

# Mt Hope High School Football Retrofit

Bristol, RI

## Lighting System

Pole/Fixture Summary						
Pole ID	Pole Height	Mtg Height	Fixture Qty	Luminaire Type	Load	Circuit
F1-F2	90'	90'	3	TLC-LED-1500	4.23 kW	B
		90'	5	TLC-LED-1500	7.05 kW	A
		25'	1	Cree OSQ	0.10 kW	C
		25'	2	TLC-BT-575	1.15 kW	A
F3-F4	90'	90'	3	TLC-LED-1500	4.23 kW	B
		90'	5	TLC-LED-1500	7.05 kW	A
		23'	2	TLC-BT-575	1.15 kW	A
<b>4</b>			<b>42</b>		<b>49.92 kW</b>	

Circuit Summary			
Circuit	Description	Load	Fixture Qty
A	Football	32.80 kW	28
B	Track	16.92 kW	12
C	Security	0.20 kW	2

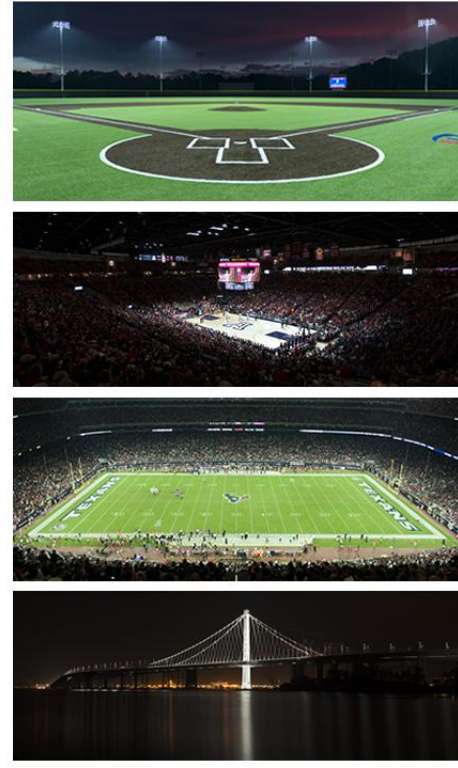
Fixture Type Summary							
Type	Source	Wattage	Lumens	L90	L80	L70	Quantity
Cree OSQ	LED 5700K - 70 CRI	100W	14,743	--	--	--	2
TLC-BT-575	LED 5700K - 75 CRI	575W	52,000	>120,000	>120,000	>120,000	8
TLC-LED-1500	LED 5700K - 75 CRI	1410W	181,000	>120,000	>120,000	>120,000	32

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								
CREE OSQ	-	-	-	-	0.3	-	-	0.2
TLC-BT-575	3.3	3.2	2.9	2.5	2.0	1.8	1.5	
TLC-LED-1500	8.4	7.9	7.3	6.3	5.0	4.6	3.6	

## Light Level Summary

Calculation Grid Summary									
Grid Name	Calculation Metric	Illumination Ave					Circuits	Fixture Qty	
		Ave	Min	Max	Max/Min	Ave/Min			
Football	Horizontal Illuminance	51.36	40	63	1.59	1.30	A,B	40	
Security	Horizontal	0.91	0	6	43185.25	6311.15	C	2	
Soccer	Horizontal Illuminance	51.50	40	63	1.59	1.30	A,B	40	
Spill @ 3ft.	Horizontal Illuminance	0.1771	0.02	0.45	29.942	11.745	A,B	40	
Spill @ 5ft.	Max Candela Metric	11515.0469	2166.69	30039.82	13.864	5.315	A,B	40	
Spill @ 5ft.	Max Vertical Illuminance Metric	0.4003	0.04	1.07	28.671	10.684	A,B	40	
Track w/ Field Fixtures	Horizontal Illuminance	16.71	3	34	10.16	5.05	A,B	40	
Track w/o Field Fixtures	Horizontal Illuminance	9.09	2	20	9.22	4.12	B	12	

## From Hometown to Professional



*Nathan Chell, LC*  
24/JAN/2025

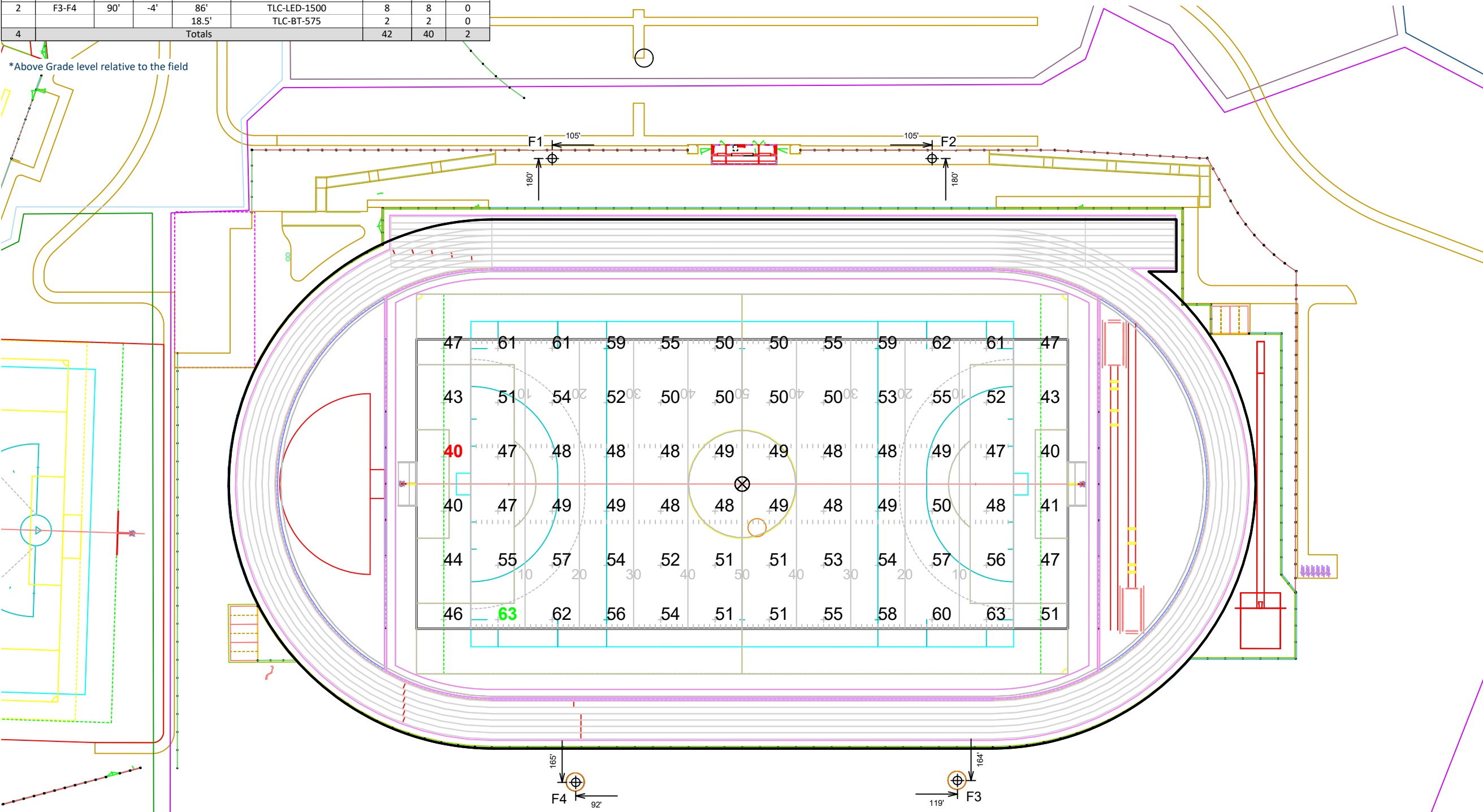


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**Equipment List For Areas Shown**

Pole				Luminaires				
QTY	LOCATION	SIZE	GRADE ELEVATION	ABOVE GRADE LEVEL	LUMINAIRE TYPE	QTY/POLE	THIS GRID	OTHER GRIDS
2	F1-F2	90'	-	90'	TLC-LED-1500	8	8	0
				25'	CREE OSQ	1	0	1
				25'	TLC-BT-575	2	2	0
2	F3-F4	90'	-4'	86'	TLC-LED-1500	8	8	0
				18.5'	TLC-BT-575	2	2	0
4	Totals					42	40	2

\*Above Grade level relative to the field



**Mt Hope High School Football Retrofit**

Bristol, RI

Grid Summary	
<b>Name</b>	Football
<b>Size</b>	360' x 160'
<b>Spacing</b>	30.0' x 30.0'
<b>Height</b>	3.0' above grade

Illumination Summary	
MAINTAINED HORIZONTAL FOOTCANDLES	
<b>Guaranteed Average</b>	Entire Grid <b>50</b>
Scan Average	51.36
Maximum	63
Minimum	40
Avg/Min	1.30
<b>Guaranteed Max/Min</b>	<b>2</b>
Max/Min	1.59
UG (adjacent pts)	1.35
CU	0.53
No. of Points	72
LUMINAIRE INFORMATION	
Applied Circuits	A,B
<b>No. of Luminaires</b>	<b>40</b>
Total Load	49.72 kW

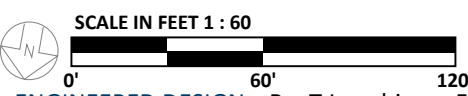
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**Field Measurements:** Individual field measurements may vary from computer-calculated predictions and should be taken in accordance with IESNA RP-6-15.

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

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

*Nathan Chubb, LC*  
24/JAN/2025



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



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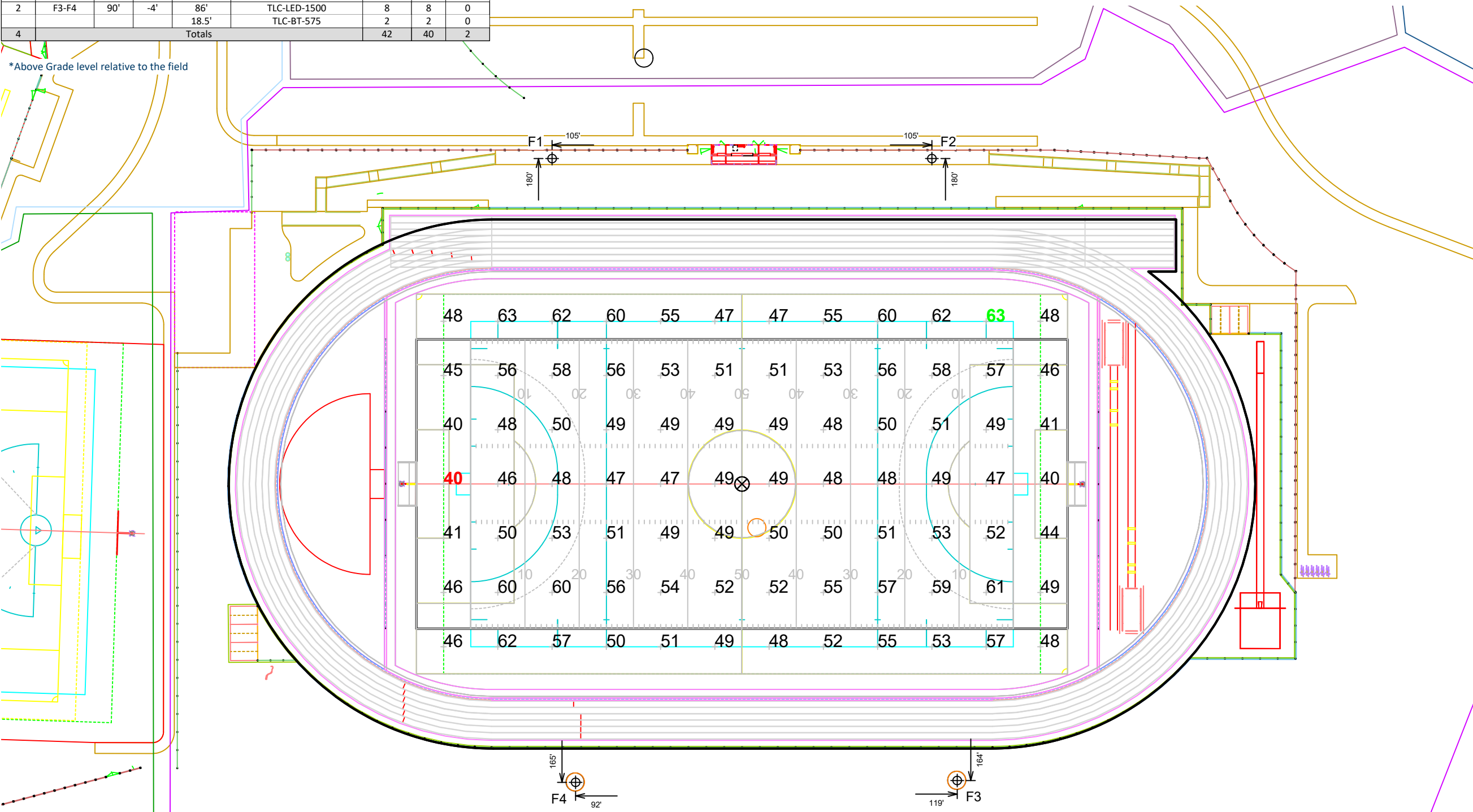
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**ILLUMINATION SUMMARY**

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Pole				Luminaires				
QTY	LOCATION	SIZE	GRADE ELEVATION	ABOVE GRADE LEVEL	LUMINAIRE TYPE	QTY/POLE	THIS GRID	OTHER GRIDS
2	F1-F2	90'	-	90'	TLC-LED-1500	8	8	0
				25'	CREE OSQ	1	0	1
				25'	TLC-BT-575	2	2	0
2	F3-F4	90'	-4'	86'	TLC-LED-1500	8	8	0
				18.5'	TLC-BT-575	2	2	0
4	Totals					42	40	2

\*Above Grade level relative to the field



**Mt Hope High School Football Retrofit**

Bristol, RI

Grid Summary	
Name	Soccer
Size	360' x 210'
Spacing	30.0' x 30.0'
Height	3.0' above grade

Illumination Summary	
MAINTAINED HORIZONTAL FOOTCANDLES	
Entire Grid	
<b>Guaranteed Average</b>	<b>50</b>
Scan Average	51.50
Maximum	63
Minimum	40
Avg/Min	1.30
<b>Guaranteed Max/Min</b>	<b>2</b>
Max/Min	1.59
UG (adjacent pts)	1.37
CU	0.62
No. of Points	84
<b>LUMINAIRE INFORMATION</b>	
Applied Circuits	A,B
<b>No. of Luminaires</b>	<b>40</b>
Total Load	49.72 kW

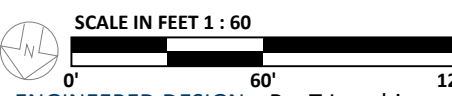
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*Nathan Chubb, LC*  
24/JAN/2025



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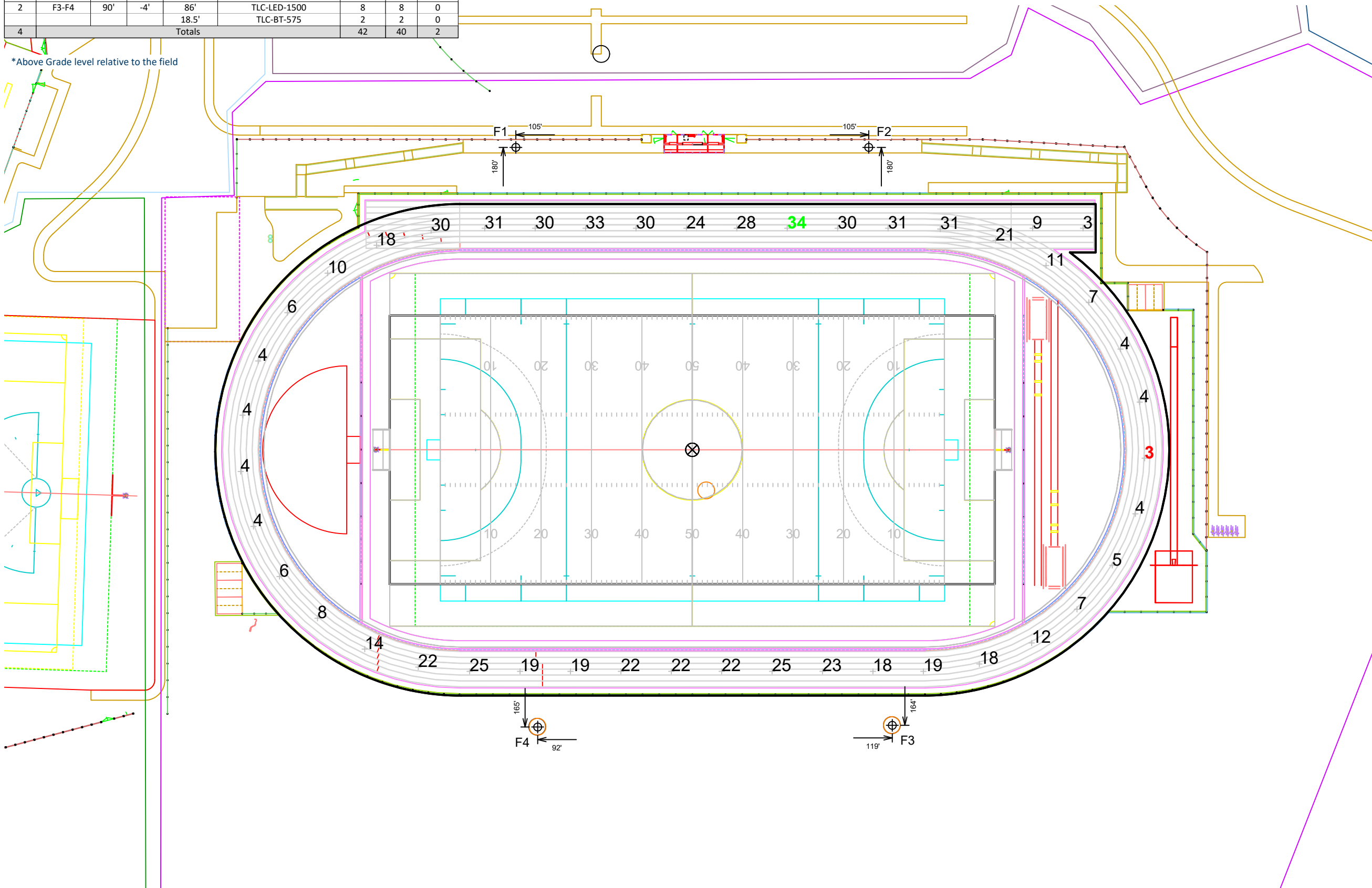
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QTY	LOCATION	SIZE	GRADE ELEVATION	ABOVE GRADE LEVEL	LUMINAIRE TYPE	QTY/POLE	THIS GRID	OTHER GRIDS
2	F1-F2	90'	-	90'	TLC-LED-1500	8	8	0
				25'	CREE OSQ	1	0	1
				25'	TLC-BT-575	2	2	0
2	F3-F4	90'	-4'	86'	TLC-LED-1500	8	8	0
				18.5'	TLC-BT-575	2	2	0
4	Totals					42	40	2

\*Above Grade level relative to the field



**Mt Hope High School Football Retrofit**

Bristol, RI

Grid Summary	
Name	Track w/ Field Fixtures
Size	Irregular
Spacing	30.0' x 30.0'
Height	3.0' above grade

Illumination Summary	
MAINTAINED HORIZONTAL FOOTCANDLES	
Scan Average	Entire Grid 16.71
Maximum	34
Minimum	3
Avg/Min	5.05
Max/Min	10.16
UG (adjacent pts)	0.00
CU	0.11
No. of Points	45
LUMINAIRE INFORMATION	
Applied Circuits	A,B
No. of Luminaires	40
Total Load	49.72 kW

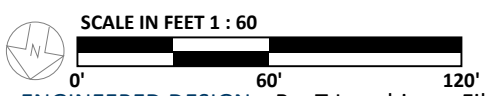
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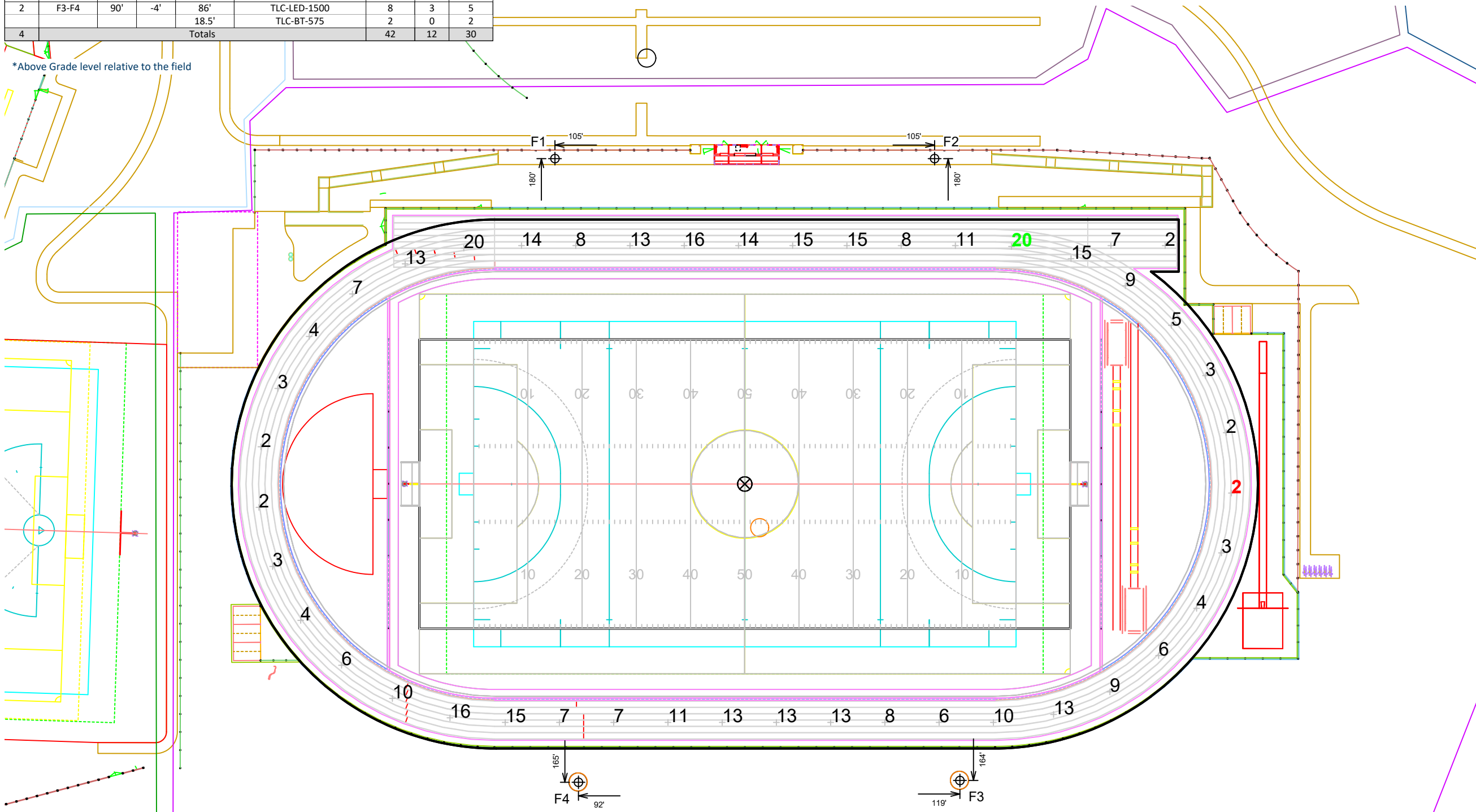
**ILLUMINATION SUMMARY**



**Equipment List For Areas Shown**

Pole				Luminaires				
QTY	LOCATION	SIZE	GRADE ELEVATION	ABOVE GRADE LEVEL	LUMINAIRE TYPE	QTY/POLE	THIS GRID	OTHER GRIDS
2	F1-F2	90'	-	90'	TLC-LED-1500	8	3	5
				25'	CREE OSQ	1	0	1
				25'	TLC-BT-575	2	0	2
2	F3-F4	90'	-4'	86'	TLC-LED-1500	8	3	5
				18.5'	TLC-BT-575	2	0	2
4	Totals					42	12	30

\*Above Grade level relative to the field



**Mt Hope High School Football Retrofit**

Bristol, RI

**Grid Summary**

Name	Track w/o Field Fixtures
Size	Irregular
Spacing	30.0' x 30.0'
Height	3.0' above grade

**Illumination Summary**

	MAINTAINED HORIZONTAL FOOTCANDLES
Entire Grid	
Scan Average	9.09
Maximum	20
Minimum	2
Avg/Min	4.12
Max/Min	9.22
UG (adjacent pts)	0.00
CU	0.17
No. of Points	45
<b>LUMINAIRE INFORMATION</b>	
Applied Circuits	B
No. of Luminaires	12
Total Load	16.92 kW

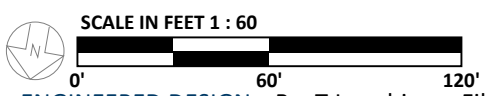
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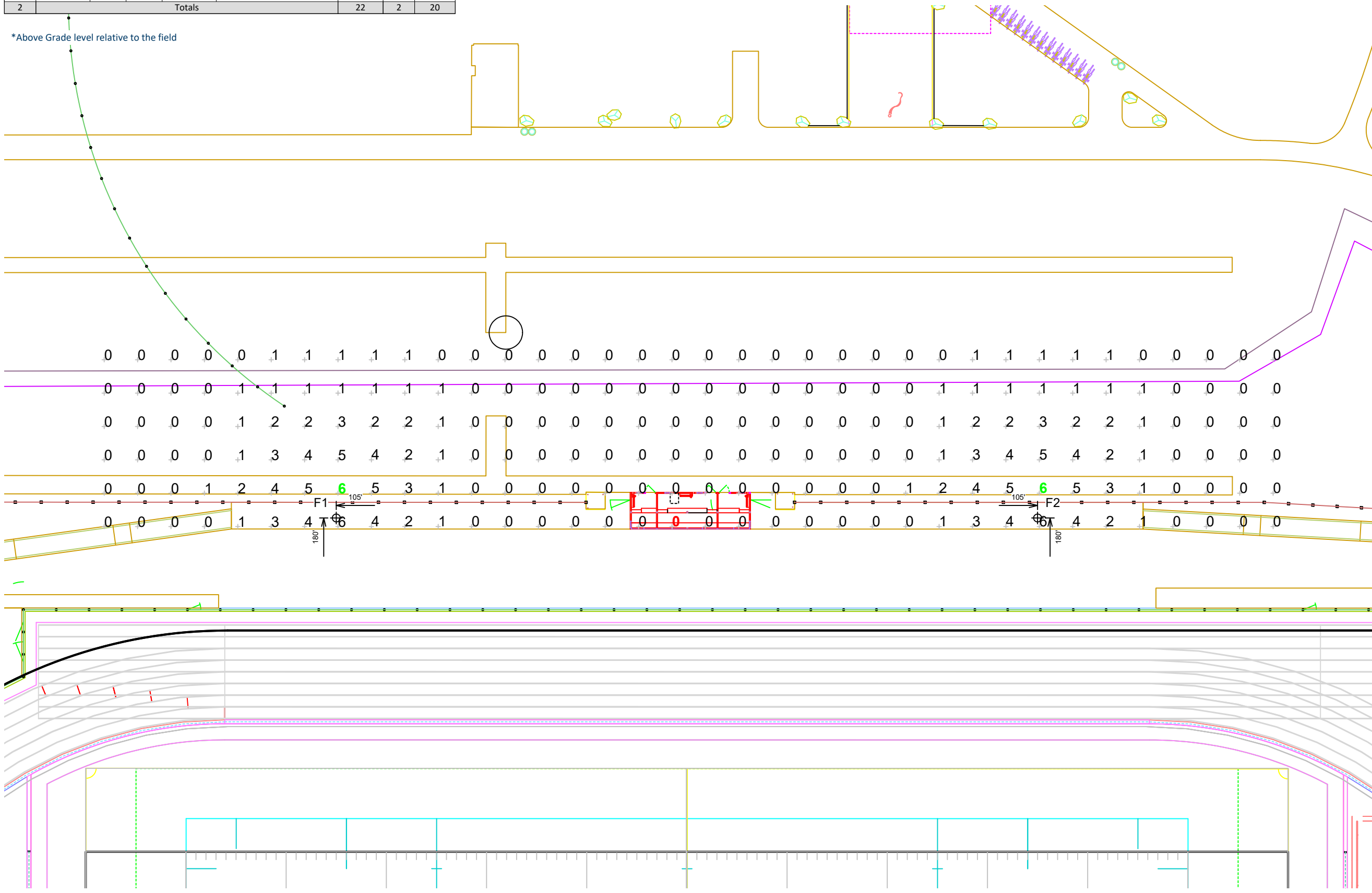
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Pole				Luminaires				
QTY	LOCATION	SIZE	GRADE ELEVATION	ABOVE GRADE LEVEL	LUMINAIRE TYPE	QTY/POLE	THIS GRID	OTHER GRIDS
2	F1-F2	90'	-	90'	TLC-LED-1500	8	0	8
				25'	CREE OSQ	1	1	0
				25'	TLC-BT-575	2	0	2
2				Totals		22	2	20

\*Above Grade level relative to the field



## Mt Hope High School Football Retrofit

Bristol, RI

Grid Summary	
Name	Security
Size	Irregular
Spacing	10.0' x 10.0'
Height	3.0' above grade

Illumination Summary	
MAINTAINED HORIZONTAL FOOTCANDLES	
Scan Average	0.91
Maximum	6
Minimum	0
Avg/Min	6311.15
Max/Min	43185.25
UG (adjacent pts)	5.58
CU	0.82
No. of Points	216
LUMINAIRE INFORMATION	
Applied Circuits	C
No. of Luminaires	2
Total Load	0.20 kW

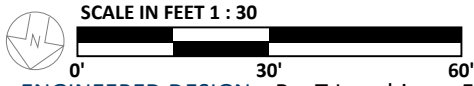
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## ILLUMINATION SUMMARY

# Mt Hope High School Football Retrofit

Bristol, RI

Grid Summary	
Name	Spill @ 3ft.
Spacing	30.0'
Height	3.0' above grade

Illumination Summary	
INITIAL HORIZONTAL FOOTCANDLES	
Entire Grid	0.1771
Scan Average	0.45
Maximum	0.45
Minimum	0.02
CU	0.00
No. of Points	70
LUMINAIRE INFORMATION	
Applied Circuits	A,B
No. of Luminaires	40
Total Load	49.72 kW

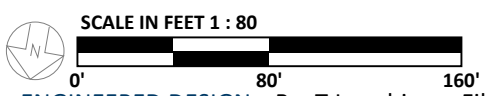
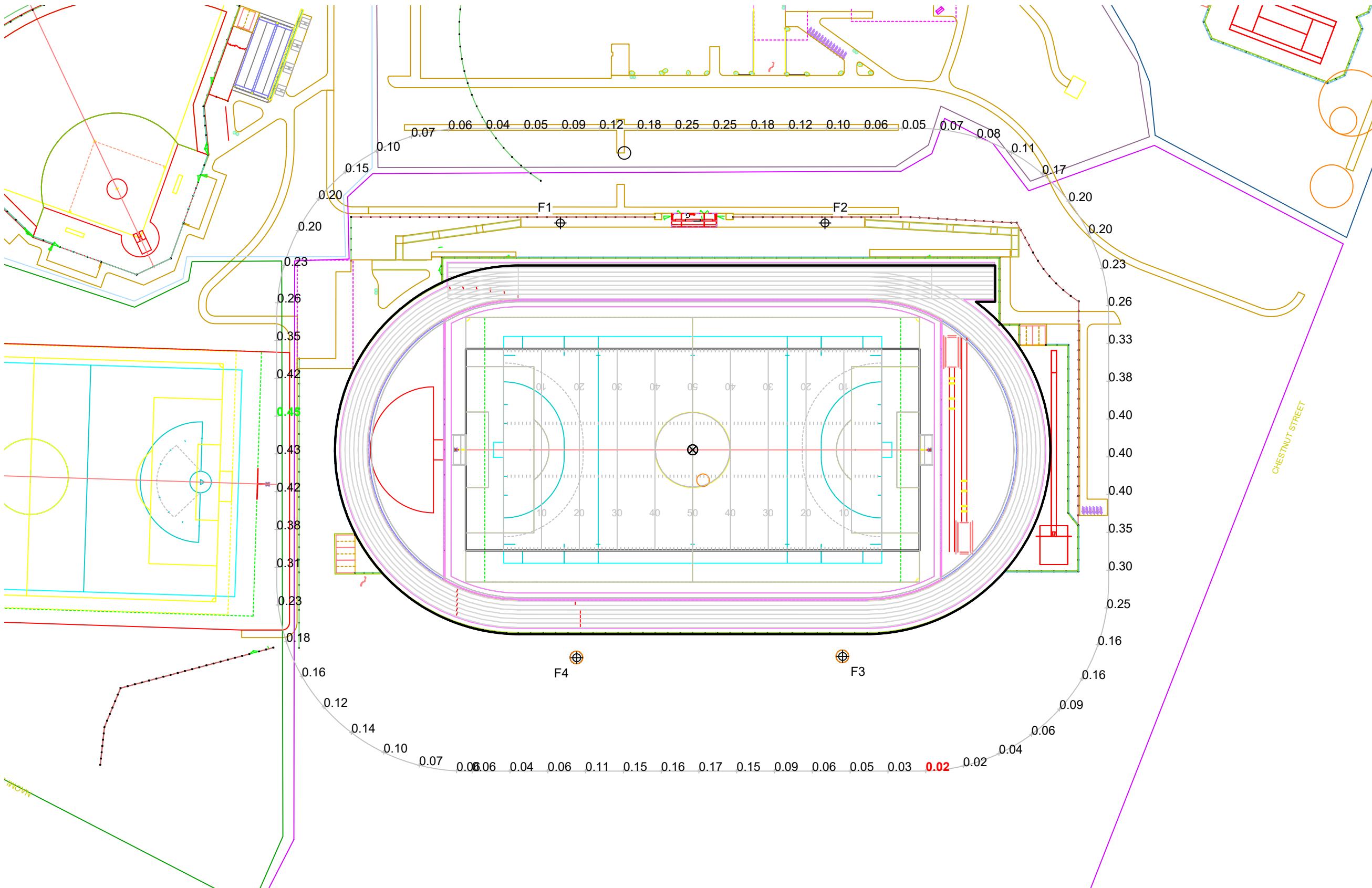
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## ILLUMINATION SUMMARY

# Mt Hope High School Football Retrofit

Bristol, RI

## Grid Summary

Name Spill @ 5ft.  
Spacing 30.0'  
Height 5.0' above grade

## Illumination Summary

INITIAL MAX VERTICAL FOOTCANDLES	
Entire Grid	0.4003
Scan Average	1.07
Maximum	1.07
Minimum	0.04
CU	0.00
No. of Points	70
<b>LUMINAIRE INFORMATION</b>	
Applied Circuits	A,B
No. of Luminaires	40
Total Load	49.72 kW

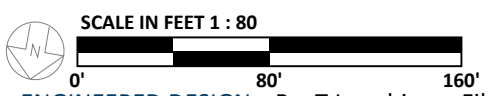
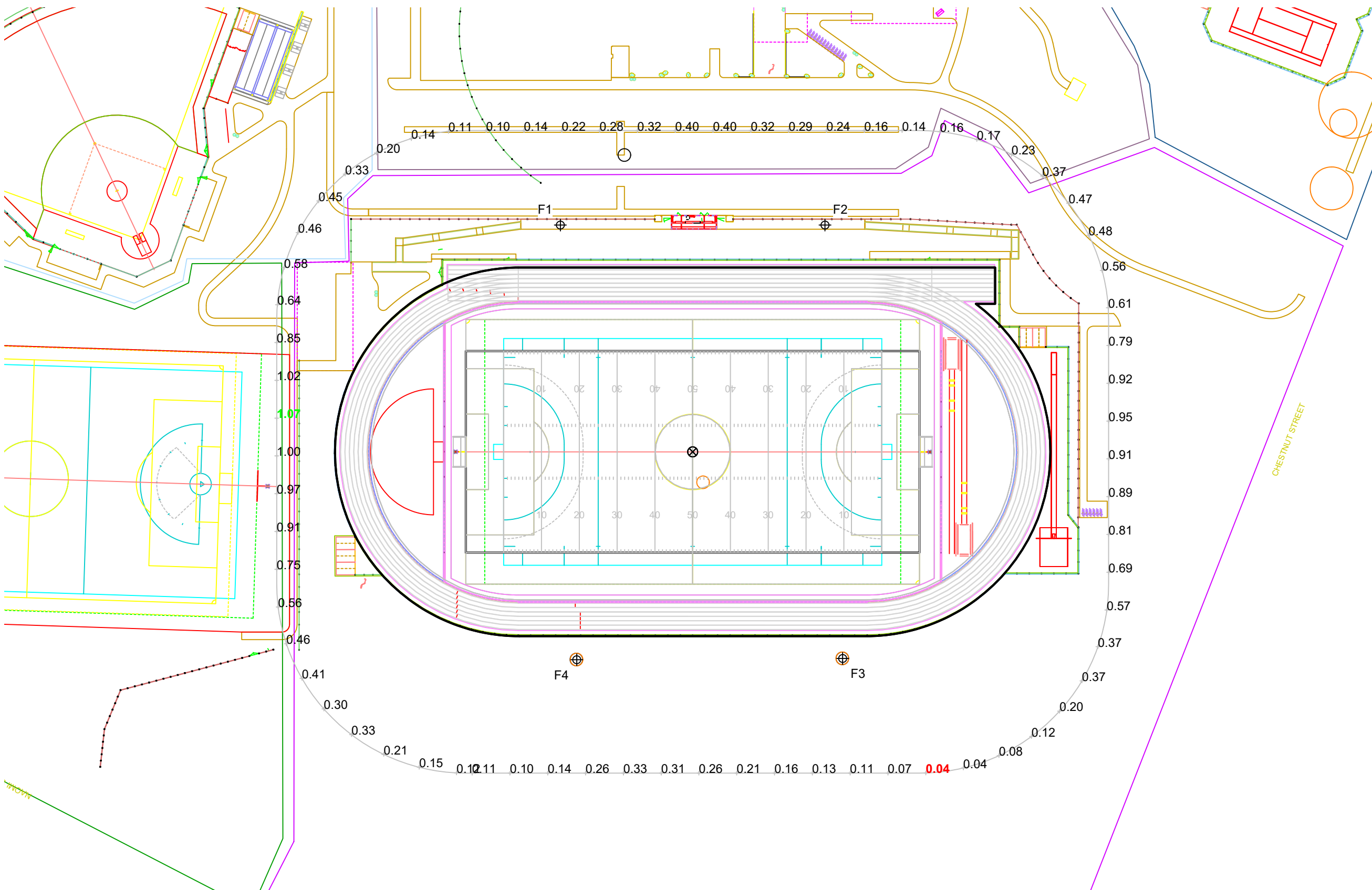
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## ILLUMINATION SUMMARY



# Mt Hope High School Football Retrofit

Bristol, RI

## Grid Summary

Name **Spill @ 5ft.**  
 Spacing 30.0'  
 Height 5.0' above grade

## Illumination Summary

	INITIAL CANDELA (PER FIXTURE)
Entire Grid	11515.0469
Scan Average	30039.82
Maximum	2166.69
Minimum	CU 0.00
No. of Points	70
<b>LUMINAIRE INFORMATION</b>	
Applied Circuits	A,B
No. of Luminaires	40
Total Load	49.72 kW

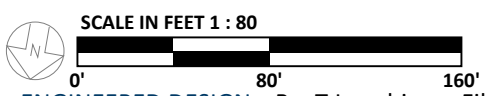
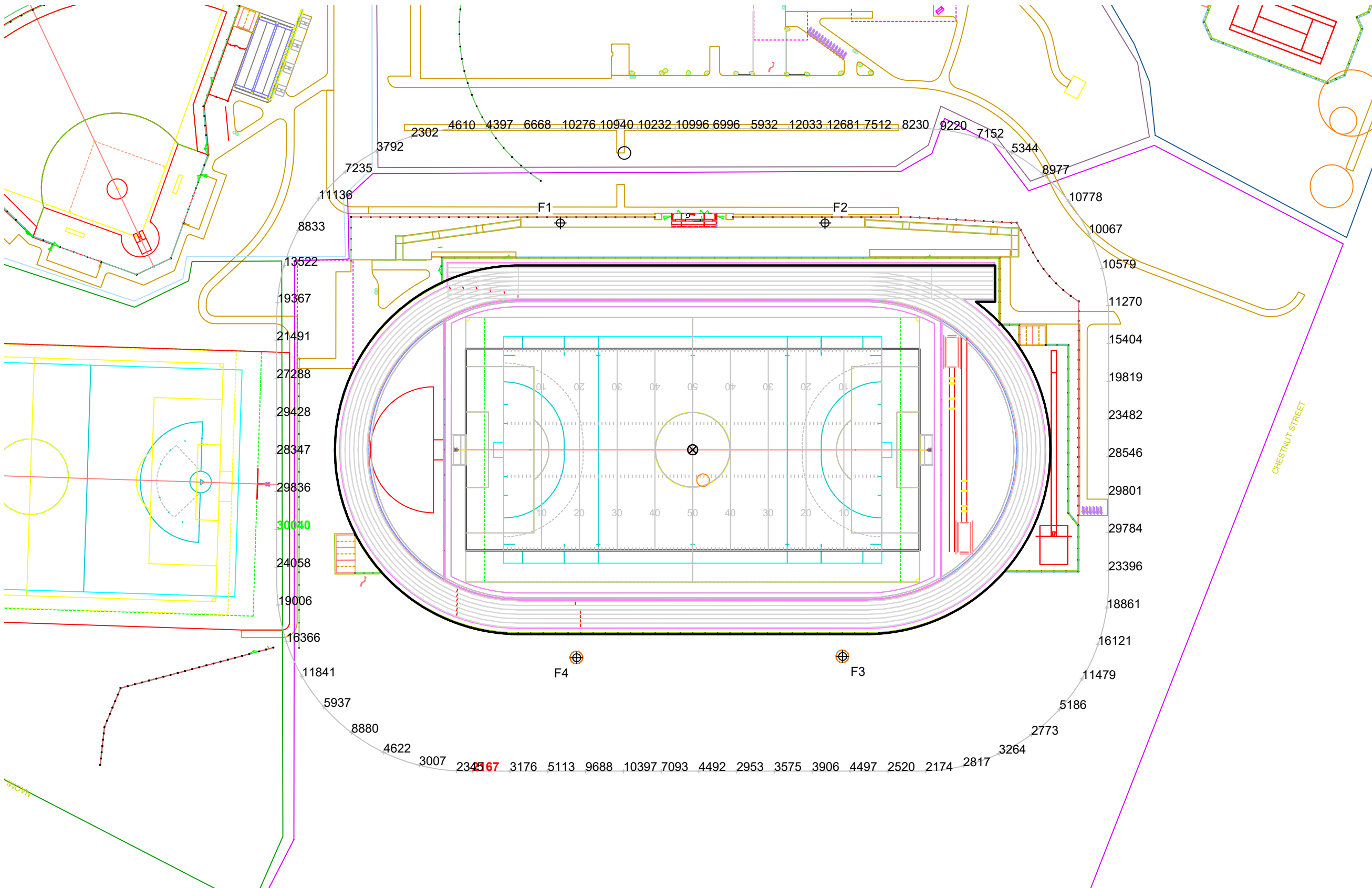
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## ILLUMINATION SUMMARY

# Mt Hope High School Football Retrofit

Bristol, RI

## Equipment Layout

### INCLUDES:

- Football
- Soccer
- Track w/ Field Fixtures
- Track w/o Field Fixtures

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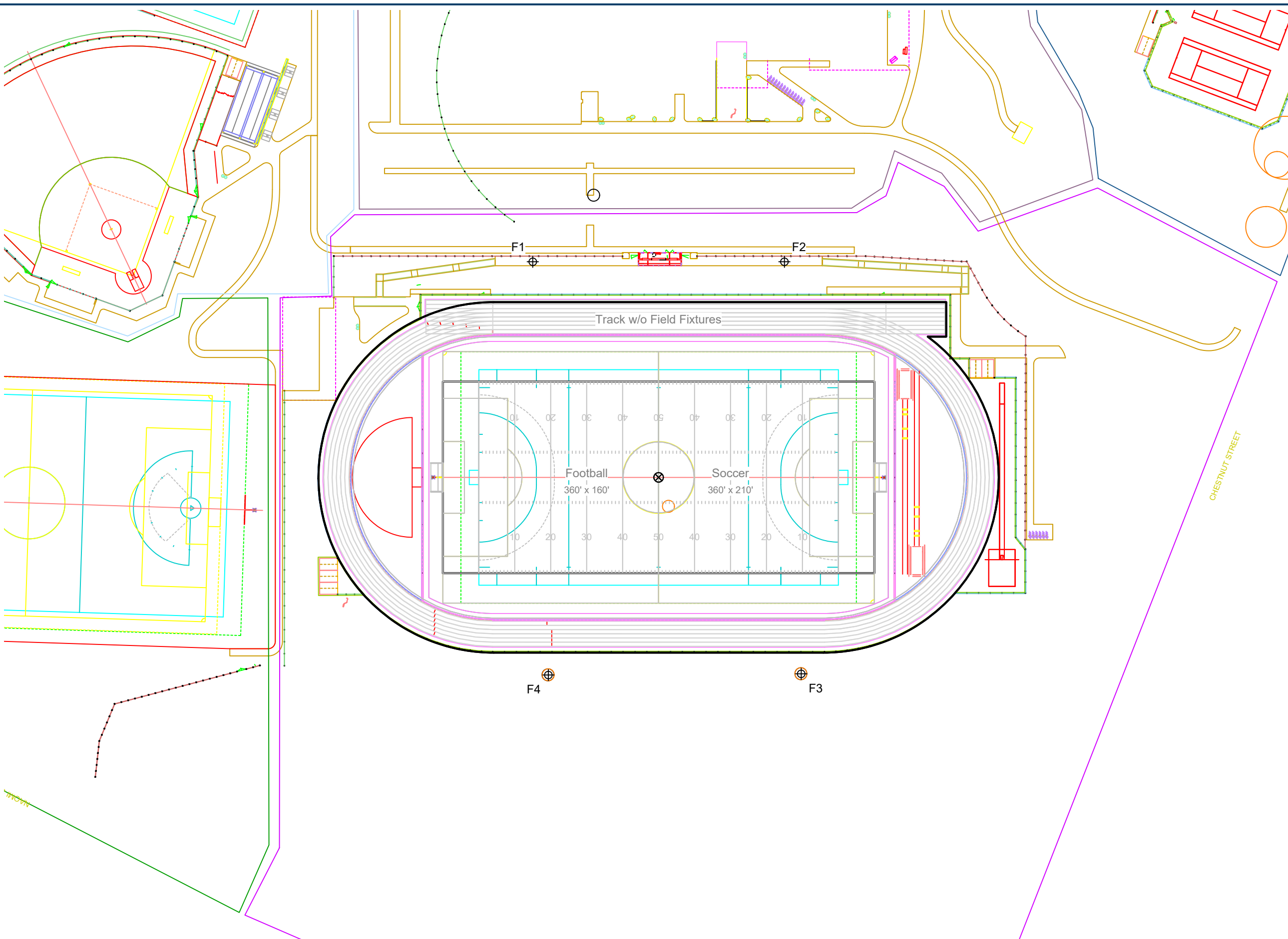
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QTY	LOCATION	Pole		Luminaires		QTY/POLE
		SIZE	GRADE ELEVATION	ABOVE GRADE LEVEL	LUMINAIRE TYPE	
2	F1-F2	90'	-	90'	TLC-LED-1500	8
				25'	CREE OSQ	1
2	F3-F4	90'	-4'	86'	TLC-LED-1500	8
				18.5'	TLC-BT-575	2
4	Totals					42

## 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)	480 (60)
Single Phase Voltage	-	-	-	-	0.3	0.2
CREE OSQ	-	-	-	-	0.3	0.2
TLC-BT-575	3.3	3.2	2.9	2.5	2.0	1.8
TLC-LED-1500	8.4	7.9	7.3	6.3	5.0	4.6

*Nathan Chubb, LC*  
24/JAN/2025



SCALE IN FEET 1 : 80  
0' 80' 160'  
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**EQUIPMENT LAYOUT**

NCQLP™

National Council on Qualifications  
for the Lighting Professions

*The National Council on Qualifications for the  
Lighting Professions certifies that*

**NATHAN W CHIZEK**

*has met all of the qualifications for the LC credential.*



**Bernard J. Erickson, LC**  
2020-2021 NCQLP President

**CERTIFICATION EXPIRES DECEMBER 31, 2024**