

CITY OF RICHLAND, ELECTRICAL DIVISION  
**TECHNICAL SPECIFICATION FOR THE INSTALLATION OF  
STREET LIGHTING**

Technical Specification: TS-STRTLT

Approved: Wayne Kelly 11/22/06  
Engineering Date

Approved: Michael J. [Signature] 12-4-06  
Operations Date

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REVISIONS

<u>Revision No.</u>	<u>By</u>	<u>Date</u>	<u>Section</u>	<u>Description</u>
1.		7/28/95	4.05.05	"fused disconnect switch" removed
2.	JG	1/09/96		Many minor revisions throughout specification including labeling, as-built, uniformity, etc
3.	WT	10/31/02		General Revision
4.	WT	11-21-06	8.0	Revised SL-Pole-10 & SL-Pole-20

## **1.0 SCOPE OF WORK**

This work shall consist of providing and installing all necessary materials required for the entire installation of the complete area lighting system in accordance with: the approved plans; this specification and other applicable construction standards and material specifications; and as directed by the Design Engineer.

## **2.0 ELECTRICAL REGULATIONS, CODES AND PERMITS**

The electrical work required under this specification shall be complete and in accordance with all State laws, rules and regulations and the Washington Administrative Code (WAC) 296-46A and Revised Code of Washington (RCW) chapter 19.28). All electrical equipment used in the installation must be UL listed.

The contractor shall be required to obtain all electrical permits required from the State of Washington Department of Labor and Industries, Electrical Division. The contractor shall be responsible for the cost of the permit and for coordination with the State for all required electrical inspections. The City will not connect any electrical facilities without state approval.

### **2.01 APPLICABLE STANDARDS:**

The following standards are to be referenced in the design and installation of street light systems for the City of Richland.

ANSI C136.1-1991 American National Standard for Roadway Lighting, Filament Lamps

ANSI C136.2-1985 American National Standard for Roadway Lighting, Luminaires

ANSI C136.10-1988, American National Standard for Roadway Lighting Equipment - Locking-type Photocontrol Devices and Mating Receptacles

ANSI C136.11-1988, American National Standard for Roadway Lighting Equipment - Multiple Sockets

ANSI C136.15-1986, American National Standard for Roadway Lighting, High Intensity -Discharge and Low-Pressure Sodium Lamps in Luminaires

ANSI C78.388-1990, Electric Lamps-High Pressure Sodium Lamps-Methods of Measuring Characteristics

ANSI C78.1350-1990, Electric Lamps-400 Watt, 100 Volt, S51 Single-Ended High Pressure Sodium Lamps

ANSI C78.1351-1989, Electric Lamps-250 Watt, 100 Volt, S50 Single Ended High Pressure Sodium Lamps

ANSI C78.1353-1990, Electric Lamps-70 Watt, 52 Volt, S62 Single Ended High Pressure Sodium Lamps

ANSI C78.1354-1990, Electric Lamps-100 Watt, 55 Volt, S54 Single Ended High Pressure Sodium Lamps

ANSI C78.1355-1989, Electric Lamps-150 Watt, 55 Volt, S55 High Pressure Sodium Lamps

ASTM A-153, Standard Specification for Zinc Coating (Hot Dip) on Iron and Steel Hardware

ASTM D1785-94, Poly (Vinyl Chloride) (PVC) Plastic Pipe, Schedules 40, 80, and 120

IESNA TM3-95, ...Appendix E: Classification of Luminaire Light Distribution

NEMA TC 2-2003, Electrical Polyvinyl Chloride Tubing and Conduit

NEMA TC 3-1999, PVC Fittings for Use with Rigid PVC Conduit and Tubing

### **3.0 MATERIALS**

The Material specifications are listed in document MS-STRTLT. Within 10 days after the execution of the contract or no later than the Pre-Construction conference, the contractor shall submit (4) copies of the list of materials proposed for installation for City approval. The materials list shall be complete as to the name of manufacturer, the model number, and any other information necessary to identify the material. When requested material shall be supplemented by other data such as detailed scale drawings, wiring diagrams, proposed deviations from plans, etc.

Additionally, the City reserves the right to request physical samples of the materials prior to City approval. Contractor must provide, at no additional cost to the City, acceptable alternative materials for materials deemed unacceptable by the City. Any material purchased, or labor performed, prior to such approval shall be at the Contractor's risk.

### **4.0 INSTALLATION**

#### **4.01 GENERAL**

All workmanship shall be complete and in accordance with the specifications and latest accepted standards of the industry, as determined by the lighting engineer.

Any excavations required for the installation of conduit, standard foundations and other appliances should be performed in such a manner as to cause the least possible damage to any existing streets, sidewalks and any other adjacent objects. Excavations shall not be performed until immediately before the installation of conduit and other appliances. The material from the excavation shall be placed where the least interference to public vehicular and pedestrian traffic, and to surface drainage, will occur. Contractor shall obtain all utility locates prior to starting construction.

#### **4.02 LIGHT STANDARDS**

##### **4.02.1 METAL STANDARD**

The standard (pole) shall be a galvanized metal structure installed in accordance with the City of Richland Construction Guideline drawing, SL-POLE10.dwg, and in accordance with the manufacturers installation guidelines. The standard shall be set plumb by utilizing leveling nuts & washers as outlined in the guideline.

##### **4.02.2 DIRECT BURIED STANDARD**

Alternative street light standards may be constructed of metal suitable for direct burial, see City Construction drawing, SL-POLE20.dwg. The standard shall be of a one piece design,

fabricated from 11 gauge steel having a minimum yield strength of 55,000 psi after fabrication. The pole shaft shall have a uniform cylindrical cross section and have a uniform taper of 0.14 inches diameter change per foot of length. The completed pole, including mast and luminaire shall be capable of withstanding code loading and 100 mph wind velocity. The mounting hole, when machine augured, shall a minimum of 24 inch diameter and a minimum of 6 ft in depth. If the standard is installed by backhoe or else excavated, the backfill shall be of "select native granular, class D" composition, compacted in 8 inch lifts, in accordance with City Public Works manual, "City Standard Specification", sections 2.3.1.B and 2.3.2.B. Backfill may also be Controlled Density Fill (CDF) of lean concrete.

#### **4.02.3 ALTERNATIVE STANDARD**

Other light standard usage will require approval of the City Electrical Engineer. Design data and test reports may be required.

#### **4.03 STANDARD MOUNTING BASE**

The concrete mounting base shall be installed in accordance with City Construction drawing, SL-BASE.dwg. Mounting bolts to secure light standard to base shall be install per manufacturer's bolt circle pattern for standard. Electrical conduit shall be installed in base per drawing, S-BASE.dwg. A one-inch chamfer shall be made on all exposed corners of the mounting base. Exposed surfaces of mounting bases shall be troweled smooth. Reinforcing steel shall be installed no closer than 3" from the outside surfaces of the mounting base. Concrete shall not be poured until the installation of reinforcing steel has been inspected and approved by the City Engineer. Soil under the footing shall remain undisturbed. Concrete shall not be installed over frozen ground, nor shall concrete be poured during freezing or near freezing temperatures unless adequately insulation is provided to allow concrete to cure. The City Engineer shall review installations when freezing weather exists. Concrete shall be compacted with high frequency mechanical vibrating equipment supplemented by hand spading.

#### **4.04 BREAKAWAY DEVICE**

When required by the City, an approved breakaway device shall be installed between the standard mounting base and the standard in accordance with the manufacturer's installation instructions. Street light standards used on all arterial roads and street must be of the break-a-way design.

#### **4.05 ELECTRICAL INSTALLATION**

##### **4.02.2 CONDUIT SYSTEM**

All underground electrical conductors shall be installed in 1-1/2" Electrical grade Schedule 40 PVC conduit except for conduit from junction boxes to direct buried standards, which is to be 1" Liquid-tight, Flexible, Non-Metallic tubing, Carlfex or equivalent. The conduit installation shall be installed in accordance with the City Construction drawings, SL-DISC.dwg and SL-JBOX.dwg, and the applicable sections of WAC 296-46A and RCW

19.28. At no additional cost to the City, conduit runs shown on the plans may be changed by the Installer and/or the Engineer to avoid existing underground obstructions revealed during excavation.

The conduit shall be buried at a minimum depth of 24" below finished grade. The top of asphalt will be considered finished grade for the purpose of establishing correct burial depths.

The radius of all conduit bends shall be a minimum of 18"; exception: A 12" minimum radius will be allowed for sweeps installed into junction boxes and 8½" radius for sweeps in the concrete bases used on bolted street light standards.

Conduits shall be stubbed to end of streets in developments where future roads are to be extended. Those conduits shown on the plans for future use shall be blown clean with compressed air and shall be capped off. A pull string shall be installed in all empty conduits. A 4"X4"X4' cedar marker post shall be driven at all ends of conduit left underground for future use.

Conduits entering junction boxes shall be swept up through the bottom of the box with a minimum 12" radius 90° sweep. Conduit ends shall be at least 4" above the level of the required gravel installed in the bottom of the box. A bell end or bushing shall be installed on all exposed conduit ends. Conduits shall enter the junction box in the general direction of the conduit run.

Galvanized rigid steel conduit shall be utilized whenever the conduit is exposed, such as at the above ground sections of conduit entering the street light pole mounted disconnect.

#### **4.05.2 JUNCTION BOX INSTALLATION**

Underground enclosures, herein referred to as Junction boxes or J-boxes, shall be installed at the locations shown on the plans, and at such additional points as ordered by the City Engineer. The J-boxes shall be installed in accordance with Construction drawing, SL-JBOX.dwg. Conduit runs shall not exceed 400 feet without the inclusion of a J-box. With approval of the City Engineer, the Contractor may, at his own expense, install additional J-boxes to facilitate the installation work.

J-boxes shall be installed on soil that has been restored to 95% compaction. J-boxes shall be installed such that the top of the covers are approximately 2" above finished grade.

Contractor shall place 4" of 5/8" minus crushed rock in the bottom of the J-boxes. Top surface of gravel shall be 2" above the bottom edge of the J-box. J-boxes shall be set level and parallel to street. All J-boxes shall be secured with a pentahead bolt and washer.

#### **4.05.3 WIRING INSTALLATION**

Electrical conductors for the street light circuits shall be installed in accordance with Street Light Wiring drawing, SL-DISC.dwg, and the applicable sections of WAC 296-46A and RCW 19.28. All wiring shall be done in a neat workmanlike manner and installed such that tension limitations recommended by the manufacturer are not exceeded during pulling.

When conductors are pulled by mechanical means, a dynamometer with drop-needle hand shall be used on every mechanical pull to ensure that the cable tension limitations are not exceeded.

The connections or splicing of the conductors will be permitted only at J-boxes, service disconnects, transformer compartments, electrical compartments in poles bases, or at control equipment. Wiring and connections made within these locations shall be done in a neat manner. Connections made in the J-boxes shall utilize UL listed connectors, or an approved equal, suitable for direct burial as specified in the material specifications

The Contractor shall provide additional conductor length inside all J-boxes such that conductors can be extended a minimum 36" out of the J-box.

#### **4.05.4 EQUIPMENT GROUNDING**

All metallic equipment included in the street light system, including but not limited to the luminaire, mast arm, light standard, etc. shall be mechanically bonded to form a continuous grounding system. The grounding system shall be installed in accordance with the Street Light Wiring drawing, SL-DISC.dwg. The grounding system shall be bonded to 2 copperclad ground rods at the service disconnect.

A copperclad ground rod shall be driven inside each J-box located next to a street light standard. The standard shall be solidly connected to the ground rod and the grounding conductor coming from the disconnect with #2 soft drawn bare copper.

#### **4.05.5 DISCONNECT INSTALLATION**

The circuit breaker disconnect shall be installed at each location where power is obtained from a City power source. The disconnect shall be installed in accordance with the Street Light Wiring drawing, SL-DISC.dwg, and with all applicable articles of the WAC 296-46A. For underground fed pad-mounted transformers, the disconnects must be mounted on a pedestal within 10' of the transformer. For overhead pole-mounted transformers, the disconnect shall be mounted on the pole. The elevation for disconnect device shall be 5' to 6' to the bottom of the disconnect when pole mounted. For pedestal mounted disconnects, the elevation to the bottom of the disconnect shall be approximately 4'.

The street light circuit breaker shall be a 60 Amp maximum and shall be approved for use within the disconnect specified in section 3.0 of the material specifications MS-STRTLT. The maximum number of street light luminaires allowed on a single breaker shall be 15.

Disconnect device shall be rated for 10,000 AIC when served from and overhead transformer with a rating of 37.5 kVA or less. When served from an overhead transformer larger than 37.5 kVA or by an underground transformer, the Disconnect shall be rated for 22,000 AIC.

#### **5.0 LABELING OF CIRCUITS AND POLES**

All field wiring conductors shall be labeled with a wire marker on every wire termination, connector, device, and handhole or junction box. Multi-conductor circuits may be identified using colored electrical tape; the grounded conductor shall be white or gray; the grounding conductor shall be green or bare copper; the ungrounded conductors shall be distinguished with red and black tape. Where there is more than one circuit in a device, handhole or junction box, all circuit conductors shall be identified with different markings.

Each circuit in junction boxes shall be permanently marked with one inch brass tag, (FLOY Tag, model #FT-205 or equivalent), secured with a plastic tie strap at the top of the conduit in which the circuit enters. The marking on the tag shall indicate the direction the conduit travels or the location of the next junction box or pulling point.

All street light poles shall be labeled with City street light numbers. Street Light numbers are provided by the City and installed by the Contractor. Numbers shall be installed at a height of eight feet above final grade, and shall be placed on the street side of the pole.

#### **6.0 AS-BUILT INFORMATION**

Prior to testing and inspecting the street light installation, the Contractor shall be responsible for providing the City with an as-built drawing(s) of the entire installation. Drawings shall show actual location of installed facilities and shall be submitted on Mylar( 24"x36" size), or via electronic file (AutoCAD ver. 14 minimum) to the City Electrical Dept. A copy of any material changes, showing manufacturer information shall also be submitted. Drawing shall show wire sized, conduit size, disconnect(s), Junction boxes, pole heights and point of feed. Light size and type with material catalog and product number shall be shown.

#### **7.0 TESTING**

The Contractor shall be responsible for performing the following tests on all electrical circuits whose nominal operating voltage is between 115 and 600 volts and that are installed in conjunction with the street light installation. The test schedule must be coordinated with the City such that a City Engineer or representative can be present during all required tests. All deficiencies discovered by the testing must be repaired in a manner acceptable to the City Engineer and re-tested. If power is not available, the Contractor must provide a generator to perform the tests. Contractor shall have a crew on-site during energizing and testing. The following tests shall be conducted.

1. Test for continuity on each circuit
2. Test for grounds in each circuit which shall consist of the physical examination of the installation to ensure that all required ground jumpers, devices and appurtenances do exist and are mechanically firm.

3. The insulation resistance shall not be less than 6 Megohms between conductor and ground as measured with a 600V megger.
4. A functional test in which it is demonstrated that each and every part of the system functions as specified or intended herein.

## 8.0 DESIGN GUIDELINES

Street lighting for subdivision and industrial or commercial development is to be designed and provided by the Developer. The street light plan shall be submitted to the City Engineer for approval. Within the guidelines of this specification, the designer is responsible for providing a lighting system design which meets the illumination and uniformity criteria provided in the table below. The City requires that the street lighting design be stamped by a Licensed Professional Engineer indicating that the design meets the requirements of WAC 296-46A and RCW 19.28.10. Whenever possible, poles shall be staggered on opposite side of the street. Breakaway poles are to be utilized on all arterials.

Street Classification (RMC title 12)	Recommended Average Maintained Illumination in foot-candles			Uniformity Ratio (Maximum)
	Commercial 1	Intermediate	Residential 1	
Major Arterials	2.0	1.4	1.0	3 to 1
Secondary Arterials	2.0	1.4	1.0	3 to 1
Collector Arterials	1.2	0.9	0.6	3 to 1
Access Streets	0.9	0.6	0.4	6 to 1 20 to 1 *

\* 20 to 1 uniformity ratio allowed in residential areas only  
Design criteria is from the IES Lighting Handbook.

### STREET CLASSIFICATIONS:

**MAJOR ARTERIAL.** The part of the roadway system that serves as the principal network for through traffic flow. The routes connect areas of principal traffic generation and important rural highways entering the city.

**SECONDARY AND COLLECTOR ARTERIALS.** The distributor and collector roadways serving traffic between major and local roadways. These are roadways used mainly for traffic movements within residential, commercial, and industrial areas.

**ACCESS STREETS.** Roadways used primarily for direct access to residential, commercial, industrial, or other abutting property. They do not include roadways carrying through traffic.

**AREA CLASSIFICATIONS**

**COMMERCIAL.** That portion of a city in a business development where ordinarily there are large numbers of pedestrians and a heavy demand for parking space during periods of peak traffic or a sustained high pedestrian volume and a continuously heavy demand for off-street parking space during business hours. This definition applies to densely developed business areas outside of, as well as those that are within, the central part of a city.

**INTERMEDIATE.** That portion of a city which is outside of a downtown area but generally within the zone of influence of business or industrial development, characterized often by a moderately heavy nighttime pedestrian traffic and somewhat lower parking turnover than is found in a commercial area. This definition includes densely developed apartment areas, hospitals, public libraries, and neighborhood recreational centers.

**RESIDENTIAL.** A residential development, or a mixture of residential and commercial establishments, characterized by few pedestrians and a low parking demand or turnover at night. This definition includes areas with single family homes, townhouses, and small apartments. Regional parks, cemeteries, and vacant lands are also included.

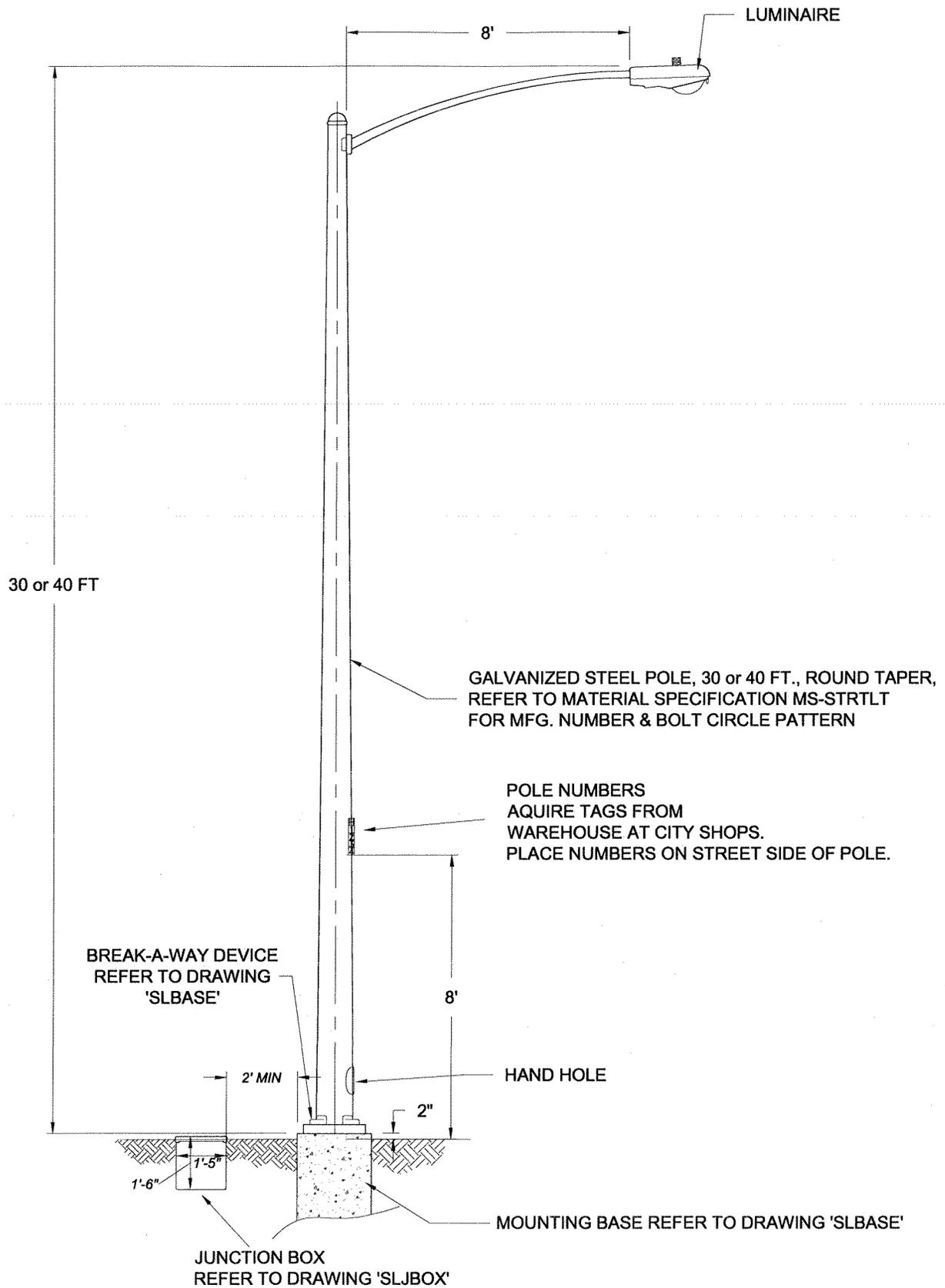
The table below provides the required luminaire mounting height and lamp wattage. Maximum allowed pole spacing is also provided.

STREET CLASSIFICATION	LUMINAIRE MOUNTING HEIGHT	LAMP WATTAGE	MAXIMUM POLE SPACING
MAJOR ARTERIAL 5-LANE	38'	400 HPS	150'
MAJOR ARTERIAL 4-LANE	38'	200 HPS	200'
RESIDENTIAL AND COLLECTOR	28'	100 HPS	300'

**8.01 DESIGN GUIDELINE ATTACHMENTS**

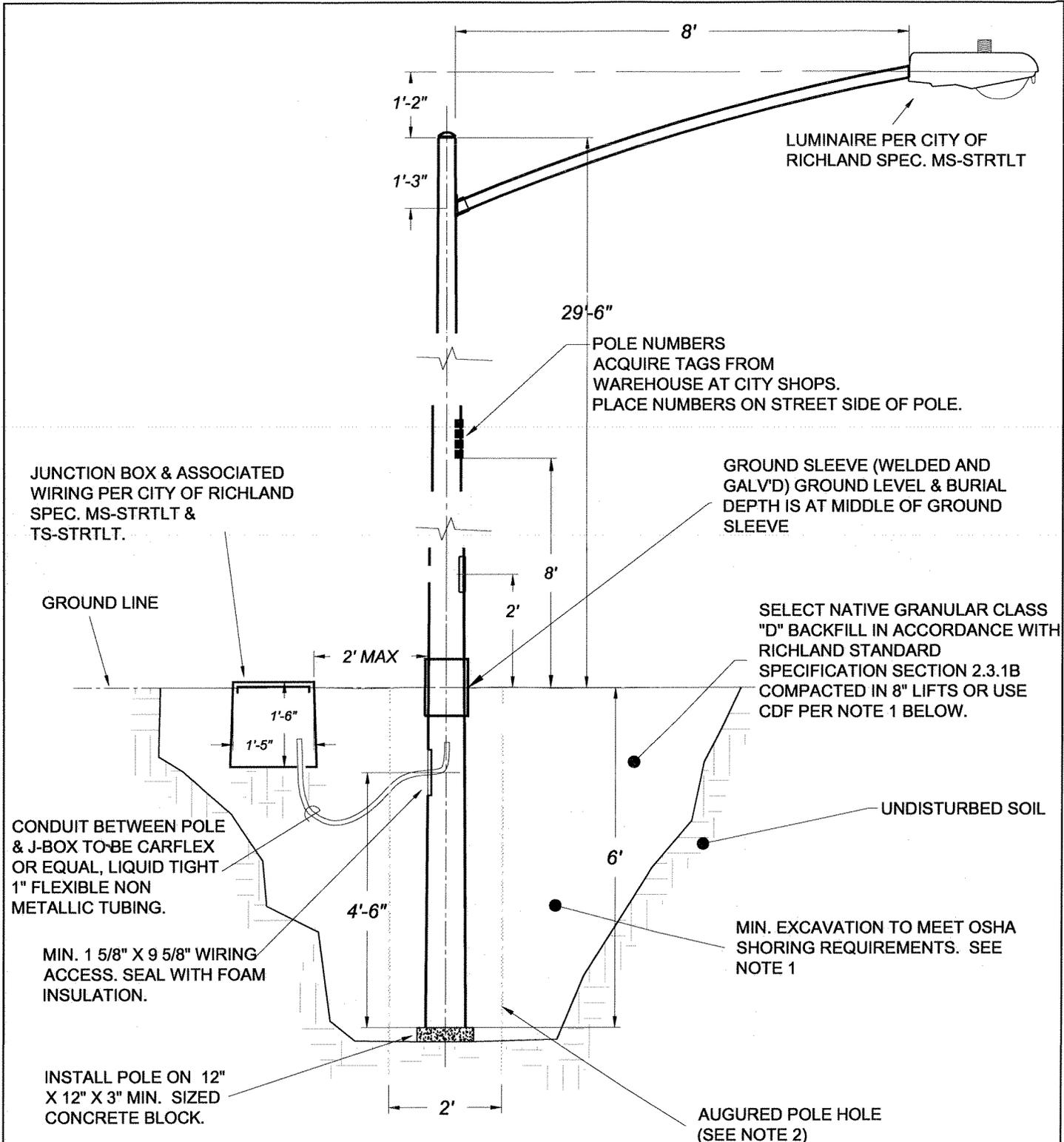
The following attachments are referenced in the document

Drawing Number	Title	Revision Date
SL-POLE10	Street Lighting, Steel Pole, 30/40 Ft, Concrete Base	11/21/06
SL-POLE20	Street Lighting, Direct Buried Pole, 30/40 Ft.	11/21/06
SL-DISC	Street Lighting, Wiring Diagram	3/28/05
SL-JBOX	Street Lighting, Junction Box and Mounting Base Details	3/28/05
SL-BASE	Street Lighting, Mounting Base Details, Concrete Support	3/28/05



SEE TECHNICAL SPECIFICATION TS-STRTLT FOR DESIGN INFORMATION  
 SEE MATERIAL SPECIFICATION MS-STRTLT FOR MANUFACTURING & MATERIALS INFORMATION

DRAWN BY: EMJ/wt	<b>STREET LIGHTING          STEEL POLE, 30/40 FT          CONCRETE BASE</b>	 <b>ENERGY          SERVICES</b>
APPRD. BY: WT		
REV #: 1		



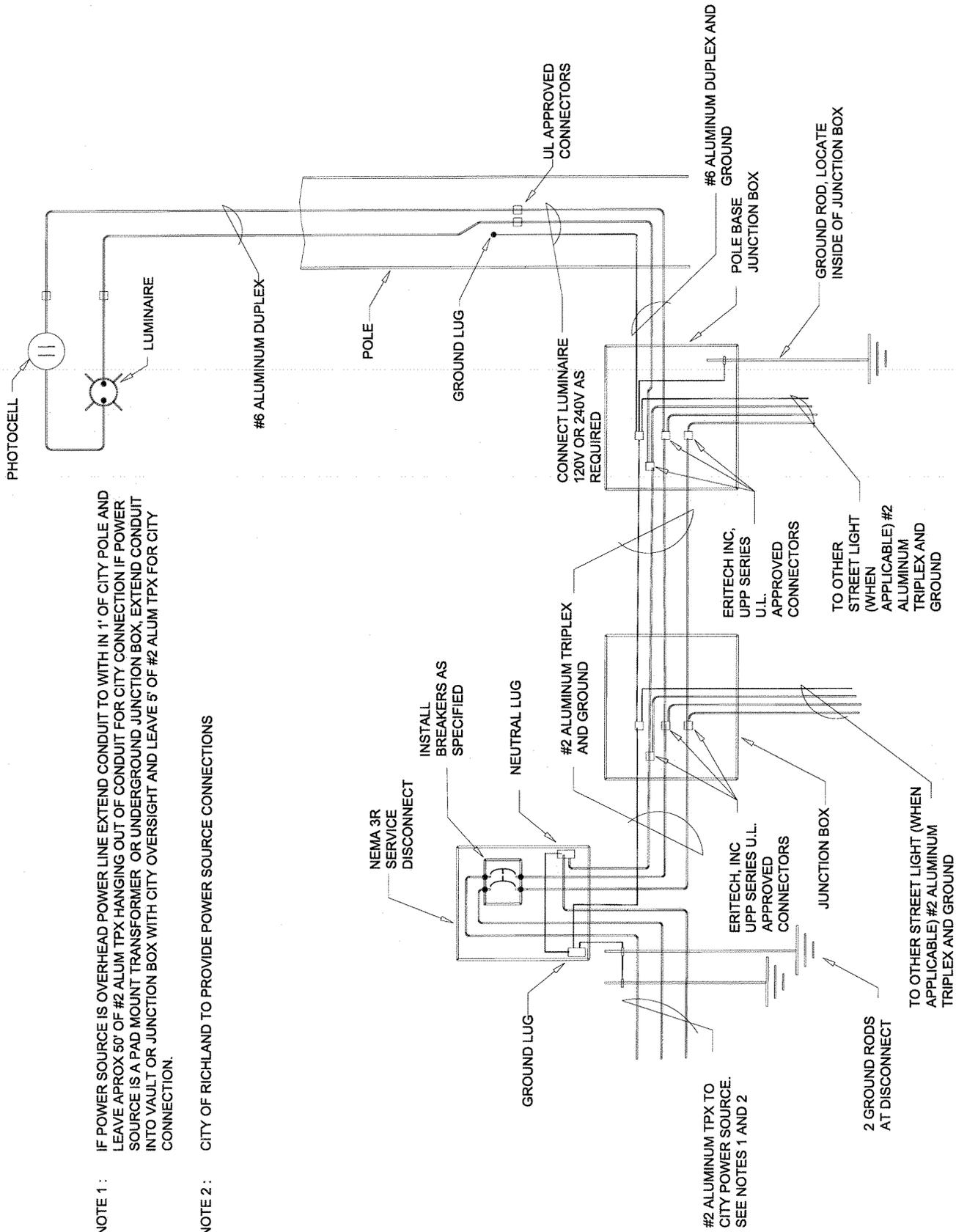
**NOTES**

1. THE USE OF CONTROLLED DENSITY FILL (CDF) OR LEAN CONCRETE OR CRUSHED 5/8" TOP COURSE GRAVEL IS ACCEPTABLE & MAY BE USED FOR BACKFILL. IF SOIL BACKFILL IS USED, THE BACKFILL SHOULD MEET RICHLAND STANDARD SPECIFICATION SECTION 2.3.1.B AND BE COMPACTED IN 8" LIFTS. IN-PLACE DENSITY TESTS SHOULD BE PERFORMED AT NOT MORE THAN 1 FT. INTERVALS TO DETERMINE COMPACTION. COMPACTION SHOULD MEET ASTM D-698. TO ACHIEVE THE FULL STRENGTH WIND LOADING, THE EXCAVATED AREA SHOULD BE AT LEAST 4 FT. ON EACH SIDE. BECAUSE THE DEPTH OF THE EXCAVATION IS GREATER THAN 4 FT, THE EXCAVATION WALLS MUST BE SLOPED AS REQUIRED BY STATE & FEDERAL REGULATIONS, IF PERSONNEL WILL BE REQUIRED TO ENTER THE EXCAVATION.
2. IF HOLES ARE AUGURED THEN AN ABSOLUTE MIN. OF A 24" DIA. AUGER MUST BE USED. BACKFILL PER NOTE 1.

DRAWN BY: EMJ/wt
APPRD. BY: WT
REV #: 1

**STREET LIGHTING  
DIRECT BURIED POLE  
30/40 FT**

	<b>ENERGY SERVICES</b>
	11/21/06 <b>SL-POLE20</b> SHT: 1 OF 1



NOTE 1: IF POWER SOURCE IS OVERHEAD POWER LINE EXTEND CONDUIT TO WITH IN 1' OF CITY POLE AND LEAVE APPROX 50' OF #2 ALUM TPX HANGING OUT OF CONDUIT FOR CITY CONNECTION IF POWER SOURCE IS A PAD MOUNT TRANSFORMER OR UNDERGROUND JUNCTION BOX, EXTEND CONDUIT INTO VAULT OR JUNCTION BOX WITH CITY OVERSIGHT AND LEAVE 5' OF #2 ALUM TPX FOR CITY CONNECTION.

NOTE 2: CITY OF RICHLAND TO PROVIDE POWER SOURCE CONNECTIONS

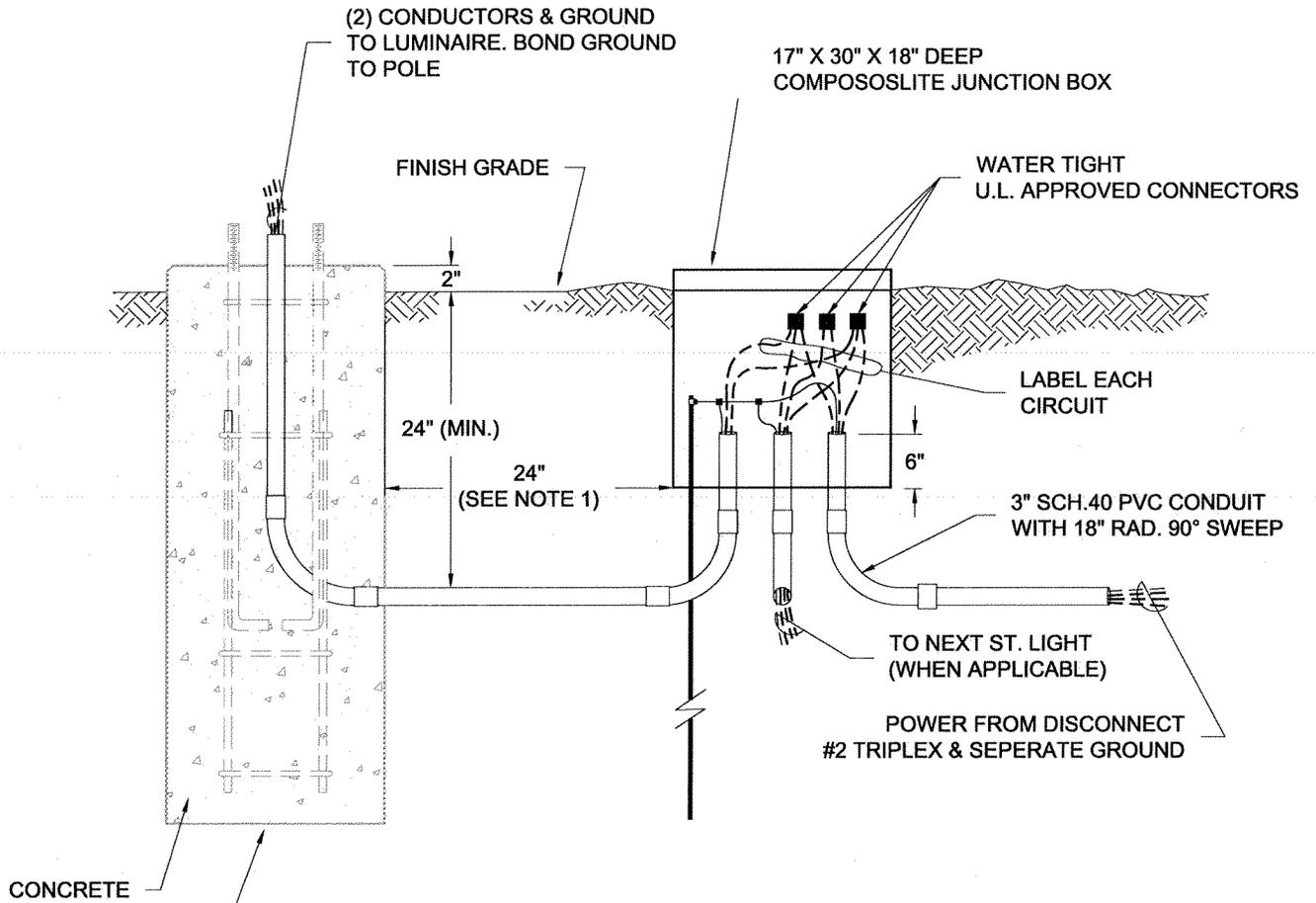
DRAWN BY: WR/wt
APPRD. BY: WT
REV #: 0

### STREET LIGHTING WIRING DIAGRAM

**ENERGY SERVICES**

03/28/05

**SL-DISC**  
SHT: 1 OF 1



STANDARD BASE  
 FOR CONCRETE BASE DETAILS SEE SLBASE DRAWING.  
 FOR STANDARD INFORMATION SEE  
 SLPOLE10 DRAWING FOR CONCRETE BASE MOUNTED STANDARD AND  
 SLPOLE20 DRAWING FOR DIRECT BURIED STANDARD.

**NOTES:**

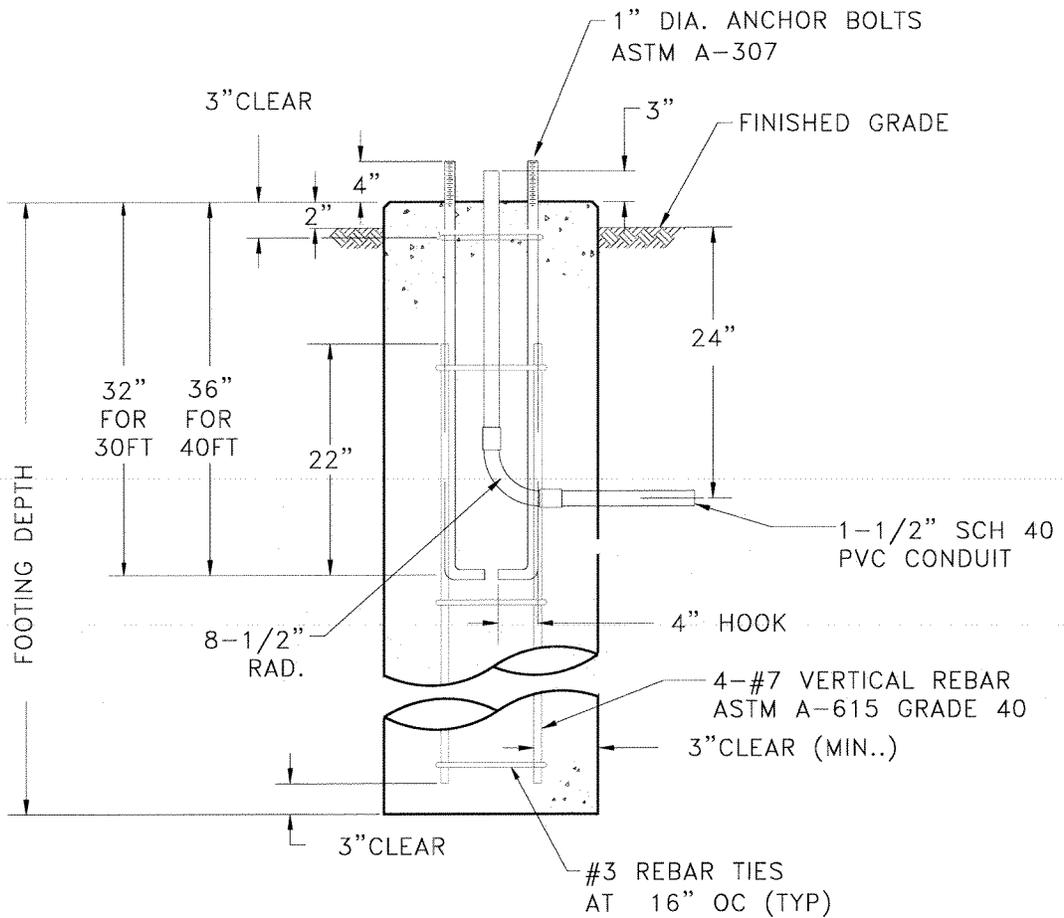
1. SET JUNCTION BOX IN THE PROPER LOCATION SUCH THAT IT IS AS LITTLE OVER 24" FROM STREET LIGHT FOUNDATION AS POSSIBLE. SOIL UNDER BOX SHALL BE RESTORED TO 95% COMPACTION. SET BOX AT AN ELEVATION SUCH THAT THE TOP OF THE BOX COVER IS APPROXIMATELY 2" ABOVE FINISHED GRADE UNLESS BOX IS TO BE SURROUNDED BY ASPHALT OR CONCRETE. SET BOX LEVEL WITH AND PARALLEL TO STREET.
2. SWEEP CONDUIT UP INTO JUNCTION BOX A MINIMUM OF 6". INSTALL BELL ENDS OR BUSHINGS ON ALL EXPOSED CONDUIT ENDS IN JUNCTION BOX.
3. ALLOW SUFFICIENT SLACK IN CONDUCTORS SUCH THAT SPLICES MAY BE REMOVED A MINIMUM OF 36" FROM SPLICE BOX.
4. JUNCTION BOXES SHALL BE COMPOSOLITE AS MANUFACTURED BY QUAZITE CORPORATION OR APPROVED EQUAL. BOXES SHALL BE CONCRETE GRAY COLOR IN APPEARANCE. COVER SHALL UTILIZE A PENTA-HEAD BOLT TO SECURE IT TO BOX. THE COVER SHALL HAVE THE LOGO "ELECTRICAL" PERMANENTLY MARKED ON IT.

DRAWN BY: EMJ/wt
APPRD. BY: WT
REV #: 0

**STREET LIGHTING  
 JUNCTION BOX AND MOUNTING  
 BASE DETAIL**

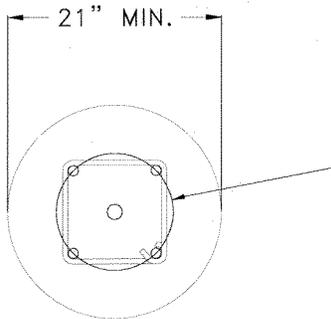
	<b>ENERGY SERVICES</b>
	<b>SL-JBOX</b> SHT: 1 OF 1

03/28/05



**MOUNTING BASE DETAIL**

BOLT CIRCLE AS REQUIRED FOR POLE



**MOUNTING BASE TOP VIEW**

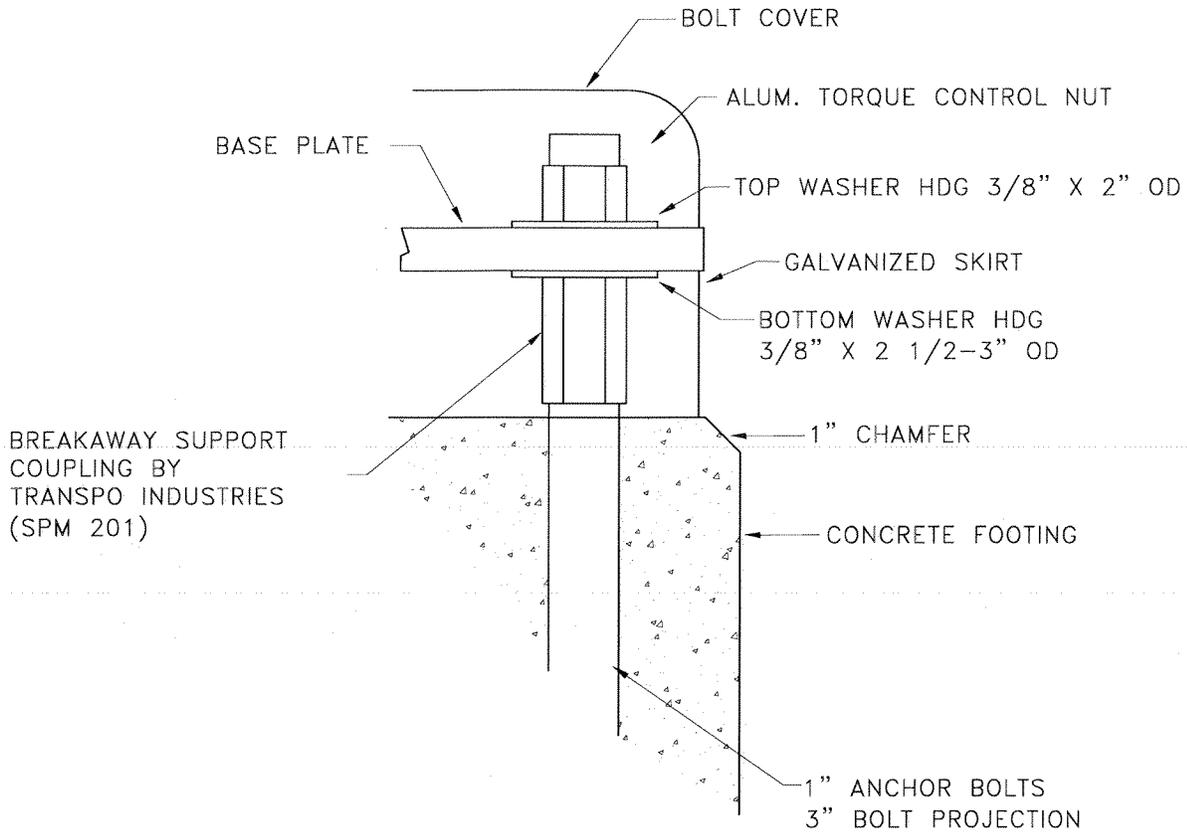
NOTE:  
 CONCRETE STRENGTH = 3000 PSI AT 28 DAYS.  
 CONCRETE STRENGTH = 2000 PSI PRIOR TO SETTING POLE.

SOIL TYPE	CLASS OF MATERIAL (UNIFORM BUILDING CODE)
A	GOOD-COMPACT WELL-GRADED SAND AND GRAVEL. HARD CLAY WELL-GRADED FINE AND COARSE SAND (ALL DRAINED SO WATER WILL NOT STAND.)
B	AVERAGE-COMPACT FINE SAND MEDIUM CLAY COMPACT SANDY LOAM LOOSE COARSE SAND AND GRAVEL (ALL DRAINED SO WATER WILL NOT STAND.)
C	POOR-SOFT CLAY CLAY LOAM POORLY COMPACTED SAND CLAYS CONTAINING LARGE AMOUNTS OF SILT (WATER STANDS DURING WET SEASON.)

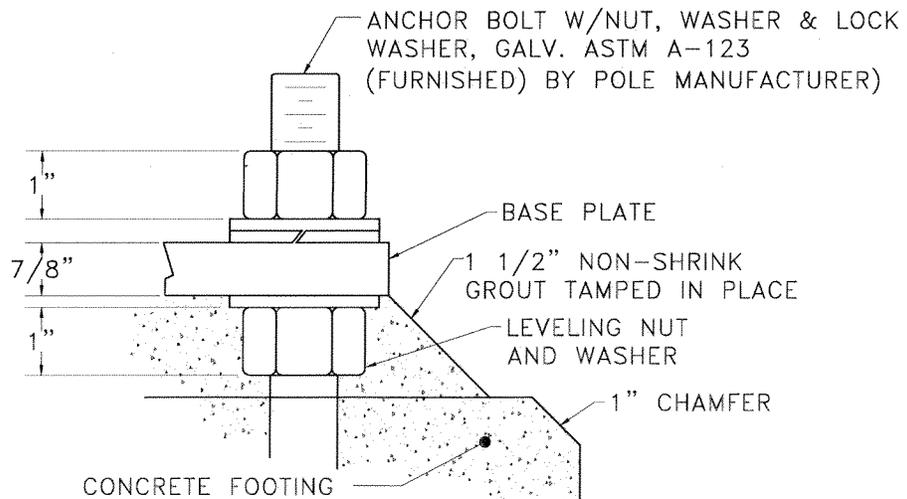
POLE LENGTH (FEET)	MINIMUM FOOTING DEPTH IN FEET. SEE SOIL TABLE		
	A	B	C
30	5'0"	6'6"	8'0"
40	5'6"	7'0"	8'6"

NOTE: FORMING MATERIALS (SONOTUBE) SHALL BE REMOVED FROM THE TOP OF THE FOUNDATION TO SIX INCHES BELOW FINISHED GRADE AFTER CONCRETE HAS HAD A CHANCE TO SET UP.  
 SOIL BELOW MOUNTING BASE TO BE UNDISTURBED.

DRAWN BY: JAM/wt	<b>STREET LIGHTING MOUNTING BASE DETAILS CONCRETE SUPPORT</b>	<b>ENERGY SERVICES</b>
APPRD. BY: WT		
REV #: 0		03/28/05



BREAKAWAY POLE ANCHOR DETAIL



NON BREAKAWAY ANCHOR DETAIL

DRAWN BY: JAM/wt	<b>STREET LIGHTING MOUNTING BASE DETAILS CONCRETE SUPPORT</b>	<b>ENERGY SERVICES</b>	<b>SL-BASE</b>
APPRD. BY: WT			
REV #: 0			