

# Lighting – Boundary Subdivision (HO)

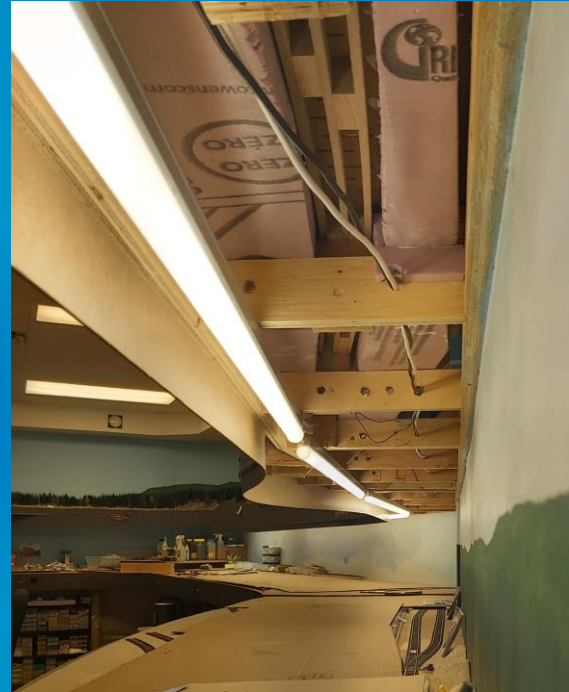
## Scott Calvert

### ➤ Key Objectives/Constraints

- Consistent lighting for numerous conditions on a large multi deck layout
- Minimize heat generated and electrical demand by lighting
- Affordable solutions – I will need about 300 feet

Application	Choice	Cost	Pro's	Con's
<b>Nelson Yard</b>	48" long LED T5 fixture 4000k, Barrina, 6 pack	~ \$2.00/ft	<ul style="list-style-type: none"> <li>• Fast and easy installation</li> <li>• Simple fixture replacement</li> <li>• Can daisy chain up to 8 fixtures</li> <li>• Very high lumen level</li> <li>• Plug and play – no transformer or special connectors required</li> <li>• No “staring” effect on the rail head</li> </ul>	<ul style="list-style-type: none"> <li>• Dark zones if fixtures too far apart (like flourscent lights)</li> <li>• Not dimmable (per mfg spec)</li> <li>• Installation clips are weak (so, buy extras !)</li> <li>• Costly for large applications</li> </ul>
<b>GN branchline</b>	2835SMD Strip 24V 3000k, LePro, 60LED/m dimmable system	~ < \$1.00/ft	<ul style="list-style-type: none"> <li>• Complete system includes dimmer and power supply</li> <li>• Higher voltage requires less amperage</li> <li>• ~ same cost as the non-dimmable 12V strips</li> </ul>	<ul style="list-style-type: none"> <li>• Lighting level seems to be lower than the 12V strips</li> <li>• Poor self-adhesive (requires additional fastening)</li> <li>• Needs a support element</li> <li>• Corners must be cut into sections</li> </ul>
<b>Lower Deck Peninsula</b>	2835SMD Strip 12V 3000k, LePro, 60LED/m	~ \$0.65/ft + transformer	<ul style="list-style-type: none"> <li>• Low cost</li> <li>• Flexible design</li> <li>• Can be cut into shorter sections with jumper wire connectors</li> </ul>	<ul style="list-style-type: none"> <li>• Generally, not dimmable (some manufacturers are)</li> <li>• Needs power supplies (which can be more costly than strips)</li> <li>• Poor self-adhesive</li> <li>• Needs a support element</li> <li>• Corners must be cut into sections</li> </ul>

# Lighting – Boundary Subdivision (HO) Nelson Yard – T5 LED Tubes



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Room ceiling lights



Room ceiling lights + T5's



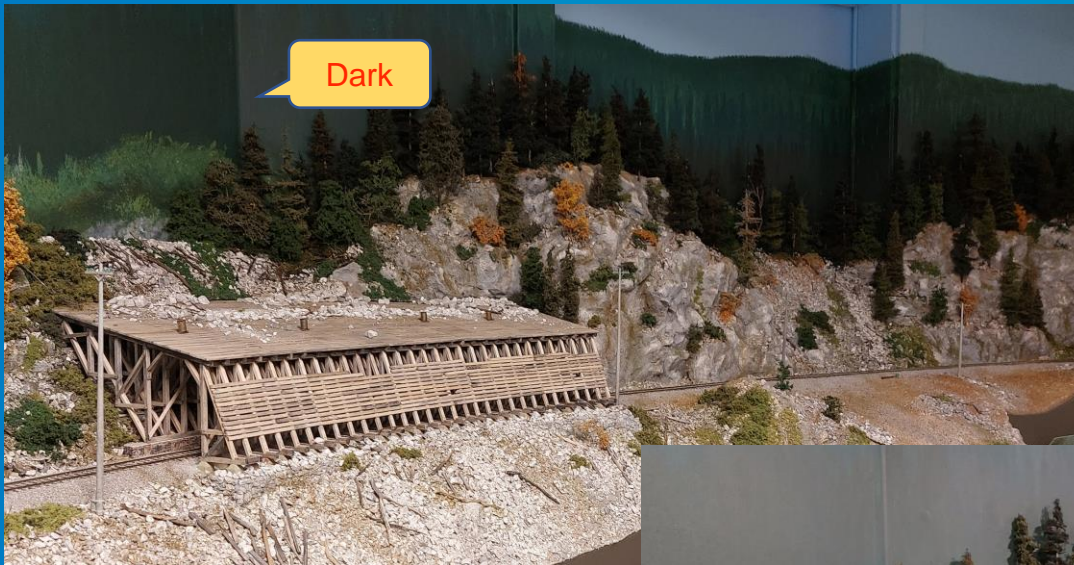
T5's only



Foreground  
Shadow

# Lighting – Boundary Subdivision (HO) Upper Deck – Paulson Scene

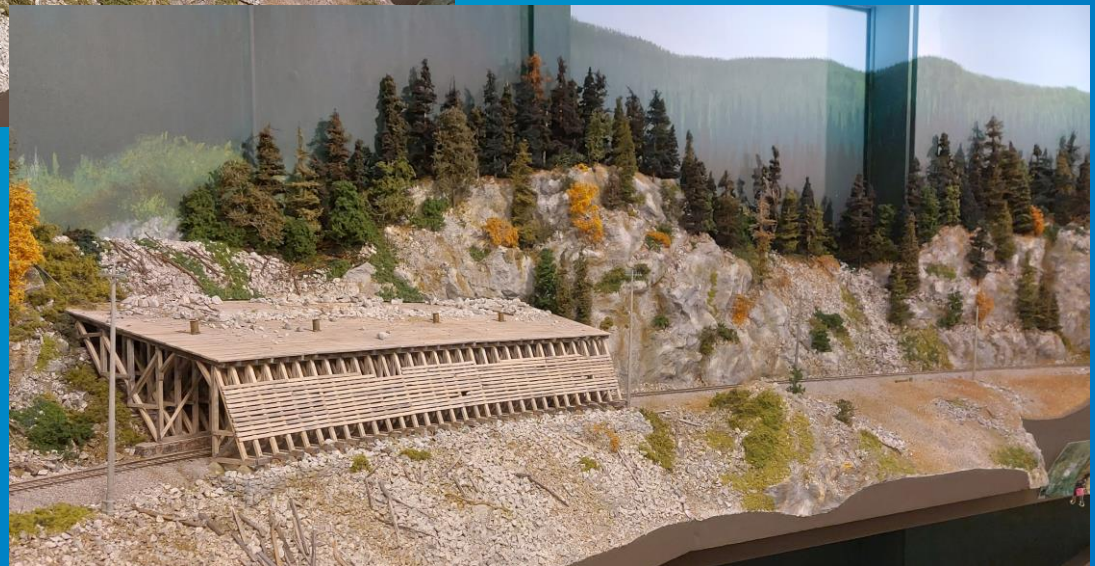
Room lights only



Highlight Ceiling LEDs  
(dimmable pots)



Room lights + LEDs

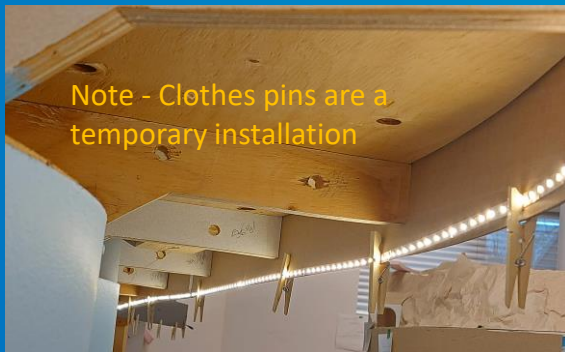


# Lighting – Boundary Subdivision (HO) Peninsula – 60LED/m Strips

Room lights only



Room lights + LEDs



Note - Clothes pins are a temporary installation

# Lighting – Boundary Subdivision (HO) GN Branchline – 60LED/m Dimmable Strips

Room lights only



Note – Dimmable strips not as bright as the non-dimmable – likely installation specific

Room lights + LEDs



Note - Clothes pins are a temporary installation



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### ➤ Learning Points

- Consider more than one solution. There is often not a “one size fits all” solution to many layouts
- Multi Deck layout produce numerous lighting level demands due to the variable distances between decks.
- Watch operator sightlines when installing the lights.
- Dimmable systems may provide a better solution
- Don’t assume that products are dimmable – check the mfg. specs.
- Try to achieve fixtures with a CRI of 85 minimum
- Lighting output of 450 lumens is considered good.
- When adding LED lighting, chose a product with a similar kelvin rating as the room lighting.
- If you are planning more than one strip of LED’s, consider using 2 slightly different kelvin rated products.