

ENVIRONMENTAL PROTECTION DEPARTMENT
PRACTICE NOTE FOR PROFESSIONAL PERSONS

**Drainage Plans subject to Comment
by the Environmental Protection Department**

**Building (Standards of Sanitary Fitments, Plumbing,
Drainage Works and Latrines) Regulations (Cap. 123I)
Section 40(1), 40(2), 41(1) and 90**

(This Practice Note supersedes the ProPECC PN 5/93.)

Drainage plans submitted to the Building Authority are referred to the Environmental Protection Department (EPD) for comment whenever there is a concern for pollution control. The EPD has, based on experience of the common problems found in the drainage submissions, prepared this practice note for reference by Authorised Persons (APs) in preparing drainage plans. Although the guidelines contained in this practice note are not meant to be exhaustive, it is hoped that they would help secure early approval of drainage plans.

2. APs are welcome to approach the EPD for discussion or clarification in case of doubt regarding any specific environmental design or pollution control issue, preferably as early as possible in the planning stage of a project. However, due to limitations in resources, the EPD does not undertake to vet submission documents prior to a formal submission of drainage plans to the Building Authority. Enquiries can be directed to the Regional Offices of the EPD (Customer Service Hotline at 2838 3111).

Discharge to Storm Drains and Foul Sewers

3. Under section 40(1) and 41(1) of the Building (Standards of Sanitary Fitments, Plumbing, Drainage Works and Latrines) Regulations (Cap. 123I), foul water should be discharged to a foul sewer and surface water should be discharged via rainwater pipes to storm water drains.

4. Discharge to foul sewers should always be kept to a minimum in order not to unduly overload the foul sewerage while preventing pollution to the storm water systems. In general, rainwater and uncontaminated cooling water and the like should be discharged to storm water drains but seawater used for the cooling of air-conditioning plants should be discharged directly to sea to avoid overloading the storm water drains. Polluted rainwater should be discharged to storm water drains after removal of the pollutants by appropriate facilities. Domestic wastewater can be discharged to foul sewers without pretreatment while

commercial and industrial wastewater should be pretreated, where necessary, to meet prescribed effluent standards. Proposals to reduce wastewater generation are encouraged, but proposals on effluent reuse should be discussed with the EPD at the early conception stage.

5. The EPD generally sets effluent discharge standards with reference to the Technical Memorandum on Effluent Standards issued under Section 21 of the Water Pollution Control Ordinance except where special circumstances warrant a more stringent standard. The Technical Memorandum lays down comprehensive standards for discharges into all public sewers and drains and all receiving waters, both inland and coastal, and is available at the EPD's website (<http://www.epd.gov.hk>). The following recommendations should be noted:

- (i) Drainage outlets provided in open areas and areas subjected to a substantial amount of wind-blown rain, including open carparks, balconies, podiums, yards, roofs, etc., should be connected to storm water drains.
- (ii) Drainage outlets provided in covered areas receiving wastewater should be discharged to foul sewers.
- (iii) Drainage outlets of verandahs next to kitchens and utilities rooms where a substantial amount of wind-blown rain is not expected should, as far as possible, be connected to foul sewers because of the concern that dwellers might discharge laundry or dishwasher wastewater through these drainage outlets.
- (iv) Subsoil drains of slopes, road embankments and earth retaining structures, and groundwater collection drains for basements, subways and tunnels, and similar drains, should, under normal circumstances, be connected to storm water drains. Silt removal facilities should be provided where necessary. A separate drainage system that connects to foul sewers should be provided to collect wastewater from basements, subways and tunnels and similar areas.
- (v) Swimming pool main drain, footbath main drain and swimming pool make-up tank drain should be connected to storm water drains (except in the Water Gathering Grounds where APs are advised to consult the Water Supplies Department) while the filtration plant backwash should be discharged to foul sewers. Swimming pool drainage layout, filtration plant room drainage layout and filtration plant schematic line diagrams are required to be included in drainage plans. Drainage for fountains and the like should be designed in a similar manner.
- (vi) Drainage in covered carparks, covered lorry loading and unloading areas and covered transport interchanges should be connected to foul sewers via petrol interceptors. Typical details of these petrol interceptors are attached at Appendix A for general reference.

- (vii) Drainage serving open transport interchanges and cargo handling areas should be connected to storm water drains via a petrol interceptor that would allow storm water bypass during peak flow periods. Typical details of such a petrol interceptor prepared by the Highways Department are attached at Appendix B and available at its website (<http://www.hyd.gov.hk>) for general reference.
- (viii) To prevent hazards from sewage overflowing, sewage pump sumps should be provided with a standby pump whose capacity should not be less than any of the duty pumps, and duty pumps should not be required to operate more than 10 on-off cycles per hour. Location of each level switch should be clearly marked on the drainage plans. A minimum distance of 200mm is required between each level switch.
- (ix) Surface water drainage should be provided for discharging storm water off slopes and from open surfaces. Such drainage as collected in open surface channels should be led to storm water drains via silt removal facilities. Runoff in kerb gutters of roads or channels of building platforms should pass through a gully pit with the necessary gratings to prevent objects from entering the storm water drains.
- (x) Amendments made on alteration and addition and resubmission drawings should be clearly marked or coloured on the drainage plans.

Drainage of Commercial and Industrial Wastewater

6. Under section 90 of the Building (Standards of Sanitary Fitments, Plumbing, Drainage Works and Latrines) Regulations (Cap. 123I), suitable treatment facilities may be required to be provided if trade waste may be discharged into any drain or sewer.

7. Whenever the wastewater flow and characteristics of a commercial or industrial development are known or are predictable, details of an appropriate wastewater treatment facility, where necessary to meet prescribed effluent standards, should be included as part of the drainage submission. Dilution as a means of meeting effluent standards is not allowed. APs are advised to confirm the effluent discharge standards with the EPD on a case by case basis before commencing on the design of a wastewater treatment facility. The following recommendations should be noted:

- (i) Drainage plans for industrial buildings, where the users are known, should include the information listed below.
 - (a) nature of business;

- (b) raw material and main products;
 - (c) brief description of production processes, indicating areas where water is used and wastewater is generated;
 - (d) quantity, discharge pattern, composition and characteristics of wastewater;
 - (e) proposed wastewater treatment facility and drainage system;
 - (f) where appropriate, proposed methods of disposal of used chemicals and wastewater sludge and similar waste; and
 - (g) other relevant information.
- (ii) Industrial wastewater treatment plant proposals should at least include:
- (a) a wastewater characteristics report;
 - (b) a design report with detailed hydraulic and process calculations;
 - (c) process and instrumentation diagrams;
 - (d) drawings of the plant layout, plant room details, pipework and equipment;
 - (e) equipment specifications and where possible equipment catalogues; and
 - (f) an operation/maintenance manual.

For more advanced treatment processes or for less common types of industrial wastewater, a treatability study or pilot test report may be required. The wastewater characteristics report should adequately address the fluctuations in wastewater flow and characteristics. A sampling point (and an automatic flow measuring device with non-resettable type totalizer for discharges greater than 50m³ per day) should be provided at the discharge outlet of the treatment plant. Safety, process control and operational and maintenance requirements should always be taken into consideration in design. Bypass arrangements are not allowed unless well justified.

- (iii) Standby equipment should be provided to guard against failure of major equipment. Neutralization plants should be equipped with standby dosing pumps, a standby acid/alkali dosing system and a pH sensor with visual alarm and graphical recorder. A standby acid dosing system should also be provided

to cater for overdosing of alkali to acidic wastewater and a standby alkali dosing system to cater for overdosing of acid to alkaline wastewater.

- (iv) Wherever practicable, waste minimization should be practised to arrive at an overall optimum production and waste treatment process. Waste heat, metal, oil and chemicals etc. should be recovered wherever practicable.
- (v) Design of drainage for flatted factories, whose users are not known at the time of the drainage plan submission, should follow the recommendation of the Practice Note for Authorized Persons and Registered Structural Engineers: “Pollution from Industrial Buildings - Building (Standards of Sanitary Fitments, Plumbing, Drainage Works and Latrines) Regulation 90” (PNAP: APP – 46) published by the Building Authority.
- (vi) Design of drainage for oil storage installations should follow the recommendations of the ‘Code of Practice for Oil Storage Installations’ published by the Building Authority. The drainage plan submission should include detailed drawings and design calculations.
- (vii) Drainage serving the open area of a petrol filling station should be connected to the storm water drains via a petrol interceptor with storm water bypass (see Appendix B for general reference). Car servicing bays, car wash bays and lubrication bays should as far as possible be located within roofed areas. The drainage in these roofed areas and in other covered areas where such activities may be carried out should be connected to foul sewers via a petrol interceptor (see Appendix A for general reference).
- (viii) The drainage arrangement and oil interceptor design for a power substation should be such that no leaked or spilled oil could escape from the site even in the event of a serious transformer failure, fire, and similar incidents. Contaminated rainwater and fire-fighting water should also be discharged via an adequately designed oil interceptor. The drainage plan submission should include detailed drawings and design calculations.
- (ix) All wastewater collected from a restaurant kitchen or food processing factory, including that from basins, sinks and floor drains, should be discharged via a grease trap capable of providing at least 20 minutes retention during peak flow. A separate grease trap should be provided for each restaurant kitchen or food processing factory as far as possible.. Grease traps are not required for bars and pantries where cooking will not be carried out. Details of the design of a typical grease trap are given at Appendix C for general reference. The EPD has also published a booklet namely “Grease Traps for Restaurants and Food Processors” which provides guidance on the design, operation and maintenance of grease traps and is available at the EPD’s website

(<http://www.epd.gov.hk>).

- (x) Disposal of commercial and industrial wastewater by injection into the ground (e.g. by soakaway pits) is not allowed.

Sewage Treatment and Disposal

8. Under section 40(2) of the Building (Standards of Sanitary Fitments, Plumbing, Drainage Works and Latrines) Regulations (Cap.123I), a septic tank or other approved facility should be provided to dispose of foul water where there is no public sewer in the vicinity.

9. A small sewage treatment plant is only acceptable under circumstances where it is demonstrated that there is no viable alternative (including public sewerage, pumping mains to connect to public foul sewers, upgrading of existing sewerage and the use of a septic tank and soakaway system for small rural populations). Design of small sewage treatment plants should in general meet the requirements given in the “Guidelines for the Design of Small Sewage Treatment Plants” published by the EPD and available at its website (<http://www.epd.gov.hk>). The following recommendations should be noted:

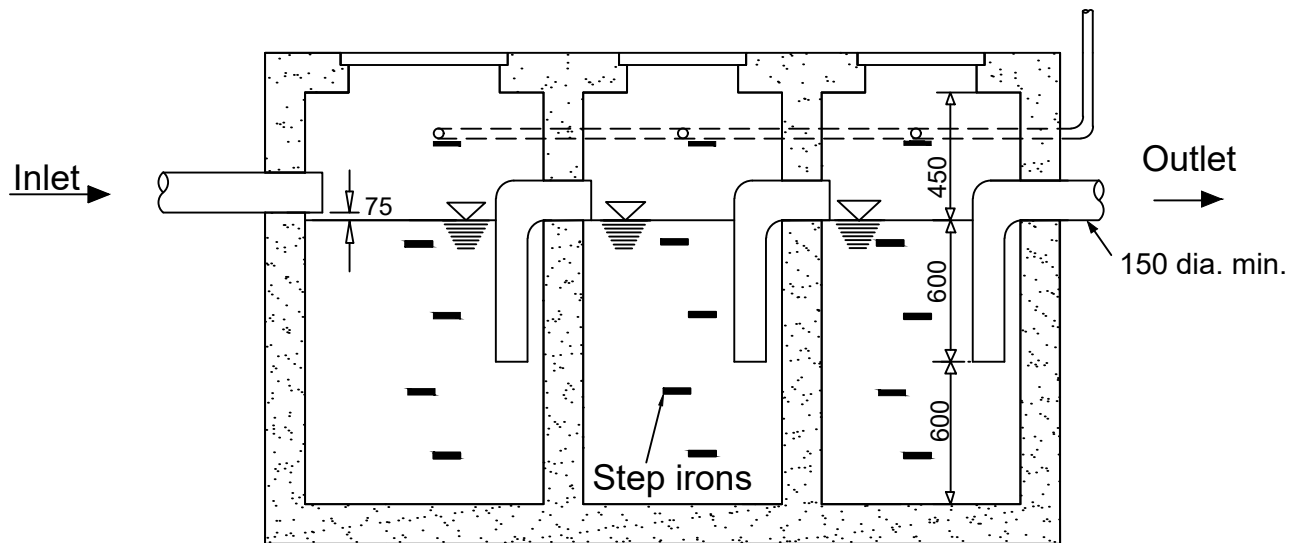
- (i) A sewage treatment plant submission should include all information required in the “Guidelines for the Design of Small Sewage Treatment Plants”. The exact discharge location and effluent discharge standards should be checked with the EPD before commencing on design.
- (ii) Septic tank and soakaway design should meet the minimum requirements given in Appendix D. Drainage plan submissions should include separation distances between soakaway systems and nearby water bodies / structures, percolation test results and detailed design calculations. Please refer to the booklet namely “Guidance Notes on Discharges from Village Houses” published by the EPD (website: <http://www.epd.gov.hk>) for further guidelines on operation and maintenance of septic tank and soakaway system.
- (iii) Design parameters for nitrification, tertiary treatment and nutrient removal should be well supported by relevant information, giving due regard to local influent characteristics and climatic conditions.
- (iv) Where sewage treatment plants are designed to cater for a peak flow of 3 times the daily average flow rate, two duty and one standby pumps should be provided in equalization tanks as far as practicable to limit the flow through the treatment units to within 1.5 times the daily average flow rate during off-peak periods. This is to even out the flow as much as possible.

- (v) Provisions should be made for future connections to public foul sewers when such is available in the vicinity.

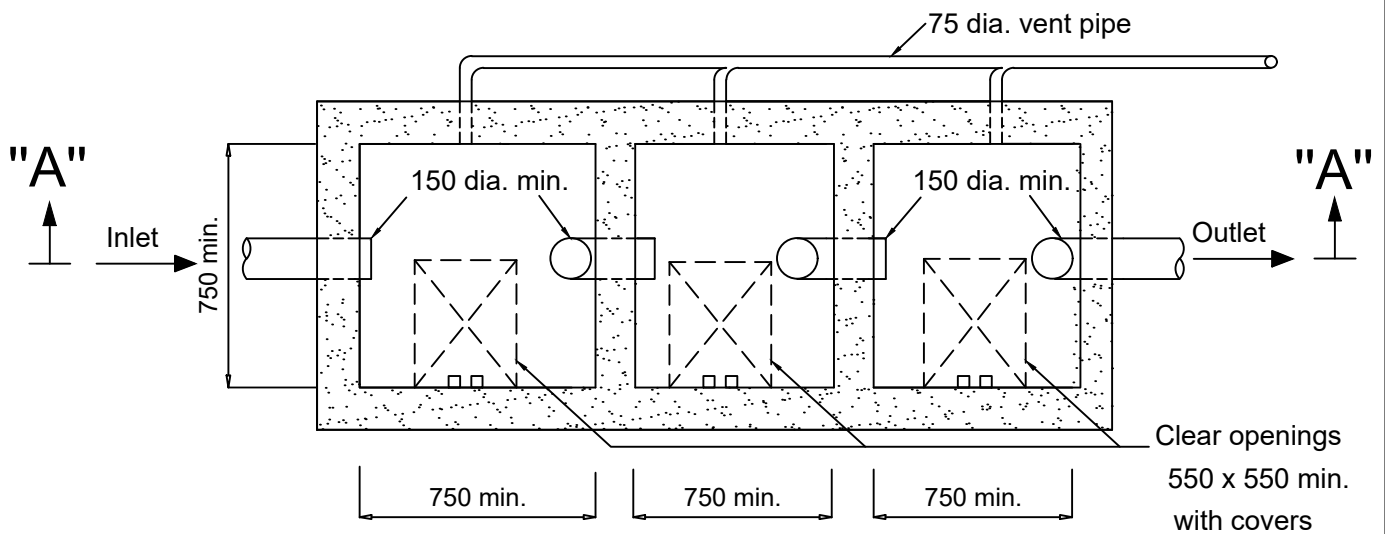


(Samuel H.K. Chui)
Director of Environmental Protection

Environmental Protection Department
Issued: November 2023



SECTION A-A



PLAN

Note:

1. All dimensions are in millimetres (mm)

TYPICAL DETAILS OF
A PETROL INTERCEPTOR

DRAWING NO.
EP 50/D1/1/01

DATE
1/23

SCALE
NTS

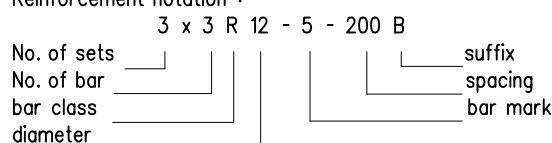
ENVIRONMENTAL
PROTECTION
DEPARTMENT
HONG KONG



GENERAL NOTES :

1. The petrol interceptor is designed to provide at least 20 minutes retention to 5-10% of the maximum runoff collected by the transport interchange in a 1 in 2 year rainstorm.
2. All dimensions are in millimetres.
3. Concrete to be grade 30/20.
4. Reinforcement shall comply to BS4449 and shall be bent in accordance with BS8666.
5. Cover to reinforcement to be 50mm unless otherwise specified.

6. Reinforcement notation :



bar class : R = GRADE 250 PLAIN ROUND STEEL BAR

suffix : T = TOP

B = BOTTOM

NF = NEAR FACE

FF = FAR FACE

EF = EACH FACE

7. Minimum lap length : 40 diameter of bar for mild steel plain bar.
8. Structural steelwork shall be grade S275 to BS EN 10025 unless otherwise specified.
9. All fillet welds to be 6mm unless otherwise specified.
10. Stainless steel access ladder to be of minimum grade 1.4401 to BS EN 10088.
11. For RSJ connections, see DSD Standard Drawing DS1031.
12. For details of treatment to the top of petrol interceptor, see DSD Standard Drawing DS1032 for flexible roadsurface and Highway Standard Drawing H1111 & H1112 for concrete road slab.
13. For details of cover to access opening and desilting opening, see DSD standard drawing DS1034.

B	General revision		Oct 22
A	General revision		Nov 02
	Former drg. no. H3028/1A with general revision		Jun 94
REF.	REVISION	SIGNATURE	DATE

**PETROL INTERCEPTOR
 FOR OPEN PUBLIC
 TRANSPORT INTERCHANGE
 (SHEET 1 OF 11)**

HIGHWAYS DEPARTMENT

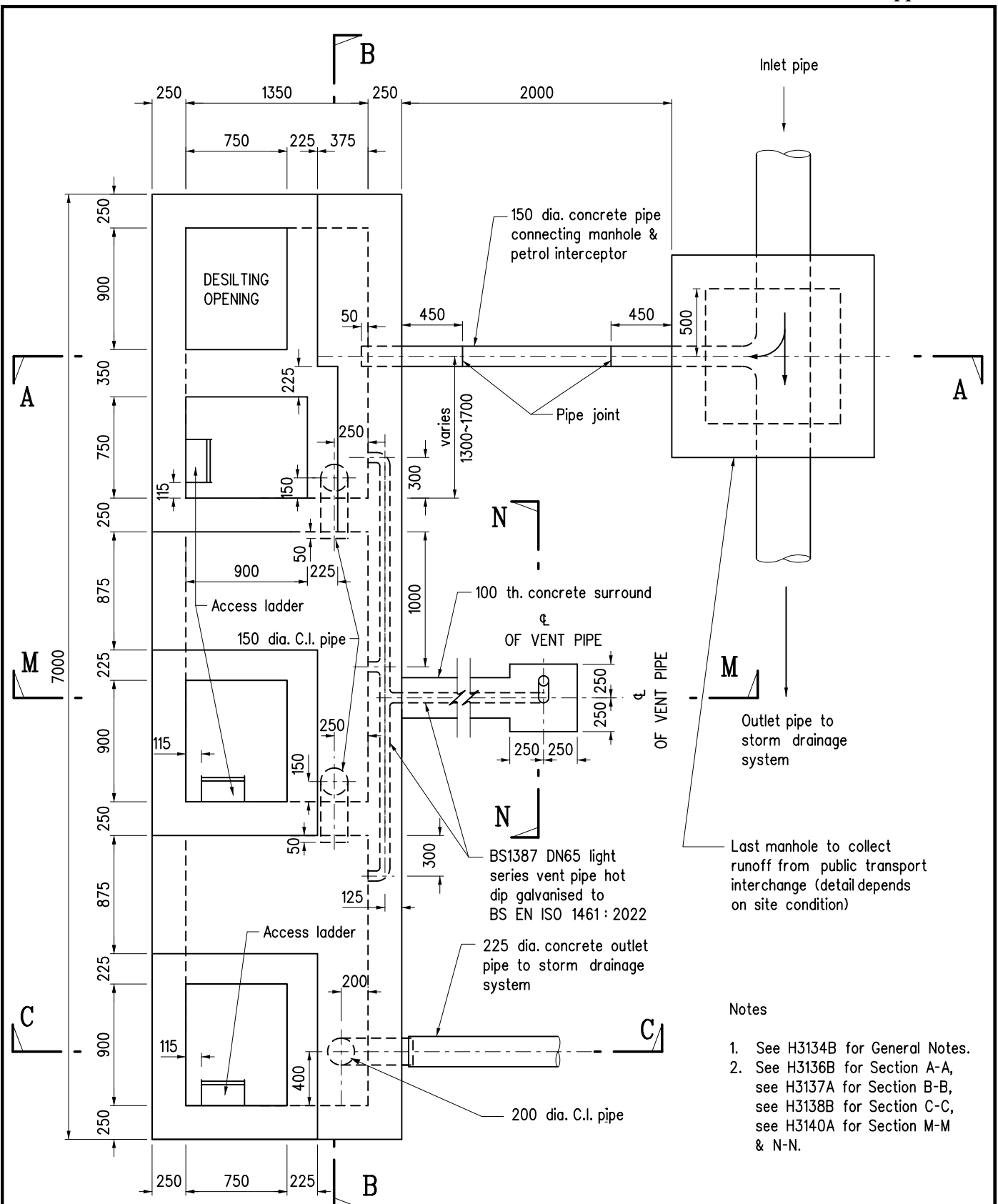
REFERENCE

DRAWING No.

CAD

SCALE

H 3134B



- Notes
1. See H3134B for General Notes.
 2. See H3136B for Section A-A, see H3137A for Section B-B, see H3138B for Section C-C, see H3140A for Section M-M & N-N.

PLAN

3 compartment petrol interceptor shown, for required no. of compartments, see table 1 in drg. no. H3136B

C	General revision		Oct 22
B	Standard for hot dip galvanising updated		Sep 07
A	General revision		Nov 02
	Former drg. no. H3028/2A with general revision		Jun 94
REF.	REVISION	SIGNATURE	DATE

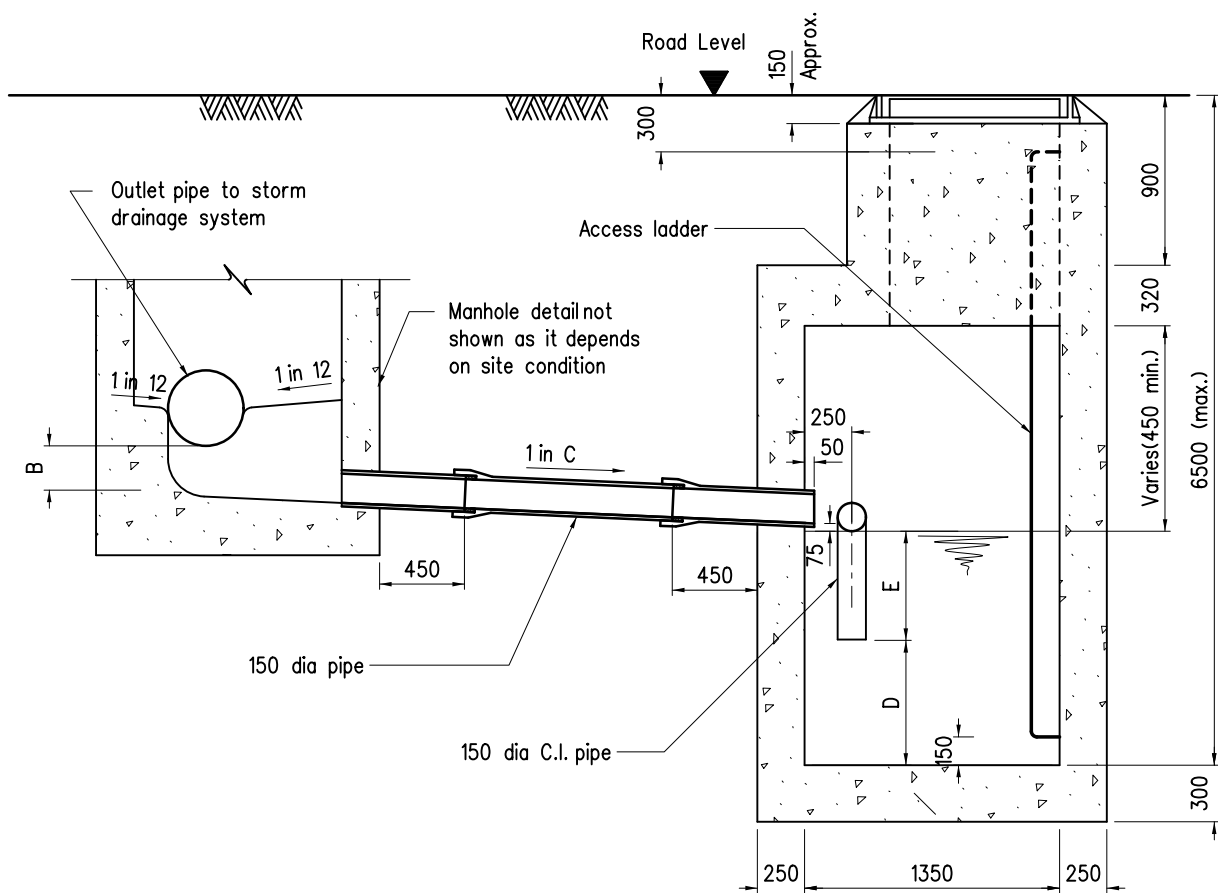
**PETROL INTERCEPTOR
FOR OPEN PUBLIC
TRANSPORT INTERCHANGE
(SHEET 2 OF 11)**

HIGHWAYS DEPARTMENT

REFERENCE	DRAWING No.	CAD
SCALE Diagrammatic	H 3135C	

CATCHMENT AREA OF THE PUBLIC TRANSPORT INTERCHANGE A (m ²)	LEVEL DIFFERENCE OF THE 2 OUTLET PIPES IN THE LAST MANHOLE B (mm)	FALL OF INLET AND OUTLET PIPE OF PETROL INTERCEPTOR C	D (mm)	E (mm)	NO. OF COMPARTMENT
A ≤ 1000	60	200	500	400	2
1000 < A ≤ 2000	90	200	600	400	3
2000 < A ≤ 3000	150	200	550	600	4
3000 < A ≤ 4000	150	100	725	600	4

TABLE 1



SECTION A - A

Note :

See H3134B for general notes.

B	General revision		Oct 22
A	General revision		Nov 02
	Former drg. no. H3028/3A with general revision		Jun 94
REF.	REVISION	SIGNATURE	DATE

PETROL INTERCEPTOR
FOR OPEN PUBLIC
TRANSPORT INTERCHANGE
(SHEET 3 OF 11)

HIGHWAYS DEPARTMENT

REFERENCE

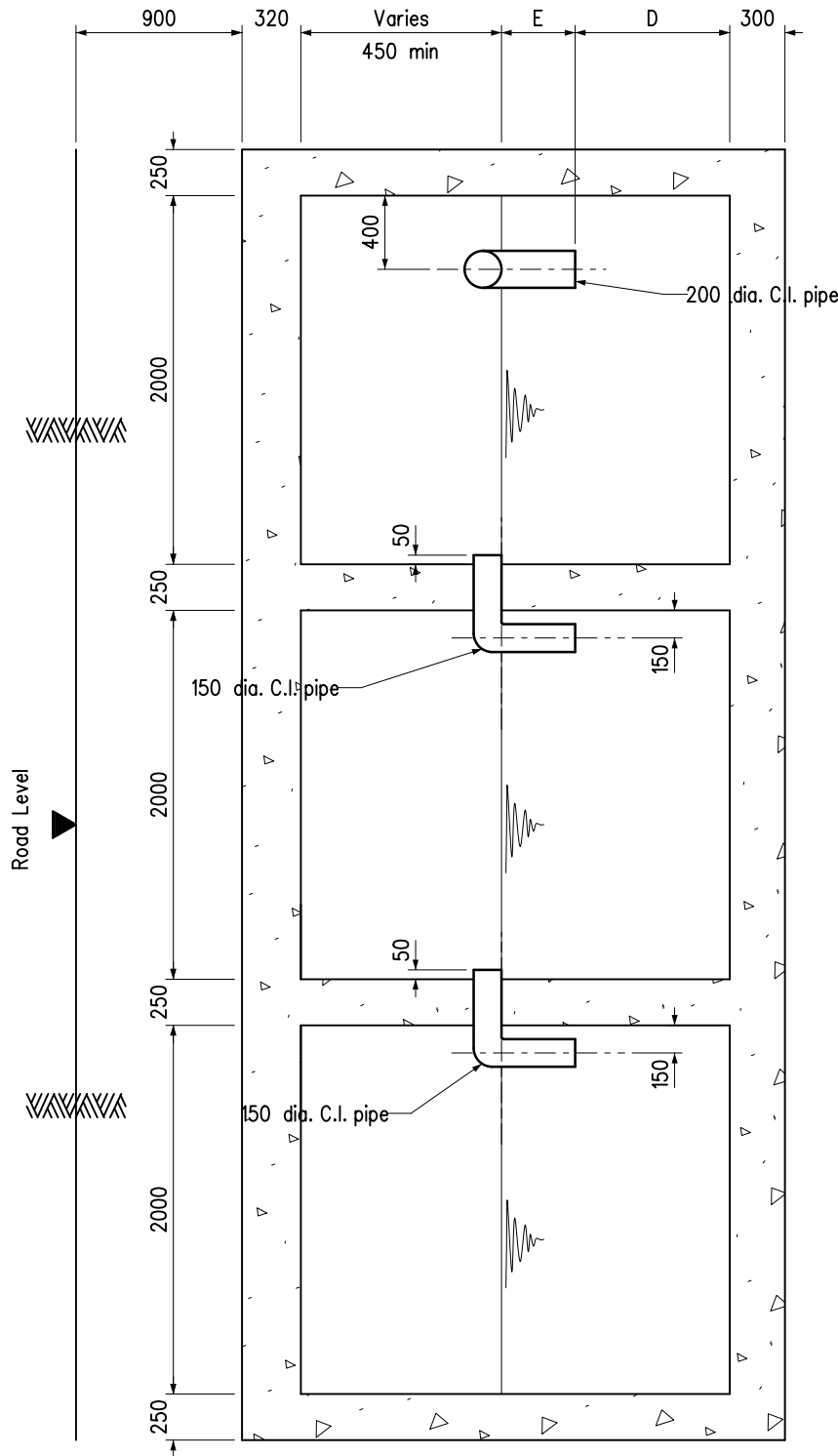
DRAWING No.

CAD

SCALE

Diagrammatic

H 3136B



SECTION B - B
(3 compartment petrol interceptor shown)

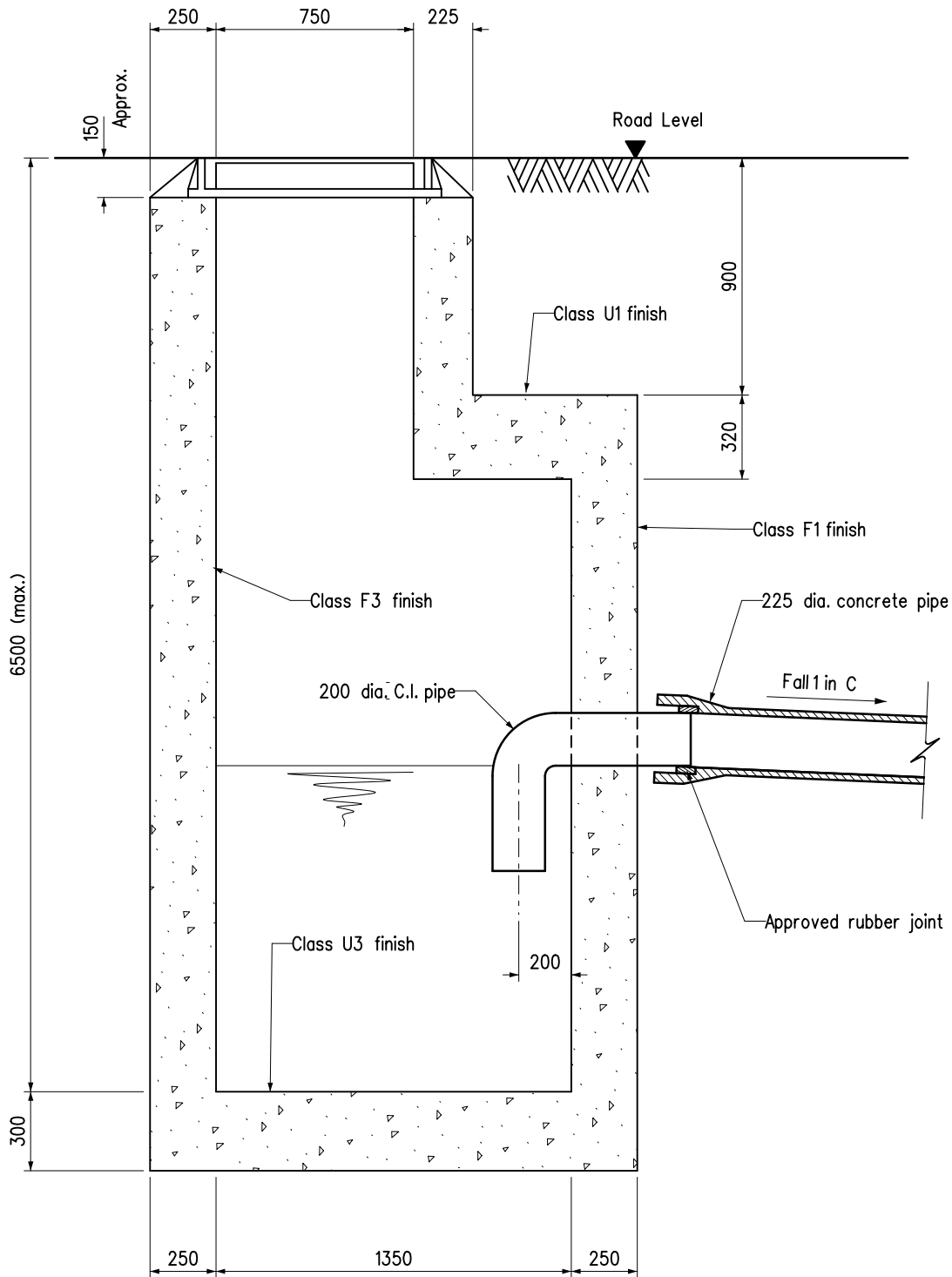
Note :
See H3134B for general notes.

A	General revision		Oct 22
	Former drg. no. H3028/4A with general revision		Jun 94
REF.	REVISION	SIGNATURE	DATE

**PETROL INTERCEPTOR
FOR OPEN PUBLIC
TRANSPORT INTERCHANGE
(SHEET 4 OF 11)**

HIGHWAYS DEPARTMENT

REFERENCE	DRAWING No.	CAD
SCALE Diagrammatic	H 3137A	



SECTION C - C

Note :
See H3134B for general notes.

B	General revision		Oct 22
A	General revision		Nov 02
	Former drg. no. H3028/5A with general revision		Jun 94
REF.	REVISION	SIGNATURE	DATE

PETROL INTERCEPTOR
FOR OPEN PUBLIC
TRANSPORT INTERCHANGE
(SHEET 5 OF 11)

HIGHWAYS DEPARTMENT

REFERENCE

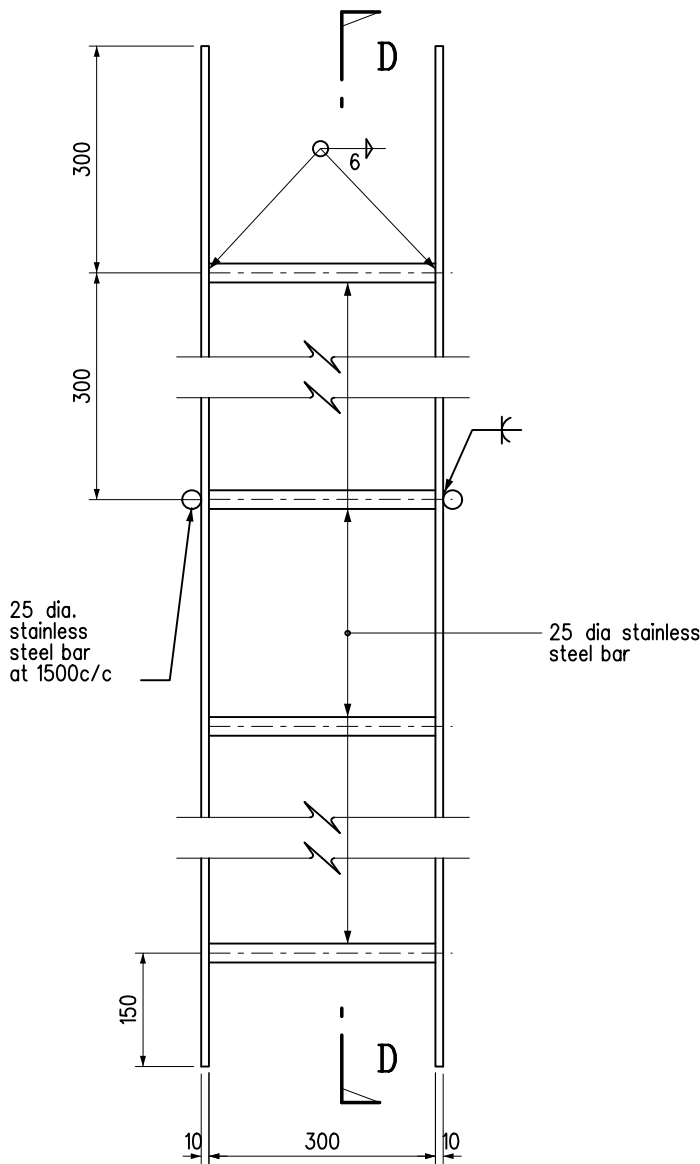
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CAD

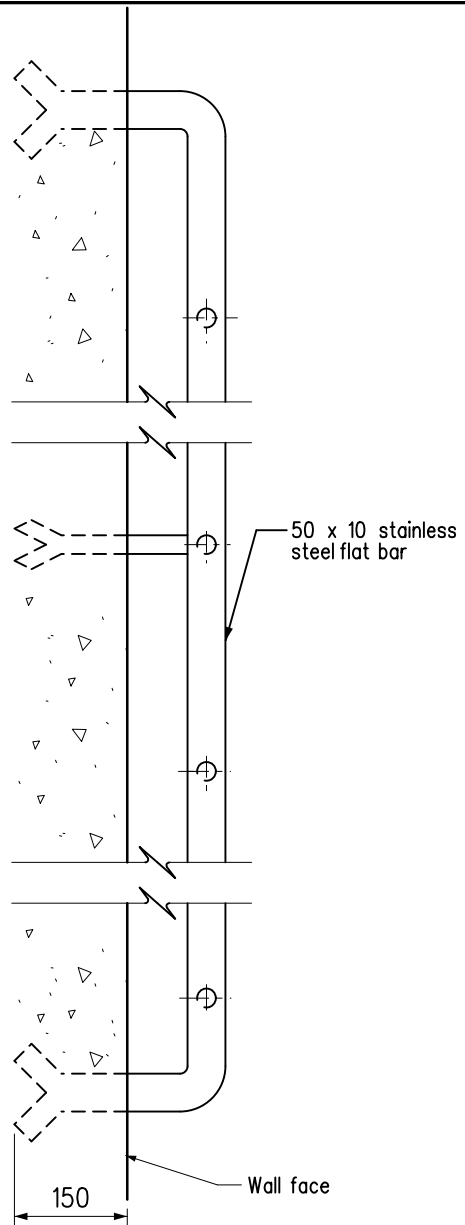
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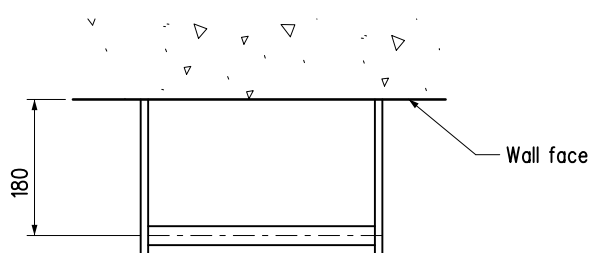
H 3138B



ELEVATION



SECTION D - D



PLAN

ACCESS LADDER

Note :

See H3134B for general notes

B	General revision		Oct 22
A	General revision		Nov 02
	Former drg. no. H3028/6A with general revision		Jun 94
REF.	REVISION	SIGNATURE	DATE

PETROL INTERCEPTOR
FOR OPEN PUBLIC
TRANSPORT INTERCHANGE
(SHEET 6 OF 11)

HIGHWAYS DEPARTMENT

REFERENCE

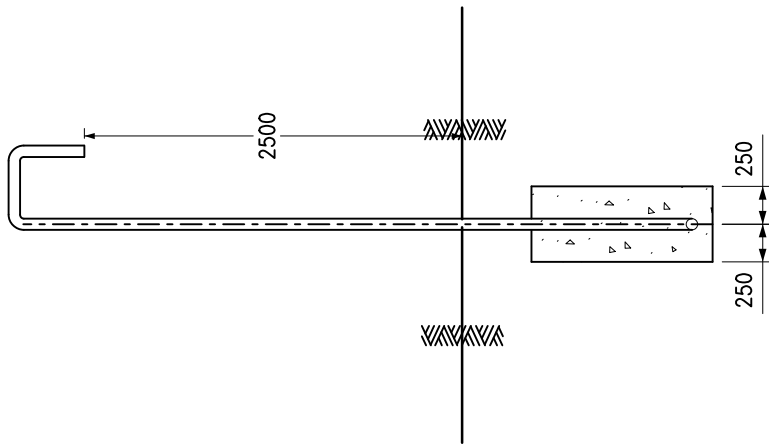
DRAWING No.

CAD

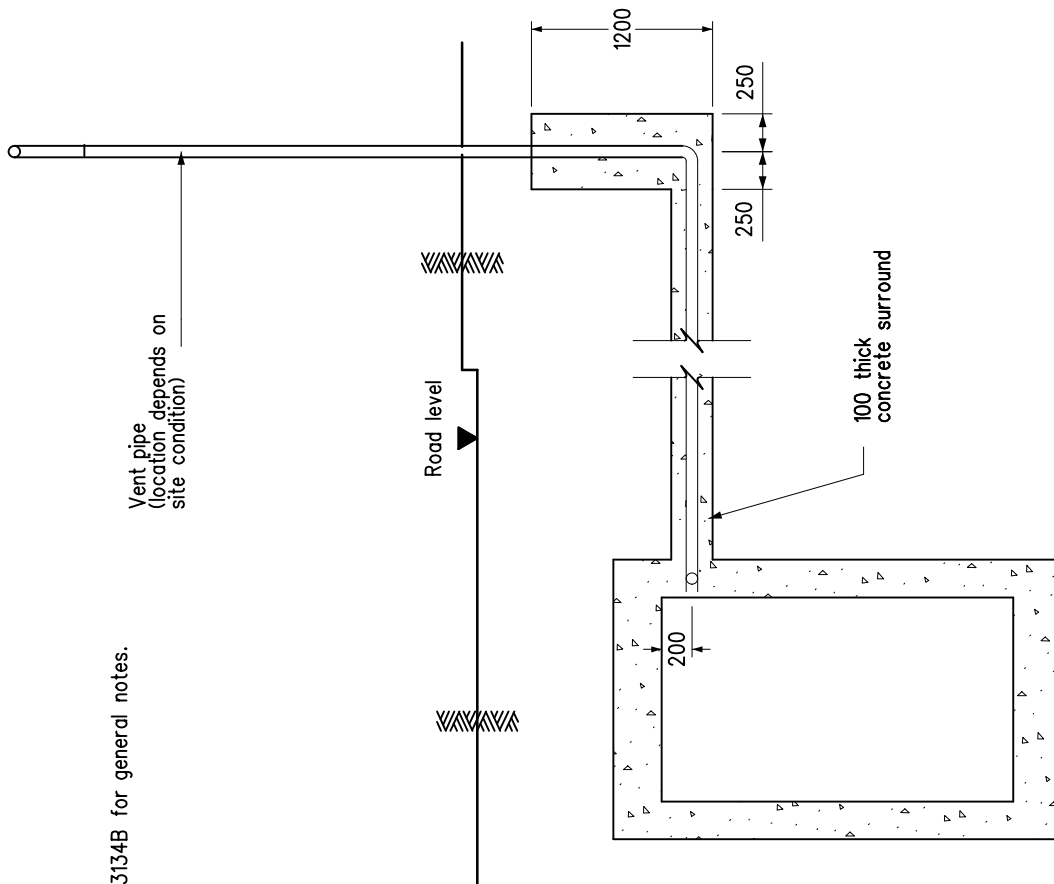
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H 3139B



SECTION N - N



SECTION M - M

Note :
See H3134B for general notes.

Vent pipe
(location depends on
site condition)

Road level

100 thick
concrete surround

A	General revision		Oct 22
	Former drg. no. H3028/7A with general revision		Jun 94
REF.	REVISION	SIGNATURE	DATE

PETROL INTERCEPTOR
FOR OPEN PUBLIC
TRANSPORT INTERCHANGE
(SHEET 7 OF 11)

HIGHWAYS DEPARTMENT

REFERENCE

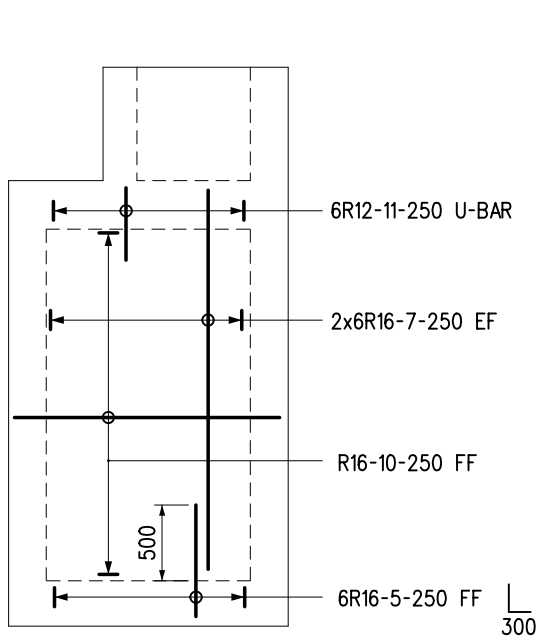
DRAWING No.

CAD

SCALE

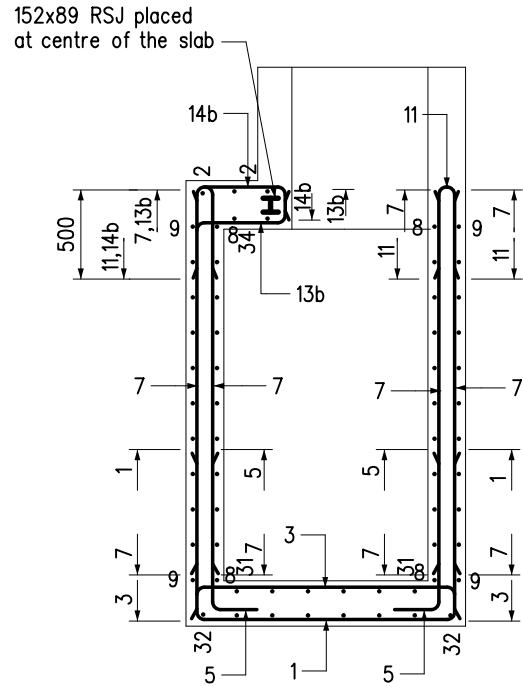
Diagrammatic

H 3140A

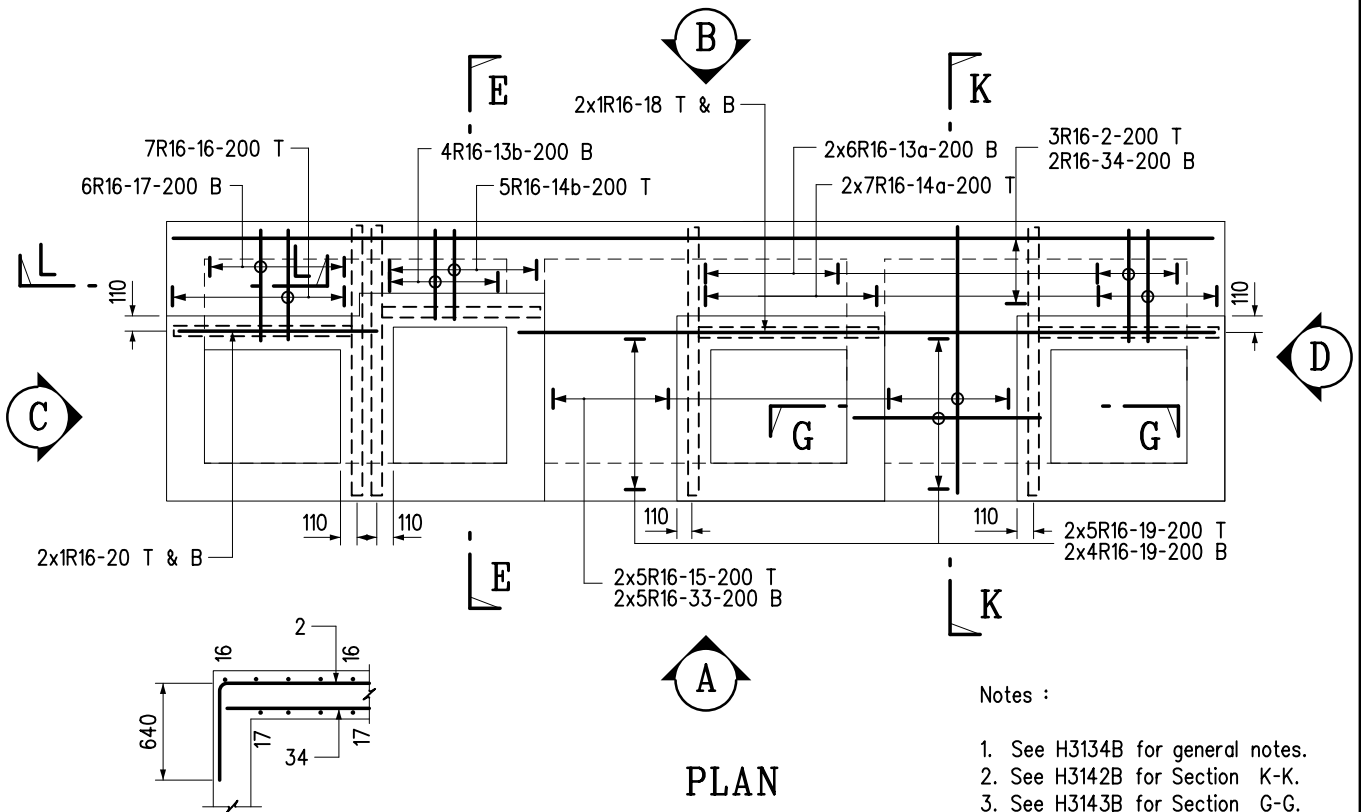


VIEW C

view D similar but opp. handed



SECTION E - E



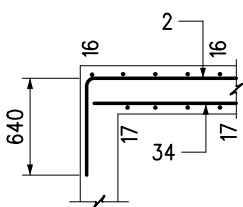
PLAN

Notes :

1. See H3134B for general notes.
2. See H3142B for Section K-K.
3. See H3143B for Section G-G.

SECTION L - L

wall bars not shown for clarity

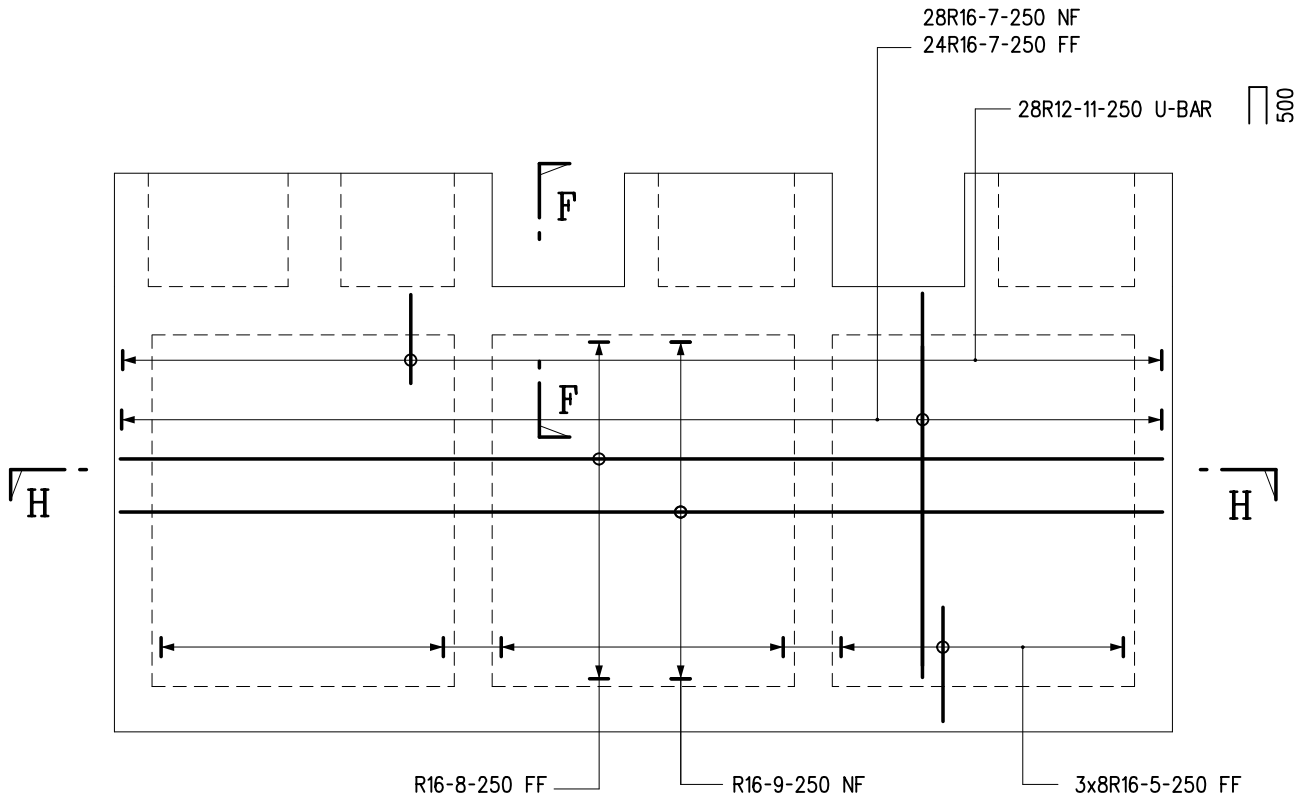


B	General revision		Oct 22
A	General revision		Nov 02
	Former drg. no. H3028/8A with general revision		Jun 94
REF.	REVISION	SIGNATURE	DATE

**PETROL INTERCEPTOR
FOR OPEN PUBLIC
TRANSPORT INTERCHANGE
(SHEET 8 OF 11)**

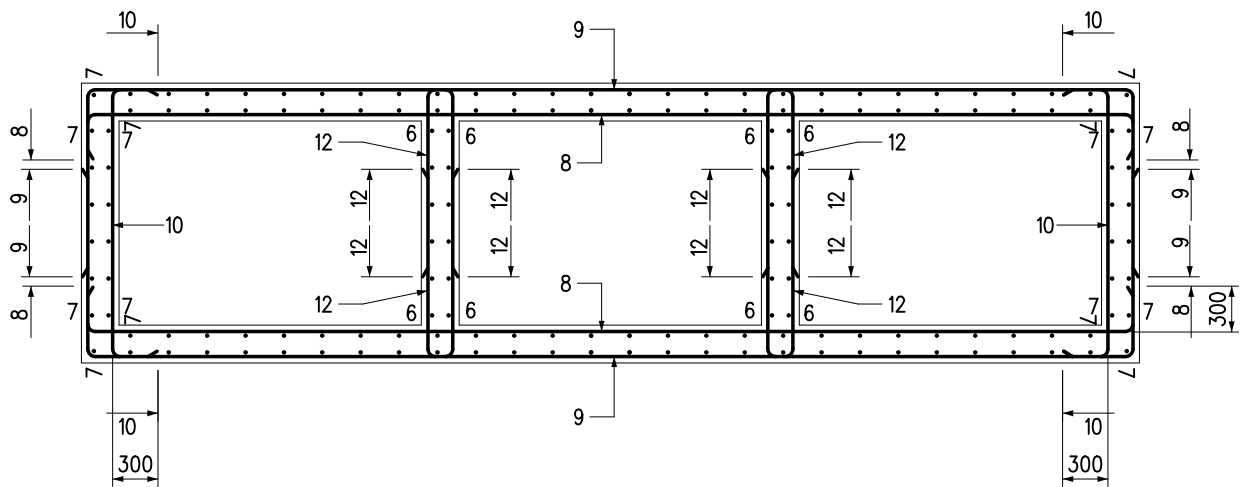
HIGHWAYS DEPARTMENT

REFERENCE	DRAWING No.	CAD
SCALE	H 3141B	
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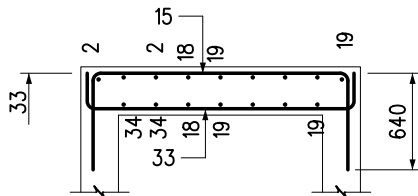


VIEW A

view B similar but opp. handed



SECTION H - H



SECTION K - K

wall bars not shown for clarity

Notes :

- 1. See H3134B for general notes.
- 2. See H3143B for Section F-F.

B	General revision		Oct 22
A	General revision		Nov 02
	Former drg. no. H3028/9A with general revision		Jun 94
REF.	REVISION	SIGNATURE	DATE

**PETROL INTERCEPTOR
FOR OPEN PUBLIC
TRANSPORT INTERCHANGE
(SHEET 9 OF 11)**

HIGHWAYS DEPARTMENT

REFERENCE

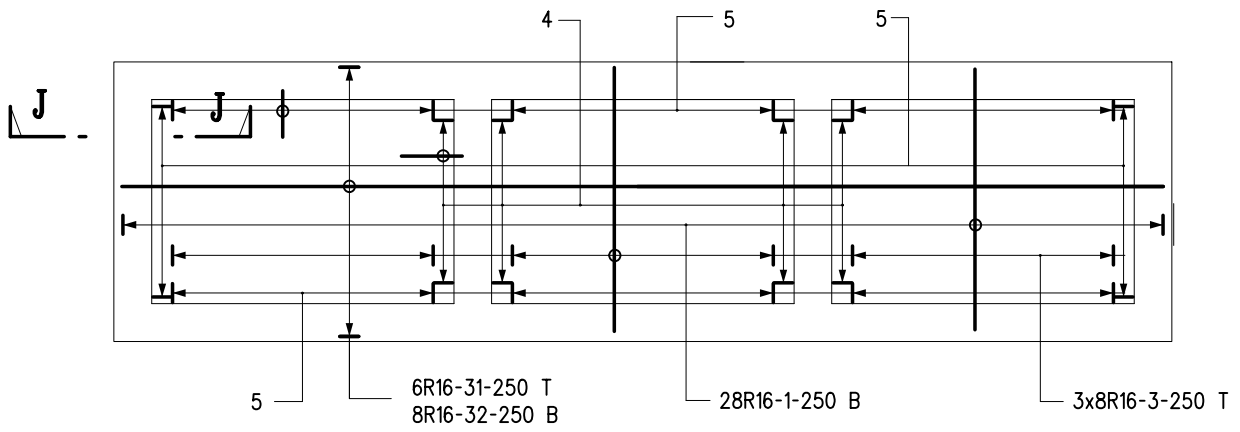
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CAD

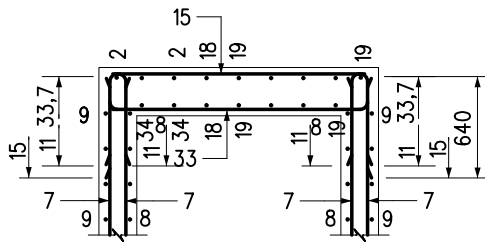
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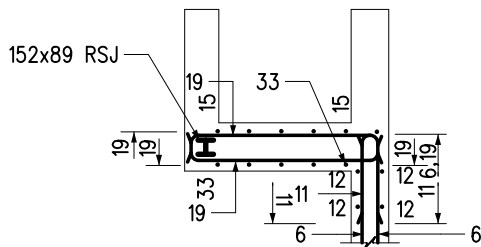
H 3142B



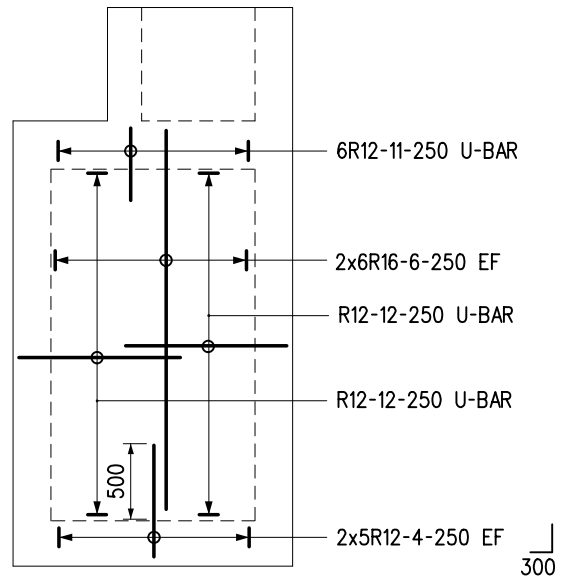
BASE SLAB



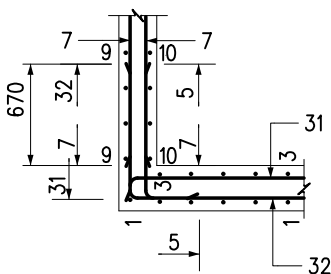
SECTION F - F



SECTION G - G



INTERNAL WALL



SECTION J - J

Notes :

See H3134B for general notes.

B	General revision		Oct 22
A	General revision		Nov 02
	Former drg. no. H3028/10A with general revision		Jun 94
REF.	REVISION	SIGNATURE	DATE

PETROL INTERCEPTOR
FOR OPEN PUBLIC
TRANSPORT INTERCHANGE
(SHEET 10 OF 11)

HIGHWAYS DEPARTMENT

REFERENCE

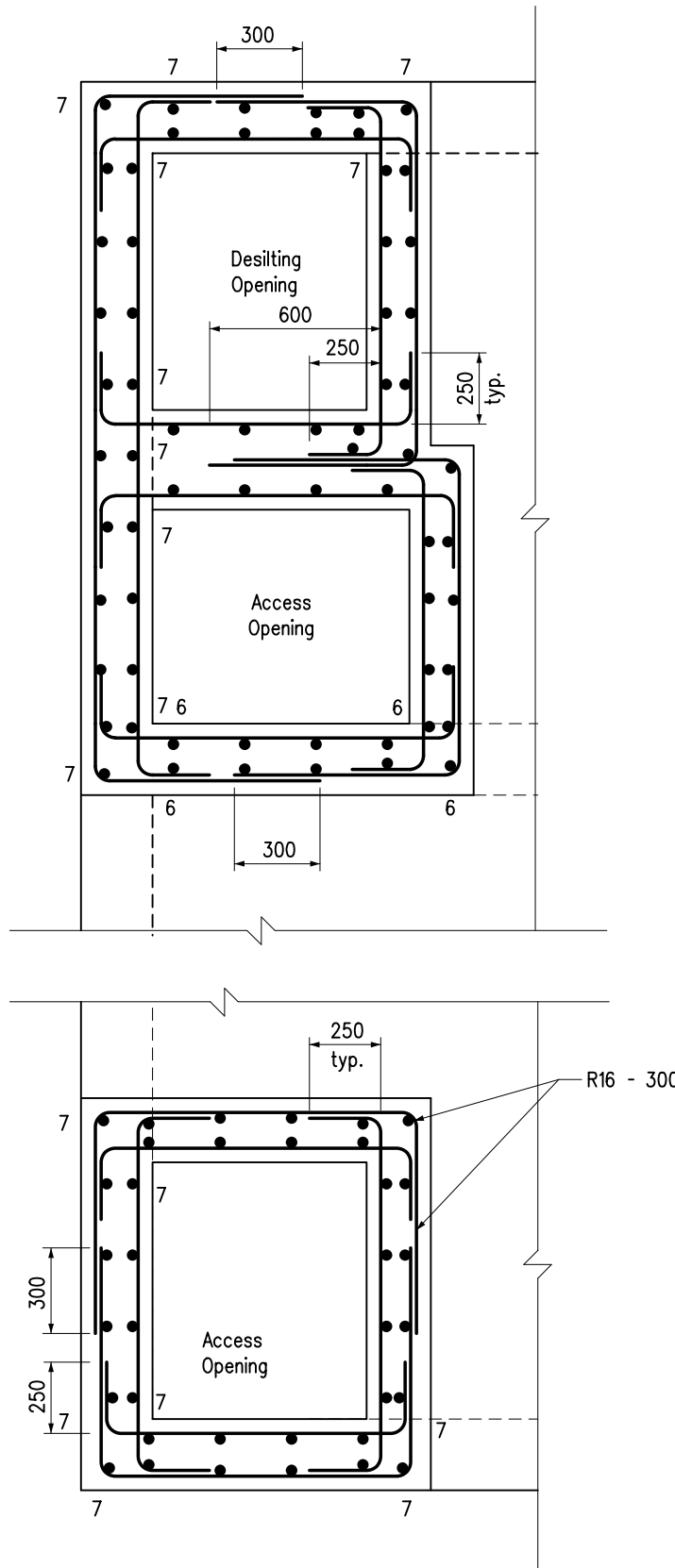
DRAWING No.

CAD

SCALE

1:50

H 3143B



Notes :

1. See H3134B for general notes.
2. All horizontal and vertical bars are R16 at 300 c/c except otherwise specified.
3. Bars with mark 6 and 7 are bars from walls in chambers below shafts (see Sect. H-H drg. no. H3142B)

SECTIONAL PLANS

reinforcement details for access shafts

B	General revision		Oct 22
A	General revision		Nov 02
	New issue		Jun 94
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**PETROL INTERCEPTOR
FOR OPEN PUBLIC
TRANSPORT INTERCHANGE
(SHEET 11 OF 11)**

HIGHWAYS DEPARTMENT

REFERENCE	DRAWING No.	CAD
SCALE	H 3144B	
1 : 25		

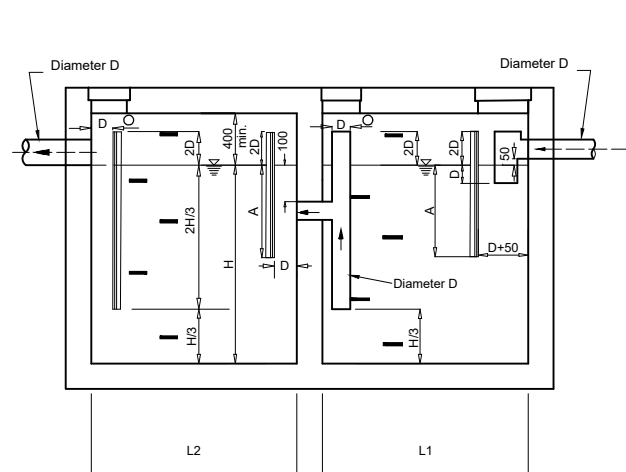
Grease Traps

(See Drawing no. EP/50/L1/1/01A for typical details of a grease trap)

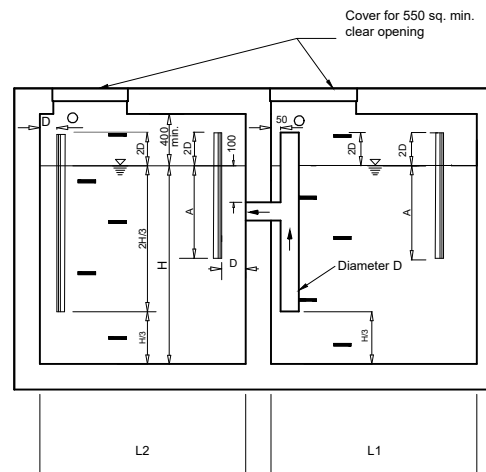
<u>Kitchen Floor Area</u> (m ²)	<u>Peaking Factor</u>	<u>Minimum Required Grease Trap Retention Volume</u> (m ³)
12	5.5	0.7
24	4.3	1.1
50	3.0	1.6
100	2.4	2.5
150		3.3
200	1.85	4.0
250		4.7
300		5.4
350		6.1
400	1.62	6.7
450		7.3
500		7.8
550		8.3
600	1.38	8.7
650		9.1
700		9.4
750		9.7
800	1.15	10.0
850		10.2
900	1.03	10.3
1000	1.0	10.4

Notes

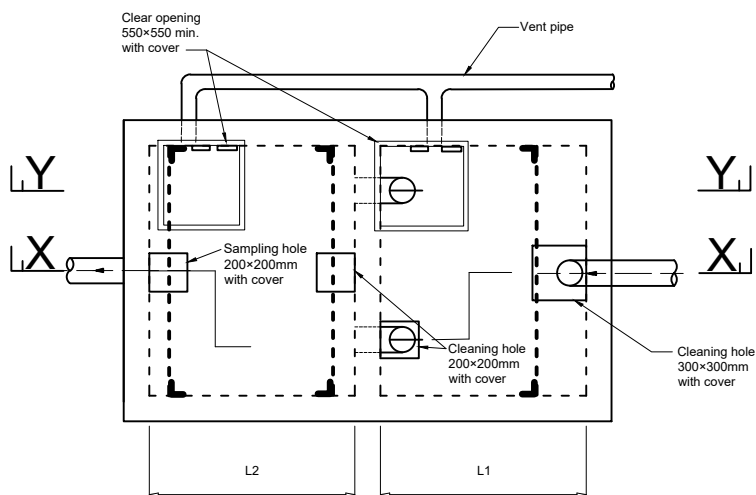
1. The minimum required grease trap retention volume tabulated above is based on an average water consumption of 0.5 m³ per day per m² of kitchen floor area, and an average working day of 16 working hours. A larger grease trap should be provided if a higher water discharge intensity is anticipated.
2. For kitchen floor areas in between the listed values, the minimum required grease trap retention volume can be calculated pro-rata.
3. For kitchen floor areas smaller than 12 m², a grease trap with retention volume 0.7 m³ should be provided unless the adequacy of a smaller grease trap can be demonstrated.
4. Depending on the actual operation of the proposed food premises, additional installations might be required to meet the standards given in the Technical Memorandum on Effluent Standards issued under section 21 of the Water Pollution Control Ordinance Cap.358.



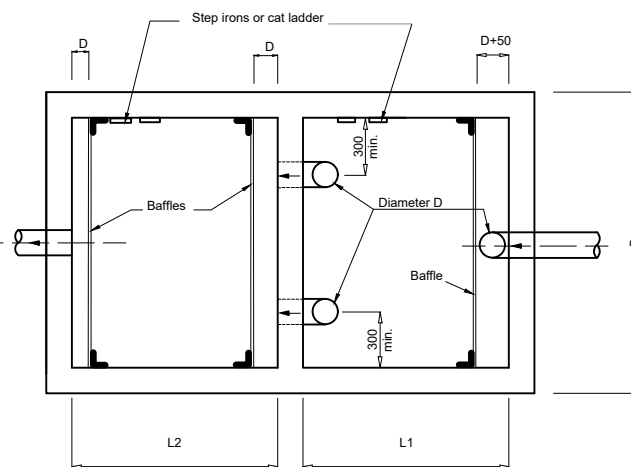
SECTION X-X



SECTION Y-Y



PLAN



SECTIONAL PLAN

TYPICAL DETAILS OF A GREASE TRAP

Notes:

1. All dimensions are in millimeters unless otherwise stated
2. $Volume = B (L_1 + L_2) H$
3. $750 \leq B \leq L_1 \leq L_2 \leq 1800$
4. $600 \leq H \leq 1200$
For kitchen floor areas $\geq 50m^2$, H should be 900 minimum
5. $L_1 + L_2 = L_T$
 $2.0 \leq L_T / H \leq 3.0$
 $1500 \leq B \times L_T / H \leq 4000$
6. $A = H/2$ but not greater than 450
7. No. of pipes through the middle partition wall should be such that the velocity inside the pipes is not greater than 0.2 m/s
8. Gradient of inlet pipe > 1 in 10
9. Horizontal pipe between the last drainage fitment and the grease trap should not be longer than 10m. Where this cannot be achieved, the gradient of the pipe should be increased and rodding eyes should also be provided
10. Minimum diameter of inlet pipes 100mm
11. Minimum diameter of vent pipes 75mm
12. Reinforced concrete grease traps should be designed as liquid retaining structure with maximum surface crack widths 0.2 mm
13. Grease traps should be easily accessible, allowing covers to be lifted and accumulated materials removed
14. A prominent sign should be erected adjacent to the grease trap to signify the location of the grease trap and should also contain the following information:
 - a) overall depth of the grease trap
 - b) liquid depth of the grease trap
 - c) the grease trap needs cleaning when the top 200mm of liquid depth is occupied by grease
 - d) warning signs and safety barriers should be erected around the manhole openings during cleaning and maintenance of the grease trap

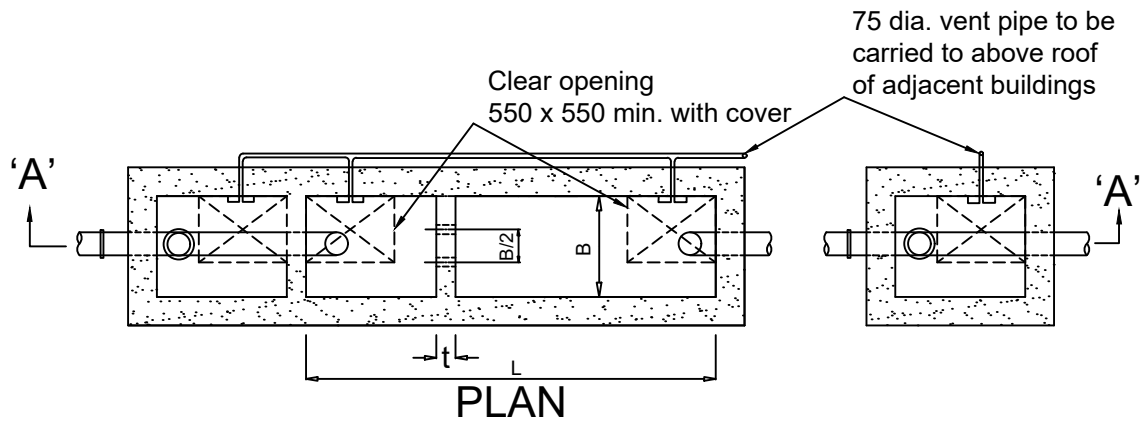
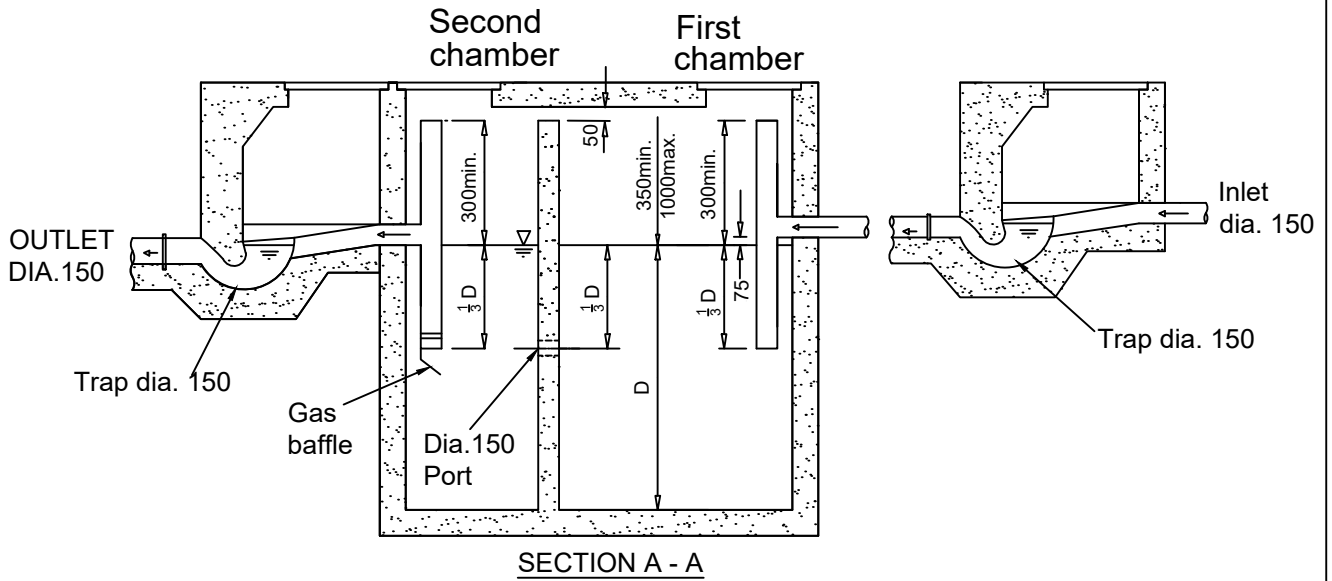
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Notes:-

1. All dimensions in millimetres (mm) unless otherwise stated.
2. Size
 - (a) $4B \geq L > 3B$
 - (b) $1800 \text{ mm} \geq D > 1200 \text{ mm}$
 - (c) Ratio of volumes of first and second chambers = 2 : 1
3. Capacity (Subject to note 2)
 - (a) Capacity, $C = (L - t) \times B \times D$
 - (b) Not less than 2.3 m^3 but not more than 41 m^3
 - (c) Not less than QN where N is the number of persons served and Q is the estimated ultimate per capita daily water consumption.
 - (d) Surface water must not be connected to the tank
 - (e) Tank to be desludged every 6 months
4. No overflow or bypass pipe is allowed.
5. Please refer to the booklet "Guidance Notes on Discharges from Village Houses" published by EPD for further guidelines on operation and maintenance of septic tank system.

SEPTIC TANK

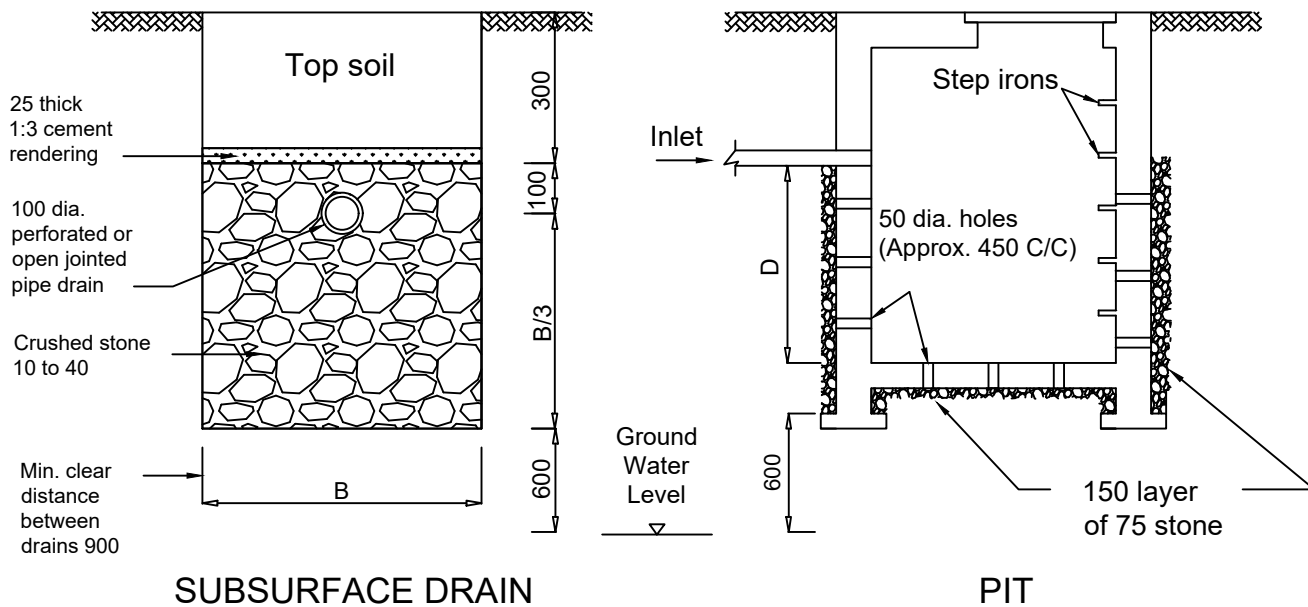
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Notes:-

F[±] All dimensions in millimetres (mm) unless otherwise stated

G[±] Percolation test for determining absorption capacity of soil

- G[±] D Excavate a hole 300 mm² to the same depth of the pit or trench.
- G[±] D Fill the hole with approximately 150 mm of water and allow to seep away completely.
- G[±] D Refill the hole with water to a depth of 150 mm and observe the time, in minutes, for water to seep completely away.
- G[±] D Divide the time by 6 to give time taken to fall 25 mm for use in table below.

H[±] Allowable loading of soakaway systems

Time in minutes for water to fall 25 mm in test pit	Allowable loading in litres per m ² per day	
	Drain Trench Bottom Area	Pit Percolation Area
1 or less	163	216
2	130	175
5	98	130
10	69	94
30	33	45

The total allowable loading per day should equate with the daily incoming flow

4. Minimum clearance requirements for soakaway systems

Water Bodies	Distance from Soakaway Systems (m)	
Wells	50	
Stream (where the bed is lower than invert of soakaway system)	15 (30)*	* These distances should be increased to distances shown in brackets if the water from the stream or pool is used or likely to be used for drinking or domestic purposes
Pools	7.5 (30)*	
Beaches	100	(From boundaries of gazetted beaches or bathing beach subzones of Water Control Zones)
	30	(From H.W.M. and from nearest watercourses for other cases)
Ground water table	0.6	(Below invert)
Structures		
Building	3	
Retaining walls	6	
Cuts or embankments	30	
Paths	1.5	

5. Engineering measures, such as: (i) soil replacement to help improve the soil absorption capacity through changing the characteristics and associated composition of soil; (ii) mound system or diversion of soakaway path, etc., may be used to address site constraints (e.g. inadequate absorption capacity of soil, high ground water table, etc.).

SOIL SOAKAWAY SYSTEM	DRAWING NO. EP 50/D1/5/02		
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