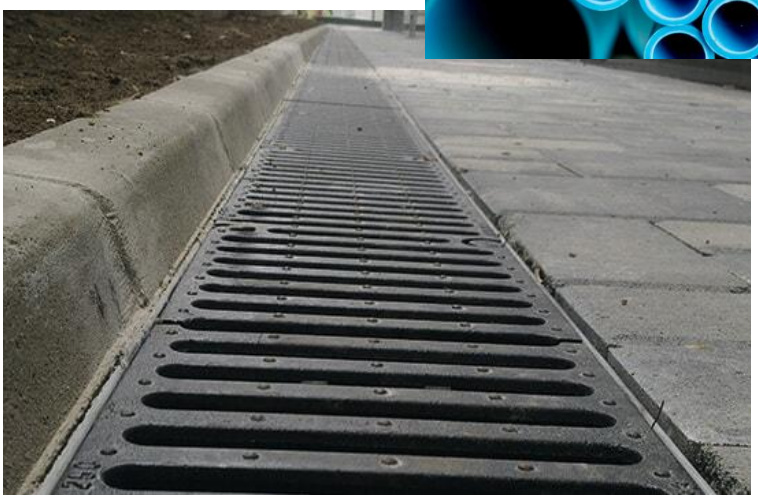
TEMPORARY DRAINAGE PROPOSAL





APPLICATION FOR PROPOSED TEMPORARY PUBLIC VEHICLE PARK WITH ELECTRIC VEHICLE CHARGING DEVICE FOR A PERIOD OF 3 YEARS AT LOTS 591(PART), 592(PART), 593(PART) AND 618(PART) IN D.D. 122, PING SHAN, YUEN LONG, NEW TERRITORIES

ISSUE 2 (SEPTEMBER 2026)

s16 Application No. A/YL-PS/795

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1. Introduction

This report presents the temporary drainage proposal for application for proposed temporary public vehicle park with electric vehicle charging device for a period of 3 years at Lots 591(part), 592(part), 593(part) and 618(part) in D.D. 122, Ping Shan, Yuen Long, New Territories. The site location is shown in **Appendix A**.

1.1. Objectives of the Report

This report shall be prepared to include the following:

- Identify the potential drainage impact from the proposed Application Site
- Recommend and implement all necessary measures to mitigate adverse drainage impacts arising from the application site

1.2. Report Structure

The report contains the following sections:

- Section 1 on Introduction;
- Section 2 on Development Proposal;
- Section 3 on Assessment Methodology;
- Section 4 on Potential Drainage Impact; and /
- Section 5 on Conclusion

1.3. References

This report has been prepared with reference to the following documents:

- Stormwater Drainage Manual: Planning, Design and Management (Fifth Edition, January 2018)
- Technical Note No.1 Technical Note to Prepare a Drainage Submission (December 2024)
- Stormwater Drainage Manual – Corrigendum No. 1/2022
- Stormwater Drainage Manual – Corrigendum No. 1/2024

2. Development Proposal

2.1. Existing Site Conditions

The application site is located in Ping Shan, Yuen Long, New Territories. The total area of approximately 2970m^2. The site layout plan is provided in **Appendix B**.

The applied development is proposed temporary public vehicle park with electric vehicle charging device for a period of 3 years. The application site is at Lots 591(part), 592(part), 593(part) and 618(part) in D.D. 122, Ping Shan, Yuen Long, New Territories.

The application site is less than 1 ha in size and neither fall within flood prone areas such as lowlying areas and flooding blackspots nor involve pond filling and substantial earth filling, so it is regarded as simple site.

There is an existing 600 mm surface channel adjacent to the application site, which connects to the ultimate discharge point, a 2,000 mm public nullah. The location and pictures of the existing surface channel are shown in **Appendix C**.

3. Assessment Methodology

3.1. Calculation Methodology for Runoff

According to Section 6.6.2 of *the Stormwater Drainage Manual***,** an "Urban Drainage Branch System" refers to a network of interconnected drains that collect rainwater runoff from an urban area and transport it to a trunk drain, river, or sea. In simpler terms, the largest pipe size or the equivalent diameter in case of a box culvert in a branch system will normally be less than 1.8m.

Referring to Stormwater Drainage Manual, since the proposed U-channels have dimensions smaller than 1.8m, the drainage system would be classified as an urban drainage branch. In consideration of the effect of recent climate change in the drainage design, the return period is 50 years with the storm constraints specified in *Stormwater Drainage Manual – Corrigendum No. 1/2024.*

To calculate the peak instantaneous runoff values before and after the development, the Rational Method with recommended physical parameters including runoff coefficient (C) and storm constants for different return periods are adopted referred to the SDM.

The Rational Method is adopted for hydraulic analysis and the peak runoff is calculated based on the following equation:

$$Q_p = 0.278\ Ci\ A$$

where Qp = Peak Runoff, m^3/s
C = Runoff Coefficient
i = Rainfall Intensity, mm/hr
A = Catchment Area, km^2

The runoff coefficient of 0.85 is assumed. Based on the storm constants for the 50-year return period recommended in the SDM, the appropriate rainfall intensities (i) are calculated as detailed in **Appendix E1** and **Appendix E2**.

3.2. Calculation Methodology for Capacity Checking

Since the catchment areas are less than 1ha, peripheral surface U-channels are recommended to be constructed to collect the stormwater runoff within the site and to

intercept the overland flow from the adjacent lands. The surface U-channel are proposed to be 350 mm width. The collected stormwater will be diverted to the existing 00 mm village drain in vicinity of the site.

In this scenario, fair condition of concrete U-channel is assumed for the Manning's roughness coefficient i.e coefficient value is 0.015 for calculating capacities of concrete U-channel using Manning's Equation. The recommended roughness values ks for concrete is 0.6 mm under normal condition.

Manning's Equation for calculating the channel and pipe capacities is adopted for this analysis:

$$\frac{V = R^{2/3} S^{1/2}}{n}$$

where V = mean velocity, m/s
S = slope of the total energy line
n = Manning's roughness coefficient
R = hydraulic radius, m

Deposition of sediment in stormwater drainage system is considered in the hydraulic calculation as required by the SDM. 10% reduction in flow area is adopted to consider the effects to flow capacity due to materials deposited on the bed.

3.3. Summary of Assessment Assumptions

The assumptions of the Drainage Proposal are summarized below for ease of reference:

- Runoff coefficient of 0. 85 for the paved area is assumed;
- Storm constants for 50 years return periods of HKO Headquarters
- Manning's roughness coefficient of 0.015 for the proposed concrete U-channels and concrete pipe are adopted; and
- Roughness values ks of 0.6 mm for concrete is adopted.

4. Potential Drainage Impact

4.1. Change in Drainage Characteristics

The adjacent sites have no record of flooding. Peripheral surface channels are proposed to collect the surface runoff accrued on the site and to intercept the overland flow from the adjacent lands. Hoardings are erected with adequate opening to allow existing overland flow passing through the site.

To manage the stormwater flows after developing the site, this drainage proposal detailed the proposed drainage system consisting of a set of U-channels for diverting stormwater flows to avoid causing flooding to the site.

4.2. Proposed Drainage Works

The runoff from the application site is proposed to be collected by U-channels along the site boundary and discharged to the terminal catchpit with sand trap and eventually lead to the existing village catchpit in vicinity of the site.

Cover levels and invert levels of proposed drainage facilities were shown on the drainage plan. The invert levels of the upstream drainage facilities were higher than those at the downstream to ensure proper flow direction. In addition, the gradients and sizes of the proposed and existing drainage facilities were also indicated on the drainage plan. The detail of the proposed drainage works in drainage plan are illustrated in **Appendix D1**.

Cross sections showing the proposed drainage facilities and the existing and proposed ground levels of the captioned site with respect to the adjacent areas were provided in **Appendix D2**.

The site area with external catchment area were considered as three catchment area in the hydraulic assessment. They are CA1 with 2020 m², CA2 with 1200 m² and CA3 with 1900 m², as shown in **Appendix D1** and **Appendix E1**.

The hydraulic performance of the existing drainage facilities of the village drain is also checked under a separate calculation in **Appendix F**. The concerned development will not adversely existing drainage facilities.

The typical designs for the U-channels and catchpits are provided in **Appendix G** as a reference.

4.3. Design Calculation and Result

The design runoff arising from the proposed application site will be collected by the proposed 350 mm U-channel. 350 mm diameter drainage pipes are proposed to convey the runoff from the terminal catchpit to the existing village drainage system.

The hydraulic calculations for U-channel with surface runoff and the drainage pipe from the application site and adjacent site areas are summarized in **Table 1** and **Table 2**, also appended in **Appendix E1** and **Appendix E2**.

From	To	U.S I.L	D.S I.L	Width (mm)	Length (m)	Grad.	Vel. Full Bore (m/s)	Catchment Area (m^2)	Capacity	Check
-	TCP1	9.62	8.87	350	47	63	1.93	2020	76.1%	OK
-	TCP2	9.33	8.78	350	22	40	2.41	1200	35.8%	OK
-	CP3	9.62	9.27	350	19	54	2.07	1200	41.4%	OK
CP3	CP2	9.27	8.92	350	45	129	1.34	1200	61.9%	OK
-	CP4	9.15	8.40	350	50	67	1.87	1900	69.2%	OK
CP4	TCP5	8.40	8.05	350	36	103	1.50	1900	84.4%	OK
CP2	TCP5	9.33	8.78	350	48	87	1.63	1900	76.1%	OK

Table 1: Drainage Schedule of Proposed U-channel Size

From	To	U.S I.L	D.S I.L	Width (mm)	Length (m)	Grad.	Vel. Full Bore (m/s)	Catchment Area (m^2)	Capacity	Check
TCP1	DP1	8.87	8.65	350	8	36	2.179	2020	65.3%	OK
TCP2	DP2	8.78	8.59	350	8	42	2.025	1200	41.8%	OK
TCP5	DP3	8.05	7.81	350	7	29	2.433	1900	74.7%	OK

Table 2: Drainage Schedule of Proposed Drainage Pipe

The hydraulic performance of the existing drainage facilities of 600 mm village surface channel and 2,000 mm government nullah were also checked. The concerned development only occupies 25.5% and 2.0% of the capacity of the existing village drain which will not adversely affect the existing drainage facilities. The design checking is appended in **Appendix F**.

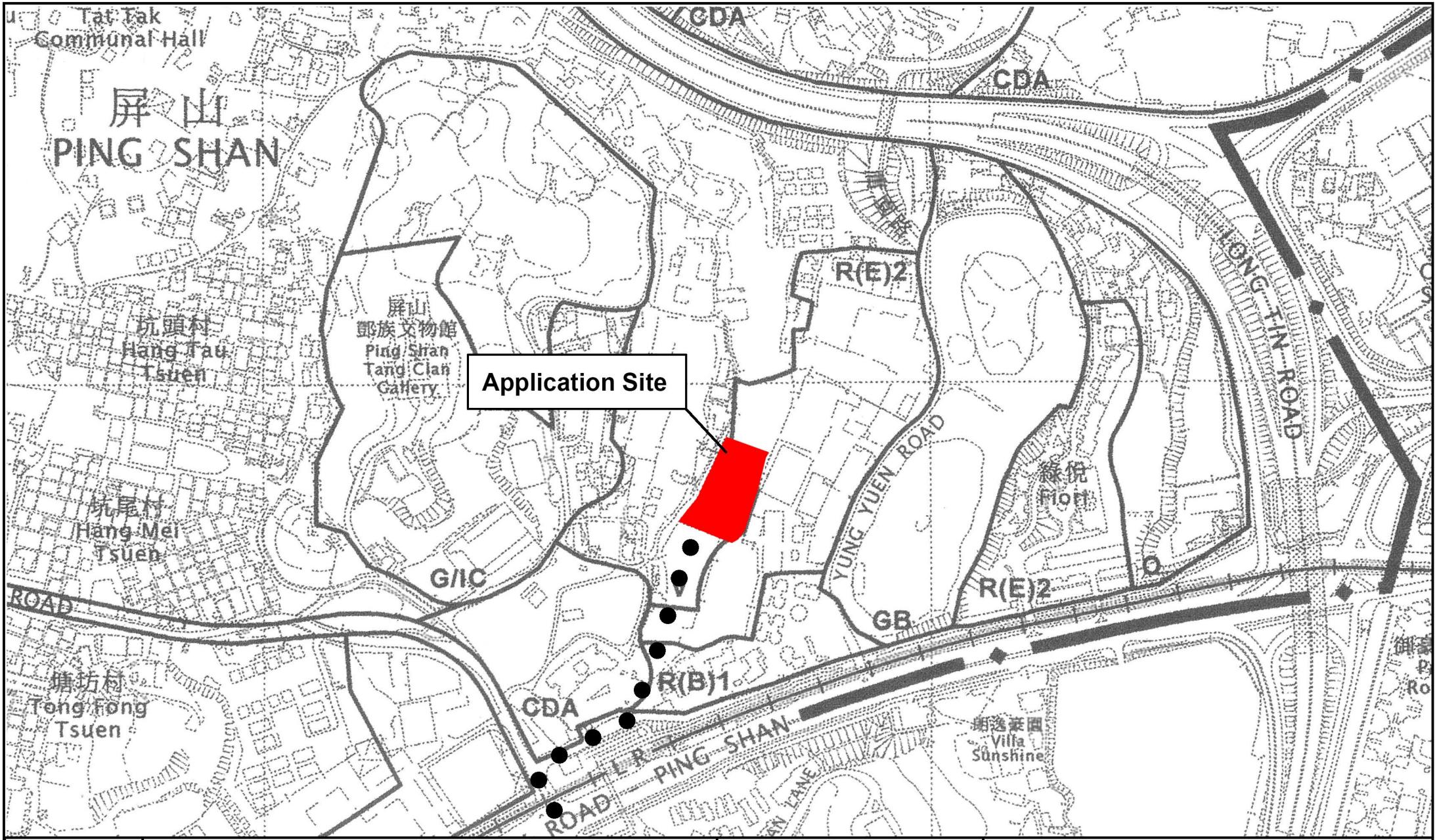
5. Conclusion

A temporary drainage proposal has been designed for proposed temporary public vehicle park with electric vehicle charging device for a period of 3 years at Lots 591(part), 592(part), 593(part) and 618(part) in D.D. 122, Ping Shan, Yuen Long, New Territories

Based on the design calculations, a set U-channel with width of 350mm and driange pipe with 350mm diameter have been deemed sufficient to convey peak runoff under a 50-year return period from the application site. The stormwater collected from the site will be discharged into the nearby existing 600 mm village surface channel then a 2,000m government nullah as ultimate discharge point.

Coordination will be undertaken with relevant stakeholders, and feedback will be sought from appropriate government departments regarding temporary drainage arrangements to ensure the system operates effectively.

Appendix A
Location Plan of Application Site



Allgain Land Planning
全堅土地規劃

Project 項目名稱:

Proposed Temporary Public Vehicle Park with Electric Charging Device for a Period of 3 Years at Lots 591(Part), 592(Part), 593(Part) and 618(Part) in D.D. 122, Ping Shan, Yuen Long, N.T.

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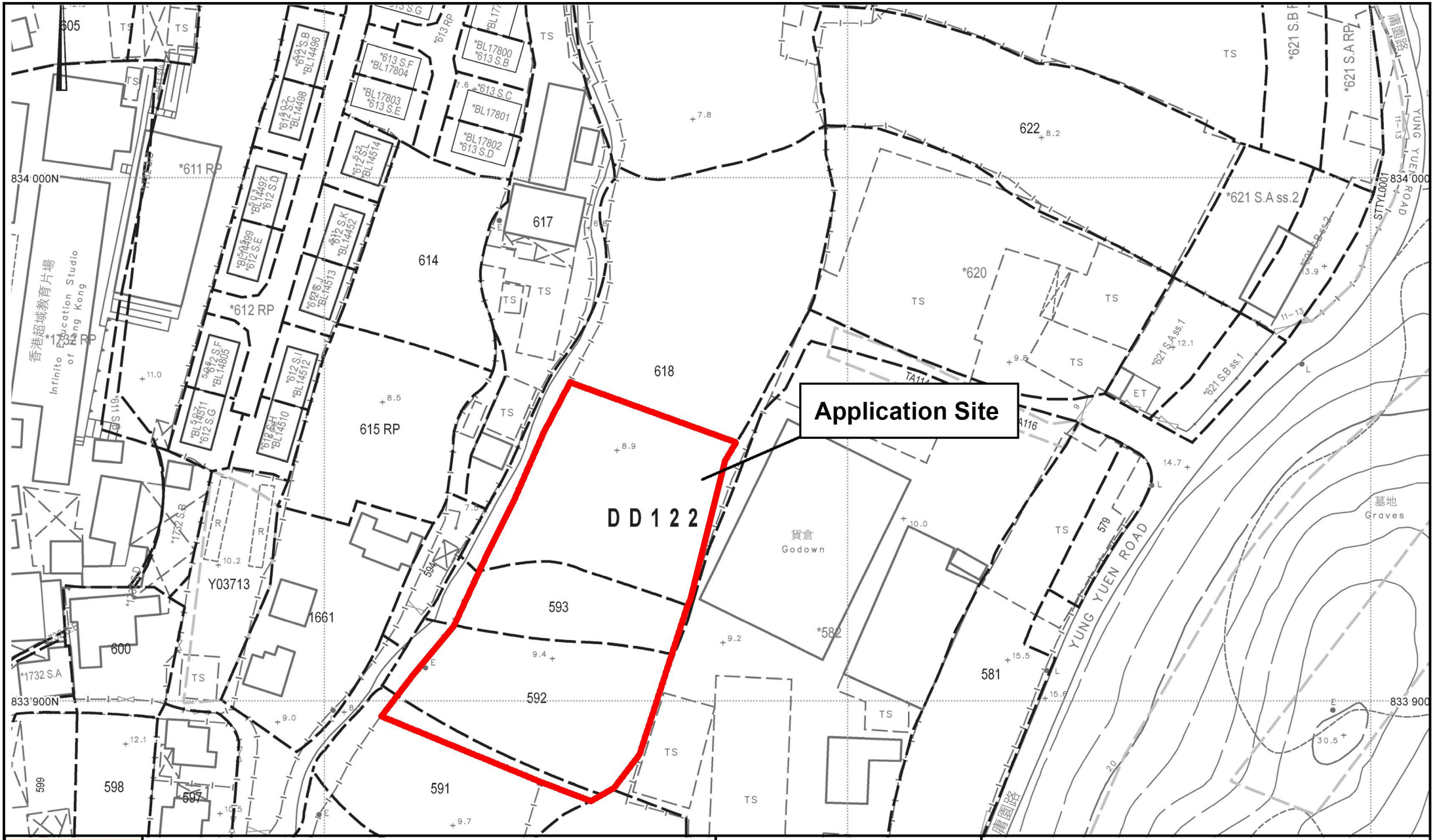
Location Plan

Drawing No. 圖號:

20240917

Remarks 備註:

●●● Vehicular access leading from Castle Peak Road - Ping Shan



Allgain Land Planning
全堅土地規劃

Project 項目名稱:

Proposed Temporary Public Vehicle Park with Electric Charging Device for a Period of 3 Years at Lots 591(Part), 592(Part), 593(Part) and 618(Part) in D.D. 122, Ping Shan, Yuen Long, N.T.

Drawing Title 圖紙標題:

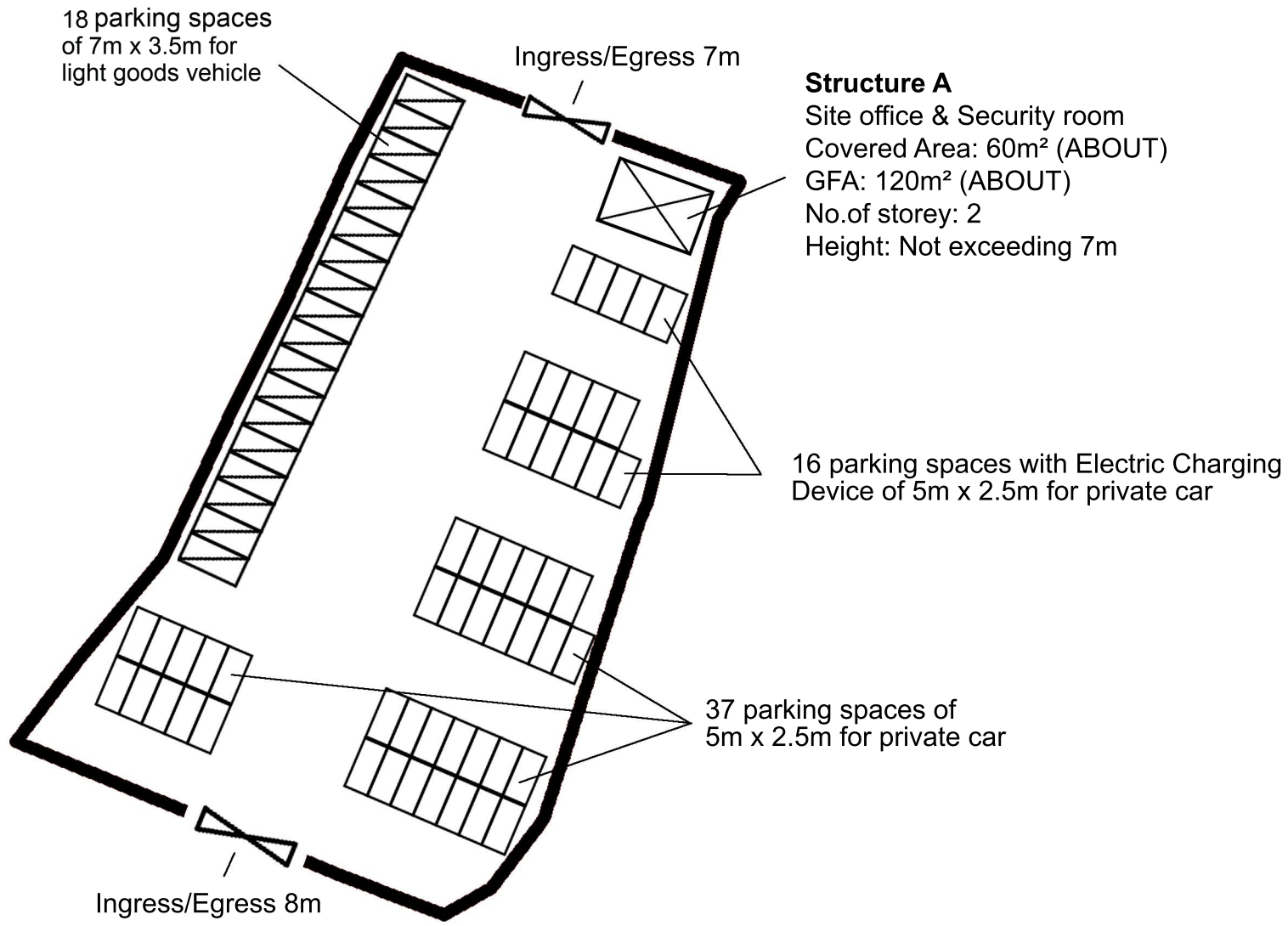
Site Plan

Drawing No. 圖號:

20240917

Remarks 備註:

Appendix B
Layout Plan of Application Site



Allgain Land Planning
全堅土地規劃

Project 項目名稱:

Proposed Temporary Public Vehicle Park with Electric Charging Device for a Period of 3 Years at Lots 591(Part), 592(Part), 593(Part) and 618(Part) in D.D. 122, Ping Shan, Yuen Long, N.T.

Drawing Title 圖紙標題:

Site Plan

Drawing No. 圖號:

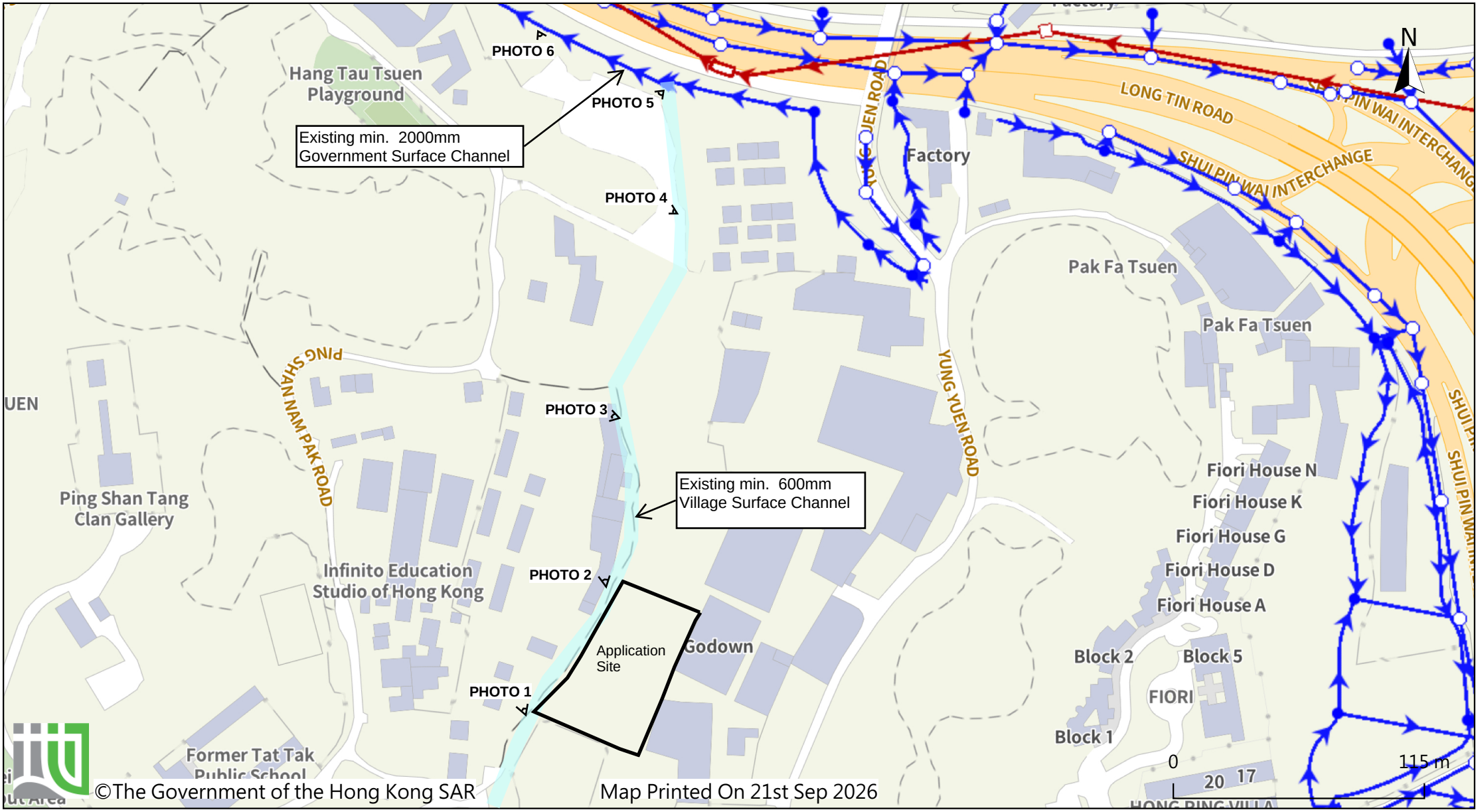
Remarks 備註:

- Structure
- Light goods vehicle
- Private car

Appendix B
Layout Plan of Application Site

GEOINFO MAP
地理資訊地圖

Go to map: https://www.map.gov.hk/gm/geo:22.4456,114.0118?z=2257



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Map Printed On 21st Sep 2026

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PHOTO 1

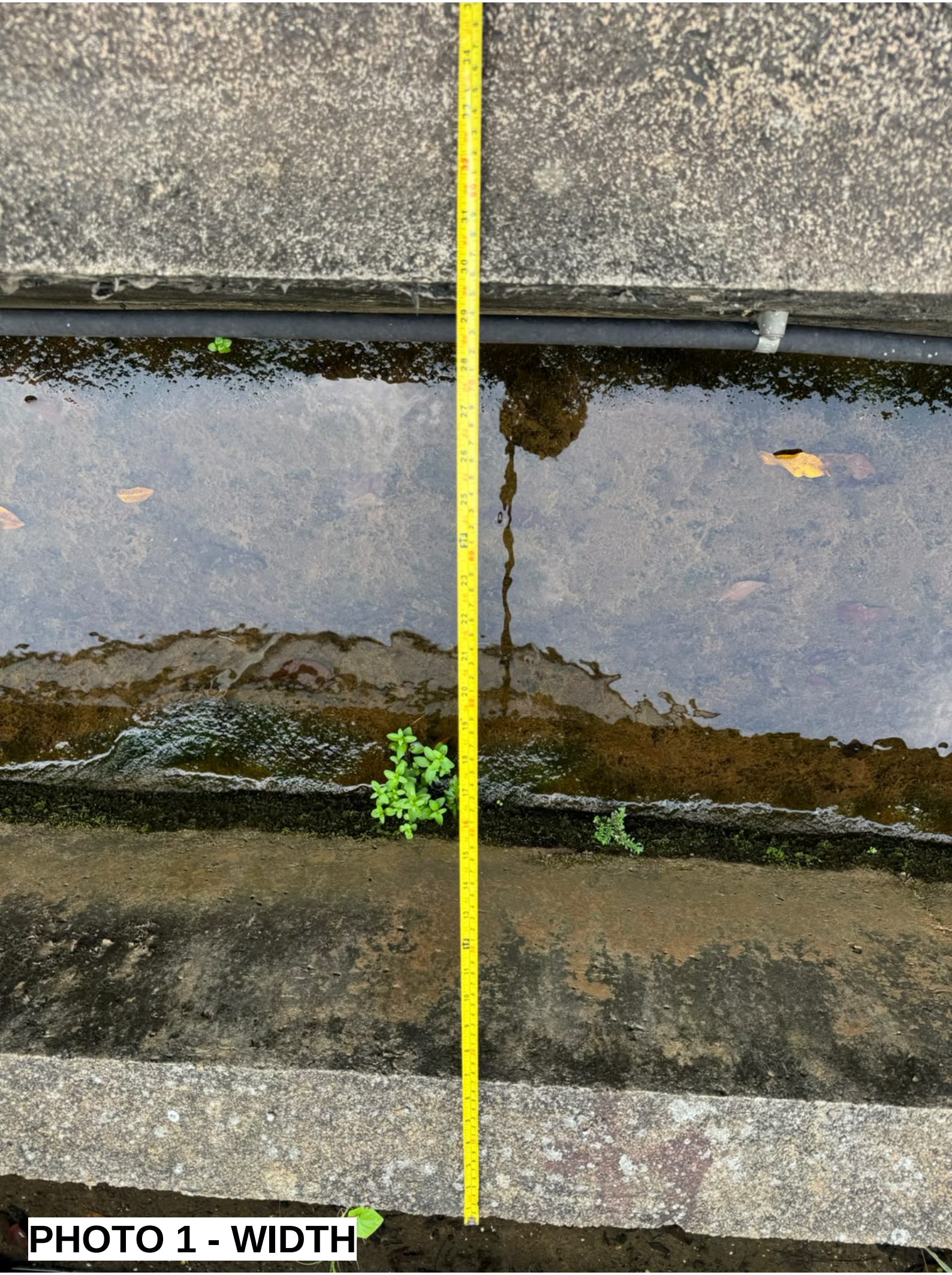


PHOTO 1 - WIDTH



PHOTO 2



PHOTO 3



PHOTO 3- WIDTH



PHOTO 4



PHOTO 5

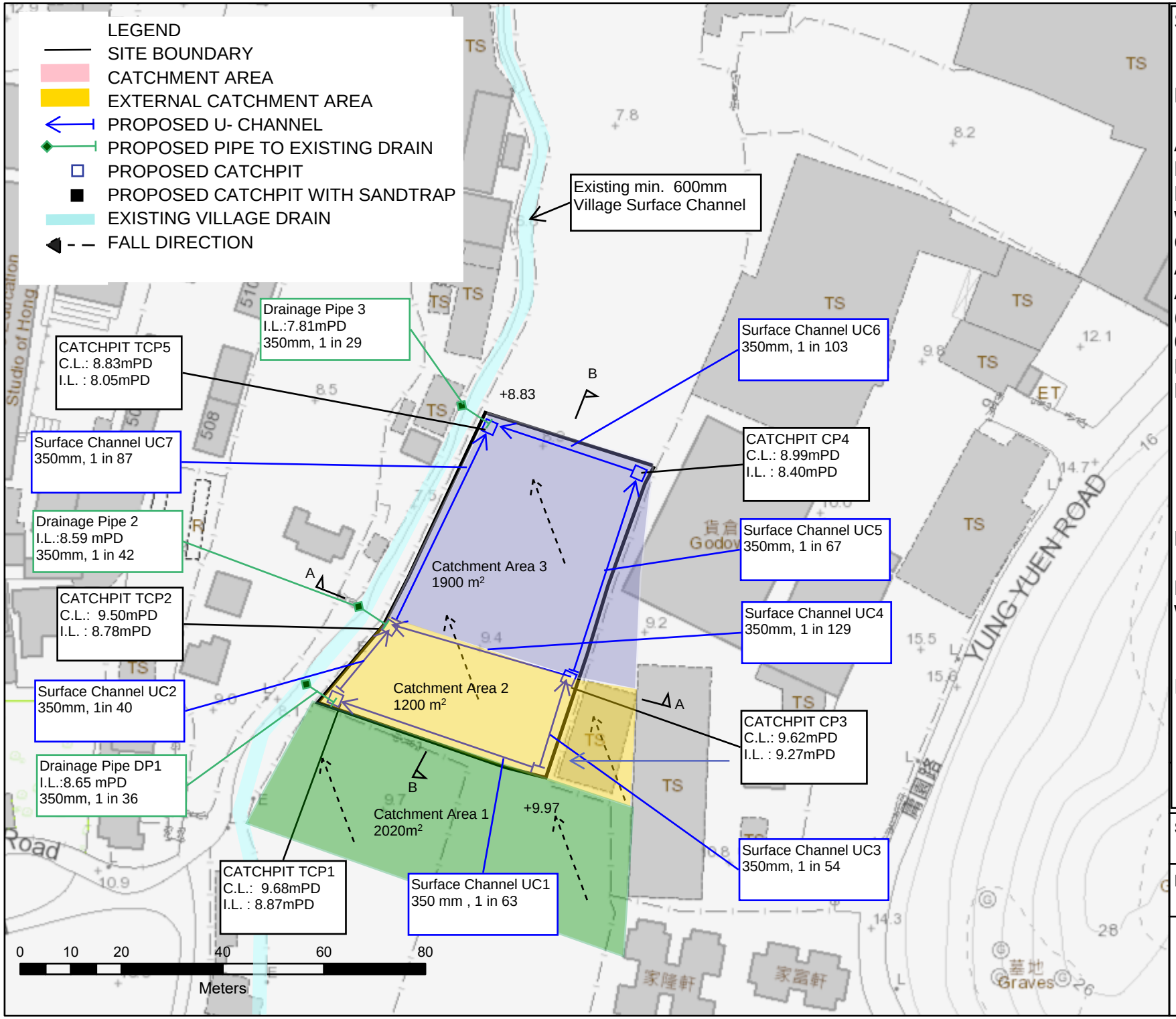


PHOTO 6



PHOTO 7

Appendix D
Proposed Drainage Arrangement



SITE PLAN

PROJECT :

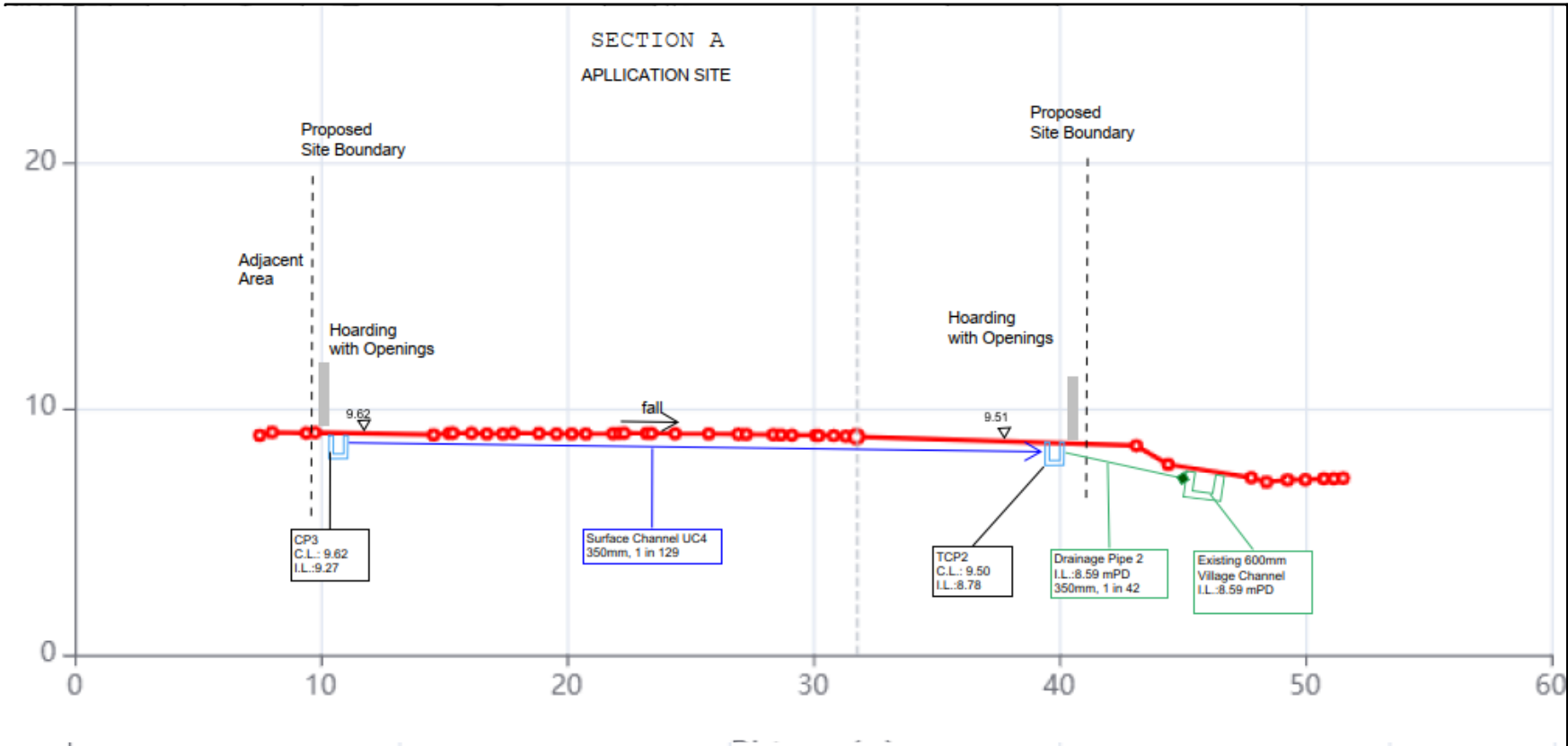
APPLICATION FOR PROPOSED TEMPORARY PUBLIC VEHICLE PARK WITH ELECTRIC VEHICLE CHARGING DEVICE FOR A PERIOD OF 3 YEARS AT LOTS 591(PART), 592 (PART), 593(PART) AND 618(PART) IN D.D. 122, PING SHAN, YUEN LONG, NEW TERRITORIES

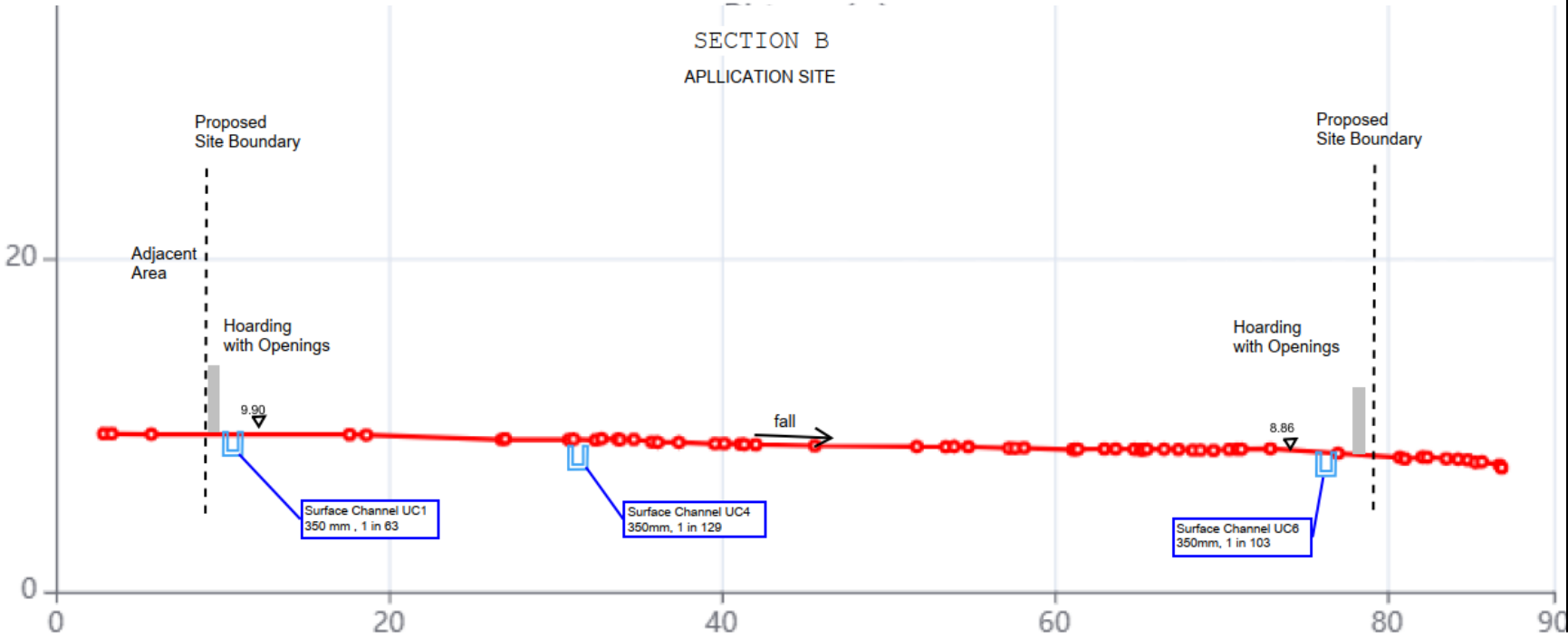
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PROPOSED DRAINAGE WORKS

ISSUE 2

Scale	1:1000
Date	08/09/2026





SITE PLAN

PROJECT :

APPLICATION FOR PROPOSED TEMPORARY PUBLIC VEHICLE PARK WITH ELECTRIC VEHICLE CHARGING DEVICE FOR A PERIOD OF 3 YEARS AT LOTS 591(PART), 592 (PART), 593(PART) AND 618(PART) IN D.D. 122, PING SHAN, YUEN LONG, NEW TERRITORIES

DRAWING TITLE:

PROPOSED DRAINAGE WORKS - SECTIONS

ISSUE 2

Scale	1:1000
Date	08/09/2026

Appendix E1
Hydraulic Calculation for Proposed U Channel for Application Site

Calculation Sheet		
Project Title:	**Date:**	**2026-09-21**
	Project No.	
APPLICATION FOR PROPOSED TEMPORARY PUBLIC VEHICLE PARK WITH ELECTRIC VEHICLE CHARGING DEVICE FOR A PERIOD OF 3 YEARS AT LOTS 591(PART), 592(PART), 593(PART) AND 618(PART) IN D.D. 122, PING SHAN, YUEN LONG, NEW TERRITORIES	**Designed by:**	**RF**
	Appendix :	**E1**
	Sheet No.:	**1**

Hydraulic Design for U Channel for Development Area

Catchpit No.		Catchment				Level				U Channel								Manning's Equation								
From (U/S)	To (D/S)	Surface Channel	Catchment. Area (m^2)	Runoff Coef. C	Ave. Slope / 100m	U/S C.L. (mPD)	D/S C.L. (mPD)	U/S I.L. (mPD)	D/S I.L. (mPD)	Mat-erial	Nominal Width (mm)	Nominal Depth (mm)	Lgth (m)	Grad. (1 in)	Restricted U Channel Area Ar (m2)	Wetted Peri.P (mm)	Hyd. Radius R (mm)	Mng's Coef. n	Vel. V at Full Bore (m/s)	Cap. Q_o (m^3/s)	Velocity Check	Time of Conc. t_c (min)	Rainfall Intensity i (mm/hr)	Runoff Q (m^3/s)	Capacity % (Q/Q_o)	Capacity Check
-	TCP1	UC1	2020	0.85	1	9.97	9.68	9.62	8.87	CO	350	350	47	63	0.10	0.90	0.11	0.015	1.93	0.19	OK	3.176	302.28	0.14	76.1%	OK
-	TCP2	UC2	1200	0.85	1	9.68	9.5	9.33	8.78	CO	350	350	22	40	0.10	0.90	0.11	0.015	2.41	0.24	OK	3.328	299.79	0.09	35.8%	OK
-	CP3	UC3	1200	0.85	1	9.97	9.62	9.62	9.27	CO	350	350	19	54	0.10	0.90	0.11	0.015	2.07	0.20	OK	3.481	297.37	0.08	41.4%	OK
CP3	CP2	UC4	1200	0.85	1	9.62	9.5	9.27	8.92	CO	350	350	45	129	0.10	0.90	0.11	0.015	1.34	0.13	OK	4.039	289.13	0.08	61.9%	OK
-	CP4	UC5	1900	0.85	1	9.5	8.99	9.15	8.40	CO	350	350	50	67	0.10	0.90	0.11	0.015	1.87	0.18	OK	4.485	283.13	0.13	69.2%	OK
CP4	TCP5	UC6	1900	0.85	1	8.99	8.83	8.40	8.05	CO	350	350	36	103	0.10	0.90	0.11	0.015	1.50	0.15	OK	4.884	278.14	0.12	84.4%	OK
CP2	TCP5	UC7	1900	0.85	1	9.68	8.83	9.33	8.78	CO	350	350	48	87	0.10	0.90	0.11	0.015	1.63	0.16	OK	5.374	272.45	0.12	76.1%	OK

Formulae:

t_c = Time of Concentration = $t_o + t_f$

where t_o = Inlet Time = 3.176

t_f = Flow Time = å (Pipe Length / Flow Velocity)

V = Pipe Flow Velocity

= $(R)^{2/3}s^{1/2}/n$ for Manning's Equation

where g = Gravitational Acceleartion = 9.81 m/s^2

R = Hydraulic Radius

s = Frictional Slope

k_s = Surface Roughness

=	0.6	mm for	concrete	CO
=	0.06	mm for	cast iron	CI
=	0.6	mm for	ductile iro	DI

Ref. DSD SDM Table 14

n = Kine. Viscosity = 1.141E-06 m^2/s

n = Manning's Coef.

0.015	for	concrete	CO
0.015	for	cast iron	CI
0.015	for	ductile iron	DI

Ref. DSD SDM Table 13

Q_o = Pipe Flow Capacity = $(\pi D^2/4)V$

i = Rainfall Intensity HKO Headquarters

= $a / (t_c + b)^c$ where a = 505.5 for a return period of 50 years

Ref. DSD Corrigendum No. 1/2024 SDM Table 3a

b = 3.29

c = 0.355

Rainfall Increase = 16 % due to climate change

Q = Runoff = 0.278*CiA

where C = Runoff Coefficient

A = Catchment Area

Ar = 0.9 Flow Area (10% reduction for Sedimentation)

Ref. DSD SDM Section 9.3

Appendix E2
Hydraulic Calculation for Proposed Drainage Pipe for Application Site

Calculation Sheet		
Project Title:	**Date:**	**2026-09-21**
	Project No.	
APPLICATION FOR PROPOSED TEMPORARY PUBLIC VEHICLE PARK WITH ELECTRIC VEHICLE CHARGING DEVICE FOR A PERIOD OF 3 YEARS AT LOTS 591(PART), 592(PART), 593(PART) AND 618(PART) IN D.D. 122, PING SHAN, YUEN LONG, NEW TERRITORIES	**Designed by:**	**RF**
	Appendix :	**E1**
	Sheet No.:	**1**

Hydraulic Design for Drainage Pipe for Development Area

		Catchment					Pipe				Colebrook-White Equation							Manning's Equation								
												Pipe Flow							Pipe Flow							
From (U/S)	To (D/S)	Incre. Area (m^2)	Accum. Area (m^2)	Runoff Coef. C	U/S I.L. (mPD)	D/S I.L. (mPD)	Mat-erial	Dia. (mm)	Lgth (m)	Grad. (1 in)	Rough-ness k_s (mm)	Vel. V (m/s)	Cap. Q_o (m^3/s)	Time of Conc. t_c (min)	Rainfall Inten-sity i (mm/hr)	Runoff Q (m^3/s)	Velocit y Check	Mng's Coef. n	Vel. V (m/s)	Cap. Q_o (m^3/s)	Capacity Check	Time of Conc. t_c (min)	Rainfall Inten-sity i (mm/hr)	Runoff Q (m^3/s)	Runoff / Cap. (Q/Q_o)	Capacity Check
TCP1	DP1	2020	2020	1	8.87	8.65	CO	350	8	36	0.60	2.883	0.277	3.176	261	0.146	OK	0.015	2.179	0.210	OK	4.485	244	0.137	65.3%	OK
TCP2	DP2	1200	1815	1	8.78	8.59	CO	350	8	42	0.60	2.678	0.258	3.328	258	0.130	OK	0.015	2.025	0.195	OK	4.485	244	0.123	63.2%	OK
TCP5	DP3	1900	1900	1	8.05	7.81	CO	350	7	29	0.60	3.221	0.310	4.884	240	0.127	OK	0.015	2.433	0.234	OK	0.000	331	0.175	74.7%	OK

Formulae:

t_c = Time of Concentration = $t_o + t_f$

where t_o = Inlet Time = 3.176

t_f = Flow Time = â (Pipe Length / Flow Velocity)

V = Pipe Flow Velocity

= $(R)^{2/3}s^{1/2}/n$ for Manning's Equation

where g = Gravitational Accelearation = 9.81 m/s^2

R = Hydraulic Radius

s = Frictional Slope

k_s = Surface Roughness

=	0.6	mm for	concrete CO
=	0.06	mm for	cast iron CI
=	0.6	mm for	ductile iro DI

Ref. DSD SDM Table 14

n = Kine. Viscosity = 1.141E-06 m^2/s

n = Manning's Coef.

0.015	for	concrete CO
0.015	for	cast iron CI
0.015	for	ductile iron DI

Ref. DSD SDM Table 13

Q_o = Pipe Flow Capacity = $(\pi D^2/4)V$

i = Rainfall Intensity HKO Headquarters

= $a / (t_c + b)^c$ where a = 505.5 for a return period of 50 years

Ref. DSD Corrigendum No. 1/2024 SDM Table 3a

b = 3.29

c = 0.355

Rainfall Increase = 16 % due to climate change

Q = Runoff = 0.278*CiA

where C = Runoff Coefficient

A = Catchment Area

Ar = 0.9 Flow Area (10% reduction for Sedimentation)

Ref. DSD SDM Section 9.3

Appendix F
Design Checking for Existing Drainage System

Calculation Sheet	Date:	2026-09-23
Project Title:	Project No.	
APPLICATION FOR PROPOSED TEMPORARY PUBLIC VEHICLE PARK WITH ELECTRIC VEHICLE CHARGING DEVICE FOR A PERIOD OF 3 YEARS AT LOTS 591(PART), 592(PART), 593(PART) AND 618(PART) IN D.D. 122, PING SHAN, YUEN LONG, NEW TERRITORIES	Designed by:	RF
	Appendix :	F
	Sheet No.:	1

Design Checking for Existing Village Drain

Catchpit No.		Catchment				Level				U Channel							Manning's Equation								
From (U/S)	To (D/S)	Channel	Catchment. Area (m^2)	Runoff Coef. C	Ave. Slope / 100m	U/S G.L. (mPD)	D/S G.L. (mPD)	U/S I.L. (mPD)	D/S I.L. (mPD)	Mat-erial	Width (mm)	Lgth (m)	Grad. (1 in)	Restricted Flow Area A (m2)	Wetted Peri.P (mm)	Hyd. Radius R (mm)	Mng's Coef. n	Vel. V at Full Bore (m/s)	Cap. Q_o (m^3/s)	Velocity Check	Time of Conc. t_c (min)	Rainfall Intensity i (mm/hr)	Runoff Q (m^3/s)	Capacity % (Q/Q_o)	Capacity Check
Site	EXISTING	600U	5120	0.85	1	10.10	7.80	9.60	6.90	CO	600	200	74	0.45	2.74	0.16	0.015	2.33	1.05	OK	12.315	221.09	0.27	25.5%	OK
Site	EXISTING	2000U	5120	0.85	1	9.80	5.80	9.20	5.40	CO	2000	1200	316	2.49	3.54	0.70	0.015	2.97	7.40	OK	73.888	125.35	0.15	2.0%	OK

Formulae:

t_c = Time of Concentration = $t_o + t_f$

where t_o = Inlet Time = 12.315 min

t_f = Flow Time = â (Pipe Length / Flow Velocity)

V = Pipe Flow Velocity

= $(R)^{2/3}s^{1/2}/n$ for Manning's Equation

where g = Gravitational Acceleartion = 9.81 m/s^2

R = Hydraulic Radius

s = Frictional Slope

k_s = Surface Roughness = 0.6 mm for concrete CO — Ref. DSD SDM Table 14

= 0.06 mm for cast iron CI

= 0.6 mm for ductile iro DI

n = Kine. Viscosity = 1.141E-06 m^2/s

n = Manning's Coef. = 0.015 for concrete CO — Ref. DSD SDM Table 13

0.015 for cast iron CI

0.015 for ductile iro DI

Q_o = Pipe Flow Capacity = $(\pi D^2/4)V$

i = Rainfall Intensity — HKO Headquarters

= $a / (t_c + b)^c$ where a = 505.5 for a return period of 50 years — Ref. DSD Corrigendum No. 1/2024 SDM Table 3a

b = 3.29

c = 0.355

Rainfall Increase = 16 % due to climate change

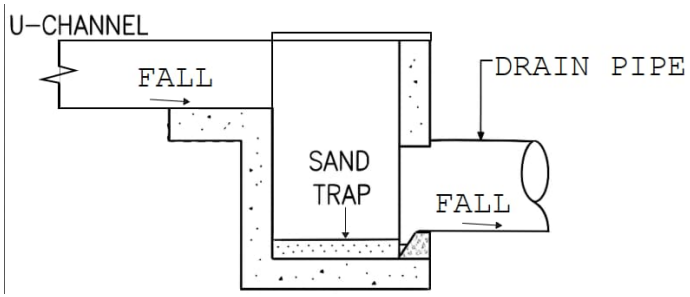
Q = Runoff = 0.278*CiA

where C = Runoff Coefficient

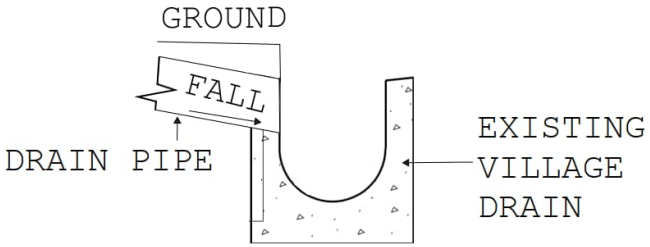
A = Catchment Area — Ref. DSD SDM Section 9.3

Ar = 0.9 Flow Area (10% reduction for Sedimentation)

Appendix G
Construction Details and
Typical designs of the U-channels and Catchpits



CONNECTION TO PROPOSED CATCHPIT
WITH SAND TRAP TO STORMWATER PIPE
(FOR INDICATIVE ONLY)



CONNECTION TO STORMWATER PIPE TO
EXISTING VILLAGE DRAIN
(FOR INDICATIVE ONLY)

SITE PLAN

PROJECT :

APPLICATION FOR PROPOSED TEMPORARY PUBLIC VEHICLE PARK WITH ELECTRIC VEHICLE CHARGING DEVICE FOR A PERIOD OF 3 YEARS AT LOTS 591(PART), 592 (PART), 593(PART) AND 618(PART) IN D.D. 122, PING SHAN, YUEN LONG, NEW TERRITORIES

DRAWING TITLE:

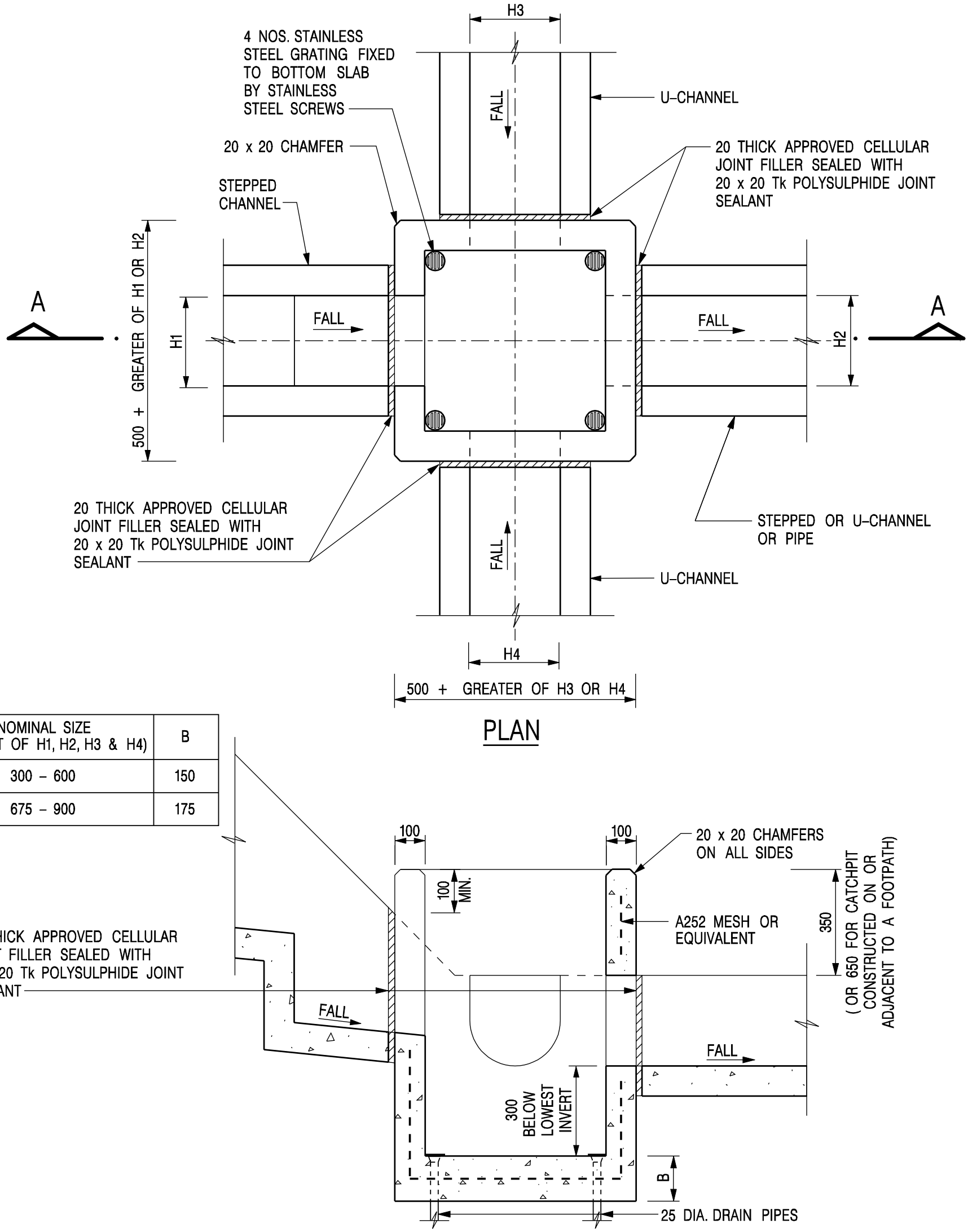
TYPICAL DETAILS

ISSUE 2

Scale NOT TO SCALE

Date 01/03/2026

APPENDIX D



PLAN

NOMINAL SIZE (LARGEST OF H1, H2, H3 & H4)	B
300 – 600	150
675 – 900	175

SECTION A – A

NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETRES.
2. REFER TO SHEET 2 FOR OTHER NOTES.

REF.	REVISION	SIGNATURE	DATE
–	FORMER DRG. NO. C2406J.	Original Signed	03.2015

CATCHPIT WITH TRAP

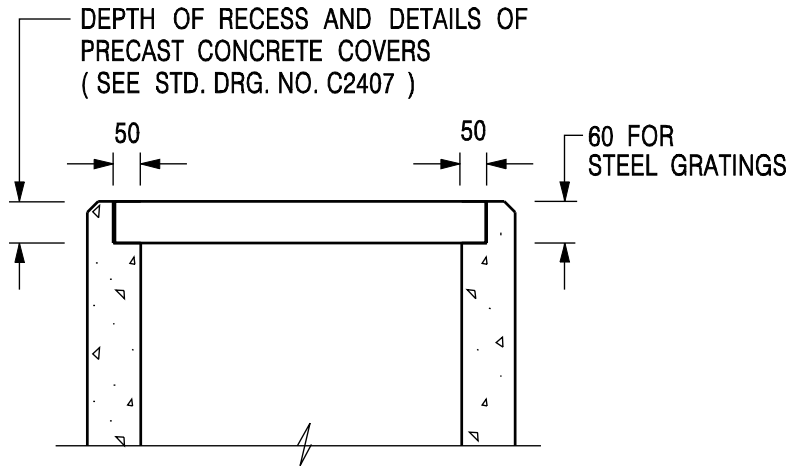
(SHEET 1 OF 2)

CEDD CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT

SCALE 1 : 20

DATE JAN 1991

DRAWING NO. C2406 /1



ALTERNATIVE TOP SECTION
FOR PRECAST CONCRETE COVERS / GRATINGS

NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETRES.

2. ALL CONCRETE SHALL BE GRADE 20 /20.

3. CONCRETE SURFACE FINISH SHALL BE CLASS U2 OR F2 AS APPROPRIATE.

4. FOR DETAILS OF JOINT, REFER TO STD. DRG. NO. C2413.

5. CONCRETE TO BE COLOURED AS SPECIFIED.

6. UNLESS REQUESTED BY THE MAINTENANCE PARTY AND AS DIRECTED BY THE ENGINEER, CATCHPIT WITH TRAP IS NORMALLY NOT PREFERRED DUE TO PONDING PROBLEM.

7. UPON THE REQUEST FROM MAINTENANCE PARTY, DRAIN PIPES AT CATCHPIT BASE CAN BE USED BUT THIS IS FOR CATCHPITS LOCATED AT SLOPE TOE ONLY AND AS DIRECTED BY THE ENGINEER.

8. FOR CATCHPITS CONSTRUCTED ON OR ADJACENT TO A FOOTPATH, STEEL GRATINGS (SEE DETAIL 'A' ON STD. DRG. NO. C2405 /2) OR CONCRETE COVERS (SEE STD. DRG. NO. C2407) SHALL BE PROVIDED AS DIRECTED BY THE ENGINEER.

9. IF INSTRUCTED BY THE ENGINEER, HANDRAILING (SEE DETAIL 'J' ON STD. DRG. NO. C2405 /5; EXCEPT ON THE UPSLOPE SIDE) IN LIEU OF STEEL GRATINGS OR CONCRETE COVERS CAN BE ACCEPTED AS AN ALTERNATIVE SAFETY MEASURE FOR CATCHPITS NOT ON A FOOTPATH NOR ADJACENT TO IT. TOP OF THE HANDRAILING SHALL BE 1 000 mm MIN. MEASURED FROM THE ADJACENT GROUND LEVEL.

10. MINIMUM INTERNAL CATCHPIT WIDTH SHALL BE 1 000 mm FOR CATCHPITS WITH A HEIGHT EXCEEDING 1 000 mm MEASURED FROM THE INVERT LEVEL TO THE ADJACENT GROUND LEVEL. AND, STEP IRONS (SEE DSD STD. DRG. NO. DS1043) AT 300 c/c STAGGERED SHALL BE PROVIDED. THICKNESS OF CATCHPIT WALL FOR INSTALLATION OF STEP IRONS SHALL BE INCREASED TO 150 mm.

11. FOR RETROFITTING AN EXISTING CATCHPIT WITH STEEL GRATING, SEE DETAIL 'G' ON STD. DRG. NO. C2405 /4.

12. SUBJECT TO THE APPROVAL OF THE ENGINEER, OTHER MATERIALS CAN ALSO BE USED AS COVERS / GRATINGS.

REF.	REVISION	SIGNATURE	DATE
A	MINOR AMENDMENT.	Original Signed	04.2016
–	FORMER DRG. NO. C2406J.	Original Signed	03.2015

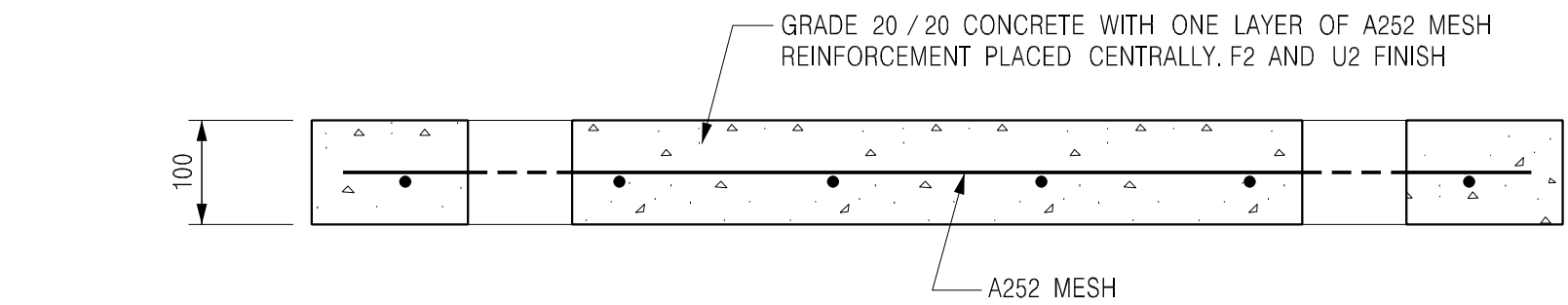
CATCHPIT WITH TRAP
(SHEET 2 OF 2)

CEDD **CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT**

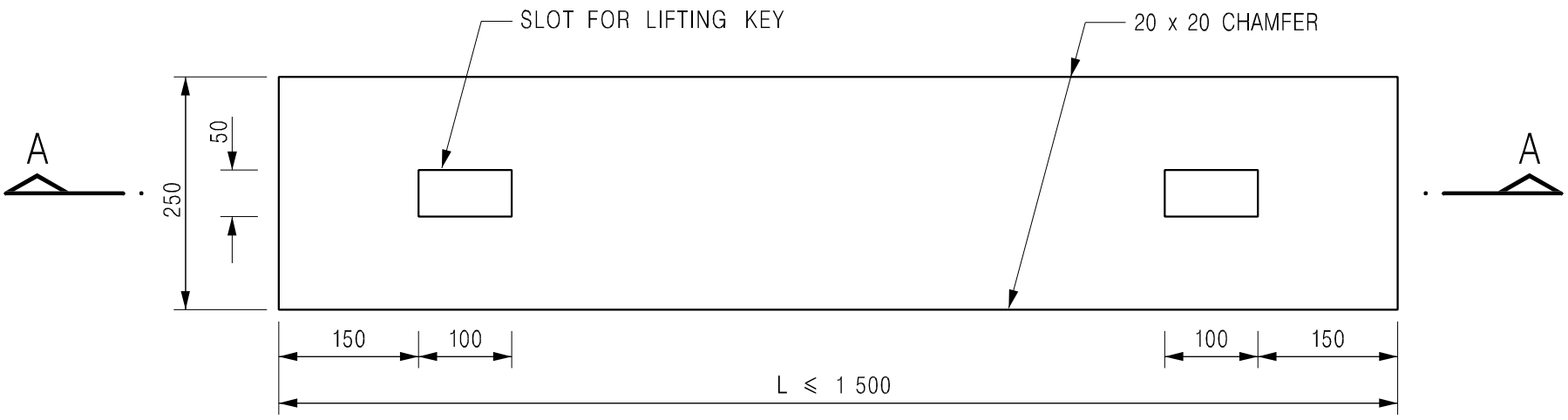
SCALE 1 : 20

DATE JAN 1991

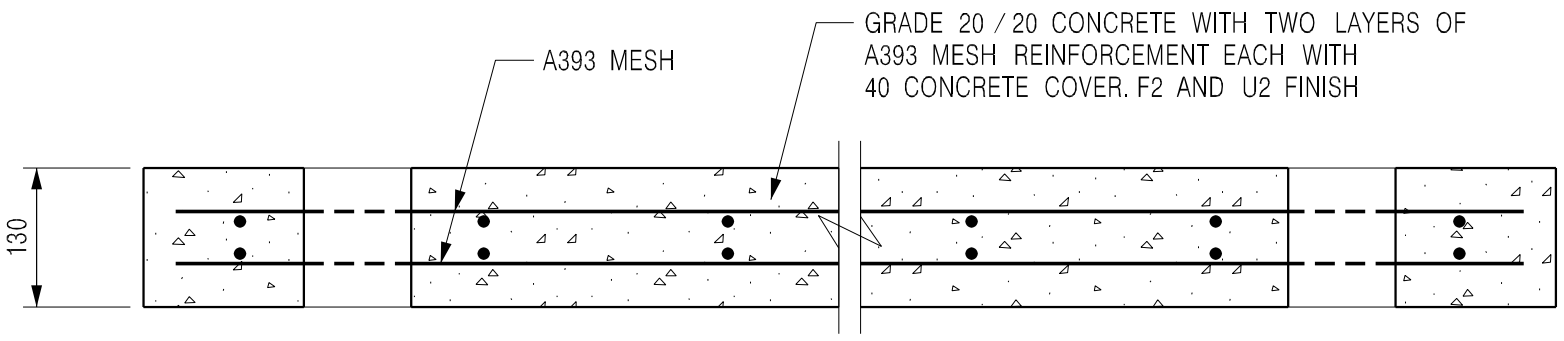
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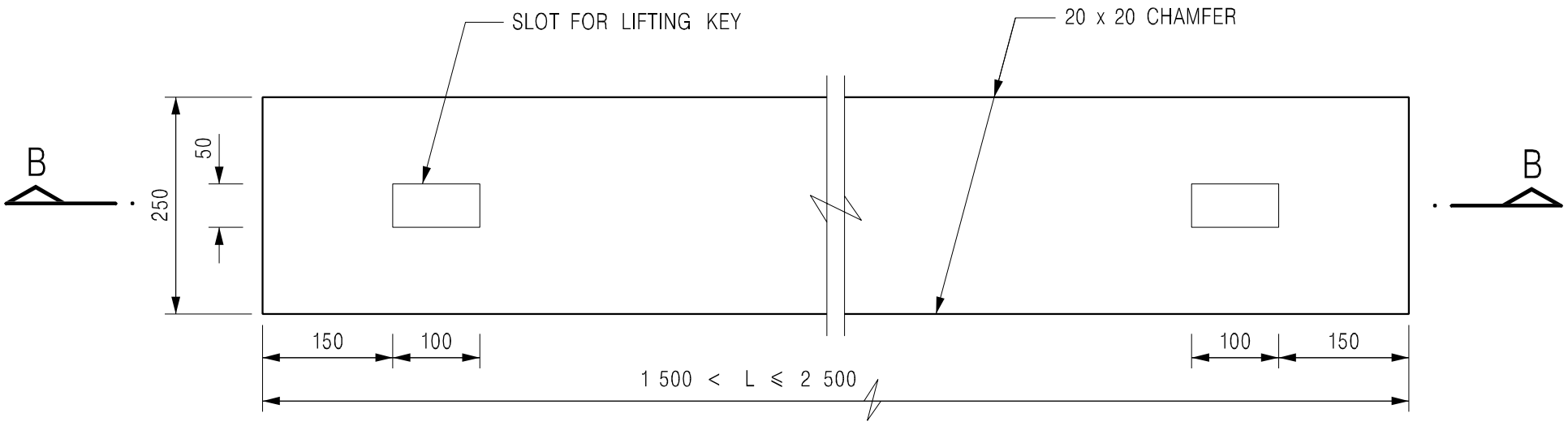
SECTION A – A



PLAN
TYPE 1 – FOR SPAN UP TO 1.5 m



SECTION B – B



PLAN
TYPE 2 – FOR SPANS 1.5 m TO 2.5 m

NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETRES.
2. ALL EXTERNAL EDGES OF THE COVERS SHALL BE 20mm CHAMFERED.

REF.	REVISION	SIGNATURE	DATE
B	NAME OF DEPARTMENT AMENDED.	Original Signed	01.2005
A	GENERAL REVISION	Original Signed	12.2002

PRECAST CONCRETE COVERS FOR CATCHPIT AND SAND TRAP

CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT

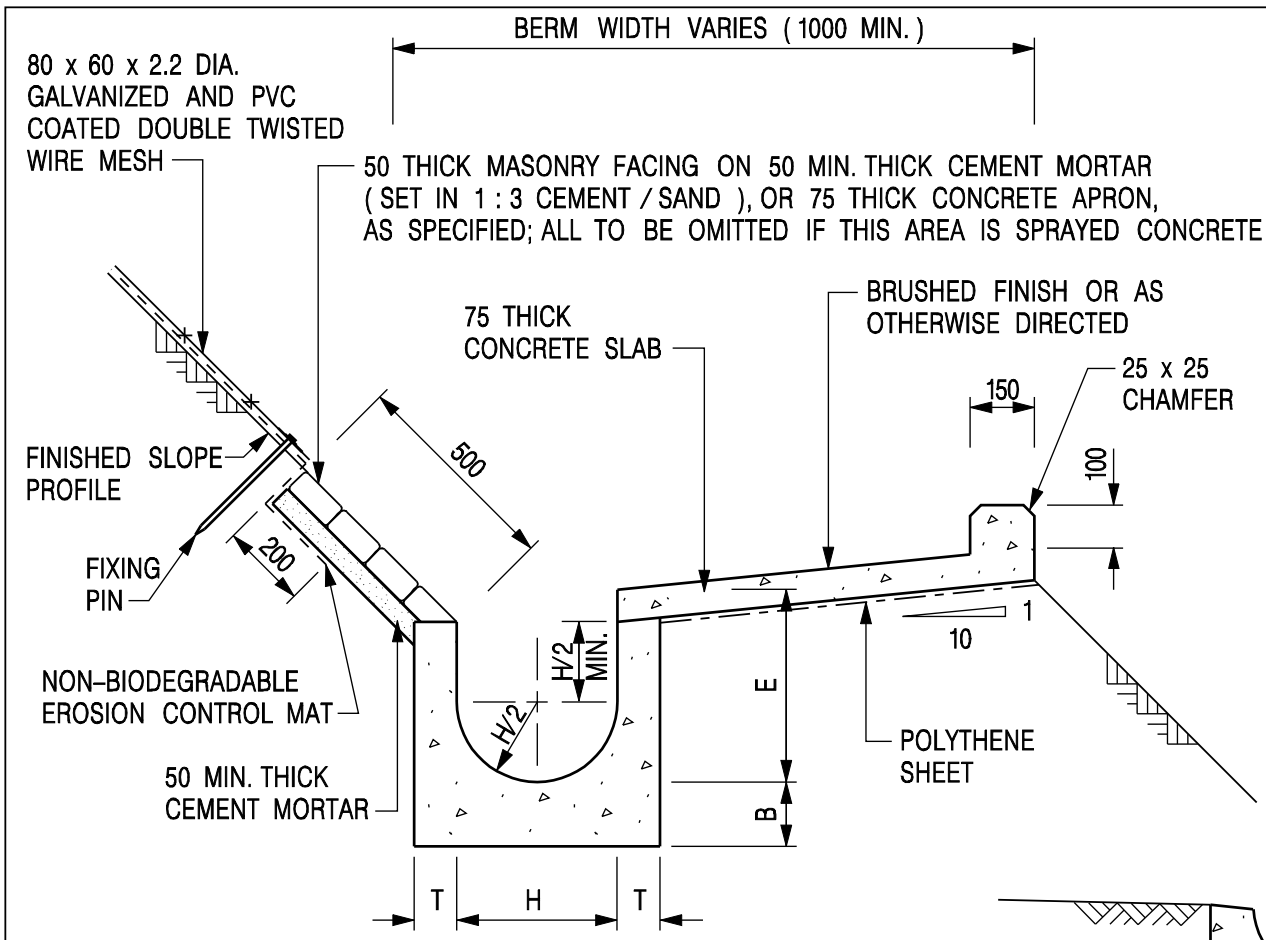
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DATE JAN 1991

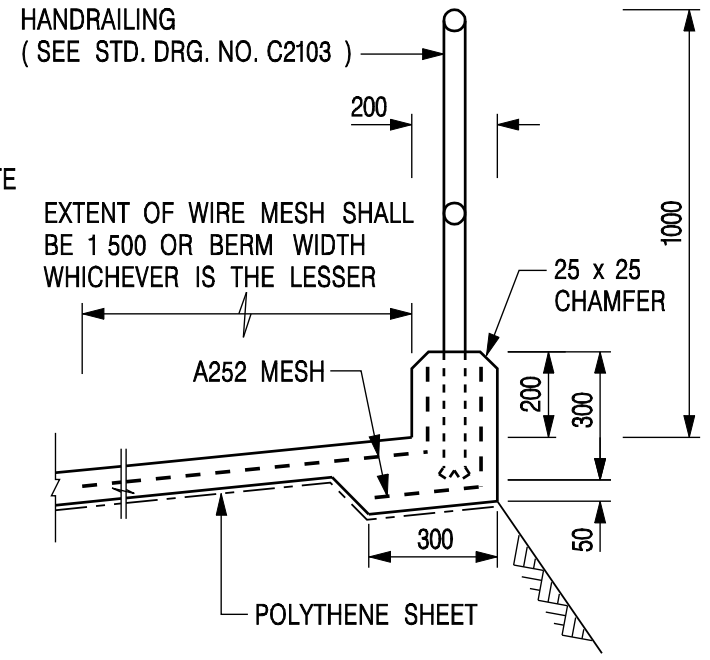
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興土木 利民生 齊拓展 創明天

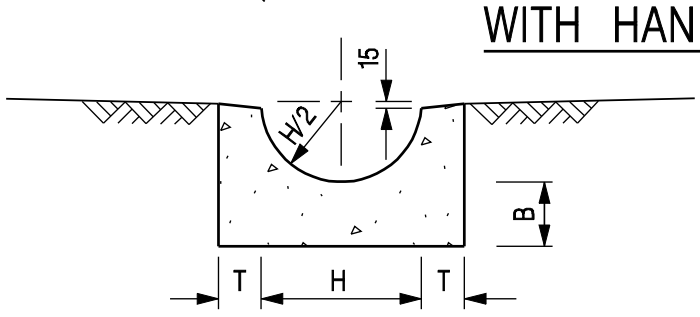
We bring the best engineering to life



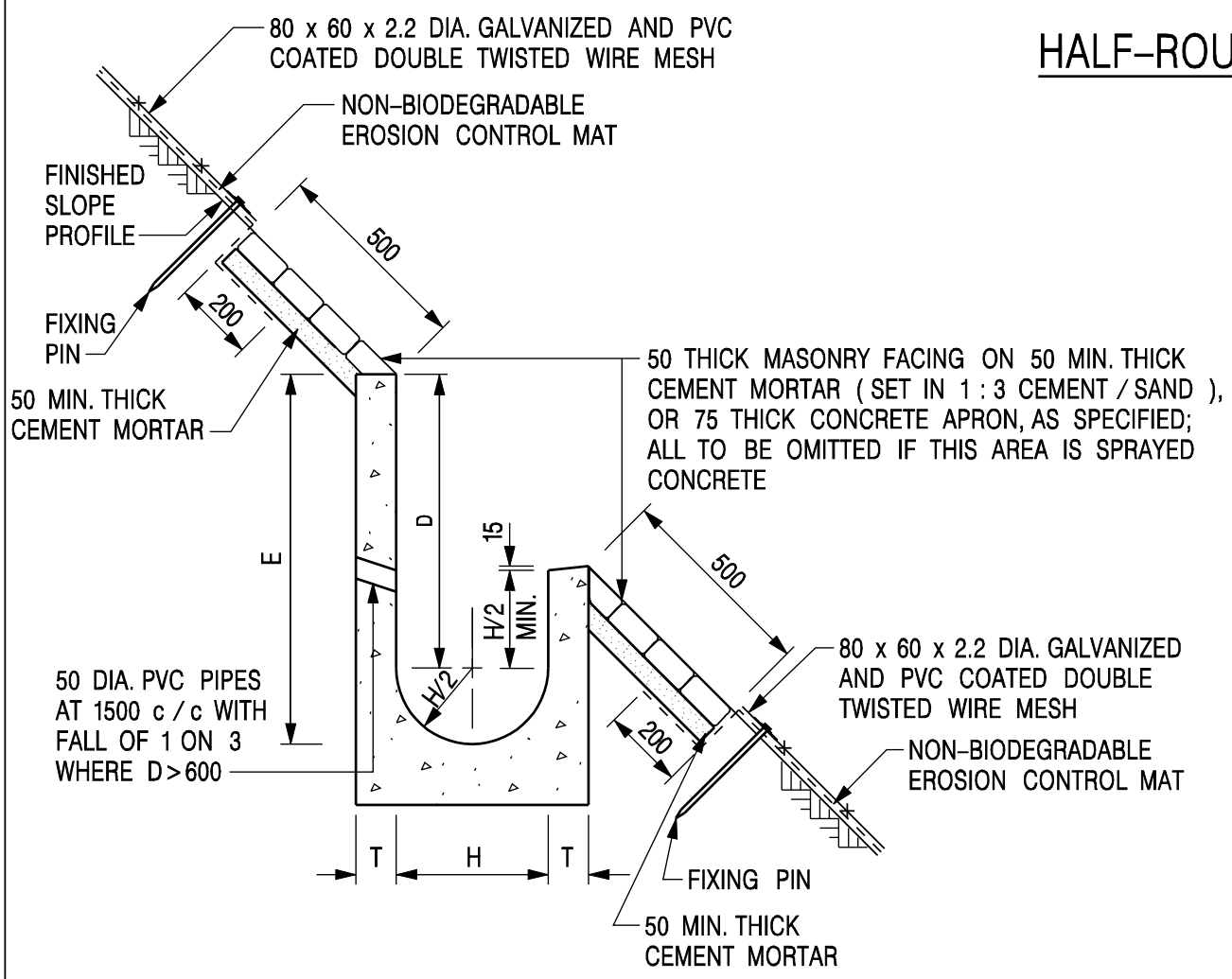
U-CHANNELS CONSTRUCTED ON BERM



DETAILS OF BERM WITH HANDRAILING



HALF-ROUND CHANNEL



U-CHANNELS NOT CONSTRUCTED ON BERM

NOMINAL SIZE H	T	B	REINFORCEMENT
300	80	100	A252 MESH PLACED CENTRALLY AND T=100 WHEN E>650
375 - 600	100	150	
675 - 900	125	175	A252 MESH PLACED CENTRALLY

NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETRES.
2. ALL CONCRETE TO BE GRADE 20 / 20.
3. CONCRETE SURFACE FINISH SHALL BE CLASS U2, F2 OR BRUSHED FINISH AS DIRECTED.
4. SPACING OF EXPANSION JOINT IN CHANNELS, BERM SLABS AND APRONS TO BE 10 METRES MAXIMUM, SEE STD. DRG. NO. C2413 FOR DETAILS.
5. JOINTS FOR CHANNELS, BERM SLABS, APRONS AND WALLS, ETC. TO BE ON THE SAME ALIGNMENT.
6. FOR DIMENSIONS T, H, & B, SEE TABLE BELOW.
7. BIODEGRADABLE EROSION CONTROL MAT IF REQUIRED, SEE STD. DRG. NO. C2511/1E.
8. CONCRETE TO BE COLOURED AS SPECIFIED.
9. CONCRETE U-CHANNEL CAN BE CAST IN-SITU OR PRECAST CONCRETE SUBJECT TO THE ENGINEER'S AGREEMENT ON THE DETAILS.
10. DETAILS OF EROSION CONTROL MAT AND WESH MESH ON BERM. (SEE STD DRG. NO. C2511/1E)

REF.	REVISION	SIGNATURE	DATE
I	MINOR AMENDMENT.	Original Signed	07.2018
H	THICKNESS OF MASONRY FACING AMENDED.	Original Signed	01.2005
G	MINOR AMENDMENT.	Original Signed	01.2004
F	GENERAL REVISION.	Original Signed	12.2002
E	DRAWING TITLE AMENDED.	Original Signed	11.2001
D	MINOR AMENDMENT.	Original Signed	08.2001
C	150 x 100 UPSTAND ADDED AT BERM.	Original Signed	6.99
B	MINOR AMENDMENTS.	Original Signed	3.94

DETAILS OF HALF-ROUND AND U-CHANNELS (TYPE A - WITH MASONRY APRON)

CEDD CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT

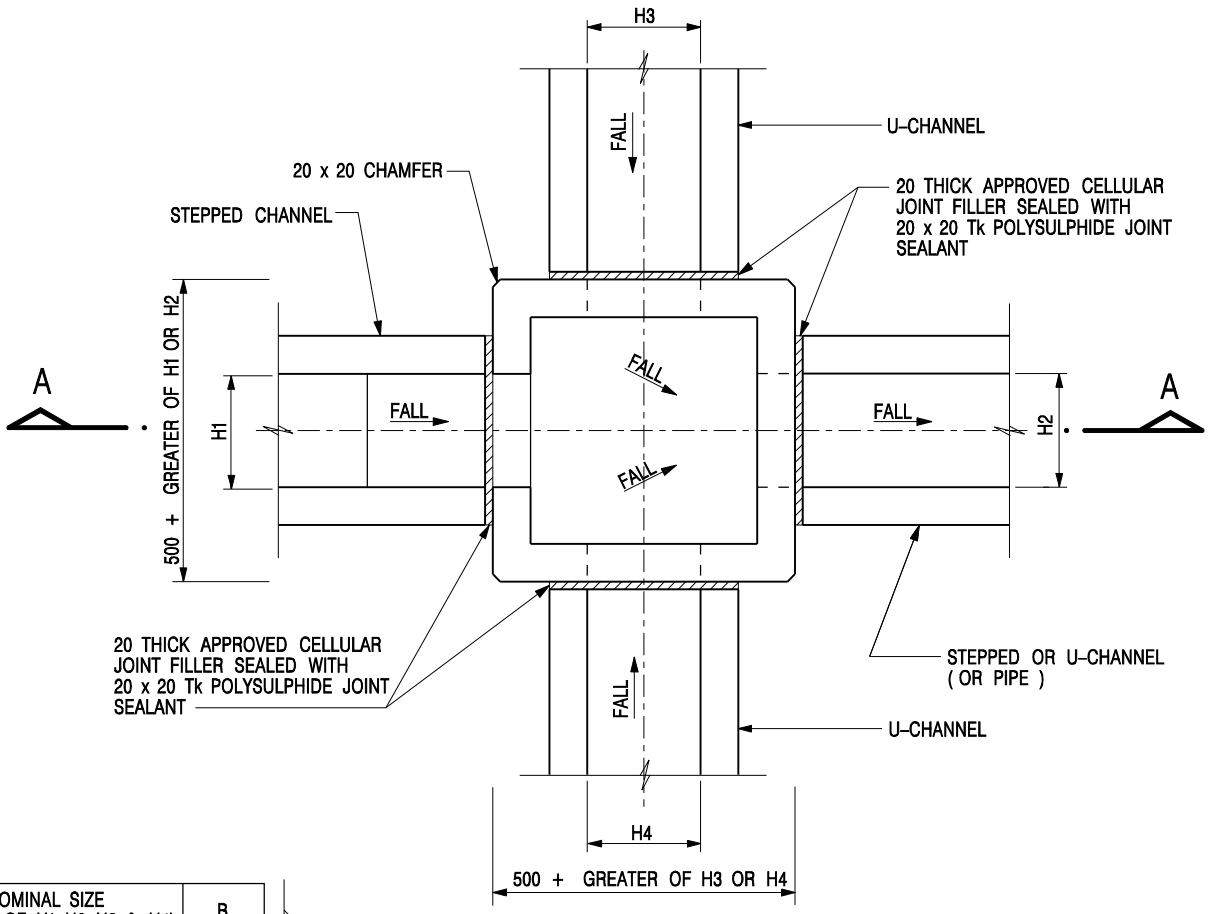
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DATE JAN 1991

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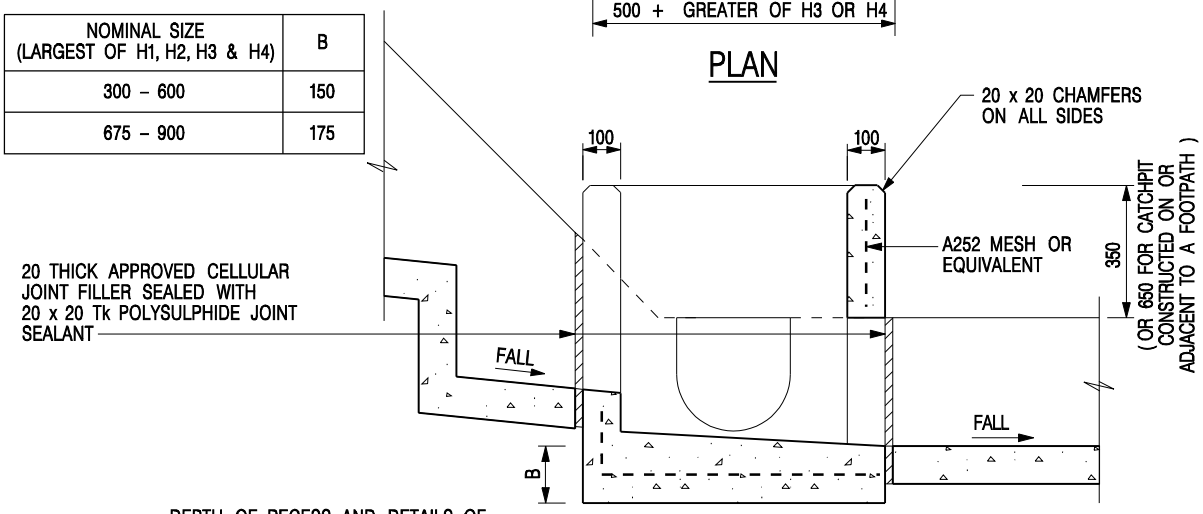
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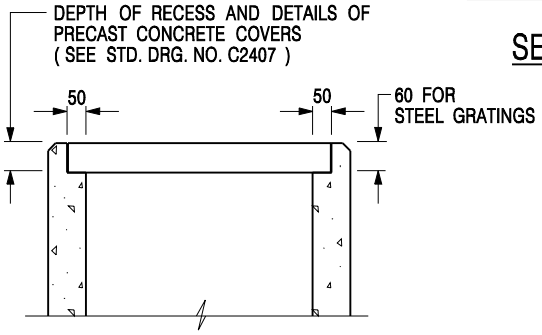


PLAN

NOMINAL SIZE (LARGEST OF H1, H2, H3 & H4)	B
300 – 600	150
675 – 900	175



SECTION A – A



NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETRES.
2. REFER TO SHEET 5 FOR OTHER NOTES.

ALTERNATIVE TOP SECTION FOR PRECAST CONCRETE COVERS / GRATINGS

REF.	REVISION	SIGNATURE	DATE
–	FORMER DRG. NO. C2405J.	Original Signed	03.2015

STANDARD CATCHPIT DETAILS

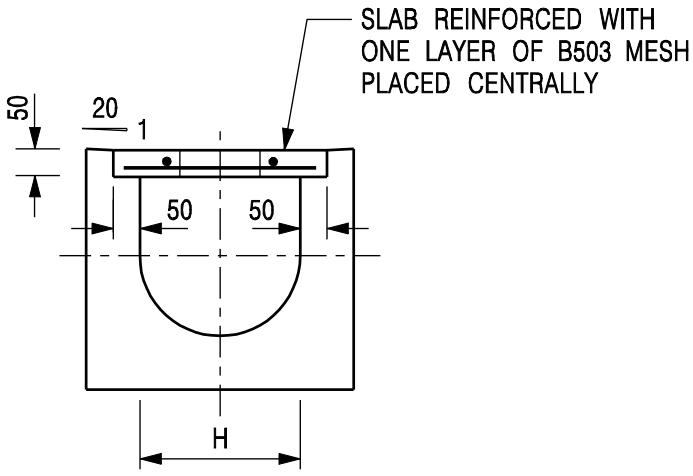
(SHEET 1 OF 5)

CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT

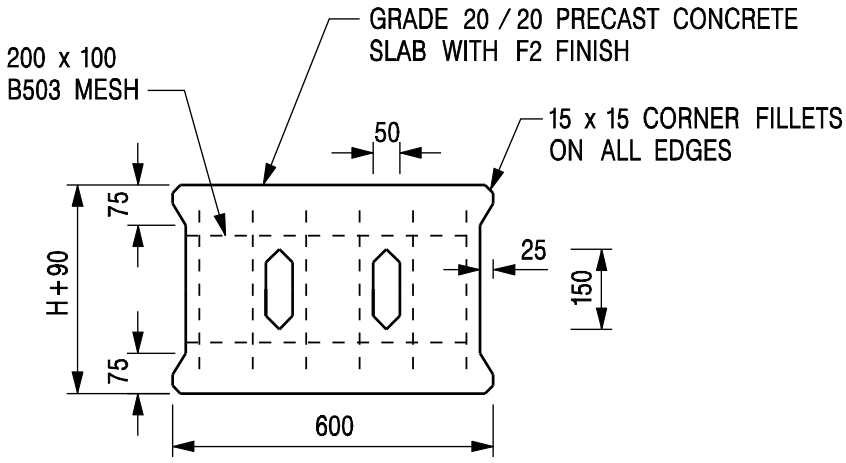
SCALE	1 : 20	DRAWING NO.
DATE	JAN 1991	C2405 /1

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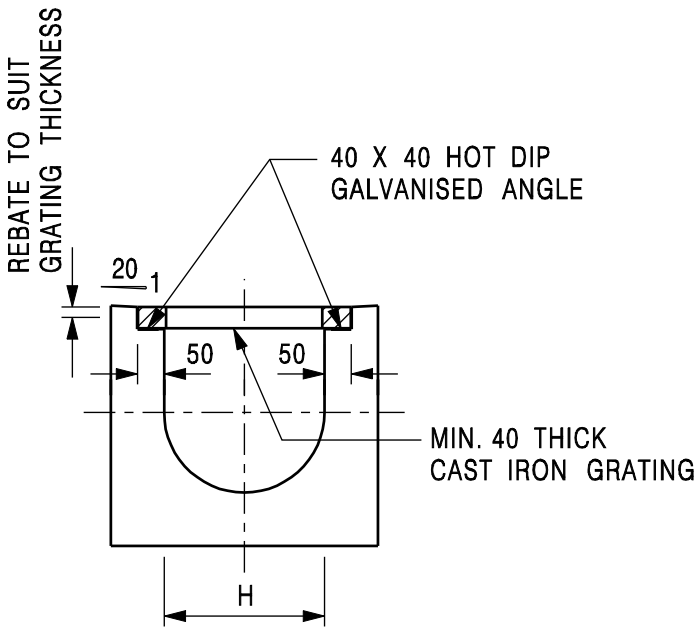
TYPICAL SECTION



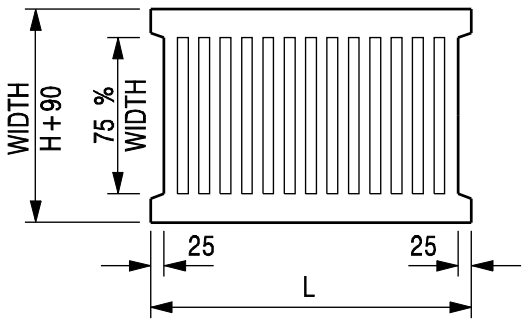
PLAN OF SLAB

U-CHANNELS WITH PRECAST CONCRETE SLABS

(UP TO H OF 525)



TYPICAL SECTION



L = 600mm FOR H ⩽ 375mm
L = 400mm FOR H > 375mm

CAST IRON GRATING

(DIMENSIONS ARE FOR GUIDANCE ONLY, CONTRACTOR MAY SUBMIT EQUIVALENT TYPE)

U-CHANNEL WITH CAST IRON GRATING

(UP TO H OF 525)

NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETRES.
2. H = NOMINAL CHANNEL SIZE.
3. ALL CAST IRON FOR GRATINGS SHALL BE GRADE EN-GJL-150 COMPLYING WITH BS EN 1561.
4. FOR COVERED CHANNELS TO BE HANDED OVER TO HIGHWAYS DEPARTMENT FOR MAINTENANCE, THE GRATING DETAILS SHALL FOLLOW THOSE AS SHOWN ON HyD STD. DRG. NO. H3156.

REF.	REVISION	SIGNATURE	DATE
E	NOTES 3 & 4 AMENDED.	Original Signed	12.2014
D	NOTE 4 ADDED.	Original Signed	06.2008
C	MINOR AMENDMENT. NOTE 3 ADDED.	Original Signed	12.2005
B	NAME OF DEPARTMENT AMENDED.	Original Signed	01.2005
A	CAST IRON GRATING AMENDED.	Original Signed	12.2002

COVER SLAB AND CAST IRON GRATING FOR CHANNELS

CEDD CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT

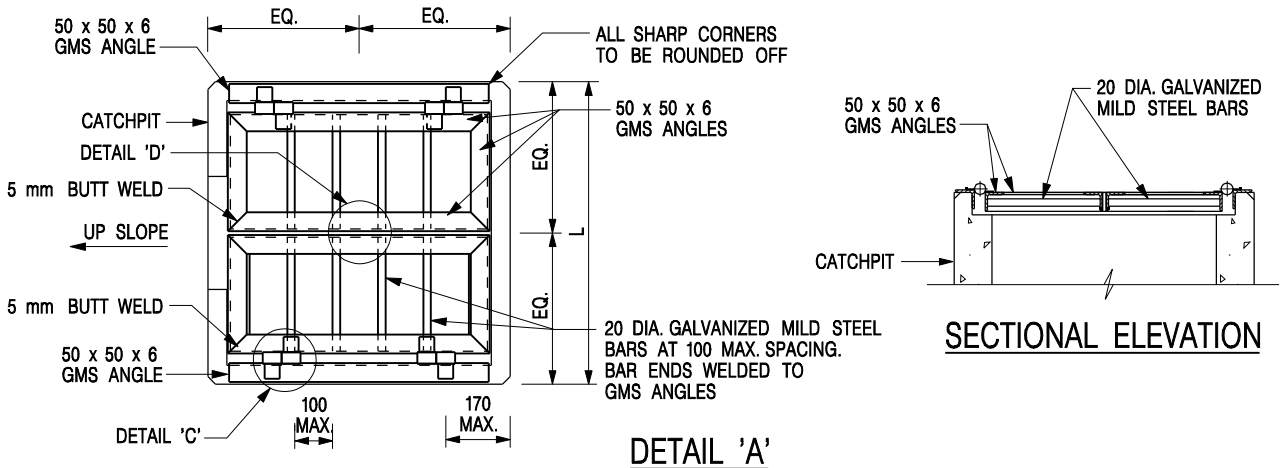
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DATE JAN 1991

DRAWING NO. C2412E

卓越工程 建設香港

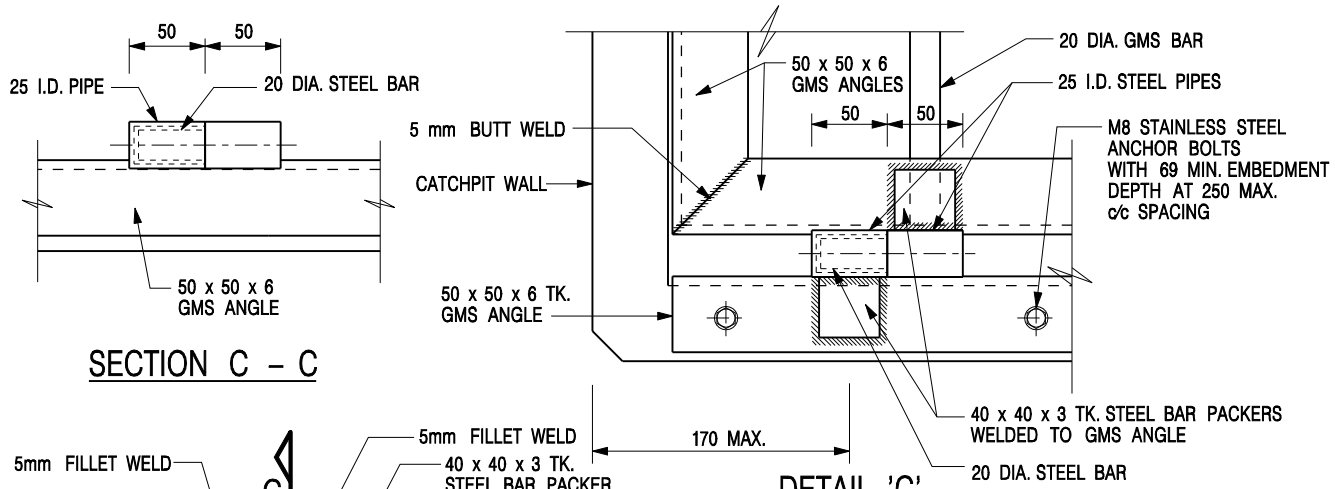
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DETAIL 'A'

(DETAILS OF DOUBLE SIDE OPENING STEEL GRATING FOR L>900mm)

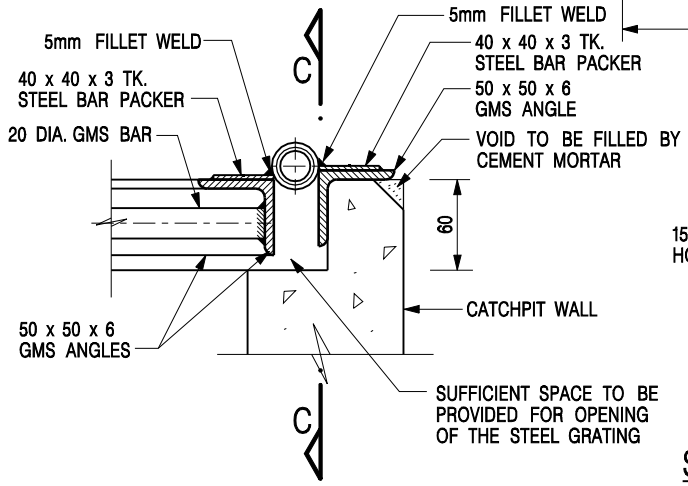
SCALE 1 : 20



DETAIL 'C'

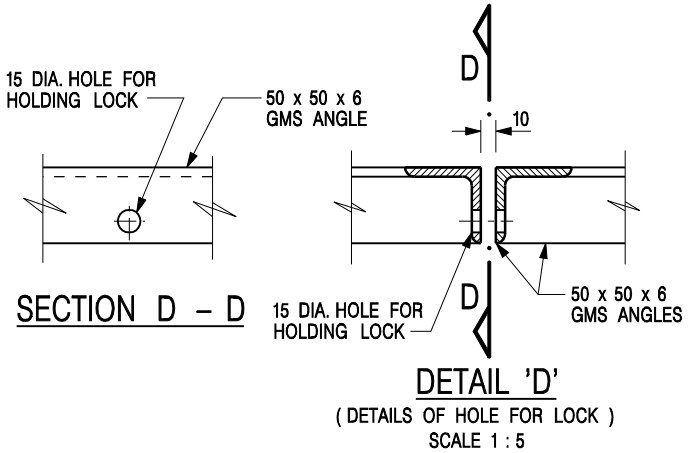
(DETAILS OF HINGE)

SCALE 1 : 5



SECTIONAL ELEVATION

(DETAIL 'C')



DETAIL 'D'

(DETAILS OF HOLE FOR LOCK)

SCALE 1 : 5

NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETRES.
2. REFER TO SHEET 5 FOR OTHER NOTES.

REF.	REVISION	SIGNATURE	DATE
–	FORMER DRG. NO. C2405J.	Original Signed	03.2015

STANDARD CATCHPIT DETAILS

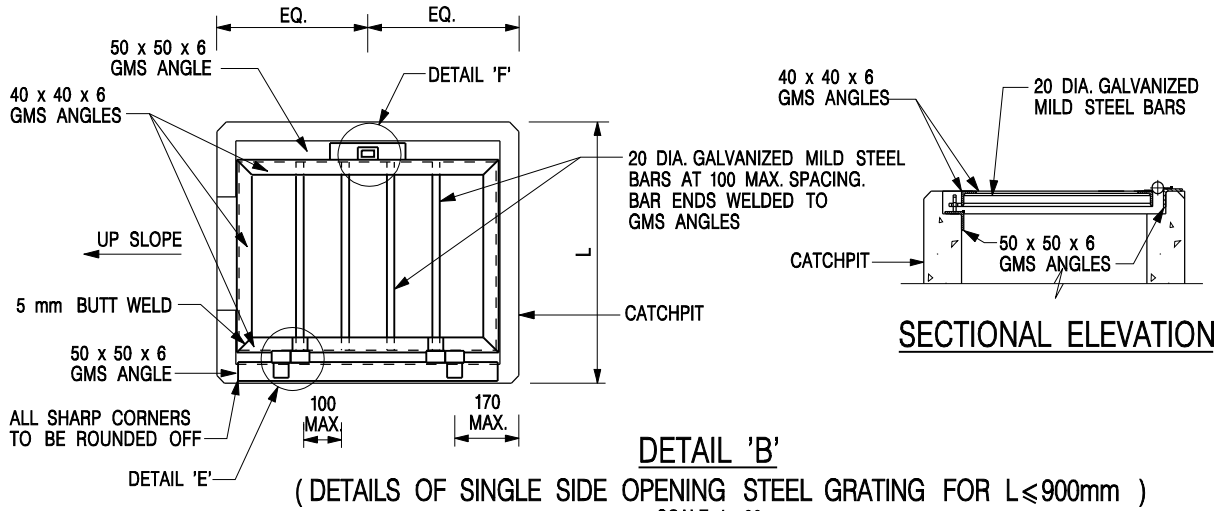
(SHEET 2 OF 5)

CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT

SCALE AS SHOWN

DATE JAN 1991

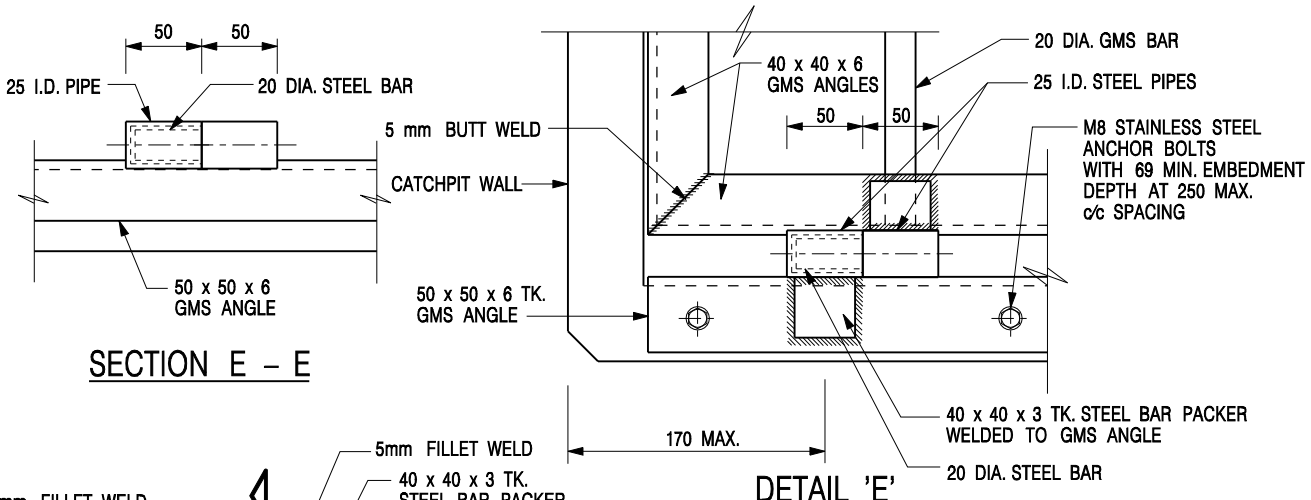
DRAWING NO. C2405 /2



DETAIL 'B'

(DETAILS OF SINGLE SIDE OPENING STEEL GRATING FOR L≤900mm)

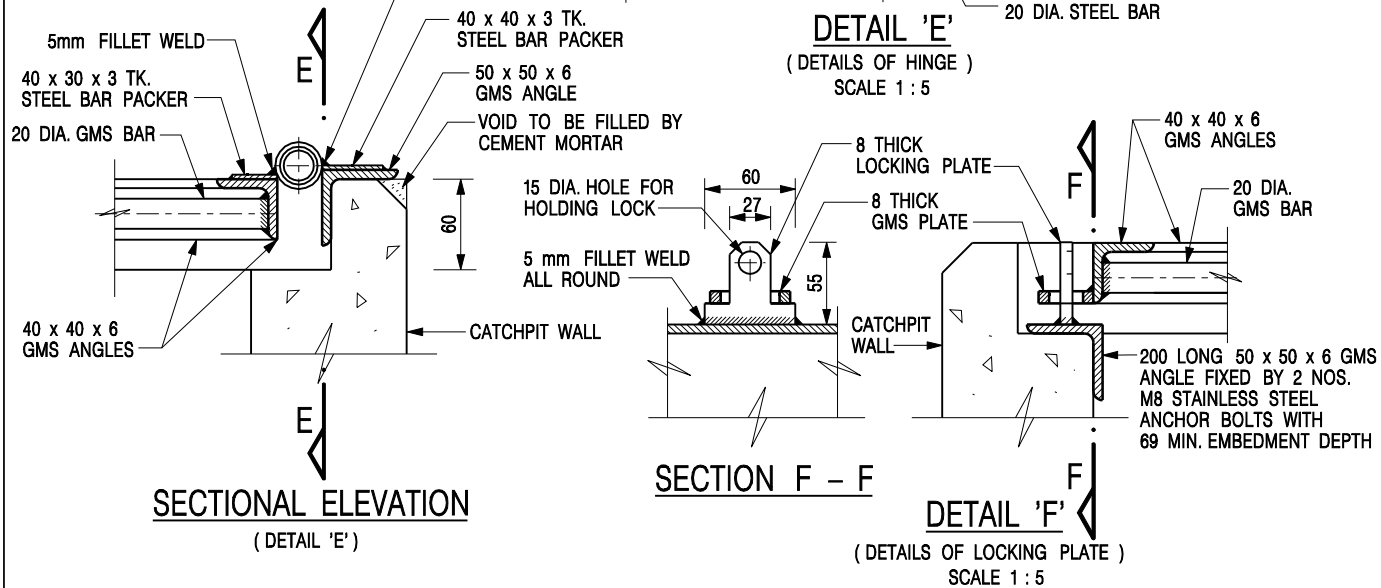
SCALE 1 : 20



DETAIL 'E'

(DETAILS OF HINGE)

SCALE 1 : 5



NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETRES.
2. REFER TO SHEET 5 FOR OTHER NOTES.

REF.	REVISION	SIGNATURE	DATE
-	FORMER DRG. NO. C2405J.	Original Signed	03.2015

STANDARD CATCHPIT DETAILS

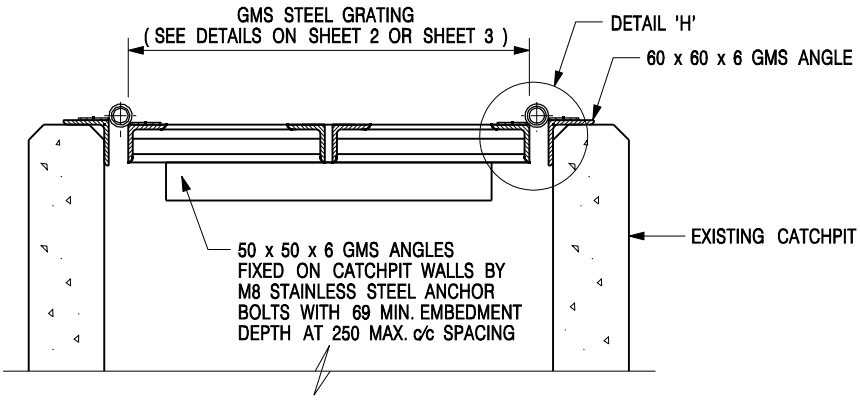
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CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT

SCALE AS SHOWN

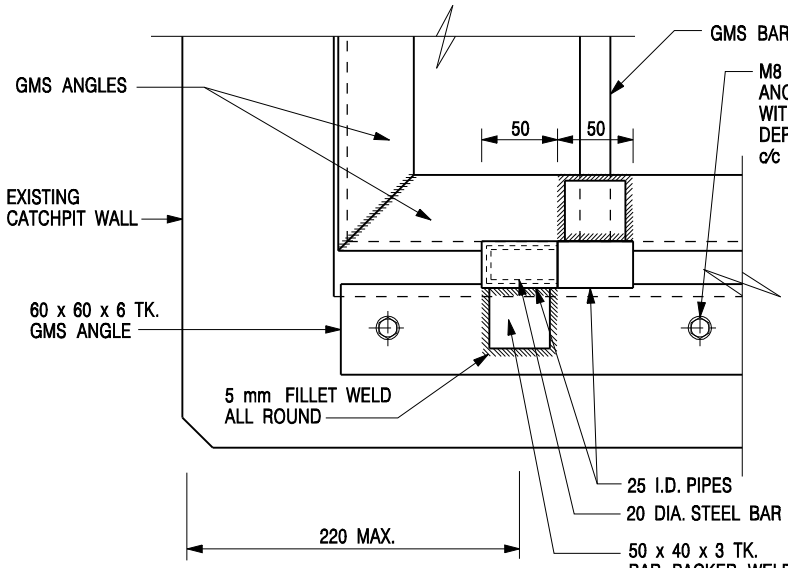
DATE JAN 1991

DRAWING NO. C2405 /3



DETAIL 'G' – DETAILS OF STEEL GRATING CONSTRUCTED ON EXISTING CATCHPIT

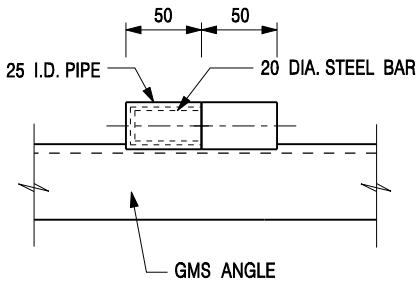
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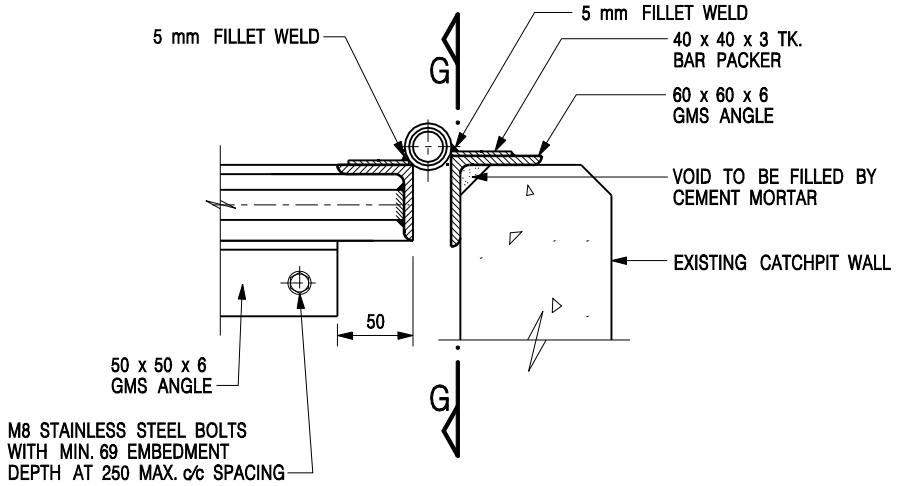
DETAIL 'H'

(DETAILS OF HINGE)

SCALE 1 : 5



SECTION G – G



SECTIONAL ELEVATION

(DETAIL 'H')

NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETRES.
2. REFER TO SHEET 5 FOR OTHER NOTES.

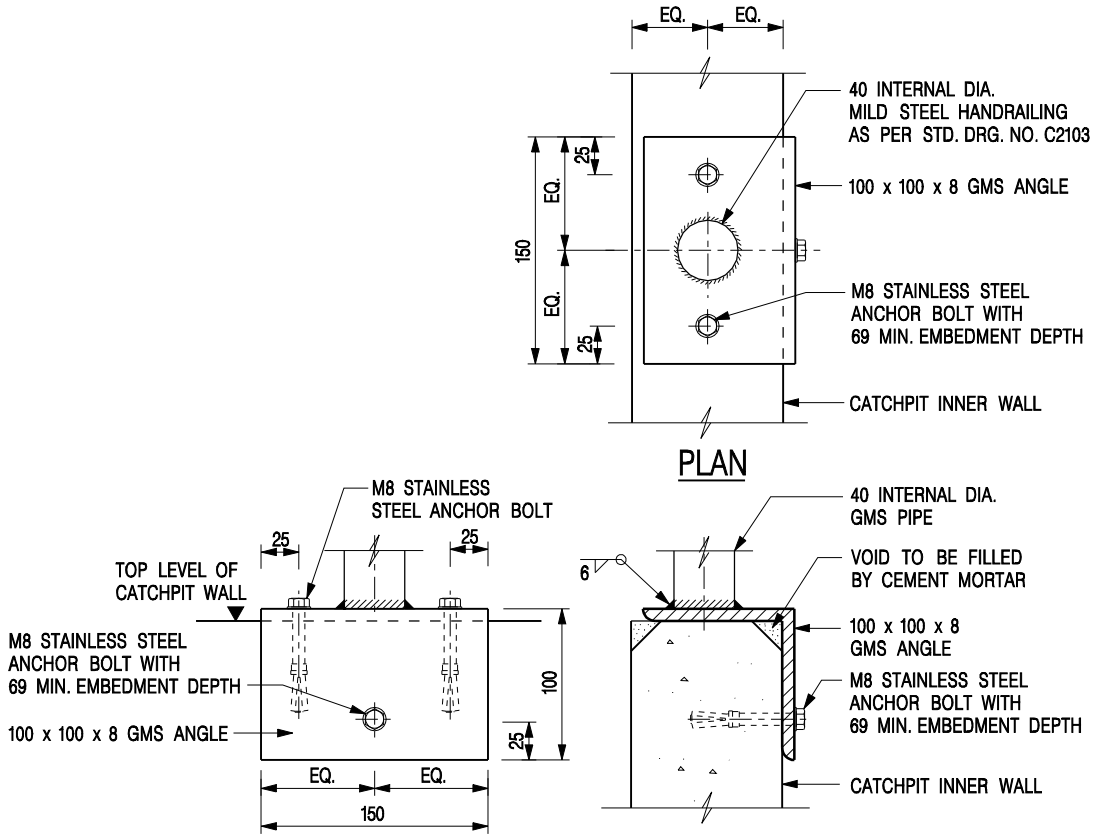
REF.	REVISION	SIGNATURE	DATE
–	FORMER DRG. NO. C2405J.	Original Signed	03.2015

STANDARD CATCHPIT DETAILS

(SHEET 4 OF 5)

CEDD CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT

SCALE	AS SHOWN	DRAWING NO.
DATE	JAN 1991	C2405 /4



DETAIL 'J' – FIXING DETAILS FOR HANDRAILING ON TOP OF CATCHPIT WALL

SCALE 1 : 5

NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETRES.
2. ALL CONCRETE SHALL BE GRADE 20 /20.
3. CONCRETE SURFACE FINISH SHALL BE CLASS U2 OR F2 AS APPROPRIATE.
4. FOR DETAILS OF JOINT, REFER TO STD. DRG. NO. C2413.
5. CONCRETE TO BE COLOURED AS SPECIFIED.
6. FOR CATCHPITS CONSTRUCTED ON OR ADJACENT TO A FOOTPATH, STEEL GRATINGS (SEE DETAILS ON SHEET 2 OR SHEET 3) OR CONCRETE COVERS (SEE STD. DRG. NO. C2407) SHALL BE PROVIDED AS DIRECTED BY THE ENGINEER.
7. IF INSTRUCTED BY THE ENGINEER, HANDRAILING (SEE DETAIL 'J' ON SHEET 5; EXCEPT ON THE UPSLOPE SIDE) IN LIEU OF STEEL GRATINGS OR CONCRETE COVERS CAN BE ACCEPTED AS AN ALTERNATIVE SAFETY MEASURE FOR CATCHPITS NOT ON A FOOTPATH NOR ADJACENT TO IT. TOP OF THE HANDRAILING SHALL BE 1 000 mm MIN. MEASURED FROM THE ADJACENT GROUND LEVEL.
8. MINIMUM INTERNAL CATCHPIT WIDTH SHALL BE 1 000 mm FOR CATCHPITS WITH A HEIGHT EXCEEDING 1 000 mm MEASURED FROM THE INVERT LEVEL TO THE ADJACENT GROUND LEVEL. AND, STEP IRONS (SEE DSD STD. DRG. NO. DS1043) AT 300 mm c/c STAGGERED SHALL BE PROVIDED. THICKNESS OF CATCHPIT WALL FOR INSTALLATION OF STEP IRONS SHALL BE INCREASED TO 150 mm.
9. FOR RETROFITTING AN EXISTING CATCHPIT WITH STEEL GRATING, SEE DETAIL 'G' ON SHEET 4.
10. ALL STEEL ANGLES SHALL COMPLY WITH BS EN 10025 AND BS EN 10056.
11. UNLESS OTHERWISE SPECIFIED, ALL WELDS SHALL BE 5 mm CONTINUOUS FILLET WELDS.
12. ALL WELDS SHALL BE CHIPPED, GROUND SMOOTH, BRUSHED TO REMOVE SLAG PRIOR TO HOT-DIP GALVANIZATION.
13. ALL STEELWORK SHALL BE HOT-DIP GALVANIZED TO BS EN ISO 1461. ALL EXPOSED STEELWORK SURFACES SHALL BE TREATED AND PAINTED IN ACCORDANCE WITH THE GENERAL SPECIFICATION.
14. SUBJECT TO THE APPROVAL OF THE ENGINEER, OTHER MATERIALS CAN ALSO BE USED AS COVERS / GRATINGS.

REF.	REVISION	SIGNATURE	DATE
–	FORMER DRG. NO. C2405J.	Original Signed	03.2015

STANDARD CATCHPIT DETAILS

(SHEET 5 OF 5)

CEDD CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT

SCALE AS SHOWN

DATE JAN 1991

DRAWING NO. C2405 /5