

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

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Hunnewell Grass Multipurpose Retrofit & Tennis

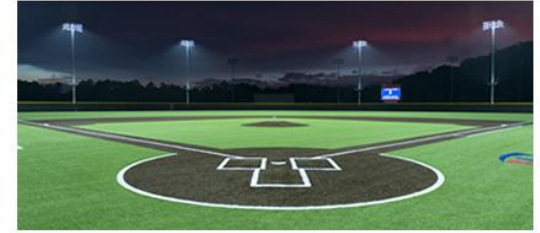
Wellesley, MA

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

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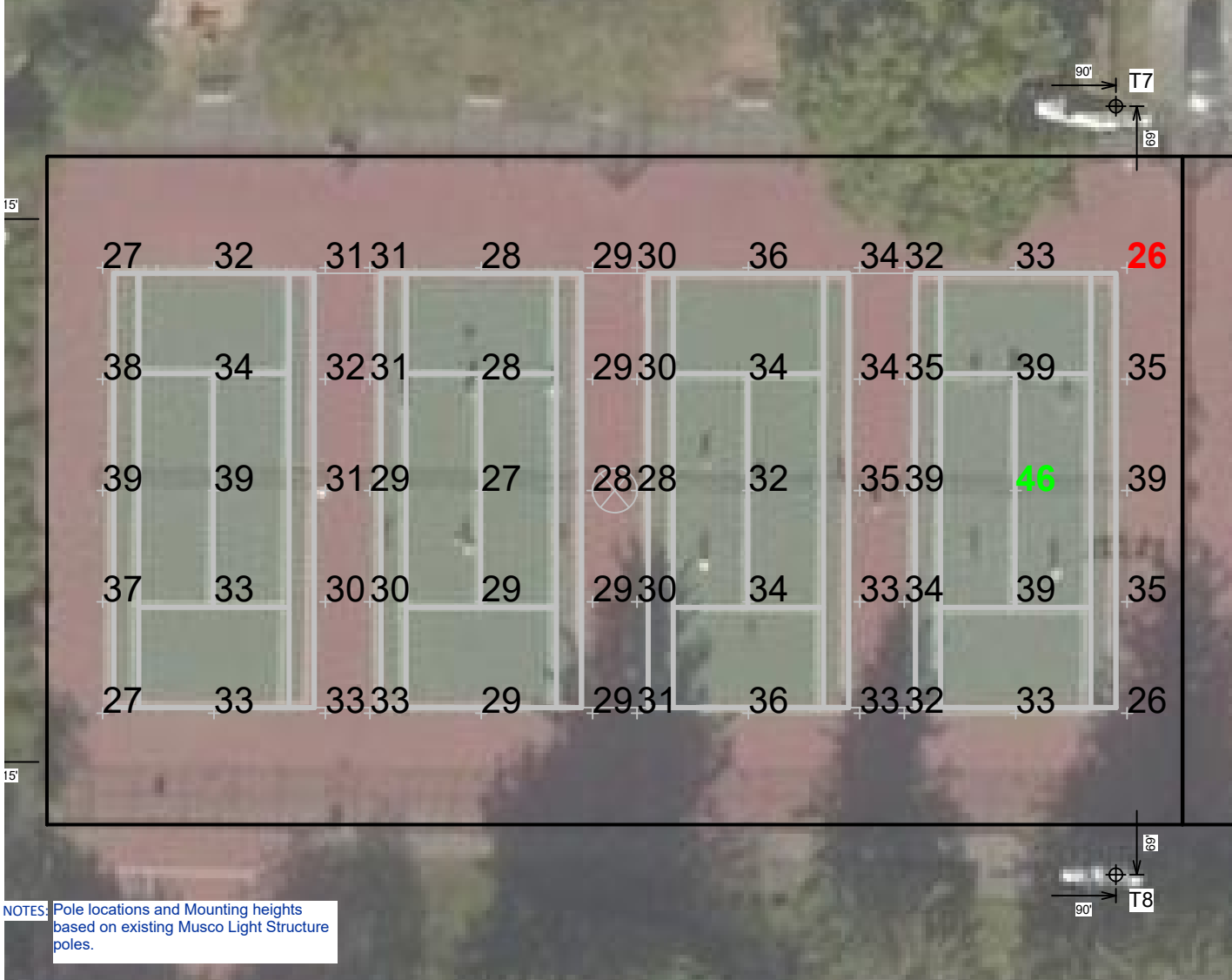
EQUIPMENT LIST FOR AREAS SHOWN

Pole				Luminaires				
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LUMINAIRE TYPE	QTY / POLE	THIS GRID	OTHER GRIDS
2	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	TOTALS					12	8	4

Hunnewell Grass Multipurpose Retrofit & Tennis Wellesley, MA

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.

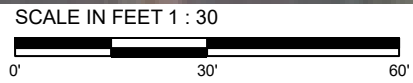
Electrical System Requirements: Refer to Amperage Draw Chart and/or the "Musco Control System Summary" for electrical sizing.

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



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



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	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

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

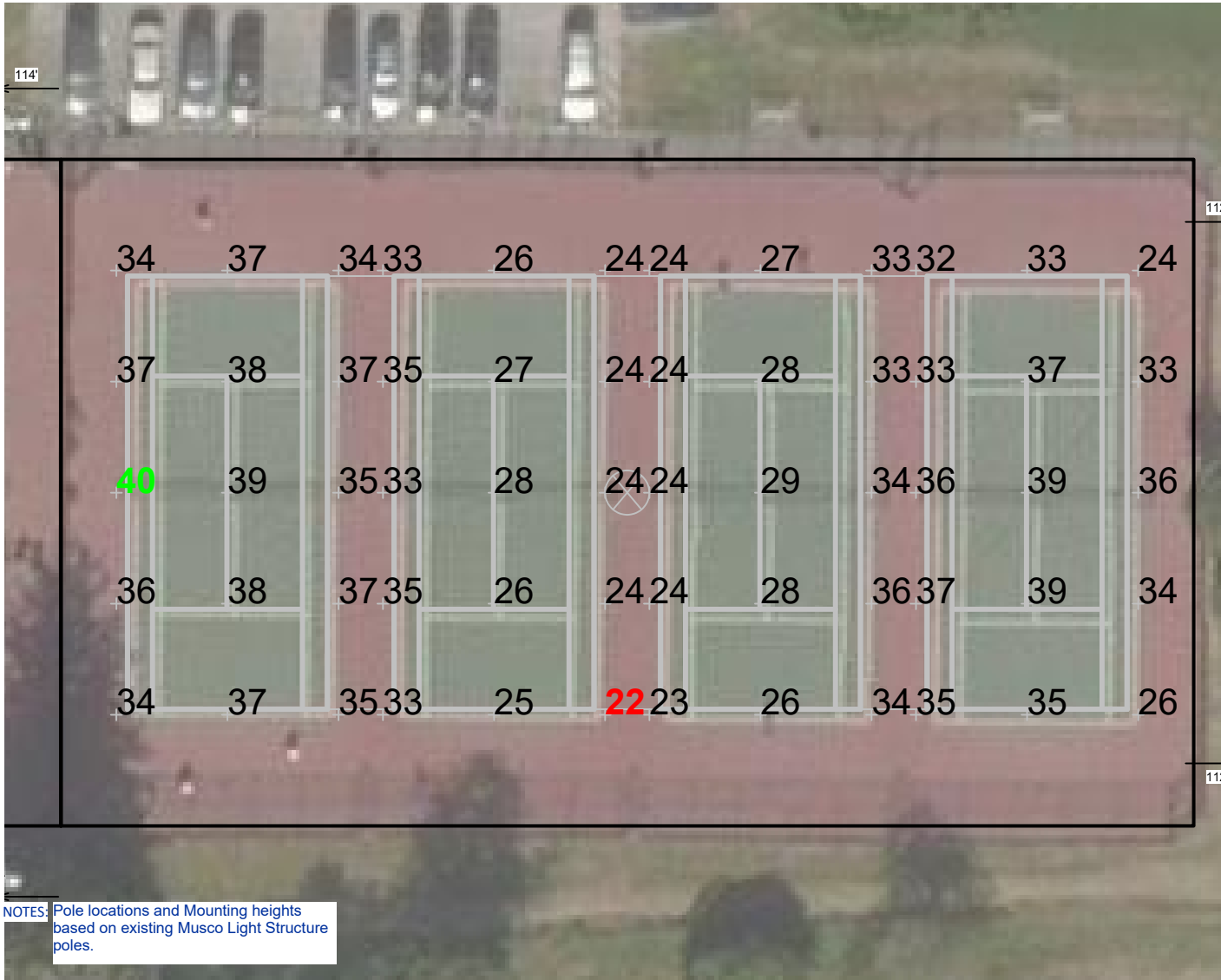
Applied Circuits: B
No. of Luminaires: 8
 Total Load: 8.8 kW

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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.

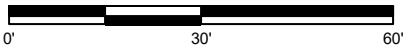
Electrical System Requirements: Refer to Amperage Draw Chart and/or the "Musco Control System Summary" for electrical sizing.

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



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

SCALE IN FEET 1 : 30



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
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

Hunnewell Grass Multipurpose Retrofit & Tennis Wellesley, MA

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



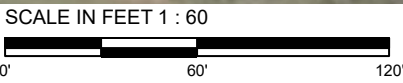
Guaranteed Performance: The ILLUMINATION described above is guaranteed per your Musco Warranty document and includes a 0.95 dirt depreciation factor.

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

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



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	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

Hunnewell Grass Multipurpose Retrofit & Tennis Wellesley, MA

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.

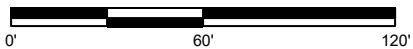
Electrical System Requirements: Refer to Amperage Draw Chart and/or the "Musco Control System Summary" for electrical sizing.

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



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

SCALE IN FEET 1 : 60



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	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
				60'	TLC-LED-1200	4	4	0
12	TOTALS					47	47	0

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

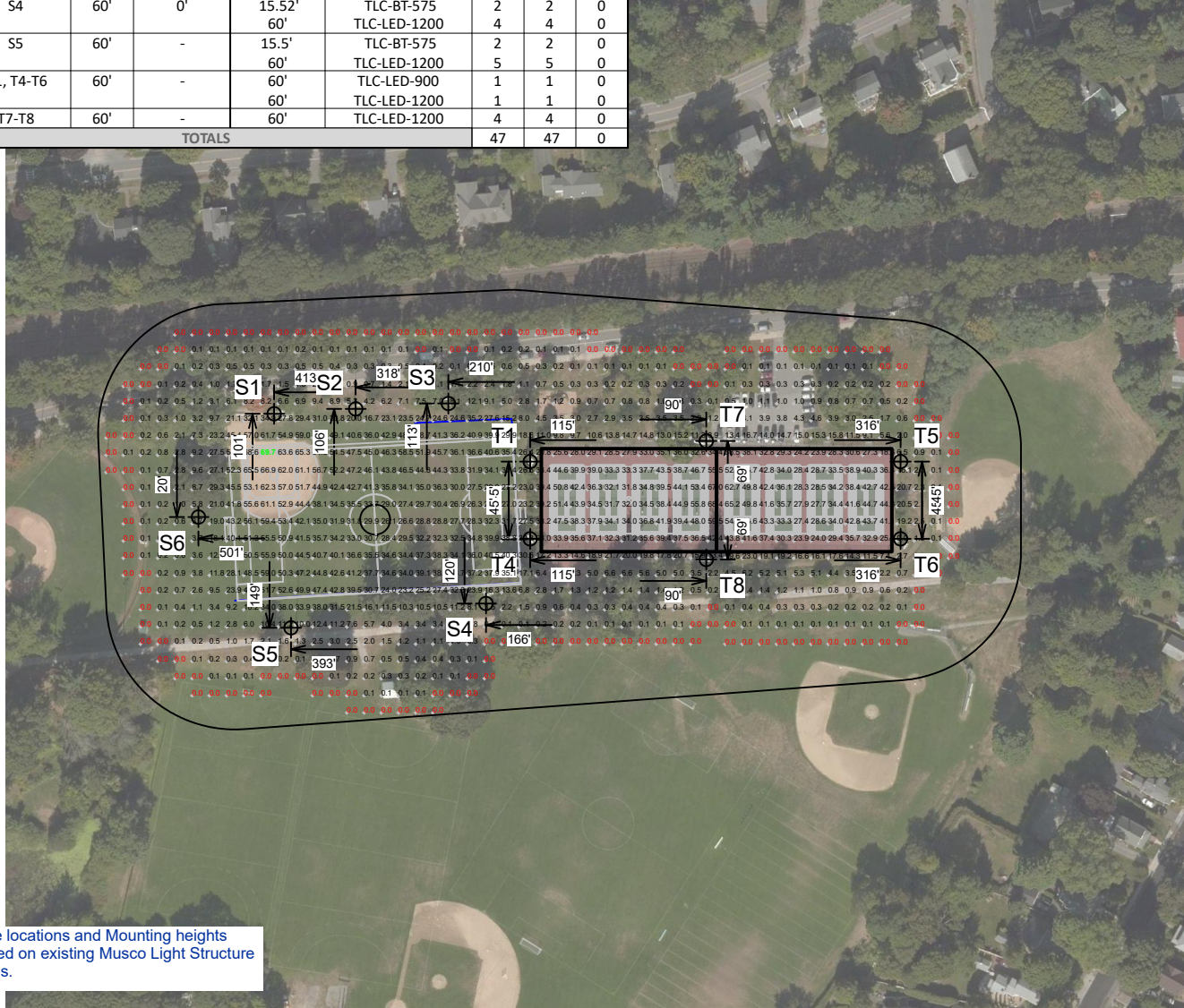
ILLUMINATION SUMMARY	
MAINTAINED HORIZONTAL FOOTCANDLES	
	Entire Grid
Scan Average:	15.29
Maximum:	70
Minimum:	0
Avg / Min:	-
Max / Min:	-
UG (adjacent pts):	1107.08
CU:	0.92
No. of Points:	938
LUMINAIRE INFORMATION	
Applied Circuits:	A, B, C, D
No. of Luminaires:	47
Total Load:	49.11 kW

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



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

SCALE IN FEET 1 : 200



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



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ILLUMINATION SUMMARY

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



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

QTY	LOCATION	Pole		Luminaires		
		SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LUMINAIRE TYPE	QTY / POLE
2	S1, S6	60'	-	15.5'	TLC-BT-575	1
				60'	TLC-LED-1200	3
2	S2-S3	60'	-	15.5'	TLC-BT-575	1
				60'	TLC-LED-1200	4
1	S4	60'	-	15.5'	TLC-BT-575	2
1	S5	60'	-	15.5'	TLC-BT-575	2
				60'	TLC-LED-1200	5
4	T1, T4-T6	60'	-	60'	TLC-LED-900	1
				60'	TLC-LED-1200	1
2	T7-T8	60'	-	60'	TLC-LED-1200	4
12	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 (60)	220 (60)	240 (60)	277 (60)	347 (60)	380 (60)	480 (60)
TLC-LED-1200	7.0	6.6	6.1	5.2	4.2	4.0	3.0
TLC-BT-575	3.4	3.2	2.9	2.5	2.0	1.8	1.5
TLC-LED-900	5.3	5.0	4.6	4.0	3.2	2.9	2.3



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SCALE IN FEET 1 : 200



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