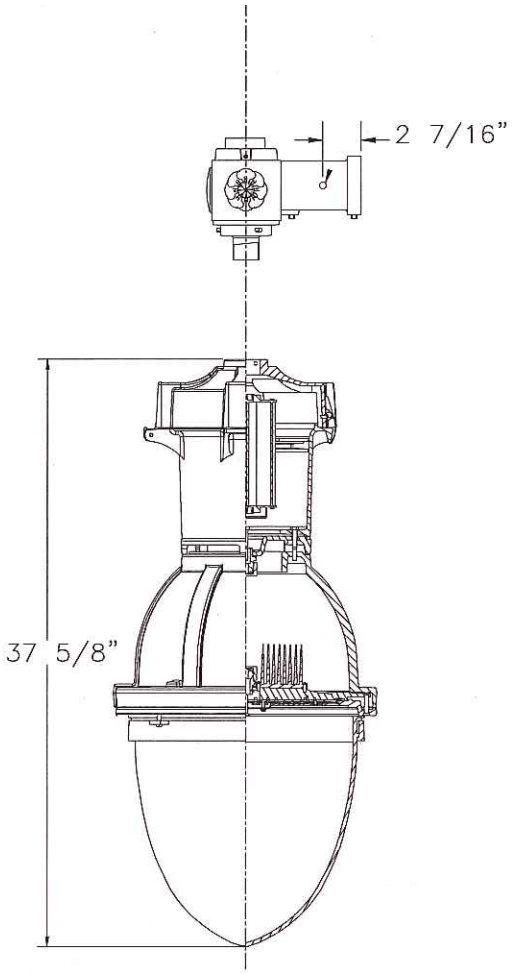
1. ***Document: Special Provisions.*** **Replace Section of Specification**

Replace pertinent sections of S.P. 57 with the following specifications for 150 W LED, replacing Item 618 778. Use Pay Item 000 506 Unassigned Special Item - EACH- Furnish & Install 150 Watt LED. Use Item # 618 779

K804 FARAD PENDANT FIXTURE
Written Specification



LIGHT SOURCE

Light engine shall include an array of Cree X-Series high power LED's (light emitting diodes). The emitters shall be mounted to a metal core circuit board using SMT technology. The LED's and circuit boards shall then be mounted to a high performance heat sink which is vented to the outside ambient air to provide dynamic airflow for cooling the system. The emitters shall be so constructed to provide a minimum system efficacy of 70 lumens per watt and continue to provide at least 70% of their initial light output after a minimum of 50,000 hours continuous use. The fixture will be available in 100, 120, 150 and 200 watt.

OPTICS

External light control shall consist of high precision refractive lenses mounted above the LED emitter arrays in such a way to achieve optimum uplight control. The optical lenses shall also control horizontal light distribution so that Type II, III or V IESNA distribution patterns are achieved.

LENS

The K804 pendant will include a rippled acrylic deep dish lens. The deep dish globe shall be moulded of rippled acrylic, Acrylite Plus Acrylic Polymer, or equiv., having a minimum thickness of 0.090". The lens is secured by means of a cast A319 aluminium holding ring that is sealed to provide an IP66 Ingress rating. Additionally, a continuous circular gasket rated for 270 degree Fahrenheit and must hold the lens into place within the cast ring assembly and assist in sealing the fixture. The deep dish globe will be designed in such a way that the fixture achieves less than 2% uplight, which will be verified by a photometric test.

HOUSE SIDE SHIELD

Fixture will have the option to include a house side shield that will provide shielding at 0 – 360 degrees.

CAST HOUSING

The luminaire shall consist of a heavy Grade A319 cast aluminum housing that acts as the enclosure for the LED light engine and is of adequate thickness to give structural rigidity. The LED light engine must be permanently affixed to the inside of the housing.

FINISH

Housing is finished with a 13 step Kingcoat™ SuperDurable polyester TGIC powder coat finish in textured black.

DRIVER

The LED universal dimmable driver will be class 2 and capable 120 - 277 input voltage, greater than .9 power factor, less than 20% total harmonic distortion and feature ambient temperature range of -35 ºC up to 65ºC. Each LED system comes with a standard surge protection designed to withstand up to 20KA/10Kv of transient line surge. The driver assembly will be mounted on a heavy duty fabricated galvanized steel mounting bracket to allow complete tool-less maintenance.

WIRING

All internal wiring and connections shall be completed so that it will be necessary only to attach the incoming supply connectors to Mate-N-Lock connectors or to a terminal block. Terminal blocks shall be certified to 250V, 70A and consist of three sets of terminals. They shall be rated to 250V and meet NEMA Specifications for Wiring Terminals. Mate-N-Lock shall be certified for 600V operation. Internal wire connectors shall be crimp connector only and rated at 1000V and 150ºC. All wiring to be CSA certified and/or UL listed, type SFF-2, SEWF-2, or SEW-2 No. 14 gauge, 150ºC, 600V, and color coded for the required voltage.

PLUMBIZER (KPL30)

The plumbizer allows for plumbing of the fixture and must be comprised of 2 components. The outer housing is a fully machined 6061-T6 aluminum enclosure and houses the internal plumbing nipple. The plumbing nipple must be a fully machined aluminum alloy 6061-T6 component with a yield strength minimum of 35000 lb/sq. in. with a minimum cross sectional area of 1.3 in. sq and a tensile strength of 45,000. Additionally, the horizontal level device must be cast from A319 and work to allow vertical adjustment of the fixture. The level device must be fastened to the horizontal arm by means of a 7/16" thru bolt. A NEMA approved twistlock photo receptacle must also be positioned in the top and be sealed to avoid water or bug entry.

PHOTOMETRICS

Fixtures are tested to IESNA LM79 specifications. These reports are made available.

THERMALS

Fixtures tested to DOE sanctioned standards to determine the maximum in-situ solder-point or junction-point temperatures of the LED emitters. This report will be made available.

LUMEN MAINTENANCE

Reported (TM21) and Calculated (L70) reports are available upon request with a minimum calculated value of 50,000hrs.

CHROMATICITY

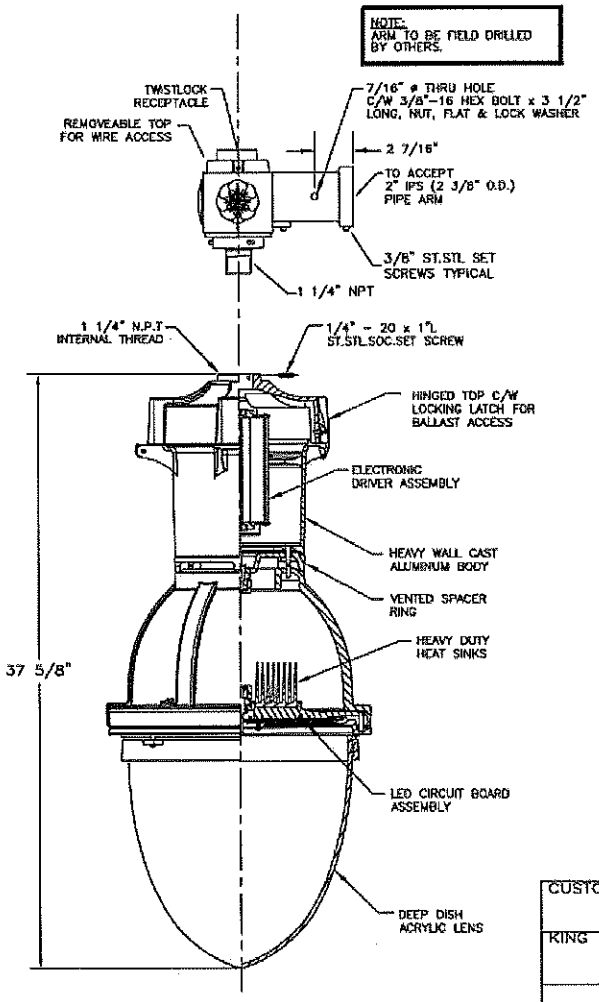
High output LED's come standard at 4500K (+/- 250K) with a minimum nominal 70 CRI. Additional CCT emitters are available upon request.

MISCELLANEOUS

All exterior hardware and fasteners, wholly or partly exposed, shall be stainless-steel alloy. All internal fasteners shall be stainless-steel or zinc coated steel. All remaining internal hardware shall be stainless steel, aluminium alloy, or zinc coated steel.

The fixture manufacturer must be ISO 9001:2000 certified and have been in the business of manufacturing outdoor lighting products for a minimum of ten (10) years. Equal proposals to this specification must be submitted to the electrical engineer 10 days prior to bid for mechanical and photometric review.

Please see the 150W LED Light Details.



NOTE:

1) PIPE SEALER TO BE USED ON ALL N.P.T. THREADED COMPONENTS

REV.	ALTERATION	DATE	BY

SPECIFICATIONS

CATALOGUE NO.:	K804-FARAD-II-150(SSL) -16000-120V-KPL30-PR
QUANTITY:	
OPTICAL SYSTEM:	FLAT ARRAY ACRYLIC DEEP DISH
IES LTG. CLASS.:	TYPE II
INPUT WATTAGE:	150W SOLID STATE LIGHTING
SERIES:	16000
CCT:	4500K
LINE VOLTAGE:	120V
PAINT:	TEXTURED BLACK
OPTIONS:	KPL-30 LEVELING DEVICE C/W TWISTLOCK RECEPTACLE (PHOTO-EYE BY OTHERS)

BALLAST TO BE SUPPLIED:

BALLAST TYPE:	ELECTRONIC
BALLAST MANU.:	-
CATALOG NUMBER:	-

OPTIONS:

QUICK DISCONNECT	[X]
TERMINAL BLOCK	[ ]

OTHER: 540 JOULE @ 2mS 20kA-8/20uS SURGE PROTECTION

CUSTOMER APPROVAL & DATE: _____

CUSTOMER ORDER No:	-
KING U.S. ORDER No:	-

King Luminaire • StressCrete • Est. 1953

STRESSCRETE GROUP

Manufacturing Locations:
Burlington, Ontario 1-800-268-7809
Northport, Alabama 1-800-435-6563
Atchison, Kansas 1-800-837-1024
Jefferson, Ohio 1-800-268-7809

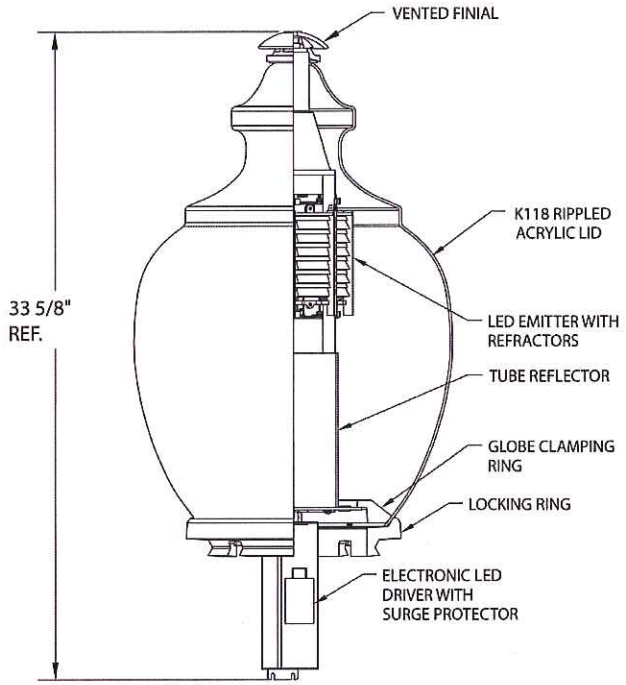
PROJECT/CUSTOMER:				
WASHINGTON DOT				
DRAWN BY:	AT:	CHECKED BY:	DATE:	REVISION:
A. ALVELA	SC1		03/23/13	
DRAWING TYPE:			DRAWING NUMBER:	
CONCEPT DWG.			206A7306-1	

150 W LED Tear Drop Light Details

2. ***Document: Special Provisions.*** **Replace Section of Specification**

Replace pertinent sections of S.P. 57 with the following specifications for 100 W LED, replacing Item 618 802. Use Pay Item 000 506 Unassigned Special Item - EACH- Furnish & Install 100 Watt LED. Use Item # 618 803

KCK118 RAAR POST TOP FIXTURE
Written Specification



LIGHT SOURCE

Lamps shall be an array of solid state light emitting diodes mounted to a multi-sided, vertical heat sink of highly conductive aluminum. The LED emitters are mounted to removable circuit boards such that they are in full thermal contact with the vertical heat sink. The vertical heat sink is open at the bottom and vented at the top to provide "Dynamic Airflow" for cooling the LED array. The emitters are arranged in various patterns on each face of the vertical heat sink to provide the required light distribution. The LED arrays include optical control baffles constructed of clear acrylic with precision refractors over each diode to control light distribution. The luminaire efficacy should be greater than 75 lumens per watt.

PROTECTIVE GLOBE

The Protective Globe shall be moulded of rippled acrylic Acrylite Plus having a minimum thickness of 0.125" with an overall diameter of 17 1/2"" and an over-all height of 28".

The Luminaire Globe Assembly is a self-contained unit consisting of the Globe itself, a rugged cast ring, and the LED light engine consisting of vertical heat sink tower, circuit boards, LED emitter arrays, and optical baffles. The LED light engine is of a modular design, and is able to be quickly removed from the globe assembly without need to disassemble the globe assembly itself. The Globe Assembly is secured to the main housing by means of set screws maintaining a secure seal between the Globe Assembly and the Main body of the luminaire.

High performance protection against water or dust particle ingress is provided for the optical chamber in which the LED light engine is contained, making the K118 suitable for an outdoor environment.

DRIVER

The driver for the LED emitters shall be dimmable electronic capable of input voltages from 120V through to 277V. The case shall be minimum IP66 seal rated. The driver shall be protected against power surges up to 20,000A. The driver shall have an input voltage and max wattage clearly identified. The ballast assembly will be mounted on a heavy duty fabricated aluminum mounting bracket to allow complete tool-less maintenance.

LUMINAIRE HOUSING

All K118 cast components shall consist of a heavy grade A319 cast aluminium.

WIRING

All internal wiring and connections shall be completed so that it will be necessary only to attach the incoming supply connectors to Mate-N-Loc connectors or to a terminal block. Terminal blocks shall be certified to 250V, 70A and consist of three sets of terminals. They shall be rated to 250V and meet NEMA Specifications for Wiring Terminals. Mate-N-Loc shall be certified for 600V operation. Internal wire connectors shall be crimp connector only and rated at 1000V and 150ºC. All wiring to be CSA certified and/or UL listed, type SFF-2, SEWF-2, or SEW-2 No. 14 gauge, 150ºC, 600V, and color coded for the required voltage.

PHOTOMETRICS

Fixture to be photometrically tested by a certified, third-party testing lab to IES LM-79 specifications. A photometric report tested to IES LM-79 and LM-63 standards must be made available

THERMALS

Fixtures to be tested by a DOE sanctioned test facility to determine the maximum In-Situ solder-point or junction-point temperatures of the LED emitters. This report is to be made available.

L70 & LUMEN DEPRECIATION

Manufacturer to supply a life expectancy value (L70) in operating hours. The minimum L70 value is to be 70,000 hrs. The LM-80 data along with the ISTMT data used to calculate the L70 value, along with the TM21 calculations used to derive the value, or a statement from the emitter manufacturer listing the L70 value as determined by the In-Situ and LM-80 data, are to be made available.

COLOR RENDERING

The Correlated Color Temperature (CCT) to be available within the ranges of 4200K to 4750K (neutral). The Color Rendering Index (CRI) to be a minimum of 72.

MISCELLANEOUS

All exterior hardware and fasteners, wholly or partly exposed, shall be stainless-steel alloy. All internal fasteners shall be stainless-steel or zinc coated steel. All remaining internal hardware shall be stainless steel, aluminium alloy, or zinc coated steel.

#16 and #18 Lanyard specification:

The post access door and interface casting shall be properly machined to insure even bearing and mating. The access door shall be attached to the base using tamperproof stainless steel hardware. A 24" lanyard 3/32 7x7 galvanized wire rope coated to 1/8 clear/ black nylon 3/32 will be attached to the access door with a stamped eye stainless steel T304 with .250 pin hole. A stainless steel ¼" – 20 x ½" long tamper resistant button head screw will secure the lanyard to the door as well as the base. A screw will be attached to the center of the door and the other the inside of the base opening just below the door.

All casting shall be done in a workmanlike manner, which shall result in uniform castings. All ornamentation and markings shall be sharp and clearly defined. All castings shall be free from abnormal physical qualities, pouring faults, porosity, cracks, blow holes, shrinkage defects, or flaws which affect the strength, value, or suitability of the castings for their intended use. Each casting will be clean and ground to eliminate all sand, burrs, machine marks, and imperfections. Base access door and interface shall be properly machined to insure even bearing and mating. Bolt and screw holes shall be drilled; coring will not be permitted to produce these holes.

14N Lanyard specification:

The post access door and interface casting shall be properly machined to insure even bearing and mating. The access door shall be attached to the base using tamperproof stainless steel hardware. A 24" lanyard 3/32 7x7 galvanized wire rope coated to 1/8 clear/ black nylon 3/32 will be attached to the access door with a stamped eye stainless steel T304 with .250 pin hole. A stainless steel ¼" – 20 x ½" long tamper resistant button head screw will secure the lanyard to the door as well as the base. A screw will be attached to the center of the door and the other the inside of the base opening just below the door.

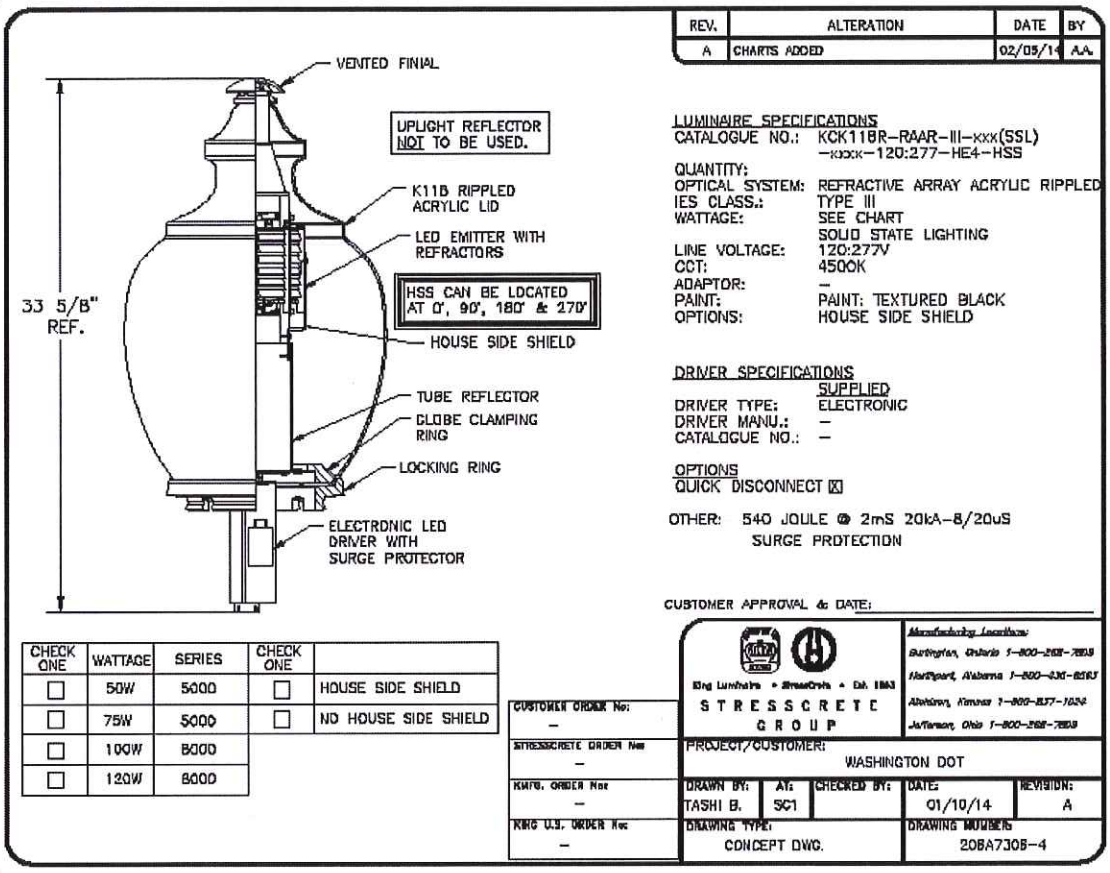
All casting shall be done in a workmanlike manner, which shall result in uniform castings. All ornamentation and markings shall be sharp and clearly defined. All castings shall be free from abnormal physical qualities, pouring faults, porosity, cracks, blow holes, shrinkage defects, or flaws which affect the strength, value, or suitability of the castings for their intended use. Each casting will be clean and ground to eliminate all sand, burrs, machine marks, and imperfections. Base access door and interface shall be properly machined to insure even bearing and mating. Bolt and screw holes shall be drilled; coring will not be permitted to produce these holes.

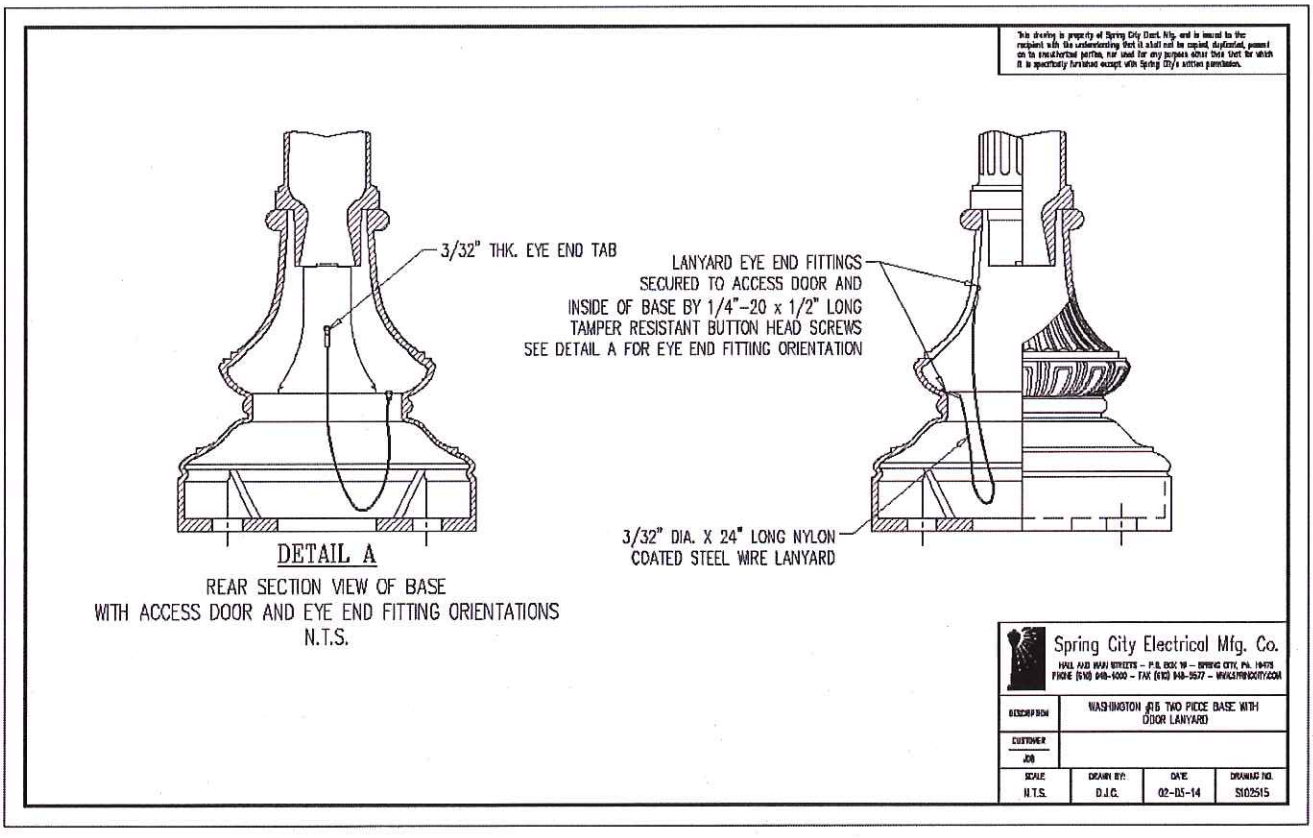
Twin 20 Lanyard specification:

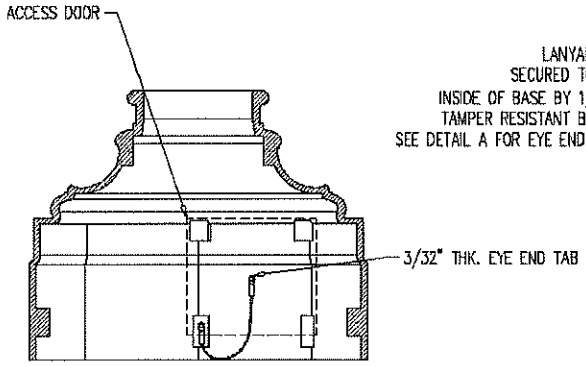
The post access door and interface casting shall be properly machined to insure even bearing and mating. The access door shall be attached to the base using tamperproof stainless steel hardware. A 12" lanyard 3/32 7x7 galvanized wire rope coated to 1/8 clear/ black nylon 3/32 will be attached to the access door with a stamped eye stainless steel T304 with .250 pin hole. A stainless steel ¼" – 20 x ½" long tamper resistant button head screw will secure the lanyard to the door as well as the base. A screw will be attached to the center of the door and the other the inside of the base opening just below the door.

All casting shall be done in a workmanlike manner, which shall result in uniform castings. All ornamentation and markings shall be sharp and clearly defined. All castings shall be free from abnormal physical qualities, pouring faults, porosity, cracks, blow holes, shrinkage defects, or flaws which affect the strength, value, or suitability of the castings for their intended use. Each casting will be clean and ground to eliminate all sand, burrs, machine marks, and imperfections. Base access door and interface shall be properly machined to insure even bearing and mating. Bolt and screw holes shall be drilled; coring will not be permitted to produce these holes.

Please see the 150W LED Light Details.

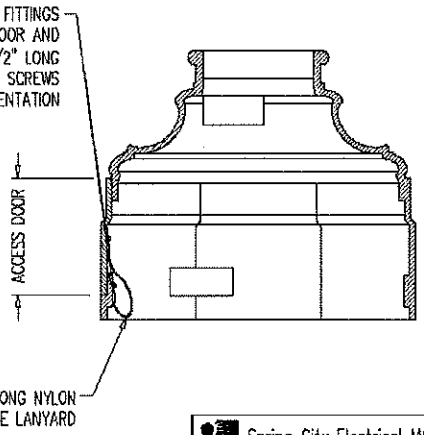






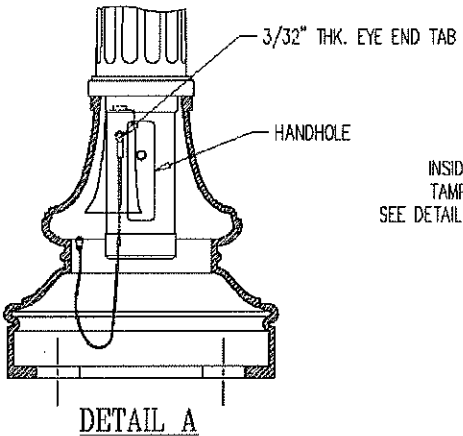
DETAIL A

REAR SECTION VIEW OF BASE
WITH ACCESS DOOR AND EYE END FITTING ORIENTATIONS
N.T.S.



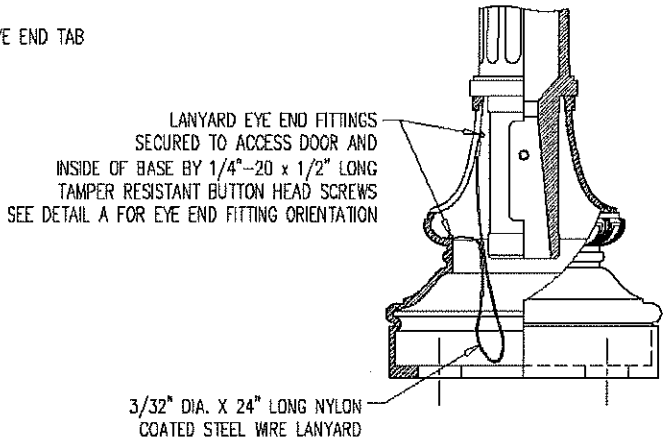
Spring City Electrical Mfg. Co.
HALL AND MAIN STREETS – P.O. BOX 98 – SPRING CITY, PA. 19475
PHONE (610) 948-4000 – FAX (610) 948-9577 – WWW.SPRINGCITY.COM

DESCRIPTION	WASHINGTON 25" OCTAGONAL TWO PIECE BASE WITH DOOR LANYARD		
CUSTOMER			
JOB			
SCALE: N.T.S.	DRAWN BY: D.J.C.	DATE: 02-05-14	DRAWING NO.: S102518



DETAIL A

REAR SECTION VIEW OF BASE
WITH ACCESS DOOR AND EYE END FITTING ORIENTATIONS
N.T.S.



Spring City Electrical Mfg. Co.
HALL AND MAIN STREETS – P.O. BOX 98 – SPRING CITY, PA. 19475
PHONE (610) 948-4000 – FAX (610) 948-9577 – WWW.SPRINGCITY.COM

DESCRIPTION	WASHINGTON 14H BASE WITH DOOR LANYARD		
CUSTOMER			
JOB			
SCALE: N.T.S.	DRAWN BY: D.J.C.	DATE: 02-17-14	DRAWING NO.: S102527