



**Water Supplies Department**  
**The Government of the Hong Kong Special Administrative Region**

**Agreement No. CE 42/2011 (WS)**

**Implementation of Pressure Management and District Metering  
for the Fresh Water Distribution Systems  
of the Tsuen Wan West, Tuen Mun, Sai Kung, Aberdeen  
and Red Hill Major Supply Zones  
Design and Construction**

**BRIEF**  
**(dated 14 November 2011)**

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**BRIEF**

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**BRIEF**

**1. Introduction**

- 1.1 This Brief is to be read in conjunction with the Memorandum of Agreement, the General Conditions of Employment of Engineering and Associated Consultants for a Design and Construction Assignment (1997 Edition) (hereinafter referred to as the General Conditions of Employment (GCE)), Special Conditions of Employment, Schedule of Fees, and any other detailed instructions issued by the Director's Representative (DR).

**2. Description of the Project**

- 2.1 The Project aims at establishing the Pressure Management Areas (PMAs) and District Metering Areas (DMAs) for the fresh water distribution systems of the Tsuen Wan West, Tuen Mun, Sai Kung, Aberdeen and Red Hill Major Supply Zones (MSZs). The project also includes the establishment of DMAs for monitoring the water consumption of large housing estates located within these MSZs. These MSZs comprise the supply zones of the following fresh water service reservoirs (FWSRs), fresh water tanks (FWTs) and fresh water break pressure tanks (FWBPTs):

Tsuen Wan West Major Supply Zone

- Choi Yuen Tsuen FWT;
- Chuen Lung FWT;
- Chuen Lung No. 2 FWT;
- Ha Fa Shan FWBPT;
- Hon Man Tsuen FWT;
- Ma Wan No. 2 FWSR;
- Sham Tseng FWT;

- Sham Tseng West FWSR;
- Shek Lei Hang FWT;
- Tsing Yi East FWSR;
- Tsing Yi East No. 2 FWSR;
- Tsing Yi North High Level FWSR;
- Tsing Yi North Low Level FWSR;
- Tsing Yi South FWSR;
- Tsuen Wan West High Level FWSR;
- Tsuen Wan West Low Level FWSR;
- Tsuen Wan West Ultra High Level FWSR; and
- Yau Kom Tau FW Primary SR.

#### Tuen Mun Major Supply Zone

- Fu Tei Sheung Tsuen FWT;
- Lung Kwu Sheung Tan FWT;
- San Shek Wan FWT;
- Siu Lam FWSR;
- Siu Lam No. 2 FWSR;
- Tuen Mun East FWSR;
- Tuen Mun East No. 2 FWSR;
- Tuen Mun North FWSR;
- Tuen Mun West FWSR; and
- Tuen Mun West No. 2 FWSR.

#### Sai Kung Major Supply Zone

- Fei Ngo Shan FWSR;
- Hoi Ha FWBPT;
- Kau Sai Chau FWBPT;
- Kei Pik Shan FWT;
- Muk Min Shan FWT;
- Ngau Wu Tun FWT;
- Pak A FWBPT;
- Pak Kong Au FWSR;
- Pik Uk FWBPT;
- Sai Kung FWBPT;
- Sai Kung FWSR;
- Tai Long FWBPT;
- Tai Po Tsai FWSR;

- Tai Shui Tseng FWT;
- Tan Ka Wan FWBPT;
- Tiu Keng Leng FWSR;
- Tseung Kwan O East Low Level FWSR;
- Tseung Kwan O West High Level FWSR;
- Tseung Kwan O West Low Level FWSR;
- Tui Min Hoi FWSR;
- Uk Tau FWBPT;
- Wong Mo Ying FWT; and
- Yim Tin Tsai FWBPT.

Aberdeen Major Supply Zone

- Ap Lei Chau FWSR;
- Ap Lei Chau No. 2 FWSR; and
- Wong Chuk Hang FWSR.

Red Hill Major Supply Zone

- Chung Hom Kok FWSR;
- Chung Hom Kok No. 2 FWSR;
- Headland Road FWBPT; and
- Red Hill FWSR.

2.2 The Project comprises the following:

- (a) construction of the proposed Pressure Management Area (PMA) chambers, District Metering Area (DMA) chambers and critical pressure point (CPP) chambers for the PMAs and DMAs for the fresh water distribution systems of the following supply zones within the five MSZs: (The numbers in the tables are proposed in the Investigation Study and are subject to review during the Design Phase.)

Tsuen Wan West MSZ:

<b>Supply Zone</b>	<b>No. of PMAs</b>	<b>No. of DMAs</b>	<b>No. of PMA chambers</b>	<b>No. of DMA chambers</b>	<b>No. of CPP chambers</b>
Choi Yuen Tsuen FWT	0	1	0	1	1
Chuen Lung FWT	6	1	6	1	6

<b>Supply Zone</b>	<b>No. of PMAs</b>	<b>No. of DMAs</b>	<b>No. of PMA chambers</b>	<b>No. of DMA chambers</b>	<b>No. of CPP chambers</b>
Chuen Lung No.2 FWT	6	0	8	0	5
Ha Fa Shan FWBPT	1	1	1	1	2
Hon Man Tsuen FWT	1	1	2	1	2
Ma Wan No. 2 FWSR	0	4	0	11	3
Sham Tseng FWT	1	2	1	2	2
Sham Tseng West FWSR	13	0	17	0	6
Shek Lai Hang FWT	0	2	0	2	1
Tsing Yi East & Tsing Yi East No.2 FWSRs	11	4	17	5	5
Tsing Yi North High Level FWSR	4	3	5	4	1
Tsing Yi North Low Level FWSR	5	13	6	19	4
Tsing Yi South FWSR	0	3	0	4	2
Tsuen Wan West High Level FWSR	1	1	1	1	2
Tsuen Wan West Low Level FWSR	22	8	40	38	14
Tsuen Wan West Ultra High Level FWSR	2	5	2	5	2
Yau Kom Tau FWPSR	8	3	13	4	5
<b>Total</b>	<b>81</b>	<b>52</b>	<b>119</b>	<b>99</b>	<b>63</b>

Tuen Mun MSZ:

<b>Supply Zone</b>	<b>No. of PMAs</b>	<b>No. of DMAs</b>	<b>No. of PMA chambers</b>	<b>No. of DMA chambers</b>	<b>No. of CPP chambers</b>
Fu Tei Sheung Tsuen FWT	1	1	1	1	1
Lung Kwu Sheung Tan FWT	0	1	0	1	1
San Shek Wan FWT	1	1	1	1	2
Siu Lam & Siu Lam No.2 FWSRs	30	6	53	6	21
Tuen Mun East & Tuen Mun East No.2 FWSRs	20	20	48	36	12
Tuen Mun North FWSR	19	13	35	26	18
Tuen Mun West & Tuen Mun West No.2 FWSRs	7	15	11	31	8
<b>Total</b>	<b>78</b>	<b>57</b>	<b>149</b>	<b>102</b>	<b>63</b>

Sai Kung MSZ:

<b>Supply Zone</b>	<b>No. of PMAs</b>	<b>No. of DMAs</b>	<b>No. of PMA chambers</b>	<b>No. of DMA chambers</b>	<b>No. of CPP chambers</b>
Fei Ngo Shan FWSR	14	2	17	5	15
Hoi Ha FWBPT	1	2	1	2	2
Kau Sai Chau FWBPT	1	0	1	0	0
Kei Pik Shan FWT	5	0	5	0	4
Muk Min Shan FWT	1	1	1	1	0
Ngau Wu Tun FWT	1	4	1	8	6

<b>Supply Zone</b>	<b>No. of PMAs</b>	<b>No. of DMAs</b>	<b>No. of PMA chambers</b>	<b>No. of DMA chambers</b>	<b>No. of CPP chambers</b>
Pak A FWBPT	3	1	3	1	1
Pak Kong Au FWSR	33	13	51	50	38
Pik Uk FWBPT	3	1	3	1	2
Sai Kung FWBPT	2	0	2	0	1
Sai Kung FWSR	1	3	1	4	4
Tai Long FWBPT	2	1	2	1	1
Tai Po Tsai FWSR	26	5	33	25	32
Tai Shui Tseng FWT	1	2	1	2	4
Tan Ka Wan FWBPT	2	2	2	2	3
Tiu Keng Leng FWSR	5	9	11	12	4
Tseung Kwan O East Low Level FWSR	6	1	9	1	3
Tseung Kwan O West High Level FWSR	2	3	3	6	3
Tseung Kwan O West Low Level FWSR	6	24	12	42	7
Tui Min Hoi FWSR	2	2	3	4	3
Uk Tau FWBPT	2	3	2	4	2
Wong Mo Ying FWT	2	2	2	2	3
Yim Tin Tsai FWBPT	0	1	0	1	1
<b>Total</b>	<b>121</b>	<b>81</b>	<b>166</b>	<b>174</b>	<b>139</b>

Aberdeen MSZ:

Supply Zone	No. of PMAs	No. of DMAs	No. of PMA chambers	No. of DMA chambers	No. of CPP chambers
Ap Lei Chau FWSR	5	3	7	4	3
Ap Lei Chau No. 2 FWSR	2	2	2	8	3
Wong Chuk Hang FWSR	5	3	9	5	4
Total	12	8	18	17	10

Red Hill MSZ:

Supply Zone	No. of PMAs	No. of DMAs	No. of PMA chambers	No. of DMA chambers	No. of CPP chambers
Chung Hom Kok & Chung Hom Kok No. 2 FWSRs	2	1	2	3	4
Headland Road FWBPT	3	0	4	0	1
Red Hill FWSR	12	4	17	7	12
Total	17	5	23	10	17

- (b) construction of the proposed DMA chambers for the DMAs for the large housing estates and villages as listed in **Appendix I** and **Appendix II** respectively;
- (c) laying of the associated water mains and installation of the associated valves;
- (d) construction of district boundary valves or modification of the existing valve arrangement according to the operational manual of the Final Report of Investigation Study;
- (e) installation of the associated flow meters, pressure reducing valves (PRVs), pressure reducing valve (PRV) controllers, data loggers and other necessary installations or monitoring equipment;
- (f) all other civil, structural, geotechnical, electrical and mechanical works and enabling works required for establishment of the PMAs and DMAs;
- (g) establishment and implementation of the PMAs and DMAs;

- (h) provision of efficient and effective means of management of large amounts of flow and pressure data generated upon commissioning of the proposed PMAs/DMAs in consultation with Development(1) Division of WSD and agreed by DR;
- (i) monitoring of the flow and pressure data for each established PMA or DMA for a minimum period of six (6) months after commissioning; and
- (j) on-site demonstration of the procedures for maintaining water supply to the established PMAs and DMAs under different scenarios of failures including extreme cases, such as the occurrence of fire fighting and water main burst at the same time, in the distribution systems.

2.3 The general layouts of the proposed chambers for the fresh water distribution systems are shown on Sketch Nos. SK 20485/1 to SK 20485/6 at **Appendix III**.

2.4 Investigation study for the Project has been carried out under the study “Pressure Management of the Fresh Water Distribution Systems of the Tsuen Wan West, Tuen Mun, Sai Kung, Aberdeen and Red Hill Major Supply Zones – Investigation.” (hereinafter called the “Investigation Study”).

Details of the findings and recommendations are given in the Final Reports of the Investigation Study and a list of the drawings of the Final Reports is given in **Appendix IV**.

### **3. Objectives of the Assignment**

The objectives of the Assignment are to design and construct the proposed works for establishment of the PMAs and DMAs for the fresh water distribution systems of the Tsuen Wan West, Tuen Mun, Sai Kung, Aberdeen and Red Hill MSZs.

### **4. Description of the Assignment**

4.1 This Assignment covers the proposed works as described in items (a) to (h) of Clause 2.2 of this Brief which aim at establishing the PMAs and DMAs for the fresh water distribution systems of the Tsuen Wan West, Tuen Mun, Sai Kung,

Aberdeen and Red Hill MSZs. The Assignment is to be carried out in three phases, namely the Design Phase, Tender Phase and Construction Phase, for the proposed works and establishment of the PMAs and DMAs with continuous monitoring of the flow and pressure data for each established PMA or DMA for a minimum period of 6 months to ensure proper functioning of the completed works and successful establishment of the PMAs and DMAs. The proposed works required for establishment of the PMAs and DMAs shall be carried out through works contracts and/or through works orders under the Term Contracts of Water Supplies Department (WSD) and if necessary, materials and equipment required for establishment of the PMAs and DMAs shall be separately procured. A majority of the proposed works shall be carried out through works contracts unless otherwise agreed by the DR. The written approval of the DR shall be obtained before commencing work in any of these phases except the Design Phase.

#### 4.2 Design Phase

The Consultants in the Design Phase shall:

- (a) review the locations of the PMA and DMA chambers proposed in the Investigation study to ensure all proposed works meet the requirement of WSD. In case chamber locations have to be revised, advise the revised PMA and DMA arrangement including district boundary valve arrangements, PMA and DMA boundaries and the effect on the existing distribution systems;
- (b) carry out design review of the PMA and DMA chambers proposed in the Investigation study to ensure all proposed works meet the requirements of WSD. The review works shall include the upgrading of the developed network models and the revision of the design drawings. Design review shall be carried out under, but not limited to, the following conditions:
  - (i) after receiving flow/pressure data of the existing or newly-commissioned PMAs/DMAs by Regions;
  - (ii) potential change in demands and number of consumer accounts due to new development;
  - (iii) where the PMAs/DMAs with PRV/district meter sizes reduced by 2 sizes or more than the pipe sizes, the design shall be checked particularly on any potential rise in demand due to future

- development within the PMAs/DMAs;
- (iv) upon receiving the inside services drawings, the network models shall be checked and updated;
  - (v) taking account of Regions' request of maintaining dual fire services supply and minimising the extents of dead end mains upon installation of the proposed district boundary valves, and comments in the design in facilitating the operation and management of the distribution networks;
  - (vi) where the flows adopted in the design of the Investigation study are underestimated;
  - (vii) where the supply zone boundaries are updated, the Consultants shall verify with Regions particularly on the accuracy of the supply zone boundaries;
  - (viii) any deviations between the developed network models and the site conditions; and
  - (ix) any alternative proposals which are considered to be more favorable than those recommended in the Investigation Study;
- (c) carry out utility surveys, inspections and investigations including site investigations for checking the feasibility for construction of the proposed chambers;
  - (d) carry out traffic impact assessment where necessary;
  - (e) identify environmental issues that will arise from the proposed works;
  - (f) prepare detailed designs, calculations, specifications, design drawings, bills of quantities or dimension sheets, cost estimates and programmes of the works for establishment of the PMAs and DMAs;
  - (g) review and update the network models to take account of the detailed designs which may deviate from those adopted in the Final Report of the Investigation Study;
  - (h) recommend the contract arrangement and advise the contract strategy;
  - (i) prepare tender documents to enable the Employer to invite tenders for the proposed works and the supply of materials and equipment;
  - (j) prepare works orders under WSD's Maintenance Works Management System (MWMS) for carrying out works which have not been covered by the works contracts, including trial pit excavations, utility surveys and/or other required investigation works; and
  - (k) propose a methodology for prioritizing the implementation of the PMAs and DMAs for the approval of the DR, and carry out prioritization based on the approved methodology.

#### 4.3 Tender Phase (Phase Subject to Incorporation)

The Consultants in the Tender Phase shall:

- (a) analyse the tenders and prepare recommendations to the Employer as to which tenders to accept; and
- (b) prepare contract documents to enable the Employer to execute Articles of Agreement with the selected tenderers.

#### 4.4 Construction Phase (Phase Subject to Incorporation)

The Consultants in the Construction Phase shall:

- (a) discharge the duties of the Engineer for the works contracts and administer the works contracts;
- (b) discharge the duties of the Engineer's Representative for WSD Term Contracts and administer the works orders through WSD's MWMS;
- (c) appoint and administer the Resident Site Staff;
- (d) prepare such further design drawings and specifications as may be necessary;
- (e) report on the progress, financial situation, variation orders, claims for additional payment and requests for extensions of time and all other matters affecting the progress and financial situation of the Assignment;
- (f) check, comment on and approve all submissions by the contractors;
- (g) prepare handing-over schedules, operation and maintenance (O&M) manuals covering both normal and emergency situations and as-constructed drawings for all completed works, including preparation of any necessary forms for internal uses;
- (h) administer the contracts for the supply of materials and equipment;
- (i) test and commission the established PMAs and DMAs and continue to monitor the pressure and flow data for the PMAs and DMAs for a minimum period of 6 months after commissioning. If the PMA or DMA cannot function properly, any cost and time incurred as a result of a monitoring period longer than 6 months shall deem to be included in the Lump Sum fee of this assignment;
- (j) develop and demonstrate on site to the DR and WSD's Regional staff the procedures for maintaining emergency water supply for the established PMAs and DMAs under different scenarios of system

failures including extreme cases, such as the occurrence of fire fighting and water main burst at the same time, in each service reservoir supply zone specified in Clause 2.2 of this Brief; and

- (k) review and update the network models upon commissioning of the PMAs and DMAs.

## **5. Deliverables**

5.1 Throughout the duration of this Agreement, the following deliverables (hardcopies and softcopies with editable and scanned files in CD-ROMs or other equivalent media) are to be submitted to the DR by the Consultants:

- (a) draft master programme for the Assignment (5 hard copies and 1 soft copy) in accordance with Clause 7 of this Brief using SureTrak or other compatible software approved by the DR (to be submitted within 2 weeks from the date of commencement of the Agreement).
- (b) detailed programme for the establishment of all the PMAs and DMAs (5 hard copies and 1 soft copy) in accordance with Clause 7.4 of this Brief using SureTrak or other compatible software approved by the DR (to be submitted within 4 months from the date of commencement of the Agreement).
- (c) progress reports (5 hard copies and 1 soft copy) in accordance with Clause 8 of this Brief (to be submitted within the first 5 working days of each month).
- (d) financial reports (5 hard copies and 1 soft copy) in accordance with Clause 9 of this Brief (to be submitted together with the progress reports).
- (e) records of meetings and correspondence with others (1 hard copy and 1 soft copy) (to be submitted within 8 working days from the date of meeting/correspondence).
- (f) information papers, in English and Chinese (up to 100 hard copies and 1 soft copy for each consultation) as requested by the DR, and in accordance with Clause 6.1.11 of this Brief for consultation with District Councils, or other public bodies and community groups (to be submitted 4 weeks prior to the consultation).
- (g) presentation materials (2 hard copies and 1 soft copy) including colour drawings mounted on boards, photographs and slides in connection with

the Assignment, programme and progress for consultation with District Councils, or other public bodies and community groups (to be submitted 2 weeks prior to the presentation).

- (h) insurance policy (1 copy) in accordance with Clause S14 of the Special Conditions of Employment (to be submitted prior to the commencement of the Agreement).
- (i) land requirement, clearance, acquisition and allocation plans including those for temporary and permanent land allocations (8 hard copies and 1 soft copy) in accordance with Clause 6.1.13 of this Brief (to be submitted within 5 months from the date of commencement of the Agreement).
- (j) draft final report of the Assignment (6 hard copies and 1 soft copy) (to be submitted within 4 weeks after finalization of the accounts for the works contracts or the accounts for all the works orders under WSD Term Contracts and submission of all the commissioning reports and site demonstration reports) which shall include, but not limited to, the following:
  - (i) Background of the Consultancy Agreement;
  - (ii) Work by the Consultants in details;
  - (iii) Work under the works contracts and WSD Term Contracts;
  - (iv) Details of the established PMAs and DMAs, and uncompleted or deleted works, if applicable, with justifications;
  - (v) Final account of the whole project; and
  - (vi) Brief account of other services provided by the Consultants.
- (k) final report of the Assignment (10 hard copies and 1 soft copy) (to be submitted within 2 weeks from the date of approval of the draft final report).

5.2 The Deliverables to be produced by the Consultants in the Design Phase of the Assignment and submitted to the DR in accordance with Clause 6.2 of this Brief are as follows:

- (a) draft tender drawings and other tender documents (15 hard copies and 1 soft copy) in accordance with Clause 15 of the General Conditions of Employment for the DR to circulate to Government departments and divisions of WSD involved in or affected by the works including any works to be entrusted to others for comments. Upon receipt of the comments from the Government departments, divisions of WSD and the DR, the Consultants shall take these comments into consideration, make

revisions to the draft tender drawings and other tender documents and submit these to the DR for agreement (to be submitted by the key date specified in Clause 7.6 of this Brief).

(b) design report for all the PMAs and/or DMAs of each of the 5 MSZs (5 hard copies and 1 soft copy) which shall include, but not limited to, the following:

- (i) drawings (key plans) for the MSZ and all the PMAs and/or DMAs within the MSZ;
- (ii) design drawings for the PMAs and/or DMAs within the MSZ (with a scale of 1:1000 or other scale agreed by the DR), showing the existing water mains (including details of the district boundary valves and supply zone boundaries) and the proposed works (including details of mainlaying works, flowmeters, PRVs, district boundary valves, critical pressure points and PMA and/or DMA boundaries). The drawings shall be prepared in CAD format in accordance with Clause 5.7 of this Brief, in SHAPE format and in Geographical Information System (GIS) format compatible with WSD Digital Mapping System;
- (iii) schematic diagrams for the distribution network and all the PMAs and/or DMAs within the supply zone;
- (iv) design assumptions and justifications;
- (v) design calculations and specifications, where necessary;
- (vi) review and confirm the design in the Investigation Study;
- (vii) results, findings and conclusions of the site investigations for PMA and DMA chambers specified in Clause 6.2.2 of this Brief within the MSZ, including drawings showing the locations of all existing services, underground structures and obstructions;
- (viii) results of the review and updating of the network models in accordance with Clause 6.2.8 of this Brief;
- (ix) design drawings, including details of chambers, where necessary;
- (x) materials and/or equipment to be procured and/or installed;
- (xi) cost estimates; and
- (xii) bills of quantities.

The format of the design report shall be agreed by the DR. The first design report shall be submitted within 3 months from the commencement of the Agreement. All the design reports shall be submitted within 5 months from the commencement of the Agreement.

(c) draft summary report of site investigations (5 hard copies and 1 soft

- copy) in accordance with Clause 6.2.2 of this Brief (to be submitted within 1 month after completion of the site investigations).
- (d) final summary report of site investigations (5 hard copies and 1 soft copy) (to be submitted within 2 weeks from the date of approval of the draft summary report).
  - (e) Traffic Impact Assessment Report where necessary (5 hard copies and 1 soft copy) in accordance with Clause 6.2.4 of this Brief (to be submitted within 4 months from the commencement of the Agreement).
  - (f) Environmental Review Report where necessary (5 hard copies and 1 soft copy) in accordance with Clause 6.2.5 of this Brief (to be submitted within 4 months from the commencement of this Agreement).
  - (g) draft works orders (2 hard copies and 1 soft copy) which shall include, but not limited to, the following documents, in hard copy with all information/document input to the MWMS system to cover the site investigation work and other works which have not been covered by the works contracts:
    - (i) Serial Number for Reference;
    - (ii) Drawings of the works;
    - (iii) Proposed start and end dates;
    - (iv) Cost estimate including contingency sum and breakdown;
    - (v) Supplementary particular specification, if applicable;
    - (vi) Excavation permit and associated conditions, if applicable;
    - (vii) Approved temporary traffic arrangement and associated conditions, if applicable; and
    - (viii) Night work permit and associated conditions, if applicable.The first works order shall commence within 4 weeks from the date for commencement of the Agreement.
  - (h) estimate of the cost of the works and deployment of the Resident Site Staff in accordance with Clause 6.2.12 of this Brief (5 hard copies and 1 soft copy) (to be submitted within 5 months from the date for commencement of the Agreement).
  - (i) Quality Site Supervision Plans (QSSP) for both the works contracts and works orders under WSD Term Contracts (5 hard copies and 1 soft copy) in accordance with Clauses 6.1.5 and 6.2.15 of this Brief (to be submitted by the key date specified in Clause 7.6 of this Brief).

5.3 The Deliverables to be produced by the Consultants in the Tender Phase of the Assignment and submitted to the DR in accordance with Clause 6.3 of this

Brief are as follows:

- (a) tender documents including the Electronic Dissemination Package in accordance with Environment, Transport and Works Bureau Technical Circular (Works) (ETWB TCW) No. 11/2005 “Electronic Dissemination of Tender Documents and Electronic Submission of Tender Returns on Removable Media” (25 hard copies and 1 soft copy for each works contract) for issue to prospective tenderers (to be submitted by the key date specified in Clause 7.6 of this Brief).
- (b) tender reports (5 hard copies and 1 soft copy) in an approved format to the DR (to be submitted within 4 weeks from the close of each tender).
- (c) tender drawings and other contract documents for the works contracts (3 signed and sealed copies of all documents and drawings, 13 certified true copies of documents and 6 certified true copies of drawings for each works contract) for the execution of the Articles of Agreement by the Employer and the contractors, for retention by the DR and for issue to the contractors, Resident Site Staff and other parties. At the request of the DR, some sets of drawings are to be reduced to A2 or A3 size as appropriate. Sealed copies of the documents and drawings for execution of the Articles of Agreement shall be submitted within 3 working days prior to the execution of Articles of Agreement. Certified true copies of documents and drawings shall be submitted within 1 week after the execution of Articles of Agreement.

5.4 The Deliverables to be produced by the Consultants in the Construction Phase of the Assignment and submitted to the DR in accordance with Clause 6.4 of this Brief are as follows:

- (a) documents, letters, certificates, charts and all other information (1 hard copy and 1 soft copy) produced in the discharge of the duties of the Engineer for works contracts or Engineer’s Representative for WSD Term Contracts and the management of the Resident Site Staff. Part/all of them are required to be entered into the MWMS in particular format as necessary.
- (b) reports on the Resident Site Staff Organisation (5 hard copies and 1 soft copy) in accordance with Clause 13.3 of this Brief (to be submitted with Progress Report specified in Clause 5.1(c) of this Brief).
- (c) as-constructed drawings of PMAs or DMAs with a scale of 1:1000 or

other scale agreed by the DR (5 hard copies and 1 soft copy) and completed forms. As-constructed drawings shall be prepared in CAD format in accordance with Clause 5.7 of this Brief, in SHAPE format and in Geographical Information System (GIS) format compatible with WSD Digital Mapping System. The Consultants shall submit 2 advanced copies of the as-constructed drawings showing necessary details (including details of mainlaying works, flowmeters, PRVs, district boundary valves, critical pressure points and PMA and/or DMA boundaries) for alteration and/or addition of WSD Mains Record Plans in CAD format and in GIS format at least 2 weeks before commissioning of the PMA or DMA for handing over of the completed works to relevant sections or Regions of WSD and the final version (5 hard copies and 1 soft copy) shall be submitted within 1 month after successful commissioning of the PMA/DMA.

- (d) revised QSSP (5 hard copies and 1 soft copy) in accordance with Clause 6.4.8 of this Brief (to be submitted upon major revision of the QSSP during the Construction Phase).
- (e) a commissioning report for each established PMA or DMA (5 hard copies and 1 soft copy) (to be submitted within 2 weeks after completion of the monitoring of the flow and pressure data for a minimum period of 6 months after establishment of the PMAs and DMAs in each FWSR, FWT or FWBPT supply zone) which shall include, but not limited to, the following:
  - (i) a drawing (key plan) for the FWSR, FWT or FWBPT supply zone and the PMAs and DMAs within the supply zone;
  - (ii) as-built drawings (with a scale of 1:1000 or other scale agreed by the DR) showing the detailed arrangement of all the PMAs or DMAs with individual chambers and installations marked;
  - (iii) as-built drawings of individual chambers;
  - (iv) inventory records for all the valves installed in the format as required by the DR;
  - (v) works orders involved;
  - (vi) construction programme;
  - (vii) list of equipment installed including, but not limited to, WSD reference number, brand, model, serial no, size, date of manufacturing, date of installation, setting and maintenance notes;
  - (viii) operation and maintenance manuals;

- (ix) results and findings in monitoring the flow and pressure data for a minimum period of 6 months after commissioning, including, but not limited to, the assessment of saving in water consumption and reduction in minimum night flow arising from pressure management where applicable, analysis of unaccounted-for water and comparison between actual and design flows and pressures (including the discrepancy ratio, which is defined as the average flow measured divided by the consumption); and
- (x) results of the review and updating of the network models in accordance with Clause 6.4.26 of this Brief.

The format of the commissioning report shall be agreed by the DR.

- (f) A site demonstration report for the established PMAs or DMAs for each FWSR, FWT or FWBPT supply zone (5 hard copies and 1 soft copy) (to be submitted within 2 weeks after completion of the on-site demonstration on the procedures for maintaining emergency water supply for the established PMAs and DMAs under different scenarios of system failures in each FWSR, FWT or FWBPT supply zone) which shall include, but not limited to, the following:
  - (i) a drawing (key plan) for the FWSR, FWT or FWBPT supply zone and the PMAs and DMAs within the supply zone;
  - (ii) as-built drawings showing the detailed arrangement of all the PMAs and DMAs with individual chambers and installations marked;
  - (iii) results and findings of the on-site demonstration on the procedures for maintaining emergency water supply for the established PMAs and DMAs under different scenarios of system failures including extreme cases, such as the occurrence of fire fighting and water main burst at the same time, in the service reservoir supply zone.

The format of the site demonstration report shall be agreed by the DR.

- 5.5 The Consultants shall submit each soft copy of the Deliverables in duplicate on Compact Discs (CDs) approved by the DR and shall clearly label on the surface of the CDs a description of the documents stored. The soft copy of each Deliverable shall comprise the files in the original formats and a combined file in portable document format (pdf).

- 5.6 The Consultants shall draw the Employer's attention to any Deliverables that are under license and any pre-existing copyright or patent on any Deliverables and other restriction whatsoever affecting the Employer's use of the same and, if required by the DR, to establish the existence of any license, copyright, patent or restriction.
- 5.7 Drawings shall be prepared by Computer-Aided-Drafting (CAD) in AutoCAD DXF or DWG format conforming to the CAD Standard for Works Projects version 1.03.00 (or later versions as agreed between the Employer and the Consultants from time to time) as posted on the Development Bureau's web site  
[http://www.devb.gov.hk/en/construction\\_sector\\_matters/electronic\\_services/cad\\_standard/index.html](http://www.devb.gov.hk/en/construction_sector_matters/electronic_services/cad_standard/index.html).
- 5.8 The numbers and boundaries of the proposed PMAs and DMAs, the location of the DMA and PMA chambers, the district boundary valves chambers and the critical control point pits shall be reviewed and revised from time to time as desirable to meet the objectives of the Assignment and be subject to the approval by the DR. The consultants shall strive to establish all these PMAs and DMAs irrespective of any splitting, merging or other suitable modifications of the original PMAs and DMAs. The consultants shall submit a commissioning report for each established PMA or DMA (i.e. fully implemented and commissioned) subject to Clause 5.9 of this Brief.
- 5.9 If a PMA or DMA cannot be established due to non-availability of space for construction of the PMA or DMA chambers or other site problems unforeseeable at the tender stage despite the effort made by the Consultants, the commissioning report of the PMA or DMA shall not be required. For such a PMA or DMA, 70% of the fees for the submission and acceptance of the commissioning report as detailed in Clauses 3(iii)(b) and (c) of the Schedule of Fees respectively will be deducted from the Lump Sum stipulated in Clause 2 of the Schedule of Fees and 30% of the said fees will be paid provided that a report detailing the effort made by the Consultants and justifications to prove that the PMA or DMA cannot be established is submitted by the Consultants and accepted by the DR.

- 5.10 If all the PMAs or DMAs within a FWSR, FWT, FWBPT supply zone cannot be established due to non-availability of space for construction of the PMA or DMA chambers or other site problems unforeseeable at the tender stage despite the effort made by the Consultants, the on-site demonstration and submission and acceptance of the site demonstration report shall not be required. For such a supply zone, the fees for the submission and acceptance of the site demonstration report as detailed in Clauses 3(iii)(d) and (e) of the Schedule of Fees will be deducted from the Lump Sum.

## **6. Services to be provided by the Consultants**

### **6.1 General**

- 6.1.1 The services to be provided by the Consultants shall comply with all instructions from the DR and with all relevant Government circulars, Departmental Instructions and technical memoranda as directed by the DR.

For Clauses 6.1.2 – 6.1.15, the Consultants shall:

- 6.1.2 draw to the attention of the DR the need to consider any implications and consequences arising out of or in relation to the Assignment and any other alternative proposals.
- 6.1.3 attend progress meetings at monthly intervals or at such other intervals as required by the DR.
- 6.1.4 prepare and submit programmes covering the work of the Assignment and such revised programmes as may be necessary in accordance with Clause 7 of this Brief.
- 6.1.5 prepare and submit a QSSP in accordance with Clause 6.2.15 of this Brief and the quality management system of the Consultants upon completion of the detailed design. The Consultants shall also review the QSSP with the Resident Site Staff during the Construction Phase.

- 6.1.6 prepare cost estimates, tender documents for the construction works, processing of payment, issuing variation orders, granting of extension of time and matters related to the administration of the works contracts.
- 6.1.7 prepare and enter the details of works to be carried out by WSD Term Contractors into WSD's MWMS at MWMS terminals located in WSD offices, including cost estimates for issue of the works orders, processing of payment, issuing variation orders, granting of extension of time and matters related to the administration and management of works orders. The work procedures shall be agreed with the DR.
- 6.1.8 prepare and submit the various reports and other documents as stated in Clause 5 of this Brief and re-submit the reports and documents to incorporate the DR's comments.
- 6.1.9 consult the following authorities and parties as required in addition to any other authority necessary all in accordance with Clause 19 of the GCE:
- (a) Agriculture, Fisheries and Conservation Department (AFCD)
  - (b) Antiquities and Monuments Office of Leisure and Cultural Services Department (AMO)
  - (c) Architectural Services Department (ArchSD)
  - (d) bus Companies
  - (e) Civil Engineering and Development Department (CEDD)
  - (f) District Lands Offices of Lands Department (DLO)
  - (g) District Offices of Home Affairs Department (DO)
  - (h) District Survey Offices of Lands Department (DSO)
  - (i) Drainage Services Department (DSD)
  - (j) Environmental Protection Department (EPD)
  - (k) Fire Services Department (FSD)
  - (l) Food and Environmental Hygiene Department (FEHD)
  - (m) Geotechnical Engineering Office of Civil Engineering and Development Department (GEO)
  - (n) Government Property Agency (GPA)
  - (o) Government Secretariat: Development Bureau (DEVB)
  - (p) Government Secretariat: Environment Bureau (EnB)
  - (q) Government Secretariat: Transport and Housing Bureau (THB)
  - (r) Highways Department (HyD)

- (s) Hong Kong Police Force (HKPF)
- (t) Housing Department (HD)
- (u) Lands Department (Lands D)
- (v) Leisure and Cultural Services Department (LCSD)
- (w) Mass Transit Railway Corporation (MTRC)
- (x) Planning Department (PD)
- (y) Transport Department (TD)
- (z) Water Supplies Department (WSD)
- (aa) all other relevant utility companies and Government departments
- (bb) other consultants and contractors in connection with the proposed works.

6.1.10 take cognizance of the existing and proposed study and projects which may have a bearing on this Assignment.

6.1.11 provide technical support for the DR to attend meetings with District Councils, or other public bodies and community groups in public consultation. This assistance is to include the preparation of information papers (including the required information on greening works in accordance with ETWB Technical Circular (Works) No. 34/2003) in both English and Chinese and presentation materials such as colour drawings, photographs and slides in both hard copies and computerised format, and to attend the meetings.

6.1.12 provide Chinese translation of the information papers and presentation materials referred to in Clause 5.1(f), 6.1.11 and 6.1.23(b) of this Brief. This translation shall be carried out by competent translators or translation firms. The translation should be of reasonable quality in rhetoric and phraseology to convey precisely the original meaning of the English version.

6.1.13 assist the DR to take possession of any land required for the purpose of or in connection with the proposed works and hand over the land to contractors or others. The services required include preparation of land requirement, clearance, acquisition and allocation plans, survey fieldwork to establish the site boundary and liaison with DLOs, the contractors and the public.

6.1.14 nominate a professional acceptable to the Employer to be named as the contact person of the Employer in applications for excavation permits and, where applicable, emergency excavation permits pursuant to the requirements of the Land (Miscellaneous Provisions) Ordinance, Cap 28.

6.1.15 carry out all duties imposed upon the Employer under the Land (Miscellaneous Provisions) Ordinance, Cap 28 or under the conditions of the excavation permits and, where applicable, emergency excavation permits in so far as such duties have not been imposed only on the Contractor under the Ordinance or under the Contracts.

6.1.16 Notwithstanding Clause 6.1.15, the Consultants shall not be liable to the Employer in respect of obligations stipulated under the following conditions of the excavation permits and, where applicable, emergency excavation permits:

- (a) the conditions stipulated in the excavation permits and, where applicable, the emergency excavation permits relating to the obligation and liability of the Permittee to indemnify the Government against all losses and claims for injury or damage to any person or property, nuisance, disruption or interference whatsoever which may arise out of or in consequence of the work of the Permittee, and against all claims, demands, proceedings, damages, costs, charges or expenses whatsoever in respect thereof or in relation thereto, and
- (b) the conditions stipulated in the excavation permits and, where applicable, emergency excavation permits relating to the obligation and liability of the Permittee to make good or pay for any works as a result of or in consequence of the work of the Permittee.

6.1.17 Clause 6.1.16 is without prejudice to Clause 22 of the General Conditions of Employment.

6.1.18 The Consultants shall ensure that the Contractors comply with the permit conditions imposed by the Authority under the Land (Miscellaneous Provisions) Ordinance, Cap 28, including those conditions stipulated in the excavation permits and, where applicable,

emergency excavation permits to be observed by the Nominated Permittee or by both the Permittee and the Nominated Permittee and those stipulated in the excavation permits and, where applicable, emergency excavation permits to be observed by the Permittee but which the Contractors are required to comply with under the Contracts.

6.1.19 In respect of permit conditions which are stipulated in the excavation permits and, where applicable, emergency excavation permits to be complied with by the Permittee but which are required to be complied with by the Contractors under the Contracts, if notwithstanding Clause 6.1.18 the Contractors have failed to comply with these conditions, the Consultants shall take such actions so as to ensure that these conditions are complied with by the Employer in his capacity as the Permittee irrespective of whether these actions are required to be carried out by the Contractors under the Contracts.

6.1.20 Clauses 6.1.14 to 6.1.19 shall apply only with respect to excavation in street maintained by the Highways Department that requires excavation permits and, where applicable, emergency excavation permits under the Ordinance for execution of the Works.

6.1.21 The Consultants shall engage a competent person to supervise the excavation works on behalf of the Employer, maintain a documented system for supervising the excavation works and maintain a documented system to ensure that the Contractors comply with their duties in relation to excavation works. The attention of the Consultants is drawn to section 10T(5) and (6) of the Land (Miscellaneous Provisions) Ordinance, Cap 28.

6.1.22 The Consultants shall study the requirements of the Ordinances listed below and bring to the attention of the DR any special measures necessary to comply with the requirements of these Ordinances:

- (a) Air Pollution Control Ordinance
- (b) Antiquities and Monuments Ordinance
- (c) Country Parks Ordinance
- (d) Environmental Impact Assessment Ordinance
- (e) Electricity Ordinance
- (f) Factories and Industrial Undertakings Ordinance

- (g) Land (Miscellaneous Provisions) Ordinance
- (h) Noise Control Ordinance
- (i) Town Planning Ordinance
- (j) Road Traffic Ordinance
- (k) Waste Disposal Ordinance
- (l) Waterworks Ordinance
- (m) Water Pollution Control Ordinance
- (n) any other Ordinance having a bearing on the works of the Assignment.

6.1.23 The Consultants shall carry out public consultations for the proposed works when necessary. The services to be rendered shall include, but not limited, to the following:

- (a) identify the District Councils, relevant committees and public consultation bodies with whom public consultation is to be made and prepare a strategy and programme for doing so.
- (b) prepare information papers and presentation materials with Chinese translation and attend meetings of the public bodies to be consulted and assist with the presentation as necessary. The number of such meetings is estimated to be one hundred and twenty (120) over which the Employer shall pay the extra cost on a time charge basis.
- (c) identify concerns and requirements arising from public consultations, and establish a strategy to fully address the concerns of the public.
- (d) examine and review the existing methods and procedures for notifying customers of an interruption of supply and prepare a strategy for liaison with customers affected by the Assignment.

## 6.2 Design Phase

The Consultants shall:

- 6.2.1 review the design and works for establishment of the PMAs and DMAs proposed in the Investigation Study and the findings, conclusions and recommendations of the Final Reports of the Investigation Study and prepare any alternative proposals which are considered to be more

favorable than those recommended in the Final Reports of the Investigation Study to the satisfaction of WSD.

- (a) review the locations of chambers and the associated enabling works on water mains and identify any alternatives that will
  - (i) result in a more cost effective solution;
  - (ii) reduce the impact on the environment of the surroundings;
  - (iii) reduce the disruption to vehicular and pedestrian traffic;
  - (iv) reduce the inconvenience to the public;
  - (v) avoid the use of private land and the land allocated to or managed by MTRC, HD or ArchSD;
  - (vi) phase in more readily with works by other WSD construction projects and others including other Government departments;
  - (vii) reduce the risk to or the effect on adjacent slopes and retaining walls; and
  - (viii) reduce conflict with the existing utilities.
- (b) examine any alternative proposals for forming the PMAs and/or DMAs giving due consideration to the availability of working space, traffic conditions and effect to the public;
- (c) review and recommend the order of implementation of PMAs and/or DMAs identified in sub-clauses (a) and (b) above in consultation with the Regions and other relevant divisions of WSD;
- (d) review the accuracy of the drawings for the proposed chambers to be constructed against the Mains Record Plans maintained by WSD including checking the diameter of pipe, material used and date of laying, embody the results of this review into the design drawings and inform WSD of the results of this review in case error is noted in the Mains Record Plans;
- (e) examine all facilities, installations and existing rights that may be affected by the proposed works;
- (f) review the sizes and types of pressure reducing valves, flowmeters and associated equipment including pressure reducing valve controllers, anti-cavitations device and low-flow device;
- (g) review the enabling works required for establishment of the PMAs and DMAs;
- (h) identify those parts of the proposed works that are located in carriageways and footways that are subject to road opening

- restriction;
- (i) identify the existing utilities and structures that require diversion or modification to suit the proposed works and establish the procedures, practicalities and programme for doing so;
  - (j) identify locations on the PMAs and/or DMAs for any additional boundary valves to suit the operational needs of the Regions of WSD;
  - (k) examine the inside service of the large housing estates, identify the inlet water mains and the service connection points for providing water supply to the housing estates and review the numbers of DMAs and number of DMA chambers for the housing estates and the feasibility of implementing pressure management;
  - (l) review interfacing with other projects and identify those parts of the proposed works that are required to be carried out or incorporated under other projects (hereinafter called the entrusted works) in order to minimize the interfacing problem.
  - (j) review and update the network models in the Investigation Study to account for, but not limited to, the followings
    - i. any change in fresh water distribution system which has been made since the Investigation Study, e.g. change in supply zone boundary or change in distribution mains due to R&R projects, leading to change in DMA/PMA boundary, etc.;
    - ii. any change in location of the chambers and hence in DMA/PMA boundary as identified by site investigation; and/or
    - iii. any substantial change in consumption pattern resulting from new development.

### 6.2.2 Site Investigations

- (a) design and carry out site investigations including, but not limited to, trial pit excavations and utility surveys for checking feasibility for construction of the chambers. Non-destructive utility surveys shall be carried out for the location of all the chambers.
- (b) liaise with WSD Term Contractors regarding those trial pit excavations, utility surveys and/or any special investigations to

- be carried out by them.
- (c) issue works orders for the proposed site investigations under MWMS. Each works order shall be issued to the relevant Term Contractor before the scheduled commencement date of the works order and the programme for issue of works order shall be agreed with the Term Contractor.
  - (d) liaise with contractors under works contracts or WSD Term Contractors and all Government departments and authorities concerned to obtain permissions for the site investigations including the application for Excavation Permits and access permission.
  - (e) identify all utilities, facilities, installations and existing rights that may be affected by the site investigations. Liaise with and obtain consent from the concerned parties for carrying out the site investigations, including the consent for diversion or relocation of the utilities, facilities and installations if necessary.
  - (f) carry out all necessary surveys, site inspections, setting out, levels and sounding, make such investigations and inquiries and search site records as are necessary for the satisfactory completion of the site investigations.
  - (g) supervise the site investigations including reinstatement, and ensure that pedestrian and vehicular traffic arrangements and the provisions for supporting, watching, guarding and lighting of any excavations are to a standard that will enhance the public image of WSD. Report on the contractor's performance. Take measurements of findings and photographs. Take measurements of work done and prepare quantities for payment for the works. The Consultants shall provide adequate qualified personnel for supervision of the site investigations. The work of supervising site investigation shall be considered as work carried out under Clause 5 of the Schedule of Fees.
  - (h) prepare and submit summary reports on the results, findings and conclusions of the site investigations including drawings to show the location of all existing services, underground structures and obstructions.

6.2.3 collect and obtain all utility records (including WSD water mains) from utilities undertakers and prepare combined service drawings to indicate

all the underground utilities. Carry out necessary site inspection to verify the records and to design locations of the chambers to avoid conflict with the existing utilities.

6.2.4 carry out Traffic Impact Assessment necessary for the proposed works under the Assignment using, where appropriate, the Guidelines on Traffic Impact Assessment and Day-Time Ban Requirements for Road Works on Traffic Sensitive Routes issued by the Research and Development Division of HyD, when necessary. Traffic Impact Assessments shall include the following:

- (a) carry out traffic counts for the Traffic Impact Assessments.
- (b) identify any traffic lights that will need adjustment to suit the proposed works.
- (c) identify any traffic diversions and road closures that will be necessary to facilitate the proposed works.
- (d) review the standard requirements of an Excavation Permit issued by HyD and identify those parts of the proposed works that will require special provisions in the contract documents of the works contracts and works orders to effect these measures and recommend how these provisions are to be made.
- (e) identify any special measures required by HyD, TD and HKPF for carrying out the proposed works and recommend how the provisions for these special measures are to be made for the proposed works.
- (f) identify those parts of the works that will require special measures for pedestrian traffic and recommend how the provisions for these special measures are to be made for the proposed works.
- (g) prepare and submit report on the results, findings and conclusions of the study.
- (h) present the results of the study to all concerned parties or persons including District Councils as required.

6.2.5 identify the environmental issues that will arise from the proposed works and liaise with Environmental Protection Department (EPD) to ensure compliance with the current Environmental Impact Assessment Ordinance, other pollution control ordinances, regulations and guidelines.

6.2.6 prepare detailed designs necessary for the works together with specifications, drawings, bills of quantities and all tender documentation using the standard documents listed below (or their latest versions) as a basis. This work shall be carried out for all the works and procurement of any materials, equipment or services required as described in the tender documents under works contracts or for all the works orders and for procurement of any materials, equipment or services required prior to or separately from the works contracts and WSD Term Contracts including works entrusted to other Government departments/parties.

<u>Title</u>	<u>Issuing Authority</u>
(a) Civil Engineering Design Manual	WSD
(b) Manual of Mainlaying Practice	WSD
(c) Code of Practice for the Lighting, Signing and Guarding of Road Works	HyD
(d) Code of Practice on Monitoring and Maintenance of Water-carrying Services Affecting Slopes	The then ETWB
(e) Project Administration Handbook for Civil Engineering Works	CEDD
(f) Project Administration Manual for Engineering Works	WSD
(g) Standard Drawings	WSD
(h) Standard Drawings	CEDD
(i) General Specification for Civil Engineering Works	HKSARG
(j) Standard Method of Measurement for Civil Engineering Works	HKSARG
(k) Stormwater Drainage Manual	DSD
(l) Hong Kong Planning Standards and Guidelines	PD
(m) Public Works Department, Lands and Works Branch, Works Branch, Works Bureau, Environment, Transport and Works Bureau and Development Bureau Technical Circulars	DEVB

<u>Title</u>	<u>Issuing Authority</u>
(n) Planning, Environment and Lands Bureau (Branch), Planning and Lands Bureau and Housing, Planning and Lands Bureau Technical Circulars	The then HPLB
(o) Departmental Instructions	WSD
(p) Professional Persons Environmental Consultative Committee (Pro PECC) Practice Notes	PD
(q) Technical Circulars/Memoranda	DSD
(r) Technical Circulars/Memoranda	HyD
(s) Technical Circulars/Memoranda	CEDD
(t) Guidelines on Traffic Impact Assessment and Day-time Ban Requirements for Road Works on Traffic Sensitive Routes	HyD
(u) General Specifications for Electrical Installation in Government Buildings of the Hong Kong Special Administrative Region	ArchSD
(v) Code of Practice for the Electricity (Wiring) Regulations	EMSD
(w) Regulations for Electrical Installations 16 <sup>th</sup> Edition including latest amendments	IEE
(x) Standard Specifications for Mechanical and Electrical Works	WSD
(y) Term Contract for Waterworks, District H – Hong Kong Island and Ap Lei Chau	WSD
(z) Term Contract for Waterworks, District E – New Territories East	WSD
(aa) Term Contract for Waterworks, District W – New Territories West	WSD
(ab) Guidelines for Hydraulic Modeling	WSD

6.2.7 draw to the attention of the DR any deviations necessary from the standard documents, manuals, instructions and guidelines listed under Clause 6.2.6 of this Brief and explain the reasons for any contract document to embody these deviations.

- 6.2.8 review and update the H2OMAP network models adopted for the design of the PMAs and DMAs in the Investigation Study to take account of the detailed designs, the data and assumptions used in the Investigation Study and any network or consumption changes as mentioned in Clause 6.2.1(j). Submit the results of the review and updating in the form of pressure contours, together with a soft copy of the updated network models.
- 6.2.9 identify any materials, equipment or services that are required prior to or separately from the works contracts and WSD Term Contracts. Prepare the tender documents to enable the Employer to invite tenders for the proposed works, the supply of these materials, equipment or services.
- 6.2.10 recommend the contractual arrangements for carrying out the proposed works and the supply of materials, equipment or services. Advise the contract strategy including the number of works contracts, strategy for site supervision, the most suitable form of contracts for all or any part of the proposed works, the supply of materials, equipment or services together with proposals for set up of the Resident Site Staff.
- 6.2.11 identify any additional land requirements, such as works areas, storage areas and access roads necessary for the completion of the works and prepare necessary land plans and other relevant information to enable arrangements for land acquisition and clearance for the works and the works areas to be made.
- 6.2.12 prepare estimates of the cost of the proposed works and deployment of Resident Site Staff, with the following shown separately:
- (a) Works carried out under the scope of works contracts or through works orders under WSD Term Contracts;
  - (b) Procurement of materials, equipment or services required under the scope of works contracts or procurement of materials, equipment or services required prior to or separately from the works contracts and WSD Term Contracts;
  - (c) Consultants fees and other reimbursable items;
  - (d) Salaries and other reimbursable items for Resident Site Staff; and
  - (e) Any other costs.

The estimation of contingency items shall be in accordance with WBTC No. 22/93 “Estimating Using Risk Analysis” or any subsequent version. Where necessary, attend the WSD Project Estimate Control Committee Meeting to present the cost estimate. Prepare proposals of funding for the Construction Phase.

6.2.13 prepare pre-tender estimates for the works contracts within 2 months before the date programmed for the invitation of tenders. Where necessary, attend vetting committee to present the pre-tender estimates.

6.2.14 calculate the level of Liquidated Damages to be stated in the tender documents using the pre-tender estimates prepared in Clause 6.2.13 of this Brief.

6.2.15 prepare a QSSP to include, but not limited to, the following details:

- (a) a detailed site supervision arrangement, including arrangements for supervision of construction activities that are required to be carried out outside the normal working hours of the Resident Site Staff;
- (b) a list of critical construction activities and structural elements that require special attention together with the associated supervision requirements for such items, where appropriate the level of supervision and the rank of staff who should perform the supervision of such items and/or sign the Request for Inspection Form (or a purposely made inspection form for a particular activity or test);
- (c) any critical construction activities, structural elements and particular aspects or details that should be noted by the inspection officer on the Request for Inspection Form for future reference if necessary; and
- (d) a guideline on the details of inspection to be recorded for specialist works or critical elements.

6.2.16 Works Order Preparation under WSD Term Contracts

- (a) prepare and submit cost estimates for the works orders at least 1 week before the respective commencement dates of the works orders. Assess the contingency sums to be stated in the works orders.

- (b) prepare documents for the works orders and input details of the draft works orders into WSD's MWMS for DR's endorsement.
- (c) assist the Employer in issuing works orders for the proposed works under MWMS. Each works order shall be issued to the Term Contractor before the scheduled commencement date of the works order and the programme for issue of works orders shall be agreed with the Term Contractor.

6.2.17 prepare and enter proposed road opening details to the Excavation Permit Management System (XPMS) for obtaining excavation permits from HyD for the proposed works, taking account of the long processing time required for application of excavation permits.

#### 6.2.18 Miscellaneous

- (a) liaise with Regions and Customer Services Division of WSD with regard to the programme of chamber construction and its associated mains and propose measures to limit interruption to water supply to individual consumers to not more than eight (8) hours for each incident and at a frequency which shall be minimized in consultation with Regions.
- (b) carry out design check on structures affected by the proposed works.
- (c) liaise with the Government departments/parties and their consultants for the entrusted works.
- (d) liaise with Regions, Mechanical & Electrical/Maintenance Division and Development Divisions of WSD regarding the operation and maintenance requirements of the water supply system during the construction and the requirements for leakage detection facilities.
- (e) liaise with Regions, Mechanical & Electrical/Projects Division and Mechanical & Electrical/Maintenance Division of WSD regarding the requirements on mechanical and electrical plant and equipment including monitoring and control equipment.
- (f) consult all authorities having rights or powers in connection with the Project, the works or the site. Obtain the necessary approval from these authorities for construction of the proposed works.
- (g) consult and liaise with all concerned Government departments including EPD, HyD, TD, CEDD, DSD, the HKPF and other

concerned parties on any specific requirements and incorporate them into the design.

- (h) liaise with Regions of WSD for the design of making connections to the existing water mains and installing isolation valves along the existing water mains.
- (i) explore means to fast-track the project with a view to completing the proposed works as early as practicable, within the key dates specified in Clause 7.6 of this Brief.
- (h) liaise with Development(2) Division of WSD regarding the hydraulic design of the proposed works.

### 6.3 Tender Phase

The Consultants shall not proceed to the Tender Phase unless and until they have received the written instruction of the DR. The Consultant shall, but not limited to,

- 6.3.1 assist the Employer in the invitation of tenders for the proposed works (including the procurement of material, equipment or services necessary for the works but not supplied under the works contracts or WSD Term Contracts), draft tender notification, prepare and distribute tender documents, prepare and issue tender addenda, answer queries and carry out pre-tender meetings if required;
- 6.3.2 analyse the tenders and prepare tender assessments and recommendations, including evaluation of alternative tenders, and submit tender reports to the DR in a standard format as required by the DR;
- 6.3.3 prepare Articles of Agreement and other contract documents for signature, for retention by the DR and for issue to contractors, Resident Site Staff and other parties. Prepare publicity materials, attend signing ceremonies and any press briefings;
- 6.3.4 carry out debriefings to unsuccessful bidders if required.

## 6.4 Construction Phase

The Consultants shall not proceed to the Construction Phase unless and until they have received the written instruction of the DR. The Consultant shall, but not limited to,

- 6.4.1 accept the appointment as and carry out the duties of the Engineer under the terms of works contracts for works to be carried out under works contracts or accept the appointment as and carry out the duties of the Engineer's Representative under the terms of WSD Term Contracts for works to be carried out under WSD Term Contracts. The Consultants' attention is drawn to WBTC No. 15/99 and 15A/99 both entitled "Improvement to Quality of Maintenance Works".
- 6.4.2 co-ordinate the work carried out in conjunction with or by others including WSD, other Government departments/parties and public utility companies and handle the interfacing issues.
- 6.4.3 comment on any insurance policies submitted by the contractors.
- 6.4.4 review and update the designs as necessary during construction of the works, including works entrusted to other Government Departments/parties. Prepare such other designs, drawings, specifications or other documents as may be necessary for the completion of the works and the mitigation of the effects of the works on the public.
- 6.4.5 arrange and supervise the testing and commissioning of the works and establishment of the PMAs and DMAs to enable all the flow and pressure data to be monitored by one or more central monitoring computers designated by the Regional staff and to achieve optimum settings for the pressure reducing valves and pressure reducing valve controllers for the PMAs in reducing water leakage. The flow and pressure data should be accessible to all relevant Regional staff.
- 6.4.6 appoint, manage and supervise the Resident Site Staff. Provide training and refresher courses to the Resident Site Staff. The Consultants shall also identify special training requirement regarding the supervision of critical construction activities and critical structural

elements as well as installation of all necessary instrument/equipment and provide the necessary training to the Resident Site Staff.

- 6.4.7 provide with free uniform for the Resident Site Staff under the works contracts. The Consultants shall ensure that Resident Site Staff, except those who are not involved in site work, such as office-based staff, or those engaged in work requiring personal protective equipment which, in the opinion of the Consultants, render the wearing of uniform unsuitable or impractical, wear the uniform in carrying out their duties of administration and site supervision of the works contracts.
- 6.4.8 review the QSSP (against the activities described by the contractors in their Quality Plans prior to the execution of works if the contractors are required to submit the Quality Plans under the contracts) at the commencement of works, and conduct regular reviews of the QSSP with the Resident Site Staff subsequently, and as the need arises, and make necessary updating and modification in order to suit the actual circumstances, and the Consultants shall report in the progress reports the status of implementing the QSSP and any major modifications to it as a result of a review. The Consultants shall submit a revised QSSP to the DR if there is a major revision and as requested by the DR.
- 6.4.9 report on the performance of the contractors in the format advised by the DR.
- 6.4.10 report on the progress, financial situation, variation orders, claims for additional payment and requests for extensions of time and all other matters affecting the progress and financial situation of the Project.
- 6.4.11 plan, arrange and, where necessary, direct the inspection and testing of materials, equipment and workmanship.
- 6.4.12 liaise with Regions of WSD for making connections to the existing water mains. The connections are to be carried out by contractors under works contracts or WSD Term Contractors under the Assignment.
- 6.4.13 liaise with Contractors to programme their works and submit the detailed programme to DR for agreement.

- 6.4.14 supervise and coordinate the installation, testing and commissioning of materials and equipment and arrange for preparation and delivery of the relevant Maintenance and Instruction Manuals for the works.
- 6.4.15 liaise with HyD, TD, HKPF and other concerned parties regarding traffic diversions and traffic management proposals made by the contractors.
- 6.4.16 check, comment on and approve all submissions by the contractors.
- 6.4.17 administer the supply of materials, equipment or services that are required under the scope of the works contracts or administer the contracts for the supply of materials, equipment or services that are required prior to or separately from the works contracts or WSD Term Contracts. For both options, supervise and coordinate the installation, testing and commissioning of the materials, equipment or services.
- 6.4.18 monitor the flow and pressure data for a minimum period of 6 months after establishment of a PMA or DMA and carry out any necessary review, re-design, adjustment and modification of the works to ensure proper functioning of the completed works and successful establishment of the PMA or DMA. If the PMA or DMA cannot be functioned properly, any cost and time incurred as a result of a monitoring period longer than 6 months shall deem to be included in the Lump Sum fee of this assignment.
- 6.4.19 provide a detailed explanation with justification for any significant deviation between the design flow/pressure and the actual flow/pressure datum if occurred.
- 6.4.20 propose improvement works for any complaints received during the monitoring period.
- 6.4.21 develop and demonstrate on site to WSD's Regional staff the procedures for maintaining emergency water supply for the established PMAs and DMAs under different scenarios of system failures including extreme cases, such as the occurrence of fire fighting and water main burst at the same time, in each service reservoir supply zone as described in the

Final Reports of the Investigation Study after successful commissioning of PMAs and DMAs within each service reservoir supply zone. Consult the Regional staff on the locations of system failures for the on-site demonstration (one number to be specified for each service reservoir supply zone) and arrange carrying out the necessary valve operation work through the works contracts or works orders under WSD Term Contracts.

6.4.22 give three months' notice to the DR of the intention to issue to a contractor a completion or taking-over certificate for the whole or part of the contract works under any of the works contracts. Arrange joint inspections, before the issue of the completion certificates, for the purpose of handing over the completed works to relevant sections or Regions of WSD. Deliver to the DR, at least two weeks prior to inspection, all drawings, instructions, manuals, calculations and information as are necessary for the operation and maintenance of the completed works.

6.4.23 prepare finalised site plans for the completed works, when required, so as to enable the return of surplus land to Lands Department, the registration of WSD reserves and the finalization of land allocations.

6.4.24 respond to audit check and reports.

6.4.25 submit additional calculations and certificates for any design work carried out during the Construction Phase.

6.4.26 review and update the H2OMAP network models upon commissioning of the PMAs and DMAs, taking account of the actual flow and pressure data of the implemented PMAs and DMAs which may deviate from those assumed by the Consultants during the Design Phase of this Assignment and from those in the Investigation Study. Submit the results of the review and updating in the form of pressure contours, together with a soft copy of the updated network models.

6.4.27 submit all records and accounts relating to the works contracts and WSD Term Contracts.

6.4.28 settle the final account for payment to the Contractors.

## 7. Programme of Implementation

- 7.1 The due date for commencement of the Agreement is XX 2012 or the date written in the letter of acceptance, whichever is the later.
- 7.2 Pursuant to Clause 26(B) of the GCE, the Consultants shall submit the draft master programme and revised draft master programmes and the DR shall agree, or instruct, within the following periods:
- |   |   |
|---|---|
| (a) Submission of the draft master programme:     | Within 2 weeks from the date for commencement of the Agreement  |
| (b) Agreement of the draft master programme:      | Within 2 weeks from receipt of the draft programme or instruction for submission of the revised draft master programme. |
| (c) Submission of revised draft master programme: | Within 2 weeks from the instruction of the DR.  |
- 7.3 The draft master programme and revised draft master programme shall detail the activities to be carried out, key dates for particular tasks and any dates for decisions that may be required for the uninterrupted progress of the Assignment. The Consultants shall discuss with the DR during the above periods to agree the timing of submission of reports, other documents and plans for each of the main elements of the Assignment, for inclusion in the draft master programme and revised draft master programmes. The critical path(s) shall be clearly highlighted in the programmes.
- 7.4 The Consultants shall prepare and submit a detailed programme for the establishment of all the PMAs and DMAs within 4 months from the date of commencement of the Agreement. This programme shall detail all works for the construction of individual PMA or DMA chambers, CPP chambers, associated civil works and the installation of equipments to the chambers. Design shall be programmed to meet the key dates for completion of the works contracts and all works orders stated in Clause 7.6 of this Brief. Actual site work should commence within 12 months from the date for commencement of the Agreement. Construction of the CPP chambers shall not normally commence until the feasibility of construction of the associated PMA or DMA

chambers has been confirmed.

7.5 All programmes shall include a statement detailing the method of approach and the proposed allotment resources for the timely and satisfactory completion of the major tasks, deliverables, design, construction and supervision of the works. The Consultants shall endeavor to ensure that the statement is followed throughout the Assignment.

7.6 The key dates referred to in Clause 7.3 of this Brief include the following:

<b>Deliverable / Milestone</b>	<b>Due Date (from the date for commencement of the Agreement)</b>
Submission of Quality Site Supervision Plan for works orders for site investigations	3 weeks
Completion of all works for site investigations in Design Phase	4 months
Submission of a detailed programme for all the DMAs and PMAs	4 months
Submission of Quality Site Supervision Plan for works contracts	4 months
Submission of design report for all PMAs and DMAs	5 months
Submission of estimate of the cost of the works and deployment of Resident Site Staff	5 months
Submission of draft tender documents	5 months
Submission of finalised tender documents	7 months
Gazetting of tender invitation	8 months
Commencement of the works contracts	12 months

<b>Deliverable / Milestone</b>	<b>Due Date (from the date for commencement of the Agreement)</b>
Substantial completion of works contracts and all works orders	47 months
Finalisation of accounts for works contracts and works orders	59 months

7.7 The Consultants shall endeavor to ensure that the Assignment and the works contracts or the works orders are carried out in accordance with the master programme and detailed programme for the PMAs and DMAs and shall submit regular reviews as part of the progress reports referred to in Clause 8 of this Brief.

## **8. Progress Reports**

The Consultants shall submit to the DR progress reports at monthly intervals on all aspects of the Services relating it to the programmes referred to in Clause 7 of this Brief. The reports shall include a list of those parts of the Services the execution of which are behind the programmes together with proposals to expedite progress, so as to complete the work by the due date. The reports shall also include updated expenditure forecasts in accordance with Clause 9 of this Brief.

## **9. Financial Management**

9.1 At monthly intervals or at such other intervals as the DR may require, the Consultants shall submit reports on the current and the forecast expenditures on the various elements of the Project during the Construction Phase and the fees due to the Consultants during all Phases, in a form to be agreed by the DR.

9.2. The Consultants shall closely monitor progress and expenditure on the works contracts and any works orders and be alert to the possibility of the approved contract sums or works order estimates being exceeded. They shall advise the DR immediately if there is any likelihood of the approved contract sums or works order estimates being exceeded. To ensure sufficient time to obtain the necessary authorities and make funds available, the Consultants shall give the DR at least two (2) months notice in writing of the need to increase the cash flow to meet payments and shall provide the supporting information, except that if the need cannot be foreseen so far ahead, then the Consultants shall give as much notice as is possible in the circumstances. The following information shall be provided:

- (a) details of the proposed net increase broken down into the following categories:
  - (i) price fluctuation payment under the contract. An arithmetical derivation based on the projected percentage and the estimated final effective value of work done is required;
  - (ii) additional works and savings arising from the Bills of Quantities items and variation orders giving reasons for any increases or decreases in the earlier estimates; and
  - (iii) claims from the contractors. These shall be the Consultants' estimates of the amounts which will be certified for payment.
- (b) an assessment of increase in the consultancy fees and the Resident Site Staff costs if the contract period is likely to be extended or additional Resident Site Staff are required; and
- (c) a revised projected monthly cash flow pattern of contract payments, consultancy fees and all other expenditure.

## **10. Standards and Specifications**

The Consultants shall adopt such technical and design standards and specifications as are in current use by Government departments or, if non-existent, British Standard, Codes of Practice and Specifications. Should instances arise for which suitable standards or specifications do not exist or for which the current standards or specifications appear to require modifications or if by the adoption of current standards the Consultants would incur additional expenses not within reasonable contemplation, the Consultants shall submit

recommendations on appropriate alternatives to the DR for agreement.

## **11. Checking and Certification of the Design**

- 11.1 The Consultants shall submit to the DR in accordance with Clause 5.2(b) of this Brief, the design report for each PMA or DMA. Each report shall be accompanied by a certificate that the design calculations have been checked by another qualified independent designer in the Consultants' employment and that the drawings are in accordance with the design requirements. The standard form of "Design Certificate" set out in **Appendix 4.7** of the Handbook on Selection, Appointment and Administration of Engineering and Associated Consultants shall be used for this purpose wherever applicable.
- 11.2 Any revision of the design report during Construction Phase shall be accompanied by a certificate in accordance with the requirements set out in Clause 11.1 of this Brief.

## **12. Variations and Other Commitments**

- 12.1 All variations to the works contracts or works orders, exceeding \$300,000 for each variation, shall be approved by the DR. All variations to the contract works shall be covered by a variation order in a form to be agreed by the DR, except that no variation order will be required for increase or decrease in quantities arising from remeasurement of the items in the bills of quantities. For contract administered through WSD Term Contracts, the approved variation orders shall then be prepared by the Consultants under MWMS for formal issue to WSD Term Contractors.
- 12.2 The DR shall advise the Consultants of his approval or otherwise within 14 days of submission. The reasons for non-approval, which may include insufficiency of supporting information provided with the submissions, will be provided to the Consultants at the same time. If, because of the need for consultation or referral elsewhere, the DR is unable to give his decision within the period stated, then he shall inform the Consultants immediately and advise them when he will give his decision provided that, in any case, a different

period can be applied by mutual agreement.

- 12.3 Under sub-clause 25(A)(iii) of Special Conditions of Employment Clause S12, the Consultants shall report all claims to the DR within 14 days of their receipt. The DR shall provide the Employer's views to the Consultants within 60 days of receipt of the Consultants' principles of assessment of a claim.
- 12.4 Under sub-clause 25(A)(iv) of Special Conditions of Employment Clause S12, the Consultants shall report all delays to the DR within 14 days of the delay being identified. The DR shall provide the Employer's views to the Consultants within 28 days of receipt of the Consultants' assessment of extension of time.

### **13. Resident Site Staff**

- 13.1 The Schedule of Resident Site Staff Standards and Duties is at **Appendix V**. The inclusion or exclusion of any rank in this schedule is not to be taken as a requirement that the rank must be included or must be excluded from the Resident Site Staff Establishment.
- 13.2 The qualifications, the experience required and the duties of the Resident Site Staff are shown in **Appendix V** but it shall remain the responsibility of the Consultants to ensure that the Resident Site Staff are suitable in all respects and that all the Resident Site Staff remain courteous in all dealings relating to this Agreement including the construction works and conduct themselves in a manner that will not bring Government in general or WSD in particular into disrepute or cause embarrassment, publicly or non-publicly.
- 13.3 The Consultants shall submit to the DR at monthly intervals reports on the Resident Site Staff, structure, establishment and dates of events affecting the deployment of the Resident Site Staff.
- 13.4 The Resident Site Staff office and associated computer facilities, furniture etc. shall be provided by the contractors under the works contracts or WSD Term Contracts. The Consultants shall administer the works contracts or WSD Term Contracts for the construction of Resident Site Staff office and provision of associated facilities.

#### **14. Director's Representative (DR)**

- 14.1 The DR as defined in the General Conditions of Employment shall be the Assistant Director/New Works of Water Supplies Department or such other person as may be authorized by the Director of Water Supplies in writing and notified to the Consultants. The DR may delegate any of the powers and functions vested in him to other officers. If the Consultants are dissatisfied with a decision or instruction of any such officer, the matter shall be referred to the DR for a ruling.
- 14.2 During the course of the Agreement, the Consultants shall report directly to the DR.

#### **15. Control of the Project and Assignment**

- 15.1 Pursuant to Clause 13 of the General Conditions of Employment, the Consultants shall attend meetings of relevant committees, public consultation bodies and District Councils as necessary. The number of such meetings is estimated to be one hundred and twenty (120) over which the Employer shall pay the extra cost on a time charge basis.
- 15.2 The Consultants, when necessary, shall communicate and correspond directly with other Government departments/parties and their consultants, utility undertakers and various divisions of WSD to obtain information in connection with the Project, copying such correspondence to the DR.

#### **16. Information and Facilities Provided by the Employer**

- 16.1 All available information relevant to the Assignment will be provided to the Consultants. The relevant reports giving the background information are given in Clause 2.4 of this Brief.
- 16.2 The Consultants shall indicate for guidance those documents which they currently hold and those of which a copy may be needed, should the Assignment be awarded to them. A copy of each of the documents indicated as needed and agreed by the DR will be supplied free of charge by the DR on

request from the Consultants, except those currently available from the Publications Sales Unit of the Information Services Department. In the case of plans and drawings, a soft copy of each plan or drawing shall be provided free of charge if requested by the Consultants.

## **17. Consultants' Office and Staffing**

- 17.1 The Consultants shall maintain for the duration of this Agreement an office in Hong Kong under the control of the Project Director of the Consultants who shall be responsible for the Project. He shall have adequate authority and sufficient professional, technical and administrative support staff in all relevant disciplines to ensure progress to the satisfaction of the DR.
- 17.2 The Consultants shall also provide the staff and manpower input in accordance with the Technical Proposal which was submitted with the Consultants' tender for this Agreement. The DR shall have the right to check the time-log record of the Consultants' staff deployed for the Assignment.
- 17.3 If the DR considers that the performance of the Consultants is not satisfactory due to inadequate staffing and manpower input allocated to the Assignment, the Consultants shall. Upon the request of the DR, forthwith submit to the DR the time-log record of the staff deployed for the Assignment for the DR to check against the Technical Proposal.
- 17.4 The Consultants' failure to adhere to their staffing proposal, in particular the employment of core personnel of the Consultants and their sub-consultants, thus causing an adverse impact on the performance of the Services, shall be duly reflected in the Employer's performance report on the Consultants.
- 17.5 If the Consultants are unable to maintain any of the core personnel specified in the Technical Proposal, the Consultants shall as soon as possible report this to the DR and propose, for the DR's approval, a revised personnel arrangement which is equivalent to or better than the existing personnel arrangement, in term of qualifications, experience and competence.

## **18. Specialist and Sub-consultant Services**

- 18.1 The Consultants shall provide all specialist and sub-consultant services required for the satisfactory completion of the Assignment. No additional fees or expenses for the provision of such services rendered locally or overseas shall be payable by the Employer except as otherwise provided for in the Schedule of Fees.
- 18.2 Without derogating from the generality of Clause 38(i) of the General Conditions of Employment, the Consultants shall, upon the award of this Agreement and save as otherwise agreed by the DR, appoint the sub-consultants as proposed in their Technical Proposal for the Assignment. The DR shall have the right to check the sub-consultancy agreements. If the DR considers that the performance of the Consultants is not satisfactory due to inadequate staffing and manpower input allocated to the Assignment, the Consultants shall, upon the request of the DR, forthwith submit to the DR a certified copy of any or all of the sub-consultancy agreements.

## **19. Surveys**

- 19.1 The digital maps prepared by the Survey and Mapping Office of the Lands Department, where available for the area covered by the Project for which the Assignment forms a part, can be obtained from the Lands Department. The Consultants will be charged a fee for handling the digital map data. This fee shall be included in the Lump Sum.
- 19.2 All field survey work required for the proper execution of the Assignment shall, unless otherwise provided for in the Agreement, be the duty of the Consultants. A copy of the field notes, field data and resultant plans arising from these surveys shall be handed over to the DR upon completion of the Assignment. The accuracy as well as presentation of these surveys should be of a standard agreed by the DR.
- 19.3 The Consultants shall be responsible for all engineering surveys required in connection with the Assignment. The division of responsibility among the Consultants, the Lands Administration Office, and the Survey and Mapping Office of the Lands Department for other surveying required in connection

with the Assignment shall be as follows:

	<b>Task</b>	<b>Responsibility of</b>
(a)	(i) Provision of basic horizontal and vertical survey control.	Survey and Mapping Office
	(ii) Checking of given control point values and establishment of survey control network(s) based on survey control given vide (i).	Consultants
(b)	(i) Provision of basic mapping (at 1:1000 scale or other standard mapping relevant to the Assignment).	Survey and Mapping Office (excluding those specified as to be provided by the Consultants in the Agreement)
	(ii) Updating and verification of accuracy of information shown on plans supplied vide (a) as necessary in relation to the Assignment.	Consultants
	(iii) Carrying out detailed surveys for site investigations and for preparation of design and contract documents as necessary in relation to the Assignment.	Consultants
(c)	(i) Supply of digital data.	Land Information Centre, Lands Department
	(ii) Provision of a plan of the study area to the Land Information Centre for data preparation.	DR
	(iii) Completion of “Undertakings by Government Department for provision of Digital Data from Land Information Centre, Lands Department to Consultants” Form.	DR
	(iv) Completion of Digital Data Order Form.	Consultants

<b>Task</b>	<b>Responsibility of</b>
(v) Completion of “Undertaking by Consultants on the use of Government Digital Data from the Land Information Centre, Lands Department” Form.	Consultants
(vi) Before data collection, payment of the charges for the storage media and labour to prepare the data when informed by the Land Information Centre prior to data collection and collection of the Demand Note.	Consultants
(d) Supply of existing cadastral plans and records and co-ordinate data.	District Survey Office
(e) Computation of detailed dimensioned layouts of roads, drainage and WSD reserves, platforms, etc.	Consultants (checked and accepted by District Survey Office)
(f) Determination of site/lot boundaries, calculation of areas, etc. in connection with the agreed dimensioned layouts.	District Survey Office (in liaison with District Lands Office)
(g) (i) Processing of resumption and surrender for privately owned land in Development Area.	District Lands Office (in liaison with District Survey Office and Consultants)
(ii) Resumption and surrender plans and demarcation of lands to be resumed.	District Survey Office (in liaison with District Lands Office and Consultants)
(h) (i) Setting out of roads, drainage works, formation areas, etc.	Contractors (checked and accepted by Consultants, usually by Resident Site Staff under their supervision)
(ii) Initial site survey, and interim and final payment surveys.	Consultants, usually by Resident Site Staff under their supervision (joint survey with contractors or agreed survey with Contractors)

<b>Task</b>	<b>Responsibility of</b>
(i) Preparation of proposal plans for Government land allocations and grants.	District Survey Office (in liaison with District Lands Office)
(j) Preparation of dimensioned plans and setting out of boundaries of sites and lots for Government land allocation and for grants to architects (Government and Housing Authority).	District Survey Office
(k) As-constructed surveys (including records of levels on all underground pipelines, etc.).	Consultants, usually by Resident Site Staff under their supervision

## **20. Insurance**

The amount of insurance cover to be maintained in accordance with sub-clause 47(A) of S14 of the Special Conditions of Employment shall be twice the Lump Sum value of the fee, subject to a maximum of HK\$75 million and a minimum of HK\$5 million.

## Agreement No. CE 42/2011 (WS)

### Implementation of Pressure Management and District Metering for the Fresh Water Distribution Systems of the Tsuen Wan West, Tuen Mun, Sai Kung, Aberdeen and Red Hill Major Supply Zones

#### Design and Construction

#### List of Large Housing Estates

Tsuen Wan West MSZ:

<b>Supply Zone</b>	<b>Name of Large Housing Estate</b>
Ma Wan No.2 FWSR	Park Island
Sham Tseng West FWSR	Bellagio
	Lido Garden
	Rhine Garden
Tsing Yi East & Tsing Yi East No.2 FWSRs	Cheung Ching Estate
	Cheung Hong Estate
	Grand Horizon
	Greenfield Garden
	Mayfair Gardens
	Rambler Crest
Tsing Yi North High Level FWSR	Cheung Hang Estate
	Cheung Wang Estate
	Ching Wah Court
Tsing Yi North Low Level FWSR	Broadview Garden
	Cheung Fat Estate
	Cheung On Estate
	Ching Tai Court
	Tierra Verede
	Tivoli Garden
	Tsing Yi Estate
	Tsing Yi Garden
	Villa Esplanada

<b>Supply Zone</b>	<b>Name of Large Housing Estate</b>
Tsuen Wan West High Level FWSR	Allway Gardens
Tsuen Wan West Low Level FWSR	Tsuen Wan MTR Depot
	Clague Garden Estate
	Discovery Park
	Tsuen King Garden
	Tsuen Tak Gardens
Yau Kom Tau FWSR	Bayview Garden
	Belvedere Garden Phase II
	Belvedere Garden Phase III
	Summit Terrace

Tuen Mun MSZ:

<b>Supply Zone</b>	<b>Name of Large Housing Estate</b>
Siu Lam & Siu Lam No.2 FWSR	Aegean Coast
Tuen Mun East & Tuen Mun East No.2 FWSRs	Fu Tai Estate
	On Ting Estate
	Parkland Villas
	Sam Shing Estate
	Siu Lun Court
	Siu On Court
	The Trend Plaza
	Tuen Mun Town Plaza
	Nerine Cove
Tuen Mun North FWSR	Affluence Garden
	Chelsea Heights
	Kin Sang Estate
	Leung King Estate
	Po Tin Estate
	Siu Hin Court
	Siu Hong Court
	Siu Kwai Court
	Tai Hing Estate
	Tin King Estate

<b>Supply Zone</b>	<b>Name of Large Housing Estate</b>
Tuen Mun West & Tuen Mun West No.2 FWSRs	Butterfly Estate
	Glorious Garden
	Lung Mun Oasis
	Marina Garden
	Melody Garden
	Miami Beach Towers
	Pierhead Garden
	Siu Hei Court
	Siu Shan Court
	Wu King Estate
	Butterfly Estate

## Sai Kung MSZ:

<b>Supply Zone</b>	<b>Name of Large Housing Estate</b>
Tai Po Tsai FWSR	Hong Kong University of Science & Technology
Tiu Keng Leng FWSR	Bauhina Garden
	Beverly Garden
	Choi Ming Court
	Kin Ming Estate
	Kwong Ming Court
	Ocean Shores
	Park Central
	Po Ming Court
	Sheung Tak Estate
	Tong Ming Court
Tsueng Kwan O Plaza	
Tseung Kwan O East Low Level FWSR	Oscar by the Sea
Tseung Kwan O West High Level FWSR	Hong Sing Garden
	King Ming Court
	Tsui Lam Estate

<b>Supply Zone</b>	<b>Name of Large Housing Estate</b>
Tseung Kwan O West Low Level FWSR	Chung Ming Court
	Fu Ning Garden
	Hau Tak (1) Estate
	Hau Tak Estate
	King Lam Estate
	La Cite Nolde
	Metro City Phase 1
	Metro City Phase 2
	Ming Tak Estate
	Nan Fung Plaza
	On Ning Garden
	Po Lam Estate
	Serenity Place
	The Metropolis
	The Pinnacle
	Verbena Heights
	Wo Ming Court
	Yan Ming Court
Ying Ming Court	
Yu Ming Court	
Yuk Ming Court	

Aberdeen MSZ:

<b>Supply Zone</b>	<b>Name of Large Housing Estate</b>
Ap Lei Chau FWSR	Ap Lei Chau Estate
	Lei Tung Estate
	Sham Wan Towers
	Yue On Court
Ap Lei Chau No.2 FWSR	South Horizons - The Oasis
Ap Lei Chau FWSR & Ap Lei Chau No.2 FWSR	South Horizons
Wong Chuk Hang FWSR	Broadview Court
	South Wave Court

Red Hill MSZ:

<b>Supply Zone</b>	<b>Name of Large Housing Estate</b>
Red Hill FWSR	Red Hill Peninsula

**Agreement No. CE 42/2011 (WS)**

**Implementation of Pressure Management and District Metering  
for the Fresh Water Distribution Systems  
of the Tsuen Wan West, Tuen Mun, Sai Kung, Aberdeen  
and Red Hill Major Supply Zones**

**Design and Construction**

**List of Villages**

Tsuen Wan West MSZ:

<b>Supply Zone</b>	<b>Name of Villages</b>
Chuen Lung FWT & Ha Fa Shan FWBPT	Ha Fa Shan
Chuen Lung No.2 FWT	Chuen Lung
Ma Wan No.2 FWSR	Ma Wan Main Street
	Tin Liu
Hon Man Tsuen FWT	Tsuen Wan Sam Tsuen
	Yau Kam Tau
Sham Tseng FWT	Pai Min Kok
	Tsing Fai Tong
Sham Tseng West FWSR	Sham Tseng
	Tsing Lung Tau
	Yuen Tun
Tsing Yi East & Tsing Yi East No.2 FWSRs	Chung Mei Tsuen
	Lo Uk Tsuen
Tsing Yi North Low Level FWSR	Lam Tin Tsuen
	San Uk Tsuen
	Tai Wong Ha Tsuen
	Tsing Yi Fishermen and St. Paul's Village
	Yim Tin Kok Tsuen
Tsuen Wan West Low Level FWSR	Hoi Pa (South Platform)
	Shek Pik San Tsuen
Tsuen Wan West Ultra High Level FWSR	Sai Lau Kok
	San Tsuen
Yau Kom Tau FWPSR	Ting Kau

Tuen Mun MSZ:

Supply Zone	Name of Villages
Fu Tei Sheung Tsuen FWT	Fu Tei Tsuen
	Tseng Tau Tsuen (Middle and Lower)
Lung Kwu Sheung Tan FWT	Lung Kwu Tan
San Shek Wan FWT	Tsing Shan Tsuen
Siu Lam & Siu Lam No.2 FWSR	Luen On San Tsuen
	Nim Wan
	Siu Lam
	So Kwun Wat
	Tai Lam Chung
Tuen Mun East & Tuen Mun East No.2 FWSRs	Leung Tin Tsuen
	San Wai Tsai
	Tseng Tau Tsuen (Upper)
	Tuen Mun San Hui
	Fu Tei Tsuen
	Tseng Tau Tsuen (Middle and Lower)
	Tuen Mun Kau Hui
Tuen Mun North FWSR	Fuk Hang Tsuen (Lower)
	Fuk Hang Tsuen (Upper)
	Ho Tin Tsuen
	Kei Lun Wai
	Kwong Shan Tsuen
	Lam Tei
	Nai Wai
	Po Tong Ha
	San Hing Tsuen
	Siu Hang Tsuen
	Sun Fung Wai
	To Yuen Wai
	Tsing Chuen Wai
	Tsing Shan Tsuen
	Tsz Tin Tsuen
	Tuen Mun San Tsuen
	Tuen Tsz Wai

Supply Zone	Name of Villages
	Yeung Siu Hang
	Tuen Mun Kau Hui
Tuen Mun West & Tuen Mun West No.2 FWSRs	Lung Kwu Tan

Sai Kung MSZ:

Supply Zone	Name of Villages
Fei Ngo Shan FWSR	Kai Ham
	Man Wo
	Tai Lam Wu
	Tseng Lan Shue
	Pik Uk
Hoi Ha FWBPT	Hoi Ha
	Pak Sha O
Kei Pik Shan FWT	Hing Keng Shek
Muk Min Shan FWT	Shan Liu
Ngau Wu Tun FWT	Chek Keng
	Pak Tam Au
	To Kwa Peng
Pak A FWBPT	Pak A
	Pak Lap
	Tung A
Pak Kong Au FWSR	Che Keng Tuk
	Ho Chung
	Kau Sai San Tsuen
	Long Keng
	Lung Mei
	Ma Nam Wat
	Nam A
	Nam Shan
	Nam Wai
	O Long
	Pak Kong

Supply Zone	Name of Villages
	Pak Kong Au
	Pak Sha Wan
	Pak Tam
	Pak Tam Chung
	Pak Wai
	Sha Ha
	Sha Kok Mei
	Sha Tsui New Village
	She Tau
	Ta Ho Tun
	Tai Mong Tsai
	Tai Po Tsai
	Tai Wan
	Tsak Yue Wu
	Tsam Chuk Wan
	Tsiu Hang
	Tso Wo Hang
	Wo Mei
	Wong Chuk Wan
	Wong Keng Tei
Wong Yi Chau	
Pik Uk FWBPT	Pik Uk
	Tai Po Tsai
Sai Kung FWBPT	Mok Tse Che
Sai Kung FWSR	Hoi Pong Street
	Main Street (East)
	Main Street (West)
	Man Yee Wan New Village
	Po Tung Road (East)
	Po Tung Road (West)
	Sai Kung Road (North)
	Sai Kung Road (South)
	See Cheung Street

Supply Zone	Name of Villages
	Tai Street (East)
	Tai Street (West)
	Tak Lung Back Street
	Tak Lung Front Street
	Sha Tsui New Village
Tai Long FWBPT	Sai Wan
	Tai Long
Tai Po Tsai FWSR	Ha Yeung
	Hang Hau
	Mang Kung Uk
	Pan Long Wan
	Po Toi O
	Sheung Sze Wan
	Sheung Yeung
	Shui Bin
	Tai Hang Hau
	Tai Po Tsai
Tai Wan Tau	
Tai Shui Tseng FWT	Mau Ping New Village
	Wong Chuk Shan New Village
Tan Ka Wan FWBPT	Ko Lau Wan
	Tan Ka Wan
	Tap Mun
	Tap Mun Fishermen Village
Tseung Kwan O West Low Level FWSR	Fu Tau Chau
	Tin Ha Wan
	Tseung Kwan O
	Yau Yue Wan
	Hang Hau
Tui Min Hoi FWSR	Tui Min Hoi
Uk Tau FWBPT	Ha Yeung
	Ko Tong
	Tai Tan

Supply Zone	Name of Villages
	Uk Tau
Wong Mo Ying FWT	Ping Tun
	Shek Hang
	Tam Wat
	Tit Kim Hang
	Wong Mo Ying
Yim Tin Tsai FWBPT	Yim Tin Tsai

**Agreement No. CE 42/2011 (WS)**

**Implementation of Pressure Management and District Metering**

**for the Fresh Water Distribution Systems**

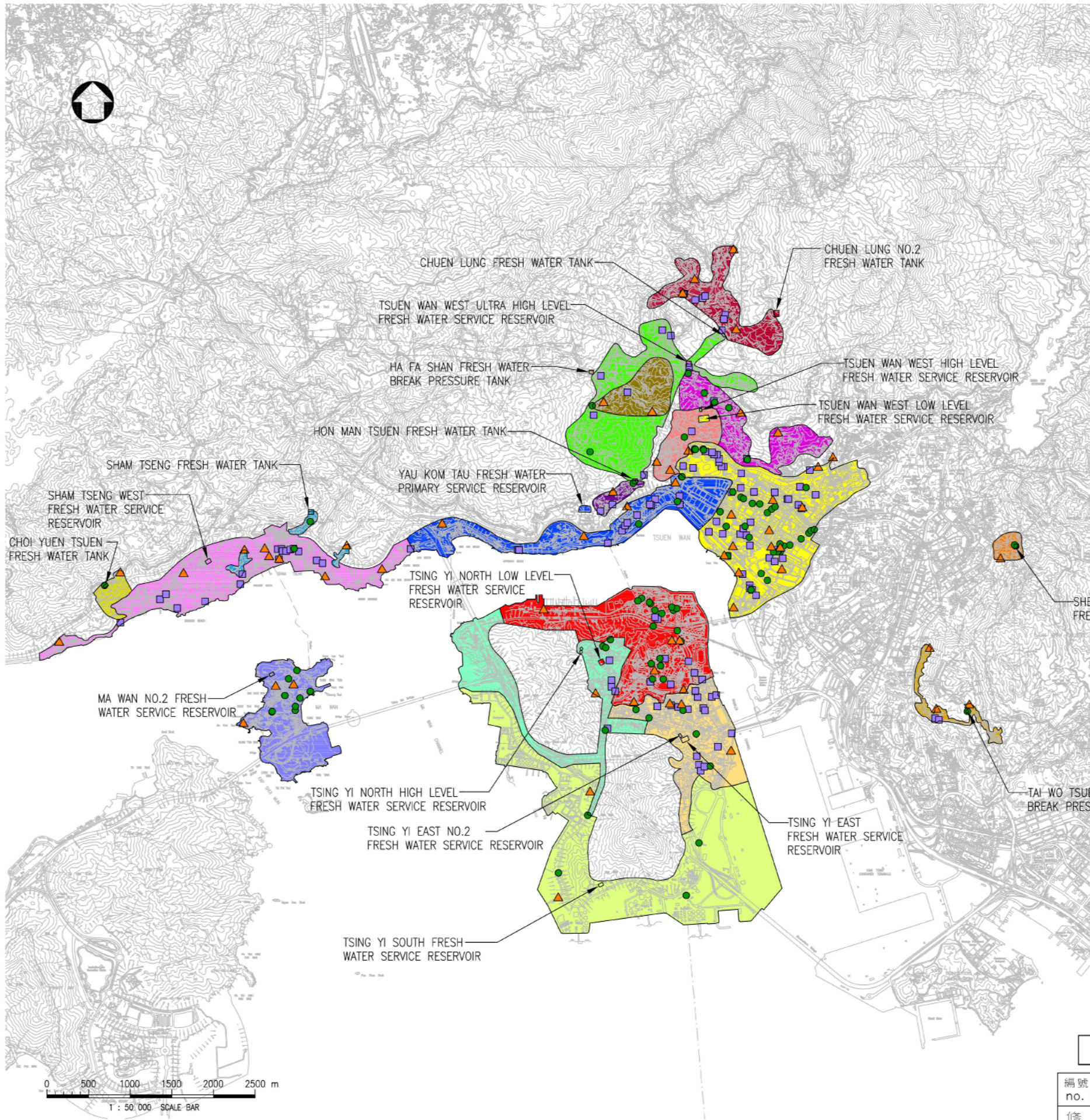
**of the Tsuen Wan West, Tuen Mun, Sai Kung, Aberdeen**

**and Red Hill Major Supply Zones**

**Design and Construction**

**General Layout of Proposed Chambers**

**Sketch Nos. SK 20485/1 to SK 20485/6**



**LEGEND :**

- MA WAN NO.2 FRESH WATER SERVICE RESERVOIR SUPPLY ZONE
- YAU KOM TAU FRESH WATER PRIMARY SERVICE RESERVOIR SUPPLY ZONE
- HA FA SHAN FRESH WATER BREAK PRESSURE TANK SUPPLY ZONE
- HON MAN TSUEN FRESH WATER TANK SUPPLY ZONE
- SHAM TSENG FRESH WATER TANK SUPPLY ZONE
- CHOI YUEN TSUEN FRESH WATER TANK SUPPLY ZONE
- SHEK LEI HANG FRESH WATER TANK SUPPLY ZONE
- TSUEN WAN WEST ULTRA HIGH LEVEL FRESH WATER SERVICE RESERVOIR SUPPLY ZONE
- TAI WO TSUEN FRESH WATER BREAK PRESSURE TANK SUPPLY ZONE
- PROPOSED PRESSURE MANAGEMENT AREA CHAMBER
- PROPOSED DISTRICT METERING AREA CHAMBER
- PROPOSED CRITICAL PRESSURE POINT CHAMBER

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**LEGEND :**

- TSING YI EAST AND TSING YI EAST NO.2 FRESH WATER SERVICE RESERVOIR SUPPLY ZONE
- TSING YI SOUTH FRESH WATER SERVICE RESERVOIR SUPPLY ZONE
- TSUEN WAN WEST LOW LEVEL FRESH WATER SERVICE RESERVOIR SUPPLY ZONE
- SHAM TSENG WEST FRESH WATER SERVICE RESERVOIR SUPPLY ZONE
- TSUEN WAN WEST HIGH LEVEL FRESH WATER SERVICE RESERVOIR SUPPLY ZONE
- TSING YI NORTH HIGH LEVEL FRESH WATER SERVICE RESERVOIR SUPPLY ZONE
- TSING YI NORTH LOW LEVEL FRESH WATER SERVICE RESERVOIR SUPPLY ZONE
- CHUEN LUNG FRESH WATER TANK SUPPLY ZONE
- CHUEN LUNG NO.2 FRESH WATER TANK SUPPLY ZONE

簽署 initial	日期 date
繪製 drawn	
核對 checked	
加簽 endorsed	
核准 approved	

合約編號 contract no.	—
檔案編號 file no.	—
工務編號 PWP no.	—

圖則名稱 drawing title  
IMPLEMENTATION OF PRESSURE MANAGEMENT AND DISTRICT METERING FOR THE FRESH WATER DISTRIBUTION SYSTEMS OF THE TSUEN WAN WEST, TUEN MUN, SAI KUNG, ABERDEEN AND RED HILL MAJOR SUPPLY ZONES - DESIGN AND CONSTRUCTION

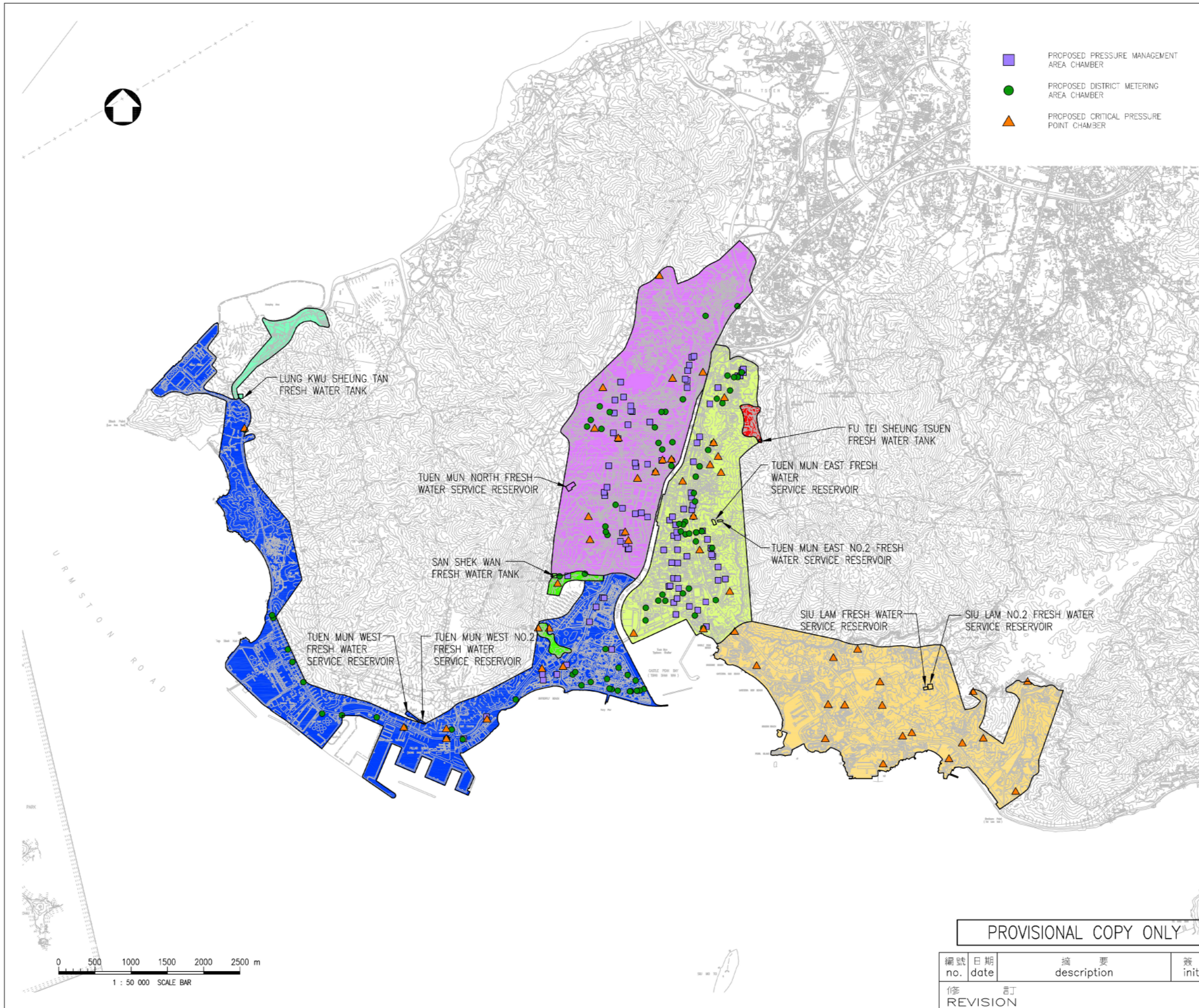
PROJECT STUDY AREA  
- TSUEN WAN WEST

圖則編號 drawing no.	比例 scale
SK 20485/1	1 : 50 000

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修訂 REVISION			

水務署  
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- PROPOSED PRESSURE MANAGEMENT AREA CHAMBER
- PROPOSED DISTRICT METERING AREA CHAMBER
- ▲ PROPOSED CRITICAL PRESSURE POINT CHAMBER

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- LEGEND :**
- SIU LAM AND SIU LAM NO.2 FRESH WATER SERVICE RESERVOIR SUPPLY ZONE
  - TUEN MUN EAST AND TUEN MUN EAST NO.2 FRESH WATER SERVICE RESERVOIR SUPPLY ZONE
  - TUEN MUN NORTH FRESH WATER SERVICE RESERVOIR SUPPLY ZONE
  - TUEN MUN WEST AND TUEN MUN WEST NO.2 FRESH WATER SERVICE RESERVOIR SUPPLY ZONE
  - LUNG KWU SHEUNG TAN FRESH WATER TANK SUPPLY ZONE
  - SAN SHEK WAN FRESH WATER TANK SUPPLY ZONE
  - FU TEI SHEUNG TSUEN FRESH WATER TANK SUPPLY ZONE

簽署 initial	日期 date
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檔案編號 —  
file no.

工務編號 —  
PWP no.

圖則名稱 drawing title  
 IMPLEMENTATION OF PRESSURE MANAGEMENT AND DISTRICT METERING SYSTEMS FOR THE FRESH WATER DISTRIBUTION SYSTEMS OF THE TSUEN WAN WEST, TUEN MUN, SA KUNG, ABERDEEN AND RED HILL MAJOR SUPPLY ZONES - DESIGN AND CONSTRUCTION

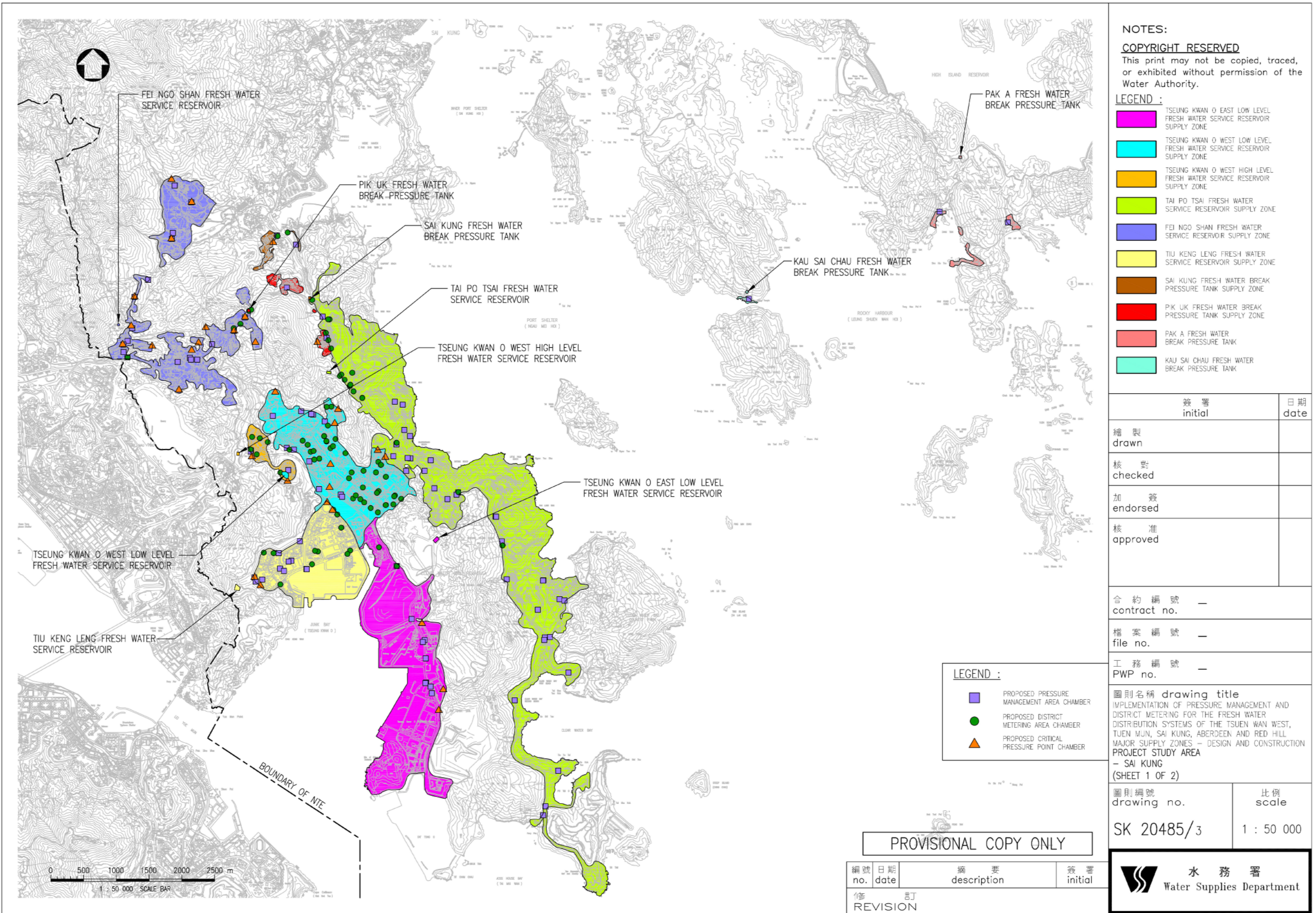
PROJECT STUDY AREA  
 - TUEN MUN

圖則編號 drawing no.	比例 scale
SK 20485/2	1 : 50 000

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編號 no.	日期 date	摘要 description	簽署 initial
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- LEGEND :**
- TSEUNG KWAN O EAST LOW LEVEL FRESH WATER SERVICE RESERVOIR SUPPLY ZONE
  - TSEUNG KWAN O WEST LOW LEVEL FRESH WATER SERVICE RESERVOIR SUPPLY ZONE
  - TSEUNG KWAN O WEST HIGH LEVEL FRESH WATER SERVICE RESERVOIR SUPPLY ZONE
  - TAI PO TSAI FRESH WATER SERVICE RESERVOIR SUPPLY ZONE
  - FEI NGO SHAN FRESH WATER SERVICE RESERVOIR SUPPLY ZONE
  - TIU KENG LENG FRESH WATER SERVICE RESERVOIR SUPPLY ZONE
  - SAI KUNG FRESH WATER BREAK PRESSURE TANK SUPPLY ZONE
  - PAK UK FRESH WATER BREAK PRESSURE TANK SUPPLY ZONE
  - PAK A FRESH WATER BREAK PRESSURE TANK
  - KAU SAI CHAU FRESH WATER BREAK PRESSURE TANK

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核對 checked	
加簽 endorsed	
核准 approved	

合約編號 —  
contract no.

檔案編號 —  
file no.

工務編號 —  
PWP no.

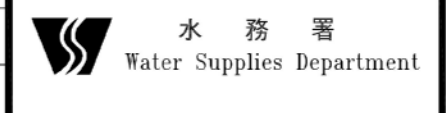
圖則名稱 drawing title  
 IMPLEMENTATION OF PRESSURE MANAGEMENT AND DISTRICT METERING FOR THE FRESH WATER DISTRIBUTION SYSTEMS OF THE TSUEN WAN WEST, TUEN MUN, SAI KUNG, ABERDEEN AND RED HILL MAJOR SUPPLY ZONES - DESIGN AND CONSTRUCTION PROJECT STUDY AREA - SAI KUNG (SHEET 1 OF 2)

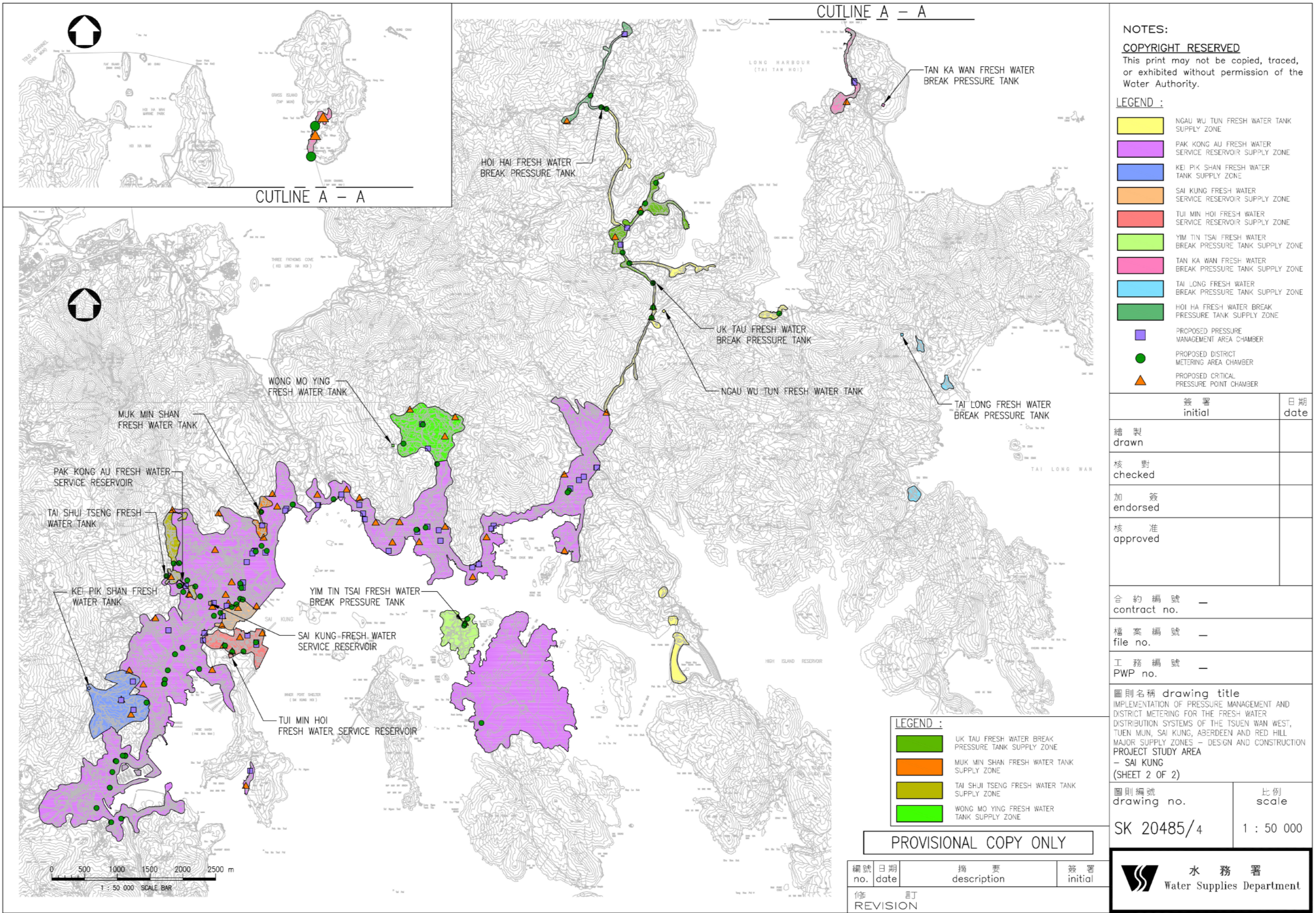
圖則編號 drawing no.	比例 scale
SK 20485/3	1 : 50 000

- LEGEND :**
- PROPOSED PRESSURE MANAGEMENT AREA CHAMBER
  - PROPOSED DISTRICT METERING AREA CHAMBER
  - PROPOSED CRITICAL PRESSURE POINT CHAMBER

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編號 no.	日期 date	摘要 description	簽署 initial
修訂 REVISION			





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- LEGEND :**
- NGAU WU TUN FRESH WATER TANK SUPPLY ZONE
  - PAK KONG AU FRESH WATER SERVICE RESERVOIR SUPPLY ZONE
  - KEI PIK SHAN FRESH WATER TANK SUPPLY ZONE
  - SAI KUNG FRESH WATER SERVICE RESERVOIR SUPPLY ZONE
  - TUI MIN HOI FRESH WATER SERVICE RESERVOIR SUPPLY ZONE
  - YIM TIN TSAI FRESH WATER BREAK PRESSURE TANK SUPPLY ZONE
  - TAN KA WAN FRESH WATER BREAK PRESSURE TANK SUPPLY ZONE
  - TAI LONG FRESH WATER BREAK PRESSURE TANK SUPPLY ZONE
  - HOI HA FRESH WATER BREAK PRESSURE TANK SUPPLY ZONE
  - PROPOSED PRESSURE MANAGEMENT AREA CHAMBER
  - PROPOSED DISTRICT METERING AREA CHAMBER
  - PROPOSED CRITICAL PRESSURE POINT CHAMBER

簽署 initial	日期 date
繪製 drawn	
核對 checked	
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合約編號 —  
contract no.

檔案編號 —  
file no.

工務編號 —  
PWP no.

圖則名稱 drawing title  
 IMPLEMENTATION OF PRESSURE MANAGEMENT AND DISTRICT METERING FOR THE FRESH WATER DISTRIBUTION SYSTEMS OF THE TSUEN WAN WEST, TUEN MUN, SAI KUNG, ABERDEEN AND RED HILL MAJOR SUPPLY ZONES - DESIGN AND CONSTRUCTION PROJECT STUDY AREA - SAI KUNG (SHEET 2 OF 2)

圖則編號 drawing no.	比例 scale
SK 20485/4	1 : 50 000

- LEGEND :**
- UK TAU FRESH WATER BREAK PRESSURE TANK SUPPLY ZONE
  - MUK MIN SHAN FRESH WATER TANK SUPPLY ZONE
  - TAI SHUI TSENG FRESH WATER TANK SUPPLY ZONE
  - WONG MO YING FRESH WATER TANK SUPPLY ZONE

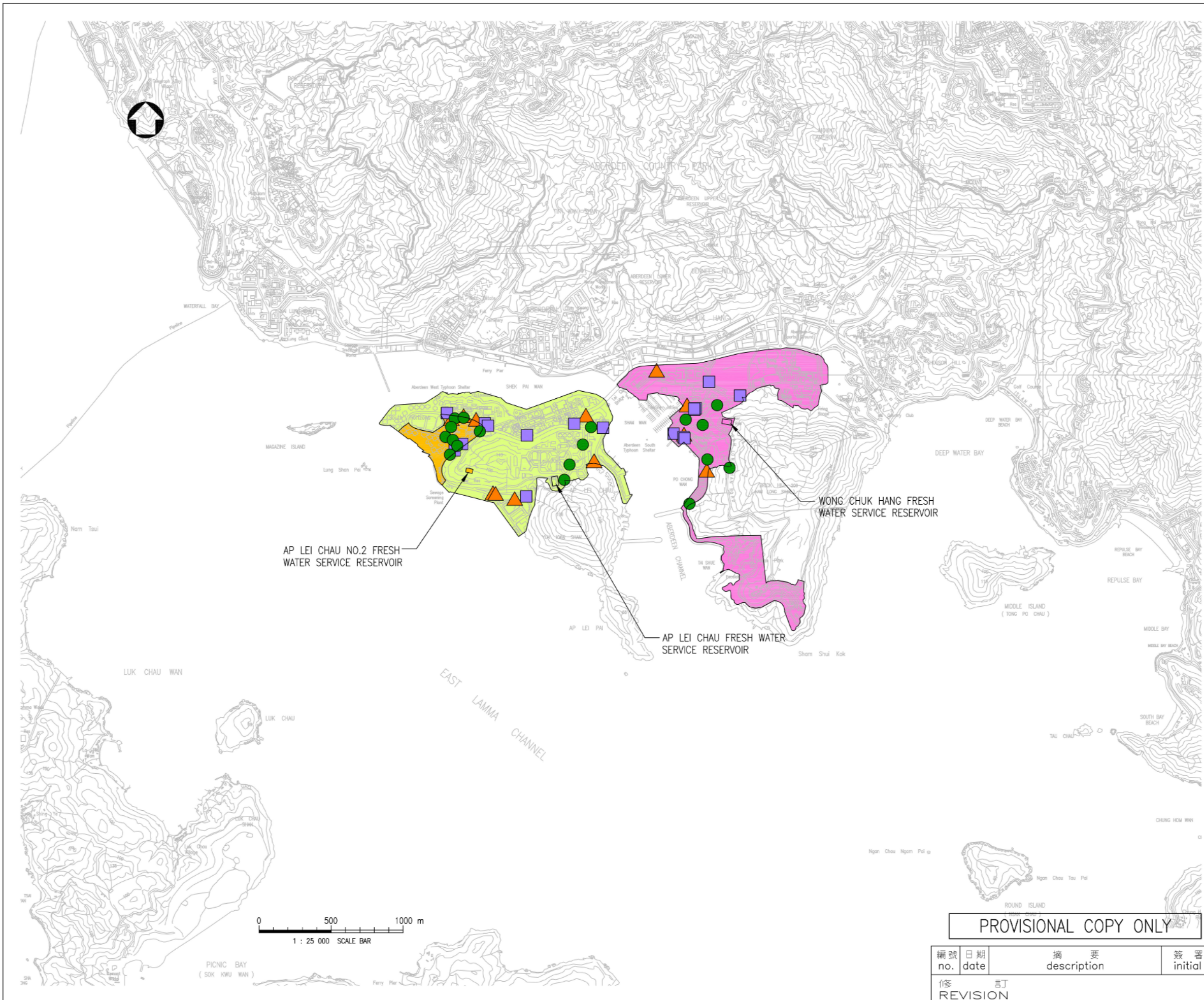
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CAD REF. SK20485\_04.dwg PLOTTING SCALE 1 : 50



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- LEGEND :**
- WONG CHUK HANG FRESH WATER SERVICE RESERVOIR SUPPLY ZONE
  - AP LEI CHAU FRESH WATER SERVICE RESERVOIR SUPPLY ZONE
  - AP LEI CHAU NO.2 FRESH WATER SERVICE RESERVOIR SUPPLY ZONE
  - PROPOSED PRESSURE MANAGEMENT AREA CHAMBER
  - PROPOSED DISTRICT METERING AREA CHAMBER
  - PROPOSED CRITICAL PRESSURE POINT CHAMBER

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工務編號 —  
PWP no.

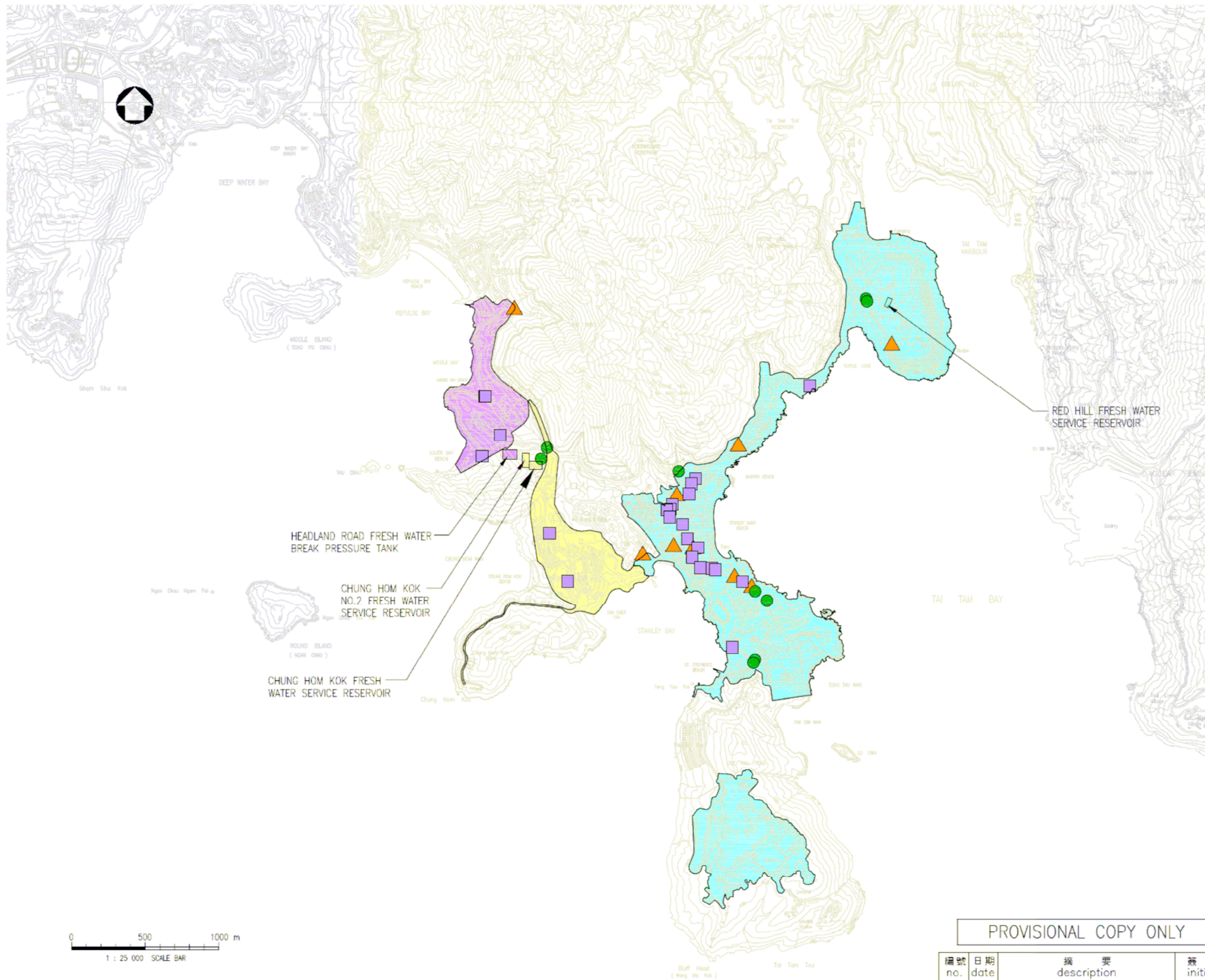
圖則名稱 drawing title  
 IMPLEMENTATION OF PRESSURE MANAGEMENT AND DISTRICT METERING FOR THE FRESH WATER DISTRIBUTION SYSTEMS OF THE TSUEN WAN WEST, TUEN MUN, SAI KUNG, ABERDEEN AND RED HILL MAJOR SUPPLY ZONES - DESIGN AND CONSTRUCTION  
 PROJECT STUDY AREA - ABERDEEN

圖則編號 drawing no.	比例 scale
SK 20485/5	1 : 25 000

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修訂 REVISION			

**水務署**  
Water Supplies Department



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**LEGEND :**

- CHUNG HOM KOK AND CHUNG HOM KOK NO.2 FRESH WATER SERVICE RESERVOIR SUPPLY ZONE
- RED HILL FRESH WATER SERVICE RESERVOIR SUPPLY ZONE
- HEADLAND ROAD FRESH WATER BREAK PRESSURE TANK SUPPLY ZONE
- PROPOSED PRESSURE MANAGEMENT AREA CHAMBER
- PROPOSED DISTRICT METERING AREA CHAMBER
- PROPOSED CRITICAL PRESSURE POINT CHAMBER

簽署 initial	日期 date
繪製 drawn	
核對 checked	
加簽 endorsed	
核准 approved	

合約編號 —  
contract no.

檔案編號 —  
file no.

工務編號 —  
PWP no.

圖則名稱 drawing title  
IMPLEMENTATION OF PRESSURE MANAGEMENT AND DISTRICT METERING FOR THE FRESH WATER DISTRIBUTION SYSTEMS OF THE TSUEN WAN WEST, TUEN MUN, SAI KUNG, ABERDEEN AND RED HILL MAJOR SUPPLY ZONES - DESIGN AND CONSTRUCTION  
PROJECT STUDY AREA - RED HILL

圖則編號 drawing no.	比例 scale
SK 20485/6	1 : 25 000

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修訂  
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Water Supplies Department

**Agreement No. CE 42/2011 (WS)**

**Implementation of Pressure Management and District Metering  
for the Fresh Water Distribution Systems  
of the Tsuen Wan West, Tuen Mun, Sai Kung, Aberdeen  
and Red Hill Major Supply Zones**

**Design and Construction**

**List of Drawings of the Final Reports of the Investigation Study**

*From the Final Report of Study on Pressure Management of the Fresh Water Distribution Systems of the Tsuen Wan West, Tuen Mun, Sai Kung, Aberdeen and Red Hill Major Supply Zones – Investigation*

<b>Drawing No.</b>	<b>Drawing Title</b>
<b>Tsuen Wan West Major Supply Zone</b>	
2843/B&V/12	PM and CM Schematic Design Choi Yuen Tsuen FWT Supply Zone
2843/B&V/12-1	PM and CM Schematic Design Choi Yuen Tsuen FWT Supply Zone (CYT-DMA01)
2843/B&V/08	PM and CM Schematic Design Chuen Lung FWT Supply Zone
2843/B&V/08-1	PM and CM Schematic Design Chuen Lung FWT Supply Zone (CL-DMA01, CL-PMA01)
2843/B&V/08-2	PM and CM Schematic Design Chuen Lung FWT Supply Zone (CL-DMA02, CL-PMA02)
2843/B&V/08-3	PM and CM Schematic Design Chuen Lung FWT Supply Zone (CL-DMA03, CL-PMA03)
2843/B&V/08-4	PM and CM Schematic Design Chuen Lung FWT Supply Zone (CL-DMA04, CL-PMA04)
2843/B&V/08-5	PM and CM Schematic Design Chuen Lung FWT Supply Zone (CL-DMA05, CL-PMA05)

<b>Drawing No.</b>	<b>Drawing Title</b>
2843/B&V/08-6	PM and CM Schematic Design Chuen Lung FWT Supply Zone (CL-DMA06)
2843/B&V/08-6A	PM and CM Schematic Design Chuen Lung FWT Supply Zone (CL-DMA06A, CL-PMA06A)
2843/B&V/09	PM and CM Schematic Design Chuen Lung No.2 FWT Supply Zone
2843/B&V/09-1	PM and CM Schematic Design Chuen Lung No.2 FWT Supply Zone (CL2-DMA01, CL2-PMA01)
2843/B&V/09-2	PM and CM Schematic Design Chuen Lung No.2 FWT Supply Zone (CL2-DMA02, CL2-PMA02)
2843/B&V/09-3	PM and CM Schematic Design Chuen Lung No.2 FWT Supply Zone (CL2-DMA03, CL2-PMA03)
2843/B&V/09-4	PM and CM Schematic Design Chuen Lung No.2 FWT Supply Zone (CL2-DMA04, CL2-PMA04)
2843/B&V/09-5	PM and CM Schematic Design Chuen Lung No.2 FWT Supply Zone (CL2-DMA05, CL2-PMA05)
2843/B&V/09-6	PM and CM Schematic Design Chuen Lung No.2 FWT Supply Zone (CL2-DMA06, CL2-PMA06)
2843/B&V/10	PM and CM Schematic Design Ha Fa Shan FWBPT Supply Zone
2843/B&V/10-1	PM and CM Schematic Design Ha Fa Shan FWBPT Supply Zone (HFS-DMA01)
2843/B&V/10-1A	PM and CM Schematic Design Ha Fa Shan FWBPT Supply Zone (HFS-DMA01A, HFS-PMA01A)
2843/B&V/18	PM and CM Schematic Design Hon Man Tsuen FWT Supply Zone
2843/B&V/18-1	PM and CM Schematic Design Hon Man Tsuen FWT Supply Zone (HMT-DMA01)
2843/B&V/18-1A	PM and CM Schematic Design Hon Man Tsuen FWT Supply Zone (HMT-DMA01A, HMT-PMA01A)
2843/B&V/11	PM and CM Schematic Design Ma Wan No.2 FWSR Supply Zone
2843/B&V/11-1	PM and CM Schematic Design Ma Wan No.2 FWSR Supply Zone (MW2-DMA01)
2843/B&V/11-2	PM and CM Schematic Design Ma Wan No.2 FWSR Supply Zone (MW2-DMA02)
2843/B&V/11-3	PM and CM Schematic Design Ma Wan No.2 FWSR Supply Zone (MW2-DMA03)
2843/B&V/11-4	PM and CM Schematic Design Ma Wan No.2 FWSR Supply Zone (MW2-DMA04)

<b>Drawing No.</b>	<b>Drawing Title</b>
2843/B&V/13	PM and CM Schematic Design Sham Tseng FWT Supply Zone
2843/B&V/13-1	PM and CM Schematic Design Sham Tseng FWT Supply Zone (ST-DMA01, ST-PMA01)
2843/B&V/13-2	PM and CM Schematic Design Sham Tseng FWT Supply Zone (ST-DMA02)
2843/B&V/13-3	PM and CM Schematic Design Sham Tseng FWT Supply Zone (ST-DMA03)
2843/B&V/14	PM and CM Schematic Design Sham Tseng West FWSR Supply Zone
2843/B&V/14-1	PM and CM Schematic Design Sham Tseng West FWSR Supply Zone (STW-DMA01, STW-PMA01)
2843/B&V/14-2	PM and CM Schematic Design Sham Tseng West FWSR Supply Zone (STW-DMA02, STW-PMA02)
2843/B&V/14-3	PM and CM Schematic Design Sham Tseng West FWSR Supply Zone (STW-DMA03, STW-PMA03)
2843/B&V/14-4	PM and CM Schematic Design Sham Tseng West FWSR Supply Zone (STW-DMA04, STW-PMA04)
2843/B&V/14-5	PM and CM Schematic Design Sham Tseng West FWSR Supply Zone (STW-DMA05, STW-PMA05)
2843/B&V/14-6	PM and CM Schematic Design Sham Tseng West FWSR Supply Zone (STW-DMA06, STW-PMA06)
2843/B&V/14-7	PM and CM Schematic Design Sham Tseng West FWSR Supply Zone (STW-DMA07, STW-PMA07)
2843/B&V/14-8	PM and CM Schematic Design Sham Tseng West FWSR Supply Zone (STW-DMA08, STW-PMA08)
2843/B&V/14-9	PM and CM Schematic Design Sham Tseng West FWSR Supply Zone (STW-DMA09, STW-PMA09)
2843/B&V/14-10	PM and CM Schematic Design Sham Tseng West FWSR Supply Zone (STW-DMA10, STW-PMA10)
2843/B&V/14-11	PM and CM Schematic Design Sham Tseng West FWSR Supply Zone (STW-DMA11, STW-PMA11)
2843/B&V/14-12	PM and CM Schematic Design Sham Tseng West FWSR Supply Zone (STW-DMA12, STW-PMA12)
2843/B&V/14-13	PM and CM Schematic Design Sham Tseng West FWSR Supply Zone (STW-DMA13, STW-PMA13)
2843/B&V/02	PM and CM Schematic Design Shek Lei Hang FWT Supply Zone
2843/B&V/02-1	PM and CM Schematic Design Shek Lei Hang FWT Supply Zone (SLH-DMA01)
2843/B&V/02-1A	PM and CM Schematic Design Shek Lei Hang FWT Supply Zone (SLH-DMA01A)

<b>Drawing No.</b>	<b>Drawing Title</b>
2843/B&V/04	PM and CM Schematic Design Tsing Yi East & Tsing Yi East No.2 FWSRs Supply Zone
2843/B&V/04-1	PM and CM Schematic Design Tsing Yi East & Tsing Yi East No.2 FWSRs Supply Zone (TYE-DMA01, TYE-PMA01)
2843/B&V/04-2	PM and CM Schematic Design Tsing Yi East & Tsing Yi East No.2 FWSRs Supply Zone (TYE-DMA02, TYE-PMA02)
2843/B&V/04-2A	PM and CM Schematic Design Tsing Yi East & Tsing Yi East No.2 FWSRs Supply Zone (TYE-DMA02A)
2843/B&V/04-3	PM and CM Schematic Design Tsing Yi East & Tsing Yi East No.2 FWSRs Supply Zone (TYE-DMA03, TYE-PMA03)
2843/B&V/04-3A	PM and CM Schematic Design Tsing Yi East & Tsing Yi East No.2 FWSRs Supply Zone (TYE-DMA03A, TYE-PMA03A)
2843/B&V/04-3B	PM and CM Schematic Design Tsing Yi East & Tsing Yi East No.2 FWSRs Supply Zone (TYE-DMA03B, TYE-PMA03B)
2843/B&V/04-3C	PM and CM Schematic Design Tsing Yi East & Tsing Yi East No.2 FWSRs Supply Zone (TYE-DMA03C, TYE-PMA03C)
2843/B&V/04-3D	PM and CM Schematic Design Tsing Yi East & Tsing Yi East No.2 FWSRs Supply Zone (TYE-DMA03D, TYE-PMA03D)
2843/B&V/04-4	PM and CM Schematic Design Tsing Yi East & Tsing Yi East No.2 FWSRs Supply Zone (TYE-DMA04)
2843/B&V/04-5	PM and CM Schematic Design Tsing Yi East & Tsing Yi East No.2 FWSRs Supply Zone (TYE-DMA05, TYE-PMA05)
2843/B&V/04-6	PM and CM Schematic Design Tsing Yi East & Tsing Yi East No.2 FWSRs Supply Zone (TYE-DMA06, TYE-PMA06)
2843/B&V/04-7	PM and CM Schematic Design Tsing Yi East & Tsing Yi East No.2 FWSRs Supply Zone (TYE-DMA07, TYE-PMA07)
2843/B&V/04-8	PM and CM Schematic Design Tsing Yi East & Tsing Yi East No.2 FWSRs Supply Zone (TYE-DMA08, TYE-PMA08)

<b>Drawing No.</b>	<b>Drawing Title</b>
2843/B&V/04-9	PM and CM Schematic Design Tsing Yi East & Tsing Yi East No.2 FWSRs Supply Zone (TYE-DMA09)
2843/B&V/04-10	PM and CM Schematic Design Tsing Yi East & Tsing Yi East No.2 FWSRs Supply Zone (TYE-DMA10)
2843/B&V/04-11	PM and CM Schematic Design Tsing Yi East & Tsing Yi East No.2 FWSRs Supply Zone (TYE-DMA11, TYE-PMA11)
2843/B&V/06	PM and CM Schematic Design Tsing Yi North High Level FWSR Supply Zone
2843/B&V/06-1	PM and CM Schematic Design Tsing Yi North High Level FWSR Supply Zone (TYN_H-DMA01)
2843/B&V/06-2	PM and CM Schematic Design Tsing Yi North High Level FWSR Supply Zone (TYN_H-DMA02)
2843/B&V/06-3	PM and CM Schematic Design Tsing Yi North High Level FWSR Supply Zone (TYN_H-DMA03, TYN_H-PMA03)
2843/B&V/06-4	PM and CM Schematic Design Tsing Yi North High Level FWSR Supply Zone (TYN_H-DMA04, TYN_H-PMA04)
2843/B&V/06-5	PM and CM Schematic Design Tsing Yi North High Level FWSR Supply Zone (TYN_H-DMA05)
2843/B&V/06-7	PM and CM Schematic Design Tsing Yi North High Level FWSR Supply Zone (TYN_H-DMA07, TYN_H-PMA07)
2843/B&V/06-8	PM and CM Schematic Design Tsing Yi North High Level FWSR Supply Zone (TYN_H-DMA08, TYN_H-PMA08)
2843/B&V/07	PM and CM Schematic Design Tsing Yi North Low Level FWSR Supply Zone
2843/B&V/07-1	PM and CM Schematic Design Tsing Yi North Low Level FWSR Supply Zone (TYN_L-DMA01)
2843/B&V/07-1A	PM and CM Schematic Design Tsing Yi North Low Level FWSR Supply Zone (TYN_L-DMA01A)

<b>Drawing No.</b>	<b>Drawing Title</b>
2843/B&V/07-1B	PM and CM Schematic Design Tsing Yi North Low Level FWSR Supply Zone (TYN_L-DMA01B)
2843/B&V/07-1C	PM and CM Schematic Design Tsing Yi North Low Level FWSR Supply Zone (TYN_L-DMA01C)
2843/B&V/07-1D	PM and CM Schematic Design Tsing Yi North Low Level FWSR Supply Zone (TYN_L-DMA01D)
2843/B&V/07-2	PM and CM Schematic Design Tsing Yi North Low Level FWSR Supply Zone (TYN_L-DMA02, TYN_L-PMA02)
2843/B&V/07-3	PM and CM Schematic Design Tsing Yi North Low Level FWSR Supply Zone (TYN_L-DMA03)
2843/B&V/07-3A	PM and CM Schematic Design Tsing Yi North Low Level FWSR Supply Zone (TYN_L-DMA03A)
2843/B&V/07-3B	PM and CM Schematic Design Tsing Yi North Low Level FWSR Supply Zone (TYN_L-DMA03B, TYN_L-PMA03B)
2843/B&V/07-4	PM and CM Schematic Design Tsing Yi North Low Level FWSR Supply Zone (TYN_L-DMA04)
2843/B&V/07-5	PM and CM Schematic Design Tsing Yi North Low Level FWSR Supply Zone (TYN_L-DMA05, TYN_L-PMA05)
2843/B&V/07-5A	PM and CM Schematic Design Tsing Yi North Low Level FWSR Supply Zone (TYN_L-DMA05A)
2843/B&V/07-5B	PM and CM Schematic Design Tsing Yi North Low Level FWSR Supply Zone (TYN_L-DMA05B)
2843/B&V/07-5C	PM and CM Schematic Design Tsing Yi North Low Level FWSR Supply Zone (TYN_L-DMA05C)
2843/B&V/07-5D	PM and CM Schematic Design Tsing Yi North Low Level FWSR Supply Zone (TYN_L-DMA05D)
2843/B&V/07-5E	PM and CM Schematic Design Tsing Yi North Low Level FWSR Supply Zone (TYN_L-DMA05E)
2843/B&V/07-6	PM and CM Schematic Design Tsing Yi North Low Level FWSR Supply Zone (TYN_L-DMA06)

<b>Drawing No.</b>	<b>Drawing Title</b>
2843/B&V/07-16	PM and CM Schematic Design Tsing Yi North Low Level FWSR Supply Zone (TYN_L-DMA16, TYN_L-PMA16)
2843/B&V/07-17	PM and CM Schematic Design Tsing Yi North Low Level FWSR Supply Zone (TYN_L-DMA17, TYN_L-PMA17)
2843/B&V/05	PM and CM Schematic Design Tsing Yi South FWSR Supply Zone
2843/B&V/05-1	PM and CM Schematic Design Tsing Yi South FWSR Supply Zone (TYS-DMA01)
2843/B&V/05-2	PM and CM Schematic Design Tsing Yi South FWSR Supply Zone (TYS-DMA02)
2843/B&V/05-3	PM and CM Schematic Design Tsing Yi South FWSR Supply Zone (TYS-DMA03)
2843/B&V/15	PM and CM Schematic Design Tsuen Wan West High Level FWSR Supply Zone
2843/B&V/15-1	PM and CM Schematic Design Tsuen Wan West High Level FWSR Supply Zone (TWW_H-DMA01)
2843/B&V/15-2	PM and CM Schematic Design Tsuen Wan West High Level FWSR Supply Zone (TWW_H-DMA02, TWW_H-PMA02)
2843/B&V/01	PM and CM Schematic Design Tsuen Wan West Low Level FWSR Supply Zone
2843/B&V/01-1	PM and CM Schematic Design Tsuen Wan West Low Level FWSR Supply Zone (TWW_L-DMA01, TWW_L-PMA01)
2843/B&V/01-1A	PM and CM Schematic Design Tsuen Wan West Low Level FWSR Supply Zone (TWW_L-DMA01A, TWW_L-PMA01A)
2843/B&V/01-1B	PM and CM Schematic Design Tsuen Wan West Low Level FWSR Supply Zone (TWW_L-DMA01B, TWW_L-PMA01B)
2843/B&V/01-1C	PM and CM Schematic Design Tsuen Wan West Low Level FWSR Supply Zone (TWW_L-DMA01C, TWW_L-PMA01C)
2843/B&V/01-1D	PM and CM Schematic Design Tsuen Wan West Low Level FWSR Supply Zone (TWW_L-DMA01D)

<b>Drawing No.</b>	<b>Drawing Title</b>
2843/B&V/01-1E	PM and CM Schematic Design Tsuen Wan West Low Level FWSR Supply Zone (TWW_L-DMA01E)
2843/B&V/01-1F	PM and CM Schematic Design Tsuen Wan West Low Level FWSR Supply Zone (TWW_L-DMA01F, TWW_L-PMA01F)
2843/B&V/01-2	PM and CM Schematic Design Tsuen Wan West Low Level FWSR Supply Zone (TWW_L-DMA02, TWW_L-PMA02)
2843/B&V/01-3	PM and CM Schematic Design Tsuen Wan West Low Level FWSR Supply Zone (TWW_L-DMA03, TWW_L-PMA03)
2843/B&V/01-5	PM and CM Schematic Design Tsuen Wan West Low Level FWSR Supply Zone (TWW_L-DMA05, TWW_L-PMA05)
2843/B&V/01-6	PM and CM Schematic Design Tsuen Wan West Low Level FWSR Supply Zone (TWW_L-DMA06, TWW_L-PMA06)
2843/B&V/01-7	PM and CM Schematic Design Tsuen Wan West Low Level FWSR Supply Zone (TWW_L-DMA07, TWW_L-PMA07)
2843/B&V/01-8	PM and CM Schematic Design Tsuen Wan West Low Level FWSR Supply Zone (TWW_L-DMA08)
2843/B&V/01-9	PM and CM Schematic Design Tsuen Wan West Low Level FWSR Supply Zone (TWW_L-DMA09)
2843/B&V/01-10	PM and CM Schematic Design Tsuen Wan West Low Level FWSR Supply Zone (TWW_L-DMA10, TWW_L-PMA10)
2843/B&V/01-11	PM and CM Schematic Design Tsuen Wan West Low Level FWSR Supply Zone (TWW_L-DMA11, TWW_L-PMA11)
2843/B&V/01-12	PM and CM Schematic Design Tsuen Wan West Low Level FWSR Supply Zone (TWW_L-DMA12, TWW_L-PMA12)
2843/B&V/01-13	PM and CM Schematic Design Tsuen Wan West Low Level FWSR Supply Zone (TWW_L-DMA13, TWW_L-PMA13)
2843/B&V/01-14	PM and CM Schematic Design Tsuen Wan West Low Level FWSR Supply Zone (TWW_L-DMA14, TWW_L-PMA14)

<b>Drawing No.</b>	<b>Drawing Title</b>
2843/B&V/01-15	PM and CM Schematic Design Tsuen Wan West Low Level FWSR Supply Zone (TWW_L-DMA15, TWW_L-PMA15)
2843/B&V/01-15A	PM and CM Schematic Design Tsuen Wan West Low Level FWSR Supply Zone (TWW_L-DMA15A)
2843/B&V/01-16	PM and CM Schematic Design Tsuen Wan West Low Level FWSR Supply Zone (TWW_L-DMA16, TWW_L-PMA16)
2843/B&V/01-17	PM and CM Schematic Design Tsuen Wan West Low Level FWSR Supply Zone (TWW_L-DMA17)
2843/B&V/01-17A	PM and CM Schematic Design Tsuen Wan West Low Level FWSR Supply Zone (TWW_L-DMA17A)
2843/B&V/01-17B	PM and CM Schematic Design Tsuen Wan West Low Level FWSR Supply Zone (TWW_L-DMA17B, TWW_L-PMA17B)
2843/B&V/01-18	PM and CM Schematic Design Tsuen Wan West Low Level FWSR Supply Zone (TWW_L-DMA18)
2843/B&V/01-18A	PM and CM Schematic Design Tsuen Wan West Low Level FWSR Supply Zone (TWW_L-DMA18A, TWW_L-PMA18A)
2843/B&V/01-19	PM and CM Schematic Design Tsuen Wan West Low Level FWSR Supply Zone (TWW_L-DMA19, TWW_L-PMA19)
2843/B&V/01-20	PM and CM Schematic Design Tsuen Wan West Low Level FWSR Supply Zone (TWW_L-DMA20, TWW_L-PMA20)
2843/B&V/01-21	PM and CM Schematic Design Tsuen Wan West Low Level FWSR Supply Zone (TWW_L-DMA21, TWW_L-PMA21)
2843/B&V/16	PM and CM Schematic Design Tsuen Wan West Ultra High Level FWSR Supply Zone
2843/B&V/16-1	PM and CM Schematic Design Tsuen Wan West Ultra High Level FWSR Supply Zone (TWW_UH-DMA01)
2843/B&V/16-2	PM and CM Schematic Design Tsuen Wan West Ultra High Level FWSR Supply Zone (TWW_UH-DMA02)

<b>Drawing No.</b>	<b>Drawing Title</b>
2843/B&V/16-3	PM and CM Schematic Design Tsuen Wan West Ultra High Level FWSR Supply Zone (TWW_UH-DMA03)
2843/B&V/16-3A	PM and CM Schematic Design Tsuen Wan West Ultra High Level FWSR Supply Zone (TWW_UH-DMA03A)
2843/B&V/16-3B	PM and CM Schematic Design Tsuen Wan West Ultra High Level FWSR Supply Zone (TWW_UH-DMA03B, TWW_UH-PMA03B)
2843/B&V/16-3C	PM and CM Schematic Design Tsuen Wan West Ultra High Level FWSR Supply Zone (TWW_UH-DMA03C)
2843/B&V/16-4	PM and CM Schematic Design Tsuen Wan West Ultra High Level FWSR Supply Zone (TWW_UH-DMA04, TWW_UH-PMA04)
2843/B&V/17	PM and CM Schematic Design Yau Kom Tau FWPSR Supply Zone
2843/B&V/17-1	PM and CM Schematic Design Yau Kom Tau FWPSR Supply Zone (YKT-DMA01, YKT-PMA01)
2843/B&V/17-1A	PM and CM Schematic Design Yau Kom Tau FWPSR Supply Zone (YKT-DMA01A)
2843/B&V/17-1AA	PM and CM Schematic Design Yau Kom Tau FWPSR Supply Zone (YKT-DMA01AA)
2843/B&V/17-2	PM and CM Schematic Design Yau Kom Tau FWPSR Supply Zone (YKT-DMA02)
2843/B&V/17-2A	PM and CM Schematic Design Yau Kom Tau FWPSR Supply Zone (YKT-DMA02A, YKT-PMA02A)
2843/B&V/17-2B	PM and CM Schematic Design Yau Kom Tau FWPSR Supply Zone (YKT-DMA02B, YKT-PMA02B)
2843/B&V/17-2C	PM and CM Schematic Design Yau Kom Tau FWPSR Supply Zone (YKT-DMA02C, YKT-PMA02C)
2843/B&V/17-2D	PM and CM Schematic Design Yau Kom Tau FWPSR Supply Zone (YKT-DMA02D, YKT-PMA02D)
2843/B&V/17-2E	PM and CM Schematic Design Yau Kom Tau FWPSR Supply Zone (YKT-DMA02E, YKT-PMA02E)
2843/B&V/17-3	PM and CM Schematic Design Yau Kom Tau FWPSR Supply Zone (YKT-DMA03, YKT-PMA03)
2843/B&V/17-4	PM and CM Schematic Design Yau Kom Tau FWPSR Supply Zone (YKT-DMA04, YKT-PMA04)

### **Tuen Mun Major Supply Zone**

2843/B&V/20	PM and CM Schematic Design Fu Tei Sheung Tsuen FWT Supply Zone
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<b>Drawing No.</b>	<b>Drawing Title</b>
2843/B&V/20-1	PM and CM Schematic Design Fu Tei Sheung Tsuen FWT Supply Zone (FTST-DMA01)
2843/B&V/20-1A	PM and CM Schematic Design Fu Tei Sheung Tsuen FWT Supply Zone (FTST-DMA01A, FTST-PMA01A)
2843/B&V/27	PM and CM Schematic Design Lung Kwu Sheung FWT Supply Zone
2843/B&V/27-1	PM and CM Schematic Design Lung Kwu Sheung FWT Supply Zone (LKST-DMA01)
2843/B&V/23	PM and CM Schematic Design San Shek Wan FWT Supply Zone
2843/B&V/23-1	PM and CM Schematic Design San Shek Wan FWT Supply Zone (SSW-DMA01)
2843/B&V/23-1A	PM and CM Schematic Design San Shek Wan FWT Supply Zone (SSW-DMA01A, SSW-PMA01A)
2843/B&V/31	PM and CM Schematic Design Siu Lam & Siu Lam No.2 FWSRs Supply Zone
2843/B&V/31-1	PM and CM Schematic Design Siu Lam & Siu Lam No.2 FWSRs Supply Zone (SL-DMA01, SL-PMA01)
2843/B&V/31-2	PM and CM Schematic Design Siu Lam & Siu Lam No.2 FWSRs Supply Zone (SL-DMA02, SL-PMA02)
2843/B&V/31-2A	PM and CM Schematic Design Siu Lam & Siu Lam No.2 FWSRs Supply Zone (SL-DMA02A)
2843/B&V/31-3	PM and CM Schematic Design Siu Lam & Siu Lam No.2 FWSRs Supply Zone (SL-DMA03, SL-PMA03)
2843/B&V/31-4	PM and CM Schematic Design Siu Lam & Siu Lam No.2 FWSRs Supply Zone (SL-DMA04, SL-PMA04)
2843/B&V/31-5	PM and CM Schematic Design Siu Lam & Siu Lam No.2 FWSRs Supply Zone (SL-DMA05, SL-PMA05)
2843/B&V/31-6	PM and CM Schematic Design Siu Lam & Siu Lam No.2 FWSRs Supply Zone (SL-DMA06, SL-PMA06)
2843/B&V/31-7	PM and CM Schematic Design Siu Lam & Siu Lam No.2 FWSRs Supply Zone (SL-DMA07, SL-PMA07)

<b>Drawing No.</b>	<b>Drawing Title</b>
2843/B&V/31-8	PM and CM Schematic Design Siu Lam & Siu Lam No.2 FWSRs Supply Zone (SL-DMA08, SL-PMA08)
2843/B&V/31-9	PM and CM Schematic Design Siu Lam & Siu Lam No.2 FWSRs Supply Zone (SL-DMA09, SL-PMA09)
2843/B&V/31-10	PM and CM Schematic Design Siu Lam & Siu Lam No.2 FWSRs Supply Zone (SL-DMA10, SL-PMA10)
2843/B&V/31-11	PM and CM Schematic Design Siu Lam & Siu Lam No.2 FWSRs Supply Zone (SL-DMA11, SL-PMA11)
2843/B&V/31-12	PM and CM Schematic Design Siu Lam & Siu Lam No.2 FWSRs Supply Zone (SL-DMA12, SL-PMA12)
2843/B&V/31-13	PM and CM Schematic Design Siu Lam & Siu Lam No.2 FWSRs Supply Zone (SL-DMA13, SL-PMA13)
2843/B&V/31-14	PM and CM Schematic Design Siu Lam & Siu Lam No.2 FWSRs Supply Zone (SL-DMA14, SL-PMA14)
2843/B&V/31-15	PM and CM Schematic Design Siu Lam & Siu Lam No.2 FWSRs Supply Zone (SL-DMA15)
2843/B&V/31-16	PM and CM Schematic Design Siu Lam & Siu Lam No.2 FWSRs Supply Zone (SL-DMA16, SL-PMA16)
2843/B&V/31-17	PM and CM Schematic Design Siu Lam & Siu Lam No.2 FWSRs Supply Zone (SL-DMA17, SL-PMA17)
2843/B&V/31-18	PM and CM Schematic Design Siu Lam & Siu Lam No.2 FWSRs Supply Zone (SL-DMA18, SL-PMA18)
2843/B&V/31-19	PM and CM Schematic Design Siu Lam & Siu Lam No.2 FWSRs Supply Zone (SL-DMA19, SL-PMA19)
2843/B&V/31-20	PM and CM Schematic Design Siu Lam & Siu Lam No.2 FWSRs Supply Zone (SL-DMA20, SL-PMA20)
2843/B&V/31-21	PM and CM Schematic Design Siu Lam & Siu Lam No.2 FWSRs Supply Zone (SL-DMA21)
2843/B&V/31-21A	PM and CM Schematic Design Siu Lam & Siu Lam No.2 FWSRs Supply Zone (SL-DMA21A, SL-PMA21A)

<b>Drawing No.</b>	<b>Drawing Title</b>
2843/B&V/31-21B	PM and CM Schematic Design Siu Lam & Siu Lam No.2 FWSRs Supply Zone (SL-DMA21B)
2843/B&V/31-22	PM and CM Schematic Design Siu Lam & Siu Lam No.2 FWSRs Supply Zone (SL-DMA22, SL-PMA22)
2843/B&V/31-23	PM and CM Schematic Design Siu Lam & Siu Lam No.2 FWSRs Supply Zone (SL-DMA23)
2843/B&V/31-24	PM and CM Schematic Design Siu Lam & Siu Lam No.2 FWSRs Supply Zone (SL-DMA24, SL-PMA24)
2843/B&V/31-25	PM and CM Schematic Design Siu Lam & Siu Lam No.2 FWSRs Supply Zone (SL-DMA25, SL-PMA25)
2843/B&V/31-26	PM and CM Schematic Design Siu Lam & Siu Lam No.2 FWSRs Supply Zone (SL-DMA26, SL-PMA26)
2843/B&V/31-27	PM and CM Schematic Design Siu Lam & Siu Lam No.2 FWSRs Supply Zone (SL-DMA27, SL-PMA27)
2843/B&V/31-28	PM and CM Schematic Design Siu Lam & Siu Lam No.2 FWSRs Supply Zone (SL-DMA28)
2843/B&V/31-29	PM and CM Schematic Design Siu Lam & Siu Lam No.2 FWSRs Supply Zone (SL-DMA29, SL-PMA29)
2843/B&V/31-30	PM and CM Schematic Design Siu Lam & Siu Lam No.2 FWSRs Supply Zone (SL-DMA30, SL-PMA30)
2843/B&V/31-31	PM and CM Schematic Design Siu Lam & Siu Lam No.2 FWSRs Supply Zone (SL-DMA31, SL-PMA31)
2843/B&V/31-32	PM and CM Schematic Design Siu Lam & Siu Lam No.2 FWSRs Supply Zone (SL-DMA32, SL-PMA32)
2843/B&V/31-33	PM and CM Schematic Design Siu Lam & Siu Lam No.2 FWSRs Supply Zone (SL-DMA33, SL-PMA33)
2843/B&V/31-TMF	PM and CM Schematic Design Siu Lam & Siu Lam No.2 FWSRs Supply Zone (TMF)
2843/B&V/19	PM and CM Schematic Design Tuen Mun East & Tuen Mun East No.2 FWSRs Supply Zone

<b>Drawing No.</b>	<b>Drawing Title</b>
2843/B&V/19-1	PM and CM Schematic Design Tuen Mun East & Tuen Mun East No.2 FWSRs Supply Zone (TME-DMA01)
2843/B&V/19-3	PM and CM Schematic Design Tuen Mun East & Tuen Mun East No.2 FWSRs Supply Zone (TME-DMA03, TME-PMA03)
2843/B&V/19-4	PM and CM Schematic Design Tuen Mun East & Tuen Mun East No.2 FWSRs Supply Zone (TME-DMA04)
2843/B&V/19-6	PM and CM Schematic Design Tuen Mun East & Tuen Mun East No.2 FWSRs Supply Zone (TME-DMA06, TME-PMA06)
2843/B&V/19-6A	PM and CM Schematic Design Tuen Mun East & Tuen Mun East No.2 FWSRs Supply Zone (TME-DMA06A)
2843/B&V/19-8	PM and CM Schematic Design Tuen Mun East & Tuen Mun East No.2 FWSRs Supply Zone (TME-DMA08, TME-PMA08)
2843/B&V/19-9	PM and CM Schematic Design Tuen Mun East & Tuen Mun East No.2 FWSRs Supply Zone (TME-DMA09, TME-PMA09)
2843/B&V/19-9A	PM and CM Schematic Design Tuen Mun East & Tuen Mun East No.2 FWSRs Supply Zone (TME-DMA09A)
2843/B&V/19-10	PM and CM Schematic Design Tuen Mun East & Tuen Mun East No.2 FWSRs Supply Zone (TME-DMA10, TME-PMA10)
2843/B&V/19-10A	PM and CM Schematic Design Tuen Mun East & Tuen Mun East No.2 FWSRs Supply Zone (TME-DMA10A)
2843/B&V/19-10B	PM and CM Schematic Design Tuen Mun East & Tuen Mun East No.2 FWSRs Supply Zone (TME-DMA10B)
2843/B&V/19-10C	PM and CM Schematic Design Tuen Mun East & Tuen Mun East No.2 FWSRs Supply Zone (TME-DMA10C)
2843/B&V/19-11	PM and CM Schematic Design Tuen Mun East & Tuen Mun East No.2 FWSRs Supply Zone (TME-DMA11, TME-PMA11)
2843/B&V/19-12	PM and CM Schematic Design Tuen Mun East & Tuen Mun East No.2 FWSRs Supply Zone (TME-DMA12, TME-PMA12)
2843/B&V/19-13	PM and CM Schematic Design Tuen Mun East & Tuen Mun East No.2 FWSRs Supply Zone (TME-DMA13, TME-PMA13)

<b>Drawing No.</b>	<b>Drawing Title</b>
2843/B&V/19-14	PM and CM Schematic Design Tuen Mun East & Tuen Mun East No.2 FWSRs Supply Zone (TME-DMA14, TME-PMA14)
2843/B&V/19-14A	PM and CM Schematic Design Tuen Mun East & Tuen Mun East No.2 FWSRs Supply Zone (TME-DMA14A)
2843/B&V/19-14B	PM and CM Schematic Design Tuen Mun East & Tuen Mun East No.2 FWSRs Supply Zone (TME-DMA14B)
2843/B&V/19-14C	PM and CM Schematic Design Tuen Mun East & Tuen Mun East No.2 FWSRs Supply Zone (TME-DMA14C)
2843/B&V/19-15	PM and CM Schematic Design Tuen Mun East & Tuen Mun East No.2 FWSRs Supply Zone (TME-DMA15, TME-PMA15)
2843/B&V/19-16	PM and CM Schematic Design Tuen Mun East & Tuen Mun East No.2 FWSRs Supply Zone (TME-DMA16, TME-PMA16)
2843/B&V/19-16A	PM and CM Schematic Design Tuen Mun East & Tuen Mun East No.2 FWSRs Supply Zone (TME-DMA16A)
2843/B&V/19-16B	PM and CM Schematic Design Tuen Mun East & Tuen Mun East No.2 FWSRs Supply Zone (TME-DMA16B)
2843/B&V/19-16C	PM and CM Schematic Design Tuen Mun East & Tuen Mun East No.2 FWSRs Supply Zone (TME-DMA16C)
2843/B&V/19-16D	PM and CM Schematic Design Tuen Mun East & Tuen Mun East No.2 FWSRs Supply Zone (TME-DMA16D)
2843/B&V/19-18	PM and CM Schematic Design Tuen Mun East & Tuen Mun East No.2 FWSRs Supply Zone (TME-DMA18)
2843/B&V/19-18A	PM and CM Schematic Design Tuen Mun East & Tuen Mun East No.2 FWSRs Supply Zone (TME-DMA18A, TME-PMA18A)
2843/B&V/19-19	PM and CM Schematic Design Tuen Mun East & Tuen Mun East No.2 FWSRs Supply Zone (TME-DMA19, TME-PMA19)
2843/B&V/19-20	PM and CM Schematic Design Tuen Mun East & Tuen Mun East No.2 FWSRs Supply Zone (TME-DMA20, TME-PMA20)
2843/B&V/19-23	PM and CM Schematic Design Tuen Mun East & Tuen Mun East No.2 FWSRs Supply Zone (TME-DMA23)

<b>Drawing No.</b>	<b>Drawing Title</b>
2843/B&V/19-24	PM and CM Schematic Design Tuen Mun East & Tuen Mun East No.2 FWSRs Supply Zone (TME-DMA24)
2843/B&V/19-25	PM and CM Schematic Design Tuen Mun East & Tuen Mun East No.2 FWSRs Supply Zone (TME-DMA25, TME-PMA25)
2843/B&V/19-26	PM and CM Schematic Design Tuen Mun East & Tuen Mun East No.2 FWSRs Supply Zone (TME-DMA26)
2843/B&V/19-26A	PM and CM Schematic Design Tuen Mun East & Tuen Mun East No.2 FWSRs Supply Zone (TME-DMA26A)
2843/B&V/19-27	PM and CM Schematic Design Tuen Mun East & Tuen Mun East No.2 FWSRs Supply Zone (TME-DMA27, TME-PMA27)
2843/B&V/19-28	PM and CM Schematic Design Tuen Mun East & Tuen Mun East No.2 FWSRs Supply Zone (TME-DMA28, TME-PMA28)
2843/B&V/19-29	PM and CM Schematic Design Tuen Mun East & Tuen Mun East No.2 FWSRs Supply Zone (TME-DMA29, TME-PMA29)
2843/B&V/19-30	PM and CM Schematic Design Tuen Mun East & Tuen Mun East No.2 FWSRs Supply Zone (TME-DMA30)
2843/B&V/19-31	PM and CM Schematic Design Tuen Mun East & Tuen Mun East No.2 FWSRs Supply Zone (TME-DMA31, TME-PMA31)
2843/B&V/19-32	PM and CM Schematic Design Tuen Mun East & Tuen Mun East No.2 FWSRs Supply Zone (TME-DMA32, TME-PMA32)
2843/B&V/19-33	PM and CM Schematic Design Tuen Mun East & Tuen Mun East No.2 FWSRs Supply Zone (TME-DMA33, TME-PMA33)
2843/B&V/22	PM and CM Schematic Design Tuen Mun North FWSR Supply Zone
2843/B&V/22-1	PM and CM Schematic Design Tuen Mun North FWSR Supply Zone (TMN-DMA01, TMN-PMA01)
2843/B&V/22-2	PM and CM Schematic Design Tuen Mun North FWSR Supply Zone (TMN-DMA02)
2843/B&V/22-3	PM and CM Schematic Design Tuen Mun North FWSR Supply Zone (TMN-DMA03, TMN-PMA03)
2843/B&V/22-4	PM and CM Schematic Design Tuen Mun North FWSR Supply Zone (TMN-DMA04, TMN-PMA04)

<b>Drawing No.</b>	<b>Drawing Title</b>
2843/B&V/22-5	PM and CM Schematic Design Tuen Mun North FWSR Supply Zone (TMN-DMA05)
2843/B&V/22-6	PM and CM Schematic Design Tuen Mun North FWSR Supply Zone (TMN-DMA06, TMN-PMA06)
2843/B&V/22-8	PM and CM Schematic Design Tuen Mun North FWSR Supply Zone (TMN-DMA08, TMN-PMA08)
2843/B&V/22-8A	PM and CM Schematic Design Tuen Mun North FWSR Supply Zone (TMN-DMA08A)
2843/B&V/22-9	PM and CM Schematic Design Tuen Mun North FWSR Supply Zone (TMN-DMA09, TMN-PMA09)
2843/B&V/22-9A	PM and CM Schematic Design Tuen Mun North FWSR Supply Zone (TMN-DMA09A)
2843/B&V/22-10	PM and CM Schematic Design Tuen Mun North FWSR Supply Zone (TMN-DMA10, TMN-PMA10)
2843/B&V/22-11	PM and CM Schematic Design Tuen Mun North FWSR Supply Zone (TMN-DMA11)
2843/B&V/22-13	PM and CM Schematic Design Tuen Mun North FWSR Supply Zone (TMN-DMA13, TMN-PMA13)
2843/B&V/22-13A	PM and CM Schematic Design Tuen Mun North FWSR Supply Zone (TMN-DMA13A)
2843/B&V/22-13B	PM and CM Schematic Design Tuen Mun North FWSR Supply Zone (TMN-DMA13B)
2843/B&V/22-13C	PM and CM Schematic Design Tuen Mun North FWSR Supply Zone (TMN-DMA13C)
2843/B&V/22-13D	PM and CM Schematic Design Tuen Mun North FWSR Supply Zone (TMN-DMA13D)
2843/B&V/22-14	PM and CM Schematic Design Tuen Mun North FWSR Supply Zone (TMN-DMA14, TMN-PMA14)
2843/B&V/22-15	PM and CM Schematic Design Tuen Mun North FWSR Supply Zone (TMN-DMA15, TMN-PMA15)
2843/B&V/22-16	PM and CM Schematic Design Tuen Mun North FWSR Supply Zone (TMN-DMA16, TMN-PMA16)
2843/B&V/22-17	PM and CM Schematic Design Tuen Mun North FWSR Supply Zone (TMN-DMA17, TMN-PMA17)
2843/B&V/22-18	PM and CM Schematic Design Tuen Mun North FWSR Supply Zone (TMN-DMA18, TMN-PMA18)
2843/B&V/22-19	PM and CM Schematic Design Tuen Mun North FWSR Supply Zone (TMN-DMA19, TMN-PMA19)
2843/B&V/22-20	PM and CM Schematic Design Tuen Mun North FWSR Supply Zone (TMN-DMA20)
2843/B&V/22-20A	PM and CM Schematic Design Tuen Mun North FWSR Supply Zone (TMN-DMA20A)
2843/B&V/22-21	PM and CM Schematic Design Tuen Mun North FWSR Supply Zone (TMN-DMA21)

<b>Drawing No.</b>	<b>Drawing Title</b>
2843/B&V/22-22	PM and CM Schematic Design Tuen Mun North FWSR Supply Zone (TMN-DMA22, TMN-PMA22)
2843/B&V/22-23	PM and CM Schematic Design Tuen Mun North FWSR Supply Zone (TMN-DMA23, TMN-PMA23)
2843/B&V/22-24	PM and CM Schematic Design Tuen Mun North FWSR Supply Zone (TMN-DMA24, TMN-PMA24)
2843/B&V/22-25	PM and CM Schematic Design Tuen Mun North FWSR Supply Zone (TMN-DMA25, TMN-PMA25)
2843/B&V/22-26	PM and CM Schematic Design Tuen Mun North FWSR Supply Zone (TMN-DMA26, TMN-PMA26)
2843/B&V/22-27	PM and CM Schematic Design Tuen Mun North FWSR Supply Zone (TMN-DMA27)
2843/B&V/21	PM and CM Schematic Design Tuen Mun West & Tuen Mun West No.2 FWSRs Supply Zone
2843/B&V/26-1	PM and CM Schematic Design Tuen Mun West & Tuen Mun West No.2 FWSRs Supply Zone (TMW-DMA01, TMW-PMA01)
2843/B&V/26-2	PM and CM Schematic Design Tuen Mun West & Tuen Mun West No.2 FWSRs Supply Zone (TMW-DMA02, TMW-PMA02)
2843/B&V/26-4	PM and CM Schematic Design Tuen Mun West & Tuen Mun West No.2 FWSRs Supply Zone (TMW-DMA04, TMW-PMA04)
2843/B&V/26-6	PM and CM Schematic Design Tuen Mun West & Tuen Mun West No.2 FWSRs Supply Zone (TMW-DMA06, TMW-PMA06)
2843/B&V/26-6A	PM and CM Schematic Design Tuen Mun West & Tuen Mun West No.2 FWSRs Supply Zone (TMW-DMA06A)
2843/B&V/26-6B	PM and CM Schematic Design Tuen Mun West & Tuen Mun West No.2 FWSRs Supply Zone (TMW-DMA06B)
2843/B&V/26-6C	PM and CM Schematic Design Tuen Mun West & Tuen Mun West No.2 FWSRs Supply Zone (TMW-DMA06C)
2843/B&V/26-6D	PM and CM Schematic Design Tuen Mun West & Tuen Mun West No.2 FWSRs Supply Zone (TMW-DMA06D)
2843/B&V/26-6E	PM and CM Schematic Design Tuen Mun West & Tuen Mun West No.2 FWSRs Supply Zone (TMW-DMA06E)

<b>Drawing No.</b>	<b>Drawing Title</b>
2843/B&V/26-6F	PM and CM Schematic Design Tuen Mun West & Tuen Mun West No.2 FWSRs Supply Zone (TMW-DMA06F)
2843/B&V/26-6G	PM and CM Schematic Design Tuen Mun West & Tuen Mun West No.2 FWSRs Supply Zone (TMW-DMA06G)
2843/B&V/26-7	PM and CM Schematic Design Tuen Mun West & Tuen Mun West No.2 FWSRs Supply Zone (TMW-DMA07)
2843/B&V/26-8	PM and CM Schematic Design Tuen Mun West & Tuen Mun West No.2 FWSRs Supply Zone (TMW-DMA08, TMW-PMA08)
2843/B&V/26-9	PM and CM Schematic Design Tuen Mun West & Tuen Mun West No.2 FWSRs Supply Zone (TMW-DMA09)
2843/B&V/26-10	PM and CM Schematic Design Tuen Mun West & Tuen Mun West No.2 FWSRs Supply Zone (TMW-DMA10, TMW-PMA10)
2843/B&V/26-11	PM and CM Schematic Design Tuen Mun West & Tuen Mun West No.2 FWSRs Supply Zone (TMW-DMA11, TMW-PMA11)
2843/B&V/26-13	PM and CM Schematic Design Tuen Mun West & Tuen Mun West No.2 FWSRs Supply Zone (TMW-DMA13)
2843/B&V/26-14	PM and CM Schematic Design Tuen Mun West & Tuen Mun West No.2 FWSRs Supply Zone (TMW-DMA14)
2843/B&V/26-15	PM and CM Schematic Design Tuen Mun West & Tuen Mun West No.2 FWSRs Supply Zone (TMW-DMA15)
2843/B&V/26-16	PM and CM Schematic Design Tuen Mun West & Tuen Mun West No.2 FWSRs Supply Zone (TMW-DMA16)
2843/B&V/26-17	PM and CM Schematic Design Tuen Mun West & Tuen Mun West No.2 FWSRs Supply Zone (TMW-DMA17)

### **Sai Kung Major Supply Zone**

2843/B&V/37	PM and CM Schematic Design Fei Ngo Shan FWSR Supply Zone
2843/B&V/37-1	PM and CM Schematic Design Fei Ngo Shan FWSR Supply Zone (FNS-DMA01, FNS-PMA01)
2843/B&V/37-1A	PM and CM Schematic Design Fei Ngo Shan FWSR Supply Zone (FNS-DMA01A, FNS-PMA01A)

<b>Drawing No.</b>	<b>Drawing Title</b>
2843/B&V/37-1AA	PM and CM Schematic Design Fei Ngo Shan FWSR Supply Zone (FNS-DMA01AA, FNS-PMA01AA)
2843/B&V/37-1AB	PM and CM Schematic Design Fei Ngo Shan FWSR Supply Zone (FNS-DMA01AB, FNS-PMA01AB)
2843/B&V/37-1AC	PM and CM Schematic Design Fei Ngo Shan FWSR Supply Zone (FNS-DMA01AC, FNS-PMA01AC)
2843/B&V/37-1AD	PM and CM Schematic Design Fei Ngo Shan FWSR Supply Zone (FNS-DMA01AD, FNS-PMA01AD)
2843/B&V/37-2	PM and CM Schematic Design Fei Ngo Shan FWSR Supply Zone (FNS-DMA02, FNS-PMA02)
2843/B&V/37-3	PM and CM Schematic Design Fei Ngo Shan FWSR Supply Zone (FNS-DMA03, FNS-PMA03)
2843/B&V/37-4	PM and CM Schematic Design Fei Ngo Shan FWSR Supply Zone (FNS-DMA04, FNS-PMA04)
2843/B&V/37-5	PM and CM Schematic Design Fei Ngo Shan FWSR Supply Zone (FNS-DMA05)
2843/B&V/37-5A	PM and CM Schematic Design Fei Ngo Shan FWSR Supply Zone (FNS-DMA05A, FNS-PMA05A)
2843/B&V/37-5B	PM and CM Schematic Design Fei Ngo Shan FWSR Supply Zone (FNS-DMA05B, FNS-PMA05B)
2843/B&V/37-5C	PM and CM Schematic Design Fei Ngo Shan FWSR Supply Zone (FNS-DMA05C, FNS-PMA05C)
2843/B&V/37-5D	PM and CM Schematic Design Fei Ngo Shan FWSR Supply Zone (FNS-DMA05D, FNS-PMA05D)
2843/B&V/37-5E	PM and CM Schematic Design Fei Ngo Shan FWSR Supply Zone (FNS-DMA05E)
2843/B&V/37-5EA	PM and CM Schematic Design Fei Ngo Shan FWSR Supply Zone (FNS-DMA05EA, FNS-PMA05EA)
2843/B&V/45	PM and CM Schematic Design Hoi Ha FWBPT Supply Zone
2843/B&V/45-1	PM and CM Schematic Design Hoi Ha FWBPT Supply Zone (HH-DMA01)
2843/B&V/45-1A	PM and CM Schematic Design Hoi Ha FWBPT Supply Zone (HH-DMA01A)
2843/B&V/45-1B	PM and CM Schematic Design Hoi Ha FWBPT Supply Zone (HH-DMA01B, HH-PMA01B)
2843/B&V/49	PM and CM Schematic Design Kau Sai Chau FWBPT Supply Zone
2843/B&V/49-1	PM and CM Schematic Design Kau Sai Chau FWBPT Supply Zone (KSC-DMA01, KSC-PMA01)
2843/B&V/42	PM and CM Schematic Design Kei Pik Shan FWT Supply Zone

<b>Drawing No.</b>	<b>Drawing Title</b>
2843/B&V/42-1	PM and CM Schematic Design Kei Pik Shan FWT Supply Zone (KPS-DMA01, KPS-PMA01)
2843/B&V/42-2	PM and CM Schematic Design Kei Pik Shan FWT Supply Zone (KPS-DMA02, KPS-PMA02)
2843/B&V/42-3	PM and CM Schematic Design Kei Pik Shan FWT Supply Zone (KPS-DMA03, KPS-PMA03)
2843/B&V/42-4	PM and CM Schematic Design Kei Pik Shan FWT Supply Zone (KPS-DMA04, KPS-PMA04)
2843/B&V/42-5	PM and CM Schematic Design Kei Pik Shan FWT Supply Zone (KPS-DMA05, KPS-PMA05)
2843/B&V/44	PM and CM Schematic Design Muk Min Shan FWT Supply Zone
2843/B&V/44-1	PM and CM Schematic Design Muk Min Shan FWT Supply Zone (MMS-DMA01)
2843/B&V/44-2	PM and CM Schematic Design Muk Min Shan FWT Supply Zone (MMS-DMA02, MMS-PMA02)
2843/B&V/50	PM and CM Schematic Design Ngau Wu Tun FWT Supply Zone
2843/B&V/50-1	PM and CM Schematic Design Ngau Wu Tun FWT Supply Zone (NWT-DMA01)
2843/B&V/50-1B	PM and CM Schematic Design Ngau Wu Tun FWT Supply Zone (NWT-DMA01B, NWT-PMA01B)
2843/B&V/50-2	PM and CM Schematic Design Ngau Wu Tun FWT Supply Zone (NWT-DMA02)
2843/B&V/50-2A	PM and CM Schematic Design Ngau Wu Tun FWT Supply Zone (NWT-DMA02A)
2843/B&V/50-2AA	PM and CM Schematic Design Ngau Wu Tun FWT Supply Zone (NWT-DMA02AA)
2843/B&V/51	PM and CM Schematic Design Pak A FWBPT Supply Zone
2843/B&V/51-1	PM and CM Schematic Design Pak A FWBPT Supply Zone (PA-DMA01, PA-PMA01)
2843/B&V/51-2	PM and CM Schematic Design Pak A FWBPT Supply Zone (PA-DMA02)
2843/B&V/51-2A	PM and CM Schematic Design Pak A FWBPT Supply Zone (PA-DMA02A, PA-PMA02A)
2843/B&V/51-2B	PM and CM Schematic Design Pak A FWBPT Supply Zone (PA-DMA02B, PA-PMA02B)
2843/B&V/54 (Sheet 1 of 2)	PM and CM Schematic Design Pak Kong Au FWSR Supply Zone
2843/B&V/54 (Sheet 2 of 2)	PM and CM Schematic Design Pak Kong Au FWSR Supply Zone

<b>Drawing No.</b>	<b>Drawing Title</b>
2843/B&V/54-ZONE A	PM and CM Schematic Design Pak Kong Au FWSR Supply Zone PKA-Zone A
2843/B&V/54-ZONE B	PM and CM Schematic Design Pak Kong Au FWSR Supply Zone PKA-Zone B
2843/B&V/54-ZONE C	PM and CM Schematic Design Pak Kong Au FWSR Supply Zone PKA-Zone C
2843/B&V/54-ZONE D	PM and CM Schematic Design Pak Kong Au FWSR Supply Zone PKA-Zone D
2843/B&V/54-ZONE E	PM and CM Schematic Design Pak Kong Au FWSR Supply Zone PKA-Zone E
2843/B&V/54-ZONE F	PM and CM Schematic Design Pak Kong Au FWSR Supply Zone PKA-Zone F
2843/B&V/54-ZONE G	PM and CM Schematic Design Pak Kong Au FWSR Supply Zone PKA-Zone G
2843/B&V/54-ZONE H	PM and CM Schematic Design Pak Kong Au FWSR Supply Zone PKA-Zone H
2843/B&V/54-ZONE I	PM and CM Schematic Design Pak Kong Au FWSR Supply Zone PKA-Zone I
2843/B&V/54-ZONE J	PM and CM Schematic Design Pak Kong Au FWSR Supply Zone PKA-Zone J
2843/B&V/54-1	PM and CM Schematic Design Pak Kong Au FWSR Supply Zone (PKA-DMA01)
2843/B&V/54-1A	PM and CM Schematic Design Pak Kong Au FWSR Supply Zone (PKA-DMA01A)
2843/B&V/54-2	PM and CM Schematic Design Pak Kong Au FWSR Supply Zone (PKA-DMA02)
2843/B&V/54-3	PM and CM Schematic Design Pak Kong Au FWSR Supply Zone (PKA-DMA03, PKA-PMA03)
2843/B&V/54-6	PM and CM Schematic Design Pak Kong Au FWSR Supply Zone (PKA-DMA06, PKA-PMA06)
2843/B&V/54-7	PM and CM Schematic Design Pak Kong Au FWSR Supply Zone (PKA-DMA07, PKA-PMA07)
2843/B&V/54-8	PM and CM Schematic Design Pak Kong Au FWSR Supply Zone (PKA-DMA08, PKA-PMA08)
2843/B&V/54-9	PM and CM Schematic Design Pak Kong Au FWSR Supply Zone (PKA-DMA09)
2843/B&V/54-10	PM and CM Schematic Design Pak Kong Au FWSR Supply Zone (PKA-DMA10, PKA-PMA10)
2843/B&V/54-12	PM and CM Schematic Design Pak Kong Au FWSR Supply Zone (PKA-DMA12)
2843/B&V/54-13	PM and CM Schematic Design Pak Kong Au FWSR Supply Zone (PKA-DMA13, PKA-PMA13)
2843/B&V/54-14	PM and CM Schematic Design Pak Kong Au FWSR Supply Zone (PKA-DMA14, PKA-PMA14)

<b>Drawing No.</b>	<b>Drawing Title</b>
2843/B&V/54-15	PM and CM Schematic Design Pak Kong Au FWSR Supply Zone (PKA-DMA15, PKA-PMA15)
2843/B&V/54-16	PM and CM Schematic Design Pak Kong Au FWSR Supply Zone (PKA-DMA16, PKA-PMA16)
2843/B&V/54-17	PM and CM Schematic Design Pak Kong Au FWSR Supply Zone (PKA-DMA17, PKA-PMA17)
2843/B&V/54-18	PM and CM Schematic Design Pak Kong Au FWSR Supply Zone (PKA-DMA18)
2843/B&V/54-19	PM and CM Schematic Design Pak Kong Au FWSR Supply Zone (PKA-DMA19, PKA-PMA19)
2843/B&V/54-20	PM and CM Schematic Design Pak Kong Au FWSR Supply Zone (PKA-DMA20, PKA-PMA20)
2843/B&V/54-22	PM and CM Schematic Design Pak Kong Au FWSR Supply Zone (PKA-DMA22, PKA-PMA22)
2843/B&V/54-23	PM and CM Schematic Design Pak Kong Au FWSR Supply Zone (PKA-DMA23, PKA-PMA23)
2843/B&V/54-24	PM and CM Schematic Design Pak Kong Au FWSR Supply Zone (PKA-DMA24, PKA-PMA24)
2843/B&V/54-24A	PM and CM Schematic Design Pak Kong Au FWSR Supply Zone (PKA-DMA24A)
2843/B&V/54-25	PM and CM Schematic Design Pak Kong Au FWSR Supply Zone (PKA-DMA25, PKA-PMA25)
2843/B&V/54-26	PM and CM Schematic Design Pak Kong Au FWSR Supply Zone (PKA-DMA26, PKA-PMA26)
2843/B&V/54-27	PM and CM Schematic Design Pak Kong Au FWSR Supply Zone (PKA-DMA27, PKA-PMA27)
2843/B&V/54-28	PM and CM Schematic Design Pak Kong Au FWSR Supply Zone (PKA-DMA28, PKA-PMA28)
2843/B&V/54-29	PM and CM Schematic Design Pak Kong Au FWSR Supply Zone (PKA-DMA29, PKA-PMA29)
2843/B&V/54-30	PM and CM Schematic Design Pak Kong Au FWSR Supply Zone (PKA-DMA30, PKA-PMA30)
2843/B&V/54-31	PM and CM Schematic Design Pak Kong Au FWSR Supply Zone (PKA-DMA31, PKA-PMA31)
2843/B&V/54-32	PM and CM Schematic Design Pak Kong Au FWSR Supply Zone (PKA-DMA32)
2843/B&V/54-32A	PM and CM Schematic Design Pak Kong Au FWSR Supply Zone (PKA-DMA32A)
2843/B&V/54-32AA	PM and CM Schematic Design Pak Kong Au FWSR Supply Zone (PKA-DMA32AA, PKA-PMA32AA)
2843/B&V/54-33	PM and CM Schematic Design Pak Kong Au FWSR Supply Zone (PKA-DMA33)
2843/B&V/54-34	PM and CM Schematic Design Pak Kong Au FWSR Supply Zone (PKA-DMA34, PKA-PMA34)

<b>Drawing No.</b>	<b>Drawing Title</b>
2843/B&V/54-35	PM and CM Schematic Design Pak Kong Au FWSR Supply Zone (PKA-DMA35, PKA-PMA35)
2843/B&V/54-36	PM and CM Schematic Design Pak Kong Au FWSR Supply Zone (PKA-DMA36, PKA-PMA36)
2843/B&V/54-37	PM and CM Schematic Design Pak Kong Au FWSR Supply Zone (PKA-DMA37, PKA-PMA37)
2843/B&V/54-38	PM and CM Schematic Design Pak Kong Au FWSR Supply Zone (PKA-DMA38, PKA-PMA38)
2843/B&V/54-39	PM and CM Schematic Design Pak Kong Au FWSR Supply Zone (PKA-DMA39, PKA-PMA39)
2843/B&V/54-40	PM and CM Schematic Design Pak Kong Au FWSR Supply Zone (PKA-DMA40)
2843/B&V/54-41	PM and CM Schematic Design Pak Kong Au FWSR Supply Zone (PKA-DMA41)
2843/B&V/54-42	PM and CM Schematic Design Pak Kong Au FWSR Supply Zone (PKA-DMA42, PKA-PMA42)
2843/B&V/54-43	PM and CM Schematic Design Pak Kong Au FWSR Supply Zone (PKA-DMA43, PKA-PMA43)
2843/B&V/54-44	PM and CM Schematic Design Pak Kong Au FWSR Supply Zone (PKA-DMA44, PKA-PMA44)
2843/B&V/54-44A	PM and CM Schematic Design Pak Kong Au FWSR Supply Zone (PKA-DMA44A, PKA-PMA44A)
2843/B&V/54-45	PM and CM Schematic Design Pak Kong Au FWSR Supply Zone (PKA-DMA45, PKA-PMA45)
2843/B&V/36	PM and CM Schematic Design Pik Uk FWBPT Supply Zone
2843/B&V/36-1	PM and CM Schematic Design Pik Uk FWBPT Supply Zone (PU-DMA01)
2843/B&V/36-2	PM and CM Schematic Design Pik Uk FWBPT Supply Zone (PU-DMA02, PU-PMA02)
2843/B&V/36-3	PM and CM Schematic Design Pik Uk FWBPT Supply Zone (PU-DMA03, PU-PMA03)
2843/B&V/36-3A	PM and CM Schematic Design Pik Uk FWBPT Supply Zone (PU-DMA03A, PU-PMA03A)
2843/B&V/33	PM and CM Schematic Design Sai Kung FWBPT Supply Zone
2843/B&V/33-1	PM and CM Schematic Design Sai Kung FWBPT Supply Zone (SK_T-DMA01, SK_T-PMA01)
2843/B&V/33-2	PM and CM Schematic Design Sai Kung FWBPT Supply Zone (SK_T-DMA02, SK_T-PMA02)

<b>Drawing No.</b>	<b>Drawing Title</b>
2843/B&V/39	PM and CM Schematic Design Sai Kung FWSR Supply Zone
2843/B&V/39-1	PM and CM Schematic Design Sai Kung FWSR Supply Zone (SK_SR-DMA01)
2843/B&V/39-2	PM and CM Schematic Design Sai Kung FWSR Supply Zone (SK_SR-DMA02)
2843/B&V/39-3	PM and CM Schematic Design Sai Kung FWSR Supply Zone (SK_SR-DMA03, SK_SR-PMA03)
2843/B&V/39-4	PM and CM Schematic Design Sai Kung FWSR Supply Zone (SK_SR-DMA04)
2843/B&V/48	PM and CM Schematic Design Tai Long FWBPT Supply Zone
2843/B&V/48-1	PM and CM Schematic Design Tai Long FWBPT Supply Zone (TL-DMA01)
2843/B&V/48-1A	PM and CM Schematic Design Tai Long FWBPT Supply Zone (TL-DMA01A, TL-PMA01A)
2843/B&V/48-1B	PM and CM Schematic Design Tai Long FWBPT Supply Zone (TL-DMA01B, TL-PMA01B)
2843/B&V/32	PM and CM Schematic Design Tai Po Tsai FWSR Supply Zone
2843/B&V/32-ZONE A	PM and CM Schematic Design Tai Po Tsai FWSR Supply Zone TPT-Zone A
2843/B&V/32-ZONE B	PM and CM Schematic Design Tai Po Tsai FWSR Supply Zone TPT-Zone B
2843/B&V/32-ZONE C	PM and CM Schematic Design Tai Po Tsai FWSR Supply Zone TPT-Zone C
2843/B&V/32-ZONE D	PM and CM Schematic Design Tai Po Tsai FWSR Supply Zone TPT-Zone D
2843/B&V/32-ZONE E	PM and CM Schematic Design Tai Po Tsai FWSR Supply Zone TPT-Zone E
2843/B&V/32-ZONE F	PM and CM Schematic Design Tai Po Tsai FWSR Supply Zone TPT-Zone F
2843/B&V/32-1	PM and CM Schematic Design Tai Po Tsai FWSR Supply Zone (TPT-DMA01)
2843/B&V/32-1A	PM and CM Schematic Design Tai Po Tsai FWSR Supply Zone (TPT-DMA01A)
2843/B&V/32-1B	PM and CM Schematic Design Tai Po Tsai FWSR Supply Zone (TPT-DMA01B)
2843/B&V/32-1C	PM and CM Schematic Design Tai Po Tsai FWSR Supply Zone (TPT-DMA01C)
2843/B&V/32-2	PM and CM Schematic Design Tai Po Tsai FWSR Supply Zone (TPT-DMA02, TPT-PMA02)
2843/B&V/32-2A	PM and CM Schematic Design Tai Po Tsai FWSR Supply Zone (TPT-DMA02A, TPT-PMA02A)

<b>Drawing No.</b>	<b>Drawing Title</b>
2843/B&V/32-2B	PM and CM Schematic Design Tai Po Tsai FWSR Supply Zone (TPT-DMA02B, TPT-PMA02B)
2843/B&V/32-3	PM and CM Schematic Design Tai Po Tsai FWSR Supply Zone (TPT-DMA03)
2843/B&V/32-4	PM and CM Schematic Design Tai Po Tsai FWSR Supply Zone (TPT-DMA04, TPT-PMA04)
2843/B&V/32-5	PM and CM Schematic Design Tai Po Tsai FWSR Supply Zone (TPT-DMA05, TPT-PMA05)
2843/B&V/32-6	PM and CM Schematic Design Tai Po Tsai FWSR Supply Zone (TPT-DMA06, TPT-PMA06)
2843/B&V/32-6A	PM and CM Schematic Design Tai Po Tsai FWSR Supply Zone (TPT-DMA06A, TPT-PMA06A)
2843/B&V/32-7	PM and CM Schematic Design Tai Po Tsai FWSR Supply Zone (TPT-DMA07, TPT-PMA07)
2843/B&V/32-7A	PM and CM Schematic Design Tai Po Tsai FWSR Supply Zone (TPT-DMA07A, TPT-PMA07A)
2843/B&V/32-8	PM and CM Schematic Design Tai Po Tsai FWSR Supply Zone (TPT-DMA08, TPT-PMA08)
2843/B&V/32-9	PM and CM Schematic Design Tai Po Tsai FWSR Supply Zone (TPT-DMA09, TPT-PMA09)
2843/B&V/32-10	PM and CM Schematic Design Tai Po Tsai FWSR Supply Zone (TPT-DMA10, TPT-PMA10)
2843/B&V/32-11	PM and CM Schematic Design Tai Po Tsai FWSR Supply Zone (TPT-DMA11, TPT-PMA11)
2843/B&V/32-12	PM and CM Schematic Design Tai Po Tsai FWSR Supply Zone (TPT-DMA12, TPT-PMA12)
2843/B&V/32-12A	PM and CM Schematic Design Tai Po Tsai FWSR Supply Zone (TPT-DMA12A, TPT-PMA12A)
2843/B&V/32-13	PM and CM Schematic Design Tai Po Tsai FWSR Supply Zone (TPT-DMA13, TPT-PMA13)
2843/B&V/32-13A	PM and CM Schematic Design Tai Po Tsai FWSR Supply Zone (TPT-DMA13A, TPT-PMA13A)
2843/B&V/32-13B	PM and CM Schematic Design Tai Po Tsai FWSR Supply Zone (TPT-DMA13B, TPT-PMA13B)
2843/B&V/32-14	PM and CM Schematic Design Tai Po Tsai FWSR Supply Zone (TPT-DMA14, TPT-PMA14)
2843/B&V/32-15	PM and CM Schematic Design Tai Po Tsai FWSR Supply Zone (TPT-DMA15, TPT-PMA15)
2843/B&V/32-15A	PM and CM Schematic Design Tai Po Tsai FWSR Supply Zone (TPT-DMA15A, TPT-PMA15A)
2843/B&V/32-16	PM and CM Schematic Design Tai Po Tsai FWSR Supply Zone (TPT-DMA16, TPT-PMA16)
2843/B&V/32-16A	PM and CM Schematic Design Tai Po Tsai FWSR Supply Zone (TPT-DMA16A, TPT-PMA16A)

<b>Drawing No.</b>	<b>Drawing Title</b>
2843/B&V/32-16B	PM and CM Schematic Design Tai Po Tsai FWSR Supply Zone (TPT-DMA16B, TPT-PMA16B)
2843/B&V/32-16C	PM and CM Schematic Design Tai Po Tsai FWSR Supply Zone (TPT-DMA16C, TPT-PMA16C)
2843/B&V/32-16D	PM and CM Schematic Design Tai Po Tsai FWSR Supply Zone (TPT-DMA16D, TPT-PMA16D)
2843/B&V/43	PM and CM Schematic Design Tai Shui Tseng FWT Supply Zone
2843/B&V/43-1	PM and CM Schematic Design Tai Shui Tseng FWT Supply Zone (TST-DMA01)
2843/B&V/43-1A	PM and CM Schematic Design Tai Shui Tseng FWT Supply Zone (TST-DMA01A, TST-PMA01A)
2843/B&V/43-1B	PM and CM Schematic Design Tai Shui Tseng FWT Supply Zone (TST-DMA01B)
2843/B&V/46	PM and CM Schematic Design Tan Ka Wan FWBPT Supply Zone
2843/B&V/46-1	PM and CM Schematic Design Tan Ka Wan FWBPT Supply Zone (TKW-DMA01, TKA-PMA01)
2843/B&V/46-2	PM and CM Schematic Design Tan Ka Wan FWBPT Supply Zone (TKW-DMA02, TKA-PMA02)
2843/B&V/46-2A	PM and CM Schematic Design Tan Ka Wan FWBPT Supply Zone (TKW-DMA02A)
2843/B&V/46-2AA	PM and CM Schematic Design Tan Ka Wan FWBPT Supply Zone (TKW-DMA02AA)
2843/B&V/40	PM and CM Schematic Design Tiu Keng Leng FWSR Supply Zone
2843/B&V/40-1	PM and CM Schematic Design Tiu Keng Leng FWSR Supply Zone (TKL-DMA01, TKL-PMA01)
2843/B&V/40-1A	PM and CM Schematic Design Tiu Keng Leng FWSR Supply Zone (TKL-DMA01A)
2843/B&V/40-2	PM and CM Schematic Design Tiu Keng Leng FWSR Supply Zone (TKL-DMA02, TKL-PMA02)
2843/B&V/40-3	PM and CM Schematic Design Tiu Keng Leng FWSR Supply Zone (TKL-DMA03, TKL-PMA03)
2843/B&V/40-3A	PM and CM Schematic Design Tiu Keng Leng FWSR Supply Zone (TKL-DMA03A)
2843/B&V/40-4	PM and CM Schematic Design Tiu Keng Leng FWSR Supply Zone (TKL-DMA04, TKL-PMA04)
2843/B&V/40-4A	PM and CM Schematic Design Tiu Keng Leng FWSR Supply Zone (TKL-DMA04A)
2843/B&V/40-4B	PM and CM Schematic Design Tiu Keng Leng FWSR Supply Zone (TKL-DMA04B)

<b>Drawing No.</b>	<b>Drawing Title</b>
2843/B&V/40-4C	PM and CM Schematic Design Tiu Keng Leng FWSR Supply Zone (TKL-DMA04C)
2843/B&V/40-4D	PM and CM Schematic Design Tiu Keng Leng FWSR Supply Zone (TKL-DMA04D)
2843/B&V/40-4E	PM and CM Schematic Design Tiu Keng Leng FWSR Supply Zone (TKL-DMA04E)
2843/B&V/40-4F	PM and CM Schematic Design Tiu Keng Leng FWSR Supply Zone (TKL-DMA04F)
2843/B&V/40-4G	PM and CM Schematic Design Tiu Keng Leng FWSR Supply Zone (TKL-DMA04G)
2843/B&V/40-5	PM and CM Schematic Design Tiu Keng Leng FWSR Supply Zone (TKL-DMA05, TKL-PMA05)
2843/B&V/41	PM and CM Schematic Design Tui Min Hoi FWSR Supply Zone
2843/B&V/41-1	PM and CM Schematic Design Tui Min Hoi FWSR Supply Zone (TMH-DMA01, TMH-PMA01)
2843/B&V/41-2	PM and CM Schematic Design Tui Min Hoi FWSR Supply Zone (TMH-DMA02)
2843/B&V/41-2A	PM and CM Schematic Design Tui Min Hoi FWSR Supply Zone (TMH-DMA02A, TMH-PMA02A)
2843/B&V/41-3	PM and CM Schematic Design Tui Min Hoi FWSR Supply Zone (TMH-DMA03)
2843/B&V/34	PM and CM Schematic Design Tseung Kwan O East Low Level FWSR Supply Zone
2843/B&V/34-2	PM and CM Schematic Design Tseung Kwan O East Low Level FWSR Supply Zone (TKOE_L-DMA02, TKOE_L-PMA02)
2843/B&V/34-3	PM and CM Schematic Design Tseung Kwan O East Low Level FWSR Supply Zone (TKOE_L-DMA03, TKOE_L-PMA03)
2843/B&V/34-4	PM and CM Schematic Design Tseung Kwan O East Low Level FWSR Supply Zone (TKOE_L-DMA04, TKOE_L-PMA04)
2843/B&V/34-5	PM and CM Schematic Design Tseung Kwan O East Low Level FWSR Supply Zone (TKOE_L-DMA05, TKOE_L-PMA05)
2843/B&V/34-6	PM and CM Schematic Design Tseung Kwan O East Low Level FWSR Supply Zone (TKOE_L-DMA06, TKOE_L-PMA06)
2843/B&V/34-7	PM and CM Schematic Design Tseung Kwan O East Low Level FWSR Supply Zone (TKOE_L-DMA07, TKOE_L-PMA07)

<b>Drawing No.</b>	<b>Drawing Title</b>
2843/B&V/34-7A	PM and CM Schematic Design Tseung Kwan O East Low Level FWSR Supply Zone (TKOE_L-DMA07A)
2843/B&V/35	PM and CM Schematic Design Tseung Kwan O West High Level FWSR Supply Zone
2843/B&V/35-1	PM and CM Schematic Design Tseung Kwan O West High Level FWSR Supply Zone (TKOW_H-DMA01, TKOW_H-PMA01)
2843/B&V/35-1A	PM and CM Schematic Design Tseung Kwan O West High Level FWSR Supply Zone (TKOW_H-DMA01A)
2843/B&V/35-1B	PM and CM Schematic Design Tseung Kwan O West High Level FWSR Supply Zone (TKOW_H-DMA01B)
2843/B&V/35-2	PM and CM Schematic Design Tseung Kwan O West High Level FWSR Supply Zone (TKOW_H-DMA02)
2843/B&V/35-2A	PM and CM Schematic Design Tseung Kwan O West High Level FWSR Supply Zone (TKOW_H-DMA02A, TKOW_H-PMA02A)
2843/B&V/38	PM and CM Schematic Design Tseung Kwan O West Low Level FWSR Supply Zone
2843/B&V/38-1	PM and CM Schematic Design Tseung Kwan O West Low Level FWSR Supply Zone (TKOW_L-DMA01)
2843/B&V/38-1A	PM and CM Schematic Design Tseung Kwan O West Low Level FWSR Supply Zone (TKOW_L-DMA01A, TKOW_L-PMA01A)
2843/B&V/38-1B	PM and CM Schematic Design Tseung Kwan O West Low Level FWSR Supply Zone (TKOW_L-DMA01B)
2843/B&V/38-1C	PM and CM Schematic Design Tseung Kwan O West Low Level FWSR Supply Zone (TKOW_L-DMA01C, TKOW_L-PMA01C)
2843/B&V/38-1D	PM and CM Schematic Design Tseung Kwan O West Low Level FWSR Supply Zone (TKOW_L-DMA01D, TKOW_L-PMA01D)
2843/B&V/38-1E	PM and CM Schematic Design Tseung Kwan O West Low Level FWSR Supply Zone (TKOW_L-DMA01E, TKOW_L-PMA01E)
2843/B&V/38-2	PM and CM Schematic Design Tseung Kwan O West Low Level FWSR Supply Zone (TKOW_L-DMA02, TKOW_L-PMA02)

<b>Drawing No.</b>	<b>Drawing Title</b>
2843/B&V/38-2A	PM and CM Schematic Design Tseung Kwan O West Low Level FWSR Supply Zone (TKOW_L-DMA02A)
2843/B&V/38-2B	PM and CM Schematic Design Tseung Kwan O West Low Level FWSR Supply Zone (TKOW_L-DMA02B)
2843/B&V/38-3	PM and CM Schematic Design Tseung Kwan O West Low Level FWSR Supply Zone (TKOW_L-DMA03, TKOW_L-PMA03)
2843/B&V/38-3A	PM and CM Schematic Design Tseung Kwan O West Low Level FWSR Supply Zone (TKOW_L-DMA03A)
2843/B&V/38-3B	PM and CM Schematic Design Tseung Kwan O West Low Level FWSR Supply Zone (TKOW_L-DMA03B)
2843/B&V/38-3C	PM and CM Schematic Design Tseung Kwan O West Low Level FWSR Supply Zone (TKOW_L-DMA03C)
2843/B&V/38-4	PM and CM Schematic Design Tseung Kwan O West Low Level FWSR Supply Zone (TKOW_L-DMA04, TKOW_L-PMA04)
2843/B&V/38-4A	PM and CM Schematic Design Tseung Kwan O West Low Level FWSR Supply Zone (TKOW_L-DMA04A)
2843/B&V/38-4B	PM and CM Schematic Design Tseung Kwan O West Low Level FWSR Supply Zone (TKOW_L-DMA04B)
2843/B&V/38-4C	PM and CM Schematic Design Tseung Kwan O West Low Level FWSR Supply Zone (TKOW_L-DMA04C)
2843/B&V/38-4D	PM and CM Schematic Design Tseung Kwan O West Low Level FWSR Supply Zone (TKOW_L-DMA04D)
2843/B&V/38-4E	PM and CM Schematic Design Tseung Kwan O West Low Level FWSR Supply Zone (TKOW_L-DMA04E)
2843/B&V/38-4F	PM and CM Schematic Design Tseung Kwan O West Low Level FWSR Supply Zone (TKOW_L-DMA04F)
2843/B&V/38-4G	PM and CM Schematic Design Tseung Kwan O West Low Level FWSR Supply Zone (TKOW_L-DMA04G)
2843/B&V/38-4H	PM and CM Schematic Design Tseung Kwan O West Low Level FWSR Supply Zone (TKOW_L-DMA04H)

<b>Drawing No.</b>	<b>Drawing Title</b>
2843/B&V/38-4I	PM and CM Schematic Design Tseung Kwan O West Low Level FWSR Supply Zone (TKOW_L-DMA04I)
2843/B&V/38-4J	PM and CM Schematic Design Tseung Kwan O West Low Level FWSR Supply Zone (TKOW_L-DMA04J)
2843/B&V/38-4K	PM and CM Schematic Design Tseung Kwan O West Low Level FWSR Supply Zone (TKOW_L-DMA04K)
2843/B&V/38-4M	PM and CM Schematic Design Tseung Kwan O West Low Level FWSR Supply Zone (TKOW_L-DMA04M)
2843/B&V/38-4N	PM and CM Schematic Design Tseung Kwan O West Low Level FWSR Supply Zone (TKOW_L-DMA04N)
2843/B&V/38-4O	PM and CM Schematic Design Tseung Kwan O West Low Level FWSR Supply Zone (TKOW_L-DMA04O)
2843/B&V/38-4P	PM and CM Schematic Design Tseung Kwan O West Low Level FWSR Supply Zone (TKOW_L-DMA04P)
2843/B&V/38-4Q	PM and CM Schematic Design Tseung Kwan O West Low Level FWSR Supply Zone (TKOW_L-DMA04Q)
2843/B&V/38-TMF	PM and CM Schematic Design Tseung Kwan O West Low Level FWSR Supply Zone (TMF)
2843/B&V/47	PM and CM Schematic Design Uk Tau FWBPT Supply Zone
2843/B&V/47-2	PM and CM Schematic Design Uk Tau FWBPT Supply Zone (UT-DMA02)
2843/B&V/47-3	PM and CM Schematic Design Uk Tau FWBPT Supply Zone (UT-DMA03, UT-PMA03)
2843/B&V/47-4	PM and CM Schematic Design Uk Tau FWBPT Supply Zone (UT-DMA04, UT-PMA04)
2843/B&V/47-4A	PM and CM Schematic Design Uk Tau FWBPT Supply Zone (UT-DMA04A)
2843/B&V/47-4B	PM and CM Schematic Design Uk Tau FWBPT Supply Zone (UT-DMA04B)
2843/B&V/52	PM and CM Schematic Design Wong Mo Ying FWT Supply Zone
2843/B&V/52-1	PM and CM Schematic Design Wong Mo Ying FWT Supply Zone (WMY-DMA01)

<b>Drawing No.</b>	<b>Drawing Title</b>
2843/B&V/52-2	PM and CM Schematic Design Wong Mo Ying FWT Supply Zone (WMY-DMA02, WMY-PMA02)
2843/B&V/52-3	PM and CM Schematic Design Wong Mo Ying FWT Supply Zone (WMY-DMA03, WMY-PMA03)
2843/B&V/52-4	PM and CM Schematic Design Wong Mo Ying FWT Supply Zone (WMY-DMA04)
2843/B&V/53	PM and CM Schematic Design Yim Tin Tsai FWBPT Supply Zone
2843/B&V/53-1	PM and CM Schematic Design Yim Tin Tsai FWBPT Supply Zone (YTT-DMA01)

### **Aberdeen Major Supply Zone**

2843/B&V/24	PM and CM Schematic Design Ap Lei Chau FWSR Supply Zone
2843/B&V/24-1	PM and CM Schematic Design Ap Lei Chau FWSR Supply Zone (ALC-DMA01, ALC-PMA01)
2843/B&V/24-2	PM and CM Schematic Design Ap Lei Chau FWSR Supply Zone (ALC-DMA02)
2843/B&V/24-3	PM and CM Schematic Design Ap Lei Chau FWSR Supply Zone (ALC-DMA03)
2843/B&V/24-4	PM and CM Schematic Design Ap Lei Chau FWSR Supply Zone (ALC-DMA04, ALC-PMA04)
2843/B&V/24-5	PM and CM Schematic Design Ap Lei Chau FWSR Supply Zone (ALC-DMA05)
2843/B&V/24-6	PM and CM Schematic Design Ap Lei Chau FWSR Supply Zone (ALC-DMA06, ALC-PMA06)
2843/B&V/24-7	PM and CM Schematic Design Ap Lei Chau FWSR Supply Zone (ALC-DMA07, ALC-PMA07)
2843/B&V/24-8	PM and CM Schematic Design Ap Lei Chau FWSR Supply Zone (ALC-DMA08, ALC-PMA08)
2843/B&V/25	PM and CM Schematic Design Ap Lei Chau No. 2 FWSR Supply Zone
2843/B&V/25-1	PM and CM Schematic Design Ap Lei Chau No. 2 FWSR Supply Zone (ALC2-DMA01, ALC2-PMA01)
2843/B&V/25-1A	PM and CM Schematic Design Ap Lei Chau No. 2 FWSR Supply Zone (ALC2-DMA01A)
2843/B&V/25-1B	PM and CM Schematic Design Ap Lei Chau No. 2 FWSR Supply Zone (ALC2-DMA01B)
2843/B&V/25-2	PM and CM Schematic Design Ap Lei Chau No. 2 FWSR Supply Zone (ALC2-DMA02, ALC2-PMA02)
2843/B&V/21	PM and CM Schematic Design Wong Chuk Hang FWSR Supply Zone
2843/B&V/21-2	PM and CM Schematic Design Wong Chuk Hang FWSR Supply Zone (WCH-DMA02, WCH-PMA02)

<b>Drawing No.</b>	<b>Drawing Title</b>
2843/B&V/21-3	PM and CM Schematic Design Wong Chuk Hang FWSR Supply Zone (WCH-DMA03)
2843/B&V/21-4	PM and CM Schematic Design Wong Chuk Hang FWSR Supply Zone (WCH-DMA04, WCH-PMA04)
2843/B&V/21-5	PM and CM Schematic Design Wong Chuk Hang FWSR Supply Zone (WCH-DMA05, WCH-PMA05)
2843/B&V/21-6	PM and CM Schematic Design Wong Chuk Hang FWSR Supply Zone (WCH-DMA06)
2843/B&V/21-7	PM and CM Schematic Design Wong Chuk Hang FWSR Supply Zone (WCH-DMA07)
2843/B&V/21-8	PM and CM Schematic Design Wong Chuk Hang FWSR Supply Zone (WCH-DMA08, WCH-PMA08)
2843/B&V/21-9	PM and CM Schematic Design Wong Chuk Hang FWSR Supply Zone (WCH-DMA09, WCH-PMA09)

### **Red Hill Major Supply Zone**

2843/B&V/28	PM and CM Schematic Design Chung Hom Kok & Chung Hom Kok No.2 FWSRs Supply Zone
2843/B&V/28-1	PM and CM Schematic Design Chung Hom Kok & Chung Hom Kok No.2 FWSRs Supply Zone (CHK-DMA01)
2843/B&V/28-1A	PM and CM Schematic Design Chung Hom Kok & Chung Hom Kok No.2 FWSRs Supply Zone (CHK-DMA01A, CHK-PMA01A)
2843/B&V/28-1AA	PM and CM Schematic Design Chung Hom Kok & Chung Hom Kok No.2 FWSRs Supply Zone (CHK-DMA01AA, CHK-PMA01AA)
2843/B&V/28-1AB	PM and CM Schematic Design Chung Hom Kok & Chung Hom Kok No.2 FWSRs Supply Zone (CHK-DMA01AB)
2843/B&V/29	PM and CM Schematic Design Headland Road FWBPT Supply Zone
2843/B&V/29-1	PM and CM Schematic Design Headland Road FWBPT Supply Zone (HLR-DMA01, HLR-PMA01)
2843/B&V/29-2	PM and CM Schematic Design Headland Road FWBPT Supply Zone (HLR-DMA02, HLR-PMA02)
2843/B&V/29-3	PM and CM Schematic Design Headland Road FWBPT Supply Zone (HLR-DMA03, HLR-PMA03)
2843/B&V/30	PM and CM Schematic Design Red Hill FWSR Supply Zone
2843/B&V/30-1	PM and CM Schematic Design Red Hill FWSR Supply Zone (RH-DMA01)

<b>Drawing No.</b>	<b>Drawing Title</b>
2843/B&V/30-2	PM and CM Schematic Design Red Hill FWSR Supply Zone (RH-DMA02)
2843/B&V/30-3	PM and CM Schematic Design Red Hill FWSR Supply Zone (RH-DMA03, RH-PMA03)
2843/B&V/30-7	PM and CM Schematic Design Red Hill FWSR Supply Zone (RH-DMA07, RH-PMA07)
2843/B&V/30-8	PM and CM Schematic Design Red Hill FWSR Supply Zone (RH-DMA08, RH-PMA08)
2843/B&V/30-9	PM and CM Schematic Design Red Hill FWSR Supply Zone (RH-DMA09, RH-PMA09)
2843/B&V/30-10	PM and CM Schematic Design Red Hill FWSR Supply Zone (RH-DMA10, RH-PMA10)
2843/B&V/30-11	PM and CM Schematic Design Red Hill FWSR Supply Zone (RH-DMA11, RH-PMA11)
2843/B&V/30-12	PM and CM Schematic Design Red Hill FWSR Supply Zone (RH-DMA12, RH-PMA12)
2843/B&V/30-13	PM and CM Schematic Design Red Hill FWSR Supply Zone (RH-DMA13, RH-PMA13)
2843/B&V/30-14	PM and CM Schematic Design Red Hill FWSR Supply Zone (RH-DMA14, RH-PMA14)
2843/B&V/30-15	PM and CM Schematic Design Red Hill FWSR Supply Zone (RH-DMA15, RH-PMA15)
2843/B&V/30-16	PM and CM Schematic Design Red Hill FWSR Supply Zone (RH-DMA16, RH-PMA16)
2843/B&V/30-17	PM and CM Schematic Design Red Hill FWSR Supply Zone (RH-DMA17)
2843/B&V/30-18	PM and CM Schematic Design Red Hill FWSR Supply Zone (RH-DMA18, RH-PMA18)
2843/B&V/30-19	PM and CM Schematic Design Red Hill FWSR Supply Zone (RH-DMA19)

**Agreement No. CE 42/2011 (WS)**

**Implementation of Pressure Management and District Metering  
for the Fresh Water Distribution Systems  
of the Tsuen Wan West, Tuen Mun, Sai Kung, Aberdeen  
and Red Hill Major Supply Zones**

**Design and Construction**

**Schedule of Resident Site Staff Standards and Duties**

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**Resident Site Staff**  
**Resident Engineer (Civil) [RE(C)]**

**1. Qualifications**

- (1) Corporate Membership of the Hong Kong Institution of Engineer (Civil Engineering Discipline) elected after 5 December 1975 or equivalent; and
- (2) Grade E or above in English (Syllabus B) and Chinese Language in the Hong Kong Certificate of Education, or equivalent.

**2. Experience**

Three years experience following attainment of Corporate Membership of which two years shall be as Resident Engineer in the construction of concrete structures and laying of water mains in both rural and urban areas.

**3. Duties**

- (1) Discharge the duties of the Engineer's Representative as required by the General Conditions of Contract.
- (2) Exercise the powers and discharge the duties contained in the provisions of the Contract delegated by the Engineer.
- (3) Assist the Engineer to exercise the powers and discharge the duties of those provisions of the Contract that have not been delegated.
- (4) Make recommendations to the Engineer on contractual matters including contractors' claims.
- (5) Supervise the preparation and maintenance of the records required by the Project Administration Handbook and the Project Administration Manual together with any other records required by the Engineer including the taking of photographs.
- (6) Examine and vet all proposals and correspondence received from the

Contractor and prepare draft replies and certificates including draft certificates for payment.

- (7) Attend meetings with the Contractor on matters related to the works including progress, safety and public image and prepare minutes of these meetings.
- (8) Liaise and attend meetings with parties other than the Contractor on matters related to the works and prepare minutes of these meetings.
- (9) Keep the Engineer appraise all developments including progress on Site by monthly reports and any special or incident reports.
- (10) Encourage Contractors and other persons on Site to use safe methods of working.
- (11) Bring to the attention of the Contractor and the Engineer any breach of regulations or good safe working practice that could give rise to the injury of any person on the Site or any member of the public.
- (12) Bring to the attention of the Contractor and the Engineer any working practice that could be detrimental to the Works.
- (13) Uphold the public image of Government in general and Water Supplies Department in particular and bring to the attention of the Contractor and the Engineer any action that is detrimental to a good public image including, but not necessarily limited to, the provision of clean footpaths and barriers in public areas, lighting, signing and guarding, and mitigation of the environmental impact of the construction activities on the public.
- (14) Supervise the other Resident Site Staff as directed by the Engineer including provision of such guidance they may need to carry out their duties, advise the Engineer of any requirements for overtime working and prepare reports on their performance.
- (15) Prepare as-constructed drawings.

- (16) Supervise the deployment and use of any vehicle provided by the Contractor under the terms of the Contract.
- (17) Wear and encourage Resident Site Staff to wear helmets, protective shoes and reflective jackets.
- (18) Review the techniques involved and analyse the results of any test or trial carried out on or off Site.
- (19) Carry out such further duties as may be assigned by the Engineer.
- (20) Check the calculation of quantities of work from measurements taken on Site.
- (21) Take measurements and calculate quantities of work measured from Drawings.

**Resident Site Staff**  
**Assistant Resident Engineer (Civil) [ARE(C)]**

**1. Qualification**

- (1) Degree in civil engineering from a Hong Kong university or equivalent;  
and
- (2) Grade E or above in English (Syllabus B) and Chinese Language in the Hong Kong Certificate of Education, or equivalent.

**2. Experience Required**

Three years relevant post-qualification experience on civil engineering works.

**3. Duties**

- (1) General day-to-day contract administration.
- (2) General correspondence with the contractor.
- (3) Answer technical queries and supply further information.
- (4) Prepare draft works orders, site instructions and variation orders.
- (5) Prepare reports on progress of works and safety.
- (6) Check contractor's submissions.
- (7) Liaise with government departments and utility companies.
- (8) Supervise construction works.
- (9) Prepare meeting minutes.
- (10) Any other duties as may be assigned from time to time by his superior.

**Resident Site Staff**  
**Resident Inspector of Works (C) [RIOW(C)]**

**1. Qualifications**

- (1) Diploma or Higher Certificate in Civil Engineering from Hong Kong Polytechnic or a technical institute or equivalent; and
- (2) Grade E or above in English (Syllabus B) and Chinese Language in the Hong Kong Certificate of Education, or equivalent.

**2. Experience**

Eight years of relevant experience in civil engineering works of which four years shall be in a position equivalent to Assistant Inspector of Works or above for reinforced concrete structures and laying of water mains in urban and rural areas.

**3. Duties**

- (1) Control and direct Resident Works Supervisors and to supervise contractor's activities.
- (2) Check that the contractor follows the agreed works programme.
- (3) Ensure that the work is carried out in accordance with contract documents and approved method statement.
- (4) Report to professional staff on site problems, progress, quality of workmanship, etc.
- (5) Guide Resident Works Supervisors in the preparation of site measurements and check site measurements.
- (6) Carry out field investigations on the works and to assist professional staff in problem investigation and planning.
- (7) Submit monthly progress report or any other return as required by his

superior.

- (8) Check and verify bills submitted by the contractors.
- (9) Check observation of safety precautions for works to be carried out.
- (10) Ensure consistent supervision and measurement standard across all sites.
- (11) Maintain overtime records of all site staff.
- (12) Liaise with Government Departments, utility companies, public on site etc.
- (13) General outdoor staff management.
- (14) Provide on-the-job training to his subordinates.
- (15) Offer comments on method statement and material submissions.
- (16) Supervise construction works and check compliance with contract documents and approved method statement.
- (17) Prepare and maintain proper and contemporary site measurement, diary and other records.
- (18) Arrange and monitor site and laboratory tests.
- (19) Assign works to RAIOW, RWSI and RWSII daily and provide guidance and instruction.
- (20) Inspect all works on site as regards safety to workman.
- (21) Check lighting, signing and guarding for traffic diversion.
- (22) Prepare and maintain all site records up to date.
- (23) Any other duties as may be assigned from time to time by his superior.

**Resident Site Staff**  
**Resident Assistant Inspector of Works (C) [RAIOW(C)]**

**1. Qualifications**

- (1) Diploma or Higher Certificate in Civil Engineering from Hong Kong Polytechnic or a technical institute or equivalent; and
- (2) Grade E or above in English (Syllabus B) and Chinese Language in the Hong Kong Certificate of Education, or equivalent.

**2. Experience**

Four years of relevant post-qualification experience in civil engineering works of which one year shall be in a position equivalent to Assistant Inspector of Works or above for reinforced concrete structures and laying of water mains in urban and rural areas.

**3. Duties**

- (1) Control and direct Resident Works Supervisors and to supervise contractor's activities.
- (2) Check that the contractor follows the agreed works programme.
- (3) Ensure that the work is carried out in accordance with contract documents and approved method statement.
- (4) Report to RIOW and professional staff on site problems, progress, quality of workmanship, etc.
- (5) Guide Resident Works Supervisors in the preparation of site measurements and check site measurements.
- (6) Carry out field investigations on the works and to assist professional staff in problem investigation and planning.
- (7) Submit monthly progress report or any other return as required by his

superior.

- (8) Check and verify bills submitted by the contractor.
- (9) Check observation of safety precautions for works to be carried out.
- (10) Ensure consistent supervision and measurement standard across all sites.
- (11) Maintain overtime records of all site staff.
- (12) Liaise with Government Departments, utility companies, public on site etc.
- (13) General outdoor staff management.
- (14) Provide on-the-job training to his subordinates.
- (15) Offer comments on method statement and material submissions.
- (16) Supervise construction works and check compliance with contract documents and approved method statement.
- (17) Maintain proper and contemporary site measurement, diary and other records.
- (18) Arrange and monitor site and laboratory tests.
- (19) Assign works to RWSI and RWSII daily and provide guidance and instruction.
- (20) Inspect all works on site as regards safety to workman.
- (21) Check lighting, signing and guarding for traffic diversion.
- (22) Prepare and maintain all site records up to date.
- (23) Any other duties as may be assigned from time to time by his superior.

**Resident Site Staff**  
**Resident Works Supervisor I (Civil) [RWSI(C)]**

**1. Qualifications**

- (1) Ordinary Certificate in an appropriate discipline from a Hong Kong Polytechnic or Technical Institute or the equivalent; and
- (2) A proficiency in English and Chinese languages equivalent to Form 5 standard (Syllabus B for English Language) in Hong Kong or minimum Form 3 Education with 5 years' appropriate experience and service.

**2. Experience Required**

Three years of relevant post-qualification experience as Works Supervisor in a Government or quasi Government project.

**3. Duties**

- (1) Assist inspectorate staff in supervising site works.
- (2) Ensure that the site works are constructed in accordance with contract specification, drawings and site instructions.
- (3) Check material quality and workmanship.
- (4) Prepare estimates and assist checking of interim certificates submitted by the contractor.
- (5) Take quantities from drawings and site measurements.
- (6) Perform routine site tests.
- (7) Keep site records, site diary, weather chart, progress report, material delivery records etc.
- (8) Assist in preparation of reports.

- (9) Report to his supervisor on site difficulties, day-to-day progress of work, quality of workmanship, adequacy of contractor's plant and labour force required for the proper execution of the works etc.
- (10) Check that all contractor's site staff observe safety precautions for works to be carried out.
- (11) Liaise with Government Departments, utility companies, public on site etc.
- (12) Any other duties as may be assigned from time to time by his superior.

**Resident Site Staff**  
**Resident Works Supervisor II (Civil) [RWSII(C)]**

**1. Qualifications**

- (1) Ordinary Certificate in an appropriate discipline from a Hong Kong Polytechnic or Technical Institute or the equivalent; and
- (2) A proficiency in English and Chinese languages equivalent to Form 5 standard (Syllabus B for English Language) in Hong Kong or minimum Form 3 Education with 5 years' appropriate experience and service.

**2. Experience Required**

One year of appropriate experience as Works Supervisor in a Government or quasi Government project.

**3. Duties**

- (1) Assist inspectorate staff in supervising site works.
- (2) Ensure that the work is constructed in accordance with contract specification, drawings, site instructions and agreed method statements.
- (3) Check material quality and workmanship.
- (4) Keep daily records of site operations and details and prepare test request forms.
- (5) Take quantities from drawings and site measurements.
- (6) Perform routine site tests.
- (7) Report to his supervisor on site difficulties, day-to-day progress of work, quality of workmanship, adequacy of Contractor's plant and labour force required for the proper execution of the works etc.
- (8) Check that all contractor's site staff observe safety precautions for works

to be carried out.

- (9) Liaise with Government Departments, utility companies, public on site etc.
- (10) Any other duties as may be assigned from time to time by his superior.

**Resident Site Staff**  
**Resident Assistant Clerical Officer (RACO)**

**1. Qualifications**

5 passes in HKCEE including English Language (Syllabus B), Chinese Language and Mathematics or equivalent.

**2. Experience**

Two years relevant experience.

**3. Duties**

- (1) Assist the professional staff in the establishment and maintenance of a system for filing of site documents including contract documents, correspondence, reports, forms, drawings, charts and records.
- (2) Handle day-to-day matters related to receipt and despatch of correspondence, cleaning and maintenance of the site office, coordination of site transport etc.
- (3) Provide clerical support to the site staff including compilation of statistics and preparation of routine returns.
- (4) Coordinate with the Consultants on personnel, office administration and accounting matters of the site staff.
- (5) Receive visitors and maintain record of visitors to site.
- (6) Any other duties as may be assigned from time to time by the RE.