

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

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Report Number: C1011 Rev A

Date: Feb 2025

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# CONTENTS

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1	THE PROPOSAL .....	1
1.1	Type of Temporary Carpark and Layout.....	1
1.2	Purpose of this Report.....	1
2	SITE CONDITIONS.....	2
2.1	Site Description .....	2
3	STORMWATER DRAINAGE FACILITIES.....	2
3.1	Existing Stormwater Drainage Facilities .....	2
4	REQUIREMENTS OF WATER SUPPLIES DEPARTMENT .....	3
4.1	Requirements Regarding WGG.....	3
5	PLANNING CONSIDERATIONS AND RISK ASSESSMENT .....	3
5.1	Planning Considerations and Actions to be Taken .....	3
5.2	Risk Assessment .....	5
6	CONCLUSION .....	6

## Appendices

### **Appendix A**

Drawing

### **Appendix B**

Site Photos

### **Appendix C**

**Electric Equipment Container** / Guard House

(for reference only)

### **Appendix D**

EPD Professional Persons Environmental Consultative Committee Practice Note

(ProPECC PN) 1/94

(for reference only)

### **Appendix E**

Highways Department Standard Drawings

Of Petrol Interceptor

(H3134 – H3144)

(for reference only)

### **Appendix F**

**Photovoltaic System**

(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 **25** 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 **electric equipment** 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 (**about 180m<sup>2</sup>**). 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. The electrical equipment container is purely for electric equipment of the photovoltaic system and guard house purpose. The operation of the container / guard house will not cause contamination to the WGG;
- XVI. 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 (catalogue is attached in **Appendix F** for reference). Any not functioning parts will be replaced by a new item and returned to the corresponding company. No repair works will be carried out on site. The operation of the solar photovoltaic shelter will not cause contamination to the WGG. The panels will only be cleaned by dry ragging and no water washing activities will be allowed within the site;
- XVII. The electric vehicles do not produce any contaminants and operation of the vehicle park will not cause contamination to the WGG. No washing activities will be allowed within the site;
- XVIII. 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;

- XIX. Regular site inspection would be conducted to ensure the implementation of necessary preventive measures;
- XX. 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;
- XXI. Concrete paved surface is provided to avoid any contamination of oil / grease leakage to the ground;
- XXII. 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.

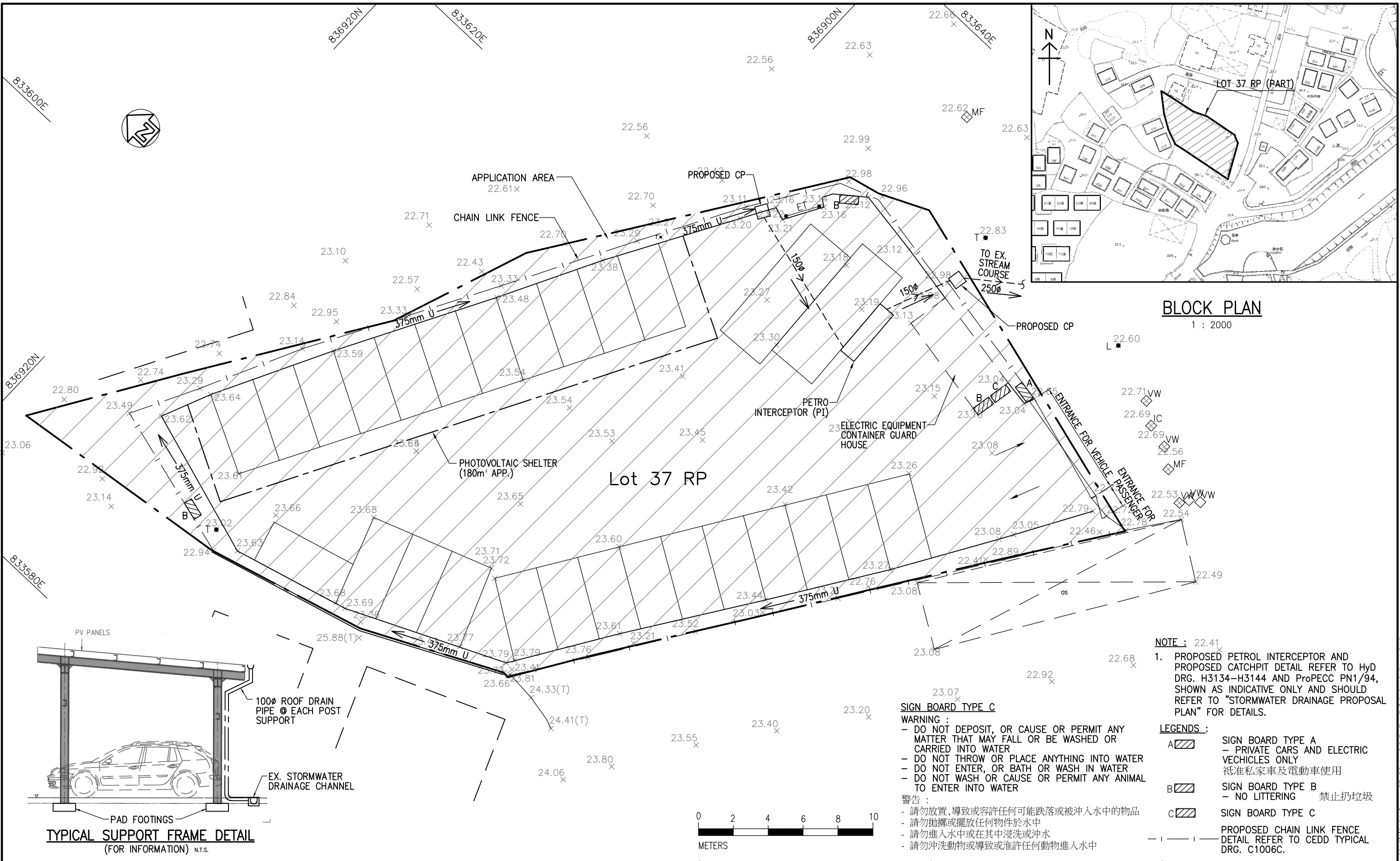
The measures as listed in this report are considered effective and applicable to the captioned site conditions. The TPB is advised to grant permission to the application.

## Appendix A

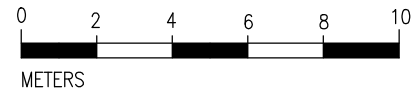
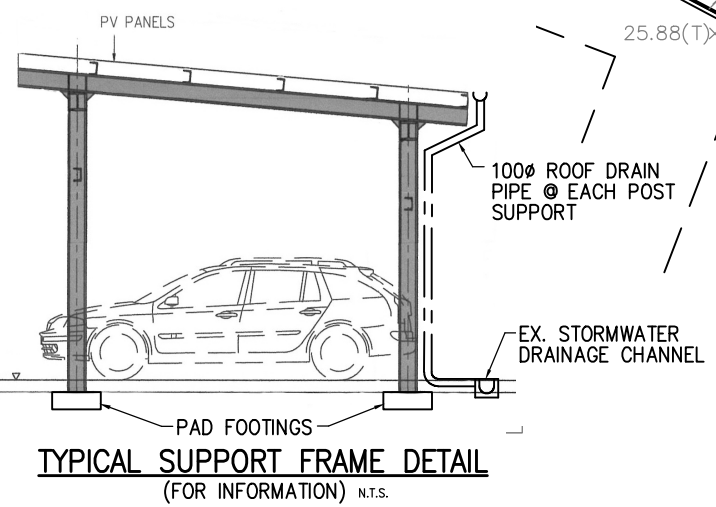
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### Drawing





**BLOCK PLAN**  
1 : 2000



**NOTE :** 22.41  
1. PROPOSED PETROL INTERCEPTOR AND PROPOSED CATCHPIT DETAIL REFER TO HyD DRG. H3134-H3144 AND ProPECC PN1/94, SHOWN AS INDICATIVE ONLY AND SHOULD REFER TO "STORMWATER DRAINAGE PROPOSAL PLAN" FOR DETAILS.

**SIGN BOARD TYPE C**  
**WARNING :**  
- DO NOT DEPOSIT, OR CAUSE OR PERMIT ANY MATTER THAT MAY FALL OR BE WASHED OR CARRIED INTO WATER  
- DO NOT THROW OR PLACE ANYTHING INTO WATER  
- DO NOT ENTER, OR BATH OR WASH IN WATER  
- DO NOT WASH OR CAUSE OR PERMIT ANY ANIMAL TO ENTER INTO WATER  
**警告 :**  
- 請勿放置, 導致或容許任何可能跌落或被沖入水中的物品  
- 請勿拋擲或擺放任何物件於水中  
- 請勿進入水中或在其中浸洗或沖水  
- 請勿沖洗動物或導致或准許任何動物進入水中

**LEGENDS :**  
A [Hatched Box] SIGN BOARD TYPE A - PRIVATE CARS AND ELECTRIC VEHICLES ONLY  
    - 祇准私家車及電動車使用  
B [Hatched Box] SIGN BOARD TYPE B - NO LITTERING 禁止扔垃圾  
C [Hatched Box] SIGN BOARD TYPE C  
- - - - - PROPOSED CHAIN LINK FENCE  
    DETAIL REFER TO CEDD TYPICAL DRG. C1006C.

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

DATE : 24-02-2025 D:\PROJECT 2018\C1011\Lot 37 RP in D.D.7, Tai Po\C1011SK01-A.DWG

## **Appendix B**

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### **Site Photos**

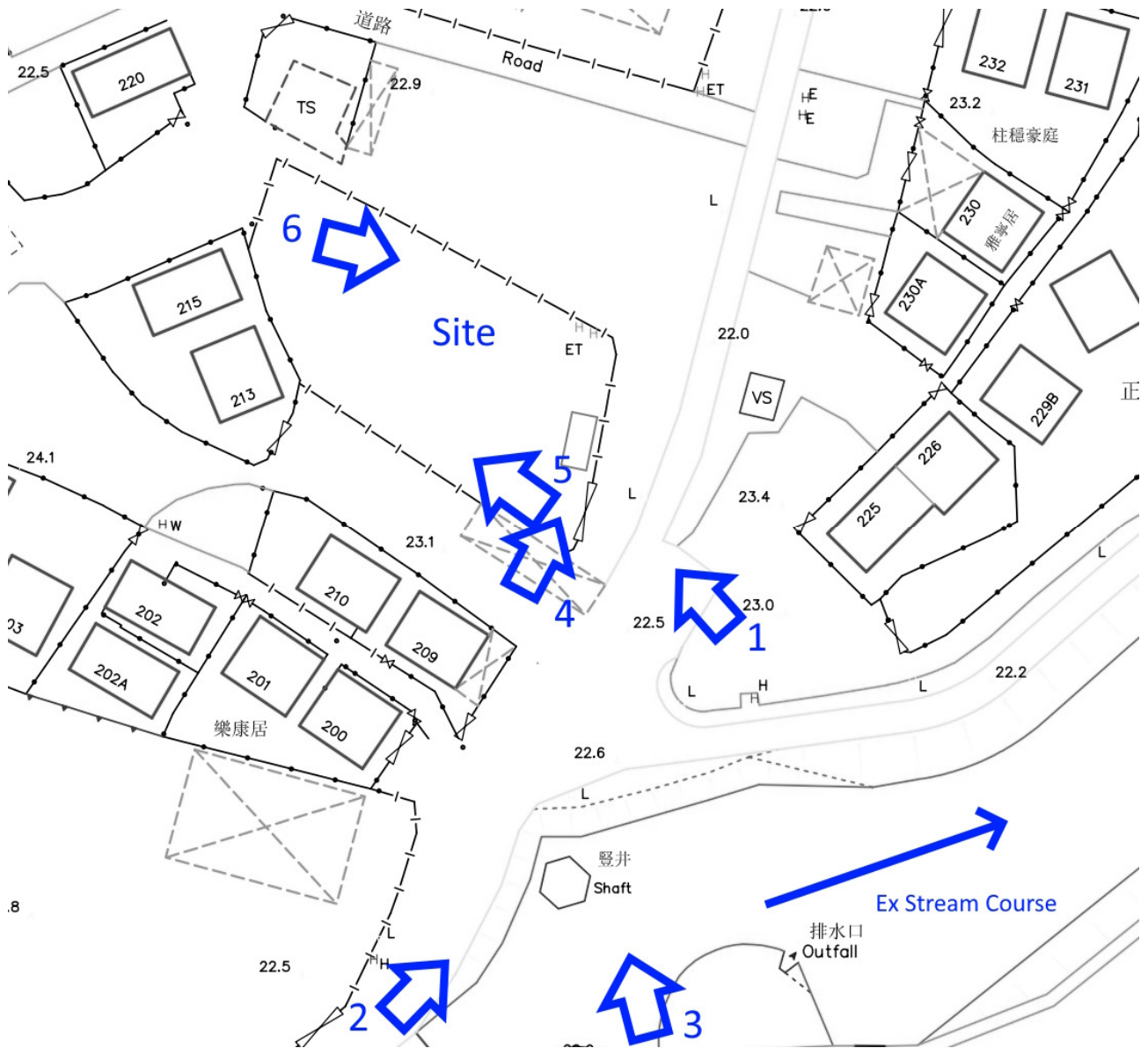


Photo Location Plan (22 Jan 2025)



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

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**Electric Equipment Container / Guard House**  
(for reference only)

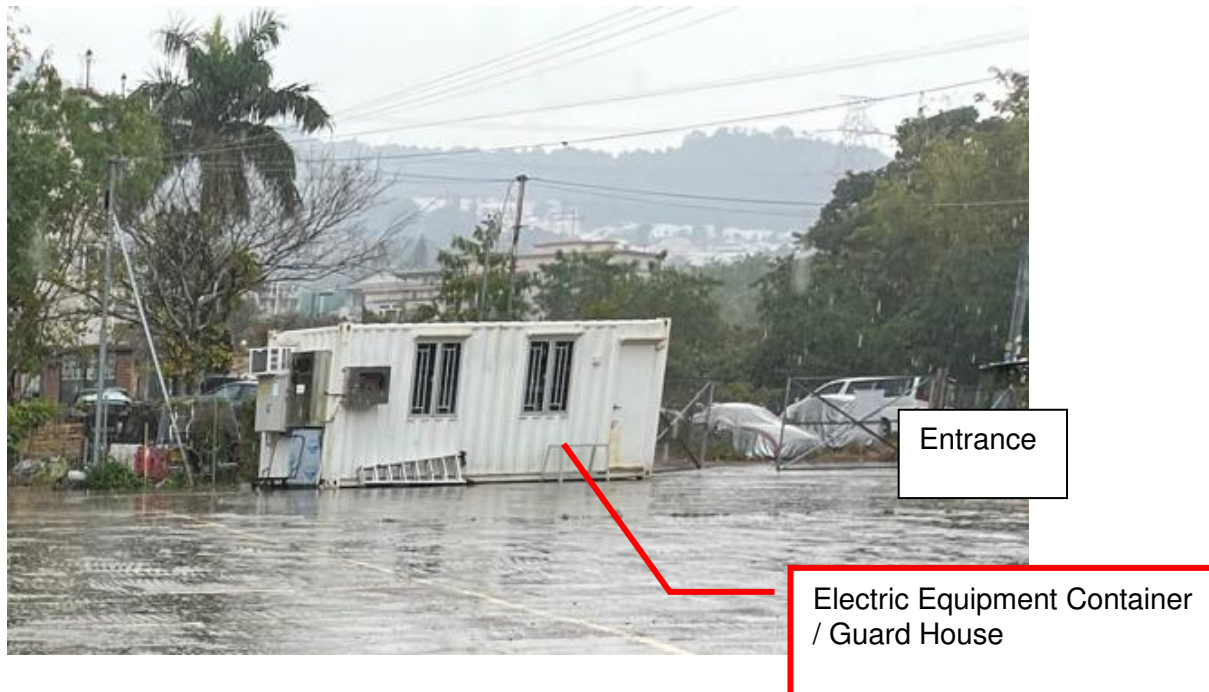


Figure C-1 Electric Equipment Container / Guard House (for reference only)

## **Appendix D**

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



## **Appendix E**

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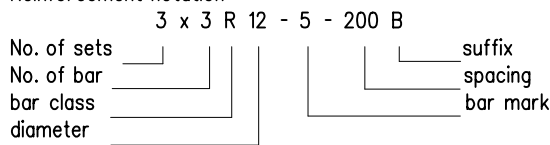
Highways Department Standard Drawings  
Of Petrol Interceptor  
(H3134 – H3144)  
(for reference only)





## 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**

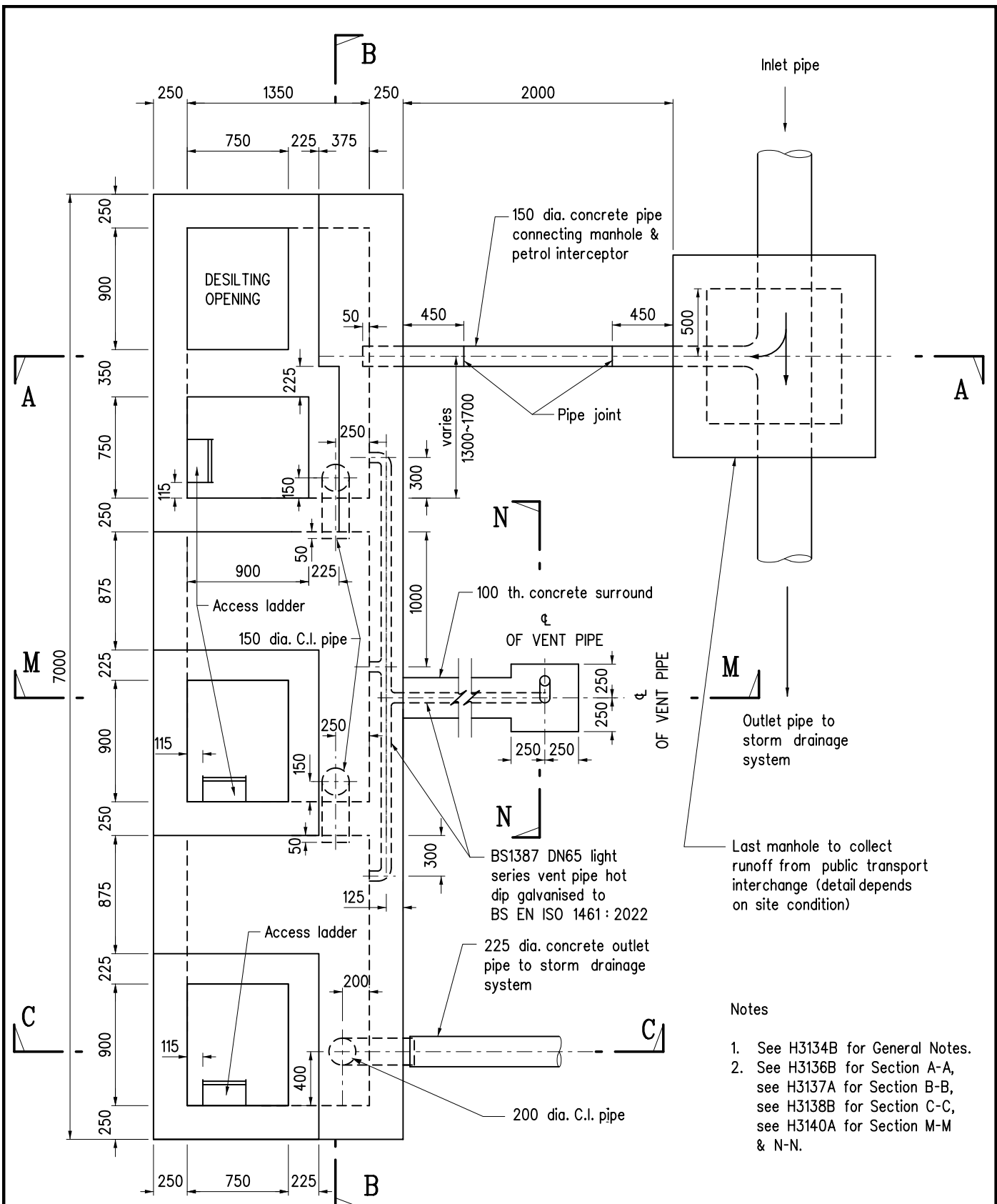
REFERENCE

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

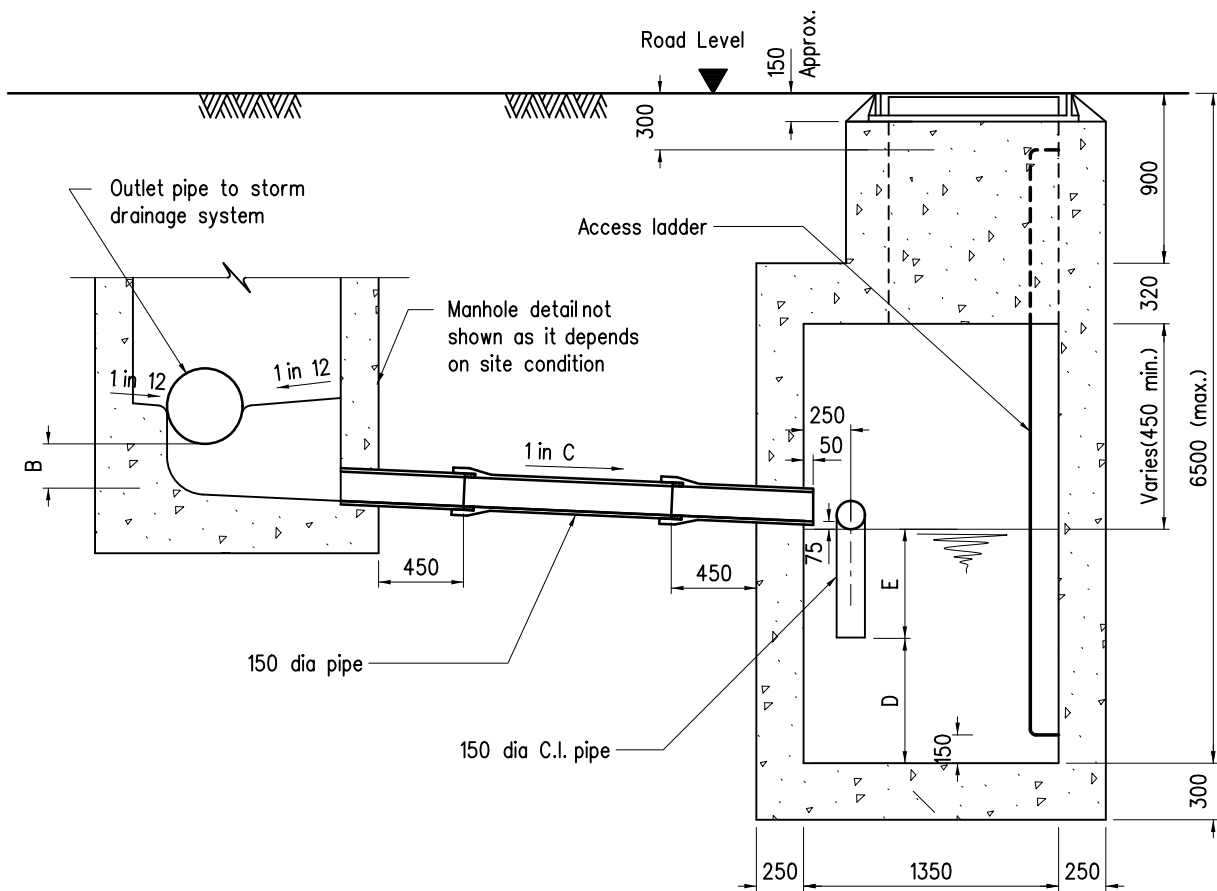
**PETROL INTERCEPTOR  
FOR OPEN PUBLIC  
TRANSPORT INTERCHANGE  
(SHEET 2 OF 11)**

**HIGHWAYS DEPARTMENT**

REFERENCE	DRAWING No.	CAD
SCALE Diagrammatic	<b>H 3135C</b>	

CATCHMENT AREA OF THE PUBLIC TRANSPORT INTERCHANGE A ( m <sup>2</sup> )	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

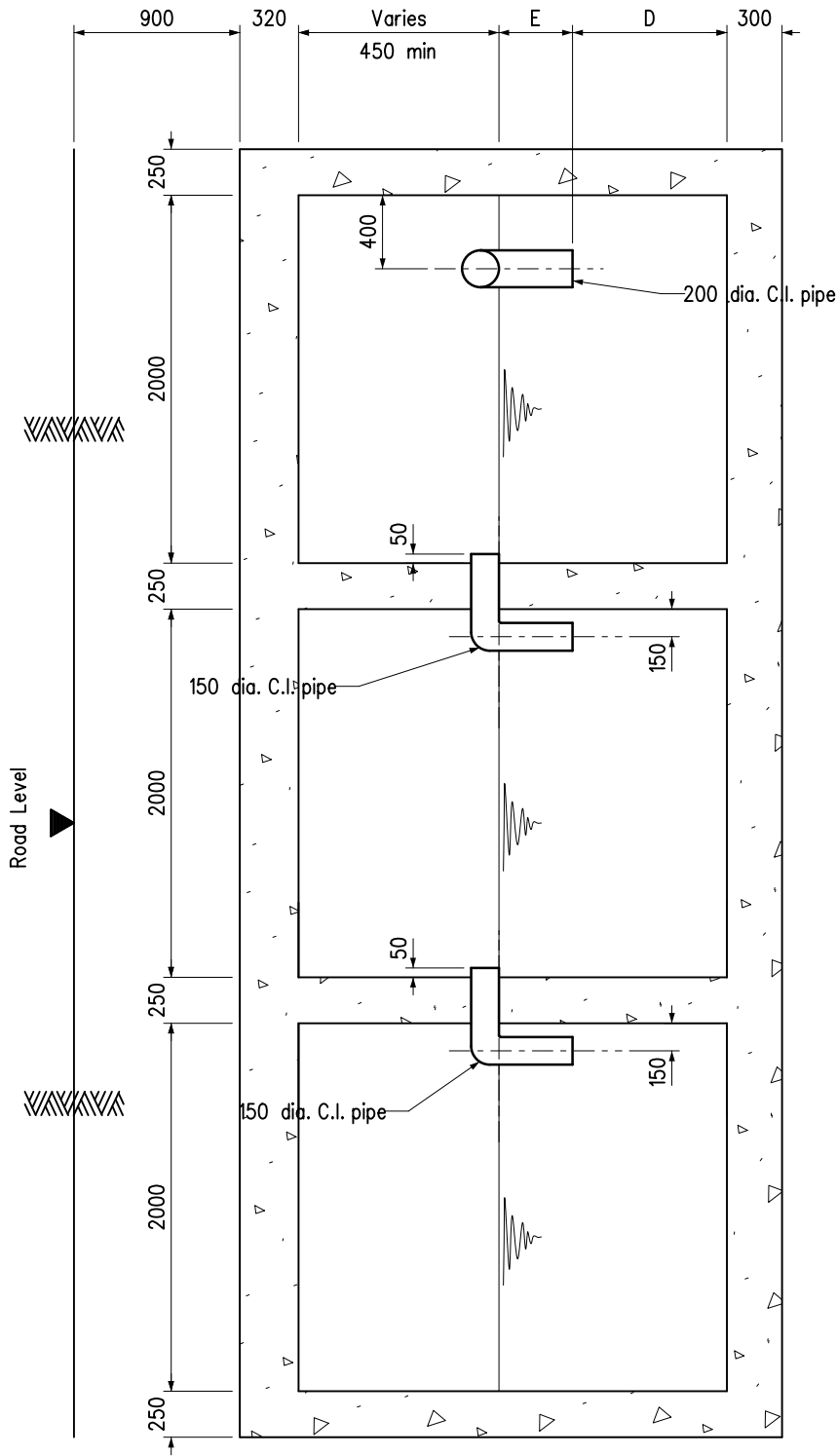
DRAWING No.

CAD

SCALE

Diagrammatic

H 3136B



**SECTION B - B**

( 3 compartment petrol interceptor shown )

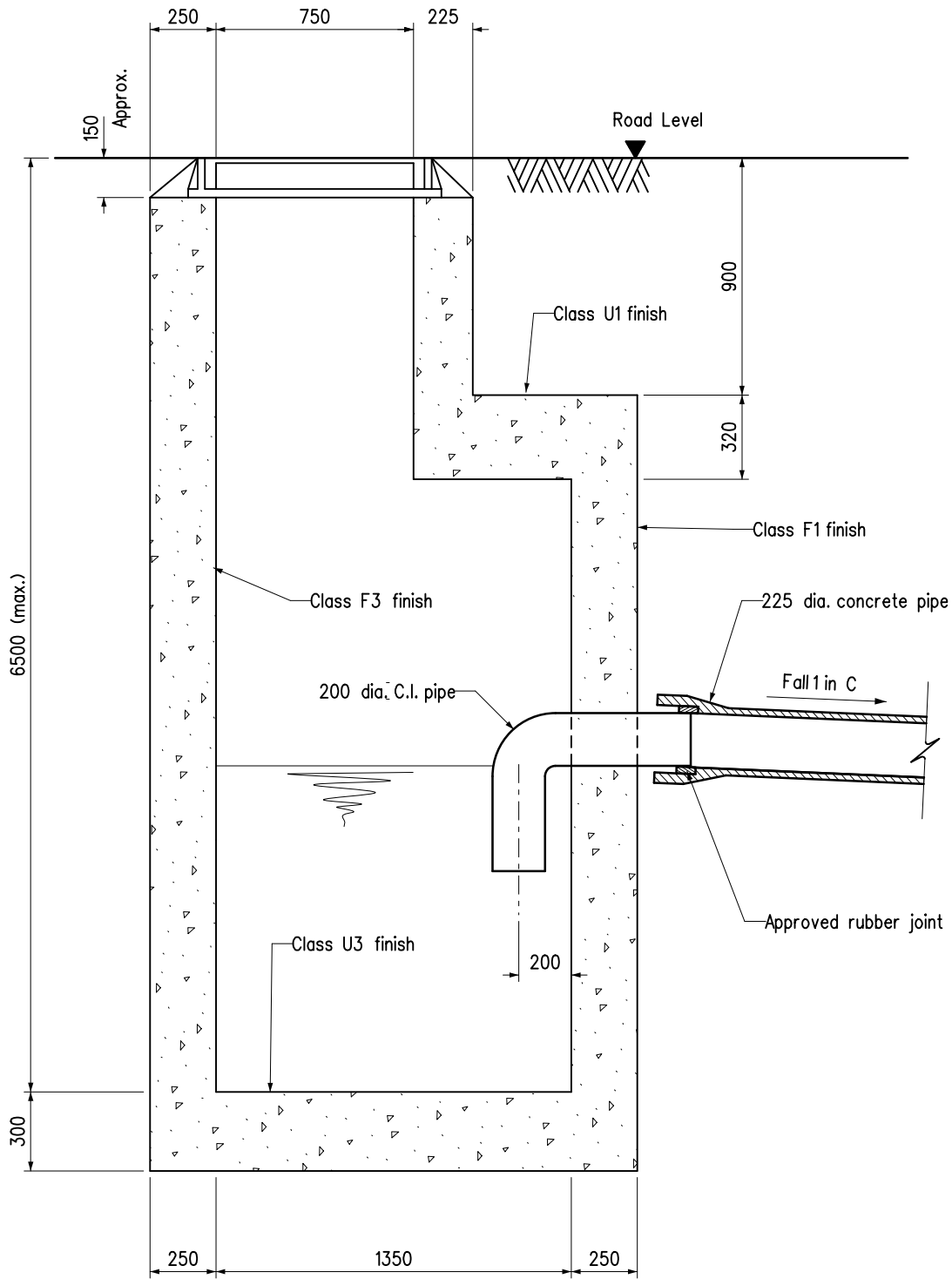
Note :  
See H3134B for general notes.

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	<b>H 3137A</b>	



**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

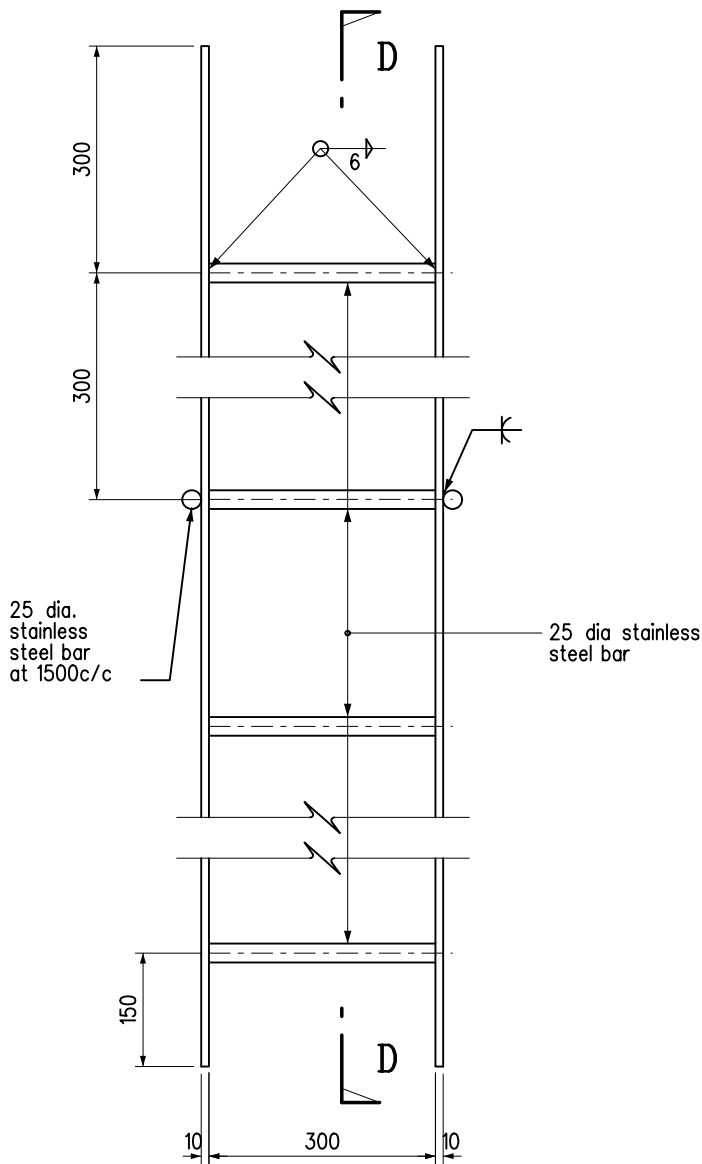
DRAWING No.

CAD

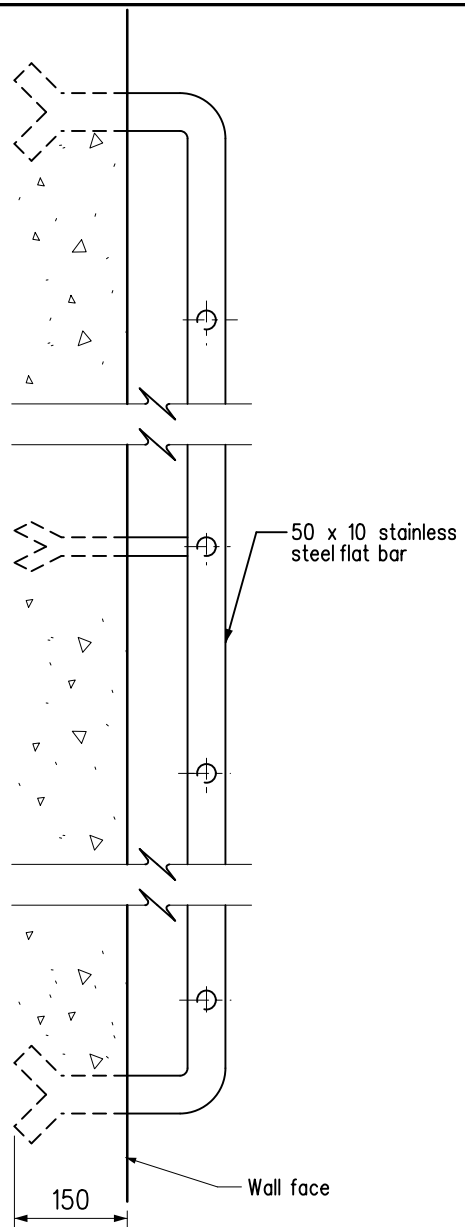
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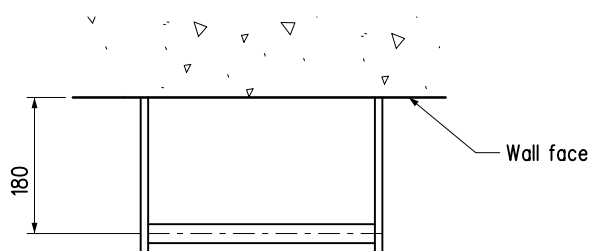
**H 3138B**



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

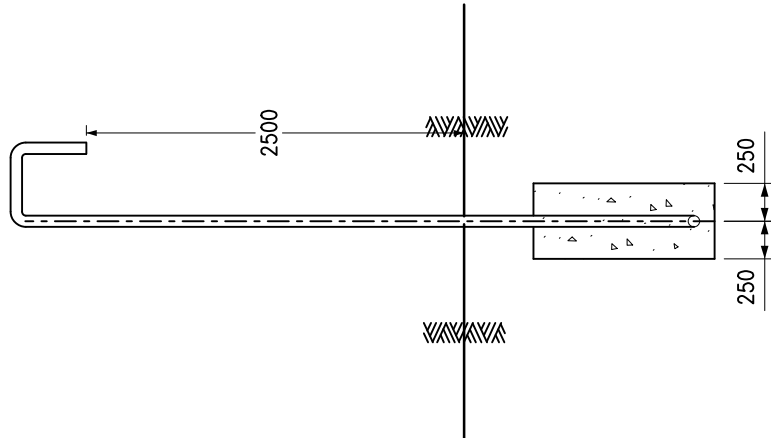
DRAWING No.

CAD

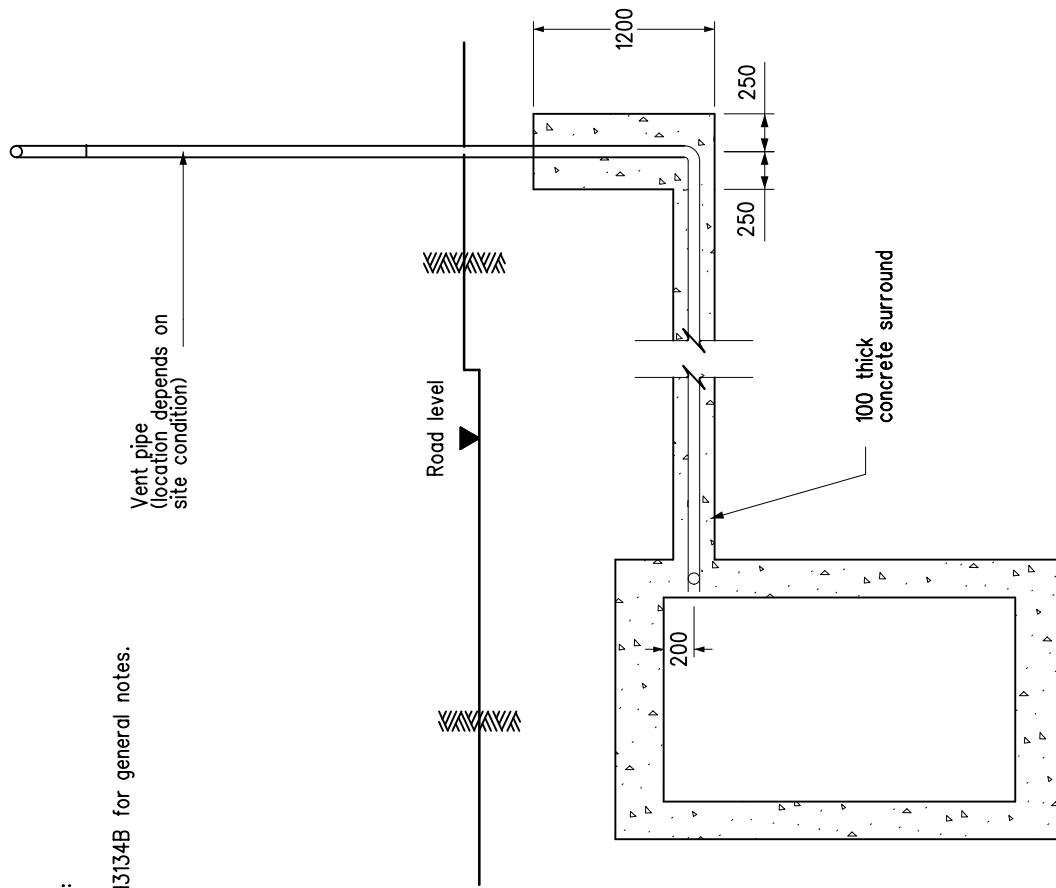
SCALE

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

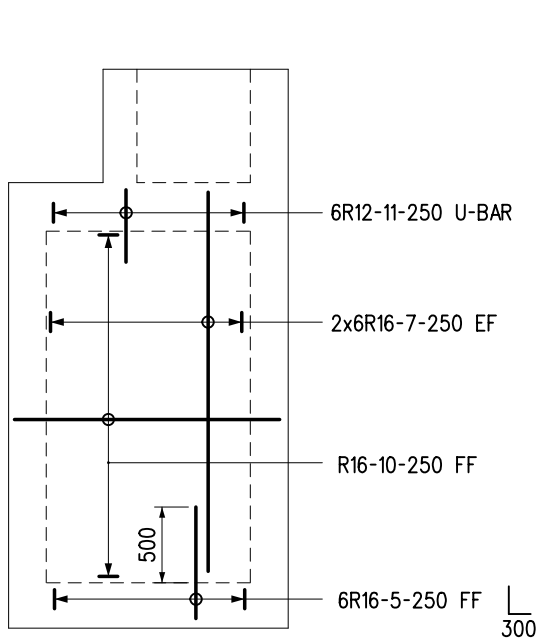
DRAWING No.

CAD

SCALE

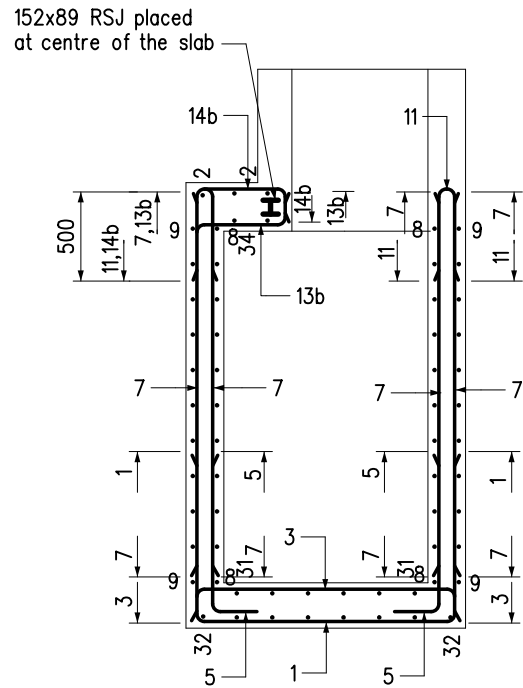
Diagrammatic

H 3140A

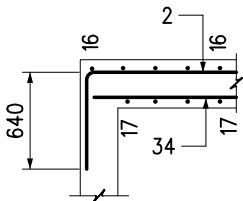
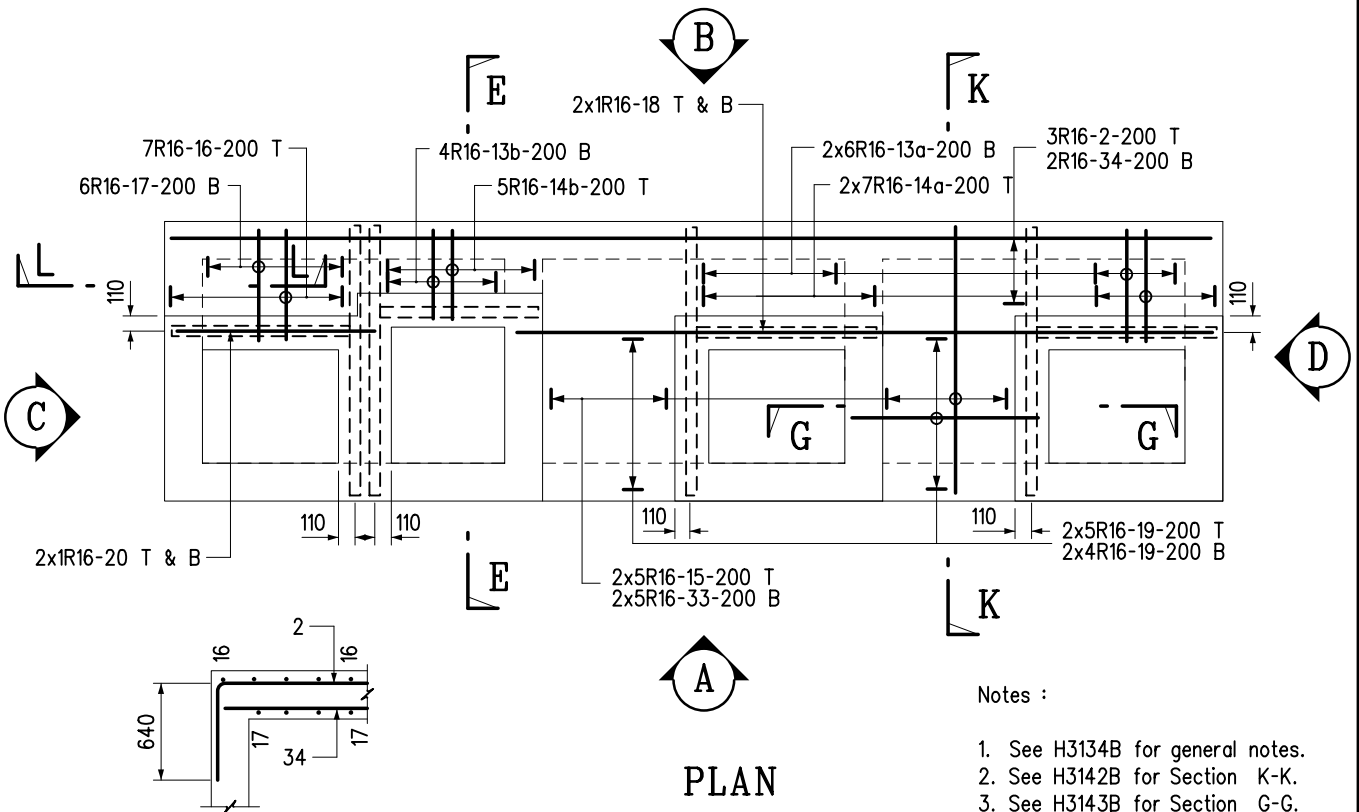


**VIEW C**

view D similar but opp. handed



**SECTION E - E**



**SECTION L - L**

wall bars not shown for clarity

Notes :

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

**PLAN**

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

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

**HIGHWAYS DEPARTMENT**

REFERENCE

DRAWING No.

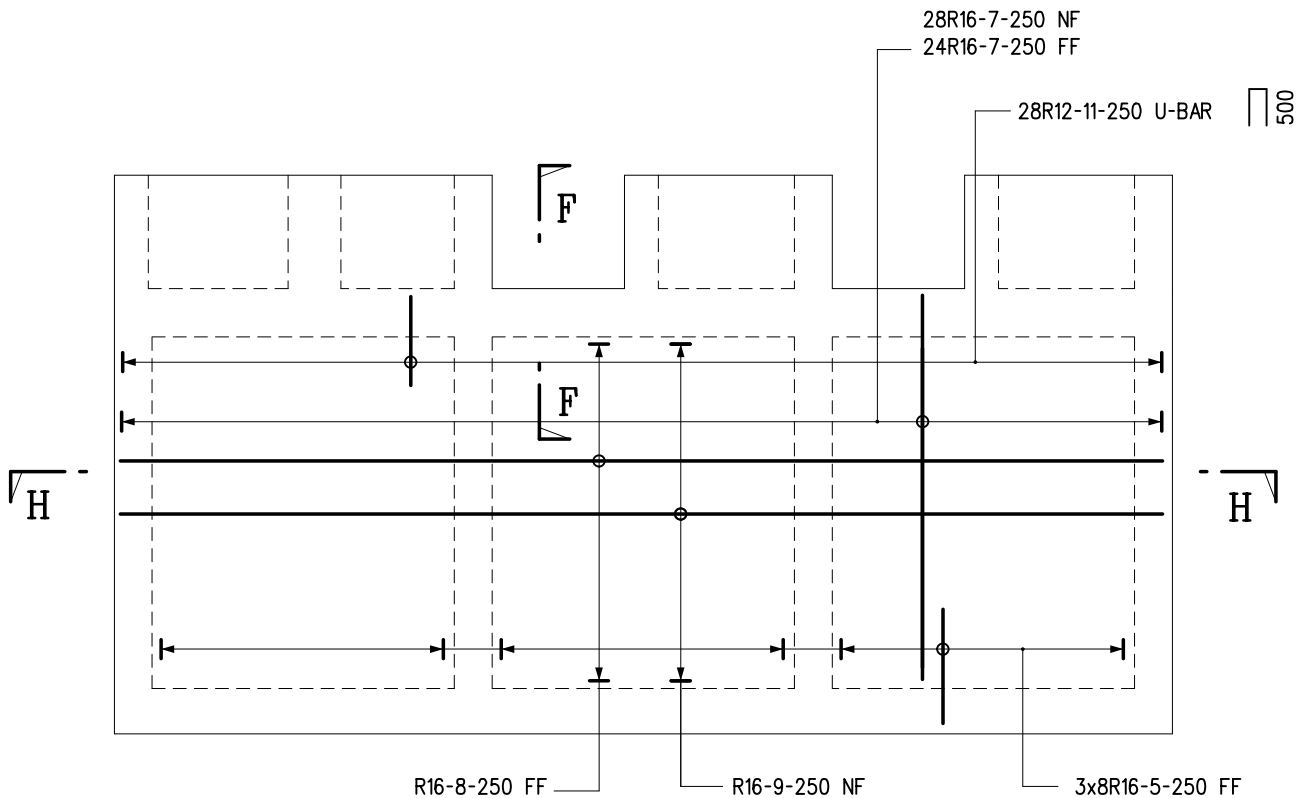
CAD

SCALE

1 : 50

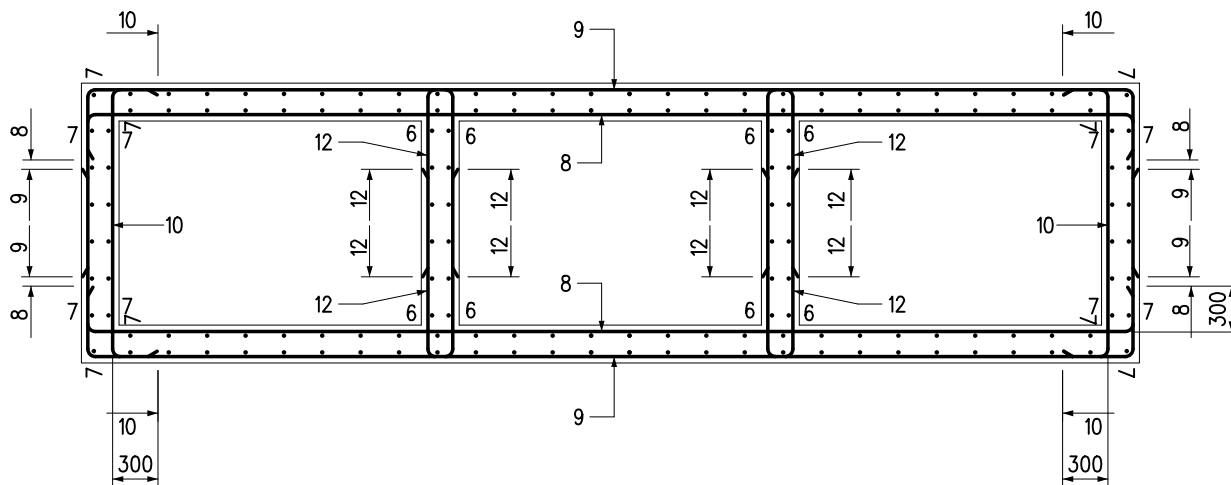
**H 3141B**



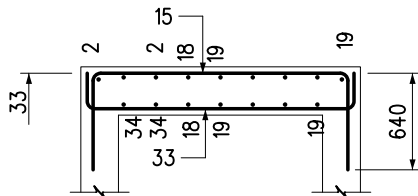


**VIEW A**

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

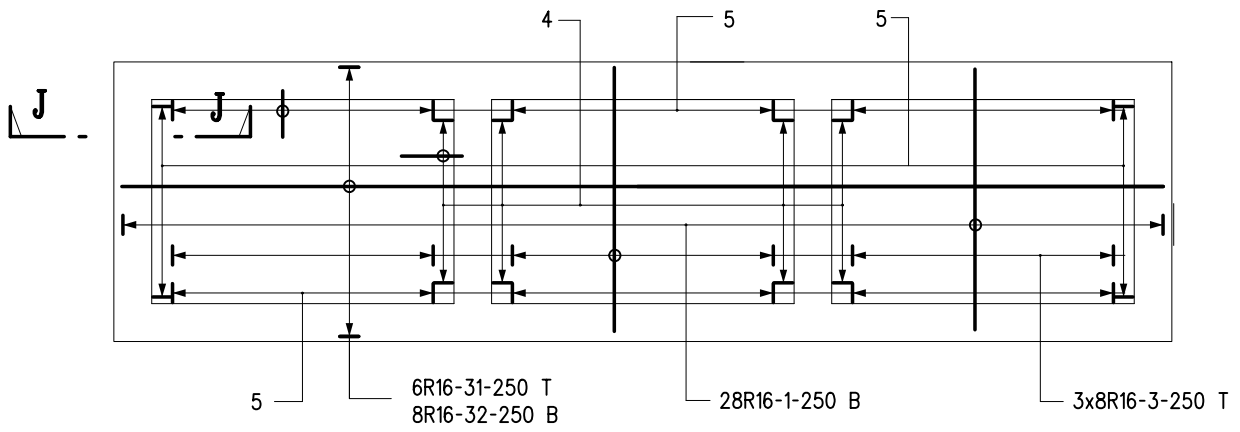
DRAWING No.

CAD

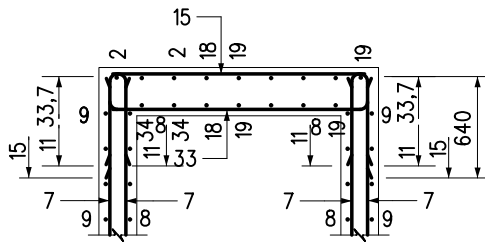
SCALE

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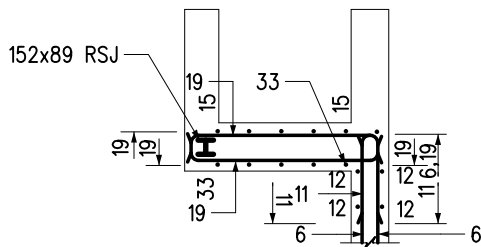
**H 3142B**



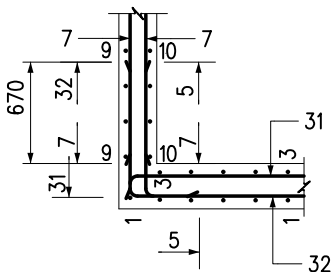
**BASE SLAB**



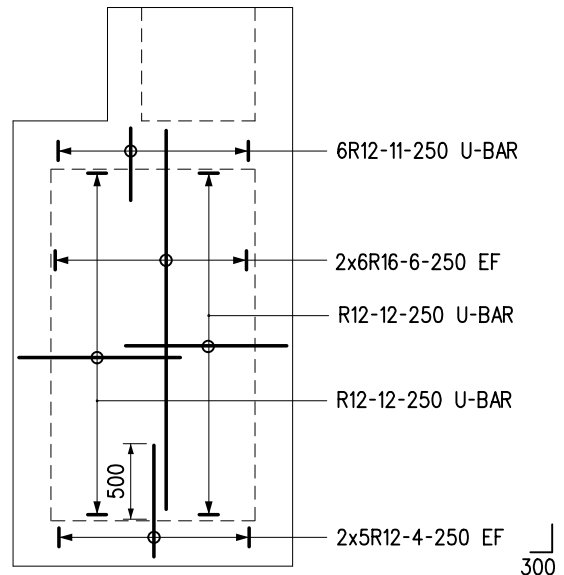
**SECTION F - F**



**SECTION G - G**



**SECTION J - J**



**INTERNAL WALL**

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

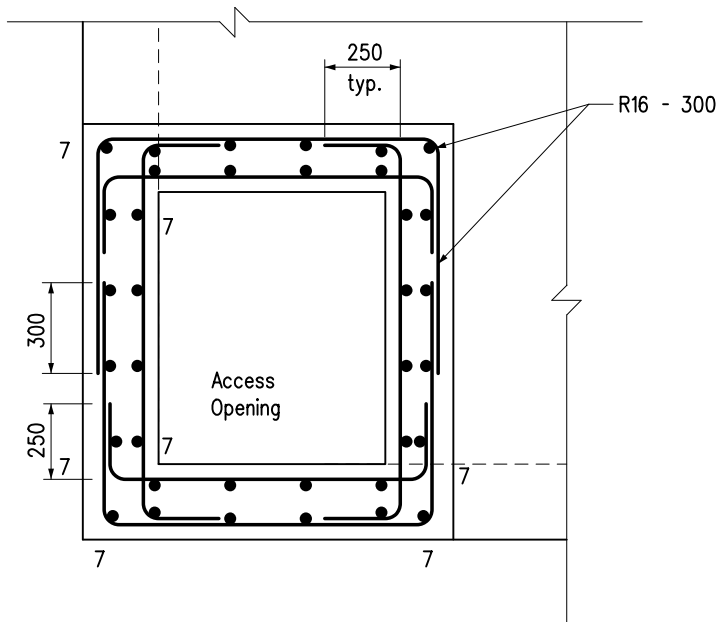
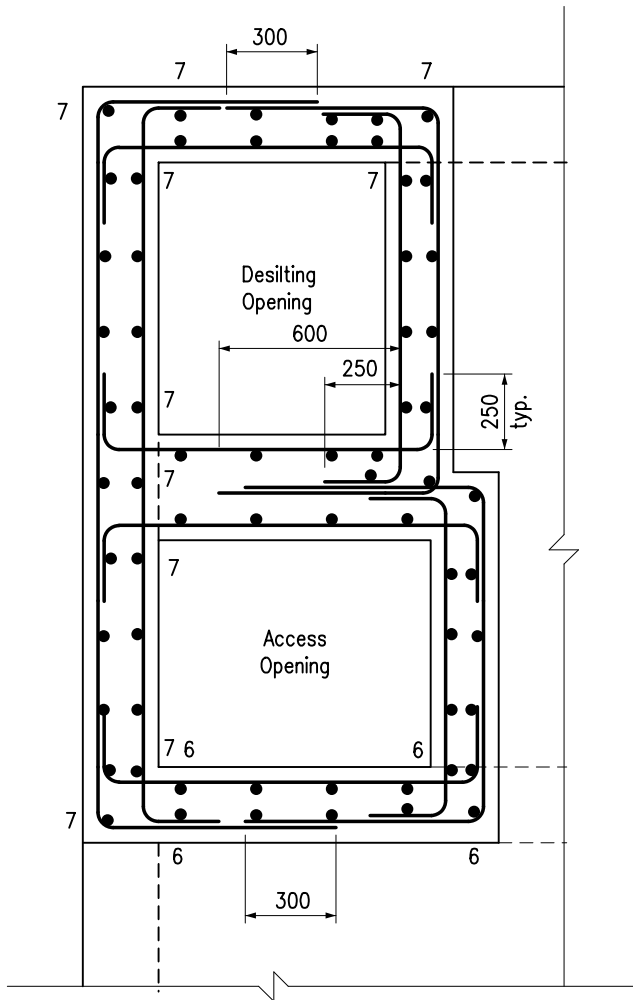
DRAWING No.

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

## Appendix F

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### Photovoltaic System (for reference only)



# SIV SERIES

Small Changes, Big Accomplishments







## 540-555W



### ● SIV SERIES

Seraphim redefined the high-efficiency module series by integrating 182mm silicon wafers with multi-busbar and half-cut cell technologies. Seraphim panel combined creative technology effectively and extremely improved the module efficiency and power output.

### ● KEY FEATURES

-  Less mismatch to get more power
-  Less power loss by minimizing the shading impact
-  Competitive low light performance
-  3 times EL test to ensure best quality
-  Ideal choice for utility and commercial scale projects by reduced BoS and improved ROI
-  Outstanding reliability proven by PVEL for stringent environment condition:
  - Sand, acid, salt and hail stones
  - 2400 Pa wind load and 5400 Pa snow load
  - Anti-PID

### ● QUALITY SYSTEM

ISO9001 / ISO14001 / ISO45001

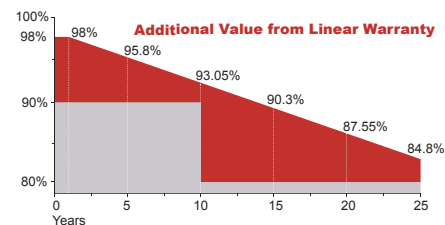
### ● PRODUCT CERTIFICATION



### ● INSURANCE

**PICC**

### ● WARRANTY



**15 YEARS** Guarantee on product material and workmanship

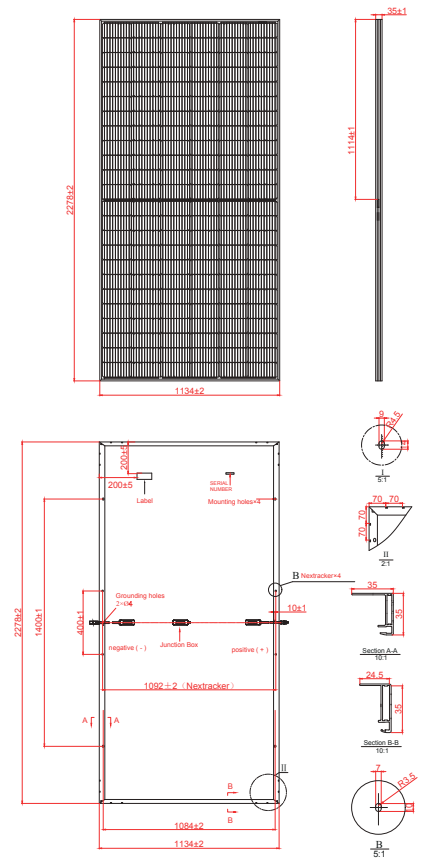
**25 YEARS** Linear power output warranty



## Electrical Characteristics

Module Type	SRP-540-BMA-HV		SRP-545-BMA-HV		SRP-550-BMA-HV		SRP-555-BMA-HV	
	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT
Maximum Power at STC (Pmp)	540	406	545	409	550	414	555	418
Open Circuit Voltage (Voc)	49.50	46.18	49.60	46.32	49.70	46.40	49.80	46.50
Short Circuit Current (Isc)	13.81	11.16	13.90	11.23	14.00	11.32	14.10	11.41
Maximum Power Voltage (Vmp)	41.55	38.39	41.80	38.41	42.05	38.58	42.31	38.68
Maximum Power Current (Imp)	13.00	10.59	13.04	10.65	13.08	10.73	13.12	10.81
Module Efficiency at STC(%)	20.90		21.10		21.29		21.48	
Power Tolerance	(0, +4.99W)							
Maximum System Voltage	1500V DC							
Maximum Series Fuse Rating	25 A							

STC: Irradiance 1000 W/m<sup>2</sup> module temperature 25°C AM=1.5  
Power measurement tolerance: +/-3%



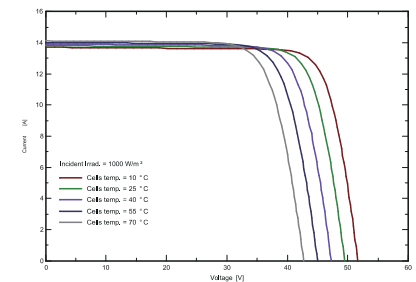
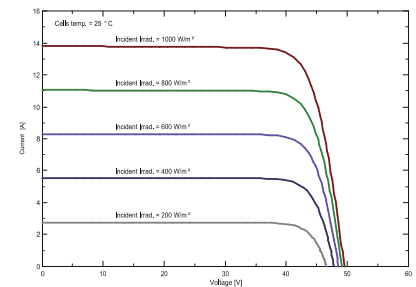
## Temperature Characteristics

Pmax Temperature Coefficient	-0.34 %/°C
Voc Temperature Coefficient	-0.26 %/°C
Isc Temperature Coefficient	+0.05 %/°C
Operating Temperature	-40 ~ +85 °C
Nominal Operating Cell Temperature(NOCT)	45±2 °C

## Mechanical Specifications

External Dimensions	2278x1134x35 mm
Weight	27.0 kg
Solar Cells	PERC Mono (144pcs)
Front Glass	3.2mm AR coating tempered glass, low iron
Frame	Anodized aluminium alloy
Junction Box	IP68, 3 diodes
Output Cables	4.0mm <sup>2</sup> , 250mm(+)/350mm(-) or Customized Length
Mechanical Load	Front side 5400Pa/ Rear side 2400Pa

## I-V Curve



## Packing Configuration

	2278x1134x35 mm	
Container	20'GP	40'HQ
Pieces per Pallet	31+4*	31
Pallets per Container	4	20
Pieces per Container	140	620

\* 31+4 pieces per pallet is the special package which only suits for container transport.  
For details, please consult SERAPHIM.

