SUPPLEMENT 8.1

Standard Drawings & Details **No. 8.1**

Detention Storage & Infiltration Tank - Single Residential Dwellings

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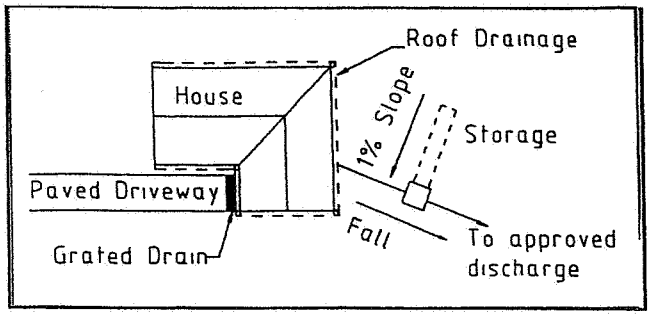
Check if the use of this design is permitted.

1. Determine new roof and paving area.
2. If Area < 25m² then OSD may be omitted

Tank Volume = 1m³ minimum

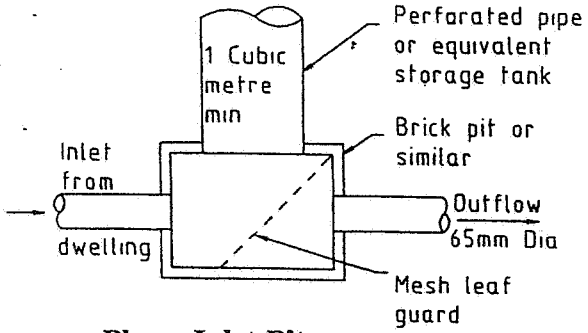


Site Plan

Modifications

1 The elevated inlet to achieve infiltration may be waived at the discretion of Council's Planner if problems are likely to occur.

2 If the fall of the property is away from the street, it is acceptable for the roof lines to drain to the street provided the driveway drains to the tank.

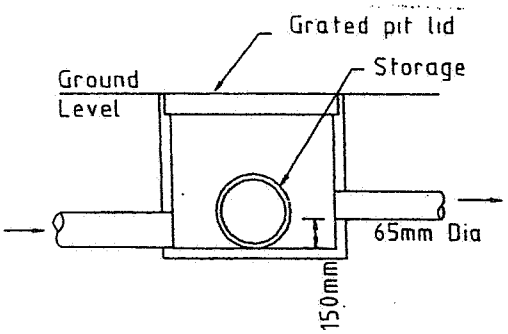


Plan - Inlet Pit

Sample list of tank materials/suppliers :

* Atlantis Drainage Cells
* Everhard Industries Trench
* RibLoc perforated pipe

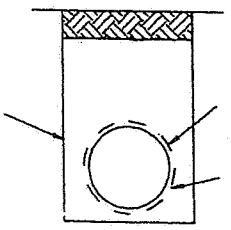
This list is not exhaustive and does not imply endorsement of any particular product



Section - Through Pit

If using pipes for the storage :

Diameter (mm)	Length (metres) required for 1 m³ volume.
300	13.3
375	9.1
450	5.9



Sand or granular backfill. Nominal 100mm clearance all round.

Minimum 300mm topsoil

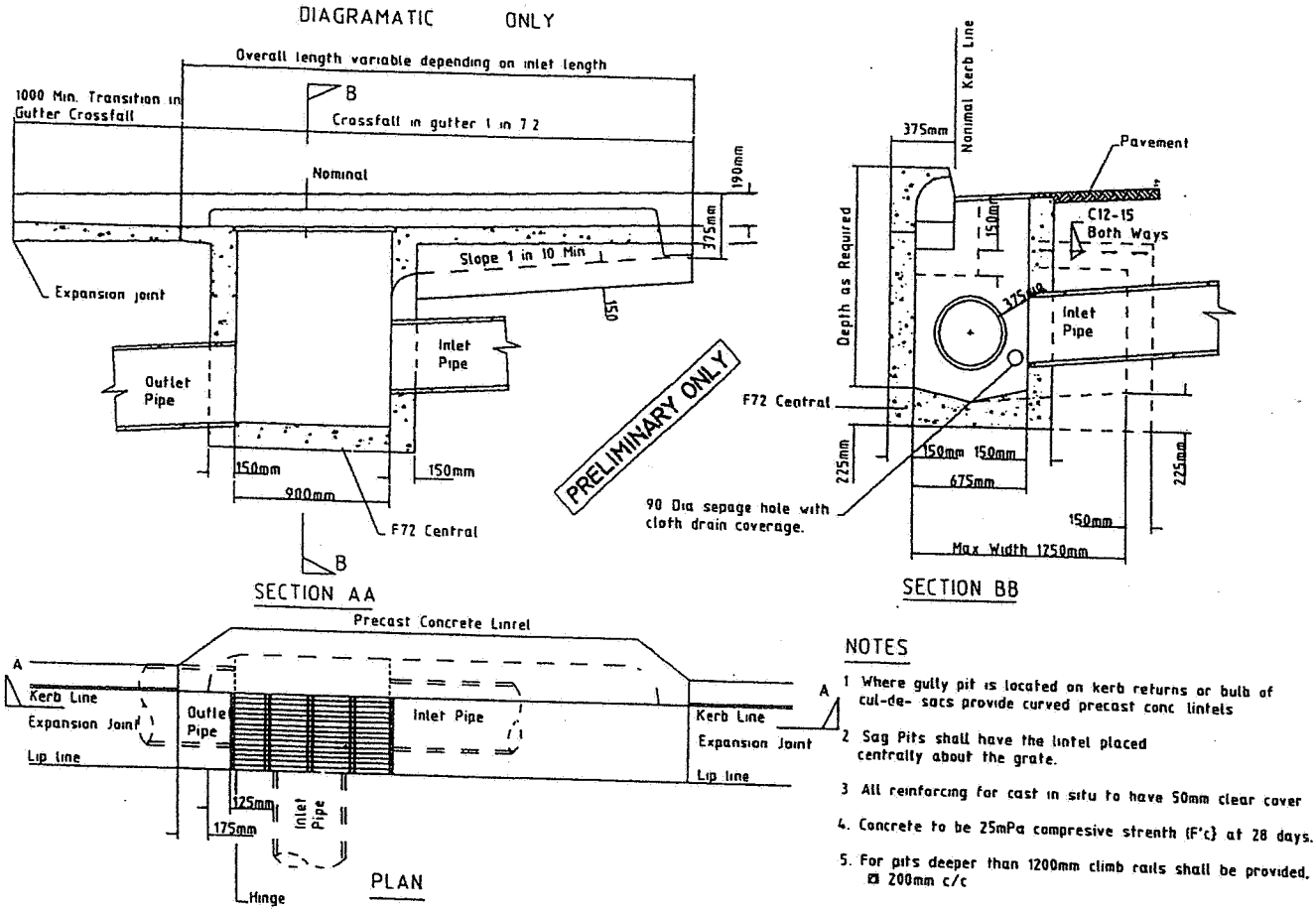
Geotextile or equivalent permeable membrane. Perforated pipe or equivalent arrangement.

Section - Through Storage

SUPPLEMENT 8.2

Standard Drawings & Details **No. 8.2**

Grated Road Stormwater Pit With Extended Kerb Inlet



NOTES

1. Where gully pit is located on kerb returns or bulb of cul-de- sacs provide curved precast conc lintels
2. Sag Pits shall have the lintel placed centrally about the grate.
3. All reinforcing for cast in situ to have 50mm clear cover
4. Concrete to be 25mPa compresive strenth (F'c) at 28 days.
5. For pits deeper than 1200mm climb rails shall be provided. @ 200mm c/c

SUPPLEMENT 9

Wordings For Restrictions As To User & Easements

Restriction As To User - Positive Covenant Form 55A
Instrument Pursuant To Section 88E(3), Conveyancing Act, 1919

On Site Detention

"The stormwater detention facility as described by the plan ..... of {Name} Council Building Consent ..... and the conditions of such consent, shall not be altered or removed in whole or in part without written approval of {Name} Council.

The registered proprietor is to maintain the stormwater detention facility in working condition.

Authorised {Name} Council employees are to be allowed access for inspection upon reasonable notice. The registered proprietor is to comply with any notices issued by Council regarding rectification or maintenance works to be carried out for compliance.

In the event of the registered proprietor not complying with the notice, Council or its authorised agents may enter and carry out the specified work, and recover the costs due."

Stormwater Surface Flow Path

"The stormwater surface flow path defined ..... shall not be obstructed or have the *{finished ground (and/or) pavement levels}* within the defined area modified in whole or in part without written approval of {Name} Council. It shall be the responsibility of the registered proprietor to ensure the stormwater surface flow path is kept unobstructed by fences or any physical structures or barriers (whether temporary or not) at all times.

Authorised {Name} Council employees are to be allowed access for inspection upon reasonable notice. The registered proprietor is to comply with any notices issued by Council regarding rectification or maintenance works to be carried out for compliance.

In the event of the registered proprietor not complying with the notice, Council or its authorised agents may enter and carry out the specified work, and recover the costs due."

SUPPLEMENT 10

Sediment Control Plans

Preparation of the Plan

The following is a brief summary of the details involved in preparing a control plan taken from chapter 5 of the "Urban Erosion and Sediment Control" handbook by the Department of Conservation and Land Management. The handbook should be referred to in the preparation of the plan.

The points under each item give the details required to be submitted as part of the control plan. Some details listed will already be provided to meet other requirements.

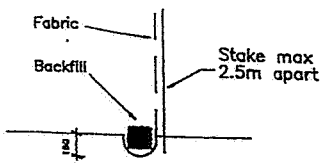
1 Investigate site characteristics ie Topography, soils, vegetation. The plan should include :
- Locality plan
- Plan of site and surrounding area with contours and catchment boundaries.
- Soil and vegetation types and coverage
- Any other relevant features

2 Integrate clearing and grading with site layout plan, including consideration of staging of works. The plan should include areas to be exposed and the type and extent of the earthworks.

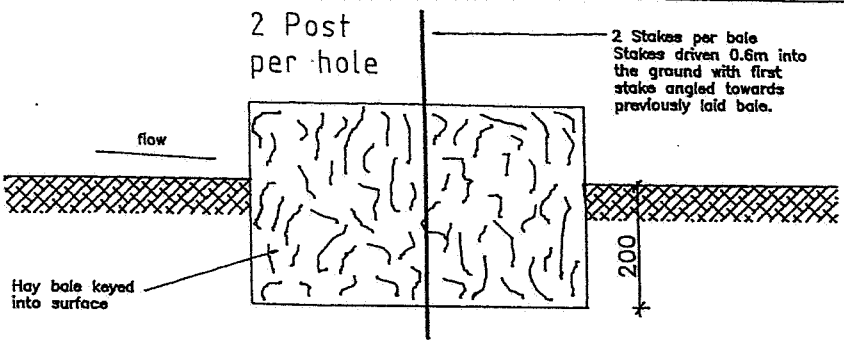
3 Determine existing and proposed drainage patterns, including diversion of flows entering the property from upstream, and impact of development on flow paths. Much of this information should be detailed as part of the stormwater design.

4 Select erosion control practices. Details of the proposed measures should include
- Location and design criteria of structural and vegetative erosion control measures needed to control the volume, direction and velocity of runoff.
- Scheduling of construction/implementation of the measures.
- Maintenance of the measures.

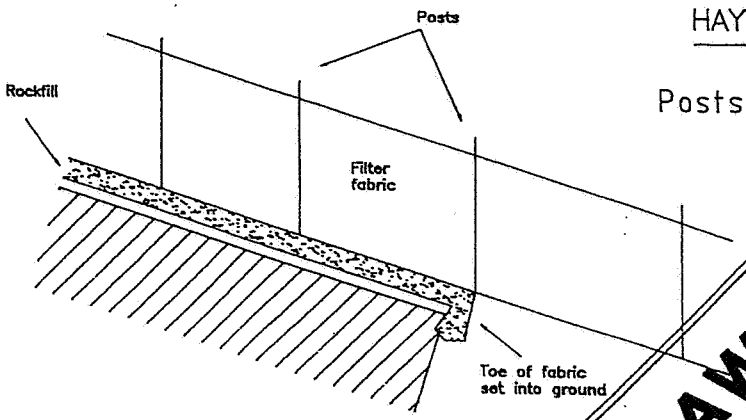
5 Outline the rehabilitation program, including :
- areas where temporary and permanent revegetation is to be employed
- details of stabilising of exposed soils
- types of planting materials or ground coverings



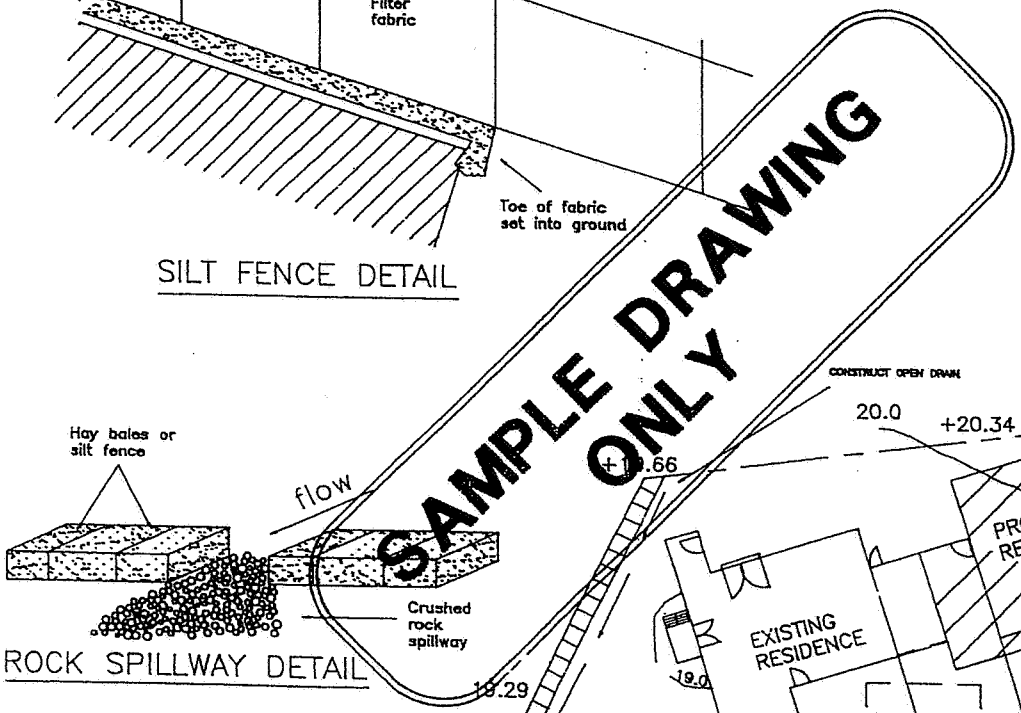
FILTER FABRIC DETAIL



HAY BALE DETAIL

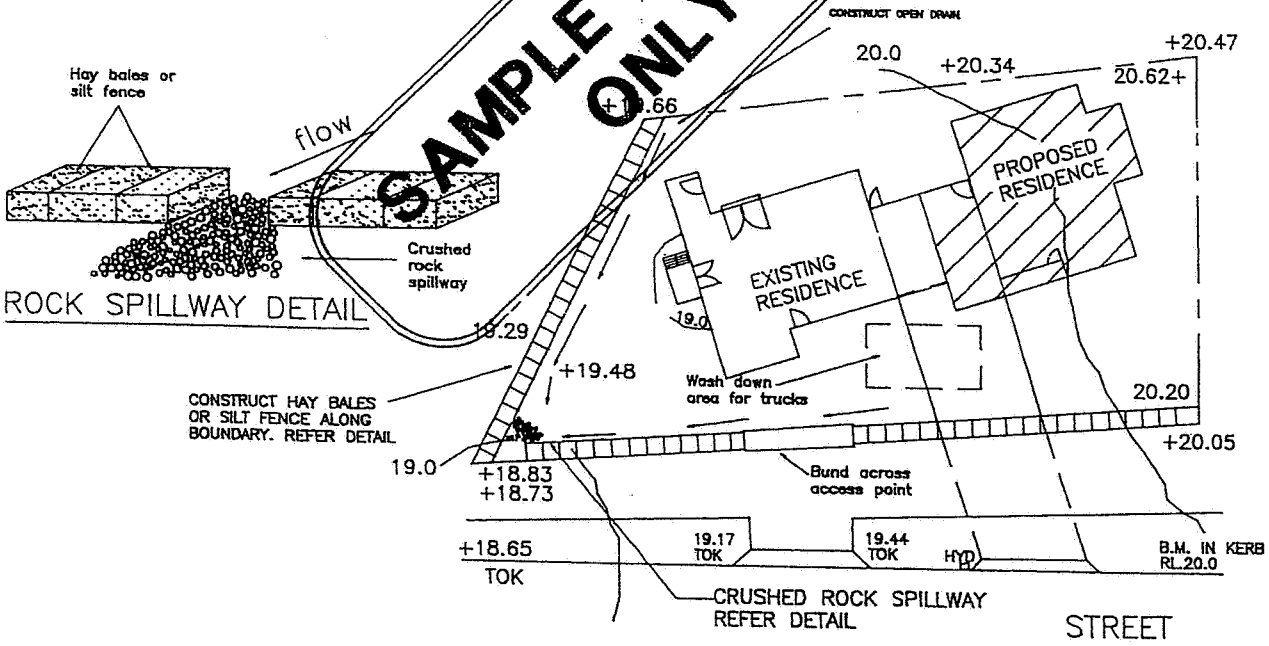


SILT FENCE DETAIL



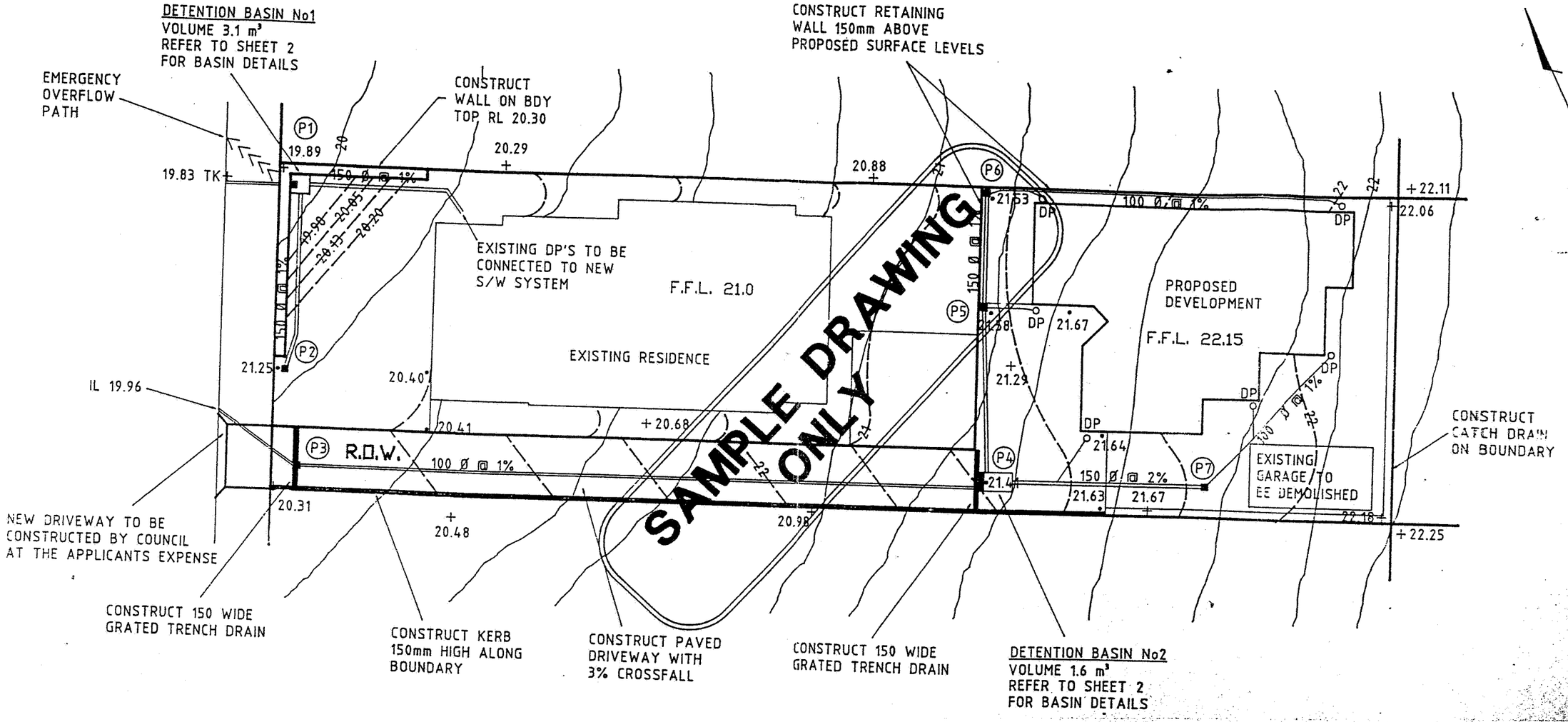
ROCK SPILLWAY DETAIL

SAMPLE DRAWING ONLY



SEDIMENT CONTROL DETAILS

SAMPLE DRAWING SHOWING TYPICAL SEDIMENT CONTROL DETAILS FOR DEVELOPMENT SITES



PIT No.	SURFACE RL	INVERT	DEPTH	SIZE	TYPE
P1	19.90	19.59	0.31	900x900	LD GRATE
P2	20.25	19.70	0.55	450x450	HD GRATE
P3	20.23	20.03	0.20	450x450	HD GRATE
P4	21.41	20.25	1.16	900x600	HD GRATE
P5	21.58	21.13	0.45	450x450	HD GRATE
P6	21.53	21.18	0.35	450x450	LD GRATE
P7	21.82	21.29	0.53	450x450	LD GRATE

22 EXISTING CONTOURS

21 PROPOSED CONTOURS

+20.68 EXISTING SURFACE LEVELS

• 21.65 PROPOSED SURFACE LEVELS

TORRENS TITLE SUBDIVISION

SCALES

PLAN 1 : ____

LONGITUDINAL SECTION Horizontal 1 : ____ Vertical 1 : ____

CROSS SECTION Horizontal 1 : ____ Vertical 1 : ____

Surveyed. . . . Date . . . . Designed. . . . Drawn. . . . Checked . . . . FIELD BOOK. . . . Datum : . . . .

APPROVED . . . . . Date : __/__/__ FILE : . . . .

ON - SITE DETENTION

SAMPLE DRAWING

SHEET No. 1

No. of SHEETS 3

PLAN No. 52463

DETENTION BASIN No1

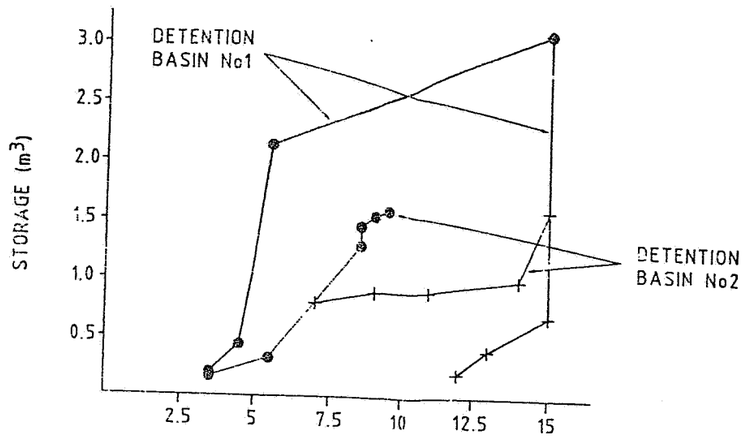
Catchment Area	: 390m^2
Impervious Area Pre Dev	: 40%
Impervious Area Post Dev	: 47%
Draining Through DSD	:100%

ARI (yrs)	Basin Qout(l/s)	Vol(Cu.m)
5	12	0.2
10	13	0.4
20	15	0.7
50	15	2.1
100	15	3.1

STAGE / STORAGE / DISCHARGE

STAGE (RL)	STORAGE (CU M)	LOW LEVEL DISCHARGE (L/S)	SPILLWAY DISCHARGE (L/S)
19.700	0.000	0.0	0 0
19.900	0.200	3.5	0.0
19.975	0.440	4.5	0.0
20.050	1.030	4.9	0 0
20.140	2.140	5.5	0.0
20.200	3.100	6.0	9 0

STORAGE / DISCHARGE RELATIONSHIP



+ REQUIRED STORAGE / DISCHARGE RELATIONSHIP

● DESIGNED STORAGE / DISCHARGE RELATIONSHIP

DETENTION BASIN No2

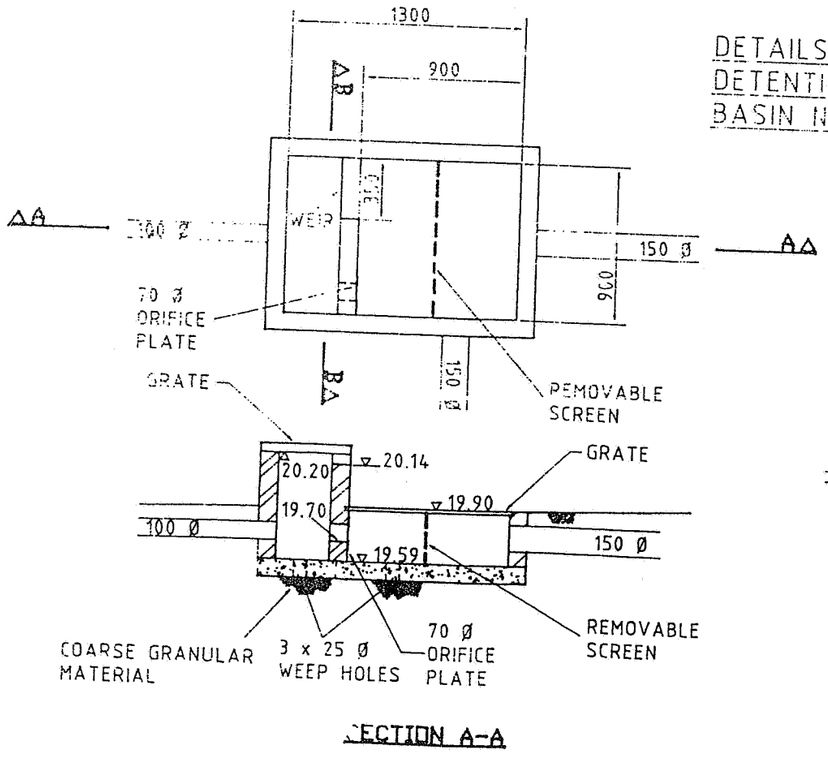
Catchment Area	: 380m^2
Impervious Area Pre Dev	: 39%
Impervious Area Post Dev	: 70%
Draining Through DSD	:75%

ARI (yrs)	Basin Qout(l/s)	Vol(m^3)
5	7	0.8
10	9	0.9
20	11	0.9
50	14	1.0
100	15	1.6

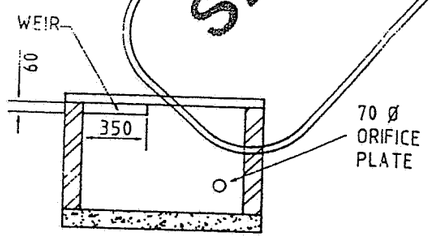
STAGE / STORAGE / DISCHARGE

STAGE (RL)	STORAGE (CU.M)	LOW LEVEL DISCHARGE (L/S)	SPILLWAY DISCHARGE (L/S)
20.350	0.000	0.0	0.0
20.450	0.160	3.5	0.0
20.550	0.325	5.5	0.0
21.150	1.295	8.5	0.0
21.250	1.460	8.5	0.0
21.310	1.555	9.0	0.0
21.410	1.600	9.5	0.0

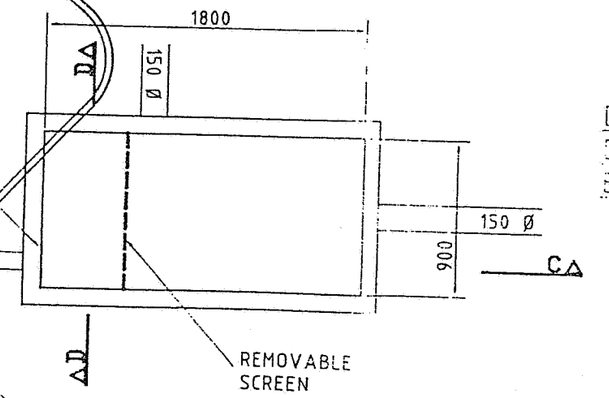
DETAILS FOR DETENTION BASIN No1

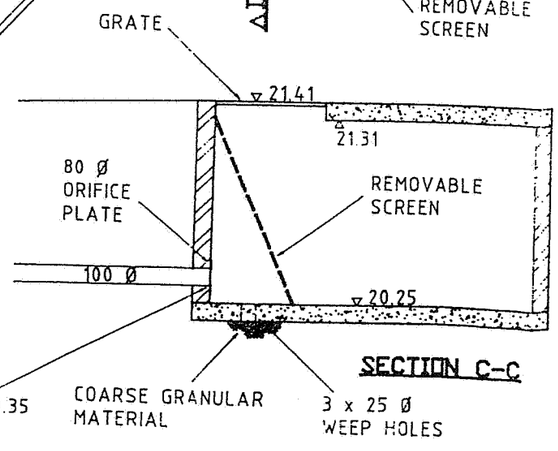


SECTION A-A

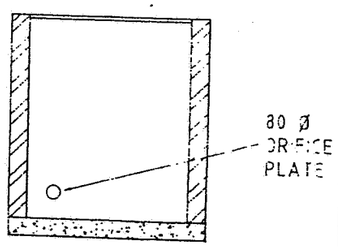


SECTION B-B





SECTION C-C



SECTION D-D

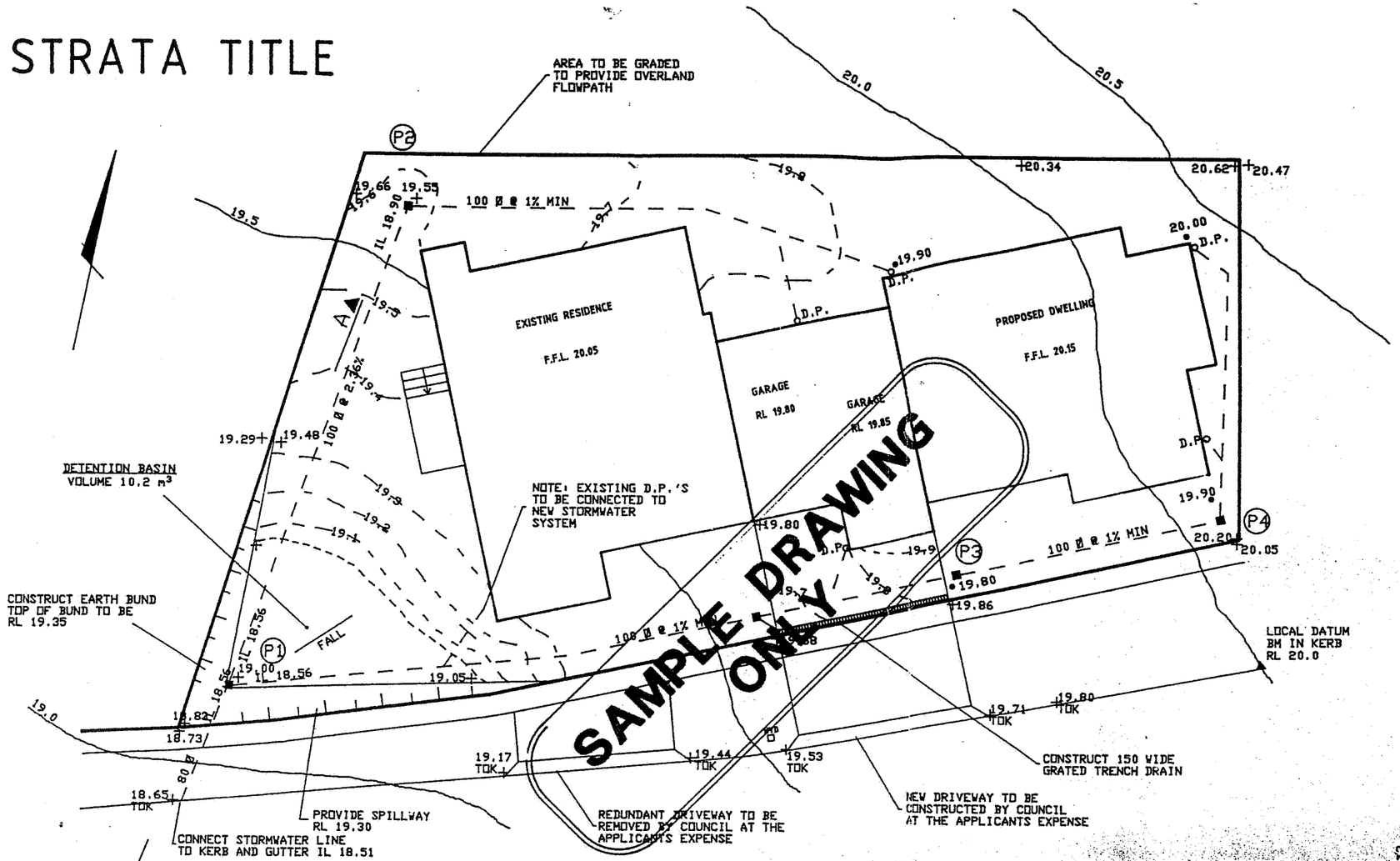
DETAILS FOR DETENTION BASIN No2

SCALES			
PLAN	1 :	Surveyed. Date	APPROVED
LONGITUDINAL SECTION Horizontal	1 :	Designed.	
LONGITUDINAL SECTION Vertical	1 :	Drawn.	
CROSS SECTION Horizontal	1 :	Checked	Date :
CROSS SECTION Vertical	1 :	FIELD BOOK.	FILE :
		Datum :	

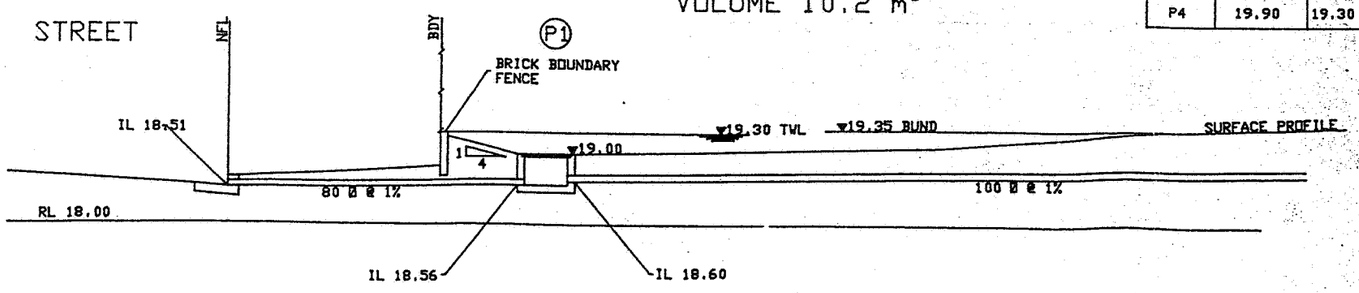
ON - SITE DETENTION
BASIN DETAILS
SAMPLE DRAWING

SHEET No.	2
No of SHEETS	3
PLAN No.	E3163

STRATA TITLE



DETENTION BASIN
VOLUME 10.2 m^3



SECTION A-A

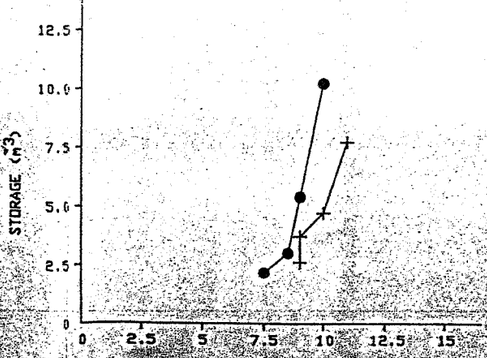
STAGE / STORAGE / DISCHARGE

STAGE (RL)	STORAGE (M^3)	PIPE DISCHARGE (L/S)	SPILLWAY DISCHARGE (L/S)
18.560	0.000	0.0	0.0
19.000	2.150	7.5	0.0
19.100	3.000	8.5	0.0
19.200	5.400	9.0	0.0
19.300	10.200	10.0	0.0

Catchment Area : 530m^2
Impervious Area Pre Dev : 22%
Impervious Area Post Dev : 48%
Draining Through OSD : 100%

ARI (yrs)	Basin Qout(l/s)	Vol(m^3)
5	9	2.6
10	9	3.7
20	10	4.7
100	11	7.7

STORAGE / DISCHARGE RELATIONSHIP



PIT No.	SURFACE RL	INVERT	DEPTH	SIZE	TYPE
P1	19.00	18.56	0.44	450x450	LD GRATE
P2	19.55	18.90	0.55	450x450	LD GRATE
P3	19.80	19.20	0.60	450x450	LD GRATE
P4	19.90	19.30	0.60	450x450	LD GRATE

LEGEND
- PROPOSED LEVEL
- EXISTING LEVEL
- PROPOSED CONTOUR
- EXISTING CONTOUR

- REQUIRED STORAGE / DISCHARGE RELATIONSHIP
- DESIGNED STORAGE / DISCHARGE RELATIONSHIP

SCALES
PLAN 1 : ...
LONGITUDINAL SECTION Horizontal 1 : ... Vertical 1 : ...
CROSS SECTION Horizontal 1 : ... Vertical 1 : ...

Surveyed
Date
Designed
Drawn
Checked
FIELD BOOK
Datum :
APPROVED
Date :../../..
FILE :

ON - SITE DETENTION
BASIN DETAILS
SAMPLE DRAWING

SHEET No. 3
No. of SHEETS 3
PLAN No. E3163