

Cold Cathode Lighting System

# *System Layout: Loading Transformer*

American Cathode  
A division of Bunting Graphics, Inc.  
20 River Road  
Verona, PA 15147

American Cathode



*Excellence In Illumination*

A division of  **BUNTING**



## System Layout: Loading Transformer

In order to ensure that the system will operate properly, it is important that the transformers be correctly loaded. Overall, the load of the transformers is based upon three factors:

1. The total linear footage of lamps.
2. One linear foot per lamp allowance for lamp electrodes.
3. Total length of secondary feeds multiplied by 0.5.

To calculate the transformer load in our sample cold cathode system:

1. Total linear footage of lamps: 72'
2. Total number of lamps: 12
3. Secondary feeds total: 12' (6' + 6')
4. Transformer load for this system is:

Linear footage of lamps.....	72'
Electrodes: 12 lamps x 1.....	12'
Secondaries: 6' + 6' = 12' x 0.5.....	6'
<b>Total Transformer Load:</b> .....	<b>90'</b>



*The P6KA2G Cold Cathode Transformer, with built-in handles and easily accessible toggle switch.*

To size the transformer, refer to the Luminous Tube Footage Chart. A 9000V transformer will accommodate up to 92 linear feet of lamping.

We have now loaded the transformer for our 12' x 24' sample area. There may be instances in which project conditions differ - varying transformer locations, dimming, length of secondary wire feeds, lamp configurations, or other factors, may necessitate re-sizing the transformer. Linear footage of lamps is reduced by 20% when dimming. Specify normal power factor transformers only when dimming. High power factor transformers are not dimmable. Dimmer is to be located on primary wiring side of transformer and wired to the hot side (black) of incoming line.

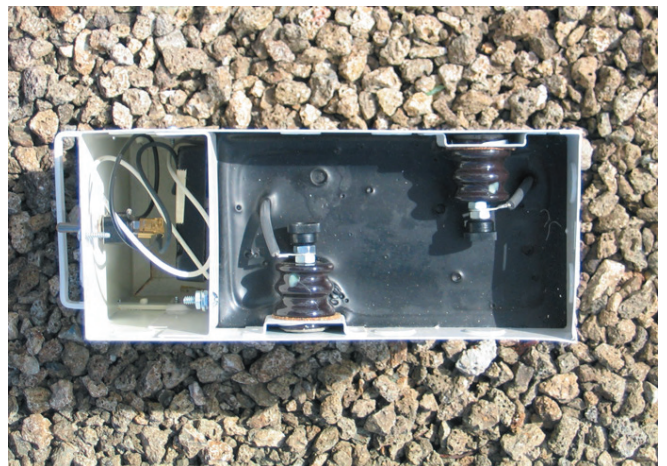
Contact Robert Costa at American Cathode for more information.



### Luminous Tube Footage Chart

Sec. V-MA		Blue Gas 25mm (Non Dimming)	Blue Gas 25mm (Dimming)
5,000	120	46'	36'
6,000	120	55'	44'
7,500	120	70'	56'
9,000	120	92'	73'

### P6KA2NG Cold Cathode Transformer

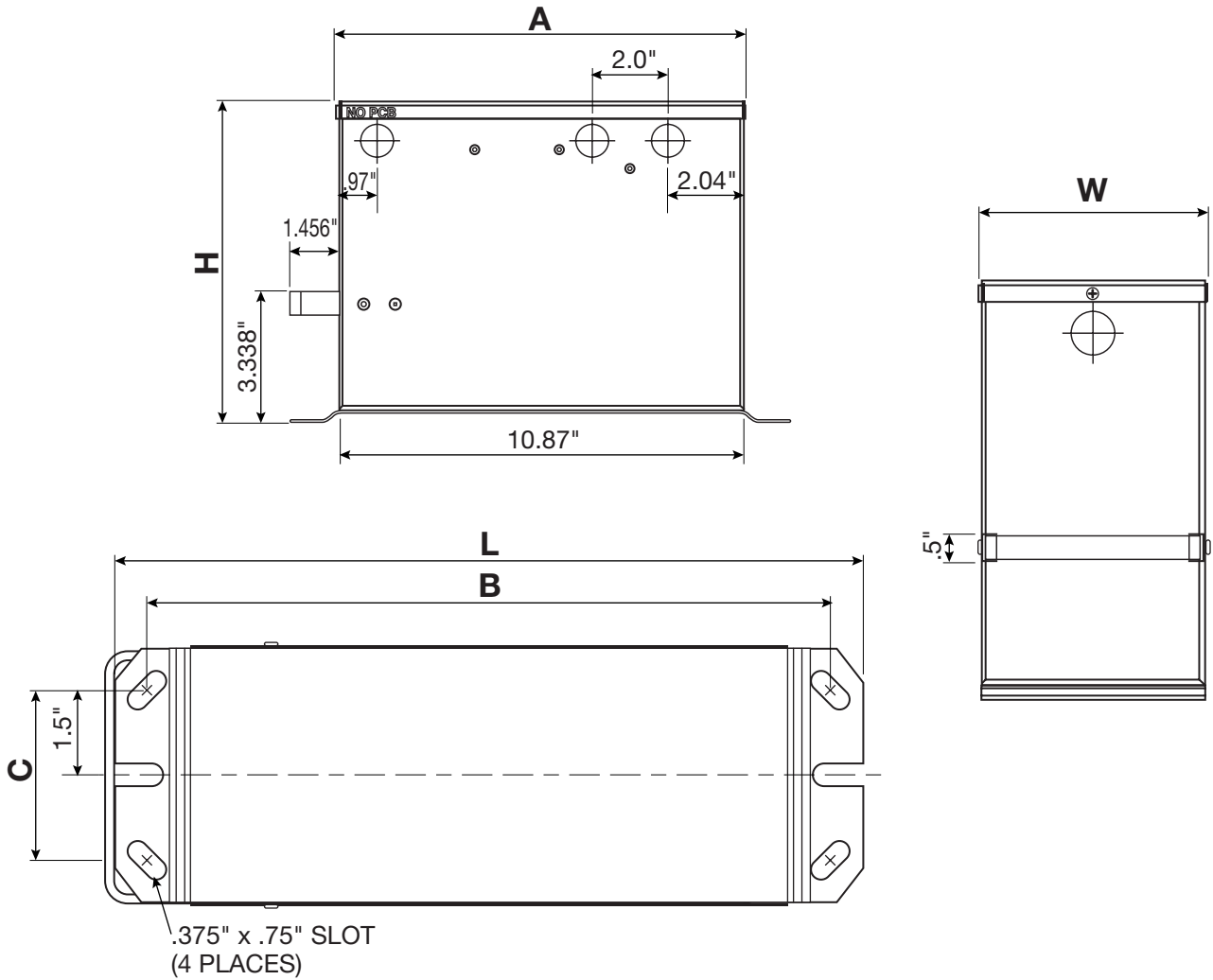


- **UL2161 listed** and 1996 and 1999 NEC compliant.
- **Secondary Circuit Ground Fault Protection** – Disables unit upon detection of arcs to ground and other conditions which may compromise transformer performance. Resists nuisance tripping.
- **Auto Reset** – After fault, automatically attempts to reset three (3) times within approximately ten (10) seconds, reducing nuisance tripping. Manual reset possible at any time.
- **Outdoor Non-weatherproof**
- **Available In Variety Of Models** – Primary voltages of 120 or 277. Secondaries from 5000 to 9000 volts, 120mA.
- **Easy Wiring Methods** – Virtual Ground and Series Wiring Methods.
- **Self Enclosed** – Doesn't require separate enclosure.
- **Multiple Knockouts** – Allows for a variety of mounting configurations.
- **Easy Off Cover.**



## P6KA2NG Cold Cathode Transformer

### Dimensions



### Normal Power Factor

Vac	Hz	Secondary		Primary VA	Input Amp	Weight (lbs)	Case Dimensions					
		Volts	MA				L	W	H	A	B	C
120	60	9000	120	1080	9	40	17.5	4.75	7.875	15	16.36	3
120	60	7500	120	900	7.5	40	17.5	4.75	7.875	15	16.36	3
120	60	6000	120	720	6	30	13.35	4.62	8.468	10.87	12.211	3
120	60	5000	120	600	5	29	13.35	4.62	8.468	10.87	12.211	3



## **P6KA2NG Cold Cathode Transformer**

### FAQ

#### **What may cause the Secondary Circuit Ground Fault Protection (S.C.G.F.P.) to trip?**

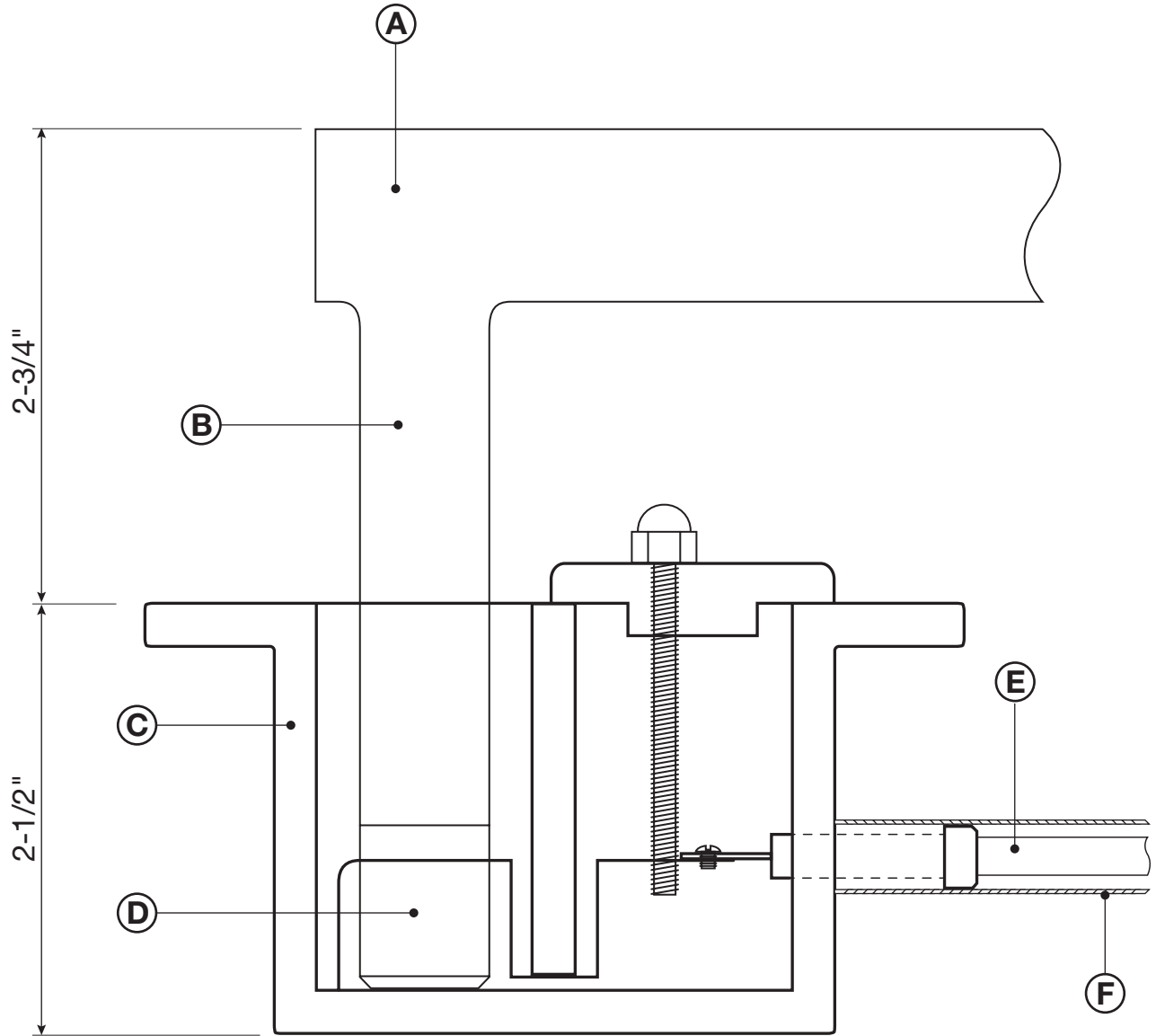
- Reversing the hot (black) or neutral (white) input power wires.
- Leaving the service ground unconnected.
- Connecting or grounding the midpoint to earth ground.
- Excessive leakage currents caused by moisture, tubing, installed too close to metal, contaminated insulators or standoffs, conductive debris (i.e. insects, dirt, etc.) between live high voltage components and ground.
- Electrical shorting or arcing from live high voltage components to ground.

#### **When will a Secondary Circuit Ground Fault Protection circuit in the P6KA2G *NOT* trip?**

- Ground faults on the primary/line side of the transformer.
- Series arcs in the system (arcs across tubing interconnections).
- Breaks in tubing, degassed tubing or opens in the high voltage connections without a corresponding short or arc to ground.
- Shorts to an ungrounded metal part within or near system.

### Recessed Feed Housing

Diagram 1



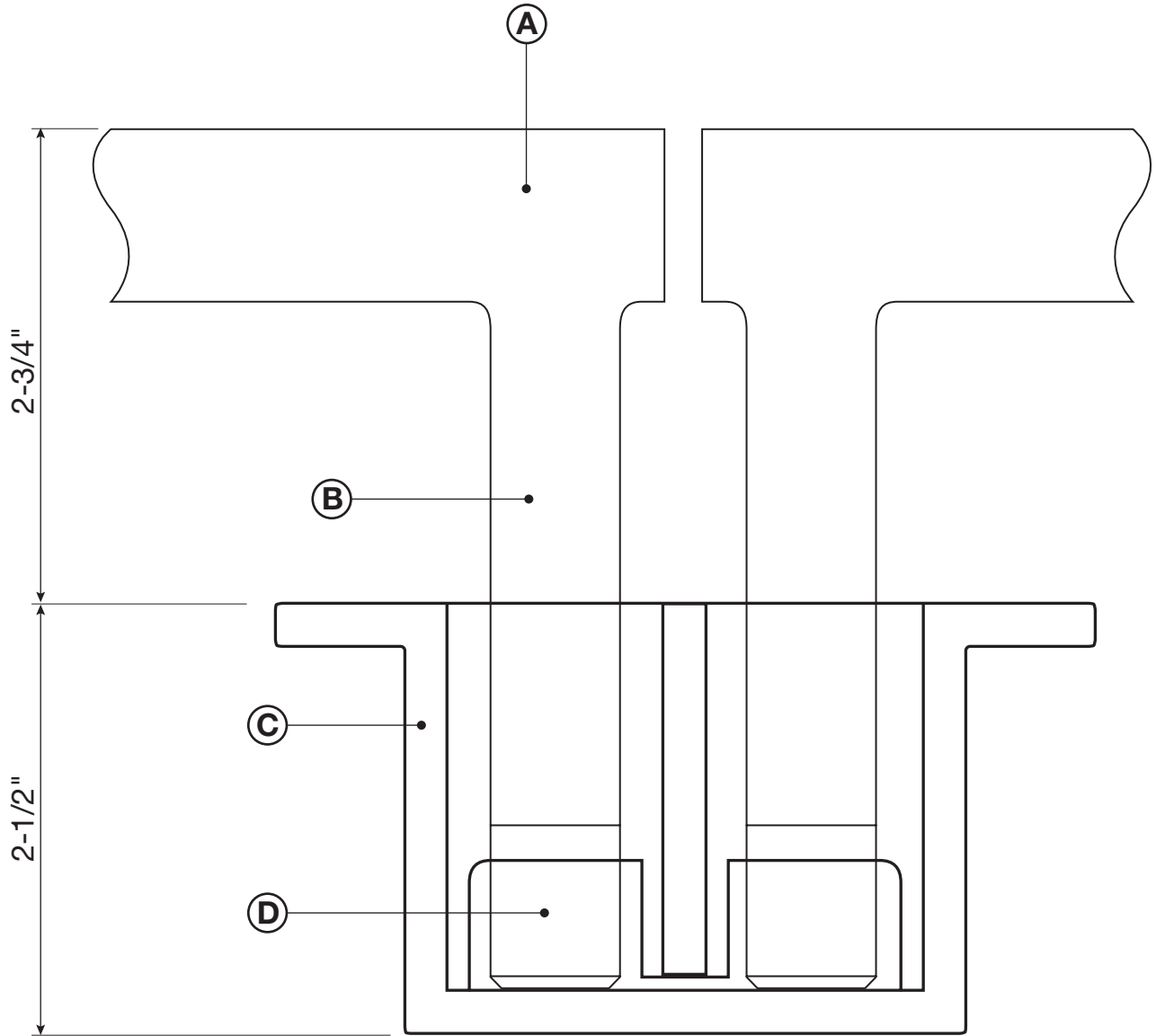
### 211 RT DETAIL/SECTION

FULL SCALE

- A.** Cold Cathode Tube
- B.** 19mm Electrode
- C.** Lamp Holder
- D.** Bronze Clip
- E.** GTO Cable
- F.** 1/2" Flexible Conduit

### Recessed Interconnect Housing

Diagram 2



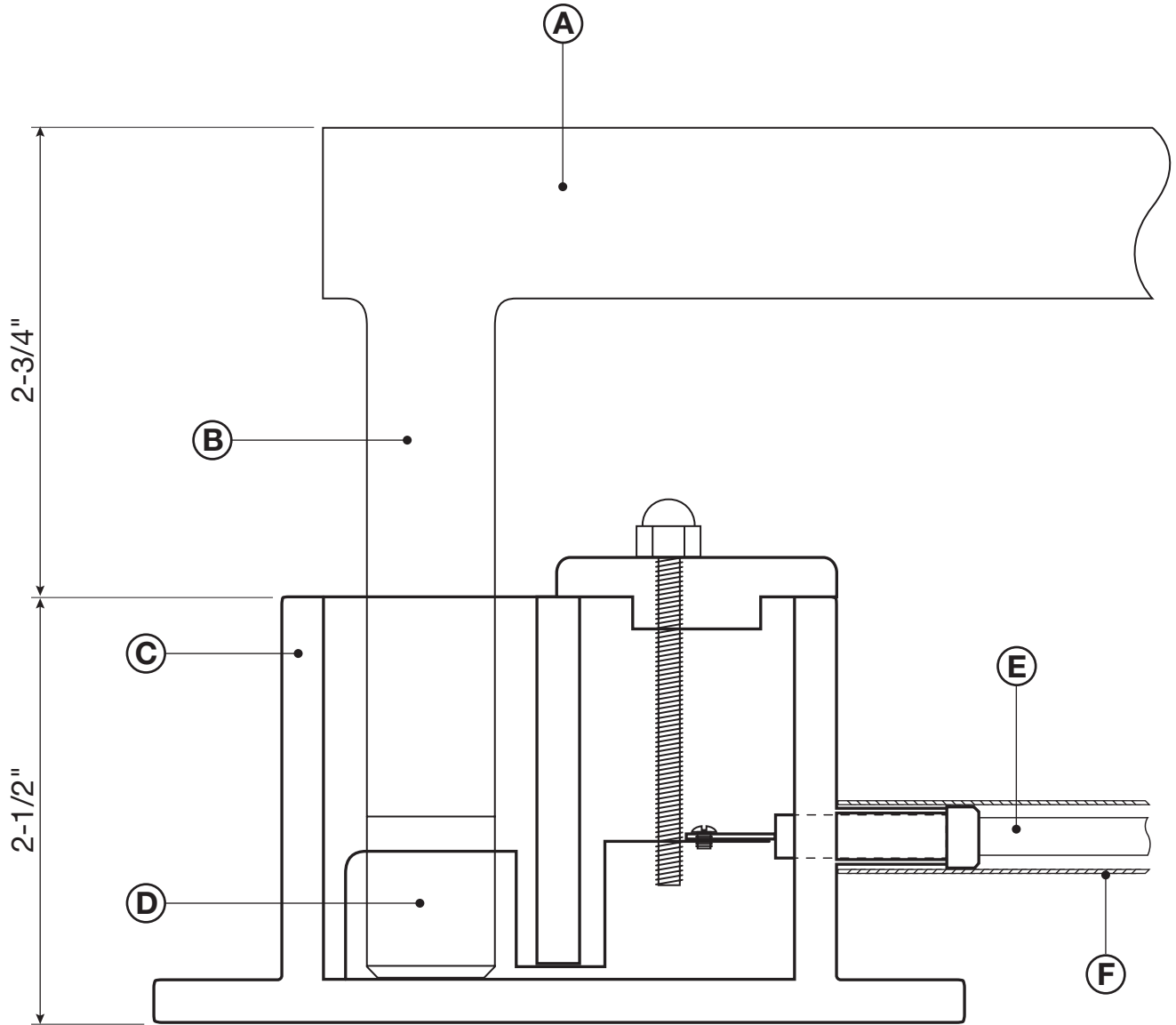
### 211 R DETAIL/SECTION

FULL SCALE

- A. Cold Cathode Tube
- B. 19mm Electrode
- C. Lamp Holder
- D. Bronze Clip

### Surface Feed Housing

Diagram 3



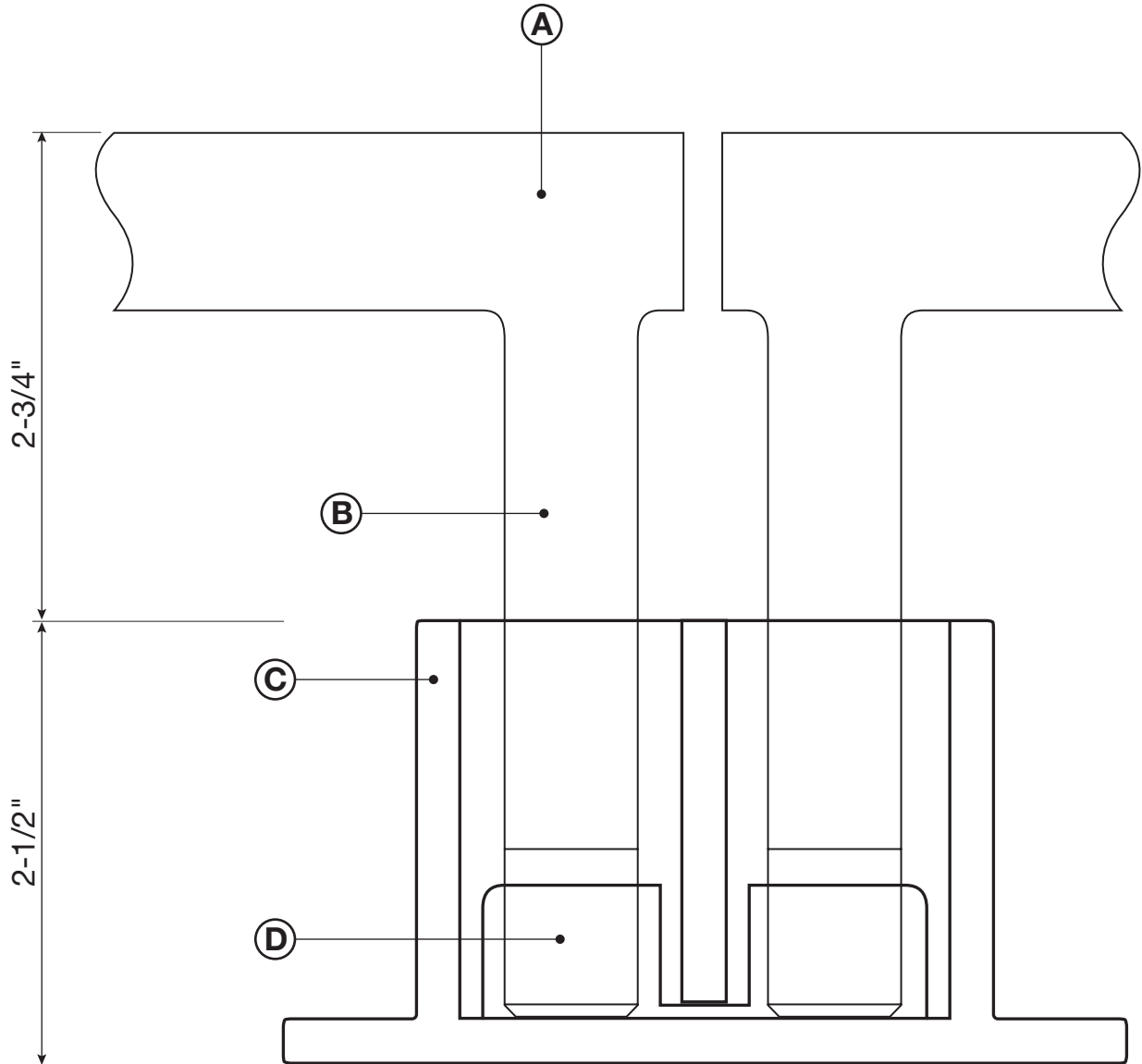
### 211 ST DETAIL/SECTION

FULL SCALE

- A. Cold Cathode Tube
- B. 19mm Electrode
- C. Lamp Holder
- D. Bronze Clip
- E. GTO Cable
- F. 1/2" Flexible Conduit

### Surface Interconnect Housing

Diagram 4



### 211 S DETAIL/SECTION

FULL SCALE

- A. Cold Cathode Tube
- B. 19mm Electrode
- C. Lamp Holder
- D. Bronze Clip