CHAPTER 5

METERING REQUIREMENTS

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METERING REQUIREMENTS

5.1 General

1. All installations connected to, or intended to be connected to HK Electric supply of electricity must comply with HK Electric Supply Rules, the latest edition of Code of Practice for the Electricity (Wiring) Regulations and other relevant Government Ordinances and Regulations.

2. Tariff metering equipment are important to HK Electric and customers in the determination of electricity consumption. Tariff meters shall be installed in a clean and dry indoor location which is not exposed to weather, mechanical damage, vibrations, extremes of temperature or dampness, etc. They shall be under conditions which are suitable for meter installation, reading and maintenance and shall comply with requirements listed below.

5.2 Interference on Meter Seals

Meter seals shall not be removed or tampered with by customer/REC/REW. A fixed charge shall be levied on unauthorised interference. However, if rewiring of customer's installation requires removal of the seals, prior consultation with HK Electric shall be made.

5.3 Type of Meters to be Installed

1. For 11-kV/22-kV installation, transformer operated meter shall be installed.

2. For 3-phase 4-wire LV installation with main switch rating exceeding 100 A, C.T. operated meter shall be installed.

3. For 3-phase 4-wire LV installation with main switch rating of 100 A and below, whole current (direct connected) type meter shall be installed.

4. For single-phase LV installation, whole current (direct connected) type meter shall be installed.

5.4 Metering Position

1. HK Electric 11-kV/22-kV current transformers and voltage transformers shall be installed in HK Electric substation and HK Electric meter shall be installed inside the customer’s switchroom. Details of the arrangement are shown in Drg. Nos. GCS/5/01 and GCS/5/02.

2. HK Electric LV meter shall be electrically connected at a position immediately after the customer main switch.

3. Meter position shall satisfy the requirements for meter reading, meter fixing and meter maintenance.

4. The metering point of an installation shall be at a position as close to the origin of the supply source as practicable.

5.5 General Requirements for Installation

1. Requirements for meter boards

   a. Meter board must be provided by the customer for installation of meters and accessories. Meter board should preferably be of hard wood with varnish treatment and at least 12 mm thick, and the distance between the surface of meter board and wall surface shall not be less than 25 mm.

   b. Fixing height of meter board (measured from the top of meter board to finished floor level) shall be as follows:

Meter Room/Switchboard	**Public Area**
Max. 2.25 m	Max. 2.25 m
Min. 0.90 m	Min. 2.15 m

   c. Flat numbering shall be from left to right, top to bottom in ascending order and be uniform throughout the building.

   d. A permanent, tidy and securely fixed flat/address label shall be provided at the conspicuous space of each meter position.

   e. If holes are provided on meter boards for tariff meter leads and meter tails to terminate onto a meter, there shall be two holes per tariff meter, left for incoming and right for customer's main cables.

   f. For non-residential customers, meter board dimensions shall be based on three-phase meters of appropriate type.

   g. Meter boards and its clearance for more than one meter shall be of dimensions in multiples of unit per Drg. No. GCS/5/14.

h. Meter board arrangements shall comply with Drg. Nos. GCS/5/15, GCS/5/16 and GCS/5/17 as appropriate.

2. Requirements for meter ducts/rooms

a. Space requirements for meter duct/room shall comply with Drg. No. GCS/05/18.

b. If meters are installed inside a meter duct with no free working space inside, the distance between meter surface and the hinged door of the meter duct at closed position shall be maximum 600 mm and minimum 200 mm.

c. Minimum working space in front of the meter is 900 mm. Minimum 70 mm clearance is required by the side of the meter.

d. In a multi-customer building, meter ducts/rooms shall be located at public area.

e. Meter duct/room shall be properly labelled, easily accessible and be provided with locks. A master key exclusively for the use of all the meter duct/room locks shall be available at the Management Office to facilitate monthly meter reading. This master key shall not be able to open other locks.

f. Adequate lighting shall be provided inside the meter ducts/rooms.

5.6 General Requirements of LV Tariff Meters

1. Space requirement for tariff meters shall comply with Drg. No. GCS/5/14.

2. For main switch rating exceeding 100 A three-phase and up to 400 A three-phase, HK Electric will provide a C.T. cum link box free of charge. The dimensions of the box are 305 mm x 375 mm x 175 mm (H x W x D). The working space in front of the box is 900 mm and the minimum clearance at the two sides of the box shall be 100 mm for sealing work.

3. For main switch rating exceeding 400 A three-phase, the C.T. chamber as per Drg. No. GCS/5/19 is required to be fitted into the switchboard cubicle.

4. C.T. operated meters shall be wired according to Drg. No. GCS/5/21. Termination of multi-core cable at C.T.s and meter will be done by HK Electric.

5. Voltage wires of length around 500 mm should be prepared using the 12-core 4-mm^2 cable provided by HK Electric. Wires with core number 7, 8, 9 and 10 should be connected to L1, L2, L3 and N respectively at the P2 (loading) side of corresponding measurement C.T. All exposed conductor of the voltage wires and customer's main wires should be properly insulated by mastic tapes, covered with the correct colour coded tapes for phase identification.

6. For new installation of C.T. operated meters with a main switch rating of 600 A or above, located inside the customer's switchboard, a Cat. 5e cable shall be supplied and installed by the customer with mechanical protection from the meter to the Tariff Meter Communication (TMC) Termination Box in the customer's switchroom. Each end of the mechanical protection shall be terminated with a junction box inside which there should be at least 1-metre spare length of the Cat. 5e cable. The junction boxes shall be within 0.5 metres of the meter and the TMC Termination Box. This requirement should also apply for refurbishments of customer's switchboards that contain C.T. operated meters with main switch rating of 600 A or above.

7. Where applicable, HK Electric shall provide the following LV metering equipment free of charge:

   - C.T. cum link box.

   - 12-core cable connecting C.T. terminals and tariff meter terminals. The maximum length is 10 metres.

   - Cable gland for 12-core cable.

   - HRC fuse link carriers and bases.

   - Tariff metering C.T.s.

   REC/REW shall make advance appointment with us at 2887 3455 to collect the above metering equipment from the Customer Centre on 9/F., Electric Centre, 28 City Garden Road, North Point, Hong Kong and install them properly before meter fixing.

8. For existing buildings, if the tariff meters are installed inside a meter cubicle/enclosure, the meter cubicle/enclosure shall comply with the requirements as shown in Detail 'A' of Drg. No. GCS/5/22. Under special circumstances, HK Electric may accept the meter cubicle/enclosure which complies with the requirements as shown in Detail 'B' of Drg. No. GCS/5/22.

5.7 Special Requirements for 11-kV/22-kV Metering Scheme

1. HK Electric shall provide the following 11-kV/22-kV metering equipment free of charge:

   - 12-core cable for connection between V.T.s/C.T.s terminals and tariff meter terminals.

   - Cable gland for 12-core cable.

   REC/REW shall make advance appointment with us at 2887 3455 to collect the above metering equipment from the Customer Centre on 9/F., Electric Centre, 28 City Garden Road, North Point, Hong Kong and install them properly before meter fixing.

2. Space requirement for tariff meter shall comply with Drg. No. GCS/5/14.

3. The maximum length of metering cable connecting the V.T./C.T. terminals and tariff meter terminal is 15 metres. The cable shall be properly laid and secured on cable trays.

4. A Cat. 5e cable shall be supplied and installed by the customer with mechanical protection from the meter to the Tariff Meter Communication (TMC) Termination Box in the customer's switchroom. Each end of the mechanical protection shall be terminated with a junction box inside which there should be at least 1-metre spare length of the Cat. 5e cable. The junction boxes shall be within 0.5 metres of the meter and the TMC Termination Box.

5. Ferruling of multi-core cable and termination of meter will be done by HK Electric.

5.8 General Requirements of Current Transformer Chamber for Accommodation of Metering C.T.s & Voltage Fuses

1. Recommended dimensions of C.T. chamber are as follows:

   Depth : 300 mm (Min.)
   Height : 400 mm (Min.)
   Width : vary with size of installation (see below)

C.T. Ratio	Size of C.T.			
	Min. I.D. (mm)	Max. O.D. (mm)	Max. Thickness (mm)	Min. Width (mm)
200/5 A	60	110	80	500
400/5 A	60	110	80	500
1000/5 A	120	180	40	650
2000/5 A	130	180	40	650

2. C.T.s shall be generously spaced between busbars. They shall be rigidly supported and insulated from live parts.

3. Bare copper bars shall be insulated by heat-shrinkable materials and correctly coded for phase identification.

4. Voltage fuses and link shall be provided to protect and isolate voltage supply to metering equipment. Details are:

   3 pcs. GEC type SC32H fuse carrier and base (black) complete with NS16 HRC fuse link.

   1 pc. GEC type SC32H fuse carrier and base (white) complete with NSC32A copper link.

5. Rigid supports shall be provided for mounting of conductor/busbar inside the chamber.

6. Minimum space of 900 mm must be maintained in front of the C.T. chamber for free access (full door swing) and as working space.

7. The sealable screw shall conform to Drg. No. GCS/5/19.

8. Multi-core cable between C.T. chamber and meter or meter panel will be provided by HK Electric and installed in position by the REC/REW.

9. The requirement for cable mounted C.T. chamber shall be similar to that of HK Electric C.T. cum-link box.

10. Fixing height of C.T. chamber (measured from the top of C.T. chamber to finished floor level) shall be as follows:

Meter Room/Switchboard	**Public Area**
Max. 2.60 m	Max. 2.60 m
Min. 0.90 m	Min. 2.15 m

11. A permanent, tidy and securely fixed flat/address label shall be provided at the conspicuous space of each C.T. chamber located inside the switchboard.

5.9 Requirements for Meter Leads and Meter Tails

1. General

   a. Size of meter leads and meter tails shall be according to the table as shown in Drg. No. GCS/5/14.

      Minimum size of conductors used for termination onto HK Electric whole current (direct connected) type meter shall be 4 mm^2 stranded copper conductor.

   b. The length of meter leads specified does not include customer's lateral mains.

   c. For the whole current (direct connected) type meter, the length of meter leads between main switch and meter terminals shall not exceed 3 metres.

   d. Only circular, multi-stranded copper conductors are allowed for termination onto HK Electric whole current (direct connected) type meter. Sector-shaped conductors are not allowed.

   e. All meter leads and meter tails shall be correctly coded for phase identification.

2. Phase Identification

   a. Single-phase Meter

      Where new colour coded cable is used in meter leads and/or tails, both meter leads and tails shall be fitted with proper, durable and legible phase identification labels (such as cable ties, sleeves, ferrules etc.) marked in L1 or L2 or L3 and N.

      Where new and old colour coded cables are used separately in meter leads and tails, a yellow warning notice in both English and Chinese shall be displayed at or close to the nearest upstream main switch/point of isolation. Details of the label shall comply with the latest edition of the Code of Practice for the Electricity (Wiring) Regulations.

b. Three-phase Meter

Where new colour coded cable is used in meter leads and tails, it is recommended that both meter leads and tails shall be fitted with proper, durable and legible phase identification labels (such as cable ties, sleeves, ferrules etc.) marked in L1, L2, L3 and N.

Where different colour coded cables are used in meter leads and tails, both the new and old colour coded cables shall be fitted with proper, durable and legible phase identification labels (such as cable ties, sleeves, ferrules etc.) marked in L1, L2, L3 and N. A yellow warning notice in both English and Chinese shall be displayed at or close to the nearest upstream main switch/point of isolation. Details of the label shall comply with the latest edition of the Code of Practice for the Electricity (Wiring) Regulations.

5.10 Ferrule Nos. for 12-core Cable

Core No.	1	2	3	4	5	6	7	8	9	10	11	12
Ferrule	D11	D10	D31	D30	D51	D50	E11	E31	E51	E71	Spare	

The ferrule nos. for 12-core cable apply to Summation and 11-kV/22-kV Metering Schemes only.

5.11 Special Summation Metering Scheme

The customer shall contact HK Electric to see whether their installation meets the requirements for special summation scheme. After the pre-requisites for special summation scheme are satisfied, technical details and quotations will then be forwarded to the customer for their consideration.

5.12 Removal of Meters and Related Services from a Building Due to Demolition

Before forwarding the request for meter disconnection and service removal, the developer/architect/contractor shall make sure that all the customers no longer need electricity supply and have vacated from the premises. The written request for meter disconnection and related services shall reach HK Electric at least six weeks before the intended service removal date.

The developer/architect/contractor is also requested to return a duly completed Form TD 40 (Confirmation of No Asbestos Containing Material (ACM) Hazard) confirming that there is no ACM hazard at the specified period for our meter/service removal at the building to be demolished.

HK Electric will arrange to remove our meters at the above building after the completion of the service removal works. The developer/architect/contractor is reminded not to interfere with or remove our meters. If our meters are in any way damaged or lost in the course of, or as a result of the works of the developer /architect/contractor, HK Electric shall hold the developer/architect/contractor fully liable for all losses and damage suffered by HK Electric including all cost incurred.

5.13 Metering Arrangement for Electric Vehicle Charging Facilities

For details, please refer to Chapter 7 – Electric Vehicle Charging Facilities.

5.14 Fire Resisting Enclosure (FRE) for Tariff Meters

1. During the planning stage, the REC/REW shall submit the design and installation method of the proposed FRE to HK Electric for consideration. The design shall comply with Drg. No. GCS/5/22.

2. The FRE, including transparent glass and access panel, shall be constructed to have a fire resisting period of not less than 1 hour with regard to both integrity and insulation, complying with Fire Services Department & Building Department's requirements and other relevant Government Ordinances and Regulations.

3. The fire rated enclosure shall not be filled with thermal insulation. The current carrying capacity of the cable will be reduced if the cable and accessories are thermal insulated.

4. The current carrying capacity of the cable shall not be jeopardized after the work. If the current carrying capacity is reduced after installing enclosure, the cable size shall be enlarged.

5. Adequate working space shall be provided for future maintenance and repair.

6. In case of any work required by HK Electric, such as meter removal, disconnection & reconnection, the building owner shall be responsible for dismantling and reinstatement of the FRE.

7. If any relocation of tariff meters is required to facilitate the installation of FRE, please contact HK Electric at 2887 3455 before work commencement.

5.15 Requirements for Tariff Meter Communication (TMC) Infrastructure Provisions in New Buildings/Existing Buildings with Major Renovation

1. Tariff Meter Communication (TMC) Infrastructure provisions shall be made by customers during the design and construction stage of new buildings/existing buildings with major renovation in the electrical installation. The proposed arrangements of facilities (as shown in Drg. Nos. GCS/5/23 and GCS/5/24) for the TMC infrastructure provisions should be submitted to HK Electric for consideration during the design stage.

2. The following facilities shall be supplied and installed at locations specified in Drg. No. GCS/5/25 and customers are responsible for subsequent repair and maintenance of the facilities.

   a. A single-phase double-pole protective device of rating not less than 6 A and 5-A single-phase fused connection unit shall be installed to provide a supply for TMC equipment. This 6-A single-phase double-pole protective device shall be connected from an unmetered lateral/rising mains and a metallic enclosure for the protective device shall be properly earthed. The wires amongst the protective device, the fused connection unit and the unmetered lateral/rising mains shall be of at least 4-mm^2 Cu PVC/PVC cable. A typical arrangement for the above is shown in Drg. No. GCS/5/26.

   b. One hard wood with varnish treatment board of minimum size 600 mm x 400 mm (H x W), with a front clearance of minimum 900 mm and at least 12 mm thick for mounting of the TMC equipment enclosure and the fuse connection unit shall be provided. Fixing height of the wooden board shall be as follows:

      Meter Room/Main Switchroom

      Max. 2.00 m
      Min. 0.80 m

   c. Relevant plastic engraved labels with the words 'DO NOT DISTURB (FOR HK ELECTRIC ONLY) 請勿干擾 (港燈專用)' shall be installed on the wooden board, fused connection unit and protective device as shown in Drg. Nos. GCS/5/23 and GCS/5/24.

3. For buildings with HK Electric distribution substations, the following additional facilities shall be provided between the customer's main switchroom(s) and meter room(s) on the lowest floor for tenants:

a. One set of 20-mm diameter earthed galvanised iron (G.I.) conduit, with associated G.I. junction boxes shall be installed from the TMC termination box at the customer's main switchroom up through to each meter room(s) of the lowest floor above customer's main switchroom. The G.I. conduit shall be supported and fixed to the side wall at an interval of not more than 1200 mm. The method of anchoring conduit must be by red-head or similar device.

The G.I. junction boxes shall be earthed and be installed on the wooden board for TMC equipment enclosure and also adjacent to the TMC termination box in the customer's main switchroom. The size of the junction boxes should be 86 mm x 86 mm x at least 45 mm (H x W x D). The covers of the junction boxes should be labelled by plastic engraved labels with the words 'DO NOT DISTURB (FOR HK ELECTRIC ONLY) 請勿干擾 (港燈專用)' as shown in Drg. No. GCS/5/23.

b. Cat. 6 STP (Shielded Twisted Pair) communication cables shall be supplied and installed from the TMC termination box at the customer's main switchroom up through to the junction box on the wooden board via the GI conduit. The customers are required to provide testing and commissioning reports for the installed Cat. 6 STP communication cables to HK Electric. HK Electric reserves the right to conduct separate tests/witness tests to ensure an acceptable performance of the installed communication cables.

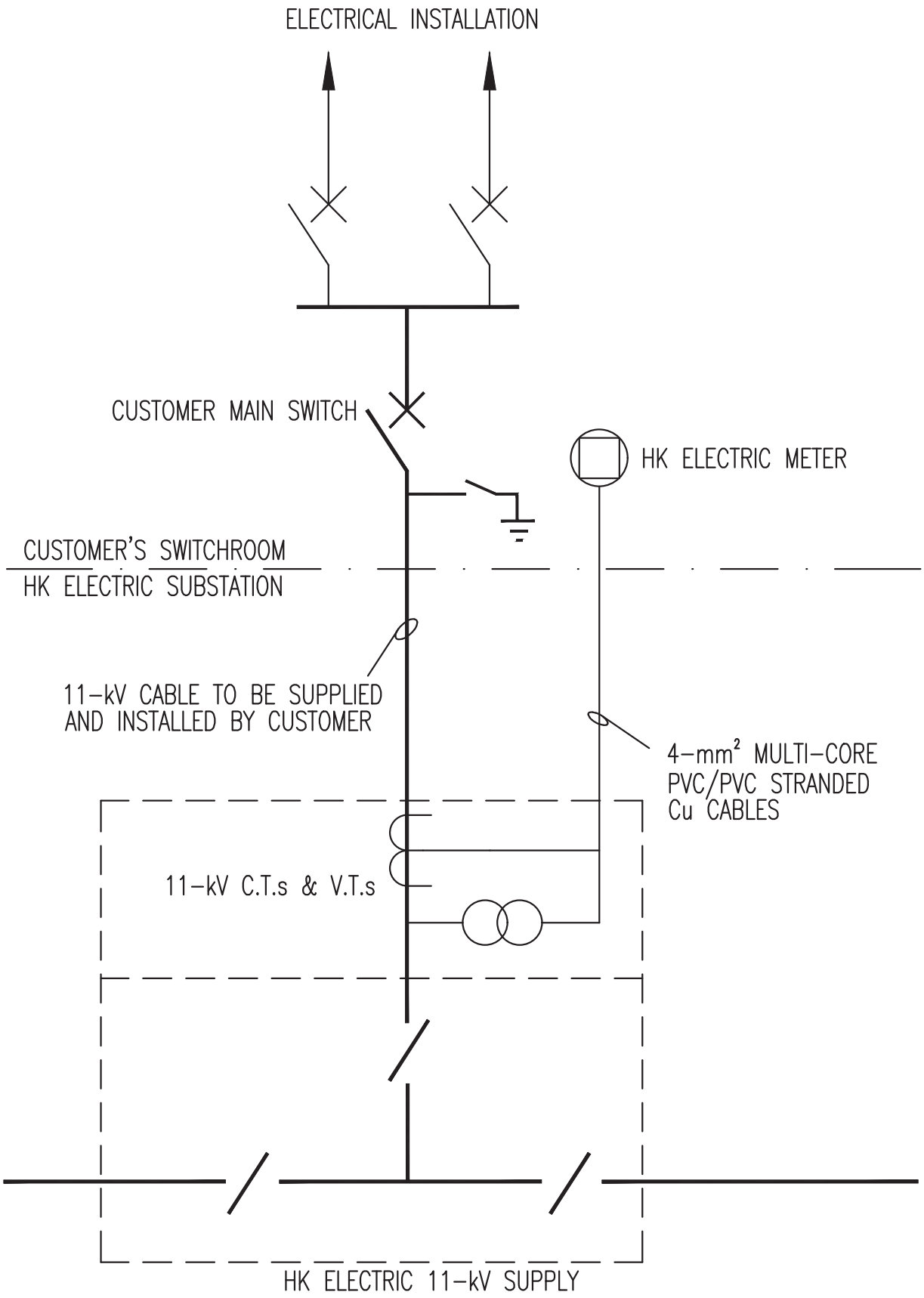
An additional length of 1 metre for the Cat. 6 STP communication cables should be coiled inside the TMC termination box and the junction box on the wooden board. The cable end at the wooden board shall be terminated according to the RJ45 T568B standard.

5.16 Schedule of Drawings – Metering Requirements

Drawing No.	Drawing Title
GCS/5/01	General Metering Arrangement for Single 11-kV Supply
GCS/5/02	General Metering Arrangement for Single 22-kV Supply
GCS/5/03	General Metering Arrangement for Single Transformer Supply
GCS/5/04	Metering Arrangement for Two Transformer Supplies with Bus-Section Circuit Breaker

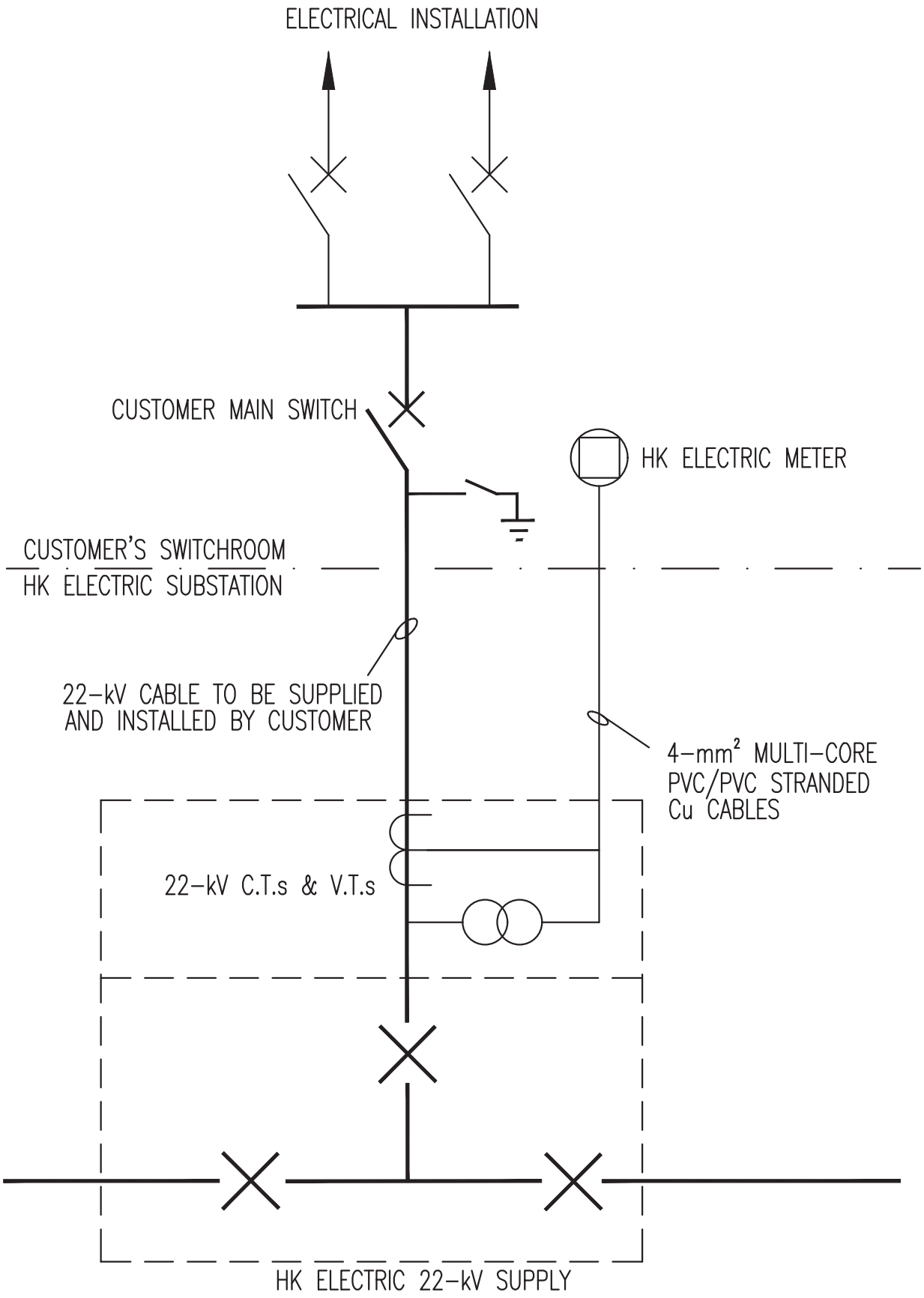
GCS/5/05	Metering Arrangement for Two Transformer Supplies with Two Bus-Section Circuit Breakers
GCS/5/06	General Metering Arrangement for Multi-Customer Premises
GCS/5/07	Metering Arrangement for Building Supply (Essential Supply from Standby Generator)
GCS/5/08	Metering Arrangement for Building Supply (Essential Supply Tee-Off Before Building Main Switch) (Total 2 sheets)
GCS/5/09	Incorrect Metering Arrangement for Building Supply
GCS/5/10	Metering Arrangement for Building Supply (Two Transformer Supplies with Bus-Section Circuit Breaker) (Total 2 sheets)
GCS/5/11	Incorrect Metering Arrangement for Building Supply (Two Transformer Supplies with Bus-Section Circuit Breaker) (Total 2 sheets)
GCS/5/12	Metering Arrangement for Upper Floor Customers with Dedicated Riser
GCS/5/13	Metering Arrangement for Communal Electrical Supply (No Essential Service)
GCS/5/14	Tariff Meter Dimensions/Termination Clearance/Meter Board/Leads Requirements
GCS/5/15	Typical Meter Board Arrangement
GCS/5/16	Meter Board Arrangement for Public Area
GCS/5/17	Meter Board Arrangement for Meter Room/Switchboard
GCS/5/18	Minimum Space Requirements for Meter Duct/Room
GCS/5/19	Requirements for Metering Current Transformer Chamber
GCS/5/20	Metering Requirements for Main Switch Rating Exceeding 100 A and up to 400 A
GCS/5/21	Wiring Diagram for C.T. Operated Meter

GCS/5/22	Requirements for Meter Cubicle/Enclosure in Existing Buildings
GCS/5/23	Facilities for Tariff Meter Communication (TMC) Infrastructure - TMC/R/1A (Apply to Meter Room(s) on the Lowest Floor)
GCS/5/24	Facilities for Tariff Meter Communication (TMC) Infrastructure - TMC/R/1B (Apply to Meter Room(s) Other Than the Lowest Floor)
GCS/5/25	Locations of Facilities for Tariff Meter Communication (TMC) Infrastructure - TMC/R/2
GCS/5/26	Typical Supply Arrangement for Tariff Meter Communication (TMC) Infrastructure



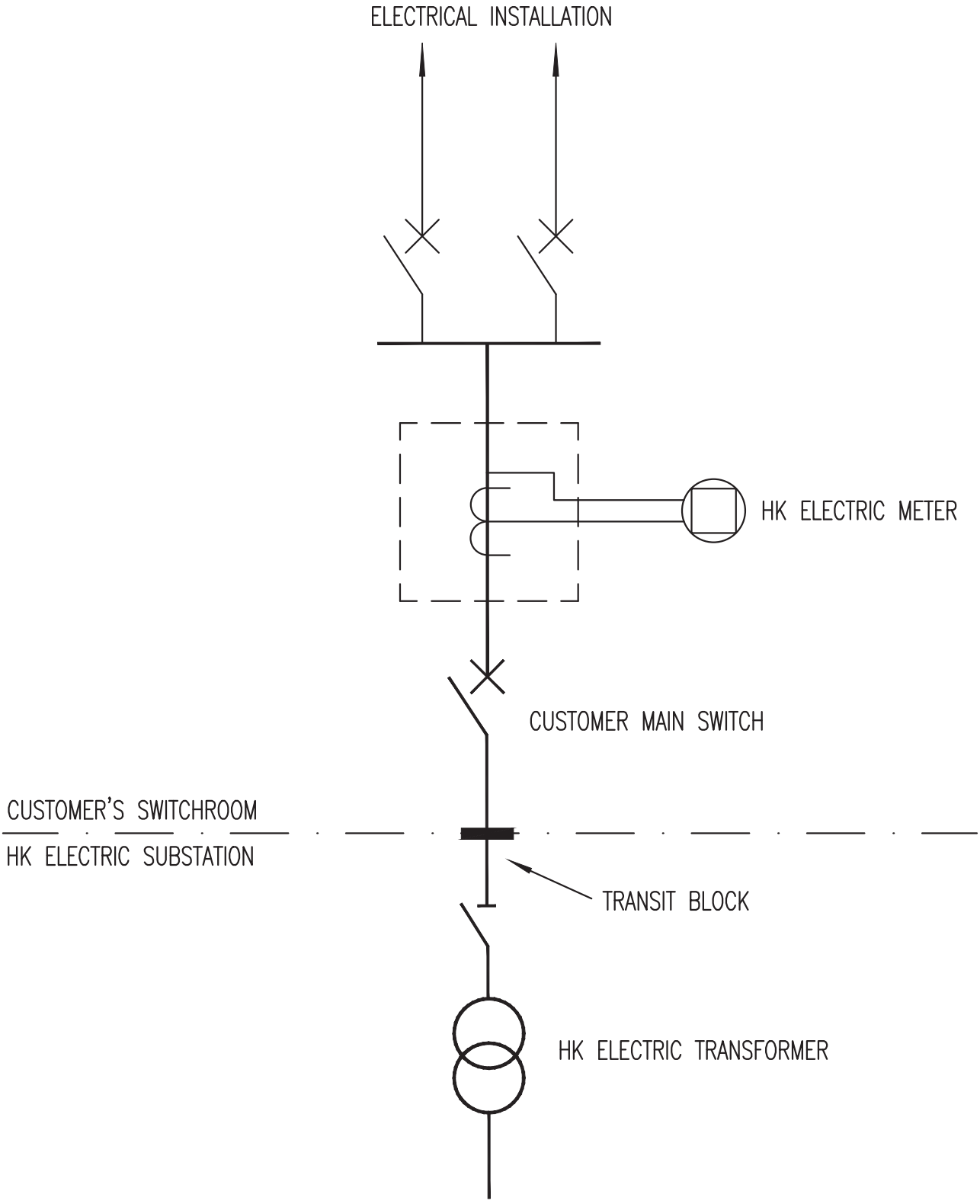
Drg. No. GCS/5/01

GENERAL METERING ARRANGEMENT FOR SINGLE 11-kV SUPPLY



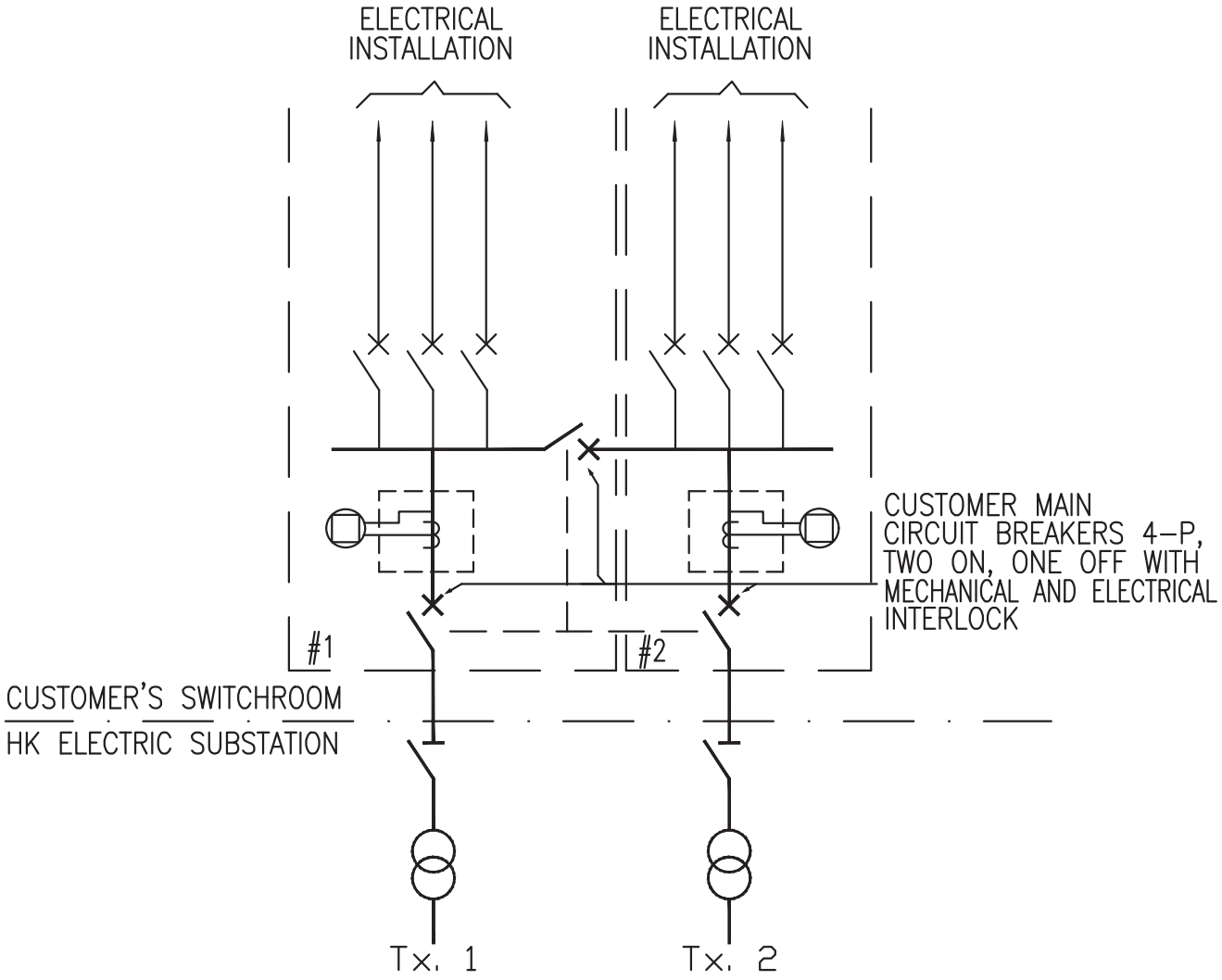
Drg. No. GCS/5/02

GENERAL METERING ARRANGEMENT FOR SINGLE 22-kV SUPPLY



Drg. No. GCS/5/03

GENERAL METERING ARRANGEMENT FOR SINGLE TRANSFORMER SUPPLY



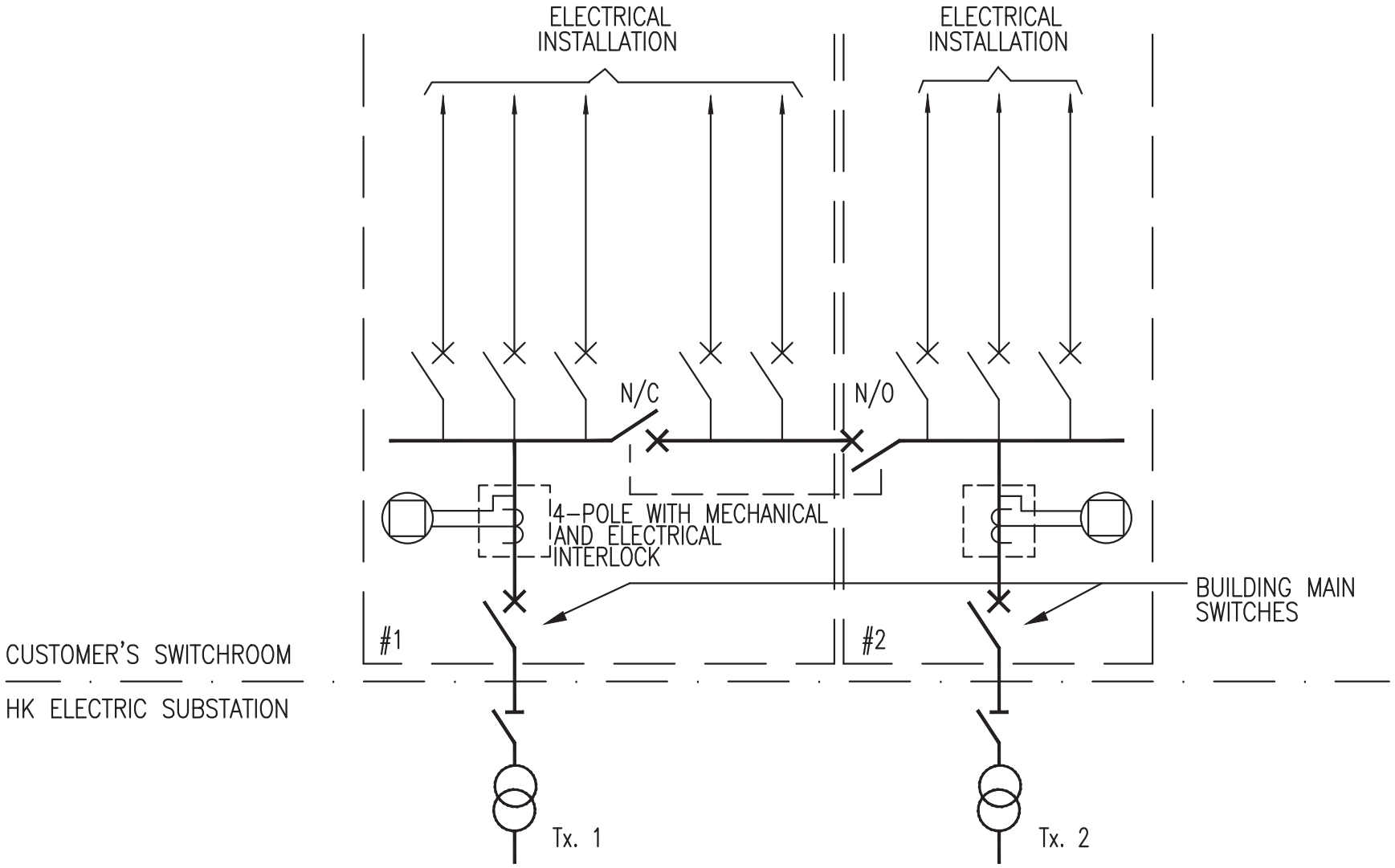
NOTES : 1. WHEN AN INSTALLATION IS SUPPLIED BY MORE THAN ONE HK ELECTRIC SOURCE, SUCH AS TRANSFORMERS, THE MINIMUM NUMBER OF ENERGY (kWh) METERS TO BE INSTALLED SHALL BE EQUAL TO THE NUMBER OF HK ELECTRIC SOURCES. ONE APPLICATION SHALL BE PROVIDED FOR EACH kWh METER.

2. # NO. INDICATES THE SEQUENCE OF APPLICATION FORMS REQUIRED.

3. ALL INTERLOCKING FACILITY BETWEEN MAIN SWITCHES SHALL BE INSPECTED IN THE FIRST INSPECTION.

Drg. No. GCS/5/04

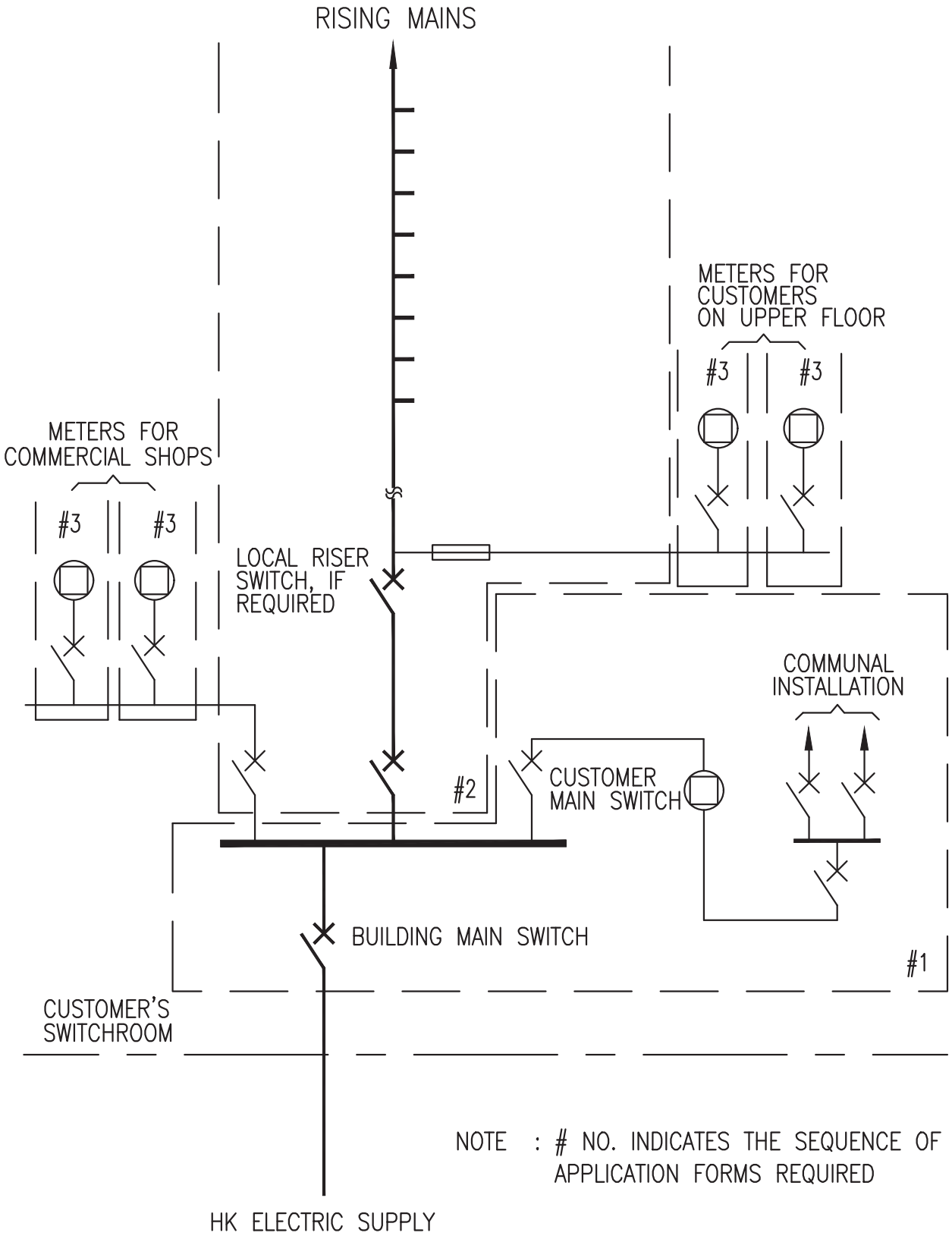
METERING ARRANGEMENT FOR TWO TRANSFORMER SUPPLIES WITH BUS-SECTION CIRCUIT BREAKER



REFER TO THE NOTES ON DRG. NO. GCS/5/04

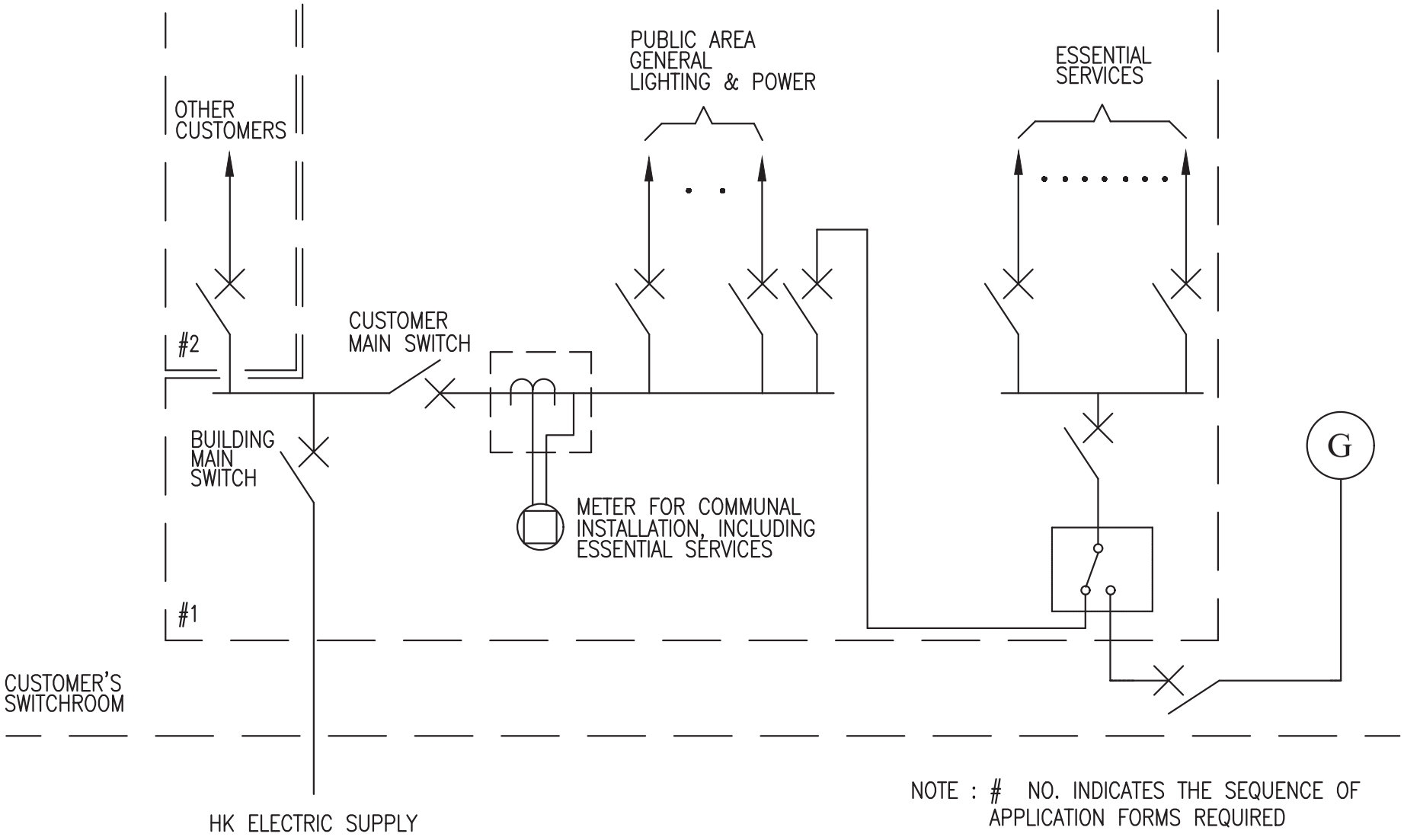
Drg. No. GCS/5/05

METERING ARRANGEMENT FOR TWO TRANSFORMER SUPPLIES WITH TWO BUS-SECTION CIRCUIT BREAKERS



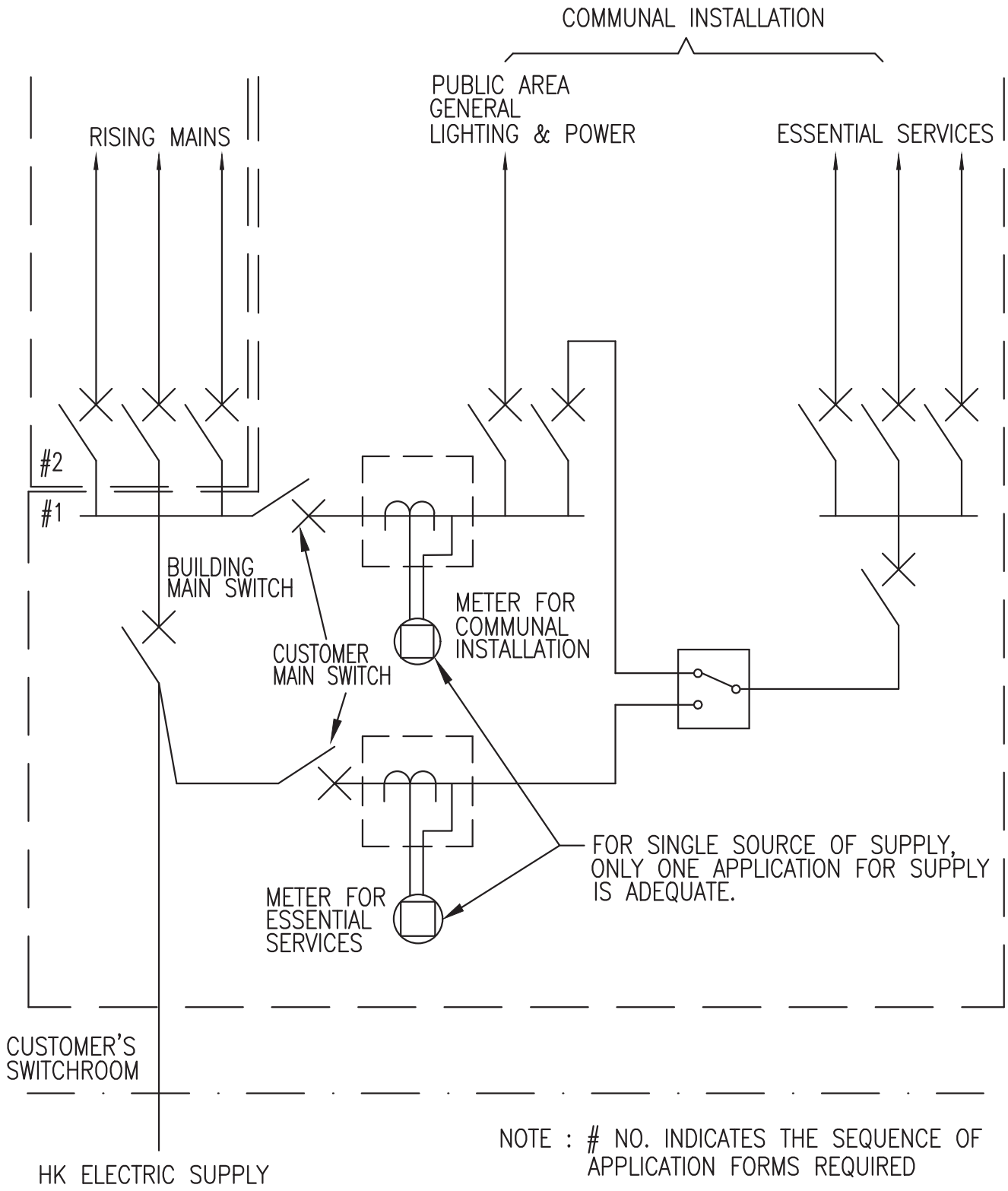
Drg. No. GCS/5/06

GENERAL METERING ARRANGEMENT FOR MULTI-CUSTOMER PREMISES



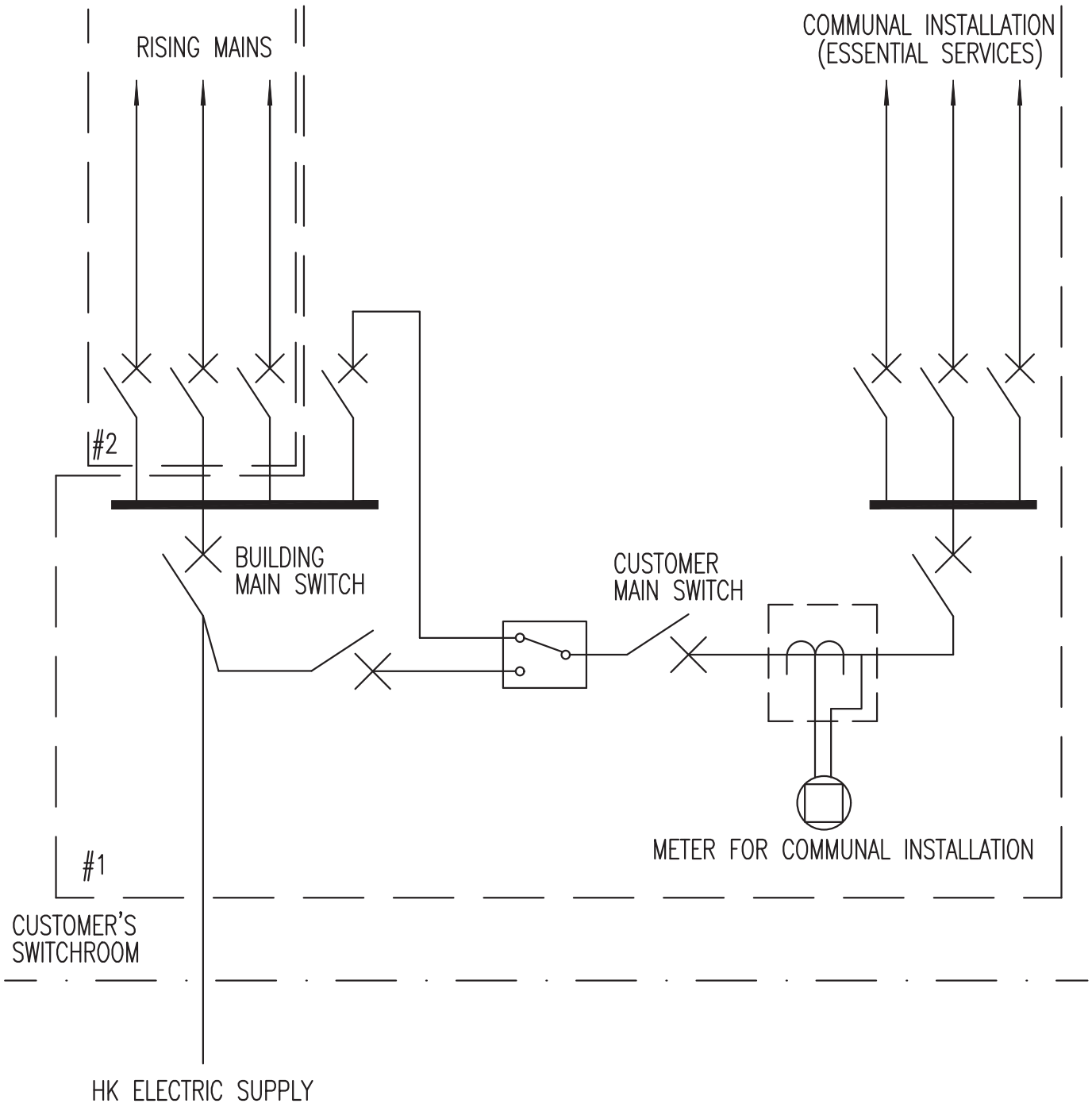
Drg. No. GCS/5/07

METERING ARRANGEMENT FOR BUILDING SUPPLY (ESSENTIAL SUPPLY FROM STANDBY GENERATOR)



Drg. No. GCS/5/08

METERING ARRANGEMENT FOR BUILDING SUPPLY
(ESSENTIAL SUPPLY TEE-OFF BEFORE BUILDING MAIN SWITCH)
SHEET 1 OF 2



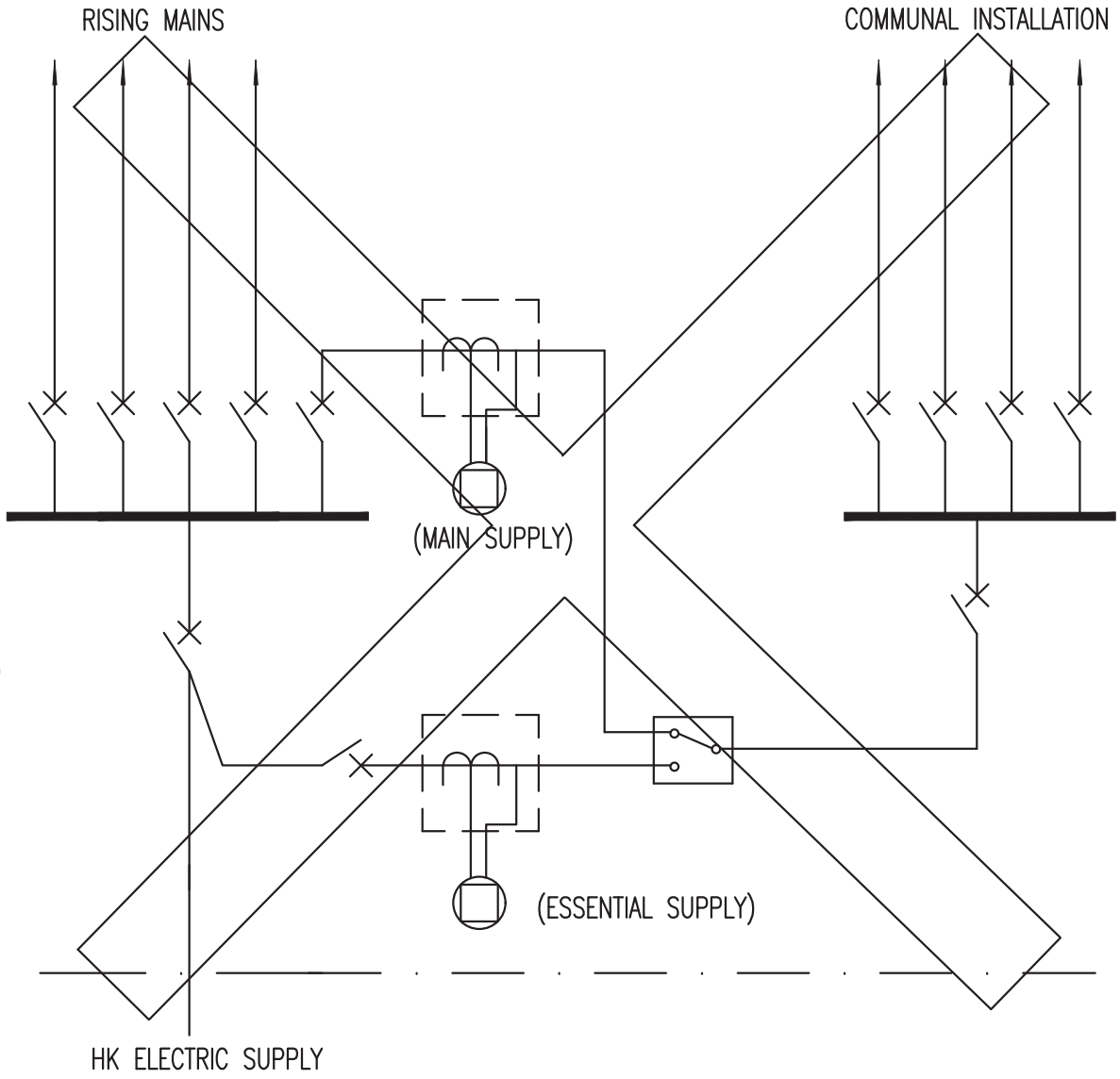
NOTE : # NO. INDICATES THE SEQUENCE OF APPLICATION FORMS REQUIRED

Drg. No. GCS/5/08

METERING ARRANGEMENT FOR BUILDING SUPPLY
(ESSENTIAL SUPPLY TEE-OFF BEFORE BUIDING MAIN SWITCH)
SHEET 2 OF 2

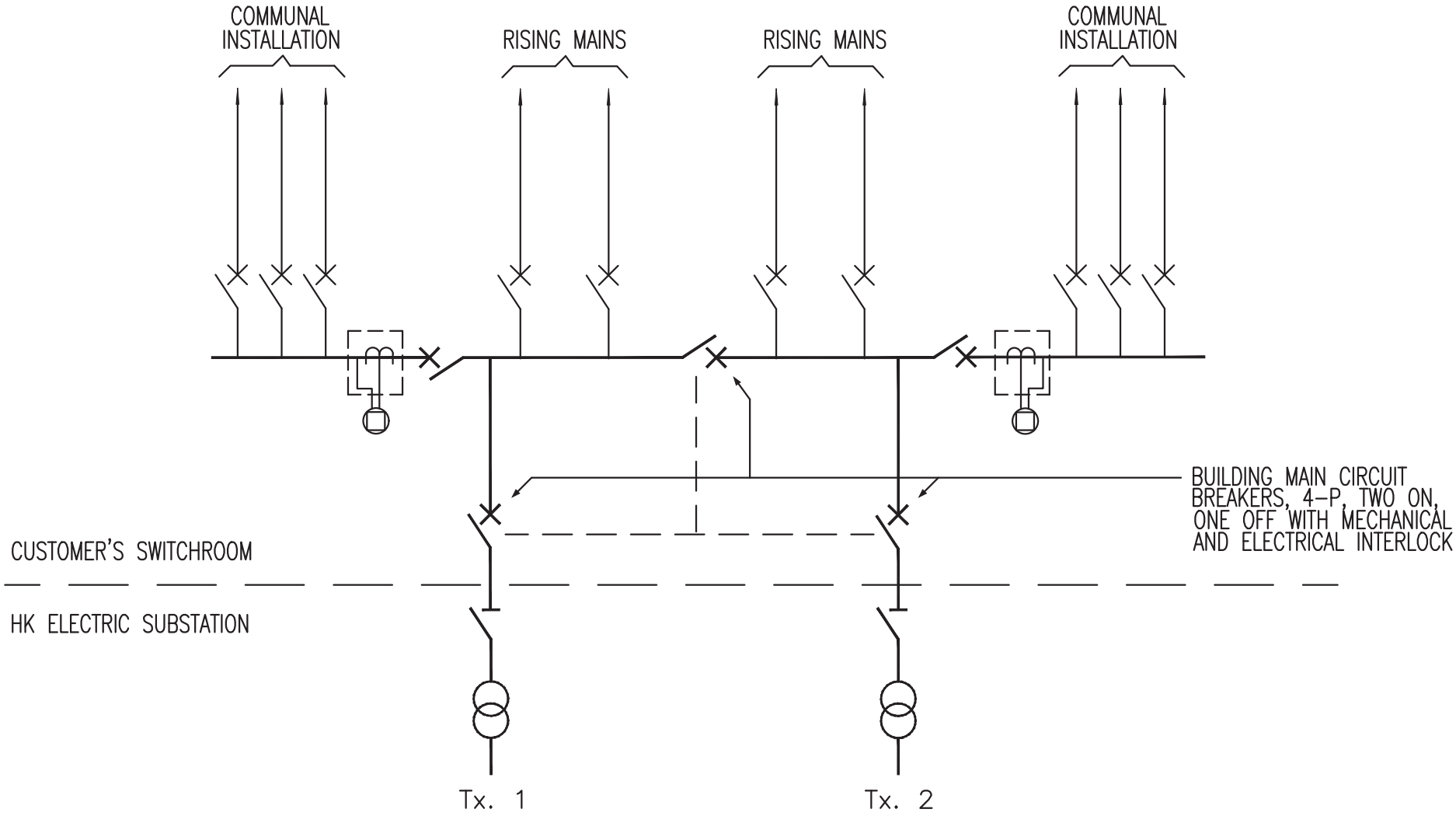
NOTE :

ONLY ONE METER IS REQUIRED TO RECORD THE TOTAL CONSUMPTION OF THE COMMUNAL INSTALLATION AND THE METER SHALL BE INSTALLED AFTER THE CHANGEOVER DEVICE.
(REFER TO DRG. NO. GCS/5/08 SHEET 2 OF 2)



Drg. No. GCS/5/09

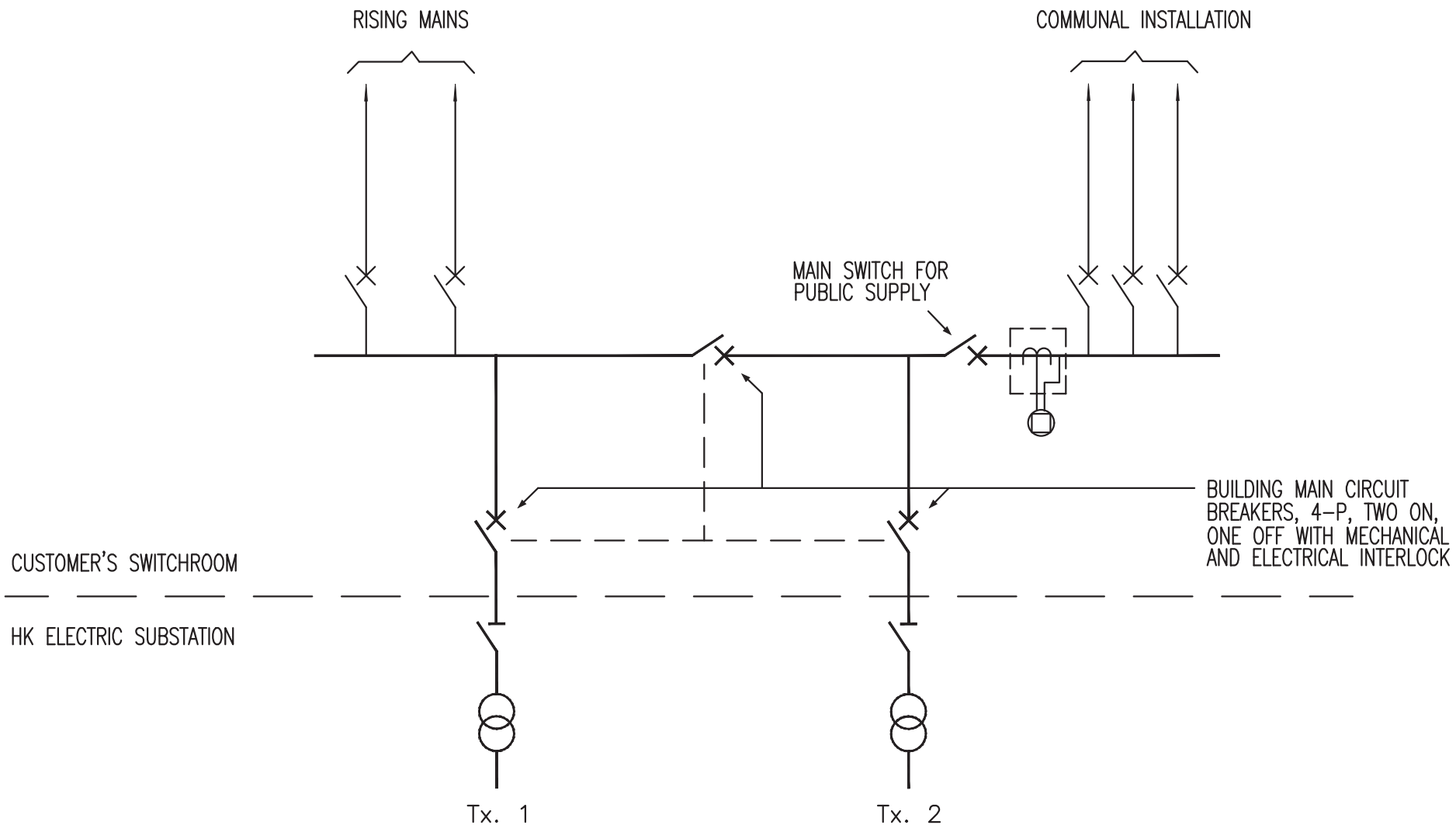
INCORRECT METERING ARRANGEMENT FOR BUILDING SUPPLY



Drg. No. GCS/5/10

METERING ARRANGEMENT FOR BUILDING SUPPLY

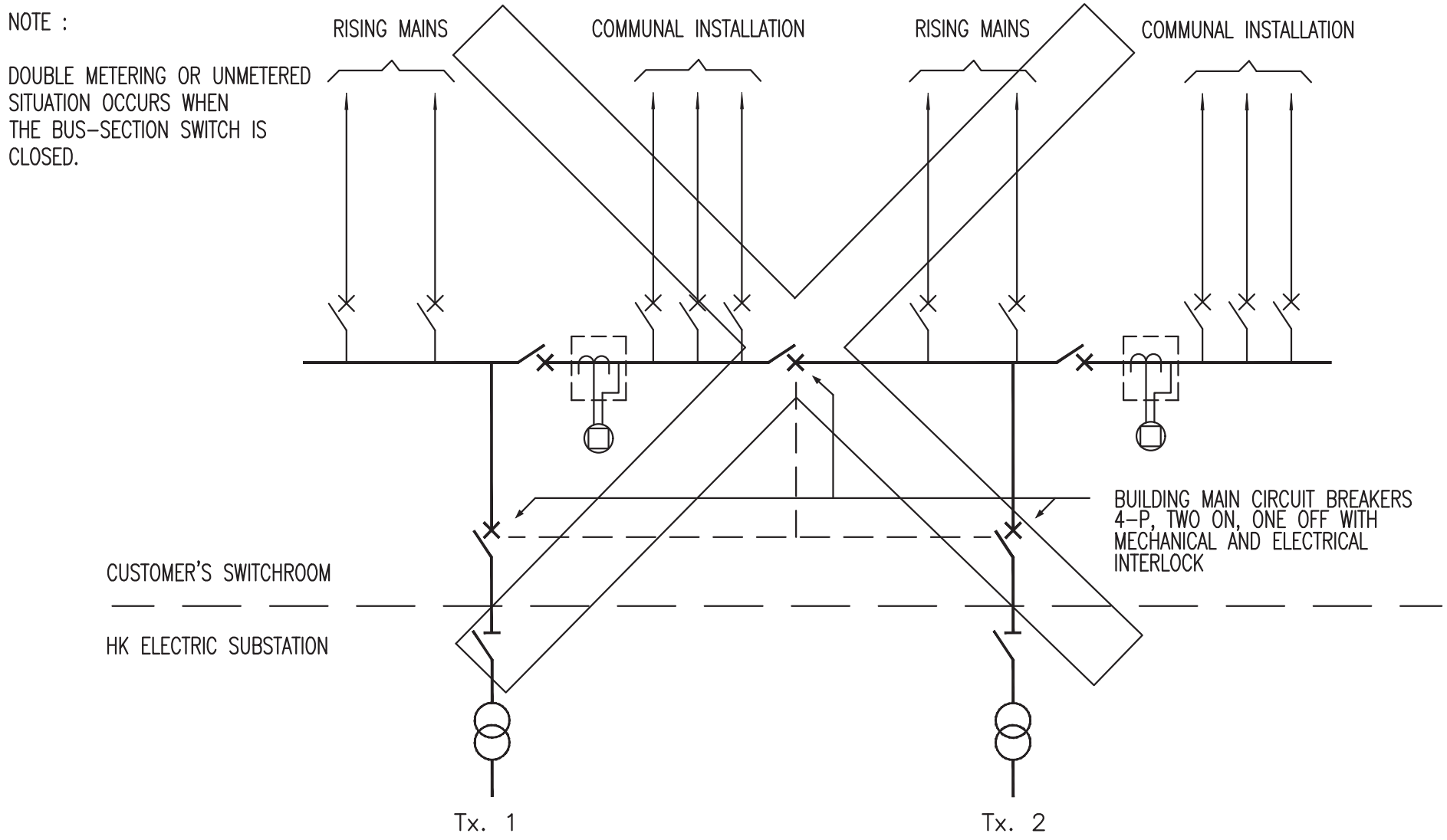
(TWO TRANSFORMER SUPPLIES WITH BUS-SECTION CIRCUIT BREAKER) SHEET 1 OF 2



Drg. No. GCS/5/10

METERING ARRANGEMENT FOR BUILDING SUPPLY

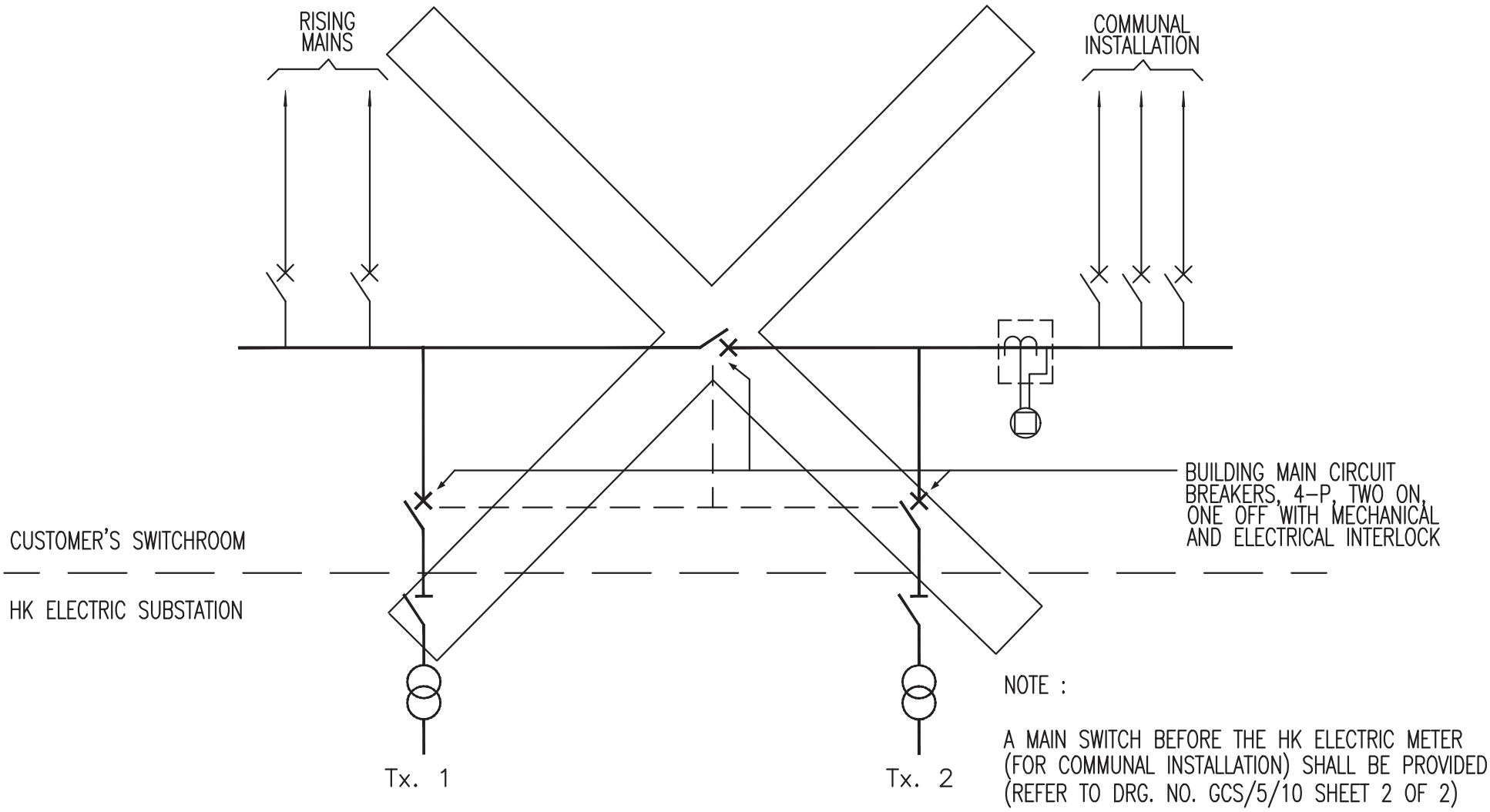
(TWO TRANSFORMER SUPPLIES WITH BUS-SECTION CIRCUIT BREAKER) SHEET 2 OF 2



Drg. No. GCS/5/11

INCORRECT METERING ARRANGEMENT FOR BUILDING SUPPLY

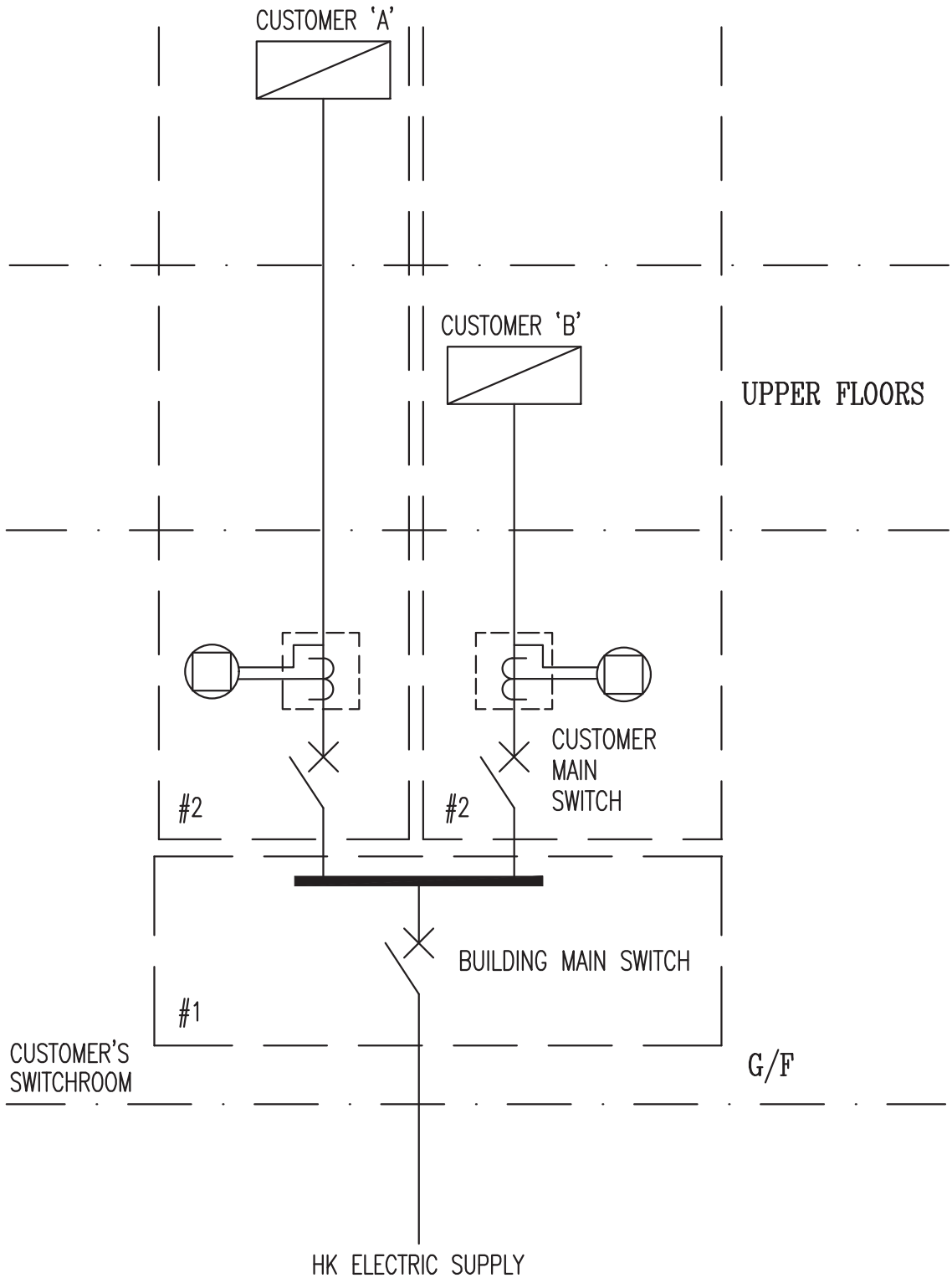
(TWO TRANSFORMER SUPPLIES WITH BUS-SECTION CIRCUIT BREAKER) SHEET 1 OF 2



Drg. No. GCS/5/11

INCORRECT METERING ARRANGEMENT FOR BUILDING SUPPLY

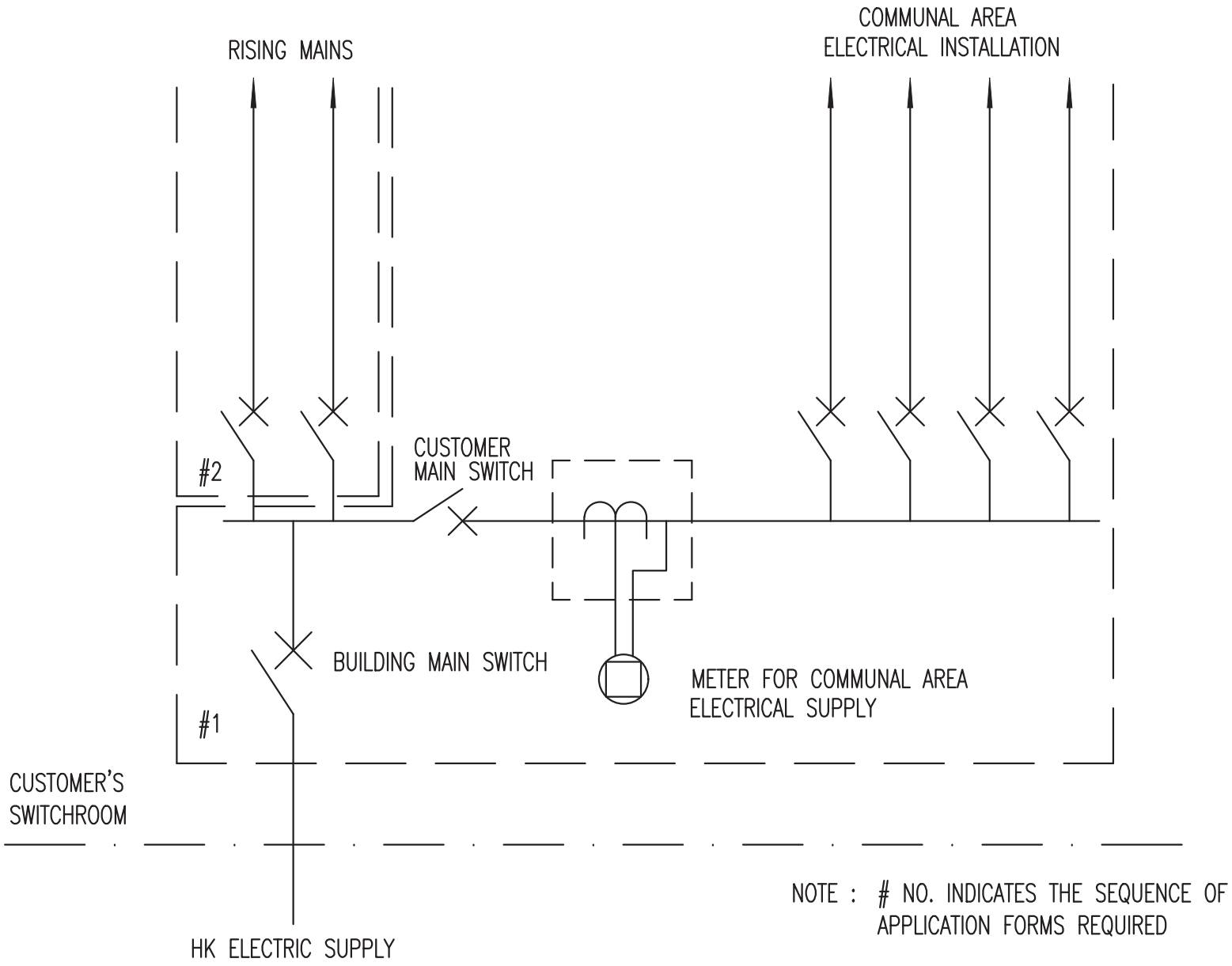
(TWO TRANSFORMER SUPPLIES WITH BUS-SECTION CIRCUIT BREAKER) SHEET 2 OF 2



NOTE : # NO. INDICATES THE SEQUENCE OF APPLICATION FORMS REQUIRED

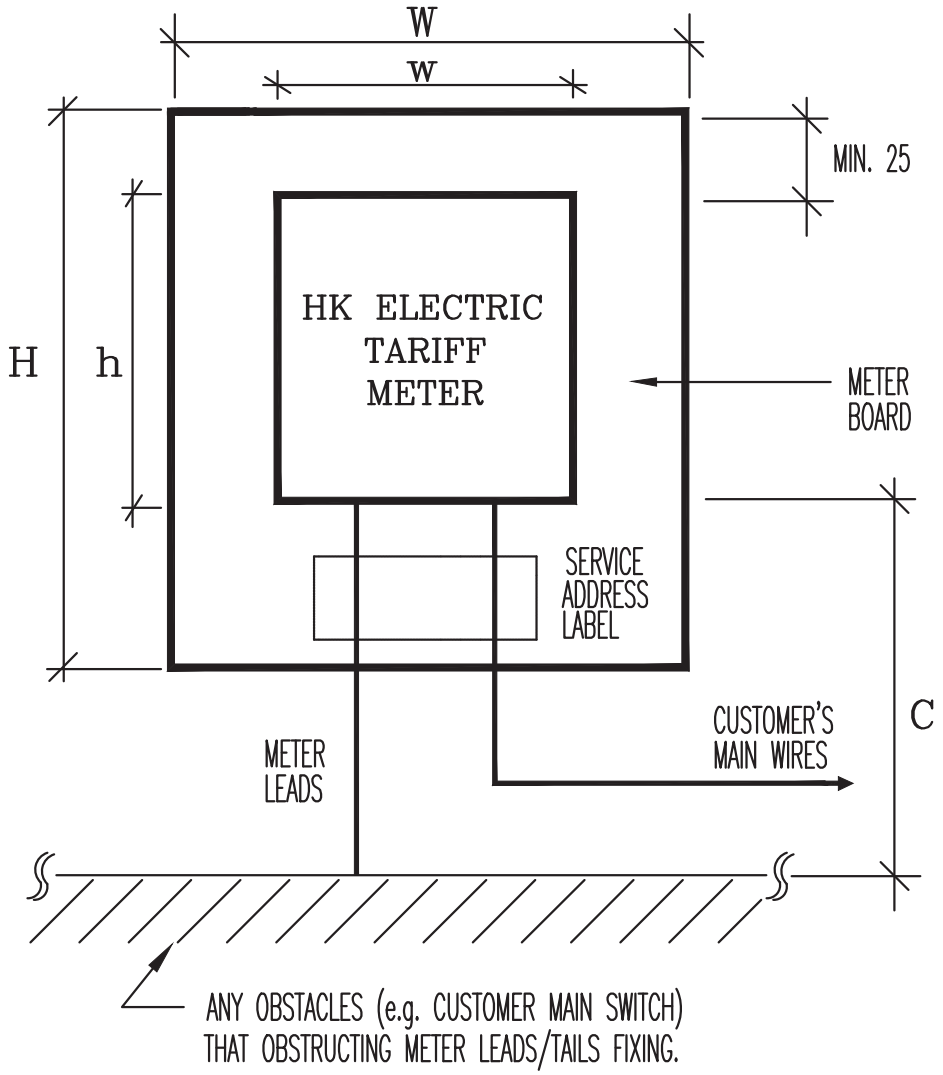
Drg. No. GCS/5/12

METERING ARRANGEMENT FOR UPPER FLOOR CUSTOMERS WITH DEDICATED RISER



Drg. No. GCS/5/13

METERING ARRANGEMENT FOR COMMUNAL ELECTRICAL SUPPLY (NO ESSENTIAL SERVICE)

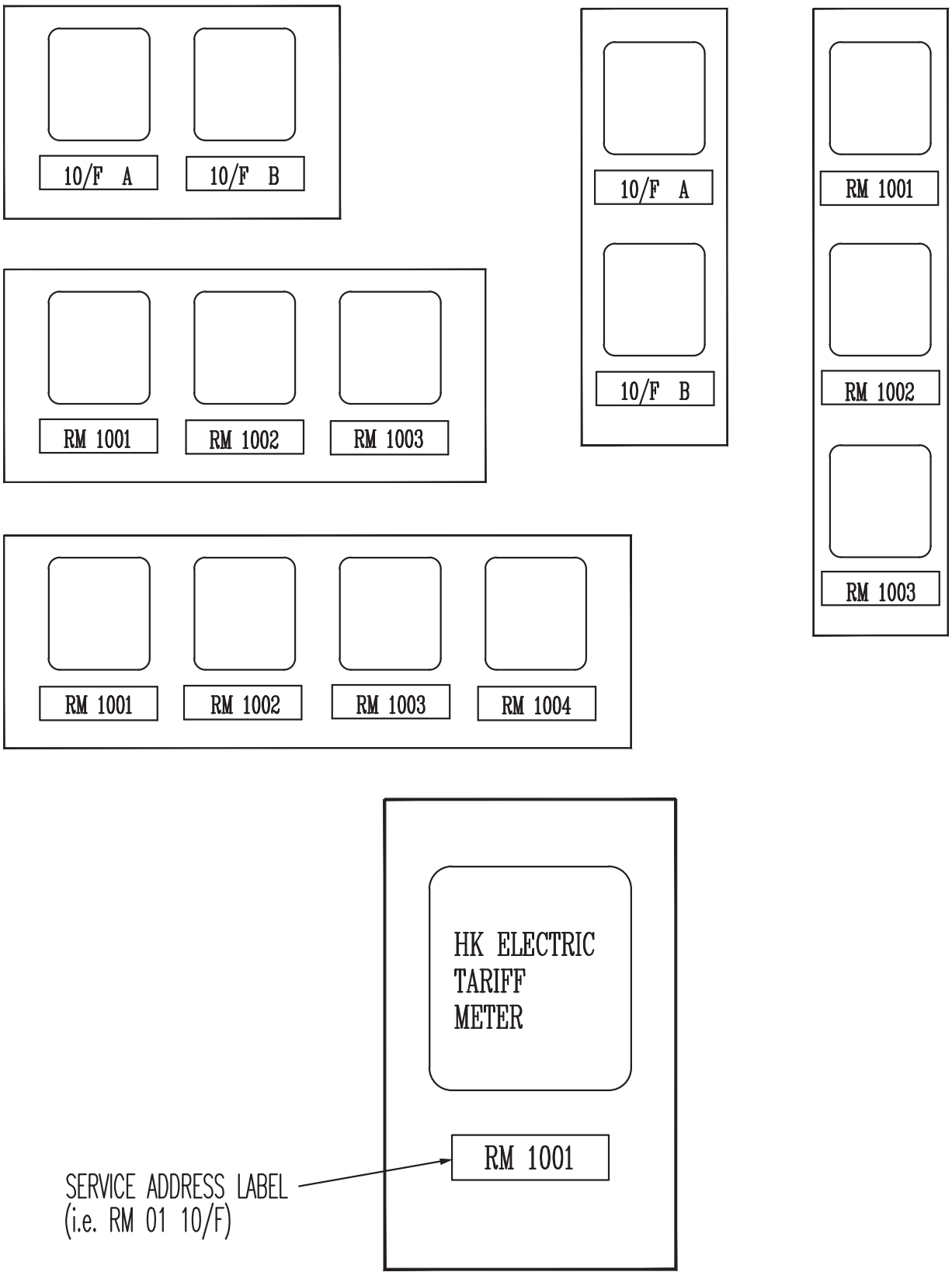


METER TYPES	MAIN SWITCH RATING (A)	METER LEADS/ TAILS SIZE (mm^2)	MINIMUM CLEARANCE FOR METER TERMINATION	TARIFF METER DIMENSIONS			METER BOARD DIMENSIONS	
			C	h	w	d	H	W
1– Ø	⩽ 60	25	150	180	140	130	280	210
3– Ø	⩽ 100	35	200	280	200	170	430	300
3– Ø C.T. OPERATED METER	> 100	4	250	330	200	170	480	300
11 kV/22 kV	⩽ 200	4	250	330	200	170	480	300

NOTES : 1. RECOMMENDED SIZE OF ADDRESS LABEL : 120 x 60 mm^2.
2. UNLESS OTHERWISE STATED, ALL DIMENSIONS ARE IN mm.

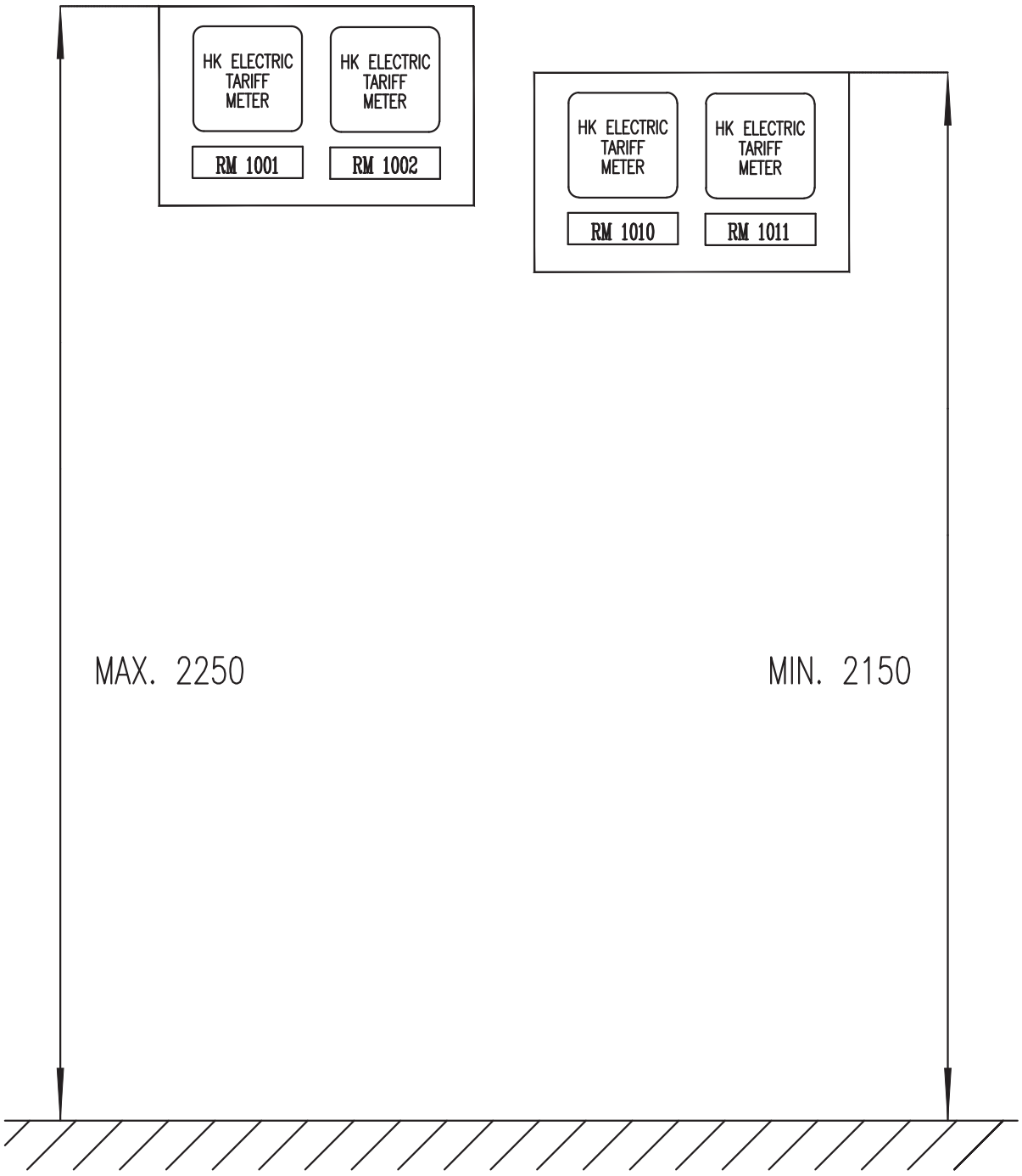
Drg. No. GCS/5/14

TARIFF METER DIMENSIONS/TERMINATION CLEARANCE/METER BOARD/LEADS REQUIREMENTS



Drg. No. GCS/5/15

TYPICAL METER BOARD ARRANGEMENT

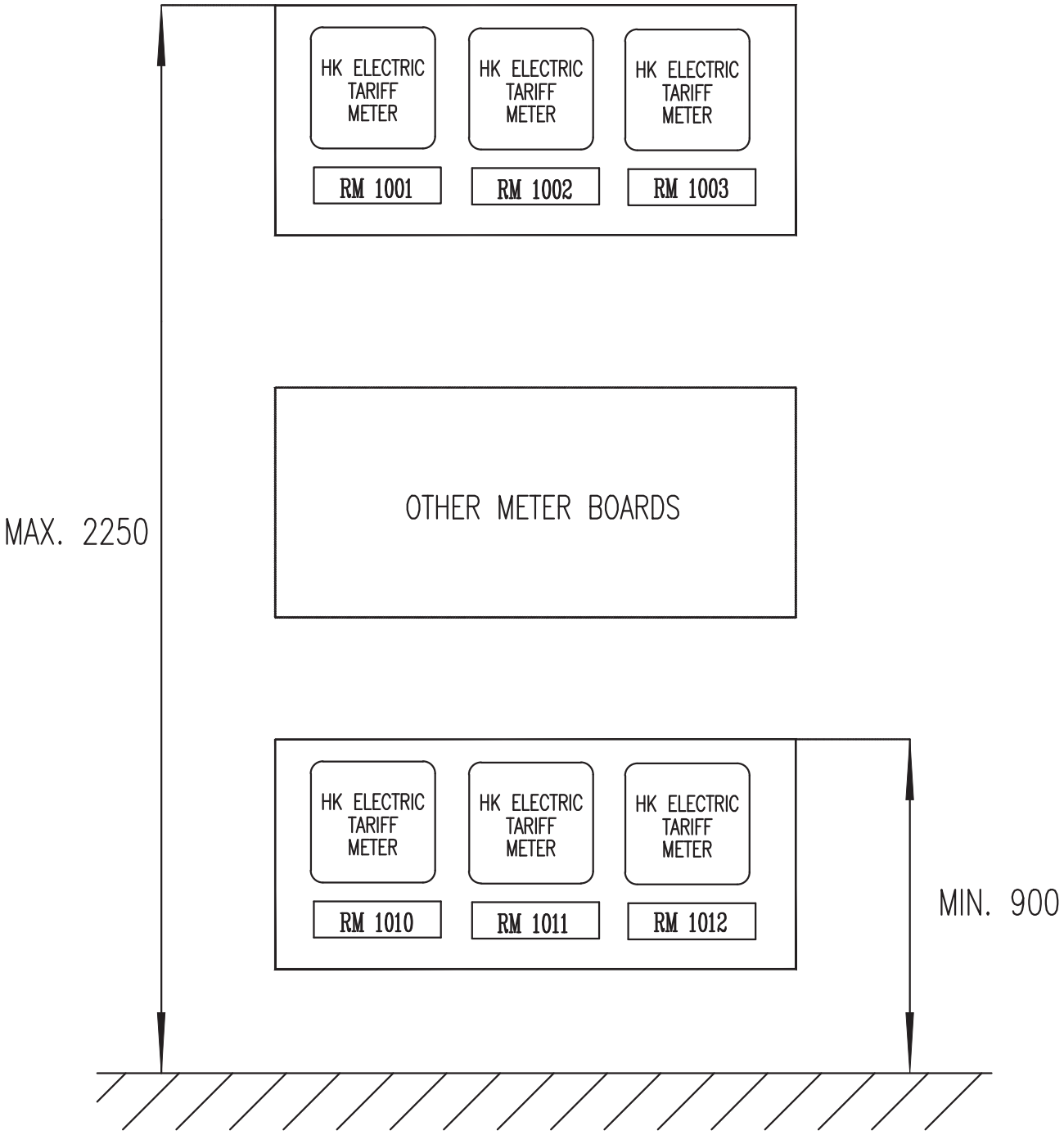


FRONT VIEW

NOTE : ALL DIMENSIONS ARE IN mm.

Drg. No. GCS/5/16

METER BOARD ARRANGEMENT FOR PUBLIC AREA

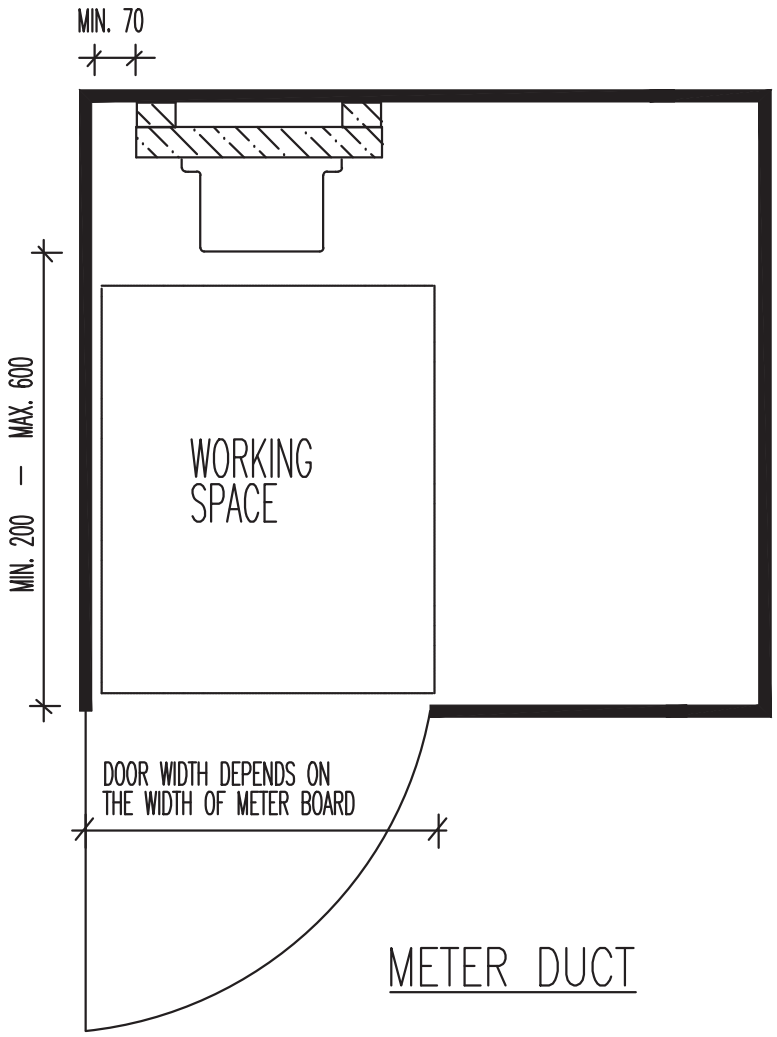


FRONT VIEW

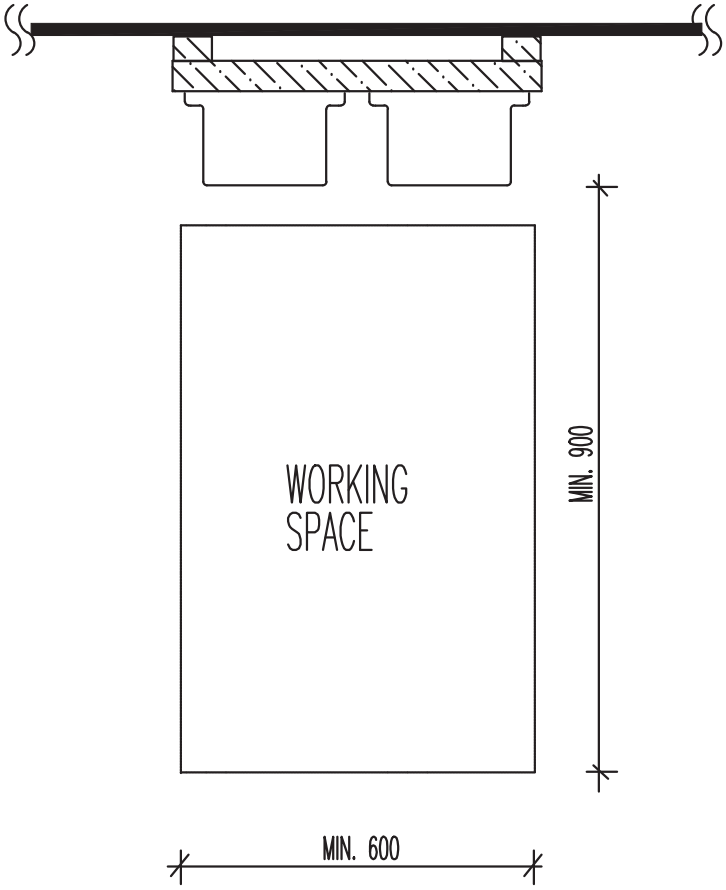
NOTE : ALL DIMENSIONS ARE IN mm.

Drg. No. GCS/5/17

METER BOARD ARRANGEMENT FOR METER ROOM/SWITCHBOARD



METER DUCT

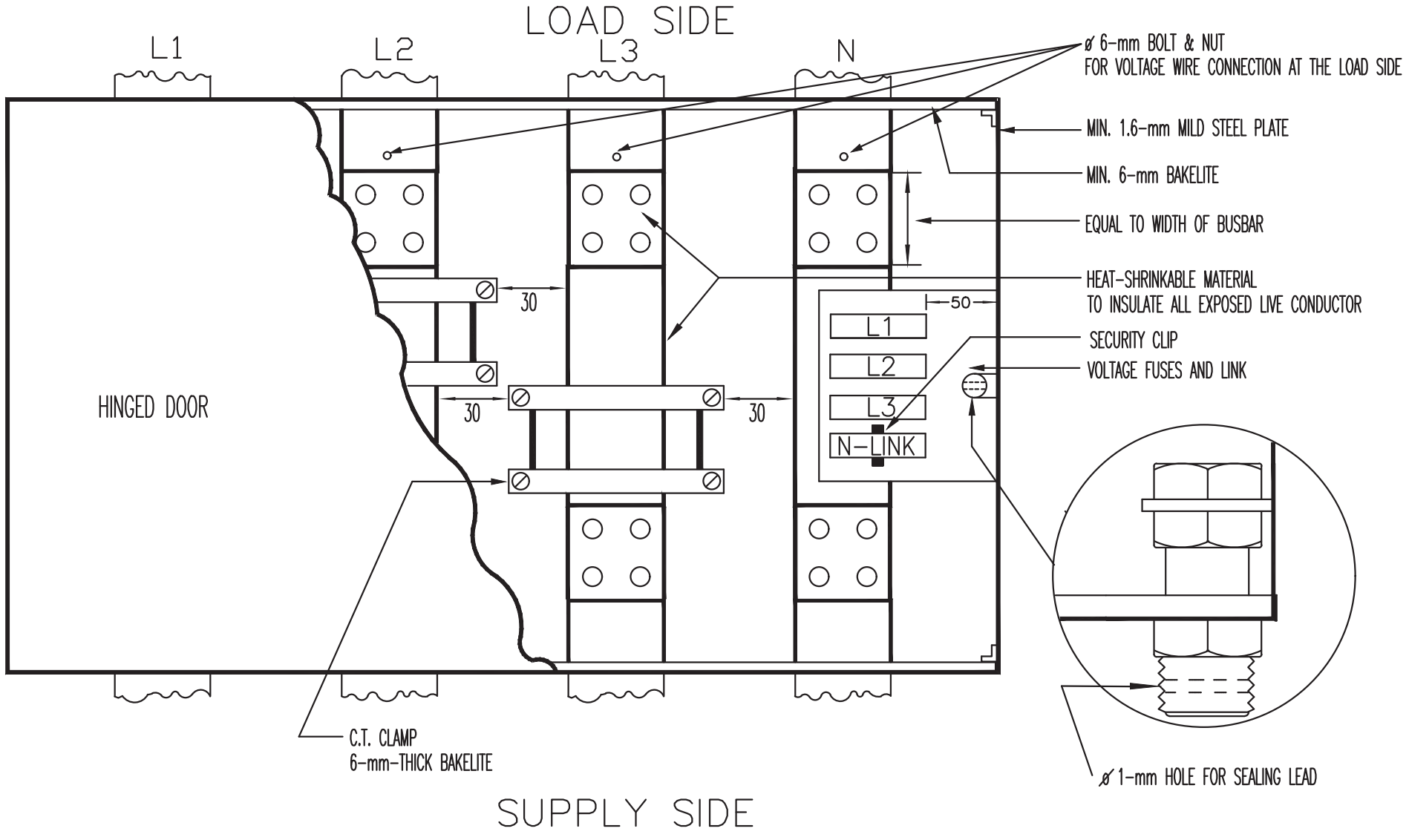


METER ROOM

NOTE : ALL DIMENSIONS ARE IN mm.

Drg. No. GCS/5/18

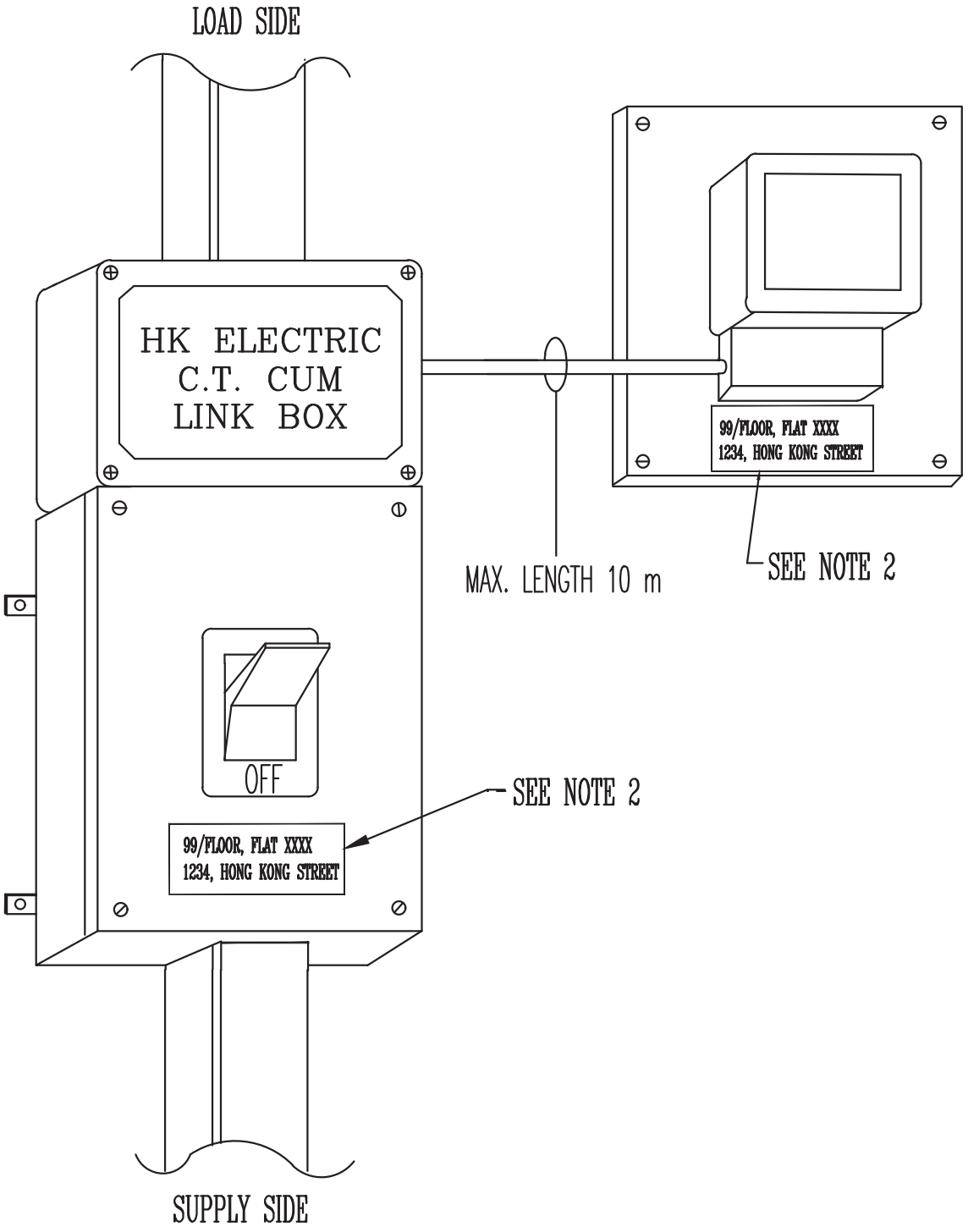
MINIMUM SPACE REQUIREMENTS FOR METER DUCT/ROOM



NOTES : 1. FOR C.T. CHAMBER SIZE, PLEASE REFER TO CLAUSE 5.8.
2. ALL DIMENSIONS ARE IN mm.

Drg. No. GCS/5/19

REQUIREMENTS FOR METERING CURRENT TRANSFORMER CHAMBER

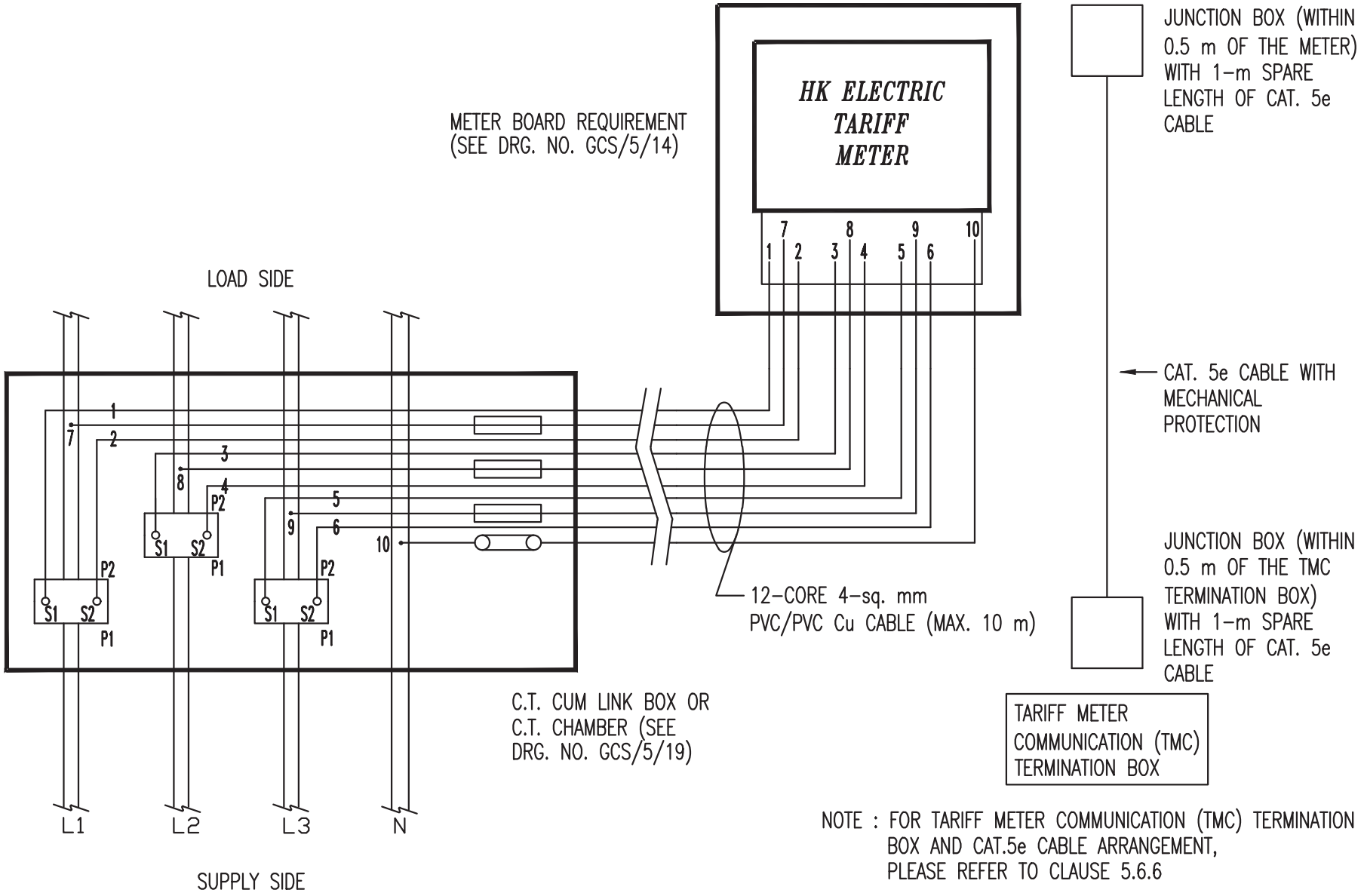


NOTES : 1. TARIFF METER, METERING C.T.s, MULTI–CORE CABLES AND C.T. CUM LINK BOX ARE PROVIDED BY HK ELECTRIC.

2. A PERMANENT, TIDY AND SECURELY FIXED FLAT / ADDRESS LABEL SHALL BE PROVIDED BY CUSTOMER.

Drg. No. GCS/5/20

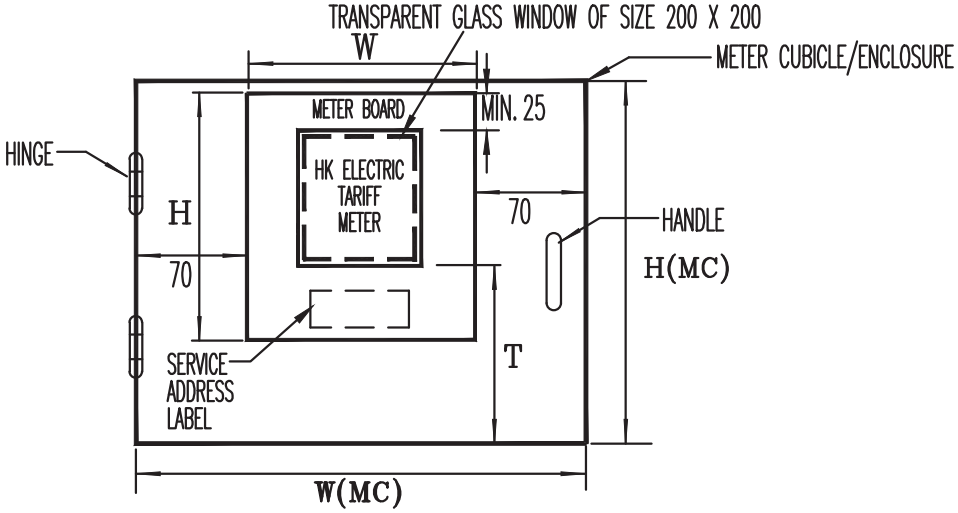
METERING REQUIREMENTS FOR MAIN SWITCH RATING EXCEEDING 100 A AND UP TO 400 A



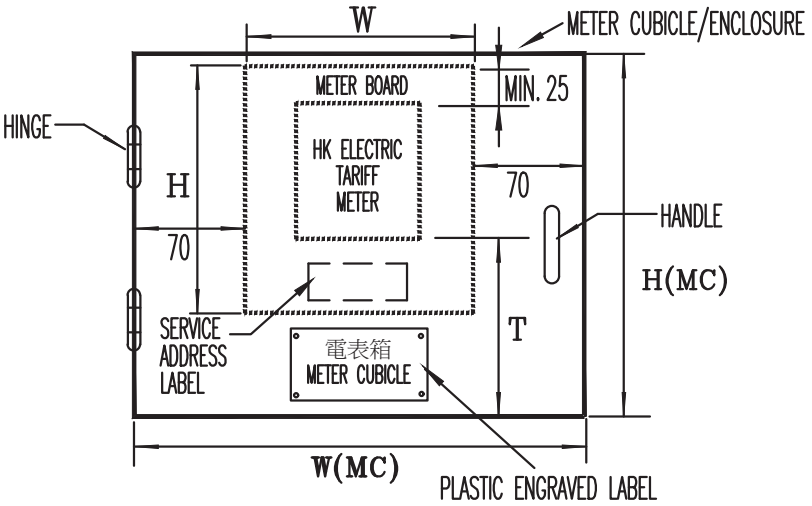
NOTE : FOR TARIFF METER COMMUNICATION (TMC) TERMINATION BOX AND CAT.5e CABLE ARRANGEMENT, PLEASE REFER TO CLAUSE 5.6.6

Drg. No. GCS/5/21

WIRING DIAGRAM FOR C.T. OPERATED METER



DETAIL 'A' METER CUBICLE/ENCLOSURE WITH TRANSPARENT GLASS WINDOW



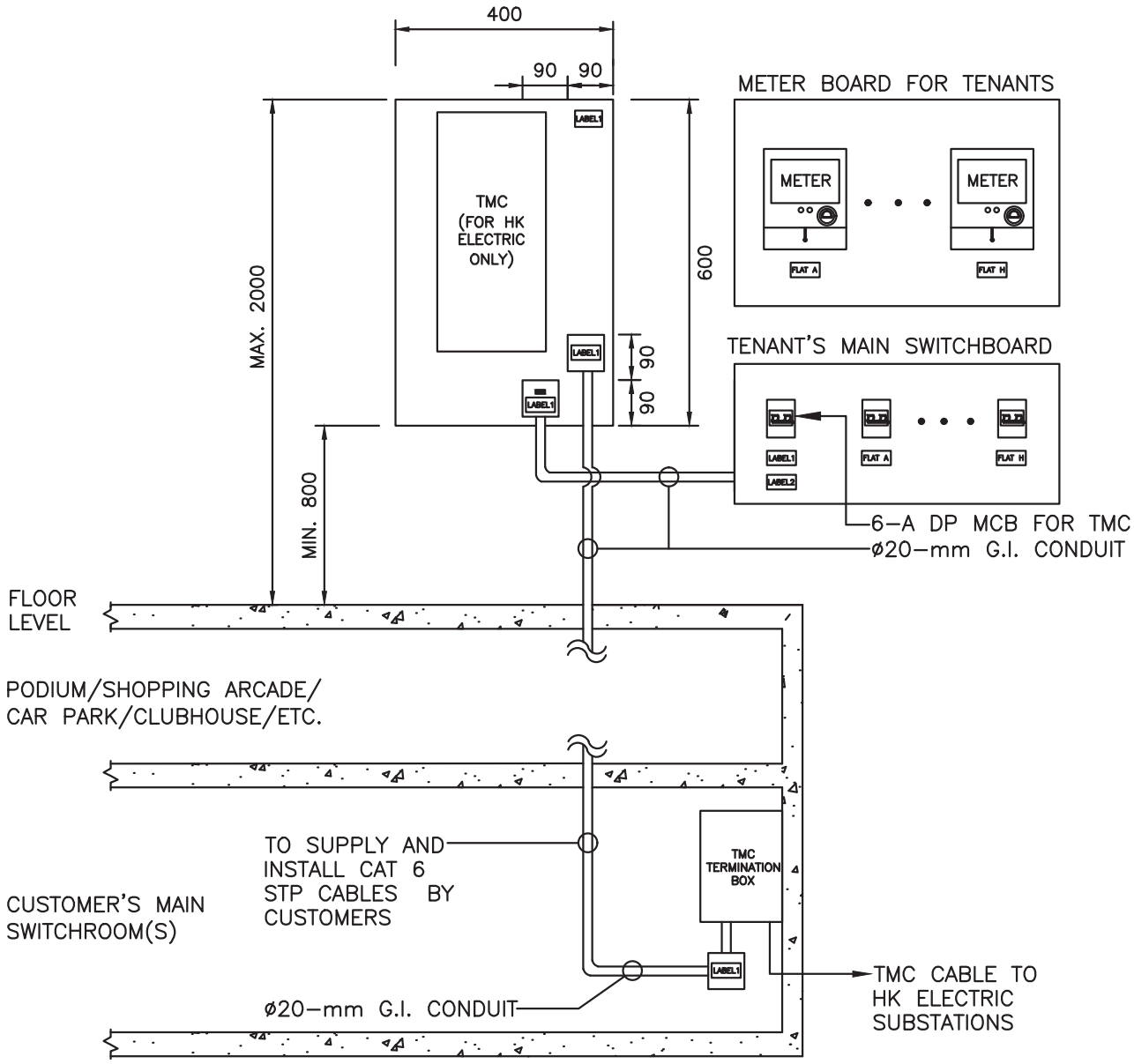
DETAIL 'B' METER CUBICLE/ENCLOSURE WITHOUT TRANSPARENT GLASS WINDOW

METER TYPES	MAIN SWITCH RATING (AMP)	MINIMUM CLEARANCE FOR METER TERMINATION	METER BOARD DIMENSIONS		METER CUBICLE/ENCLOSURE DIMENSIONS	
		T	H	W	H(MC)	W(MC)
1 - ø	⩽ 60	150	280	210	355	350
3 - ø	⩽ 100	200	430	300	515	440

NOTES :
1. THE METER CUBICLE/ENCLOSURE (INCLUDING THE TRANSPARENT GLASS WINDOW IN DETAIL 'A') SHALL COMPLY WITH THE RELEVANT FIRE REGULATIONS.
2. THE DISTANCE BETWEEN METER SURFACE TO THE HINGED DOOR AT CLOSED POSITION SHALL BE MAXIMUM 50 mm AND MINIMUM 20 mm.
3. METER CUBICLE/ENCLOSURE FOR MORE THAN ONE METER SHALL BE OF DIMENSIONS IN MULTIPLES OF UNIT PER THE ABOVE TABLE.
4. IF OTHER RELATED ELECTRICAL EQUIPMENT IS REQUIRED TO BE INSTALLED INSIDE THE METER CUBICLE/ENCLOSURE, THEN THE SIZE OF THE METER CUBICLE/ENCLOSURE SHALL BE ENLARGED ACCORDINGLY.
5. FOR DETAIL 'B', THE METER CUBICLE/ENCLOSURE SHALL BE INSTALLED AT AN EASILY ACCESSIBLE LOCATION/LEVEL TO FACILITATE MONTHLY METER READING. A PLASTIC ENGRAVED LABEL BEARING WORDS : " 電表箱 " AND "METER CUBICLE" SHALL BE INSTALLED AT THE METER CUBICLE/ENCLOSURE FRONT COVER. RECOMMENDED SIZE OF THE LABEL : 150 X 75 mm^2 .
6. RECOMMENDED SIZE OF ADDRESS LABEL : 120 X 60 mm^2 .
7. ALL DIMENSIONS ARE IN mm.

Drg. No. GCS/5/22

REQUIREMENTS FOR METER CUBICLE/ENCLOSURE IN EXISTING BUILDINGS

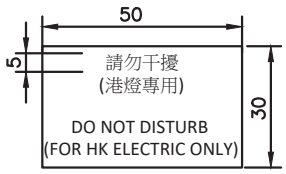


LEGEND : DESCRIPTION :

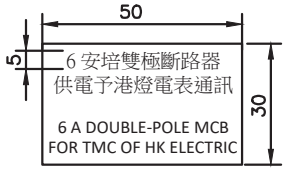
5-A FUSED CONNECTION UNIT WITH EARTHING TERMINAL

G.I. JUNCTION BOX

LABEL1



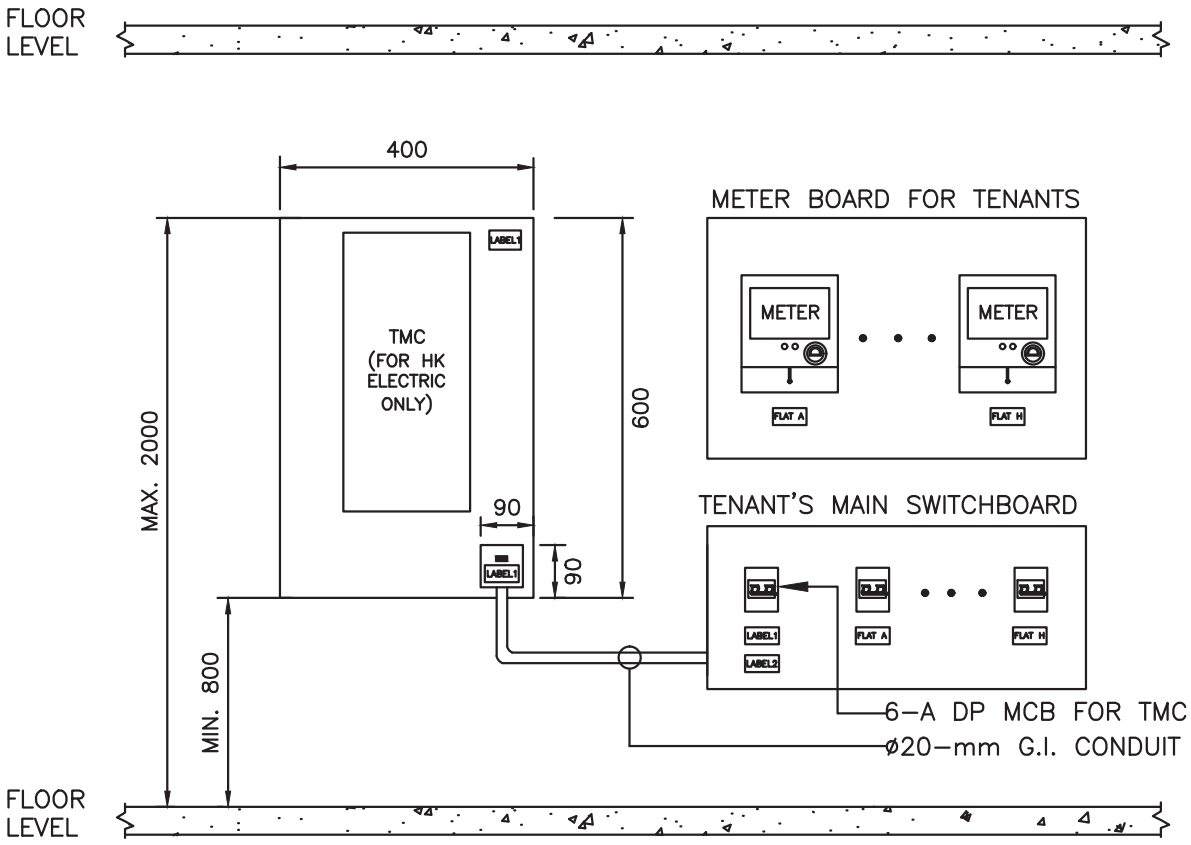
LABEL2



NOTE : ALL DIMENSIONS ARE IN mm.

Drg. No. GCS/5/23

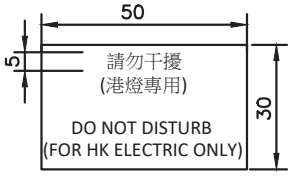
FACILITIES FOR TARIFF METER COMMUNICATION (TMC) INFRASTRUCTURE - TMC/R/1A (APPLY TO METER ROOM(S) ON THE LOWEST FLOOR)



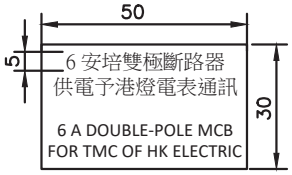
LEGEND : DESCRIPTION :

- 5–A FUSED CONNECTION UNIT WITH EARTHING TERMINAL
- G.I. JUNCTION BOX

LABEL1



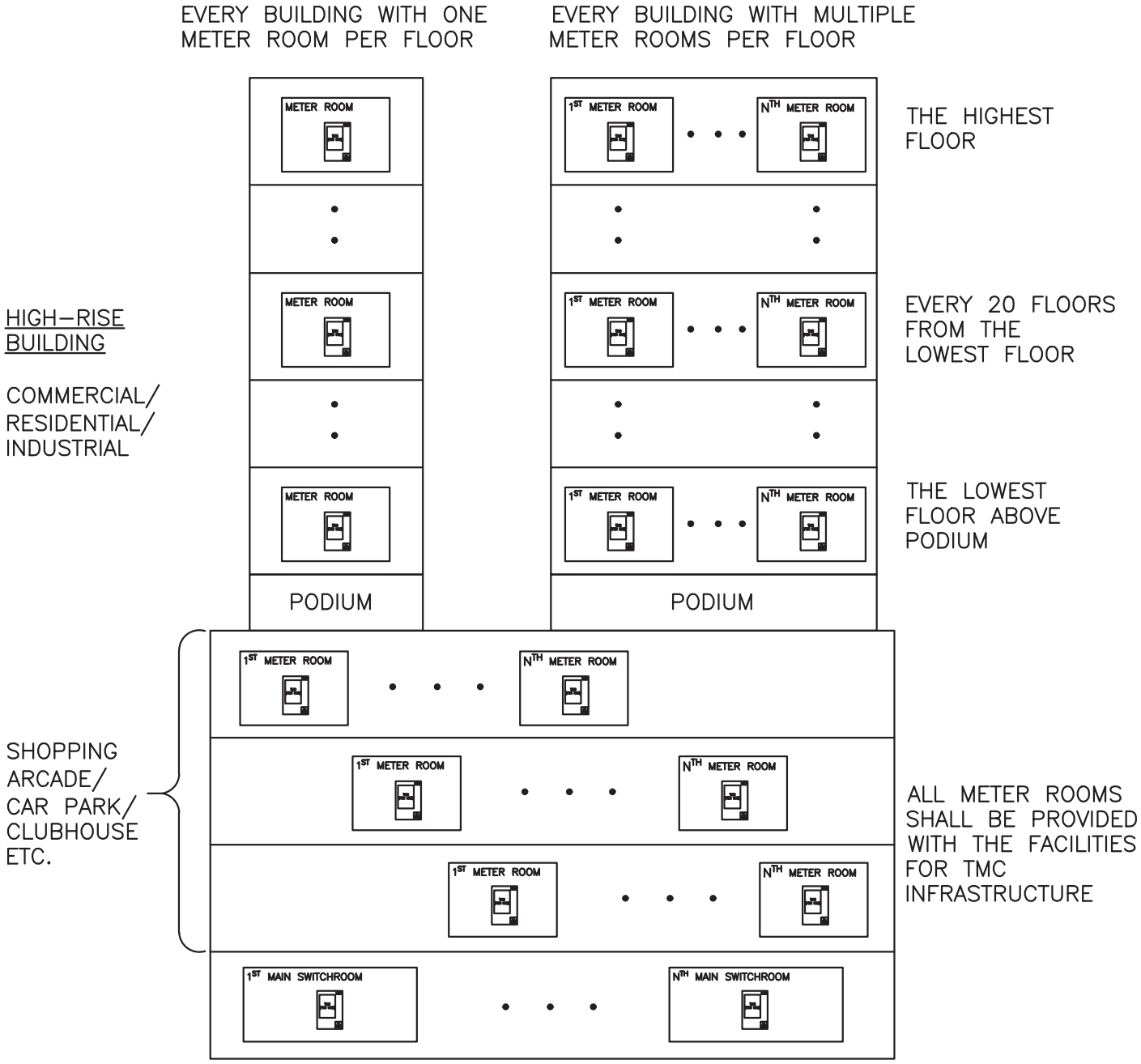
LABEL2



NOTE : ALL DIMENSIONS ARE IN mm.

Drg. No. GCS/5/24

FACILITIES FOR TARIFF METER COMMUNICATION (TMC) INFRASTRUCTURE - TMC/R/1B (APPLY TO METER ROOM(S) OTHER THAN THE LOWEST FLOOR)



LEGEND : DESCRIPTION :

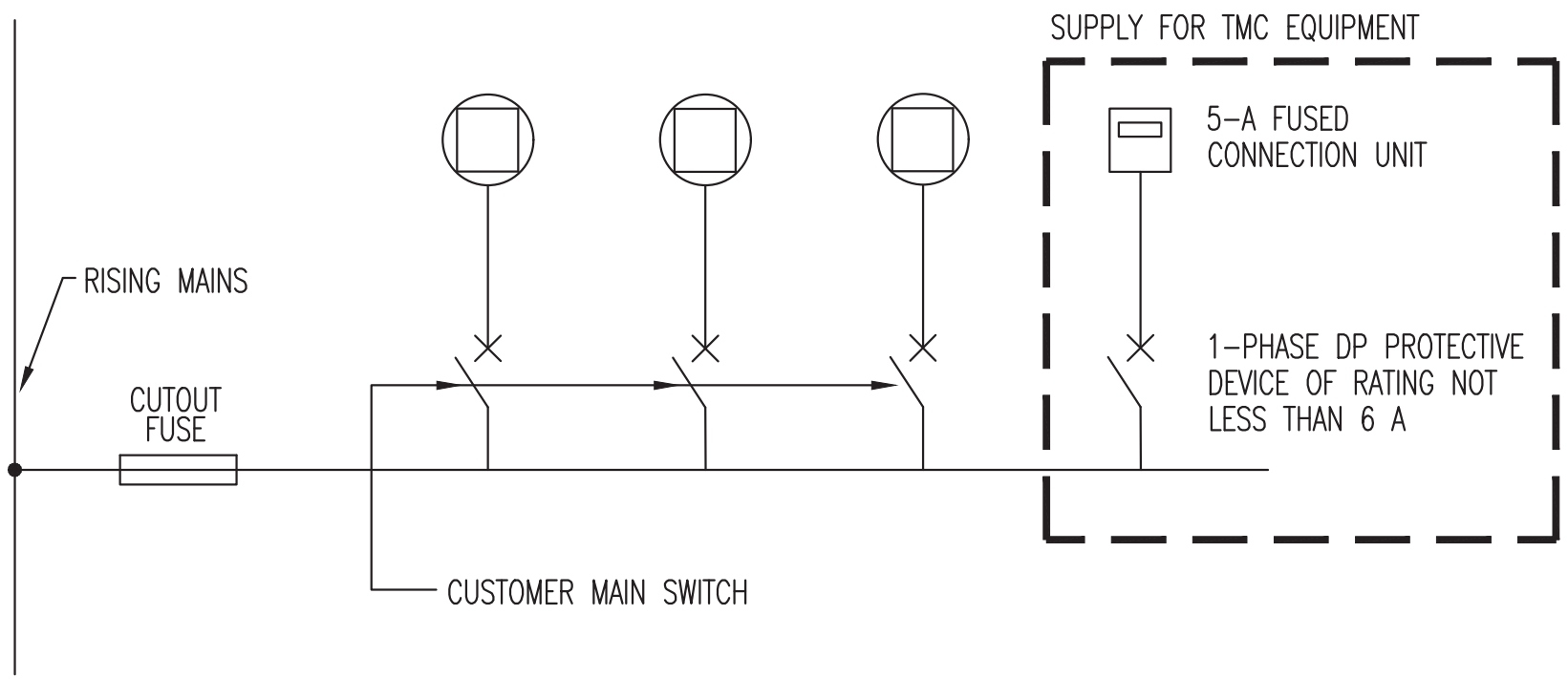
THE FACILITIES FOR TARIFF METER COMMUNICATION (TMC) INFRASTRUCTURE (REFER TO DRG: GCS/5/23 AND GCS/5/24)

Drg. No. GCS/5/25
LOCATIONS OF FACILITIES FOR TARIFF METER COMMUNICATION (TMC) INFRASTRUCTURE - TMC/R/2

Notes for Drawing Nos. GCS/5/25

1. TMC infrastructure provisions shall be installed at the following locations:

Conditions	Locations of Facilities
(I) Building with 20 floors or less	- Customer's main switchroom(s) - Meter room(s) on the top floor and lowest floor above the customer's main switchroom. **The same requirements apply to all meter rooms on the same floor.**
(II) Building with over 20 floors	- Customer's main switchroom(s) - Meter room(s) on the top floor and lowest floor above the customer's main switchroom. **The same requirements apply to all meter rooms on the same floor.** - Meter room(s) for every 20 floors above the customer's main switchroom. **The same requirements apply to all meter rooms on the same floor.**
(III) Shopping centre or building with shopping centre	- Customer's main switchroom(s) - All meter rooms for shops. For the vertical portion of the building above the podium, conditions (I) and (II) apply.



Drg. No. GCS/5/26

TYPICAL SUPPLY ARRANGEMENT FOR TARIFF METER COMMUNICATION (TMC) INFRASTRUCTURE