# Edgewood High School Of Sacred Heart SO Madison,WI

### **Lighting System**

Pole / Fixture	Summary					
Pole ID	Pole Height	Mtg Height	Fixture Qty	Luminaire Type	Load	Circuit
F1-F2	68'	68'	6	TLC-LED-1500	8.58 kW	Α
		15'	2	TLC-BT-575	1.15 kW	Α
		50'	1	TLC-LED-1200	1.17 kW	Α
F3-F4	68'	68'	4	TLC-LED-1500	5.72 kW	Α
		68'	2	TLC-LED-900	1.78 kW	Α
		15'	2	TLC-BT-575	1.15 kW	Α
4			34		39.10 kW	

Circuit Summary							
Circuit	Description	Load	Fixture Qty				
Α	Football	39.1 kW	34				

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	20
TLC-BT-575	LED 5700K - 75 CRI	575W	52,000	>120,000	>120,000	>120,000	8
TLC-LED-1200	LED 5700K - 75 CRI	1170W	136,000	>120,000	>120,000	>120,000	2
TLC-LED-900	LED 5700K - 75 CRI	890W	89,600	>120,000	>120,000	>120,000	4

### **Light Level Summary**

Out of Name			Illumination			0: ::	Final Char	
Grid Name	Calculation Metric	Ave	Min Max Max/Min Ave				Circuits	Fixture Qty
Bleachers	Horizontal	19.3	13	31	2.37	1.48	Α	34
Football	Horizontal Illuminance	31.5	20	45	2.24	1.58	Α	34
Property Line	Horizontal	0.01	0	0.03	0.00		Α	34
Soccer	Horizontal Illuminance	32.3	20	45	2.19	1.61	Α	34
Track	Horizontal Illuminance	8.80	0	21	54.70		Α	34

### From Hometown to Professional











#### **EQUIPMENT LIST FOR AREAS SHOWN** LOCATION SIZE TLC-LED-1200 50' TLC-LED-1500 TLC-LED-900 F3-F4 68' 15' 68' TLC-BT-575 TLC-LED-1500 4 TOTALS 34 34 0 43 35 35 45 350 28 37 360 32 32 350 36 36 36 36 27 29 29 28 27 26 26 27 28 29 28 21 29 28 26 24 24 24 24 26 27 20 27 34 33 30 27 26 26 27 32 32 23 30 23 28 37 28 39 30 SCALE IN FEET 1:50 to 0,0 reference point(s) $\otimes$

**ENGINEERED DESIGN** By: Connor Ramstead • File #172583G • 10-Mar-20

## Edgewood High School Of Sacred Heart SO Madison,WI

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

ILLUMINATION SUMMARY					
MAINTAINED HORIZONTA	AL FOOTCANDLES				
	Entire Grid				
Guaranteed Average:	30				
Scan Average:	31.50				
Maximum:	45				
Minimum:	20				
Avg / Min:	1.56				
Guaranteed Max / Min:	2.5				
Max / Min:	2.24				
UG (adjacent pts):	1.52				
CU:	0.49				
No. of Points:	72				
LUMINAIRE INFORMATIO	N				
Color / CRI:	5700K - 75 CRI				
Luminaire Output:	160,000 / 52,000 / 136,000 / 89,600 lumens				
No. of Luminaires:	34				
Total Load:	39.1 kW				

TLC-LED-1500 >120,000 >120,000 >120,000 TLC-BT-575 >120,000 >120,000 >120,000 TLC-LED-1200 >120,000 >120,000 >120,000 >120,000 >120,000 TLC-LED-900 >120,000 Reported per TM-21-11. See luminaire datasheet for details Guaranteed Performance: The ILLUMINATION described

L90 hrs

L80 hrs

above is guaranteed per your Musco
Warranty document and includes a 0.95
dirt depreciation factor.

Luminaire Type

**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.



# **EQUIPMENT LIST FOR AREAS SHOWN** LOCATION SIZE TLC-LED-1200 50' TLC-LED-1500 TLC-LED-900 F3-F4 68' 15' 68' TLC-BT-575 TLC-LED-1500 TOTALS 34 34 0 16 15 SCALE IN FEET 1:50 to 0,0 reference point(s) $\otimes$

**ENGINEERED DESIGN** By: Connor Ramstead • File #172583G • 10-Mar-20

#### **Edgewood High School Of Sacred Heart SO** Madison,WI

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

**ILLUMINATION SUMMARY** Entire Grid Scan Average: Maximum: 21 Minimum: Avg / Min: 22.90 Max / Min: CU: 0.09 No. of Points: 47 LUMINAIRE INFORMATION Color / CRI: 5700K - 75 CRI Luminaire Output: 160,000 / 52,000 / 136,000 / 89,600 lumens No. of Luminaires: 34 Total Load: 39.1 kW

L70 hrs Luminaire Type L90 hrs L80 hrs TLC-LED-1500 >120,000 >120,000 >120,000 TLC-BT-575 >120,000 >120,000 >120,000 TLC-LED-1200 >120,000 >120,000 >120,000 TLC-LED-900 >120,000 >120,000 >120,000 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.



# LOCATION SIZE 50' TLC-LED-1200 TLC-LED-1500 TLC-LED-900 F3-F4 68' 15' 68' TLC-BT-575 TLC-LED-1500 TOTALS 34 34 0 23 19 18 16 15 22 28 23 15 20 25 25 18 SCALE IN FEET 1:10 Pole location(s) $\oplus$ dimensions are relative to 0,0 reference point(s) $\otimes$

**EQUIPMENT LIST FOR AREAS SHOWN** 

**ENGINEERED DESIGN** By: Connor Ramstead • File #172583G • 10-Mar-20

# Edgewood High School Of Sacred Heart SO Madison,WI

RID SUMMARY

Name: Bleachers
Size: 360' x 205'
Spacing: 10.0' x 10.0'
Height: 3.0' above grade

ILLUMINATION SUMMARY						
MAINTAINED HORIZONTA	AL FOOTCANDLES	5				
	Entire Grid					
Scan Average:	19.26					
Maximum:	31					
Minimum:	13					
No. of Points:	24	24				
LUMINAIRE INFORMATION						
Color / CRI:	5700K - 75 CRI					
Luminaire Output:	160,000 / 52,	000 / 136,000 /	89,600 lumens			
No. of Luminaires:	34					
Total Load:	39.1 kW					
		Lum	en Maintenance			
Luminaire Type	L90 hrs	L80 hrs	L70 hrs			
TLC-LED-1500	>120,000	>120,000	>120,000			
TLC-BT-575	>120,000	>120,000	>120,000			
TLC-LED-1200	>120,000	>120,000	>120,000			
TLC-LED-900	>120,000	>120,000	>120,000			
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.



#### MOUNTING LOCATION SIZE TLC-LED-1200 50' TLC-LED-1500 TLC-LED-900 F3-F4 68' TLC-BT-575 15' 2 TLC-LED-1500 TOTALS 34 34 0 **ILLUMINATION SUMMARY** 1.1 1.1 0.6 0.3 0.1 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 405 28 8 26.0 15.2 20.4 32.3 105.0 Reported per TM-21-11. See luminaire datasheet for details. 8H 131 248 245 171 218 298 15 1 3 60 41 B 0.2770.1 0.0 0.0 0.0 0.0 0.0 6 11.0 21.2 22.5 29.0 26.3 23.6 17.1 20.6 27.2 27.6 26.0 23.5 17.3 6 0.5 0.1 0.0 0.0 0.0 0.0 0.0 **2**2.9 39.9 41.2 40.3 46.2 38.4 29.3 34.4 43.4 42.5 39.5 41.1 **32.**3 12.9 24.5 38.5 43.2 40.7 43.3 39.0 34.5 36.7 43.4 42.3 42.3 41.5 29.2 14.5 3.9 0.8 0.0 0.1 17.7 29.7 34.0 33.6 33.1 31.5 30.2 30.6 32.6 33.3 34.0 32.1 20.8 9.9 3.0 0.3 1.3 4.8 r12.9 24.0 28.4 27.5 27.1 25.1 24.3 24.6 26.4 27.1 28.1 25.8 1710 7.2 2.3 11.2 24.8 29.9 27.7 25.6 24.1 24.2 23.9 24.8 26.2 28.7 26.5 16.3 6.4 2.1 0.6 0.1 0.0 0.0 0.0 0.0 0.0 12.6 29.9 37.0 33.9 30.5 28.5 26.6 27.7 29.5 32.8 34.8 33.0 19.2 6.7 1/6 1<del>6.6 34.9 39.6 38.5 37.6 32.3 26.7 29.8 36.9 39.8 38.2 40.1 24.2 8.1 1.4 0.3 0</del>1 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 188 12.2 29.3 32.7 28.8 33.9 23.5 16.8 20.4 31.2 30.5 32.6 33.7 20.2 4.1 6.6 0.2 0.1 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.4 19 11.6 1 9 14.7 17.1 8.4 3.2 5.8 14.5 15.9 15 17.8 4.3 0.9 0.3 0.1 0.0 0.1 0.1 0.4 1.1 3.7 0.0 2.7 1.3 0.9 1.2 2.0 3.5 0.0 3.8 2.1 0.6 0.3 0.1 0.0 0.0 0.0 0.0 0.0 0.0 $0.0 \quad 0.0 \quad 0.0$

**Edgewood High School Of Sacred Heart SO** Madison,WI

**GRID SUMMARY** Name: Blanket Grid Size: 360' x 205' Spacing: 30.0' x 30.0' Height: 3.0' above grade

MAINTAINED HORIZONTAL FOOTCANDLES						
	Entire Grid					
Scan Average:	5.90					
Maximum:	45					
Minimum:	0					
No. of Points:	713					
LUMINAIRE INFORMATION						
Color / CRI:	5700K - 75 CRI					
Luminaire Output:	160,000 / 52,000 / 136,000 / 89,600 lumens					
No. of Luminaires:	34					
Total Load:	39.1 kW					
		Lum	en Maintenance			
Luminaire Type	L90 hrs	L80 hrs	L70 hrs			
TLC-LED-1500	>120,000	>120,000	>120,000			
TLC-BT-575	>120,000	>120,000	>120,000			
TLC-LED-1200	>120,000	>120,000	>120,000			
TLC-LED-900	>120,000	>120,000	>120,000			

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"

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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to 0,0 reference point(s)  $\otimes$ 

SCALE IN FEET 1:100

**EQUIPMENT LIST FOR AREAS SHOWN** 

#### **EQUIPMENT LIST FOR AREAS SHOWN** LOCATION SIZE TLC-LED-1200 50' TLC-LED-1500 TLC-LED-900 F3-F4 68' 15' 68' TLC-BT-575 TLC-LED-1500 4 TOTALS 34 34 0 38 42 33 33 40 38 44 40 42 33 40 40 35 35 40 32 29 32 32 30 29 30 32 31 31 31 23 28 28 25 24 25 26 27 21 27 24 27 29 27 25 25 25 25 29 21 .21 31 27 29 284 35 36 26 38 332 26 29 30 39 35 27 39 42 41 37 27 35 37 SCALE IN FEET 1:50 to 0,0 reference point(s) $\otimes$

**ENGINEERED DESIGN** By: Connor Ramstead • File #172583G • 10-Mar-20

#### **Edgewood High School Of Sacred Heart SO** Madison,WI

**GRID SUMMARY** Name: Soccer Size: 360' x 205' Spacing: 30.0' x 30.0' Height: 3.0' above grade

ILLUMINATION SUMMARY				
MAINTAINED HORIZONTA	AL FOOTCANDLES			
	Entire Grid			
Guaranteed Average:	30			
Scan Average:	32.27			
Maximum:	45			
Minimum:	20			
Avg / Min:	1.58			
Guaranteed Max / Min:	2.5			
Max / Min:	2.19			
UG (adjacent pts):	1.50			
CU:	0.58			
No. of Points:	84			
LUMINAIRE INFORMATIO	N			
Color / CRI:	5700K - 75 CRI			
Luminaire Output:	160,000 / 52,000 / 136,000 / 89,600 lumens			

Total Load: 39.1 kW Luminaire Type L90 hrs L80 hrs TLC-LED-1500 >120,000 >120,000 >120,000 TLC-BT-575 >120,000 >120,000 >120,000 TLC-LED-1200 >120,000 >120,000 >120,000 >120,000 >120,000 TLC-LED-900 >120,000 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.

No. of Luminaires: 34

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.



EQI	EQUIPMENT LIST FOR AREAS SHOWN									
Pole					Luminaires					
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING LUMINAIRE QTY / THIS HEIGHT TYPE POLE GRID						
2	F1-F2	68'	-	15'	TLC-BT-575	2	2	0		
				50'	TLC-LED-1200	1	1	0		
				68'	TLC-LED-1500	6	6	0		
2	F3-F4	68'	-	68'	TLC-LED-900	2	2	0		
				15'	TLC-BT-575	2	2	0		
				68'	TLC-LED-1500	4	4	0		
4	TOTALS						34	0		

SCALE IN FEET 1:120

**ENGINEERED DESIGN** By: Connor Ramstead • File #172583G • 10-Mar-20

NOTES: Light reading calculations follow the elevation changes of the roads.

Pole location(s)  $\bigoplus$  dimensions are relative to 0,0 reference point(s)  $\bigotimes$ 

#### **Edgewood High School Of Sacred Heart SO** Madison,WI

GRID SUMMARY	
Name:	Property Line
Spacing:	30.0'
Height:	18.0' above grade

ILLUMINATION SUMMARY							
HORIZONTAL FOOTCAND	LES						
	Entire Grid						
Scan Average:	0.0064						
Maximum:	0.03						
Minimum:	0.00						
No. of Points:	36						
LUMINAIRE INFORMATION							
Color / CRI:	Color / CRI: 5700K - 75 CRI						
Luminaire Output:	160,000 / 52,	000 / 136,000 /	89,600 lumen				
No. of Luminaires:	34						
Total Load:	39.1 kW						
		Lum	en Maintenance				
Luminaire Type	L90 hrs	L80 hrs	L70 hrs				
TLC-LED-1500	>120,000	>120,000	>120,000				
TLC-BT-575	>120,000	>120,000	>120,000				
TLC-LED-1200	>120,000	>120,000	>120,000				
TLC-LED-900	>120,000	>120,000	>120,000				
Reported per TM-21-11.	See luminaire da	tasheet for detai	ils.				

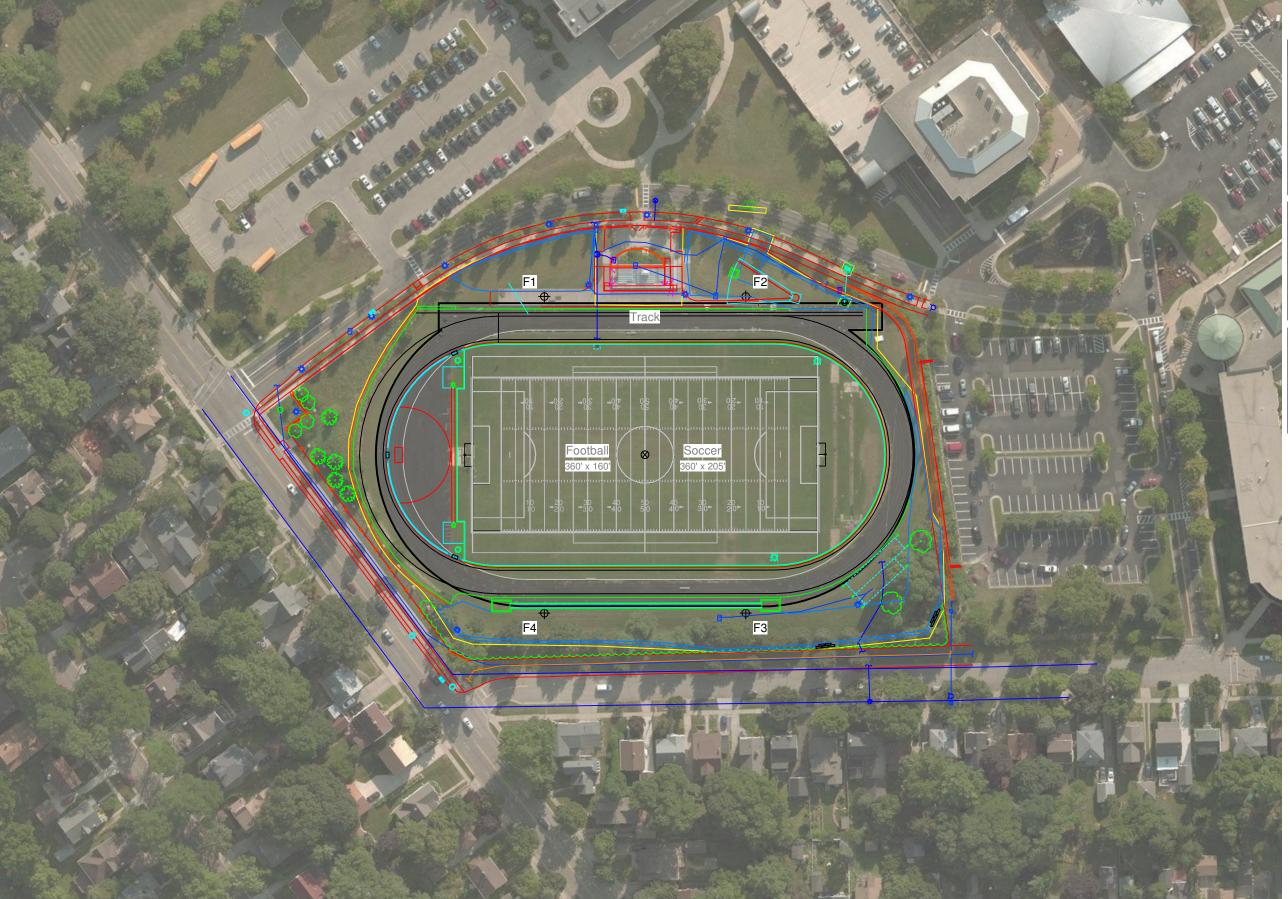
Guaranteed Performance: The ILLUMINATION described above is guaranteed per your Musco Warranty

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.





**ENGINEERED DESIGN** By: Connor Ramstead • File #172583G • 10-Mar-20

Edgewood High School Of Sacred Heart SO Madison,WI

#### **EQUIPMENT LAYOUT**

INCLUDES:
· Football
· Soccer
· 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.

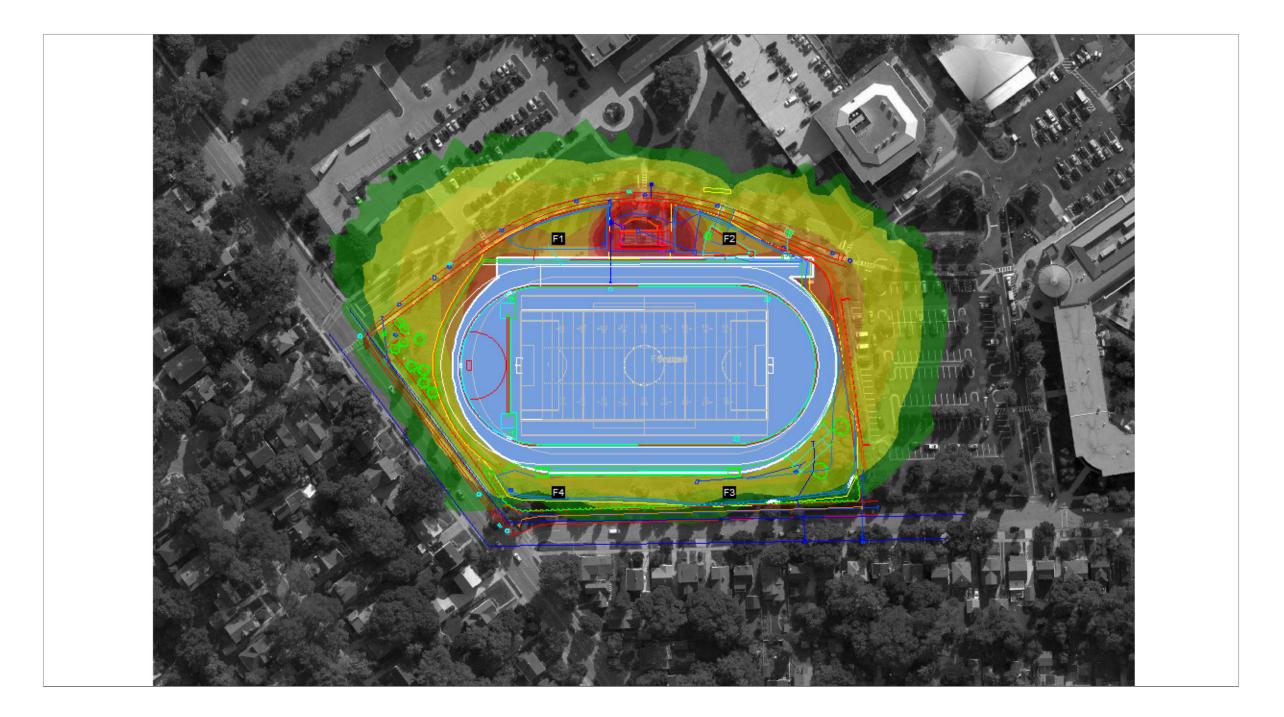
EQ	EQUIPMENT LIST FOR AREAS SHOWN								
Pole				Luminaires					
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LUMINAIRE Type	QTY / POLE			
2	F1-F2	68'	-	15'	TLC-BT-575	2			
				50'	TLC-LED-1200	1			
				68'	TLC-LED-1500	6			
2	F3-F4	68'	-	68'	TLC-LED-900	2			
				15'	TLC-BT-575	2			
				68'	TLC-LED-1500	4			
4			TOTAL	S		34			

SINGLE LUMINAIRE AMPERAGE DRAW CHART											
Ballast Specifications (.90 min power factor)	Line Amperage Per Luminaire (max draw)										
Single Phase Voltage	208	220	240	277	347 (60)	380 (60)	480				
TLC-LED-1500	8.5	8.1	7.4	6.4	5.1	4.7	3.7				
TLC-BT-575	3.4	3.2	2.9	2.5	2.0	1.8	1.5				
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				



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Pole location(s)  $\bigoplus$  dimensions are relative to 0,0 reference point(s)  $\bigotimes$ 



#### Candelas: 50,000 20,000 4,000 1,500 150,000 100,000

# Edgewood High School Of Sacred Heart SO Madison,WI

#### **GLARE IMPACT**

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.

#### 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.



# Edgewood High School Of Sacred Heart SO Madison,WI

### **Lighting System**

Pole / Fixture	Summary					
Pole ID	Pole Height	Mtg Height	Fixture Qty	Luminaire Type	Load	Circuit
F1-F2	80'	80'	6	TLC-LED-1500	8.58 kW	Α
		15'	2	TLC-BT-575	1.15 kW	Α
		50'	1	TLC-LED-1200	1.17 kW	Α
F3-F4	80'	80'	4	TLC-LED-1500	5.72 kW	Α
		80'	2	TLC-LED-900	1.78 kW	Α
		15'	2	TLC-BT-575	1.15 kW	Α
4			34		39.10 kW	

Circuit Summ	nary		
Circuit	Description	Load	Fixture Qty
Α	Football	39.1 kW	34

Fixture Type Summary							
Туре	Source	Wattage	Lumens	L90	L80	L70	Quantity
TLC-LED-1500	LED 5700K - 75 CRI	1430W	160,000	>120,000	>120,000	>120,000	20
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
TLC-LED-1200	LED 5700K - 75 CRI	1170W	136,000	>120,000	>120,000	>120,000	2

### **Light Level Summary**

Calculation Grid Summary	y							
Grid Name	Calculation Metric	Ave	Min	Illumination Max	Max/Min	Ave/Min	Circuits	Fixture Qty
Bleachers	Horizontal	19.4	13	31	2.35	1.49	A	34
Football	Horizontal Illuminance	33	21	44	2.06	1.57	Α	34
Property Line	Horizontal	0.01	0	0.05	0.00		Α	34
Soccer	Horizontal Illuminance	33.2	21	42	2.00	1.58	А	34
Track	Horizontal Illuminance	8.10	0	19	52.82		Α	34

### From Hometown to Professional











#### **EQUIPMENT LIST FOR AREAS SHOWN** LOCATION SIZE 50' TLC-LED-1200 TLC-LED-1500 TLC-LED-900 F3-F4 80' 80' 15' TLC-BT-575 TLC-LED-1500 4 TOTALS 34 34 0 38 39 43 37 380 35 35 38 38 30 39 38 29 30 28 28 29 30 32 32 31 31 31 23 33 32 29 27 25 25 27 30 30 28 22 36 33 29 34 22 38 27 32 34 26 27 38 37 28 39 30 SCALE IN FEET 1:50 to 0,0 reference point(s) $\otimes$

**ENGINEERED DESIGN** By: Connor Ramstead • File #172583H • 10-Mar-20

## Edgewood High School Of Sacred Heart SO Madison,WI

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

**ILLUMINATION SUMMARY** Entire Grid **Guaranteed Average:** Scan Average: 32.96 Maximum: 44 21 Minimum: Avg / Min: 1.56 Guaranteed Max / Min: Max / Min: 2.06 1.73 UG (adjacent pts): CU: 0.51 No. of Points: 72 LUMINAIRE INFORMATION Color / CRI: 5700K - 75 CRI Luminaire Output: 160,000 / 52,000 / 89,600 / 136,000 lumens No. of Luminaires: 34

Total Load: 39.1 kW Luminaire Type L90 hrs L80 hrs TLC-LED-1500 >120,000 >120,000 >120,000 TLC-BT-575 >120,000 >120,000 >120,000 TLC-LED-900 >120,000 >120,000 >120,000 >120,000 TLC-LED-1200 >120,000 >120,000 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.



# **EQUIPMENT LIST FOR AREAS SHOWN** LOCATION SIZE TLC-LED-1200 50' TLC-LED-1500 TLC-LED-900 F3-F4 80' 15' 80' TLC-BT-575 TLC-LED-1500 TOTALS 34 34 0 SCALE IN FEET 1:50 to 0,0 reference point(s) $\otimes$

**ENGINEERED DESIGN** By: Connor Ramstead • File #172583H • 10-Mar-20

## Edgewood High School Of Sacred Heart SO Madison,WI

RID SUMMARY

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

**ILLUMINATION SUMMARY** Entire Grid Scan Average: Maximum: 19 Minimum: Avg / Min: 21.94 Max / Min: 52.82 CU: 0.08 No. of Points: 47 LUMINAIRE INFORMATION Color / CRI: 5700K - 75 CRI Luminaire Output: 160,000 / 52,000 / 89,600 / 136,000 lumens No. of Luminaires: 34 Total Load: 39.1 kW

L70 hrs Luminaire Type L90 hrs L80 hrs TLC-LED-1500 >120,000 >120,000 >120,000 TLC-BT-575 >120,000 >120,000 >120,000 TLC-LED-900 >120,000 >120,000 >120,000 TLC-LED-1200 >120,000 >120,000 >120,000 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.



# LOCATION SIZE F1-F2 TLC-LED-1200 50' TLC-LED-1500 TLC-LED-900 F3-F4 80' 2 2 4 80' 15' 80' TLC-BT-575 TLC-LED-1500 4 TOTALS 34 34 0 23 19 16 28 23 19 15 16 18 22 26 18 20 25 SCALE IN FEET 1:10 to 0,0 reference point(s) $\otimes$

**EQUIPMENT LIST FOR AREAS SHOWN** 

**ENGINEERED DESIGN** By: Connor Ramstead • File #172583H • 10-Mar-20

### Edgewood High School Of Sacred Heart SO Madison,WI

RID SUMMARY

Name: Bleachers
Size: 360' x 205'
Spacing: 10.0' x 10.0'
Height: 3.0' above grade

**ILLUMINATION SUMMARY** Entire Grid Scan Average: Maximum: 31 Minimum: 13 No. of Points: 24 LUMINAIRE INFORMATION Color / CRI: 5700K - 75 CRI Luminaire Output: 160,000 / 52,000 / 89,600 / 136,000 lumens No. of Luminaires: 34 Total Load: 39.1 kW Luminaire Type L90 hrs L80 hrs L70 hrs TLC-LED-1500 >120,000 >120,000 >120,000 TLC-BT-575 >120,000 >120,000 >120,000 TLC-LED-900 >120,000 >120,000 TLC-LED-1200 

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

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

**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.



#### **EQUIPMENT LIST FOR AREAS SHOWN** MOUNTING LOCATION SIZE TLC-LED-1200 50' TLC-LED-1500 TLC-LED-900 F3-F4 80' TLC-BT-575 15' 2 TLC-LED-1500 TOTALS 34 34 0 0.0 0.0 0.0 0.0 0.0 0.0 0.1 0.1 0.1 0.2 0.1 0.1 1.1 5.0 11.6 9.4 10.6 8.2 18 0.3 0.1 0.2 0.2 0.1 0.1 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.2 1.1 0,7 0.3 0.1 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.1 0.2 0.5 0.9 1.2 47 29 0 26.0 15.4 20.5 32.5 10.5 76 117 238 244 176 221 294 14 # T4 60 42 03 0 2 11.4 8.8 19.7 24.3 23.2 22.8 18.0 20.6 24.1 23.6 22.0 20.6 16.5 7 0.5 0.1 0.0 0.0 0.0 0.0 0.0 23.3 37.4 36.8 36.0 41.4 37.9 30.7 34.9 40.5 38.0 35.2 37.6 31.8 13.9 0.8 \_0.2 0.0 0.0 0.0 0.0 0.0 **2.**5 **10.6 25.6 39.0 42.0 39.8 43.3 40.9 37.1 38.8** 41.3 40.2 41.3 30.2 15.4 4.0 0.8 0.2 0.1 0.0 0.0 0.0 0.0 0.0 0.1 18.9 32.2 36.6 35.7 35.4 34.0 33.0 33.2 34.8 35.2 35.5 34.1 22.4 10.4 2.9 0.3 1.2 4.7 T13.2 26.2 32.3 31.0 30.0 27.5 26.2 26.8 28.9 29.9 30.8 28.1 1875 7.7 2.4

15.0 32.5 42.2 37.8 37.3 31.7 26.7 29.1 36.2 38.4 37.0 39.2 24.1 9.3 1.8 0.3 0.1 0.0 0.0 0.0 0.0 0.0

1. 24 23.9 31.1 26.5 29.6 21.1 15.6 18.6 27.4 27.5 29.0 27.5 18.2 3.8 67. 0.3 0.1 0.0 0.0 0.0 0.0 0.0

10.9 26.3 34.4 31.6 28.5 26.3 25.7 25.8 27.2 29.0 31.3 29.1 18.5 7.4 2.3 0.6

.11.8 30.7 41.1 36.6 33.0 30.1 27.5 28.8 31.3 34.4 36.0 35.3 22.4 8.6 2/2

0.1 0.2 0.4 1.3 4.0 4.1 3.0 1.5 1.1 1.3 2.3 3.6 4.0 2.4 0.8 0.3 0.1 0.1

0.0 0.0 0.0 0.0 0.0 0.0 ...

0.5 17 8.7 6 8.6 13.5 14.4 8.0 3.6 5.8 13.0 13.3 6 14.2 4.0

0.0 0.0 0.0 0.0 0.0

0.0 0.0 0.0 0.0 0.0 0.1 0.2

0.0 0.0 0.0 0.0 0.0

0.1 0.0 0.0 0.0 0.0 0.0

## Edgewood High School Of Sacred Heart SO Madison,WI

ILLUMINATION SUMMARY
MAINTAINED HORIZONTAL FOOTCANDLES

GRID SUMMARY

Name:
Size:
Spacing:
Height:
3.0' above grade

	Entire Grid						
Scan Average:	5.90						
Maximum:	44						
Minimum:	0						
No. of Points:	713						
LUMINAIRE INFORMATIO	N						
Color / CRI:	5700K - 75 CRI						
Luminaire Output:	160,000 / 52,	000 / 89,600 / 3	136,000 lumens				
No. of Luminaires:	34						
Total Load:	39.1 kW						
		Lum	en Maintenance				
Luminaire Type	L90 hrs	L80 hrs	L70 hrs				
TLC-LED-1500	>120,000	>120,000	>120,000				
TLC-BT-575	>120,000	>120,000	>120,000				
TLC-LED-900	>120,000	>120,000	>120,000				

TLC-LED-1200 >120,000 >120,000 >120,000

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

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

**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.



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SCALE IN FEET 1:100

#### **EQUIPMENT LIST FOR AREAS SHOWN** LOCATION SIZE TLC-LED-1200 50' TLC-LED-1500 TLC-LED-900 F3-F4 80' 15' 80' TLC-BT-575 TLC-LED-1500 4 TOTALS 34 34 0 **ILLUMINATION SUMMARY** 37 37 35 35 36 37 41 41 39 42 42 37 37 42 39 33 Reported per TM-21-11. See luminaire datasheet for details 34 35 34 33 31 31 33 33 34 25 26 22 32 30 28 26 26 27 29 30 29 23 31 34 30 27 26 27 32 31 23 35 26\_ 29 334 28 25 39 28 352 36 37 29 26 28 36 38 33 26 33 37 35 40 41 26 SCALE IN FEET 1:50 to 0,0 reference point(s) $\otimes$

**ENGINEERED DESIGN** By: Connor Ramstead • File #172583H • 10-Mar-20

#### **Edgewood High School Of Sacred Heart SO** Madison,WI

**GRID SUMMARY** Name: Soccer Size: 360' x 205' Spacing: 30.0' x 30.0' Height: 3.0' above grade

MAINTAINED HORIZONTA	AL FOOTCANDLES	5	
	Entire Grid		
<b>Guaranteed Average:</b>	30		
Scan Average:	33.20		
Maximum:	42		
Minimum:	21		
Avg / Min:	1.57		
Guaranteed Max / Min:	2.5		
Max / Min:	2.00		
UG (adjacent pts):	1.67		
CU:	0.60		
No. of Points:	84		
LUMINAIRE INFORMATIO	N		
Color / CRI:	5700K - 75 CF	RI .	
Luminaire Output:	160,000 / 52,	000 / 89,600 / 3	136,000 lumens
No. of Luminaires:	34		
Total Load:	39.1 kW		
		Lum	nen Maintenance
Luminaire Type	L90 hrs	L80 hrs	L70 hrs

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

>120,000

>120,000

>120,000

>120,000

>120,000

>120,000

>120,000

>120,000

>120,000

>120,000

>120,000

TLC-LED-1500

TLC-BT-575

TLC-LED-900

TLC-LED-1200

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.

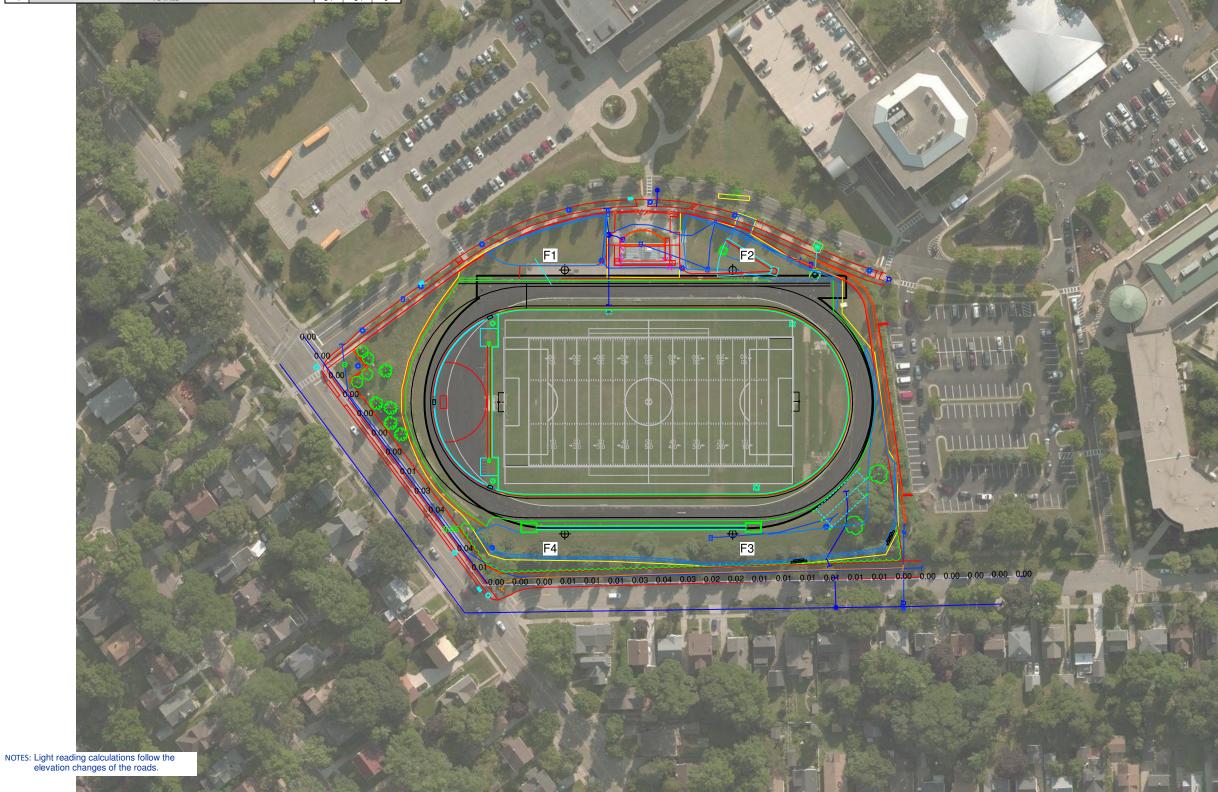
Installation Requirements: Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.



EQI	EQUIPMENT LIST FOR AREAS SHOWN												
	P	ole			Luminaires								
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LUMINAIRE Type	QTY / POLE	THIS GRID	OTHER GRIDS					
2	F1-F2	80'	-	15'	TLC-BT-575	2	2	0					
	1	!	'	50'	TLC-LED-1200	1	1	0					
	<u> </u>			80'	TLC-LED-1500	6	6	0					
2	F3-F4	80'	-	80'	TLC-LED-900	2	2	0					
	1	!	'	15'	TLC-BT-575	2	2	0					
	1		1	80'	TLC-LED-1500	4	4	0					
4			34	34	0								

SCALE IN FEET 1:120

**ENGINEERED DESIGN** By: Connor Ramstead • File #172583H • 10-Mar-20



Pole location(s)  $\bigoplus$  dimensions are relative to 0,0 reference point(s)  $\bigotimes$ 

#### **Edgewood High School Of Sacred Heart SO** Madison,WI

<b>GRID SUMMARY</b>	
Name:	Property Line
Spacing:	30.0'
Height:	18.0' above grade

ILLUMINATION S	UMMARY						
HORIZONTAL FOOTCAND	LES						
Entire Grid							
Scan Average:	0.0115						
Maximum:	0.05						
Minimum:	0.00						
No. of Points:	36						
LUMINAIRE INFORMATIC	N						
Color / CRI:	5700K - 75 CF	RI					
Luminaire Output:	160,000 / 52,	000 / 89,600 / 3	136,000 lumens				
No. of Luminaires:	34						
Total Load:	39.1 kW						
		Lum	en Maintenance				
Luminaire Type	L90 hrs	L80 hrs	L70 hrs				
TLC-LED-1500	>120,000	>120,000	>120,000				
TLC-BT-575	>120,000	>120,000	>120,000				
TLC-LED-900	>120,000	>120,000	>120,000				
TLC-LED-1200	>120,000	>120,000	>120,000				
Reported per TM-21-11.	Saa luminaira da	tacheet for deta	ils				

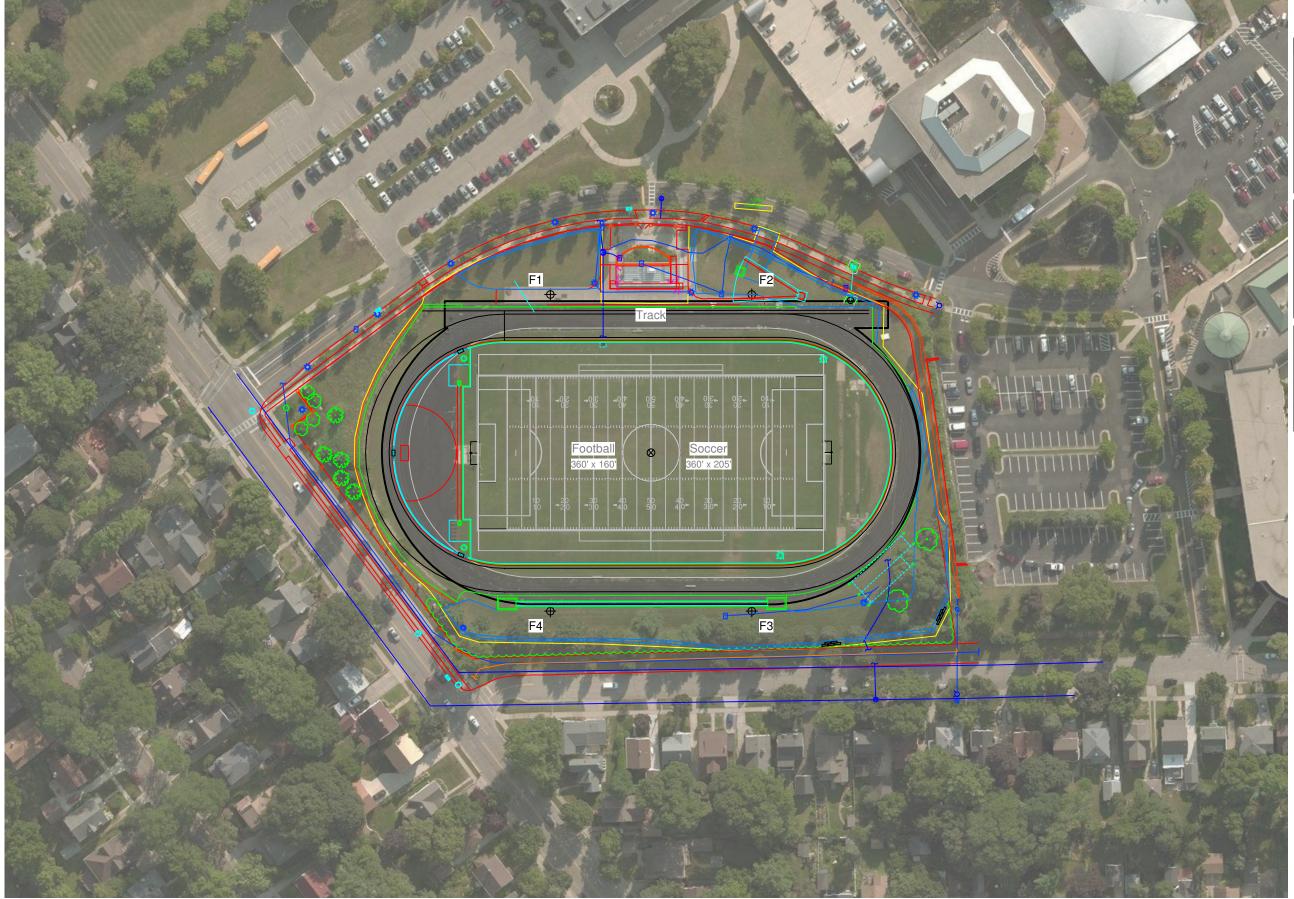
Guaranteed Performance: The ILLUMINATION described above is guaranteed per your Musco Warranty

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.





**Edgewood High School Of Sacred Heart SO** Madison,WI

#### **EQUIPMENT LAYOUT**

# INCLUDES: · Football · Soccer · 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.

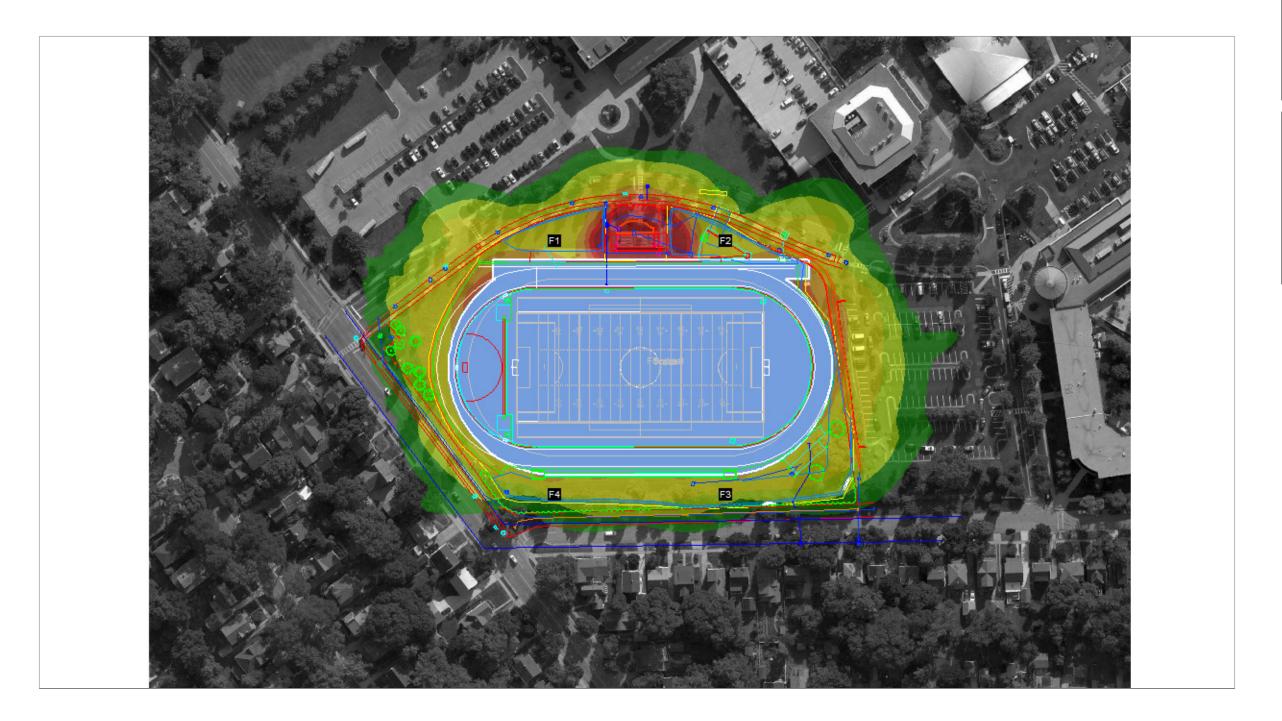
EQUIPMENT LIST FOR AREAS SHOWN										
	Po	ole			Luminaires					
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LUMINAIRE Type	QTY / POLE				
2	F1-F2	80'	-	15'	TLC-BT-575	2				
				50'	TLC-LED-1200	1				
				80'	TLC-LED-1500	6				
2	F3-F4	80'	-	80'	TLC-LED-900	2				
				15'	TLC-BT-575	2				
				80'	TLC-LED-1500	4				
4 TOTALS										

SINGLE LUMINAIRE AMPERAGE DRAW CHART											
Ballast Specifications (.90 min power factor)	Line Amperage Per Luminaire (max draw)										
Single Phase Voltage	208	220 (60)	240 (60)	277 (60)	347 (60)	380	480 (60)				
TLC-LED-1500	8.5	8.1	7.4	6.4	5.1	4.7	3.7				
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				
TLC-LED-1200	7.0	6.6	6.1	5.2	4.2	4.0	3.0				

We Make It Happen.

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Pole location(s)  $\bigoplus$  dimensions are relative to 0,0 reference point(s)  $\bigotimes$ 





# Edgewood High School Of Sacred Heart SO Madison,WI

#### GLARE IMPACT

Summar

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 Level

#### 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.

