

Have Your Say.

Notice of Public Hearing

Tuesday January 28, 2025 | 6:00 pm

Learn more.

The proposed land use bylaw amendment can be reviewed from January 20th 2025 - January 28th, 2025.

Online: rdck.ca/landuseapplications

In Person: RDCK Office, 202 Lakeside Drive, Nelson, BC
Mon - Fri: 8:30 am - 4:30 pm

Tell us what you think.

Make a verbal submission at the public hearing or send a written submission before 4:00 pm on January 28, 2025.

Attend a public hearing.

Online: Via Zoom | [https://rdck-bc-ca.zoom.us/j/95381049717?](https://rdck-bc-ca.zoom.us/j/95381049717?pwd=gTXnVoajNjkwRKdvpl5q9oGyoZQEJD.1)

[pwd=gTXnVoajNjkwRKdvpl5q9oGyoZQEJD.1](https://rdck-bc-ca.zoom.us/j/95381049717?pwd=gTXnVoajNjkwRKdvpl5q9oGyoZQEJD.1)

Meeting ID: 953 8104 9717

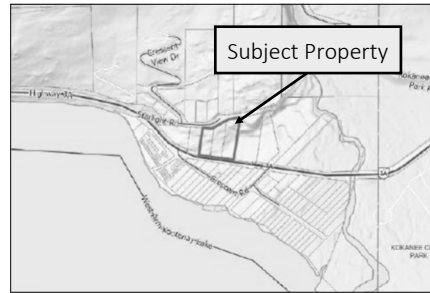
Passcode: 123456

Phone: 1.833.955.1088

In Person: RDCK Head Office — Board Room (202 Lakeside Drive, Nelson, BC)

Visit rdck.ca/publichearings for further details.

**All written submissions are public information pursuant to the Freedom of Information and Protection of Privacy Act.*



From: Country Residential (CR/R2)

To: Industrial (M) land use and Comprehensive Development (CD3) zoning

Location and Legal Descriptions:

4612 Starlight Road, LOT 5 DISTRICT LOT 790 KOOTENAY DISTRICT PLAN 2449 (015-282-228)

4614-4616 Starlight Road, LOT 4 DISTRICT LOT 790 KOOTENAY DISTRICT PLAN 2449 (015-289-567)

4643 Highway 3A, LOT 3 DISTRICT LOT 790 KOOTENAY DISTRICT PLAN 2449 (015-289-559)

Bylaw 3002: Being a bylaw to amend the Electoral Area 'F' Official Community Plan Bylaw No. 2214, 2011 by changing the land use designation of the subject lands from Country Residential (CR) to Industrial (M).

Bylaw 3003: Being a bylaw to amend RDCK Zoning Bylaw No. 1675, 2004 by changing the zoning designation of the subject lands from Country Residential (R2) to Comprehensive Development 3 (CD3).



rdck.ca/publichearings

Please direct enquiries to Zachari Giacomazzo | 250.352.8190
1.800.268.7325 | zgiacomazzo@rdck.bc.ca



Land Use Bylaw Amendment Application

Referral Form – RDCK File Z2410F

Date: October 23, 2024

You are requested to comment on the attached BYLAW AMENDMENT for potential effect on your agency's interests. We would appreciate your response **WITHIN 30 DAYS (PRIOR TO NOVEMBER 22, 2024)**. If no response is received within that time, it will be assumed that your agency's interests are unaffected.

GENERAL LOCATION:

4612 and 4614-4614 Starlight Road, and 4643 Highway 3A, 12 Mile, Electoral Area 'F'

LEGAL DESCRIPTIONS:

4612 Starlight Road, LOT 5 DISTRICT LOT 790 KOOTENAY DISTRICT PLAN 2449 (015-282-228)

4614-4616 Starlight Road, LOT 4 DISTRICT LOT 790 KOOTENAY DISTRICT PLAN 2449 (015-289-567)

4643 Highway 3A, LOT 3 DISTRICT LOT 790 KOOTENAY DISTRICT PLAN 2449 (015-289-559)

PRESENT USE AND PURPOSE OF AMENDMENT REQUESTED:

The subject lands are 3 fee simple lots bounded by Starlight Road to the north, Highway 3A to the south, the existing Spearhead business to the east, and residential lots to the west.

The purpose of the proposed land use bylaw amendment application is to rezone the subject lands from Country Residential (R2) to Comprehensive Development (CD) and amend the land use designation from Country Residential (CR) to Comprehensive Development (CD) in order to authorize the expansion of the existing wood product manufacturing business. The proposed expansion would consist of a 1 storey workshop and an attached 3 storey office and child care facility. Phase 1 of the proposal would involve the consolidation of the 3 existing lots and the construction of the 1 storey workshop. Phase 2 would involve the 3 storey office with space dedicated for the child care facility on the west side of the workshop and a supplemental expansion to the workshop on the east side of the building.

In the event that the Board supports the proposed Land Use Bylaw Amendment a Commercial, Industrial, and High Density Residential Development Permit (CIHDRDP) application would be required in order for RDCK staff to review the proposed landscaping, screening, parking, building design, and site layout details. The development permit would need to be issued prior to the issuance of a building permit for the proposed workshop/office building.

AREA OF PROPERTY AFFECTED	ALR	ZONING	OCP
2 hectares (5 acres)	STATUS N/A	Country Residential (R2) in Zoning Bylaw No. 1675, 2004	Country Residential (CR) in Electoral Area 'F' Official Community Plan Bylaw No. 2214, 2011

APPLICANT: Ben Hall, Spearhead

OTHER INFORMATION: ADVISORY PLANNING COMMISSION PLEASE NOTE:

If your Advisory Planning Commission plans to hold a meeting to discuss this Bylaw Amendment application, please note that the applicants must be provided with an opportunity to attend such meeting, in accordance with Section 461, subsection (8) of the *Local Government Act*, which reads as follows:

"If the commission is considering an amendment to a plan or bylaw, or the issue of a permit, the applicant for the amendment or permit is entitled to attend meetings of the commission and be heard."

Please fill out the Response Summary on the back of this form. If your agency's interests are 'Unaffected' no further information is necessary. In all other cases, we would appreciate receiving additional information to substantiate your position and, if necessary, outline any conditions related to your position. Please note any legislation or official government policy which would affect our consideration of this permit.

- ☒ MINISTRY OF TRANSPORTATION AND INFRASTRUCTURE
☒ HABITAT BRANCH (Environment)
☒ FRONTCOUNTER BC (Ministry of Forests)
☐ AGRICULTURAL LAND COMMISSION
☐ REGIONAL AGROLOGIST
☐ ENERGY & MINES
☐ MUNICIPAL AFFAIRS & HOUSING
☒ INTERIOR HEALTH, HBE TEAM
☐ KOOTENAY LAKES PARTNERSHIP (FORESHORE DEVELOPMENT PERMITS)
☐ SCHOOL DISTRICT NO.
☒ WATER SYSTEM OR IRRIGATION DISTRICT
☒ UTILITIES (FORTIS, NELSON HYDRO)

REGIONAL DISTRICT OF CENTRAL KOOTENAY

DIRECTORS FOR:

☐ A ☐ B ☐ C ☐ D ☐ E ☒ F ☐ G ☐ H ☐ I ☐ J ☐ K

ALTERNATIVE DIRECTORS FOR:

☐ A ☐ B ☐ C ☐ D ☐ E ☒ F ☐ G ☐ H ☐ I ☐ J ☐ K

- ☒ RDCK FIRE SERVICES
☒ RDCK EMERGENCY SERVICES
☒ RDCK BUILDING SERVICES
☒ RDCK UTILITY SERVICES
☐ RDCK RESOURCE RECOVERY
☐ RDCK REGIONAL PARKS

FIRST NATIONS

- ☒ KTUNAXA NATION COUNCIL (ALL REFERRALS)
 YAQAN NU?KIY (LOWER KOOTENAY)
 ?AKINK'UM?ASNUQ?I?IT (TOBACCO PLAINS)
 ?AKISQNUK (COLUMBIA LAKE)
 ?AQ'AM (ST. MARY'S)

- ☒ OKANAGAN NATION ALLIANCE
☐ C'ƏC'ƏWIXA? (UPPER SIMILKAMEEN)
☒ K?K'ƏR'MÍWS (LOWER SIMILKAMEEN)
☒ SNPÍNTKTN (PENTICTON)
☐ STQA?TKWƏ+WT (WEST BANK)
☒ SUKNAQÍN (OKANAGAN)
☒ SWÍWS (OSOYOOS)
☒ SPAXOMƏN (UPPER NICOLA)

☐ SHUSWAP NATION TRIBAL COUNCIL

- ☒ KENPÉSQT (SHUSWAP)
☐ QW?EWT (LITTLE SHUSWAP)
☐ SEXQELTQÍN (ADAMS LAKE)
☐ SIMPCW ((SIMPCW)
☐ SKEMTSIN (NESKONLITH)
☐ SPLATSÍN (SPLATSÍN FIRST NATION)

☐ SKEETCHESTN INDIAN BAND

☐ TK'EMLUPS BAND

- ☒ LAKES TRIBES OF THE CONFEDERATED TRIBES OF THE COLVILLE RESERVATION (SINIXT)

INSERT COMMENTS ON REVERSE . . .

The personal information on this form is being collected pursuant to *Regional District of Central Kootenay Planning Procedures and Fees Bylaw No. 2457, 2015* for the purpose of determining whether the application will affect the interests of other agencies or adjacent property owners. The collection, use and disclosure of personal information are subject to the provisions of FIPPA. Any submissions made are considered a public record for the purposes of this application. Only personal contact information will be removed. If you have any questions about the collection of your personal information, contact the Regional District Privacy Officer at 250.352.6665 (toll free 1.800.268.7325), info@rdck.bc.ca, or RDCK Privacy Officer, Box 590, 202 Lakeside Drive, Nelson, BC V1L 5R4.

RESPONSE SUMMARY
FILE: Z2410F APPLICANT: Ben Hall, Spearhead

Name:

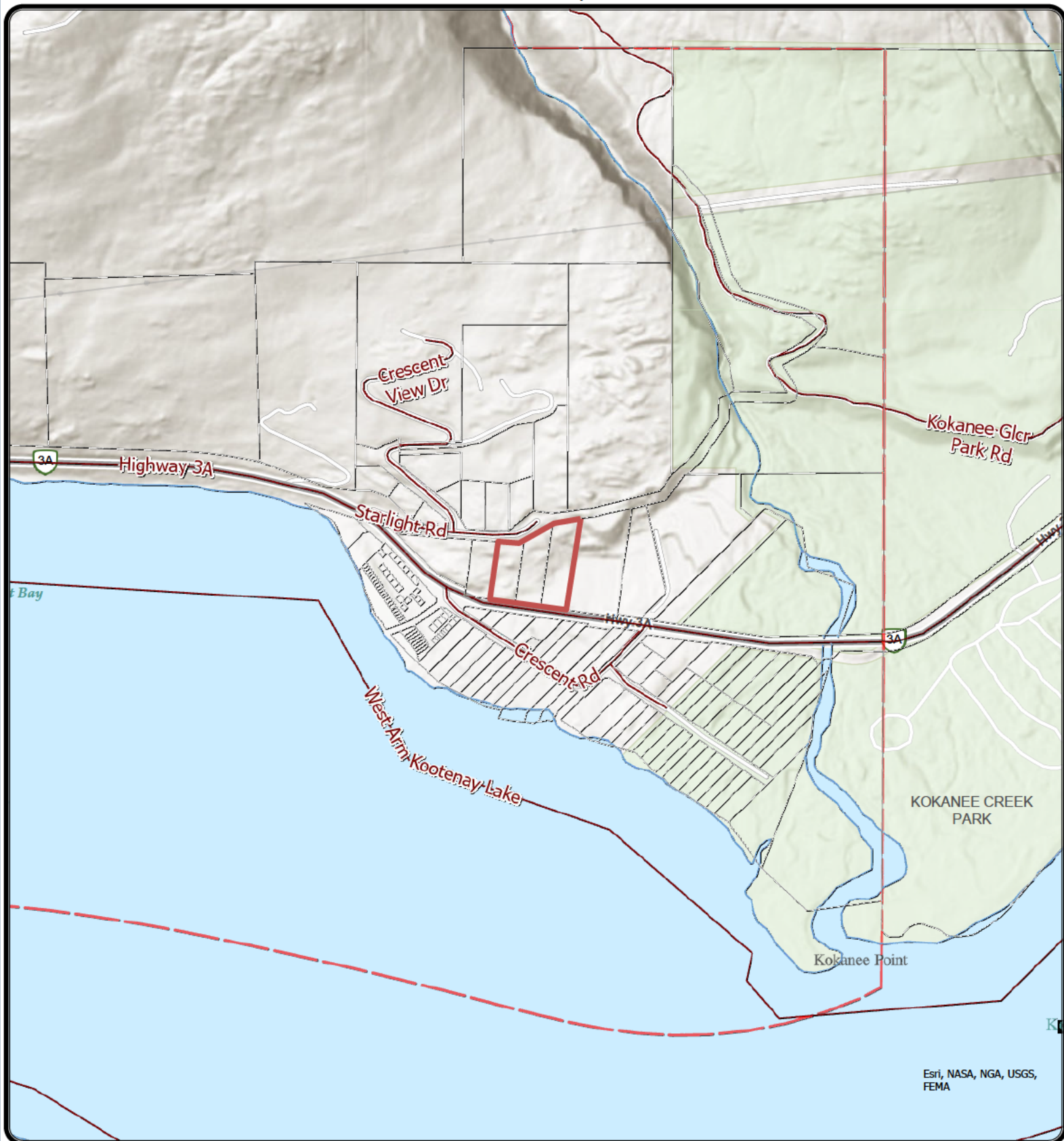
Date:

Agency:

Title:

RETURN TO: ZACHARI GIACOMAZZO, PLANNER
DEVELOPMENT AND COMMUNITY SUSTAINABILITY SERVICES
REGIONAL DISTRICT OF CENTRAL KOOTENAY
BOX 590, 202 LAKESIDE DRIVE
NELSON, BC V1L 5R4
Ph. 250-352-8190
Email: plandept@rdck.bc.ca

RDCK Map



Esri, NASA, NGA, USGS, FEMA



REGIONAL DISTRICT OF CENTRAL KOOTENAY
Box 590, 202 Lakeside Drive,
Nelson, BC V1L 5R4
Phone: 1-800-268-7325 www.rdck.bc.ca
maps@rdck.bc.ca

Legend

- Streams and Shorelines
- Electoral Areas
- RDCK Streets
- Cadastre - Property Lines

Map Scale:

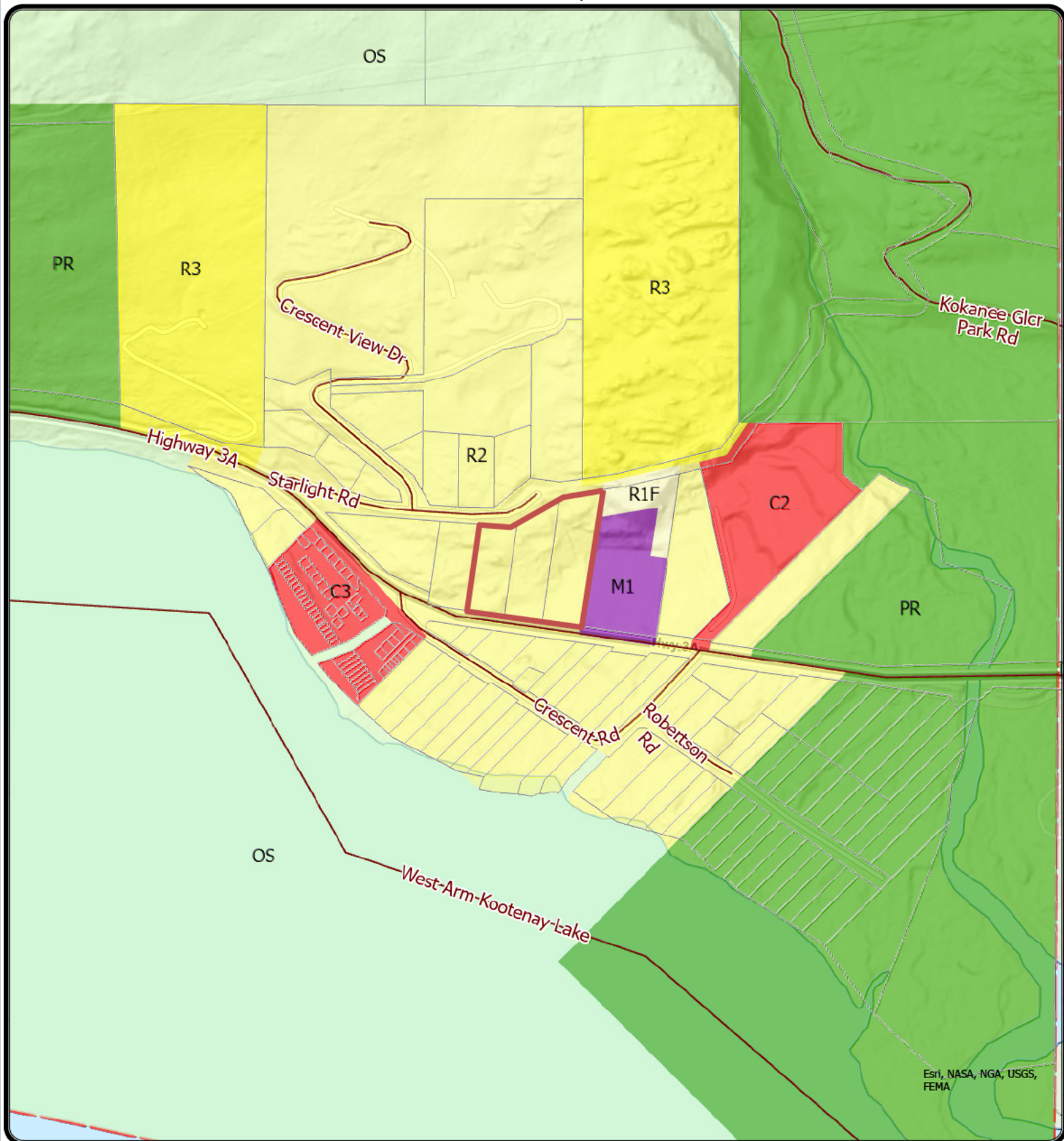
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Date: October 23, 2024



The mapping information shown are approximate representations and should only be used for reference purposes. The Regional District of Central Kootenay is not responsible for any errors or omissions on this map.

RDCK Map



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Zoning Class

- Commercial
- Industrial
- Open Space
- Parks and Recreation
- Residential 1

Legend

- Residential 2
- Residential 3
- Streams and Shorelines
- Electoral Areas
- RDCK Streets
- Cadastre - Property Lines

Map Scale:

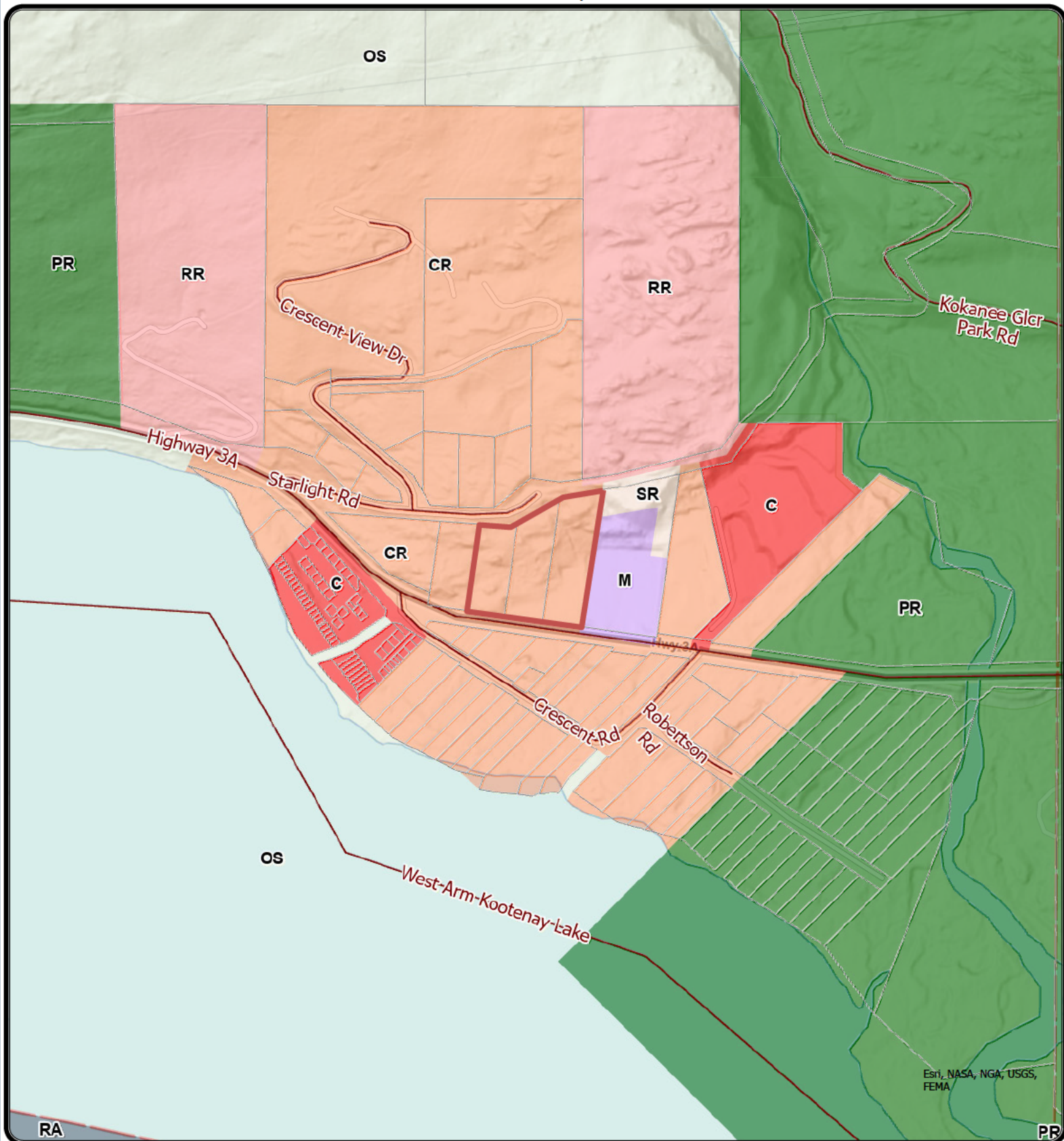
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Date: October 23, 2024



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RDCK Map



Esri, NASA, NGA, USGS, FEMA



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Official Community Plan

- Commercial
- Country Residential
- Industrial
- Open Space
- Parks and Recreation

Legend

- Resource Area
- Rural Residential
- Suburban Residential
- Streams and Shorelines
- Electoral Areas
- RDCK Streets
- Cadastre - Property Lines

Map Scale:

1:10,000

Date: October 23, 2024



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RDCK Map



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Nelson, BC V1L 5R4
Phone: 1-800-268-7325 www.rdck.bc.ca
maps@rdck.bc.ca

Legend

- Streams and Shorelines
- Electoral Areas
- RDCK Streets
- Cadastre - Property Lines
- Address Points

Map Scale:

1:5,000

Date: October 23, 2024



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Spearhead Advanced Timber

Rezoning & Expansion Summary

As a family-owned and operated business with a 30-year history in Nelson BC, we take great pride in the recognition Spearhead and our community have garnered from leading architects, engineers, builders, and clients world-wide. Our highly customized processes and innovative approach have positioned us at the forefront of our industry, enabling us to refine our craft while living and working in one of the most beautiful regions of British Columbia.

Nelson is home to three generations of our family, and we are deeply committed to keeping Spearhead rooted in this vibrant community. As a generational business, we strive to operate with integrity and foresight, celebrating the natural resources of our region, the uniqueness of this place, and the immense talent of our team. Having operated at our current location at 4655 Hwy 3A for over 25 years, we feel a deep connection to the neighbourhood where we live and work, and we look forward to listening, engaging, and collaborating with our neighbours as we continue to evolve and grow as a company.

In line with our commitment to leading innovation in advanced timber fabrication, we are proposing the rezoning of three lots adjacent to our facility at 4655 Hwy 3A. This zoning change will enable us to invest in the development of a highly specialized, low volume facility to produce custom glulam for our unique project driven work. This facility will set a new standard for environmental sustainability in construction and will enhance our ability to compete in world-class projects, thus further positioning Nelson as a hub of innovation in advanced timber engineering and fabrication.

This expansion marks a significant milestone for our company, our community, and our province. It reflects our ambition to lead progressive change in the North American mass timber sector by developing a hyper-local supply chain, promoting truly sustainable forestry practices, and showcasing the full potential of value-added timber fabrication stemming from British Columbia. To achieve this, we are partnering with local forestry cooperatives that share our vision, including the Harrop Proctor Community Forest and Monticola Forest Ltd., to promote selective and sustainable harvesting methods – ensuring future generations can continue to enjoy and benefit from the forests we cherish today.



Community and Regional Benefits

In conjunction with increasing Spearhead's capabilities, this project will provide significant benefits to our immediate neighbours as well as the broader Kootenay region. It will celebrate a thoughtfully designed architectural building, introduce a much-needed childcare program to the Nelson area, and help mitigate wildfire risk in the 12-Mile neighbourhood through the installation of advanced fire suppression infrastructure – all while preserving and celebrating the unique qualities that make the North Shore such a desirable place to live.

Strengthening the Local Economy through Diversification

This project will drive local economic diversification by creating direct, highly skilled jobs, along with indirect employment opportunities in related industries across the Kootenay Boundary. It will offer upskilling pathways for current employees while attracting new talent to the region, contributing to long-term economic stability and growth throughout the Kootenays. Moreover, the anticipated government funding for the project will ensure that provincial and federal investments directly and indirectly benefit the Nelson community, fostering broader economic resilience and prosperity.

Promoting Value-Added Forestry

Sustainable forestry practices are fundamental to this initiative, and we are excited to promote and encourage increased forest resilience and diversity by creating a value chain for underutilized species. While Spearhead is not a forestry company and does not plan to manage local silviculture or forest tenure, we are committed to supporting our community's shining examples of forward-thinking forest practices as demonstrated by the Harrop Proctor Community Forest and Monticola Forest Ltd.

Context-Sensitive Expansion and Impact Mitigation

We are fully committed to ensuring that our expansion complements and harmonizes with the surrounding environment and land uses. To achieve this, we have partnered with Hemsworth Architecture, a Vancouver-based firm honoured with the Governor General's Medal in Architecture, and Nelson-based Studio 9 Architecture & Planning, to design the facility. We look forward to sharing what we believe will be an award-winning mass timber building that embodies Spearhead's ethos, celebrates our ingenuity and craftsmanship, and remains sensitive to our local community and regional context.

We are taking careful measures to minimize noise, traffic, and visual impacts. As part of the rezoning process, we are thoroughly evaluating key landscape strategies, including visual screening and noise buffering, to ensure our intended development blends with the surrounding community. Additionally, we have thoughtfully designed our site layout and building placement to respect the character of the existing community, maximizing the use of our interior space for operations and minimizing the potential for increased operational noise.

We are proposing a comprehensive development zone with specific metrics for setbacks, building height, and lot coverage that align with those of the existing M1 zone. However, the permitted uses we propose are intentionally restrictive to safeguard the community from potentially disruptive industrial activities permitted under broader industrial zones. Additionally, we have included a 30-meter auxiliary building front setback to ensure that no unsightly accessory structures are located at the front of the lot. Parking requirements are based on the expected occupant load and will accommodate both proposed and existing buildings. Shipping and receiving functions will continue through the existing driveway that serves our current facility.

Protecting Quality of Life and Community Character

By prioritizing thoughtful planning and engaging with residents, we aim to ensure that our community not only continues to

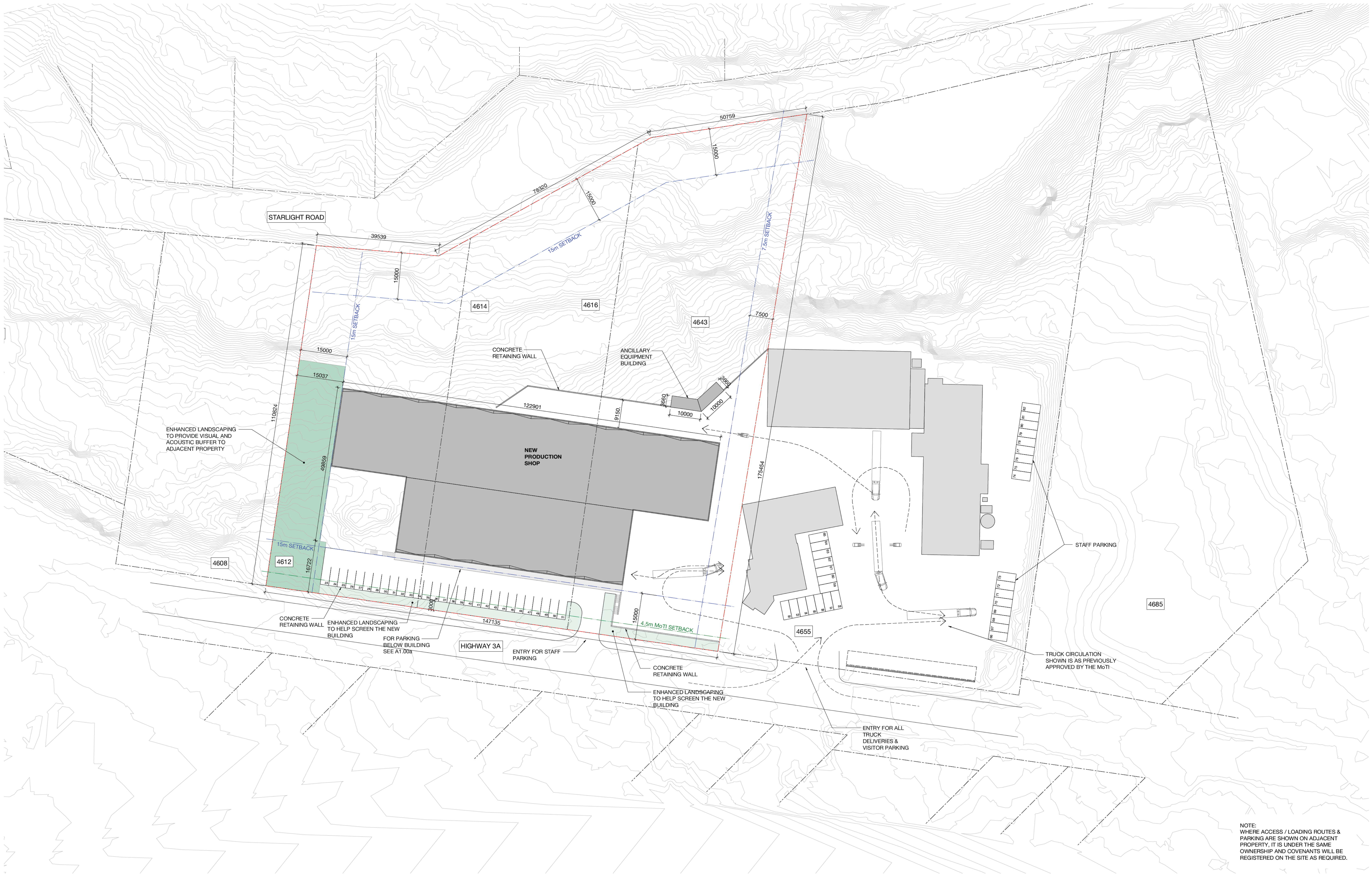
thrive but also benefits from the new opportunities generated by this project.

During our visits to Western Europe, we have consistently observed how many wood fabrication companies coexist harmoniously with their local communities and neighbourhoods. While we acknowledge the cultural differences between British Columbia and Western Europe, our commitment to generational sustainability inspires us to think broadly and explore initiatives such as community fire mitigation, childcare services, clean energy production, and staff housing projects – efforts that we believe will benefit businesses and community for years to come.

In Summary

We hope to earn your support and look forward to discussing how this initiative can positively impact our neighbourhood, our region, and our province. Thank you for your consideration and we look forward to connecting with you in the near future!

Ted, Josh & Ben Hall
Spearhead



NOTE:
WHERE ACCESS / LOADING ROUTES &
PARKING ARE SHOWN ON ADJACENT
PROPERTY, IT IS UNDER THE SAME
OWNERSHIP AND COVENANTS WILL BE
REGISTERED ON THE SITE AS REQUIRED.





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OWNERSHIP AND COVENANTS WILL BE
REGISTERED ON THE SITE AS REQUIRED.

DIVISION 11 COUNTRY RESIDENTIAL (R2)

Permitted Uses

1100 Land, buildings and structures in the Country Residential (R2) zone shall be used for the following purposes only:

Dwellings:

- Single Detached Housing
- Duplex Housing

Accessory Uses:

- Accessory Buildings and Structures
- Accessory Dwelling Unit
- Accessory Tourist Accommodation
- Home Based Business
- Horticulture
- Keeping of Farm Animals
- Sale of Site Grown Farm Products
- Portable Sawmills for processing of material harvested on site only

Development Regulations

1101

- 1 The minimum lot size is 1.0 hectare.
- 2 The minimum lot size for a parcel subdivided for a relative under Section 514 of the *Local Government Act*, with the approval of the Interior Health Authority shall be 0.8 hectare.
- 3 The maximum site coverage permitted shall be 50 percent of the lot area.
- 4 The keeping of farm animals shall comply with the requirements of section 613.
- 5 The maximum density is 2 Dwelling Units.
- 6 Buildings and structures in the case of a lot that may be further subdivided shall be sited so as to facilitate further subdivision of the lot or adjacent lots.
- 7 Portable Sawmills shall be located a minimum of 30 metres from any property line.
- 8 *Deleted by Bylaw 2757.*
- 9 The maximum height of any accessory building or structure shall not exceed 8 metres.
- 10 The maximum gross floor area of any accessory building or structure shall not exceed 200 square metres.
- 11 The cumulative gross floor area of all accessory buildings or structures shall not exceed 400 square metres.

Site Specific - Lot 13 District Lot 6300 Kootenay District Plan NEP21755 (PID 019-022-069) from Country Residential (R2) to Country Residential (R2) 'site specific' to enable a second dwelling to be constructed up to a maximum height of 6.5 meters, with a minimum 6.5 meter setback from a front lot line of and a minimum 5 meter setback from an interior side lot line.

Proposed zoning details and development regulations for the subject lands

REQUESTED DEVELOPMENT REGULATIONS

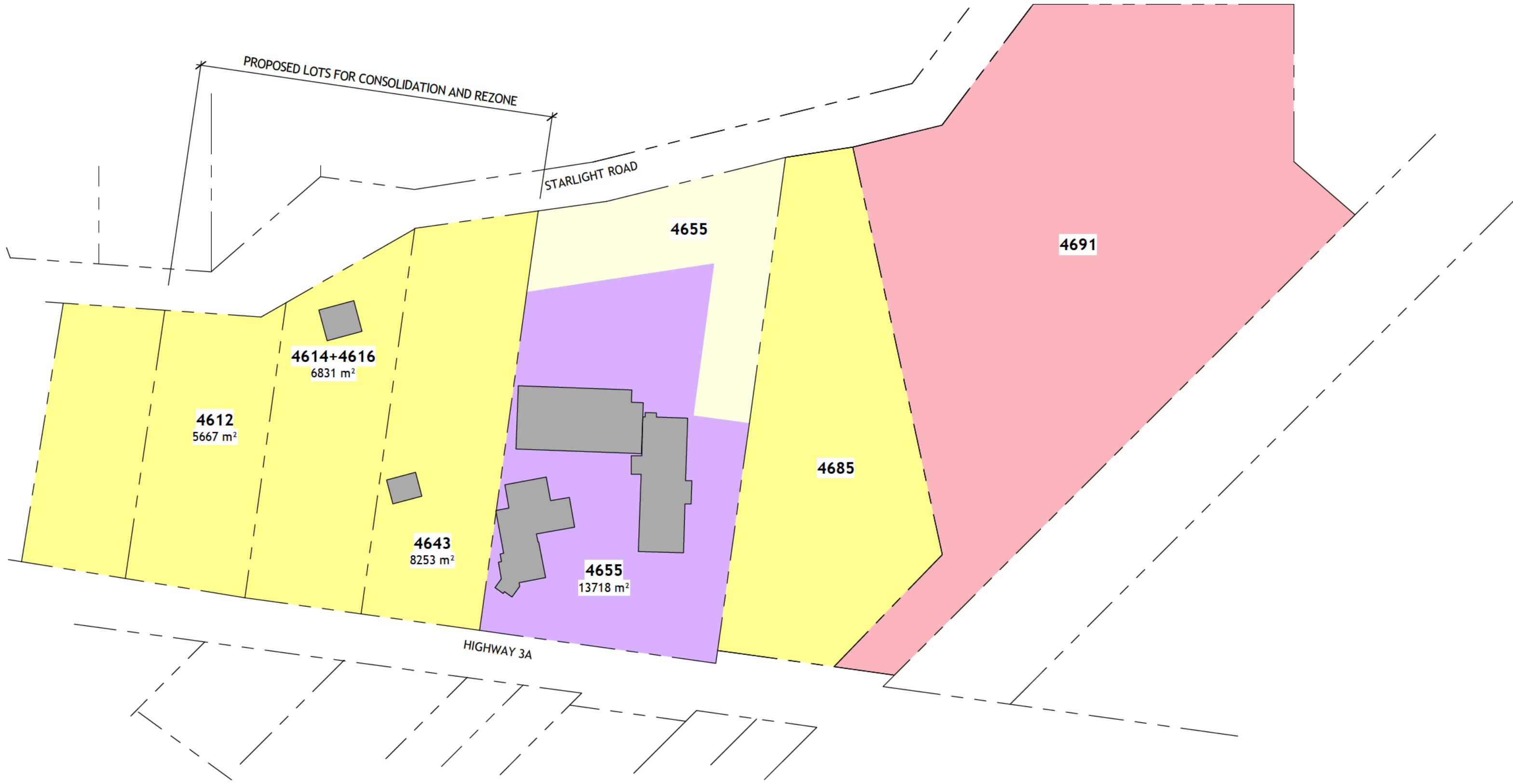
Permitted Uses
Land, buildings and structures in the proposed Industrial CD zone shall be used for the following purposes only:

- Commercial Workshops:
Machine Shops
Construction, Sales, Repair and Storage of:
Prefabricated Buildings
Wood Product Manufacturing
Office
Day Care Facility

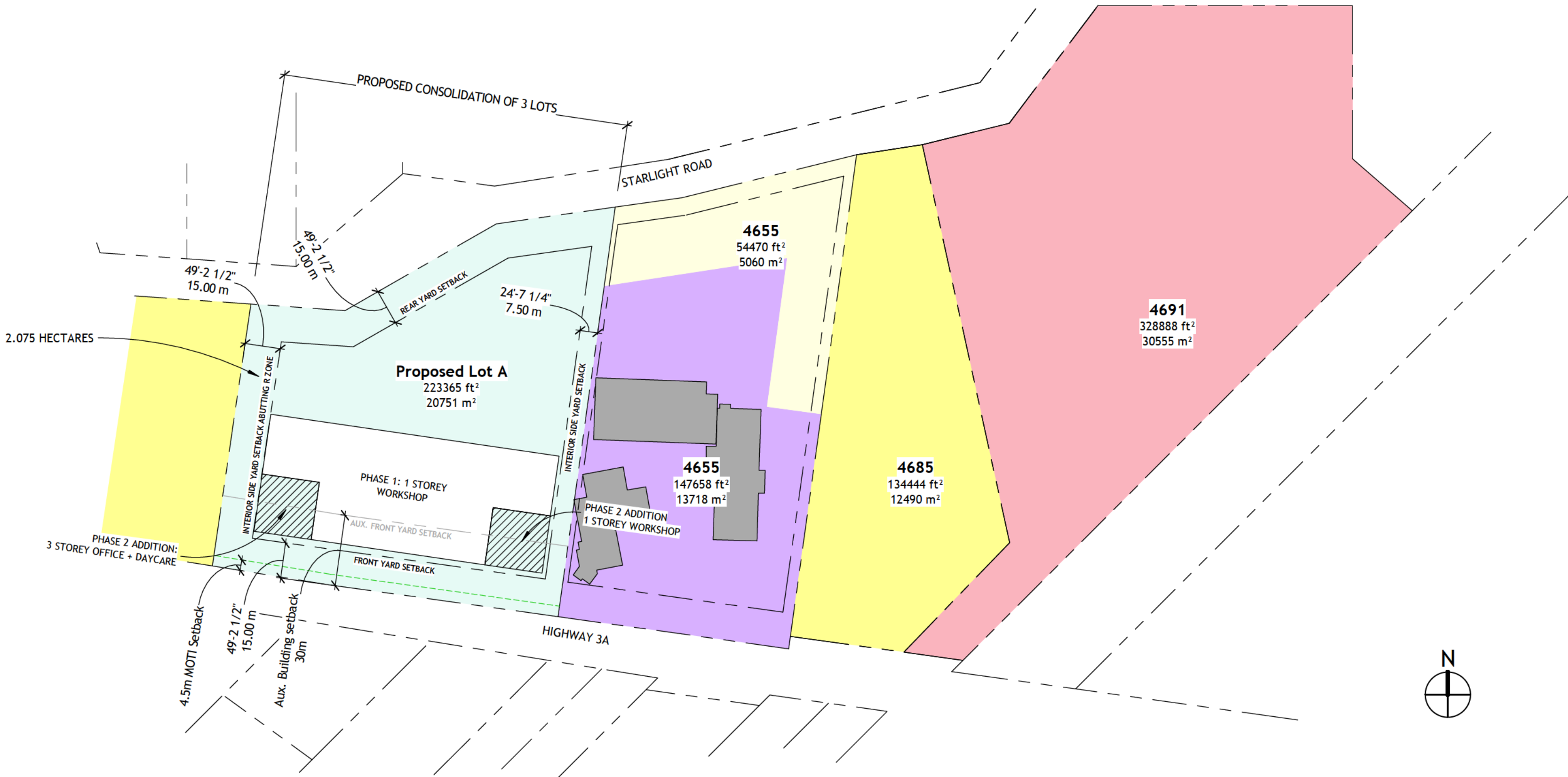
- 1 The maximum site coverage permitted shall be 50 percent of the lot area.
2 Excepting a fence, no building or structure may be located within:
a. 15 meters of the front lot line
b. 15 meters of the rear lot line
c. 7.5m of the interior side lot line; or
d. 15 meters of a rear or interior side lot line that abuts an agricultural or residential zone.
3 The maximum height of any structure on a lot shall be 15 meters.
4 Landscaping shall comply with the requirements of sections 621 and 622.
5 An Industrial Development Permit is required for developments on Industrial zoned land.

Zoning Legend

- C2
CD
M1
R1F
R2



1 Existing Zoning.
1 : 1500



2 Proposed Development
1 : 1500

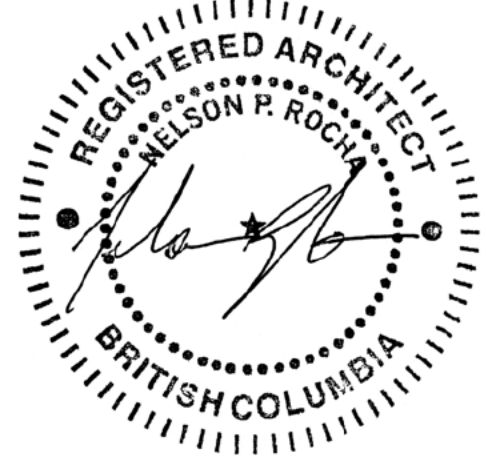
PROJECT DATA		
Legal Description	LOT 5, LOT 4 & LOT 3, PLAN NEP2449, DISTRICT LOT 790, KOOTENAY LAND DISTRICT	
PID	015-282-228/015-289-567/015-289-559	
Land Use	NONE/DUPLEX/SFH	
Development Permit Area	AREA F	
Zoning	Custom Light Industrial (Proposed) - Change from R2	
ZONING REQUIREMENTS		
Item	Required	Proposed
Parcel Size and Coverage		
Parcel Area	20751m2 (2.075 H)	
Parcel Width	146.2 m	
Site Coverage		50%
Principal Buildings		
Setbacks		
front yard		15 m
rear yard		15 m
interior side yard that abuts agricultural or residential		15 m
interior side yard		7.5 m
Height (maximum)		15 m
Auxiliary Buildings		
Setbacks		
front yard		30 m
rear yard		15 m
interior side yard that abuts agricultural or residential		15 m
interior side yard		7.5 m
Height		15 m
Parking		
Number of spaces		
Industrial (7,294m²)	1.5 spaces per 100m² of GFA, 1 space/employee plus one for every commercially licensed vehicle for that address (110 total)	1 for every person expected to be working at the facility (30)
Childcare Center (67m²)	4.4 spaces per 100 m² GFA (3 total)	1 for every person expected to be working at the facility (2)
Office (1,003m²)	3.4 spaces per 100m² of GFA (33 total)	1 for every person expected to be working at the facility (33)
Total	146	65 (+19 for adjacent lot) = 84
Number of accessible spaces	provide one (1) disabled person's parking space for every ten (10) parking spaces required (8 total)	1 for every 100 spaces (per BCBC) x2 = 2
standard	2.6 m x 5.8 m x 2.2 m (wxdhx) Adjacent to Wall 3.2 m x 5.8 m x 2.2 m (wxdhx)	Abv. Grade 2.75 m x 6 m x 2.2 m (wxdhx) Below Grade 3.05 m x 6 m x 2.675 m (wxdhx) Below Grade (adjacent to wall) 3.2 m x 6 m x 2.675 m (wxdhx)
accessible	2.4 m+1.5m aisle x 5.4 m x 2.2 m (wxdhx)	2.4 m+1.5m aisle x 5.4 m x 2.2 m (wxdhx)
Parking provided for an alternate parcel	Where some or all of the off-street parking is provided on a parcel other than that on which the use, building or structure being served is located, a covenant under Section 219 of the Land Title Act must be registered in the Land Title Office in favour of the Regional District of Central Kootenay against the parcel to be used for parking, reserving the off-street parking spaces that are not on the same parcel as the use, building or structure that they are intended to serve, for as long as that use, building or structure exists.	19 Spaces to be registered for existing facility <PARCEL A, PLAN NEP2449, DISTRICT LOT 790, KOOTENAY LAND DISTRICT, (BEING A CONSOLIDATION OF LOTS 1 & 2 SEE CA5564282)PID: 029-966-574>

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OWNER:
NAME OF OWNER HERE

Spearhead Expansion

4655 Highway 3A,
Nelson, BC V1L 6N3





Committee Report

Date of Report: November 26, 2024
Date & Type of Meeting: December 11, 2024 Rural Affairs Committee
Author: Zachari Giacomazzo, Planner
Subject: LAND USE BYLAW AMENDMENT
File: Z2410F – Spearhead
Electoral Area/Municipality F

SECTION 1: EXECUTIVE SUMMARY

The purpose of this report is for the Rural Affairs Committee and Board to consider an application to amend the land use and zoning designations for three existing lots: 4612 Starlight Road, 4614-4616 Starlight Road, and 4643 Highway 3A, at 12 Mile in Electoral Area 'F'.

This application seeks to rezone the subject lands from Country Residential (R2) to Comprehensive Development (CD3) and amend the land use designation in the Area F Official Community Plan from Country Residential (CR) to Industrial (M) in order to authorize the expansion of the existing wood product manufacturing business.

Staff recommend that Official Community Plan and Zoning Bylaws be given 1st and 2nd reading, and referred to a Public Hearing. However, Staff further recommend that the applicant be required to provide the following additional information to support the proposed Land Use Bylaw Amendment Application:

- Archaeological assessment
- On-site wastewater assessment
- Groundwater impact assessment
- Traffic Study prepared to the satisfaction of the Ministry of Transportation and Infrastructure
- Noise Study

SECTION 2: BACKGROUND/ANALYSIS

GENERAL INFORMATION

Property Owner: Spearhead

Location of Properties: 4612 and 4614-4616 Starlight Road, and 4643 Highway 3A, 12 Mile, Electoral Area 'F'

Legal Descriptions:

4612 Starlight Road, LOT 5 DISTRICT LOT 790 KOOTENAY DISTRICT PLAN 2449 (015-282-228)

4614-4616 Starlight Road, LOT 4 DISTRICT LOT 790 KOOTENAY DISTRICT PLAN 2449 (015-289-567)

4643 Highway 3A, LOT 3 DISTRICT LOT 790 KOOTENAY DISTRICT PLAN 2449 (015-289-559)

Property Sizes:

4612 Starlight Road – 0.53 ha

4614-4616 Starlight Road – 0.68 ha

4643 Highway 3A – 0.81 ha

Current Zoning: Country Residential (R2) in Zoning Bylaw No. 1675, 2004
Current Official Community Plan Designation: Country Residential (CR) in Electoral Area 'F' Official Community Plan Bylaw No. 2214, 2011

SURROUNDING LAND USES
North: Residential
East: Industrial
South: Residential
West: Residential

Site Context

The subject property is located approximately 15 km north east of the City of Nelson in a predominantly Rural Residential Area which is comprised of a small number of commercial properties in a predominantly residential area. The subject lands are 3 existing residential lots that are west of the existing Spearhead wood product manufacturing business and directly adjacent to and accessed from Highway 3A.



Figure 1 - Location Map

Land Use Bylaw Amendments Proposed

The purpose of this application would authorize a proposed expansion to the existing wood product manufacturing business and would consist of a 1 storey workshop and an attached 3 storey office and child care facility. Phase 1 of the proposal would involve the consolidation of the 3 existing lots and the construction of the 1 storey workshop. Phase 2 would involve the 3 storey office with space dedicated for a child care facility on the west side of the workshop and a supplemental expansion to the workshop on the east side of the building. See Figure 3 for a Site Plan which shows Phase 1 of the proposal. The full size site plan drawings are also included as Attachment 'E' to this report.

In the event that the Board supports the proposed Land Use Bylaw Amendment a Commercial, Industrial, and High Density Residential Development Permit (CIHDRDP) application would be required in order for RDCK staff to review the proposed landscaping, screening, parking, building design, and site layout details. The development permit would need to be issued prior to the issuance of a building permit for the proposed workshop/office building.

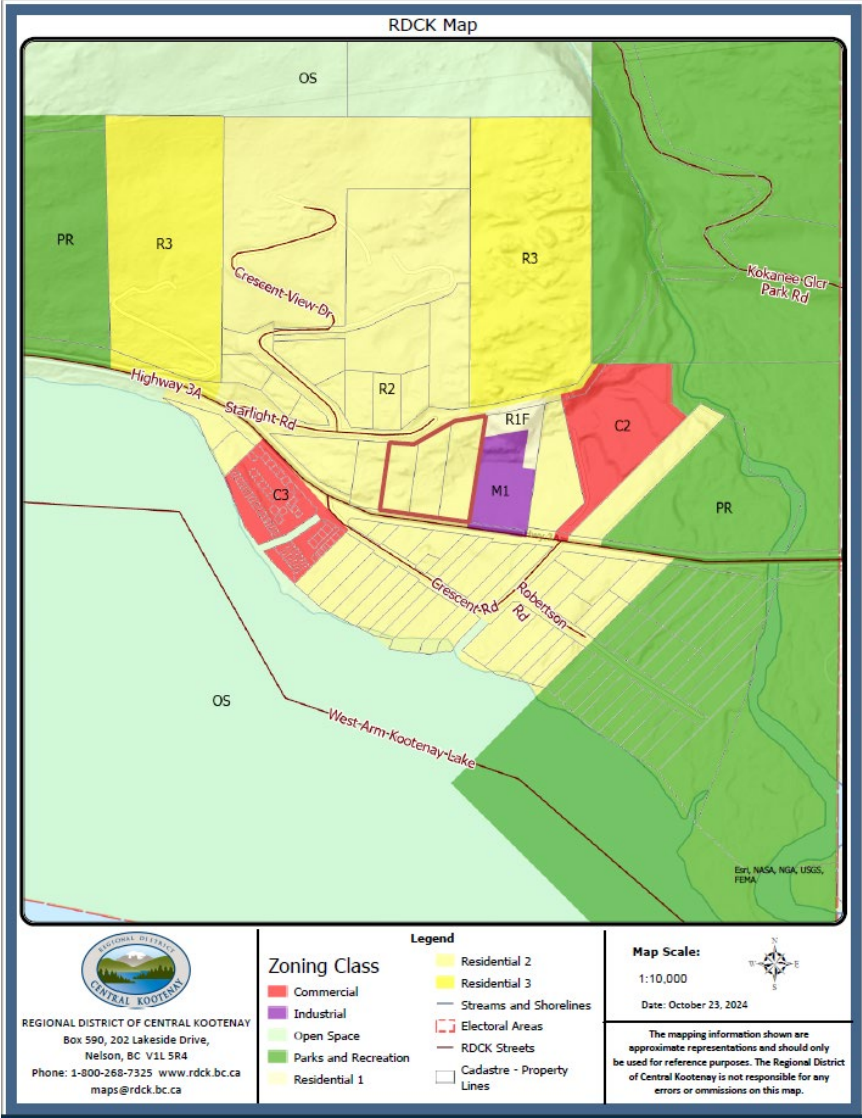


Figure 2 - Zoning Map

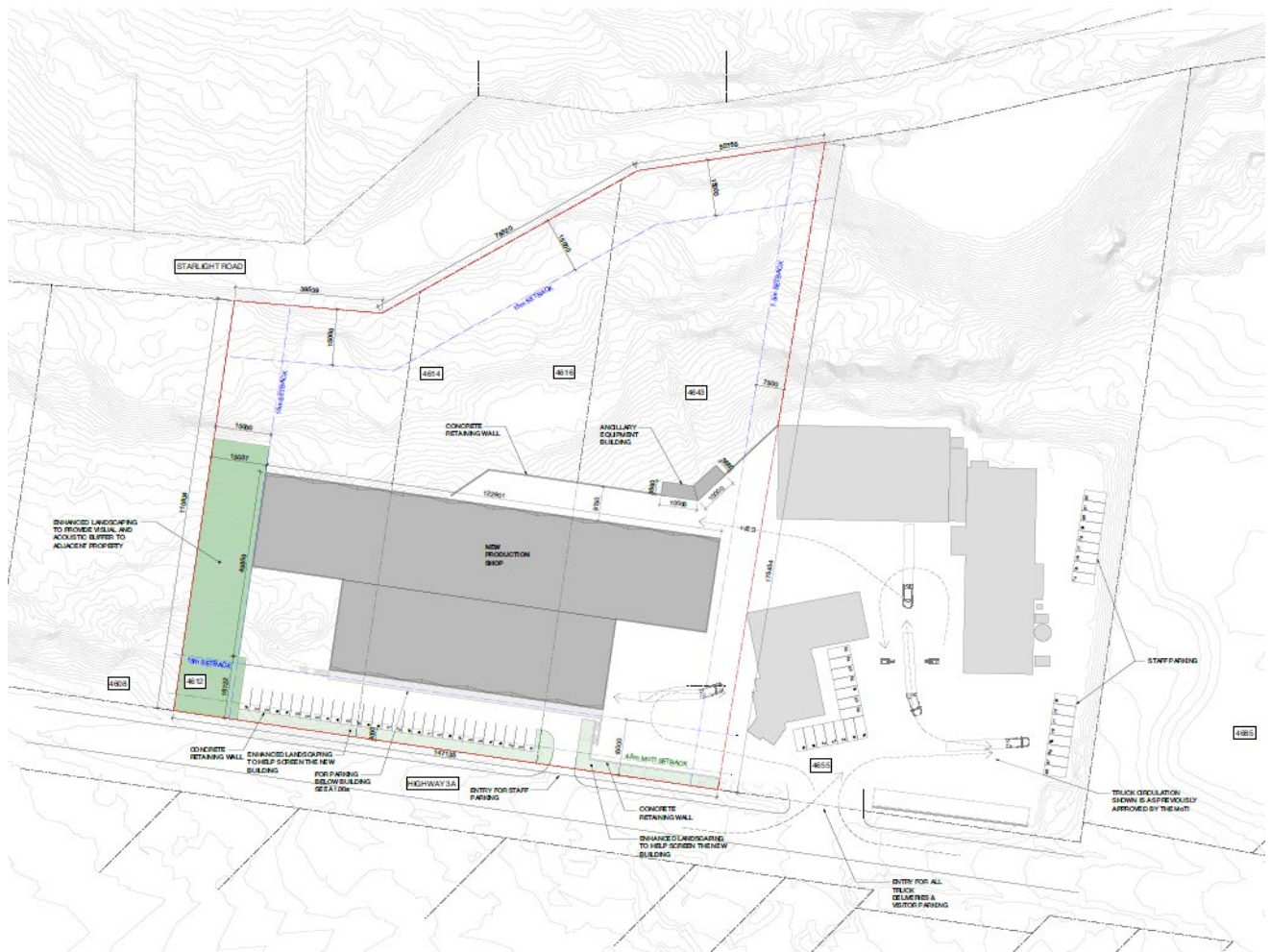




Figure 4 – View from Highway 3A of the approximate location where the proposed building would be constructed.

Planning Policy

8.0 ECONOMIC DEVELOPMENT

8.1 Background

The current economy of the RDCK is largely based on agriculture and resource-based industries, manufacturing, tourism and hospitality, arts and culture, renewable energies, and health and life sciences. Supporting new and fostering existing businesses in Area F is encouraged.

8.2 Objectives

- .1 Encourages economic growth and maintenance of our area's unique character through small business.
- .2 Create a strong and sustainable tourism economy within a strong economic mix.
- .3 Attract and maintain the operation of responsible, renewable resource based industries to the region.
- .4 Minimize conflicts between resource based industries and other land uses.

8.3 Policies

General

The Regional Board:

- .1 Supports efforts to diversify and strengthen the local economy.
- .2 Continues to support the traditional economic base of the resource sectors, but recognizes and supports the shift towards emerging sustainable resource management opportunities as the new core of the local economy, e.g. tourism, education, value added.
- .3 Supports a business friendly environment through streamlined approval processes, improved fee structure, open and responsive governance, efficient use of taxation resources and timely delivery of services.
- .4 Recognizes the jurisdiction of the Province over public Crown land.
- .5 Promotes growth and expansion of value added forestry, fishing and agriculture.

- .6 Encourages the development of high-speed internet in the region.
- .7 Supports enforcement of the Noise and Unsightly Premises Bylaws.

9.0 FOOD, AGRICULTURE & RURAL LAND

9.2 Objectives

- .4 Retain and enhance the natural character of rural / country residential areas.

Industrial

The Regional Board:

- .29 Designates land shown as Industrial on Schedule B for industrial uses.
- .30 Shall protect the industrial land base to promote a diversified local economy, healthy tax base and stable, well paid labour force.
- .31 Encourages future industrial areas to be located with consideration of the existing and intended uses adjacent to the area and the associated impacts so as to ensure they are context sensitive and harmonize with adjacent land uses. Screening and buffering are required to mitigate land use impacts.
- .32 Supports the development of a light industrial sector, including clean/green, technological, sustainable industries and renewable energy opportunities.

SECTION 3: DETAILED ANALYSIS

3.1 Financial Considerations – Cost and Resource Allocations:

Included in Financial Plan:	☐ Yes	☒ No	Financial Plan Amendment:	☐ Yes	☒ No
Debt Bylaw Required:	☐ Yes	☒ No	Public/Gov't Approvals Required:	☐ Yes	☒ No

Pursuant to Planning Fees and Procedures Bylaw No. 2457, 2015 the applicant has paid the Zoning Bylaw Amendment Application fee of \$1800 in full.

3.2 Legislative Considerations (Applicable Policies and/or Bylaws):

The application was processed in accordance with Planning Fees and Procedures Bylaw No. 2457, 2015.

Official Community Plan Consultation, RDCK Policy No. 400-02-19

The purpose of this policy is to establish a consistent process to comply with Local Government Act (LGA) consultation requirements during a minor amendment to an official community plan. A minor amendment to an Official Community Plan is defined as any official community plan amendment application made by the public for a single property or multiple properties functioning as one site. This application meets the definition of a minor amendment to an Official Community Plan.

Based on the fact that the proposed OCP amendment affects three existing lots that function as one site and would be consolidated if the proposed development is to proceed, staff have ensured that the consultation requirements for a minor amendment have been satisfied.

3.3 Environmental Considerations

Not applicable.

3.4 Social Considerations:

Potential impacts to the use and enjoyment of land for neighbouring property must be considered. Notification of the proposal was distributed by mail to 26 adjacent property owners within 100 metres of the subject lands.

3.5 Economic Considerations:

Spearhead is recognized as a significant employer within the area. The proposed warehouse/office building will showcase some of the company's lumber products and will provide for a more suitable building for business administration.

3.6 Communication Considerations:

In accordance with Schedule 'C' of the *Regional District of Central Kootenay Planning Procedures and Fees Bylaw No. 2457, 2015*, two 'Notice of Proposal' signs were placed in visible locations on the subject property and adjacent property owner notification was mailed to 26 properties within 100 metres of the subject property.

At the time this report was prepared, seven (7) responses were received from neighbouring property owners that identified concerns related to noise, dust, traffic, emissions, impacts to the use and enjoyment of their properties and the overall incompatibility of the proposed expansion to the existing business with surrounding residential uses. One (1) submission in support of the application was received. The responses from the neighbouring property owners are summarized at the end of this section and are included as Attachment 'D'.

The following responses were received from external agencies, internal departments and first nations:

Agency/ Department	Referral Response
RDCK Environmental Services	Thank you for the referral. I have reviewed this referral and the three lots in question are not within our water systems, nor are they in proximity to any intakes or wells. Water Services has no concerns with this proposed amendment.
RDCK Building Services	Please see the comments from the Building Department Below. 1. Survey will be required at the time of BP, 3 separate shall be consolidated (a building is not permitted to span across property lines. 2. BPs will be required for the demolition any existing buildings on the existing lot areas. 3. Qualified Professional including Geotechnical Letter of Assurance (LOAs) – Schedule B's are required for the projects including a CRP (Coordinating Registered Professional) 4. Property is located in an area serviced by a volunteer Fire Department – delayed FRT is applicable. BCBC Code Analysis shall comply with all spatial separations requirements with consideration of delayed FRT. 5. NFPA 1270 – applicable for organization and deployment of Fire suppression operations and special operations to the Public by Volunteer Fire Departments. 6. Building shall comply to NECB or Part 10 of the BCBC (for portions of applicable occupancy classifications) <u>Building Code Compliance:</u> 1. Building shall comply with Part 3 of the current BCBC 2. Fire Department access shall comply with BCBC Article 3.2.5.5.5. Access routes shall be provided to a building so that a) for a building provided with a fire department connection, a fire department pumper vehicle can be located so that the length of the access route from a hydrant to

	the vehicle plus the unobstructed path of travel for the firefighter from the vehicle to the building is not more than 90 m, and c) the unobstructed path of travel for the firefighter from the vehicle to the building is not more than 45 m <u>3.2.5.6. Access Route Design</u> 1.) A portion of a roadway or yard provided as a required access route for fire department use shall a) have a clear width not less than 6 m, unless it can be shown that lesser widths are satisfactory, b) have a centre-line radius not less than 12 m, c) have an overhead clearance not less than 5 m, d) have a change of gradient not more than 1 in 12.5 over a minimum distance of 15 m, e) be designed to support the expected loads imposed by firefighting equipment and be surfaced with concrete, asphalt or other material designed to permit accessibility under all climatic conditions, f) have turnaround facilities for any dead-end portion of the access route more than 90 m long, and g) be connected with a public thoroughfare. (See Note A-3.2.5.6.(1).) 2.) For buildings conforming to Article 3.2.2.50. or 3.2.2.58., no portion of the access route described in Sentence 3.2.2.10.(3) shall be more than 20 m below the uppermost floor level A-3.2.5.6.(1) Fire Department Access Route. The design and construction of fire department access routes involves the consideration of many variables, some of which are specified in the requirements in the Code. All these variables should be considered in relation to the type and size of fire department vehicles available in the municipality or area where the building will be constructed. It is appropriate, therefore, that the local fire department be consulted prior to the design and construction of access routes. The Building Department may request more documentation and clarification after the submission of the Building Permits (prior to issuance), upon review of your applications.
RDCK Fire Services	<i>No comments provided.</i>
Ministry of Transportation and Infrastructure (MoTI)	Thank you for the opportunity to comment on this proposal. MoTI accepts the proposed amendment in principle. Highway 3A is a high-volume-high-speed travel corridor and is classified as a controlled access highway. MoTI restricts the number of access points to controlled access highways in order to maintain highway safety and service through these corridors. The applicant should explore the feasibility of using a shared existing access and be prepared to provide justification if they request a new access point. The applicant must apply for an Access to a Controlled Access Highway Permit. If permitted, a new access point must meet MoTI design specifications. Approval of an access permit may be contingent on receiving a report from a licensed traffic engineer and completing any recommendations included in the report. The property(ies) must be able to accommodate all vehicle turning movements and provide suitable off-street parking. All

	structures related this proposal must be at least 4.5m from the property line fronting Highway 3A.
Ktunaxa Nation Council	As this property has not been included in an Archaeological Overview Assessment (AOA), KNC would like an AOA to be completed for this project. The AOA report should be completed by a professional consulting archaeologist with local knowledge of the area. Once completed, the report will have arch recommendations to follow. <i>RDCK Staff Note: Staff have informed the applicant that an AOA shall be completed.</i>
Fortis BC	There are no FortisBC Inc (Electric) ("FBC(E)") facilities affected by this application. As such FBC(E) has no concerns with this circulation.
Nelson Hydro	<i>No comments provided.</i>
Interior Health Authority	<i>See attachment 'F' for complete IHA comments.</i>
Ministry of Forests – Selkirk District	The ministry of forests, selkirk district have no concerns about this amendment.
Ministry of Water – Land and Resource Stewardship	Permitting Transformation Division (Water Authorizations) staff of the Ministry of Water, Land and Resource Stewardship (WLRS) have reviewed information provided in RDCK Referral Number Z2410F and provide the following comments at this time. 1. A review of the RDCK Public Web Map page indicates the three subject parcels and adjacent Spearhead facility are not located within a water system service area, as such, each of the parcels is responsible for obtaining water to support the land use. 2. Staff advise that use of surface water (including spring water) for any purpose (with a few exceptions) requires a water license in accordance with the Water Sustainability Act (WSA). Additionally, with exception of groundwater for domestic use, use of groundwater for non-domestic purposes (e.g., irrigation, industrial, storage, power, waterworks) requires a license in accordance with the WSA. (Staff note that use of groundwater for domestic purpose does not require a water license, but well owners are encouraged to register their groundwater well to support the management of groundwater quality and quantity.) 3. A review of WLRS water licensing data indicates the Spearhead facility located at 4655 Highway 3A does not hold a surface or groundwater water license to support the existing light industrial use. If the facility was using groundwater prior to March 1, 2016 then it was eligible to submit an "existing use groundwater" (EUG) application by March 1, 2022 to allow the use of groundwater to lawfully continue until such time the application was adjudicated. If an EUG application was submitted, it could be in the application submission portal backlog and hasn't been entered into the water licensing system for WLRS staff to see it. Please have the applicant confirm the water source for the 4655 Highway 3A parcel. If an EUG application was submitted, please have applicant provide the Front Counter BC tracking number for WLRS staff to search the application submission portal. 4. A review of WLRS water licensing data indicates the three residential parcels that are subject of application do not hold water licenses. Please have the applicant confirm the source of water for the three parcels. WLRS staff note the three parcels are currently zoned for residential use and, as discussed above, if water is supplied to these parcels through groundwater then a water license is not required.

	5. Should the proposed zoning be successful and the proposed land use proceed as described in the referral package, use and diversion of surface or groundwater water must be in accordance with the requirements of WSA and associated regulations; any non-domestic use of surface water or groundwater will require a water license. If a water license application is required to support existing and future land use, the proponent should place an application with FrontCounterBC as soon as possible as Water Authorizations in the Kootenay Boundary Region has a significant backlog and processing of the application may take considerable time. Should you wish to discuss further, please contact Rod Shead, Licensed Authorizations Officer, WLRS at 778-463-5601.
Ministry of Water, Land and Resource Stewardship – Ecosystems Section Head – Kootenay- Boundary Region	The Kootenay-Boundary Ecosystems Section of the Ministry of Water, Land and Resource Stewardship has received your referral request. We are currently unable to provide a detailed review of the referral but provide the following standard requirements, recommendations and/or comments: 1. All activities are to follow and comply with all higher-level plans, planning initiatives, agreements, Memorandums of Understanding, etc. that local governments are parties to. 2. Changes in and about a “stream” [as defined in the Water Sustainability Act (WSA)] must only be done under a license, use approval or change approval; or be in compliance with an order, or in accordance with Part 3 of the Water Sustainability Regulation. Authorized changes must also be compliant with the Kootenay-Boundary Terms and Conditions and Timing Windows documents. Applications to conduct works in and about streams can be submitted through FrontCounter BC. 3. No “development” should occur within 15 m of the “stream boundary” of any “stream” [all as defined in the Riparian Areas Protection Regulation (RAPR)] in the absence of an acceptable assessment, completed by a Qualified Professional (QP), to determine if a reduced riparian setback would adversely affect the natural features, functions and conditions of the stream. Submit the QP assessment to the appropriate Ministry of Water, Land and Resource Stewardship office for potential review. Local governments listed in Section 2(1) of RAPR are required to ensure that all development is compliant with RAPR. 4. The federal Species at Risk Act (SARA) protects Endangered, Extirpated or Threatened species listed under Schedule 1 of SARA. Developers are responsible to ensure that no species or ecosystems at risk (SEAR), or Critical Habitat for Federally listed species, are adversely affected by the proposed activities. The BC Species and Ecosystem Explorer website provides information on known SEAR occurrences within BC, although the absence of an observation record does not confirm that a species is not present. Detailed site-specific assessments and field surveys should be conducted by a QP according to Resource Inventory Standard Committee (RISC) standards to ensure all SEAR have been identified and that developments are consistent with any species or ecosystem specific Recovery Strategy or Management Plan documents, and to ensure proposed activities will not adversely affect SEAR or their Critical Habitat for Federally-listed Species at Risk (Posted). 5. Development specific Best Management Practices (BMPs) should be applied to help meet necessary legislation, regulations, and policies. Current BC BMPs can be found at: Natural Resource Best Management Practices - Province of British Columbia (gov.bc.ca) and Develop with Care 2014 - Province of British Columbia.

6. Vegetation clearing, if required, should adhere to the least risk timing windows for nesting birds (i.e., development activities should only occur during the least risk timing window). Nesting birds and some nests are protected by Section 34 of the provincial Wildlife Act and the federal Migratory Birds Convention Act. Guidelines to avoid harm to migratory birds can be found at: Guidelines to avoid harm to migratory birds - Canada.ca. If vegetation clearing is required during the bird nesting period (i.e., outside of the least risk timing window) a pre-clearing bird nest survey should be completed by a QP. The following least risk windows for birds are designed to avoid the bird nesting period:

Bird Species	Least Risk Timing Windows
Raptors (eagles, hawks, falcons, & owls)	Aug 15 – Jan 30
Hérons	Aug 15 – Jan 30
Other Birds	Aug 1 – March 31

7. The introduction and spread of invasive species is a concern with all developments. The provincial Weed Control Act requires that an occupier must control noxious weeds growing or located on land and premises, and on any other property located on land and premises, occupied by that person. Information on invasive species can be found at: Invasive species - Province of British Columbia. The Invasive Species Council of BC provides BMPs that should be followed, along with factsheets, reports, field guides, and other useful references. For example, all equipment, including personal equipment such as footwear, should be inspected prior to arrival at the site and prior to each daily use and any vegetative materials removed and disposed of accordingly. If noxious weeds are established as a result of this project or approval, it is the tenure holder's responsibility to manage the site to the extent that the invasive, or noxious plants are contained or removed.
8. Section 33.1 of the provincial Wildlife Act prohibits feeding or attracting dangerous wildlife. Measures should be employed to reduce dangerous human-wildlife conflicts. Any food, garbage or organic waste that could attract bears or other dangerous wildlife should be removed from the work area. If this is not feasible and waste is not removed, it should be stored in a bear-proof container to avoid drawing wildlife into the area and increasing the threat of human/wildlife conflict.
9. If this referral is in relation to a potential environmental violation it should be reported online at Report All Poachers & Polluters (RAPP) or by phone at 1-877-952-RAPP (7277).
10. Developments must be compliant with all other applicable statutes, bylaws, and regulations.

Neighbour Responses

Responses were received from 7 individuals indicating that they are opposed to the proposed land use bylaw amendment. Their comments and concerns are included as Attachment 'D' to this report and are also summarized as follows:

- Decrease in the value of their properties
- Negative impact to the residential/rural character of the area

	- Concerns related to the proximity of the proposed industrial building to neighbouring residential properties/dwellings - Noise from the expanded industrial use - Potential impact to neighbouring groundwater wells - Concerns about the noise/dust pollution and truck traffic associated with the development and construction process - Negative impact to the quality and enjoyment of private property - Overall concerns of increased noise and air pollution - Concerns related to how “waste wood” will be disposed of and if it will be incinerated on-site in a wood fired boiler or cogeneration plant - Concern about the removal of a significant number of trees - Overall concerns about the compatibility of the proposed industrial use and the surrounding residential properties
--	--

3.7 Staffing/Departmental Workplace Considerations:

Should the Board choose to give the amending bylaw First and Second reading and refer to public hearing, staff will organize the public hearing pursuant to the Planning Fees and Procedures Bylaw No. 2457, 2015.

3.8 Board Strategic Plan/Priorities Considerations:

Not applicable.

SECTION 4: SUMMARY

PLANNING DISCUSSION

The building proposed to be constructed on the subject lands is approximately the same size as the total of all the existing buildings and structures within Spearhead’s current operation and represents a substantial increase to the size and scale of the industrial “Wood Product Manufacturing” business. Consequently, there is the potential for the proposed expansion of the industrial operation to negatively impact the residents living in the vicinity of this development. This concern is noted in the feedback already received, which includes seven (7) letters from neighbouring residents noting concerns and opposition to the proposal.

The existing site has been in operation for 25 years, with recent expansions on that original site. Recent expansions following various approvals from the RDCK in 2020 permitted construction of a large “fabrication and assembly shop” and installation of a visual screen along the front property line adjacent to Highway 3A. Through the review of the Development Variance Permit (DVP) application required to address various zoning bylaw regulations for that project, some area residents also raised concern with negative impacts from that expansion. Consequently, conditions of the DVP included mitigations to address noise and air quality. Since that expansion, the RDCK has not received any complaints from area residents.

Despite the concerns regarding potential negative impact to the surrounding residential properties, Staff consider that there is sufficient merit in the proposal to consider first and second reading of the amending bylaws and refer the application to a public hearing. However, Staff recommend that the Board require additional information from the applicant in order to assist them in making a decision on this important land use decision. This recommendation is detailed in “Option 1 – Proceed with 1st and 2nd Readings, refer to Public Hearing, and Additional Information Be Provided” below.

Alternatively, should the Board prefer that this information be provided prior to consideration of 1st and 2nd readings, a referral motion is provided in “Option 2 – Refer to Future Meeting and Additional Information Required” below.

“Option 3 – No Further Action” is provided, should the Board consider that there is no merit in pursuing the matter further. This would send a signal for the applicant to consider siting this facility in an alternate location with existing land uses more compatible to the activity proposed.

SECTION 5: OPTIONS

Option 1 - Proceed with 1st and 2nd Readings, refer to Public Hearing, and Additional Information Be Provided

That Regional District of Central Kootenay Electoral Area ‘F’ Official Community Plan Amendment Bylaw No. 3002 being a bylaw to amend Electoral Area ‘F’ Official Community Plan Bylaw No. 2214, 2011 is hereby given FIRST and SECOND reading by content and referred to a PUBLIC HEARING.

That Regional District of Central Kootenay Zoning Amendment Bylaw No. 3003 being a bylaw to amend the Regional District of Central Kootenay Zoning Bylaw No. 1675, 2004 is hereby given FIRST and SECOND reading by content and referred to a PUBLIC HEARING.

And Further

That in accordance with Regional District of Central Kootenay Planning Procedures and Fees Bylaw No. 2457, 2015, Electoral Area ‘F’ Director Tom Newell is hereby delegated the authority to chair the Public Hearing on behalf of the Regional District Board.

And Further

That the applicant be required to provide the following additional information to support the proposed Land Use Bylaw Amendment Application:

- Archaeological assessment prepared by a consulting Archaeologist
- On-site wastewater assessment prepared by a qualified professional (e.g. ROWP or P.Eng)
- Groundwater impact assessment prepared by a Hydro-geotechnical Engineer or other qualified professional
- Traffic Study prepared to the satisfaction of the Ministry of Transportation and Infrastructure
- Noise Study prepared by a qualified professional

Option 2 - Refer to Future Meeting, and Additional Information Be Provided

That further consideration of Regional District of Central Kootenay Electoral Area ‘F’ Official Community Plan Amendment Bylaw No. 3002 being a bylaw to amend Electoral Area ‘F’ Official Community Plan Bylaw No. 2214, 2011 and Regional District of Central Kootenay Zoning Amendment Bylaw No. 3003 being a bylaw to amend the Regional District of Central Kootenay Zoning Bylaw No. 1675, 2004 be referred to the January Rural Affairs Committee Meeting in order for the following information to be provided prior to FIRST and SECOND Readings:

- Archaeological assessment prepared by a consulting Archaeologist
- On-site wastewater assessment prepared by a qualified professional (e.g. ROWP or P.Eng)
- Groundwater impact assessment prepared by a Hydro-geotechnical Engineer or other qualified professional
- Traffic Study prepared to the satisfaction of the Ministry of Transportation and Infrastructure
- Noise Study prepared by a qualified professional

Option 3 - No Further Action

That no further action be taken with respect to Regional District of Central Kootenay Electoral Area 'F' Official Community Plan Amendment Bylaw No. 3002 being a bylaw to amend Electoral Area 'F' Official Community Plan Bylaw No. 2214, 2012 and Regional District of Central Kootenay Zoning Amendment Bylaw No. 3003 being a bylaw to amend the Regional District of Central Kootenay Zoning Bylaw No. 1675, 2004.

SECTION 5: RECOMMENDATIONS

That Regional District of Central Kootenay Electoral Area 'F' Official Community Plan Amendment Bylaw No. 3002 being a bylaw to amend Electoral Area 'F' Official Community Plan Bylaw No. 2214, 2011 is hereby given FIRST and SECOND reading by content and referred to a PUBLIC HEARING.

That Regional District of Central Kootenay Zoning Amendment Bylaw No. 3003 being a bylaw to amend the Regional District of Central Kootenay Zoning Bylaw No. 1675, 2004 is hereby given FIRST and SECOND reading by content and referred to a PUBLIC HEARING.

That prior to consideration of THIRD READING for Regional District of Central Kootenay Electoral Area 'F' Official Community Plan Amendment Bylaw No. 3002 and Regional District of Central Kootenay Zoning Amendment Bylaw No. 3003, the applicant is required to provide the following additional information to support the proposed Land Use Bylaw Amendment Application:

- Archaeological assessment prepared by a consulting Archaeologist;
- On-site wastewater assessment prepared by a qualified professional (e.g. ROWP or P.Eng);
- Groundwater impact assessment prepared by a Hydro-geotechnical Engineer or other qualified professional;
- Traffic Study prepared to the satisfaction of the Ministry of Transportation and Infrastructure;
- Noise Study prepared by a qualified professional.

That in accordance with Regional District of Central Kootenay Planning Procedures and Fees Bylaw No. 2457, 2015, Electoral Area 'F' Director Tom Newell is hereby delegated the authority to chair the Public Hearing on behalf of the Regional District Board.

Respectfully submitted,

Zachari Giacomazzo, Planner

CONCURRENCE

Planning Manager – Nelson Wight **Approved**

Manager of Development and Community Sustainability – Sangita Sudan **Approved**

Chief Administrative Officer – Stuart Horn **Approved**

ATTACHMENTS:

Attachment A – DRAFT Official Community Plan Amendment Bylaw No. 3002

Attachment B – DRAFT Zoning Amendment Bylaw No. 3003

Attachment C – Referral responses from Shuswap Band, Okanagan Indian Band and Penticton Indian Band.
Attachment D – Written submissions from neighbouring property owners
Attachment E – Architectural plans (site plan, elevations and renderings)
Attachment F – Referral Comments from Interior Health Authority, dated November 27, 2024

REGIONAL DISTRICT OF CENTRAL KOOTENAY

Bylaw No. 3002

A Bylaw to amend Electoral Area 'F' Official Community Plan Bylaw No. 2214, 2011

WHEREAS it is deemed expedient to amend the Electoral Area 'F' Official Community Plan Bylaw No. 2214, 2011, and amendments thereto.

NOW THEREFORE the Board of the Regional District of Central Kootenay, in open meeting assembled, HEREBY ENACTS as follows:

APPLICATION

- 1 That Schedule 'Schedule B' of Electoral Area 'F' Official Community Plan Bylaw No. 2214, 2011 be amended by changing the Land Use Designation of LOT 3 DISTRICT LOT 790 KOOTENAY DISTRICT PLAN 2449 (015-289-559), LOT 4 DISTRICT LOT 790 KOOTENAY DISTRICT PLAN 2449 (015-289-567), and LOT 5 DISTRICT LOT 790 KOOTENAY DISTRICT PLAN 2449 (015-282-228) from Country Residential (CR) to Industrial (M), as shown on the attached Map.
- 2 This Bylaw shall come into force and effect upon its adoption.

CITATION

- 3 This Bylaw may be cited as **"Regional District of Central Kootenay Electoral Area F Official Community Plan Amendment Bylaw No. 3002, 2004"**

READ A FIRST TIME this 12th day of December, 2024.

READ A SECOND TIME this 12th day of December, 2024.

WHEREAS A PUBLIC HEARING was held this [Date] day of [Month], 20XX.

READ A THIRD TIME this [Date] day of [Month], 20XX.

[Controlled Highway or Exceeds 4500 sq.m] APPROVED under **Section 52 (3)(a) of the Transportation Act** this [Date] day of [Month], 20XX.

Approval Authority,
Ministry of Transportation and Infrastructure

ADOPTED this [Date] day of [Month], 20XX.

[Name of Board Chair], Board Chair

[Name of CO], Corporate Officer

GENERAL INFORMATION

File number: Z2410F

Property Owner: Spearhead

Property Location: 4612 and 4614-4614 Starlight Road,
and 4643 Highway 3A, 12 Mile, Electoral Area 'F'

Legal Descriptions:

4612 Starlight Road, LOT 5 DISTRICT LOT 790

KOOTENAY DISTRICT PLAN 2449 (015-282-228)

4614-4616 Starlight Road, LOT 4 DISTRICT LOT 790

KOOTENAY DISTRICT PLAN 2449 (015-289-567)

4643 Highway 3A, LOT 3 DISTRICT LOT 790

KOOTENAY DISTRICT PLAN 2449 (015-289-559)

REGIONAL DISTRICT OF CENTRAL KOOTENAY
ELECTORAL AREA F
OFFICIAL COMMUNITY PLAN AMENDMENT
BYLAW NO. 3002, 2024
SCHEDULE A

RR

SR

M

C

Starlight Rd

Highway 3A

CR

Crescent Rd

Robertson Rd

OS

4612 and 4614-4616 Starlight Road

From: Country Residential (CR)

To: Industrial (M)

PIDS: 015-282-228, 015-289-567, 015-289-559

Road

Subject Property

Lakes and Streams

Lot Lines

Official Community Plan

Industrial

Commercial

Country Residential

Open Space

Parks and Recreation

Rural Residential

Suburban Residential

Meters

0 250 500

Scale: 1 : 3,000

Plotted: Wednesday, November 27, 2024

Datum/Projection: NAD83/UTM Zone11N

The mapping information shown are approximate representations and should only be used for reference purposes. The Regional District of Central Kootenay is not responsible for any errors or omissions on this map.



REGIONAL DISTRICT OF CENTRAL KOOTENAY

Bylaw No. 3003

A Bylaw to amend Regional District of Central Kootenay Zoning Bylaw No. 1675, 2004

WHEREAS it is deemed expedient to amend the Regional District of Central Kootenay Zoning Bylaw No. 1675, 2004, and amendments thereto.

NOW THEREFORE the Board of the Regional District of Central Kootenay, in open meeting assembled, HEREBY ENACTS as follows:

APPLICATION

- 1 That Schedule 'E' of Regional District of Central Kootenay Zoning Bylaw No. 1675, 2004 be amended by changing the Zoning Designation of LOT 3 DISTRICT LOT 790 KOOTENAY DISTRICT PLAN 2449 (015-289-559), LOT 4 DISTRICT LOT 790 KOOTENAY DISTRICT PLAN 2449 (015-289-567), and LOT 5 DISTRICT LOT 790 KOOTENAY DISTRICT PLAN 2449 (015-282-228) from Country Residential (R2) to Comprehensive Development (CD3), as shown on the attached Map.

- a. ADDING the following:

DIVISION 55 COMPREHENSIVE DEVELOPMENT (CD3)

Permitted Uses	
5500	Land, buildings and structures in the Comprehensive Development (CD3) zone shall be used for the following purposes only: Principal Uses: Commercial Workshops: Machine Shops Construction, Sales, Repair and Storage of: Prefabricated Buildings Wood Product Manufacturing Accessory Uses: Day Care Facility Office
Development Regulations	
5501	
1	All development in the Comprehensive Development (CD3) zone shall be subject to the requirements of a Development Permit.
2	The minimum lot area shall be 2 hectares
3	The maximum site coverage shall be 50 percent of the lot area
4	Excepting a fence, no building or structure may be located within:

a.	15 metres of the front lot line
b.	15 metres of the rear lot line
c.	7.5 metres of the interior side lot line
d.	15 metres of an interior side lot line that abuts an agricultural or residential zone
5	The maximum height of any building or structure shall be 15 metres
6	Landscaping shall comply with the requirements of Sections 620 and 621
7	The following parking requirements shall apply:
a.	A minimum of 65 parking spaces shall be provided on the subject property
b.	19 parking spaces shall be provided on the adjacent lot (PID: 029-966-574) in the form of a covenant under Section 219 of the Land Title Act
c.	A minimum of 2 of the required number of parking spaces shall be provided as accessible parking spaces
d.	Minimum Parking Space Dimensions (w x l x h): Above Grade: 2.75 m x 6 m x 2.2 m Below Grade: 3.05 m x 6 m x 2.675 m Below Grade (adjacent to wall): 3.2 m x 6 m x 2.675 m

2 This Bylaw shall come into force and effect upon its adoption.

CITATION

3 This Bylaw may be cited as “**Regional District of Central Kootenay Zoning Amendment Bylaw No. 3003, 2024**”

READ A FIRST TIME this 12th day of December, 2024.

READ A SECOND TIME this 12th day of December, 2024.

WHEREAS A PUBLIC HEARING was held this [Date] day of [Month], 20XX.

READ A THIRD TIME this [Date] day of [Month], 20XX.

[Controlled Highway or Exceeds 4500 sq.m] APPROVED under **Section 52 (3)(a) of the Transportation Act** this [Date] day of [Month], 20XX.

Approval Authority,
Ministry of Transportation and Infrastructure

ADOPTED this [Date] day of [Month], 20XX.

Aimee Watson, Board Chair

Mike Morrison, Corporate Officer

GENERAL INFORMATION

File number: Z2410F

Property Owner: Spearhead

Property Location: 4612 and 4614-4616 Starlight Road,
and 4643 Highway 3A, 12 Mile, Electoral Area 'F'

Legal Descriptions:

4612 Starlight Road, LOT 5 DISTRICT LOT 790

KOOTENAY DISTRICT PLAN 2449 (015-282-228)

4614-4616 Starlight Road, LOT 4 DISTRICT LOT 790

KOOTENAY DISTRICT PLAN 2449 (015-289-567)

4643 Highway 3A, LOT 3 DISTRICT LOT 790

KOOTENAY DISTRICT PLAN 2449 (015-289-559)

REGIONAL DISTRICT OF CENTRAL KOOTENAY
BYLAW NO. 3003, 2024
SCHEDULE B

4612 and 4614-4616 Starlight Road

From: Country Residential (R2)

To: Comprehensive Development (CD3)

PIDS: 015-282-228, 015-289-567, 015-289-559

Road

Subject Property

Lakes and Streams

Lot Lines

Zoning

Industrial

Open Space

Parks and Recreation

Residential 1

Residential 2

Residential 3

Commercial

Meters

0 250 500

Scale: 1 : 3,000

Plotted: Wednesday, November 27, 2024

Datum/Projection: NAD83/UTM Zone11N

The mapping information shown are approximate representations and should only be used for reference purposes. The Regional District of Central Kootenay is not responsible for any errors or omissions on this map.





Shuswap Band

Project Name:

Bylaw Amendment Application - Z2410F

FN Consultation ID:

Z2410F

Consulting Org Contact:

Laura Christie

Consulting Organization:

[Regional District of Central Kootenay](#)

Date Received:

Monday, October 28, 2024

October 29, 2024

Weyt-k (Hello),

Shuswap Band is in receipt of the project information for: -Bylaw Amendment Application - Z2410F.

The proposed project is located within Shuswap Band's Caretaker Area, within the greater Secwépemcúlecw (Secwepemc Traditional Territory). As land users and stewards, Shuswap Band members continue to exercise their Section 35 Aboriginal rights as their ancestors have done for generations, including hunting, trapping, gathering, and fishing, along with rights associated with spiritual and cultural traditions that are practiced in accordance with Secwepemc customs, laws, and governance structures. Secwepemc share an obligation of caretaker responsibility (stewardship) which is to act mindfully, learning from and caring for surrounding ecosystems for the health and survival of future generations, as is their Indigenous right (UNDRIP, Bill 41, Bill C15) Secwepemc culture hinges on the belief that the land responds positively to care and respect, and that tmicw (the air, lands, and resources) is interconnected at a watershed level. It is therefore critical for Shuswap Band to be actively engaged and consulted on all developments occurring within their Caretaker Area.

Based on our initial review, the nature of the proposed activity, its location, the current information available to our office at this time, we do not see any apparent significant impacts to our indigenous rights, including title at this time. However, we may at future date want to revisit consultation on this matter should new information become available.

Further, the watersheds in this area are significant to Shuswap Band's cultural heritage, as an area of ancestral land use, and presently significant as an area needing restoration and protection. Currently, Shuswap Band members collect medicines and berries in the surrounding area, fish the area waters, and camp nearby. While the area and its vitality has been impacted by industry developments, Shuswap Band has been actively involved in research and other initiatives which aim to restore this region to an ecologically and culturally thriving place.

Wherever possible, Shuswap Band recommends the reuse of existing infrastructure so as to avoid unnecessary ground disturbance and additional cumulative impacts to the region. It is Shuswap Bands expectation that all disturbed areas be reclaimed as soon as possible with the areas being monitored and treated for invasive plants to aid the ecosystem in its healing.

The province is responsible for ensuring adequate consultation and where appropriate, accommodation to address potential impacts of proposed developments on asserted Aboriginal rights including title. It is Shuswap Band expectation that continued consultation on projects and on matters that may affect our long-term traditional land use, occupancy and access, including potential cumulative impacts between proposed activity and other previous or future developments within the

project footprint and in adjacent areas (watershed, habitat type, aquifer, viewscape, etc).

Kukwststsemc (Thank you).

Referrals Coordinator

"Our people are our strength. Our children are our future."

ec: Barb Cote - Chief, Shuswap Band

Mark Thomas - Councilor, Shuswap Band

Richard Martin - Councilor, Shuswap Band

Manon Moreau - Director, Territorial Stewardship, Shuswap Band

Travis Yeats - Referrals Coordinator, Shuswap Band

Joshua Martin - Guardian Manager, Shuswap Band

Enola Eugene - Culture, Shuswap Band



Okanagan Indian Band

12420 Westside Road • Vernon, BC, • V1H 2A4

Telephone: 250-542-4328 • Facsimile 250-542-

4990

Email: [REDACTED]

"This correspondence will not be construed so as to to prejudice, limit, or derogate from any rights, claims or interests in respect of any Aboriginal title, rights and interests of Okanagan or Syilx Nation recognized and affirmed under Section 35 of the Constitution Act, 1982 and nothing in this letter indicates acceptance by Okanagan of federal or provincial Crown jurisdiction over or ownership of land, water or other resources within the Territory."

November 12, 2024

Attention: Laura Christie

RE: Bylaw Amendment Application - Z2410F

The Territorial Stewardship Division would like to acknowledge receipt of the above referral. The Okanagan Indian Band ("OKIB") has conducted a desktop review of the project. The location of the project to which the referral relates is within Syilx (Okanagan Nation) territory, and may have impacts on Syilx Aboriginal Title and Rights, which OKIB holds as part of the Syilx. However, the project is located outside the OKIB's Area of Responsibility as a member of the Syilx. At this time, we defer to the Lower Similkameen Indian Band and Penticton Indian Band for a more in depth review. Please keep us informed of any updates or changes to the project as this may change our assessment and our view on the need for further consultation with OKIB.

liml?mt | Thank You

Julie Richard
Referrals Management Clerk
Territorial Stewardship Division
Okanagan Indian Band
12420 Westside Road
Vernon BC, V1H 2A4
Office: [REDACTED]
Cell: [REDACTED]



Penticton Indian Band
Natural Resources Department
841 Westhills Drive | Penticton, B.C.
V2A 0E8

[REDACTED] | www.pib.ca

Telephone: [REDACTED]

Fax: [REDACTED]

Project Name:

Bylaw Amendment Application - Z2410F

FN Consultation ID:

L-241030-Z2410F

Consulting Org Contact:

Laura Christie

Consulting Organization:

[Regional District of Central Kootenay](#)

Date Received:

Monday, October 28, 2024

October 30, 2024

WITHOUT PREJUDICE

Attention: Laura Christie

File number: Z2410F

RE: 40 (forty) day extension

Thank you for the above application that was received on 2024-10-28.

This letter is to inform you that due to current levels of internal capacity, we are unable to review your referral in your proposed timeline. With additional time, snpink'tn (Penticton Indian Band) will be able to ensure that an informed review process will occur. We are setting the new timeline to be 40 days from the existing timeline.

syilx (Okanagan Nation) Title includes snpink'tn right to proactively use and manage our resources. In Tsilhqot'in, the Supreme Court of Canada emphasizes the need to seek the consent of the title-holding Aboriginal group, and warns, without consent for a project, the proponent risks having the project cancelled. The obligation to seek free, prior and informed consent is further required by the United Nations Declaration on the Rights of Indigenous People (UNDRIP). UNDRIP requires that Indigenous peoples shall be consulted and cooperated with in good faith in order to obtain their free and informed consent prior to the approval of any project affecting their lands or territories and other resources, particularly in connection with the development, utilization or exploitation of mineral, water or other resources.

Please note that not receiving a response regarding a referral from snpink'tn in the pre-application, current or post-application stage does not imply our support for the project.

I appreciate your co-operation.

limlæmt,

Maryssa Bonneau

Referrals Coordinator

snpink'tn (Penticton Indian Band)

Natural Resources

email:

office:

address: 841 Westhills Drive

Penticton, British Columbia

Canada V2A 0E8

IN REFERENCE TO RDCK FILE NO. Z2410~~0~~^F

RE; APPLICATION FOR LAND BYLAW AMENDMENT Z2410F/ APPLICANT; BEN HALL, SPEARHEAD

I LIVE NEXT TO THE SAID PROPERTIES LISTED AS LOT A DISTRICT LOT 790 KOOTENAY DISTRICT PLAN 13690. SHARED OWNERSHIP BY MYSELF- MR. EUGENE JOSAY AND MARIA RAVESTEIN. BOTH RETIRED.

I WOULD LIKE TO NOTIFY RDCK OF MY STRONG OPPOSITION FOR ANY CHANGES TO THE LAND USE BYLAW AMENDMENT BY THE APPLICANT.

THE CHANGES WOULD DEVALUE OUR PROPERTY AND FURTHER CHANGE THE RESIDENTIAL STATUS OF THE AREA. THE OWNERS DO NOT LIVE IN THE AREA AND THEREFORE HAVE NO INTEREST IN THE AREA EXEPT FOR PROFIT.

SINCERELY EUGENE JOSAY



Zachari Giacomazzo

From: Tom Klein [REDACTED]
Sent: November 17, 2024 9:03 AM
To: Zachari Giacomazzo; Planning
Subject: Response to Spearhead proposal

Some people who received this message don't often get email from [REDACTED] [Learn why this is important](#)

CAUTION This email originated from outside the organization. Please proceed only if you trust the sender.

Hi Zachari,

My name is Tom. I own the property at 4608 Starlight rd. As you know, Spearhead has recently proposed to rezone 3 lots to the East of our property. This new rezoning would make our property the only adjacent property to this new change. I recently had a look at the site plan for the proposal. The scale of this project is significantly more than I expected after reading Spearhead's letter that arrived in the mail a few weeks ago. The impact that this rezoning will have on our property and daily lives is undoubtedly large.

The location of our house on the property and the proposed new industrial structure will make it so we will be living in very close proximity. When I purchased the property, I noted that there was industrial activity several lots to the east. I concluded that there was enough of a buffer there as the lots to the East of us are zoned for residential purposes. Based on this I felt assured that I would never have to live next to an industrial site. Had I known that this proposal was possible, I would have never considered buying this property. Now, it appears that I will be living adjacent to an industrial zoned area. Already, with this proposal in action, the face value and appeal of this property has plummeted. I can't help but feel like we are going to be squeezed out of our quiet neighbourhood. Should this happen, we will have a hard time selling the property for what it *was* worth before this proposal was put forth. The bottom line here is that we do not want to live next to an industrial zoned area. No shielding or fence is going to hide a structure of that size from us. Our house is situated at the edge of a large cliff that looks over the proposed structure that will be similar in size to our entire lot. We already hear noise from the current operations of Spearhead. The noise is minimal as there is lots of space to drown it out. Now that activity will be within 100' of our house. No soundproofing or vegetation is going to drown out that type of noise.

Another major concern is the proximity of our water well to the proposed building site. A significant amount of bedrock will have to be removed in preparation for this new structure. This means blasting the bedrock to remove it. There is a risk here of disrupting the ground water. Our well is within 55' of the new building site. What if our well is affected by this site work?

In conclusion to this initial response, I would like to say that I do not want to hinder any development plans, whether it be residential or commercial. However, the scale of this proposal is gargantuan when you look at the surrounding neighbourhood and area. It is such that it puts us uncomfortably close to this activity. I can't help but feel like it is going to negatively affect our daily lives. So where does that leave us? Where do we go from here? What voice do we have in this? We are just one family that happens to be living very close to someone's multi million dollar dream. Should the project move forward, how can we be compensated for this profound change?

I hope you can address this and we can come to some sort of agreement. Right now I do not know what that is. I would like to hear from you (the RDCK) with what our options are and how they can be mitigated. I feel like our situation is much different than the rest of the neighbourhood. I have also sent an email to Ben Hall, asking him to meet me in person so we can discuss this further, as neighbours.

I hope to hear from you soon,
Tom

Zachari Giacomazzo

From: stardes [REDACTED]
Sent: November 11, 2024 11:34 AM
To: Planning
Cc: [REDACTED]
Subject: re zoning proposal for Starlight road lots.

You don't often get email from [REDACTED] [Learn why this is important](#)

CAUTION This email originated from outside the organization. Please proceed only if you trust the sender.

To: Zachari Giacomazzo, Planner

Development and Community Sustainability services

R.D.C.K

November 11, 2024

Re: Re-zoning proposal.

We are writing to express our disapproval and disappointment with the re zoning proposal of lots 4612, and 4614 on Starlight road.

When we purchased our property at 4609 Starlight road, in 2001, we did so believing we were establishing ourselves in a residential area. Had we known the zoning was going to change and that the neighboring semi industrial business would expand we would not have purchased it.

We already have experienced a spring summer and fall of extensive dump truck traffic, and blasting, during the first expansion of the Spearhead business. The noise, traffic and dust pollution was high and this was not the kind of peaceful enjoyment life style we expect. Although the business was expanding on its own lot, they used their upper property, which we believe is also zoned residential, to store all the material excavated during their building. We don't believe that this next business expansion will restrict itself only to the lots in question, and that further expansion is likely, as well as the subsequent use of the upper lot. Also the lots on Starlight road both have driveways from that road and Spearhead will likely be accessing their properties from them. It may not be actual shipping and receiving but will necessarily be business related access. This type of traffic is far greater in volume then usual resident traffic. Our residential neighborhood will then be surrounded by a semi industrial business, with its noise, visual and air pollution. The final band of trees separating us from the highway will disappear and the noise and visual impact from the highway will be significant. We will no longer

be residing in a residential neighborhood and the impact of that fact on the value of our home will certainly be negative to say nothing of the quality of the quiet life we had expected when we purchased our property. (We certainly expect that our property taxes should reflect that fact when it unfolds)

We understand and agree that Spearhead is a worthwhile business, mindful of the community with the goal of minimizing the impact of their expansion, but possibly their current location is inadequate. Rezoning the lots on Starlight road opens the door to any other semi industrial business should Spearhead move its location, one that might not be as environmental and community minded. As a mitigating factor we would welcome any guarantee that Starlight road will never be used for industry traffic if such regulation exists and can be enforced.

We see many examples of semi industrial businesses that have been allowed to invade residential neighborhoods in the RDCK district, such as the lumber yard on the upper Balfour road and the usage of Annabelle road by dump trucks to access a gravel pit. This does nothing to build our trust that RDCK has all its residents interests in mind and that, furthermore, they favor business development interests over housing needs, and the right homeowners have to a peaceful and undisturbed home.

Anne Desjardins

Jack Starr

4609 Starlight Road.

[REDACTED]

Zachari Giacomazzo

From: Pedram Sheirzad [REDACTED]
Sent: November 14, 2024 8:38 AM
To: Zachari Giacomazzo
Subject: Application Z2410F

Follow Up Flag: Follow up
Flag Status: Flagged

You don't often get email from [REDACTED] [Learn why this is important](#)

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Hi Zachari,

What type of glue will they be using for the production of the gluelam beams?

Phenol resorcinol formaldehyde adhesives

are the most common but which glue will they use. These adhesives are highly toxic until they are cured. We live within breathing distance of the glue constantly being cured. What is their method for capturing the fumes before they are released into the atmosphere? How many hours per week will they be venting?

Thanks,
Pedram Sheirzad

Zachari Giacomazzo

From: Ursula Lowrey <[REDACTED]>
Sent: November 26, 2024 2:50 PM
To: Zachari Giacomazzo
Subject: Spearhead rezoning

You don't often get email from [REDACTED] [Learn why this is important](#)

CAUTION This email originated from outside the organization. Please proceed only if you trust the sender.

Dear Sir,

Regarding the proposed rezoning of three lots adjacent to the Spearhead Advanced Timber facility located at 4655 Hwy 3A, I have some concerns. Since we moved to this residential neighbourhood in 1986, we have seen a number of changes away from its quiet residential character. While Spearhead is not heavy industry, they have created noise and air pollution in the past. While they seem to have remedied these problems now, I am somewhat concerned that additional growth of this facility may cause more noise, air, or water pollution. Our household is dependent on ground water from a shallow well, and the facility is close enough that we are certainly exposed to any noise and air pollution they may emit. My other concern is that all businesses seem to be interested in continuous growth. I sincerely hope that after this current proposal, they will not sprawl farther onto other residential lots. The work they do is innovative and good employment, so as long as they can keep it contained, I shouldn't object.

There is other industrial creep in our neighbourhood. Two lots along Crescent Road have been stripped of their trees and large "shops" or "warehouses" have been erected. Starlight Tool Services at 4655 Crescent Road has piled up much unsightly material in front of the house. 12 Mile Storage has expanded far up the mountainside. Even Kokanee Creek Provincial Park next door has "paved paradise, put up a parking lot" and expanded their campground to within 100 meters of our home.

I realize that this area has very limited flat land to build on. And I don't want to be a "NIMBY". But I would hate to be surrounded by an industrial park since we moved here expecting to live the rest of our lives in a quiet residential neighbourhood.

Thank you for allowing me to express my concerns.

Yours sincerely,
Ursula Lowrey
4718 Robertson Road
Nelson, BC V1L 6N4

Zachari Giacomazzo

From: terry lowrey [REDACTED]
Sent: November 26, 2024 7:20 PM
To: Zachari Giacomazzo
Subject: Re: RDCK FILE NO.; Z2410F

You don't often get email from [REDACTED] [Learn why this is important](#)

CAUTION This email originated from outside the organization. Please proceed only if you trust the sender.

November 26, 2024

Attention: Zachari Giacomazzo, Planner RDCK

As per our conversation regarding the Spearhead Timberworks proposed rezoning of Country Residential (R2) lots to Comprehensive Development (CD) along Starlight Road and Highway 3A in order to authorize the "expansion" of an existing workshop for custom timber milling: It is not an expansion (as indicated) of the workshop but an entirely new stand-alone structure dwarfing anything presently there. I feel the proposal is not being represented fairly and is misleading in its magnitude.

My main concern with the expansion is the long range but hitherto not discussed plan to use waste wood in a Biomass Cogeneration Plant or Wood Fired Boiler on site. This information came to light in conversation with the owner and the manager of Spearhead. Both devices burn wood to create hot water or steam. Regardless of the industry hype being heaped on them, both are very polluting systems. When wood is used to heat water, the water inevitably cools the combustion chamber temperatures, resulting in incomplete combustion and increased emissions. The pollutants include fine particulate matter (PM), nitrogen dioxide (NO₂), carbon monoxide (CO), sulfur dioxide (SO₂), and a host of other hazardous air pollutants such as arsenic, chromium, mercury, and dioxins/furans.

This is a totally unacceptable development coming from this proposal and therefore unless guaranteed assurance can be given that no Biomass Cogeneration Plant or Wood Fired Boiler will be installed, I must oppose the granting of the rezoning proposal.

If this isn't possible, then I request that RDCK implement guidelines/regulations restricting the use of these devices/systems in residential areas, certainly in the Kokanee Creek/Crescent Beach area. Unlike wood burning stoves for home heating, Biomass Cogeneration Plants generally operate 24/7, compounding the pollution problem year round. The health effects impact the well being of the public at large but particularly those with respiratory illness, heart conditions, asthma, and can even result in birth defects, neurodegenerative diseases and death, among many other health impacts. In general the smoke from these wood burning devices is unhealthy. This is well known and acknowledged by the Ministry of Environment of British Columbia. These devices should be banned outright!

In closing I ask that this concern be addressed and restrictions on installing either a Biomass Cogeneration Plant or Wood Fired Boiler on site be part of the granting of the rezoning application.

Sincerely, Kenneth
Lowrey

Road

C.

4718 Robertson

Nelson, B.

V1L6N4

Zachari Giacomazzo

From: Lisa Bramson [REDACTED]
Sent: November 26, 2024 9:39 PM
To: Zachari Giacomazzo
Subject: Spearhead Zoning application

You don't often get email from [REDACTED]. [Learn why this is important](#)

CAUTION This email originated from outside the organization. Please proceed only if you trust the sender.

Hello,

Thank you for receiving “late “ input. We were waiting for Ted Hall to schedule the site visit he invited us to. We just had the visit and have also walked the proposal areas.

Spearhead has mostly been a decent business in our residential neighborhood. I understand their growth plans and needs. However, the new construction will be 5 times as large as the existing main building. This means removal of trees, which otherwise buffer highway noise. We don't support commercial operations including truck traffic in the residential neighborhood of Starlight Road.

We feel that the people on Starlight Rd who bought property in the middle of a rural residential area would be negatively impacted by the proposed development to the extent that it would no longer allow them to enjoy the rural aspects that existed when they bought the property.

Thank you for considering this input. We live on Robertson Road, off Crescent Road, which is across from the Spearhead site, so this development proposal is in our neighborhood.

Sincerely,

Lisa Bramson and Gusti Callis
4722 Robertson Road
Nelson V1L6N4

Zachari Giacomazzo

From: Ben Hall [REDACTED]
Sent: November 14, 2024 4:59 PM
To: Zachari Giacomazzo
Cc: Ted Hall; Josh Hall; Ken Foot; Noam Ironi
Subject: Fw: Expansion - plant visit
Attachments: LOCTITE HB X PURBOND products (statement VOC content).pdf; GREENGUARD Gold Certification 227797-420_Loctite HB X.pdf

CAUTION

This email originated from outside the organization. Please proceed only if you trust the sender.

Zachari,

See below for a very supportive and enthusiastic follow-up email after Bryon and Sue visited today. They are our neighbours on Starlight Road.

Does this constitute a 'letter of support' or should we request a formal letter?

Regards,
 Ben

SPEARHEAD

Ben Hall - Partner, Project Manager

Office [REDACTED]
 Mobile [REDACTED]
www.spearhead.ca



Spearhead respectfully acknowledges that we live, work and play within the unceded traditional territory of the Ktunaxa, the Syilx, and the Sinixt peoples. The information contained herein is confidential and may contain personal or legally privileged information. It is intended only for the addressee(s). Any use, distribution or copying of this information by anyone other than the intended recipient is prohibited. If you have received this communication in error, please notify me by e-mail and delete or destroy any copies of this communication.

From: Ben Hall [REDACTED]
Sent: November 14, 2024 4:54 PM
To: Bryon Brideau [REDACTED] Josh Hall [REDACTED]
Cc: Ken Foot [REDACTED] Ted Hall [REDACTED]
Subject: Re: Expansion - plant visit

Bryon, Sue,

Thank you for taking the time to come and see us today. It was a pleasure meeting you, and I am glad to hear you found the visit worthwhile.

Your engagement, interest, and perspective are certainly appreciated.

Please feel free to reach out as any additional questions come up.

We touched briefly on glues while you were here. I have attached the Greenguard Gold certification as well as a statement from Henkel on the zero VOC nature of the glue. In two weeks, I will be visiting Henkel's main lab in Switzerland as we explore their research on bio-based glues and how we can bring them into practice. Impressive how far the technology has come!

Warm Regards,
Ben

From: Bryon Brideau [REDACTED]
Sent: November 14, 2024 3:40 PM

To: Josh Hall [REDACTED]

Cc: Ben Hall [REDACTED] Ken Foot [REDACTED]

Subject: Expansion - plant visit

Sue and I would like to thank everyone for taking the time to reach out to us and explain what the plant expansion and related activities will entail. We were genuinely impressed by scope and quality of Spearheads work as seen during the tour. Everyone was friendly and very relaxed.

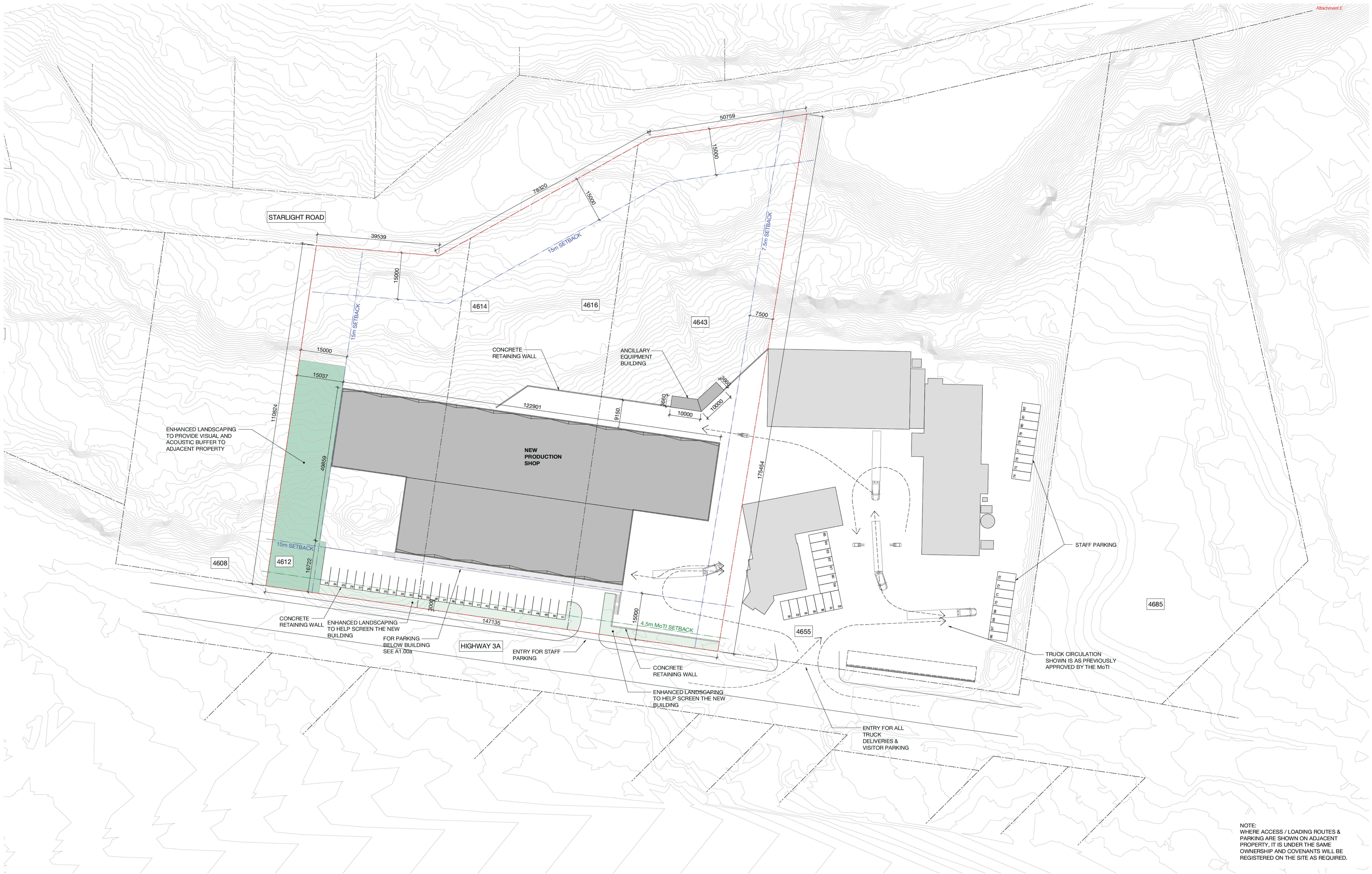
Nice to have a local company that recognizes the importance of the workforce and community. Very European.

Again thanks and if there is anything from our end I could do for your group, it would be my pleasure.

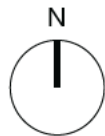
Best regards

Bryon Brideau
Cell [REDACTED]

PS: I did not have Ken's email so please if the address is incorrect forward this note to him.
Sent from my iPad



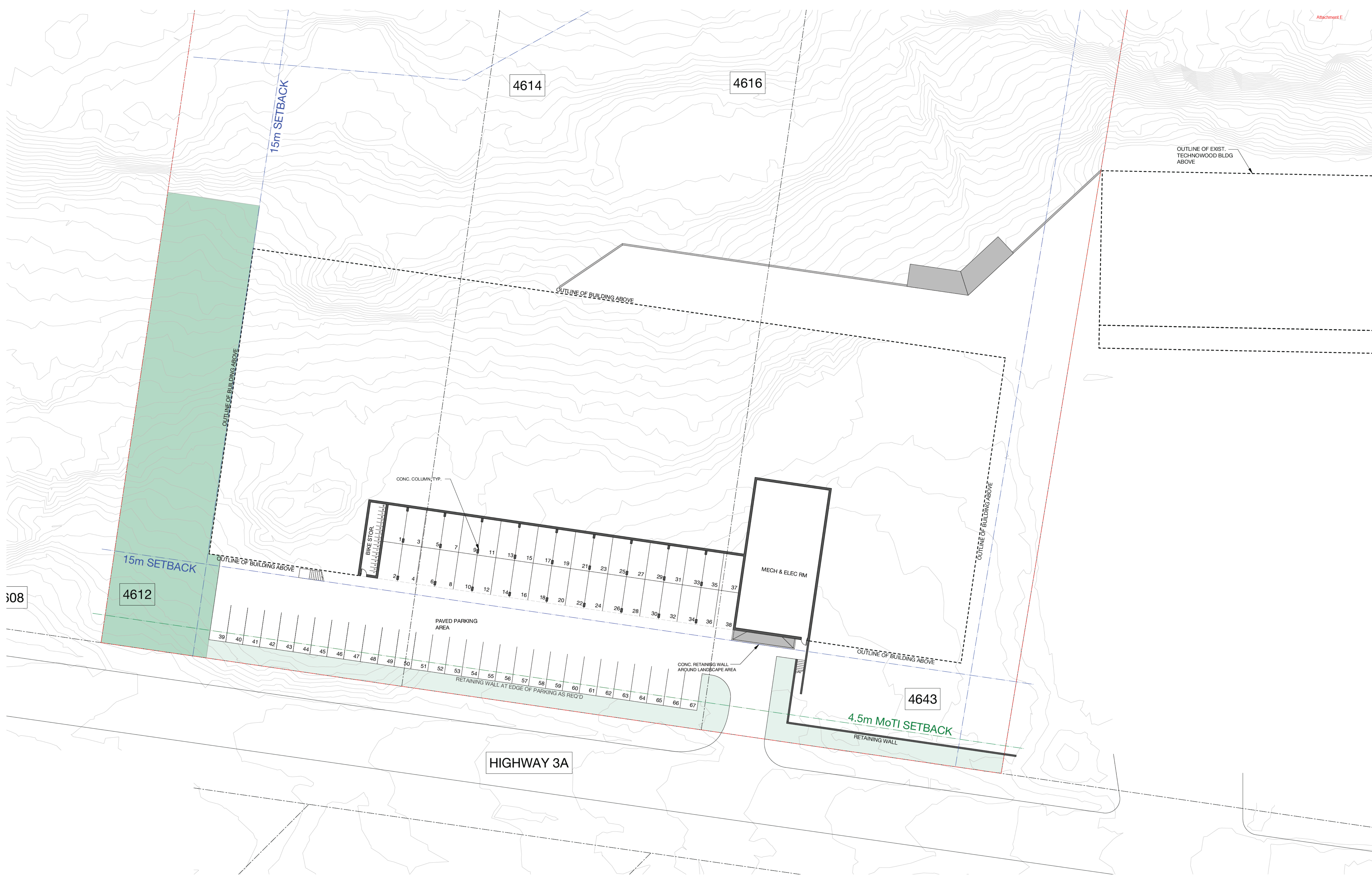
NOTE:
WHERE ACCESS / LOADING ROUTES &
PARKING ARE SHOWN ON ADJACENT
PROPERTY, IT IS UNDER THE SAME
OWNERSHIP AND COVENANTS WILL BE
REGISTERED ON THE SITE AS REQUIRED.







NOTE:
WHERE ACCESS / LOADING ROUTES &
PARKING ARE SHOWN ON ADJACENT
PROPERTY, IT IS UNDER THE SAME
OWNERSHIP AND COVENANTS WILL BE
REGISTERED ON THE SITE AS REQUIRED.



REQUESTED DEVELOPMENT REGULATIONS

Permitted Uses
Land, buildings and structures in the proposed Industrial CD zone shall be used for the following purposes only:

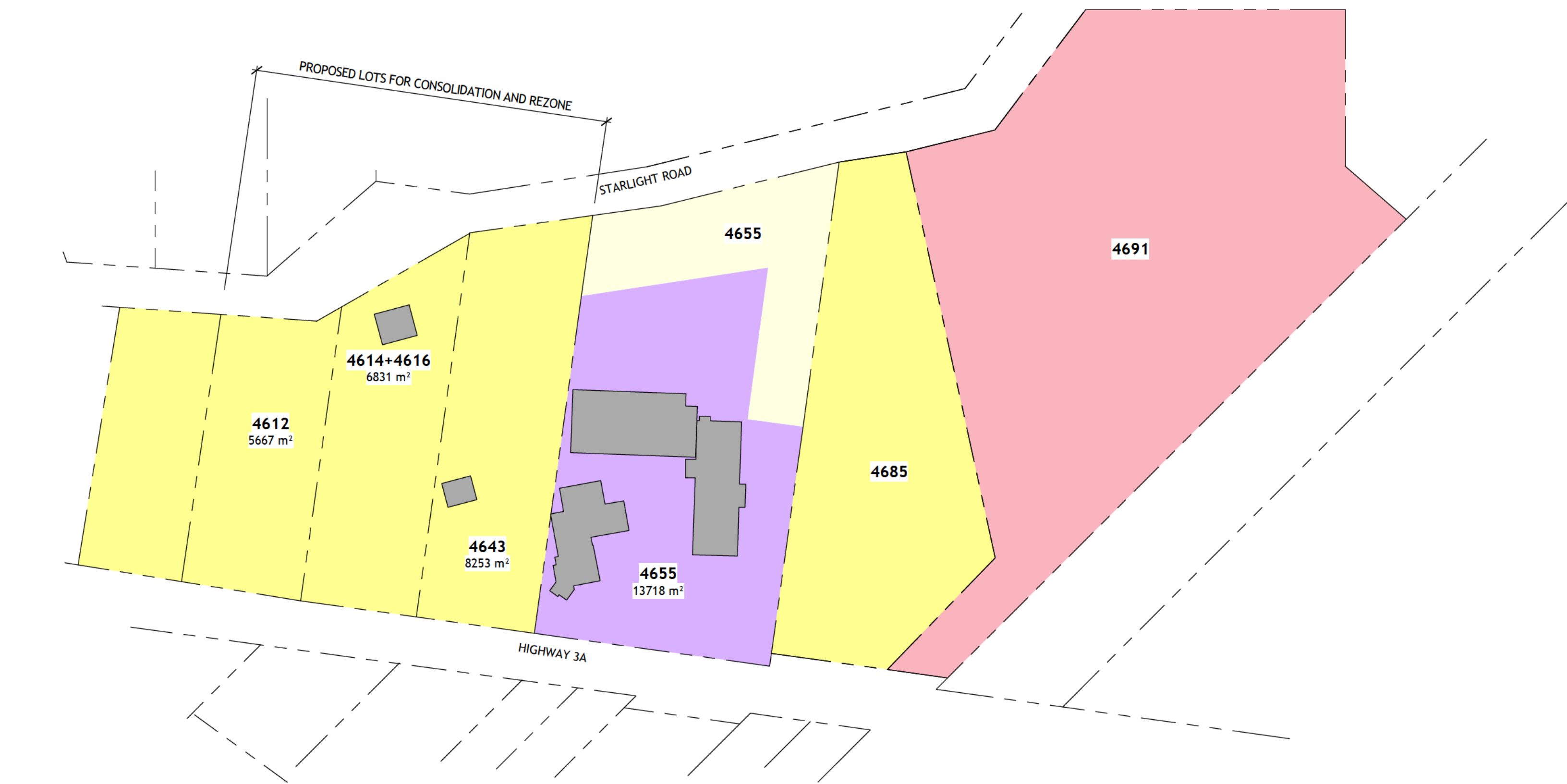
Commercial Workshops:
Machine Shops
Construction, Sales, Repair and Storage of:
Prefabricated Buildings
Wood Product Manufacturing
Office
Day Care Facility

- The maximum site coverage permitted shall be 50 percent of the lot area.
- Excepting a fence, no building or structure may be located within:
 - 15 meters of the front lot line
 - 15 meters of the rear lot line
 - 7.5m of the interior side lot line; or
 - 15 meters of a rear or interior side lot line that abuts an agricultural or residential zone.
- The maximum height of any structure on a lot shall be 15 meters.
- Landscaping shall comply with the requirements of sections 621 and 622.
- An Industrial Development Permit is required for developments on Industrial zoned land.

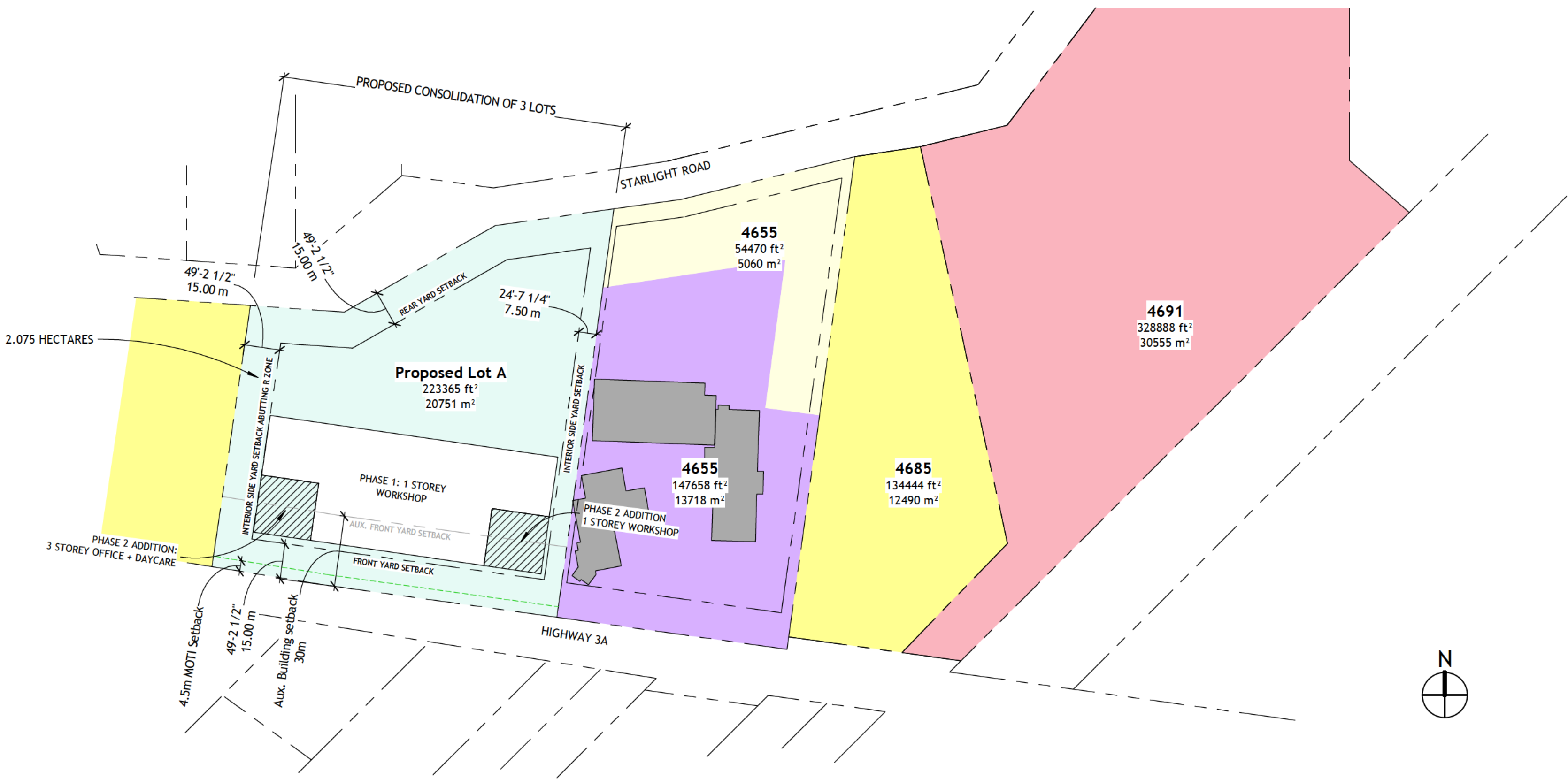
PROJECT DATA		
Legal Description	LOT 5, LOT 4 & LOT 3, PLAN NEP2449, DISTRICT LOT 790, KOOTENAY LAND DISTRICT	
PID	015-282-228/015-289-567/015-289-559	
Land Use	NONE/DUPLEX/SFH	
Development Permit Area	AREA F	
Zoning	Custom Light Industrial (Proposed) - Change from R2	
ZONING REQUIREMENTS		
Item	Required	Proposed
Parcel Size and Coverage		
Parcel Area	20751m2 (2.075 H)	
Parcel Width	146.2 m	
Site Coverage		50%
Principal Buildings		
Setbacks		
front yard		15 m
rear yard		15 m
interior side yard that abuts agricultural or residential		15 m
interior side yard		7.5 m
Height (maximum)		15 m
Auxiliary Buildings		
Setbacks		
front yard		30 m
rear yard		15 m
interior side yard that abuts agricultural or residential		15 m
interior side yard		7.5 m
Height		15 m
Parking		
Number of spaces		
Industrial (7,294m ²)	1.5 spaces per 100m2 of GFA, 1 space/employee plus one for every commercially licensed vehicle for that address (110 total)	1 for every person expected to be working at the facility (30)
Childcare Center (67m ²)	4.4 spaces per 100 m ² GFA (3 total)	1 for every person expected to be working at the facility (2)
Office (1,003m ²)	3.4 spaces per 100m ² of GFA (33 total)	1 for every person expected to be working at the facility (33)
Total	146	65 (+19 for adjacent lot) = 84
Number of accessible spaces	provide one (1) disabled person's parking space for every ten (10) parking spaces required (8 total)	1 for every 100 spaces (per BCBC) x2 2
standard	2.6 m x 5.8 m x 2.2 m (wvxh) Adjacent to Wall 3.2 m x 5.8 m x 2.2 m (wvxh)	Abv. Grade 2.75 m x 6 m x 2.2 m (wvxh) Below Grade 3.05 m x 6 m x 2.675 m (wvxh) Below Grade (adjacent to wall) 3.2 m x 6 m x 2.675 m (wvxh)
accessible	2.4 m+1.5m aisle x 5.4 m x 2.2 m (wvxh)	2.4 m+1.5m aisle x 5.4 m x 2.2 m (wvxh)
Parking provided for an alternate parcel	Where some or all of the off-street parking is provided on a parcel other than that on which the use, building or structure being served is located, a covenant under Section 219 of the Land Title Act must be registered in the Land Title Office in favour of the Regional District of Central Kootenay against the parcel to be used for parking, reserving the off-street parking spaces that are not on the same parcel as the use, building or structure that they are intended to serve, for as long as that use, building or structure exists. 19 Spaces to be registered for existing facility <PARCEL A, PLAN NEP2449, DISTRICT LOT 790, KOOTENAY LAND DISTRICT, (BEING A CONSOLIDATION OF LOTS 1 & 2 SEE CA5564282)PID: 029-966-574>	

Zoning Legend

- C2
- CD
- M1
- R1F
- R2



1 Existing Zoning.
1 : 1500



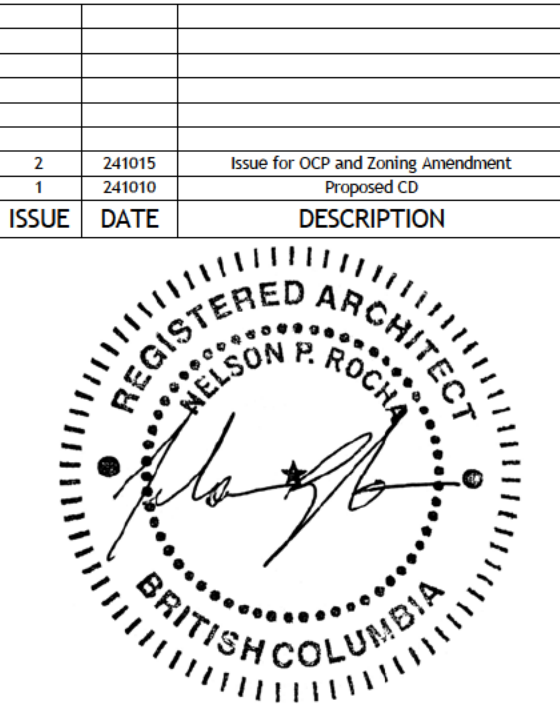
2 Proposed Development
1 : 1500

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OWNER:
NAME OF OWNER HERE

Spearhead Expansion

4655 Highway 3A,
Nelson, BC V1L 6N3



PROJECT #: 231106
DRAWN BY: AW
CHK'D BY: NR
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ARCHITECTURE + PLANNING LTD.

CD Zone

A103

SCALE: 1 : 1500

Zachari Giacomazzo

From: HBE [IH] <HBE@interiorhealth.ca>
Sent: November 27, 2024 10:44 AM
To: Planning
Subject: RE: RDCK Referral - Proposed Bylaw Amendment Application Z2410F

CAUTION This email originated from outside the organization. Please proceed only if you trust the sender.

Good day Zachari,

Thank you for the opportunity to provide comments for consideration regarding the above referenced application. It is our understanding purpose of the proposed land use bylaw amendment application is to rezone the subject lands from Country Residential (R2) to Comprehensive Development (CD) and amend the land use designation from Country Residential (CR) to Comprehensive Development (CD) in order to authorize the expansion of the existing wood product manufacturing business. We also understand that this property is currently serviced by onsite drinking water (e.g. a well) and wastewater disposal (sewerage system).

Please note that this referral has been reviewed from Healthy Community Development and Environmental Public Health perspective, and the following comments are offered in consideration of both phases (1 and 2) of the proposed development for your consideration. Based on the current application and information provided by the Regional District of Central Kootenay, we do have some concerns with this proposal. Our rationale is provided below.

Community Planning, Density and Services

[Healthy Built Environment \(HBE\)](#) is a term used to describe community environments which population health research has demonstrated are linked to improved health outcomes at the population level. From this perspective, it is important that workplaces be relatively close to where people live so that fewer resources are used for transportation (lowering living costs), and people have the opportunity to be more physically active and social. This supports reduced chronic diseases, increased mental health and overall well-being. Best practice is to guide that industrial areas are located close, but not too close, to residential areas. However, agreeing on suitable locations for industrial use within a community is often difficult because these uses are often not compatible with other uses (e.g. noise, dust and heavy machinery near residential or commercial uses).

We do acknowledge that having a robust and diversified economy is very important for supporting the health of community members because when families have stable, well-paid jobs they are better able to achieve what they need to live a healthy life (e.g. stable, suitable housing, adequate healthy food, education, recreation, etc.).

Community planning must be conducted carefully to limit the production of, and exposure to air pollution, noise pollution and other environmental hazards. Housing proximity to dense, busy areas or industrial sites is also related to noise levels inside the home. Residents in small and medium-sized communities can be affected by noise exposure where residential areas are located close to dense, busy areas such as roadways and industrial areas. Higher levels of noise exposure are associated with sleep disturbance, fatigue, and other mental and physical health problems.

We note that the proposed expansion of the existing wood product manufacturing business (industrial operation) is located in an area the is primarily zoned and designated residential, with some limited commercial. This would be a significant change to the local are community / neighbourhood area and may create conflict between the different land users because of their incompatibility.

Drinking Water

A cornerstone of healthy built rural development is keeping drinking source water and potential contamination sources (far) apart. Drinking water is more reliably safe when there are more safeguards in place from source water to tap. Ensuring source water is free from contaminants is a very important safeguard. We note in the case of this application, this consideration would appear to be even more paramount from a community planning perspective, understanding that there are 2 groundwater aquifers located in the proposed development, one (Aquifer 1018) being considered moderately vulnerable, while the other (Aquifer 994) being considered highly vulnerable. Please see the images below for more detailed information on each of them.

Aquifer Search

Basic Search

Search by aquifer name or number (leave blank to see all aquifers)

Advanced Search

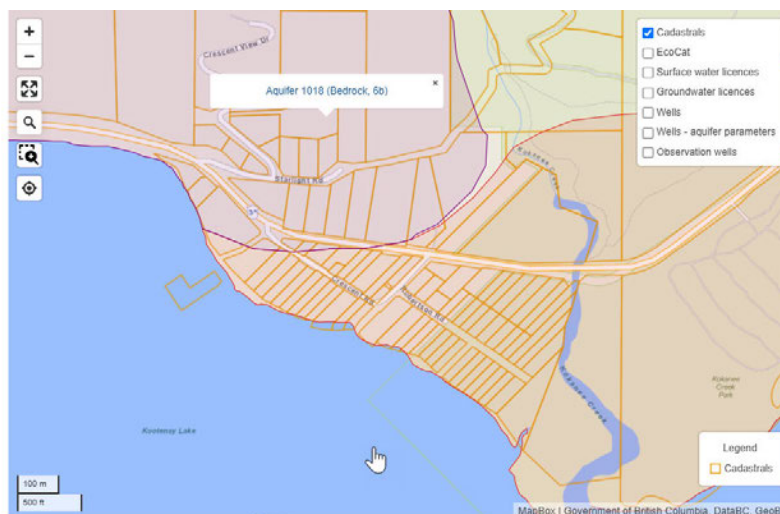
☐ Any field match ☒ All field match

- ☐ Advanced mapping
- ☐ Aquifer notations
- ☐ Aquifer parameters
- ☐ Drilling and operation advisory
- ☐ Groundwater surface water interactions
- ☐ Numerical model
- ☐ Other information
- ☐ Water budget

Search **Reset**

Download all aquifers

[Aquifer extract \(XLSX\)](#)
[Aquifer extract \(CSV\)](#)



Showing 1 to 1 of 1

Aquifer number	Aquifer name	Descriptive location	Material	Litho stratigraphic unit	Subtype	Vulnerability	Size-km²	Productivity	Demand	Year of mapping
1018	1018	Crescent Bay	Bedrock	Granodioritic rock; Nelson Batholith Group; Mesozoic Era	Fractured crystalline bedrock	Moderate	8.4	Moderate	Low	2012

Aquifer Search

Basic Search

Search by aquifer name or number (leave blank to see all aquifers)

Advanced Search

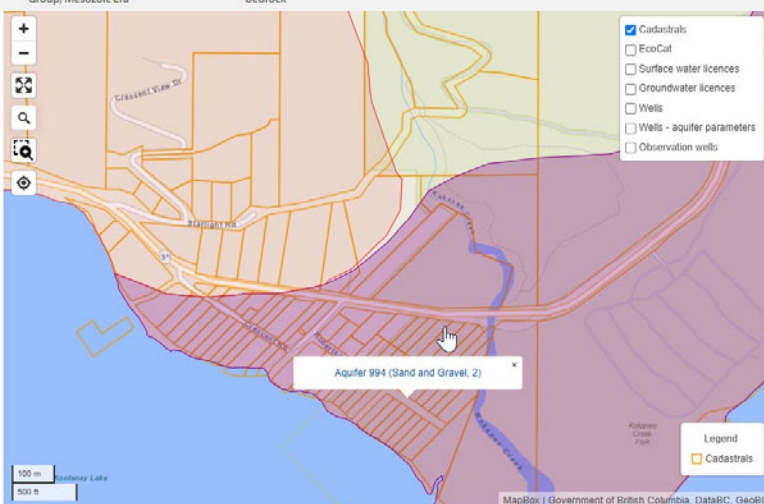
☐ Any field match ☒ All field match

- ☐ Advanced mapping
- ☐ Aquifer notations
- ☐ Aquifer parameters
- ☐ Drilling and operation advisory
- ☐ Groundwater surface water interactions
- ☐ Numerical model
- ☐ Other information
- ☐ Water budget

Search **Reset**

Download all aquifers

[Aquifer extract \(XLSX\)](#)
[Aquifer extract \(CSV\)](#)



Showing 1 to 1 of 1

Aquifer number	Aquifer name	Descriptive location	Material	Litho stratigraphic unit	Subtype	Vulnerability	Size-km²	Productivity	Demand	Year of mapping
994	994	Kokanee Point	Sand and Gravel	Fluvial sand & gravel deposits	Unconfined sand and gravel - deltaic	High	1.2	Moderate	Moderate	2012

We note that with the aquifer identified as 994 being highly vulnerable (aquifer has little natural protection against contamination introduced at the ground surface), any additional development should be carefully assessed. We are aware of smaller communities or settlement areas in the BC interior that have been developed / densified based on onsite services (wells and septic systems), and that over time have experienced the groundwater in the aquifer being impacted or contaminated. This can lead to the drinking water for all users not being considered safe to consume or use, and/or expensive solutions required to fix and treat it.

Regarding the proposed expansion of the wood product manufacturing business, it makes mention in Phase 2 of developing a daycare. For the applicants information, any public facility (or open to the public, e.g. the children attending the daycare and the staff working at the daycare) on it's own water source is considered a water supply system under the [Drinking Water Protection Act](#) and [Regulations](#). More information on permits or approvals required to provide drinking water to consumers can be found on our public website here [Drinking Water Providers & Operators | Businesses | IH \(interiorhealth.ca\)](#).

Sewerage Disposal

Any home or building that is not connected to a community sewer system needs a method for getting rid of human waste. All buildings with indoor plumbing must have a sewerage system in compliance with the [BC Sewerage System Regulation](#). Ensuring there is enough unencumbered space (undeveloped, untouched and left available in perpetuity) for a primary and reserve disposal system is a critical consideration for any proposed development on it's on disposal system. More information on constructing a new or expanding an existing sewerage disposal system can be found on our public website here [Sewerage, Subdivisions & Healthier Industries | IH \(interiorhealth.ca\)](#).

Based on the above healthy community development and population health comments and perspectives, we recommend that the Regional District of Central Kootenay carefully consider whether to support amending the land use designation and rezoning of the subject lands given the concerns we've identified. Interior Health is committed to working collaboratively with the Regional District of Central Kootenay to support healthy, sustainable community development, land use planning and policy creation.

If you have any questions or require additional information, or would like to discuss our response further, please feel free to email me directly at hbe@interiorhealth.ca.

Regards,

Mike Adams (he/him/his)

Team Leader, Healthy Community Development
Interior Health

c:

p:

e:

www.interiorhealth.ca



Interior Health

Interior Health would like to recognize and acknowledge the traditional, ancestral, and unceded territories of the Dākelh Dené, Ktunaxa, Nlaka'pamux, Secwépemc, St'át'imc, Syilx, and Tsilhqot'in Nations where we live, learn, collaborate and work together.

From: Planning <PlanDept@rdck.bc.ca>

Sent: Wednesday, October 23, 2024 2:38 PM

To: Planning <PlanDept@rdck.bc.ca>

Cc:

Subject: RDCK Referral - Proposed Bylaw Amendment Application Z2410F

Caution: This email originated from outside of Interior Health. Do not click links or open attachments unless you recognize the sender, their email address, and know the content is safe. If you suspect this is a phishing or fraudulent email please forward it to spam@interiorhealth.ca.

Good Afternoon,

Attached is a referral package for the above noted file.

Please return your comments, if any, to plandep@rdck.bc.ca prior to November 22, 2024.

Kind regards,

Zachari Giacomazzo | Planner

Regional District of Central Kootenay

Phone: 250.352.8190 | Fax: 250.352.9300

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rdck.ca



January 15, 2025

Ben Hall
Partner – Spearhead Timberworks Inc.
4655 BC-3A
Nelson, BC V1L 6N3

Archaeological Overview Assessment of proposed rezoning of Parcel A, Lot 3, Lot 4, and Lot 5, District Lot 790, Plan NEP2449, Kootenay Land District.

This report summarizes the findings of a desktop Archaeological Overview Assessment (AOA) of the proposed parcel rezoning located at Parcel A, Lot 3, Lot 4, and Lot 5, District Lot 790, Plan NEP2449, Kootenay Land District (PID 15289559, PID 15289567, and PID 15282228) northeast of the City of Nelson, BC (Figure 1). The subject properties, owned by the Spearhead Group, are slated for rezoning with the Regional District of Central Kootenay (RDCK). Through rezoning application process, an AOA of the subject property was requested by the Ktunaxa Nation Council; therefore, Ben Hall of Spearhead Timberworks Inc. retained Ursus Heritage Consulting Ltd. (Ursus) to conduct an AOA, which included a field review of the property.

The objectives of the AOA are to:

- Identify and evaluate any areas of archaeological potential within the subject study area that warrant detailed archaeological investigation.
- Provide recommendations regarding the need and appropriate scope of further archaeological studies.

Archaeological sites can be defined as physical evidence of past human use of an area that, in the subject region, is typically represented by artifacts, lithic debitage (by-products of toolstone quarrying and lithic artifact production), faunal remains, fire altered rock, hearth/fire pit features, and habitation and subsistence features.

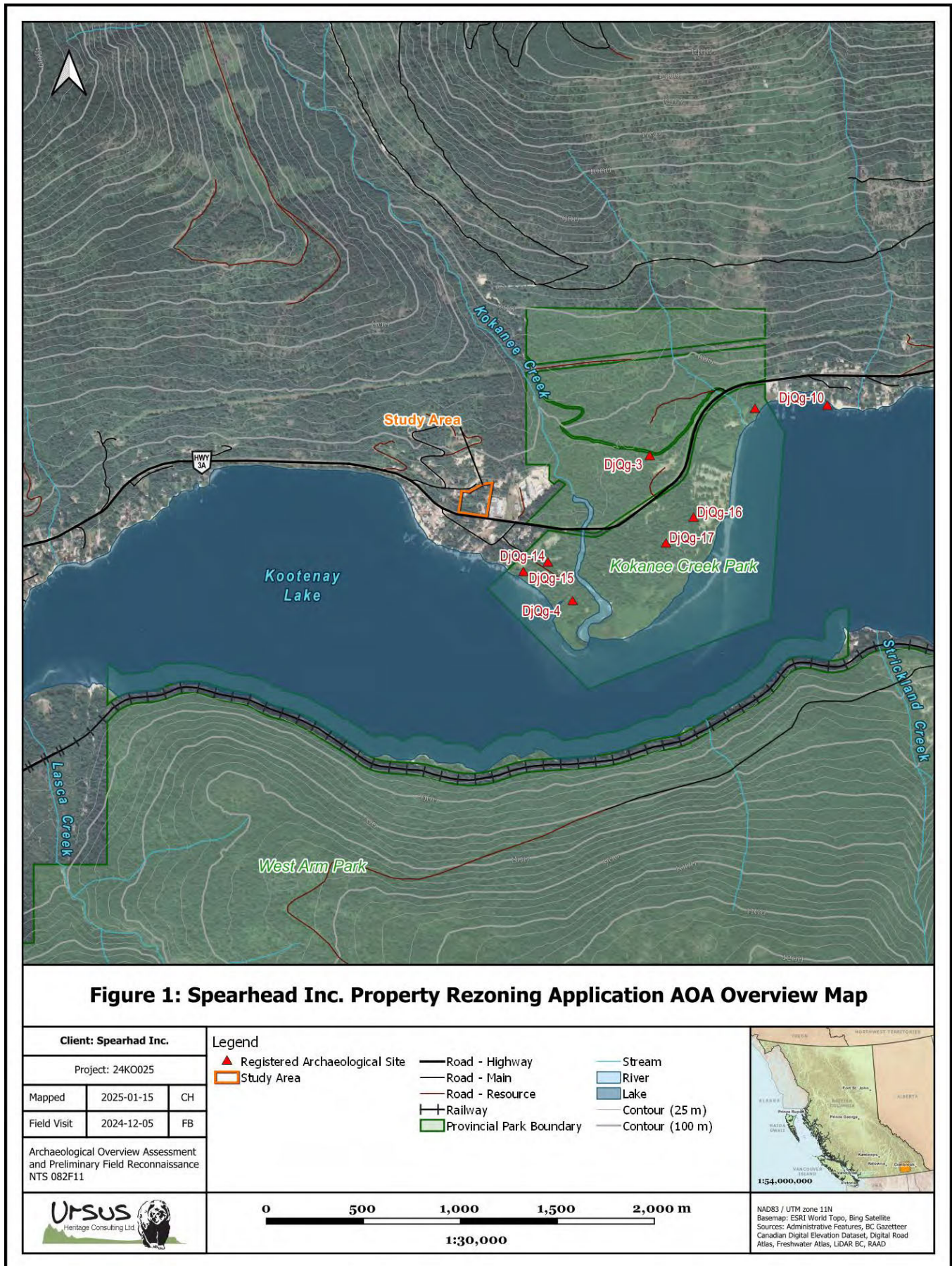
Site Protection

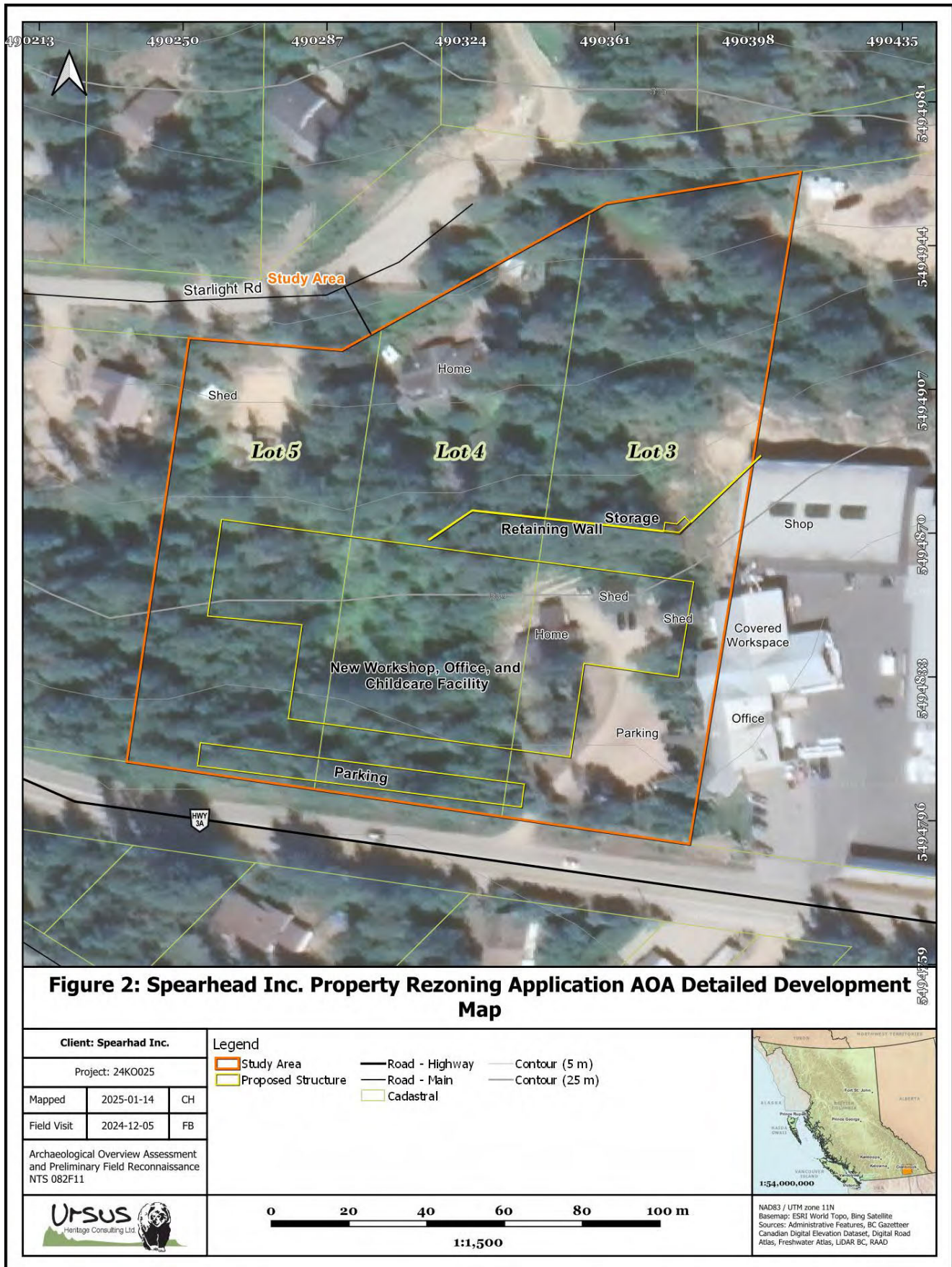
In British Columbia, archaeological sites are protected by the *Heritage Conservation Act (HCA)*. Sites that are automatically protected by the *HCA* include: sites that pre-date 1846; sites of an unknown age that have a likelihood of dating prior to 1846 (i.e., lithic scatters); aboriginal rock art; burial places; and historic shipwrecks.

Project Description

The study area is located on a 2.07 ha (5.12 acre) area occupying three cadastral parcels (PID 15289559, PID 15289567, and PID 15282228) located approximately 0.2 km west of Kokanee Creek Provincial Park and 14.5 km northeast of the City of Nelson. Highway 3A provides access to the study area along the south. The study area adjoins previously developed residential and industrial properties, including a property to the east owned by the Spearhead Group. The study area is located approximately 225 m northeast of the Kootenay Lake and 435 m west of Kokanee Creek.

Should rezoning be successful, proposed development includes the construction of a one-story workshop, a three-story office and childcare facility, paved parking, retaining walls, and storage structures (Figure 2). Two residential structures and three sheds will be demolished. Significant ground disturbance will occur as a result of the proposed development including tree removal, ground stripping, and levelling and grading.





Study Area Setting

The study area is set on the toe of a steeply sloping south-aspect hillside overlooking the alluvial fan of Kokanee Creek where it enters the West Arm of Kootenay Lake. Kootenay Lake is heavily impacted by seasonal water level fluctuations, influenced in part by downstream hydroelectric dams along the Lower Kootenay River. The subject property is located approximately 225 m northeast of Kootenay Lake and 435 m west of Kokanee Creek.

The study area is encompassed by a single biogeoclimatic zone, the Interior Cedar Hemlock (ICH), as defined by the biogeoclimatic classificatory system utilized by the Ministry of Forests (Meidinger and Pojar 1991). The ICH zone typically occurs at low to mid elevations (400 to 1500 m asl) within valley areas of the Interior Plateau and is characterized by cool and wet winters and the summers which are warm and dry. In an undeveloped context, the ICH zone supports western hemlock and western redcedar as the dominant species with western larch, Douglas fir, western white pine and white birch occurring in minor percentages. Shrub and groundcover layers include Utah honeysuckle, Oregon grape, beaked hazelnut, and mockorange; with devil's club, twisted stalk, and a variety of fern species occurring in wetter locations (Meidinger and Pojar 1991). The ICH zone has a wide range of habitat niches for wildlife and attracts many animals including mule deer, white-tailed deer, moose, Rocky Mountain elk, black bear, cougar, and red squirrel. These forests also support a diverse number of birds including barred owl, boreal owl, great horned owl, golden eagle, pileated woodpecker, Stellar's jay, grey jay, and ruffed grouse (Meidinger and Pojar 1991).

First Nation Consultation Area

The BC Consultative Area Database (CAD) identifies the study area as being located within the consultative area of the ?Akisq'nuk First Nation (formerly Columbia Lake Indian Band), ?Aq'am (formerly St. Mary's Indian Band), Ktunaxa Nation Council, Lower Similkameen Indian Band, Okanagan Indian Band, Okanagan Nation Alliance, Osoyoos Indian Band, Penticton Indian Band, Shuswap Band, Sinixt Confederacy, Upper Nicola Band, Yaq'it ?a-knuq'i ?it First Nation (formerly Tobacco Plains Indian Band), and Yaqan Nu'iy (formerly Lower Kootenay Band).

Previous Archaeological Study and Recorded Sites

The British Columbia Remote Access Archaeological Database (RAAD) application at the Archaeology Branch was queried and revealed that the study area is not located within any landscape-level archaeological potential model approved by the BC Archaeology Branch. No previous archaeological field studies queryable through the BC Archaeology Branch have been completed to date within the study area. Archaeological field studies in the vicinity of the study area have typically been associated with park operations at Kokanee Creek Provincial Park (Alan 1971; Ursus 2020; Ursus 2023; Ursus 2024). There are eight (8) registered archaeological sites within 5 km of the study area (see Table 1).

Table 1. Recorded archaeological sites within 5 km of the study area.

Borden Name	Site Type	Distance from Study area	Year Initially Recorded	Permit(s)
DjQg-15	Precontact: Subsurface and Surface Lithics	340 m southeast	2017	2017-0207
DjQg-14	Precontact: Subsurface Lithics	390 m southeast	2017	2017-0207
DjQg-4	Precontact: Surface Lithic	580 m southeast	1972	1972 Non-permit 1989-0061
DjQg-3	Precontact: Surface Lithic	800 m northeast	1971	1971-0030
DjQg-17	Precontact: Subsurface Lithics	930 m east	2021	2020-0381
DjQg-16	Precontact: Subsurface Lithics	1060 m east	2021	2020-0381
DjQg-13	Precontact: Subsurface and Surface Lithics, Subsurface Fauna	1330 m northeast	2017	2017-0207
DjQg-10	Postcontact: Transportation, Marine, Shipwreck	1760 m northeast	1992	1992 Non-permit

AOA Methodology

The AOA was conducted in accordance with the *British Columbia Archaeological Impact Assessment Guidelines* (Archaeology Branch 1998) and *British Columbia Archaeological Overview Assessment Guidelines* (Archaeology Branch 2023) issued by the Archaeology Branch at the Ministry of Forests. For the current project, the AOA involved:

- A review of pertinent regional archaeological, historical, ethnographic, geological, and biophysical literature.
- A review of the property's biophysical and topographic characteristics.
- An evaluation of the previous impacts to the natural landscape of the study area.
- An evaluation of archaeological site potential.

The archaeological site potential assessment process considers a number of criteria to establish potential ratings for a given landscape. This AOA employs a two-tiered rating system with low or high potential values assigned based on topographical and biophysical characteristics coupled with the examination of a number of cultural and archaeological criteria.

A correlation exists between particular biophysical characteristics and the incidence of archaeological sites. The presence of these biophysical characteristics can be used to predict the likelihood of a location being used prehistorically. Generally, people gravitate toward areas with access to water, shelter, food and raw material resources, seeking out locations that are relatively level, well-drained, with good solar aspect, and provide a good vantage point. Archaeologically it is important to not only examine these biophysical characteristics as they appear currently but to also consider the changes in these biophysical characteristics over time, from the Late Pleistocene through to the Holocene.

The biophysical characteristics that are considered are:

- Presence and nature of water features.
- Wildlife and fish values.
- Slope, aspect, and topography.
- Presence of bedrock exposures, karst, talus, or boulders suitable for rock art locations, caves, rock shelters, or lithic raw material sources.
- Vegetation and forest cover composition and age.

Further to the biophysical characteristics, a number of cultural and archaeological criteria are considered to further refine the archaeological site potential assessment included:

- Connection of study area to First Nations' traditional use localities, oral history, and/or known traditional place names.
- Proximity of study area to previously recorded archaeological sites.
- Prehistoric settlement and resource use of the region with a specific emphasis on the nature and characteristics of Kootenay region archaeological sites.
- Level and type of past historic land use and the resulting impacts.
- The previous archaeological experience of the researcher.

AOA Results

This section contains the determination of archaeological potential for the study area. These results are framed within the context of the background research; including archaeological and ethnographic data, topography and geomorphology, structural geology, paleoenvironmental reconstruction, and the historic record.

The entirety of the study area was assessed with low potential for the presence of archaeological sites. The low potential assessment is based upon:

- Proximity to a major hydrologic feature. The study area is located approximately 225 m northeast of Kootenay Lake and 435 m west of Kokanee Creek. Kootenay Lake is one of the largest lakes in the Kootenay region and supported intensive pre-contact Indigenous occupation and resource use.

It is understood that the study area is proximal to significant hydrologic features that are reflective of high archaeological potential.

- High fish, wildlife, and plant values. Kootenay Lake and Kokanee Creek supported large resident populations of trout, kokanee salmon, sturgeon, burbot, and other coarse fish. The study area is located in an area understood to have supported intensive Indigenous harvesting/processing activity areas that would have generated large and significant archaeological deposits. The environment within and surrounding the study area is a valley bottom with ample access to diverse plant and wildlife communities that would have been utilized by Indigenous peoples. It is understood that the study area contains sufficient proximity to fish, terrestrial wildlife, and plant values that are reflective of high archaeological potential.
- Presence of areas of favourable slope, aspect, and topography. Much of the subject property is set on steeply sloping, convoluted south to south-southeast aspect terrain with frequent bedrock outcrops. The exception is the lower elevations at the southernmost end of Lots 3 and 4, which are characterized by more moderately sloped undulating terrain. It is understood that the terrain within the study area is reflective of low archaeological potential.
- Proximity and setting of previously recorded archaeology sites. Known pre-1846 archaeological sites on and surrounding the alluvial fan of Kokanee Creek are isolated to several small low density site deposits, which are expected to underrepresent the intensity of Indigenous occupation and resource use of the location. This is likely a reflection of the paucity of archaeological investigation in Kokanee Creek Provincial Park and surrounding private residential and commercial lots prior to development. As such, the low volume of previously recorded archaeological sites in proximity to the study area is not considered reflective of low archaeological potential, rather it reflects the limited archaeological study sample size.
- Indigenous cultural history. Bouchard and Kennedy (2000) provide a comprehensive ethnography and ethnohistorical summary of the Lower Kootenay and Columbia Hydropower Region, which includes an examination of the Kootenay Lake area as it relates to its use by Sinixt, Ktunaxa, Okanagan (Sylix), and Secwepemc peoples. Their research indicates that prior to the incursion of colonial settlement, the West Arm of Kootenay Lake was utilized by Ktunaxa and Sinixt peoples (known in earlier ethnographic and historic literature as the Lakes Indians or Arrow Lakes Band) as evidenced by historic and ethnographic accounts and the presence of traditional placenames (Bouchard and Kennedy 2000).
- Previous land modifications and sediment disturbances. The study area has been subject to various levels of previous disturbance resulting from land clearing, residential structure building, highways and road construction, and buried utility installation. The southern end of Lot 3 contains two sheds and a house structure as well as a large parking area, the construction of which encompassed significant cut and fill grading of the naturally undulating terrain that was present prior to the development. On the northern half of Lot 4 is a house set on a leveled and landscaped building site cut into the naturally sloping terrain, with a second leveled and landscaped area immediately below. On the northern half of Lot 5 a shed structure set upon a similar levelled and landscaped building site cut into the naturally sloping terrain.

Fraser Bonner of Ursus conducted the field review on December 5, 2024. The study area was examined and evaluated for the presence of and potential for archaeological sites (Figure 3). No archaeological sites were identified during the field review and based on field observations, the potential for the presence of archaeological sites is assessed as low. This low potential assessment is based on the presence of steeply sloping, convoluted terrain mixed with more moderately sloped undulating terrain with frequent bedrock outcrops (Photos 1 - 3) and an absence of archaeologically significant terrain features such as level, well-drained terraces, benches, and/or promontories that are conducive to the presence of archaeological sites.



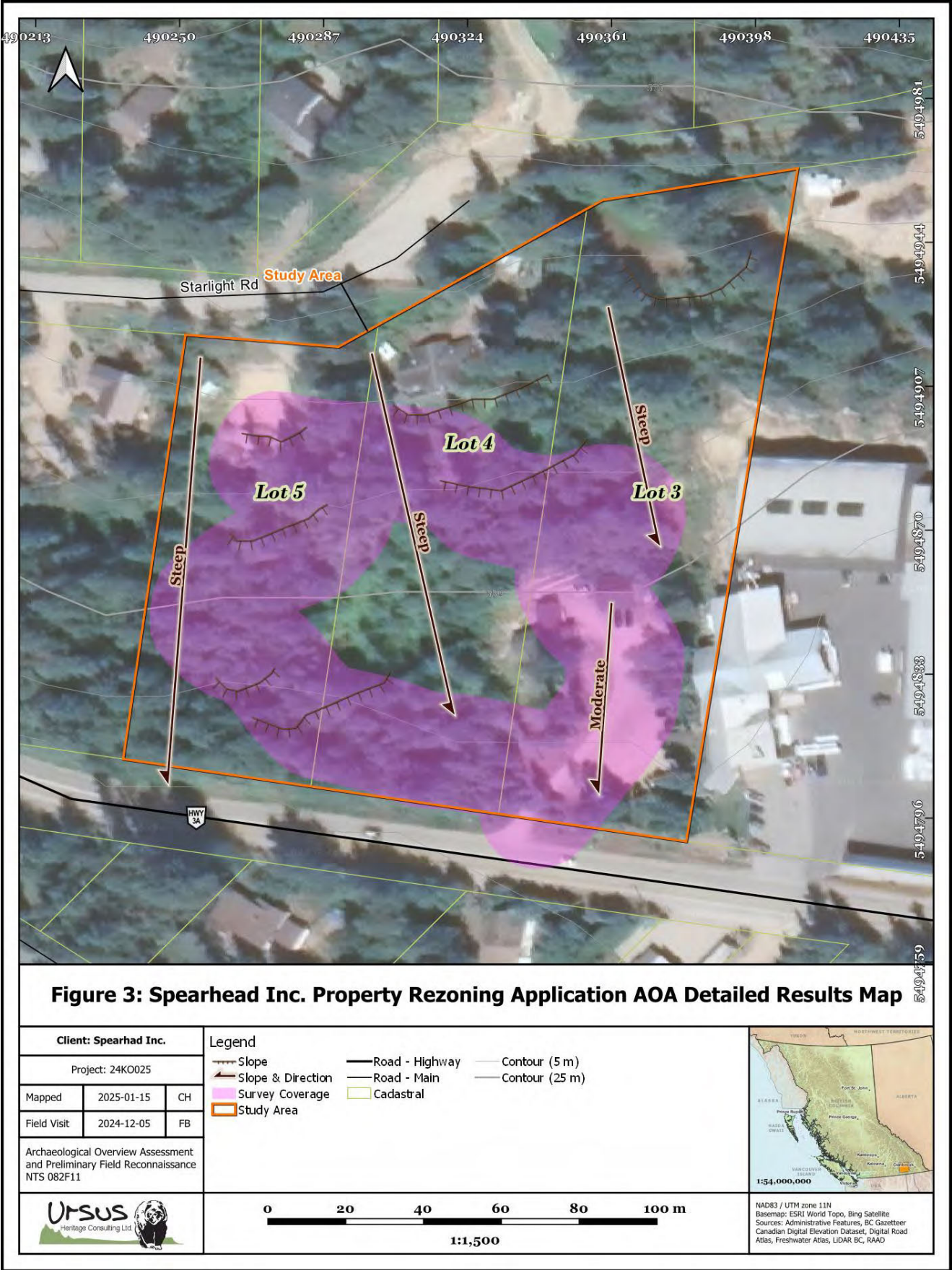
Photo 1. View north of the upper portion of the subject property showing the steep terrain and bedrock outcrops typical to the area.



Photo 2. View northwest of the mid portion of the subject property showing the sloping terrain and informal access road that cuts through the area.



Photo 3. View southwest of the lower portion of the subject property showing the more moderately sloped and convoluted terrain typical to the area.



Recommendations

Based on the results of the AOA, the entirety of the study area is assessed with low potential for the presence of archaeological sites; therefore, no further archaeological study is recommended for the subject properties.

Users of this report should be aware that even the most thorough investigation may fail to reveal all archaeological remains that exist in an area, including sites protected by the BC Heritage Conservation Act (1996). All users of this report should also be aware that: (1) archaeological remains in BC are protected from disturbance, intentional or inadvertent, by the Heritage Conservation Act; (2) in the event that archaeological remains are encountered, all ground disturbance in the immediate vicinity must be suspended at once; (3) it is the individual's responsibility to inform the Archaeology Branch, and appropriate First Nations as soon as possible, about the location of the archaeological remains and the nature of the disturbance; and (4) the Heritage Conservation Act may incur heavy fines and imprisonment for failing to comply with these requirements.

The AOA is concerned with identification of archaeological potential and archaeological sites within the study area. It does not address potential for traditional use sites within the study area. It is not the intent of this report to document First Nations' interest in the land. The study was conducted without prejudice to First Nations' treaty negotiations, Aboriginal rights, or Aboriginal title.

Please contact Ursus Heritage Consulting if you require further information regarding the AOA.

With respect,



Chris Hamilton, BSc
Archaeologist
Ursus Heritage Consulting Ltd.

Reviewed by,



Fraser Bonner, BA
Senior Archaeologist and Project Manager
Ursus Heritage Consulting Ltd.

References

Alan, C. D.

- 1971 The Provincial Museum Archaeological Survey of Parks and Recreation Reserves Summer, 1971. Permit 1971-0030. Report on file with the BC Archaeology Branch, Ministry of Forests, Victoria, BC.

Archaeology Branch

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1998 Archaeological Impact Assessment Guidelines. Archaeology Branch – Ministry of Forests, Victoria, BC.
2023 Archaeological Overview Assessment Guidelines. Archaeology Branch – Ministry of Forests, Victoria, BC.

Bouchard, R. and D. Kennedy

- 2000 First Nations' Ethnography and Ethnohistory in British Columbia's Lower Kootenay / Columbia Hydropower Region. Report on file with Columbia Power Corporation.

Meidinger, D. and J. Pojar

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I.R. Wilson

- 1989 Fifteen Referrals – East Kootenay, Central Kootenay, Kootenay Boundary and Fraser Valley Highways Districts: Detailed Heritage Resource Impact Assessment. Permit 1989-0061. Report on file with the BC Archaeology Branch - Ministry of Forests, Victoria, BC.

Ursus Heritage Consulting Ltd.

- 2020 Archaeological Impact Assessments of Provincial Parks Developments Proposed by BC Park, Ministry of Environment within the Kootenay Region – Final Report. Permit 2017-0207. Report on file with the BC Archaeology Branch - Ministry of Forests, Victoria, BC.
2023 Archaeological Impact Assessment of Proposed Toilet and Trail Access Upgrades at Kokanee Creek Provincial Park, east of Nelson – Interim Report. Permit 2020-0381. Report on file with the BC Archaeology Branch - Ministry of Forests, Victoria, BC.
2024 Archaeological Overview Assessment and Preliminary Field Reconnaissance of the proposed works yard upgrade at Kokanee Creek Provincial Park, BC. Report on file with Ursus Heritage Consulting Ltd.

INITIAL SEPTIC INVESTIGATION

HCL Project # 24746

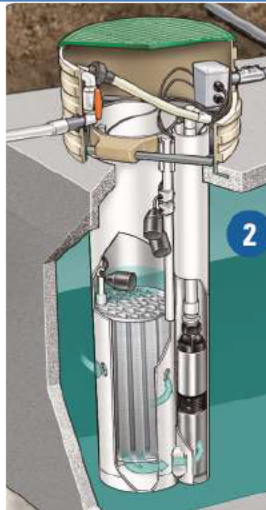
RDCK File # Z2410F

Tax Role # 21-707-03623.000

21-707-03622.000

21-707-03621.000

Spearhead-SPHD Expansion On-Site Wastewater Review



hemsworth
ARCHITECTURE

SPEARHEAD



HIGHLAND CONSULTING LTD
CIVIL ENGINEERING

Prepared By:

Highland Consulting Ltd

#210-601 Front Street,

Nelson, BC

V1L 4B6

Rev	Desc.	By	Date
A	For Review	PK	Jan 6, 2025
B	Draft to Client	PK	Jan 8, 2025
C	Final	PK	Jan 17, 2025



1. PROJECT BACKGROUND

2. OBSERVATIONS

3. EXISTING SEWAGE SYSTEM REVIEW

4. FLOW RATES

5. CONCEPTUAL SEWAGE SYSTEM DESIGN

5.1. Hydraulic Loading Rate

5.2. Design Calculations

5.3. Critical Standards

5.4. Design Rational

5.5. Well Locations

5.6. Linear Loading Rate

5.7. Monitoring Requirements

6. SOIL PROFILES

7. CONCLUSION

8. CLOSURE

APPENDICES

APPENDIX A – Drawings/Design Sketch

APPENDIX B - Soil Logs

APPENDIX C - Legal Information



1. PROJECT BACKGROUND

The subject property is located approximately 15 km northeast of the City of Nelson in a predominantly Rural Residential Area. The proposed development consists of three existing residential lots which are located directly west of the existing Spearhead wood product manufacturing business and directly adjacent to and accessed from Highway 3A.

Legal Description	Size
4612 Starlight Road, LOT 5 DISTRICT LOT 790 KOOTENAY DISTRICT PLAN 2449 (015-282-228)	0.53 ha
4614-4616 Starlight Road, LOT 4 DISTRICT LOT 790 KOOTENAY DISTRICT PLAN 2449 (015-289-567)	0.68 ha
4643 Highway 3A, LOT 3 DISTRICT LOT 790 KOOTENAY DISTRICT PLAN 2449 (015-289-559)	0.81 ha

It is understood that Spearhead (client) are currently investigating the feasibility to build an expansion on the site of their current factory in Nelson, BC. The new facility will both increase their existing manufacturing capacity and allow for the production of high end glulams. Located to the north of Highway 3A, the site features a significant slope from north to south and has their existing offices and shop space on it.

The proposed project will be broken into two phases:

- Phase 1 - consisting of a single story $\pm 5,300$ sq.m. of light industrial space with a steel and glulam structure with CLT wall and roof panels. Mechanical and electrical rooms as well as parking will be located below the building.
- Phase 2 - includes a ± 600 sq.m. addition to the phase 1 industrial space, and $\pm 1,800$ sq.m. of office space (with a daycare component) in a three story building.

It is the client's intention that all three phases will be designed concurrently, however only phase 1 will be built at this time.

The purpose of this report is to assess the subject property(s) capacity for an on-site septic system with additional redundancy.

2. OBSERVATIONS

A site assessment was completed by Mr Paul Kernan, P.Eng, and Jacob Hildebrand of Highland Consulting Ltd on November 19th & 20th, 2024. The assessment consisted of several test pits at 1.5m depth and several perc tests. A full set of soil logs and associated percolation results can be found in appendix B. The location map (Appendix A) indicates the test pit locations. In addition to the above, assessment on slope grade, surrounding surface water features and relevant features such as buildings, existing septic systems, bedrock crops, potential break out points and existing/proposed wells were undertaken.

The septic system for all combined phases (1 & 2) of development will provide the capacity for a 5300 m² production shop, new offices, a day care facility and a 1500 m² shop expansion. This equates to a total conservative flow of 5.78 m³/day maximum daily flow rates. Flow rates of 22.7 m³/day or less typically falls under Interior Health (IH) jurisdiction and is required to be designed to the Sewage System Regulation (SSR) and conform to the Sewage System Standard Practice Manual Version 3.



A site investigation report, soil assessment and detailed design of system are required to be filed with IH, prior to construction.

3. EXISTING SEWAGE SYSTEM REVIEW

It is beyond the scope of this report to review the existing septic system filed under IH servicing the existing spear head facility. It is understood that the proposed new facility will have its own on-site system meeting IH legislation.

4. FLOW RATES

Accommodation Type/Phase	# Units	Flow per unit (L/day)	Daily Flow (L/day)
Phase 1 - 5300 sq.m Production Shop			
Production (Factory) Shop Staff	65	50	3250
Phase 2 - New Offices/Day Care			
Office staff	20	50	1000
Day Care	12	65	780
Additional staff	15	50	750
		Sub Total Flow	5780

Figure 1. Theoretical Flow Rates

*Daily per capita design flow rates are obtained for Maximum Daily Flow from Sewage System Standard Practice Manual (Version 3), Ministry of Health (SPM V3). Further investigation is required.

5. SEWAGE SYSTEM DESIGN

5.1. Hydraulic Loading Rate (HLR)

A HLR for the native soils are selected from a soil analysis.

Treatment Standard	HLR	Basal Area Required
Type 1	40 L/m ² /d	144.5 m ² /day
Type 2	65 L/m ² /d	88.92 m ² /day
Type 3	130 L/m ² /d	44.46 m ² /day

Figure 2. Hydraulic Loading Rates



Table II- 22. Maximum allowable HLR based on soil type

SOIL TEXTURE GROUP	STRUCTURE AND CONSISTENCE CATEGORY	TYPE 1 (L/DAY/M ²)	TYPE 2 (L/DAY/M ²)	TYPE 3 (L/DAY/M ²)
Very or Extremely Gravelly Sands	F or P	45	65	150
Gravelly Sands and Coarse Sand	F	40	65	130
	P	35	65	120
Sand, Loamy Sand	F	30	60	90
	P	27	50	80
Fine Sands, Loamy Fine Sands, Sandy Loams	F	27	50	80
	P	23	45	70
	VP	17	40	50
Loam, Silt Loam, Silt	F	23	40	70
	P	15	30	50
	VP	12	25	35
Clay Loam, Sandy Clay Loam, Silty Clay Loam	F	15	25	40
	P	12	15	20
	VP	NA	NA	NA
Sandy Clay, Silty Clay, Clay	F	12	15	20
	P	NA	15	15
	VP	NA	NA	NA

Table II- 23. Maximum allowable HLR based on permeability or percolation rate

KFS RANGE (MM/DAY)	PERCOLATION TEST RANGE (MIN/INCH)	TYPE 1 (L/DAY/M ²)	TYPE 2 (L/DAY/M ²)	TYPE 3 (L/DAY/M ²)
> 8000	< 1.0	45	65	150
4000 – 8000	1 – 2	45	65	130
2000 – 4000	2 – 4	35	65	100
1000 – 2000	4 – 7.5	30	60	90
550 – 1,000	7.5 – 15	27	50	80
300 – 550	15 – 30	23	40	70
150 – 300	30 – 60	15	25	40
75 – 150	60 – 120	12	15	20
< 75	> 120	NA		



Table II- 21. Soil structure and consistence categories

MOIST CONSISTENCE OR CEMENTATION	LOOSE TO FRIABLE NON CEMENTED EXTREMELY WEAKLY CEMENTED	FIRM* VERY WEAKLY CEMENTED*	VERY FIRM OR STRONGER WEAKLY CEMENTED OR STRONGER
OR DRY CONSISTENCE	LOOSE TO SLIGHTLY HARD	MODERATELY HARD*	HARD OR STRONGER
STRUCTURE			
Single grain (structure-less) soils	F	P	NA
Strong or moderate grade: Granular, Blocky or Prismatic	F	P	NA
Weak grade: Granular, Blocky or Prismatic	P	VP	NA
Weak grade Platy structure and Sandy Loam or Loam	P	VP	NA
Weak grade Platy structure, all other soils	VP	VP	NA
Moderate or Strong grade Platy structure	NA	NA	NA
Massive (structure-less) soils	VP	VP	NA
F=Favorable, P=Poor, VP=Very Poor, NA=Not allowed.			

5.2. Design Calculations

The soil stratum predominantly consists of a Gravelly Coarse Sand (please refer to Appendix B for soil data).

The Hydraulic Loading Rate (HLR) of the native soils are given as 40 L/m²/Day for type 1 effluent, requiring a basal infiltration area of 144.5 m². This may be split into several zones for equal ground distribution. For the purposes of this report a conceptual design would consist of three zones of 17m x 2.833m, each consisting of 4 runs of pressurized Sch 40 PVC laterals.

The conceptual design may consist of:

- (i) 4000 Igal concrete septic tank
- (ii) 2500 Igal concrete pump tank
- (iii) Hydro Tek Valve
- (iv) Seepage bed. 3 zones of 17m x 2.833m

The conceptual plan set is based upon the expected flows and waste strengths provided herein for the purpose of serving 5,780 L/DAY (1,271 IGAL/DAY). Any change in usage that would affect flows or waste strength requires a review by the designer. Once a facility is placed into operation, the flows and waste strengths to the facility are to be monitored to standard Practice Manual criteria. If flow or any of the effluent waste strengths exceed those listed in the design, measures should be taken to reduce these parameters to those listed on the plan set. Otherwise, additional treatment capacity and plant expansion will be necessary.



5.3. Critical Standards

The critical Standards are highlighted in the Standard Practice Manual (SPM) version 3.

Table II- 19. Minimum required horizontal separation distances

MINIMUM HORIZONTAL DISTANCE TO	FROM DISPERSAL SYSTEM	FROM WATERTIGHT TREATMENT OR PUMP TANK
	METRES	METRES
Water sources and wells		
Surface source of drinking water	30	15
Domestic water supply well ¹	30	30
Domestic water supply well, high pumping rate ²	60	30
Domestic water supply well, high pumping rate, in unconfined aquifer ²	90	30
Irrigation well or open loop geothermal well	15	7.5
Deep monitoring well or closed loop geothermal well ³	6	6
Shallow monitoring well ⁴	3	0
Drinking water lines and cisterns		
Drinking water suction line	30	15
Drinking water suction line, sleeved ⁵	7.5	3
Drinking water line, under pressure	3	3
Drinking water line, under pressure, sleeved ⁵	1	1
Drinking water supply cistern, below ground	15	3
Water bodies and surface breakout		
Permanent fresh water body ⁶	30	10
Intermittent fresh water body ⁷	15	10
Marine water body ⁸	15	7.5
Break-out point or downslope drain ⁹	7.5	0



Table III- 16. Guidelines for minimum horizontal separation distances

DISTANCE TO	FROM DISPERSAL SYSTEM (METRES)	FROM LAGOON (METRES)	FROM WATERTIGHT SUBSURFACE TREATMENT TANK (METRES)
Property lines	3	*	1
Building or structure (where there is not a perimeter drain)	1	*	1
Dispersal system (including other dispersal system)	6	6	3
Buried utility services	1	1	1
Drinking water supply cistern, at or above ground	1	*	1

5.4. Design Rational

Due to the size of the lot, soil depth and proposed future development, an area has been identified on a gentle slope to the North-West corner of the property Lot 5 Plan NEP14442, District Lot 790, Kootenay Land District. As the soil type is predominantly a gravelly coarse sand, it is recommended to pressure distribute the effluent over the contours to allow equal distribution and slow the percolation rate so that proper treatment can be maintained. Drainage solutions are to be implemented around the proposed septic field(s). Sewerage from the proposed development will typically be residential strength only.

5.5. Well Locations

The closest point of diversion and well location(s) are greater than 30m from proposed septic field.

5.6. Linear Loading Rate (LLR)

The required Linear Loading Rate from SPM version 3 Table 27/28 are indicated as (5,780 L/day / 400 L/day/m= 14.45 m). Therefore, the minimum contour length will be met, and ground water mounding will not affect the treatment.



5.7. Monitoring Requirements

SYSTEM OR TREATMENT TYPE	INSPECTION (BY MAINTENANCE PROVIDER)	FLOW	BOD AND TSS	FECAL COLIFORMS	NOTES
Type 1	12 months	12 months			
ET or ETA	6 months	6 months			During the wet season
Type 2	6 months	6 months	6 months		
Type 3	1 month, 7 months, 13 months	1 month, 7 months, 13 months	1 month, 7 months, 13 months	1 month, 7 months, 13 months	
Lagoon	12 months				Flow monitoring for diagnosis only

6. SOIL PROFILES

Please refer to Appendix B for full details.

7. CONCLUSION

The subject property (PID 015-282-228, 015-289-567, & 015-289-559) has the on-site septic capacity for the proposed Spearhead expansion project with a theoretical design flow rate of **5780 L/day**. The septic may consist of pressurized distribution Type 1 dispersal field(s) and provided the system is designed correctly by qualified persons, will meet Sewerage System Regulation and not pose a health hazard. Provided the foregoing recommendations are followed, the subject property may be used safely for the intended use.

8. CLOSURE

This report has been prepared by Highland Consulting Ltd (HCL) for use by the client and includes distribution or reproduction as may be required for their purposes. The review, assessments, and evaluations contained herein have been carried out in accordance with generally accepted engineering practice. Engineering judgment based on similar experience has been applied in developing recommendations and conclusions. No other warranty is made, either expressed or implied. The disclosure of any information contained within report is the sole responsibility of the client. Any use which a third party makes of this report, or any reliance on or decisions to be made based on it, are the responsibility of such third parties. HCL accepts no responsibility for damages, if any, suffered by a third party as a result of decisions made or actions based on this report.

LIMITATION OF LIABILITY – Notwithstanding any other provision of this agreement, the total liability of Highland Consulting Ltd for liabilities, claims, judgements, demands and causes of action arising under



or related to this agreement, whether based in contract or tort, shall be eliminated to the total compensations actually paid to Highland Consulting Ltd for the services hereunder. All claims by CLIENT shall be deemed relinquished unless filled within one (1) year after substantial completion of the services hereunder.

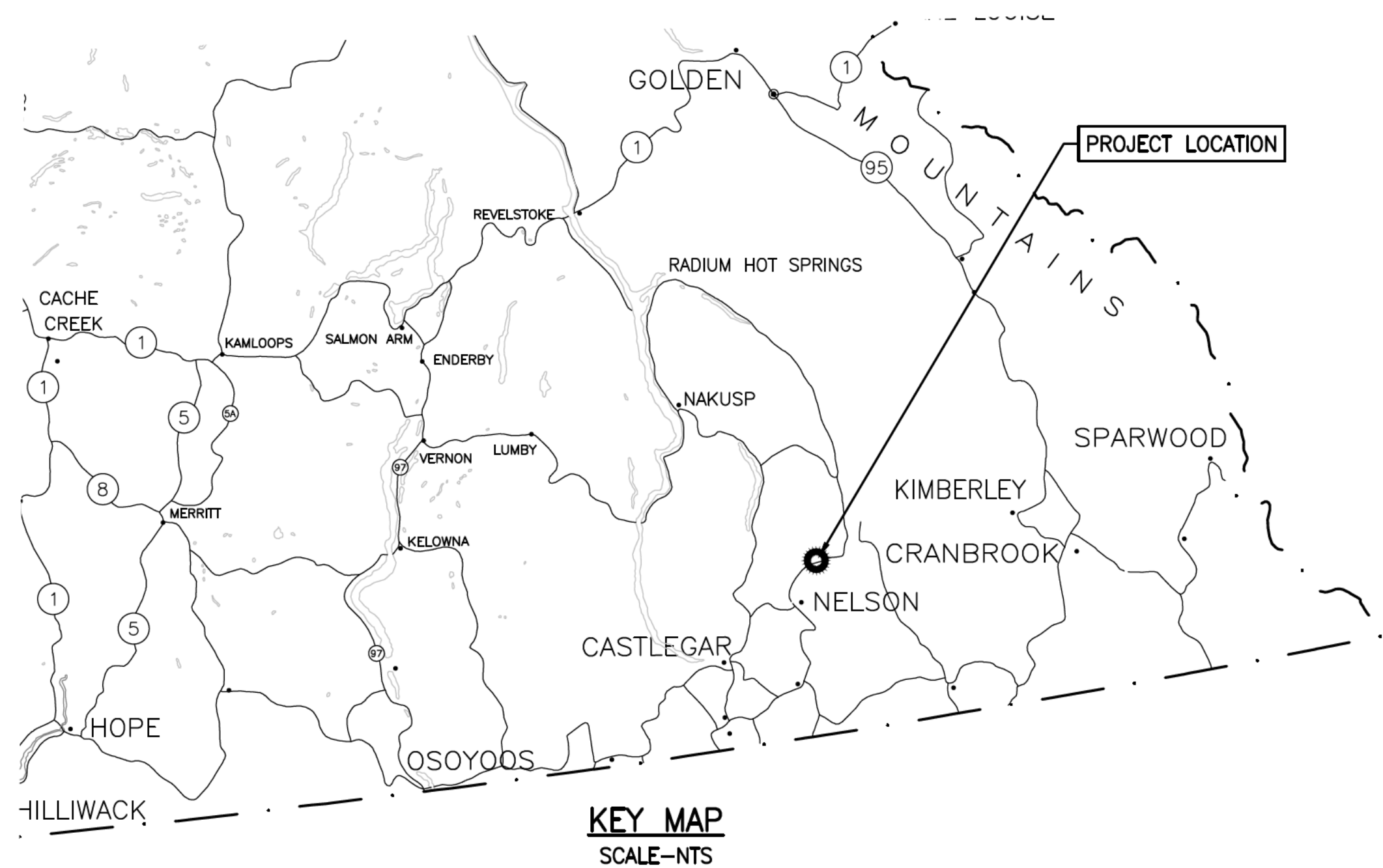
Highland Consulting Ltd trusts that this report meets your requirements, however if you have any questions or require further information, please do not hesitate in contacting the undersigned.

Yours sincerely,
HIGHLAND CONSULTING LTD
Permit to Practice # 1002652

Paul Kernan, P.Eng, Civil Engineer
Principal/Owner

APPENDIX A

Drawings/Design Sketch



SITE LOCATION
SCALE-1:1250

LEGEND:

GENERAL NOTES:

ALL DIMENSIONS ARE SPECIFIED IN METERS UNLESS OTHERWISE STATED.

LOT PLAN BASED ON ROCK MAPPING DATA AND SURVEY CARRIED OUT BY CLIENT. HIGHLAND CONSULTING IS NOT LIABLE FOR INACCURACIES IN DRAWING.

SCALE IS BASED ON ARCH EXPANDED D (24"x36") DRAWINGS.

NO VARIATION TO THIS DRAWING SHALL BE PERMITTED UNLESS AUTHORIZED BY ENGINEER IN WRITING.

THE CONCEPTUAL DESIGN IS BASED UPON THE EXPECTED FLOWS AND WASTE STRENGTHS PROVIDED HEREIN FOR THE PURPOSE OF SERVING FLOWS OF 5780L/DAY. ANY CHANGE IN USAGE THAT WOULD AFFECT FLOWS OR WASTE STRENGTH REQUIRES A REVIEW BY THE DESIGNER. ONCE A FACILITY IS PLACED INTO OPERATION, THE FLOWS AND WASTE STRENGTHS TO THE FACILITY SHOULD BE MONITORED TO STANDARD PRACTICE MANUAL CRITERIA. IF FLOW OR ANY OF THE INFLUENT WASTE STRENGTHS EXCEED THOSE LISTED IN THE DESIGN, MEASURES SHOULD BE TAKEN TO REDUCE THESE PARAMETERS TO THOSE LISTED ON THE PLAN SET. OTHERWISE ADDITIONAL TREATMENT CAPACITY AND PLANT EXPANSION WILL BE NECESSARY.

AT CROSSINGS WHERE THE VERTICAL SEPARATION BETWEEN THE WATER MAIN AND THE SEWER MAIN IS LESS THAN 450mm, ALL JOINTS WITH IN 3.0m OF THE CROSSING SHALL BE WRAPPED WITH DENSE TAPE OR EQUIVALENT.

NO CLEANING CHEMICALS TO BE USED IN HOME CONTAINING ANTIMICROBIAL CHEMICALS INCLUDING (BUT NOT LIMITED TO) FORMALDEHYDE, RESTAURANT CLEANERS, FLOOR WAX, STRIPPER AND OTHER TOXICS.

SEPTIC TANK TO MEET SPECIFICATIONS OF SEWAGE SYSTEM STANDARD PRACTICE MANUAL AND CURRENT CSA STANDARDS.

SEWAGE SYSTEM TO BE INSTALLED BY AUTHORIZED PERSONS.

ALL SETBACKS TO MEET CRITERIA AS SET OUT IN STANDARD PRACTICE MANUAL 3

EXACT LOCATION OF PROPOSED SEPTIC SYSTEM TO BE CONFIRMED BY ENGINEER/ DESIGNER PRIOR TO CONSTRUCTION.

AERIAL IMAGERY FROM ROCK MAPPING IMPORTED DECEMBER 16, 2024

B	ISSUED TO CLIENT	16-JAN-25
A	FOR REVIEW	20-DEC-24
REV.	DESCRIPTION	DATE
	ISSUED	

HIGHLAND CONSULTING LTD
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SEAL

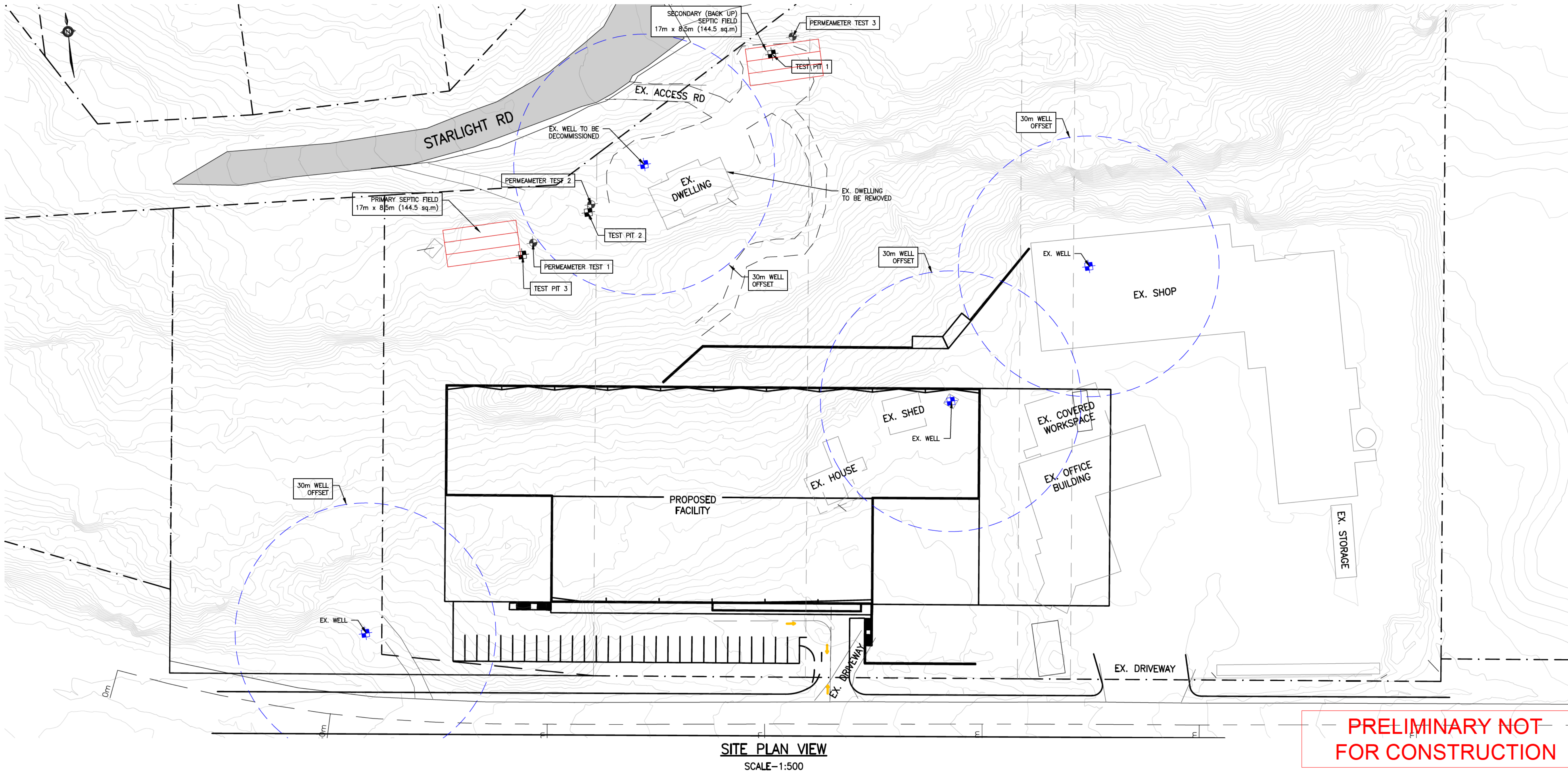
PROJECT TITLE
SPEARHEAD EXPANSION
STARLIGHT RD, NELSON
SEPTIC

DRAWING TITLE
GENERAL
LAYOUT

CLIENT NAME
SPEARHEAD

SCALE: REFER TO DWG	JOB No. 24746
DRAWN: JH	REVISION Δ
CHECKED: PK	DWG. No. S01
DATE: 16-Jan-25	
PLOT: 16-Jan-25	

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FILE: \\H:\C:\Users\johnd\OneDrive\Documents\24746_Spearhead-SEPTIC.dwg

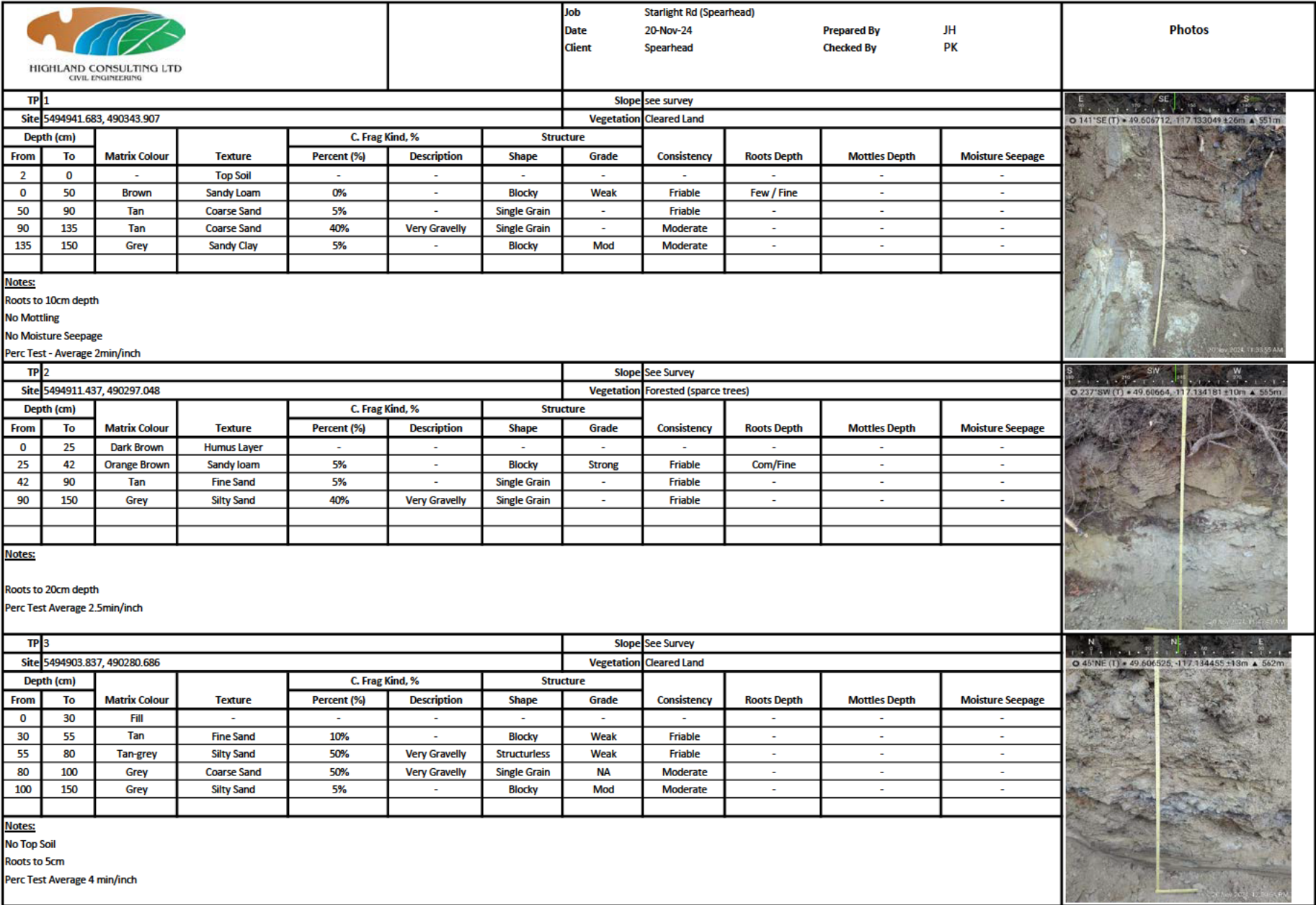


SITE PLAN VIEW
SCALE-1:500

PRELIMINARY NOT
FOR CONSTRUCTION

APPENDIX B

Soil Logs



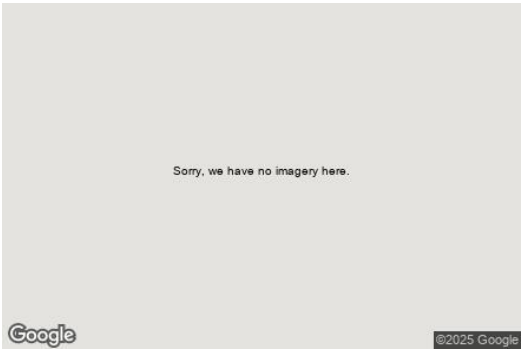
APPENDIX C

Legal Information



The information in this report is provided for your information and convenience. If the information has been altered for any reason from the format in which it was originally received verification may be required by BC Assessment. In any case of doubt, the official BC Assessment records shall prevail.

4612 STARLIGHT RD KOKANEE CREEK
Area-Jurisdiction-Roll: 21-707-03623.000



Total value \$170,000

2025 assessment as of July 1, 2024	
Land	\$170,000
Buildings	\$0
Previous year value	
Land	\$164,000
Buildings	\$0

Property information

Year built	
Description	Vacant Residential Less Than 2 Acres
Bedrooms	
Baths	
Carports	
Garages	
Land size	1.33 Acres
First floor area	
Second floor area	
Basement finish area	
Strata area	
Building storeys	
Gross leasable area	
Net leasable area	
No.of apartment units	

Legal description and parcel ID

LOT 5, PLAN NEP2449, DISTRICT LOT 790, KOOTENAY
LAND DISTRICT
PID: 015-282-228

Sales history (last 3 full calendar years)

Aug 29, 2022	\$170,000
--------------	-----------

Manufactured home

Width
Length
Total area

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4614 STARLIGHT RD KOKANEE CREEK VIL 6N4
Area-Jurisdiction-Roll: 21-707-03622.000



Total value \$614,000

2025 assessment as of July 1, 2024	
Land	\$219,000
Buildings	\$395,000
Previous year value	
Land	\$212,000
Buildings	\$422,000

Property information

Year built	1957
Description	1 STY Duplex - Standard
Bedrooms	2
Baths	1
Carports	
Garages	
Land size	1.67 Acres
First floor area	826
Second floor area	
Basement finish area	
Strata area	
Building storeys	1
Gross leasable area	
Net leasable area	
No.of apartment units	

Legal description and parcel ID

LOT 4, PLAN NEP2449, DISTRICT LOT 790, KOOTENAY
LAND DISTRICT
PID: 015-289-567

Sales history (last 3 full calendar years)

Mar 8, 2024	\$625,000
Feb 8, 2024	\$532,900

Manufactured home

Width
Length
Total area

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4643 HIGHWAY 3A KOKANEE CREEK VIL 6N4
Area-Jurisdiction-Roll: 21-707-03621.000



Total value \$684,000

2025 assessment as of July 1, 2024

Land	\$244,000
Buildings	\$440,000

Previous year value	\$671,000
Land	\$236,000
Buildings	\$435,000

Property information

Year built	2008
Description	1 STY house - Standard
Bedrooms	2
Baths	2
Carports	C
Garages	
Land size	2 Acres
First floor area	1,330
Second floor area	
Basement finish area	
Strata area	
Building storeys	1
Gross leasable area	
Net leasable area	
No.of apartment units	

Legal description and parcel ID

LOT 3, PLAN NEP2449, DISTRICT LOT 790, KOOTENAY
LAND DISTRICT
PID: 015-289-559

Sales history (last 3 full calendar years)

No sales history for the last 3 full calendar years

Manufactured home

Width
Length
Total area

Register with BC Assessment



Search properties on a map



Compare property information and assessment values



Store and access favourite properties across devices



View recently viewed properties

Date: January 16, 2025

Our File No: 9393-01

RDCK File Number: #Z2410F

BY EMAIL

Ben Hall, Partner
Spearhead
4655 Hwy 3A
Nelson, BC
V1L 6N3

Dear Mr. Hall:

Re: Spearhead Industrial Rezoning, Nelson, BC – Access Study Proposal

Creative Transportation Solutions Ltd. (CTS) is pleased to submit this **FINAL** report summarising our work on the above study. CTS was retained by Spearhead to undertake an Access Study for the proposed industrial expansion at 4655 Highway 3A in Nelson, BC. The primary objectives of this study were as follows:

1. To conduct data collection and analysis to support the approval of the proposed industrial expansion;
2. To prepare a report that documents the technical analysis, key findings and recommendations to meet the requirements as set out by the Regional District of Central Kootenay, and the Ministry of Transportation and Infrastructure.

This report documents our analyses and findings.

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1.0 BACKGROUND

1.1 The Site

Spearhead is proposing an expansion to their existing manufacturing facility to include additional manufacturing and office space as well as a day care centre for employees at 4655 Highway 3A in Nelson, BC.

Access to the development will be located to the south of the development along Highway 3A.

The study area and the existing roadways are illustrated in **FIGURE 1**.

FIGURE 1
STUDY AREA AND INTERSECTIONS



1.2 Existing Road Network

The following is a summary of the existing road network:

Highway 3A

- Highway 3A is a two-lane highway with a posted speed limit of 80 km/h
- No on-street parking
- There are painted shoulders that can be used for pedestrians and cyclists
- The road is only illuminated at specific locations
- Rural cross section, shoulders with run-off

1.3 Alternative Modes of Travel

Transit Network

There are bus stops within a walking distance of 400 metres from the site and therefore this site could be considered transit accessible if there is a pedestrian network from the site to the bus stops. The closest bus stops are located along Crescent Road. The closest bus routes to the site are listed below.

- Route #10 North Shore: Service for this bus runs 6-7 times per day, approximately every 1-1.5 hours during peak periods. The majority of service is with a community bus.

Bus stops are illustrated in **FIGURE 2**.

Bicycle Network

There are no dedicated bike routes but there are shoulders on both sides of the road.

The existing bicycle network within the study area is illustrated in **FIGURE 2**.

Pedestrian Network

There are no sidewalks surrounding the site but there are shoulders on both sides of the road.

The existing sidewalks within the study area are illustrated in **FIGURE 2**.

**FIGURE 2
ALTERNATIVE MODES**



1.4 Scope of Work

The weekday morning and afternoon peak hours were selected as the design hours of analysis for this study.

The following scenarios were used in this traffic impact assessment:

1. 2024 (existing base)
2. 2026 (future base)
3. 2026 (future base + traffic from the proposed development)

2.0 TRAFFIC VOLUMES

2.1 Current Road Network

2024 Base Traffic Volumes

CTS conducted turning movement counts on Thursday, November 21, 2024 from 06:00 to 09:00 and 15:00 to 18:00 to document the typical weekday morning and afternoon peak hour traffic volumes for the study intersections. The study intersections included:

- Site Access & Highway 3A

The traffic count data was summarized and reviewed to ensure data integrity and validity. The summarized traffic data sheets are included in **APPENDIX A**.

The following peak hours were selected, based on the peak hours observed by the study intersections:

- Weekday Morning Peak Hour – 07:45 – 08:45
- Weekday Afternoon Peak Hour – 16:15 – 17:15

The Active-Permanent Core MoTI count station “Harrop P-31-3EW-NY” is directly adjacent to the count location. After review it was found that the peak traffic volumes along Highway 3A occur during the months of July and August. Monthly average traffic volumes for the previous 10 years were compiled to compare November volumes to July and August volumes to calculate an adjustment factor to apply to the base counted volumes so as to represent the peak volumes expected at the site location. **TABLE 1** below summarizes the collected data, and an adjustment factor of 1.72 was chosen to be applied to the base counted volumes. Volumes from 2020 to 2022 were not included due to changes to vehicle traffic during the covid pandemic.

TABLE 1
PERMANENT COUNT STATION DATA

Year	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Average
July MADT	3786	4062	4191	4315	4255	4302	4080	4291	4241	4265	
Aug MADT	4056	4165	4347	4391	4269	4391	4308	4023	4221	-	
Nov MADT	2301	2440	2540	2536	2518	2577	2499	-	2464	2648	
July %	64.5%	66.5%	65.0%	70.1%	69.0%	66.9%	63.3%	-	72.1%	61.1%	67%
Aug %	76.3%	70.7%	71.1%	73.1%	69.5%	70.4%	72.4%	-	71.3%	-	72%

The unfactored 2024 base traffic volumes for the weekday morning and weekday afternoon peak hours are illustrated in **FIGURE 3** and **FIGURE 4**, respectively. The factored 2024 base traffic volumes for the weekday morning and weekday afternoon peak hours are illustrated in **FIGURE 5** and **FIGURE 6**, respectively.

FIGURE 3
UNFACTORED 2024 WEEKDAY MORNING PEAK HOUR BASE TRAFFIC VOLUMES

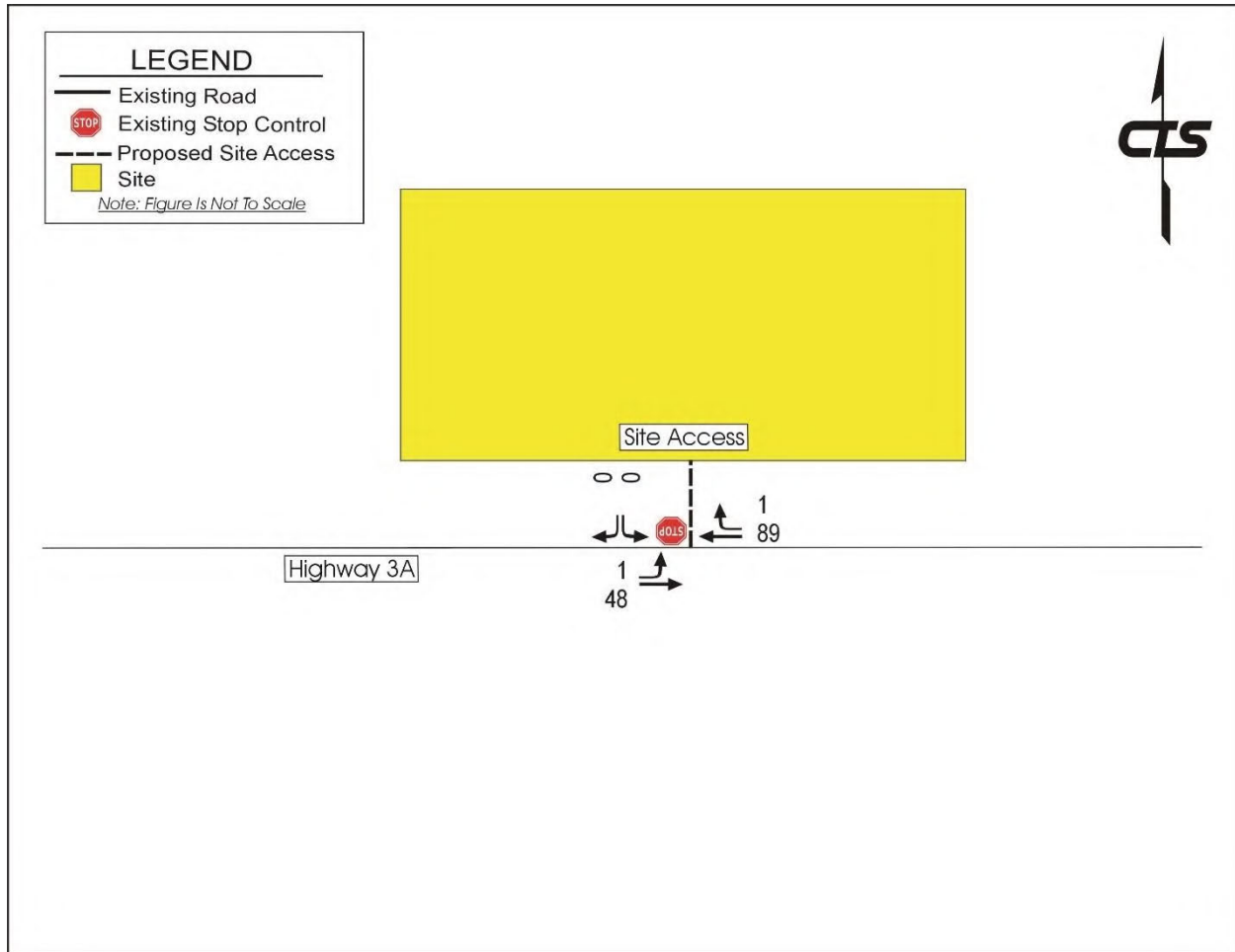


FIGURE 4
UNFACTORED 2024 WEEKDAY AFTERNOON PEAK HOUR BASE TRAFFIC VOLUMES

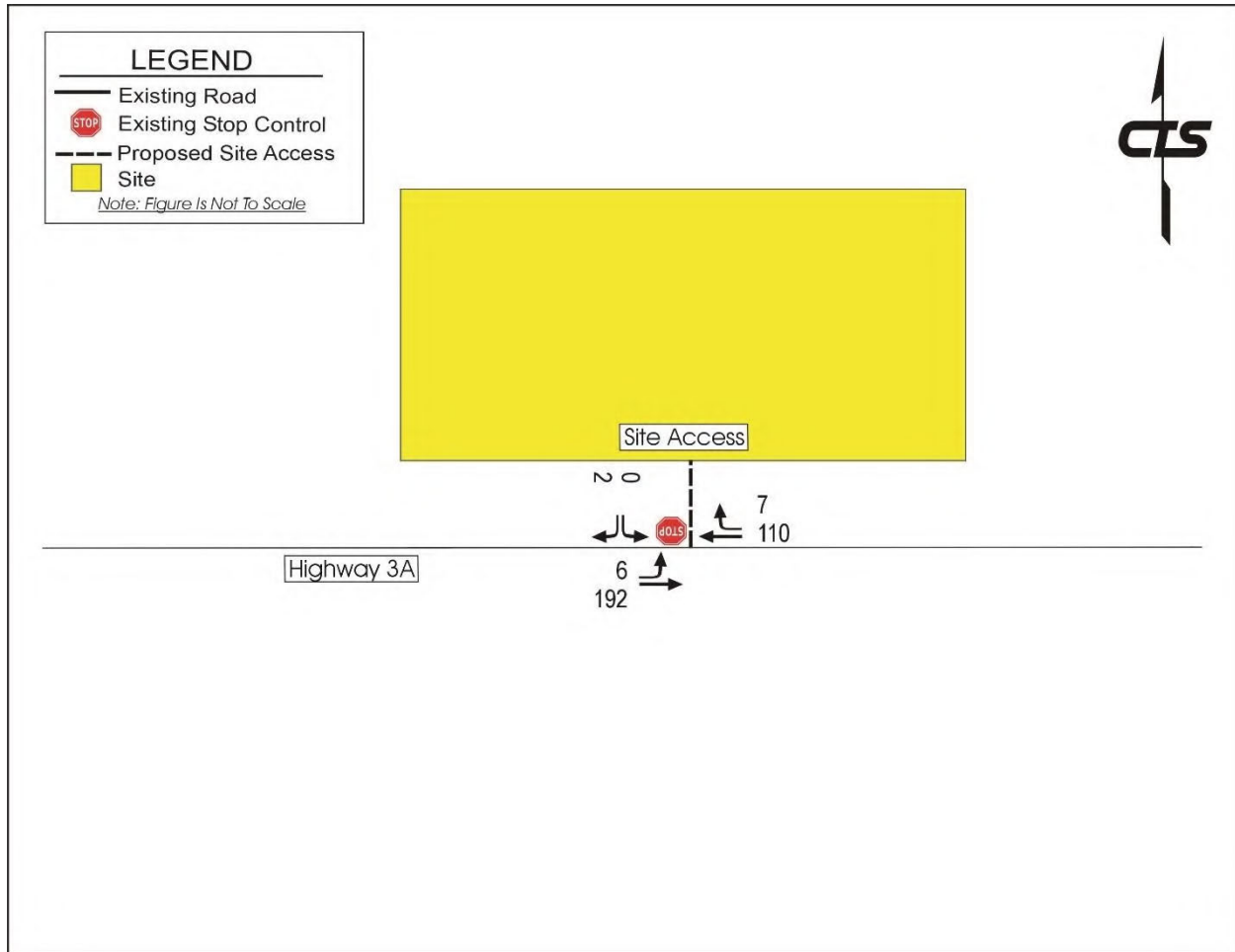


FIGURE 5
FACTORED 2024 WEEKDAY MORNING PEAK HOUR BASE TRAFFIC VOLUMES

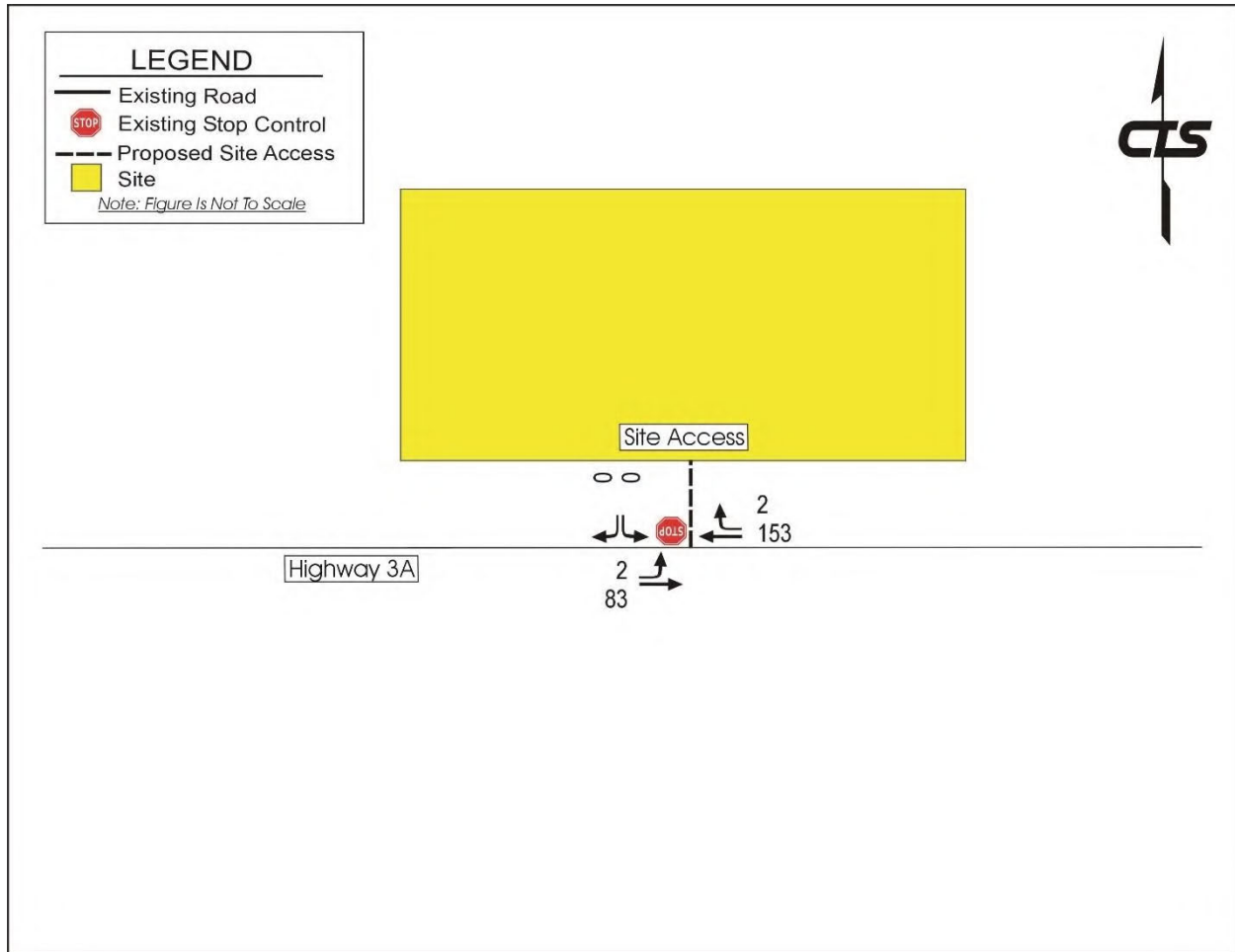
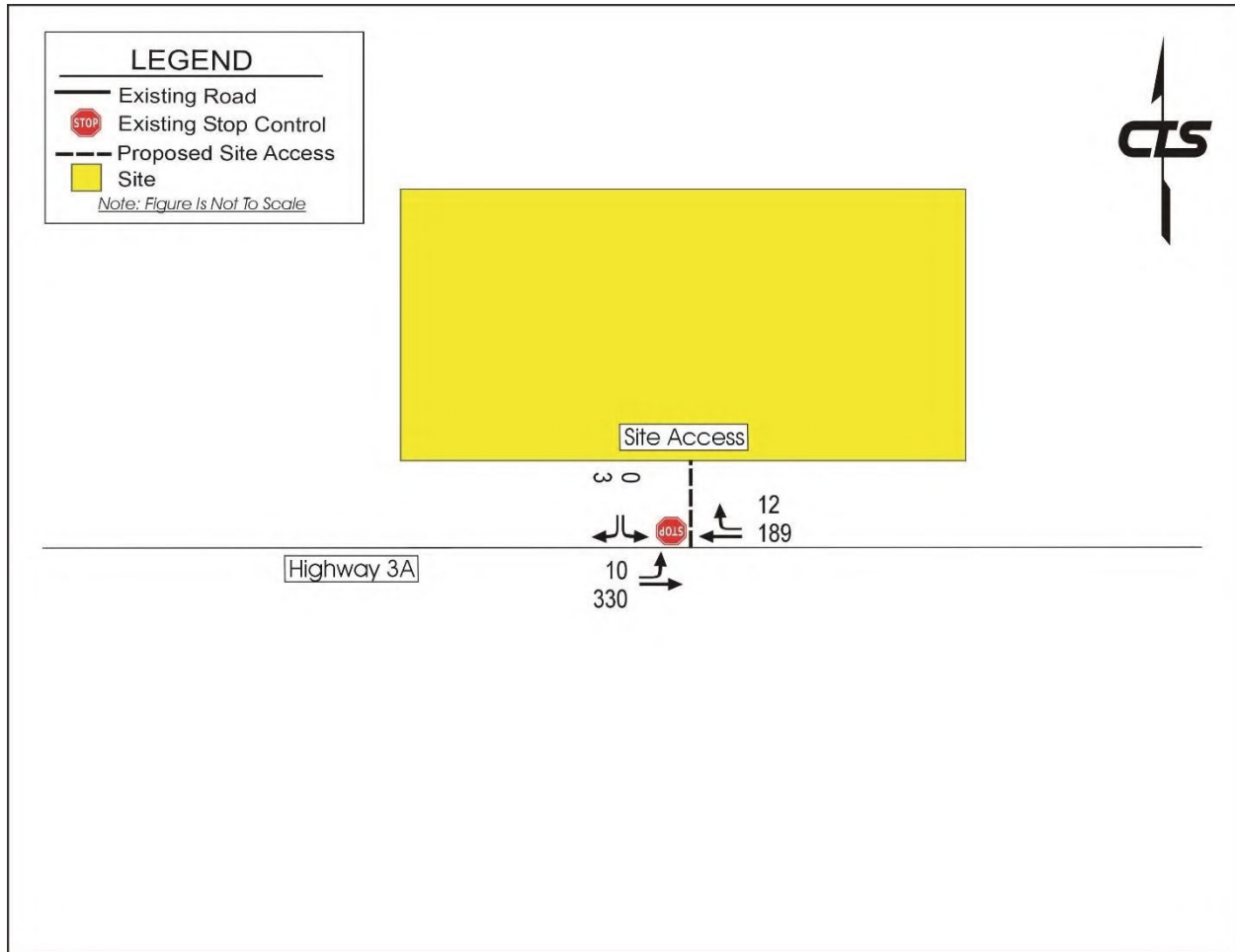


FIGURE 6
FACTORED 2024 WEEKDAY AFTERNOON PEAK HOUR BASE TRAFFIC VOLUMES



2.2 Future Traffic Volumes

2026 Future Base Traffic Volumes

2026 is anticipated to be the year of the buildout of the proposed development. The 2024 base traffic volumes were factored up by a traffic volume growth rate of 1.0% per annum (simple straight line) to represent base year 2026 volumes.

FIGURE 7 and **FIGURE 8** illustrate the weekday morning and weekday afternoon, respectively.

FIGURE 7
2026 WEEKDAY MORNING PEAK HOUR BASE TRAFFIC VOLUMES

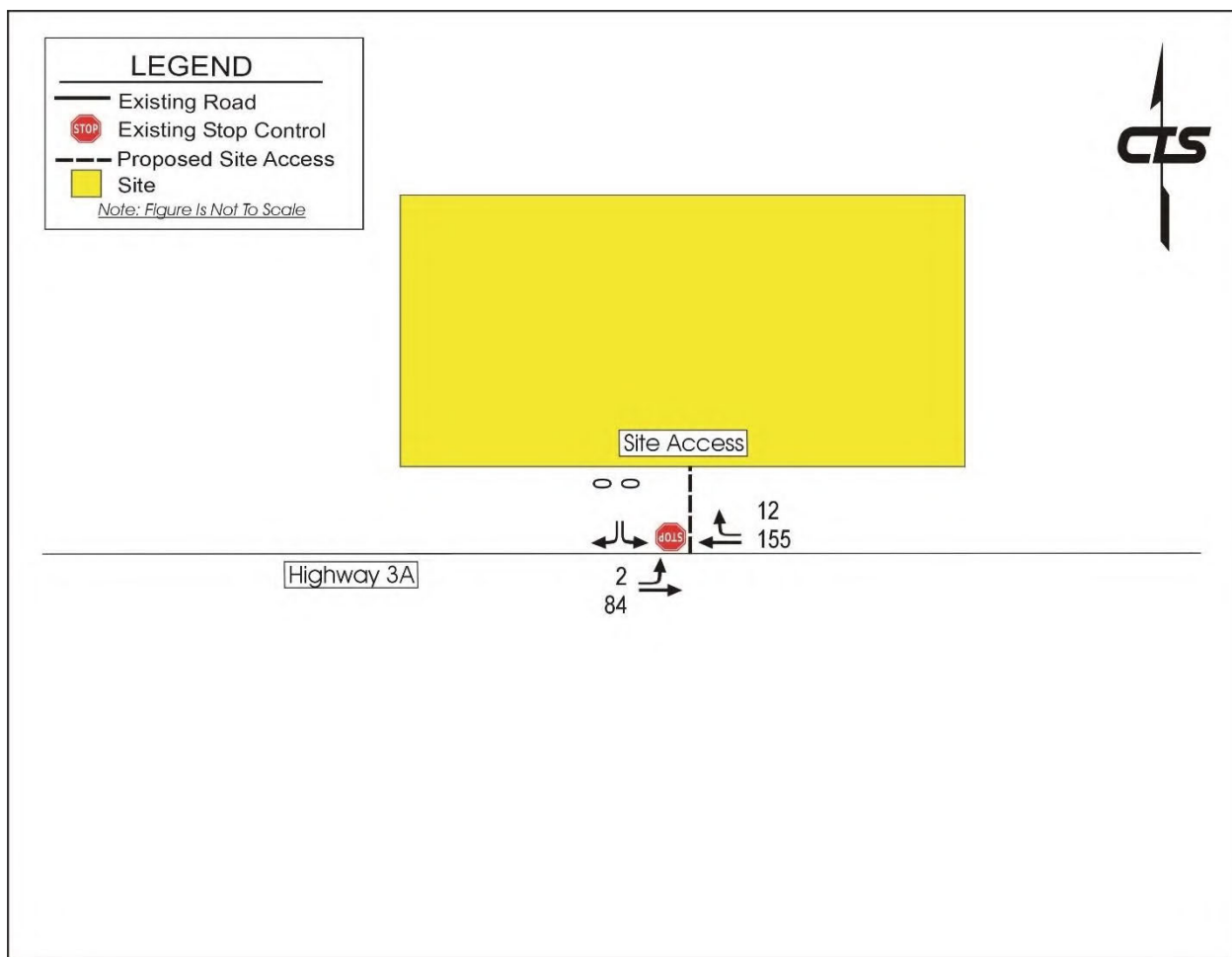
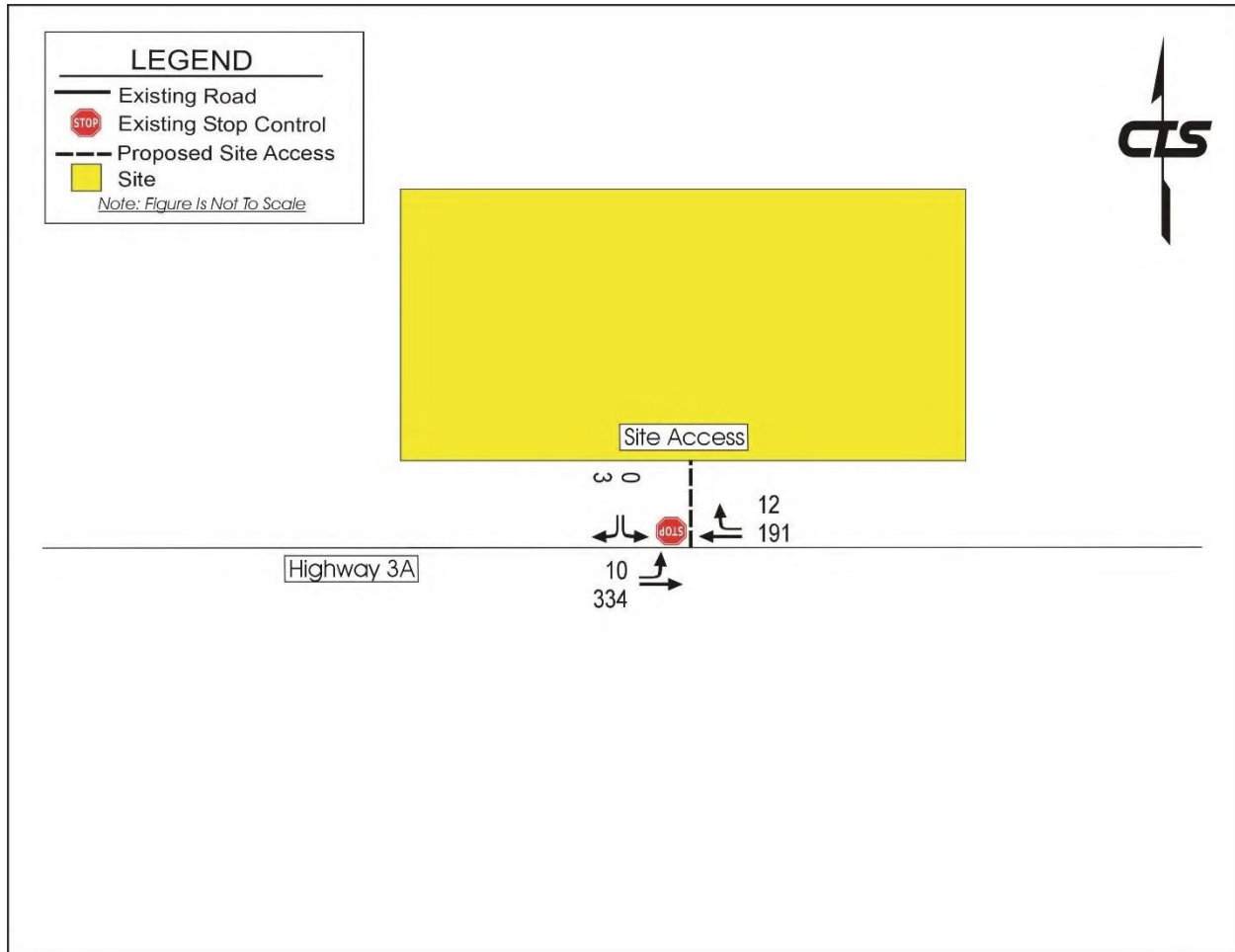


FIGURE 8
2026 WEEKDAY AFTERNOON PEAK HOUR BASE TRAFFIC VOLUMES



3.0 SITE TRAFFIC VOLUMES

3.1 Trip Generation

CTS utilized employee data and projections as provided by Spearhead for trip generation purposes. The truck and vehicle projections are included in **APPENDIX B** and summarized in **TABLE 2** below.

TABLE 2
SUMMARY OF SITE GENERATED TRAFFIC

Staff	Peak Hour	Peak Hour Volumes (vph)		
		in	out	total
Manufacturing, Office, and Day Care Employees	Weekday Morning	36	0	36
	Weekday Afternoon	0	36	36

From **TABLE 2**, the total current proposed site is forecasted to generate a total of 36 vehicle trips (36 inbound, and 0 outbound) during the weekday morning peak hour and 36 vehicle trips (0 inbound and 36 outbound) during the weekday afternoon peak hour.

3.2 Trip Distribution

As the vast majority of employees commuting to the site will be residing in and near the City of Nelson. Based on discussions with the client, CTS has assumed that 90% of vehicle trips will be to and from west of the site towards the City of Nelson, with the remaining 10% of vehicle trips to be assigned to east of the site.

3.3 Traffic Assignment

FIGURE 9 and **FIGURE 10** illustrate the site generated traffic volumes on the *existing* road network for the weekday morning and afternoon peak hours, respectively.

FIGURE 9
2026 SITE TRAFFIC VOLUMES FOR WEEKDAY MORNING PEAK HOUR

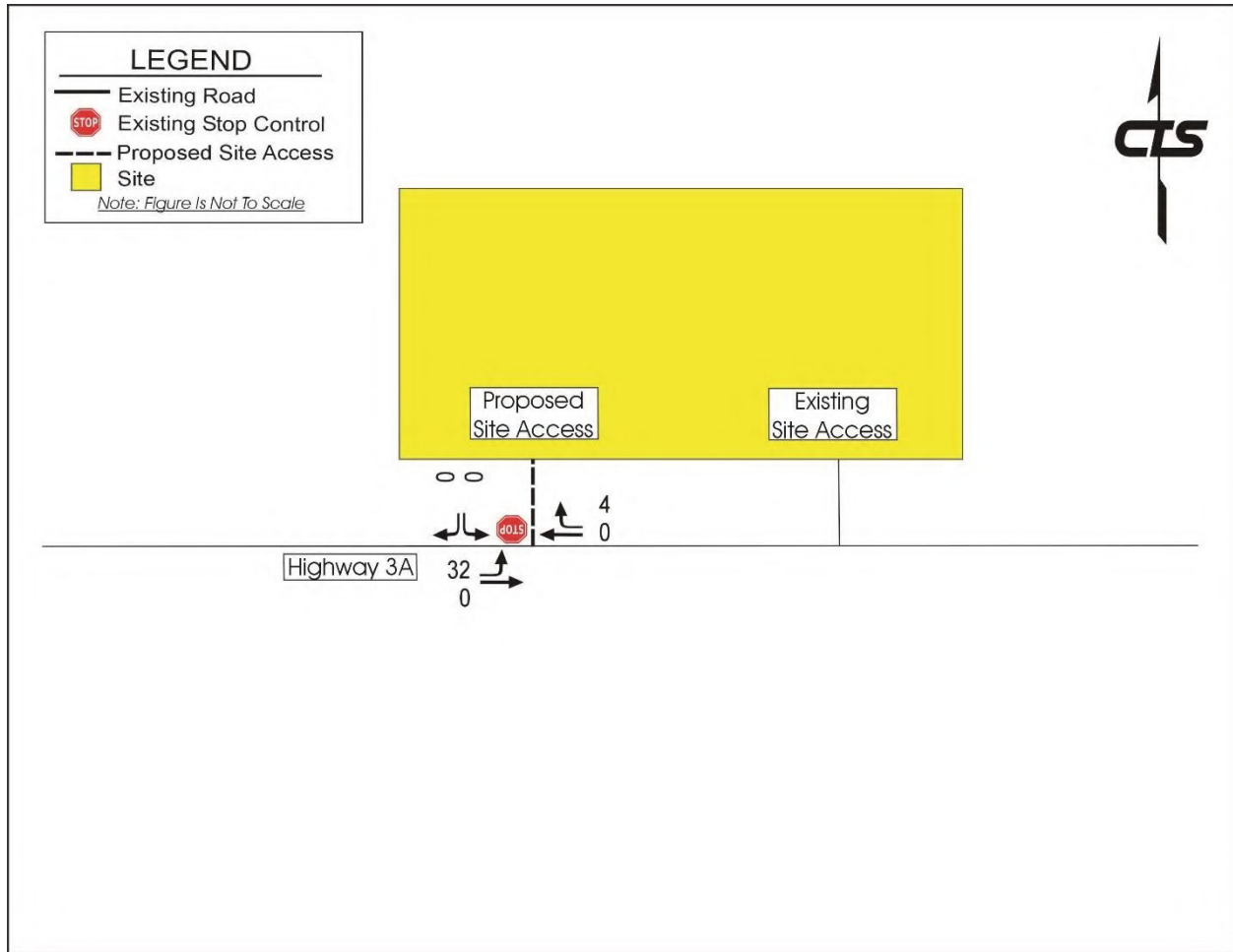
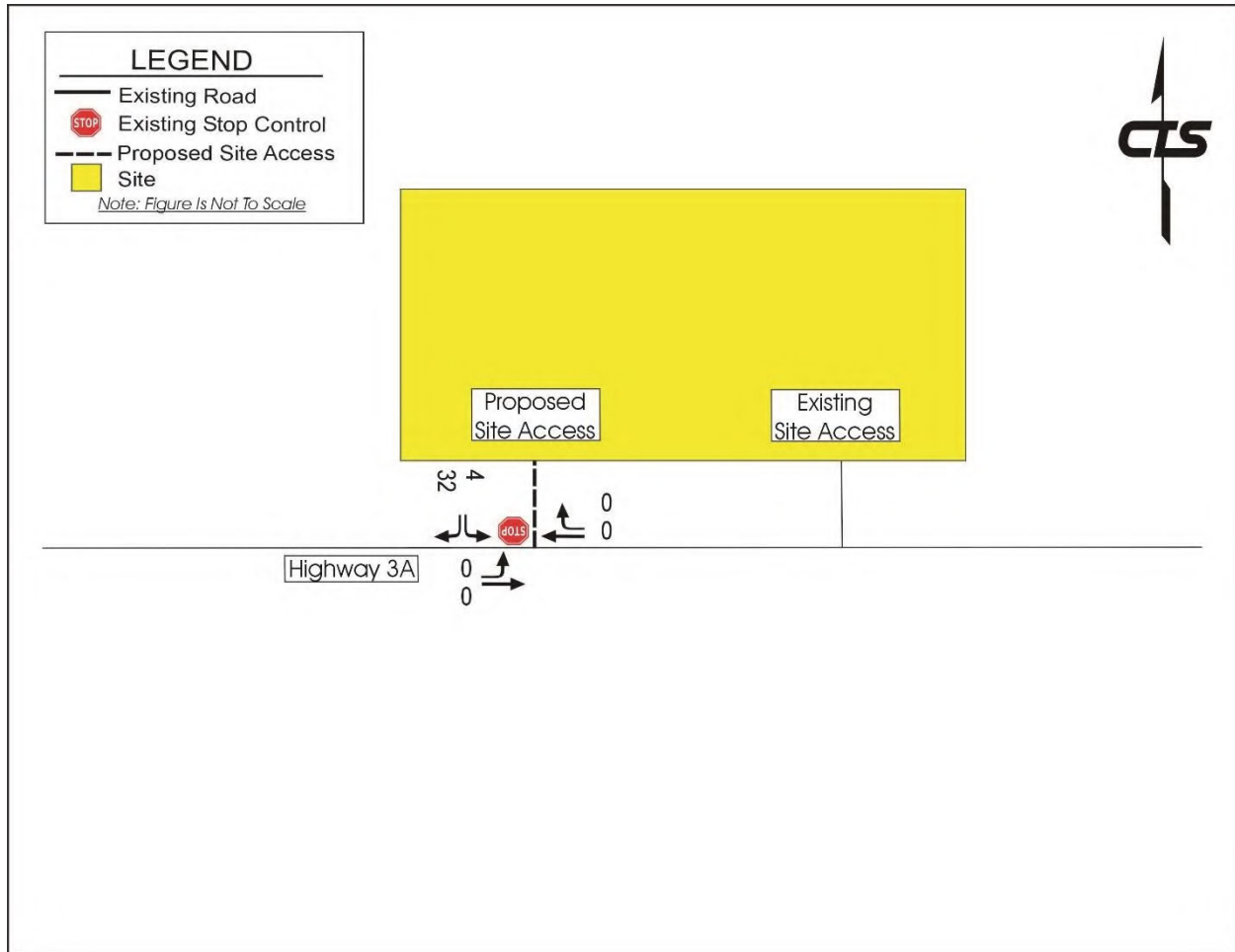


FIGURE 10
2026 SITE TRAFFIC VOLUMES FOR WEEKDAY AFTERNOON PEAK HOUR



4.0 BASE + SITE TRAFFIC VOLUMES

2026 Base + Site Volumes

FIGURE 11 illustrates the total projected traffic for the year 2026 weekday morning peak hour consisting of both base and site traffic resulting from the proposed development. It is the result of superimposing **FIGURE 9** onto **FIGURE 7**.

FIGURE 12 illustrates the total projected traffic for the year 2026 weekday afternoon peak hour consisting of both base and site traffic resulting from the proposed development. It is the result of superimposing **FIGURE 10** onto **FIGURE 8**.

FIGURE 11
2026 WEEKDAY MORNING PEAK HOUR BASE+SITE TRAFFIC VOLUMES

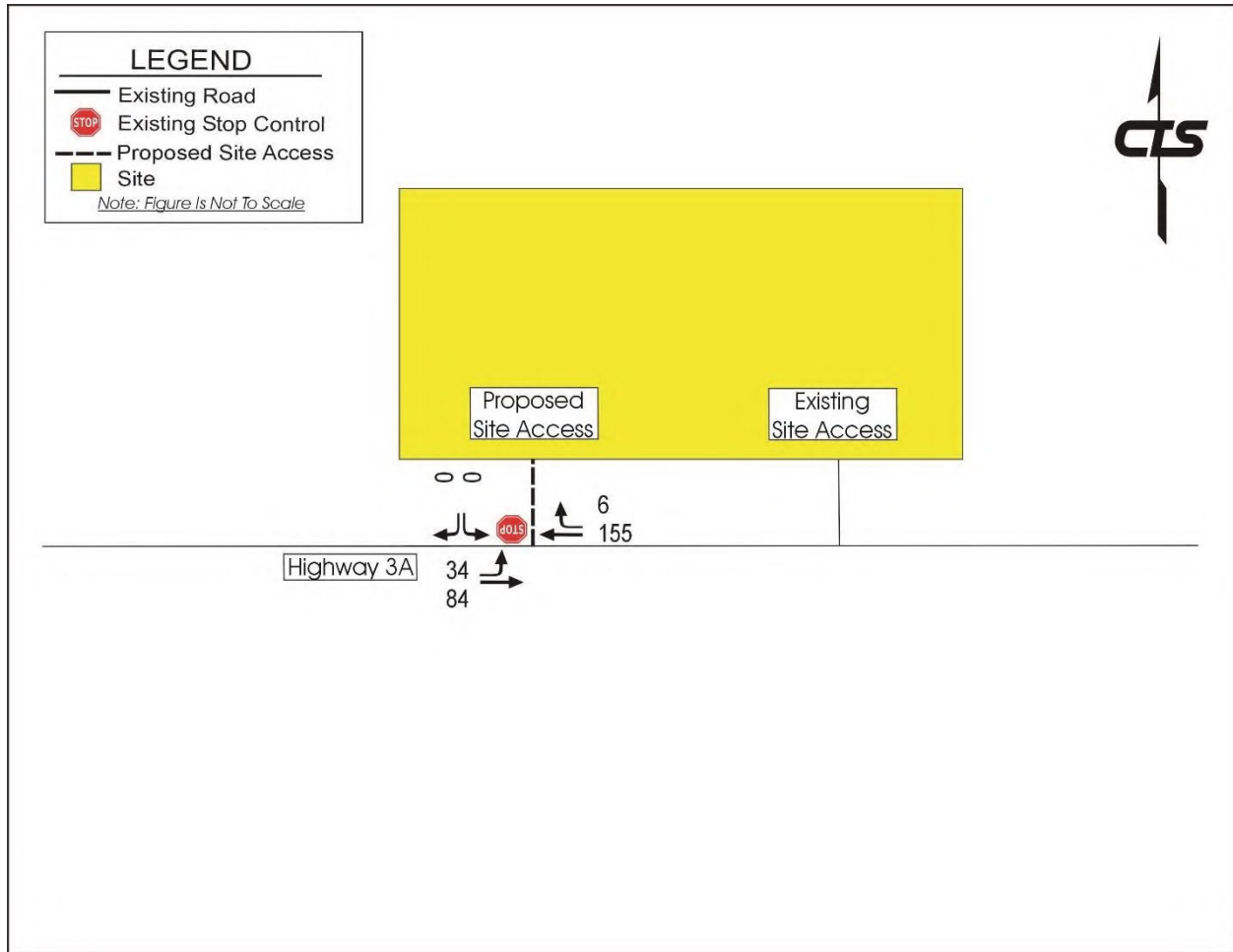
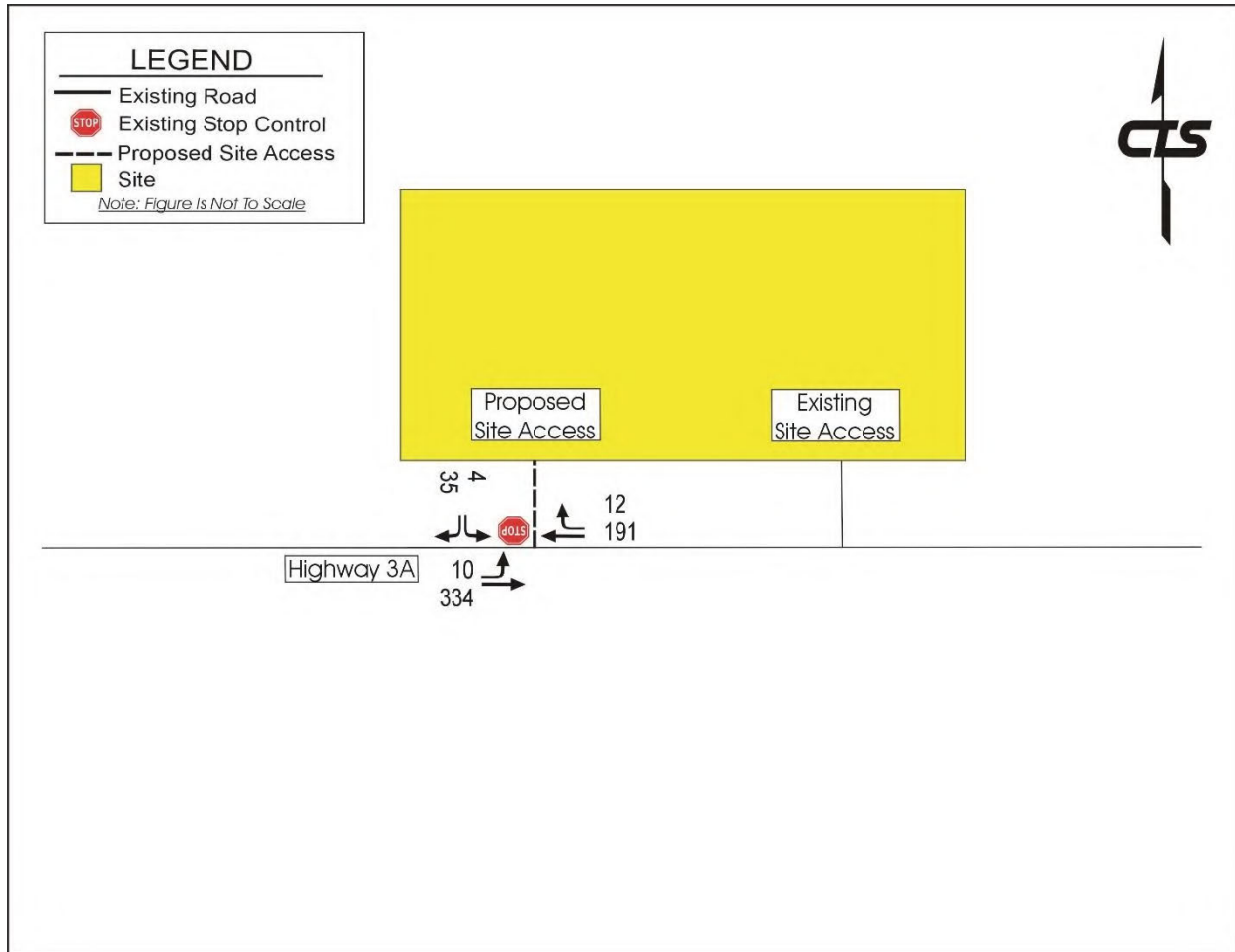


FIGURE 12
2026 WEEKDAY AFTERNOON PEAK HOUR BASE+SITE TRAFFIC VOLUMES



5.0 TRAFFIC ENGINEERING ANALYSIS

5.1 Capacity Analysis

Capacity analysis was performed at the location in order to determine the intersection levels of service (LOS) that is provided to motorists. The LOS for intersections and movements is defined in terms of delay (seconds per vehicle), which is a measure of driver discomfort and frustration, fuel consumption and lost travel time.

An intersection or movement LOS can range from "A" (Excellent) to "F" (Fail). See **Table 3**. A LOS of "F" (Fail) indicates that an intersection or movement is failing because the intersection or movement is over capacity and delays are considered excessive. A LOS of "D" during the critical peak hours is considered acceptable by many public agencies in large urban areas for overall intersection operation and a LOS of "E" or better is considered acceptable for left turn movements as it recognizes that the intersections normally perform much better the remaining 90% of the day.

**TABLE 3
LEVEL OF SERVICE DESCRIPTIONS**

Level of Service	Description
A	Excellent
B	Good
C	Fair
D	Poor
E	Very Poor
F	Fail

Highway Capacity Software (HCS 2024) was used for the analysis of the unsignalized intersections.

The analyses used the factored traffic volumes to yield the most conservative results.

The following assumptions were made with respect to the intersection capacity analysis:

- *Saturation flow rate* = 1,800 passenger cars/hour of green time/lane (pcphgpl)
- *Peak hour factor* (PHF) = 0.81 (weekday morning peak) and 0.76 (weekday afternoon peak) which is the factor observed from the surveyed intersections.
- Heavy vehicle percentage for roads = 3%

Saturation flow rate is the equivalent hourly rate at which previously queued vehicles can traverse an intersection approach under prevailing conditions, assuming that the green signal is available at all times and no lost times are experienced. It is a base rate to which adjustment factors are applied.

Peak Hour Factor is a measure of traffic demand fluctuation within the analysis hour. The closer the number is to 1.00, the less fluctuation during the hour.

5.2 Unsignalized Intersections

TABLE 4 summarizes and compares the main performance parameters of the intersection capacity analysis for unsignalized intersections.

For unsignalized intersections, the delay time in seconds for each lane group is summarized. Delay is additional travel time experienced by a driver, passenger, bicyclist, or pedestrian beyond that required to travel at the desired speed.

The capacity analysis worksheets with Levels of Service for each individual movement are included in **APPENDIX C**.

TABLE 4
CAPACITY ANALYSIS FOR SITE ACCESS AND HIGHWAY 3A

Intersection	Time of Day	Scenario	Performance Measure	Eastbound			Westbound			Northbound			Southbound			LOS	Notes
				Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right		
Site Access (N/S) & Hwy 3A (E/W)	Weekday Morning Peak Hour	2024 Base	Volumes	2	83			153	2				0		0	A	Okay.
			Delay	8	0			0					0.0				
			95% Queue (m)	0	0			0					0.0				
		2026 Base	Volumes	2	84			155	2				0		0	A	Okay.
			Delay	8	0			0					0.0				
			95% Queue (m)	0	0			0					0.0				
		2026 Base + Site	Volumes	34	84			155	6				0		0	A	Okay.
			Delay	8	0			0					0.0				
			95% Queue (m)	1	0			0					0.0				
	Weekday Evening Peak Hour	2024 Base	Volumes	10	330			189	12				0		3	A	Okay.
			Delay	8	0			0					9.6				
			95% Queue (m)	0	0			0					0.0				
		2026 Base	Volumes	10	334			191	12				0		3	A	Okay.
			Delay	8	0			0					9.7				
			95% Queue (m)	0	0			0					0.0				
		2026 Base + Site	Volumes	10	334			191	12				4		35	A	Okay.
			Delay	8	0			0					10.5				
			95% Queue (m)	0	0			0					1.4				

Delay = Average Delay (seconds/vehicle)

Intersection approaching capacity (LOS 'D' or 'E'); or medium approach delays (25sec to <50sec)

Intersection equals or exceeds capacity (LOS 'F'); or high approach delays (>= 50sec)

From **TABLE 4**, the following observations can be made:

Site Access and Highway 3A

- The intersection overall operates at LOS A (Excellent) for all analysis scenarios.
- By comparing the results of the capacity analysis between the Base and Base + Site scenarios for the horizon years analyzed in this study, it is found that the traffic added by the proposed development does not significantly impact the performance of this intersection.
- The addition of site traffic in 2026 represents a 15% (36 vehicles) increase in the weekday morning peak hour intersection volume, and a 7% (36 vehicles) increase in the weekday afternoon peak hour intersection volume.
- No operational and/or geometrical improvements are recommended for this location.

6.0 INTERSECTION WARRANTS ANALYSIS

6.1 Left-Turn Warrant Analysis

A left-turn warrant was conducted for the eastbound left-turn movement at the intersection of the Site Access & Highway 3A. Methodology and graphs from the Ontario Ministry of Transportation (MoT) were used for the analysis. The details of the left turn warrant analysis are included in **APPENDIX D. TABLE 5** below has a summary of the results of the warrant analysis. Both base and base + site conditions in 2024 and 2026 were considered.

**TABLE 5
LEFT-TURN WARRANT ANALYSIS RESULTS**

LTFE-TURN LANE WARRANT ANALYSIS - HIGHWAY 3B									
Location	Direction	Scenario	Peak Hour	Opposing Traffic Volume	Advancing Traffic Volume	Left Turn Traffic Volume	Percentage of Left-Turning Traffic	Left-Turn Lane Warrant	Left-Turn Storage Length
				V _O	V _A	V _L	%	(Yes/No)	S (m)
Highway 3A	EB	2024 Base	1 Thursday AM	155	85	2	2%	N	0
			2 Thursday PM	201	340	10	3%	N	0
		2026 Base + Site	3 Thursday AM	161	118	34	29%	N	0
			4 Thursday PM	203	344	10	3%	N	0

The analysis shows that for all of the design conditions a left-turn lane is not warranted.

7.0 SITE AND ACCESS REVIEW

7.1 Swept Path Analysis

Swept path drawing analysis was conducted to ensure the manoeuvrability WB-20 trucks in and out of the site without impacting traffic operations on Highway 3A. Areas analysed were determined from expected ingress and egress manoeuvres that could potentially be difficult for users or results in conflicts. All movements have been analysed with a 0.5 metre buffer area around all sides of the vehicle. All swept path drawings can be found in **APPENDIX E**.

WB-20 tractor-trailers are able to enter and exit all areas with no conflicts.

All swept path analysis has been conducted with the site plan provided to CTS on December 09, 2024.

7.1 Sight Line Analysis

Sight line analysis was conducted during a site visit with a posted speed limit of 80 km/h. Using methodology from the *TAC Geometric Design Guide for Canadian Roads "Chapter 2 – Design Controls, Classification and Consistency"*, the sight line looking west of the proposed driveway access was measured to be 148 metres, and the sight line looking east was measured to be 224 metres. These exceed the design stopping sight distance of 130 metres for the design speed of 80 km/h as listing in Table 2.5.2 of the *TAC Geometric Design Guide for Canadian Roads "Chapter 2 – Design Controls, Classification and Consistency"*.

Additionally, intersection sight triangle analysis was conducted with a posted speed limit of 80 km/h. Using methodology from the *TAC Geometric Design Guide for Canadian Roads "Chapter 9 – Intersections"*, the intersection sight distance turning right westbound of the proposed driveway access was calculated to be 145 metres as listed in Table 9.9.6, and the intersection sight distance turning left eastbound was calculated to be 170 metres. The sightlines as measured in the field were found to be 148 metres for the right-turn westbound and 224 metres for the left-turn east-bound, both of which exceed the calculated intersection sight distances.

Field notes with measurements for the sightlines can be found in **APPENDIX F**.

8.0 CONCLUSIONS & RECOMMENDATIONS

8.1 Conclusions

- 1) Spearhead is proposing an expansion to their site, including additional manufacturing and office space, as well as a day care centre for use by employees.
- 2) The proposed development is connected to alternative modes of travel. The closest bus stop is within 400 metres walking distance from the access to the development. There is no dedicated cycling or pedestrian infrastructure, however there are shoulders alongside both sides of Highway 3A.
- 3) CTS conducted turning movement counts on Thursday, November 21, 2024 from 06:00 to 09:00 and 15:00 to 18:00 to document the typical weekday morning and afternoon peak hour traffic volumes for the following study intersections:
 - Site Access & Highway 3A
- 4) The following peak hours were selected, based on the peak hours observed by the study intersections:
 - Weekday Morning Peak Hour – 07:45 – 08:45
 - Weekday Afternoon Peak Hour – 16:15 – 17:15
- 5) The proposed development at full build-out, is forecasted to generate a total of 36 vehicle trips (36 inbound, and 0 outbound) during the weekday morning peak hour and 36 vehicle trips (0 inbound and 36 outbound) during the weekday afternoon peak hour.
- 6) A capacity analysis was conducted at the study intersection with the following results:
 - Site Access & Highway 3A: LOS A (Excellent) during all analysis periods.
- 7) A left-turn warrant analysis was conducted for the eastbound left-turn movement at the intersection of the Site Access & Highway 3A.
 - A left-turn lane was determined to **not be warranted** in all analysis scenarios.
- 8) Swept path analysis using the design vehicle WB-20 was conducted and no conflicts were found with a 0.5 metre buffer.
- 9) Sight line analysis was conducted using an 80 km/h design speed for stopping sight distance. The measured sight lines exceeded the design SSD.

8.2 Recommendations

- 1) CTS recommends that no further changes to the proposed layout and design of the site expansion are needed.
- 2) CTS recommends that the applicant work with the RDCK to have a streetlight installed on an existing pole in the immediate vicinity of the proposed new access.

We would like to take this opportunity to thank you for this unique project and we look forward to working with you again in the future. Please call the undersigned should you have any questions or comments.

Yours truly,

CREATIVE TRANSPORTATION SOLUTIONS LTD.

CTS Permit to Practice: 1000697

Reviewed by:

Prepared by:

Gary Vlieg, M.Sc., P.Eng. FEC
Vice President

Maciej Wysocki, EIT
Junior Traffic Engineer

Attachment

Appendix A

Turning Movement Counts



Site Access & Hwy 3A

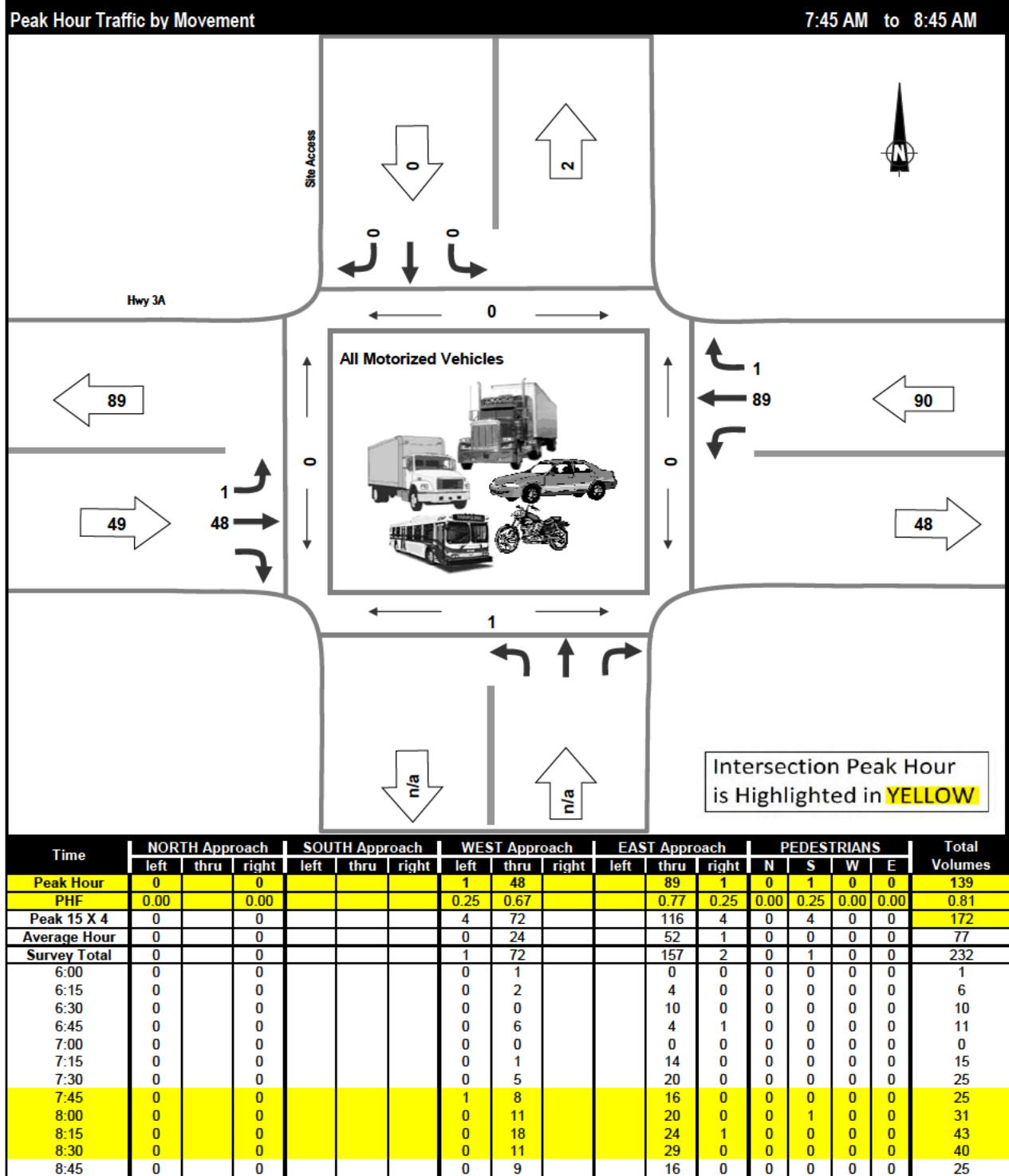
Thursday, November 21, 2024

Vehicle Classification Summary

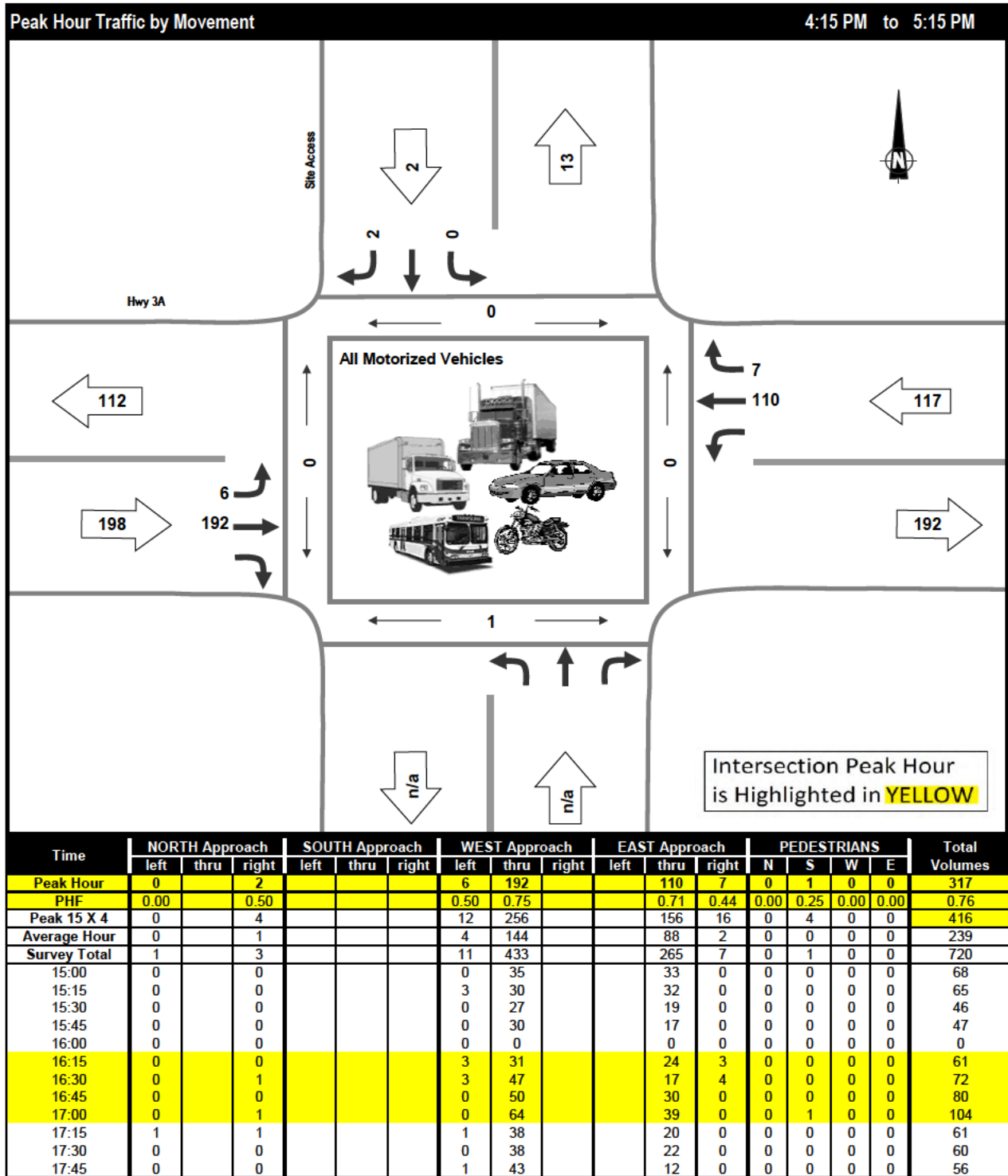
Project: #9393: Nelson Industrial Rezoning Access Study
Municipality: City of Nelson
Weather: Clear

Time Period	Entering Intersection	Vehicle Classification					Total
		Passenger Cars	Heavy Vehicles (3 or more axles)				
Morning (06:00 - 09:00)	Volume	220	12				232
	%	94.8%	5.2%				100.0%
	Volume						
	%						
Afternoon (15:00 - 18:00)	Volume	706	14				720
	%	98.1%	1.9%				100.0%
Total (6 Hours)	Volume	926	26				952
	%	97.3%	2.7%				100.0%

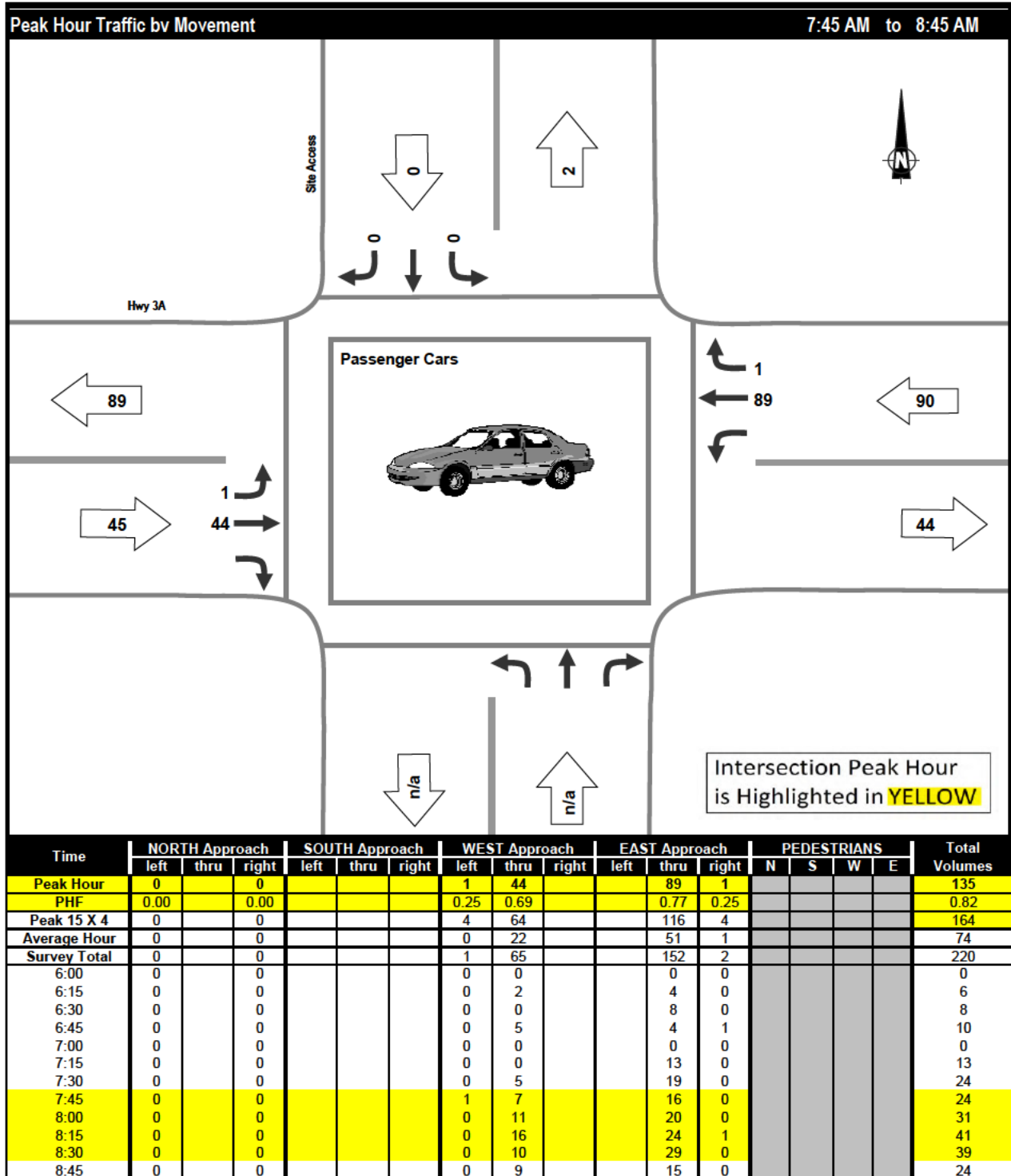
Project: #9393: Nelson Industrial Rezoning Access Study
Municipality: City of Nelson
Weather: Clear
Vehicle Class: All Motorized Vehicles

Morning Peak Period


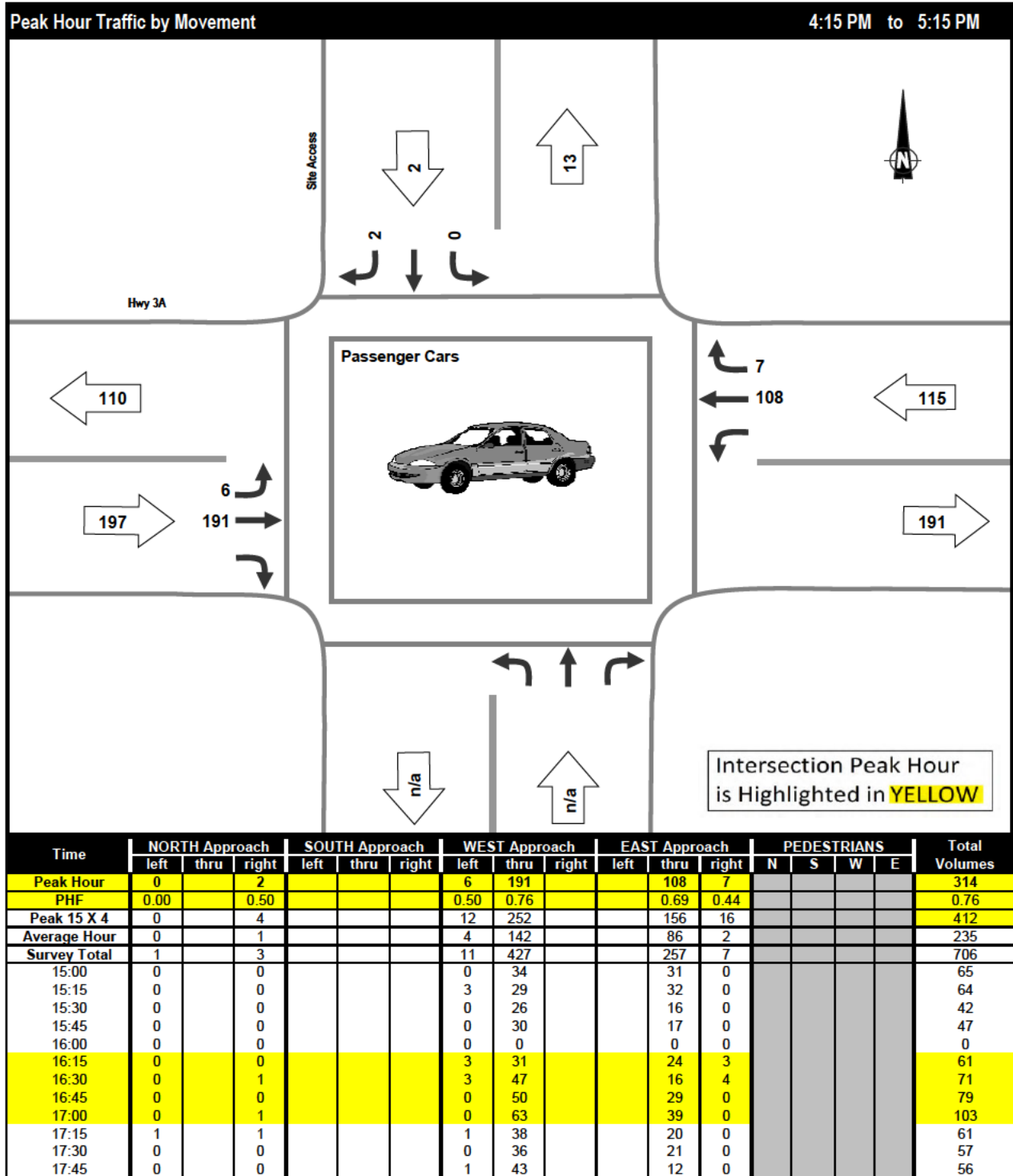
Project: #9393: Nelson Industrial Rezoning Access Study
Municipality: City of Nelson
Weather: Clear
Vehicle Class: All Motorized Vehicles

Afternoon Peak Period


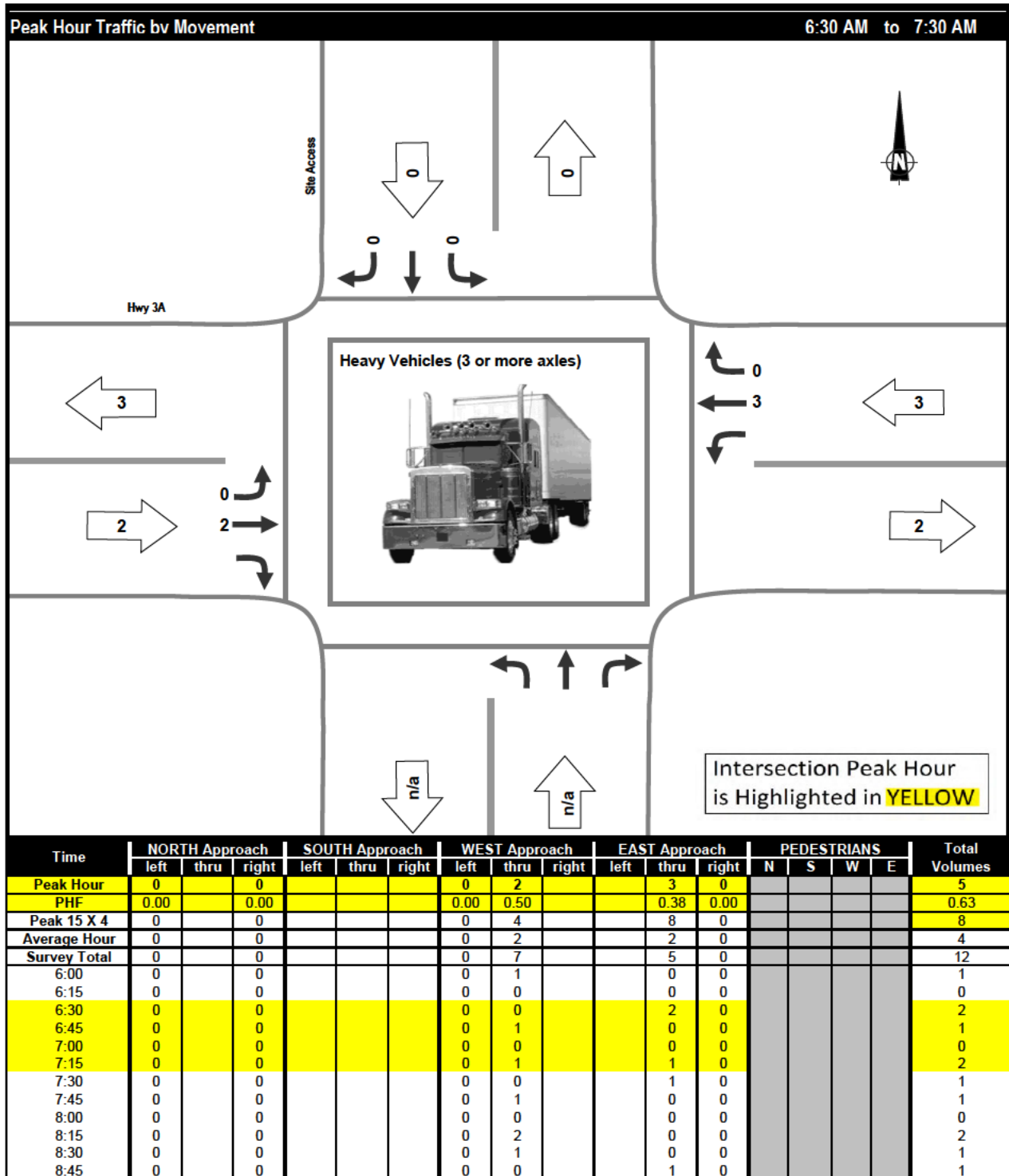
Project: #9393: Nelson Industrial Rezoning Access Study
Municipality: City of Nelson
Weather: Clear
Vehicle Class: Passenger Cars

Morning Peak Period


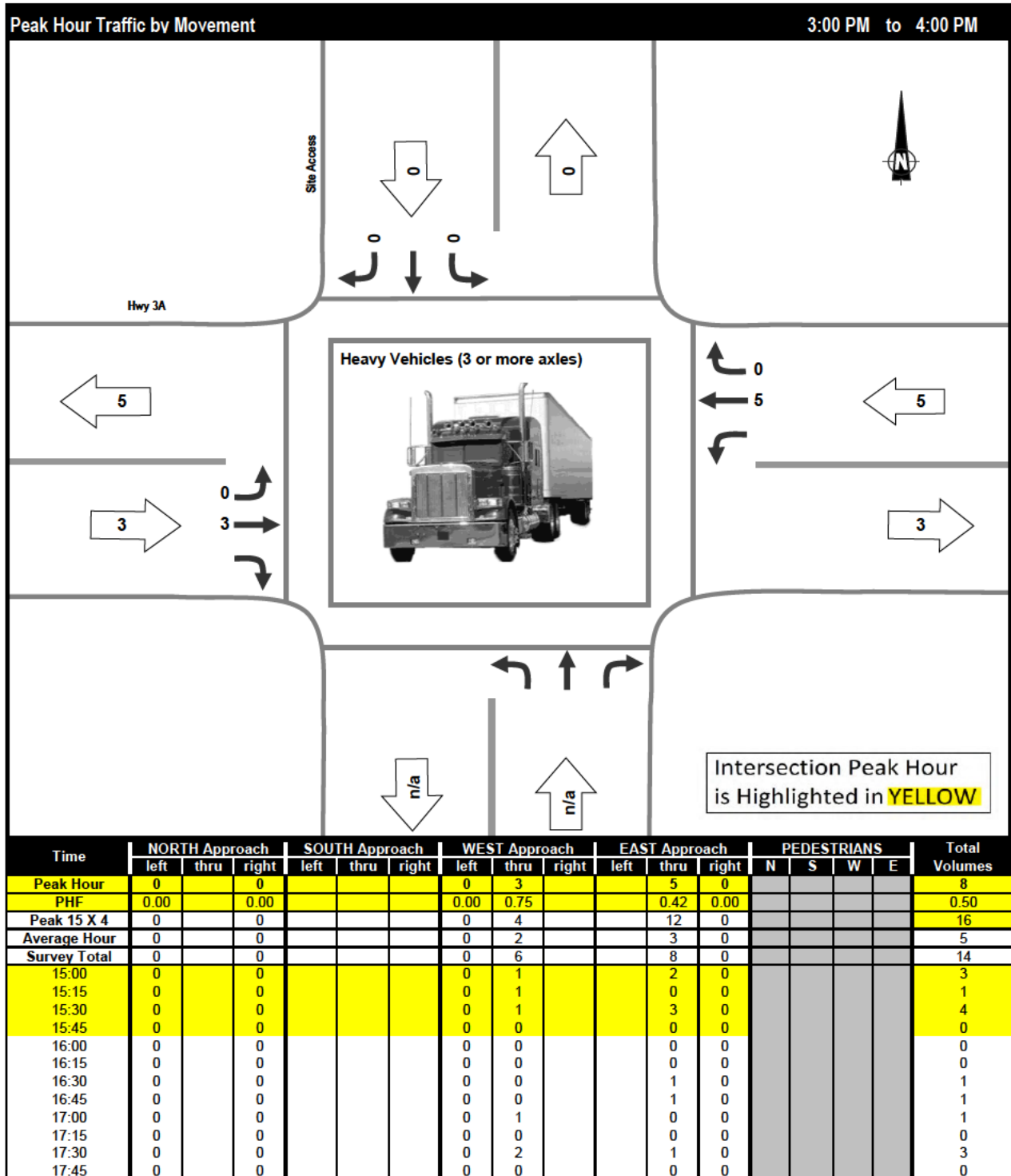
Project: #9393: Nelson Industrial Rezoning Access Study
Municipality: City of Nelson
Weather: Clear
Vehicle Class: Passenger Cars

Afternoon Peak Period


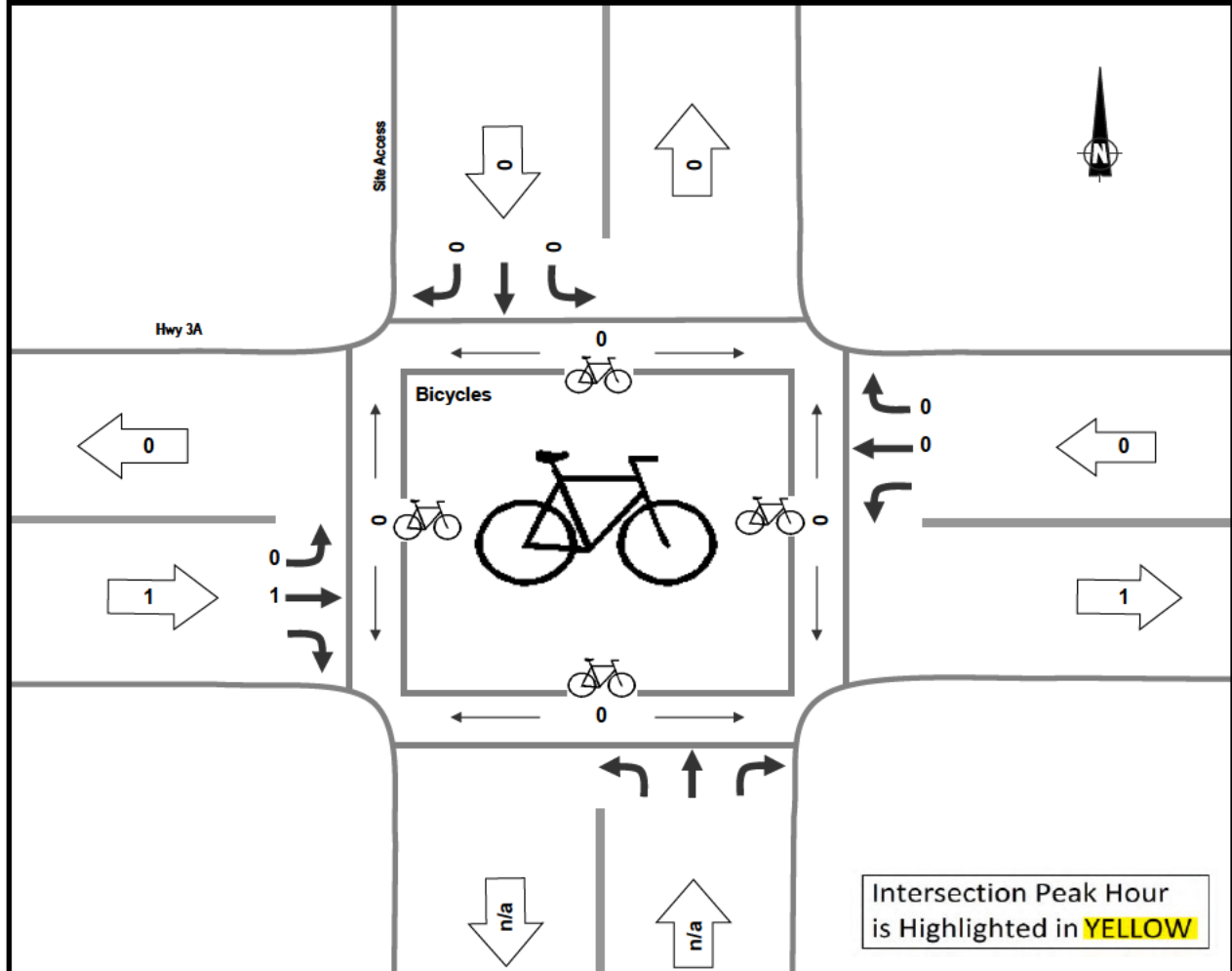
Project: #9393: Nelson Industrial Rezoning Access Study
Municipality: City of Nelson
Weather: Clear
Vehicle Class: Heavy Vehicles (3 or more axes)

Morning Peak Period


Project: #9393: Nelson Industrial Rezoning Access Study
Municipality: City of Nelson
Weather: Clear
Vehicle Class: Heavy Vehicles (3 or more axles)

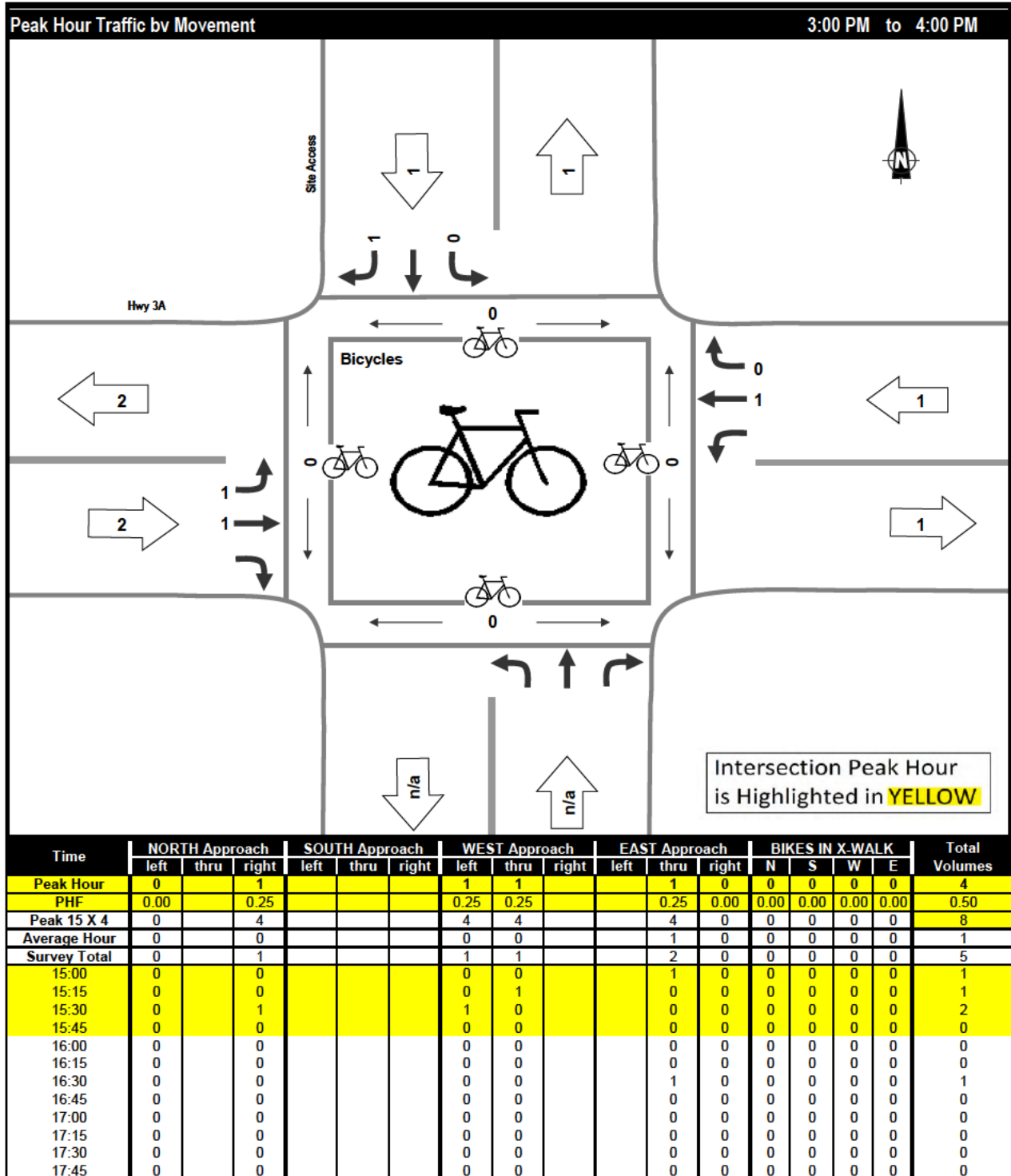
Afternoon Peak Period


Project: #9393: Nelson Industrial Rezoning Access Study
Municipality: City of Nelson
Weather: Clear
Vehicle Class: Bicycles

Morning Peak Period
Peak Hour Traffic by Movement
7:45 AM to 8:45 AM


Time	NORTH Approach			SOUTH Approach			WEST Approach			EAST Approach			BIKES IN X-WALK				Total Volumes
	left	thru	right	left	thru	right	left	thru	right	left	thru	right	N	S	W	E	
Peak Hour	0		0				0	1			0	0	0	0	0	0	1
PHF	0.00		0.00				0.00	0.25			0.00	0.00	0.00	0.00	0.00	0.00	0.25
Peak 15 X 4	0		0				0	4			0	0	0	0	0	0	4
Average Hour	0		0				0	0			0	0	0	0	0	0	0
Survey Total	0		0				0	1			0	0	0	0	0	0	1
6:00	0		0				0	0			0	0	0	0	0	0	0
6:15	0		0				0	0			0	0	0	0	0	0	0
6:30	0		0				0	0			0	0	0	0	0	0	0
6:45	0		0				0	0			0	0	0	0	0	0	0
7:00	0		0				0	0			0	0	0	0	0	0	0
7:15	0		0				0	0			0	0	0	0	0	0	0
7:30	0		0				0	0			0	0	0	0	0	0	0
7:45	0		0				0	0			0	0	0	0	0	0	0
8:00	0		0				0	0			0	0	0	0	0	0	0
8:15	0		0				0	0			0	0	0	0	0	0	0
8:30	0		0				0	1			0	0	0	0	0	0	1
8:45	0		0				0	0			0	0	0	0	0	0	0

Project: #9393: Nelson Industrial Rezoning Access Study
Municipality: City of Nelson
Weather: Clear
Vehicle Class: Bicycles

Afternoon Peak Period


Appendix B

Spearhead Employee and Trip Projections

NEW DEVELOPMENT	YEAR	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
	TRANSPORT TRUCKS										
	M³ INPUT LAMELLA BY SPECIES	2624	4665	5423	5423	5423	5423	5423	5423	5423	5423
	TOTAL INBOUND TRUCKS PER YEAR	58	104	121	121	121	121	121	121	121	121
	TOTAL INBOUND TRUCKS PER WEEK	1.12	1.99	2.32	2.32	2.32	2.32	2.32	2.32	2.32	2.32
	M³ FINISHED PRODUCT SHIPPED	2303	4095	4760	4760	4760	4760	4760	4760	4760	4760
	TOTAL OUTBOUND TRUCKS PER YEAR	66	117	136	136	136	136	136	136	136	136
	TOTAL OUTBOUND TRUCKS PER WEEK	1.27	2.25	2.62	2.62	2.62	2.62	2.62	2.62	2.62	2.62
		1.27	2.25	2.62	2.62	2.62	2.62	2.62	2.62	2.62	2.62
EXISTING	SPEARHED 2024 TRUCK PER WEEK AVERAGE	2	2	2	2	2	2	2	2	2	2
COMBINED	TOTAL AVERAGE TRUCKS PER WEEK	3.36	4.42	4.82	4.82	4.82	4.82	4.82	4.82	4.82	4.82

How many m3 delivered per truck avg?

45 m3 / truck

How many m3 shipping out per truck avg?

35 m3 / truck

Max Per Week

Average Per Week

How many trucks are being shared in/out?

75% Efficiency rate

NEW DEVELOPMENT	YEAR	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
	Vehicle Trips										
	PRODUCTION STAFF: 6:30AM-4:00PM	6	8	9	9	9	9	9	9	9	9
	PRODUCTION STAFF: 7:30AM-5:15PM	10	13	14	14	14	14	14	14	14	14
	OVERHEAD STAFF: 8:30AM-5:00PM	9	13	14	14	15	15	15	16	16	16
	OVERHEAD STAFF: 9:30AM-6:00PM	13	19	22	22	22	22	23	24	24	25
	Daycare Staff: 8:30AM-5:30PM	0	0	0	0	2	2	2	2	2	2
	TOTAL OVERHEAD STAFF WORKING AT HQ	0	0	0	0	26	26	27	28	28	29
	TOTAL STAFF WORKING AT HQ	10	13	14	14	40	40	41	42	42	42
EXISTING	PRODUCTION STAFF: 6:30AM-4:00PM	11	11	11	11	11	11	11	11	11	11
	PRODUCTION STAFF: 7:30AM-5:15PM	16	16	16	16	16	16	16	16	16	16
	OVERHEAD STAFF: 8:30AM-5:00PM	15	15	15	15	15	15	15	15	15	15
	OVERHEAD STAFF: 9:30AM-6:00PM	23	23	23	23	23	23	23	23	23	23
	TOTAL OVERHEAD STAFF WORKING AT HQ	10	10	10	10	10	10	10	10	10	10
	TOTAL STAFF WORKING AT HQ	37	37	37	37	37	37	37	37	37	37
COMBINED	TOTAL STAFF WORKING AT HQ	46	49	51	51	77	77	77	79	79	79
COMBINED	ARRIVALS BY TIME	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
	6:30am	17	19	20	20	20	20	20	20	20	20
	7:30am	26	29	30	30	32	32	32	32	32	32
	8:30am	10	10	10	10	20	20	20	20	20	21
	9:30am	15	15	15	15	29	29	30	30	30	31
	DEPARTURES BY TIME	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
	4:00pm	17	19	20	20	20	20	20	20	20	20
	5:00pm	10	10	10	10	20	20	20	20	20	21
	5:15pm	26	29	30	30	30	30	30	30	30	30
	5:30pm	0	0	0	0	2	2	2	2	2	2
	6:00pm	15	15	15	15	29	29	30	30	30	31

How many overhead (office) staff are working at HQ?

65% OH Staff working from HQ

Rest of staff work from Nelson office, remote, etc.

How many production staff are on the early start schedule?

40% Production staff start early

How many overhead staff are on the early start schedule?

40% Production staff start early

Total Current Production Staff

27 Staff

Total Current Overhead Staff

38 Staff

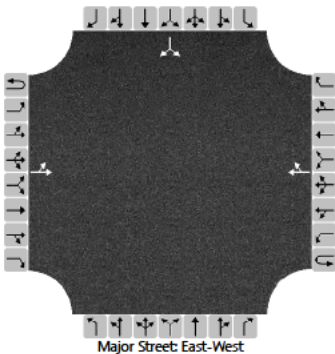
Appendix C

Capacity Analysis

HCS Two-Way Stop-Control Report

General Information		Site Information	
Analyst	MW	Intersection	Site Access & Highway 3A
Agency/Co.	CTS	Jurisdiction	RDCK
Date Performed	12/6/2024	East/West Street	Highway 3A
Analysis Year	2024	North/South Street	Site Access
Time Analyzed	AM 2024 Base	Peak Hour Factor	0.81
Intersection Orientation	East-West	Analysis Time Period (hrs)	0.25
Project Description	9393		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	0	0		0	1	0
Configuration		LT						TR							LR	
Volume (veh/h)		2	83				153	2						0		0
Percent Heavy Vehicles (%)		3												3		3
Proportion Time Blocked																
Percent Grade (%)													0			
Right Turn Channelized																
Median Type Storage					Undivided											

Critical and Follow-up Headways

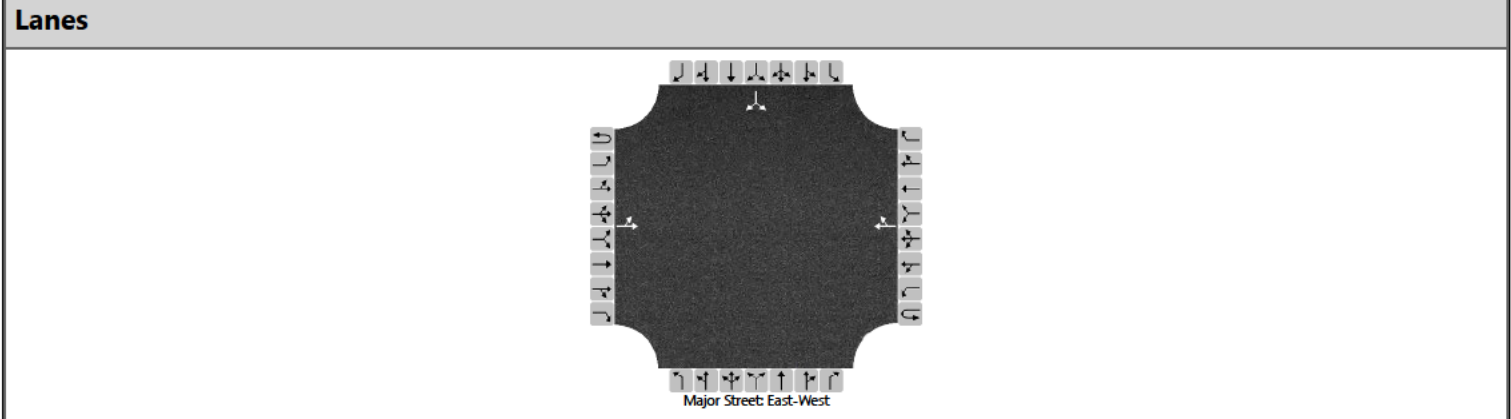
Base Critical Headway (sec)		4.1												7.1		6.2
Critical Headway (sec)		4.13												6.43		6.23
Base Follow-Up Headway (sec)		2.2												3.5		3.3
Follow-Up Headway (sec)		2.23												3.53		3.33

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		2													0	
Capacity, c (veh/h)		1376													0	
v/c Ratio		0.00														
95% Queue Length, Q ₉₅ (veh)		0.0														
95% Queue Length, Q ₉₅ (ft)		0.0														
Control Delay (s/veh)		7.6	0.0													
Level of Service (LOS)		A	A													
Approach Delay (s/veh)	0.2															
Approach LOS	A															

HCS Two-Way Stop-Control Report

General Information		Site Information	
Analyst	MW	Intersection	Site Access & Highway 3A
Agency/Co.	CTS	Jurisdiction	RDCK
Date Performed	12/6/2024	East/West Street	Highway 3A
Analysis Year	2026	North/South Street	Site Access
Time Analyzed	AM 2026 Base + Site	Peak Hour Factor	0.81
Intersection Orientation	East-West	Analysis Time Period (hrs)	0.25
Project Description	9393		



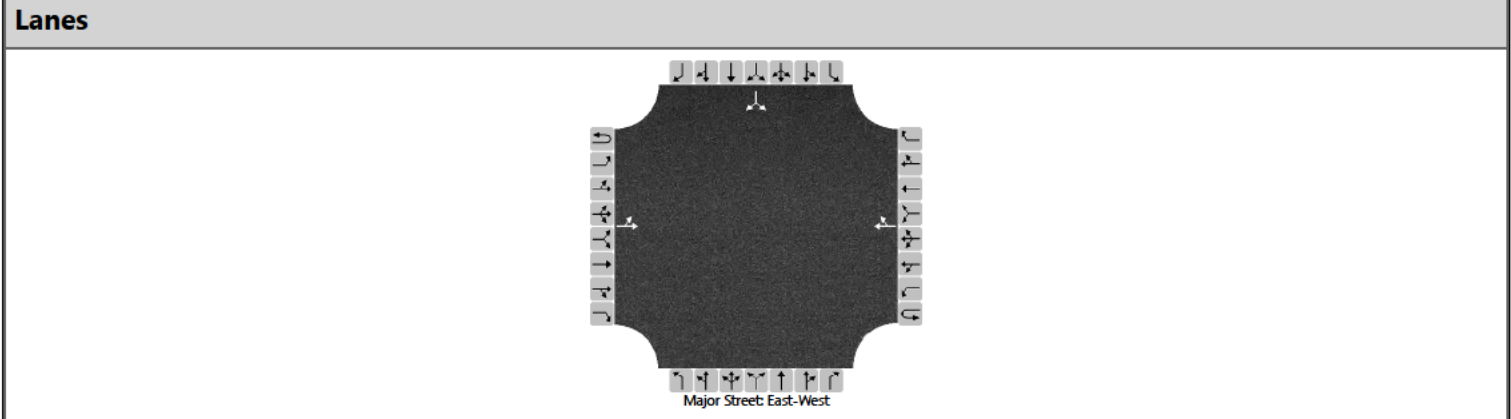
Vehicle Volumes and Adjustments																
Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	0	0		0	1	0
Configuration		LT						TR							LR	
Volume (veh/h)		34	84				155	6						0		0
Percent Heavy Vehicles (%)		3												3		3
Proportion Time Blocked																
Percent Grade (%)													0			
Right Turn Channelized																
Median Type Storage	Undivided															

Critical and Follow-up Headways																
Base Critical Headway (sec)		4.1												7.1		6.2
Critical Headway (sec)		4.13												6.43		6.23
Base Follow-Up Headway (sec)		2.2												3.5		3.3
Follow-Up Headway (sec)		2.23												3.53		3.33

Delay, Queue Length, and Level of Service																
Flow Rate, v (veh/h)		42													0	
Capacity, c (veh/h)		1368													0	
v/c Ratio		0.03														
95% Queue Length, Q ₉₅ (veh)		0.1														
95% Queue Length, Q ₉₅ (ft)		2.6														
Control Delay (s/veh)		7.7	0.3													
Level of Service (LOS)		A	A													
Approach Delay (s/veh)	2.4															
Approach LOS	A															

HCS Two-Way Stop-Control Report

General Information		Site Information	
Analyst	MW	Intersection	Site Access & Highway 3A
Agency/Co.	CTS	Jurisdiction	RDCK
Date Performed	12/6/2024	East/West Street	Highway 3A
Analysis Year	2026	North/South Street	Site Access
Time Analyzed	AM 2026 Base	Peak Hour Factor	0.81
Intersection Orientation	East-West	Analysis Time Period (hrs)	0.25
Project Description	9393		



Vehicle Volumes and Adjustments																
Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	0	0		0	1	0
Configuration		LT						TR							LR	
Volume (veh/h)		2	84				155	2						0		0
Percent Heavy Vehicles (%)		3												3		3
Proportion Time Blocked																
Percent Grade (%)													0			
Right Turn Channelized																
Median Type Storage	Undivided															

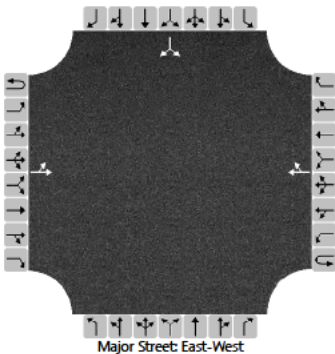
Critical and Follow-up Headways																
Base Critical Headway (sec)		4.1												7.1		6.2
Critical Headway (sec)		4.13												6.43		6.23
Base Follow-Up Headway (sec)		2.2												3.5		3.3
Follow-Up Headway (sec)		2.23												3.53		3.33

Delay, Queue Length, and Level of Service																
Flow Rate, v (veh/h)		2													0	
Capacity, c (veh/h)		1373													0	
v/c Ratio		0.00														
95% Queue Length, Q ₉₅ (veh)		0.0														
95% Queue Length, Q ₉₅ (ft)		0.0														
Control Delay (s/veh)		7.6	0.0													
Level of Service (LOS)		A	A													
Approach Delay (s/veh)	0.2															
Approach LOS	A															

HCS Two-Way Stop-Control Report

General Information		Site Information	
Analyst	MW	Intersection	Site Access & Highway 3A
Agency/Co.	CTS	Jurisdiction	RDCK
Date Performed	12/6/2024	East/West Street	Highway 3A
Analysis Year	2024	North/South Street	Site Access
Time Analyzed	PM 2024 Base	Peak Hour Factor	0.76
Intersection Orientation	East-West	Analysis Time Period (hrs)	0.25
Project Description	9393		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	0	0		0	1	0
Configuration		LT						TR							LR	
Volume (veh/h)		10	330				189	12						0		3
Percent Heavy Vehicles (%)		3												3		3
Proportion Time Blocked																
Percent Grade (%)													0			
Right Turn Channelized																
Median Type Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1												7.1		6.2
Critical Headway (sec)		4.13												6.43		6.23
Base Follow-Up Headway (sec)		2.2												3.5		3.3
Follow-Up Headway (sec)		2.23												3.53		3.33

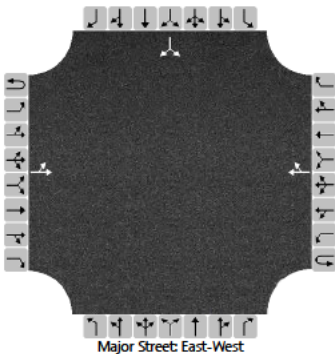
Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		13													4	
Capacity, c (veh/h)		1294													780	
v/c Ratio		0.01													0.01	
95% Queue Length, Q ₉₅ (veh)		0.0													0.0	
95% Queue Length, Q ₉₅ (ft)		0.0													0.0	
Control Delay (s/veh)		7.8	0.1												9.6	
Level of Service (LOS)		A	A												A	
Approach Delay (s/veh)	0.3												9.6			
Approach LOS	A												A			

HCS Two-Way Stop-Control Report

General Information		Site Information	
Analyst	MW	Intersection	Site Access & Highway 3A
Agency/Co.	CTS	Jurisdiction	RDCK
Date Performed	12/6/2024	East/West Street	Highway 3A
Analysis Year	2026	North/South Street	Site Access
Time Analyzed	PM 2026 Base + Site	Peak Hour Factor	0.76
Intersection Orientation	East-West	Analysis Time Period (hrs)	0.25
Project Description	9393		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	0	0		0	1	0
Configuration		LT						TR							LR	
Volume (veh/h)		10	334				191	12						4		35
Percent Heavy Vehicles (%)		3												3		3
Proportion Time Blocked																
Percent Grade (%)													0			
Right Turn Channelized																
Median Type Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1												7.1		6.2
Critical Headway (sec)		4.13												6.43		6.23
Base Follow-Up Headway (sec)		2.2												3.5		3.3
Follow-Up Headway (sec)		2.23												3.53		3.33

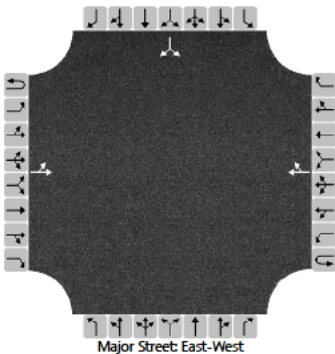
Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		13													51	
Capacity, c (veh/h)		1291													704	
v/c Ratio		0.01													0.07	
95% Queue Length, Q ₉₅ (veh)		0.0													0.2	
95% Queue Length, Q ₉₅ (ft)		0.0													5.1	
Control Delay (s/veh)		7.8	0.1												10.5	
Level of Service (LOS)		A	A												B	
Approach Delay (s/veh)	0.3												10.5			
Approach LOS	A												B			

HCS Two-Way Stop-Control Report

General Information		Site Information	
Analyst	MW	Intersection	Site Access & Highway 3A
Agency/Co.	CTS	Jurisdiction	RDCK
Date Performed	12/6/2024	East/West Street	Highway 3A
Analysis Year	2026	North/South Street	Site Access
Time Analyzed	PM 2026 Base	Peak Hour Factor	0.76
Intersection Orientation	East-West	Analysis Time Period (hrs)	0.25
Project Description	9393		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	0	0		0	1	0
Configuration		LT						TR							LR	
Volume (veh/h)		10	334				191	12						0		3
Percent Heavy Vehicles (%)		3												3		3
Proportion Time Blocked																
Percent Grade (%)													0			
Right Turn Channelized																
Median Type Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1												7.1		6.2
Critical Headway (sec)		4.13												6.43		6.23
Base Follow-Up Headway (sec)		2.2												3.5		3.3
Follow-Up Headway (sec)		2.23												3.53		3.33

Delay, Queue Length, and Level of Service

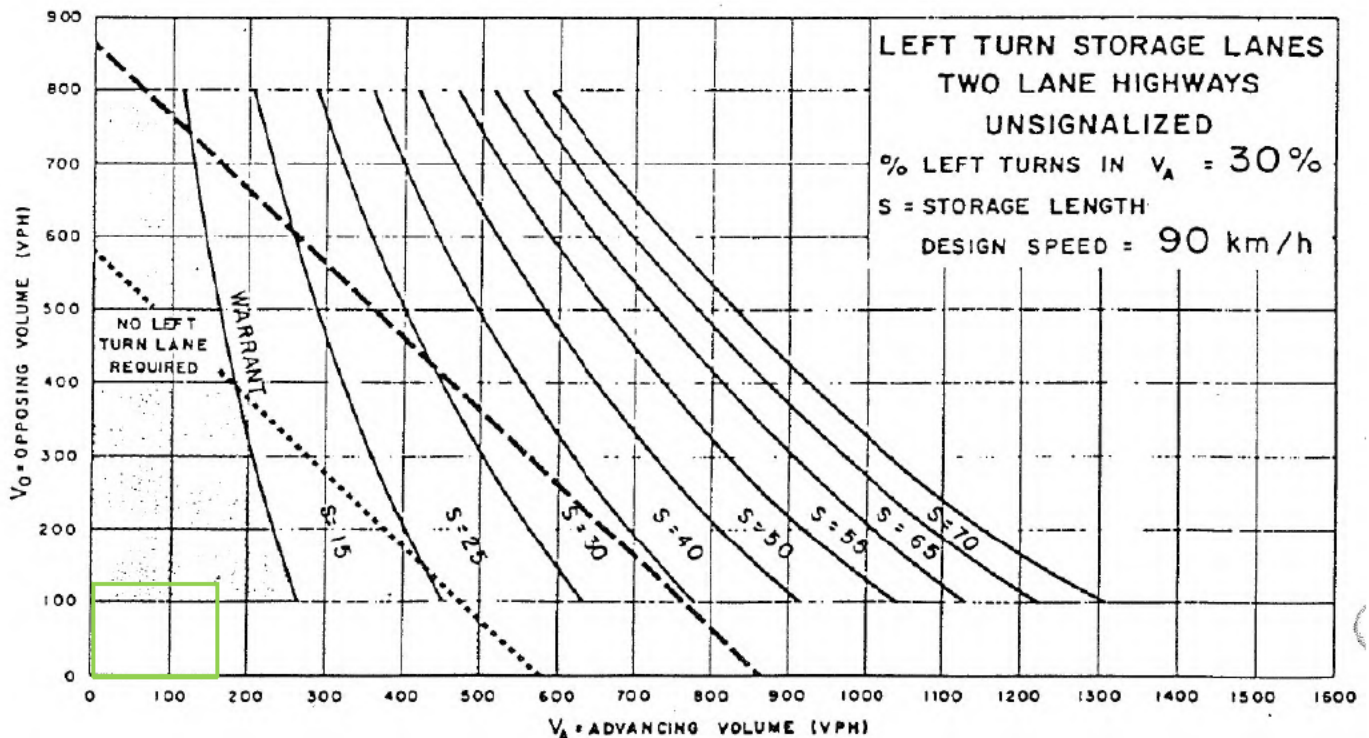
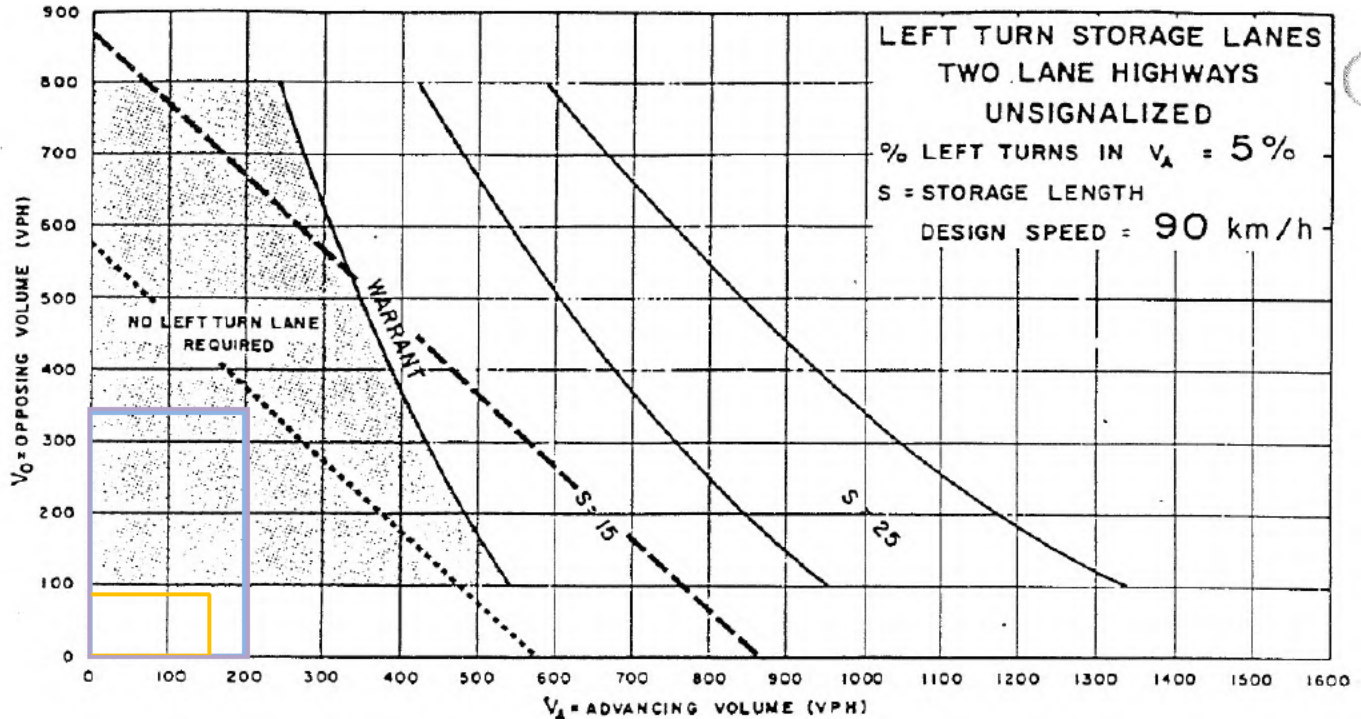
Flow Rate, v (veh/h)		13													4	
Capacity, c (veh/h)		1291													777	
v/c Ratio		0.01													0.01	
95% Queue Length, Q ₉₅ (veh)		0.0													0.0	
95% Queue Length, Q ₉₅ (ft)		0.0													0.0	
Control Delay (s/veh)		7.8	0.1												9.7	
Level of Service (LOS)		A	A												A	
Approach Delay (s/veh)	0.3												9.7			
Approach LOS	A												A			

Appendix D

Left-Turn Warrant Analysis

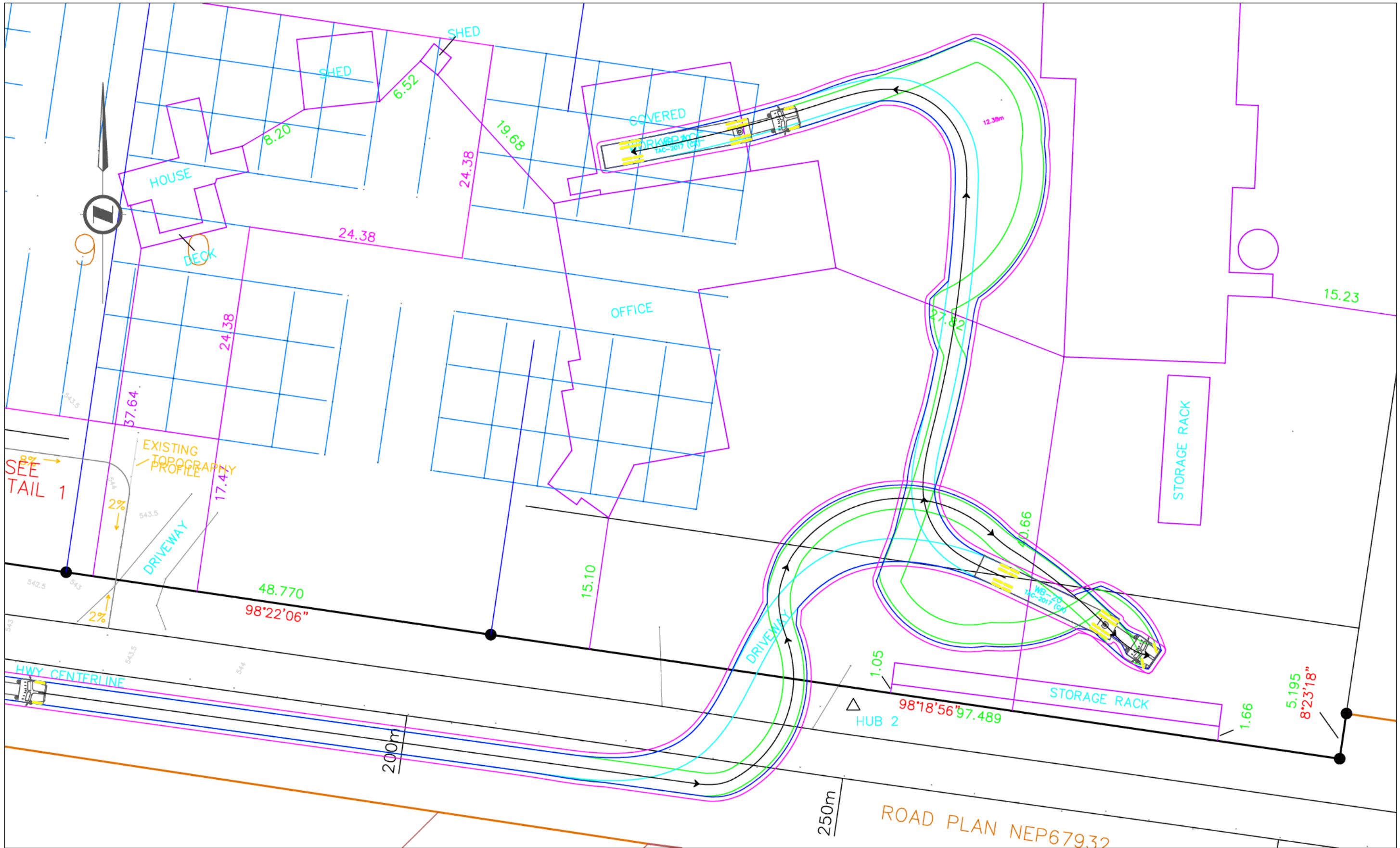
Project: 9393 - Nelson Industrial Rezoning Access Study
Design Speed: 90 km/h

LEFT-TURN LANE WARRANT ANALYSIS - HIGHWAY 3B									
Location	Direction	Scenario	Peak Hour	Opposing Traffic Volume V_O	Advancing Traffic Volume V_A	Left Turn Traffic Volume V_L	Percentage of Left-Turning Traffic %	Left-Turn Lane Warrant (Yes/No)	Left-Turn Storage Length S (m)
Highway 3A	EB	2024 Base	1 Thursday AM	155	85	2	2%	N	0
			2 Thursday PM	201	340	10	3%	N	0
		2026 Base + Site	3 Thursday AM	181	118	34	20%	N	0
			4 Thursday PM	203	344	10	3%	N	0



Appendix E

Swept Path Analysis



LEGEND

Front Tires
Rear Tires
Vehicle Body
0.5m Body Clearance
Conflict

Truck Width: 3.0m
Truck Length: 17.0m
Truck Height: 2.5m
Truck Wheelbase: 10.0m
Truck Turning Radius: 6.0m
Truck Turning Angle: 60°

REVISIONS	DESCRIPTION	DATE	BY

CLS Traffic Engineering Specialists

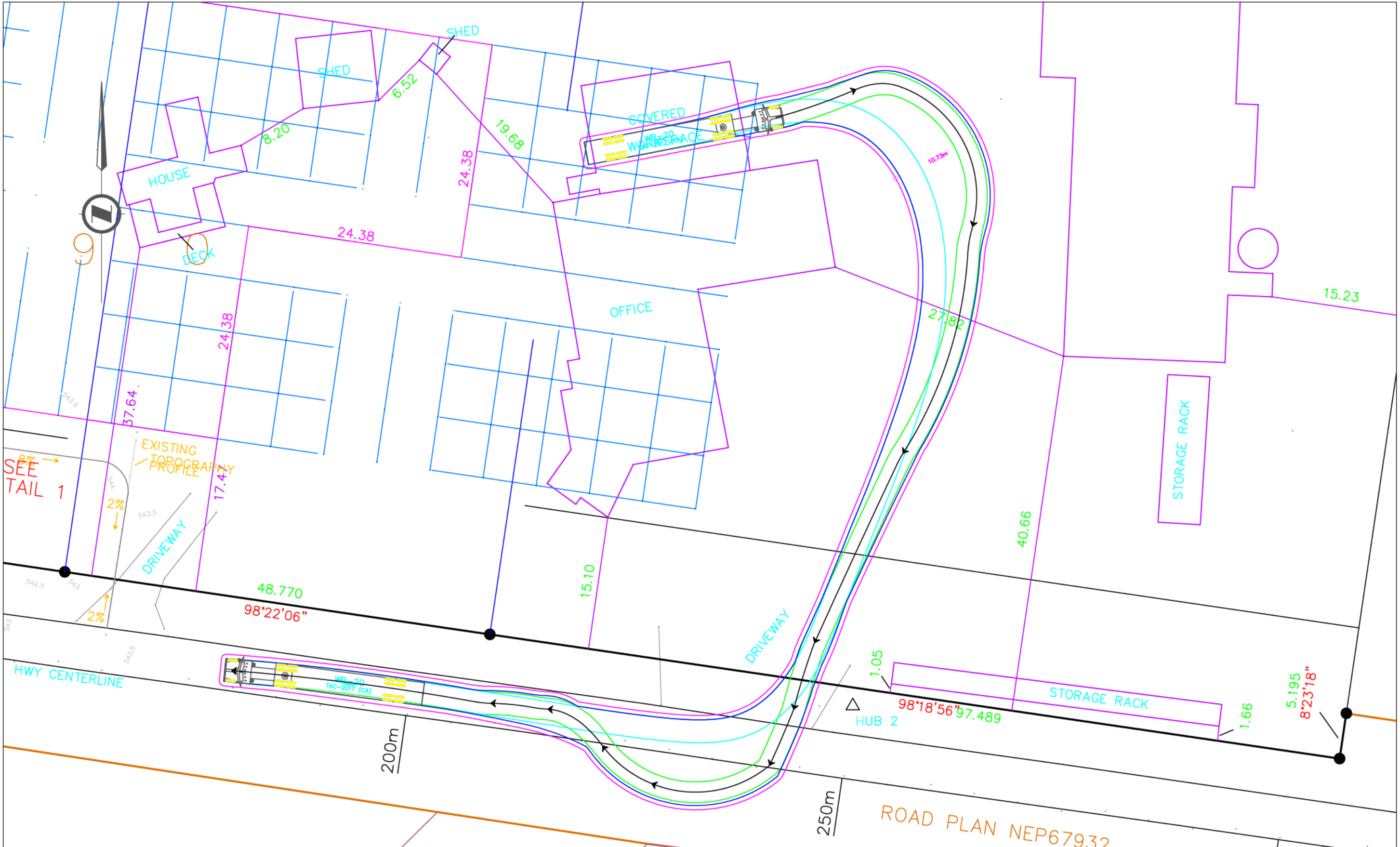
101A - 1952 Kingsway Avenue
Port Coquitlam, BC, Canada V3C 6C2
Tel: 604-936-6190
Fax: 604-936-6175

SPEARHEAD
4655 Highway 3A
Nelson, BC, V1L 6N3

**SPEARHEAD INDUSTRIAL REZONING
SWEEP PATH ANALYSIS
(WB-20 INBOUND)**

Stamp

Scale: NTS	CTS Permit to Practice	Drawing No: 1
Designed: M.W.	CTS Project Number: 9393	Revision No: 0
Drawn: M.W.		
Reviewed: G.V.	Date: DEC 2024	



LEGEND

Front Tires
Rear Tires
Vehicle Body
0.5m Body Clearance
Conflict

Truck	Width	Height	Lock to Lock	Steering Angle	Articulating Angle
Truck - Width	3.66	2.44	6.80	5.0	7.5
Truck - Height	3.66	2.44	6.80	5.0	7.5
Truck - Lock to Lock	3.66	2.44	6.80	5.0	7.5
Truck - Steering Angle	3.66	2.44	6.80	5.0	7.5
Truck - Articulating Angle	3.66	2.44	6.80	5.0	7.5

REVISIONS	DESCRIPTION	DATE	BY

CLS Traffic Engineering Specialists
101A - 1952 Kingsway Avenue
Port Coquitlam, BC, Canada V3C 6C2
Tel: 604-936-6190
Fax: 604-936-6175

SPEARHEAD
4655 Highway 3A
Nelson, BC, V1L 6N3

**SPEARHEAD INDUSTRIAL REZONING
SWEEP PATH ANALYSIS
(WB-20 OUTBOUND)**

Stamp	Scale	CTS Permit to Practice	Drawing No.
	NTS		2
	Designed: M.W.		
	Drawn: M.W.	CTS Project Number: 9393	
	Reviewed: G.V.	Date: DEC 2024	Revision No: 0

Appendix F

Field Notes



Suite 280-1385 West 8th Avenue
Vancouver, BC Canada
V6H 3V9

Tel: +1. 604.730.5688
E-mail: solutions@rwdi.com

MEMORANDUM

DATE:	2025-01-15	RWDI Reference No.: 2508962
TO:	Dean Shwedyk	EMAIL: [REDACTED]
FROM:	Keith Choi	EMAIL: [REDACTED]
	Michel Parent, C.E.T.	EMAIL: [REDACTED]
	Phil Tsui, P. Eng.	EMAIL: [REDACTED]
RE:	Environmental Noise Criteria Limits Review, Existing Conditions and Operation Suggestions Spearhead Expansion Nelson, BC.	

Dear Dean,

This memo provides an environmental noise review of the proposed Spearhead expansion to the existing facility at 4655 Highway 3A, Nelson, BC. The review consists of environmental noise criteria recommendations, an estimation of existing baseline sound levels at nearby receptors and preliminary mitigation advice for general design components for industrial facilities located adjacent to residential zones.

The Spearhead facility is in the Regional District of Central Kootenay (RDCK), northeast of the City of Nelson (CoN), BC. Both jurisdictions have enacted noise control bylaws, however, neither the RDCK bylaw No. 2440¹ nor the CoN bylaw No. 3201² have specific noise limits. The bylaws generally prohibit making noise that disturbs the public.

¹ Regional District of Central Kootenay (RDCK), (2015), Regional District of Central Kootenay Noise Control Bylaw No. 2440, 2015

² The Corporation of the City of Nelson (CoN), (2011), The Corporation of the City of Nelson Noise Control Bylaw No. 3201, 2011

STUDY AREA

The Spearhead facility is located north of Highway 3A, east of Nelson, BC, near the Kokanee Creek Provincial Park. The Spearhead expansion building is proposed for construction west of the existing buildings. Figure 1 shows the local study area including the Spearhead facility, expansion building approximate location and Highway 3A. The Canadian Pacific Railway Nelson Subdivision rail line is located across the West Arm of Kootenay Lake along the south shore, not shown in the figure below.



Figure 1: Local Study Area, Receptors and Spearhead Facility Location

Receptor locations evaluated are presented in Table 1. Receptors are selected based on proximity to the proposed expansion facility.

Table 1: Receptor Locations

Receptor ID	UTM Coordinates (NAD 83, Zone 10)	
	Easting (m)	Northing (m)
R01	490358	5494754
R02	490333	5494768
R03	490269	5494772
R04	490315	5494910
R05	490232	5494901
R06	490176	5494880
R07	490163	5494773
R08	490121	5494818



NOISE CRITERIA LIMITS REVIEW

The Spearhead facility expansion is within the RDCK which enacted bylaw No. 2440 that provides general prohibitions on causing unwanted sounds or noise that disturbs the public, however specific decibel limits are not defined. The nearby CoN has enacted bylaw No. 2440 that provides general regulations on undesirable sound emissions, however, that document also omits specific decibel limits for daytime and nighttime sound levels. The CoN bylaw No. 2440 does state that no person shall perform construction activities that disturb the comfort of persons between the nighttime hours 22:00 and 07:00 or on Sunday without written approval from the Director of Engineering and Operations.

RWDI has reviewed 26 local bylaws for various municipalities, townships, districts, and cities in the region for specific limits on noise. Of the bylaws reviewed in the region, only six have specific noise limits. A complete listing of the review bylaws is supplied in Attachment A, with the locations with specific sound level limits provided in Table 2 below:

Table 2: Summary of Regional Noise Bylaws with Specific Noise Level Limits

Location	Bylaw	Sound Level Limits (dBA)	
		Day	Night
District Of Coldstream	Noise Regulation Bylaw No. 1694, 2017	60	50
Regional District Of North Okanagan	Noise Regulation Bylaw No. 2581, 2013	60	50
Regional District Of Okanagan-Similkameen	Bylaw No. 2931, 2022	60	55
City Of Chilliwack	Community Standards Bylaw 2021, No. 5041	NA	65
City Of Abbotsford	Bylaw No. 2687-2017	60	55
The Corporation Of The Township Of Langley	Community Standards Bylaw 2019 No. 5448	55	45

Other community bylaws provide some guidance on acceptable sound level limits for various community zones. The Regional District of North Okanagan, a comparable district in terms of demographics and location within central BC, notes permitted sound levels from an Intermediate Zone (commercial) or Activity Zone (Industrial) to a Quiet Zone (Residential) of 60 dBA daytime (07:00 – 10:00), and 50 dBA nighttime (10:00-07:00). RWDI recommends these limits be applicable to properties within the RDCK for general guidance for the purpose of providing acoustical recommendations. It is RWDI's stance that limiting commercial or industrial facility noise contributions to neighbouring residential receptors to 60 dBA during the daytime and 50 dBA during the nighttime can reduce noise complaint concerns from the public. Other considerations such as allowable construction hours only between 07:00 and 22:00, except on Sundays, protects the public from unwanted sound.



EXISTING CONDITIONS

Existing conditions are defined as the existing ambient soundscape around the proposed Spearhead expansion site as shown in Attachment B. Sources of environmental sound from road traffic travelling along Highway 3A and distant rail freight train traffic on the Canadian Pacific Railway Nelson subdivision contribute to the existing conditions soundscape.

Traffic volumes for Highway 3A were obtained from the BC Ministry of Transportation (BC MoT) and Infrastructure website with the traffic reports presented in Attachment C. Traffic volumes for westbound traffic on Highway 3A adjacent to the Spearhead facility were obtained for the BC MoT site ID P-81-4 report³ that shows an Annual Average Traffic Data (AADT) volume of 1274 vehicles per day. The BC MoT site ID P-81-4 report does not present eastbound traffic; therefore, the eastbound traffic volumes were obtained from the BC MoT site ID P-31-3EW report⁴ that shows an AADT volume of 3162 vehicles overall with 45% of those vehicles travelling eastbound, resulting in 1423 vehicles per day. The eastbound AADT may be slightly elevated due to the eastbound turning volume from Harrop Access Road⁵.

For existing conditions modelling purposes the data was not grown for future volumes. Heavy vehicle percentages were assumed based on default model parameters for ordinary roads. Local roadway traffic volumes within the development area are not included in the model as their anticipated AADT is insignificant compared to the arterial roadway. Table 3 presents a summary of the road traffic data used for modelling.

Table 3: Road Traffic Volumes

Roadway	Segment	Current Traffic (AADT)	Speed Limit (km/hr)	% Heavy Vehicles	
				Daytime	Nighttime
Highway 3A	Westbound	1274	80	20	10
	Eastbound	1423 ¹	80	20	10

Notes: [1] Eastbound AADT may be slightly elevated due to additional eastbound turning volumes from Harrop Access Road. Turning volumes are not presented in the BC MoT Site ID P-31-2NS report in Attachment C.

³ BC MoT Site ID P-81-4 10-year Annual Summary for 2024, <https://prdoas6.pub-apps.th.gov.bc.ca/tig-public/Report.do?pdbSiteId=14235>

⁴ BC MoT Site ID P-31-3EW 10-year Annual Summary for 2024, <https://prdoas6.pub-apps.th.gov.bc.ca/tig-public/Report.do?pdbSiteId=14117>

⁵ BC MoT Site ID P-31-2NS 10-year Annual Summary for 2024, <https://prdoas6.pub-apps.th.gov.bc.ca/tig-public/Report.do?pdbSiteId=14172>

Rail traffic on the distant Canadian Pacific Railway (CPR) Nelson Subdivision may contribute to the existing ambient soundscape. Rail volume data was obtained from the Government of Canada open data website⁶ for grade crossing inventory that indicates the CPR Nelson Subdivision rail line is rated for two (2) trains per 24-hour period travelling at a speed of 20 miles per hour. The open data rail crossing summary is presented in Attachment D. The train composition was assumed based on RWDI's experience and typical model inputs in the absence of specific data from CPR. Table 4 presents a summary of the rail data used for modelling.

Table 4: Rail Traffic Volumes

Railway	Subdivision	Train Composition	Speed Limit (km/hr)	Train Pass-bys	
				Daytime	Nighttime
Canadian Pacific Railway	Nelson	2 Locomotives 65 Rail Cars	32 (20 mph)	1	1

Sound levels due to the adjacent road transportation sources were predicted using the RLS-90 standard (RLS,1990) as implemented in the Cadna/A software package. Rail traffic sources were predicted using the FTA/FRA calculation standards as implemented in the Cadna/A software package. Predicted sound levels are presented in Table 5.

Table 5: Transportation Model Predicted Sound Levels at Receptors

Receptor ID	Predicted Sound Level due to Current Traffic Volumes (dBA)		Receptor ID	Predicted Sound Level due to Current Traffic Volumes (dBA)	
	Daytime (07:00 to 22:00)	Nighttime (22:00 to 07:00)		Daytime (07:00 to 22:00)	Nighttime (22:00 to 07:00)
R01	61	50	R05	53	43
R02	64	54	R06	56	46
R03	62	52	R07	57	47
R04	52	42	R08	61	50

Based on the results from the environmental noise modelling, the predicted sound pressure levels at the receptors adjacent to the facility support the recommended 60 dBA daytime and 50 dBA nighttime criteria limits. Baseline monitoring may be beneficial to establish the actual sound levels at receptors.

⁶ Government of Canada open data website, <https://open.canada.ca/data/en/dataset/d0f54727-6c0b-4e5a-aa04-ea1463cf9f4c>



OPERATION SUGGESTIONS

Source contributions from commercial and industrial equipment may cause concern at neighbouring receptors and be the source of noise complaints. The following operational strategies considered at the planning and design stage may result in more cordial relations with public stakeholders and reduce or eliminate retrofit costs associated with addressing possible future complaints.

Operations and equipment have different predicted sound pressure levels at the receptors adjacent to the facility due to various factors (i.e., source sound power level, path of propagation, topography, source directivity, meteorological conditions, etc.). RWDI recommends considering the loudest sound source contributors that may have the greatest effect on neighboring receptors. RWDI does not have the proposed facility final design nor the proposed equipment sound power levels at this stage and is unsure of the actual equipment selection at the existing or expanded facility. The following list presents typical planning and design considerations for reduced sound levels at neighbouring receptors for wood fabrication facilities, based on our experience:

- Dust collector exhaust orientation; aiming exhaust source directivity away residential receptors. Installing silencers on dust collector exhaust outlets may also be effective.
- Enclosing dust collector air blower housing in an acoustical enclosure or installing an absorptive acoustic barrier very near the sources and of sufficient length and height to block the direct transmission path to the receptor. Effective sound barriers contain sufficient mass (i.e., 20 kg/m² minimum) to reduce the direct sound transmission path.
- Avoiding stockpiling materials along the property line adjacent to the receptor. The operation of a forklift with a back-up beeper can be a source of residence complaints.
- Loading and unloading materials can result in drop or impact noises. Schedule materials handling during daytime hours to minimize resident concerns.
- Buildings that do have operable doors should be closed during evening and nighttime shifts, when possible, to minimize sound contributions of these open-door sources during quieter nighttime hours.
- Select low-noise model heating ventilation and air conditioning (HVAC) equipment.

RWDI can recommend site specific sound source mitigation strategies (i.e., engineering solutions or administrative controls) upon receipt of final design sound equipment data.



Dean Shwedyk
Hemsworth Architecture
RWDI#2508962
January 15, 2025

CLOSING

We trust that this memo has provided you with all the information you require at this time. A review of the municipal noise criteria bylaws indicates that a design limit of 60 dBA during the daytime and 50 dBA during the nighttime is appropriate for this community. Site specific monitoring is recommended to confirm existing background noise levels. RWDI can provide further noise mitigation consulting upon request and receipt of final design data. Please do not hesitate to contact us should you have any questions.

Yours truly,

A handwritten signature in black ink, appearing to read 'Keith Choi'.

Keith Choi
Project Manager

A handwritten signature in black ink, appearing to read 'Michel Parent'.

Michel Parent, C.E.T
Senior Acoustical Consultant

A handwritten signature in black ink, appearing to read 'Phil Tsui'.

Phil Tsui, P.Eng,
Senior Acoustical Engineer

RWDI

January 15, 2025
Attach.



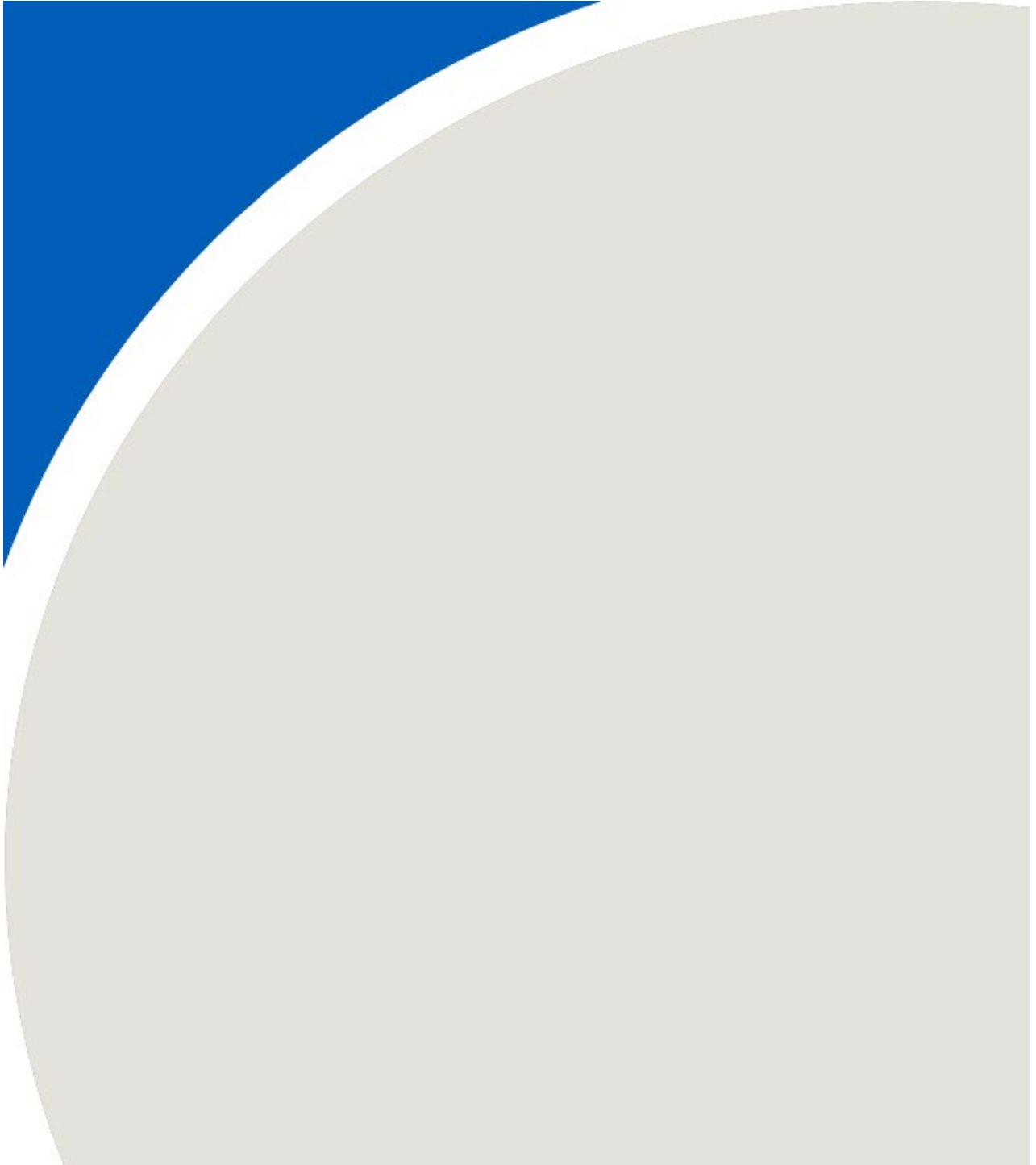
STATEMENT OF LIMITATIONS

This document entitled Environmental Noise Limits Review, Existing Conditions and Operation Suggestions was prepared by RWDI AIR Inc. ("RWDI") for Spearhead ("Client"). The results presented in this document have been conducted for the Client and are specific to the project described herein ("Project"). The results represent site conditions at the time the measurements were taken. Since equipment noise and vibration levels may change over time, it is recommended that RWDI be retained by the Client to verify applicability prior to relying on this data for another purpose.

The data contained in this document have also been presented for the specific purpose(s) set out herein. Should the Client or any other third party utilize the document and/or implement the conclusions and recommendations contained therein for any other purpose or project without the involvement of RWDI, the Client or such third party assumes any and all risk of any and all consequences arising from such use and RWDI accepts no responsibility for any liability, loss, or damage of any kind suffered by Client or any other third party arising therefrom.

Finally, it is imperative that the Client and/or any party relying on the conclusions and recommendations in this document carefully review the stated assumptions contained herein to understand the different factors which may impact the conclusions and recommendations provided.

APPENDIX A



ATTACHMENT A: NOISE BYLAW REVIEW AND SUMMARY

Summary of Local Noise Bylaws

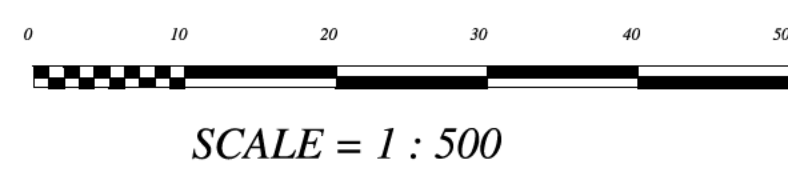
Location	BYLAW	Sound Level Limits (dBA)		
		Day	Night	Notes
Salmon Arm	Noise-Prevention-Bylaw-No-2037	No	No	No specific limits, subjective annoyance criteria.
The Corporation Of The District Of Sicamous	Good Neighbour Bylaw No. 1005, 2021	No	No	
City Of Vernon	GOOD NEIGHBOUR BYLAW 4980, 2005	No	No	
District Of Coldstream	Noise Regulation Bylaw No. 1694, 2017	60	50	From Activity Zone (Industrial) to Quiet Zone (Residential)
District Of Lake Country	Bylaw 857, 2013	No	No	No specific limits, subjective annoyance criteria.
Village Of Lumby	Good Neighbour Bylaw No. 838, 2020	No	No	
City Of Kelowna	BYLAW NO. 11500	No	No	
City Of West Kelowna	BYLAW NO. 0151	No	No	
City Of Kamloops	GOOD NEIGHBOUR BYLAW NO. 49-1	No	No	
District Of Logan Lake	Bylaw 721, 2012	No	No	
City Of Williams Lake	GOOD NEIGHBOUR BYLAW NO. 2194, 2014	No	No	
Columbia Shuswap Regional District	Bylaw No. 5754	No	No	
Thompson-Nicola Regional District	Bylaw No. 2480	No	No	
Regional District Of Central Okanagan	Bylaw No. 403	No	No	

Location	BYLAW	Sound Level Limits (dBA)		
		Day	Night	Notes
Regional District Of North Okanagan	Noise Regulation Bylaw No. 2581, 2013	60	50	From Activity Zone (Industrial) to Quiet Zone (Residential)
Regional District Of Okanagan-Similkameen	BYLAW NO. 2931, 2022	60	55	
Fraser Valley Regional District	Bylaw No. 0841,2007	No	No	No specific limits, subjective annoyance criteria.
Regional District Of Kootenay Boundary	Bylaw No. 1431	No	No	
Regional District Of Central Kootenay	Noise Control Bylaw No. 2440, 2015	No	No	
City of Nelson	Noise Control Bylaw No. 3201, 2011	No	No	
Cariboo Regional District	Bylaw No. 4713	No	No	
Squamish-Lillooet Regional District	Bylaw No. 1724-2021	No	No	
City Of Chilliwack	Community Standards Bylaw 2021, No. 5041	No	65	Commercial/Industrial Noise Limit
City Of Abbotsford	Bylaw No. 2687-2017	60	55	From Activity Zone (Industrial) to Quiet Zone (Residential)
District Of Kent	Noise Regulation Bylaw No. 1320, 2005	no	no	
The Corporation Of The Township Of Langley	Community Standards Bylaw 2019 No. 5448	55	45	Specific to all Quiet Zones.

APPENDIX B



SITE PLAN AND ROAD PROFILES OF
PARCEL A (BEING A CONSOLIDATION OP LOTS 1 AND 2, SEE CA5564282),
LOT S, LOT 4 AND LOT 5, DISTRICT LOT 790
KOOTENAY DISTRICT PLAN NEP2449
B.C.G.S. 82F.065

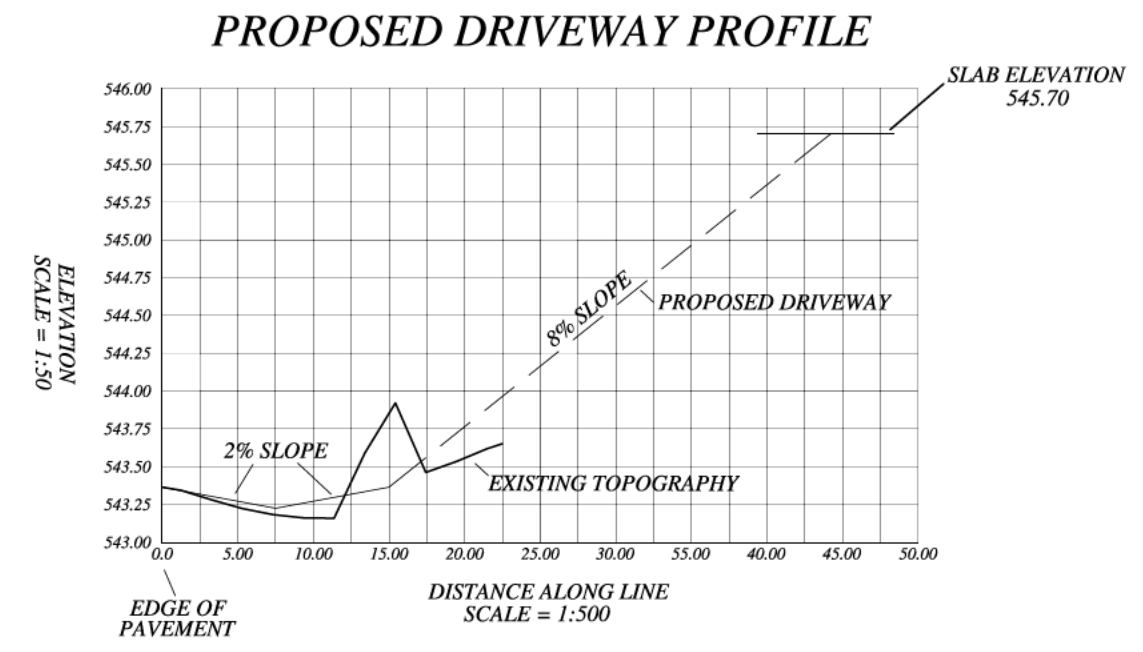
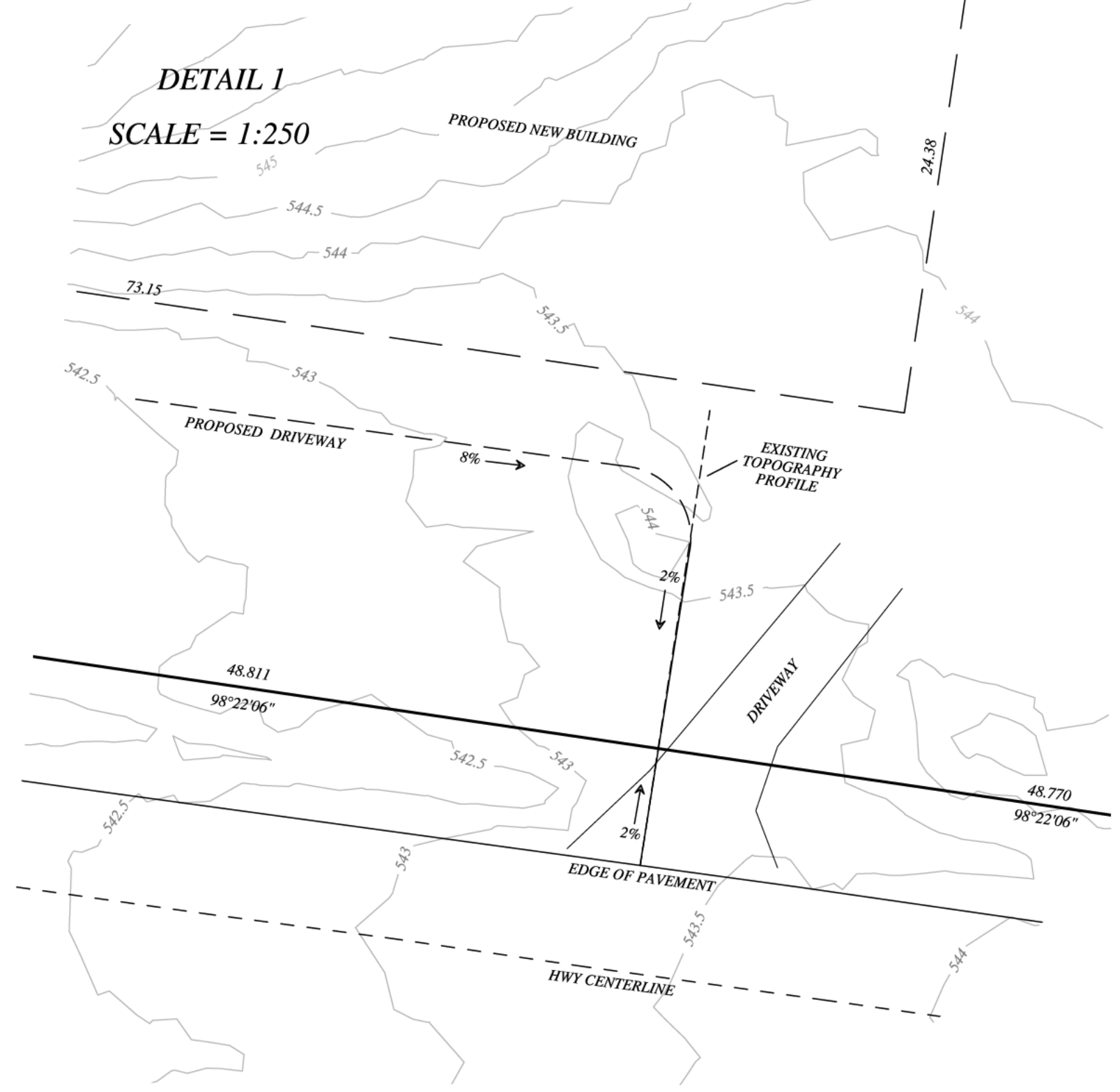
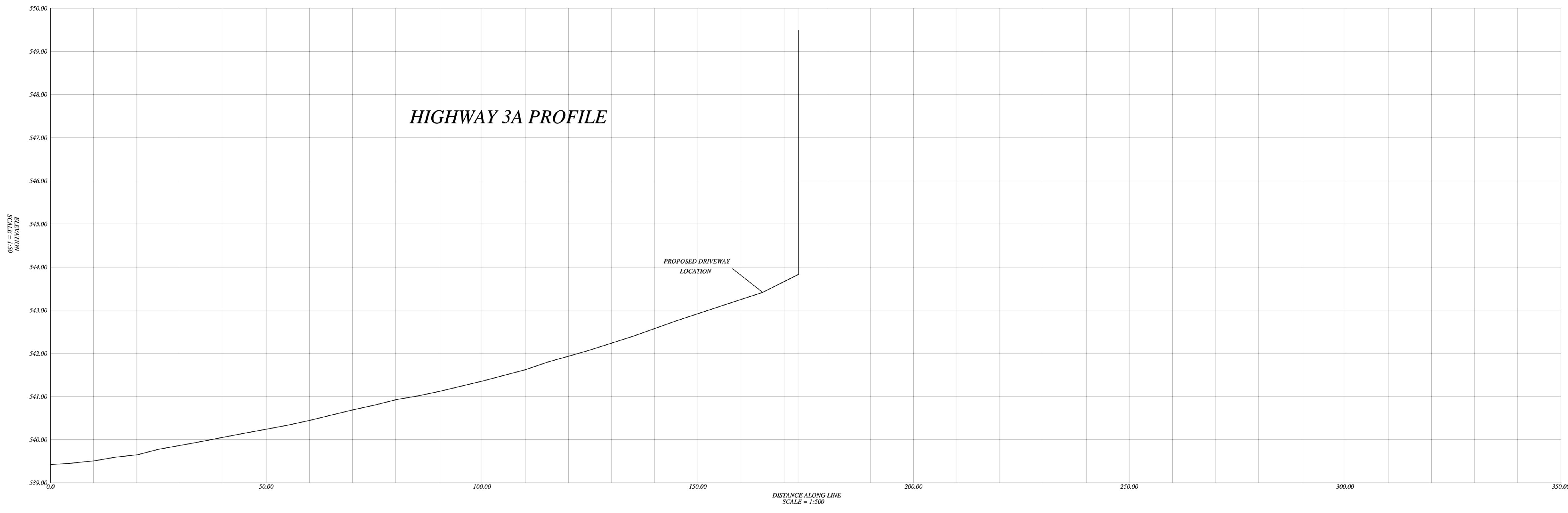
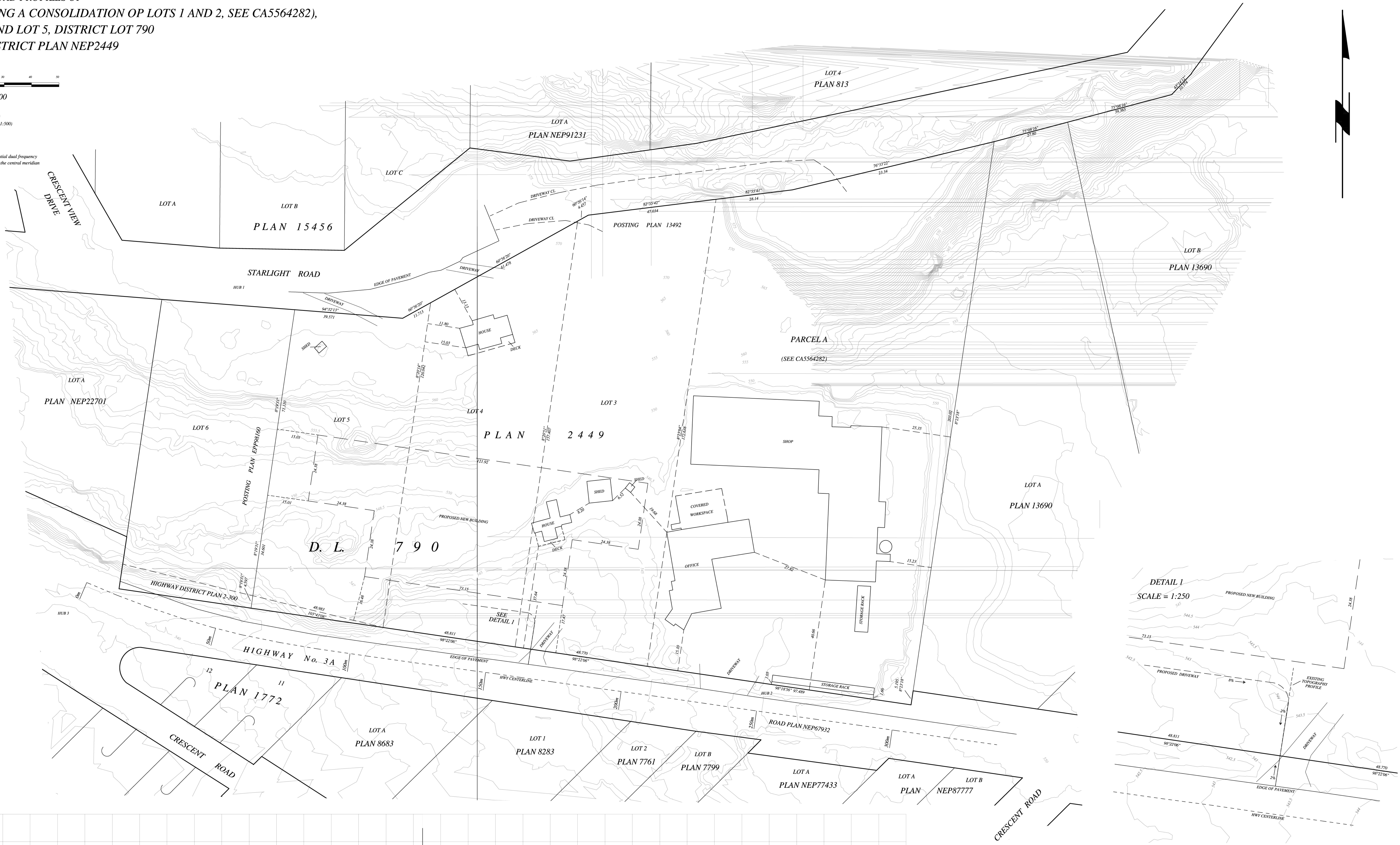


The intended plot size is 1118mm in width
and 864mm in height (E size at a scale of 1:500)

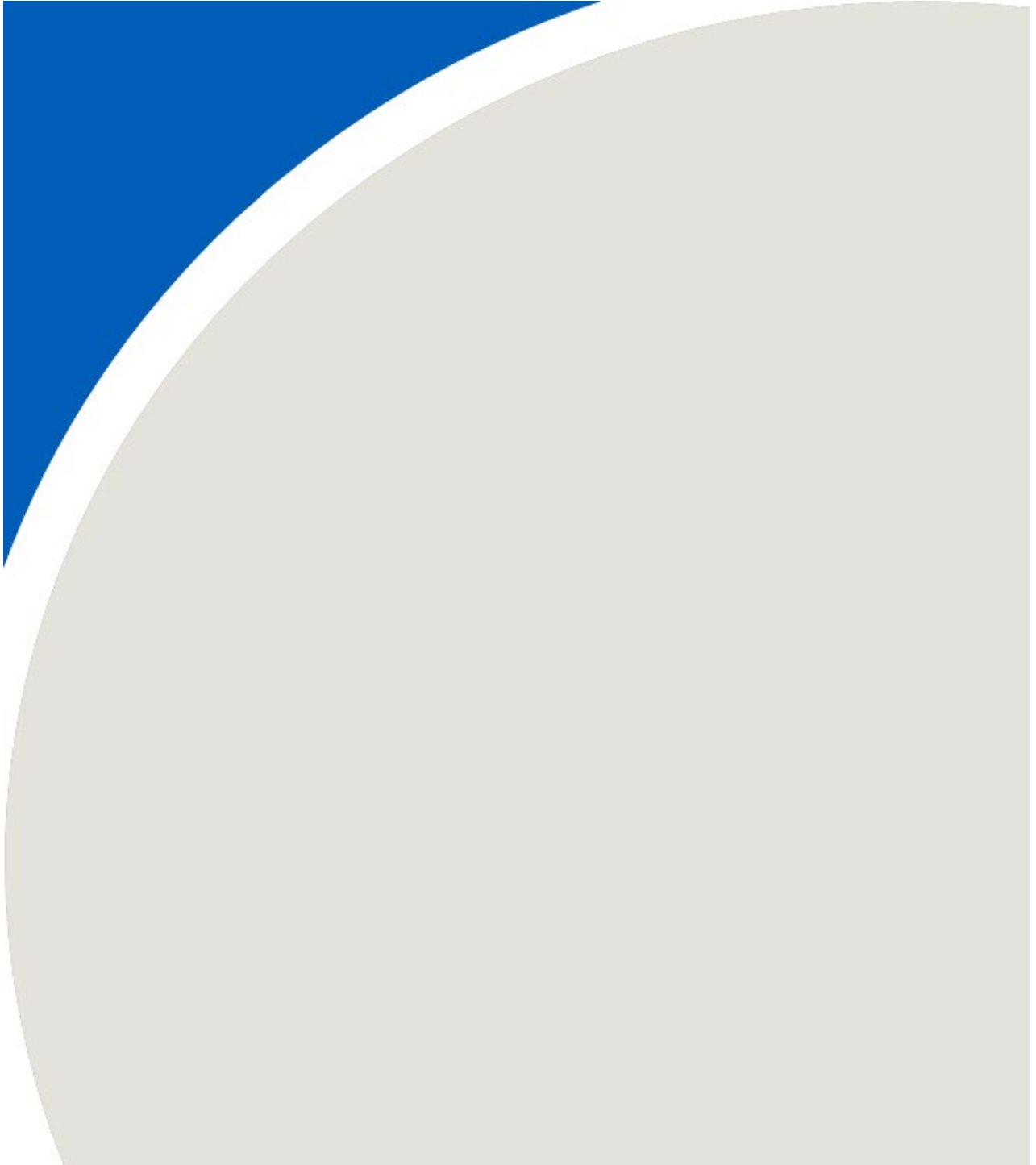
LEGEND

Grid bearings are derived from differential dual frequency
GNSS observations and are referred to the central meridian
UTM Zone 11.
Contours are 0.5m

- Denotes iron post found
- △ Denotes traverse hub placed
- ▲ Denotes traverse hub found



APPENDIX C



Traffic Data

10 Year Annual Summary for 2024

TM Site ID: **P-31-2NS**

TM Site Name: **Harrop - P-31-2NS, Harrop Access Road**

Location: **Harrop Access Road, just south of Route 3A, east of Nelson**

Posted Speed:

Report Run on: **Tuesday January 14 2025 12:54 PM**

Traffic Data in this report

AADT

Annual Average Daily Traffic
A calculated daily estimate of the number of vehicles passing this site.

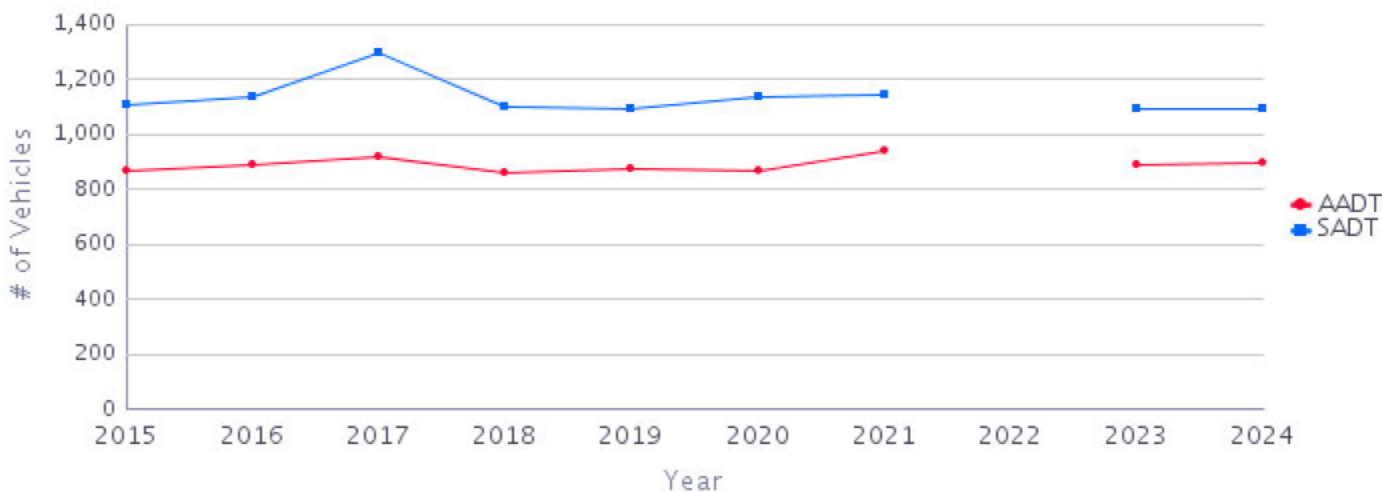
SADT

Summer Average Daily Traffic
(for the months of July and August)

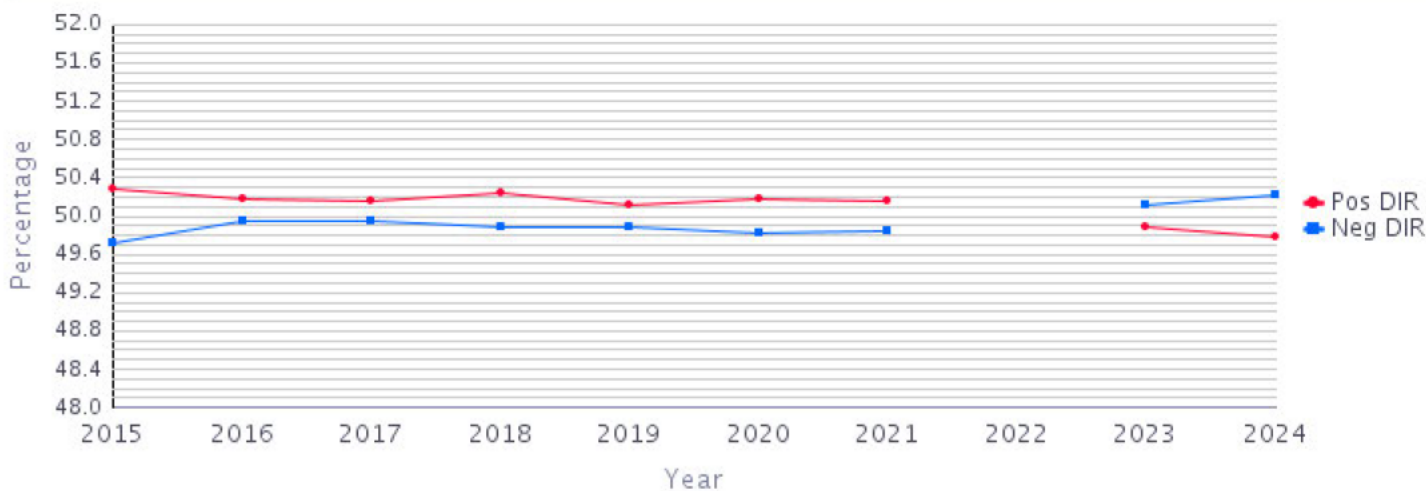
Average Daily Traffic Volumes

	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
AADT	871	889	919	860	874	869	941		890	898
SADT	1,107	1,136	1,297	1,097	1,095	1,135	1,143		1,095	1,093

10 Year Annual Statistics



10 Years % AADT by Direction



Traffic Data

10 Year Annual Summary for 2024

TM Site ID: **P-31-2NS**

TM Site Name: **Harrop - P-31-2NS, Harrop Access Road**

Location: Harrop Access Road, just south of Route 3A, east of Nelson

Posted Speed:

Report Run on: Tuesday January 14 2025 12:54 PM

Disclaimer information and the most current traffic data may be found at: <http://www.th.gov.bc.ca/trafficData>

Traffic Data

10 Year Annual Summary for 2024

TM Site: Description:

P-31-3EW ROUTE 3A, JUNCTION WITH HARROP FERRY ROAD JUST EAST OF NELSON
P-31-2NS HARROP FERRY ROAD, JUNCTION WITH ROUTE 3A JUST EAST OF NELSON
P-81-4 ROUTE 3A, JUNCTION WITH HARROP FERRY ROAD JUST EAST OF NELSON

Station: 51530P

Name: HARROP JUNCTION

Survey: 5153

▲ - Short Count Post

■ - Loops

■ - Cabinet

■ - Junction Box

□ - TRADAS Traffic Measurement Site

① - Channels

A - Detectors

PHOTOLOG

YEAR: -

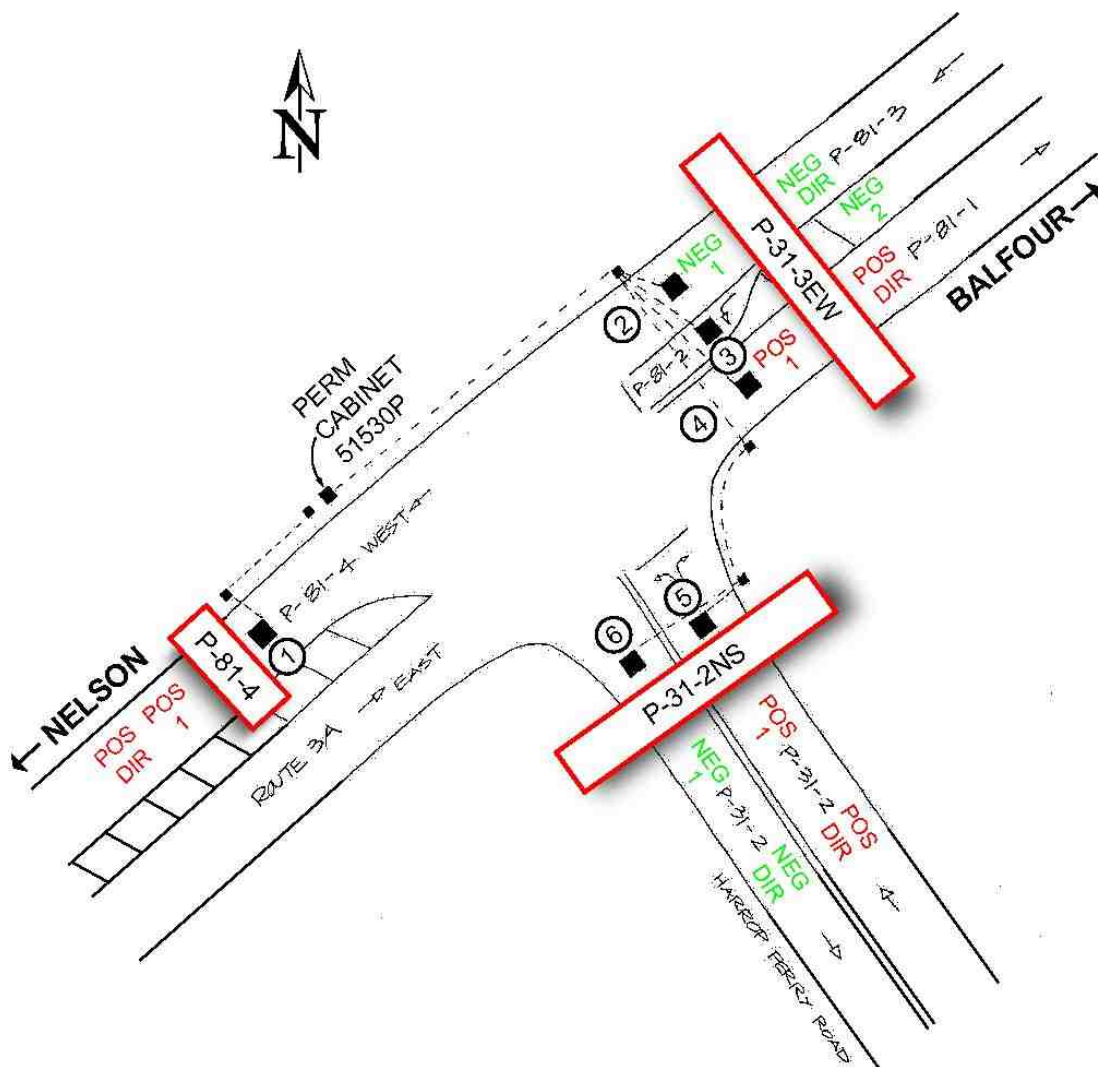
HIGHWAY: -

IMAGE NUMBER: -

SHOWS LOOPS: -

☐ YES

☒ NO



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Highway Planning Branch
TRANHighway Planning@gov.bc.ca

Revised Date: February / 2005
Version 3-A

Traffic Data

10 Year Annual Summary for 2024

TM Site ID: **P-31-3EW**

TM Site Name: **Harrop - P-31-3EW, Castlegar - Nelson Creston**

Location: **Route 3A, at Harrop Access Road, east of Nelson**

Posted Speed:

Report Run on: **Tuesday January 14 2025 11:25 AM**

AADT

Annual Average Daily Traffic

A calculated daily estimate of the number of vehicles passing this site.

SADT

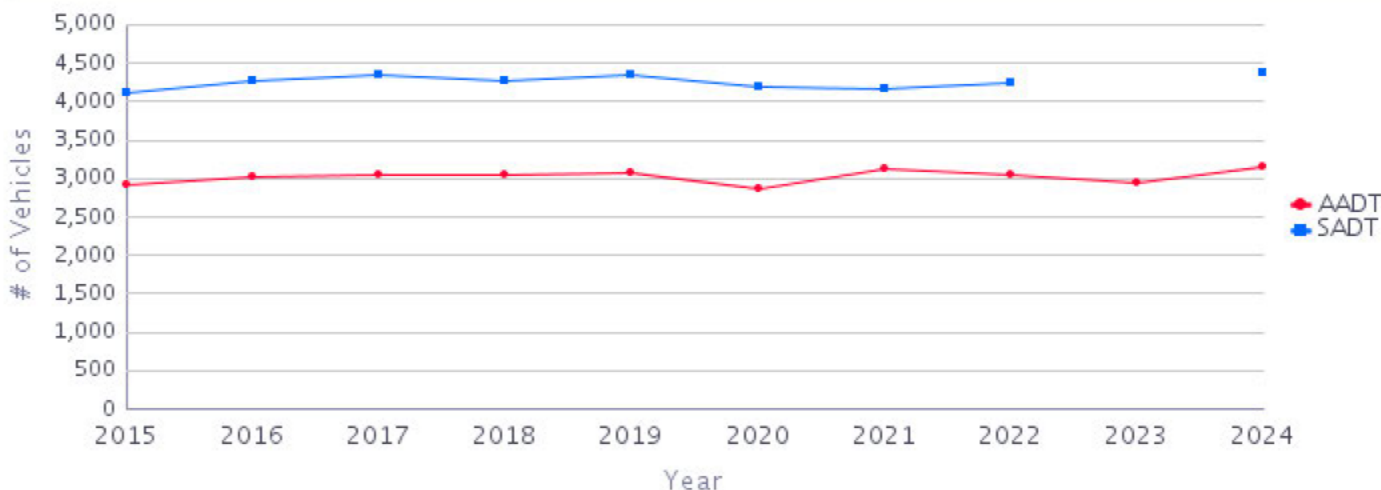
Summer Average Daily Traffic

(for the months of July and August)

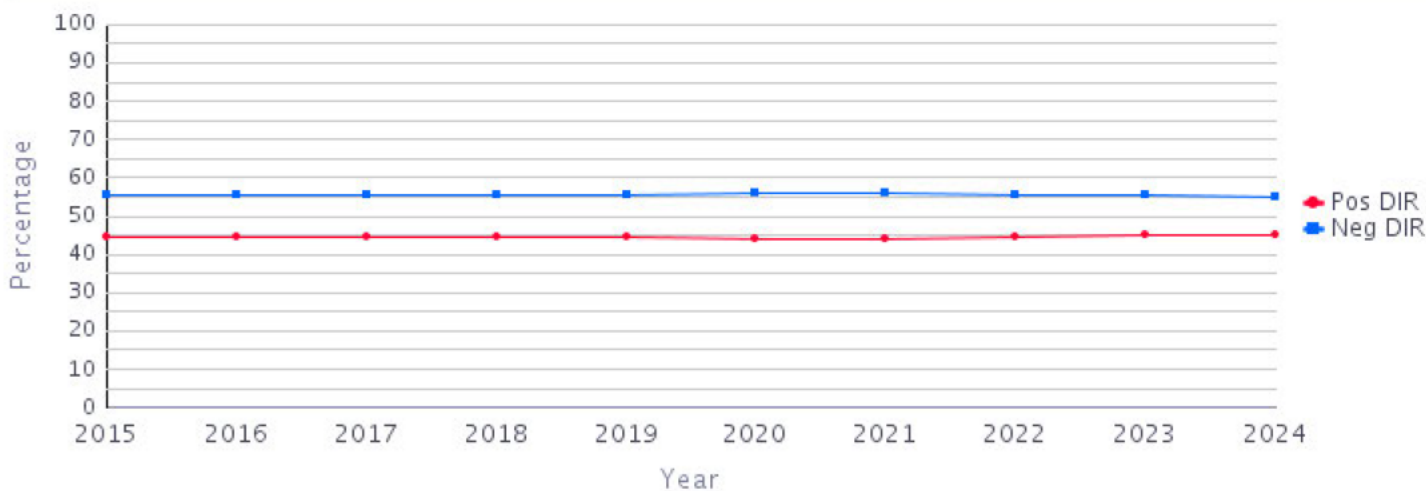
Average Daily Traffic Volumes

	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
AADT	2,919	3,018	3,053	3,036	3,078	2,852	3,118	3,040	2,954	3,162
SADT	4,114	4,269	4,353	4,262	4,347	4,195	4,158	4,231		4,363

10 Year Annual Statistics



10 Years % AADT by Direction



Traffic Data

10 Year Annual Summary for 2024

TM Site ID: **P-31-3EW**

TM Site Name: **Harrop - P-31-3EW, Castlegar - Nelson Creston**

Location: Route 3A, at Harrop Access Road, east of Nelson

Posted Speed:

Report Run on: Tuesday January 14 2025 11:25 AM

Disclaimer information and the most current traffic data may be found at: <http://www.th.gov.bc.ca/trafficData>

Traffic Data

10 Year Annual Summary for 2024

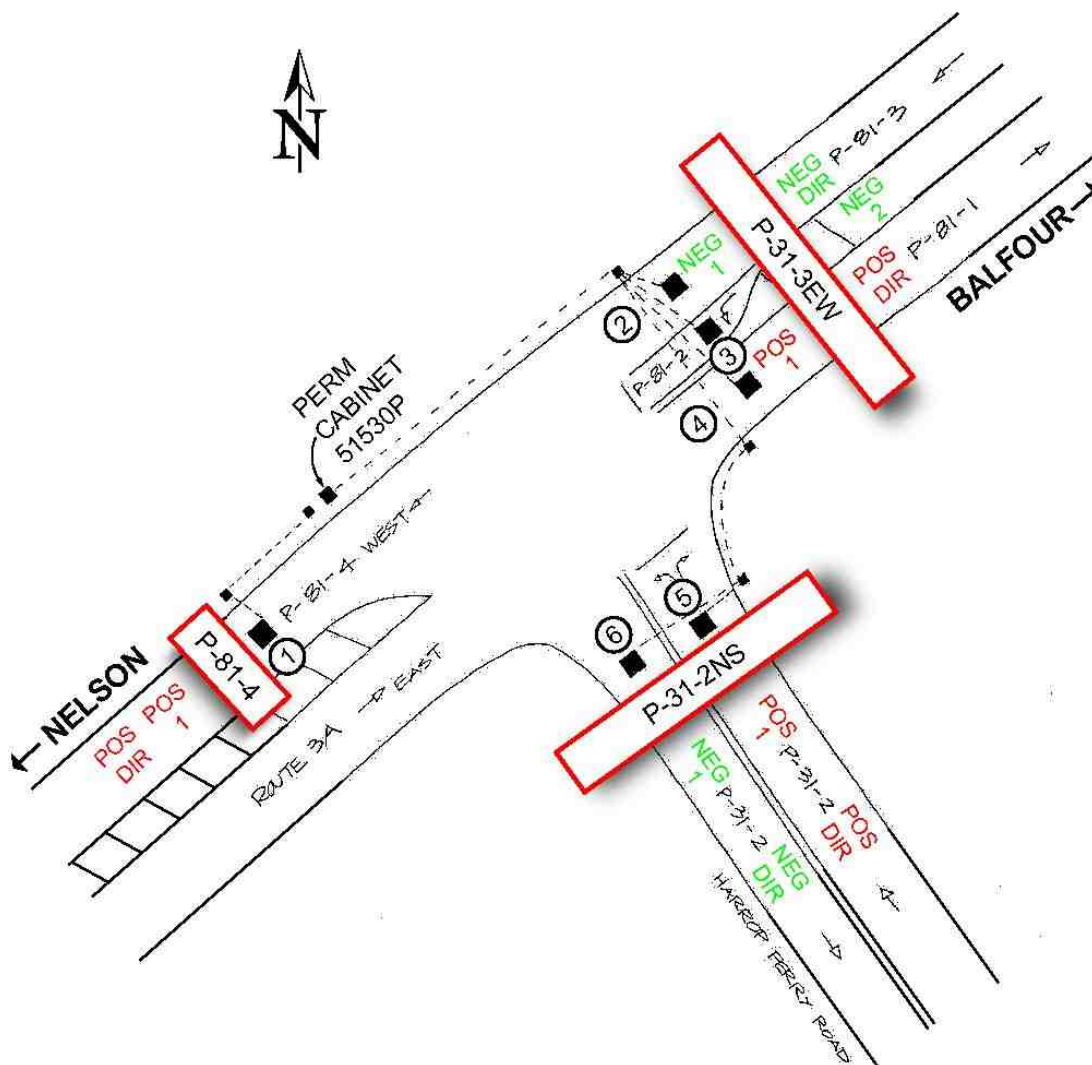
TM Site: Description:

P-31-3EW ROUTE 3A, JUNCTION WITH HARROP FERRY ROAD JUST EAST OF NELSON
P-31-2NS HARROP FERRY ROAD, JUNCTION WITH ROUTE 3A JUST EAST OF NELSON
P-81-4 ROUTE 3A, JUNCTION WITH HARROP FERRY ROAD JUST EAST OF NELSON

Station: 51530P
Name: HARROP JUNCTION
Survey: 5153

- ▲ - Short Count Post
- - Loops
- - Cabinet
- - Junction Box
- - TRADAS Traffic Measurement Site
- ① - Channels
- A - Detectors

PHOTOLOG
YEAR: -
HIGHWAY: -
IMAGE NUMBER: -
SHOWS LOOPS: -
☐ YES ☒ NO



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Revised Date: February / 2005
 Version 3-A

Traffic Data

10 Year Annual Summary for 2024

TM Site ID: **P-81-4**

TM Site Name: **Harrop - P-81-4, Keremeos - Kaleden Junction**

Location: **Route 3A, Wb, just west of Harrop Access Road, east of Nelson**

Posted Speed:

Report Run on: **Tuesday January 14 2025 11:25 AM**

Traffic Data in this report

AADT

Annual Average Daily Traffic
A calculated daily estimate of the number of vehicles passing this site.

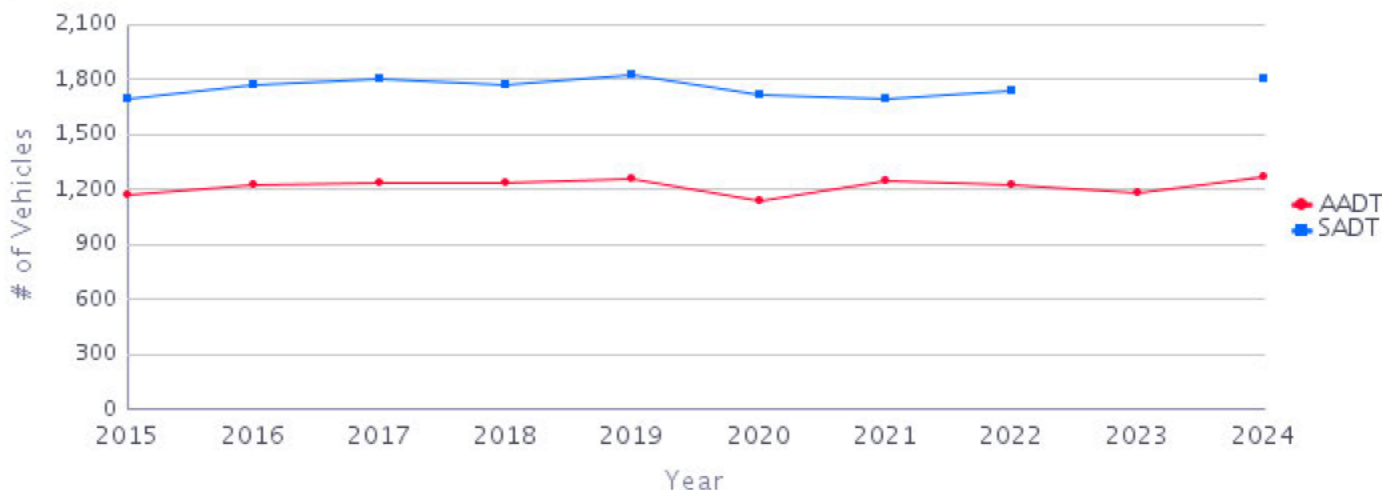
SADT

Summer Average Daily Traffic
(for the months of July and August)

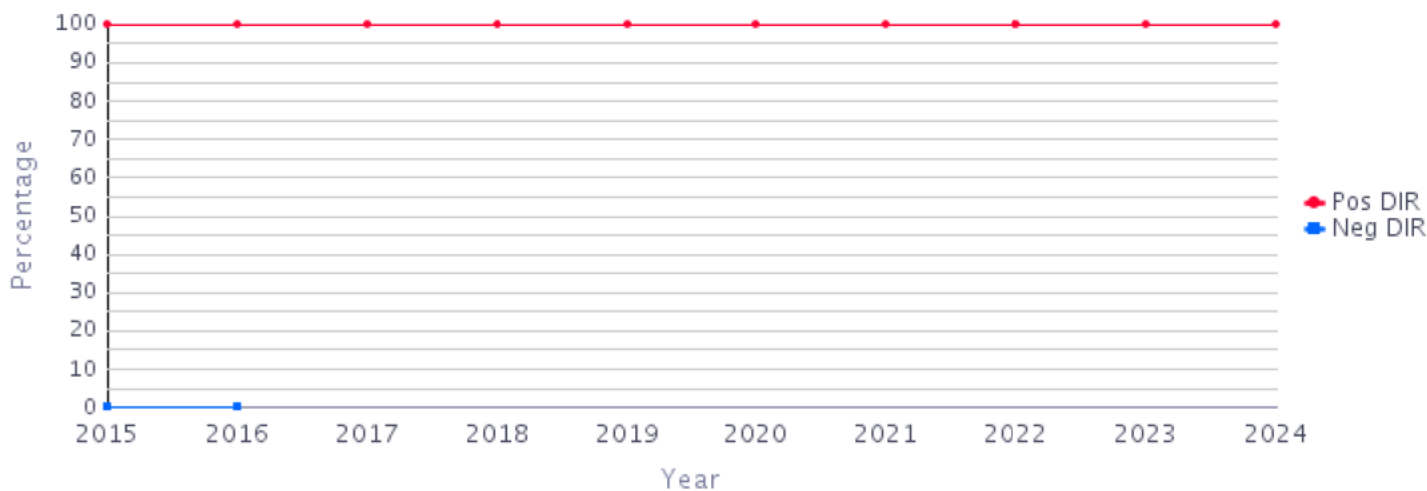
Average Daily Traffic Volumes

	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
AADT	1,173	1,223	1,238	1,235	1,257	1,137	1,242	1,227	1,185	1,274
SADT	1,692	1,772	1,804	1,775	1,825	1,718	1,697	1,739		1,805

10 Year Annual Statistics



10 Years % AADT by Direction



Traffic Data

10 Year Annual Summary for 2024

TM Site ID: **P-81-4**

TM Site Name: **Harrop - P-81-4, Keremeos - Kaleden Junction**

Location: Route 3A, Wb, just west of Harrop Access Road, east of Nelson

Posted Speed:

Report Run on: Tuesday January 14 2025 11:25 AM

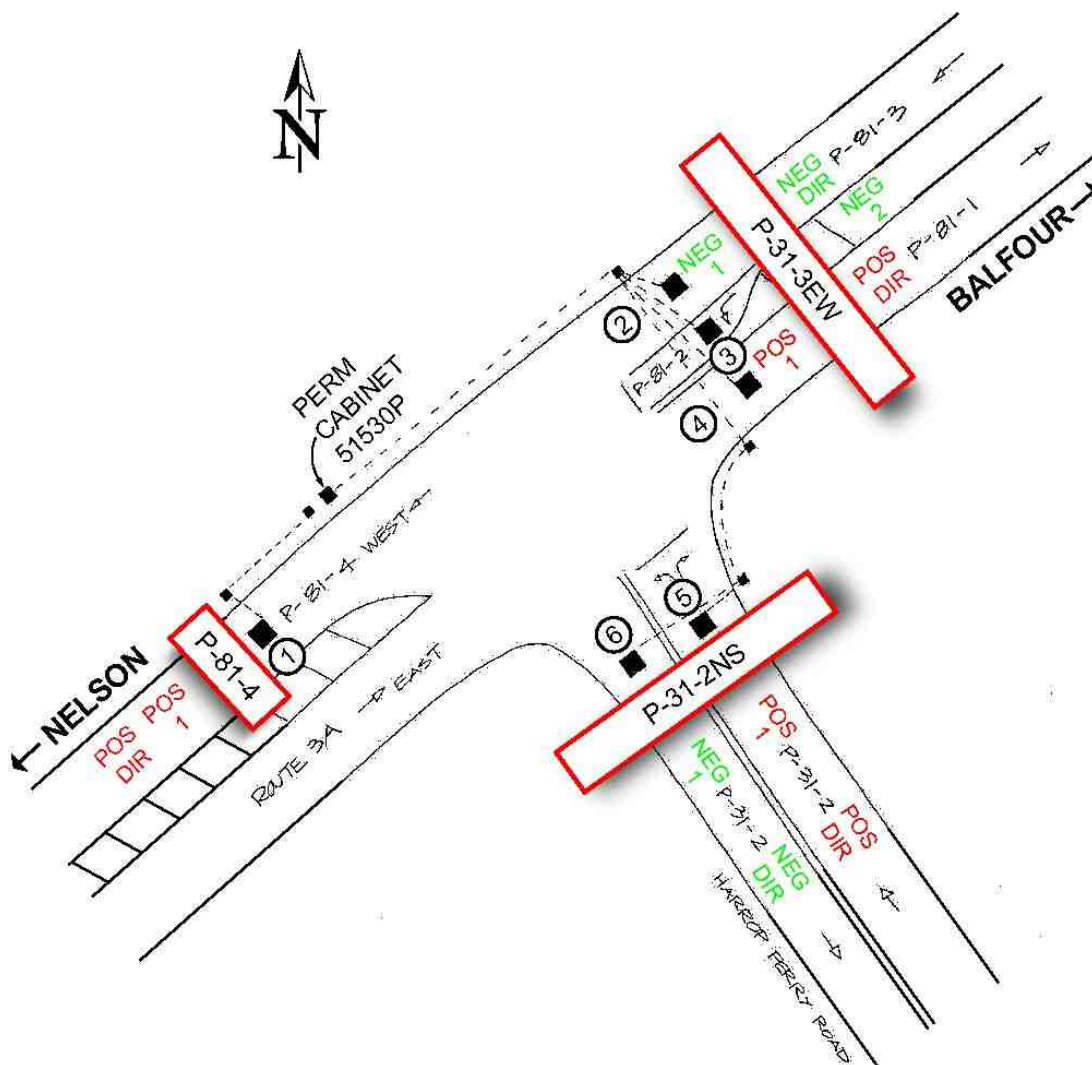
Disclaimer information and the most current traffic data may be found at: <http://www.th.gov.bc.ca/trafficData>

Traffic Data

10 Year Annual Summary for 2024

TM Site:	Description:
P-31-3EW	ROUTE 3A, JUNCTION WITH HARROP FERRY ROAD JUST EAST OF NELSON
P-31-2NS	HARROP FERRY ROAD, JUNCTION WITH ROUTE 3A JUST EAST OF NELSON
P-81-4	ROUTE 3A, JUNCTION WITH HARROP FERRY ROAD JUST EAST OF NELSON

Station: 51530P Name: HARROP JUNCTION Survey: 5153	 - Short Count Post  - Loops  - Cabinet  - Junction Box  - TRADAS Traffic Measurement Site  - Channels  - Detectors	PHOTOLOG YEAR: - HIGHWAY: - IMAGE NUMBER: - SHOWS LOOPS: ☐ YES ☒ NO
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TRANHighwayPlanning@gov.bc.ca

Revised Date: February / 2005
Version 3-A

APPENDIX D



Spur Name	Location	Latitude	Longitude	Road Authority	Protection	Accidents	Fatality	Injury	Trains Daily	Vehicles Daily	Train Max Speed (mph)	Road Speed (km/h)	Lanes	Tracks	IsUrban
-	Harrop Procter Rd	49.60554	-117.0539	British Columbia Highways	Active - FLB	0	0	0	2	504	20	50	2	1	N

Source: <https://open.canada.ca/data/en/dataset/d0f54727-6c0b-4e5a-aa04-ea1463cf9f4c>