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TECHNICAL MEMORANDUM

TO: **Alan Lee, P.Eng., SmartCentres Salmon Arm Mixed-Use Development**
FROM: **Gary Vlieg, P.Eng.**, Creative Transportation Solutions Ltd. (CTS)
DATE: 16 February 2024
RE: Salmon Arm Mixed-Use Development, Salmon Arm, BC; Parking Study
FILE NO: 9158-01

1.0 BACKGROUND

CTS has been retained by SmartCentres (Salmon Arm Shopping Centres Limited and Calloway REIT (Salmon Arm) Inc.) to conduct a parking study for a proposed siteplan revision to the development located at 2991 – 9th Avenue SW in the City of Salmon Arm. This memo fulfils that requirement.

The existing development consists of CRU A (Walmart), CRU B (Bulk Barn, Telus), CRU D (Winner's), CRU E (Dollarama), CRU G (Tim Horton's), and CRU M (Jiffy Lube) per the approved Development Permit siteplan and amendments as attached in SD384. The revised siteplan as attached proposes to remove CRU J and CRU K, and redistribute a portion of the remove retail density to new CRU P and CRU N as well as new residential buildings A and B.

This memo analyses the existing parking usage to support a reduced parking requirement for the proposed additions.

2.0 PARKING RATE ANALYSIS

2.1 Parking Study

For the purposes of this study, CTS is utilizing data provided by SmartCentres as collected by Parkalytics, the Study Executive Report is shown in **APPENDIX A.** The study area is shown in **FIGURE 1** below. Area A represents the Walmart, Bulk Barn, and Telus parking lot, Area B represents the Tim Hortons, Winners, and Dollarama parking lot, and Area C represents the Jiffy Lube parking lot.

FIGURE 1
STUDY AREA

The data was collected on Friday December 22, 2023 from 10:00 to 15:30 and Saturday December 23, 2023 from 10:00 to 17:00 to represent the busiest time of the year for parking usage as it is the last weekend before Christmas. School District 83 last day of class was December 21, 2023. It can therefore be assumed that this is the worst-case scenario, providing a conservative analysis for parking usage and requirements for the development. The results are shown in **TABLE 1** to **TABLE 4,** and **FIGURE 1** to **FIGURE 4** below.

TABLE 1
AREA A STUDY RESULTS

Area A		# Parked Cars		% Parked Cars	
		Friday	Saturday	Friday	Saturday
Time	10:00	164	-	40%	-
	10:30	199	221	49%	54%
	11:00	240	220	59%	54%
	11:30	257	231	63%	56%
	12:00	259	258	63%	63%
	12:30	225	246	55%	60%
	13:00	249	244	61%	60%
	13:30	255	247	62%	60%
	14:00	257	251	63%	61%
	14:30	268	252	66%	62%
	15:00	247	243	60%	59%
	15:30	229	206	56%	50%
	16:00	-	211	-	52%
	16:30	-	163	-	40%
	17:00	-	142	-	35%
Min		164	142	40%	35%
Max		268	258	66%	63%
Average		237	224	58%	55%
Capacity		409		100%	

FIGURE 2
AREA A PARKING UTILIZATION

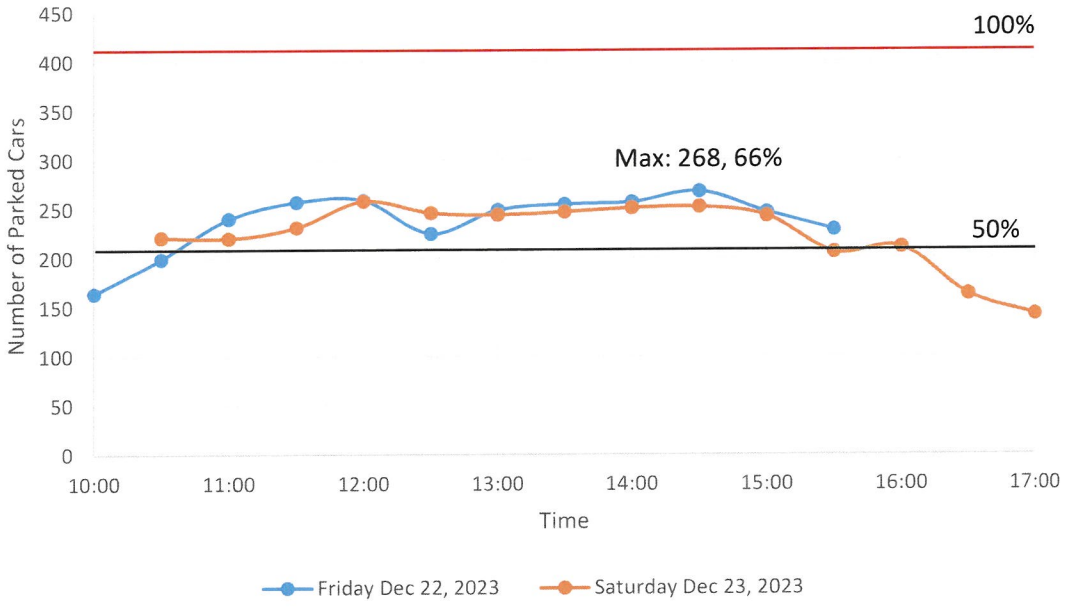


TABLE 2
AREA B STUDY RESULTS

		# Parked Cars		% Parked Cars	
		Friday	Saturday	Friday	Saturday
Time	10:00	93	90	41%	40%
	10:30	104	101	46%	44%
	11:00	115	107	51%	47%
	11:30	106	116	47%	51%
	12:00	114	120	50%	53%
	12:30	114	119	50%	52%
	13:00	105	118	46%	52%
	13:30	122	133	54%	59%
	14:00	137	124	60%	55%
	14:30	124	120	55%	53%
	15:00	153	121	67%	53%
	15:30	130	116	57%	51%
	16:00	-	101	-	44%
	16:30	-	79	-	35%
	17:00	-	70	-	31%
Min		93	70	41%	31%
Max		153	133	67%	59%
Average		118	109	52%	48%
Capacity		227		100%	

FIGURE 3
AREA B PARKING UTILIZATION

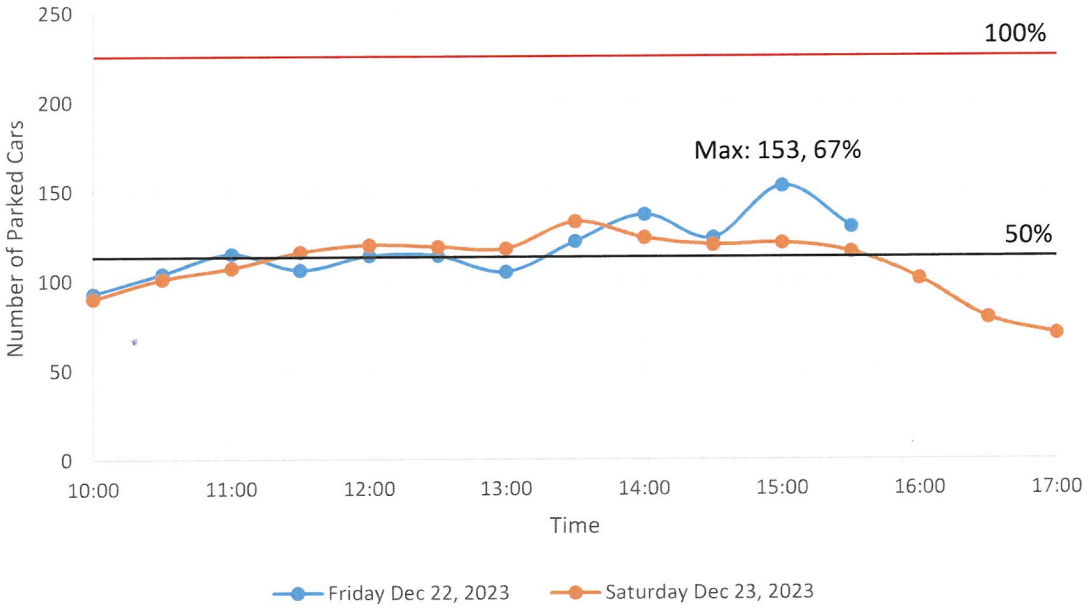


TABLE 3
AREA C STUDY RESULTS

		# Parked Cars		% Parked Cars	
		Friday	Saturday	Friday	Saturday
Time	10:00	2	2	10%	10%
	10:30	2	2	10%	10%
	11:00	2	2	10%	10%
	11:30	2	2	10%	10%
	12:00	2	3	10%	14%
	12:30	3	2	14%	10%
	13:00	2	1	10%	5%
	13:30	2	1	10%	5%
	14:00	2	1	10%	5%
	14:30	2	2	10%	10%
	15:00	2	1	10%	5%
	15:30	2	1	10%	5%
	16:00	-	2	-	10%
	16:30	-	1	-	5%
	17:00	-	0	-	0%
Min		2	0	10%	0%
Max		3	3	14%	14%
Average		2	2	10%	8%
Capacity		21		100%	

FIGURE 4
AREA C PARKING UTILIZATION

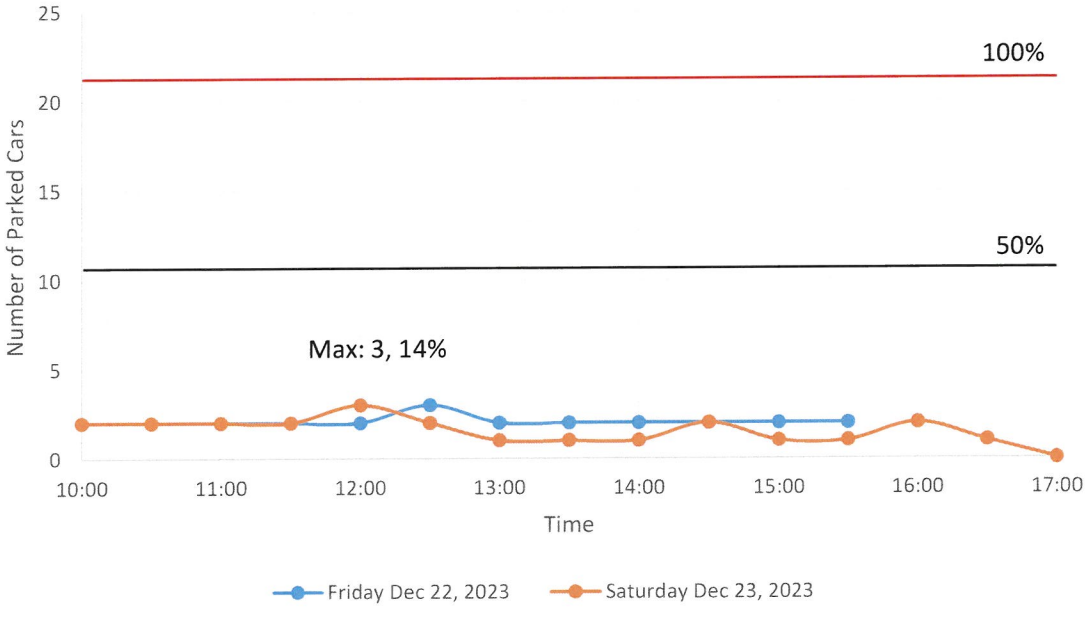
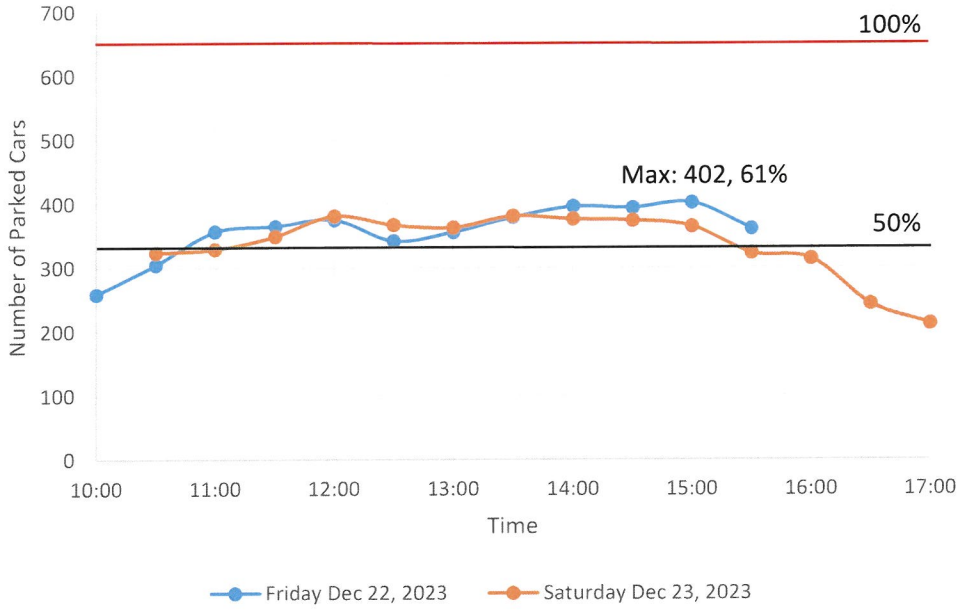


TABLE 4
TOTAL STUDY RESULTS

Total		# Parked Cars		% Parked Cars	
		Friday	Saturday	Friday	Saturday
Time	10:00	259	-	39%	-
	10:30	305	324	46%	49%
	11:00	357	329	54%	50%
	11:30	365	349	56%	53%
	12:00	375	381	57%	58%
	12:30	342	367	52%	56%
	13:00	356	363	54%	55%
	13:30	379	381	58%	58%
	14:00	396	376	60%	57%
	14:30	394	374	60%	57%
	15:00	402	365	61%	56%
	15:30	361	323	55%	49%
	16:00	-	314	-	48%
	16:30	-	243	-	37%
	17:00	-	212	-	32%
Min		259	212	39%	32%
Max		402	381	61%	58%
Average		358	336	54%	51%
Capacity		657		100%	

FIGURE 5
TOTAL PARKING UTILIZATION



The total existing retail building area is 96,641 ft^2 at Walmart, 6,228 ft^2 at Bulk Barn and Telus, 18,441 ft^2 at Winners, 9,538 ft^2 at Dollarama, 2,100 ft^2 at Tim Hortons, and 1,636 ft^2 at Jiffy Lube.

For the purposes of this analysis, Areas A and B (hereby refered to as the "study area") will be utilized to provide a more conservative result, as well as have a more accurate conclusion as Area C only has Auto Repair and no retail.

Excluding Tim Hortons, there is a total of 130,848 ft^2 of existing retail and 636 parking stalls. To only focus on the retail parking usage, 10 parking stalls to account for Tim Hortons will be deducted from the parking supply so 626 parking stalls will be used for analysis. Therefore, the existing parking is being supplied at a rate of 4.78 stalls per 1000 ft^2. This exceeds required parking rate as shown in the Salmon Zoning Bylaw Table A1-1 of 3.88 stalls per 1000 ft^2 (1 stall per 24 m^2) and results in a surplus of 118 stalls from what is required.

The peak utilization for the study area was found to be at 67% in Area B at 15:00 on Friday. For a more conservative analysis this utilization rate was applied to the entire study area. The study was also conducted on the final weekend before Christmas which is typically the busiest time of the year for retail locations, therefore this parking usage will be the peak for the entire year. 67% usage at the peak for the entire study site results in 426 parking stalls being occupied. This in turn results in parking demand rate of 3.26 stalls per 1000 ft^2, and a surplus of 200 parking stalls.

2.2 Analysis and Conclusions

The revised siteplan proposes to delete CRU J and CRU K and utilize that space and retail density for new CRU P and CRU N as well as residential buildings A and B.

The siteplan revision consists of existing and new retail density at a total 164,127 ft^2 with retail parking of 693 parking stalls for a ratio of 4.22 parking stalls per 1000 ft^2. As mentioned in section 2.1, this exceeds the Zoning Bylaw parking ratio of 3.88 parking stalls per 1000 ft^2. As the peak observed parking utilization was recorded at 3.26 stalls per 1000 ft^2, extrapolated to the new retail density, there would be 535 parking stalls utilized, or a surplus of 158 parking stalls (693 – 535).

The Zoning Bylaw parking rate for residential developments is 1.25 stalls per dwelling unit which, at the proposed 225 unit development size, would require 281 parking stalls. SmartCentres is proposing a parking rate of 0.82 stalls per dwelling unit or 185 parking stalls, which results in a variance of 96 parking stalls.

During the peak parking demand of the year, there would be surplus of 64 parking stalls, given the very conservative assumption that all residential parking stalls are occupied during the day on a weekend. As peak peaking for retail typically occurs on weekdays from 2:00 PM – 6:00 PM and on weekends from 12:00 PM – 3:00 PM, and peak parking for residential land uses occurs in the late evening after 6:00 PM and overnight when many retail uses are typically closed, there will be no overlap of peak parking usage between the different land uses.

As the residential portion of the development will be located between Study Areas B and C it is understood that residents are unlikely to use all parts of the parking within the development, such as the northern most parking within Area A as it is the furthest from the proposed residential area. Overflow parking for residential would occur on Area B, and at the maximum occupancy during the study there was 67% utilization at 153 stalls out of 227 available.

The proposed changes to the siteplan would add additional retail parking for a total of 262 parking stalls, which at the 67% utilization rate would have 176 utilized stalls, or a surplus of 86 stalls. Parking is typically designed to the 95th percentile of utilization. At the 95th percentile of utilization for Area A, it is at 144 utilized parking stalls out of 227, or extrapolated to 166 parking stalls out of 262, resulting in a surplus 96 parking stalls. This matches the proposed variance for residential parking of 96 parking stalls, and would be able to accommodate the maximum expected parking during the year with the added assumption of 100% parking occupancy for the residential land use occurring at the same time.

Additionally, the site is served by transit via BC Transit Route 25 Shopper's Shuttle. This further reduces car trips to the site to support parking ratio flexibility.

Snow storage would be accommodated with excess paved areas in Areas A and C (not in parking stalls). Snow storage that exceeds the capacity of these areas would be trucked offsite.

3.0 RECOMMENDATIONS

Based on the analyses above, CTS recommends the following:

- Allow a residential parking rate reduction to 0.82 parking stalls per dwelling unit based on the demonstrated surplus of available on-site parking combined with shared parking with retail parking.

Should you have any questions regarding this memo, please do not hesitate to contact the undersigned.

Regards,
CREATIVE TRANSPORTATION SOLUTIONS LTD.
CTS Permit to Practice: 1000697

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

gvlieg@cts-bc.com
250-404-9094

2024-02-16

PROFESSIONAL ENGINEER
PROVINCE OF BRITISH COLUMBIA
G. E. VLIEG
18761

2024-02-16

Maciej Wysocki, EIT
Junior Traffic Engineer

APPENDIX A
Parkalytics Parking Study Executive Report

SmartCentres Salmon Arm

Parking Study Executive Report

2991 10TH AVENUE SOUTH WEST, SALMON ARM, BC, V1E 3J9

Data Collected:
Friday December 22, 2023 10:00 AM to 3:30 PM
Saturday December 23, 2023 10:00 AM to 5:00 PM

View This Data Online

Max Utilization (All Regions)	Parking Stalls (As Built)	Study Duration (Total)	Total Vehicles (Unique Sessions)	Max Turnover (Vehicles per Hour)
61.2%	**657**	**14h 30m**	**5759**	**539**

Study Summary

Aerial imagery was collected by unmanned aerial vehicle with a sampling period of 30 minutes and began on Friday December 22 at 10:00 AM local time. Sampling concluded at 3:30 PM local time on Friday due to weather. Parking stall occupancy was measured at each sample and the results were used to compile the findings in this report. The study region is subdivided into 3 zones.

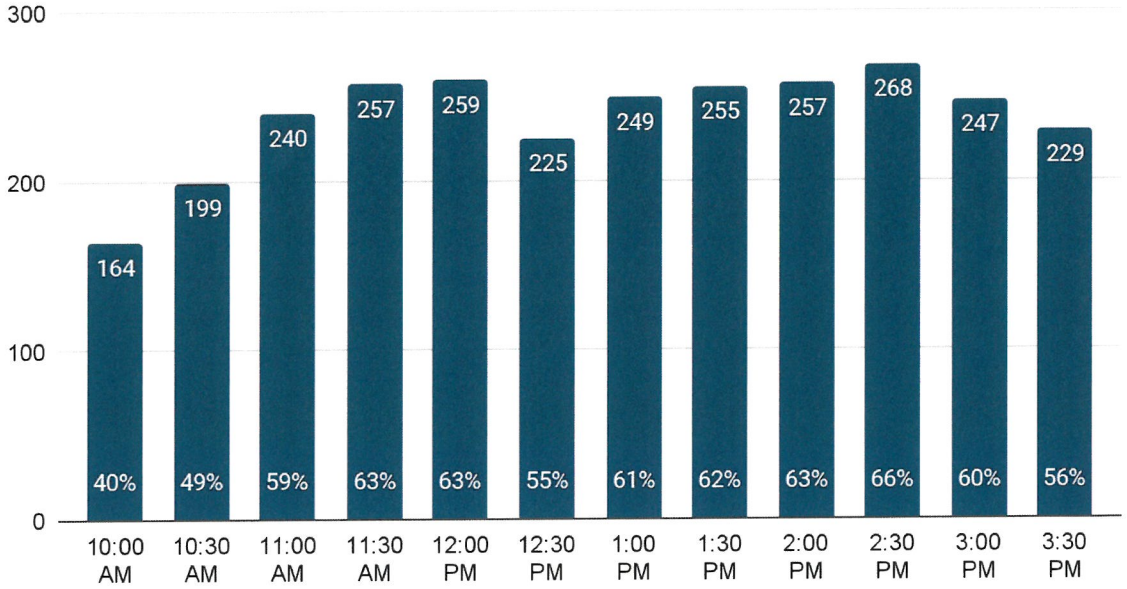
Parking Inventory and Utilization

Current parking inventory and utilization were assessed for the study area and presented below.

Parking Area	Stalls	Peak utilization	Peak Utilization Factor	Time
All Areas	**657**	**402 Vehicles**	**61%**	**Friday 3:00 pm**
A	409	268 Vehicles	66%	Friday 2:30 pm
B	227	153 Vehicles	67%	Friday 3:00 pm
C	21	3 Vehicles	14%	Friday 3:00 pm

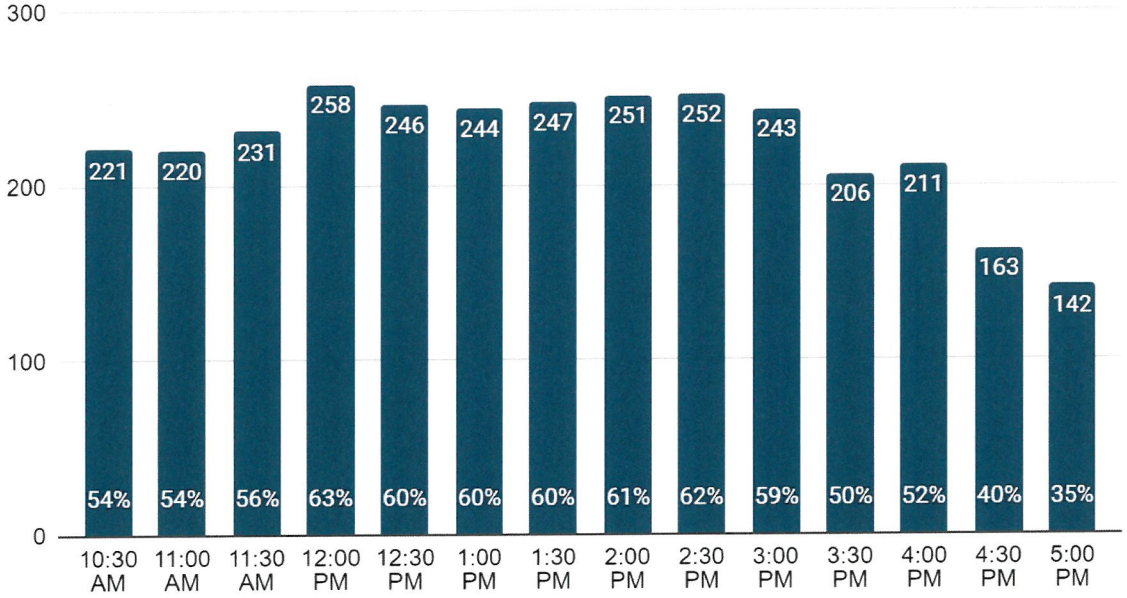
Parking Area A

Friday



Average: 237 - 58%

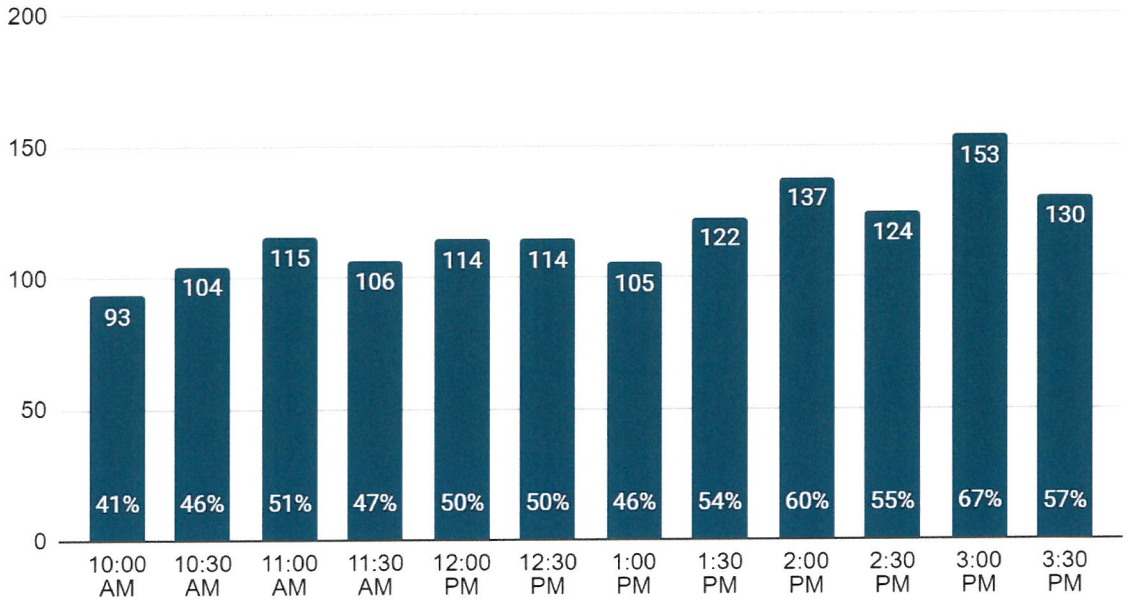
Saturday



Average: 220 - 54%

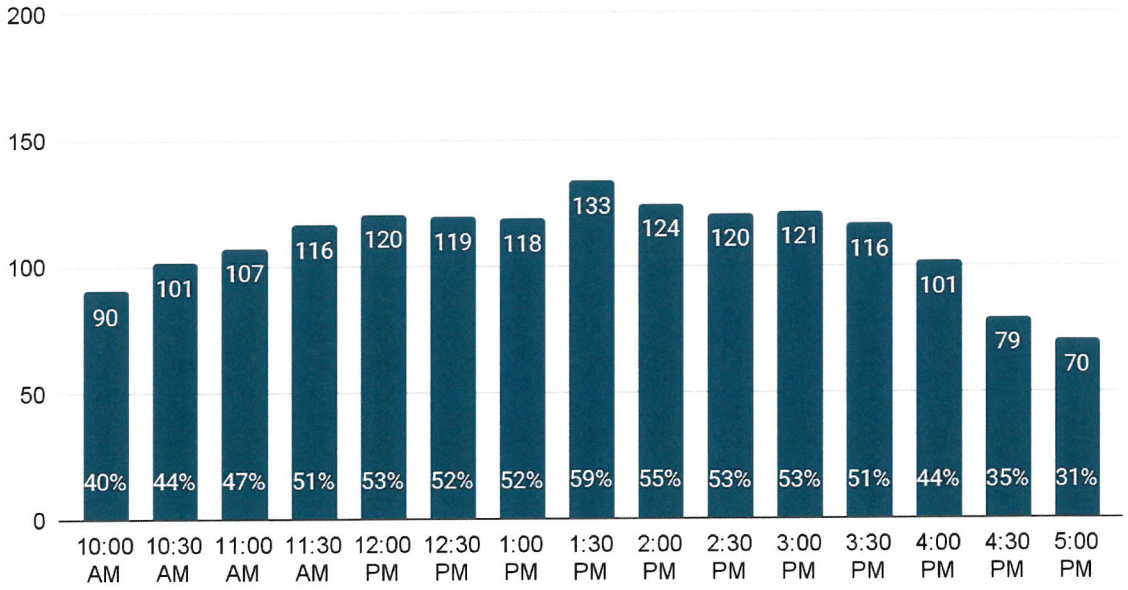
Parking Area B

Friday



Average: 118 - 52%

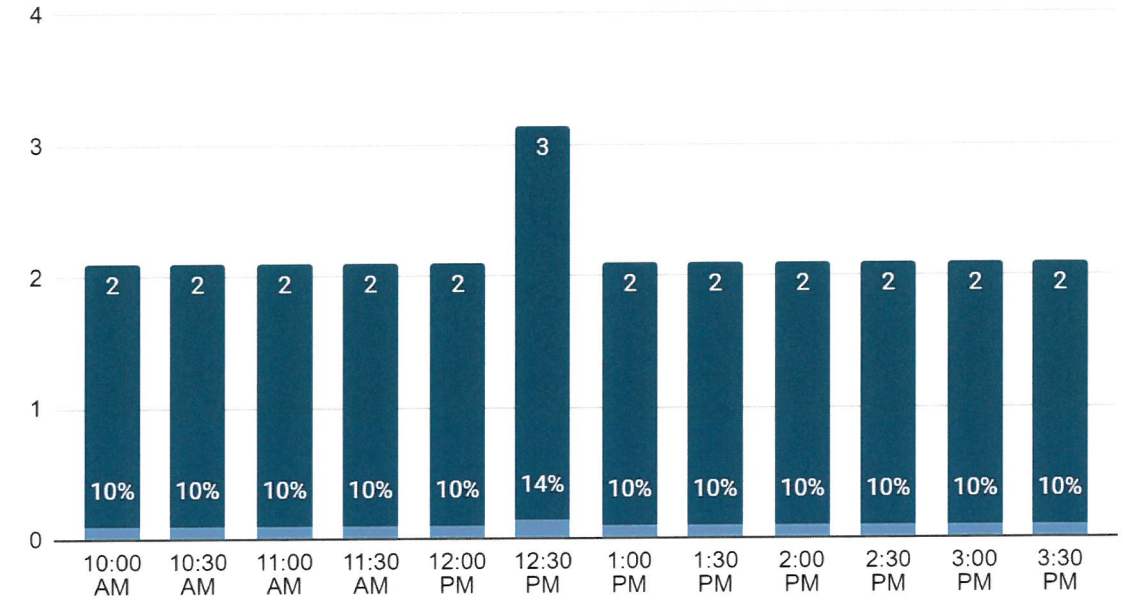
Saturday



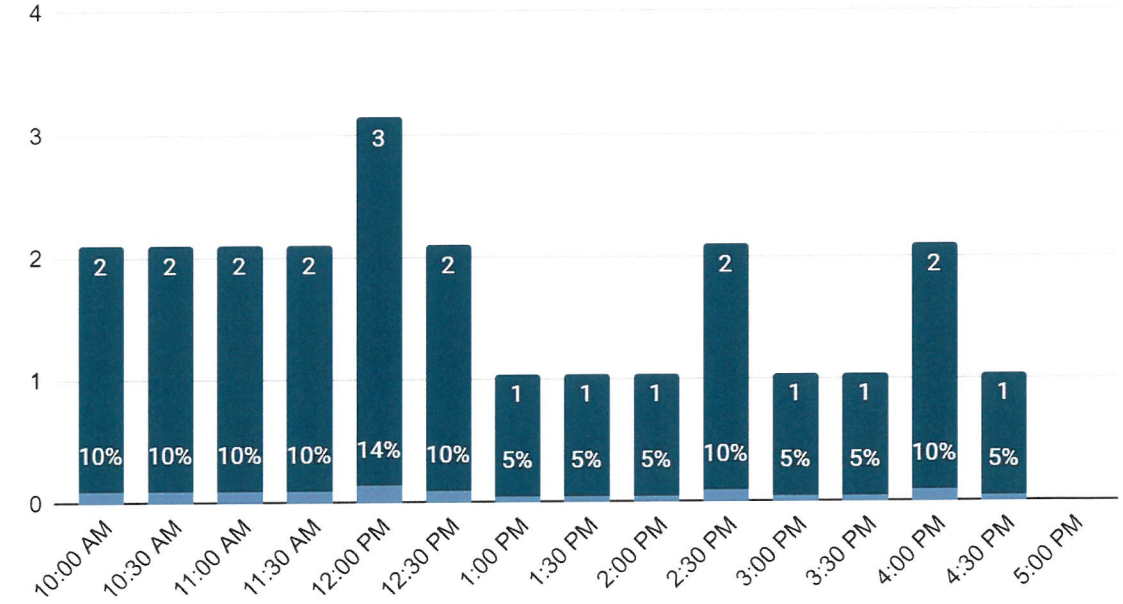
Average: 109 - 48%

Parking Area C

Friday



Saturday



Important Information About this Study

We are not licensed professional engineers or land surveyors

Avien Data Inc is not a state-licensed professional engineering or surveying company. Avien Data Inc staff are not state-licensed professional engineers or surveyors and the services of the company or its staff are not a substitute for services of those state-licensed professionals.

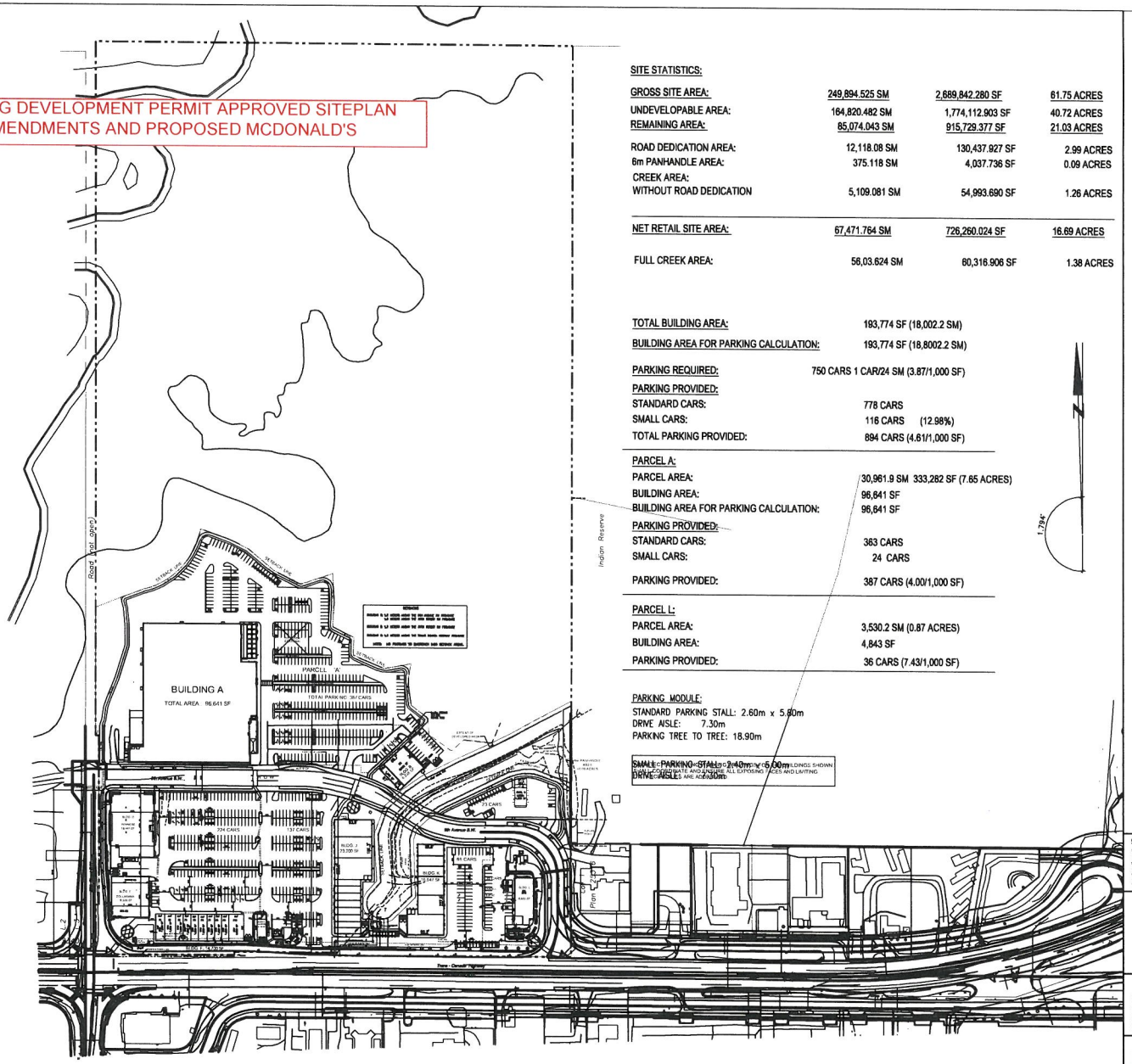
Data access period

Avien Data Inc prides itself on providing intuitive and interactive analysis tools to all customers, so further questions can always be asked of the data. We guarantee an access period of at least 1 year following the last day of the study period. We will always aim to beat this guarantee.

This study does not come with a warranty

Avien Data Inc ("Parkalytics") provides this parking study ("Study") without any warranties, whether express or implied. Parkalytics does not guarantee the accuracy, completeness, or reliability of this Study. This Study is provided "as-is," and Parkalytics disclaims all liability for errors or inaccuracies. Parkalytics is not responsible for any direct, indirect, incidental, or consequential damages arising from the use of the Study.

EXISTING DEVELOPMENT PERMIT APPROVED SITEPLAN
WITH AMENDMENTS AND PROPOSED MCDONALD'S



SITE STATISTICS:

GROSS SITE AREA:	249,894.525 SM	2,689,842.280 SF	61.75 ACRES
UNDEVELOPABLE AREA:	164,820.482 SM	1,774,112.903 SF	40.72 ACRES
REMAINING AREA:	85,074.043 SM	915,729.377 SF	21.03 ACRES
ROAD DEDICATION AREA:	12,118.08 SM	130,437.927 SF	2.99 ACRES
6m PANHANDLE AREA:	375.118 SM	4,037.736 SF	0.09 ACRES
CREEK AREA: WITHOUT ROAD DEDICATION	5,109.081 SM	54,993.690 SF	1.26 ACRES
NET RETAIL SITE AREA:	67,471.764 SM	726,260.024 SF	16.69 ACRES
FULL CREEK AREA:	56,03.624 SM	60,316.906 SF	1.38 ACRES

TOTAL BUILDING AREA: 193,774 SF (18,002.2 SM)
BUILDING AREA FOR PARKING CALCULATION: 193,774 SF (18,8002.2 SM)

PARKING REQUIRED: 750 CARS 1 CAR/24 SM (3.87/1,000 SF)
PARKING PROVIDED:
STANDARD CARS: 778 CARS
SMALL CARS: 116 CARS (12.98%)
TOTAL PARKING PROVIDED: 894 CARS (4.61/1,000 SF)

PARCEL A:
PARCEL AREA: 30,961.9 SM 333,282 SF (7.65 ACRES)
BUILDING AREA: 96,641 SF
BUILDING AREA FOR PARKING CALCULATION: 96,641 SF
PARKING PROVIDED:
STANDARD CARS: 363 CARS
SMALL CARS: 24 CARS
PARKING PROVIDED: 387 CARS (4.00/1,000 SF)

PARCEL L:
PARCEL AREA: 3,530.2 SM (0.87 ACRES)
BUILDING AREA: 4,843 SF
PARKING PROVIDED: 36 CARS (7.43/1,000 SF)

PARKING MODULE:
STANDARD PARKING STALL: 2.60m x 5.80m
DRIVE AISLE: 7.30m
PARKING TREE TO TREE: 18.90m

SMALL PARKING STALL: 2.40m x 5.00m
DRIVE AISLES ARE ACCESSIBLE

SD-384

SALMON ARM, B.C.

SITE PLAN

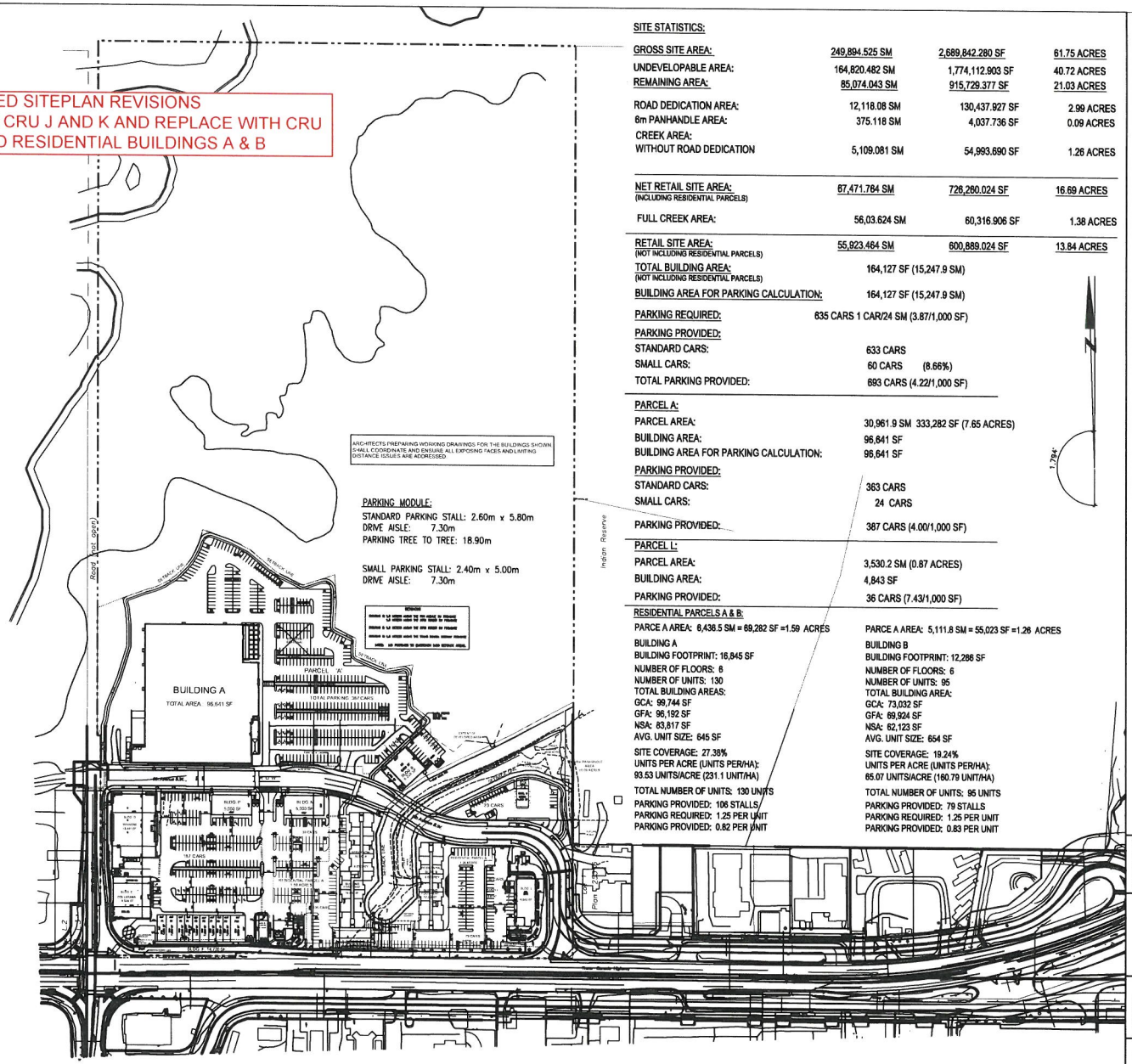
SCALE 1:1000

COMMERCIAL DEVELOPMENT
SALMON ARM
BRITISH COLUMBIA
For: Salmon Arm Shopping Centre Ltd.

ARK

PROJECT No. 06537
DRAWING No. SD-384

PROPOSED SITEPLAN REVISIONS
- DELETE CRU J AND K AND REPLACE WITH CRU P & N AND RESIDENTIAL BUILDINGS A & B



SITE STATISTICS:

GROSS SITE AREA:	249,894.525 SM	2,689,842.280 SF	61.75 ACRES
UNDEVELOPABLE AREA:	164,820.482 SM	1,774,112.903 SF	40.72 ACRES
REMAINING AREA:	85,074.043 SM	915,729.377 SF	21.03 ACRES
ROAD DEDICATION AREA:	12,118.08 SM	130,437.927 SF	2.99 ACRES
6m PANHANDLE AREA:	375.118 SM	4,037.736 SF	0.09 ACRES
CREEK AREA: WITHOUT ROAD DEDICATION	5,109.081 SM	54,993.690 SF	1.26 ACRES
NET RETAIL SITE AREA: (INCLUDING RESIDENTIAL PARCELS)	87,471.764 SM	726,260.024 SF	16.69 ACRES
FULL CREEK AREA:	56,03.624 SM	60,316.906 SF	1.38 ACRES
RETAIL SITE AREA: (NOT INCLUDING RESIDENTIAL PARCELS)	55,923.464 SM	600,889.024 SF	13.84 ACRES

TOTAL BUILDING AREA: (NOT INCLUDING RESIDENTIAL PARCELS) 164,127 SF (15,247.9 SM)

BUILDING AREA FOR PARKING CALCULATION: 164,127 SF (15,247.9 SM)

PARKING REQUIRED: 835 CARS 1 CAR/24 SM (3.87/1,000 SF)

PARKING PROVIDED:
STANDARD CARS: 633 CARS
SMALL CARS: 60 CARS (8.66%)
TOTAL PARKING PROVIDED: 693 CARS (4.22/1,000 SF)

PARCEL A:
PARCEL AREA: 30,961.9 SM 333,282 SF (7.65 ACRES)
BUILDING AREA: 96,641 SF
BUILDING AREA FOR PARKING CALCULATION: 96,641 SF
PARKING PROVIDED:
STANDARD CARS: 363 CARS
SMALL CARS: 24 CARS
PARKING PROVIDED: 387 CARS (4.00/1,000 SF)

PARCEL L:
PARCEL AREA: 3,530.2 SM (0.87 ACRES)
BUILDING AREA: 4,843 SF
PARKING PROVIDED: 36 CARS (7.43/1,000 SF)

RESIDENTIAL PARCELS A & B:

PARCE A AREA: 6,436.5 SM = 69,282 SF =1.59 ACRES	PARCE A AREA: 5,111.8 SM = 55,023 SF =1.26 ACRES
BUILDING A	BUILDING B
BUILDING FOOTPRINT: 16,845 SF	BUILDING FOOTPRINT: 12,286 SF
NUMBER OF FLOORS: 6	NUMBER OF FLOORS: 6
NUMBER OF UNITS: 130	NUMBER OF UNITS: 95
TOTAL BUILDING AREAS:	TOTAL BUILDING AREA:
GCA: 99,744 SF	GCA: 73,032 SF
GFA: 96,192 SF	GFA: 69,924 SF
NSA: 83,617 SF	NSA: 62,123 SF
AVG. UNIT SIZE: 645 SF	AVG. UNIT SIZE: 654 SF
SITE COVERAGE: 27.36%	SITE COVERAGE: 19.24%
UNITS PER ACRE (UNITS PER/HA): 93.53 UNITS/ACRE (231.1 UNIT/HA)	UNITS PER ACRE (UNITS PER/HA): 65.07 UNITS/ACRE (160.79 UNIT/HA)
TOTAL NUMBER OF UNITS: 130 UNITS	TOTAL NUMBER OF UNITS: 95 UNITS
PARKING PROVIDED: 106 STALLS	PARKING PROVIDED: 79 STALLS
PARKING REQUIRED: 1.25 PER UNIT	PARKING REQUIRED: 1.25 PER UNIT
PARKING PROVIDED: 0.82 PER UNIT	PARKING PROVIDED: 0.83 PER UNIT

SD-383

SALMON ARM, B.C.

SITE PLAN

SCALE 1:1000

COMMERCIAL DEVELOPMENT
SALMON ARM
BRITISH COLUMBIA
For: Salmon Arm Shopping Centre Ltd.

ARK

PROJECT No. 06537

DRAWING No. SD-383

DATE: SEPTEMBER 5, 2006
REVISED: FEBRUARY 5, 2007