



水務署

Water Supplies Department

香港灣仔告士打道七號入境事務大樓

Immigration Tower, 7 Gloucester Road, Hong Kong.

電子郵遞

e-mail

wsdinfo@wsd.gov.hk

電話

Telephone

2829 4367

圖文傳真

Facsimile

2824 0578

檔號

Reference

(44) in WSD 1640/47/03 Pt.1

23 November 2005

Distribution: To all Licensed Plumbers and Authorised Persons

Dear Sir/Madam,

WSD Circular Letter No. 5/2005
Implementation of Master Metering Policy for
Fresh Water and Temporary Mains-water for Flushing
Inside Service and Fire Service

Water is a precious resource. Therefore, the Water Authority (WA) has devoted much effort in minimizing the loss in the water distribution network. Our effort includes carrying out an over ten-billion-dollar water mains replacement and rehabilitation project, proactive leak detection, pressure management, etc.

Consumers and their agents have also a share to contribute. They should maintain the plumbing within their lot boundaries to ensure reliability of water supply and to prevent leakage. Also, they should guard against unlawful taking of water, which is a contravention to the Waterworks Ordinance and, worse still, poses a potential health hazard to the water supply system.

From our experience, it usually takes a long time for consumers and their agents solely on their initiative to discover leakage in their plumbing, repair it or rectify unlawful taking of water. It is not uncommon that some of them do not respond in reasonable speed to repair notices. This may lead to suffering of other consumers, inconvenience to the public, risk to area encasing the plumbing and loss of Government revenue. Therefore, the WA has to improve the feedback mechanism on potential leakage and/or unlawful taking of water to prompt their early action.

On a “consumer pays” principle, the most effective feedback mechanism is charging consumers and their agents for water leaked or taken unlawfully. And, this is a fair arrangement. Legal advice has also confirmed that this is within the purview of the Waterworks Ordinance. Hence, the WA will implement a master metering policy:

- (a) For all new developments, except single detached village type buildings and single block buildings, plumbing designers shall be required to provide master meter room/chamber with master meter position(s) in the plumbing, submit undertaking Form WWO 542 for the consumership(s) of master meter(s) and arrange licensed plumber to install master meter(s). These requirements shall apply to all plumbing proposals first submitted to the WA after 31 December 2005.
- (b) The water supply connection arrangement for fresh water supply, fire service supply and Temporary Mains-water for Flushing (TMF) supply will be as shown in the sketch No. SK20221/1-2.
- (c) The master meter will substitute current requirement of check meter positions in all fresh water and TMF inside service and fire service. There will be 1 master meter installed in each set of connection points at the lot or building boundary. Twin or dual main connections are regarded as one set of connection points.
- (d) Downstream of the master meter,
 - (i) for fresh water supply
all individual domestic premises, water usage points or group of water usage points shall be metered with separate meters as in current practice.
 - (ii) for fire service
there shall be no other meter.
 - (iii) for TMF supply
there shall be 1 communal TMF meter to each individual block of buildings as in current practice.
- (e) There shall be no deposit required for all master meters.
- (f) **Charging calculation algorithm is being worked out and would be announced in due course.**
- (g) To ensure accuracy of master meter, the plumbing designer shall provide two lengths of straight pipe, one upstream and one downstream of the master meter. The length upstream and downstream should not be less than 10 times the nominal diameter of the master meter and 5 times respectively.
- (h) To facilitate replacement of master meter(s), a 100mm diameter by-pass arrangement should be provided for future maintenance of water supply during meter replacement. (Please see sketch No. SK20221/2&4 for reference).
- (i) To facilitate installation, inspection, reading, service and replacement of master meter(s), the plumbing designer shall house master meter(s) and associated by-pass(es) in meter room(s) or cabinet(s) preferably with at-grade access where feasible. A typical sketch No. SK SK20221/3-7 is attached to indicate design considerations for at-grade master meter room/cabinet. If the


master meter has to be installed below grade, the meter chamber should be sited in footpath or landscaping area where there is no risk of vehicle rolling over. If it is unavoidable to place master meter chamber under a road, the plumbing designer has to prove the need to the WA in the plumbing proposal stage. All below-grade meter chambers should be provided with an at-grade box to house remote meter counter(s) and a duct in between the box and the chamber. Typical layout of master meter room and chamber is shown in the attached drawing no. SK20221/8-12 for reference only. Plumbing designers shall also observe other requirements in Hong Kong Waterworks Standard Requirements.

For developments not required to install master meters, fire service shall be connected from the main outside the lot boundary. Also, check meter positions shall be provided in fresh water and TMF inside service and fire service as in the existing practice.

For development with more than 1 detached village type building, master meter requirement shall be applied if the total length of underground and concealed pipes exceeds 15m.

For more information, please contact our Engineer Mr. Alan WONG at tel. No. 2829 4726.

Yours faithfully,



(CHIN Chu Sum)
for Water Authority

Encl.

c.c.

Housing Department
Building Department
Architectural Services Department
Fire Services Department
Hong Kong Housing Society
Real Estate Development Association
The Hong Kong Institute of Architects

The Hong Kong Institution of Engineers

The Hong Kong Institute of Surveyors

The Institute of Plumbing and Heating Engineering– Hong Kong Council

Hong Kong Plumbing and Sanitary Ware Trade Association Ltd.

Hong Kong Licensed Plumbers Association Ltd.

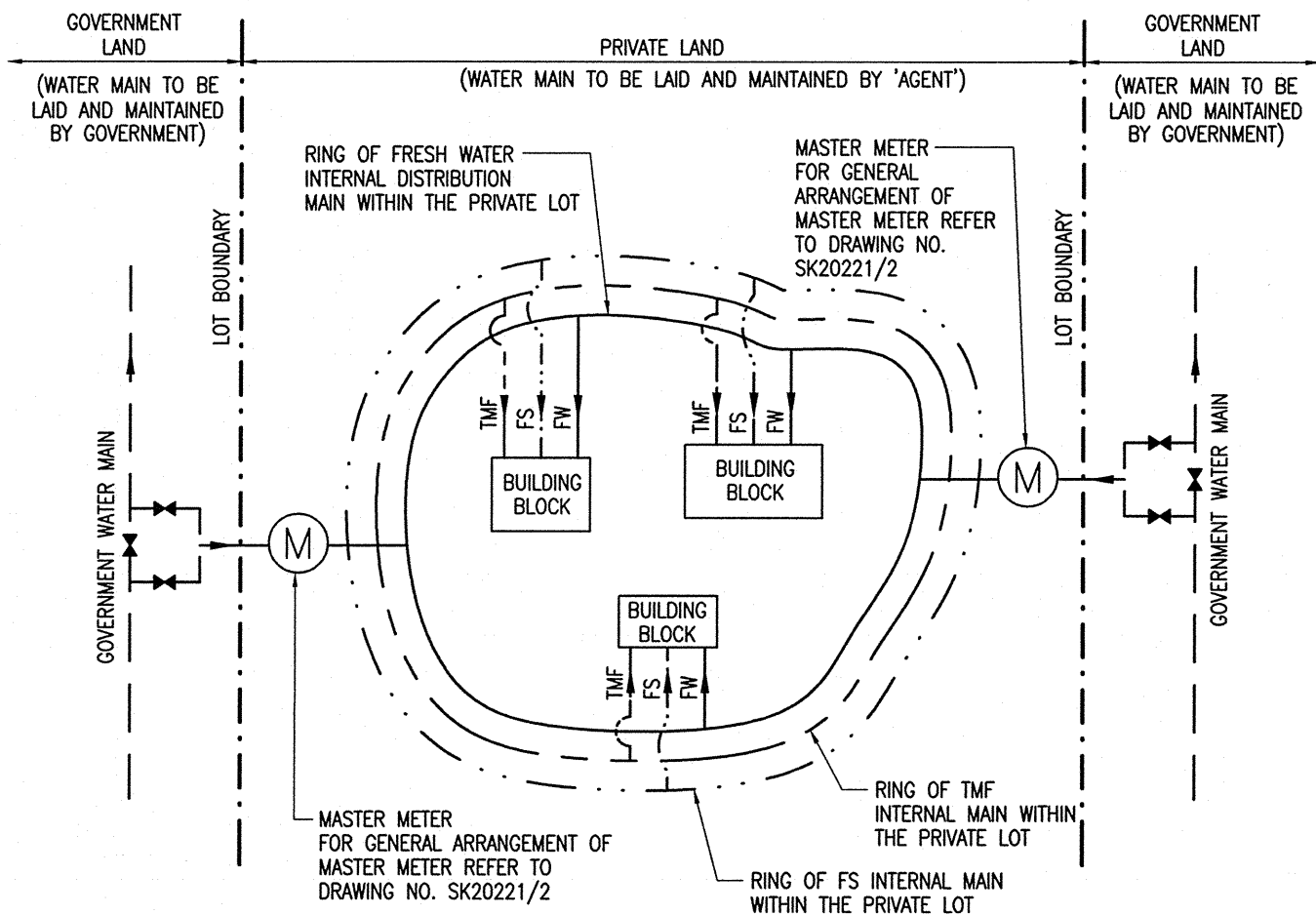
Hong Kong Plumbing General Union

Hong Kong Water Works Professionals Association Ltd.

The Hong Kong Institution of Plumbing and Drainage Ltd.

The Association of Registered Fire Service Installation Contractors of Hong Kong Ltd.

The Hong Kong Association of Property Management Companies Limited



CONFIGURATION OF MASTER METER FOR DEVELOPMENT WITH MORE THAN ONE BLOCK (AND OPTIONALLY WITH TMF)

ABBREVIATIONS :

FW	FRESH WATER MAIN
FS	FIRE SERVICES MAIN
TMF	TEMPORARY MAIN FOR FLUSHING

編號 no.	日期 date	摘要 description	簽署 initial
修訂 REVISION			

圖則名稱 drawing title

MASTER METER -

SCHEMATIC LAYOUT
(SHEET 1 OF 2)

簽署 initial

日期 date

圖則編號 drawing no.

比例 scale

繪製 drawn

K. S. TSUI

7/11/05

SK 20221/1

N.A.

核對 checked

C. P. WONG

8/11/05

加簽 endorsed

Y. H. TAM

16/11/05

核准 approved

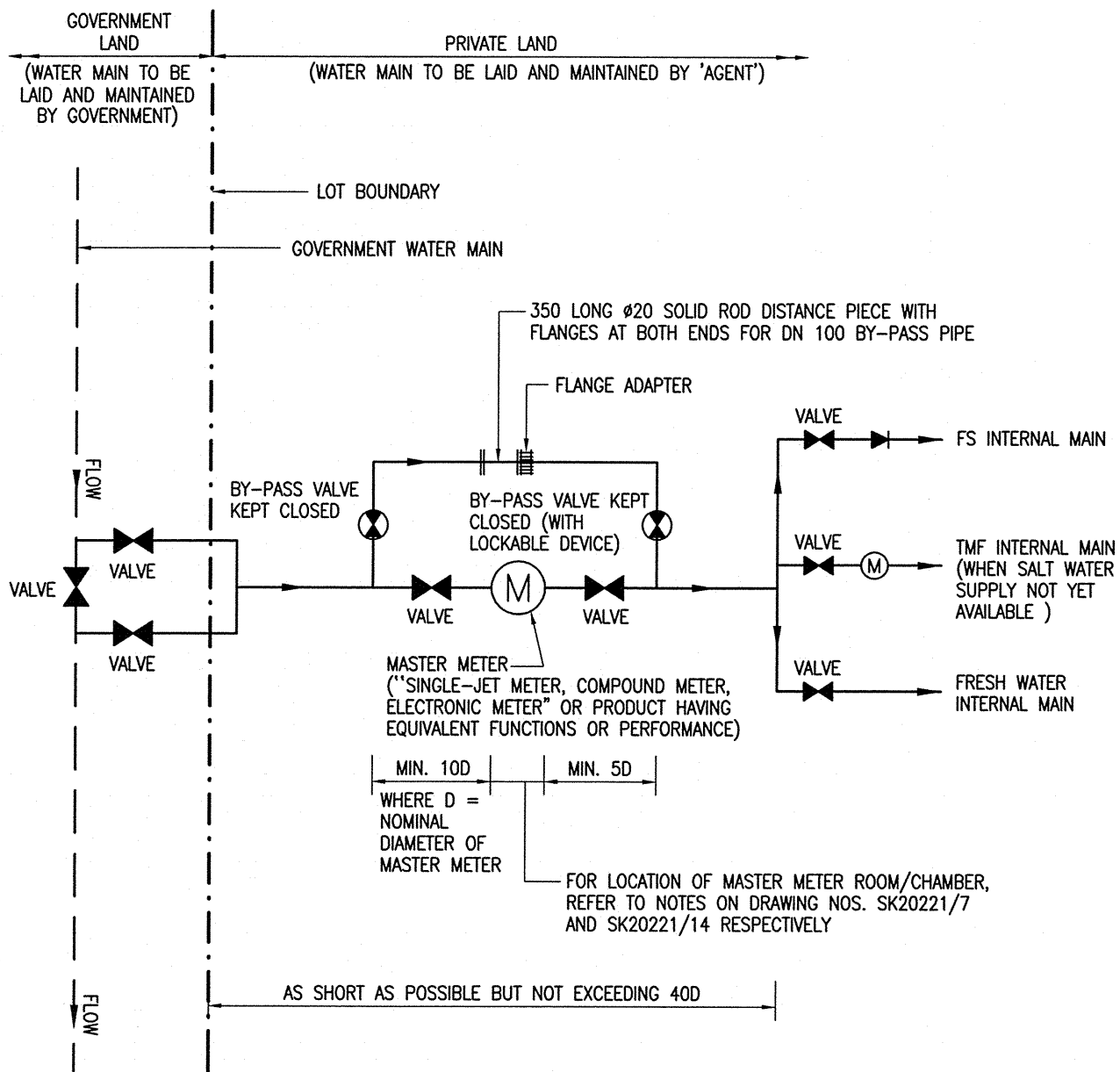
M. P. LAM

21/11/05



水務署

Water Supplies Department



**CONFIGURATION OF MASTER METER
FOR DEVELOPMENT WITH MORE THAN ONE BLOCK
(AND OPTIONALLY WITH TMF)**

CAD REF. SK20221_02.dwg PLOTTING SCALE 1 : 1

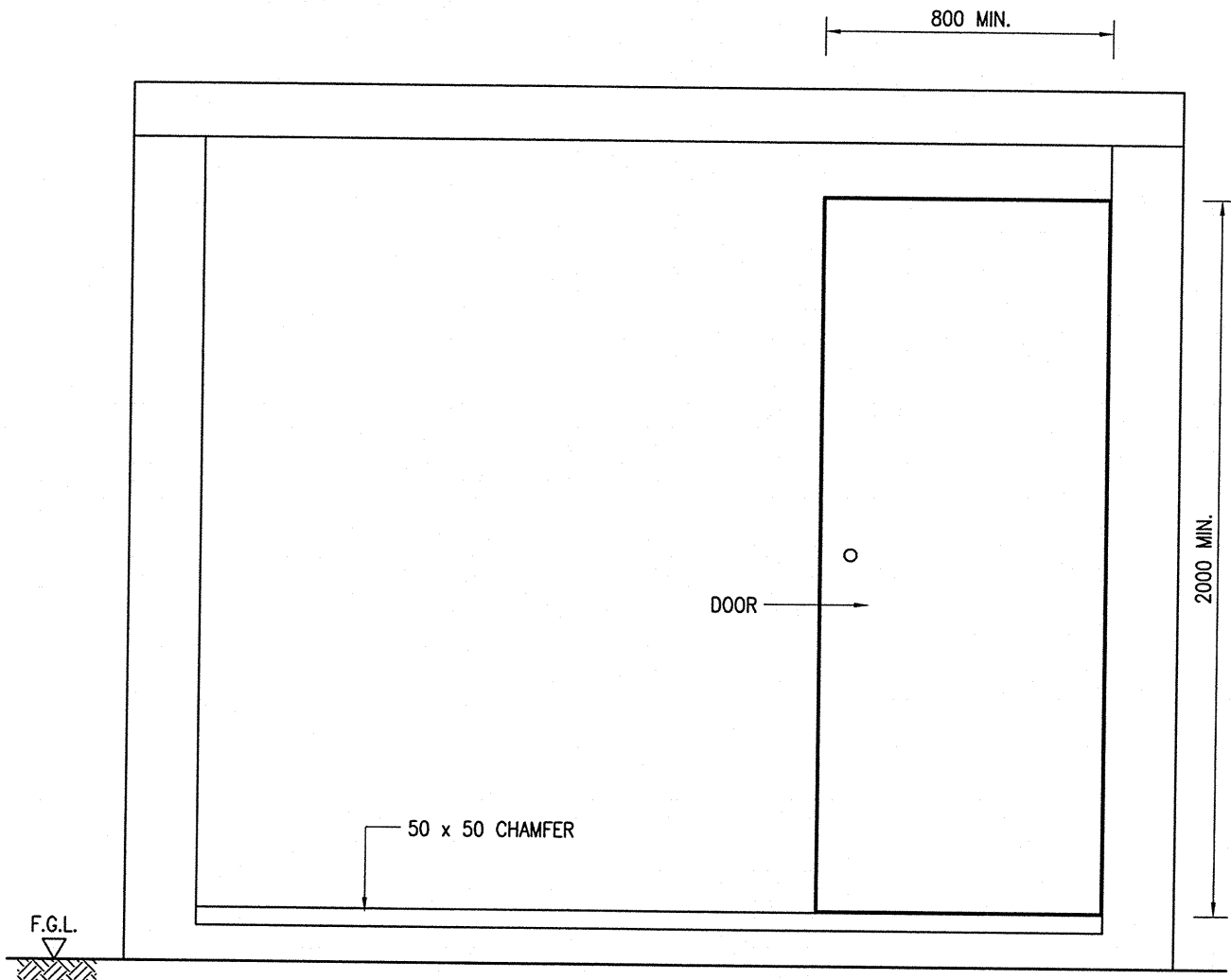
編號 no.	日期 date	摘要 description	簽署 initial
修訂 REVISION			
圖則名稱 drawing title		圖則編號 drawing no.	比例 scale
MASTER METER - SCHEMATIC LAYOUT (SHEET 2 OF 2)		SK 20221/2	N.A.
簽署 initial	日期 date	 水務署 Water Supplies Department	
繪製 drawn			
核對 checked			
加簽 endorsed			
核准 approved			

MASTER METER -
SCHEMATIC LAYOUT
(SHEET 2 OF 2)

簽署 initial
K. S. TSUI
繪製 drawn
核對 checked C. P. WONG
E/CS(TS)2
加簽 endorsed Y. H. TAM
SE/CS(TS)
核准 approved M. P. LAM
CE/CS

日期 date
7/11/05
8/11/05
16/11/05
21/11/05

圖則編號 drawing no.
SK 20221/2
比例 scale
N.A.

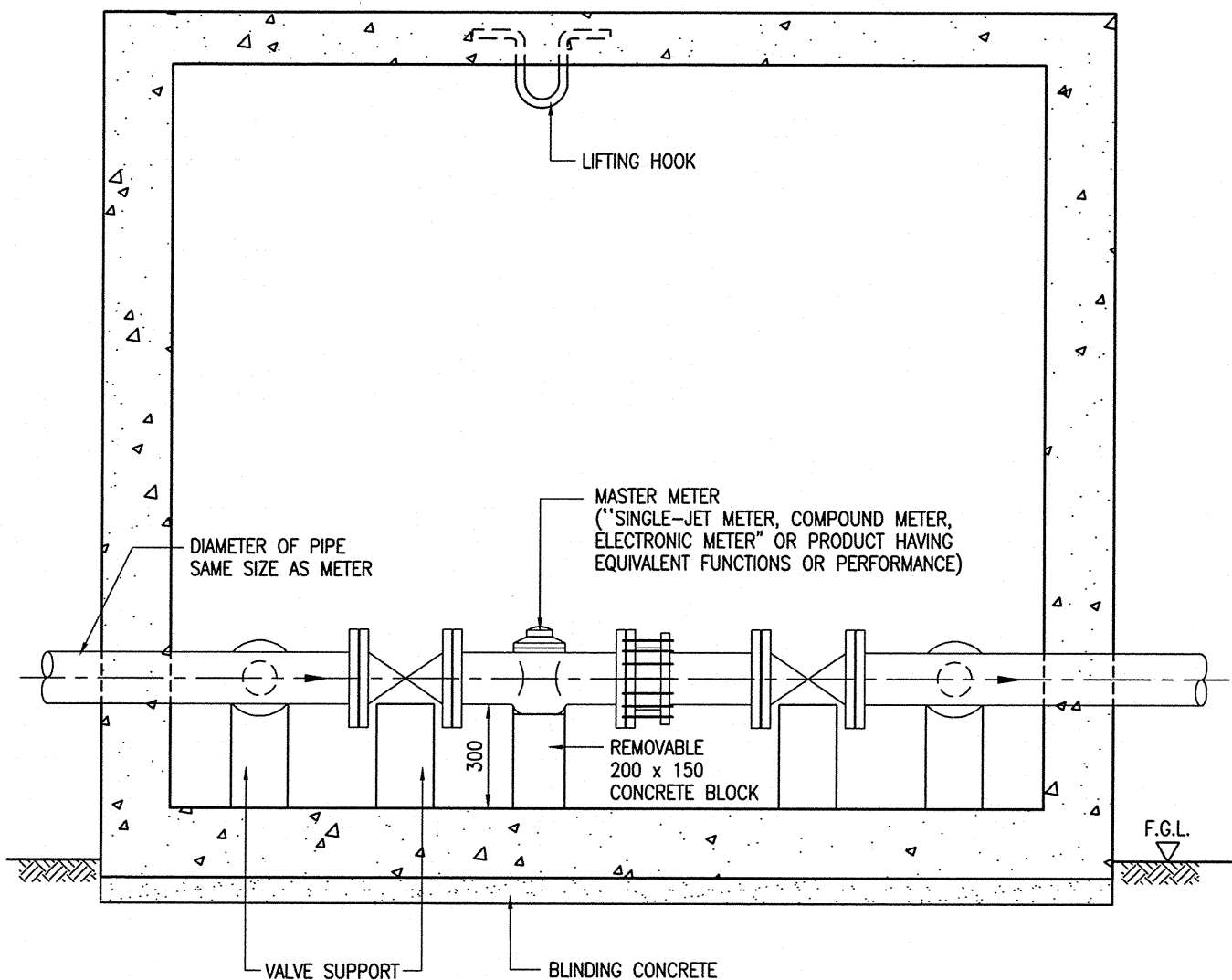


ELEVATION

編號 no.	日期 date	摘要 description	簽署 initial
修訂 REVISION			
圖則編號 drawing no.		比例 scale	
SK 20221/3		N.A.	
圖則名稱 drawing title		簽署 initial	
MASTER METER ROOM		繪製 drawn	
(SHEET 1 OF 5)		K. S. TSUI	
		核對 checked	
		C. P. WONG E/CS(TS)2	
		加簽 endorsed	
		Y. H. TAM SE/CS(TS)	
		核准 approved	
		M. P. LAM CE/CS	



水務署
Water Supplies Department



SECTION A - A

編號 no.	日期 date	摘要 description	簽署 initial
修訂 REVISION			
日期 date	圖則編號 drawing no.		比例 scale
7/11/05	SK 20221/5		N.A.
8/11/05	 水務署 Water Supplies Department		
16/11/05			
21/11/05			

MASTER METER -

MASTER METER ROOM
(SHEET 3 OF 5)

簽署 initial

日期 date

圖則編號 drawing no.

比例 scale

繪製 drawn

K. S. TSUI

7/11/05

核對 checked

C. P. WONG

8/11/05

加簽 endorsed

Y. H. TAM

16/11/05

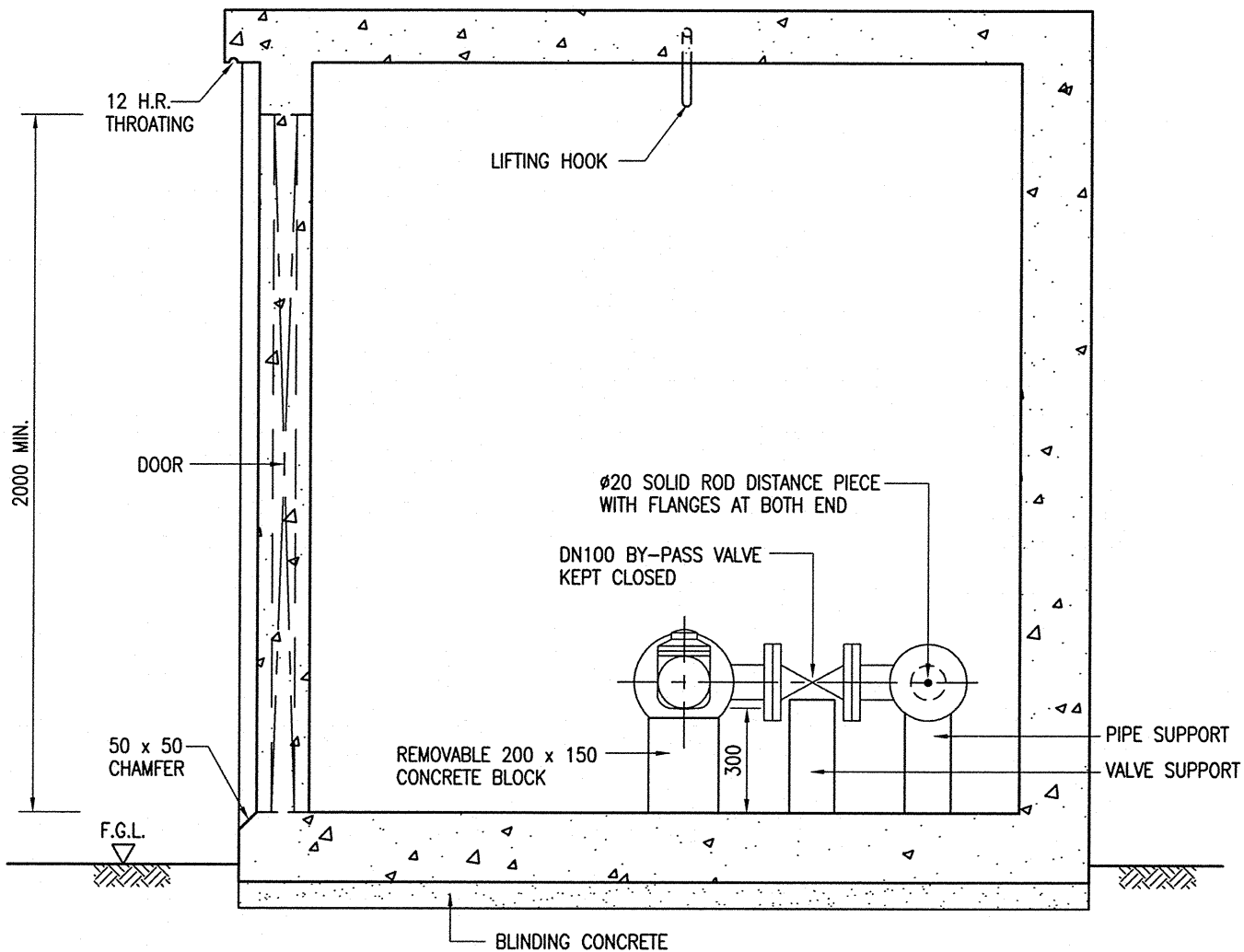
核准 approved

M. P. LAM

21/11/05



水務署
Water Supplies Department



SECTION B - B

編號 no.	日期 date	摘要 description	簽署 initial
修訂 REVISION			

圖則名稱 drawing title

MASTER METER -

MASTER METER ROOM

(SHEET 4 OF 5)

簽署 initial

繪製 drawn

K. S. TSUI

核對 checked

C. P. WONG

E/CS(TS)2

加簽 endorsed

Y. H. TAM

SE/CS(TS)

核准 approved

M. P. LAM

CE/CS

日期 date

7/11/05

8/11/05

16/11/05

21/11/05

圖則編號 drawing no.

SK 20221/6

比例 scale

N.A.



水務署

Water Supplies Department

FOR SINGLE JET / COMPOUND (IN-LINE) METER OF VARIOUS SIZES

SIZE (mm)	DIMENSIONS (mm)			WEIGHT OF METER (kg)	MAX. PEAK FLOW (m ³ /h)		NOMINAL FLOW RATE (m ³ /h)		MINIMUM FLOW RATE (m ³ /h)	
	A	B	C		SINGLE JET	COMPOUND IN-LINE	SINGLE JET	COMPOUND IN-LINE	SINGLE JET	COMPOUND IN-LINE
50	300	141	450	25	30	90	15	50	0.09	0.006
80	350	360	719	35	60	200	30	120	0.18	0.006
100	350	370	729	41	100	280	50	180	0.3	0.006

FOR COMPOUND (BY-PASS) METER OF VARIOUS SIZES

SIZE (mm)	DIMENSIONS (mm)			WEIGHT OF METER (kg)	MAX. PEAK FLOW (m ³ /h)	NOMINAL FLOW RATE (m ³ /h)	MINIMUM FLOW RATE (m ³ /h)
	A	B	C				
150	500	390	899	60	600	400	0.03
200	560	410	979	115	500	250	0.3

FOR WOLTMANN TYPE METER (250/300mm) / ELECTRONIC METER (400mm)

SIZE (mm)	DIMENSIONS (mm)			WEIGHT OF METER (kg)	MAX. PEAK FLOW (m ³ /h)	NOMINAL FLOW RATE (m ³ /h)	MINIMUM FLOW RATE (m ³ /h)
	A	B	C				
250	450	440	899	82	1000	500	18
300	500	450	959	104	1540	770	36
400	600	450	1059	115	2000	1000	13

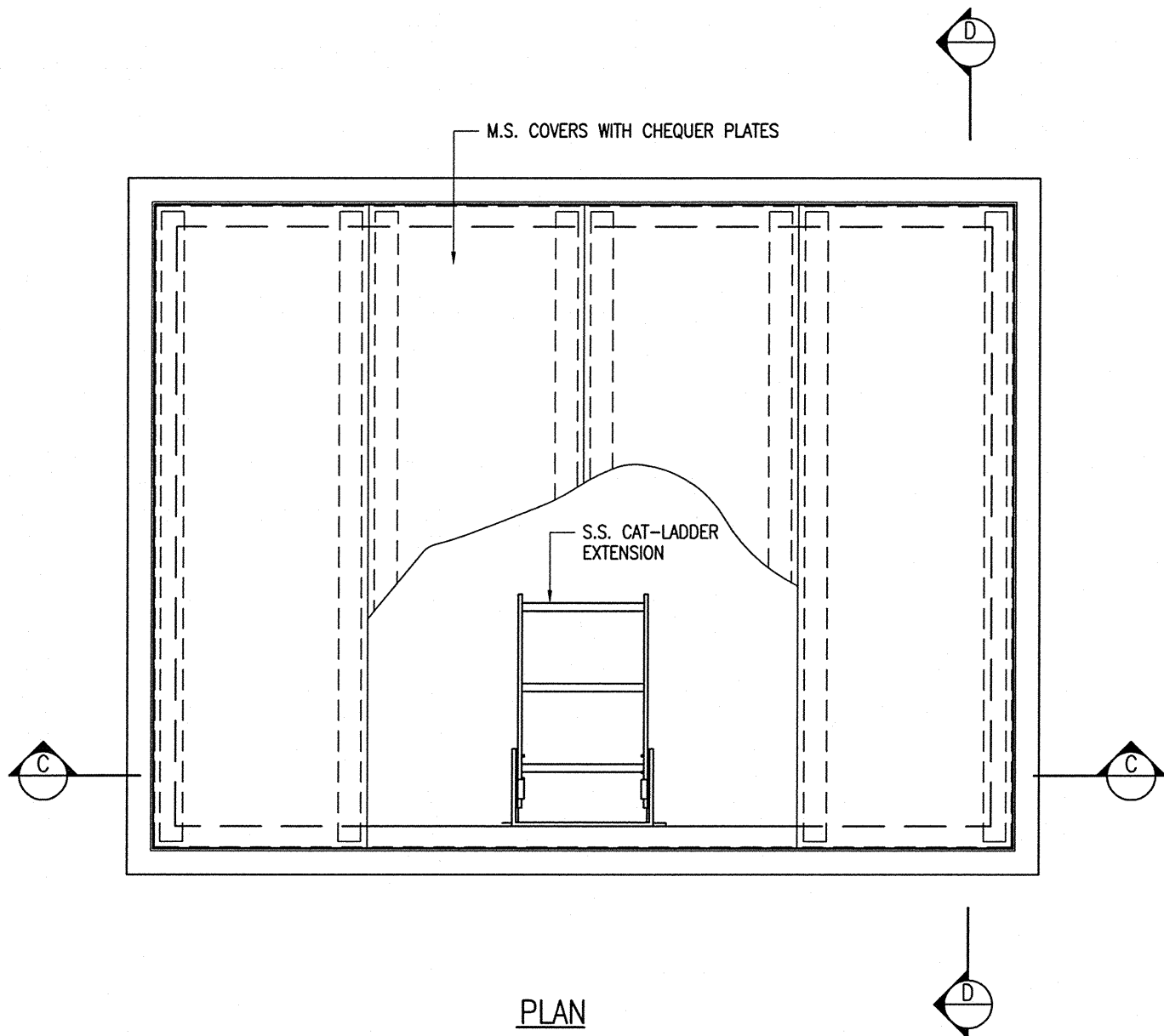
NOTES :

- ALL DIMENSIONS ARE IN MILLIMETRES.
- THE METER ROOM MUST BE SITED ON FOOTWAY OR LANDSCAPING AREA.
- THIS SET OF DRAWINGS SHALL BE READ IN CONJUNCTION WITH THE HONG KONG WATERWORKS STANDARD REQUIREMENT FOR PLUMBING INSTALLATION IN BUILDING.
- LIFTING HOOK SHALL BE ABLE TO LIFT UP 2.5 TIMES THE WEIGHT OF THE METER.
- THE CENTRE-LINE OF THE PIPEWORK MUST BE HORIZONTAL.
- ALL NEWLY LAID WATER MAINS MUST BE CLEANED AND STERILIZED BEFORE THE INSTALLATION OF SPECIFIED METER OR PRODUCT HAVING EQUIVALENT FUNCTIONS OR PERFORMANCE INSIDE THE ROOM.
- DRAIN PIPE FOR METER ROOM SHALL BE PROVIDED.
- A MINIMUM OF 10D STRAIGHT PIPE UPSTREAM AND 5D STRAIGHT PIPE DOWNSTREAM FROM THE FLANGES OF THE MASTER METER POSITION SHALL BE PROVIDED WHERE D IS THE NOMINAL DIAMETER OF THE MASTER METER.
- DIMENSION 'A' AND 'B' SHOWN IN THE TABLES ARE FOR INDICATION ONLY, EXACT DIMENSION TO BE DETERMINED ON SITE.

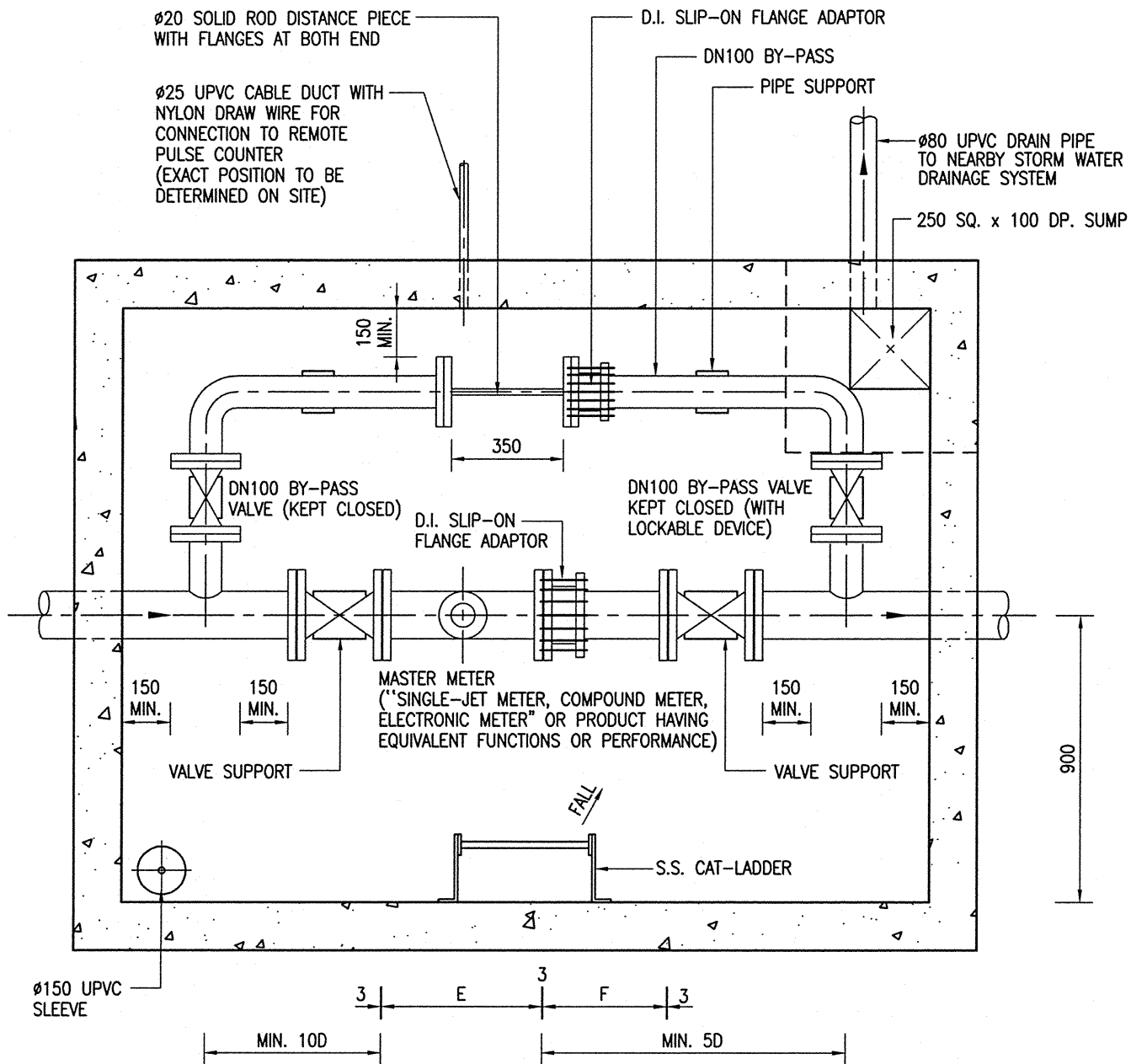
PROVISIONAL COPY

DATE : 17/11/2005

編號 no.	日期 date	摘要 description	簽署 initial
修訂 REVISION			
日期 date		圖則編號 drawing no.	比例 scale
7/11/05		SK 20221/7	N.A.
8/11/05			
16/11/05			
21/11/05			
 <div>水務署 Water Supplies Department</div>			



編號 no.	日期 date	摘要 description	簽署 initial
修訂 REVISION			
日期 date	圖則編號 drawing no.		比例 scale
7/11/05	SK 20221/8		N.A.
8/11/05	 水務署 Water Supplies Department		
16/11/05			
21/11/05			



編號 no.	日期 date	摘要 description	簽署 initial
修訂 REVISION			

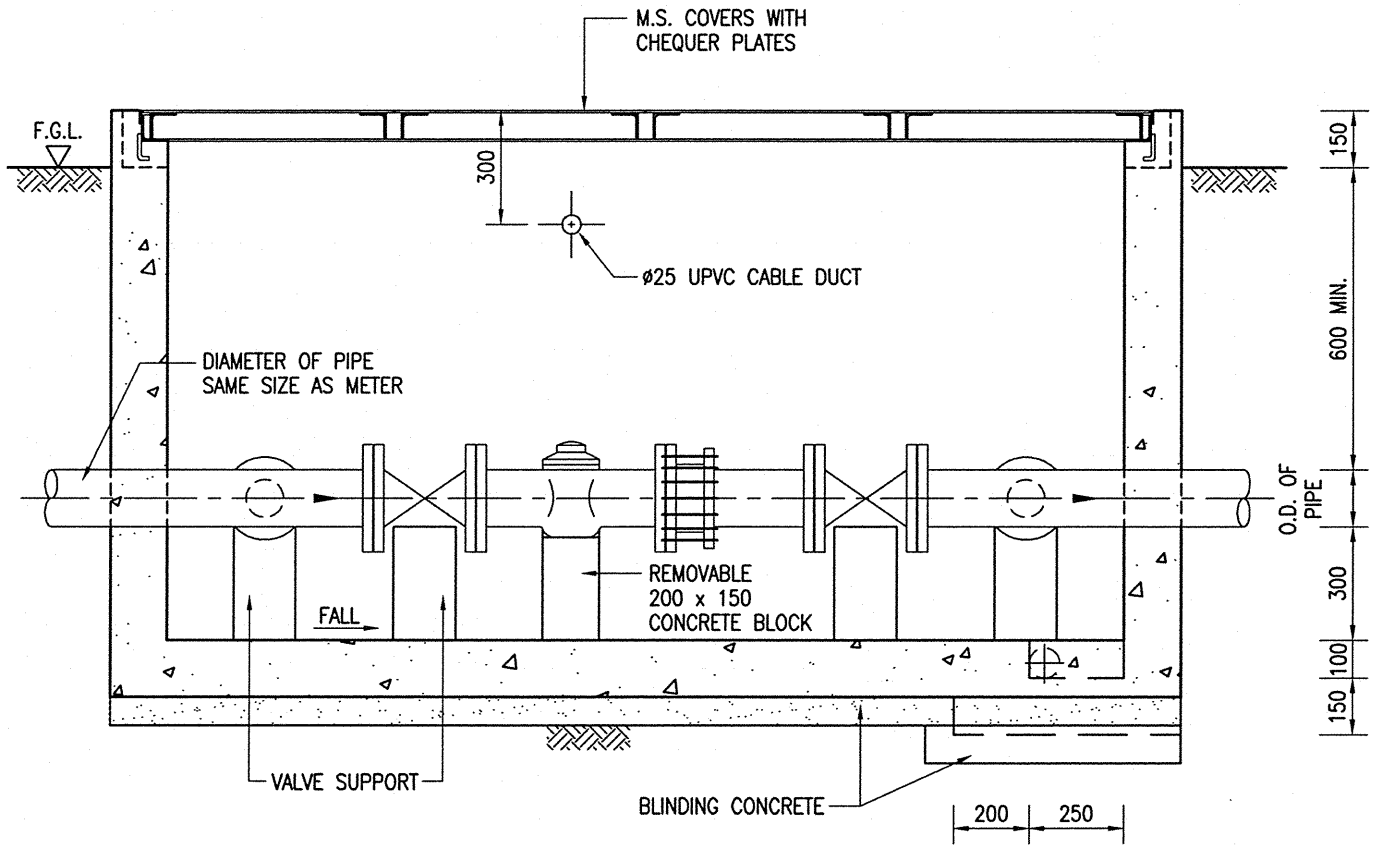
圖則名稱 drawing title
MASTER METER -
MASTER METER CHAMBER
(SHEET 2 OF 6)

簽署 initial	日期 date
繪製 drawn K. S. TSUI	7/11/05
核對 checked C. P. WONG E/CS(TS)2	8/11/05
加簽 endorsed Y. H. TAM SE/CS(TS)	16/11/05
核准 approved M. P. LAM CE/CS	21/11/05

圖則編號 drawing no.	比例 scale
SK 20221/9	N.A.



水務署
Water Supplies Department



SECTION C - C

編號 no.	日期 date	摘要 description	簽署 initial
修訂 REVISION			
日期 date	圖則編號 drawing no.		比例 scale
7/11/05	SK 20221/10		N.A.
8/11/05	 <div>水務署 Water Supplies Department</div>		
16/11/05			
21/11/05			

MASTER METER -

MASTER METER CHAMBER
(SHEET 3 OF 6)

簽署 initial

日期 date

圖則編號 drawing no.

比例 scale

繪製 drawn

K. S. TSUI

7/11/05

核對 checked

C. P. WONG
E/CS(TS)2

8/11/05

加簽 endorsed

Y. H. TAM
SE/CS(TS)

16/11/05

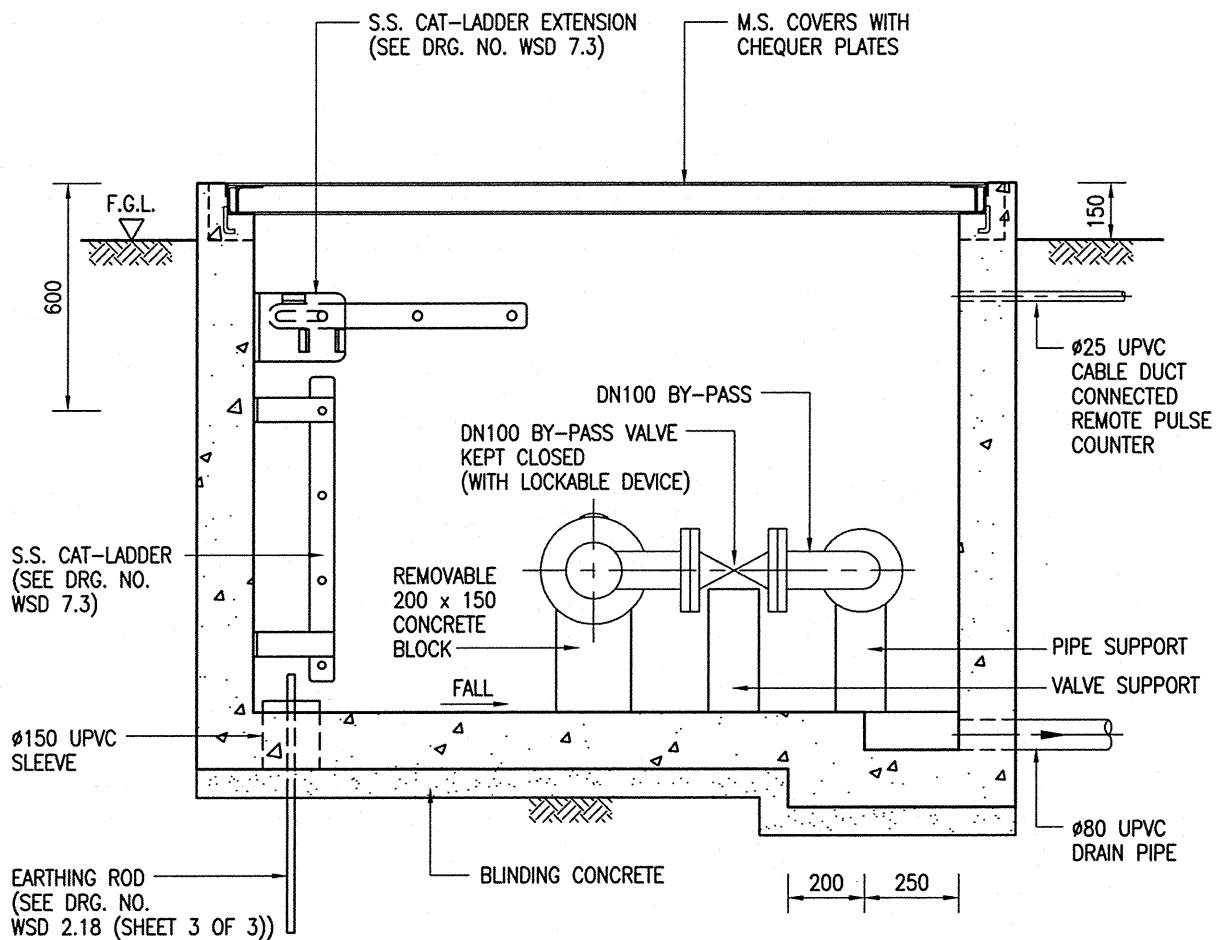
核准 approved

M. P. LAM
CE/CS

21/11/05



水務署
Water Supplies Department



SECTION D - D

編號 no.	日期 date	摘要 description	簽署 initial
修訂 REVISION			

圖則名稱 drawing title
MASTER METER -

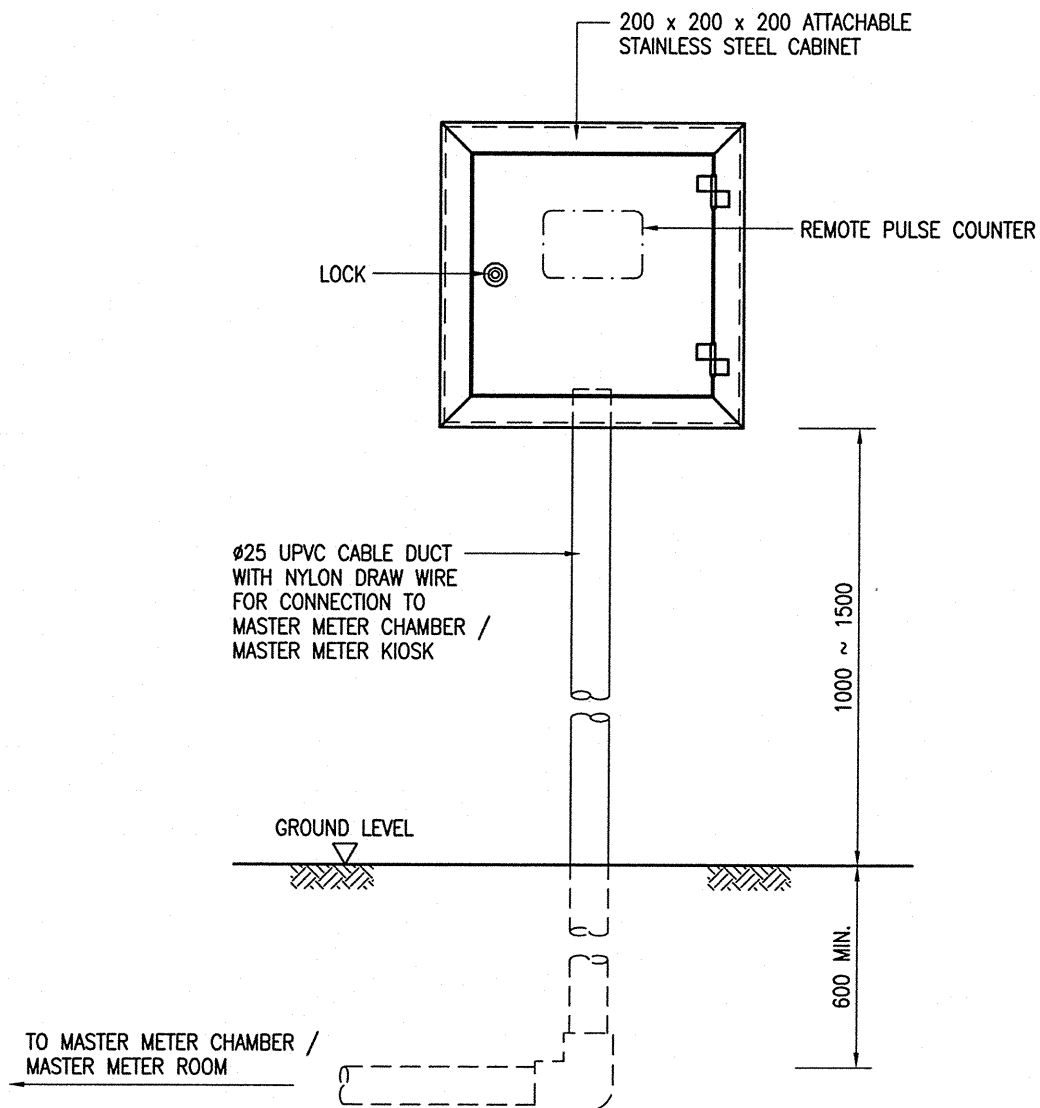
MASTER METER CHAMBER
(SHEET 4 OF 6)

簽署 initial	日期 date
繪製 drawn K. S. TSUI	7/11/05
核對 checked C. P. WONG E/CS(TS)2	8/11/05
加簽 endorsed Y. H. TAM SE/CS(TS)	16/11/05
核准 approved M. P. LAM CE/CS	21/11/05

圖則編號 drawing no.	比例 scale
SK 20221/11	N.A.



水務署
Water Supplies Department



ARRANGEMENT OF REMOTE PULSE COUNTER

NOTES :

1. MAXIMUM CABLE LENGTH BETWEEN MASTER METER AND THE REMOTE PULSE COUNTER IS 25 METRES.

編號 no.	日期 date	摘要 description	簽署 initial
修訂 REVISION			

圖則名稱 drawing title	簽署 initial	日期 date	圖則編號 drawing no.	比例 scale
MASTER METER -	繪製 drawn K. S. TSUI	7/11/05	SK 20221/12	N.A.
MASTER METER CHAMBER	核對 checked C. P. WONG E/CS(TS)2	8/11/05		
(SHEET 5 OF 6)	加簽 endorsed Y. H. TAM SE/CS(TS)	16/11/05		
	核准 approved M. P. LAM CE/CS	21/11/05		



水務署
Water Supplies Department

FOR SINGLE JET / COMPOUND (IN-LINE) METER OF VARIOUS SIZES

SIZE (mm)	DIMENSIONS (mm)		WEIGHT OF METER (kg)	MAX. PEAK FLOW (m ³ /h)		NOMINAL FLOW RATE (m ³ /h)		MINIMUM FLOW RATE (m ³ /h)	
	E	F		SINGLE JET	COMPOUND IN-LINE	SINGLE JET	COMPOUND IN-LINE	SINGLE JET	COMPOUND IN-LINE
50	300	141	25	30	90	15	50	0.09	0.006
80	350	360	35	60	200	30	120	0.18	0.006
100	350	370	41	100	280	50	180	0.3	0.006

FOR COMPOUND (BY-PASS) METER OF VARIOUS SIZES

SIZE (mm)	DIMENSIONS (mm)		WEIGHT OF METER (kg)	MAX. PEAK FLOW (m ³ /h)	NOMINAL FLOW RATE (m ³ /h)	MINIMUM FLOW RATE (m ³ /h)
	E	F				
150	500	390	60	600	400	0.03
200	560	410	115	500	250	0.3


FOR WOLTMANN TYPE METER (250/300mm) / ELECTRONIC METER (400mm)

SIZE (mm)	DIMENSIONS (mm)		WEIGHT OF METER (kg)	MAX. PEAK FLOW (m ³ /h)	NOMINAL FLOW RATE (m ³ /h)	MINIMUM FLOW RATE (m ³ /h)
	E	F				
250	450	440	82	1000	500	18
300	560	450	104	1540	770	36
400	600	450	115	2000	1000	13

NOTES :

- ALL DIMENSIONS ARE IN MILLIMETRES.
- THE METER CHAMBER MUST BE SITED ON LANDSCAPING AREA WITHOUT VEHICULAR TRAFFIC.
FOR METER CHAMBER TO BE SITED ON FOOTWAY OR PAVEMENT, ALTERNATIVE DESIGN OF CHAMBER COVER IS REQUIRED.
- THE CENTRE-LINE OF THE PIPEWORK MUST BE HORIZONTAL.
- ALL NEWLY LAID WATER MAINS MUST BE CLEANED AND STERILIZED BEFORE THE INSTALLATION OF SPECIFIED METER OR PRODUCT HAVING EQUIVALENT FUNCTIONS OR PERFORMANCE INSIDE THE CHAMBER.
- DRAIN PIPE FOR CHAMBER SHALL BE PROVIDED.
- A MINIMUM OF 10D STRAIGHT PIPE UPSTREAM AND 5D STRAIGHT PIPE DOWNSTREAM FROM THE FLANGES OF THE MASTER METER POSITION SHALL BE PROVIDED WHERE D IS THE NOMINAL DIAMETER OF THE MASTER METER.
- DIMENSION 'E' & 'F' SHOWN IN THE TABLES ARE FOR INDICATION ONLY, EXACT DIMENSION TO BE DETERMINED ON SITE.

編號 no.	日期 date	摘要 description	簽署 initial
修訂 REVISION			

圖則名稱 drawing title MASTER METER – MASTER METER CHAMBER (SHEET 6 OF 6)	簽署 initial	日期 date	圖則編號 drawing no.	比例 scale
	繪製 drawn K. S. TSUI	7/11/05	SK 20221/13	N.A.
	核對 checked C. P. WONG E/CS(TS)2	8/11/05	 水務署 Water Supplies Department	
	加簽 endorsed Y. H. TAM SE/CS(TS)	16/11/05		
	核准 approved M. P. LAM CE/CS	21/11/05		