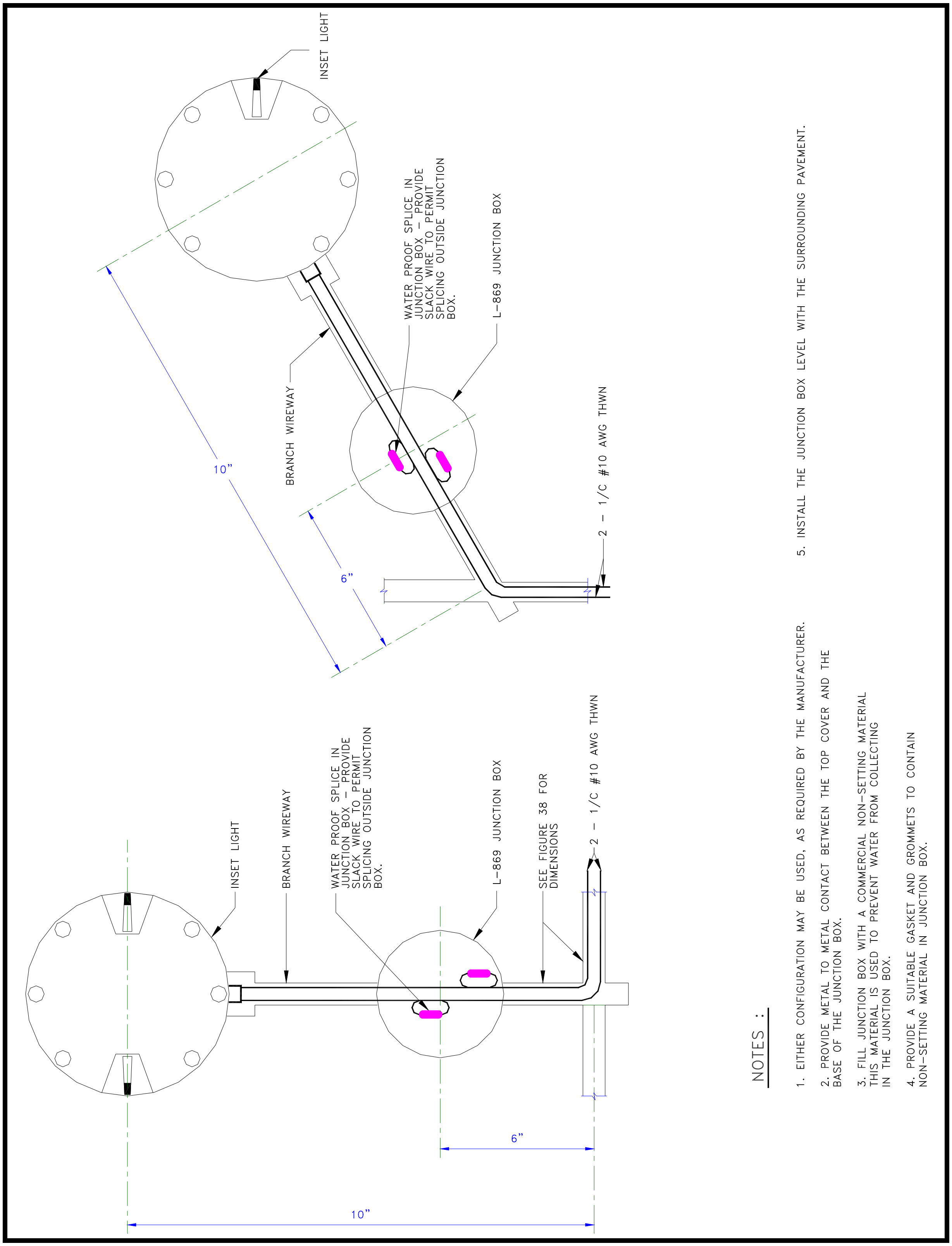


Figure 42. Junction Box for Inset Fixture Installation.

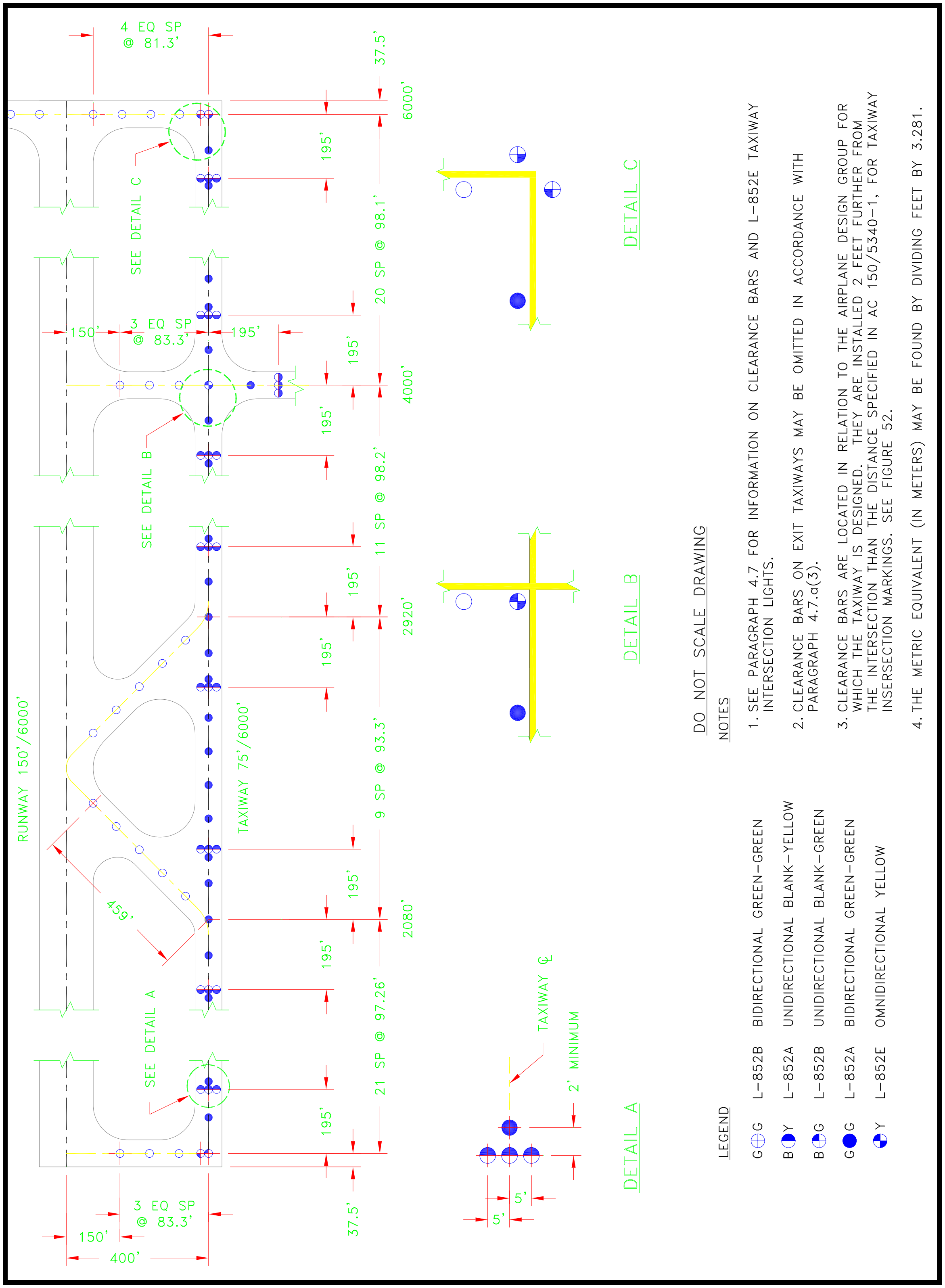


Figure 43. Typical Taxiway Centerline Lighting Configuration for Non-Standard Fillets (Centerline light spacing for operations above 1,200 feet (365 m) RVR).

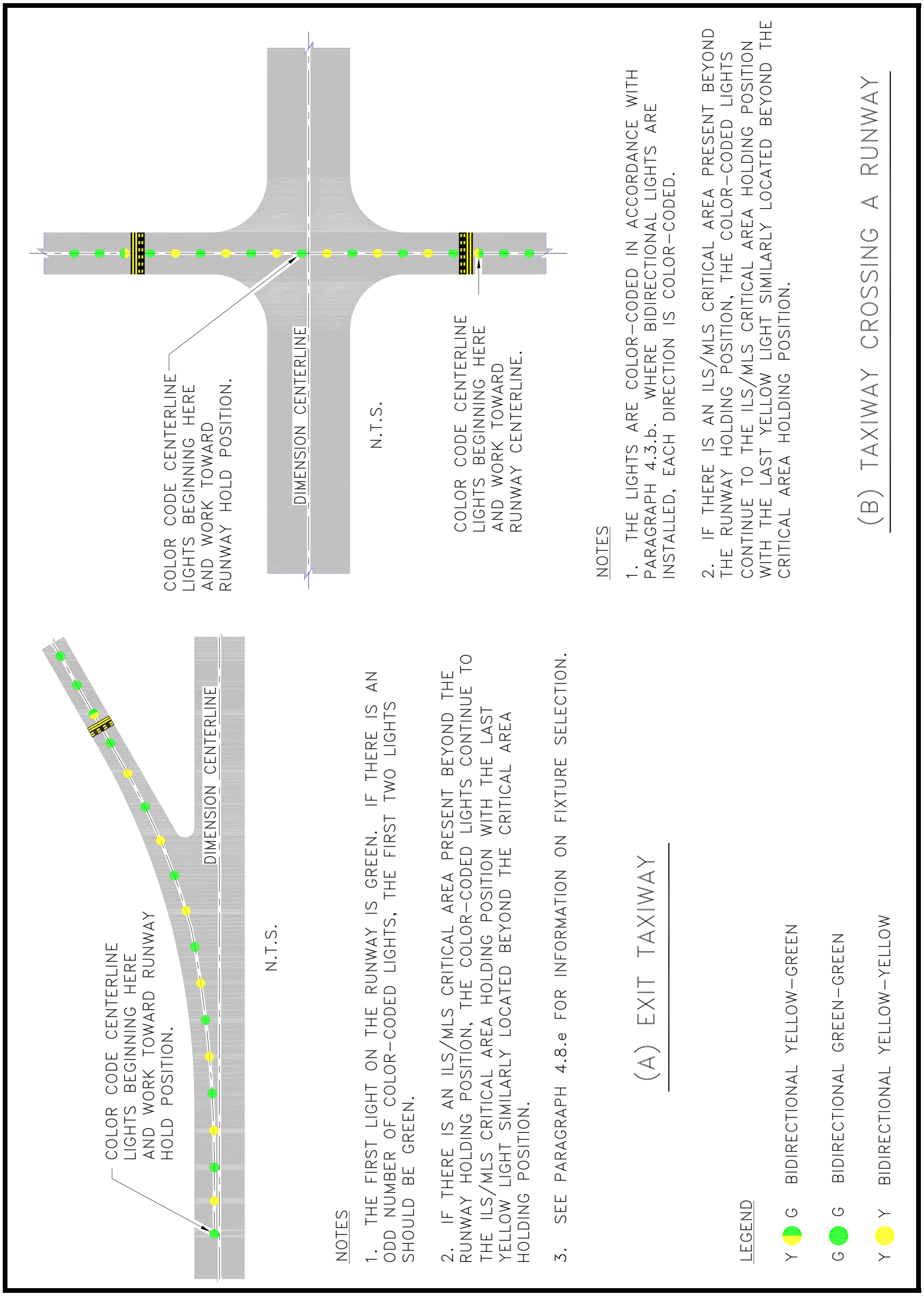


Figure 44. Color-Coding of Exit Taxiway Centerline Lights.

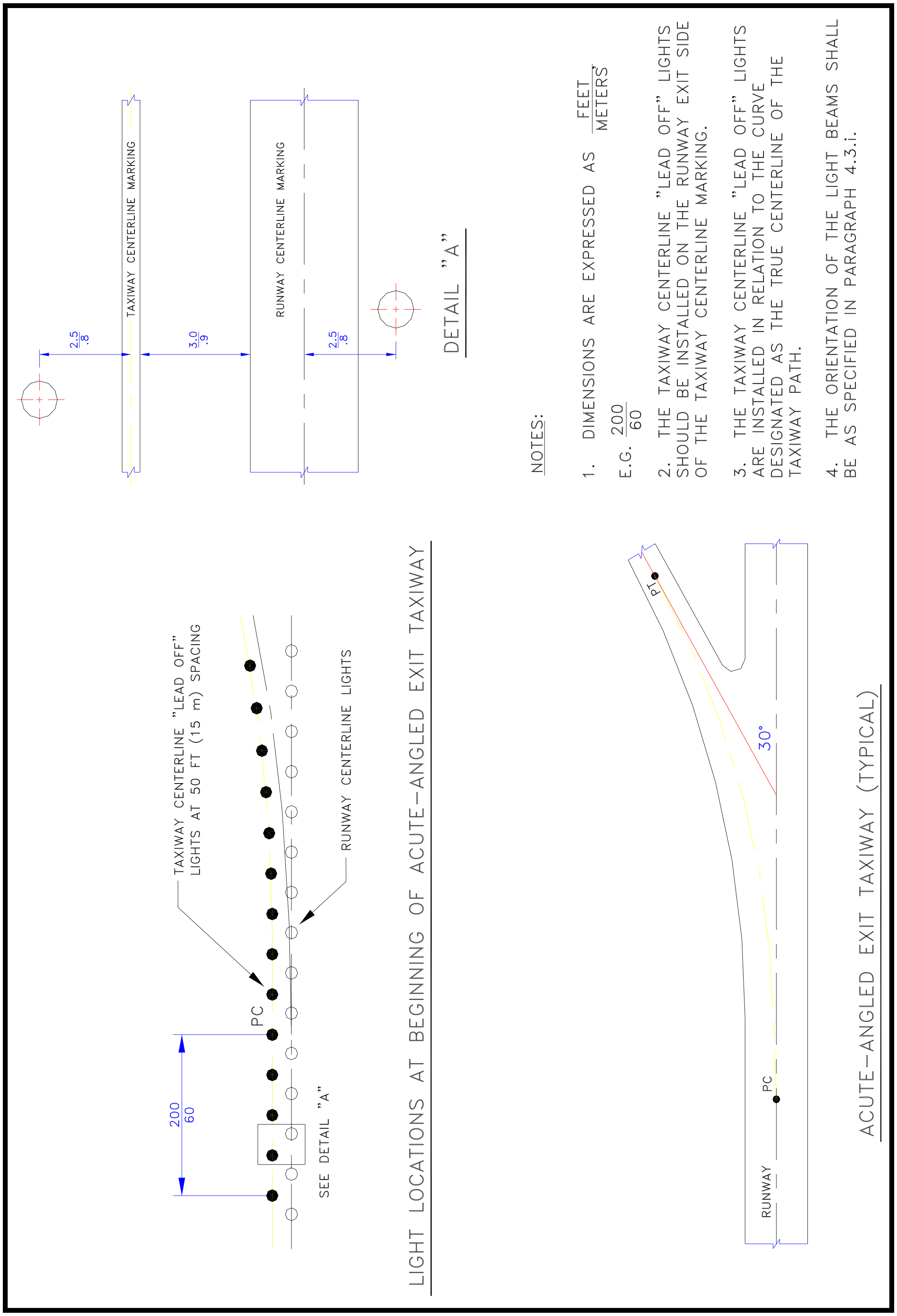


Figure 45. Taxiway Centerline Lighting Configuration for Acute-Angled Exits.

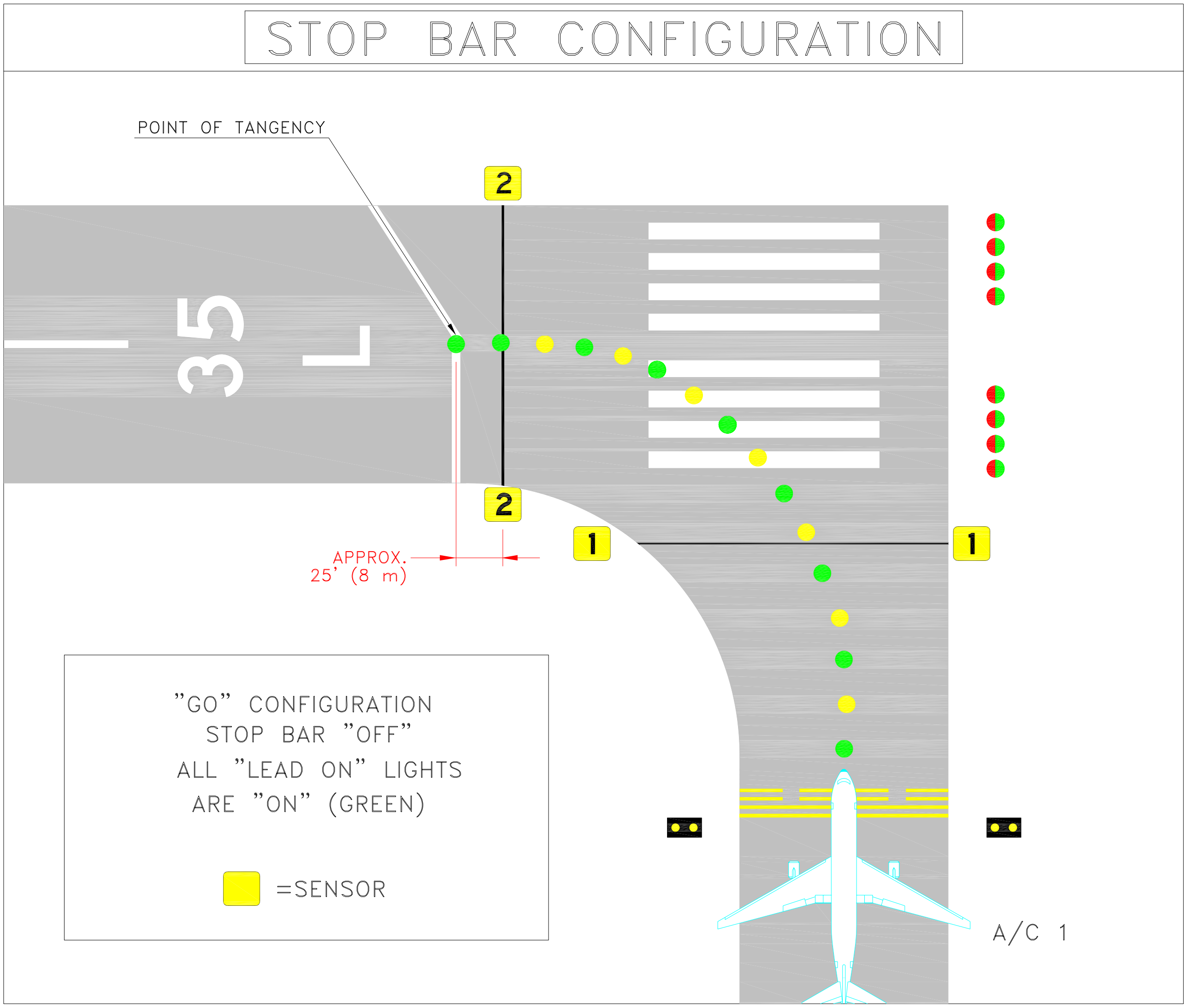


Figure 46. Controlled Stop Bar Design and Operation – "GO" Configuration.

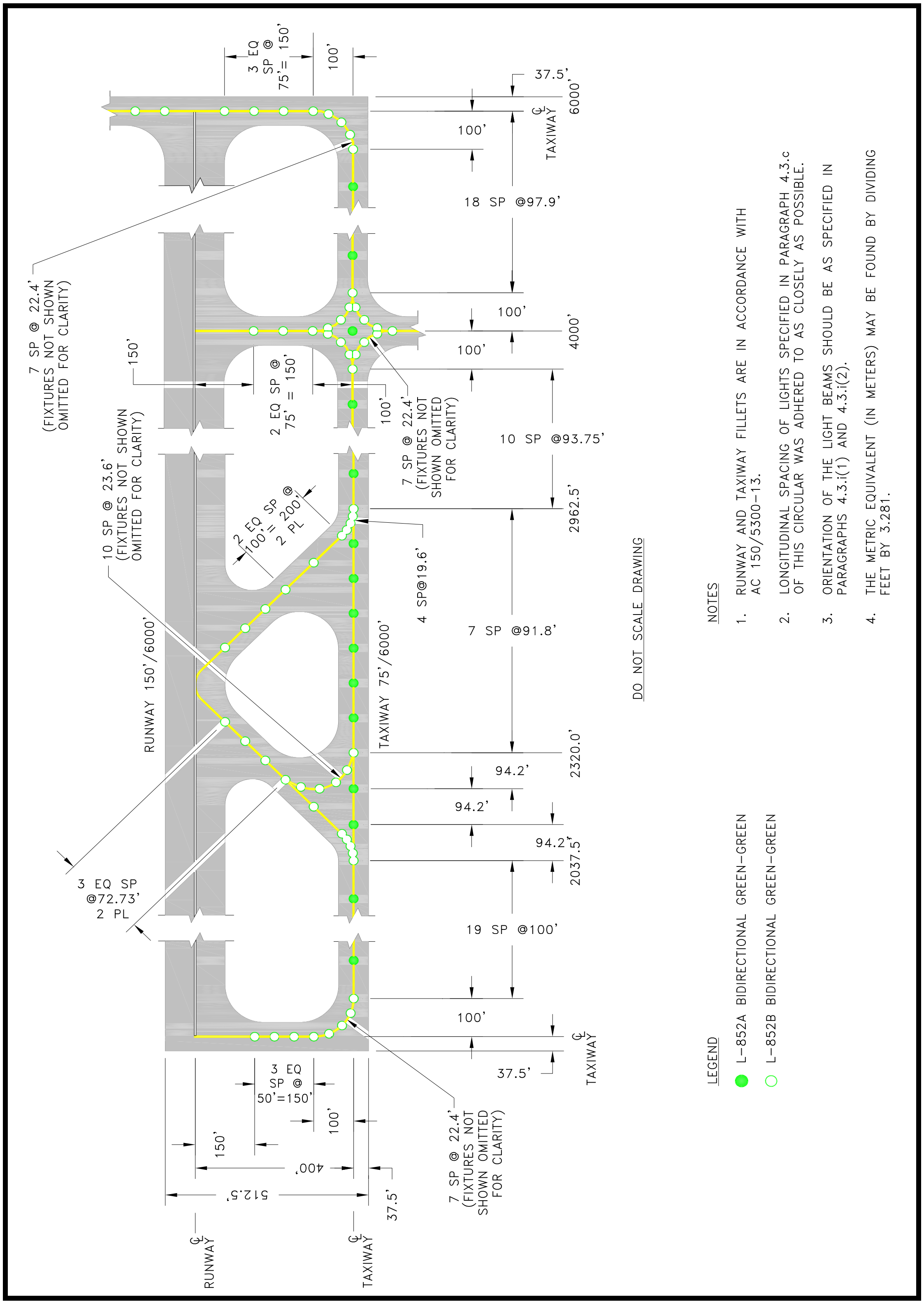
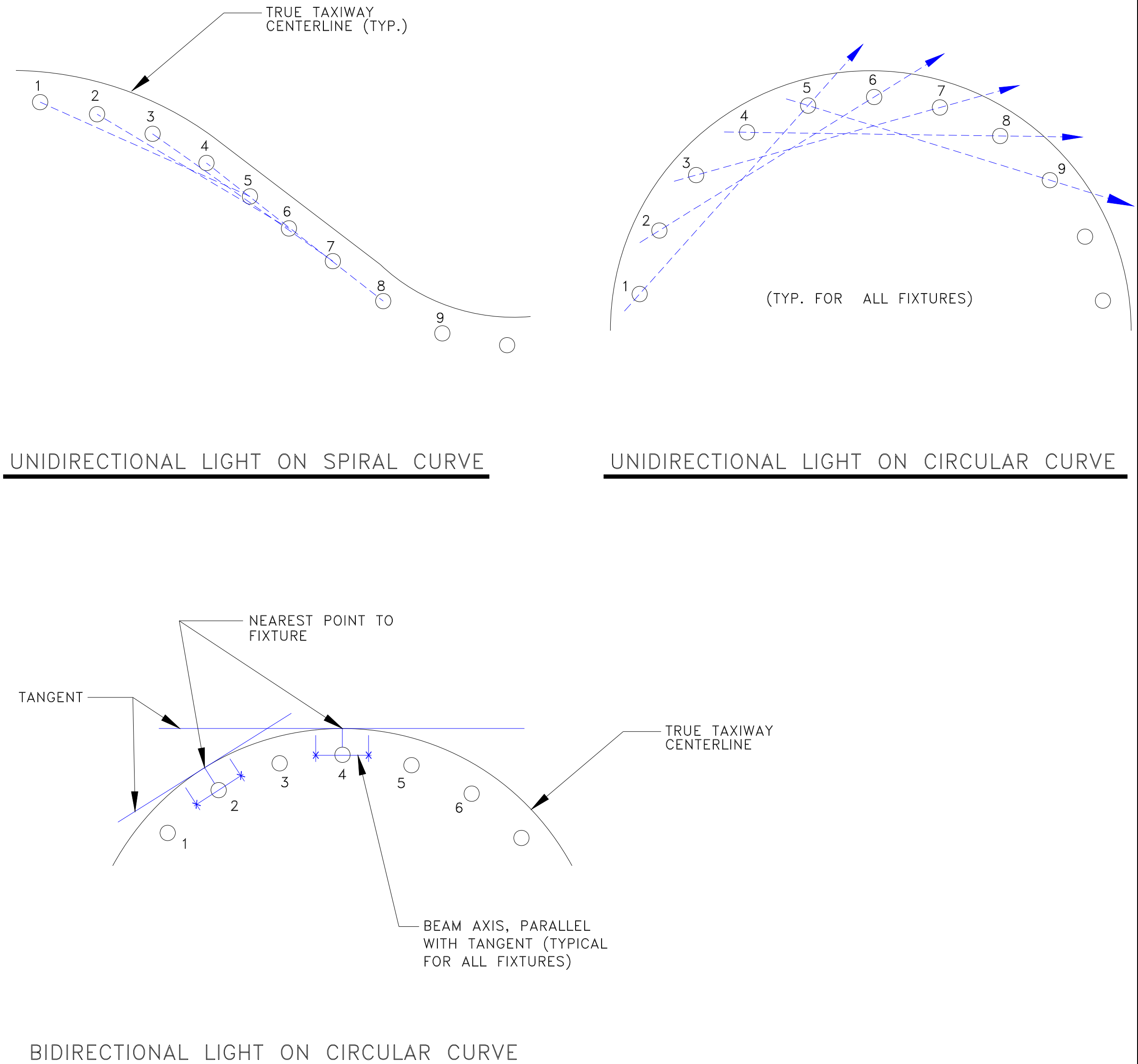


Figure 47. Typical Taxiway Centerline Lighting Configuration for Standard Fillets (Centerline light spacing for operations above 1,200 feet (365 m) RVR).



NOTES:

1. FOR BIDIRECTIONAL LIGHTS, THE AXIS OF THE TWO BEAMS SHALL BE ORIENTED PARALLEL TO THE TANGENT OF THE NEAREST POINT OF THE CURVE DESIGNATED AS THE TRUE CENTERLINE OF THE TAXING PATH.

2. FOR UNIDIRECTIONAL LIGHTS, THE AXIS OF THE BEAM SHALL BE "TOED IN" TO INTERSECT THE CENTERLINE AT A POINT APPROXIMATELY EQUAL TO FOUR TIMES THE SPACING OF LIGHTS (EVERY FOURTH LIGHT) ON THE CURVE PORTION, AND SUCH SPACING SHALL BE MEASURED ALONG THE CHORD OF THE CURVE.

Figure 48. Taxiway Centerline Light Beam Orientation.

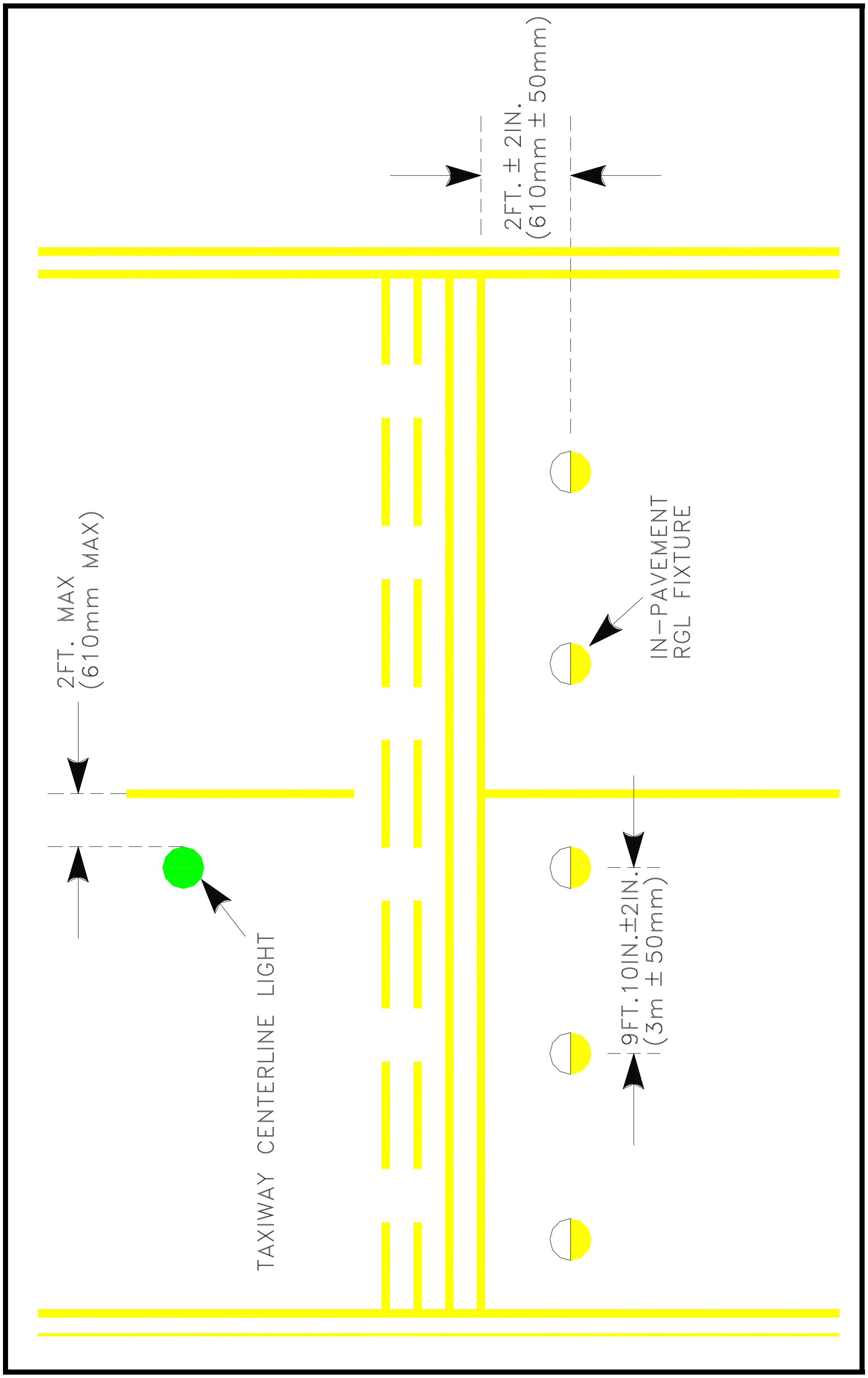


Figure 49. In-Pavement Runway Guard Light Configuration.

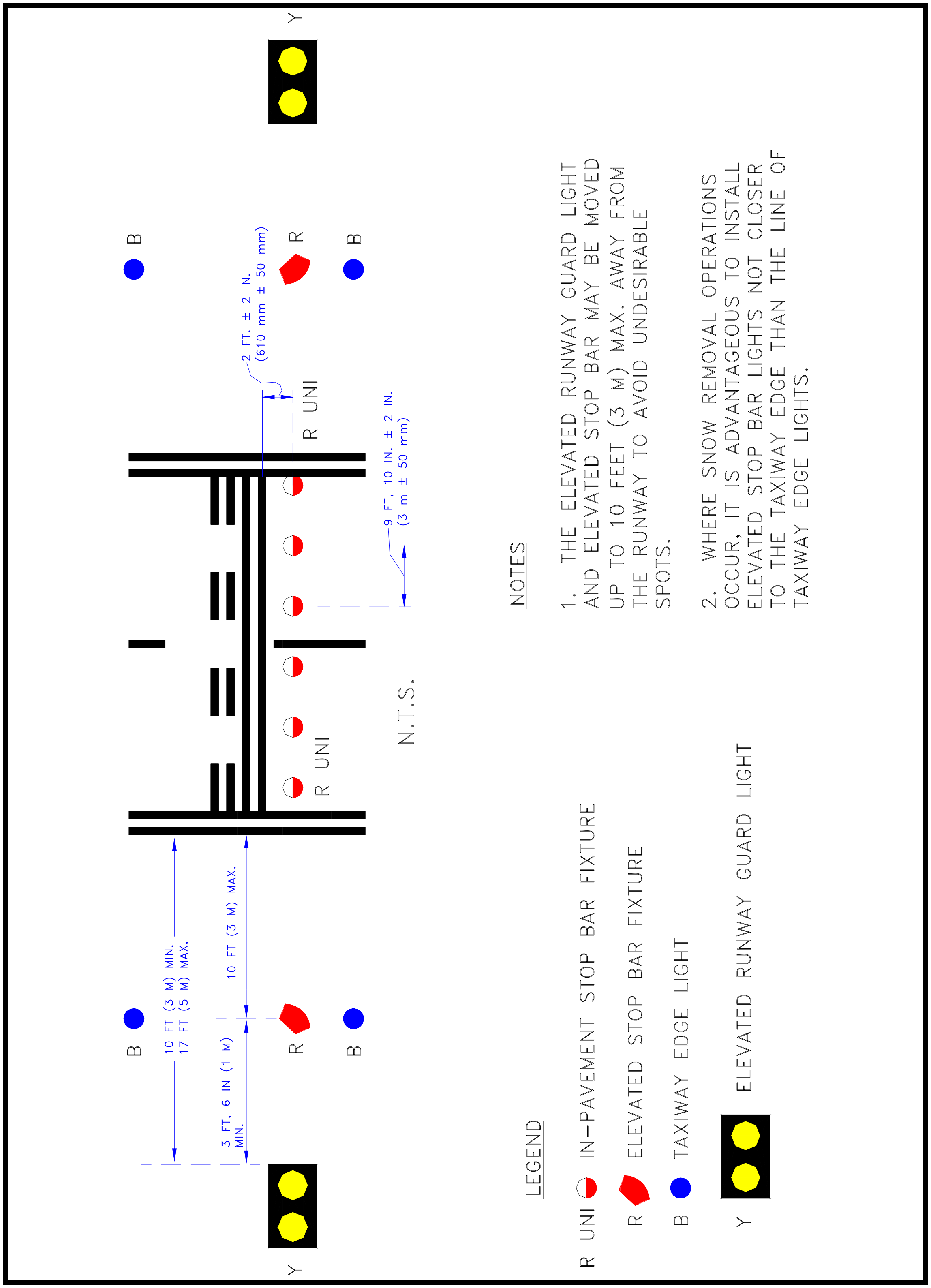


Figure 50. Elevated RGL and Stop Bar Configuration.

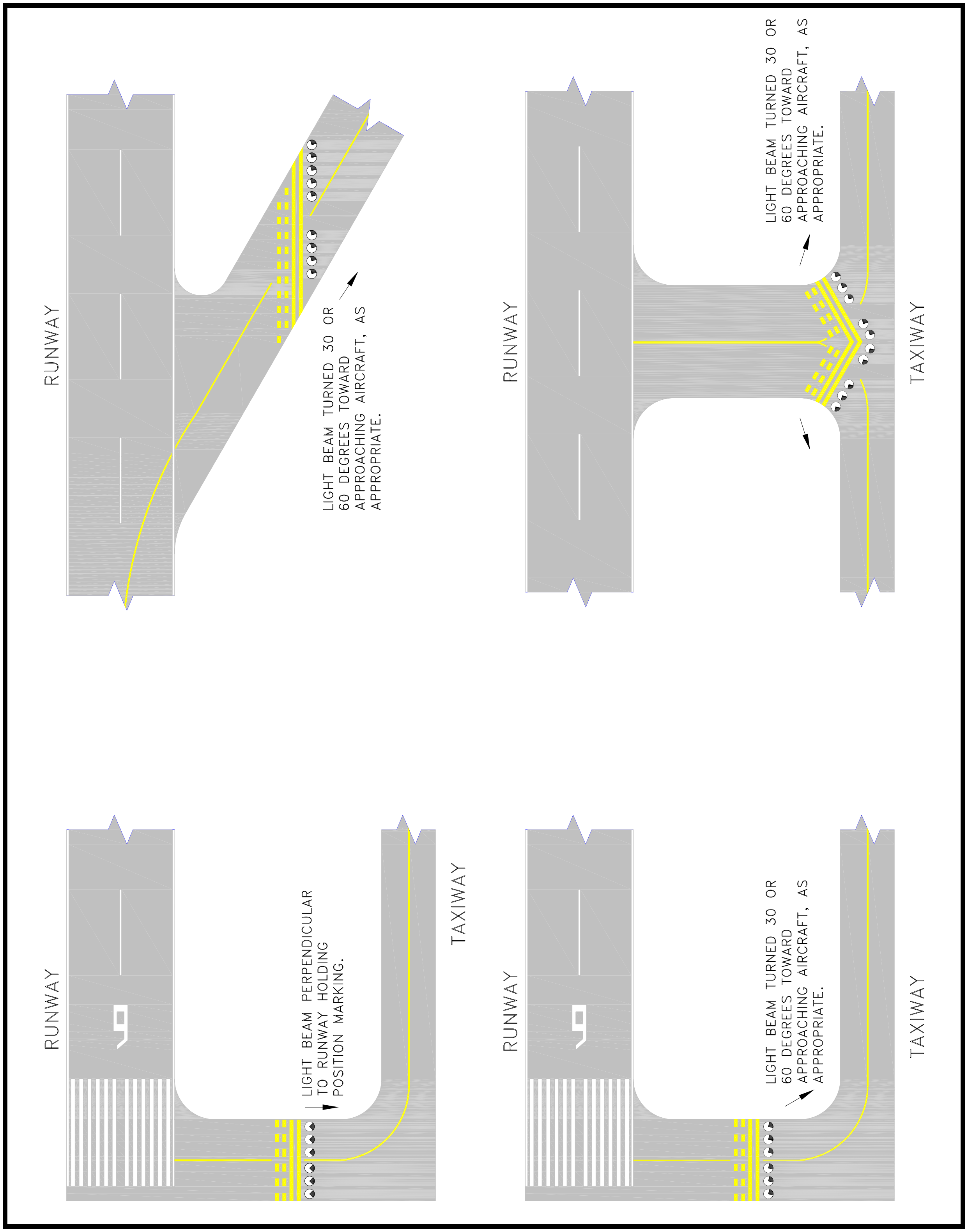


Figure 51. Typical Light Beam Orientation for In-Pavement RGLs and Stop Bars.

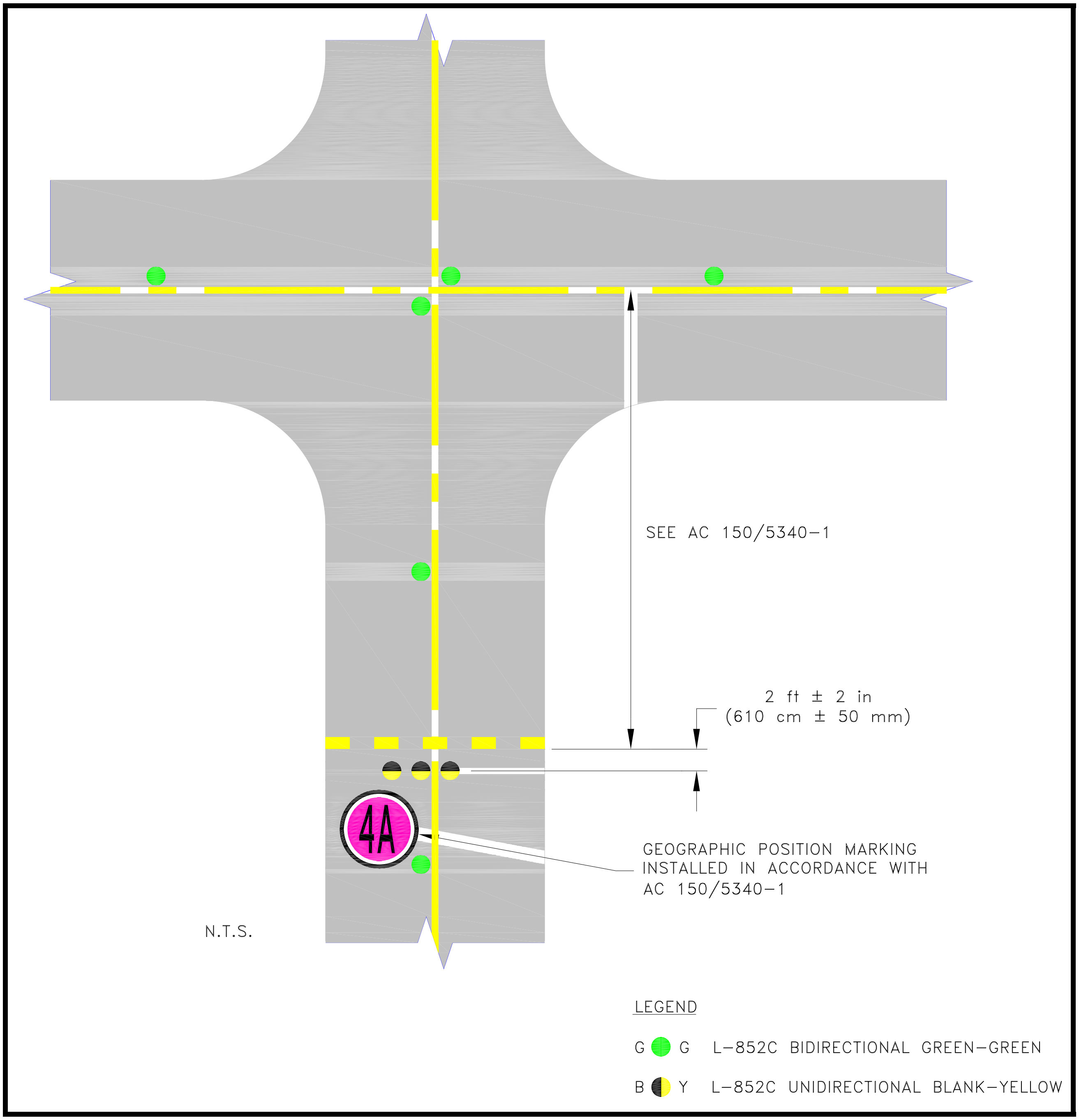


Figure 52. Clearance Bar Configuration at a Low Visibility Hold Point.

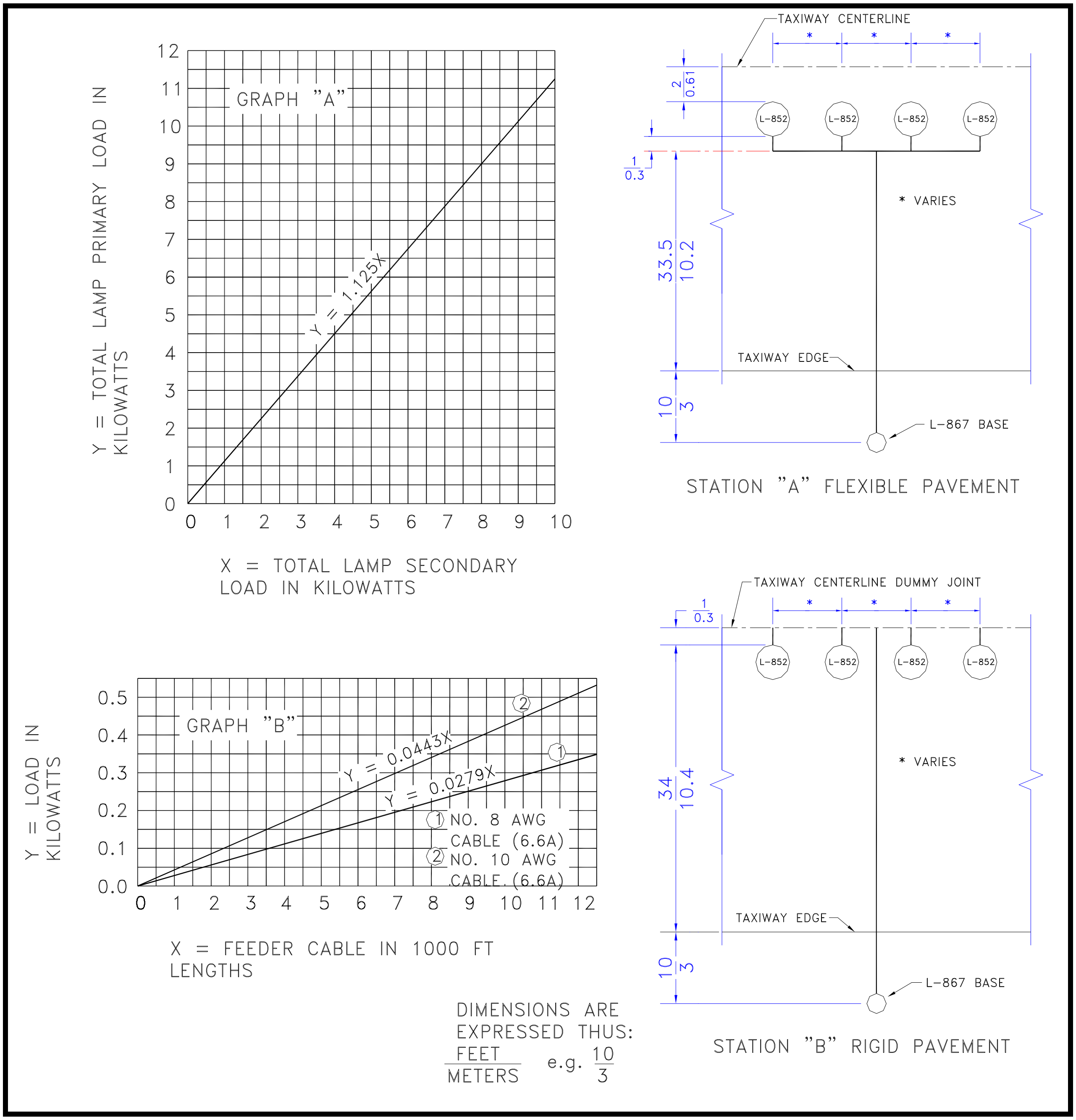
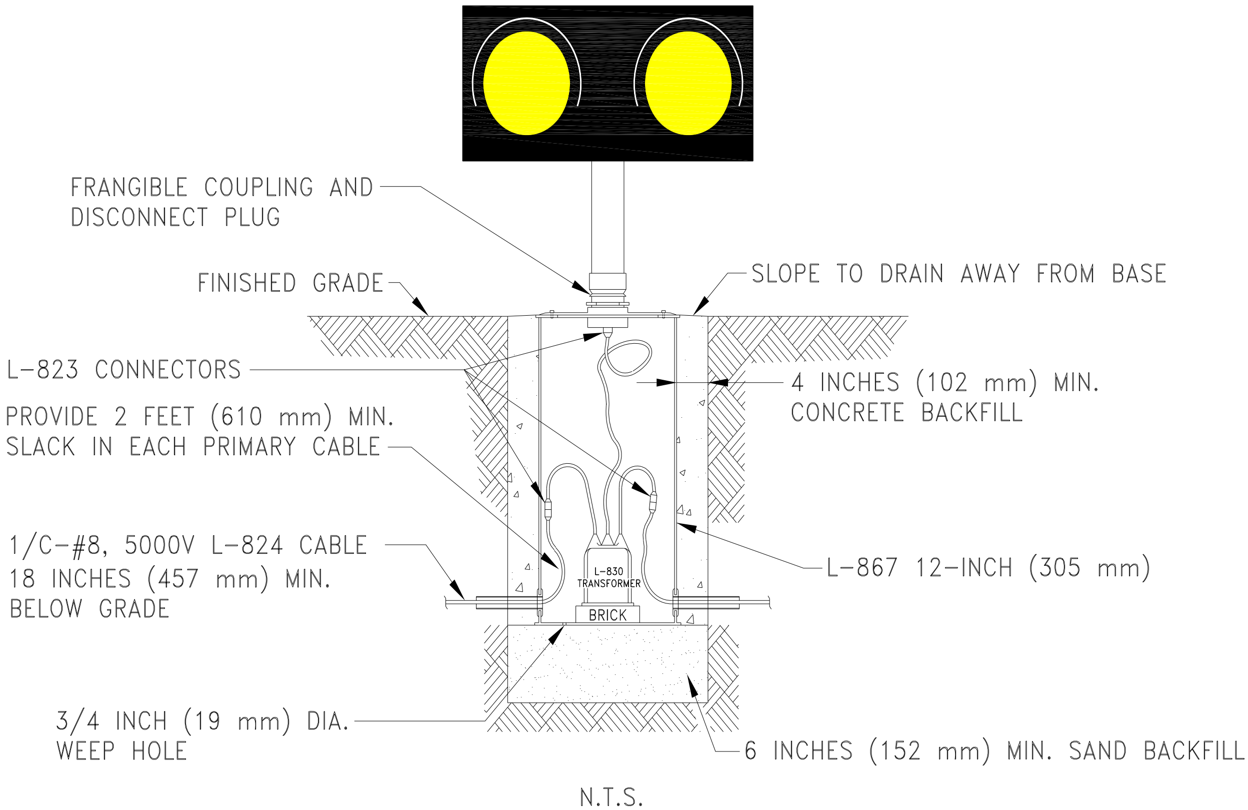


Figure 53. Curves for Estimating Primary Load for Taxiway Centerline Lighting Systems.



Notes:

1. Breaking-point frangible coupling should be located 3 inches max above grade.

Figure 54. Typical Elevated RGL Installation Details.

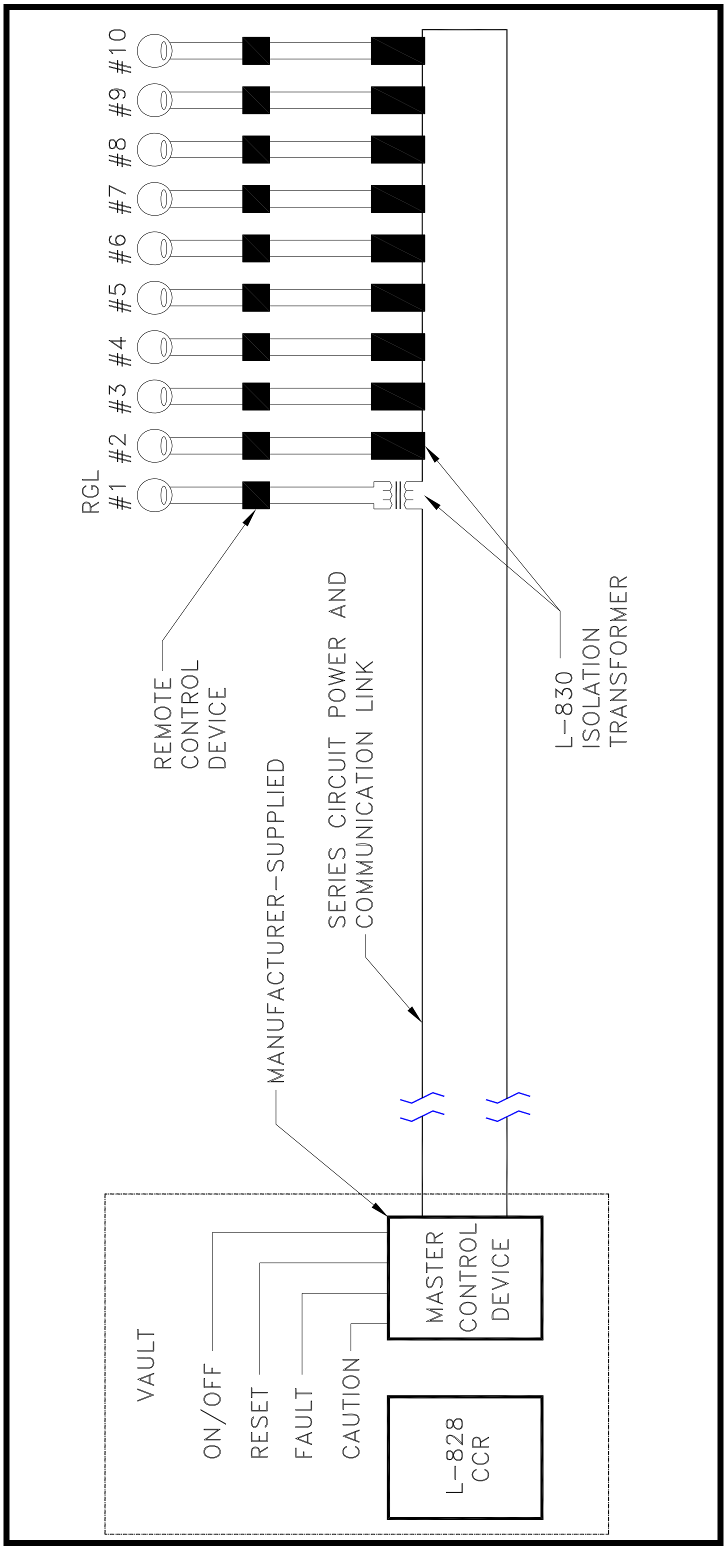


Figure 55. Typical In-Pavement RGL External Wiring Diagram – Power Line Carrier Communication, One Light Per Remote.

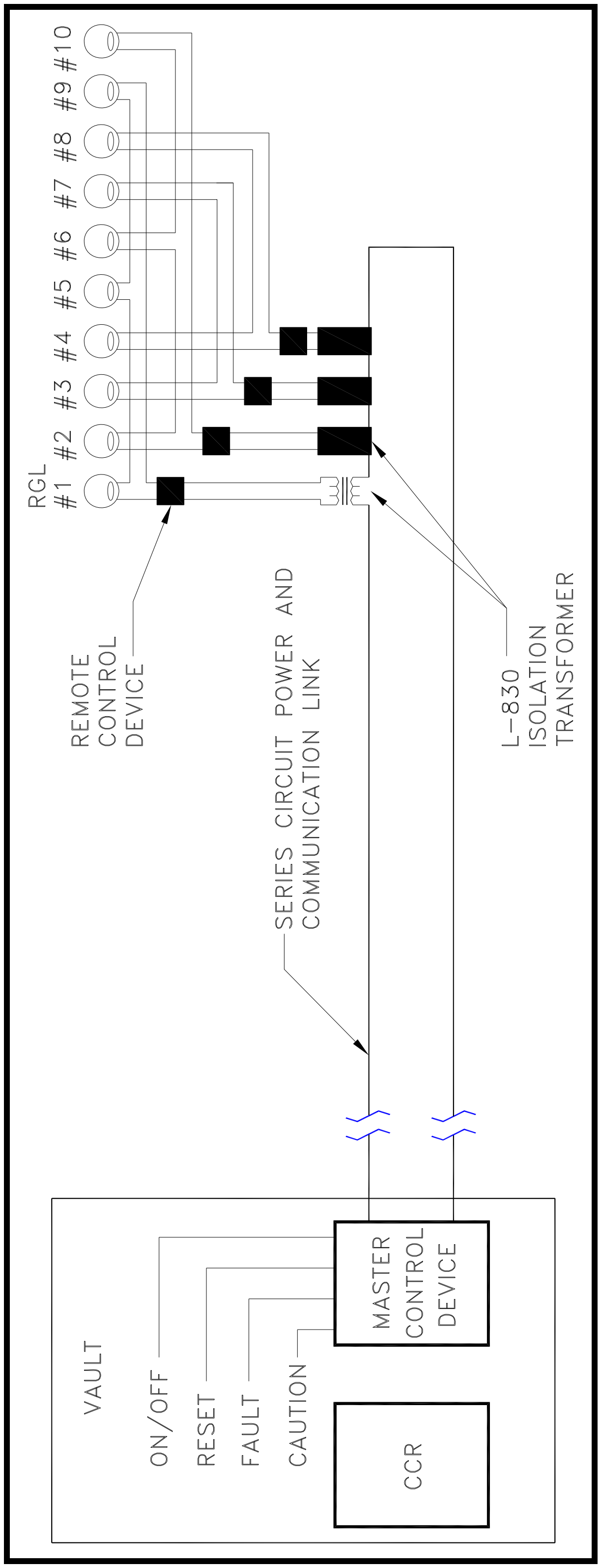


Figure 56. Typical In-Pavement RGL External Wiring Diagram – Power Line Carrier Communication, Multiple Lights per Remote.

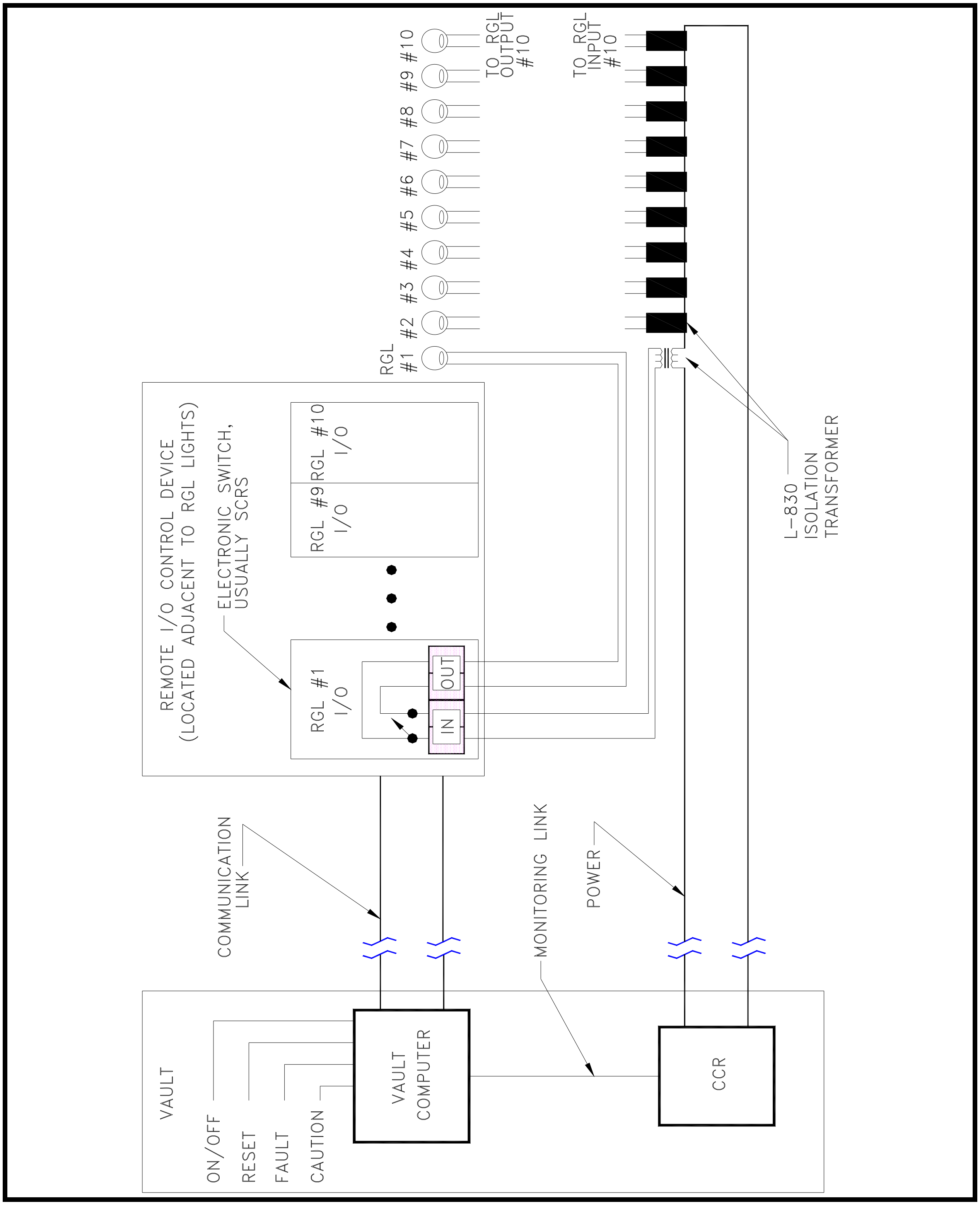


Figure 57. Typical In-Pavement RGL External Wiring Diagram – Dedicated Communication Link.

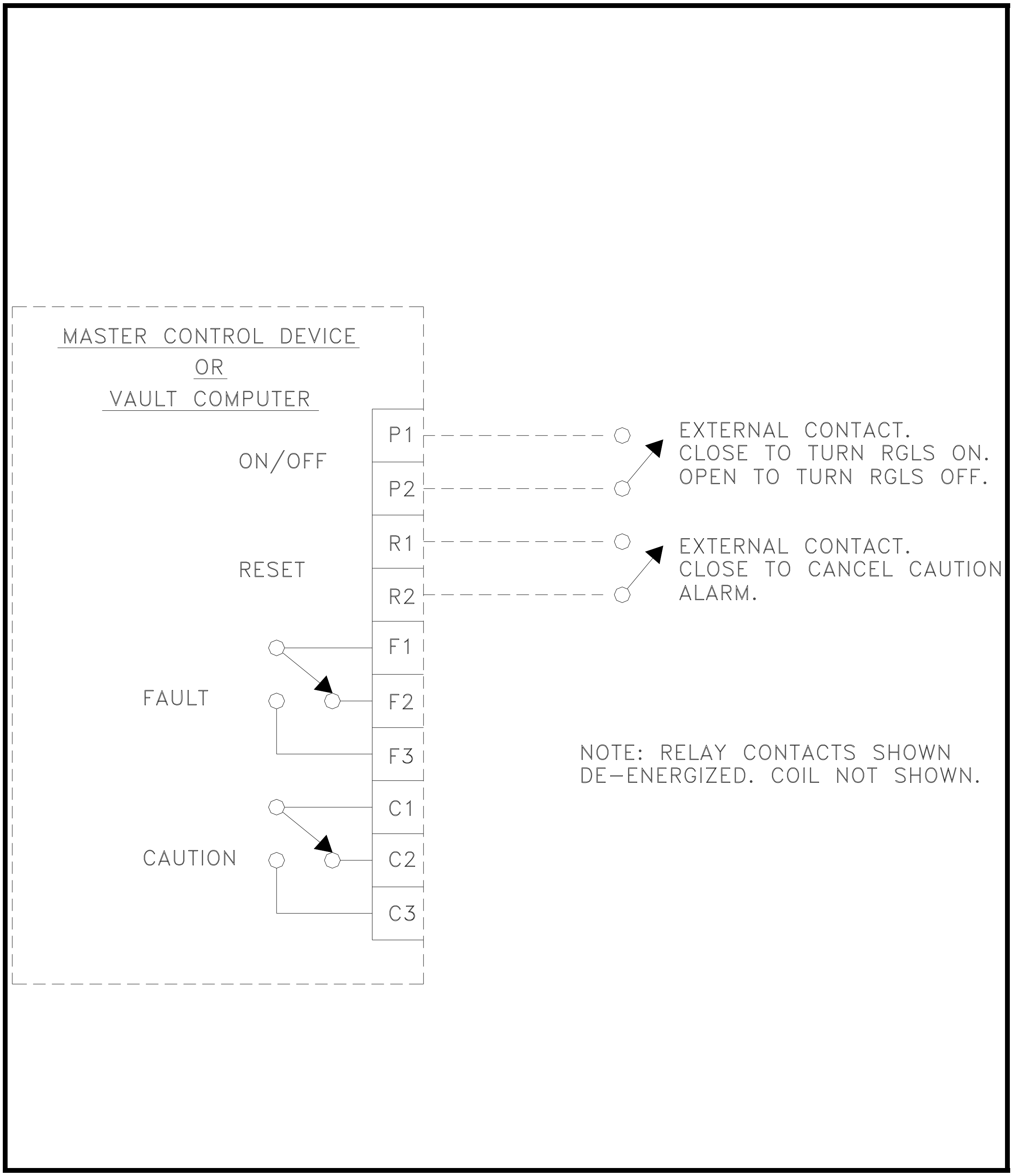


Figure 58. In-Pavement RGL Alarm Signal Connection.

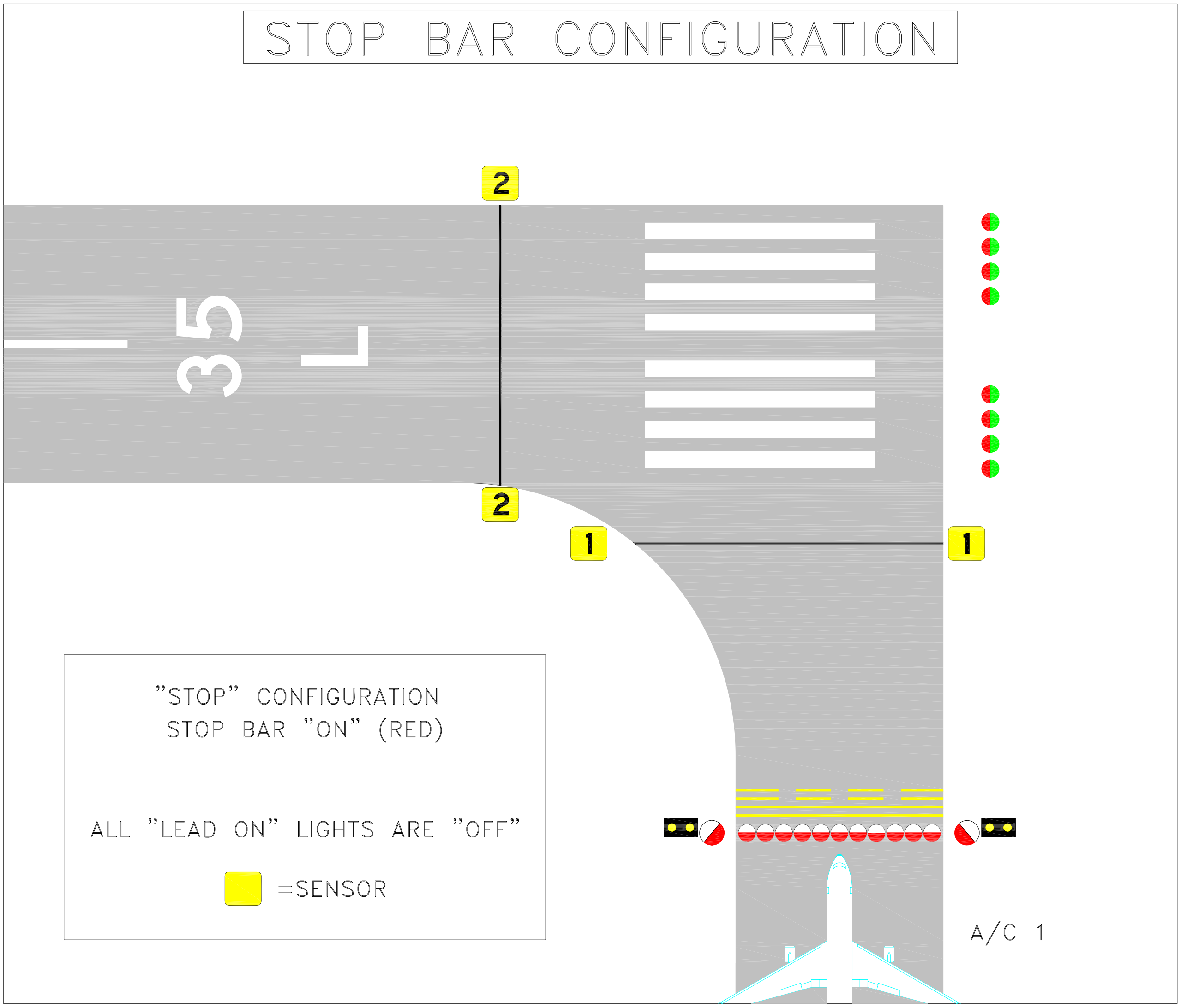


Figure 59. Controlled Stop Bar Design and Operation – "STOP" Configuration.

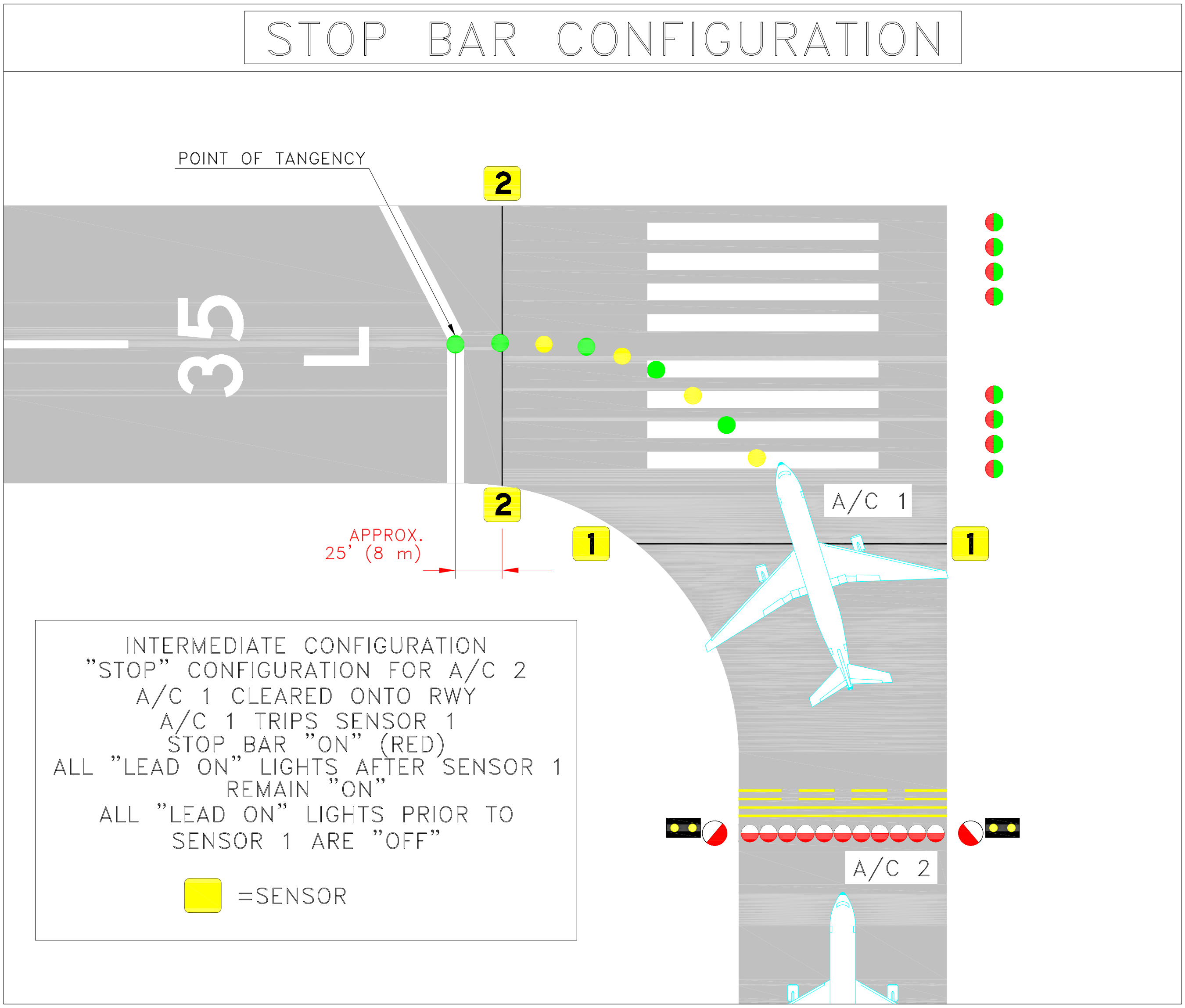


Figure 60. Controlled Stop Bar Design and Operation – Intermediate Configuration.

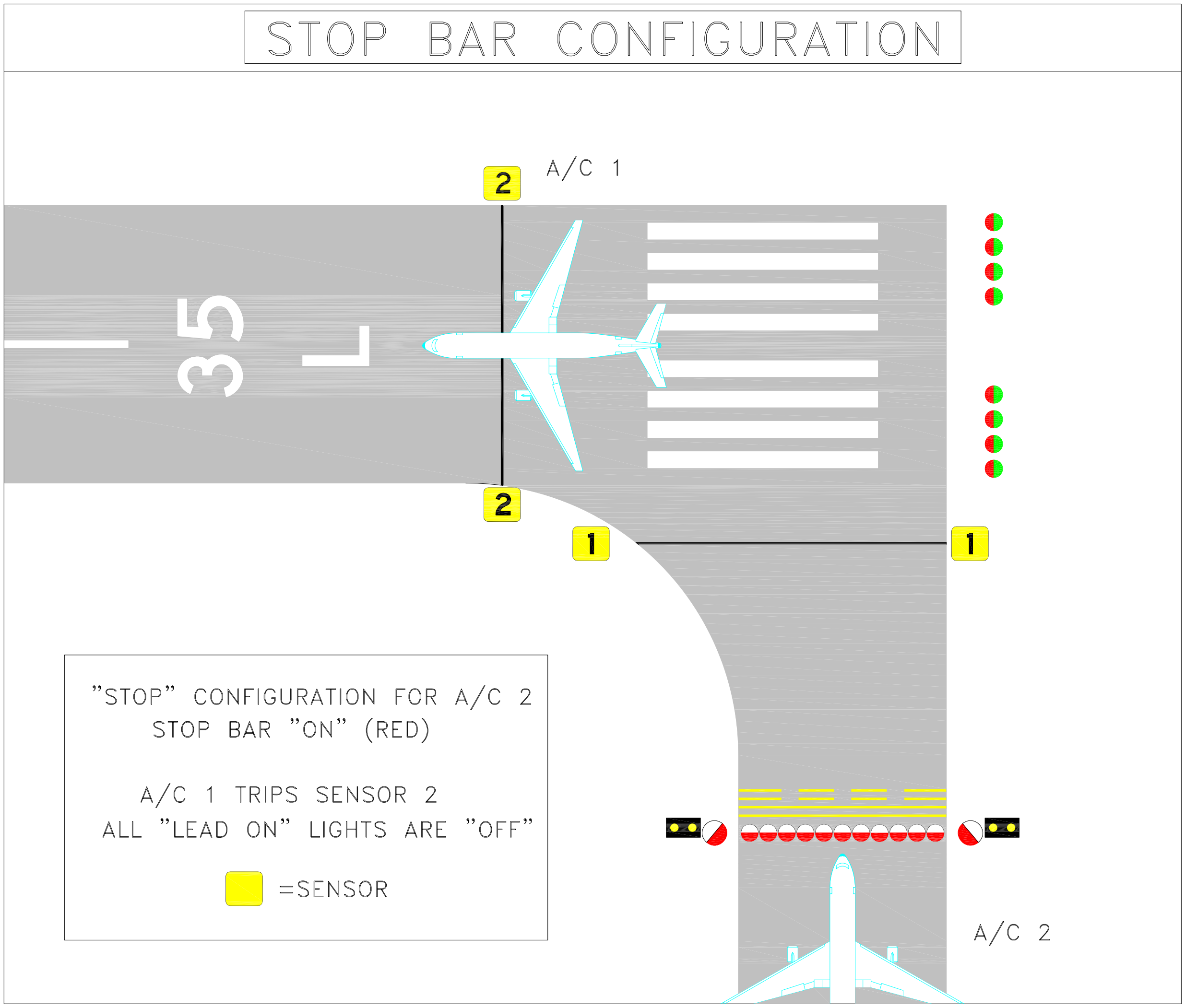


Figure 61. Controlled Stop Bar Design and Operation – "STOP" Configuration for A/C 2.

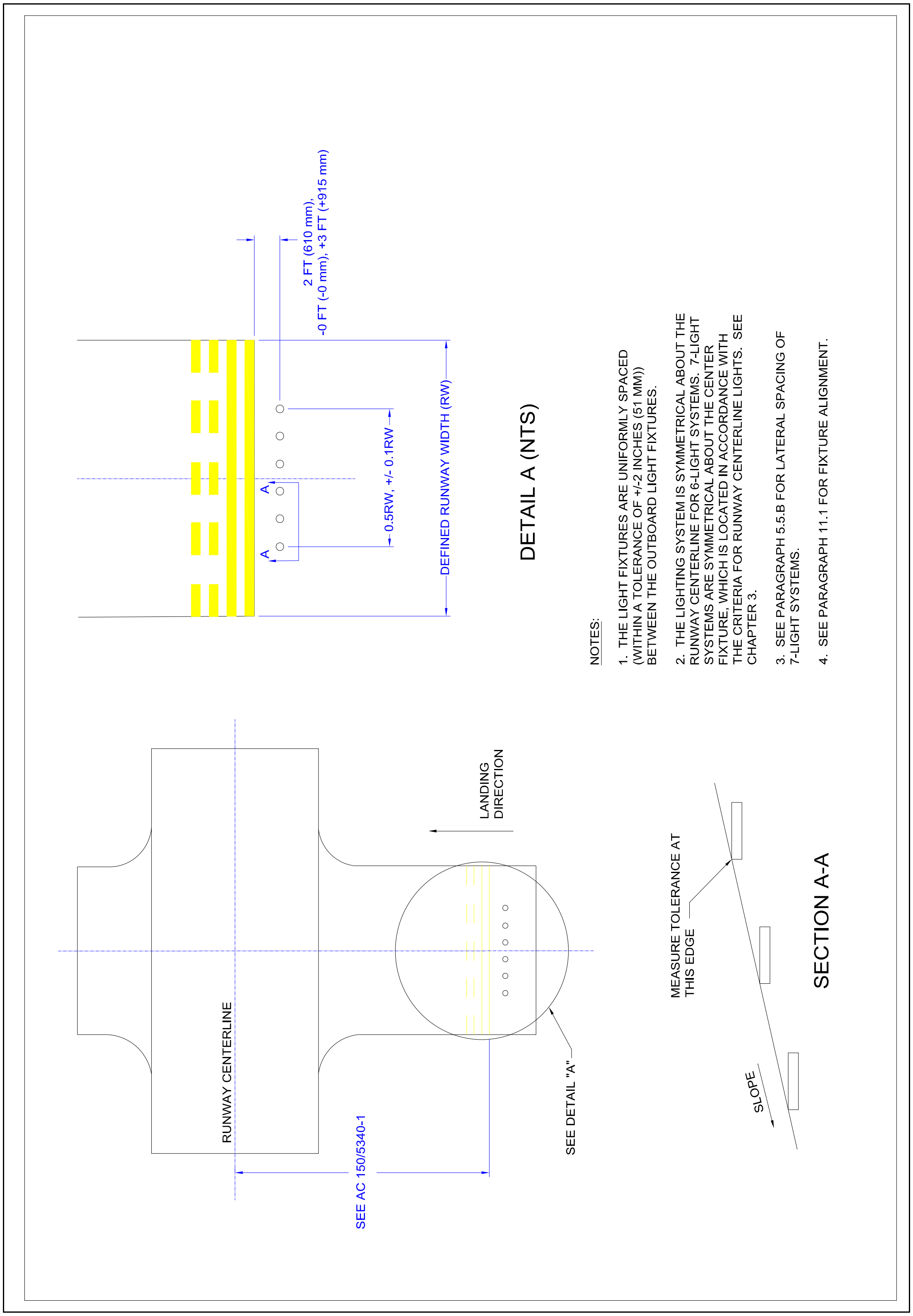
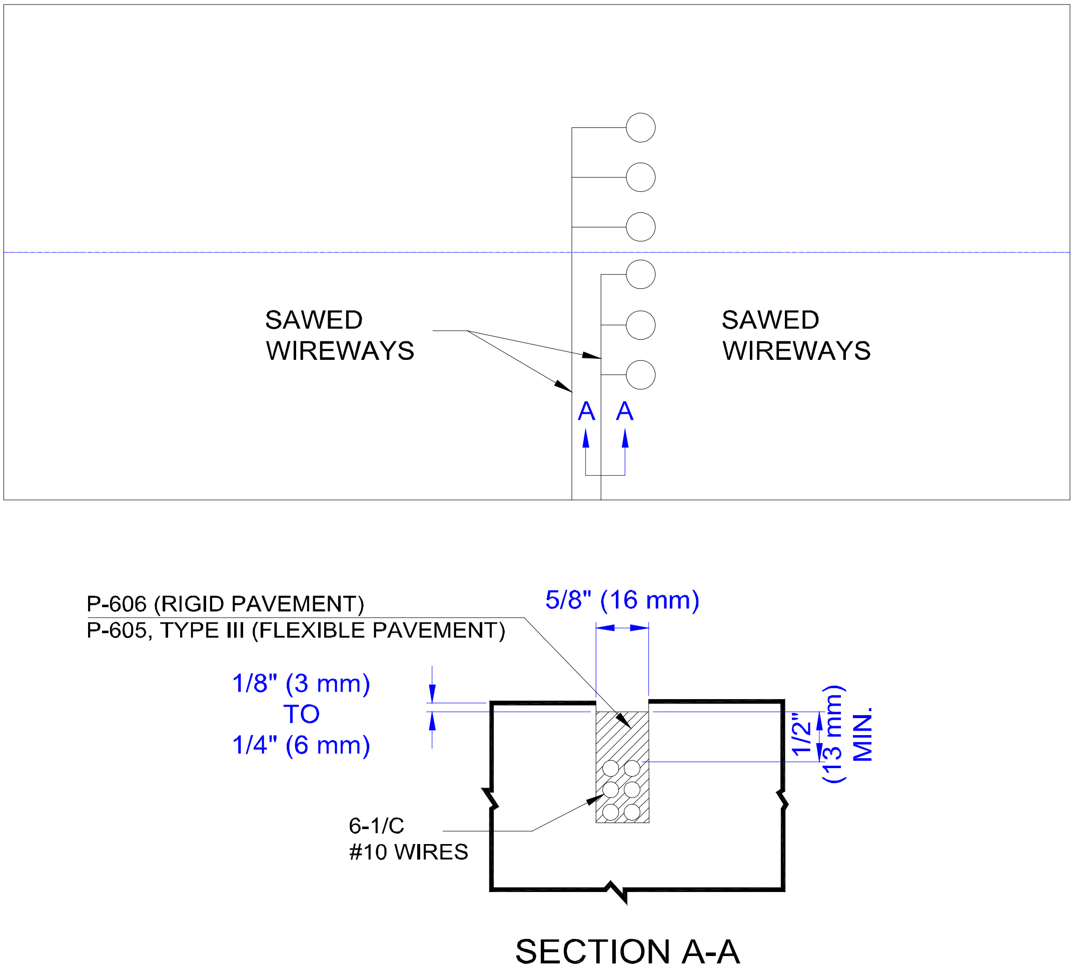


Figure 62. Typical Layout for Land and Hold Short Lights.



GENERAL NOTES

1. THE INSTALLATION DETAILS SHOWN ARE FOR RIGID OR FLEXIBLE PAVEMENT UNLESS OTHERWISE SPECIFIED.

2. THE DIAMETERS AND DEPTHS OF HOLES FOR DIRECT-MOUNTED LIGHTING FIXTURES ARE IN ACCORDANCE WITH FIGURE 64.

3. THE ALIGNMENT OF DRILLED HOLES FOR THE FIXTURES SHOULD NOT VARY MORE THAN 2 INCHES.

4. WHERE WIREWAYS CROSS JOINTS IN RIGID PAVEMENT, THEIR DEPTH IS INCREASED AS SHOWN ON PLANS. SEE FIGURE 64 FOR A TYPICAL DETAIL OF JOINT INTERSECTION.

Figure 63. Typical Wireway Installation Details for Land & Hold Short Lights.

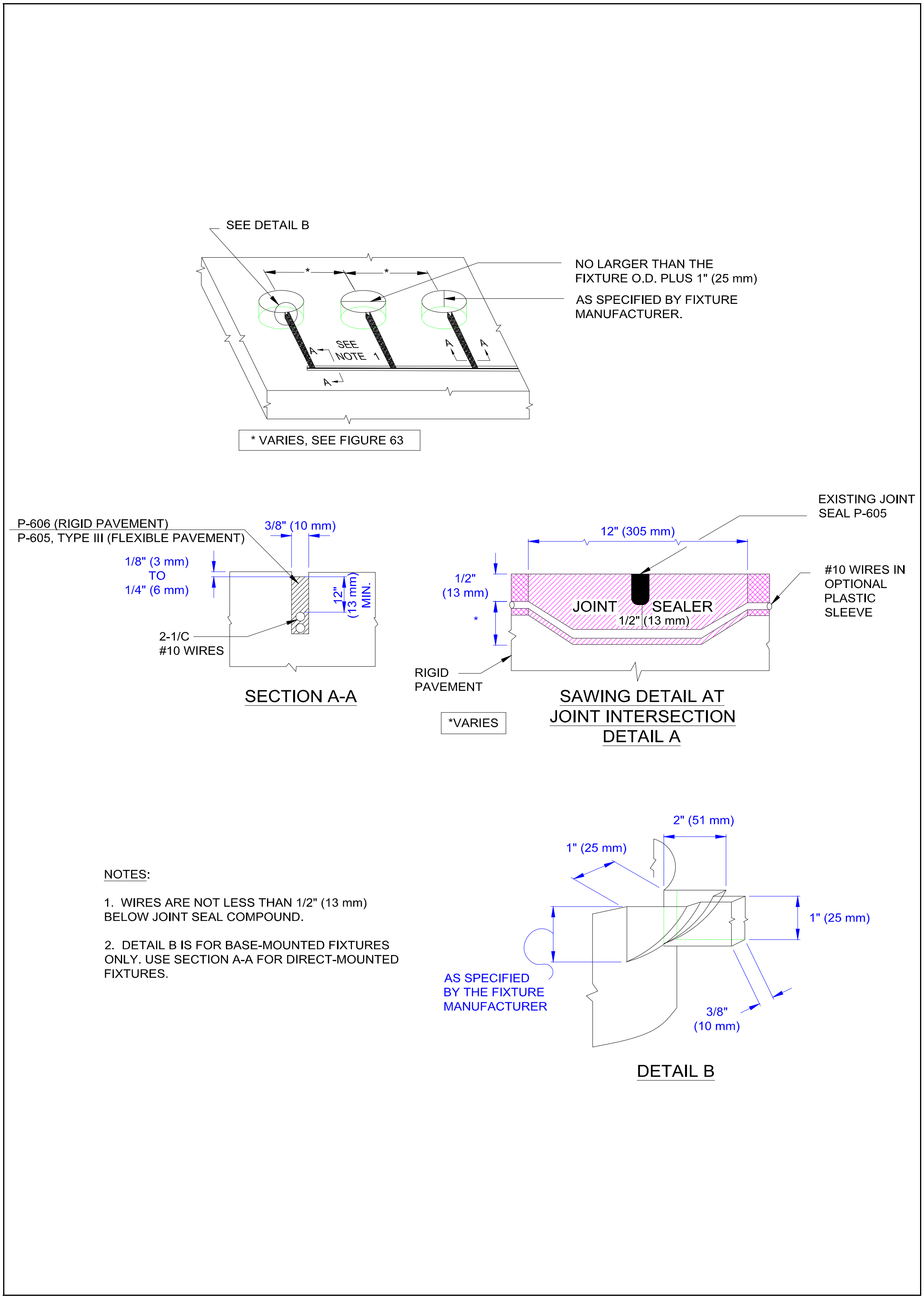


Figure 64. Sawing & Drilling Details for In-pavement Land & Hold Short Lights.

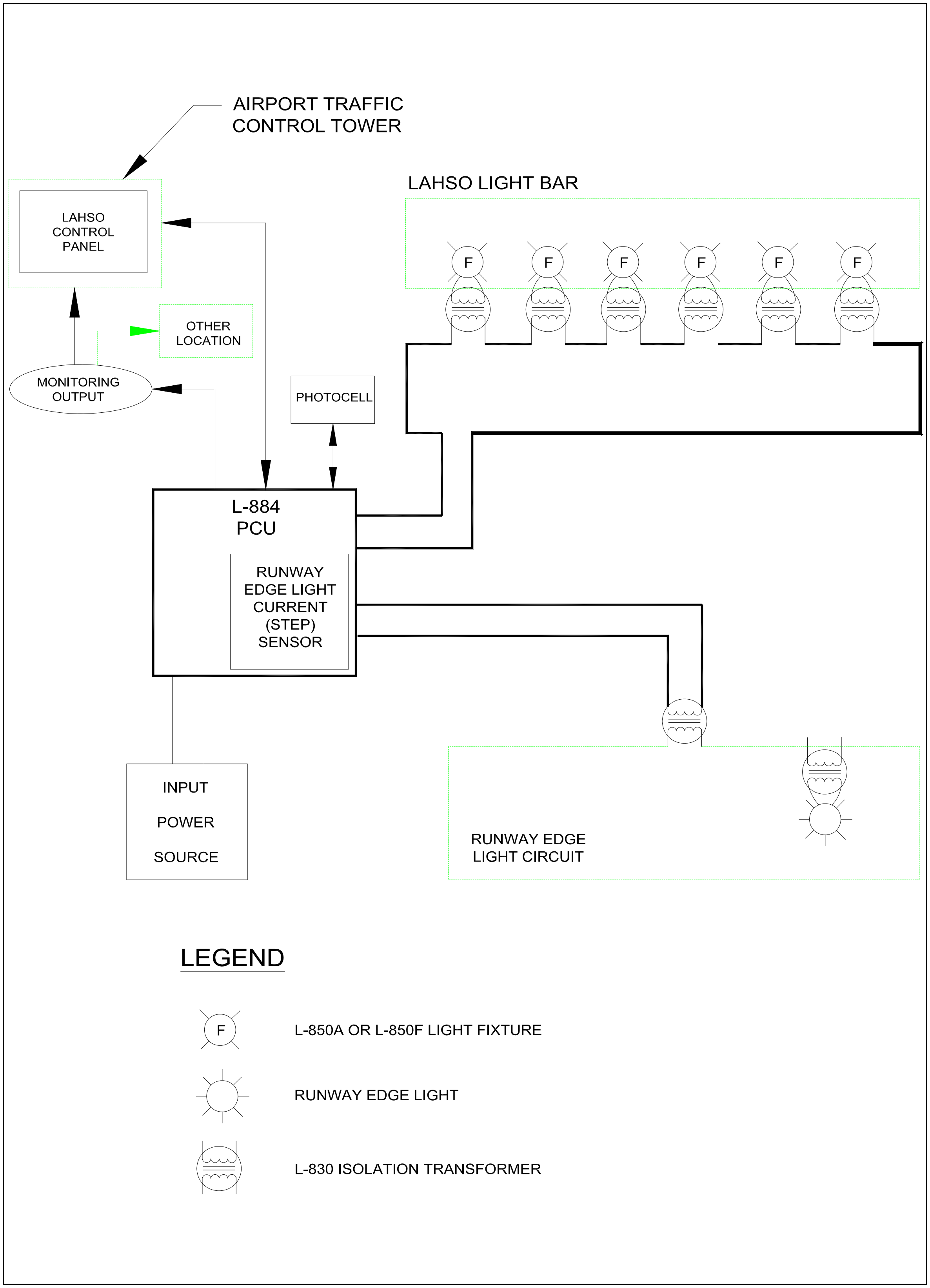


Figure 65. Typical Block Diagram for Land & Hold Short Lighting System.

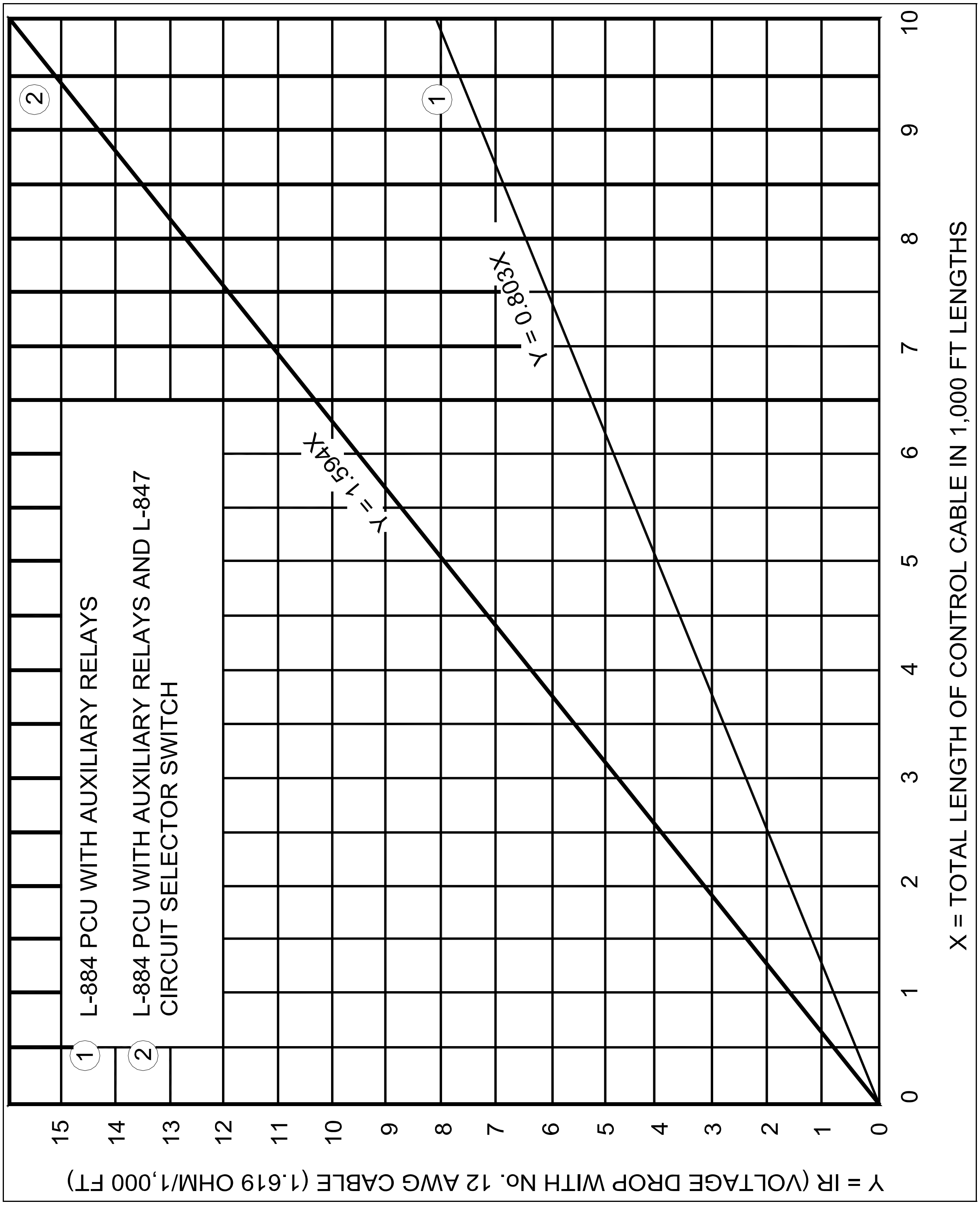


Figure 66. Typical Curve for Determining Maximum Separation Between Vault and Control Panel with 120-volt AC Control.

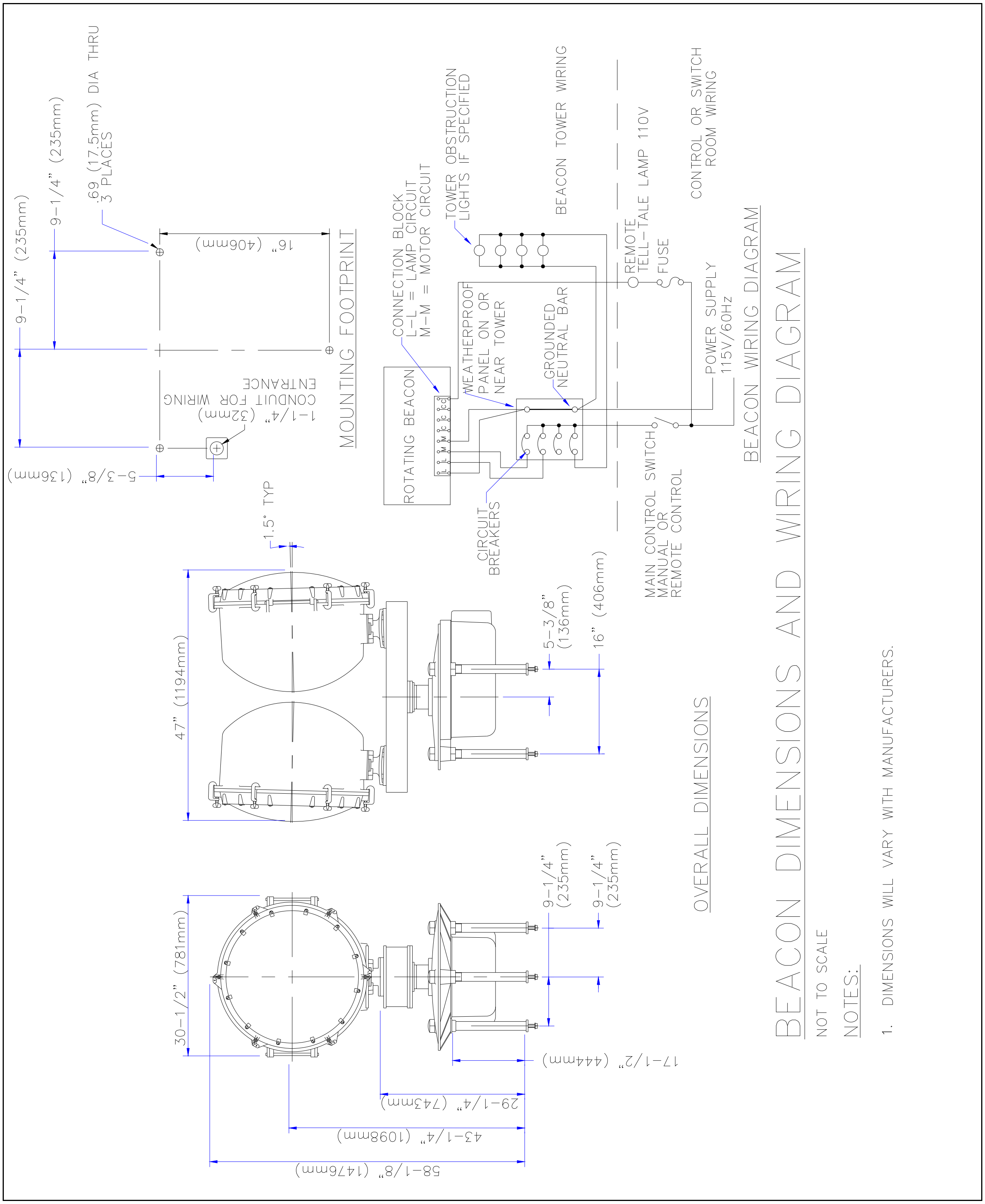


Figure 67. Beacon Dimensions and Wiring Diagram.

COPPER-WIRE, AMERICAN WIRE GAUGE B&S

B&S GAUGE NO.	OHMS PER 1 000 FEET 25°C., 77°F.	AREA CIRCULAR MILS	DIAMETER IN MILS AT 20°C.	APPROXIMATE POUNDS PER 1,000 FEET (305 m)
2	0.1593	66,370	257.6	201
4	0.2523	41,740	204.3	126
6	0.4028	26,250	162.0	79
8	0.6405	16,510	128.5	50
10	1.018	10,380	101.9	31
12	1.619	6,530	80.81	20

Calculations

1. To determine the AWG size wire necessary for a specific connected load to maintain the proper voltage for each miscellaneous lighting visual aid, use the above table and Ohms Law $I = \frac{E}{R}$ as follows:

   a. Example. What size wire will be necessary in a circuit of 120 volts AC to maintain a 2 percent voltage drop with the following connected load which is separated 500 feet from the power supply?

      (1) Lighted Wind Tee Load - 30 lamps, 25 watts each = 750 watts.

      (2) The total operating current for the wind tee is $I = \frac{watts}{volts} = \frac{750}{120} = 6.25\,amperes$.

      (3) Permissible voltage drop for homerun wire is 120 volts x 2% = 2.4 volts.

      (4) Maximum resistance of homerun wires with a separation of 500 feet (1,000 feet (305 m) of wire used) to maintain not more than 2.4 volts drop is $R = \frac{E}{I} = \frac{2.4\,volts}{6.25\,amperes} = 0.384\,ohms$ per 1,000 feet (305 m) of wire.

      (5) From the above table, obtain the wire size having a resistance per 1,000 feet (305 m) of wire that does not exceed 0.384 ohms per 1,000 feet (305 m) of wire. The wire size that meets this requirement is No. 4 AWG wire with a resistance of 0.2523 ohms per 1,000 feet (305 m) of wire.

      (6) By using No. 4 AWG wire in this circuit, the voltage drop is E=IR=6.25-amperes x 0.2523 ohms=1.58 volts which is less than the permissible voltage drop of 2.4 volts.

2. Where it has been determined that it will require an extra large size wire for homeruns to compensate for voltage drop in a 120-volt power supply, one of the following methods should be considered.

   a. A 120/240-volt power supply.

   b. A booster transformer, in either a 120-volt or 120/240-volt power supply, if it has been determined its use will be more economical.

Figure 68. Calculations for Determining Wire Size.

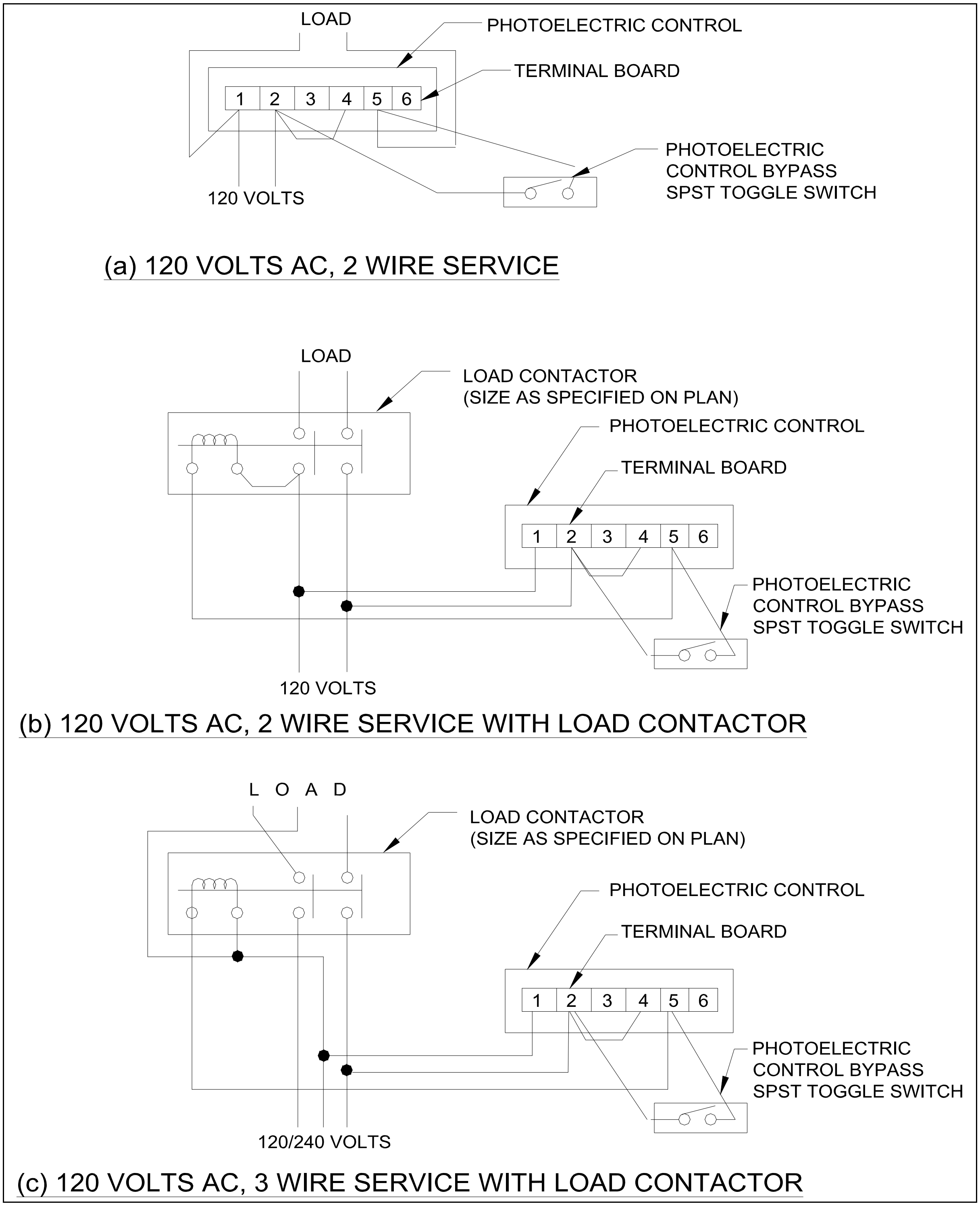


Figure 69. Typical Automatic Control.

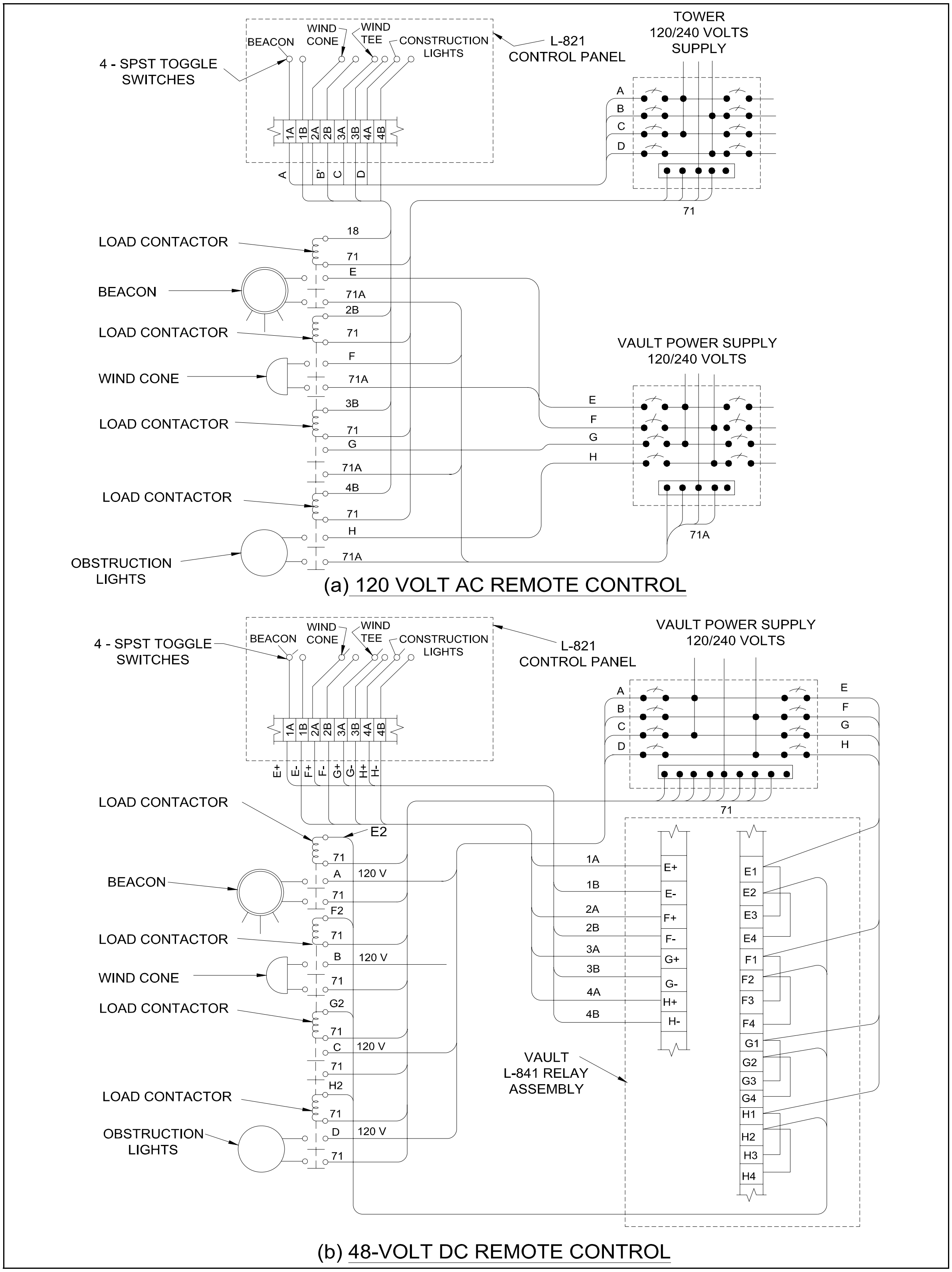


Figure 70. 120-Volt AC and 48-Volt DC Remote Control.

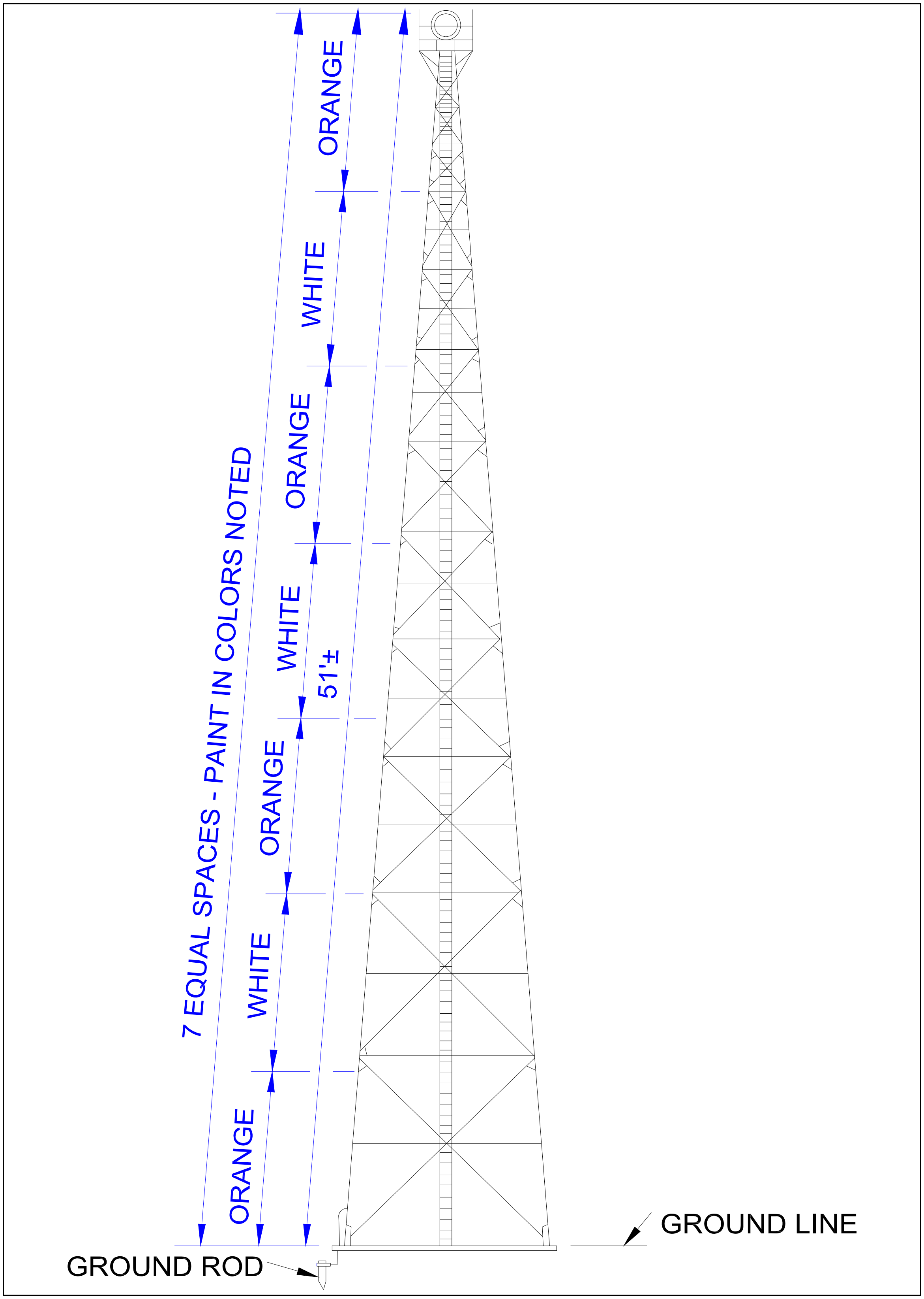


Figure 71. Typical Structural Beacon Tower.