

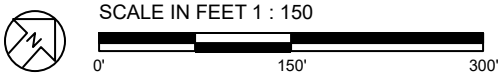
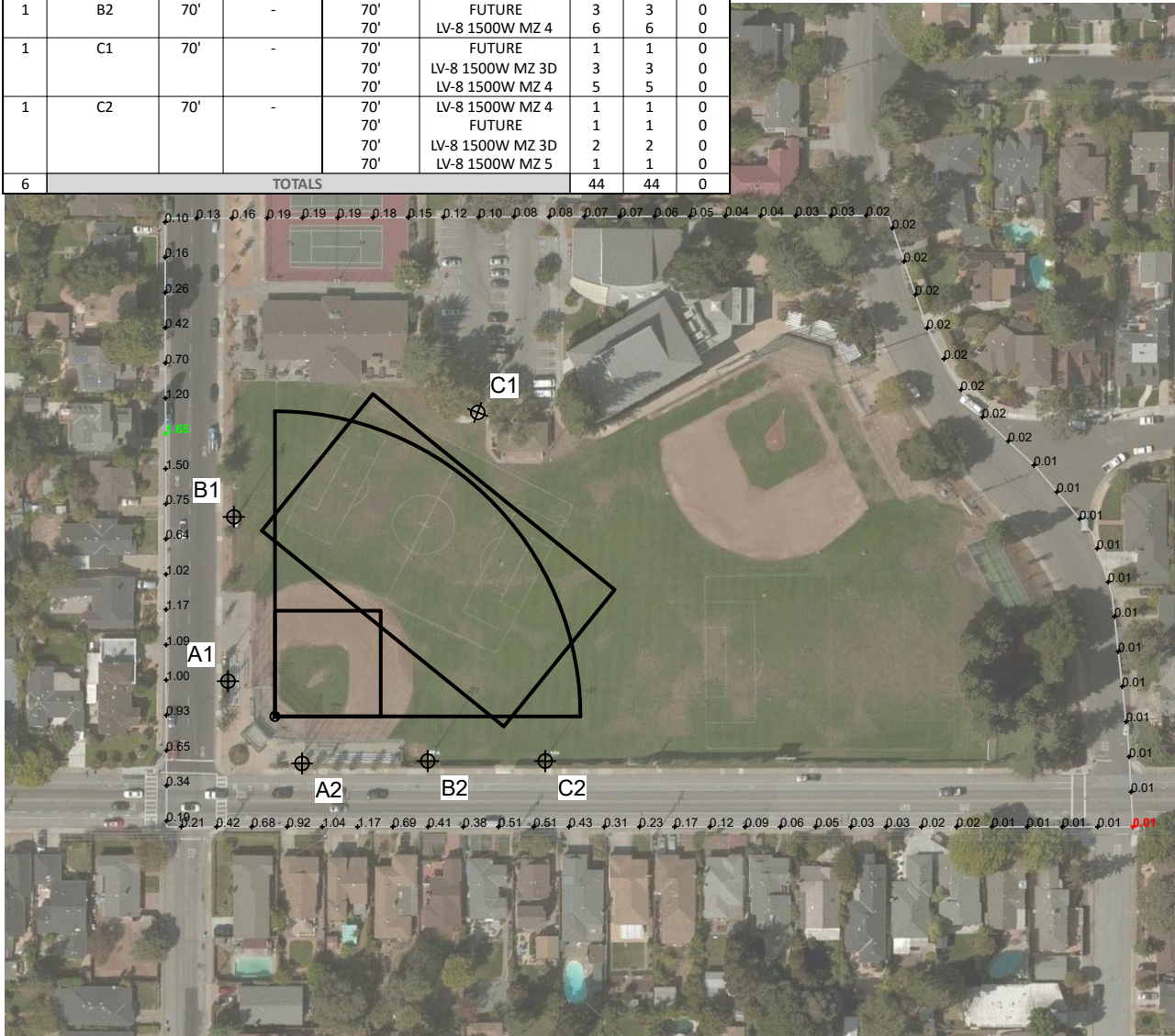
APPENDIX D

FIELD LIGHTING ILLUMINATION SUMMARIES

Burton Park Existing Lighting Plans

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'	-	60'	LV-8 1500W MZ 4	2	2	0
				60'	FUTURE	3	3	0
				60'	LV-8 1500W MZ 5	1	1	0
1	B1	70'	-	70'	LV-8 1500W MZ 4	5	5	0
				70'	FUTURE	3	3	0
				70'	LV-8 1500W MZ 5	1	1	0
1	B2	70'	-	70'	FUTURE	3	3	0
				70'	LV-8 1500W MZ 4	6	6	0
1	C1	70'	-	70'	FUTURE	1	1	0
				70'	LV-8 1500W MZ 3D	3	3	0
				70'	LV-8 1500W MZ 4	5	5	0
1	C2	70'	-	70'	LV-8 1500W MZ 4	1	1	0
				70'	FUTURE	1	1	0
				70'	LV-8 1500W MZ 3D	2	2	0
				70'	LV-8 1500W MZ 5	1	1	0
6	TOTALS					44	44	0



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

Burton Park (existing)

San Carlos, CA

GRID SUMMARY

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

ILLUMINATION SUMMARY

MAINTAINED HORIZONTAL FOOTCANDLES

Entire Grid
Scan Average: 0.289
 Maximum: 1.65
 Minimum: 0.01
 No. of Points: 85

LUMINAIRE INFORMATION

Color / CRI: 1500W MZ / XXXX
 Luminaire Output: 155,000 / 155,000 lumens
 Average LLF: 0.800
No. of Luminaires: 30
 Total Load: 48.0 kW

Lumen Maintenance

Luminaire Type	L90 hrs	L80 hrs	L70 hrs
LV-8	--	--	--
FUTURE	--	--	--

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

Guaranteed Performance: The ILLUMINATION described above is guaranteed per your Musco Warranty document and includes a 0.95 dirt depreciation factor.

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.



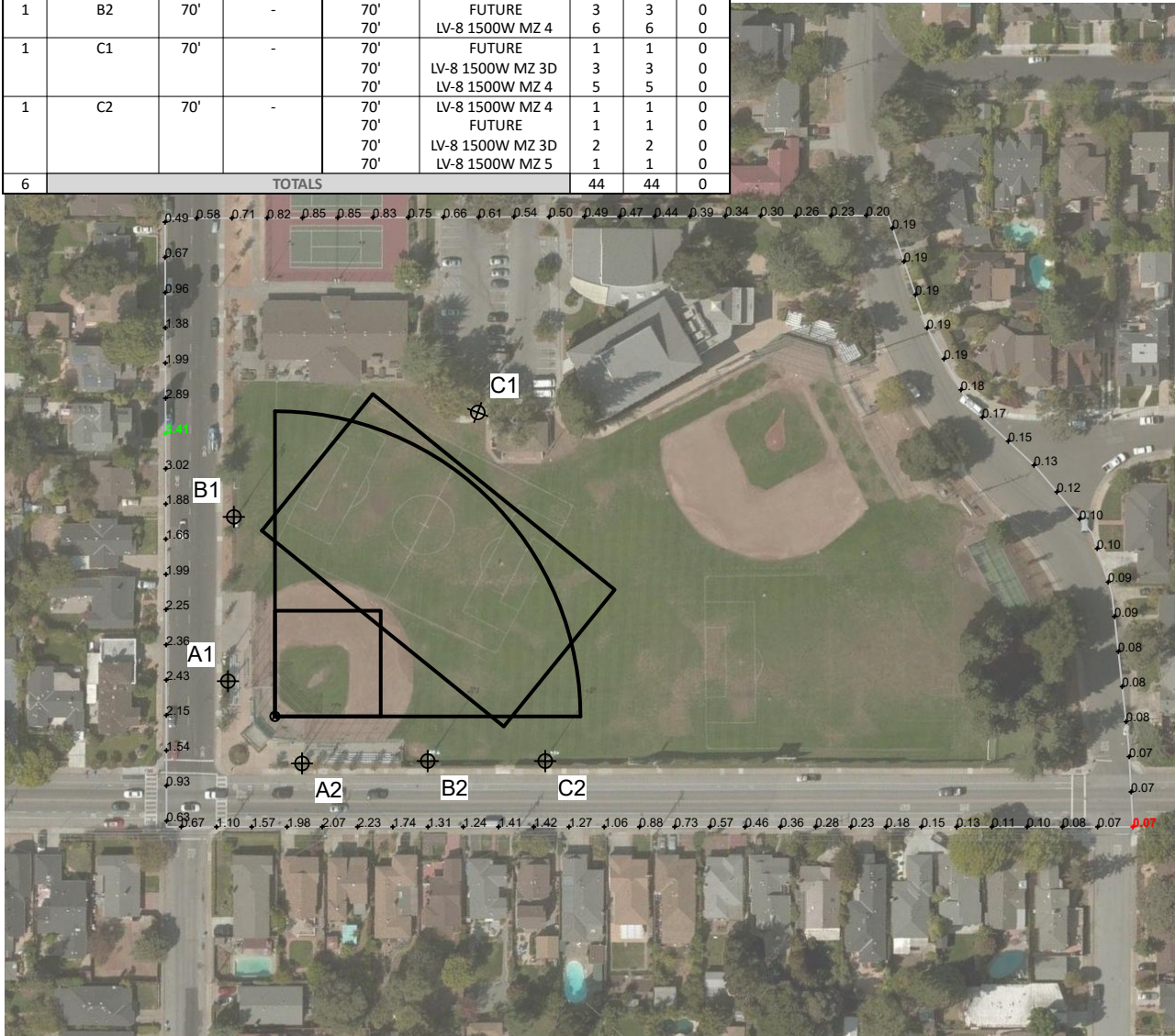
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ILLUMINATION SUMMARY

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'	-	60'	LV-8 1500W MZ 4	2	2	0
				60'	FUTURE	3	3	0
				60'	LV-8 1500W MZ 5	1	1	0
1	B1	70'	-	70'	LV-8 1500W MZ 4	5	5	0
				70'	FUTURE	3	3	0
				70'	LV-8 1500W MZ 5	1	1	0
1	B2	70'	-	70'	FUTURE	3	3	0
				70'	LV-8 1500W MZ 4	6	6	0
1	C1	70'	-	70'	FUTURE	1	1	0
				70'	LV-8 1500W MZ 3D	3	3	0
				70'	LV-8 1500W MZ 4	5	5	0
1	C2	70'	-	70'	LV-8 1500W MZ 4	1	1	0
				70'	FUTURE	1	1	0
				70'	LV-8 1500W MZ 3D	2	2	0
				70'	LV-8 1500W MZ 5	1	1	0
6	TOTALS					44	44	0



Burton Park (existing)

San Carlos, CA

GRID SUMMARY

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

ILLUMINATION SUMMARY

MAINTAINED MAX VERTICAL FOOTCANDLES

Scan Average: 0.817
Maximum: 3.41
Minimum: 0.07
No. of Points: 85

LUMINAIRE INFORMATION

Color / CRI: 1500W MZ / XXXX
Luminaire Output: 155,000 / 155,000 lumens
Average LLF: 0.800
No. of Luminaires: 30
Total Load: 48.0 kW

Lumen Maintenance

Luminaire Type	L90 hrs	L80 hrs	L70 hrs
LV-8	--	--	--
FUTURE	--	--	--

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

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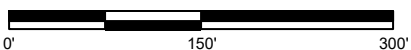


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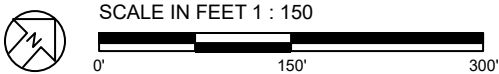
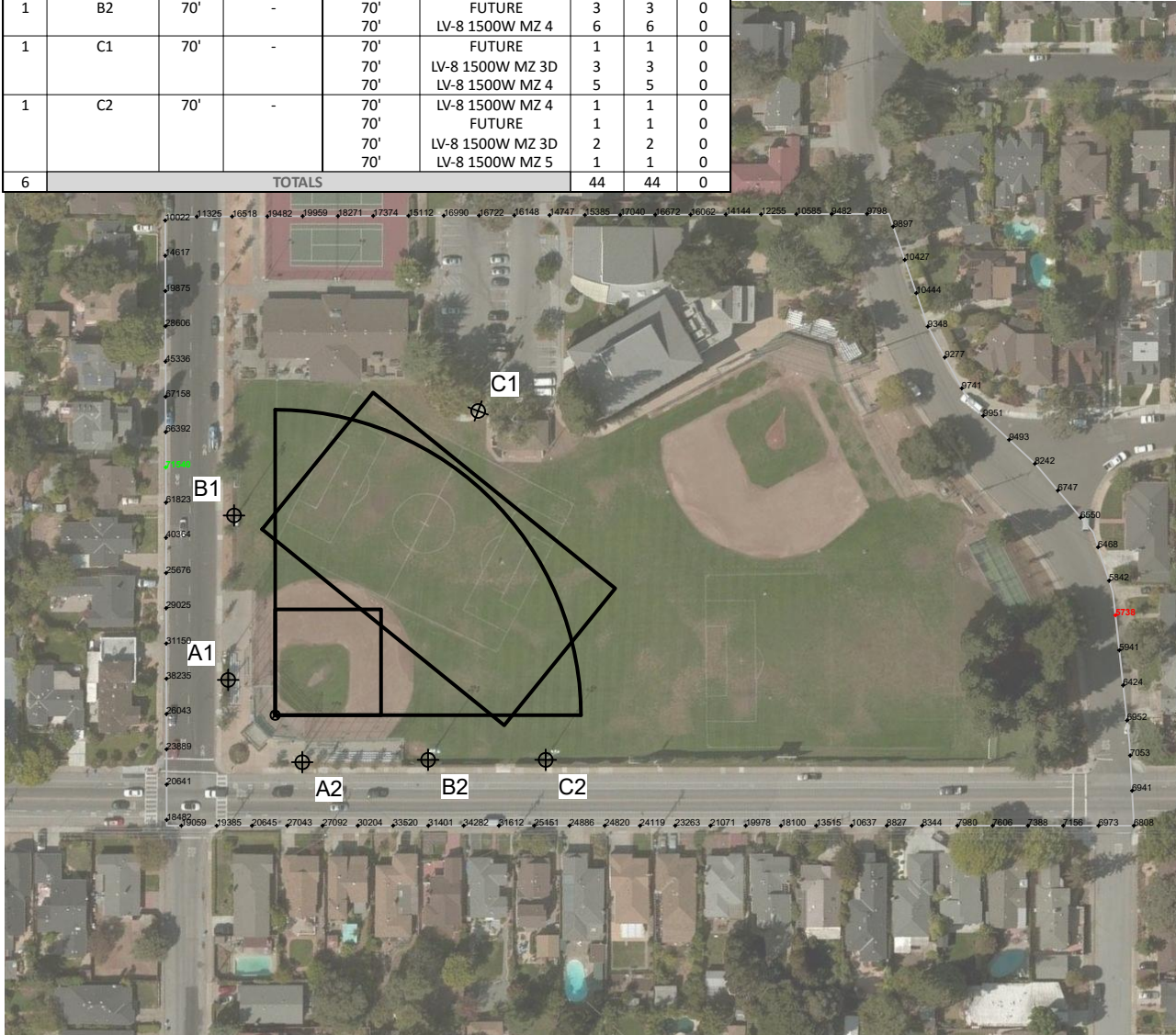
SCALE IN FEET 1 : 150



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

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'	-	60'	LV-8 1500W MZ 4	2	2	0
				60'	FUTURE	3	3	0
				60'	LV-8 1500W MZ 5	1	1	0
1	B1	70'	-	70'	LV-8 1500W MZ 4	5	5	0
				70'	FUTURE	3	3	0
				70'	LV-8 1500W MZ 5	1	1	0
1	B2	70'	-	70'	FUTURE	3	3	0
				70'	LV-8 1500W MZ 4	6	6	0
1	C1	70'	-	70'	FUTURE	1	1	0
				70'	LV-8 1500W MZ 3D	3	3	0
				70'	LV-8 1500W MZ 4	5	5	0
1	C2	70'	-	70'	LV-8 1500W MZ 4	1	1	0
				70'	FUTURE	1	1	0
				70'	LV-8 1500W MZ 3D	2	2	0
				70'	LV-8 1500W MZ 5	1	1	0
6	TOTALS					44	44	0



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

Burton Park (existing)

San Carlos, CA

GRID SUMMARY

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

ILLUMINATION SUMMARY

MAINTAINED CANDELA (PER FIXTURE)

Entire Grid
Scan Average: 19238.604
 Maximum: 71539.55
 Minimum: 5737.56
 No. of Points: 85

LUMINAIRE INFORMATION

Color / CRI: 1500W MZ / XXXX
 Luminaire Output: 155,000 / 155,000 lumens
 Average LLF: 0.800
No. of Luminaires: 30
 Total Load: 48.0 kW

Lumen Maintenance

Luminaire Type	L90 hrs	L80 hrs	L70 hrs
LV-8	--	--	--
FUTURE	--	--	--

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

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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.



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Burton Park (existing)

San Carlos, CA

GLARE IMPACT

Summary

Map indicates the maximum candela an observer would see when facing the brightest light source from any direction.

A well-designed lighting system controls light to provide maximum useful on-field illumination with minimal destructive off-site glare.

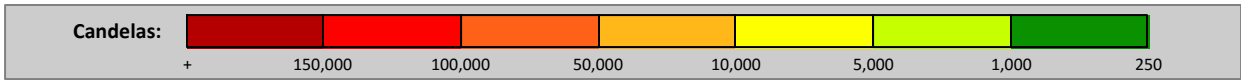
GLARE

Candela Levels

High Glare: 150,000 or more candela
Should only occur on or very near the lit area where the light source is in direct view. Care must be taken to minimize high glare zones.

Significant Glare: 25,000 to 75,000 candela
Equivalent to high beam headlights of a car.

Minimal to No Glare: 500 or less candela
Equivalent to 100W incandescent light bulb.



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Burton Park Proposed Lighting Plans

Burton Park Multi-Use Field

San Carlos, CA

Lighting System

Pole / Fixture Summary						
Pole ID	Pole Height	Mtg Height	Fixture Qty	Luminaire Type	Load	Group
A1-A2	60'	60'	2	TLC-LED-1150	2.30 kW	A
		25'	1	TLC-LED-1150	1.15 kW	A
A3-A4	70'	70'	4	TLC-LED-1150	4.60 kW	C
		25'	1	TLC-LED-1150	1.15 kW	C
B1-B2	70'	70'	5	TLC-LED-1150	5.75 kW	A
		25'	1	TLC-LED-1150	1.15 kW	A
B3	80'	80'	7	TLC-LED-1150	8.05 kW	C
		25'	1	TLC-LED-1150	1.15 kW	C
B4	80'	80'	3	TLC-LED-1150	3.45 kW	B
		80'	4	TLC-LED-1150	4.60 kW	C
		25'	1	TLC-LED-1150	1.15 kW	C
C1	70'	70'	5	TLC-LED-1150	5.75 kW	B
C2	70'	70'	2	TLC-LED-1150	2.30 kW	B
		70'	2	TLC-LED-1150	2.30 kW	A
C3-C4	80'	80'	4	TLC-LED-1150	4.60 kW	C
		25'	1	TLC-LED-1150	1.15 kW	C
12			63		72.45 kW	

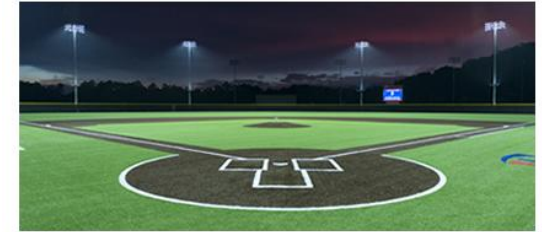
Group Summary					
Group	Description	Avg Load	Max Load	Fixture Qty	
A	Baseball 1	23.0 kW	23.0 kW	20	
B	Multipurpose	11.5 kW	11.5 kW	10	
C	Baseball 2	37.95 kW	37.95 kW	33	

Fixture Type Summary								
Type	Source	Wattage	Lumens	L90	L80	L70	Quantity	
TLC-LED-1150	LED 5700K - 75 CRI	1150W	121,000	>51,000	>51,000	>51,000	63	

Light Level Summary

Calculation Grid Summary							
Grid Name	Calculation Metric	Illumination				Groups	Fixture Qty
		Ave	Min	Max	Max/Min		
Baseball 1 (Infield)	Horizontal Illuminance	41.9	30	58	1.90	A,B	30
Baseball 1 (Outfield)	Horizontal Illuminance	31.2	20	46	2.31	A,B	30
Baseball 2 (Infield)	Horizontal Illuminance	50	33	62	1.85	B,C	43
Baseball 2 (Outfield)	Horizontal Illuminance	31.1	22	45	2.03	B,C	43
Property Spill Line	Horizontal Illuminance	0.01	0	0.09	0.00	A,B,C	63
Property Spill Line	Max Candela Metric	514	0	2589	0.00	A,B,C	63
Property Spill Line	Max Vertical Illuminance Metric	0.02	0	0.13	0.00	A,B,C	63
Soccer 1	Horizontal Illuminance	30.1	23	43	1.91	A,B	30
Soccer 2	Horizontal Illuminance	30.3	25	38	1.52	B,C	43

From Hometown to Professional



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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	B1-B2	70'	-	25'	TLC-LED-1150	1	1	0
				70'	TLC-LED-1150	5	5	0
1	B4	80'	-	25'	TLC-LED-1150	1	0	1
				80'	TLC-LED-1150	7	3	4
1	C1	70'	-	70'	TLC-LED-1150	5	5	0
1	C2	70'	-	70'	TLC-LED-1150	4	4	0
7	TOTALS					35	30	5

Burton Park Multi-Use Field

San Carlos, CA

GRID SUMMARY

Name: Baseball 1
Size: 260'/260' - basepath 70'
Spacing: 20.0' x 20.0'
Height: 3.0' above grade

ILLUMINATION SUMMARY

MAINTAINED HORIZONTAL FOOTCANDLES

	Infield	Outfield
Scan Average:	41.9	31.2
Maximum:	58	46
Minimum:	30	20
Avg / Min:	1.38	1.57
Max / Min:	1.90	2.31
UG (adjacent pts):	1.46	1.50
CU:	0.61	
No. of Points:	25	135

LUMINAIRE INFORMATION

Color / CRI: 5700K - 75 CRI
Luminaire Output: 121,000 lumens
No. of Luminaires: 30
Total Load: 34.5 kW

Lumen Maintenance

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

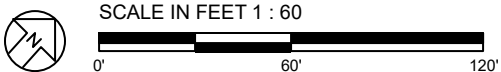
Reported per TM-21-11. See luminaire datasheet for details.

Guaranteed Performance: The ILLUMINATION described above is guaranteed per your Musco Warranty document and includes a 0.95 dirt depreciation factor.

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) ⊗



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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'	-	25'	TLC-LED-1150	1	1	0
				70'	TLC-LED-1150	4	4	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	2	2
2	C3-C4	80'	-	25'	TLC-LED-1150	1	1	0
				80'	TLC-LED-1150	4	4	0
8	TOTALS					45	43	2

Burton Park Multi-Use Field

San Carlos, CA

GRID SUMMARY

Name: Baseball 2
Size: 300'/300'/300' - basepath 90'
Spacing: 30.0' x 30.0'
Height: 3.0' above grade

ILLUMINATION SUMMARY

MAINTAINED HORIZONTAL FOOTCANDLES

	Infield	Outfield
Guaranteed Average:	50	30
Scan Average:	50.0	31.1
Maximum:	62	45
Minimum:	33	22
Avg / Min:	1.50	1.39
Guaranteed Max / Min:	2	2.5
Max / Min:	1.85	2.03
UG (adjacent pts):	1.26	1.43
CU:	0.63	
No. of Points:	25	73

LUMINAIRE INFORMATION

Color / CRI: 5700K - 75 CRI
Luminaire Output: 121,000 lumens
No. of Luminaires: 43
Total Load: 49.45 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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ENGINEERED DESIGN By: Jacob McCrea • File #185750b • 16-May-17



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ILLUMINATION SUMMARY

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	B1-B2	70'	-	25'	TLC-LED-1150	1	1	0
				70'	TLC-LED-1150	5	5	0
1	B4	80'	-	25'	TLC-LED-1150	1	0	1
				80'	TLC-LED-1150	7	3	4
1	C1	70'	-	70'	TLC-LED-1150	5	5	0
1	C2	70'	-	70'	TLC-LED-1150	4	4	0
TOTALS						35	30	5

Burton Park Multi-Use Field

San Carlos, CA

GRID SUMMARY

Name: Soccer 1
Size: 265' x 150'
Spacing: 30.0' x 30.0'
Height: 3.0' above grade

ILLUMINATION SUMMARY

MAINTAINED HORIZONTAL FOOTCANDLES

Entire Grid	
Guaranteed Average:	30
Scan Average:	30.1
Maximum:	43
Minimum:	23
Avg / Min:	1.33
Guaranteed Max / Min:	2.5
Max / Min:	1.91
UG (adjacent pts):	1.51
CU:	0.31
No. of Points:	40

LUMINAIRE INFORMATION

Color / CRI: 5700K - 75 CRI
Luminaire Output: 121,000 lumens
No. of Luminaires: 30
Total Load: 34.5 kW

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

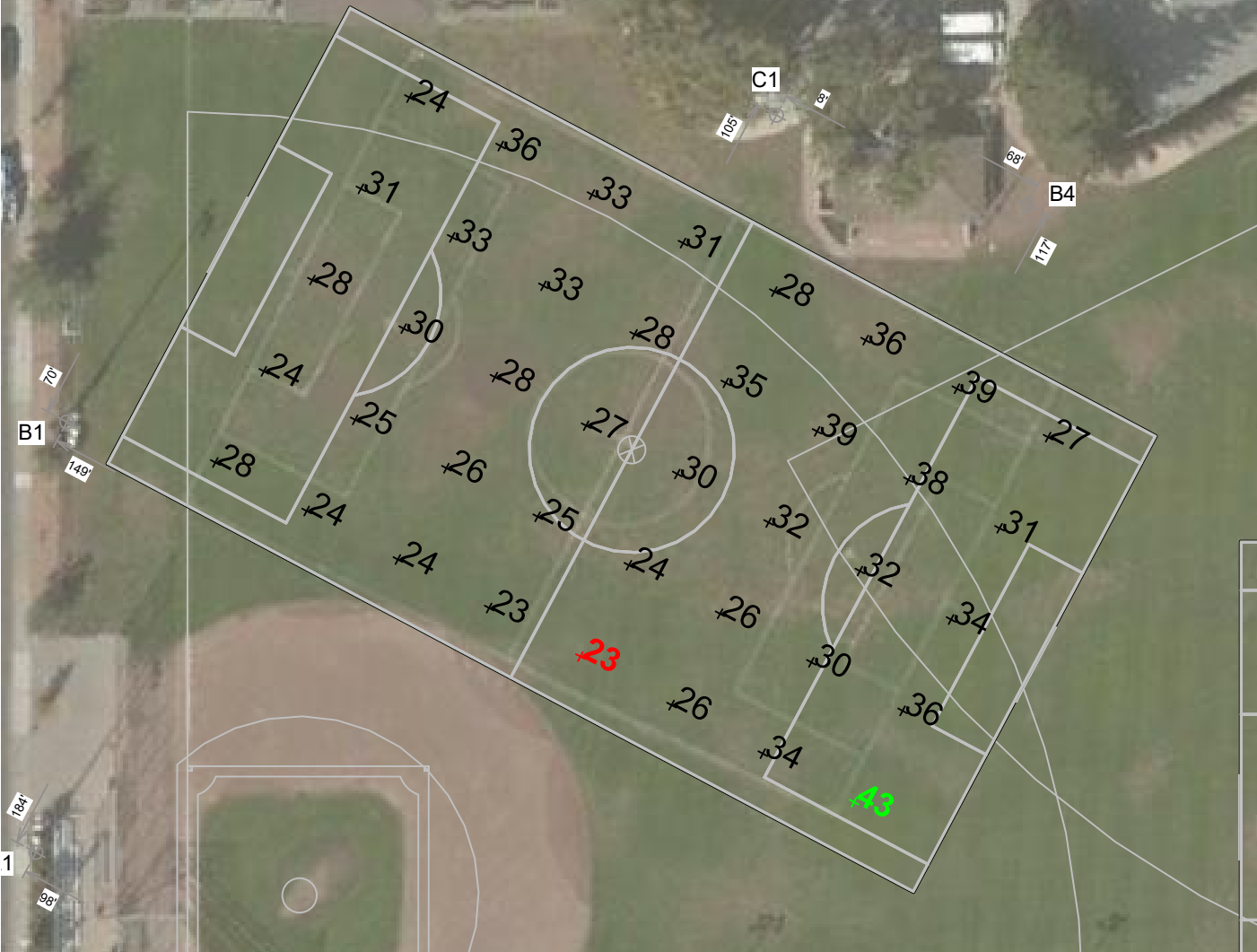
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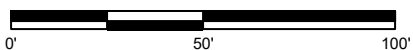
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SCALE IN FEET 1 : 50



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

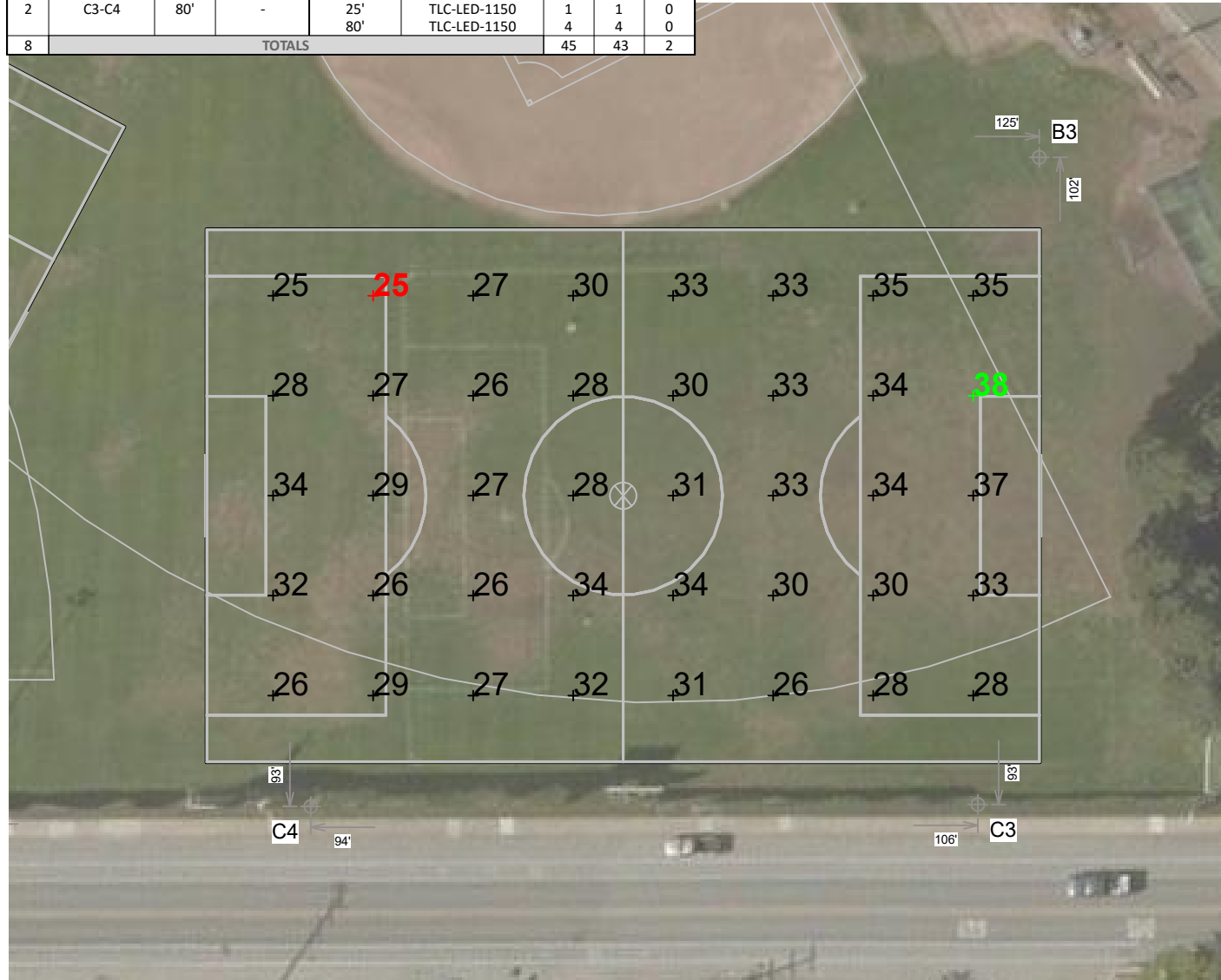


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EQUIPMENT LIST FOR AREAS SHOWN

Pole			Luminaires					
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LUMINAIRE TYPE	QTY / POLE	THIS GRID	OTHER GRIDS
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				70'	TLC-LED-1150	4	4	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	2	2
2	C3-C4	80'	-	25'	TLC-LED-1150	1	1	0
				80'	TLC-LED-1150	4	4	0
8	TOTALS					45	43	2



Burton Park Multi-Use Field

San Carlos, CA

GRID SUMMARY

Name: Soccer 2
Size: 250' x 160'
Spacing: 30.0' x 30.0'
Height: 3.0' above grade

ILLUMINATION SUMMARY

MAINTAINED HORIZONTAL FOOTCANDLES

Entire Grid	
Guaranteed Average:	30
Scan Average:	30.3
Maximum:	38
Minimum:	25
Avg / Min:	1.23
Guaranteed Max / Min:	2.5
Max / Min:	1.52
UG (adjacent pts):	1.31
CU:	0.22
No. of Points:	40

LUMINAIRE INFORMATION

Color / CRI: 5700K - 75 CRI
Luminaire Output: 121,000 lumens
No. of Luminaires: 43
Total Load: 49.45 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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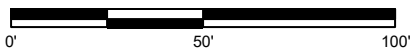


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SCALE IN FEET 1 : 50



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

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



Burton Park Multi-Use Field

San Carlos, CA

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.

Guaranteed Performance: The ILLUMINATION described above is guaranteed per your Musco Warranty document and includes a 0.95 dirt depreciation factor.

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.

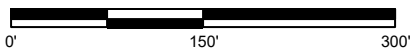


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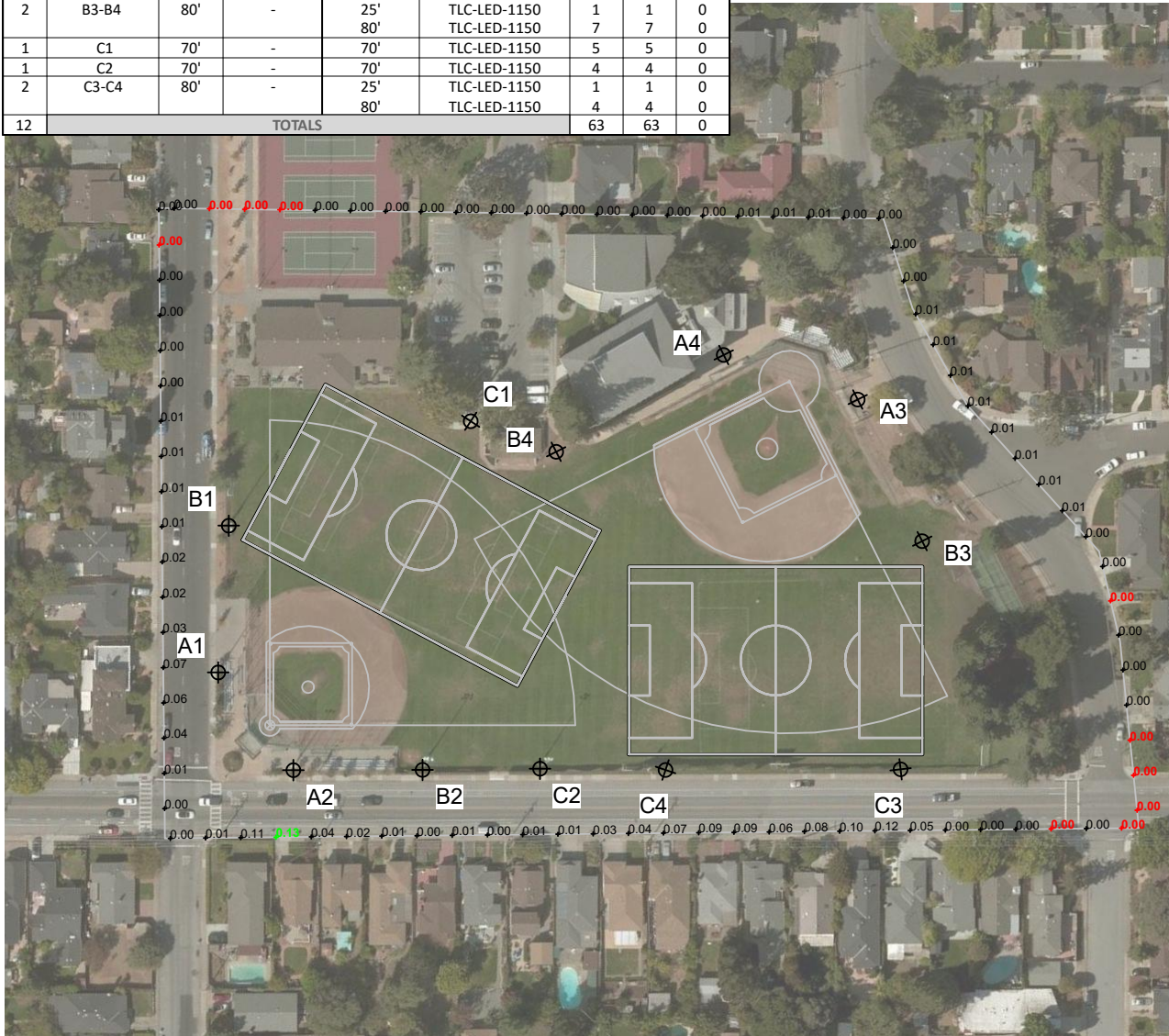
SCALE IN FEET 1 : 150



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

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



Burton Park Multi-Use Field

San Carlos, CA

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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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.

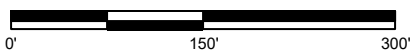


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SCALE IN FEET 1 : 150



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

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



Burton Park Multi-Use Field

San Carlos, CA

GRID SUMMARY

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

ILLUMINATION SUMMARY

MAINTAINED CANDELA (PER FIXTURE)

Scan Average: Entire Grid
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.

Guaranteed Performance: The ILLUMINATION described above is guaranteed per your Musco Warranty document and includes a 0.95 dirt depreciation factor.

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.

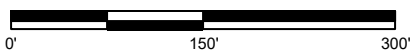


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SCALE IN FEET 1 : 150



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

Burton Park Multi-Use Field

San Carlos, CA



EQUIPMENT LAYOUT

INCLUDES:

- Baseball 1
- Baseball 2
- Soccer 1
- Soccer 2

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.

EQUIPMENT LIST FOR AREAS SHOWN

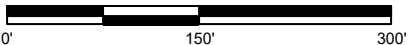
QTY	LOCATION	Pole		Luminaires		
		SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LUMINAIRE TYPE	QTY/POLE
2	A1-A2	60'	-	25'	TLC-LED-1150	1
				60'	TLC-LED-1150	2
2	A3-A4	70'	-	25'	TLC-LED-1150	1
				70'	TLC-LED-1150	4
2	B1-B2	70'	-	25'	TLC-LED-1150	1
				70'	TLC-LED-1150	5
2	B3-B4	80'	-	25'	TLC-LED-1150	1
				80'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

SINGLE LUMINAIRE AMPERAGE DRAW CHART

Ballast Specifications (.90 min power factor)	Line Amperage Per Luminaire (max draw)					
	208 (60)	220 (60)	240 (60)	277 (60)	347 (60)	480 (60)
Single Phase Voltage	208 (60)	220 (60)	240 (60)	277 (60)	347 (60)	480 (60)
TLC-LED-1150	7.0	6.6	6.1	5.2	4.2	3.8



SCALE IN FEET 1 : 150



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



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Burton Park Multi-Use Field

San Carlos, CA

GLARE IMPACT

Summary

Map indicates the maximum candela an observer would see when facing the brightest light source from any direction.

A well-designed lighting system controls light to provide maximum useful on-field illumination with minimal destructive off-site glare.

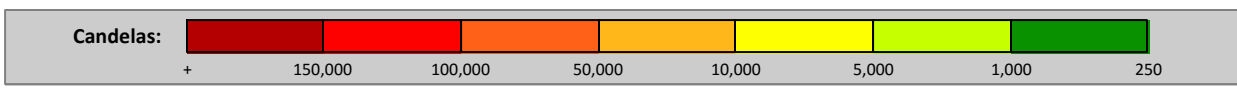
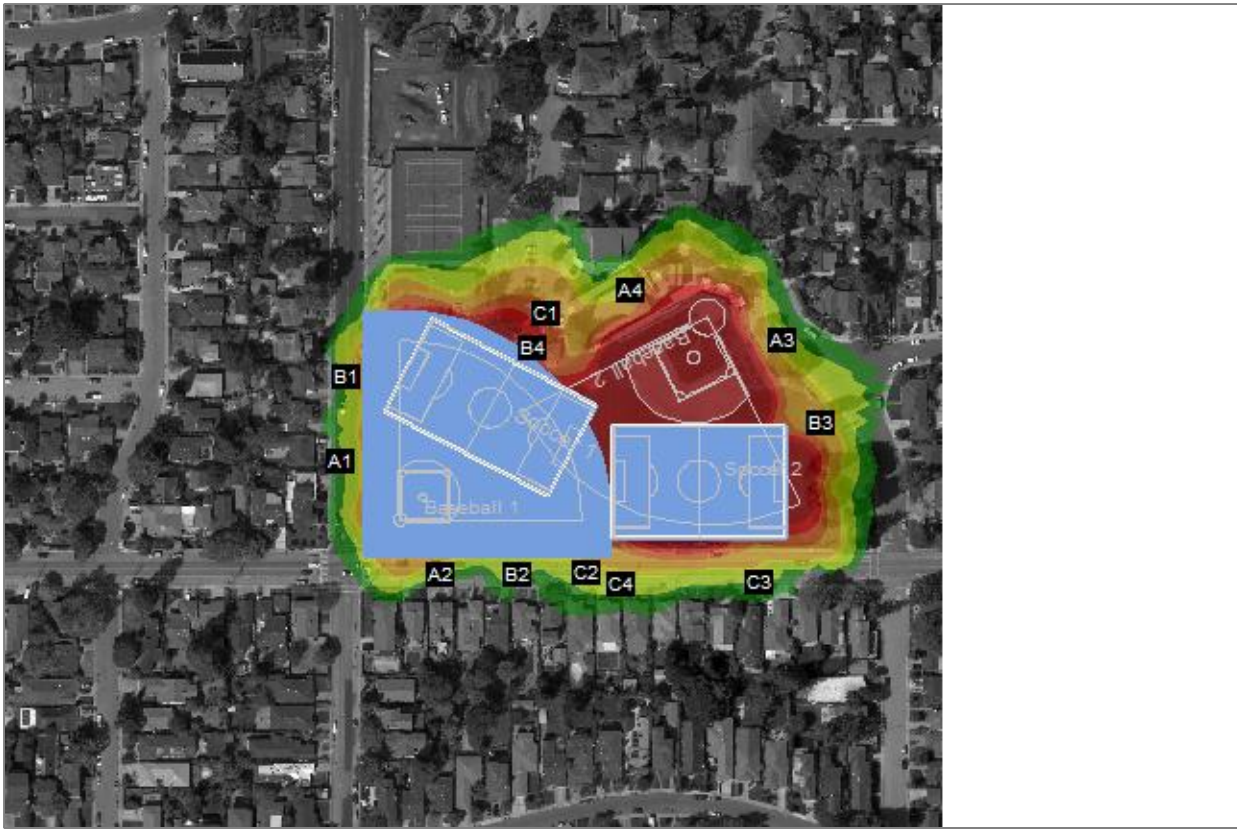
GLARE

Candela Levels

High Glare: 150,000 or more candela
Should only occur on or very near the lit area where the light source is in direct view. Care must be taken to minimize high glare zones.

Significant Glare: 25,000 to 75,000 candela
Equivalent to high beam headlights of a car.

Minimal to No Glare: 500 or less candela
Equivalent to 100W incandescent light bulb.



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Highlands Park Existing Lighting Plans

EQUIPMENT LIST FOR AREAS SHOWN

Pole		Luminaires							
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LUMINAIRE TYPE	QTY / POLE	THIS GRID	OTHER GRIDS	
2	1C2, 3C2	70'	-	70'	SC-1 MH 1500W MH 4	8	8	0	
2	1C1, 3C1	70'	-	70'	SC-1 MH 1500W MH 4	11	11	0	
1	1C3	70'	-	70'	SC-1 MH 1500W MH 4	6	6	0	
4	3A2	50'	-	50'	SC-1 MH 1500W MH 4	4	4	0	
	A1-A2, 3A1								
2	B1, 3B1	70'	-	70'	SC-1 MH 1500W MH 4	7	7	0	
2	B2, 3B2	70'	-	70'	SC-1 MH 1500W MH 4	5	5	0	
13	TOTALS						84	84	0

Highlands Park Multi-Use Field

San Carlos, CA

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

ILLUMINATION SUMMARY			
MAINTAINED HORIZONTAL FOOTCANDLES			
		Entire Grid	
Scan Average:	0.5539		
Maximum:	3.74		
Minimum:	0.05		
No. of Points:	133		
LUMINAIRE INFORMATION			
Color / CRI:	5700K - 75 CRI / 1500W MH		
Luminaire Output:	121,000 / 155,000 lumens		
No. of Luminaires:	84		
Total Load:	134.4 kW		
Lumen Maintenance			
Luminaire Type	L90 hrs	L80 hrs	L70 hrs
TLC-LED-1150	>51,000	>51,000	>51,000
SPORTSCLUSTER 1	--	--	--
Reported per TM-21-11. See luminaire datasheet for details.			

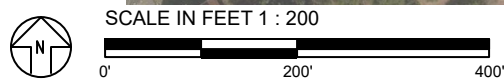


Guaranteed Performance: The ILLUMINATION described above is guaranteed per your Musco Warranty document and includes a 0.95 dirt depreciation factor.

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) ⊗



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EQUIPMENT LIST FOR AREAS SHOWN

Pole		Luminaires							
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LUMINAIRE TYPE	QTY / POLE	THIS GRID	OTHER GRIDS	
2	1C2, 3C2	70'	-	70'	SC-1 MH 1500W MH 4	8	8	0	
2	1C1, 3C1	70'	-	70'	SC-1 MH 1500W MH 4	11	11	0	
1	1C3	70'	-	70'	SC-1 MH 1500W MH 4	6	6	0	
4	3A2	50'	-	50'	SC-1 MH 1500W MH 4	4	4	0	
	A1-A2, 3A1								
2	B1, 3B1	70'	-	70'	SC-1 MH 1500W MH 4	7	7	0	
2	B2, 3B2	70'	-	70'	SC-1 MH 1500W MH 4	5	5	0	
13	TOTALS						84	84	0

Highlands Park Multi-Use Field

San Carlos, CA

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

ILLUMINATION SUMMARY			
MAINTAINED MAX VERTICAL FOOTCANDLES			
Entire Grid	3.5470		
Scan Average:	9.76		
Maximum:	0.63		
Minimum:	133		
No. of Points:			
LUMINAIRE INFORMATION			
Color / CRI:	5700K - 75 CRI / 1500W MH		
Luminaire Output:	121,000 / 155,000 lumens		
No. of Luminaires:	84		
Total Load:	134.4 kW		
Lumen Maintenance			
Luminaire Type	L90 hrs	L80 hrs	L70 hrs
TLC-LED-1150	>51,000	>51,000	>51,000
SPORTSCLUSTER 1	--	--	--
Reported per TM-21-11. See luminaire datasheet for details.			

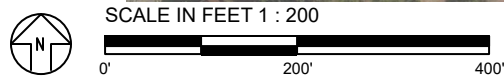


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Field Measurements: Individual field measurements may vary from computer-calculated predictions and should be taken in accordance with IESNA RP-6-15.

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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) ⊗



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EQUIPMENT LIST FOR AREAS SHOWN

Pole		Luminaires							
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LUMINAIRE TYPE	QTY / POLE	THIS GRID	OTHER GRIDS	
2	1C2, 3C2	70'	-	70'	SC-1 MH 1500W MH 4	8	8	0	
2	1C1, 3C1	70'	-	70'	SC-1 MH 1500W MH 4	11	11	0	
1	1C3	70'	-	70'	SC-1 MH 1500W MH 4	6	6	0	
4	3A2	50'	-	50'	SC-1 MH 1500W MH 4	4	4	0	
	A1-A2, 3A1								
2	B1, 3B1	70'	-	70'	SC-1 MH 1500W MH 4	7	7	0	
2	B2, 3B2	70'	-	70'	SC-1 MH 1500W MH 4	5	5	0	
13	TOTALS						84	84	0

Highlands Park Multi-Use Field

San Carlos, CA

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

ILLUMINATION SUMMARY			
MAINTAINED CANDELA (PER FIXTURE)			
		Entire Grid	
Scan Average:	93272.4922		
Maximum:	120836.79		
Minimum:	75794.13		
No. of Points:	133		
LUMINAIRE INFORMATION			
Color / CRI:	5700K - 75 CRI / 1500W MH		
Luminaire Output:	121,000 / 155,000 lumens		
No. of Luminaires:	84		
Total Load:	134.4 kW		
Lumen Maintenance			
Luminaire Type	L90 hrs	L80 hrs	L70 hrs
TLC-LED-1150	>51,000	>51,000	>51,000
SPORTSCLUSTER 1	--	--	--
Reported per TM-21-11. See luminaire datasheet for details.			



Guaranteed Performance: The ILLUMINATION described above is guaranteed per your Musco Warranty document and includes a 0.95 dirt depreciation factor.

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.

SCALE IN FEET 1 : 200



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



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Highlands Park Multi-Use Field

San Carlos, CA

GLARE IMPACT

Summary

Map indicates the maximum candela an observer would see when facing the brightest light source from any direction.

A well-designed lighting system controls light to provide maximum useful on-field illumination with minimal destructive off-site glare.

GLARE

Candela Levels

High Glare: 150,000 or more candela

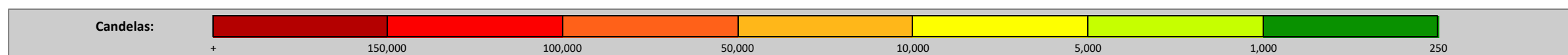
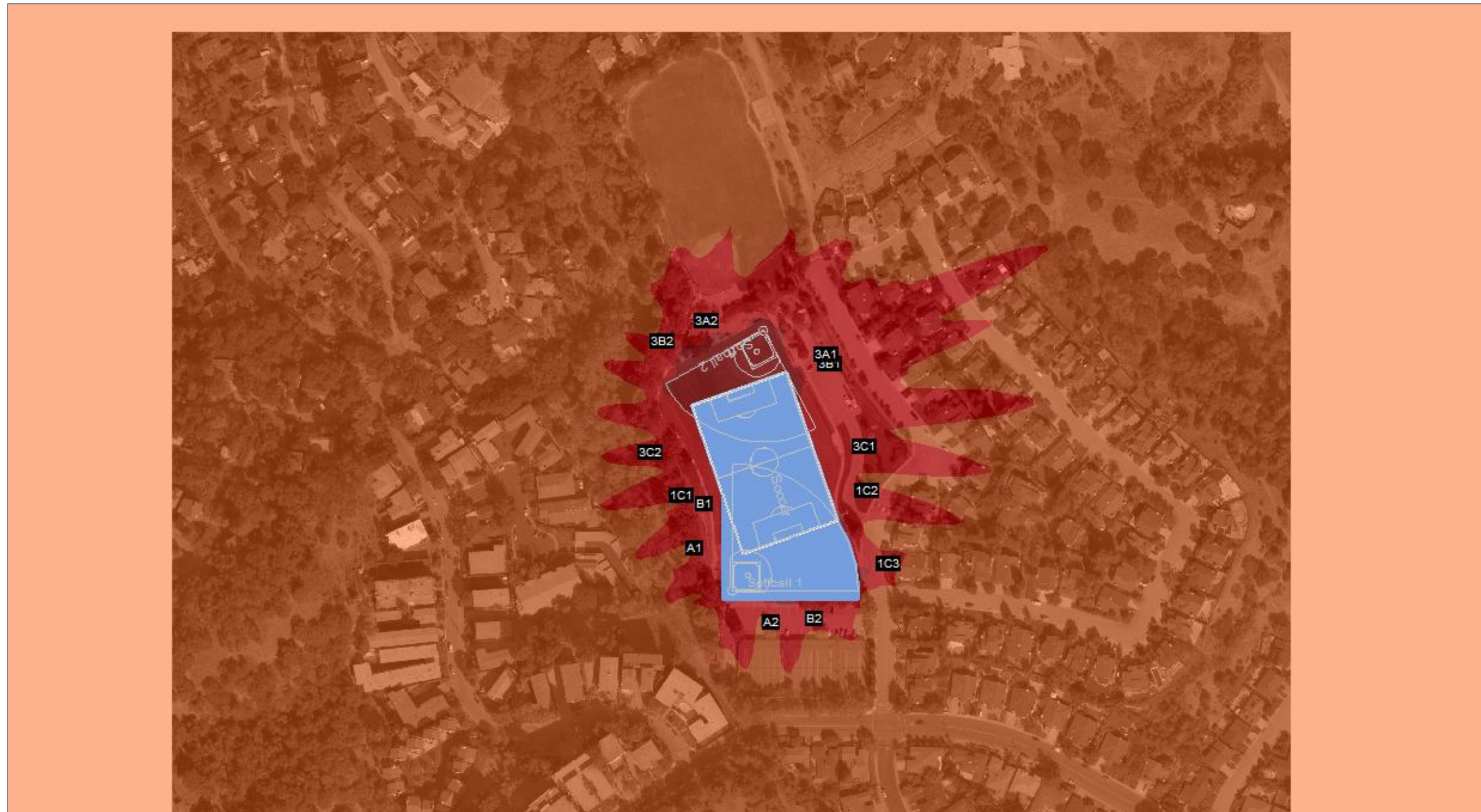
Should only occur on or very near the lit area where the light source is in direct view. Care must be taken to minimize high glare zones.

Significant Glare: 25,000 to 75,000 candela

Equivalent to high beam headlights of a car.

Minimal to No Glare: 500 or less candela

Equivalent to 100W incandescent light bulb.



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Highlands Park Proposed Lighting Plans

Highlands Park Multi-Use Field

San Carlos, CA

Lighting System

Pole / Fixture Summary						
Pole ID	Pole Height	Mtg Height	Fixture Qty	Luminaire Type	Load	Group
A1-A2	60'	60'	3	TLC-LED-1150	3.45 kW	A
A3-A4	60'	60'	3	TLC-LED-1150	3.45 kW	D
A5-A6	70'	70'	3	TLC-LED-1150	3.45 kW	E
		25'	1	TLC-LED-1150	0.34 kW	E
B1	80'	80'	6	TLC-LED-1150	6.90 kW	B
		25'	1	TLC-LED-1150	1.15 kW	A
B2, C2	70'	70'	4	TLC-LED-1150	4.60 kW	A
		25'	1	TLC-LED-1150	1.15 kW	A
B3	80'	80'	7	TLC-LED-1150	8.05 kW	C
		25'	1	TLC-LED-1150	1.15 kW	D
B4	70'	70'	4	TLC-LED-1150	4.60 kW	D
		25'	1	TLC-LED-1150	1.15 kW	D
B5	70'	70'	5	TLC-LED-1150	5.75 kW	F
		25'	1	TLC-LED-1150	0.34 kW	E
C1	80'	80'	7	TLC-LED-1150	8.05 kW	B
		25'	1	TLC-LED-1150	1.15 kW	A
C3	80'	80'	8	TLC-LED-1150	9.20 kW	C
		25'	1	TLC-LED-1150	1.15 kW	D
S1, S5	70'	70'	4	TLC-LED-1150	4.60 kW	F
S2, S4	70'	70'	3	TLC-LED-1150	3.45 kW	F
S3	70'	70'	6	TLC-LED-1150	6.90 kW	F
		25'	1	TLC-LED-1150	0.34 kW	E
19			94		104.86 kW	

Group Summary				
Group	Description	Avg Load	Max Load	Fixture Qty
A	Softball 1	20.7 kW	20.7 kW	18
B	Multipurpose 1	14.95 kW	14.95 kW	13
C	Multipurpose 1	17.25 kW	17.25 kW	15
D	Softball 2	14.95 kW	14.95 kW	13
E	Softball 3	8.26 kW	8.26 kW	10
F	Multipurpose 2	28.75 kW	28.75 kW	25

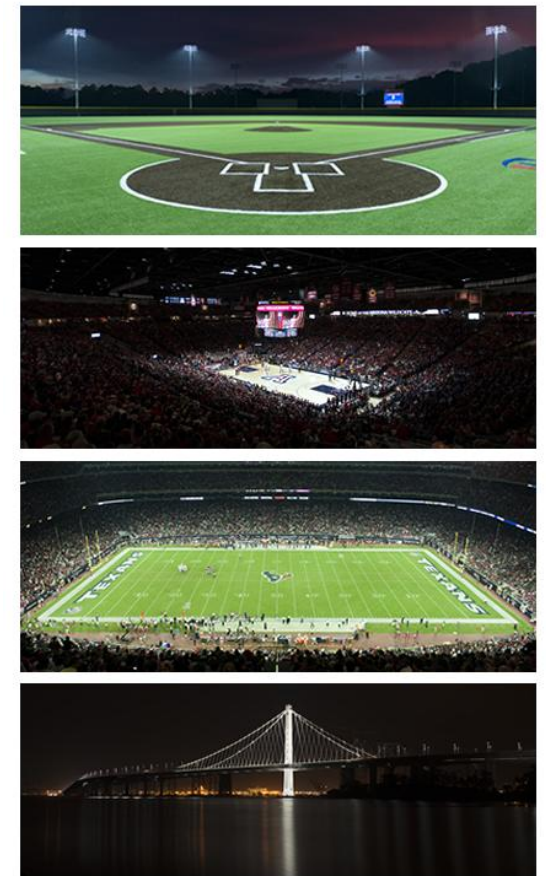
Fixture Type Summary							
Type	Source	Wattage	Lumens	L90	L80	L70	Quantity
TLC-LED-1150	LED 5700K - 75 CRI	1150W	121,000	>51,000	>51,000	>51,000	90
TLC-LED-1150	LED 5700K - 75 CRI	340W	40,600	>51,000	>51,000	>51,000	4

Light Level Summary

Calculation Grid Summary							
Grid Name	Calculation Metric	Illumination				Groups	Fixture Qty
		Ave	Min	Max	Max/Min		
Property Line Spill	Horizontal Illuminance	0	0	0.07	0.00	A,B,C,D,E, F,G	94
Property Line Spill	Max Candela Metric	249	0	2233	0.00	A,B,C,D,E, F,GA,B,C,D, E,F,G	94
Property Line Spill	Max Vertical Illuminance Metric	0.01	0	0.09	0.00	A,B,C,D,E, F,GA,B,C,D, E,F,GA,B, C,D,E,F,G	94
Soccer 1	Horizontal Illuminance	30.8	21	39	1.91	B,C	28
Soccer 2	Horizontal Illuminance	31.5	24	38	1.60	F	25
Softball 1 (Infield)	Horizontal Illuminance	50.7	38	61	1.61	A,B	31
Softball 1 (Outfield)	Horizontal Illuminance	34.2	24	47	2.01	A,B	31
Softball 2 (Infield)	Horizontal Illuminance	51.8	39	62	1.57	C,D	28
Softball 2 (Outfield)	Horizontal Illuminance	35.3	24	53	2.24	C,D	28
Softball 3 (Infield)	Horizontal Illuminance	50.8	36	61	1.68	E,F	35
Softball 3 (Outfield)	Horizontal Illuminance	30.7	21	50	2.36	E,F	35

ENGINEERED DESIGN By: Jacob McCrea • File #185751B • 16-May-17

From Hometown to Professional



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PROJECT SUMMARY

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'	-	60'	TLC-LED-1150	3	3	0	
1	B1	80'	-	25'	TLC-LED-1150	1	1	0	
				80'	TLC-LED-1150	6	6	0	
2	B2, C2	70'	-	25'	TLC-LED-1150	1	1	0	
				70'	TLC-LED-1150	4	4	0	
1	C1	80'	-	25'	TLC-LED-1150	1	1	0	
				80'	TLC-LED-1150	7	7	0	
6	TOTALS					31	31	0	

Highlands Park Multi-Use Field

San Carlos, CA

GRID SUMMARY	
Name:	Softball 1
Size:	265'/265'/265' - basepath 60'
Spacing:	20.0' x 20.0'
Height:	3.0' above grade

ILLUMINATION SUMMARY		
MAINTAINED HORIZONTAL FOOTCANDLES		
	Infield	Outfield
Guaranteed Average:	50	30
Scan Average:	50.70	34.17
Maximum:	61	47
Minimum:	38	24
Avg / Min:	1.33	1.45
Guaranteed Max / Min:	2	2.5
Max / Min:	1.61	2.01
UG (adjacent pts):	1.31	1.40
CU:	0.65	
No. of Points:	25	137

LUMINAIRE INFORMATION			
Color / CRI:	5700K - 75 CRI		
Luminaire Output:	121,000 lumens		
No. of Luminaires:	31		
Total Load:	35.65 kW		
Lumen Maintenance			
Luminaire Type	L90 hrs	L80 hrs	L70 hrs
TLC-LED-1150	>51,000	>51,000	>51,000

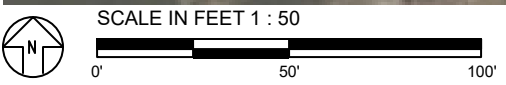
Reported per TM-21-11. See luminaire datasheet for details.

Guaranteed Performance: The ILLUMINATION described above is guaranteed per your Musco Warranty document and includes a 0.95 dirt depreciation factor.

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) ⊗



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ILLUMINATION SUMMARY

EQUIPMENT LIST FOR AREAS SHOWN

Pole		Luminaires							
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LUMINAIRE TYPE	QTY / POLE	THIS GRID	OTHER GRIDS	
1	B1	80'	-	25'	TLC-LED-1150	1	0	1	
				80'	TLC-LED-1150	6	6	0	
2	B3, C1	80'	-	25'	TLC-LED-1150	1	0	1	
				80'	TLC-LED-1150	7	7	0	
1	C3	80'	-	25'	TLC-LED-1150	1	0	1	
				80'	TLC-LED-1150	8	8	0	
4	TOTALS						32	28	4

Highlands Park Multi-Use Field

San Carlos, CA

GRID SUMMARY	
Name:	Soccer 1
Size:	330' x 210'
Spacing:	30.0' x 30.0'
Height:	3.0' above grade

ILLUMINATION SUMMARY	
MAINTAINED HORIZONTAL FOOTCANDLES	
	Entire Grid
Guaranteed Average:	30
Scan Average:	30.77
Maximum:	39
Minimum:	21
Avg / Min:	1.50
Guaranteed Max / Min:	2.5
Max / Min:	1.91
UG (adjacent pts):	1.47
CU:	0.70
No. of Points:	84

LUMINAIRE INFORMATION	
Color / CRI:	5700K - 75 CRI
Luminaire Output:	121,000 lumens
No. of Luminaires:	28
Total Load:	32.2 kW

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

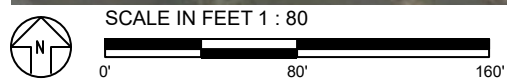
Reported per TM-21-11. See luminaire datasheet for details.

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



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ILLUMINATION SUMMARY

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	60'	-	60'	TLC-LED-1150	3	3	0
1	B3	80'	-	25'	TLC-LED-1150	1	1	0
				80'	TLC-LED-1150	7	7	0
1	B4	70'	-	25'	TLC-LED-1150	1	1	0
				70'	TLC-LED-1150	4	4	0
1	C3	80'	-	25'	TLC-LED-1150	1	1	0
				80'	TLC-LED-1150	8	8	0
5	TOTALS					28	28	0

Highlands Park Multi-Use Field

San Carlos, CA

GRID SUMMARY

Name: **Softball 2**
 Size: 235'/235'/235' - basepath 60'
 Spacing: 20.0' x 20.0'
 Height: 3.0' above grade

ILLUMINATION SUMMARY

MAINTAINED HORIZONTAL FOOTCANDLES		
	Infield	Outfield
Guaranteed Average:	50	30
Scan Average:	51.76	35.28
Maximum:	62	53
Minimum:	39	24
Avg / Min:	1.32	1.48
Guaranteed Max / Min:	2	2.5
Max / Min:	1.57	2.24
UG (adjacent pts):	1.40	1.54
CU:	0.62	
No. of Points:	25	106

LUMINAIRE INFORMATION			
Color / CRI:	5700K - 75 CRI		
Luminaire Output:	121,000 lumens		
No. of Luminaires:	28		
Total Load:	32.2 kW		

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

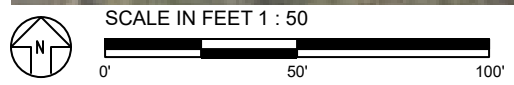
Reported per TM-21-11. See luminaire datasheet for details.

Guaranteed Performance: The ILLUMINATION described above is guaranteed per your Musco Warranty document and includes a 0.95 dirt depreciation factor.

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) ⊗



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EQUIPMENT LIST FOR AREAS SHOWN

Pole		Luminaires						
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LUMINAIRE TYPE	QTY / POLE	THIS GRID	OTHER GRIDS
2	A5-A6	70'	-	25'	TLC-LED-1150	1	1	0
				70'	TLC-LED-1150	3	3	0
1	B5	70'	-	25'	TLC-LED-1150	1	1	0
				70'	TLC-LED-1150	5	5	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
8	TOTALS			70'	TLC-LED-1150	6	6	0
						35	35	0

Highlands Park Multi-Use Field

San Carlos, CA

GRID SUMMARY	
Name:	Softball 3
Size:	200'/200'/200' - basepath 60'
Spacing:	20.0' x 20.0'
Height:	3.0' above grade

ILLUMINATION SUMMARY			
MAINTAINED HORIZONTAL FOOTCANDLES			
	Infield	Outfield	
Guaranteed Average:	50	30	
Scan Average:	50.78	30.73	
Maximum:	61	50	
Minimum:	36	21	
Avg / Min:	1.40	1.45	
Guaranteed Max / Min:	2	2.5	
Max / Min:	1.68	2.36	
UG (adjacent pts):	1.33	1.41	
CU:	0.39		
No. of Points:	25	72	
LUMINAIRE INFORMATION			
Color / CRI:	5700K - 75 CRI		
Luminaire Output:	40,600 / 121,000 lumens		
No. of Luminaires:	35		
Total Load:	37.01 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.			

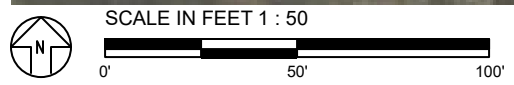


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Field Measurements: Individual field measurements may vary from computer-calculated predictions and should be taken in accordance with IESNA RP-6-15.

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) ⊗



EQUIPMENT LIST FOR AREAS SHOWN

Pole		Luminaires							
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LUMINAIRE TYPE	QTY / POLE	THIS GRID	OTHER GRIDS	
1	B5	70'	-	25'	TLC-LED-1150	1	0	1	
				70'	TLC-LED-1150	5	5	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	0	1	
				70'	TLC-LED-1150	6	6	0	
6	TOTALS						27	25	2

Highlands Park Multi-Use Field

San Carlos, CA

GRID SUMMARY	
Name:	Soccer 2
Size:	300' x 200'
Spacing:	30.0' x 30.0'
Height:	3.0' above grade

ILLUMINATION SUMMARY			
MAINTAINED HORIZONTAL FOOTCANDLES			
Entire Grid			
Guaranteed Average:	30		
Scan Average:	31.46		
Maximum:	38		
Minimum:	24		
Avg / Min:	1.32		
Guaranteed Max / Min:	2.5		
Max / Min:	1.60		
UG (adjacent pts):	1.39		
CU:	0.71		
No. of Points:	70		
LUMINAIRE INFORMATION			
Color / CRI:	5700K - 75 CRI		
Luminaire Output:	121,000 lumens		
No. of Luminaires:	25		
Total Load:	28.75 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.			

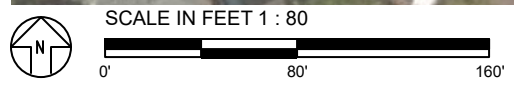


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Installation Requirements: Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.



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



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



Highlands Park Multi-Use Field

San Carlos, CA

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

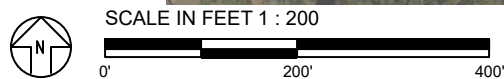
ILLUMINATION SUMMARY			
MAINTAINED HORIZONTAL FOOTCANDLES			
Entire Grid			
Scan Average:	0.0048		
Maximum:	0.07		
Minimum:	0.00		
No. of Points:	138		
LUMINAIRE INFORMATION			
Color / CRI:	5700K - 75 CRI		
Luminaire Output:	121,000 / 40,600 lumens		
No. of Luminaires:	94		
Total Load:	104.86 kW		
Lumen 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.			

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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.



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Highlands Park Multi-Use Field

San Carlos, CA

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	0.0083		
Scan Average:	0.09		
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.			

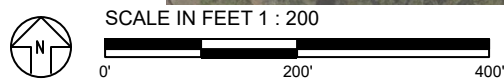


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Field Measurements: Individual field measurements may vary from computer-calculated predictions and should be taken in accordance with IESNA RP-6-15.

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) ⊗



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Highlands Park Multi-Use Field

San Carlos, CA

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

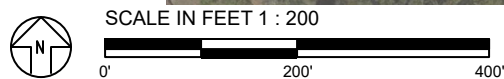
ILLUMINATION SUMMARY			
MAINTAINED CANDELA (PER FIXTURE)			
Entire Grid	249,044.1		
Scan Average:	2233.27		
Maximum:	0.00		
Minimum:	0.00		
No. of Points:	138		
LUMINAIRE INFORMATION			
Color / CRI:	5700K - 75 CRI		
Luminaire Output:	121,000 / 40,600 lumens		
No. of Luminaires:	94		
Total Load:	104.86 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.			

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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) ⊗



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Highlands Park Multi-Use Field

San Carlos, CA



EQUIPMENT LAYOUT

INCLUDES:

- Soccer 1
- Soccer 2
- Softball 1
- Softball 2
- Softball 3

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.

EQUIPMENT LIST FOR AREAS SHOWN

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

SINGLE LUMINAIRE AMPERAGE DRAW CHART

Ballast Specifications (.90 min power factor)	Line Amperage Per Luminaire (max draw)					
	208 (60)	220 (60)	240 (60)	277 (60)	347 (60)	480 (60)
Single Phase Voltage						
TLC-LED-1150	-	-	-	-	-	-



SCALE IN FEET 1 : 200



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



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Highlands Park Multi-Use Field

San Carlos, CA

GLARE IMPACT

Summary

Map indicates the maximum candela an observer would see when facing the brightest light source from any direction.

A well-designed lighting system controls light to provide maximum useful on-field illumination with minimal destructive off-site glare.

GLARE

Candela Levels

High Glare: 150,000 or more candela

Should only occur on or very near the lit area where the light source is in direct view. Care must be taken to minimize high glare zones.

Significant Glare: 25,000 to 75,000 candela
Equivalent to high beam headlights of a car.

Minimal to No Glare: 500 or less candela
Equivalent to 100W incandescent light bulb.



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