

APPENDIX C

SEISMIC SCREENING FORM

SEISMIC SCREENING INVENTORY FORM

2020 Labieux Garage and Vehicle Repair Shops
City of Nanaimo Bldg Nos. B21 and B21A

Comments:

- glulam beams on steel columns for interior support
- Large overhead door openings on 2 sides
- 3 storey high addition in 2002
- Ext. walls 6 to 7 meters high
- Crack in interior wall of 3 storey addition
- West addition, in 1976, has exterior block wall
15 M reinforcing @ 800 mm σ_c
- Wood joists and diagonal shiplap sheathing

Note: Unreinforced concrete block walls assumed
for 1965 east portion of building

SEISMIC SCREENING FORM			p. 1 of 2	ITEM No.: B21/21A
Address: 2020 Labieux Rd		Postal Code: V9T 6T9		Bldg. Name: Vehicle Repair
No. of storeys: 3	Total Floor Area: 818 m ²	Year Built: 1970	Design NBC: 1965	
Primary use (see list on p. 2): Office/manufacturing			Heritage Designation: N/A	
Inspector: GK	Date: Apr/12/2012		Checked by:	

See attached

Sketch

See attached

Photo

TYPE OF STRUCTURE (circle appropriate descriptors) see 4.3.2			BM	BUILDING IRREGULARITIES (circle appropriate descriptors) see 4.3.3	
Wood	WLF WPB	Wood Light Frame Wood, Post and Beam	90	1. Vertical Irregularity	Abrupt changes in plan dimensions over height (e.g. setback or building on hill)
Steel	SMF SBF SLF SCW SIW	Steel Moment Frame Steel Braced Frame Steel Light Frame Steel Frame with Concrete Shear Walls Steel Frame with Infill Masonry Shear Walls	90	2. Horizontal Irregularity (Torsion)	Irregular building shapes such as "L", "V", "E", "T", eccentric stiffness in plan (e.g. shear wall on only one side of building)
Concrete	CMF CSW CIW	Concrete Moment Frame Concrete Shear Walls Concrete Frame with Infill Masonry Shear Walls	85	3. Short Concrete Columns	Short columns restrained by partial storey height walls (structural or infill) or deep spandrels
	PCF PCW	Precast Concrete Frame Precast Concrete Walls		4. Soft Storey	Severe reduction of stiffness caused by discontinuous shear walls, openings, etc.
Masonry	RML	Reinforced Masonry Bearing Walls with Wood or Metal Deck Floors or Roofs	90	5. Pounding	Separation between buildings less than 20 Z _v x no. of storeys (in mm)
	RMC	Reinforced Masonry Bearing Walls with Concrete Diaphragms		6. Major Modifications	Any change in function, use or addition which results in significant increase in loading or weight
	URM	Unreinforced Masonry Bearing Wall Building		7. Deterioration	Structural elements are damaged, poor condition of building is apparent (corroded reinforcement or steel, rotted wood, poor concrete or masonry)
				8. None	None of the irregularities listed above is present.

NON - STRUCTURAL HAZARDS (Circle appropriate descriptors) see 4.3.4

F₁ Falling Hazards to Life: overhead gantry cranes.
 Exterior: Masonry chimneys, parapets, veneer or stone / precast panels, non-safety glass, or canopies over exits and walkways
 Interior: Heavy components; masonry partitions; non-safety glass in egress areas; storage shelves which may collapse onto areas of human occupancy

F₂ Hazards to Continuous Operation of Special Buildings: Equipment or lifelines required for continuous operation of special facilities. The owner or authority should provide a list of critical items needed for continuing operations.

SEISMIC SCREENING FORM

p. 2 of 2

ITEM No.:

SEISMIC PRIORITY INDEX: Circle appropriate value and enter each result on right side. Use asterisk (*) with uncertain values

A	Seismicity	Design NBC	Effective Seismic Zone (Z_v , or $Z_v + 1$ if $Z_a > Z_v$)					A = 2
			2	3	4	5	6	
		Pre - 65 65 - 84 Post - 85	1.0 1.0 1.0	1.5 1.0 1.0	2.0 1.3 1.0	3.0 1.5 1.0	4.0 2.0 1.0	

B	Soil Conditions	Design NBC	Soil Category					B = 1.3
			Rock or Stiff Soil	Stiff Soil > 50 m	Soft Soil > 15 m	Very Soft or Liquefiable Soil	Unknown Soil	
		Pre - 65 Post - 65	1.0 1.0	1.3 1.0	1.5 1.0	2.0 1.5	1.5 1.5	

C	Type of Structure (BM = Benchmark year, see p.1)	Design NBC	Construction Type and Symbol (see p. 1)											C = 3.5		
			Wood		Steel			Concrete		Precast		Masonry Infill	Masonry			
			WLF	WPB	SLF	SMF	SBF	SCW	CMF	CSW	PCF	PCW	SIW, CIW		RML, RMC	URM
		Pre - 70 70 - BM Post - BM	1.2 1.2 1.0	2.0 2.0 1.0	1.0 1.0 1.0	1.2 1.2 1.0	1.5 1.5 1.0	2.0 1.5 1.0	2.5 1.5 1.0	2.0 1.5 1.0	2.5 1.8 1.0	2.0 1.5 1.0	3.0 2.0 1.0		2.5 1.5 1.0	3.5 3.5 -

D	Building Irregularities	Design NBC	1. Vertical	2. Horiz.	3. Short Concrete Columns	4. Soft Storey	5. Pounding	6. Modification	7. Deterioration	8. None	D = product of circled Numbers (Max of 4.0) = 1.5
		Pre - 70	1.3	1.5	1.5	2.0	1.3	1.3	1.3	1.0	
		Post - 70	1.3	1.5	1.5	1.5	1.3	1.3	1.3	1.0	

E	Building Importance	Design NBC	Low Occupancy N < 10	Normal Occupancy N = 10 - 300	School, or High Occupancy N = 301 - 3000	Post Disaster, or Very High Occup. N > 3000	Special Operational Requirements	E = 1
		Pre - 70	0.7	1.0	1.5	2.0	3.0	
		Post - 70	0.7	1.0	1.2	1.5	2.0	

N = Occupied Area x Occupancy Density x Duration Factor* = ... 8.1.8 ... x ... 1 ... x ... 5 ... = 40.9

Primary Use:	Occupancy Density Persons / m ²	Average Weekly Hours of Human Occupancy	* Duration Factor is equal to the average weekly hours of human occupancy divided by 100, not greater than 1.0
Assembly	1	5 - 50	
Mercantile, Personal service	0.2	50 - 80	
Offices, Institutional, Manufacturing	0.1	50 - 60	
Residential	0.05	100	
Storage	0.01 - 0.02	100	

SI STRUCTURAL INDEX = A · B · C · D · E = \rightarrow SI = 13.7

F	NON - STRUCTURAL HAZARDS		Description (see p. 1)		None	Yes	Yes *	F = max (F ₁ , F ₂) = 3
	F ₁	Falling Hazards to Life	OH Cranes	Pre - 70 NBC Post - 70 NBC	1.0 1.0	3.0 2.0	6.0 3.0	
	F ₂	Hazards to Vital Operations		Any Year	1.0	3.0	6.0	

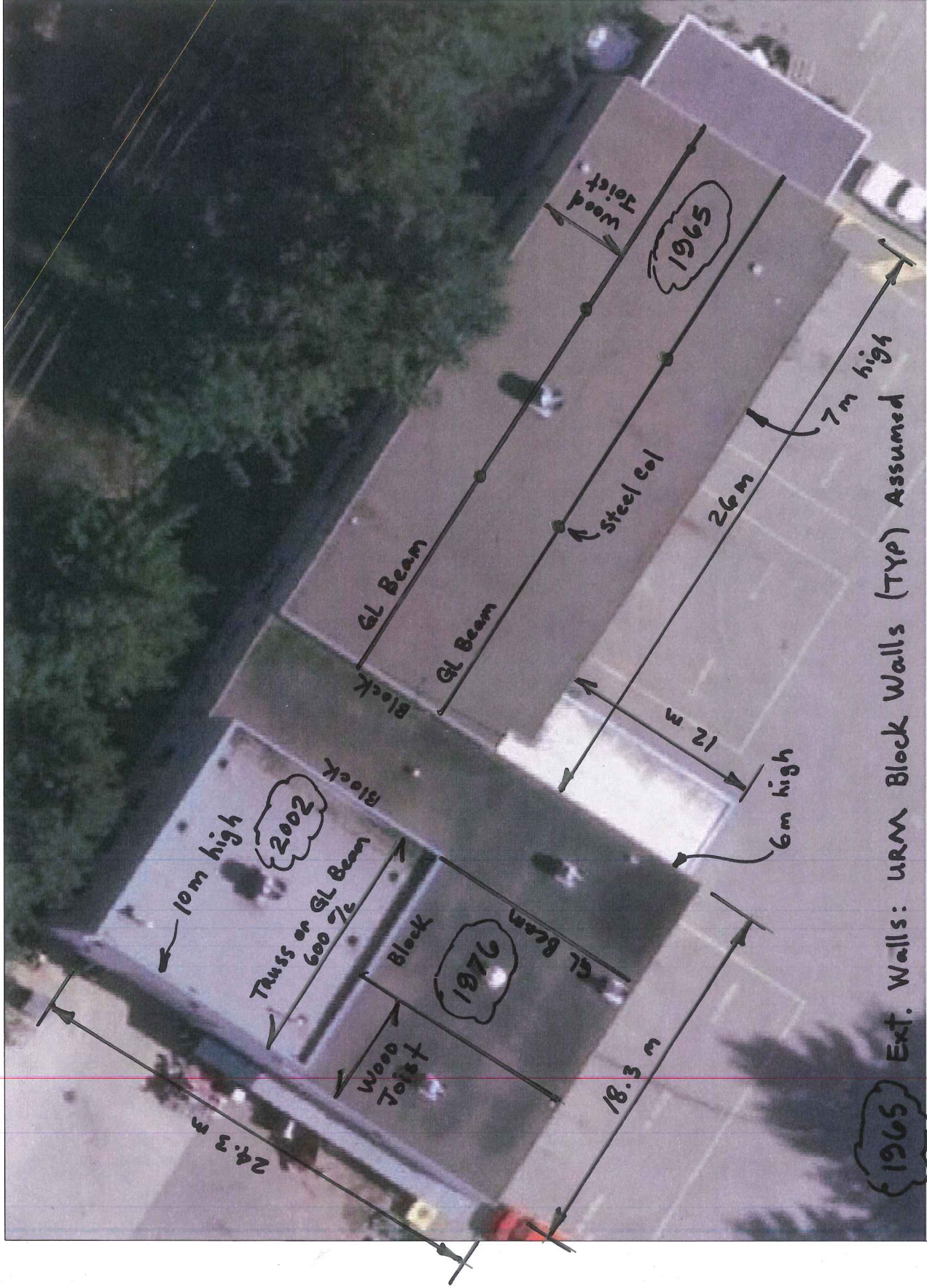
* applies only if one or more of the following descriptors on page 1 are circled: SMF, CMF, soft storey, torsion

NSI NON - STRUCTURAL INDEX = B · E · F = \rightarrow NSI = 3.9

SPI SEISMIC PRIORITY INDEX = SI + NSI = \rightarrow SPI = 17.6

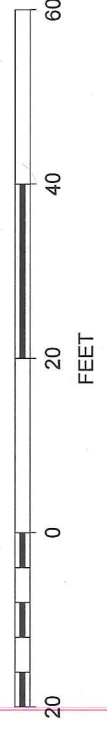
Comments: Medium Priority

SEISMIC SCREENING INVENTORY FORM Attach asterisks (*) to uncertain values						Page No.:
Item No.	Address and/or Name of Building	SI Structural Index	NSI Non- Structural Index	SPI Seismic Priority Index	Priority for Evaluation	Comments



1965 Ext. Walls: URM Block Walls (TYP) Assumed

SCALE 1 : 264



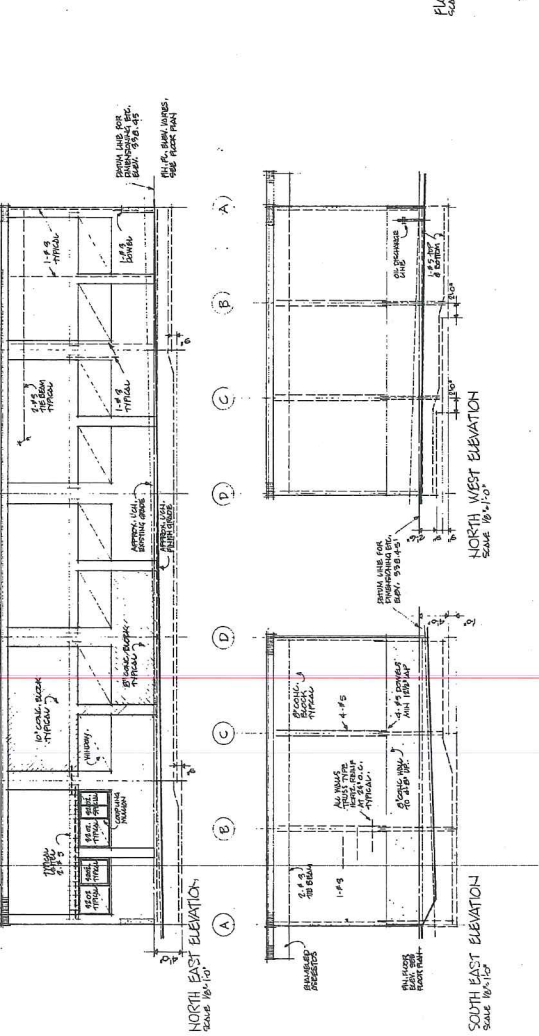
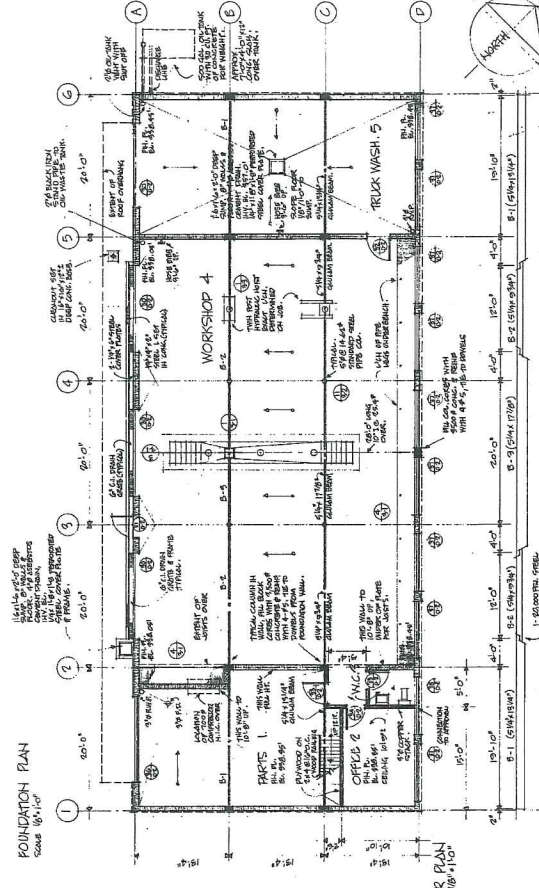
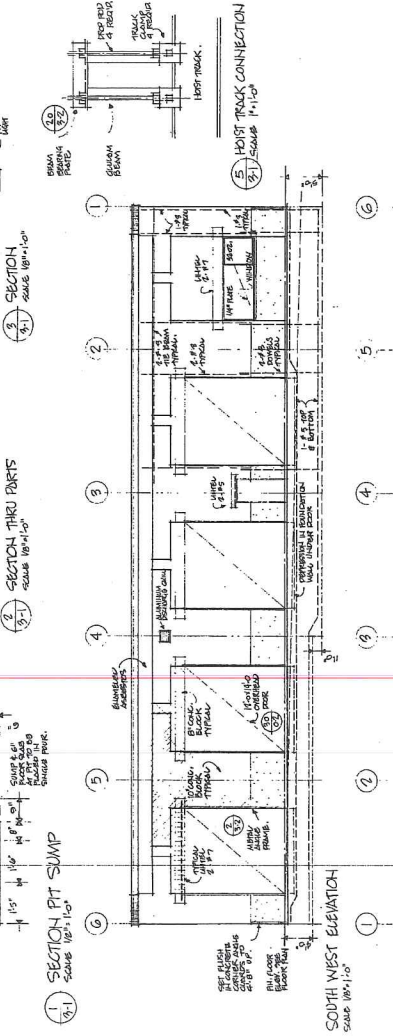
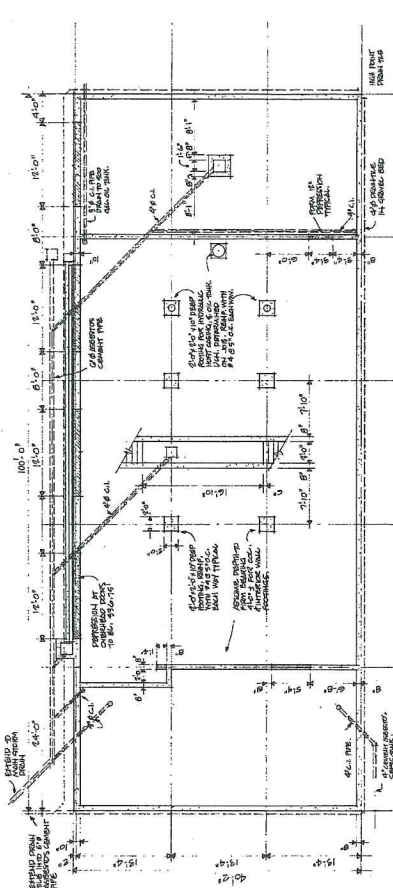
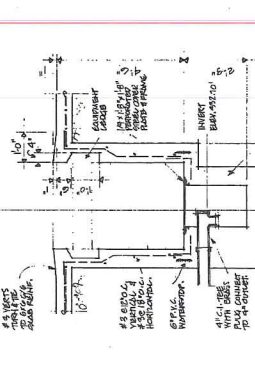
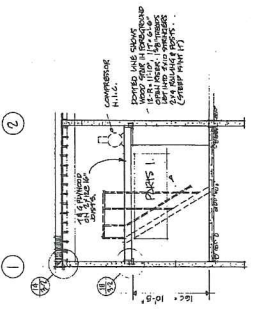
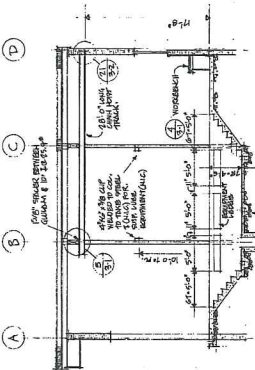
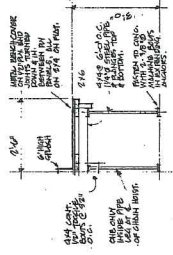
2020 Labieux Vehicle Repair
BZ1 & B21A



ALSO IN MS
ALSO IN MS

Handwritten text, possibly bleed-through from the reverse side of the page. The text is faint and difficult to decipher but appears to contain several lines of script.

BEAM SCHEDULE		BEARING PLATES			
BEAM NO.	DESCRIPTION	(1)	(2)	(3)	(4)
101	101	101	101	101	101
102	102	102	102	102	102
103	103	103	103	103	103
104	104	104	104	104	104
105	105	105	105	105	105
106	106	106	106	106	106
107	107	107	107	107	107
108	108	108	108	108	108
109	109	109	109	109	109
110	110	110	110	110	110



9035

9035-5-89

FLOOR PLANS, ELEVATIONS,
SECTION, DETAILS.

II JAMES WHITE
ARCHITECT

VEHICLE REPAIR BUILDING # 2
THE CONSTRUCTION OF THE 2ND FLOOR

LAWNA : BONEY
DWP : J. P. B. 1955
ACR : G. E. 5

9035-5-89

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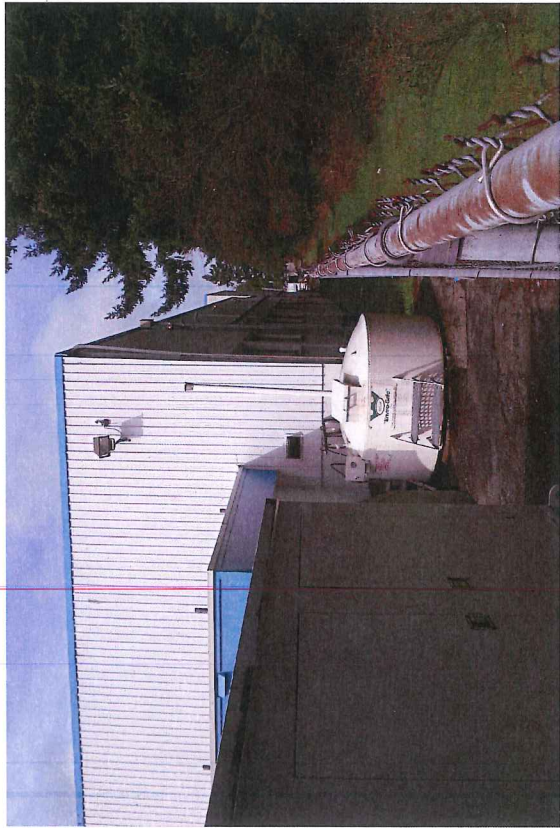
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B21&21A NORTHWEST VIEW



B21&21A SOUTHWEST VIEW

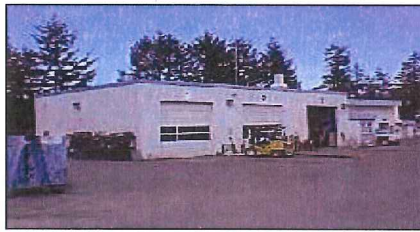


B21&21A NORTHEAST VIEW



B21&21A SOUTHEAST VIEW

**APPENDIX "G"
BUILDING COST ANALYSIS
CITY OF NANAIMO
GARAGE & VEHICLE REPAIR SHOPS
2020 LABIEUX ROAD**



APPRAISAL BUILDING #: B21
GROSS FLOOR AREA: 7,228 FT²

CLASS: C

EFFECTIVE DATE: FEBRUARY 8, 2008
YEAR(S) BUILT: CIRCA 1970

BELOW GRADE ASSETS	CRN	CRNLD
EXCAVATION, BACKFILL AND SITE PREPARATION:	23,000	11,400
FOUNDATIONS:	25,600	12,700
ARCHITECTURAL OR ENGINEERING FEES:	3,400	1,700
TOTAL BELOW GRADE ASSETS:	52,000	25,800

ABOVE GRADE ASSETS		
BUILDING FRAMING:	18,800	9,200
FLOOR STRUCTURE:	61,300	30,300
INTERIOR CONSTRUCTION, MEZZANINES, STAIRS:	117,600	58,100
FLOOR AND CEILING FINISHES:	1,500	800
PLUMBING SYSTEM, FIXTURES, AND SEWERAGE:	6,400	3,200
HEATING, VENTILATION AND AIR CONDITIONING:	11,500	5,600
ELECTRICAL AND LIGHTING:	26,700	13,200
EXTERIOR WALL CONSTRUCTION, BALCONIES:	198,200	97,900
ROOF STRUCTURE, ROOF COVERING, AND CANOPIES:	30,700	15,100
FIRE PROTECTION:	-	-
ELEVATORS:	-	-
ADDITIONAL CONSTRUCTION:	-	-
ARCHITECTURAL OR ENGINEERING FEES:	34,700	17,200
TOTAL ABOVE GRADE ASSETS:	507,400	250,600

TOTAL BELOW AND ABOVE GRADE ASSETS:	559,400	276,400
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BUILDING CODES & BYLAWS		
PARKING SPACES	MEETS CODE	-
SPECIAL NEEDS ACCESS	MEETS CODE	-
FIRE PROTECTION	MEETS CODE	-
TOTAL BUILDING CODES & BYLAWS:		-

TOTAL YARD IMPROVEMENTS:	23,800	23,800
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TOTAL CRN COST:	583,200	300,200
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FOUNDATIONS:	REINFORCED CONCRETE FOUNDATIONS
FRAMING:	LOAD BEARING MASONRY WALLS & STEEL COLUMNS
FLOOR STRUCTURE:	REINFORCED CONCRETE SLAB ON GRADE
INTERIOR CONSTRUCTION:	PAINTED MASONRY & DRYWALL, PART EXPOSED ROOF STRUCTURE
PLUMBING SYSTEM:	STANDARD FIXTURES & TYPICAL SERVICE FOR OCCUPANCY
H.V.A.C.:	RADIANT & ELECTRIC HEAT
ELECTRICAL AND LIGHTING:	STANDARD FIXTURES & TYPICAL SERVICE FOR OCCUPANCY
EXTERIOR WALLS:	PAINTED CONCRETE BLOCK
ROOF:	WOOD JOIST & WOOD DECK WITH BUILT-UP ROOFING
FIRE PROTECTION:	NIL
ELEVATORS:	NIL
ADDITIONAL CONSTRUCTION:	NIL

**APPENDIX "G"
BUILDING COST ANALYSIS
CITY OF NANAIMO
ADDITION TO: GARAGE & VEHICLE REPAIR SHOPS
2020 LABIEUX ROAD**



APPRAISAL BUILDING # B21A EFFECTIVE DATE: FEBRUARY 8, 2008
GROSS FLOOR AREA: 1,573 FT² CLASS: C YEAR(S) BUILT: 2002

BELOW GRADE ASSETS	CRN	CRNLD
EXCAVATION, BACKFILL AND SITE PREPARATION:	4,800	4,200
FOUNDATIONS:	8,100	7,100
ARCHITECTURAL OR ENGINEERING FEES:	1,700	1,400
TOTAL BELOW GRADE ASSETS:	14,600	12,700

ABOVE GRADE ASSETS		
BUILDING FRAMING:	21,000	18,000
FLOOR STRUCTURE:	11,300	9,700
INTERIOR CONSTRUCTION, MEZZANINES, STAIRS:	-	-
FLOOR AND CEILING FINISHES:	6,500	5,600
PLUMBING SYSTEM, FIXTURES, AND SEWERAGE:	-	-
HEATING, VENTILATION AND AIR CONDITIONING:	8,100	7,100
ELECTRICAL AND LIGHTING:	14,600	12,600
EXTERIOR WALL CONSTRUCTION, BALCONIES:	69,600	59,900
ROOF STRUCTURE, ROOF COVERING, AND CANOPIES:	16,100	13,900
FIRE PROTECTION:	-	-
ELEVATORS:	-	-
ADDITIONAL CONSTRUCTION:	-	-
ARCHITECTURAL OR ENGINEERING FEES:	9,700	8,300
TOTAL ABOVE GRADE ASSETS:	156,900	135,100

TOTAL BELOW AND ABOVE GRADE ASSETS:	171,500	147,800
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BUILDING CODES & BYLAWS		
PARKING SPACES	MEETS CODE	-
SPECIAL NEEDS ACCESS	MEETS CODE	-
FIRE PROTECTION	MEETS CODE	-
TOTAL BUILDING CODES & BYLAWS:		-

TOTAL YARD IMPROVEMENTS:	-	-
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TOTAL CRN COST:	171,500	147,800
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FOUNDATIONS:	CONCRETE FOOTINGS & GRADE BEAMS
FRAMING:	STEEL SUPPORT FRAMING
FLOOR STRUCTURE:	CONCRETE SLAB FLOOR
INTERIOR CONSTRUCTION:	NIL
PLUMBING SYSTEM:	NIL
H.V.A.C.:	RADIANT
ELECTRICAL AND LIGHTING:	MERCURY VAPOUR
EXTERIOR WALLS:	CONCRETE BLOCK & EXTERIOR OVERHEAD DOOR
ROOF:	WOOD STRUCTURE WITH BUILT UP ROOFING
FIRE PROTECTION:	NIL
ELEVATORS:	NIL
ADDITIONAL CONSTRUCTION:	NIL