



SYDNEY CONSTRUCTION DIVISION

Electrical & Communications Contractors *Since 1910*

10-12 Clyde Street,
RYDALMERE NSW 2116

File:

20 February 2017

RE: WEST SYDNEY STADIUM, PARRAMATTA CONTROL OF OBTRUSIVE EFFECTS OF OUTDOOR LIGHTING

Outdoor lighting incorporated in the WSS project will be selected and installed to effectively control unwanted obtrusive effects on surrounding properties generally in accordance with the principles given in AS 4282, Control of the obtrusive effects of outdoor lighting.

Project site and usage conditions

The stadium is bounded by car parks, playing fields and park lands on three sides with the eastern side abutting O'Connell Street. There are no existing residential properties at the site boundaries. Screening by trees as part of the landscaping, will also contribute to limiting obtrusive lighting effects including glare.

The sporting venue is intended to operate for national and state football events – as well as adhoc sporting and concert functions – with an emphasis on weekends and weekend shoulders rather than mid-week nights. Maximum stadium lighting levels will occur during events providing live broadcasts with reduced lighting levels operating after events and up to curfew.

Car park lighting

Designed to AS/NZS 1158.3.1, Lighting for roads and public spaces, Category P11/P12 for safe pedestrian and vehicle movement the pole mounted lighting comprises flat glass luminaires producing no light above the horizontal plane in accordance with the principles of AS 4282.

Stadium sports lighting

Sports field lighting is required to meet stringent requirements for performance associated with high illuminance levels for colour television broadcasting, and to minimise shadowing and glare that adversely affect players. While AS4282 does not apply to sports lighting the following features of the equipment and installation will minimise obtrusive effects:

- 268 LED spotlights, mounted around the roof perimeter and under a fabric roof, are pointed onto the playing surface such that no upward light passes the roof perimeter and no lighting being directed towards neighbouring properties.
- The maximum lighting levels will occur during night time sport event which are of low frequency with reduced levels in training mode ;
- The arrangement provides a significantly reduction in the spill lighting from the option of lighting mounted on towers as used in the former Parramatta Oval installation.

Attachment A indicates the arrangement of the sports field lighting and a depiction of similar exiting installation. Note the under canopy location and the shielded effect achieved.

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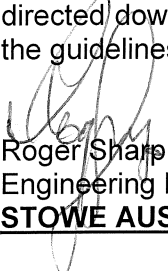
Façade lighting

Narrow beam colour changing uplights providing accent lighting are to be mounted on external columns on the north and east main public entry sides of the stadium to provide illumination of the underside of the fabric roof.

In accordance with the guidelines given in AS4282 the lighting is contained by the roof so as to control the upward lighting into the night sky.

Landscape pathway lighting

Pole mounted lights are to be placed along pedestrian and bicycle pathways to meet AS/NZS 1158.3.1 Category P lighting. Supplementary lighting may be provided at steps by means of lighting that is directed downwards so as to control obtrusive lighting above the horizontal plane in accordance with the guidelines given in AS 4282



Roger Sharp
Engineering Manager
STOWE AUSTRALIA PTY. LTD.

ATTACHMENT A – STADIUM SPORTS LIGHTING

Western Sydney Stadium

Parramatta, NSW

EQUIPMENT LAYOUT

INCLUDES:

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

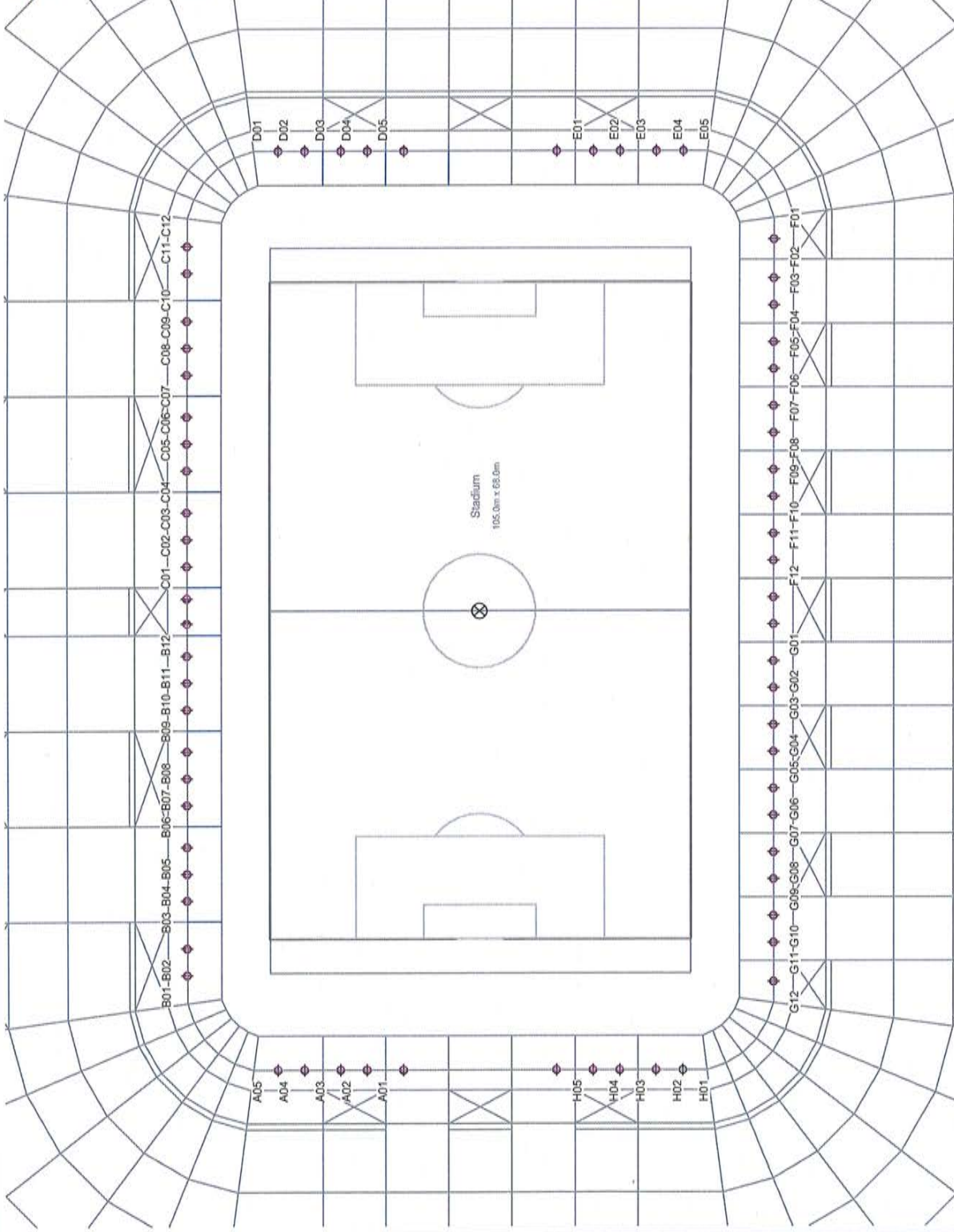
Installation Requirements: Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.

EQUIPMENT LIST FOR AREAS SHOWN

Qty	Location	Size	Color	Mounting	Luminaire	Unit	Page
64	A01, A02, A03, A04, A05, B01, B02, B03, B04, B05, B06, B07, B08, B09, B10, B11, C01, C02, C03, C04, C05, C06, C07, C08, C09, C10, C11, C12, D01, D02, D03, D04, D05, E01, E02, E03, E04, E05, F01, F02, F03, F04, F05, F06, F07, F08, F09, F10, F11, F12, G01, G02, G03, G04, G05, G06, G07, G08, G09, G10, G11, H01, H02, H03, H04, H05	25.2m	25.2m	25.2m	TLC-LED-1400	4	4
TOTALS							258

SINGLE LUMINAIRE AMPERAGE DRAW CHART

Bar Code	Line Amperage Per Luminaire
230	230
240	240
250	250
260	260
270	270
280	280
290	290
300	300
310	310
320	320
330	330
340	340
350	350
360	360
370	370
380	380
390	390
400	400
410	410
420	420
430	430
440	440
450	450
460	460
470	470
480	480
490	490
500	500
510	510
520	520
530	530
540	540
550	550
560	560
570	570
580	580
590	590
600	600
610	610
620	620
630	630
640	640
650	650
660	660
670	670
680	680
690	690
700	700
710	710
720	720
730	730
740	740
750	750
760	760
770	770
780	780
790	790
800	800
810	810
820	820
830	830
840	840
850	850
860	860
870	870
880	880
890	890
900	900
910	910
920	920
930	930
940	940
950	950
960	960
970	970
980	980
990	990
1000	1000



Pole location(s) dimensions are relative to 0.0 reference point(s)

SCALE 1:600

ENGINEERED DESIGN By: Nick Rohrer • File #181676E • 17-Feb-17



We Make It Happen.

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EQUIPMENT LAYOUT



EMIRATES STADIUM - ARSENAL FOOTBALL CLUB

Holloway, London, U.K. - August 2015

1800 vertical lux (180 footcandles)
307 kW

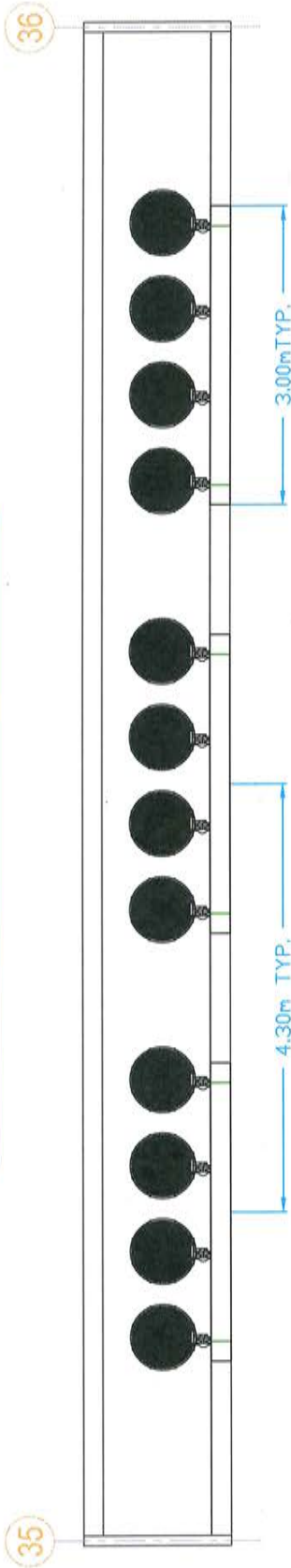
Performance Comparison with Prior Floodlights
32% increase in light levels
30% reduction in energy usage

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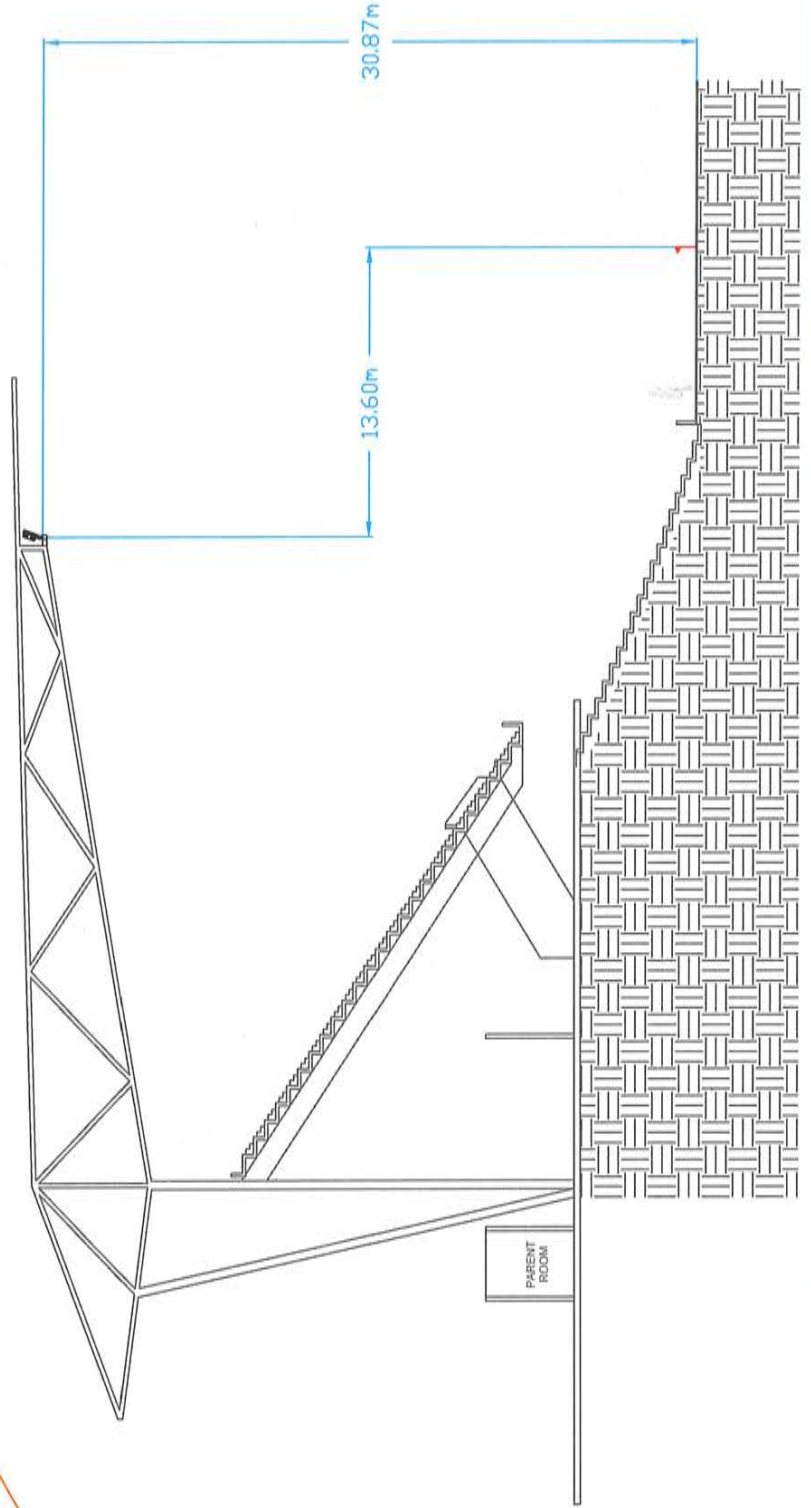
LED Light Source

TYPICAL ROOF SECTION ELEVATION



SCALE 5x

TYPICAL CROSS SECTION



PRELIMINARY
Approval Pending

Information contained herein is the confidential property of James Spence Lighting, LLC and may be used for design, construction, or other purposes without written permission by JSL/SLC.

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Elevation

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REVISIONS:	DATE:	BY:	R/L

JOB NUMBER:	181676
DRAWN BY:	NJR
CHECK BY:	
REPRESENTATIVE:	R. SNEED
SCALE:	1=10
DATE:	10/14/2016
DRAWING NUMBER:	181676L1
	1 of 1 SHEETS