City of Richmond

Agenda

Parks, Recreation and Cultural Services Committee
Electronic Meeting

Council Chambers, City Hall
6911 No. 3 Road

Wednesday, July 19, 2023
Immediately Following Public Works and Transportation Committee

Pg. # ITEM

MINUTES

PRCS-3 ***Motion to adopt the minutes of the meeting of the Parks, Recreation and Cultural Services Committee held on June 27, 2023.***

NEXT COMMITTEE MEETING DATE

September 26, 2023, (tentative date) at 4:00 p.m. in the Council Chambers.

COMMUNITY SERVICES DIVISION

1. **POTENTIAL ENHANCEMENTS TO THE RAILWAY GREENWAY**
(File Ref. No. 06-2400-20-RAIL1) (REDMS No. 7213846)

PRCS-8 See Page **PRCS-8** for full report

Designated Speaker: Kevin Fraser

STAFF RECOMMENDATION

That a public consultation and engagement process be initiated to determine community preferences for lighting along the Railway Greenway, as outlined in the staff report titled "Potential Enhancements to the Railway Greenway," dated June 15, 2023, from the Director, Parks Services.

2. **RICHMOND SPORTS FACILITY NEEDS ASSESSMENT – 2023 UPDATE**
(File Ref. No. 11-7025-09-002) (REDMS No. 7265004)

PRCS-56

See Page **PRCS-56** for full report

Designated Speakers: Mandy Hadfield and Mandeep Bains

STAFF RECOMMENDATION

That the prioritized sport facility and infrastructure list be received and endorsed for consideration in future corporate facility or park plans as outlined in the staff report titled "Richmond Sports Facility Needs Assessment - 2023 Update" dated June 29, 2023, from the Director, Recreation and Sport Services.

3. **MANAGER'S REPORT**

ADJOURNMENT

City of Richmond

Minutes

Parks, Recreation and Cultural Services Committee

Date:	Tuesday, June 27, 2023
Place:	Council Chambers Richmond City Hall
Present:	Councillor Chak Au, Chair Councillor Michael Wolfe Councillor Laura Gillanders Councillor Andy Hobbs Councillor Bill McNulty
Also Present:	Councillor Carol Day
Call to Order:	The Chair called the meeting to order at 4:00 p.m.

MINUTES

It was moved and seconded
That the minutes of the meeting of the Parks, Recreation and Cultural Services Committee held on May 24, 2023, be adopted as circulated.

CARRIED

AGENDA ADDITIONS

It was moved and seconded
That:

(1) Lacrosse and Hockey Box be added to the agenda as Item No. 3A; and

(2) Richmond Ice Centre Ice Times be added to the agenda as Item No. 3B.

CARRIED

DELEGATIONS

1. (1) Rebecca Harbut and Mike Bomford, Department of Sustainable Agriculture, Kwantlen Polytechnic University, provided an overview of the KPU Farm at Garden City Lands 2022 Report, together with a brief presentation (copy on file). The following was highlighted:

- The license to use area covers a total of twenty acres (8 ha), with phase 1 of the area being an 8 acres (3 ha) site, farmed since 2018, with horticultural crops, field crops/berries and an orchard.
- Soil was deposited last year for the expansion to phase 2. Due to contamination at the site and concerns on maintaining carbon sequestered in the peat, 70 cm of mineral soil layered on top of the peat required.
- There is a 6 year crop rotation in the market gardens, which has seen production grow each year, resulting in $120k of produce grown last year ($50k at market, $40k at wholesale and remainder to Richmond Food Bank).
- Expanding on community engagement, including the learning garden to create spaces for interaction, and utilizing the iNaturalist app to learn about different species of plants, insects and birds that interface with the ecosystem of the site.

In response to queries from Committee, the delegation noted:

- KPU offers a Bachelor of Applied Science and Sustainable Agriculture Degree program, with 50 students typically completing the four year program, and a target to double that enrollment over the coming years;
- all students are required to engage with the Garden City lands for a full year hands on Agro-Ecosystems Management production series and a full year of research;
- all the material with farm waste in the peat was screened with no chemical residues found, just clean peat laid down; and
- summer twilight farm tours held second Tuesday of every month.

(2) Wallapak Polasub, Research and Extension Program Manager, Institute for Sustainable Food Systems, Kwantlen Polytechnic University, provided an overview of the 2022 Annual Report on Richmond Farm School at Gilbert Road, together with a brief presentation (copy on file). The following was highlighted:

2.

- following the COVID pandemic there was a greater interest in growing food and being self reliant which led to 2 cohort programs in 2021, later reduced to 1 cohort program in 2022 (late March to November), with a maximum capacity of 20 students;
- with respect to land use, there are 2.5 acres of teaching, including 0.75 acre mixed vegetables, herbs and flowers and 1.5 acres of apples and pears, and 3.3 acres allocated to incubator farmers;
- site upgrades include the installation of another perimeter security fence along the ditch, shipping container for storage, new processing area and access road improvement; and
- various outreach activities are ongoing, including farm tours and food donations to local community organizations, with additional community supported agriculture information and videos available on the KPU Institute for Sustainable Food Systems website.

In response to queries from Committee, the delegation advised that:

- Although 100 people on the waitlist it is not possible to do more than one cohort of 20 students per year due to limited staff.
- Exploring long term expansion opportunities is ongoing.

COMMUNITY SERVICES DIVISION

2. **HUGH BOYD COMMUNITY FACILITY AND FIELDHOUSE – STAKEHOLDER ENGAGEMENT AND DELIVERY TIMELINE**
(File Ref. No. 06-2052-20-HBSC) (REDMS No. 6915261)

In response to queries from Committee, staff noted beginning in the fall, and throughout the lifecycle of the project, there will be multiple opportunities for various types of public engagement to ensure the design fits the community.

It was moved and seconded
That the staff report titled "Hugh Boyd Community Facility and Fieldhouse – Stakeholder Engagement and Delivery Timeline" from the Director, Recreation and Sport Services, and Director, Facilities and Project Development dated June 1, 2023 be received for information.

CARRIED

3. **WHARVES REGULATION BYLAW NO. 10182**
(File Ref. No. 06-2345-00) (REDMS No. 6407177)

In response to queries from Committee, staff noted (i) aggregate reporting of statistics can be provided to committees on a monthly/annual basis, and police related files could be requested through the RCMP, (ii) staff will be

developing a specific operational plan for enforcement and working with a contractor (tow operator) for any removal of vessels, and (iii) depending on the value, removed vessels will be auctioned or disposed.

It was moved and seconded

(1) That Wharves Regulation Bylaw No. 10182 be introduced and given first, second and third reading;

(2) That Consolidated Fees Bylaw No. 8636, Amendment Bylaw No. 10286, be introduced and given first, second, and third reading;

(3) That Notice of Bylaw Violation Dispute Adjudication Bylaw No. 8122, Amendment Bylaw No. 10285, be introduced and given first, second, and third reading;

(4) That Municipal Ticket Information Authorization Bylaw No. 7321, Amendment Bylaw No. 10306, be introduced and given first, second, and third reading; and

(5) That staff report back to Council in one year to provide a status update regarding the implementation and enforcement results following adoption of the Wharves Regulation Bylaw No. 10182.

CARRIED

3A. LACROSSE AND HOCKEY BOXES

(File Ref. No.)

In response to questions from the Committee regarding the Steveston lacrosse box, staff noted:

- the Steveston Community Centre development and playground updates do not currently touch upon areas of recreational facilities, including the lacrosse box;
- an asset management crew can review and address concerns regarding the condition of the lacrosse box
- currently there are no plans or requests to update or change the use of the court boxes, and
- an outdoor covered lacrosse box has been identified in the sports facility needs assessment to be reported to the Committee later this year.

A brief discussion ensued regarding the Burkeville hockey box. Staff noted the ongoing assessment and improvement process for the area, including pickleball courts.

3B. RICHMOND ICE CENTRE ICE TIMES

(File Ref. No.)

In response to questions from the Committee regarding available of ice times

at the Richmond Ice Centre, staff noted:

- staff meet with the Richmond Arena Community Association (RACA) on a regular basis, which included a meeting in April also attended by the four minor sport groups to discuss this year's renovations and construction timeline;
- the RACA Program Committee met last week to discuss all of the tournaments for the coming year to ensure a balanced slate in terms of ice time; and
- high performance groups tend to use weekday ice time as opposed to evening/weekend ice time, other than tournament ice time, of which there is one tournament considered for this season, opposed to three tournaments last season.

4. **MANAGER'S REPORT**

(i) Steveston Salmon Festival

A brief overview of the programming planned for the upcoming 76th Annual Steveston Salmon Festival (July 1, 2023), was provided.

(ii) Summer Art Gallery Exhibition

Staff noted the upcoming Richmond Art Gallery summer exhibition, "MOTHLIKE/silvery-blue", by Amy-Claire Huestis, which focusses on awareness of the Fraser River ecosystem.

ADJOURNMENT

It was moved and seconded
That the meeting adjourn (4:58 p.m.).

CARRIED

Certified a true and correct copy of the Minutes of the meeting of the Parks, Recreation and Cultural Services Committee of the Council of the City of Richmond held on Tuesday, June 27, 2023.

Councillor Chak Au
Chair

Lorraine Anderson
Legislative Services Associate

City of Richmond

Report to Committee

To:	Parks, Recreation and Cultural Services Committee	**Date:**	June 15, 2023
From:	Todd Gross Director, Parks Services	**File:**	06-2400-20-RAIL1/Vol 01
Re:	**Potential Enhancements to the Railway Greenway**		

Staff Recommendation

That a public consultation and engagement process be initiated to determine community preferences for lighting along the Railway Greenway, as outlined in the staff report titled "Potential Enhancements to the Railway Greenway," dated June 15, 2023, from the Director, Parks Services.

Todd Gross
Director, Parks Services
(604-247-4942)

Att. 1

REPORT CONCURRENCE		
ROUTED TO:	**CONCURRENCE**	**CONCURRENCE OF GENERAL MANAGER**
Engineering	☑	
Sustainability & District Energy	☑	
Transportation	☑	
SENIOR STAFF REPORT REVIEW	**INITIALS:**	**APPROVED BY CAO**

7213846

Staff Report

Origin

At the October 19, 2022, Public Works and Transportation Committee meeting, Richmond resident Kevin Krygier presented concerns about user safety after dark along the Railway Greenway. A petition to "install lighting and integrate other safety enhancements that are consistent with CPTED, pedestrian, and cyclist safety standards" with fifty-six signatures was also submitted. Staff received the following referral:

> *Refer presentation and the petition on the railway greenway to staff for review of CPTED principles and other relevant City of Richmond strategies and report back to Committee with an implementation plan.*

The purpose of this report is to respond to the referral and outline recommended next steps.

This report supports Council's Strategic Plan 2022-2026 Focus Area #2 Strategic and Sustainable Community Growth:

> *2.4 Enhance Richmond's robust transportation network by balancing commercial, public, private and active transportation needs.*

This report supports Council's Strategic Plan 2022-2026 Focus Area #3 A Safe and Prepared Community:

> *Community safety and preparedness through effective planning, strategic partnerships and proactive programs.*
>
> *3.4 Ensure civic infrastructure, assets and resources are effectively maintained and continue to meet the needs of the community as it grows.*

This report supports Council's Strategic Plan 2022-2026 Focus Area #6 A Vibrant, Resilient and Active Community:

> *6.2 Enhance the City's network of parks, trails and open spaces.*

Background

Crime Prevention Through Environmental Design

Crime Prevention Through Environmental Design (CPTED) is a conceptual framework that was developed by American criminologist C. Ray Jeffery in the 1970s. It is based on the notion that the quality and character of the built environment has a significant influence on public health, safety, and wellness, and is regularly cited by urban planners and design professionals. The CPTED principle of "natural surveillance" is most relevant to this discussion. Its premise is that a greater degree of visibility for a given public space, i.e., with clear sightlines, will deter criminal activity and instill a greater sense of security for users.

The City's Parks Services Department strives to create and maintain good visibility and clear sightlines in all new and existing park spaces through its planning, design, construction and maintenance practices.

Railway Greenway Overview

In 2010, the City purchased the Canadian Pacific Railway (CPR) corridor adjacent to Railway Avenue between Granville Avenue and Garry Street. The goal to develop a trail/greenway for pedestrians, cyclists, and other wheeled users was established in the 1979 Trails Plan and the subsequent 2010 Trails Strategy. In 2012, Council approved the Phase 1 Implementation Plan of the Railway Corridor Greenway following an extensive public consultation process. The associated report to committee "Railway Corridor Greenway – Phase 1 Implementation Plan," dated November 6, 2012, outlined the initial priorities, intended future enhancements and community engagement results. While the report noted resident requests for lighting at bus stop connections, lighting along the multi-use path (MUP) was not indicated as a current or future priority. Since the initial implementation phase, subsequent enhancements to realize the original vision have occurred; these include extending the greenway north to River Road, planting trees and shrubs, installing site furnishings, improving crossings and bus stop connections, and creating new amenities such as picnic areas, community gardens and a bike park.

Today, the Railway Greenway is an established linear City park that provides important ecosystem services as an ecological corridor, while concurrently serving as a corridor for various modes of active transportation. The MUP serves as one of Richmond's busiest cycling routes; Eco-Counter data from 2020 and 2021 indicated average daily cycling trips ranging from approximately 700 to 1,000 for the months of April through August.

There is an existing on-road bicycle lane on both the east and west sides of Railway Avenue, which runs parallel to the Railway Greenway between Garry Street and Granville Avenue that is illuminated by roadway lighting.

Relevant City Strategies

The Council-approved Enhanced Accessibility Design Guidelines and Technical Specifications aim to improve accessibility in public facilities and open spaces; they include references to outdoor lighting. Section 4.14 'Outdoor Recreational Facilities' notes "on paths, install lighting, waste receptacles, benches, drinking fountains, trees and shrub plantings, and other pedestrian path elements, in a location adjacent and not encroaching on the accessible path." Section 4.16 'Outdoor Lighting Considerations' notes that "artificial lighting and natural light… should provide a glare-free evenly distributed light where required, at outdoor working areas, on accessible path routes, at areas of potential hazard, and at building entrances and places of outdoor amenity." 'Outdoor Lighting Principles' note that "illumination along an accessible route should not create any dark or shadowy areas."

The provision of lighting in parks occurs on a site-specific basis, and is commensurate with park amenities and community need, e.g., sport fields and urban environments where lighting is deemed necessary to ensure safe passage or access to amenities that operate after dark; in these cases, lights typically operate on a sensor or timer from dawn to dusk. The Parks and Open

Space Strategy (POSS) Implementation Plan does refer to lighting: Outcome #2 "The system is inviting, accessible, and safe, enabling residents and visitors to feel comfortable and connected to the community;" and Priority Action #5 "Provide lighting for those locations intended for night time use, primarily urban places where there are adjacent, complementary uses."

The Community Wellness Strategy does not specifically refer to lighting; however, Focus Area #4 is to "Facilitate supportive, safe and healthy natural and built environments." Its key actions include references to improving accessibility and addressing barriers to using existing pedestrian and cycling routes.

Finally, the Community Energy & Emissions Plan 2050 includes Action 5.2.1 (Expand existing walking and rolling connectivity within and between neighbourhoods) to "review development requirements and urban design guidelines as necessary to ensure streets, lanes, and walk/roll infrastructure are accessible, and easy to navigate for all ages and abilities."

Analysis

Existing Conditions

In response to the referral received, staff procured the services of a qualified electrical engineer, PBX Engineering Ltd. (PBX), to study lighting levels along the Railway Greenway, from Garry Street to Westminster Highway, and prepare a report summarizing its findings; refer to Attachment 1 – PBX Engineering Technical Report, Railway Greenway Lighting Study. As there are no established City Park lighting standards, the City's current Engineering Design Specifications for Roadway Lighting were used. These specifications are based on the Illuminating Engineering Society (IES) standards and can be applied to off-street pathways as well as roadways.

The final report from PBX reached the following conclusions with respect to existing conditions:

- Existing lighting levels for almost the entirety of the Railway Greenway do not meet IES standards; the exception being areas with close proximity (< 30 metres) to lit intersections;
- Spillage from existing roadway lighting is insufficient to light the Railway Greenway to IES standards;
- Segment 1 – from Garry Street to Steveston Highway (approximately 470 metres in length) – had the best lighting levels, due to nearby BC Hydro lease lights; and
- Segment 6 – from Granville Avenue to Westminster Highway (approximately 786 metres in length) – had the worst lighting levels, due to the absence of parallel roads to provide light spillage.

Potential Lighting Strategy

As a reporting deliverable, PBX outlined a lighting strategy that would meet City illumination targets along the Railway Greenway. Based on their lighting assessment and computer simulations, PBX noted that the installation of 166 light poles with a height of 4.57 metres, spaced at 30 metres on centre, with lamp and fixtures that correspond to City Engineering design specifications, would be expected to meet City lighting standards. A Class D cost estimate for

this design was provided, with a projected cost of $1,367,000. The costs were broken down per segment, and ranged from $144,000 to $254,000 – refer to Table 1.

Table 1: Cost Estimate for PBX Lighting Design

Segment	Poles per Segment	Segment Length	Cost per Segment
Steveston Highway Quarter	16	470 m	$ 144,000
Williams Road Quarter	27	800 m	$ 231,000
Francis Road Quarter	31	800 m	$ 254,000
Blundell Road Quarter	28	785 m	$ 230,000
Granville Avenue Quarter	32	786 m	$ 254,000
Westminster Highway Quarter	32	786 m	$ 254,000
Total	**166**	**4,427 m**	**$ 1,367,000**

Alternative Lighting Solutions

PBX also provided input on alternative lighting approaches, including solar lights, photoluminescent aggregate and bollards.

PBX raised caution with the use of solar lights for this application due to the limited availability of sunlight throughout much of the year, battery maintenance and potential theft, placement limitations for optimal sunlight capture and a higher upfront cost.

Photoluminescent aggregate is a type of material that is applied to the pathway itself and can absorb and store light energy from natural or artificial light sources and then emit that energy in the form of visible light in darkness. When mixed with concrete or asphalt, photoluminescent aggregate can be used to provide pathway illumination for pedestrian walkways, paths and trails. PBX did not recommend the use of photoluminescent aggregate in this application due to the limited duration of emitted light, limited brightness and extent of illumination, maintenance requirements and costs required to replace existing paving.

Bollards, short vertical posts often used to control vehicle and pedestrian traffic, can be designed with integrated lighting. PBX did not recommend the use of bollards in this application due to their limited height, poor illumination coverage, and cost; they noted that bollards might be more appropriate for decorative or ambient lighting.

Considerations

To determine whether lighting is appropriate for the Railway Greenway, there are a number of factors that should be considered.

Community Impact

The Railway Greenway passes through a number of predominantly single-family home residential neighbourhoods, in some cases with limited visual screening, e.g., tree or shrub planting, between the pathway and adjacent homes. The introduction of pathway lighting could

lead to unintended light trespass, and may have a perceived negative effect on adjacent residents. This will be carefully considered and included in the public consultation process.

While the petition received indicates a number of Richmond residents are in favour of lighting implementation to address safety concerns, staff recommend that this preference should be verified through consultation with the broader community.

Ecological Impact

In addition to providing a MUP for various modes of active transportation, the Railway Greenway serves as an ecological corridor, as noted in the City's Ecological Network Management Strategy. It is an important piece of green infrastructure that offers ecosystem services, including but not limited to stormwater management, provision of food and wildlife habitat, reducing the urban heat island effect, etc. It enhances the City's ecological network by creating a continuous green linkage between the south and middle arm of the Fraser River that facilitates the movement of animals, nutrients and energy.

If lighting is implemented along the Railway Greenway, staff will assess and bring forward measures to mitigate negative effects on wildlife and ensure the continued provision of habitat and ecosystem services within the corridor.

Associated Costs

As noted above, PBX has developed a cost estimate for approximately $1.37 million to implement the recommended lighting approach along the Railway Greenway. Opportunities for phased implementation, and/or the use of a combination of lighting alternatives can be explored, however in any case a capital funding request would need to be submitted for Council consideration.

Local Precedents

City of Vancouver Outdoor Lighting Strategy

In 2019, the City of Vancouver adopted an Outdoor Lighting Strategy to provide direction on outdoor lighting on streets, public spaces and private properties across the city. Its stated intents are to:

- Improve public safety;
- Provide accessible and inviting outdoor spaces;
- Reduce light pollution;
- Reduce energy usage and cost; and
- Minimize ecological impacts.

One of its specified goals is to "Provide accessible and inviting spaces," noting "An improved public lighting network can help those who feel vulnerable to harassment and violence feel more secure by making outdoor spaces more visible and inviting."

Arbutus Greenway Solar-Powered Lighting

The Arbutus Greenway is an 8.8-kilometre paved pathway on a former rail line that runs between the Fraser River and False Creek in Vancouver. In 2019, the City implemented a solar photovoltaic lighting system along a 900-metre long section of the pathway with limited ambient lighting. Thirty solar-powered LED light poles, spaced at approximately 30 metres on centre, were installed between West 37th Avenue and West 33rd Avenue on the Arbutus Greenway.

The cost for supply, installation and commissioning was approximately $400,000 (roughly $13,500 per unit). The lights have been operated in 'dimmed' mode to provide adequate lighting while minimizing light spillage and conserving energy stored in the batteries, and the fixtures have shrouds to further manage light spillage. Field reviews demonstrated that there are no significant light trespass issues. The supplier, Urban Solar, noted that the lights could operate at these levels for over 20 days without solar recharge.

Further development of the Arbutus Greenway, including expansion of the lighting program, has not been realized to date. However, this project has been cited as a successful local example of off-grid solar lighting along an active transportation corridor.

While PBX raised caution with the use of solar lighting to meet City illumination targets, successful local precedents such as the Arbutus Greenway indicate that it may be a viable approach and warrants further study.

Next Steps

Staff are seeking endorsement from Council to proceed with public consultation, engagement and ecological assessments to determine community preferences and potential impacts for introducing lighting along the Railway Greenway. For an initiative of this magnitude with significant associated costs, and the potential to affect adjacent residents, pathway users and wildlife, it is paramount to consult with subject matter experts and Richmond residents while exploring opportunities to expand use of the Railway Greenway.

A public consultation process would adhere to the City's standard practices and consist of a combination of a Let's Talk Richmond online engagement process and in-person events. In addition to local residents, stakeholders would include those with expertise in accessibility, active transportation, and environmental impacts of lighting.

In the meantime, staff will work to ensure routine pruning and preservation of sightlines through existing planted areas to the degree possible.

Financial Impact

There is no financial impact at this time.

Conclusion

In response to the referral, staff procured the services of a qualified electrical engineer, PBX Engineering Ltd., to study existing lighting levels along the Railway Greenway (Garry Street to Westminster Highway) and provide a lighting strategy that would meet IES standards.

Staff recommend conducting a comprehensive public consultation and engagement process to determine community preferences and the ecological impact of lighting along the Railway Greenway. Once completed, staff would report back to Council with the results to inform next steps.

Kevin Fraser
Research Planner 2
(604-233-3311)

Att. 1: PBX Engineering Technical Report, Railway Greenway Lighting Study, City of Richmond

PBX ENGINEERING

TECHNICAL REPORT

Railway Greenway Lighting Study

City of Richmond

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Permit to Practice Number: 1000208

Prepared by:
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May 12, 2023
Version 2.0
PBX#: 230054

DOCUMENT REVISION HISTORY		
Revision	Description	Date
1.0	First Submission	March 24, 2023
2.0	Final Submission	April 14, 2023
3.0	Updated Final Submission	May 12, 2023

1 Executive Summary

The City of Richmond retained PBX Engineering (PBX) to provide a lighting level assessment and lighting analysis report for the Railway Greenway ("The Greenway") from Garry Street to Westminster Highway. It is understood that the Greenway is a multi-use path (MUP) along the westside of Railway Avenue with multiple at-grade street crossings. PBX assumes the area to have medium pedestrian activity based on surrounding land use. The intention of this assignment is to identify the need for additional lighting to meet the recommended lighting levels of a MUP.

This report describes the methodology and findings of the lighting assessment for all segments of the Greenway. In this report there are two main parameters that are considered as follows:

- Illuminance is the amount of light hitting on a given surface and is a measure of the density of light incident on a surface. The number of lumens incident on a surface (real or imaginary) is divided by the area of the surface to obtain the average illuminance over that area. The unit for illuminance is lux (lx).
- Uniformity may be expressed as the ratio of the average level of illuminance to the minimum level. A high degree of uniformity of lighting has traditionally been accepted as desirable. The closer the uniformity ratio is to 1:1 the more evenly distributed the light with fewer bright spots or dark shadows in the calculation area.

Based on IESNA RP-8-21 Roadway Lighting Table 11-2 and City of Richmond standards the evaluation criteria utilized in this assessment include:

- Minimum maintained average horizontal illuminance 5 lux
- Average vertical illuminance at 1.5m above the pavement 2 lux
- Uniformity ratio 5:1

The lighting assessment survey was conducted on the Railway Greenway on March 14th, 2023. The assessment started after Evening Civil Twilight (7:48pm) when all nearby roadway fixtures would be illuminated. The light readings were attained where lighting levels changed significantly and the lighting of roadway intersections and crosswalks were not collected as they are outside the scope of this report

Of the segments that have been assessed, it has been determined that the Steveston Highway Quarter is currently the most lit segment with an average of 4 lux, and the Westminster Highway Quarter is the least lit segment, with an average of 1 lux.

During winter months, little to no foliage is on the trees along the Greenway. As this site visit occurred during this time, the noted values were taken during the best-case scenario for light levels. As the summer months approach, and the leaves return to the trees, there will be more blockage between the roadway lighting and the Greenway, decreasing the values even further.

Based on these findings, PBX designed a lighting solution for the Greenway using City of Richmond recognized products. To meet the evaluation criteria, 166 poles spaced at approximately 30 meters on centre would be required to light the Greenway.

Several alternative lighting options were explored including solar lighting, photoluminescent aggregate and illuminated bollards. PBX does not recommend use of these solutions for this location.

It is estimated the total cost to complete these upgrades will be $1,367,000.

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2 Introduction

The City of Richmond has contracted PBX Engineering to perform a lighting assessment of the Railway Greenway ("The Greenway") corridor from Garry Street to Westminster Highway and provide possible solutions for improvement. A field review was completed on March 14th, 2023. For the purposes of this study, the Greenway was divided into segments as shown below:

Table 1: Greenway Segments

#	Segment Name	Start	End	Length
1	Steveston Highway Quarter	Garry Street	Steveston Highway	470m
2	Williams Road Quarter	Steveston Highway	Williams Road	800m
3	Francis Road Quarter	Williams Road	Francis Road	800m
4	Blundell Road Quarter	Francis Road	Blundell Road	785m
5	Granville Avenue Quarter	Blundell Road	Granville Avenue	786m
6	Westminster Highway Quarter	Granville Avenue	Westminster Highway	786m

3 Lighting Standards

The Illuminating Engineering Society (IES) has established standards and best practices that have been adopted by the City of Richmond. These standards have been applied to this assessment in order to inform recommendations. In this report there are two main parameters that are considered as follows:

- Illuminance is the amount of light hitting on a given surface and is a measure of the density of light incident on a surface. The number of lumens incident on a surface (real or imaginary) is divided by the area of the surface to obtain the average illuminance over that area. The unit for illuminance is lux (lx).
- Uniformity may be expressed as the ratio of the average level of illuminance to the minimum level. A high degree of uniformity of roadway lighting has traditionally been accepted as desirable. The closer the uniformity ratio is to 1:1 the more even evenly distributed the light with fewer intense bright spots or dark shadows in the calculation area.

For the purposes of this report, the recommended lighting level for the Greenway is noted in the following table:

Table 2: Lighting Design Criteria

PEDESTRIAN USAGE AT NIGHT	MINIMUM MAINTAINED AVERAGE HORIZONTAL ILLIMNANCE (E_{AVG}, LUX)	AVERAGE VERTICAL ILLUMINANCE AT 1.5M ABOVE THE PAVEMENT (E_{VAVG}, LUX)	UNIFORMITY RATIO (E_{AVG}/E_{MIN})
MEDIUM PEDESTRIAN ACTIVITY	5 lux	2 lux	5

This table is based on IESNA RP-8-21 Roadway Lighting Table 11-2

4 Methodology

4.1 Field Measurements

The lighting assessment survey was conducted along the Greenway on March 14th, 2023 and was started after Evening Civil Twilight (7:48pm) when all nearby roadway fixtures would be illuminated. Evening Civil Twilight is defined as when the geometric center of the sun is 6 degrees below the horizon. This start time also ensures that there is a minimal level of ambient light.

On March 14th, 2023, the weather was overcast on site. The cloud cover was high in the atmosphere and did not obstruct the existing lighting infrastructure but did filter out moonlight.

A Minolta Illuminance Meter model T-10 was employed to record the field measurements. The lighting sensor was attached to a tripod at a height of 1.5m to ensure consistent sensor reading.

The survey points were chosen based on the size of the survey areas to ensure that a reasonable representation of the area was captured. Due to the large stretches of complete darkness the survey points were attained where lighting levels changed significantly. The lighting of roadway intersections and crosswalks was not collected as it is outside the scope of this report.

4.2 Lighting Design Simulation

To find a possible lighting solution Agi32 was used as it is widely accepted industry standard lighting design software. It was used to determine the luminaire mounting height and spacing required to meet the lighting design criteria mentioned in Section 3.
The following should also be noted:

- A light loss factor (LLF) of 0.82 was used for the evaluation.
- The American Electric Lighting (AEL) Autobahn fixture (ATBMic-P101-MVOLT-R3L-3K HSS) was used for the proposed fixture.
- IES files for fixtures were downloaded from the AEL website.
- Where possible, pedestrian lights were positioned on the West side of the Greenway, with luminaire arms facing East towards Railway Avenue

5 Findings

5.1 Observations

The following sections describe in detail what was observed on site, and potential changes that could occur in the surrounding environment due to seasonal changes.

Table 3: Site Observations

#	SEGMENT	EXISTING NEARBY LIGHTING	FOLIAGE
1	Steveston Highway Quarter	-BC Hydro lease lights along Greenway facing Railway Avenue. City of Richmond street lights along far side of Railway Avenue -Single davit luminaire at midblock crosswalk -Approximately 100m South of Steveston Highway crossing a Hydro lease light burnt out. The effect of this light missing reduces the lighting levels from near recommended level to not meeting.	Sparsely treed for majority of trail
2	Williams Road Quarter	-City of Richmond street lights along far side of Railway Avenue. Impact of street lights minimal due to distance from trail -Single davit luminaire facing Railway Avenue at midblock crosswalk	Heavily treed on one side of the Greenway for majority of the trail
3	Francis Road Quarter	-BC Hydro lease light at the crossing of Railway and Princeton Avenue -City of Richmond street lights along far side of Railway Avenue. Impact of street lights minimal due to distance from trail -City of Richmond street lights along far side of Geal Road. Impact of street lights minimal due to distance from trail -Single davit luminaire facing Railway Avenue at Woodwards Road crosswalk	Heavily treed on one side of the Greenway for majority of the trail
4	Blundell Road Quarter	-City of Richmond street lights along far side of Railway Avenue. Impact of street lights minimal due to distance from trail	Heavily treed for majority of the trail
5	Granville Avenue Quarter	- BC Hydro lease lights along far side of Railway Avenue. Impact of street lights minimal due to distance from trail -BC Hydro lease lights along McCallan Road. Impact of lights minimal due to distance from trail. -Single davit luminaire facing Railway Avenue at Colbeck Road crosswalk.	Heavily treed for majority of the trail
6	Westminster Highway Quarter	-Downlights at JN Burnett Secondary School but the impact is minimal due to distance from trail. Single BC Hydro lease light 20m South of Westminster Highway crossing	Sparsely treed for majority of the trail

For the purpose of this report, a condensed set of the total lighting measurements were used to evaluate the illuminance against the recommended levels. It is assumed that the area is large enough that these points would represent a suitable average for the segments in question without performing an impractical amount of data collection. To that end, the specific point values, and not the average of the entire zone is used as a reference. The summary of the measured lighting levels using a handheld light meter can be found in Appendix A.

5.2 Seasonal Affect

During winter months, little to no foliage is on the trees along the Greenway. As this site visit occurred during this time, the noted values were taken during the best-case scenario for lighting levels. As the summer months approach, and the leaves return to the trees, there will be more blockage between the roadway lighting and the Greenway, decreasing the values even further.

6 City of Richmond Pathway Lighting Design

The design for additional lighting along the Greenway using City of Richmond approved products, includes a 4.57m (15 ft) Side Mounted Luminaire pole with an American Electric Lighting Autobahn ATBMic 20W luminaire fixture. To meet the recommended lighting levels, 166 poles with an average spacing of 30m per pole would be required to complete this design sufficiently. The breakdown of the design per segment can be seen in the table below, (refer to Appendix B for a Class D summary of costs):

Table 4:Lighting Design

SEGMENT	POLES PER SEGMENT	SEGEMENT LEGNTH	COST PER SEGEMENT
Steveston Highway Quarter	16	470m	$144,000
Williams Road Quarter	27	800m	$231,000
Francis Road Quarter	31	800m	$254,000
Blundell Road Quarter	28	785m	$230,000
Granville Avenue Quarter	32	786m	$254,000
Westminster Highway Quarter	32	786m	$254,000
TOTAL	166	4.4km	$1,367,000

6.1 Lighting Calculations

The following table identifies the theorical lighting levels for the proposed lighting design of the Greenway using the AGI32 lighting analysis software. All calculations were completed using the American Electric Lighting Autobahn fixture, ATBMicro 20W Type 3 Long Throw. The detailed results of the lighting calculations can be found in Appendix C.

Table 5: Software Calculations (AGI32)

SEGMENT	ILLUMINANCE	VERTICAL ILLUMINANCE	UNIFORMITY (LAVG/LMIN)
Steveston Highway Quarter	7.99 lux	7.23 lux	4.70
Williams Road Quarter	7.96 lux	7.42 lux	4.98
Francis Road Quarter	8.30 lux	7.59 lux	4.91
Blundell Road Quarter	8.25 lux	5.43 lux	4.58
Granville Avenue Quarter	9.44 lux	8.11 lux	4.72
Westminster Highway Quarter	9.45 lux	6.24 lux	4.50

7 Alternative Lighting Options

7.1 Solar Lighting

Solar street lights would not be suitable for this design, based on the following considerations:

- Limited Availability of Sunlight: One of the main challenges with solar street lights is that they require high amounts of sunlight to function properly. In Metro Vancouver's rainy climate, solar panels may not function at full capacity. This could result in reduced lighting or a shorter lifespan for the street lights. Due to the location of this project, these lights would not be able to provide consistent lighting year-round.
- Battery Maintenance & Theft: Solar street lights rely on batteries to store energy, and these batteries require maintenance to ensure they function correctly. If the batteries are not properly maintained, they may fail, resulting in insufficient lighting. Furthermore, battery banks have been identified as attractive targets for theft.
- Placement Limitations: Depending on the location and orientation of the street lights, it may be difficult to position the solar panels in an optimal position to capture sunlight. This can impact the efficiency and effectiveness of the street lights. Considering the many trees shading the Greenway and the number of lights required to meet the given lighting criteria, shading due to trees is likely and will result in reduced efficiency of the lights.
- Cost: Solar Street lights have a higher upfront cost per pole than traditional grid-connected street lights. However, they save money in cost for trenching and conduit between poles. The linear cost per metre is $920/metre.

Ultimately, the decision to use solar street lights depends on a variety of factors, including the location, lighting requirements, and budget.

7.2 Photoluminescent Aggregate

Photoluminescent aggregate is a type of material that can absorb and store light energy from natural or artificial light sources and then emit that energy in the form of visible light in darkness. When mixed with concrete or asphalt photoluminescent aggregate can be used to provide pathway illumination for pedestrian walkways, paths and trails.

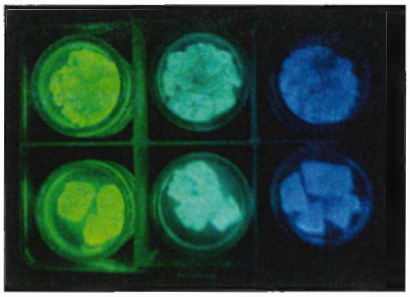

Figure 1: Photoluminescent Aggregate

PBX does not recommend the use of photoluminescent aggregate in this application for the following reasons:

- Limited Duration: The duration of the emitted light from photoluminescent aggregate is limited by the amount of light energy it can absorb and store. Once the stored energy is depleted, the material will no longer emit light, which means it may not be effective in situations where sunlight is limited for extended periods of time.
- Limited Brightness: The intensity of the light emitted by photoluminescent aggregate is often much lower than that of other lighting sources, which means it may not be bright enough to provide adequate visibility in all situations.
- Maintenance Requirements: Photoluminescent aggregate requires periodic maintenance to ensure that it remains functional, including snow clearing. Over time, the material can become dirty or damaged, which can reduce its ability to absorb and emit light.
- Facial Lighting: Photoluminescent aggregate would not be an equivalent to traditional pathway lighting as it would only provide the ability to see the pathway, and not what is in the surrounding area.
- Replacement of Existing Pavement: This product would require an entire replacement of the existing functional pavement on the greenway.
- Cost: Adding photoluminescent aggregate is an additional cost to asphalt or concrete pour and is more expensive than traditional materials. The linear cost per metre is $2,300/metre.

7.3 Illuminated Bollards

Bollards, which are short vertical posts often used to control vehicle and pedestrian traffic, can be designed with lighting features. However, they may not be suitable for functional lighting for several reasons:

- Limited height: Bollards are typically low to the ground, which means that the light they emit may not reach far enough to adequately illuminate an area. This can make them less effective for providing functional lighting, particularly in larger spaces.
- Limited coverage: Bollard lights are often designed to cast light in a specific direction or pattern, which may not be sufficient to provide full coverage of an area. This can create dark spots or shadows that can be hazardous, particularly in areas where people are walking or riding.
- Cost: Due to the limited height and coverage additional bollards are required to reach the same lighting levels as street lights. The linear cost per metre is $1,370/metre.

For these reasons, bollards may be better suited for decorative or ambient lighting rather than functional lighting. PBX does not recommend the use of Illuminated bollards to provide sufficient trail lighting.

8 Conclusions & Recommendations

8.1 Conclusions

The following conclusions were made while conducting this study:

- Existing lighting levels for almost the entirety of the Greenway are insufficient and do not meet City-adopted lighting standards, the only readings that met the recommended lighting criteria were less than 30m from the closest intersection.

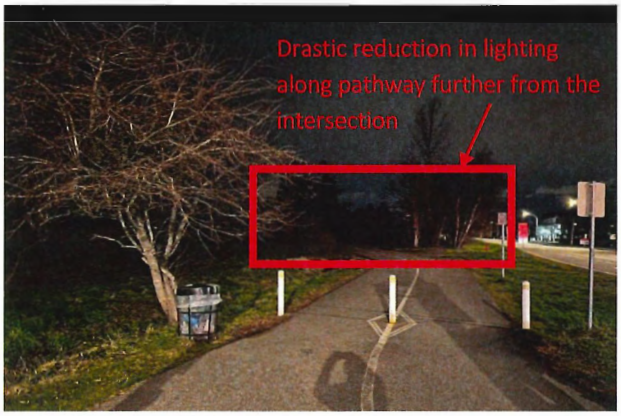

Figure 2: Lighting at the Francis Rd. Intersection

- Spillage from roadway lighting is insufficient to light the Greenway. Overall Segment 1, the Steveston Highway Quarter, does not meet lighting recommendations but has the best lighting (much of the trail had a rating of 4 lux) due to the nearby BC Hydro lease lights. Segment 6, the Westminster Highway Quarter, has the worst lighting as there are no roads parallel to the path to provide light spillage. An average of 0.5 lux was not uncommon.
- In order to meet recommended lighting levels along the Greenway, additional poles along the Greenway are required.
- Solar lighting, photoluminescent aggregate and bollards are not suggested for this design.

8.2 Recommendations

Based on the findings summarized in the previous sections, a list of recommendations has been provided. The recommendations below are based on the calculated values from the computer simulation:

- Installation of 166 additional 4.57m light poles to meet recommended lighting levels along the Greenway. This installation can be completed over several years.
- The ATBMic-P101-MVOLT-R3L-3K HSS fixture is recommended.
- Poles should be spaced about 30 m apart to meet lighting criteria.

9 Closure

This document has been prepared based upon the information referenced herein and on-site findings. It has been prepared in a manner consistent with good engineering judgement. Should new information come to light, PBX Engineering Ltd. requests the opportunity to review this information and our conclusions contained in this report. This document has been prepared for the exclusive use of the City of Richmond, and there are no representations made by PBX Engineering Ltd. to any other party. Any use that a third party makes of this document, or any reliance on or decisions made based on it, are the responsibility of such third parties.

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Appendix A – Field Survey

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Rev.	DATE		DESN	QC	QA
1	23MAR10	FIELD SURVEY RESULTS–DRAFT REPORT	DS	KI	KI

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TITLE

CITY OF RICHMOND
MUP LIGHTING – SITE PLAN
SEGMENT 1 – GARRY ST TO STEVESTON HWY

SCALE	PROJECT NUMBER	DRAWING NUMBER	REV.
NTS	230054	E001	1

Rev.	DATE		DESN	QC	QA
1	23MAR10	FIELD SURVEY RESULTS–DRAFT REPORT	DS	KI	KI

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TITLE

CITY OF RICHMOND
MUP LIGHTING – SITE PLAN
SEGMENT 2 – STEVESTON HWY TO WILLIAMS RD

SCALE	PROJECT NUMBER	DRAWING NUMBER	REV.
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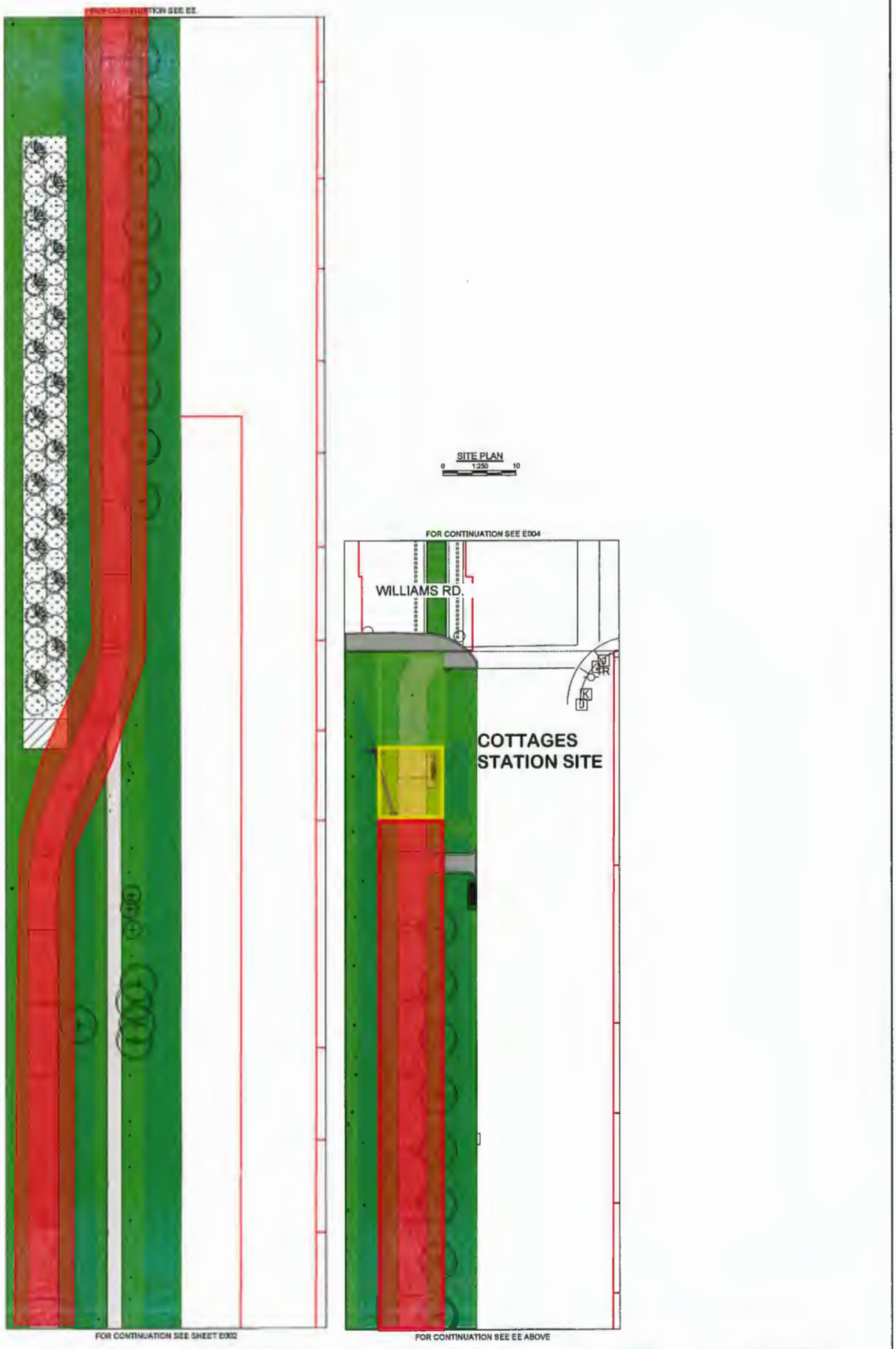

Rev.	DATE		DESN	QC	QA
1	23MAR10	FIELD SURVEY RESULTS–DRAFT REPORT	DS	KI	KI

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CITY OF RICHMOND
MUP LIGHTING – SITE PLAN
SEGMENT 2 – STEVESTON HWY TO WILLIAMS RD

SCALE	PROJECT NUMBER	DRAWING NUMBER	REV.
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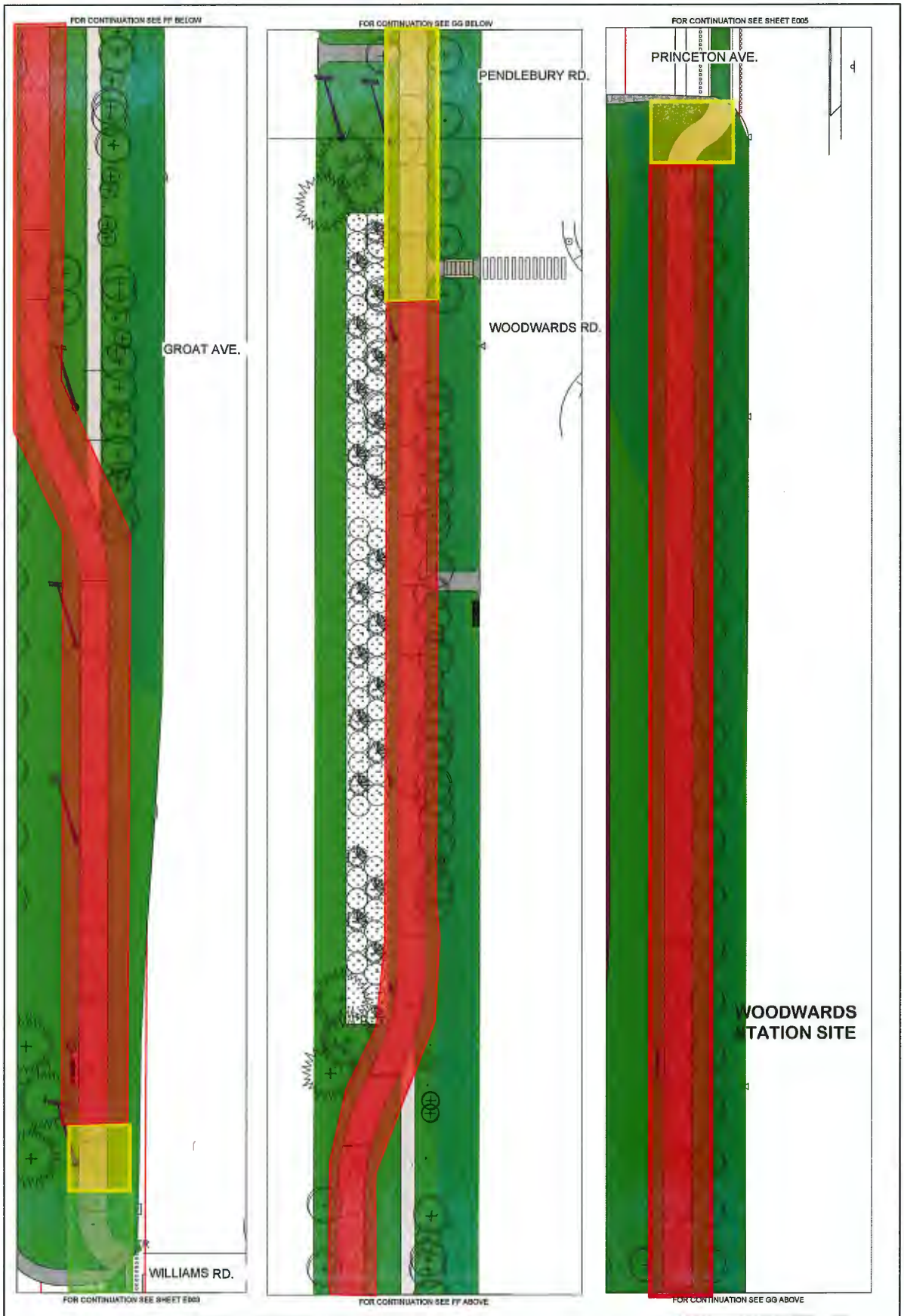

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1	23MAR10	FIELD SURVEY RESULTS–DRAFT REPORT	DS	KI	KI

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CITY OF RICHMOND
MUP LIGHTING – SITE PLAN
SEGMENT 3 – WILLIAMS RD TO FRANCIS RD

SCALE	PROJECT NUMBER	DRAWING NUMBER	REV.
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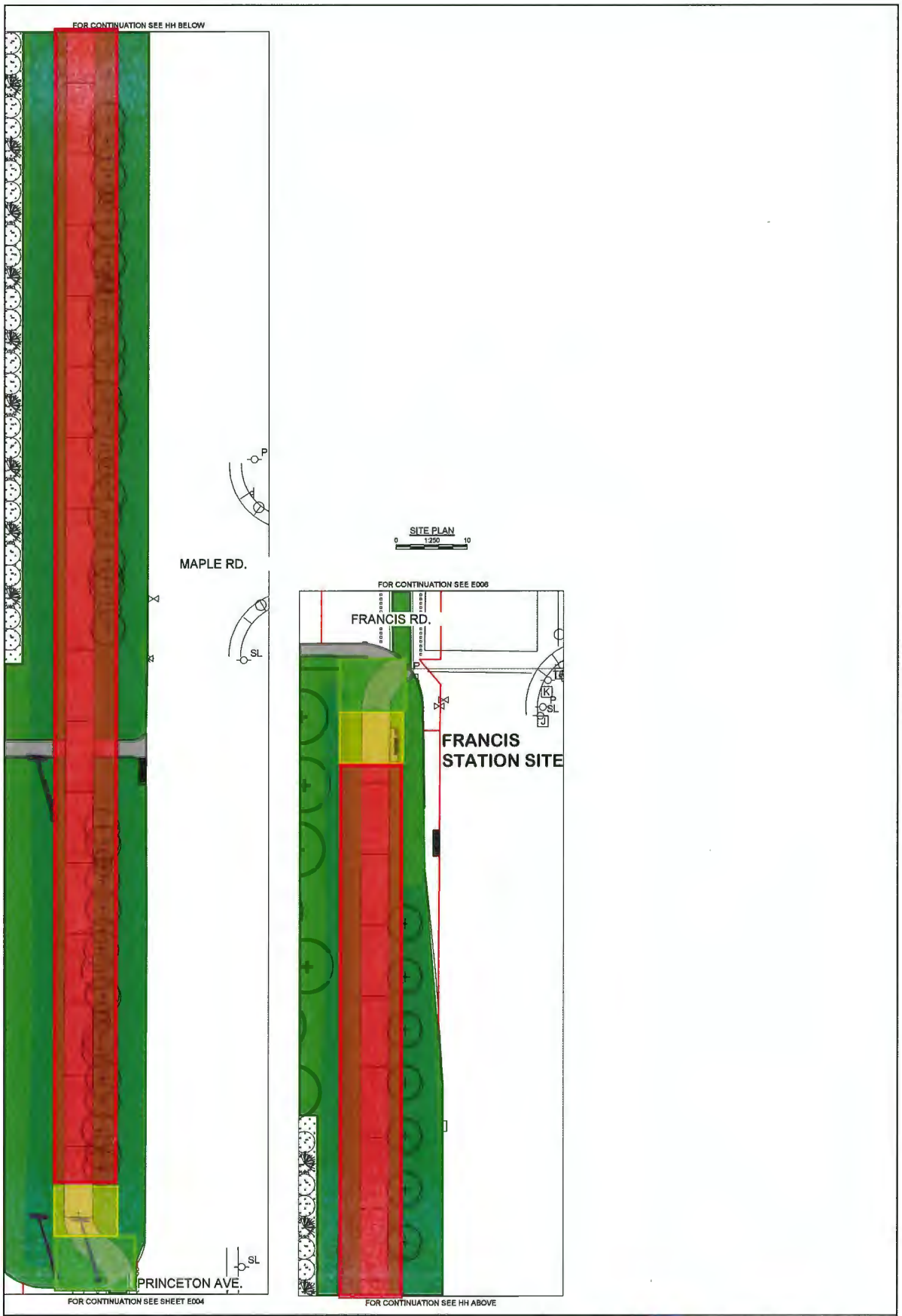

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MUP LIGHTING – SITE PLAN
SEGMENT 3 – WILLIAMS RD TO FRANCIS RD

SCALE	PROJECT NUMBER	DRAWING NUMBER	REV.
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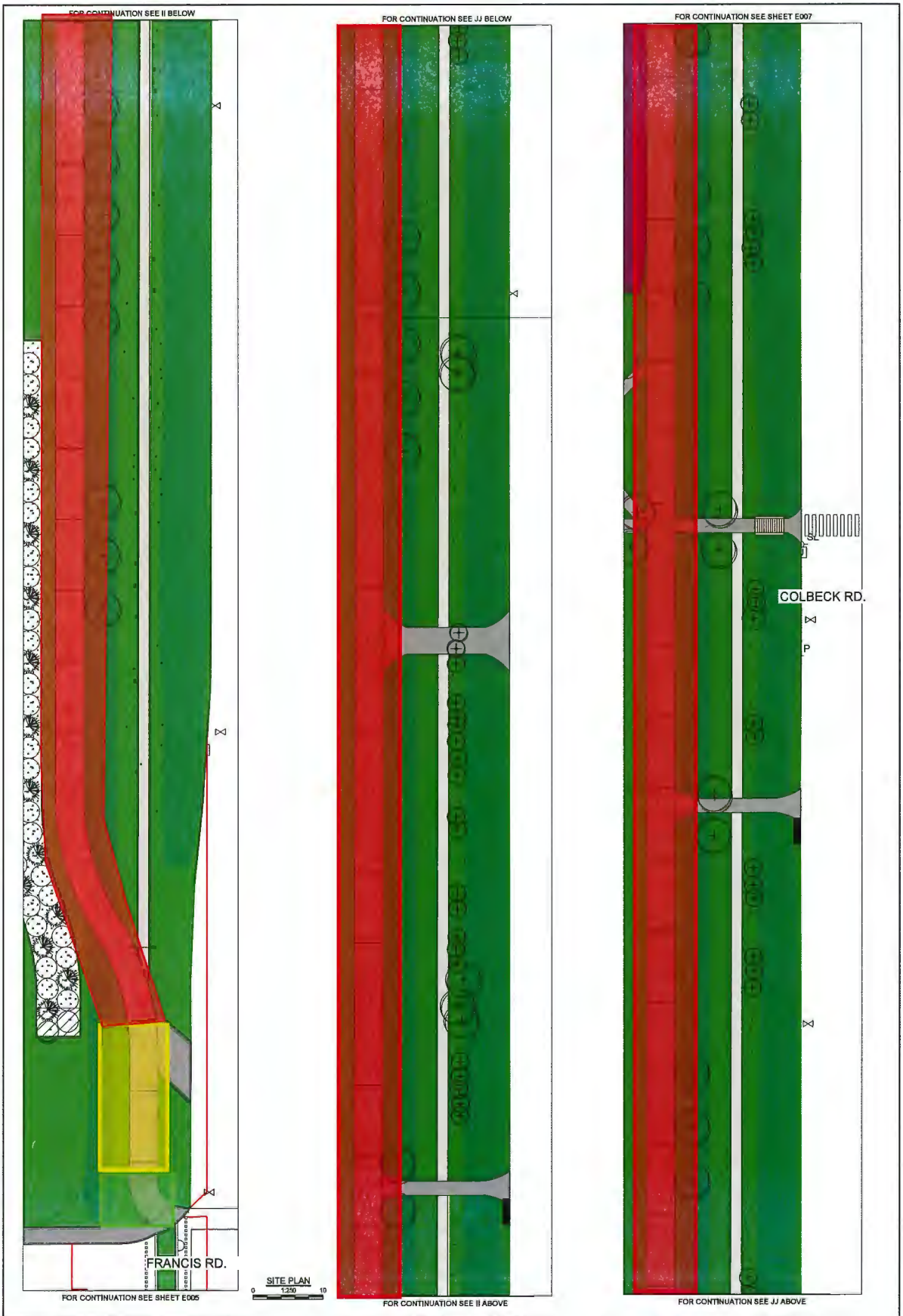

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CITY OF RICHMOND
MUP LIGHTING – SITE PLAN
SEGMENT 4 – FRANCIS RD TO BLUNDELL RD

SCALE	PROJECT NUMBER	DRAWING NUMBER	REV.
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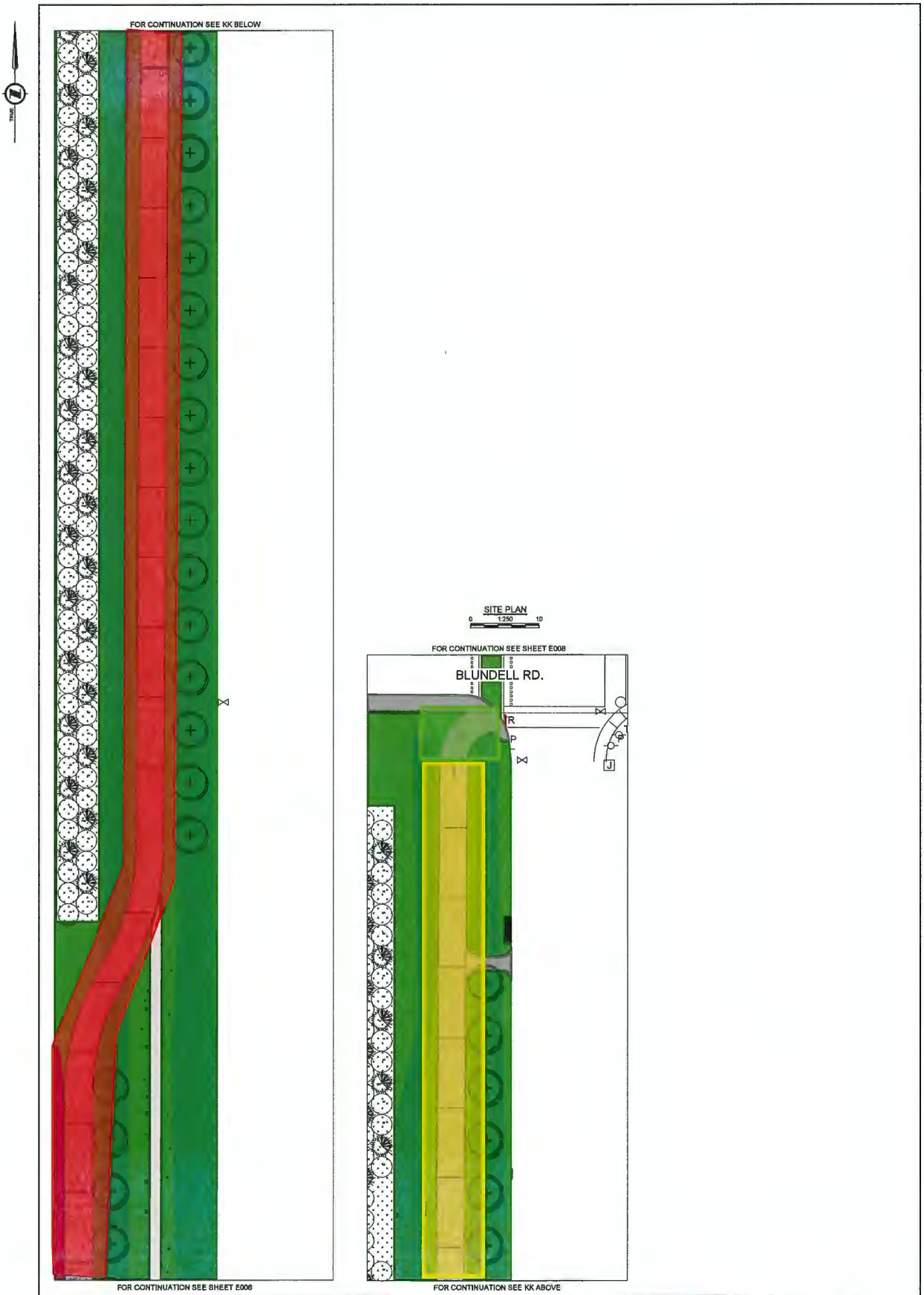

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MUP LIGHTING – SITE PLAN
SEGMENT 4 – FRANCIS RD TO BLUNDELL RD

SCALE	PROJECT NUMBER	DRAWING NUMBER	REV.
NTS	230054	E007	1

Rev.	DATE		DESN	QC	QA
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TITLE

CITY OF RICHMOND
MUP LIGHTING – SITE PLAN
SEGMENT 5 – BLUNDELL RD TO GRANVILLE AVE

SCALE	PROJECT NUMBER	DRAWING NUMBER	REV.
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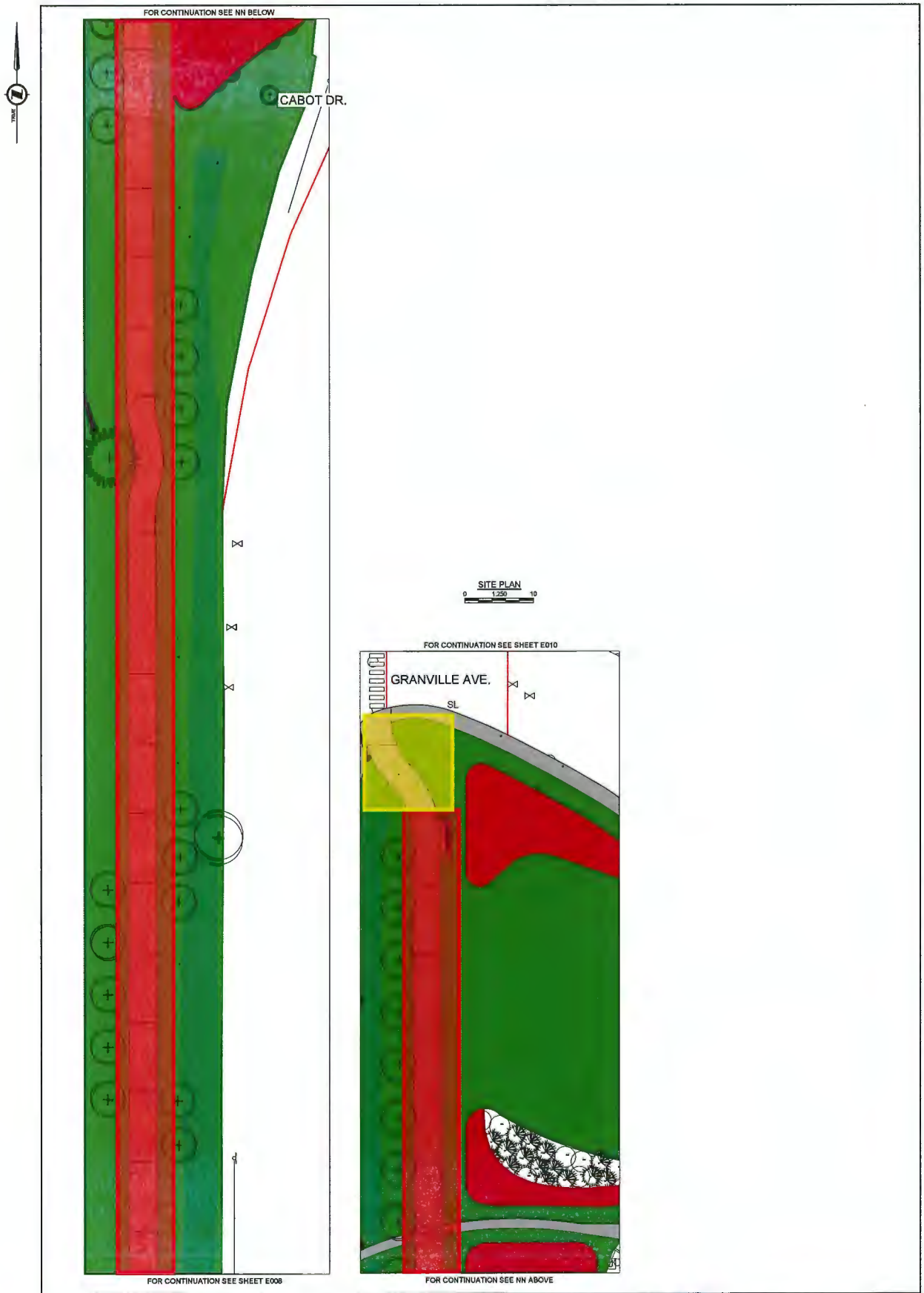

Rev.	DATE		DESN	QC	QA
1	23MAR10	FIELD SURVEY RESULTS–DRAFT REPORT	DS	KI	KI

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MUP LIGHTING – SITE PLAN
SEGMENT 5 – BLUNDELL RD TO GRANVILLE AVE

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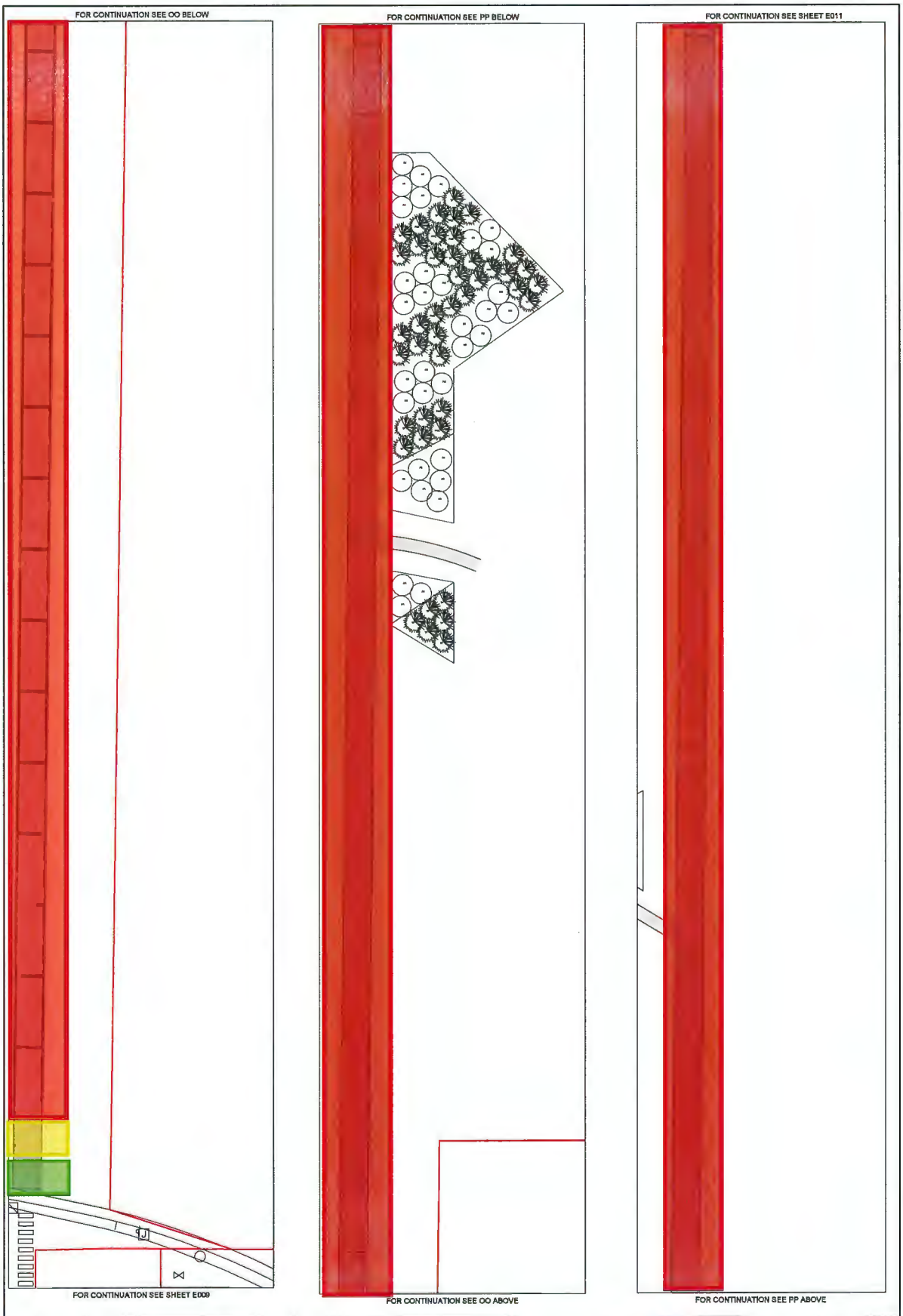

Rev.	DATE		DESN	QC	QA
1	23MAR10	FIELD SURVEY RESULTS–DRAFT REPORT	DS	KI	KI

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CITY OF RICHMOND
MUP LIGHTING – SITE PLAN
SEGMENT 6 – GRANVILLE AVE TO WESTMINSTER HWY

SCALE	PROJECT NUMBER	DRAWING NUMBER	REV.
NTS	230054	E010	1

SITE PLAN
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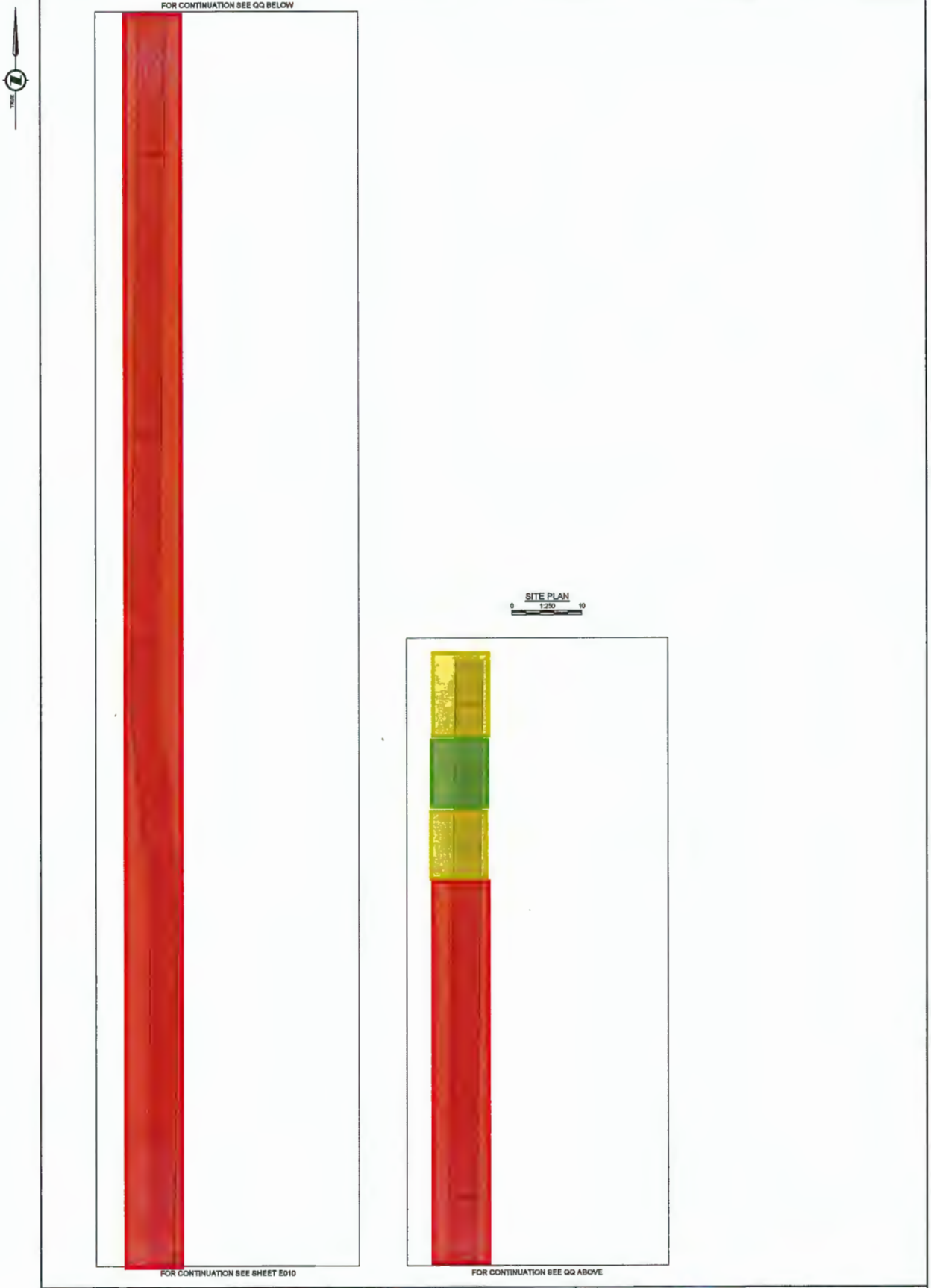

Rev.	DATE		DESN	QC	QA
1	23MAR10	FIELD SURVEY RESULTS–DRAFT REPORT	DS	KI	KI

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CITY OF RICHMOND
MUP LIGHTING – SITE PLAN
SEGMENT 6 – GRANVILLE AVE TO WESTMINSTER HWY

SCALE	PROJECT NUMBER	DRAWING NUMBER	REV.
NTS	230054	E011	1

Appendix B – Class D Cost Estimate

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City of Richmond Railway Greenway Lighting - Steveston Highway Quarter

Description		Unit	Qty	Material Cost	Total Material	Labour	Total Labour	Equipment	Total Equipment	Line Totals	TOTALS
1	**Street Lighting**										
1.01	CoR Type S1 Concrete Base	ea.	16	$ 1,000.00	$ 16,000.00	6.00	$ 8,640.00	$ -	$ -	$ 24,640.00	
1.02	35mm RPVC Conduit	m	470	$ 15.00	$ 7,050.00	0.04	$ 1,692.00	$ -	$ -	$ 8,742.00	
1.03	Trenching and Backfill (Gravel)	m	458	$ 60.00	$ 27,480.00	0.00	$ -	$ -	$ -	$ 27,480.00	
1.05	Trenching and Backfill (Asphalt)	m	12	$ 600.00	$ 7,200.00	0.00	$ -	$ -	$ -	$ 7,200.00	
1.06	Laneway 4.57m Luminaire Pole, Galv & Powder Coated, RICHMOND	ea.	16	$ 581.00	$ 9,296.00	6.00	$ 8,640.00	$ -	$ -	$ 17,936.00	
1.07	ATBMic-P101-MVOLT-R2-3K	ea.	16	$ 220.00	$ 3,520.00	2.00	$ 2,880.00	$ -	$ -	$ 6,400.00	
1.08	No. 6 RW90	m	1410	$ 5.31	$ 7,487.10	0.00	$ -	$ -	$ -	$ 7,487.10	
1.08	No. 8 RW90	m	470	$ 3.51	$ 1,649.70	0.00	$ -	$ -	$ -	$ 1,649.70	
1.10	BC Hydro Disconnect and New Service Dip	LS	1	$ 10,000.00	$ 10,000.00	0.00	$ -	$ -	$ -	$ 10,000.00	
Subtotal					$ 79,682.80		$ 21,852.00		$ -		$ 101,534.80
2	**General Site Costs**										
2.00	Mobilization	LS	1	$ 5,000.00	$ 5,000.00	0.00	$ -	$ -	$ -	$ 5,000.00	
Subtotal					$ 5,000.00		$ -		$ -		$ 5,000.00
TOTAL											$ 106,534.80
CONTINGENCY (35%)											$ 37,287.18
GRAND TOTAL											$ 143,821.98

City of Richmond Railway Greenway Lighting - Williams Road Quarter

Description		Unit	Qty	Material Cost	Total Material	Labour	Total Labour	Equipment	Total Equipment	Line Totals	TOTALS
1	**Street Lighting**										
1.01	CoR Type S1 Concrete Base	ea.	27	$ 1,000.00	$ 27,000.00	6.00	$ 14,580.00		$ -	$ 41,580.00	
1.02	35mm RPVC Conduit	m	800	$ 15.00	$ 12,000.00	0.04	$ 2,880.00	$ -	$ -	$ 14,880.00	
1.03	Trenching and Backfill (Gravel)	m	796	$ 60.00	$ 47,760.00	0.00	$ -	$ -	$ -	$ 47,760.00	
1.05	Trenching and Backfill (Asphalt)	m	8	$ 600.00	$ 4,800.00	1.00	$ 720.00	$ -	$ -	$ 5,520.00	
1.06	Laneway 4.57m Luminaire Pole, Galv & Powder Coated, RICHMOND	ea.	27	$ 581.00	$ 15,687.00	6.00	$ 14,580.00	$ -	$ -	$ 30,267.00	
1.07	ATBMic-P101-MVOLT-R2-3K	ea.	27	$ 220.00	$ 5,940.00	2.00	$ 4,860.00	$ -	$ -	$ 10,800.00	
1.08	No. 6 RW90	m	2400	$ 5.31	$ 12,744.00	0.00	$ -	$ -	$ -	$ 12,744.00	
1.09	No. 8 RW90	m	800	$ 3.51	$ 2,808.00	0.00	$ -	$ -	$ -	$ 2,808.00	
1.10	BC Hydro Disconnect and New Service Dip	LS	1	$ 10,000.00	$ 10,000.00	0.00	$ -	$ -	$ -	$ 10,000.00	
Subtotal					$ 128,738.00		$ 37,620.00		$ -		$ 166,358.00
2	**General Site Costs**										
2.00	Mobilization	LS	1	$ 5,000.00	$ 5,000.00	0.00	$ -	$ -	$ -	$ 5,000.00	
Subtotal					$ 5,000.00		$ -		$ -		$ 5,000.00
TOTAL											$ 171,359.00
CONTINGENCY (35%)											$ 59,975.65
GRAND TOTAL											$ 231,334.65

City of Richmond Railway Greenway Lighting - Francis Road Quarter

Description		Unit	Qty	Material Cost	Total Material	Labour	Total Labour	Equipment	Total Equipment	Line Totals	TOTALS
1	**Street Lighting**										
1.01	CoR Type S1 Concrete Base	ea.	31	$ 1,000.00	$ 31,000.00	6.00	$ 16,740.00		$ -	$ 47,740.00	
1.02	35mm RPVC Conduit	m	800	$ 15.00	$ 12,000.00	0.04	$ 2,880.00	$ -	$ -	$ 14,880.00	
1.03	Trenching and Backfill (Gravel)	m	784	$ 60.00	$ 47,040.00	0.00	$ -	$ -	$ -	$ 47,040.00	
1.05	Trenching and Backfill (Asphalt)	m	16	$ 600.00	$ 9,600.00	1.00	$ 1,440.00	$ -	$ -	$ 11,040.00	
1.06	Laneway 4.57m Luminaire Pole, Galv & Powder Coated, RICHMOND	ea.	31	$ 581.00	$ 18,011.00	6.00	$ 16,740.00	$ -	$ -	$ 34,751.00	
1.07	ATBMic-P101-MVOLT-R2-3K	ea.	31	$ 220.00	$ 6,820.00	2.00	$ 5,580.00	$ -	$ -	$ 12,400.00	
1.08	No. 6 RW90	m	2400	$ 5.31	$ 12,744.00	0.00	$ -	$ -	$ -	$ 12,744.00	
1.09	No. 8 RW90	m	800	$ 3.51	$ 2,808.00	0.00	$ -	$ -	$ -	$ 2,808.00	
1.10	BC Hydro Disconnect and New Service Dip	LS	1	$ 10,000.00	$ 10,000.00	0.00	$ -	$ -	$ -	$ 10,000.00	
Subtotal					$ 140,023.00		$ 43,381.00		$ -		$ 183,403.00
2	**General Site Costs**										
2.00	Mobilization	LS	1	$ 5,000.00	$ 5,000.00	0.00	$ -	$ -	$ -	$ 5,000.00	
Subtotal					$ 5,000.00		$ -		$ -		$ 5,000.00
TOTAL											$ 188,403.00
CONTINGENCY (35%)											$ 65,941.05
GRAND TOTAL											$ 254,344.05

Notes:

1. Civil Works beyond trenching and backfilling are not included in this estimate.
2. Applicable taxes are not included.

City of Richmond Railway Greenway Lighting - Blundell Road Quarter

Description		Unit	Qty	Material Cost	Total Material	Labour	Total Labour	Equipment	Total Equipment	Line Totals	TOTALS
1	**Street Lighting**										
1.01	CoR Type S1 Concrete Base	ea.	28	$ 1,000.00	$ 28,000.00	6.00	$ 15,120.00		$ -	$ 43,120.00	
1.02	35mm RPVC Conduit	m	765	$ 15.00	$ 11,775.00	0.04	$ 2,626.00	$ -	$ -	$ 14,601.00	
1.03	Trenching and Backfill (Gravel)	m	761	$ 60.00	$ 46,860.00	0.00	$ -	$ -	$ -	$ 46,860.00	
1.05	Trenching and Backfill (Asphalt)	m	4	$ 600.00	$ 2,400.00	1.00	$ 360.00	$ -	$ -		
1.06	Laneway 4.57m Luminaire Pole, Galv & Powder Coated, RICHMOND	ea.	28	$ 581.00	$ 16,268.00	6.00	$ 15,120.00	$ -	$ -	$ 31,388.00	
1.07	ATBMic-P101-MVOLT-R2-3K	ea.	28	$ 220.00	$ 6,160.00	2.00	$ 5,040.00	$ -	$ -	$ 11,200.00	
1.08	No. 6 RW90	m	2355	$ 5.31	$ 12,505.05	0.00	$ -	$ -	$ -	$ 12,505.05	
1.09	No. 8 RW90	m	765	$ 3.51	$ 2,755.35	0.00	$ -	$ -	$ -	$ 2,755.35	
1.10	BC Hydro Disconnect and New Service Dip	LS	1	$ 10,000.00	$ 10,000.00	0.00	$ -	$ -	$ -	$ 10,000.00	
Subtotal					$ 126,723.40		$ 38,466.00		$ -		$ 165,189.40
2	**General Site Costs**										
2.00	Mobilization	LS	1	$ 5,000.00	$ 5,000.00	0.00	$ -	$ -	$ -	$ 5,000.00	
Subtotal					$ 5,000.00		$ -		$ -		$ 5,000.00
TOTAL											$ 170,189.40
CONTINGENCY (35%)											$ 59,566.29
GRAND TOTAL											$ 229,755.69

City of Richmond Railway Greenway Lighting - Granville Ave Quarter

Description		Unit	Qty	Material Cost	Total Material	Labour	Total Labour	Equipment	Total Equipment	Line Totals	TOTALS
1	**Street Lighting**										
1.01	CoR Type S1 Concrete Base	ea.	32	$ 1,000.00	$ 32,000.00	6.00	$ 17,280.00		$ -	$ 49,280.00	
1.02	35mm RPVC Conduit	m	766	$ 15.00	$ 11,790.00	0.04	$ 2,629.60	$ -	$ -	$ 14,619.60	
1.03	Trenching and Backfill (Gravel)	m	740	$ 60.00	$ 44,400.00	0.00	$ -	$ -	$ -	$ 44,400.00	
1.05	Trenching and Backfill (Asphalt)	m	18	$ 600.00	$ 9,600.00	1.00	$ 1,440.00	$ -	$ -	$ 11,040.00	
1.06	Laneway 4.57m Luminaire Pole, Galv & Powder Coated, RICHMOND	ea.	32	$ 581.00	$ 18,592.00	6.00	$ 17,280.00	$ -	$ -	$ 35,872.00	
1.07	ATBMic-P101-MVOLT-R2-3K	ea.	32	$ 220.00	$ 7,040.00	2.00	$ 5,760.00	$ -	$ -	$ 12,800.00	
1.08	No. 6 RW90	m	2358	$ 5.31	$ 12,520.98	0.00	$ -	$ -	$ -	$ 12,520.98	
1.09	No. 8 RW90	m	766	$ 3.51	$ 2,758.66	0.00	$ -	$ -	$ -	$ 2,758.66	
1.10	BC Hydro Disconnect and New Service Dip	LS	1	$ 10,000.00	$ 10,000.00	0.00	$ -	$ -	$ -	$ 10,000.00	
Subtotal					$ 138,701.64		$ 44,509.60		$ -		$ 183,291.44
2	**General Site Costs**										
2.00	Mobilization	LS	1	$ 5,000.00	$ 5,000.00	0.00	$ -	$ -	$ -	$ 5,000.00	
Subtotal					$ 5,000.00		$ -		$ -		$ 5,000.00
TOTAL											$ 188,291.44
CONTINGENCY (35%)											$ 65,902.00
GRAND TOTAL											$ 254,193.44

City of Richmond Railway Greenway Lighting - Westminster Highway Quarter

Description		Unit	Qty	Material Cost	Total Material	Labour	Total Labour	Equipment	Total Equipment	Line Totals	TOTALS
1	**Street Lighting**										
1.01	CoR Type S1 Concrete Base	ea.	32	$ 1,000.00	$ 32,000.00	6.00	$ 17,280.00		$ -	$ 49,280.00	
1.02	35mm RPVC Conduit	m	786	$ 15.00	$ 11,790.00	0.04	$ 2,829.60	$ -	$ -	$ 14,619.60	
1.03	Trenching and Backfill (Gravel)	m	782	$ 60.00	$ 46,920.00	0.00	$ -	$ -	$ -	$ 46,920.00	
1.05	Trenching and Backfill (Asphalt)	m	12	$ 600.00	$ 7,200.00	1.00	$ 1,080.00	$ -	$ -	$ 8,280.00	
1.06	Laneway 4.57m Luminaire Pole, Galv & Powder Coated, RICHMOND	ea.	32	$ 581.00	$ 18,592.00	6.00	$ 17,280.00	$ -	$ -	$ 35,872.00	
1.07	ATBMic-P101-MVOLT-R2-3K	ea.	32	$ 220.00	$ 7,040.00	2.00	$ 5,760.00	$ -	$ -	$ 12,800.00	
1.08	No. 6 RW90	m	2358	$ 5.31	$ 12,520.98	0.00	$ -	$ -	$ -	$ 12,520.98	
1.09	No. 8 RW90	m	786	$ 3.51	$ 2,758.86	0.00	$ -	$ -	$ -	$ 2,758.86	
1.10	BC Hydro Disconnect and New Service Dip	LS	1	$ 10,000.00	$ 10,000.00	0.00	$ -	$ -	$ -	$ 10,000.00	
Subtotal					$ 151,821.84		$ 44,229.60		$ -		$ 196,051.44
2	**General Site Costs**										
2.00	Mobilization	LS	1	$ 5,000.00	$ 5,000.00	0.00	$ -	$ -	$ -	$ 5,000.00	
Subtotal					$ 5,000.00		$ -		$ -		$ 5,000.00
TOTAL											$ 188,051.44
CONTINGENCY (35%)											$ 65,818.00
GRAND TOTAL											$ 253,869.44

Notes:

1. Civil Works beyond trenching and backfilling are not included in this estimate.
2. Applicable taxes are not included.

Appendix C – Lighting Calculations

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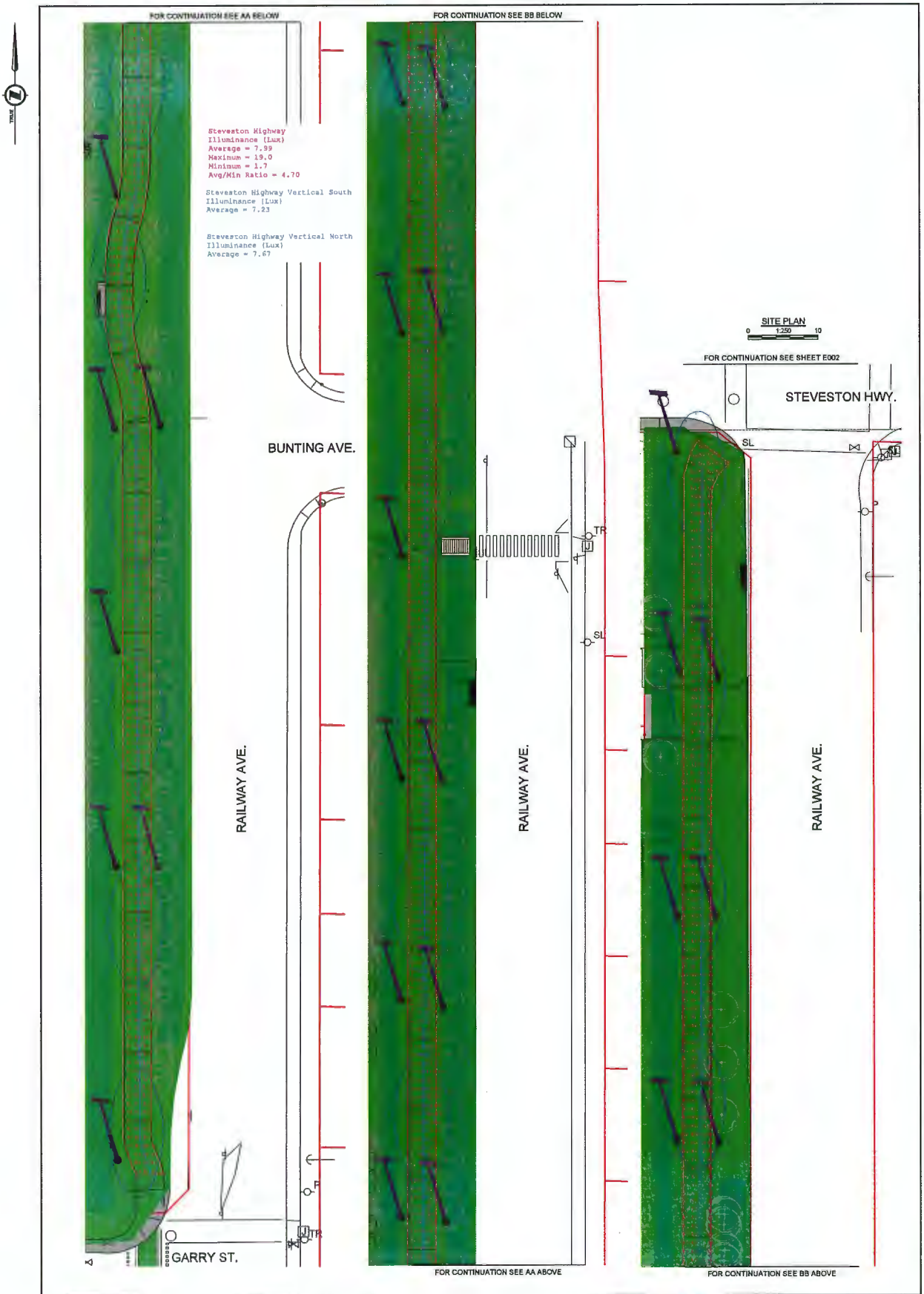

Rev.	DATE		DESN	QC	QA
1	23MAR10	LIGHTING CALCULATION–DRAFT REPORT	DS	KI	KI

CLIENT

PROJECT

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Vancouver BC, V6B 4M3
Tel 604.408.7222
www.pbxeng.com

TITLE

CITY OF RICHMOND
MUP LIGHTING CALCULATION
SEGMENT 1 – GARRY ST TO STEVESTON HWY

SCALE	PROJECT NUMBER	DRAWING NUMBER	REV.
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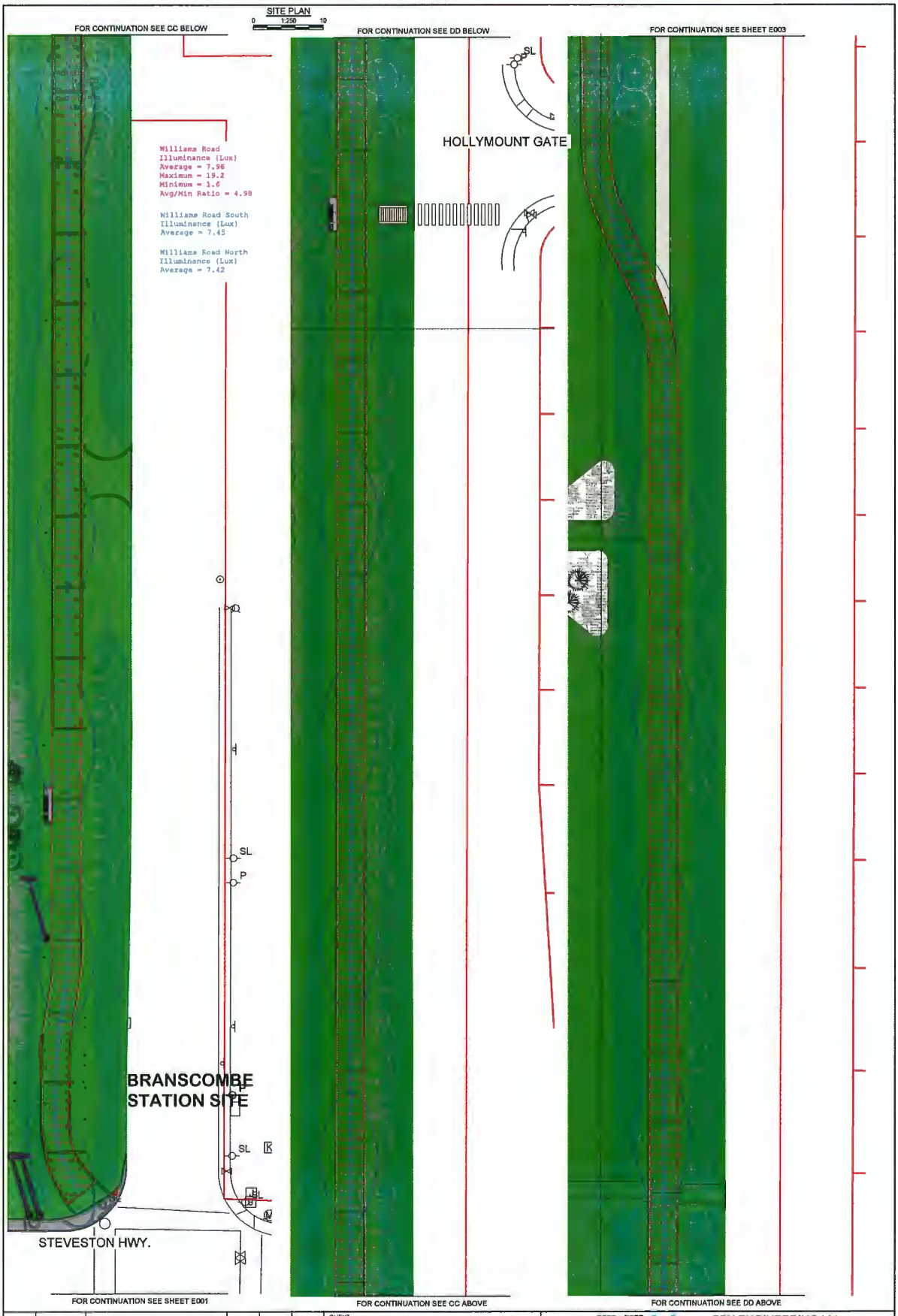

Rev.	DATE		DESN	QC	QA
1	23MAR10	LIGHTING CALCULATION–DRAFT REPORT	DS	KI	KI

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TITLE

CITY OF RICHMOND
MUP LIGHTING CALCULATION
SEGMENT 2 – STEVESTON HWY TO WILLIAMS RD

SCALE	PROJECT NUMBER	DRAWING NUMBER	REV.
NTS	230054	E002	1

Rev.	DATE		DESN	QC	QA
1	23MAR10	LIGHTING CALCULATION–DRAFT REPORT	DS	KI	KI

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TITLE

CITY OF RICHMOND
MUP LIGHTING CALCULATION
SEGMENT 2 – STEVESTON HWY TO WILLIAMS RD

SCALE	PROJECT NUMBER	DRAWING NUMBER	REV.
NTS	230054	E003	1

Rev.	DATE		DESN	QC	QA
1	23MAR10	LIGHTING CALCULATION-DRAFT REPORT	DS	KI	KI

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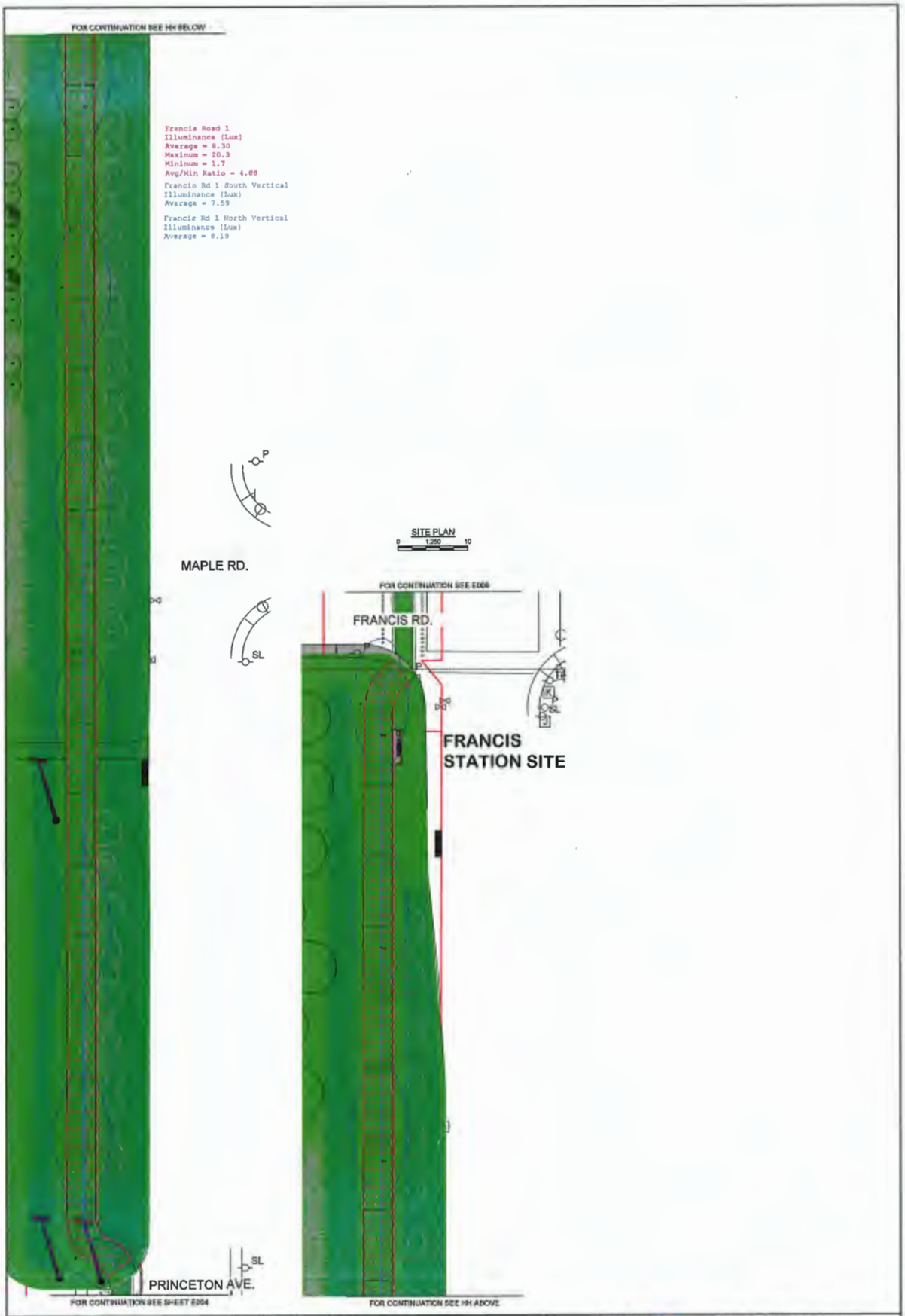
TITLE

CITY OF RICHMOND
MUP LIGHTING CALCULATION
SEGMENT 3 – WILLIAMS RD TO FRANCIS RD

SCALE	PROJECT NUMBER	DRAWING NUMBER	REV.
NTS	230054	E004	1



Rev.	DATE		DESN	QC	QA
1	23MAR10	LIGHTING CALCULATION-DRAFT REPORT	DS	KI	KI

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TITLE

CITY OF RICHMOND
MUP LIGHTING CALCULATION
SEGMENT 3 – WILLIAMS RD TO FRANCIS RD

SCALE	PROJECT NUMBER	DRAWING NUMBER	REV.
NTS	230054	E005	1

Rev.	DATE		DESN	QC	QA
1	23MAR10	LIGHTING CALCULATION–DRAFT REPORT	DS	KI	KI

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TITLE

CITY OF RICHMOND
MUP LIGHTING CALCULATION
SEGMENT 4 – FRANCIS RD TO BLUNDELL RD

SCALE	PROJECT NUMBER	DRAWING NUMBER	REV.
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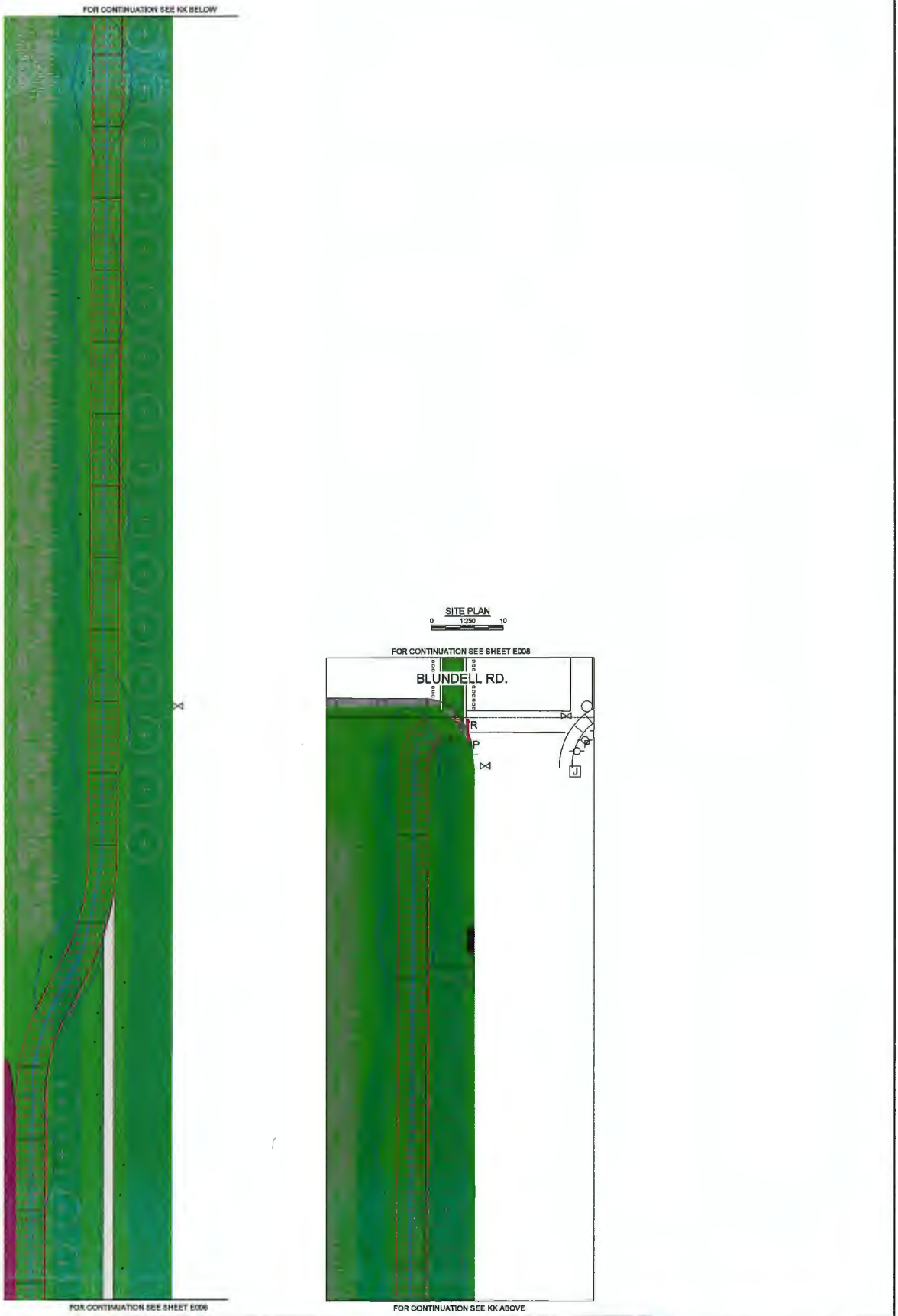

Rev.	DATE		DESN	QC	QA
1	23MAR10	LIGHTING CALCULATION–DRAFT REPORT	DS	KI	KI

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TITLE

CITY OF RICHMOND
MUP LIGHTING CALCULATION
SEGMENT 4 – FRANCIS RD TO BLUNDELL RD

SCALE	PROJECT NUMBER	DRAWING NUMBER	REV.
NTS	230054	E007	1

Rev.	DATE		DESN	QC	QA
1	23MAR10	LIGHTING CALCULATION-DRAFT REPORT	DS	KI	KI

CLIENT

PROJECT

SITE PLAN
0 125 50

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TITLE

CITY OF RICHMOND
MUP LIGHTING CALCULATION
SEGMENT 5 – BLUNDELL RD TO GRANVILLE AVE

SCALE	PROJECT NUMBER	DRAWING NUMBER	REV.
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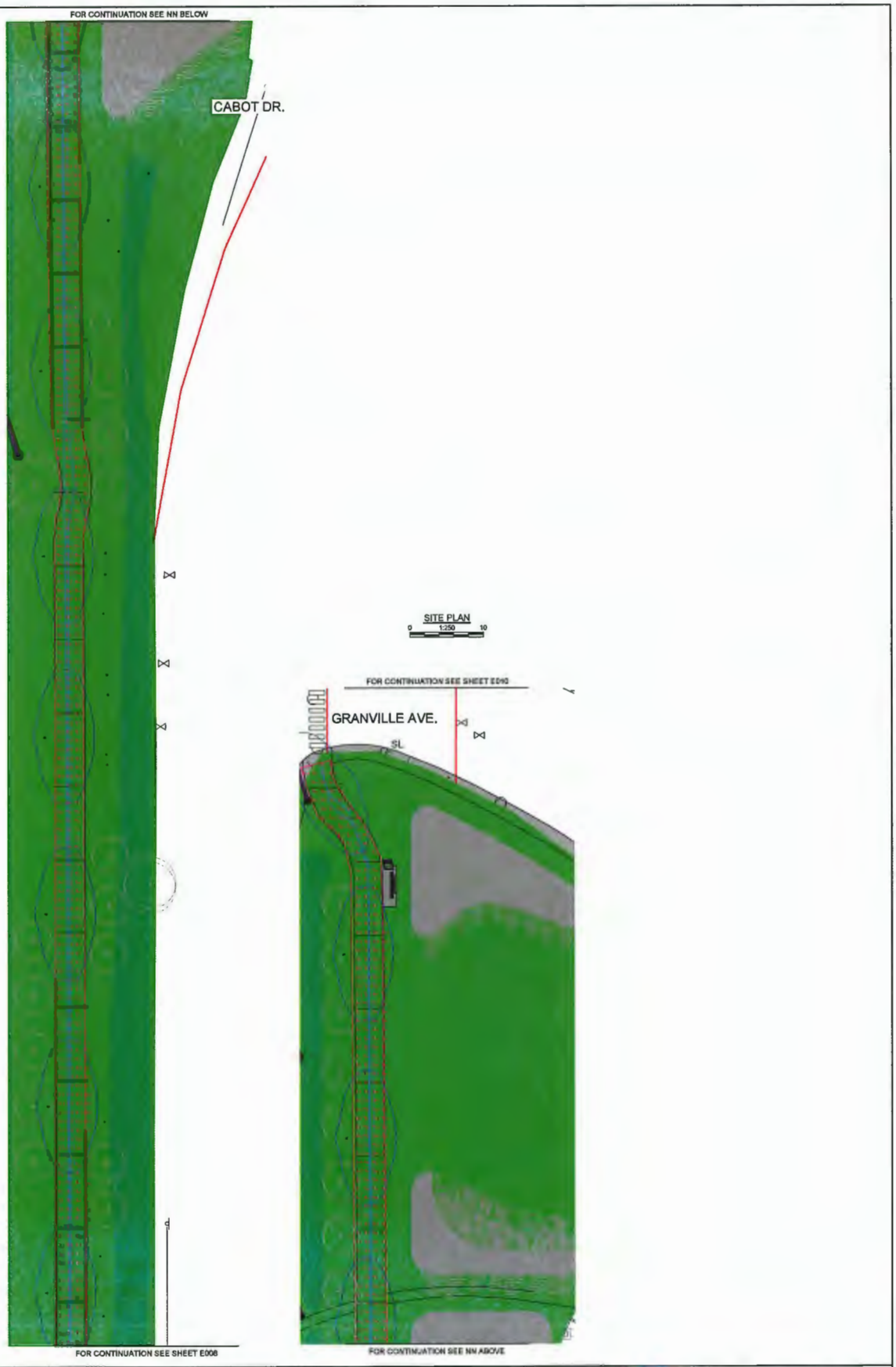

Rev.	DATE		DESN	QC	QA
1	23MAR10	LIGHTING CALCULATION-DRAFT REPORT	DS	KI	KI

CLIENT

PROJECT

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Tel 604.408.7222
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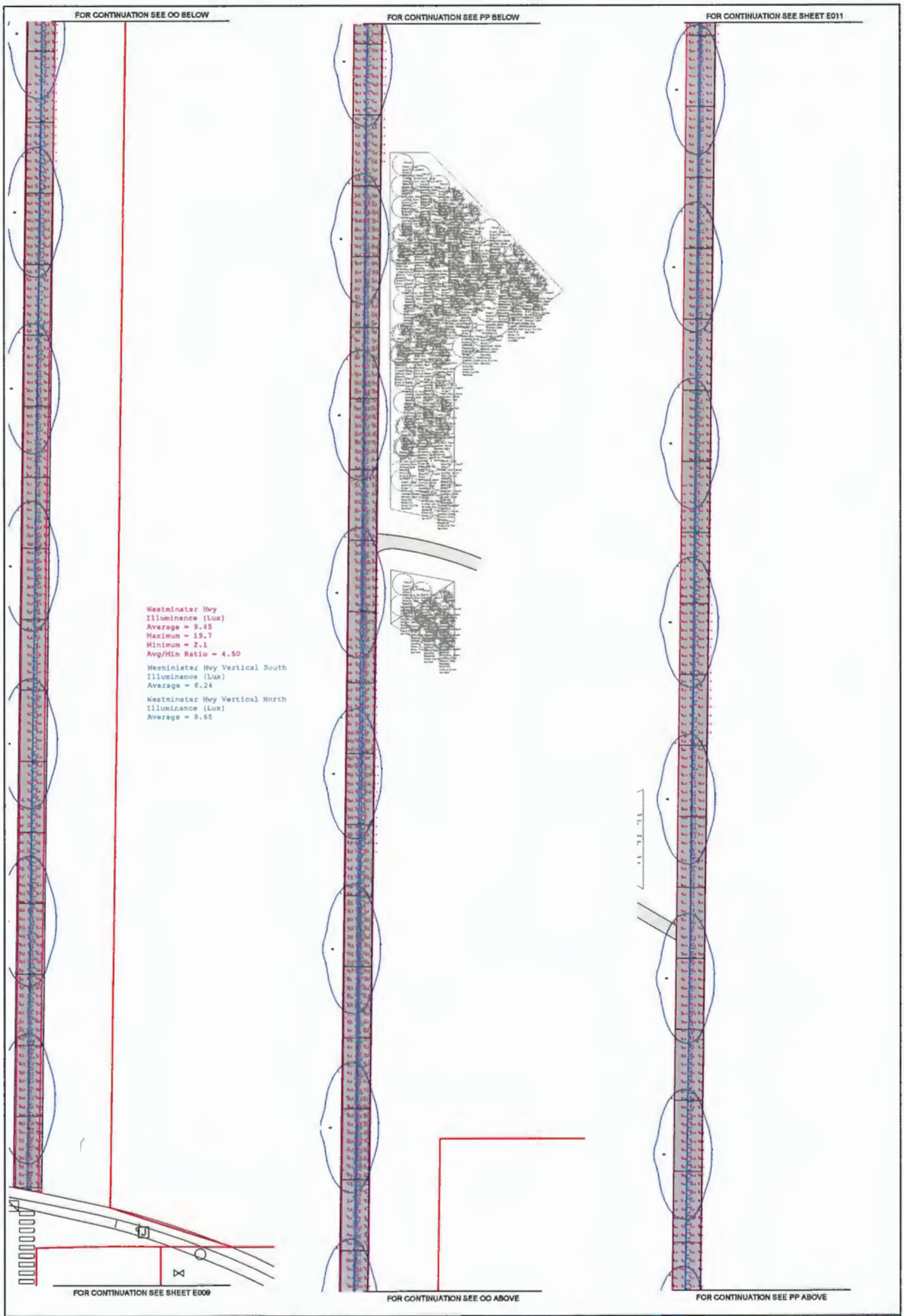
TITLE

CITY OF RICHMOND
MUP LIGHTING CALCULATION
SEGMENT 5 – BLUNDELL RD TO GRANVILLE AVE

SCALE	PROJECT NUMBER	DRAWING NUMBER	REV.
NTS	230054	E009	1



Rev.	DATE		DESN	QC	QA
1	23MAR10	LIGHTING CALCULATION-DRAFT REPORT	DS	KI	KI

CLIENT

PROJECT

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Tel 604.408.7222
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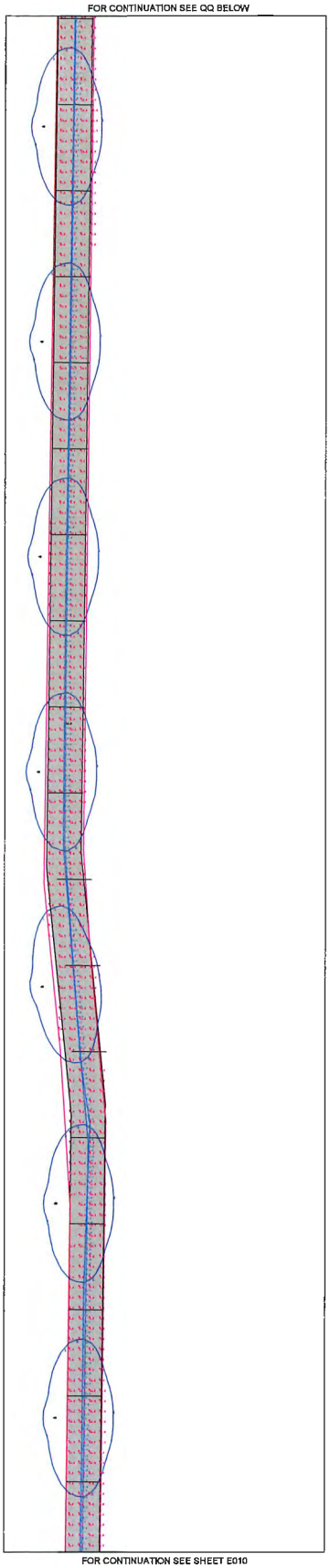
TITLE

CITY OF RICHMOND
MUP LIGHTING CALCULATION
SEGMENT 6 – GRANVILLE AVE TO WESTMINSTER HWY

SCALE	PROJECT NUMBER	DRAWING NUMBER	REV.
NTS	230054	E010	1

SCALE 1:250



SITE PLAN
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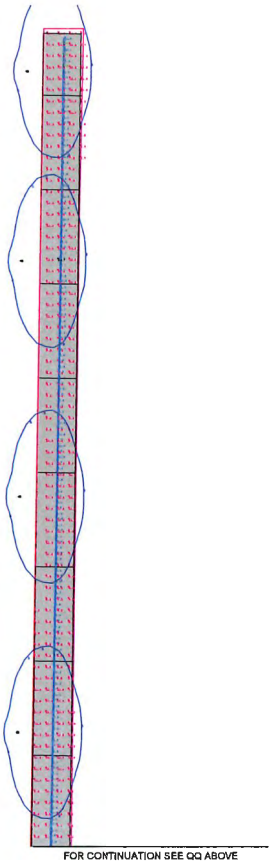

Rev.	DATE		DESN	QC	QA
1	23MAR10	LIGHTING CALCULATION-DRAFT REPORT	DS	KI	KI

CLIENT

PROJECT

PBX ENGINEERING Ltd.
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Vancouver BC, V6B 4M3
Tel 604.408.7222
www.pbxeng.com

TITLE

CITY OF RICHMOND
MUP LIGHTING CALCULATION
SEGMENT 6 – GRANVILLE AVE TO WESTMINSTER HWY

SCALE	PROJECT NUMBER	DRAWING NUMBER	REV.
NTS	230054	E011	1

City of Richmond

Report to Committee

To:	Parks, Recreation and Cultural Services Committee	**Date:**	June 29, 2023
From:	Keith Miller Director, Recreation and Sport Services	**File:**	11-7025-09-002/2023-Vol 01
Re:	**Richmond Sports Facility Needs Assessment – 2023 Update**		

Staff Recommendation

That the prioritized sport facility and infrastructure list be received and endorsed for consideration in future corporate facility or park plans as outlined in the staff report titled "Richmond Sports Facility Needs Assessment – 2023 Update" dated June 29, 2023, from the Director, Recreation and Sport Services.

Keith Miller
Director, Recreation and Sport Services
(604-247-4475)

REPORT CONCURRENCE		
ROUTED TO:	**CONCURRENCE**	**CONCURRENCE OF GENERAL MANAGER**
Finance Department	☑	
Parks Services	☑	
Facility Services & Project Development	☑	
SENIOR STAFF REPORT REVIEW	**INITIALS:**	**APPROVED BY CAO**

7265004

Staff Report

Origin

At the September 24, 2019, Parks, Recreation and Culture Services Committee meeting staff received the following referral:

> *That Staff work with the Richmond Sports Council and other stakeholders to develop a City of Richmond sport facility and infrastructure priority list for consideration in future corporate facility or park plans;*

At the September 28, 2021, Parks, Recreation and Cultural Services Committee meeting staff received a secondary referral:

> *That East Richmond and Hamilton areas be included as potential sites for sport amenities in the Sports Council Facility Priorities Task Force.*

At the June 10, 2019, Council meeting, staff received the following referral:

> *That the proposal and supporting documents from the Richmond Tennis Club be referred to staff to be considered with the City's Long Term Facility Plan.*

The purpose of this report is to present a prioritized sport facility and infrastructure list along with recommended next steps for Council's consideration. In response to the referrals mentioned above, this report includes consideration of the Richmond Tennis Club proposal and a review of projects that could be considered for the East Richmond and Hamilton areas.

This report supports Council's Strategic Plan 2022-2026 Focus Area #4 Responsible Financial Management and Governance:

> *Responsible financial management and efficient use of public resources to meet the needs of the community.*
>
> *4.2 Seek improvements and efficiencies in all aspects of City business.*

This report supports Council's Strategic Plan 2022-2026 Focus Area #6 A Vibrant, Resilient and Active Community:

> *Vibrant, resilient and active communities supported by a wide variety of opportunities to get involved, build relationships and access resources.*
>
> *6.1 Advance a variety of program, services, and community amenities to support diverse needs and interests and activate the community.*
>
> *6.2 Enhance the City's network of parks, trails and open spaces.*

This report supports the following action from the City of Richmond Wellness Strategy 2018-2023:

> *Foster healthy, active and involved lifestyles for all Richmond residents with an emphasis on physical activity, healthy eating, and mental wellness.*

This report supports the following action from the Recreation and Sport Strategy 2019-2024:

> *Active People and Vibrant Places: 4. Provide inclusive, safe and welcoming facilities and spaces for recreation and sports programs and services.*

Background

Richmond's parks and open spaces, and recreation and sport facilities play an essential role in the community. They are safe places for people of all ages and backgrounds to get active, learn new skills, and strengthen social connections and belonging.

The City is committed to working with its partners, community sport groups and residents to enhance the provision of sport facilities and spaces, which will be of benefit to all who live, work and play in Richmond.

The Richmond Sports Council has a long history of representing and working for the collective interests of sports in the Richmond community. In 1988, The Richmond Sports Council was officially registered as a not-for-profit organization.

In January 2018, a Facility Review Committee (the Committee), appointed by and composed of 10 members from the Richmond Sports Council, polled their member organizations to understand the needs of the Richmond-based sport organizations that make up the Richmond Sports Council. At a General Purposes meeting in June 2018, the Richmond Sports Council presented the "Richmond Sports Council's Sports Facilities Needs Assessment 2018," which summarized a list of requests and recommendations received from the 17 organizations that participated in their survey.

Initial assessment of the list showed that a number of the items required further review to understand the need and the priority of each item. Furthermore, it was identified that in order to develop a comprehensive prioritized list of sports facility and infrastructure requests that meet both the current and future needs of the sport community, a more fulsome assessment was required.

Analysis

To ensure a fulsome evaluation was completed, the process for reviewing and prioritizing community sport facility and infrastructure projects involved an expanded stakeholder engagement, the development of a Sport Facility Prioritization Framework (the Framework) for the ranking of identified projects, a review of sport participation and population demographics, trends and best practices, and completion of high level facility cost estimates to inform the ranking of each project.

Sport Facility and Infrastructure Identification

To build upon the work completed by the Richmond Sports Council in 2018, a key initial step involved expanding engagement with local sport organizations and user groups. A survey was sent to 89 local sports organizations, with 51 of the groups responding. In addition, a series of stakeholder meetings were conducted. These engagement activities allowed staff to identify gaps in the list of sport facilities and infrastructure previously provided.

The items from the Richmond Sports Council's Sports Facilities Needs Assessment 2018 and the items identified through the expanded stakeholder engagement process were compiled, resulting in 14 sport facility and infrastructure projects for further assessment. Each of these projects were then subsequently evaluated through the Framework.

The process also identified maintenance items and minor improvements, which staff continue to address in coordination with local sports organizations, including, a review of seeding schedules and minor field repairs.

It should be highlighted that several significant amenity replacement or improvement projects identified through the process have been completed or are in progress since this data was collected. Completed projects include synthetic sport field upgrades at multiple parks, the installation of nine pickleball courts, upgrades to sand fields, the resurfacing of Clement Track at Minoru Park, and the purchase and upgrade of the Richmond Curling Club. In addition, the Bowling Green Community Activity Centre project is in progress and the Hugh Boyd Community Facility and Fieldhouse was approved by Council as a Phase 2 Major Facilities Project for the period of 2016–2026.

Sport Facility Prioritization Framework

To provide transparency and objectivity in the evaluation process, projects are ranked on 10 weighted criteria that together provide an overall indication of the demonstrated need for a project. The Framework was developed with input from the Facilities Task Force that included members from the Richmond Sports Council, Richmond Sport Hosting office, and Richmond School District No. 38 staff.

The Framework criteria include:

- *City Policies and Strategies*: considers whether the project aligns with City strategies and community goals.
- *Multifunctional and Accessible*: considers whether the project is multipurpose, contributes to an equitable provision of services and facilities, and is accessible to the majority of community members as well as community sport groups.
- *Net Cost Impact*: considers the net cost impacts of providing the project to the community.
- *Demonstration of Market Need*: considers sport participation levels and the needs of the local sport community and sport user groups for the project.
- *Demographics and Population Growth*: considers Richmond's demographics, projected population growth and whether the project will provide an adequate level of service moving forward.

- *Sport Event Hosting*: considers whether the project would expand and enhance the City's current sport hosting capacity.
- *Trends and Leading Practices*: considers whether the project aligns with trends and leading practices such as those addressing physical inactivity and National Sport Organization guidelines.
- *Regional Sport Amenity Inventory*: considers the project against provisions offered in the region to avoid duplication and oversupply of sport amenities that should be offered regionally.
- *Municipal Comparisons*: considers the project against the sport amenity provisions of contextually comparable communities to better align amenities that should be offered locally.
- *Partnerships*: considers existing partnerships related to the project that could enhance service levels and more efficiently leverage public funds.

Research was undertaken to gather data and information specific to each of the Framework's criteria. The estimated cost was determined through a Class D costing exercise, which has a potential variance of up to +/-50 per cent. Project costs will also vary as the scope and program for each facility is confirmed.

Evaluation of each project through the Framework provides two pieces of information: first, it provides a score of the overall community need for each project and second, it provides a comparative ranking when multiple projects are evaluated concurrently.

Each of the 14 identified sport facility and infrastructure projects was assessed using the Framework and supporting research described above. The results of the assessment are summarized in Tables 1 and 2 below. The priority order of the projects has been endorsed by the Facilities Task Force.

Sport Facility and Infrastructure Prioritized List - Priority Projects

Projects that are experiencing increasing participation rates, are demonstrating growth in demand, are multipurpose in nature, meet the needs of multiple sport and community groups, and may also offer opportunity for unstructured use benefiting the overall community ranked higher. Those projects that ranked highest are prioritized in Table 1 and are recommended by staff to move forward in future corporate facility or park plans in the one to ten year timeframe.

Table 1 – Sport Facility and Infrastructure Prioritized List – Priority Projects

Rank	Project	Description	Estimated Cost (Class D Estimate)
1.	Outdoor Pickleball Courts	An outdoor pickleball venue holding nine courts with lighting, including court surfacing, lining and netting.	$1.43M
2.	Athletics Track and Field Facility	A rubberized track facility with amenities to support athletic events and community sport, and recreation needs, including lighting.	$13.5M
3.	Synthetic Turf Infield	A synthetic turf baseball and softball infield with a portable mound, full size backstop, and fencing.	$520K
4.	Covered Lacrosse Box	A covered lacrosse box for year-round use with a sport court surface and lines for multiple activities (lacrosse, ball hockey, soccer, pickleball, tai chi), lighting, boards, team and officials benches, and movable bleacher seating.	$8.4M
5.	Synthetic Turf Sport Field	A synthetic turf field for soccer, football and other field sports, including perimeter and end zone fencing, team benches, officials' area and lighting.	$4.3M
6.	Steveston/London Field Softball Diamond	A softball diamond at the north end of Steveston/London field with gyro infield, backstop, dugouts, lighting and seasonal fencing. Includes shifting existing soccer and football field to the southern end of the park.	$2.3M

Sports Facility and Infrastructure Prioritized List – Projects for Future Consideration

Projects that ranked lower on the list are outlined in priority order in Table 2 below and not recommended by staff to move forward at this time. Staff will work with the sport groups associated with each project below to provide support in other ways. This could include assistance with grant applications, promotion and advertising, and/or exploration of local or regional partnerships or affiliations. Staff will also continue to monitor and review these projects and sport participation levels. Should factors change, such as an increase in sport participation levels, or partnerships or funding opportunities be identified, staff will re-score the project and if merited, present it along with the most recent evidence to Council for consideration.

Table 2 – Sports Facility and Infrastructure Prioritized List – Projects for Future Consideration

Rank	Project	Description	Estimated Cost (Class D Estimate)
7.	Richmond Tennis Bubble	A seasonal covering for two existing outdoor courts for fall and winter use.	$5.0M
8.	Rugby Change Room Facilities	A replacement change room facility to support rugby league play.	$700K*
9.	Wrestling Mat Space	An indoor multi-purpose space for wrestling with appropriate storage for wresting mats.	$4.0M
10.	Gymnastics Centre	A replacement facility, double in size, with large floor, foam pit and apparatus areas, with kitchen area, change rooms, reception, administration, and viewing area to support recreational and high performance gymnastics.	$2.65M – $5.3M**
11.	Multi-Sport Fieldhouse	A multi-sport indoor field house with indoor playing surfaces, multi-purpose space that supports year round use by a variety of sports and community recreation activities, including tournaments and community events.	$88.0M – $142.0M
12.	Richmond Tennis Clubhouse Renovation	Renovation of the existing tennis clubhouse to replace aging infrastructure and improve accessibility for recreational and competitive use.	$1.12M
13.	Outdoor Archery Range	An outdoor archery range that meets Federation of Canadian Archers standards for event hosting.	$2.2M
14.	Archery and Air Gun Facility	A replacement facility for air gun and archery training and competition.	$2.0M**

* A like-for-like modular replacement facility.

** Tenant improvement of a shell space; does not include ongoing lease costs for the space.

East Richmond and Hamilton

Potential projects that could be considered in the East Richmond and Hamilton areas include an athletics track and field facility, a synthetic turf infield and a synthetic turf sports field. Further review, as described in the "Next Steps" section below, will be required to determine recommended project site/locations for Council consideration.

Next Steps

Project scoring is based on current data available at the time of project evaluation. As new information becomes available and/or circumstances change, the scoring and ranked order of the projects could shift. It is also possible that new sport facility and infrastructure priorities emerge as a result of changes in the sport landscape. If either of these occur, staff will score the project using the Framework and if warranted, present the project for Council consideration.

This evaluation is the first step in the planning process. Although each project will have its unique considerations, further detailed planning and analysis will be required for each project to move forward, including:

- Confirmation of sport participation levels, market need and community benefit;
- Program development;
- Site assessment and selection;
- Refinement of capital and operating costs; and
- Public engagement and consultation.

With this information, staff would then bring forward each project for Council consideration through a specific report(s) or capital submission as appropriate for each. As with all capital submissions, any project that moves forward will be further ranked using the Council approved Capital ranking criteria. Depending on the type and size of each facility or infrastructure project, the timeframe for completion could range from approximately one to seven years.

Financial Impact

None.

Conclusion

The continued provision of modern and well-maintained facilities that meet the current and future needs of residents is fundamental to supporting sport and physical activity in Richmond. As the population grows, and as sport and active recreation opportunities in the City continue to evolve and diversify, so do the demands for new, refurbished and diverse sport amenities. A prioritized list of sport facility and infrastructure projects has been identified through a collaborative and comprehensive process utilizing evidence informed criteria.

Participation in sport allows for physical, creative and social opportunities that contribute to building healthy, connected individuals, along with livable and vibrant communities. Continued investment in Richmond's sport facility inventory will contribute to achieving the City's Recreation and Sport Strategy 2019-2024 vision of being a leader in the planning and delivery of recreation and sports opportunities.

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