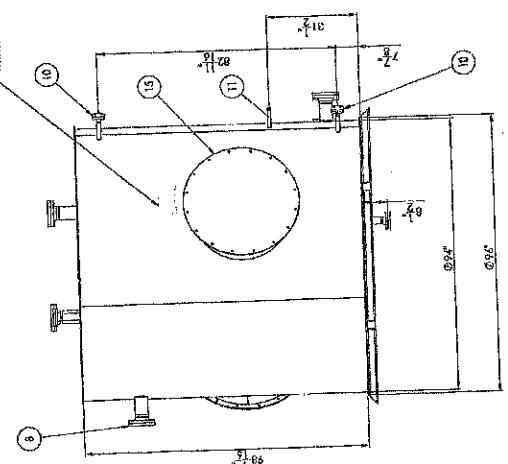
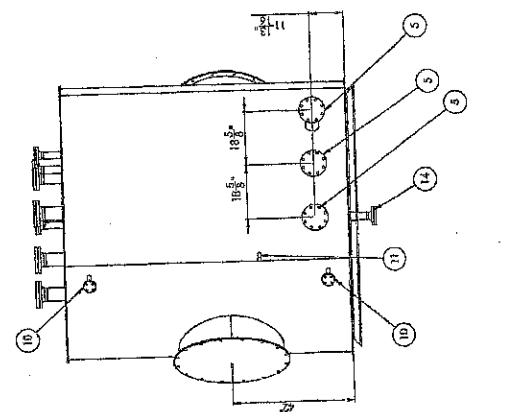
- NEW CONDENSATE RECEIVER LAYOUT**
- NOTES:
- Tank wall to be 3/16 SS
  - Tank top and bottom to be 3/16 THK
  - All hardware to be 316 Stainless Steel
  - Flange gaskets to be Gasket #6500
  - All hatch gaskets to be neoprene
- Connection Layout**
- 1 - Tanker Water Connection: 2" SCH 40 - Complete with weld neck flange and blind
  - 2 - Emergency Quick Fill Domestic Cold Water Connection: 3" SCH 40 - Complete with weld neck flange and blind
  - 3 - Purge Gas Connection: 1/2" SCH 40 - Complete with weld neck flange and blind
  - 4 - Purge Gas Connection: 1/2" SCH 40 - Complete with weld neck flange and blind
  - 5 - Condensate Transfer Pump Connection (TYP 3 Places): 4" SCH 40 - Complete with weld neck flange and blind
  - 6 - Gravity Filler Feeder Inlet: 4" SCH 40 - Complete with weld neck flange and blind
  - 7 - Level Transmitter Connection: 2" SCH 40 - Complete with weld neck flange and blind
  - 8 - Spare Connection (TYP 2 Places): 4" SCH 40 - Complete with weld neck flange and blind
  - 9 - Spare Connection (TYP 2 Places): 4" SCH 40 - Complete with weld neck flange and blind
  - 10 - Manual Level Indicator (TYP 2 Places): 1" SCH 40 - Complete with weld neck flange and blind
  - 11 - 2" TD Connection - 3/4" SCH 40 - NPT male thread complete with cap flange and blind
  - 12 - HP/WHV Overflow Connection: 4" SCH 40 - Complete with weld neck flange and blind
  - 13 - Vent Connection: 2" SCH 40 - Complete with weld neck flange and blind
  - 14 - Drain Connection: 2" SCH 40 - Complete with weld neck flange and blind
  - 15 - Access hatch: 36" Diameter, 1/4" SS Outlet, 3/16" Flange, 1/4" Hatch Cover (TYP 2)



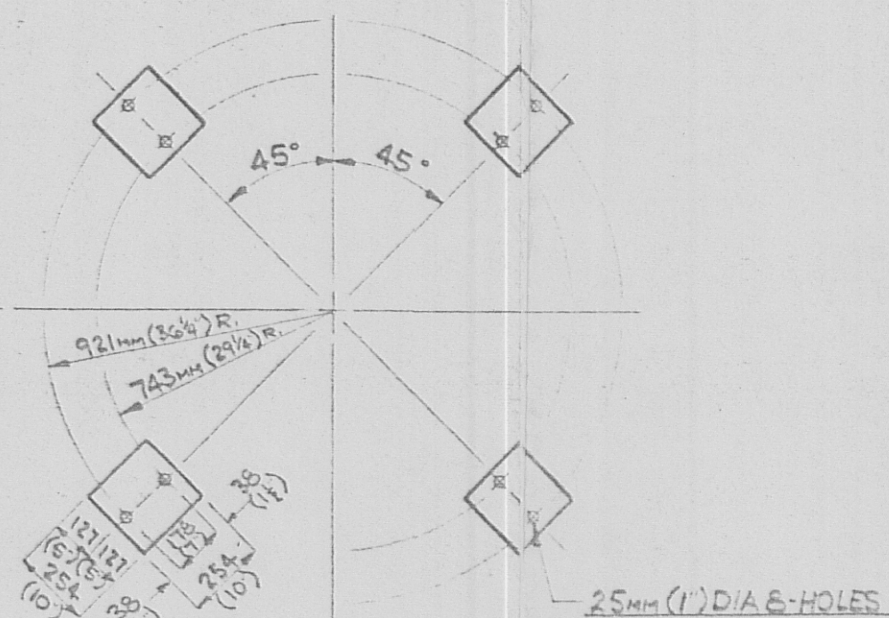
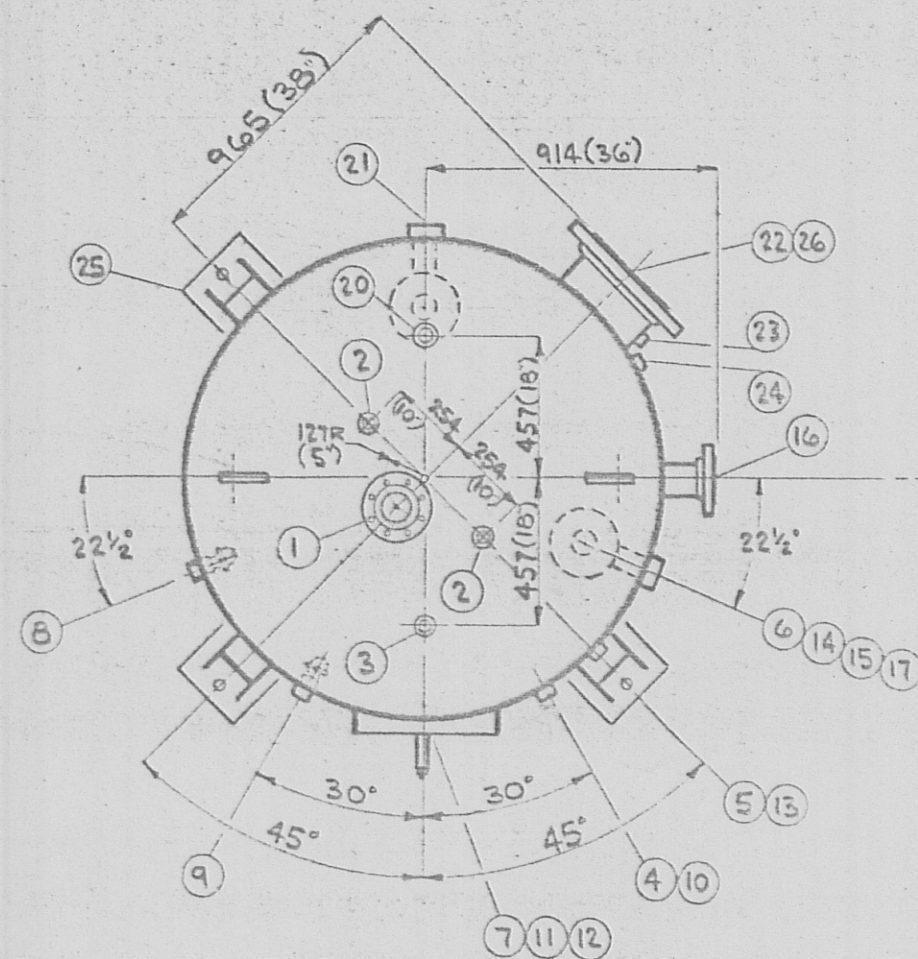
Revised	Description	Date
1	Revised for Hatch	10/17/13
2	Revised for Hatch	10/17/13
3	Revised for Hatch	10/17/13
4	Revised for Hatch	10/17/13

**KLILMARNOCK CA**  
 13100 S. Main St., Suite 100, Ontario, CA 91764  
 Phone: (951) 251-4222  
 FAX: (951) 251-4223  
 E-MAIL: klilmarnock@klilmarnock.com  
 WWW: www.klilmarnock.com

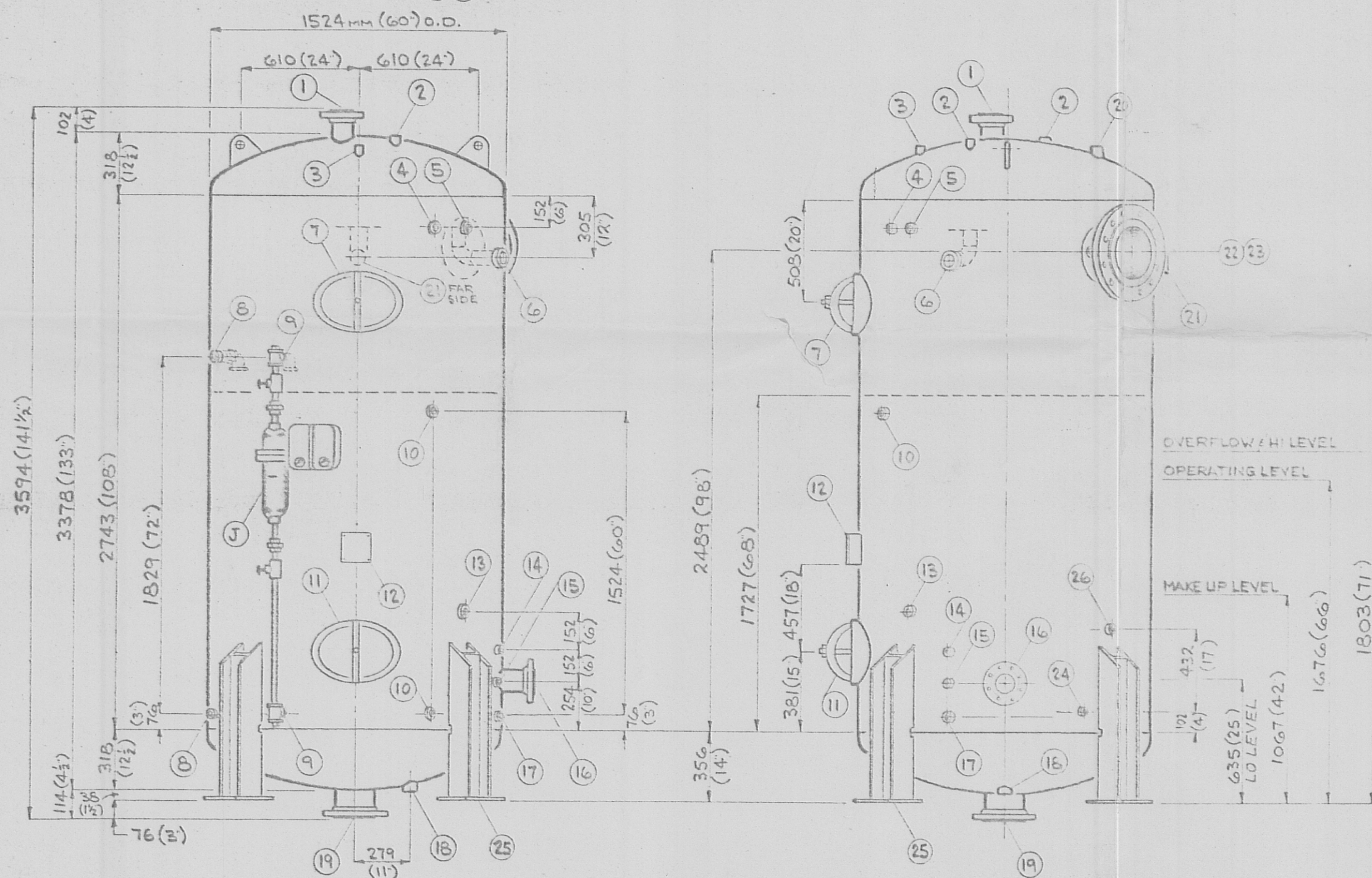
**NRC**  
 CONDENSATE HOT WELL  
 HPHW01  
 D 12766-001 4  
 SHEET 2 OF 2







DEAERATOR FOOT PLATE LAYOUT



The approval of the attached information and/or drawing in no way limits or alters the requirements and conditions of our purchase order or the plan, specification and addendum.

MAY 20 1993

E. S. FOX LTD.

TOLERANCE ON MACHINED DIMENSIONS TO BE  
± .005 FOR 3 PLACE DIMENSIONS  
± .010 FOR 2 PLACE DIMENSIONS  
UNLESS OTHERWISE SPECIFIED

INSTRUMENTATION IDENTIFICATION			
Nº	ITEM	IDENTIFICATION	TAG Nº
1	THERMOMETER- STORAGE SECTION	TRERICE 9'-BX91406	TI 840
2	THERMOMETER- SPRAY SECTION	TRERICE 9'-BX91406	TI 841
3	PRESSURE GAUGE- SPRAY SECTION	TRERICE 6'-Nº 600	PI 842
4	LEVEL SWITCH- HI LEVEL	MERCOID Nº 123-2	LSH 843
5	LEVEL SWITCH- LO LEVEL	MERCOID Nº 123-3	LSL 844
6	LEVEL SWITCH- OVERFLOW CONTROL VALVE	MERCOID Nº 123-2	LSC 845
7	PRESS. GA.- VALVE CONTROLLER INPUT AIR SIGNAL	FISHER Nº 2500	PI 846
8	PRESS. GA.- VALVE CONTROLLER OUTPUT AIR SIGNAL	FISHER Nº 2500	PI 847
9	LIQUID LEVEL GAUGE GLASS- LOWER	CONBRACO Nº 20-250	LG 848
10	LIQUID LEVEL GAUGE GLASS- UPPER	CONBRACO Nº 20-250	LG 849

FOR: E.S. FOX LTD. WELLAND ONTARIO P.O. Nº 163873.  
JOB: NEW COGENERATION SYSTEM- NATIONAL RESEARCH COUNCIL OTTAWA.  
ITEM: LEITCH TYPE 3 VERTICAL DEAERATOR 1-REQ'D.  
OUTLET CAPACITY: 4762 kg/HR (105000 lb/HR).  
STORAGE CAPACITY: 1678 kg (3700 lb).

CODE: VESSEL DESIGNED AND FABRICATED TO ASME 1992 PRESSURE VESSEL CODE  
SECTION VIII, DIVISION I, SECTION IX, LATEST ADDENDA AND CSA B51M1991.

- DESIGN PRESSURE: 345 KPA (50 PSIG).
- OPERATING PRESSURE: 42 KPA (6 PSIG).
- HYDROSTATIC TEST PRESSURE: 552 KPA (80 PSIG).
- DESIGN TEMPERATURE: 177°C (350°F).
- CORROSION ALLOWANCE: 3.2 MM (.125").
- RADIOGRAPHY: SPOT PER UW-12 (b).
- VESSEL HEADS: 12.7MM (½) THK SA516-70 DEEP DISHED, 1DR-1372MM (54) 1KR-92MM (3½).
- VESSEL SHELL: 9.5MM (¾) THK SA516-70.

#### ITEM Nº

- WATER INLET 4'-150PSIG ANSI RF50 FLANGE SA105 ¾W 304 S.S. FACE, NOZZLE SCH 40: SA312 TP 304 WLD.
- VENTS (2) 1½'-3000 PSIG NPT CPLG SA182 F 304.
- SENTINEL RELIEF 1'-3000 PSIG NPT CPLG SA105.
- THERMOMETER PREHEATER SECTION ¾'-3000PSIG NPT CPLG SA105.
- PRESSURE GAUGE ¾'-3000 PSIG NPT CPLG SA105.
- TRAP RETURNS 2½'-3000 PSIG NPT CPLG SA105.
- MANWAY PREHEATER SECTION 12' 16" CLARK KENNEDY CRN OH661-5Y16487T 3290.
- OVERFLOW, HI-LEVEL, 1'-LO-LEVEL CONTROLS (2) 1'-3000 PSIG NPT CPLG SA105.
- CONDENSATE CONTROL (2) 1½'-3000 PSIG NPT CPLG SA105.
- GAUGE GLASS (2) 1'-3000 PSIG NPT CPLG SA105.
- MANWAY STORAGE SECTION 12' 16" CLARK KENNEDY CRN OH661-5Y16487T 3290.
- NAMEPLATE
- THERMOMETER STORAGE SECTION ¾'-3000 PSIG CPLG SA105.
- SAMPLE ½'-3000 PSIG NPT CPLG SA105.
- CHEMICAL FEED ½'-3000 PSIG NPT CPLG SA105.
- OVERFLOW 4'-150PSIG ANSI RF50 FLANGE SA105, NOZZLE SCH 40 SA106-B.
- BOILER FEED PUMP RECIRCULATION 1'-3000 PSIG NPT CPLG SA105.
- DRAIN 2½'-3000 PSIG NPT CPLG SA105.
- WATER OUTLET 6'-150PSIG ANSI RF50 FLANGE SA105, NOZZLE SCH 40 SA106-B.
- VACUUM BREAKER 1½'-3000 PSIG NPT CPLG SA105.
- HOT WATER RETURNS 2½'-3000 PSIG NPT CPLG SA105.
- STEAM INLET 12'-150PSIG ANSI RF50 FLANGE SA105, NOZZLE STD. SA106-B.
- LIVE STEAM 2'-3000 PSIG NPT CPLG SA105.
- SCRUBBER DRAIN ¾'-3000 PSIG NPT CPLG SA105.
- LEGS (4) 6" HØ 2016/FT SA336 ¾W 10" X 10" X ¾" FOOTPLATES SA516-70.
- INTERNAL SCRUBBER INSPECTION 2'-3000 PSIG NPT CPLG SA105 ¾W SERVICE PLUG.

#### ACCESSORIES SUPPLIED BY A.S. LEITCH CO. LTD.

- PRESSURE GAUGE TRERICE 6" DIA. Nº 600B RANGE -100KPA to +100KPA G/30" HG to 15PSIG ¾W SILENCE COCK.
- THERMOMETERS (2) TRERICE 9" Nº BX91406 RANGE 10 to 205°C/50 to 400°F ¾W SEPARABLE WELL.
- GAUGE GLASS (2) CONBRACO Nº 20-250 AT 30" CTRS ¾W COCKS AND GUARD RODS.
- LEVEL ALARM SWITCHES (2) MERCOID Nº 123-2 "HI" & 123-3 "LO" LEVELS, PIPED TO DEAERATOR.
- VENT VALVE CRANE 1½" Nº 428.
- SENTINEL RELIEF VALVE FARRIS 1" Nº 1855-OL SET AT 15PSIG.
- OVERFLOW VALVE LEVEL CONTROL SWITCH MERCOID Nº 123-2, PIPED TO DEAERATOR.
- OVERFLOW CONTROL DEZURIK 3" Nº BHP ¾W DR 40 ACTUATOR AND 3-WAY SOLENOID.
- CONDENSATE CONTROL FISHER 2½" Nº 65TET ¾W (2500-249-67 FR PIPED AS SHOWN).
- TEST KIT

#### NOTE

- STORAGE TANK CARBON STEEL, VENT CONDENSER 304 STAINLESS STEEL, AND SPRAY VALVES BRONZE.
- ALL EXPOSED EXTERIOR AND BARE SURFACES TO BE GIVEN ONE SHOP COAT OF ZINC CHROMATE PRIMER.
- EXCEPT AS SHOWN ALL EXTERIOR PIPING IS NOT SUPPLIED BY A.S. LEITCH CO. LTD.
- CONNECTIONS ARE NOT DESIGNED TO WITHSTAND EXTERNAL PIPE STRESSES.

RECEIVED

MAY 14 1993

E. S. FOX LIMITED  
WELLAND, ONT.

FLOODED WT.- 7870 kg (17350 lb)  
OPERATING WT.- 3774 kg (8320 lb)  
EMPTY WT.- 2095 kg (4620 lb)

THE ARTHUR S. LEITCH COMPANY LTD.  
ENGINEERS-MANUFACTURERS

NATIONAL RESEARCH COUNCIL OTTAWA  
LEITCH TYPE 3 VERTICAL DEAERATOR

SCALE- DO NOT SCALE	DWG. NO.
DATE- 2-FEB. 1993	C-181785
DRAWN- J. WALSH	
CHECKED- TD	ISSUE- 2
	SIZE- C

DATE	SYM.	REVISION	BY	CHK'D
10-MAY-93	A	INSTRUMENT I.D. CHART ADDED	Y	TD
10-MAY-93	B	FARRIS Nº 1855 WAS 1875	Y	TD
10-MAY-93	A	ITEM 2 ADDED	Y	TD
10-MAY-93	B	RADIOGRAPHY UW-12 (b) WAS (c)	Y	TD
10-MAY-93	A	CORROSION .125" WAS .062"	Y	TD
10-MAY-93	A	DESIGN PRESSURE 50 WAS 30 PSIG	Y	TD