



MEMORANDUM

DATE: April 29, 2022

TO: Vatsal Patel, PE, Senior Engineer, City of San Carlos

FROM: Theresa Wallace, AICP, Principal
Matthew Wiswell, AICP, Senior Environmental Planner

SUBJECT: Addendum to the Burton and Highlands Parks Project Final Environmental Impact Report (EIR), State Clearinghouse #201752066

This memorandum, prepared pursuant to the California Environmental Quality Act (CEQA), is an Addendum to the certified Final Environmental Impact Report (Final EIR) for the 2018 Burton and Highlands Parks Project (2018 Project).^{1,2} The City of San Carlos (City) is the Lead Agency for the Final EIR and this Addendum.

To summarize the analysis and conclusions of this Addendum, the minor modifications related to the lighting system in the approved 2018 Project would not result in any new or potentially more severe impacts. The potential impacts associated with the minor modifications have been (a) analyzed adequately in the Final EIR pursuant to applicable standards; and (b) avoided or mitigated pursuant to the Final EIR, including revisions or mitigation measures that are imposed upon the proposed project, no further CEQA evaluation is required.

Additionally, the proposed changes to the approved lighting at the Burton and Highlands Parks, as described in this Addendum, would not require major revisions to the Final EIR due to new or substantially increased significant environmental effects, new circumstances under which these lighting modifications would be undertaken, nor new information of substantial importance. Therefore, no subsequent or Supplemental EIR or Negative Declaration is required prior to approval of the lighting modifications as a component of the 2018 Project, and an addendum is the appropriate CEQA document to evaluate this minor modification to the Final EIR.

This Addendum has been prepared pursuant to CEQA Guidelines Section 15164, which states: “The lead agency or a responsible agency shall prepare an addendum to a previously certified EIR if some changes or additions are necessary, but none of the conditions described in Section 15162 calling for preparation of a subsequent EIR have occurred.” Section 15162 specifies that “no subsequent EIR

¹ LSA Associates, Inc. 2017. *Burton and Highlands Parks Project Draft Environmental Impact Report*. November.

² LSA Associates, Inc. 2018. *Burton and Highlands Parks Project Environmental Impact Report Response to Comments Document* (Final EIR). August.

shall be prepared for that project unless the lead agency determines [...] one or more of the following”:

1. Substantial changes are proposed in the project that would require major revisions of the previous EIR due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects;
2. Substantial changes occur with respect to the circumstances under which the project is undertaken, which would require major revisions of the previous EIR due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects; or
3. New information of substantial importance, which was not known and could not have been known with the exercise of reasonable diligence at the time the previous EIR was certified as complete, shows any of the following:
 - a. The project would have one or more significant effects not discussed in the previous EIR;
 - b. Significant effects previously examined would be substantially more severe than shown in the previous EIR;
 - c. Mitigation measures or alternatives previously found not to be feasible would in fact be feasible and would substantially reduce one or more significant effects of the project, but the project proponents decline to adopt the mitigation measure or alternative; or
 - d. Mitigation measures or alternatives that are considerably different from those analyzed in the previous EIR would substantially reduce one or more significant effects on the environment, but the project proponents decline to adopt the mitigation measure or alternative.

Pursuant to CEQA Guidelines Section 15164(e), the following: (1) describes the modifications to the approved lighting included in the 2018 Project as a proposed minor modification to the project evaluated in the Final EIR; (2) briefly explains that no new or significant impacts would be associated with the proposed changes to the project; and (3) identifies the reasons for the City’s conclusion that the minor changes to the proposed project (to modify the lighting system) evaluated in the Final EIR do not meet the conditions described in Sections 15162 and 15163 calling for preparation of a Subsequent EIR or a Supplement to an EIR.

PROPOSED PROJECT

This section describes the location and minor modifications to the 2018 Project and the Final EIR.

Project Location

Burton and Highlands Parks are located in the City of San Carlos, San Mateo County. Burton Park is located at 900 Chestnut Street and is bounded by Woodland Avenue and Chestnut Street to the north, Brittan Avenue to the east, Arroyo Avenue to the west, and Cedar Street to the southwest.

The two fields that are the subject of this Addendum at Burton Park are Madsen Field and Flanagan Field.

Highlands Park is located at 206 Aberdeen Drive and is bounded by Aberdeen Drive to the east, Melendy Drive to the south. Highlands Field and Stadium Field at Highlands Park is the subject of this Addendum. Both parks are surrounded by residential uses. For a detailed description of the existing facilities within each park, refer to Chapter III, Project Description, of the Draft EIR. Figures III-1 through III-3 within the Draft EIR show the project location and regional vicinity and aerials of the project site.

2018 Project Lighting

The following section describes the lighting included in the 2018 Project, as evaluated in the Final EIR.

Burton Park. The 2018 Project included replacement lighting at Madsen Field that would utilize the existing light poles and replace the existing metal halide light fixtures with new LED light fixtures. The five existing poles at Madsen Field would hold a total of 30 new LED light fixtures and five new uplight fixtures, for a total of 35 fixtures. New lighting at Flanagan Field included six new light poles that would be 70 to 80 feet in height and would hold a total of 43 new LED light fixtures. As shown in Figures 1 through 3, the lighting included in the 2018 Project would have a maximum spillover (i.e., the amount of light at the property line) of 0.09 horizontal footcandles³ and 0.13 vertical footcandles, and 2,588 candelas.⁴ All three maximums would occur along Brittan Avenue. The average spillover across the project site would be 0.010 horizontal footcandles, 0.017 vertical footcandles, and 513 candelas.

Highlands Park. The 2018 Project included replacement lighting at Highlands field that would consist of 11 new light poles ranging from 60 to 80 feet in height that would hold a total of 59 new fixtures. New lighting at Stadium Field included eight new light poles, each of which would be 70 feet in height, with a total of 35 fixtures. As shown in Figures 4 through 6, the lighting included in the 2018 Project would have a maximum spillover (i.e., the amount of light at the property line) of 0.07 horizontal footcandles and 0.09 vertical footcandles, and 2,223 candelas. All three maximums would occur along the northern boundary of Highlands Park. The average spillover across the project site would be 0.005 horizontal footcandles, 0.008 vertical footcandles, and 249 candelas.

Proposed Lighting Modifications

The minor modifications to the 2018 Project evaluated in the Final EIR are discussed below.

Burton Park. The two proposed light poles adjacent to the Youth Center at Burton Park would be moved south, as the previous location was determined to be infeasible. Additionally, new lighting would be installed around the batting cages. The number and height of the poles and total number of fixtures would not change. As shown in Figures 7 through 9, the minor modifications would result

³ A footcandle is defined as the illuminance on a one square foot surface from a uniform source of light. A typical neighborhood streetlight is equal to approximately 1 to 5 footcandles.

⁴ A candela is a unit of luminous intensity in a given direction, and used to measure glare.

in a maximum spillover of 0.09 horizontal footcandles, 0.17 vertical footcandles, and 2,365 candelas. The maximum spillover for horizontal footcandles and candelas would occur along Brittan Avenue, while the maximum spillover for vertical footcandles would occur along Woodland Avenue. The horizontal footcandles would be the same as the 2018 Project, while the vertical footcandles would be slightly higher and the candelas would be slightly lower. The average spillover across the project site would be 0.016 horizontal footcandles, 0.036 vertical footcandles, and 765 candelas, which would all be slightly higher than the levels from the 2018 Project.

Highlands Park. The location of the fixtures and poles on the west side of the fields would be slightly adjusted. Five additional poles with only security pathway lighting would be installed along the existing path around the fields. Additionally, new lighting would be installed around the batting cages. No other modifications to the lighting system would be made. As shown in Figures 10 through 12, the minor modifications would result in a maximum spillover of 0.41 horizontal footcandles, 0.77 vertical footcandles, and 9,520 candelas, all of which would occur at the southeast corner of the site. The average spillover across the site would be 0.02 horizontal footcandles, 0.06 vertical footcandles, and 1,034 candelas. All lighting levels, including both average and maximum levels, would be slightly higher than the 2018 Project.

Minor Modifications to the Final EIR

The Final EIR evaluated light and glare impacts associated with the addition and improvement of lighting at Burton and Highlands Parks. The proposed modifications to the lighting system, as described above, would not result in a change in the use, or intensity of use, of the fields at Burton or Highlands Parks. The amount and intensity of light emitted by the new fixtures would be similar to that emitted by the fixtures considered in the Final EIR. Therefore, as described below, the proposed changes to the project would not substantially degrade the existing visual character or quality of the site or create a new source of substantial light or glare. No new impacts would result from this change to the project and no additional mitigation measures would be required.

COMPARISON TO THE CONDITIONS LISTED IN CEQA GUIDELINES SECTION 15162 AND 15164

The following summarizes the reasons that a Subsequent or Supplemental EIR to the Final EIR or a Mitigated Negative Declaration, pursuant to CEQA Guidelines Section 15162 and 15162, is not required to evaluate the environmental effects of the minor modifications currently proposed to the project.

Changes to the Project

The measurement of light is quantified in many different ways. A photometric analysis of the lighting system measures light in both footcandles and candelas. A footcandle is a common unit of measurement used to calculate adequate lighting levels of workspaces in buildings or outdoor space. It is used to describe the light level that a lighting source is expected to provide over the long-term. A horizontal footcandle is the amount of light striking a horizontal plane, and a vertical footcandle is the amount of light striking a vertical plane. Examples of commonly experienced light levels in other settings are shown below:

- Full moonlit night: approximately 0.01 footcandle
- Typical neighborhood street light: 1 to 5 footcandles
- Main road intersection street lighting 2.5 to 3 footcandles
- Residential lighting at night: 7 to 10 footcandles
- Dusk: Approximately 10 footcandles
- Gas station canopies: 25 to 30 footcandles

A candela is a unit of luminous intensity in a given direction and is used to measure glare. Glare refers to the discomfort or impairment of vision caused by excessive and uncontrolled brightness. The intensity of glare ranges from the worst case of “disability glare” where visibility is lost to “discomfort glare” where the light is uncomfortable. The degree of discomfort associated with glare decreases the further that a viewer is located from a light source, due to the dispersion of light across distance. Light intensities, or candela levels, at surrounding properties may be subject to the following levels of glare:

- Minimal to no glare: 500 candelas or less
- Significant glare: 25,000 to 75,000 candelas
- Maximum glare that should only occur on or very near the lit area where the light source is in direct view: 150,000 candelas or more

As described above, the light spillover and glare were modeled at the property lines of Burton and Highlands Parks. As shown in Figures 7 through 9 and described above, the average spillover of horizontal footcandles, vertical footcandles, and candelas, as well as the maximum vertical footcandles at Burton Park would slightly increase. The maximum horizontal footcandles would be the same as the 2018 Project and the maximum candelas would slightly decrease. As shown in Figures 10 through 12 and described above, all spillover levels at Highlands Park would slightly increase compared to the 2018 Project.

As described on page 63 of the Draft EIR, the City selected a significance threshold for light spillover at the property line of an average of 0.8 either vertical or horizontal footcandles during pre-curfew hours (up to 10:00 p.m. at night) and 0.2 footcandles during post-curfew hours (after 10:00 p.m.), based on the Illuminating Engineering Society of North America (IESNA) Lighting Handbook.⁵ In addition, a significance threshold for off-site glare intensity of 10,000 candelas during pre-curfew hours or 1,000 candelas during post-curfew hours at the nearest adjacent use was applied, based on standards developed by the International Commission on Illumination (CIE).⁶

⁵ Engineering Society. 2011. *The Lighting Handbook, 10th Edition*. Illuminating Engineering Society.

⁶ Institution of Lighting Professionals, 2011. Guidance notes for the reduction of obtrusive light.

As shown on Tables III-1 and III-2 of the Draft EIR (pages 19 and 20), no events at Burton or Highlands Park would occur during post-curfew hours. Therefore, only low-level safety lighting would be on during post-curfew hours. As described on page 68 of the Draft EIR, safety lighting would be designed to ensure that lights would not have an illuminance greater than 0.2 footcandles on walkways during pre- or post-curfew hours, which would ensure there would be no spillover or glare from safety lighting.

As shown above, the minor modifications to the 2018 Project would not result in lighting at either Burton or Highlands Park exceeding 0.8 footcandles (both horizontal or vertical) or 10,000 candelas at any property line. Therefore, the minor modifications to the project (i.e., installation of a new LED lighting system) would create no new source of substantial light or glare that would adversely affect day or nighttime views in the area. The proposed minor modification to the project would not have a substantially greater impact related to light and glare than what was analyzed in the Final EIR.

The proposed minor modifications are not substantial changes to the project and would not substantially increase the severity of impacts identified in the Final EIR, and thus would not require major revisions to the Final EIR. Therefore, an Addendum is the appropriate document to address these minor modifications rather than a Subsequent EIR, Supplemental EIR, or a Mitigated Negative Declaration.

Change in Circumstances

Environmental conditions in and around the project site have not changed such that modifications to the lighting system would result in new significant environmental effects. Additionally, because no significant impacts related to lighting were identified, there would be no substantial increase in the severity of environmental effects identified in the Final EIR. Major revisions to the Final EIR are not required.

New Information

No new information of substantial importance, which was not known and could not have been known when the Final EIR was certified, has been identified to show that the proposed lighting modifications would be expected to result in: (1) new significant environmental effects not identified in the Final EIR; (2) substantially more severe environmental effects than shown in the Final EIR; (3) mitigation measures or alternatives previously determined to be infeasible that would in fact be feasible and would substantially reduce one or more significant effects of the project, but the project sponsor declines to adopt the mitigation measure or alternative; or (4) mitigation measures or alternatives that are considerably different from those identified in the Final EIR would substantially reduce one or more significant effects of the project, but the project sponsor declines to adopt the mitigation measure or alternative. In addition, the proposed lighting modifications would require no new mitigation measures because no new or substantially more severe impacts associated with the project as modified are expected beyond those identified and mitigated to a less-than-significant level in the Final EIR.

CONCLUSION

The proposed modifications to the lighting systems at Burton and Highlands Parks described in this Addendum would not require major revisions to the Final EIR due to new or substantially increased significant environmental effects. There have been no substantial changes with respect to the circumstances under which these lighting modifications would be undertaken that would require major revisions of the Final EIR due to new or substantially increased significant environmental effects, and there has been no discovery of new information of substantial importance that would trigger or require major revisions to the Final EIR due to new or substantially increased significant environmental effects. Therefore, no subsequent or supplemental EIR or Mitigated Negative Declaration is required prior to approval of the lighting modifications as a component of the 2018 Project, and an addendum is the appropriate CEQA document to evaluate this minor modification to the Final EIR.

Attachment: Figures 1 through 12

ATTACHMENT

FIGURES 1 THROUGH 12

EQUIPMENT LIST FOR AREAS SHOWN								
Pole				Luminaires				
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LUMINAIRE TYPE	QTY / POLE	THIS GRID	OTHER GRIDS
2	A1-A2	60'	-	25'	TLC-LED-1150	1	1	0
				60'	TLC-LED-1150	2	2	0
2	A3-A4	70'	-	25'	TLC-LED-1150	1	1	0
				70'	TLC-LED-1150	4	4	0
2	B1-B2	70'	-	25'	TLC-LED-1150	1	1	0
				70'	TLC-LED-1150	5	5	0
2	B3-B4	80'	-	25'	TLC-LED-1150	1	1	0
				80'	TLC-LED-1150	7	7	0
1	C1	70'	-	70'	TLC-LED-1150	5	5	0
1	C2	70'	-	70'	TLC-LED-1150	4	4	0
2	C3-C4	80'	-	25'	TLC-LED-1150	1	1	0
				80'	TLC-LED-1150	4	4	0
12	TOTALS					63	63	0



GRID SUMMARY	
Name:	Property Spill Line
Spacing:	30.0'
Height:	3.0' above grade

ILLUMINATION SUMMARY			
MAINTAINED HORIZONTAL FOOTCANDLES			
Entire Grid			
Scan Average:	0.010		
Maximum:	0.09		
Minimum:	0.00		
No. of Points:	86		
LUMINAIRE INFORMATION			
Color / CRI:	5700K - 75 CRI		
Luminaire Output:	121,000 lumens		
No. of Luminaires:	63		
Total Load:	72.45 kW		
Lumen Maintenance			
Luminaire Type	L90 hrs	L80 hrs	L70 hrs
TLC-LED-1150	>51,000	>51,000	>51,000
Reported per TM-21-11. See luminaire datasheet for details.			

LSA

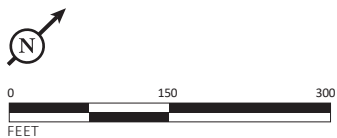
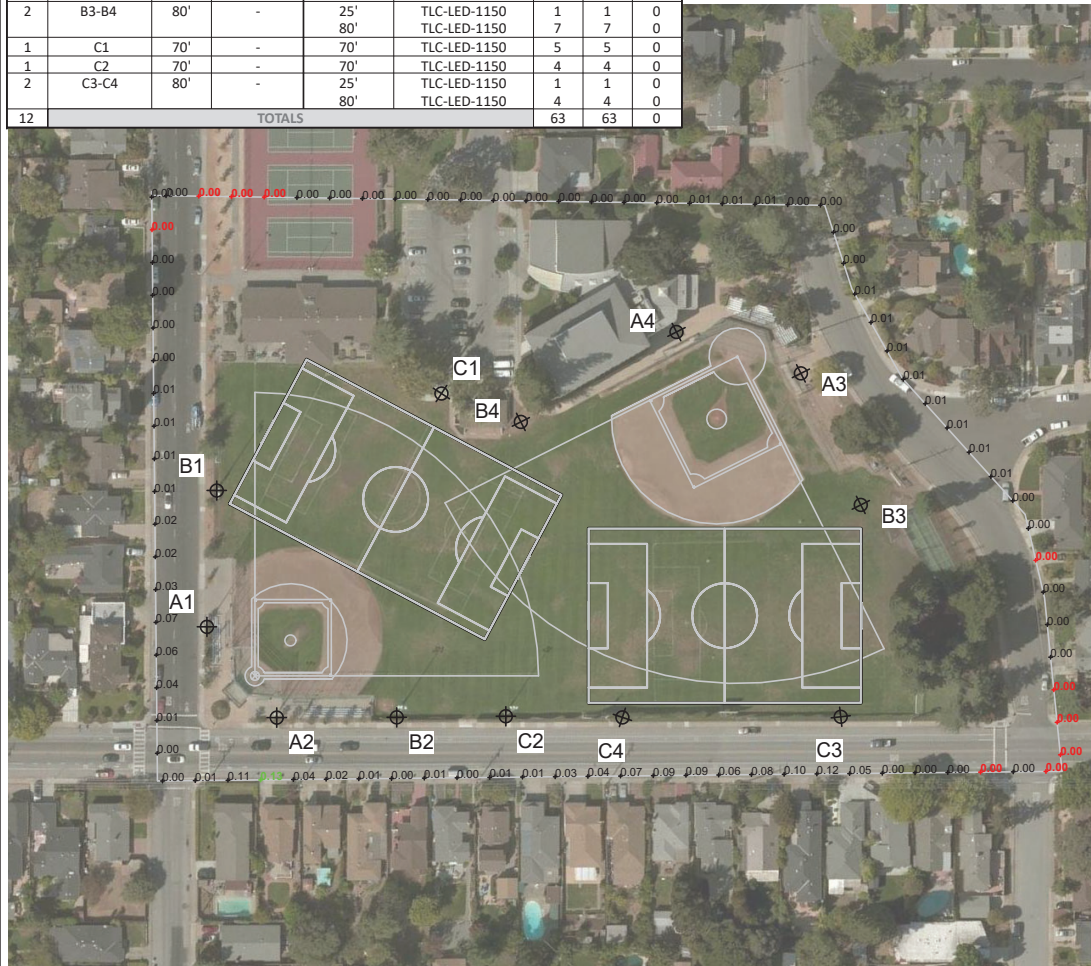


FIGURE 1

EQUIPMENT LIST FOR AREAS SHOWN								
Pole			Luminaires					
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LUMINAIRE TYPE	QTY / POLE	THIS GRID	OTHER GRIDS
2	A1-A2	60'	-	25'	TLC-LED-1150	1	1	0
				60'	TLC-LED-1150	2	2	0
2	A3-A4	70'	-	25'	TLC-LED-1150	1	1	0
				70'	TLC-LED-1150	4	4	0
2	B1-B2	70'	-	25'	TLC-LED-1150	1	1	0
				70'	TLC-LED-1150	5	5	0
2	B3-B4	80'	-	25'	TLC-LED-1150	1	1	0
				80'	TLC-LED-1150	7	7	0
1	C1	70'	-	70'	TLC-LED-1150	5	5	0
1	C2	70'	-	70'	TLC-LED-1150	4	4	0
2	C3-C4	80'	-	25'	TLC-LED-1150	1	1	0
				80'	TLC-LED-1150	4	4	0
12	TOTALS					63	63	0



GRID SUMMARY	
Name:	Property Spill Line
Spacing:	30.0'
Height:	3.0' above grade

ILLUMINATION SUMMARY			
MAINTAINED MAX VERTICAL FOOTCANDLES			
	Entire Grid		
Scan Average:	0.017		
Maximum:	0.13		
Minimum:	0.00		
No. of Points:	86		
LUMINAIRE INFORMATION			
Color / CRI:	5700K - 75 CRI		
Luminaire Output:	121,000 lumens		
No. of Luminaires:	63		
Total Load:	72.45 kW		
Lumen Maintenance			
Luminaire Type	L90 hrs	L80 hrs	L70 hrs
TLC-LED-1150	>51,000	>51,000	>51,000
Reported per TM-21-11. See luminaire datasheet for details.			

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SOURCES: JACOB MCCREA; MUSCO LIGHTING, MAY 2017.

I:\CNH2201\G\Fig 2_Burton 2018 Vert Footcandles.ai (2/21/2022)

FIGURE 2

EQUIPMENT LIST FOR AREAS SHOWN								
Pole				Luminaires				
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LUMINAIRE TYPE	QTY / POLE	THIS GRID	OTHER GRIDS
2	A1-A2	60'	-	25'	TLC-LED-1150	1	1	0
				60'	TLC-LED-1150	2	2	0
2	A3-A4	70'	-	25'	TLC-LED-1150	1	1	0
				70'	TLC-LED-1150	4	4	0
2	B1-B2	70'	-	25'	TLC-LED-1150	1	1	0
				70'	TLC-LED-1150	5	5	0
2	B3-B4	80'	-	25'	TLC-LED-1150	1	1	0
				80'	TLC-LED-1150	7	7	0
1	C1	70'	-	70'	TLC-LED-1150	5	5	0
1	C2	70'	-	70'	TLC-LED-1150	4	4	0
2	C3-C4	80'	-	25'	TLC-LED-1150	1	1	0
				80'	TLC-LED-1150	4	4	0
12	TOTALS					63	63	0



Pole location(s) ⊕ dimensions are relative to 0,0 reference point(s) ⊗

GRID SUMMARY	
Name:	Property Spill Line
Spacing:	30.0'
Height:	3.0' above grade

ILLUMINATION SUMMARY			
MAINTAINED CANDELA (PER FIXTURE)			
		Entire Grid	
Scan Average:	513.637		
Maximum:	2588.71		
Minimum:	0.00		
No. of Points:	86		
LUMINAIRE INFORMATION			
Color / CRI:		5700K - 75 CRI	
Luminaire Output:		121,000 lumens	
No. of Luminaires:		63	
Total Load:		72.45 kW	
Lumen Maintenance			
Luminaire Type	L90 hrs	L80 hrs	L70 hrs
TLC-LED-1150	>51,000	>51,000	>51,000
Reported per TM-21-11. See luminaire datasheet for details.			

LSA

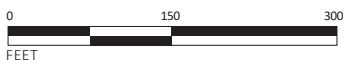


FIGURE 3

SOURCES: JACOB MCCREA; MUSCO LIGHTING, MAY 2017.

I:\CNH2201\G\Fig 3_Burton 2018 Maint Candelas.ai (2/21/2022)

EQUIPMENT LIST FOR AREAS SHOWN									
QTY	Pole			Luminaires					
	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LUMINAIRE TYPE	QTY / POLE	THIS GRID	OTHER GRIDS	
4	A1-A4	60'	-	60'	TLC-LED-1150	3	3	0	
2	A5-A6	70'	-	25'	TLC-LED-1150	1	1	0	
				70'	TLC-LED-1150	3	3	0	
1	B1	80'	-	25'	TLC-LED-1150	1	1	0	
				80'	TLC-LED-1150	6	6	0	
3	B2, B4, C2	70'	-	25'	TLC-LED-1150	1	1	0	
				70'	TLC-LED-1150	4	4	0	
2	B3, C1	80'	-	25'	TLC-LED-1150	1	1	0	
				80'	TLC-LED-1150	7	7	0	
1	B5	70'	-	25'	TLC-LED-1150	1	1	0	
				70'	TLC-LED-1150	5	5	0	
1	C3	80'	-	25'	TLC-LED-1150	1	1	0	
				80'	TLC-LED-1150	8	8	0	
2	S1, S5	70'	-	70'	TLC-LED-1150	4	4	0	
2	S2, S4	70'	-	70'	TLC-LED-1150	3	3	0	
1	S3	70'	-	25'	TLC-LED-1150	1	1	0	
				70'	TLC-LED-1150	6	6	0	
19	TOTALS					94	94	0	

GRID SUMMARY	
Name:	Property Line Spill
Spacing:	30.0'
Height:	3.0' above grade

ILLUMINATION SUMMARY			
MAINTAINED HORIZONTAL FOOTCANDLES			
Entire Grid			
Scan Average:	0.0048		
Maximum:	0.07		
Minimum:	0.00		
No. of Points:	138		
LUMINAIRE INFORMATION			
Color / CRI:	5700K - 75 CRI		
Luminaire Output:	121,000 / 40,600 lumens		
No. of Luminaires:	94		
Total Load:	104.86 kW		
Lumen Maintenance			
Luminaire Type	L90 hrs	L80 hrs	L70 hrs
TLC-LED-1150	>51,000	>51,000	>51,000
Reported per TM-21-11. See luminaire datasheet for details.			



Pole location(s) ⊕ dimensions are relative to 0,0 reference point(s) ⊗

LSA

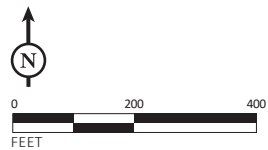


FIGURE 4

SOURCES: JACOB MCCREA; MUSCO LIGHTING, MAY 2017.

EQUIPMENT LIST FOR AREAS SHOWN								
Pole				Luminaires				
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LUMINAIRE TYPE	QTY / POLE	THIS GRID	OTHER GRIDS
4	A1-A4	60'	-	60'	TLC-LED-1150	3	3	0
2	A5-A6	70'	-	25'	TLC-LED-1150	1	1	0
				70'	TLC-LED-1150	3	3	0
1	B1	80'	-	25'	TLC-LED-1150	1	1	0
				80'	TLC-LED-1150	6	6	0
3	B2, B4, C2	70'	-	25'	TLC-LED-1150	1	1	0
				70'	TLC-LED-1150	4	4	0
2	B3, C1	80'	-	25'	TLC-LED-1150	1	1	0
				80'	TLC-LED-1150	7	7	0
1	B5	70'	-	25'	TLC-LED-1150	1	1	0
				70'	TLC-LED-1150	5	5	0
1	C3	80'	-	25'	TLC-LED-1150	1	1	0
				80'	TLC-LED-1150	8	8	0
2	S1, S5	70'	-	70'	TLC-LED-1150	4	4	0
2	S2, S4	70'	-	70'	TLC-LED-1150	3	3	0
1	S3	70'	-	25'	TLC-LED-1150	1	1	0
				70'	TLC-LED-1150	6	6	0
19	TOTALS					94	94	0

GRID SUMMARY	
Name:	Property Line Spill
Spacing:	30.0'
Height:	3.0' above grade

ILLUMINATION SUMMARY			
MAINTAINED MAX VERTICAL FOOTCANDLES			
Entire Grid			
Scan Average:	0.0083		
Maximum:	0.09		
Minimum:	0.00		
No. of Points:	138		
LUMINAIRE INFORMATION			
Color / CRI:	5700K - 75 CRI		
Luminaire Output:	121,000 / 40,600 lumens		
No. of Luminaires:	94		
Total Load:	104.86 kW		
Lumen Maintenance			
Luminaire Type	L90 hrs	L80 hrs	L70 hrs
TLC-LED-1150	>51,000	>51,000	>51,000
Reported per TM-21-11. See luminaire datasheet for details.			



Pole location(s) ⊕ dimensions are relative to 0,0 reference point(s) ⊗

LSA

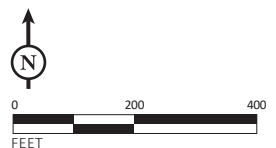


FIGURE 5

SOURCES: JACOB MCCREA; MUSCO LIGHTING, MAY 2017.

EQUIPMENT LIST FOR AREAS SHOWN								
Pole				Luminaires				
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LUMINAIRE TYPE	QTY / POLE	THIS GRID	OTHER GRIDS
4	A1-A4	60'	-	60'	TLC-LED-1150	3	3	0
2	A5-A6	70'	-	25'	TLC-LED-1150	1	1	0
				70'	TLC-LED-1150	3	3	0
1	B1	80'	-	25'	TLC-LED-1150	1	1	0
				80'	TLC-LED-1150	6	6	0
3	B2, B4, C2	70'	-	25'	TLC-LED-1150	1	1	0
				70'	TLC-LED-1150	4	4	0
2	B3, C1	80'	-	25'	TLC-LED-1150	1	1	0
				80'	TLC-LED-1150	7	7	0
1	B5	70'	-	25'	TLC-LED-1150	1	1	0
				70'	TLC-LED-1150	5	5	0
1	C3	80'	-	25'	TLC-LED-1150	1	1	0
				80'	TLC-LED-1150	8	8	0
2	S1, S5	70'	-	70'	TLC-LED-1150	4	4	0
2	S2, S4	70'	-	70'	TLC-LED-1150	3	3	0
1	S3	70'	-	25'	TLC-LED-1150	1	1	0
				70'	TLC-LED-1150	6	6	0
19	TOTALS					94	94	0

GRID SUMMARY	
Name:	Property Line Spill
Spacing:	30.0'
Height:	3.0' above grade

ILLUMINATION SUMMARY	
MAINTAINED CANDELA (PER FIXTURE)	
Entire Grid	
Scan Average:	249,0441
Maximum:	2233.27
Minimum:	0.00
No. of Points:	138
LUMINAIRE INFORMATION	
Color / CRI:	5700K - 75 CRI
Luminaire Output:	121,000 / 40,600 lumens
No. of Luminaires:	94
Total Load:	104.86 kW

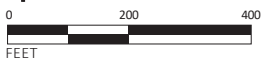
Lumen Maintenance			
Luminaire Type	L90 hrs	L80 hrs	L70 hrs
TLC-LED-1150	>51,000	>51,000	>51,000

Reported per TM-21-11. See luminaire datasheet for details.



Pole location(s) ⊕ dimensions are relative to 0,0 reference point(s) ⊗

LSA



SOURCES: JACOB MCCREA; MUSCO LIGHTING, MAY 2017.

I:\CNH2201\G\Fig 6_Highlands 2018 Proj Glare Maint Candelas.ai (2/22/2022)

FIGURE 6

EQUIPMENT LIST FOR AREAS SHOWN									
QTY	Pole			Luminaires					
	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LUMINAIRE TYPE	QTY / POLE	THIS GRID	OTHER GRIDS	
2	A3-A4	70'	-06'	15.44'	TLC-BT-575	1	1	0	
				29.94'	CREE OSQ	1	0	1	
				69.94'	TLC-LED-1200	4	4	0	
1	B3	70'	-06'	69.94'	TLC-LED-1500	5	5	0	
				15.44'	TLC-BT-575	1	1	0	
				29.94'	CREE OSQ	1	0	1	
1	B4	70'	-06'	69.94'	TLC-LED-900	1	1	0	
				15.44'	TLC-BT-575	1	1	0	
				29.94'	CREE OSQ	1	0	1	
1	C3	70'	-06'	69.94'	TLC-LED-1500	6	6	0	
				69.94'	TLC-LED-900	2	2	0	
				15.44'	TLC-BT-575	2	2	0	
1	C4	70'	-06'	69.94'	TLC-LED-1500	2	2	0	
				15.44'	TLC-BT-575	2	2	0	
				69.94'	TLC-LED-1500	5	5	0	
6	TOTALS					41	37	4	

GRID SUMMARY	
Name:	Spill - Prop Line - Field Lighting w/o Walkway
Spacing:	30.0'
Height:	3.0' above grade
ILLUMINATION SUMMARY	
HORIZONTAL FOOTCANDLES	
Entire Grid	
Scan Average:	0.0164
Maximum:	0.09
Minimum:	0.00
No. of Points:	86
LUMINAIRE INFORMATION	
Applied Circuits:	A, B, C
No. of Luminaires:	37
Total Load:	42.37 kW



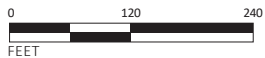
Guaranteed Performance: The ILLUMINATION described above is guaranteed per your Musco Warranty document.

Field Measurements: Individual field measurements may vary from computer-calculated predictions and should be taken in accordance with IESNA RP-6-15.

Electrical System Requirements: Refer to Amperage Draw Chart and/or the "Musco Control System Summary" for electrical sizing.

Installation Requirements: Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.

LSA



SOURCE: MUSCO LIGHTING, DECEMBER 2021.

I:\CNH2201\G\Fig 7_Burton Prop Lt Spill Horiz Footcandles.ai (2/22/2022)

FIGURE 7

EQUIPMENT LIST FOR AREAS SHOWN									
Pole				Luminaires					
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LUMINAIRE TYPE	QTY / POLE	THIS GRID	OTHER GRIDS	
2	A3-A4	70'	-.06'	15.44'	TLC-BT-575	1	1	0	
				29.94'	CREE OSQ	1	0	1	
				69.94'	TLC-LED-1200	4	4	0	
1	B3	70'	-.06'	69.94'	TLC-LED-1500	5	5	0	
				15.44'	TLC-BT-575	1	1	0	
				29.94'	CREE OSQ	1	0	1	
1	B4	70'	-.06'	69.94'	TLC-LED-900	1	1	0	
				15.44'	TLC-BT-575	1	1	0	
				29.94'	CREE OSQ	1	0	1	
1	C3	70'	-.06'	69.94'	TLC-LED-1500	6	6	0	
				15.44'	TLC-BT-575	2	2	0	
				29.94'	CREE OSQ	2	2	0	
1	C4	70'	-.06'	69.94'	TLC-LED-900	2	2	0	
				15.44'	TLC-BT-575	2	2	0	
				29.94'	CREE OSQ	2	2	0	
1	TOTALS			15.44'	TLC-BT-575	2	2	0	
6				69.94'	TLC-LED-1500	5	5	0	
						41	37	4	

GRID SUMMARY	
Name:	Spill - Prop Line - Field Lighting w/o Walkway
Spacing:	30.0'
Height:	3.0' above grade

ILLUMINATION SUMMARY	
MAX VERTICAL FOOTCANDLES	
Entire Grid	
Scan Average:	0.0359
Maximum:	0.17
Minimum:	0.00
No. of Points:	86

LUMINAIRE INFORMATION	
Applied Circuits:	A, B, C
No. of Luminaires:	37
Total Load:	42.37 kW

Guaranteed Performance: The ILLUMINATION described above is guaranteed per your Musco Warranty document.

Field Measurements: Individual field measurements may vary from computer-calculated predictions and should be taken in accordance with IESNA RP-6-15.

Electrical System Requirements: Refer to Amperage Draw Chart and/or the "Musco Control System Summary" for electrical sizing.

Installation Requirements: Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.



NOTES: The Light level shown are from the field lighting fixture and are not taking the light levels from the Pathway or the bleachers.

Pole location(s) ⬠ dimensions are relative to 0,0 reference point(s) ⊗

LSA

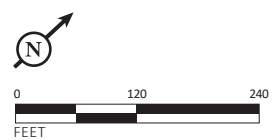


FIGURE 8

SOURCE: MUSCO LIGHTING, DECEMBER 2021.

I:\CNH2201\G\Fig 8_Burton Prop Lt Spill Vert Footcandles.ai (2/22/2022)

EQUIPMENT LIST FOR AREAS SHOWN								
Pole				Luminaires				
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LUMINAIRE TYPE	QTY/POLE	THIS GRID	OTHER GRIDS
2	A3-A4	70'	-.06'	15.44'	TLC-BT-575	1	1	0
				29.94'	CREE OSQ	1	0	1
				69.94'	TLC-LED-1200	4	4	0
1	B3	70'	-.06'	69.94'	TLC-LED-1500	5	5	0
				15.44'	TLC-BT-575	1	1	0
				29.94'	CREE OSQ	1	0	1
1	B4	70'	-.06'	15.44'	TLC-BT-575	1	1	0
				29.94'	CREE OSQ	1	0	1
				69.94'	TLC-LED-1500	6	6	0
1	C3	70'	-.06'	69.94'	TLC-LED-900	2	2	0
				15.44'	TLC-BT-575	2	2	0
				69.94'	TLC-LED-1500	2	2	0
1	C4	70'	-.06'	15.44'	TLC-BT-575	2	2	0
				69.94'	TLC-LED-1500	5	5	0
				69.94'	TLC-LED-1500	4	4	0
6	TOTALS					41	37	4

GRID SUMMARY	
Name:	Spill - Prop Line - Field Lighting w/o Walkway
Spacing:	30.0'
Height:	3.0' above grade

ILLUMINATION SUMMARY	
CANDELA (PER FIXTURE)	
Entire Grid	
Scan Average:	765.3293
Maximum:	2365.78
Minimum:	3.96
No. of Points:	86
LUMINAIRE INFORMATION	
Applied Circuits:	A, B, C
No. of Luminaires:	37
Total Load:	42.37 kW



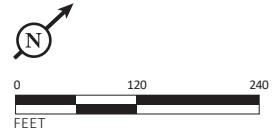
Guaranteed Performance: The ILLUMINATION described above is guaranteed per your Musco Warranty document.

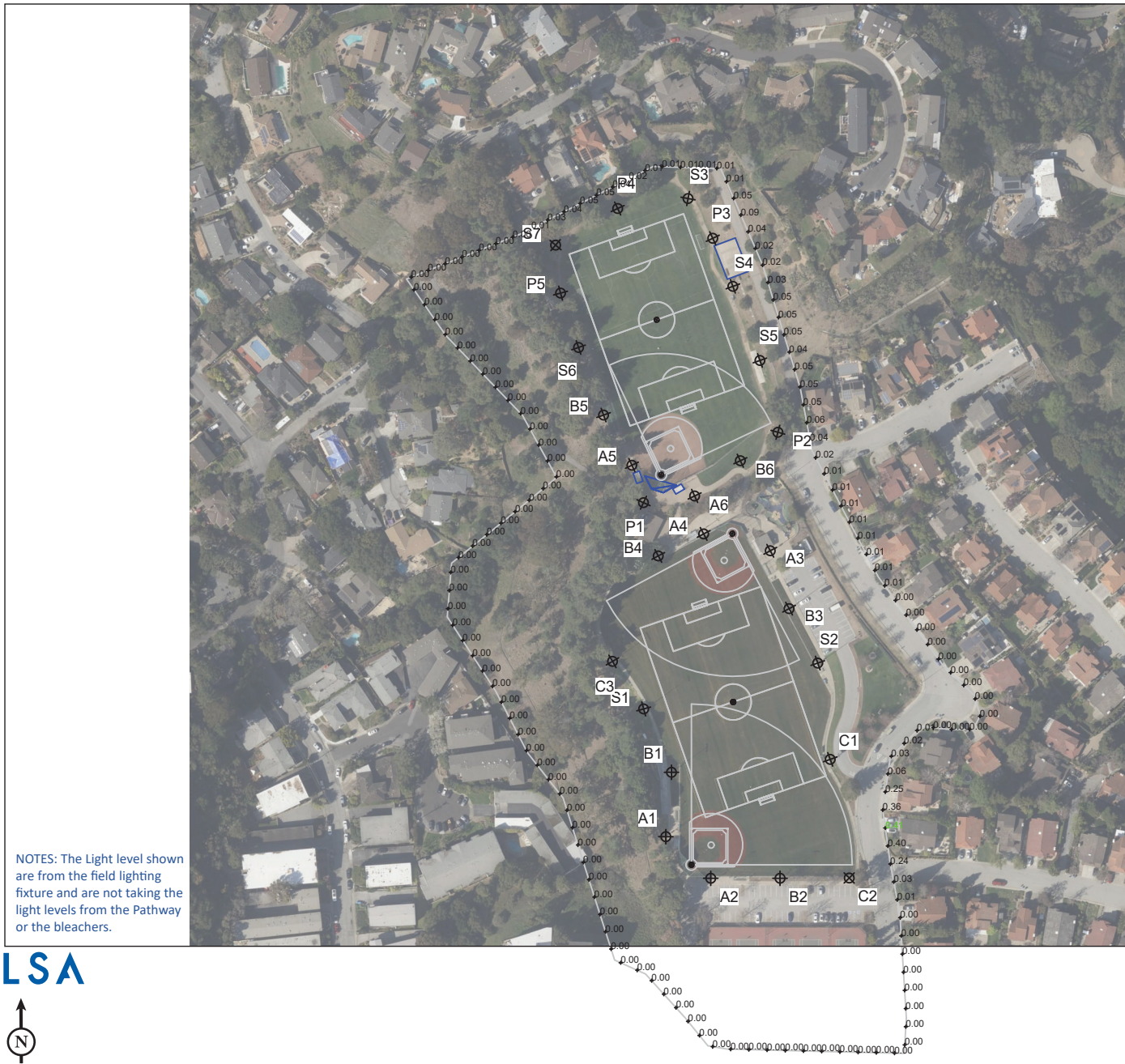
Field Measurements: Individual field measurements may vary from computer-calculated predictions and should be taken in accordance with IESNA RP-6-15.

Electrical System Requirements: Refer to Amperage Draw Chart and/or the "Musco Control System Summary" for electrical sizing.

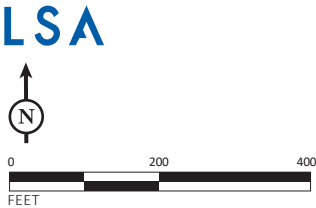
Installation Requirements: Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.

LSA





NOTES: The Light level shown are from the field lighting fixture and are not taking the light levels from the Pathway or the bleachers.



GRID SUMMARY	
Name:	ALL Spill - Prop Line - Field Lights & PWY no Bleachers
Spacing:	30.0'
Height:	5.0' above grade

ILLUMINATION SUMMARY	
HORIZONTAL FOOTCANDLES	
	Entire Grid
Scan Average:	0.0217
Maximum:	0.41
Minimum:	0.00
No. of Points:	138
LUMINAIRE INFORMATION	
Applied Circuits:	A, B, C, D, F, G, H, I, K
No. of Luminaires:	113
Avg Load:	100.52 kW
Max Load:	100.37 kW

Guaranteed Performance: The ILLUMINATION described above is guaranteed per your Musco Warranty document.

Field Measurements: Individual field measurements may vary from computer-calculated predictions and should be taken in accordance with IESNA RP-6-15.

Electrical System Requirements: Refer to Amperage Draw Chart and/or the "Musco Control System Summary" for electrical sizing.

Installation Requirements: Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.

Pole location(s) ⊕ dimensions are relative to 0,0 reference point(s) ⊗

FIGURE 10



GRID SUMMARY	
Name:	ALL Spill - Prop Line - Field Lights & PWY no Bleachers
Spacing:	30.0'
Height:	5.0' above grade

ILLUMINATION SUMMARY	
MAX VERTICAL FOOTCANDLES	
	Entire Grid
Scan Average:	0.0618
Maximum:	0.77
Minimum:	0.00
No. of Points:	138
LUMINAIRE INFORMATION	
Applied Circuits:	A, B, C, D, F, G, H, I, K
No. of Luminaires:	113
Avg Load:	100.52 kW
Max Load:	100.37 kW

Guaranteed Performance: The ILLUMINATION described above is guaranteed per your Musco Warranty document.

Field Measurements: Individual field measurements may vary from computer-calculated predictions and should be taken in accordance with IESNA RP-6-15.

Electrical System Requirements: Refer to Amperage Draw Chart and/or the "Musco Control System Summary" for electrical sizing.

Installation Requirements: Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.

NOTES: The Light level shown are from the field lighting fixture and are not taking the light levels from the Pathway or the bleachers.

Pole location(s) ⊕ dimensions are relative to 0,0 reference point(s) ⊗

LSA

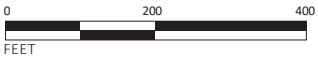
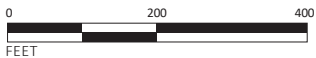


FIGURE 11



NOTES: The Light level shown are from the field lighting fixture and are not taking the light levels from the Pathway or the bleachers.

LBSA



SOURCE: MUSCO LIGHTING, APRIL 2022

I:\CNH2201\G\Fig 12_Highlands Prop Lt Spill Maint Candelas.ai (4/28/2022)

GRID SUMMARY	
Name:	ALL Spill - Prop Line - Field Lights & PWY no Bleachers
Spacing:	30.0'
Height:	5.0' above grade

ILLUMINATION SUMMARY	
CANDELA (PER FIXTURE)	
	Entire Grid
Scan Average:	1034.8683
Maximum:	9520.70
Minimum:	97.96
No. of Points:	138

LUMINAIRE INFORMATION	
Applied Circuits:	A, B, C, D, F, G, H, I, K
No. of Luminaires:	113
Avg Load:	100.52 kW
Max Load:	100.37 kW

Guaranteed Performance: The ILLUMINATION described above is guaranteed per your Musco Warranty document.

Field Measurements: Individual field measurements may vary from computer-calculated predictions and should be taken in accordance with IESNA RP-6-15.

Electrical System Requirements: Refer to Amperage Draw Chart and/or the "Musco Control System Summary" for electrical sizing.

Installation Requirements: Results assume $\pm 3\%$ nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.

FIGURE 12