

# REGISTER

CONSENT NO.	400506
FILE REFERENCE	13/43/28

**WATER RESOURCES ACT 1991  
(SECTION 88 - SCHEDULE 10)  
(As amended by the Environment Act 1995)**

**CONSENT TO DISCHARGE**

**TO:** BOURNEMOUTH & WEST HAMPSHIRE WATER  
GEORGE JESSEL HOUSE  
FRANCIS AVENUE  
BOURNEMOUTH  
DORSET BH11 8NB

The **ENVIRONMENT AGENCY** ("The Agency") in pursuance of its powers under the Water Resources Act 1991 (as amended by the Environment Act 1995) **HEREBY CONSENTS** to the making of the following Discharge(s):-

**TRADE EFFLUENT: RESERVOIR EMERGENCY OVERFLOW**

**FROM:** NEW RESERVOIR  
**AT:** KNAPP MILL WATER TREATMENT WORKS  
MILL ROAD  
CHRISTCHURCH  
DORSET BH23 2LU

**TO:** RIVER AVON

**SUBJECT TO** the conditions set out in the following schedule(s):

**TR/01**

Subject to the provisions of paragraphs 7 and 8 of Schedule 10 of the Water Resources Act 1991 (as amended by the Environment Act 1995) no notice shall be served by the Agency, altering this consent without the agreement in writing of the Discharger, during a period of 4 years from the date this consent takes effect or such later date as may be specified in an endorsement to this document.

This Consent is issued and takes effect on the 26 day of *October* 1998

Signed: .....

*RMTS*

CONSENT NO.	400506
SCHEDULE NO.	TR/01

## CONDITIONS OF CONSENT TO DISCHARGE

### TRADE EFFLUENT: RESERVOIR EMERGENCY OVERFLOW ("the Discharge")

**FROM:** NEW RESERVOIR  
KNAPP MILL WATER TREATMENT WORKS  
MILL ROAD  
CHRISTCHURCH  
DORSET BH23 2LU

1. a. The Discharge shall not contain any poisonous, noxious or polluting matter or solid waste matter.
- b. Provided that the Discharge hereby consented is made in accordance with the following conditions of this consent, such Discharge shall not be taken to be in breach of condition (a) above by reason of containing substances or having properties identified in and controlled by those conditions.

### DATE(S) THAT CONDITIONS OF THE CONSENT HAVE EFFECT

2. This consent shall take effect on the date of signature of this consent.

### NATURE OF DISCHARGE

3. The Discharge shall consist of trade effluent comprising an emergency overflow from the reservoir. A discharge in an emergency shall only occur when the pumps are inoperative as a result of one or more of the following:
  - a) electrical power failure not due to the act or default of the discharger its agents, representatives, officers, employees or servants;
  - b) mechanical breakdown.

There shall be no undue delay on the part of the discharger in stopping the discharge and remedying the failure or breakdown.

#### PLACE OF DISCHARGE

4. The Discharge shall be made in the manner and at the place specified as:
  - a. discharging to the River Avon.
  - b. at National Grid Reference SZ 1560 9358.
  - c. marked "Outlet A" on the plan attached.

#### REQUIREMENTS OF SAMPLING POINTS

5. An appropriately labelled sample point shall be provided and maintained at National Grid Reference SZ 1559 9358 as marked "Sampling Point 1" on the plan attached so that a representative sample of the Discharge may be obtained. The Discharger shall ensure that all constituents of the Discharge pass through the said sampling point at all times and in any legal proceedings it shall, for the purposes of Section 10 of the Rivers (Prevention of Pollution) Act 1961, be presumed, until the contrary is shown that any sample of the Discharge taken at the said sampling point is a sample of what was discharging into watercourse.

#### COMPOSITION OF THE DISCHARGE

6. No sample of the discharge shall contain more than:
  - a. 30 milligrams per litre of suspended solids (measured after drying at 105°C).
  - b. 1 milligram per litre of total aluminium.
  - c. 5 milligrams per litre of total iron.
  - d. 1 milligram per litre of total available chlorine.
7. The discharge shall not have a pH less than 6 or greater than 9.
8. The discharge shall not contain cationic or anionic polyelectrolytes.
9. The discharge shall not contain any visible oil or grease.

## NON INJURIOUS TO FISH

10. As far as is reasonably practicable, the discharger shall try to prevent:
  - a. any matter being present in the Discharge, other than matter specifically covered by numerical conditions in this consent, to such an extent as to cause the receiving waters, or any waters of which the receiving waters are a tributary, to be poisonous or injurious to fish in those waters, or to the spawning grounds, spawn or food of fish in those waters, or otherwise cause damage to the ecology of those waters; and
  - b. the Discharge from having any other adverse environmental impact.

## RECORDING AND REPORTING

11. The Agency shall be notified as soon as possible in the event of any breakdown which significantly affects the Discharge to the watercourse.
12. At the written request of the Agency, a 24 hour response telemetry alarm system shall be provided and maintained to provide a notification in the event of operation of the overflow. The system shall be tested on a regular basis, as agreed in writing, to ensure that it is functioning satisfactorily. The discharger shall keep a record of the test results available for inspection by the Agency.
13. A permanent stand-by power generator shall be provided and maintained in good working order.

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SCHEDULE	TR/01



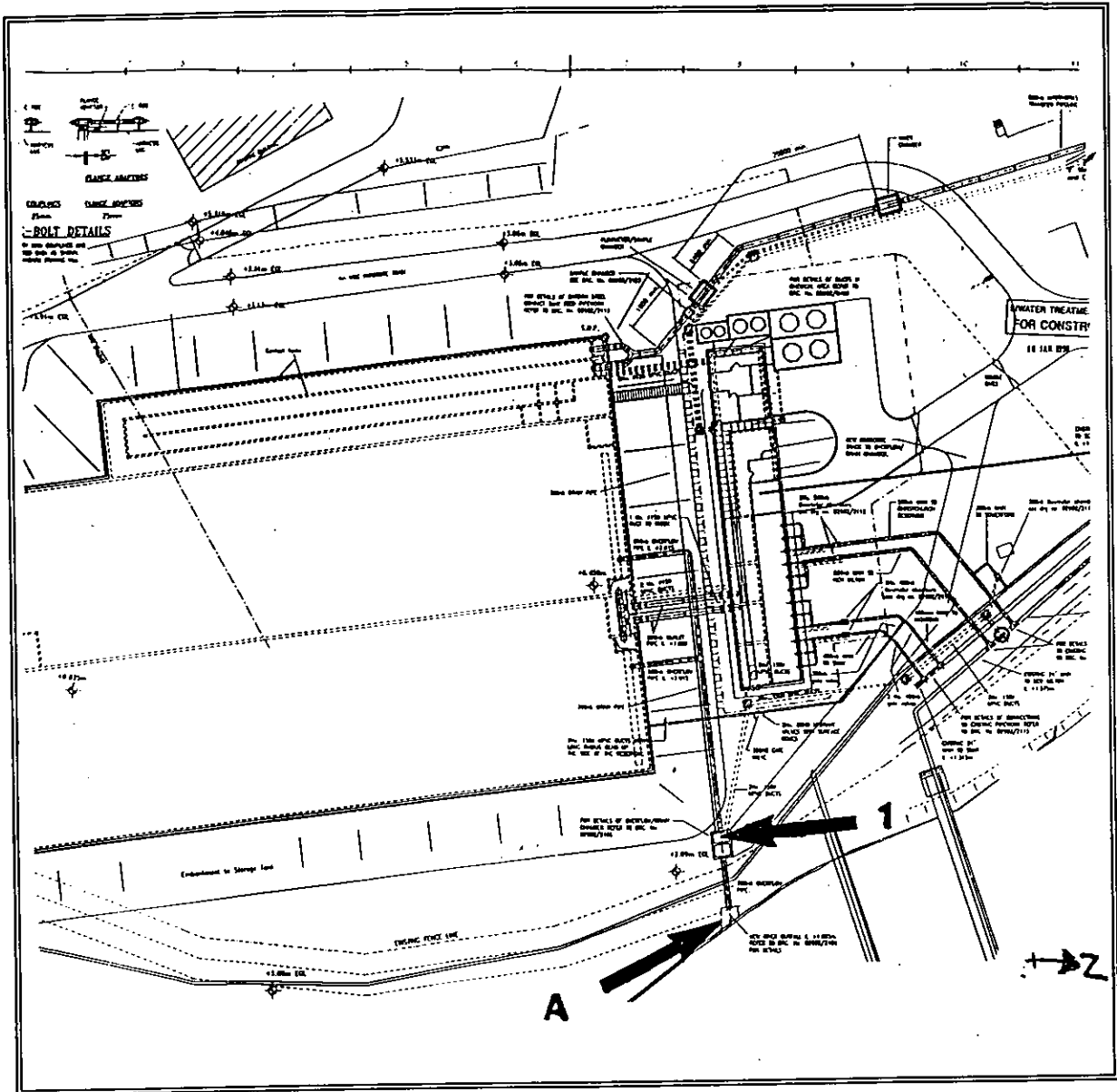
<p>Signed: <i>RMTG</i></p> <p>Date: <i>26 October 1998</i></p>	<p>National Grid Reference of Site Main Entrance: SZ 1543 9376</p>
<p>Outlet: A/ SZ 1560 9358</p> <p>Sampling Point: 1/ SZ 1559 9358</p>	<p>NEW RESERVOIR KNAPP MILL WATER TREATMENT WORKS MILL ROAD CHRISTCHURCH DORSET BH23 2LU</p>

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## CONSENT NOTES

**The consent notes below are provided for explanation and clarification - they do not form conditions of the consent.**

- A. If you are not satisfied with the terms of this consent, you may appeal to the Secretary of State for the Environment (Planning Inspectorate). Any such appeal has to be made within three months of the issue of the consent.
- B. This consent includes a copy of a map showing the location of the site to which this consent relates and a plan of the site to assist in interpretation of the consent. The outlets and sampling points are marked with letters and numbers as stated in the text.
- C. The conditions attached to this consent remain in force unless varied as a result of appeal or review. They are binding, not only on the person, company or body named in the consent, but on any person making the discharge. The consent is automatically transferred when responsibility for the discharge is transferred. Anyone who takes responsibility for the discharge is required to inform the Agency of the change.
- D. The site and plant shall be accessible at all times to the Agency's representatives for the purpose of enabling them to determine whether any provision made by or under any of the water pollution provisions of the Water Resources Act 1991 is being or has been contravened. The Agency's representatives may take samples or measurements of flows or install equipment to take measurements and flows and facilities will be provided as required for these purposes.
- E. This consent is not to be taken as providing a statutory defence against a charge under Section 85(1) in respect of any constituent for which it does not specify limits.
- F. The operators own method statement for the operation of the reservoir overflow and washout system is laid out in Annexe A. Please note the washout of the reservoir is covered in the Water Industry Act 1991 consent, reference WIA 0001.

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**ANNEXE A**

**METHOD STATEMENT AND OPERATION OF THE RESERVOIR OVERFLOW,  
AND WASHOUT SYSTEM**

## **Knapp Mill Water Storage Tank Operation of the Reservoir Overflow and Washout System**

### **Introduction**

The water is extracted from the River Avon at Knapp Mill. It is treated by rapid gravity filtration followed by slow sand filtration through a sand / Granular Activated Carbon bed.

The water is collected in a collection chamber and will then be pumped to the new contact tank. Prior to entry to the new contact tank chlorine is added to the water at a dose rate of 0.9 - 1.1 mg/l. After 1 hour contact time excess chlorine is removed using sodium bisulphate to a level of around 0.4 - 0.6 mg/l prior going in to the storage reservoir. The potable water is then pumped from the reservoir into domestic supply.

The reservoir overflow / washout system is likely to be used in a number of circumstances as follows.

### **1. Reservoir Inspection and Maintenance**

The washout facility will be used to allow inspection and maintenance of the reservoir which happens approximately once every 5 years.

The water in one half of the reservoir compartment is isolated by shutting the inlet valve in chamber No2. The water in the chamber is lowered through the existing pumped distribution level to 50 mm above floor level to minimise waste water. The valve in the outlet valve chamber is closed and the washout valve opened.

After inspection the reservoir is washed with water containing 20 mg/l of free chlorine (0.2 litres chlorox in 1000 litres water).

The 200mm washout pipework is connected to the to the overflow drain chamber. The chamber is split into a double compartment system with a weir set at 3.3m. To enable water to drain to the river it has to be pumped using a portable pump from the sump pump in the first chamber over the weir in to a 700 mm diameter outfall pipe. The pumping is a controlled system that means that the discharge to the river is controlled by the rate of pumping out of the first chamber.

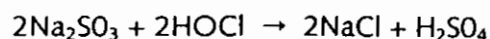
Sodium thiosulphate crystals, sodium sulphite crystals or tablets (dechlorination agents) are to be manually added in the first compartment to remove any chlorine. These remove the excess chlorine and the reaction of the kinetics are rapid.

The chemical reaction is as follows

Sodium thiosulphate



Sodium Sulphite



The chlorine stoichiometry is 4.45g of sodium thiosulphate per gramme of chlorine or 1.78g of sodium bisulphite per gramme of chlorine.

Samples are to be taken from the first chamber. The chlorine content of the water is measured using a portable commercial chlorine test kit such as Palin test kit. The water shall be tested for the presence of both combined and free chlorine. The reagent is added to the water. This reacts with chlorine to produce red colour. The colour is dependent upon the amount of chlorine present.

If no chlorine is present the water can be pumped over the weir. The water shall be monitored at regular intervals to ensure no chlorine is present and additional dechlorination agents shall be added as necessary. If chlorine is present the pumping shall be stopped and more dechlorination agent shall be added and the water tested until no chlorine is present.

## **2. Emergency Overflow**

Under normal circumstances the reservoir should never overflow. The water is pumped in to the reservoir from the collection chamber with the level in the reservoir continuously monitored and displayed on the Companies SCADA system. If the water reaches a pre set level an alarm is sent via a SCADA system to the companies control room. Above this level is a hard wired cut out. If the water level reaches this level it shuts the pumps from the transfer pumping station preventing additional water entering the reservoir.

If overflow occurs this is an emergency operation and is design to prevent damage to the reservoir structure that could cause failure. Water will flow out of the overflow through the outlet chamber and in to the river by gravity.

## **3. Portable Water failure**

As part of the testing procedure all of our portable water reservoirs are tested for bacteriological, chemical and physical compliance. If there is a failure which cannot be rectified the water will have to go to waste. The water will be discharged in a controlled manner through the washout pipework using the same procedure for that employed for a washout.

## **4. Commissioning of the reservoir**

The reservoir needs to be commissioned to be put in to service.

### **4.1 Hydraulic Testing**

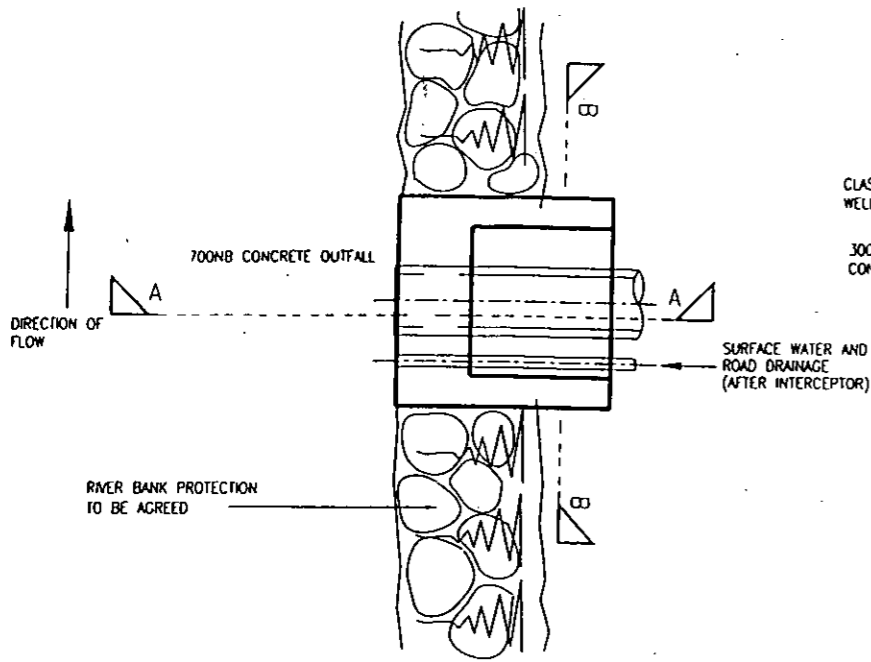
The reservoir shall be hydraulically tested using unchlorinated filtered river water that has been partially treated by the works. This shall be discharged via the washout pipework and overflow drain chamber to the river.

### **4.2 Cleaning and Bacteriological Test**

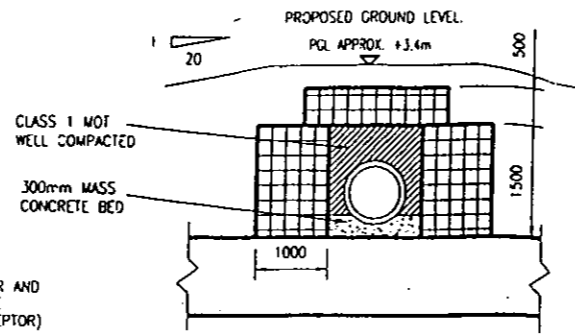
The reservoir shall be washed down using chlorinated water prior to being put in to service. If this water is required to be wasted the procedures shall be the same as for a washout procedure.

The tanks will be filled with potable water and the tanks bacteriologically tested. If a serve failure occurs the water shall have to be wasted. The procedures shall be the same for a washout procedure

DO NOT SCALE

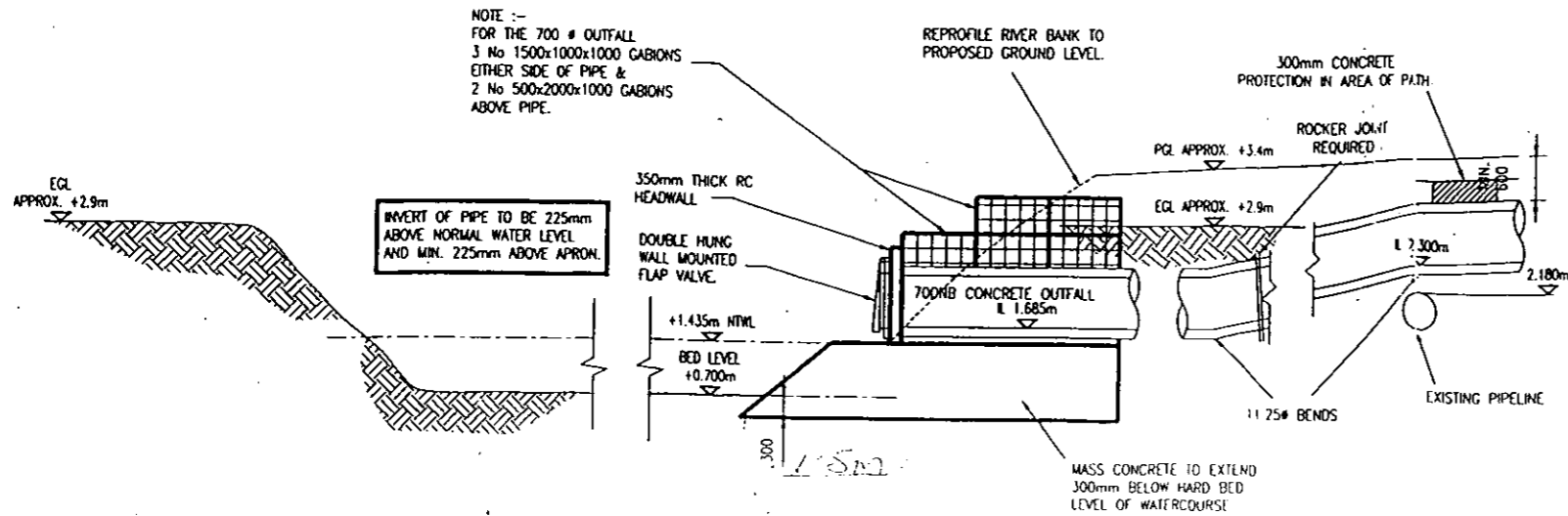


PLAN ON OUTFALL



SECTION 'B-B'

RIVER AVON  
DIRECTION OF FLOW



SECTION 'A-A'

NOTE :-  
FOR THE 700 # OUTFALL  
3 No 1500x1000x1000 GABIONS  
EITHER SIDE OF PIPE &  
2 No 500x2000x1000 GABIONS  
ABOVE PIPE.

INVERT OF PIPE TO BE 225mm  
ABOVE NORMAL WATER LEVEL  
AND MIN. 225mm ABOVE APRON.

NOTES :-

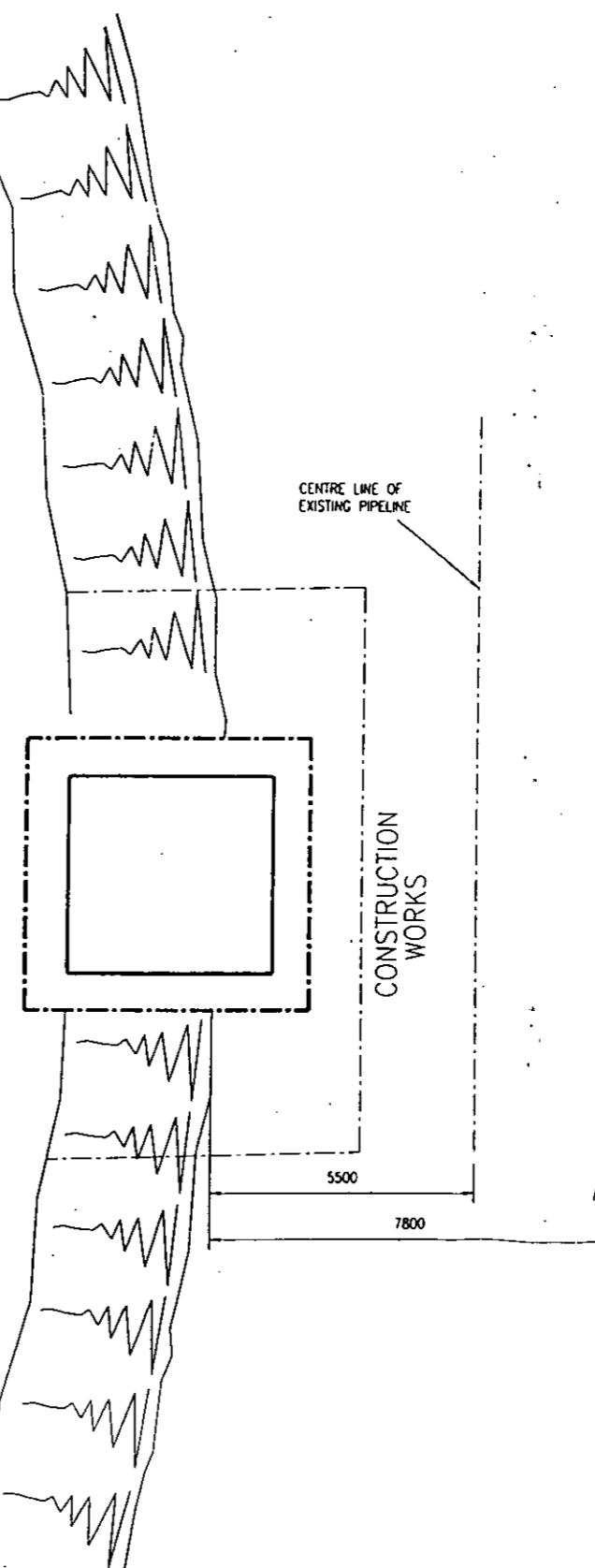
FOR GENERAL NOTES REFER TO  
DRAWING No. 02902/2201  
FOR LOCATION OF OUTFALL REFER TO DRAWING 02902/2102

CONSTRUCTION SEQUENCE

DURATION OF ACTIVITY APPROX 8 WEEKS STARTING SUMMER 1997.

- 1) RE-ROUTE PEDESTRIAN ACCESS IF REQUIRED.
- 2) REDUCE GROUND LEVEL LOCALLY BY 1.5m TO PROVIDE WORKING PLATFORM FOR EXCAVATOR.
- 3) INSTALL TEMPORARY SHEET PILES TO FACES OF EXCAVATION AS LOCATED.
- 4) EXCAVATE FOR HEADWALL FORMATION TO 300mm BELOW RIVER BED LEVEL.
- 5) CONSTRUCT CONCRETE GABION BASE AND INSTALL GABIONS
- 6) REMOVE TEMPORARY SHEET PILES, BACKFILL WALLS AND RE-STATE AREA.

- X — EXISTING FENCE LINE
- — — — — HERAS' FENCE PANELS 6" HIGH
- — — — — TEMPORARY SHEET PILES



PLAN TO SHOW CONSTRUCTION ACTIVITIES

BIWATER KNAPP MILL

21 JUL 1997

DETAILS	ACTION	COPY

18 JUL 1997

BIWATER INTERNATIONAL LIMITED  
FOR CONSTRUCTION

Biwater International Ltd  
U.K. Division  
Biwater Place,  
Greege Street,  
Heywood, Lancashire  
OL10 7DQ, England  
Telephone (01706) 252551  
Facsimile (01706) 252552  
Email biwater@compuserve.com

REV	AMENDMENT DESCRIPTION	REV BY	DATE	CHK BY

CLIENT: BOURNEMOUTH & WEST HAMPSHIRE  
KNAPP MILL WATER STORAGE

CAD REF: KN2108  
ORIGINAL SCALE: 1:500  
DATE: 3/6/97  
FIRST ANGLE PROJECTION

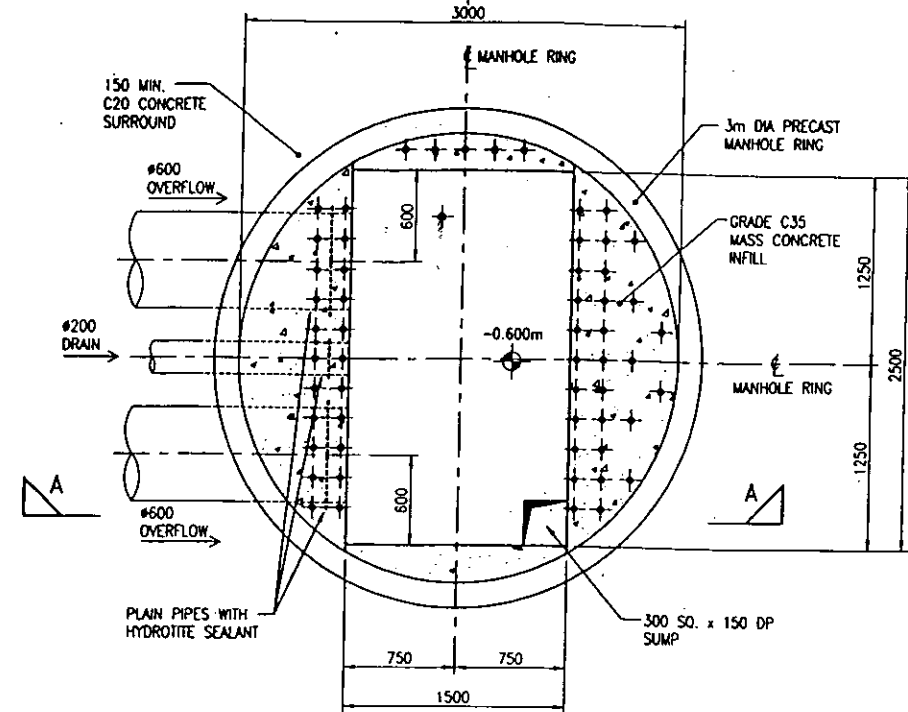
TITLE: RIVER OUTFALL DETAILS.  
DRAWN: [ ]  
CHECKED: [ ]  
PRODUCTION: [ ]  
02902

DO NOT SCALE

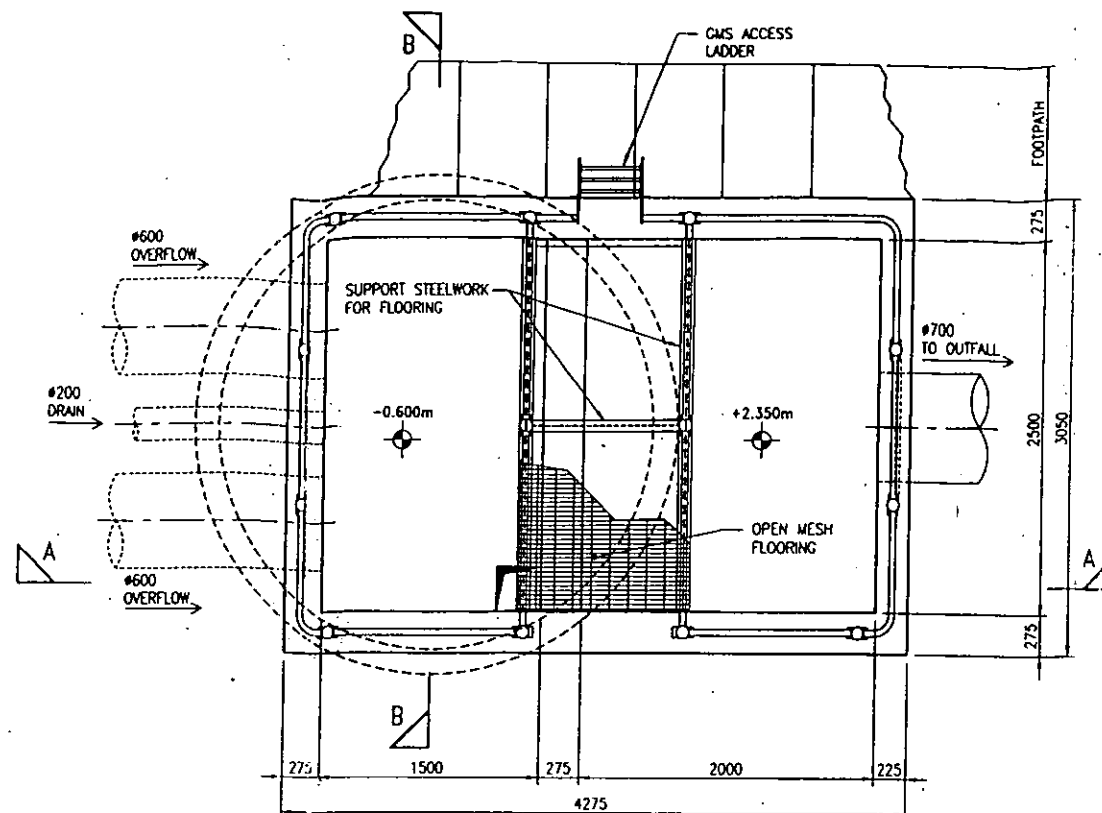
NOTES :-

FOR GENERAL NOTES REFER TO DRAWING No. 02902/2201.

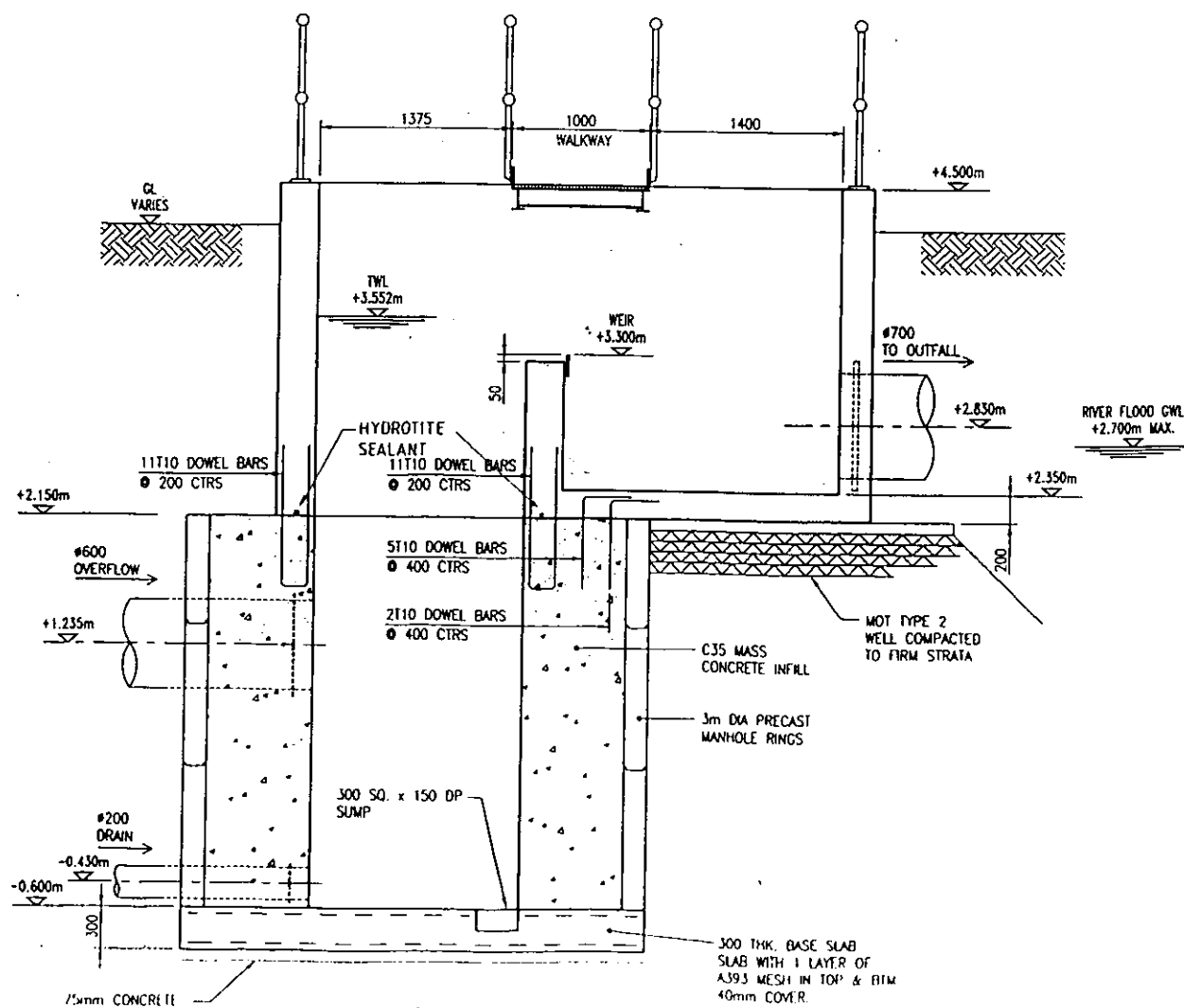
FOR LOCATION OF DRAIN AND OVERFLOW CHAMBER REFER TO DRAWING No. 02902/2101.



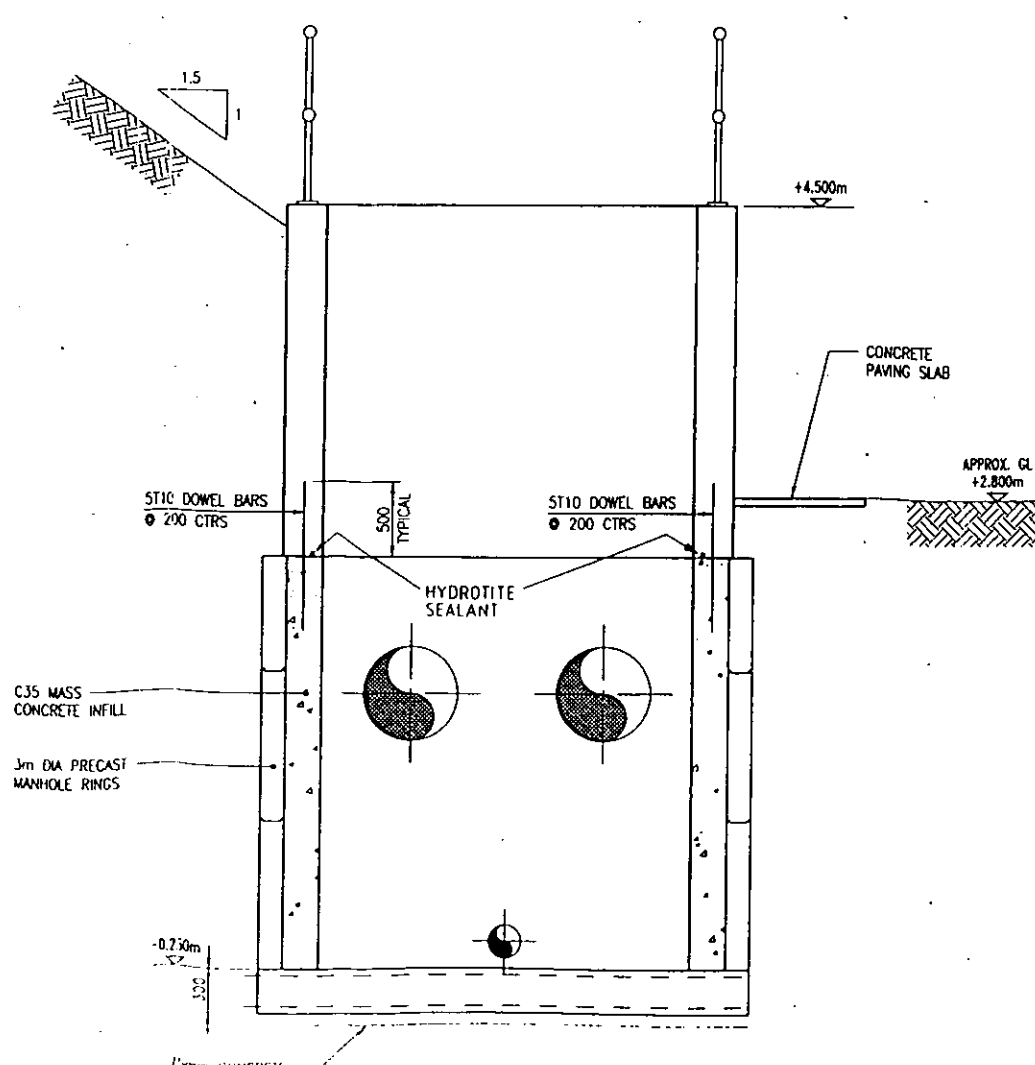
PLAN ON CHAMBER AT +2.150m LEVEL



PLAN ON CHAMBER AT +4.500m LEVEL



SECTION A-A



SECTION B-B

19 AUG 1997

APPROVAL STATUS	
CODE 1	APPROVED ISSUE FOR CONSTRUCTION
CODE 2	APPROVED SUBJECT TO INCORPORATION OF COMMENTS
CODE 3	APPROVED SUBJECT TO AREAS OF HOLD NOT FOR CONSTRUCTION AS NOTED
CODE 4	REJECTED REVISE AS INDICATED AND RESUBMIT
CODE 5	AS BUILT / CERTIFIED

Approved by: \_\_\_\_\_ Date: \_\_\_\_\_  
For and on behalf of: \_\_\_\_\_

REV	AMENDMENT DESCRIPTION	REV BY	DATE	CHKD	APPD

Biwater International Ltd.  
U.K. Division,  
Biwater Place,  
Grege Street,  
Heywood, Lancashire  
OL10 2DX, England  
Telephone (01706) 367555  
Facsimile (01706) 365598  
Email bi-uk@biuk.mhs.computererve.com

CLIENT/ CONTRACT BOURNEMOUTH & WEST HAMPSHIRE  
KNAPP MILL WATER STORAGE

CAD REF: KNA2106  
ORIGINAL SCALE: 1:25  
DRAWN: J.C.  
DATE: 15/08/97  
CHECKED: J.C.  
APPROVED: J.C.

TITLE: GA AND DETAILS OF DRAIN AND OVERFLOW CHAMBER  
FIRST ANGLE PROJECTION  
CONTRACT NUMBER: 02902  
DRAWING NUMBER: 02902/2106