Appendix A Lighting Plans

Appendices

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Santiago High School Athletic Fields

Garden Grove,CA

Lighting System

Pole / Fixture Summary

Pole ID	Pole Height	Mtg Height	Fixture Qty	Luminaire Type	Load	Circuit
A1	70'	70'	1	TLC-LED-1200	1.17 kW	B
		70'	4	TLC-LED-900	3.56 kW	B
		16'	1	TLC-BT-575	0.58 kW	B
A2	60'	60'	2	TLC-LED-1200	2.34 kW	B
		60'	3	TLC-LED-900	2.67 kW	B
		16'	1	TLC-BT-575	0.58 kW	B
A3-A4	60'	60'	2	TLC-LED-1200	2.34 kW	C
		60'	1	TLC-LED-900	0.89 kW	C
		16'	1	TLC-BT-575	0.58 kW	C
B1	80'	80'	6	TLC-LED-1500	8.58 kW	B
		16'	1	TLC-BT-575	0.58 kW	B
B2	70'	70'	3	TLC-LED-1500	4.29 kW	B
		70'	4	TLC-LED-900	3.56 kW	B
		16'	1	TLC-BT-575	0.58 kW	B
B3	70'	70'	6	TLC-LED-1500	8.58 kW	C
		16'	1	TLC-BT-575	0.58 kW	C
B4	70'	70'	7	TLC-LED-1500	10.01 kW	E
		16'	1	TLC-BT-575	0.58 kW	E
C1	70'	70'	5	TLC-LED-1500	7.15 kW	B
		16'	2	TLC-BT-575	1.15 kW	B
C2	70'	70'	3	TLC-LED-1500	4.29 kW	B
		70'	2	TLC-LED-900	1.78 kW	B
		16'	2	TLC-BT-575	1.15 kW	B
F1-F4	80'	80'	11	TLC-LED-1500	15.73 kW	A
		16'	2	TLC-BT-575	1.15 kW	A
S1, S3-S4	70'	70'	3	TLC-LED-1200	3.51 kW	D
		70'	1	TLC-LED-900	0.89 kW	D
T1-T4	60'	60'	4	TLC-LED-900	3.56 kW	F
21			***144***		***166.30 kW***	

Circuit Summary

Circuit	Description	Load	Fixture Qty
A	Football	67.52 kW	52
B	Baseball	43.99 kW	41
C	Softball	16.76 kW	15
D	Practice	13.2 kW	12
E	Softball/Practice	10.59 kW	8
F	Tennis 1-3	14.24 kW	16

Fixture Type Summary

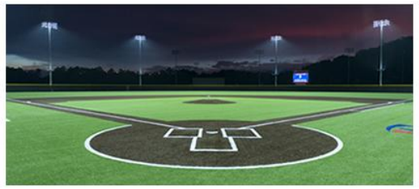
Type	Source	Wattage	Lumens	L90	L80	L70	Quantity
TLC-LED-1500	LED 5700K - 75 CRI	1430W	160,000	>120,000	>120,000	>120,000	74
TLC-LED-1200	LED 5700K - 75 CRI	1170W	136,000	>120,000	>120,000	>120,000	16
TLC-LED-900	LED 5700K - 75 CRI	890W	89,600	>120,000	>120,000	>120,000	34
TLC-BT-575	LED 5700K - 75 CRI	575W	52,000	>120,000	>120,000	>120,000	20

Light Level Summary

Calculation Grid Summary

Grid Name	Calculation Metric	Illumination					Circuits	Fixture Qty
		Ave	Min	Max	Max/Min	Ave/Min		
BB LF Bull Pen	Horizontal	33.1	23	39	1.68	1.44	B	41
BB RF Bull Pen	Horizontal	6.20	2	13	5.79	3.10	B	41
Baseball (Infield)	Horizontal Illuminance	51.5	36	68	1.90	1.43	B	41
Baseball (Outfield)	Horizontal Illuminance	31.4	19	44	2.29	1.65	B	41
Football	Horizontal Illuminance	51.2	40	59	1.48	1.28	A	52
Practice	Horizontal Illuminance	35.6	21	44	2.13	1.70	D,E	20

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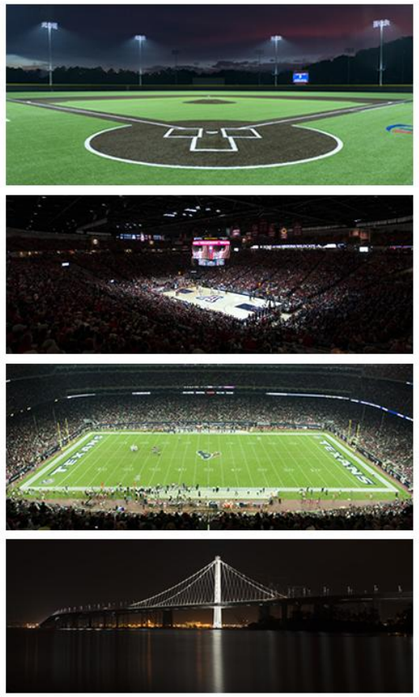
Santiago High School Athletic Fields

Garden Grove,CA

Calculation Grid Summary

Grid Name	Calculation Metric	Illumination					Circuits	Fixture Qty
		Ave	Min	Max	Max/Min	Ave/Min		
Property Line Spill	Horizontal	0.03	0	0.38	0.00		A,B,C,D,E, F,G	144
Property Line Spill	Max Candela (by Fixture)	1588	26.1	6794	260.81	60.97	A,B,C,D,E, F,G	144
Property Line Spill	Max Vertical Illuminance Metric	0.06	0	0.43	0.00		A,B,C,D,E, F,G	144
Soccer	Horizontal Illuminance	51	40	58	1.47	1.28	A	52
Softball (Infield)	Horizontal Illuminance	52.1	37	58	1.60	1.41	C,E	23
Softball (Outfield)	Horizontal Illuminance	33.2	21	49	2.34	1.58	C,E	23
Tennis 1-3	Horizontal Illuminance	51.7	40	62	1.57	1.29	F	16
Track	Horizontal Illuminance	28.3	14	42	2.89	2.02	A	52

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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
4	F1-F4	80'	-	15.5'	TLC-BT-575	2	2	0
				80'	TLC-LED-1500	11	11	0
4	TOTALS					52	52	0



SCALE IN FEET 1 : 60

0' 60' 120'

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

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Santiago High School Athletic Fields
Garden Grove,CA

GRID SUMMARY

Name:	**Football**
Size:	360' x 160'
Spacing:	30.0' x 30.0'
Height:	3.0' above grade

ILLUMINATION SUMMARY

MAINTAINED HORIZONTAL FOOTCANDLES

	Entire Grid
Guaranteed Average:	**50**
Scan Average:	51.2
Maximum:	59
Minimum:	40
Avg / Min:	1.28
Guaranteed Max / Min:	**2**
Max / Min:	1.48
UG (adjacent pts):	1.16
CU:	0.45
No. of Points:	72

LUMINAIRE INFORMATION

Applied Circuits:	A
No. of Luminaires:	**52**
Total Load:	67.52 kW

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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EQUIPMENT LIST FOR AREAS SHOWN

Pole				Luminaires				
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LUMINAIRE TYPE	QTY / POLE	THIS GRID	OTHER GRIDS
4	F1-F4	80'	-	15.5'	TLC-BT-575	2	2	0
				80'	TLC-LED-1500	11	11	0
4	TOTALS					52	52	0



SCALE IN FEET 1 : 60

0' 60' 120'

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

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Santiago High School Athletic Fields
Garden Grove,CA

GRID SUMMARY

Name:	**Soccer**
Size:	360' x 195'
Spacing:	30.0' x 30.0'
Height:	3.0' above grade

ILLUMINATION SUMMARY

MAINTAINED HORIZONTAL FOOTCANDLES

	Entire Grid
Guaranteed Average:	**50**
Scan Average:	51.0
Maximum:	58
Minimum:	40
Avg / Min:	1.29
Guaranteed Max / Min:	**2**
Max / Min:	1.47
UG (adjacent pts):	1.19
CU:	0.53
No. of Points:	84

LUMINAIRE INFORMATION

Applied Circuits:	A
No. of Luminaires:	**52**
Total Load:	67.52 kW

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.

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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
4	F1-F4	80'	-	15.5'	TLC-BT-575	2	2	0
				80'	TLC-LED-1500	11	11	0
4	TOTALS					52	52	0



SCALE IN FEET 1 : 60

0' 60' 120'

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

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Santiago High School Athletic Fields
Garden Grove,CA

GRID SUMMARY

Name:	**Track**
Size:	Irregular
Spacing:	30.0' x 30.0'
Height:	3.0' above grade

ILLUMINATION SUMMARY

MAINTAINED HORIZONTAL FOOTCANDLES

	Entire Grid
Guaranteed Average:	**25**
Scan Average:	28.3
Maximum:	42
Minimum:	14
Avg / Min:	1.96
Guaranteed Max / Min:	**4**
Max / Min:	2.89
UG (adjacent pts):	0.00
CU:	0.17
No. of Points:	48

LUMINAIRE INFORMATION

Applied Circuits:	A
No. of Luminaires:	**52**
Total Load:	67.52 kW

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.

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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
1	A1	70'	-	70'	TLC-LED-1200	1	1	0
				15.5'	TLC-BT-575	1	1	0
				70'	TLC-LED-900	4	4	0
1	A2	60'	-	60'	TLC-LED-900	3	3	0
				15.5'	TLC-BT-575	1	1	0
				60'	TLC-LED-1200	2	2	0
1	B1	80'	-	15.5'	TLC-BT-575	1	1	0
				80'	TLC-LED-1500	6	6	0
1	B2	70'	-	70'	TLC-LED-900	4	4	0
				15.5'	TLC-BT-575	1	1	0
				70'	TLC-LED-1500	3	3	0
1	C1	70'	-	15.5'	TLC-BT-575	2	2	0
				70'	TLC-LED-1500	5	5	0
1	C2	70'	-	70'	TLC-LED-900	2	2	0
				15.5'	TLC-BT-575	2	2	0
				70'	TLC-LED-1500	3	3	0
6	TOTALS					41	41	0



SCALE IN FEET 1 : 60

0' 60' 120'

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

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Santiago High School Athletic Fields
Garden Grove,CA

GRID SUMMARY

Name:	**Baseball**
Size:	Irregular 308' / 349' / 298'
Spacing:	30.0' x 30.0'
Height:	3.0' above grade

ILLUMINATION SUMMARY

MAINTAINED HORIZONTAL FOOTCANDLES

	Infield	Outfield
Guaranteed Average:	**50**	**30**
Scan Average:	51.5	31.4
Maximum:	68	44
Minimum:	36	19
Avg / Min:	1.43	1.63
Guaranteed Max / Min:	**2**	**2.5**
Max / Min:	1.90	2.29
UG (adjacent pts):	1.38	1.58
CU:	0.74	
No. of Points:	25	81

LUMINAIRE INFORMATION

Applied Circuits:	B
No. of Luminaires:	**41**
Total Load:	43.99 kW

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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EQUIPMENT LIST FOR AREAS SHOWN

Pole				Luminaires				
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LUMINAIRE TYPE	QTY / POLE	THIS GRID	OTHER GRIDS
1	A1	70'	-	70'	TLC-LED-1200	1	1	0
				15.5'	TLC-BT-575	1	1	0
				70'	TLC-LED-900	4	4	0
1	A2	60'	-	60'	TLC-LED-900	3	3	0
				15.5'	TLC-BT-575	1	1	0
				60'	TLC-LED-1200	2	2	0
1	B1	80'	-	15.5'	TLC-BT-575	1	1	0
				80'	TLC-LED-1500	6	6	0
1	B2	70'	-	70'	TLC-LED-900	4	4	0
				15.5'	TLC-BT-575	1	1	0
				70'	TLC-LED-1500	3	3	0
1	C1	70'	-	15.5'	TLC-BT-575	2	2	0
				70'	TLC-LED-1500	5	5	0
1	C2	70'	-	70'	TLC-LED-900	2	2	0
				15.5'	TLC-BT-575	2	2	0
				70'	TLC-LED-1500	3	3	0
6	TOTALS					41	41	0



SCALE IN FEET 1 : 30

0' 30' 60'

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

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Santiago High School Athletic Fields
Garden Grove,CA

GRID SUMMARY

Name:	**BB LF Bull Pen**
Size:	Irregular 308' / 349' / 298'
Spacing:	10.0' x 10.0'
Height:	3.0' above grade

ILLUMINATION SUMMARY

MAINTAINED HORIZONTAL FOOTCANDLES

	Entire Grid
Scan Average:	**33.1**
Maximum:	39
Minimum:	23
Avg / Min:	1.41
Max / Min:	**1.68**
UG (adjacent pts):	1.31
CU:	0.01
No. of Points:	16

LUMINAIRE INFORMATION

Applied Circuits:	B
No. of Luminaires:	**41**
Total Load:	43.99 kW

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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EQUIPMENT LIST FOR AREAS SHOWN

Pole				Luminaires				
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LUMINAIRE TYPE	QTY / POLE	THIS GRID	OTHER GRIDS
1	A1	70'	-	70'	TLC-LED-1200	1	1	0
				15.5'	TLC-BT-575	1	1	0
				70'	TLC-LED-900	4	4	0
1	A2	60'	-	60'	TLC-LED-900	3	3	0
				15.5'	TLC-BT-575	1	1	0
				60'	TLC-LED-1200	2	2	0
1	B1	80'	-	15.5'	TLC-BT-575	1	1	0
				80'	TLC-LED-1500	6	6	0
1	B2	70'	-	70'	TLC-LED-900	4	4	0
				15.5'	TLC-BT-575	1	1	0
				70'	TLC-LED-1500	3	3	0
1	C1	70'	-	15.5'	TLC-BT-575	2	2	0
				70'	TLC-LED-1500	5	5	0
1	C2	70'	-	70'	TLC-LED-900	2	2	0
				15.5'	TLC-BT-575	2	2	0
				70'	TLC-LED-1500	3	3	0
6	TOTALS					41	41	0



SCALE IN FEET 1 : 30

0' 30' 60'

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

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Santiago High School Athletic Fields
Garden Grove,CA

GRID SUMMARY

Name:	**BB RF Bull Pen**
Size:	Irregular 308' / 349' / 298'
Spacing:	10.0' x 10.0'
Height:	3.0' above grade

ILLUMINATION SUMMARY

MAINTAINED HORIZONTAL FOOTCANDLES

	Entire Grid
Scan Average:	**6.2**
Maximum:	13
Minimum:	2
Avg / Min:	2.74
Max / Min:	**5.79**
UG (adjacent pts):	4.15
CU:	0.00
No. of Points:	14

LUMINAIRE INFORMATION

Applied Circuits:	B
No. of Luminaires:	**41**
Total Load:	43.99 kW

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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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-900	1	1	0
				15.5'	TLC-BT-575	1	1	0
				60'	TLC-LED-1200	2	2	0
1	B3	70'	-	15.5'	TLC-BT-575	1	1	0
				70'	TLC-LED-1500	6	6	0
1	B4	70'	-	15.5'	TLC-BT-575	1	1	0
				70'	TLC-LED-1500	7	7	0
4	TOTALS					23	23	0



SCALE IN FEET 1 : 40

0' 40' 80'

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

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Santiago High School Athletic Fields
Garden Grove,CA

GRID SUMMARY

Name:	**Softball**
Size:	225'/225'/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:	52.1	33.2
Maximum:	58	49
Minimum:	37	21
Avg / Min:	1.43	1.59
Guaranteed Max / Min:	**2**	**2.5**
Max / Min:	1.60	2.34
UG (adjacent pts):	1.21	1.55
CU:	0.58	
No. of Points:	25	89

LUMINAIRE INFORMATION

Applied Circuits:	C, E
No. of Luminaires:	**23**
Total Load:	27.35 kW

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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EQUIPMENT LIST FOR AREAS SHOWN

Pole				Luminaires				
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LUMINAIRE TYPE	QTY / POLE	THIS GRID	OTHER GRIDS
4	T1-T4	60'	-	60'	TLC-LED-900	4	4	0
4	TOTALS					16	16	0



SCALE IN FEET 1 : 40

0' 40' 80'

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

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Santiago High School Athletic Fields
Garden Grove,CA

GRID SUMMARY

Name:	**Tennis 1-3**
Size:	8 Court - 14' Spacing
Spacing:	20.0' x 20.0'
Height:	3.0' above grade

ILLUMINATION SUMMARY

MAINTAINED HORIZONTAL FOOTCANDLES

	Entire Grid
Guaranteed Average:	**50**
Scan Average:	51.7
Maximum:	62
Minimum:	40
Avg / Min:	1.30
Guaranteed Max / Min:	**2**
Max / Min:	1.57
UG (adjacent pts):	0.00
CU:	0.82
No. of Points:	60

LUMINAIRE INFORMATION

Applied Circuits:	F
No. of Luminaires:	**16**
Total Load:	14.24 kW

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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EQUIPMENT LIST FOR AREAS SHOWN

Pole				Luminaires				
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LUMINAIRE TYPE	QTY / POLE	THIS GRID	OTHER GRIDS
1	B4	70'	-	15.5'	TLC-BT-575	1	1	0
				70'	TLC-LED-1500	7	7	0
3	S1, S3-S4	70'	-	70'	TLC-LED-900	1	1	0
				70'	TLC-LED-1200	3	3	0
4	TOTALS					20	20	0



SCALE IN FEET 1 : 50

0' 50' 100'

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

ENGINEERED DESIGN By: Vashon Alexander · File #216621C · 23-Feb-22

Santiago High School Athletic Fields
Garden Grove,CA

GRID SUMMARY

Name:	**Practice**
Size:	287' x 140'
Spacing:	30.0' x 30.0'
Height:	3.0' above grade

ILLUMINATION SUMMARY

MAINTAINED HORIZONTAL FOOTCANDLES

	Entire Grid
Guaranteed Average:	**30**
Scan Average:	35.6
Maximum:	44
Minimum:	21
Avg / Min:	1.72
Guaranteed Max / Min:	**2.5**
Max / Min:	2.13
UG (adjacent pts):	1.55
CU:	0.61
No. of Points:	50

LUMINAIRE INFORMATION

Applied Circuits:	D, E
No. of Luminaires:	**20**
Total Load:	23.79 kW

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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EQUIPMENT LIST FOR AREAS SHOWN

Pole				Luminaires				
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LUMINAIRE TYPE	QTY / POLE	THIS GRID	OTHER GRIDS
1	A1	70'	-	70'	TLC-LED-1200	1	1	0
				15.5'	TLC-BT-575	1	1	0
				70'	TLC-LED-900	4	4	0
1	A2	60'	-	60'	TLC-LED-900	3	3	0
				15.5'	TLC-BT-575	1	1	0
				60'	TLC-LED-1200	2	2	0
2	A3-A4	60'	-	60'	TLC-LED-900	1	1	0
				15.5'	TLC-BT-575	1	1	0
				60'	TLC-LED-1200	2	2	0
1	B1	80'	-	15.5'	TLC-BT-575	1	1	0
				80'	TLC-LED-1500	6	6	0
1	B2	70'	-	70'	TLC-LED-900	4	4	0
				15.5'	TLC-BT-575	1	1	0
				70'	TLC-LED-1500	3	3	0
1	B3	70'	-	15.5'	TLC-BT-575	1	1	0
				70'	TLC-LED-1500	6	6	0
1	B4	70'	-	15.5'	TLC-BT-575	1	1	0
				70'	TLC-LED-1500	7	7	0
1	C1	70'	-	15.5'	TLC-BT-575	2	2	0
				70'	TLC-LED-1500	5	5	0
1	C2	70'	-	70'	TLC-LED-900	2	2	0
				15.5'	TLC-BT-575	2	2	0
				70'	TLC-LED-1500	3	3	0
4	F1-F4	80'	-	15.5'	TLC-BT-575	2	2	0
				80'	TLC-LED-1500	11	11	0
3	S1, S3-S4	70'	-	70'	TLC-LED-900	1	1	0
				70'	TLC-LED-1200	3	3	0
4	T1-T4	60'	-	60'	TLC-LED-900	4	4	0
21	TOTALS					144	144	0



SCALE IN FEET 1 : 200

0' 200' 400'

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

ENGINEERED DESIGN By: Vashon Alexander · File #216621C · 23-Feb-22

Santiago High School Athletic Fields
Garden Grove,CA

GRID SUMMARY

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

ILLUMINATION SUMMARY

HORIZONTAL FOOTCANDLES

	Entire Grid
Scan Average:	0.033
Maximum:	0.38
Minimum:	0.00
No. of Points:	145

LUMINAIRE INFORMATION

Applied Circuits:	A, B, C, D, E, F, G
No. of Luminaires:	**144**
Total Load:	166.3 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.

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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
1	A1	70'	-	70'	TLC-LED-1200	1	1	0
				15.5'	TLC-BT-575	1	1	0
				70'	TLC-LED-900	4	4	0
1	A2	60'	-	60'	TLC-LED-900	3	3	0
				15.5'	TLC-BT-575	1	1	0
				60'	TLC-LED-1200	2	2	0
2	A3-A4	60'	-	60'	TLC-LED-900	1	1	0
				15.5'	TLC-BT-575	1	1	0
				60'	TLC-LED-1200	2	2	0
1	B1	80'	-	15.5'	TLC-BT-575	1	1	0
				80'	TLC-LED-1500	6	6	0
1	B2	70'	-	70'	TLC-LED-900	4	4	0
				15.5'	TLC-BT-575	1	1	0
				70'	TLC-LED-1500	3	3	0
1	B3	70'	-	15.5'	TLC-BT-575	1	1	0
				70'	TLC-LED-1500	6	6	0
1	B4	70'	-	15.5'	TLC-BT-575	1	1	0
				70'	TLC-LED-1500	7	7	0
1	C1	70'	-	15.5'	TLC-BT-575	2	2	0
				70'	TLC-LED-1500	5	5	0
1	C2	70'	-	70'	TLC-LED-900	2	2	0
				15.5'	TLC-BT-575	2	2	0
				70'	TLC-LED-1500	3	3	0
4	F1-F4	80'	-	15.5'	TLC-BT-575	2	2	0
				80'	TLC-LED-1500	11	11	0
3	S1, S3-S4	70'	-	70'	TLC-LED-900	1	1	0
				70'	TLC-LED-1200	3	3	0
4	T1-T4	60'	-	60'	TLC-LED-900	4	4	0
21	TOTALS					144	144	0



SCALE IN FEET 1 : 200

0' 200' 400'

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

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Santiago High School Athletic Fields
Garden Grove,CA

GRID SUMMARY

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

ILLUMINATION SUMMARY

MAX VERTICAL FOOTCANDLES

	Entire Grid
Scan Average:	0.060
Maximum:	0.43
Minimum:	0.00
No. of Points:	145

LUMINAIRE INFORMATION

Applied Circuits:	A, B, C, D, E, F, G
No. of Luminaires:	**144**
Total Load:	166.3 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.

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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
1	A1	70'	-	70'	TLC-LED-1200	1	1	0
				15.5'	TLC-BT-575	1	1	0
				70'	TLC-LED-900	4	4	0
1	A2	60'	-	60'	TLC-LED-900	3	3	0
				15.5'	TLC-BT-575	1	1	0
				60'	TLC-LED-1200	2	2	0
2	A3-A4	60'	-	60'	TLC-LED-900	1	1	0
				15.5'	TLC-BT-575	1	1	0
				60'	TLC-LED-1200	2	2	0
1	B1	80'	-	15.5'	TLC-BT-575	1	1	0
				80'	TLC-LED-1500	6	6	0
1	B2	70'	-	70'	TLC-LED-900	4	4	0
				15.5'	TLC-BT-575	1	1	0
				70'	TLC-LED-1500	3	3	0
1	B3	70'	-	15.5'	TLC-BT-575	1	1	0
				70'	TLC-LED-1500	6	6	0
1	B4	70'	-	15.5'	TLC-BT-575	1	1	0
				70'	TLC-LED-1500	7	7	0
1	C1	70'	-	15.5'	TLC-BT-575	2	2	0
				70'	TLC-LED-1500	5	5	0
1	C2	70'	-	70'	TLC-LED-900	2	2	0
				15.5'	TLC-BT-575	2	2	0
				70'	TLC-LED-1500	3	3	0
4	F1-F4	80'	-	15.5'	TLC-BT-575	2	2	0
				80'	TLC-LED-1500	11	11	0
3	S1, S3-S4	70'	-	70'	TLC-LED-900	1	1	0
				70'	TLC-LED-1200	3	3	0
4	T1-T4	60'	-	60'	TLC-LED-900	4	4	0
21	TOTALS					144	144	0



SCALE IN FEET 1 : 200

0' 200' 400'

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

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Santiago High School Athletic Fields
Garden Grove,CA

GRID SUMMARY

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

ILLUMINATION SUMMARY

CANDELA (PER FIXTURE)

	Entire Grid
Scan Average:	1588.381
Maximum:	6793.97
Minimum:	26.05
No. of Points:	145

LUMINAIRE INFORMATION

Applied Circuits:	A, B, C, D, E, F, G
No. of Luminaires:	**144**
Total Load:	166.3 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.

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SCALE IN FEET 1 : 200

0' 200' 400'

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

Santiago High School Athletic Fields
Garden Grove,CA

EQUIPMENT LAYOUT

INCLUDES:
- Baseball
- Football
- Practice
- Soccer
- Softball
- Tennis
- Track

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

Pole				Luminaires		
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LUMINAIRE TYPE	QTY / POLE
1	A1	70'	-	70' 15.5' 70'	TLC-LED-1200 TLC-BT-575 TLC-LED-900	1 1 4
1	A2	60'	-	60' 15.5' 60'	TLC-LED-900 TLC-BT-575 TLC-LED-1200	3 1 2
2	A3-A4	60'	-	60' 15.5' 60'	TLC-LED-900 TLC-BT-575 TLC-LED-1200	1 1 2
1	B1	80'	-	15.5' 80'	TLC-BT-575 TLC-LED-1500	1 6
1	B2	70'	-	70' 15.5' 70'	TLC-LED-900 TLC-BT-575 TLC-LED-1500	4 1 3
1	B3	70'	-	15.5' 70'	TLC-BT-575 TLC-LED-1500	1 6
1	B4	70'	-	15.5' 70'	TLC-BT-575 TLC-LED-1500	1 7
1	C1	70'	-	15.5' 70'	TLC-BT-575 TLC-LED-1500	2 5
1	C2	70'	-	70' 15.5' 70'	TLC-LED-900 TLC-BT-575 TLC-LED-1500	2 2 3
4	F1-F4	80'	-	15.5' 80'	TLC-BT-575 TLC-LED-1500	2 11
3	S1, S3-S4	70'	-	70' 70'	TLC-LED-900 TLC-LED-1200	1 3
4	T1-T4	60'	-	60'	TLC-LED-900	4
21	TOTALS					144

SINGLE LUMINAIRE AMPERAGE DRAW CHART

Ballast Specifications (.90 min power factor)	Line Amperage Per Luminaire (max draw)						
Single Phase Voltage	208 (60)	220 (60)	240 (60)	277 (60)	347 (60)	380 (60)	480 (60)
TLC-LED-1500	8.5	8.1	7.4	6.4	5.1	4.7	3.7
TLC-LED-1200	7.0	6.6	6.1	5.2	4.2	4.0	3.0
TLC-LED-900	5.3	5.0	4.6	4.0	3.2	2.9	2.3
TLC-BT-575	3.4	3.2	2.9	2.5	2.0	1.8	1.5

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