



Technical Submittal 38
North Stand Pitch Lighting

DOCUMENT STATUS

Document Status				
Revision	P01			
Date	13/11/2024			
Author	B Dickinson			
Checked	B Green			
Verified	D Hudson			

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Executive Summary

The purpose of this technical submittal is to provide the reader with an overview of the **Pitch Lighting System** and materials to be provided within the MCFC North Stand Development.

Appendix A - Basis of Design

- Document No: NSE-MEE-NS-XX-TS-E-008001 RIBA Stage 4a Interim
Revision: P01
- Document No: NSE-MEE-NS-XX-TS-E-008002 RIBA Stage 4a
Revision: P01
- Document No: NSE-MEE-NS-XX-LS-E-008001 RIBA Stage 4a Interim
Revision: P02

Appendix B - Manufacturers Details

Company Name: Musco Lighting
Email: eurosales@musco.com
Tel: +44 (0) 1942 811 777
Web: <https://www.musco.com/>

Appendix C - Technical Literature

As per technical data attached - see appendix H.

Appendix D - Compliance

In line with the electrical specification and equipment schedule:

- Document No: NSE-MEE-NS-XX-TS-E-008001 RIBA Stage 4a Interim
Revision: P01
- Document No: NSE-MEE-NS-XX-TS-E-008002 RIBA Stage 4a
Revision: P01
- Document No: NSE-MEE-NS-XX-LS-E-008001 RIBA Stage 4a Interim
Revision: P02

Appendix E - Non -Compliance

N/A

Appendix F - Programme

The Purpose of this technical submission is to inform the Etihad client team and professional team of SES intent regards to procurement of systems and equipment to enable input into the MEP design and therefore complete the systems MEP design.

The Technical submission is by no means intended to show full systems design by the way of MEP design drawings and schematics.

Drawings and Schematics will follow once technical submissions have reached A or B status and the technical information from within the approved submission has been inputted into the MEP design.

Appendix G - Drawing Reference

N/A

Appendix H - Attachments

MCFC Etihad Stadium North Stand Renovation
Manchester,North West

Lighting System

Pole/Fixture Summary						
Pole ID	Pole Height	Mtg Height	Fixture Qty	Luminaire Type	Load	Circuit
A01-A03		34.0 m	1	TLC-LED-1400	1.40 kW	B
A04		36.8 m	1	TLC-LED-1400	1.40 kW	B
A05-A06		36.8 m	1	TLC-LED-1400	1.40 kW	A
A07-A08		37.6 m	1	TLC-LED-1400	1.40 kW	A
A09-A12		38.3 m	1	TLC-LED-1400	1.40 kW	B
A13		38.7 m	1	TLC-LED-1400	1.40 kW	A
A14-A16		39.0 m	1	TLC-LED-1400	1.40 kW	A
A17-A18		39.3 m	1	TLC-LED-1400	1.40 kW	B
A19-A20		39.0 m	1	TLC-LED-1400	1.40 kW	B
A21		39.0 m	1	TLC-LED-1400	1.40 kW	A
A22-A24		38.7 m	1	TLC-LED-1400	1.40 kW	A
A25-A26		38.3 m	1	TLC-LED-1400	1.40 kW	B
A27-A28		37.6 m	1	TLC-LED-1400	1.40 kW	B
A29-A31		36.8 m	1	TLC-LED-1400	1.40 kW	A
A32		34.0 m	1	TLC-LED-1400	1.40 kW	A
A33-A34		34.0 m	1	TLC-LED-1400	1.40 kW	B
AA1		31.0 m	4	TLC-LED-1500	5.72 kW	A
AA2		32.3 m	4	TLC-LED-1500	5.72 kW	B
AA3		33.5 m	4	TLC-LED-1500	5.72 kW	A
AA4-AA5		34.6 m	3	TLC-LED-1500	4.29 kW	B
AA6		33.5 m	4	TLC-LED-1500	5.72 kW	A
AA7		32.3 m	4	TLC-LED-1500	5.72 kW	B
AA8		31.0 m	4	TLC-LED-1500	5.72 kW	A
B01-B04		33.4 m	1	TLC-LED-1500	1.43 kW	B
B05-B06		33.4 m	1	TLC-LED-1500	1.43 kW	A
B07-B08		34.3 m	1	TLC-LED-1500	1.43 kW	A
B09-B12		34.3 m	1	TLC-LED-1500	1.43 kW	B
B13-B16		35.0 m	1	TLC-LED-1500	1.43 kW	A
B17-B18		35.0 m	1	TLC-LED-1500	1.43 kW	B
B19-B20		35.5 m	1	TLC-LED-1500	1.43 kW	B
B21-B24		35.5 m	1	TLC-LED-1500	1.43 kW	A
B25-B26		35.5 m	1	TLC-LED-1500	1.43 kW	B
B27-B28		35.0 m	1	TLC-LED-1500	1.43 kW	B
B29-B32		35.0 m	1	TLC-LED-1500	1.43 kW	A
B33-B36		34.3 m	1	TLC-LED-1500	1.43 kW	B
B37-B38		34.3 m	1	TLC-LED-1500	1.43 kW	A
B39-B40		33.4 m	1	TLC-LED-1500	1.43 kW	A
B41-B44		33.4 m	1	TLC-LED-1500	1.43 kW	B
C01-C03		34.0 m	1	TLC-LED-1400	1.40 kW	A
C04		36.8 m	1	TLC-LED-1400	1.40 kW	A
C05-C06		36.8 m	1	TLC-LED-1400	1.40 kW	B
C07-C08		37.6 m	1	TLC-LED-1400	1.40 kW	B
C09-C12		38.3 m	1	TLC-LED-1400	1.40 kW	A
C13		38.7 m	1	TLC-LED-1400	1.40 kW	B
C14-C16		39.0 m	1	TLC-LED-1400	1.40 kW	B
C17-C18		39.3 m	1	TLC-LED-1400	1.40 kW	A
C19-C20		39.0 m	1	TLC-LED-1400	1.40 kW	A
C21		39.0 m	1	TLC-LED-1400	1.40 kW	B
C22-C24		38.7 m	1	TLC-LED-1400	1.40 kW	B
C25-C26		38.3 m	1	TLC-LED-1400	1.40 kW	A
C27-C28		37.6 m	1	TLC-LED-1400	1.40 kW	A
C29-C31		36.8 m	1	TLC-LED-1400	1.40 kW	B
C32		34.0 m	1	TLC-LED-1400	1.40 kW	B
C33-C34		34.0 m	1	TLC-LED-1400	1.40 kW	A
CC1		31.0 m	4	TLC-LED-1500	5.72 kW	B
CC2		32.3 m	4	TLC-LED-1500	5.72 kW	A
CC3		33.5 m	4	TLC-LED-1500	5.72 kW	B
CC4		34.6 m	3	TLC-LED-1500	4.29 kW	A
CC5		34.6 m	3	TLC-LED-1500	4.29 kW	B
CC6		33.5 m	4	TLC-LED-1500	5.72 kW	A
CC7		32.3 m	4	TLC-LED-1500	5.72 kW	B
CC8		31.0 m	4	TLC-LED-1500	5.72 kW	A
D03-D06		32.4 m	1	TLC-LED-1500	1.43 kW	A
D07-D10		33.7 m	1	TLC-LED-1500	1.43 kW	B
D13-D16		34.4 m	1	TLC-LED-1500	1.43 kW	A
D19-D26		34.7 m	1	TLC-LED-1500	1.43 kW	B
D29-D32		34.5 m	1	TLC-LED-1500	1.43 kW	A
D35-D38		33.6 m	1	TLC-LED-1500	1.43 kW	B
D39		32.9 m	1	TLC-LED-1500	1.43 kW	A
D40-D42		32.7 m	1	TLC-LED-1500	1.43 kW	A
N01-N02		32.4 m	1	TLC-LED-1500	1.43 kW	C
N03-N04		33.7 m	1	TLC-LED-1500	1.43 kW	C
N05-N08		34.4 m	1	TLC-LED-1500	1.43 kW	C
N09-N10		33.6 m	1	TLC-LED-1500	1.43 kW	C
N11		32.3 m	1	TLC-LED-1500	1.43 kW	C
N12		32.1 m	1	TLC-LED-1500	1.43 kW	C
S01-S02		32.4 m	1	TLC-LED-550	0.54 kW	D
S03-S06		34.3 m	1	TLC-LED-550	0.54 kW	D
S07		32.4 m	1	TLC-LED-550	0.54 kW	D
S08		32.9 m	1	TLC-LED-550	0.54 kW	D

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MCFC Etihad Stadium North Stand Renovation

Manchester,North West

Lighting System

Pole/Fixture Summary						
Pole ID	Pole Height	Mtg Height	Fixture Qty	Luminaire Type		Circuit
180			224			311.16 kW

Circuit Summary			
Circuit	Description	Load	Fixture Qty
A	Football Luminaires	143.41 kW	101
B	Backup Generator Luminaires	146.27 kW	103
C	New Luminaires	17.16 kW	12
D	North Stand	4.32 kW	8

Fixture Type Summary							
Type	Source	Wattage	Lumens	L90	L80	L70	Quantity
TLC-LED-1400	LED 5700K - 80 CRI	1400W	135,240	>81,000	>81,000	>81,000	68
TLC-LED-1500	LED 5700K - 80 CRI	1430W	147,200	>120,000	>120,000	>120,000	148
TLC-LED-550	LED 5700K - 75 CRI	540W	67,000	>120,000	>120,000	>120,000	8

Single Luminaire Amperage Draw Chart						
Driver Specifications (.90 min power factor)	Line Amperage Per Luminaire (max draw)					
	220 (50)	230 (50)	240 (50)	380 (50)	400 (50)	415 (50)
TLC-LED-1400	7.4	7.1	6.8	4.3	4.1	3.9
TLC-LED-1500	8.1	7.7	7.4	4.7	4.4	4.3
TLC-LED-550	3.0	2.9	2.8	1.8	1.7	1.6

Light Level Summary

Calculation Grid Summary									
Grid Name	Calculation Metric	Illumination Ave					Circuits	Fixture Qty	
		Ave	Min	Max	Min/Max	Min/Ave			
01 Etihad Stadium	01) Horizontal Illuminance	2516.05	2064	2944	0.70	0.82	A,B,C	216	
01 Etihad Stadium	02) West Vertical	1506.23	1099	1849	0.59	0.73	A,B,C	216	
01 Etihad Stadium	03) North Vertical	1571.67	1130	1851	0.61	0.72	A,B,C	216	
01 Etihad Stadium	04) East Vertical	1506.91	1096	1850	0.59	0.73	A,B,C	216	
01 Etihad Stadium	05) South Vertical	1551.55	1116	1898	0.59	0.72	A,B,C	216	
01 Etihad Stadium	06) Main Camera	1783.83	1391	2148	0.65	0.78	A,B,C	216	
01 Etihad Stadium	Glare Rating	37.09	35	39	0.89	0.93	A,B,C	216	
01 Etihad Stadium	Vertical Uniformity	0.84	1	1	0.72	0.81	A,B,C	216	
Stand	Horizontal Illuminance	43.92	2	130	0.01	0.03	D	8	

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Grid Summary	
Name	01 Etihad Stadium
Size	105.0m x 68.0m
Spacing	9.5m
Height	1.0m above grade

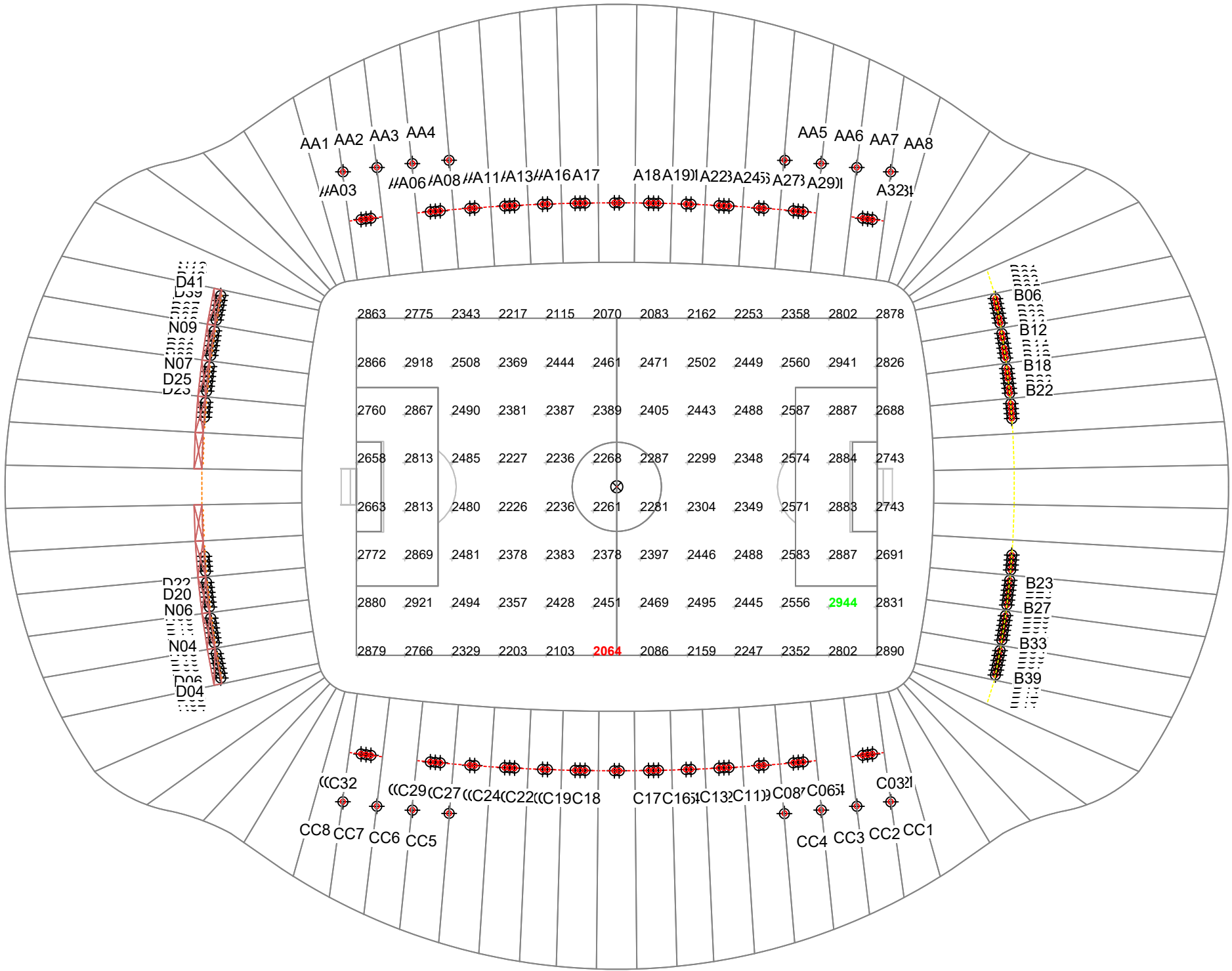
Illumination Summary	
	MAINTAINED HORIZONTAL LUX
	Entire Grid
Guaranteed Average	2000
Scan Average	2516.05
Maximum	2944
Minimum	2064
Guaranteed Min/Avg	0.7
Min/Avg	0.82
Min/Max	0.70
UG (adjacent pts)	1.19
CU	0.66
No. of Points	96
LUMINAIRE INFORMATION	
Applied Circuits	A,B,C
No. of Luminaires	216
Total Load	306.84 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.



MCFC Etihad Stadium North Stand Renovation

Manchester, North West

Grid Summary	
Name	01 Etihad Stadium
Size	105.0m x 68.0m
Spacing	9.5m
Height	1.0m above grade

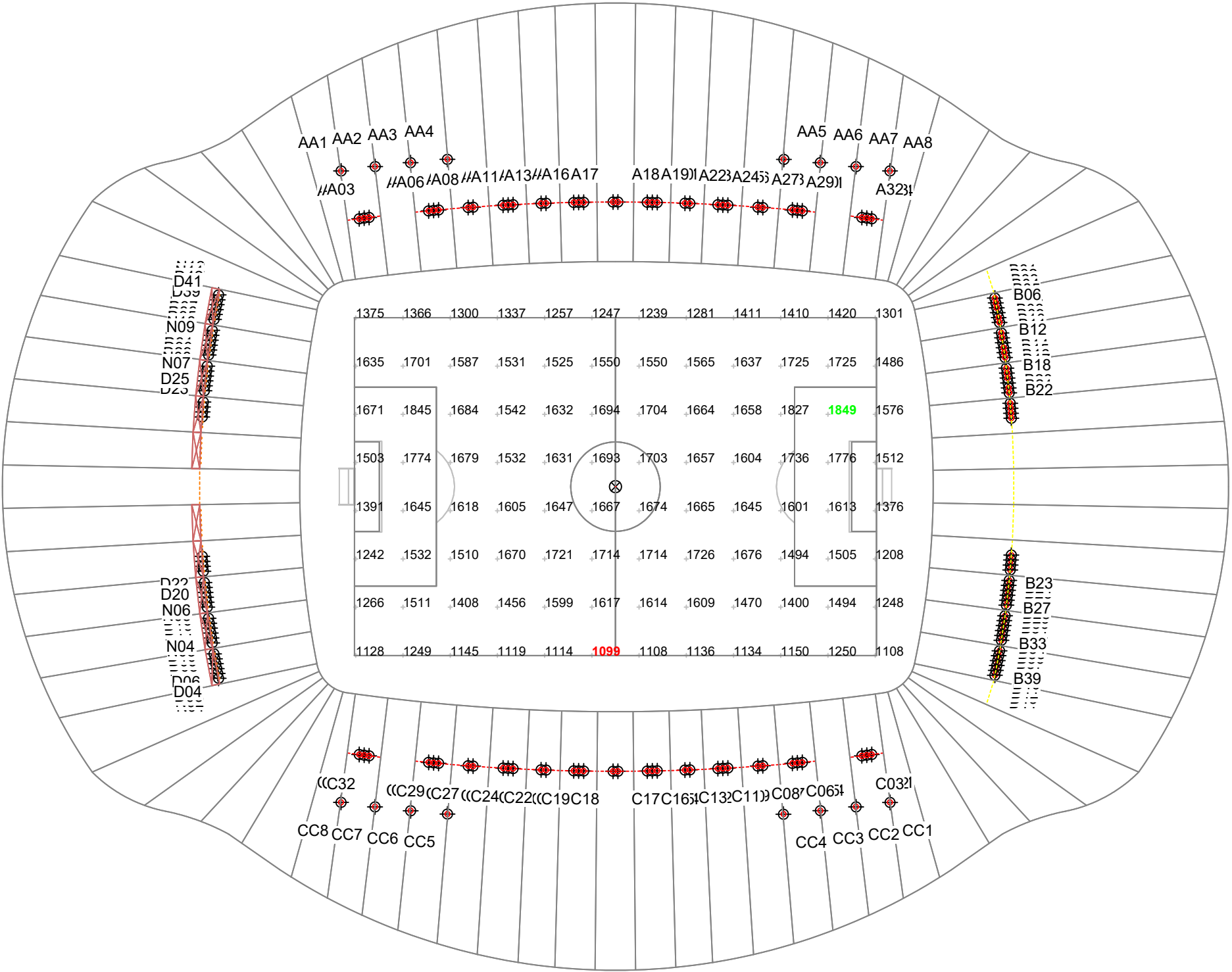
Illumination Summary	
MAINTAINED VERTICAL LUX: 0° TIR	
Entire Grid	
Guaranteed Average	1500
Scan Average	1506.23
Maximum	1849
Minimum	1099
Guaranteed Min/Avg	0.6
Min/Avg	0.73
Min/Max	0.59
UG (adjacent pts)	1.47
CU	0.66
No. of Points	96
LUMINAIRE INFORMATION	
Applied Circuits	A,B,C
No. of Luminaires	216
Total Load	306.84 kW

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ILLUMINATION SUMMARY

Grid Summary	
Name	01 Etihad Stadium
Size	105.0m x 68.0m
Spacing	9.5m
Height	1.0m above grade

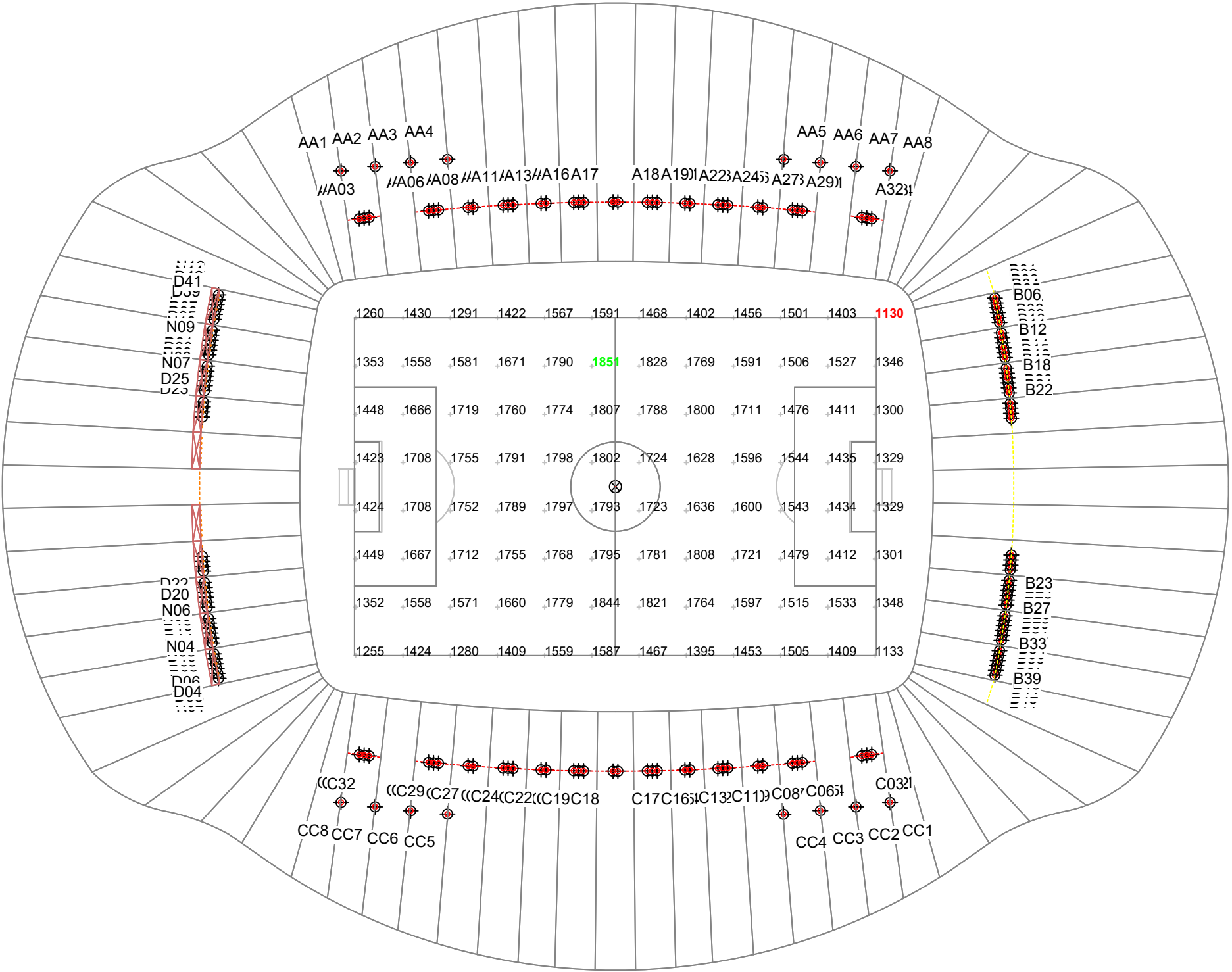
Illumination Summary	
MAINTAINED VERTICAL LUX: 0° TIR	
Entire Grid	
Guaranteed Average	1500
Scan Average	1571.67
Maximum	1851
Minimum	1130
Guaranteed Min/Avg	0.6
Min/Avg	0.72
Min/Max	0.61
UG (adjacent pts)	1.26
CU	0.66
No. of Points	96
LUMINAIRE INFORMATION	
Applied Circuits	A,B,C
No. of Luminaires	216
Total Load	306.84 kW

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MCFC Etihad Stadium North Stand Renovation

Manchester, North West

Grid Summary	
Name	01 Etihad Stadium
Size	105.0m x 68.0m
Spacing	9.5m
Height	1.0m above grade

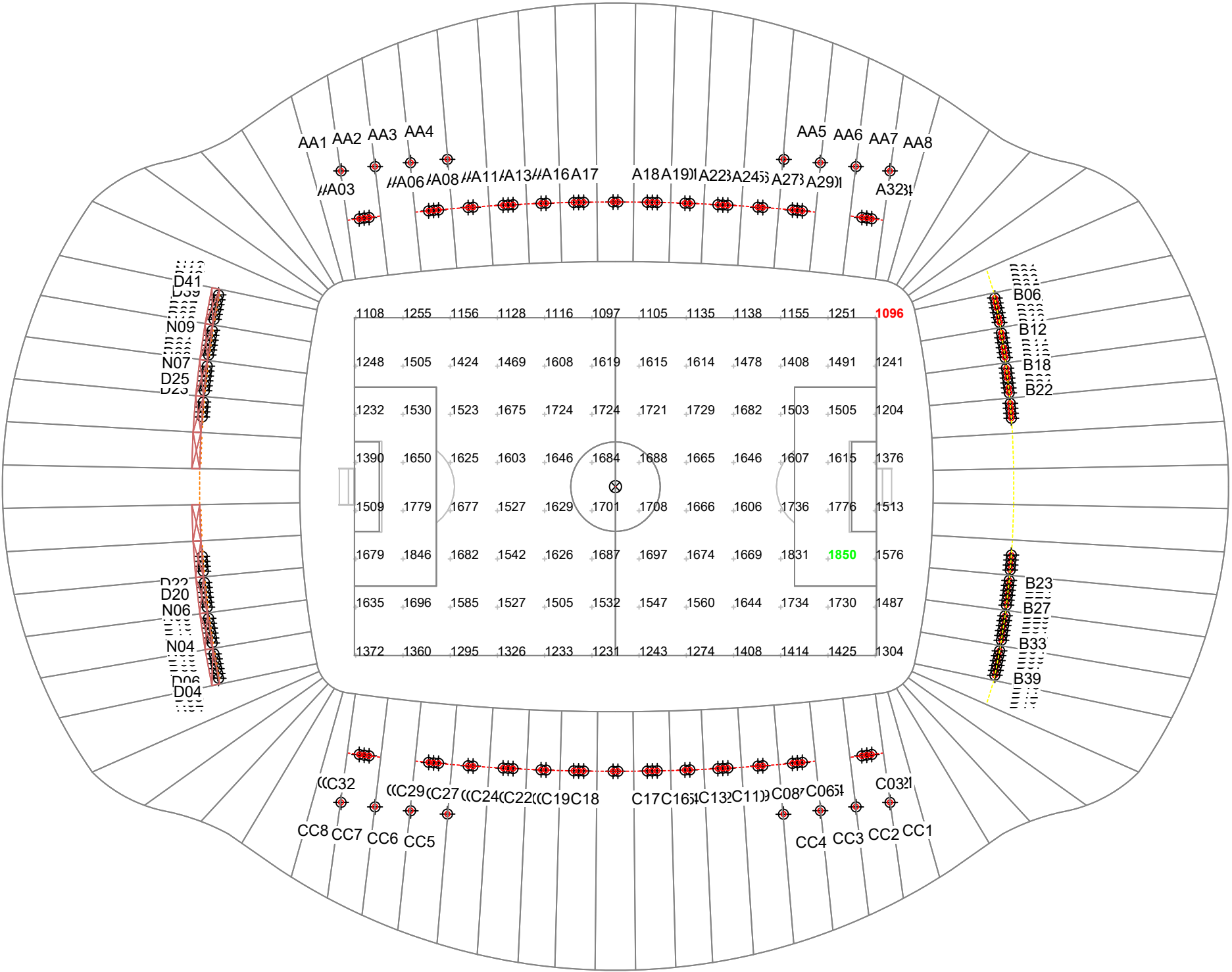
Illumination Summary	
MAINTAINED VERTICAL LUX: 0° TIR	
Entire Grid	
Guaranteed Average	1500
Scan Average	1506.91
Maximum	1850
Minimum	1096
Guaranteed Min/Avg	0.6
Min/Avg	0.73
Min/Max	0.59
UG (adjacent pts)	1.48
CU	0.66
No. of Points	96
LUMINAIRE INFORMATION	
Applied Circuits	A,B,C
No. of Luminaires	216
Total Load	306.84 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.



MCFC Etihad Stadium North Stand Renovat

Manchester, North West

Grid Summary	
Name	01 Etihad Stadium
Size	105.0m x 68.0m
Spacing	9.5m
Height	1.0m above grade

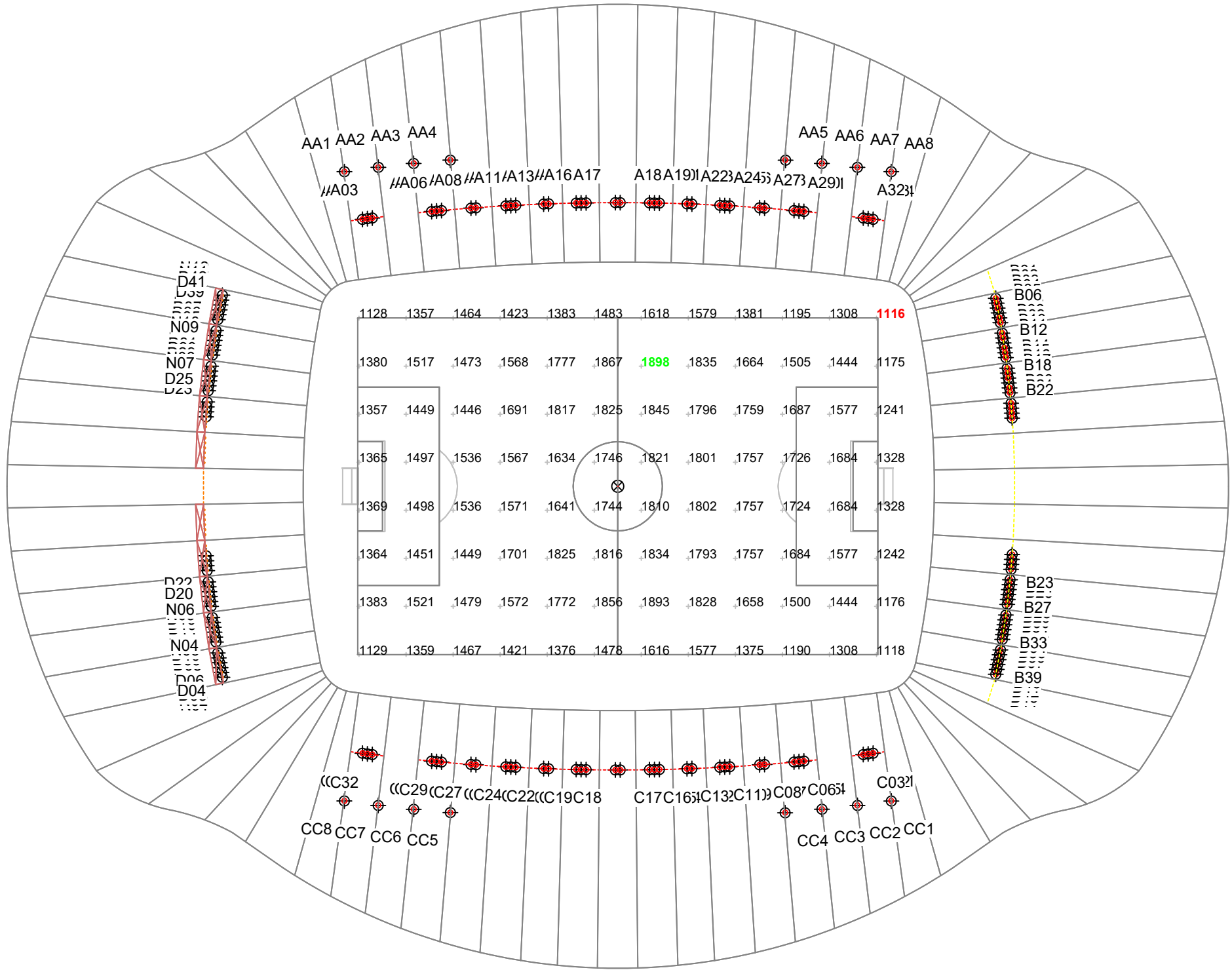
Illumination Summary	
MAINTAINED VERTICAL LUX: 0° TIR	
Entire Grid	
Guaranteed Average	1500
Scan Average	1551.55
Maximum	1898
Minimum	1116
Guaranteed Min/Avg	0.6
Min/Avg	0.72
Min/Max	0.59
UG (adjacent pts)	1.29
CU	0.66
No. of Points	96
LUMINAIRE INFORMATION	
Applied Circuits	A,B,C
No. of Luminaires	216
Total Load	306.84 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.



Grid Summary	
Name	01 Etihad Stadium
Size	105.0m x 68.0m
Spacing	9.5m
Height	1.0m above grade

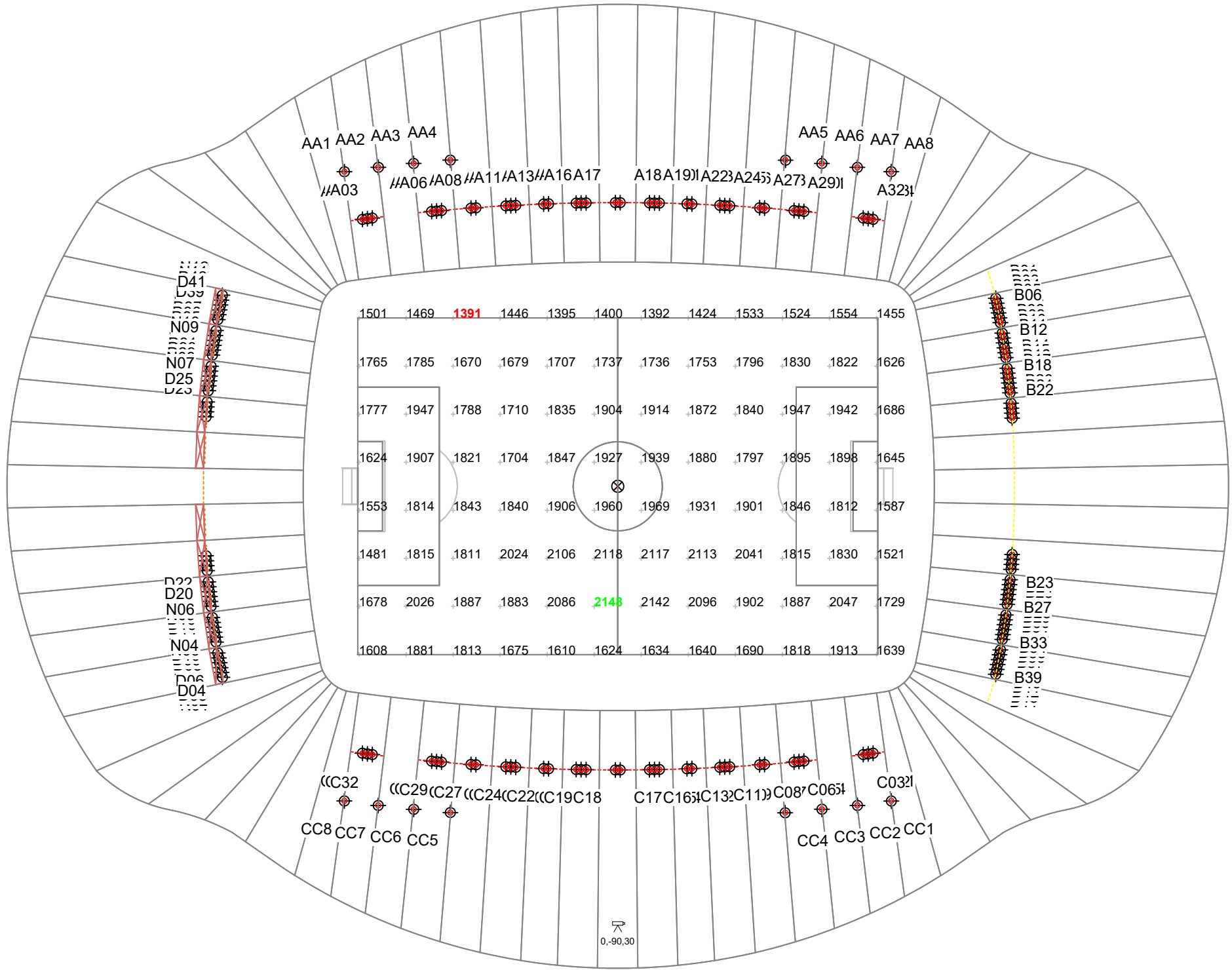
Illumination Summary	
MAINTAINED TV LUX: 06) Main Camera	
Entire Grid	
Guaranteed Average	1650
Scan Average	1783.83
Maximum	2148
Minimum	1391
Guaranteed Min/Avg	0.6
Min/Avg	0.78
Min/Max	0.65
UG (adjacent pts)	1.32
CU	0.66
No. of Points	96
LUMINAIRE INFORMATION	
Applied Circuits	A,B,C
No. of Luminaires	216
Total Load	306.84 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.



Grid Summary	
Name	01 Etihad Stadium
Size	105.0m x 68.0m
Spacing	9.5m
Height	1.0m above grade

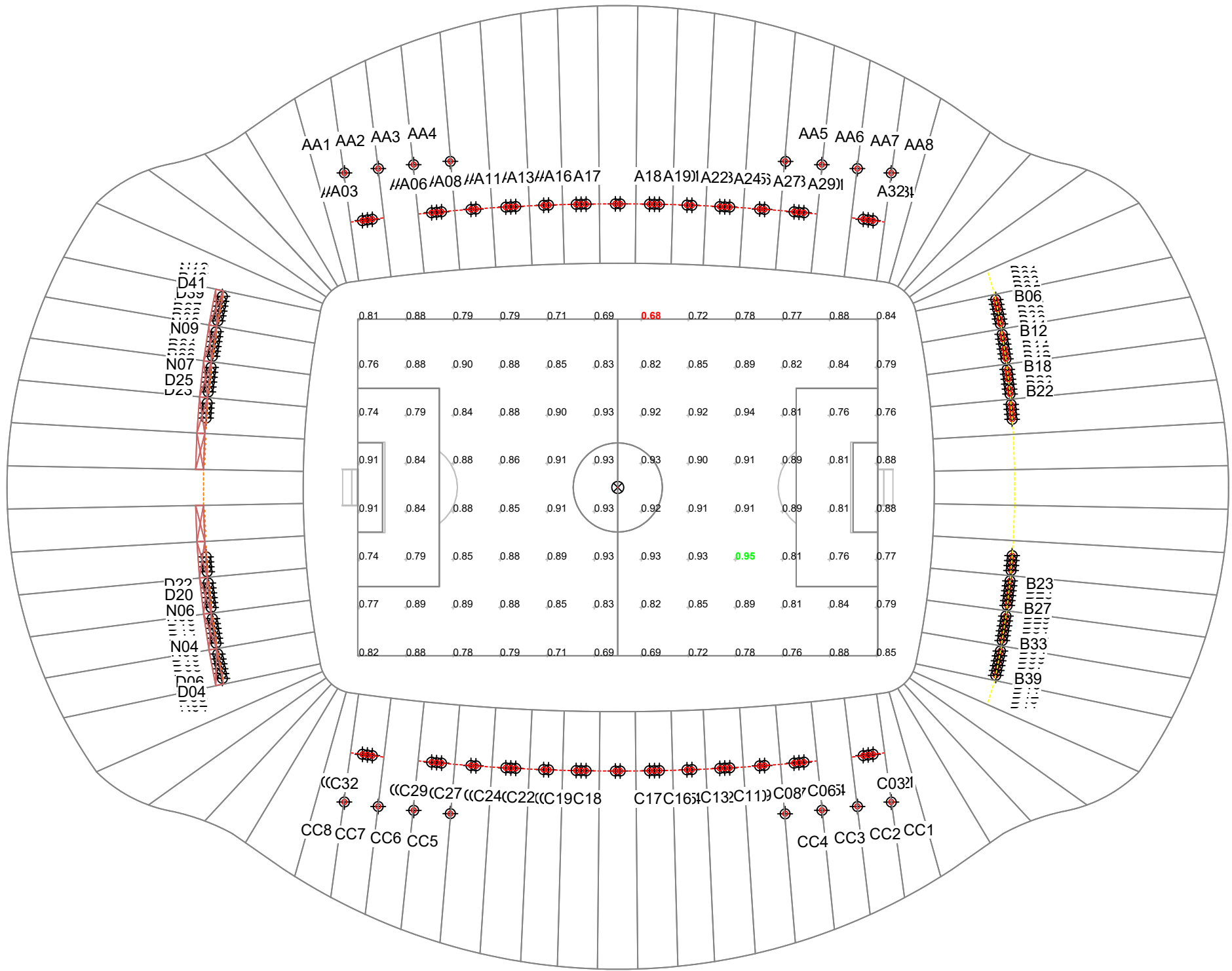
Illumination Summary	
MAINTAINED VERTICAL LUX: 90° TIR	
Entire Grid	
Scan Average	0.84
Maximum	1
Guaranteed Minimum	0.6
Minimum	1
Min/Avg	0.81
Min/Max	0.72
UG (adjacent pts)	1.23
CU	0.66
No. of Points	96
LUMINAIRE INFORMATION	
Applied Circuits	A,B,C
No. of Luminaires	216
Total Load	306.84 kW

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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.

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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.



SCALE IN METERS 1 : 1000

0m 50m 100m
ENGINEERED DESIGN By: C.Castaneda • File #223612D • 07-Nov-24

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



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Grid Summary	
Name	01 Etihad Stadium
Size	105.0m x 68.0m
Spacing	9.5m
Height	1.0m above grade

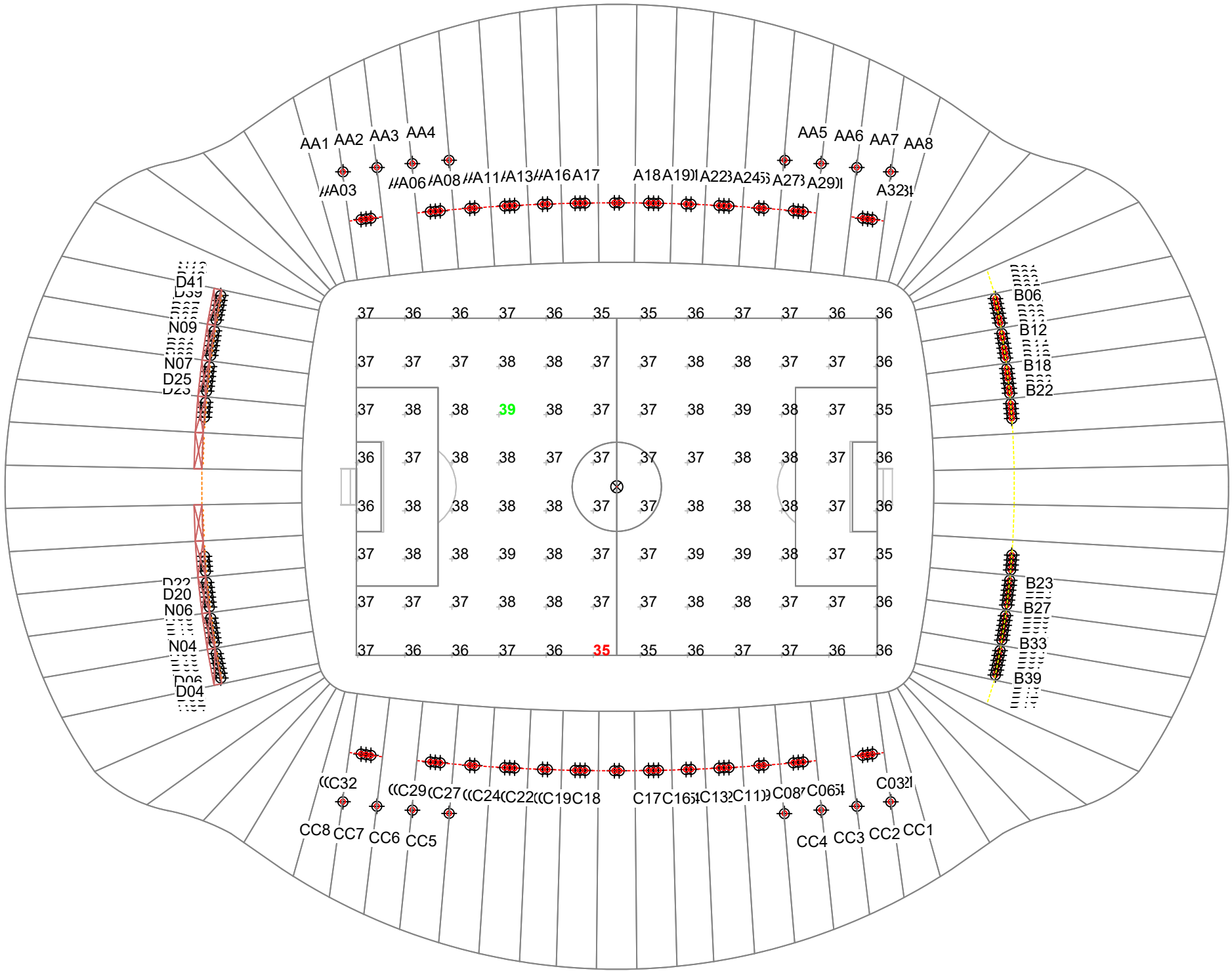
Illumination Summary	
MAINTAINED GLARE RATING: Max Reading	
Entire Grid	
Scan Average	37.09
Guaranteed Maximum	50
Maximum	39
Minimum	35
Min/Avg	0.93
Min/Max	0.89
UG (adjacent pts)	1.07
CU	0.66
No. of Points	96
LUMINAIRE INFORMATION	
Applied Circuits	A,B,C
No. of Luminaires	216
Total Load	306.84 kW

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.

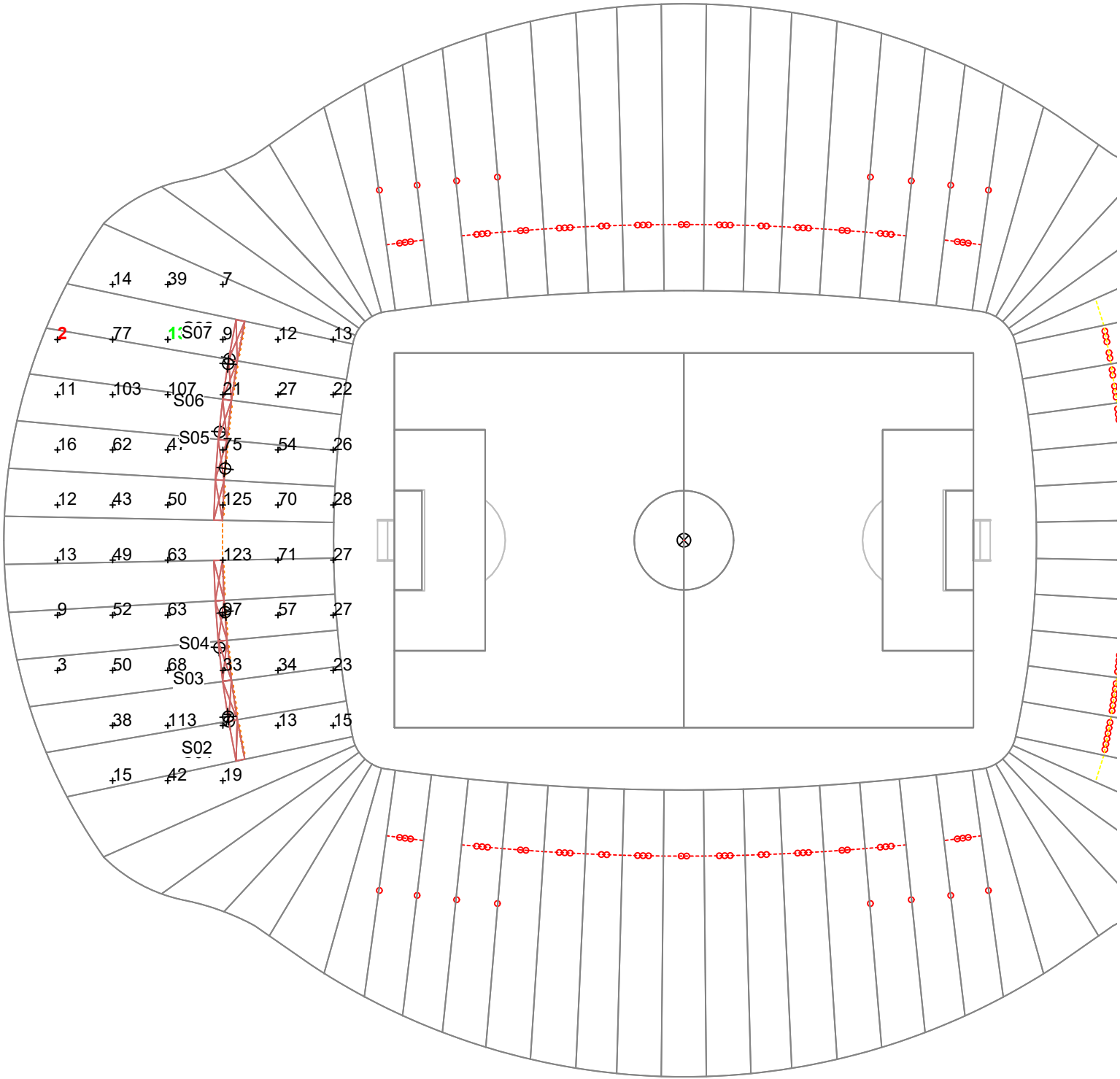
Installation Requirements: Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.



Equipment List For Areas Shown

Pole				Luminaires				
QTY	LOCATION	SIZE	GRADE ELEVATION	ABOVE GRADE LEVEL	LUMINAIRE TYPE	QTY/POLE	THIS GRID	OTHER GRIDS
3	S01-S02 S07		32.44m	32.44m	TLC-LED-550	1	1	0
1	S03		34.30m	34.30m	TLC-LED-550	1	1	0
2	S04-S05		34.70m	34.70m	TLC-LED-550	1	1	0
1	S06		34.40m	34.40m	TLC-LED-550	1	1	0
1	S08		32.90m	32.90m	TLC-LED-550	1	1	0
8	Totals					8	8	0

*Above Grade level relative to the field



MCFC Etihad Stadium North Stand Renovat

Manchester,North West

Grid Summary	
Name	Stand
Spacing	10.0m
Height	33.0m above grade

Illumination Summary	
	MAINTAINED HORIZONTAL LUX
	Entire Grid
Scan Average	43.92
Maximum	130
Minimum	2
Min/Avg	0.03
Min/Max	0.01
UG (adjacent pts)	0.00
CU	0.46
No. of Points	53
LUMINAIRE INFORMATION	
Applied Circuits	D
No. of Luminaires	8
Total Load	4.32 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.

SCALE IN METERS 1 : 1000



ENGINEERED DESIGN By: C.Castaneda • File #223612D • 07-Nov-24

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



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ILLUMINATION SUMMARY

Equipment Layout

INCLUDES:
· Etihad Stadium

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

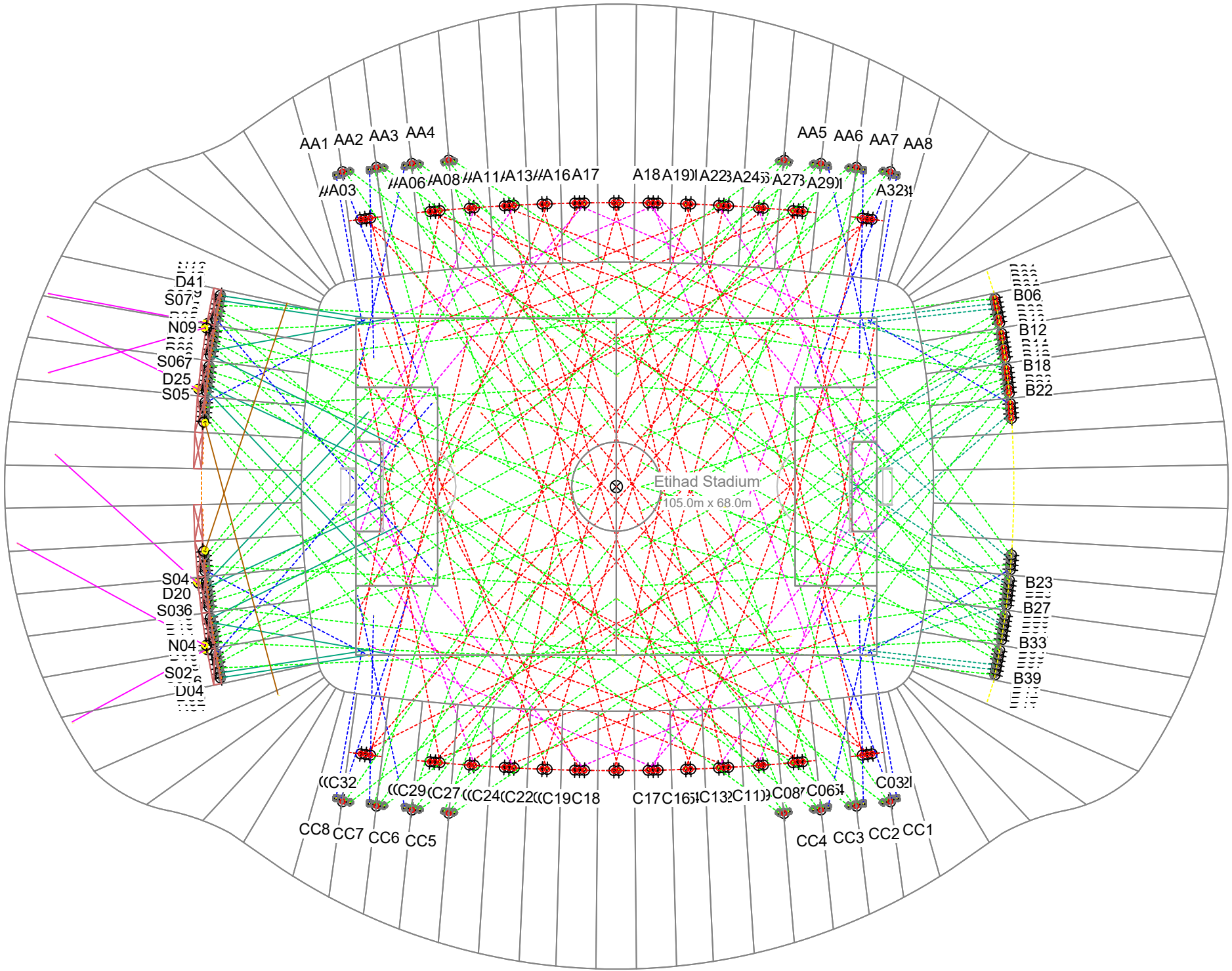
Installation Requirements: Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.

Equipment List For Areas Shown

Pole				Luminaires		
QTY	LOCATION	SIZE	GRADE ELEVATION	ABOVE GRADE LEVEL	LUMINAIRE TYPE	QTY/POLE
12	A01-A03 A32-A34 C01-C03 C32-C34		34.00m	34.00m	TLC-LED-1400NB	1
12	A04-A06 A29-A31 C04-C06 C29-C31		36.75m	36.75m	TLC-LED-1400NB	1
8	A07-A08 A27-A28 C07-C08 C27-C28		37.60m	37.60m	TLC-LED-1400NB	1
12	A09-A11 A24-A26 C09-C11 C24-C26		38.30m	38.30m	TLC-LED-1400NB	1
8	A12-A13 A22-A23 C12-C13 C22-C23		38.65m	38.65m	TLC-LED-1400NB	1
12	A14-A16 A19-A21 C14-C16 C19-C21		39.00m	39.00m	TLC-LED-1400NB	1
4	A17-A18 C17-C18		39.30m	39.30m	TLC-LED-1400NB	1
4	AA1 AA8 CC1 CC8		31.00m	31.00m	TLC-LED-1500	4
4	AA2 AA7 CC2 CC7		32.30m	32.30m	TLC-LED-1500	4
4	AA3 AA6 CC3 CC6		33.50m	33.50m	TLC-LED-1500	4
4	AA4-AA5 CC4-CC5		34.60m	34.60m	TLC-LED-1500	3
12	B01-B06 B39-B44		33.40m	33.40m	TLC-LED-1500	1
12	B07-B12 B33-B38		34.25m	34.25m	TLC-LED-1500	1
12	B13-B18 B27-B32		35.00m	35.00m	TLC-LED-1500	1
8	B19-B26		35.45m	35.45m	TLC-LED-1500	1
7	D03-D06 D42 N01-N02		32.44m	32.44m	TLC-LED-1500	1
6	D07-D10 N03-N04		33.67m	33.67m	TLC-LED-1500	1
6	D13-D16 N05-N06		34.38m	34.38m	TLC-LED-1500	1
8	D19-D26		34.70m	34.70m	TLC-LED-1500	1
6	D29-D32 N07-N08		34.47m	34.47m	TLC-LED-1500	1
6	D35-D38 N09-N10		33.55m	33.55m	TLC-LED-1500	1
1	D39		32.89m	32.89m	TLC-LED-1500	1
1	D40		32.74m	32.74m	TLC-LED-1500	1
1	D41		32.59m	32.59m	TLC-LED-1500	1
1	N11		32.29m	32.29m	TLC-LED-1500	1
1	N12		32.14m	32.14m	TLC-LED-1500	1
3	S01-S02 S07		32.44m	32.44m	TLC-LED-550	1
1	S03		34.30m	34.30m	TLC-LED-550	1
2	S04-S05		34.70m	34.70m	TLC-LED-550	1
1	S06		34.40m	34.40m	TLC-LED-550	1
1	S08		32.90m	32.90m	TLC-LED-550	1
180	Totals					224

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SCALE IN METERS 1 : 1000

0m 50m 100m

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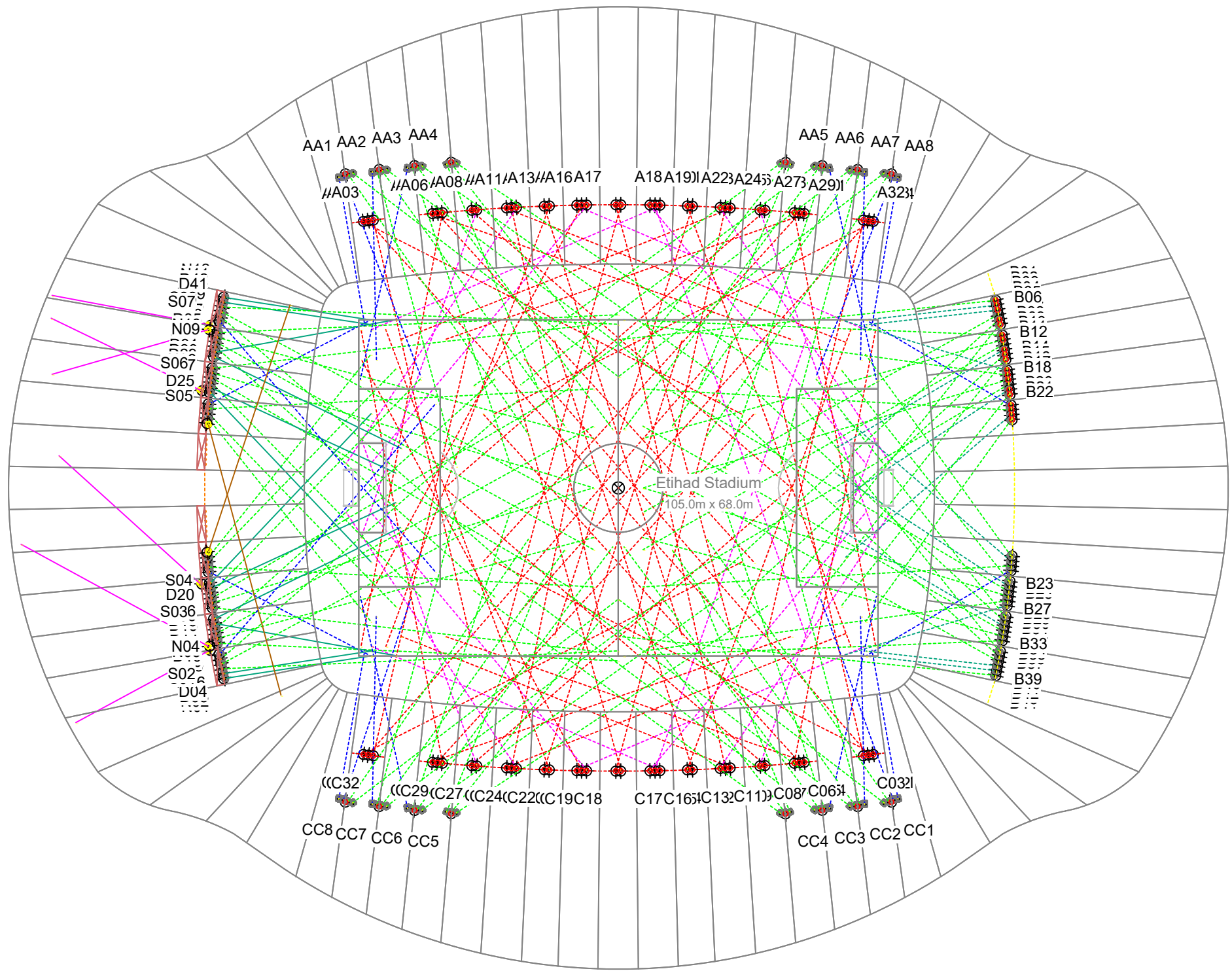
Pole location(s) ⊕ dimensions are relative to 0,0 reference point(s) ⊗

Equipment Layout

INCLUDES:
• Etihad Stadium

Single Luminaire Amperage Draw Chart

Driver Specifications (.90 min power factor)	Line Amperage Per Luminaire (max draw)					
	220 (50)	230 (50)	240 (50)	380 (50)	400 (50)	415 (50)
Single Phase Voltage						
TLC-LED-1400	7.4	7.1	6.8	4.3	4.1	3.9
TLC-LED-1500	8.1	7.7	7.4	4.7	4.4	4.3
TLC-LED-550	3.0	2.9	2.8	1.8	1.7	1.6



SCALE IN METERS 1 : 1000



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to 0,0 reference point(s) ⊗

NOTES:



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Zone Description	Circuits
Zone1	A,B,C
Zone2	D

Pole ID	Dimensioned From	Pole Location		Light Bank Mounting Height	Reflector NEMA Type	Number	Aiming Point			Aiming Angle		Circuit
		X	Y				X	Y	Z	Hor	Ver	
A01	Etihad Stadium	-51.55	53.88	34.00	2	77	24.91	14.96	0.00	L 55.6	21.22	B
A02	Etihad Stadium	-50.56	54.02	34.00	2	78	19.91	-25.08	0.00	L 34.2	17.46	B
A03	Etihad Stadium	-49.57	54.15	34.00	2	79	-30.03	-30.01	0.00	L 5.6	21.10	B
A04	Etihad Stadium	-37.59	55.47	36.75	2	84	35.06	30.00	0.00	L 65.5	25.10	B
A05	Etihad Stadium	-36.59	55.56	36.75	2	85	27.48	-15.10	0.00	L 37.0	20.72	A
A06	Etihad Stadium	-35.60	55.65	36.75	2	86	-52.03	-32.02	0.00	R 15.9	22.03	A
A07	Etihad Stadium	-29.64	56.14	37.60	2	91	34.97	0.03	0.00	L 44.8	23.34	A
A08	Etihad Stadium	-28.64	56.22	37.60	3	92	-52.04	-10.04	0.00	R 23.7	27.74	A
A09	Etihad Stadium	-22.61	56.61	38.30	2	97	45.99	29.44	0.00	L 65.3	27.01	B
A10	Etihad Stadium	-21.61	56.66	38.30	2	98	-3.01	-30.03	0.00	L 8.9	23.00	B
A11	Etihad Stadium	-20.61	56.71	38.30	3	99	-55.02	4.99	0.00	R 36.9	31.22	B
A12	Etihad Stadium	-14.98	56.97	38.65	2	103	12.96	-30.07	0.00	L 15.7	22.57	B
A13	Etihad Stadium	-13.98	57.01	38.65	2	104	-47.03	-32.06	0.00	R 22.5	21.79	A
A14	Etihad Stadium	-8.41	57.17	39.00	3	105	49.99	31.98	0.00	L 65.8	31.07	A
A15	Etihad Stadium	-7.41	57.19	39.00	2	106	-52.03	-24.98	0.00	R 29.5	22.29	A
A16	Etihad Stadium	-6.41	57.20	39.00	3	107	-50.15	4.81	0.00	R 40.9	29.33	A
A17	Etihad Stadium	-0.50	57.25	39.30	2	108	23.03	-30.04	0.00	L 15.1	23.14	B
A18	Etihad Stadium	0.50	57.25	39.30	2	109	-23.03	-30.04	0.00	R 15.1	23.14	B
A19	Etihad Stadium	6.41	57.20	39.00	3	110	50.15	4.81	0.00	L 40.9	29.33	B
A20	Etihad Stadium	7.41	57.19	39.00	3	111	37.97	-29.98	0.00	L 20.4	22.54	B
A21	Etihad Stadium	8.41	57.17	39.00	3	112	-49.99	31.98	0.00	R 65.8	31.07	A
A22	Etihad Stadium	13.98	57.01	38.65	2	113	47.03	-32.06	0.00	L 22.5	21.79	A
A23	Etihad Stadium	14.98	56.97	38.65	2	114	-12.96	-30.07	0.00	R 15.7	22.57	A
A24	Etihad Stadium	20.61	56.71	38.30	3	118	55.02	4.99	0.00	L 36.9	31.22	A
A25	Etihad Stadium	21.61	56.66	38.30	2	119	3.01	-30.03	0.00	R 8.9	23.00	B
A26	Etihad Stadium	22.61	56.61	38.30	2	120	-44.04	30.03	0.00	R 65.2	27.67	B
A27	Etihad Stadium	28.64	56.22	37.60	3	125	52.04	-10.04	0.00	L 23.7	27.74	B
A28	Etihad Stadium	29.64	56.14	37.60	2	126	-35.12	0.03	0.00	R 44.9	23.31	B
A29	Etihad Stadium	35.60	55.65	36.75	2	131	52.03	-32.02	0.00	L 15.9	22.03	A
A30	Etihad Stadium	36.59	55.56	36.75	2	132	-27.48	-15.10	0.00	R 37.0	20.72	A
A31	Etihad Stadium	37.59	55.47	36.75	2	133	-35.06	30.00	0.00	R 65.5	25.10	A
A32	Etihad Stadium	49.57	54.15	34.00	2	138	30.03	-30.01	0.00	R 5.6	21.10	A
A33	Etihad Stadium	50.56	54.02	34.00	2	139	-19.91	-25.08	0.00	R 34.2	17.46	B
A34	Etihad Stadium	51.55	53.88	34.00	2	140	-25.11	14.96	0.00	R 55.7	21.18	B
AA1	Etihad Stadium	-55.19	63.50	31.00	4	80	-51.26	32.77	0.00	R 5.7	45.00	A
					3	83	-0.05	22.54	0.00	L 36.9	24.33	A
					4	81	-39.96	22.53	0.00	L 5.4	35.08	A
					3	82	-18.09	10.68	0.00	L 19.1	25.48	A
AA2	Etihad Stadium	-48.35	64.39	32.30	4	87	-48.93	25.99	0.00	R 6.6	40.00	B
					3	90	10.18	21.46	0.00	L 45.3	24.06	B
					3	88	-32.76	4.42	0.00	L 7.2	27.29	B
					3	89	-10.80	12.49	0.00	L 27.8	26.61	B
AA3	Etihad Stadium	-41.22	65.16	33.50	4	93	-52.18	21.91	0.00	R 19.4	37.00	A
					3	96	20.79	21.93	0.00	L 47.7	23.98	A
					3	94	-21.61	3.96	0.00	L 11.4	27.28	A
					3	95	-1.15	11.90	0.00	L 29.9	26.55	A
AA4	Etihad Stadium	-33.81	65.83	34.60	3	100	-16.31	20.31	0.00	L 16.4	35.00	B
					3	102	30.36	23.72	0.00	L 50.6	24.25	B
					3	101	-3.90	27.01	0.00	L 31.9	35.00	B
AA5	Etihad Stadium	33.89	65.82	34.60	3	115	-29.32	20.59	0.00	R 48.2	23.98	B
					3	117	16.38	20.30	0.00	R 16.4	35.00	B
					3	116	3.86	27.10	0.00	R 32.1	35.00	B
AA6	Etihad Stadium	41.21	65.16	33.50	3	121	-19.78	20.87	0.00	R 46.6	24.04	A
					4	124	52.17	21.91	0.00	L 19.4	37.00	A
					3	122	1.14	11.90	0.00	R 29.9	26.55	A
					3	123	21.61	3.96	0.00	R 11.4	27.28	A
AA7	Etihad Stadium	48.38	64.37	32.30	3	127	-10.14	21.44	0.00	R 45.3	24.06	B
					4	130	48.97	25.97	0.00	L 6.6	40.00	B
					3	128	10.84	12.47	0.00	R 27.8	26.61	B
					3	129	32.80	4.40	0.00	R 7.2	27.29	B
AA8	Etihad Stadium	55.22	63.50	31.00	3	134	0.08	22.54	0.00	R 36.9	24.33	A
					4	137	51.29	32.77	0.00	L 5.7	45.00	A
					3	135	17.90	10.53	0.00	R 19.2	25.39	A
					4	136	39.99	22.52	0.00	R 5.4	35.08	A
B01	Etihad Stadium	76.32	37.94	33.40	3	141	-0.04	30.01	0.00	R 5.1	23.31	B
B02	Etihad Stadium	76.50	36.96	33.40	4	142	50.00	34.00	0.00	R 4.7	51.27	B
B03	Etihad Stadium	76.70	35.98	33.40	4	143	50.00	33.00	0.00	R 4.7	51.07	B
B04	Etihad Stadium	76.88	35.00	33.40	3	144	4.96	-4.99	0.00	L 18.1	21.89	B
B05	Etihad Stadium	77.07	34.01	33.40	3	145	19.99	-18.00	0.00	L 31.4	23.18	A
B06	Etihad Stadium	77.25	33.03	33.40	3	146	36.99	-17.00	0.00	L 40.3	27.25	A
B07	Etihad Stadium	77.63	30.92	34.25	3	147	0.99	34.00	0.00	R 11.3	23.86	A
B08	Etihad Stadium	77.76	29.93	34.25	3	148	4.97	10.03	0.00	L 6.3	24.21	A
B09	Etihad Stadium	77.91	28.94	34.25	3	149	4.98	-12.49	0.00	L 20.7	22.01	B
B10	Etihad Stadium	78.07	27.96	34.25	4	150	43.99	8.01	0.00	L 21.5	40.73	B
B11	Etihad Stadium	78.21	26.97	34.25	3	151	24.98	-22.00	0.00	L 33.7	25.13	B
B12	Etihad Stadium	78.36	25.98	34.25	3	152	39.98	-22.00	0.00	L 42.5	28.91	B
B13	Etihad Stadium	78.63	23.84	35.00	4	153	44.98	34.00	0.00	R 24.0	44.70	A
B14	Etihad Stadium	78.74	22.85	35.00	3	154	4.99	33.00	0.00	R 14.9	24.98	A
B15	Etihad Stadium	78.85	21.86	35.00	3	155	4.97	0.02	0.00	L 9.5	24.24	A
B16	Etihad Stadium	78.96	20.86	35.00	3	156	9.98	-19.98	0.00	L 23.7	23.39	A
B17	Etihad Stadium	79.09	19.87	35.00	4	157	43.98	-2.99	0.00	L 26.2	39.67	B
B18	Etihad Stadium	79.20	18.88	35.00	3	158	44.99	-23.99	0.00	L 44.6	32.31	B
B19	Etihad Stadium	79.40	16.77	35.45	4	159	50.00	34.00	0.00	R 35.6	45.94	B
B20	Etihad Stadium	79.48	15.77	35.45	3	160	4.98	20.01	0.00	R 8.3	25.21	B



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Zone Description	Circuits
Zone1	A,B,C
Zone2	D

Pole ID	Dimensioned From	Pole Location		Light Bank Mounting Height	Reflector NEMA Type	Number	Aiming Point			Aiming Angle		Circuit
		X	Y				X	Y	Z	Hor	Ver	
B19	Etihad Stadium	79.40	16.77	35.45	4	159	50.00	34.00	0.00	R 35.6	45.94	B
B20	Etihad Stadium	79.48	15.77	35.45	3	160	4.98	20.01	0.00	R 8.3	25.21	B
B21	Etihad Stadium	79.55	14.77	35.45	4	161	45.99	-14.00	0.00	L 35.8	38.51	A
B22	Etihad Stadium	79.62	13.78	35.45	3	162	49.99	-26.99	0.00	L 49.2	34.88	A
B23	Etihad Stadium	79.62	-13.78	35.45	3	163	49.99	26.99	0.00	R 49.2	34.88	A
B24	Etihad Stadium	79.55	-14.77	35.45	4	164	45.99	14.00	0.00	R 35.8	38.51	A
B25	Etihad Stadium	79.48	-15.77	35.45	3	165	4.98	-20.01	0.00	L 8.3	25.21	B
B26	Etihad Stadium	79.40	-16.77	35.45	4	166	50.00	-34.00	0.00	L 35.6	45.94	B
B27	Etihad Stadium	79.20	-18.88	35.00	3	167	44.99	23.99	0.00	R 44.6	32.31	B
B28	Etihad Stadium	79.09	-19.87	35.00	4	168	43.98	2.99	0.00	R 26.2	39.67	B
B29	Etihad Stadium	78.96	-20.86	35.00	3	169	9.98	19.98	0.00	R 23.7	23.39	A
B30	Etihad Stadium	78.85	-21.86	35.00	3	170	4.97	-0.02	0.00	R 9.5	24.24	A
B31	Etihad Stadium	78.74	-22.85	35.00	3	171	4.99	-33.00	0.00	L 14.9	24.98	A
B32	Etihad Stadium	78.63	-23.84	35.00	4	172	44.98	-34.00	0.00	L 24.0	44.70	A
B33	Etihad Stadium	78.36	-25.98	34.25	3	173	39.98	22.00	0.00	R 42.5	28.91	B
B34	Etihad Stadium	78.21	-26.97	34.25	3	174	24.98	22.00	0.00	R 33.7	25.13	B
B35	Etihad Stadium	78.07	-27.96	34.25	4	175	43.99	-8.01	0.00	R 21.5	40.73	B
B36	Etihad Stadium	77.91	-28.94	34.25	3	176	4.98	12.49	0.00	R 20.7	22.01	B
B37	Etihad Stadium	77.76	-29.93	34.25	3	177	4.97	-10.03	0.00	R 6.3	24.21	A
B38	Etihad Stadium	77.63	-30.92	34.25	3	178	0.99	-34.00	0.00	L 11.3	23.86	A
B39	Etihad Stadium	77.25	-33.03	33.40	3	179	36.99	17.00	0.00	R 40.3	27.25	A
B40	Etihad Stadium	77.07	-34.01	33.40	3	180	19.99	18.00	0.00	R 31.4	23.18	A
B41	Etihad Stadium	76.88	-35.00	33.40	3	181	4.96	4.99	0.00	R 18.1	21.89	B
B42	Etihad Stadium	76.70	-35.98	33.40	4	182	50.00	-33.00	0.00	L 4.7	51.07	B
B43	Etihad Stadium	76.50	-36.96	33.40	4	183	50.00	-34.00	0.00	L 4.7	51.27	B
B44	Etihad Stadium	76.32	-37.94	33.40	3	184	-0.04	-30.01	0.00	L 5.1	23.31	B
C01	Etihad Stadium	51.55	-53.88	34.00	2	185	-25.01	-14.97	0.00	L 55.6	21.20	A
C02	Etihad Stadium	50.56	-54.02	34.00	2	186	-19.03	26.01	0.00	L 33.6	17.44	A
C03	Etihad Stadium	49.57	-54.15	34.00	2	187	30.03	30.01	0.00	L 5.6	21.10	A
C04	Etihad Stadium	37.59	-55.47	36.75	2	192	-35.06	-30.00	0.00	L 65.5	25.10	A
C05	Etihad Stadium	36.59	-55.56	36.75	2	193	-27.48	15.10	0.00	L 37.0	20.72	B
C06	Etihad Stadium	35.60	-55.65	36.75	2	194	52.03	32.02	0.00	R 15.9	22.03	B
C07	Etihad Stadium	29.64	-56.14	37.60	2	199	-35.09	-0.02	0.00	L 44.9	23.32	B
C08	Etihad Stadium	28.64	-56.22	37.60	3	200	52.04	10.04	0.00	R 23.7	27.74	B
C09	Etihad Stadium	22.61	-56.61	38.30	2	205	-44.02	-29.98	0.00	L 65.1	27.66	A
C10	Etihad Stadium	21.61	-56.66	38.30	2	206	3.01	30.03	0.00	L 8.9	23.00	A
C11	Etihad Stadium	20.61	-56.71	38.30	3	207	55.02	-4.99	0.00	R 36.9	31.22	A
C12	Etihad Stadium	14.98	-56.97	38.65	2	211	-12.96	30.07	0.00	L 15.7	22.57	A
C13	Etihad Stadium	13.98	-57.01	38.65	2	212	47.03	32.06	0.00	R 22.5	21.79	B
C14	Etihad Stadium	8.41	-57.17	39.00	3	213	-49.99	-31.98	0.00	L 65.8	31.07	B
C15	Etihad Stadium	7.41	-57.19	39.00	3	214	37.98	30.04	0.00	R 20.3	22.53	B
C16	Etihad Stadium	6.41	-57.20	39.00	3	215	50.15	-4.81	0.00	R 40.9	29.33	B
C17	Etihad Stadium	0.50	-57.25	39.30	2	216	-23.46	30.04	0.00	L 15.4	23.12	A
C18	Etihad Stadium	-0.50	-57.25	39.30	2	1	23.03	30.04	0.00	R 15.1	23.14	A
C19	Etihad Stadium	-6.41	-57.20	39.00	3	2	-50.15	-4.81	0.00	L 40.9	29.33	A
C20	Etihad Stadium	-7.41	-57.19	39.00	2	3	-52.00	26.03	0.00	L 29.2	22.10	A
C21	Etihad Stadium	-8.41	-57.17	39.00	3	4	49.99	-31.98	0.00	R 65.8	31.07	B
C22	Etihad Stadium	-13.98	-57.01	38.65	2	5	-47.04	32.02	0.00	L 22.6	21.80	B
C23	Etihad Stadium	-14.98	-56.97	38.65	2	6	12.96	30.07	0.00	R 15.7	22.57	B
C24	Etihad Stadium	-20.61	-56.71	38.30	3	10	-55.02	-4.99	0.00	L 36.9	31.22	B
C25	Etihad Stadium	-21.61	-56.66	38.30	2	11	-4.02	30.03	0.00	R 8.3	23.05	A
C26	Etihad Stadium	-22.61	-56.61	38.30	2	12	45.99	-29.44	0.00	R 65.3	27.01	A
C27	Etihad Stadium	-28.64	-56.22	37.60	3	17	-52.04	10.04	0.00	L 23.7	27.74	A
C28	Etihad Stadium	-29.64	-56.14	37.60	2	18	34.95	0.16	0.00	R 44.7	23.32	A
C29	Etihad Stadium	-35.60	-55.65	36.75	2	23	-52.03	32.02	0.00	L 15.9	22.03	B
C30	Etihad Stadium	-36.59	-55.56	36.75	2	24	27.53	15.07	0.00	R 37.0	20.71	B
C31	Etihad Stadium	-37.59	-55.47	36.75	2	25	35.06	-30.00	0.00	R 65.5	25.10	B
C32	Etihad Stadium	-49.57	-54.15	34.00	2	30	-30.03	30.01	0.00	R 5.6	21.10	B
C33	Etihad Stadium	-50.56	-54.02	34.00	2	31	18.98	26.00	0.00	R 33.5	17.45	A
C34	Etihad Stadium	-51.55	-53.88	34.00	2	32	24.99	-14.97	0.00	R 55.6	21.21	A
CC1	Etihad Stadium	55.24	-63.54	31.00	4	188	51.30	-32.81	0.00	R 5.7	45.00	B
					3	191	0.10	-22.57	0.00	L 36.9	24.33	B
					4	189	40.98	-22.59	0.00	L 4.2	35.31	B
					3	190	18.01	-10.50	0.00	L 19.1	25.39	B
CC2	Etihad Stadium	48.39	-64.42	32.30	4	195	48.98	-26.01	0.00	R 6.6	40.00	A
					3	198	-10.13	-21.48	0.00	L 45.3	24.06	A
					3	196	32.81	-4.45	0.00	L 7.2	27.29	A
					3	197	10.85	-12.52	0.00	L 27.8	26.61	A
CC3	Etihad Stadium	41.23	-65.18	33.50	4	201	52.19	-21.94	0.00	R 19.4	37.00	B
					3	204	-19.76	-20.90	0.00	L 46.6	24.04	B
					3	202	21.62	-3.98	0.00	L 11.4	27.28	B
					3	203	1.16	-11.92	0.00	L 29.9	26.55	B
CC4	Etihad Stadium	33.80	-65.91	34.60	3	208	16.29	-20.39	0.00	L 16.4	35.00	A
					3	210	-29.41	-20.68	0.00	L 48.2	23.98	A
					3	209	3.83	-27.13	0.00	L 32.0	35.00	A
CC5	Etihad Stadium	-33.80	-65.85	34.60	3	7	30.44	-23.66	0.00	R 50.6	24.22	B
					3	9	-16.30	-20.33	0.00	R 16.4	35.00	B
					3	8	-3.85	-27.07	0.00	R 32.0	35.00	B
CC6	Etihad Stadium	-41.20	-65.20	33.50	3	13	20.82	-21.99	0.00	R 47.7	23.98	A
					4	16	-52.16	-21.95	0.00	L 19.4	37.00	A
					3	14	-1.13	-11.94	0.00	R 29.9	26.55	A
					3	15	-21.60	-4.00	0.00	R 11.4	27.28	A
CC7	Etihad Stadium	-48.37	-64.41	32.30	3	19	10.15	-21.48	0.00	R 45.3	24.06	B
					4	22	-48.96	-26.01	0.00	L 6.6	40.00	B



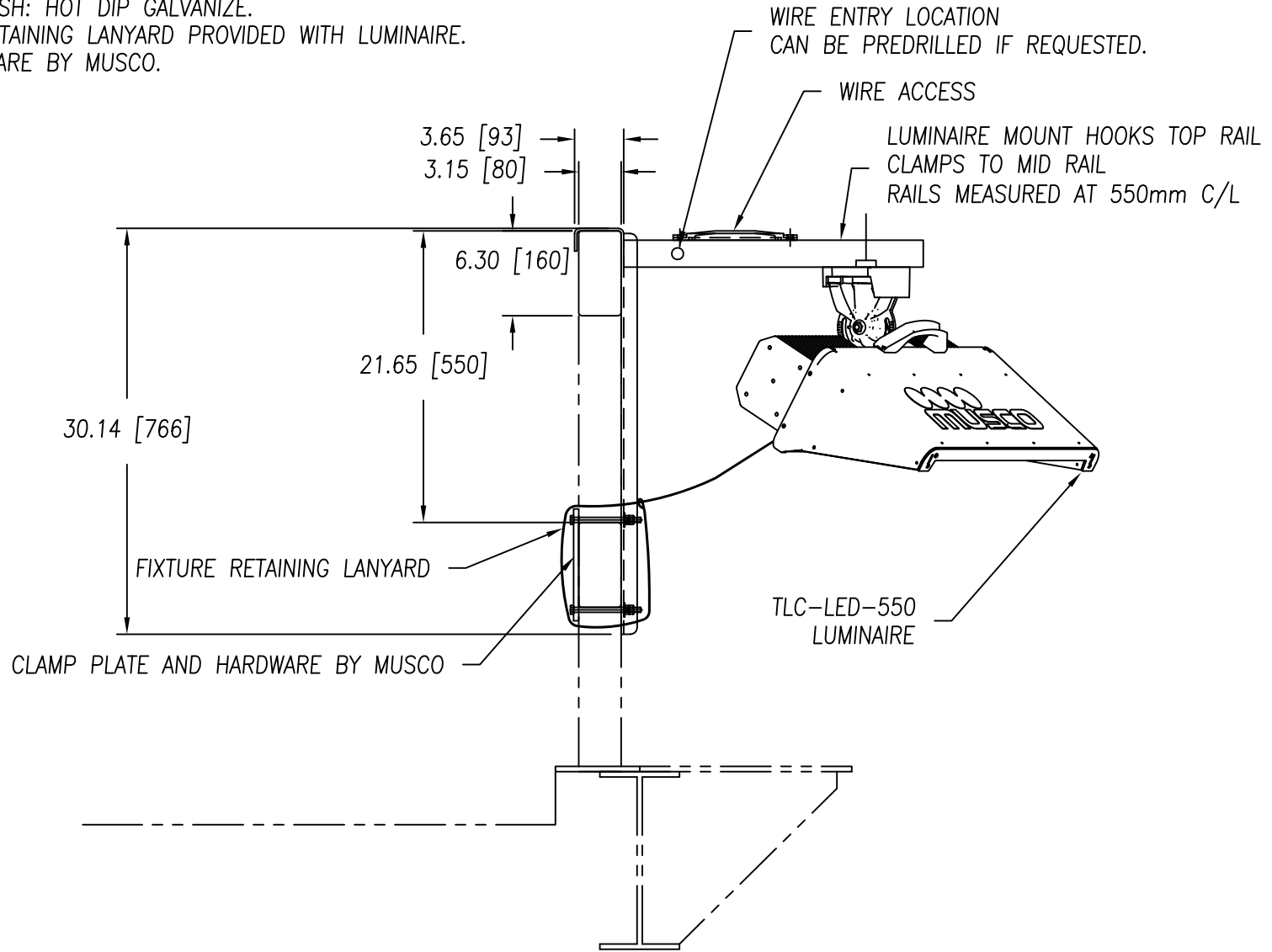
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Zone Description	Circuits
Zone1	A,B,C
Zone2	D

Pole ID	Dimensioned From	Pole Location		Light Bank Mounting Height	Reflector NEMA Type	Number	Aiming Point			Aiming Angle		Circuit
		X	Y				X	Y	Z	Hor	Ver	
CC7	Etihad Stadium	-48.37	-64.41	32.30	3	19	10.15	-21.48	0.00	R 45.3	24.06	B
					4	22	-48.96	-26.01	0.00	L 6.6	40.00	B
					3	20	-10.83	-12.52	0.00	R 27.8	26.61	B
					3	21	-32.79	-4.45	0.00	R 7.2	27.29	B
CC8	Etihad Stadium	-55.21	-63.52	31.00	3	26	-0.07	-22.56	0.00	R 36.9	24.33	A
					4	29	-51.27	-32.79	0.00	L 5.7	45.00	A
					3	27	-18.20	-10.41	0.00	R 18.9	25.41	A
					4	28	-42.02	-22.58	0.00	R 2.9	35.54	A
D03	Etihad Stadium	-80.20	-36.60	32.44	3	35	-0.10	-32.94	0.00	R 8.4	21.82	A
D04	Etihad Stadium	-80.39	-35.62	32.44	3	36	-4.96	4.99	0.00	L 17.3	20.54	A
D05	Etihad Stadium	-80.57	-34.64	32.44	3	37	-19.99	18.00	0.00	L 30.1	21.80	A
D06	Etihad Stadium	-80.76	-33.65	32.44	4	38	-36.99	17.00	0.00	L 38.3	25.62	A
D07	Etihad Stadium	-81.12	-31.43	33.67	3	39	-0.01	-34.98	0.00	R 11.5	22.33	B
D08	Etihad Stadium	-81.26	-30.44	33.67	3	40	-4.97	-10.03	0.00	L 6.0	22.89	B
D09	Etihad Stadium	-81.41	-29.46	33.67	3	41	-4.98	12.49	0.00	L 19.8	20.92	B
D10	Etihad Stadium	-81.57	-28.47	33.67	3	42	-25.02	22.03	0.00	L 32.9	23.73	B
D13	Etihad Stadium	-82.12	-24.25	34.38	3	45	-5.04	-33.00	0.00	R 13.5	23.70	A
D14	Etihad Stadium	-82.23	-23.26	34.38	3	46	-5.07	0.02	0.00	L 9.8	22.91	A
D15	Etihad Stadium	-82.34	-22.27	34.38	3	47	-10.05	20.07	0.00	L 23.4	22.12	A
D16	Etihad Stadium	-82.46	-21.27	34.38	3	48	-40.05	22.02	0.00	L 38.7	29.34	A
D19	Etihad Stadium	-82.90	-17.02	34.70	4	51	-50.00	-34.00	0.00	R 32.5	42.94	B
D20	Etihad Stadium	-82.97	-16.03	34.70	3	52	-4.98	-20.01	0.00	R 7.9	23.76	B
D21	Etihad Stadium	-83.05	-15.03	34.70	3	53	-45.01	24.03	0.00	L 40.9	32.24	B
D22	Etihad Stadium	-83.12	-14.03	34.70	3	54	-50.02	27.04	0.00	L 46.3	33.10	B
D23	Etihad Stadium	-83.12	14.03	34.70	3	55	-50.08	-26.99	0.00	R 46.3	33.13	B
D24	Etihad Stadium	-83.05	15.03	34.70	3	56	-45.01	-23.98	0.00	R 40.9	32.26	B
D25	Etihad Stadium	-82.97	16.03	34.70	3	57	-4.98	20.01	0.00	L 7.9	23.76	B
D26	Etihad Stadium	-82.90	17.02	34.70	4	58	-50.00	34.00	0.00	L 32.5	42.94	B
D29	Etihad Stadium	-82.45	21.27	34.47	3	61	-40.00	-21.98	0.00	R 38.7	29.40	A
D30	Etihad Stadium	-82.34	22.27	34.47	3	62	-10.00	-19.99	0.00	R 23.4	22.17	A
D31	Etihad Stadium	-82.23	23.26	34.47	3	63	-5.04	0.02	0.00	R 9.8	22.96	A
D32	Etihad Stadium	-82.12	24.25	34.47	3	64	-5.02	33.04	0.00	L 13.5	23.75	A
D35	Etihad Stadium	-81.56	28.47	33.55	3	67	-25.08	-21.99	0.00	R 32.9	23.68	B
D36	Etihad Stadium	-81.40	29.45	33.55	3	68	-4.98	-12.49	0.00	R 19.8	20.86	B
D37	Etihad Stadium	-81.25	30.44	33.55	3	69	-4.97	10.03	0.00	R 6.0	22.82	B
D38	Etihad Stadium	-81.11	31.43	33.55	3	70	-0.01	35.02	0.00	L 11.6	22.26	B
D39	Etihad Stadium	-80.75	33.65	32.89	4	71	-36.99	-17.00	0.00	R 38.3	25.94	A
D40	Etihad Stadium	-80.57	34.63	32.74	3	72	-19.99	-18.00	0.00	R 30.1	21.98	A
D41	Etihad Stadium	-80.38	35.62	32.59	3	73	-4.96	-4.99	0.00	R 17.3	20.63	A
D42	Etihad Stadium	-80.20	36.60	32.44	3	74	-0.04	33.10	0.00	L 8.5	21.81	A
N01	Etihad Stadium	-79.82	-38.56	32.44	4	33	-50.01	-33.96	0.00	R 2.2	46.92	C
N02	Etihad Stadium	-80.01	-37.58	32.44	4	34	-50.04	-32.99	0.00	R 2.3	46.77	C
N03	Etihad Stadium	-81.70	-27.48	33.67	4	43	-44.96	-33.93	0.00	R 19.1	41.87	C
N04	Etihad Stadium	-81.85	-26.49	33.67	4	44	-44.06	-7.99	0.00	L 17.2	38.46	C
N05	Etihad Stadium	-82.58	-20.28	34.38	4	49	-45.01	-2.97	0.00	L 17.8	39.53	C
N06	Etihad Stadium	-82.69	-19.29	34.38	4	50	-49.99	15.03	0.00	L 39.6	35.72	C
N07	Etihad Stadium	-82.69	19.29	34.47	4	59	-50.02	-14.96	0.00	R 39.5	35.83	C
N08	Etihad Stadium	-82.58	20.28	34.47	4	60	-45.06	3.03	0.00	R 17.8	39.66	C
N09	Etihad Stadium	-81.84	26.49	33.55	4	65	-43.93	8.01	0.00	R 17.1	38.29	C
N10	Etihad Stadium	-81.70	27.48	33.55	4	66	-44.99	34.02	0.00	L 19.2	41.78	C
N11	Etihad Stadium	-80.02	37.58	32.29	4	75	-50.04	33.03	0.00	L 2.4	46.63	C
N12	Etihad Stadium	-79.84	38.57	32.14	4	76	-50.04	33.95	0.00	L 2.2	46.66	C
S01	Project	-82.50	-32.85	32.44	6	217	-109.71	-47.44	33.35	L 18.4	-2.24	D
S02	Project	-82.64	-31.99	32.44	6	218	-120.79	-11.40	33.22	R 32.2	-1.42	D
S03	Project	-84.22	-19.45	34.30	6	219	-113.10	6.50	28.49	R 40.1	8.12	D
S04	Project	-83.18	-13.03	34.70	5	220	-66.46	37.07	4.65	L 64.2	29.45	D
S05	Project	-83.18	13.03	34.70	5	221	-68.22	-41.87	2.13	R 67.5	29.61	D
S06	Project	-84.15	19.67	34.40	6	222	-114.70	34.32	32.81	R 22.3	2.21	D
S07	Project	-82.64	31.99	32.44	6	223	-114.52	22.98	30.71	L 19.6	2.50	D
S08	Project	-82.40	32.89	32.90	6	224	-114.52	38.93	33.52	L 4.4	-1.61	D

GENERAL NOTES:

- 1) TLC-LED-550 LUMINAIRE WEIGHT 21 Kg EA.
- 2) TLC-LED-550 APPROX EPA 0.11 SQ. METER.
- 3) MOUNT WEIGHT: 9.6 Kg EA.
- 4) LUMINAIRE FINISH: POWDER COAT GRAY PER MUSCO MS-1023.
- 5) MOUNT FINISH: HOT DIP GALVANIZE.
- 6) FIXTURE RETAINING LANYARD PROVIDED WITH LUMINAIRE.
- 7) ALL HARDWARE BY MUSCO.



MANCHESTER CITY NORTH STAND

Mounting Concept

CORPORATE OFFICE:

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REVISIONS:

DATE: 11/6/24 BY: R.L. ADM A
CREATED FROM 194382X14

JOB NUMBER: 223612

DRAWN BY: ADM

CHECK BY:

REPRESENTATIVE:

SCALE: 1/12

DATE: 11/6/24

DRAWING NUMBER: 223612X1

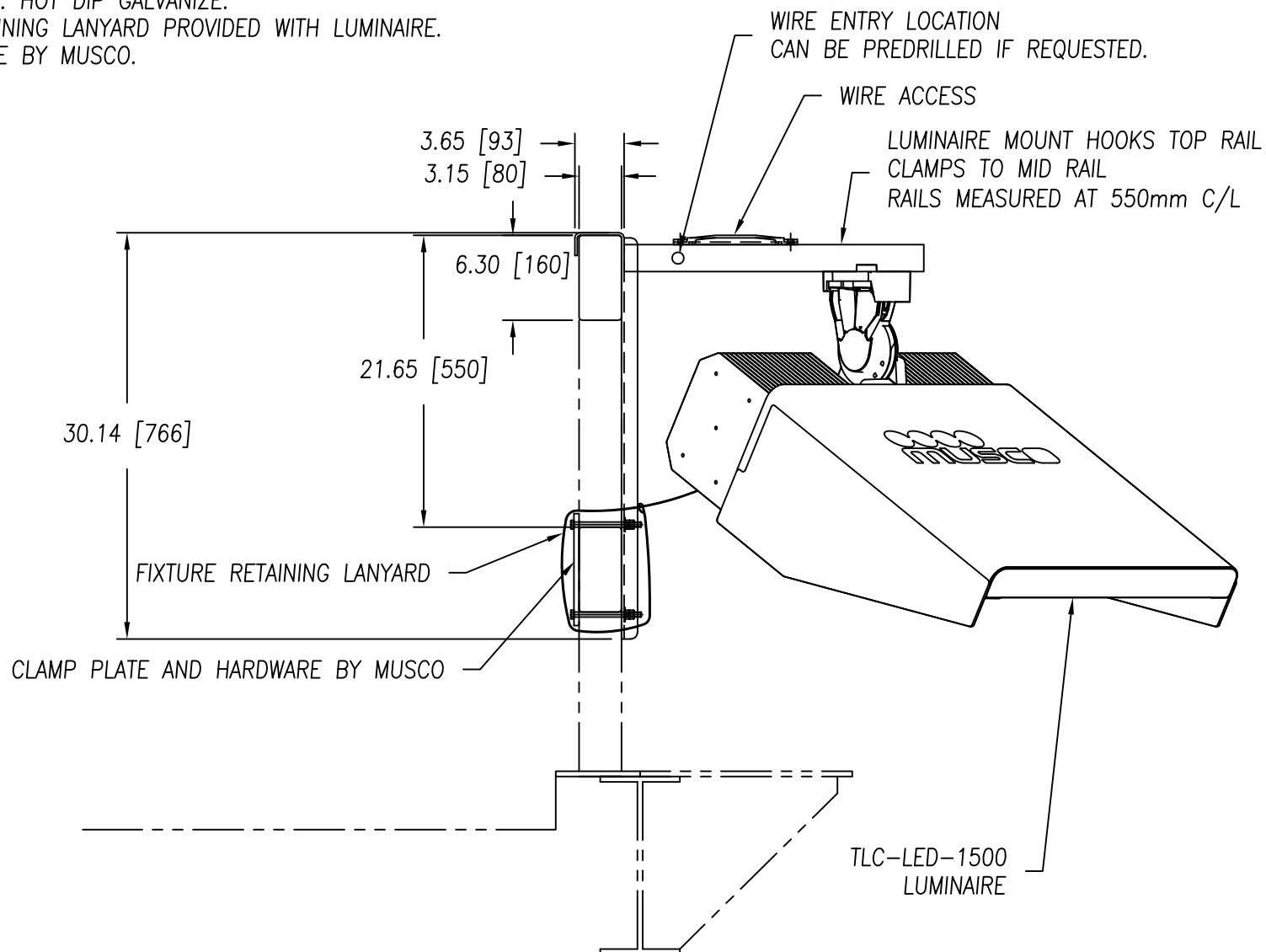
OF SHEETS

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GENERAL NOTES:

- 1) TLC-LED-1500 LUMINAIRE WEIGHT 31 Kg EA.
- 2) TLC-LED-1500 APPROX EPA 0.27 SQ. METER.
- 3) MOUNT WEIGHT: 9.5 Kg EA.
- 4) LUMINAIRE FINISH: POWDER COAT GRAY PER MUSCO MS-1023.
- 5) MOUNT FINISH: HOT DIP GALVANIZE.
- 6) FIXTURE RETAINING LANYARD PROVIDED WITH LUMINAIRE.
- 7) ALL HARDWARE BY MUSCO.



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Mounting Concept

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DATE:	BY:	R.L.	ADM	REVISIONS:
11/6/24	ADM	A		CREATED FROM 194382X14

JOB NUMBER:	223612
DRAWN BY:	ADM
CHECK BY:	
REPRESENTATIVE:	
SCALE:	1/12
DATE:	11/6/24
DRAWING NUMBER:	223612X2
OF	SHEETS