



City of Richmond
Urban Development Division

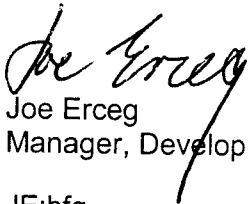
**Report to
Development Permit Panel**

To: Development Permit Panel
From: Joe Erceg
Manager, Development Applications
Date: July 7, 2003
File: DP 03-234836
Re: **Application by Northwest Development Ltd. for a Development Permit at
11311/11331 Cambie Road**

Manager's Recommendation

That a Development Permit be issued for 11311/11331 Cambie Road on a site zoned Townhouse District (R2), which would allow the development of thirteen (13) townhouses with a total building area of 1,440.043 m² (15,501 ft²) and vary the provisions of Zoning and Development Bylaw 5300 as follows:

- a) Reduce the minimum road setback along Cambie Road from 6.0 m (19.865 ft) to 5.0m (16.404 ft.) for two (2) covered porch projections;
- b) Reduce the minimum road setback along Cambie Road from 6.0 m (19.865 ft) to 1.0m (3.281 ft.) for a roof structure over the mailbox;
- c) Reduce the minimum side yard setbacks along the east and west property lines from 3.0m (9.843 ft) to 2.543 m (8.343 ft.) for two (2) chimney; and
- d) Increase the number of small car parking stalls from 0 to 11.



Joe Erceg
Manager, Development Applications

JE:bfg
Att. 8

Staff Report

Origin

This application by Northwest Development Ltd. requests a Development Permit at 11311 and 11331 Cambie Road for a site zoned Townhouse District (R2) in order to construct thirteen (13) two-storey townhouses. The site was the subject of a Rezoning (RZ 99-156389) from Single-Family Housing District, Subdivision Area E (R1/E) to Townhouse District (R2). A copy of the development application filed with the Urban Development Division is appended to this report.

Development Information

Site Area:	2,618.201m ² (28,183 ft ²) (after road dedication)
Building Area:	1,440.043 m ² (15,501 ft ²)
Density:	50 du per ha 20 du per ac.
Site Coverage:	40.0% Allowed 36.4% Proposed
F.A.R.:	0.55 Allowed 0.55 Proposed
Parking:	29 Spaces Required including 3 visitors spaces 29 Spaces Proposed including 3 visitors spaces

Development surrounding the subject site is as follows:

- To the north, are rear yards of single-family residential lots fronting on Mellis Drive;
- To the east, are single-family dwellings;
- To the south, are single-family dwellings across Cambie Road and
- To the west, are single-family dwellings.

Findings of Fact

Criteria and policies for the issuance of Development Permits are contained in Schedule 1 of Bylaw 7100, the Richmond Official Community Plan, Section 9.3 Multi-Family Guidelines. The detailed assessment of the Development Permit guideline checklist for this application is attached in Appendix 'A': Assessment of Relevant Development Permit Guidelines.

Staff Comments

Staff comments are followed by the applicant's response, noted in *bold italics*.

Development Co-ordinator Comments

1. The applicant is required to complete the Multi-Family Development Permit Guidelines.
The relevant checklist has been submitted. See Appendix 'A'.

2. Specify the two benches in the amenity areas. ***The landscape architect has submitted a separate fax to specify the 2 benches as a 'Sarita 4' Bench'.***
3. This Development Permit is subject to adoption of RZ 99-156387. The following requirements were identified in the Rezoning report and are prior conditions to final Rezoning adoption:
Legal requirements, specifically:
 1. The consolidation of the two parcels into a single development site;
 2. The dedication of a 2.13 m strip of road along the entire frontage of Cambie Road;
 3. The execution of a covenant ensuring that there will be only one temporary vehicular access to Cambie Road and that the access will be closed once vehicular access is available to an alternate local road such as Bargin Drive;
 4. The execution of a cross access easement for the benefit of the neighbouring properties;
 5. The execution of an Aircraft Noise covenant;
 6. A \$10,000.00 contribution toward a future traffic signal; and
 4. The submission and processing of a Development Permit to a satisfactory level, as determined by the manager of Development Applications.***The applicant will complete these requirements for the July 28th 2003 Council meeting, which will permit this application to proceed to the Development Permit Panel meeting of July 30th 2003.***

Development Planner Comments

1. Eliminate the amenity area along Cambie Road and enlarge the amenity space between buildings 3 and 4. ***The amenity area along Cambie Road has been eliminated and the amenity space between buildings 3 and 4 are enlarged by relocating a visitor's parking space.***
2. Move the mailbox to the enlarged amenity space between buildings 3 and 4. ***The mailbox is retained at the front entry for the convenience of residents.***
3. Shift buildings 4 and 5 to the east in order to avoid a side yard variance for building 5. ***Only fire places project onto the side yards and a side yard setback variance is required.***
4. Revise the landscape plan to add hedging materials at strategic locations around the perimeter of the site in order to protect the privacy of adjacent properties. ***Hedging materials have been added for the privacy of adjacent properties. The applicant has located trees at strategic locations in rear yards to provide screening and privacy.***
5. Ensure that there is sufficient paved or grass area on private property adjacent to the entry for placement of both refuse cans and recycling boxes on collection day. ***Complies.***
6. Provide appropriate replacement tree planting according to City of Richmond guidelines. ***The landscape architect has certified the following:***
 - ***The 3 existing horse-chestnut trees on the boulevard along Cambie Road will be retained.***
 - ***Formerly, there were 13 existing site trees however 2 trees were severely compromised.***
 - ***The applicant has agreed to provide 17 replacement trees at a minimum 10cm (4") in caliper size plus 2 replacement trees at 15 cm (6") in caliper size and 1 replacement tree at 14cm (5.5") in caliper size. The value of proposed tree replacement approximates the equivalent value of 22 replacement trees at 10cm (4") in caliper size.***

7. Ensure that all plant material symbols are keyed to the plant list. *The landscape architect has complied.*

Building Department Comments

1. An aircraft noise covenant is required otherwise this proposal complies with Part 9 of the BC Building Code. *The applicant has submitted a copy of an acoustic report entitled 'Environmental Noise Study: 11311 – 11331 Cambie Road – Richmond' by 'BKL Consultants in Acoustics' dated April 23, 2003. Please see Appendix 'B' below. The applicant will also execute an aircraft noise covenant.*

Fire Department Comments

1. If the access is temporary please maintain it as emergency access. *The entry from Cambie Road is to be retained as emergency access when this vehicle access is closed.*
2. Ensure that a hydrant is within 90 m. of the most remote unit as well as 45 m from the set up area for the fire truck pumping-unit. *The applicant has indicated on the site plan the extent of emergency fire access which meets the minimum requirements in the BC Building Code.*

Transportation Comments

1. Only one access point will be permitted from this site onto Cambie Road. *Only one temporary access point is provided from this site to Cambie Road.*
2. The pavement width of all internal drive aisles should be at least 6.706 m (22 ft) wide excluding curb and gutter. This width of drive aisle is deemed necessary to accommodate vehicle manoeuvring since this internal roadway system will form part of an informal lane way parallel to Cambie Road. *Driveway is widened to 22 ft. including curb and gutter. If curb and gutter is added to the 22 ft. driveway, all landscaped areas in front of garages will have to be eliminated. The applicant cannot reduce the building depth any further.*
3. A dimensioned site plan is requested. Demonstrate with turning radii that there is adequate vehicle manoeuvring space at critical locations such as the 'T' intersection and egress from visitor parking stalls V1 and V3. *Dimensions are added onto the site plan. The widened driveways improve the vehicle manoeuvring spaces at the 'T' intersection and parking access.*
4. Parking stalls V1 and V3 are non-functional and must be revised. *Driveway is widened and additional manoeuvring space has been provided for parking stalls V1 and V3.*
5. The southern-most parking stall (opposite the mailbox) is too close to Cambie Road and must be relocated or eliminated. *The southernmost parking stall is relocated to the opposite side of driveway away from Cambie Road.*
6. A variance is require to increase the number of small car parking stalls from 0 to 11. *The applicant has superimposed Richmond's standard parking stall over the proposed small parking stalls and demonstrated that full size passenger vehicles can use the proposed small car stalls.*

Garbage & Recycling Comments

1. This 13 unit townhouse development qualifies for City of Richmond refuse and recycling collection. ***The applicant acknowledges this information.***
2. A refuse/recycling enclosure or designated area should be incorporated into the plan at the Cambie Road entry. The garbage and recycling must be brought to the entrance of the driveway on collection day. ***A paved area besides the entry driveway is provided for placing garbage and recycling containers on collection day.***

Design Panel Comments

Advisory Design Panel at its meeting on September 5, 2001 assessed the application. The Advisory Design Panel comments are followed by the applicant's response, noted in ***bold italics***.

The comments and recommendations of the Advisory Design Panel were as follows:

1. The facades of buildings 1 and 7 along Cambie Road are too flat and require more articulation; ***The facades of buildings 1 and 7 are improved by introducing the more prominent gable roofs.***
2. The two parking stalls at the front entry should be relocated; ***The two parking stalls at the front entry have been reconfigured with one parking stall on each side of the driveway and additional landscape screening has been provided.***
3. Project identification signage should be located on either side of the entrance; ***The project signs on either side of the entry are indicated on our site plan and south elevation.***
4. Expand the private gardens of the 'A' units along Cambie Road provided that this does not conflict with the retention of the existing trees; ***The private yards of the A units along Cambie Road are extended.***
5. The 3 Horse-chestnut trees on Cambie Road should be retained and the number of proposed new street trees should be reduced from 3 to 2 and placed at the corners; ***The 3 horse-chestnut trees on Cambie Road are to be retained and the 3 new street trees are reduced to 2 and placed at the corner.***
6. Unit E1 on the west side of building 3 and unit E in building 5 were considered secluded and a security risk. Incorporate security enhancements to improve the safety of these and all units within this townhouse complex; ***Motion-sensitive lighting is to be provided at each private yard and photo-sensitive lighting is provided at driveway near front entry of each unit.***
7. It is recommended to have chimneys on the roof and reduce the number of vents. ***Chimneys have been added to the 'A' units along Cambie Road.***

The consensus of the Panel was that this item should move forward to the next stage subject to staff resolving outstanding issues.

Analysis

Conditions of Adjacency: In general, this project provides greater than the required 3 m (9.843 ft.) side yard setback. The majority of building mass along the east and west property lines is setback 5.182 m (17 ft.). Along the north property line (i.e. the rear yard setback) the building line steps back from the minimum setback line in four locations to help create greater

separation and better privacy for the adjacent single-family residential dwellings to the north. According to the minutes of the public hearing held on September 14th 1999, for this Rezoning application (RZ 99-156387), Kelly Freigang of 11351 Cambie Road, the neighbouring property to the east, expressed the following concerns regarding the development of the subject properties:

- a) There would be impacts on the future development potential of the properties at 11271 and 11281 Cambie Road;
- b) There would be increased traffic, air pollution and shadowing impacts on his property at 11351 Cambie Road; and
- c) The elimination of a common driveway, which he shared with the subject property, will require him to exist directly on Cambie Road.

In addition to other requirements of final rezoning approval the applicant has provided the following information to address the concerns of Mr. Freigang:

- A schematic layout for future townhouse development on 11271 and 11281 Cambie Road, as well as a cross access easement over the subject property for the benefit of the neighbouring properties; See Appendix 'C'
- A contribution of \$10,000.00 for a new traffic light at the intersection of Cambie and Dallyn Roads; and
- Provision of a sun/shade analysis of the proposed development on surrounding lots. See Appendix 'D'. In addition, the architect has agreed to meet with Mr. Freigang of 11351 Cambie Road to explain the shadow impacts, prior to the Development Permit Panel.

Parking and Circulation: The applicant has increased the width of the laneway to 6.706 m (22 ft.) including curbs. The parking layout has been revised. The applicant has superimposed the sweep path of passenger vehicles for parking at dead ends to demonstrate that the current site plan is accessible for vehicles and the current configuration is deemed to be acceptable.

Building Form and Character: The Cambie Street elevation has been revised to improve the façade articulation of the building mass. The palette of building materials relies primarily on horizontal vinyl siding, vinyl shakes and asphalt roof shingles. The use of wood is limited to trim boards around window and door openings.

Open Space: The site planning and landscape design retains the three large Horse-chestnut trees on Cambie Road and this project presents a mature landscape along the principal street address. Eleven (11) former site trees required tree replacement compensation. The applicant has provided reasonable tree replacement compensation strategy that is supported by Richmond staff. The internal road layout incorporates decorative paving and there is a consolidated outdoor amenity space along the laneway. The landscape architect proposes a new ±1.5m (6 ft.) high wood fence and has also provided additional shrub planting along the perimeter fence which will improve the privacy for adjacent properties.

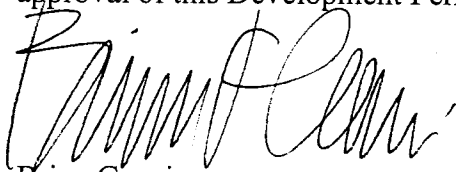
Variances: Each requested variance is followed by a brief Richmond staff assessment:

- a) Reduce the minimum road setback along Cambie Road from 6.0 m (19.865 ft) to 5.0m (16.404 ft.) for two (2) covered porch projections. This requested setback variance along Cambie Road improves the streetscape with minimal impact to neighbouring properties.

- b) Reduce the minimum road setback along Cambie Road from 6.0 m (19.865 ft) to 1.0m (3.281 ft.) for a roof structure over the mailbox. This requested setback variance along Cambie Road improves the streetscape with minimal impact to neighbouring properties.
- c) Reduce the minimum side yard setbacks along the east and west property lines from 3.0m (9.843 ft) to 2.543 m (8.343 ft.) for two (2) chimney. The requested setback variances along the side yards are minor and the majority of building mass along the side and rear yards is setback more than the minimum 3.0 m (9.843 ft). The architect has supplied sun/shadow analysis diagrams that illustrate the shadowing impacts on the neighbouring properties and the architect has agreed to meet with Mr. Freigang of 11351 Cambie Road to explain these impacts prior to the Development Permit Panel meeting.
- d) Increase the number of small car parking stalls from 0 to 11. The applicant anticipates that the purchasers of these entry level townhouse units will typically possess 1 standard size and 1 small passenger vehicle. Since the architect has demonstrated that standard sized passenger vehicles can use the proposed small car parking spaces, Richmond Transportation, Zoning and Development Applications staff support the request for increasing the number of small car parking spaces.

Conclusions

This project represents an acceptable design, staff supports of this proposal and recommends approval of this Development Permit application.



Brian Guzzi, MCIP, MCSLA, MASLA
Registered Planner / Landscape Architect
(loc. 4393)

BFG:bfg

1. Prior to final development permit approval the applicant is required to provide a landscape letter of credit in favour of the City of Richmond in the amount of \$31,000.00.
2. Registration of a Public Rights of Passage Right of Way for the driveway access/laneway satisfactory to the City of Richmond prior to final Council adoption of the Development Permit.
3. Entering into a Standard Servicing Agreement for the driveway/laneway access satisfactory to the City of Richmond prior to the issuance of the Building Permit.

Appendix 'A': Assessment of Relevant Development Permit Guidelines

Criteria and policies for the issuance of Development Permits are contained in Schedule 1 of Bylaw 7100, the Richmond Official Community Plan. The following development permit guidelines are relevant and the applicant's responses are identified in '*bold italics*'.

Schedule 1 of Bylaw 7100, Richmond Official Community Plan

9.0 Development Permit Guidelines

9.3 Multi-Family Guidelines

1. Fire hydrant within 90 m (295ft) of the front door of each dwelling and a paved area of width 7.3 m (24ft) for fire truck set up within 45 m (150ft) of all dwellings. ***Project Complies.***
2. Minimum of 75% of dwellings and their private open spaces receive direct sunlight every day of the year. ***Project Complies.***
3. Townhouses should be designed in clusters of 25 units or less and defined by publicly-accessible open spaces and roadways. ***Project Complies.***
4. Maximum number of townhouses in a row is 6 units, increased to 8 if adjacent rows are separated by broader open areas. ***Project Complies.***
5. Where multiple family units adjoin single family homes, design units with greater setbacks above the ground floor, special landscape measures and/or orientating living areas away from neighbours. ***Project Complies.***
6. Townhouses to be compatible in scale and form with surrounding area. ***Project Complies.***
7. Provide a transition between townhouse units and single-family homes by building duplexes along property lines with a minimum spacing of 3 m (9.8 ft) between each duplex. ***Project does not comply but the spacing between duplex units is 2.438 m (8 ft.) which complies with the building code.***
8. Maximum transition height gradient of 26 degrees between townhouse development and property lines. ***Project does not comply but there are wider side yard setbacks provided along both the east and west property lines.***
9. End units to be one-storey in height where adjoining single family homes. ***Project does not comply but there are wider side yard setbacks provided along both the east and west property lines.***
10. Articulate building façade with projections, recesses, solids and voids, chimneys and multi-paned windows. ***Project Complies.***
11. Reduce the apparent height of buildings with treatment that avoids sheer blank walls and promotes recognition of individual storeys (eg. use of trim, secondary roof elements, building recesses). ***Project Complies.***
12. Vehicle and pedestrian access should be specifically marked or separated from each other and appropriately located. ***Project Complies.***
13. Individual front doors to grade level units along public streets. ***Project Complies.***
14. New developments should promote the provision of individual grade-level entries to units wherever possible. ***Project Complies.***
15. Porches and covered stairs for weather protection at the entry should be at least 2.5m (8.2 ft) deep and should be designed into the façade, rather than appear 'tacked-on'. ***Project does not comply but the south elevation of buildings 1 and 7 have been redesigned.***
16. Townhouses fronting residential streets should have their main pedestrian entrances on the street side. ***Project Complies.***
17. Incorporate human-scale elements (windows, doors, roof elements, trellises etc.) into the building façade visible from the street. ***Project Complies.***

18. Main entrances to units should not be adjacent to, or on the same façade as garage doors. **Project Complies.**
19. Garage doors to occupy no more than 60% of the building width as seen from the internal road. **Project Complies.**
20. Garage doors to be a max. width of 4.9 m and maximum height of 2.1 m. **Project Complies.**
21. Incorporate decorative architectural treatments that are complimentary to unit finishes, such as windows, on and above garage doors. **Project Complies.**
22. Townhouse units require a minimum private outdoor space of 37m² (398.3 ft²) in area and 9 m (29.5 ft) in depth, which may be reduced to 5.3m (17.2 ft) where adequate privacy screening is provided. **Project Complies.**
23. Indoor amenity space should be provided at a minimum rate of 2 m² (6.6ft²) per bedroom and 70m² per development and shall include a multi-purpose facility. **Project does not comply and is too small to have an indoor amenity space.**
24. Outdoor amenity space should be provided at a minimum rate of 4 m² per bedroom, in addition to indoor amenity space, consolidated in one compact area and located to take advantage of sunlight and natural shelter. **Project Complies.**
25. Outdoor amenity space should provide barrier-free access to the space and surveillance from adjacent units, and do not locate the space near parking areas or garbage/recycling storage areas. **Project Complies.**
26. Resident parking should be in small, defensible open parking lots or should be located in locked, defensible garages screened from view from the road. Visitor parking should be in public view and easily accessible near the main entry. Parking lots should have landscaping to separate every fourth parking space. **Project Complies.**
27. Provision should be made for emergency vehicles, moving vans, and service vehicles. **Project Complies.**
28. Developments should provide for both internal unit privacy and passive surveillance of internal roadways and communal amenity areas to enhance safety and security for residents. **Project Complies.**
29. Traffic noise to be screened from residential units in order to maintain a maximum ambient sound level of 35 dBA for indoor spaces and 55 dBA for outdoor private spaces. Where private outdoor space is adjacent to arterial roads, building should be setback 12 m (39.37ft.) in order to allow space for landscaping, fencing and berming. **Project complies and an acoustic report has been submitted.**
30. Units should be designed to be universally accessible in all multiple family developments, or be adaptable for conversion. **Project does not comply and the applicant indicates that this project is too small to adhere to these guidelines.**

April 23, 2003

File: 1710-01B II

Gurdev Sandhu
#205 2607 E. 49th Ave.
Vancouver, BC
V5S 1J9

Dear Sir:

Re: Environmental Noise Study: 11311 - 11331 Cambie Road - Richmond

As requested, BKL Consultants Ltd. has undertaken an environmental noise study for the development proposed for 11311 - 11331 Cambie Road. Upon visiting the project site, we have determined that two significant exterior noise sources affect this project, road traffic from Cambie Road and aircraft operations from the north and south runways of Vancouver International Airport. Other, potential future exterior or interior noise sources are outside the scope of this study. Our two part analysis first involved a review of the environmental noise exposures at the building facades. The second part was a review of the project design, including exterior facade construction, to meet the City's development permit requirements in acoustics.

Site Noise Study

A 24-hour noise measurement was made on December 19th - 20th, 2001. The sound level meter was placed on the eave of the front roof of the existing house at 11311 Cambie Road in the proposed development. The measurement location was at a distance of approximately 39 feet from the curb of the north curb of Cambie Road, at an elevation of 10' 2" above grade, approximately 6' 8" above the road grade. The measurement results are reported in the attached Figure 1 and Table 1. The 24-hour equivalent sound level (Leq 24) at the measurement location was 67 dBA.

The project drawings received November 30, 2001 (dated February 14, 2001), showed the project south facade at a distance of 32' 6" from the north lane curb of Cambie Road. Therefore a distance correction of +0.5 dB has been applied to our measured 24-hour equivalent sound level (Leq24).

The contribution of aircraft noise has been assessed based upon the 2015 Noise Exposure Forecast (NEF) issued in July 1994 by YVR Noise Management. Based upon the sound level measurements, the NEF data, and the project drawings, we have determined that the 24-hour equivalent sound exposure of the southernmost buildings, numbers 1 and 7 of the project, are as follows:

Building Facade	Noise Exposure Level
South Face (facing Cambie Road)	67 dBA
West Face	65 dBA
East Face	65 dBA
North Face	64 dBA

The exposure levels presented are rounded to integral values and reflect additional corrections for shielding effects. Other building groupings have different exposures based upon distance attenuation and shielding presented to road traffic. The contribution of aviation noise has been incorporated in the exposures of each building. In this work we have followed the procedures in these matters that have been set out in the Canada Mortgage and Housing Corporation (CMHC) documents "Road and Rail Noise: Effects on Housing." and "New Housing and Airport Noise." These procedures have been accepted by the development authorities of the City of Richmond.

Detailed Review and Recommendations

According to CMHC criteria, for road traffic sources a level between 55 dBA and 75 dBA is considered to be "**normally unacceptable**" for housing. Likewise, the proposed development is located at NEF 30. This is considered an intermediate zone for aircraft impact, and can lead to "sporadic to repeated individual complaints. Group action is possible."

This generally means that careful acoustical measures are required to achieve acceptable interior noise levels. The noise criteria for this project are set by the Development Permit Guidelines of City of Richmond, Section 9.3.14.A for traffic noise, and Section 9.3.14.B for aircraft noise. The City of Richmond aircraft noise criteria follows the CMHC reference for road and rail noise as follows:

Portion of Dwelling Unit	Noise Level
Bedrooms	35 dBA
Living, dining, recreation rooms	40 dBA
Kitchen, bathrooms, hallways	45 dBA

Whereas section 9.3.14.A Traffic Noise requires that: "**Traffic noise should be screened from residential units in order to maintain an acceptable ambient sound level of 35 dB for indoor spaces and 55 dB for outdoor private space;**

- **Where private outdoor space is adjacent to arterial roads, buildings should be set back 12m from the arterial, and other noise mitigating measures should be utilized, such as fencing, berming, and landscaping:..."**

Unlike the aircraft noise criteria the latter criterion for traffic noise makes no distinction between the differing uses and noise sensitivities in the interior spaces of the homes. Both CMHC references make three separate design requirements for noise levels in the, bedroom, living/dining/recreation room, and kitchen/bathroom.

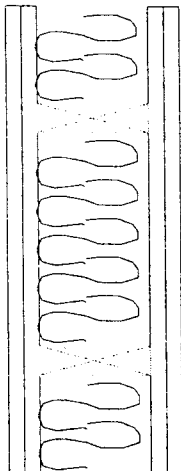
We suggest that policy for these two noise sources should have consistent design requirements. The City of Richmond Development Permit Guidelines should reflect these harmonized criteria. A 35 dBA interior design level for traffic noise has a significant cost implication to the developer. Such policy may serve to encourage development in areas impacted by aircraft noise in preference to those affected by traffic noise. It may also be argued that the source documents referenced would not support the one criterion for all spaces.

We have chosen to proceed with our analysis on the basis that this reasoning will be accepted by the City. We have combined the noise levels at the site of the proposed development to provide an overall recommendation meeting the interior levels of Section 9.3.14.B, and we offer the following comments and recommendations to satisfy these development requirements.

1. Exterior Wall system

The following exterior wall detail has been proposed:

- ½" gypsum wallboard.
- 2 x 4 wood studs.
- R12 Batt thermal insulation.
- ½" exterior sheathing.
- exterior vinyl siding.



This wall system will provide adequate sound attenuation to **some** of the interior spaces.

To meet the further acoustical requirements of the site the following alternative constructions are proposed:

- A. 2x4 wood studs, 16" o.c. with:
 - ½" gypsum wallboard nailed with 5d nails 24" o.c. to studs only on each side of the stud,
 - ⅝" gypsum wallboard nailed with 8d nails 12" o.c. at edges and 24" o.c. on each side of the studs onto the ½" gypsum wallboard
 - A minimum of 1 ½" thick glass fibre insulation.

This construction is laboratory rated at STC 46. Adjustments to this construction may be required to meet BCBC and rain penetration requirements. These further concerns must be discussed and confirmed with the architects on the project and building officials.

- B. Exterior construction as originally proposed with interior wallboard mounted on resilient attachments. The wallboard must be Type X.

Either of these wall constructions (A or B) will be required in the following portions of the development:

- All exterior walls of buildings **No. 1 and No. 7.**
- **All exterior 2nd floor walls** of all buildings in the development.

2. Roof system

Your proposed roof/ceiling detail:

- ½" gypsum wallboard
- R 40 batt insulation
- ventilated attic system formed from trusses
- ½" sheathing
- asphalt shingles

This design will provide adequate noise isolation to all interior spaces. Any increase in material thickness is acceptable.

3. Exterior windows

Except in those areas specified, a base window system providing a minimum Sound Transmission Class (STC) of 37 will provide adequate noise isolation to all interior spaces, for example, one pane of 3mm standard glass and one pane of 6mm standard glass separated by a 13mm airspace.

The following windows will be required to be **6LAM-13-6LAM**¹ to meet the interior sound level requirements specified:

¹ 6LAM-13-6LAM is two panes of 6mm laminated glass separated by a 13mm airspace. Note that the laminated glass should be specified with a 0.030" thick polyvinyl butyral interlayer.

- **Building No. 1 and No.7**

Unit A - Second Floor

Br - 2 The south face small rectangular windows may be 3-13-6 glass but must be sealed and **not operable**.

The east and west facing windows.

Master The east and west facing windows.

Unit B - Second Floor

Br - 2 The east and west facing windows.

Master The east and west facing windows.

- **Building No. 2 and No.6**

Unit C and D - Second Floor

Br - 2 The east and west facing windows.

Master The east and west facing windows.

- **Building No. 3, No. 4 and No.5**

Unit E - Second Floor

Br - 3 The south facing window.

Br - 2 The south facing window.

Master The north facing window.

Unit E1- Second Floor

Br - 2 The south facing windows.

Br - 3 The south facing windows.

Master The north facing window.

Any further increase in glass thickness or airspace is acceptable. The above windows should be specified to meet the A3 performance rating for Air Tightness found in the CSA standard CAN/CSA-A440-M90, or latest revision.

4. **Doors**

The entry doors on Building No. 1 and No.7, Unit A, face south toward Cambie Road and can be a source of sound entry. These doors should be 35 mm solid core wood with an exterior storm door of wood or aluminum with openable glazed sections. Note that these doors should be provided with closed celled foam or neoprene seals or gaskets capable of maintaining the acoustical integrity of the construction. Again, any further increase in wood thickness is acceptable.

5. **Outdoor Private Space**

As the patio areas of Building No. 1 and No.7, Unit A, are less than the required 12m from the curb of Cambie Road, other noise mitigating measures must be utilized. In this regard, we

recommend that the proposed 6ft high fence be extended along the front as far as is practical. On the south property line, the top lattice work should be replaced with solid fence materials. This fence must be without gaps and must have a density of at least 20kg/m². It will be necessary to confirm if the design of this barrier satisfies the City of Richmond and/or other regulatory requirements. As the exterior sound levels are expected to approach 62 dBA due to aircraft movements alone, it will not be possible to meet the City's requirement of 55 dB for outdoor private space.

6. Ventilation

The CMHC criteria notes that for sites where the noise level is in excess of 55 dB, an alternative means of ventilation is necessary. An alternative form of ventilation allows for ventilation of the rooms with the windows and/or exterior doors closed. **This does not exclude the use of operable windows.**

We understand that there may be other code requirements regarding mechanical ventilation. The details of such a system are within the purview of the mechanical consultant. A mechanical system installed to satisfy the code requirements can also be designed to provide alternative ventilation. For reference we have included in Appendix 1 a copy of the relevant sections of the alternate ventilation requirements of the CMHC "Road and Rail Noise: Effects on Housing."

This report completes our work for this project. Please note that recommendations contained herein address only the acoustical requirements. Other requirements should be examined for compatibility with our recommendations. If you have any questions, please call.

Sincerely,

BKL Consultants Ltd.

per

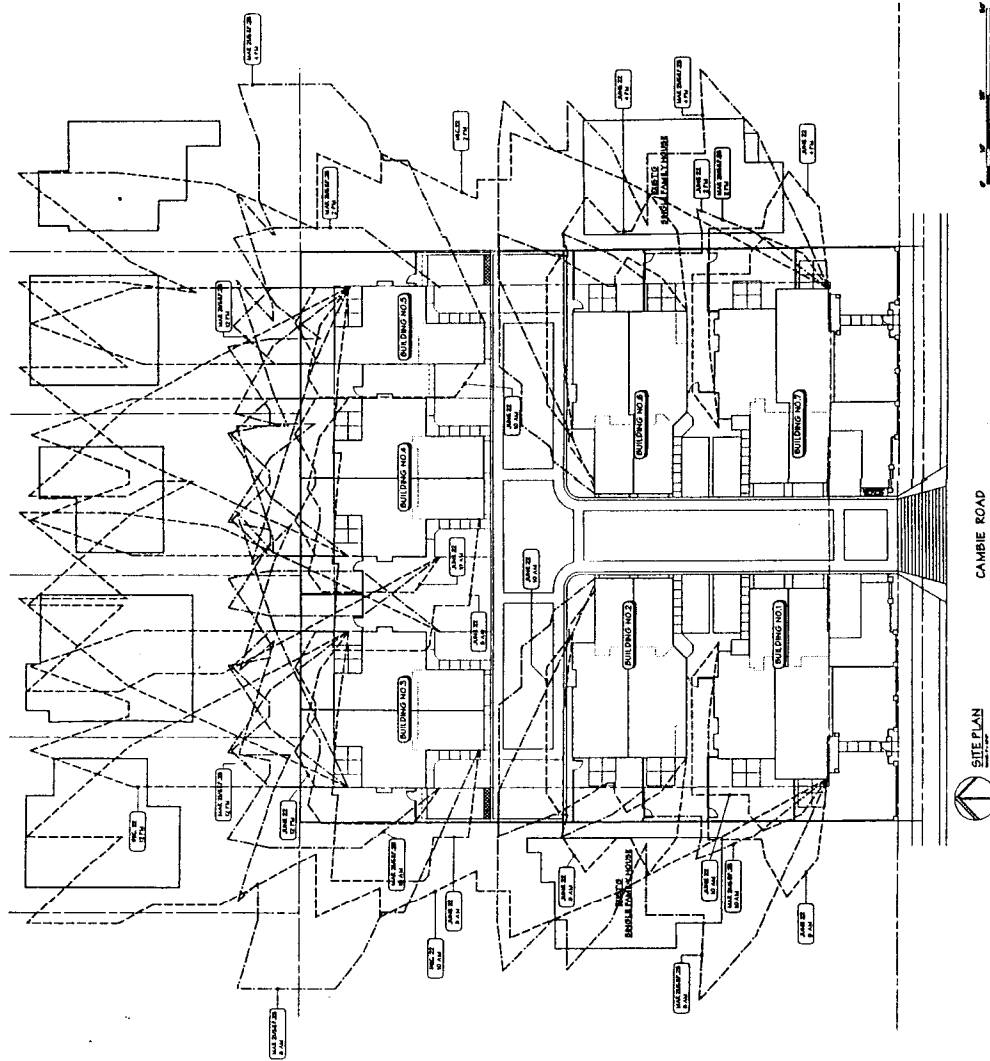


Douglas S. Kennedy, P.Eng

attachments

ACCESSORY BIDS: 5 M (10.40%)

APPENDIX 'D' (1 PAGE)



PROJECT	13 UNIT TOWNHOUSE DEVELOPMENT
ARCHITECT	tomizo yamamoto architect inc.
DATE	11/11/11
SCALE	1/8" = 1'-0"
DATE	11/11/11
BY	RY
CHECKED	RY
DATE	11/11/11



City of Richmond

6911 No. 3 Road
Richmond, BC V6Y 2C1

Development Permit Application Development Applications Department

(604) 276-4000 Fax (604) 276-4052

Please submit this completed form to the Zoning counter located at City Hall. All materials submitted to the City for a *Development Permit Application* become public property, and therefore, available for public inquiry.

Please refer to the attached forms for details on application attachments and non-refundable application fees.

Property Address(es): 11311-11331 CAMPBIE ROAD

Legal Description(s): LOT 16 & 161, SECTION 25, BSW. ROW, N.W. 1/2 PLAN 47377

Applicant: NORTHWEST DEVELOPMENT LTD.

Correspondence/Calls to be directed to:

Name: TOMIHO YAMAMOTO ARCHITECT INC.

Address: 954 BAYCREST DRIVE, NORTH VANCOUVER, B.C.

V7G 1N8
Postal Code

Te. No.: 604-929-8531
Business

Residence

tyarch@shaw.ca
E-mail

604-929-8591
Fax

Property Owner(s) Signature(s): [Signature]

Gurdev S. Sandhu
Please print name

or

Authorized Agent's Signature: _____

Attach Letter of Authorization

Please print name

For Office Use

Date Received: May 2/03

File No.: 03-234836

Only assign if application is complete

Application Fee: 3180.⁰⁰

Receipt No.: _____



City of Richmond
Urban Development Division

Development Permit

No. DP 03-234836

To the Holder: NORTHWEST DEVELOPMENT LTD.
Property Address: 11311 / 11331 CAMBIE ROAD
Address: C/O TOMIZO YAMAMOTO ARCHITECT INC.
954 BAYCREST DRIVE, NORTH VANCOUVER, BC V7G 1N8

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 and Development Bylaw No. 5300" is hereby varied or supplemented as follows:
 - a) The dimension and siting of buildings and structures on the land shall be generally in accordance with Plan #1 attached hereto.
 - b) The siting and design of off-street parking and loading facilities shall be generally in accordance with Plans # 1 and #2 attached hereto.
 - c) Landscaping and screening shall be provided around the different uses generally in accordance with the standards shown on Plan #2 attached hereto.
 - d) Roads and parking areas shall be paved in accordance with the standards shown on Plans # 1 and #2 attached hereto.
 - e) Sanitary sewers, water, drainage, highways, street lighting, underground wiring, and sidewalks, shall be provided as required.
 - f) Subject to Section 692 of the Local Government Act, R.S.B.C., the building shall be constructed generally in accordance with Plans #1 to #4 attached hereto.
4. As a condition of the issuance of this Permit, Council is holding the security set out below 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, or 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.

There is filed accordingly:

An Irrevocable Letter of Credit in the amount of \$31,000.00.

To the Holder: NORTHWEST DEVELOPMENT LTD.
Property Address: 11311 / 11331 CAMBIE ROAD
Address: C/O TOMIZO YAMAMOTO ARCHITECT INC.
954 BAYCREST DRIVE, NORTH VANCOUVER, BC V7G 1N8

5. 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.
 6. 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.
- This Permit is not a Building Permit.

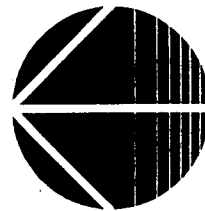
AUTHORIZING RESOLUTION NO. ISSUED BY THE COUNCIL THE DAY
OF , .

DELIVERED THIS DAY OF , .

MAYOR



19280	19282	791280	791300	791320
19280	19282	791280	791300	791320



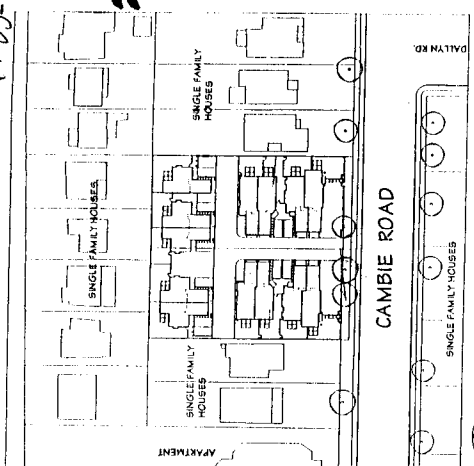
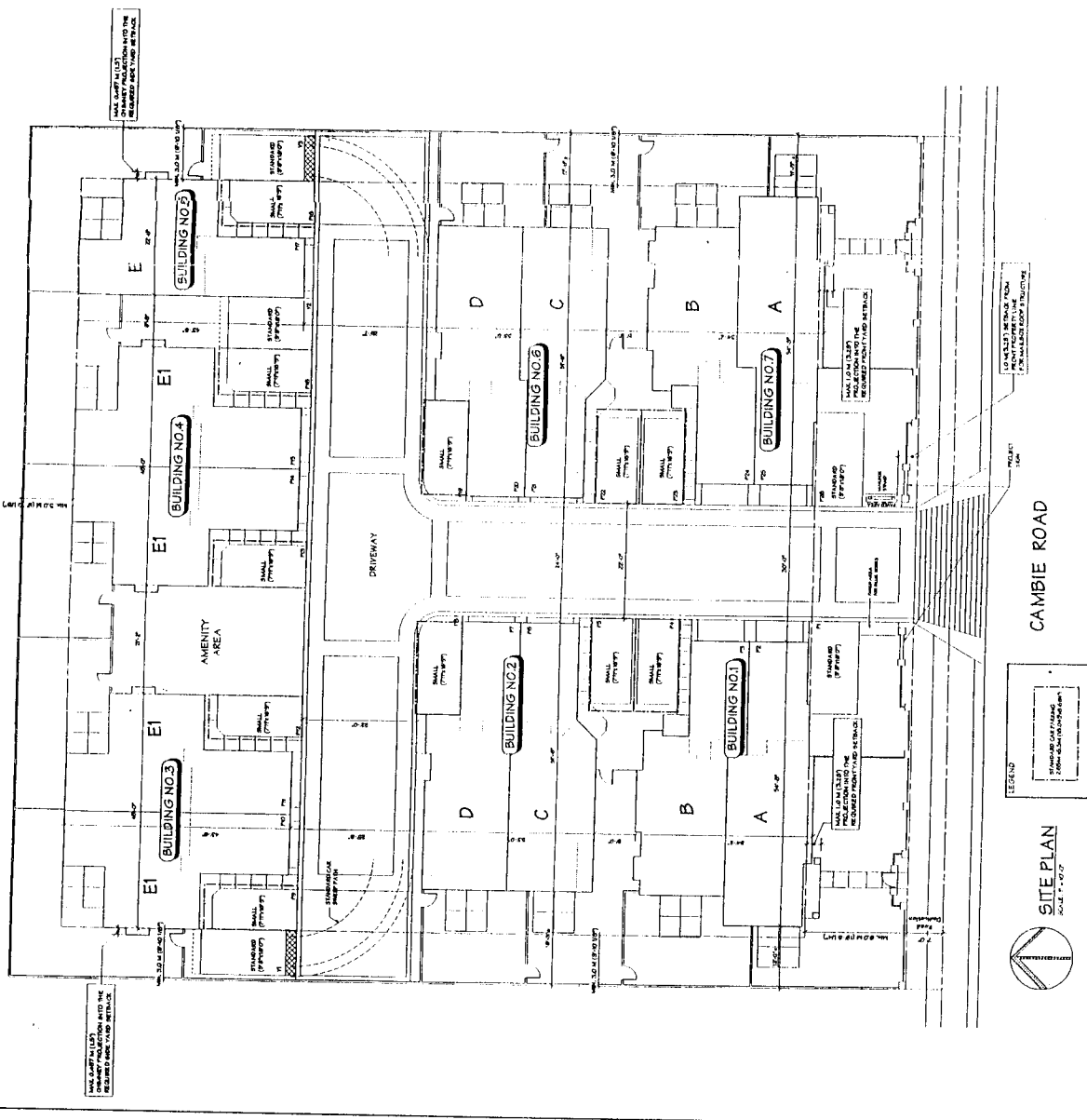
DP 03-234836
SCHEDULE "A"

Original Date: 05/16/03

Revision Date:

Note: Dimensions are in METRES

10



CONTEXT PLAN

[illegible]

Project and public relations, including the value of its products. The company is an important source of interest to its customers and has tried to use this information to improve its products.

3 UNIT TOWNHOUSE
DEVELOPMENT

3311-112TH CAMBIE ROAD
CHAMOND, N.C.

omizo
amamoto
rchitect inc.

Bayview Drive, 7.400 - 2.2
1140 1st 774-4631 Box 908-4581

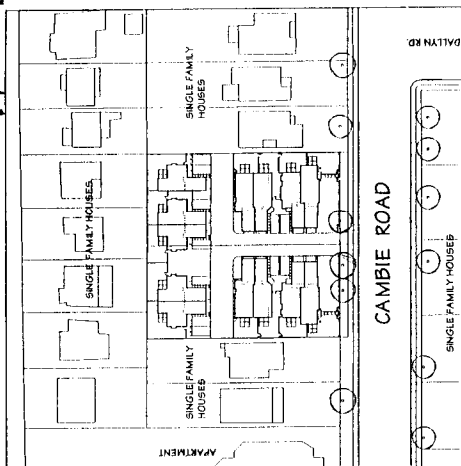
WORKING STUDY

FILE	18" x 11"	SIZE NO.
DATE	February 14, 2001	SIZE NO.
TIME	0.24	SIZE NO.
SIZE	1001	SIZE NO.



DP 03-234836

二井



CONTEXT PLAN

[illegible]

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**13 UNIT TOWNHOUSE
DEVELOPMENT**

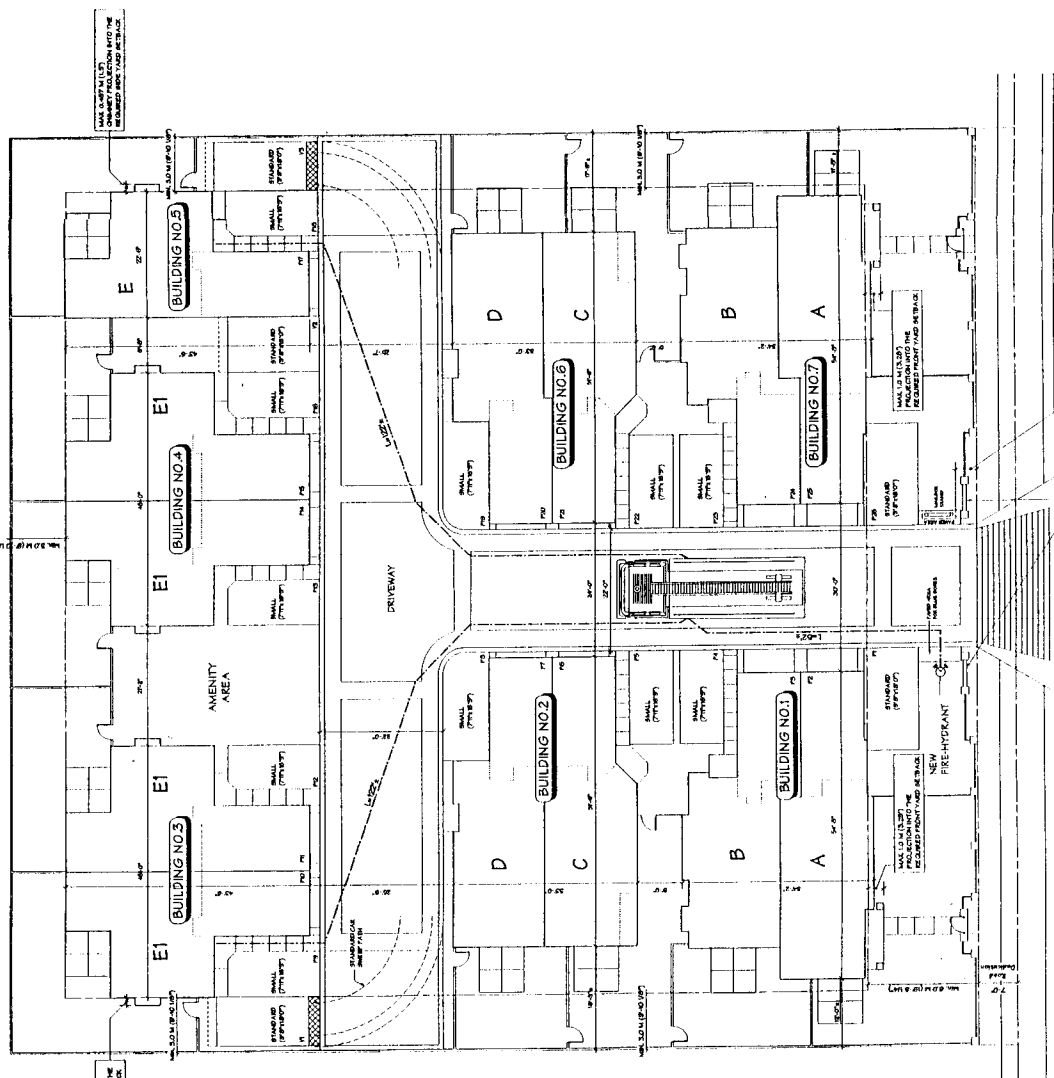
11311-11331 GAMBIE ROAD
INCHBURN, B.C.

tomizo
yamamoto
architect inc

1400-628 380 1690-628 381 8N1 D/L
375 7800 70 6416 8416000 950

SITE PLAN

SCALE	1" = 1'-0"	SECRET	A01	OF 03	FIG. NO. 1001
DATE	FEBRUARY 14, 2001				
DRAWN	D.A.L.				
CHECKED					



SITE PLAN

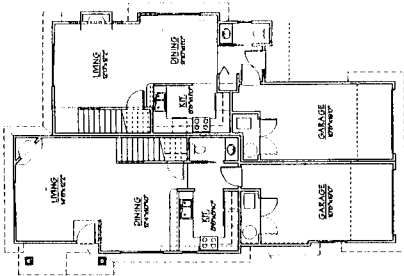


CAMBIE ROAD

JUL 07 2003

DP 03-234836

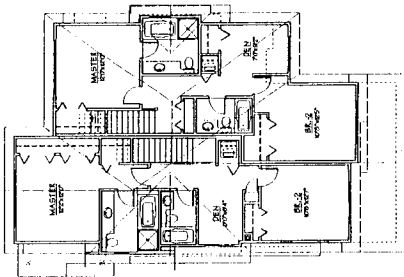
#3



GROUND FLOOR PLAN (BUILDINGS NO. 1 & NO. 7)
SCALE: 1/8" = 1'-0"
DRAWN BY: J.P.P.

UNIT-1

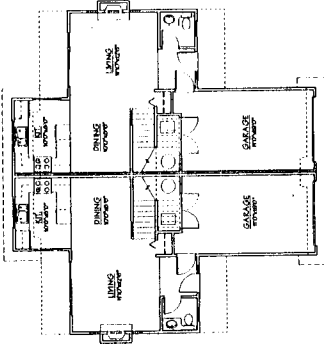
UNIT-2



SECOND FLOOR PLAN (BUILDINGS NO. 1 & NO. 7)
SCALE: 1/8" = 1'-0"
DRAWN BY: J.P.P.

UNIT-1

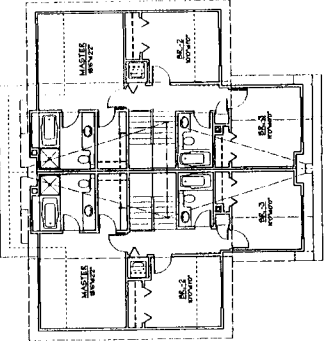
UNIT-2



GROUND FLOOR PLAN (BUILDINGS NO. 3 & NO. 4)
SCALE: 1/8" = 1'-0"
DRAWN BY: J.P.P.

UNIT-1

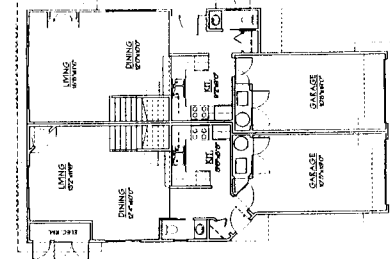
UNIT-2



SECOND FLOOR PLAN (BUILDINGS NO. 3 & NO. 4)
SCALE: 1/8" = 1'-0"
DRAWN BY: J.P.P.

UNIT-1

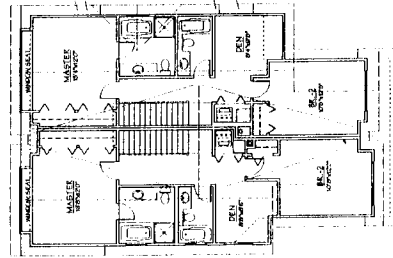
UNIT-2



GROUND FLOOR PLAN (BUILDINGS NO. 2 & NO. 6)
SCALE: 1/8" = 1'-0"
DRAWN BY: J.P.P.

UNIT-1

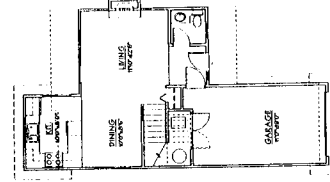
UNIT-2



SECOND FLOOR PLAN (BUILDINGS NO. 2 & NO. 6)
SCALE: 1/8" = 1'-0"
DRAWN BY: J.P.P.

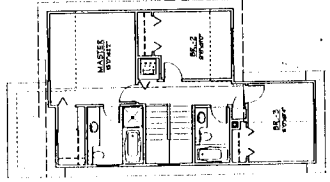
UNIT-1

UNIT-2



GROUND FLOOR PLAN (BUILDING NO. 5)
SCALE: 1/8" = 1'-0"
DRAWN BY: J.P.P.

UNIT-1



SECOND FLOOR PLAN (BUILDING NO. 5)
SCALE: 1/8" = 1'-0"
DRAWN BY: J.P.P.

UNIT-1

NO.	DATE	REVISIONS
1	JAN 03/01	REVISIONS
2		
3		

PROJECT
13 UNIT TOWNHOUSE
DEVELOPMENT

1301-1303 CHAMBER RD
RICHMOND, B.C.
tomizo
yamamoto
architect inc.

DATE: 07/07/03
DRAWN BY: J.P.P.
CHECKED BY: J.P.P.

FLOOR PLANS

SCALE	DATE	BY	CHKD	NO.
1/8" = 1'-0"	07/07/03	J.P.P.	J.P.P.	1301

