2018

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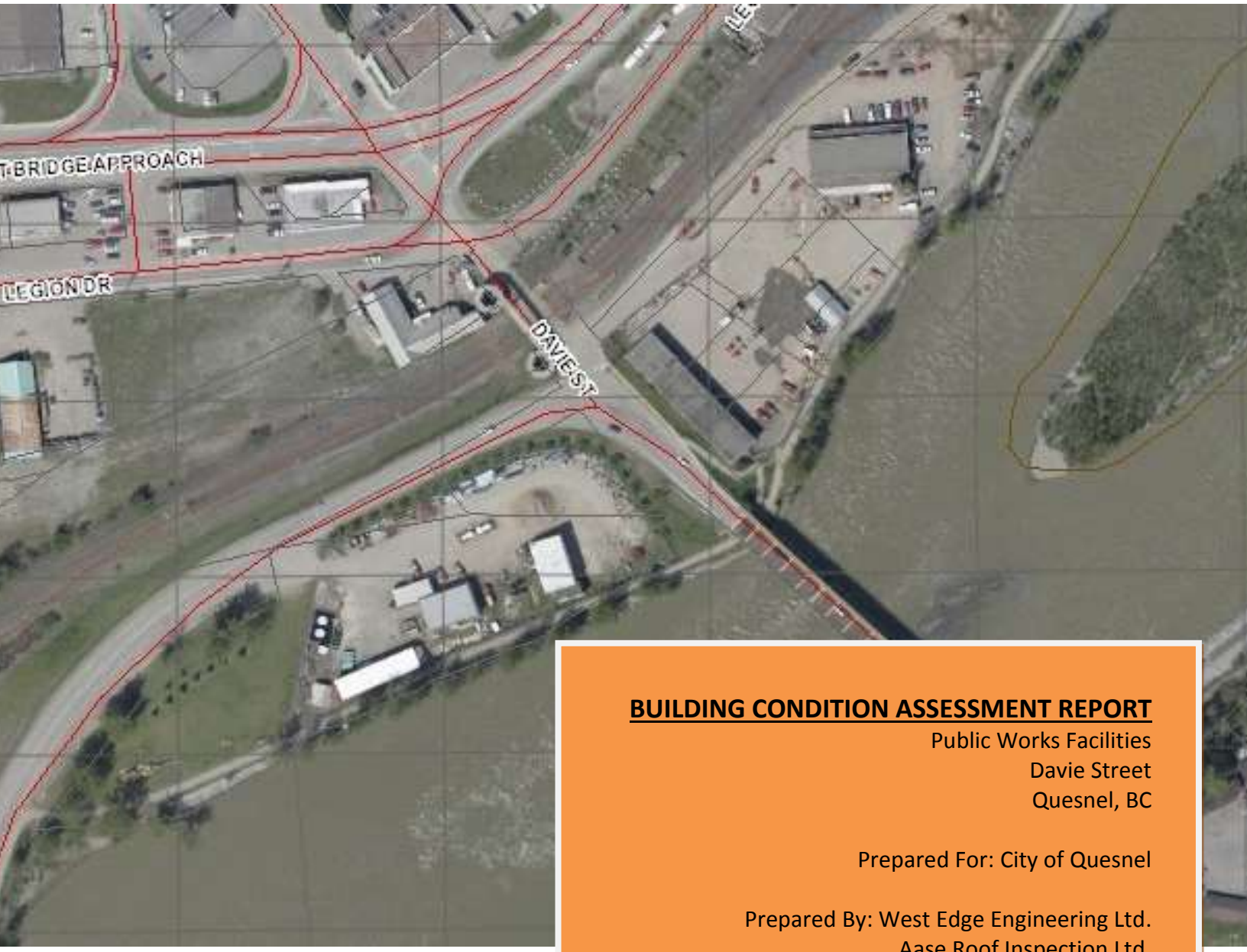

BUILDING CONDITION ASSESSMENT REPORT

Public Works Facilities
Davie Street
Quesnel, BC

Prepared For: City of Quesnel

Prepared By: West Edge Engineering Ltd.
Aase Roof Inspection Ltd.
www.westedge.ca
File 18-109

PROPERTY CONDITION REPORT

WESTEDGE
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July 23, 2018

City of Quesnel
410 Kinchant Street
Quesnel, BC V2J 7J5
Attn: Mr. Byron Johnson, City Manager

Dear Byron:

Re: PROPERTY CONDITION ASSESSMENT REPORT FOR PUBLIC WORKS BUILDINGS, DAVIE STREET, QUESNEL, BC

As requested, West Edge Engineering Ltd. (WEE) and it's team of subconsultants undertook a property condition assessment at the City of Quesnel Public Works site on May 31 & June 1, 2018.

The intent of this review was to assess and present the existing condition of the buildings on the site related to Building Code items, safety standards, structural and roofing only. No assessment of the site itself, landscaping, or electrical items were carried out for this report.

Findings of the inspection team are presented in the attached report, addressing what is believed to be issues that need to be addressed short and long term.

The inspection was generally visual, and should not be considered to be a guarantee or warranty of any kind.

Please review the above and contact the undersigned if you have any questions.

Yours truly,

Yu Kang, P.Eng.

Direct: (250) 374-5433 Extension #204
Email: yu@westedge.ca

File: 18-109
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PROJECT OVERVIEW

A. Scope

The review of these buildings included a site visit with members from West Edge Engineering Ltd. and Aase Roof Inspection Ltd.

The purpose of this review was to assess the general visual condition of the existing building, and to identify and recommend any action required for immediate code and safety concerns.

All inspection is visual and therefore no comments can be made on environmental, archeological or asbestos related materials.

B. Property Description

Address: Davie Street
Quesnel, BC

The Public Works building is located along the Quesnel River south of the railway tracks and on each side of Davie Street.

The east yard has a mechanical shop and stores building (#1) built in the 1940's and a small storage building (#2) built in the 1970's and a covered shed type vehicle storage and lunch room facility (#3) at the north end (1975).

The west side of Davie Street has a reconditioned 1998 trailer being used as an office (#4), a utility office, storage and woodwork shop(#5) (1960); a backhoe storage building (#6) (1940's); a shed type pipe storage building with one enclosed bay (#7) (1980's); and a small fencing storage shed (1980).

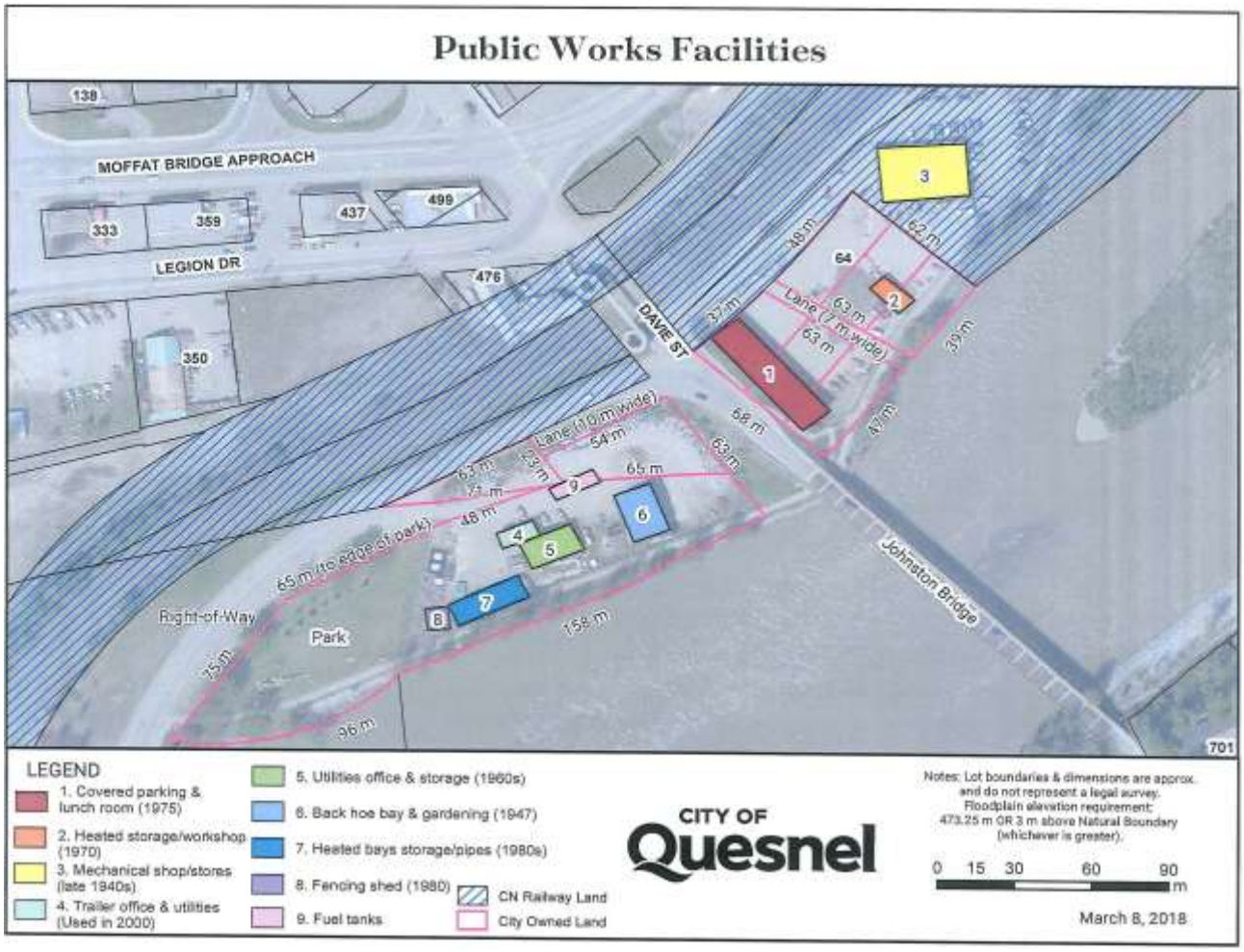
At the time of the inspection, the access to the site was limited due to high water levels. The loop road was closed and the Davie Street access appears to be confined by rail tracks, a pedestrian overpass and an off-centered intersection to the yard. Based on mapping information, access to the east yard is gain through CN Railway land and the mechanical shop and stores is not owner by the City. Parking in both yards appears random and staff parking is on CN Railway land.

It was noted that both sites are well below the floodplain level and some yard flooding was present in the east yard.

There are partially paved areas of the sites and grading is rough. A limited number of catchbasins were observed. No oil interceptors were noted on the site and it is assumed any contamination flows to the river. The extent of any storm management is not known, nor was it in our scope of work.

There is a fuel loading facility on the west yard and was not part of our scope to inspect.

C. Key Plan


Public Works Facilities
138
MOFFAT BRIDGE APPROACH
333
359
437
499
LEGION DR
476
350
DAVIE ST
3
64
2
1
Lane (7 m wide)
Lane (10 m wide)
9
6
4
5
7
8
Right-of-Way
Park
65 m (to edge of park)
Johnston Bridge
701
LEGEND
1. Covered parking & lunch room (1975)
2. Heated storage/workshop (1970)
3. Mechanical shop/stores (late 1940s)
4. Trailer office & utilities (Used in 2000)
5. Utilities office & storage (1960s)
6. Back hoe bay & gardening (1947)
7. Heated bays storage/pipes (1980s)
8. Fencing shed (1980)
9. Fuel tanks
CN Railway Land
City Owned Land
CITY OF Quesnel
Notes: Lot boundaries & dimensions are approx. and do not represent a legal survey.
Floodplain elevation requirement: 473.25 m OR 3 m above Natural Boundary (whichever is greater).
0 15 30 60 90 m
March 8, 2018

II. BUILDING ONE – COVERED PARKING & LUNCHROOM

A. Description of Exterior

The building has exterior walls, 14'-8" high with 8" concrete block walls around enclosed two truck bays and lunchroom. There are six open bays with steel columns & glulam beams. The roof is framed with 2X12 joists, plywood sheathing and has an SBS roof. The west wall facing Davie Street is concrete block on a 4'-0" concrete wall, and the exterior grade is about 4' higher than the floor level.

Exterior doors, windows and overhead doors are all appear original to the age of the building.

The landscaping slopes down to the building from the street.

B. Description of Interior

The enclosed three bays contain a lunchroom, washrooms, first aid station, lockers and a mezzanine office. The lockers are located in the two work bays where open painting is done.

There are no man doors to outside off the two bays. The only door leads back into the washroom and lunchroom areas. The mens and ladies washrooms have poor access. The staircase leading to the small mezzanine office is unsafe.

Lighting is poor in all areas and has no emergency lighting. Furnaces and hot water tanks appear very old and past any useful life expectancy. In addition, the building has little to no energy efficiencies.

All areas, except for the first aid station are vintage 1970's with few or no upgrades having been done, and as such finishes are beyond repair.

C. Key Concerns

First aid station:

The mechanical system is old, and there does not appear to be a fresh air intake. A downdraft would cause a potential health risk (carbon monoxide).

Figure 1 First Aid Station Mechanical

Lunchroom:

Dysfunctional lunch room and dated kitchen area. Has a gas fired furnace that does not have a fire separation to the space, and the air quality in all areas appear poor.

In the short term, some maintenance is required to ensure there is no life safety or health risks to the staff. Not recommended to engage any upgrading of services or finishes as the expenditure would not be justified.

Figure 2 Lunchroom/Kitchen

Figure 3 Lunch room

Figure 4 furnace room

Mens Washroom:

Access to the washroom does not meet code requirements. The door width access is reduced with lockers placed right next to the door opening. There are two lavatories, one urinal and two water closets. The ventilation system may not be in proper working condition.

Figure 5 Mens Washroom

Figure 6 Mens Washroom

Figure 7 Mens Washroom Access

Presently, the washrooms are functional and maintenance would be required in the short term. No expenditures are recommended as the washroom would require major renovations to accommodate the current building code for access and barrier free provisions.

Ladies Washroom:

There is a water closet that is accessible by walking through the two bays and locker areas. The washroom has one lavatory (one washroom is acceptable for up to 10 female staff). The door and layout restricts access, and lighting is poor. The travel distance for exiting purposes from the washroom exceeds the building code requirement.

Figure 8 Ladies Washroom

Figure 9 Ladies Washroom

Presently, the washrooms are functional and maintenance would be required in the short term. No expenditures are recommended as the washroom would require major renovations to accommodate the current building code for access and barrier free provisions.

Lockers in Service Bays:
Some of the lockers appear to be original or older than the existing building. There is no privacy and the layout and lighting levels are poor. Access is through a door that has a raised sill.
Heater maintenance and painting is performed in this area next to the lockers.

Heat is being provided from the ceiling mounted unit heater.

Service Bays:
Proper exiting is not provided from either bay. Lighting, wall and floor finishes are poor.

The floor drains are not connected to an oil interceptor.


Figure 10 Locker/Service Area


Figure 11 Locker/Service Area


Figure 12 paint bay/Service Area


Figure 13 Locker/Service Area

No upgrades are recommended in this area.

Mezzanine Office:
Stair access to the mezzanine office does not meet the requirements of the building code the travel distance to the exit is exceeded.


Figure 16 Mezzanine Stair


Figure 17 Mezzanine Stair


Figure 18 Mezzanine office

No recommendations are made for this space.

Structure:

Concrete spalling and chipping were observed on pedestals supporting the steel columns. It appears that the steel columns have not been well protected from the environment and have experienced different degrees of corrosion and damage, especially in the first 2 open bays storing sands and soils. One steel column in the first opening bay appears to have been hit and bent. The glulam beam above this column has also experienced damage due to column bending and weathering. The damaged steel columns and beam need to be repaired or replaced to avoid structure failure.

Other than the concrete block wall along the back, there is no other shear wall or vertical bracing in the 6 open bays. As a result, the open bay area has very limited lateral stability to resist wind or seismic induced lateral loads.

Figure 18 Pedestal Concrete Spalling

Figure 19 Corroded Steel Column

Figure 20 Bent Steel Column

Figure 21 Damaged Glulam Beam

D. Conclusion

This is the largest building in the Public Works facility. There are some building structural concerns that need to be addressed. The roof still has some short term life expectancy. The staff areas and first aid station within the building are the key concerns.

Years have passed without any appreciable amount of money having been spent to upgrade or maintain any of the services within the building. As such, safety and health concerns require immediate attention. It is not, however, feasible to invest further to bring this building up to current building code standards.

III. BUILDING TWO – HEATED STORAGE/WORKSHOP

A. Description

The heated storage /workshop building is 45’ x 20’ with an 8’-0” ceiling, constructed of concrete blocks, wood trusses and a metal roof. The front 8’-8” is separated from the rear. There is a door and two windows on the south face currently used for storage and a small work counter. There is no insulation in the walls; assumed to be little or no insulation in the attic.

A gas fired furnace is in the area next to the front room. There are floor channel drains that have been covered. Minimal light is provided.

B. Key Concerns

The age of the building is 48 years - the roof requires maintenance and repair. The walls and attic would need to be insulated to meet current building code requirements.

Furnace room needs to be separated form remainder of the area with 45min rated walls and door. Mechanical system needs to be inspected for conformance to fresh air, insulated ductwork and other requirements.

The block wall is likely non-reinforced, and a control joint was not installed along the wall. Separations were noted in the block wall.

C. Conclusion

The current condition of the building is poor. It is recommended to remove workshop use and the heating system.

This building has no further life expectancy under its current use.

Figure 22 block wall settlement

Figure 23 exposed furnace

Figure 24 storage area

Figure 25 front elevation

IV. BUILDING THREE – MECHANICAL SHOP & STORES

A. Description

A steel frame building with Bolted steel connections**,** wood frame infill and asbestos shingles built in the 1940’s. The main central building is approximately 36’ x 110’ long with a 16’-5” ceiling and has lower framed roof sections extend full length down each side. A shed framed storage addition has been added along the west side. There is 300 sq.ft. of mezzanine at the rear that houses a lunchroom and an office. Under the mezzanine is a washroom, locker area and parts area.

The primary structure of the building is a series of steel moment frames at 12’ spacing. The two side wings are wood frame construction with 2x12 roof joists, and the storage shed is a lean-to structure with 2x4 roof joists. The floor slab appears to have significant cracking. It was also reported by the staff that there is an underslab void at the entrance location.

Existing finishes are all very dated the stores area along the east side has had the only updates. The centre mechanical shop area has seen modifications over the years, and an overhead crane has been added to the existing structure.

Several heating and ventilating systems were noted, some appear abandoned.


Figure 26 Exterior Wall


Figure 27 Exterior View


Figure 28 Mechanical Shop


Figure 29 Mezzanine


Figure 30 Mezzanine Stairs


Figure 31 Lunchroom

B. Key Concerns

The age of the structure, modifications and additions over time has impacted the structural integrity that may cause future issues. While the steel members appear to be relatively good condition, the wood frame components have shown signs of aging. The storage shed roof is structurally inadequate to withstand the roof snow load. The floor slab in the main service area has experienced severs cracking and surface deterioration. Any upgrades or changes will be costly; all surfaces and finishes may contain hazardous materials that would require abatement procedures.


Figure 32 Slab Cracking


Figure 33 Slab Cracking

The current layout cannot accommodate service bay modifications or improve the function and serviceability. Any investment into the building would still result in a building that is 75 plus years old. The building appears to be on land owned by CN Railway and is in the floodplain.

The building has little or no insulation and as a result has no energy efficiency. Upgrading to meet current building code standards would be costly and very impractical.

C. Conclusion

In the short term, address any life safety issues to minimize any risk to staff. Do not invest any other additional capital to upgrade this building as it would far exceed the costs of rebuild new. This building has already exceeded standard life expectancy.

V. BUILDING FOUR – OFFICES (TRAILER)

A. Description

The office is an 880 sq.ft. trailer refurbished in 1998. Located in the west yard, this is a temporary structure situated approximately 5'-0" above grade. Wood stairs and landings access the main entry to the north and exit to the west.

Figure 34 Main Entry

Figure 35 Exit Stair

Inside there is a waiting/reception area with three offices, one workstation and a washroom.

Figure 36 Entry Lobby

Figure 37 Waiting Area

Figure 38 Reception

Figure 39 Office

Figure 40 Washroom

The furnace is located next to the main entrance and has no fire separation to the space. It is very old and past its usefulness. All interior finishes are well worn. The washroom is very small and the door access is only 2'-0" wide.

Figure 41 Washroom Door

Figure 42 Worn Finishes

The thickness of the floor indicates that the floor structure consists of 2x8 joists. The floor feels 'bouncy' when walking on it. The building is supported on 3 rows of wood cribbings. The cribbings are about five feet tall with 2x cross-bracing in between.

B. Key Concerns

The office facility is not barrier free accessible, and the main entry and exit stairs do not meet code requirements. The rear exit stair is damaged and failure is imminent.

Figure 43 Main Entry Stair

Figure 44 Rear Exit Stair

The building has little or no insulation and the doors and windows leak badly. As a result, the building has no energy efficiency.

The washroom is not barrier free accessible and the unit is in overall poor condition.

Figure 45 End Elevation

Figure 46 Side/End Elevation

The bouncy floor indicates that the floor joists are not in good structural condition. The joists may have certain degree of decay or other types of damage. Also, the cribbing foundation does not provide adequate lateral stability to the building against the design wind and seismic loads.

Figure 47 Wood Cribbing/Cross Bracing

C. Conclusion

In terms of life expectancy, the building is not likely to last much longer. Upgrading is not recommended at this time. However, if there are plans to continue to use this building, a maintenance and safety plan should be implemented in the short term. In addition, any upgrades or renovations might require a hazardous materials assessment.

VI. BUILDING FIVE (5a, EAST HALF) – UTILITIES OFFICE AND STORAGE

A. Description

Built in the 1960's, the building is 2400 sq.ft., comprised of offices on the east end, storage in the middle and a millwork shop on the west end. It is a concrete masonry block building on a raised 4'-0" concrete block foundation, likely on concrete strip footing. The building floor is a 6" thick concrete slab. One loading dock overhead door at utility stores and a built-up ramp to a framed in double door at the millwork shop west wall. There is no control joint along the block wall. Some block wall mortar is cracked and moisture stains are showing at rainwater leaders on exterior walls. All exterior building features appear original.

Figure 48 Overhead Doors

Figure 49 Block Wall Mortar Cracking

Figure 50 Old Window/AC Unit

Figure 51 Window Failing

The roof structure consists of wood planking supported on 5¼" x 27½" glulam beams. The glulam beams span the entire width of the building and are supported on concrete block pilasters. There is no available information indicating whether the block walls are reinforced. However, judging from the age of the building, it is reasonable to assume that the walls are not adequately reinforced for a seismic event.

Figure 52 Glulam Beam

The utility office on the east end and across the rear of the utility stores warehouse contains a lunch room, washroom, two workstations and an office.

Figure 53 Lunchroom

Figure 54 Washroom

Figure 55 Office

The furnace for the offices and lunchroom is located in the stores warehouse. The walls that separate the warehouse from the offices are frame and are not fire separations. The overall building is in fair condition, although minimal upgrades have been done.

Figure 56 Furnace in Warehouse

B. Key Concerns

The stairs and guardrails do not meet current code requirements, and there is no proper access. The air quality is poor in the lunchroom and office areas. There is no fire separation between the office/lunchroom areas and warehouse that houses the exposed furnace. There is no insulation in the building and the space is located below the floodplain level, even though the floor is 4'-0" above grade. Also, an unreinforced masonry block structure is susceptible to earthquake induced ground movement.

C. Conclusion

In terms of life expectancy, the building is 58 years old that was designed as a warehouse. The current building code requirements would not be achievable for a conditioned space without major expense. It is also economically unfeasible to retrofit the structure to meet today's seismic design requirements. Likely 1-2 more years would be all that could be expected.

Upgrading is not recommended at this time. If there are plans to continue to use this building short term, and inspection and upgrade of the mechanical system as well as addressing safety and health concerns would be required.

VII. BUILDING FIVE (5b, WEST HALF) – MILLWORK SHOP

A. Description

Built in the 1960's, the west half of the utility stores and office building is 900 sq.ft.(+-) It is a concrete block building on a raised 4'-0" concrete block foundation, and shares the same structural system as the east half. The west end has a built-up grade ramp access to a framed double door opening.

Figure 57 Exterior Elevation

Figure 58 Framed Double Door

The interior is an open work space with one washroom and small mezzanine area. The furnace is located in the stores warehouse, exposed to parts storage. The walls that separate the warehouse from the offices are framed and provides no fire separation.


Figure 59 Millwork Shop


Figure 60 Millwork Shop


Figure 61 Small Mezzanine

B. Key Concerns

There are a number of concerns in this space. The furnace is located in the adjacent stores area and dust is accumulating within the duct system. There is no visible dust collection system in any of the cutting areas. Sawdust exposure may cause health risks and any sawdust accumulation is a source of fuel and very combustible. The washroom is beyond any form of salvage and is unhealthy.
The structural safety concern is the same as the east half of the building.

C. Conclusion

In the short term, health and safety issues must be addressed. Upgrading is not recommended to extend the life of this area.

VIII. BUILDING SIX – BACKHOE BAY & GARDENING

A. Description

Built in 1947, this is a wood timber and frame building which appears to have had numerous modification over its 70 year history. Its condition is poor and the life expectancy is far past what would be deemed reasonable.

B. Key Concerns

The roof is showing significant sagging, showing its inability to withstand the snow load. The building does not have a proper lateral support system to provide adequate lateral stability to resist wind and seismic induced loading, and the tall built-up roof further reduces the overall stability of the building. It appears that a fire had occurred in one compartment and may have damaged the structure in that space.

C. Conclusion

It is not recommended that this building use be continued for anything at this time. The roof is disintegrating and there is general concern about safety. The current uses for this space should be move to another location.


Figure 62 Backhoe Bay


Figure 63 Interior First Bay


Figure 64 Interior 2nd Bay

Figure 65 Entrance Door

Figure 66 End bay

IX. BUILDING SEVEN – HEATED STORAGE BAYS/PIPES

A. Description

Built in the 1980, the building is comprised of four open bays and one enclosed bay. It is constructed of 2x6 wood frame exterior walls with 3/8" painted plywood sheathing and no interior finish. There are also a sheathed 2x4 wall between each bay. The roof is metal screw down on plywood sheathing on 16" deep wood/metal trusses at 24" spacing, no ceiling finish. The header over each bay opening is a triple-ply girder truss. A heated centre bay is enclosed and finished with plywood. A concrete strip foundation supports the structure. The heated bay has a concrete slab on grade and the other bays are gravel.

Figure 67 Exterior Elevation

Figure 68 First Bay

Figure 69 Heated Bay

Figure 70 Trusses & Back Wall

Figure 71 End Wall

B. Key Concerns

The current condition of this building is run down. The exterior sheathing was never protected from the elements and is showing signs of delamination and decay. Moisture has penetrated both the roof and wall sheathing over time and left water stains on the wall and roof structure. It is suspected that the structural capacity of certain trusses and wall studs may have been weakened by the moisture. Moreover, as a light weight open structure, this building lacks proper tie-down to the foundation to resist wind induced uplifting forces. Further assessment of the structure would be required to assess life expectancy and safety concerns. The heated bay may not have any insulation and the sliding doors are not sealed to provide weather tightness.

C. Conclusion

A full structural assessment is recommended to maintain future use as a storage facility. Any items that require heat should be moved to a more suitable location, as the cost to maintaining heat in this space in not economically viable. Pipe storage would be suitable use for the space if it is found to be safe.

X. BUILDING EIGHT – FENCING SHED

A. Description

Built in the 1980, the building is approximately 480 sq.ft., constructed of wood frame exterior walls with plywood sheathing and framed rafter roof with shiplap sheathing and a metal roof. The foundation appears to be a thickened edge concrete slab. Sliding doors are used to access the space. This is a base building shell only with no exterior finishes.

Figure 72 Exterior Elevation

Figure 73 Roof & Wall Framing

Figure 74 Roof Rafters

B. Key Concerns

The roof is in a substandard condition. Signs of rotting are showing on the ends of the 2x4 rafters. Some structural reinforcement works may be required to maintain this building for future use.

Figure 75 End of Roof Rafters

C. Conclusion

Life expectancy is limited and as such, would not recommend extended usage without addressing the roof and further structural assessments.

XI. SUMMARY

The inspection was performed on May 31, and June 1, 2018. The weather was partially overcast with periodic rain showers.

In all, eight buildings were inspected by a structural engineer, building design technician and roofing inspector. Comments have been made on all eight structures and the underlying consensus is that all buildings have structural, roof and health & safety concerns.

Lack of regular ongoing maintenance and upgrading over the years has greatly contributed to most, if not all of the concerns brought forth.

In moving forward, both sites are well below flood plain level and any work to now upgrade the sites would be costly to meet current building code and local bylaw requirements. This alone would impede making any changes that would extend the life these structures. In addition, plumbing and electrical upgrades would be very challenging and likely not practical.

Building 1: Structural repairs are required for the open bays. The two enclosed bays combined with the locker areas are unacceptable health and safety wise, and the lunchroom/washroom setup is impractical to revise. The building could be retained for storage use, but recommend finding another location for lunch, washroom and locker facilities.

Building 2: This building is not feasible to upgrade to a functional workshop. Recommend using as an unheated storage building.

Building 3: Based on information provided, this building is on CN Railway property, and therefore not owned by the City. This is the oldest building (68 years) on the site. The stores area is well maintained and the shop area is functioning satisfactorily. However, as noted, no upgrades are feasible. In the short term, maintenance and safety concerns need to be addressed as well as any legal land issues.

Building 4: The trailer is not feasible to upgrade. Immediate concerns are to address life safety and required maintenance.

Building 5: The utility stores and millwork shop is not feasible to upgrade. Immediate concerns are to address life safety and required maintenance.

Building 6: This building is a safety hazard and should be vacated and demolished.

Building 7: Some work is required to maintain this structure for pipe storage only. Any heating capacity should be removed for safety.

Building 8: The fencing shop is not feasible to upgrade. Immediate concerns are to address life safety and required maintenance to prolong its current use.

The facilities on this site(s) are currently in a state not realistic to bring up to today's current building code, energy and life safety standards that would be required to be conditioned. For unconditioned spaces, buildings 1, 2, 5, 7 and 8 can be used as storage spaces, but are not upgradeable for everyday occupant use.

APPENDIX A

ROOF INSPECTION REPORT
AASE ROOF INSPECTION LTD

Aase ROOF INSPECTION LTD

AASE ROOF INSPECTION LTD.
Mons Aase, RRO, President

Roof Consulting & Inspection
Roof Surveys
Budget Cost Calculations
Roof Specification

Provincial & Interprovincial Ticketed
Journeyman Roofer
RCABC Approved
Member of RICABC & RCI

9255 Robson Road
Prince George, BC
V2N 5B3
Cell 250.614.3369
Tel 250.964.2204
Fax 250.964.2287

5/31/2018

Roof Survey

Public Works Yard

Quesnel B.C.

Aase Roof Inspection Ltd.
9255 Robson Road
Prince George, B.C. V2N-5B3
Ph: (250) 964-2204 Fax: (250) 964-2287
Cell (250) 614-3369

Westedge Engineering June 21, 2018
#203-655 Victoria Street
Kamloops, BC V2C 2B3
Phone: 250-374-5433 Ext 204
Fax: 250-374-7022 Email: ralph@westedge.ca

Project: Quesnel Public Works Buildings
Attn: Ralph Ruppel
Preamble:

A roof survey was conducted on May 31st, 2018 at the Quesnel Public Works Buildings in Quesnel B.C. by the request of Ralph Ruppel (Westedge Engineering) The Public Works Yard consists of 9 buildings covering approx 26,844 Ft/Sq. Main office is SBS and EPDM Rubber roofing. Other roofs are either sloped metal, SBS Torch-On membrane, or older Tar and Gravel roofs. The roofs range from good to poor condition. Some require repairs only, others require re-roofing..

Mons Aase RRO TQ IP Roofing Inspector/Consultant attended the site.

The following is comprehensive listing by section and problems pertaining to each:

Existing Condit Covered parking/lunch rm #1. Roof Area 7,605 Ft./Sq.

Deck tongue and groove and g wood deck covered with plywood
Insulation 3 " Insulation on the North 1/3 , un-insulated other sections
Surface 2 Ply SBS IKO .

Roof is approximately 15+ years old but its still in satisfactory condition. Some minor buckles. . Chimney cap to replace. No cap stripping on the perimeter. No roof leaks have been reported. Front canopy membrane is shot. Should probably be replaced or torn down. Life expectancy with minor repairs 7-10+ years.

Covered parking and Lunch Room building. SBS membrane

North roof area.

Roof #1 overview . Looking south

Chimney cap missing. North end

Minor ridging all sections.

Chimney storm collar does not cover oversized tall cone flashing. Leaking ?

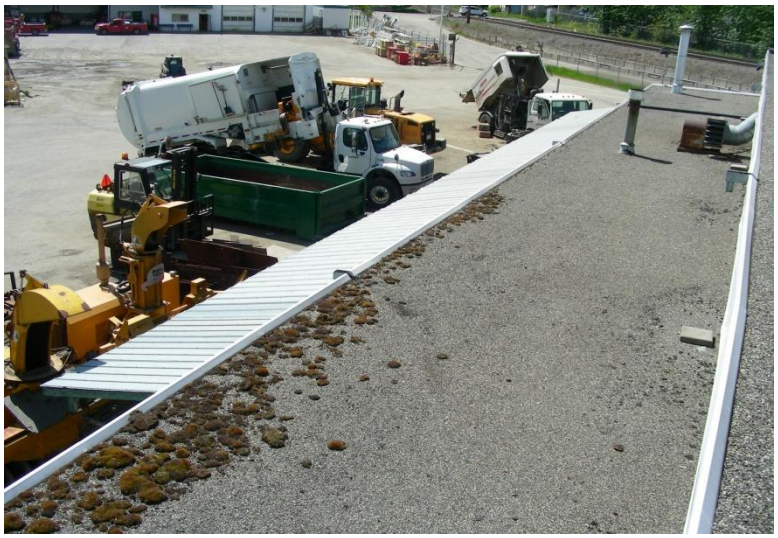
Heated storage/ workshop building Roof #2 nails popping out.

Minor damage to metal panels on the Southwest side. Replace nails with metal roofing screws.

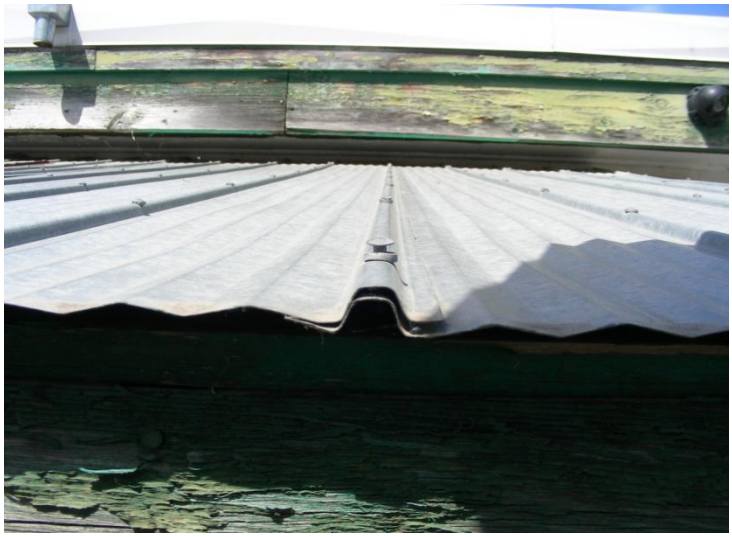
Chimney flashing not installed properly . Re-screw and caulk.

Roof #3a , shop/store. Roof is old and leaks reported.

Roof overview Roof # 3a



Roof over view 3a and 3 b.



Roof #3b Replace nails on 3b with screws.

Roof 4 overview .EPDM Rubber.

Roof 5 overview . SBS.

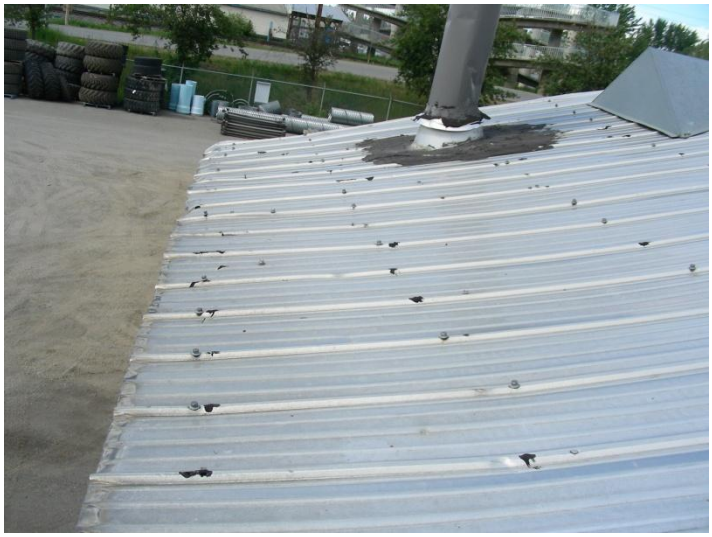
Roof 5 overview .Looking East.

Roof 4 b overview .Looking west.
Flat drains no strainers.

Roof 6A overview .Looking east.

Building is from the 40s??

Roof 6A overview .Looking south. Nails popping alot of damage holes and repairs



Roof 6A overview .Looking North Nails popping deck swaled back near the perimeter.

Roof 6A overview .Looking South Alot of damage and makeshift repairs .

Roof 6A holes and damage everywhere.

Roof 6A popped nails

Roof 6b overview .Looking east. Satisfactory condition.

Heated bay and pipe storage.Roof 7a overview .Looking West . Satisfactory condition.

Roof 7b overview .Looking east. Satisfactory condition.

Roof 7a overview .Looking east. Satisfactory condition.

Fencing shed Roof 8 overview .
Fair condition.

Roof 6b overview .Looking east.
Fair condition.

Roof 6b overview .Screws backing out..

Existing Conditions Heated storage/workshop #2. Roof Area 1,355 Ft./Sq.

Strapping 3ft O.C. 4/12 slope
Surface 28 gauge Weather beater metal panel .
Roof is approximately 20+ years old but its still in fair condition. See Photos. Nails are popping out. Refasten all nails with metal roofing screws. No roof leaks have been reported. Caulk and re-fasten chimney. **Life expectancy 10 years** +

Existing Conditions Section #3a shop/store. Roof Area 7329 Ft./Sq.

Deck Wood
Insulation Under-deck
Surface 4 ply No 15felt, tar and gravel
Roof is very 30 years old + Roof is in poor condition. Leaks have been reported. **Life expectancy 1-2 years-**

Existing Conditions Section #3b shop/stores. Roof Area 1,188 Ft./Sq.

strapping 1x4 16" O.C. 3/12 slope
Surface 28 gauge Weather beater metal panel .
Roof is approximately 20+ years old but its still in fair condition. See Photos. No roof leaks have been reported. Refasten all nails with metal roofing screws. **Life expectancy 10 years** +

Existing Conditions Trailer office Section #4. Roof Area 880 Ft./Sq.

Deck Plywood
Insulation Under deck fibre glass
Surface .045 EPDM Rubber
Roof is approximately 5 years old+. Roof is in good condition. Re-caulk T laps in 5 years. **Life expectancy 15 years** +

Existing Conditions Office/Storage Section #5. Roof Area 2427 Ft./Sq.

Deck Wood 1/12 slope
Insulation Unknown +Sopra board
Surface Two Ply SBS Grey Soprema
Roof is approximately 15 years old. Roof is in satisfactory condition.
Life expectancy 7-10 years +

Existing Conditions Back hoe / Gardening #6a. **Roof Area 2370 Ft./Sq.**

Deck Wood 4/12 slope

Surface 28 gauge Weather beater metal panel .

Roof is approximately 30 + years old. It has been repaired extensively. Roof is in failed condition. See Photos. Nails are popping out. There are hole in the metal everywhere. Nails have to be taken out and replaced with screws. No roof leaks have been reported. We suspect multiple roofs underneath this one. **Life expectancy 0 years** +

Existing Conditions Section #6b. **Roof Area 480 Ft./Sq.**

Deck Wood 4/12 slope

Surface 28 gauge Weather beater metal panel .

Roof 6 b in satisfactory condition but 1/12 is too low slope for metal. **Life expectancy 20 years** +

Existing Conditions Heated bays/pipe storage #7a. **Roof Area 2,523 Ft./Sq.**

Deck OSB plywood Fastened 2Ft O.C. 1.5/12 slope

Surface 24 gauge metal panel .

Roof is approximately 20+ years old but its still in satisfactory condition. 1.5/12 slope is too low slope for metal roofing. Some screws backing out need to be re-tightened .No roof leaks have been reported. **Life expectancy 10 years** +

Existing Conditions Section #7b. **Roof Area 182 Ft./Sq.**

Deck 1x4 strapping 3 ft" O.C. 2/12 slope

Surface 24 gauge metal panel .

Roof is approx 10+ years old Roof in satisfactory condition. **Life expectancy 15 years** +

Existing Conditions Fencing shed Section #8. **Roof Area 505 Ft./Sq.**

Deck T&G plank deck wood 4/12 slope Fastened 32" O.C.

Surface 28 gauge Weather beater metal panel Aluminium.

Roof is in fair condition. Fascia is rotten Some screws backing out and nails popping. but 1/12 is too low slope for metal. **Life expectancy 4-7 years** +

Recommendations:

Most of the main roofs , are in satisfactory condition with minor repairs required.
Repairs are required on some roofs.

1.Roofs #2,3b,7a , 8 need to be refastened with screws.(pull out nail replace with metal roofing screw)(Or retighten existing screw)

2. Roof # 4 re-caulk T laps in 5 years time.

3.Roof # 1 Replace chimney cap and one storm collar

4. Roof 1 front canopy replace or remove.

Budget price for repairs $6500.00 to $9500.00

Large repair work to be done ASAP

Mech shop /Stores 3a reroof 73.29 x $1500.00= $109,935.00

Back Hoe & Gardening 6a re-roof 23.70 x $1200.00= $ 28,440.00

$138,375.00

Large repair work to be done 4-7 year

Fencing shed 8 reroof 5.05 x $1200.00= $6,060.00

Large repair work to be done 7-10 year

Covered parking / Lunch Rm 1 reroof 76.05 x $1200.00= $91,260.00

***Allow for 6 to 9 % for Roof design and inspection.**

Conclusion :

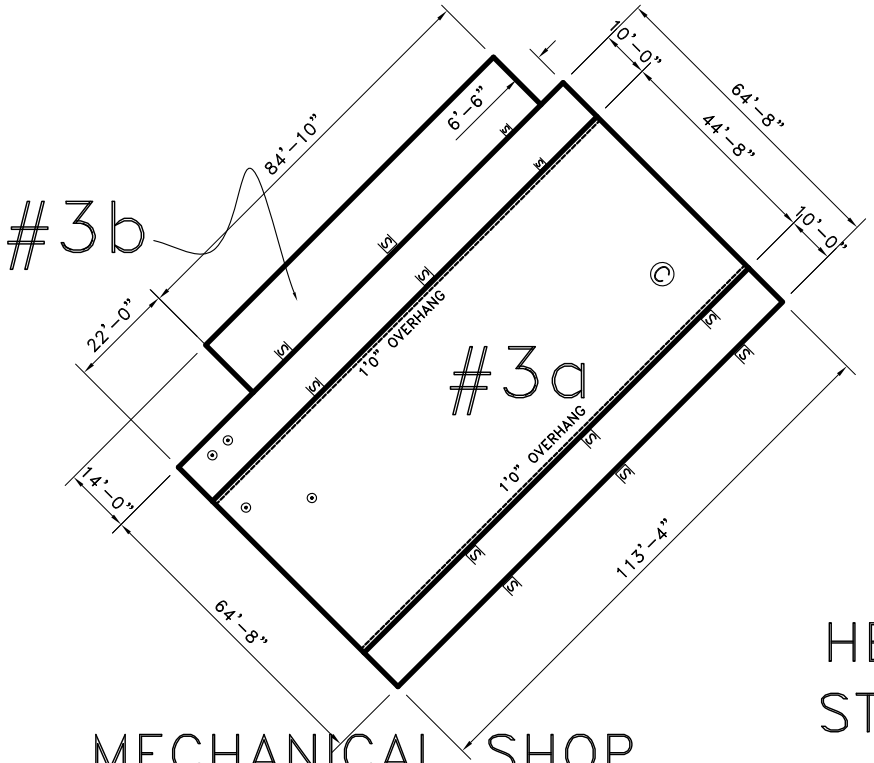
We strongly suggest that only trained roofers be considered to do the repair work.

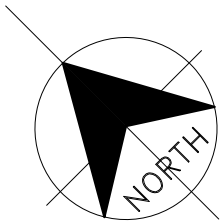
Note: The building with Roof 6a is so old it may be a tear down.

If you require further information, please feel free to call us.

Submitted by,

Mons Aase RRO TQ IP
AASE Roof Inspection





NOTE:

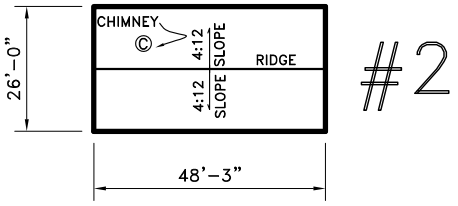
THE MEASUREMENTS ARE TO BE VERIFIED BY THE CONTRACTOR

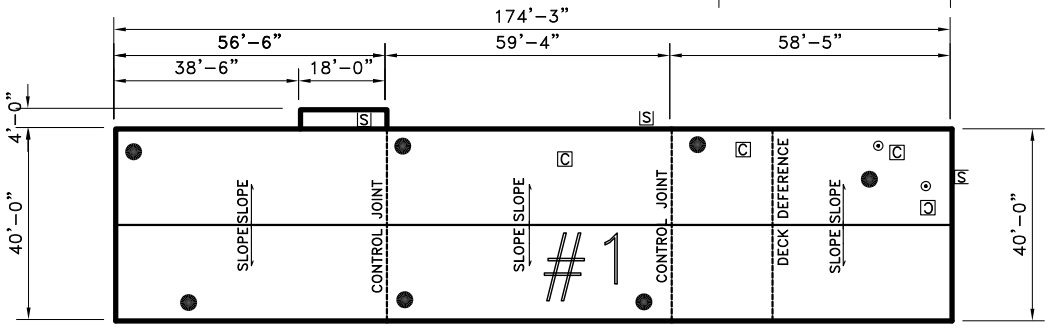
AREA:

#1	7,605	sqft
#2	1,355	sqft
#3a	7,329	sqft
#3b	1,188	sqft
TOTAL	17,477	sqft

MECHANICAL SHOP
STORES BUILDING

HEATED
STORAGE





COVERED PARKING
LUNCH ROOM

AASE ROOF INSPECTION LTD.
ROOF CONSULTING & INSPECTION
ROOF SURVEYS
BUDGET COST CALCULATIONS
ROOF SPECIFICATIONS
PH. 250 964 2204
FAX. 250 964 2287

LEGEND

C	MASONRY CHIMNEY		CONTROL JOINT		PLUMBING VENT CURB	S	SKY-LIGHT
©	METAL CHIMNEY	P	PARAPET WALL	⊙	PLUMBING VENT	V	VENTILATOR
C	CURB CHIMNEY		SLEEPER	●	ROOF DRAIN	F	FAN
	WIRE HOUSE		ROOF SLOPE	⊗	ROOF JACK	A/C	ROOF UNIT
	T. V. ANTENNA		LADDER	⊠	ROOF HATCH	S	SCUPPER
				■	PITCH PAN	□	CURB OPEN

1
QCB

QUESNEL CITY-MAINTENANCE BLDGS
HEATED STORAGE & WORKSHOP
ROOF PLAN

FRONT STREET +
JOHNSTON BRIDGE
QUESNEL, B.C.

DATE:	25/06/18
SCALE:	1"=40'-0"
DRWN:	T.Ezaki
CHECK:	M. AASE

SCHL. NO.
QCB

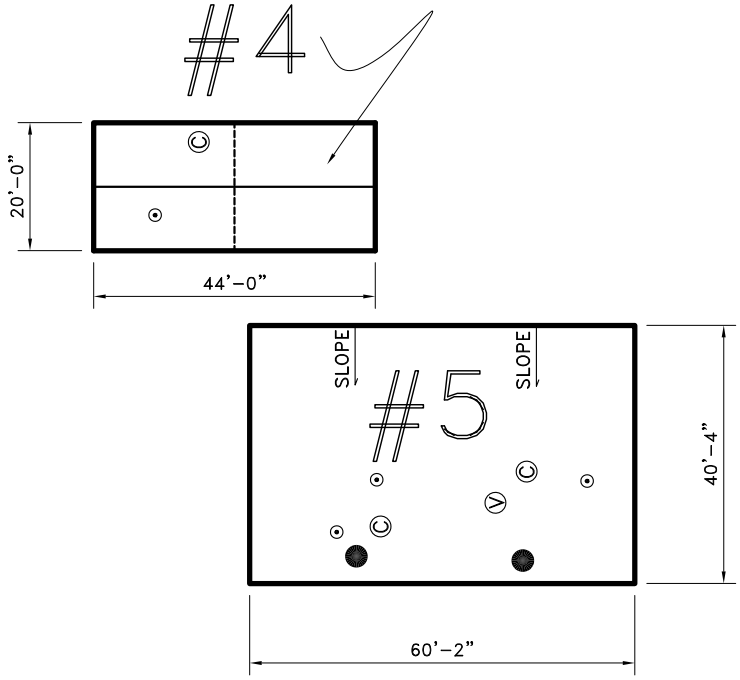
DRWING.NO.

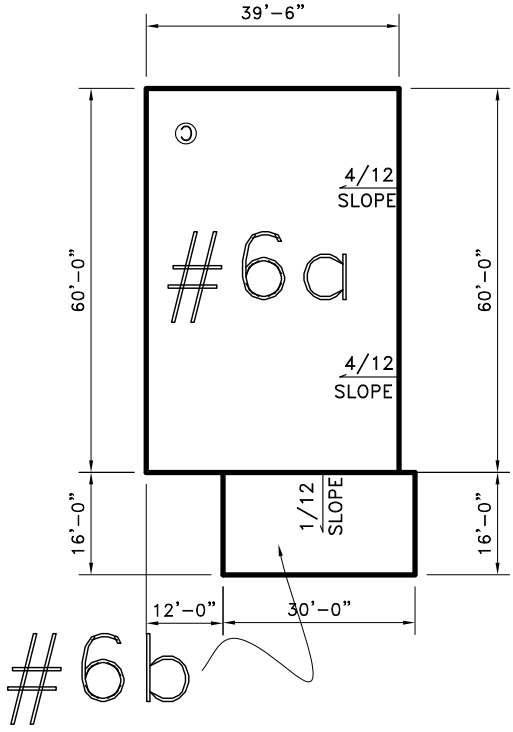
NOTE:

THE MEASUREMENTS ARE TO BE VERIFIED BY THE CONTRACTOR

AREA:

#4	880	sqft
#5	2,427	sqft
#6a	2,370	sqft
#6b	480	sqft
TOTAL	6,157	sqft





TRAILER OFFICE & UTILITIES

BACK HOE & GARDENING

AASE ROOF INSPECTION LTD.

ROOF CONSULTING & INSPECTION
ROOF SURVEYS
BUDGET COST CALCULATIONS
ROOF SPECIFICATIONS

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FAX. 250 964 2287

L E G E N D

C	MASONRY CHIMNEY		CONTROL JOINT		PLUMBING VENT CURB	S	SKY-LIGHT
©	METAL CHIMNEY	P	PARAPET WALL	⊙	PLUMBING VENT	V	VENTILATOR
C	CURB CHIMNEY		SLEEPER	●	ROOF DRAIN	F	FAN
	WIRE HOUSE		ROOF SLOPE	⊗	ROOF JACK	A/C	ROOF UNIT
	T. V. ANTENNA		LADDER	⊠	ROOF HATCH	S	SCUPPER
				■	PITCH PAN	□	CURB OPEN

2
QCB

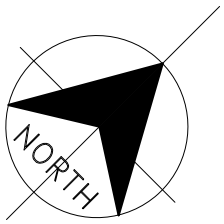
QUESNEL CITY-MAINTENANCE BLDGS OFFICE, BACK HOE & GARDEN ROOF PLAN

FRONT STREET + JOHNSTON BRIDGE
QUESNEL, B.C.

DATE:	25/06/18
SCALE:	1"=30'-0"
DRWN:	T.Ezaki
CHECK:	M. AASE

SCHL. NO.
QCB

DRWING.NO.

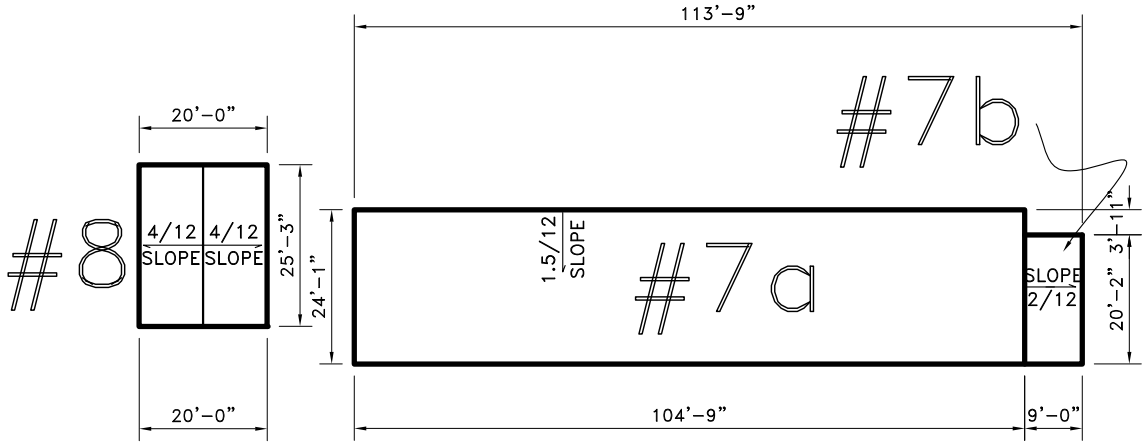


NOTE:

THE MEASUREMENTS ARE TO BE VERIFIED BY THE CONTRACTOR

AREA:

#7a	2,523	sqft
#7b	182	sqft
#8	505	sqft
TOTAL	3,210	sqft



FENCING SHED

HEATED BAYS STORAGE/PIPES

AASE ROOF INSPECTION LTD.
ROOF CONSULTING & INSPECTION
ROOF SURVEYS
BUDGET COST CALCULATIONS
ROOF SPECIFICATIONS
PH. 250 964 2204
FAX. 250 964 2287

L E G E N D

C	MASONRY CHIMNEY		CONTROL JOINT		PLUMBING VENT CURB	S	SKY-LIGHT
C	METAL CHIMNEY	P	PARAPET WALL		PLUMBING VENT	V	VENTILATOR
C	CURB CHIMNEY		SLEEPER		ROOF DRAIN	F	FAN
	WIRE HOUSE		ROOF SLOPE		ROOF JACK	A/C	ROOF UNIT
	T. V. ANTENNA		LADDER		ROOF HATCH	S	SCUPPER
					PITCH PAN		CURB OPEN

3
QCB

QUESNEL CITY-MAINTENANCE BLDGS
HEATED BAY STORAGE & FENCE SHED
ROOF PLAN

FRONT STREET + JOHNSTON BRIDGE
QUESNEL, B.C.

DATE:	25/06/18
SCALE:	1"=30'-0"
DRWN:	T.Ezaki
CHECK:	M. AASE

SCHL. NO.
QCB

DRWING.NO.
[redacted]