



# SINGAPORE CRICKET ASSOCIATION

*The Governing Body of Indoor and Outdoor Cricket in Singapore*

## NOTICE OF INVITATION TO TENDER

SINGAPORE CRICKET ASSOCIATION  
Singapore National Cricket Ground [SNCG]  
Address 600 West Coast Road, Singapore 127445

**Ref: SNCG- Notice of Tender [NOT] – Turnkey Led Flood Lighting**  
**Date- 28/11/2024**

### PROJECT OVERVIEW

- 1- **Project Title:** Turnkey Led Flood Lighting System Complete with Power System for Cricket Pitch
- 2- **Scope:** Design, Delivery, And Installation of Turnkey Led Flood Lighting System Complete with Power System at Cricket Pitch
- 3- **Location:** Singapore National Cricket Ground [SNCG] Address 600 West Coast Road, Singapore 127445
- 4- **Duration:** 31<sup>st</sup> March 2025 Completion Date
- 5- **To meet eligibility requirements, interested vendors must ensure:**
  - a- **10-Year Guarantee:** Vendors must provide a 10-year guarantee that all components, from the foundation to the pole top, are designed to function cohesively within a Light-Structure system, ensuring reliable and trouble-free operation.
  - b- **Manufacturer Certification:** Vendors must possess certifications from the manufacturer confirming product quality and compatibility within cricket facilities.
  - c- **Prior Project Experience:** Vendors should have experience with a minimum of 10 previous cricket facilities utilizing the manufacturer's product.
  - d- **Singapore-Based Operations:**

Companies based in Singapore are also eligible to participate, with emphasis on local project experience and operational reliability. If a Singapore-based company is not the manufacturer of the flood light, it must provide an official Manufacturer's Authorization Certificate. This certificate should verify that the Singapore-based company is an authorized representative of the manufacturer, with permission to supply, install, and support the manufacturer's products for this project.
  - e- **Details of Manufacturer's Authorization Certificate:**

**Certificate Contents:** The certificate must include the manufacturer's name, authorization date, and confirmation of the company's eligibility to represent the manufacturer in Singapore.

**Scope of Representation:** The certificate should state that the Singapore-based company is authorized to handle sales, installation, and after-sales support of the manufacturer's products [flood light, poles, etc.] for the tendered project.

**Verification:** The manufacturer's certification must be signed by an official representative of the manufacturer to validate authenticity.
- 6- **For submission,** all tender documents must include the following:
  - a- **Completed Tender Form:** Ensure all fields are accurately filled in per tender requirements.

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- b- **Supporting Documentation:** Include relevant certifications, licenses, and proof of eligibility criteria (e.g., manufacturer certifications, experience records).
- c- **Company Registration:** Provide official company registration documentation to verify eligibility as a Singapore-based company.
- d- **Project Proposal:** Submit a detailed project proposal that outlines the approach, timelines, and key milestones for successful project delivery.
- e- **Specification Compliance Statement:** A clear statement confirming compliance with all specifications and requirements outlined in the tender documents.

## 7- Tender Documents

- a- Tender documents may be obtained from the SCA Website. [Option – 1]
- b- Tenderers can contact SCA office at [admin@singaporecricket.org](mailto:admin@singaporecricket.org) for documents [Option – 2]

## 8- Important Dates

- a- **Tender Issue Date:** 28<sup>th</sup> October 2024.
- b- **Deadline for Submission:** Closing on 20<sup>th</sup> November 2024, **5:00 pm**
- c- **Pre-Tender Meeting:** Prospective tenderers must attend a compulsory site show round to be held at 600 West Coast Road, Singapore 127445, 15<sup>th</sup> November 2024 at 10:30am.
- d- **Evaluation and Award:** 29<sup>th</sup> November 2024 [Estimated Date of Award]
- e- **Submission Method:** Please submit all documents in-person/ registered post [close envelop] at 229 Mountbatten Road, #03-31 Mountbatten Square, Singapore 398007 Tel: (65) 63486566 before the closing date.
- f- No quotation will be accepted after the closing date 20<sup>th</sup> November 2024, 5:00 pm

## Introduction And Invitation

Quotations are hereby invited from the suppliers/ vendors/ Contractors/ Manufacturers [but not limited] for supply of the under mentioned items as per specifications mentioned below:

The Singapore Cricket Association is the national governing body for indoor and outdoor Cricket in Singapore.

Singapore Cricket Association is pleased to invite qualified vendors to submit tenders for design, delivery, and installation of turnkey led flood lighting system complete with power system at for cricket pitch

Singapore Cricket Association invites tenderers to submit bids for:

- a- Design, delivery and installation of LED pole mast lighting at open field at 600 West Coast Road, Singapore 127445 for Cricket practices and games. Requirement specifications are outlined in this document.
- b- The location is sizeable [estimated 65m/65m].
- c- Tenderers are to design and propose lighting systems for the unlit fields.

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- d- Tenderers are to consider this as a **TURNKEY PROJECT**, including catering for the entire power supply requirement, application for and subsequent cabling and power connectivity.
- e- As a turnkey project, tenderers will be required to ensure that all relevant rules and codes applicable, including approvals of government and statutory agencies are obtained.

## 1- General

- a. Bidders must have a relevant track record and experience to provide the services.
- b. Bidders must satisfy all technical specifications and commercial requirements contained in this document [Bidders can provide additional supporting documents]. There are contained in **Appendix 1**.
- c. The site general layout and indicative plots for the cricket field are shown in **Appendix 2**.
- d. All costs related to temporary structures and supplies (including power supply) for the installation through to test & commissioning of the proposed lighting systems shall be borne by the successful tenderer.
- e. Successful tenderer shall be responsible for any damage at site or part of building on site by the contractor or his workmen or agents. All reinstatement work must be done to the satisfaction of the SCA.
- f. All work at the site shall be carried out during office hours between 8am to 6pm from Monday to Saturday. No work shall be carried out on a Public Holiday/Sunday unless otherwise approved.
- g. Successful tenderer shall in any case submit a work schedule for approval after award of tender.
- h. Successful tenderer must ensure that necessary warning signage and safety barricades are always in place during installation and shall undertake all safety precautions and indemnify the Singapore Cricket Association against all claims and damages including claims from 3rd parties and public arising from any adverse occurrence at work sites in possession.
- i. All works shall comply in all respect with any relevant Statutory Regulation, Rules and Byelaws in force.
- j. Particular attention is required for the structural strength of poles, weight bearing capacity and sturdiness; plus, safety requirements / features relevant to power supply. As the sports fields are used by the public, full safety features are required to be incorporated.
- k. Successful Tenderer shall engage PE, LEW, QP and any similar qualified person(s) in compliance with requirement of government and statutory agencies for submission and approvals and to check, inspect, and certify works, fitness to operate the lighting systems.

## 2- Scope Of Works

The successful contractor will be required to comply with **Specifications in Appendix 1**. Work scope in general is defined below.

- a. Design, manufacture, import and install new LED pole lighting systems for the fields indicated as "Field 1" in **Appendix 2**.
- b. Entrenched cabling (embedded in ground in UPVC and concrete haunching to applicable standards) to carry power supply from source to fittings.

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- c. Power to the field shall be controllable individually.
- d. The contractor will have to examine the power supply available on site and propose power connectivity with all safety and security features.
- e. Site rectification which will include repair to field turf and perimeter fencing and all other damages on site due to the work done in fulfilment of this lighting project.
- f. Apply for and obtain ALL direct and indirect statutory approvals for the Lighting Systems which inter alia will include all costs associated with engaging PE, QP, LEW etc., and land survey for submission and approvals by agencies.
- g. Final project report incorporating all documentation; especially Approvals afore mentioned.

### 3- Tender Submission

Bidders are required to submit the following:

- a. Tender submission document (format as **Appendix 3**) - duly signed and stamped.
- b. Price submission form (format **Appendix 4**)  
duly filled and signed without qualifications. Bidders who have deviations or alternative proposals may indicate so in a separate document and submit for consideration).
- c. **Appendix 5** - Field Lighting Tender Evaluation Checklist
- d. Lighting simulations for the wicket, infield, and outfield areas.
- e. Product Brochures.
- f. Proposed Warranty Document, including the proposed DLP for other materials supplied and workmanship.
- g. Locations where a lighting system proposed has been installed.
- h. The list of contractors who will be undertaking installation if awarded.
- i. Price validity period.

### Appendix 1

#### Tender For Exterior Sports Field Mast Lightings for Singapore Cricket Association

#### Lighting System with Led Light Source

#### Part 1 – General

### 1- SUMMARY

- a. Work covered by this section of the specifications shall conform to the contract documents between successful tenderer and the Singapore Cricket Association. Full conformity is also required toward all rules and regulations applicable in Singapore for the design, import, installation, and testing approvals to operate the lighting systems and associated provision of power supply.
- b. The purpose of these specifications is to define the lighting system performance and design standards for Cricket Fields using an LED Lighting source. The manufacturer, approved bidder / contractor shall supply lighting equipment to meet the standards set forth in these specifications.

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- c. The sports lighting will be for the open field at (600 West Coast Road, Singapore 127445).
- d. The site plan is attached as Appendix 2 and tenderers will be required to engage a surveyor to plot land size, demarcations, site features including constraints for the purpose of designing lighting systems (not required at bidding stage) and for submissions for approvals by relevant government agencies, statutory boards.

## 2. The approximate field dimensions and lighting work scope are:

- a. Field (65m radius): to design, manufacture, deliver, and install pre-cast concrete bases, poles, LED lighting and accessories for **Field**.
- b. Subterranean electrical cabling and all required connectivity for power supply for the lighting systems for field.

## 3. The primary goals of this sports lighting project are:

### a. **Guaranteed Light Levels:**

Adequate lighting is critical for the safety of players and the enjoyment of spectators. Specified light levels are required to be **Guaranteed for A Period Of 10 Years**.

### b. **Environmental Light Control:**

It is a primary goal to minimize spill light to adjoining properties and glare to players, spectators, and people residing in neighboring vicinity.

### c. **Cost of Ownership:**

To reduce the operating budget, the preferred lighting system shall be energy efficient. All maintenance costs shall be eliminated for the duration of the warranty.

### d. **Control and Monitoring:**

Singapore Cricket Association requires a remote **on/off** control system for the lighting system. Fields should be proactively monitored to detect luminaire outages over a **10-Year Life Cycle**. All communication and monitoring costs for the 10-Year period shall be included in the bid.

## 4. On field Lighting Performance

- a. **Illumination Levels and Design Factors:** Playing surfaces shall be lit to an average target illumination level and uniformity as specified in the chart below.
- b. Lighting manufacturers and approved bidder / contractor will provide a guarantee that light levels will be sustained over the life of the warranty period.
- c. Lighting calculations shall be developed, and field measurements taken on grid spacing, with the

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minimum number of grid points specified below.

- d. manufacturer, approved bidder / contractor will provide lumen maintenance data of the LED luminaires used per TM-21-11 and will incorporate the lumen maintenance projections into the lighting designs to ensure target light levels are achieved throughout the guaranteed period of the system.
- e. Per IES guidelines, lumen maintenance hours should be reported based on the 6x multiplier of testing hours.

CRICKET FIELD 1 - SNCG					
Area of Lighting	Average Guaranteed Illumination Levels	Ehmin/ Ehmax	Ehmin/Ehave	Grid Height	Grid Spacing
Wicket	1500 lux	0.7	0.8	1m	5mx5m
Infield	1200 lux	0.6	0.7	1m	5mx5m
Outfield	1000 lux plus	0.4	0.6	1m	5mx5m
Boundary line	65-meter boundary radius not less than Detail – 2				

- f- **Please Note:** The area of lighting and average guaranteed illumination levels has been mentioned as per our requirement. Other specs for example, Ehmin/ Ehmax, Ehmin/ Ehave, Grid Height and Grid Spacing submit upon submission of your quote.
- g- **Color Temperature:** The lighting system shall have a color temperature of 5700K and a CRI of 75.
- h- **Playability:** Lighting design and luminaire selection should be optimized for playability by reducing glare on field.
- i- **Aiming Angles:** To reduce glare, luminaire aiming should ensure the top of the luminaire field angle (based on sample photometric reports) is minimum of 20 degrees below horizontal.
- j- **Glare Control Technology** – Luminaires selected should have glare control technology including, but not limited to external visors, internal shields, and louvres.
- k- **No symmetrical** beam patterns are acceptable.
- l- **Mounting Heights:** Mounting heights support aiming angles and delivery of required illuminations.

## 5. ENVIRONMENTAL LIGHT CONTROL

### a. Light Control Luminaires:

Luminaires shall utilize spill light and glare control devices including, but not limited to, internal shields, louvers, and external shields.

- b. No symmetrical beam patterns are accepted.

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## c. Glare Control:

To minimize impact on adjacent properties, spill light and candela values must not exceed the following parameters:

See ""Spill line for residential community""	Maximum
Max Candela for the residential community above 5m height from ground	10,000
Max Candela for the residential community above 15m height from ground	1,000
Max Candela for the residential community above 25m height from ground	0

Spill light value	Maximum
Horizontal Spill(1m) 40m away from the boundary	20 lux
Horizontal Spill(1m) 50m away from the boundary	10 lux

- c- Please Note: The area of lighting and average guaranteed illumination levels and Glare Control and Max Candela has been mentioned as per our requirement. Other specs submit upon submission of your quote.

## 6. Cost Of Ownership

The manufacturer/ Contractor shall submit a 10-year Cost of Ownership summary that includes energy consumption, anticipated maintenance costs, and control costs. All costs associated with faulty luminaire replacement - equipment rentals, removal and installation labor, and shipping - are to be included in summary.

## **PART 2 – PRODUCT**

### 1. **Sports Lighting System Construction**

- a. Manufacturing Requirements: All components shall be designed and manufactured as a system. All luminaires, wire harnesses, drivers and other enclosures shall be factory assembled, aimed, wired and tested.
- b. Durability: All exposed components shall be constructed of corrosion resistant material and/or coated to help prevent corrosion. All exposed carbon steel shall be hot dip galvanized per ASTM A123. All exposed aluminum shall be powder coated with high performance polyester or anodized. All exterior reflective inserts shall be anodized, coated, and protected from direct environmental exposure to prevent reflective degradation or corrosion. All exposed hardware and fasteners shall be stainless steel, passivated and coated with aluminum-based thermosetting epoxy resin for protection against corrosion and stress corrosion cracking. Structural fasteners may be carbon steel and galvanized meeting ASTM A153 and ISO/EN 1461 (for hot dipped galvanizing), or ASTM B695 (for mechanical galvanizing). All wiring shall be enclosed within the cross-arms, pole, or electrical components enclosure.
- c. System Description: Lighting system shall consist of the following:

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Galvanized steel poles and cross-arm assemblies.

Lighting systems shall use concrete foundations. See Section 2.4 for details.

- For a foundation using a pre-stressed concrete base embedded in concrete backfill the concrete shall be air-entrained and have a minimum compressive design strength at 28 days of 3,000 PSI. 3,000 PSI concrete specified for early pole erection, actual required minimum allowable concrete strength is 1,000 PSI. All piers and concrete backfill must bear on and against firm undisturbed soil.
- For anchor bolt foundations or foundations using a pre-stressed concrete base in a suspended pier or re-enforced pier design pole erection may occur after 7 days. Or after a concrete sample from the same batch achieves a certain strength.
- d. The manufacturer, approved bidder / contractor will supply all drivers and supporting electrical equipment.
  - Remote drivers and supporting electrical equipment shall be mounted approximately 10 feet above grade in aluminum enclosures. The enclosures shall be touch-safe and include drivers and fusing with indicator lights on fuses to notify when a fuse is to be replaced for each luminaire. Disconnect per circuit for each pole structure will be located in the enclosure. Integral drivers are not allowed.
  - Manufacturer, approved bidder / contractor shall provide surge protection at the pole equal to or greater than 40 kA for each line to ground (Common Mode) as recommended by IEEE C62.41.2\_2002.
  - Wire harness complete with an abrasion protection sleeve, strain relief and plug-in connections for fast, trouble-free installation.
  - All luminaires, visors, and cross-arm assemblies shall withstand 240 km/h winds and maintain luminaire aiming alignment.
  - Control cabinet to provide remote on-off control, monitoring, and entertainment features of the lighting system.
  - Contactor cabinet to provide on-off control.
  - Manufacturer, approved bidder / contractor shall provide lightning grounding as defined by NFPA 780 and be UL Listed per UL 96 and UL 96A.
  - Integrated grounding via concrete encased electrode grounding system.

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- If grounding is not integrated into the structure, the manufacturer shall supply grounding electrodes, copper down conductors, and exothermic weld kits. Electrodes and conductors shall be sized as required by NFPA 780. The grounding electrode shall be minimum size of 5/8 inch diameter and 8 feet long, with a minimum of 10 feet embedment. Grounding electrode shall be connected to the structure by a grounding electrode conductor with a minimum size of 2 AWG for poles with 75 feet mounting height or less, and 2/0 AWG for poles with more than 75 feet mounting height.
- Enhanced corrosion protection package: Due to the potentially corrosive environment for this project, manufacturers must provide documentation that their products meet the following enhanced requirements in addition to the standard durability protection specified above:
- Exposed carbon steel horizontal surfaces on the crossarm assembly shall be galvanized to no less than a five (5) mil average thickness.
- Exposed die cast aluminum components shall be Type II anodized per MIL-STD-8625 and coated with high performance polyester.
- Exposed extruded aluminum components shall be Type II anodized per MIL-STD-8625 and coated with high performance polyester.
- Safety: All system components shall be UL listed for the appropriate application.

## 2. ELECTRICAL

A. Electric Power Requirements for the Sports Lighting Equipment:

- **Electric power:** <Enter voltage, F11> Volt, <Enter phase, F11> Phase.
- **Maximum total voltage drops:** Voltage drop to the disconnect switch located on the poles shall not exceed three (3) percent of the rated voltage.

B. Energy Consumption: The kW consumption for the field lighting systems shall be less than 200kw.

## 3. CONTROL

- a. **Instant On/Off Capabilities:** System shall provide for instant on/off of luminaires.
- b. Lighting contactor cabinet(s) constructed of NEMA Type 4 aluminum, designed for easy installation with contactors, labeled to match field diagrams and electrical design. Manual off-on-auto selector switches shall be provided.
- c. **Contactors control of lights:** To minimize wear on drivers and other electrical components and prevent lights from turning on due to communication loss, circuits must be controlled via contactor switching, not dimming driver output to zero.
- d. **Dimming:** System shall provide for 3-stage dimming (**high-medium-low**). Dimming will be set via scheduling options (Website, app, phone, email).

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- e. **Remote Lighting Control System:** System shall allow owner and users with a security code to schedule on/off system operation via a web site, phone, or email up to ten years in advance. Manufacturer shall provide and maintain a two-way TCP/IP communication link. Trained staff shall be available 24/7 to provide scheduling support and assist with reporting needs.
- f. The owner may assign various security levels to schedulers by function and/or fields. This function must be flexible to allow a range of privileges such as full scheduling capabilities for all fields to only having permission to execute "early off" commands by phone. The scheduling tool shall be capable of setting curfew limits.
- g. Controller shall accept and store 7-day schedules, be protected against memory loss during power outages, and shall reboot once power is regained and execute any commands that would have occurred during outage.
- h. **Remote Monitoring System:** System shall monitor lighting performance and notify manufacturer if individual luminaire outage is detected so that appropriate maintenance can be scheduled. The controller shall determine switch position (manual or auto) and contactor status (open or closed).
- i. **Management Tools:** Manufacturer shall provide a web-based database and dashboard tool of actual field usage and provide reports by facility and user group. The dashboard shall also show current status of luminaire outages, control operation and service. Mobile applications will be provided suitable for IOS and Android devices.
- j. **Hours of Usage:** Manufacturer shall provide a means of tracking actual hours of usage for the field lighting system that is readily accessible to the owner.
- k. **Cumulative hours:** shall be tracked to show the total hours used by the facility.
- l. Report hours saved by using early off and push buttons by users.
- m. **Communication Costs:** Manufacturer shall include communication costs for operating the control and monitoring system for a period of 10 years.
- n. Communication with luminaire drivers: Control system shall interface with drivers in electrical components enclosures by means of powerline communication.

## 4. **STRUCTURAL PARAMETERS**

- a. **Wind Loads:** Wind loads shall be based on the 2013 European Standard EN 40-3-1. And a design wind speed of 20mps. and exposure category II.

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- b. **Pole Structural Design:** The stress analysis and safety factor of the poles shall conform to 2013 AASHTO Standard Specification for Structural Supports for Highway Signs, Luminaires, and Traffic Signals (LTS-6).
- c. **Foundation Design:** The foundation design shall be based on soils that meet or exceed those of a Class 5 material as defined by 2012 IBC Table 1806.2.
- d. **Foundation Drawings:** Project specific foundation drawings stamped by a registered engineer in the state where the project is located are required. The foundation drawings must list the moment, shear (horizontal) force, and axial (vertical) force at ground level for each pole. These drawings must be submitted at time of bid to allow for accurate pricing.

## PART 3 – EXECUTION

### 1. DELIVERY TIMING

- o **Delivery Timing Equipment On-Site:** The equipment must be on-site 10-14 weeks from receipt of purchase order with all agreed order information.

### 2. FIELD QUALITY CONTROL

- a. **Illumination Measurements:** Upon substantial completion of the project and in the presence of the Contractor, Project Engineer, Owner's Representative, and Manufacturer's Representative, illumination measurements shall be taken and verified. The illumination measurements shall be conducted in accordance with IESNA RP-6-22.
- b. **Field Light Level Accountability**
  - o Light levels are guaranteed not to fall below the target maintained light levels for the entire warranty period of 10 years. These levels will be specifically stated as “guaranteed” on the illumination summary provided by the manufacturer.
  - o The contractor/manufacturer shall be responsible for conducting initial light level testing and an additional inspection of the system, in the presence of the owner, one year from the date of commissioning of the lighting.
  - o The contractor/manufacturer will be held responsible for any and all changes needed to bring these fields back to compliance for light levels and uniformities. Contractor/Manufacturer will be held responsible for any damage to the fields during these repairs.
- c. **Correcting Non-Conformance:** If, in the opinion of the Owner or his appointed Representative, the actual performance levels including footcandles, uniformity ratios are not in conformance with the requirements of the performance specifications and submitted information, the Manufacturer shall be required to make adjustments to meet specifications and satisfy Owner.

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### 3. WARRANTY AND GUARANTEE for NEW EQUIPMENT FOR FIELDS 1 & 2.

- a. **10-Year Warranty:** Each manufacturer shall supply a signed warranty covering the entire system for 10 years from the date of shipment. The warranty shall guarantee specified light levels. The manufacturer shall maintain specifically funded financial reserves to assure fulfillment of the warranty for the full term. The warranty does not cover weather conditions events such as lightning or hail damage, improper installation, vandalism or abuse, unauthorized repairs or alterations, or products made by other manufacturers.
- b. **Maintenance:** Manufacturer shall monitor the performance of the lighting system, including on/off status, hours of usage and luminaire outage for 10 years from the date of equipment shipment. Parts and labor shall be covered such that individual luminaire outages will be repaired when the usage of any field is materially impacted. The manufacturer is responsible for removal and replacement of failed luminaires, including all parts, labor, shipping, and equipment rental associated with maintenance. Owner agrees to check fuses in the event of a luminaire outage.

### PART 4 – DESIGN APPROVAL

- a. **Design Approval:** The owner / engineer will review pre-bid submittals per section 4.1.B from all manufacturers to ensure compliance to the specification 10 days prior to bid. If the design meets the design requirements of the specifications, a letter and/or addendum will be issued to the manufacturer / bidders indicating approval for the specific design submitted.
- b. All manufacturers / bidders shall submit the information at the end of this section at least 10 days prior to bidding. An addendum will be issued prior to bidding; listing approved lighting manufacturers and the design method to be used.
- c. Bidders are required to bid only on products that have been approved by this specification or addendum by the owner or owner's representative. Bids received that do not utilize an approved system / design, will be rejected.

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## Indicated Red Line - Spill line for Residential Community



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## APPENDIX 3

### Required Submittal Information For All Tenderers / Bidders 10 Days Prior To Bid

All items listed below are mandatory, shall comply with the specification and be submitted according to pre-bid submittal requirements. Complete the Yes/ No column to indicate compliance (Y) or noncompliance (N) for each item.

**Submit all documentation, information as requested below with checklist below with ticks indicating submittal  in first column below. Attach information, documentation with this Appendix 3**

Yes / No	Tab	Item	Description
	A	Letter/ Checklist	A listing of all the information being submitted must be included in the table of contents. With the name and address of manufacturer and local representative and contact telephone number, email. Signed submittal checklist to be included.
	B	Equipment Layout	Drawing(s) showing field layouts with pole locations
	C	On Field Lighting Design	Lighting design drawing(s) showing: a. Field Name, date, file number, prepared by b. Outline of field(s) being lighted, as well as pole locations referenced to the center of the field (x & y), Illuminance levels at grid spacing specified. c. Pole height, number of fixtures per pole, horizontal and vertical aiming angles, as well as luminaire information including wattage, lumens and optics d. Height of light test meter above field surface. e. Summary table showing the number and spacing of grid points; average, minimum and maximum illuminance levels in lux; uniformity including maximum to minimum ratio, maximum to average ratio number of luminaires, total kilowatts.
	D	Off Field Lighting Design	Lighting design drawing showing initial spill light levels along the boundary line (defined on bid drawings) in footcandles. The lighting design shows glare along the boundary line in candela. Light levels shall be taken at 30-foot intervals along the boundary line. Readings shall be taken with the meter orientation at both horizontal and aimed towards the most intense bank of lights.
	E	Photometric Report	Provide the first page of photometric report for all luminaire types being proposed showing candela tabulations as defined by IESNA Publication LM-35-02. Photometric data shall be certified by laboratory with current National Voluntary Laboratory Accreditation Program or an independent testing facility with over 5 years' experience.
	F	Performance Guarantee	Provide performance guarantee including a written commitment to undertake all corrections required to meet the performance requirements noted in these specifications at no expense to the owner. Light levels must be guaranteed to not fall below target levels for the warranty period.

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	<b>G</b>	Structural Calculations	Pole structural calculations and foundation design showing foundation shape, depth backfill requirements, rebar, and anchor bolts (if required). Pole base reaction forces shall be shown on the foundation drawing along with soil bearing pressures. Design must be stamped by a structural engineer if required by the owner. (Structural Calculations shall be supplied upon award).
	<b>H</b>	Control & Monitoring System	The manufacturer of the control and monitoring system shall provide written definition and schematics for automated control system They will also provide ten (10) references of customers currently using proposed system.
	<b>J</b>	Warranty	Provide written warranty information including all terms and conditions. Provide ten (10) references of customers currently under specified warranty.
	<b>K</b>	Project References	The manufacturer/ Contractor/ Bidder to provide a list of LED projects where the technology and specific fixture proposed for this project has been installed.  Reference list will include project name, project city.
	<b>L</b>	Product Information	Complete bill of material and current brochures/cut sheets for all products being provided.
	<b>M</b>	Delivery	The manufacturer/ Contractor/ Bidder shall supply an expected delivery timeframe from receipt of approved submittals and complete order information.
	<b>N</b>	Non-Compliance	The manufacturer/ Contractor/ Bidder shall list all items that do not comply with the specifications. If in full compliance, tab may be omitted.
	<b>O</b>	Cost of Ownership	Document cost of ownership as defined in the specification. Identify energy costs for operating the luminaires. Maintenance costs for the system must be included. All costs should be based on 10 Years.
	<b>P</b>	Environmental Light Control Design	Environmental glare impact scans must be submitted showing the maximum candela must not exceed the Max candela specified in 1.3 B.

The information supplied herein shall be used for the purpose of complying with the specifications for Singapore Cricket Fields. By signing below, I agree that all requirements of the specifications have been met and that the manufacturer will be responsible for any future costs incurred to bring their equipment into compliance for all items not meeting specifications and not listed in the Non-Compliance section.

**Manufacturer, Bidder:** .....

**Signature:** .....

**Contact Name:** .....

**Date:** ...../...../.....

**Contractor:** .....

**Signature:** .....

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## Appendix 4

Ref: **SNCG- Notice of Tender [NOT] – Turnkey Led Flood Lighting**

Commercial / Bid Form

<b>BOQ List: Cricket Field 1 <u>SNCG</u> (65m radius)</b>			<b>Price S\$</b>
ITEM	QTY	Equipment Description	
1		Factory aimed and assembled luminaires	
2		Galvanized steel poles – 28 to 30 meters [achieve specified lux level]	
3		Pre-cast concrete bases for galvanized steel poles	
4		Electrical component enclosures (as required)	
5		Pole length wire harnesses from Pole bottom to Pole top (as required)	
6		Aviation Obstruction light	
7		LED Control & Monitoring System [remote control dimmer]	

<b>BOQ List: All Other Cost Items</b>			<b>Price S\$</b>
ITEM	QTY		
1		e.g sub-contractor electrical	
2		Cables and entrenchment	
3		Land Survey	
4		Professional Fees	
5		Etc.	
6			
7			

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## Appendix 5

### Ref: SNCG- Notice of Tender [NOT] – Turnkey Led Flood Lighting

Tenderer Name			
<b>A</b>	<b>Previous Experience</b>	<b>Compliance Yes/ No</b>	<b>Notes</b>
1	Manufacturer list for previously lit Cricket Fields (10 minimum)		
2	Manufacturer list for previously lit Sports facilities (10 minimum)		
4	Manufacturer has experience and presence in Singapore (experiential and for warranty fulfillment)		
5	Manufacturer provides project management during installation in Singapore		
<b>B</b>	<b>System Design and Components</b>		
1	All components shall be designed and manufactured to work as a system. All luminaires, drivers, and enclosures must be factory assembled, aimed, wired and tested to ensure longevity		
2	New galvanized poles design to withstand wind speed --- (km/h) per International Building Code		
3	(Factory aimed) Light fittings come direct from factory as per lighting design to reduce installation duration		
4	All Drivers must be remotely located from the LED floodlight in a location accessible without the need for high level access machinery. Floodlights with the driver mounted integrally to the floodlight not acceptable		
5	Control gear enclosures are factory manufactured from single source, and tested and CE certified with surge protection, fuses/breakers		
6	Internal wiring inside poles come with plug and play connectors (to reduce installation timing and facilitate maintenance)		
7	No exposed wiring. All wires will remain internally - without any drilling on the poles		
8	Light fittings are assymetric and come with visor louvers, shields, glass lenses and optics		
9	New full Control Link System that allows monitoring, scheduling and facility management		
<b>C</b>	<b>Structural Integrity</b>		
1	Manufacturer took into consideration soil conditions and will provide and guarantee structural design based on International Building Codes and Wind Speed of -- km/h		

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2	Slip fit mechanism that allows rotating the pole over foundation and keeps pole elevated above elements. Anchor bolts are not allowed.		
3	Precast/prestressed foundations that are equiped with internal pole grounding		
<b>D</b>	<b>Warranty and Service</b>		
1	Manufacturer guarantees lighting performance for 10 years		
2	Manufacturer has the ability to monitor the system remotely and provide off site system upgrades for 10 years		
3	Manufacturer provides on site trouble shooting and replacement of any faulty components for 10 years		
4	Warranty coverage includes all manufactured components		
5	Manufacturer's warranty coverage includes all equipment, labor and machinery needed to carry out any repairs		
6	Provide financial proof of ability to fulfil warranty obligation		
7	Local team present in Singapore to handle all warranty and services		
<b>E</b>	<b>Fixture design and performance</b>		
1	LED TRI optic protected with tempered glass lenses		
2	Confirm lumen output is constant and doesn't change with ambient temperature fluctuations		
3	Fixtures come with visors/louver to minimize spill and glare and direct light where needed		
4	The L90, L80, L70 values should all be equal to or above 100,000 hours		
<b>F</b>	<b>Scope</b>		
1	Complete lighting design provided		
2	Complete electrical design provided		
3	Turnkey supply, installation, testing and commissioning of entire system including foundations and electrical requirement		

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## **Terms & Condition**

- a. Quotes received after Date: Closing on 20th November 2024, 5:00 pm, will not be acceptable.
- b. SCA reserves the right to reject all or any of the quotation(s) without assigning any reason thereof.
- c. Validity of quotation 60 days after closing date **[20th November 2024]**
- d. Please submit your documents.
- e. Attention: Singapore Cricket Association Admin Department
- f. For information - [admin@singaporecricket.org](mailto:admin@singaporecricket.org)
- g. Quotes by hand, address as below: 10.00am to 5:00pm. [Monday to Friday]
- h. **Address:** 229 Mountbatten Rd, Mountbatten Square, Singapore 398007

## **Disclaimer**

This document only provides an idea of how the field looks like, it in no way takes care of structural stability, Structural stability will be building contractors responsibility. This information is shared to provide an idea based on which Contractor is required to crop up with feasible and sustainable design.

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## ***For record-***

- 1- *Accounts department – SCA*
- 2- *Executive Committee – SCA*
- 3- *Admin Department – SCA*

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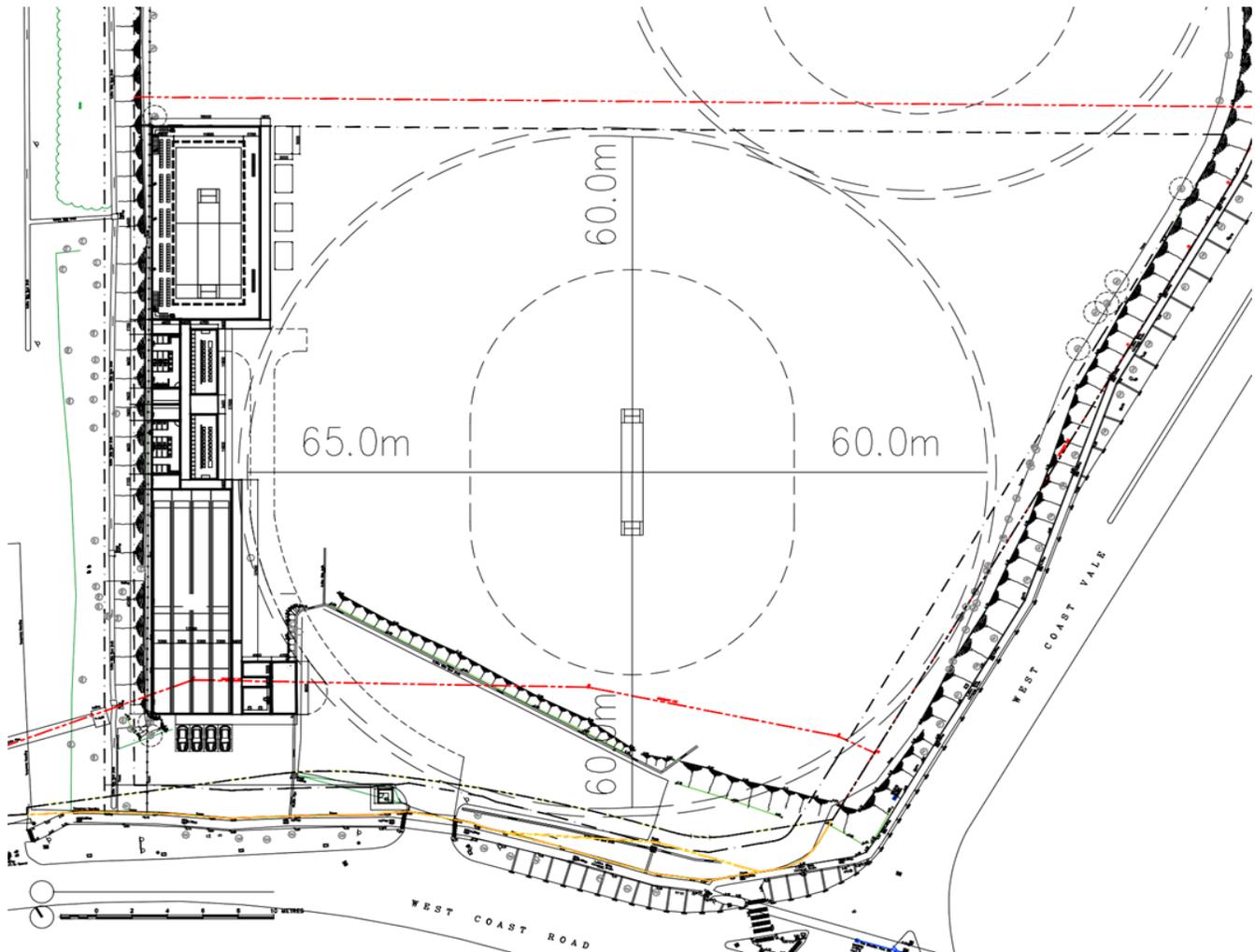
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## CRICEKT FIELDS MAPING.

Grounds	Name of Ground	Size
Cricket Field	SNCG	65m Radius [ Contractor to prose design and drawing]
Direction of the Pitch		Placed – can view during site visit

## Detail – 1 [Example Only for idea]



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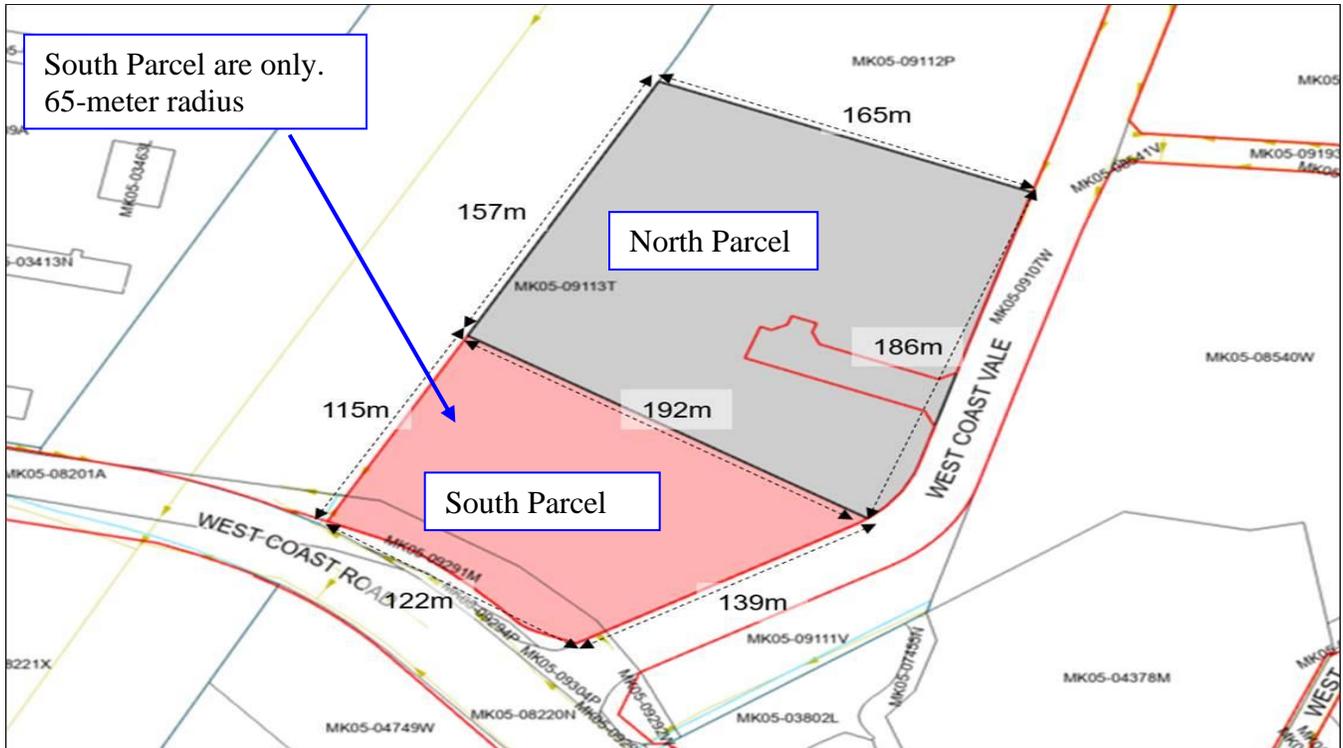




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Note – poles should not cross South Parcel Dimensions No pole outside to south parcel.



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