



Talbot Mackenzie & Associates  
Consulting Arborists

# **CONSTRUCTION IMPACT ASSESSMENT & TREE PRESERVATION PLAN**

**324/328 Cook Street and 1044-1054 Pendergast  
Street, Victoria**

**PREPARED FOR:** Aragon Properties Ltd.  
201 – 1628 West 1st Avenue  
Vancouver, BC, Canada V6J 1G1

**PREPARED BY:** Talbot, Mackenzie & Associates  
Noah Borges – Consulting Arborist  
ISA Certified # PN-8409A  
  
Graham Mackenzie – Consulting Arborist  
ISA Certified #PN-0428A

**DATE OF ISSUANCE:** May 7, 2018

Box 48153 RPO - Uptown Victoria, BC V8Z 7H6  
Ph: (250) 479-8733  
Fax: (250) 479-7050  
Email: tmtreehelp@gmail.com



## Talbot Mackenzie & Associates

Consulting Arborists

Jobsite Property: 324/328 Cook Street and 1044-1054 Pendergast Street, Victoria

Date of Site Visit(s): October 24, 2017, April 10, 2018

Site Conditions: Even terrain. No construction activity present. One CR-3M (Commercial Residential Apartment Modified) and three R-K (Medium Density Attached Dwelling) lots.

**Summary:** Based on the site plans provided, the two protected trees on the subject property (**Plum #673** and **Cedar #674**) will require removal as they are located within the proposed building envelope. We anticipate it will also be necessary to remove trees on the neighbouring property to the west numbered **NT 09-12** to accommodate the proposed excavation for the underground parking area, as well as municipal tree **NT 01**, which is in the path of the proposed driveway. The remaining trees located on municipal property have a good potential for being retained providing their critical root zones can be adequately protected during the construction process and the proposed excavation does not go beyond the property line of the subject property.

**Scope of Assignment:** To inventory the existing bylaw protected trees and any trees on neighbouring properties that could be potentially impacted by construction or that are within 3 meters of the property line. Review the proposal to demolish the existing buildings and construct a 4-6 storey mixed commercial and residential building, and comment on how construction activity may impact existing trees. Prepare a tree retention and construction damage mitigation plan for those trees deemed suitable to retain given the proposed impacts.

**Methodology:** We visually examined the trees on the property and prepared an inventory in the attached Tree Resource Spreadsheet. Each by-law protected tree was identified using a numeric metal tag attached to its lower trunk. Municipal trees and neighbours' trees were not tagged. Information such as tree species, DBH (1.4m), crown spread, critical root zone (CRZ), health, structure, and relative tolerance to construction impacts were included in the inventory. The by-law protected trees with their identification numbers were labelled on the attached Site Plan. The conclusions reached were based on the information provided within the attached plans and from exploratory excavations carried out on April 10, 2018.

**Summary of Tree Resource:** 17 trees were inventoried. Eight are municipal trees and seven are on neighbouring properties. There are two protected trees on the subject property: Plum #673 and Cedar #674.

**Trees to be Removed:**



- **Plum #673 and Western Red Cedar #674** on the subject property will have to be removed for construction of the 4-6 storey building.
- **Trees NT 9-12 and NT 15** are on neighbouring properties within 1m of the property line. We anticipate that excavation for the underground parkade will result in substantial root loss, significantly impacting the health and stability of the trees. The trees should be removed prior to construction.
- **Municipal tree NT 01** is in the path of the driveway entrance on Pendergast Street to the underground parkade.

#### **Potential Impacts on Trees to be Retained and Mitigation Measures**

- **Underground Parking Excavation:** The excavation for the portions of the underground parking that encroach into the critical root zones of trees to be retained, must be supervised by the project arborist. This will be particularly important when excavating next to trees NT 02-08 and NT 13-14 if they are going to be successfully retained. To minimize the extent of the excavation into the critical root zones, it will likely be necessary to use shoring techniques such as sheet piling, shotcrete or similar methods to reduce the requirements for cut slope and over excavation. Any roots critical to the trees survival must be retained and any non-critical roots in direct conflict with the excavation must be pruned to sound tissue to encourage new root growth. It may be necessary to excavate using a combination of hand digging, small machine excavation and hydro excavation to expose roots in conflict with the proposed excavation and determine if they can or cannot be pruned without having a significant impact on the trees. If it is found that large structural roots must be pruned to accommodate the proposed construction, it may be necessary to remove additional trees to eliminate any risk associated with them. Once the excavation is complete the proposed new underground parking walls may have to be constructed using blind forming or similar techniques to reduce the amount of necessary working room required. Once the project is given approval and before the excavation work commences, we recommend a meeting take place with the excavation contractor, blasting contractor, the project arborist, and a representative from the City of Victoria Parks department to go over the methods of excavation, blasting and shoring that may be required.
  - **Municipal trees NT 02-08:** Excavation for the underground parkade will encroach within the estimated critical root zones of some of these trees, though we do not predict the impacts will be significant enough to warrant removal. If shoring techniques are used, we estimate that excavation will occur approximately 4-5m from **NT 06**, 6.8m from **NT 07**, and 11-12m from **NT 08**.
- **Exploratory excavations** carried out on April 10, 2018, examined an area 7.1 meters from the existing curb (5 meters from center of tree) within the subject property directly opposite **NT 07**(see attached pictures). The trench, hydro-excavated under our direction, was 3.6 meters long and 72 cm wide. The deepest part of the excavation was 180 cm deep and the majority of the roots encountered were between 90 cm – 120 cm deep, other than some small surface roots below the concrete. The area excavated appeared to have been disturbed previously and we encountered various types of fill soil and portions of dead tree roots approximately 5 cm in diameter. The live roots encountered included: 8- 2.5 cm, 2- 5 cm and



1- 4 cm, along with numerous roots less than 1 cm in diameter. Based on these findings, we do not anticipate the excavation for the proposed construction will have a significant impact on the health or stability of this tree provided the remaining critical root zone can be adequately protected and shoring and blind forming techniques are used to reduce an over excavation.

- Of the municipal trees on Pendergast St. (**NT 03-05**), structural roots from **Cherry NT 03** are most likely to be encountered during excavation. Exploratory digging to confirm their presence within the property boundary, however, is currently precluded by the presence of a private laurel hedge. We do not anticipate the tree's health will be significantly compromised by excavation for the underground parkade, and will likely be able to be retained.

An arborist should also be present to supervise all excavation within the CRZs of trees NT 02-08. If large structural roots are encountered, the arborist should re-assess the viability of the trees. If they are to be retained, the arborist should prune non-critical roots back to sound tissue to encourage rapid compartmentalization of wounds and root re-growth.

- **Trees NT 13 and 14** are located on the west neighbour's property, 1.5m and 1m from the property line, respectively. Excavation for the underground parkade will extend to the property boundary, which may significantly impact the trees' root systems. Both are fruit trees, with moderate tolerance to construction related impacts. The trees are located at the edge of a parking lot, which may limit root spread to the west and may exacerbate the impacts of excavation. We anticipate that the trees may require removal, particularly NT 13, but that determination should be made at the time of excavation when an arborist can evaluate the extent of root loss.

- **Clearance Pruning:**

- **NT 03:** Limbs from this municipal cherry overhang the property line by 4-5 metres and will require clearance pruning to accommodate the building. According to the site plans provided, the southeast side of the proposed building's first and second storey is set back approximately 2.5-3m and 4.5m from the property line, respectively. The building does not encroach within the northwest portion of the tree's canopy. Provided that building scaffolding does not encroach additionally into the tree's canopy, the pruning required should be minor and not significantly impact the tree's health.
- **NT 06-08:** Canopy measurements were supplied for NT 06 and NT 07 as well as surveys completed of the limbs in comparison to the proposed buildings. The most recent drawings supplied and attached show the building has been altered to set the building back from the canopy of NT07 and the balconies have been removed from the building in this area. NT06 will still require some pruning to accommodate the proposed construction. We estimate this would remove approximately 15% of the live canopy of the tree. The largest pruning cuts would be 13cm and 10cm. Some of the branches have suitable lateral branches to cut back to, others do not (so some small topping cuts may need to be made to avoid larger cuts). In our opinion, this young

tree will recover from the health impact and do not anticipate the pruning cuts will result in significant potential decay, but some less than ideal pruning cuts may need to be made.

- **Landscaping within CRZs of boulevard trees:** Installing any new plant material within the critical root zones of the municipal trees will have to be done carefully and will have to take into account any existing tree roots that are present. In order to improve the growing environment on the boulevard and to reduce the amount of foot traffic over the tree roots, we propose the following methodology:
  - Using an airspade, loosen the soil on the boulevard and amend with new soil and mulch where possible.
  - Through this process identify areas where grades can be raised and small shrubs and plantings may be able to be incorporated to deter foot traffic through the root zones of the trees.
  - Any proposed irrigation system will likely have to be placed over the existing grades and root systems.
- **Underground Services:** It is our understanding that connections for underground services (water, sewer, drain) will be made at the southwest corner of the subject property, off Pendergast St. Given that trees NT 09-12 will require removal for construction of the underground parking area, servicing will not impact any additional trees.
- **Hydro connection:** No information was provided regarding the location of a hydro connection.
- **Barrier fencing:** The areas, surrounding the trees to be retained, should be isolated from the construction activity by erecting protective barrier fencing. Where possible, the fencing should be erected at the perimeter of the critical root zones. The barrier fencing to be erected must be a minimum of 4 feet in height, of solid frame construction that is attached to wooden or metal posts. A solid board or rail must run between the posts at the top and the bottom of the fencing. This solid frame can then be covered with plywood, or flexible snow fencing. The fencing must be erected prior to the start of any construction activity on site (i.e. demolition, excavation, construction), and remain in place through completion of the project. Signs should be posted around the protection zone to declare it off limits to all construction related activity. The project arborist must be consulted before this fencing is removed or moved for any purpose.
  - All municipal trees identified in the inventory should be protected with barrier fencing to reduce the risk of accidental mechanical injury and limit unnecessary soil compaction.
- **Arborist Supervision:** All excavation occurring within the critical root zones of protected trees should be completed under supervision by the project arborist. Any roots encountered must be pruned back to sound tissue to reduce wound surface area and encourage rapid compartmentalization of the wound.



- **Methods to avoid soil compaction:** In areas where construction traffic must encroach into the critical root zones of trees to be retained, efforts must be made to reduce soil compaction where possible by displacing the weight of machinery and foot traffic. This can be achieved by one of the following methods:
  - Installing a layer of hog fuel at least 20 cm in depth and maintaining it in good condition until construction is complete.
  - Placing medium weight geotextile cloth over the area to be used and installing a layer of crushed rock to a depth of 15 cm over top.
  - Placing two layers of 19mm plywood.
  - Placing steel plates.
- **Demolition of the existing buildings:** The demolition of the existing houses and any services that must be removed or abandoned, must take the critical root zone of the trees to be retained into account. If any excavation or machine access is required within the critical root zones of trees to be retained, it must be completed under the supervision and direction of the project arborist. If temporarily removed for demolition, barrier fencing must be erected immediately after the supervised demolition.
- **Mulching:** Mulching is an important proactive step to maintaining the health of the trees to be retained and mitigating construction related impacts and overall stress. Mulch should be made from a natural material such as wood chips or bark pieces and be 5-8cm deep. As much of the area within two times the dripline of the tree should be mulched, both inside and outside of the critical root zone. No mulch should be touching the trunk of the tree. See “methods to avoid soil compaction” if the area is to have heavy traffic.
- **Arborist Role:** It is the responsibility of the client or his/her representative to contact the project arborist for the purpose of:
  - Locating the barrier fencing
  - Reviewing the report with the project foreman or site supervisor
  - Locating work zones, where required
  - Supervising any excavation within the critical root zones of trees to be retained
  - Reviewing and advising of any pruning requirements for machine clearances
- **Review and site meeting:** Once the project receives approval, it is important that the project arborist meet with the principals involved in the project to review the information contained herein. It is also important that the arborist meet with the site foreman or supervisor before any demolition, site clearing or other construction activity occurs.

Exploratory excavation:

Pic. 1 – Location of exploratory excavation.





Exploratory excavation:

Pic 2. – Largest roots encountered.





Talbot Mackenzie & Associates

Please do not hesitate to call us at (250) 479-8733 should you have any further questions. Thank you.

Yours truly,



Talbot Mackenzie & Associates  
ISA Certified Consulting Arborists

Encl. 2-page tree resource spreadsheet, 1-page site plan with trees, 18-page building plans, 1-page tree canopies vs. building, 1-page barrier fencing specifications

**Disclosure Statement**

Arborists are professionals who examine trees and use their training, knowledge and experience to recommend techniques and procedures that will improve their health and structure or to mitigate associated risks.

Trees are living organisms, whose health and structure change, and are influenced by age, continued growth, climate, weather conditions, and insect and disease pathogens. Indicators of structural weakness and disease are often hidden within the tree structure or beneath the ground. It is not possible for an Arborist to identify every flaw or condition that could result in failure or can he/she guarantee that the tree will remain healthy and free of risk.

Remedial care and mitigation measures recommended are based on the visible and detectable indicators present at the time of the examination and cannot be guaranteed to alleviate all symptoms or to mitigate all risk posed.

Cook St. and Pendergast St.  
Tree Resource Spreadsheet

Tree ID	Common Name	Latin Name	DBH (cm) * over ivy approximate	~ Crown Spread (m)	CRZ (m)	Health	Structure	Relative Tolerance	Remarks and Recommendations	Retention Status
NT 01	Cherry	<i>Prunus spp.</i>	29	6	3.5	Fair	Fair	Moderate	Municipal.	Remove
NT 02	Cherry	<i>Prunus spp.</i>	17	4	2.0	Fair	Fair	Moderate	Municipal.	Retain
NT 03	Cherry	<i>Prunus spp.</i>	35	10	4.0	Fair	Fair	Moderate	Municipal. Limbs overhang property line.	Retain
NT 04	Cherry	<i>Prunus spp.</i>	15	4	2.0	Fair/poor	Fair	Moderate	Municipal. Minor dieback.	Retain
NT 05	Cherry	<i>Prunus spp.</i>	15	4	2.0	Fair/poor	Fair/poor	Moderate	Municipal. Dieback and deadwood.	Retain
673	Purple Leaf Plum	<i>Prunus cerasifera</i>	36, 32, 23, 22	12	10.0	Good	Fair/poor	Moderate	Codominant unions at base. Epicormic growth.	Remove
NT 06	Horsechestnut	<i>Aesculus hippocastanum</i>	51	12	6.0	Good	Fair	Moderate	Municipal. Y-pruned for utility line clearance. Asymmetric crown. Damaged surface roots.	Retain
NT07	Horsechestnut	<i>Aesculus hippocastanum</i>	118	18	14.0	Fair	Fair/poor	Moderate	Municipal. Surface rooted and swelling at base (possible decay). Some exposed roots pruned. Significant dieback and large deadwood. Y-pruned for utility line clearance. Large pruning wounds throughout. Codominant union at 2m.	Retain
NT 08	Horsechestnut	<i>Aesculus hippocastanum</i>	112	18	13.5	Fair/poor	Fair/poor	Moderate	Municipal. Y-pruned for utility line clearance. Large wound on stem overhanging road with possible decay. Reaction wood and included bark at codominant union.	Retain
NT 09	Holly	<i>Ilex aquifolium</i>	20, 15	5	3.0	Good	Fair	Good	Neighbour's. 0.5m from property line.	Retain
NT 10	Western Red Cedar	<i>Thuja plicata</i>	55	10	8.5	Good	Good	Poor	Neighbour's. 0.5m from property line.	Remove
NT 11	Lawson Cypress	<i>Chamaecyparis lawsonii</i>	57	8	7.0	Fair	Good	Moderate	Neighbour's. 0.5m from property line.	Remove

Prepared by:  
Talbot Mackenzie & Associates  
ISA Certified, and Consulting Arborists  
Phone: (250) 479-8733  
Fax: (250) 479-7050  
email: Treehelp@telus.net



Cook St. and Pendergast St.  
Tree Resource Spreadsheet

Tree ID	Common Name	Latin Name	DBH (cm) * over ivy approximate	~ Crown Spread (m)	CRZ (m)	Health	Structure	Relative Tolerance	Remarks and Recommendations	Retention Status
NT 12	Leyland cypress	<i>Cupressus x leylandii</i>	59	12	7.0	Fair	Fair	Moderate	Neighbour's. 0.5m from property line.	Remove
NT 13	Cherry	<i>Prunus spp.</i>	20, 20	8	4.0	Fair	Fair	Moderate	Neighbour's. 1.5m from property line.	TBD
NT 14	Apple	<i>Malus spp.</i>	35	8	4.0	Fair/poor	Fair/poor	Moderate	Neighbour's. 1m from property line.	TBD
NT 15	Cherry	<i>Prunus spp.</i>	40	10	5.0	Fair	Fair	Moderate	Neighbour's. Adjacent to fence.	Remove
674	Western Red Cedar	<i>Thuja plicata</i>	61	12	9.0	Good	Good	Poor	Minor dieback and browning foliage.	Remove





PROJECT INFORMATION TABLE	
Zone (existing)	CR-3M, R-K
Proposed zone or site specific zone If unsure, state "new zone"	NEW ZONE
Site area (m <sup>2</sup> )	2875 m <sup>2</sup> (DPA 5 = 1099 m <sup>2</sup> , DPA 16 = 1776 m <sup>2</sup> )
Total floor area (m <sup>2</sup> )	6299 m <sup>2</sup> (DPA 5 = 2747 m <sup>2</sup> , DPA 16 = 3552 m <sup>2</sup> )
Commercial floor area (m <sup>2</sup> )	535 m <sup>2</sup>
Floor space ratio	2.19:1 (DPA 5 = 2.5:1, DPA 16 = 2:1)
Site coverage (%)	65.7%
Open site space (%)	34.1%
Height of building (m)	16.15 m
Number of storeys	4
Parking stalls (number) on site	80
Bicycle parking number (Class 1 and Class 2)	53 CLASS 1, 12 CLASS 2
Building Setbacks (m) *	* MEASURED TO BUILDING FACE
Front yard	3.18 m (PENDERGAST STREET)
Rear yard	4.18 m
Side yard (indicate which side)	3.54 m (WEST P.L.)
Side yard (indicate which side)	0.46 m (COOK STREET)
Combined side yards	4.00 m
<b>Residential Use Details</b>	
Total number of units	48
Unit type, e.g., 1 bedroom	11 1BR, 28 2BR, 9 3BR
Ground-orientated units	7
Minimum unit floor area (m <sup>2</sup> )	66 m <sup>2</sup>
Total residential floor area (m <sup>2</sup> )	5160 m <sup>2</sup>

18



COOK & PENDERGAST CORNER PERSPECTIVE



SITE CONTEXT PLAN

A0.00	Cover Sheet	A2.01	Ground Floor	A9.01	Materials
A1.00	Survey, Existing Site Plan & Average Grade	A2.02	Level 2	L1.01	Landscape Materials Plan
A1.01	Code Analysis	A2.03	Level 3	L1.02	Tree Retention and Removal Plan
A1.02	Limiting Distance	A2.04	Level 4	L1.03	Stormwater Management Plan
A1.03	Overall Site Plan	A2.05	Roof Level	L1.04	Planting Plan & Plant List
A1.04	Shadow Studies - Equinox	A3.00	Elevations	L1.05	Roof & Rooftop Landscape & Planting Plan
A1.05	Shadow Studies - Summer	A4.00	Building Sections	C1.00	Preliminary Site Plan
A1.06	Shadow Studies - Winter	A4.01	Context Sections		
A2.00	Parking Level	A9.00	Perspectives		

#### APPLICANT

ARAGON PROPERTIES LTD.  
201-1628 WEST 1st AVENUE  
VANCOUVER BC V6J 1G1  
604.732.6170

CONTACT:  
LENNY MOY  
lmoy@aragon.ca  
LUKE RAMSEY  
lramsey@aragon.ca

#### PROJECT TEAM

##### ARCHITECT

CASCADIA ARCHITECTS  
1060 MEARES STREET  
VICTORIA BC V8V 3J6  
250.590.3223

CONTACT:  
PETER JOHANNKNECHT  
peter@cascadiaarchitects.ca  
GREGORY DAMANT  
greg@cascadiaarchitects.ca

##### STRUCTURAL ENGINEER

FAST + EPP  
201-1672 WEST 1st AVENUE  
VANCOUVER BC V6J 1G1  
604.731.7412

CONTACT:  
ROBERT JACKSON  
rjackson@fastep.ca

##### MECHANICAL ENGINEER

WILLIAMS ENGINEERING  
SUITE 202, 31 BASTION SQUARE  
VICTORIA BC V8W 1J1  
778.406.0023

CONTACT:  
COLLIN CRONKHITE  
ccronkhite@williamsengineering.com

##### ELECTRICAL ENGINEER

SMITH + ANDERSEN  
338-6450 ROBERTS STREET  
BURNABY BC V5G 4E1  
604.294.8414

CONTACT:  
RON SHARMA  
Ron.Sharma@smithandandersen.com

##### CIVIL ENGINEER

J.E. ANDERSON & ASSOCIATES  
4212 GLANFORD AVENUE  
VICTORIA BC V8Z 4B7  
250.727.2214

CONTACT:  
ROSS TUCK  
rtuck@jeanderson.com

##### TRAFFIC CONSULTANT

WATT CONSULTING GROUP  
501-740 HILLSIDE AVENUE  
VICTORIA BC V8T 1Z4  
250.388.9877

CONTACT:  
DANIEL CASEY  
dcasey@wattconsultinggroup.com

##### LANDSCAPE ARCHITECT

MURDOCH de GREEF INC.  
200-524 CULDUTH ROAD  
VICTORIA BC V8Z 1G1  
250.412.2891

CONTACT:  
SCOTT MURDOCH  
scott@mdesign.com

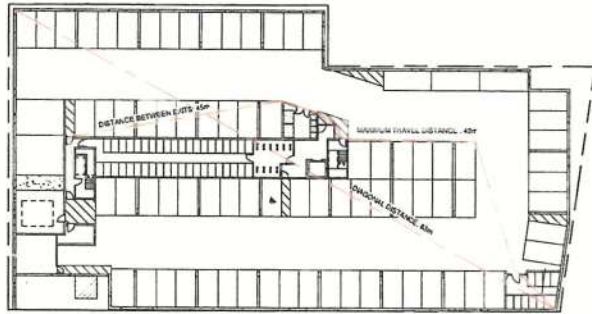
##### ARBORIST

TALBOT MACKENZIE & ASSOCIATES  
BOX 48153 RPO UPTOWN  
VICTORIA BC V8Z 7H6  
250.479.8733

CONTACT:  
GRAHAM MACKENZIE  
tmtreehelp@gmail.com

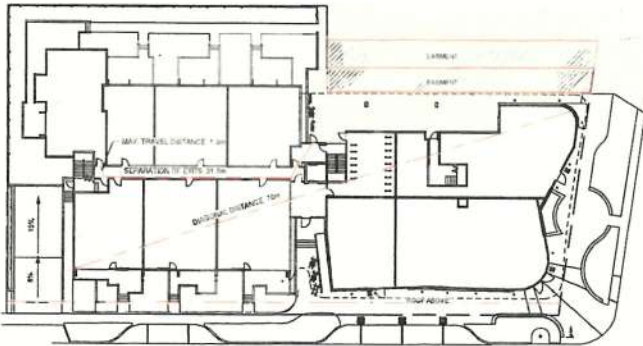






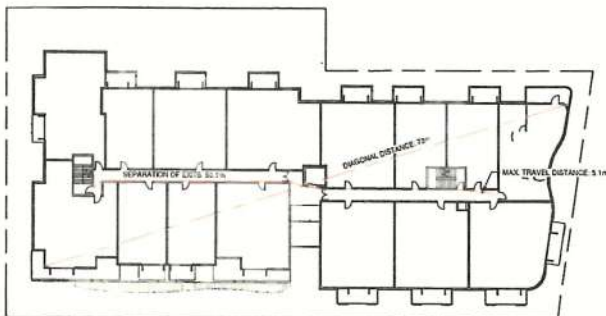
MIN. SEPARATION BETWEEN EXITS: 41.5m  
 OCCUPANCY: GROUP F, DIVISION 3  
 OCCUPANT LOAD: 7683 MP / 45 MP PER PERSON = 55 PERSONS  
 MIN. EXIT WIDTH:  
 RAMP, CORRIDORS & PASSAGEWAYS: 1.1m PER PERSON x 55 = 250m  
 STAIRS: 800m PERSON x 55 = 475m

① Parking Level - Code Plan  
 1:300



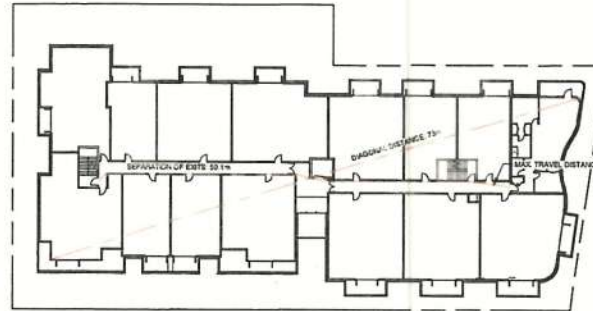
RESIDENTIAL AREA  
 MIN. SEPARATION BETWEEN EXITS: 9m  
 OCCUPANCY: GROUP C, RESIDENTIAL  
 OCCUPANT LOAD: 14 SLEEPING ROOMS x 2 PERSONS PER ROOM = 28 PERSONS  
 MIN. EXIT WIDTH:  
 RAMP, CORRIDORS & PASSAGEWAYS: 1.1m PER PERSON x 28 = 171m  
 STAIRS: 800m PERSON x 28 = 224m  
 COMMERCIAL AREA  
 OCCUPANCY: GROUP E  
 OCCUPANT LOAD: 544 MP / 37 MP PER PERSON = 147 PERSONS  
 MIN. EXIT WIDTH:  
 RAMP, CORRIDORS & PASSAGEWAYS: 1.1m PER PERSON x 147 = 887m  
 STAIRS: 800m PERSON x 147 = 1176m

② Grade - Code Plan  
 1:300



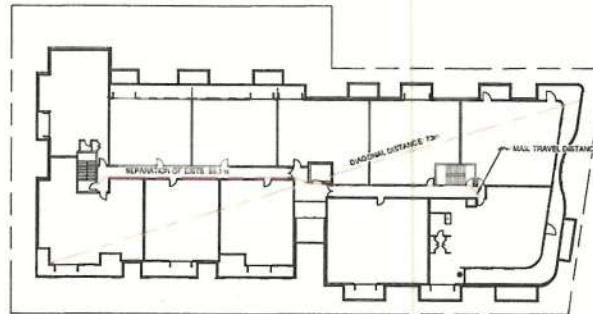
MIN. SEPARATION BETWEEN EXITS: 9m  
 OCCUPANCY: GROUP C, RESIDENTIAL  
 OCCUPANT LOAD: 28 SLEEPING ROOMS x 2 PERSONS PER ROOM = 56 PERSONS  
 MIN. EXIT WIDTH:  
 RAMP, CORRIDORS & PASSAGEWAYS: 1.1m PER PERSON x 56 = 242m  
 STAIRS: 800m PERSON x 56 = 448m

③ Level 2 - Code Plan  
 1:300



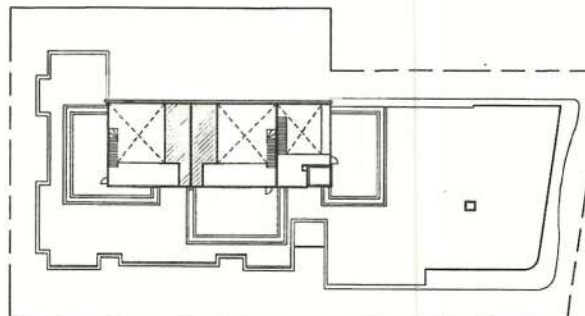
MIN. SEPARATION BETWEEN EXITS: 9m  
 OCCUPANCY: GROUP C, RESIDENTIAL  
 OCCUPANT LOAD: 28 SLEEPING ROOMS x 2 PERSONS PER ROOM = 56 PERSONS  
 MIN. EXIT WIDTH:  
 RAMP, CORRIDORS & PASSAGEWAYS: 1.1m PER PERSON x 56 = 242m  
 STAIRS: 800m PERSON x 56 = 448m

④ Level 3 - Code Plan  
 1:300



MIN. SEPARATION BETWEEN EXITS: 9m  
 OCCUPANCY: GROUP C, RESIDENTIAL  
 OCCUPANT LOAD: 27 SLEEPING ROOMS x 2 PERSONS PER ROOM = 54 PERSONS  
 MIN. EXIT WIDTH:  
 RAMP, CORRIDORS & PASSAGEWAYS: 1.1m PER PERSON x 54 = 222m  
 STAIRS: 800m PERSON x 54 = 432m

⑤ Level 4 - Code Plan  
 1:300



OCCUPANCIAL AREA IS NEGLIGIBLE TO LEVEL BELOW AND INCLUSIVE OF LEVEL 4 CALCULATIONS

⑥ Roof - Code Plan  
 1:300

BC BUILDING CODE 2012  
 3.1 GENERAL  
 3.1.1 OCCUPANCY CLASSIFICATION:  
 GROUP C, RESIDENTIAL, OCCUPANCY LEVEL 1-4  
 GROUP F, DIVISION 3, PARKING LEVEL  
 3.1.2 SEPARATION OF USES  
 F/C TO C REQUIRED 1HR F.R.  
 C TO E REQUIRED 2HR F.R.  
 3.1.17 OCCUPANT LOAD  
 SEE A1.01  
 3.2 FIRE SAFETY  
 BUILDING AREA:  
 1750 MP  
 3.2.2 BUILDING SIZE AND CONSTRUCTION  
 3.2.2.1 GROUP C, UP TO 8 STORES: SPRINKLERED  
 SPRINKLERED: YES  
 3.4 EXITS  
 3.4.2.1 MINIMUM NUMBER OF EXITS: 2 PER FLOOR  
 3.4.2.2 DISTANCE BETWEEN EXITS: SEE A1.01  
 3.4.2.3 LOCATION OF EXITS  
 MAX TRAVEL PERMITTED (RESIDENTIAL): 35m  
 MAX TRAVEL PERMITTED (PS USE): 45m  
 3.7 HEALTH REQUIREMENTS  
 MINIMUM OF REQUIRED WASHROOMS: 1 B.O.  
 3.8 REQUIREMENTS FOR PERSONS WITH DISABILITIES  
 T.S.D.

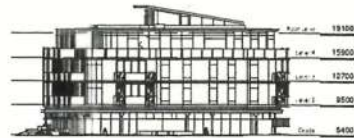
NO.	DESCRIPTION	DATE



Project: Cook & Pendergast  
 Aragon Properties Ltd.  
 328 Cook Street  
 Code Analysis  
 Date: April 4, 2018  
 Scale: 1:300  
 Project: 1719  
 Sheet: A1.01  
 Date: 2018-04-04 12:21:08 PM

**GROUP E OCCUPANCY**  
 LISTING DISTANCE: 18.2 m  
 EXPOSING BUILDING FACE: 200 m<sup>2</sup>  
 MAXIMUM AREA OF UNPROTECTED OPENINGS: 100%

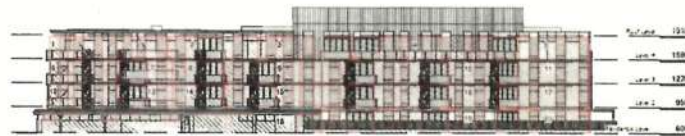
**GROUP C OCCUPANCY**  
 LISTING DISTANCE: 18.2 m  
 EXPOSING BUILDING FACE: 150 m<sup>2</sup>  
 MAXIMUM AREA OF UNPROTECTED OPENINGS: 100%



① East Elevation Limiting Distance  
 1:300

**GROUP E OCCUPANCY**  
 LISTING DISTANCE: 4.7 m  
 EXPOSING BUILDING FACE: 73 m<sup>2</sup>  
 MAXIMUM AREA OF UNPROTECTED OPENINGS: 33%  
 PROPOSED AREA OF UNPROTECTED OPENINGS: 15 m<sup>2</sup>  
 PROPOSED PERCENTAGE OF UNPROTECTED OPENINGS: 20.5%

**GROUP C OCCUPANCY**  
 SEE TABLE



② North Elevation Limiting Distance  
 1:300

**GROUP E OCCUPANCY**  
 LISTING DISTANCE: 10.9 m  
 EXPOSING BUILDING FACE: 73 m<sup>2</sup>  
 MAXIMUM AREA OF UNPROTECTED OPENINGS: 100%

**GROUP C OCCUPANCY**  
 LISTING DISTANCE: 10.9 m  
 EXPOSING BUILDING FACE: 150 m<sup>2</sup>  
 MAXIMUM AREA OF UNPROTECTED OPENINGS: 100%



③ South Elevation Limiting Distance  
 1:300

**GROUP E OCCUPANCY**  
 N/A

**GROUP C OCCUPANCY**  
 LISTING DISTANCE: 5 m  
 EXPOSING BUILDING FACE: 405 m<sup>2</sup>  
 MAXIMUM AREA OF UNPROTECTED OPENINGS: 40%  
 PROPOSED AREA OF UNPROTECTED OPENINGS: 93 m<sup>2</sup>  
 PROPOSED PERCENTAGE OF UNPROTECTED OPENINGS: 23.5%



④ West Elevation Limiting Distance  
 1:300

**NORTH ELEVATION, GROUP C OCCUPANCY**

BUILDING COMPARTMENT	LISTING DISTANCE	AREA OF EXPOSING FACE	MAXIMUM % OPENING	PROPOSED AREA OF OPENING	PROPOSED % OPENING
1	4.1 m	43 m <sup>2</sup>	60%	26 m <sup>2</sup>	61%
2	4.1 m	35 m <sup>2</sup>	71%	18 m <sup>2</sup>	51%
3	4.1 m	35 m <sup>2</sup>	71%	21 m <sup>2</sup>	60%
4	12.2 m	41 m <sup>2</sup>	100%	41 m <sup>2</sup>	100%
5	5.8 m	28 m <sup>2</sup>	100%	11 m <sup>2</sup>	39%
6	4.1 m	27 m <sup>2</sup>	78%	12 m <sup>2</sup>	45%
7	4.1 m	20 m <sup>2</sup>	100%	14 m <sup>2</sup>	70%
8	4.1 m	20 m <sup>2</sup>	100%	14 m <sup>2</sup>	70%
9	4.1 m	29 m <sup>2</sup>	78%	18 m <sup>2</sup>	62%
10	10.5 m	84 m <sup>2</sup>	100%	31 m <sup>2</sup>	37%
11	5.8 m	28 m <sup>2</sup>	100%	11 m <sup>2</sup>	39%
12	4.1 m	27 m <sup>2</sup>	78%	12 m <sup>2</sup>	45%
13	4.1 m	20 m <sup>2</sup>	100%	14 m <sup>2</sup>	70%
14	4.1 m	20 m <sup>2</sup>	100%	14 m <sup>2</sup>	70%
15	4.1 m	29 m <sup>2</sup>	78%	18 m <sup>2</sup>	62%
16	10.5 m	84 m <sup>2</sup>	100%	31 m <sup>2</sup>	37%
17	5.8 m	28 m <sup>2</sup>	100%	11 m <sup>2</sup>	39%
18	8.4 m	35 m <sup>2</sup>	100%	8 m <sup>2</sup>	23%
19	10.5 m	84 m <sup>2</sup>	100%	42 m <sup>2</sup>	50%
20	5.8 m	31 m <sup>2</sup>	100%	8 m <sup>2</sup>	26%

NO.	DESCRIPTION	DATE
-----	-------------	------



**Cook & Pendergast**  
 Aragon Properties Ltd.  
 328 Cook Street

**Limiting Distance**

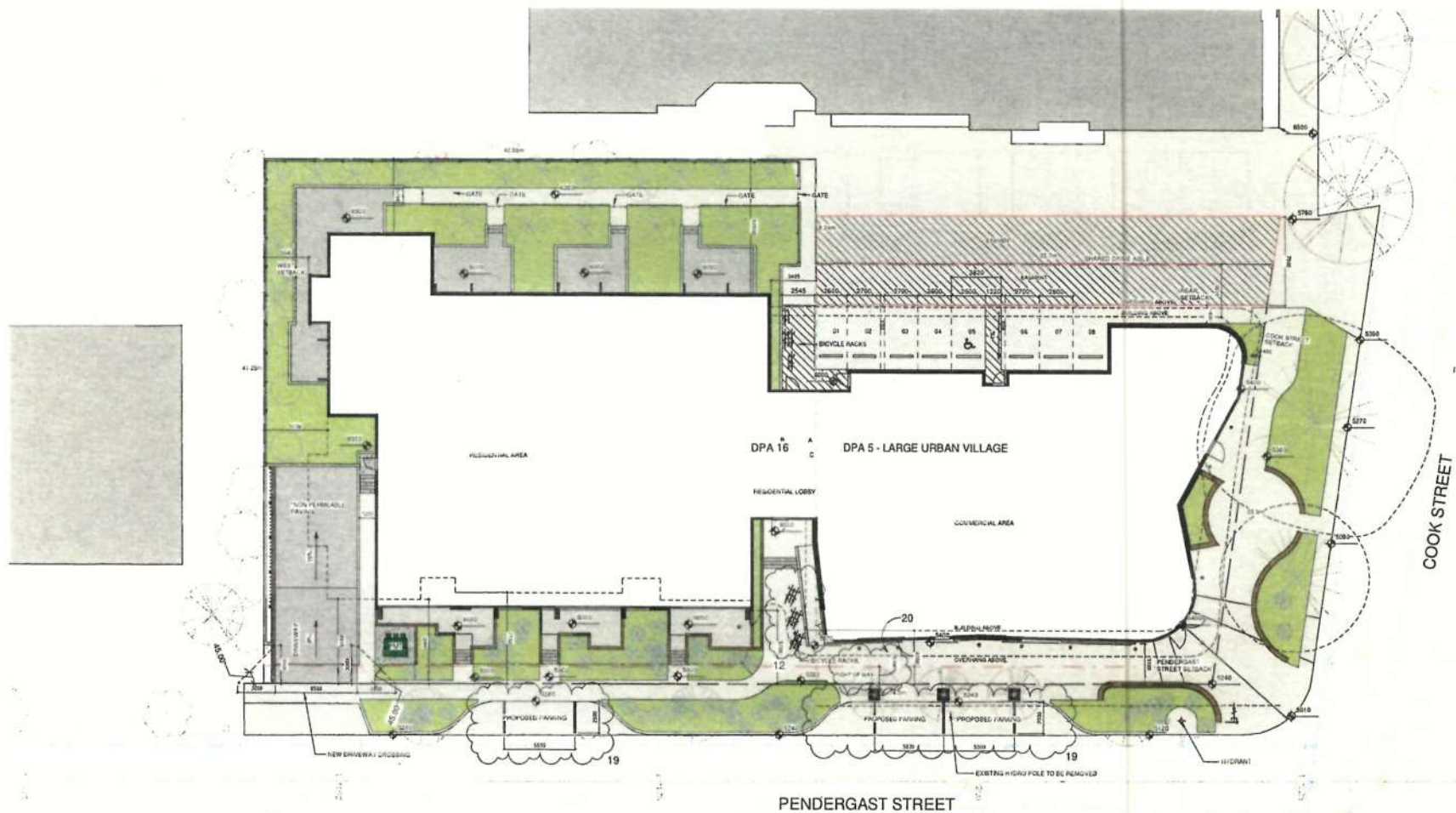
Date: April 4, 2018

Scale: 1:300

Project #: 1719

Sheet # A1.02





NOTE:  
REFER TO LANDSCAPE PLAN FOR TREE  
INFORMATION INCLUDING LOCATION OF  
TREES TO BE REMOVED

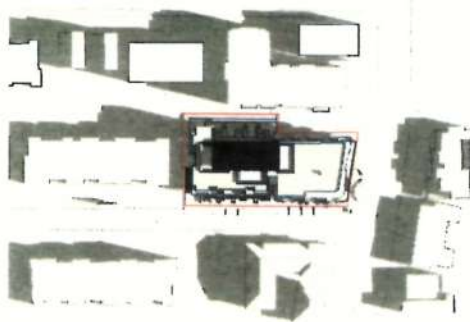
1 Overall Site Plan  
1:150

NO.	DESCRIPTION	DATE
1	PRELIMINARY SITE PLAN	APR 4, 2018

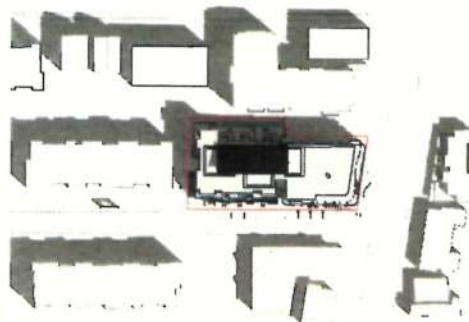


Cook & Pendergast	
Aragon Properties Ltd. 328 Cook Street	
Overall Site Plan	
Date	April 4, 2018
Scale	1:150
Project #	1719
Permit #	APR 03 2018
Sheet #	A1.03

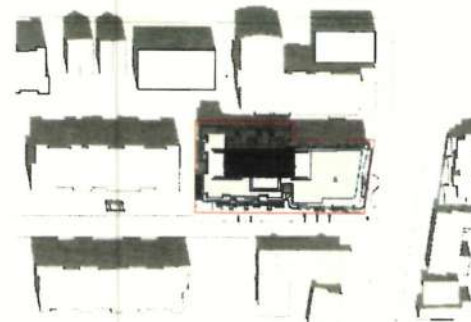
25 50047324-0.PDF



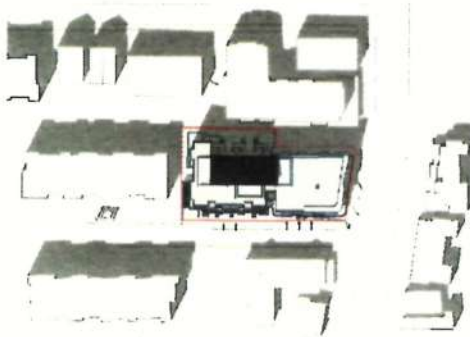
① Shadow - Equinox - 8 AM  
1:1000



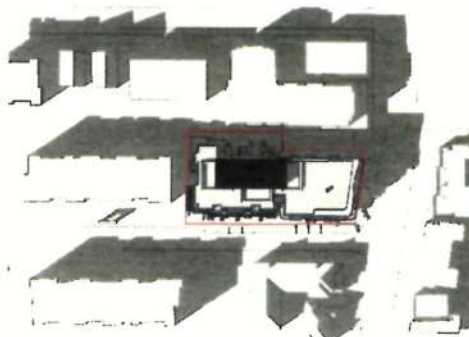
④ Shadow - Equinox - 10 AM  
1:1000



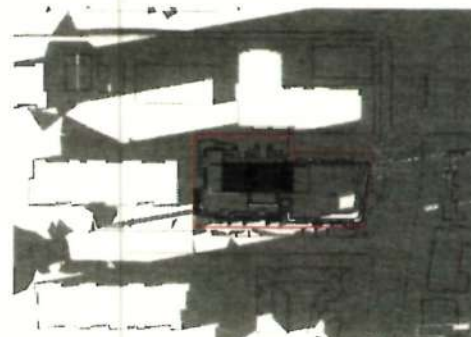
⑤ Shadow - Equinox - 12 PM  
1:1000



② Shadow - Equinox - 2 PM  
1:1000



③ Shadow - Equinox - 4 PM  
1:1000



⑥ Shadow - Equinox - 6 PM  
1:1000

NO.	DESCRIPTION	DATE
-----	-------------	------



CASCADIA ARCHITECTS INC.

10000 100th Street, Suite 100, Richmond, BC V6V 1K2  
Tel: 604-273-1111 Fax: 604-273-1112  
www.cascadiaarchitects.com


© 2018 Cascadia Architects Inc. All rights reserved.

**Cook & Pendergast**  
Aragon Properties Ltd.  
328 Cook Street

**Shadow Studies - Equinox**

Date: April 4, 2018

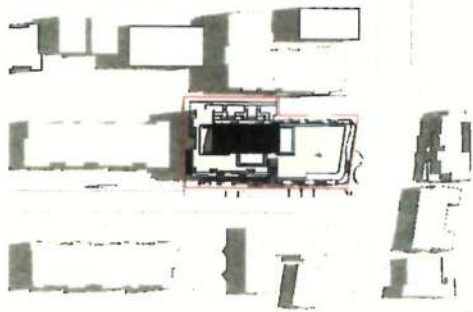
Scale: 1:1000 Project: 1719

Revised: 

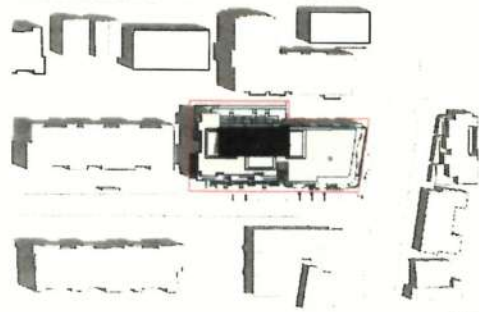
Sheet: **A1.04**

20-000-07201-01719

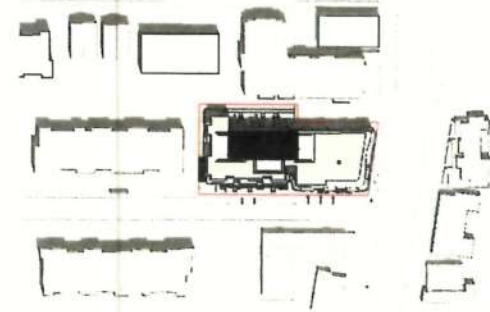




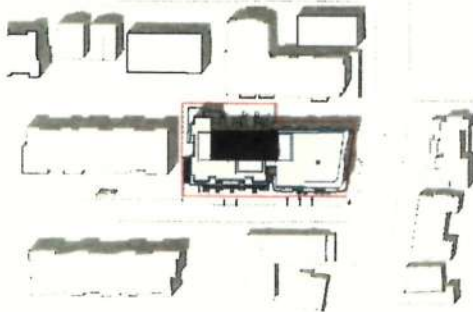
① Shadow - Summer - 8 AM  
1 : 1000



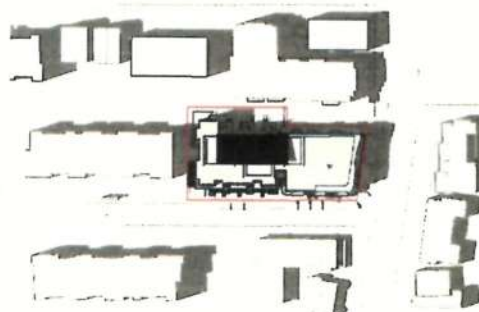
② Shadow - Summer - 10 AM  
1 : 1000



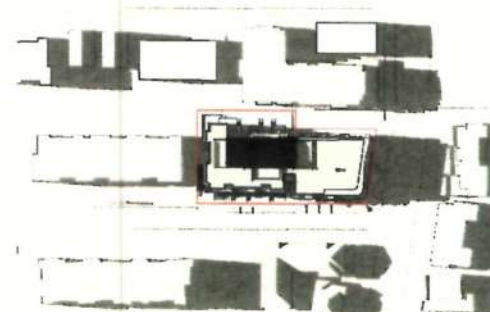
③ Shadow - Summer - 12 PM  
1 : 1000



④ Shadow - Summer - 2 PM  
1 : 1000



⑤ Shadow - Summer - 4 PM  
1 : 1000



⑥ Shadow - Summer - 6 PM  
1 : 1000

NO.	DESCRIPTION	DATE
-----	-------------	------



CASCADIA ARCHITECTS INC.

10000 10th Avenue, Suite 100  
Seattle, WA 98148  
Phone: 206.461.1234  
Fax: 206.461.1235  
Email: info@cascadiaarchitects.com

Project: Cook & Pendergast

Aragon Properties Ltd.  
328 Cook Street

Shadow Studies - Summer

Drawn: April 4, 2018

Scale: 1 : 1000 Plot: 1719

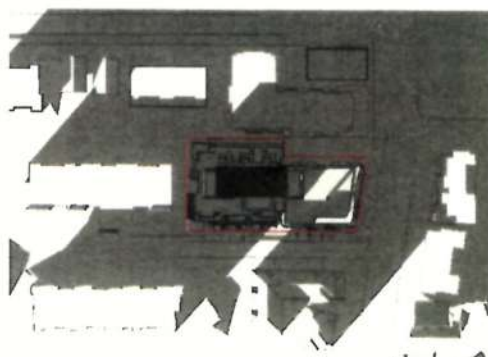
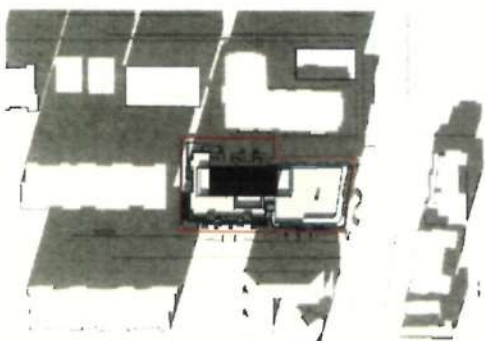
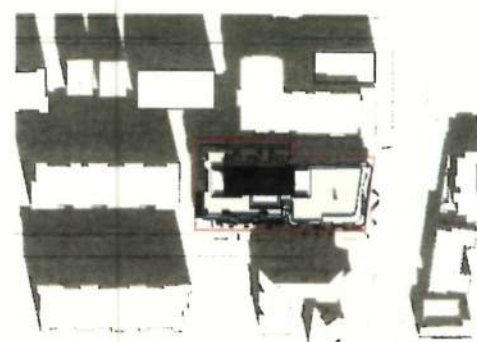
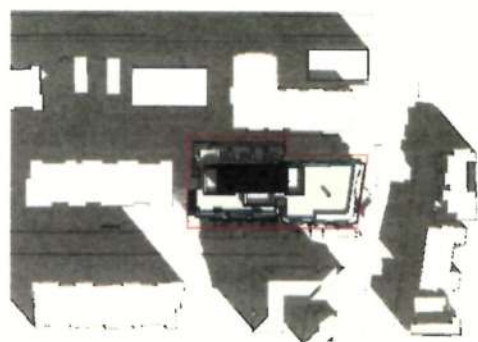
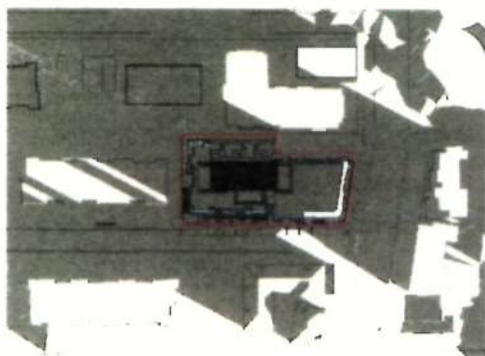
Sheet: A1.05

Scale: 1 : 1000 Plot: 1719

Sheet: A1.05

Scale: 1 : 1000 Plot: 1719

Sheet: A1.05





NO.	DESCRIPTION	DATE
-----	-------------	------



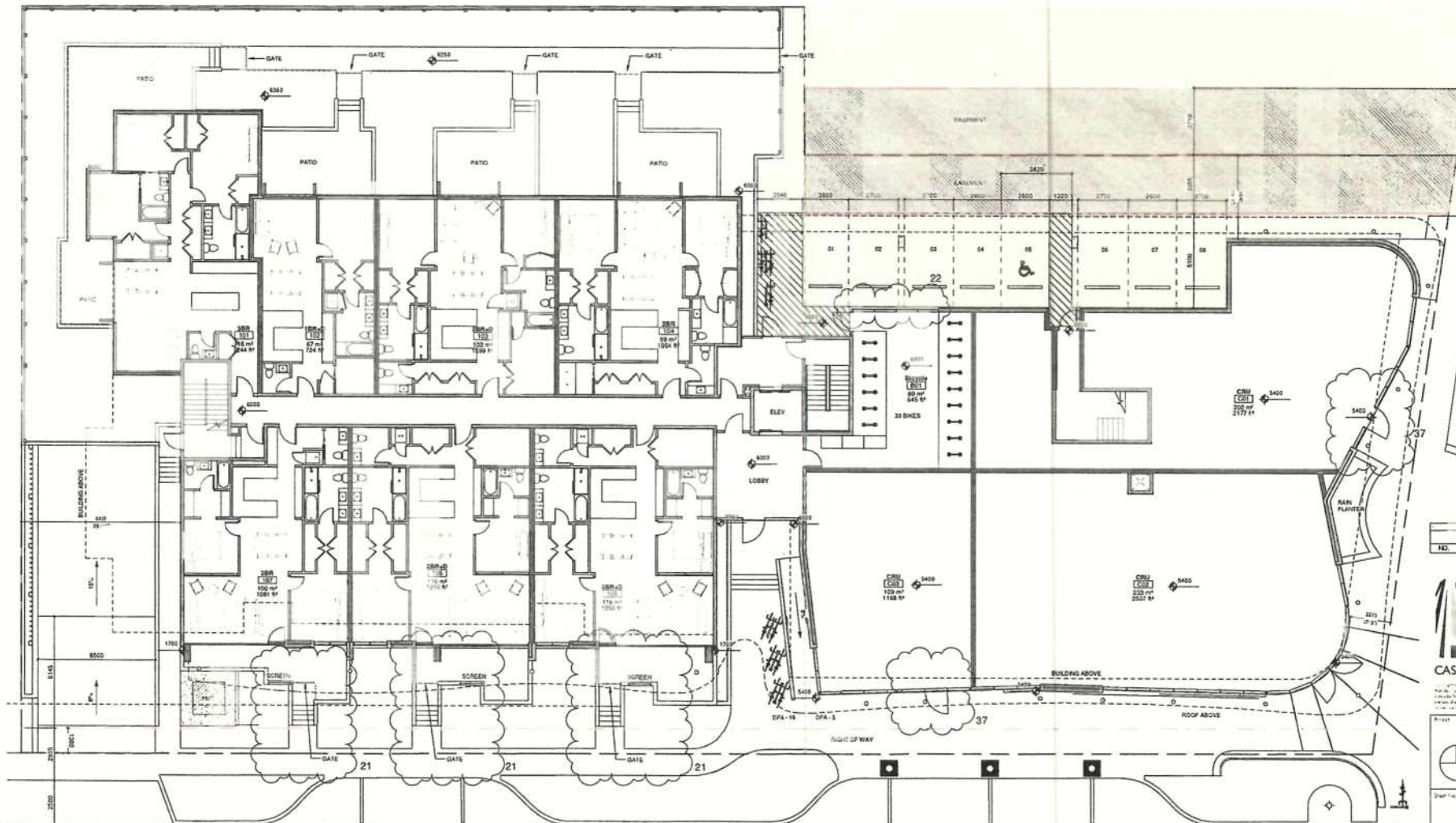
CASCADIA ARCHITECTS INC.

Received 10 November 2003; accepted 10 November 2003; first published online 12 February 2004

		<b>Cook &amp; Pendergast</b> Aragon Properties L 328 Cook Creek	
Street Name <b>Shadow Studies - Winter</b>			
Date April 4, 201			
Scale 1 : 1000	Project # 1715		
		Plan 	
		Sheet # <b>A1.06</b>	







DPA - 5 AREA = 587 m<sup>2</sup>  
DPA - 16 AREA = 840 m<sup>2</sup>

NO.	DESCRIPTION	DATE



CASCADIA ARCHITECTS INC.  
1000 1/2 1st Avenue North, Suite 100  
Vancouver, BC V6C 1A1  
Tel: 604.681.1111  
Fax: 604.681.1112  
www.cascadiaarchitects.com

Project: Cook & Pendergast  
Aragon Properties Ltd.  
338 Cook Street

Sheet Name: Ground Floor

Date: April 4, 2018

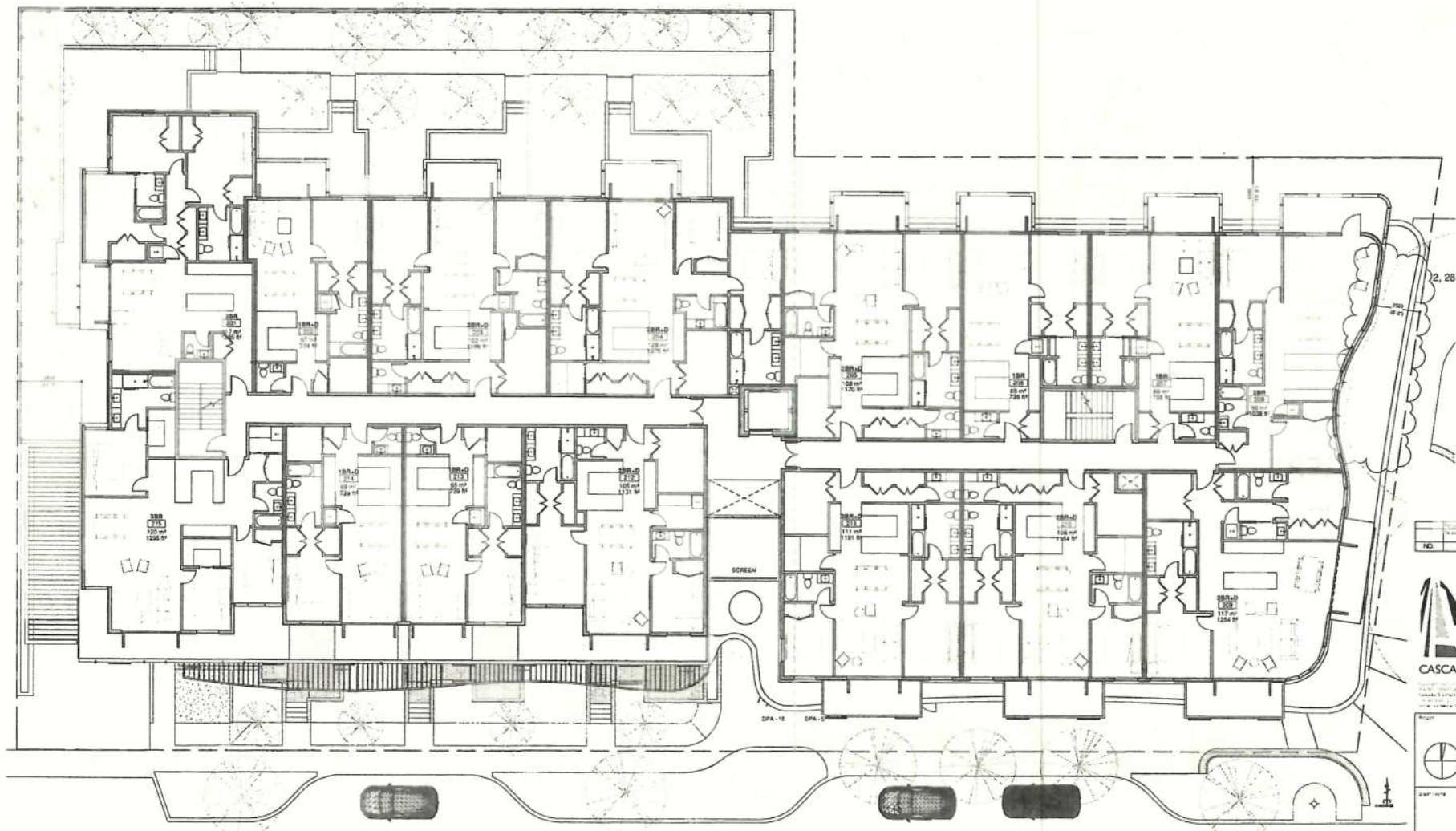
Scale: 1 : 100 Plot: 1719

Person: Apr 27, 2018

Trans: 1  
A2.01

10-50m250713PV





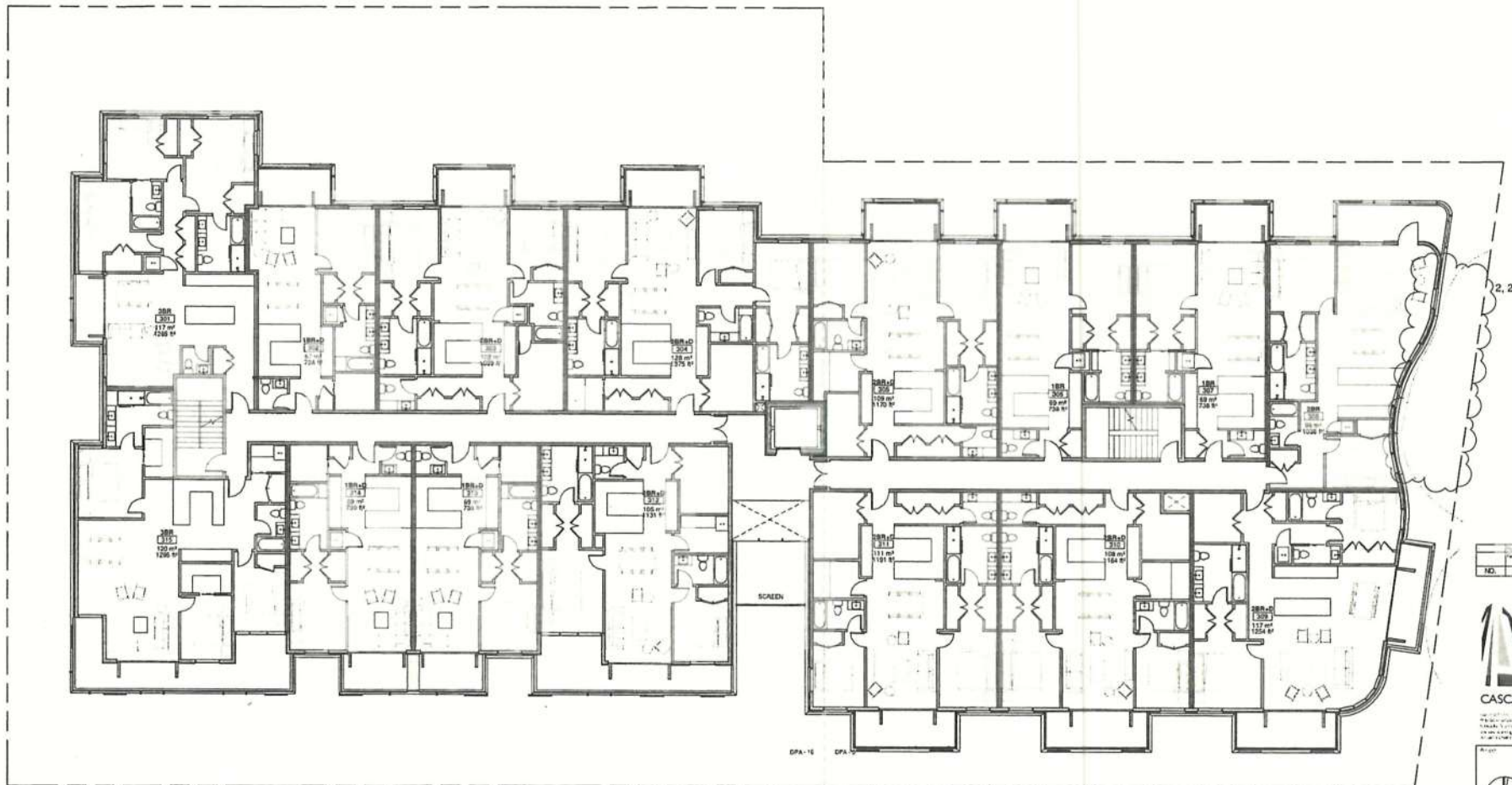
DPA - 5 AREA = 741.5 m<sup>2</sup>  
 DPA - 16 AREA = 892 m<sup>2</sup>

NO.	DESCRIPTION	DATE



Project <b>Cook &amp; Pendergast</b> Aragon Properties Ltd. 328 Cook Street	
Level 2	
Date April 4, 2018	
Scale 1 : 100	Plot No. 1719
Period Apr. 22, 2018	
Sheet No. <b>A2.02</b>	

21-640473.27.20.P01



DPA - 5 AREA = 741.5 m<sup>2</sup>  
DPA - 16 AREA = 892 m<sup>2</sup>

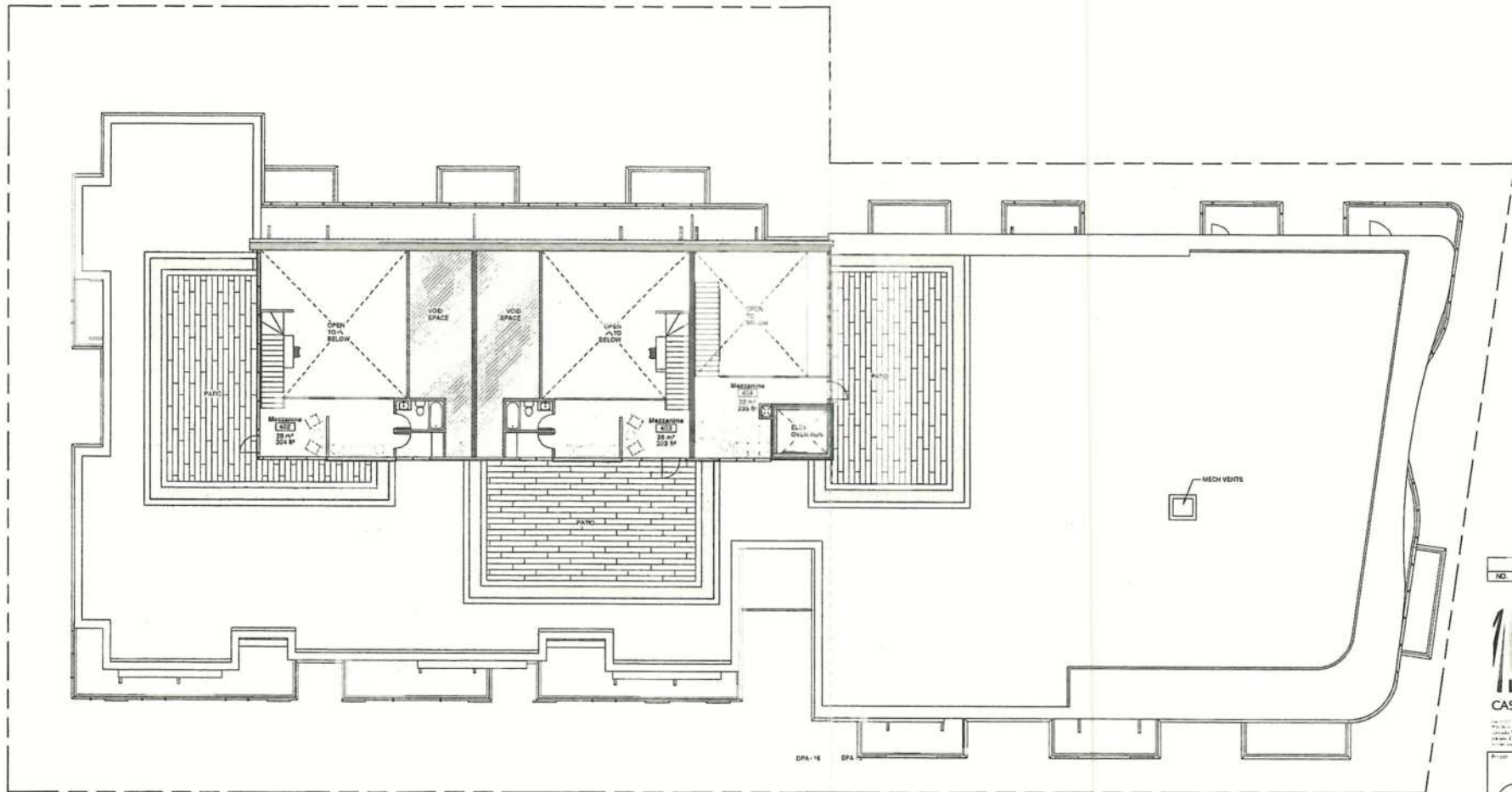
NO.	DESCRIPTION	DATE



<b>Cook &amp; Pendergast</b> Aragon Properties Ltd. 328 Cook Street	
Sheet Name: <b>Level 3</b>	
Date: <b>April 4, 2018</b>	
Scale: <b>1:100</b>	Revision: <b>1719</b>
Project: <b>Apr 27, 2018</b>	
Sheet # <b>A2.03</b>	







DPA - 16 DPA

DPA - 16 AREA = 81 m<sup>2</sup>

NO.	DESCRIPTION	DATE

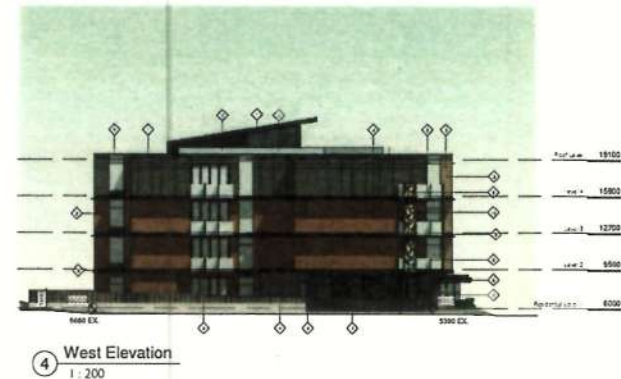
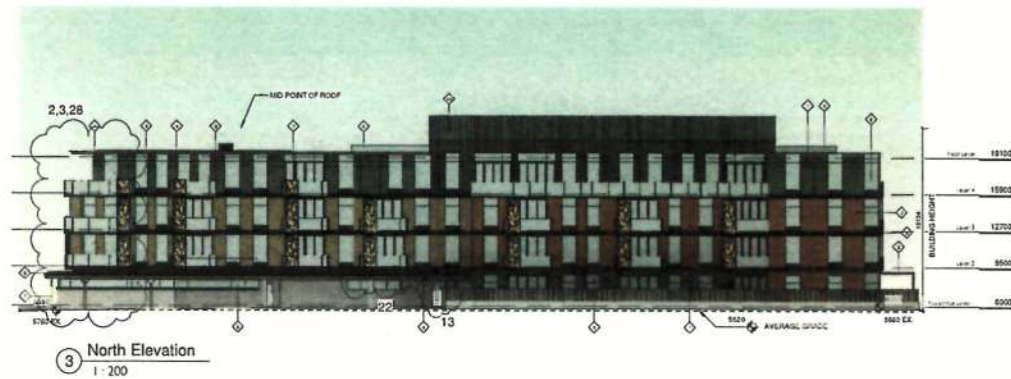
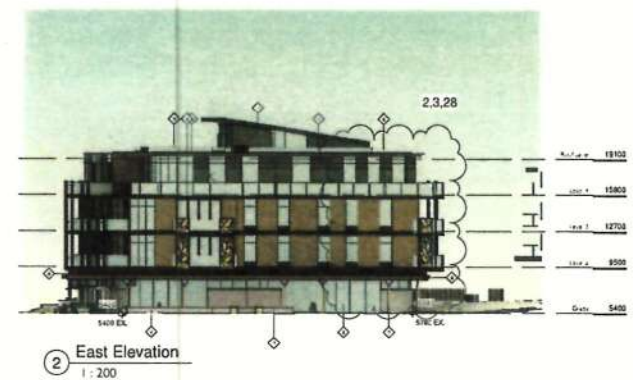


CASCADIA ARCHITECTS INC.  
1000 10th Avenue, Suite 100, Victoria, BC V8W 2E1  
Tel: 250-383-1111 Fax: 250-383-1112  
www.cascadiaarchitects.com

<b>Cook &amp; Pendergast</b> Aragon Properties Ltd. 328 Cook Street	
Sheet Name: <b>Roof Level</b>	
Date: <b>April 4, 2016</b>	
Scale: <b>1:100</b>	Plot: <b>1719</b>
Title: <b>A2.05</b>	

DL 940-2710733 PM





MATERIALS LEGEND			
1	CEMENTITIOUS PANEL CLADDING	7	CLEAR SEALED WOOD
2	WOOD FINISH BOARD CLADDING	8	PRE-FINISHED METAL (CHARCOAL)
3	BRICK CLADDING	9	PERFORATED PRE-FINISHED ALUMINUM
4	STONE CLADDING	10	SOLID PRE-FINISHED ALUMINUM
5	GLASS	11	CONCRETE BLOCK
6	T&G CEDAR SOFFIT	12	PRE-FINISHED STANDING SEAM METAL

NO.	DESCRIPTION	DATE
-----	-------------	------



CASCADIA ARCHITECTS INC.

1017 1st Ave. S. Ste. 200  
Tacoma, WA 98402  
Phone: (253) 863-1111  
Fax: (253) 863-1112  
Email: info@cascadiaarchitects.com

Cook & Pendergast	
Aragon Properties Ltd. 328 Cook Street	
Elevations	
Drawn	April 4, 2018
Scale	1:200
Project	1719
Revision	1
Sheet	A3.00



VIEW ALONG COOK STREET



VIEW ALONG PENDERGAST STREET



CORNER OF COOK STREET & PENDERGAST STREET



① Pendergast Street Elevation  
1 : 300



② Cook Street Elevation  
1 : 300

NO.	DESCRIPTION	DATE



CASCADIA ARCHITECTS INC.

Architects, Engineers, Planners, and Environmental Consultants  
1000 10th Avenue, Suite 100, Victoria, BC V8W 2E1  
Tel: 250-383-1111 Fax: 250-383-1112  
www.cascadiaarchitects.com

Project: **Cook & Pendergast**  
Aragon Properties Ltd.  
328 Cook Street

Sheet Name: **Context Elevations**

Date: **May 4, 2018**

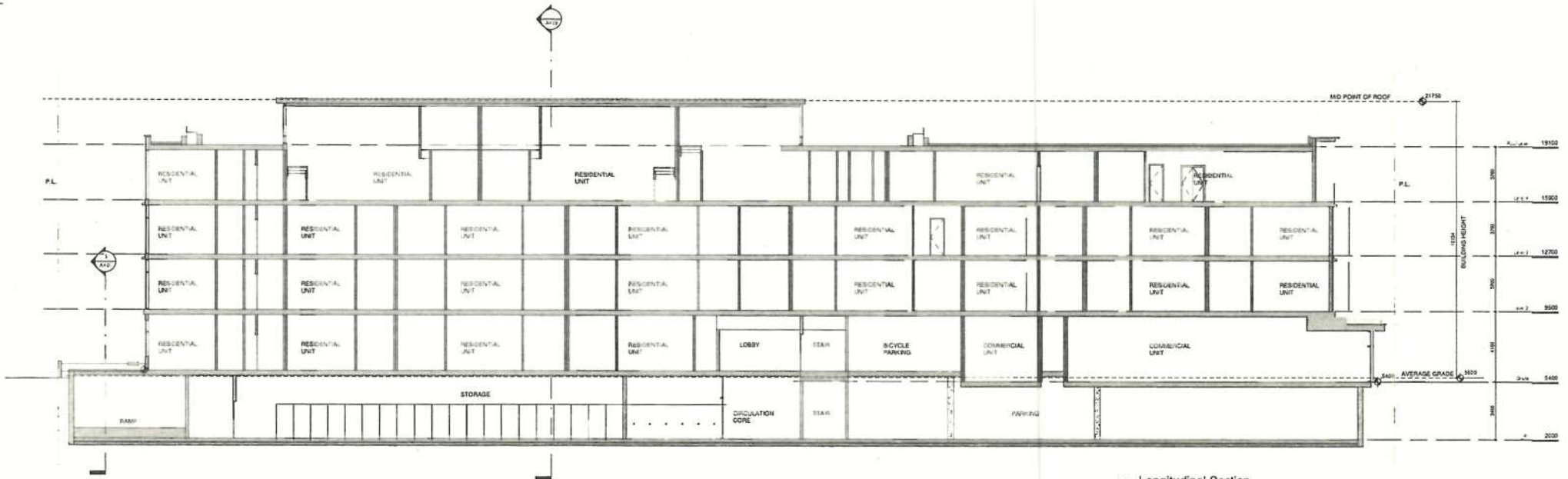
Scale: **1 : 300** Project: **1719**

Author:

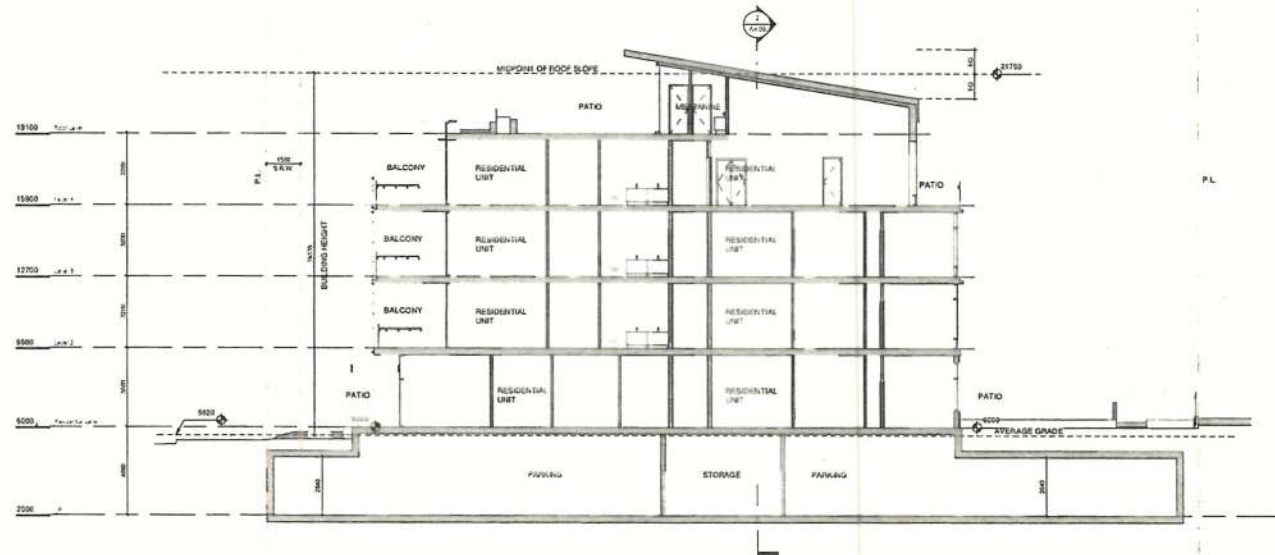
Sheet #: **A3.01**

Tel: 250-383-1111





② Longitudinal Section  
1:100



① Cross Section  
1:100

NO.	DESCRIPTION	DATE



**Cook & Pendergast**  
Aragon Properties Ltd.  
328 Cook Street

Sheet Name: **Building Sections**

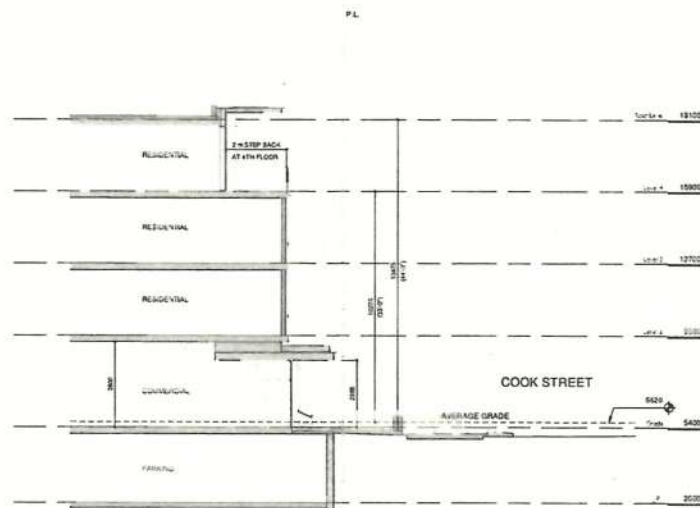
Date: **April 4, 2018**

Scale: **1:100** Plot: **1719**

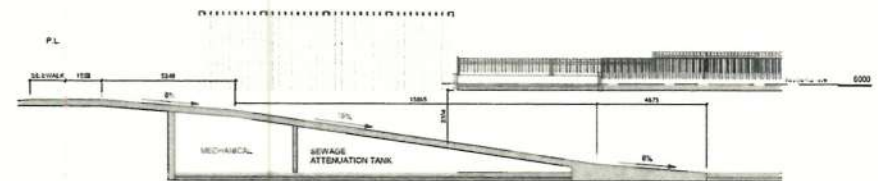
Project: **A4.00**

20-04-07 12:05 PM

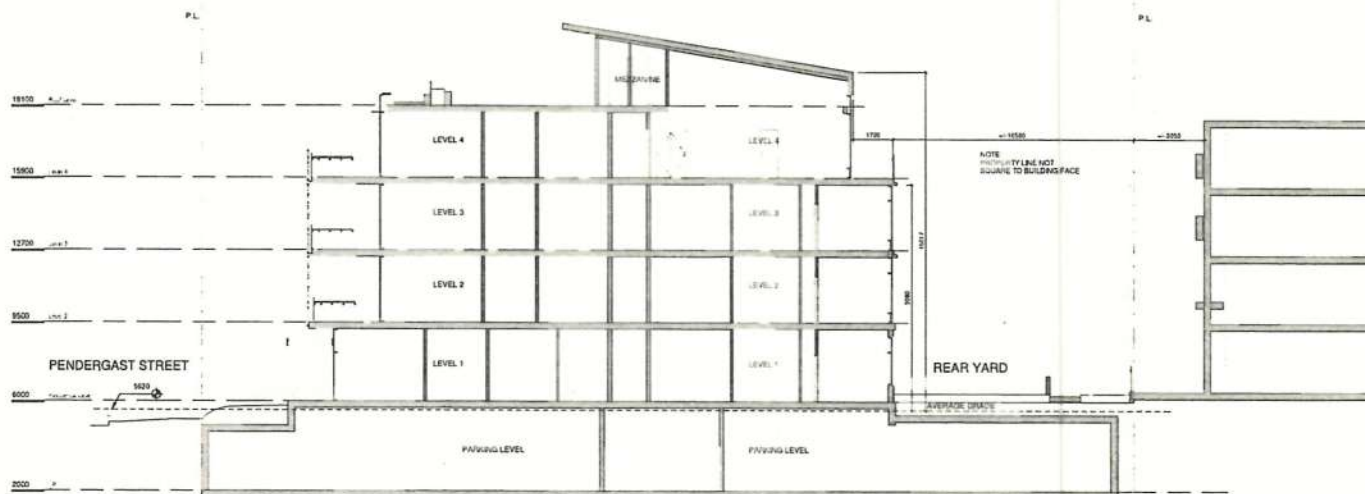




① Cook Street Section  
1:100



③ Parking Ramp  
1:100



② Site Cross Section  
1:100

NO.	DESCRIPTION	DATE



Project: Cook & Pendergast  
Aragon Properties Ltd.  
328 Cook Street

Sheet Name: Context Sections

Date: April 4, 2018

Scale: 1:100

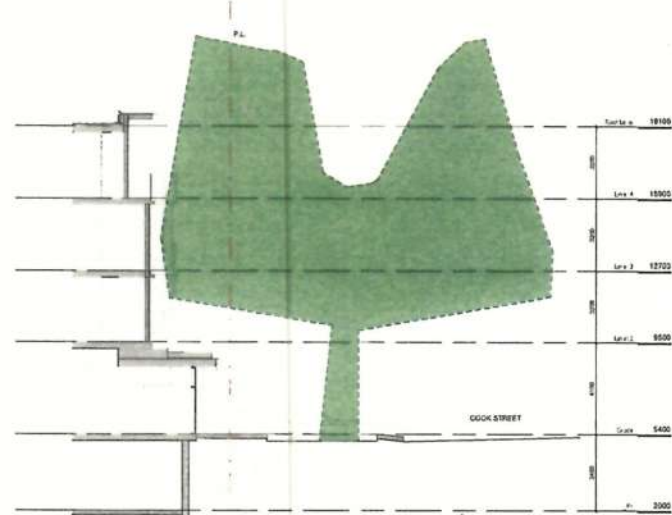
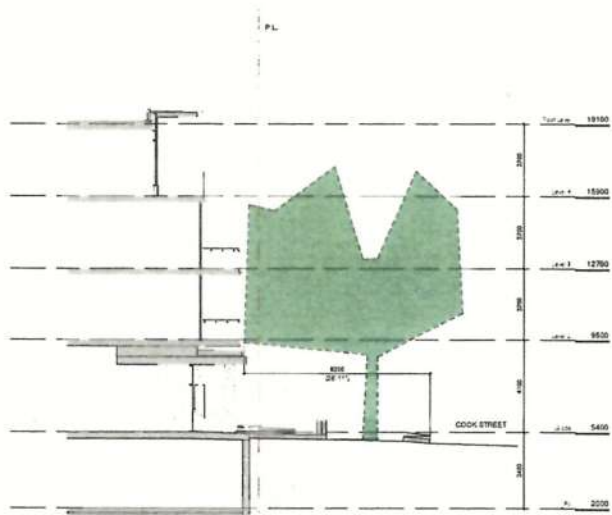
Project: 1719

Sheet: A4.01

Sheet: A4.01

Sheet: A4.01

Sheet: A4.01

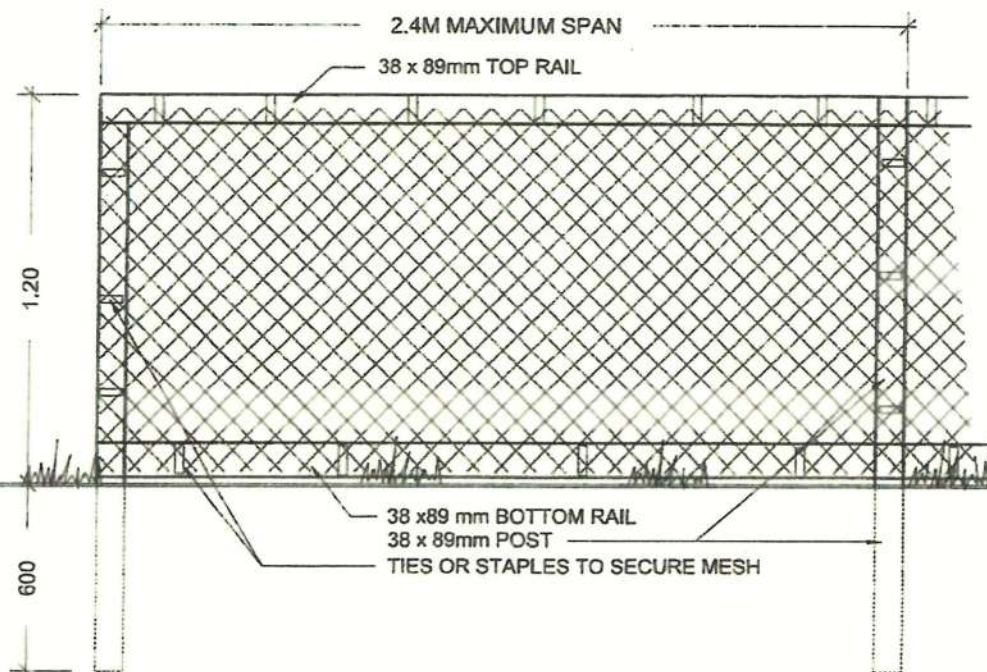


NO.	DESCRIPTION	DATE
-----	-------------	------



Project	Cook & Pendergast	
	Aragon Properties Ltd. 328 Cook Street	
Client Name	Tree Sections	
Due	April 4, 2018	
Scale	1 : 100	1719
For sign		
Shop #	ASK 1.00	

**DRAFT**



**TREE PROTECTION FENCING**  
 FENCE WILL BE CONSTRUCTED USING  
 38 X 89 mm (2"X4") WOOD FRAME:  
 TOP, BOTTOM AND POSTS. \*  
 USE ORANGE SNOW-FENCING MESH AND  
 SECURE TO THE WOOD FRAME WITH  
 "ZIP" TIES OR GALVANIZED STAPLES

\* IN ROCKY AREAS, METAL POSTS (T-BAR  
 OR REBAR) DRILLED INTO ROCK WILL BE  
 ACCEPTED

DETAIL NAME:

**TREE PROTECTION FENCING**

DATE: Oct 30/07  
 DRAWN: DM  
 APP'D: RR  
 SCALE: N.T.S.

**E105**  
 DRAWING