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No.	Description	Date
1	OFFSITE REVIEW	2024-10-04
2	ISSUED TO MUNICIPALITY	2025-02-07

ARCHITECT

IBA ARCHITECTURE INC

CLIENT

SIERRA DEVELOPMENT LP

SEAL

PERMIT

DRAWN BY: ATT

CHECKED BY: AM

ENGINEER: JATINDER JASSAL

PROJECT #: 2024184

SCALE: 1:250

PROJECT

FAIRFIELD & TOWNPLACE SUITES

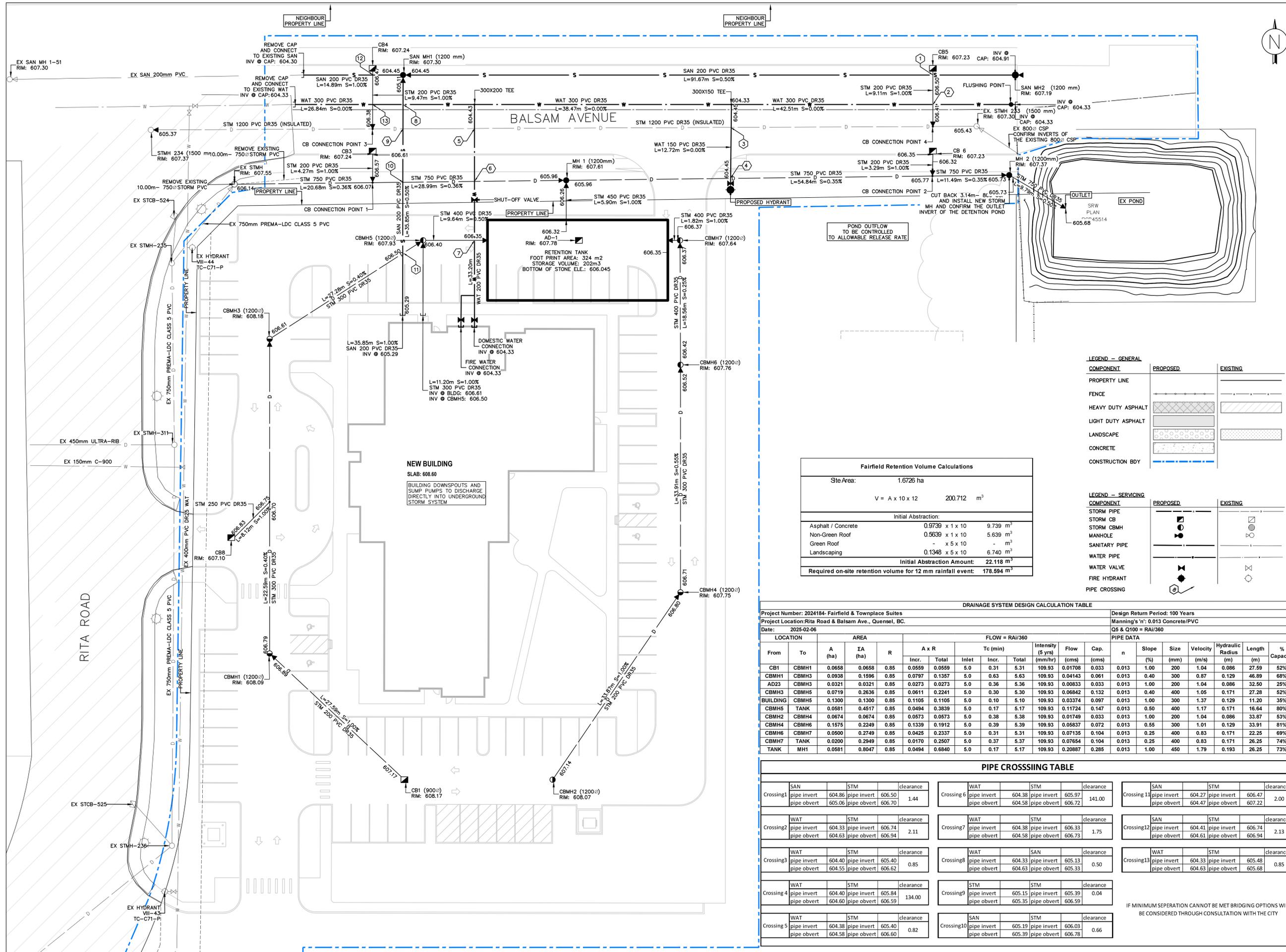
RITA ROAD & BALSAM AVENUE
QUESNEL, BC

DESCRIPTION

SITE SERVICING PLAN

DRAWING NO. **C2.00**

SHEET **8** / 11



Fairfield Retention Volume Calculations

Site Area: 1.6726 ha

$V = A \times 10 \times 12 = 200.712 \text{ m}^3$

Initial Abstraction:	Area	Volume
Asphalt / Concrete	0.9739 x 1 x 10	9.739 m ³
Non-Green Roof	0.5539 x 1 x 10	5.539 m ³
Green Roof	- x 5 x 10	- m ³
Landscaping	0.1348 x 5 x 10	6.740 m ³
Initial Abstraction Amount:		22.118 m³
Required on-site retention volume for 12 mm rainfall event:		178.594 m³

DRAINAGE SYSTEM DESIGN CALCULATION TABLE

Project Number: 2024184- Fairfield & Townplace Suites
Project Location: Rita Road & Balsam Ave., Quensel, BC.
Date: 2025-02-06

Design Return Period: 100 Years
Manning's 'n': 0.013 Concrete/PVC
Q5 & Q100 = RAI/360

LOCATION	AREA	R	A x R		Tc (min)		Intensity (5 yrs)	Flow (cms)	Cap. (cms)	PIPE DATA								
			Incr.	Total	Inlet	Total				n	Slope (%)	Size (mm)	Velocity (m/s)	Hydraulic Radius (m)	Length (m)	% Capacity		
CB1	0.0658	0.85	0.0559	0.0559	5.0	0.31	5.31	109.93	0.01708	0.033	0.013	1.00	200	1.04	0.086	27.59	52%	
CBMH1	0.0838	0.85	0.0797	0.1357	5.0	0.63	5.63	109.93	0.04143	0.061	0.013	0.40	300	0.87	0.129	46.89	68%	
AD23	0.0321	0.85	0.0273	0.0273	5.0	0.36	5.36	109.93	0.00833	0.033	0.013	1.00	200	1.04	0.086	32.50	25%	
CBMH3	0.0719	0.85	0.0611	0.2241	5.0	0.30	5.30	109.93	0.06842	0.132	0.013	0.40	400	1.05	0.171	27.28	52%	
BUILDING	0.1300	0.85	0.1105	0.1105	5.0	0.10	5.10	109.93	0.03374	0.097	0.013	1.00	300	1.37	0.129	11.20	35%	
CBMH5	0.0581	0.85	0.0494	0.3839	5.0	0.17	5.17	109.93	0.11724	0.147	0.013	0.50	400	1.17	0.171	16.64	80%	
CBMH2	0.0674	0.85	0.0573	0.0573	5.0	0.38	5.38	109.93	0.01749	0.033	0.013	1.00	200	1.04	0.086	33.87	53%	
CBMH4	0.1575	0.85	0.1339	0.1912	5.0	0.39	5.39	109.93	0.05837	0.072	0.013	0.55	300	1.01	0.129	33.91	81%	
CBMH6	0.0500	0.85	0.0425	0.2337	5.0	0.31	5.31	109.93	0.07135	0.104	0.013	0.25	400	0.83	0.171	22.25	69%	
CBMH7	0.0200	0.85	0.0170	0.2507	5.0	0.37	5.37	109.93	0.07654	0.104	0.013	0.25	400	0.83	0.171	26.25	74%	
TANK	MH1	0.0581	0.85	0.0494	0.6840	5.0	0.17	5.17	109.93	0.20887	0.285	0.013	1.00	450	1.79	0.193	26.25	73%

PIPE CROSSING TABLE

Crossing	From	To	A (ha)	ΣA (ha)	R	Inlet	Total	Tc (min)	Intensity (5 yrs)	Flow (cms)	Cap. (cms)	n	Slope (%)	Size (mm)	Velocity (m/s)	Hydraulic Radius (m)	Length (m)	% Capacity	
Crossing 1	SAN pipe invert	STM pipe invert	604.86	605.50	1.44														
	pipe obvert	pipe obvert	605.06	606.70															
Crossing 2	WAT pipe invert	STM pipe invert	604.33	606.74	2.11														
	pipe obvert	pipe obvert	604.63	606.94															
Crossing 3	WAT pipe invert	STM pipe invert	604.40	605.40	0.85														
	pipe obvert	pipe obvert	604.55	606.62															
Crossing 4	WAT pipe invert	STM pipe invert	604.40	605.84	134.00														
	pipe obvert	pipe obvert	604.60	606.59															
Crossing 5	WAT pipe invert	STM pipe invert	604.38	605.40	0.82														
	pipe obvert	pipe obvert	604.58	606.60															
Crossing 6	WAT pipe invert	STM pipe invert	604.38	605.97	141.00														
	pipe obvert	pipe obvert	604.58	606.72															
Crossing 7	WAT pipe invert	STM pipe invert	604.38	606.33	1.75														
	pipe obvert	pipe obvert	604.58	606.73															
Crossing 8	WAT pipe invert	SAN pipe invert	604.33	605.13	0.50														
	pipe obvert	pipe obvert	604.63	605.33															
Crossing 9	STM pipe invert	STM pipe invert	605.15	605.39	0.04														
	pipe obvert	pipe obvert	605.35	606.59															
Crossing 10	WAT pipe invert	STM pipe invert	605.19	606.03	0.66														
	pipe obvert	pipe obvert	605.39	606.78															

IF MINIMUM SEPERATION CANNOT BE MET BRIDGING OPTIONS WILL BE CONSIDERED THROUGH CONSULTATION WITH THE CITY