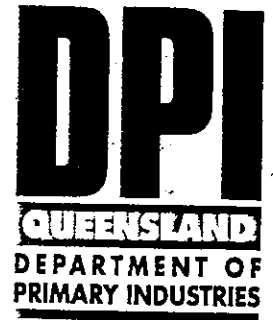


Office of the Director-General

DESPATCHED FROM
OFFICE OF DIRECTOR-GENERAL

20, 6, 95.



20 JUN 1995

Mr G Ryan
Enviroseptic Pty Ltd
8 Lander Avenue
SHEIDOW PARK SA 5158

Dear Mr Ryan

AUTHORISATION OF PREFABRICATED WASTEWATER TREATMENT SYSTEM

The specification and performance data for the Enviroseptic Model 10 and model 114 aerated sewage treatment systems have been examined. Authorisation is granted for these plants to treat wastewater from a domestic dwelling serving up to 10 persons, subject to the attached conditions of authorisation.

This authorisation is granted under the Sewerage and Water Supply Act, Standard Sewerage Law 186(3).

The conditions of authorisation and authorised drawing of the system are attached.

Yours sincerely

A handwritten signature in black ink, appearing to be 'R F I Smith'.

R F I Smith
ACTING DIRECTOR-GENERAL

A handwritten mark or signature in black ink, consisting of a stylized 'A' shape with a diagonal line through it.

95/2223

PREFABRICATED SEWAGE TREATMENT PLANT

ENVIROSEPTIC MODEL 10 AND MODEL 114

DOMESTIC WASTEWATER TREATMENT SYSTEM

DESCRIPTION OF PLANT

An aerobic sewage treatment system designed to treat and disinfect 2 000 litres per day of sewage wastes from a single domestic dwelling. The Enviroseptic Model 10 and Model 114 two tank aerated sewage treatment plant, constructed within a reinforced concrete tank, consists of a primary treatment chamber of 2 500 litres minimum capacity, a two compartment aeration chamber of at least 2 190 litres capacity equipped with an air blower, a sedimentation chamber of at least 700 litres capacity, a tablet erosion chlorinator, a chlorine contact chamber of at least 530 litres and pump chamber with a capacity of at least 560 litres, together with a reticulated effluent disposal system. The treated effluent shall be disposed within the confines of the premises without nuisance or risk to Public Health.

The Model 10 is constructed with three baffles cast integrally with the tank and one baffle glued in position. The Model 114 is constructed with the four baffles rebated and glued in position.

CONDITIONS OF AUTHORISATION

1. Before installation of the authorised plant, approval shall be obtained from the relevant Local Government and any requirements of that Local Government in regard to the installation shall be complied with.
2. The plant when installed, shall continue to perform satisfactorily producing an effluent to comply with the following standard when tested in accordance with procedures recommended by DPI-Water Resources:
 - (a) The 5 day Biochemical Oxygen Demand shall not exceed 20 mg/L in any sample.
 - (b) The Suspended Solids shall not exceed 30 mg/L in any sample.
 - (c) The E.coli requirement shall be as follows:
 - the geometric mean for a daily set of 5 separate samples taken at 30 minute intervals shall not exceed 200 E.coli per 100ml.
 - No individual count shall exceed 1000 E.coli per 100ml.
 - (d) The free residual chlorine value shall be between 0.3 mg/L and 0.5 mg/L after 30 minutes average detention time at the peak flow of at least 650 L over 2 hours.

3. No modification to the specified process, equipment materials and fittings shall be undertaken without prior authorisation from DPI-Water Resources, Queensland.
4. The concrete or fibreglass structures forming part of the plant shall comply with the requirements of AS1546 in relation to strength, durability and quality of finish.
5. Should the plant prove to be unsatisfactory in any respect during service, and therefore require modification to achieve the prescribed standards, all installed Enviroseptic Model 10 and Model 114 domestic sewage treatment plants shall be modified accordingly. It may also be necessary to subject any modified plant to full performance evaluation for compliance with the DPI-Water Resources Authorisation procedures current at the time of re-testing.
6. The Enviroseptic Model 10 and Model 114 treatment plant is authorised for a hydraulic loading of up to 2 000 litres per day and an organic waste loading of up to 560 grams BOD₅ per day.
7. The treatment plant shall be installed with tops of tanks above ground level.
8. A chlorine contact tank shall provide 30 minutes detention at peak flow. The chlorine dosage equipment must be capable of providing a free residual chlorine level of 0.3 - 0.5 mg/L after 30 minutes of peak flow without excessive residual chlorine levels for low flows.
9. The chlorinator shall be capable of operating without any attention or chemical replenishment for a period in excess of 3 months when the plant is operating at its design capacity.
10. The manufacturer shall ensure that the plant is serviced by trained personnel at 3 monthly intervals and a service history is kept on every plant. A copy of the three monthly service report shall be forwarded to the Local Government and the owner of the plant. The Local Government shall be advised when an owner fails to renew a service contract.
11. The plant shall be permanently marked with the manufacturer's name, registered trademark (if applicable), and product identification in a position readily visible after installation.
12. The unit shall be supplied with a complete and detailed owner's instruction manual for installation, initiation of service, operation and maintenance instructions for the information of the owner.



Department of Primary Industries
Water Resources
Client Advisory Services Division

Authorisation of Prefabricated Household Sewage Treatment Plants

Plant: ... *Enviroseptic Model 10 + Model 114*
Manufacturer: ... *Enviroseptic Pty Ltd.*
DPI-WR file: ... *NRM/520/180 (25/P2)*
Contact Person: ... *Ian Tully* Phone: *2242442*

Action Sheet:

1. ~~Principal Engineer (LAS)~~

Plant evaluated:

- (a) Meets criteria for authorisation; or
- (b) Is unsatisfactory.

Comments: ... *The two models are almost identical.*

..... *I. Tully* 1316195

2. General Manager (CAS)

Authorisation ready for Director-General's signature

GM (CAS) *we are presently reevaluating our total authorisation process & will discuss this with you at a later stage. i/sy.*

..... *M. E. Glyn* 1516195
A/ Principal Engineer (LAS)

3. Executive Director (WR)

For Director-General's signature

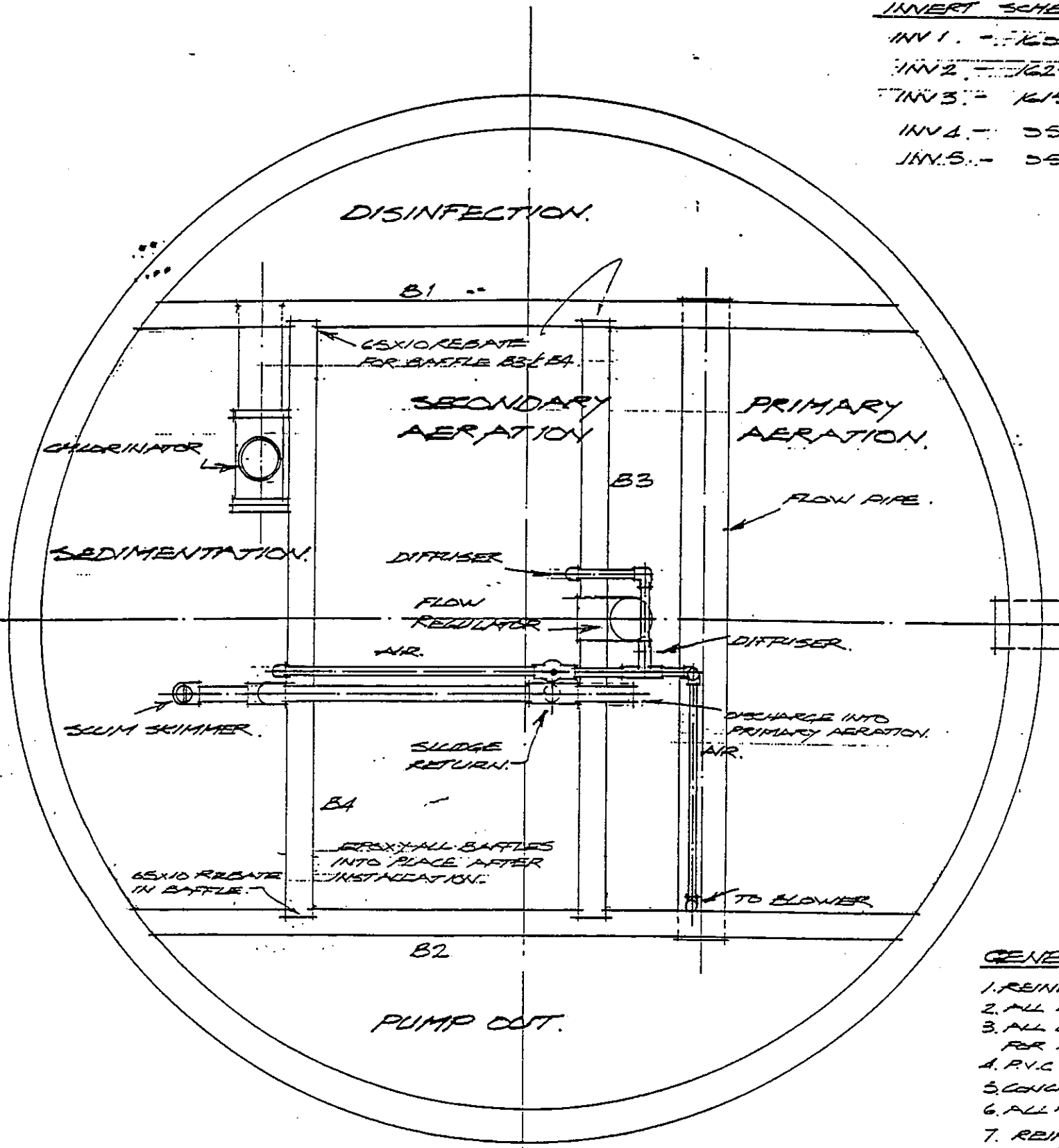
..... *John Rogers* 1616195
General Manager (CAS)

① P. Benin to note
②
↓
↓

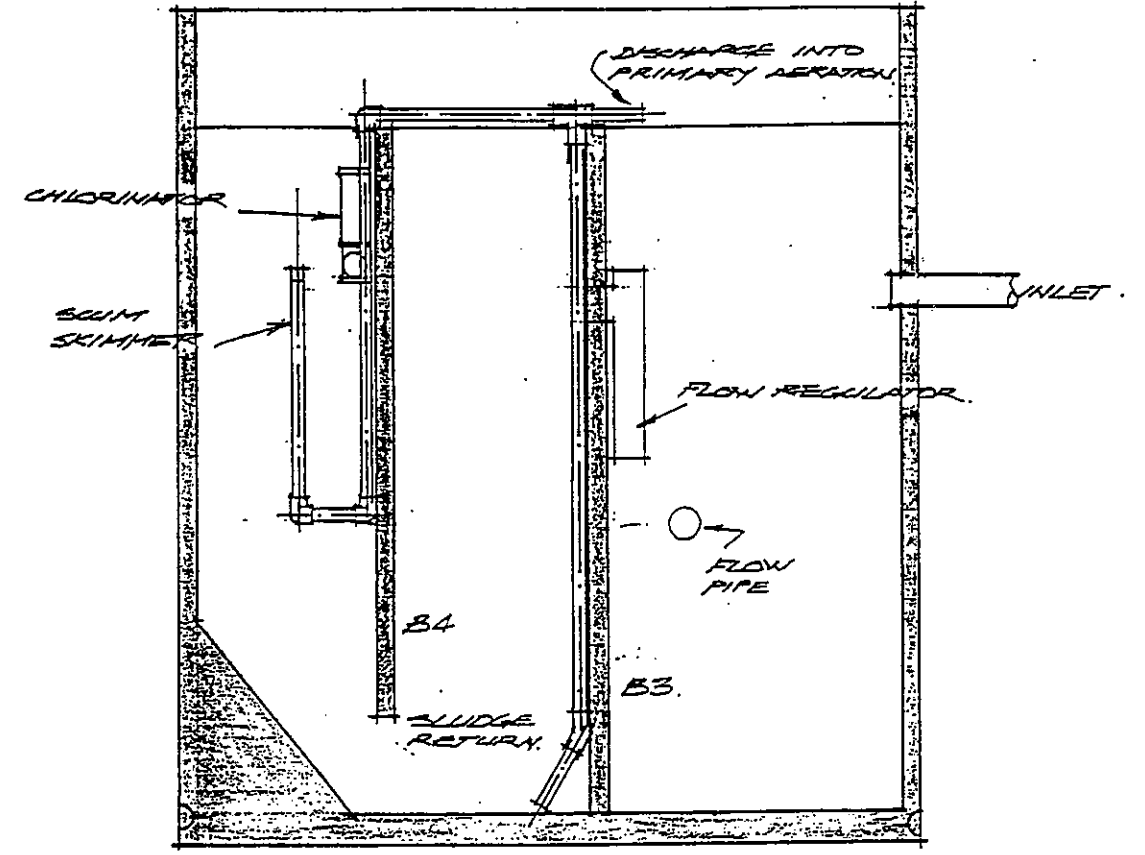
Please return file copy to Ian Tully, LATS, CASD, Water Resources, Floor 10, Mineral House.

INVERT SCHEDULE:

- INV 1. - 1600 ABOVE TANK FLOOR
- INV 2. - 1625
- INV 3. - 1615
- INV 4. - 555
- INV 5. - 555



CHAMBER & PIPE LAYOUT.



SECTION.

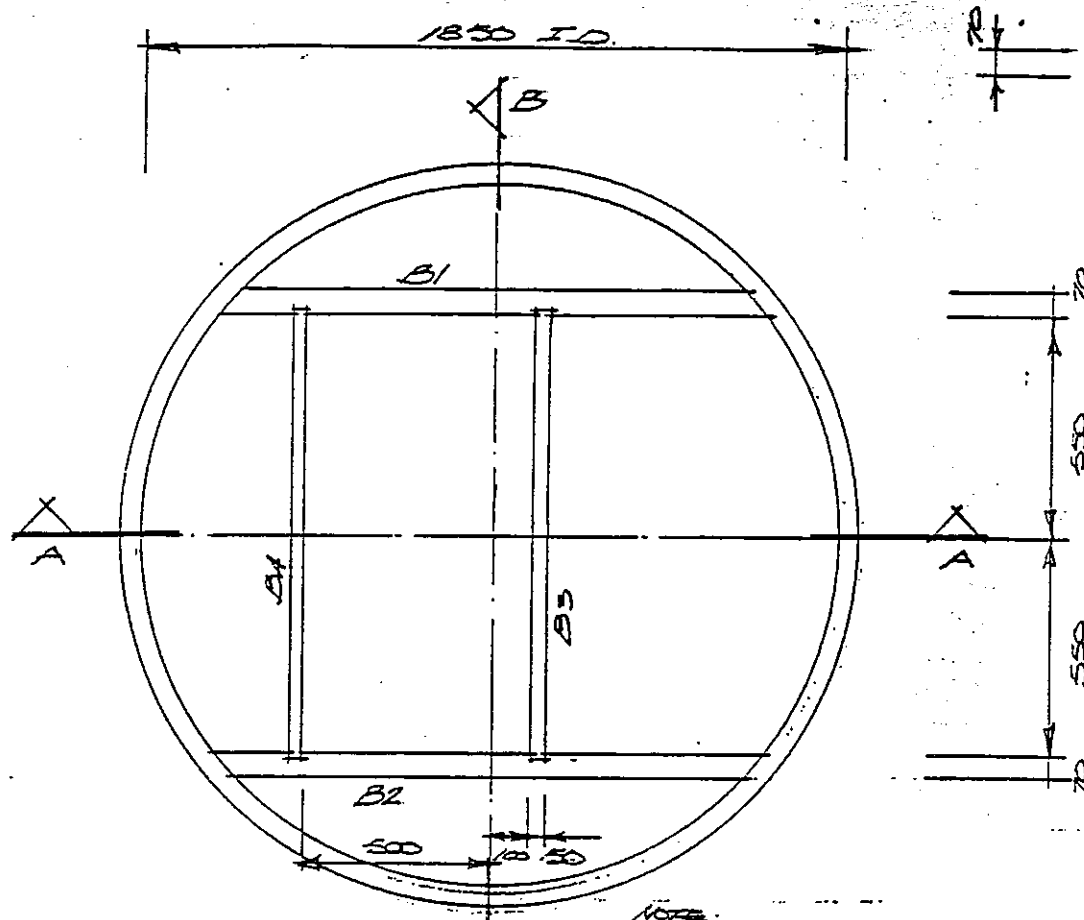
CAST IN 4" 25T SWIFT LIFT LIFTING FERRULES.

GENERAL NOTES:

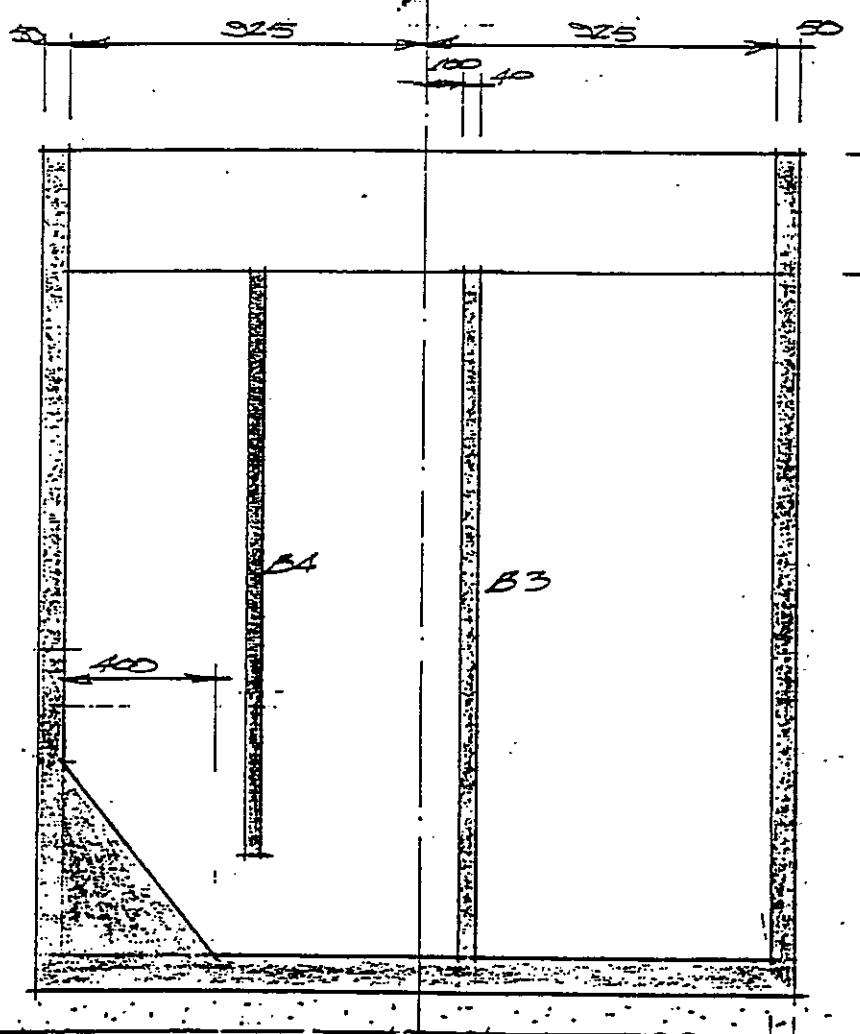
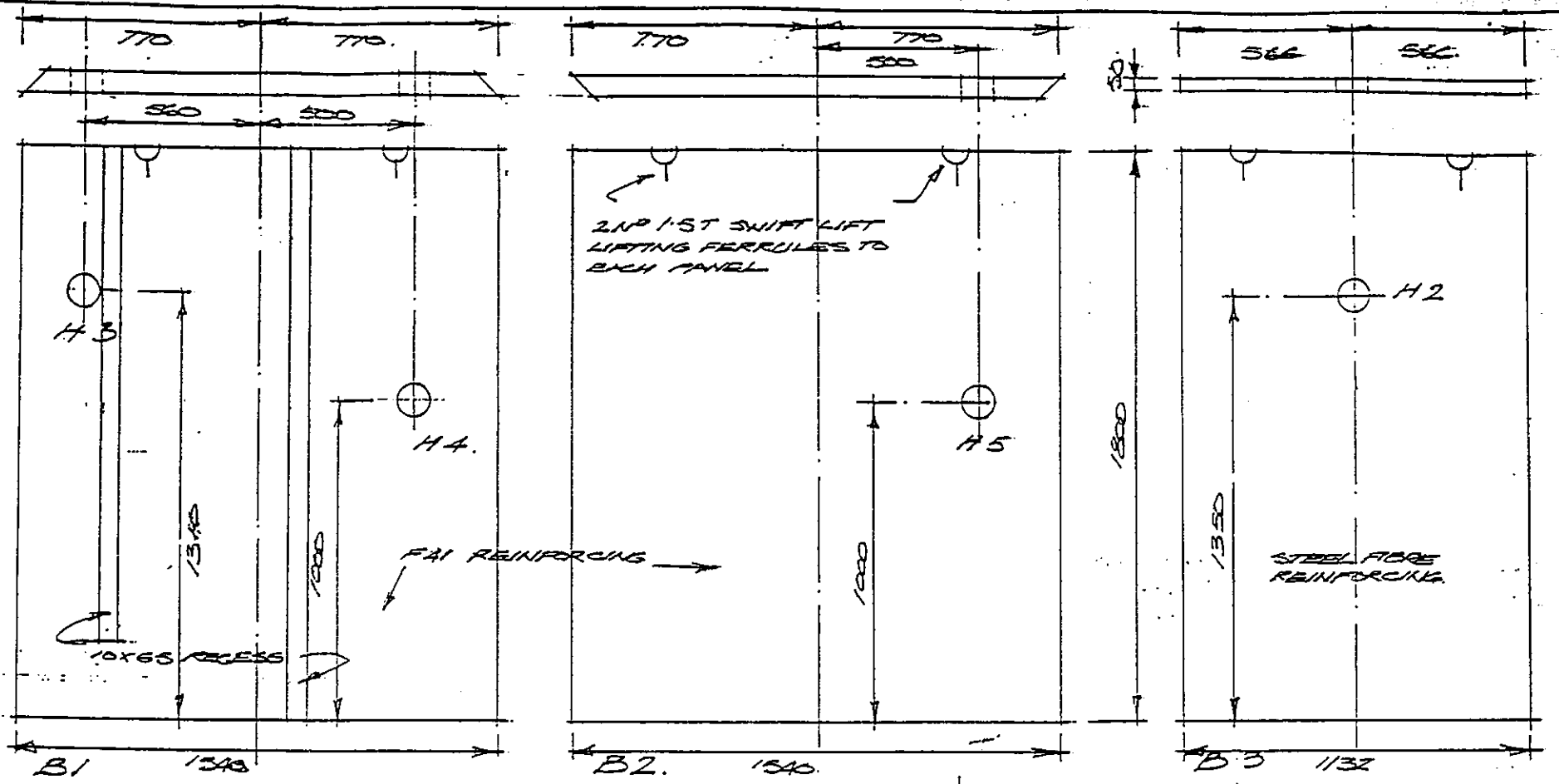
1. REINFORCING TO BE CURVED TO SUIT TANK DIAMETER.
2. ALL BAFFLES TO BE PRECAST.
3. ALL CONNECTIONS TO TANK TO BE SOLVENT WELDED FOR P.V.C. FITTINGS.
4. P.V.C. COLLAR CONNECTIONS TO BE WATER TIGHT.
5. CONCRETE STRENGTH TO BE 40 M.P.A. - 460 KG/CM².
6. ALL REINFORCING TO BE CENTRAL (U.N.C.).
7. REINFORCING.
 TANK FLOOR & WALLS - 10KG/MT³ STEEL FIBRE.
 BAFFLES - B1 & B2 - 10 THICK - F41.
 B3 & B4 - 10 THICK - STEEL FIBRE.
 LID - F82. PROVIDE RD LIGS TO PERIMETER OF ALL OPENINGS.
 TURRET & LID - STEEL FIBRE - 10KG/MT³.
 MAN HOLE LID - F82.
 8. BRXY BAFFLES INTO PLACE AFTER INSTALLATION.

AUTHORISED
 BY: *Sk Lee*
 DATE: 9/6/95
 DEPT. PRIMARY INDUSTRIES

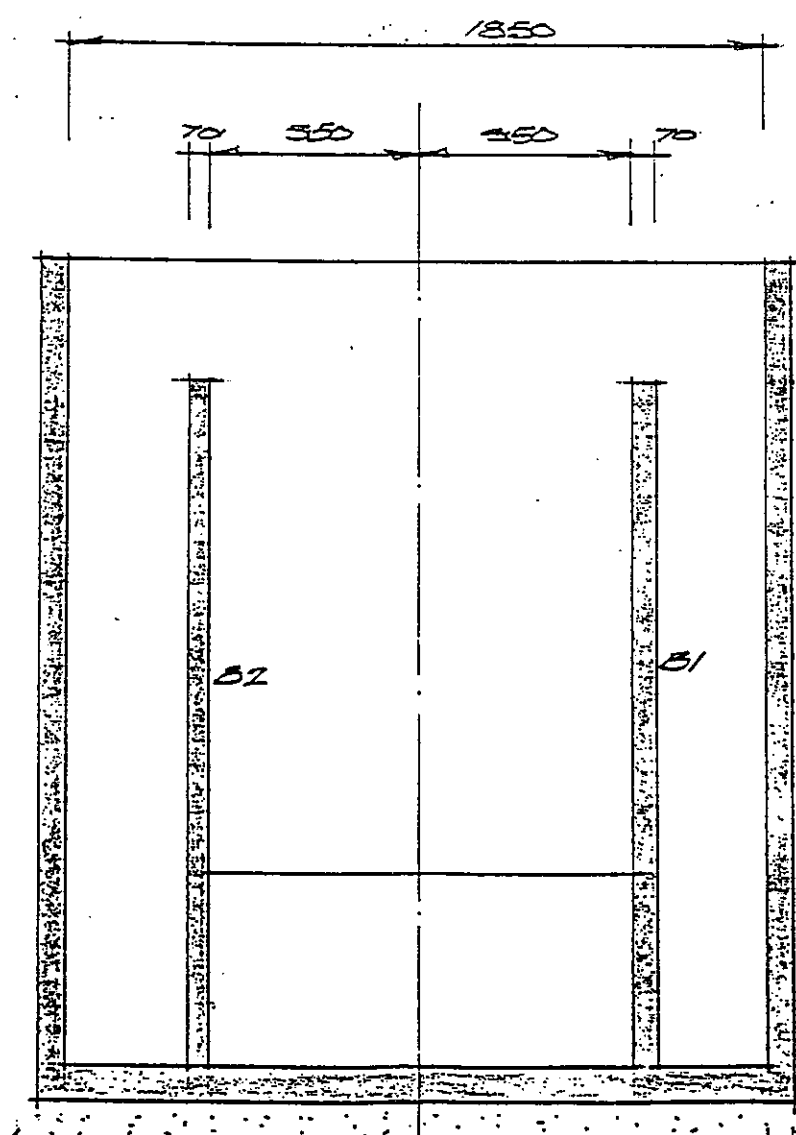
ENVIROSEPTIC PTY LTD
 MODEL 11A.
 DATE: MARCH 94.
 SCALE: 1:10, 1:20. DRWG N° BA.
 SHEET 1 OF 5



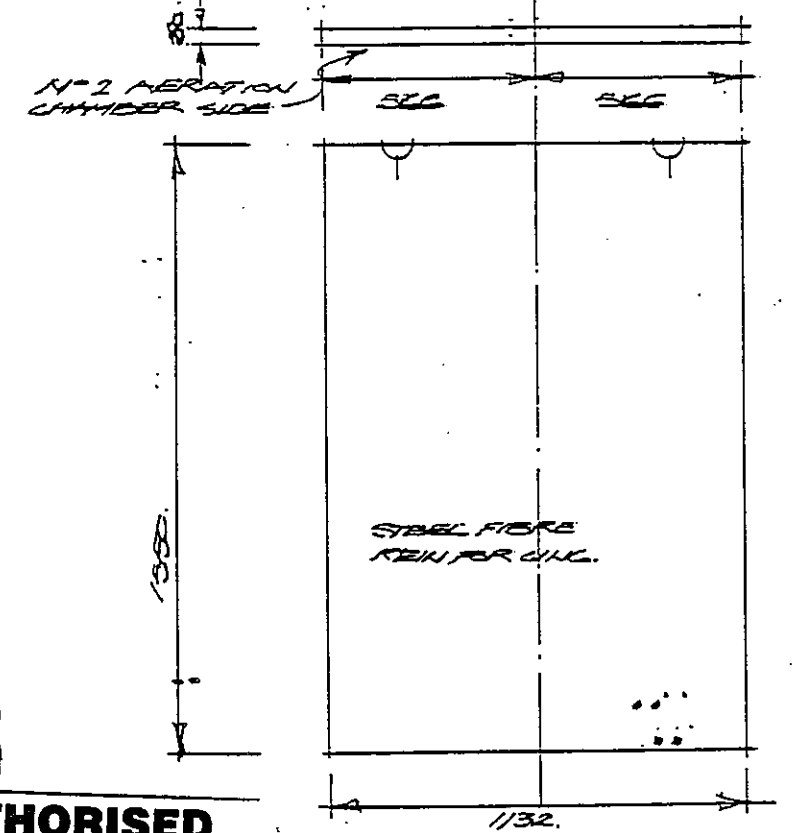
NOTE:
REBAR BARRIERS
B1 & B2 FOR B3 & B4
10X65.



SECTION A-A



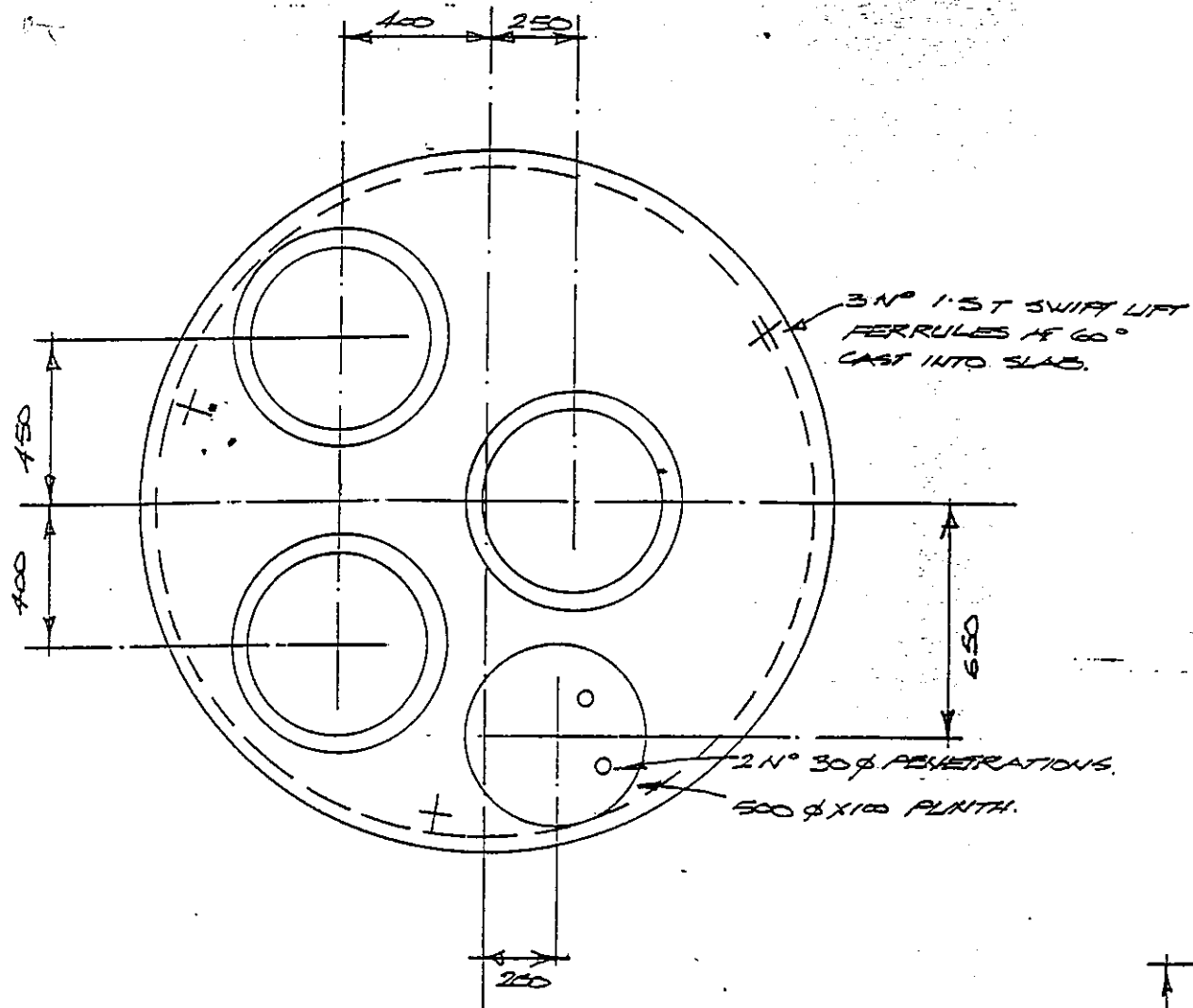
SECTION B-B



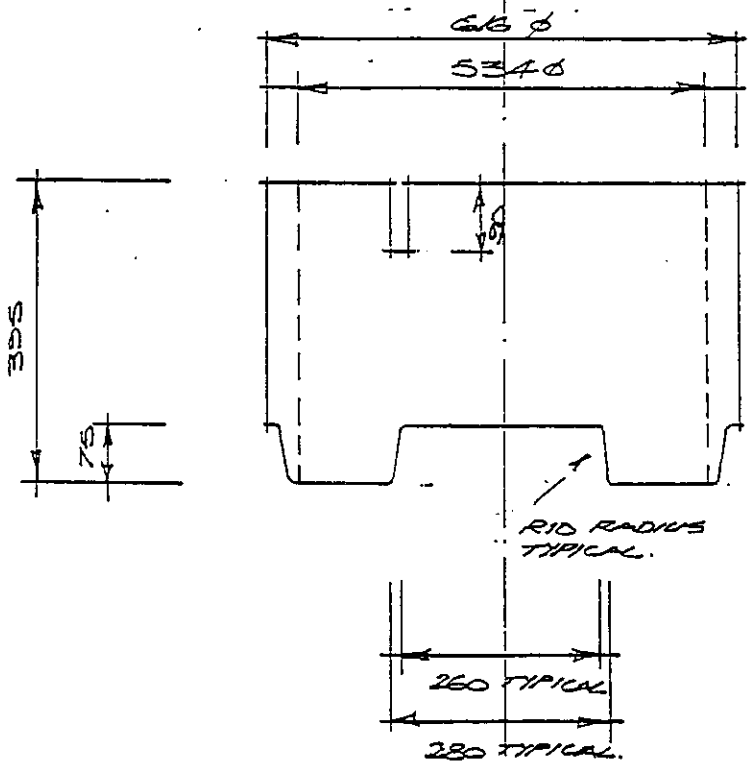
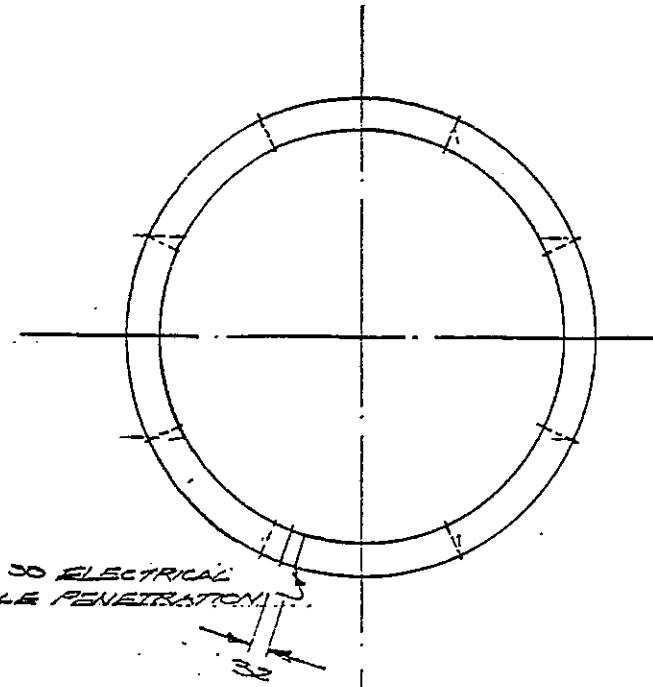
AUTHORISED
BY: *Sk. J. J.*
DATE: 9/6/95
DEPT. PRIMARY INDUSTRIES

ENVIROSEPTIC PTY LTD
MODEL 11A.
DATE: MARCH 1994.
SCALE: 1:20 DRAWN: B1
SHEET 2 OF 5

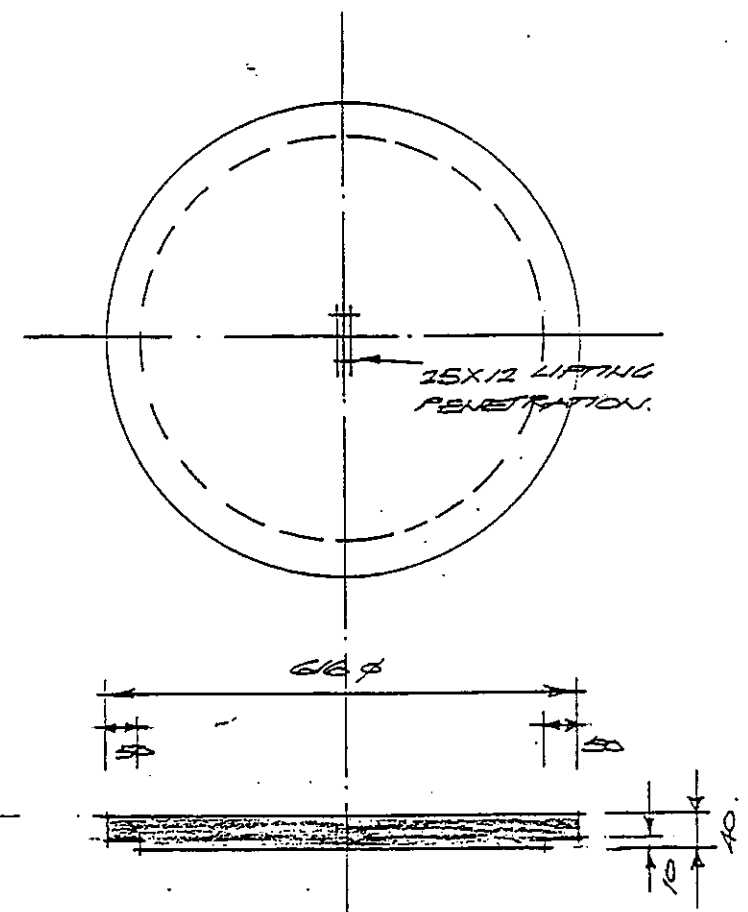
TANK TO SIT ON
PREPARED
BASE.



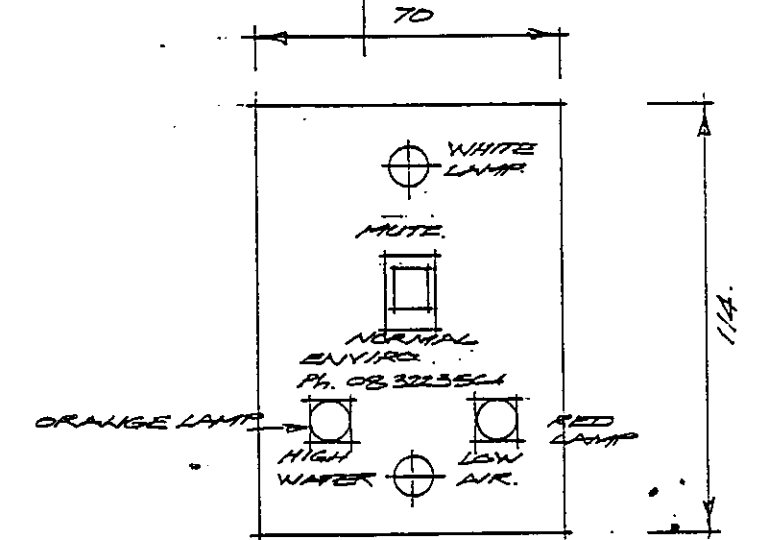
LID PLAN



TURRET PLAN & SECTION.

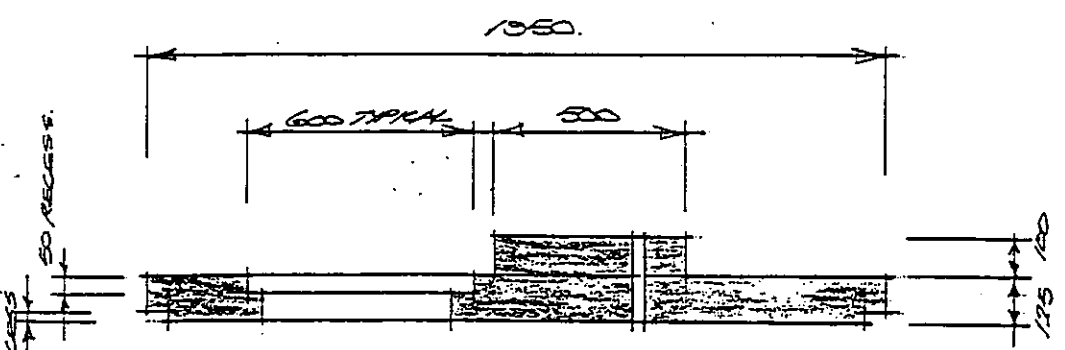


LID PLAN & SECTION.

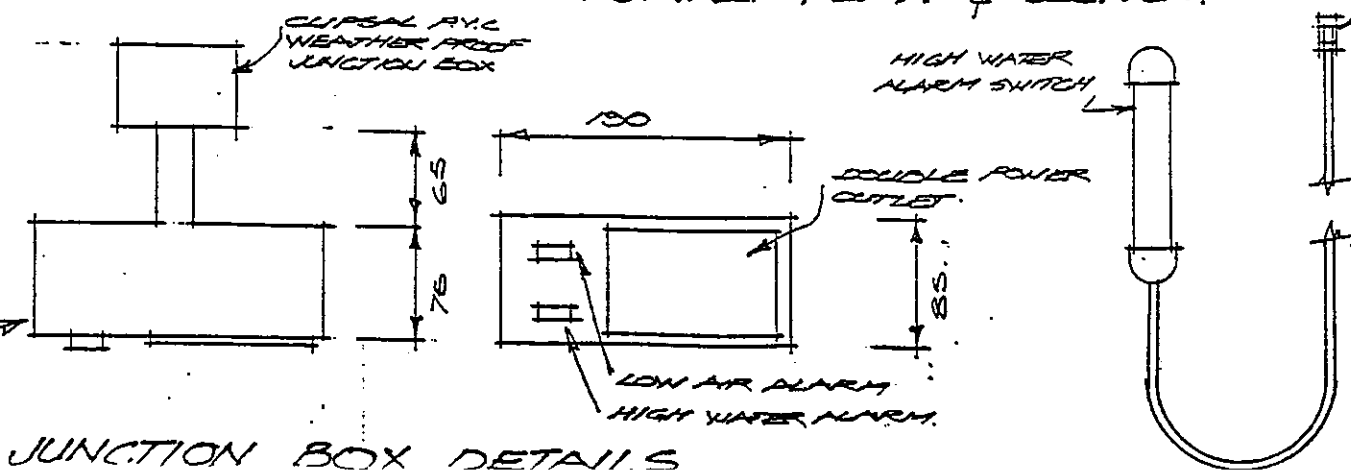


ALARM PANEL

AUTHORISED
 DATE: 9/6/95
 DEPT. PRIMARY INDUSTRIES

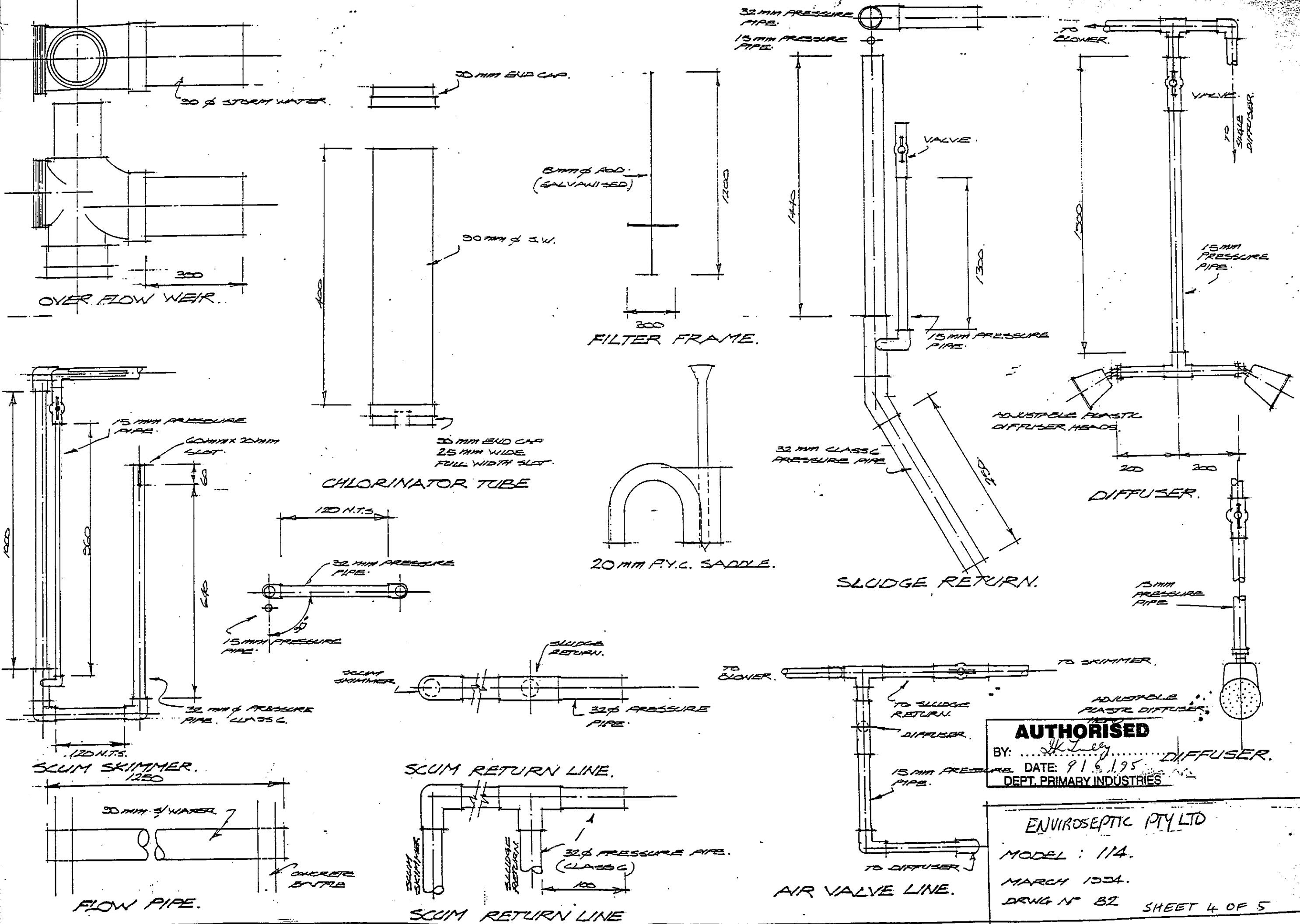


SECTION THRU LID.



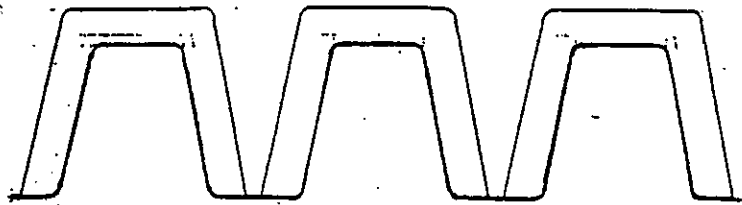
JUNCTION BOX DETAILS

ENVIROSEPTIC PTY LTD
 MODEL 11A
 DATE: MARCH 54.
 SCALE: 1:10, 1:20
 DR. 15 15 23

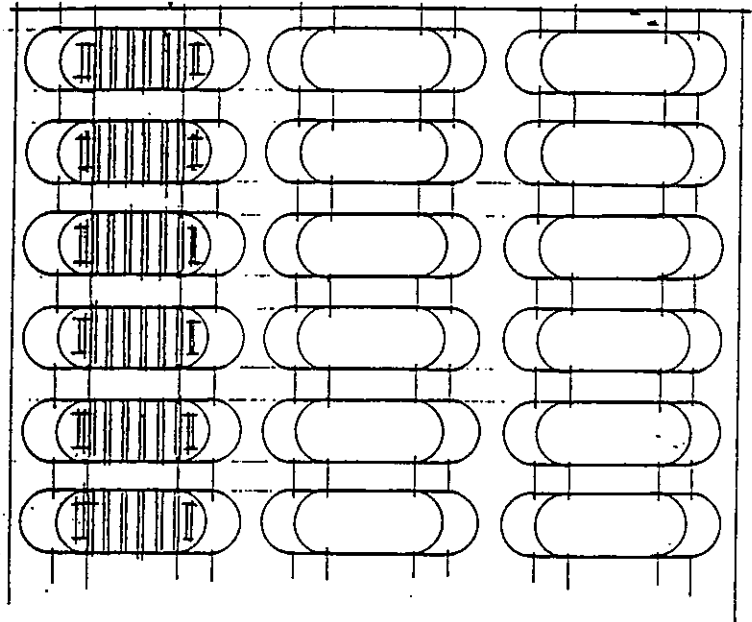


AUTHORISED
 BY: *St. Inley*
 DATE: 9/6/95
 DEPT. PRIMARY INDUSTRIES

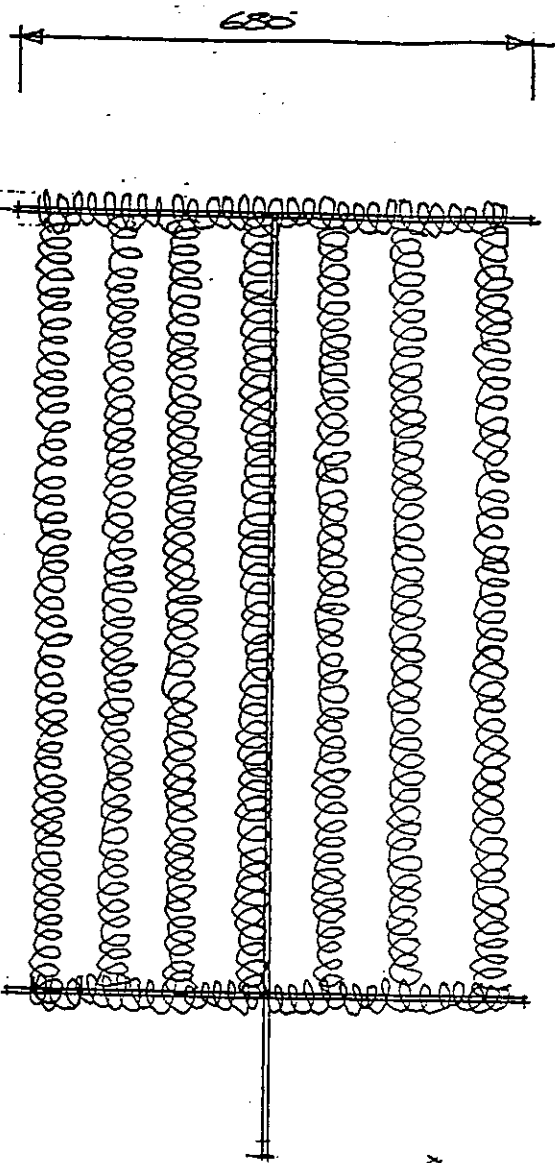
ENVIROSEPTIC PTY LTD
 MODEL: 114.
 MARCH 1994.
 DRWG N° 82 SHEET 4 OF 5



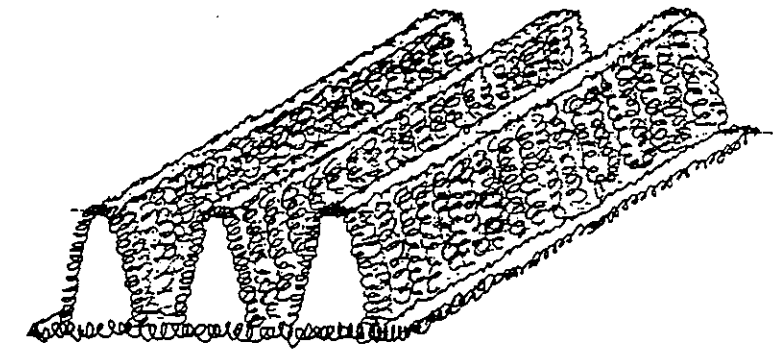
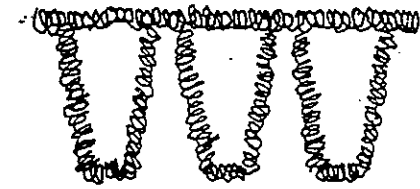
SECTION.



PLAN.

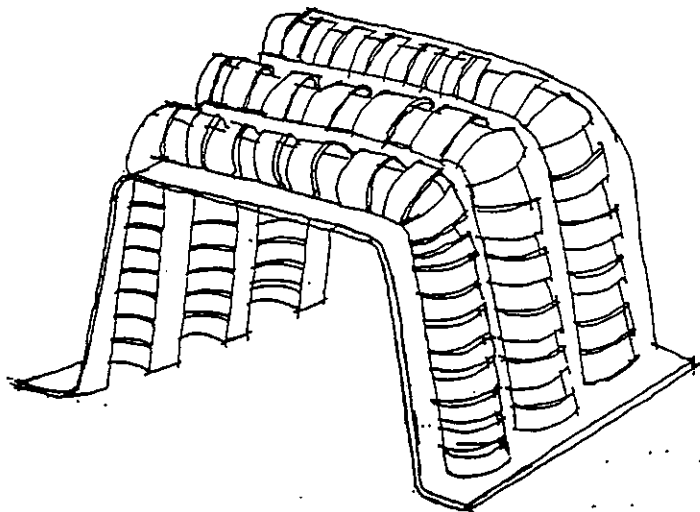


BIO CORD.

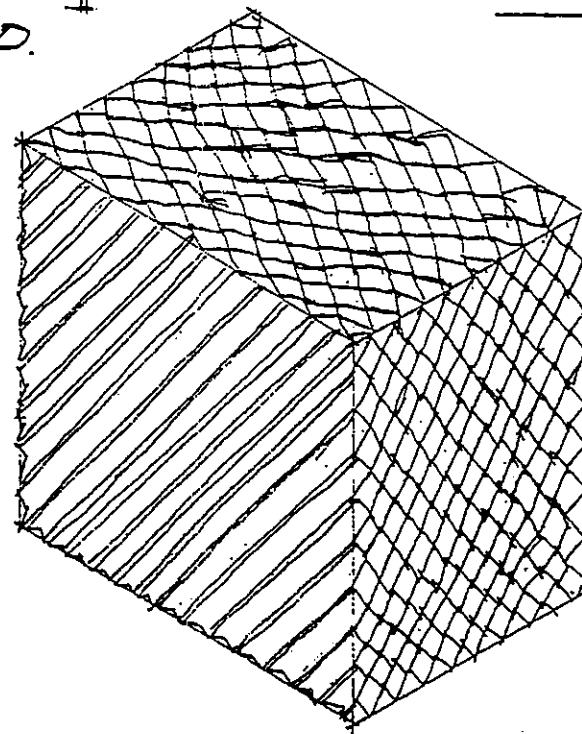


HELICOM V3

ARID



PERSPECTIVE OF SINGLE MODULE.



SHEETS GLUED TOGETHER TO FORM HONEYCOMBED BLOCK.



SECTION THROUGH SINGLE SHEET.

AUTHORISED
BY: <i>K. Lee</i>
DATE: 9/6/95
DEPT. PRIMARY INDUSTRIES

FILTER MEDIUMS.

APPLICABLE ALL TANK MODELS.

ENVIROSEPTIC PTY LTD

DATE: MARCH 24
DRWG N° F.M.I. SHEET 5 OF 5