City of Richmond

Report to Development Permit Panel

To:	Development Permit Panel	**Date:**	February 24, 2022
From:	Wayne Craig Director of Development	**File:**	DP 19-858783
Re:	**Application by Zhao XD Architect Ltd. for a Development Permit at 8231 and 8251 Williams Road**		

Staff Recommendation

That a Development Permit be issued which would:

1. Permit the construction of ten townhouse dwellings at 8231 and 8251 Williams Road with vehicle access from 8299 Williams Road on a site zoned "Low Density Townhouses (RTL4)"; and
2. Vary the provisions of Richmond Zoning Bylaw 8500 to increase the permitted small parking spaces from 0 to 6 (i.e. 30%).

Wayne Craig
Director, Development
(604-247-4625)

WC:jr
Att. 3

Staff Report

Origin

Zhao XD Architect Ltd. has applied on behalf of Y&W Development Ltd. (Directors Jing Long Yuan and Xia Wang) to the City of Richmond for permission to develop ten (10) townhouse dwellings at 8231 and 8251 Williams Road on a site zoned "Low Density Townhouses (RTL4)," with vehicle access from 8299 Williams Road. The site currently contains two single detached dwellings, which would be demolished. A location map is provided in Attachment 1.

The site is being rezoned from "Single Detached (RS1/E)" to "Low Density Townhouses (RTL4)" under Richmond Zoning Bylaw 8500, Amendment Bylaw 10173 (RZ 18-824503).

A Servicing Agreement is required as a condition of building permit issuance and includes, but is not limited to, the following improvements:

- Removal of the existing sidewalk and replacement with new 2.0 m wide sidewalk and 1.5 m landscaped boulevard behind the existing curb; and,
- removal of the existing driveway crossings and replacement with the above frontage improvements.

Development Information

Please refer to attached Development Application Data Sheet (Attachment 2) for a comparison of the proposed development data with the relevant Bylaw requirements.

Background

Development surrounding the subject site is as follows:

To the North: Single detached dwellings on properties zoned "Single Detached (RS1/E)" with vehicle access from Pigott Road.

To the South: Single detached dwellings on properties zoned "Single Detached (RS1/E)" with vehicle access from Williams Road. One of the properties is included in an active rezoning application (RZ 21-934592). 8240 Williams Road is proposed to be rezoned for a three-unit townhouse development. The application is currently under review, and a staff report will be submitted to the Planning Committee following completion of the staff review process.

To the East: A vacant property recently rezoned to "Low Density Townhouses (RTL4)" in order to develop ten (10) townhouse units (RZ 17-788945, DP 18-829083). The building permit application for this development is currently under review. Driveway access to the subject site is provided through a Statutory Right-of-Way registered on this property secured as a condition of rezoning approval.

To the West: Single detached dwellings on properties zoned "Single Detached (RS1/E)" with vehicle access from Williams Road.

Rezoning and Public Hearing Results

During the rezoning process, staff identified the following design issues to be resolved at the Development Permit stage:

- Compliance with Development Permit Guidelines for the form and character of multiple-family projects provided in the 2041 Official Community Plan (OCP).
- Review of the size and species of on-site trees to ensure bylaw compliance and to achieve an acceptable mix of coniferous and deciduous species on-site.
- Refinement of the shared outdoor amenity area design, including the choice of play equipment, to create a safe and vibrant environment for children's play and social interaction.
- Review of relevant accessibility features for the four proposed convertible units and aging-in-place design features in all units.
- Review of a sustainability strategy for the development proposal.

The Public Hearing for the rezoning of this site was held on July 20, 2020. No public correspondence was received at the Public Hearing.

Staff worked with the applicant to address the above design issues in the following ways:

- The architectural and landscape drawings have been reviewed by staff and presented to the Advisory Design Panel for comment. The applicant has refined the design while retaining the general character presented to Council at rezoning stage.
- The proposed size and location of the shared outdoor amenity area is the same, however it has been redesigned with a greater focus on structured play opportunities.
- An accessibility strategy including detailed design of the four convertible units was reviewed by staff and presented to the Advisory Design Panel.
- The applicant has provided a sustainability strategy and a letter from a Certified Energy Advisor indicating that the project will achieve Step 3 of the BC Energy Step Code consistent with current City regulations.

The above issues are discussed further in the "Analysis" section of this report.

Staff Comments

The proposed scheme attached to this report has satisfactorily addressed the significant urban design issues and other staff comments identified as part of the review of the subject Development Permit application (Plans 1-15). In addition, it complies with the intent of the applicable sections of the OCP and is generally in compliance with the "Low Density Townhouses (RTL4)" zone except for the zoning variance noted below.

Zoning Compliance/Variances (staff comments in ***bold italics***)

The applicant requests to vary the provisions of Richmond Zoning Bylaw 8500 to:

1) Increase the permitted small parking spaces from 0 to 6 (i.e. 30%).

The applicant proposes a small parking space in each of the six garages with a side-by-side parking arrangement. Richmond Zoning Bylaw 8500 permits up to 50% small parking spaces where more than 31 spaces are required. This development would require 21 parking spaces. Staff support the proposed variance as it applies only to the side-by-side garages and is consistent with similar townhouse developments, including the approved development to the east (RZ 17-788945).

Advisory Design Panel Comments

The Advisory Design Panel reviewed the proposed development on July 7, 2021, and recommended support for the proposal subject to consideration of the Panel's comments. A copy of the relevant excerpt from the Advisory Design Panel Minutes is attached for reference (Attachment 3). The design response from the applicant has been included immediately following the specific Design Panel comments and is identified in '***bold italics***'.

Analysis

Conditions of Adjacency

- The site grade is proposed to meet the existing grade of adjacent properties. Perimeter retaining walls are not proposed.
- The subject site abuts existing single detached dwellings to the north and west. These sensitive interfaces have been given special design consideration:
    - Rear units are two storeys and have a variable rear yard setback consistent with the guidelines for arterial road townhouses. The minimum setback is generally 6.0 m, with up to 50% of the ground floor set back 4.5 m. New trees and hedges are proposed in the rear yard.
    - The westernmost units are two storeys and have a 3.0 m side yard setback. New trees and hedges are proposed in the side yard.
- The subject site abuts a recently approved townhouse development to the east that has not yet been constructed. The adjacent development consists of two- and three-storey townhouses, with two-storey massing immediately adjacent to the subject site. The proposed development would also provide two-storey massing adjacent to the future development consistent with the guidelines for arterial road townhouses.

Urban Design and Site Planning

- The proposed development consists of ten (10) townhouse dwellings arranged on a central drive aisle, which would be an extension to the drive aisle to be constructed on 8299 Williams Road. A pedestrian access is provided in the middle of the site adjacent to an existing Magnolia tree, which is proposed to be retained. Retention of this tree strongly informed the proposed layout and building massing. The pathway would be constructed with permeable pavers with supervision by the project arborist within the tree protection zone.

- The two front buildings contain a total of six dwellings and would have direct access to the sidewalk along Williams Road. Front yards are landscaped and include a covered patio for weather protection. Three of the dwellings would have some living space at grade.
- The three dwellings with no living space at grade include a Juliet balcony on the second storey accessed from the living room. These balconies would overlook the internal drive aisle.
- The two rear buildings contain a total of four dwellings and would have access from the drive aisle. The front doors are set back from the drive aisle to allow space for a roof overhang providing weather protection. Rear yards are landscaped and accessed directly from the living room.
- Each dwelling has a garage containing two vehicle parking spaces and two Class 1 bicycle parking spaces. Two visitor vehicle parking spaces are proposed at the east end of the site, and two Class 2 bicycle parking spaces are proposed near the front of the site beside the central pathway.
- A garbage and recycling room is proposed in the middle of the site beside the central pathway. A small loading area is provided across from the garbage and recycling room, which also functions as a turn-around location.

Architectural Form and Character

- The proposed architectural form and character draws from traditional single detached designs. The material palette consists of Hardie Board siding in three colours, painted wood trim, cultured stone, and black asphalt shingles.
- A band of cultured stone is provided along the base of the street-fronting elevations. Grey and taupe Hardie Board siding is used on the first and second storeys, and yellow Hardie Board siding is used on the third storey and as an accent. Colour and articulation are used to visually distinguish individual dwelling units.
- Gable roofs reinforce the low-rise residential character of the development. The rear units immediately adjacent to single detached dwellings have a simple roof form, whereas the front units have more complex roof lines incorporating projecting gable ends.
- An archway feature is proposed between the two front buildings framing the pathway and the retained Magnolia. The archway is designed as an extension of the building massing and would be clad in gray Hardie Board siding with cultured stone footings.

Landscape Design and Open Space Design

- Two on-site trees are proposed to be retained. These are a Magnolia in the middle of the site and a Cherry tree in the southeast corner of the site. On-site building layout and landscaping have been designed to retain these trees, and the off-site sidewalk will need to be designed to avoid impacting the Cherry tree. A $20,000 tree survival security is to be provided prior to rezoning bylaw adoption.
- At rezoning stage, staff supported the applicant's proposal to remove and replace one on-site tree due to its poor condition, which would require two replacement trees based on the 2:1 replacement ratio contained in the OCP. A total of 15 trees are proposed in the development, which includes 11 deciduous and four (4) coniferous trees.
- Each dwelling unit has a private outdoor space at grade that includes a small lawn, patio, shade tree, and planted area.

- A central pathway is proposed providing a connection to the Williams Road sidewalk. Permeable pavers are proposed for the entirety of the pathway, and landscaping would be provided on both sides. The retained Magnolia tree is integrated into the landscaped area, which also includes the mailbox, bench seating, and bike racks for visitors. A trellis structure would mark the entry and further distinguish the on-site pathway from the public sidewalk.
- The shared outdoor amenity area is at the rear of the site between the two buildings, and immediately across from the pathway to Williams Road. The programming of the outdoor amenity area includes bench seating and a play structure allowing for climbing, jumping, and sliding.
- The drive aisle is predominantly asphalt with concrete curbs. Permeable pavers are proposed at the east and west extents of the drive aisle, and in the centre where the pathway crosses to the outdoor amenity area.
- All soft landscaped areas would be provided with automatic irrigation.
- A Landscape Security in the amount of $117,881.23 is required prior to Development Permit issuance to ensure that the agreed upon landscaping works are installed.

Crime Prevention Through Environmental Design

- A 1.8 m (6 ft.) wood fence is proposed around the perimeter of the property for privacy and security. The fence within the front yard will be 1.0 m (3.5 ft.) tall to provide clear sightlines from the units to the sidewalk while maintaining separation of the public and private realms.
- Front yards are landscaped with low shrubs and deciduous trees to maintain clear sightlines.
- Pedestrian site access is controlled via gates at each of the walkways to the unit entries.
- The mailbox is proposed beside the central pathway and is covered but not enclosed, maintaining visibility.
- Building-mounted sconce lighting is proposed beside each garage door, and pot lights are proposed in the soffits above each unit entrance. Bollard lighting is proposed along the central pathway and the shared amenity area.

Accessible Housing

- The proposed development includes four (4) convertible units that are designed with the potential to be easily renovated to accommodate a future resident in a wheelchair. The potential conversion of these units will require installation of a chair lift. All four (4) of these units are two storeys.
- All of the proposed units incorporate aging in place features to accommodate mobility constraints associated with aging. These features include:
  - stairwell hand rails;
  - lever-type handles for plumbing fixtures and door handles; and,
  - solid blocking in washroom walls to facilitate future grab bar installation beside toilets, bathtubs and showers.
- The central pathway, which provides access to the garbage enclosure, mailboxes, and Williams Road sidewalk, is typically 2.0 m wide but narrows to 1.5 m wide within the tree protection zone. This width is sufficient to accommodate a person using a wheelchair or other mobility aid.

Sustainability

- This development is expected to achieve Step 3 of the BC Energy Step Code for Part 9 buildings or Step 2 with a low carbon energy system. The applicant has provided a letter from a Certified Energy Advisor confirming that the buildings have been designed to achieve Step 3 of the BC Energy Step Code.
- Each dwelling would have an air source heat pump for heating and cooling. Heat pumps have generally been located away from living areas to minimize noise impacts on residents. The proposed locations of the heat pumps are shown on the site plan. The applicant must provide an acoustical report confirming that the noise generated by the heat pumps complies with Richmond Noise Regulation Bylaw 8856.
- 100% of the residential parking spaces are provided with Class 2 EV charging in the garage, as per Richmond Zoning Bylaw 8500.

Conclusions

As the proposed development would meet applicable policies and Development Permit Guidelines, staff recommend that the Development Permit be endorsed, and issuance by Council be recommended.

Jordan Rockerbie
Planner 1
(604-276-4092)

JR:js

Attachments:
Attachment 1: Location Map
Attachment 2: Development Application Data Sheet
Attachment 3: Excerpt of the Minutes from the July 7, 2021 Advisory Design Panel Meeting

The following are to be met prior to forwarding this application to Council for approval:

1. Receipt of a Letter-of-Credit for landscaping in the amount of $117,881.23.
   NOTE: staff to ensure that landscape estimates include a 10% contingency cost.
2. Complete an acoustical report and recommendations prepared by an appropriate registered professional, which demonstrates that the interior noise levels and noise mitigation standards comply with the City's Official Community Plan and Noise Bylaw requirements. The report should address noise from proposed exterior mechanical systems (e.g. heat pumps). Maximum interior noise levels (decibels) within the dwelling units must achieve CMHC standards follows:

Portions of Dwelling Units	Noise Levels (decibels)
Bedrooms	35 decibels
Living, dining, recreation rooms	40 decibels
Kitchen, bathrooms, hallways, and utility rooms	45 decibels

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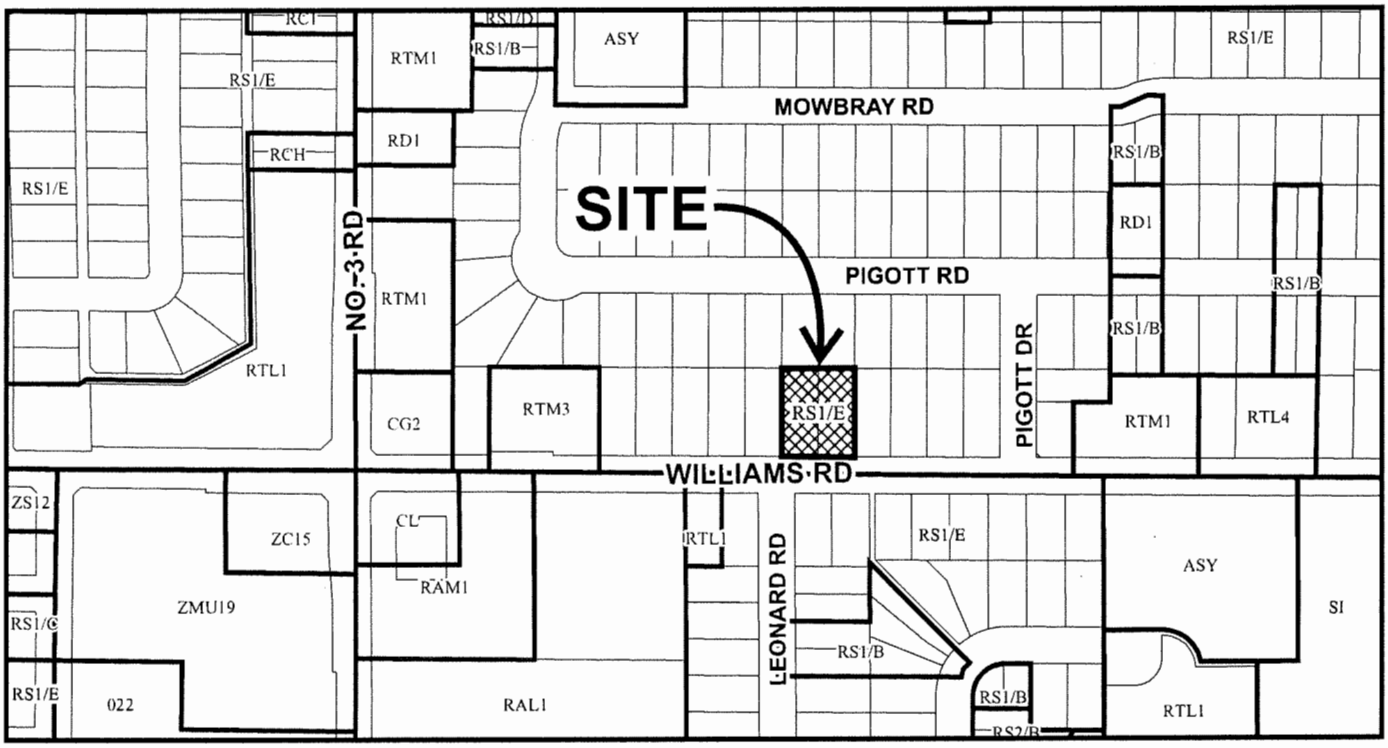
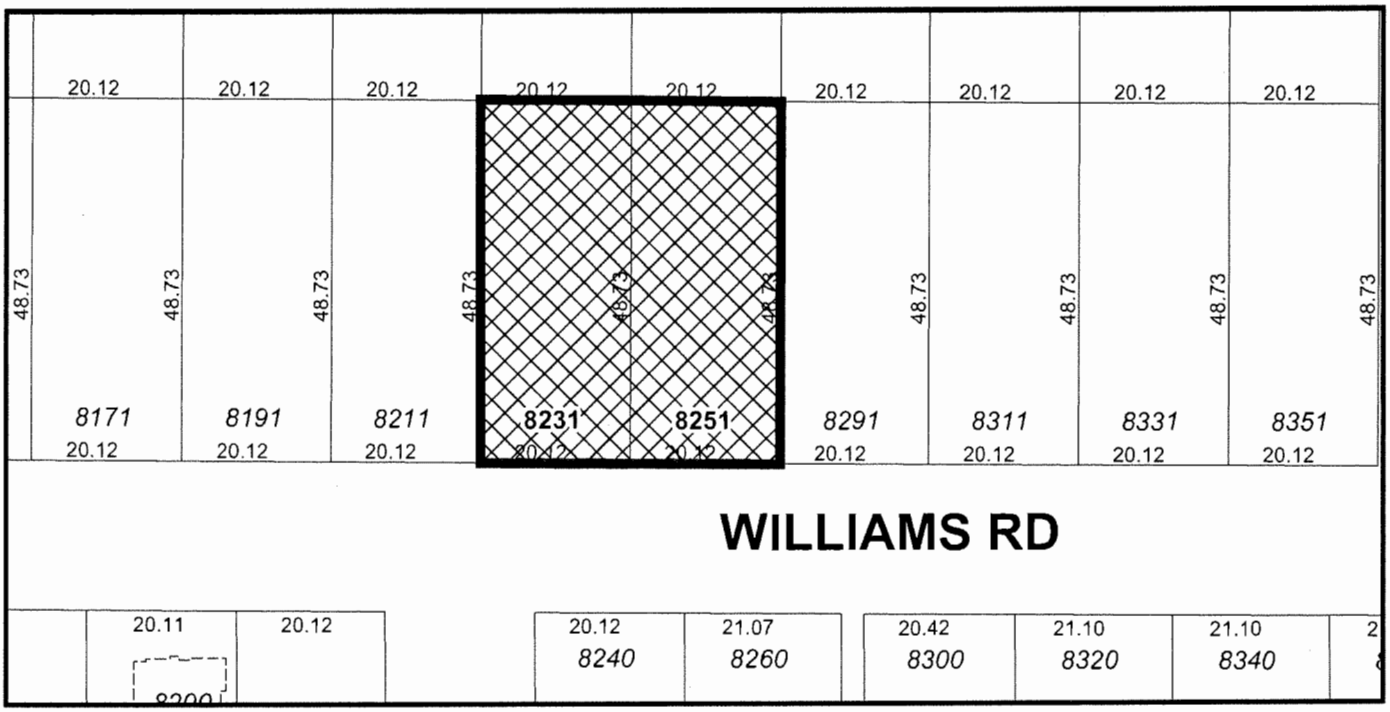




DP 19-858783

Original Date: 04/29/19

Revision Date:

Note: Dimensions are in METRES

City of Richmond

Development Application Data Sheet

Development Applications Department

DP 19-858783 **Attachment 2**

Address: 8231 and 8251 Williams Road

Applicant: Zhao XD Architect Ltd. Owner: Y&W Development Ltd. (Directors Jing Long Yuan and Xia Wang)

Planning Area(s): Broadmoor

Floor Area Gross: 1,660 m^2 (17,870 ft^2) Floor Area Net: 1,151.7 m^2 (12,397 ft^2)

	Existing	Proposed
Site Area:	1,959.8 m^2	1,919.5 m^2
Land Uses:	Single detached dwellings	Townhouse dwellings
OCP Designation:	Neighbourhood Residential	No change
Zoning:	Single Detached (RS1/E)	Low Density Townhouses (RTL4)
Number of Units:	Two single detached dwellings	Ten (10) townhouse dwellings

	Bylaw Requirement	Proposed	Variance
Floor Area Ratio:	Max. 0.6 FAR	0.6 FAR	None permitted
Lot Coverage:	Building: Max. 40% Non-porous Surfaces: Max. 65% Live Landscaping: Min. 25%	Building: 40% Non-porous Surfaces: 65% Live Landscaping: 29%	None
Setback – Front Yard:	Min. 6.0 m	6.0 m	None
Setback – West Side Yard:	Min. 3.0 m	3.0 m	None
Setback – East Side Yard:	Min. 3.0 m	3.0 m	None
Setback – Rear Yard:	Min. 3.0 m	4.5 m	None
Height (m):	Max. 12.0 m	12.0 m	None
Lot Size:	No minimum	1,919.5 m^2	None
Lot Dimensions (m):	Width: Min. 40 m Depth: Min. 35 m	Width: 40.2 m Depth: 47.7 m	None
Off-street Parking Spaces – Resident/Visitor:	Min. 2 R and 0.2 V per unit	2 R and 0.2 V per unit	None
Off-street Parking Spaces – Accessible:	Zero if fewer than 3 visitor parking spaces are required	0	None
Off-street Parking Spaces – Small:	Not permitted if fewer than 31 spaces are required	6 (i.e. 30%)	**Vary**

Off-street Spaces – Total:	Min. 20 R and 2 V	20 R and 2 V	None
Tandem Parking Spaces	Permitted – Maximum of 50% of required spaces	8 (40%)	None
Bicycle Parking Spaces – Class 1	Min. 1.25 per unit	20 (2 per unit)	None
Bicycle Parking Spaces – Class 2	Min. 0.2 per unit	2 (i.e. 0.2 per unit)	None
Amenity Space – Indoor:	Min. 50 m^2 or cash-in-lieu	Cash-in-lieu	None
Amenity Space – Outdoor:	Min. 6.0 m^2 per unit	60 m^2 (i.e. 6.0 m^2 per unit)	None

Attachment 3

Excerpt from the Minutes from

The Design Panel Meeting

Wednesday, July 7, 2021 – 4:00 p.m.
Remote (Webex) Meeting

1. DP 19-858783 – ARTERIAL ROAD TOWNHOUSE DEVELOPMENT

ARCHITECT:	Zhao XD Architect Ltd.
LANDSCAPE ARCHITECT:	PMG Landscape Architects
PROPERTY LOCATION:	8231 and 8251 Williams Road

Applicant's Presentation

Architect Xuedong Zhao, Zhao XD Architect Ltd., and Landscape Designer Denitsa Dimitrova, PMG Landscape Architects, presented the project and answered queries from the Panel.

Panel Discussion

Comments from Panel members were as follows:

- appreciate the densification of the subject site which includes 10 townhouse units;
- appreciate the retention of the Magnolia tree which is the focal point of the proposed development; however, consider increasing the width of the pedestrian pathway to enhance its accessibility considering that it provides the only direct pedestrian access to the subject site from Williams Road;

  1.5 m minimum width is provided for accessible path (see updated plans).

- consider either relocating the four Western Red Cedar trees or consider replacing them with another tree species due to the tight growing space when these trees mature in the future;

  See updated landscape plans.

- consider consolidating the small planting areas fronting both sides of the driveway into larger patches of planting;

  See updated landscape plans.

- overall, the choice of landscaping materials is appropriate;

- consider using less trim on some of the Hardie materials (e.g., using 7/8- inch thickness) on the south elevation as it would provide a thinner effect particularly on the underside of the proposed archway;

  The suggestions are considered. The arch is reduced 1'-0" in height thickness. Thinner cladding will be used on the underside of the arch.

- appreciate the provision of exterior insulation on the townhouse buildings that will not reduce the setbacks; the energy model should reflect this and guide the applicant towards achieving compliance with Step 3 of the BC Energy Step Code;

- understand the rationale for the location of most of the windows along the south elevation facing Williams Road from an architectural perspective; however, consider installing sun shading outside of the building envelope to reduce the impact of sun exposure to the windows; should be included in the energy modeling to ensure achieving Step Code compliance;

  Sun shading projection would increase the bulkiness of the buildings. The selection of windows addresses the energy saving strategies which is included in the effort to comply Step Code requirements.

- the proposed wood trellis in front of the Magnolia tree and the archway is not reflected in any of the architectural drawings and may not be appropriate as it appears heavy and may draw more attention than originally intended; consider an alternate approach to provide shading;

  See updated landscape plans.

- overall, appreciate the site layout and presentation of the project by the applicant;

- consider incorporating exterior fixed shading into the architecture of the buildings to minimize solar heat gain and in order to ensure the achievement of BC Energy Step Code 3 rating requirements;

  See the response above for the shading devices.

- consider improving the solar heat gain coefficient (SHGC) of 0.43 for windows considering that the window-to-wall ratio along the south elevation is very high;

  SHGC 0.43 or higher will be used. One window for Unit F is removed.

- appreciate the project conforming to the new airtightness standard; however, consider including a heat recovery ventilation (HRV) system which is included in the applicant's sustainability strategy but not in the energy model;

  Sustainability strategy indicates that "Reductions of air leakage will reduce heating and cooling costs, with heat recovery ventilators (HRV) <u>or</u> equivalent providing fresh air to each townhome unit."

- appreciate the details provided on the project's firefighting plan, e.g. fire truck access and location of fire hydrants; however, include information on the distance required from the fire hydrant to the fire truck;

  As a new fire hydrant is proposed in the middle of the site, the required distance from fire hydrant to the fire truck can be easily achieved.

- the project's mechanical system needs to be outlined as it will impact the project's final energy modeling and compliance with BC Energy Step Code 3;

  "Mechanical Components" are included in the CEA's letter/documents for the Step Code compliance.

- review the floor plans of convertible units D and C1 and confirm whether the washrooms would be wheelchair accessible when converted to fully accessible units in the future; recommend that washrooms on both the ground and second floors should be accessible;

  Per City's "Convertible Unit Guidelines for Townhouses", minimum one bathroom should be designed as convertible.

- like the building design and the stepping down in height to provide an appropriate interface with adjacent residential developments;

- look at the existing elevation of the Magnolia tree and its proposed grade in the future as it may impact the usable space for the proposed pedestrian pathway;

  See previous responses that address the improvements.

- consider a different and more special material and/or colour for the archway than Hardie panel that better reflects an idea of a background to the Magnolia tree;

  Contrast with building can also enhance the importance of expressions that tree/vegetation provides. Even if a distinct building material background for the tree may possibly be proposed to provide some benefits to show the tree, but extra cladding materials/colors may not be proper for the building design, since we should limit the number of different materials/colors for the building design composition.

- appreciate the retention of the Magnolia tree; however, consider modifying the tree, e.g. through root pruning or relocating it to provide an appropriate width for the pedestrian pathway considering that vehicular access to the subject site is provided in the adjacent site and therefore a direct pedestrian access to the site from Williams Road would be important;

  Relocating the tree is not supported by arborist for best interest for the tree to survive. The width of the walkway is increased for better use and visual prominence.

- support the Panel comment that the proposed trellis could overwhelm the visual scale of the space which includes the archway and the Magnolia tree;

- proposed site signage is simple and low key; consider echoing this character (i.e. concrete board and cedar trim detail) along the frontage as individual entries into the separate units to enhance their character;

  The distinct appearance is intended for its visibility with the limited scale (see landscape plan).

- consider more variability in terms of materials and colours between units to make them more visually distinct and not read as a single large apartment complex;

  As mentioned earlier, the units at street front are designed with expressions in both massing recess and color differentiation. With the distinctive front doors and porches as well as the massing and color as mentioned, the individuality of the townhouse units is well expressed, while the unity of the townhouse building that these units belong to can also be maintained and expressed with a consistency of the color scheme as shown.

- support the Panel comment regarding the tightness of the growing space for the Western Red Cedar trees as they mature; consider managing the growth of these trees (e.g., trimming) to avoid overwhelming the ancillary spaces to the side; and

- concerned about the proposed location of concrete patios and bollard lights within the SRW for the sanitary sewer in the rear yard; the applicant should work with City staff as the project moves forward to ensure that Engineering guidelines for SRWs are complied with.

  Removable concrete pads should be more maneuverable than other paving materials so that patios can be more easily reconstructed for any events for City to service the SRW though it would happen not so often in term of years.

The following written comments submitted by Panel member Patrick Schilling were read into the record by Jordan Rockerbie:

- vehicular access from within the property is an interesting approach, removing traffic from Williams Road and issues with vehicles pulling in and out of garages;

- overall massing fits well within the context; each building is relatively similar in size to the neighbouring single-family dwellings;

- each building is also broken down into smaller elements; multiple articulations create a human scale and minimize what could be perceived as a large mass; however, there might be too many articulations, when looking at the ground floor plan one can wonder if there would be a way to reduce the number of articulations, while maintaining the successful overall massing breakdown;

  A "chimney" is removed for the suggested improvement.

- incorporation of 10 residential units into this design is to be commended;

- ground floors of Building 1 and Building 2 are primarily occupied by parking; unfortunate that the City could not have relaxed the parking requirements here to allow for more active uses on the ground floor; the split between parking and residential is well done on Building 3 and Building 4;
- the separation between Building 3 and Building 4 works well, but the separation between Building 1 and Building 2 is tight; wondering if there is a way to increase that separation;

  Elevation drawing shows many portions of buildings in-between are merely the projections of rear portions of the buildings, while the spacing near the street frontage is more opened up. The introduction of arch minimizes the impression of tall "gap" for the rear portion of the buildings.
- removing the connecting arch element between these two buildings would create a visual separation that may help to increase the perceived separation; and

  As mentioned, the arch can not only provide better articulations for the walkway and tree but also minimize the impression of tall and narrow gap impression between the buildings.
- concerned with the functionality of units B, B1 and E as they have no residential area on the ground floor and livable area only begins on the second floor.

  Upper floors are often seen as a more desirable living space than on ground level for street facing units.

Panel Decision

It was moved and seconded
That DP 19-858783 be supported to move forward to the Development Permit Panel subject to the applicant giving consideration to the comments of the Advisory Design Panel.

CARRIED

City of Richmond

Development Permit

No. DP 19-858783

To the Holder:	ZHAO XD ARCHITECT LTD.
Property Address:	8231 AND 8251 WILLIAMS ROAD
Address:	11181 VOYAGEUR WAY SUITE 255 RICHMOND, BC V6X 3N9

1. This Development Permit is issued subject to compliance with all of the Bylaws of the City applicable thereto, except as specifically varied or supplemented by this Permit.
2. This Development Permit applies to and only to those lands shown cross-hatched on the attached Schedule "A" and any and all buildings, structures and other development thereon.
3. The "Richmond Zoning Bylaw 8500" is hereby varied to increase the permitted small parking spaces from 0 to 6 (i.e. 30%).
4. Subject to Section 692 of the Local Government Act, R.S.B.C.: buildings and structures; off-street parking and loading facilities; roads and parking areas; and landscaping and screening shall be constructed generally in accordance with Plans 1 to 15 attached hereto.
5. Sanitary sewers, water, drainage, highways, street lighting, underground wiring, and sidewalks, shall be provided as required.
6. As a condition of the issuance of this Permit, the City is holding the security in the amount of $117,881.23 to ensure that development is carried out in accordance with the terms and conditions of this Permit. Should any interest be earned upon the security, it shall accrue to the Holder if the security is returned. The condition of the posting of the security is that should the Holder fail to carry out the development hereby authorized, according to the terms and conditions of this Permit within the time provided, the City may use the security to carry out the work by its servants, agents or contractors, and any surplus shall be paid over to the Holder. Should the Holder carry out the development permitted by this permit within the time set out herein, the security shall be returned to the Holder. The City may retain the security for up to one year after inspection of the completed landscaping in order to ensure that plant material has survived.
7. If the Holder does not commence the construction permitted by this Permit within 24 months of the date of this Permit, this Permit shall lapse and the security shall be returned in full.

Development Permit
No. DP 19-858783

To the Holder:	ZHAO XD ARCHITECT LTD.
Property Address:	8231 AND 8251 WILLIAMS ROAD
Address:	11181 VOYAGEUR WAY SUITE 255 RICHMOND, BC V6X 3N9

8. The land described herein shall be developed generally in accordance with the terms and conditions and provisions of this Permit and any plans and specifications attached to this Permit which shall form a part hereof.

   This Permit is not a Building Permit.

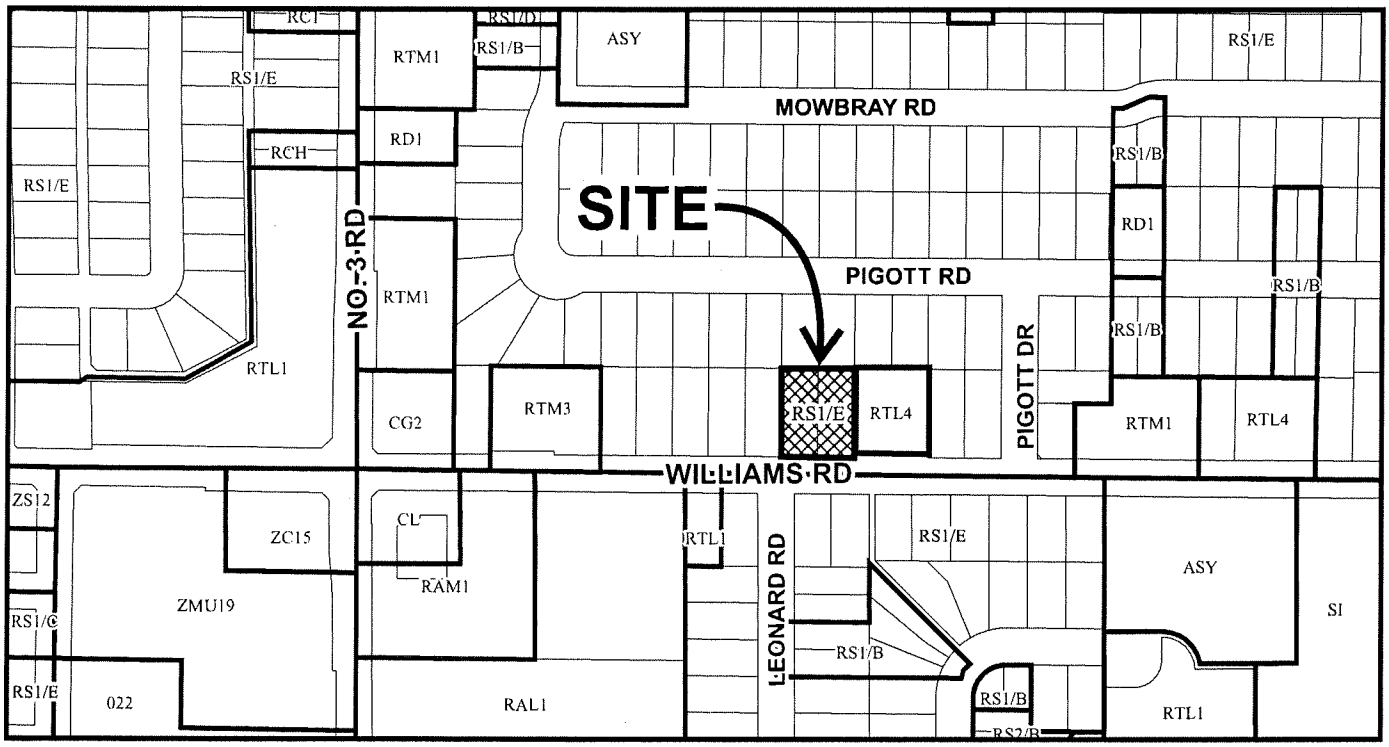
AUTHORIZING RESOLUTION NO. ISSUED BY THE COUNCIL THE DAY OF , .

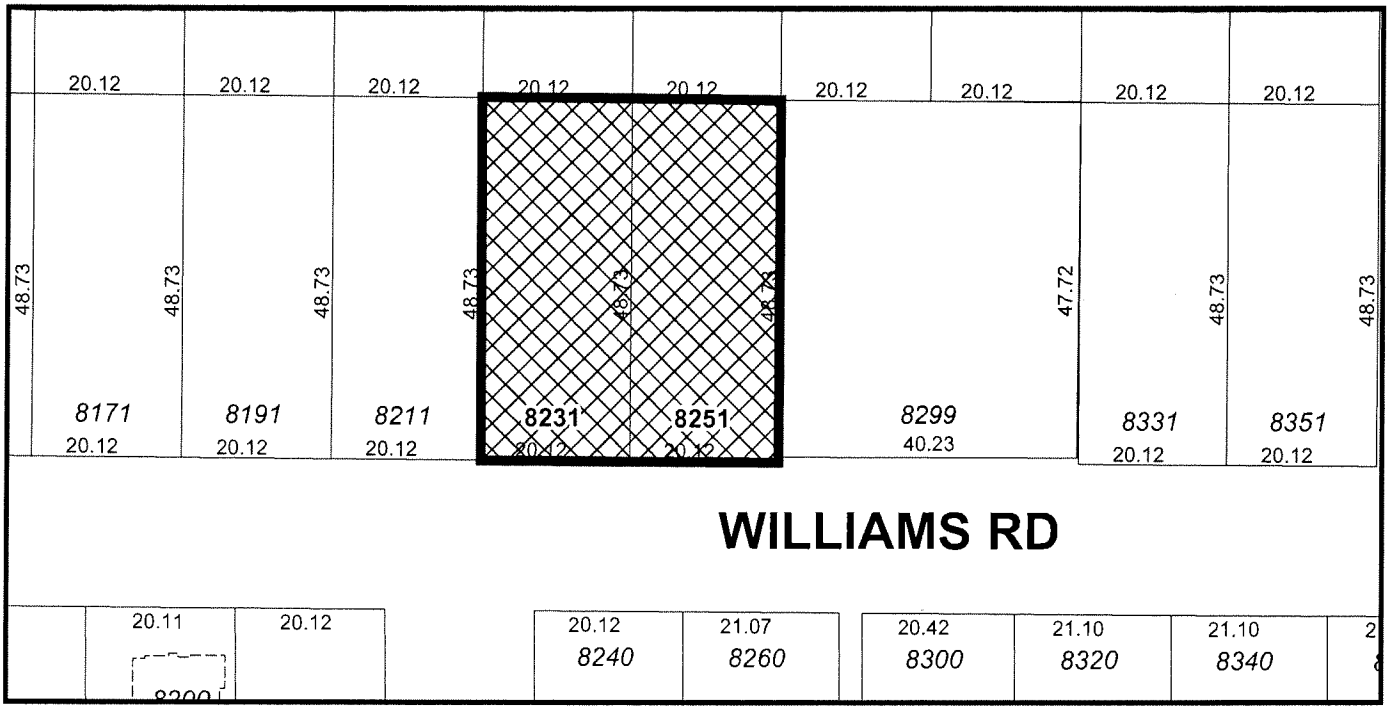
DELIVERED THIS DAY OF , .

_____

MAYOR

City of Richmond





DP 19-858783 SCHEDULE "A"

Original Date: 04/29/19

Revision Date: 02/07/22

Note: Dimensions are in METRES

ZHAO XD ARCHITECT LTD.
www.zhaoarch.com Tel: 604 275-8882

10-UNIT TOWNHOUSE DEVELOPMENT

8231 & 8251 WILLIAMS ROAD, RICHMOND, BC

DP 19-858783 Plan 1

ZHAO XD ARCHITECT LTD.

#255–11181 Voyageur Way,
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Project:

TOWNHOUSE DEVELOPMENT

8231–51 Williams Road
RICHMOND, BC

Drawing Title:

COVER

Date:

Scale:

Drawn By:

Checked By:

Project No.:

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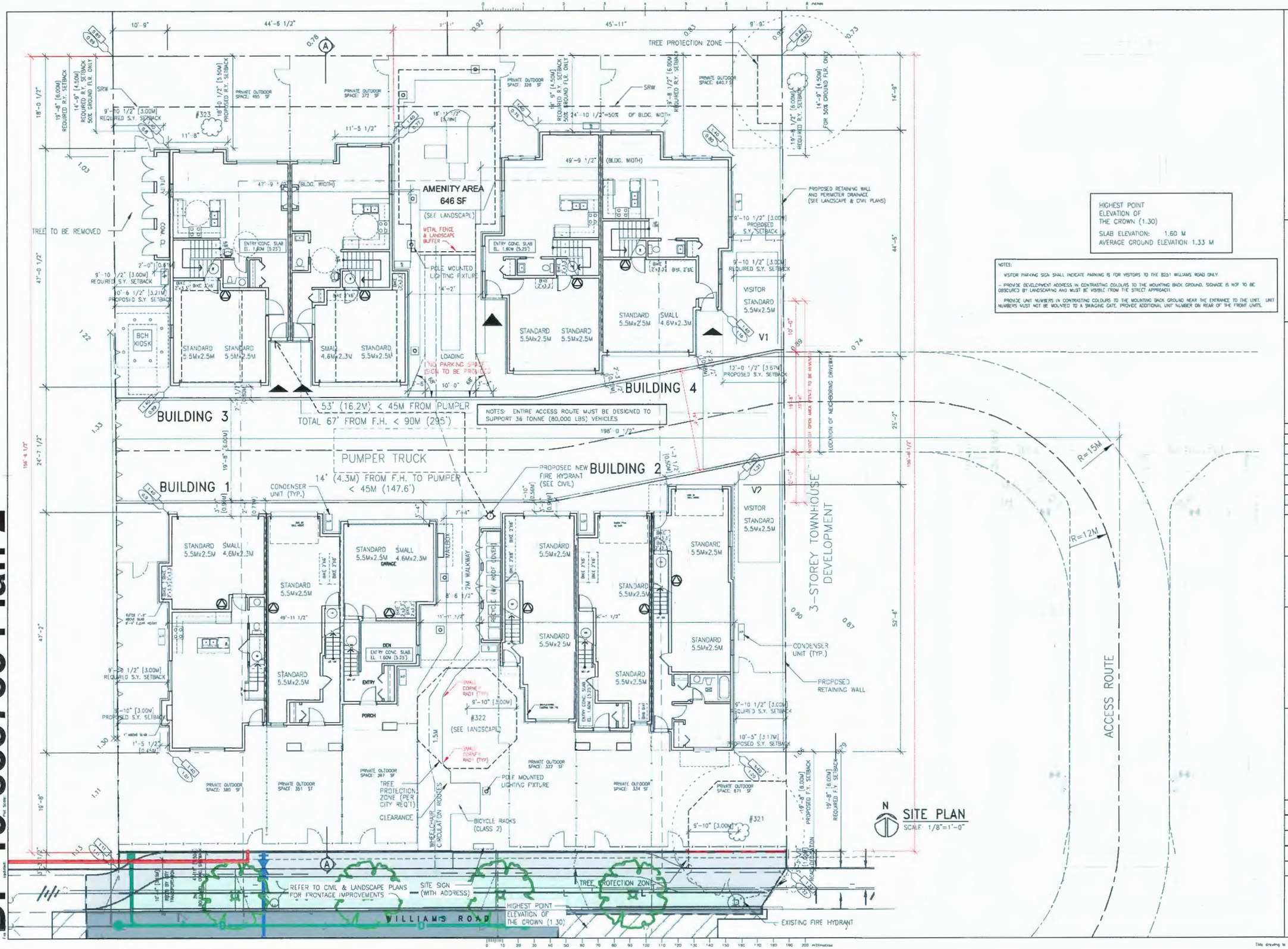
A1

DP 19-858783 Plan 2



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Drawing Title:

SITE PLAN & PARKING PLAN

Date:

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Drawn By:

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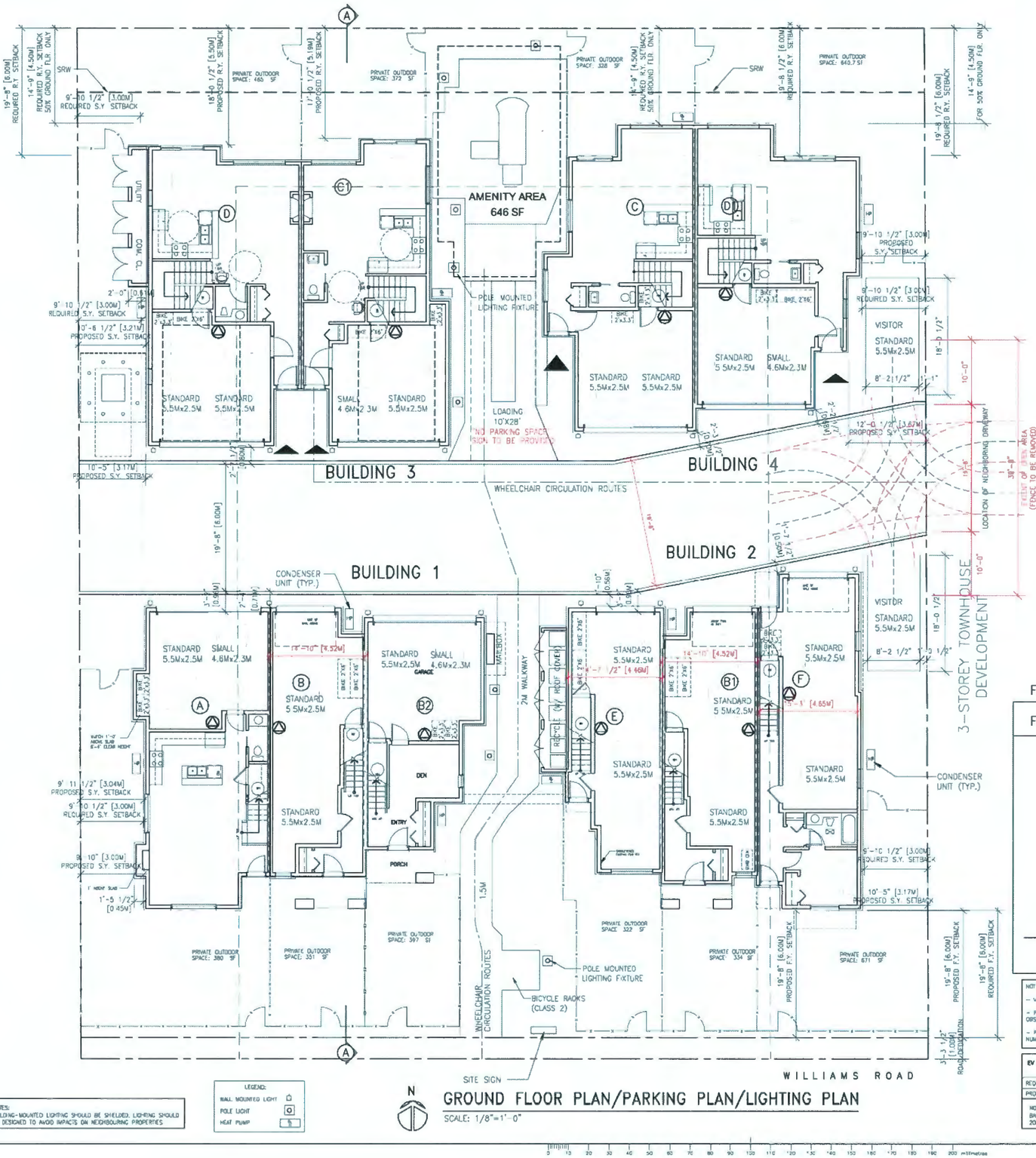
A1

DP 19-858783 Plan 3



NOTES:
BUILDING-MOUNTED LIGHTING SHOULD BE SHIELDED. LIGHTING SHOULD BE DESIGNED TO AVOID IMPACTS ON NEIGHBOURING PROPERTIES.

LEGEND:
WALL MOUNTED LIGHT
POLE LIGHT
HEAT PUMP

N

GROUND FLOOR PLAN/PARKING PLAN/LIGHTING PLAN

SCALE: 1/8"=1'-0"

DEVELOPMENT DATA

ADDRESS:	8231 & 8251 WILLIAMS ROAD
LEGAL DESCRIPTION:	LOT A, CURRENTLY LOTS 11 AND 12, BOTH OF SECTION 28, BLOCK 4 NORTH, RANGE 6 WEST NEW WESTMINSTER DISTRICT, PLAN 14004
P.I.D NUMBERS:	PID:004 871 693 (LOT 11) PID:003-674-991 (LOT 12)
PLANNING AREA(S):	06 BROADMOOR / ARTERIAL ROAD POLICY

	EXISTING	PROPOSED
SITE SIZE (SM):	1959.8 SM (21094.6 S.F.)	1919.5 (20661.1 S.F.)
LAND USES:	SINGLE-FAMILY RESIDENTIAL	TOWNHOUSE
OCP DESIGNATION:	NEIGHBOURHOOD RESIDENTIAL	NEIGHBOURHOOD RESIDENTIAL
AREA PLAN DESIGNATION:	OCP ARTERIAL ROAD POLICY	OCP ARTERIAL ROAD POLICY
ZONING:	SINGLE DETACHED (RS1/E)	LOW DENSITY TOWN HOUSING (RTL4)
NUMBER OF UNITS:	2	10

	BYLAW REQUIREMENT	PROPOSED	VARIANCE
FLOOR AREA RATIO:	0.60 (12396.7 SF)	0.60 (12396.6 SF)	
LOT COVERAGE - BUILDING:	MAX. 40% (8264.44 SF)	40% (8260.6 SF)*	NONE
LOT COVERAGE - LIVE LANDSCAPING:	MIN. 25% (5,165.27 SF)	29% (6132.4 SF)	NONE
LOT COVERAGE - NON-POROUS AREA:	MAX. 65% (13711.5 SF)	65% (13455.7 SF)	
SETBACK - FRONT SETBACK (SOUTH):	MIN. 6.0M	6.0M	NONE
SETBACK - EAST SIDE YARD:	MIN. 3.0M	3.0M	NONE
SETBACK - WEST SIDE YARD:	MIN. 3.0M	3.0M	NONE
SETBACK - REAR YARD (NORTH):	MIN. 6.0M/4.5M	MIN. 6.0M/4.5M	NONE
HEIGHT:	12M (3 STOREYS)	12M (3 STOREYS)	NONE
LOT SIZE (MIN. DIMENSIONS).	(MIN. 40M WIDE) (MIN. 35M DEEP)	(MIN. 40.2M WIDE) (MIN. 47.7M DEEP)	NONE
RESIDENTIAL PARKING SPACES:	20 SPACES (2/UNIT)	20 SPACES (2.0/UNIT)	NONE
VISITOR PARKING SPACES:	0.2 SPACES/ UNIT= 2	2 SPACES	NONE
OFF-STREET PARKING SPACES-TOTAL:	22 SPACES	22 SPACES	NONE
ACCESSIBLE PARKING SPACE	NOT REQUIRED	0	NONE
SMALL CAR PARKING SPACES:	NONE PERMITTED	6 SPACES	VARIANCE
TANDEM PARKING SPACES:	20 (MAX. 50% OF TOTAL PARKING) - 10 SPACES	8 SPACES	NONE
BICYCLE PARKING SPACE-CLASS 1:	1.25 SPACES PER UNIT	2 SPACES PER UNIT	NONE
BICYCLE PARKING SPACE-CLASS 2:	0.2 SPACES PER UNIT	2 SPACES	NONE
AMENITY SPACE - INDOOR:	MIN. 50 SM OR CASH-IN-LIEU	CASH-IN-LIEU	NONE
AMENITY SPACE - OUTDOOR:	MIN. 6 SM PER UNIT	646 SF (6 SM PER UNIT)	NONE
PRIVATE OPEN SPACE:	MIN. 30 SM PER UNIT	MIN. 30 SM PER UNIT	NONE

* INCLUDING UTILITY CLOSETS

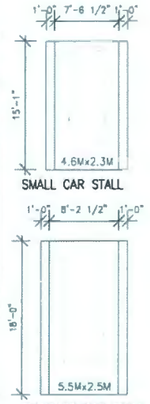
F.A.R. CALCULATION: LOT AREA: 20661.1 SQ.FT.

F.A.R. (0.6):	FAR = 12396.7	SQ.FT.
UNIT 'A'	1234.8	SQ.FT.
UNIT 'B'	1263.7	SQ.FT.
UNIT 'B1'	1263.6	SQ.FT.
UNIT 'B2'	1311.9	SQ.FT.
UNIT 'C' (COVERTIBLE UNIT)	1230.6	SQ.FT.
UNIT 'C1' (COVERTIBLE UNIT)	1245.2	SQ.FT.
UNIT 'D' (COVERTIBLE UNIT)	1304.3	SQ.FT.
UNIT 'D1' (COVERTIBLE UNIT)	1301.1	SQ.FT.
UNIT 'E'	1198.4	SQ.FT.
UNIT 'F'	1046.1	SQ.FT.
TOTAL PROPOSED = (0.6 FAR)	12396.7	SQ.FT.

NOTES:
- VISITOR PARKING SIGN SHALL INDICATE PARKING IS FOR VISITORS TO THE 8251 WILLIAMS ROAD ONLY.
- PROVIDE DEVELOPMENT ADDRESS IN CONTRASTING COLOURS TO THE MOUNTING BACK GROUND. SIGNAGE IS NOT TO BE OBSCURED BY LANDSCAPING AND MUST BE VISIBLE FROM THE STREET APPROACH.
- PROVIDE UNIT NUMBERS IN CONTRASTING COLOURS TO THE MOUNTING BACK GROUND NEAR THE ENTRANCE TO THE UNIT. UNIT NUMBERS MUST NOT BE MOUNTED TO A SWINGING GATE. PROVIDE ADDITIONAL UNIT NUMBER ON REAR OF THE FRONT UNITS.

EV CHARGING EQUIPMENT CALCULATIONS	A NUMBER OF PARKING SPACES TO BE PROVIDED WITH 120V RECEPTACLE TO ACCOMMODATE ELECTRIC VEHICLE CHARGING EQUIPMENT
REQUIRED	22 SPACES
PROVIDED	22 SPACES

NOTE: REQUIREMENTS FOR ELECTRIC VEHICLE CHARGER SHALL FOLLOW BULLETIN NO. ENGINEERING 05 AND BYLAW 8500 BASED ON DP & BP APPLICATION & APPROVAL TIME THAT ENERGIZED OUTLETS OF 208-240V AC 1-PHASE, AND 32 AMP (40 AMP BRANCH BREAKER) WILL BE REQUIRED.



PARKING DIMENSIONS

SCALE: 1/8"=1'-0"

LEGEND:
ELEV2 FINISHED GRADE ELEVATION
ELEV2 EXISTING GRADE ELEVATION

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TOWNHOUSE DEVELOPMENT

8231-51 Williams Road
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Drawing Title:

FLOOR PLAN3

Date:

Scale:

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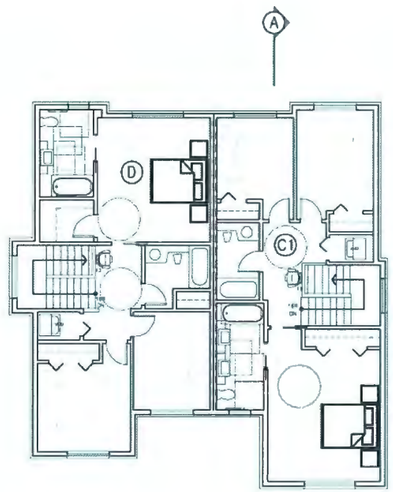
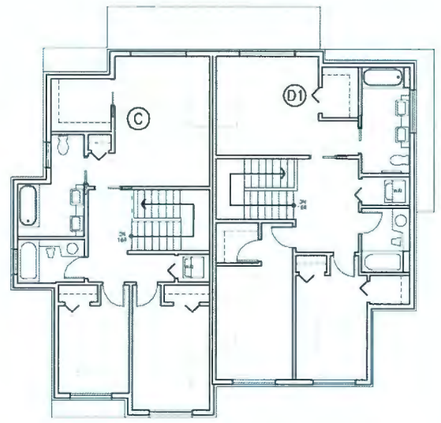
A2

DP 19-858783 Plan 4



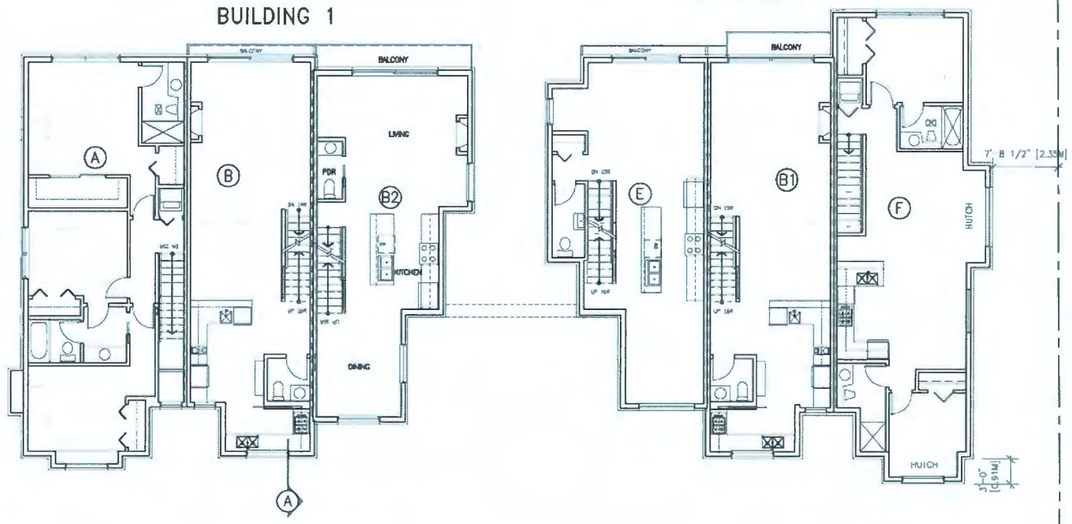
BUILDING 3



BUILDING 4

BUILDING 2

BUILDING 1



N

SECOND FLOOR PLAN

SCALE: 1/8"=1'-0"

ALL INDOOR PARKING SPACES WILL BE PROVIDED WITH LEVEL 2 EV CHARGING OUTLETS (208V TO 240V AC AND CURRENT OF 16A TO 80A).

SEE SITE PLAN AND BUILDING LAYOUT FOR THE LOCATION OF ALL EV CHARGING EQUIPMENT.

N

CONTEXT PLAN

N.T.S.

AGING IN PLACE FEATURES FOR ALL UNITS:
-SOLID BLOCKING IN WASHROOM WALLS FOR FUTURE GRAB BARS;
-LEVER-TYPE HANDLES FOR PLUMBING AND DOOR HANDLES

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TOWNHOUSE DEVELOPMENT

8231–51 Williams Road
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FLOOR PLANS

Date:

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A3

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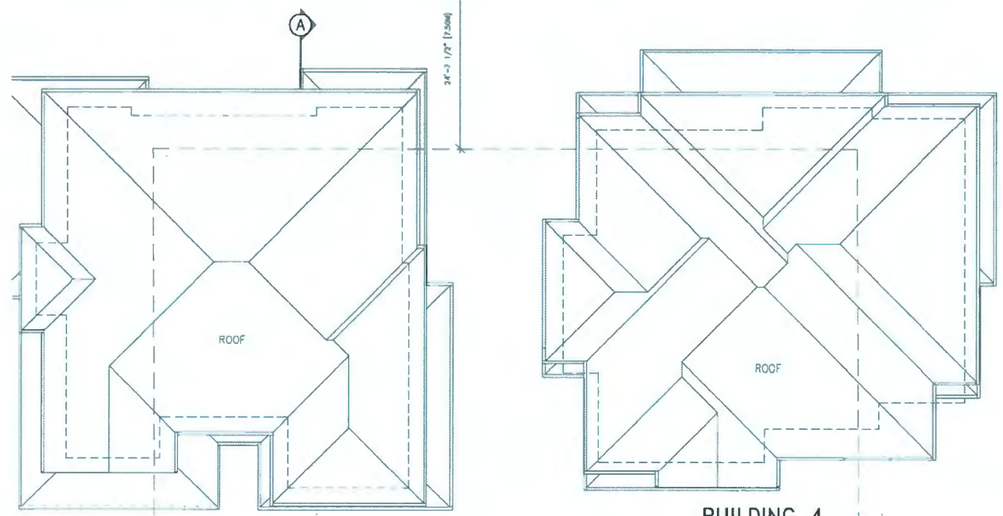
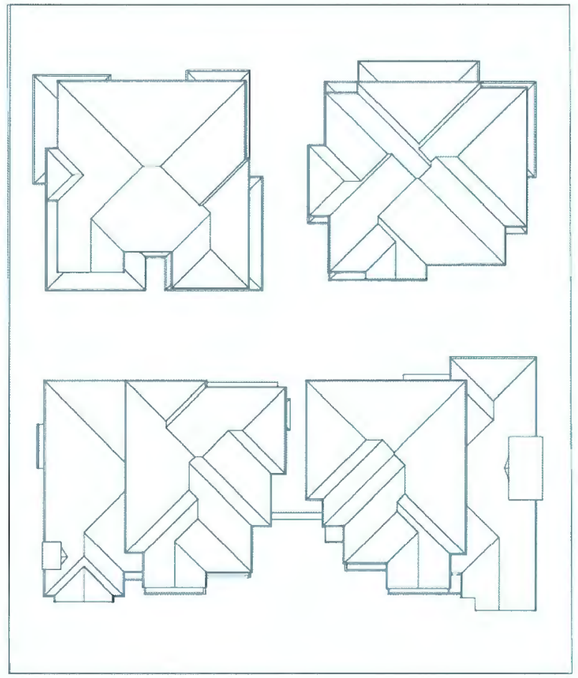
AGING IN PLACE FEATURES FOR ALL UNITS:
-SOLID BLOCKING IN WASHROOM WALLS FOR FUTURE GRAB BARS;
-LEVER-TYPE HANDLES FOR PLUMBING AND DOOR HANDLES



N
THIRD FLOOR PLAN
SCALE: 1/8"=1'-0"



N
ROOF PLAN
SCALE: 1/8"=1'-0"

DP 19-858783 Plan 5

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TOWNHOUSE DEVELOPMENT

8231-51 Williams Road
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FLOOR PLANS

Date:

Scale:

Drawn By:

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Drawing No.:

A4

DP 19-858783 Plan 6

WEST ELEVATIONS

SCALE: 1/8"=1' 0"

EAST ELEVATIONS

SCALE: 1/8"=1' 0"

SOUTH ELEVATIONS

SCALE: 1/8" 1'-0"

NORTH ELEVATIONS

SCALE: 1/8"=1'-0"

EXTERIOR FINISH & COLOR

1. ASPHALT SHINGLES – DUAL BLACK – IKO
2. 5" ALUM. GUTTER ON 2X6 WOOD FASCIA BOARD PAINTED (TYP.) MATCH COLOR IRON GRAY
3. HARDIE SIDING (7") MONTEREY TAUPE
4. HARDIE SIDING (7") – TUSCAN GOLD
5. HARDIE SIDING (7") – IRON GRAY
6. 2X10 WOOD TRIM MATCH COLOR IRON GRAY
7. ALUM. GUARDRAIL (BLACK)
8. DOUBLE-GLAZED WINDOWS IN VINYL FRAMES C/W 2x4 SILL (SLOPE 15%) & 2x4 SIDE & TOP TRIM C/W FLASHING OVER TRIM PAINTED: COLOR MATCH MONTEREY TAUPE
9. LIGHT FIXTURE
10. SOLID CORE WOOD DOOR – BJ 1231 WYNWOOD
11. GARAGE DOOR: BM: AF-380 COSTAL PATH
12. POT LIGHTS AT EACH ENTRY
13. 2X10 HORIZONTAL TRIM BOARD C/W FLASHING OVER MONTEREY TAUPE
14. CULTURE STONE BY BORAL (A BLEND OF 65% ASPEN DRESSD FIRELDSTONE 35% ASPEN COUNTRY LEDGESTONE)

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A5

DP 19-858783 Plan 7

WEST ELEVATIONS

SCALE: 1/8"=1' 0"

EAST ELEVATIONS

SCALE: 1/8"=1' 0"

NORTH ELEVATIONS

SCALE: 1/8" 1'-0"

SOUTH ELEVATIONS

SCALE: 1/8"=1'-0"

EXTERIOR FINISH & COLOR

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4. HARDIE SIDING (7") – TUSCAN GOLD
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A6

8171 8191 8211 8231–8251 8291 8311 8331

STREET SCAPE (WILLIAMMS ROAD)

SCALE: 1"=20'-0"

DP 19-858783 Plan 8

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TOWNHOUSE DEVELOPMENT

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STREETSCAPE ELEVATIONS

Date:

Scale:

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Drawing No.:

A7

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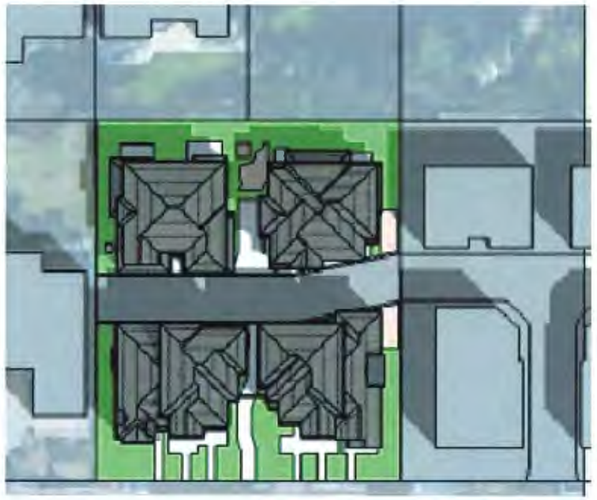
SUN SHADING DIAGRAMS

MARCH 21



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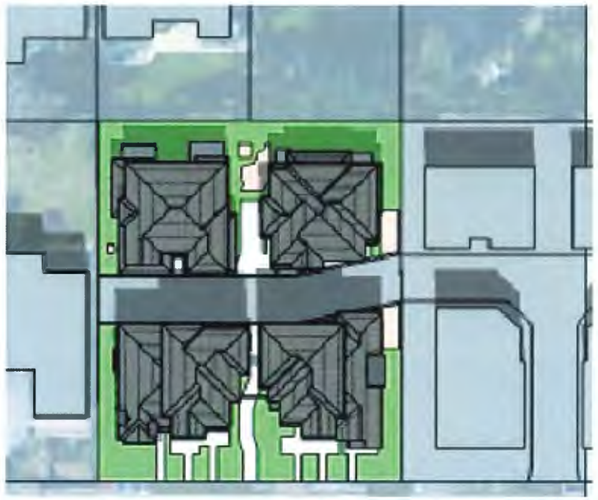

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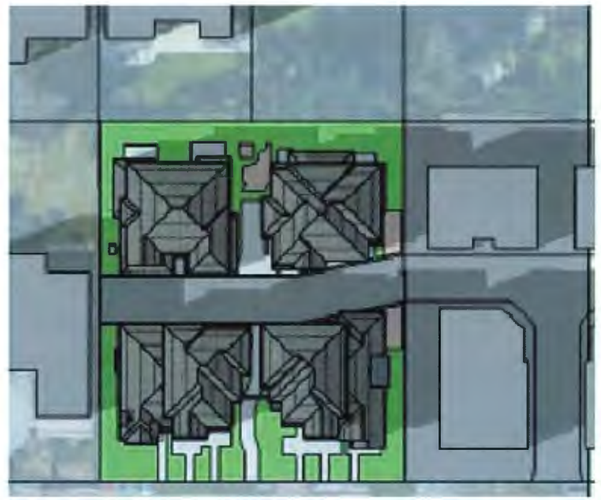

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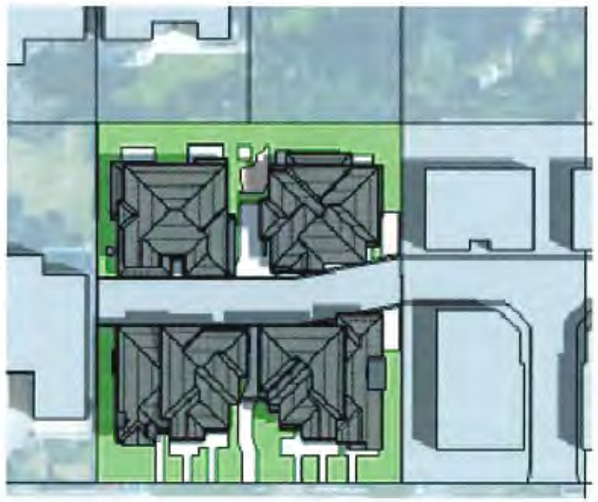
JUNE 21



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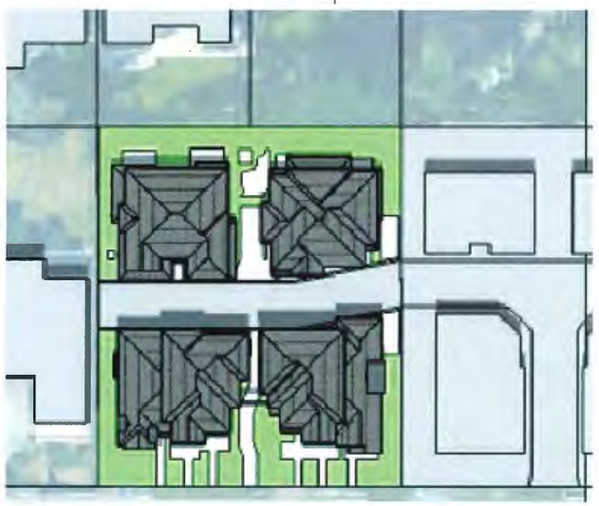
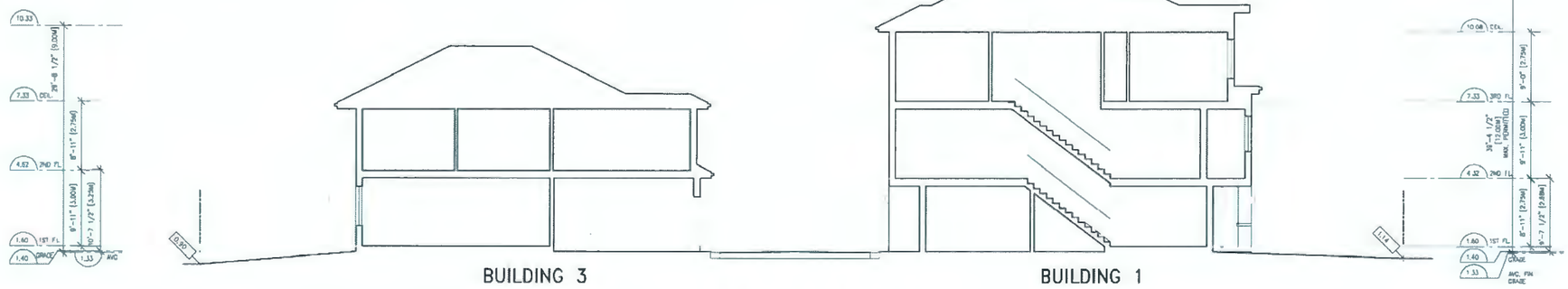


12:00 pm

4:00 pm

SECTIONS

SCALE: 1/8"=1'-0"



DP 19-858783 Plan 9

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TOWNHOUSE DEVELOPMENT

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Drawing Title:

SUN SHADING DIAGRAMES & SECTIONS

Date:

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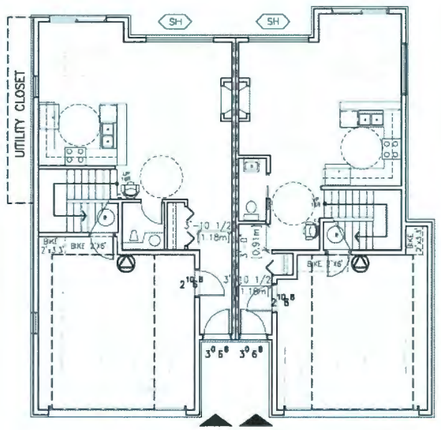
A8

GROUND FLOOR | SECOND FLOOR | AREA OVERLAY

HIGHLIGHTED AREAS ARE EXEMPTED FROM FSR CALCULATIONS.

SH WINDOW THAT CAN BE OPENED WITH A SINGLE HAND



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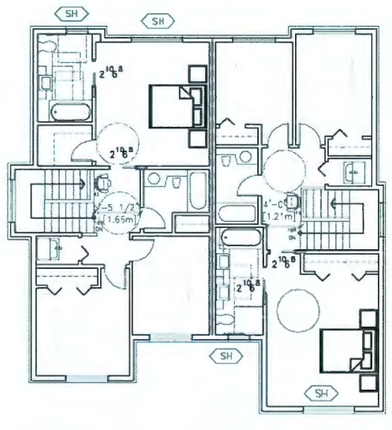
UNIT D

TOTAL FLOOR AREA:	1301.3 SF
LOT COVERAGE:	1034.2 SF
GROSS FLOOR AREA:	1793.0 SF
EXEMPTED FLOOR AREA:	491.7 SF



Ⓓ Ⓒ1

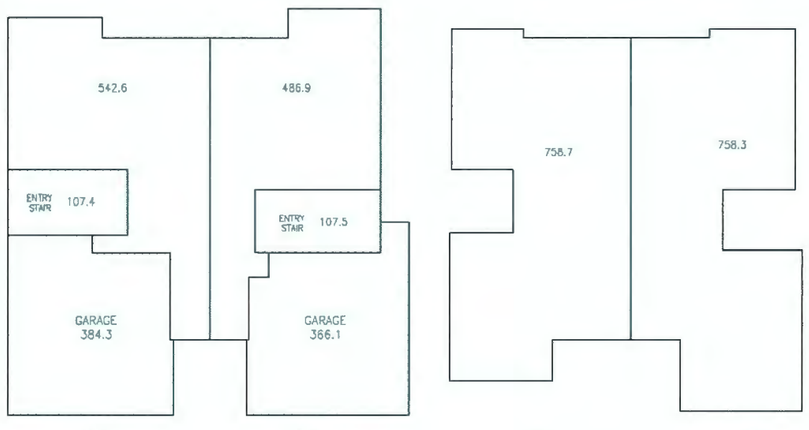
GROUND FLOOR

SCALE: 1/8"=1'-0" 542.6 SF

GARAGE 384.3 SF
STAIR ENTRY: 107.4 SF (EXCLUDED)

SECOND FLOOR

SCALE: 1/8"=1'-0" 758.7 SF



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UNIT C1

TOTAL FLOOR AREA:	1245.2 SF
LOT COVERAGE:	960.3 SF
GROSS FLOOR AREA:	1718.8 SF
EXEMPTED FLOOR AREA:	473.6 SF

Ⓓ Ⓒ1

GROUND FLOOR

SCALE: 1/8"=1'-0" 486.9 SF

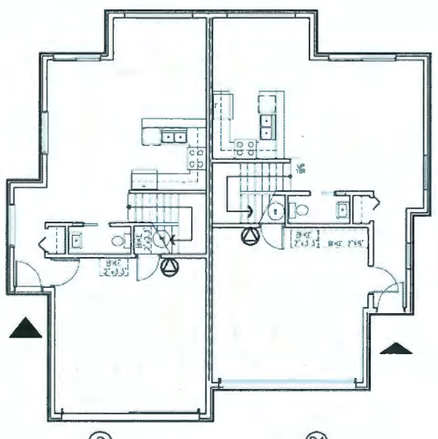
GARAGE 366.1 SF
STAIR ENTRY: 107.5 SF (EXCLUDED)

SECOND FLOOR

SCALE: 1/8"=1'-0" 758.3 SF

GROUND FLOOR | SECOND FLOOR | AREA OVERLAY

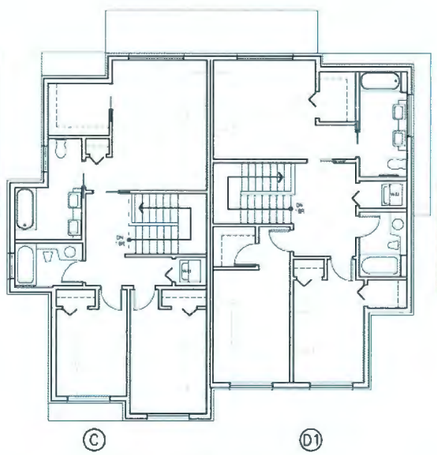
HIGHLIGHTED AREAS ARE EXEMPTED FROM FSR CALCULATIONS.



Ⓒ D1

UNIT C

TOTAL FLOOR AREA:	1230.6 SF
LOT COVERAGE:	928.9 SF
GROSS FLOOR AREA:	1692.5 SF
EXEMPTED FLOOR AREA:	461.9 SF



Ⓒ D1

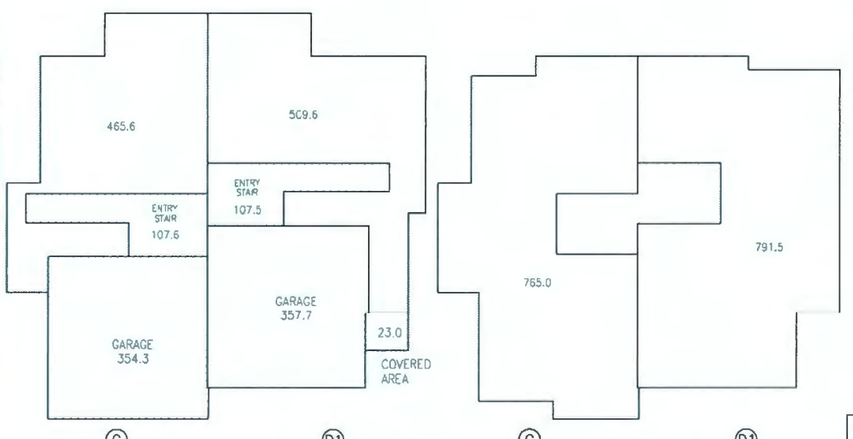
GROUND FLOOR

SCALE: 1/8"=1'-0" 465.6 SF

GARAGE 354.3 SF
STAIR ENTRY: 107.6 SF (EXCLUDED)

SECOND FLOOR

SCALE: 1/8"=1'-0" 765.0 SF



Ⓒ D1

UNIT D1

TOTAL FLOOR AREA:	1301.1 SF
LOT COVERAGE:	974.7 SF
GROSS FLOOR AREA:	1789.3 SF
EXEMPTED FLOOR AREA:	488.2 SF

Ⓒ D1

GROUND FLOOR

SCALE: 1/8"=1' 0" 509.6 SF

GARAGE 357.7 SF
STAIR ENTRY: 107.5 SF (EXCLUDED)
COVERED AREA: 23.0 SF (EXCLUDED)

SECOND FLOOR

SCALE: 1/8"=1'-0" 791.5 SF

CHECKLIST – CONVERTIBLE UNIT FEATURES

DOORS & DOORWAYS

ENTRY DOOR MIN. 863 MM BUT IDEALLY 914MM AND HAVE CLEAR ACCESS.
ENTRY DOOR CLEAR EXTERIOR FLOOR SPACE MIN. 1220 MM DEPTH BY DOOR WIDTH PLUS 600 MM ON LATCH SIDE (NOT NEEDED IF ROUGH IN WIRING PROVIDED FOR FUTURE AUTOMATIC DOOR OPENER)

INTERIOR DOORS TO MAIN LIVING AREAS, 1 BATHROOM AND 1 BEDROOM. MIN. 800 MM CLEAR OPENING WITH FLUSH THRESHOLDS MAX. 13MM HEIGHT. DEMONSTRATE W/CHAIR ACCESS BETWEEN THE HALLWAY AND ROOMS AND WIDEN HALLWAY AND/OR DOORWAY(S) IF NECESSARY TO SECURE ACCESS

PATIO/BALCONY MIN. 860MM CLEAR OPENING. NOTE HOW ACCESSED.
ALL INTERIOR THRESHOLDS WITHIN UNITS COMPLY BC BUILDING CODE.

LEVER-TYPE HANDLES FOR ALL DOORS.

VERTICAL CIRCULATION

VERTICAL LIFT, DEPRESSED SLAB AREA, AND LANDINGS, AS NOTED ON FLOOR PLANS IN COMPLIANCE WITH MANUFACTURER SPECIFICATIONS. FRAMING TO ACCOMMODATE SHAFT CONSTRUCTION WITHOUT IMPACT TO SOURROUNDING STRUCTURE.
AT THE TOP OF ALL STAIRWAYS, WALLS ARE REINFORCED WITH 2X12 SOLID LUMBER AT 914MM TO CENTRE.

HALLWAYS

MIN. 900 MM WIDTH

GARAGE

MIN. 1 ACCESSIBLE PARKING SPACE WITH MIN. 4 M GARAGE WIDTH
ACCESS FROM GARAGE TO LIVING AREA WITH MIN. 800 MM CLEAR DOOR OPENING (2'-8" SLIDING OR 2'-10" SWINGING DOOR SPEC.) AND FLUSH THRESHOLDS MAX. 13 MM HEIGHT

BATHROOMS (MBL 1)

TOILET CLEAR FLOOR SPACE MIN. 1020 MM AT SIDE AND IN FRONT.
WALL BLOCKING FOR FUTURE GRAB BAR INSTALLATIONAT TOILET, TUB AND SHOWER. REINFORCED WITH 2"x 2 SOLID LUMBER IN ALL BATHTUB, SHOWER, AND TOILE" LOCATIONS.
LEVER-TYPE HANDLES FOR PLUMBING FIXTURES.
PRESS-ARE AND TEMPERATURE CONTROL VALVES ARE INSTALLED ON ALL SHOWER FAUCETS
CABINETS UNDERNEATH SINK(S) ARE EASILY REMOVED.
DEMONSTRATE BATH AND SHOWER CONTROLS ARE ACCESSIBLE (LAYOUT OR FIXTURE PLACEMENT)
MIN. 800 MM CLEAR DOOR OPENING (2'-8" SLIDING OR 2'-10" SWINGING DOOR SPEC.)
WITH FLUSH THRESHOLDS MAX. 13 MM HEIGHT

KITCHEN

CLEAR AREA NEEDED UNDER FUTURE WORK SPACE, PLUMBING AND GAS PIPES (N-WALL AND IN-FLOOR) LOCATED CLEAR OF UNDER COUNTER AREA OF FUTURE WORK SPACE (STOVE, SINK & MIN. 810 MM WIDE COUNTER) - ALL PIPES ARE BROUGHT IN NO HIGHER THAN 304MM TO 356MM TO THE CENTRE OF THE PIPE FROM FLOOR LEVEL.
CABINETS UNDERNEATH SINK ARE EASILY REMOVED.
1500 MM TURNING DIAMETER OR TURNING PATH DIAGRAM
MIN. 800 MM CLEAR DOOR OPENING (2'-8" SLIDING OR 2'-10" SWINGING DOOR SPEC.)
WITH FLUSH THRESHOLDS MAX. 13 MM HEIGHT
LEVER-TYPE HANDLES FOR PLUMBING FIXTURES

WINDOWS

MIN. 1 WINDOW THAT CAN BE OPENED WITH A SINGLE HAND (BATHROOM, KITCHEN, LIVING ROOM)

OUTLETS & SWITCHES

PLACEMENT LOCATIONS OF ELECTRICAL OUTLETS BESIDE WINDOW, BOTTOM OF STAIRWAYS, BESIDE TOILET, ABOVE EXTERNAL DOORS (OUTSIDE AND INSIDE), ON FRONT FACE OF KITCHEN COUNTER, WITH PROXIMITY OF CONTROL CENTRE FOR SMART HOME OPTIONS.
UPGRADE TO FOUR-PLEX OUTLETS IN MASTER BEDROOM, HOME OFFICE, GARAGE, AND RECREATION ROOM.

BAY WINDOW NOTES:

BAY WINDOW SEAT MIN. 2' ABOVE FINISHED FLOOR IS STRUCTURALLY PROTRUDED FROM THE WALL.
NO FLOORING JOIST EXTENDS BEYOND THE WALL TO PREVENT A CONVERSION TO USABLE FLOOR SPACE.

SUSTAINABILITY FEATURES (TO BE PROVIDED IN ALL UNITS):

- DOUBLE GLAZED VINYL FRAMED WINDOW W/LOW E GLASS (TYP.);
- ENERGY STAR APPLIANCES AND LOW FLOW FIXTURES;
- LOW EMITTING SEALANTS, PAINTS, ADHESIVES, CARPETS & COMPOSITE WOOD

SH WINDOW THAT CAN BE OPENED WITH A SINGLE HAND

AGING IN PLACE FEATURES FOR ALL UNITS:
- SOLID BLOCKING IN WASHROOM WALLS FOR FUTURE GRAB BARS;
- LEVER-TYPE HANDLES FOR PLUMBING AND DOOR HANDLES

ZHAO XD ARCHITECT LTD.

#255–11181 Voyageur Way,
Richmond, BC V6X 3N9
Tel. (604) 275-8882
Fax (604) 909-1736

Email: info@zhaoarch.com
Web: zhaoarch.com

JAN 11/22	CITY FD COMMENTS
DEC 30/21	CITY FD COMMENTS
NOV 29/21	FOR ADP COMMENTS
MAR 31/20	FOR CITY COMMENTS
APR 1/19	DP APPLICATION
DEC19/18	FOR CITY COMMENTS
MAY31/18	REZONING APP
Date:	Issued For:

A DETAIL NUMBER
B LOCATION SHEET
C DETAIL SHEET

Project:

TOWNHOUSE DEVELOPMENT

8231–51 Williams Road
RICHMOND, BC

Drawing Title:

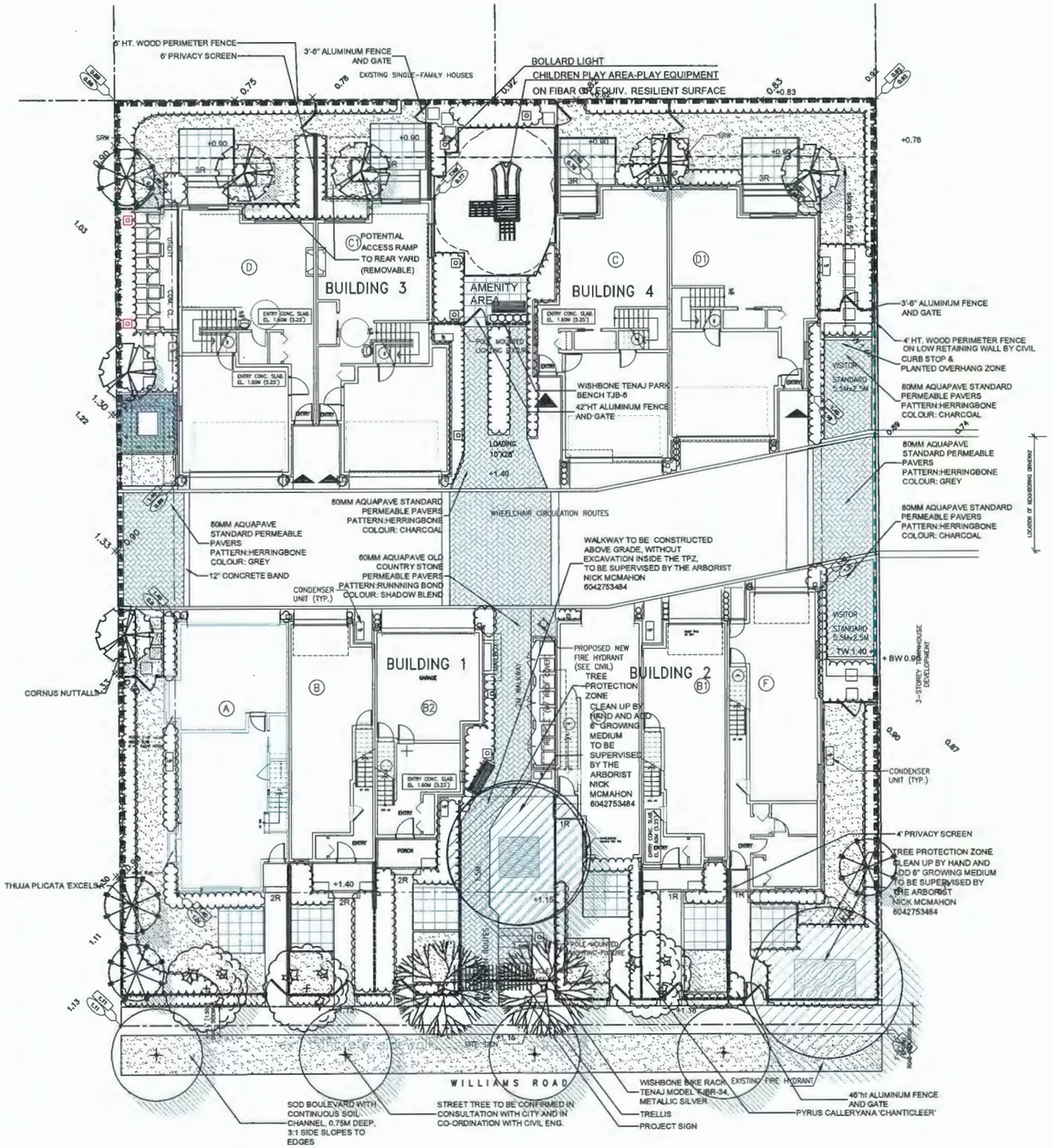
UNIT FLOOR PLANS

Date:
Scale:
Drawn By:
Checked By:
Project No:

Drawing No.:

A10

DP 19-858783 Plan 10



DP 19-858783 Plan 11

WISHBONE BIKE RACK

WISHBONE TENAJ PARK BENCH TJB-6

Cabana-mec650 by BigToys
BY RecTec Industries Ph.: 604-940-0087

PLANT SCHEDULE

PMG PROJECT NUMBER: 19-028

KEY	QTY	BOTANICAL NAME	COMMON NAME	PLANTED SIZE / REMARKS
TREE				
	4	STREET TREE		7CM CAL.; 1.8M STD; B&B

NOTES: * PLANT SIZES IN THIS LIST ARE SPECIFIED ACCORDING TO THE BC LANDSCAPE STANDARD AND CANADIAN LANDSCAPE STANDARD, LATEST EDITION. CONTAINER SIZES SPECIFIED AS PER CNLA STANDARD. BOTH PLANT SIZE AND CONTAINER SIZE ARE THE MINIMUM ACCEPTABLE SIZES. * REFER TO SPECIFICATIONS FOR DEFINED CONTAINER MEASUREMENTS AND OTHER PLANT MATERIAL REQUIREMENTS. * SEARCH AND REVIEW: MAKE PLANT MATERIAL AVAILABLE FOR OPTIONAL REVIEW BY LANDSCAPE ARCHITECT AT SOURCE OF SUPPLY. AREA OF SEARCH TO INCLUDE LOWER MAINLAND AND FRASER VALLEY. * SUBSTITUTIONS: OBTAIN WRITTEN APPROVAL FROM THE LANDSCAPE ARCHITECT PRIOR TO MAKING ANY SUBSTITUTIONS TO THE SPECIFIED MATERIAL. UNAPPROVED SUBSTITUTIONS WILL BE REJECTED. ALLOW A MINIMUM OF FIVE DAYS PRIOR TO DELIVERY FOR REQUEST TO SUBSTITUTE. SUBSTITUTIONS ARE SUBJECT TO BC LANDSCAPE STANDARD AND CANADIAN LANDSCAPE STANDARD - DEFINITION OF CONDITIONS OF AVAILABILITY. * ALL LANDSCAPE MATERIAL AND WORKMANSHIP MUST MEET OR EXCEED BC LANDSCAPE STANDARD AND CANADIAN LANDSCAPE STANDARD LATEST EDITION. * ALL PLANT MATERIAL MUST BE PROVIDED FROM CERTIFIED DISEASE FREE NURSERY. * BIO-SOLIDS NOT PERMITTED IN GROWING MEDIUM UNLESS AUTHORIZED BY LANDSCAPE ARCHITECT.

PLANT SCHEDULE

PMG PROJECT NUMBER: 19-028

KEY	QTY	BOTANICAL NAME	COMMON NAME	PLANTED SIZE / REMARKS
TREE				
	2	CERCIDIPHYLLUM JAPONICUM	KATSURA TREE	9CM CAL.; 1.8M STD; B&B
	6	MAGNOLIA KOBUS STELLATA	STAR MAGNOLIA (WHITE)	6CM CAL.; 1.5M STD; B&B
	3	PYRUS CALLERYANA 'CHANTICLEER'	CHANTICLEER PEAR	6CM CAL.; 1.5M STD; B&B
	4	THUJA PLICATA 'EXCELSA'	WESTERN RED CEDAR	3M HT; B&B

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NOTE:
- All soft landscape areas to be irrigated with automatically installation to I.I.A.B.C. Standards, latest edition.

19028-6.ZIP

pmg LANDSCAPE ARCHITECTS
Suite C100 - 4185 Still Creek Drive
Burnaby, British Columbia, V5C 6G9
p: 604 294-0011 ; f: 604 294-0022

SEAL:

NO.	DATE	REVISION DESCRIPTION	DR.
7	22.JAN.10	REVISION AS PER CITY COMMENTS	DD
6	21.DEC.01	NEW SITE PLAN&CITY COMMENTS	DD
5	21.MAR.15	NEW SITE PLAN	DD
4	21.JAN.08	NEW SITE PLAN & CITY COMMENTS	DD
3	20.MAR.06	NEW SITE PLAN	RJ
2	20.JAN.21	NEW SITE PLAN/CITY COMMENTS	RJ
1	19.MAR.07	ISSUED FOR DP	RJ

CLIENT:

PROJECT:

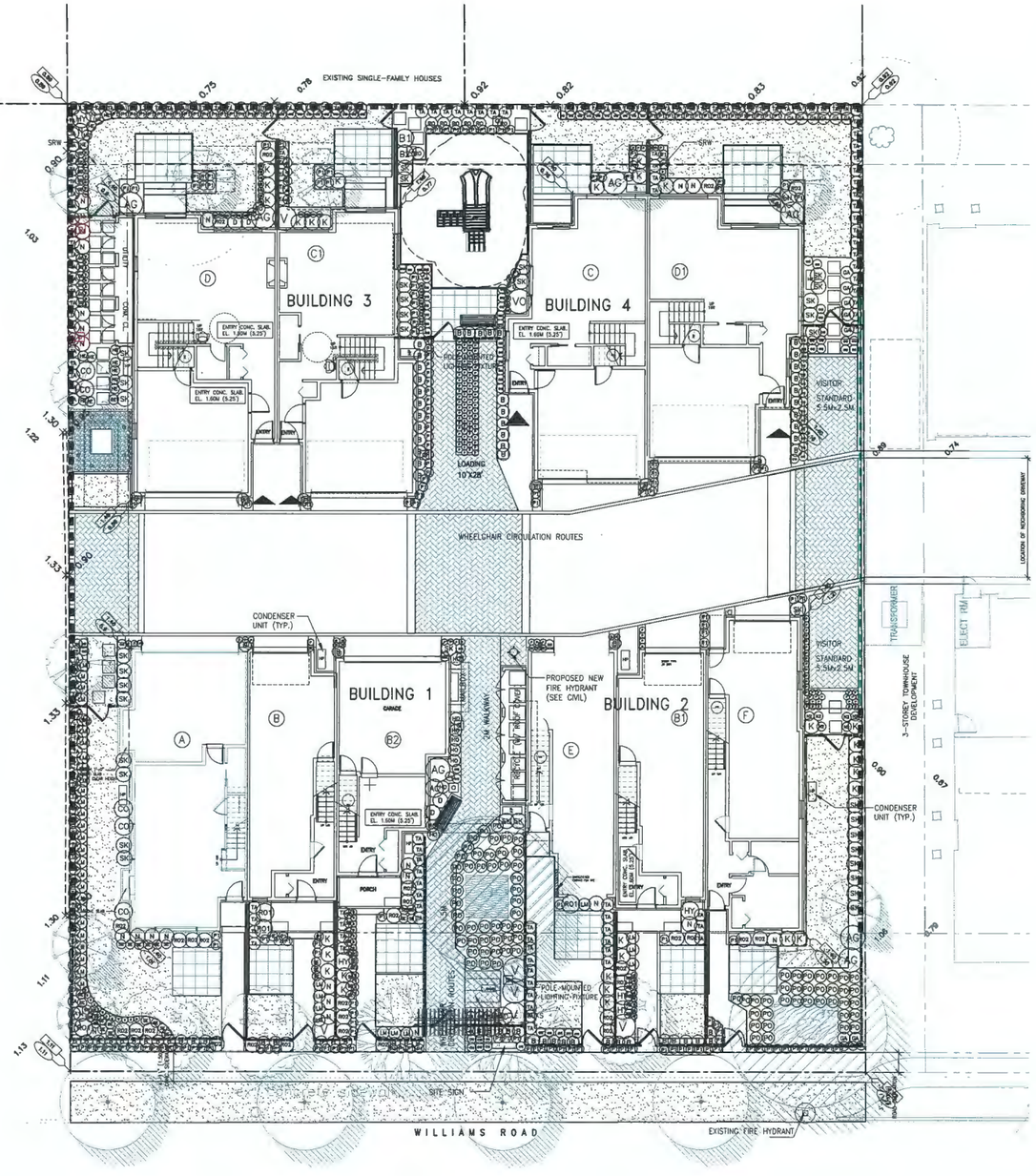
10 UNIT TOWNHOUSE DEVELOPMENT
8231 – 8251 WILLIAMS ROAD
RICHMOND

DRAWING TITLE:

LANDSCAPE PLAN

DATE:	19.FEB.26	DRAWING NUMBER:
SCALE:	3/32"=1'-0"	**3.a**
DRAWN:	RJ	
DESIGN:	RJ	
CHK'D:	PCM	OF 5

PMG PROJECT NUMBER: **19-028**



PLANT SCHEDULE

PMG PROJECT NUMBER: 19-028

KEY	QTY	BOTANICAL NAME	COMMON NAME	PLANTED SIZE / REMARKS
SHRUB				
AG	7	AUCUBA JAPONICA 'GOLDSTRIKE'	MALE JAPANESE AUCUBA	#3 POT; 50CM
BX	81	BUXUS MICROPHYLLA 'WINTER GEM'	LITTLE-LEAF BOX	#3 POT; 40CM
CO	5	CORNUS ALBA 'SIBIRICA'	SIBERIAN DOGWOOD	#2 POT; 50CM
HY	5	HYDRANGEA MACROPHYLLA 'SISTER THERESA'	BIGLEAF HYDRANGEA; WHITE	#2 POT; 50CM
K	29	KALMIA LATIFOLIA 'ELF'	DWARF MOUNTAIN LAUREL	#3 POT; 50CM
N	6	NANDINA DOMESTICA 'FIREPOWER'	FIREPOWER HEAVENLY BAMBOO	#2 POT; 40CM
N	28	NANDINA DOMESTICA 'MOONBAY'	DWARF HEAVENLY BAMBOO	#3 POT; 50CM
RO	4	ROSA MEIDILAND 'BONICA'	BONICA ROSE	#2 POT; 40CM
RO	29	ROSA MEIDILAND 'RED'	MEIDILAND ROSE; RED	#2 POT; 40CM
SK	39	SKIMMIA JAPONICA (90% MALE)	JAPANESE SKIMMIA	#2 POT; 30CM
TA	175	TAXUS X MEDIA 'HILLII'	HILLII YEW	1.2M B&B
VO	1	VACCINIUM 'POLARIS'	POLARIS BLUEBERRY	#3 POT; 60CM
VO	1	VACCINIUM 'SUNSHINE BLUE'	BLUEBERRY	#2 POT; 50CM
VO	1	VACCINIUM OVATUM 'THUNDERBIRD'	EVERGREEN HUCKLEBERRY	#3 POT; 60CM
V	6	VIBURNUM DAVIDII	DAVID'S VIBURNUM	#3 POT; 50CM
GRASS				
HM	104	CAREX OSHIMENSIS 'EVERGOLD'	EVERGOLD JAPANESE SEDGE	#1 POT
PO	203	PENNISETUM ALOPECUROIDES 'LITTLE BUNNY'	FOUNTAIN GRASS	#1 POT
VINE				
AC	2	ACTINIDIA ARGUTA 'ISSAI'	HARDY KIWI-FRUIT VINE	#2 POT; 60CM; STAKED
PERENNIAL				
HE	28	HELLEBORUS x HYBRIDUS	LENTEN ROSE	15CM POT
HO	11	HOSTA 'PATRIOT'	HOSTA; GREEN AND WHITE VARIEGATED	#1 POT; 1 EYE
LA	38	LAVENDULA ANGUSTIFOLIA 'MUNSTEAD'	ENGLISH LAVENDER; COMPACT; VIOLET-BLUE	#1 POT
RO	7	ROSMARINUS OFFICINALIS 'ARP'	ROSEMARY	#1 POT
RU	5	RUDBECKIA FULGIDA VAR SULLIVANTII 'GOLDSTURM'	RUDBECKIA; YELLOW	15CM POT
SE	50	SEDUM 'AUTUMN JOY'	STONECROP	#1 POT
S	48	STACHYS BYZNATINA 'SILVER CARPET'	LAMB'S EAR	15CM POT
GC				
BE	16	BLECHNUM SPICANT	DEERFERN	#2 POT; 35CM
DR	4	DRYOPTERIS ERYTHROSORA 'BRILLIANCE'	BRILLIANCE AUTUMN FERN	#2 POT; 45CM
GA	13	GAULTHERIA SHALLON	SALAL	#1 POT; 20CM
P	156	PACHYSANDRA TERMINALIS	JAPANESE SPURGE	#1 POT; 15CM
PO	81	POLYSTICHUM SETIFERUM	ALASKAN FERN	#1 POT; 25CM

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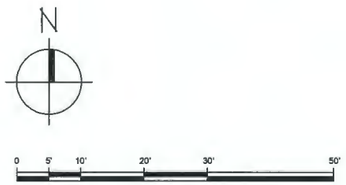

DP 19-858783 Plan 12

pmg LANDSCAPE ARCHITECTS
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Burnaby, British Columbia, V5C 6G9
p: 604 294-0011 ; f: 604 294-0022

SEAL:

NO.	DATE	REVISION DESCRIPTION	DR.
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6	21.DEC.01	NEW SITE PLAN/CITY COMMENTS	DD
5	21.MAR.15	NEW SITE PLAN	DD
4	21.JAN.08	NEW SITE PLAN & CITY COMMENTS	DD
3	20.MAR.05	NEW SITE PLAN	RJ
2	20.JAN.21	NEW SITE PLAN/CITY COMMENTS	RJ
1	19.MAR.07	ISSUED FOR DP	RJ

CLIENT:

PROJECT:

10 UNIT TOWNHOUSE DEVELOPMENT
8231 – 8251 WILLIAMS ROAD
RICHMOND

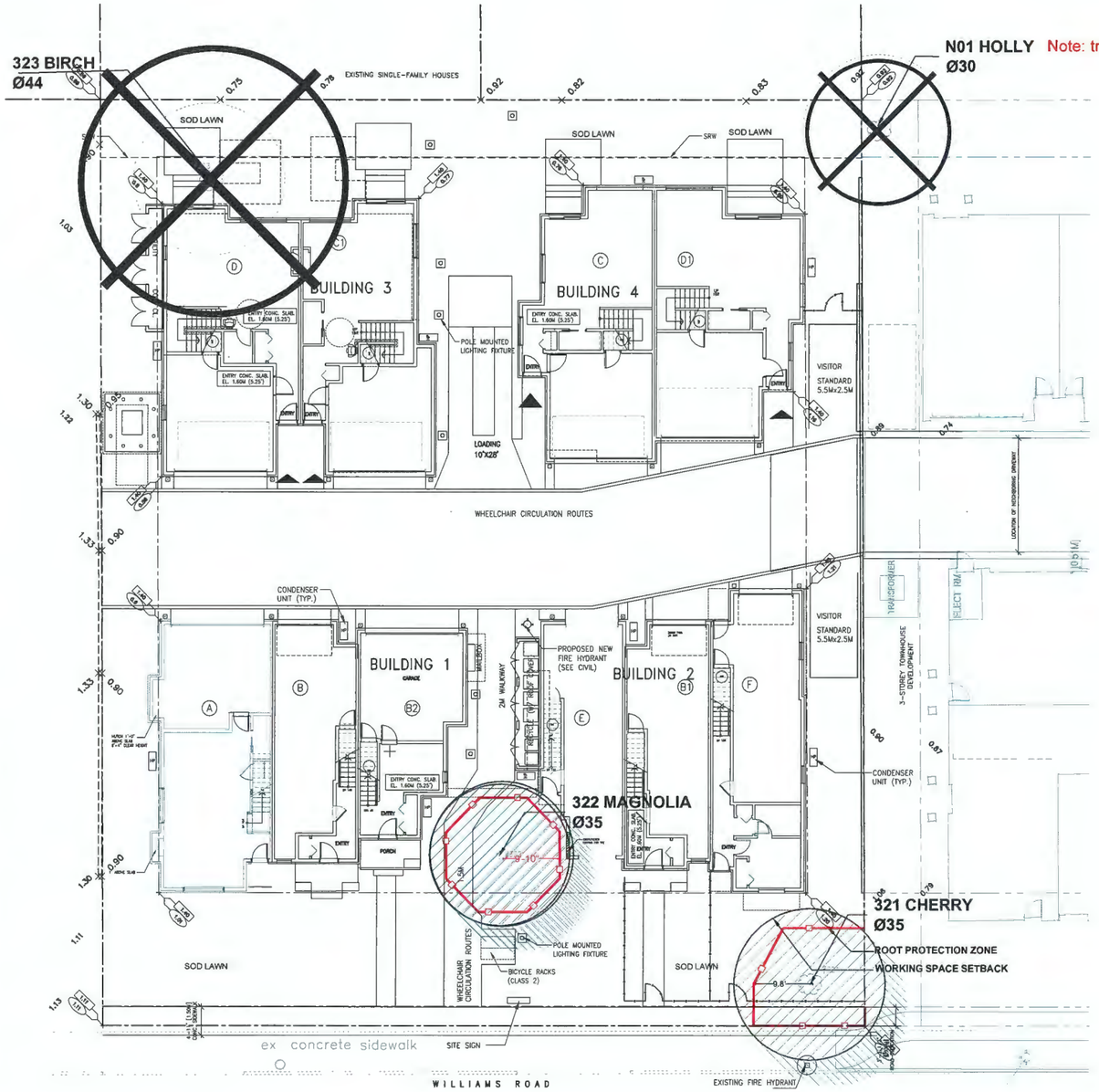
DRAWING TITLE:

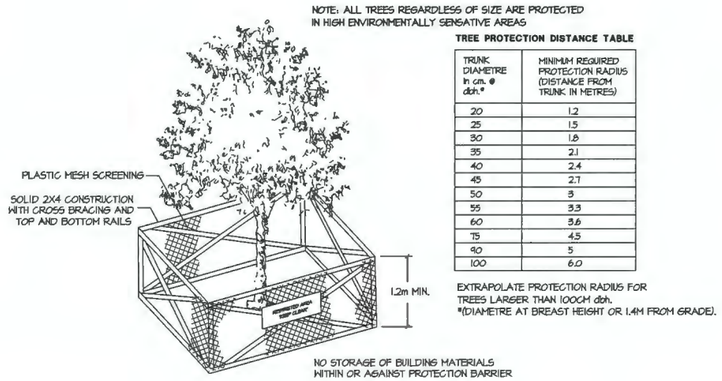
LANDSCAPE SHRUB PLAN

DATE:	19.FEB.26	DRAWING NUMBER:
SCALE:	3/32"=1'-0"	**3.b**
DRAWN:	RJ	
DESIGN:	RJ	
CHK'D:	PCM	OF 5

19028-6.ZIP

PMG PROJECT NUMBER: **19-028**





TREE PROTECTION DISTANCE TABLE

TRUNK DIAMETRE in cm. @ dbh.*	MINIMUM REQUIRED PROTECTION RADIUS (DISTANCE FROM TRUNK IN METRES)
20	1.2
25	1.5
30	1.8
35	2.1
40	2.4
45	2.7
50	3
55	3.3
60	3.6
75	4.5
90	5
100	6.0

EXTRAPOLATE PROTECTION RADIUS FOR TREES LARGER THAN 100CM dbh.
*(DIAMETRE AT BREAST HEIGHT OR 1.4M FROM GRADE).

1 **TREE PROTECTION BARRIER**

NO. OF REPLACEMENT TREES	SUITABLE REPLACEMENT TREES	
	SPECIES	
	BOTANICAL NAME	SIZE
2	CERCIDIPHYLLUM JAPONICUM	9CM CAL; 1.8M STD; B&B

TREE TO BE RETAINED

TREE TO BE REMOVED

N

0 5' 10' 20' 30' 50'

DP 19-858783 Plan 13

pmg LANDSCAPE ARCHITECTS
Suite C100 - 4185 Still Creek Drive
Burnaby, British Columbia, V5C 6G9
p: 604 294-0011 ; f: 604 294-0022

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3	20.MAR.06	NEW SITE PLAN	RJ
2	20.JAN.21	NEW SITE PLAN/CITY COMMENTS	RJ
1	19.MAR.07	ISSUED FOR DP	RJ

CLIENT:

PROJECT:

10 UNIT TOWNHOUSE DEVELOPMENT
8231 – 8251 WILLIAMS ROAD
RICHMOND

DRAWING TITLE:

TREE MANAGEMENT PLAN

DATE: 19.FEB.26
SCALE: 3/32"=1'-0"
DRAWN: RJ
DESIGN: RJ
CHK'D: PCM

DRAWING NUMBER: **3.c**
OF 5

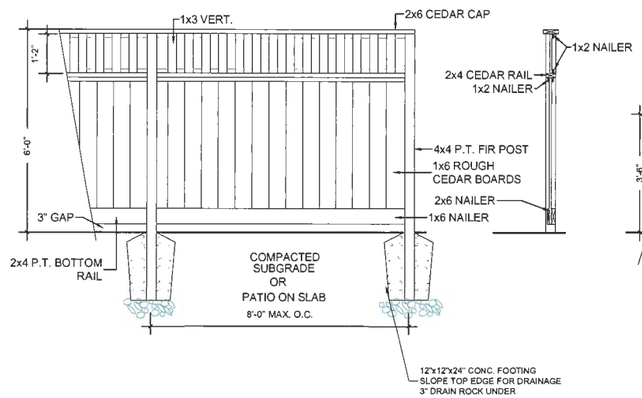
19028-6.ZIP

PMG PROJECT NUMBER: **19-028**

DP 19-858783 Plan 14

NOTES:

1. ALL POSTS PRESSURE TREATED TO CSA STANDARD AND END CUTS TREATED WITH PRESERVITIVE.
2. ALL OTHER MEMBERS TO BE CEDAR. #2 (CONSTRUCTION) GRADE MINIMUM.
3. ALL HARDWARE HOT DIPPED GALVANIZED.
4. APPLY 2 COATS EXTERIOR STAIN TO MANUFACTURERS SPECIFICATION. FINISH SELECTION AS APPROVED BY PROJECT ARCHITECT.
5. ALL FENCES TO BE LEVEL. CHANGES IN GRADE TO BE IN 12"-18" STEPS (MAX.). GAPS TO GRADE TO FOLLOW FINISH GRADE. GAP TO BE 3-6".

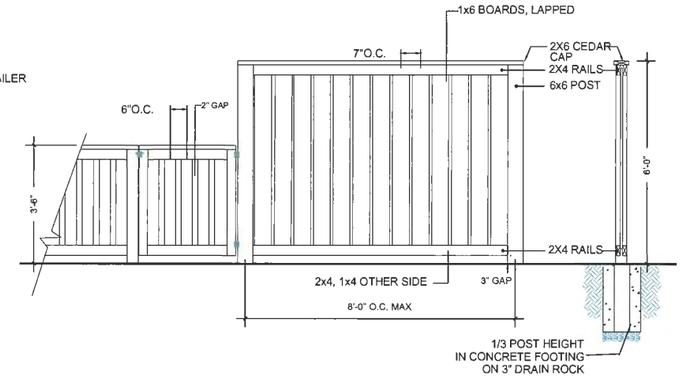


1 L-1 6'-0" HEIGHT WOOD FENCE WITH LATTICE

1/2" = 1'-0"

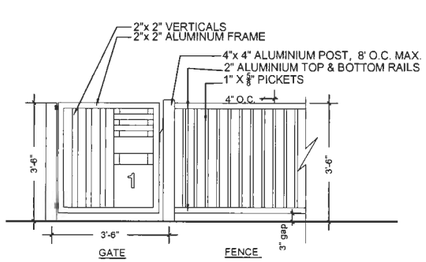
NOTES:

1. ALL WOOD P.T. HEM/FIR
2. ALL FASTENERS HOTDIPPED GALVANIZED
3. STAIN ALL EXPOSED SURFACES WITH TWO COATS PREMIUM WEATHERPROOFING STAIN, COLOUR TO MATCH ARCH.; PROVIDE SAMPLE TO OWNER FOR PREAPPROVAL PRIOR TO APPLICATION
4. STEP FENCE IN EQUAL SEGMENTS TO FOLLOW GRADE AT PROPERTY LINE.



2 L1 6' HT PATIO SCREEN AND 42"HT WOOD FENCE WITH GATE

1/2"= 1'-0"

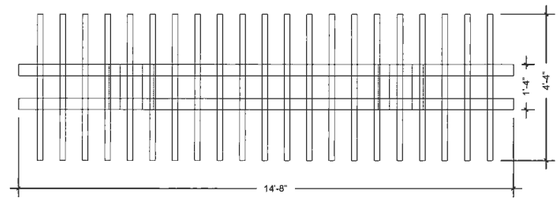


GEOGRID PLACEMENT TO FOLLOW THE LAYOUT AS INDICATED ON THE CIVIL PLANS AS REQUIRED TO PROTECT THE ROOTS OF THE RETAINED TREES.

MICHAEL J MILLS CONSULTING

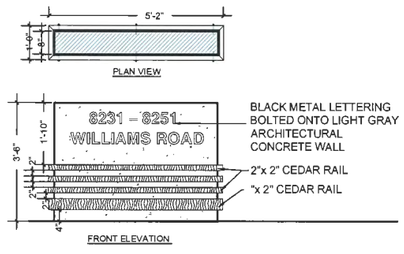
NOTE:
1. IN THE EVENT ROOTS ARE EXPOSED, CONTACT PROJECT ARBORIST FOR ASSISTANCE PRIOR TO PROCEEDING, NICK MCMAHON 6042753464.
2. PAVERS TO BE INSTALLED TO MANUFACTURERS SPECIFICATIONS

6 3/4"= 1'-0" PAVERS THROUGH ROOT ZONE



NOTES:

1. METAL MATERIAL: ALUMINUM TO BE POWDER COATED BLACK, TWO COATS.
2. ALL HARDWARE TO BE HOT DIPPED GALVANIZED, MEDIUM GAUGE.
3. GATE HARDWARD TO BE CHOSEN BY OWNER. INSTALL PER MANUFACURER'S INSTRUCTIONS.
4. ALUMINUM FENCE TO BE POWDER COATED SEM-GLOSS BLACK



3 L1 42"HT ALUMINUM FENCE WITH GATE

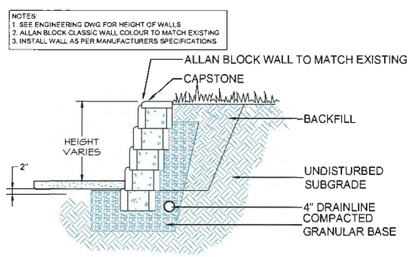
NOTES: ALL TO BE FINISHED IN BLACK- PROVIDE SHOP DWTS

1/2"=1'-0"

4 PROJECT SIGNAGE

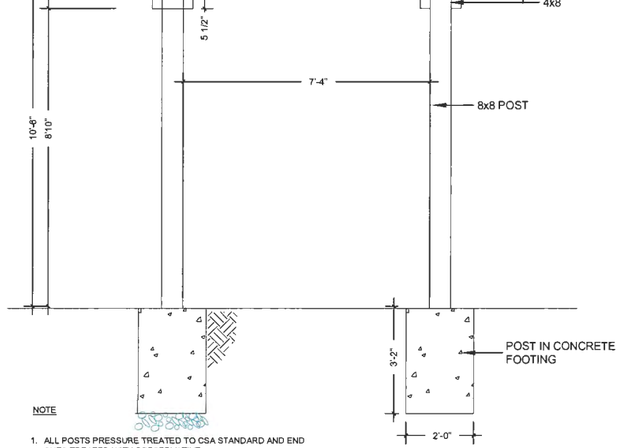
1/2"=1'-0"

NOTES:
1. SEE ENGINEERING DWG FOR HEIGHT OF WALLS
2. ALLAN BLOCK CLASSIC WALL COLOUR TO MATCH EXISTING
3. INSTALL WALL AS PER MANUFACTURERS SPECIFICATIONS



5 ALLAN BLOCK WALL

1/2"=1'-0"

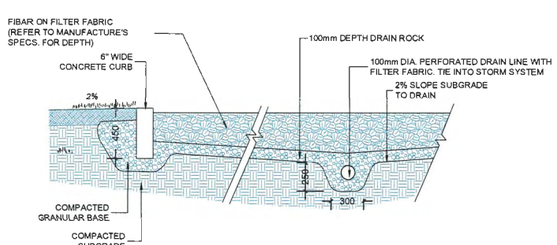


NOTE

1. ALL POSTS PRESSURE TREATED TO CSA STANDARD AND END CUTS TREATED WITH PRESERVATIVE.
2. ALL OTHER MEMBERS TO BE CEDAR. #2 (CONSTRUCTION) GRADE MINIMUM.
3. ALL HARDWARE HOT DOUBLE DIPPED GALVANIZED.
4. APPLY 2 COATS APPLY 2 COATS OF BENJAMIN MOORE GRAPHITE 1603.

7 TRELLIS

1/2"=1'-0"



8 L1 PLAY AREA

1/2"=1'-0"

pmg LANDSCAPE ARCHITECTS
Suite C100 - 4185 Still Creek Drive
Burnaby, British Columbia, V5C 6G9
p: 604 294-0011 ; f: 604 294-0022

SEAL:

NO.	DATE	REVISION DESCRIPTION	DR.
7	22.JAN.10	REVISION AS PER CITY COMMENTS	DD
6	21.DEC.01	NEW SITE PLAN & CITY COMMENTS	DD
5	21.MAR.15	NEW SITE PLAN	DD
4	21.JAN.08	NEW SITE PLAN & CITY COMMENTS	DD
3	20.MAR.06	NEW SITE PLAN	RJ
2	20.JAN.21	NEW SITE PLAN/CITY COMMENTS	RJ
1	19.MAR.07	ISSUED FOR DP	RJ

CLIENT:

PROJECT:

10 UNIT TOWNHOUSE DEVELOPMENT
8231 – 8251 WILLIAMS ROAD
RICHMOND

DRAWING TITLE:

LANDSCAPE DETAILS

DATE:	19.FEB.26	DRAWING NUMBER:
SCALE:	3/32"=1'-0"	**3.d**
DRAWN:	RJ	
DESIGN:	RJ	
CHK'D:	PCM	**OF 5**

19028-6.ZIP

PMG PROJECT NUMBER: **19-028**

DP 19-858783 Plan 15

PART ONE GENERAL REQUIREMENTS

1.1 REFERENCES

.1 CCDC Doc 2 2008
Comply with all articles in the General Conditions of Contract in conjunction with this section unless superseded by other Contract Documents

.2 Canadian Landscape Standard, latest edition, prepared by the Canadian Society of Landscape Architects and the Canadian Landscape & Nursery Association, jointly. All work and materials shall meet standards as set out in the Canadian Landscape Standard unless superseded by this specification or as directed by Landscape Architect with written instruction.

.3 MASTER MUNICIPAL SPECIFICATIONS & STANDARD DETAILS, 2000 edition, prepared by the Consulting Engineers of British Columbia, Roadbuilders and Heavy Construction Association, and the Municipal Engineers Division

.4 STANDARD FOR LANDSCAPE IRRIGATION SYSTEM, 2008: Prepared by the Irrigation Industry Association of British Columbia

.5 MUNICIPAL BYLAWS AND ENGINEERING SPECIFICATIONS WHERE NOTED

1.2 TESTING

.1 A current (not more than one month) test for all growing medium to be used on this site is required. Provide and pay for testing by an independent testing facility pre-approved by the Landscape Architect. Deliver growing medium test results to Landscape Architect for review and approval prior to placement. Refer to Section 3.4 Growing Medium Testing for procedure.

.2 Owner reserves the right to test or re-test materials. Contractor responsible to pay for testing if materials do not meet specification.

1.3 SUBMITTALS

.1 Any alternate products differing from that contained in the contract documents must be pre-approved by the Landscape Architect.

.2 Submittals to consist of product sample or manufacturer's produtl description.

1.4 SITE REVIEW

.1 Under the terms of the Landscape Architect's Contract with the Owner and where the Landscape Architect is the designated reviewer, the Landscape Architect will observe construction as is necessary in their opinion to confirm conformance to the plans and specifications. Contact Owners Representative to arrange for site observation at the appropriate times. Allow two days notice. Observation schedule may include but will not be limited to the following.
.1.1 Start Up Site Meeting, General Contract: Prior to any site disturbance, a meeting with the general contractor to review tree preservation issues, general landscape issues and municipal requirements.
.1.2 Start Up Site Meeting, Landscape Contract (if separate). At the start of work with Owner's Representative, Site Superintendent and Landscape Contractor, a meeting is to be held to review expected work and to verify the acceptability of the subgrade and general site conditions to the Landscape Contractor. Provide growing medium test results for this meeting.
.1.3 Progress Site Visits: To observe materials and workmanship as necessary through the course of the work. Review of different aspects of the work may be dealt with on any single visit. Such elements may include: Site Layout, Rough Grading, Growing Medium - quality, depths, finish grading; Drainage and Drainage Materials; Lawns or Grass areas; Planting - plant material including negotiations with suppliers, nursery inspections, plant sizes, quality, quantity, planting practice and layout, tree support; Mulch; Irrigation Systems, Play Equipment, Site Furniture, and other elements of the site development where the Landscape Architect is the designated reviewer such as: Pedestrian Paving, Fencing, Non-structural walls and slabs, Unit Paving.
.1.4 Substantial Performance: Review of all work, accounting of all substitutions, deletions; plant counts, preparations of deficiency list, and recommendations for completion.
.1.5 Certificate of Completion: Upon the declaration of Substantial Performance, a recommendation for the issuance of the Certificate of Completion will be made to the Payment Certifier as defined in the contract.
.1.6 Deficiency Review: Prior to the completion of the holdback period, check for completion of deficiencies. Once completed, a Schedule 'C' will be issed where required.
.1.7 Warranty Review: Prior to the completion of the waranty period (+/- 11 months after issuance of the Certificate of Completion), review all waranty material and report recommendations for waranty replacement

1.5 WORKMANSHIP

.1 Unless otherwise instructed in the Contract Documents, the preparation of the subgrade shall be the responsibility of the General Contractor. Placement of growing medium constitutes acceptance of the subgrade by the Landscape Contractor. Any subsequent corrections to the subgrade required are the responsibility of the Landscape Contractor

.2 All work and superintendence shall be performed by personnel skilled in landscape contracting. In addition, all personnel applying herbicides and/or pesticides shall hold a current license issued by the appropriate authorities.

.3 A site visit is required to become familiar with site conditions before bidding and before start of work

.4 Confirm location of all services before proceeding with any work.

.5 Notify Landscape Architect of any discrepancies. Obtain approval from Landscape Architect prior to deviating from the plans

.6 Take appropriate measures to avoid environmental damage. Do not dump any waste materials into water bodies. Conform with all federal, provincial and local statutes and guidelines.

.7 Collect and dispose of all debris and/or excess material from landscape operations. Keep paved surfaces clean and repair damage resulting from landscape work. Repairs are to be completed prior to final acceptance.

.8 Where new work connects with existing, and where existing work is altered, make good to match existing undisturbed condition

1.6 WARRANTIES

.1 Guarantee all materials and workmanship for a minimum period of one full year from the date of Certificate of Completion

.2 Refer to individual sections for specific warranties.

PART TWO SCOPE OF WORK

2.1 SCOPE OF WORK

.1 Other conditions of Contract may apply. Confirm Scope of Work at time of tender

.2 Work includes supply of all related items and performing all operations necessary to complete the work in accordance with the drawings and specifications and generally consists of the following:

2.1 Retention of Existing Trees where shown on drawings.
2.2 Finish Grading and Landscape Drainage
2.3 Supply and placement of growing medium.
2.4 Testing of imported growing medium and/or site topsoil,
2.5 Supply and incorporation of additives to meet requirements of soil test and Table One.
2.6 Preparation of planting beds, supply of plant material and planting.
2.7 Preparation of rough grass areas, supply of materials and seeding.
2.8 Preparation of lawn areas, supply of materials and sodding.
2.9 Supply and placement of bark mulch.
2.10 Maintenance of planted and seeded/sodded areas until accepted by Owner
2.11 SEPARATE PRICE: Establishment Maintenance, Section 3.11
2.12 Other work: Work other than this list, not specified by Landscape Architect.

2.2 MATERIALS

.1 Growing Medium: Conform to Canadian Landscape Standard for definitions of imported and on-site topsoil. Refer to Table One below.

TABLE ONE: PROPERTIES OF GROWING MEDIUM FOR LEVEL 2 GROOMED AND LEVEL 3 MODERATE AREAS
Canadian System of Soil Classification Textural Class: "Loamy Sand" to "Sandy Loam".

Applications	Low Traffic Areas. Trees and Large Shrubs	High Traffic Lawn Areas	Planting Areas and Planters
Growing Medium Types	2L	2H	2P
Texture	Percent Of Dry Weight of Total Growing Medium		
Coarse Gravel: larger than 25mm	0 - 1%	0 - 1%	0 - 1%
All Gravel: larger than 2mm	0 - 5%	0 - 5%	0 - 5%
	Percent Of Dry Weight of Growing Medium Excluding Gravel		
Sand: larger than 0.05mm smaller than 2.0mm	50 - 80%	70 - 90%	40 - 80%
Silt: larger than 0.002mm smaller than 0.05mm	10 - 25%	0 - 15%	10 - 25%
Clay: smaller than 0.002mm	0 - 25%	0 - 15%	0 - 25%
Clay and Silt Combined	maximum 35%	maximum 15%	maximum 35%
Organic Content (coast):	3 - 10%	3 - 5%	10 - 20%
Organic Content (interior):	3 - 5%	3 - 5%	15 - 20%
Acidity (pH):	6.0 - 7.0	6.0 - 7.0	4.5 - 6.5
Drainage	Percolation shall be such that no standing water is visible 60 minutes after at least 10 minutes of moderate to heavy rain or irrigation.		

.2 Fertilizer: An organic and/or inorganic compound containing Nitrogen (N), Phosphate (2S), and Potash (soluble 2) in proportions required by soil test.

.3 Lime: Ground agricultural limestone. Meet requirements of the Canadian Landscape Standard.

.4 Organic Additive: Commercial compost product to the requirements of the Canadian Landscape Standard, latest edition and pre-approved by the Landscape Architect. Recommended suppliers: The Answer Garden Products, Fraser Richmond Soils & Fibre, Stream Organics Management.

.5 Sand: Clean, washed pump sand to meet requirements of the Canadian Landscape Standard

.6 Composted Bark Mulch: 10mm (3/8") minus Fir/Hemlock bark chips and fines, free of chunks and sticks, dark brown in colour and free of all soil, stones, roots or other extraneous matter. Fresh orange in colour bark will be rejected

.7 Herbicides and Pesticides: If used, must conform to all federal, provincial and local statutes. Appliers must hold current licenses issued by the appropriate authorities in the area.

.8 Filter Fabric: A non biodegradable blanket or other filtering membrane that will allow the passage of water but not fine soil particles. (Such as MIRAFI 140 NL, GEOLON N40 OR AMOCO 4545 or alternate product pre-approved by the Landscape Architect.)

.9 Drainage Piping if required: Schedule 40 PVC nominal sizes.

.10 Drain Rock: Clean, round, inert, durable, and have a maximum size of 19mm and containing no material smaller than 10mm

.11 Plant Material: To the requirements of the Canadian Landscape Standard. Refer to 3.9, Plants and Planting. All plant material must be provided from a certified disease free nursery. Provide proof of certification.

.12 Sod: Refer to individual sections in this specification.

.13 Supplier and installers of segmental block walls to provide engineered drawings for all walls: signed and sealed drawings for all walls, individually, in excess of 1.2m, or combinations of walls collectively in excess of 1.2m. Installations must be reviewed and signed off by Certified Professional Engineer; inlcude cost of engineering services in Tender price.

.14 Miscellaneous: Any other material necessary to complete the project as shown on the drawings and described herein.

PART THREE SOFT LANDSCAPE DEVELOPMENT

3.1 RETENTION OF EXISTING TREES

.1 Prior to any work on site - protect individual trees or plant groupings indicated as retained on landscape plans as vegetation retention areas.
.1.1 In some instances the Landscape Architect will tag trees or areas to remain. Discuss tree retention areas at a start-up meeting with the Landscape Architect.

.2 A physical barrier must be installed to delineate clearing boundaries. Refer to physical barrier detail. If detail not provided, comply with local municipal requirements

.3 No machine travel through or within vegetation retention areas or under crowns of trees to be retained is allowed

.4 Do not stockpile soil, construction materials, or excavated materials within vegetation retention areas

.5 Do not park, fuel or service vehicles within vegetation retention areas

.6 No debris fires, clearing fires or trash burning shall be permitted within vegetation retention areas

.7 No excavations, drain or service trenches nor any other disruption shall be permitted within vegetation retention areas without a review of the proposed encroachment by the Landscape Architect.

.8 Do not cut branches or roots of retained trees without the approval of the Landscape Architect.

.9 Any damage to existing vegetation intended for preservation will be subject to evaluation by an I.S.A. Certified Arborist using the "Guide for Plant Appraisal", Eighth Edition, 1992.
.9.1 Replacement planting of equivalent value to the disturbance will be required. The cost of the evaluation and of the replacement planting will be the responsibility of the General Contractor and or the person(s) responsible for the disturbance.

.10 In municipalities with specific tree retention/replacement bylaws ensure compliance to bylaws

.11 In situations where required construction may disturb existing vegetation intended for preservation, contact Landscape Architect for review prior to commencing construction.

3.2 GRADES

.1 Ensure subgrade is prepared to conform to depths specified in Section 3.5, Growing Medium Supply, below. Where planting is indicated close to existing trees, prepare suitable planting pockets for material indicated on the planting plan. Shape subgrade to eliminate free standing water and conform to the site grading and drainage plan.

.2 On slopes in excess of 3:1 trench subgrade across slope to 150mm (6") minimum at 1.5m (5 ft.) intervals minimum.

.3 Scarify the entire subgrade immediately prior to placing growing medium. Re-cultivate where vehicular traffic results in compaction during the construction procedures. Ensure that all planting areas are smoothly contoured after light compaction to finished grades.

.4 Eliminate standing water from all finished grades. Provide a smooth, firm and even surface and conform to grades shown on the Landscape Drawings. Do not exceed maximum and minimum gradients defined by the Canadian Landscape Standard

.5 Construct swales true to line and grade, smooth and free of sags or high points. Minimum slope 2%, maximum side slopes 10%. Assure positive drainage to collection points

.6 Slope not to exceed the following maximums: Rough Grass 3:1, Lawn 4:1, Landscape plantings 2:1.

.7 Finished soil/mulch elevation at building to comply with municipal requirements

.8 Inform Landscape Architect of completion of finish grade prior to placement of seed, sod, plants or mulch.

3.3 LANDSCAPE DRAINAGE

.1 Related Work: Growing medium and Finish Grading, Grass areas, Trees Shrubs and Groundcovers, Planters, Crib Walls

.2 Work Included: Site finish grading and surface drainage. Installation of any drainage systems detailed on landscape plans. Note. Catch basins shown on landscape plans for coordination only, confirm scope of work prior to bid.
.2.1 Coordinate all landscape drainage work with rest of site drainage, Refer to engineering drawings and specifications for connections and other drainage work.
.2.2 Determine exact location of all existing utilities and structures and underground utilities prior to commencing work, which may not be located on drawings and conduct work so as to prevent interruption of service or damage to them. Protect existing structures and utility services and be responsible for damage caused.
.2.3 Planter drains on slab: Refer to Section 3.10, Installing Landscapes on Structures

.3 Execution
.3.1 Do trenching and backfilling in accordance with engineering details and specifications.
.3.2 Lay drains on prepared bed, true to line and grade with inverts smooth and free of sags or high points. Ensure barrel of each pipe is in contact with bed throughout full length.
.3.3 Commence laying pipe at outlet and proceed in upstream direction.
.3.4 Lay perforated pipes with perforations at 8pm and 4pm positions.
.3.5 Make joints tight in accordance with manufacturer's directions.
.3.6 Do not allow water to flow through the pipes during construction except as approved by Engineer.
.3.7 Make watertight connections to existing drains, new or existing manholes or catchbasins where indicated or as directed by Landscape Architect
.3.8 Plug upstream ends of pipe with watertight clean out caps.
.3.9 Surround and cover pipe with drain rock in uniform 150mm layers to various depths as shown in details, minimum 100mm.
.3.10 Cover drain rock with non-woven filter cloth lap all edges and seams minimum 150mm
.3.11 Assure positive drainage.
.3.12 Back fill remainder of trench as indicated.
.3.13 Protect subdrains from floatation during installation.

3.4 GROWING MEDIUM TESTING

.1 Submit representative sample of growing medium proposed for use on this project to an independent laboratory. Provide test results to Landscape Architect prior to placing. Test results to include:
.1.1 Physical properties, % content of gravel, sand, silt, clay and organics.
.1.2 Acidity PH and quantities of lime or sulphur required to bring within specified range
.1.3 Nutrient levels of principle and trace elements and recommendations for required soil amendments.
.1.4 Carbon/Nitrogen level.

3.5 GROWING MEDIUM SUPPLY AND PLACEMENT

.1 Supply all growing medium required for the performance of the Contract. Do not load, transport or spread growing medium when it is so wet that its structure is likely to be damaged.

.2 Supply all growing medium admixtures as required by the soil test. Amended growing medium must meet the specification for growing medium as defined in Table One for the various areas.
.2.1 Thoroughly mix required amendments into the full depth of the growing medium.
.2.2 Special mixes may be required for various situations. Refer to drawing notes for instructions

.3 Place the amended growing medium in all grass and planting areas. Spread growing medium in uniform layers not exceeding 6" (150mm), over unfrozen subgrade free of standing water

.4 Minimum depths of growing medium placed and compacted to 80%:
.4.1 On-grade:
.4.1.1 Seeded and sodded lawn.................6" (150mm)
.4.1.2 Mass planted shrubs & groundcovers.................18" (450mm)
.4.1.3 Groundcover only areas, if defined on plan.................9" (225mm)
.4.1.4 Tree & large shrub pits.................depth to conform to depth of rootball - width shall be at least twice the width of the root ball with saucer shaped sides.
.4.2 On-Slab:
.4.2.1 Irrigated lawn.................9" (210mm)
.4.2.2 Groundcover areas.................12" (300mm)
.4.2.3 Lawn without automatic irrigation.................12" (300mm)
.4.2.4 Shrub & groundcover areas 18" (450mm)
.4.2.5 Trees and specimen shrubs*.................30" (760mm) over columns and/or edge of slab (verify column locations on-site for tree locations.)
.4.2.6 Depth noted includes 1" to 2" (25-50mm) sand over filter fabric
.4.2.7 Maximum 18" depth growing medium except where mounded for trees over column points

.5 Manually spread growing medium/planting soil around existing trees, shrubs and obstacles.

.6 In perimeter seeded grass areas, feather growing medium out to nothing at edges and blend into existing grades.

.7 Finished grades shall conform to the elevations shown on landscape and site plans.

3.6 ROUGH GRASS AREA - SEEDING

.1 General: Rough grass areas are noted on the drawings as "Rough Grass". Treat all areas defined as rough grass between all property lines of the project including all boulevards to edge of roads and lanes.

.2 Preparation of Surfaces: To Canadian Landscape Standard Class 3 Areas (Rough grass) Section 7.1.1.3
.2.1 Clean existing soil by mechanical means of debris over 50mm in any dimension.
.2.2 Roughly grade surfaces to allow for maintenance specified and for positive drainage

.3 Time of Seeding: Seed from early spring (generally April 1st) to late fall (September 15th) of each year. Further extensions may be obtained on concurrence of the Landscape Architect

.4 Seed Supply & Testing: All seed must be obtained from a recognized seed supplier and shall be No. 1 grass mixture delivered in containers bearing the following information:
.4.1 Analysis of the seed mixture
.4.2 Percentage of each seed type

.5 Seed Mixture: All varieties shall be rated as strong performers in the Pacific Northwest and are subject to client approval
70% Creeping Red Fescue
20% Annual Rye
5% Saturn Perennial Rye
5% Kentucky Bluegrass
For Wildflower Areas use a mixture of Wildflowers with Hard Fescues (Terralink Coastal Wildflowers) with Hard Fescue or pre-approved alternate

.6 Fertilizer: Mechanical seeding: Apply a complete synthetic slow-release fertilizer with maximum 35% water soluble nitrogen and a formulation ratio of 18-18-18 - 50% sulphur urea coated, 112 kg/ha(100lbs/acre) using a mechanical spreader.

.7 Seeding: Apply seed at a rate of 112k/H (100lbs /acre) with a mechanical spreader. Incorporate seed into the top 1/4" (6mm) of soil and lightly compact.

.8 Acceptance: Provide adequete protection of the seeded areas until conditions of acceptance have been met. Comply with Section 3.7 Hydroseeding.

3.7 HYDROSEEDING

.1 May be used as an alternate to mechanical seeding in rough grass areas

.2 May not be used in areas of lawn unless pre-approved by the Landscape Architect prior to bidding

.3 Preparation and Growing Medium:
.3.1 In areas of Rough Grass: Comply with Section 3.6 Rough Grass.
.3.2 Where approved for use in areas of lawn, comply with Section 3.8 Lawn Areas: Sodding.

.4 Protection: Ensure that fertilizer in solution does not come in contact with the foliage of any trees, shrubs, or other susceptible vegetation. Do not spray seed or mulch on objects not expected to grow grass. Protect existing site equipment, roadways, landscaping, reference points, monuments, markers and structures from damage. Where contamination occurs, remove seeding slurry to satisfaction of and by means approved by the Landscape Architect

.5 Mulch shall consist of virgin wood fibre or recycled paper fibre designed for hydraulic seeding and dyed for ease of monitoring application. If using recycled paper material for wood fibre substitute use 135% (by weight). Conform to Canadian Landscape Standard for mulch requirements.

.6 Water: Shall be free of any impurities that may have an injurious effect on the success of seeding or may be harmful to the environment.

.7 Equipment: Use industry standard hydraulic seeder/mulcher equipment with the tank volume certified by an identification plate or sticker affixed in plain view on the equipment. The hydraulic seeder/mulcher shall be capable of sufficient agitation to mix the material into a homogenous slurry and to maintain the slurry in a homogenous state until it is applied. The discharge pumps and gun nozzles shall be capable of applying the materials uniformly over the designated area.

PART THREE SOFT LANDSCAPE DEVELOPMENT - CONT

.8 Application Rate:
.8.1 Seed Mixture: 136 kg/ha (125 lbs/acre)
.8.2 Fertilizer: 112 kg/ha (100 lbs/acre)
.8.3 Coastal Wildflower Mix: Where specified, apply (31 lbs/acre) (1/4 lb : 1 lb of grass seed)
.8.4 Notes:
.8.4.1 At the time of Tender provide a complete chart of all components of the mix proposed including mulch, tackifier, water etc. Sloped sites require tackifier
.8.4.2 Fertilizer:
.8.4.2.1 Rough Grass: If a soil analysis is available, comply with results.
.8.4.2.2 Lawn: Where hydroseeding is approved, comply with soil analysis recommendations.

.9 Accurately measure the quantities of each of the materials to be charged into the tank either by mass or by a commonly accepted system of mass-calibrated volume measurements. The materials shall be added to the tank while it is being filled with water, in the following sequence; seed, fertilizer. Thoroughly mix into a homogenous slurry. After charging, add no water or other material to the mixture. Do not leave slurry in the tank for more than four (4) hours

.10 Distribute slurry uniformly over the surface of the area to be hydroseeded. Blend application into previous applications and existing grass areas to form uniform surfaces

.11 Clean up: Remove all materials and other debris resulting from seeding operations from the job site.

.12 Maintenance: Begin maintenance immediately after seeding and continue for 60 days after Substantial Completion and until accepted by the Owner. Re-seed at three week intervals where germination has failed. Protect seeded areas from damage with temporary wire or twine fences complete with signage until grass area is taken over by the Owner. Water in sufficient quantities to ensure deep penetration and at frequent intervals to maintain vigorous growth until grass is taken over by the Owner. It is the Owner's responsibility to supply water at no extra cost to the Contract.

.13 Acceptance of the Rough Grass Areas: Proper germination of all specified grass species is the responsibility of the Landscape Contractor. The grass shall be reasonably well established, with no apparent dead or bare spots and shall be reasonably free of weeds (to Canadian Landscape Standard, Section 13 Maintenance Level 4 (open space). Sixty days after substantial completion, areas meeting the conditions above will be taken over by the Owner. Areas seeded in Fall will be accepted in Spring one month after start of growing season, provided that the above conditions for acceptance are fulfilled.

3.8 LAWN AREAS - SODDING

.1 General: Treat all areas defined as lawn areas on the landscape plan between all property lines of the project including all boulevards to edge of roads and lanes

.2 Growing Medium: Comply with Section 2.2.1, Growing Medium. Prior to sodding, request an inspection of the finished grade, and depth and condition of growing medium by the Landscape Architect.

.3 Time of Sodding: Sod from April 1st to October 1st. Further extensions may be obtained on concurrence of the Landscape Architect

.4 Sod Supply: Conform to all conditions of Canadian Landscape Standard, Section 8, B.C. Standard for Turfgrass Sod.

.5 Specified Turfgrass by area: Refer to Table 2 below.

TABLE 2 SPECIFIED TURFGRASS BY AREA

Area	Description	Quality Grade	Major Species
CLASS 1	Lawn, all areas noted on drawings as lawn in urban development sites including boulevard grass	No. 1 Premium	Kentucky Blue for sun, Fescues for shade
CLASS 2	Grass - public parks, industrial and institutional sites	No. 2 Standard	same
CLASS 3	Rough Grass	see hydroseeding	
SPECIAL			

.6 Lime: The lime shall be as defined in Section 2.2.3, Materials. Apply at rates recommended in required soil test. Refer to Section 3.4 for method

.7 Fertilizer: Refer to Section 2.2.2 Materials. Apply specified fertilizer at rates shown in the required soil test. Apply with a mechanical spreader. Cultivate into growing medium 48 hours prior to sodding. Apply separately from lime.

.8 Sodding: Prepare a smooth, firm, even surface for laying sod. Lay sod staggered with sections closely butted, without overlapping or gaps, smooth and even with adjoining areas and roll lightly. Water to obtain moisture penetration of 3" to 4" (7 - 10cm). Comply with requirements of Canadian Landscape Standard Section 8, BC Standard for Turfgrass Sod.

.9 Maintenance: Begin maintenance immediately after sodding and continue for 60 days after Substantial Completion and until accepted by the Owner. Protect sodded areas from damage with temporary wire or twine fences complete with signage until lawn is taken over by the Owner. Water to obtain moisture penetration of 3" to 4" (7-10cm) at intervals necessary to maintain sufficient growth. Keep grass cut at height of between 1-1/2" (4cm) and 2" (5cm). Provide adequate protection of sodded areas against damage until the turf has been taken over by Owner. Repair any damaged areas, re-grade as necessary. Aeration may be required if in the Landscape Architect's opinion, drainage through the sod base medium is impaired.

.10 Acceptance of Lawn Areas: The turf shall be reasonably well established, with no apparent dead spots or bare spots and shall be reasonably free of weeds (to Canadian Landscape Standard, Section 13 Maintenance Level 2 (Appearance). Use herbicides if necessary for weed removal unless other conditions of contract forbid their use. After the lawn has been cut at least twice, areas meeting the conditions above will be taken over by the Owner.

3.9 PLANTS AND PLANTING

.1 Conform to planting layout as shown on Landscape Plans.

.2 Obtain approval of Landscape Architect for layout and preparation of planting prior to commencement of planting operations

.3 Make edge of beds with smooth clean defined lines

.4 Time of Planting:
.4.1 Plant trees, shrubs and groundcovers only during periods that are normal for such work as determined by local weather conditions when seasonal conditions are likely to ensure successful adaptation of plants to their new location

.5 Standards:
.5.1 All plant material shall conform to the requirements of the Canadian Landscape Standard, latest edition, unless exceeded by drawing Plant Schedule or this specification
.5.1.1 Refer to Canadian Landscape Standard, Section 9, Plants and Planting and in Section 12, BCLNA Standard for Container Grown Plants for minimum standards.
.5.1.2 Refer to Plant Schedule for specific plant and container sizes and comply with requirements.
.5.2 Plant material obtained from areas with less severe climatic conditions shall be grown to withstand the site climate.

.6 Review:
.6.1 Review at the source of supply and/or collection point does not prevent subsequent rejection of any or all planting stock at the site

.7 Availability:
.7.1 Area of search includes the Lower Mainland and Fraser Valley. Refer to Plant Schedule for any extension of area.
.7.2 Supply proof of the availability of the specified plant material within 30 days of the award of the Contract.

.8 Substitution:
.8.1 Obtain written approval of the Landscape Architect prior to making any substitutions to the specified material. Non-approved substitutions will be rejected
.8.2 Allow a minimum of 5 days prior to delivery for request to substitute
.8.3 Substitutions are subject to Canadian Landscape Standard - definition of Conditions of Availability.

.9 Plant Species & Location:
.9.1 Plants shall be true to name and of the height, caliper and size of root ball as shown on the landscape/site plan plant schedule. Caliper of trees is to be taken 6" (15cm) above grade.
.9.2 Plant all specified species in the location as shown on the landscape drawings. Notify Landscape Architect if conflicting rock or underground/overhead services are encountered.
.9.3 Deviation of given planting location will only be allowed after review of the proposed deviation by the Landscape Architect.

.10 Excavation:
.10.1 Trees and large shrubs: Excavate a saucer shaped tree pit to the depth of the rootball and to at least twice the width of the rootball. Assure that finished grade is at the original grade the tree was grown at

.11 Drainage of Planting Holes:
.11.1 Provide drainage of planting pits where required. ie. on sloped conditions, break out the side of the planting pit to allow drainage down slope; and in flat conditions, mound to raise the rootball above impervious layer. Notify the Landscape Architect where the drainage of planting holes is limited.

.12 Planting and Fertilizing Procedures:
.12.1 Plant all trees and shrubs with the roots placed in their natural growing position. If burlapped, loosen around the top of the ball and cut away or fold under. Do not pull burlap from under the ball. Carefully remove containers without injuring the rootballs. After settled in place, cut twine. For wire baskets, clip and remove top three rows of wire.
.12.2 Fill the planting holes by gently firming the growing medium around the root system in 6" (15cm) layers. Settle the soil with water. Add soil as requred to meet finish grade. Leave no air voids. When 2/3 of the topsoil has been placed, apply fertilizer as recommended by the required soil test at the specified rates.
.12.3 Where planting is indicated adjacent to existing trees, use special care to avoid disturbance of the root system or natural grades of such trees.
.12.4 Where trees are in lawn areas, provide a clean cut mulched 900mm (3 ft.) diameter circle centered on the tree.

.13 Staking of Trees:
.13.1 Use two 2"x2"x5' stakes, unless superseded by municipal requirements. Set stakes minimum 2 ft. in soil. Do not drive stake through rootball
.13.2 Leave the tree carefully vertical.
.13.3 Tie with pre-approved commercial, flat woven polypropylene fabric belt, minimum width 19mm (3/4"). Approved product: ArborTie - available from DeepRoot.
.13.4 Coniferous Trees over 6 ft. height: Guy with three 2-strand wires (11 gauge). Drive three stakes equidistant around the tree completely below grade.
.13.5 Trees 6 ft.+ on Wood or Concrete Decks: Guy as above using three deadmen (min. 2"x2"x4") buried to the maximum possible depth instead of stakes.
.13.6 Mark all guy wires with visible flagging material.

.14 Pruning:
.14.1 Limit pruning to the minimum necessary to remove dead or injured branches. Preserve the natural character of the plants, do not cut the leader. Use only clean, sharp tools. Make all cuts clean and cut to the branch collar leaving no stubs. Shape affected areas so as not to retain water. Remove damaged material.

.15 Mulching:
.15.1 Mulch all planting areas with an even layer of mulch to 2-1/2 - 3" (65 - 75mm) depth. Confirm placement of mulch in areas labeled "Groundcover Area" on drawings. Mulch a 3 ft. (900mm) diameter circle around trees in lawn areas, leave a clean edge.

.16 Acceptance:
.16.1 The establishment of all plant material is the responsibility of the Landscape Contractor.

.17 Plant Material Maintenance:
.17.1 Maintain all plant material for 60 days after landscape work has received a Certificate of Completion.
.17.2 Watering: Conform to Canadian Landscape Standard, Section 13.3.2 - Watering and generally as follows:
.17.2.1 Water to supplement natural rainfall such that the soil moisture content is kept to 50% to 100% of field capacity. Water to the full depth of the root zone each time. The Owner is responsible to supply water at no extra cost to the Contract. Confirm source of water prior to beginning work.
.17.3 Use appropriate measures to combat pests or diseases damaging plant material. Comply with all local governing statutes and guidelines for chemical control
.17.4 Plant material which fails to survive shall be replaced in the next appropriate season as determined by the Landscape Architect
.17.5 Repair tree guards, stakes, and guy wires, when necessary.
.17.6 Maintain areas relatively weed free. (Appearance level 2, Canadian Landscape Standard, Chapter 13).
.17.7 Maintain mulch to specified depths.

.18 Plant Warranty:
.18.1 Replace all unsatisfactory plant material except those designated "Specimen" for a period of one (1) year after the Certificate of Completion. Replace all unsatisfactory plant material designated "Specimen" for a period of two (2) years after the Certificate of Completion. Replace all unsatisfactory trees and shrubs and continue to replace these until the specified number is complete and satisfactory to the Landscape Architect. Such replacement shall be subject to the notification, inspection and approval as specified for the original planting, and shall not constitute an extra to the Contract.
.18.2 Those Plants, identified as hardy within one zone of the Canada Department of Agriculture zonal class for the area, specified by the Landscape Architect and installed by the Landscape Contractor which are killed through below normal temperatures (below the average of the extreme minimum temperatures officially recorded in the area concerned, in the last 10 years), will not be replaced without cost of replacement borne by the Owner.
.18.3 A review may be requested during the latter part of the warranty growing season. All plant material showing well developed foliage, healthy growth and bud forming, will then be taken over.

PART THREE SOFT LANDSCAPE DEVELOPMENT - CONT

.18.4 For all plant material, the Landscape Architect reserves the right to extend the Contractor's responsibility for another growing season if, in his opinion, leaf development and growth is not sufficient to ensure future satisfactory growth.
.18.5 Where the Owner is responsible for plant maintenance and has not provided adequate maintenance, the plant replacement section of the contract may be declared void. The Landscape Architect shall determine whether maintenance has been satisfactory using the Canadian Landscape Standard, Section 13, Maintenance as the guide. The required maintenance standard is a minimum of Level Three - Medium. Refer to Section 3.11, Establishment Maintenance.
.18.6 The Landscape Contractor is responsible to replace any plant material or repair any construction included in the Contract that is damaged or stolen until the issuance of the Certificate of Completion
.18.7 Deviation from the specifications may require extension of the Warranty Period as determined by the Landscape Architect.

3.10 INSTALLING LANDSCAPE ON STRUCTURES

.1 Verify that drainage and protection material is completely installed and acceptable before beginning work. Contact Landscape Architect for instructions if not in place.

.2 Coordinate work with construction of planters and planter drainage.
.2.1 Verify that planter drains are in place and positive drainage to roof drains is present prior to placing any drain rock or soil.

.3 Provide clean out at all through-slab drain locations. Use 300mm min. dia. PVC Pipe filled with drain rock unless specific drawing detail shown.

.4 Install drain rock evenly to a minimum depth of 4" (100mm)or alternate sheet drain if specified. Install sheet drain as per manufacturer's recommendations.

.5 Cover drain rock (or alternate sheet drain if specified on drawing details) with filter fabric lapping 6" (150mm) at all edges. Obtain approval of drainage system prior to placing growing medium.

.6 Place an even layer of 25 - 50mm clean washed pump sand over filter fabric

.7 Place growing medium to depths specified in Section 3.5 above for various surface treatments. Refer to Drawing details for any light weight filler required to alter grade. Use Styrofoam block over drain rock shaped to provide smooth surface transition at edges. Butt each piece tightly together and cover with filter fabric to prevent soil from migrating downward.

3.11 ESTABLISHMENT MAINTENANCE (Provide a separate price for this section)

.1 Intent: The intent of "establishment" maintenance is to provide sufficient care to newly installed plant material for a relatively short period of time to ensure or increase the long term success of the planting. The objective is the adaptation of plants to a new site in order to obtain the desired effect from the planting while reducing the rate of failure and unnecessary work associated with improper establishment. Establishment of maintenance procedures apply to all new and retained vegetation including cultivated turfgrass areas and new trees and shrubs.

.2 Maintenance Period: Provide maintenance of installed landscaping for 12 months following substantial completion

.3 Related Standards and Legislation: Canadian Landscape Standard, latest edition; Fertilizer Code., B.C. Pesticide Control Act.

.4 Site Review: In addition to the inspections at substantial completion, at final progress draw application, and at the end of the guarantee period, there should be three other reviews during the 12 months attended by the Contractor and a designated representative of the Owner. Maintain a logbook and reporting procedures and submit to the designated representative.

.5 Scheduling: Prepare a schedule of anticipated visits and submit to designated representative at start-up. Maintenance operations shall be carried out predominately during the growing season between March 1st and November 30th, however visits at other times of the year may be required.

.6 Maintenance Level: Comply with B. C. Landscape Standard, Section 14, Table 14.2, Maintenance Level 2 "Groomed".

.7 Materials: Comply with Part Two of this specification.
.7.1 Fertilizers: To the requirements of the Canadian Landscape Standard. Formulations and rates as required by soil testing

.8 Plant Material Establishment:
.8.1 Watering: During the first growing season, water new plants at least every ten (10) days between April 1st and July 31st, and every twenty (20) days between August 1st and September 15th. Minimum 25 gallons per tree per application. During the second growing season, water new plants at least every twenty days between April 1 and July 31 and once between August 1st and September 31st. Apply water at a rate and duration such that the water content reaches field capacity to the full depth of the growing medium. Apply water again when the water content reaches 25% of field capacity. Provide and irrigate with water in the event that any automatic irrigation system malfunctions or has not been completely installed. Scheduled applications of water shall be missed only when rainfall has penetrated the soil fully as required.
.8.2 Mulch: Maintain mulches in the original areas and to the original depths
.8.3 Weed Control: Remove all weeds from all areas at least once per month during the growing season by hoeing or cultivation to a maximum depth of 80mm, hand-pulling, or, if necessary, by the use of herbicides.
.8.4 Pest and Disease Control: Inspect all planted areas for pests and diseases periodically and at least every two months during the growing season by an experienced person. Carry out treatment for pests or diseases promptly and consistently for maximum effectiveness. Comply with all B.C. Pesticide Control Act and municipal requirements.
.8.5 Tree Support: Maintain stakes, guy wires and ties one full growing season. Check ties at least every two months to ensure that they are not causing a depression in the bark. Loosen, repair or replace ties as necessary. Remove all stakes guy wires and ties after the first growing season except where large trees require continuing support in the opinion of the Landscape Architect. All flagging of guy wires shall be visible and in good repair.
.8.6 Pruning: Inspect all trees and shrubs at least every two months during the growing season; prune to remove all dead, weak or diseased wood. Maintain the natural shape of the plant. Carry out clipping or shaping only if required in the maintenance contract for specific varieties or conditions.
.8.7 Fertilizing: Once during the twelve month period of establishment maintenance fertilize shrubs, trees and groundcovers according to soil analysis requirements.

.9 Grass Areas Establishment:
.9.1 Watering: Use hoses and sprinklers, irrigation systems or other methods to apply water to Class 1 and Class 2 grassed areas (Canadian Landscape Standard, Section 7, Lawns and Grasses) such that the grass is maintained in a turgid condition. Supply and irrigate with water in the event of any irrigation system malfunction, or incomplete installation at no expense to the owner. Apply water to prevent packing or erosion of the soil. Apply water at a rate and duration so that the water content in the growing medium reaches field capacity to the full depth of the growing medium. Apply water again when the water content reaches 25% of field capacity.
.9.2 Weed, Insect and Disease Control: Inspect grass areas each time they are mowed for weeds, insect pests, and diseases and treat promptly when necessary by appropriate manual methods, or by the use of chemicals in compliance with the B.C.S.L.A./B.C.L.N.A. Landscape Standards latest edition. Kill broadleafed weeds in grassed areas by a general application of a suitable herbicide if the weed population exceeds 10 Broadleaf weeds or 50 annual weeds or weedy grasses per 40 square meters. This application shall reduce the weed population to zero.
.9.3 Fertilizing: According to soil analysis.
.9.4 Liming According to soil analysis
.9.5 Mowing and Trimming - All areas: The first four cuts shall be a sharp rotary type mower. Excess grass clipping shall be removed after each cut. Mow all grassed areas with a sharp reel or rotary mower when the grass reaches a height of 60mm. Mow to a height of 40mm. Edge with a mechanical vertical cutting edger once per year in March. Remove all grass clippings after each cut.
.9.6 Aeration: Aeration not required in the first growing season. If necessary, in the second growing season, aerate in early May with a suitable mechanical corer. Core to a depth of 100mm. (4"), and remove cores.
.9.7 Repairs: Re-grade, re-seed or re-sod when necessary to restore damaged or failing grass areas. Match the grass varieties in the surrounding area. Re-sod, if required, throughout the growing season. Re-seed between April 1st and April 15th or between September 1st and September 15th. Protect re-seeded areas and keep moist until the first mowing.

pmg LANDSCAPE ARCHITECTS
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SEAL:

NO.	DATE	REVISION DESCRIPTION	DR.
7	22.JAN.10	REVISION AS PER CITY COMMENTS	DD
6	21.DEC.01	NEW SITE PLAN&CITY COMMENTS	DD
5	21.MAR.15	NEW SITE PLAN	DD
4	21.JAN.08	NEW SITE PLAN & CITY COMMENTS	DD
3	20.MAR.06	NEW SITE PLAN	RJ
2	20.JAN.21	NEW SITE PLAN/CITY COMMENTS	RJ
1	19.MAR.07	ISSUED FOR DP	RJ

CLIENT:

PROJECT:

10 UNIT TOWNHOUSE DEVELOPMENT
8231 – 8251 WILLIAMS ROAD RICHMOND

DRAWING TITLE:

LANDSCAPE SPECIFICATIONS

DATE: 19.FEB.26
DRAWING NUMBER: 3.e OF 5
SCALE:
DRAWN: RJ
DESIGN: RJ
CHK'D: PCM

19028-6.ZIP
PMG PROJECT NUMBER: 19-028