

# Coral Shores High School FB & BB

Tavernier, FL

## Exhibit A

NOTES: Pole location are estimate. They will need to be confirmed.

### Lighting System

Pole / Fixture Summary						
Pole ID	Pole Height	Mtg Height	Fixture Qty	Luminaire Type	Load	Circuit
A2, B2	52'	52'	3	TLC-LED-900	2.67 kW	C
A3-A4	52'	52'	1	TLC-LED-600	0.58 kW	B
		52'	2	TLC-LED-900	1.78 kW	B
B1	52'	52'	4	TLC-LED-900	3.56 kW	B
B3-B4, C2	52'	52'	4	TLC-LED-900	3.56 kW	B
		16'	1	TLC-BT-575	0.58 kW	B
C1	52'	52'	3	TLC-LED-900	2.67 kW	B
		16'	2	TLC-BT-575	1.15 kW	B
F1-F4	90'	90'	9	TLC-LED-1500	12.87 kW	A
		90'	1	TLC-LED-600	0.58 kW	A
		16'	2	TLC-BT-575	1.15 kW	A
<b>13</b>			<b>84</b>		<b>88.25 kW</b>	

Circuit Summary			
Circuit	Description	Load	Fixture Qty
A	Football	58.4 kW	48
B	Softball	24.5 kW	30
C	Multipurpose	5.34 kW	6

Fixture Type Summary							
Type	Source	Wattage	Lumens	L90	L80	L70	Quantity
TLC-BT-575	LED 5700K - 75 CRI	575W	52,000	>81,000	>81,000	>81,000	13
TLC-LED-1500	LED 5700K - 75 CRI	1430W	160,000	>81,000	>81,000	>81,000	36
TLC-LED-900	LED 5700K - 75 CRI	890W	89,600	>81,000	>81,000	>81,000	29
TLC-LED-600	LED 5700K - 75 CRI	580W	65,600	>81,000	>81,000	>81,000	6

### Light Level Summary

Calculation Grid Summary								
Grid Name	Calculation Metric	Illumination					Circuits	Fixture Qty
		Ave	Min	Max	Max/Min	Ave/Min		
East Bleacher Area	Horizontal	11.8	5	17	3.60	2.36	A	48
Football Field	Horizontal Illuminance	51.2	42	57	1.35	1.22	A	48
SB/Multipurpose	Horizontal Illuminance	34.3	14	66	4.62	2.45	B,C	36
Softball (Infield)	Horizontal Illuminance	52.2	33	65	1.95	1.58	B	30
Softball (Outfield)	Horizontal Illuminance	31.9	21	49	2.30	1.52	B	30
Track	Horizontal Illuminance	11.5	1	21	15.83	11.49	A	48
West Bleacher Area	Horizontal	10.2	2	15	8.96	5.09	A	48

### From Hometown to Professional



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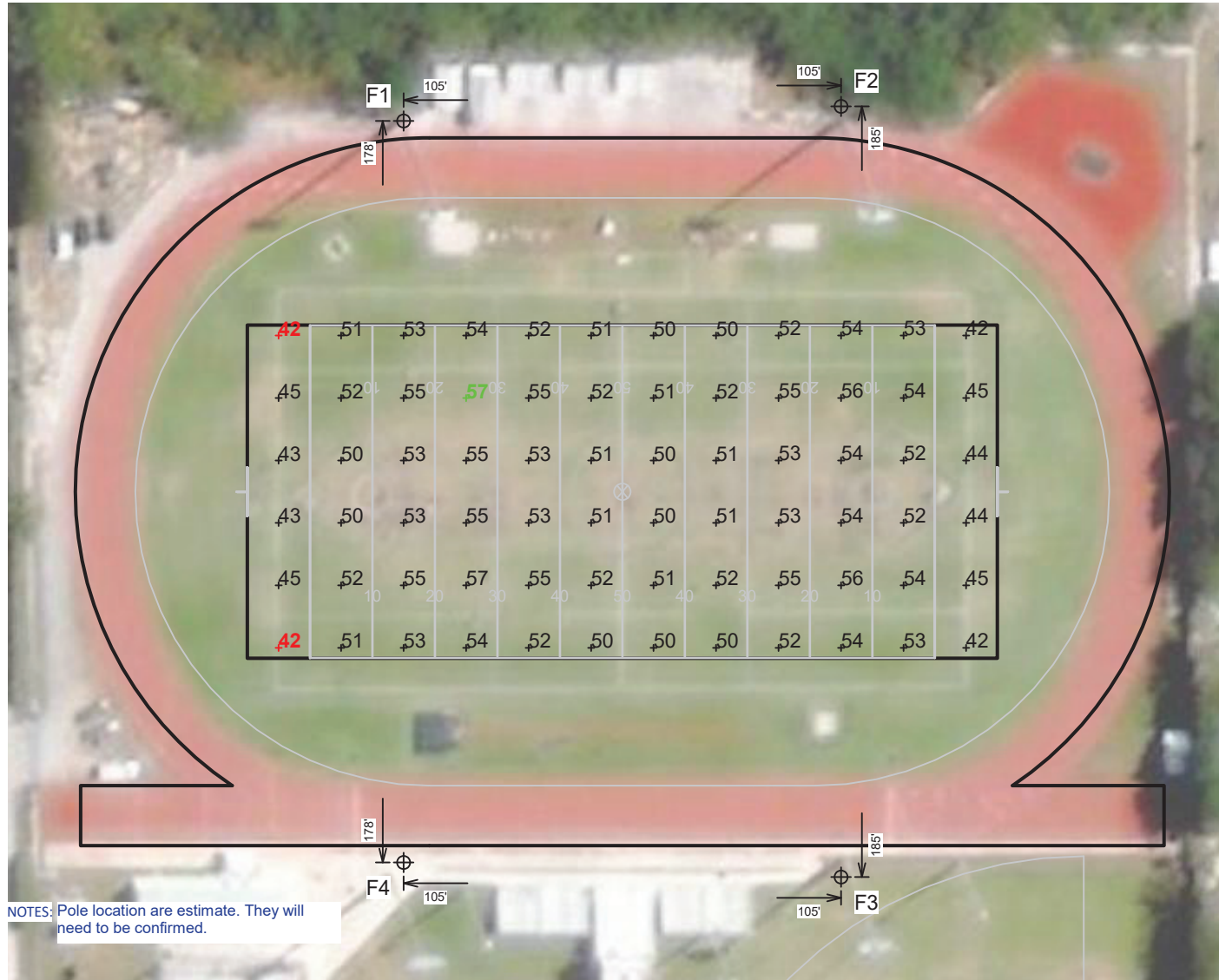
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**PROJECT SUMMARY**

# EQUIPMENT LIST FOR AREAS SHOWN

Pole				Luminaires				
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LUMINAIRE TYPE	QTY / POLE	THIS GRID	OTHER GRIDS
4	F1-F4	90'	-	90'	TLC-LED-600	1	1	0
				15.5'	TLC-BT-575	2	2	0
				90'	TLC-LED-1500	9	9	0
4	TOTALS					48	48	0



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

## Coral Shores High School FB & BB

Tavernier,FL

### GRID SUMMARY

**Name:** Football Field  
**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: 51.22  
 Maximum: 57  
 Minimum: 42  
 Avg / Min: 1.22  
**Guaranteed Max / Min:** 2  
 Max / Min: 1.35  
 UG (adjacent pts): 1.26  
 CU: 0.52  
 No. of Points: 72

### LUMINAIRE INFORMATION

**Color / CRI:** 5700K - 75 CRI  
**Luminaire Output:** 52,000 / 160,000 / 65,600 lumens  
**No. of Luminaires:** 48  
**Total Load:** 58.4 kW

### Lumen Maintenance

Luminaire Type	L90 hrs	L80 hrs	L70 hrs
TLC-BT-575	>81,000	>81,000	>81,000
TLC-LED-1500	>81,000	>81,000	>81,000
TLC-LED-600	>81,000	>81,000	>81,000

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.

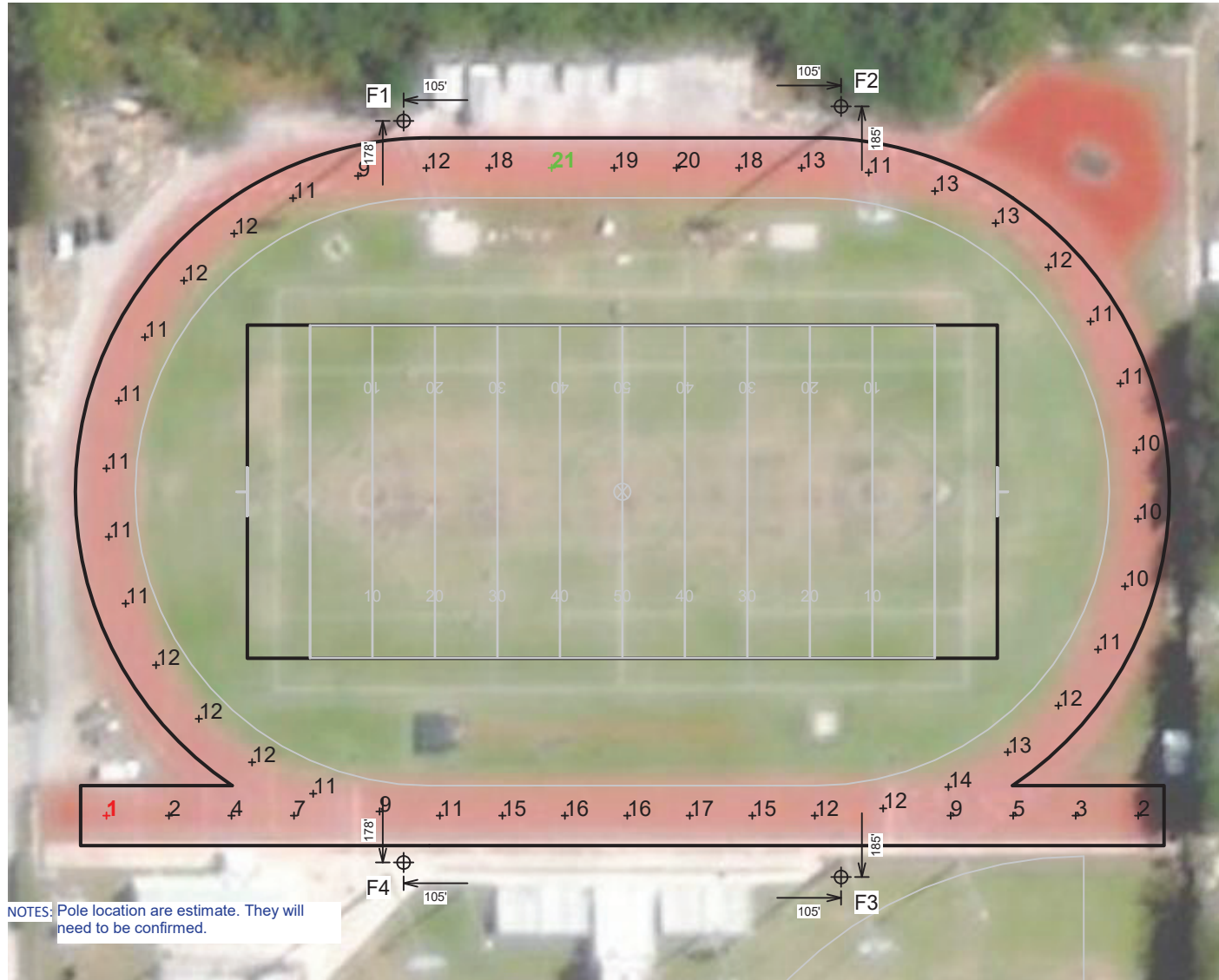


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## ILLUMINATION SUMMARY

## EQUIPMENT LIST FOR AREAS SHOWN

Pole				Luminaires				
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LUMINAIRE TYPE	QTY / POLE	THIS GRID	OTHER GRIDS
4	F1-F4	90'	-	90'	TLC-LED-600	1	1	0
				15.5'	TLC-BT-575	2	2	0
				90'	TLC-LED-1500	9	9	0
4	TOTALS					48	48	0



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## Coral Shores High School FB & BB

Tavernier, FL

### GRID SUMMARY

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

### ILLUMINATION SUMMARY

MAINTAINED HORIZONTAL FOOTCANDLES

Entire Grid

**Scan Average:** 11.49  
**Maximum:** 21  
**Minimum:** 1  
**Avg / Min:** 8.76  
**Max / Min:** 15.83  
**UG (adjacent pts):** 0.00  
**CU:** 0.08  
**No. of Points:** 50

### LUMINAIRE INFORMATION

**Color / CRI:** 5700K - 75 CRI  
**Luminaire Output:** 52,000 / 160,000 / 65,600 lumens  
**No. of Luminaires:** 48  
**Total Load:** 58.4 kW

### Lumen Maintenance

Luminaire Type	L90 hrs	L80 hrs	L70 hrs
TLC-BT-575	>81,000	>81,000	>81,000
TLC-LED-1500	>81,000	>81,000	>81,000
TLC-LED-600	>81,000	>81,000	>81,000

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

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## ILLUMINATION SUMMARY



# EQUIPMENT LIST FOR AREAS SHOWN

Pole				Luminaires				
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LUMINAIRE TYPE	QTY / POLE	THIS GRID	OTHER GRIDS
4	F1-F4	90'	-	90'	TLC-LED-600	1	1	0
				15.5'	TLC-BT-575	2	2	0
				90'	TLC-LED-1500	9	9	0
4	TOTALS					48	48	0

# Coral Shores High School FB & BB

Tavernier,FL

## GRID SUMMARY

**Name:** East Bleacher Area  
**Spacing:** 10.0' x 10.0'  
**Height:** 3.0' above grade

## ILLUMINATION SUMMARY

### MAINTAINED HORIZONTAL FOOTCANDLES

**Scan Average:** 11.79

Maximum: 17

Minimum: 5

Avg / Min: 2.49

**Max / Min:** 3.60

UG (adjacent pts): 1.59

CU: 0.01

No. of Points: 64

### LUMINAIRE INFORMATION

Color / CRI: 5700K - 75 CRI

Luminaire Output: 52,000 / 160,000 / 65,600 lumens

**No. of Luminaires:** 48

Total Load: 58.4 kW

### Lumen Maintenance

Luminaire Type	L90 hrs	L80 hrs	L70 hrs
TLC-BT-575	>81,000	>81,000	>81,000
TLC-LED-1500	>81,000	>81,000	>81,000
TLC-LED-600	>81,000	>81,000	>81,000

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

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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.

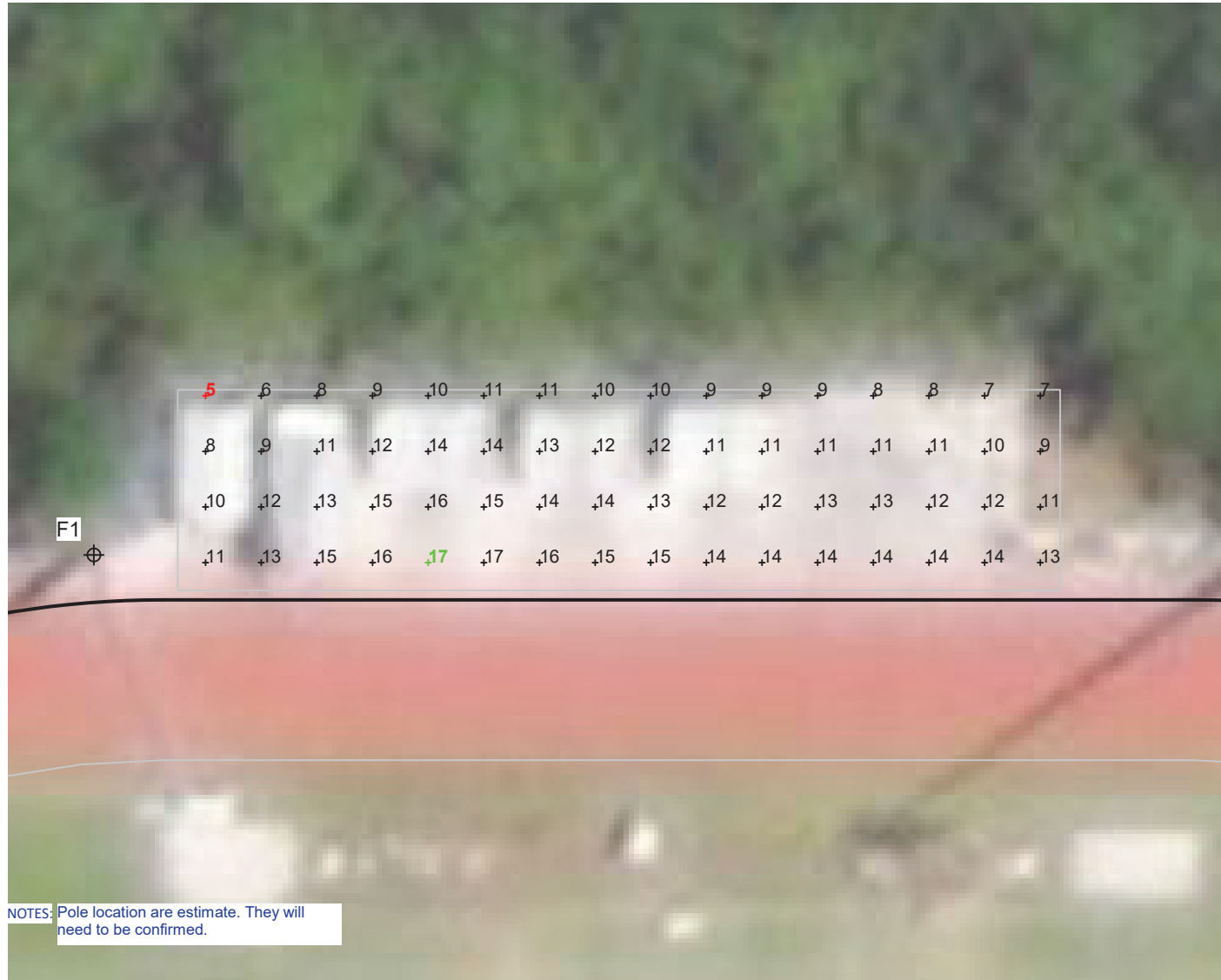
**Installation Requirements:** Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.



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## ILLUMINATION SUMMARY



**NOTES:** Pole location are estimate. They will need to be confirmed.



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
4	F1-F4	90'	-	90'	TLC-LED-600	1	1	0
				15.5'	TLC-BT-575	2	2	0
				90'	TLC-LED-1500	9	9	0
4	TOTALS					48	48	0



NOTES: Pole location are estimate. They will need to be confirmed.



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

## Coral Shores High School FB & BB

Tavernier,FL

### GRID SUMMARY

Name: West Bleacher Area  
Spacing: 10.0' x 10.0'  
Height: 3.0' above grade

### ILLUMINATION SUMMARY

#### MAINTAINED HORIZONTAL FOOTCANDLES

Entire Grid  
Scan Average: 10.17

Maximum: 15  
Minimum: 2  
Avg / Min: 6.21  
Max / Min: 8.96

UG (adjacent pts): 1.84  
CU: 0.02  
No. of Points: 108

#### LUMINAIRE INFORMATION

Color / CRI: 5700K - 75 CRI  
Luminaire Output: 52,000 / 160,000 / 65,600 lumens  
No. of Luminaires: 48  
Total Load: 58.4 kW

#### Lumen Maintenance

Luminaire Type	L90 hrs	L80 hrs	L70 hrs
TLC-BT-575	>81,000	>81,000	>81,000
TLC-LED-1500	>81,000	>81,000	>81,000
TLC-LED-600	>81,000	>81,000	>81,000

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

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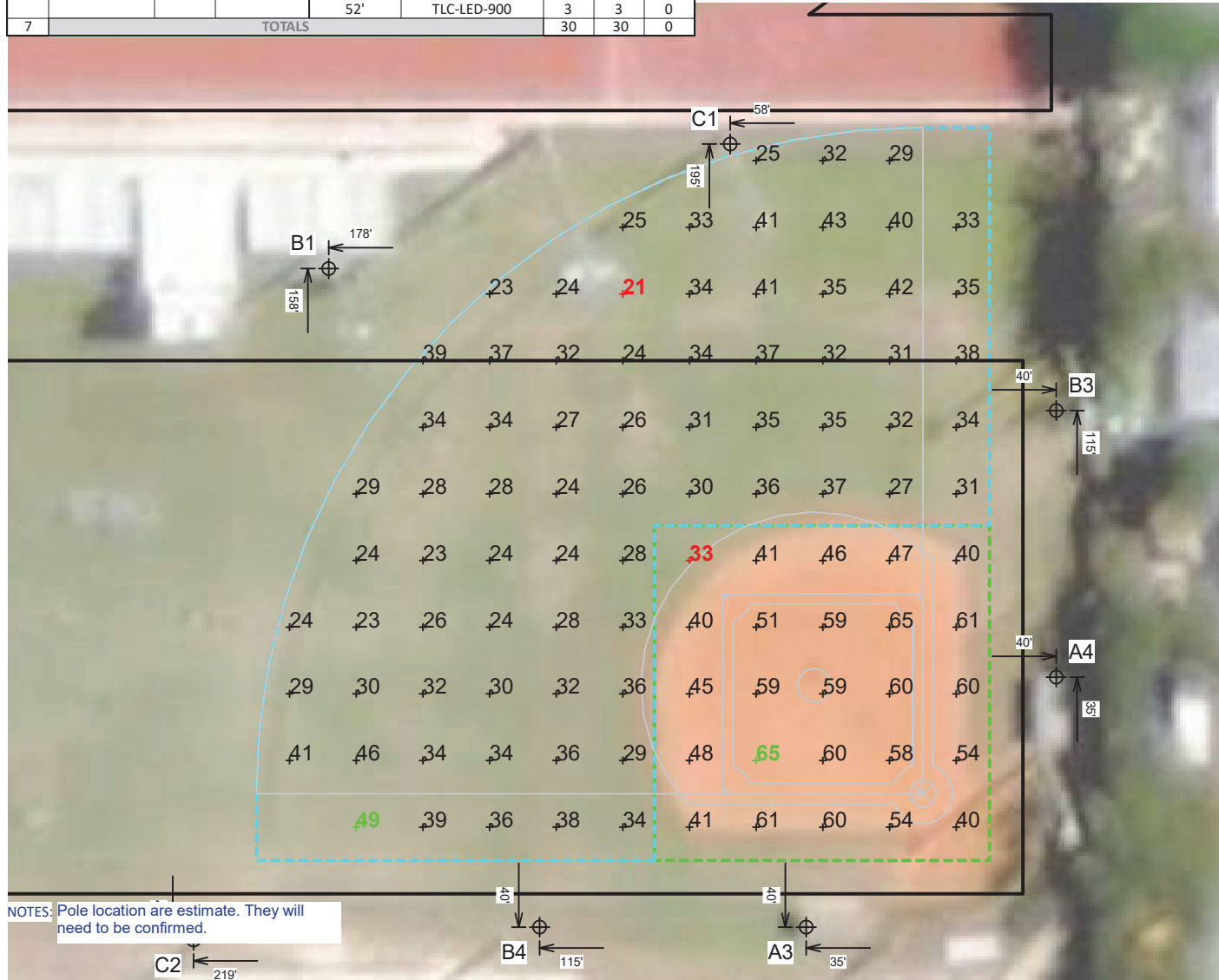
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### ILLUMINATION SUMMARY

# EQUIPMENT LIST FOR AREAS SHOWN

Pole				Luminaires				
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LUMINAIRE TYPE	QTY / POLE	THIS GRID	OTHER GRIDS
2	A3-A4	52'	-	52'	TLC-LED-600	1	1	0
				52'	TLC-LED-900	2	2	0
1	B1	52'	-	52'	TLC-LED-900	4	4	0
3	B3-B4, C2	52'	-	15.5'	TLC-BT-575	1	1	0
				52'	TLC-LED-900	4	4	0
1	C1	52'	-	15.5'	TLC-BT-575	2	2	0
				52'	TLC-LED-900	3	3	0
7	TOTALS					30	30	0



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## Coral Shores High School FB & BB

Tavernier, FL

### GRID SUMMARY

**Name:** Softball  
**Size:** 200'/200'/200' - basepath 60'  
**Spacing:** 20.0' x 20.0'  
**Height:** 3.0' above grade

### ILLUMINATION SUMMARY

#### MAINTAINED HORIZONTAL FOOTCANDLES

	Infield	Outfield
<b>Guaranteed Average:</b>	<b>50</b>	<b>30</b>
Scan Average:	52.19	31.94
Maximum:	65	49
Minimum:	33	21
Avg / Min:	1.56	1.51
<b>Guaranteed Max / Min:</b>	<b>2</b>	<b>2.5</b>
Max / Min:	1.95	2.30
UG (adjacent pts):	1.53	1.62
CU:	0.57	
No. of Points:	25	73

#### LUMINAIRE INFORMATION

**Color / CRI:** 5700K - 75 CRI  
**Luminaire Output:** 52,000 / 89,600 / 65,600 lumens  
**No. of Luminaires:** 30  
**Total Load:** 24.51 kW

Luminaire Type	Lumen Maintenance		
	L90 hrs	L80 hrs	L70 hrs
TLC-BT-575	>81,000	>81,000	>81,000
TLC-LED-900	>81,000	>81,000	>81,000
TLC-LED-600	>81,000	>81,000	>81,000

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

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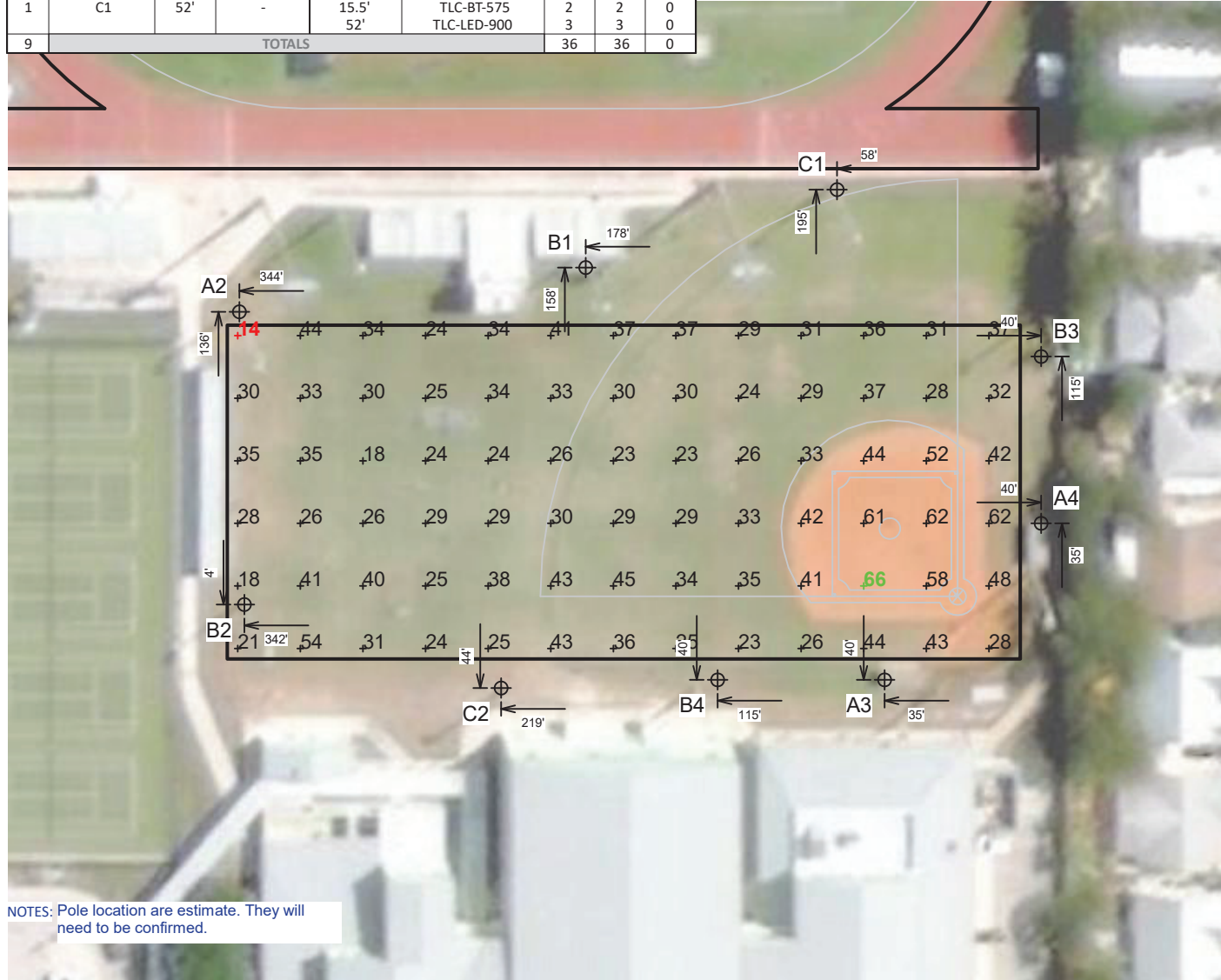


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### ILLUMINATION SUMMARY

# EQUIPMENT LIST FOR AREAS SHOWN

Pole				Luminaires				
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LUMINAIRE TYPE	QTY / POLE	THIS GRID	OTHER GRIDS
2	A2, B2	52'	-	52'	TLC-LED-900	3	3	0
2	A3-A4	52'	-	52'	TLC-LED-600	1	1	0
1	B1	52'	-	52'	TLC-LED-900	2	2	0
3	B3-B4, C2	52'	-	15.5'	TLC-BT-575	1	1	0
				52'	TLC-LED-900	4	4	0
1	C1	52'	-	15.5'	TLC-BT-575	2	2	0
				52'	TLC-LED-900	3	3	0
9	TOTALS					36	36	0



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## Coral Shores High School FB & BB

Tavernier, FL

### GRID SUMMARY

Name: SB/Multipurpose  
Size: 380' x 160'  
Spacing: 30.0' x 30.0'  
Height: 3.0' above grade

### ILLUMINATION SUMMARY

MAINTAINED HORIZONTAL FOOTCANDLES

Entire Grid  
Guaranteed Average: 30  
Scan Average: 34.26  
Maximum: 66  
Minimum: 14  
Avg / Min: 2.40  
Max / Min: 4.62  
UG (adjacent pts): 3.07  
CU: 0.77  
No. of Points: 78

### LUMINAIRE INFORMATION

Color / CRI: 5700K - 75 CRI  
Luminaire Output: 52,000 / 89,600 / 65,600 lumens  
No. of Luminaires: 36  
Total Load: 29.84 kW

### Lumen Maintenance

Luminaire Type	L90 hrs	L80 hrs	L70 hrs
TLC-BT-575	>81,000	>81,000	>81,000
TLC-LED-900	>81,000	>81,000	>81,000
TLC-LED-600	>81,000	>81,000	>81,000

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

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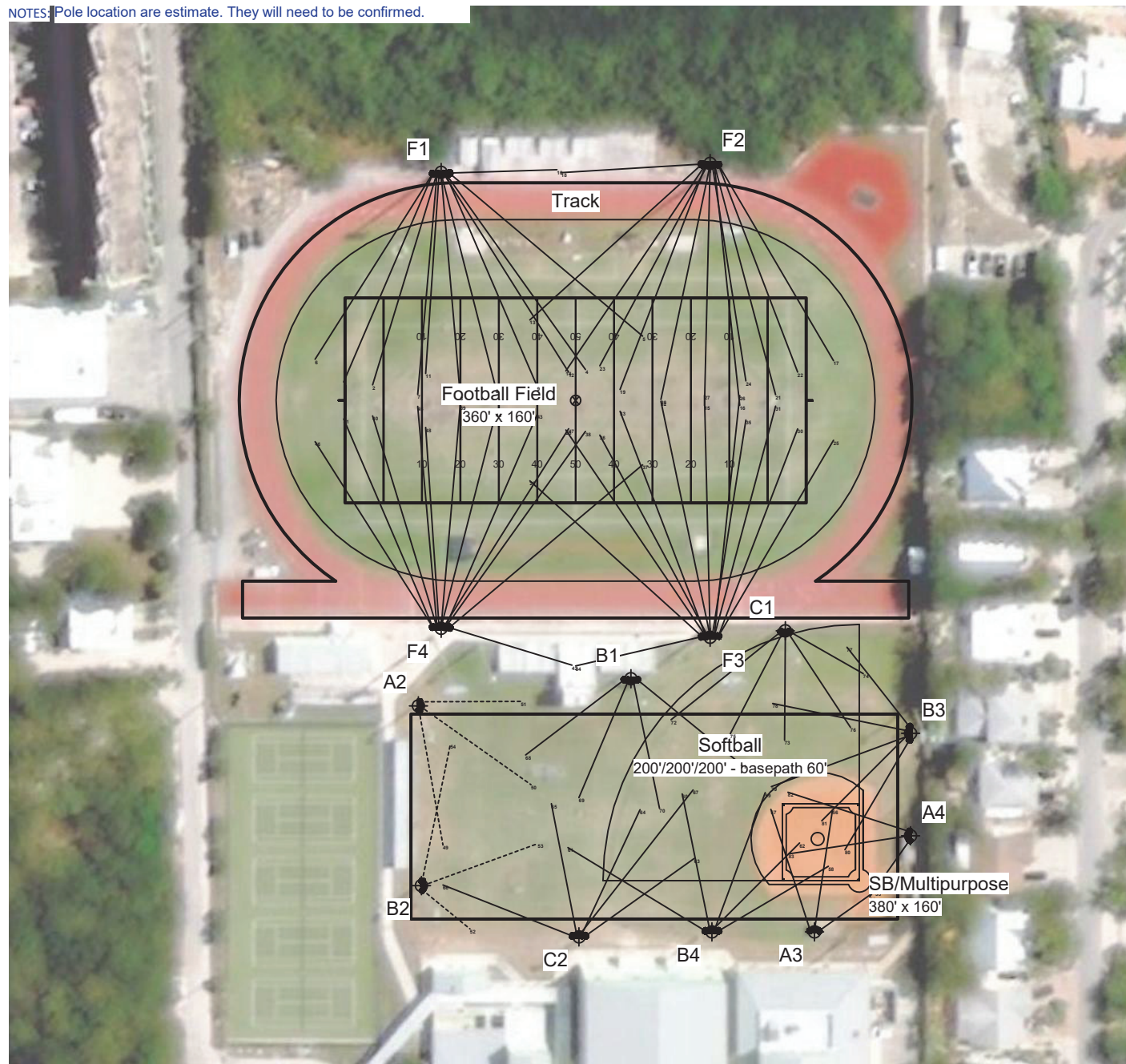


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## Coral Shores High School FB & BB

Tavernier, FL

### EQUIPMENT LAYOUT

#### INCLUDES:

- Football Field
- SB/Multipurpose
- Softball
- Track

**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	SIZE	GRADE ELEVATION	Luminaires		
				MOUNTING HEIGHT	LUMINAIRE TYPE	QTY / POLE
2	A2, B2	52'	-	52'	TLC-LED-900	3
2	A3-A4	52'	-	52'	TLC-LED-600	1
				52'	TLC-LED-900	2
1	B1	52'	-	52'	TLC-LED-900	4
3	B3-B4, C2	52'	-	15.5'	TLC-BT-575	1
				52'	TLC-LED-900	4
1	C1	52'	-	15.5'	TLC-BT-575	2
				52'	TLC-LED-900	3
4	F1-F4	90'	-	90'	TLC-LED-600	1
				15.5'	TLC-BT-575	2
				90'	TLC-LED-1500	9
13	TOTALS					84

### 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)
TLC-BT-575	3.4	3.2	2.9	2.5	2.0	1.8	1.5
TLC-LED-1500	8.5	8.1	7.4	6.4	5.1	4.7	3.7
TLC-LED-900-A	5.3	5.0	4.6	4.0	3.2	2.9	2.3
TLC-LED-600-A	3.4	3.2	3.0	2.6	2.0	1.9	1.5



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**EQUIPMENT LAYOUT**