SECTION 7

POWER SYSTEM

7.1 INTRODUCTION. This section covers the specifications for off-site improvements for power system construction and defines the materials and practices required. Polices and procedures relating to electrical construction and maintenance practices are outlined in the "City of St. George Underground Power Construction Standards and Specifications". Where conflict exists between these and said standards, said standards shall govern.

All materials and equipment shall be furnished by the Contractor and shall be installed in a workmanship like manner in compliance with the current edition of the National Electrical Code and the National Electric Safety Code. Where code conflicts occur, these specifications and local regulations will govern.

7.2 ELECTRIC SERVICES.

7.2.1 POWER CONNECTION. Only authorized employees of the Power Department will be permitted to connect, or disconnect, electrical service to, or from, their power lines.

7.2.2 ELECTRIC SERVICE AGREEMENT. Each applicant for electric service within the municipal power service area must sign a standard electric service agreement. The applicant must supply the required information relating to the amount of load, voltage required, phase required and the purpose for which the service will be used. In the absence of a signed agreement, the acceptance of electric service will be deemed as constituting acceptance of the Power Department requirements and regulations. Large industrial, and/or commercial customers shall contract with the Power Department to meet their special requirements.

7.2.3 CUSTOMER SERVICE FACILITIES. The Customer shall provide and install an approved meter socket having the proper terminal arrangement and capacity to adequately accommodate their service requirements. The Customer shall also extend the building wiring from the meter socket to the service attachment. The Customer shall provide an adequate and substantial means by which Power Department personnel can attach appropriate service line equipment to the building. All service attachments shall have a minimum clearance of ten feet above the ground level, or above other areas where people could come in contact with the power lines.

Ample space shall be provided around the meter attachment to permit an unobstructed area for meter installation and maintenance. A minimum space of three inches shall be left between each meter socket and between meter sockets and other equipment. All equipment on the load side of the building service attachment, (except the meter and metering equipment, which will be furnished by the Power Department) shall be the responsibility of the Building Owner. All building wiring shall conform to applicable wiring codes.

The Customer shall be responsible for providing adequate and proper equipment to protect their equipment against overload, over or under voltage, or phase failure. The Power Department takes reasonable precaution to prevent any abnormal condition, but does not guarantee that such conditions will not occur. Any proposed change in existing meter, or service locations, or conditions, must be approved by the Power Department or service may be discontinued.

7.3 MATERIALS AND WORKMANSHIP. All materials and workmanship shall be first quality in every respect, plumb and true, and comply with the specific requirements of the approved layout drawings. The previously referenced Power Department standards will be adhered to.

No work shall be embedded in concrete, backfilled, or otherwise covered or concealed, until it has been inspected and approved by Power Department personnel. If any portion of the completed system fails to operate satisfactorily due to defects in material or workmanship, within one year of acceptance, it shall be corrected at the Customer's expense to the satisfaction of the City's Representative.

7.4 CONTROL OF GROUND WATER. All trenches shall be kept free from water during excavation, fine grading, cable laying, and embedment operations. Where the trench bottom is mucky or otherwise unstable because of the presence of ground water, and in cases where the static ground water elevation is above the bottom of any trench excavation, such ground water shall be lowered to the extent necessary to keep the trench free from water and the trench bottom stable when the work within the trench is in progress. Surface water shall be prevented from entering the trenches.

7.5 EXCAVATION AND BACKFILL. Excavation of trenches shall be as shown on approved layout drawings. The City's Representative(s) shall have the right to direct field changes where, in his judgment, alignment or topography problems are evident. Trenches shall be straight and the bottom free from water. All blocking or shoring materials shall be removed during backfill procedures.

Where trenching is required in dedicated streets, or other public rights-of-ways, all

trenches shall be backfilled in compliance with these specifications. The developer shall assume full responsibility for street failure where trenching operations have been performed.

Where soil conditions require bedding material, sand shall be placed above and below direct buried cables, or conduits, in two backfill operations. The trench shall then be compacted to ninety (90) percent of relative maximum dry density, unless the trenches are in streets or other public rights-of-ways, where they shall be compacted to a minimum of ninety five (95) percent of relative maximum dry density for granular soils and ninety (90) percent for fine grain soils as detailed in these specifications.

Bedding material specifications shall be as follows:

> **SAND:** Sand shall be well graded, have rounded to sub-rounded particles with one hundred (100) percent of the material passing a three-eighth (3/8) inch sieve, and no more than twenty (20) percent passing a number two hundred (200) sieve. No open graded material, such as "pea gravel" will be permitted for cable bedding. The material shall be non-plastic as per ASTM D-432 and D-424, and the cable shall be embedded with a minimum depth of four (4) inches of sand below the cable and a minimum depth of eight (8) inches of sand over the cable.

7.6 CONCRETE. All concrete poured in the field shall be ready-mixed and shall meet the requirements of these specifications, unless otherwise permitted by the City's Representative.

7.7 METERS. To permit access to the metering installation and to provide working safety for personnel, a clear working and standing space shall be provided in front of all meters. This area shall be located entirely on the Customer's property. The working space shall be kept clear and unobstructed, and shall extend a minimum of three feet from the face of the meter socket or instrument transformer compartment. The working space shall be sufficiently wide to permit ready access to the complete metering installation and in no case shall it be less than three feet wide, and have a height clearance of no less than six feet.

For each meter, the Customer shall furnish and install a switch or other approved disconnecting device. The disconnecting device shall be installed on the load side of the meter and shall control all of, and only the energy registered by that meter.

All meters and enclosures for meters, metering equipment and service entrance equipment on the line side of the meter, shall be sealed only by the Power Department personnel. Seals shall not be broken except by an authorized representative from the Power Department. No person shall be permitted to tamper

with, or in any way interfere with a meter or its connections, as placed by the Power Department.

For reasons of public safety, maintenance of service, and reliability of metering; meters shall not be installed in the following areas:

1. In any location that is not readily accessible.
2. In any location which is hazardous to personnel.
3. On any surface subject to excessive vibration.
4. In any elevated or depressed area that does not have access provided by means of a ramp or clear stairway of normal tread and which conforms to building code requirements.
5. In any substation area or transformer vault.
6. In common areas with dogs.