



Tender Documents For:

Title: Newton Athletic Park Tennis Court Lighting - Upgrade

Reference No.: 1220-020-2023-005

**(Construction Services)
Issue Date: November 08, 2023**



INVITATION TO TENDERERS

Contract: **Reference No. 1220-020-2023-005**
NEWTON ATHLETIC PARK TENNIS COURT LIGHTING - UPGRADE

The Owner invites tenders for: Newton tennis court electrical and lighting upgrade. Remove 9 existing concrete poles, cross-arms, sports field luminaires, kiosk, and conductors. Provide a new sub-fed kiosk, kiosk pad, sports poles and foundations, sports luminaires, lighting control systems, junction boxes and conductors. Work located Newton Athletic Park, Tennis Courts, Surrey, British Columbia.

Contract Documents are available at: This tender is being issued electronically through the BC Bid website www.bcbid.gov.bc.ca (the "BC Bid Website") and the Owner's website at www.surrey.ca (the "Owner's Website") where any interested party may download the tender documents from the websites. No registration tracking or other recording of tender document holders will be performed by the Owner. All addenda, or further information, will be published through the BC Bid website. It is the sole responsibility of the tenderer to check the BC Bid Website and the Owner's Website regularly to check for updates.

The Contract is based on the MMCD Platinum Edition and the Owner's Supplementary MMCD (April, 2020).

Information Meeting: An information meeting will be hosted by the Owner's Representative to discuss the Owner's requirements under this ITT (the "Information Meeting"). While attendance is at the discretion of tenderers, tenderers who do not attend will be deemed to have attended the Information Meeting and to have received all of the information given at the Information Meeting.

This is to provide an opportunity for Contractors to visually see the space of the tennis courts and to discuss site access requirements or any other questions.

At the time of issuance of this ITT a meeting has been scheduled as follows:

Date and Time: November 15, 2023 @ 10:00 a.m.

Time and Location: 7395 – 128th Street, Surrey, British Columbia.
(Meet at the Tennis Courts)

Completion of a sign-in sheet will be required of all tenderers in attendance at the meeting place start time.

The site visit will give the opportunity for contractors to view the site, take any measurements, confirm specifications and ask any other questions regarding the *Work*.

No claims will be allowed for any misunderstanding about the terms and conditions of the Contract relating to the site conditions. No adjustment to the schedule or to the Contract price will be made for difficulties encountered during the construction due to conditions, features, and peculiarities of the site that were evident at the time of the *Tender Closing Date and Time*.

Tenders are scheduled to close:

Tender Closing Time: 11:00 a.m. local time

Tender Closing Date: November 30, 2023

A Tender should be submitted in the form attached to this ITT as Section C – Form of Tender and should be accompanied by a copy of the original Bid Bond in an amount of ten (10) percent of the tender price.

The tenderer should submit the tender **electronically** in a single pdf file which must be delivered by email at: purchasing@surrey.ca by the Closing Date and Time.

Confirmation of receipt of email will be issued. Tenders that cannot be opened or viewed may be rejected. A Tenderer bears all risk that the City's receiving equipment functions properly so that the tender is received by the tender *Closing Date and Time*.

Note: The maximum file size the City can receive is 10Mb. If sending large email attachments, tenderers should phone [604-590-7274] to confirm receipt.

The lowest or any Tender will not necessarily be accepted. The Owner reserves the right to accept or reject any or all Tenders. The *Owner* also reserves the right to cancel any Invitation To Tender at any time without recourse by the tenderer.

The *Owner* will not under any circumstances be responsible for any costs incurred by the tenderer in preparing the tender.

Name of Owner's Representative

Name and Title: Sunny Kaila, Manager Procurement Services,
Email: purchasing@surrey.ca

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SECTION A

INSTRUCTIONS TO TENDERERS - PART I

Instructions To Tenderers - Part 1

(TO BE READ WITH "INSTRUCTIONS TO TENDERERS - PART II" CONTAINED IN THE EDITION OF THE PUBLICATION "MASTER MUNICIPAL CONSTRUCTION DOCUMENTS" SPECIFIED IN ARTICLE 3.2 BELOW)

Owner: City of Surrey

Contract: Newton Athletic Park Tennis Court Lighting - Upgrade

Reference Number: 1220-020-2023-005

1.0 Introduction

1.1 These Instructions apply to and govern the preparation of tenders for this *Contract*. The *Contract* is generally for the following work:

Newton tennis court electrical and lighting upgrade. Remove 9 existing concrete poles, cross-arms, sports field luminaires, kiosk, and conductors. Provide a new sub-fed kiosk, kiosk pad, sports poles and foundations, sports luminaires, lighting control systems, junction boxes and conductors. Work located Newton Athletic Park, Tennis Courts, Surrey, British Columbia.

2.0 Information Meeting

2.1 An information meeting will be hosted by the Owner's Representative to discuss the Owner's requirements under this ITT (the "**Information Meeting**"). While attendance is at the discretion of tenderers, tenderers who do not attend will be deemed to have attended the Information Meeting and to have received all of the information given at the Information Meeting.

This is to provide an opportunity for tenderers to visually see the space of the tennis courts and to discuss site access requirements or any other questions.

At the time of issuance of this ITT a meeting has been scheduled as follows:

Date and Time: November 15, 2023 @ 10:00 a.m.

Time and Location: 7395 – 128th Street, Surrey, British Columbia. (Meet at the Tennis Courts)

Completion of a sign-in sheet will be required of all tenderers in attendance at the meeting place start time.

The site visit will give the opportunity for tenderers to view the site, take any measurements, confirm specifications and ask any other questions regarding the *Work*.

No claims will be allowed for any misunderstanding about the terms and conditions of the contract relating to the site conditions. No adjustment to the schedule or to the contract price will be made for difficulties encountered during the construction due to conditions, features, and peculiarities of the site that were evident at the time of the Tender Closing Date and Time.

3.0 Tender Documents

- 3.1 The tender documents which a *Tenderer* should review to prepare a tender consist of all of the *Contract Documents* listed in Schedule 1 entitled “Schedule of Contract Documents”. Schedule 1 is attached to the Agreement which is included as part of the tender package. The *Contract Documents* include the drawings listed in Schedule 2 to the Agreement, entitled “List of *Contract Drawings*”.
- 3.2 A portion of the *Contract Documents* are included by reference. Copies of these documents have not been included with the tender package. These documents are the Instructions to Tenderers - Part II, General Conditions, Specifications and Standard Detail Drawings. They are those contained in the publication entitled “Master Municipal Construction Documents - General Conditions, Specifications and Standard Detail Drawings” and the latest edition (updated April, 2020) of “City of Surrey Supplementary Master Municipal Construction Documents- Supplementary General Conditions, Supplementary Specifications, and Supplementary Standard Drawings”. Refer to Schedule 1 to the Agreement or, if not specified in Schedule 1, then the applicable edition shall be the most recent edition as of the date of the *Tender Closing Date*. All sections of this publication are by reference included in the *Contract Documents*.
- 3.3 Any additional information made available to tenderers prior to the *Tender Closing Time* by the *Owner* or representative of the *Owner*, such as geotechnical reports or as-built plans, which is not expressly included in Schedule 1 or Schedule 2 to the Agreement, is not included in the *Contract Documents*. Such additional information is made available only for the assistance of tenderers who must make their own judgment about its reliability, accuracy, completeness and relevance to the *Contract*, and neither the *Owner* nor any representative of the *Owner* gives any guarantee or representation that the additional information is reliable, accurate, complete or relevant.

4.0 Submission of Tenders

4.1 A Tender should be submitted in the form attached to this ITT as Section C – Form of Tender and should be accompanied by a copy of the original Bid Bond in an amount of ten (10%) percent of the Tender Price on or before the following date and time:

Tender Closing Time: 11:00 a.m., local time

Tender Closing Date: November 30, 2023

(the “Closing Date and Time”).

Confirmation of receipt of email will be issued. Tenders that cannot be opened or viewed may be rejected. A *Tenderer* bears all risk that the *Owner’s* receiving equipment functions properly so that the tender is received by the *Closing Date and Time*.

Note: The maximum file size the City can receive is 10Mb. If sending large email attachments, Proponents should phone [604-590-7274] to confirm receipt.

4.2 Late tenders will not be accepted or considered.

4.3 Tenders will not be opened in public.

4.4 For the purpose of the Tender submission, digital copies of original documents and signatures sent electronically are accepted. Original documents are required upon request by the *Owner*.

4.5 Tender submissions are subject to the *Freedom of Information and Protection of Privacy Act*.

4.6 The *Tenderer* has the sole responsibility for any costs associated with preparing and submission of its tender

5.0 Additional Instructions to Tenderers

5.1 In submitting a tender, the tenderer represents and warrants that:

(a) prior to submitting the tender, the tenderer has disclosed to the *Owner* in writing any actual or potential conflict of interest;

(b) the tenderer has not and will not offer or provide any gifts or personal benefit to any elected or appointed representative or employee of the *Owner*;

(c) except as disclosed in writing by the tenderer, no elected or appointed representative or employee of the *Owner*.

- i) has any interest in the tenderer by way of ownership or management, or
 - ii) has or is entitled to have any interest in the *Contract* or any benefit arising therefrom; and
- (d) the tenderer has not and will not solicit or lobby any individual elected or appointed representative or employee of the *Owner* in regard to the award of the *Contract*.

As a condition precedent to award of *Contract*, the successful tenderer must have or obtain a business license from the *Owner*.

- 5.2 Amendment to 5.1 of the Instructions to Tenderers-Part II, by deleting the first sentence and replacing with:

“A tender should be on the Form of Tender as provided and be signed by the authorized signatory(s) as follows.”

- 5.3 Amendment to 5.3 of the Instructions to Tenderers - Part II, by deleting the first sentence and substituting it with:

“A tender should include the following Appendices:”

- 5.4 Amendment to 5.3 of the Instructions to Tenderers - Part II, by adding the following:

“5.3.6 Tenderers that do not have an operational base in Lower Mainland, British Columbia, should submit in their tender a memorandum outlining the operational strategy of operating in Lower Mainland.”

- 5.5 Amendment to 15.1 of the Instructions to Tenderers – Part II, by deleting the paragraph after 15.1.3, and replacing with:

“In exercising its absolute discretion the *Owner* will have regard to the information provided by the tenderer, and may also have regard to any information obtained by the *Owner*, as well as from any other person, firm or corporation. In exercising this discretion the *Owner* may consider, but is not limited to, the following criteria:

- (a) the proven experience of the tenderer, and any listed *Superintendent* or *Subcontractors* to do the *Work*;
- (b) the tenderer's history on other projects including with respect to quality of work, changes in the work, force

account work, and the contract administration costs of the *Owner*;

- (c) the tenderer's ability to complete the *Work* within the *Preliminary Construction Schedule* including timeliness in completing deficient *Work*;
- (d) maintenance costs, availability of parts and service, warranty and compatibility with existing equipment and/or conditions; and
- (e) the tenderer's ability to work effectively with the *Owner*, its consultants and representatives, and the public.

In no event shall the *Owner* be liable for the tenderer's costs of preparing a tender.

The *Owner* may, in its absolute discretion, not award to a tenderer if the tenderer, or any officer or director of a corporate tenderer, is or has been engaged, either directly or indirectly through another corporation or legal entity, in a legal action against the *Owner* and its elected and appointed officers and employees or any of them, or if the *Owner* has initiated legal action against any officers or directors of the tenderer in relation to any other contract services or matter. In no event shall the *Owner* be liable for the tenderer's cost of preparing a tender.

For purposes of this section, the words "legal action" includes, without limitation, mediation, arbitration, hearing before an administrative tribunal or lawsuit filed in any court."

5.6 Amendment to 15.0 of the Instructions to Tenderers - Part II, add the following:

15.5 The *Owner* need not necessarily accept the tender with the lowest *Tender Price*, or any tender, and the *Owner* reserves the right to reject any and all tenders at any time, or cancel the ITT process, without further explanation and to accept any tender the *Owner* considers to be in any way advantageous to it. The *Owner's* acceptance of any tender is contingent on having sufficient funding for the *Work* and a *Contract* with the tenderer.

15.6 The *Owner* and its representatives, agents, *Contract Administrators* and advisors will not be liable to any tenderer for any claims, whether for costs, expenses, losses, damages, or loss of anticipated profits, or for any other matter whatsoever, incurred by a tenderer in preparing and submitting a tender, or participating in negotiations for a final *Contract*, or other activity related to or arising out of this ITT, including in the event the

Product Approval

Owner accepts a non-compliant tender or otherwise breaches the terms of this ITT.

- 5.7 Wherever any material, machinery, equipment, fixtures (“**Product**”) is specified or shown herein by description of proprietary items, model numbers, catalogue numbers, manufacturer, trade names or similar references, the tender and award of the *Contract* will be based upon the use of such *Products*. Use of such *Product* descriptions in the tender documents is intended to establish a reference by which to measure the quality of the *Products* required for the *Work*. In respect of specific situations for which two or more interchangeable *Products* are shown or specified in the tender documents, the tenderer may choose which to use.

For approval of Products for use in substitution for those specified in the tender documents, tenderers will submit a request in writing to the *Owner* at least seven (7) days prior to the *Tender Closing Date and Time*. Requests should clearly define and describe the product for which approval is requested and be accompanied by manufacturer’s literature, specifications, drawing, cuts, performance data or other information necessary to completely describe the product.

Tender Inquiries

- 5.8 .1 All inquiries related to this *ITT* should be directed in writing to the person named below (the “**Owner’s Representative**”). Information obtained from any person or source other than the *Owner Representative* may not be relied upon.

Name: Sunny Kaila, Manager, Procurement Services
Business Email: purchasing@surrey.ca
Reference No.: 1220-020-2023-005

- .2 Inquiries should be made no later than seven (7) *days* before the *Closing Date and Time*. The *Owner* reserves the right not to respond to inquiries made within seven (7) *days* of the *Closing Date and Time*. Inquiries and responses will be recorded and may be distributed to all *Tenderers* at the discretion of the *Owner*.
- .3 *Tenderers* finding discrepancies or omissions in the *Tender Documents*, or having doubts as to the meaning or intent of any provision, should immediately notify the *Owner’s Representative*. If the *Owner* determines that an amendment is required to this *ITT*, the *Owner Representative* will issue an addendum. No oral conversation will affect or modify the terms of this *ITT* or may be relied upon by any *Tenderer*.

- END OF PAGE -

SECTION B

FORM OF TENDER

FORM OF TENDER

FOR USE WHEN UNIT PRICES FORM THE BASIS OF PAYMENT - TO BE USED ONLY WITH THE GENERAL CONDITIONS AND OTHER STANDARD DOCUMENTS OF THE UNIT PRICE MASTER MUNICIPAL CONSTRUCTION DOCUMENTS.

Owner: City of Surrey
(NAME OF OWNER)

Contract: **Newton Athletic Park Tennis Court Lighting - Upgrade**
(TITLE OF CONTRACT)

Reference No. 1220-020-2023-005
(OWNER'S CONTRACT REFERENCE No.)

To Owner:

WE, THE UNDERSIGNED: 1.1 have received and carefully reviewed all of the *Contract Documents*, including the Instructions to Tenderers, the specified edition of the "Master Municipal Construction Documents - General Conditions, Specifications and Standard Detail Drawings" and the following Addenda:

(Addenda, If Any)

ACCORDINGLY WE HEREBY OFFER

- 1.2 have full knowledge of the *Place of the Work*, and the *Work* required; and
- 1.3 have complied with the Instructions to Tenderers; and
- 2.1 to perform and complete all of the *Work* and to provide all the labour, equipment and material all as set out in the *Contract Documents*, in strict compliance with the *Contract Documents*; and
- 2.2 to achieve *Substantial Performance of the Work* on or before **March 24, 2024** and (Work Duration)
- 2.3 to do the *Work* for the price, which is the sum of the products of the actual quantities incorporated into the *Work* and the appropriate unit prices set out in Appendix 1, the "*Schedule of Quantities and Prices*", plus any lump sums or specific prices and adjustment amounts as provided by the *Contract Documents*. For the purposes of tender comparison, our offer is to complete the *Work* for the "*Tender Price*" as set out on Appendix 1 of this Form of Tender. Our *Tender Price* is based on the estimated quantities listed in the *Schedule of Quantities and Prices*, and excludes GST.

WE CONFIRM: 3.1 that we understand and agree that the quantities as listed in the *Schedule of Quantities and Prices* are estimated, and that the actual quantities will vary.

WE CONFIRM:

- 4.1 that the following appendices are attached to and form a part of this tender:
- 4.1.1 the appendices as required by paragraph 5.3 of the Instructions to Tenderers – Part II;
 - 4.1.2 the *Bid Security* as required by paragraph 5.2 of the Instructions to Tenderers – Part II; and
 - 4.1.3 the Agreement to Bond – Performance, and Labour and Materials Payment filled and signed.

WE AGREE:

- 5.1 that this tender will be irrevocable and open for acceptance by the *Owner* for a period of 60 calendar days from the day following the *Tender Closing Date and Time*, even if the tender of another *Tenderer* is accepted by the *Owner*. If within this period the *Owner* delivers a written notice (“*Notice of Award*”) by which the *Owner* accepts our tender we will:
- 5.1.1 within 10 *Days* of receipt of the written *Notice of Award* deliver to the *Owner*:
 - (a) a Performance Bond and a Labour and Material Payment Bond, each in the amount of 50% of the *Contract Price*, covering the performance of the *Work* including the *Contractor’s* obligations during the Maintenance Period, issued by a surety licensed to carry on the business of suretyship in the province of British Columbia, and in a form acceptable to the *Owner*;
 - (b) a *Baseline Construction Schedule*, as provided by GC 4.6.1;
 - (c) a “clearance letter” indicating that the *Tenderer* is in Worksafe BC compliance; and
 - (d) a copy of the insurance policies as specified in SGC 24 indicating that all such insurance coverage is in place and;
 - 5.1.2 within 5 *Days* of receipt of written “*Notice to Proceed*”, or such longer time as may be otherwise specified in the *Notice to Proceed*, commence the *Work*; and
 - 5.1.3 sign the *Contract Documents* as required by GC 2.1.2.

WE AGREE:

6.1 that, if we receive written *Notice of Award* of this *Contract* and, contrary to paragraph 5 of this Form of Tender, we:

6.1.1 fail or refuse to deliver the documents as specified by paragraph 5.1.1 of this Form of Tender; or

6.1.2 fail or refuse to commence the *Work* as required by the *Notice to Proceed*,

then such failure or refusal will be deemed to be a refusal by us to enter into the *Contract* and the *Owner* may, on written notice to us, award the *Contract* to another party. We further agree that, as full compensation on account of damages suffered by the *Owner* because of such failure or refusal, the *Bid Security* shall be forfeited to the *Owner*, in an amount equal to the lesser of:

6.1.3 the face value of the *Bid Security*; and

6.1.4 the amount by which our *Tender Price* is less than the amount for which the *Owner* contracts with another party to perform the *Work*.

OUR ADDRESS IS AS FOLLOWS:

Business Phone: _____

Business Email: _____

Attention: _____

This Tender is executed this _____ day of _____, 2023.

CONTRACTOR:

(FULL LEGAL NAME OF CORPORATION, PARTNERSHIP OR INDIVIDUAL)

(AUTHORIZED SIGNATORY)

(AUTHORIZED SIGNATORY)

**APPENDIX 1
SCHEDULE OF QUANTITIES AND PRICES**

See paragraph 5.3.1 of the Instructions to Tenderers – Part II

All prices and Quotations including the Contract Price shall include all Taxes, except for GST. GST shall be shown separately.

Contract No.: 1220-020-2023-005

Schedule of Quantities and Prices – Summary Sheet

Title	Amount
Asphalt Paving for Hard Courts:	\$
Hard Court Surfacing System:	\$
Tennis Court Lighting Retrofit::	\$
Tender Price:	\$
GST :	\$
Total Tender Price, including GST:	\$

Schedule of Quantities and Prices

Item No.	Section	Description	Unit	Est. Qty.	Unit Price	Amount
1.	General					
1.1	N/A	Bonding and Insurance	Lump Sum			\$
1.2	N/A	Mobilization and Demobilization	Lump Sum			\$
1.3	N/A	Shop Drawings	Lump Sum			\$
2.0	32-12-16.1	Asphalt Paving for Hard Courts				\$
2.1	32-18-23	Hard Court Surfacing System				\$
3.0		Tennis Courts Lighting Retrofit				\$
	<i>Other (State):</i>					

Sub Total: _____

APPENDIX 2 PRELIMINARY CONSTRUCTION SCHEDULE

Indicate Schedule with bar chart with major item descriptions and time. Tenderer to use a separate page for any additional schedule if required. Please indicate milestone dates including substantial performance.

ACTIVITY (Insert the following milestone dates)	Time from <i>Notice to Proceed</i> in Days									
	5	10	15	20	25	30	35	40	45	50
<i>Notice to Proceed</i>										
Asphalt Paving For Hard Courts:										
Hard Court Surfacing System:										
Tennis Courts Lighting Retrofit:										
<i>Substantial Performance</i>										

Proposed Disposal Site: _____

**APPENDIX 3
TENDERER'S EXPERIENCE IN SIMILAR WORK**

1. TENDERER'S EXPERIENCE IN SIMILAR WORK (REFERENCES)

This document is intended to provide information on the capacity, competence, and relevant experience of the Tenderer. Tenderer's should have a minimum of three (3) years experience on projects of similar in nature to this *Project*. Tenderer may supplement information with additional sheets if required.

Note: Refer to DMD Supplemental Specifications – Lighting and Electrical, Section 26 56 01 (1.12 New) for additional information. Tenderer should supplement the information below to include these contractor qualifications.

Year Completed	Description of Contract	For Whom Work Performed	Value

**APPENDIX 4
TENDERER'S SENIOR SUPERVISORY STAFF EXPERIENCE**

Tenderers should provide information on the background and experience of all key personnel proposed to undertake the Work (use the spaced provided and/or attach additional pages

Name: _____ Appointment: Project Manager

Experience:

Dates: _____

Project Name: _____

Responsibility: _____

Name: _____ Appointment: Site Superintendent

Dates: _____

Project Name: _____

Responsibility: _____

Name: _____ Appointment: _____

Dates: _____

Project Name: _____

Responsibility: _____

Name: _____ Appointment: _____

Dates: _____

Project Name: _____

Responsibility: _____

**APPENDIX 5
SUBCONTRACTOR'S AND MATERIAL SUPPLIERS**

The *Tenderer* proposes to use the following *Subcontractors* and *Suppliers* for the divisions or sections of *Work / supply* listed below. [Note: It is not necessary for *Tenderer* to list all *Subcontractors* and *Suppliers* that the *Tenderer* proposes to use – only those for the divisions or sections of *Work / supply* as may be listed below.]

The named *Subcontractors* and *Suppliers* will not be changed without the written approval of the *Owner*.

1. Sub-Trade Section

Description of work /supply	Name, address and business phone number of Subcontractor / Supplier

2. Equipment Section

<u>Equipment</u>	<u>Manufacturer and Model</u>

The *Owner* reserves the right of approval for each of the *Subcontractors* and *Suppliers*. The *Contractor* will be given the opportunity to substitute an acceptable *Subcontractor* and *Supplier*, if necessary.

Use the spaces provided and/or attach additional pages, if necessary.

**APPENDIX 6
SUBCONTRACTOR'S SENIOR SUPERVISORY STAFF EXPERIENCE**

Name of Subcontractor: _____

Name: _____ Appointment: Project Superintendent

Dates: _____

Project Name: _____

Responsibility: _____

Name of Subcontractor: _____

Name: _____ Appointment: Project Superintendent

Dates: _____

Project Name: _____

Responsibility: _____

Name of Subcontractor: _____

Name: _____ Appointment: _____

Dates: _____

Project Name: _____

Responsibility: _____

Name of Subcontractor: _____

Name: _____ Appointment: _____

Dates: _____

Project Name: _____

Responsibility: _____

SECTION C
FORM OF AGREEMENT

FORM OF AGREEMENT

BETWEEN *OWNER* AND *CONTRACTOR*

This form of agreement (the "Agreement") is made in duplicate this

_____ day of _____, 2023.

Contract: **Newton Athletic Park Tennis Court Lighting - Upgrade**
(TITLE OF CONTRACT)

Reference No.: **1220-020-2023-005**
(OWNER'S CONTRACT REFERENCE NO.)

BETWEEN:

The City of Surrey

(NAME OF OWNER)

(the "*Owner*")

AND:

(NAME AND OFFICE ADDRESS OF CONTRACTOR)

(the "*Contractor*")

The *Owner* and the *Contractor* agree as follows:

- | | | | |
|------------------|--|-----|---|
| Article 1 | The Work Start / Completion Dates | 1.1 | The <i>Contractor</i> will perform all <i>Work</i> and provide all labour, equipment and material and do all things strictly as required by the <u><i>Contract Documents</i></u> . |
| | | 1.2 | The <i>Contractor</i> will commence the <i>Work</i> in accordance with the <u><i>Notice to Proceed</i></u> . The <i>Contractor</i> will proceed with the <i>Work</i> diligently, will perform the <i>Work</i> generally in accordance with the construction schedules as required by the <u><i>Contract Documents</i></u> and will achieve <u><i>Substantial Performance</i></u> of the <i>Work</i> on or before March 29, 2024 subject to the provisions of the <u><i>Contract Documents</i></u> for adjustments to the <u><i>Contract Time</i></u> . |
| | | 1.3 | Time shall be of the essence of the <i>Contract</i> . |
| Article 2 | Contract Documents | 2.1 | The " <u><i>Contract Documents</i></u> " consist of the documents listed or referred to in Schedule 1, entitled "Schedule of Contract Documents", which is attached and forms a part of this Agreement, and includes any and all additional and amending documents issued in accordance with the provisions of the <i>Contract</i> |

Documents. All of the *Contract Documents* shall constitute the entire *Contract* between the *Owner* and the *Contractor*.

2.2 The *Contract* supersedes all prior negotiations, representations or agreements, whether written or oral, and the *Contract* may be amended only in strict accordance with the provisions of the *Contract Documents*.

Article 3 Contract Price

3.1 The price for the Work ("*Contract Price*") shall be the sum in Canadian dollars of the following

3.1.1 the product of the actual quantities of the items of *Work* listed in the *Schedule of Quantities and Prices* which are incorporated into or made necessary by the Work and the unit prices listed in the *Schedule of Quantities and Prices*; plus

3.1.2 all lump sums, if any, as listed in the *Schedule of Quantities and Prices*, for items relating to or incorporated into the *Work*; plus

3.1.3 any adjustments, including any payments owing on account of Changes and agreed to *Extra Work*, approved in accordance with the provisions of the *Contract Documents*.

3.2 The *Contract Price* shall be the entire compensation owing to the *Contractor* for the *Work* and this compensation shall cover and include all profit and all costs of supervision, labour, material, equipment, overhead, financing, and all other costs and expenses whatsoever incurred in performing the *Work*.

Article 4 Payment

4.1 Subject to applicable legislation and the provisions of the *Contract Documents*, the *Owner* shall make payments to the *Contractor*.

4.2 At the substantial performance, a holdback will be made from the monthly progress payment to the *Contractor*. The holdback shall be the lesser of \$30,000 or 5% of the total *Contract* value including any change orders.

This holdback shall be released upon the submission, by the *Contractor*, of sufficient field data, to the *Contract Administrator*, for the creation of as-constructed drawings. The sufficiency of data will solely be determined by the *Contract Administrator* before instructing the *Owner*, in writing, for the release of this holdback.

Article 5 Rights and Remedies

5.1 The duties and obligations imposed by the *Contract Documents* and the rights and remedies available thereunder shall be in addition to and not a limitation of any duties, obligations, rights and remedies otherwise imposed or available by law.

Article 6 Notices

6.1 Communications among the *Owner*, the *Contract Administrator* and the *Contractor*, including all written notices required by the *Contract Documents*, may be delivered by hand, or by email, or by pre-paid registered mail to the addresses as set out below:

The Owner:

City of Surrey – Parks, Recreation & Culture Department
Operations Division
13450 – 104th Avenue
Surrey, B.C., V3T 1V8

Attention:

The Contractor:

<<Contractor Legal Name>>
<<Contractor Address>>

Attention: <<Insert name, job title>>

Business Email: <<Insert Email>>

The Contract Administrator:

<<Legal Name>>
<<Address>>

Attention: <<Insert name, job title>>

Business Email: <<Insert Email>>

6.2 A communication or notice that is addressed as above shall be considered to have been received:

6.2.1 immediately upon delivery, if delivered by hand;

6.2.2 immediately upon transmission if sent or received by email; or

6.2.3 after 5 Days from date of posting if sent by registered mail.

6.3 The *Owner* or the *Contractor* may, at any time, change its address for notice by giving written notice to the other at the address then applicable. Similarly if the *Contract Administrator* changes its address for notice then the *Owner* will give or cause to be given written notice to the *Contractor*.

Article 7 General

7.1 This *Contract* shall be construed according to the laws of British Columbia.

7.2 The *Contractor* shall not, without the express written consent of the *Owner*, assign this *Contract*, or any portion of this *Contract*.

7.3 The headings included in the *Contract Documents* are for convenience only and do not form part of this *Contract* and will not be used to interpret, define or limit the scope or intent of this *Contract* or any of the provisions of the *Contract Documents*.

- 7.4 A word in the Contract Documents in the singular includes the plural and, in each case, vice versa.
- 7.5 This agreement shall enure to the benefit of and be binding upon the parties and their successors, executors, administrators and assigns.

IN WITNESS WHEREOF the parties hereto have executed this Agreement the day and year first written above.

Contractor:

(FULL LEGAL NAME OF CORPORATION, PARTNERSHIP OR INDIVIDUAL)

(AUTHORIZED SIGNATORY) (SIGN & PRINT NAME)

(AUTHORIZED SIGNATORY) (SIGN & PRINT NAME)

Owner:

City of Surrey

(AUTHORIZED SIGNATORY) (SIGN, PRINT NAME & POSITION)

(AUTHORIZED SIGNATORY) (SIGN, PRINT NAME & POSITION)

Schedule 1 – Schedule of Contract Documents

The following is a list of the Contract Documents of the Agreement:

NOTE: The documents noted with “*” are contained in the “Master Municipal Construction Documents - General Conditions, Specifications and Standard Detail Drawings”, Platinum edition dated 2009, and the documents noted with “**” are contained in the City of Surrey Supplementary Master Municipal Construction Documents, edition dated April 2020.

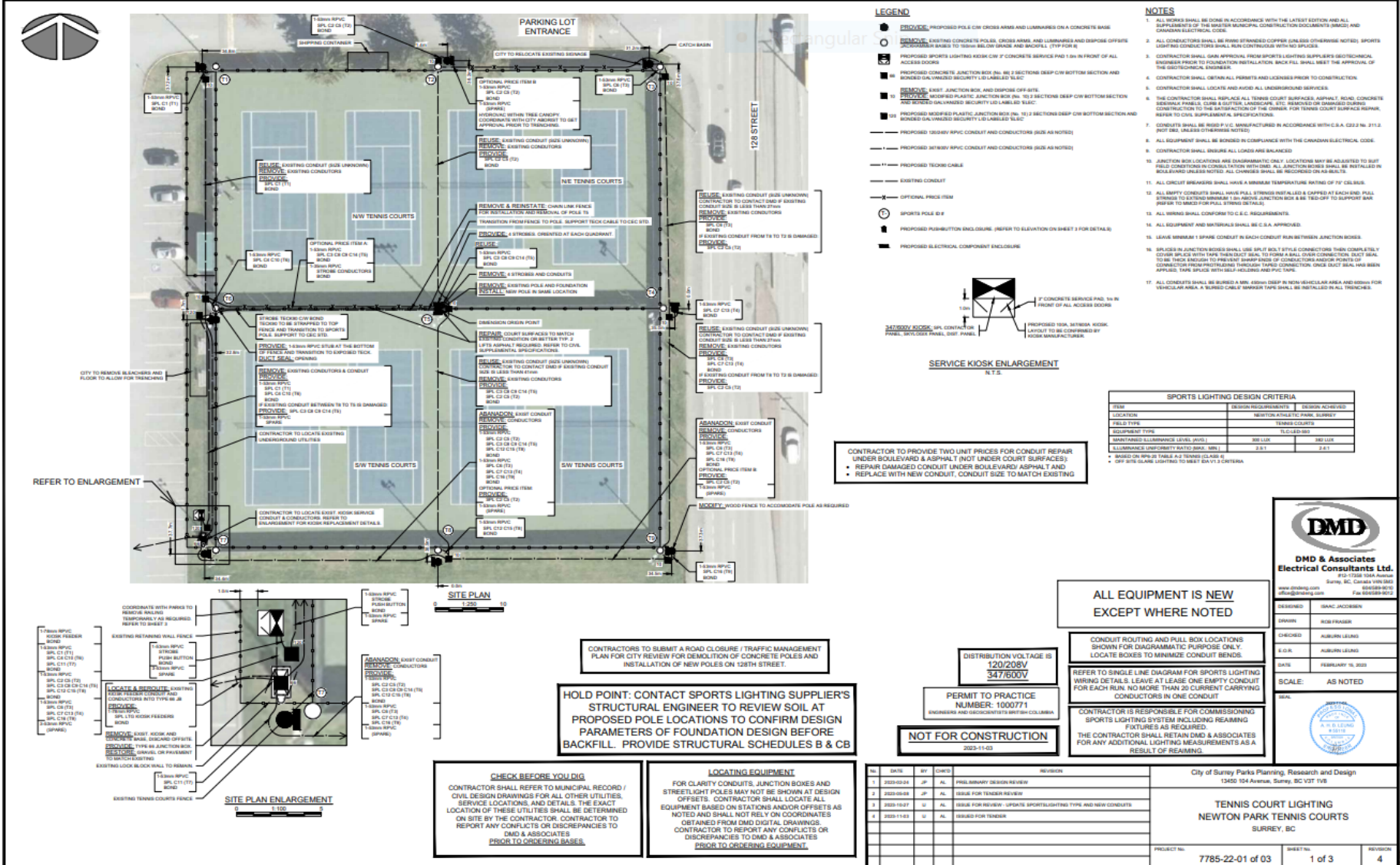
1. Agreement, including Schedules
2. Addenda, if any;
3. Supplementary General Conditions, Project;
4. Supplementary General Conditions**;
5. General Conditions*;
6. Supplementary Specifications, Project;
7. Supplementary Specifications**;
8. Specifications*;
9. *Contract Drawings*;
10. Supplementary Standard Detail *Drawings***;
11. Standard Detail Drawings*;
12. Executed Form of Tender, including all Appendices and Form of Agreement;
13. Schedule 2 to the Agreement – “List of *Contract Drawings*”;
14. Instructions To Tenderers - Part I; and
15. Instructions to Tenderers - Part II*.

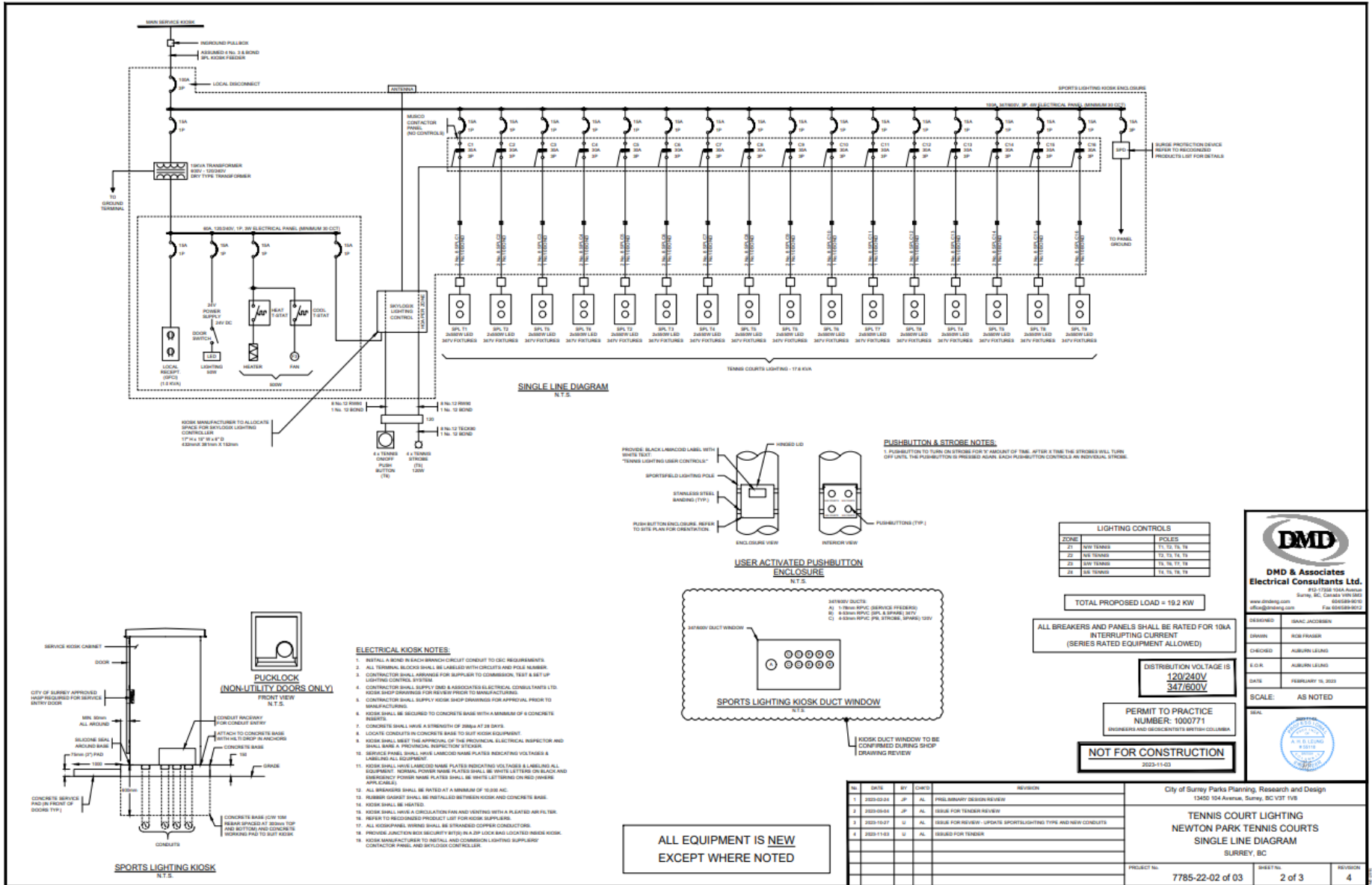
Schedule 2 – List of Contract Drawings

(COMPLETE LISTING OF ALL DRAWINGS, PLANS AND SKETCHES WHICH ARE TO FORM A PART OF THE CONTRACT, OTHER THAN STANDARD DETAIL DRAWINGS AND SUPPLEMENTARY STANDARD DETAIL DRAWINGS.)

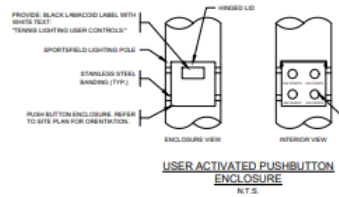
DMD & ASSOCIATES ELECTRICAL CONSULTANTS LTD.

Title	Revision No.	Revision Date
00 – Drawings		
Project No. 7785-22-1 of 3 - General	4	11-03-23
Project No. 7785-22-2 of 3 – Single Line Diagram	4	11-03-23
Project No. 7785-22-3 of 3 – Specifications and Details	4	11-03-23





SINGLE LINE DIAGRAM
N.T.S.



PUSHBUTTON & STROBE NOTES:
1. PUSHBUTTON TO TURN ON STROBE FOR 2" AMOUNT OF TIME. AFTER 3" TIME THE STROBE WILL TURN OFF UNTIL THE PUSHBUTTON IS PRESSED AGAIN. EACH PUSHBUTTON CONTROLS AN INDIVIDUAL STROBE.

LIGHTING CONTROLS	
ZONE	POLES
21 NEW TENNIS	11, 12, 13, 14
22 NEW TENNIS	12, 13, 14, 15
23 OLD TENNIS	13, 14, 15, 16
24 OLD TENNIS	14, 15, 16, 17

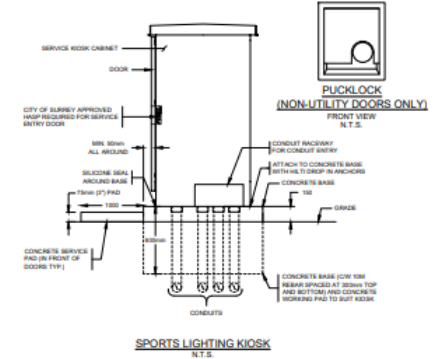
TOTAL PROPOSED LOAD = 19.2 KW

ALL BREAKERS AND PANELS SHALL BE RATED FOR 10KA INTERRUPTING CURRENT (SERIES RATED EQUIPMENT ALLOWED)

DISTRIBUTION VOLTAGE IS
120/240V
347/600V

PERMIT TO PRACTICE NUMBER: 100071
ENGINEERS AND GEODETISTS BRITISH COLUMBIA

NOT FOR CONSTRUCTION
2023-11-03



SPORTS LIGHTING KIOSK
N.T.S.

- ELECTRICAL KIOSK NOTES:**
1. INSTALL A MINE IN EACH BRANCH CIRCUIT CONDUIT TO CEC REQUIREMENTS.
 2. ALL TERMINAL BLOCKS SHALL BE LABELED WITH CIRCUITS AND POLE NUMBER.
 3. CONTRACTOR SHALL ARRANGE FOR SUPPLIER TO COMMISSION, TEST & SET UP LIGHTING CONTROL SYSTEM.
 4. CONTRACTOR SHALL SUPPLY VSD & ASSOCIATED ELECTRICAL CONSULTANTS LTD. KIOSK SHOP DRAWINGS FOR REVIEW PRIOR TO MANUFACTURING.
 5. CONTRACTOR SHALL SUPPLY KIOSK SHOP DRAWINGS FOR APPROVAL PRIOR TO MANUFACTURING.
 6. KIOSK SHALL BE SECURED TO CONCRETE BASE WITH A MINIMUM OF 4 CONCRETE INSERTS.
 7. CONCRETE SHALL HAVE A STRENGTH OF 28MPa AT 28 DAYS.
 8. LOCATE CONDUITS IN CONCRETE BASE TO SUIT KIOSK EQUIPMENT.
 9. KIOSK SHALL HAVE THE APPROVAL OF THE PROFESSIONAL ELECTRICAL INSPECTOR AND SHALL HAVE A PROFESSIONAL INSPECTOR STICKER.
 10. SERVICE PANEL SHALL HAVE LAMCROSS NAME PLATES INDICATING VOLTAGES & LABELING ALL EQUIPMENT.
 11. KIOSK SHALL HAVE LAMCROSS NAME PLATES INDICATING VOLTAGES & LABELING ALL EQUIPMENT. NORMAL POWER NAME PLATES SHALL BE WHITE LETTERS ON BLACK AND EMERGENCY POWER NAME PLATES SHALL BE WHITE LETTERS ON RED POWERS. APPLICABLE.
 12. ALL BREAKERS SHALL BE RATED AT A MINIMUM OF 10000 AIC.
 13. RUBBER GASKET SHALL BE INSTALLED BETWEEN KIOSK AND CONCRETE BASE.
 14. KIOSK SHALL BE 650/150.
 15. KIOSK SHALL HAVE A CIRCULATION FAN AND VENTING WITH A PLEATED AIR FILTER. REFER TO RECOMMENDED PRODUCT LIST FOR KIOSK SUPPLIERS.
 16. ALL KIOSK/PANEL WIRING SHALL BE TRANSDUCED COPPER CONNECTIONS.
 17. PROVIDE JUNCTION BOX SECURITY BITE IN A ZIP LOCK BAG LOCATED INSIDE KIOSK.
 18. KIOSK MANUFACTURER TO INSTALL AND COMMISSION LIGHTING SUPPLIERS. CONTRACTOR PANEL AND SUPPLY KIOSK CONTROLLER.

ALL EQUIPMENT IS NEW EXCEPT WHERE NOTED

NO.	DATE	BY	CHKD	REVISION
1	2023-02-04	JP	JL	PRELIMINARY DESIGN REVIEW
2	2023-02-04	JP	JL	ISSUE FOR TENDER REVIEW
3	2023-10-07	W	JL	ISSUE FOR REVIEW - UPDATE SPORTS LIGHTING TYPE AND NEW CONDUITS
4	2023-11-03	W	JL	ISSUED FOR TENDER

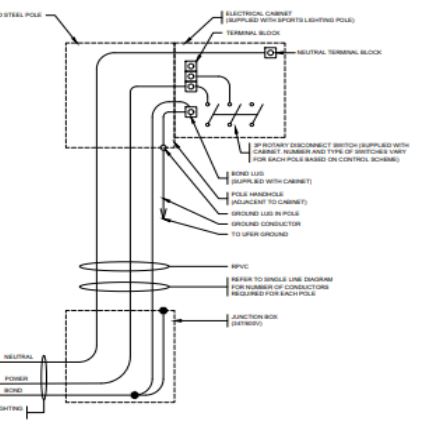
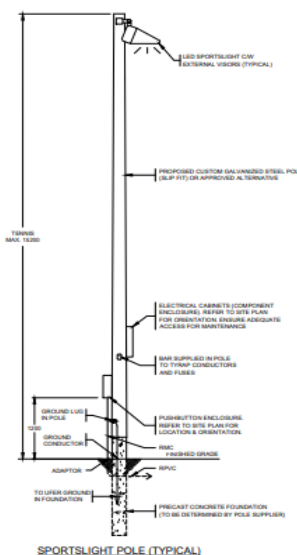
City of Surrey Parks Planning, Research and Design
13450 154 Avenue, Surrey, BC V3T 1V8

**TENNIS COURT LIGHTING
NEWTON PARK TENNIS COURTS
SINGLE LINE DIAGRAM**
SURREY, BC

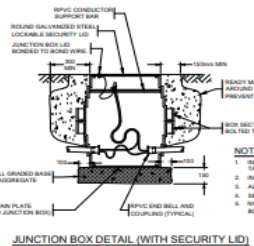
PROJECT NO: 7785-22-02 of 03 SHEET NO: 2 of 3 REVISION: 4

CANCEL PRINTS BEARING PREVIOUS LETTERS

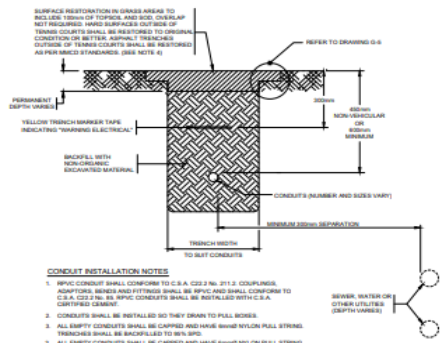
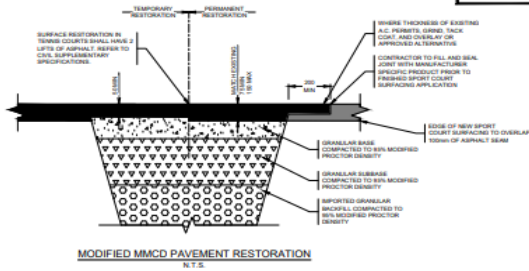
ALL EQUIPMENT IS NEW EXCEPT WHERE NOTED



WIRING INSIDE ON SPORTS LIGHTING POLE (TYPICAL) N.T.S.



- NOTES:**
1. INSTALL LID ON PLASTIC JUNCTION BOX BEFORE BACKFILLING, TRAMPING & FINISH OPERATIONS.
 2. INSTALL TOP OF JUNCTION BOX FLUSH WITH FINISHED GRADE.
 3. ALL DIMENSIONS UNLESS NOTED OTHERWISE.
 4. SECURITY LID BY RFIIC POLE WITH SECURITY BITS.
 5. NO SPOTS LIGHTING CONTROLLER SHALL BE SPICED IN FULL BOXES (UNLESS NOTED OTHERWISE).



- CONDUIT INSTALLATION NOTES:**
1. RFIIC CONDUIT SHALL CONFORM TO C.S.A. C22.2 NO. 211.3. COULPUNG. ADAPTORS, REDUCERS AND FITTINGS SHALL BE RFIIC AND SHALL CONFORM TO C.S.A. C22.2 NO. 211.3. RFIIC CONDUITS SHALL BE INSTALLED WITH C.S.A. CERTIFIED JOINT.
 2. CONDUITS SHALL BE INSTALLED AS SHOWN OR TO USER'S PULL STRONG. TRENCHES SHALL BE BACKFILLED TO NEW SPIC.
 3. PERMANENT REMOVAL AND REPLACEMENT IN EXISTING PAVED AREAS TO BE IN ACCORDANCE WITH RECORDED MMCD PAVEMENT RESTORATION.
 4. IF REQUIRED COMPACTION IS ACHIEVED, PERMANENT RESTORATION MAY BE UNDERTAKEN IMMEDIATELY.
 5. JOINT BETWEEN NEW AND EXISTING ASPHALT TO BE FILLED AND SEALED PER SPORT COURT MANUFACTURER AND PROJECT SPECIFICATIONS PRIOR TO FINISH COURT SURFACING APPLICATION. NEW SPORT SURFACING TO EXTEND 10" MIN. PAST SEAM FOR STRAIGHT AND FLUSH EDGE.

RECOGNIZED PRODUCT LIST

PRODUCT	MANUFACTURER	SPECIFICATION	EXCEPTIONS
SPOTS LIGHTING SYSTEM	REFER TO SUPPLEMENTARY SPECIFICATIONS	POLES, LUMINAIRES, FOUNDATIONS & LIGHTING SYSTEM	FOUNDATIONS SHALL BE VERIFIED AND SEALED BY THE SUPPLIER. STRUCTURAL ENGINEER. WARRANTY SHALL BE 10 YEARS (OPTIONAL 15 YEARS)
CONDUIT	RFIIC	C.S.A. C22.2-11.3	
SPORTS LIGHTING HOSES	UNID MANUFACTURING (1" ID. 80' MIN.) OR COWE ELECTRIC		POROSIL COATED AND 81 DREY
FOUNDATION ENCLOSURE	RFIIC MANUFACTURER OR APPROVED ALTERNATIVE	MIN. 600MM X 600MM PROF. BLUE COLOUR	POROSIL COATED AND 81 DREY
SPOTS PROTECTION DEVICE	MERSEN OR EQUIVALENT	MIN. 600MM X 600MM X 100MM	
TYPE 86 JUNCTION BOX	FRABRAMBY PRESENT (OR APPROVED EQUIVALENT)	MMCD SPEC	
TYPE 86 JUNCTION BOX	NO CONDUITS. FRABRAMBY PRESENT (OR APPROVED EQUIVALENT)	MMCD SPEC	
FOUNDATIONS	MMCD	WEATHER PROOF	GALVANIZED CHECKERPLATE LID (OR PREVIOUS PAVEMENT AND SEE NOTE 6). LID TO BE SECURITY BOLT. PROVIDE SECURITY BIT. R.F.P. FOR LOOK AND HARD TAPES HOLES OF HOSE. LID MARKED 1000.
STRONG	FEDERAL SIGNAL	PROF. 1000	COLOURS SHALL BE A, B, & C, R
LIGHTING CONTROLLER	SKYDIVER	ARC-10	

DISTRIBUTION VOLTAGE IS 120/240V 347/600V

PERMIT TO PRACTICE NUMBER: 1000771

NOT FOR CONSTRUCTION 2023-11-03

DMD & Associates
Electrical Consultants Ltd.
 415-1758 104A Avenue
 Surrey, BC, Canada V4N 0A2
 www.dmdeng.com
 604-899-9270
 604-899-9272
 Fax: 604-899-9272

DESIGNED: BRAC JACOBSON
 DRAWN: ROB PRAGER
 CHECKED: AUBRYN LEUNG
 DATE: FEBRUARY 16, 2023
 SCALE: AS NOTED

PROFESSIONAL ENGINEER
 A.B. LEUNG
 P. ENG.
 2023-11-03

ROLES AND RESPONSIBILITY FOR CONTRACTOR AND KIOSK MANUFACTURER

	SUPPLIED BY	INSTALLED BY	EXCEPTIONS
LIGHTING CONTRACTOR PANEL	CONTRACTORS	KIOSK MANUFACTURER	CONTRACTORS TO COORDINATE WITH LIGHTING SUPPLIER TO SET CONTRACTOR PANEL TO KIOSK MANUFACTURER
SKYDIVER SPORTS LIGHTING CONTROLLER	CONTRACTORS	KIOSK MANUFACTURER	CONTRACTORS TO COORDINATE WITH SUPPLIER TO SHIP CONTROLLER TO KIOSK MANUFACTURER. CONTRACTOR TO COMMISSION CONTROLLER TO THE SATISFACTION OF THE CITY OF SURREY.

REVISION

NO.	DATE	BY	CHKD	REVISION
1	2023-02-24	JP	AL	PRELIMINARY DESIGN REVIEW
2	2023-05-08	JP	AL	ISSUE FOR TENDER REVIEW
3	2023-10-27	U	AL	ISSUE FOR REVIEW - UPDATE SPORTS LIGHTING TYPE AND NEW CONDUITS
4	2023-11-03	U	AL	ISSUED FOR TENDER

City of Surrey Parks Planning, Research and Design
 13450 104 Avenue, Surrey, BC V3T 1V6

TENNIS COURT LIGHTING
NEWTON PARK TENNIS COURTS
SPECIFICATIONS & DETAILS
 SURREY, BC

PROJECT NO: 7785-22-03 of 03
 SHEET NO: 3 of 3
 REVISION: 4

CONC. PRINTS BEARING PREVIOUS LETTERS

SECTION D

**SUPPLEMENTARY GENERAL CONDITIONS
(PROJECT)**

&

SUPPLEMENTARY SPECIFICATIONS (PROJECT)

SUPPLEMENTARY GENERAL CONDITIONS (PROJECT)

SUPPLEMENTARY GENERAL CONDITIONS (PROJECT)			
SGC#	Paragraph#	Title	Action
SGC 4.6	4.6.9	Hours of Work	Append to SGC 4.6.8: Given this is a busy athletic park.... we will confine Work to Monday-Friday 7am-10pm.

SUPPLEMENTARY SPECIFICATIONS (PROJECT)

The following is an exact and complete list of the Specifications (Project).

SPECIFICATION INDEX

Section	Title
Asphalt	
32 12 16.1	Asphalt Paving for Hard Courts
32.18.23	Hard Court Surfacing System
Lighting and Electrical	
26.56.01 (1.0)	General
26 56 01 (1.10)	Inspection and Testing
26 56 01 (1.11 – New)	Submittals
26 56 01 (1.12 – New)	Contractor Qualifications
25 56 01 (1.13 – New)	Materials by Contractor, key pattern supplied by Municipality
26 56 01 (1.14 – New)	Warranty
26 56 01 (2.1)	General
26 56 01 (3.1)	Execution
16470	Electrical Cabinet (Kiosk)
16500	Sports Lighting
Including any and all updates as needed	

SUPPLEMENTARY SPECIFICATIONS

The Supplementary Contract Specification takes precedence over the MMCD – Platinum Edition

SECTION	DESCRIPTION	TYPE
Section 32 12 16.1	Asphalt Paving for Hard Courts	Standalone
Section 32 18 23	Hard Court Surfacing System	Standalone

ASPHALT PAVING FOR HARD COURTS

SECTION 32 12 16.1

PART 1 GENERAL

1.1 Related Work

- .1 MMCD Section 31 05 17 Aggregates and Granular Materials
- .2 MMCD Section 32 11 23 Granular Base
- .3 MMCD Section 32 12 16 Hot Mix Asphalt Paving

1.2 References

- .1 Materials, mix designs, testing and application procedures shall comply with the requirements of the British Columbia Road Builders and Heavy Construction Association Specification for Hot-Mix Asphalt Concrete Pavement, revised June 1989.
- .2 Materials, mix designs, testing and application procedures shall comply with the requirements of the (MMCD) Master Municipal Specification Section 32 12 16 Hot Mix Asphalt Concrete Paving.

1.3 Delivery and Storage of Materials

- .1 Deliver materials to site in original unopened containers with proper manufacturer's label affixed.
- .2 Store materials in accordance with manufacturer's specifications.

1.4 Submittals

- .1 Submit sieve analysis for grading of both base and subbase materials.
- .2 Submit hot mix asphalt design and trial mix test results to the Owner's Representative for review at least one week (7 days) prior to commencement of work of this Section.

1.5 Site Conditions

- .1 Start of work shall signify acceptance of site as satisfactory and no claim will be recognized for extra work nor any allowance made for defective work due to site conditions.

- .2 Investigate the site to verify information shown in Contract Documents. **Verify that existing grades are as shown on Drawings and notify City Representative immediately of any discrepancies.**
- .3 Review existing site conditions with regard to subsurface conditions. Data on indicated subsurface conditions is not intended as representations or warrants of continuity of such conditions. Additional test borings and other exploratory operations may be made by bidders at no cost to the City. Notify City Representative prior to carrying out any such work.

1.6 Protection

- .1 Verify locations of all underground utility and drainage lines. Take all necessary precautions to protect unit precast paving, curbs, utilities and other site elements and work of other trades. Make good any damage to the satisfaction of Owner's Representative at no additional cost.
- .2 Immediately report any damage to the site or danger to persons on/near site to all concerned parties (Owner's Representative). Prior to commencement of work of this section, erect warning signs at all locations where the public may gain entrance to the project site. Provide all necessary construction barricades as requested by the City Representative to protect the public from accidents occurring during construction.

1.7 Site Conditions

- .1 Do not install hot-mix asphalt concrete pavement, base, or subbase during heavy rain or snowfall, cool temperatures or other unsuitable conditions as determined by the City's Representative. Place paving under favourable weather conditions; **Air temperature must be 10 degrees and rising.**
- .2 Do not install asphalt concrete paving on frozen, wet, muddy or rutted base(s).
- .3 Examine substrates and notify the Owner's Representative of any deficiencies related to compaction or incorrect grades or slopes. Ensure deficiencies are corrected prior to commencement of work of this Section.
- .4 Use Oil Soak Blotters in catch basin spillways and elsewhere as directed to avoid spilling oil into site drainage system(s) or adjacent watercourses.
- .5 Allow asphalt concrete paving to completely cure prior to washing the surface to avoid spilling oil into site drainage system(s) or adjacent watercourses.

1.8 Testing and Approvals

- .1 The Contractor shall provide the Owner's Representative with min. 48 hrs. notice to arrange for inspections and compaction tests.
- .2 An independent testing agency shall be paid for by the Contractor to perform

sieve analysis and density testing to confirm compliance with this Specification. Test results shall be submitted directly to the Owner's Representative. Items to be tested shall include but not necessarily be limited to the following:

- .1 Density testing of subgrade, subbase(s), base and asphalt.
- .2 Benkleman Beam Testing may be required prior to paving.
- .3 Asphalt cores for density analysis.
- .3 Prior to commencing work of this Section, mix designs shall be submitted to the Owner's Representative for approval. The contractor shall furnish sufficient evidence the proposed mix will produce satisfactory results to the Owner's Representative (if requested).

PART 2 PRODUCTS

2.1 Materials

- .1 **Hot-Mix Asphalt Concrete:** Refer to Master Municipal Specification Section 32 12 16 Hot-Mix Asphalt Concrete Paving for asphalt cement, aggregates and gradations, sand equivalents, abrasion, absorption, mineral fillers and all aspects of the mix design.
- .2 **Base:** Refer to Master Municipal Specification Section 32 11 23 Granular Base
- .3 **Subbase:** Refer to Master Municipal Specification Section 32 11 16.1 Granular Subbase

PART 3 EXECUTION

3.1 Plant and Mixing Requirements

- .1 Refer to Master Municipal Specification Section 32 12 16 Hot-Mix Asphalt Concrete Paving.

3.2 Base Inspection

- .1 Prior to commencement of hot-mix asphalt concrete paving the granular base

shall be inspected by the City Representative and the Contractor. Provide min 48 hrs. notice prior to desired paving time to allow for inspection to be scheduled. Areas of work to receive hot-mix asphalt concrete paving shall be examined and unsatisfactory conditions reported to the City Representative; commencement of work shall imply acceptance of conditions. The City Representative reserves the right to order a Benkleman Beam Test if they deem the base is unsatisfactory and work is not to proceed until such testing has been approved. The contractor shall provide a loaded single axle truck with a rear axle load of 8165 kg to be used in conducting tests.

- .2 Any areas which are found to be soft or wet shall be excavated and backfilled with the granular subbase and base as specified.
- .3 The subgrade shall be well drained. Verify that the subgrade is dry, uniform, even and ready to support the pavement structure and intended loads. Base course shall be examined for adequate compaction and uniform surface. The base course to be compacted to 95% Modified Proctor Density.
- .4 Verify the gradients and elevations of the subgrade and base are correct to allow installation as per the details and meet the intended finished grades. Notify the City Representative of any discrepancies prior to proceeding with installation.

3.3 Preparation of Subgrade and Placing Base Courses

- .1 Prepare subgrade to requirements of MMCD Section 31 22 01 Site Grading.
- .2 Place compacted aggregate base course (on compacted sub-base course) on subgrade to finished depths as detailed.
- .3 The sub-base or subgrade as detailed shall be compacted to 95% Modified Proctor Density.

3.4 Placing and Compacting Asphaltic Concrete

- .1 Place asphalt concrete to thicknesses, grades and lines as shown on the contract documents or as directed by the City Representative To be placed in compacted lifts of specified thicknesses. Arrange for and complete paving in a continuous operation, avoid delays in laying parallel strips.
- .2 Placing Conditions:
 - .1 Place asphalt mixtures only when air temperature is above 10 degrees and rising.
 - .2 Do not place hot-mix asphalt concrete when pools of standing water exist on surface to be paved.
 - .3 Lower Course: Machine place to specified compacted thickness (maximum lifts of 50mm after compaction) over compacted and graded aggregate base. Some areas may require thicker applications to fill in

low spots and to ensure positive drainage.

- .4 Upper Course: Machine place to minimum specified compacted thickness (maximum lift of 25mm after compaction) over compacted lower course. Hand place/tamp as required around all site fixtures.
- .5 When asphalt concrete meets site fixtures, furnishings, concrete walls, walks, flare the asphalt upwards around the base of fixture to ensure water drains away from the fixture and is in compliance with the overall grading and drainage plans for the Project.
- .6 Commence rolling and/or manual compaction immediately after the bearing capacity is adequate to support the required compaction equipment, without undue displacement of material or surface cracking.
- .7 Along building walls, curbs, gutters, headwalls, manholes and similar locations not accessible to a roller, thorough compaction shall be obtained by means of hot hand or smaller mechanical tampers before the mixture has set. At all contacts of this nature, the joints between these structures and the surfacing must be effectively tack coated with an emulsified asphalt.
- .8 Notify the City Representative min. 48 hrs. prior to flooding to arrange for inspection. Flood the entire asphalt concrete surface area after placement of the Lower Course Asphalt to ensure positive drainage in accordance with the grading plans. Make all necessary repairs to ensure positive drainage prior to placing the Upper Course Asphalt.
- .9 Cutting and removal/patching type repairs are permitted in the Lower Course asphalt only. Take care to ensure that grading and drainage problems are rectified prior to placement of Upper Course asphalt. Deflecting, ponding or other surface grading problems found in the asphalt Upper Course shall be corrected by complete removal of the top lift of asphalt concrete and replacement with a new lift of Upper Course asphalt. Final repair process subject to review/approval with the City Representative.
- .10 All asphalt concrete pavement edges shall have a uniform, beveled, tidy and straight appearance. Border planks or sawcut edges are not acceptable.
- .11 Both Lower and Upper Course asphalt concrete joints shall be homogeneous with the rest of the surface and carefully matched for texture and elevation. All joints which are rejected by the Owner's Representative are to be cut out and redone to Owner approval.

3.5 Existing Asphalt

- .1 Repair all existing asphalt concrete that has been damaged/broken or eroded due the Work of this Contract.
- .2 Where new asphalt concrete paving abuts existing asphalt concrete paving

make good all cracked, damaged or eroded areas to a distance of 600mm back from the intersection to provide a uniformly graded, smooth and solid transition with the new work.

- .3 Where existing asphalt is to be overlaid, prior to installing asphalt concrete mix, the surface shall be cleaned of loose or foreign material and tack coated in accordance with Section 32 12 13.15 of the MMCD. Erect temporary barriers to protect coatings and markings during drying and curing.

3.6 Performance Standard(s)/Surface Tolerances

- .1 All finished asphalt concrete surfaces shall be dense, compact, free from faults or cracks and true to grades, elevations and cross falls shown. Any birdbaths holding water deeper than 3mm after rainfall or test flooding shall be patched and leveled in accordance with recommendations of the colour coating/finishing system specified. Re-flood and test. All surface irregularities are to be repaired to the City Representative approval.
- .2 All asphalt concrete paved surfaces shall have a uniform appearance. Any areas that do not have a uniform appearance, with a tight aggregate spacing or have footprint indentations shall be repaired to Owner's Representative approval.
- .3 Repairs to court surfaces shall be seamless with the adjacent surface and have a similar appearance and texture that will not result in a different shoe grip or ball bounce or compromise the application of any colour coat surface/line paint

3.7 Thickness Tolerance

- .1 The minimum asphalt concrete pavement thickness specified herein shall mean the average compacted thickness as determined from cores taken as dictated by the Owner's Representative from random locations around the site area being paved. The Contractor is to repair the core hole locations.
- .2 The average thickness of cores shall equal or exceed the specified pavement thickness and no individual core shall be more than 5mm less than the specified thickness detailed.
- .3 Any paved surface area failing the core thickness testing criteria shall receive a minimum 12mm lift of Upper Course Asphalt.

3.8 Power Washing

- .1 Power wash entire surface of each court to remove any surface oils prior to final surface coating applications.

END OF SECTION

HARD COURT SURFACING SYSTEM

SECTION 32 18 23

PART 1 GENERAL

1.1 Related Work

- .1 MMCD Section 31 05 17 Aggregates and Granular Materials
- .2 MMCD Section 32 11 23 Granular Base
- .3 MMCD Section 32 12 16 Hot Mix Asphalt Paving

1.2 References

- .1 Current ASBA (American Sports Builders Association) Guide Specifications.
- .2 Product delivery, environmental requirements, preparation of surfaces and application shall be in accordance with the applicable chapters of Canadian Painting Contractors Association/Master Painters Institute Architectural Painting Specification Manual: Ext. 2.1 Asphalt Surfaces or Ext. 3.2 Concrete Horizontal Surfaces and/or Maintenance Repainting Manuals Rex 2.1 Asphalt Surfaces or Rex 3.2 Concrete Horizontal Surfaces (CPCA/MPDA), latest editions.
- .3 A copy of the applicable chapters of the Canadian Painting Contractors Association/ Master Painters Institute Architectural Painting Specification Manual and/or Maintenance Repainting Manual shall be kept on site during the duration of the painting work.
- .4 Should modifications to the standards occur in this specification, then the modifications shall govern.

1.3 Delivery and Storage of Materials

- .1 Deliver materials to site in original unopened containers with proper manufacturer's label affixed.
- .2 Store materials in accordance with manufacturer's specifications.

1.4 Quality Control and Testing

- .1 The acrylic colour system shall be installed by a court specialty professional with a minimum of five (5) years of experience in court surfacing work and must have successfully completed a minimum of five (5) projects of similar scope in each of the past three (3) years.

- .2 Court sub-Contractor must be a certified acrylic installer.
- .3 If an alternate court professional is proposed, they must meet the above qualifications and provide a list of past projects, complete with addresses, contact names and phone numbers, to the Consultant for approval.

1.5 Samples

- .1 The Contractor is to submit samples of surface system and colour chart to the Contract Administrator.
- .2 Mark samples with name of project and its location, manufacturer's name and address, name of coating and colour.
- .3 Submit manufacturer specifications for components and installation instructions.

PART 2 PRODUCTS

2.1 Materials

- .1 All surface coating products shall be supplied by a single manufacturer.
- .2 Hard Court Surfacing Materials shall be:
 - .1 **Plexipave:** as manufactured by California Products Corp. Andover, MA. 01810. Plexipave System www.plexipave.com
 - .2 or **Equivalent**
- .3 Acrylic Colour Surfacing shall be pure acrylic, containing no asphaltic or tar emulsions, nor any vinyl, alkyd or non-acrylic resins. The color system shall be factory-mixed compounds requiring only the addition of water at the site:
 - .1 **Plexipave:** Fortified Plexipave.
 - .2 or **Equivalent**
- .4 Colours;
 - .1 Court: (**Plexipave** "Dark Blue" and "Light Green")
 - .2 Line Markings: White or Yellow as shown on Plan
- .5 Acrylic Resurfacer shall be 100% acrylic concentrate/filler blended with silica sand and water at the site:
 - .1 **Plexipave:** Acrylic Resurfacer.
 - .2 or **Equivalent**

- .6 Patching Mix shall be used for patching cracks, holes, depressions and other surface imperfections:
 - .1 **Plexipave**: Court Patch Binder.
 - .2 or Equivalent
- .7 Crack Filler shall be used for filling fine cracks:
 - .1 **Plexipave**: Plexipave Crack Filler.
 - .2 or Equivalent
- .8 Line painting (white) shall be:
 - .1 **Plexipave**: Plexicolor textured line paint and Line Rite.
 - .2 or Equivalent

PART 3 EXECUTION

3.1 Preparation and Condition of Surfaces

- .1 New asphalt paving shall cure for a minimum of fourteen (14) days of warm weather prior to application of any surfacing materials.
- .2 Surfaces shall be cleaned using a stiff bristle broom and gas-powered blower or water based pressure spray unit capable of generating 2500 psi at the nozzle tip, to remove all dirt and debris.

3.2 Preparation for Acrylic Colour System

- .1 Cracks and Holes: Clean cracks and holes so that is it free of all vegetation and debris. Remove all loose pavement from cracks. Repair according to manufacturer's specifications. Allow repair to dry prior to applying acrylic colour system.
- .2 Depressions: The surface shall be flooded. Any ponding water remaining that is deep enough to cover the thickness of a five-cent piece shall be corrected using a patch mix as per manufacturer's directions and specifications. Depressions must be primed with a 50% dilution of patch binder and water prior to patching.
- .3 All areas to be colour coated shall be clean, free of grease, oil, dust, dirt and other foreign matter before starting work.

3.3 Application of Acrylic Colour System

- .1 All new asphalt to be painted over must be allowed to cure for a minimum of 14 days prior to painting application.
- .2 The Contractor must notify the Owner's Representative of all applications, forty-eight (48) hours prior to installation for inspection and approval of the surface;
- .3 All areas to be colour coated shall be clean, free of grease, oil, dust dirt and other foreign matter before starting Work;
- .4 Application of the acrylic colour system must be completed by September 15 of this year. If acrylic colour system is not installed by September 15, the contractor shall apply temporary line markings for fall and winter use and shall apply the full acrylic colour system the following spring season when temperature and weather meet the necessary conditions per section 3.3.5 and 3.3.6.
- .5 Coatings are waterborne and cannot cure in cold temperatures or when subject to moisture. Care should be taken not to apply coatings when rain is forecast or sudden drop of temperature is expected. Climatic conditions such as very cool evenings and high dew points dictate that work should be completed early in the day so the coatings can be exposed to enough warm sunlight to form a film before sunset. The opposite applies during times of high heat, low humidity and drying breezes: under these conditions, work very early in the morning or very late in the day. If the product seems to be drying too fast in hot weather, mist the pavement with water to make the application easier;
- .6 Application shall proceed only if the surface is dry and clean and the temperature is at least ten degrees (10°C) and rising, and the surface temperature is not in excess of sixty degrees (60°C). Do not apply coatings when rain is imminent;
- .7 Each coat in this system must dry completely before next application. Between each coat, inspect entire surface. Any defects should be repaired. Scrape surface to remove any lumps, and broom or blow off all loose matter;
- .8 Acrylic Resurfacer: This filler course is used as a resurfacer, once the asphalt surface has been properly repaired, to fill voids and hide the profile of aggregates in the pavement prior to the application of acrylic colour surfacing systems.
 - .1 Using a neoprene rubber squeegee, apply two (2) coats of acrylic resurfacer according to manufacturer's specifications;

- .2 Allow each application to dry thoroughly before next application.
- .9 Acrylic Colour Surfacing: This is the colour coating course
 - .1 Using a neoprene rubber squeegee, apply a minimum of two(2) coats of the acrylic colour surfacing according to manufacturer's specifications.
 - .2 Allow each application to dry thoroughly before next application.
 - .3 The finished surface shall have a uniform appearance and be free from ridges and tool marks.

3.4 Line Painting

- .1 Upon completion and acceptance of the surface from the Owner's Representative, the Contractor shall prepare and paint lines.
- .2 Lines shall be 50mm (2") wide unless otherwise noted on the drawings.
- .3 All lines are to be applied by painting between masking tape with a paintbrush or roller, according to the applicable detail and USTA specifications. Obtain approval of layout prior to painting.
- .4 Prime masked lines with line primer, allow application to dry.
- .5 Paint lines. Apply two coats. Allow application to dry thoroughly before next application.
- .6 Remove masking tape immediately after lines are dry.
- .7 Protect adjacent areas and structures (fences, posts, sidewalks, buildings, etc.), which are not to be coated. In the event that coatings are applied to above, remove immediately before drying is complete.

3.5 Protection

- .1 Erect temporary barriers to protect coatings and markings during drying and curing.

3.6 Cleaning

- .1 Upon completion, the Contractor shall insure proper removal of all construction debris, surplus materials, empty containers, and wash water, and shall leave the site in a condition acceptable to the Owner.

END OF SECTION

Section	Subsection	Title	Supplementary Specifications
26 56 01	1.0	General	.1 Any reference to Roadway Lighting shall include Sports Lighting .2 The work shall include the supply and installation of sports field lighting as shown on drawings 7785-22. .3 The pole foundation design drawings shall be provided by the pole supplier's structural engineer.
26 56 01	1.10	Inspection and Testing	.2 Refer to Specifications 16500 and 16470 for specific testing and inspection requirements. .3 DMD & Associates Ltd., and CoS will observe the Contractor's work at various stages. .4 Foundations will require review and inspection by the structural engineer prior to backfill. .5 Contractor shall contact DMD & Associates Electrical Consultants Ltd at substantial completion for field review. .6 Contractor shall supply photos of conduits and JB to DMD for review prior to closing the trench.
26 56 01	1.11 (NEW)	Submittals	.1 Contractor shall prepare a set of prints marked-up to show the "as constructed" installation upon the completion of the installation. These mark-ups shall be submitted to DMD. .2 Submit information as noted in Specifications Sections 16470. .3 Where required by the engineer the contractor shall measure and document the voltage and amperage at electrical cabinet on poles and at the main electrical panel.
26 56 01	1.12 (NEW)	Contractor Qualifications	.1 All work must be installed by a qualified electrical contractor, who is required to obtain a permit from the Provincial Electrical Inspector. .2 The Contractor shall be a Registered Electrical Contractor under the provisions of the Electrical Safety Act. .3 Contractors shall have successfully completed at least two major sports field projects of the same scale and nature, in the past five years.

Supplemental Specifications



26 56 01	1.13 (NEW)	Materials by contractor, key pattern supplied by Municipality	.1 Padlocks and pucklocks - The Contractor shall obtain locks patterns from Parks. Contractor shall supply pucklocks for electrical kiosk and padlocks for the pole mounted electrical component enclosures, and push button enclosures, and junction boxes.
26 56 01	1.14 (NEW)	Warranty	.1 The Contractor shall for a period of one (1) year after the total performance date, replace or repair all deficiencies or failures to the installation free of all charges.
26 56 01	2.1	General	.6 All products are indicated on Drawings. .7 Electrical cabinets shall be Valid Manufacturing Ltd or Code Electric. (or equal) type in accordance with Section 16470.
	3.1	Execution	.5 No MMCD drawings shall apply for the installation of sports lighting poles and bases unless approved by structural engineer. .6 The contractor shall use suitable equipment to excavate the holes for the pre-cast foundations. Cost for dewatering and sleeving of foundation shall be borne by the contractor. .7 The contractor shall employ a BC Land Surveyor to layout the poles and equipment. Use the dimensions shown on the construction drawings. Any digital files that are provided by DMD are for coordination only, and shall not be used for surveying. .8 It is the responsibility of the contractor to obtain all required information from the City of Surrey and set-up and test the Sports Lighting Controls system prior to final inspection. .9 The contractor shall protect all surfaces from damage caused by equipment and vehicles. .10 Contractors to ensure construction area is safe by the end of the day. Any debris on the field to be removed by the end of work day where accessible by public. .11 Hours of work shall be 7AM-8PM, Monday through Friday. .12 Replace existing tennis lighting kiosk with new kiosk. See section 16470 for new kiosk specifications.

Supplemental Specifications



			<p>.13 Remove existing concrete poles, cross arms, luminaire and discard offsite.</p> <p>.14 When removing the centre concrete pole, minimize damage to the affected area. Re-surface the tennis court to equal or better condition. Refer to drawings for details.</p>
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END OF SECTION

16470 ELECTRICAL CABINET (KIOSK)

PART 1 – GENERAL

1.01 GENERAL

- A. This specification shall apply to the design and supply of electrical cabinets which shall include:
 - 1. Lighting Control Cabinet –Sports lighting kiosk
- B. Cabinets shall include all required equipment, not limited to the main breaker, meter, pull box, distribution panel(s), transformer, contactors, lighting controls, etc as shown on the drawings. The cabinet shall be designed to accommodate the lighting controller.
- C. The final cabinet complete with all electrical components shall bear the label of the CSA.
- D. The supplier shall design and produce the lighting control cabinet to meet the criteria noted in this document. The supplier shall be capable of producing a premium grade product, which meets the quality, fit and finish noted in this document. The use of CNC equipment is mandatory. The supplier's shop shall be approved to produce CSA listed products.
- E. The cabinet and internal components shall be designed to meet the approval of the local electrical utility and shall be designed for easy maintenance.
- F. The lighting control system (schematic) and power distribution system (one-line diagram) shall be as noted on the contract electrical drawings.
- G. All equipment produced shall meet the requirements of the Canadian Electrical Code.

1.02 ALTERNATE SUBMITTALS

- A. Alternate lighting control cabinet suppliers must submit the following for review:
 - 1. Detailed cabinet and door shop drawings showing all fabrication and the layout of all internal components. Drawings shall be produced using computer drafting format.
 - 2. List of components (by manufacturer and number) and product sheets for each item
 - 3. Cabinet ventilation drawings (sealed by PEng)
- B. Approval of alternates shall be granted if the submittal information listed above is complete and meets the approval of the engineer. To be accepted an alternate submittal must meet or exceed the Valid Manufacturing or Code Electric product in quality, performance, durability, warranty and shall meet the requirements of this specification. Where an alternate submittal is not accepted it shall be returned with a list of deficiencies. Alternates will be reviewed up to two week after award. Where deficiencies are noted the supplier will have 3 days to resolve the deficiencies to the satisfaction of the engineer.
- C. Acceptance of an alternate does not negate the contractor and suppliers responsibility to meet the requirements of these specifications.

D. Product Approval:

Wherever any material, machinery, equipment, fixtures (“Product”) is specified or shown herein by description of proprietary items, model numbers, catalogue numbers, manufacturer, trade names or similar references, the tender and award of the Contract will be based upon the use of such Products. Use of such Product descriptions in the tender documents is intended to establish a reference by which to measure the quality of the Products required for the Work. In respect of specific situations for which two or more interchangeable Products are shown or specified in the tender documents, the tenderer may choose which to use.

For approval of Products for use in substitution for those specified in the Tender documents, tenderers will submit a request in writing to the Owner at least five (5) working days prior to the Tender Closing Date. Requests should clearly define and describe the product for which approval is requested and be accompanied by manufacturer’s literature, specifications, drawing, cuts, performance data or other information necessary to completely describe the product.

1.03 QUALITY CONTROL

- A. The supplier shall have and maintain a suitable quality control program throughout the contract. The purpose of the quality control program is to ensure that the product meets the quality requirements of these qualifications, is delivered on time, and is produced in a cost-effective manner. The supplier’s quality control program shall apply to all stages of the design, procurement, manufacturing, testing and delivery of the product.

1.04 WARRANTY

- A. General Warranty: The special warranty specified in this Article shall not deprive the Owner of other rights the Owner may have under other provisions of the Contract Documents and shall be in addition to, and run concurrent with, other warranties made by the Contractor under requirements of the Contract Documents.
 - 1. One year parts and labor on all materials from the date of substantial performance

PART 2 – PRODUCTS

2.01 MANUFACTURERS

- A. Available Products: Subject to compliance with requirements, that may be incorporated in the Work include the following products:
 - 1. Valid Manufacturing Ltd. Lighting Control Cabinet (ph 1-250-832-6477)
 - 2. Code Electric Ltd. (ph 604-540-0011)
 - 3. Engineer approved alternate (refer to section 1.02)

2.02 GENERAL MATERIAL REQUIREMENTS

- A. All materials shall be new.
- B. Unless otherwise noted, the cabinet shall be fabricated from 5052-H32 sheet aluminum of at least 1/8-inch thick.

16470 Service Cabinet



- C. All materials shall be corrosion resistant for extended life

2.03 FABRICATION PROCESS

- A. The cabinet and door shall be fabricated using CNC controlled equipment.
- B. The cabinet and doors shall be fabricated to plus or minus 10 thousands of an inch tolerance for proper fit.
- C. All bending shall be done using a suitable break press.

2.04 CONNECTING HARDWARE

- A. All screws, bolts, washers, nuts, etc. shall be stainless steel.
- B. All screws shall be stainless steel pan-head machine screw type.
- C. Any bolts that are 1/4-20 or larger shall be stainless steel hex head type.
- D. No sheet metal or self tapping screws shall be used.

2.05 WELDING

- A. All exterior seams shall be of continuously welded construction. All welds shall be free of slag and spatter. All exterior welds shall be ground smooth.
- B. The supplier shall have suitable credentials to weld aluminum and shall adhere to all applicable ANSI standards.
- C. The supplier shall use a suitable welding process and materials.

2.06 DOORS AND HINGES

- A. Doors shall be designed for maximum strength and snug fit. Refer to Figures 1 to 5A, which illustrate the standard required. It is the supplier's responsibility to design and fabricate the doors to the fit and finish required in this specification.
- B. Doors shall be fabricated out of a single sheet of aluminum and have wrap around return for strength and fit.
- C. Doors shall also have an inner skin for additional strength. The bottom of each door shall have ventilation holes.
- D. Doors shall be fully gasketed against the cabinet.
- E. Door hinges shall be positioned so they are hidden behind the door and cannot be accessed with the door closed. Door hinges are model No. HALZF, HALZM, HALZML, or Approved Equal). A minimum of 4 hinges are required per door.

- F. Each door shall have a pneumatic return device (see Figure 4) to control the rate of door open and close and prevent opening beyond 90 degrees (Faucher Models 777-7727).
- G. Door handles shall be recessed and 3 point contact stainless steel construction (Faucher Industries No 617-5076 for the handle and 700-5463 for the latch or Approved Equal). The handles shall latch to the cabinet 16 gauge stainless steel rails and rollers which shall be fabricated to provide a secure and well sealed attachment to the cabinet (see Figure 3).
- H. The exterior of the doors shall have continuous welds.
- I. All exterior corners shall be rounded to a minimum radius of 1/8 of an inch. All sharp edges shall be de-burred to a minimum radius of 1/64 inch in order to reduce hazards to service personnel.



Figure 1

Figure 2

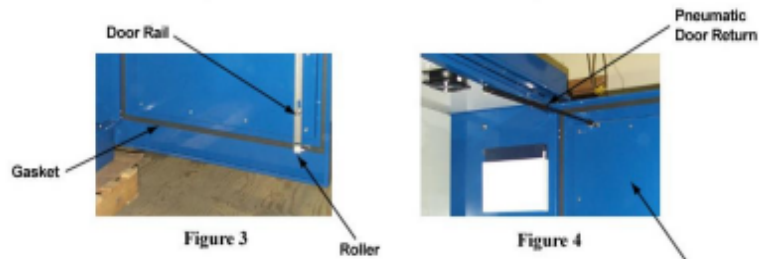


Figure 3

Figure 4



Figure 5

2.07 CABINET

- A. The cabinet and door shall be constructed to meet NEMA 3R standards. The cabinet shall be made up of the main body, roof section and inner wall. These components shall be welded together. The cabinet shall be designed for maximum strength and proper fit to the door.

- B. Refer to Figures 6 to 11, which illustrate the standard required. It is the supplier's responsibility to design and fabricate the cabinet to the fit and finish required in this specification.
- C. The cabinet shall be designed to attach to concrete pad via Hilti style drop-in anchors, which shall be supplied with the cabinet. Supplier shall provide Hilti anchors.
- D. The exterior of the cabinet shall have continuous welds.
- E. The cabinet main body shall have a wrap around return to accept the door (see Figure 10).
- F. The cabinet shall contain 2 internal motion controlled lights (Guard 59-310-Cord C90, or Approved Equal), a thermostatically controlled fan (ETRI 148 DK-0282-030, 253 CFM), or Approved Equal), thermostatically controlled 500W heater (Stelpro Heating No. RWF-SA-W and RWF-501-W, or Approved Equal) and 120V spec grade ground fault duplex receptacle.
- G. The cabinet shall be equipped with lifting brackets, which shall be removed after the installation. The bolts to attach the lifting brackets are shown in Figure 9).
- H. All exterior corners shall be rounded to a minimum radius of 1/8 of an inch. All sharp edges shall be de-burred to a minimum radius of 1/64 inch in order to reduce hazards to service personnel.
- I. Non Utility doors on cabinet shall contain Puck Lock in recessed access next to the cabinet door handle (See Figure 5A).



Figure 5A



Figure 6



Figure 7



Figure 8

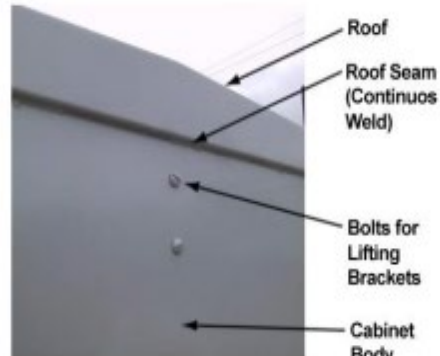


Figure 9

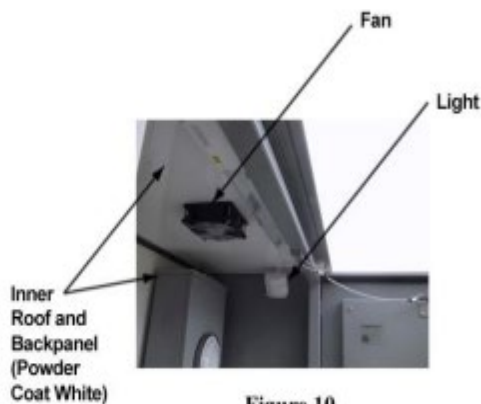


Figure 10



Figure 11

2.08 CABINET VENTILATION

- A. The cabinet and doors shall be provided with an engineered ventilation system designed to move filtered air in through the bottom of the cabinet and out through the top. The internal air temperature shall be thermostatically controlled to allow the internal equipment to operate within their recommended operation temperatures and to reduce condensation. The supplier shall produce details of the ventilation system, how it works, and evidence that the system has been engineered.
- B. The cabinet shall have intake vents in the lower portion of each door and exhaust vents on the cabinet above the door (see Figures 8 and 12).
- C. Ventilation holes shall not be larger than 1/8" diameter to prevent the entry of foreign particles into the cabinet.
- D. Both intake and exhaust vent shall be filtered.

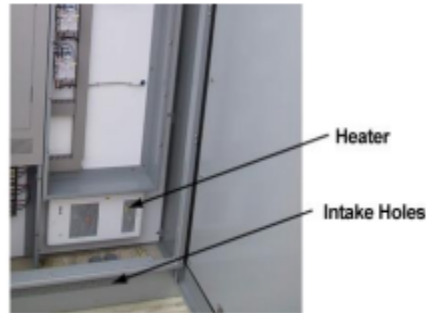


Figure 12

2.09 EQUIPMENT MOUNTING INNER WALL

- A. Equipment shall be mounted on an inner panel.

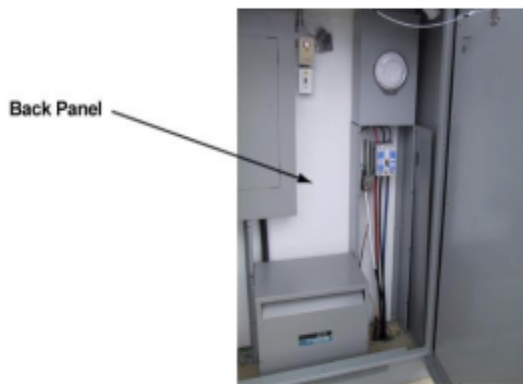


Figure 13

- B. Equipment mounting panels shall be constructed from 5052-H32 sheet aluminum at least 1/8 thick.

2.10 FINISH

- A. Upon completion of fabrication the cabinet, door and inner wall shall be finished as follows:
1. The surface shall be thoroughly cleaned and degreased using alkaline cleaner and then rinsed.
 2. The surfaces shall be brush blasted to a 1.5 to 2 mil profile.
 3. The surfaces shall then be pre-baked and a prime coat shall be electrostatically applied (DuraCoat zinc epoxy powder primer E-2024-2Z) 2 to 3 mils in thickness.
 4. After the prime coat has set, the top coat shall be electrostatically applied (DuraCoat polyester urethane anti-graffiti type resin for cabinet and doors) 3 to 5mils in thickness. Color shall be ANSI 61 Grey for the cabinet and door and white for the internal back plane.
 5. An independent testing agency shall test and verify the final powder adhesion and finish is suitable for a long life in an outdoor environment.
 6. The final product shall be free of dents, scratches, weld burns and abrasions harmful to its strength and general appearance.

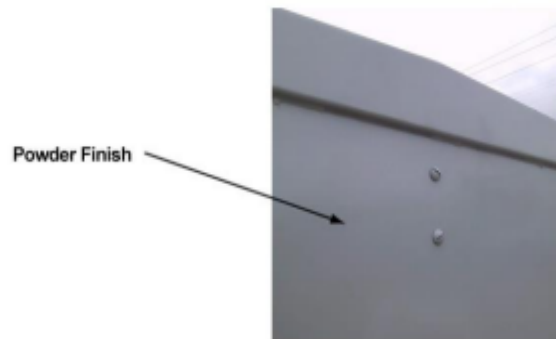


Figure 14

2.11 GENERAL ELECTRICAL

- A. The supplier shall provide equipment layout details with the shop drawings.
- B. An inner mask shall be installed to protect personnel from electrical hazard. The mask shall have cut-outs for circuit breaker toggle mechanisms. Knock outs in the mask shall be provided for all spare breaker spaces.

- C. All equipment shall be mounted on stand-off back panels and shall be secured using 8-32 inserts.
- D. All equipment shall be labeled using Lamicaid or vinyl adhesive labels with ½-inch high black characters on a white background.
- E. All panels shall be supplied with the breakers installed.

2.12 METERING (NOT REQUIRED)

- A. Metering shall meet the approval of the local utility. All metering shall be contained within the Lighting Control Cabinet. The metering shall be located for easy reading by the local utility.
- B. CT's shall be to local utility standards. CT's and metering cabinets shall be sized and laid out to meet utility standards.

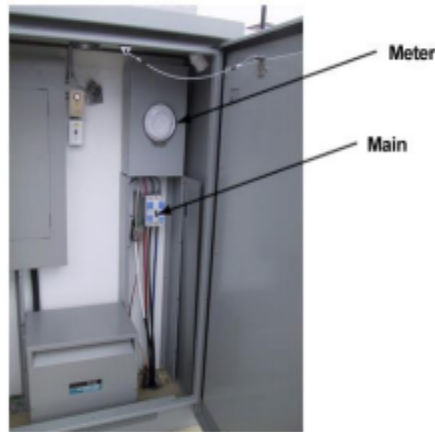


Figure 15

2.13 PANELBOARDS

- A. The main panel boards shall be supplied based on the panel schedule on the contract drawings.
- B. A load center shall also be supplied to feed internal lighting, heater, fan, receptacle, etc in the lighting control cabinet. This panel may also feed some external devices noted on the contract drawings.
- C. Panel boards and load centers shall be securely attached to the cabinet back plane and shall be located for easy access and servicing (see Figure 16).

2.14 CIRCUIT BREAKERS

- A. The main breaker shall be electronic trip, molded-case, and clamp-on type (Schneider/Square D, Cutler-Hammer, or approved equal).



Figure 16

- B. Branch circuit breakers shall be thermal magnetic trip, molded-case, clamp-on type (Schneider/Square D, Cutler Hammer, Hammond or Approved Equal) to suit the main panel board.
 - 1. Circuit breakers used for lighting applications shall be suitable for LED Lighting inrush (D Curve breakers).
- C. The minimum fault current shall be as noted on the contract drawings.

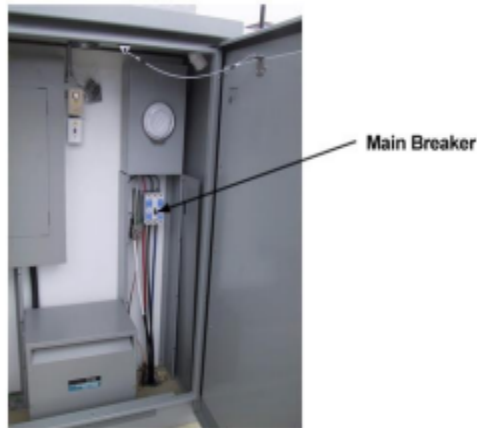


Figure 17

2.15 TRANSFORMERS

- A. Transformers shall be dry type (Hammond, Beaver, Delta ET series, or Approved Equal). Transformer size and voltage shall be as noted on the contract drawings.
- B. Transformer shall be mounted and attached in a suitable location for easy access.



Figure 18

- C. If the enclosure of the transformer is removed due to physical size constraints, the transformer shall be isolated in its own compartment complete with its own access door. A removable (by tools) polycarbonate protective shield shall be installed to protect from live parts. A lamacoid

label on the transformer access door shall read “Caution! Live Transformer Parts. Access by Qualified Electrician Only”

2.16 GROUNDING AND BONDING

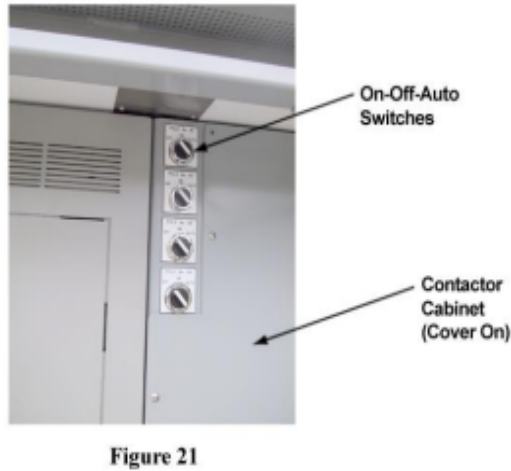
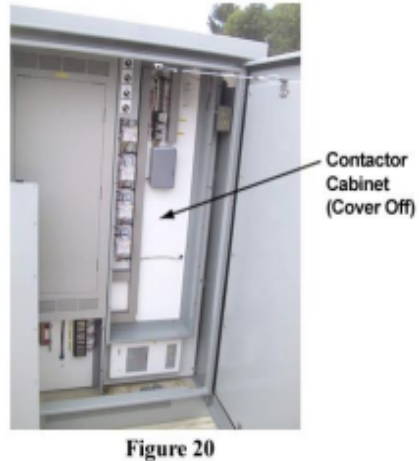
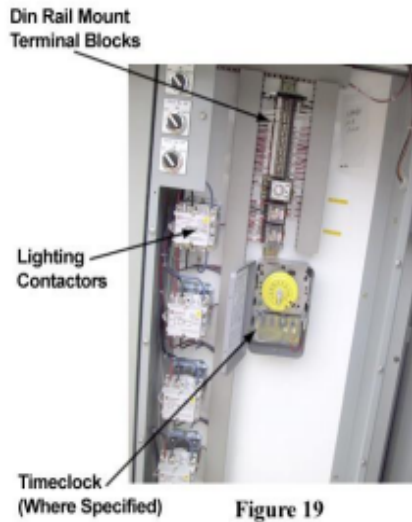
- A. The grounding and bonding system shall be designed to meet all CSA standards and any codes and local utility standards.
- B. The grounding and bonding system shall be designed as part of the power distribution system.

2.17 SURGE PROTECTION

- A. The surge protection device (SPD) shall be Type 2 with a minimum of 10kA nominal discharge current rating in accordance with ANSI/UL 1449.

2.18 LIGHTING CONTROL CABINET

- A. The lighting controls shall be Skylogix. The control panel shall be supplied by the contractor and installed by the kiosk manufacturer.



2.19 PULL BOXES AND WIREWAYS

- A. Pull boxes and wire ways shall be provided for easy field wiring and trouble shooting. Pull box size and locations shall meet utility standards.
- B. All wire way shall have removable covers.

2.20 WIRING

- A. All wiring shall be neatly grouped bundled and ty-rapped as shown below.
- B. All conductors shall be stranded copper RW90 insulation.
- C. Provide 8-32 inserts and ty-rap mounts for the attachment of wiring.
- D. Wiring and terminal blocks shall be labeled according to the conventions shown in Figures 22 and 23.

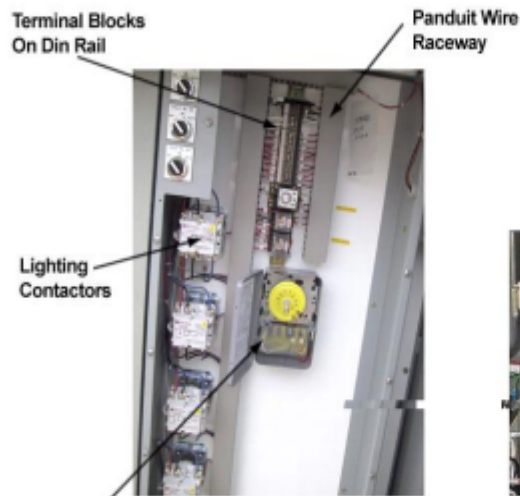


Figure 22

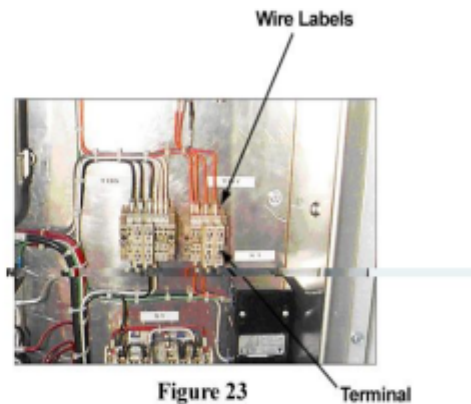


Figure 23

- E. All wiring shall meet CEC standards.

2.21 TERMINAL BLOCKS

- A. Terminal blocks in the contactor cabinet shall be din rail mounted as shown in figure 22 above.
- B. Output wiring shall be connected via terminal blocks to accept field wiring.
- C. Terminals for bonding conductors will also be required.

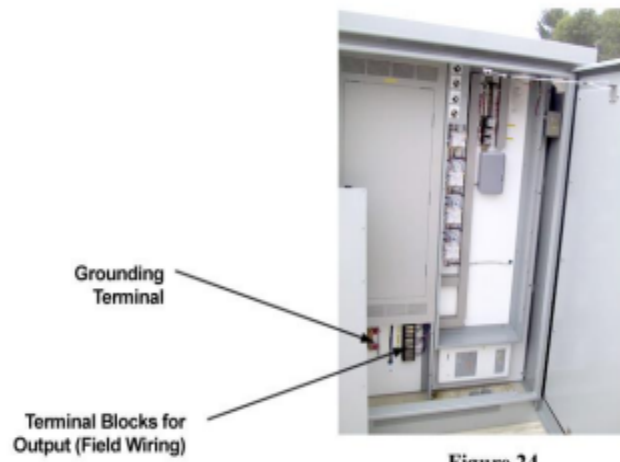


Figure 24

2.22 LABELING

- A. All products shall be labeled (inside) with the supplier's company name, model number, panel rating and the date of manufacture.
- B. The supplier shall also provide adhesive Lamicoid or vinyl labels on the inside of each cabinet for each component. Each contactor and output circuit shall also be labeled in accordance with the suppliers lighting design.
- C. All ID labels shall have ¼" to ½" high black characters on a white background.
- D. All wiring shall be labeled with computer generated sleeve type wire markers.

2.23 TESTING AND INSPECTION

- A. The supplier shall test all equipment circuits and lighting controls prior to shipment. Test results shall be provided upon request.
- B. The owner reserves the right to inspect the completed product prior to packaging and shipping. The supplier shall advise the engineer a minimum of 5 working days prior to shipping for inspection.

2.24 PACKAGING

- A. Each cabinet shall each be lag bolted to two 4" x 4" posts along the shorter sides of the cabinet to be used for support when kiosk is being lifted or moved.
- B. Any product damaged in shipping shall be repaired or replaced at no extra cost to the Owner.

PART 3 – EXECUTION

3.01 INSTALLATION

- A. Set units on concrete foundation and attach with drop in anchors supplied with cabinet. Seal cabinet to concrete with suitable sealant.
- B. Conduits shall be located as shown on the supplier’s conduit layout drawing.
- C. Concrete Foundations:
 - 1. Size as noted on the contract drawings
 - 2. Concrete shall have a minimum compressive strength of 28Mpa at 28 days.
 - 3. Comply with details on the contract drawings for reinforcing, attachment, etc.
 - 4. Trowel finish and rub smooth parts exposed to view. Top of concrete shall be level. Chamfer all exposed edges.
 - 5. Conduits shall be as noted on the contract drawings. Supplier to provide template locating conduits to suit the cabinet
 - 6. The concrete base shall be complete with 15M rebar spaced at 300mm top and bottom.
 - 7. A concrete working pad (min. 3” thick) shall be installed in front of all access doors minimum 1.2m in length. Where the kiosk is located in front of a hardscape surface, the hardscape surface may be used as the working pad.
 - 8. A silicon seal between the kiosk and the concrete foundation shall be installed.

3.02 GROUNDING

- A. Install all grounding and bonding in accordance with CEC and the contract drawings.

3.03 FIELD QUALITY CONTROL

- A. Inspect each installed unit for damage. Replace damaged components.
- B. Give advance notice of dates and times for field tests.
- C. Provide instruments to make and record test results.
- D. Tests and Observations: Supplier shall test all circuits and controls prior to shipping.
- E. Replace or repair damaged and malfunctioning units, make necessary adjustments, and retest. Repeat procedure until all units operate properly.

END OF SECTION



16500 SPORTS LIGHTING

PART 1 – GENERAL

1.01 GENERAL

- A. These specifications cover the supply and installation of the sports lighting system which includes:
1. Galvanized steel poles and fixture mounting cross arms
 2. Fixtures including external glare shields
 3. Electrical cabinets
 4. Wiring from cabinets to fixtures
 5. Brackets for security luminaires
 6. Foundations and related engineered design drawings and letters of assurance for structural (Schedules B and CB forms). Geotechnical Report included in attachments.
 7. Security Features – Poles foundations shall have tamper proof hand-holes with stainless steel banding, pole mounted electrical cabinets shall be heavy duty lock brackets
- B. The sports lighting equipment shall meet the requirements of these specifications and the DMD contract drawings.
- C. Abbreviations:
1. ANSI American National Standards Institute
 2. CEC Canadian Electrical Code
 3. NEMA National Electrical Manufacturers Association
 4. IES Illuminating Engineering Society
 5. CSA Canadian Standards Association
 6. UBC Uniform Building Code
- D. Alternate lighting systems may be considered and shall be quoted as an alternate as specified on the drawings. No other alternate approvals will be granted prior to bid close.

1.02 CSA

- A. All equipment shall be CSA approved and/or cUL Listed.

1.03 DESIGN CRITERIA

- A. The sports lighting system shall meet the following criteria:
1. **Fixtures:** max 550W LED.
 2. **Maximum Load:** 17.6 kW. Higher loads will require electrical redesign and larger wire which shall be factored into the cost
 3. **Voltage:** System voltages are to be 347/600V, 3 phase.

4. **Pole Sizes:** Shall be as shown on DMD electrical drawings.
 5. **Pole locations:** Are shown on DMD electrical drawings (alternate locations shall meet consultant approval).
 6. **Off Field Lighting Impact:** Off field lighting shall meet IDA-Criteria for Community-Friendly Outdoor Sports Lighting v1.3. If the 150' (46m) requirement is obstructed by a structure such as a building, the supplier shall provide vertical calculations along the structure facing the field.
 7. **Light Loss Factor (LED):** Average maintained horizontal illuminance light levels shall be lumen depreciation via IES TM-21 tests, dirt factor (0.95), and ambient temperature factor. If light loss factor is achieved via changing driver current the supplier must submit data to prove light levels can be maintained.
 8. **Minimum Maintained Average Horizontal Illuminance (on field):**
 - a) Tennis courts shall not be less than **300 Lux**
 9. **Maximum to Minimum Uniformity (on field):**
 - a) Tennis fields shall not exceed **2.5:1**
 10. **Grid Spacing** – As per IESNA RP-6 (current edition).
 11. **Foundations:** Shall be such that their excavation has a minimum impact on the surrounding areas. Foundations shall be engineered as part of the system.
- B. The above lighting criteria shall be read in conjunction with the contract drawings.

1.04 WARRANTY

- A. The equipment shall include the following warranty:
1. A full written parts and labor warranty for a period of 10 years. The supplier will exercise all reasonable efforts to perform service under this Contract, in an expeditious manner, as laid out in the written warranty, but will not be responsible for delays or failure in performing such services caused by conditions, acts, or other causes beyond its control. The warranty period shall start from the date of shipment from the factory.
 2. Average constant light levels shall be guaranteed to +/- 10% of the design criteria for the warranty period.
 3. Alternatively, the supplier can provide a 25-year warranty as an optional price item.

1.05 PERFORMANCE GUARANTEE

- A. The lighting supplier shall provide a written guarantee for the performance of the lighting system relative to the information provided. The supplier must also commit in writing to making any repairs and/or modifications to the components supplied if they don't meet the performance requirements noted in these specifications.

1.06 SUBMITTALS AFTER AWARD

- A. Prior to production the supplier shall submit the following information to DMD for review:
1. Light level calculations on the fields and off the fields (spill lighting in vertical Lux and Candle-power;

2. Aiming diagram;
3. Lighting control system operations and diagrams and cabinet details specific to this project;
4. Foundation design drawing (complete with engineer's seal, registered in the province of BC);
5. Warranty information;
6. Installation instructions and O&M information;
7. Production schedule.

B. DMD shall review and provide comments. Supplier shall make revisions prior to production.

PART 2 – PRODUCTS

2.01 MANUFACTURERS

A. Available Products: Subject to comply with requirements:

1. **An LED lighting system and the 10-year service plan, optional price item for 25-year service plan**

2.02 POLES

A. Poles shall be:

1. Multi-section round tapered steel to ASTM-A595.
2. Each section shall slip fit together over the lower section by at least 1.5 times the diameter
3. Slip-fit over pre-cast concrete or approved alternative.
4. Include all couplings, brackets, wire ways and fittings as required
5. All welding shall be to the highest standard and shall be performed by AWS Certified welders
6. Hot dip galvanized after fabrication and welding in accordance with ASTM-A123
7. Designed to CSA standards (CAN/CSA S6-06) for the required mean wind pressure of **480 Pascals** for the **Surrey** area. Pole shop drawings shall be sealed by a P.Eng and shall be supplied upon request.

2.03 CROSS ARMS AND FIXTURES

A. Fixtures shall be mounted on cross arms. The fixture and cross arm assembly shall be designed to CSA standards for a required mean wind pressure of **480 Pascals**.

B. Cross arms shall be as follows:

1. Designed to support the required fixtures and attach to the pole
2. Include all couplings, brackets, wire ways and fittings as required
3. All welding shall be to the highest standard and shall be performed by AWS or CWB Certified welders

4. Hot dip galvanized after fabrication and welding in accordance with ASTM-A123
 5. Designed to accept wiring harness
- C. Fixtures shall attach to cross arms. Fixtures shall be as follows:
1. Designed specifically for sports lighting.
 2. Fixtures shall be LED.
 3. Attach to the cross arm with an adjustable bracket. This bracket shall be set at the factory to the required fixture aiming. The bracket shall lock in and retain the factory aiming position.
 4. The lens, seal and reflector shall prevent water entry into the reflector
 5. All attachment hardware, nuts, bolts and washers shall be stainless steel
 6. Have external visor, which wraps around the fixture to minimize light trespass.

2.04 ELECTRICAL CABINETS

- A. The electrical cabinet shall attach to the pole at approximately 3m above finished grade. The electrical cabinet shall be galvanized steel or powder coated aluminum finish. The cabinet shall be a NEMA 3R rated enclosure, which shall securely attach to the pole with stainless steel hardware. The cabinet shall have corrosion-resistant hinges, be of vandal resistant and shall be designed to accept a padlock. The cabinet shall have a suitable wire way into the pole. The cabinet shall house the following:
1. Driver
 2. Surge protection
 3. Terminal blocks- For wiring from the breaker to the individual fuses
 4. Wiring- Shall have suitable temperature rating and shall be color coded
 5. Disconnect Device- To accept incoming circuits. The breaker shall be the landing point for the incoming circuits and shall act as a local disconnect device.
 6. Fuses- Each fixture shall have individual fusing
- B. Nuts, bolts and internal hardware shall be corrosion resistant
- C. All equipment shall be fully assembled, neatly arranged and wired. All wiring shall be labeled for easy field tracing. Components shall be mounted for easy removal and replacement.

2.05 WIRING

- A. Wiring from the electrical cabinet to the fixtures shall be supplied as a pre-wired harness with CSA recognized plug in connectors. All wiring shall be labeled for easy trouble-shooting.
- B. Wiring harness shall have abrasion bumpers or wrapping to prevent chaffing against the pole.
- C. Wiring shall attach to a suitable strain reducing device at the top of the pole.

2.06 MOUNTING HARDWARE

- A. All external mounting hardware shall be aluminum, stainless steel or galvanized steel. Internal mounting hardware shall be stainless steel or cad plated.

2.07 FOUNDATIONS

- A. Foundation shall be designed by supplier based on geotechnical report (attached). All foundations including rebar and backfill shall be designed and signed and sealed by the supplier's professional engineers to suit the soils conditions and pole loading.
- B. Pre-cast concrete foundations shall be designed to support the pole when installed in the excavation and backfilled with concrete. The foundation shall have suitable conduit entrance holes and wiring access hand holes and shall have a suitable wire way into the pole.
- C. Signed and sealed Schedule B and C-B letters of assurance shall be provided by geotechnical and structural engineers for pole foundations at the supplier's expense.

PART 3 – EXECUTION

3.01 STORAGE

- A. If required the contractor shall store luminaires, cross arms, wiring and electrical enclosures off-site until they are ready for assembly and erection. Under no circumstances shall any of these items be stored on site when the contractor is not present.
- B. Poles and foundations may be stored on-site (for a short time period) if they do not impact the day-to-day operation of the facility. The contractor is responsible for any damage or theft to any materials left on-site. Pole and bases shall be placed on suitable supports off the ground.

3.02 INSTALLATION

- A. The sports lighting equipment shall be installed in accordance with the supplier's installation instructions.
- B. Equipment shall be off loaded and installed in accordance with the supplier's installation instructions.
- C. All pole and foundations shall be installed plumb.
- D. Upon acceptance from the structural engineer the foundation shall be backfilled with concrete. Contractor shall arrange for and coordinate for structural inspections.
- E. Foundations shall be installed as noted on the structural foundation design drawings.

3.03 FIELD QUALITY CONTROL

- A. Inspect each installed unit for damage. Replace damaged fixtures and components prior to installation.
- B. Give advance notice of dates and times for field tests.
- C. Tests and Observations:
 - 1. Prior to pole erection all sports lights shall be checked by energizing circuits with suitable power source.
 - 2. After installation and connection of sports lights to their permanent power supply the contractor shall verify supply voltages and current at the disconnect switch in the electrical enclosure and at the main breaker. Measurements shall be taken phase to phase and phase to neutral.

3.04 INDEPENDENT TESTING AND OBSERVATIONS

- A. DMD will field measure and document the on-field illumination levels and uniformities in accordance with IESNA LM-5. Off-site spill light levels will also be measured along the defined boundary line.
- B. If the field survey results do not meet the specified illumination requirements. The supplier shall rectify the problem at no cost to the client. In the event that local residents have complaints about the spill and glare from the lights even though the supplier has met the intent of the specification the supplier will provide re-aiming services to reduce the spill and glare to the best of their abilities with no guarantee that it will appease the local residents and meet the field illumination requirements. This additional service will be at no cost to the client if no additional equipment is required.
- C. If the offsite illuminance intensity is 20% over the 1000cd at 150' per IDA requirements, the supplier shall rectify the problem at no cost to the client.
- D. Following installation DMD will undertake a detailed review of the lighting installation and will note all deficiencies to be corrected. Where deficiencies are noted as a result of inaccurate or improper installation the installing contractor will be required to correct all noted deficiencies, in an expeditious manner. Where the noted deficiencies are related to the materials and workmanship of the lighting equipment itself the supplier will correct the deficiencies as per the warranty agreement.
- E. Sports light pole foundation installation monitored by the contractor's structural engineer. All installations shall meet the satisfaction of the structural engineer. Schedule B and CB forms shall be provided for structural and geotechnical.

END OF SECTION

SECTION E

SAMPLES OF FORMS

FORMS FOR THE USE OF THE CONSULTANT AND/OR CONTRACTOR

Standard forms shall be utilized for City projects as applicable.

- A. Bid Bond
- B. Letter of Credit Format
- C. Agreement to Bond - Performance and Labour and Materials Payment
- D. Performance Bond
- E. Labour and Material Payment Bond
- F. Certificate of Insurance – Standard Form – Contractor
- G. Prime Contractor Designation – Letter of Understanding
- H. Contractor Health & Safety Expectations
- I. Statutory Declaration
- J. Notice of Certification of Substantial Performance
- K. Certificate of Substantial Performance
- L. Posting Compliance Form – Certificate of Substantial Performance

BID BOND

No. _____ \$ _____

KNOW ALL MEN BY THESE PRESENTS THAT _____ as Principal hereinafter called the Principal, and _____ a corporation created and existing under the laws of _____ and duly authorized to transact the business of Suretyship in _____ as Surety, hereinafter called the Surety, are held and firmly bound unto _____ as Obligee hereinafter called the Obligee, in the amount of _____ Dollars (\$ _____) lawful money of Canada, for the payment of which sum, well and truly to be made, the Principal and the Surety bind themselves, their heirs, executors, administrators, successors, and assigned, jointly and severally, firmly by these presents.

WHEREAS, the Principal has submitted a written tender to the Obligee, dated the _____ day of _____ 20 _____ for _____

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION is such that if the aforesaid Principal shall have the tender accepted within sixty (60) days from the closing date of tender, and the said Principal will, within the time required, enter into a formal contract and give the specified security to secure the performance of the terms and conditions of Contract, then his obligation shall be null and void; otherwise the Principal and the Surety will pay unto the Obligee the difference in money between the amount of the bid of the said Principal and the amount for which the Obligee legally contracts with another party to perform the work if the latter amount is in excess of the former.

The Principal and the Surety shall not be liable for a greater sum than the specified penalty of this Bond.

Any suit under this Bond must be instituted before the expiration of six months from the date of Bond.

IN WITNESS WHEREOF, the Principal and the Surety have Signed and Sealed this Bond this _____ day of _____, 20____.

SIGNED AND SEALED (((_____) (Seal) Principal (((_____) (Seal) Surety

(To Be On Bank Letterhead)

_____ day of _____, A.D., 20_____

The City of Surrey
13450-104 Avenue
Surrey, B.C.
V3T 1V8

Dear Sirs:

IRREVOCABLE COMMERCIAL LETTER OF CREDIT NO. _____

We hereby authorize you to draw on (NAME OF BANK), (ADDRESS OF BANK), Province of British Columbia, for account of (NAME OF TENDERER), up to an aggregate amount of \$_____ available by drafts at sight for 100% of value:

1. Drawings are to be made in writing to (NAME OF BANK)
2. Partial drawings may be made.
3. The Bank will not inquire as to whether or not The City has a right to make demand on this Letter of Credit.
4. This Letter of Credit is irrevocable up to the expiry date.

DRAFTS MUST BE DRAWN AND NEGOTIATED NOT LATER THAN

_____ day of _____, A.D., 20 _____

The drafts drawn under this Credit are to be endorsed hereon and shall state on their face that they are drawn under (NAME OF BANK), (ADDRESS OF BANK), Vancouver, B.C., Letter of Credit No.

Yours truly,

Manager
On Behalf of
(NAME OF BANK)

**Agreement to Bond
Performance and Labour and Materials Payment**

For the CITY OF SURREY

We, the undersigned, hereby agree to become bound as surety for

in a Performance Bond totaling fifty percent (50%) of the Contract Price, and in a Labour and Materials Payment Bond totaling fifty percent (50%) of the Contract price, and conforming to the Instruments of Contract attached hereto, for the full and due performance of the works shown as described herein, if the Tender for _____

is accepted by the City of Surrey.

It is a condition of this Agreement that if the above mentioned Tender is accepted, application for the above mentioned Bonds must be completed with the undersigned within eight (8) Days of acceptance of the tender related thereto, otherwise this Agreement shall be null and void.

DATED this _____ day of _____, 20__.

Name of Bonding Company

BY:

Signature of Authorized Person
Signing for Company

(Company Seal)

Position

Form of Performance Bond

BOND NO. _____

KNOW THEREFORE ALL MEN BY THESE PRESENTS THAT _____
 (hereinafter called the "Principal") and _____
 a corporation created and existing under the laws of _____ and whose principal
 office for Canada is located in the _____ (hereinafter called the
 "Surety") are held and firmly bound unto the City of Surrey (hereinafter called the "Obligee") in the
 amount of \$_____, lawful money of Canada, for the payment of which sum, well and
 truly to be made, the Principal and the Surety bind themselves and their respective heirs, legal
 representatives, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS the Principal has entered into a contract with the Obligee dated the ____ day of
 _____, 202_, for Contract No. _____ which by reference hereto is made a
 part hereof as fully to all intents and purposes as though recited in full herein and which contract
 as amended, supplemented, modified or restated from time to time is hereinafter called the
 "Contract".

NOW THEREFORE, the condition of the foregoing obligation is such that, if the Principal shall
 well and truly observe and perform all the obligations of the Contract on the part of the Principal
 to be observed and performed, then this obligation shall be void but otherwise shall remain in full
 force and effect.

The Surety hereby waives notice of any alteration or extension of time made by the Obligee.

Whenever the Principal shall be, and declared by the Obligee to be in default under the Contract,
 the Surety shall:

- (a) if the work is not taken out of the Principal's hands, remedy the default of the Principal;
- (b) if the work is taken out of the Principal's hands and the Obligee directs the Surety to
 undertake the completion of the work, complete the work in accordance with the Contract
 provided that if a contract is entered into for the completion of the work:
 - (i) such contract shall be between the Surety and the completing contractor; and
 - (ii) the selection of the completing contractor shall be subject to the approval of the
 Obligee;
- (c) if the work is taken out of the Principal's hands and the Obligee does not direct the Surety
 to undertake completion of the work, assume financial responsibility for the costs of
 completion and be liable for and pay the costs of completion of the Contract.

No action shall be instituted by the Obligee herein against the Surety pursuant to these presents
 after the expiration of three (3) years from the date upon which final payment under the Contract
 is made.

The Surety shall be liable as principal and nothing of any kind or matter whatsoever shall operate as a discharge or release of the liability of the Surety notwithstanding any law or usage relating to the liability of sureties to the contrary, until all obligations of the Contract have been observed and performed.

In witness whereof, the Principal and Surety have hereunto affixed their corporate seals and caused their presents to be signed by their duly authorized officers.

DATED THIS _____ day of _____, 202__.

Name - Surety

c/s

Signature and Signing Authority

Name - Principal

c/s

Signature and Signing Authority

Form of Labour and Material Payment Bond

BOND NO. _____

KNOW THEREFORE ALL MEN BY THESE PRESENTS THAT _____ (hereinafter called the "Principal") and _____ a corporation created and existing under the laws of _____ and whose principal office for Canada is located in the _____ (hereinafter called the "Surety") are held and firmly bound unto the City of Surrey (hereinafter called the "Obligee") in the amount of \$_____, lawful money of Canada, for the payment of which sum, well and truly to be made, the Principal and the Surety bind themselves and their respective heirs, legal representatives, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS the Principal has entered into a contract with the Obligee dated the _____ day of _____, 202____, for Contract No. _____ which by reference hereto is made a part hereof as fully to all intents and purposes as though recited in full herein and which contract as amended, supplemented, modified or restated from time to time is hereinafter called the "Contract".

NOW THEREFORE, the condition of the foregoing obligation is such that, if the Principal shall make payment to all Claimants for all labour and material used or reasonably required for use in the performance of the Contract, then this obligation shall be void but otherwise shall remain in full force and effect.

A Claimant for the purpose of this Bond is defined as one having a direct contract with the Principal for labour, material, or both, used or reasonably required for use in the performance of the Contract, labour and material being construed to include that part of water, gas, power, light, heat, oil, gasoline, telephone service or rental equipment directly applicable to the Contract provided that a person, firm or corporation who rents equipment to the Principal to be used in the performance of the Contract under a contract which provides that all or any part of the rent is to be applied towards the purchase price thereof, shall only be a Claimant to the extent of the prevailing industrial rental value of such equipment for the period during which the equipment was used in the performance of the Contract. The prevailing industrial rental value of equipment shall be determined, insofar as it is practical to do so, in accordance with and in the manner provided for in the latest revised edition of the "Equipment Rental Rate Guide" of the Ministry of Transportation and Highways, B.C., published prior to the period during which the equipment was used in the performance of the Contract.

The Principal and the Surety, hereby jointly and severally agree with the Obligee, as Trustee, that every Claimant who has not been paid as provided for under the terms of its contract with the Principal, before the expiration of a period of 90 days after the date on which the last of such Claimant's work or labour was done or performed or materials were furnished by such Claimant, may as a beneficiary of the trust herein provided for, sue on this Bond, prosecute the suit to final judgment for such sum or sums as may be justly due to such Claimant under the terms of its contract with the Principal and have execution thereon. Provided that the Obligee is not obliged to do or take any act, action or proceeding against the Surety on behalf of the Claimants, or any of them, to enforce the provisions of this Bond. If any act, action or proceeding is taken either in the name of the Obligee or by joining the Obligee as a party to such proceeding, then such act,

action or proceeding, shall be taken on the understanding and basis that the Claimants or any of them, who take such act, action or proceeding shall indemnify and save harmless the Obligees against all costs, charges and expenses or liabilities incurred thereon and any loss or damage resulting to the Obligees by reason thereof.

No suit or action shall be commenced hereunder by any Claimant:

- (a) unless such Claimant shall have given written notice within the time limits hereinafter set forth to each of the Principal, the Surety and the Obligees, stating with substantial accuracy the amount claimed. Such notice shall be served by mailing the same by registered mail to the Principal, the Surety and the Obligees, at any place where an office is regularly maintained for the transaction of business by such persons or served in any manner in which legal process may be served in the Province or other part of Canada in which the subject matter of the Contract is located. Such notice shall be given:
 - (i) in respect of any claim for the amount or any portion thereof, required to be held back, from the Claimant by the Principal, under either the terms of the Claimant's contract with the Principal, or under construction lien legislation applicable to the Claimant's contract with the Principal, whichever is the greater, within 120 days after such Claimant should have been paid in full under the Claimant's contract with the Principal;
 - (ii) in respect of any claim other than for the holdback, or portion thereof, referred to above, within 120 days after the date upon which such Claimant did, or performed, the last of the work or labour or furnished the last of the materials for which such claim is made under the Claimant's contract with the Principal;
- (b) after the expiration of one (1) year following the date on which the Principal ceased work on the Contract, including work performed under the guarantees provided in the Contract;
- (c) other than in a Court of competent jurisdiction in the Province of British Columbia, or District of Canada in which the subject matter of the Contract, or any part thereof, is situated and not elsewhere, and the parties hereto agree to submit to the jurisdiction of such Court.

Any material change in the contract between the Principal and the Obligees shall not prejudice the rights or interest of any Claimant under this Bond, who is not instrumental in bringing about or has not caused such change.

The amount of this Bond shall be reduced by, and to the extent of any payment or payments made in good faith, and in accordance with the provisions hereof, inclusive of the payment by the Surety of construction liens which may be filed on record against the subject matter of the Contract, whether or not claim for the amount of such lien be presented under and against this Bond.

The Surety shall be liable as principal and nothing of any kind or matter whatsoever shall operate as a discharge or release of the liability of the Surety notwithstanding any law or usage relating to the liability of sureties to the contrary.

In witness whereof, the Principal and Surety have hereunto affixed their corporate seals and caused their presents to be signed by their duly authorized officers.

DATED THIS _____ day of _____, 202__.

c/s

Name - Surety

Signature and Signing Authority

c/s

Name - Principal

Signature and Signing Authority

**City of Surrey
Certificate of Insurance Form - Contractor**
(This form is to be completed by the Insurance Broker and will be provided at time of award)

This certifies that policies of insurance as described below have been issued to the Insured named below and are in full force and effect at this time. It is understood and agreed that thirty (30) days' written notice of any cancellation or change in applicable limit of any of the policies listed below, with the exception of ICBC, will be given to the holder of this certificate.

NOTE: PROOF OF INSURANCE WILL BE ACCEPTED ON THIS FORM ONLY. INSURANCE COMPANIES MUST BE LICENSED TO OPERATE IN CANADA.
This Certificate is issued to: City of Surrey, 13450 104 Avenue, Surrey, B.C. V3T1V8

Insured:	Name:		
	Address:		
Broker:	Name:	Broker's Name:	
	Address:	Phone:	

Location, Project No. and nature of contract, permit, lease, license or operation to which this Certificate applies:

Type of Insurance	Company and Policy Number	Policy yyyy/mm/dd	Term	Limits of Liability/Amount
Section 1 <input checked="" type="checkbox"/> Commercial General Liability <input type="checkbox"/> Wrap-up <input type="checkbox"/> Umbrella Liability <input type="checkbox"/> Excess Liability Sudden & Accidental Pollution <input checked="" type="checkbox"/> \$ 2,000,000 <input type="checkbox"/> \$ 20,000,000 (adjacent to Kinder Morgan Pipeline)		From: To:		Bodily Injury, Death & Property Damage \$ Per Occurrence \$ Aggregate \$ Deductible \$ Umbrella Liability \$ Excess Liability <input checked="" type="checkbox"/> MINIMUM \$5,000,000 <input type="checkbox"/> MINIMUM \$10,000,000
Section 2 Automobile Liability (owned or leased vehicles)		From: To:		Bodily Injury & Property Damage \$ Limit <input checked="" type="checkbox"/> MINIMUM \$3,000,000
Section 3 <input type="checkbox"/> Professional Liability		From: To:		\$ Each Claim \$ Aggregate \$ Deductible <input checked="" type="checkbox"/> MINIMUM \$2,000,000
Section 4 <input type="checkbox"/> Builder's Risk		From: To:		\$ Limit \$ Deductible <input checked="" type="checkbox"/> MINIMUM: CONSTRUCTION VALUE
Section 5 Contractor's Equipment Insurance		From: To:		\$ Limit
Section 6 <input type="checkbox"/> Boiler & Machinery Insurance		From: To:		\$ Limit \$ Extra Expense Limit \$ Deductible <input checked="" type="checkbox"/> MINIMUM: CONSTRUCTION VALUE

Particulars of Wrap-up/Commercial General Liability Insurance (Sections 1 & 2): X indicates that the coverage is included.

<input checked="" type="checkbox"/> City of Surrey as Additional Insured	<input checked="" type="checkbox"/> Attached Machinery	<input type="checkbox"/> Removal or weakening of support of property, building or land whether the support is natural or otherwise
<input checked="" type="checkbox"/> Contract Administrator as Additional Insured	<input checked="" type="checkbox"/> Broad Form Property Damage	<input type="checkbox"/> Work below ground level over 3 meters (XCU extension)
<input checked="" type="checkbox"/> Premises & Operations	<input checked="" type="checkbox"/> Non-Owned Automobile	<input type="checkbox"/> Use of explosives for blasting
<input checked="" type="checkbox"/> Broad Form Products & Completed Operations	<input checked="" type="checkbox"/> Contingent Employer's	<input checked="" type="checkbox"/> Vibration from pile driving or caisson work
<input checked="" type="checkbox"/> Owners & Contractors Protective	<input checked="" type="checkbox"/> Personal Injury	<input type="checkbox"/> Shoring, blasting, excavation, underpinning, demolition, debris removal, tunneling and grading (as applicable)
<input checked="" type="checkbox"/> Blanket Contractual	<input checked="" type="checkbox"/> Incidental Medical Malpractice	
<input checked="" type="checkbox"/> Cross Liability/Severability of Interests	<input checked="" type="checkbox"/> 24 months Completed Operations	
<input checked="" type="checkbox"/> Employees as additional insured	<input checked="" type="checkbox"/> Elevator & Hoist Liability	
	<input checked="" type="checkbox"/> Operation of Attached Equipment	

Particulars of Professional Liability Insurance (Sections 3): X indicates that the coverage is included.

<input checked="" type="checkbox"/> 24 Months Maintenance Period	<input type="checkbox"/> Insures all professionals on the project
--	---

Particulars of Property Insurance (Sections 4,5 & 6): X indicates that the coverage is included

<input checked="" type="checkbox"/> Builder's Risk (All Risks)	<input checked="" type="checkbox"/> Breach of Conditions Clause	<input checked="" type="checkbox"/> Materials On & Off Site & In Transit insurable interest
<input checked="" type="checkbox"/> Flood & Earthquake	<input checked="" type="checkbox"/> City as First Loss Payee to extent of its	
<input checked="" type="checkbox"/> 30 Days Testing & Commissioning		

It is understood and agreed any deductible or reimbursement clause contained in the policy shall be the sole responsibility of the Named Insured.

Authorized to Sign on Behalf of Insured	Date Signed
Authorized to Sign on Behalf of Insurers & Broker Stamp	Date Signed

PRIME CONTRACTOR DESIGNATION
Letter Of Understanding

As per the requirements of the *Workers' Compensation Act*, R.S.B.C. 2019, Chapter 1, Part 2, Division 4, Section 24 and 25 which states:

Coordination of multiple-employer workplaces

24 *In this section:*

“**multiple-employer workplace**” means a workplace where workers of 2 or more employers are working at the same time:

“**prime contractor**” means, in relation to a multiple-employer workplace,

- (1) The prime contractor of a multiple-employer workplace must
 - (a) ensure that the activities of employers, workers and other persons at the workplace relating to occupational health and safety are coordinated, and
 - (b) do everything that is reasonably practicable to establish and maintain a system or process that will ensure compliance with this Part and the regulation in respect to the workplace.
- (2) Each employer of workers at a multiple-employer workplace must give to the prime contractor the name of the person the employer has designated to supervise the employer’s workers at that workplace.

By signing this Agreement, the Contractor accepts all responsibilities of a prime contractor as outlined in the *Workers' Compensation Act*, and WorkSafeBC OH&S Regulation.

As a Contractor signing this Prime Contractor Designation form with the City of Surrey (the “owner”), you are agreeing that your company, management staff, supervisory staff and workers will comply with the *Workers' Compensation Board (WCB) Occupational Health and Safety Regulation* and the *Workers' Compensation (WC) Act*.

Any WorkSafeBC OH&S violation by the prime contractor may be considered a breach of contract resulting in possible termination or suspension of the agreement and/or any other actions deemed appropriate at the discretion of the City.

Any penalties, sanctions or additional costs levied against the City, as a result of the actions of the prime contractor are the responsibility of the prime contractor.

The Contractor acknowledges having read and understood the information above.

By signing this Prime Contractor Designation form, the Contractor agrees as a representative of the firm noted below, to accept all responsibilities of the prime contractor for this project.

The Contractor understands and accepts the responsibilities of the prime contractor designation in accordance with the *Workers' Compensation Act* while contracted by the City of Surrey for project and will abide by all *Workers' Compensation Board Regulation* requirements.

Project File No.: 1220-020-2023-005

Project Title and Site Location: Newton Athletic Park Tennis Court Lighting - Upgrade

Prime Contractor Name: _____

Prime Contractor Address: _____

Business Telephone/Business Fax Numbers: Phone: _____ Fax: _____

Name of Person in Charge of Project: _____

Name of Person Responsible for Coordinating Health & Safety Activities: _____

Phone: _____

Prime Contractor Signature: _____ Date: _____

Please return a signed copy of this memo to the City of Surrey, Finance Department, Procurement Services Section, 13450 – 104 Avenue, Surrey, British Columbia, V3T 1V8

If you have any questions, please contact the City of Surrey, Manager Occupational Health & Safety at 604-591-4658.

CONTRACTOR HEALTH & SAFETY EXPECTATION RESPONSIBILITY OF CONTRACTOR(S)

The City of Surrey strives to maintain a safe work environment for employees and contractors and insists upon the enforcement of safe practices and procedures in all premises and in all work activities. It is essential that all contractors and their employees and sub-contractor(s) perform in the same manner. It is every employer and contractor's responsibility to ensure that staff and public are protected from workplace hazards.

As a contractor to the City of Surrey, you are expected to conform to the requirements of the Workers' Compensation Act, the WorkSafeBC Occupational Health and Safety Regulation and to all provincial and local laws and regulations. The City of Surrey Building Owner, Project Manager, and the Manager, Occupational Health & Safety or designate have the authority to order an unsafe act to cease or to have an unsafe piece of equipment removed from the premises or, in extreme situations, to shut down a job entirely. Any City of Surrey Employee that observes a safety infraction by a contractor performing work for the City of Surrey should bring it to the attention of a manager immediately or Occupational Health & Safety (604-591-4131).

The following information is provided as typical City of Surrey requirements but does not relieve the contractor from complying with all applicable local and provincial laws, regulations and bylaws.

PERSONNEL

1. You are expected to inform your employees of any potential hazard in the workplace and advise of appropriate action to be taken should a hazard be found or a fire or accident occur.
2. Contractors will restrict persons invited on the premises to employees only. No families or friends are permitted.
3. The contractor will advise the City of any on-site accidents involving the contractor's employees, or injuries to others caused by the contractor's business.

SAFETY MANAGEMENT SYSTEM

1. Contractors will ensure their employees utilize proper safety equipment and clothing as required for job site activities.
2. Contractors must follow and have on site proper written safe work procedures for hazardous work, e.g. Fall protection, confined space entry, hot work, lockout, excavations and shoring, traffic management, etc.
3. Contractor must identify workplace hazards and implement suitable controls to decrease the risk.
4. Contractor must provide safety training and education to staff and have training records available for review.
5. Contractor must have a health & safety program for its workers and sub-contractors.
6. Contractor will provide appropriate First-Aid coverage for their workers and subcontractors.
7. Contractor must forward a weekly work task list prior to work commencement to the coordinator.
8. The qualified safety coordinator must participate in the City of Surrey OHS Orientation or attend the Prime Contractor's Orientation.

WORK AREAS –City Facilities

No work by contractors shall occur in any area without prior consent of the City of Surrey Manager, Civic Facilities or their designated representative. Work during normal business hours of the City shall not create undue noise, smells or otherwise unduly disturb the work of City of Surrey staff or the public. If an activity requires that a disturbance is likely, the contractor shall whenever possible only do that work outside normal business hours.

All activities that create a hazard (i.e., work from a ladder, removal of a floor tile, emission of VOC's, etc.) to persons outside the contractor's supervision shall have warning devices, delineation or barriers, sealed spaces, etc. as would normally be required to protect any person from that hazard.

SAFETY ATTITUDE

Your safety record and attitude are important criteria used to judge your qualification for future bidding on solicitations with the City of Surrey. You can help ensure employee safety and your eligibility for future business with the City if you exhibit and practice a "Safe Work - Safe City" attitude.

The City of Surrey is concerned about the health, safety and wellbeing of all employees and contractors. It is essential we maintain a healthy, safe and productive work environment.

All Employees & Contractors:

It is everyone responsibility to:

- know and comply with WorkSafeBC regulations
- follow established safe work procedures
- immediately report any work-related injury to his/her supervisor; and to the city representative
- not remain on the work site while his/her ability to work is in any way impaired
- report unsafe acts and conditions to their supervisor
- correct unsafe conditions immediately whenever it is possible to do so
- take reasonable care to protect your health & safety and the health and safety of other persons who may be affected by your acts or omissions at work

An employee must refuse to work if continuing to do so would endanger the health and safety of the employee, fellow employees, or others. The worker must immediately report the circumstances of the unsafe condition to his or her supervisor or manager. If the unsafe condition is not remedied or the issue is not resolved the Manager, Occupational Health & Safety must be contacted.

GENERAL RULES

1. For all secured worksites, contracted workers are required to sign in and sign out each day
2. (Access cards may be issued – a worker may need to provide an Identification document (i.e. Driver's License) in exchange).
3. Personal protective equipment, as determined by the City, through consultation with the Contractors Health and Safety Representatives must be worn when and where required. (Hard Hats, Safety Footwear, Safety Vests and Safety Glasses must be worn on active construction sites. Hearing Protection must be worn when noise levels are above 85dBA.)
4. Horseplay, gambling and the use of alcohol or narcotics will not be tolerated.
5. No Smoking within 7.5M of a City owned buildings door exits, windows and vents.
6. Report **ALL** injuries to your supervisor immediately and notify the City's site representative.
7. Report any unsafe conditions, including someone under the influence or hazards, which may allow an injury to occur to you, a fellow worker, or others on the worksite.
8. Report any property damage, regardless of how minor.
9. Restricted and controlled products will be labeled, used and stored in accordance with the associated regulations, e.g., WHMIS. Follow all procedural instructions when using or handling hazardous materials/controlled products and ensure that all containers of hazardous/controlled product materials are properly labelled and stored in designated areas.
10. Obey all posted signs and notices. Do not venture into areas that you are not authorized to enter.
11. Always use the correct posture when lifting and get assistance if the weight is excessive.
12. Do not work within the limits of approach to high voltage equipment.
13. If working at heights greater than 10 feet a Fall Protection system must be in place. The appropriate Fall Protection equipment must be worn at all times. If working at 25 feet or higher, that is not protected by permanent guardrails, a written workplace fall protection plan must be developed.
14. Housekeeping (Orderliness and good housekeeping are basic requirements and must be maintained at all times):
 - a. Aisles are to be kept clear at all times.

- b. Individual work areas are to be kept clean and tidy. All materials, tools, products and equipment are to be kept in their designated areas.
 - c. Liquid spills are to be cleaned up immediately to prevent slips and falls.
 - d. Accumulation of oily rags, combustible refuse or similar fire hazards will not be tolerated.
15. Fire Prevention:
- a. Become familiar with surroundings and emergency exit.
 - b. Ensure aisles and exits are not blocked at any time.
 - c. Anytime a fire extinguisher is used, report it immediately to your supervisor, so that it can be recharged.
16. Equipment Operation (Any equipment, which could create a hazard, must be maintained in good condition):
- a. Equipment must not be repaired, adjusted or operated unless by a "competent person" who understand the safe operating procedures.
 - b. Always be aware of the use and location of the "EMERGENCY STOP" button, if equipment is so equipped, before using the equipment.
 - c. Loose clothing, jewelry and long hair must be secured to prevent becoming entangled with equipment.
 - d. The Operator must check all safety devices on equipment before operation.
 - e. All equipment must be turned off and the appropriate "lock-out" procedure followed, prior to repairs, cleaning, adjustment or lubrication.
 - f. Radio/I-pod Headphones are not allowed to be worn during regular work operations.
 - g. All ladders must be of an approved type and length. Unacceptable ladders must be removed immediately from the premises.
 - h. All vehicles and equipment on City property must be kept in safe mechanical condition at all times and be operated only by persons with a valid driver's license and/or proper training and qualifications.
 - i. Contractors will not operate any equipment, valves, switches, etc., which are part of the City's operation, unless specific permission is received from the Department Representative.
17. Ground Disturbance –Every time you dig in the ground, with a shovel or mechanized equipment, you run the risk of loss of life or damage to property if you hit any of the many buried cables, conduits, gas or oil pipelines and/or other underground facilities that serve our city. BC One Call Must be called and a ticket obtained prior to commencing any ground disturbance activities.
18. An Exposure Control Plan and written Safe Work Procedures and must be accessible for work tasks that involve handling or disturbing Asbestos (ie. AC pipe), Lead (ie. paint) or Silica (ie. concrete) containing products.

This document does not replace the Workers' Compensation Act or WorkSafeBC OH&S regulation. Each individual Contractor must have specific health and safety safe work rules and procedures that apply to their work tasks. Each Contractor must comply with the Workers' Compensation Act and WorkSafeBC Occupational Health & Safety Regulation and to provincial, and local laws and regulations. If a contractor is unable to comply they must bring this to the attention of their qualified safety representative and to the Prime Contractor safety representative immediately.

Authorized Signature: _____

Name: _____
(Please Print)

Date: _____

STATUTORY DECLARATION

CANADA)	In the Matter City of Surrey, Newton Athletic
)	Park Tennis Court Lighting - Upgrade
)	Surrey, British Columbia
PROVINCE OF BRITISH COLUMBIA)	Surrey Reference No.: 1220-020-2023-005

TO WIT:

I, _____,
(officer of company, sole proprietor or partner)

of _____ in the Province of British Columbia do solemnly
declare:

That all employees, sub-contractors and suppliers used in connection with the Work have been full paid and satisfied by the Consultant with the exception of normal holdbacks, and that all fees and assessments have been paid, and that there is no claim outstanding or pending in respect of the Work carried out and that no lien has been filed against the Owner's Lands or against any Materials or Equipment used in connection with the Work or Work done or materials supplied under the Contract.

AND I MAKE THIS SOLEMN DECLARATION conscientiously believing it to be true and knowing that it is of the same force and effect as if made under oath and by virtue of the Canada Evidence Act.

DECLARED before me at _____)

in the Province of British Columbia,)

this _____ day)

of _____, A.D. 202_.)

Signature

_____)
A Commissioner for taking Affidavits for British Columbia
A Notary Public in and for the Province of British Columbia

CITY OF SURREY
CONTRACT No.: 1220-020-2023-005

Builders Lien Act
(Section 7 (4))

Notice of Certification of Substantial Performance

NOTICE: Newton Athletic Park Tennis Court Lighting – Upgrade, Surrey, British Columbia

Reference No.: 1220-020-2023-005

Take notice that on _____ [date] a certificate of Substantial Performance, was issued with respect to a contract between:

CITY OF SURREY
13450 – 104th Avenue,
Surrey, B.C., V3T 1V8

(the "City")

AND:

CONTRACTOR

(the "Contractor")

In connection with an improvement on land described as follows:

NEWTON ATHLETIC PARK TENNIS COURT LIGHTING UPGRADE AT SURREY, BRITISH COLUMBIA, CANADA

All persons entitled to claim a lien under the *Builders Lien Act* and who performed *Work* or supplied material in connection with or under the contract are warned that the time to file a claim of lien may be abridged and section 20 of the Act should be consulted.

Issued By: _____
[City / Department Representative]

CITY OF SURREY

Builders Lien Act
(Section 7 (10))

Certificate of Substantial Performance

Contract Title: **NEWTON ATHLETIC PARK TENNIS COURT LIGHTING – UPGRADE,
SURREY, BRITISH COLUMBIA, CANADA**

Reference No.: 1220-020-2023-005

Consultant:

Date of Issue:

I certify that to the best of my knowledge:

Work on this Contract was Substantially Complete as of _____

There are no outstanding deficiencies on this Contract.

The Maintenance Period specified in the Contract shall:

commence on: _____

and

terminate on: _____

The following is a list of outstanding claims as per General Conditions:

[state here]

Certified by:

Consultant Representative

Date

CITY OF SURREY

POST COMPLIANCE FORM

CERTIFICATE OF SUBSTANTIAL PERFORMANCE

Please complete this form and promptly fax to 604-599-0956. Note that any delays in the posting of this Certificate of Substantial Performance or in the return of this form may affect the scheduling of the Holdback Release.

Contract Title: Newton Athletic Park Tennis Court Lighting – Upgrade, Surrey, British Columbia, CANADA

Reference No.: 1220-020-2023-005

As outlined in the Builders Lien Act, Section 7(4)(c), the Certificate of Substantial Performance must be posted “in a prominent place on the improvement.” For contracts that do not have a clearly identified work site (e.g., Maintenance Contracts), the Contractor shall prominently post the notice in their office.

The Certificate of Substantial Performance has been posted:

(detailed description of posting location, including address)

on: _____
(date of posting)

I confirm that the above statements are correct:

Signature

Date

Print Name

Consultant

SECTION F

REFERENCE DOCUMENTS

- 1. Geotechnical Investigation Report – Terrane Geotechnical Group**



114-2433 Dollarton Highway | 604-770-0355
North Vancouver, BC V7H 0A1 | info@terrane.com

DMD & Associates Electrical Consultants Ltd.,
12-17358 104A Ave,
Surrey, BC
V4N 5M3

October 18th, 2023
6770-TEG

Attention: Auburn Leung, P.Eng.

Re: Newton Athletic Park – Tennis Court Lighting Retrofit
7395 128th Street, Surrey BC

Geotechnical Investigation Report

1.0 INTRODUCTION and BACKGROUND INFORMATION

We are pleased to provide this report with respect to the Newton Athletic Park Tennis Court Lighting Retrofit project. The purpose of this report is to summarize the findings of the site and project specific investigation; and to provide all geotechnical recommendations for the proposed lighting pole design.

Our office has been provided with a three-page Tennis Court Lighting drawing package prepared by DMD & Associates Electrical Consultants Ltd., (DMD), dated February 15 2023. The drawing package includes a site plan indicating the locations of the proposed lighting poles.

2.0 SITE DESCRIPTION and PROJECT DESCRIPTION

We understand that the existing wooden lighting poles at the tennis courts currently, are to be upgraded to new lighting poles with precast concrete foundations. The proposed retrofit will include the installation of nine new lighting poles (T1 to T9). Eight lighting poles are to be located around the perimeter of the tennis court and one within the approximate centre of the tennis courts.

The site is located within Newton Park in Surrey. Currently there are eight tennis courts, surrounded by a chain link fence. Surrounding the tennis courts, is 128 Street to the east, a drainage ditch and grass area to the south, a parking area of the west, and a driveway for the park to the north.

The tennis court surface is comparatively flat, at an elevation of 89 m. To the south of the tennis courts, the site slopes from an elevation of 89 m down to an elevation of 87 m, at the base of the drainage ditch. The areas to the north, east and west gently slope away from the tennis courts down to an elevation of about 88.5 m. These elevations are taken with respect to the City of Surrey's GIS software 'COSMOS' and we have assumed all these elevations are with respect to the Geodetic Datum.

At this time we have not been provided with the structural design drawings or loading conditions for the proposed lighting pole foundations. However, from our experience with these types of projects, we envisage that the proposed foundations will be 'drilled pier' type of deep foundation. These type of foundations typically include an embedded precast base, that is supported by the natural soil at the bottom, and the concrete base is surrounded with concrete.

The performance of these lighting structures would be adversely affected by foundation settlement or rotation and thus they are considered to be settlement sensitive structures.

TERRANEGROUP.COM

RESPONSIVE | PROFESSIONAL | PRACTICAL



3.0 SITE INVESTIGATION

3.1 Methodology

A desktop study was also conducted and included review of available geological and geotechnical information of the area, and review of local surficial geology and topographical maps. These maps indicate that the expected subsurface soil materials in this area is a deposit of sand, silt and clay of marine origin. This unit of soil includes sediments with variable bearing capacities depending of whether or not they were overridden by the glaciers.

Prior to completing the investigation, a BC one call was carried out, and a utility locate specialist 'cleared' the testhole locations of underground services.

The subsurface investigation was carried out and included drilling five testholes (TH-01 to TH-05) again adjacent to each of the accessible proposed lighting pole foundation locations. Dynamic Cone Penetrating Test (DCPT) soundings were completed immediately adjacent to TH-01, TH-03 and TH-05 and thus the data from these tests are presented on the appropriate testhole log.

Testholes were completed using a truck mounted drill rig, equipped with solid stem flight augers. During the subsurface investigation, soil was visually logged and classified by an engineer from our office and select samples were taken for further laboratory analysis and classification. The testholes were immediately backfilled with excavated materials.

The DCPT sounding is a penetration test methodology that includes cone dimensions specific to the local geotechnical community. The dimensions of the cone and the associated driving hammer weight and drop distance are such that the result is a "Blow Count" resistance or "N value", which is considered to be equivalent to a Standard Penetration Test (SPT) blow count "N value" that is 60% efficient, thus the test presents " N_{60} " blow count values.

A testhole location plan and detailed testhole logs from the site investigation are attached following the text of this report.

3.2 Subsurface Conditions - Soil

Generally, a surficial thin veneer of fill materials was encountered at each of the testhole locations. The fill encountered at TH-01, TH-02, TH-03 and TH-05 consisted of a dark brown to black, silty sand, with intermixed organic material and intermixed rootlets. At TH-04, 75 mm thickness of asphalt was present at the ground surface of the testhole. The asphalt was underlain by 75 mm of 'road base' fill material, consisting of angular sand and gravel. Below the road base a 0.75 m thickness of black to dark brown silt, with intermixed wood waste was encountered.

Below the surficial fill, the testholes were underlain by moderate to thickly bedded layers of silt, sandy silt, sand, and silty sand. These materials varied in color between light brown to light grey, and particle size.

A very dense, silty sand to sandy silt, till material was encountered at each of the tests at depths between 0.76 m and 3.05 m. Within this material the DCPT sounding blow counts would achieve greater than 50 blows/ft, and generally this material was very difficult to drill through.

The detailed soil logs indicating the soil conditions at each testhole location are attached following the text of this report.



3.3 Subsurface Conditions - Groundwater

A "static" or groundwater table was not observed during the drilling program, and the groundwater table is envisaged to be well below the depth of interest for this project.

However, at some testholes, the soil was observed to be damp at the till interface. It is envisaged that this may be due to 'perched' groundwater.

It should be noted that the static groundwater level, or the water table, is defined as the level at which the subsurface is saturated with water, and where the groundwater pressure is equal to atmospheric pressure. The groundwater level can vary fluctuate due to many factors such as seasonal precipitation, evaporation, and pumping of groundwater.

However, perched groundwater may be present during or soon after precipitation. Perched groundwater refers to localized and transient condition, whereby a water table exists in an isolated zone within the subsurface. Typically, perched groundwater occurs when a low permeability or impermeability layer, such as Till, silt, or bedrock is present above the groundwater level, inhibiting the vertical water movement. Typically, the perched groundwater will move laterally along this comparatively impermeable layer. Perched groundwater is often associated with heavy rainfall or surface runoff .

4.0 DISCUSSION and RECOMMENDATIONS

4.1 General

From a geotechnical viewpoint, the natural undisturbed subgrade material encountered at the testhole locations is considered to be well suited to support the proposed lighting pole foundations and project, provided that the following recommendations are incorporated into the design and construction.

Again, at this time we do not know the loading conditions of the proposed lighting poles. However, the following recommendations are based on the site investigation and from our experience on other similar type of developments.

4.2 Deep Foundations

It is envisaged that the lighting pole foundations will be 'drilled pier' type foundations, complete with a precast base surrounded by concrete.

The precast base should be placed on the suitable, natural, undisturbed subgrade material. Any loosened, softened, disturbed, organic, or deleterious material should be removed, prior to placing the precast base or pouring concrete.

Settlement of end-bearing, pile supported foundations, under serviceability loading conditions, designed in accordance with the following recommendations should be less than one inch.

It is recommended that foundations are supported on the natural, till, soil material. The till material is suitable to support foundations designed on a Serviceability Limit States (SLS) end design bearing pressure of 250 kPa or 5,000 psf. The above design bearing pressure may be doubled for short term transient loading conditions and under Ultimate Limit States Design.

The soil types and parameters encountered at each base location are provided in Table 1 below for the proposed light poles. We do not recommend relying on the loose, silty sand fill materials encountered at the surface. For lighting pole locations T4, T5, T6 and T9, we have provided soil recommendations with respect to the nearest testholes. These soil parameters should be confirmed during installation.

Table 1 – Testhole Locations, Soil Type and Recommended Geotechnical Design Parameters

Testhole	Lighting Pole Base	Soil Type	"Total" Unit Weight (kN/m ³)	Friction Angle or Shear Strength (° or kPa)	
TH-01	T3	Sandy silt to Silt	17 kN/m ³	125 kPa	
		Sand – Till like	19 kN/m ³	38°	
		Silty sand to sandy silt – Till like	18 kN/ m ³	36°	
TH-02	T2	Sand	19 kN/m ³	38°	
		Silty sand – Till like	18 kN/m ³	36°	
		Silty sand to sandy silt – Till like	18 kN/ m ³	36°	
TH-03	T1	Sand	19 kN/m ³	38°	
		Silty sand to sandy silt – Till like	18 kN/m ³	36°	
		Silty sand – Till like	18 kN/m ³	36°	
TH-04	T8	Silty sand to sandy silt– Till like	18 kN/m ³	36°	
		Silt	17 kN/m ³	125 kPa	
		Silty sandy to sandy silt – Till like	18 kN/m ³	36°	
TH-05	T7	Sand– Till like	19 kN/m ³	38°	
		Silty sand– Till like	18 kN/m ³	36°	
		Silty sand and gravel	18 kN/m ³	32°	
TH-05	T7	Silty sand to sandy silt	18 kN/m ³	32°	
		Silt	17 kN/m ³	125 kPa	
		Silty sand to sandy silt – Till like	18 kN/m ³	36°	
TH-05	T7	Silty sand – Till like	18 kN/m ³	36°	
		Interpolated Soil Parameters			
		Nearby Testhole TH-01	T4	Silt to sandy silt	17 kN/m ³
TH-01	T4	Sand– Till like	19 kN/m ³	38°	
		Silty sand to sandy silt– Till like	18 kN/ m ³	36°	
		Silty sand and gravel	18 kN/m ³	32°	
Nearby Testhole TH-05	T6	Silty sand to sandy silt	18 kN/m ³	32°	
		Silt	17 kN/m ³	125 kPa	
		Silty sand to sandy silt – Till like	18 kN/m ³	36°	
Nearby Testhole TH-04	T9	Silty sand – Till like	18 kN/m ³	36°	
		Silty sandy to sandy silt – Till like	18 kN/m ³	36°	
		Sand– Till like	19 kN/m ³	38°	
TH-04	T9	Silty sand– Till like	18 kN/m ³	36°	
		Silty sand– Till like	18 kN/m ³	36°	



As testholes were carried out around the perimeter of the tennis court, we surveyed the elevations of the testhole locations with respect to the existing tennis court surface. The site gently slopes away from the courts such that the testholes are located at elevation generally below the surface. We have included these elevations within the table below.

Table 2 – Elevation of Testholes with Respect to Existing Tennis Court Surface

Testhole	Lighting Pole Base	Elevation of Testhole with Respect to Existing Tennis Court (Approx 89 m) (m)
TH-01	T3	-0.183
TH-02	T2	-0.127
TH-03	T1	-0.480
TH-04	T8	-0.615
TH-05	T7	-0.655

4.3 Shallow Foundations

If the lighting pole foundations are to be founded on shallow pad foundations, the natural, undisturbed subgrade materials encountered at the site, are considered to be well suited to support shallow foundations. Again, any sod, topsoil, disturbed and fill materials should be suitably stripped and removed from the foundation footprint.

It is recommended that foundations supported on the natural soil material are designed using a bearing capacity of 250 kPa or 5,000 psf under Serviceability Limit States design and 500 kPa or 10,000 psf under Ultimate Limit States Design.

4.4 Engineered Fill

At this time, we do not envisage a requirement for Engineered Fill below or around the proposed lighting pole foundations. However, if this is not the case and Engineered Fill is required (for example below shallow foundations), we have provided recommendations regarding Engineered Fill below.

In the context of this report, *Engineered Fill* is defined as load bearing fill placed under settlement sensitive structures, such as foundations. Any Engineered Fill placed in support of footings or foundations should extend beyond edges of the footings, a distance at least equal to the thickness of the fill placed.

Engineered Fill should consist of clean, well graded, coarse grained granular materials with all particles passing the 150 mm sieve size designation. In the context of this report, “clean” is defined as materials having “fines” content less than 10% of all the materials that pass the maximum sand size sieve test designation.

This definition of Engineered Fill is comparatively broad and is intended to allow for many different sourced materials to be used. Appropriate compaction levels will depend on the intended use. In the sections below, we have provided recommendations regarding appropriate compaction levels. Placement of Engineered Fill should be in lifts of uniform thickness, not exceeding 300 mm.



5.0 SUMMARY and CLOSURE

It is recommended that Terrane Group is provided with the opportunity to review the lighting pole foundation design drawings to confirm that the design parameters, prior to construction.

We should be provided with the opportunity to review the subsurface soil profile and subgrade material prior to the placement of the bases, concrete or fill material.

This report has been prepared for the sole use of our client and other design consultants for this project, as described. Any use or reproduction of this report for other than the stated intended purpose is prohibited without our written permission.

We are pleased to be of assistance to you on this project and we trust that our comments and recommendations are both helpful and sufficient for your current purposes. If you would like further details or require clarification of the above, please do not hesitate to call.

For
Terrane Engineering Group Ltd.

Leah MacGillivray, EIT
Project Engineer

For
Terrane Engineering Group Ltd.
Permit to Practice #: 1001310

J. Troy Issigonis, M.Eng, P.Eng
Principal


October 18, 2023

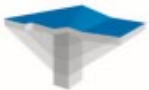


Attachments

- Testhole Location Plan – One page
- Soil Log – Five pages



 Testhole Locations



TERRANE
GEOTECHNICAL GROUP

114 - 2433 Dollarton Highway
North Vancouver, BC, V7H 0A1
Phone: 604.770.0335

Newton Athletic Park
Tennis Court Lighting
Retrofit

7395 128 Street,
Surrey BC
V3W 2M7

Testhole
Location Plan

6770 - TEG

Scale	Date
N/A	25 SEPT 2023
Drawn	Checked
LM	TI
Design	Issued

Figure

1 OF 1

DEPTH (m)		DEPTH (ft)	Sample	Classification	Lithology	DESCRIPTION	DCPT (N) Blows per foot	DCPT GRAPH	Notes	DEPTH (m)
PROJECT NAME: NEWTON PARK TENNIS COURT LIGHTING						SOIL LOG: TH-01				
CLIENT: DMD & ASSOCIATES ELECTRICAL CONSULTANTS LTD.										
PROJECT #: 6770-TEG						SURFACE ELEVATION (m): Approx 88 m				
DRILLING CONTRACTOR: SOUTHLAND DRILLING CO LTD.						INVESTIGATION DATE: 2023-09-26				
DRILLING METHOD: SOLID STEM AUGER						END OF TEST HOLE (m): 6.1				
DRILLING EQUIPMENT: TRUCK MOUNTED DRILL RIG						DEPTH TO WATER: -				
SAMPLING METHOD: GRAB						LOGGED BY: LM				
HAMMER WEIGHT: 140 lbs			DROP: 30 inches			PROJECT ENGINEER: JTI				
Surface Elevation: Existing Grade										
0.0	0.0					Silty SAND, intermixed organic material, rootlets, dark brown/black, damp, loose (FILL)	3	X		0.0
0.5	2.0					Sandy SILT, trace rounded gravel, light brown to light grey	2	X		0.5
1.0						SILT, trace fine grained sand, light grey, rust staining, stiff, wet	11	X		1.0
1.5						SILT, light brown, rust staining, stiff, dry	18	X		1.5
2.0						SAND, some to trace silt, some rounded gravel, occasional black rounded gravel, fine grained sand, light grey, very dense, dry (TILL)	28	X		2.0
2.5							47	X		2.5
3.0							111	X		3.0
3.5							>50 @ 4 inches			3.5
4.0						Silty SAND to sandy SILT, some coarse rounded gravel, occasional black rounded gravel, light grey, very dense, dry			Difficult to drill	4.0
4.5										4.5
5.0						-Becomes light brown in colour between 4.88 m and 5.49 m				5.0
5.5									Very difficult to drill - drilling becomes slower	5.5
6.0						END OF TESTHOLE				6.0



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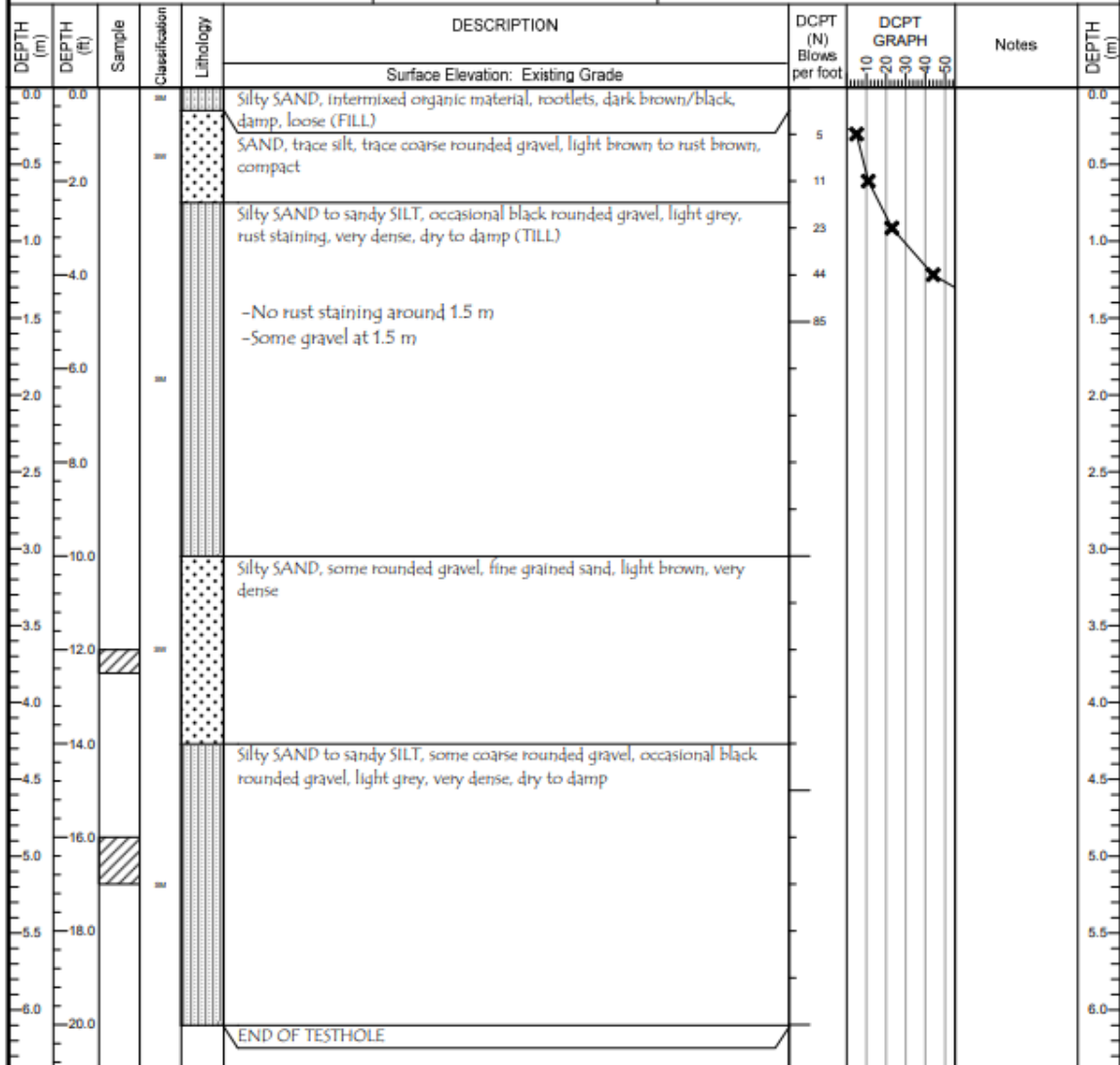
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Rectangular Snip

PROJECT NAME:		NEWTON PARK TENNIS COURT LIGHTING		SOIL LOG: TH-02			
CLIENT:		DMD & ASSOCIATES ELECTRICAL CONSULTANTS LTD.					
PROJECT #:		6770-TEG		SURFACE ELEVATION (m):		Approx 88.5 m	
DRILLING CONTRACTOR:		SOUTHLAND DRILLING CO LTD.		INVESTIGATION DATE:		2023-09-26	
DRILLING METHOD:		SOLID STEM AUGER		END OF TEST HOLE (m):		6.1	
DRILLING EQUIPMENT:		TRUCK MOUNTED DRILL RIG		DEPTH TO WATER:		-	
SAMPLING METHOD:		GRAB		LOGGED BY:		LM	
HAMMER WEIGHT: 140 lbs		DROP: 30 inches		PROJECT ENGINEER:		JTI	

DEPTH (m)	DEPTH (ft)	Sample	Classification	Lithology	DESCRIPTION	DCPT (N) Blows per foot	DCPT GRAPH	Notes	DEPTH (m)
0.0	0.0				Surface Elevation: Existing Grade				0.0
0.5	2.0				Silty SAND, intermixed organic material, rootlets, dark brown/black, damp, loose (FILL)				0.5
1.0	4.0				SAND, trace silt, trace rounded gravel, light grey to light brown, dense, damp -Becomes silty at 1.07 m				1.0
1.5	6.0				Silty SAND, trace black rounded gravel, light grey, very dense, damp (TILL) -Cobble layer around 1.5 m				1.5
2.0	8.0								2.0
2.5	10.0								2.5
3.0	12.0				Silty SAND to sandy SILT, some coarse rounded gravel, occasional black rounded gravel, light grey, very dense, dry to damp				3.0
3.5	14.0							Difficult to drill - soil is warm off of the auger	3.5
4.0	16.0								4.0
4.5	18.0								4.5
5.0	20.0				END OF TESTHOLE				5.0

PROJECT NAME: NEWTON PARK TENNIS COURT LIGHTING		SOIL LOG: TH-03
CLIENT: DMD & ASSOCIATES ELECTRICAL CONSULTANTS LTD.		
PROJECT #: 6770-TEG	SURFACE ELEVATION (m): Approx 88.5 m	
DRILLING CONTRACTOR: SOUTHLAND DRILLING CO LTD.	INVESTIGATION DATE: 2023-09-26	
DRILLING METHOD: SOLID STEM AUGER	END OF TEST HOLE (m): 6.1	
DRILLING EQUIPMENT: TRUCK MOUNTED DRILL RIG	DEPTH TO WATER: -	
SAMPLING METHOD: GRAB	LOGGED BY: LM	
HAMMER WEIGHT: 140 lbs	DROP: 30 inches	PROJECT ENGINEER: JTI



PROJECT NAME: NEWTON PARK TENNIS COURT LIGHTING		SOIL LOG: TH-04
CLIENT: DMD & ASSOCIATES ELECTRICAL CONSULTANTS LTD.		
PROJECT #: 6770-TEG	SURFACE ELEVATION (m): Approx 88.5 m	
DRILLING CONTRACTOR: SOUTHLAND DRILLING CO LTD.	INVESTIGATION DATE: 2023-09-26	
DRILLING METHOD: SOLID STEM AUGER	END OF TEST HOLE (m): 6.1	
DRILLING EQUIPMENT: TRUCK MOUNTED DRILL RIG	DEPTH TO WATER: -	
SAMPLING METHOD: GRAB	LOGGED BY: LM	
HAMMER WEIGHT: 140 lbs	DROP: 30 inches	PROJECT ENGINEER: JTI

DEPTH (m)	DEPTH (ft)	Sample	Classification	Lithology	DESCRIPTION	DCPT (N) Blows per foot	DCPT GRAPH				Notes	DEPTH (m)
							0-10	10-20	20-30	30-40		
0.0	0.0				Surface Elevation: Existing Grade							0.0
0.0	0.0				Asphalt - 3 inch thickness							0.0
0.0	0.0				SAND and GRAVEL FILL, angular, light grey, compact (FILL)							0.0
0.5	2.0				SILT, intermixed organic material, intermixed wood waste, black to dark brown, damp, firm (FILL)							0.5
1.0	4.0				SILT, trace sand, light grey, rust staining, stiff							1.0
1.5	6.0				Silty SAND to sandy SILT, trace to some coarse rounded gravel, light grey, very dense, damp (TILL)							1.5
2.0	8.0											2.0
2.5	10.0											2.5
3.0	12.0											3.0
3.5	14.0				SAND, trace gravel, medium grained sand, light brown, dense to very dense						Difficult to drill	3.5
4.0	16.0											4.0
4.5	18.0				Silty SAND, trace rounded gravel, light brown, very dense, damp							4.5
5.0	20.0											5.0
5.5	22.0											5.5
6.0	24.0				END OF TESTHOLE							6.0
6.5	26.0											6.5
7.0												7.0
7.5												7.5
8.0												8.0

DEPTH (m)		DEPTH (ft)	Sample	Classification	Lithology	DESCRIPTION	DCPT (N) Blows per foot	DCPT GRAPH	Notes	DEPTH (m)
PROJECT NAME: NEWTON PARK TENNIS COURT LIGHTING						SOIL LOG: TH-05				
CLIENT: DMD & ASSOCIATES ELECTRICAL CONSULTANTS LTD.										
PROJECT #: 6770-TEG						SURFACE ELEVATION (m): Approx 88.5 m				
DRILLING CONTRACTOR: SOUTHLAND DRILLING CO LTD.						INVESTIGATION DATE: 2023-09-26				
DRILLING METHOD: SOLID STEM AUGER						END OF TEST HOLE (m): 6.1				
DRILLING EQUIPMENT: TRUCK MOUNTED DRILL RIG						DEPTH TO WATER: -				
SAMPLING METHOD: GRAB						LOGGED BY: LM				
HAMMER WEIGHT: 140 lbs			DROP: 30 inches			PROJECT ENGINEER: JTI				
Surface Elevation: Existing Grade										
0.0	0.0					Silty SAND, intermixed organic material, rootlets, dark brown/black, damp, loose (FILL)	9			0.0
-0.5	-2.0					Silty SAND and GRAVEL, light grey, rust staining, compact	23			0.5
-1.0	-4.0					Silty SAND to sandy SILT, some to trace rounded gravel, light grey to light brown, some rust staining, firm/compact	12			1.0
-1.5	-6.0					SILT, light grey to light brown, some rust staining, stiff	13			1.5
-2.0	-8.0						14			2.0
-2.5	-10.0					Silty SAND to sandy SILT, some coarse rounded gravel, light grey, very dense (TILL)	11			2.5
-3.0	-12.0						15			3.0
-3.5	-14.0						15			3.5
-4.0	-16.0					Silty SAND, some rounded gravel, light brown, very dense, damp	16			4.0
-4.5	-18.0						130		Difficult to drill	4.5
-5.0	-20.0						>50 @ 3 inches			5.0
-5.5	-22.0									5.5
-6.0	-24.0					END OF TESTHOLE				6.0
-6.5	-26.0									6.5
-7.0										7.0
-7.5										7.5
-8.0										8.0



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