YOUNG SHIRE COUNCIL

ONSITE WASTE WATER MANAGEMENT SYSTEMS IN UNSEWERED AREAS

POLICY

NO 31

DATE ADOPTED: 18/09/13

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INTRODUCTION

This plan deals with single domestic household on-site wastewater management systems that treat and utilise the domestic wastewater from a household, completely within the boundary of the premises.

Traditionally in unsewered areas, effluent from most domestic dwellings has received primary treatment in a conventional septic tank before being disposed underground in absorption trenches or transpiration beds. These systems rely on the soil completing the treatment process, however not all soils are suitable for absorption trenches, particularly in villages where small areas are available therefore, a conventional septic tank and underground disposal may not be permitted.

The aerated wastewater treatment system (AWTS) is an alternative to the conventional septic system. This effluent is treated to a level known as secondary treatment with effluent undergoing chlorination to remove bacteria and other micro-organisms. This allows the effluent to be spray irrigated above the ground without major health risk however, NSW Health imposes restrictions upon vegetation within and access to disposal areas.

All wastewater treatment devices, disposal systems and drainage field principles must be approved by the Director General of NSW Health and are subject to the requirements of such an approval.

This document has been developed to outline to owners and tradespeople the matters that are considered by Council in assessing and regulating the installation and use of on-site wastewater management systems, having regard to protection of public health, the environment, community amenity and ecological sustainable development.

Post installation inspections of wastewater management systems will be carried out at frequencies determined by Council. The owner of the premises will pay Council for the inspection, the cost being that as fixed by Council's Management Plan annually.

1 CONVENTIONAL SEPTIC SYSTEMS

Domestic single septic tank with effluent disposal by absorption trench or transpiration bed.

1.1 Performance Criteria

1.1.1 Effluent disposal systems are to be designed and constructed in such a manner which ensures that effluent disposed from the system is undertaken in a manner which minimises adverse impacts on the environment, and in particular on the quality of local watercourses and ground water systems.

1.1.2 The effluent disposal area shall be designed and constructed in such a manner so as to prevent a risk to health.

1.1.3 Avoid odour or nuisance impact on neighbouring lands.

1.2 Situations which may preclude use or for which special conditions may apply

1.2.1 Close proximity to water courses, gullies and dams

A buffer distance of between disposal system (absorption trench) of 100 metres to a permanent water body or watercourse and 40 metres to intermittent watercourse is recommended.

1.2.2 High Groundwater Level

A minimum depth to groundwater of two (2) metres.

1.2.3 Non Absorbent Soil Type or Small Area Allotments

If Council considers -

- The complexity of physical and chemical factors may affect the permeability of soil; or
- The size of the allotment limits the area available for disposal.

1.2.4 Small Landholdings

Blocks with less than one (1) hectare are generally considered as having insufficient area for disposing of effluent via conventional septic tank and absorption trenches or transpiration beds.

In these instances Council will require the applicant to engage a suitably qualified soil analyst to carry out testing and design of an on site wastewater management system. A list of suitably qualified soil specialists is available from the P & E Group on request. The design and testing shall comply with the requirements of ANZS 1547-2000 - Disposal Systems for Effluent from Domestic Premises.

1.3 Site Evaluation

The evaluation of the site for the suitability of conventional absorption trenches shall include the following –

1.3.1 Depth and permeability of soil;

1.3.2 Designation of an alternative area to enable the disposal system to be duplicated;

1.3.3 Note: - most designs and installations have a life of approximately 15 years

1.3.4 The risk of prejudicing adjoining property, underground water supplies and the like, by seepage or run-off from the site;

1.3.5 Any seasonal changes in groundwater level and absorptive capacity of the site;

1.3.6 The general climate and its effect on evaporation or transpiration from the site;

1.3.7 The effect of seepage and surface waters from surrounding areas at higher levels.

1.4 Generic Absorption Trench Design

For the purpose of this plan, the design daily flow, is estimated as follows –

- For all wastes, 300 L/bedroom
- WC pan only, 60 L/bedroom
- Sullage only, 240 L/bedroom

The size of disposal area has been calculated in accordance with these quantities and is based on a clay loam soil permeability, which predominates in much of Young Shire:-

- A three bedroom dwelling requires a minimum absorption trench length of **45 metres.**
- A four bedroom dwelling requires, a minimum absorption trench length of **60 metres.**

This size may be further increased should the results of a percolation test or assessment relative to parts 2(b) and 2(c), prove a lower permeability is exhibited.

An acceptable design for absorption trench and transpiration bed construction is attached.

Note: Council may require the disposal area to be separately fenced and storm or surface run off shall be diverted from these areas.

1.5 Alternate Disposal System

1.5.1 If in the opinion of Council the requirements of Section 2 (a), (b) and (c) cannot be complied with or

1.5.2 The applicant wishes to vary the Generic Absorption Trench Design requirements;

The applicant shall engage a suitably qualified soil analyst to carry out testing and design of an on site wastewater management system. The testing and design shall comply with the requirements of AS/NZ 1547-2000 - Disposal Systems for Effluent from Domestic Premises.

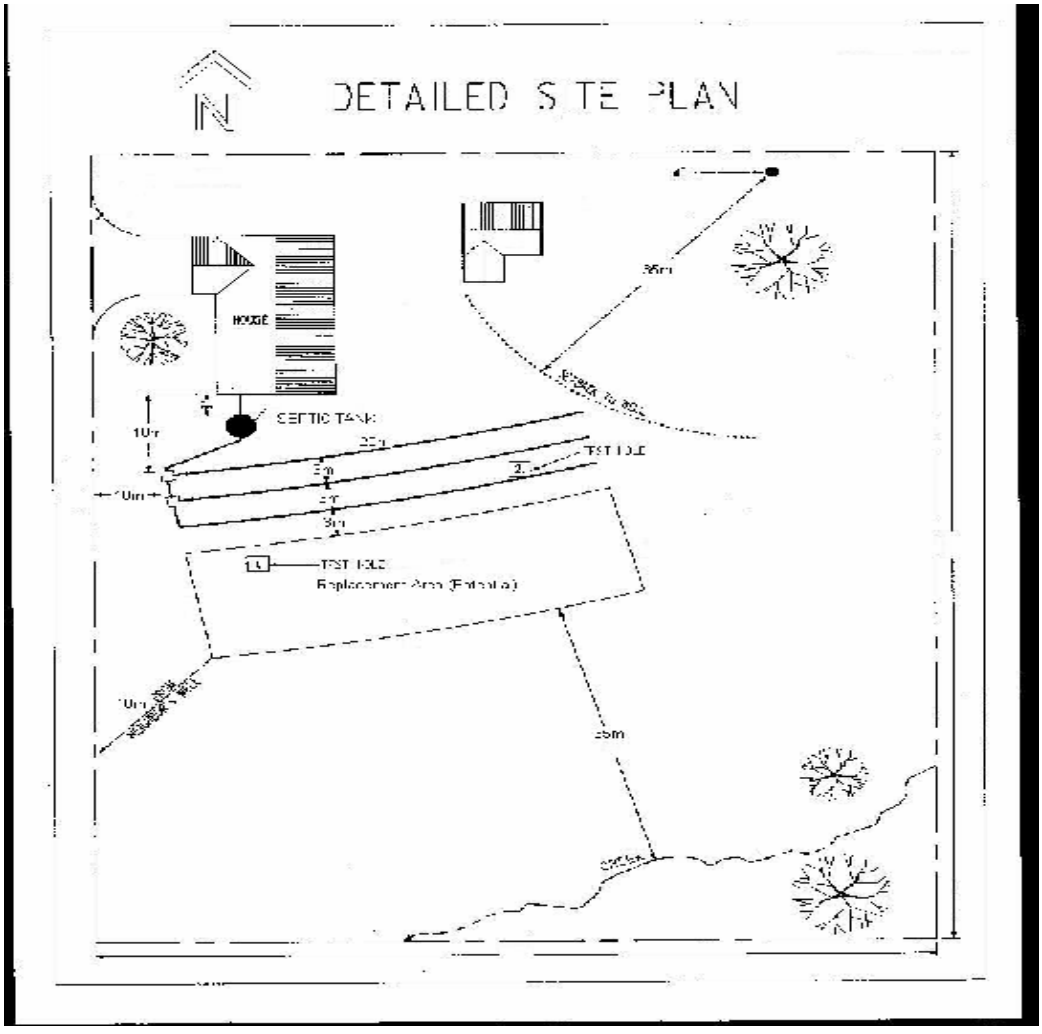

Figure 1 - Example of site plan and design

2 AERATED WASTEWATER TREATMENT SYSTEMS

Performance Criteria

2.1 Effluent disposal system and area shall be designed and constructed in a manner which ensures that the treated effluent is discharged in a manner which minimises impact on the environment and is in accordance with manufacturer's specification.

2.2 The effluent disposal area shall be designed and constructed in such a manner so as to prevent a risk to the public health

2.3 Compliance with the terms and conditions of accreditation of the particular system chosen. A list of approved systems and conditions of accreditation is available at:

http://www.health.nsw.gov.au/public-health/ehb/general/wastewater/wastewater.html

Required conditions to permit use

2.4 A minimum depth to groundwater of at least two (2) metres.

2.5 Irrigation area shall be reasonably level with a maximum slope of 15%.

2.6 A minimum irrigation area on site as determined by the accredited installer and is dependent upon the volumes of effluent generated, the nature of soil types and proposed plantings on each site.

2.7 The disposal area must not be used to grow vegetables or fruit for human consumption.

2.8 The minimum horizontal setback distances from the perimeter of any disposal areas must be –

- from a building or property boundary at a higher elevation, not less than 2 metres.
- from a building or property boundary at a lower elevation, not less than 4 metres.
- from a swimming pool or spa, not less than 6 metres.

2.9 The disposal area shall be properly signposted.

2.10 The disposal area shall be suitably prepared and landscaped per the accreditation requirements for the system. These areas shall be free from potential contact with children or animals.

Note: Disposal by a pipe into a non prepared or gardened paddock is expressly prohibited.

2.11 Alternate Disposal System

If in the opinion of Council the requirements of Section 3 (a) and (b) cannot be complied with the applicant shall engage a suitably qualified soil analyst to carry out testing and design a system that does comply.

The testing and design shall comply with the requirements of AS/NZ 1547-2000 Disposal systems for effluent from domestic premises.

3 ALTERNATIVE TECHNOLOGY

Young Shire council is prepared at all times to consider the use of alternative technology where it can be demonstrated that the proposal would meet the objectives of this Code for the proposed site. Accreditation guidelines are available from the following link on the NSW Health Website.

http://www.health.nsw.gov.au/public-health/ehb/general/wastewater/wastewater.html

4 INFORMATION TO BE SUBMITTED WITH APPLICATIONS

To enable an evaluation of a proposed wastewater treatment system to ensure acceptable impact on the environment and suitability of the site, the following should accompany any Septic Tank Application or other application for an alternative effluent disposal system that proposes on-site effluent disposal.

4.1 The type of effluent treatment and disposal system together with details of the system including tanks, pumps, valves timers etc. These details shall include volumes, model numbers and accreditation details where appropriate.

4.2 Site information including the position of tanks and disposal areas and their proximity to boundaries, creeks, watercourses, dwelling and recreation areas and the estimated depth of water table in the vicinity and location any bores within 250 metres of the disposal area.

4.3 The proposed treatment/construction of the disposal area including materials, size and methods, length of trench, height of trench profile, size of aggregate, vegetated areas, plantings and/or other details as are necessary to demonstrate how the effluent management system will operate.

4.4 Proposed landscaping treatment of disposal area includes plant, shrubs and groundcover and any ground or stormwater disbursement drains or mounding required around disposal areas.

5 POST APPROVAL EFFLUENT TREATMENT & DISPOSAL ISSUES

5.1 Installation

Must be considered and approved in conjunction with Development Application.

Note: Effluent disposal systems are not to be covered and/or used until the work has been inspected and passed by Council.

5.2 Operation

All domestic effluent treatment/disposal systems rely on natural decomposer micro-organisms to break down the effluent. Certain chemicals, such as bleaches, which are in some cleaning agents, can adversely affect the organisms.

Washing powders detergents and other cleaning agents have the potential to adversely effect the efficient operation of the system. In this regard Council encourages the use of readily biodegradable, low sodium, low phosphate products that do not contain chlorine.

In relation to water conservation measures council supports the installation the following devices:

Toilets to be fitted with 6/3 litre dual flush systems.

Where possible restrict water pressure to the premises to around 150 kPa.

Devices to Australian Water Conservation Rating ‘AA” or better.

5.3 Maintenance

Conventional septic tanks and absorption trenches are not maintenance free. Solids levels will build up in septic tanks over a number of years and accordingly these systems require ‘desludging’. The frequency of desludging is dependant upon the number of people using the system but generally systems will be required to the desludged every 3-5 years.

‘Split systems’ separate ‘black’ (toilet) and ‘grey’ (bath/laundry etc) water for treatment and disposal. Grey water systems will require regular maintenance of the greasetrap or preclarification pit to remove oils and greases, which may block the subsurface effluent disposal area.

The inside of the absorption trenches may become coated with a layer of biological and chemical solids, which will tend to clog the system and impede absorption. For this reason it is imperative that solar access to the disposal field be maintained and the grass kept well mown at all times. This ensures that evapo-transpiration occurs and the system has the optimum change of operating successfully at all times.

If trees and/or shrubs are to be planted adjacent to effluent disposal area care should be taken in the selection of species to ensure that shading, particularly during winter and root infiltration does not occur.

After a period of years some absorption areas will ‘fail’. Resting these areas or the application of gypsum may help. However in some situations the only feasible alternative is replacement of the effluent disposal area. Replacement of absorption trenches or any other effluent disposal area requires formal Council approval.

5.4 Aerated Wastewater Treatment System (AWTS)

It is emphasised that maintenance is essential for the satisfactory performance of aerated wastewater treatment systems (AWTS). Accordingly specific requirements apply.

A permit to install an AWTS will only be granted on the condition that the household has the installation inspected every three months, by approved servicing agent at the householder’s expense. A report shall be prepared after each inspection, with a copy forwarded to the Council. A service tag or similar recording arrangement must be implemented and is to be dated and signed or stamped at each visit.

The servicing agent must be engaged to carry out necessary repair work to the installation as well as the routine cleaning and maintenance activities at the householders expense. Any installation faults revealed on the three monthly inspections must be repaired promptly.

Each three monthly service must include a check on all mechanical, electrical and functioning parts of the AWTS including:

- the chlorinator
- replenishment of the disinfectant
- all pumps
- the air blower, fans or air venturi
- the alarm system
- the slime growth on the filter media
- the operation of the sludge return system
- sludge build up
- basic chemical testing to confirm the operating efficiency of the tank and that the effluent produced is suitable for spray irrigation.

In the event of a breakdown or malfunction, the service agent must be capable of effecting temporary repairs within 24 hours to ensure continued operation of the AWTS. This would necessitate the provision of adequate spare parts and temporary replacement blowers and irrigation pumps where repairs cannot be completed on site.

Service reports are to be submitted to Council for each AWTS within fourteen (14) days of the service date. The reports must be in the form acceptable to Council and be certified by the service technician.

IN ADDITION SERVICE CONTRACTORS MUST IMMEDIATELY REPORT TO COUNCIL:

i. All AWTS owners refusing a service or failing to renew a service contract.

ii. All AWTS owners who have made alterations to the unit or irrigation system not in accordance with the original Council approval, manufacturers recommendations and/or

iii. NSW Health requirements for such unit.

Rotation of irrigation areas in the case of AWTS will also aid in nutrient removal from these systems.

6 HELP AND ASSISTANCE

Should you wish further or more detailed information or advice, please contact Council's Planning and Environment Department on

Phone: (02) 6380 1200 or (02) 6380 1203
Fax: (02) 6380 1299
Email: mail@young.nsw.gov.au
Web: www.young.nsw.gov.au

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Date Reviewed	**15.07.09**	**Resolution No. 195/09**
Date Reviewed:	**18.09.13**	**Resolution No. 392/13**

7 GENERIC DESIGNS

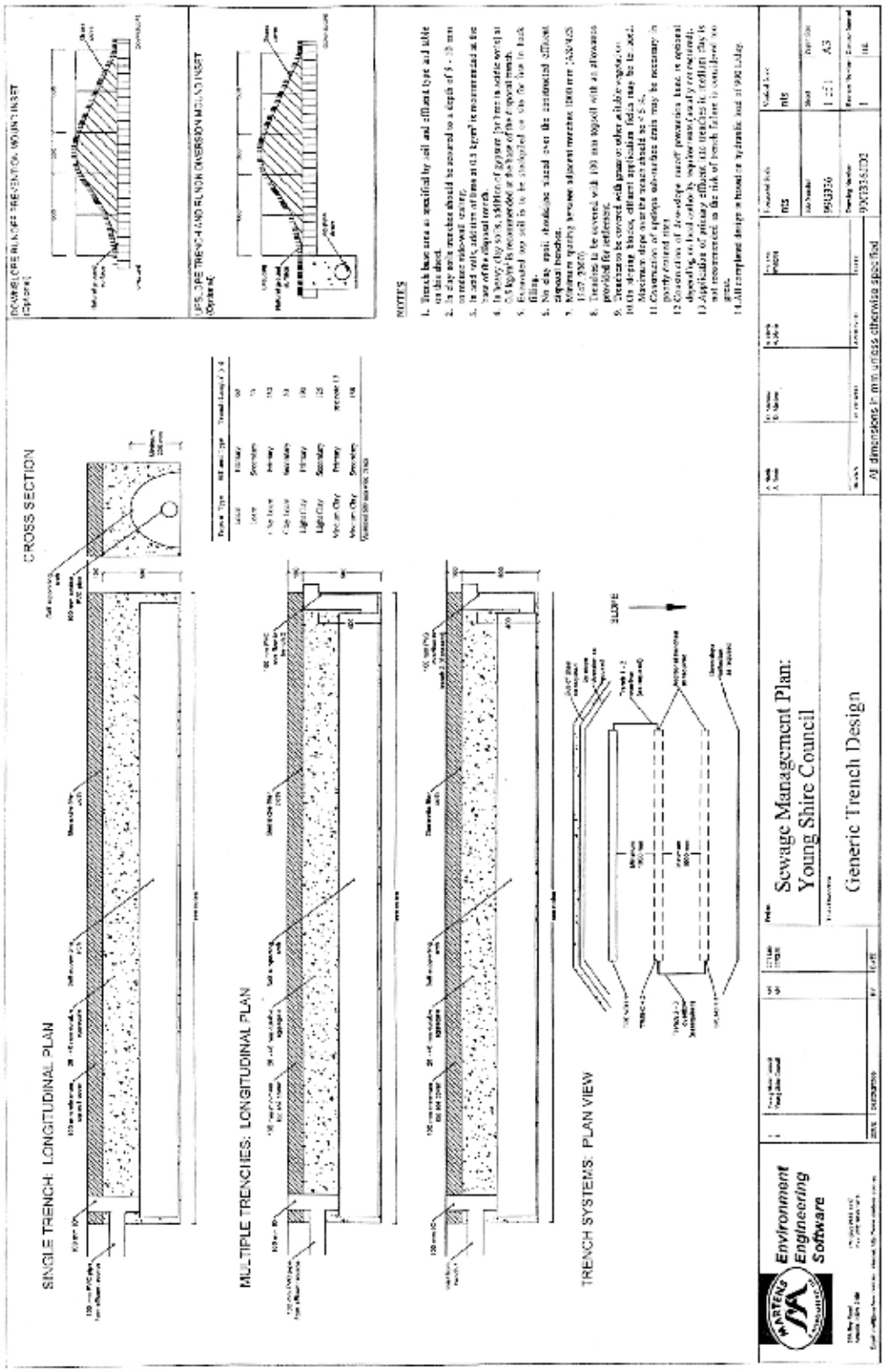

Figure 2 - Absorption Trench

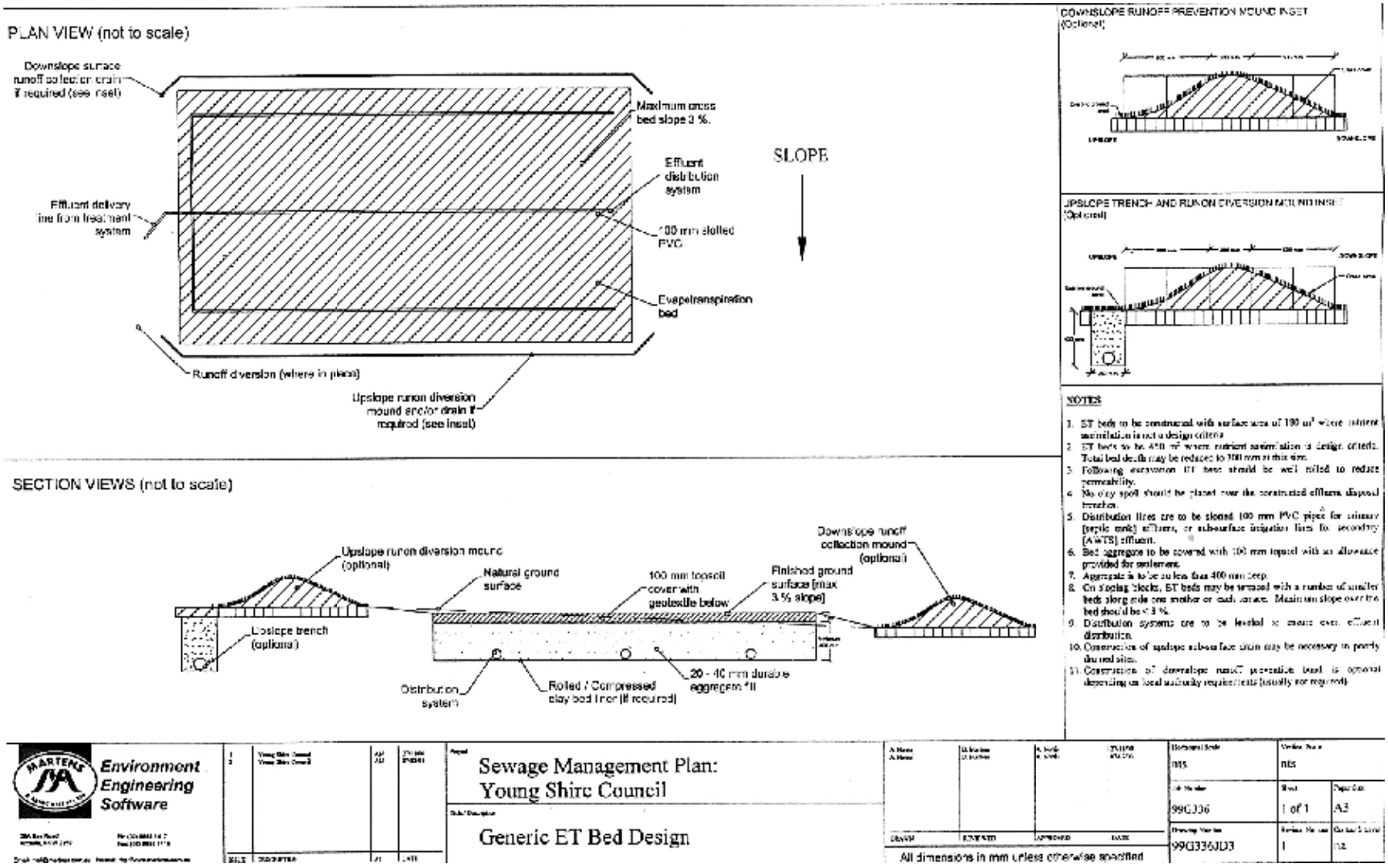

Figure 3 - Evaporation/Transportation Bed

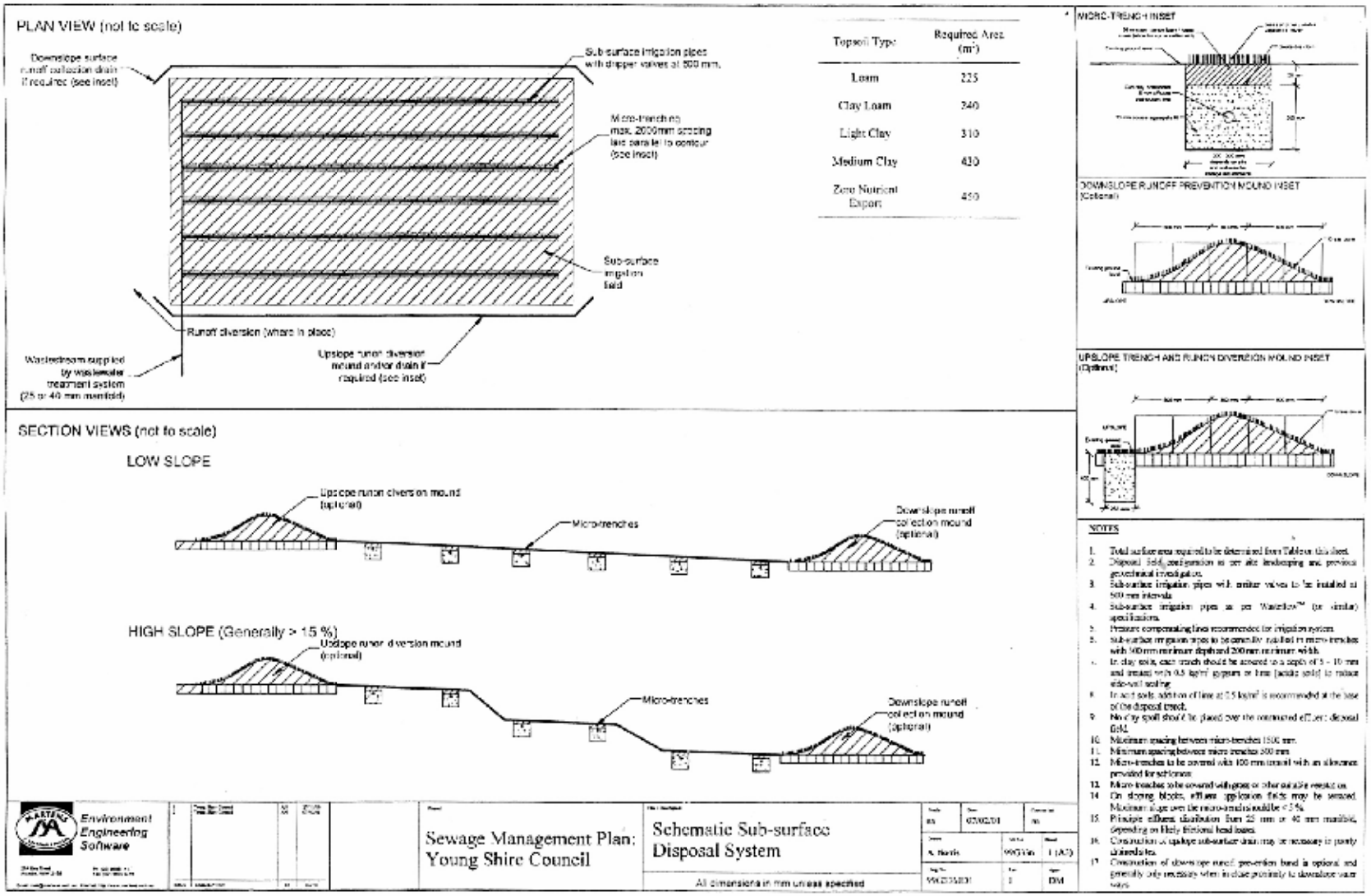

Figure 4 - Sub-Surface