

Annex A

Updated Drainage Proposal

Drainage Submission in support of

S16 Planning Application for

Proposed Temporary Electric Vehicle Charging Station (for Electric Taxi),
Vehicle Repair Workshop, Shop and Services (Motor Vehicle Showroom),
Eating Place with Ancillary Site Office
for a Period of 5 Years in “Open Storage” zone

at Taxlord Lot 464 S.A RP (Part) in D.D. 83 and Adjoining
Government Land, Sha Tau Kok Road – Lung Yeuk Tau, Fanling,
New Territories

(HT25039)

October 2025

(Revision A)

Drainage Consultant:

何田顧問工程師有限公司
HO TIN & ASSOCIATES
CONSULTING ENGINEERS LIMITED

Prepared & approved by	LEE Kwok Cheung <i>RPE(Civil)</i>	
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1. Background

- 1.1 With respect to a S16 Planning Application for Proposed Temporary Electric Vehicle (EV) Charging Station (for Electric Taxi), Vehicle Repair Workshop, Shop and Services (Motor Vehicle Showroom), Eating Place with Ancillary Site Office for a Period of 5 Years at Taxlord Lot 464 S.A RP (Part) in D.D. 83 and Adjoining Government Land, Sha Tau Kok Road – Lung Yeuk Tau, Fanling, New Territories, Messrs. Ho Tin & Associates Consulting Engineers Limited was appointed to prepare a drainage submission.

2. Approach to Prepare this Proposal

- 2.1 This Drainage Submission is prepared in line with the “Technical Note to prepare a Drainage Submission (Relating to applications for temporary change of land use such as temporary storage areas, car parks, workshops, small factories ... etc. under S.16 of the Town Planning Ordinance)” issued by Drainage Services Department in December 2024.

3. The Subject Site and Proposed Development

- 3.1 The subject site with a total site area of about 4,190m² comprises of Taxlord Lot 464 S.A RP (Part) in D.D. 83 and Adjoining Government Land (about 680m²), Sha Tau Kok Road – Lung Yeuk Tau, Fanling, New Territories. The subject site is to the south of Ng Tung River and on the north side of Sha Tau Kok Road – Lung Yeuk Tau opposite to Kwan Tei Children’s Playground. A Site Location Plan is shown in **Figure D1**.
- 3.2 The subject development consists of one single-storey motor vehicle showroom structure (5m high, total floor area = 225m²), one two-storey vehicle repair workshop cum eating place and ancillary office structure (7m high, total floor area = 2,012m²), one single-storey transformer room and switch room structure (3.5m high, total floor area = 53m²), and 3 numbers of container for EV chargers (3m high, total floor area = 29m² each) accompanying with 18 numbers of EV charging spaces for electric taxi, 30 numbers of parking spaces/waiting spaces for electric taxi, 6 numbers of parking spaces for staff/visitors, and 1 number of loading/unloading space for medium goods vehicle. A plan showing the proposed site layout is in **Figure D2**.

4. Existing Drainage Conditions of the Site

- 4.1 At present, the subject site is hard paved, partitioned into sub-units and partly used for storage use and car repairing workshop and partly vacant (refer to **Plate 1** to **4**).
- 4.2 The subject site is bounded by a footpath on the east and north sides (refer to **Plate 8** to **12**). There is existing 300mm U-channel running between the subject site and the aforementioned footpaths collecting surface runoff of the subject site and the adjacent areas. The existing 300mm U-channel discharges its collected flows via an existing 450mm stepped channel into Ng Tung River to the further north (refer to **Plate 13** and **14**).
- 4.3 Outside the southern subject site boundary is currently used as access of the subject site and its nearby areas beside Sha Tau Kok Road – Lung Yeuk Tau. There is existing 450mm U-channel serving the access (refer to **Plate 5** to **7**).
- 4.4 To the west of the subject site is another development of which the surface runoff would be discharged via an existing 600mm stepped channel into Ng Tung River (refer to **Plate 15** and **16**).
- 4.5 Current conditions of the subject site and its existing drainage conditions are shown in the following photos (photo taking locations are shown on **Figure D3**):

	
Plate 1 – Photo of the southern side of the subject site taken from Sha Tau Kok Road – Lung Yeuk Tau (1 of 4)	Plate 2 – Photo of the southern side of the subject site taken from Sha Tau Kok Road – Lung Yeuk Tau (2 of 4)



Plate 3 – Photo of the southern side of the subject site taken from Sha Tau Kok Road – Lung Yeuk Tau (3 of 4)



Plate 4 – Photo of the southern side of the subject site taken from Sha Tau Kok Road – Lung Yeuk Tau (4 of 4)



Plate 5 – Existing 450mm U-channel running westward along the existing access in front of the southern subject site boundary (1 of 2)



Plate 6 – Existing 450mm U-channel running westward along the existing access in front of the southern subject site boundary (2 of 2)



Plate 7 – Existing 450mm U-channel running eastward along the existing access in front of the southern subject site boundary



Plate 8 – Existing 300mm U-channel running between the eastern subject site boundary and an existing external footpath (1 of 3)

	
Plate 9 – Existing 300mm U-channel running between the eastern subject site boundary and an existing external footpath (2 of 3)	Plate 10 – Existing 300mm U-channel running between the eastern subject site boundary and an existing external footpath (3 of 3)
	
Plate 11 – Existing 300mm U-channel (currently covered up by overgrown with weeds) running between the northern subject site boundary and an existing external footpath (1 of 2)	Plate 12 – Existing 300mm U-channel (currently covered up by overgrown with weeds) running between the northern subject site boundary and an existing external footpath (2 of 2)
	
Plate 13 – The section of Ng Tung River outside the northern subject site boundary	Photo 14 – Existing 450mm stepped channel discharging into Ng Tung River close to the northern boundary of the Application Site



Plate 15 – Existing 600mm stepped channel discharging into Ng Tung River at the downstream of the Application Site



Plate 16 – View toward the further downstream of the Application Site along Ng Tung River



Extract of the Drainage Records from LandsD's GeoInfo Map in May 2025

5. Drainage Assessment and Proposal

- 5.1 The subject site is a simple small site with a total site area of about 4,190m² (less than 1 ha in size). The existing subject site levels are generally same as those of the area close to Sha Tau Kok Road – Lung Yeuk Tau and relatively higher than the surroundings at the remaining three sides. There are existing surface channels intercepting surface runoff on the area between the subject site and Sha Tau Kok Road – Lung Yeuk Tau. In general, surface runoff flowing toward the subject site would be collected and conveyed away the subject site by the existing surrounding channels.

- 5.2 The existing site levels would be maintained and no site formation/leveling works would be carried out such that the subject proposed development would be maintained at levels relatively higher than its adjacent developments/areas to its east, west and north, and would be at similar levels of the existing access running along its southern boundary. In principle, surface runoff of the surrounding areas would be collected and conveyed away by the existing channels in the adjacent areas of the subject site, hence, any new solid fence wall of the subject site would not obstruct any existing overland flows (in addition, it should be noted that the existing levels (similar to the proposed finished levels) of the subject site are already relatively higher than those to the east, west and north). Nevertheless, for conservative, in order to ensure no surface runoff from the southern side (at levels close to the proposed finished levels of the subject development), due to any unexpected reasons, flowing onto the subject site to be obstructed, 100mm high gap will be formed at the bottom of the security hoarding/fence wall along the southern subject site boundary. Cross sections of the proposed subject development and typical details of the gap at the bottom of proposed security hoarding/fence are shown in **Figure D5**.
- 5.3 With respect to the "Technical Note to prepare a Drainage Submission" (the "TN") published by Drainage Services Department, for the subject site area = $4,190\text{m}^2 \leq 5,000\text{m}^2$, peripheral 525mm U channel at 1 in 200 gradient would be appropriate. It is therefore proposed to construct new peripheral 525mm U channel at 1 in 200 gradient for the subject development. A new catchpit with trap will be constructed at the end of the proposed 525 U channels near the northwest corner of the subject site before discharging into a proposed 525mm stepped channel at Ng Tung River. A Proposed Stormwater Drainage Layout Plan is shown in **Figure D4**.
- 5.4 Besides, the Applicant is committed to obtain consents from owners of adjacent relevant land/lots prior to commencement of the proposed drainage works outside the subject site and to maintain regularly to avoid blockage of the drainage system to the satisfaction of relevant Government departments.
- 5.5 Details of proposed drainage provisions shall follow relevant details shown in Government Departments' Standard Drawings as follows:

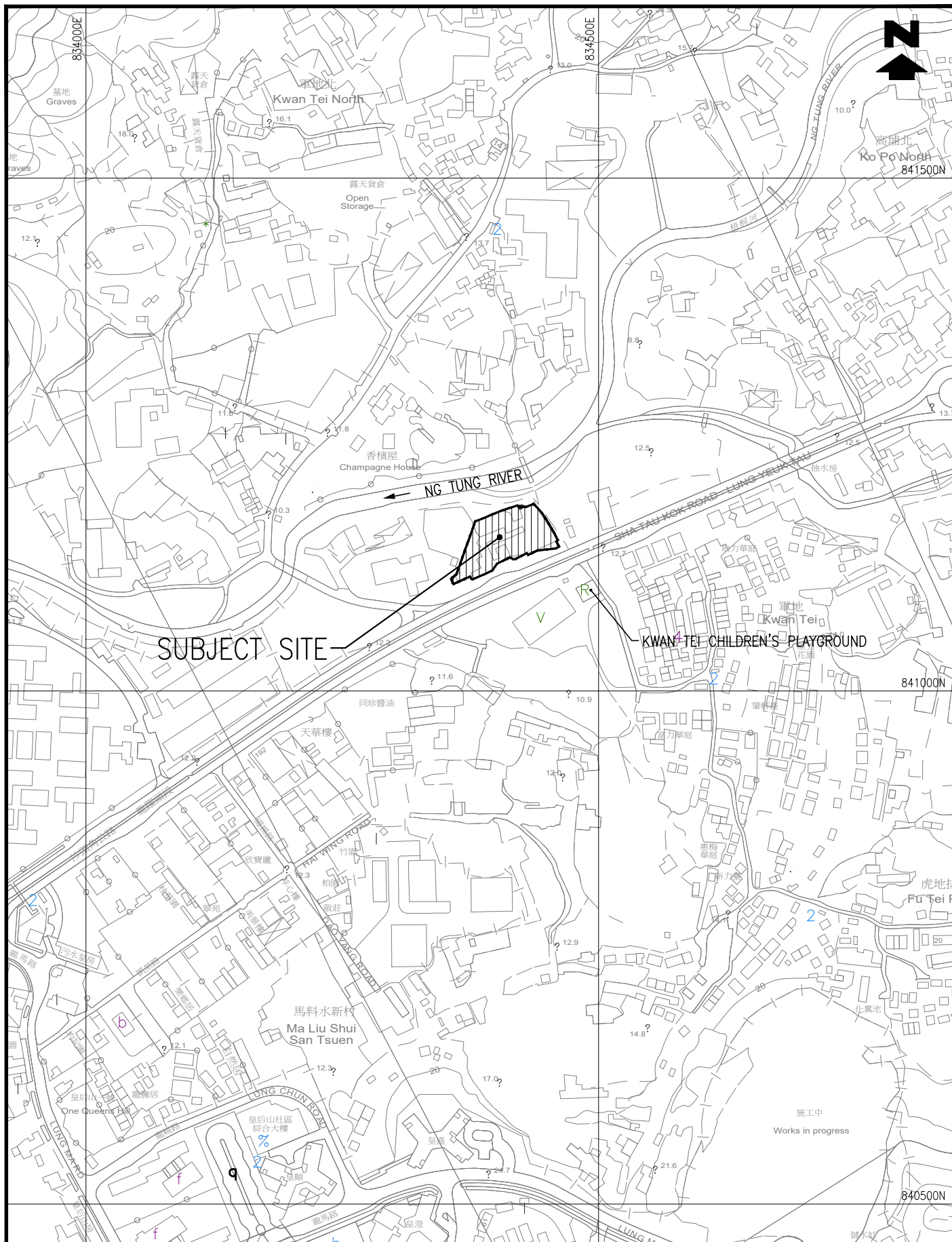
<i>Proposed Drainage Provisions</i>	<i>Standard Drawings</i>	<i>Drawing No. & Title</i>
Catchpit	CEDD Standard Drawings	C 2405/1 to /5 – Standard Catchpit Details
Catchpit with trap		C 2406/1 to /2A – Catchpit with Trap
Catchpit precast concrete cover		C 2407B – Precast Concrete Covers for Catchpit and Sand Trap
U-channel		C 2409J – Details of Half-round and U-channels
Channel cover		C 2412E – Cover Slab and Cast Iron Grating for Channels

6. Conclusion and Recommendations

- 6.1 The subject development as Temporary Electric Vehicle (EV) Charging Station (for Electric Taxi), Vehicle Repair Workshop, Shop and Services (Motor Vehicle Showroom), Eating Place with Ancillary Site Office will be for temporary use for a period of 5 years. The subject site area has been hard paved for a very long period without complaints on drainage conditions. The existing site levels would be maintained and no site formation/leveling works would be carried out.
- 6.2 The subject site is at present served by surrounding surface channels and its levels are relatively higher than those to its east, west and north. In principle, no surface runoff would flow onto the subject site from its surroundings. 525mm U channel at 1 in 200 gradient will be constructed at the peripheral of the subject site to intercept all crossing surface runoff. For conservative, 100mm high gap will be formed at the bottom of the security hoarding/fence along the southern subject site boundary to ensure no surface runoff from the adjacent, due to any unexpected incidents, to be obstructed. A new catchpit with trap will be constructed at the ends of the 525mm U channel before discharging into the proposed new 525mm stepped channel at Ng Tung River.

- 6.3 The Applicant is committed to obtain consents from owners of adjacent relevant land/lots prior to commencement of the proposed drainage works outside the subject site and to maintain regularly to avoid blockage of the system to the satisfaction of relevant Government departments.
- 6.4 The subject development would not alter the existing drainage conditions and pattern of the area and the proposed drainage system would be maintained with appropriate drainage clearance and repair works, i.e. debris clearance and damage repair. Therefore, in conclusion, the subject development would not cause any adverse drainage impact onto the area.

H:\25039_LungYeukTau_Site\DRAWING\25039_FIGD1_00.dwg, 21/5/2025 16:04:30



TITLE

SITE LOCATION PLAN

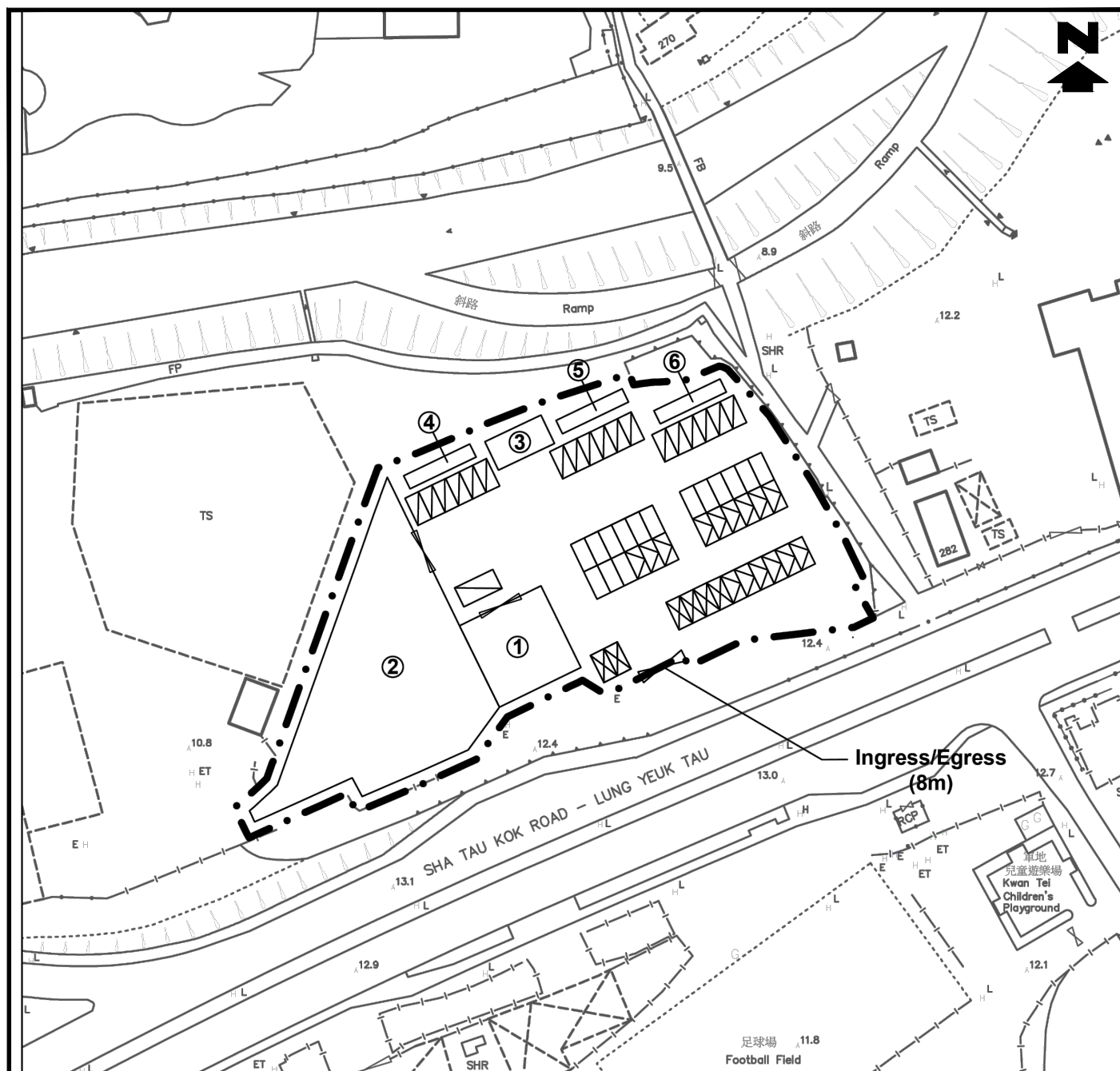
何田顧問工程師有限公司
HO TIN & ASSOCIATES
CONSULTING ENGINEERS LIMITED

SCALE

1 : 5000 - A4

DRAWING No.

FIGURE D1



Structure No.	Uses	No. of Storey	Floor Area (m ²)	Height (m)
1	Motor Vehicle Showroom	1	225	5.0
2	G/F: Vehicle Repair Workshop 1/F: Eating Place, Ancillary Office	2	1,006 806 + 200	7.0
3	Transformer Room and Switch Room	1	53	3.5
4	Container for EV Chargers	1	29	3.0
5	Container for EV Chargers	1	29	3.0
6	Container for EV Chargers	1	29	3.0

Legend:

- Application Site (Area: about 4,180m²)
- ▨ EV Charing Spaces for Electric Taxi (18 nos.)
- ▨ Parking Spaces/Waiting Spaces for Electric Taxi (15 nos.)
- ▨ Parking Spaces for Private Vehicles (for Motor Vehicle Showroom and Office Use) (15 nos.)
- ▨ Parking Spaces for Staff/Visitors (6 nos.)
- ▨ Loading/Unloading Space for Light Goods Vehicle (3.5m x 7m) (1 no.)

TITLE

LAYOUT PLAN

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HO TIN & ASSOCIATES
CONSULTING ENGINEERS LIMITED

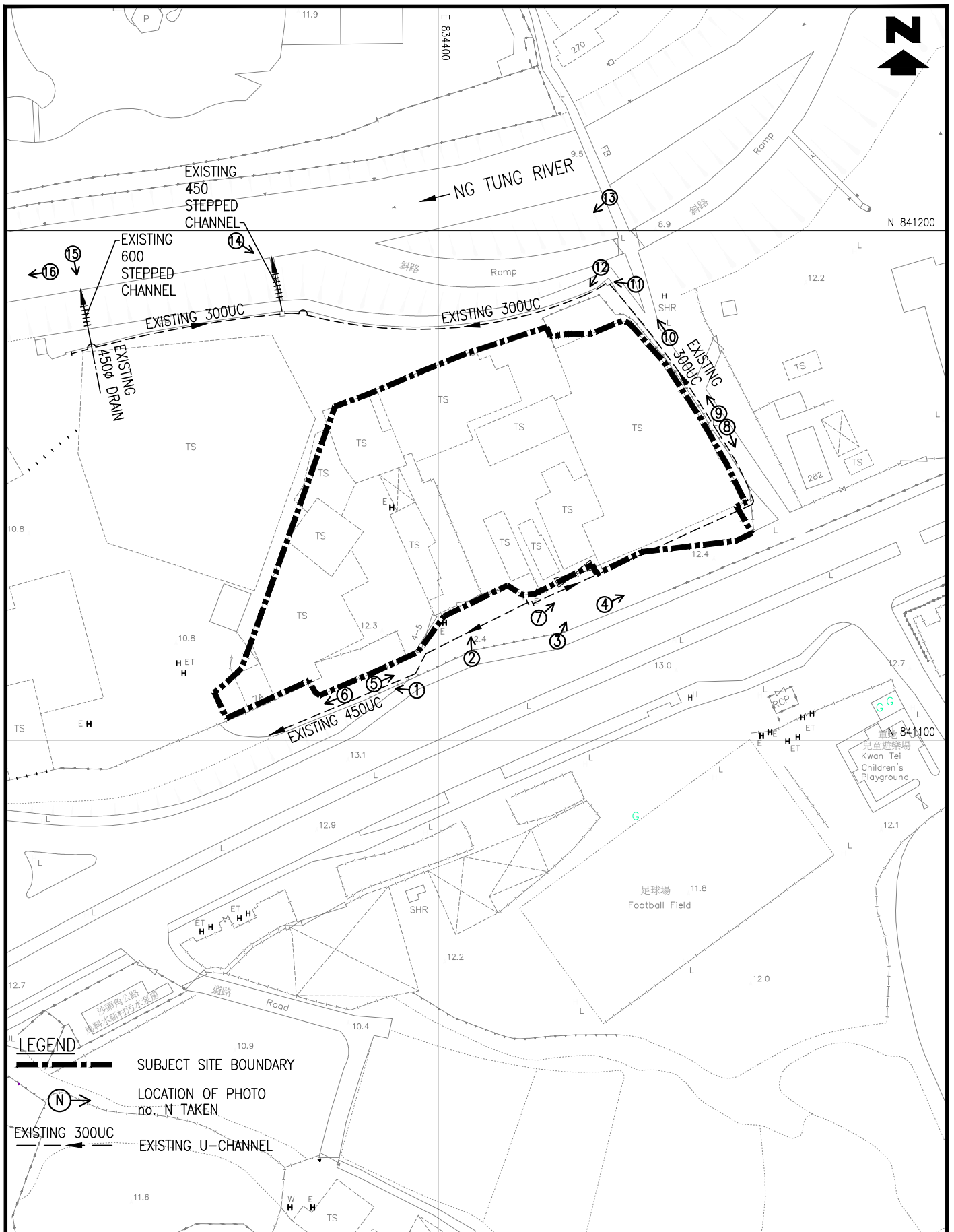
SCALE

1 : 1000 - A4

DRAWING No.

FIGURE D2

H:\25039_LungYeukTau_Site\DRAWING\25039_FIGD2_03 FIGD3A_01 FIGD4A_02 & FIGD5_00.dwg, 8/10/2025 10:24:30



TITLE

EXISTING DRAINAGE AND LOCATIONS OF PHOTO TAKEN

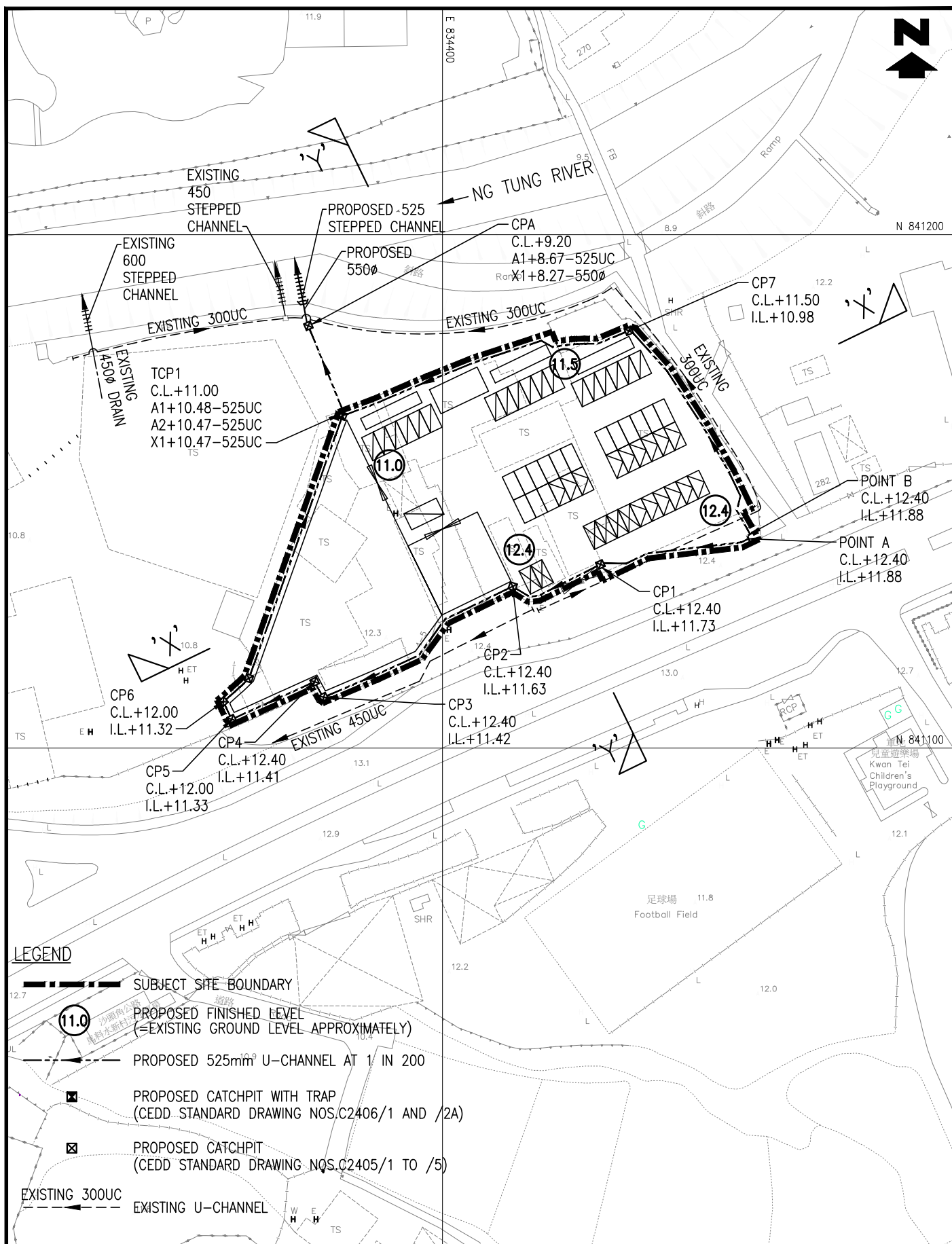
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SCALE

1 : 1000 - A4

DRAWING No.

FIGURE D3
(REVISION A)



TITLE

PROPOSED STORMWATER DRAINAGE LAYOUT PLAN

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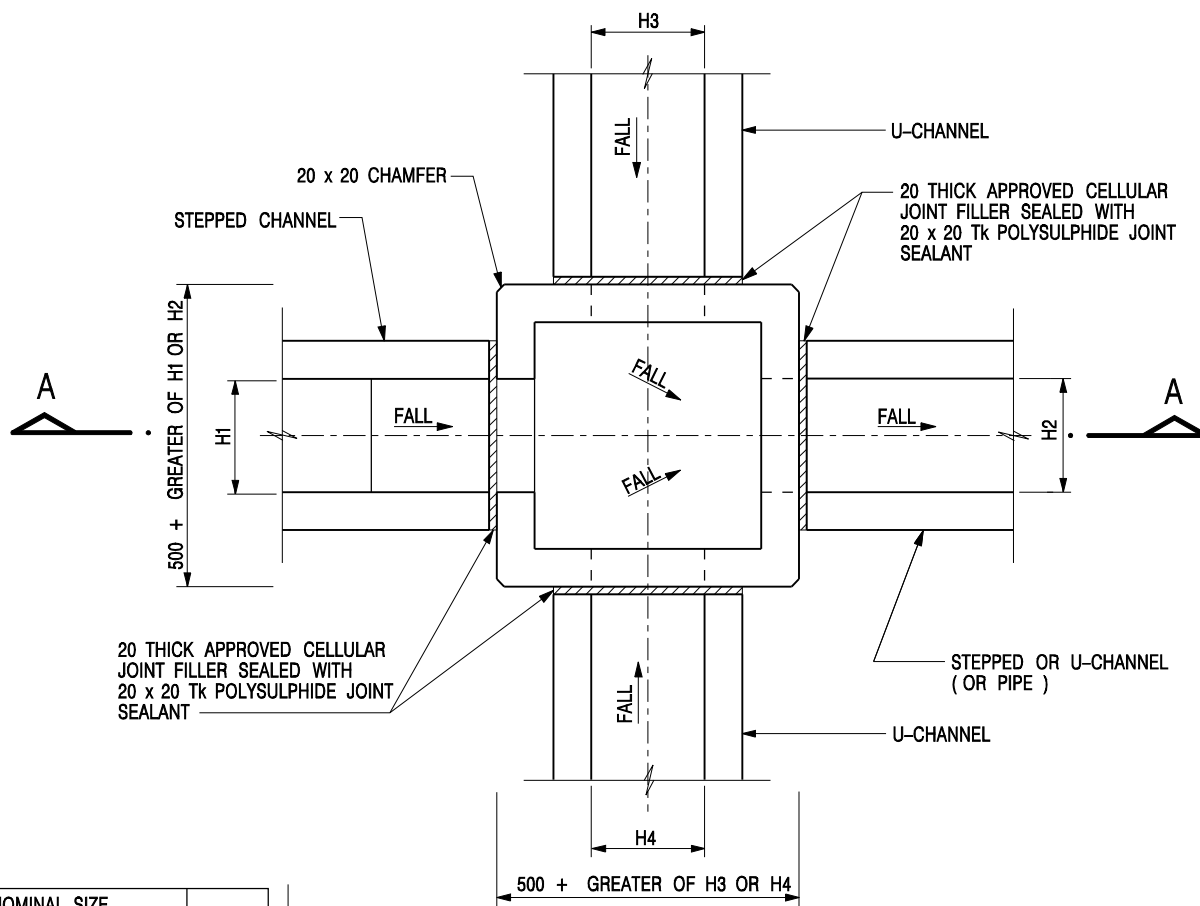
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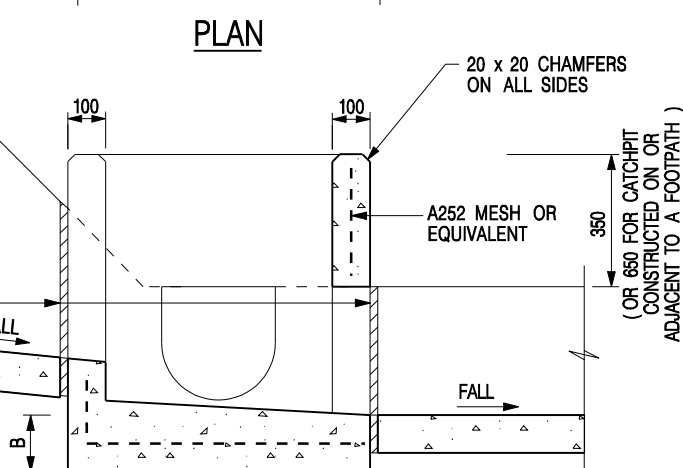
FIGURE D4
(REVISION A)

FIGURE D5



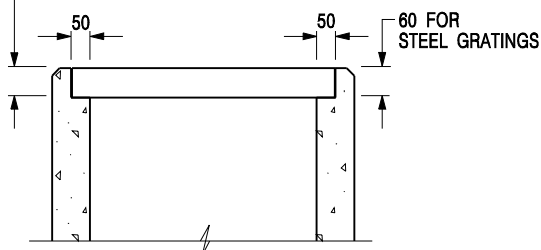
NOMINAL SIZE (LARGEST OF H1, H2, H3 & H4)	B
300 - 600	150
675 - 900	175

20 THICK APPROVED CELLULAR JOINT FILLER SEALED WITH 20 x 20 Tk POLYSULPHIDE JOINT SEALANT



SECTION A - A

DEPTH OF RECESS AND DETAILS OF PRECAST CONCRETE COVERS (SEE STD. DRG. NO. C2407)



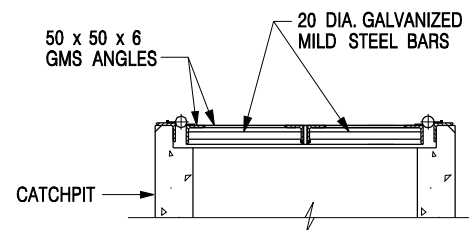
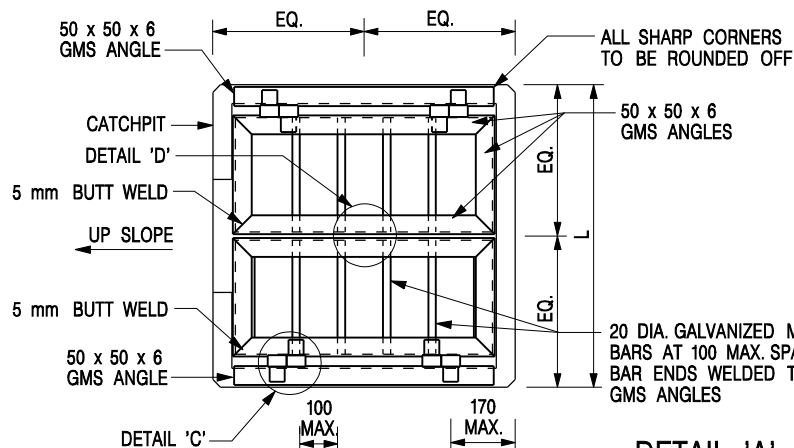
NOTES:

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

ALTERNATIVE TOP SECTION FOR
PRECAST CONCRETE COVERS / GRATINGS

STANDARD CATCHPIT DETAILS
(SHEET 1 OF 5)

-	FORMER DRG. NO. C2405J.	Original Signed	03.2015
REF.	REVISION	SIGNATURE	DATE
 CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT			
SCALE 1 : 20		DRAWING NO. C2405 /1	
DATE JAN 1991			

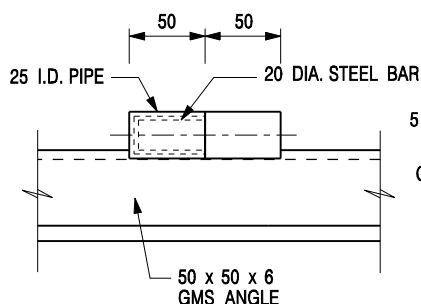


SECTIONAL ELEVATION

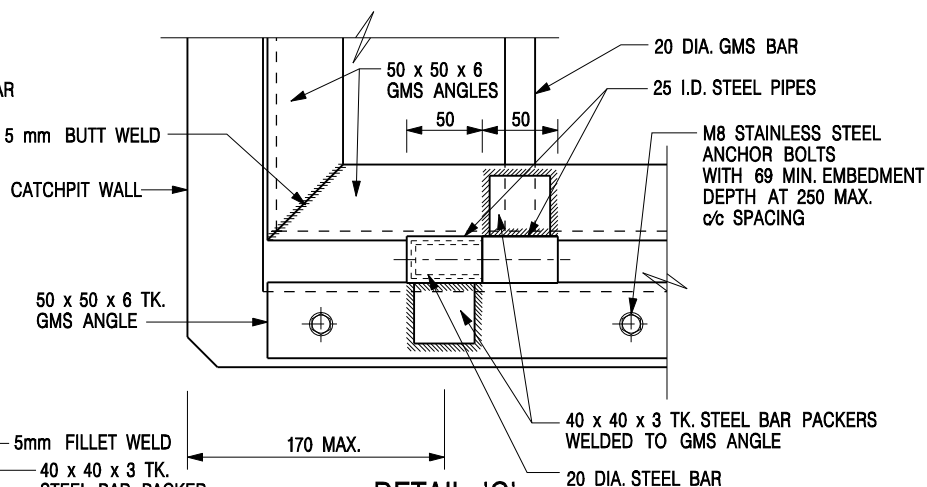
DETAIL 'A'

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

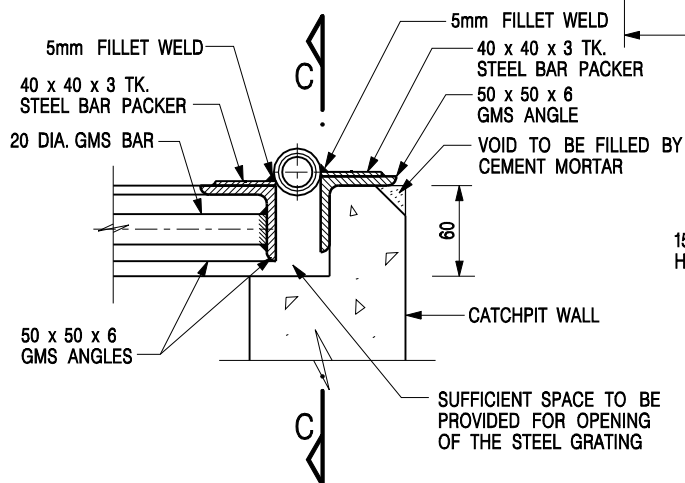
SCALE 1 : 20



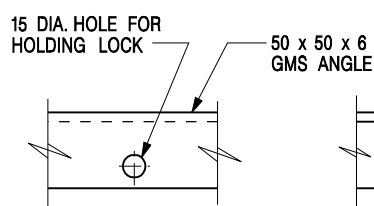
SECTION C - C



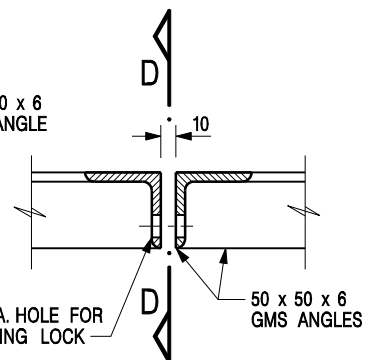
DETAIL 'C'
(DETAILS OF HINGE)
SCALE 1 : 5



SECTIONAL ELEVATION
(DETAIL 'C')



SECTION D - D



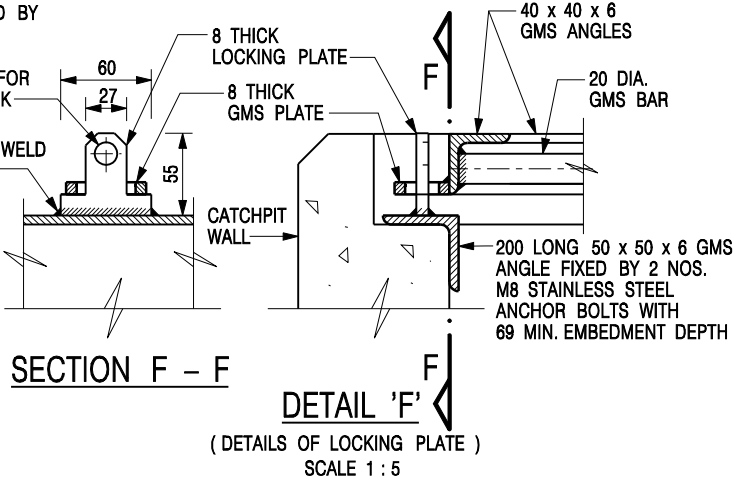
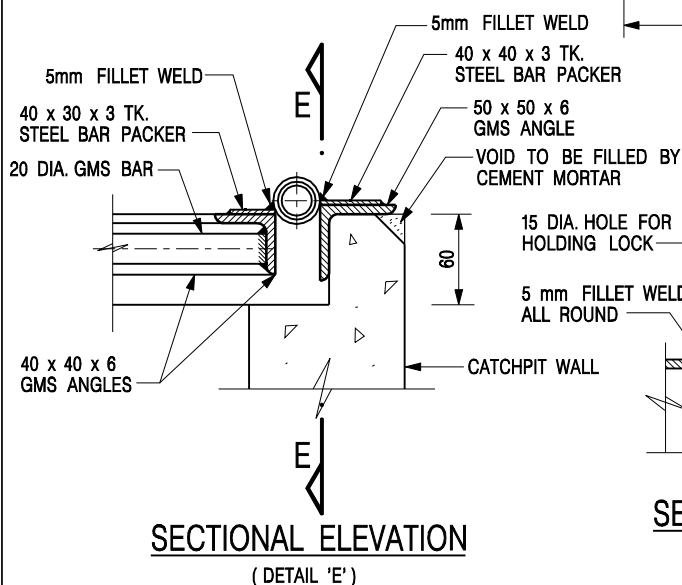
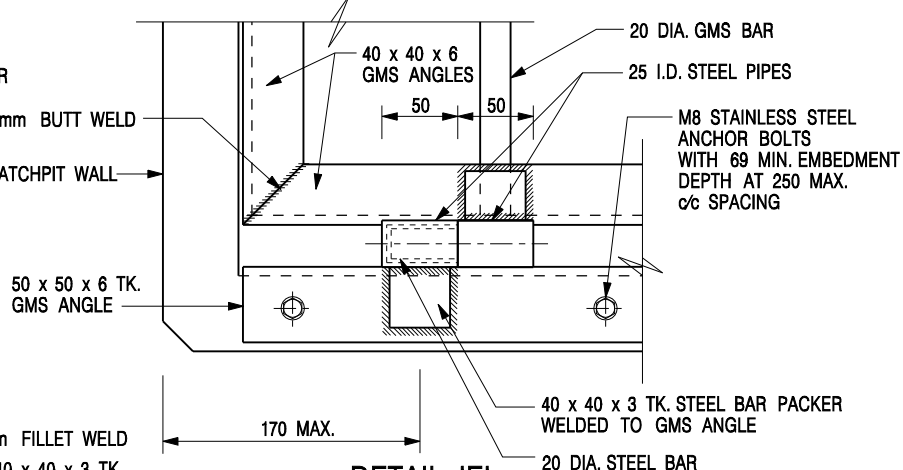
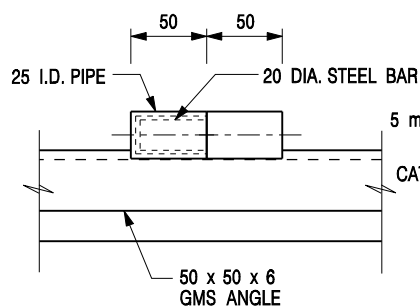
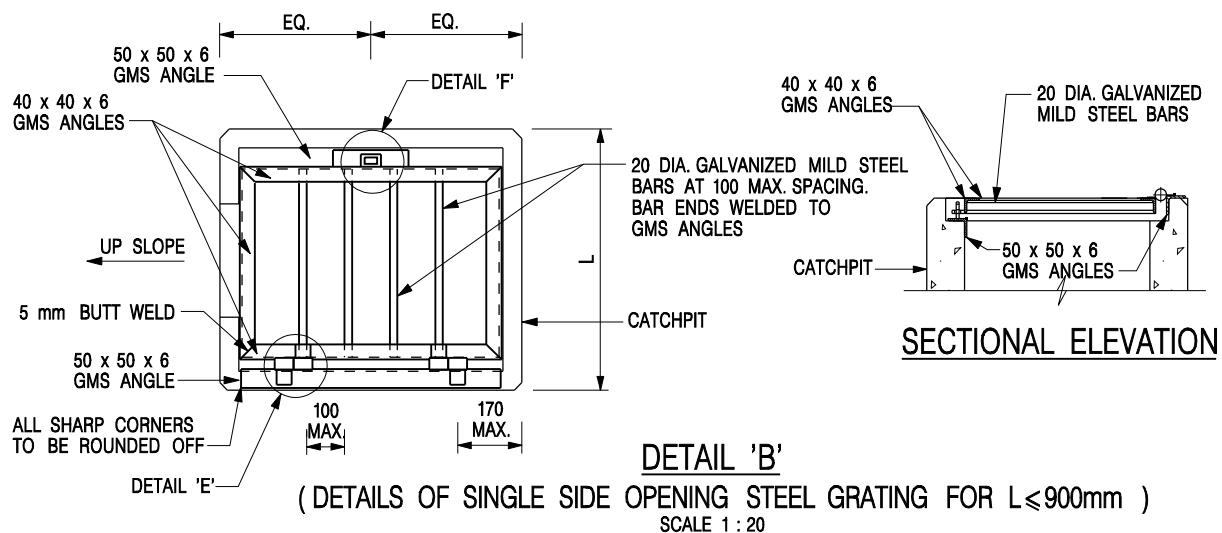
DETAIL 'D'
(DETAILS OF HOLE FOR LOCK)
SCALE 1 : 5

NOTES:

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

STANDARD CATCHPIT DETAILS
(SHEET 2 OF 5)

-	FORMER DRG. NO. C2405J.	Original Signed	03.2015
REF.	REVISION	SIGNATURE	DATE
 CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT		SCALE AS SHOWN DATE JAN 1991	
		DRAWING NO. C2405 /2	

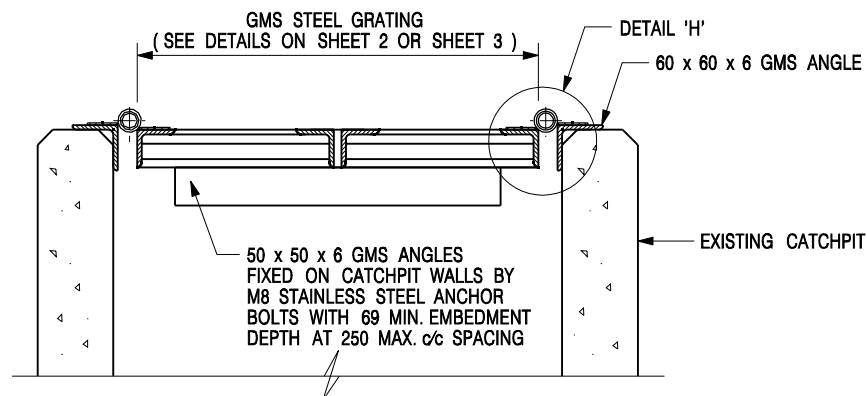


NOTES:

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

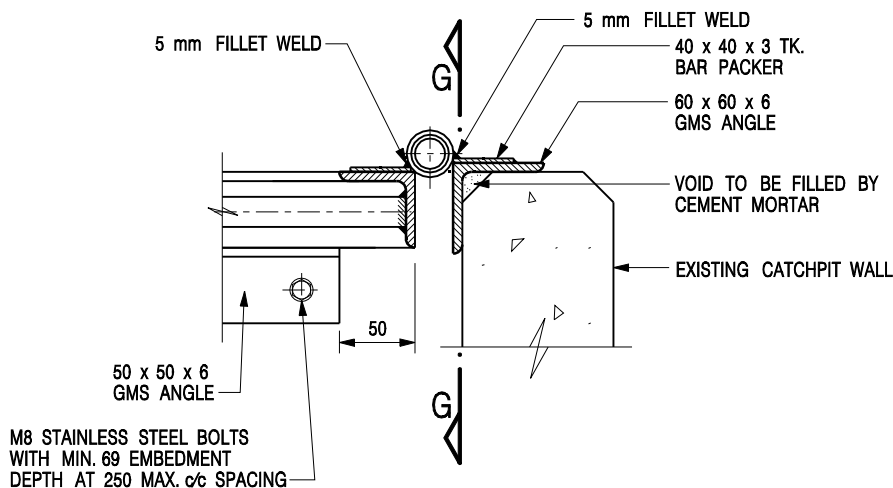
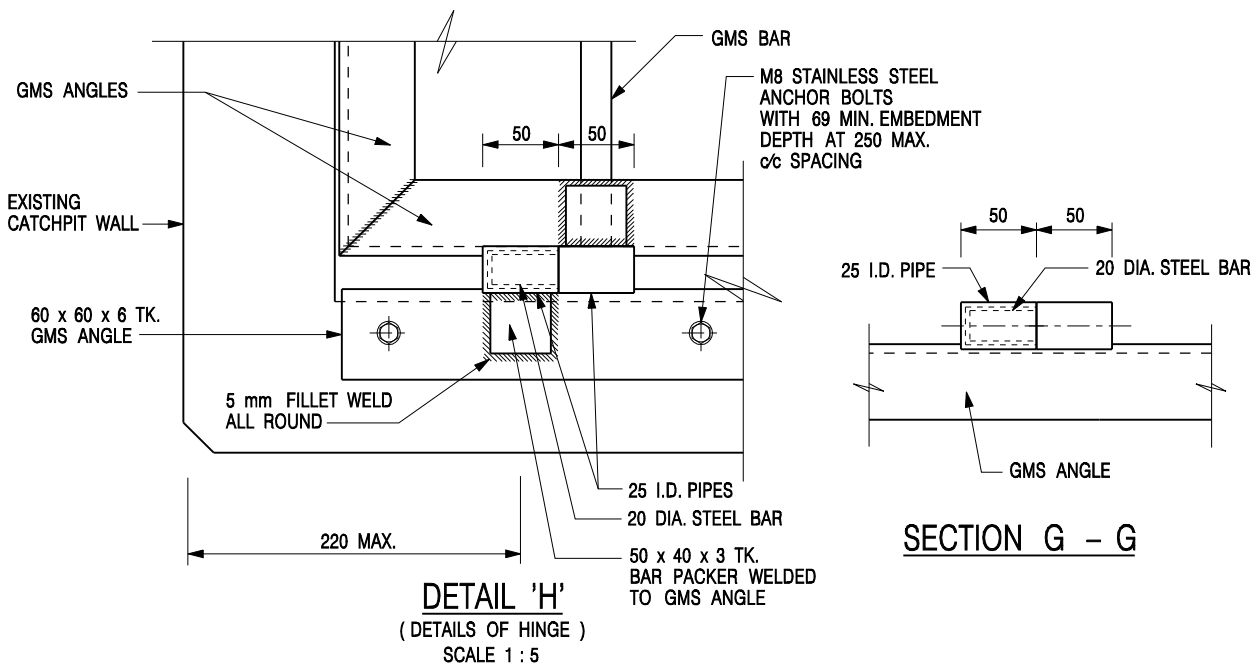
STANDARD CATCHPIT DETAILS (SHEET 3 OF 5)

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

SCALE 1 : 10



SECTIONAL ELEVATION

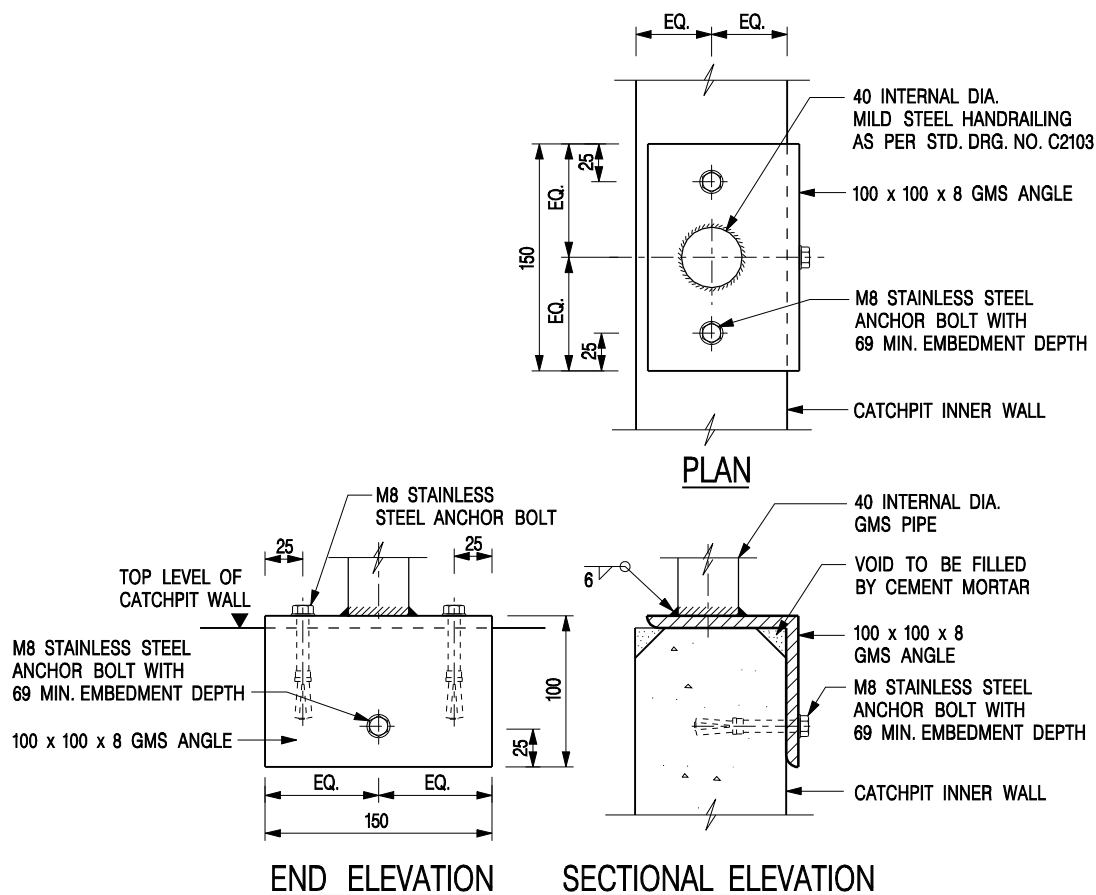
(DETAIL 'H')

NOTES:

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

STANDARD CATCHPIT DETAILS
(SHEET 4 OF 5)

-	FORMER DRG. NO. C2405J.	Original Signed	03.2015
REF.	REVISION	SIGNATURE	DATE
 CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT			
SCALE AS SHOWN		DRAWING NO. C2405 /4	
DATE JAN 1991			



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

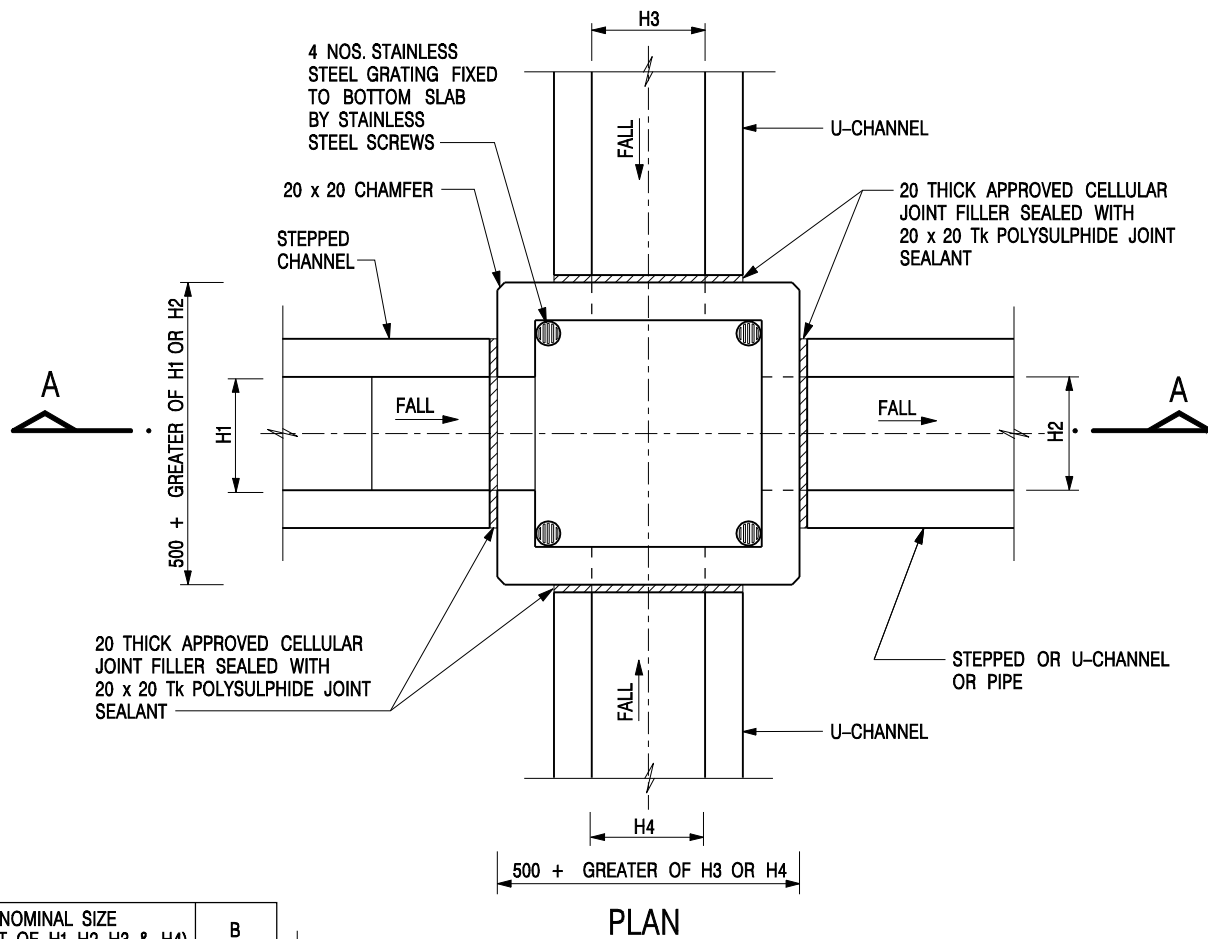
SCALE 1 : 5

NOTES:

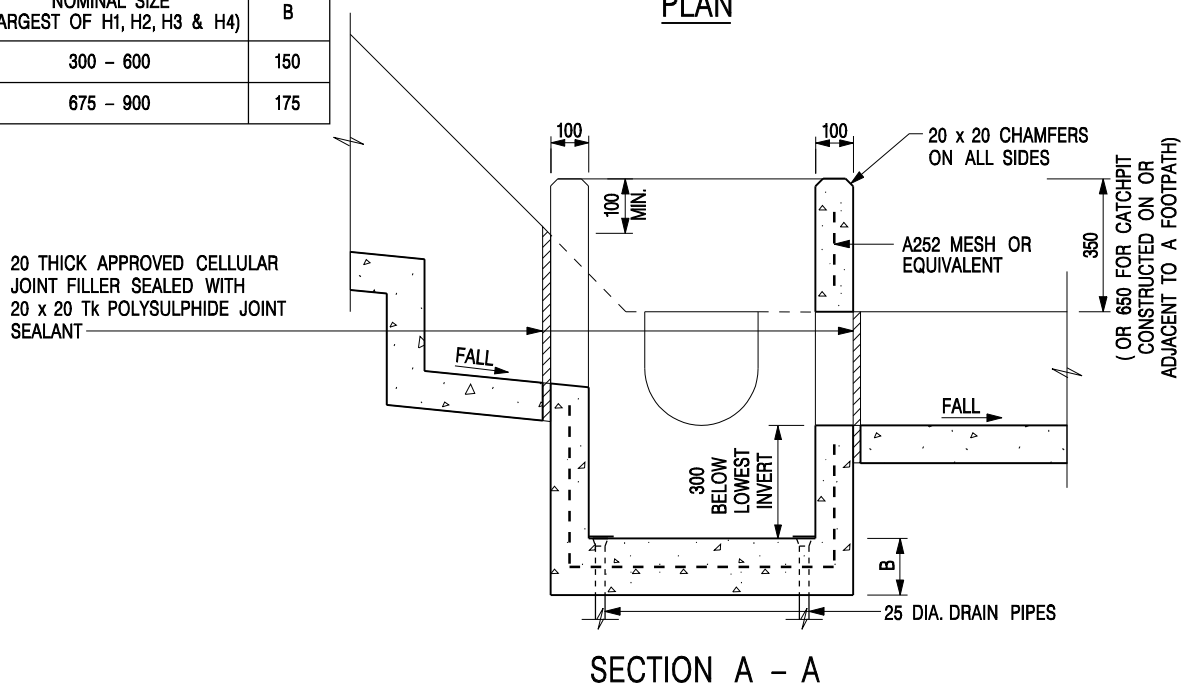
- ALL DIMENSIONS ARE IN MILLIMETRES.
- ALL CONCRETE SHALL BE GRADE 20 /20.
- CONCRETE SURFACE FINISH SHALL BE CLASS U2 OR F2 AS APPROPRIATE.
- FOR DETAILS OF JOINT, REFER TO STD. DRG. NO. C2413.
- CONCRETE TO BE COLOURED AS SPECIFIED.
- FOR CATCHPITS CONSTRUCTED ON OR ADJACENT TO A FOOTPATH, STEEL GRATINGS (SEE DETAILS ON SHEET 2 OR SHEET 3) OR CONCRETE COVERS (SEE STD. DRG. NO. C2407) SHALL BE PROVIDED AS DIRECTED BY THE ENGINEER.
- 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.
- 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.
- FOR RETROFITTING AN EXISTING CATCHPIT WITH STEEL GRATING, SEE DETAIL 'G' ON SHEET 4.
- ALL STEEL ANGLES SHALL COMPLY WITH BS EN 10025 AND BS EN 10056.
- UNLESS OTHERWISE SPECIFIED, ALL WELDS SHALL BE 5 mm CONTINUOUS FILLET WELDS.
- ALL WELDS SHALL BE CHIPPED, GROUND SMOOTH, BRUSHED TO REMOVE SLAG PRIOR TO HOT-DIP GALVANIZATION.
- 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.
- SUBJECT TO THE APPROVAL OF THE ENGINEER, OTHER MATERIALS CAN ALSO BE USED AS COVERS / GRATINGS.

STANDARD CATCHPIT DETAILS
(SHEET 5 OF 5)

-	FORMER DRG. NO. C2405J.	Original Signed	03.2015
REF.	REVISION	SIGNATURE	DATE
 CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT			
SCALE AS SHOWN		DRAWING NO. C2405 /5	
DATE JAN 1991			



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



NOTES:

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

CATCHPIT WITH TRAP
(SHEET 1 OF 2)

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



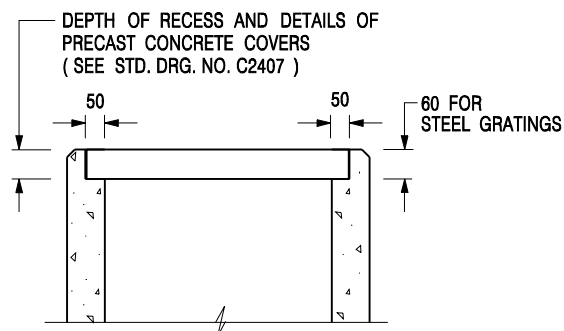
**CIVIL ENGINEERING AND
DEVELOPMENT DEPARTMENT**

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.

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

**CATCHPIT WITH TRAP
(SHEET 2 OF 2)**



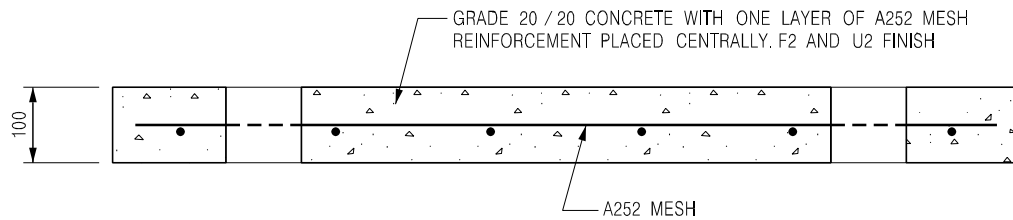
**CIVIL ENGINEERING AND
DEVELOPMENT DEPARTMENT**

SCALE 1 : 20

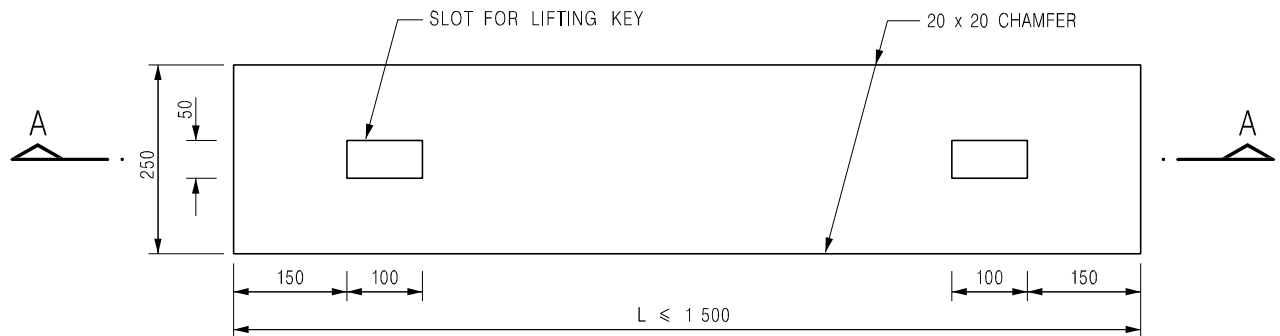
DATE JAN 1991

DRAWING NO.

C2406 /2A

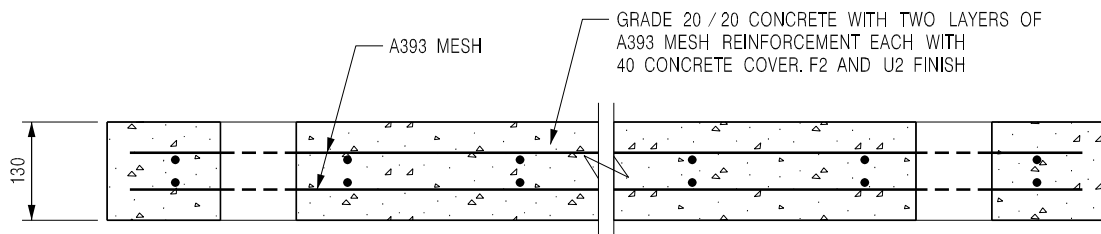


SECTION A - A

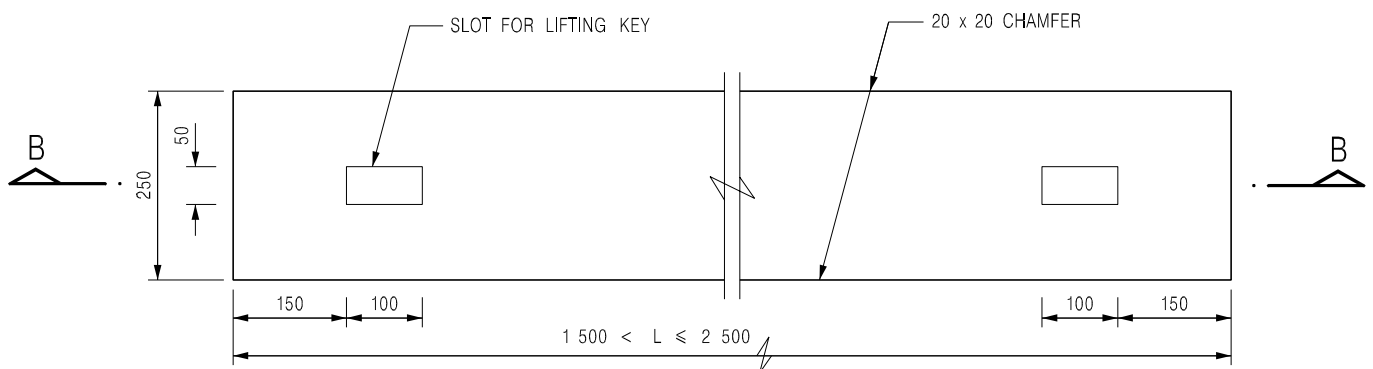


PLAN

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.

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

PRECAST CONCRETE COVERS
FOR CATCHPIT AND SAND TRAP

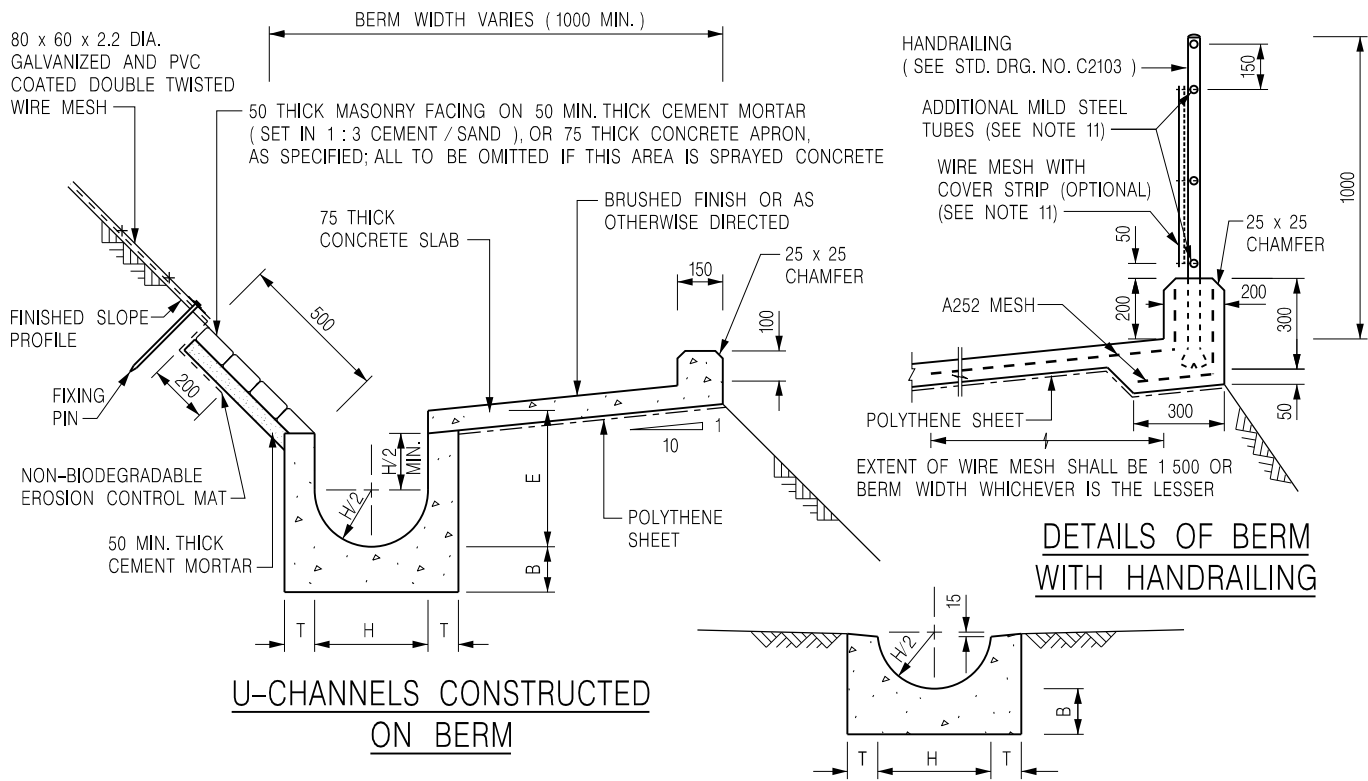


CIVIL ENGINEERING AND
DEVELOPMENT DEPARTMENT

SCALE 1 : 10

DATE JAN 1991

DRAWING NO.
C2407B

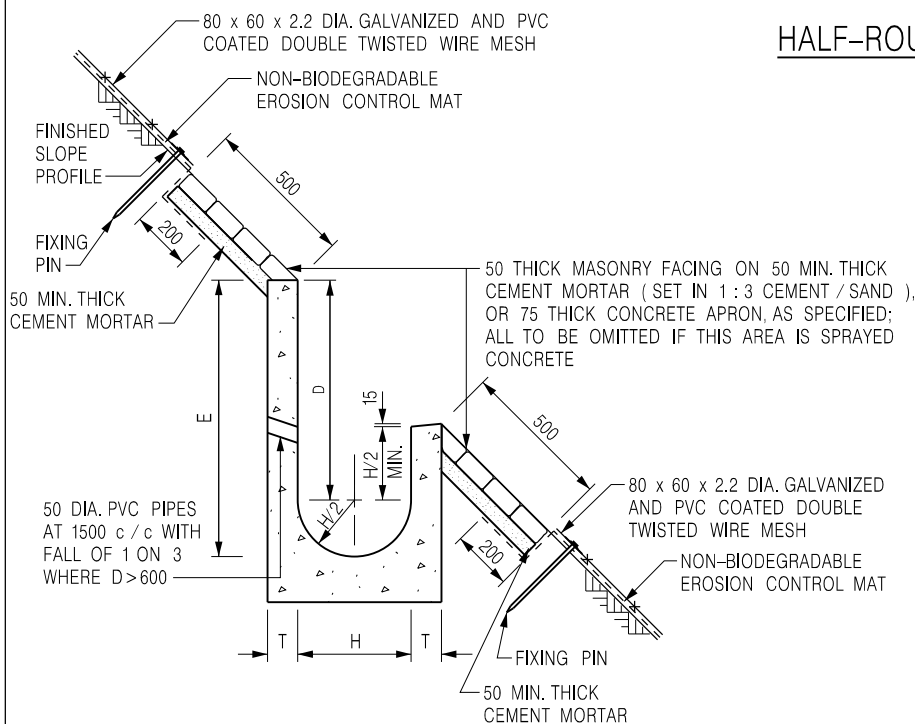


U-CHANNELS CONSTRUCTED ON BERM

HALF-ROUND CHANNEL

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/E.
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/E)
11. THE WIRE MESH ON HANDRAILING IS OPTIONAL. THE COVER STRIP AND ADDITIONAL MILD STEEL TUBES ARE NEEDED ONLY IF WIRE MESH IS PROVIDED. (SEE STD. DRG. NO. C2103)



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

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

J	DETAILS OF HANDRAILING AMENDED.	Original Signed	08.2024
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
REF.	REVISION	SIGNATURE	DATE



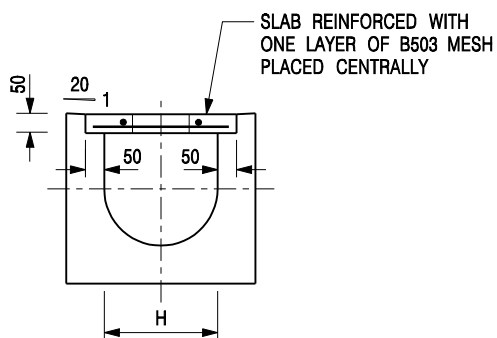
CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT

SCALE 1 : 25

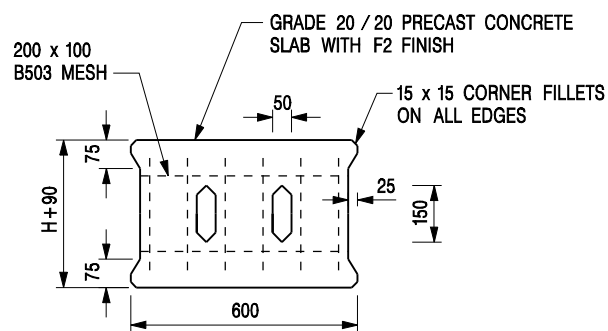
DATE JAN 1991

DRAWING NO.

C2409J



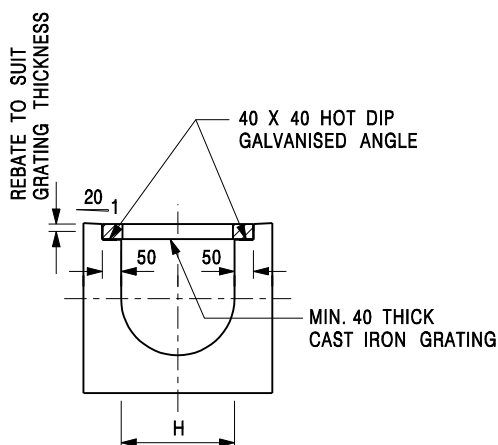
TYPICAL SECTION



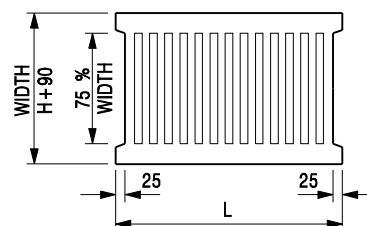
PLAN OF SLAB

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:

- ALL DIMENSIONS ARE IN MILLIMETRES.
- H=NOMINAL CHANNEL SIZE.
- ALL CAST IRON FOR GRATINGS SHALL BE GRADE EN-GJL-150 COMPLYING WITH BS EN 1561.
- 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.

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
REF.	REVISION	SIGNATURE	DATE

**COVER SLAB AND CAST IRON
GRATING FOR CHANNELS**



**CIVIL ENGINEERING AND
DEVELOPMENT DEPARTMENT**

SCALE 1 : 20

DATE JAN 1991

DRAWING NO.
C2412E