

Temporary Public Vehicle Park (excluding Container Vehicles) with Ancillary Electric Vehicle Charging Facilities and Utility Installation for Private Project (Solar Photovoltaic System)
in "Village Type Development" Zone
Lot 37 RP (Part), D.D. 7, Kau Lung Hang, Tai Po

Risk Assessment Report
On Contamination of Water Gathering Grounds

Report Number: C1011 Rev 0

Date: Jan 2025

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(for reference only)

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(for reference only)

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(H3134 – H3144)

(for reference only)

1 THE PROPOSAL

The applicant seeks planning permission for a temporary private car park (excluding container vehicles) with Ancillary Electric Vehicle Charging Facilities and Utility Installation for private project (Solar Photovoltaic System) for a period of five years at the application site (the Site) (**Appendix A**).

1.1 Type of Temporary Carpark and Layout

According to the applicant, a total of number of 23 parking spaces for private cars (5m x 2.5m approximately each) and 2 parking spaces for electric buses (8m x 3m approximately) will be provided within the Site to serve local residents. The proposed temporary car park is for villagers' convenience only as there is insufficient parking spaces in the captioned areas. No structure (temporary nor permanent) will be proposed at the Site except a pre-fabricated container will be placed at the entrance for safe guard and control. In addition, solar panels support frames will also be provided for the solar photovoltaic system and ancillary electric vehicle charging facilities and utility installation. The Site is accessible from Tai Wo Services Road West via village service roads. An existing concrete lined stream course is running adjacent to the eastern end of the Site. A layout plan showing the layout and vehicular ingress/egress of the proposed car park is attached in **Appendix A**.

1.2 Purpose of this Report

This Risk Assessment Report on Contamination of Water Gathering Grounds (WGG) is submitted for Town Planning Board's approval. The following elements are covered in this submission:

- (a) Site Conditions,
- (b) Stormwater Drainage Facilities,
- (c) Requirements of Water Supplies Department,
- (d) Planning Considerations and Risk Assessments

This Risk Assessment Report is developed based on the layout plan submitted for approval and concluded that there will be no potential risk of contamination to the WGG under the Planning Considerations with control measures.

2 SITE CONDITIONS

2.1 Site Description

The Site is located within the village and is situated to the west of Tai Wo Services Road West and no heavy traffic is expected. The Site is located at a flat and concrete paved area. An existing concrete lined stream course is located in close proximity in the eastern end of the Site.

There is no existing tree within the Site nor close to the Site that need to be protected.

The Site is surrounded by existing kerbs and surface ditches. Site photos are attached in **Appendix B** for reference.

3 STORMWATER DRAINAGE FACILITIES

3.1 Existing Stormwater Drainage Facilities

The Site is located within an area where drainage connections to existing public stormwater drainage is available in the vicinity. Stormwater collection and discharge systems to cater for the runoff generated within the Site and overland flow from other areas surrounding the Site will be upgraded.

The Site is located on the concrete paved ground, and the proposal will not increase the impervious area resulting in any change of the flow pattern and no increase of the surface runoff. There will be no flooding risk in the area.

There are concealed / covered channels located around the Site. The surface stormwater will be collected to the concealed / covered channels and discharged to the adjacent existing stream course.

The stormwater drainage checking will be carried out and presented under separate report accordingly. The existing drainage facilities are found to be sufficient and no flooding record is reported regarding the Site areas.

The applicant will maintain such stormwater drainage systems properly and rectify the systems throughout the operation.

4 REQUIREMENTS OF WATER SUPPLIES DEPARTMENT

4.1 Requirements Regarding WGG

The applicant will refrain from contaminating the Water Gathering Grounds (WGG) by all means.

According to the Waterworks Ordinance Section 30(2)(a), any person who enters, or bathes or washes in, water forming part of the waterworks; Section 30(2)(b), any person who washes or causes or permits any animal to enter therein; and Section 30(2)(c), any person who throws or places any thing therein, shall be guilty of an offence and may be fined.

5 PLANNING CONSIDERATIONS AND RISK ASSESSMENT

5.1 Planning Considerations and Actions to be Taken

- I. The Site has been formed with concrete surface. A typical photo record of the container office / guard house is attached in **Appendix C** for reference.
- II. Supportive panels for the solar panels and ancillary electric vehicle charging facilities and utility installation for solar photovoltaic system will be required. Shallow pad footings of less than 1m depth for the support of the frames will be provided.

The earth or other construction materials which may cause contamination will not be stockpiled or stored on site. All excavation or filled surfaces will be protected from erosion and siltation to any water courses. All construction spoil will be contained and protected and effluent containing spoils will be disposed off site after desiltation;

- III. There will be no public toilet or similar facilities to be provided. No discharge of effluent or foul water into adjoining land, storm water drain, channel, stream or river course is allowed. The impact from domestic sewage effluent is not anticipated;
- IV. No earth soil, building materials, fuel, or toxic materials or any other materials which may cause contamination to the WGG are allowed to be stockpiled within the Site or WGG or areas close to watercourses;
- V. Any solid waste and sludge from the proposed development will be collected and disposed outside WGG or areas close to watercourses;
- VI. No storage and discharge of flammable or toxic solvents, petroleum oil or tar and other toxic substances will be allowed within the Site or WGG or areas close to watercourses;

- VII. Stormwater channels will be provided surrounding the site. Regular cleaning of the channels will be carried out to ensure that they function properly at all times;
- VIII. Any vehicle which causes pollution to catchwaters or catchment due to leakage of oil or fuel will be removed off site immediately;
- IX. There will be no application and/or storage of any chemicals including detergents and cleaning agents on site;
- X. The use and storage of pesticides, herbicides, toxicants, chemical solvents, larvicidal oil, rodenticide, tar and petroleum oil are strictly prohibited within the Site or WGG or areas close to watercourses;
- XI. Grease trap and/or petrol interceptor will be provided at the drainage outlets and will be under proper maintenance. The drainage traps shall have sufficient capacity to ensure the proper interception and collection of fuel and lubricants in surface run-off for off-site disposal. Proper maintenance and disposal records should be maintained. The recommendations given under EPD Professional Persons Environmental Consultative Committee Practice Note (ProPECC PN) 1/94 shall be followed and is attached in **Appendix D** for reference. Details of the oil interceptor will be provided according to Highways Department Standard Drawings and are attached in **Appendix E** for reference;
- XII. No vehicle dismantling, inspection, maintenance, repairing, cleansing, paint spraying or other workshop activities will be carried out at the Site at any time during and after the planning approval period. A signboard : “Private Cars and Electric Vehicles Only 祇准私家車及電動車使用” will be provided at the entrance to provide announcement and make sure that only private cars and light vehicles are allowed to use the carpark;
- XIII. Oil leakage and spillage are not allowed. Oil and grease decontamination kit such as absorbent pads will be provided to decontaminate any oil/grease leakage.
- XIV. No oil tanker is allowed to park inside the site to avoid risk of any leakage;
- XV. Operation and maintenance of solar photovoltaic system will not cause any leaching of contamination to WGG or areas near watercourses. Materials related to the system will be waterproof and no toxic or harmful to environmental during prolonged exposure to weather and environmental conditions during the operation life;
- XVI. Should pollution be detected in future, the proposed temporary car park would immediately be closed. Environmental consultants would be appointed to carry out necessary remedial measures to WSD’s satisfaction;
- XVII. Regular site inspection would be conducted to ensure the implementation of necessary preventive measures;
- XVIII. A signboard : “No Littering 禁止扔垃圾” and a signboard of WSD Drg No. WSD7.66A will be erected at noticeable position for alerting public not to pollute WGG and the management team will provide cleaning to the site in a regular basis;
- XIX. Concrete paved surface is provided to avoid any contamination of oil / grease leakage to the ground;
- XX. Chain link fence will be erected on the side facing the nearest stream course to trap all wind-blown litters, if any, within the site.

5.2 Risk Assessment

Measures as mentioned in Item 5.1 in the previous section will be enforced. The risk of any contamination will be reduced and controlled to negligible. The followings are summarised and highlighted for considerations:

- I. Only shallow pad footing will be constructed for the support frames of solar photovoltaic system. No blasting, drilling or piling will be carried out. No well will be sunk on site. Construction proposal will be submitted to departments including WSD for acceptance / approval before any works to be commenced on site;
- II. The area is provided with concrete paving, concrete kerbs/bunds and interceptor drains along its perimeter to prevent the washing out or loss of materials such as soil, silt or debris to the surrounding area; The risk of pollution or causing contamination is negligible.
- III. The proposal is for a temporary car park for private car only and no other vehicles including oil tanker and light-goods vehicle are allowed to park at the Site. Besides, no other activities including vehicle inspection, maintenance, repairing and washing are permitted at the Site. A signboard : “Private Cars and Electric Vehicles Only 祇准私家車及電動車使用” will be provided at the entrance to provide announcement and make sure that only private cars and light vehicles are allowed to use the carpark. The risk of pollution or causing contamination by commercial vehicles is eliminated;
- IV. No use and storage of chemicals including pesticides and fertilizers as well as, toxicants, flammable solvents, tar and petroleum oil will be allowed at the Site. There is no risk of contamination by chemicals and oil;
- V. There will be no solid waste and sludge at the Site or WGG. A signboard : “No Littering 禁止扔垃圾” and a signboard of WSD Drg No. WSD7.66A will be erected at noticeable position for alerting public not to pollute WGG and the management team will provide cleaning to the site in a regular basis;
- VI. Car park users will be advised to drive away their cars if there is any oil leakage. Moreover, oil and grease decontamination kit such as absorbent pads would be provided at the Site to minimize potential pollution impact. Moreover, there is a grease trap and/or petrol interceptor will be provided at the drainage outlets and will be under proper maintenance. The risk of contamination of oil will be negligible;
- VII. No toilet facilities would be provided at the Site. No discharge of effluent or foul water into adjoining land, storm water drain, channel, stream or river course is allowed. Adverse sewerage impact is not anticipated. ;
- VIII. Should pollution be detected in future, the proposed temporary car park would immediately be closed. Environmental consultants would be appointed to carry out necessary remedial measures to WSD’s satisfaction. The risk of contamination will be well controlled; and

- IX. Regular site inspection would be conducted to ensure the implementation of necessary preventive measures. The risk of contamination will be well under control.
- X. As part of the site encroaches upon the 30m Waterworks Reserve for Tai Po Yau & Tau Pass, the following conditions will be imposed and followed:
- a. No structure will be erected over this Waterwork Reserve areas, and such areas will not be used for storage purposes except with the prior written consent of the Waterworks Authority;
 - b. Tree planting will not be permitted within the Waterworks Reserve except with the prior written consent of the Waterworks Authority;
 - c. No blasting or pile driving will be carried out within the Waterworks Reserve except with the prior written consent of the Waterworks Authority;
 - d. The applicant / grantee will indemnify and keep indemnified the Government from and against all liability, damages, expenses, claims, costs, demands, charges, actions and proceedings of whatsoever nature the grantee / applicant, his servants, workmen and contractors in connection with any damage to the existing Government water mains;
 - e. The Water Authority and his officers and contractors, his or their workmen will have free access at all times to the Site with necessary plant and vehicles for the purpose of laying, repairing and maintenance of water mains. All other services across, through or under the waterworks reserve are required to seek authorization from the Water Authority;
 - f. Government will not be liable to any damage whatsoever and howsoever caused arising from burst or leakage of the public water mains within and in close vicinity of the Site.

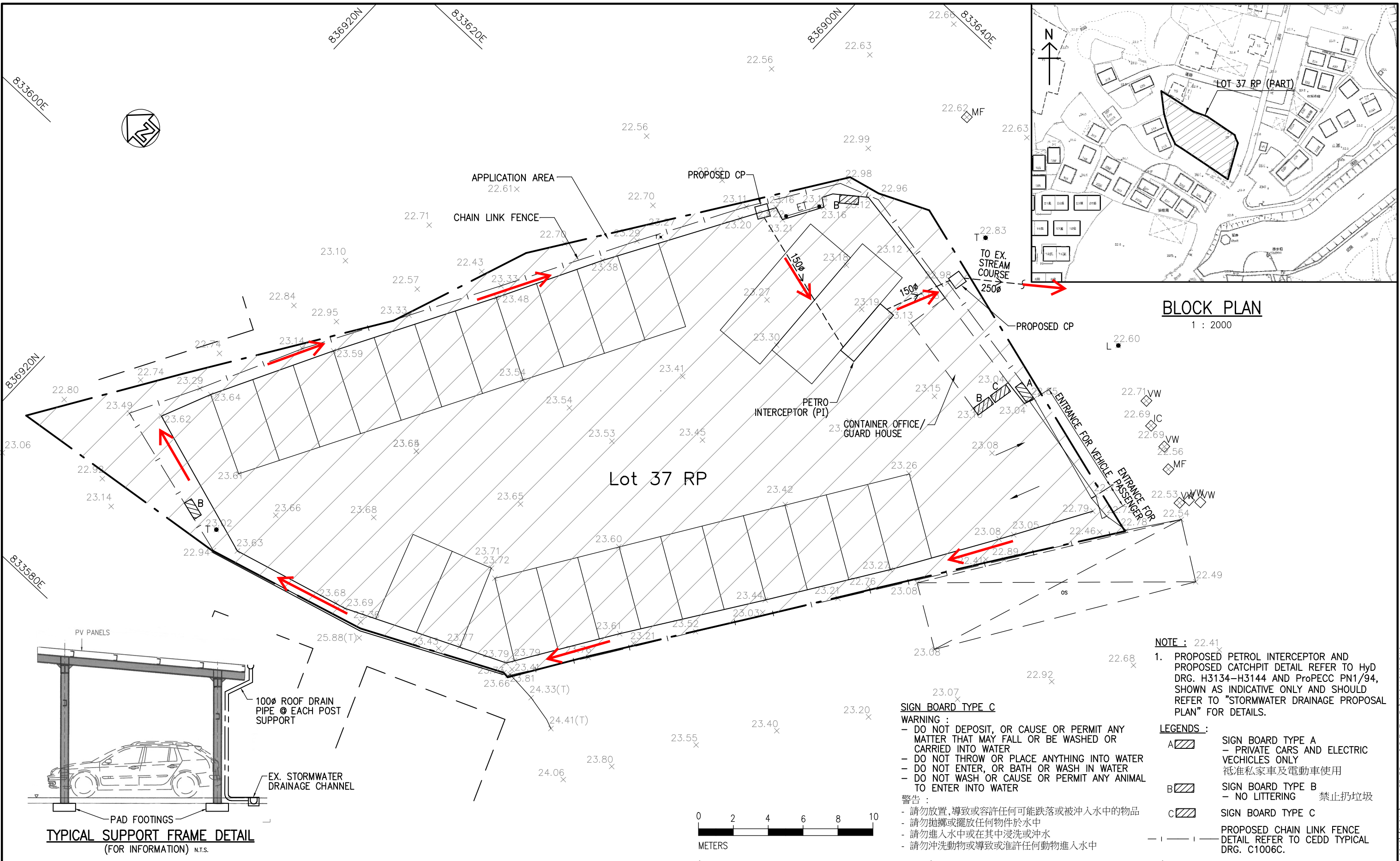
6 CONCLUSION

Under the application of the temporary private carpark (excluding Container Vehicles) with Ancillary Electric Vehicle Charging Facilities and Utility Installation for Private Project (Solar Photovoltaic System) within the captioned site, the applicant will provide and take up all necessary actions and measures for controlling and reducing the risk of contamination on WGG to a negligible level.

The measures as listed in this report are considered effective and applicable to the captioned site conditions. The TPB is advised to grant permission to the application.

Appendix A

Drawing



PROJECT	TEMPORARY PUBLIC VEHICLE PARK (EXCLUDING CONTAINER VEHICLES) LOT 37 RP (PART) IN DD7, KAU LUNG HANG, TAI PO, N.T.	DRAWING NO.	C1011SK01	DESIGNED	JAN 2025	SCALE	1 : 200
TITLE	GENERAL LAYOUT PLAN	DESIGN CHECKED	S.W.	DESIGNED	S.W.	DRAWN	A.T.

DATE : 24-01-2025 D:\PROJECT 2018\C1011\Lot 37 RP in DD7, Tai Po\C1011SK01.DWG

Appendix B

Site Photos

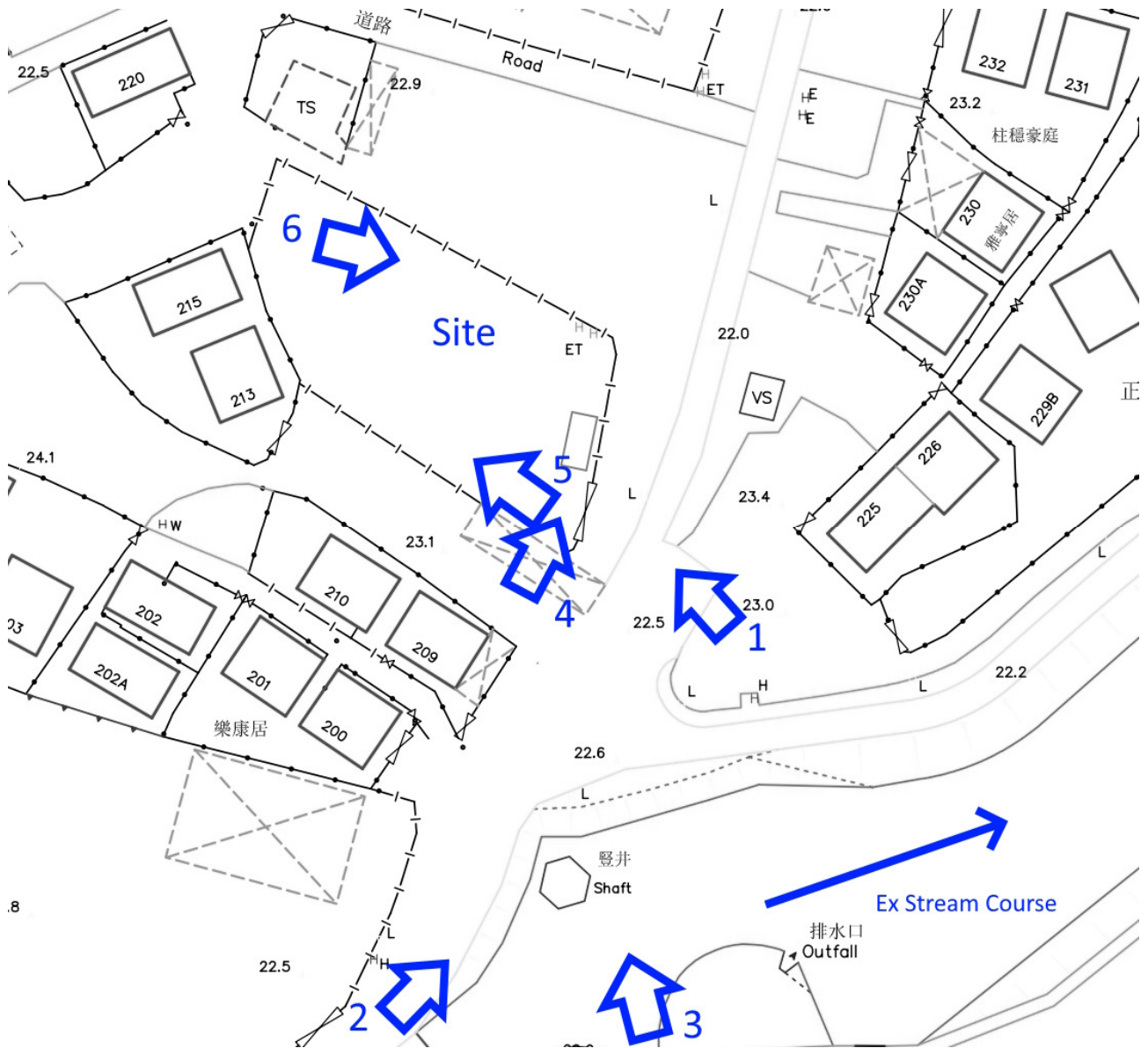


Photo Location Plan (22 Jan 2025)



Photo 1 – Site Condition



Photo 2 – Site Condition



Photo 3 – Site Condition



Photo 4 – Site Condition



Photo 5 – Site Condition



Photo 6 – Site Condition

Appendix C

**Container Office / Guard House
(for reference only)**



Figure C-1 Container Office / Guard House (for reference only)

Appendix D

**EPD Professional Persons Environmental
Consultative Committee Practice Note
(ProPECC PN) 1/94
(for reference only)**

**ENVIRONMENTAL PROTECTION DEPARTMENT
PRACTICE NOTE FOR PROFESSIONAL PERSONS**

Construction Site Drainage

Introduction

The purpose of this practice note is to provide some basic environmental guidelines for the handling and disposal of construction site discharges. It is hoped that through the issuance of this practice note, some of the pollution problems currently associated with construction activities can be prevented or minimized, for example :

- (i) siltation in storm drains caused by excessive sand and silt in the storm run-off;
- (ii) visual nuisance and hazard to aquatic life caused by discharge of muddy water into streams or the sea;
- (iii) pollution caused by improper handling and disposal of other types of construction site wastewater such as sewage from site toilets.

A total of ten types of discharges from construction sites have been identified. Good practice for dealing with these discharges is provided in the following sections.

Surface Run-off

2. Surface run-off from construction sites should be discharged into storm drains via adequately designed sand/silt removal facilities such as sand traps (see Appendix A1 for reference), silt traps and sediment basins. Channels or earth bunds or sand bag barriers should be provided on site to properly direct stormwater to such silt removal facilities. Perimeter channels at site boundaries should be provided where necessary to intercept storm run-off from outside the site so that it will not wash across the site. Catchpits and perimeter channels should be constructed in advance of site formation works and earthworks.

3. Silt removal facilities, channels and manholes should be maintained and the deposited silt and grit should be removed regularly, at the onset of and after each rainstorm

to ensure that these facilities are functioning properly at all times.

4. Construction works should be programmed to minimize soil excavation works in rainy seasons (April to September). If excavation in soil could not be avoided in these months or at any time of year when rainstorms are likely, for the purpose of preventing soil erosion, temporarily exposed slope surfaces should be covered e.g. by tarpaulin, and temporary access roads should be protected by crushed stone or gravel, as excavation proceeds. Intercepting channels should be provided (e.g. along the crest/edge of excavation) to prevent storm runoff from washing across exposed soil surfaces. Arrangements should always be in place to ensure that adequate surface protection measures can be safely carried out well before the arrival of a rainstorm.

5. Earthworks final surfaces should be well compacted and the subsequent permanent work or surface protection should be carried out immediately after the final surfaces are formed to prevent erosion caused by rainstorms. Appropriate drainage like intercepting channels should be provided where necessary.

6. Measures should be taken to minimize the ingress of rainwater into trenches. If excavation of trenches in wet seasons is necessary, they should be dug and backfilled in short sections. Rainwater pumped out from trenches or foundation excavations should be discharged into storm drains via silt removal facilities.

7. Open stockpiles of construction materials (e.g. aggregates, sand and fill material) on sites should be covered with tarpaulin or similar fabric during rainstorms. Measures should be taken to prevent the washing away of construction materials, soil, silt or debris into any drainage system.

8. Manholes (including newly constructed ones) should always be adequately covered and temporarily sealed so as to prevent silt, construction materials or debris from getting into the drainage system, and to prevent storm run-off from getting into foul sewers. Discharge of surface run-off into foul sewers must always be prevented in order not to unduly overload the foul sewerage system.

9. Precautions to be taken at any time of year when rainstorms are likely, actions to be taken when a rainstorm is imminent or forecast and actions to be taken during or after rainstorms are summarized in Appendix A2 for easy reference.

Groundwater

10. Groundwater pumped out of wells, etc. for the lowering of ground water level in basement or foundation construction, and groundwater seepage pumped out of tunnels or caverns under construction should be discharged into storm drains after the removal of silt in silt removal facilities.

Boring and Drilling Water

11. Water used in ground boring and drilling for site investigation or rock/soil anchoring should as far as practicable be recirculated after sedimentation. When there is a need for final disposal, the wastewater should be discharged into storm drains via silt removal facilities.

Wastewater from Concrete Batching Precast Concrete Casting

12. Wastewater generated from the washing down of mixer trucks and drum mixers and similar equipment should wherever practicable be recycled. The discharge of wastewater should be kept to a minimum.

13. To prevent pollution from wastewater overflow, the pump sump of any water recycling system should be provided with an on-line standby pump of adequate capacity and with automatic alternating devices.

14. Under normal circumstances, surplus wastewater may be discharged into foul sewers after treatment in silt removal and pH adjustment facilities (to within the pH range of 6 to 10). Disposal of wastewater into storm drains will require more elaborate treatment. Surface run-off should be segregated from the concrete batching plant and casting yard area as much as possible, and diverted to the stormwater drainage system. Surface run-off contaminated by materials in a concrete batching plant or casting yard should be adequately treated before disposal into stormwater drains.

Wheel Washing Water

15. All vehicles and plant should be cleaned before they leave a construction site to ensure no earth, mud, debris and the like is deposited by them on roads. A wheel washing bay should be provided at every site exit if practicable and wash-water should have sand and silt settled out or removed before discharging into storm drains. The section of construction road between the wheel washing bay and the public road should be paved with backfall to reduce vehicle tracking of soil and to prevent site run-off from entering public road drains.

Bentonite Slurries

16. Bentonite slurries used in diaphragm wall and bore-pile construction should be reconditioned and reused wherever practicable. If the disposal of a certain residual quantity cannot be avoided, the used slurry may be disposed of at the marine spoil grounds subject to obtaining a marine dumping licence from EPD on a case-by-case basis.

17. If the used bentonite slurry is intended to be disposed of through the public drainage system, it should be treated to the respective effluent standards applicable to foul sewers, storm drains or the receiving waters as set out in the WPCO Technical Memorandum on Effluent Standards.

Water for Testing Sterilization of Water Retaining Structures and Water Pipes

18. Water used in water testing to check leakage of structures and pipes should be reused for other purposes as far as practicable. Surplus unpolluted water could be discharged into storm drains.

19. Sterilization is commonly accomplished by chlorination. Specific advice from EPD should be sought during the design stage of the works with regard to the disposal of the sterilizing water. The sterilizing water should be reused wherever practicable.

Wastewater from Building Construction

20. Before commencing any demolition works, all sewer and drainage connexions should be sealed to prevent building debris, soil, sand etc. from entering public sewers/drains.

21. Wastewater generated from building construction activities including concreting, plastering, internal decoration, cleaning of works and similar activities should not be discharged into the stormwater drainage system. If the wastewater is to be discharged into foul sewers, it should undergo the removal of settleable solids in a silt removal facility, and pH adjustment as necessary.

Acid Cleaning, Etching and Pickling Wastewater

22. Acidic wastewater generated from acid cleaning, etching, pickling and similar activities should be neutralized to within the pH range of 6 to 10 before discharging into foul

sewers. If there is no public foul sewer in the vicinity, the neutralized wastewater should be tankered off site for disposal into foul sewers or treated to a standard acceptable to storm drains and the receiving waters.

Wastewater from Site Facilities

23. Sewage from toilets, kitchens and similar facilities should be discharged into a foul sewer. If there is no foul sewer in the vicinity, a septic tank and soakaway system (see Appendix B, these guidelines are for interim reference only as they are currently under review by Government) or for large flows, a sewage treatment plant will have to be provided. For sites where there are only toilet wastes arising, the use of chemical toilets may also be considered if a septic tank and soakaway system is found to be not feasible.

24. Wastewater collected from canteen kitchens, including that from basins, sinks and floor drains, should be discharged into foul sewers via grease traps capable of providing at least 20 minutes retention during peak flow. Details of a typical grease trap are given at Appendix C for reference.

25. Drainage serving an open oil filling point should be connected to storm drains via a petrol interceptor with peak storm bypass (see Appendix D for reference).

26. Vehicle and plant servicing areas, vehicle wash bays and lubrication bays should as far as possible be located within roofed areas. The drainage in these covered areas should be connected to foul sewers via a petrol interceptor (see Appendix E for reference). Oil leakage or spillage should be contained and cleaned up immediately. Waste oil should be collected and stored for recycling or disposal in accordance with the Waste Disposal Ordinance.

Licensing of Construction Site Discharges within Water Control Zones

27. All discharges into any drainage or sewerage systems, or inland or coastal waters, or into the ground (e.g. from septic tanks) within a Water Control Zone are controlled under the Water Pollution control Ordinance (WPCO), except the discharge of domestic sewage into foul sewers or the discharge of unpolluted water into storm drains or into the waters of Hong Kong. Construction site discharges are controlled under the WPCO. The geographical extents of the Water Control Zones are shown on the map at Appendix F.

28. Discharges controlled under the WPCO must comply with the terms and conditions of a valid WPCO licence. It should be noted that compliance with the recommendations in this practice note does not necessarily imply compliance with the terms and conditions of a licence issued under the WPCO. Depending on actual site conditions, facilities in addition to those recommended in this practice note might be necessary.

29. The WPCO licence application form (Form A) can be obtained from any EPD office or from District Offices. The applicant should include in the application, inter alia, information on the various points of discharge of storm run-off and wastewater, and the corresponding maximum (or range of) volume of discharge expected on a dry day. The application form, which can be filled in by the Owner, the Authorized Person, the Consulting Engineer or the Contractor, should be submitted to EPD as early as possible before the commencement of any discharge. In general, assuming adequate information has been provided together with the licence application, EPD would need at least 20 days for the processing of a licence for a discharge, and in the case of a discharge directly into any waters of Hong Kong, EPD would need at least 50 days to allow time for public notification as required by the WPCO. (EPD General Enquiry 835 1018)

(Stuart B. Reed)

Director of Environmental Protection

Environmental Protection Department
28/F Southorn Centre
130 Hennessy Road
Wan Chai

Issued August 1994

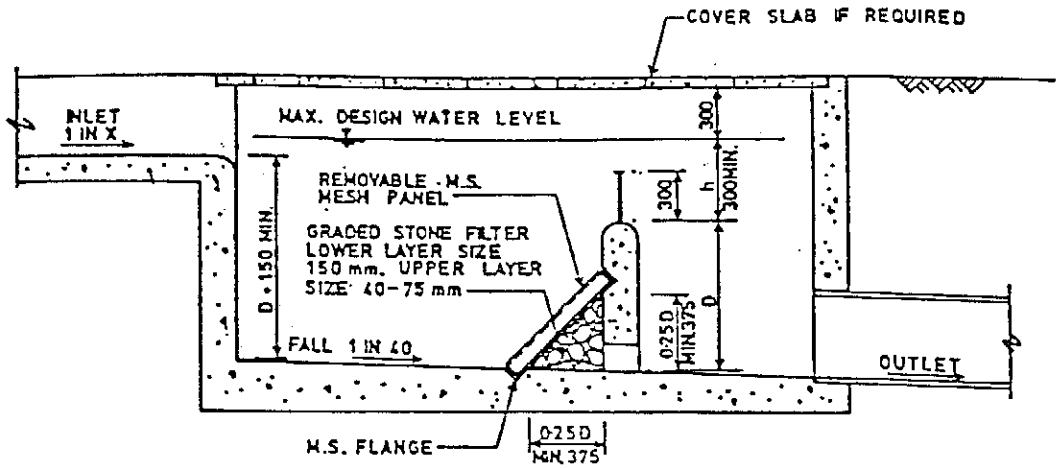
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LIST OF APP

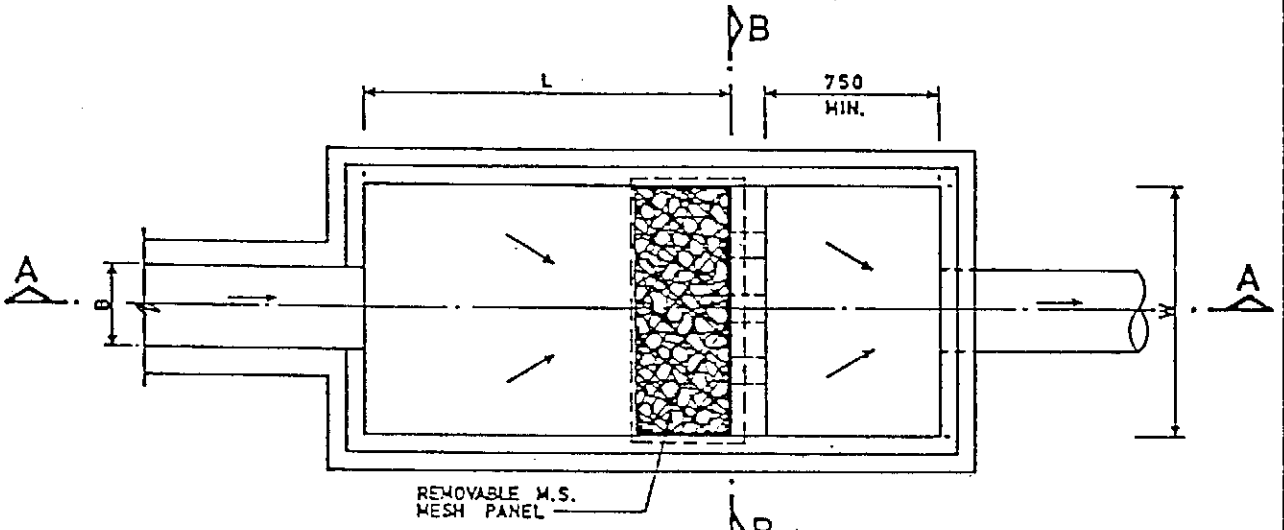
Appendix A1	Sand Trap (CED Standard Drawing No. GC 1034)
Appendix A2	Precautions/Actions relating to Rainstorms
Appendix B	Septic Tank and Soakaway
Appendix C	Grease Trap
Appendix D	Petrol Interceptor with Storm Bypass
Appendix E	Petrol Interceptor
Appendix F	Water Control Zones

Addendum to the ProPECC Practice Note PN 1/94

Original	Amendments
Para 29, last sentence “(EPD General Enquiry 835 1018)”	“(EPD General Enquiry 2835 1018)”

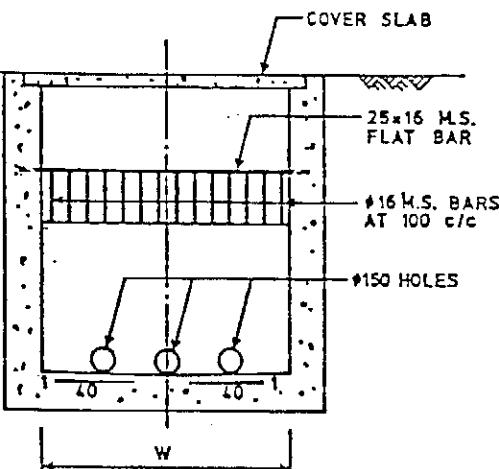


SECTION A-A



PLAN

(COVER SLAB NOT SHOWN)



SECTION B-B

NOTES:-

1. All dimensions are in millimetres.
2. Normally for drains of 900 mm dia. and below. For bigger drains and steep terrain, sand trap should be specially designed.
3. SIZE:-
 Depth $D < 750$; Width $W \geq 3B$
 Length $L = 4.8 D^{0.67} h^{0.5} X^{0.5} \geq 4B$
4. Graded stone filter shall be crusher run granite aggregate.
5. CAPACITY:- D.W.L. to be according to size and nature of catchment, providing detention time not less than 5 minutes for max. design flow of inlet.
6. All mild steel structures to be hot dip galvanized.
7. Reinforcement to be specified.
8. Wall and slab thicknesses to be specified.

SAND TRAP

REF.	REVISION	SIGNATURE	DATE
CIVIL ENGINEERING DEPARTMENT GEOTECHNICAL ENGINEERING OFFICE			
SCALE : DIAGRAMMATIC		DRAWING NO.	
DATE : MAY 1990		GC 1034	

Precautions/Actions relating to Rainstorms

The following are extracted from the main text to highlight the specific precautions or actions concerned with rainstorms. For general precautions to be taken at all times in relation to surface run-off, please refer to Section 2 of the main text.

(I) Precautions to be taken at any time of year when rainstorms are likely

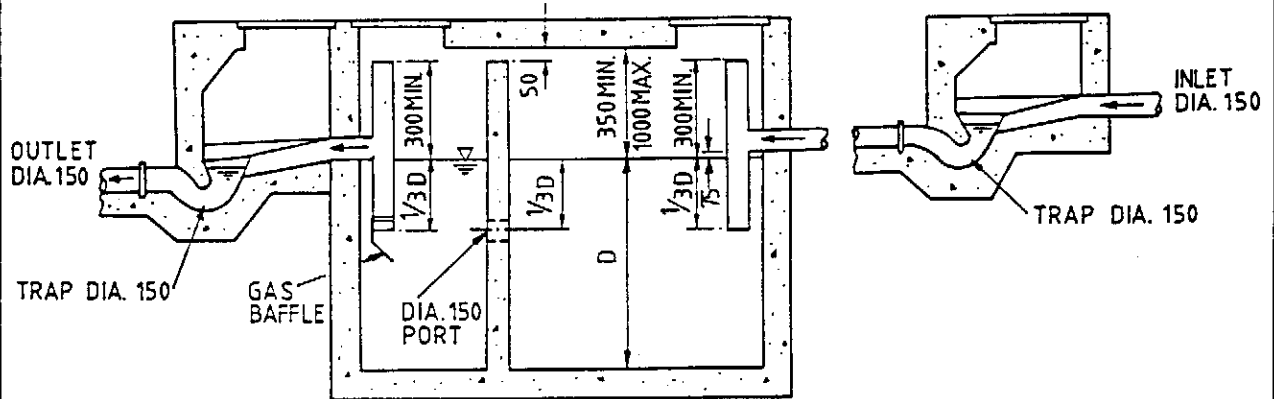
- (a) Silt removal facilities, channels and manholes should be maintained and the deposited silt and grit should be removed regularly.
- (b) Temporarily exposed slope surfaces should be covered e.g. by tarpaulin.
- (c) Temporary access roads should be protected by crushed stone or gravel.
- (d) Intercepting channels should be provided (e.g. along the crest/edge of excavation) to prevent storm runoff from washing across exposed soil surfaces.
- (e) Trenches should be dug and backfilled in short sections. Measures should be taken to minimize the ingress of rainwater into trenches.

(II) Actions to be taken when a rainstorm is imminent or forecast

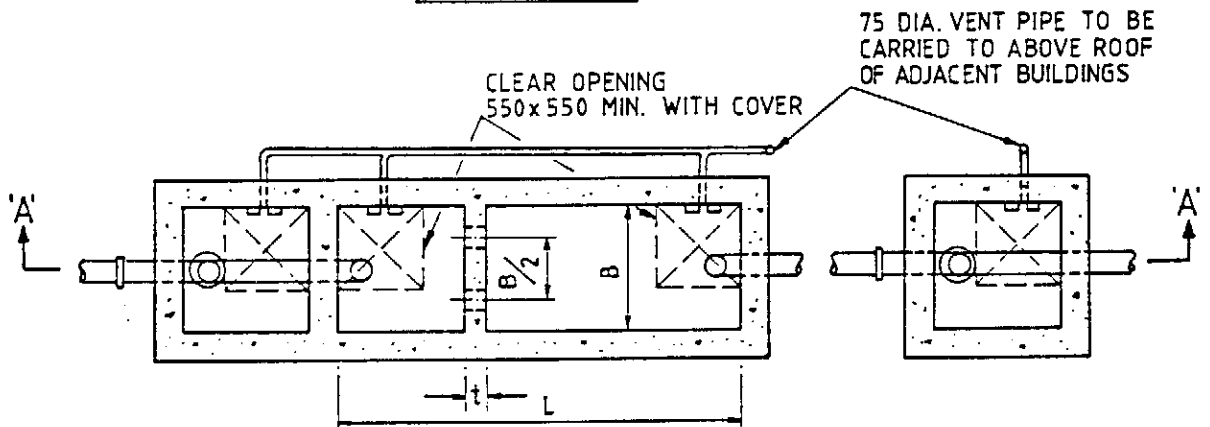
- (a) Silt removal facilities, channels and manholes should be checked to ensure that they can function properly.
- (b) Open stockpiles of construction materials (e.g. aggregates, sand and fill materials) on site should be covered with tarpaulin or similar fabric.
- (c) All temporary covers to slopes and stockpiles should be secured.

(III) Actions to be taken during or after rainstorms

- (a) Silt removal facilities, channels and manholes should be checked and maintained to ensure satisfactory working conditions. Attention should be given to safety when carrying out this work.



SECTION A-A




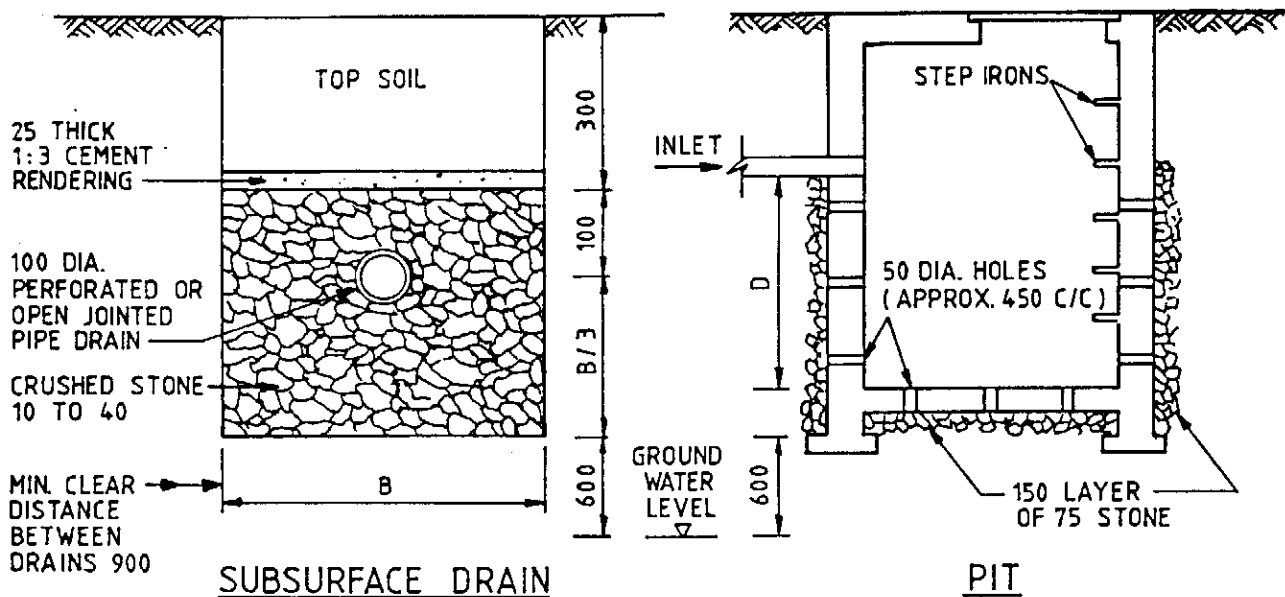
PLAN

NOTES:-

1. ALL DIMENSIONS IN MILLIMETRES 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 $0.1N$ 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
(FOR INTERIM REFERENCE ONLY)

drawing no. EP 50/D/1/5/01		group Liquid Waste Projects	
date 5/93	scale NTS	ENVIRONMENTAL PROTECTION DEPARTMENT HONG KONG	



- NOTES:-**
- ALL DIMENSIONS IN MILLIMETRES UNLESS OTHERWISE STATED
 - PERCOLATION TEST FOR DETERMINING ABSORPTION CAPACITY OF SOIL
 - EXCAVATE A HOLE 300 mm SQUARE TO THE SAME DEPTH OF THE PIT OR TRENCH.
 - FILL THE HOLE WITH APPROXIMATELY 150 mm OF WATER AND ALLOW TO SEEP AWAY COMPLETELY.
 - REFILL THE HOLE WITH WATER TO A DEPTH OF 150 mm AND OBSERVE THE TIME, IN MINUTES, FOR WATER TO SEEP COMPLETELY AWAY.
 - DIVIDE THE TIME BY 6 TO GIVE TIME TAKEN TO FALL 25 mm FOR USE IN TABLE BELOW.
 - 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	89	94
30	33	45

THE TOTAL ALLOWABLE LOADING PER DAY SHOULD EQUATE WITH THE DAILY INCOMING FLOW

4. MINIMUM CLEARANCE REQUIREMENTS FOR SOAKAWAY SYSTEMS

	DISTANCE FROM SOAKAWAY SYSTEMS (m)	
BUILDING	3	
RETAINING WALLS	6	
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)*	
CUTS OR EMBANKMENTS	30	
PATHS	1.5	
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)

**SOIL SOAKAWAY SYSTEM
(FOR INTERIM REFERENCE ONLY)**

drawing no.
EP 50/D1/5/02

group
Liquid Waste Projects

date
5/93

scale
NTS

ENVIRONMENTAL
PROTECTION
DEPARTMENT
HONG KONG



Grease Traps

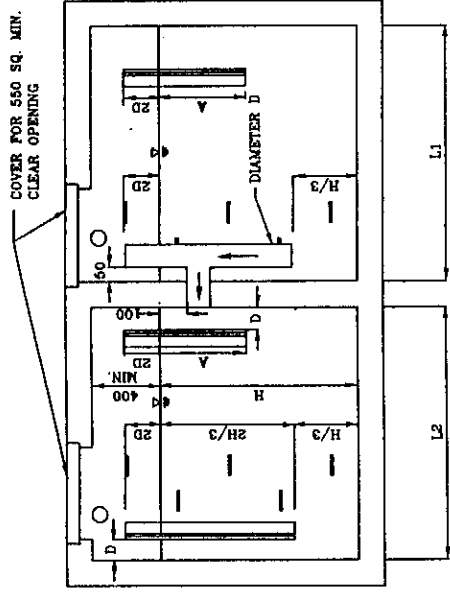
(see Drawing no. EP 50/L1/1/01A for typical details of a grease trap)

<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

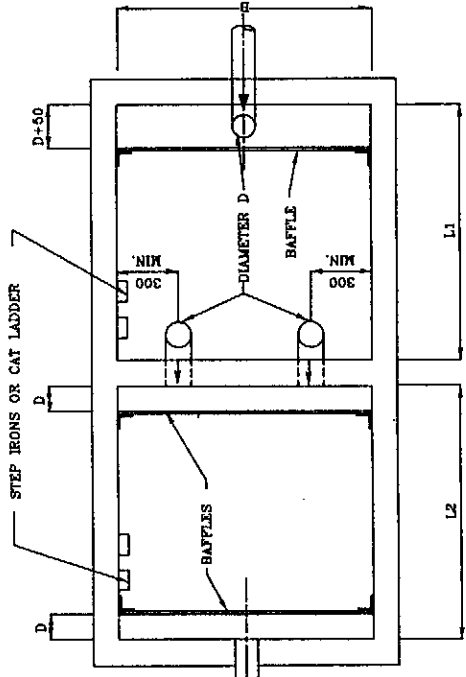
- Note
1. The minimum required grease trap retention volume tabulated above is based on an average water consumption of 0.5 m³ per day per m² of kitchen floor area, and an average working day of 16 working hours. A larger grease trap should be provided if a higher water discharge intensity is anticipated.
 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 issued under section 21 of the Water Pollution Control (Amendment) Ordinance 1990.

Notes

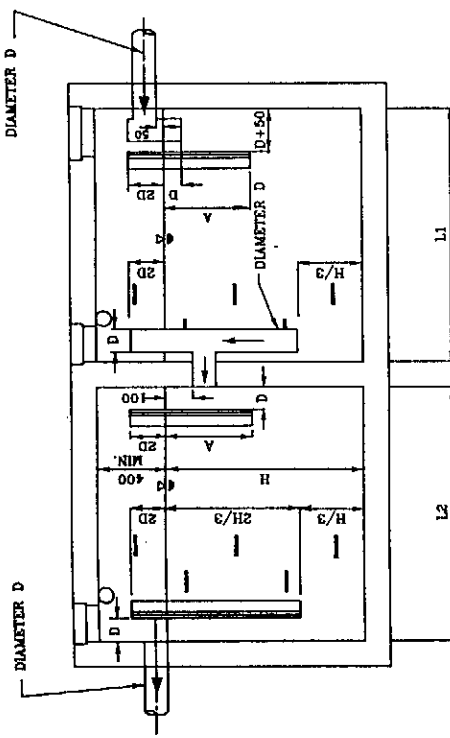
1. All dimensions are in millimetres unless otherwise stated
2. Volume = $B(L_1 + L_2)H$
3. $750 \leq B \leq L_1 \leq L_2 \leq 1800$
4. $600 \leq H \leq 1200$
For kitchen floor areas $\geq 50 \text{ m}^2$, H should be 900 minimum
5. $L_1 + L_2 = L_T$
 $2.0 \leq L_T/H \leq 3.0$
 $1500 \leq B \times L_T/H \leq 4000$
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 funnel 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 0.2mm
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



SECTION Y-Y



SECTIONAL PLAN

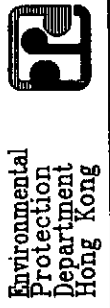


SECTION X-X

CLEAR OPENING
550 X 550 MIN.
WITH COVER

TYPICAL DETAILS OF A GREASE TRAP

Drawing No.	Scale:
EP50/L1/1/01A	NTS
Group	LIQUID WASTE PROJECTS



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. DETAILS OF PETROL INTERCEPTOR SHOWN IN THESE DRAWING IS FOR OPEN SPACE PUBLIC TRANSPORT INTERCHANGE. FOR PETROL INTERCEPTOR AT COVERED PUBLIC TRANSPORT INTERCHANGE SEE CEO STANDARD DRAWING CE 1041.
3. ALL DIMENSIONS ARE IN MILLIMETRES.
4. CONCRETE TO BE GRADE 30/20.
5. REINFORCEMENT SHALL COMPLY TO BS 4449 AND SHALL BE BENT IN ACCORDANCE WITH BS 4466.
6. COVER TO REINFORCEMENT TO BE 50 mm UNLESS OTHERWISE SPECIFIED.
7. REINFORCEMENT NOTATION :

No. OF SETS		3 x 3 R12	-	5	-	200	B	SUFFIX
No. OFF								SPACING
BAR CLASS								BAR MARK
DIAMETER								
8. MINIMUM LAP LENGTH : 40 DIAMETER OF BAR FOR MILD STEEL PLAIN BAR.
9. STRUCTURAL STEELWORK SHALL BE GRADE 43C COMPLY WITH BS 4360 UNLESS OTHERWISE SPECIFIED.
10. ALL FILLET WELDS TO BE 6 mm UNLESS OTHERWISE SPECIFIED.
11. STAINLESS STEEL ACCESS LADDER TO BE OF MINIMUM GRADE 304 S12 TO BS 970:PT1:1983.
12. FOR RSJ CONNECTIONS, SEE CEO STANDARD DRAWING CE 1020.
13. FOR DETAILS OF TOP TREATMENT TO PETROL INTERCEPTOR, SEE CEO STANDARD DRAWING CE 1021 FOR FLEXIBLE ROAD SURFACE AND HIGHWAY STANDARD DRAWING H 1006 FOR CONCRETE ROAD SLAB.
14. FOR DETAILS OF COVER TO PETROL INTERCEPTOR, SEE CEO STANDARD DRAWING CE 1022.
15. FOR DETAILS OF DESILTING OPENING COVER, SEE CEO STANDARD DRAWING CE 1023.

BAR CLASS - R= GRADE 250 PLAIN ROUND STEEL BAR

SUFFIX --- T= TOP

B= BOTTOM

NF= NEAR FACE

FF= FAR FACE

EF= EACH FACE

PETROL INTERCEPTOR
FOR OPEN PUBLIC
TRANSPORT INTERCHANGE

NEW ISSUE

AL 7/91

HIGHWAYS DEPARTMENT

REFERENCE

DRAWING No.

SCALE

H 3028/1

NOTES :-
SEE H 3028/1 FOR GENERAL NOTES

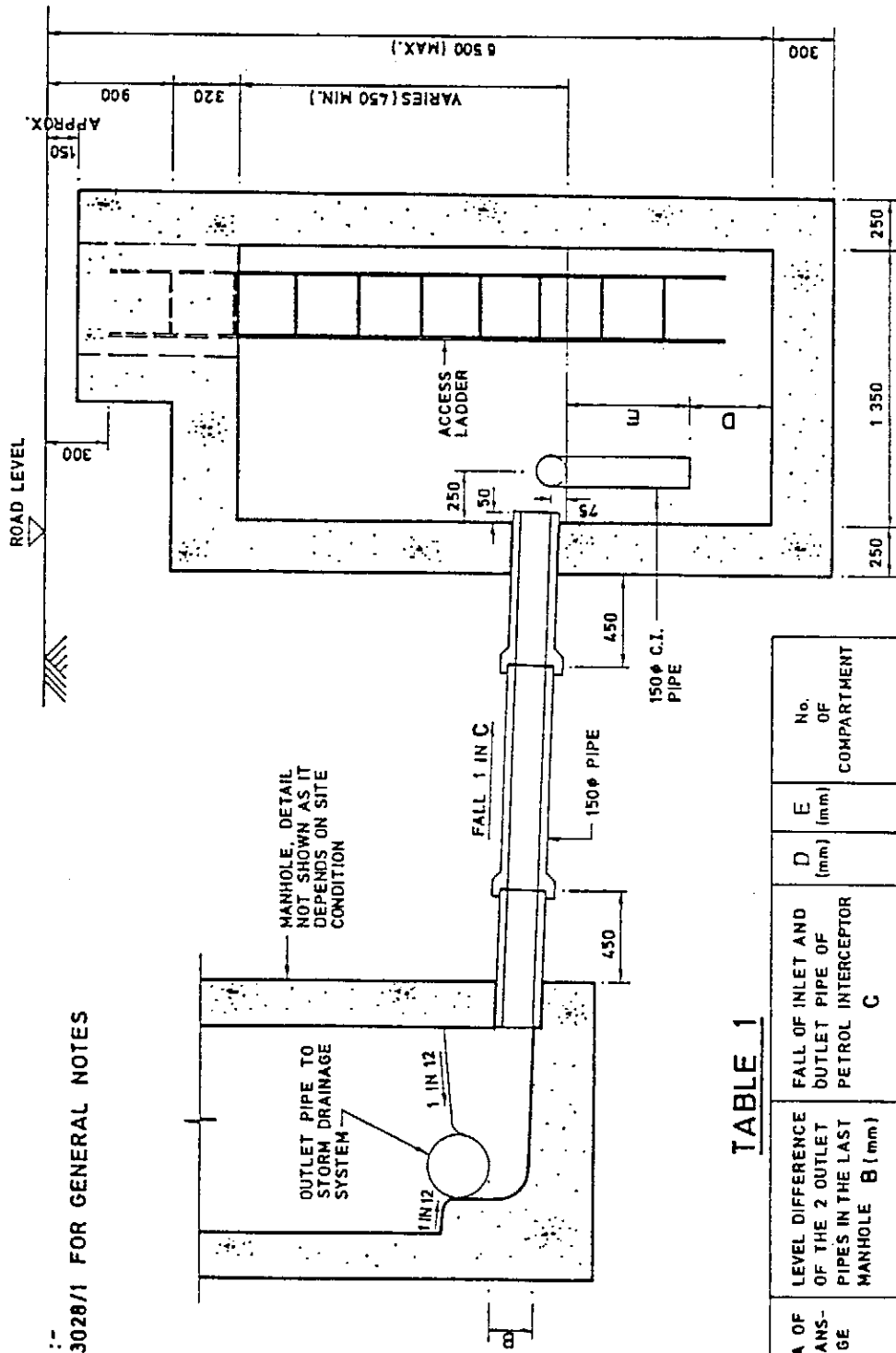
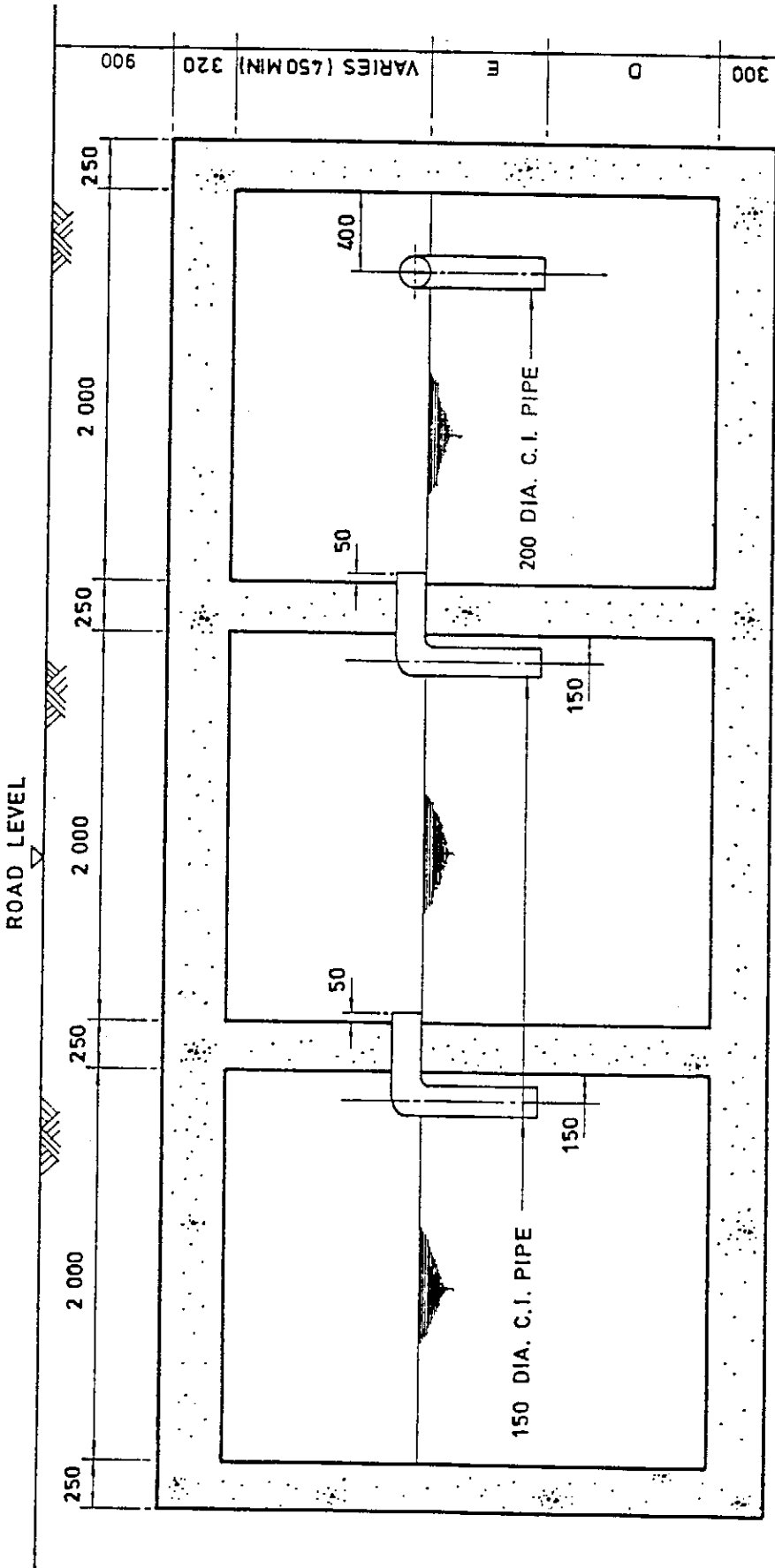


TABLE 1

CATCHMENT AREA OF THE PUBLIC TRANS-PORT 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 ≤ 1 000	60	2 00	500	400	2
1 000 < A ≤ 2 000	90	2 00	600	400	3
2 000 < A ≤ 3 000	150	2 00	550	600	4
3 000 < A ≤ 4 000	150	1 00	725	600	4

SECTION A-A

NEW ISSUE	M 7/91
HIGHWAYS DEPARTMENT	
REFERENCE	DRAWING No.
SCALE	H 3028/3
DIAGRAMMATIC	

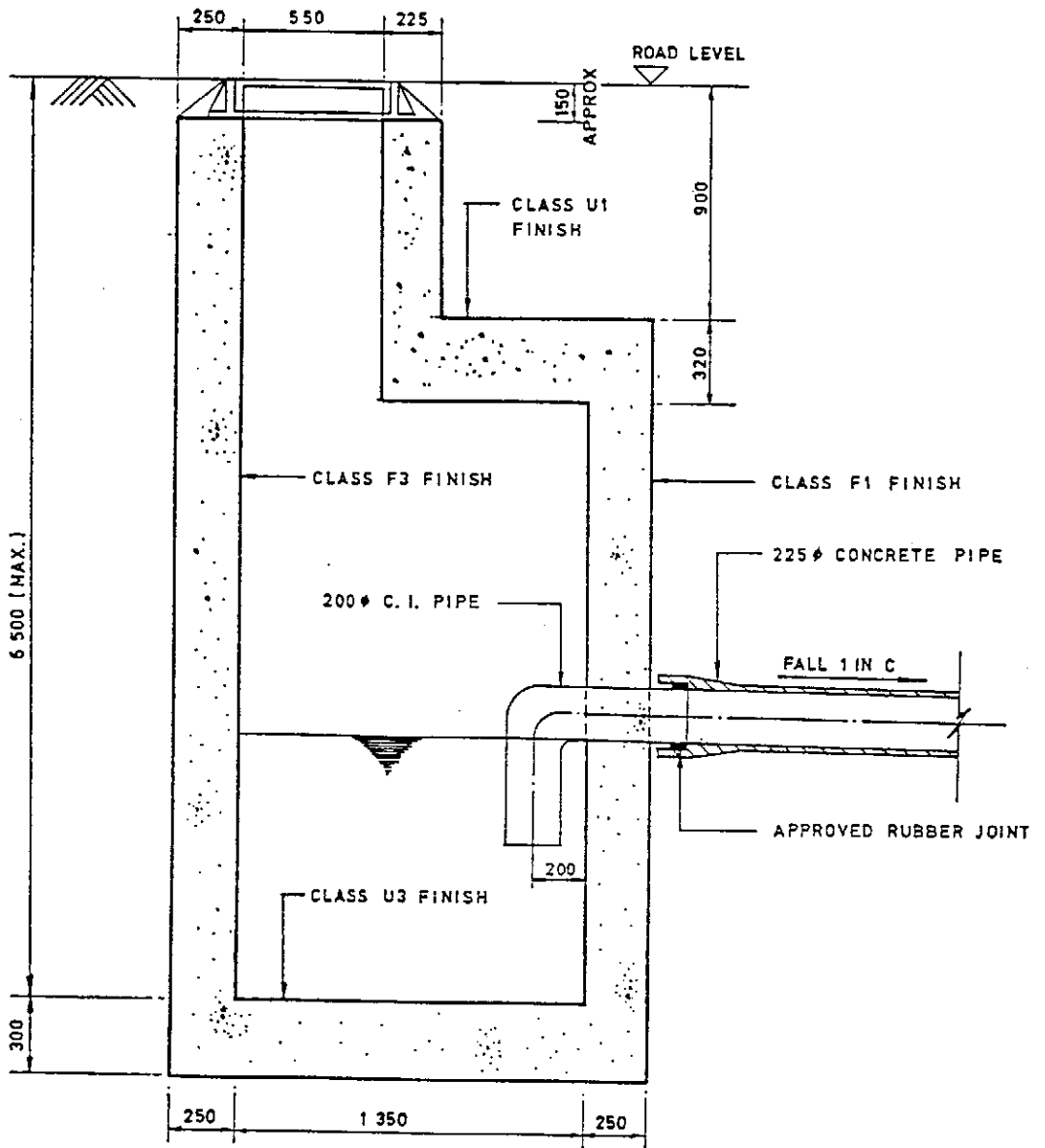


SECTION B-B
 (3 COMPARTMENT PETROL
 INTERCEPTOR SHOWN)

NOTES :-
 SEE H3028/1 FOR GENERAL NOTES

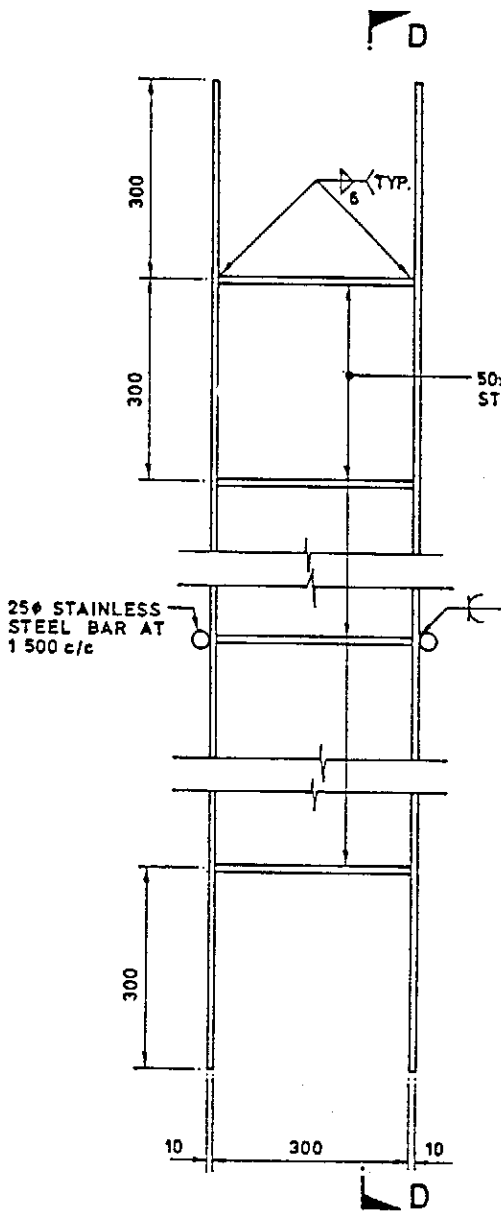
NEW ISSUE	N/L	7/91
HIGHWAYS DEPARTMENT		
REFERENCE	DRAWING No.	
SCALE	H 3028/4	
DIAGRAMMATIC		

NOTES :-
SEE H 3028/1 FOR GENERAL NOTES

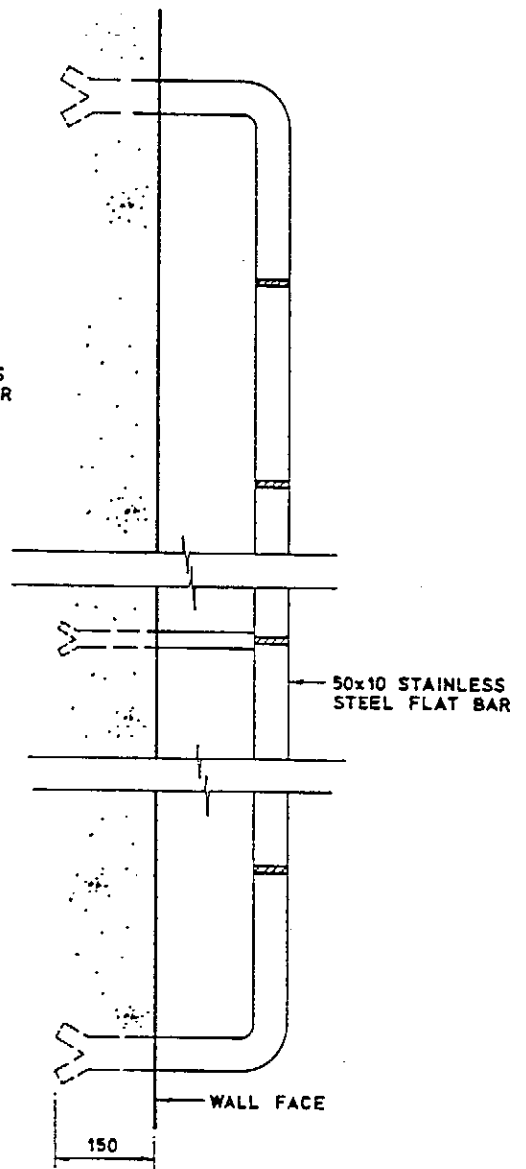


SECTION C-C

NEW ISSUE		NL	7/91
HIGHWAYS DEPARTMENT			
REFERENCE		DRAWING No.	
SCALE		H 3028/5	
1: 25			

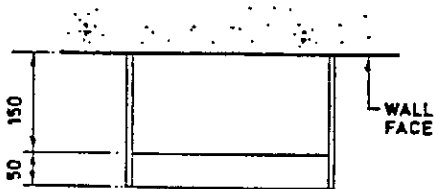


ELEVATION



SECTION D-D

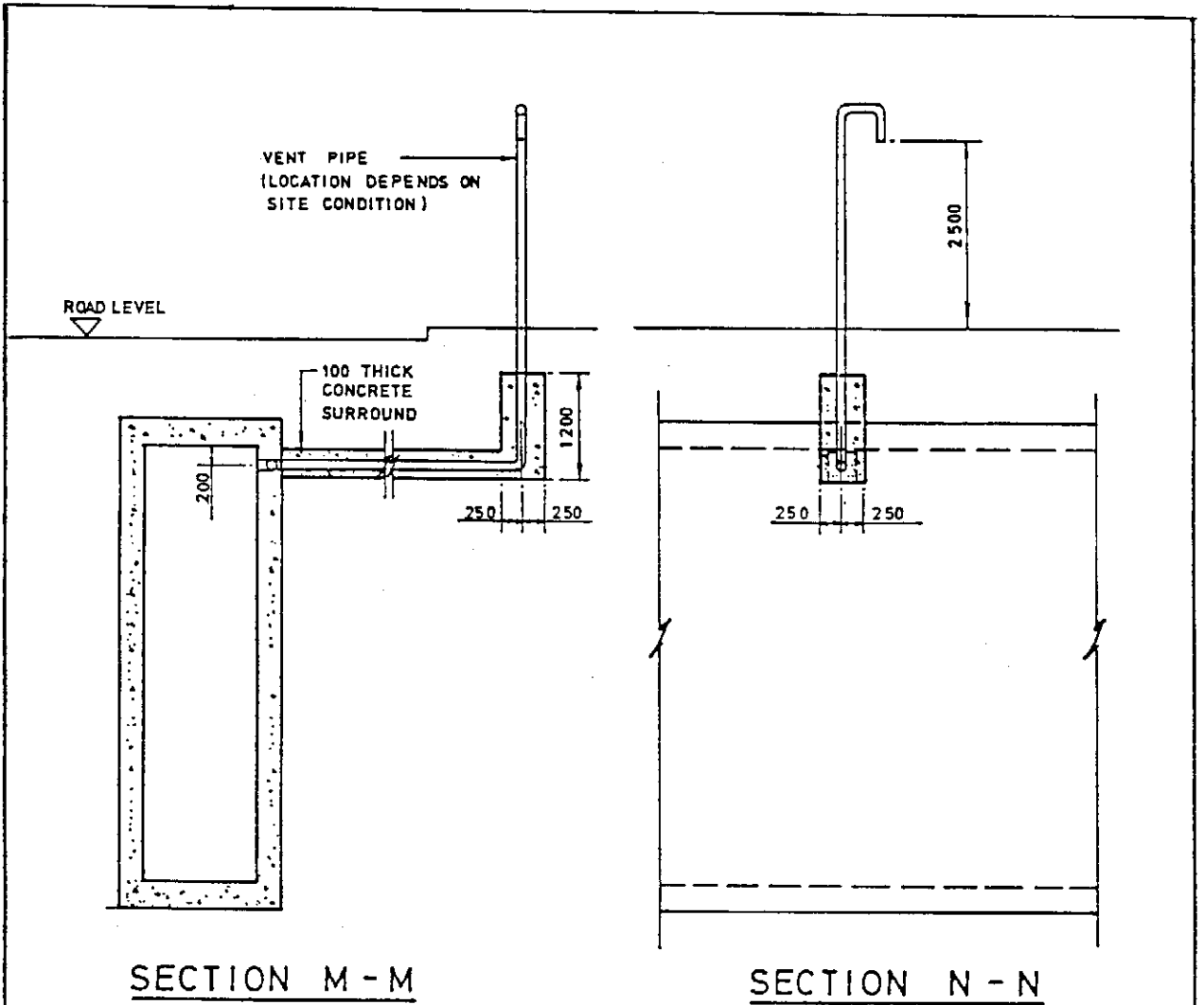
NOTES:-
SEE H 3028/1 FOR GENERAL NOTES



PLAN

ACCESS LADDER

NEW ISSUE		NL	7/91
HIGHWAYS DEPARTMENT			
REFERENCE		DRAWING No.	
SCALE		H 3028/6	
1 : 10			

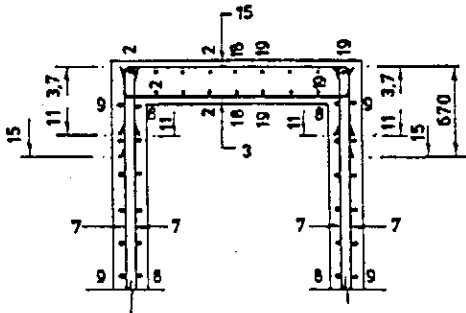


NOTES:-

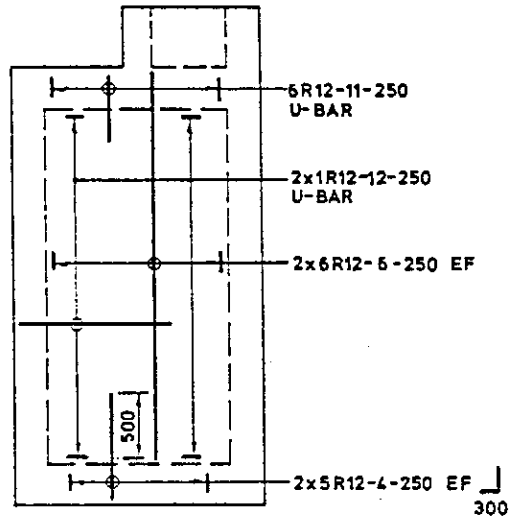
SEE H3028/1 FOR GENERAL NOTES

NEW ISSUE		NL	7/91
HIGHWAYS DEPARTMENT			
REFERENCE		DRAWING No.	
SCALE		H 3028/7	
DIAGRAMMATIC			

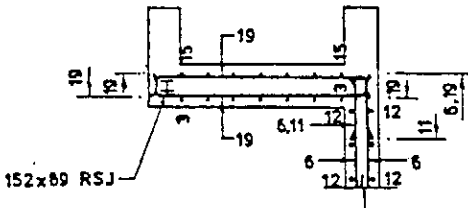
NOTES :-
SEE H 3028 /1 FOR GENERAL NOTES



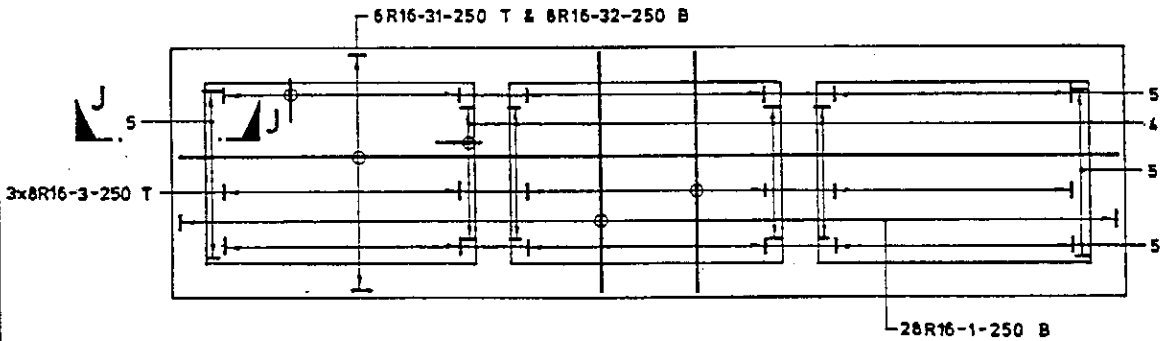
SECTION F-F



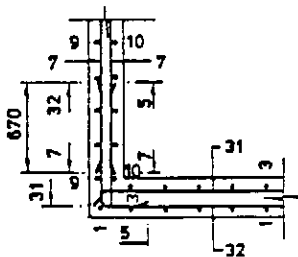
INTERNAL WALL



SECTION G-G

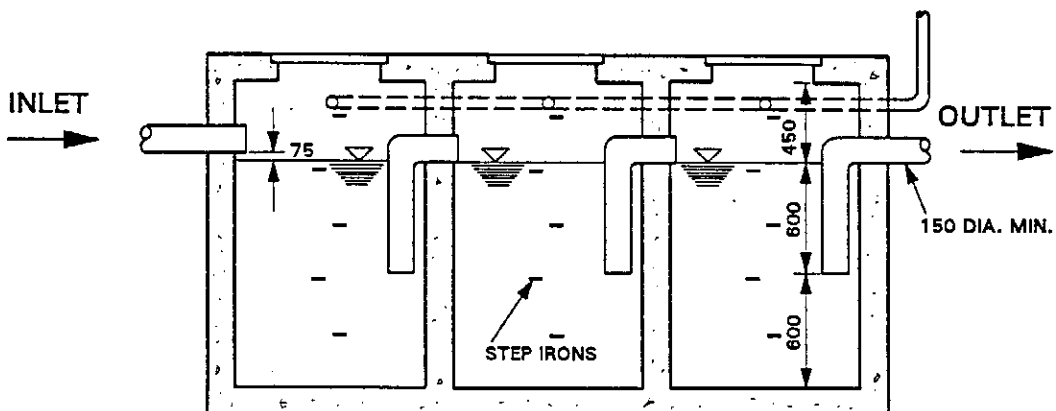


BASE SLAB

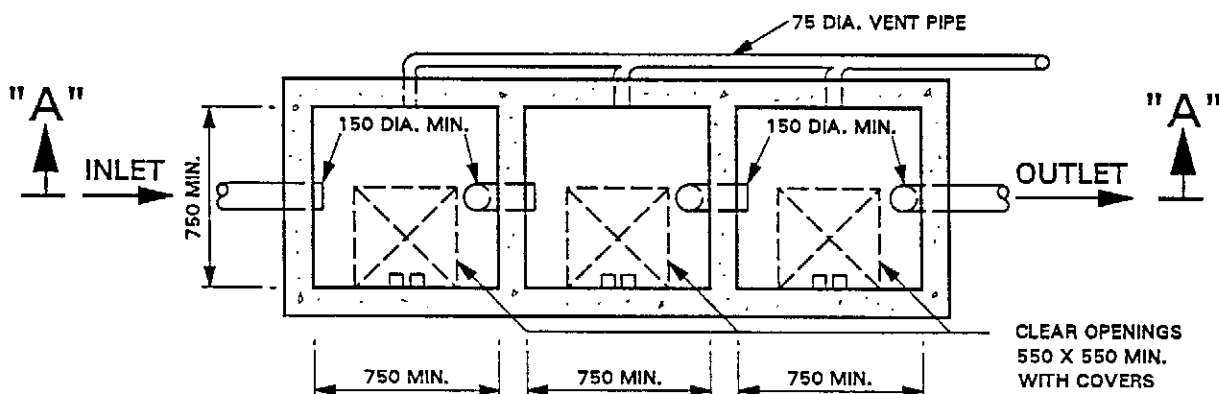


SECTION J-J

NEW ISSUE		NL	7/91
HIGHWAYS DEPARTMENT			
REFERENCE		DRAWING No.	
SCALE		H 3028/10	
1:50			



SECTION A - A



PLAN

NOTES :

1. ALL DIMENSIONS ARE IN MILLIMETRES

TYPICAL DETAILS OF
A PETROL INTERCEPTOR

drawing no.
EP 50/D1/1/01

group
Liquid Waste Projects

date
5/93

scale
NTS

ENVIRONMENTAL
PROTECTION
DEPARTMENT
HONG KONG



LEGEND :
Water Control Zones

- ① Tolo Harbour & Channel (Apr 87)
- ② Southern (Aug 88)
- ③ Port Shelter (Aug 89)
- ④ Junk Bay (Aug 89)
- ⑤ Deep Bay (Dec 90)
- ⑥ Mirs Bay (Dec 90)
- ⑦ North Western (Apr 92)
- ⑧ Western Buffer (Jun 93)
- ⑨ Eastern Buffer (Jun 93)
- ⑩ Tolo Harbour Supplementary (Jun 93)
- ⑪ Southern Supplementary (Jun 93)

Victoria Harbour

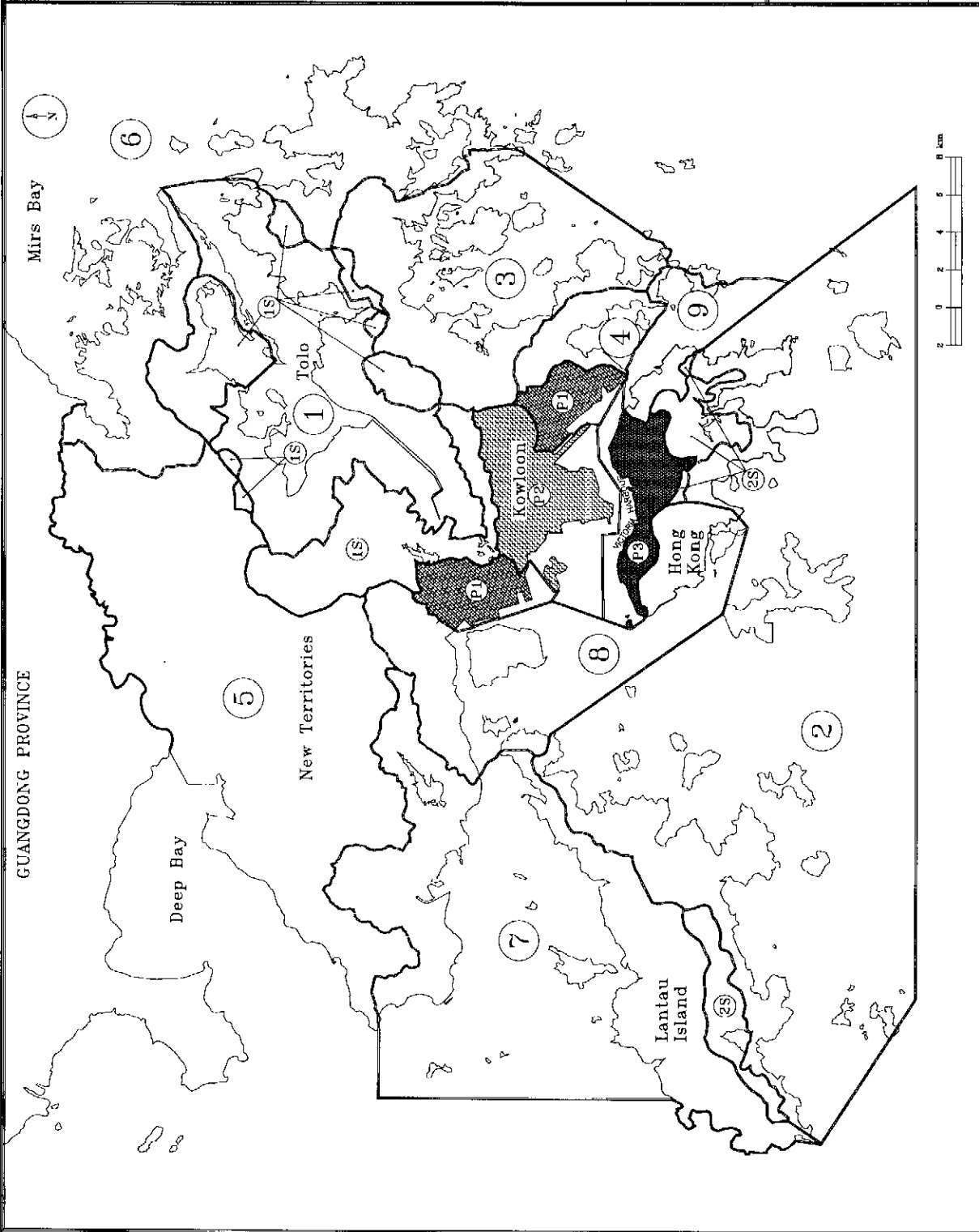
- P1 Phase I (Nov 94)
- P2 Phase II
- P3 Phase III

Implementation of water pollution control ordinance



HONG KONG GOVERNMENT
 ENVIRONMENTAL PROTECTION DEPARTMENT

Waste & Water Policy Group

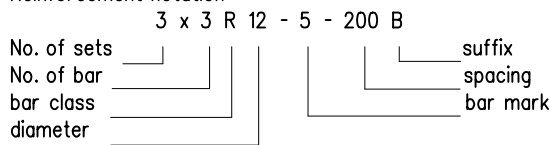


Appendix E

Highways Department Standard Drawings
Of Petrol Interceptor
(H3134 – H3144)
(for reference only)

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

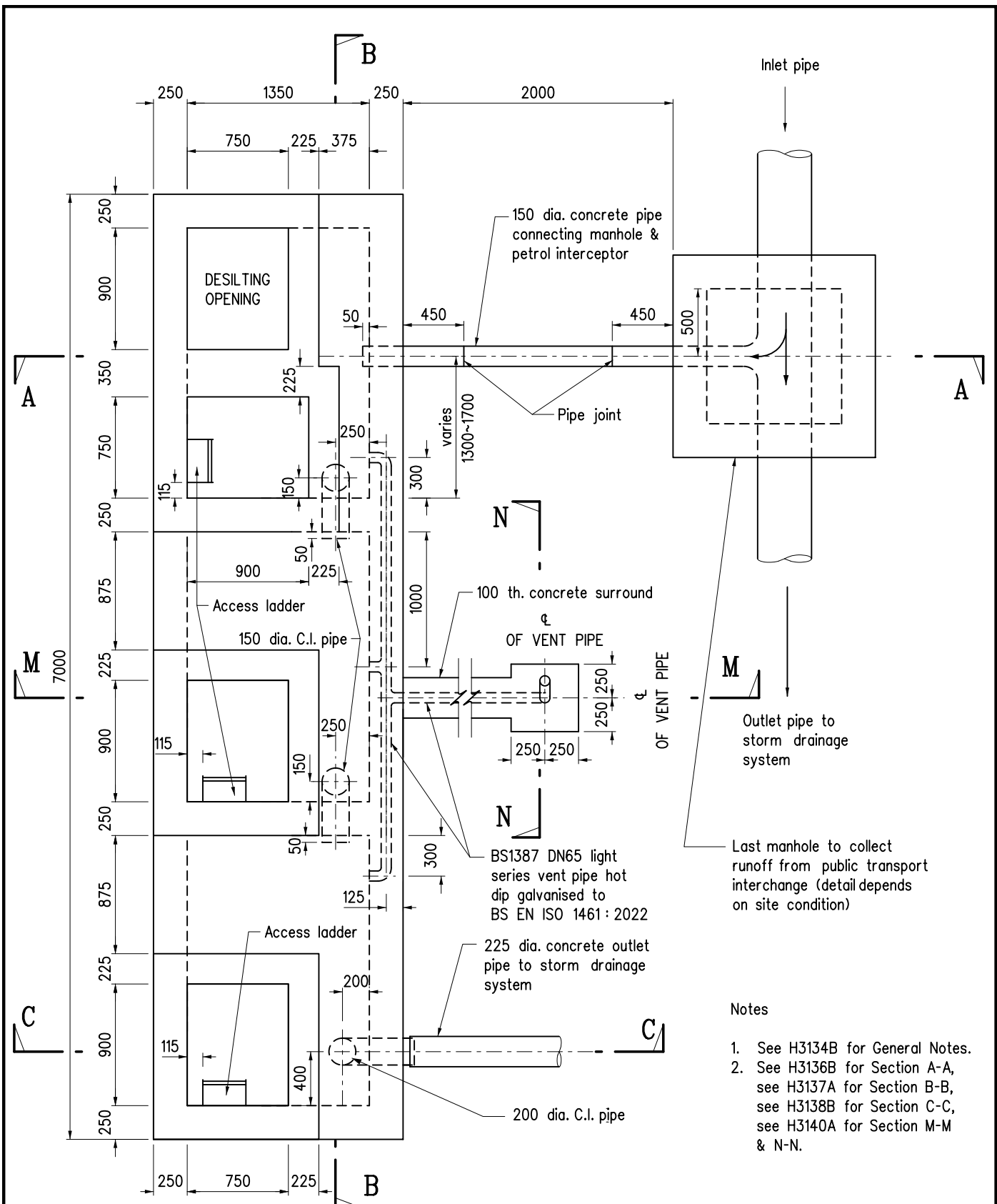
REFERENCE

DRAWING No.

CAD

SCALE

H 3134B



PLAN

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

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.

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

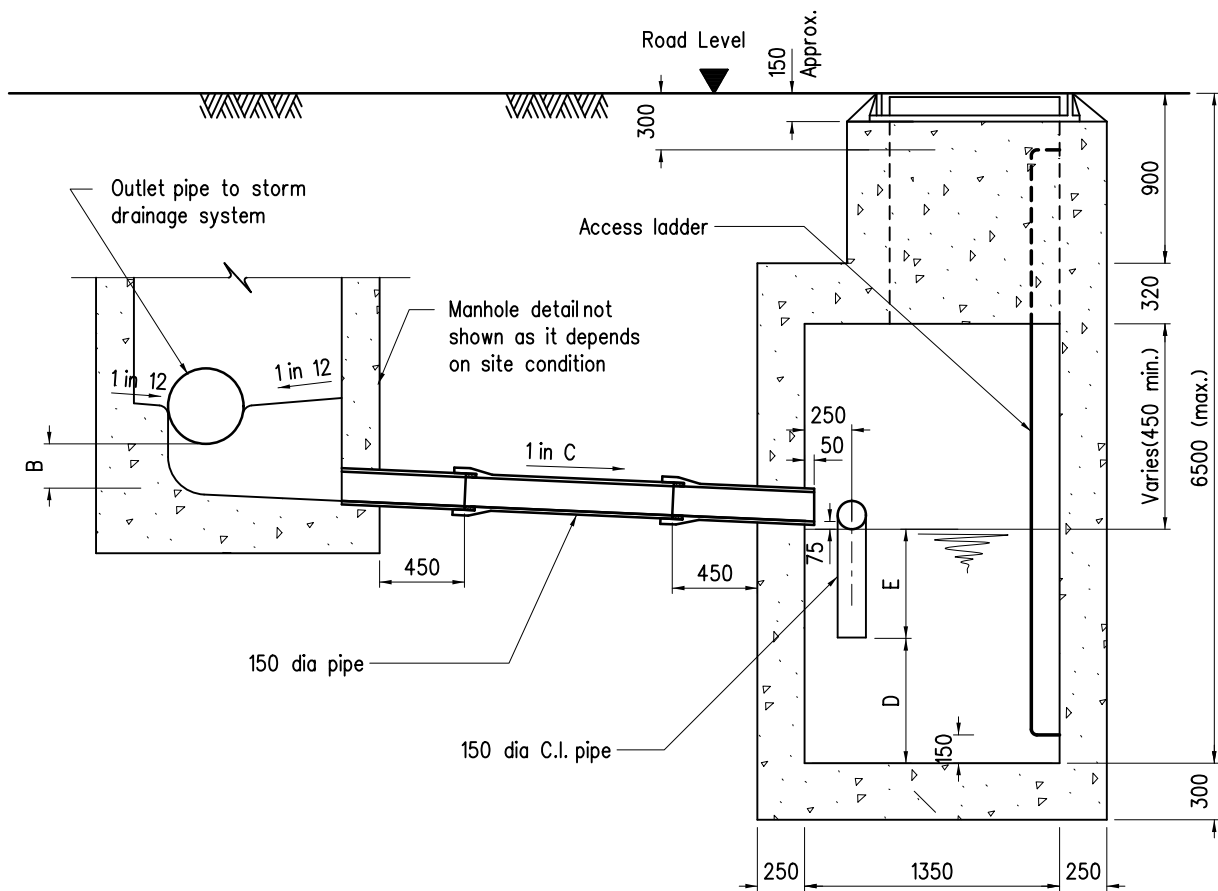
**PETROL INTERCEPTOR
FOR OPEN PUBLIC
TRANSPORT INTERCHANGE
(SHEET 2 OF 11)**

HIGHWAYS DEPARTMENT

REFERENCE	DRAWING No.	CAD
SCALE	H 3135C	
Diagrammatic		

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

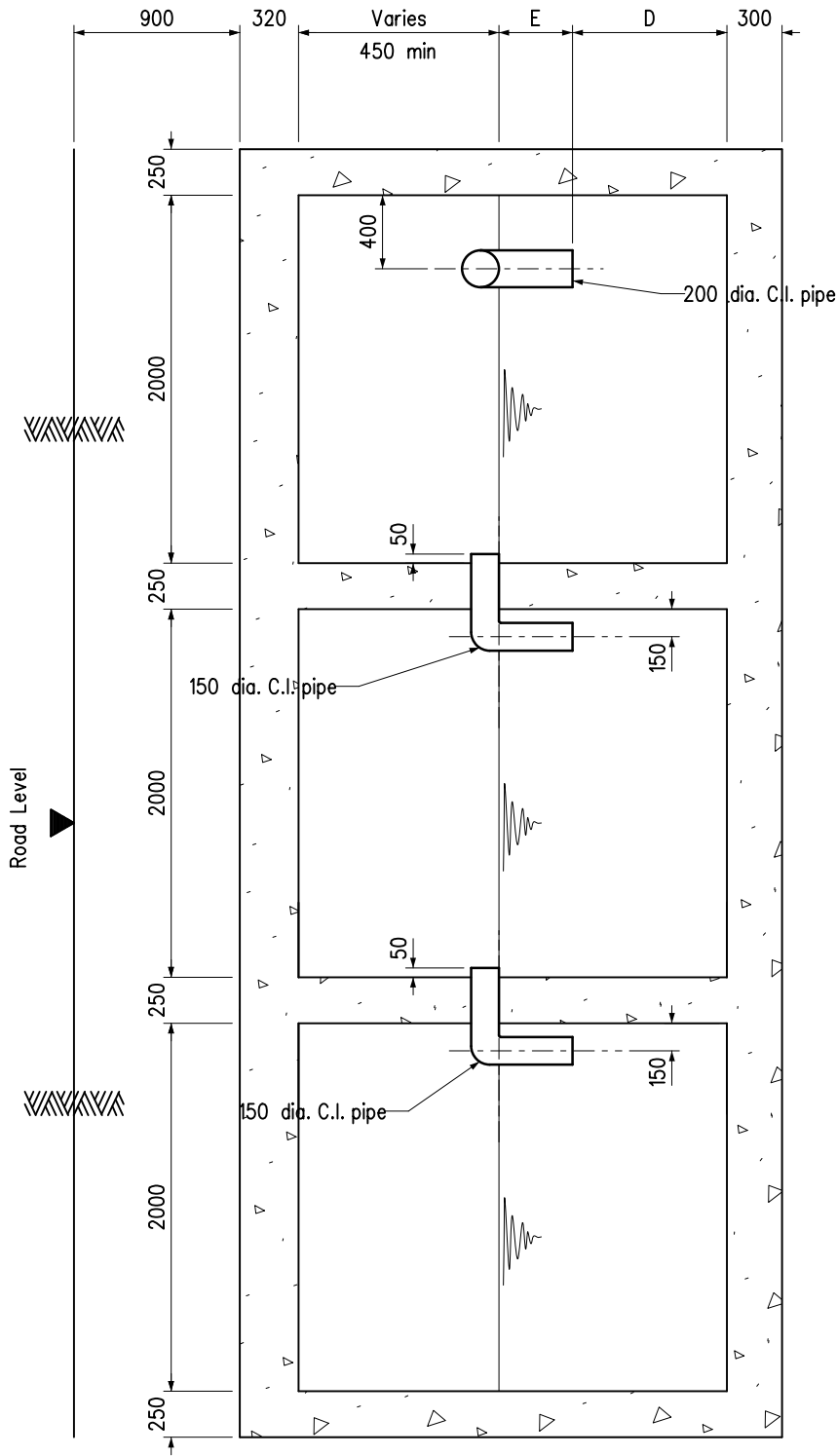
DRAWING No.

CAD

SCALE

Diagrammatic

H 3136B



SECTION B - B

(3 compartment petrol interceptor shown)

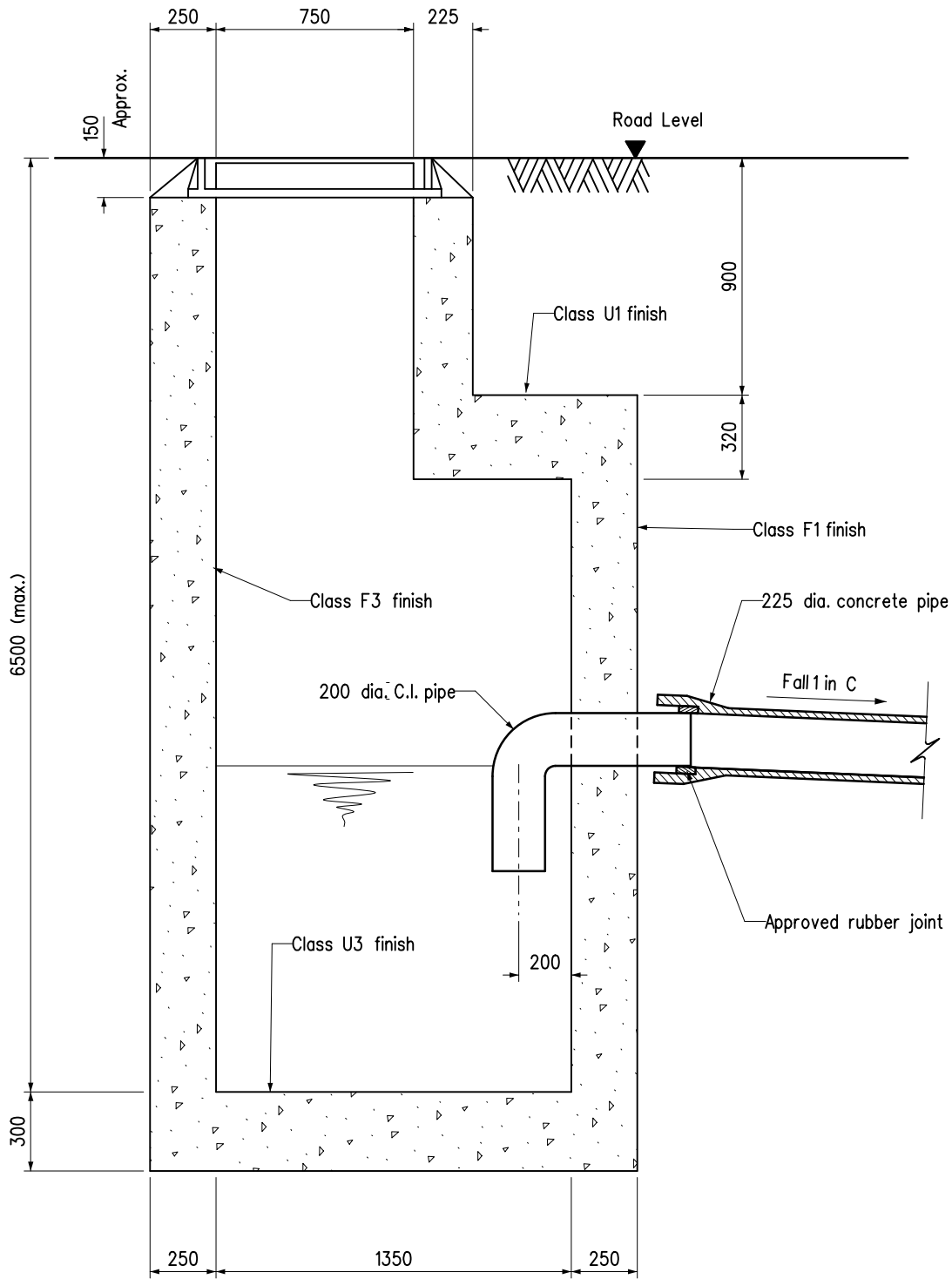
Note :
See H3134B for general notes.

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

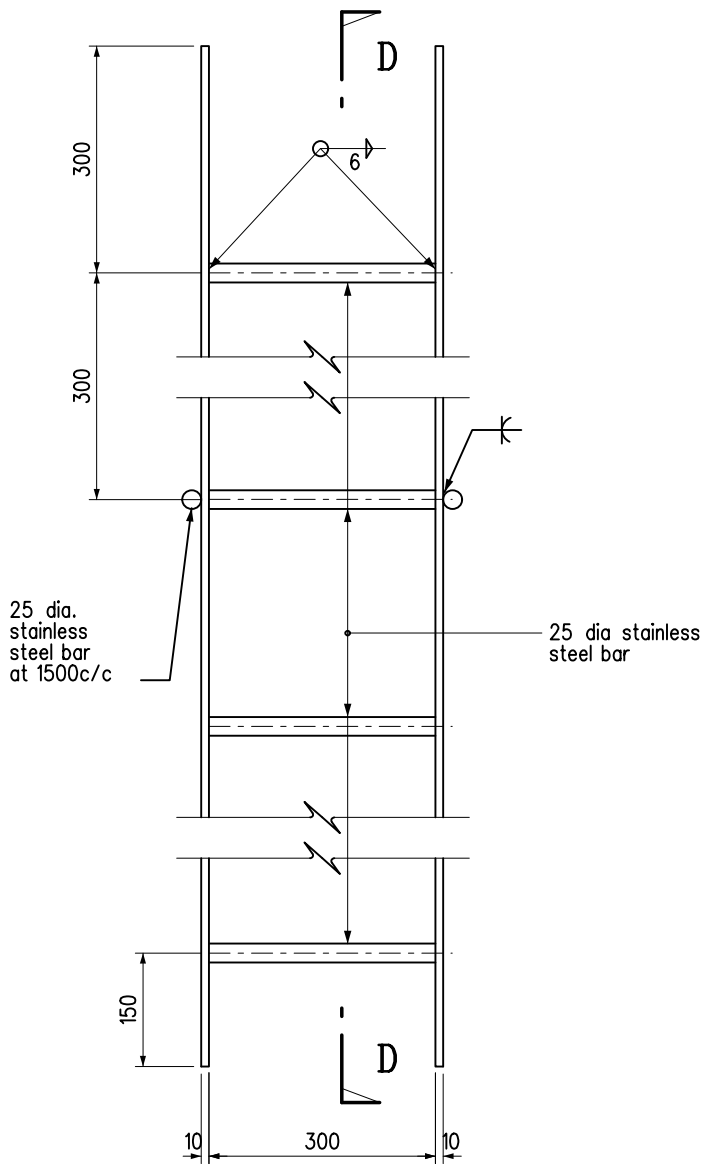
DRAWING No.

CAD

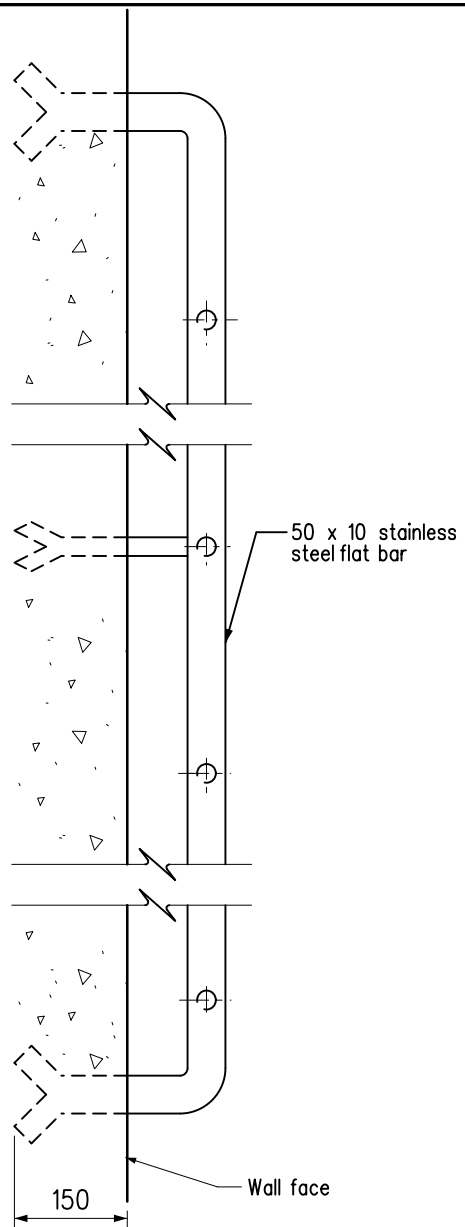
SCALE

1: 25

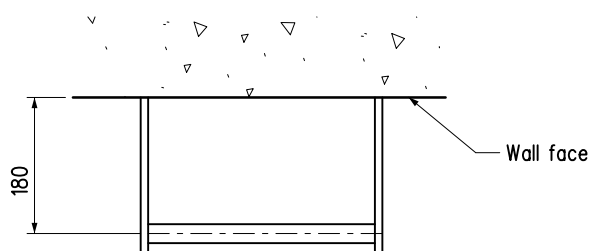
H 3138B



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

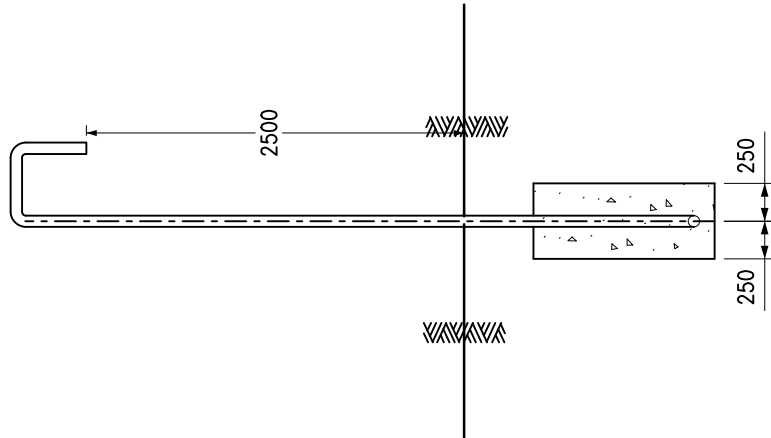
DRAWING No.

CAD

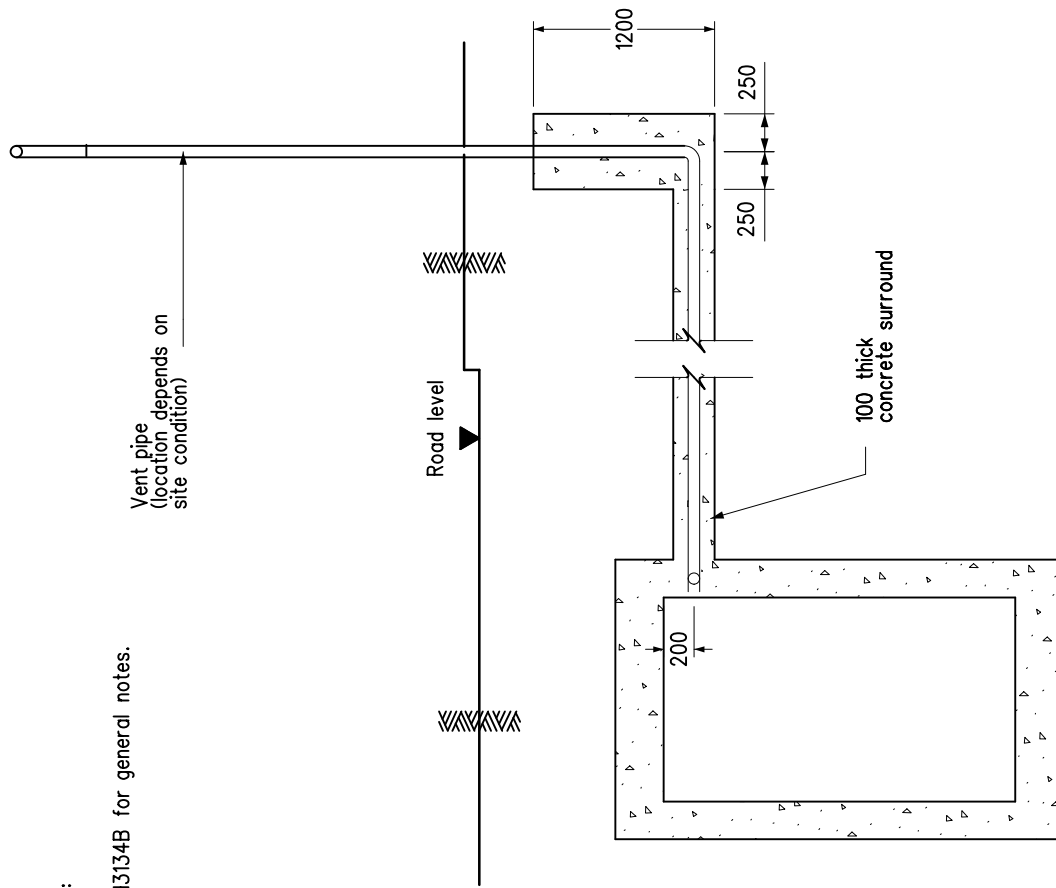
SCALE

1 : 10

H 3139B



SECTION N - N



SECTION M - M

Note :
See H3134B for general notes.

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

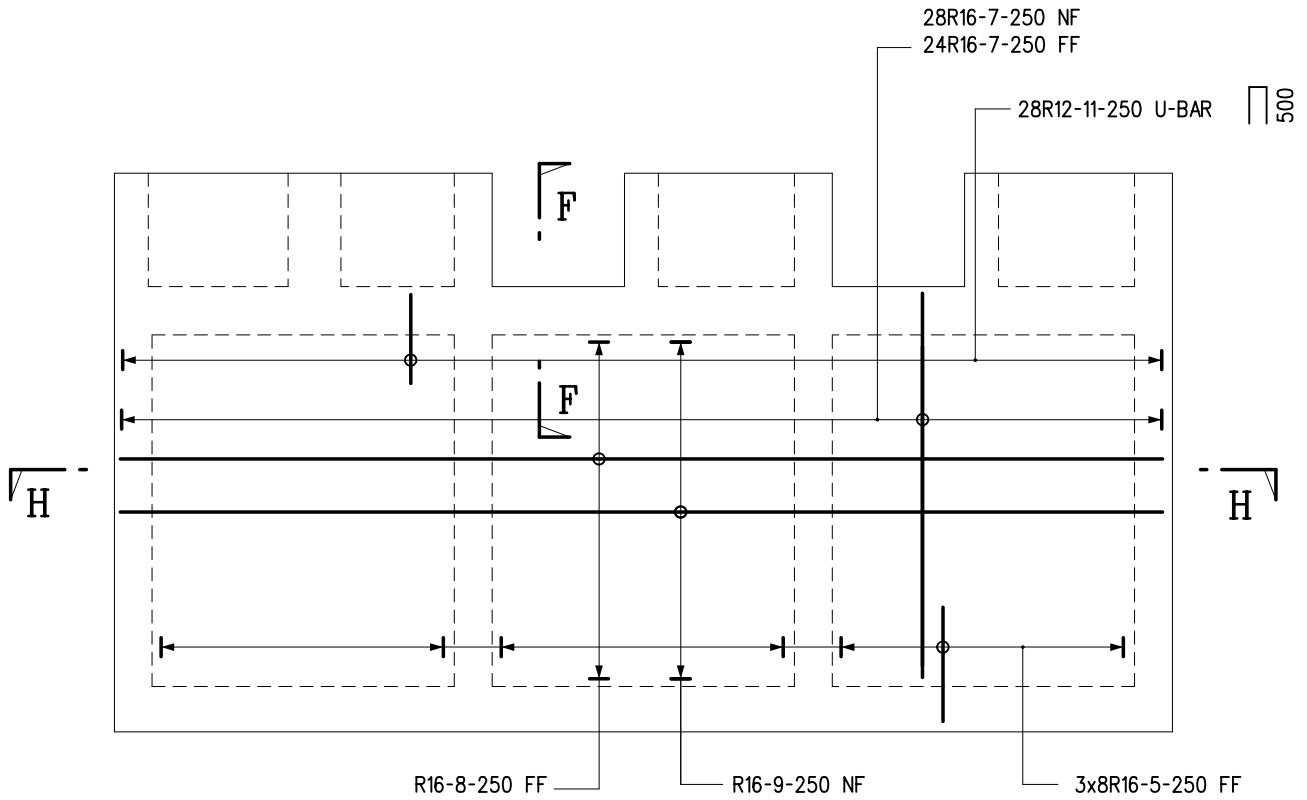
DRAWING No.

CAD

SCALE

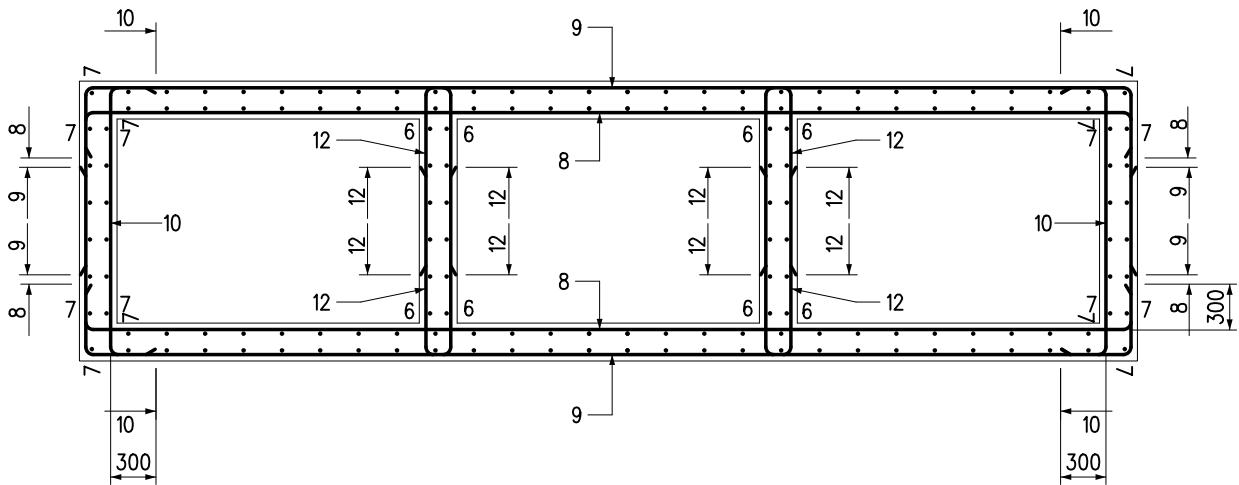
Diagrammatic

H 3140A

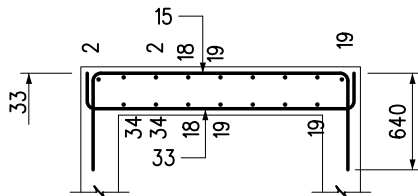


VIEW A

view B similar but opp. handed



SECTION H - H



SECTION K - K

wall bars not shown for clarity

Notes :

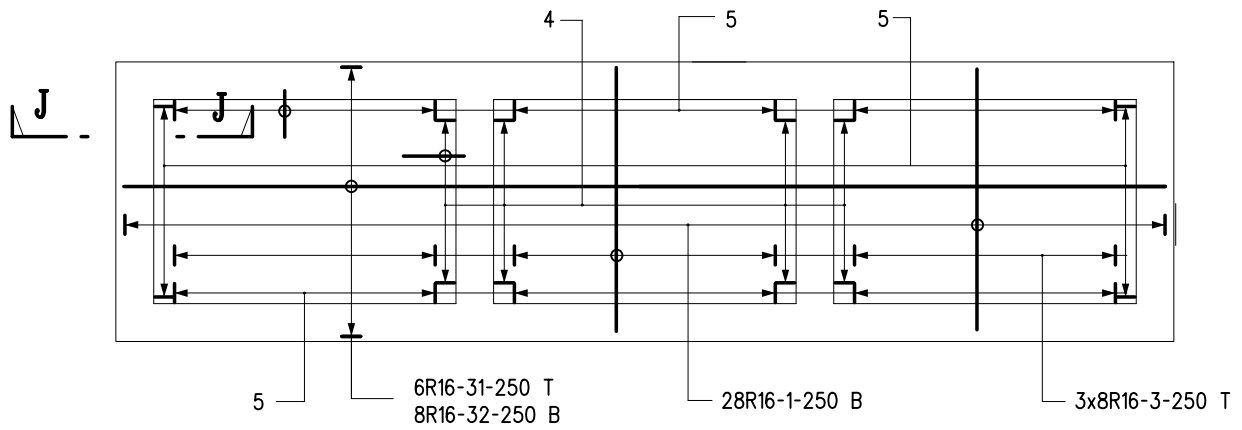
1. See H3134B for general notes.
2. See H3143B for Section F-F.

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

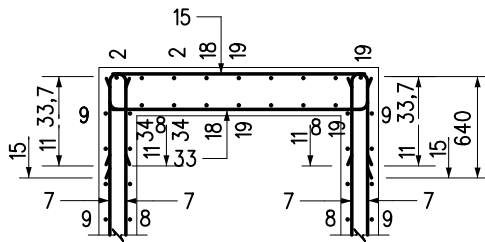
**PETROL INTERCEPTOR
FOR OPEN PUBLIC
TRANSPORT INTERCHANGE
(SHEET 9 OF 11)**

HIGHWAYS DEPARTMENT

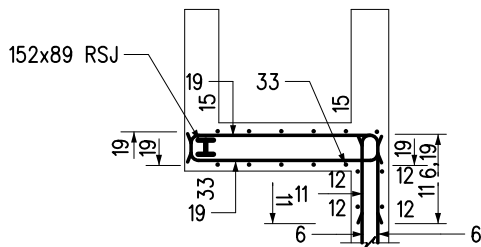
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SCALE	H 3142B	
1 : 50		



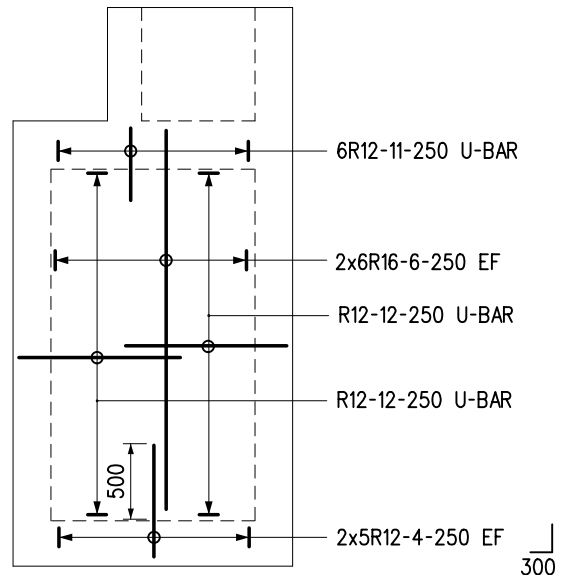
BASE SLAB



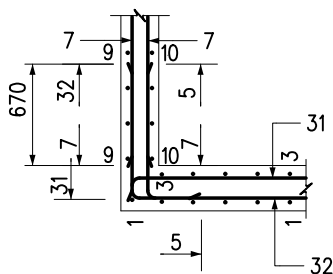
SECTION F - F



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

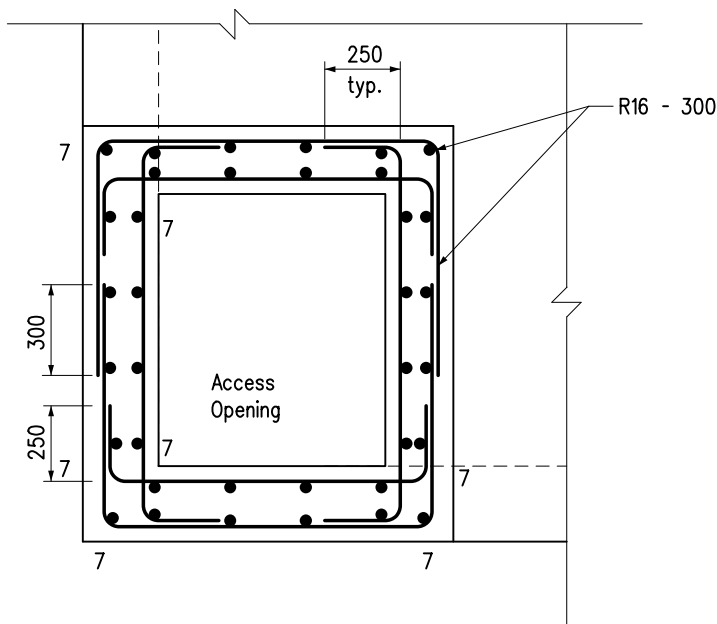
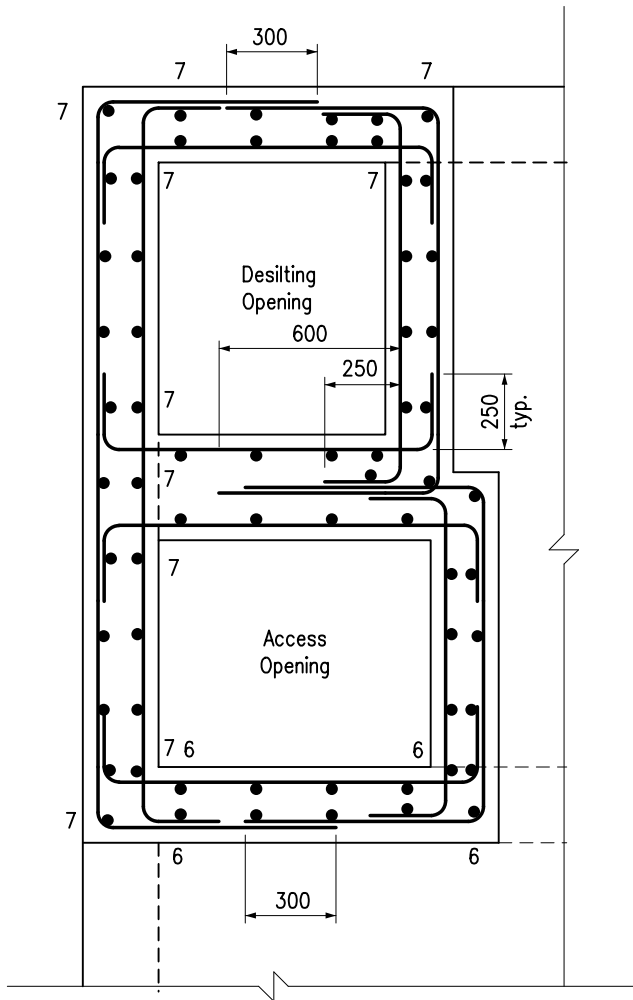
DRAWING No.

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
REF.	REVISION	SIGNATURE	DATE

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

HIGHWAYS DEPARTMENT

REFERENCE

DRAWING No.

CAD

SCALE

1 : 25

H 3144B