5.0 INSTALLATION STANDARDS

The Developer and/or its agent(s) are responsible to ensure that all construction meets the conditions and/or requirements of any governing authority, other utility, pipeline, railway or other facility owner affected by or having an interest in the work (e.g., permits, crossing agreements, environmental caveats, etc.), and whose approval or acceptance of the proposed URD was required and obtained prior to ATCO's acceptance of the final design and the start of construction.

5.1 Main Trench and Cable

5.1.1 Site Preparation and Grading

Before starting work within the URD area, the Developer and/or its agent(s) must prepare the site by defining the locations of the required distribution facilities and equipment, as well as grade levels and all vegetation plans, in relation to the subdivision site survey reference points provided by the Municipality.

Generally, the sequence of activities is to be as follows:

1. Rough grading along all required alignments and URWs.
2. Location staking for all bases for padmount transformers and switch cubicles, secondary junction boxes, joint-use pedestals and street light bases, and staking for proper grade elevation.
3. Alignment staking for all trenching, as well as grade level confirmation.
4. Location staking for all secondary service boxes.

Also prior to construction, all streets and lanes or walkways within the URD area must be rough graded, as per the definition in Section 1.1.

The Developer and/or its agent(s) are responsible for having all work related to alignments and grade levels, as required for the entire installation, laid out by qualified surveyors, and for the preservation of all stakes and marks during construction.

Future landscaping must be considered when determining the final grade, prior to the installation of any underground distribution power cables, bases for padmount transformers, secondary joint-use pedestals or street light screw-in bases. In addition, special care must be taken during landscaping, to avoid having electrical bases in the path of runoff water from rainstorms or snow melt.

5.1.2 Alignments

All main distribution power cable trenches located on boulevards must be laid at a minimum depth of 1.2m below rough grade level. Where cables fill the trench to more than 0.3m, the Developer and/or its agent(s) must ensure the top cables are at a minimum depth of 1.0m.

5.2 Trenches

5.2.1 Excavation

All trenches must have a minimum width of 300mm to a maximum width of 700mm. See Appendix B Drawings, U1 to U8, and Appendix D, Drawings D.1.1 to D.7.9. Alignments are as noted on utility alignment plans.

Extreme care must be taken during excavation to not disturb any iron pins. If any iron pin is disturbed or removed by the Developer and/or its agent(s), it must be replaced and confirmed by a registered land surveyor.

The Developer and/or its agent(s) are responsible to arrange locates and to ensure all underground facilities have been located and marked prior to starting any excavation within the development area.

No deviation from the surveyed alignments or grade levels is allowed during construction except with the written approval of the Consulting Engineer and, if significant alignment or grade changes are necessary, the written acceptance of ATCO's Electricity Engineering Representative.

No trenching is allowed within 3.0m of an existing energized padmount transformer, switch cubicle or stub-out without the authority of ATCO's Electricity Expeditor. At the start-up meeting, the Developer and/or its agent(s) and ATCO's Electricity Expeditor will determine or verify:

a) the distance the Contractor must maintain from energized facilities;

b) coordination and method of excavation (e.g., hydrovac, hand digging, etc.) required to complete the installation;

c) coiling of the underground power cables;

d) barricading of open trench; and

e) any other requirements to ensure the required construction clearances are not jeopardized.

The Developer and/or its agent(s) are responsible to provide temporary support, adequate protection and maintenance for all underground and surface utility structures, drains, sewers and other obstructions encountered during the work, and to cover any and all associated costs including the costs of others.

Where the grade or alignment of the trench is obstructed by existing utility structures such as conduits, ducts, pipes or branch connections to main sewers or main drains, the obstruction must be permanently supported, relocated, removed or reconstructed by the Developer and/or its agent(s), in cooperation with the owners of the utility structures.

The trench bottom must be free of stones, loose earth (including scuffed material) and sharp objects. In backfilled areas, the trench bottom must

be compacted to the satisfaction of ATCO's Electricity Representative. The trench bottom must also be kept level, to facilitate the laying-in of the cable. Where there is a change in the contour of the surface, the Developer and/or its agent(s) must provide additional grade stakes as required.

Trenches must be backfilled the same day the cables are pulled; cables must not be left exposed in an open trench.

5.2.2 Sand Bedding and Backfilling

5.2.2.1 General Requirements

The Developer and/or its agent(s) must:

a) supply and place a minimum of 150mm of stone-free sand fill above **and** below the underground power cables (see Section 5.2.2.2);

b) arrange spoil piles in order to maintain the soil in the centre of the pile in a non-frozen state;

c) extract all backfill to be placed immediately above the top layer of sand from **below** the frozen surface of the spoil piles (see Section 5.2.2.3);

d) "berm" the trench line where possible, to minimize the void if sloughing does occur;

e) install warning tape as shown in Appendix B, Drawings U1 to U8

f) compact the backfill (see Section 5.2.2.4).

Extreme care must be taken during backfilling to not disturb any iron pins. If any iron pin is disturbed or removed by the Developer and/or its agent(s), it must be replaced and confirmed by a registered land surveyor.

5.2.2.2 Sand Bed Material

The Developer and/or its agent(s) are responsible to provide all sand. The sand must be free of clay, rocks and organic materials, and meet the following grading requirements:

a) 100% passing 25mm sieve;

b) 95% passing 5mm sieve, with a maximum allowable 10% passing 80 micrometer sieve; and

c) liquid limit not exceeding 25%, and plasticity index not exceeding 6%.

For sand definitions and requirements, refer to ASTM Standards D698-07e1 and D1557-09. **Note:** ASTM standards are copyrighted; the Developer and/or its agent(s) are advised to obtain their own copies. These are available through the ASTM web site at www.astm.org.

5.2.2.3 Backfill Material

Backfill material must be the soil excavated from the ditch or trench. Sand is to be substituted for poor existing soils (i.e., soils with high thermal resistivity, which includes organic soils, peat, black loam, sod, clay that has hardened and stones). All backfill material is subject to approval by ATCO's Electricity Representative during inspection of the open trench.

Backfill containing large stones, dry clay lumps, ice, snow, straw or organic or frozen materials is unacceptable and may not be used at any time. **Note:** If ATCO's Electricity Representative determines native frozen lumps may be utilized on top of the sand, and then the frozen lumps must be power compacted.

Backfill must be placed in uniform lifts not exceeding 300mm compacted depth. Where clay is used as the backfill material, the moisture content of the clay must not exceed the plastic limit, or more than 15%, when being placed in the ditch. For definitions and instructions related to the plastic limits of soil, see ASTM Standard D698-07e1.

Wherever possible, the excavated material should be placed back into the trench in both the vertical and horizontal order in which it was removed.

5.2.2.4 Compaction

The native backfill must be compacted to within 150mm of the top of the trench.

The backfill within road crossings, trenches, ditches and other excavations within the road allowance must be compacted as per the Municipality's requirements. ATCO's Electricity Representative requires the Developer and/or its agent(s) to provide copies of certified tests of the soil compaction, as per ASTM Standard D698-07e1, and in accordance with the Standards provided by the Municipality (see Appendix F, Form F.16).

5.2.2.5 Road Crossings

Road crossings are to be installed as appropriate (i.e., one party, two party, three party or four party). See Appendix D, Drawings D.2.1, Compaction requirements are as stated in Section 5.2.4.4.

5.3 Cables

5.3.1 General Requirements

The supply and installation of all single phase subdivision power cables and service stubs is the responsibility of the Developer and/or its agent(s), as part of the overall installation of the underground electrical distribution system.

Installation of express feeders is addressed in Section 2.0, Table 2.1, Note 1 (i.e., responsibility for the civil works is at the discretion of ATCO and will be discussed with the Consulting Engineer at the Preliminary Design stage of the project).

Underground power cables should not be installed at temperatures below -25 degrees Celsius. If cables are to installed at temperatures below -25 degrees Celsius, the cables must first be warmed to room temperature for a minimum of 48 hours, then installed (pulled and shaped) within 2-3 hours.

Underground power cables must be laid and pulled out in the trench at random separation, with primary cables generally trained to the street side of the trench, secondary and street light cables to the center of the trench and communication cables or gas line to the property side of the trench, as per ATCO's Single Party to Four Party Trenching Standards (see Appendix B Drawings, U1 to U8, and Appendix D, Drawings D.1.1 to D.7.9.

The Developer and/or its agent(s) must always exercise extreme care when handling underground power cables to ensure the cables are not damaged due to negligence or rough handling (see Section 5.3.1.1). The underground power cables must not be unduly dragged over abrasive surfaces, crimped or cut where the exterior jacket or insulating properties of the individual cables are jeopardized.

Any vehicles utilized by the Developer and/or its agent(s) must allow safe handling and playing out of the underground power cable in a straight line, tangentially from the reel, without undue tension.

All underground power cables must be placed in the trench with great care to avoid kinking, damage to the concentric neutrals, or placing on rocks or other unacceptable material.

Care must be taken when laying the underground power cables to avoid excessive snaking and/or crossing of the cables over each other, which can create pressure points on the cables when backfilled and cause insulation damage.

5.3.1.1 Damage to Cables

The Developer and/or its agent(s) are responsible for the repair or replacement of any cable damaged during installation and prior to ATCO's acceptance of the Construction Completion Certificate (CCC) and energization of the system, even if the damage is through no fault of the Developer and/or its agent(s).

Any damage to an underground power cable must be reported immediately to ATCO's Electricity Expeditor, who will decide if the cable must be replaced.
Replacement of power cables must be made to the satisfaction of ATCO's Electricity Representative.
The two (2) categories of underground power cable damage and required corrective procedures are described below:

a) Minor Cable Damage: Minor scratches, marks, and indentations to outer jacket (e.g., after pulling cable through a duct).

   Corrective Action: ATCO's Electricity Representative will determine if the cable needs to be replaced.

b) Severe Cable Damage: Any damage beyond that described in "Minor Cable Damage" is considered to be too severe for repair (i.e., a gouge or break through the concentric neutral strands).

Corrective Action: Cable must be replaced by the Developer and/or its agent(s).

5.3.2 Primary Cable

Any primary cable installed under a paved surface must be installed in 102mm duct. See Appendix E.13, Appendix B Drawings, U1 to U8, and Appendix D, Drawings D.1.0 to D.2.1.

The ducts should be sized so the power cables do not exceed forty percent (40%) of the cross-sectional area of the duct. Also, the ducts must be used only for underground power cables. After installing the power cables, all road crossing duct ends must be covered by sand to a depth of 200mm.

When pulling underground power cable in duct, care must be taken to avoid the use of equipment or pulling distances that could result in damage to the cable or duct walls.

When determining safe pulling distances through duct, considerations include: coefficients of friction; cable lubricants; tension and sidewall bearing pressure levels. Where lubricant is required, accepted power cable lubricant must be used.

At entrances into ducts, bases, etc., the underground power cables must not be positioned beyond the allowable minimum-bending radius of each particular cable (i.e., eight (8) times the cable diameter, or as otherwise noted by the manufacturer).

5.3.3 Secondary Cable

All secondary power cables and/or terminations required at, or entering, existing padmount transformers, switch cubicles, splice boxes, riser poles, etc. must be installed and completed by ATCO personnel only.

The Developer and/or its agent(s) will at no time have access to any energized facilities.

The Developer and/or its agent(s) must coordinate the excavation and installation of all secondary power cables within 3.0m of an existing energized padmount transformer, switch cubicle or stub-out with ATCO's Electricity Representative.

5.4 Pre-Cast Transformer Pads

5.4.1 Excavation

The Developer and/or its agent(s) must excavate a hole large enough to accommodate each padmount transformer base and ground grid before the trenching is completed or any underground power cable or ground wire is installed. The Developer and/or its agent(s) must also properly compact the unwashed gravel fill to support the base, and to ensure proper leveling at each transformer base location. The compaction should be at least 95% Proctor, as defined in ASTM Standard D698-07e1.

After the underground power cables are installed at the base, and the secondary cables, where applicable, are extended away from the base, the Developer and/or its agent(s) must place sand around the cables, to a minimum cover of 400mm and extending 500mm from the base, before backfilling the main trench.

5.4.2 Sand Bedding and Backfilling

After the padmount transformer bases are installed, the Developer and/or its agent(s) must backfill the excavation and compact the surrounding fill up to 400mm below final grade.

The Developer and/or its agent(s) must then install the required ground grid (see Appendix B, Drawings E21 to E27), backfill the remaining excavation and compact it to within +/- 150mm of rough grade. No backfill is allowed inside the padmount transformer bases.

The Developer and/or its agent(s) are responsible to provide all sand for leveling bases for padmount transformers and/or raising bases to accommodate future landscaping. The sand must be free of clay, rocks and organic materials, and meet the following grading requirements:

a) 100% passing 25mm sieve;

b) 95% passing 5mm sieve and a maximum allowable 10% passing 80 micrometer sieve; and

c) liquid limit not exceeding 25%, and plasticity index not exceeding 6%.

For sand definitions and requirements, refer to ASTM Standards D698-07e1 and D 1557-09.
All costs for any corrective measures required after energization will be borne solely by the Developer.

5.4.3 Ground Grid Installation

The Developer and/or its agent(s) are responsible to install the ground grid at each padmount transformer location prior to backfilling and compacting the excavation.

The ground grid installation for padmount transformers and the protective guard posts are shown in Appendix B, Drawing H401.

Specifications for grounding materials and parts are provided in Appendix E, Document E.5.

All grounding must meet the requirements of the AEUC, In addition, all ground grids must be tested before connecting the concentric neutrals using *Fall of Potential* to ensure ground resistance is below 6 Ohms (see Appendix B, Document E21), as per the Code requirements.

If the ground grid does not meet the Code requirements, remedial action must be taken by the Developer and/or its agent(s) to ensure compliance.

Note: The use of deep driven ground rods provides a means of lowering ground resistance in most cases and is recommended.
Test results must be documented, as per Section 7.2.3, showing the date of test, type and identification of equipment and measured ground resistances.

5.5 Transformers

The installation of transformers is shown in Appendix B, Drawings R380 to R380B and N380 to N380B.

5.5.1 Cable Installation and Coiling

Primary and secondary cable coils must have one loop of cable left in the vault, coiled in a clockwise (primary cable) or counter-clockwise (secondary cable) direction.

5.5.2 Transformer Bushing Designations

Padmount transformer primary bushings are designated H1 to indicate the bushing is connected to the H1 end of the primary winding.

For single phase transformers where one end of the primary winding is grounded, H1A and H1B are the primary terminals. H2X2 is the grounding point. Single phase mini-padmount transformers are loop-feed transformers with the primary bushings designated as H1A - H1B, with the H1A bushing on the lower left side of the transformer.

Three phase padmount transformers designed for feed-through operation have two sets of primary bushings, which are designated H1A - H1B, H2A - H2B, H3A - H3B, where A and B represent different connection points for the same phase.

When facing the bushings, the underground primary power cables feeding from the left side of the padmount transformer must be connected to the H1A bushing (H2A and H3A bushings for three phase), and the primary cables feeding from the right must be connected to the H1B bushing (H2B and H3B bushings for three phase), regardless of the number of phases or from where the system is fed.

5.5.3 Cable Terminations

All conductors must be properly dressed prior to termination, in accordance with the manufacturer's instructions, with the appropriate identification tag securely attached to each cable.

5.5.3.1 Primary Cable Tagging

Tagging requirements for primary cables within the padmount transformer compartment are as follows:

a) Each primary power cable connection inside the padmount transformer must be tagged with the appropriate cable tag supplied by ATCO (i.e., A1,B1,C1). **Note:** The cable tag does not necessarily indicate the phase at the transformer.

b) A matching cable tag must be installed directly above the primary bushing on the padmount transformer tank wall (i.e., the primary power cable tag must match the cable tag on the tank wall).

c) The three phase and/or single phase switches on loop-feed padmount transformers must be marked with the appropriate cable number, directly above the switch handle on the tank wall, using lamicoids supplied by ATCO.

d) The SLD Schematic plate supplied by ATCO and the phase connection must be attached to the inside of the padmount transformer.

e) The Switch number supplied by ATCO must be attached to the outside of the padmount transformer door.

f) All Equipment combined or standalone shall have its own asset tags attached to the outside of the equipment.

See Appendix B, Drawing H9.

5.5.3.2 Secondary Cable Tagging

Each secondary cable (300 MCM) must be identified with the asset number of the previous or next pedestal or transformer to which it is connected.

A stick-on tag created with a labeler must be attached to the cable and encapsulated with a clear, heat-shrink sleeve. The lettering on the tag is to be uppercase, bold and of a reasonably legible size.

See Appendix B, Drawing H9.

5.5.3.3 Load Break Elbows

At each padmount transformer, where the subdivision primary cable is to be terminated, the Developer and/or its agent(s) must supply and install the required separable load break (LB) connectors and fault

indicators, and make all the supply conductor connections and grounding bonds within the padmounted enclosure. See Appendix E, Document E.6 for fault indicator specifications. The individual performing the termination must complete and sign the cable termination form. See Appendix F, Form F.20.

All conductors must be properly dressed prior to termination, in accordance with the manufacturer's instructions, with the appropriate identification tag securely attached to each cable. Fault indicators are to be located on the cable connected to the LC transformer bushing.

Elbow terminators are to be installed as follows:

a) The manufacturer's instructions for installing the elbow and related parts must be followed in the sequence provided.

b) During installation, the male contact pin is not to be handled with bare hands, but only by workers wearing clean cotton gloves. This pin must be absolutely free of any lubricant and installed or removed only with the use of the approved probe insertion tool.

c) One half-lapped wrap of semiconducting tape is to be applied to bond the semiconductor portion of the elbow. Three half-lapped wraps of ozone-resistant tape or a cold-shrink sleeve are to be applied to bond the jacket of the cable up over the semiconductor tape and onto the elbow, providing a waterproof seal between the jacket and the elbow.

d) One strand of concentric neutral wire is to be utilized to ground the grounding eye. The remaining concentric neutral wires must be tightly twisted together and connected to the ground bus of the transformer.

e) Silicone grease must be applied and the elbow connector placed on the bushing, and the elbow pressed straight onto the bushing with sufficient force to ensure the top of the bushing is firmly

locked into place at the bottom of the elbow. A visual check should be done to ensure the skirt of the elbow is completely over the semiconductor portion of the bushing.

f) The conductor connectors must NOT be interchanged with the elbow pins and fitted into the elbow unless they are from the same manufacturer.

5.5.3.4 Secondary Terminations

The Developer and/or its agent(s) are responsible to complete all secondary connections between the padmount transformer and the secondary pedestal. However, no cable terminations may be completed until each transformer is properly secured by four (4) hot dipped, galvanized hold-down plates and bolted to precast inserts. Once installed, all lifting bolts are to be removed.

The secondary cables connecting a single phase padmount transformer up to 300 MCM are to be trained such that they are installed into the proper secondary terminal block of the pedestal.

After installation into the terminal block, the phase conductor must have a tie wrap installed on the end of the insulated conductor. The set screw is to be tightened only enough to prevent the cable from falling out of the terminal block.

5.5.4 Lightning Arrestors

ATCO's Electricity Engineering Representative will confirm the type and location of lightning arrestors required during the Preliminary Design stage.

5.5.5 Fault Indicators

A fault indicator must be installed on each primary loop cable on the LB elbow.

The fault indicator specification is provided in Appendix E, Document E.6.

5.5.6 Ground Grid Connections

For three phase padmount transformers, the neutral conductor must be grounded to the HO bus bar and interconnected with the secondary neutral conductor and then to ground. See Appendix B, Drawing E23 to E25.

For single phase padmount transformers, the neutral conductor must be grounded to the HO bus bar and interconnected with the secondary neutral conductor and then to ground. See Appendix B, Drawing E22.

5.6 Pedestals

All pedestals are to be installed as shown in Appendix B, Drawing X305 and meet the specifications identified in Appendix E, Document E.7. All pedestals must be leveled and installed at the proper grade.

5.6.1 Cable Installation

The secondary cables used to connect the padmount transformer terminals and secondary pedestals must NOT be smaller than the largest secondary cable feeding out of that pedestal. For specifications for one party and 2/3 party pedestals, see Appendix E, Document E.7 and Appendix B, Drawing X305.

The source feed to street lights may be from the secondary pedestals.

All secondary power supply cables from the padmount transformers must be connected to the phase connector terminals. Each secondary power service cable in the pedestals is to be left unconnected for connection upon completion of the lot service, and properly identified by legal lot description and address, as per Section 5.6.3.

Caution must be exercised to prevent damage to the primary and secondary power cables when connecting to the secondary pedestals. Each secondary power cable must be trained into position to prevent unnecessary crossing of the cables.

5.6.2 Cable Termination

All cables (phase and neutral conductors) must be terminated in an acceptable fashion. The strands of the concentric neutral on each secondary power cable must be twisted together for a minimum of 200mm and connected to the neutral terminal. All terminal bolts must be tightened such that the secondary power cables cannot be moved by normal force.

5.6.3 Secondary Cable Tagging

Both ends of each secondary service cable must be properly identified by legal lot description (i.e., lot, block and plan number). Each service cable must be identified with the legal description of the lot being serviced by that cable.

A stick-on tag created with a labeler must be attached to the cable and encapsulated with a clear heat-shrink sleeve. The lettering on the tag is to be uppercase, bold and of a reasonably legible size.

See Appendix B, Drawing H9.

5.6.4 Ground Connections

In secondary and joint-use pedestals, the concentric neutrals must be terminated to the neutral block and a separate #8 copper white TWH wire connected from the neutral block to the apparatus ground lug.

Bonding must also be provided between all above-ground metallic power and communication equipment (i.e., secondary and joint-use pedestals) separated

by a distance of 3.0m or less, as per CSA Standard C22.3 No. 7-94, Clause 3.6.1.

The communication sheath or shield must be bonded to the effectively grounded neutral conductor at an interval of not less than 300m, and there must be a minimum of five connections of grounding electrodes per km, as per CSA Standard C22.3 No. 7-94, Clause 4.3.3. Extra lengths of #2 bare copper conductor may be used to interconnect the communication sheath with the system neutral where required.

5.7 Service Boxes

5.7.1 Depth and Alignment

A wooden service box must be located within each residential service lot, as shown in Appendix D, Drawings D.5.1.

The service box is to be located 0.5m past the easement, inside the property line. The top of the service box must be a minimum of 300mm below rough grade.

The location of the service box must be marked with a stake and marker tape on the property side of the box, extending a minimum of 200mm above rough grade.

To avoid secondary cable damage during excavation and installation of the secondary service to the home or building, marker tape or another suitable electrical marker should also be installed 500mm beyond the service box into the property. This indicates to the electrician to take extra care to ensure the service box and secondary service lead within are not damaged by the backhoe or ditcher.

5.7.2 Coiling of Cable

Two-thirds of the subdivision lot length of cable must be left coiled (see Appendix D, Drawing D.5.1), and heat-shrink capped within the service box.

5.7.3 Markers

An Omni ball marker (Appendix E, Document E.11) must be installed within 1.0m of each wooden service box. Refer also to Appendix D, Drawing D.5.1

5.8 Street Lights

All street lights must be supplied and installed by the Developer and/or its agent(s), as per the IFC drawings accepted by ATCO for the development area, and in accordance with these specifications, the AEUC and the manufacturer's recommendations and limitations.

5.8.1 Excavation

The Consulting Engineer must provide, classify and designate cross-sections for each street light and walkway within the subdivision design. This will be in relation to standard utility alignment.

5.8.2 Base and Davit Installation

The Developer and/or its agent(s) are responsible to install the bases and davit poles for each street light location. See Appendix E, Documents E.8A and E.8B.

Care and attention must be taken to not damage the davit or the finish. 100% of the threads on the nut must be engaged. All davit standards must be leveled utilizing the appropriate shims such that the pole shaft is perpendicular to the roadway cross section, and all standards have a uniform tilt of zero degrees (0^{o}).

5.8.3 Sand Bedding and Backfilling

The Developer and/or its agent(s) must properly compact the fill to support the base and to ensure proper leveling at each screw-in base location. The compaction should be at least 95% Proctor, as defined in ASTM Standard D698-07e1.

The Developer and/or its agent(s) are responsible to provide all sand used to support the base. The sand must be free of clay, rocks and organic materials, and meet the following grading requirements:

a) 100% passing 25mm sieve;

b) 95% passing 5mm sieve and a maximum allowable 10% passing 80 micrometer sieve; and

c) liquid limit not exceeding 25%, and plasticity index not exceeding 6%.

For sand definitions and requirements, see ASTM Standards D698-07e1 and D1557-09.

All costs for any corrective measures required after energization will be borne solely by the Developer.

5.8.4 Cable Installation

The wiring between the luminaire, the insulated connector and the direct buried cable is to be completed by the Developer and/or its agent(s). A sufficient length of wiring must be maintained to allow a 460mm length out of the hand hole in the davit pole.

5.8.5 Cable Termination and Tagging

All street light circuits must be fed from transformers and pedestals. All cables must be terminated in accordance with Section 5.6.2.

Individual street light davits are to be controlled by a photoelectric cell mounted on each luminaire. The aperture of the photoelectric cell must face the northern skyline. Each light must be tested at time of installation by covering the photoelectric cell to ensure illumination.

Each street light cable must be identified with the asset number of the previous facility or next light to which it is connected.
A stick-on tag created with a labeler must be attached to the cable and encapsulated with a clear heat shrink sleeve. The lettering on the tag is to be uppercase, bold and of a reasonably legible size. See Appendix B, Drawing H9.

5.8.6 Ground Connections

The ground resistance must be measured at each screw-in base location. See Appendix B, Drawing E21 for the ground test method and values. Treat the screw-in base as an individual ground rod.

5.9 Single Phase and Three Phase SLD Schematic Plates

SLD Schematic plates will be provided by ATCO during the Pre-construction stage, at the request of the Developer and/or its agent(s).

SLD Schematic plates are to be installed as shown in Appendix B, Drawing H9.