DEVELOPMENT PLANNING & ENGINEERING
PROJECTS / ENGINEERING DIVISION

Guidelines for Building Permit
Technical Submissions to QP-DC in RLIC

QGL-CE-003
# Contents

<table>
<thead>
<tr>
<th>Section</th>
<th>Description</th>
<th>Page No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.0</td>
<td>INTRODUCTION</td>
<td>3</td>
</tr>
<tr>
<td>2.0</td>
<td>OBJECTIVE</td>
<td>3</td>
</tr>
<tr>
<td>3.0</td>
<td>DEFINITIONS/ ABBREVIATIONS</td>
<td>3</td>
</tr>
<tr>
<td>4.0</td>
<td>SCOPE</td>
<td>4</td>
</tr>
<tr>
<td>5.0</td>
<td>RELATED DOCUMENTS</td>
<td>5</td>
</tr>
<tr>
<td>6.0</td>
<td>TECHNICAL DOCUMENT SUBMISSION PROCEDURE</td>
<td>5</td>
</tr>
<tr>
<td>6.1</td>
<td>Covering Sheet</td>
<td>5</td>
</tr>
<tr>
<td>6.2</td>
<td>Submission Category Code</td>
<td>6</td>
</tr>
<tr>
<td>6.3</td>
<td>Purpose of Submission</td>
<td>7</td>
</tr>
<tr>
<td>6.4</td>
<td>Sequence of Technical Submissions</td>
<td>8</td>
</tr>
<tr>
<td>6.5</td>
<td>Other Information</td>
<td>8</td>
</tr>
<tr>
<td>6.6</td>
<td>Content of the submission</td>
<td>8</td>
</tr>
<tr>
<td>6.7</td>
<td>Drawings &amp; Documents</td>
<td>8</td>
</tr>
<tr>
<td>6.8</td>
<td>Soft Copies</td>
<td>8</td>
</tr>
<tr>
<td>6.9</td>
<td>Coordinate System</td>
<td>9</td>
</tr>
<tr>
<td>6.10</td>
<td>Acknowledgement of Submissions</td>
<td>9</td>
</tr>
<tr>
<td>7.0</td>
<td>REQUIREMENTS</td>
<td>9</td>
</tr>
<tr>
<td>7.1</td>
<td>General Requirements</td>
<td>9</td>
</tr>
<tr>
<td>7.2</td>
<td>Specific Requirements</td>
<td>10</td>
</tr>
<tr>
<td>8.0</td>
<td>FACILITIES/UTILITIES PROVIDED BY QP-DC, TIE-IN REQUIREMENTS</td>
<td>17</td>
</tr>
<tr>
<td>8.1</td>
<td>Potable Water</td>
<td>17</td>
</tr>
<tr>
<td>8.2</td>
<td>Fire Water</td>
<td>19</td>
</tr>
<tr>
<td>8.3</td>
<td>Sewage Network</td>
<td>20</td>
</tr>
<tr>
<td>8.4</td>
<td>Storm water drainage system</td>
<td>22</td>
</tr>
<tr>
<td>8.5</td>
<td>Power Supply</td>
<td>22</td>
</tr>
<tr>
<td>8.6</td>
<td>Telecom / Fiber Optic Network</td>
<td>31</td>
</tr>
<tr>
<td>8.7</td>
<td>Access Road to Facility and Road Crossing Philosophy</td>
<td>31</td>
</tr>
<tr>
<td>9.0</td>
<td>INSPECTION AND TEST REQUIREMENTS PRIOR TO TIE-IN</td>
<td>33</td>
</tr>
<tr>
<td>10.0</td>
<td>AS-BUILT INFORMATION</td>
<td>33</td>
</tr>
<tr>
<td>11.0</td>
<td>ATTACHMENTS</td>
<td>33</td>
</tr>
<tr>
<td>11.0</td>
<td>ATTACHMENT A: Category Code 001: Site Development Plan</td>
<td>35</td>
</tr>
<tr>
<td>11.0</td>
<td>ATTACHMENT B: Category Code 002: Architectural Drawings and Documents</td>
<td>36</td>
</tr>
<tr>
<td>11.0</td>
<td>ATTACHMENT C: Category Code 003: Civil / Structural Drawings and Documents</td>
<td>37</td>
</tr>
<tr>
<td>11.0</td>
<td>ATTACHMENT D: Category Code 004: Electrical Drawings and Documents</td>
<td>38</td>
</tr>
<tr>
<td>11.0</td>
<td>ATTACHMENT E: Category Code 005: Mechanical Drawings and Documents</td>
<td>39</td>
</tr>
<tr>
<td>11.0</td>
<td>ATTACHMENT F: Category Code 006: Fire &amp; Life Safety, Loss Prevention Drawings and Documents</td>
<td>40</td>
</tr>
<tr>
<td>11.0</td>
<td>ATTACHMENT G: Category Code 007: Fire Alarm (FA) &amp; Fire Fighting (FF)/Fire Protection Systems Drawings and Documents</td>
<td>41</td>
</tr>
</tbody>
</table>
1.0 INTRODUCTION

Ras Laffan Industrial City has developed Support Service Areas on the West (RSSA) and East (ESSA) sides of the city to accommodate support service industries such as maintenance, logistics, supply and service providers, manufacturers, shut down services, and gas industry related specialist services that will provide support services to End Users in Ras Laffan Industrial City.

Infrastructure, facilities and utilities such as Road, Power, Desalinated water, Potable water, Fire water, Sewage networks, Wastewater treatment and Waste Management facilities are also being developed in this support service area.

Companies that are interested to establish facilities within the Support Services & Industries Areas (RSSA and ESSA) shall follow the Land Application Process and enter into a Support Services Land Lease Agreement (SLLA) made between QP-DC and the tenant for the allocated plot/plots for a duration of up to 15 years, which is renewable subject to QP-DC procedures and policy.

Tenant shall then submit technical drawings and documents associated with the establishment of such facilities in accordance with the requirements of this document to QP-DC for review/approval and shall also pay the necessary Building Permit Fee to obtain a Building Permit from QP-DC.

2.0 OBJECTIVE

The objective of this document is to establish and maintain a documented Guideline to all Tenants for the preparation of Building Permit technical submissions to QP-DC.

This document will also acquaint the Tenants and their Consultants/Contractors with QP-DC philosophy, regulations, and requirements required for obtaining QP-DC’s “Building Permit” and “Consent to Operate”.

3.0 DEFINITIONS/ ABBREVIATIONS

This section contains definitions/acronyms which must be clearly understood by the Tenants/Contractors.

<table>
<thead>
<tr>
<th>Definition</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Building Permit</td>
<td>The authorization issued by QP-DC to build facilities/</td>
</tr>
<tr>
<td></td>
<td>utilities and buildings within RSSA and ESSA.</td>
</tr>
<tr>
<td>CGIS QNG95</td>
<td>The coordinate system implemented by the Centre for Geographical Information System-Qatar National Grid.</td>
</tr>
</tbody>
</table>
4.0 SCOPE

This guideline covers the general requirements for the preparation of Technical Submissions related to Building Permit by Tenants to QP-DC. Prior to installation of any facility in RSSA or ESSA, Tenant is required to submit all the technical details as applicable at relevant stages to QP-DC for review and approval.
5.0 RELATED DOCUMENTS

It is incumbent upon the Tenant to confirm that the latest revision of the Document/Regulation/Drawing is employed. All QP-DC documents are available, upon written request from QP-DC.

- Land Application Process
- Building Fire Protection Philosophy (QPR-CHF-001)
- QP Guideline for Hazard Identification Study (HAZID), (QP-GDL-S-001)
- QP Guideline for Hazard & Operability Studies (HAZOP), (QP-GDL-S-001) and QP Philosophy for HSE Risk Management (QP-PHL-S-100)
- QP Guideline for QRA, (QP-GDL-S-032)
- Fire Alarm Installation Requirement Guidelines, (QGL-RHF-001)
- QP Philosophy For Fire & Safety, (QP-PHL-S-001)
- Procedure for Emergency Muster Points and Emergency Shelter-In Place Evacuation, (QPR-RHR-011)
- Temporary Site Facilities (Attachment 11: CHF Drawing Submittal Requirements)
- Environmental Regulations for Ras Laffan Industrial City
- QP Engineering Standard ES-2-03-0001-Electrical Engineering Philosophy
- Guidelines for Temporary Access Road tie-in with RLIC Main Roads
- Guidelines for Corridors And Corridor Crossings (QGL-CE-001)
- RLIC Signboard Regulations Part 1
- Building Construction and Safety Code (NFPA 5000)
- QCS (Qatar Construction Specifications)
- QTM (Qatar Traffic Manual)
- QHDN (Qatar Highway Design Manual)

6.0 TECHNICAL DOCUMENT SUBMISSION PROCEDURE

Tenant shall submit the technical documentation detailing the proposed item of work with necessary drawings & documents. The details submitted shall be conclusive and comprehensive with regard to the relevant information to enable easy and quick review. Consultants/Contractors are not permitted to submit drawings or documents directly to QP-DC.

All drawings and documents submitted for Building Permit review shall be reviewed, approved and signed off by Tenant’s authorized representative (Consultant).

The technical submissions shall be made in accordance with the following:

6.1 Covering Sheet

The covering sheet must contain the following information as a minimum:

a. A unique Submission number with date.
b. Total number of pages included in the Submission.
c. All the submissions shall be addressed to:

   Asst. Manager  
   Projects / Engineering (RLIC)  
   Development Planning and Engineering  
   QP- Industrial Cities  
   P.O. Box 22247  
   Ras Laffan Industrial City  
   E-Fax: 4013 9823  
   Tel: 4474 8855

d. Information regarding the originator.
e. Name and Designation of the person to whom QP-DC’s response to be sent.
f. Name of the Tenant.
g. Fax Number to which QP-DC response to be sent.
h. Name of the Facility and Subject.
i. Brief Description of the request/ content of the submission.
j. Contact details (Phone number, Mobile number, email ID) of a person with whom clarifications on the subject matter are to be sought.

All the submissions shall contain a ‘Covering sheet’ as per the format attached as in Attachment L.

A document/drawing list showing the document/drawing no., description, revision shall be attached with the covering letter.

### 6.2 Submission Category Code

Submissions are categorized under the following headings based on the nature of work/discipline. Indicate the appropriate submission category Code in the relevant box provided in the covering sheet.

Submissions under each category shall be made separately in accordance with the relevant attachment. The Attachment-A to K describes the details that are to be submitted.

<table>
<thead>
<tr>
<th>CATEGORY CODE</th>
<th>DESCRIPTION</th>
<th>ATTACHMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>001</td>
<td>Site Development Plan</td>
<td>A</td>
</tr>
<tr>
<td>002</td>
<td>Architectural Drawings and Documents</td>
<td>B</td>
</tr>
<tr>
<td>003</td>
<td>Civil /Structural Drawings and Documents</td>
<td>C</td>
</tr>
</tbody>
</table>
6.3 Purpose of Submission

The purpose of submission shall be indicated in the appropriate box in the covering sheet by inserting a tick mark. For this purpose the following types are identified:

6.3.1 For Approval
The documents that are submitted to QP-DC which requires QP-DC review and issuance of necessary ‘Approval Letter’, resorts under this type. The approval letter is necessary for Tenant/Contractor to initiate the Consolidated Permit to Work and to obtain a Building Permit.

6.3.2 Supplementary submissions
A submission made subsequent to an earlier submission, supplementing the details that are required for QP-DC’s review. This may be the result of a clarification meeting between QP-DC & the Tenant/Contractor or a voluntary additional submission of details by the originator.

6.3.3 Revised Submissions
A subsequent submission made after an original submission revising the drawings & documents. This must supersede the original submission. This submission may be the result of a discussion/s with QP-DC or any other authority involved in the approval/concurring process or a voluntary submission due to an engineering change.

6.3.4 Response to QP-DC Letters
This type is applicable when revised /supplementary submission is made by the Tenant taking into consideration various comments/query communicated to the Tenant on an earlier submission in writing. This shall essentially reference the earlier communications from QP-DC.
6.3.5 Information & records
The submissions that are made to QP-DC wherein no action from QP-DC is solicited will come under this type. This will be applicable in the case of reports, as-built details, etc.

6.4 Sequence of Technical Submissions
Tenant shall submit the technical drawings and documents in the following sequence:

1. An overview of the facility describing the facility shall be submitted along with the initial submission of the Site Development plan to understand the business model, process description, process flow diagrams (PFDs), Material Safety Data Sheet (MSDS) of chemicals if any,
2. Category code 001 drawings and documents
3. Category code 002 & 006A drawings and documents shall be submitted after Category code 001 documents have been reviewed and approved by QP-DC.
4. All other category code drawings and documents shall be submitted after the above mentioned category documents have been reviewed and approved by QP-DC.

6.5 Other Information
The submission must indicate previous reference(s)/ correspondence(s), if any.

6.6 Content of the Submission
QP-DC’s Review & Approval process mainly focuses on details which are pertinent to ensure that the proposals are inline with QP-DC’s Regulations and Guidelines. QP-DC’s Review/Approval does not absolve the Tenant from checking and ensuring the technical content of the document with regard to its conformity with applicable Codes/Standards & Environmental requirements. Hence all Tenants must refrain from submitting details such as fabrication drawings, piping isometrics, design/stress calculations etc. unless otherwise requested by QP-DC.

6.7 Drawings & Documents
All documents shall be in A4 size.
All drawings shall be in the standard sheet size (A0/A1/A2 or A3) prepared as per standard engineering practice. Sketches are not acceptable.
All drawings must be numbered with revision.
At least 3 sets of drawings & documents must be submitted.

6.8 Soft Copies
Complete set of technical submission shall be in PDF format (scanned copy with Tenant/Consultant’s endorsement) and in addition soft copies of drawings shall be
submitted in AutoCAD format compatible with QP-DC system. Site Development Plan including all tie-in drawings shall be submitted in QP-DC coordinate system with scale suitable to incorporate in QP-DC Master Plan.

6.9 Coordinate System

The submitted drawings shall be in the CGIS-QNG 95 coordinate system. No other coordinate system will be entertained.

6.10 Acknowledgement of Submissions

If Tenant/Contractor requires acknowledgement, QP-DC will acknowledge the receipt of the submission from the Office of CEL on the duplicate of the covering sheet. No email submissions will be accepted.

7.0 REQUIREMENTS

The QP-DC’s Building Permit is the authorization to build facilities/utilities and buildings within RSSA and ESSA. Drawings and documents mentioned in the Attachments A to K shall fulfill the following requirements as minimum:

7.1 General Requirements

Based on the nature of facility/ business and/or Operation within the facility, the Tenant may be required to conduct Environmental Baseline Assessment (EBA)/ Environmental Impact Assessment (EIA) and/or Quantitative Risk Assessment (QRA) during the building permit review process as per QCS, QTM, QHDM and prevailing QP-DC’s Regulations & Guidelines. Besides the requirements of this document, if any additional mitigating measures are required as per the recommendations of EBA/EIA/QRA, then more stringent requirements shall be applicable.

For Facilities with Chemical storage, separate approval shall be obtained from Qatar Civil Defense (QCD) for the Site Development Plan and all other relevant drawings and documents.

With regards to Design Undertaking (Appendix D), Contractor Undertaking (Appendix F) and Supervisor Undertaking (Appendix H) Tenants shall ensure all parties for the intended particular undertakings shall have the necessary commercial registration with the Ministry of Economy & Commerce and registered with the Ministry of Municipality and Urban Planning, Qatar.

Tenants on the East Side shall have their own arrangement for utilities which are not available.
All drawings and documents submitted for Building Permit review shall be reviewed and approved and signed off by Tenant’s authorized representative (Consultant) stating that the designs are complying with relevant Codes.

Any document/drawing reviewed unofficially, the same will not be considered unless submitted officially to QP-DC.

Method Statement and Job Safety Analysis of works related to all tie-in activities and crossings shall be submitted to QP-DC for review and approval. QP-DC may request the Tenant to submit the Method Statement and Job Safety Analysis of specific activities within the plot area for review and approval.

Any request for deviation from this guideline must be submitted officially for approval.

7.2 Specific Requirements

Tenants shall design and build their facilities in accordance with the minimum requirements given below.

7.2.1 The maximum coverage of all buildings and structures on a plot shall not exceed 65% of the extent of the plot.

7.2.2 The following setbacks shall apply:

- Sides: 6m
- Roadway: 6m
- Rear: 6m

Buildings, structures, sheds or any above ground facilities are not permitted in this area. However, soft landscaping and parking may be permitted in this setback area. Also miscellaneous supporting facilities such as guard room, water tanks, pump rooms, electrical room and underground holding tanks may be permitted in the roadway frontage setback area subject to QP-DC approval.

7.2.3 Height of any building or structure shall not exceed 16m, measured from Finished Grade Level to wall plate height. QP-DC may grant consent for greater height if deemed critical to the function of the building or structure. Refer to typical drawing SK-QP-DC-03283 in Attachment-M.

7.2.4 Levelling and Grading

The Finished Grade Level of the plot(s) shall be minimum 0.5m lower than QP-DC main road level.

7.2.5 Fencing
All plots shall be fenced to a minimum height of 2.4m measured from Finished Grade Level to the top of the fence. Refer to typical drawing SK-QP-DC-03283 in Attachment-M. The height will be calculated at the mid point between the highest and lowest Finished Grade Level along the affected boundary.

Fence shall consist of a chain link, galvanized, PVC coated in green colour.

Compound wall may be considered when its presence is critical for operational requirements or insisted upon by QP-DC when the utilization of a portion of the site will be such that it impacts negatively on the character of the area.

Roadway side fence can have a wall with a maximum height of 0.60m from bottom of the fence for decorative purpose. The wall shall be painted in natural earth tones or colours. The remaining height of the fence shall be with palisades or columns or similar.

The foundation and fence structure shall not encroach the adjacent boundary.

7.2.6 Landscaping

A minimum of 3.5% of the total plot area shall be soft landscaped as Per QP-DC Environmental Regulations.

The vegetation to be used shall preferably be indigenous species requiring a minimum amount of water and be compatible with the prevailing environmental conditions such as salinity, soil composition, wind speed and temperature.

The Landscape Plan must contain a complete list of the plants to be used. “Desert-type” landscaping may be considered as part of the total landscaping proposal. Tenant shall remain responsible for the maintenance of the landscaping as per the approved Landscape Plan for the duration of the lease of the plot.

Tenants shall install a separate irrigation water tank and pumping system within their plot. The treated sewage water may be sourced from QP-DC’s Waste Water Treatment Plants if available after making necessary service agreement with QP-DC.

7.2.7 Storm Water Drainage

Tenants must contain storm water run off within their plot and design a suitable self contained drainage system to accommodate 100% of the storm water generated.

7.2.8 Finishing Schedule

No un-plastered cement block wall/ structure will be permitted.
Exteriors of all plastered and other structures including pre-coated rust resistant type shall be in the following colours to create a uniform aesthetic appearance: White; various hues of off-white that blend in with the immediate Desert Landscape; hues of sandy colour; hues of sienna; reddish brown/yellowish brown. Tiles, if any, to be used to clad any wall or structure shall match with the above colours.

7.2.9 Parking, Loading and Off Loading

The following minimum parking and off-loading facilities must be accommodated on-site. Parking bay requirements are expressed as a number of bays per Gross Leasable Area (GLA).

<table>
<thead>
<tr>
<th>Component</th>
<th>Bays per 100m² GLA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Office component</td>
<td>4 Bays per 100m² GLA</td>
</tr>
<tr>
<td>Industrial component</td>
<td>1 Bay/100m² GLA</td>
</tr>
<tr>
<td>Warehousing component</td>
<td>0.5 Bays/100m² GLA</td>
</tr>
</tbody>
</table>

GLA is defined as the area of a building of all floors and shall exclude the following:

1) All exclusions from the definition of floor space
2) Toilets
3) Lift shafts, service ducts, vertical penetrations of floors, lift motor rooms and rooms for other mechanical equipment required for the proper functioning of the building
4) Areas reasonably used in connection with the cleaning, maintenance and care of the building, excluding dwelling units for caretakers, supervisors, cleaners or maintenance staff
5) Interior parking and loading bays

All parking, loading facilities and manoeuvring space must be accommodated on-plot. Parking and Loading facilities will be provided in such a manner that vehicles will enter the plot in forward motion and exit the plot in forward motion.

Tenant will be required to indicate the proposed vehicular parking, internal circulation and loading and off-loading proposals as part of the Site Development Plan.

Delivery Vehicles will not be permitted to wait off-plot for loading or off-loading purposes. There will be no off-plot parking/loading/waiting by trucks or other vehicles. Gate houses or guard houses shall not be located off-plot.

7.2.10 Potable water meter

Tenants shall design and install potable water meter in accordance with the minimum requirements given below.
1) Tenant shall locate the potable water meter as close as to the QP-DC tie-in chamber. The arrangement, type and model of the flow meter shall have QP-DC approval prior to installation.

2) Electronic flow meter shall be used with accuracy of $\pm 0.5\%$. Calibration certificates to be submitted to QP-DC prior to installation.

3) The flow meter shall be sized to accommodate the maximum flow applicable for the plot.

4) The supply line to the plot to have a lockable type globe valve to set the flow and limit it within the allowable flow range.

5) A strainer shall be installed upstream of the flow meter.

6) In case the FM is installed inside a pit, it should be positioned in a way that the meter readings can be taken without having to go inside the chamber. Alternatively, external Display Unit to be installed above ground on the fence boundary facing outside and shall be encased in a protective enclosure.

7) Continuous power supply shall be ensured for the flow meter. It can be AC powered either with UPS or in built battery back up.

8) QP-DC operations team shall have un-restricted access to the potable water flow meter at all times for the purpose of inspection and meter reading.

9) Tenants to ensure that all mandatory spares with respect to the FM installation and commissioning are readily available. Flow meter to be verified for calibration every year at Tenant’s cost. Faulty flow meters shall be replaced by the Tenant at their own cost at advice from QP-DC.

10) Tenants to fill-up the check list of requirements for the potable water meter. Please refer to Appendix - N for the check list.

7.2.11 Site Access

No vehicular access from major roadways (main roads) abutting these properties will be permitted. Typical drawing SK-QP-DC-02718 in Attachment-M indicates roads to which no access may be taken. Pedestrian access gates/emergency access may however be provided on these road boundaries.

Emergency access gate of 6m wide shall be provided on the opposite side of main access gate with vehicle accessibility.

The entrance and exit proposals shall be reviewed with due consideration to existing configurations, proximity to existing access points, corners and intersections.

Two exit/entrance ways may be considered by QP-DC on condition that neither shall be closer than 15m from any existing or proposed entrances/exits nor shall they be closer than 7.5m to any side boundaries.
If a singular access is proposed it shall not be closer than 7.5m from the side boundaries of the property. Turning radii into the plot shall be designed depending upon anticipated use and in accordance with QHDM.

Vehicular access to a corner plot within 50m of an intersection, measured from the edge of the asphalt roadway, will be subject to QP-DC review and approval.

The guardhouse must be located in such a way that vehicles awaiting security clearance does not cause traffic congestion on the adjacent QP-DC roads.

Any modification to existing roads due to the new access shall be in accordance with QHDM and QCS.

7.2.12 Area Classification

Tenant shall submit hazardous area classification drawings, if applicable, in accordance with EI-15 Model code of safe practice (EI 15, formerly referred to as IP 15), NFPA-70 : National Electrical Code and NFPA-497: Recommended Practice for the Classification of Flammable Liquids, Gases, or Vapors and of Hazardous (Classified) Locations for Electrical Installations in Chemical Process Areas.

All equipment and devices/instruments to be used/installed within the classified hazardous area shall be suitably rated and certified.

7.2.13 Lighting

Tenant shall provide and install additional area lighting that will effectively illuminate half portion of QP-DC roads abutting the property. This shall be clearly depicted in the lighting layout drawing including details and supported by lighting calculation using validated software. The additional area lighting design shall be in accordance with QP Engineering Standard ES-2-03-0001-Electrical Engineering Philosophy. The calculation shall contain the minimum required information or details such as basis and assumptions, design considerations, requirements/standards, type of light fitting, position/orientation, and standard output data generated by the calculation software, and the calculation output results shall clearly demonstrate the actual site installation and confirm that the design meet the minimum requirements. However, this requirement does not apply where street lighting are already provided and installed along street boundaries with dual carriageways.

7.2.14 Road Marking/Signage and Signboards

Road marking and signage details in accordance with QTM shall be submitted as part of Road Development Plan.
A Signage Master Plan (SMP) must be submitted to QP-DC as part of the Site Development Plan for directional signboard structures to guide vehicles and pedestrians to the facility. The SMP must be compliant with the stipulations and restrictions as set out in the QP-DC Signboard Regulations.

7.2.15 Telecom

A brief description of the telecommunication facilities planned for the new building / facility with details of telephone, fax, intercom and data connections shall be submitted. Specify if any kind of radio installation is planned within the facility.

7.2.16 Fire & Life Safety

Tenants within RSSA and ESSA are required to submit the following for approval.

1) Fire risk assessment
2) Fire and life safety design philosophy
3) Site layouts including fencing, gate access to the site, proximity of all buildings, process areas, manufacturing sites, and storage exposures
4) Building layouts, including building area, the division of the building by firewalls, the degree of fire separations of storeys, shafts, and special rooms or areas
5) Architectural drawings showing fire separations
6) Fire alarm system layouts and associated details
7) Fire protection/suppression system details (Fire water, Sprinkler and gaseous suppression systems)
8) Life safety including means of egress, travel distances, occupant loads, exit light placement, emergency light placement, fire extinguisher locations including lighting calculation for emergency lighting
9) Hazardous processes and operations, if any
10) Material submittal: Fire equipment certification and approvals

The facilities shall be designed as per the following QP-DC documents:–
1) Document No. QPR-CHF-001: Building Fire Protection Philosophy
3) QP Philosophy For Fire & Safety (QP-PHL-S-001)
4) QP Guideline for Hazard Identification Study (HAZID), (QP-GDL-S-001)
5) QP Guideline for Hazard & Operability Studies (HAZOP), (QP-GDL-S-001) and QP Philosophy for HAS Risk Management (QP-PHL-S-100)
6) QP Guideline for QRA, (QP-GDL-S-032)
7) Procedure for Emergency Muster Points and Emergency Shelter-In Place Evacuation (QPR-RHR-011)
9) Temporary Site Facilities (Attachment 11: CHF Drawing Submittal Requirements)

When an alternative protection measure is proposed in place of a measure prescribed by the referenced codes, standards, and these guidelines, adequate documentation shall be provided by the Tenant to demonstrate that the proposed alternative solution complies with QP-DC requirements. QP-DC reserves the right to permit or deny any alternative solution at its sole discretion.

7.2.17 Environmental Regulatory Requirements

Tenants shall obtain Ministry of Environmental (MoE) approval for installation of their facilities (Environmental Permit) as well as operation of their facilities (Consent to Operate).

Tenants shall comply with QP-DC Environmental Regulations and QP-DC Waste Management guidelines.
8.0 FACILITIES/UTILITIES PROVIDED BY QP-DC, TIE-IN REQUIREMENTS

QP-DC provides various facilities and utilities that are common to the Tenants of the RSSA and ESSA. These include roads, power, potable water, fire water, sewerage, and telecommunication networks. However, fire water network is not available for ESSA. QP-DC distributes potable water and fire water to the Tenants of the RSSA and ESSA (only potable water) at plot boundaries or in the proximity. Sewage collection network is also available which will collect sewage waste water from individual plots in the RSSA and ESSA. Each Tenant will be provided with a service connection for the Tenants to tie-in to these utilities and shall avail these facilities. Refer to typical drawing SK-RLC-03570 in Attachment-M.

Tenant shall arrange and carry out tie-in connections with QP-DC existing facilities/utilities including required materials after obtaining necessary approval from QP-DC. Separate CPW shall be raised for each tie-in work with QP-DC network.

A dismantling joint is to be provided in the tie-in valve chamber for fire water and potable water connections. Tenant shall design and install independent pipe support for their portion of pipeline with in the chamber. Gap between the sleeve and pipeline in the valve chamber shall be sealed. A regular preventive and corrective maintenance of these pipes, fittings and accessories as well as cleaning of sewage chamber at the tie-in shall be under Tenant’s responsibility.

Power is provided to the Tenants through QP-DC Power network.

QP-DC provides passive telecommunication infrastructure such as telecom ducts space for laying of fiber cables & fiber optic cable network for operation of telecommunication equipment, fire alarm management, SCADA systems and LAN within QP-DC. It also provides telecom services on temporary basis such as land line, copper cable, and TETRA radios to contractors and liaises with Qatar Telecom ISP service provider for provision of internet services. Tenants/Contractors are required to enter into an agreement with QP-DC prior to start using QP-DC telecommunication infrastructure. Applicable tariffs/charges are levied by QP-DC for providing aforementioned telecom infrastructure.

Identification tags/markers with the details like size, depth and type of utility shall be installed.

8.1 Potable Water

QP-DC’s Potable Water (PW) distribution network at RSSA is designed based on the following water demand quantities for each plot:

For plot sizes 60m x 100 m : 23m³/day/hectare (ha) (Total 13.8m³/day)
For plot sizes 200m x 120m : 61m³/day/ha (Total 146.4 m³/day)
The interface with the Tenants will be in an underground valve chamber located within each Tenant’s plot or in proximity to plot boundaries. These service connections shall have the following sizes and is provided with an isolation valve located in the valve chamber. Refer to typical drawing SK-RLC-03573 in Attachment-M.

For plot sizes 60m x 100 m at RSSA : 25mm (1”) pipe
For plot sizes 200m x 120m at RSSA : 40mm (1½”) pipe
For plots at ESSA : 50mm (2”) pipe

The maximum PW quantity that the Tenant can avail per plot will be limited to the design quantity mentioned above. However, request for higher quantities may be considered by QP-DC.

Tenants shall verify the location and sizes of the tie-in service connections provided by QP-DC at site before finalizing their tie-in arrangement drawings.

Tenant shall locate the water meter at the plot boundary so that QP-DC operations team can have access at all times for inspection and meter reading. Refer to Section 7.2.10 for potable water meter requirements.

The design parameters of the QP-DC potable water distribution network are given below for Tenants to design their potable water system in conformity to QP-DC network design from the tie-in connection. Tenants to size their supply lines based upon minimum available pressure.

Potable water network at RSSA

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Min. supply pressure (at tie-in)</td>
<td>2 barg</td>
</tr>
<tr>
<td>Design Pressure</td>
<td>16 barg</td>
</tr>
<tr>
<td>Design Temp.</td>
<td>40°C</td>
</tr>
<tr>
<td>Vacuum</td>
<td>Full</td>
</tr>
<tr>
<td>Material of construction</td>
<td>GRP for pipes dia. 200mm &amp; above</td>
</tr>
<tr>
<td></td>
<td>uPVC for pipes dia. less than 200mm.</td>
</tr>
</tbody>
</table>

Potable water network at ESSA

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Min. supply pressure (at tie-in)</td>
<td>2 barg</td>
</tr>
<tr>
<td>Design pressure</td>
<td>9.4 barg</td>
</tr>
<tr>
<td>Maximum Design Pressure</td>
<td>10 barg</td>
</tr>
<tr>
<td>System design pressure</td>
<td>3.5 barg</td>
</tr>
<tr>
<td>Vacuum</td>
<td>N/A</td>
</tr>
<tr>
<td>Material of construction</td>
<td>uPVC for buried pipe and</td>
</tr>
<tr>
<td></td>
<td>Ductile iron epoxy coated for within</td>
</tr>
<tr>
<td></td>
<td>chambers</td>
</tr>
</tbody>
</table>
Tenant shall install storage tanks inside their plot sufficient for storing minimum three days (72 hours) peak water demand.

Tenants shall start availing potable water supplies from QP-DC ONLY after entering into a Potable Water Supply Agreement with QP-DC. For making the Potable Water Supply Agreement, the Tenant will be required to register for access to QP – DC website and subsequently submit the agreement request on-line along with the supporting documents, such as, the Land Lease Agreement, Approved Potable Water, Tie-in Drawings etc. The Tenant is advised to contact the concerned QP – DC division via e-mail at erlcsupport@qp.com.qa with regard to the application of the Potable Water Supply agreement.

Not limiting to the minimum requirements as per Attachment - P, the Tenant shall make the necessary tie-in to QP-DC Potable Water network.

8.2 Fire Water

QP-DC’s Fire Water (FW) network at RSSA is designed to meet a maximum fire water demand of 35000 liters per minute (LPM) at a minimum residual pressure of 2 barg.

The interface with the Tenant will be in an underground valve chamber located within each Tenant’s plot or in proximity to plot boundaries. These service connections shall have a Post Indicator Valve Assembly (PIVA) of size 150 mm as tie-in valve located in the valve chamber. Refer to typical drawing SK-RLC-03571 in Attachment-M.

Tenants shall verify the location and sizes of the tie-in service connections provided by QP-DC at site before finalizing their tie-in arrangement drawings.

The supply source and specification of FW:-
I. Please be informed that at present we are using the potable water as the source of the firewater network. The same will replaced with treated industrial water (TIW) in future.
II. Therefore the design of the fire fighting system shall be suitable for TIW specifications. Please refer to Attachment – O for the specification of the TIW.

Tenants shall design and install a water meter, listed for "fire service use" by UL/FM, on the fire water line for QP-DC to monitor and reconcile fire water consumption. Water availed from the QP-DC for fire fighting or testing of fire fighting equipment/system ONLY shall be free of cost. As per NFPA – 24 Clause # 8.2: Domestic Service Use Prohibited - The use of hydrants and hose for purposes other than fire related services shall be prohibited. In this regards any other unintended consumption of Fire Water shall be prohibited and seen as a violation.

Therefore any other unintended consumption of Fire Water shall be prohibited and considered as a violation and shall be accordingly chargeable as per applicable rates
In order to avoid any unintended usage of Fire Water the water meter shall be temper proof with seal.

The arrangement, type and model of the flow meter shall have QP-DC approval prior to installation. Water meter shall be designed to meet all designed flow rates and pressure. Flow meters shall have an accuracy of + 0.5% and shall have a continuous power supply. Inspection, Testing and regular maintenance of flow meters shall be performed by Tenants in accordance with NFPA 25. Tenants to fill-up the check list of requirements for the firewater water meter. Please refer to Appendix - O for the check list.

The design parameters of the QP-DC fire water network are given below for Tenants to design their fire water system in conformity to QP-DC network design from the tie-in connection:

- **Min. supply pressure (residual pressure)**: 2 barg
- **Design Pressure**: 16 barg
- **Design Temp.**: 40°C
- **Vacuum**: Full
- **Material of construction**: GRP

(Refer to Item 13 of Attachment – M for Fire Flow vs Residual Pressure Graph – Residual Pressure Available During Fire Event, Package 1.)

The fire water main shall be designed as per NFPA 24 and tenants shall workout fire water demand as per NFPA 1, 11, 13 and 15.

For the WSSA if the fire water demand based on the fire risk analysis exceeds 35000 LPM @ 2 barg the Tenants shall install FW storage and pumping arrangements to meet this additional demand.

For the ESSA, Tenants to install fire water pumps to cater for the fire water demand which shall be worked out as per NFPA-24 (NFPA 1, 11, 13 and 15) method and to provide water storage tanks for 2-hour fire fighting as per NFPA.

Not limiting to the minimum requirements as per Attachment - P, the Tenant shall make the necessary tie-in to QP-DC Firewater network.

### 8.3 Sewage Network

QP-DC’s sewage collection network comprising sewers, service connections, manholes and rising mains in the RSSA and ESSA will collect sewage waste water from individual plots.

Sewer lines from Tenants plots are gravity lines with uPVC as the material of construction and terminated at various collection chambers and pumped to QP-DC’s waste water treatment plant.
The interface with Tenant will be in an underground chamber located within each Tenant’s plot or in proximity to plot boundaries. These service connections shall have the following sizes. Refer to typical drawing SK-RLC-03572 in Attachment-M:

For plot sizes 60m x 100 m : 150mm
For plot sizes 200m x 120m : 200mm

QP-DC’s sewage collection network system at RSSA is designed based on the following average sewage flows from each plot:

For plot sizes 60m x 100 m : 20m³/day/ha (Total 12 m³/day)
For plot sizes 200m x 120m : 52m³/day/ha (Total 124.8 m³/day)

The design parameters of the QP-DC sewage system gravity lines are given below for Tenant to design their sewage system in conformity to QP-DC network design up to the tie-in service connection.

Design Temp. : 40°C
Material of construction : uPVC

The Tenant shall install gravity sewers to tie-in to the service connection. Any other waste water is not allowed in the Sewage system and need to be contained and treated on plot.

Tenant shall verify the invert level and coordinates of the sewage tie-in chamber located inside and back calculate the slope and design their internal sewage system accordingly.

Tenant shall install sewage holding tank inside their plot sufficient for storing minimum three days (72 hours) sewage. The connection details/flow arrangement from holding tank to QP-DC tie-in manhole shall be clearly shown. No flow meters are to be installed on the sewer lines. Monthly billing for sewage quantities shall be based upon the monthly potable water quantities.

Isolation valves shall be provided in the sewage line connecting to the tie-in chamber as well as to the holding tank.

Septic tanks are not allowed inside QP-DC.

Tenants shall start availing sewage treatment services at QP-DC ONLY after entering into a Service Agreement with QP-DC. For making the Service Agreement, the Tenant will be required to register for access to QP – DC website and subsequently submit the agreement request on-line along with the supporting documents, such as, the Land Lease Agreement, Approved Sewage Tie-in Drawings etc. The Tenant is advised to contact the concerned QP – DC division via e-mail at erlcsupport@qp.com.qa with regard to the application of the service agreement.
Not limiting to the minimum requirements as per Attachment - P, the Tenant shall make the necessary tie-in to QP-DC Sewage network.

### 8.4 Storm water drainage system

Storm water generated within the Tenant’s plot shall be managed within the plot limits by suitable methods like soak-away etc.

QP-DC’s storm water drainage system is not designed to cater for the run-off from Tenant’s plot. Hence, tie-in to the QP-DC’s existing or future storm water drainage is not permitted.

The drainage design basis shall be in accordance with Section 8 of the Qatar Highway Design Manual (QHDM) and Design criteria adopted by Drainage Affairs/State of Qatar. Also ensure that drainage capacity is adequate to cater fire water run-off.

The design intensity rainfall shall be found from the “Intensity–Duration–Frequency chart” as per figure 8.1b of QHDM. Return period of 10 years and storm duration of 1hr shall be considered.

### 8.5 Power Supply

The power distribution system/network consisting of Ring Main Units (RMU’s), Package Unit Substations (PUSS’s), and the associated feeders and cables are installed in RSSA and ESSA to cater the Tenant’s power requirements.

Each Tenant will be provided with a tie-in point (service connection) from the 11kV power distribution network or 415V power distribution system. The tie-in point shall be through the Ring Main Unit (RMU), Package Unit Substation (PUSS), or cable splice/joint on existing feeder cable of power distribution system/network depending upon the requirements which shall be decided by QP-DC.

Tenants shall ensure that the Electrical Design and Installation inside Tenant’s Facilities comply with Local Statutory and Kahramaa Standards. In addition, Tenant shall also carry out risk assessment to determine the need of lightning protection in their facilities. If required, lightning protection system shall be provided/installed in accordance with NFPA 780 – Standard for the Installation of Lightning Protection Systems or BS EN 62305 – Protection against Lightning.

#### 8.5.1 Tie-in Requirements/Provision on the Electrical Power Supply to Tenants

#### 8.5.1.1 General
Based on the power demand, Tenants will be classified into four categories as given below (Refer Sec. 8.5.2 for complete details):

Category 1: Low Voltage (Power demand up to 200kW)
Category 2: 11kV (Power demand greater than 200kW up to 3500kW)
Category 3: 11kV (Power demand greater than 3500kW but less than 5000kW)
Category 4: 11kV or 33kV Bulk (Power demand 5000kW and above)

All works and services associated with the connection of power supply from QP-DC Networks including tie-in, tariff metering, provision of Ring Main Units (RMU), Transformers, Switchgears, cables, modifications to existing installation, etc., shall be the responsibility of the Tenant and subject to approval by QP-DC.

Tenant shall submit Load list/Schedule indicating the equipment to be connected and its Power (kW) requirements and demand factor to support its maximum power demand. Loads shall be clearly classified if continuous, intermittent, or standby. Refer to typical format in Attachment-M.

Tenant shall submit estimated monthly Power demand (kW/kVA) and Energy consumption (kWh) for the first 5 years and yearly Power demand (kW/kVA) and Energy consumption (kWh) for the next 10 years. Refer clause 8.5.1.6.

Estimated Power and Energy demand as confirmed by the Tenant and approved by QP-DC will be considered in the Power Supply Agreement (PSA) and will be the basis of the power distribution network design.

Cable from QP-DC tie-in point to Tenant’s switchgear/RMU shall be provided and installed by the Tenant including any associated pilot wires/control cables required.

Tenants shall install cable markers from QP-DC tie-in network to Tenant’s interface point in accordance with QP Engineering Standard - Electrical Cable Marker Post Dwg. No. ES.2.62.0016, Sht. 001 in Attachment-M.

Minimum bending radius requirement shall be observed and implemented for cable installation.

Electrical Room and Package Unit Substation area shall have adequate space meeting the required clearances as per standard/requirements to accommodate all the electrical equipment.

Power cable crossing QP-DC wet utility corridor shall be provided with RCC precast slabs of 100mm thick (installed between cable and pipeline). Minimum 600mm separation distance shall be maintained between cable and pipes.
Tenant’s cable crossing existing underground utilities shall be in accordance with QP-DC Guidelines QGL-CE-001 (Guideline for Corridors and Corridor Crossings).

Power cables associated with QP-DC power network tie-in shall be installed at a minimum depth of 1.1m.

8.5.1.2 Environmental Conditions

All equipment and devices to be provided and installed by the Tenant associated with QP-DC tie-in interface shall be suitable for the following site conditions within RLIC:

Altitude : less than 1000 m

Ambient Temperature :

- For design of electrical equipment installed indoor in Substation : 45°C
- Design summer dry bulb : 43°C
- Maximum summer dry bulb : 48°C
- Maximum shade temperature : 52°C
- Minimum shade temperature : 0°C

Relative Humidity :

- Absolute maximum humidity : 100%
- Absolute minimum humidity : 1%

The atmosphere shall be considered to be dusty and corrosive, as normally associated with oil and gas processing plants, refineries, chemical plants, LNG plants, industrial sites, and the like. In addition, the atmosphere shall be considered as salt laden for coastal locations.

High humidity is experienced in all areas and condensation will occur on all equipment during some period of its lifetime and therefore all components, nuts, bolts and washers, etc., shall be of corrosion resistant material except where specifically stated otherwise and shall be tropicalized.

Equipment shall not result in improper operation or cause to malfunction due to the adverse effect of the above site conditions.

8.5.1.3 Tie-in and Battery Limits
The Battery Limit shall be the terminal of the QP-DC RMU/switchgear to which the Tenant connects. This shall be clearly demonstrated in the relevant drawings to be submitted to QP-DC. Connection to the Battery Limit facilities shall be done in such a way so as not to damage QP-DC equipment or affect any other Tenants’ connection. Any damages caused due to negligence, Tenant shall be responsible to reinstate the same as directed by QP-DC.

Where the Equipment/RMU is installed by the Tenant and become part of the existing QP-DC ring network, the operation and control shall be by QP-DC (ALL RMU CB’s and other devices), and maintain by the Tenant. Such condition applies where the tie-in point is at the existing feeder cable of power distribution system/network (i.e., 11kV ring to be cut and splice/joint).

Tenant’s Package Substation shall be tagged as per Tenant’s equipment tag numbering procedure/standard. Tag numbers shall be clearly indicated in the relevant drawings, i.e., Single Line Diagram, Equipment Layout, etc.

In the event where QP-DC requires Tenant’s equipment/facility to be tagged in accordance with QP-DC Tagging standard, then Tenant shall raise tagging request by completing the tag request form(s) to be submitted to QP-DC.

Tenant shall coordinate with QP-DC for the tie-in. Any work to be performed on the tie-in connection shall be under QP-DC’s authorisation and in the presence of a QP-DC representative. Work shall be carried out Tenant’s electrical personnel authorized by QP-DC for the required voltage level.

Tenant shall ensure that all materials used for the Tenant’s connection are of sufficient quality to ensure a reliable and safe connection to acceptable standards. Failure of the connection equipment due to material defect, inadequate design or poor workmanship and damage to other Tenant’s or QP-DC’s equipment due to failure of the Tenant’s tie-in shall be to the Tenant’s account only. Once tie-in point is approved, Tenant shall proceed with the necessary design of their power distribution network including the tie-in connection.

Tenant shall ensure that an appropriately rated circuit breaker with a trip characteristic that grades acceptably with the QP-DC supply breaker shall be installed in order that this breaker trips before the QP-DC breaker in the event of any fault.

Tenant shall carry out necessary power system studies/calculation such as load flow, short-circuit, protection coordination, relay settings, and earthing (as required) including cable sizing (for the tie-in cables) and harmonics (if applicable) for the tie-in connection with QP-DC power network and submit for review and approval.
Necessary interlocks for feeders, circuits and earthing to be provided between tie-in points and Tenant’s incoming power supply.

For PMS Requirements, an RMU Gateway shall be provided by the Tenant and shall be an intelligent electronic module/device capable of acquiring data such as status of switching devices, voltages, T-off currents as a minimum and communicate the information through its input/output FO ports network and hence to the PMS.

Tenant shall also submit Vendor Data related to electrical tie-in to QP-DC power network which provide details of the tie-in equipment (HV Switchgear, Transformer, LV Switchgear and all associated protection and metering schemes, tie-in cables, etc.

8.5.1.4 Connected Equipment

Electrical equipment proposed to be supplied and installed by Tenant shall comply with QP/QP-DC requirements. Connection shall be three-phase, four-wire (3Ph, 4W) plus earth (E) in case of low voltage (LV) connection and three-phase, three-wire (3Ph, 3W) + E for 11kV tie-in. Copper area for neutral connection shall not be less than 75% of the phase conductor. Full size neutral connections are preferred.

Tenant shall ensure that the power factor is maintained at 0.9. Any deviation to the specified pre-set value of the power factor will be subject to QP-DC approval. Also, Tenant shall ensure that load is distributed between the three phases such that no imbalance of more than 5% of the maximum connected capacity exists between phases.

Tenant shall ensure that harmonics and flicker imposed on the QP-DC network shall not exceed IEC norms. Total harmonic distortion shall not exceed 3%, with individual “even” harmonic contribution < 1.5% and “odd” harmonic contribution < 2%, under any circumstances. Tenant shall provide load list identifying high harmonics equipment, i.e., non-linear loads such as rectifiers, power electronics equipment, etc. Harmonics calculation shall be provided to support this requirement.

Necessary electrical protection requirements shall be provided by the Tenant as required by QP-DC for smooth operation of QP-DC Electrical Network. In the event of Tenant’s equipment failure tripping the QP-DC breaker, the Tenant shall investigate and demonstrate to QP-DC’s satisfaction that the cause of the fault has been cleared before requesting the breaker to be closed. At the sole discretion of QP-DC, an appropriate system insulation test may be carried out on the Tenant’s Tie-in equipment from the battery limit with the Tenant’s downstream circuit breaker open, and/or an inspection of the Tenant downstream circuit breaker shall be carried out before the QP-DC circuit breaker is closed.
Tenant shall ensure adequate earthing of the electrical supply such that an earth connection is maintained even if the earth connection to the QP-DC tie-in point is interrupted. This shall be clearly detailed in the drawing.

8.5.1.5 Tariff Energy Meters

Tenant shall provide and install Tariff Energy Meter for each plot at the 11KV side or at the 415V incoming side if connected from QP-DC Package Substation. Certification for the Tariff Energy Meter shall be furnished by the Tenant.

Tariff Energy Meters shall be provided in accordance with Kahramaa Tariff Energy Meter Specifications/Requirements as listed in Attachment-M, unless otherwise the requirements hereunder are more stringent as determined by QP-DC. Tenant shall submit specification and compliance sheet to the requirements as listed in Attachment - M, No. 11 of QP-DC Guidelines for the tariff meter including data/catalogue sheets for review and approval.

Tariff Energy Meters shall be in compliance but not limited to the following:

a) IEC 62053-22: Electricity metering equipment (a.c.) Particular requirements Part 22: Static meters for active energy (classes 0,2 S and 0,5 S).


c) BS EN 62058-31:2010: Electricity metering equipment (a.c.). Acceptance inspection. Particular requirements for static meters for active energy (classes 0,2 S, 0,5 S, 1 and 2, and class indexes A, B and C).

d) BS EN 60687:1993: Alternating current static watt-hour meters for active energy (classes 0.2 S and 0.5 S).

e) Properly sized CT/VT shall be provided for Tariff Energy Meter to be able to have accurate reading on low level of loading at initial stages.

The tariff energy meter shall be a three-phase, four-wire single tariff electronic type meter, giving running kW, kVAR and kVA, total kWh, kVAh and maximum kVA over a half-hour period, retained for a calendar month and then automatically reset.

Tenant shall provide access (unconstrained) to QP-DC at all times into their facilities which are associated with tariff energy meter and power tie-in to QP-DC.

Tenant shall design such that the location of the tariff energy meter is close to the tie-in point. In case the installation of tariff meter is not possible at QP-DC tie-in point location, Tenant has to submit to QP-DC the equivalent power loss between
QP-DC tie-in point and the location where tariff energy meters are installed. The power loss will be calculated and added in the monthly energy consumption for billing at the same rate as the normal tariff described in the agreement.

Tariff energy meter provided by the Tenant shall be calibrated on installation and subsequently every 5 years or on QP-DC’s request when there is sufficient evidence of a meter error in the same group of Tenants. Calibration shall be performed by a Kahramaa approved third party calibration agency/company. Calibration certificate shall be furnished to QP-DC.

The terminals of the tariff energy meter shall be sealed at all times and shall not be broken except in the presence of QP-DC and shall be non-resettable.

The tariff energy meter shall be installed in a lockable cabinet/enclosure clearly visible and accessible from the outside of the Tenant’s facility. Lock shall be of the standard triangular electrical cabinet key. The tariff energy meter cabinet shall not be located inside any fenced or access-restricted areas. It shall be labelled with the Tenant’s name, the meter serial number and the plot number in a metallic or traffolyte tag with two (2) cm high black letters on a red background. It shall be black/yellow striped or if installed in a wall, shall have a black/yellow striped surround not less than two (2) inches thick.

Tenant shall ensure that the Tariff Energy Meter is fully functional/operational. In case of sudden malfunction, improper operation, or out of order, Tenant shall arrange for the immediate rectification of the energy meter with due information to QP-DC. Energy readings during the rectification period will be taken based on the previous month or the month immediately after rectification to be decided by QP-DC.

Tenant shall be responsible for Submission of meter reading at the end of each month by Fax/E-mail. Monthly meter reading shall be performed by QP-DC O&M. Meter shall be read by QP-DC to confirm consumption prior to connection of tie-in equipment, on removal of tie-in equipment and a minimum of once per month thereafter. In the event of a metering or usage dispute, Tenant may request QP-DC to verify the meter reading once per year at no cost.

### 8.5.1.6 Maximum Power Demand Commitment by Tenant

Tenant shall provide Power Demand Forecast for next 5 years, in addition to the monthly Maximum Power Demand, as given below in the table format (Table E1).

**Table E1. Five-Year Power Demand Forecast**

<table>
<thead>
<tr>
<th>YEAR (***</th>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
<th>Year 4</th>
<th>Year 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Connected Load (kW)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Max. Demand (kW)  
Estimated power consumption (kWh)  
Max. Demand (kVA)

(***) Tenant shall define exactly the Year. Year 1 is considered as the initial year
where the Tenant anticipates QP-DC power is required for its plot/facility’s
power demand.

8.5.1.7 As-Built Drawings/Documents by Tenant

Drawings shall be updated/ revised by the Tenant on the basis of the final tie-in
details provided by QP-DC.

Tenant shall submit the “As-Built” drawings including “Load Schedules” and
Protection details to QP-DC upon completion of the connection.
Refer Sec. 9 for further requirements related to As-Built submittal.

8.5.1.8 Other Conditions

Existing facilities shall be reinstated to the original condition by the Tenant to QP-
DC’s satisfaction, upon completion of tie-in job. All equipment used for the Tenant
to connect to QP-DC facilities shall be removed by the Tenant and reinstated to
original condition to QP-DC’s satisfaction upon completion of the Tenant’s lease
agreement. In the event the Tenant does not remove any equipment connected
to QP-DC facilities after the Tenant has vacated the site, this equipment shall be
removed by QP-DC at Tenant’s cost, and stored by QP-DC at Tenant’s cost. After
three (3) months title will be deemed to pass to QP-DC and it will be disposed of
by QP-DC to defray expenses.

Power Supply Start Date shall be the moment when Tenant’s facility is energized
through QP-DC power distribution network.

The Tenant is required to make the necessary payment for the energy
consumption to QP-DC or Kahramaa as decided and advised by QP-DC which is in
line with the Tenant’s maximum power demand. Necessary requirements shall be
arranged and complied by the Tenant in order to make and complete the payment
of the billed energy consumption.

8.5.1.9 Operation and Maintenance

QP-DC Electrical Distribution System will be operated by QP-DC at QP-DC’s
discretion on the basis of QP-DC’s priorities. Load shedding, if applicable, shall be
notified to the respective Tenants. All equipment including tie-in cables installed...
Guidelines for Building Permit Technical Submissions to QP – DC in RLIC

by the Tenant shall be maintained by the Tenant. However, the Battery Limit for QP-DC operation perspective shall be up to the interface point of the system (interface circuit breaker) installed by the Tenant. Tenant shall coordinate with QP-DC for interface switching.

Tenant will ensure the operation of their switchgear by experienced switching personnel at their end including incoming power supplies from QP-DC and tenant will be fully responsible for any eventuality caused by any wrong switching at their end.

Any maintenance activities to be performed by the Tenant on the interface equipment (at battery limit) connected to QP-DC Electrical Distribution Network shall be carried out on the basis of approved permits from QP-DC and controlled by joint switching operation by both QP-DC and the Tenant.

O&M Requirements of QP-DC may involve power shutdown of the Tenant’s facility on “as needed” basis with prior notification.

8.5.2 Review of Requests, Network/Substation Adequacy Checks and Approval to Proceed

QP-DC estimate the power demand per unit area as 0.04kW per square meter of plot area for power supply distribution network design.

Details of Tenant’s power demand categories are considered as follows:
Category 1: Low Voltage (LV)

Low Voltage distribution at 415V is available only in limited locations where the maximum load allowed is 200kW at a maximum distance of 200m subject to availability of corridor space. If the LV substation is not available within 200m from his plot, it is the responsibility of the Tenant to provide his own LV distribution using package substation connected directly from the 11kV ring circuits.

Category 2: 11kV (Power Demands greater than 200kW up to 3500kW)

Individual Tenant will be allowed to connect to the 11kV ring mains with a load demand of up to 3,500kW and provide his own RMU/Package Substation in his plot, subject to the availability of ring mains capacity.

Category 3: 11kV (Power Demands greater than 3500kW but less than 5000kW)

Tenant with power demand above 3500kW but below 5000kW may be allowed to connect to the 11kV ring on a case-by-case basis depending on the current loading of the ring circuits. If the existing ring circuits could not accommodate the additional loads, the Tenant will be required to install his own 11kV ring directly connected to the 11kV switchgear at the substation including the 11kV circuit
breakers (switchgear extension) subject to availability of substation capacity and space for the switchgear extension, and allow other Tenants to connect to the same ring circuits in the future to a total load of not exceeding 5000kW.

Category 4: 11kV or 33kV Bulk (Power Demands 5000kW and above)

Tenant with power demand 5000kW and above shall be subject to availability of network/substation capacity. This may be connected directly either from the 11kV or 33kV switchgear whichever is available.

QP-DC will review the load list and the forecasts for estimated Power (kW/kVA), Energy (kWh) as described in Clauses 8.5.1.1 and 8.5.1.6 above, its technical proposals and check the network and substation adequacy for the power supply provision.

8.6 Telecom / Fiber Optic Network

Telecom ducts are available at many locations in RSSA, which are available for lease based on feasibility. Tenants shall liaise with QP – DC if they wish to lease the ducts on a chargeable basis. Telecom services are provided by the telecom service providers in the state of Qatar who are available at RSSA. Tenants shall approach them for the availability of their services.

8.7 Access Road to Facility and Road Crossing Philosophy

8.7.1 Access Roads

Tenant shall tie-in to the existing QP-DC road network as per requirements mentioned in Clause 7.2.11.

8.7.2 Crossing Philosophy

Tenants shall adhere to the following crossing philosophy while developing their access roads. Refer to typical drawing SK-RLC-03475 in Attachment-M.

8.7.2.1 For occupied corridors

1) RCC precast slabs shall be provided to protect the existing wet utility lines. Maximum weight of each slab shall not exceed 3.5ton with the minimum thickness of 0.35m. A 1000 gauge thick polythene damp proof membrane shall be placed below the slabs.

2) Duct banks shall be installed for wet utility pipeline crossings in case of single access to the plot.
3) Concrete duct bank shall be installed for the entire width of power and telecom corridor with necessary spares and split sleeves for the existing power and telecom cables.

8.7.2.2 For un-occupied corridors

1) Concrete duct bank Type-9 shall be installed for the entire width of wet utility corridor. Refer to typical drawing SK-RLC-00163, Sht.1 in Attachment-M. However, 600mm diameter sleeves shall be used instead of 900mm diameter sleeves.
2) Concrete duct bank Type-5 shall be installed for the entire width of power and telecom corridor. Refer to typical drawing SK-RLC-00163, Sht.1 in Attachment-M. However, duct bank width and sleeve configuration shall be decided on case by case, if corridor width is non-standard.

8.7.3 General requirements

1) Start and end coordinates of culvert and access roads in CGIS-QNG95 shall be furnished.
2) Removable type hydraulically pressed heavy duty concrete pavement blocks of minimum 80mm thick shall be provided over utility corridor crossings for access road (between culvert and plot boundary).
3) RCC culvert shall be installed for drain crossing.
4) The alignment of access road shall not block the entry/exit points of existing duct banks in QP-DC roads and other facilities in the utility corridor.
5) The spare ducts in the electrical duct bank shall have pull chord and sealed on either side for future use.
6) Duct banks / culverts shall be provided with identification tags/cable markers on either side with the details like number of sleeves, sizes of sleeve, type of utility and length of duct bank including SAP number (if any).
9.0 INSPECTION AND TEST REQUIREMENTS PRIOR TO TIE-IN

Once the facility is constructed in accordance with the Building Permit requirements, Tenants shall complete the installation and testing of their systems within their facility before it is connected to QP-DC networks. A copy of the inspection and test reports of all systems which are connected to the QP-DC networks shall be submitted to QP-DC for review and to obtain approval for tie-in. Approval letter for each tie-in shall be attached along with the CPW. Refer to QP-DC’s “Minimum Requirements for Inspection and test Reports” in Attachment – M.

10.0 AS-BUILT INFORMATION

As-built drawings shall be submitted to QP-DC for records along with the request for “consent to operate”/occupancy certificate. The As-built drawings shall include two sets of hard copies and a soft copy prepared in AUTO-CAD format compatible with QP-DC system.

11.0 ATTACHMENTS

| ATTACHMENT - A | : SITE DEVELOPMENT PLAN |
| ATTACHMENT - B | : ARCHITECTURAL DRAWINGS AND DOCUMENTS |
| ATTACHMENT - C | : CIVIL / STRUCTURAL DRAWINGS AND DOCUMENTS |
| ATTACHMENT - D | : ELECTRICAL DRAWINGS AND DOCUMENTS |
| ATTACHMENT - E | : MECHANICAL DRAWINGS AND DOCUMENTS |
| ATTACHMENT - F | : FIRE & LIFE SAFETY, LOSS PREVENTION DRAWINGS AND DOCUMENTS |
| ATTACHMENT - G | : FIRE ALARM (FA) & FIRE FIGHTING (FF) / FIRE PROTECTION DRAWINGS AND DOCUMENTS |
| ATTACHMENT - H | : TELECOM DRAWINGS AND DOCUMENTS |
| ATTACHMENT - I | : ENVIRONMENTAL DRAWINGS AND DOCUMENTS |
| ATTACHMENT - J | : LANDSCAPING DRAWINGS AND DOCUMENTS |
| ATTACHMENT - K | : OTHER CATEGORIES DRAWINGS AND DOCUMENTS |
| ATTACHMENT - L | : COVERING LETTER FORMAT |
ATTACHMENT - M : REFERENCE DRAWINGS
ATTACHMENT - N : CHECK LIST OF REQUIREMENTS FOR POTABLE WATER FLOW METER
ATTACHMENT - O : CHECK LIST OF REQUIREMENTS FOR FIREWATER FLOW METER
ATTACHMENT - P : UTILITIES TIE-IN REQUIREMENTS
ATTACHMENT - Q : QUALITY CRITERIA FOR TREATED WASTEWATER USED FOR LANDSCAPING
ATTACHMENT A: Category Code 001: Site Development Plan

A site development plan indicating internal configuration and proposed land uses of the plot area shall be submitted for QP-DC review and approval.

This drawing shall include the following information as minimum:

1. Site Boundary (Coordinates in CGIS QNG 95 systems shall be given)
2. Key plan with allocated plot number(s)
3. Plan view of all Buildings, Structures (above and below ground) and Facilities including process areas, manufacturing sites, and storage exposures etc.
4. Brief Description of the facility, e.g., Process Flow Diagram (PFD), Process Description etc.
5. Temporary facilities, if any
6. Parking areas with calculations
7. Site Access with coordinates
8. Safe inter distance between various facilities
9. Emergency access/gates
10. North Arrow
11. Wind Direction
12. Location and names of roads serving the site
13. Location of above or underground storage tanks with name and capacity
14. Finished Grade Levels and Finished Road Levels in QNHD
15. Legends and References
16. Building Occupancy (No. of occupants)
17. Area statement (Covered area, Built up area including floor area per floor and total floor area for each building, and total landscape area.)
18. Consultant’s endorsement stating that the design and layout is complying with NFPA / relevant code requirement
ATTACHMENT B: Category Code 002: Architectural Drawings and Documents

Tenant shall submit the following drawings/documents to QP-DC for review and approval.

1. Floor plans, Elevations, and Sectional details of all buildings and structures
2. Finishing schedule (exterior) of the buildings/structures
3. Boundary fence and gate details
4. No. of occupants shall be indicated in the Floor plans
5. Occupancy classification
ATTACHMENT C: Category Code 003: Civil / Structural Drawings and Documents

Civil/ Structural drawings and documents shall include the following detail information:

1. Site Grading Plan
2. Access road and its tie-in with QP-DC road including corridor crossing details
3. Road marking and signage
4. Storm water drainage management system with calculation
5. Structural Drawings
6. Earthwork/Foundation details of buildings and structures
7. Fence and gate foundation details
ATTACHMENT D: Category Code 004: Electrical Drawings and Documents

Tenant shall submit the following electrical drawings and documents with the minimum required information as described below:

1. Overall Single Line Diagram (SLD) – showing the Tenant's electrical distribution system, tie-in to QP-DC's Substation/RMU or splice point at 11kV ring, total connected load and demand load in kVA. Also, earthing arrangement depicting earthing system philosophy in case of generator back-up.
2. Protection and Metering Diagram – showing the CT's with the ratio, VT's, type of protection, tariff metering, alarm/tripping communication, etc.
3. Protection coordination study, relay settings calculation, short circuit study
4. In case of generator back-up, operating philosophy of the DG set during normal and emergency conditions
5. Load Summary showing the Tenant's Total Connected and Demand Loads in kVA.
6. Site Electrical Layout and Details - showing the following:
   a) Tenant's Service Equipment/Substation
   b) Tariff Metering
   c) Electrical Tie-in point (QP-DC Substation/RMU or splice point at 11kV ring)
   d) Cable layout and details of duct bank/cable trench from Tenant's Service Equipment/Substation to Electrical Tie-in point (QP-DC Substation/RMU or splice point at 11kV ring)
7. Equipment Layout of Substation or Electrical Room (Tenant installing new Substation complete with RMU/Transformer/Switchgears with dimensions/clearances)
8. Cable sizing calculation for tie-in cables
9. External Lighting Layout - which includes additional area lighting that will illuminate half portion of QP-DC roads abutting the property along with the lighting calculation to support the design.
10. Earthing Layout – showing the no. of earth pits, size of earthing conductor and other relevant details associated with QP-DC system tie-in.
11. Earthing calculation/study - as requested by QP-DC.
12. Estimated monthly power demand (kW) and energy consumption (kWHR) for the first 5 years. (Refer to clause #8.5.5 above)
13. Estimated yearly power demand (kW) and energy consumption (kWHR) for the next 10 years. (Refer to clause #8.5.5 above)
14. Plant operating philosophy in terms of electrical loading, i.e., continuous and intermittent (as required by QP-DC).
15. Hazardous Area Classification, if applicable.
ATTACHMENT E: Category Code 005: Mechanical Drawings and Documents

Tenant shall submit the following mechanical drawings and documents with the minimum required information as described below:

A. Potable Water

1. Potable water demand calculation (expected total peak demand in m$^3$/day)
2. Potable water tie-in arrangement with QP-DC network (including sectional details of tie-in valve chamber)
3. Water meter details and arrangement
4. Pipe sizing calculation from tie-in point to the storage tank
5. Ground storage tank sizing calculation
6. Plumbing layout and material of the potable water distribution network within the facility.
7. Pumping arrangements for potable water

B. Fire Water

1. Fire water tie-in arrangement with QP-DC network (including sectional details of tie-in valve chamber)
2. Layout of the Fire water network and material of construction
3. Details of Fire water storage and pumping arrangements, if proposed

C. Sewage System

1. Sewerage calculation for normal and peak flows
2. Tie-in with QP-DC sewerage network (including sectional details of tie-in manhole)
3. Layout of sewerage network within the facility and material of construction
4. Sewage holding tank sizing calculation

D. HVAC system (only packaged A/C units)

1. HVAC overall system Layout
2. HVAC ducting arrangement
3. Refrigerant specifications

E. Fuel oil/Fuel gas system (if applicable)

1. Fuel oil/gas storage tanks layout
2. Fuel oil/gas piping arrangement
ATTACHMENT F: Category Code 006: Fire & Life Safety, Loss Prevention Drawings and Documents

Tenant shall submit the following Fire & Life Safety, Loss Prevention drawings and documents with the minimum required information as described below:

**CATEGORY CODE 006A**

1. Fire risk assessment,
2. Fire and life safety design philosophy,
3. Building layouts, including building area, the division of the building by firewalls, the degree of fire separations of storeys, shafts, and special rooms or areas,
4. Source of information for fire-resistance ratings of elements of construction (to be indicated on large-scale sections),
5. Escape Routes
6. Life safety drawings: Including means of egress, travel distances, occupant loads, exit light placement, emergency light placement, fire extinguisher locations and other life safety equipment
8. Fuel gas system ( design basis, piping layout, P& ID, schematic drawings)

**CATEGORY CODE 006B**

10. Material Submittals of Fire Protection Equipment
11. Acceptance Tests for all fire systems, including fire pumps
12. Fire Equipment listings/test reports where required

The drawings related to Loss Prevention systems shall include Consultant’s endorsement stating that the design and layout is complying with NFPA/ relevant code requirements.
ATTACHMENT G: Category Code 007: Fire Alarm (FA) & Fire Fighting (FF)/Fire Protection Systems Drawings and Documents

Tenant shall submit the following Fire alarm & fire fighting/ fire protection systems drawings and documents with the minimum required information as described below:

1. **FIRE & GAS SYSTEM.**
   
   1.1 Layout drawings.
   1.2 Single line diagram (schematic showing all interface to other electromechanical system).
   1.3 HVAC Control systems with fire and smoke dampers
   1.4 Riser diagram.
   1.5 Cause and Effect matrix.
   1.6 High Sensitivity Smoke Detection (HSSD) system details and layout.

2. **FIXED FIRE FIGHTING INSTALLATION**
   
   2.1 Sprinkler system/ Deluge system :
      
      2.1.1 Design basis
      2.1.2 Layout and associated details
      2.1.3 Hydraulic calculation
      2.1.4 Material submittal
      2.1.5 Full height cross section or schematic diagram

   2.2 Fire Water System :
      
      2.2.1 Design basis
      2.2.2 Layout and pump details.
      2.2.3 Hydraulic calculation.
      2.2.4 Material submittal

   2.3 Gaseous suppression system
      
      2.3.1 Design basis
      2.3.2 Layout and other details.
      2.3.3 Hydraulic calculation.
      2.3.4 Material submittal
ATTACHMENT H: Category Code 008: Telecom Drawings and Documents

Tenant shall submit the following telecom drawings and documents with the minimum required information as described below:

1. Drawing showing complete telecommunication cable route between Tenant’s facility and nearest QP-DC telecom tie-in node.
2. Existing ducts/manholes and new ducts/manholes for the entire cable route shall be clearly identified in the drawing. Type (such as fiber optic/copper cable) and capacity of the cables shall be identified in the drawing.
3. Ducting and manhole details. No direct buried telecom cable shall be permitted. Telecom cables shall be laid through JRC14/12 manhole and duct network.
4. Equipment rack face layout with details of MDF, Junction box and IDF’s.
5. Telecom room equipment layout showing layout arrangement for all equipment racks. All telecom equipment indicated in the drawing shall be earthed to clean separate telecom earth and value of less than 1 ohm shall be indicated in the drawing.
7. Details of required telecom infrastructure/services such as duct space, fiber cable cores, Number of PRI/ telephone lines and internet lines and/or any other telecom requirement shall be identified in the telecom submittal.
8. Details of Radio installations with antenna locations, if any.
9. Schematic/block diagram of telecom systems (if any) for the proposed tenant facility.
10. Communication wiring diagram and network block diagram from the Tenant Fire Alarm Control Panel to RLIC Central Alarm Monitoring System (Main and the nearest Fire Station).
ATTACHMENT I: Category Code 009: Environmental Drawings and Documents

Tenant shall submit the following environmental drawings and documents with the minimum required information as described below:

1. **ENVIRONMENTAL PERMIT** issued by Ministry of Environment (MOE)
   In case an Environmental Permit is issued by MOE, Consent to Operate Application Form must be submitted to QP-DC before commissioning of the project.

2. **EBA (Environmental Baseline Assessment)** must be obtained before submitting CPW for construction.
   EBA will verify the requirements of checking for Top Soil, Flora, Fauna and any existing spills.

3. **EMP (Environmental Management Plan)**
   Tenant/Contractor must devolve Construction EMP to QP-DC for review and approval.
ATTACHMENT J: Category Code 010: Landscaping Drawings and Documents

Tenant shall submit the following landscaping drawings and documents with the minimum required information as described below:

1. Overall Landscaping plan
2. Typical landscaping details (list of plants etc.)
3. Irrigation water storage and pumping system layout
Attachment K: Category Code 011: Other Categories Drawings and Documents

Tenant shall submit all other drawings and documents which are not covered in other category codes under category code 011 for information and record purposes.

If there are any chemical / processing plants in the facility tenant shall submit the following process related documents.

1. Process Plot Plan(s)
2. Process Flow Diagrams
3. Piping and Instrumentation Diagrams
4. Summary of Process Materials
5. Material Safety Data Sheets (MSDS)
6. Other relevant documents

<table>
<thead>
<tr>
<th>S.No</th>
<th>Description</th>
<th>Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Facilities without hazardous chemicals as part of their business processes such as mechanical workshop, fabrication yards etc.</td>
<td>Risk Management Plan to be developed in consultation with HSE Risk Division of QP-DC HSE Department.</td>
</tr>
<tr>
<td>2</td>
<td>Facilities involving handling, storage and transportation of hazardous chemicals such as chemical warehouse, chemical manufacturing industries</td>
<td>HAZID to be performed in line with QP-GDL-5-040 during the early stages of the project which will establish the requirements for other safety studies such as HAZOP, QRA, SIL etc.</td>
</tr>
<tr>
<td>3</td>
<td>Facilities involving hydrocarbons that could potentially lead to major fire, toxic or explosion impacts</td>
<td>HAZID, HAZOP, QRA, SIL would be required.</td>
</tr>
</tbody>
</table>
### ATTACHMENT L: Covering Letter Format

<table>
<thead>
<tr>
<th>NAME OF THE COMPANY</th>
<th>(LOGO)</th>
</tr>
</thead>
<tbody>
<tr>
<td>BUILDING PERMIT TECHNICAL SUBMISSIONS</td>
<td></td>
</tr>
<tr>
<td>SUBMISSION REFERENCE No.</td>
<td>..........</td>
</tr>
<tr>
<td>Date:</td>
<td>..........</td>
</tr>
<tr>
<td>NUMBER OF PAGES:</td>
<td>..........</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>To</th>
<th>From</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asst. Manager , Projects/Engineering (RLIC), Development Planning &amp; Engineering, QP – Industrial Cities Post Box No: 22247 Ras Laffan Industrial City e- Fax: 40139823 Tel: 4474 8855</td>
<td>------------------ (Name of the Originator)</td>
</tr>
</tbody>
</table>

**REPLY TO BE FAXED TO : XXXXXXXXXXX**

<table>
<thead>
<tr>
<th>NAME OF THE FACILITY :</th>
<th>SUBJECT:</th>
</tr>
</thead>
</table>

**BRIEF DESCRIPTION**

--------------------------Name of the Contact Person (for clarifications, if any, on the subject)

Tel : | Mobile :

Email :

<table>
<thead>
<tr>
<th>SUBMISSION CATEGORY CODE:</th>
<th></th>
</tr>
</thead>
</table>

**PURPOSE OF SUBMISSION (Please tick)**

<table>
<thead>
<tr>
<th>Approval</th>
<th>Supplementary submission*</th>
<th>Revised submission *</th>
<th>Response to RLC letters*</th>
<th>Information and Records</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Leave this space blank- for QP-DC purpose only)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Previous references

1. |
2. |

Attachments:

<table>
<thead>
<tr>
<th>Signature</th>
<th>Name</th>
</tr>
</thead>
</table>
ATTACHMENT M: Reference Drawings/Documents

1. Drawing No. SK – RLC 03283: Road way frontage, building height & fence height
2. Drawing No. SK-RLC-02718: Land use regulations - vehicular access
3. Drawing No. SK-RLC-00163(sheets 1 & 2): Utility crossing & pipe culvert details
4. Drawing No.SK-RLC-03475: Typical crossing detail for access road at RSSA
5. Drawing No.SK-RLC-03570: Typical service connection details at RSSA
6. Drawing No.SK-RLC-03571: Typical details of fire water tie-in chamber at RSSA
7. Drawing No.SK-RLC-03572: Typical details of sewage tie-in chamber at RSSA
8. Drawing No.SK-RLC-03573: Typical details of potable water tie-in chamber at RSSA
9. Drawing No. ES.2.62.0016, Sht. 001: Electrical Cable Marker Post
10. Typical format for Load Schedule
11. Kahramaa Tariff Energy Meter specification/requirements (2 sheets)
12. Minimum Requirements for Inspection and test Reports (3 sheets)
13. Fire Flow vs Residual Pressure Graph – Residual Pressure Available During Fire Event, Package 1 (1 sheet)
## ATTACHMENT N: Check List of Requirements for Potable Water Flow Meter

<table>
<thead>
<tr>
<th>No.</th>
<th>Item/Description</th>
<th>RLC requirement</th>
<th>QGL-RM-001 Ref</th>
<th>Proposed by Tenant</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Flow meter installation</td>
<td>As close as to the tie-in chamber</td>
<td>Section 7.2.10.1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Flow meter accuracy</td>
<td>Accuracy = ± 0.5%</td>
<td>Section 7.2.10.2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Calibration certificates</td>
<td>To be submitted prior to installation</td>
<td>Section 7.2.10.2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Pipe size</td>
<td>RLC pipe sizes: 1&quot; (60 x 100m)</td>
<td>Section 8.1</td>
<td></td>
<td>Reading on flowmeter shall be in m³</td>
</tr>
<tr>
<td></td>
<td></td>
<td>&amp; 1 1/2&quot; (200 x 120 m)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Flow rate</td>
<td>Rated for the maximum flow</td>
<td>Section 7.2.10.3</td>
<td></td>
<td>Reading on flowmeter shall be in m³</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Maximum flow for plots:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>13.8 m³/day for 60 x 100m</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>149.4 m³/day for 200 x 120m</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Lockable type globe valve</td>
<td>Lockable globe valve to set the flow within</td>
<td>Section 7.2.10.4</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>the allowable range</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Strainer</td>
<td>A strainer upstream of the flow meter</td>
<td>Section 7.2.10.5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Meter reading</td>
<td>Meter readings can be taken without having</td>
<td>Section 7.2.10.6</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>to go inside the chamber.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>External display unit (this is</td>
<td>External display unit to be installed</td>
<td>Section 7.2.10.6</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>alternate arrangement for meter reading)</td>
<td>aboveground on the fence boundary facing</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>outside encased in protective enclosure</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Power supply</td>
<td>Continuous power supply. It can be AC</td>
<td>Section 7.2.10.7</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>powered either with UPS or in built battery</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>back up.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Access</td>
<td>Unrestricted access to the flow meter for</td>
<td>Section 7.2.10.8</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>RLC operations team</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>Spares and maintenance</td>
<td>Ensure availability of mandatory spares and</td>
<td>Section 7.2.10.9</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>calibration verification</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>Minimum straight pipe length</td>
<td>Manufacturer recommendation</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>requirements</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>Material</td>
<td>Manufacturer recommendation</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## ATTACHMENT O: Check List of Requirements for Firewater Flow Meter

<table>
<thead>
<tr>
<th>No.</th>
<th>Item/Description</th>
<th>RLC requirement</th>
<th>QGL-R001 Ref.</th>
<th>Proposed by Tenant</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Flow meter installation</td>
<td>As close as to the fire water tank</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Flow meter accuracy</td>
<td>Accuracy ± 0.5%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Calibration certificates</td>
<td>To be submitted prior to installation</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Pipe size</td>
<td>150 mm (6”)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Flow rate</td>
<td>Rated for the maximum flow as per fire demand</td>
<td></td>
<td></td>
<td>Reading on flowmeter shall be in m³</td>
</tr>
<tr>
<td>6</td>
<td>Lockable type globe valve</td>
<td>Not required</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Strainer</td>
<td>Not required</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Meter reading</td>
<td>Meter readings can be taken without having to go inside the chamber</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>External display unit (this is alternate arrangement for meter reading)</td>
<td>External display unit to be installed above ground on the fence boundary facing outside encased in protective enclosure</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Power supply</td>
<td>Continuous power supply; it can be AC powered either with UPS or in built battery back up</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Access</td>
<td>Unrestricted access to the flow meter for RLC operations team</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>Spares and maintenance</td>
<td>Ensure availability of mandatory spares and calibration verification</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>Minimum straight pipe length requirements</td>
<td>Manufacturer recommendation</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>Material</td>
<td>Manufacturer recommendation</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>Temper proof with seal</td>
<td>Manufacturer recommendation</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>UL/IFM listing</td>
<td>Listed for fire service use by UL/IFM</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
ATTACHMENT P: Utilities Tie-In Requirements

Sewage Tie-in Requirements:

1. **Tie-in Point:** Clearly identify the QP-DC tie-in chamber on the drawing with valve chamber number & coordinates.
2. **Holding Tank:** Each tenant shall have a holding tank capable of storing sewage for up to 3 days.
3. **Gravity Lines:** Tenant shall install gravity sewer lines from their holding tank till the QP-DC tie-in chamber.
4. **Isolation valve:** In between the holding tank and QP-DC tie-in point, there shall be an isolation valve.
5. **Avoid Oil/Grease into the sewage system:** End-user shall ensure that oil/grease does not get into the sewage network. End-user shall confirm that only the domestic sewage is routed to the QP-DC network. Apart from domestic sewage, other stream (from workshop, oil/grease drain, chemical wash) shall NOT be routed to QP-DC network.

Potable Water Tie-in Requirements:

1. **Tie-in point:** Clearly identify the QP-DC tie-in chamber on the drawing with valve chamber number & coordinates.
2. **Storage Capacity at Site:** End user to confirm their peak daily demand and accordingly confirm 3 days of storage at site (calculated as per peak daily requirements)
3. **Flowmeter:** All flow meter requirement shall be as per FM checklist. Flowmeter unit shall be in m$^3$. Flowmeter calibration certificates to be submitted to QP-DC prior to tie-in.

Fire Water Tie-in Requirements:

1. **Tie-in point:** Clearly identify the QP-DC tie-in chamber on the drawing with valve chamber number & coordinates.
2. **Flowmeter:** All flow meter requirement shall be as per FM checklist and FM installation shall be as per vendor recommendations. Flowmeter unit shall be in m$^3$. Flowmeter calibration certificates to be submitted to QP-DC prior to tie-in.
ATTACHMENT Q: Quality Criteria for Treated Wastewater Used for Landscaping

Environmental Regulations for Ras Laffan Industrial City

**TABLE 2-C: Quality Criteria for Treated Wastewater Used for Landscaping**

<table>
<thead>
<tr>
<th>PARAMETER</th>
<th>SYMBOL</th>
<th>UNITS</th>
<th>MAXIMUM ALLOWABLE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Food Crops&lt;sup&gt;(1)&lt;/sup&gt;</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Landscaping</td>
</tr>
<tr>
<td>Total Dissolved Solids</td>
<td>TDS</td>
<td>mg/l</td>
<td>1750</td>
</tr>
<tr>
<td>Total Suspended Solids</td>
<td>TSS</td>
<td>mg/l</td>
<td>50</td>
</tr>
<tr>
<td>pH</td>
<td>pH</td>
<td>pH units</td>
<td>6-9</td>
</tr>
<tr>
<td>Floating Particles / Oil</td>
<td></td>
<td>mg/m²</td>
<td>Nil</td>
</tr>
<tr>
<td>1. Metallic species</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aluminium</td>
<td>Al</td>
<td>mg/l</td>
<td>15</td>
</tr>
<tr>
<td>Arsenic</td>
<td>As</td>
<td>mg/l</td>
<td>0.1</td>
</tr>
<tr>
<td>Barium</td>
<td>Ba</td>
<td>mg/l</td>
<td>2</td>
</tr>
<tr>
<td>Boron</td>
<td>B</td>
<td>mg/l</td>
<td>1.5</td>
</tr>
<tr>
<td>Cadmium</td>
<td>Cd</td>
<td>mg/l</td>
<td>0.05</td>
</tr>
<tr>
<td>Chromium, total</td>
<td>Cr</td>
<td>mg/l</td>
<td>0.2</td>
</tr>
<tr>
<td>Cobalt</td>
<td>Co</td>
<td>mg/l</td>
<td>0.5</td>
</tr>
<tr>
<td>Copper</td>
<td>Cu</td>
<td>mg/l</td>
<td>0.5</td>
</tr>
<tr>
<td>Iron</td>
<td>Fe</td>
<td>mg/l</td>
<td>1</td>
</tr>
<tr>
<td>Lead</td>
<td>Pb</td>
<td>mg/l</td>
<td>0.2</td>
</tr>
<tr>
<td>Manganese</td>
<td>Mn</td>
<td>mg/l</td>
<td>0.05</td>
</tr>
<tr>
<td>Mercury</td>
<td>Hg</td>
<td>mg/l</td>
<td>0.001</td>
</tr>
<tr>
<td>Nickel</td>
<td>Ni</td>
<td>mg/l</td>
<td>0.5</td>
</tr>
<tr>
<td>Zine</td>
<td>Zn</td>
<td>mg/l</td>
<td>0.5</td>
</tr>
<tr>
<td>Sodium Absorption Ratio</td>
<td>SAR</td>
<td>mg/l</td>
<td>10</td>
</tr>
<tr>
<td>2. Non-Metallic Species</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ammonia</td>
<td>NH&lt;sub&gt;4&lt;/sub&gt;&lt;sup&gt;-&lt;/sup&gt;</td>
<td>mg/l</td>
<td>5&lt;sup&gt;(2)&lt;/sup&gt;</td>
</tr>
<tr>
<td>Chlorine Residual</td>
<td>Cl</td>
<td>mg/l</td>
<td>0.1</td>
</tr>
<tr>
<td>Cyanide</td>
<td>CN&lt;sup&gt;-&lt;/sup&gt;</td>
<td>mg/l</td>
<td>0.2</td>
</tr>
<tr>
<td>Dissolved Oxygen</td>
<td>DO</td>
<td>mg/l</td>
<td>-</td>
</tr>
<tr>
<td>Fluoride</td>
<td>F&lt;sup&gt;-&lt;/sup&gt;</td>
<td>mg/l</td>
<td>15</td>
</tr>
<tr>
<td>Phosphate</td>
<td>PO&lt;sub&gt;4&lt;/sub&gt;&lt;sup&gt;-3&lt;/sup&gt;</td>
<td>mg/l</td>
<td>30&lt;sup&gt;(2)&lt;/sup&gt;</td>
</tr>
<tr>
<td>Sulphate</td>
<td>SO&lt;sub&gt;4&lt;/sub&gt;&lt;sup&gt;-2&lt;/sup&gt;</td>
<td>mg/l</td>
<td>400</td>
</tr>
<tr>
<td>Sulfide</td>
<td>S&lt;sup&gt;-2&lt;/sup&gt;</td>
<td>mg/l</td>
<td>0.1</td>
</tr>
<tr>
<td>Biochemical Oxygen Demand</td>
<td>BOD&lt;sub&gt;5&lt;/sub&gt;</td>
<td>mg/l</td>
<td>30</td>
</tr>
<tr>
<td>Total Kjeldahl Nitrogen (as N)</td>
<td>TKN</td>
<td>mg/l</td>
<td>75</td>
</tr>
<tr>
<td>Chemical Oxygen Demand</td>
<td>COD</td>
<td>mg/l</td>
<td>150</td>
</tr>
<tr>
<td>3. Organic Species</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oil &amp; Grease (Hexane Extractable)</td>
<td></td>
<td>mg/l</td>
<td>10</td>
</tr>
<tr>
<td>Phenols</td>
<td></td>
<td>mg/l</td>
<td>0.5</td>
</tr>
<tr>
<td>Total Organic Carbon</td>
<td>TOC</td>
<td>mg/l</td>
<td>75</td>
</tr>
<tr>
<td>Biological Test</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Coliform</td>
<td></td>
<td>MPN/100ml</td>
<td>0</td>
</tr>
</tbody>
</table>

**NOTE:**
1. The given food crops limits are agreed with the SCENR, MMAA and Ministry of Health (Preventive Health Dept.) as per the minuta of the meeting held on 27/01/2004
2. The State of Qatar Environmental Standards limit.

* The concentration of any identifiable chlorinated hydrocarbon or pesticide shall not exceed 10% of the 96 h LC<sub>50</sub> value for the commercial shrimp (*Penaeus Semisulcatus*).

* The criteria value, limits or levels not specifically addressed will be decided on case by case basis. Where clarification and / or variance / exemption is required SCENR will be contacted.