



Talbot Mackenzie & Associates

Consulting Arborists

**638-640 Constance Ave and 637**

**Nelson St, Esquimalt**

**Construction Impact Assessment &  
Tree Preservation Plan**

PREPARED FOR: GT Mann Contracting Ltd.  
1551 Broadmead Ave.  
Victoria, BC  
V8P 2V1

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

DATE OF ISSUANCE: January 29, 2018



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Jobsite Property: 638-640 Constance Ave and 637 Nelson St., Esquimalt

Date of Site Visit: December 19, 2017

Site Conditions: Three residential lots. No construction activity present.

**Summary:** The proposal to construct a 77-unit housing complex with an underground parkade will require the removal of 17 trees. Yew #87 and Douglas Fir #90 are sufficient distances from the edge of excavation for construction of a proposed underground parkade that they may be retained. We recommend barrier fencing be erected as close to the perimeter of their CRZs as possible. Tree NT4, a small fruit tree on an adjacent property is separated by a retaining wall, and should not be impacted by construction.

**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 housing complex with underground parking 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 from Praxis Architects Inc.

**Summary of Tree Resource:** 20 trees were inventoried, including 2 on municipal property. There are several Douglas and Grand Firs on the subject property in poor structural condition, having been previously topped.

**Trees to be Removed:** 17 trees will require removal due to construction related impacts:

- **Trees #79-86, #88, #89, #92-94 and NT1** will require removal, as they are within, or immediately adjacent to the underground parkade footprint.
- **NT2** is located within the footprint of the underground parking entrance driveway.

- **NT3** is located where a new sidewalk is proposed to be constructed on Nelson St.
- A retaining wall is proposed to be built immediately adjacent to **Douglas Fir #91**.

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

- **Yew #87 and Douglas Fir #90** are outside the footprint of the underground parkade. Excavation will occur approximately 4m from the base of the yew on the north and west sides, and approximately 7m from the base of the fir. We anticipate roots from both trees may be encountered, but excavation should not significantly impact their health or stability. We recommend barrier fencing be erected and an arborist be on site to supervise any excavation that occurs within the trees' CRZs. It should be noted that Fir #90 is in poor structural condition, having been previously topped and is not the most suitable candidate for retention. It may be prudent to remove this tree and plant young, well-structured replacements.
- **Tree NT4** is on the property of 633 Nelson St. separated by a 1m tall retaining wall. We anticipate its root system will not be impacted by any excavation for the construction of the proposed underground parkade.
- **Servicing:** According to the plans provided, connections will be made at the north end of the property from both Constance Ave (water) and Nelson St (storm and sewer), away from all trees to be retained.
- **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 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.
- **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. In particular, the following activities should be completed under the direction of the project arborist:
  - The demolition of existing buildings and excavation for construction of the underground parkade within the CRZs of Yew #87 and Douglas Fir #90.
- **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 or coarse wood chips 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 accessory buildings, 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.
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- **Irrigation Systems:** The installation of any in-ground irrigation system must take into account the critical root zones of the trees to be retained. Prior to installation, we recommend the irrigation technician consult with the project arborist about the most suitable locations for the irrigation lines and how best to mitigate the impacts on the trees to be retained. This may require the project arborist supervise the excavations associated with installing the irrigation system. Excessive frequent irrigation and irrigation which wets the trunks of trees can have a detrimental impact on tree health and can lead to root and trunk decay.
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- **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.

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, 1-page building plans, 1-page building plans with underground parking highlighted, 1-page site plan with service connections, 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.

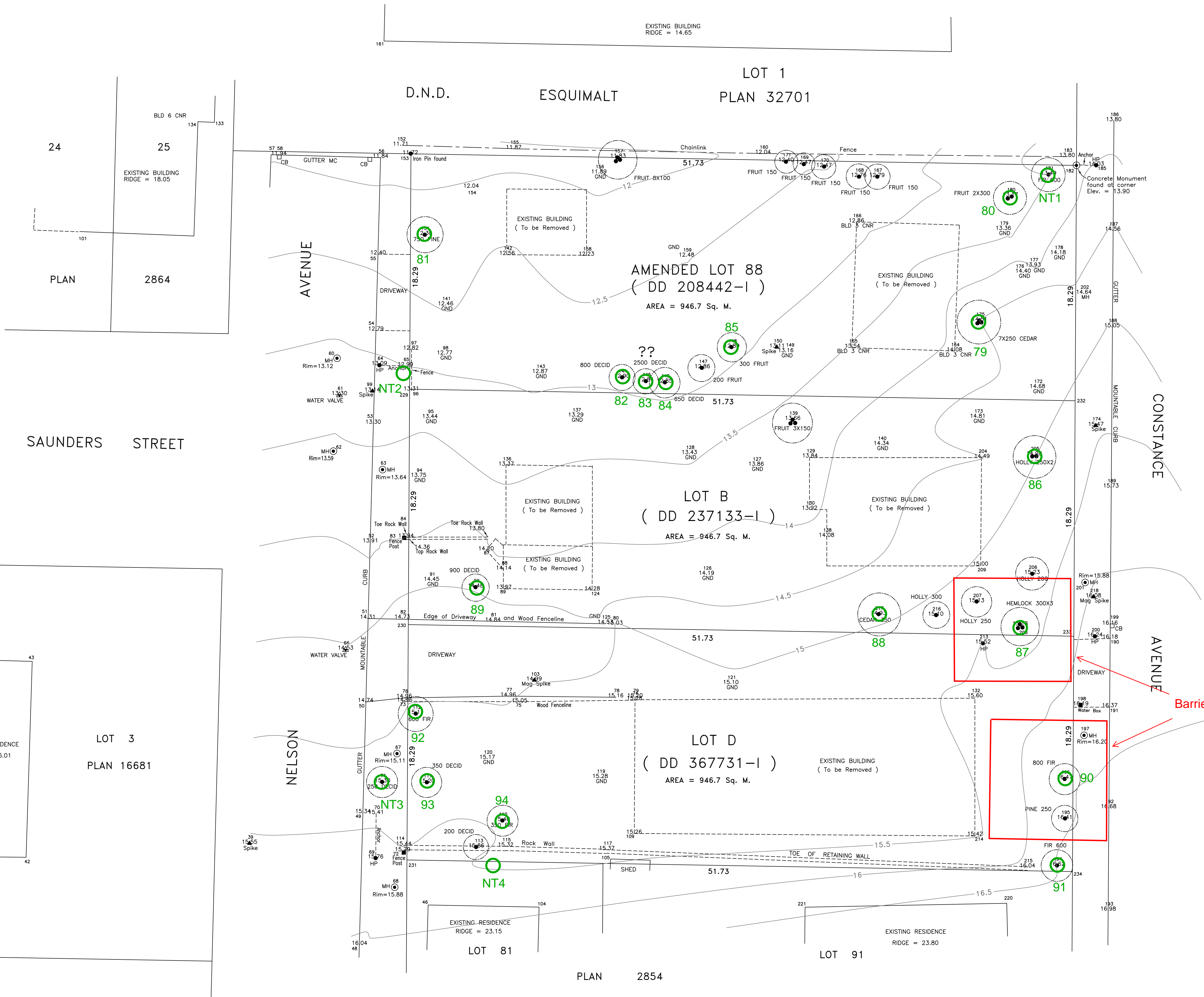
**638-640 Constance Ave and 637 Nelson St  
Tree Resource**

Tag	Common Name	Latin Name	DBH (cm)	CRZ (m)	Crown Spread (m)	Health	Structure	Relative Tolerance	Remarks and Recommendations	Retention Status
79	Lawson Cypress	<i>Chamaecyparis lawsonii</i>	30, 29, 25...	9.5	6.0	Good	Poor	Poor	Lower crown dieback	X
NT1	Grand Fir	<i>Abies grandis</i>	~65	10.0	6.0	Fair	Poor	Poor	Deflected leader. Asymmetric crown. Ivy at base	X
80	Plum	<i>Prunus spp.</i>	32, 23	5.5	4.0	Fair/poor	Poor	Moderate	Previously topped. Cavity on 32cm stem	X
81	Grand Fir	<i>Abies grandis</i>	70	10.5	8.0	Fair	Fair/poor	Poor	Tridominant union at 5m	X
82	Lombardy Poplar	<i>Populus nigra</i>	95	9.5	6.0	Fair	Fair	Good	Epicormic growth	X
83	Lombardy Poplar	<i>Populus nigra</i>	33	3.5	3.0	Fair	Fair	Good		X
84	Lombardy Poplar	<i>Populus nigra</i>	70	7.0	5.0	Fair	Fair	Good	Surface rooted	X
85	Cherry	<i>Prunus spp.</i>	31	3.5	6.0	Fair	Fair	Moderate	Multiple stubs	X
86	Holly	<i>Ilex aquifolium</i>	23, 22	3.5	4.0	Fair	Fair	Good		X
87	Pacific Yew	<i>Taxus brevifolia</i>	Multistem	-	5.0	Good	Fair	Poor		Retain
88	Lawson Cypress	<i>Chamaecyparis lawsonii</i>	37	5.5	6.0	Fair	Poor	Poor	Previously topped at 3m	X

**638-640 Constance Ave and 637 Nelson St  
Tree Resource**

Tag	Common Name	Latin Name	DBH (cm)	CRZ (m)	Crown Spread (m)	Health	Structure	Relative Tolerance	Remarks and Recommendations	Retention Status
89	English Walnut	<i>Juglans regia</i>	81	12.0	14.0	Good	Fair	Poor	Codominant union at 1.5m	X
NT2	English Hawthorn	<i>Crataegus laevigata</i>	Multistem	-	4.0	Fair	Fair/poor	Good	Municipal. 2.5m from road. Adjacent to fence line	X
90	Douglas Fir	<i>Pseudotsuga menziesii</i>	73	11.0	8.0	Fair/poor	Poor	Poor	Topped at 7m	Retain
91	Douglas Fir	<i>Pseudotsuga menziesii</i>	61	9.0	8.0	Fair/poor	Poor	Poor	Topped at 7m	X
NT3	Purple Leaf Plum	<i>Prunus cerasifera</i>	25	3.0	5.0	Fair/poor	Fair/poor	Moderate	Municipal. Pruned for line clearance	X
92	Douglas Fir	<i>Pseudotsuga menziesii</i>	67	10.0	12.0	Good	Poor	Poor	Codominant union at 5m	X
93	Pear	<i>Pyrus spp.</i>	37	4.5	7.0	Fair	Fair	Moderate		X
94	Douglas Fir	<i>Pseudotsuga menziesii</i>	32	5.0	5.0	Fair	Fair	Poor	Surface rooted	X
NT4	Plum	<i>Prunus spp.</i>	Multistem	-	4.0	Fair	Poor	Moderate	Neighbour's. 0.5m from fence line	Retain





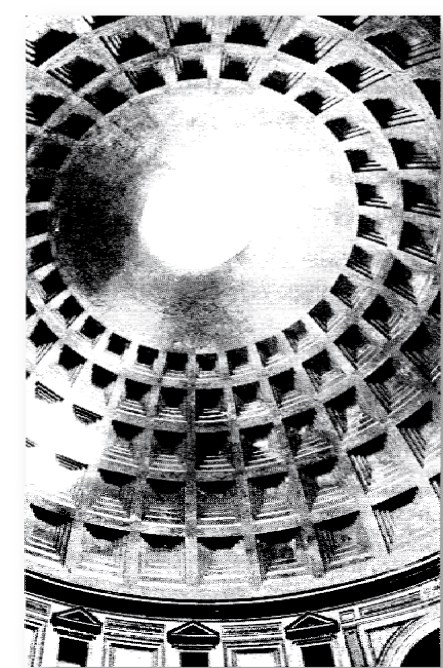
NOTE : ELEVATIONS ARE TO GEODETIC DATUM  
THE DECIMAL POINT OF THE ELEVATION  
DENOTES THE LOCATION OF THE SHOT  
TAKEN UNLESS OTHERWISE NOTED  
GND DENOTES EXISTING GROUND  
DECID DENOTES DECIDUOUS  
CONIF DENOTES CONIFEROUS  
TREE INFORMATION MUST BE CONFIRMED BY AN ARBORIST  
TREE DIAMETER IS SHOWN IN mm  
BUILDINGS TO BE REMOVED ARE SHOWN APPROXIMATELY  
PROPERTY LINES HAVE BEEN CALCULATED  
FROM CURRENT SURVEY AND EXISTING SURVEY RECORDS  
PROPERTY DIMENSIONS AND LOT LINE LOCATIONS ARE  
ACCURATE TO 0.2m+/- AS EXISTING SURVEYS DISAGREE  
WITH MONUMENTATION. FURTHER SURVEY IS REQUIRED.

AMENDED LOT 88  
CIVIC : 640 CONSTANCE AVENUE  
PID : 000-380-911  
LOT B  
CIVIC : 638 CONSTANCE AVENUE  
PID : 000-546-437  
LOT D  
CIVIC : 637 NELSON STREET  
PID : 006-386-466

J.E.Anderson and Associates  
SURVEYORS ENGINEERS  
VICTORIA NANAIMO

SITE PLAN	
LEGAL : AMENDED LOT 88 AND LOTS B AND D, ALL OF SUBURBAN LOT 44, ESQUIMALT DISTRICT, PLAN 2854	
DRAWN BY : DBL	PROJECT SURVEYOR : D.R. CARRIER
SCALE : 1 : 150	DATE : JULY 31, 2017.
CLIENT : GT MANN CONTRACTING	
OUR FILE : 30594	REVISION :



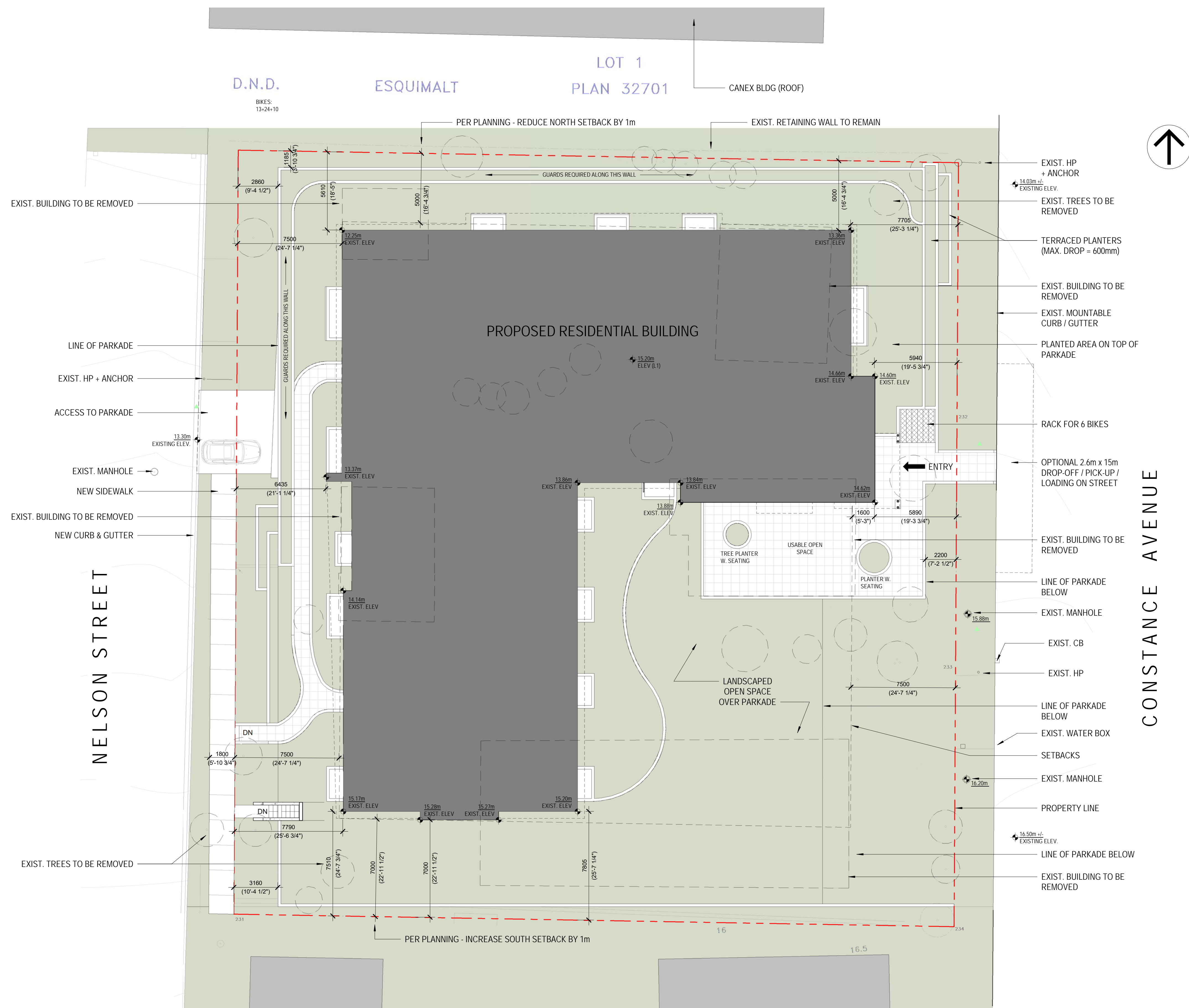


**PRAXIS**  
architects inc.

① SITE PLAN  
1 : 150

## CONSTANCE 638-640 + NELSON 637

638/640 CONSTANCE AVENUE + 637 NELSON STREET  
PROJECT NO. 17-011



## SITE PLAN

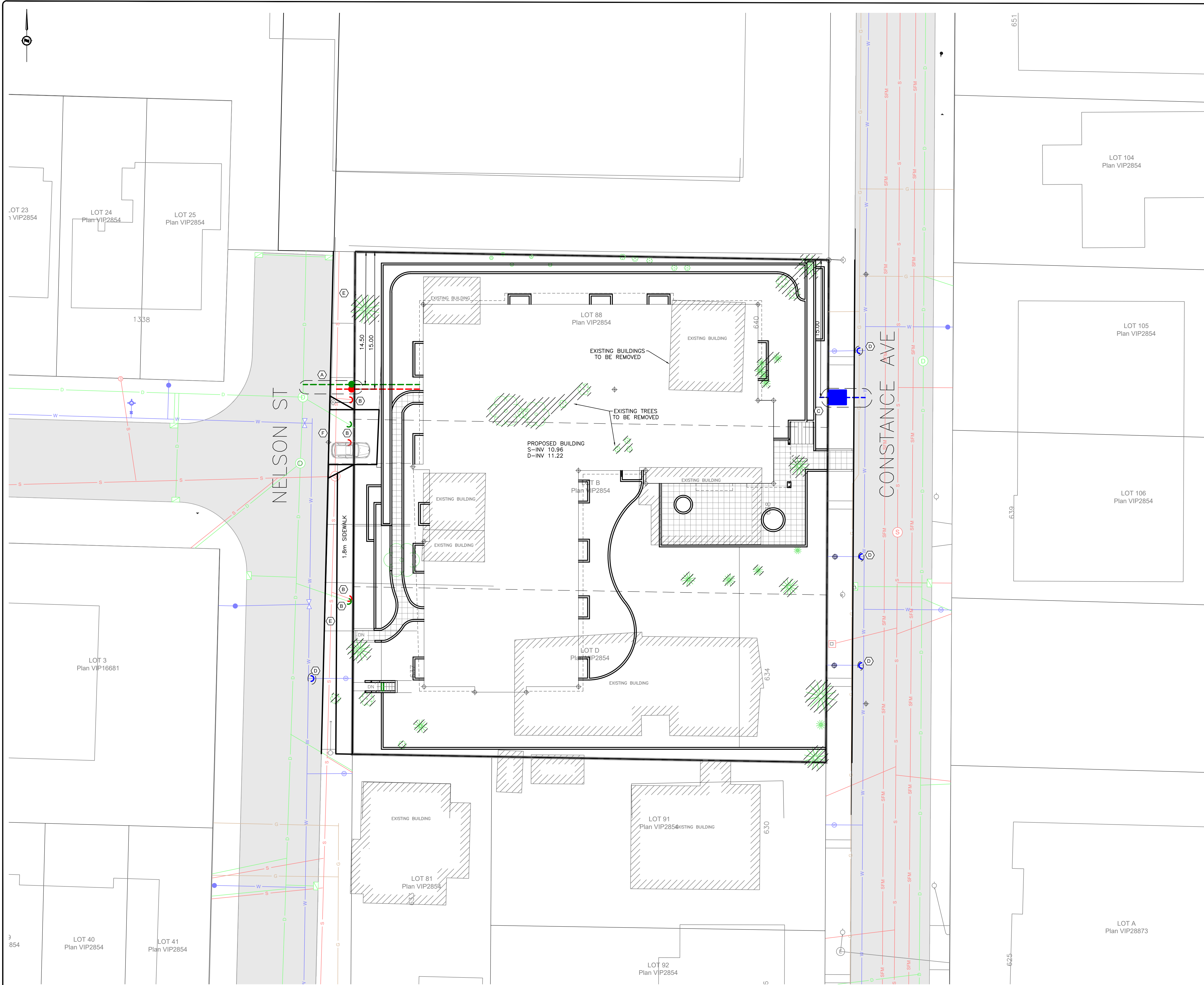
2018.01.05 - REZONING APPLICATION

**A01**









- DETAILED CONSTRUCTION NOTES:**
- (A) TOWNSHIP OF ESQUIMALT TO INSTALL 150mm DRAIN AND SEWER SERVICES AT DEVELOPERS EXPENSE.
  - (B) TOWNSHIP OF ESQUIMALT TO CAP EXISTING DRAIN AND SEWER SERVICES AT DEVELOPERS EXPENSE.
  - (C) CITY OF VICTORIA TO INSTALL 150mm FIRE AND 100mm DOMESTIC WATER SERVICE AT DEVELOPERS EXPENSE.
  - (D) CITY OF VICTORIA TO CAP EXISTING WATER SERVICE AT DEVELOPERS EXPENSE.
  - (E) CONTRACTOR TO REMOVE EXISTING DRIVEWAYS AND REINSTATE CURB AND BOULEVARD.
  - (F) CONTRACTOR TO INSTALL DRIVEWAY TO TOWNSHIP OF ESQUIMALT STANDARDS.



**KEY PLAN**  
NTS

**GT MANN**  
**638/640 CONSTANCE AVE**  
**CONCEPTUAL**  
**SERVICING PLAN**

Scale  
horiz. **1:200**

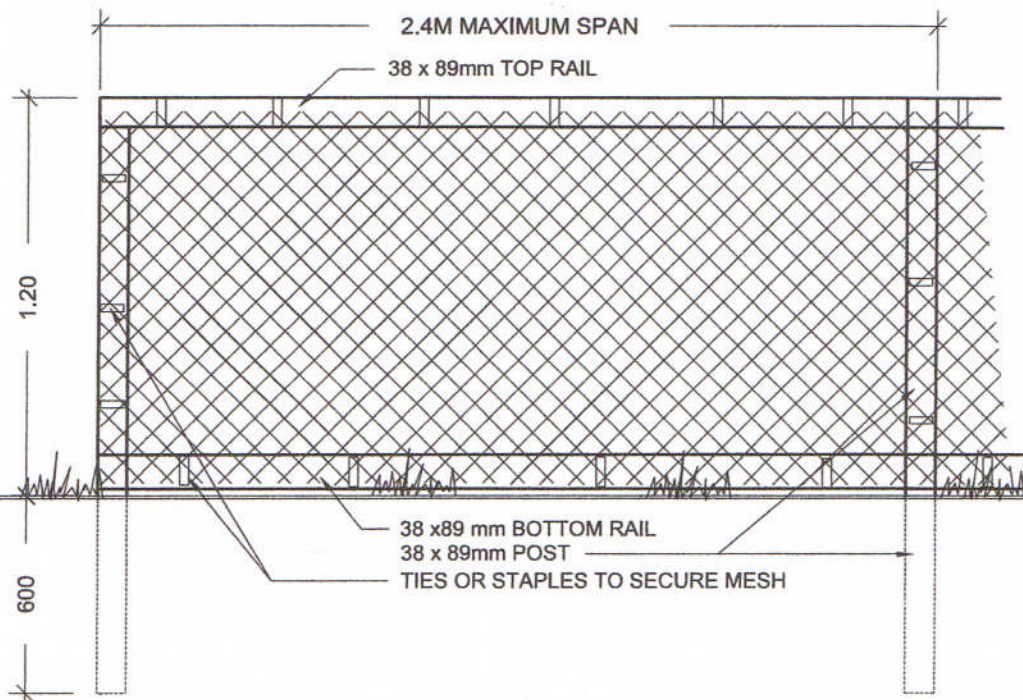
Sheet **1** of **1**

Eng. Project No. **30896**

**JEA** **J E ANDERSON & ASSOCIATES**  
SURVEYORS - ENGINEERS  
VICTORIA NANAIMO PARKVILLE  
PHONE: 250-727-2214 FAX: 250-727-3395

**PRELIMINARY ONLY**





**TREE PROTECTION FENCING**  
 FENCE WILL BE CONTRUCTED 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 GALVANZIED 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