

Lighting System

Pole/Fixture Summary						
Pole ID	Pole Height	Mtg Height	Fixture Qty	Luminaire Type	Load	Circuit
F1-F4	90'	90'	1	TLC-LED-1200	1.17 kW	A
		90'	7	TLC-LED-1500	9.87 kW	A
		70'	1	TLC-RGBW	0.64 kW	B
4			36		46.72 kW	

Circuit Summary			
Circuit	Description	Load	Fixture Qty
A	Football	44.16 kW	32
B	Bleachers	2.56 kW	4

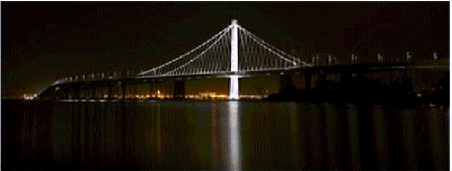
Fixture Type Summary							
Type	Source	Wattage	Lumens	L90	L80	L70	Quantity
TLC-LED-1200	LED 5700K - 75 CRI	1170W	150,000	>120,000	>120,000	>120,000	4
TLC-LED-1500	LED 5700K - 75 CRI	1410W	181,000	>120,000	>120,000	>120,000	28
TLC-RGBW	LED 5700K - 75 CRI	640W	28,500	>120,000	>120,000	>120,000	4

Single Luminaire Amperage Draw Chart							
Driver 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)
TLC-LED-1200		6.9	6.5	6.0	5.2	4.2	3.8
TLC-LED-1500		8.4	7.9	7.3	6.3	5.0	4.6
TLC-RGBW		4.5	4.3	3.8	3.3	2.7	1.9

Light Level Summary

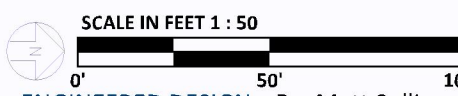
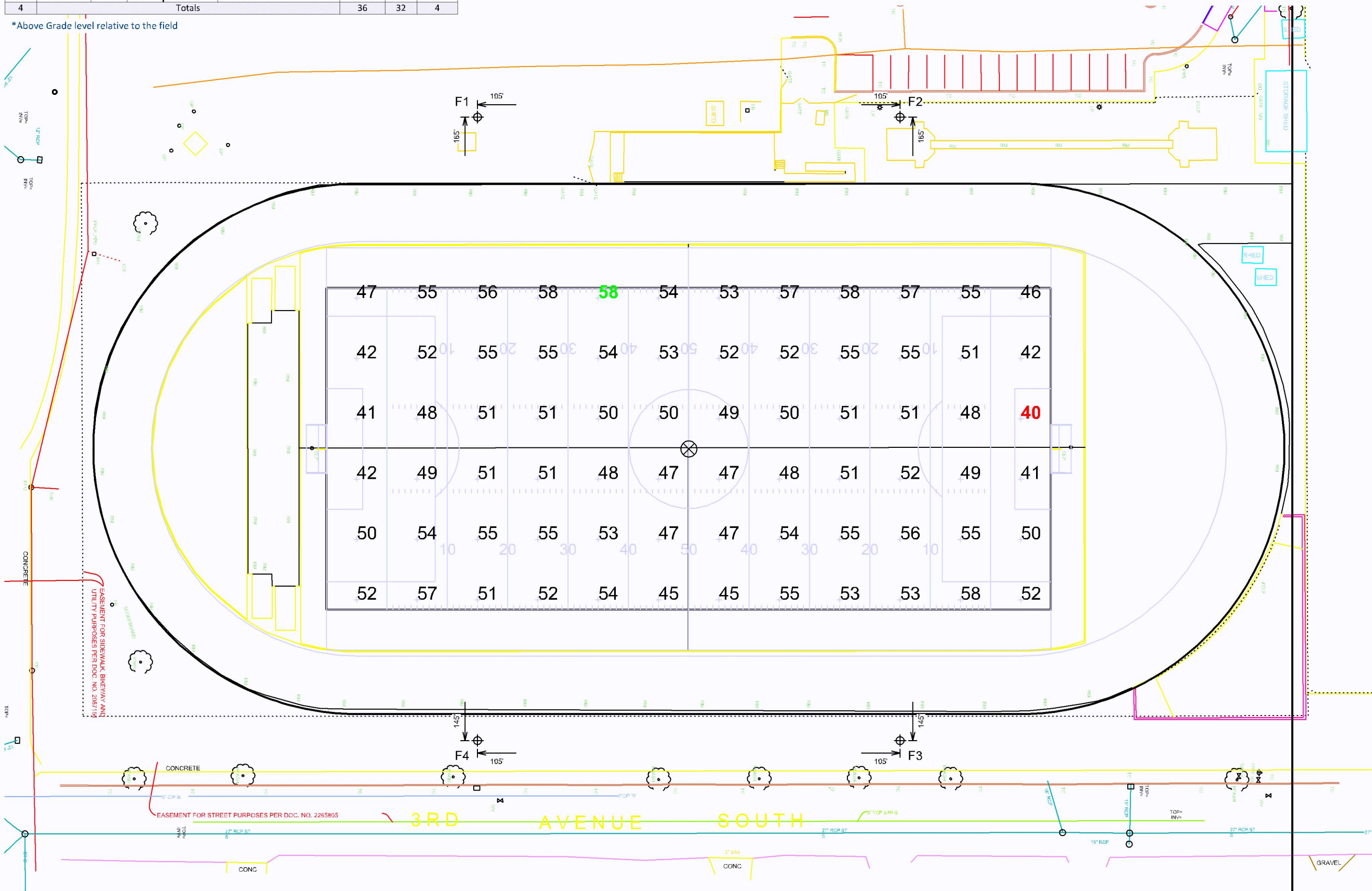
Calculation Grid Summary								
Grid Name	Calculation Metric	Illumination					Circuits	Fixture Qty
		Ave	Min	Max	Max/Min	Ave/Min		
100' S and E Property Line	Horizontal Illuminance	13.73	0	59	-	-	A,B,C	36
Away Bleachers	Horizontal	2.38	2	3	1.75	1.32	B	4
Football	Horizontal Illuminance	51.20	40	58	1.44	1.27	A,C	32
Home Bleachers	Horizontal	3.27	3	4	1.23	1.10	B	4
Property Glare	Max Candela (by Fixture)	2400.42	11	5779	542.91	225.49	A,B,C	36
Property Spill	Horizontal	0.07	0	0	-	-	A,B,C	36
Soccer	Horizontal Illuminance	50.25	40	57	1.41	1.25	A	32
Track	Horizontal Illuminance	20.16	7	36	5.10	2.87	A	32

From Hometown to Professional



Equipment List For Areas Shown								
Pole				Luminaires				
QTY	LOCATION	SIZE	GRADE ELEVATION	ABOVE GRADE LEVEL	LUMINAIRE TYPE	QTY/POLE	THIS GRID	OTHER GRIDS
4	F1-F4	90'	-	90'	TLC-LED-1200	1	1	0
				90'	TLC-LED-1500	7	7	0
				70'	TLC-RGBW	1	0	1
4	Totals					36	32	4

*Above Grade level relative to the field



ENGINEERED DESIGN By: Matt Sullivan • File #160225G • 24-Jun-24

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

PL202300157

Bloomington Kennedy High School Football

Bloomington, MN

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	51.20
Maximum	58
Minimum	40
Avg/Min	1.27
Guaranteed Max/Min	2
Max/Min	1.44
UG (adjacent pts)	1.24
CU	0.58
No. of Points	72
LUMINAIRE INFORMATION	
Applied Circuits	A,C
No. of Luminaires	32
Total Load	44.16 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.

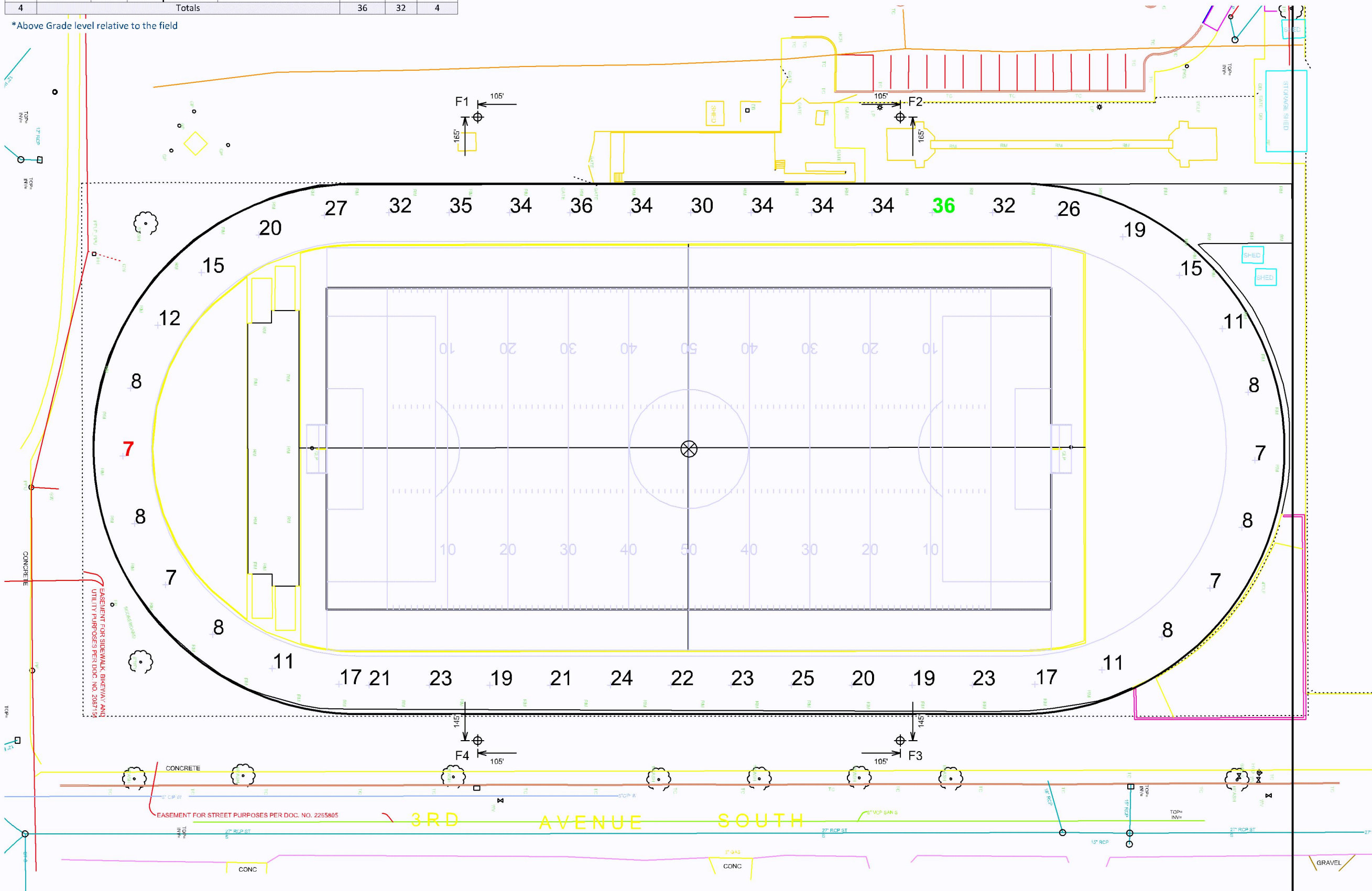


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ILLUMINATION SUMMARY

Equipment List For Areas Shown								
Pole				Luminaires				
QTY	LOCATION	SIZE	GRADE ELEVATION	ABOVE GRADE LEVEL	LUMINAIRE TYPE	QTY/POLE	THIS GRID	OTHER GRIDS
4	F1-F4	90'	-	90'	TLC-LED-1200	1	1	0
				90'	TLC-LED-1500	7	7	0
				70'	TLC-RGBW	1	0	1
4	Totals					36	32	4

*Above Grade level relative to the field



SCALE IN FEET 1 : 50
0' 50' 100'
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Pole location(s) ⊕ dimensions are relative to 0,0 reference point(s) ⊗

Bloomington Kennedy High School Football

Bloomington, MN

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

Illumination Summary	
MAINTAINED HORIZONTAL FOOTCANDLES	
Scan Average	20.16
Maximum	36
Minimum	7
Avg/Min	2.87
Max/Min	5.10
UG (adjacent pts)	0.00
CU	0.14
No. of Points	44
LUMINAIRE INFORMATION	
Applied Circuits	A
No. of Luminaires	32
Total Load	44.16 kW

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

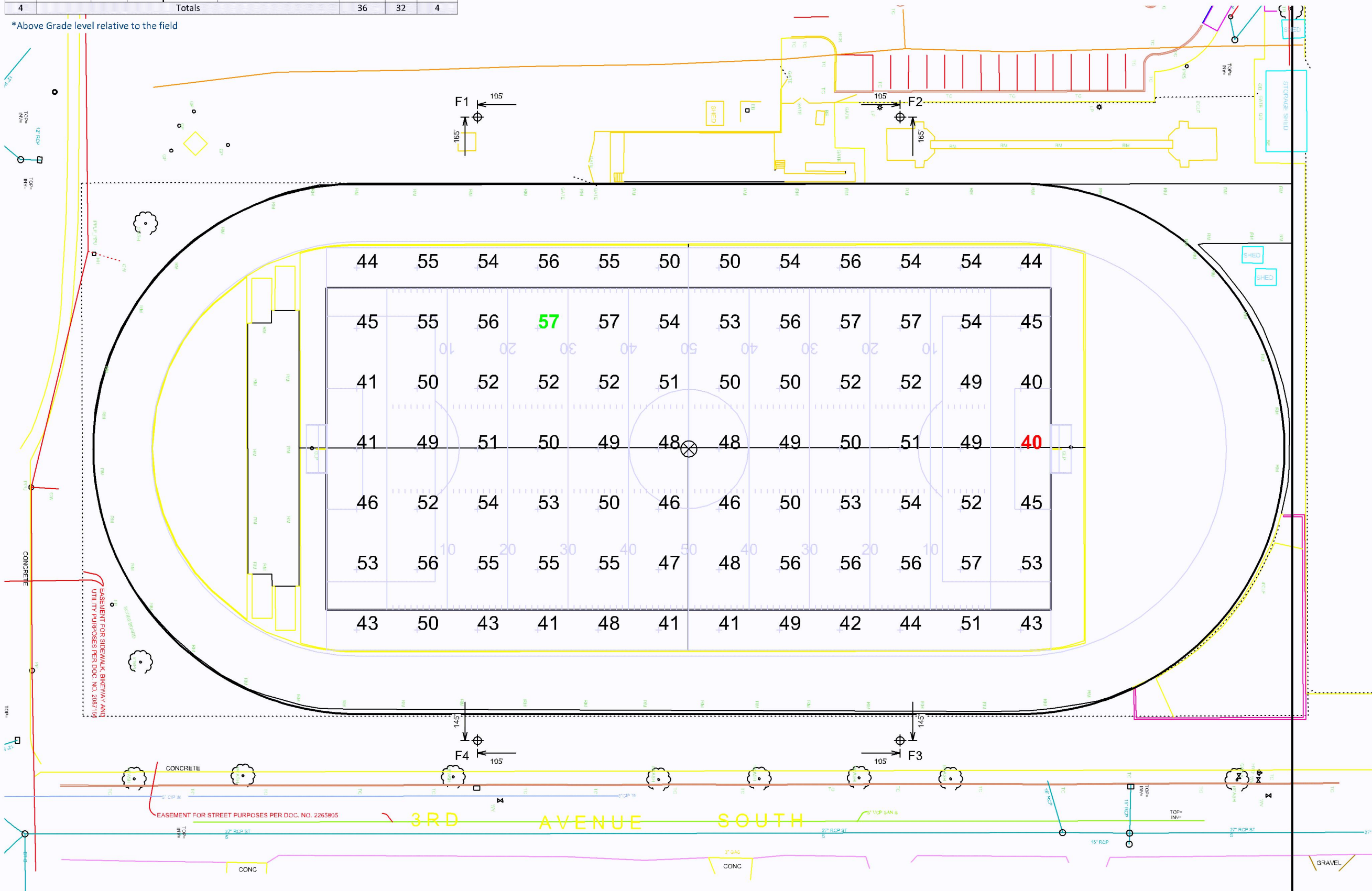


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ILLUMINATION SUMMARY

Equipment List For Areas Shown								
Pole				Luminaires				
QTY	LOCATION	SIZE	GRADE ELEVATION	ABOVE GRADE LEVEL	LUMINAIRE TYPE	QTY/POLE	THIS GRID	OTHER GRIDS
4	F1-F4	90'	-	90'	TLC-LED-1200	1	1	0
				90'	TLC-LED-1500	7	7	0
				70'	TLC-RGBW	1	0	1
4	Totals					36	32	4

*Above Grade level relative to the field



SCALE IN FEET 1 : 50
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Pole location(s) ⊕ dimensions are relative to 0,0 reference point(s) ⊗

PL202300157

Bloomington Kennedy High School Football

Bloomington, MN

Grid Summary	
Name Soccer	
Size 360' x 200'	
Spacing 30.0' x 30.0'	
Height 3.0' above grade	

Illumination Summary	
	MAINTAINED HORIZONTAL FOOTCANDLES
	Entire Grid
Guaranteed Average	50
Scan Average	50.25
Maximum	57
Minimum	40
Avg/Min	1.25
Guaranteed Max/Min	2
Max/Min	1.41
UG (adjacent pts)	1.34
CU	0.67
No. of Points	84
LUMINAIRE INFORMATION	
Applied Circuits	A
No. of Luminaires	32
Total Load	44.16 kW

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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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ILLUMINATION SUMMARY

Equipment List For Areas Shown								
Pole				Luminaires				
QTY	LOCATION	SIZE	GRADE ELEVATION	ABOVE GRADE LEVEL	LUMINAIRE TYPE	QTY/POLE	THIS GRID	OTHER GRIDS
4	F1-F4	90'	-	90'	TLC-LED-1200	1	0	1
				90'	TLC-LED-1500	7	0	7
				70'	TLC-RGBW	1	1	0
4	Totals					36	4	32

*Above Grade level relative to the field

PL202300157

Bloomington Kennedy High School Football

Bloomington, MN

Grid Summary	
	Name Home Bleachers
	Size 360' x 200'
	Spacing 10.0' x 10.0'
	Height 3.0' above grade

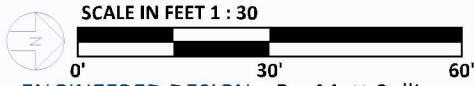
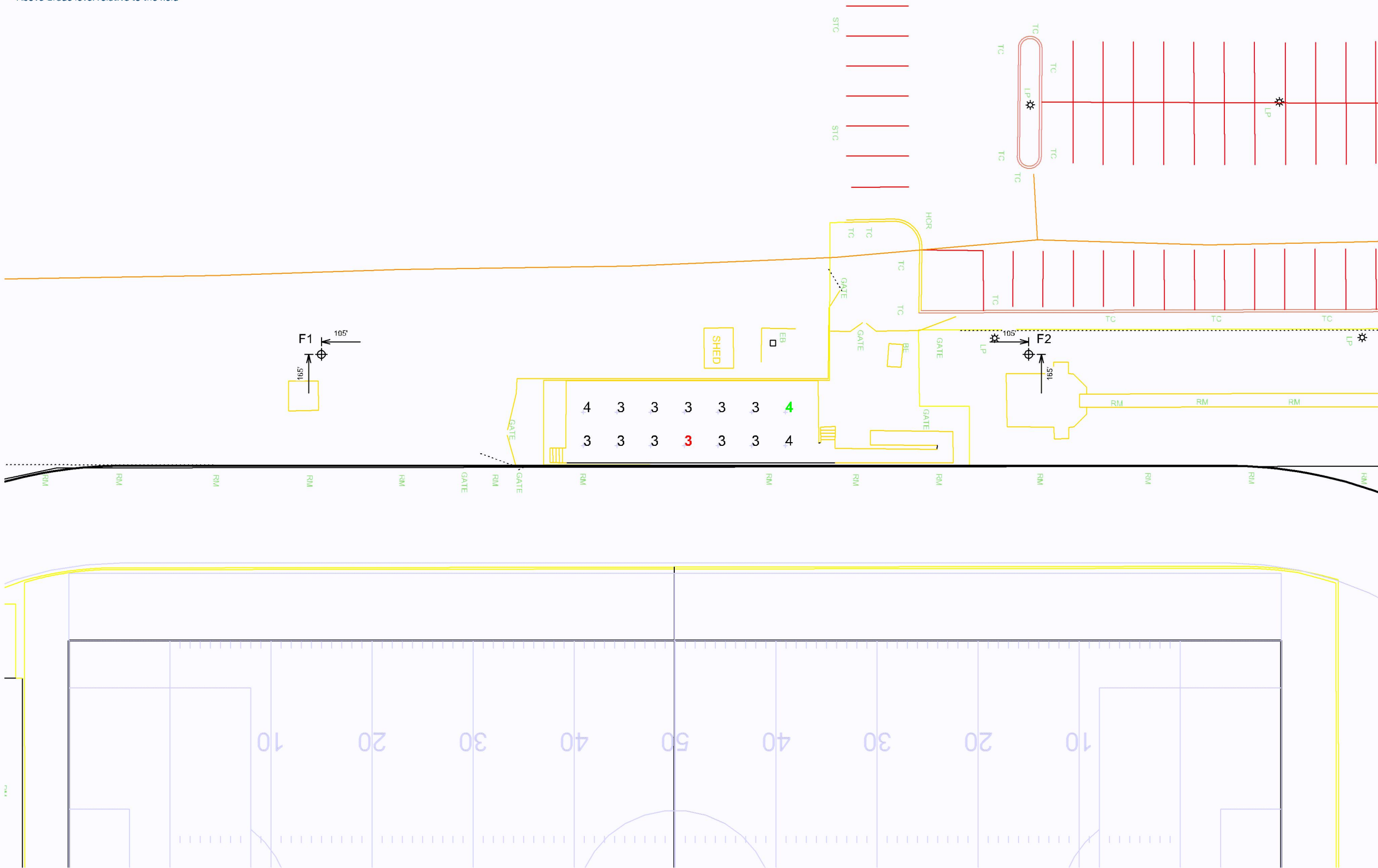
Illumination Summary	
	MAINTAINED HORIZONTAL FOOTCANDLES
	Entire Grid
Scan Average	3.27
Maximum	4
Minimum	3
Avg/Min	1.10
Max/Min	1.23
UG (adjacent pts)	1.11
CU	0.05
No. of Points	14
LUMINAIRE INFORMATION	
Applied Circuits	B
No. of Luminaires	4
Total Load	2.56 kW

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



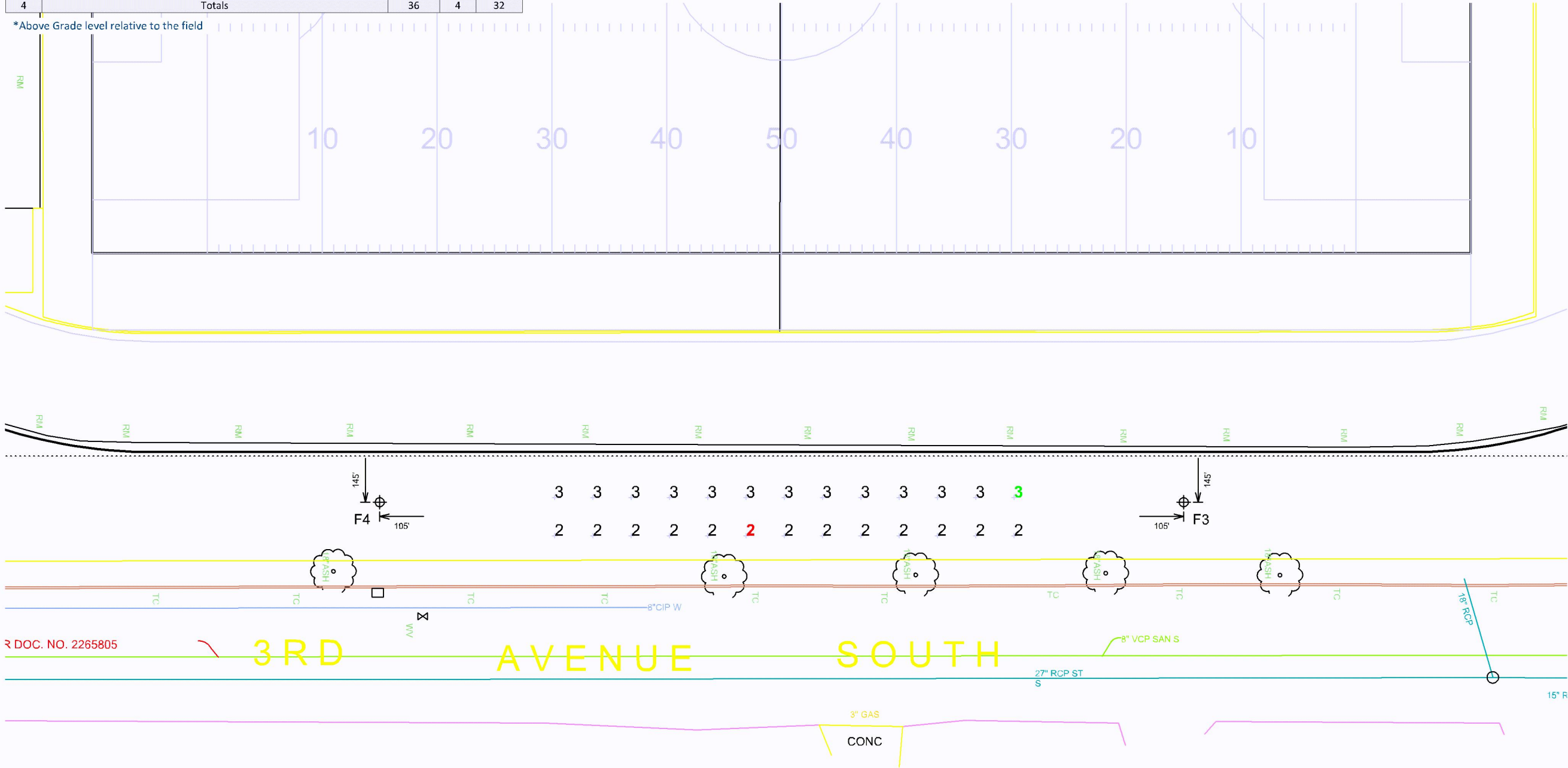
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ILLUMINATION SUMMARY

Equipment List For Areas Shown								
Pole				Luminaires				
QTY	LOCATION	SIZE	GRADE ELEVATION	ABOVE GRADE LEVEL	LUMINAIRE TYPE	QTY/POLE	THIS GRID	OTHER GRIDS
4	F1-F4	90'	-	90'	TLC-LED-1200	1	0	1
				90'	TLC-LED-1500	7	0	7
				70'	TLC-RGBW	1	1	0
4	Totals					36	4	32

*Above Grade level relative to the field



PL202300157

Bloomington Kennedy High School Football

Bloomington, MN

Grid Summary	
	Name Away Bleachers
	Size 360' x 200'
	Spacing 10.0' x 10.0'
	Height 3.0' above grade

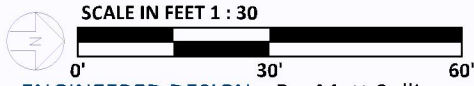
Illumination Summary	
	MAINTAINED HORIZONTAL FOOTCANDLES
	Entire Grid
Scan Average	2.38
Maximum	3
Minimum	2
Avg/Min	1.32
Max/Min	1.75
UG (adjacent pts)	1.51
CU	0.06
No. of Points	26
LUMINAIRE INFORMATION	
Applied Circuits	B
No. of Luminaires	4
Total Load	2.56 kW

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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.



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



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ILLUMINATION SUMMARY

Equipment List For Areas Shown								
Pole				Luminaires				
QTY	LOCATION	SIZE	GRADE ELEVATION	ABOVE GRADE LEVEL	LUMINAIRE TYPE	QTY/POLE	THIS GRID	OTHER GRIDS
4	F1-F4	90'	-	90'	TLC-LED-1200	1	1	0
				90'	TLC-LED-1500	7	7	0
				70'	TLC-RGBW	1	1	0
4	Totals					36	36	0

*Above Grade level relative to the field

PL202300157

Bloomington Kennedy High School Football

Bloomington, MN

Grid Summary		
Name	Property Spill	
Size	360' x 200'	
Spacing	30.0' x 10.0'	
Height	3.0' above grade	

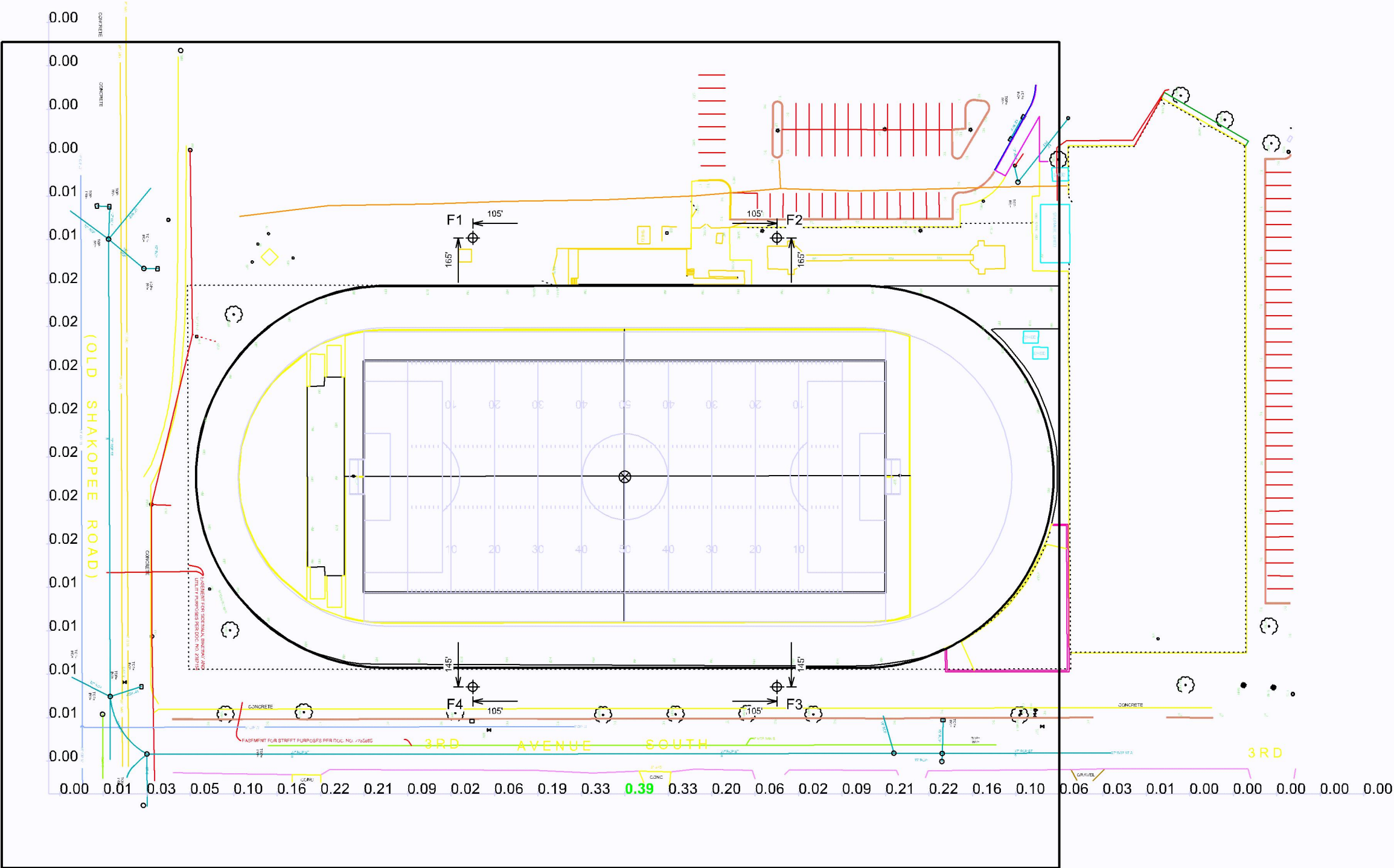
Illumination Summary	
	MAINTAINED HORIZONTAL FOOTCANDLES
	Entire Grid
Scan Average	0.07
Maximum	0
Minimum	0
Avg/Min	-
Max/Min	-
UG (adjacent pts)	0.00
CU	0.00
No. of Points	49
LUMINAIRE INFORMATION	
Applied Circuits	A,B,C
No. of Luminaires	36
Total Load	46.72 kW

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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 $\pm 3\%$ 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	ABOVE GRADE LEVEL	LUMINAIRE TYPE	QTY/POLE	THIS GRID	OTHER GRIDS
4	F1-F4	90'	-	90'	TLC-LED-1200	1	1	0
				90'	TLC-LED-1500	7	7	0
				70'	TLC-RGBW	1	1	0
4	Totals					36	36	0

*Above Grade level relative to the field

PL202300157

Bloomington Kennedy High School Football

Bloomington, MN

Grid Summary		
	Name	Property Glare
	Size	360' x 200'
	Spacing	30.0' x 10.0'
	Height	3.0' above grade

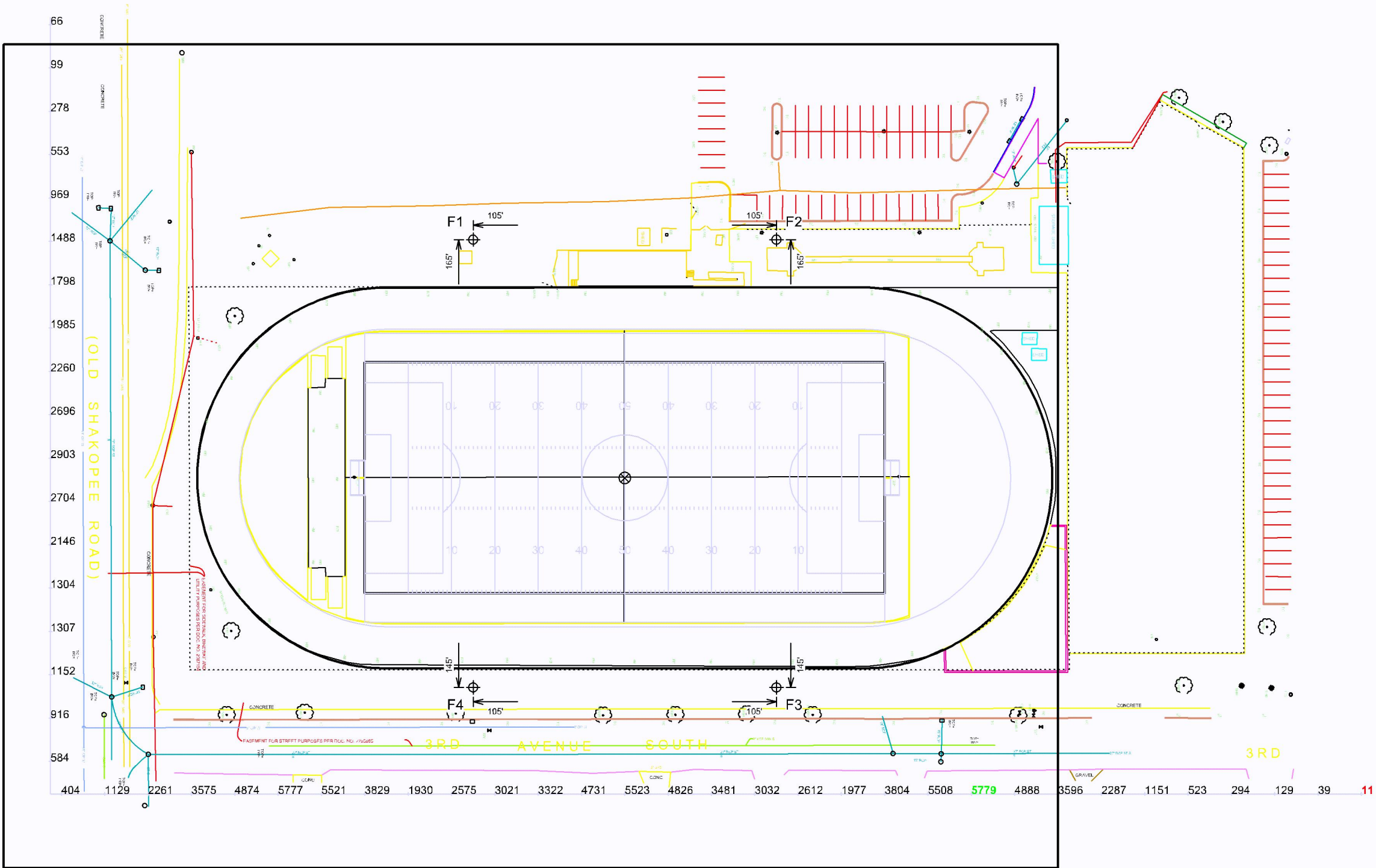
Illumination Summary		
	MAINTAINED MAX CANDELA (PER FIXTURE)	
	Entire Grid	
Scan Average	2400.42	
Maximum	5779	
Minimum	11	
Avg/Min	225.49	
Max/Min	542.91	
UG (adjacent pts)	0.00	
CU	0.00	
No. of Points	49	
LUMINAIRE INFORMATION		
Applied Circuits	A,B,C	
No. of Luminaires	36	
Total Load	46.72 kW	

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Equipment List For Areas Shown								
Pole				Luminaires				
QTY	LOCATION	SIZE	GRADE ELEVATION	ABOVE GRADE LEVEL	LUMINAIRE TYPE	QTY/POLE	THIS GRID	OTHER GRIDS
4	F1-F4	90'	-	90'	TLC-LED-1200	1	1	0
				90'	TLC-LED-1500	7	7	0
				70'	TLC-RGBW	1	1	0
4	Totals					36	36	0

*Above Grade level relative to the field

PL202300157

Bloomington Kennedy High School Football

Bloomington, MN

Grid Summary	
Name 100' S and E Property Line	
Size 730' x 570'	
Spacing 10.0' x 10.0'	
Height 3.0' above grade	

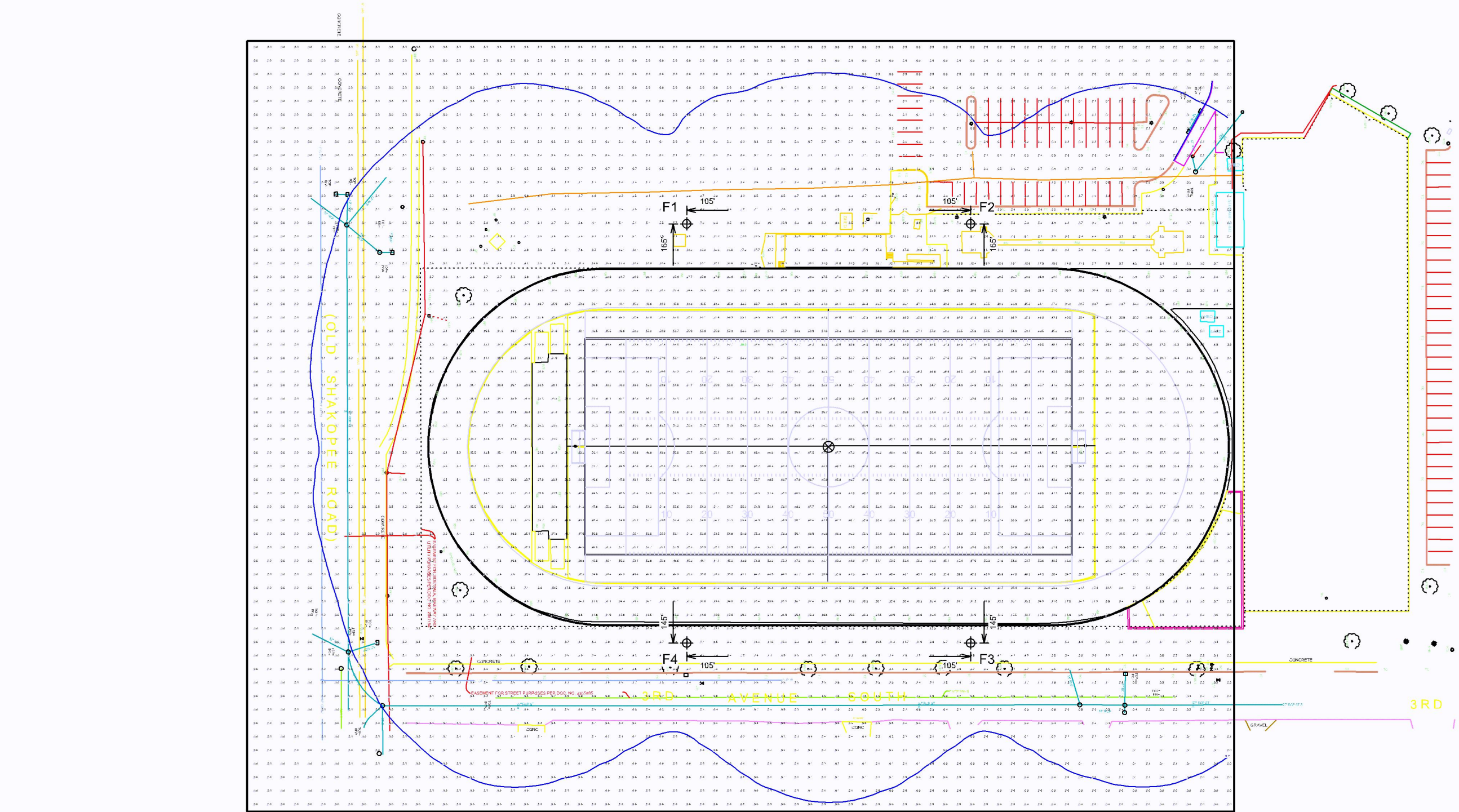
Illumination Summary	
MAINTAINED HORIZONTAL FOOTCANDLES	
Entire Grid	
Scan Average	13.73
Maximum	59
Minimum	0
Avg/Min	-
Max/Min	-
UG (adjacent pts)	4.56
CU	0.98
No. of Points	4161
LUMINAIRE INFORMATION	
Applied Circuits	A,B,C
No. of Luminaires	36
Total Load	46.72 kW

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

Equipment Layout

INCLUDES:

- 100' S and E Property Line
- 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

Pole				Luminaires		
QTY	LOCATION	SIZE	GRADE ELEVATION	ABOVE GRADE LEVEL	LUMINAIRE TYPE	QTY/POLE
4	F1-F4	90'	-	90'	TLC-LED-1200	1
				90'	TLC-LED-1500	7
				70'	TLC-RGBW	1
4	Totals					36

Single Luminaire Amperage Draw Chart

Driver 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							
TLC-LED-1200	6.9	6.5	6.0	5.2	4.2	3.8	3.0
TLC-LED-1500	8.4	7.9	7.3	6.3	5.0	4.6	3.6
TLC-RGBW	4.5	4.3	3.8	3.3	2.7	1.9	1.9

