

DRAWN BY: LW
DATE: 2/19/06
CHECKED BY: DMK

REVISIONS:

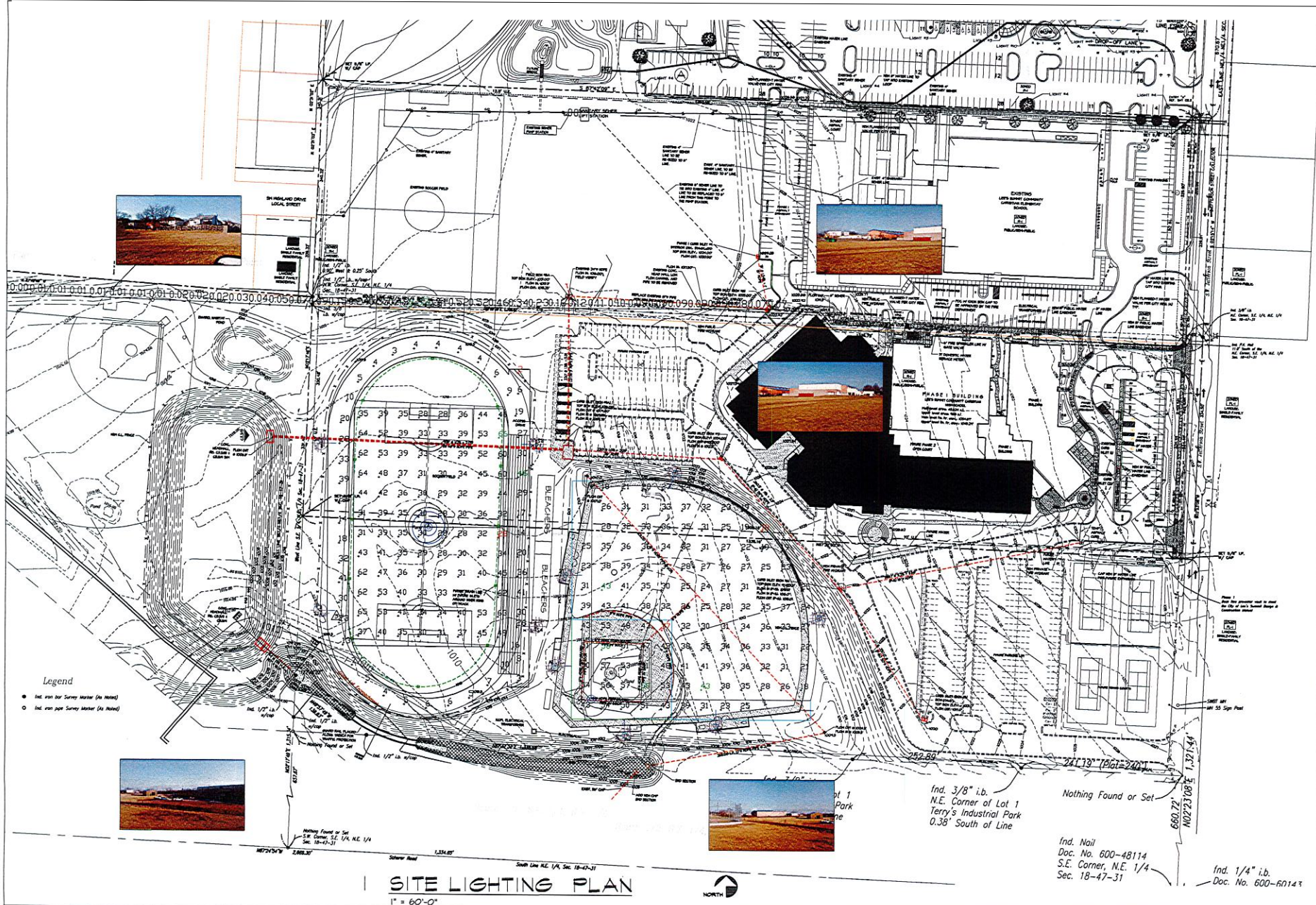
NO.	DESCRIPTION	BY
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LEE'S SUMMIT COMMUNITY CHRISTIAN HIGH SCHOOL
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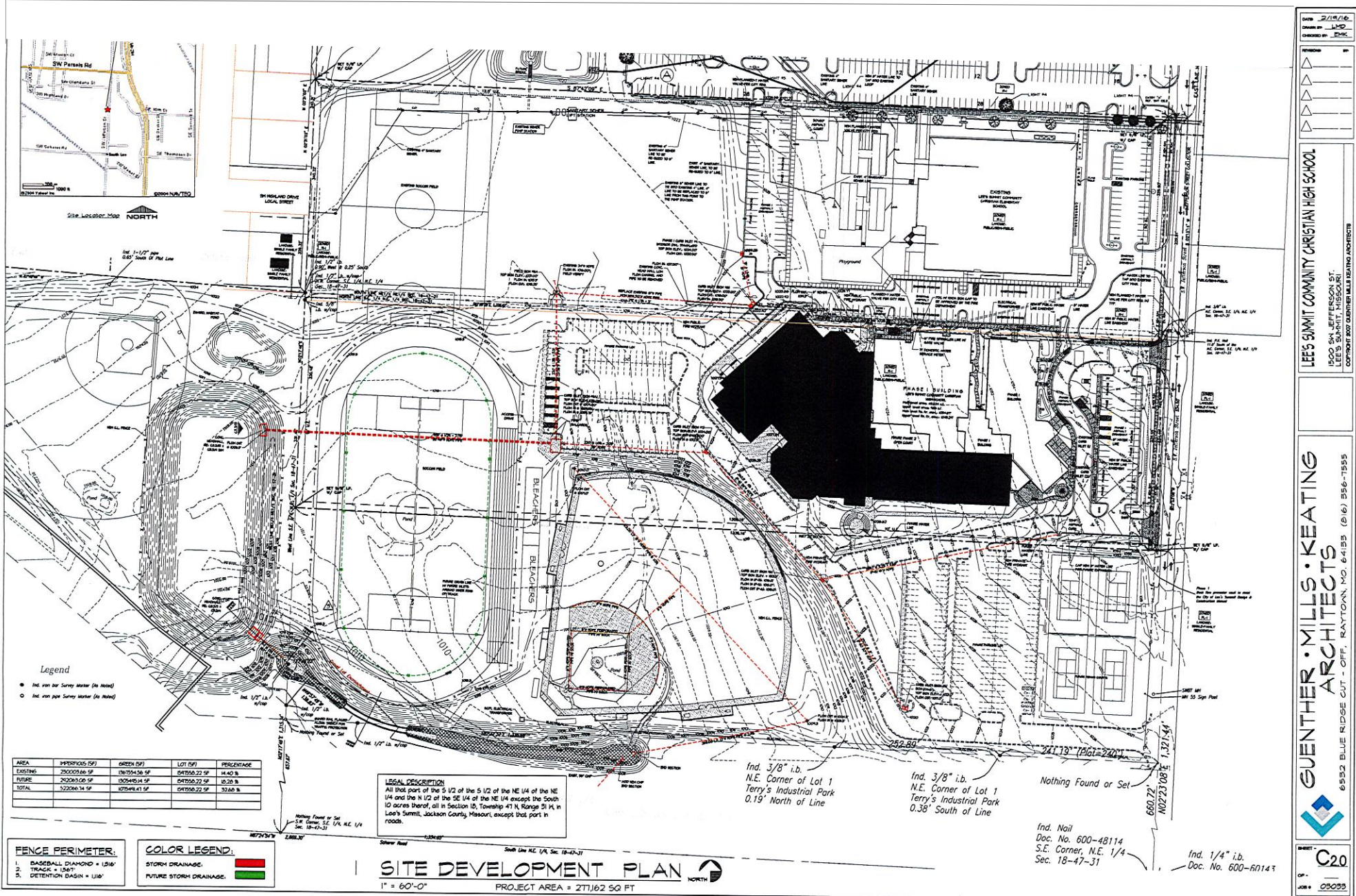


SL1.0

05055



ORIGINAL SUBMISSION BY
OTHERS: FOR
REFERENCE ONLY



Pole / Fixture Summary

Pole ID	Pole Height	Fixture Qty	Lamp Type	Group
A1	70'	5	1500W MZ	B
A2	70'	5	1500W MZ	B
B1	70'	10	1500W MZ	B
B2	70'	10	1500W MZ	B
C1	70'	7	1500W MZ	B
C2	70'	7	1500W MZ	B
S1	70'	11	1500W MZ	A
S2	70'	11	1500W MZ	A
S3	70'	11	1500W MZ	A
S4	70'	11	1500W MZ	A
10		88		

Calculation Grid Summary

Grid Name	Calculation Metric	Type	Light Level			Uniformity		Groups	Fixture Qty
			Ave	Min	Max	Max/Min	Ave/Min		
Baseball-1 (Infield)	Horizontal Illuminance	Constant	50.1	37	58	1.59	1.37	B	44
Baseball-1 (Outfield)	Horizontal Illuminance	Constant	30.6	18	43	2.47	1.74	B	44
Property Spill	Horizontal	Constant	0.11	0	0.53	0.00	0.00	A,B	88
Property Spill	Max Vertical Illuminance Metric	Constant	0.55	0	1.95	0.00	0.00	A,B	88
Soccer-1	Horizontal Illuminance	Constant	40.1	28	66	2.41	1.45	A	44
Track-1	Horizontal Illuminance	Constant	16.5	2	46	20.50	7.29	A	44

Group Summary

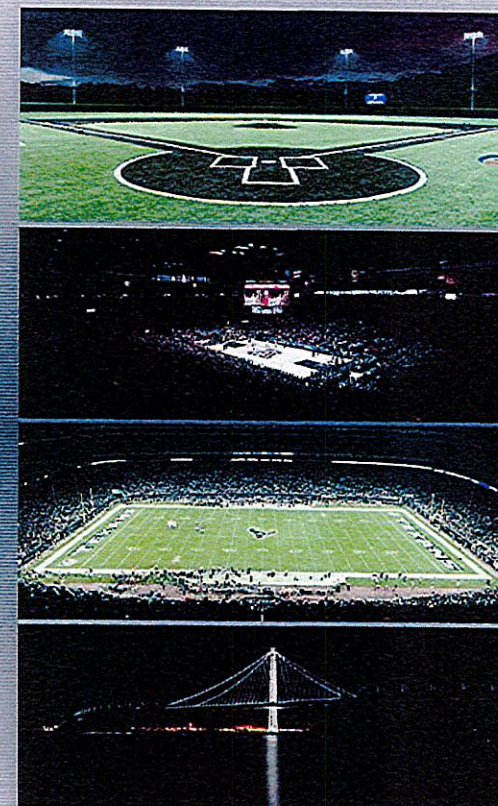
Group	Description	Load	Fixture Qty
A	Soccer	68.82 kW	44
B	Baseball	68.82 kW	44



MY PROJECT

Name: Summit Christian Academy Football
Location: Lees Summit, MO

From Hometown to Professional



We Make It Happen®

ENGINEERED DESIGN

By: Greg Beatty
File # / Date: 113310A

17-Feb-16

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PROJECT SUMMARY

EQUIPMENT LIST FOR AREAS SHOWN

Pole				Luminaires				
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LAMP TYPE	QTY / POLE	THIS GRID	OTHER GRIDS
4	S1-S4	70'	-	70'	1500W MZ	11	11	0
4	TOTALS					44	44	0



MY PROJECT

Name: Summit Christian Academy Football
Location: Lees Summit, MO

GRID SUMMARY

Name: Soccer-1
Size: 360' x 225'
Spacing: 30.0' x 30.0'
Height: 3.0' above grade

CONSTANT ILLUMINATION

SUMMARY	HORIZONTAL FOOTCANDLES
	Entire Grid
Guaranteed Average:	40
Scan Average:	40.05
Maximum:	66
Minimum:	28
Avg / Min:	1.45
Guaranteed Max / Min:	2.5
Max / Min:	2.41
UG (adjacent pts):	1.82
CU:	0.59
No. of Points:	96
LUMINAIRE INFORMATION	
Luminaire Type:	Green Generation
Design Usage Hours:	5,000 hours
Design Lumens:	134,000
Avg Lamp Tilt Factor:	1.000
No. of Luminaires:	44
Avg KW:	68.82 (74.8 max)

Guaranteed Performance: The Guaranteed Average CONSTANT ILLUMINATION described above is guaranteed for the design usage hours of the system.

Field Measurements: Illumination measured in accordance with IESNA LM-5-04 and CIBSE LG4. Individual values may vary. See the Warranty document for details.

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

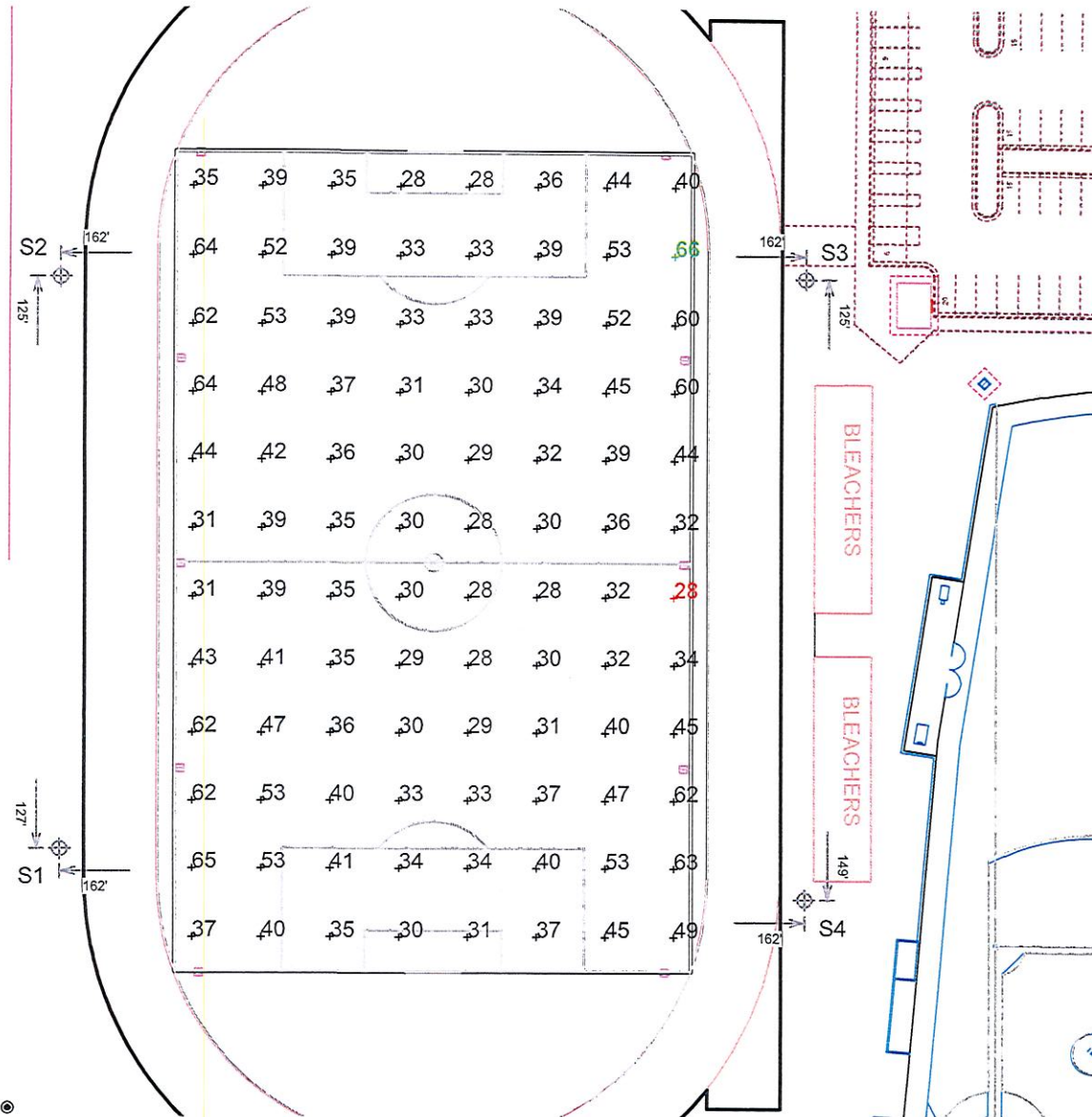
Installation Requirements: Results assume +/- 3% nominal voltage at line side of the ballast and structures located within 3 feet (1m) of design locations.

ENGINEERED DESIGN

By: Greg Beatty
File # / Date: 113310A

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SCALE IN FEET 1 : 80



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

ILLUMINATION SUMMARY

EQUIPMENT LIST FOR AREAS SHOWN

Pole				Luminaires			
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LAMP TYPE	QTY / POLE	THIS GRID
2	A1-A2	70'	-	70'	1500W MZ	5	5
2	B1-B2	70'	-	70'	1500W MZ	10	10
2	C1-C2	70'	-	70'	1500W MZ	7	7
6	TOTALS					44	44
						0	0



MY PROJECT

Name: Summit Christian Academy Football
Location: Lees Summit, MO

GRID SUMMARY

Name: Baseball-1
Size: Irregular 329' / 380' / 329'
Spacing: 30.0' x 30.0'
Height: 3.0' above grade

CONSTANT ILLUMINATION

SUMMARY	Infield	HORIZONTAL FOOTCANDLES Outfield
Guaranteed Average:	50	30
Scan Average:	50.10	30.64
Maximum:	58	43
Minimum:	37	18
Avg / Min:	1.37	1.74
Guaranteed Max / Min:	2	2.5
Max / Min:	1.59	2.47
UG (adjacent pts):	1.24	1.66
CU:	0.66	
No. of Points:	25	101
LUMINAIRE INFORMATION		
Luminaire Type:	Green Generation	
Design Usage Hours:	5,000 hours	
Design Lumens:	134,000	
Avg Lamp Tilt Factor:	1.000	
No. of Luminaires:	44	
Avg KW:	68.82 (74.8 max)	

Guaranteed Performance: The Guaranteed Average CONSTANT ILLUMINATION described above is guaranteed for the design usage hours of the system.

Field Measurements: Illumination measured in accordance with IESNA LM-5-04 and CIBSE LG4. Individual values may vary. See the Warranty document for details.

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

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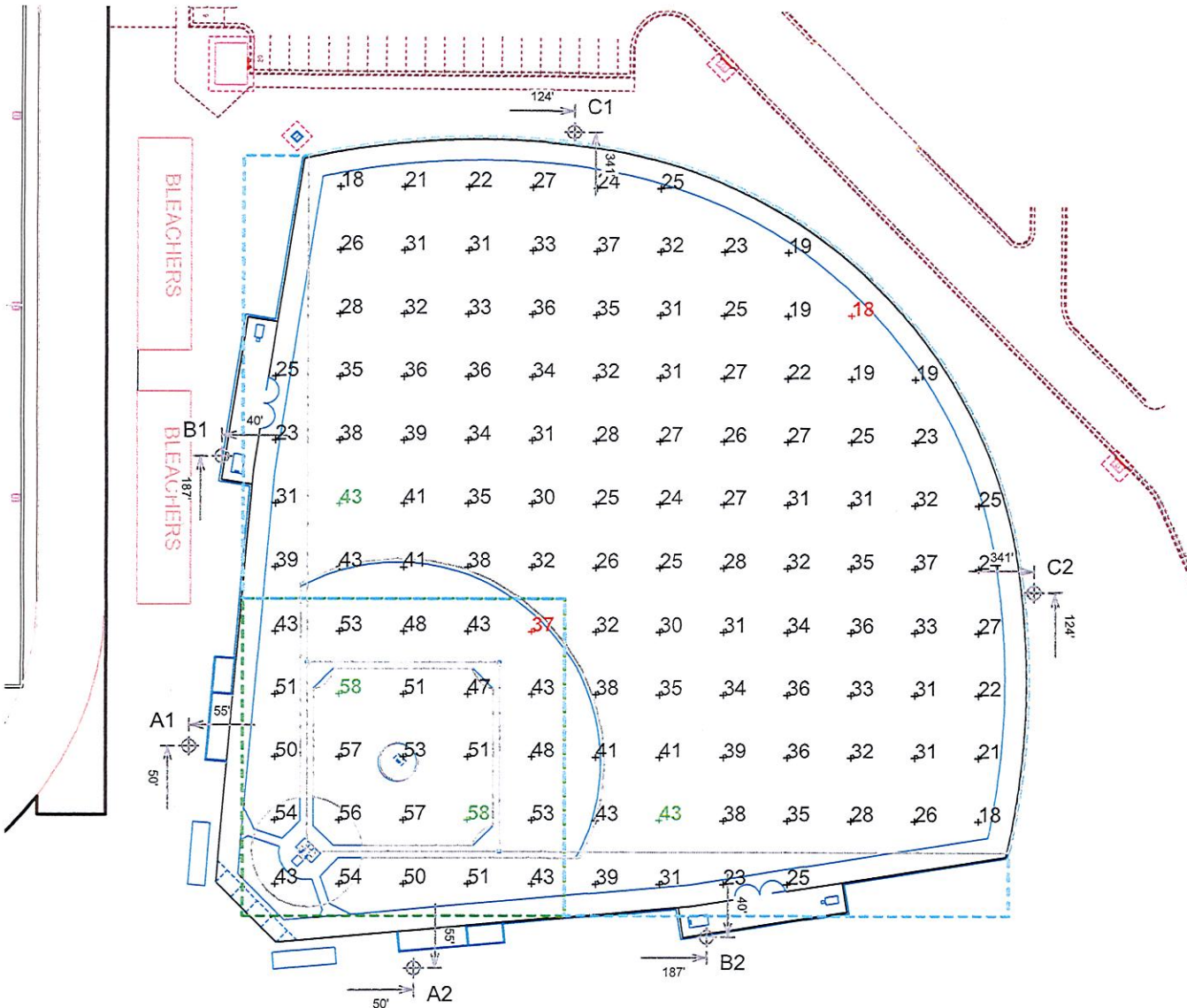
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ILLUMINATION SUMMARY



SCALE IN FEET 1 : 80



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	LAMP TYPE	QTY / POLE	THIS GRID	OTHER GRIDS
4	S1-S4	70'	-	70'	1500W MZ	11	11	0
4	TOTALS					44	44	0



MY PROJECT

Name: Summit Christian Academy Football
Location: Lees Summit, MO

GRID SUMMARY

Name: Track-1
Size: Irregular
Spacing: 30.0' x 30.0'
Height: 3.0' above grade

CONSTANT ILLUMINATION

SUMMARY	Entire Grid	HORIZONTAL FOOTCANDLES
Scan Average:	16.49	
Maximum:	46	
Minimum:	2	
Avg / Min:	7.29	
Max / Min:	20.50	
UG (adjacent pts):	0.00	
CU:	0.12	
No. of Points:	48	
LUMINAIRE INFORMATION		
Luminaire Type:	Green Generation	
Design Usage Hours:	5,000 hours	
Design Lumens:	134,000	
Avg Lamp Tilt Factor:	1.000	
No. of Luminaires:	44	
Avg KW:	68.82 (74.8 max)	

Guaranteed Performance: The CONSTANT ILLUMINATION described above is guaranteed for the design usage hours of the system.

Field Measurements: Illumination measured in accordance with IESNA LM-5-04 and CIBSE LG4. Individual values may vary. See the Warranty document for details.

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

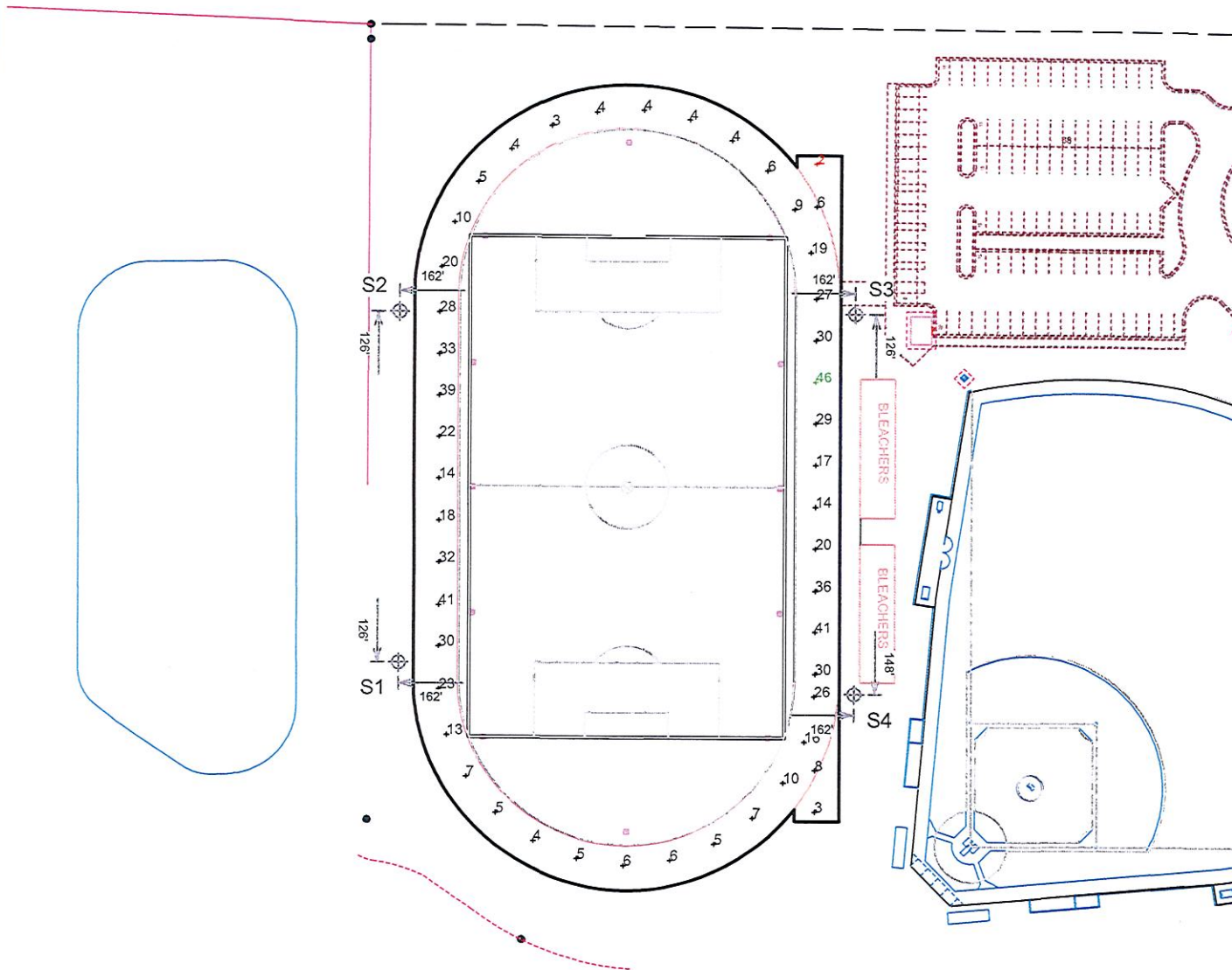
Installation Requirements: Results assume +/- 3% nominal voltage at line side of the ballast and structures located within 3 feet (1m) of design locations.

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SCALE IN FEET 1 : 120



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

ILLUMINATION SUMMARY

EQUIPMENT LIST FOR AREAS SHOWN

Pole				Luminaires				
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LAMP TYPE	QTY / POLE	THIS GRID	OTHER GRIDS
2	A1-A2	70'	-	70'	1500W MZ	5	5	0
2	B1-B2	70'	-	70'	1500W MZ	10	10	0
2	C1-C2	70'	-	70'	1500W MZ	7	7	0
4	S1-S4	70'	-	70'	1500W MZ	11	11	0
10	TOTALS					88	88	0



MY PROJECT

Name: Summit Christian Academy Football
Location: Lees Summit, MO

GRID SUMMARY

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

CONSTANT ILLUMINATION

SUMMARY HORIZONTAL FOOTCANDLES

Scan Average: 0.1137

Maximum: 0.53

Minimum: 0.00

No. of Points: 52

LUMINAIRE INFORMATION

Luminaire Type: Green Generation

Design Usage Hours: 5,000 hours

Design Lumens: 134,000

Avg Lamp Tilt Factor: 1.000

No. of Luminaires: 88

Avg KW: 137.63 (149.6 max)

Guaranteed Performance: The CONSTANT ILLUMINATION described above is guaranteed for the design usage hours of the system.

Field Measurements: Illumination measured in accordance with IESNA LM-5-04 and CIBSE LG4. Individual values may vary. See the Warranty document for details.

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 ballast and structures located within 3 feet (1m) of design locations.

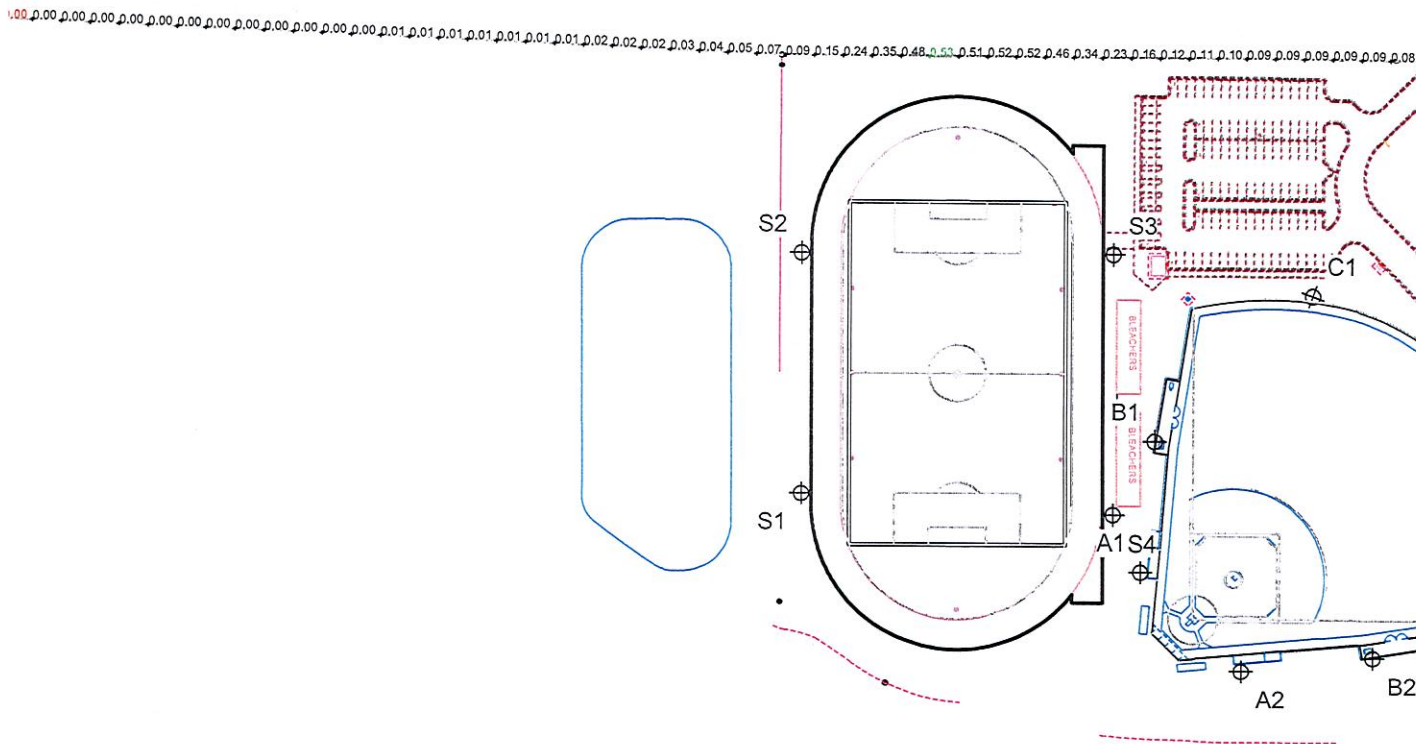
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ILLUMINATION SUMMARY



SCALE IN FEET 1 : 200



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	LAMP TYPE	QTY / POLE	THIS GRID	OTHER GRIDS
2	A1-A2	70'	-	70'	1500W MZ	5	5	0
2	B1-B2	70'	-	70'	1500W MZ	10	10	0
2	C1-C2	70'	-	70'	1500W MZ	7	7	0
4	S1-S4	70'	-	70'	1500W MZ	11	11	0
10	TOTALS					88	88	0



MY PROJECT

Name: Summit Christian Academy Football
Location: Lees Summit, MO

GRID SUMMARY

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

CONSTANT ILLUMINATION

SUMMARY	MAX VERTICAL FOOTCANDLES
Entire Grid	
Scan Average:	0.5505
Maximum:	1.95
Minimum:	0.00
No. of Points:	52
LUMINAIRE INFORMATION	
Luminaire Type:	Green Generation
Design Usage Hours:	5,000 hours
Design Lumens:	134,000
Avg Lamp Tilt Factor:	1.000
No. of Luminaires:	88
Avg KW:	137.63 (149.6 max)

Guaranteed Performance: The CONSTANT ILLUMINATION described above is guaranteed for the design usage hours of the system.

Field Measurements: Illumination measured in accordance with IESNA LM-5-04 and CIBSE LG4. Individual values may vary. See the Warranty document for details.

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 ballast and structures located within 3 feet (1m) of design locations.

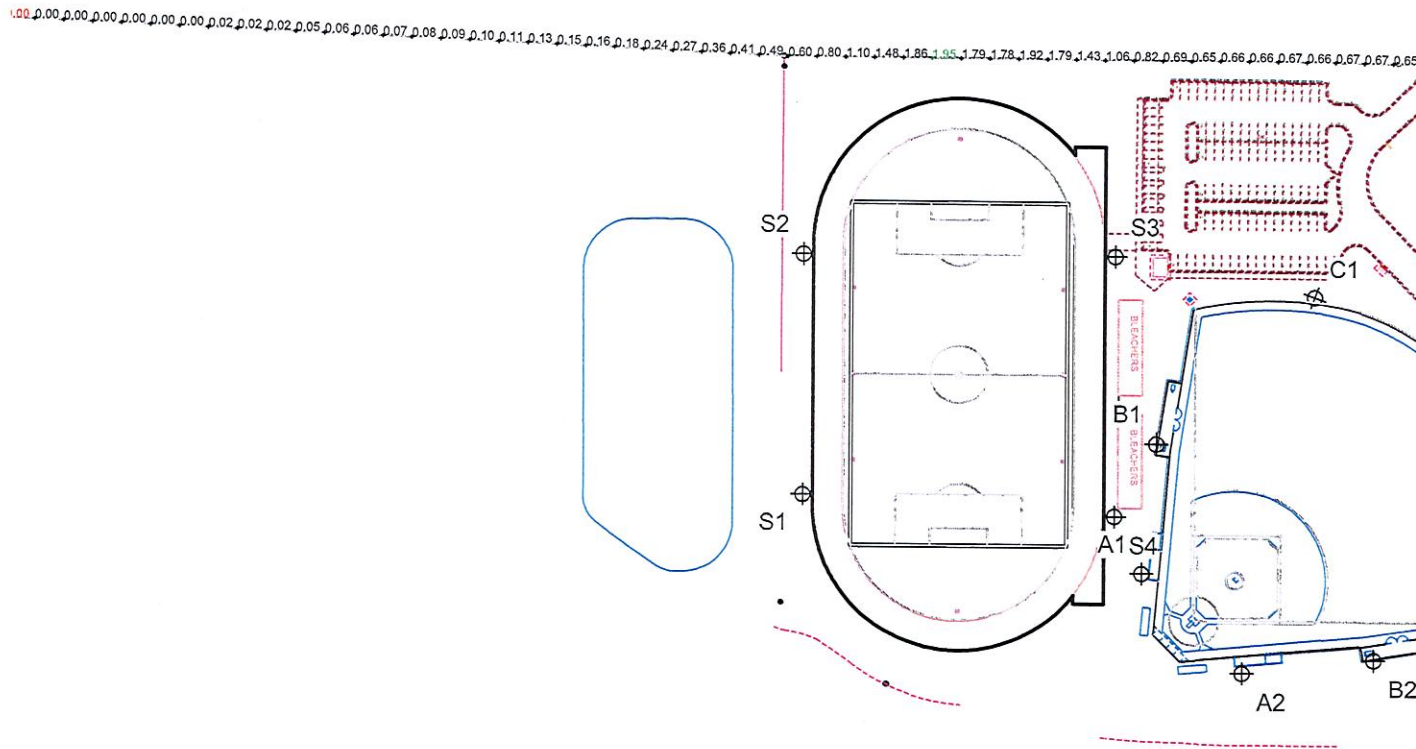
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ILLUMINATION SUMMARY



SCALE IN FEET 1 : 200



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

MY PROJECT

Name: Summit Christian Academy Football
Location: Lees Summit, MO

EQUIPMENT LAYOUT

INCLUDES:

- Baseball-1
- Soccer-1
- Track-1

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 ballast and structures located within 3 feet (1m) of design locations.

EQUIPMENT LIST FOR AREAS SHOWN

QTY	LOCATION	Pole		Luminaires		
		SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LAMP TYPE	QTY / POLE
2	A1-A2	70'	-	70'	1500W MZ	5
2	B1-B2	70'	-	70'	1500W MZ	10
2	C1-C2	70'	-	70'	1500W MZ	7
4	S1-S4	70'	-	70'	1500W MZ	11
10	TOTALS					88

SINGLE LUMINAIRE AMPERAGE DRAW CHART

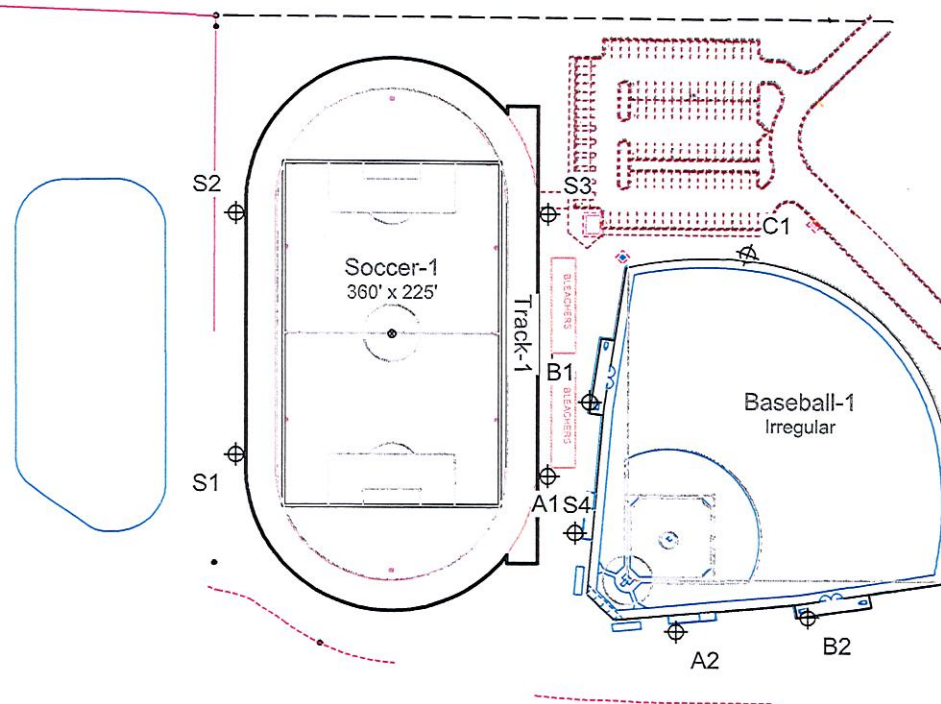
Ballast Specifications (.90 min power factor)	Line Amperage Per Luminaire (max draw)						
Single Phase Voltage	208 (60)	220 (60)	240 (60)	277 (60)	347 (60)	380 (60)	480 (60)
1500 watt MZ	8.6	8.3	7.5	6.5	5.1	4.7	3.7

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SCALE IN FEET 1 : 200



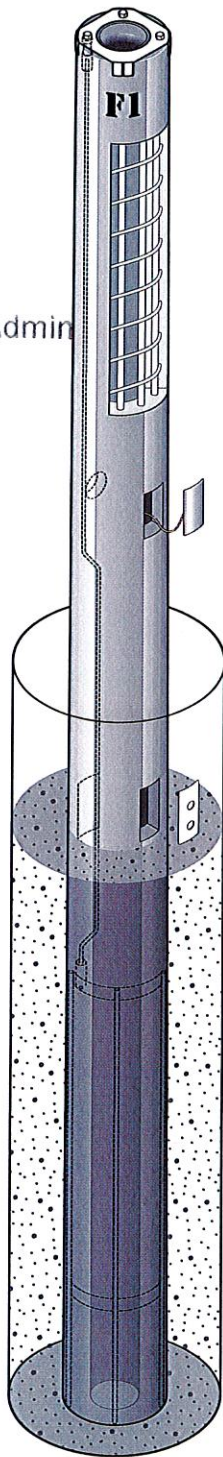
Pole location(s) ⊕ dimensions are relative to 0,0 reference point(s) ⊗

Precast Concrete Base – HID and LED

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Overview

The precast concrete base is set directly into the ground and backfilled with concrete. The base includes an integrated lightning ground system.

Features

Base

- Set pole on base in 24 hours
- Tapered upper section for slip-fit steel pole
- Access holes for wire entry
- Epoxy coated ends prevent water intrusion
- Lifting hole accepts load-rated steel rod provided by Musco

Integrated Lightning Ground System

- Complies with NFPA 780, UL 96A, and EN 62305 standards when installed per Musco installation instructions
- UL Listed, Class II Lightning Protection, file number E337467
- Tested up to 100 kA by independent laboratory
- Steel pole interfaces with integrated grounding system by means of the pole grounding connector
- 2/0 AWG (crosssectional area of 67.4 mm²) grounding electrode conductor
- Concrete-encased grounding electrode, 20 feet (6.1 m) total length, ½ inch (12.7 mm) diameter

Technical Specifications

Base dimensions vary. For measurements refer to project specific *Foundation and Pole Assembly* drawing.

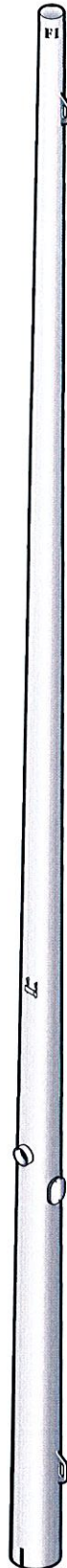
Construction

- Spun concrete construction
- Prestressed vertical strands and steel coil spiral for radial reinforcement throughout base
- Minimum design strength is 9500 lb/in² (65.5 MPa) at 28 days
- Meets ASTM C1804 design requirements

Quality Assurance Tests

- 28-day compressive strength
- Bending moment capacity
- Grounding system continuity

Galvanized Steel Pole – HID and LED



Overview

The galvanized steel pole is designed to slip-fit together with the precast concrete base and the poletop luminaire assembly.

Features

- Slip-fit connection allows pole assembly with come-alongs
- Built-in hardware for attaching electrical components enclosure
- Wire access from inside the pole (no exposed wiring or conduit)
- Shipped in sections for easier handling
- Labeled with pole identification for location on field

Technical Specifications

Pole dimensions vary. For measurements refer to project specific pole configuration drawing.

Construction

- Pole designs comply with all major building codes
- High strength, low alloy, tapered, round steel pole
- Hot-dip galvanizing inside and outside after fabrication meets ASTM-A123 and EN 1461 standards
- Conforms to AASHTO stress standards and BS EN 40-3-1
- Grounding lug—rated for aluminum (AL) or copper (CU) wiring
- Pole shipped in sections
- Stainless steel fasteners passivated and coated
- Material certifications are available

Quality Assurance Tests

- Bending stress
- Minimum galvanizing thickness
- Straightness measurement

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Light-Structure Green™ Lighting System

For your
BUDGET,
for the
ENVIRONMENT.

5 Easy Pieces™ Complete System from Foundation to Poletop

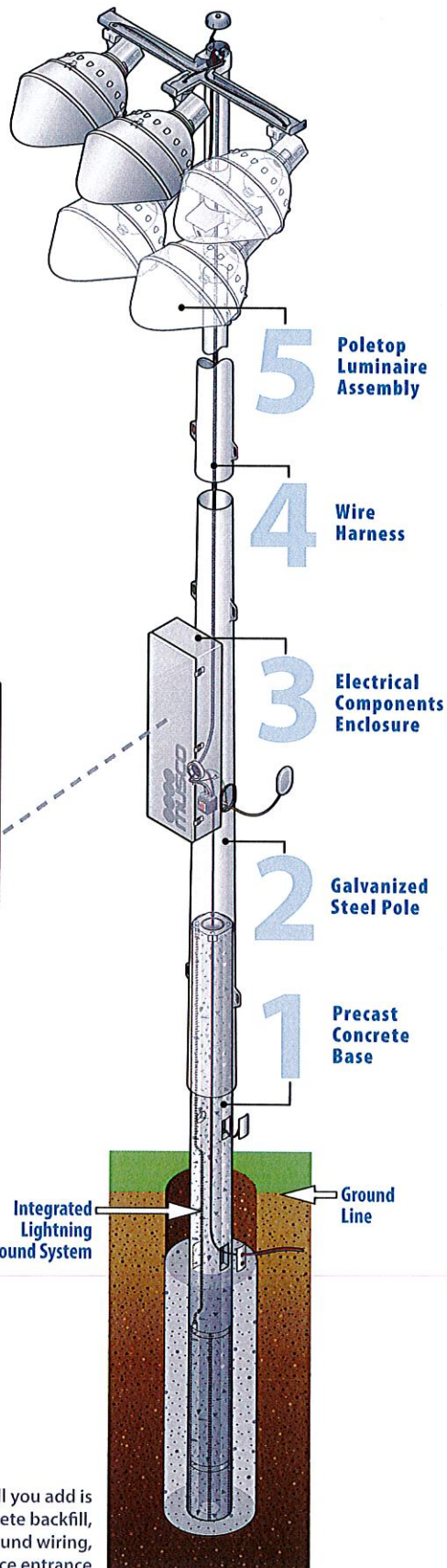
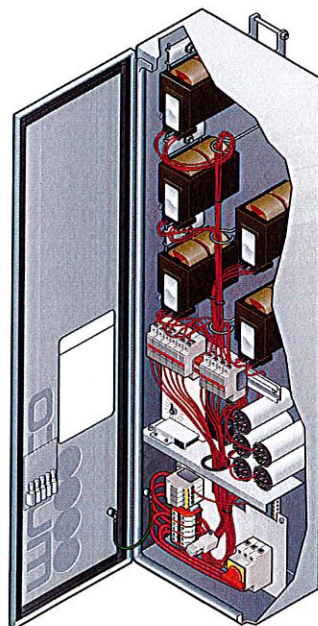
Factory wired, aimed, and tested
Fast, trouble-free installation
Comprehensive corrosion package
Integrated lightning ground system

-2016-030-

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Leading Technology

Cuts operating costs in half
Reduces spill light by 50%
Includes 100% of maintenance costs
for 25 years
Provides constant light levels
Includes system monitoring and
remote on/off control services with
24/7 support

All you add is
concrete backfill,
underground wiring,
and a service entrance

