

Hunnewell Grass Multipurpose Retrofit & Tennis

Wellesley, MA

NOTES: Pole locations and Mounting heights based on existing Musco Light Structure poles.

Lighting System

Pole / Fixture Summary

Pole ID	Pole Height	Mtg Height	Fixture Qty	Luminaire Type	Load	Circuit
S1	60'	60'	3	TLC-LED-1200	3.51 kW	C
		16'	1	TLC-BT-575	0.58 kW	C
S2-S3	60'	60'	4	TLC-LED-1200	4.68 kW	C
		16'	1	TLC-BT-575	0.58 kW	C
S4	60'	60'	4	TLC-LED-1200	4.68 kW	C
		16'	2	TLC-BT-575	1.15 kW	C
S5	60'	60'	5	TLC-LED-1200	5.85 kW	C
		16'	2	TLC-BT-575	1.15 kW	C
S6	60'	60'	3	TLC-LED-1200	3.51 kW	D
		16'	1	TLC-BT-575	0.58 kW	D
T1, T4	60'	60'	1	TLC-LED-1200	1.17 kW	A
		60'	1	TLC-LED-900	0.89 kW	A
T5-T6	60'	60'	1	TLC-LED-1200	1.17 kW	B
		60'	1	TLC-LED-900	0.89 kW	B
T7	60'	60'	2	TLC-LED-1200	2.34 kW	A
		60'	2	TLC-LED-1200	2.34 kW	B
T8	60'	60'	2	TLC-LED-1200	2.34 kW	B
		60'	2	TLC-LED-1200	2.34 kW	A
12			47		49.11 kW	

Circuit Summary

Circuit	Description	Load	Fixture Qty
A	Tennis 1	8.8 kW	8
B	Tennis 2	8.8 kW	8
C	Soccer/Baseball	27.42 kW	27
D	Baseball	4.09 kW	4

Fixture Type Summary

Type	Source	Wattage	Lumens	L90	L80	L70	Quantity
TLC-LED-1200	LED 5700K - 75 CRI	1170W	136,000	>120,000	>120,000	>120,000	35
TLC-BT-575	LED 5700K - 75 CRI	575W	52,000	>120,000	>120,000	>120,000	8
TLC-LED-900	LED 5700K - 75 CRI	890W	89,600	>120,000	>120,000	>120,000	4

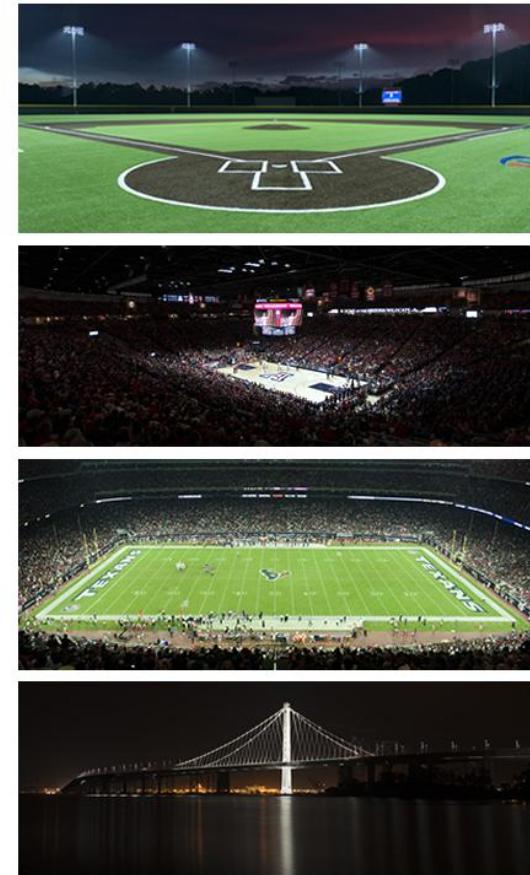
Light Level Summary

Calculation Grid Summary

Grid Name	Calculation Metric	Illumination					Circuits	Fixture Qty
		Ave	Min	Max	Max/Min	Ave/Min		
150' Spill Line	Horizontal	0	0	0.02	0.00		A,B,C,D	47
150' Spill Line	Max Candela (by Fixture)	158	0	951	0.00		A,B,C,D	47
150' Spill Line	Max Vertical Illuminance Metric	0	0	0.04	0.00		A,B,C,D	47
Soccer 1	Horizontal Illuminance	31.7	21	51	2.43	1.51	C	27
Softball (Infield)	Horizontal Illuminance	50.8	35	61	1.77	1.45	C,D	31

ENGINEERED DESIGN By: Tanner Lanphier · File #198552C-Hunnewell · 11-Feb-21

From Hometown to Professional



We Make It Happen

Not to be reproduced in whole or part without the written consent of Musco Sports Lighting, LLC. ©1981, 2021 Musco Sports Lighting, LLC.

PROJECT SUMMARY

Hunnewell Grass Multipurpose Retrofit & Tennis

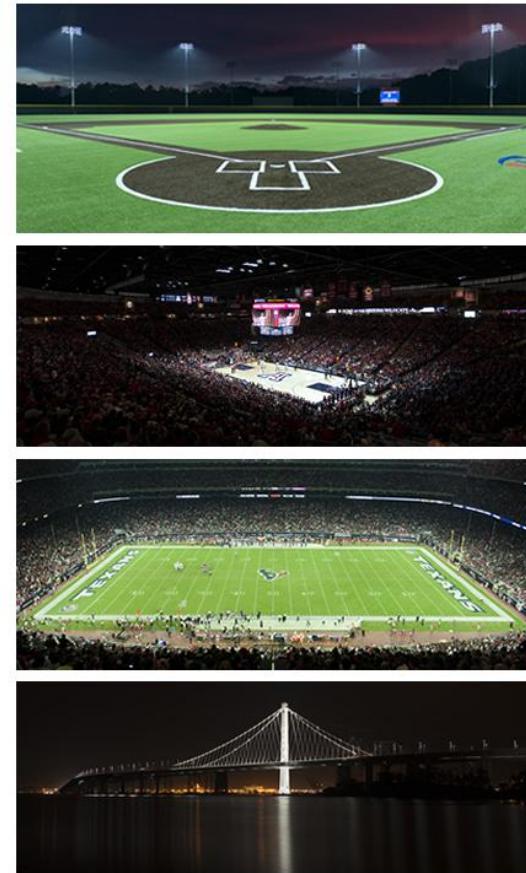
Wellesley, MA

NOTES: Pole locations and Mounting heights based on existing Musco Light Structure poles.

Calculation Grid Summary

Grid Name	Calculation Metric	Illumination					Circuits	Fixture Qty
		Ave	Min	Max	Max/Min	Ave/Min		
Softball (Outfield)	Horizontal Illuminance	33.8	23	51	2.26	1.47	C,D	31
Tennis 1	Horizontal Illuminance	32.5	26	46	1.78	1.25	A	8
Tennis 2	Horizontal Illuminance	31.7	22	40	1.81	1.44	B	8
Zero Grid	Horizontal	15.3	0	70	0.00		A,B,C,D	47

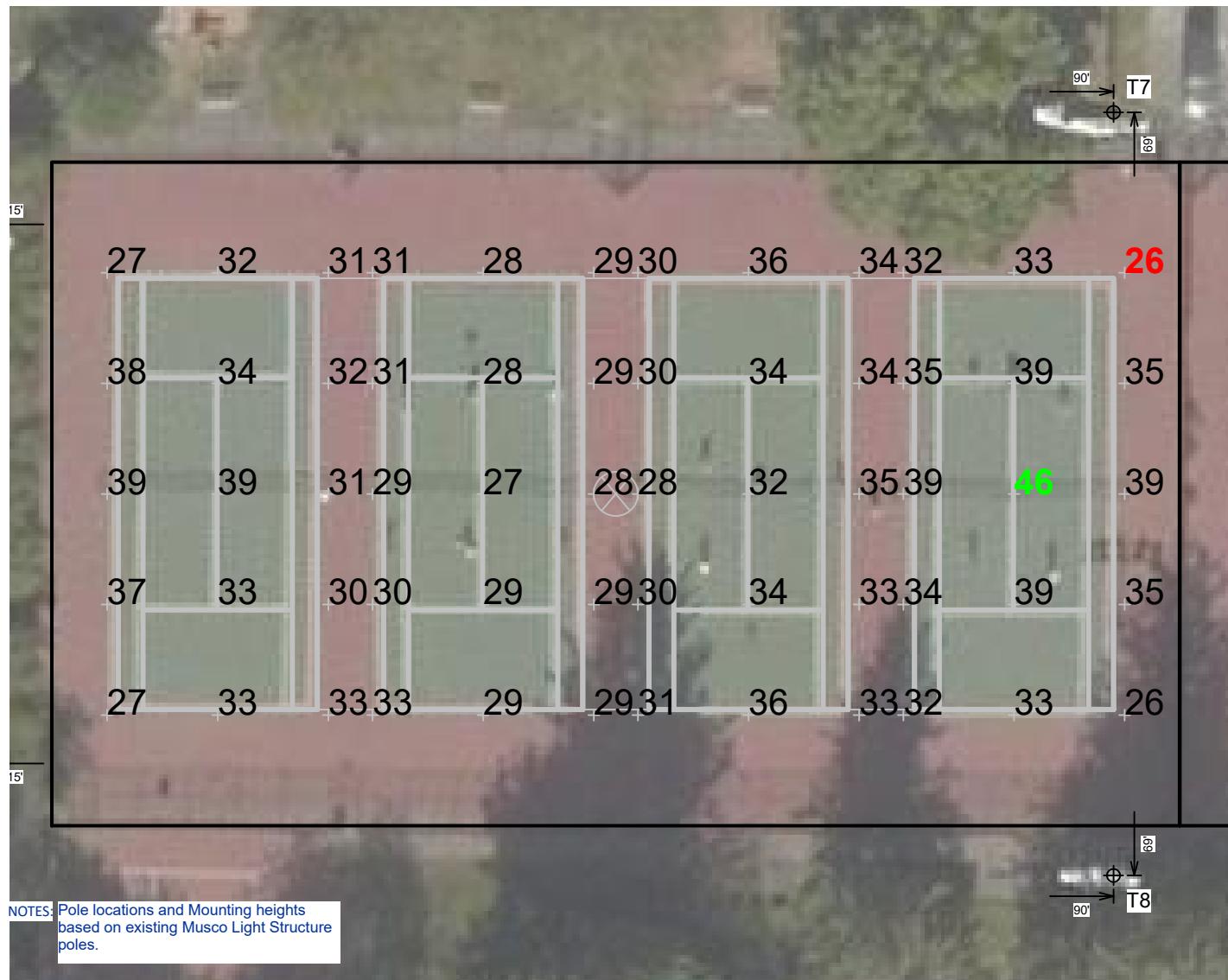
From Hometown to Professional



EQUIPMENT LIST FOR AREAS SHOWN

Pole				Luminaires				
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LUMINAIRE TYPE	QTY / POLE	THIS GRID	OTHER GRIDS
2	T1, T4	60'	-	60'	TLC-LED-900	1	1	0
				60'	TLC-LED-1200	1	1	0
2	T7-T8	60'	-	60'	TLC-LED-1200	4	2	2
4						12	8	4
TOTALS								

Hunnewell Grass Multipurpose Retrofit & Tennis
Wellesley, MA



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

GRID SUMMARY

Name: Tennis 1
Size: 4 Court - 12' Spacing
Spacing: 20.0' x 20.0'
Height: 3.0' above grade

ILLUMINATION SUMMARY

MAINTAINED HORIZONTAL FOOTCANDLES

Entire Grid

Guaranteed Average: 30

Scan Average: 32.48

Maximum: 46

Minimum: 26

Avg / Min: 1.27

Guaranteed Max / Min: 2.5

Max / Min: 1.78

UG (adjacent pts): 0.00

CU: 0.80

No. of Points: 60

LUMINAIRE INFORMATION

Applied Circuits: A

No. of Luminaires: 8

Total Load: 8.8 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.

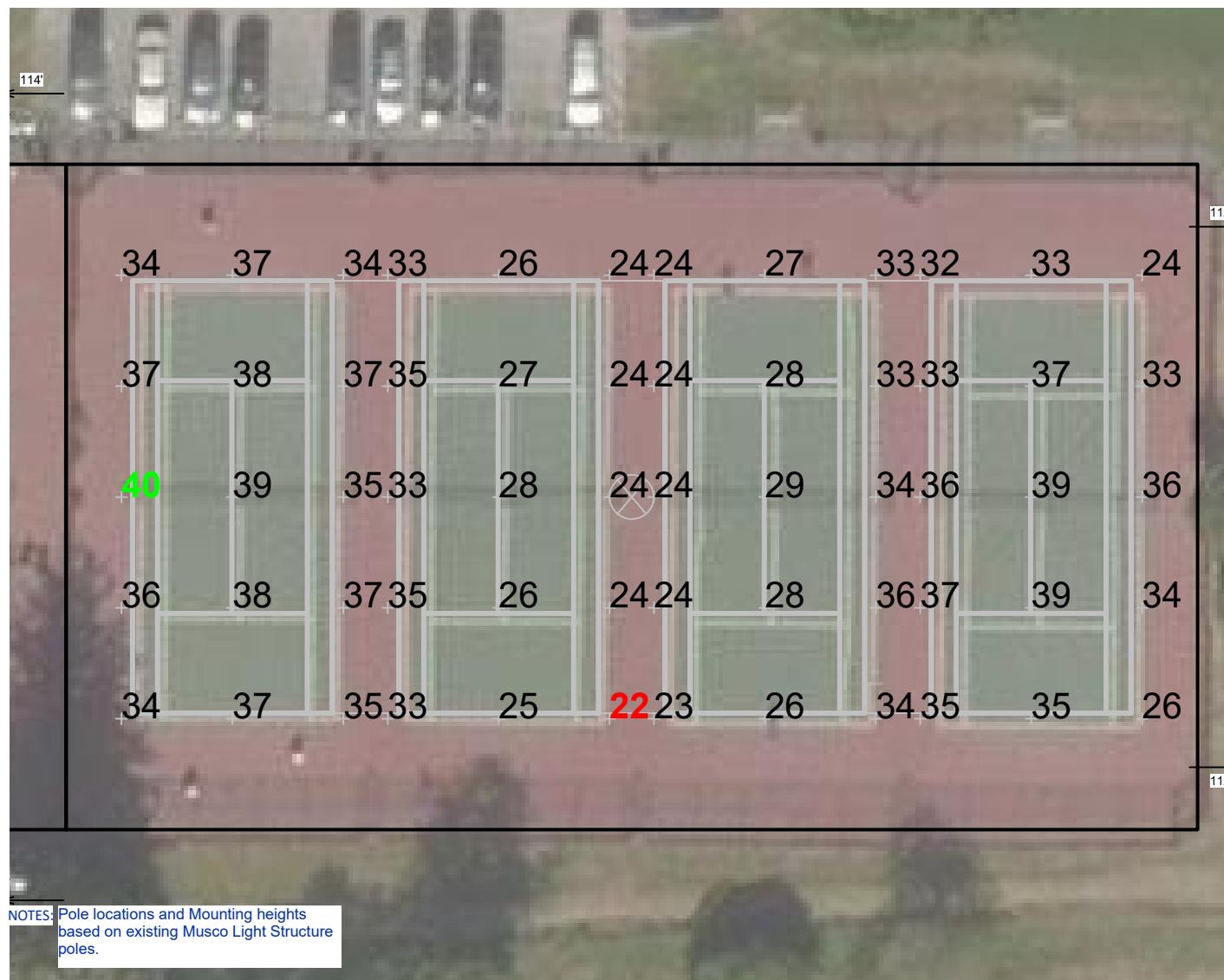
Installation Requirements: Results assume $\pm 3\%$ nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.



We Make It Happen

EQUIPMENT LIST FOR AREAS SHOWN

Pole				Luminaires				
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LUMINAIRE TYPE	QTY / POLE	THIS GRID	OTHER GRIDS
2	T5-T6	60'	0'	60'	TLC-LED-900	1	1	0
				60'	TLC-LED-1200	1	1	0
2	T7-T8	60'	0'	60'	TLC-LED-1200	4	2	2
4					TOTALS	12	8	4


ENGINEERED DESIGN By: Tanner Lanphier · File #198552C-Hunnewell · 11-Feb-21

Hunnewell Grass Multipurpose Retrofit & Tennis
Wellesley, MA
GRID SUMMARY
Name: Tennis 2
Size: 4 Court - 12' Spacing
Spacing: 20.0' x 20.0'
Height: 3.0' above grade

ILLUMINATION SUMMARY
MAINTAINED HORIZONTAL FOOTCANDLES
Entire Grid
Guaranteed Average: 30

Scan Average: 31.72

Maximum: 40

Minimum: 22

Avg / Min: 1.43

Guaranteed Max / Min: 2.5

Max / Min: 1.81

UG (adjacent pts): 0.00

CU: 0.79

No. of Points: 60

LUMINAIRE INFORMATION

Applied Circuits: B

No. of Luminaires: 8

Total Load: 8.8 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 $\pm 3\%$ nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.

We Make It Happen

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

Not to be reproduced in whole or part without the written consent of Musco Sports Lighting, LLC. ©1981, 2021 Musco Sports Lighting, LLC.

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	S1	60'	0'	15.48'	TLC-BT-575	1	1	0
				60'	TLC-LED-1200	3	3	0
1	S2	60'	0'	15.48'	TLC-BT-575	1	1	0
				60'	TLC-LED-1200	4	4	0
1	S3	60'	-	15.5'	TLC-BT-575	1	1	0
				60'	TLC-LED-1200	4	4	0
1	S4	60'	-	15.5'	TLC-BT-575	2	2	0
				60'	TLC-LED-1200	4	4	0
1	S5	60'	0'	15.48'	TLC-BT-575	2	2	0
				60'	TLC-LED-1200	5	5	0
5	TOTALS					27	27	0



GRID SUMMARY

Name: Soccer 1
Size: 330' x 170'
Spacing: 30.0' x 30.0'
Height: 3.0' above grade

ILLUMINATION SUMMARY

MAINTAINED HORIZONTAL FOOTCANDLES

Entire Grid

Guaranteed Average: 30
Scan Average: 31.74
Maximum: 51
Minimum: 21
Avg / Min: 1.51
Guaranteed Max / Min: 2.5
Max / Min: 2.43
UG (adjacent pts): 1.47
CU: 0.62
No. of Points: 66

LUMINAIRE INFORMATION

Applied Circuits: C
No. of Luminaires: 27
Total Load: 27.43 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 $\pm 3\%$ nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.



We Make It Happen

EQUIPMENT LIST FOR AREAS SHOWN

Pole				Luminaires				
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LUMINAIRE TYPE	QTY / POLE	THIS GRID	OTHER GRIDS
2	S1, S6	60'	-	15.5'	TLC-BT-575	1	1	0
				60'	TLC-LED-1200	3	3	0
1	S2	60'	-	15.5'	TLC-BT-575	1	1	0
				60'	TLC-LED-1200	4	4	0
1	S3	60'	0'	15.52'	TLC-BT-575	1	1	0
				60'	TLC-LED-1200	4	4	0
1	S4	60'	0'	15.52'	TLC-BT-575	2	2	0
				60'	TLC-LED-1200	4	4	0
1	S5	60'	-	15.5'	TLC-BT-575	2	2	0
				60'	TLC-LED-1200	5	5	0
6	TOTALS					31	31	0



Pole location(s) \diamond dimensions are relative to 0,0 reference point(s) \otimes

GRID SUMMARY

Name:	Softball
Size:	Irregular 312' / 244' / 175'
Spacing:	20.0' x 20.0'
Height:	3.0' above grade

ILLUMINATION SUMMARY

MAINTAINED HORIZONTAL FOOTCANDLES		
	Infield	Outfield
Guaranteed Average:	50	30
Scan Average:	50.82	33.78
Maximum:	61	51
Minimum:	35	23
Avg / Min:	1.47	1.49
Guaranteed Max / Min:	2	2.5
Max / Min:	1.77	2.26
UG (adjacent pts):	1.27	1.52
CU:	0.67	
No. of Points:	25	134
LUMINAIRE INFORMATION		
Applied Circuits:	C, D	
No. of Luminaires:	31	
Total Load:	31.51 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 $\pm 3\%$ nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.



We Make It Happen

EQUIPMENT LIST FOR AREAS SHOWN

Pole				Luminaires				
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LUMINAIRE TYPE	QTY / POLE	THIS GRID	OTHER GRIDS
2	S1, S6	60'	-	15.5'	TLC-BT-575	1	1	0
				60'	TLC-LED-1200	3	3	0
1	S2	60'	-	15.5'	TLC-BT-575	1	1	0
				60'	TLC-LED-1200	4	4	0
1	S3	60'	0'	15.52'	TLC-BT-575	1	1	0
				60'	TLC-LED-1200	4	4	0
1	S4	60'	0'	15.52'	TLC-BT-575	2	2	0
				60'	TLC-LED-1200	4	4	0
1	S5	60'	-	15.5'	TLC-BT-575	2	2	0
				60'	TLC-LED-1200	5	5	0
4	T1, T4-T6	60'	-	60'	TLC-LED-900	1	1	0
				60'	TLC-LED-1200	1	1	0
2	T7-T8	60'	-	60'	TLC-LED-1200	4	4	0
						47	47	0
12								
TOTALS						47	47	0



ENGINEERED DESIGN By: Tanner Lanphier · File #198552C-Hunnewell · 11-Feb-21

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

Hunnewell Grass Multipurpose Retrofit & Tennis
Wellesley, MA

GRID SUMMARY

Name: Zero Grid
Size: 4 Court - 12' Spacing
Spacing: 20.0' x 20.0'
Height: 3.0' above grade

ILLUMINATION SUMMARY

MAINTAINED HORIZONTAL FOOTCANDLES

Entire Grid

Scan Average: **15.29**

Maximum: 70

Minimum: 0

Avg / Min: -

Max / Min: -

UG (adjacent pts): 1107.08

CU: 0.92

No. of Points: 938

LUMINAIRE INFORMATION

Applied Circuits: A, B, C, D

No. of Luminaires: **47**

Total Load: 49.11 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 $\pm 3\%$ nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.



We Make It Happen®

Not to be reproduced in whole or part without the written consent of Musco Sports Lighting, LLC. ©1981, 2021 Musco Sports Lighting, LLC.

ILLUMINATION SUMMARY

NOTES: Pole locations and Mounting heights based on existing Musco Light Structure poles.



SCALE IN FEET 1 : 200



ENGINEERED DESIGN By: Tanner Lanphier · File #198552C-Hunnewell · 11-Feb-21

Pole location(s) \diamond dimensions are relative to 0,0 reference point(s) \otimes

Hunnewell Grass Multipurpose Retrofit & Tennis Wellesley, MA

EQUIPMENT LAYOUT

INCLUDES:

- Soccer-1
- Softball
- Tennis-1
- Tennis-2

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.

EQUIPMENT LIST FOR AREAS SHOWN

Pole			Luminaires			
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LUMINAIRE TYPE	QTY / POLE
2	S1, S6	60'	-	15.5' 60'	TLC-BT-575 TLC-LED-1200	1 3
	S2-S3	60'	-	15.5' 60'	TLC-BT-575 TLC-LED-1200	1 4
1	S4	60'	-	15.5' 60'	TLC-BT-575 TLC-LED-1200	2 4
	S5	60'	-	15.5' 60'	TLC-BT-575 TLC-LED-1200	2 5
4	T1, T4-T6	60'	-	60' 60'	TLC-LED-900 TLC-LED-1200	1 1
	T7-T8	60'	-	60'	TLC-LED-1200	4
TOTALS						47

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)	380 (60)	480 (60)
Single Phase Voltage	208	220	240	277	347	380	480
	(60)	(60)	(60)	(60)	(60)	(60)	(60)
	7.0	6.6	6.1	5.2	4.2	4.0	3.0
	3.4	3.2	2.9	2.5	2.0	1.8	1.5
	5.3	5.0	4.6	4.0	3.2	2.9	2.3



Not to be reproduced in whole or part without the written consent of Musco Sports Lighting, LLC. ©1981, 2021 Musco Sports Lighting, LLC.

EQUIPMENT LAYOUT