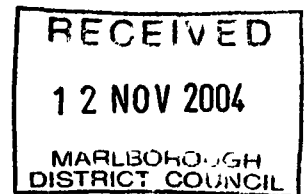


012106-

HODDER CONSULTING LTD.
Civil & Structural Engineering

Todd Valley, RD 1, Nelson Telephone (03) 545 1316



PRODUCER STATEMENT - PS1 - DESIGN

REF NO. 440

ISSUED BY: HODDER CONSULTING LTD. CPE ID NO. 58430

TO: J & T ZWART

IN RESPECT OF: WASTEWATER DISPOSAL SYSTEM

AT: WHAKITENGA BAY, CROISILLES HARBOUR

NOT DP SO

GARY HODDER has been engaged by: J & T ZWART to provide WASTEWATER DESIGN services in respect of the requirements of the relevant clauses of the Building Regulations 1992 for Part only of the building work as specified above.

The design has been prepared in accordance with: AS/NZS 1547 of the approved documents issued by the Building Industry Authority and the work is described on: HODDER CONSULTING LTD. drawings titled: WASTEWATER SYSTEM FOR J & T ZWART AT WHAKITENGA BAY

and numbered: 440 SHT 1

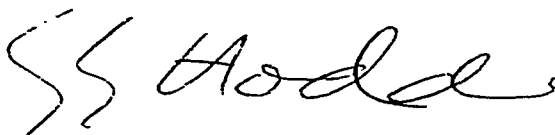
As an independent design professional covered by a current policy of Professional Indemnity Insurance to a minimum value of \$200,000, I BELIEVE ON REASONABLE GROUNDS that subject to:

(1) site verification that soakage trench excavations are in similar material to that sampled on site, and

(2) all proprietary products meeting the performance specification requirements,

the drawings, specifications according to which the system is proposed to be constructed comply with the relevant provisions of the building code.

Signed:



Date: 27.10.04

GARY HODDER CONSULTING ENGINEER

WASTEWATER SYSTEM

OR J & T ZWART

I WHAKITEMAKA BAY

HODDER CONSULTING LTD.

Civil & Structural Engineering

Todd Valley, RD 1, Nelson. Phone (03) 545 1316

REF 440 OCTOBER '04

DESIGN OF ON SITE WASTEWATER DISPOSAL SYSTEM

WASTEWATER FLOW : 3 BEDROOMS : ALLOW 5×180
 $= 900 \text{ L/DAY}$

SEPTIC TANK : 1ST STAGE : 3300 LITRE CAPACITY
2ND STAGE : 800 LITRE CAPACITY
WITH BIOTUBE OR RABBIT FILTER AT
OUTLET.

SOIL : YELLOW CLAY WITH ANGULAR GRAVEL FRAGMENTS
- USE SOIL CATEGORY 5, WITH DESIGN

MAX. LOADING RATE = 8 mm/DAY (BOTTOM AREA ONLY,
WITH RESERVE AREA)

SOAKAGE BEDS : 2000 WIDE
 $\Rightarrow 900/8 \times 2 = 56 \text{ m LONG}$

OR SOAKAGE TRENCH : 600 WIDE

$\Rightarrow 900/8 \times 0.6 = 188 \text{ m LONG}$

SITE INSPECTION SCHEDULE

REF NO.440

ISSUED BY: HODDER CONSULTING LTD.

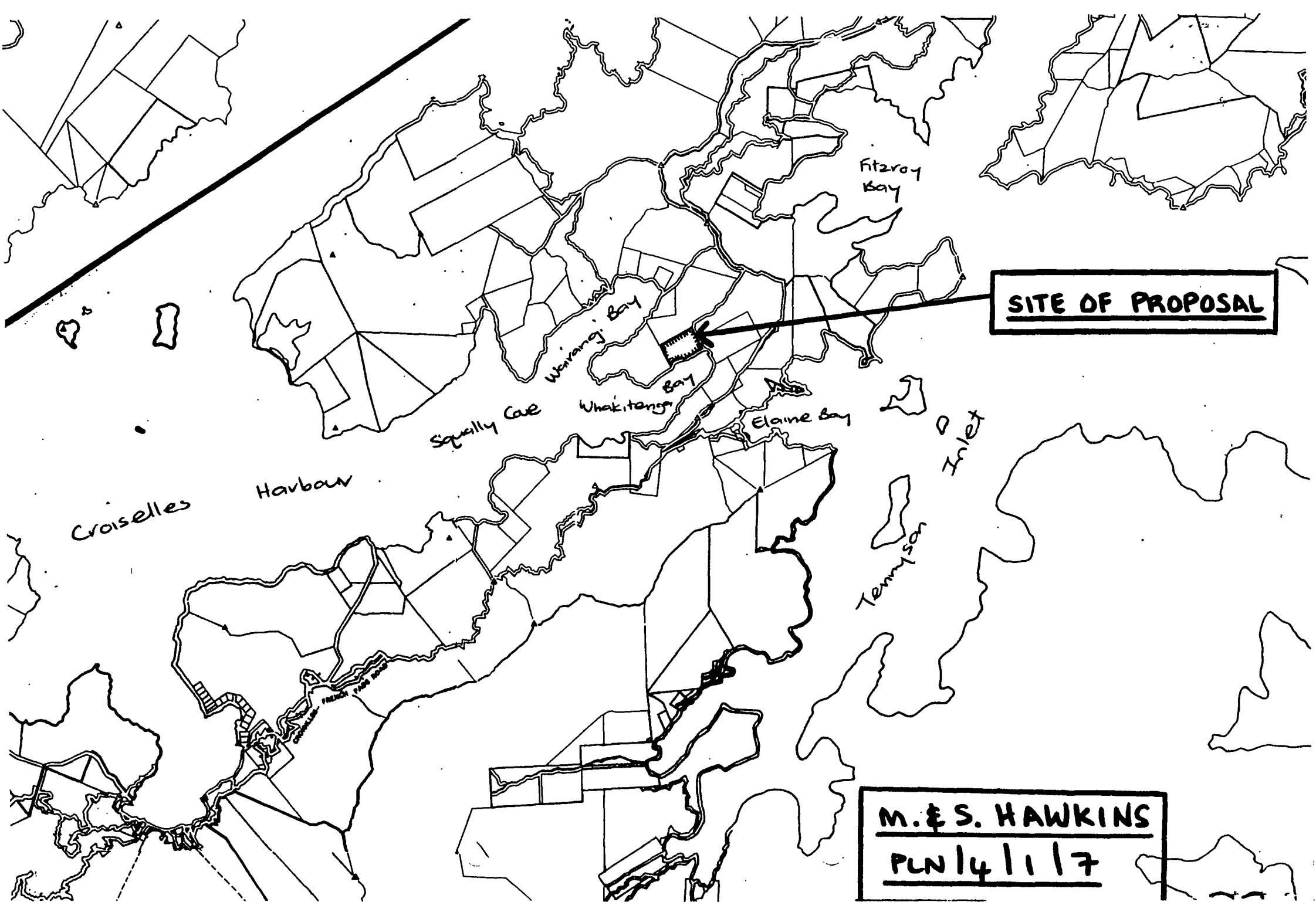
TO: J & T ZWART

IN RESPECT OF: WASTEWATER DISPOSAL SYSTEM

AT: WHAKITENGA BAY, CROISILLES HARBOUR

Contact the Engineer a minimum of 3 days in advance (preferably 7 days) for site visits to check:

- Soakage trench excavations after everglas installation and before placing gravel.
- Septic tanks and pipework before backfilling.
- At completion



SITE OF PROPOSAL

M. & S. HAWKINS
PLAN 14/1/7

This site plan has
been copied from
the property file
(No. 198539)

NOTES

=CONTACT ENGINEER 7 DAYS
IN ADVANCE TO VISIT SITE
BEFORE PLACING GRAVEL.
-DO NOT EXCAVATE TRENCHES
WHEN GROUND IS WET.
-NO VEHICLES ALLOWED ONTO
BED AREA.

INSPECTION PIPE & VENTED
CAP AT MIDDLE OF BED

FORM VEE DRAIN 150
DEEP BOTH SIDES OF
EACH BED, FALL TO
BOTH ENDS

MOUND TOP SOIL
TO SHED RAIN

1.0 m 2.0 m 1.0 m

200
300
230mm EVERGLAS PLASTIC
TRENCH WITH END CAPS.
CONNECT TRENCHES WITH LEVEL
110 SEWER PIPE AT BASE.

FILTER
FABRIC
TOP SOIL
DRAINAGE

GRAVEL 20-40mm
(NO FINES)

SECTION ① 1:50

NOTE: BOTTOM OF TRENCHES TO BE COMPLETELY FLAT & AT THE SAME LEVEL

EXISTING BANK 2.5m
HIGH, 30° ANGLE
VEE DRAINS 1000 WIDE
x 150 DEEP, FALLS
TO ENDS.

1.0
2.0
1.0
2.0
1.0
2.0

ACCESS TRACK

EXISTING HOUSE

110 UPVC SEWER PIPE
MIN 1.2% FALL, 45°
INSPECTION BENDS.

3300 LITRE SEPTIC
TANK, VENTED.

1000 LITRE SECONDARY
TANK, BIOLOGIC FILTER
AT OUTLET

RESERVE AREA

28.0m

SOAKAGE BEDS
150mm MIN. AS SECTION 1

TOP OF BANK TO FORESHORE

SITE PLAN 1:200

041874

HODDER CONSULTING LTD.

Civil & Structural Engineering

Todd Valley, RD 1, Nelson. Phone (03) 545 1316

WASTE WATER SYSTEM FOR J & T ZWART
AT WHAKITENGA BAY

DRAWN GH
TRACED

CHECKED
DATE 02/10/01

SCALE

SHEET

1

SERIES OF

REF 440

NOTES

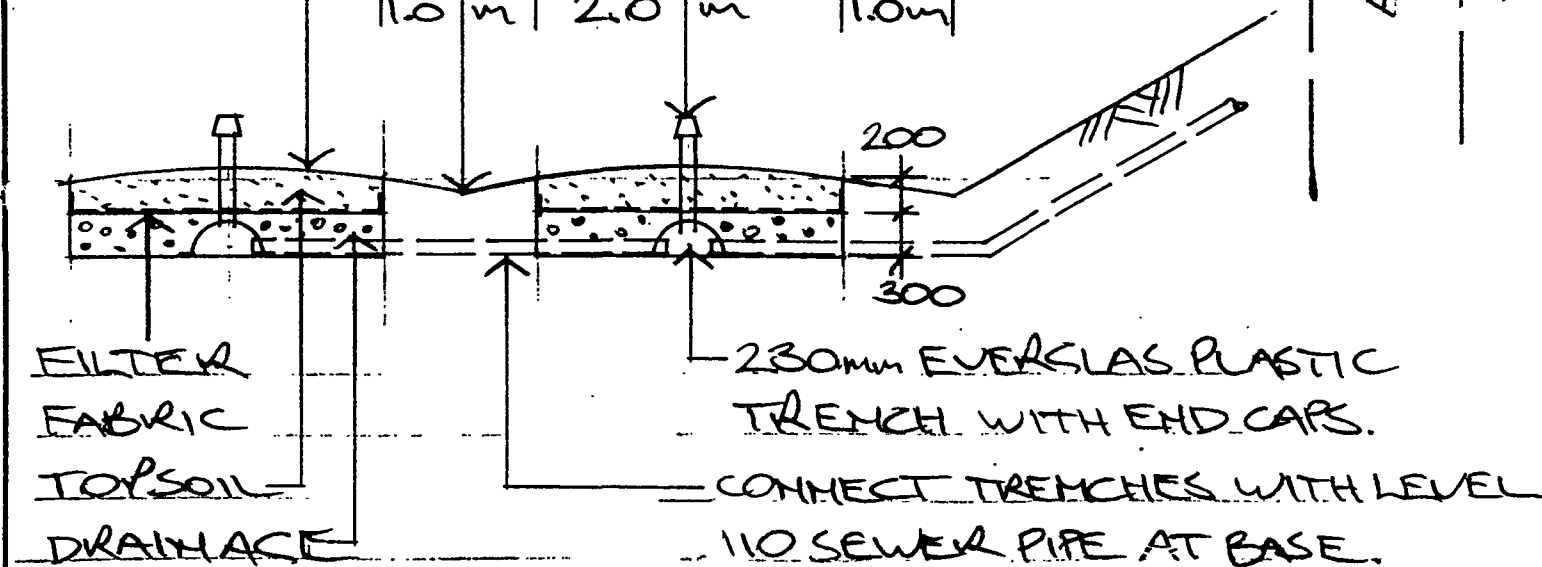
- CONTACT ENGINEER 7 DAYS IN ADVANCE TO VISIT SITE BEFORE PLACING GRAVEL.
- DO NOT EXCAVATE TRENCHES WHEN GROUND IS WET.
- NO VEHICLES ALLOWED ONTO BED AREA.

INSPECTION PIPE & VENTED CAP AT MIDDLE OF BED

-22mm VEE DRAIN 150 DEEP BOTH SIDES OF EACH BED, FALL TO BOTH ENDS.

MOUND TOP SOIL TO SHED RAIN

1.0 m 2.0 m 1.0 m



GRAVEL 20-40mm (NO FINES)

SECTION ① 1:50

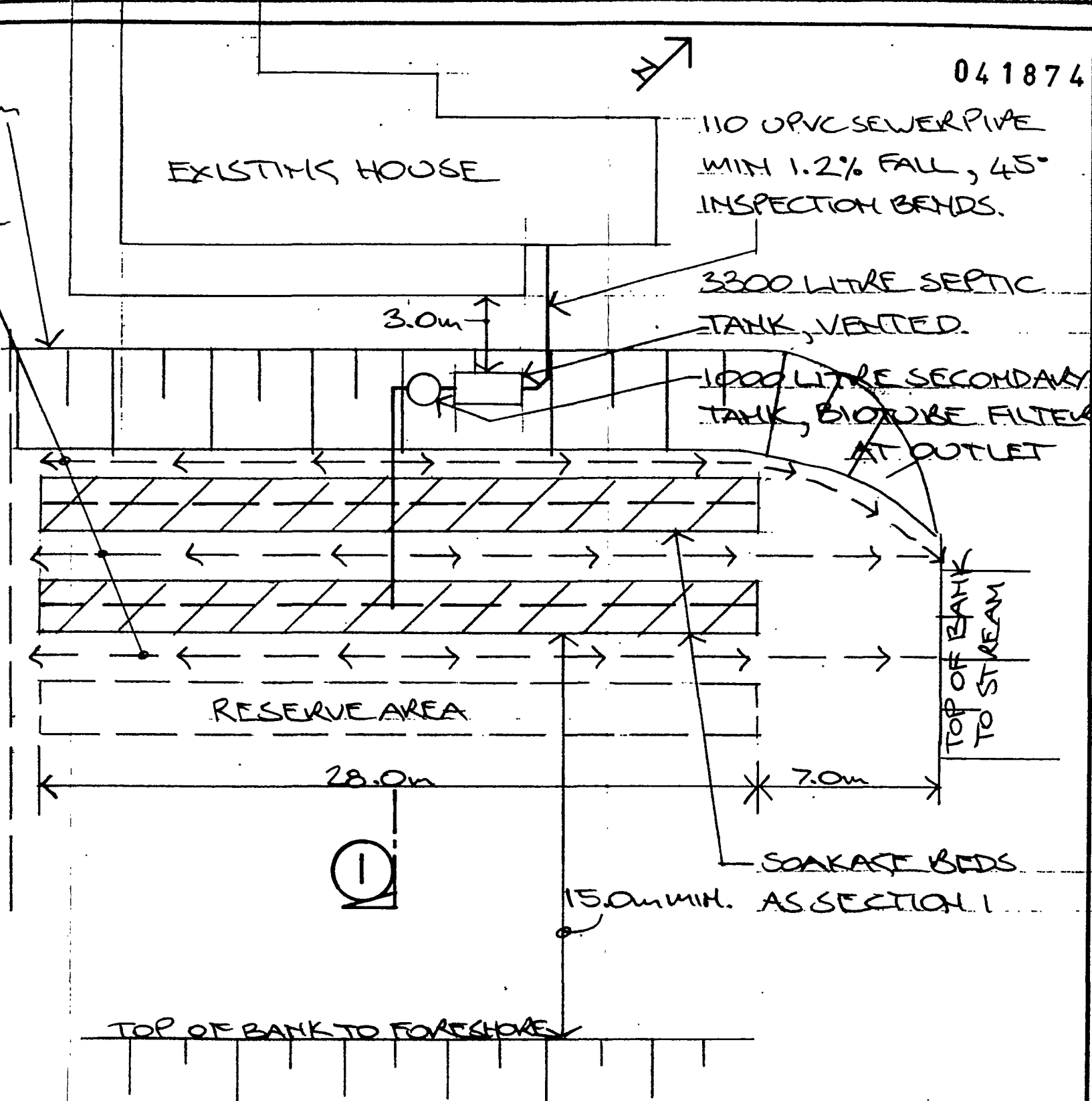
NOTE: BOTTOM OF TRENCHES TO BE COMPLETELY FLAT & AT THE SAME LEVEL

EXISTING BANK 2.5m HIGH, 30° ANGLE

VEE DRAINS 1000 WIDE x 150 DEEP, FALLS TO ENDS.

1.0
2.0
1.0
2.0
1.0
2.0

ACCESS TRACK



SITE PLAN 1:200

NOTES

- CONTACT ENGINEER 7 DAYS IN ADVANCE TO VISIT SITE BEFORE PLACING GRAVEL.
- DO NOT EXCAVATE TRENCHES WHEN GROUND IS WET.
- NO VEHICLES ALLOWED ONTO BED AREA.

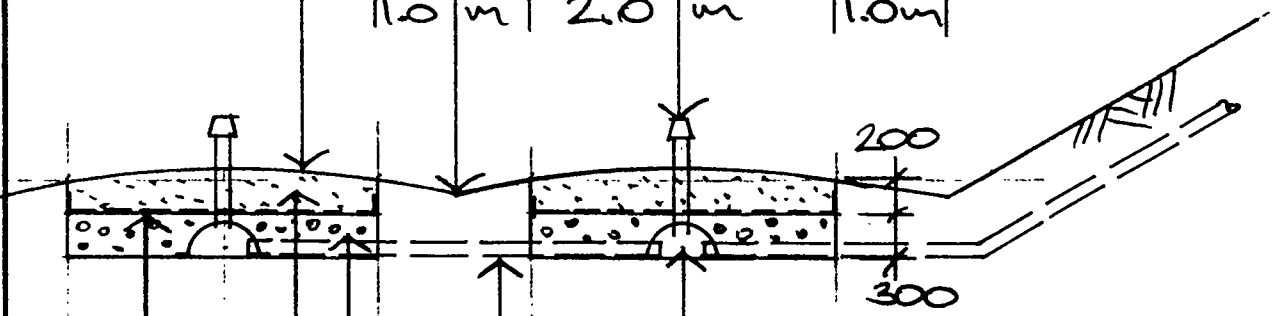
EXISTING BANK 2.5m HIGH, 30° ANGLE
VEE DRAINS 1000 WIDE x 150 DEEP, FALLS TO ENDS.

INSPECTION PIPE & VENTED CAP AT MIDDLE OF BED

FORM VEE DRAIN 150 DEEP BOTH SIDES OF EACH BED, FALL TO BOTH ENDS.

MOUND TOP SOIL TO SHED RAIN

1.0 m 2.0 m 1.0 m



FILTER FABRIC
TOP SOIL
DRAINAGE

230mm EVERGLAS PLASTIC TRENCH WITH END CAPS.

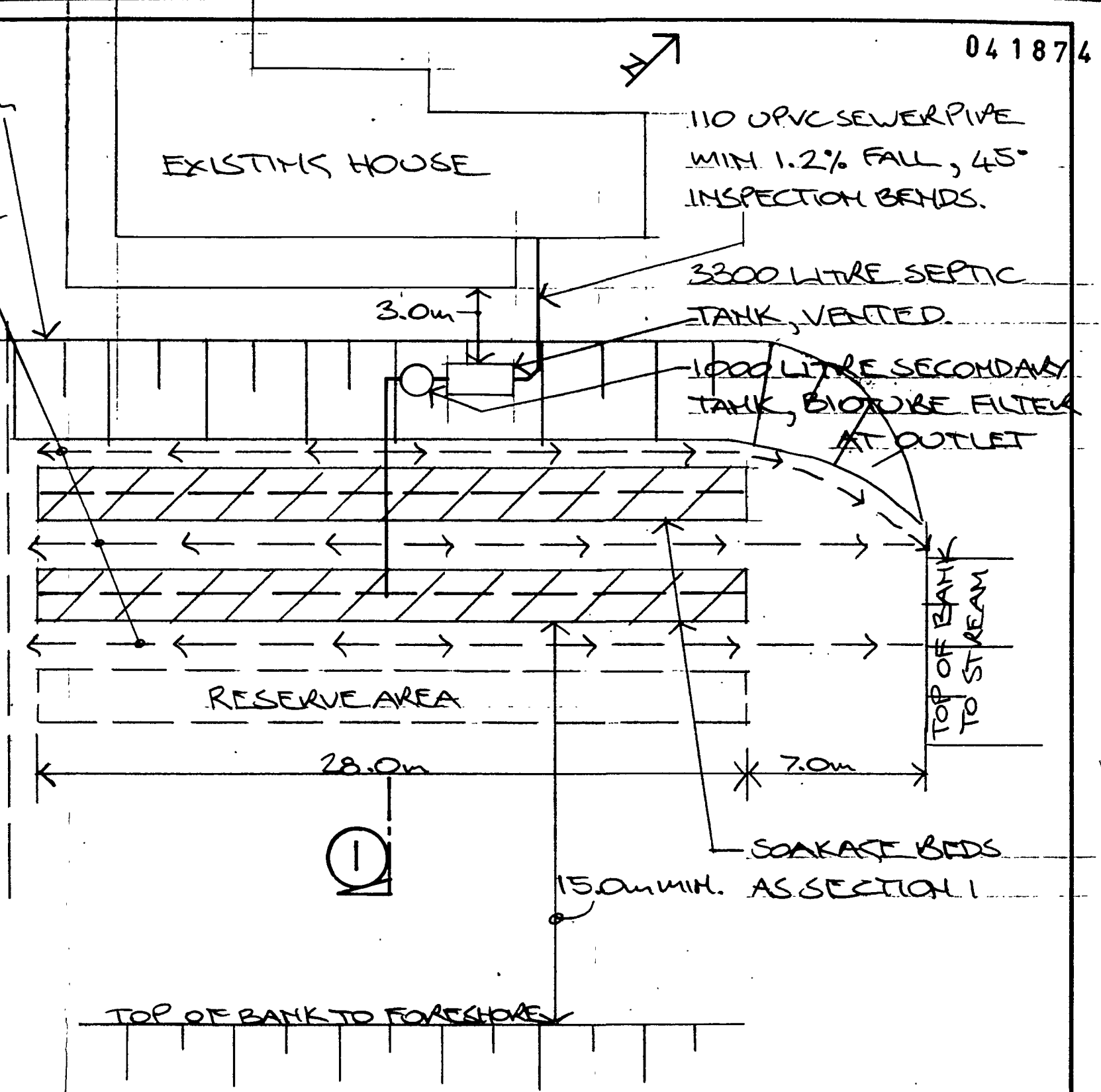
CONNECT TRENCHES WITH LEVEL 110 SEWER PIPE AT BASE.

GRAVEL 20-40mm (NO FINES)

SECTION ① 1:50

NOTE: BOTTOM OF TRENCHES TO BE COMPLETELY FLAT & AT THE SAME LEVEL.

ACCESS TRACK



SITE PLAN 1:200