APPENDIX 1. FIGURES.

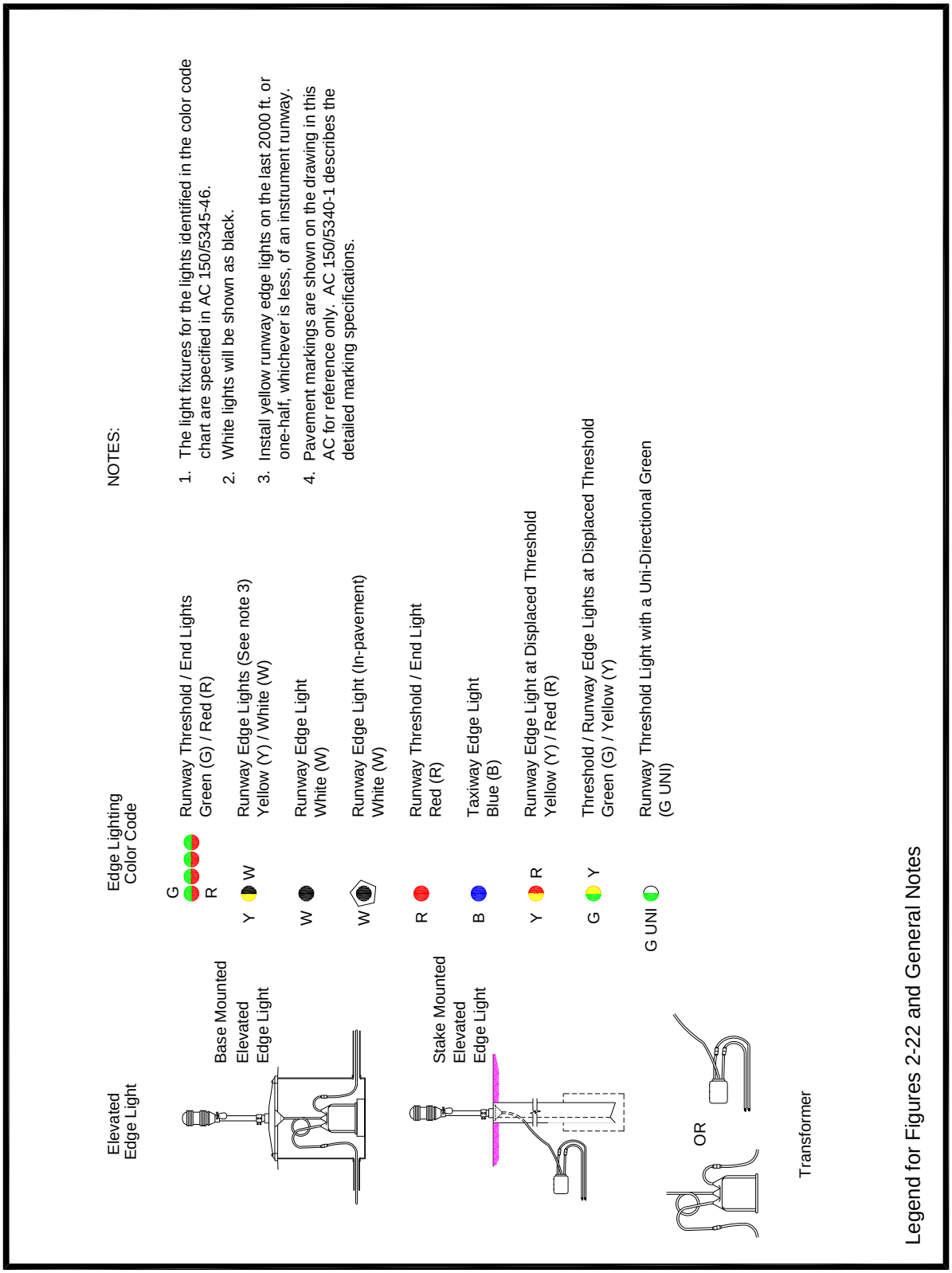


Figure 1. Legend and General Notes.

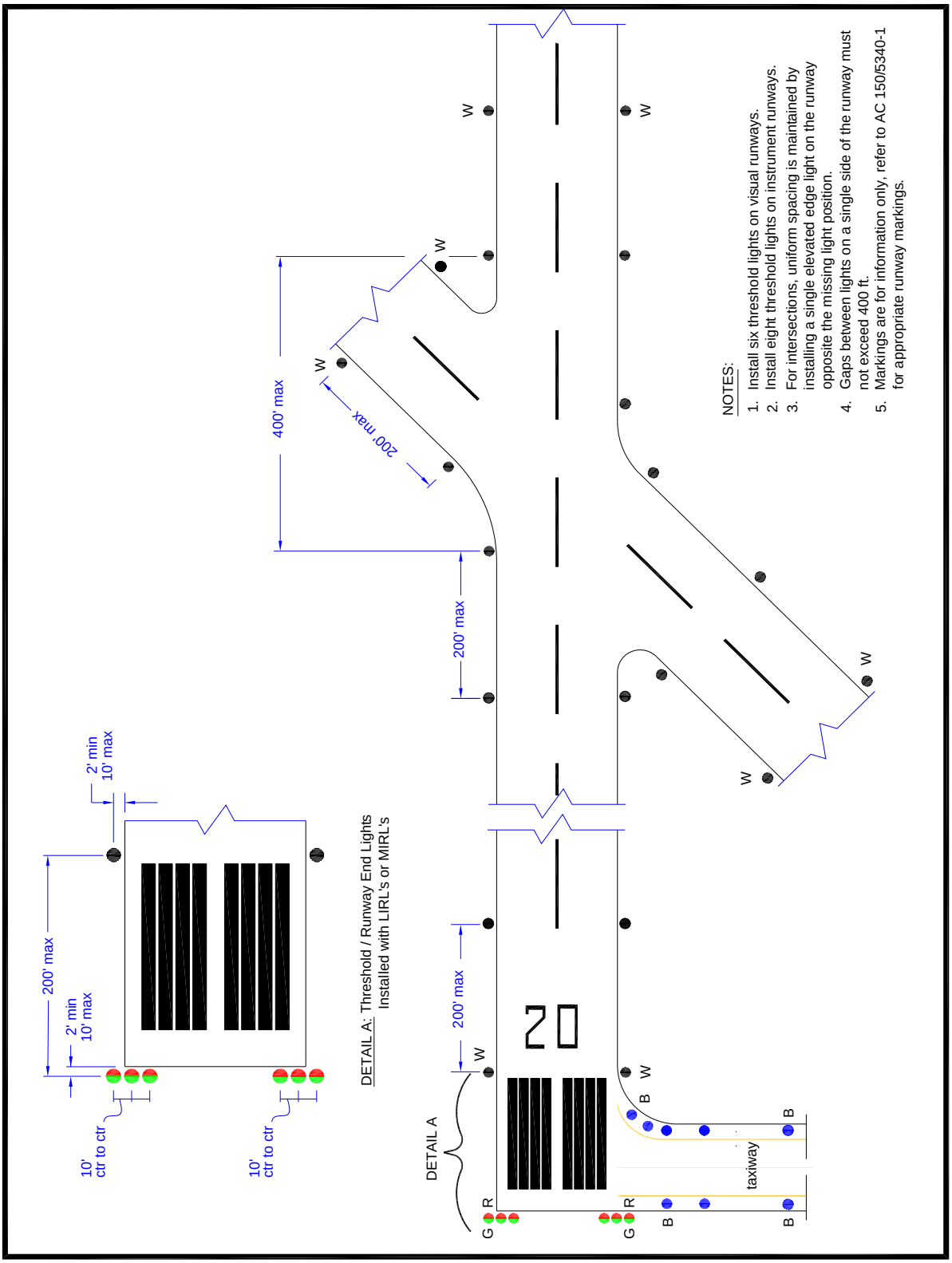


Figure 2. Runway and Threshold Lighting Configuration (LIRL Runways & MIRLVisual Runways).

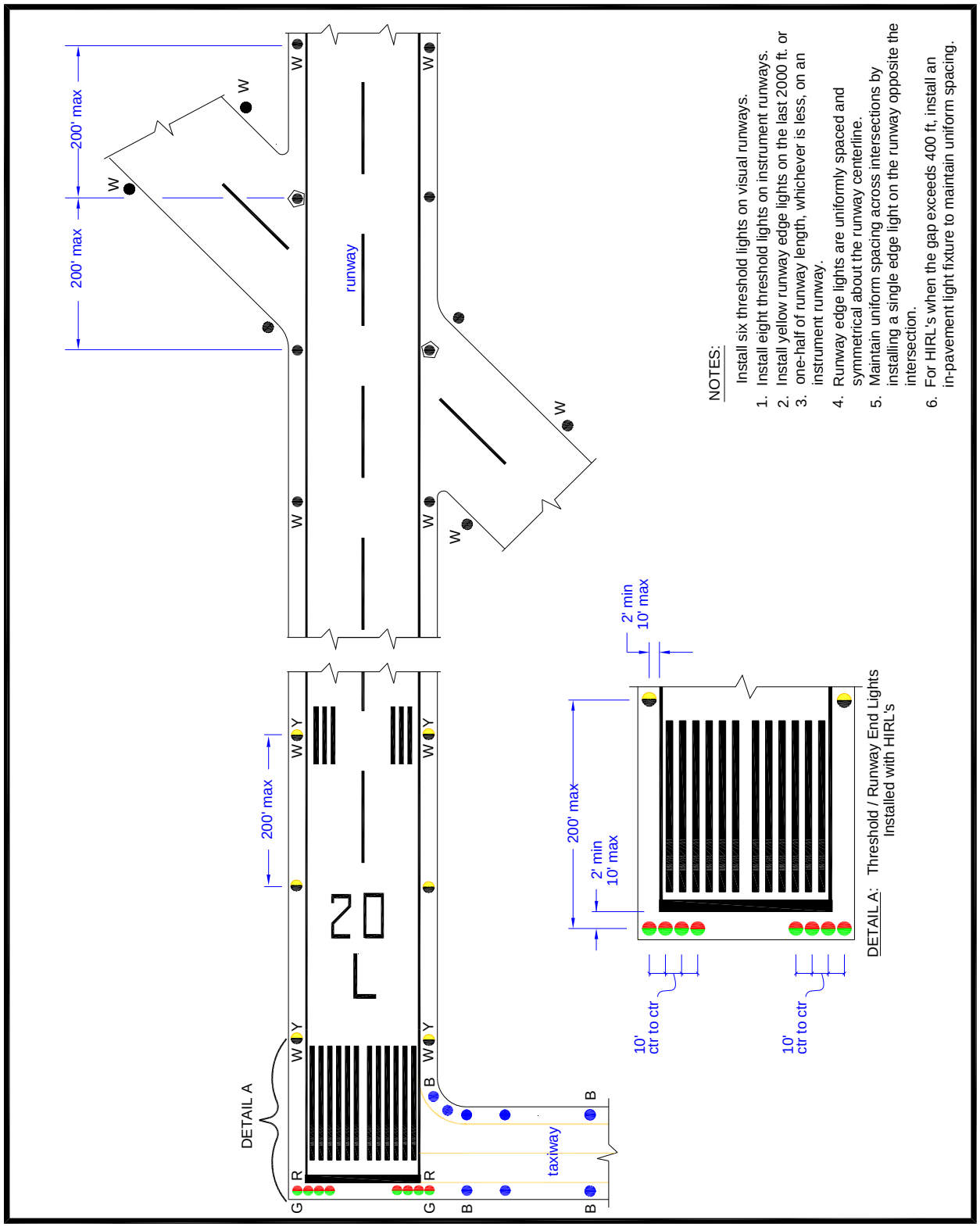


Figure 3. Runway and Threshold Lighting Configuration (HIRL Precision Instrument Approach - runway centerline not shown for HIRL. Non-Precision Instrument Approach for MIRL)

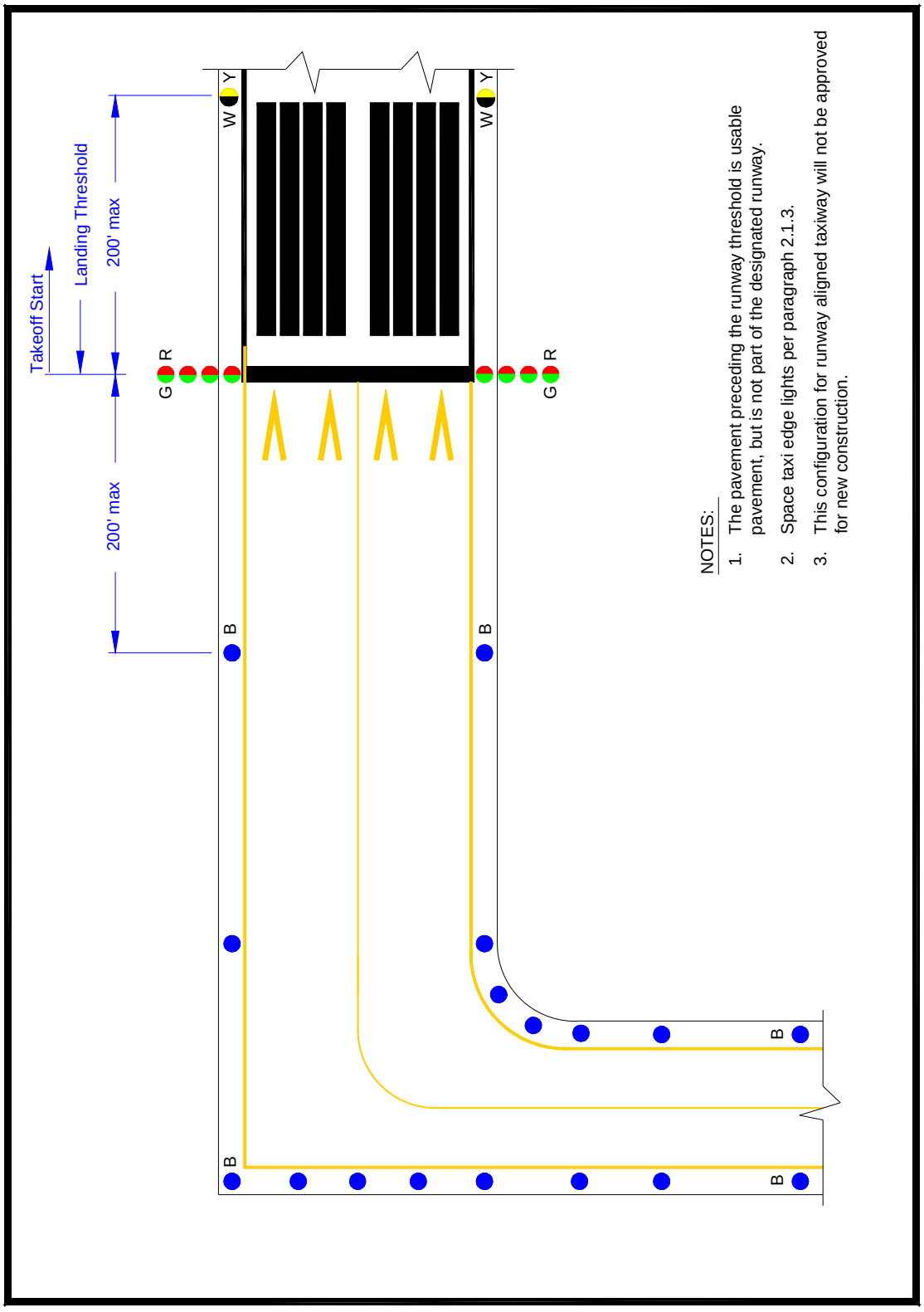


Figure 4. Runway with Taxiway at End.

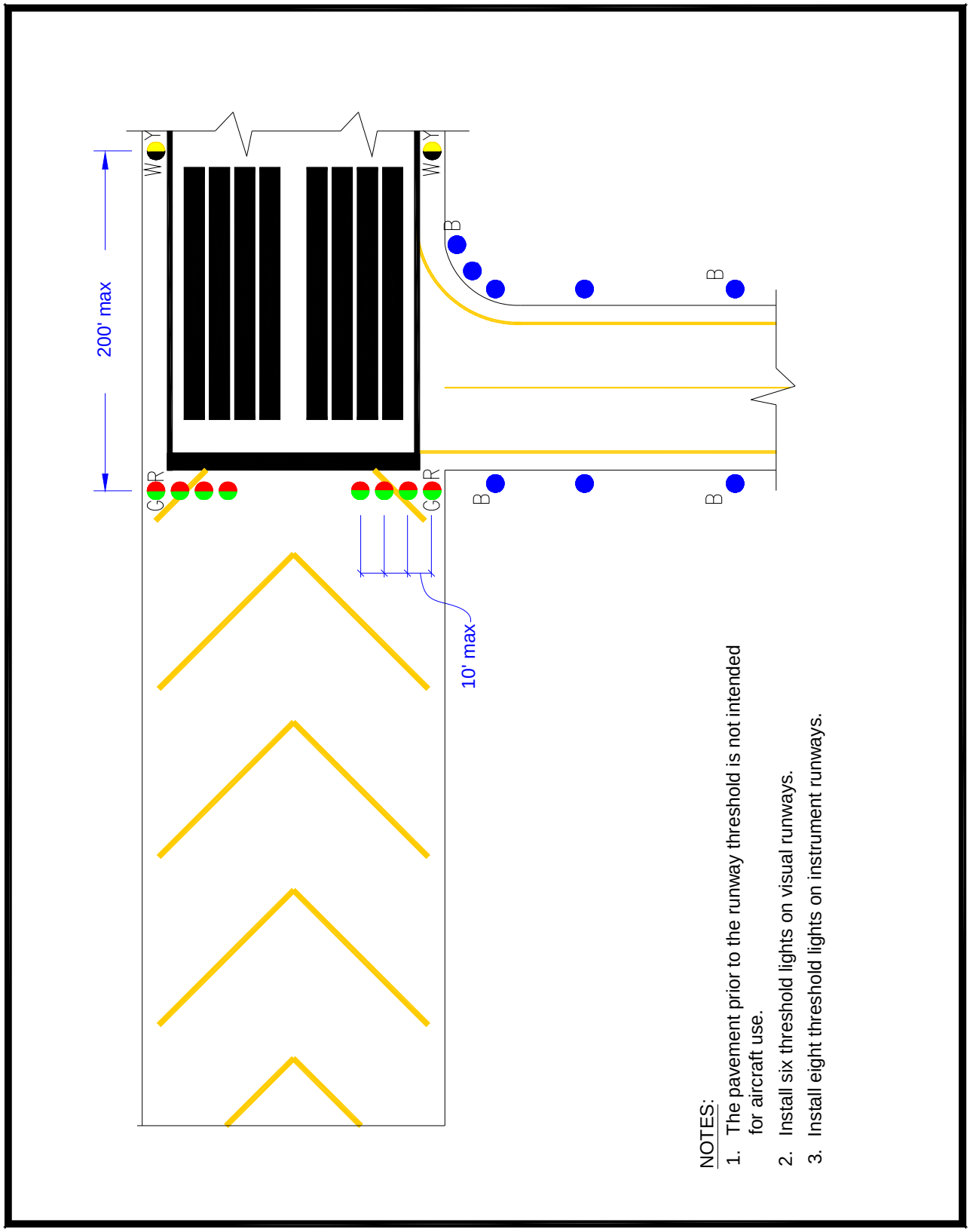


Figure 5. Runway with Blast Pad (No Traffic).

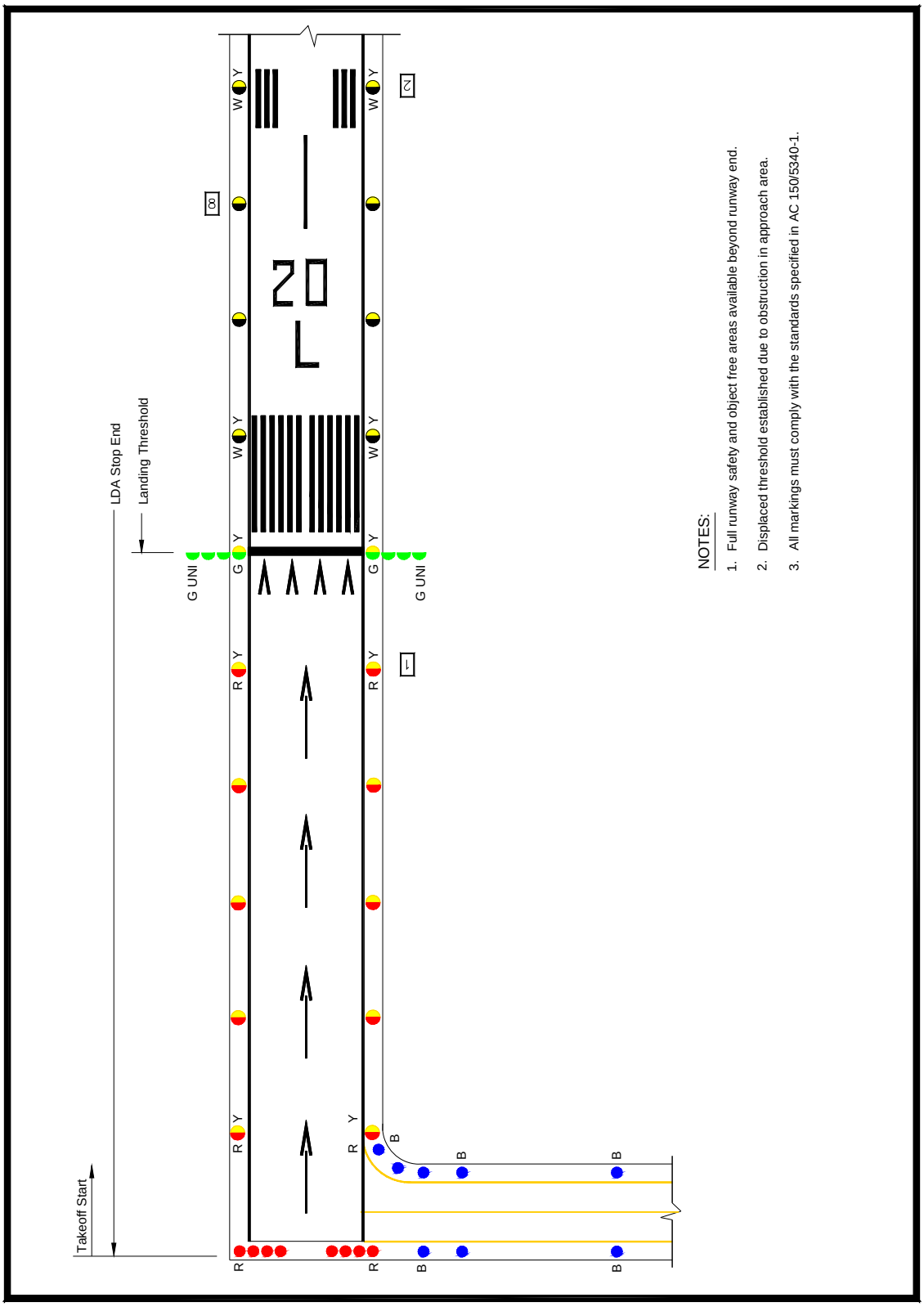


Figure 6. Lighting for Runway with Displaced Threshold.

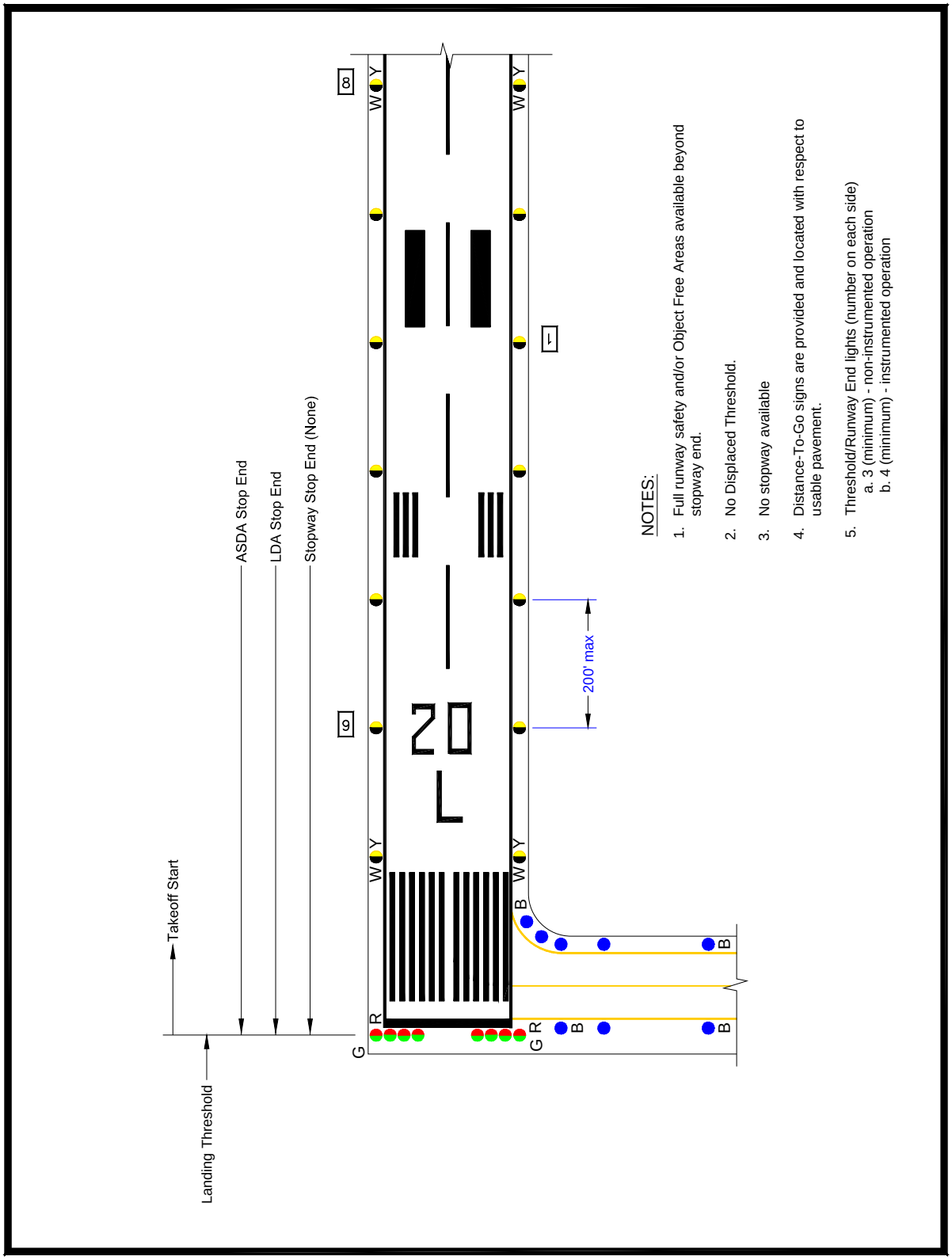


Figure 7. Normal Runway with Taxiway.

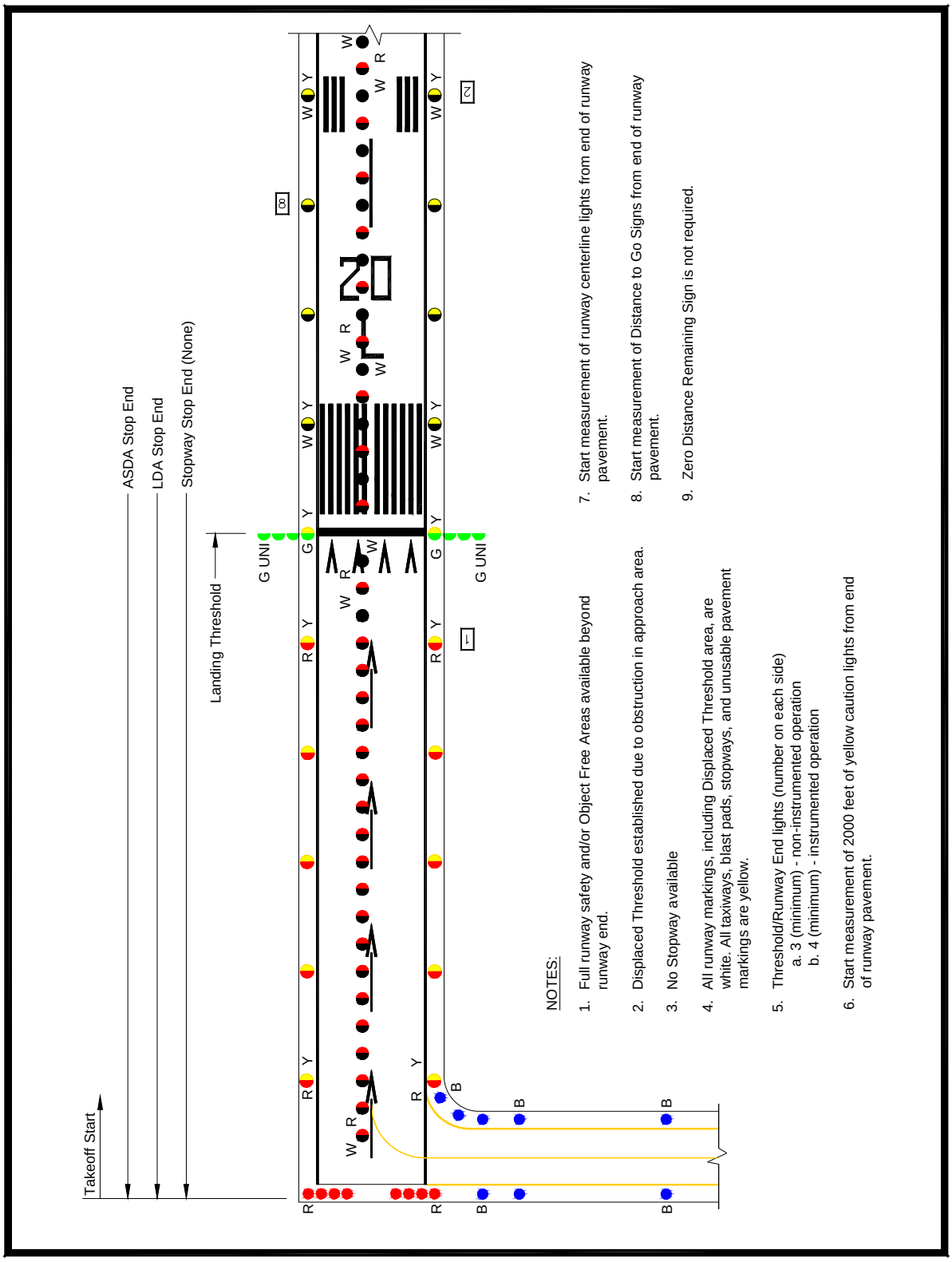


Figure 8. Lighting for Runway with Displaced Threshold.

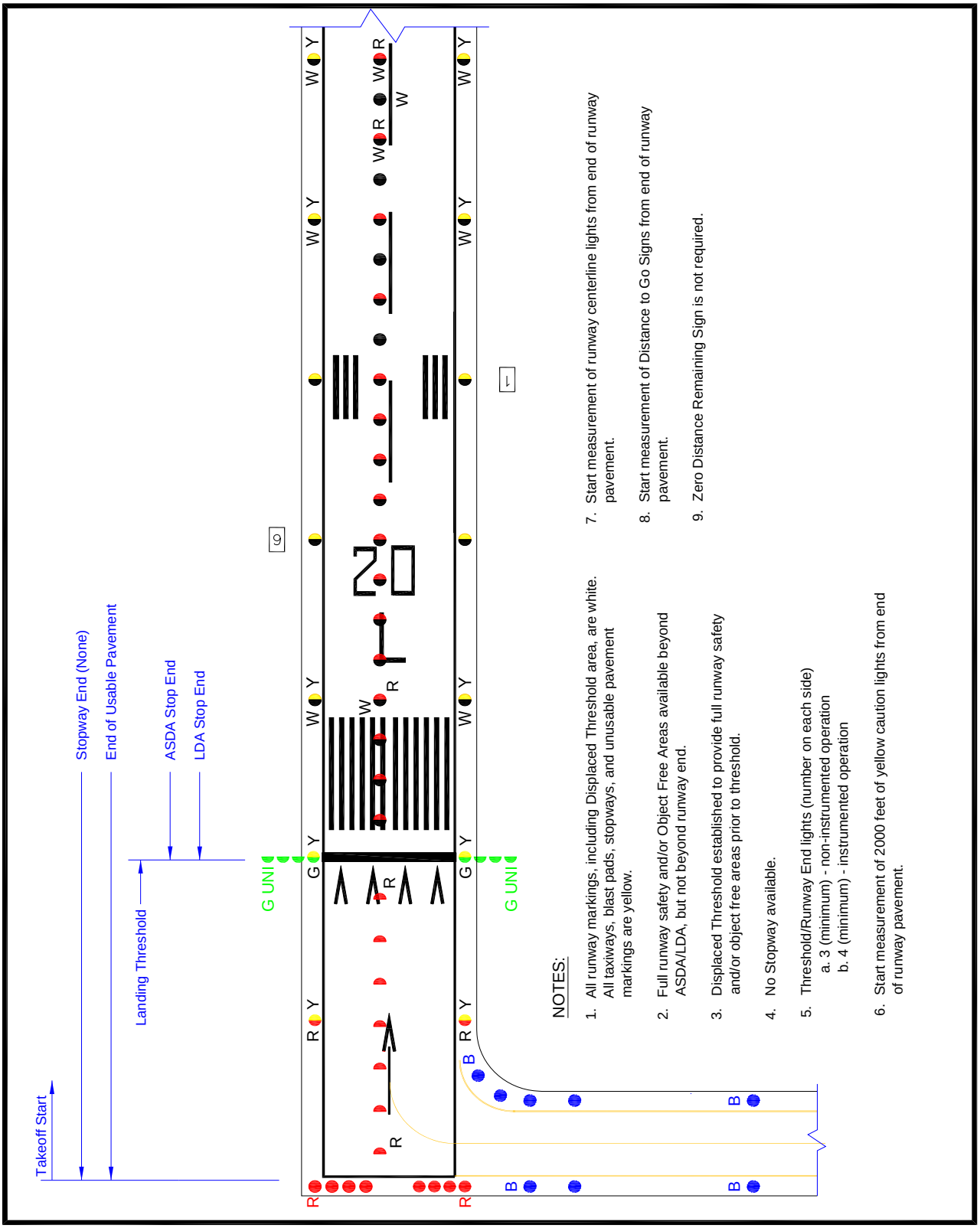


Figure 9. Lighting for Runway with Displaced Threshold/Usable Pavement.

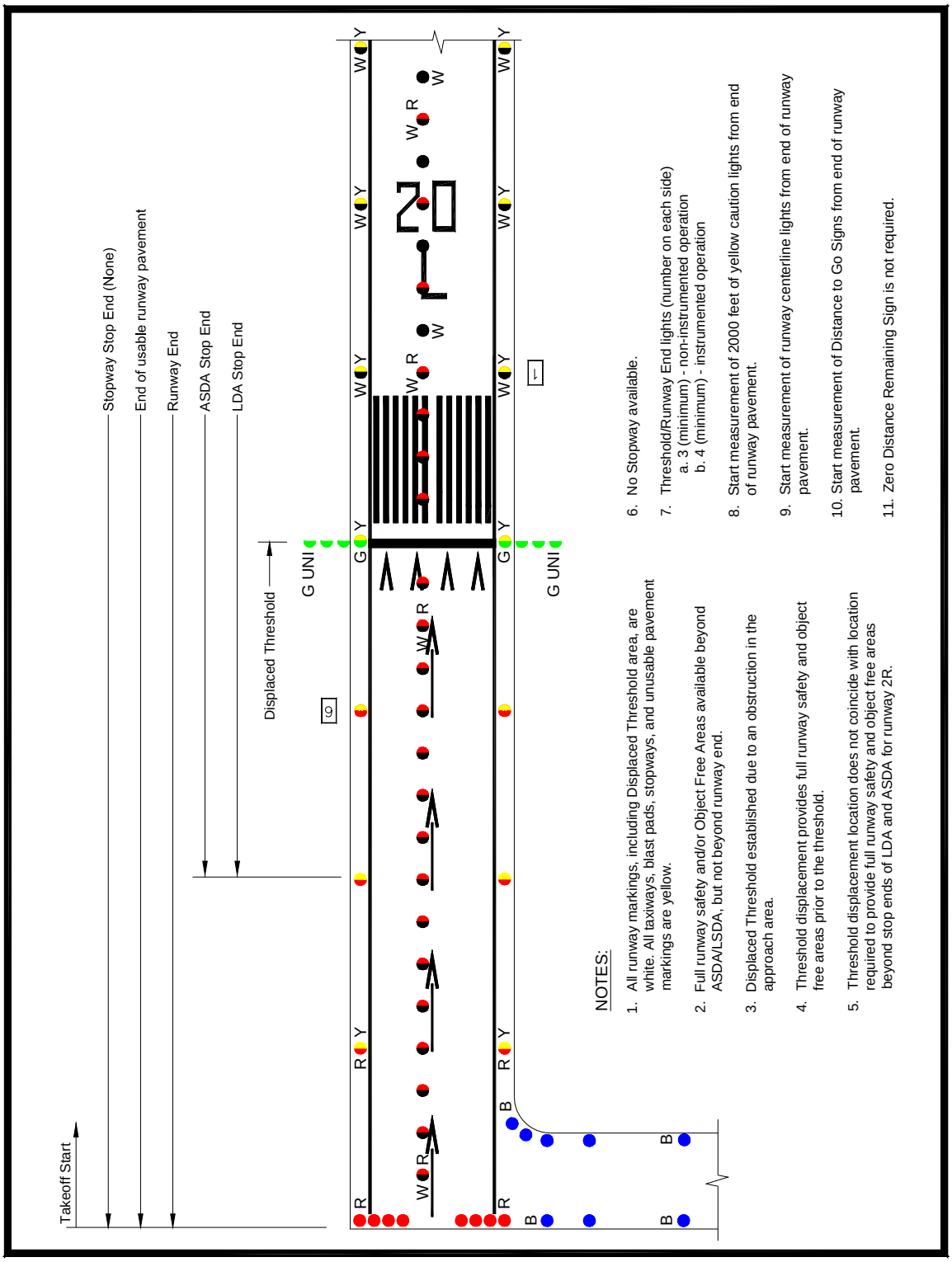


Figure 10. Lighting for Runway with Displaced Threshold not Coinciding with Opposite Runway End.

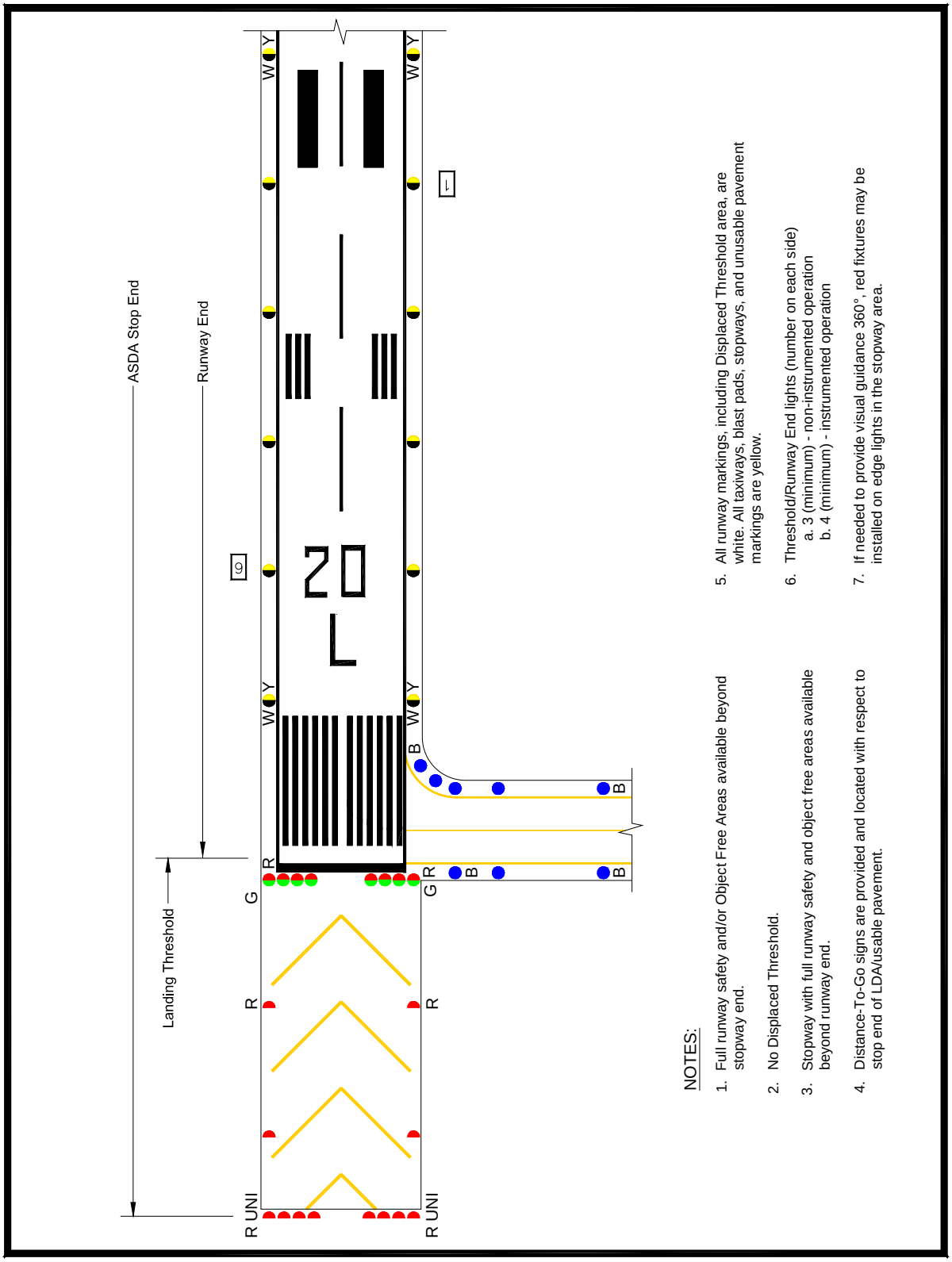


Figure 11. Lighting for Runway with Stopway.

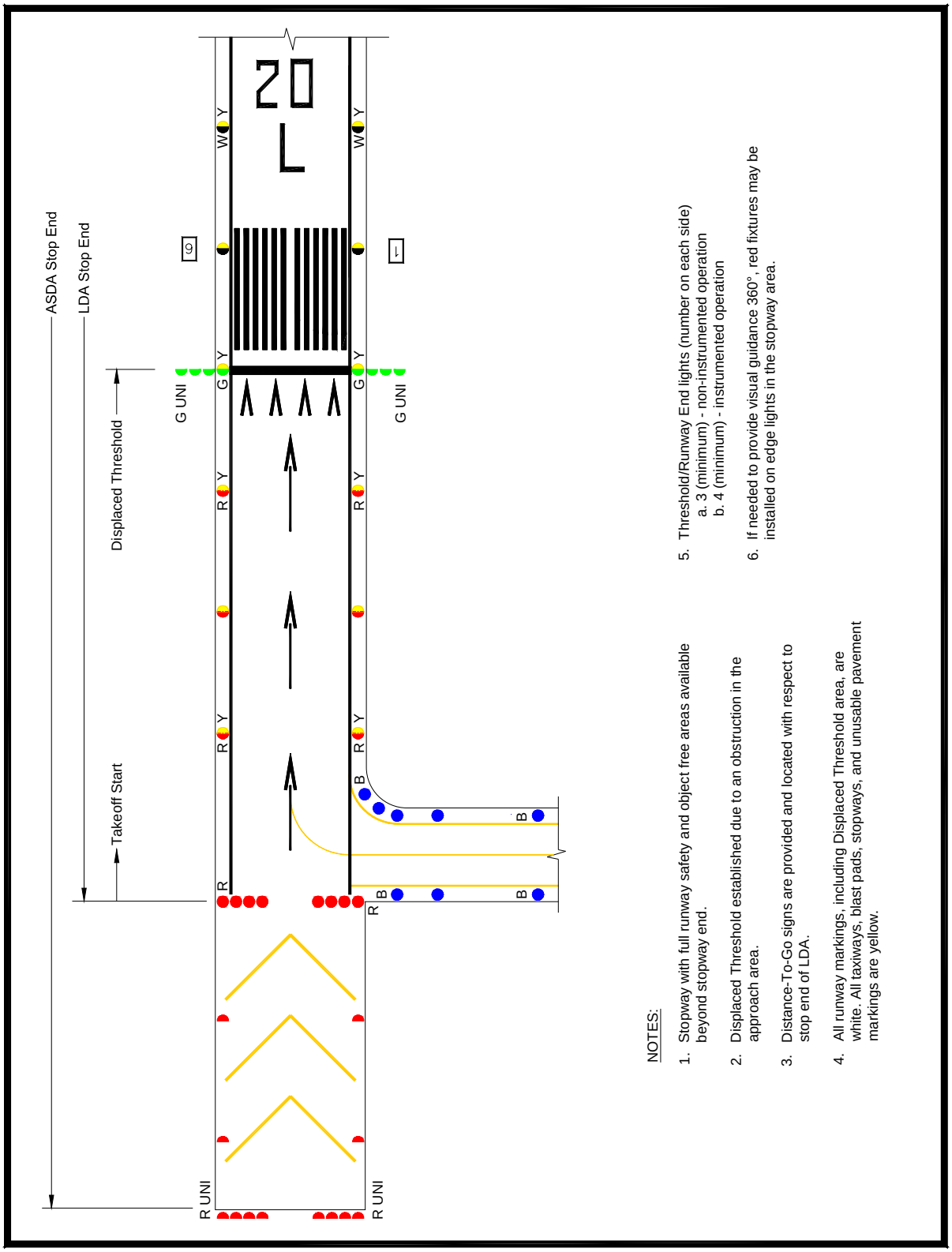


Figure 12. Lighting for Runway with Displaced Threshold & Stopway.

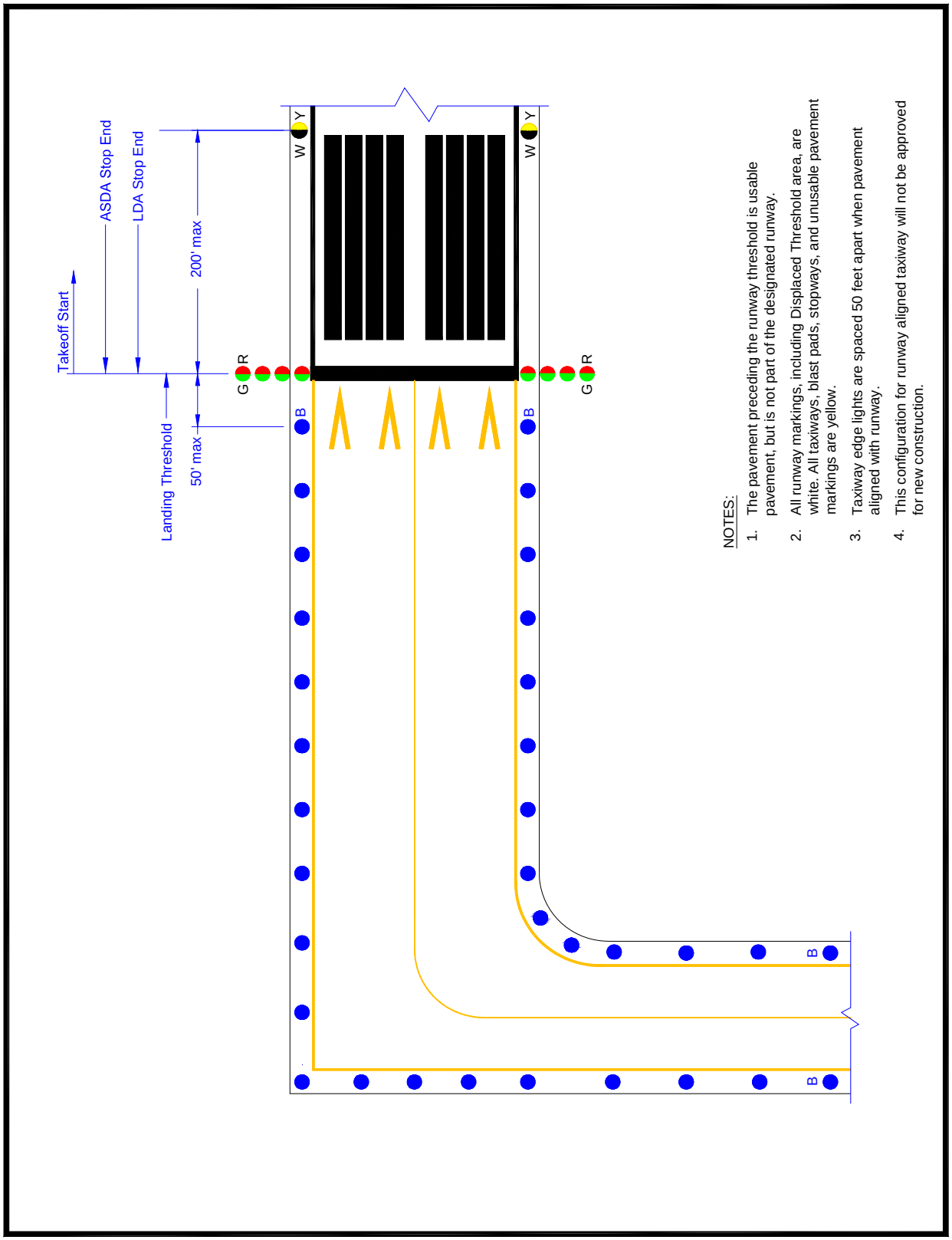


Figure 13. Runway with End Taxiway.

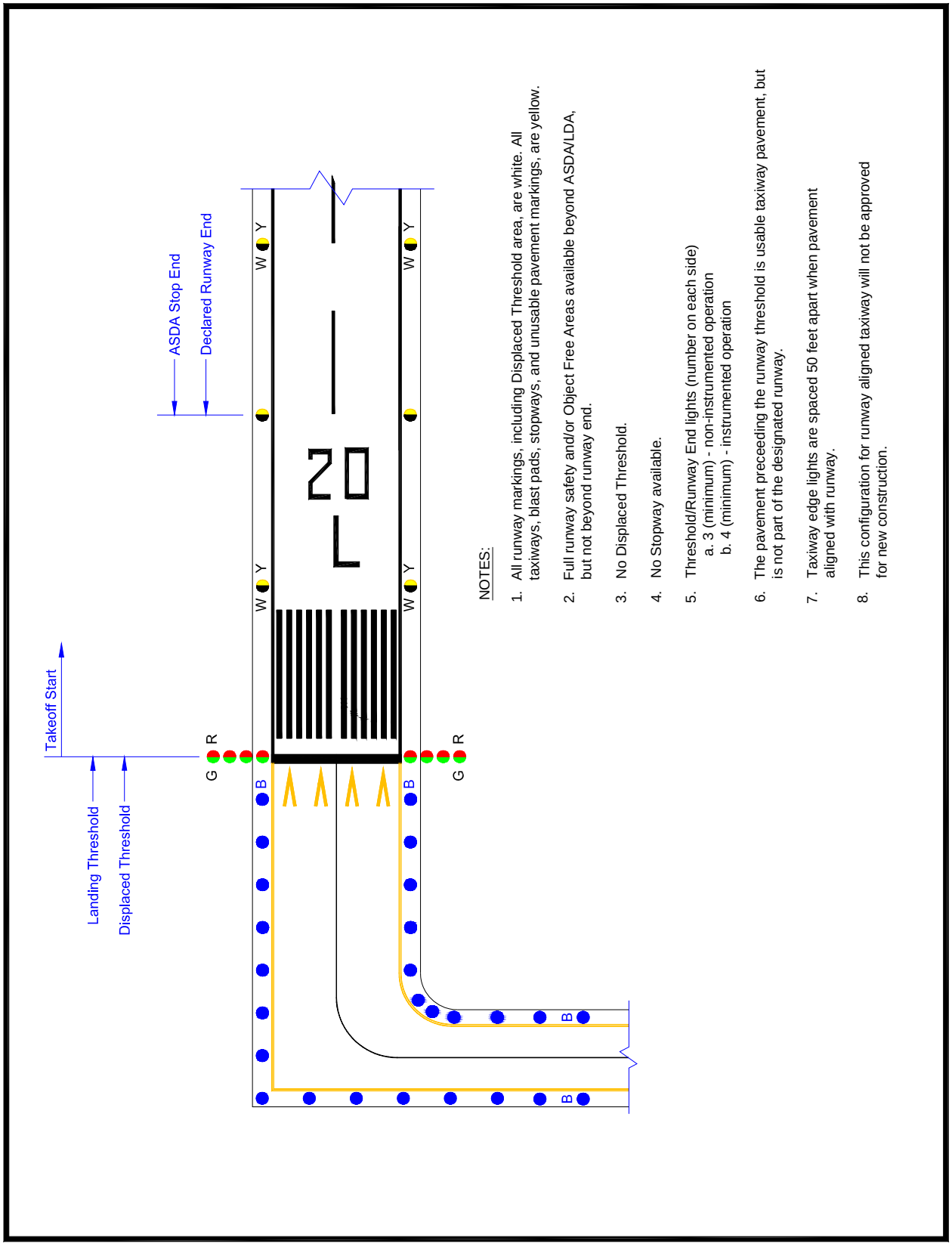


Figure 14. Lighting for Runway with End Taxiway and Shortened ASDA.

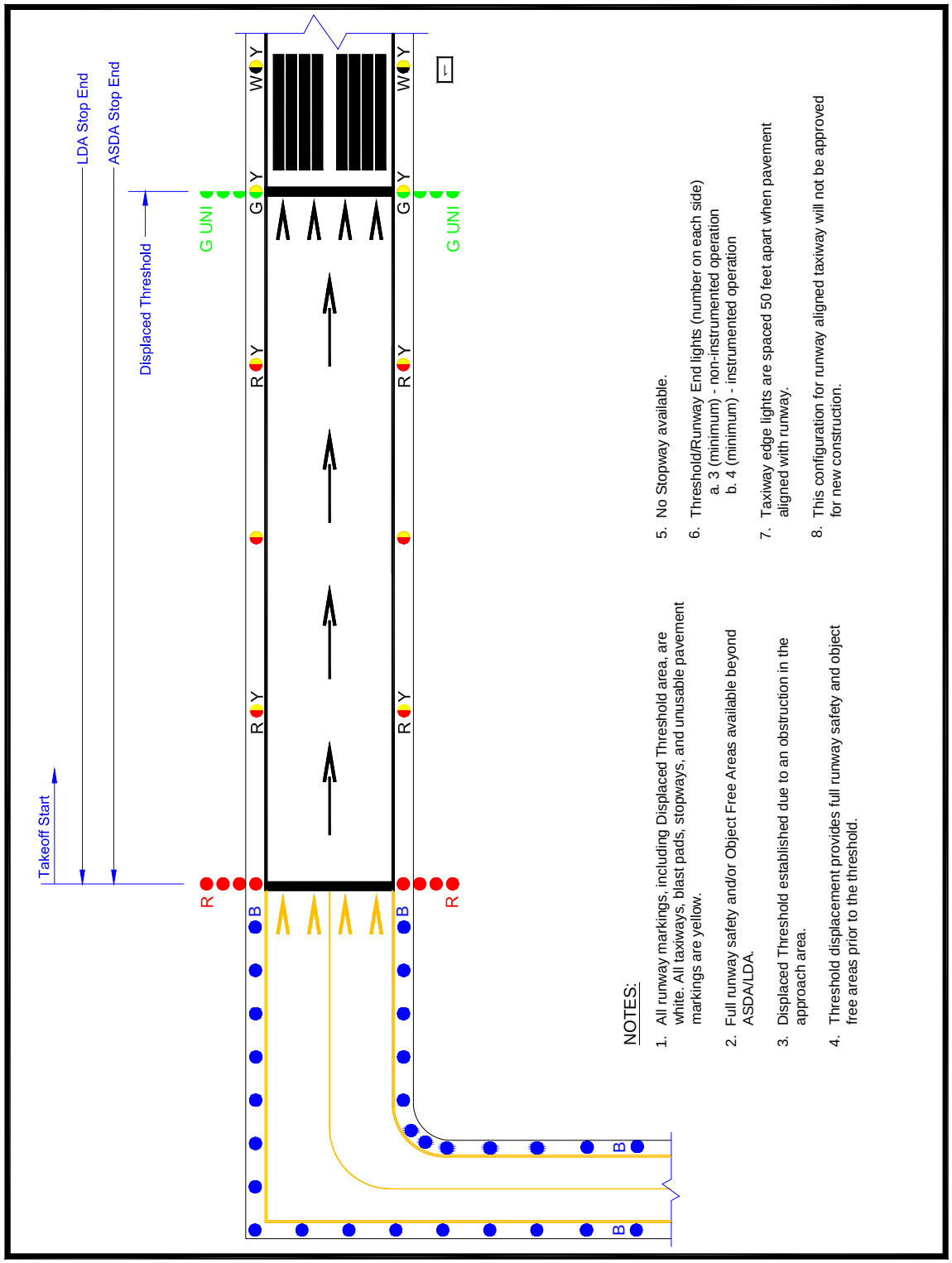


Figure 15. Lighting for Runway with End Taxiway and Displaced Threshold not Coinciding with Opposite Runway End.

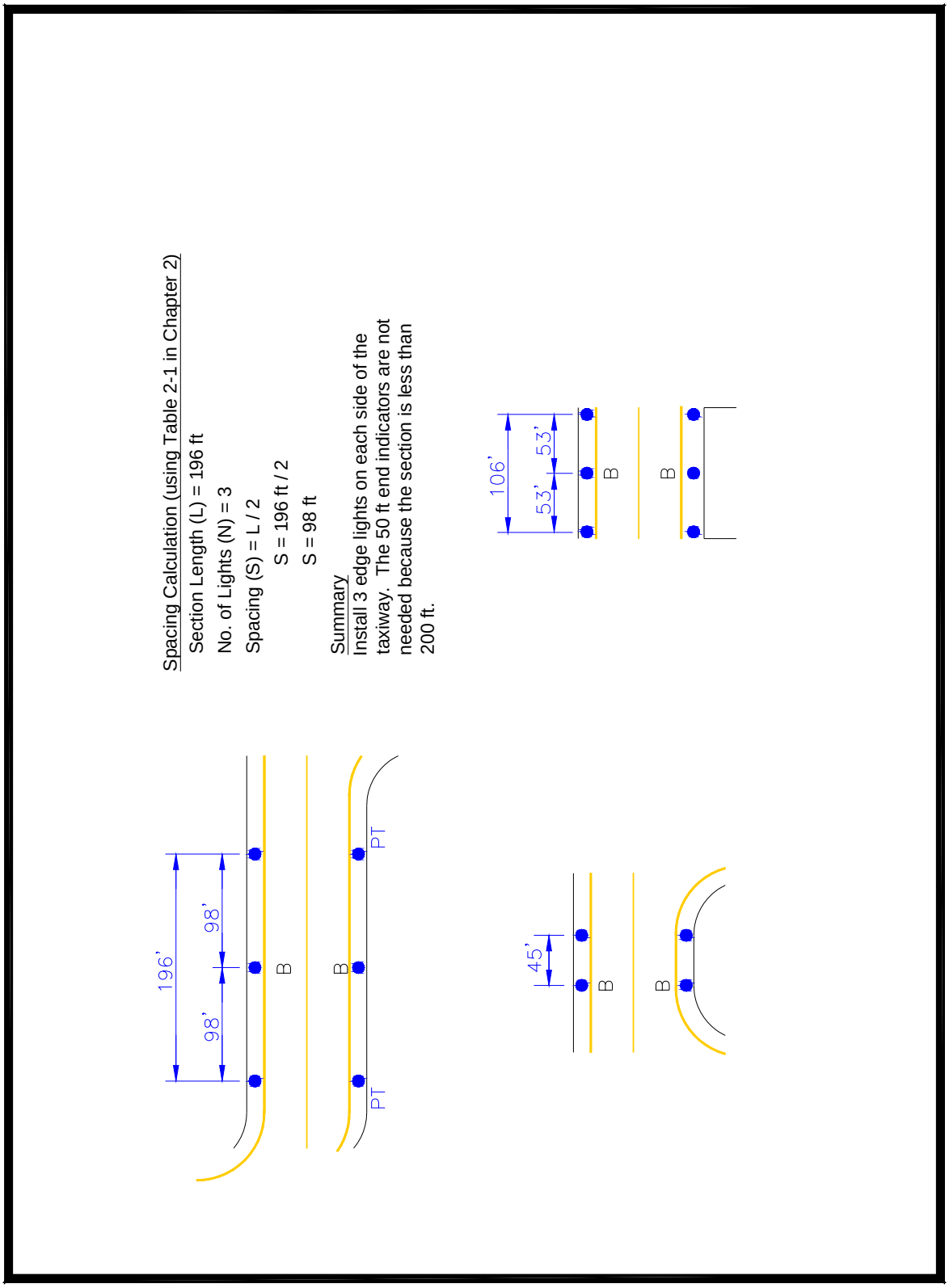


Figure 16. Typical Straight Taxiway Sections (Less Than 200 Feet (61 m)).

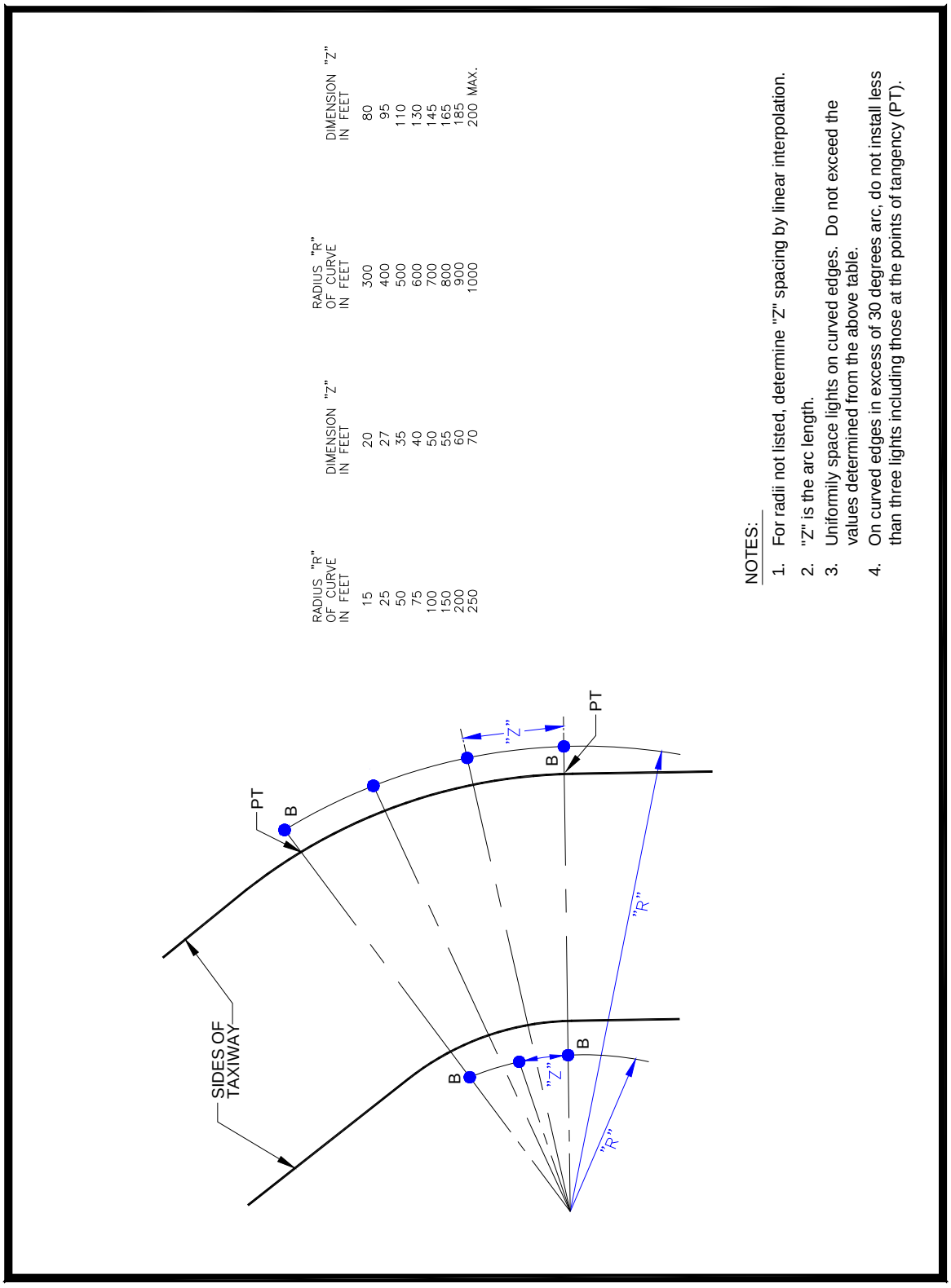


Figure 17. Spacing of Lights on Curved Taxiway Edges.

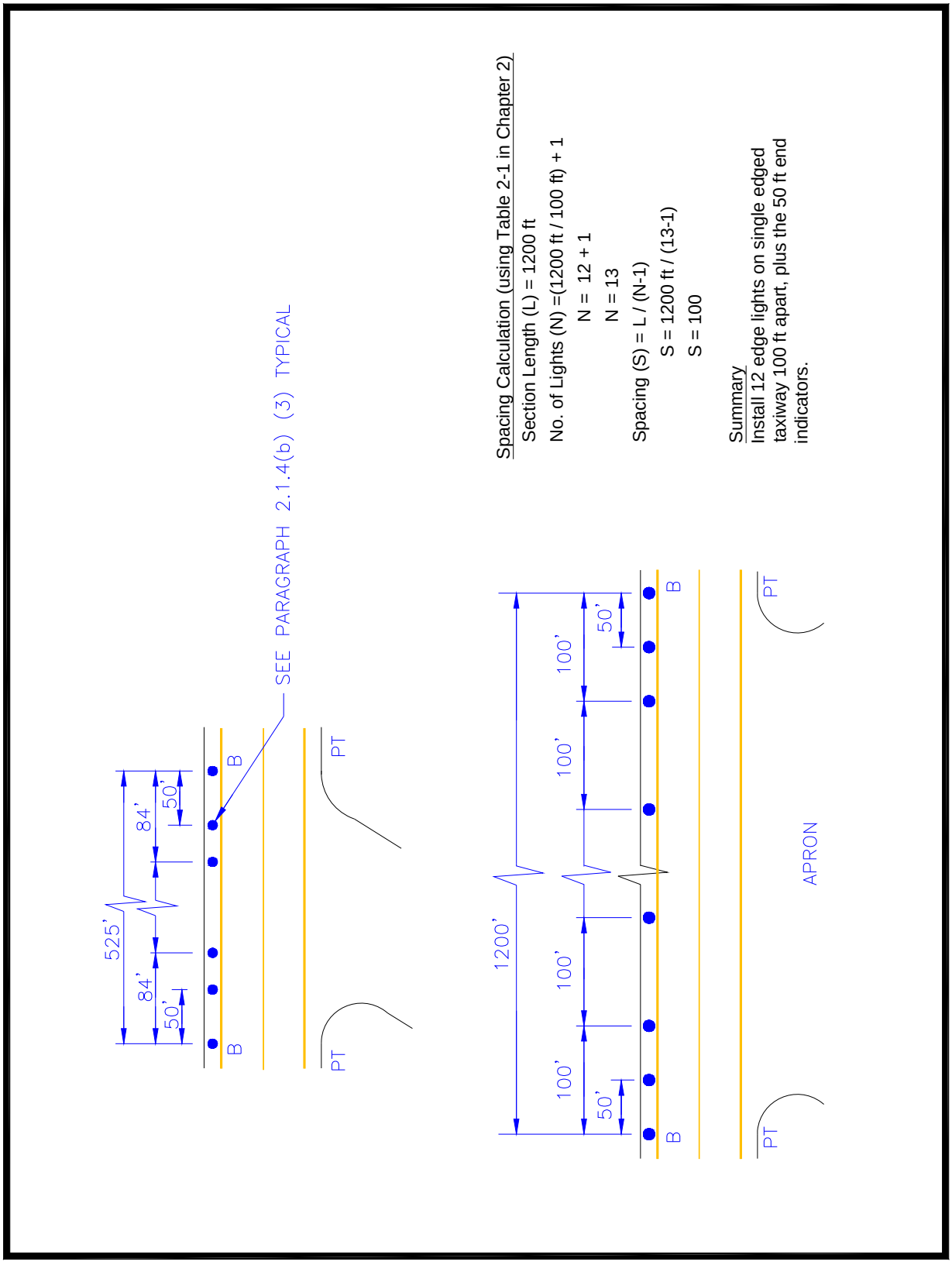


Figure 18. Typical Single Straight Taxiway Edges (More Than 200 Feet (61 m)).

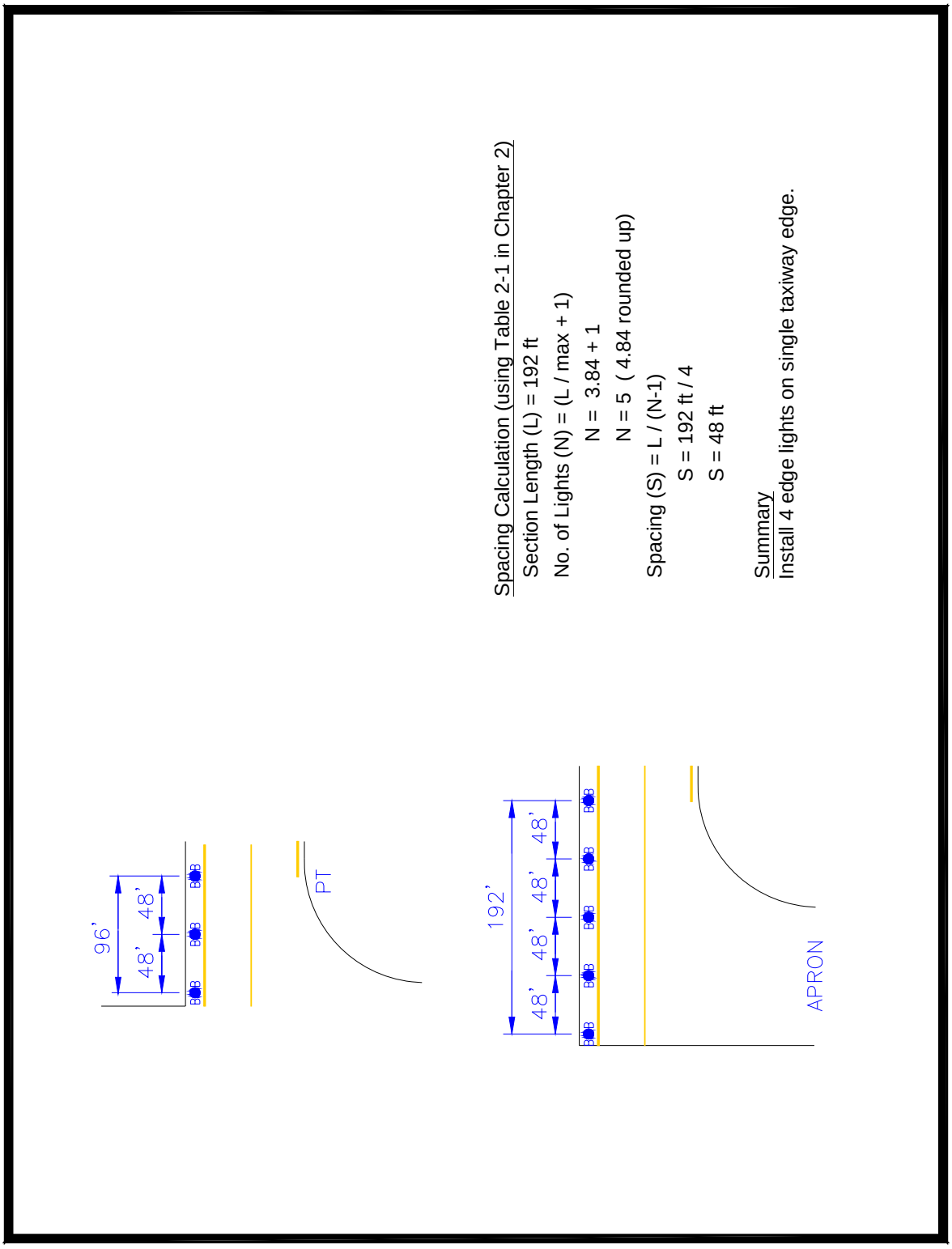


Figure 19. Typical Single Straight Taxiway Edges (Less Than 200 Feet (61 m)).

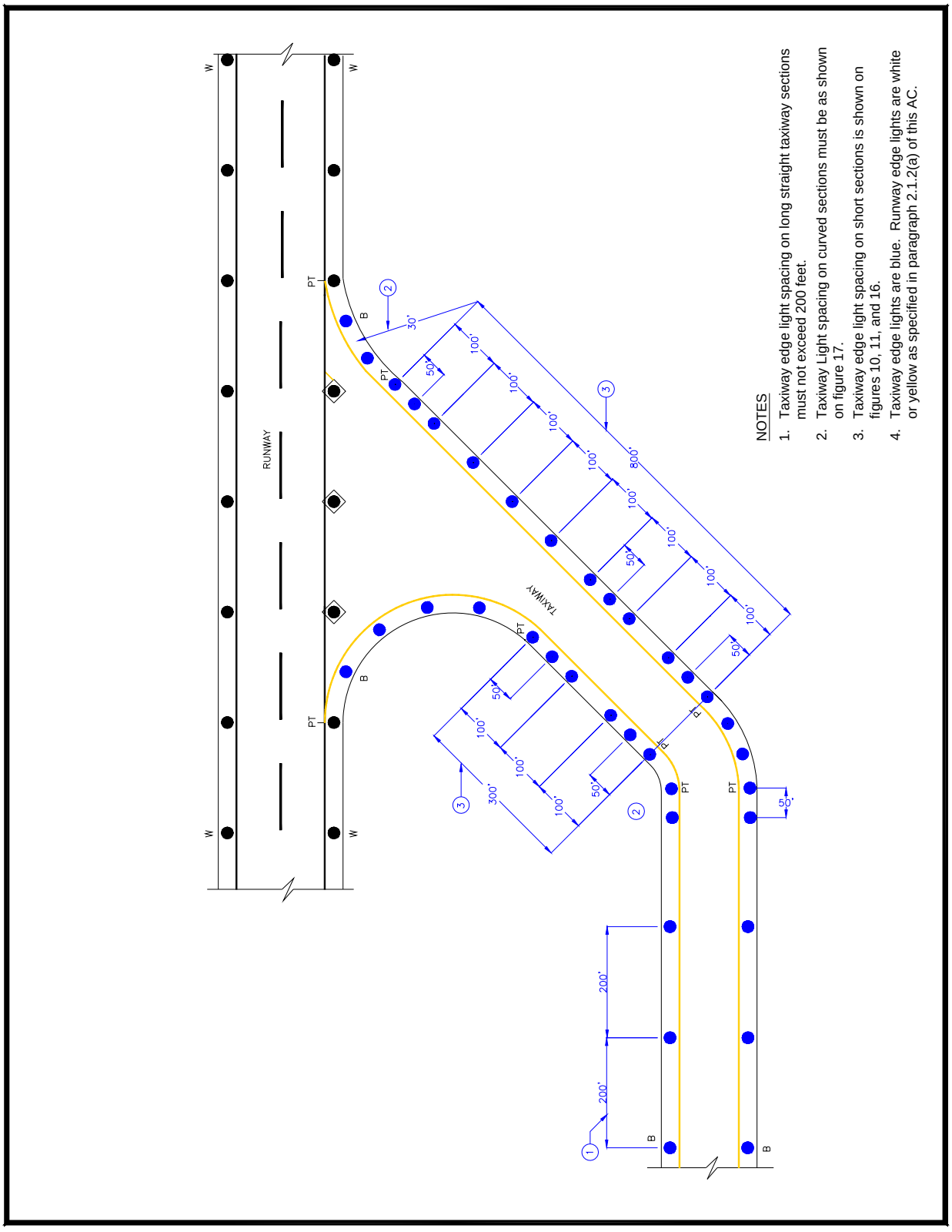


Figure 20. Typical Edge Lighting Configuration.

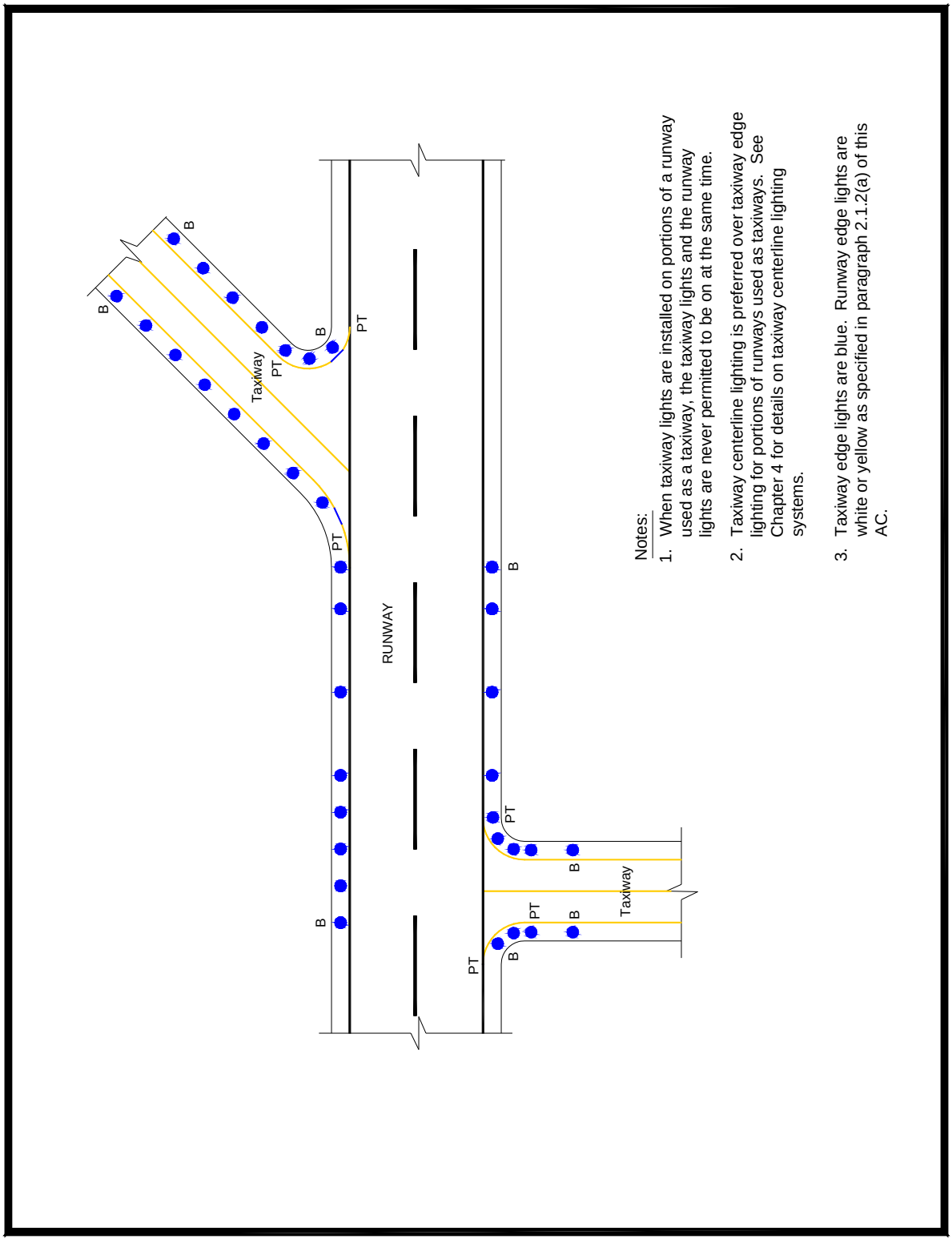


Figure 21. Typical Edge Lighting for Portions of Runways Used as Taxiway (When Taxiway Lights Are "On").

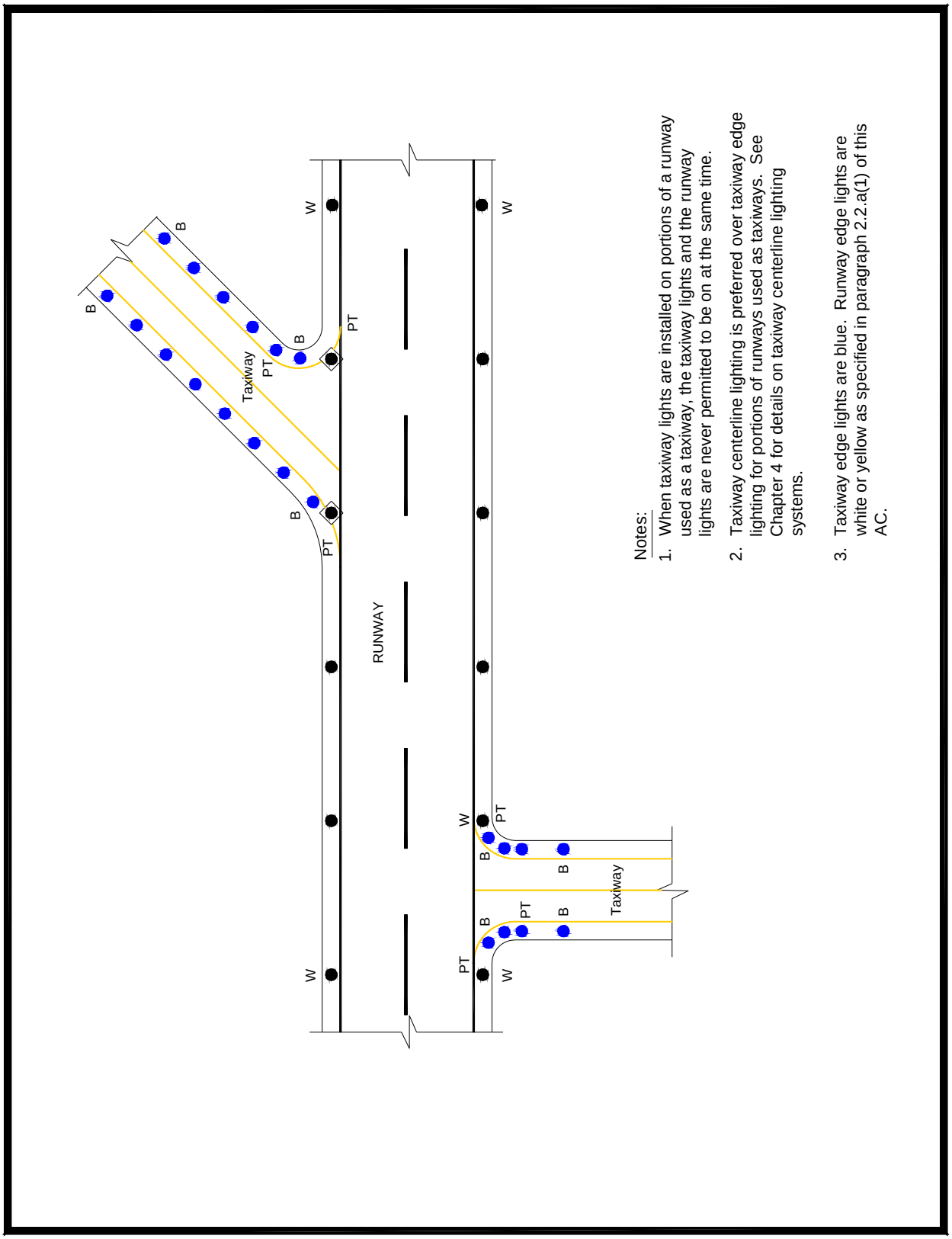


Figure 22. Typical Edge Lighting for Portions of Runways Used as Taxiway (When Runway Lights Are "On").

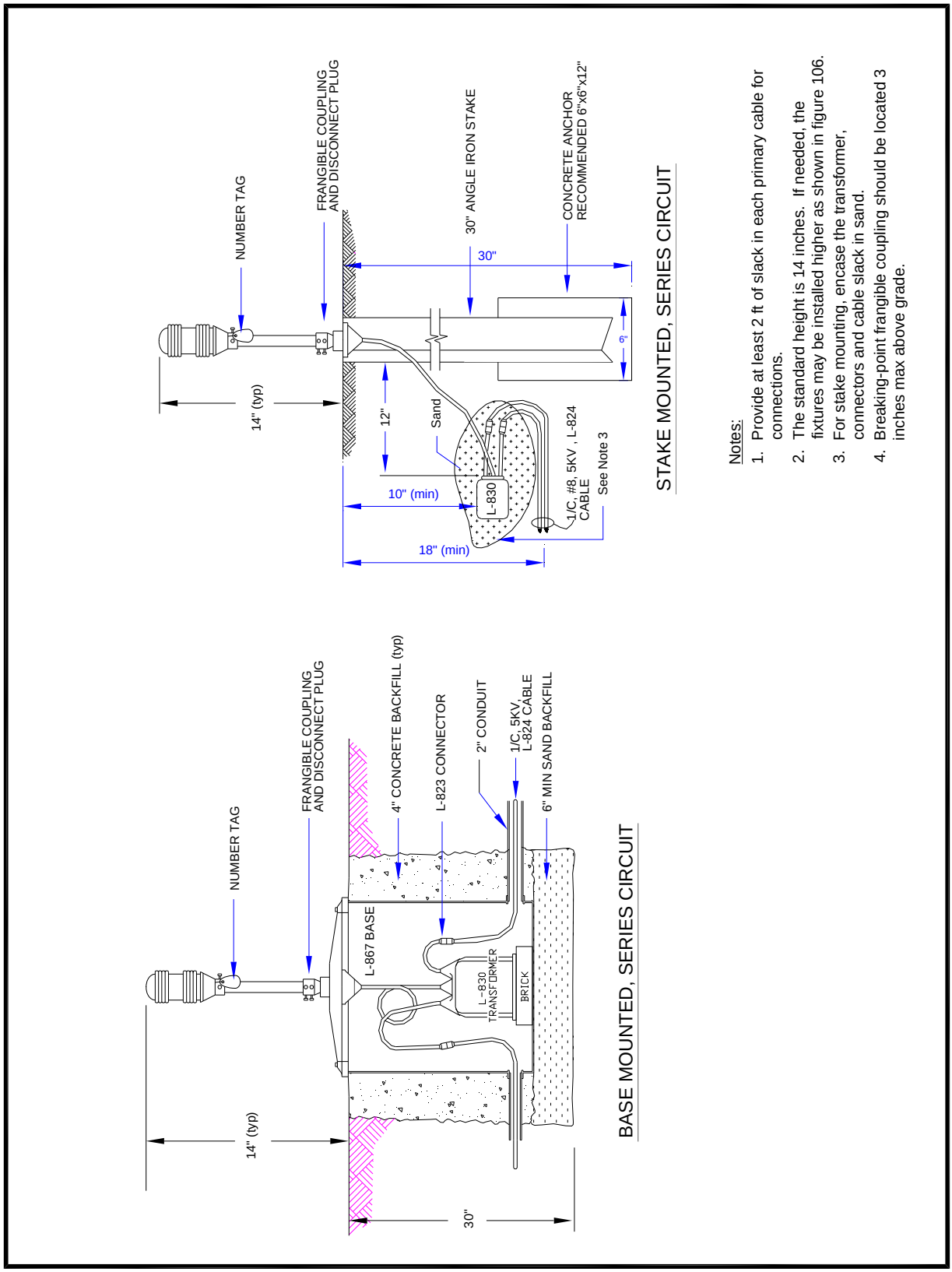


Figure 23. Light Fixture Wiring.

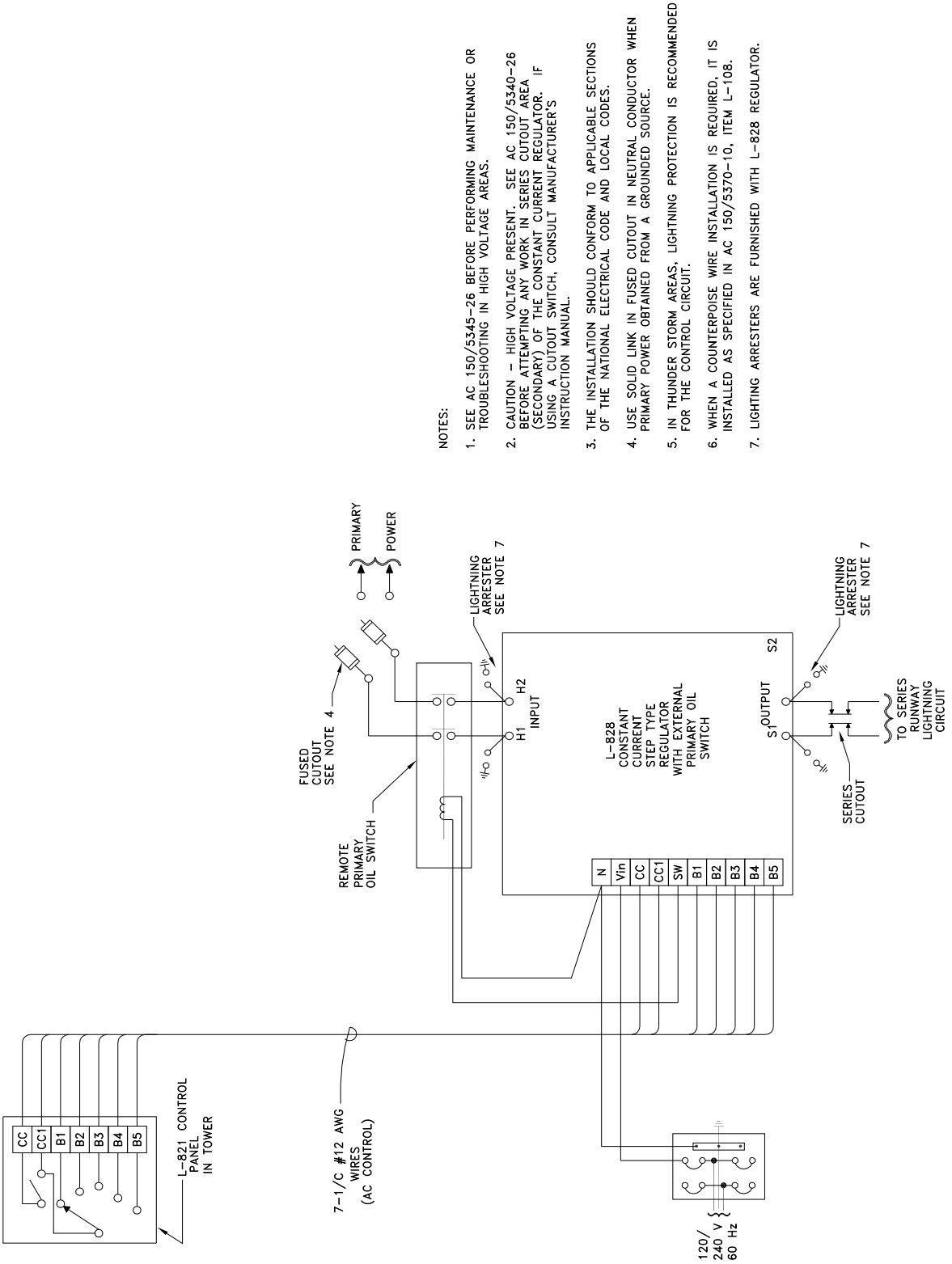
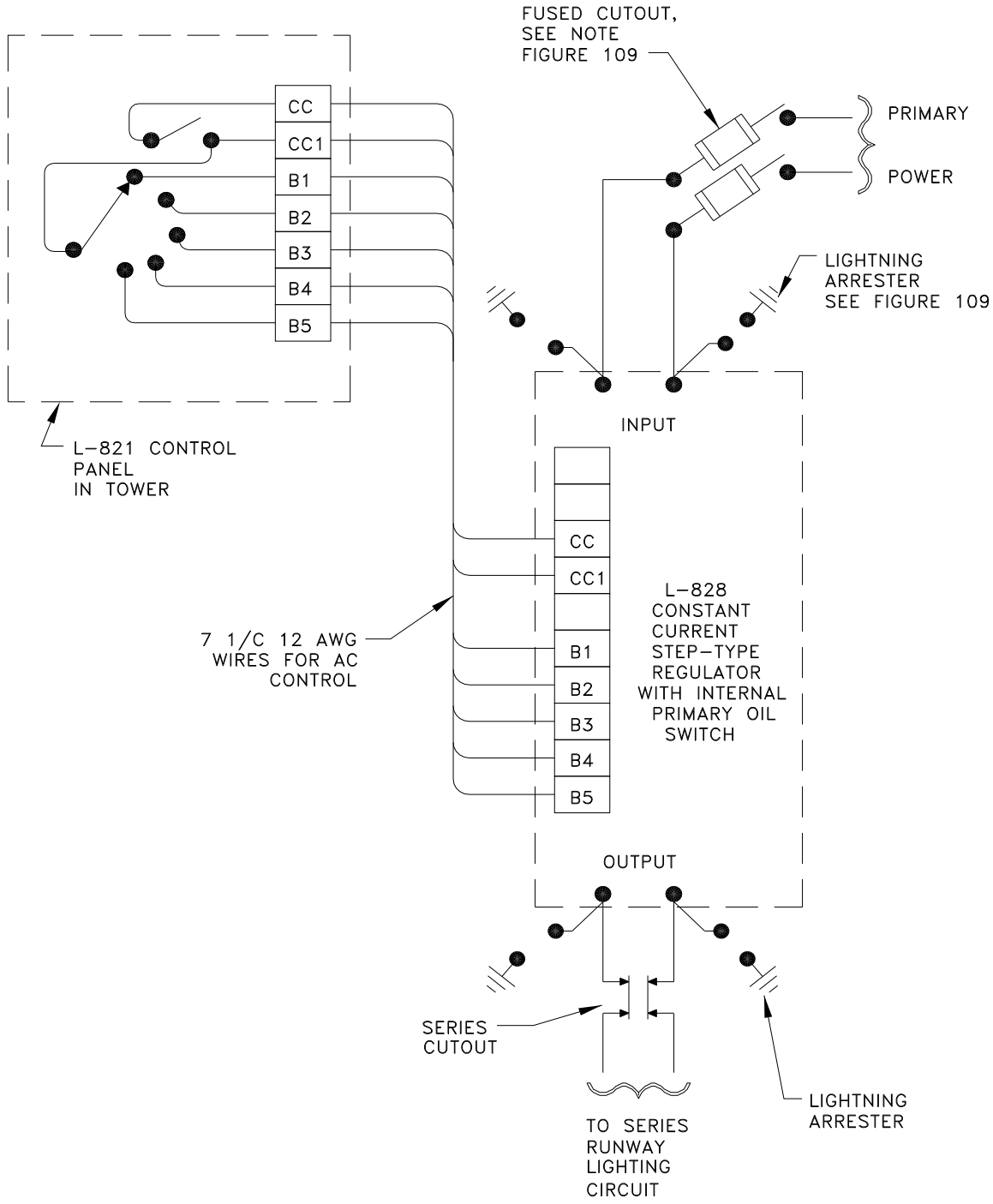


Figure 24. Typical Wiring Diagram Utilizing L-828 Step-type Regulator with External Remote Primary Oil Switch.



NOTE:

PERFORM ALL CONSTANT CURRENT REGULATOR MAINTENANCE, TROUBLESHOOTING, AND SAFETY TAG OUT PROCEDURES PER AC 150/5340-26.

Figure 25. Typical Wiring Diagram Utilizing L-828 Step-type Regulator with Internal Control Power and Primary Oil Switch.

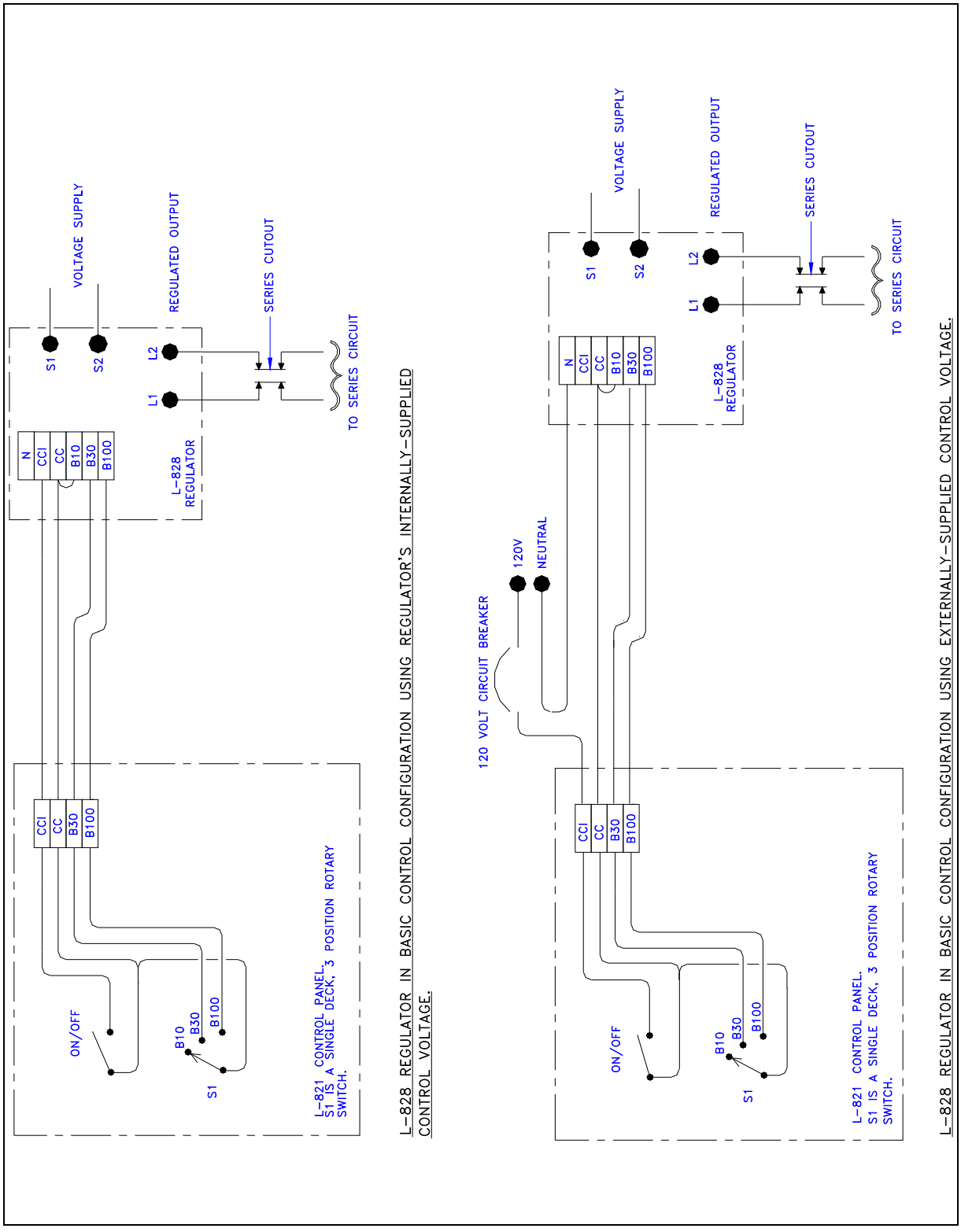


Figure 26. Typical Basic 120 Volt AC Remote Control System.

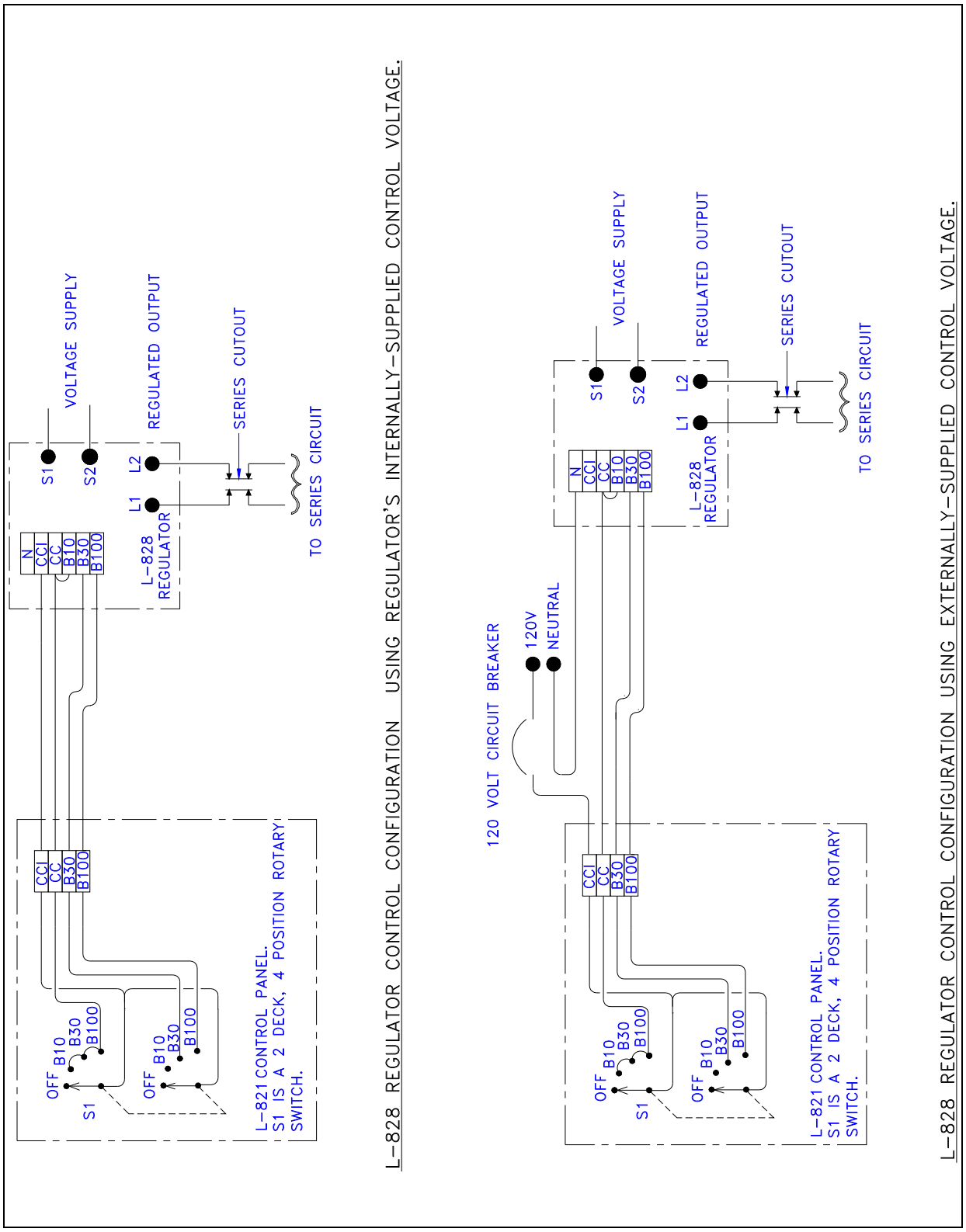


Figure 27. Alternative 120 Volt AC Remote Control System.

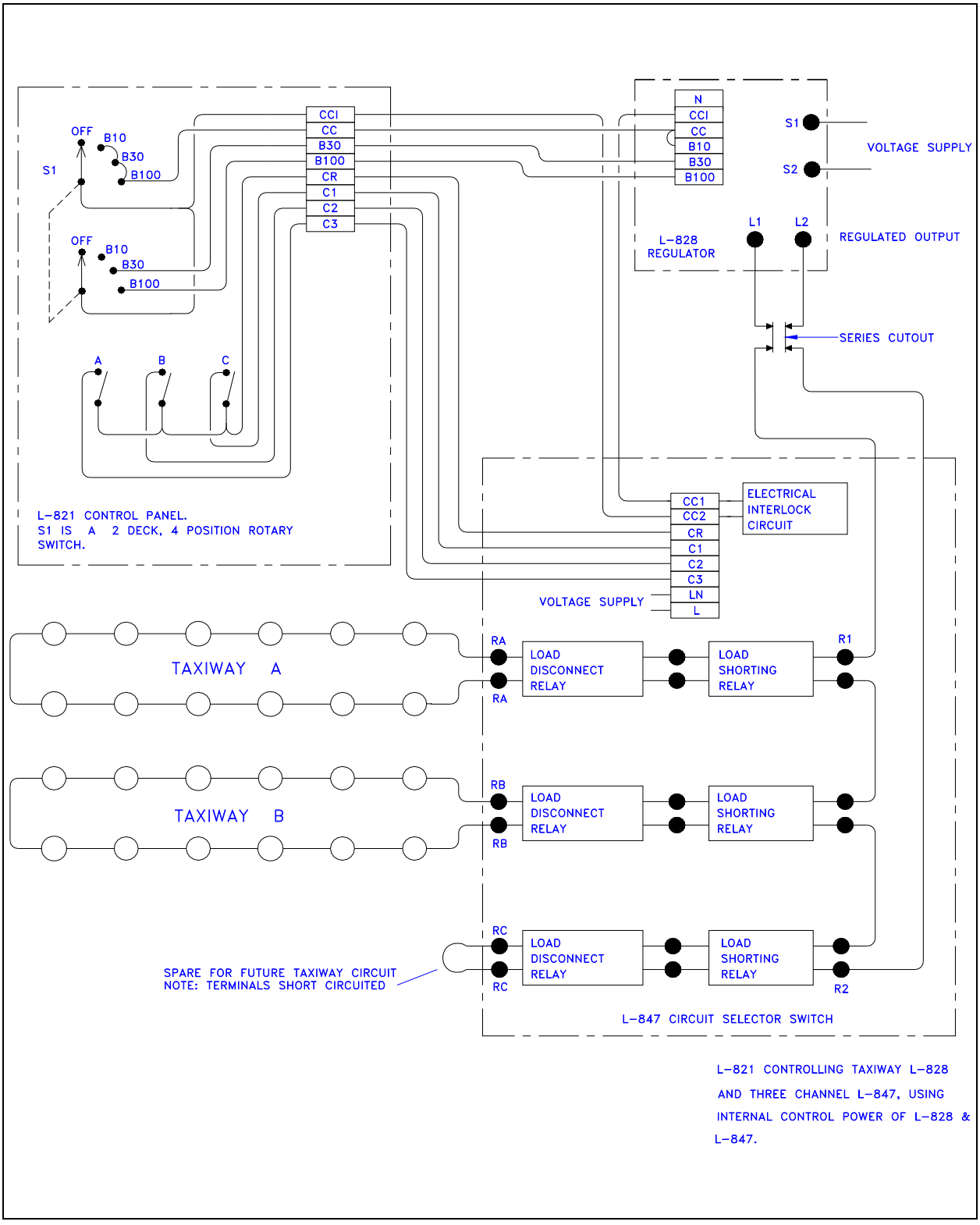


Figure 28. Typical 120 Volt AC Remote Control System with L-847 Circuit Selector Switch.

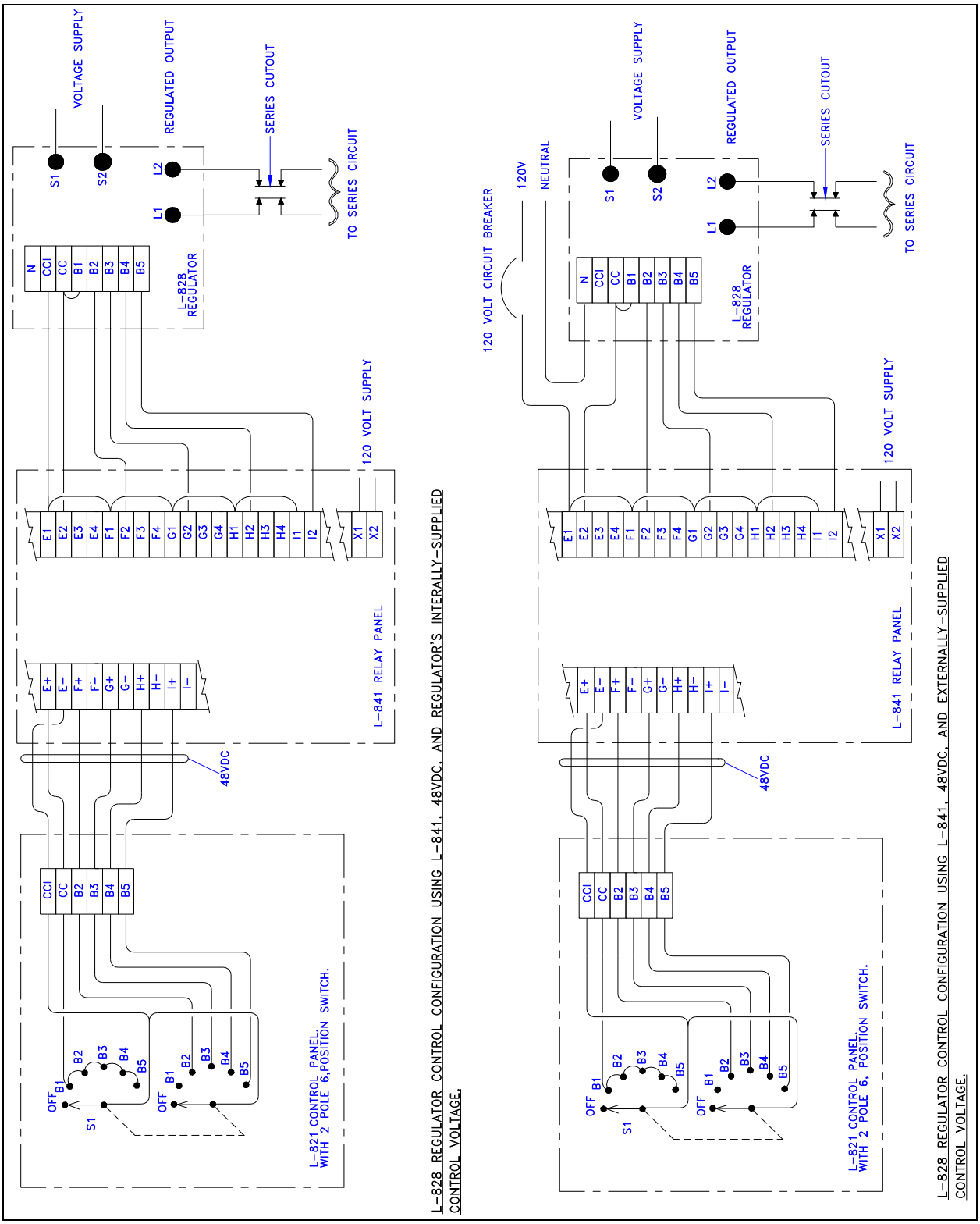


Figure 29. Typical 48 VDC Remote Control System with 5-Step Regulator and L-841 Relay Panel.

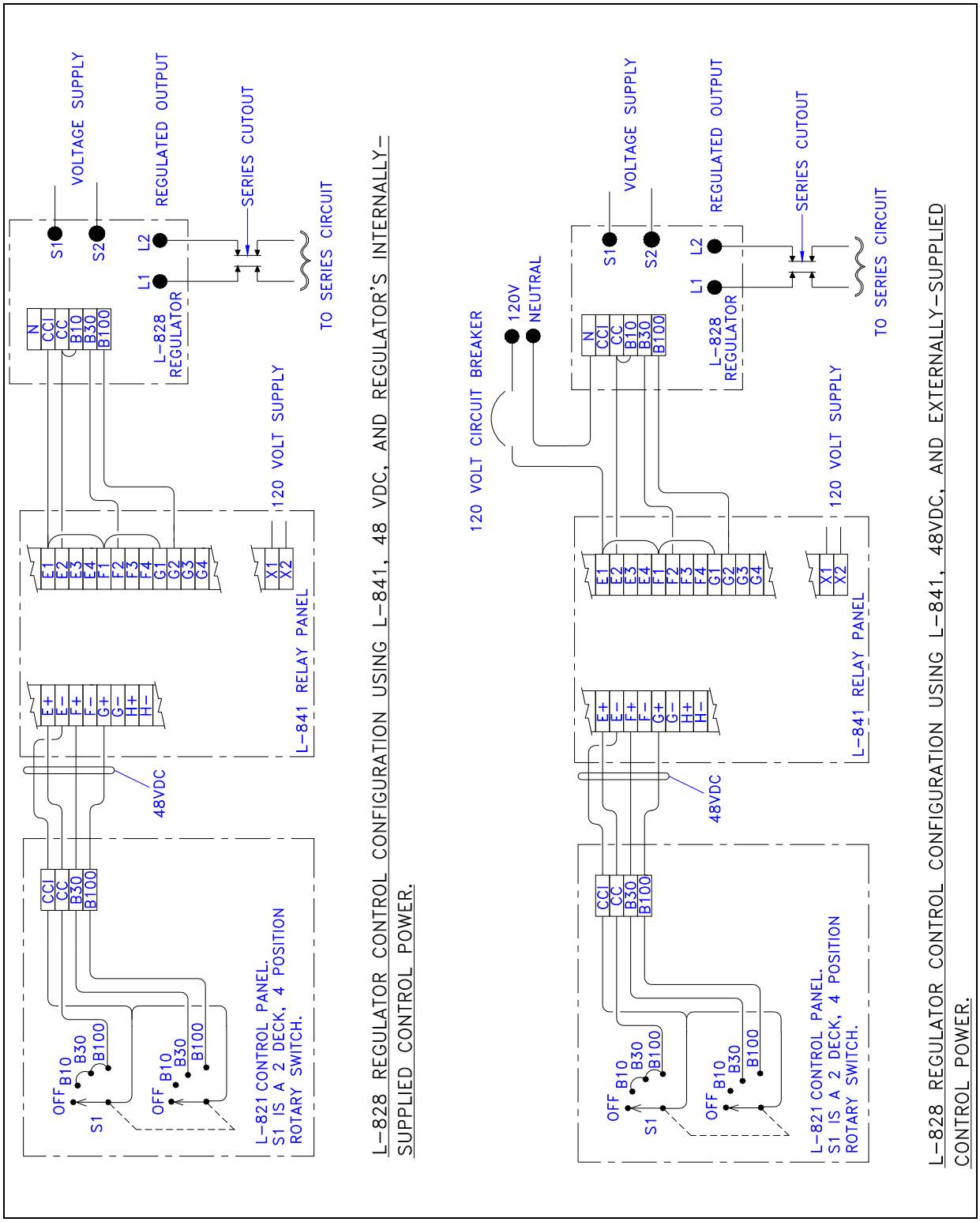


Figure 30. Typical 48 VDC Remote Control System with 3-Step Regulator and L-841 Relay Panel.

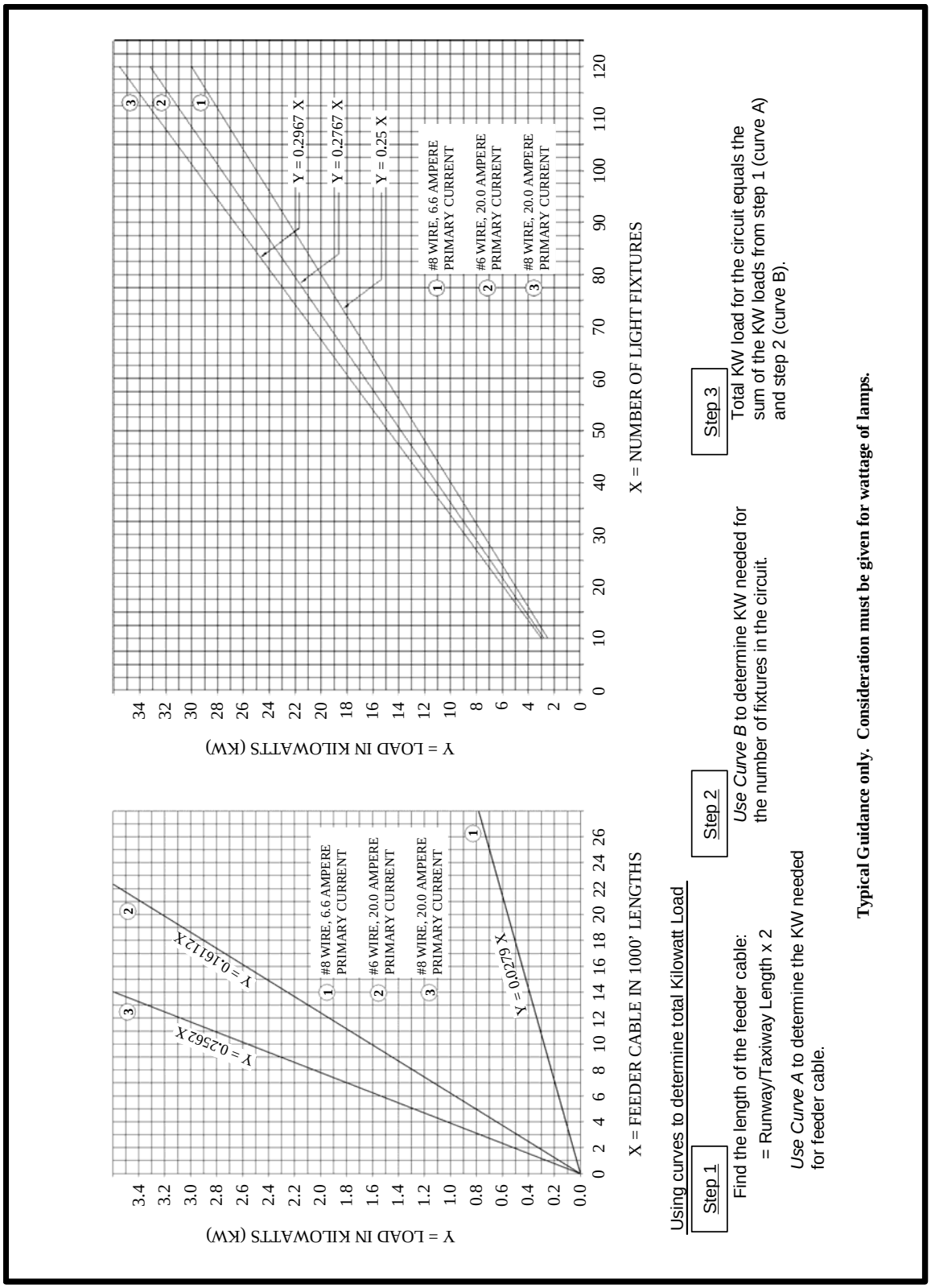


Figure 31. Curves for Estimating Loads in High Intensity Series Circuits.

Using curves to determine total Kilowatt Load

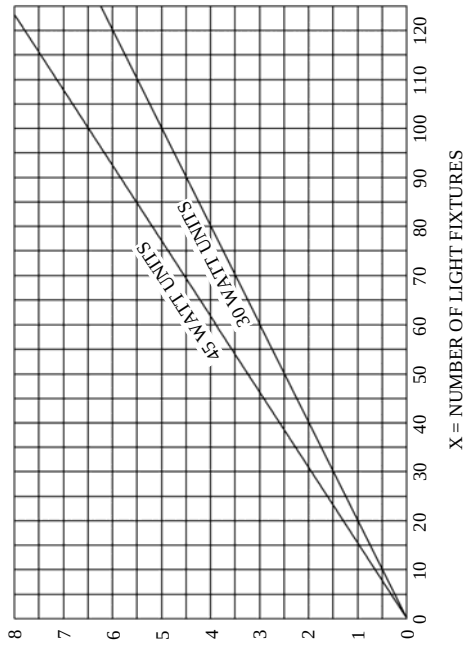
1. Computations based on actual circuit load tests.
2. In Curve A find kilowatt load (KW) for the total number of fixtures, using the applicable lines (i.e. 45 watt or 30 watt).
3. Basis for computing unit loads in Curve A:

30/45 watt transformer with 45 watt lamp	54.7 watts
Cable loss, lamp tolerance, etc.	10.3 watts
Total estimated load per 45 watt unit	65.0 watts
30/45 watt transformer with 30 watt lamp	40.4 watts
Cable loss, lamp tolerance, etc.	9.6 watts
Total estimated load per 30 watt unit	50.0 watts

4. Basis for computing load per 1000 ft of No. 8 AWG cable in Curve B:

   $I^2R = (6.6A)^2 \times 0.6405$ ohms/1,000 ft = 27.9 watts/1000 ft

5. Total KW load per circuit equal the sum of the KW loads from curve A and curve B.



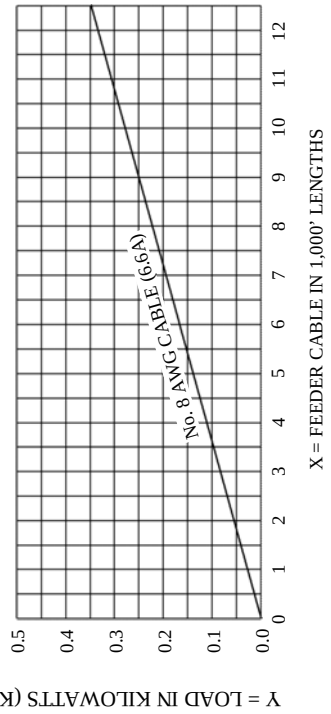
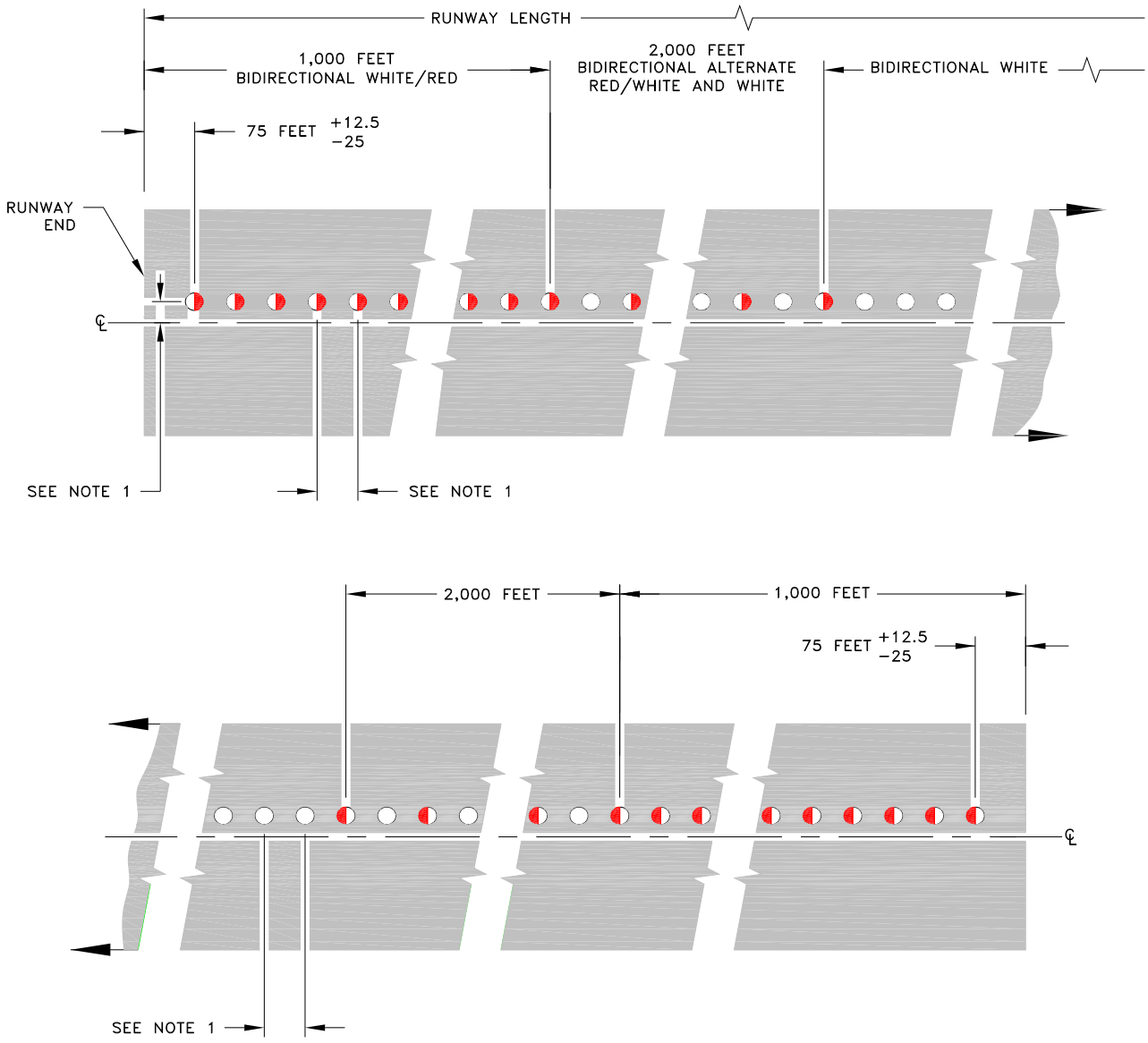


Figure 32. Curves for Estimating Loads in Medium Intensity Series Circuits.



NOTE:

1. REFER TO PARAGRAPH 3.3a1 FOR RUNWAY CENTERLINE LIGHT FIXTURES PLACEMENT AND TOLERANCES.

LEGEND:

○ BIDIRECTIONAL RCL – WHITE BOTH DIRECTIONS

◐ BIDIRECTIONAL RCL – RED IN DIRECTION OF SHADED SIDE
WHITE IN DIRECTION OF WHITE SIDE

Figure 33. Runway Centerline Lighting Layout.

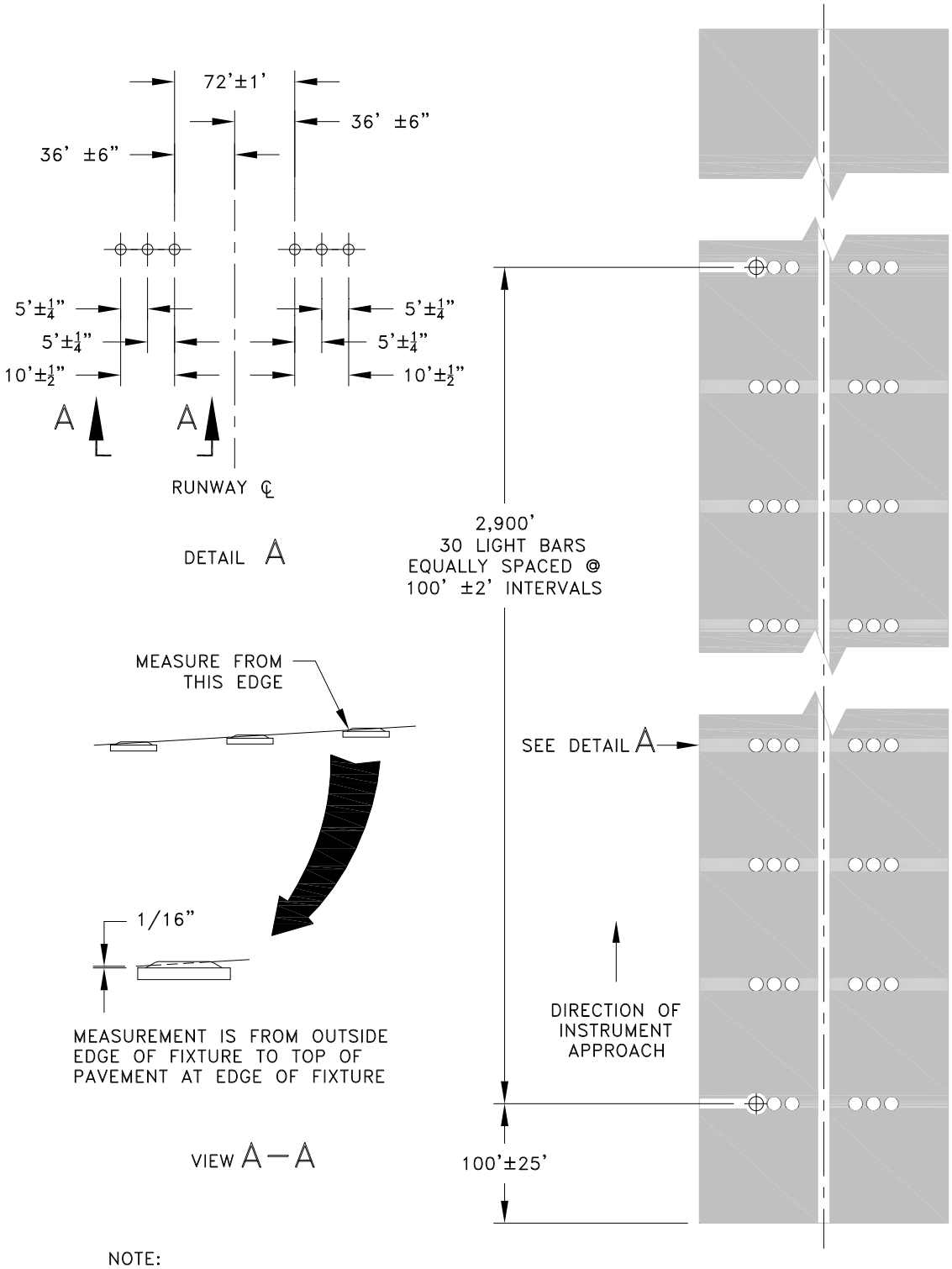


Figure 34. Touchdown Zone Lighting Layout.

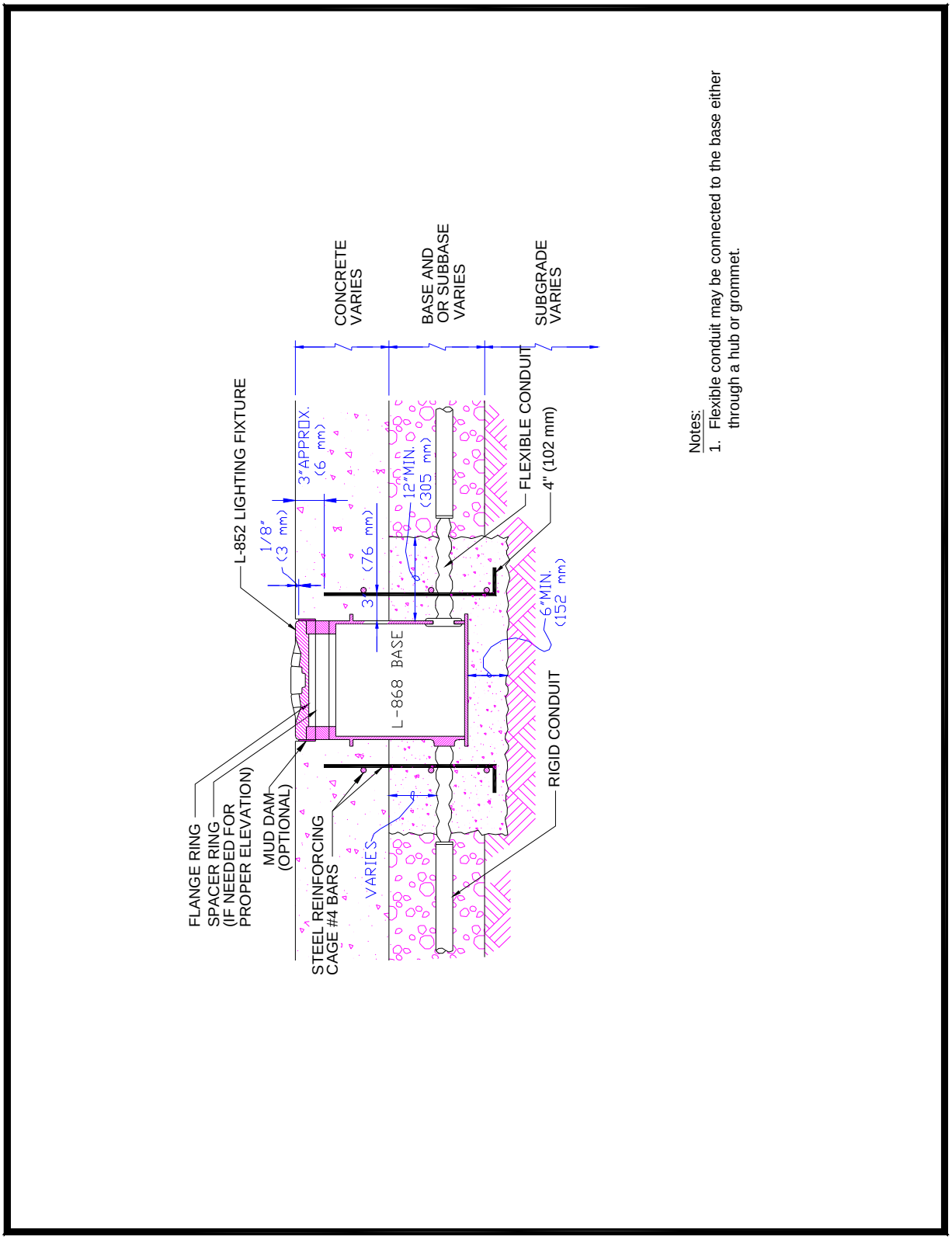


Figure 35. Section Through Non-adjustable Base and Anchor, Base and Conduit System, Rigid Pavement.

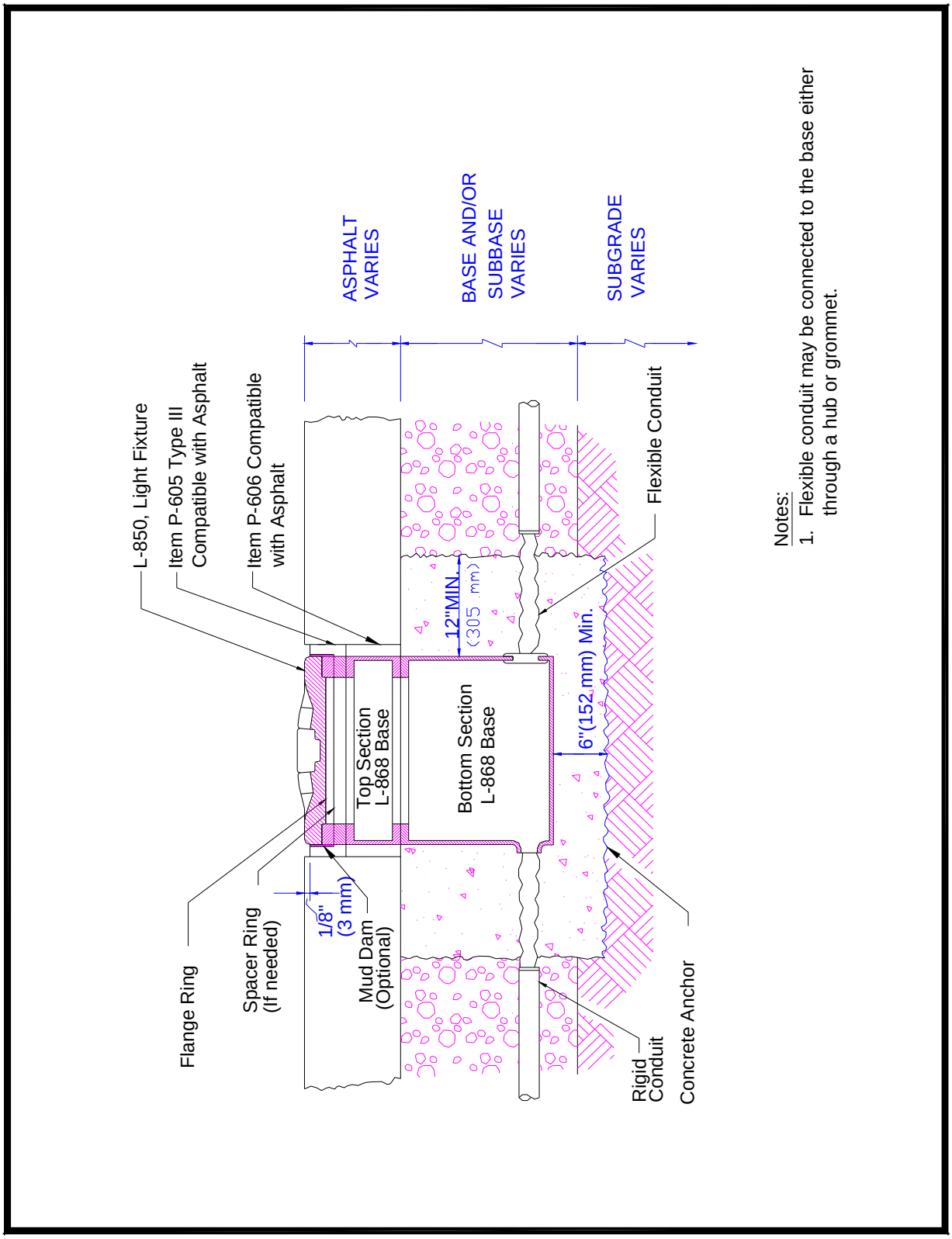


Figure 36. Section Through Non-adjustable Base and Anchor, Base and Conduit System, Flexible Pavement.

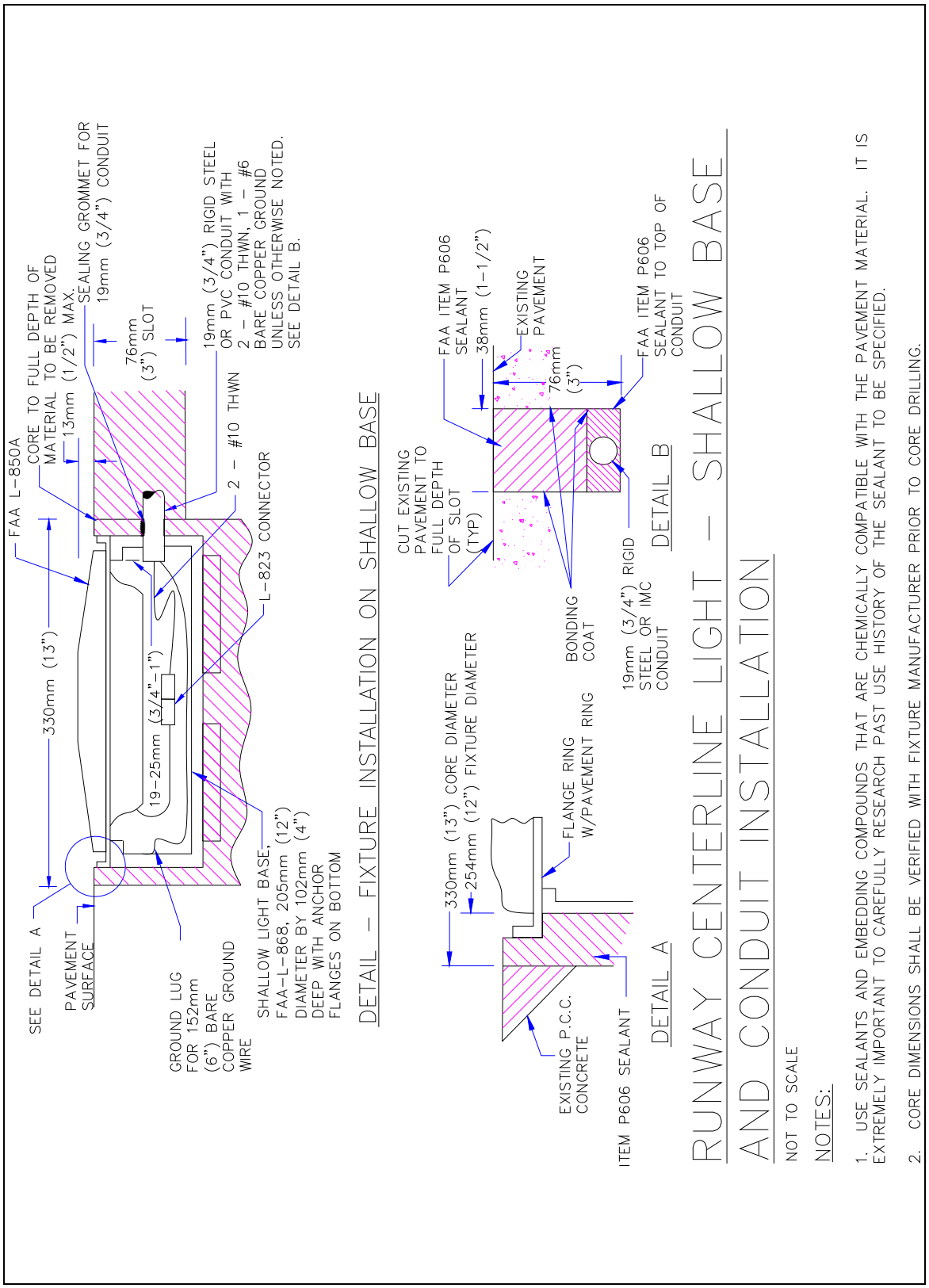
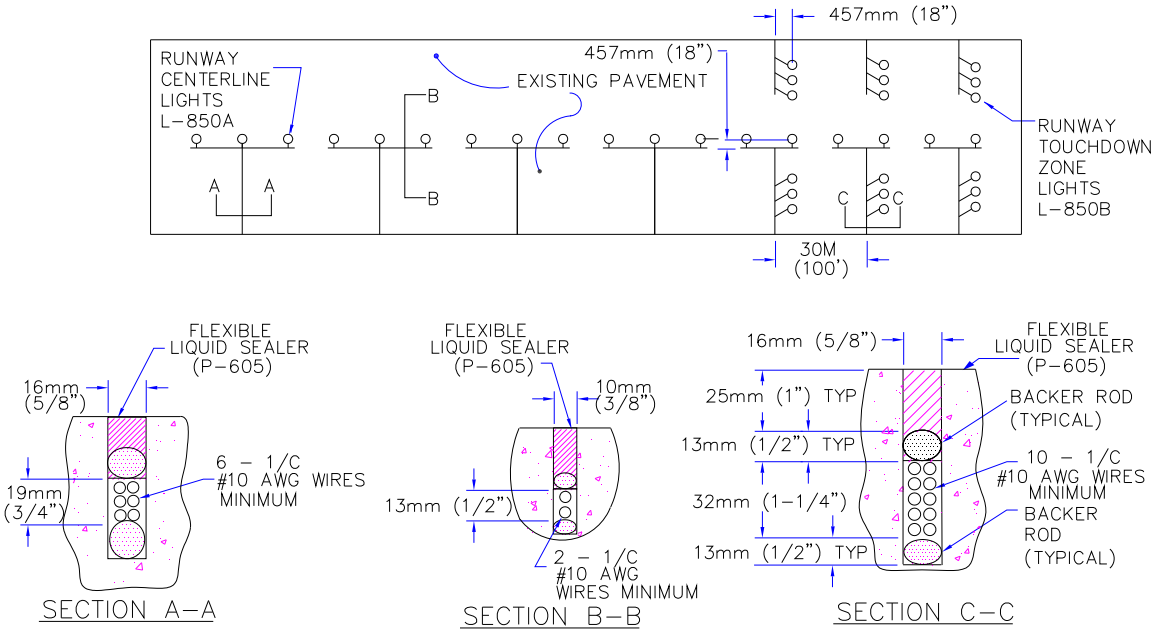
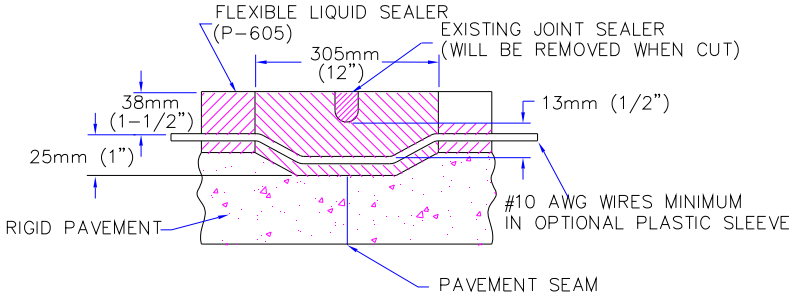


Figure 37. Runway Centerline Light – Shallow Base & Conduit Installation.



WIREWAY DETAILS FOR
CENTERLINE AND TOUCHDOWN ZONE LIGHTS



JOINT INTERSECTION AND SAWING DETAILS

WIRES ARE NOT TO BE LESS THAN 13mm (1/2") BELOW EXISTING JOINT SEAL COMPOUND

SAW KERF WIREWAY DETAILS:
R/W CENTERLINE & TDZ LIGHTS

NOT TO SCALE

NOTES:

1. DIAMETER OF BACKER ROD SHALL BE 6mm (1/4") LARGER THAN WIDTH OF SAW KERF.
2. IN EXISTING PAVEMENT, THE EASIEST METHOD OF INSTALLING IN-PAVEMENT LIGHTING IS TO CORE A HOLE FOR THE FIXTURE AND MAKE A SAW KERF FOR THE WIREWAYS. PRIMARY CABLES AND TRANSFORMERS IN THIS CASE ARE LOCATED AT THE EDGE OF THE RUNWAY.
3. TO ASSURE A SUCCESSFULL INSTALLATION, CARE MUST BE TAKEN TO SEE THAT ALL SURFACES ARE SAND BLASTED AND DRIED BEFORE THE SEALER IS APPLIED.
4. USE SEALANTS THAT ARE CHEMICALLY COMPATIBLE WITH THE PAVEMENT MATERIAL. IT IS EXTREMELY IMPORTANT TO CAREFULLY RESEARCH PAST USE HISTORY OF THE SEALANT TO BE SPECIFIED.

Figure 38. Saw Kerf Wireway Details.

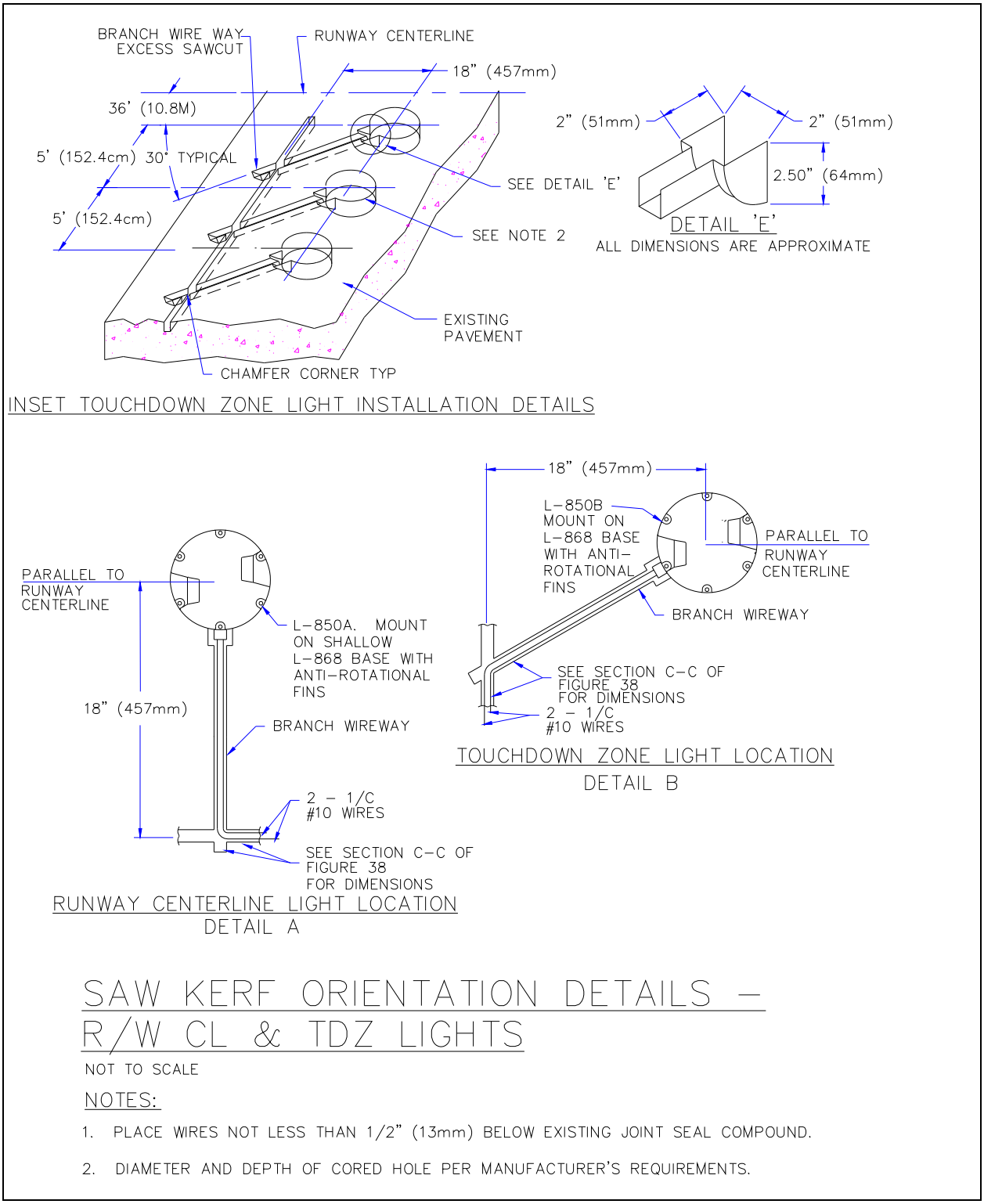


Figure 39. Saw Kerf Orientation Details – R/W Centerline and TDZ Lights.

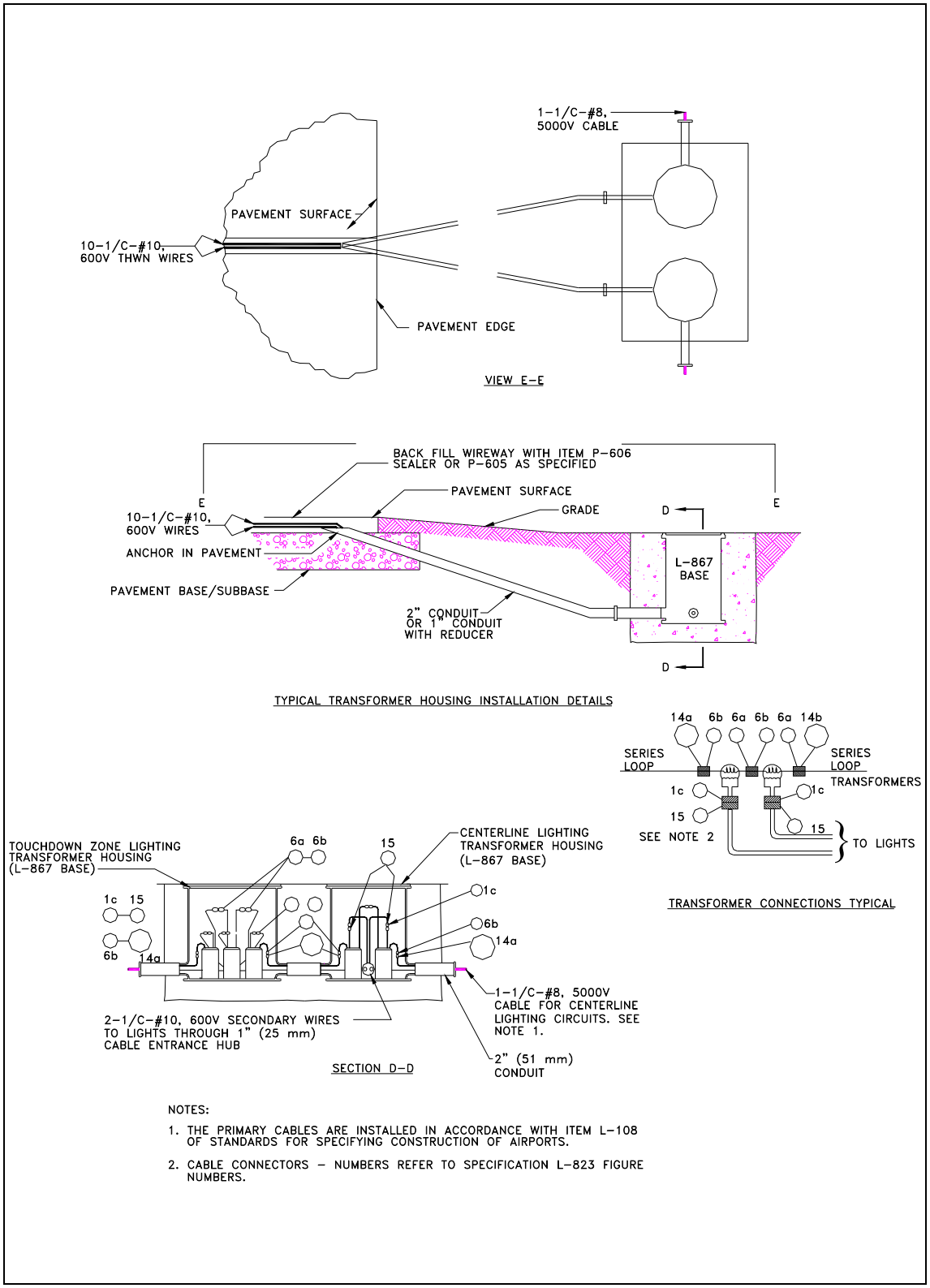


Figure 40. Transformer Housing Installation Details Inset Type Lighting Fixtures.

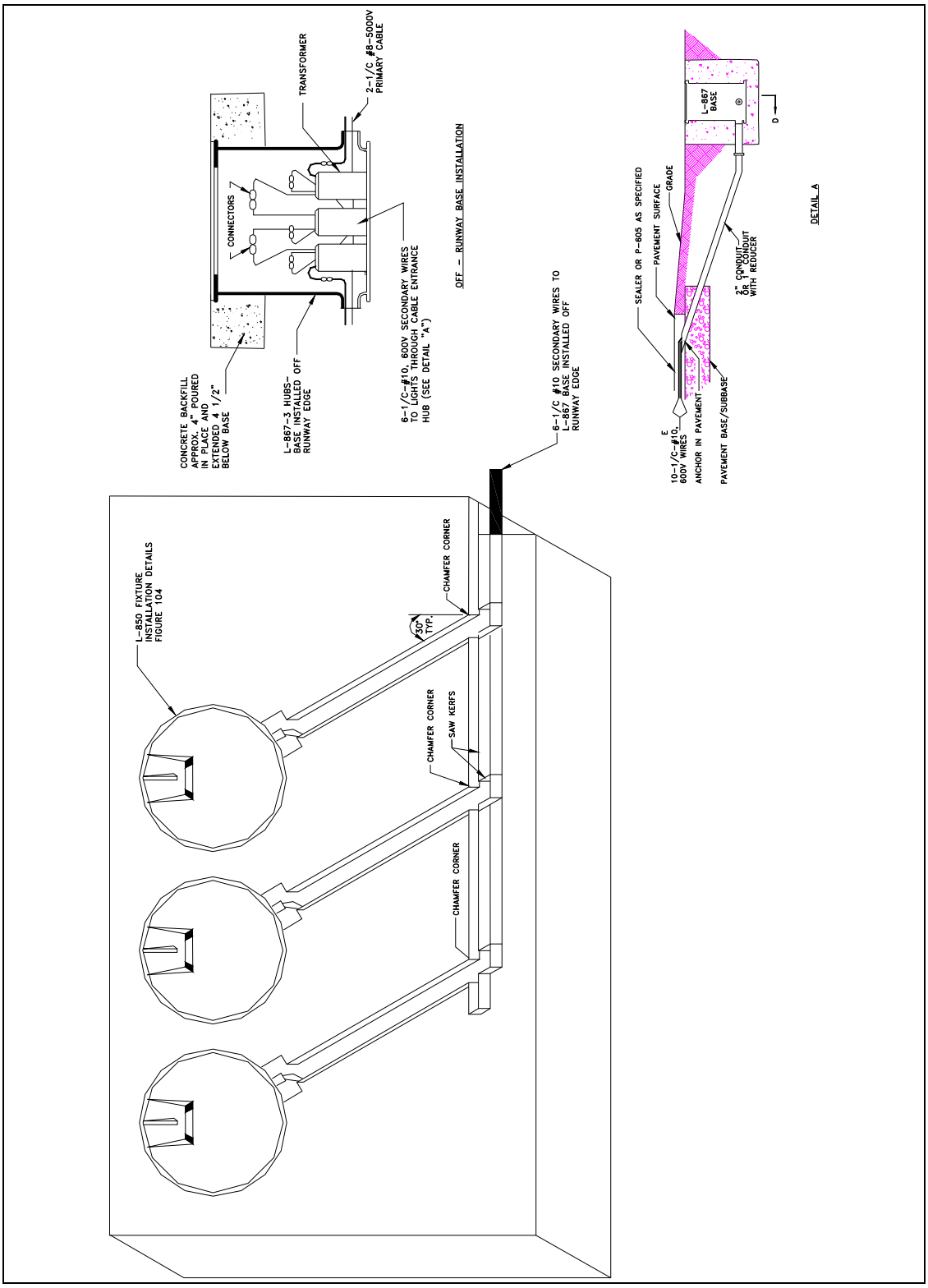


Figure 41. Typical Equipment Layout, Inset Type Lighting Fixtures.

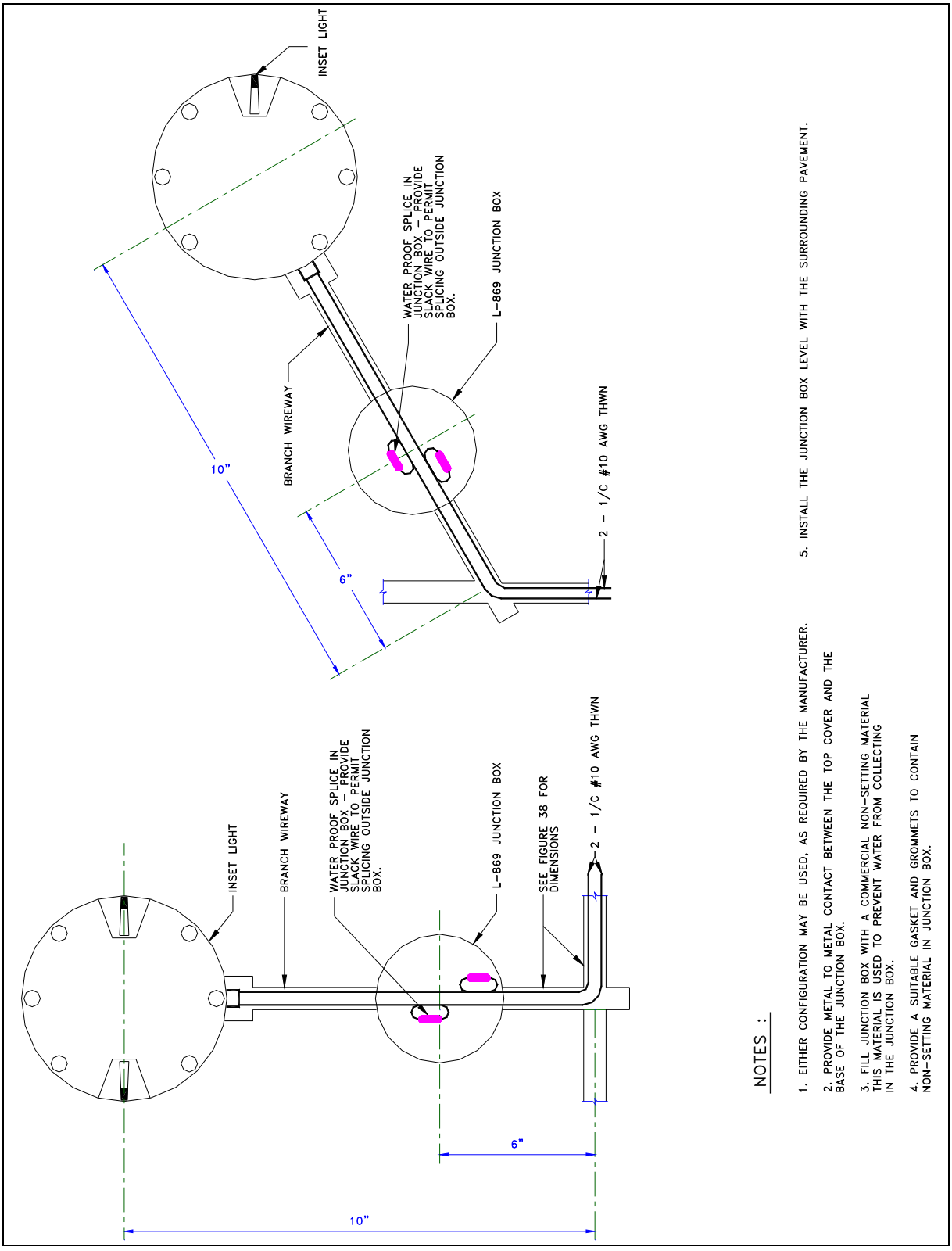


Figure 42. Junction Box for Inset Fixture Installation.

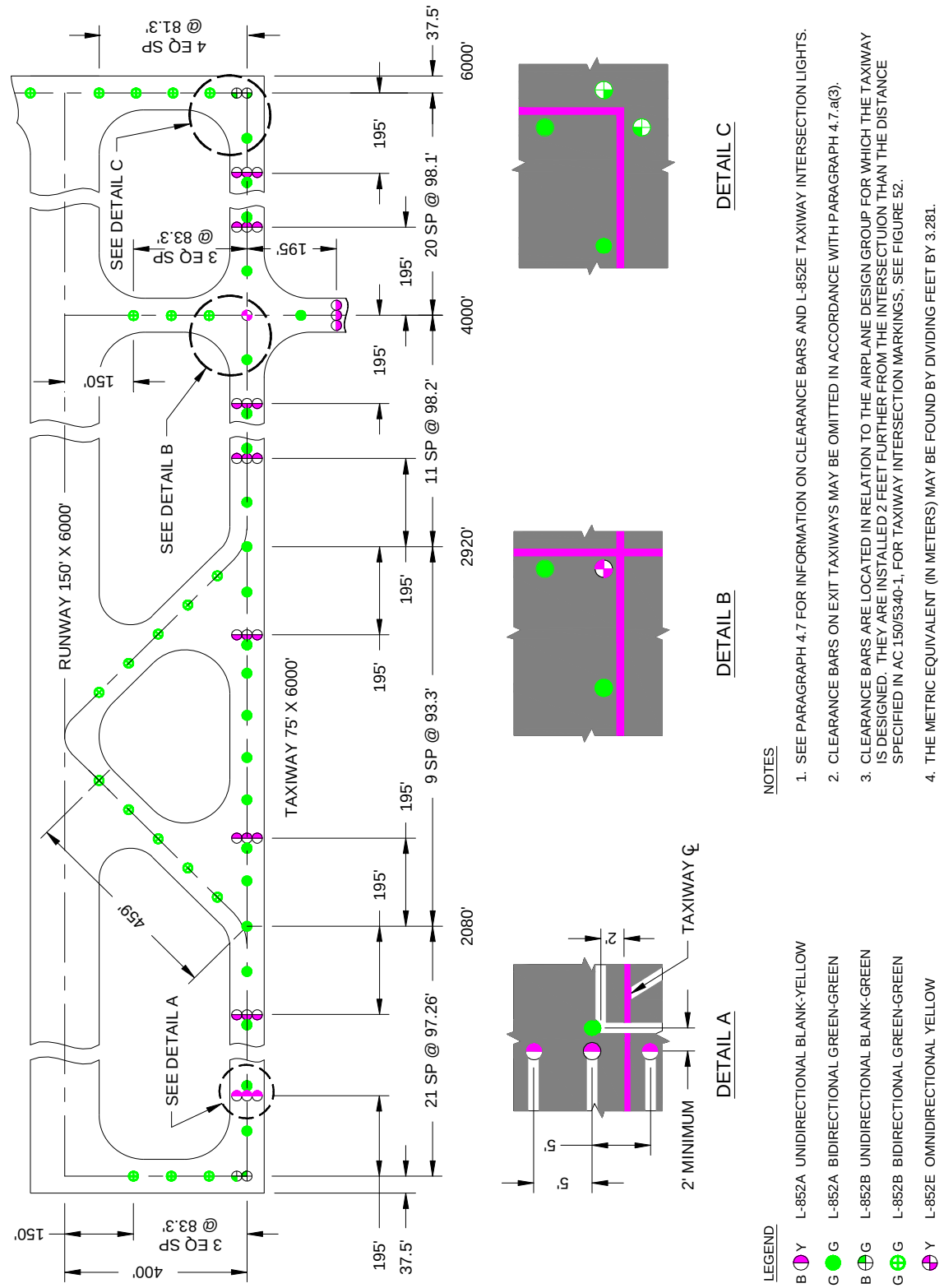


Figure 43. Typical Taxiway Centerline Lighting Configuration for Non-Standard Fillets (Centerline light spacing for operations above 1,200 feet (365 m) RVR).

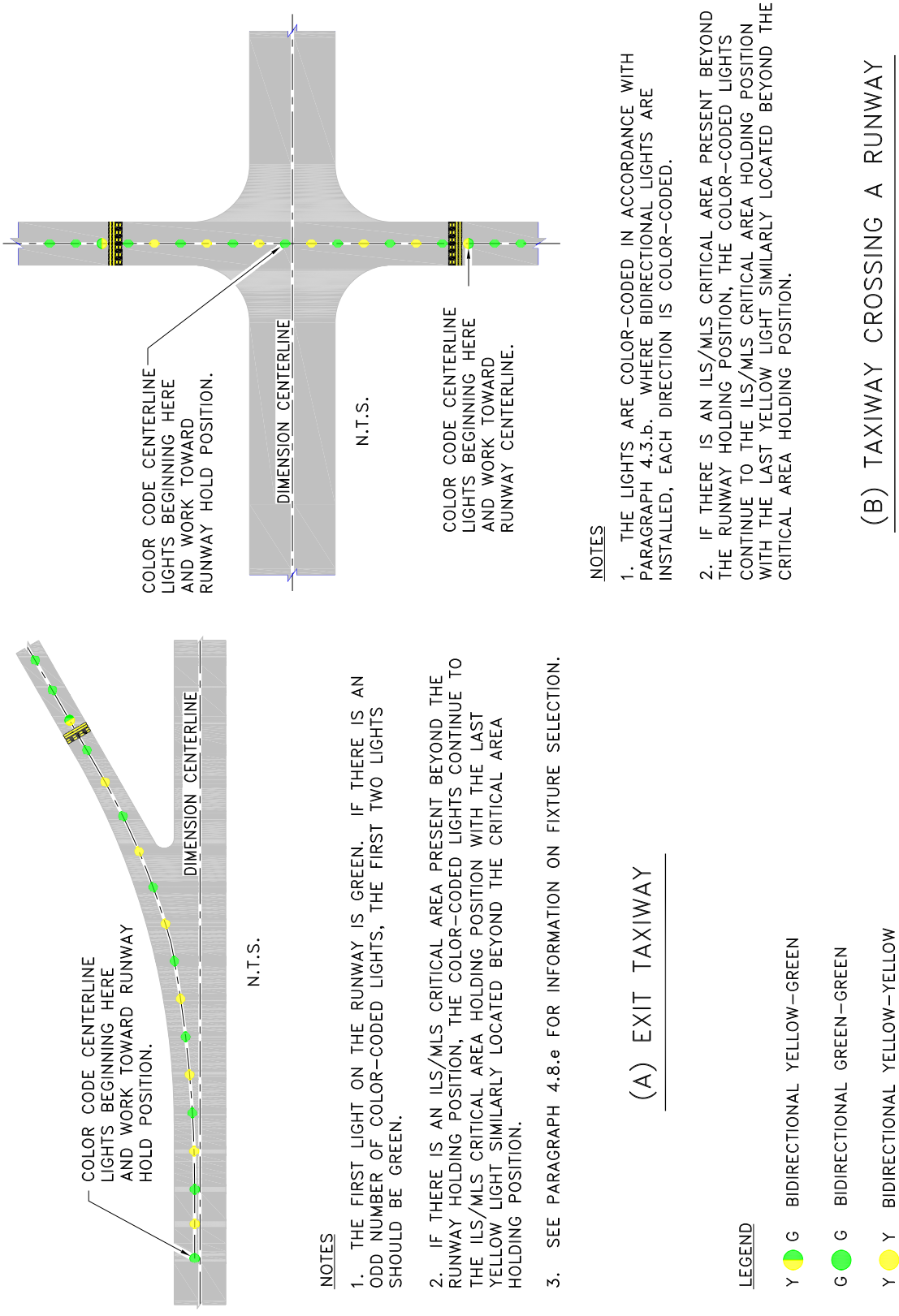


Figure 44. Color-Coding of Exit Taxiway Centerline Lights.

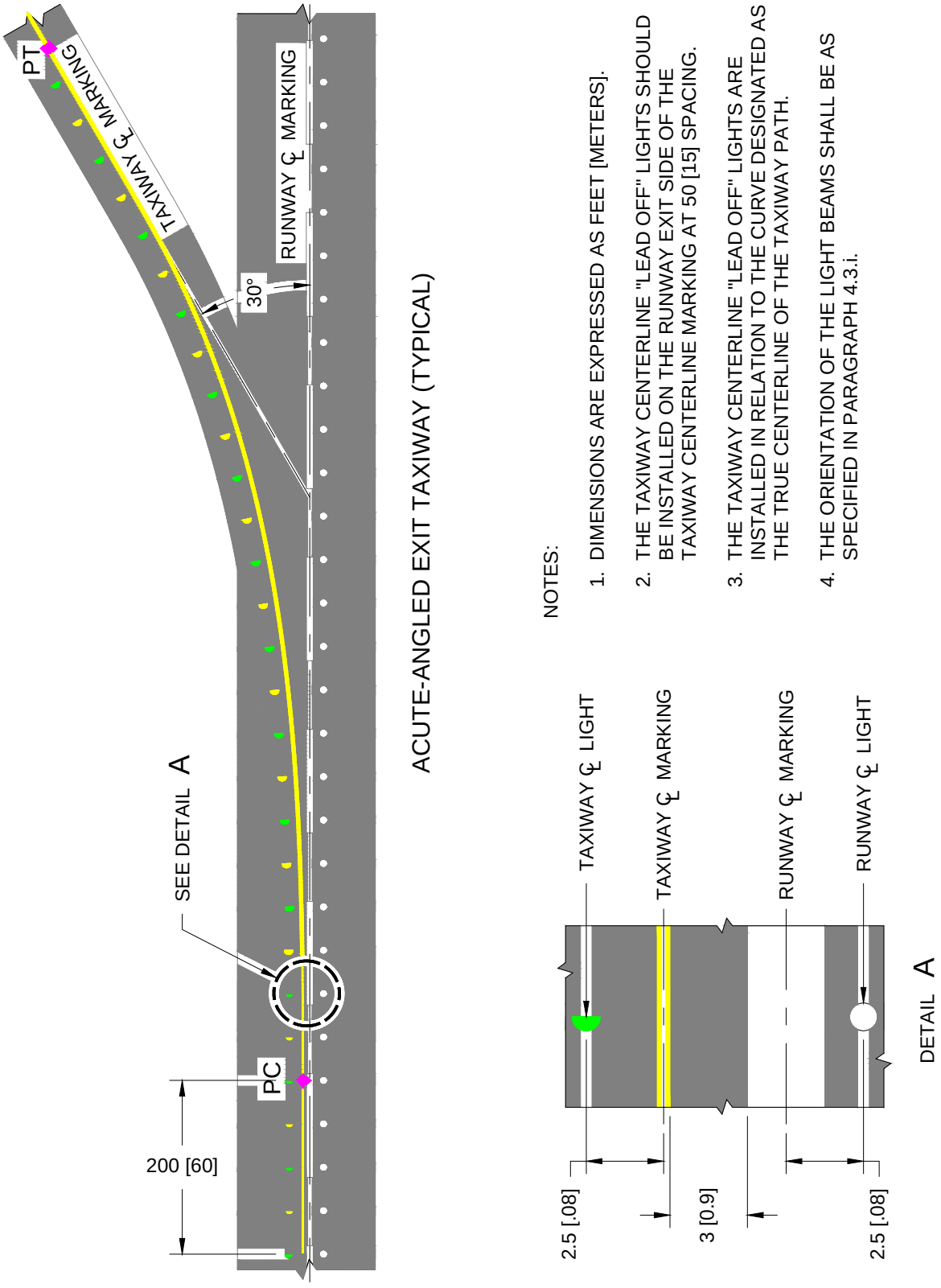


Figure 45. Taxiway Centerline Lighting Configuration for Acute-Angled Exits.

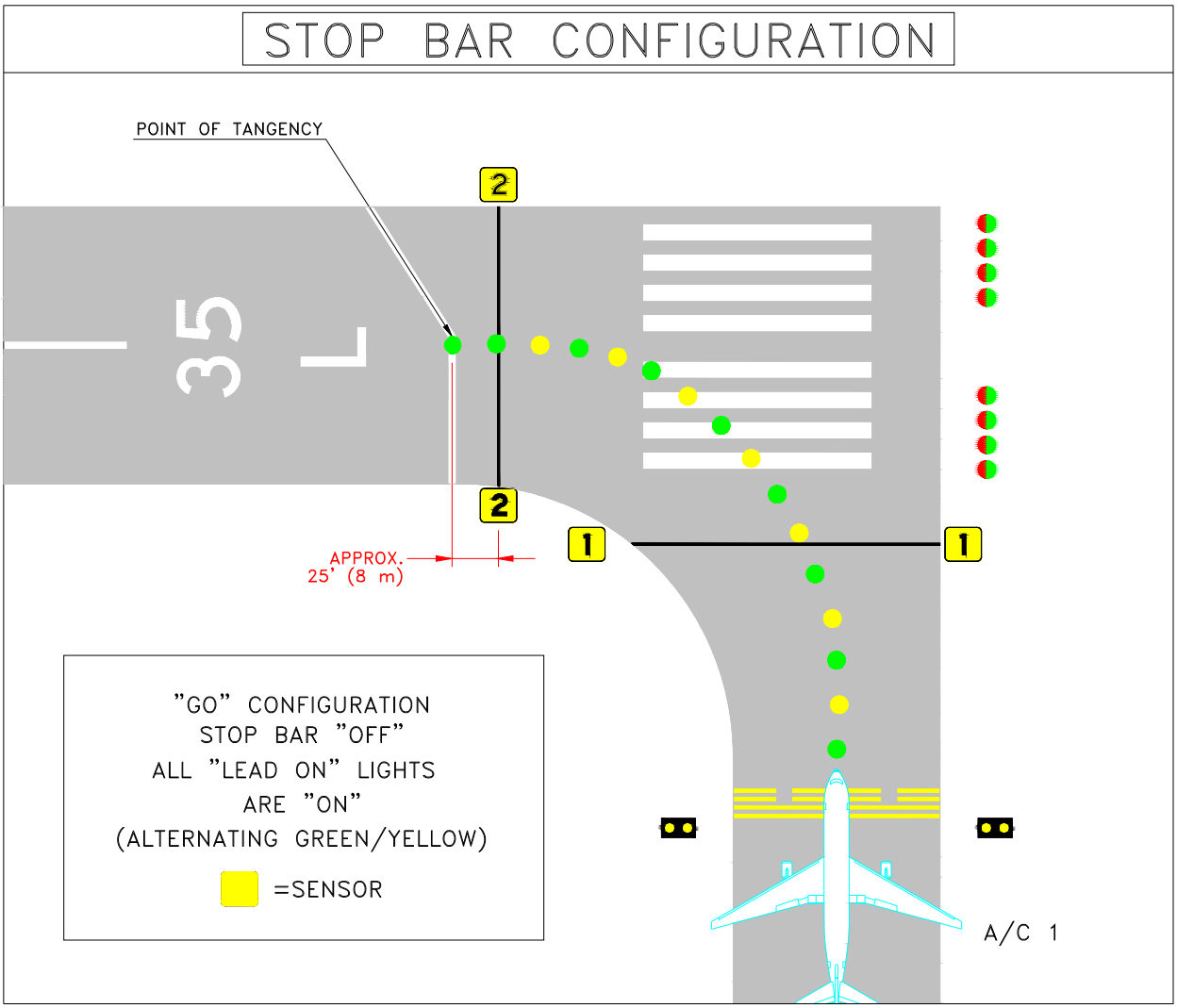


Figure 46. Controlled Stop Bar Design and Operation – "GO" Configuration.

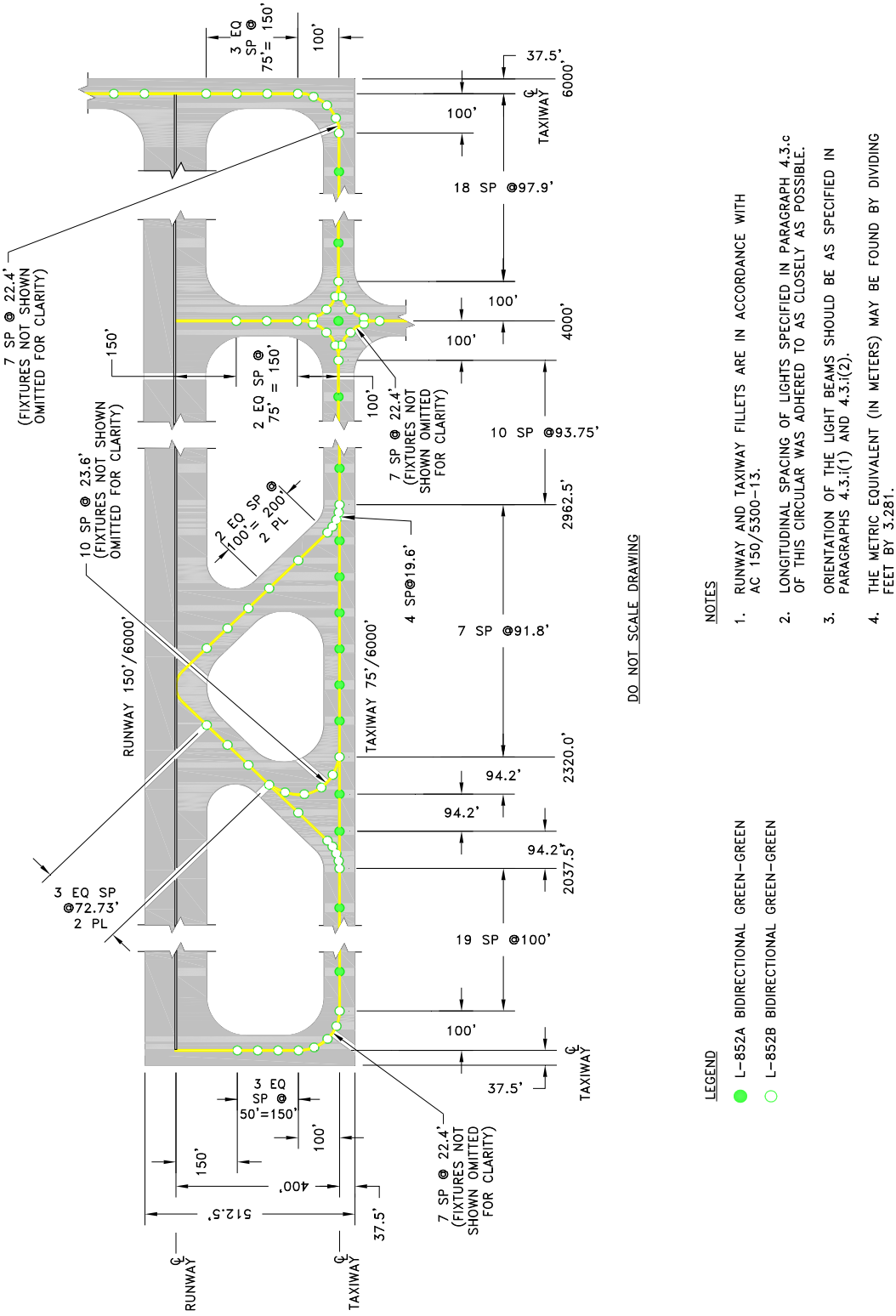


Figure 47. Typical Taxiway Centerline Lighting Configuration for Standard Fillets (Centerline light spacing for operations above 1,200 feet (365 m) RVR).

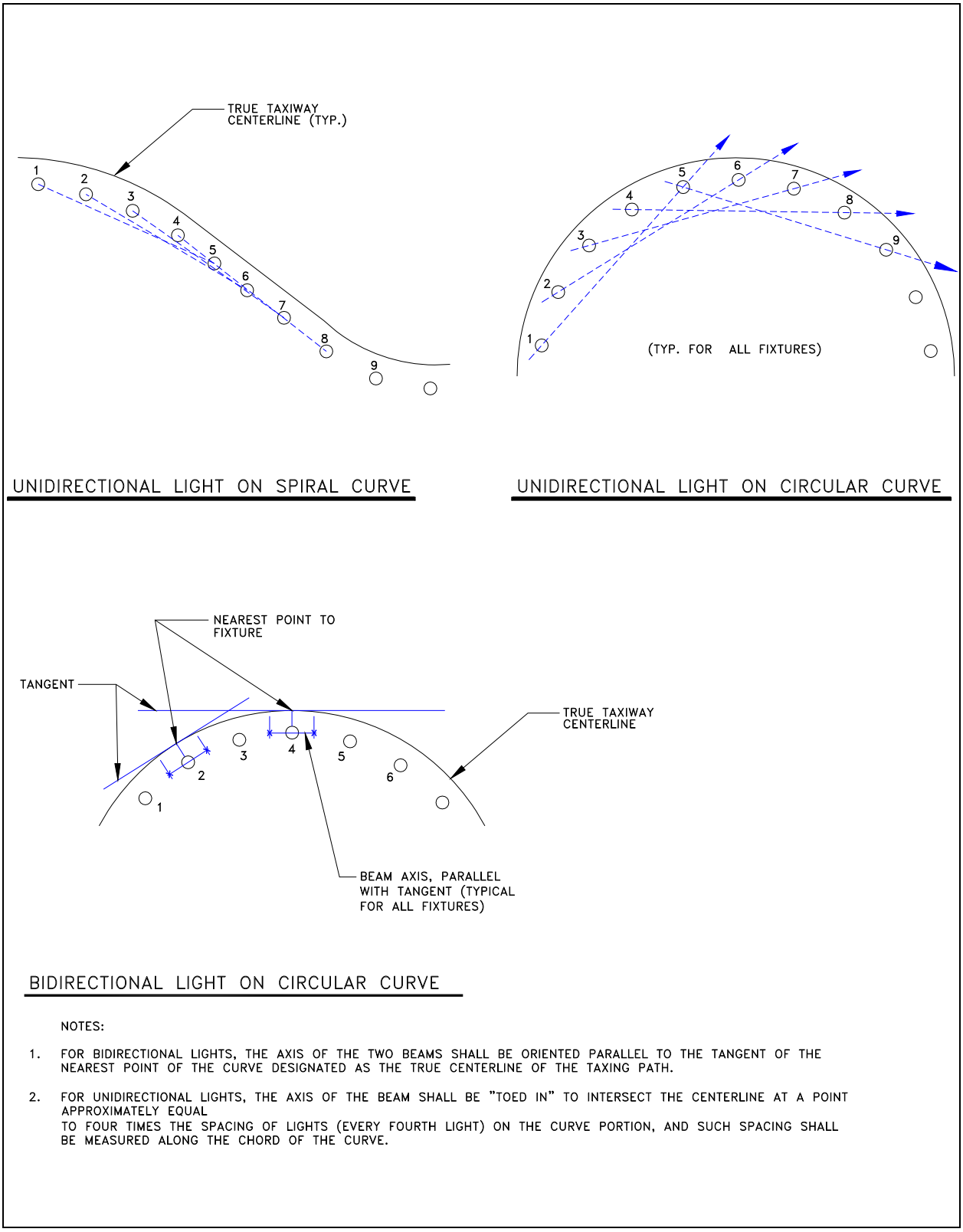
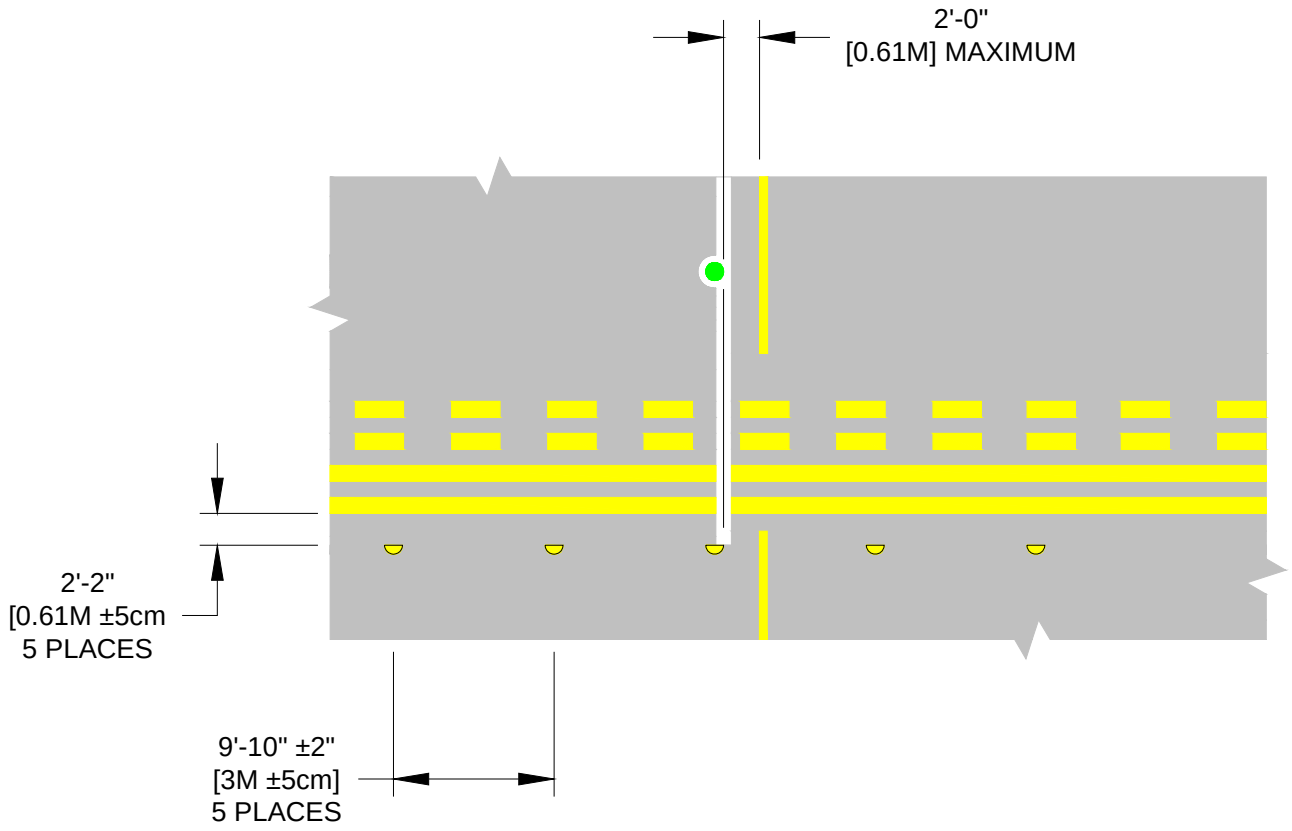


Figure 48. Taxiway Centerline Light Beam Orientation.



LEGEND

- TAXIWAY CENTERLINE
- IN-PAVEMENT RGL FIXTURE

Figure 49. In-Pavement Runway Guard Light Configuration.

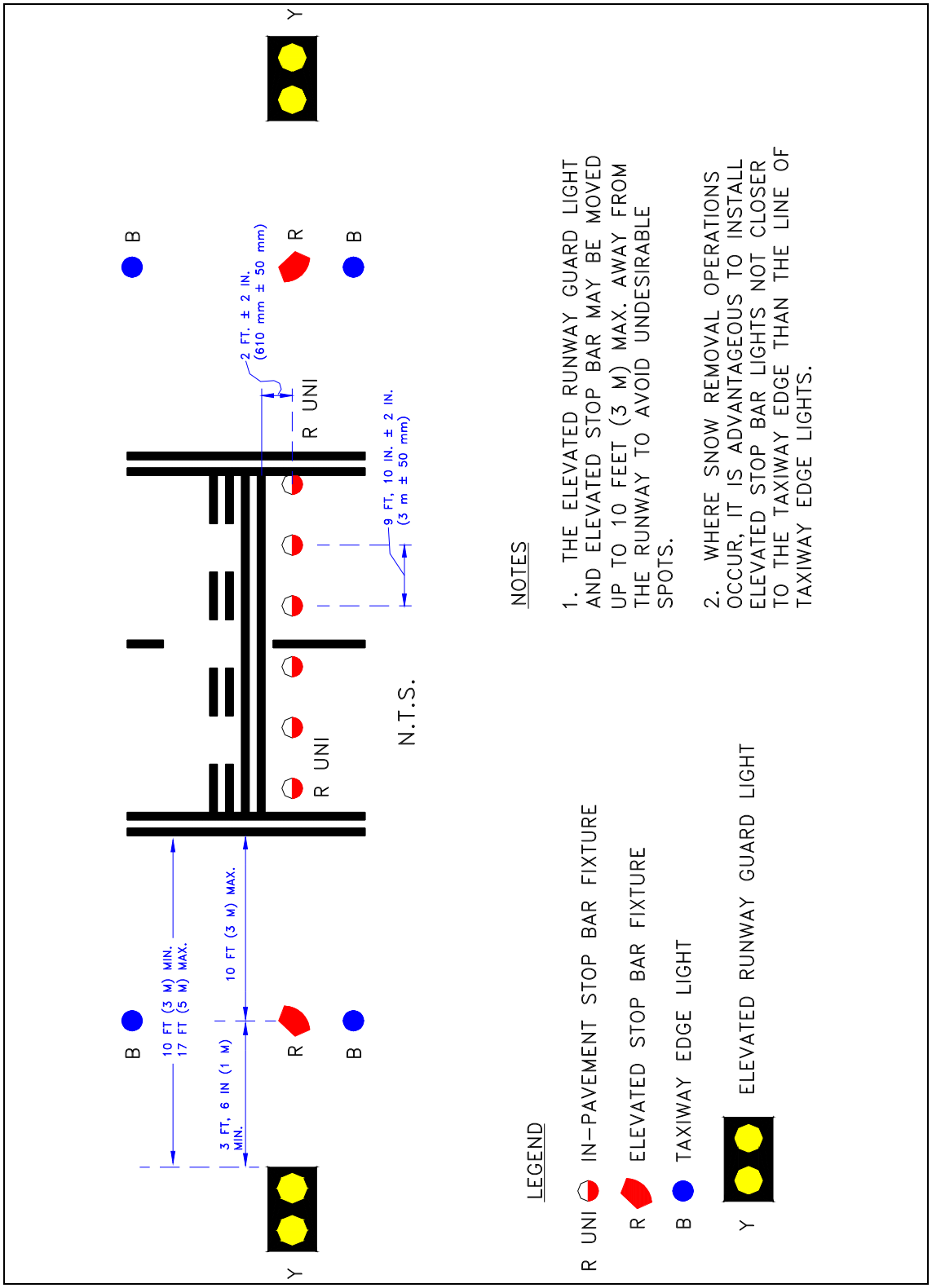


Figure 50. Elevated RGL and Stop Bar Configuration.

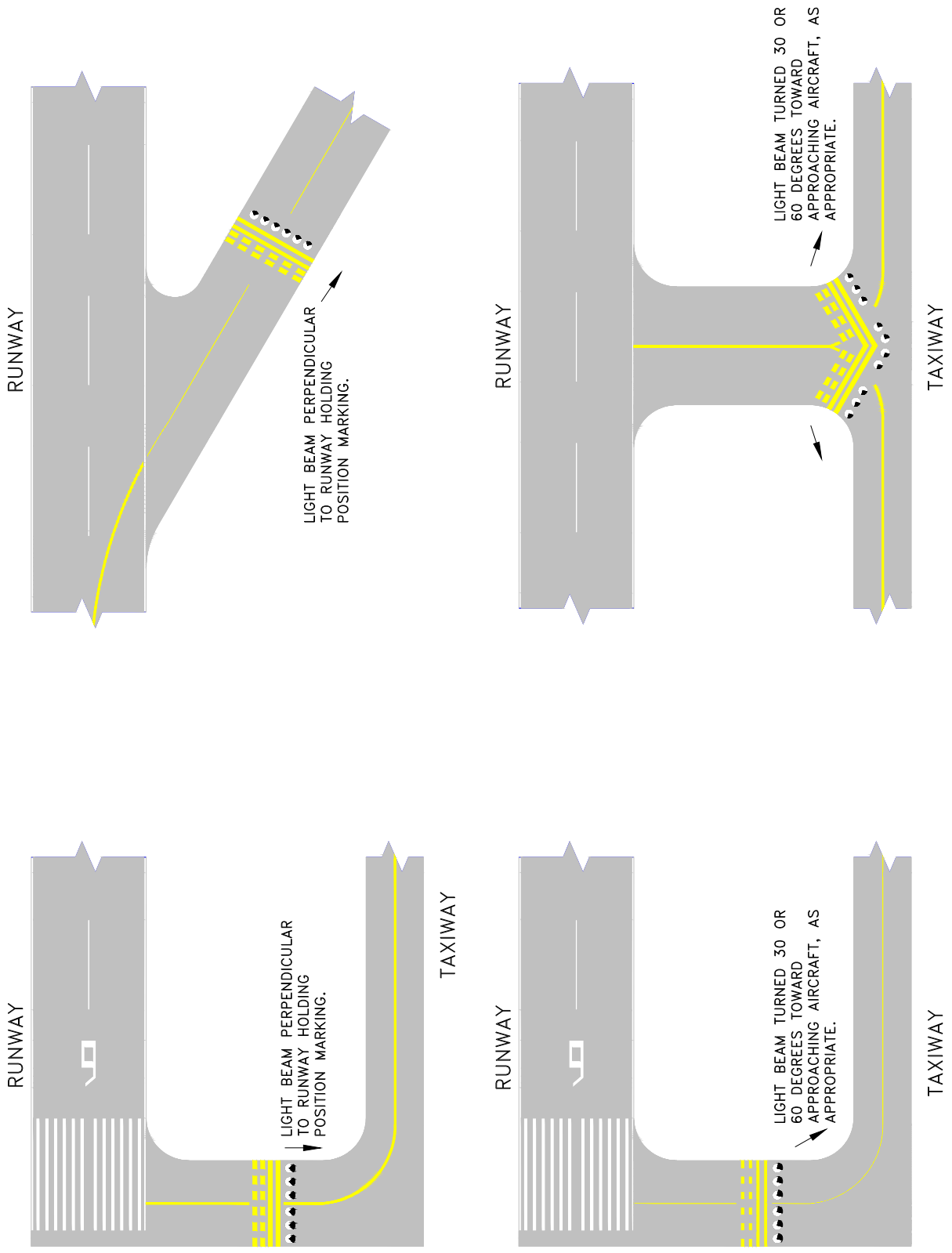


Figure 51. Typical Light Beam Orientation for In-Pavement RGLs and Stop Bars.

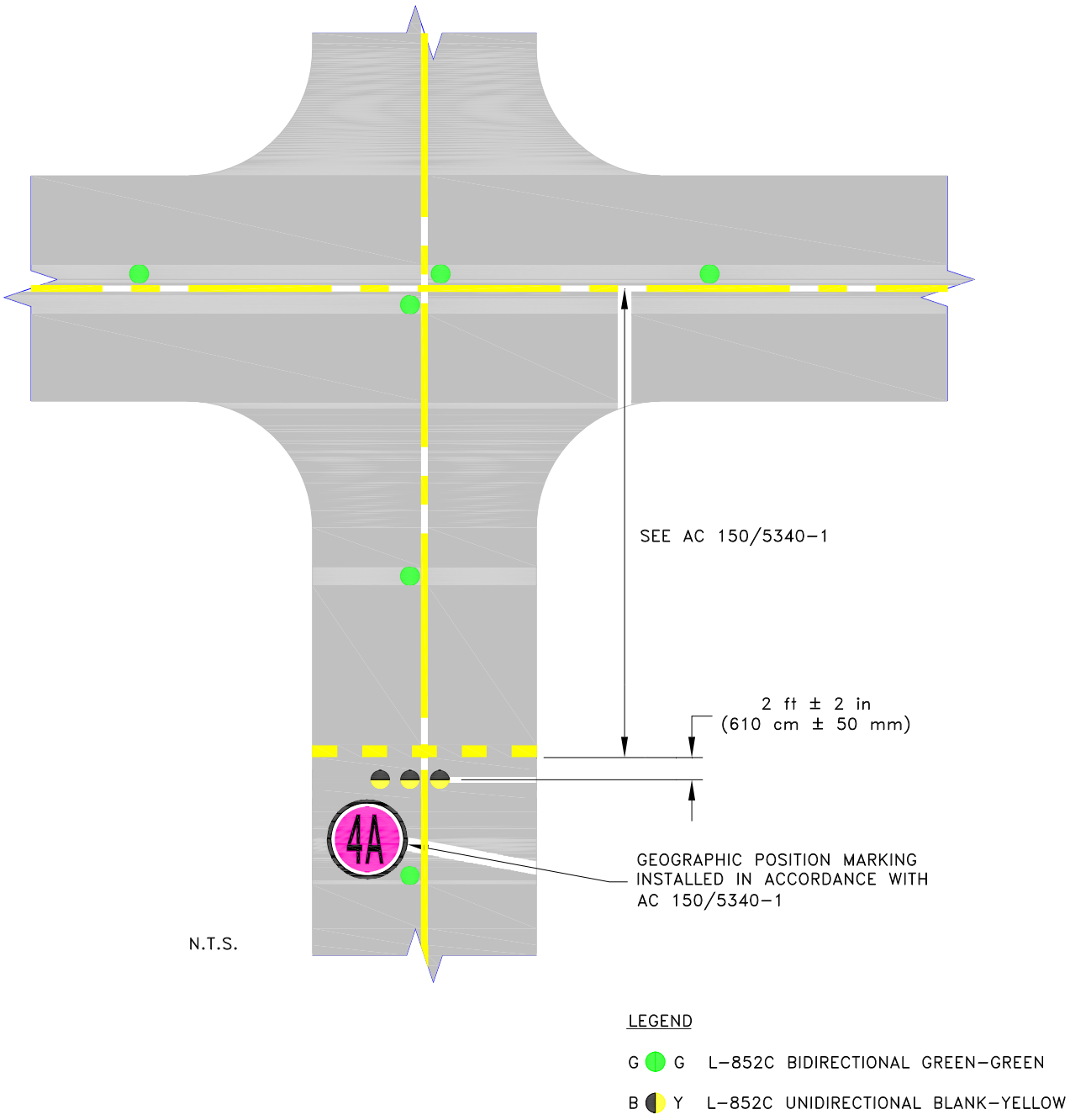


Figure 52. Clearance Bar Configuration at a Low Visibility Hold Point.

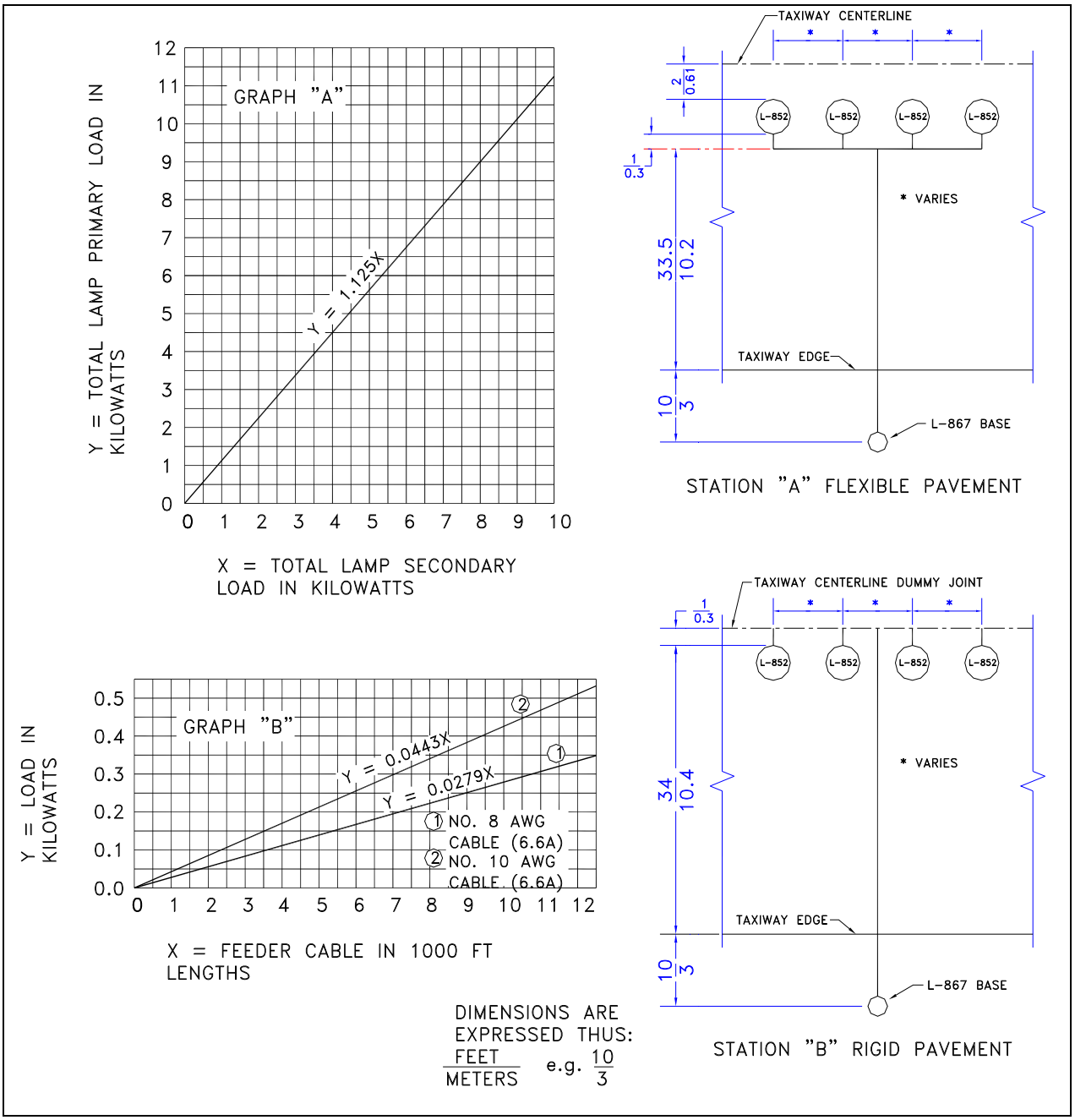


Figure 53. Curves for Estimating Primary Load for Taxiway Centerline Lighting Systems.

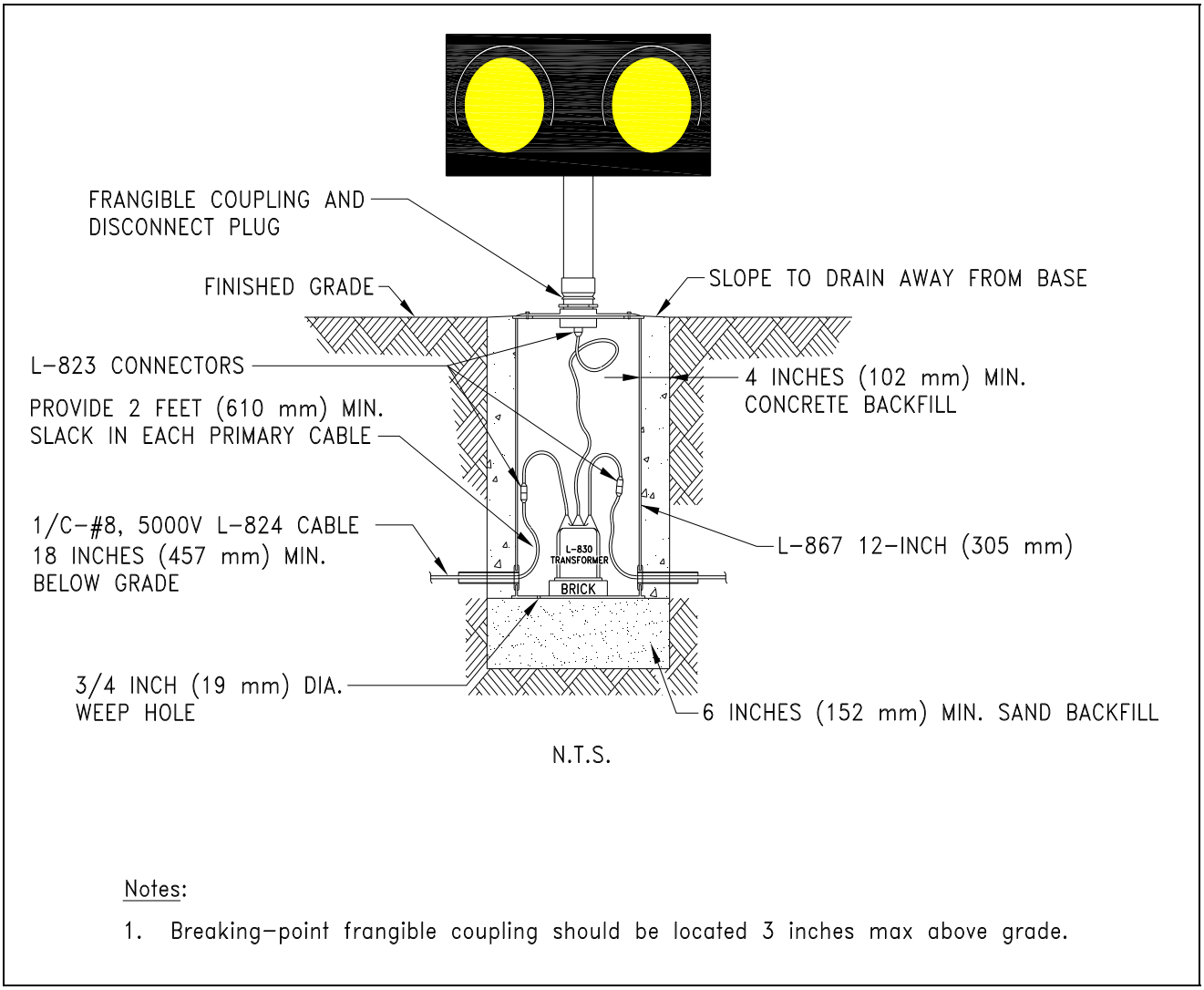


Figure 54. Typical Elevated RGL Installation Details.

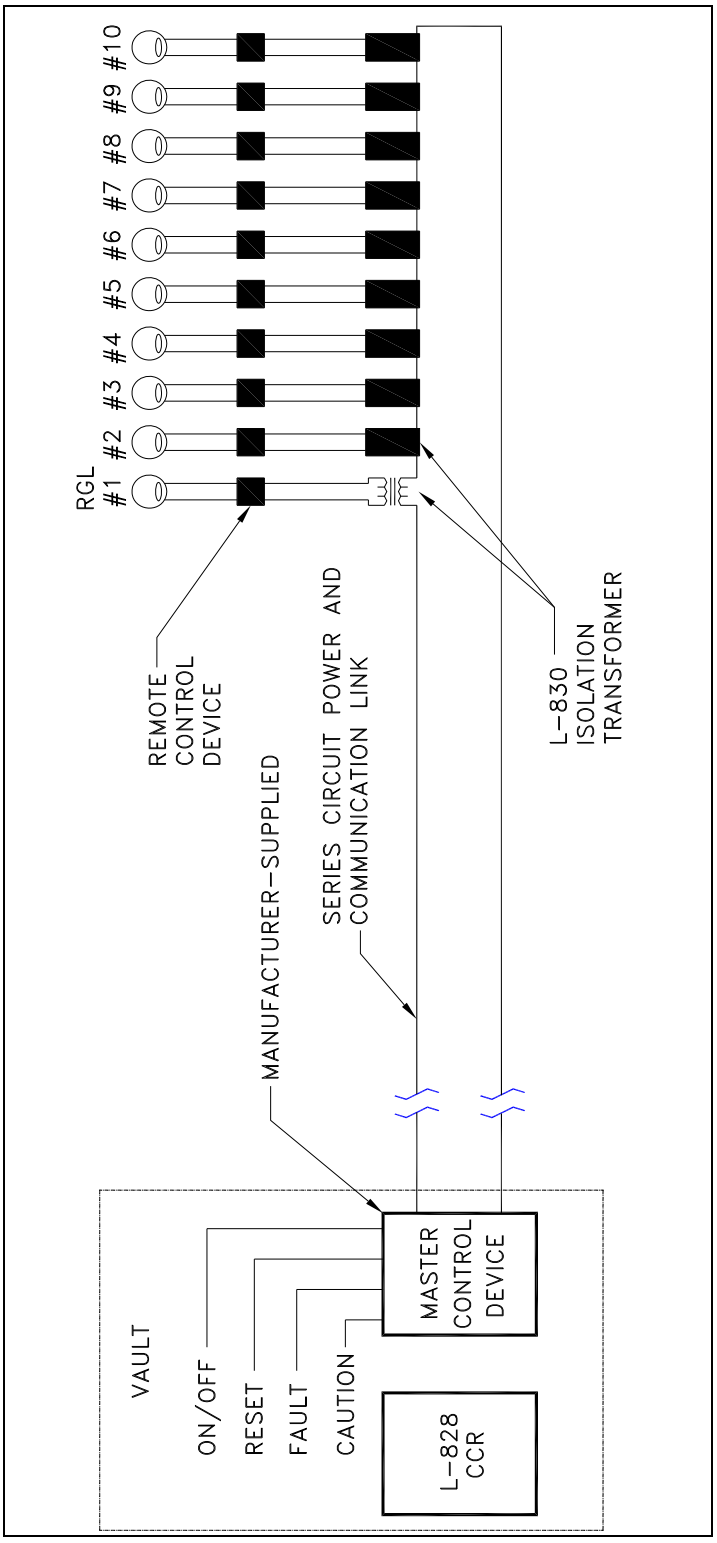


Figure 55. Typical In-Pavement RGL External Wiring Diagram – Power Line Carrier Communication, One Light Per Remote.