

SANITARY SEWER MEMO

PROJECT NO: 23-042

DATED: DECEMBER 22, 2023

REVISION 1: JANUARY 04, 2024

REVISION 2: JANUARY 16, 2024



Baird AE has been retained by Bullet Investments Inc. to prepare a sanitary sewer memo in support of a site plan application for a proposed redevelopment at 285 Giles Boulevard East in the City of Windsor. The development is bordered by Giles Boulevard East to the north, McDougall Street to the east, and existing commercial buildings to the west and south. The proposed development is 0.123 ha in area, and it is proposed to convert the existing 3-storey commercial building into a mixed-use building with 46 residential units covering 0.108 ha and a commercial retail section of 0.015 ha. The existing 3-storey commercial was used as office space.

The scope of this report is to compute the anticipated sanitary peak flow for the proposed redevelopment and compare it to the existing 3-storey commercial flow to determine whether the proposed development flows will have a significant impact on the receiver. The receiver is an existing 750-mm combined sewer on McDougall Street.

Levels	Proposed	Population	Existing	Population
Basement	2 Bachelor & 5 One Bedroom Suite	16.38	N/A	
1st Floor	9 One Bedroom & 2 Two Bedroom Suite	25.74	33 Office Spots	33
2nd Floor	8 One Bedroom & 6 Two Bedroom Suite	32.76	142 Office Spots	142
3rd Floor	8 One Bedroom & 6 Two Bedroom Suite	32.76	123 Office Spots	123
Retail	N/A		N/A	
Total Population		108		298

• Based on the City of Windsor's design Criteria, the permissible density for apartments with medium density is 2.34PPU (Persons Per Unit).

Sanitary Design Parameters		Existing
Average Daily Per Capita Flow		
363 L/Cap/Day – Residential	0.45 L/s	0.48 L/s
140 L/d - Office Space		
Commercial - Retail	0.0049 L/s	
28 m³/Ha/Day	0.0049 L/S	N/A
Extraneous Flow	0.12 L/s	0.12 L/s
1 L/s/ha	U.12 L/S	
Ultimate Flow Factor (UFF) / MOE peaking Factor		
6 – City of Windsor U.F.F. for Population below 1000 for residential	6 / 4.23	1.5 / 1.5
1.5 – For schools / office space – MOE	0 / 4.23	
4.23 – Harmon Peaking factor for residential using population of 108 as per		
MOE		
Total Sanitary Peak Flow – Using U.F.F.	2.85 L/s	0.84 L/s
Total sanitary Peak Flow – Using MOE Harmon peaking factor	2.04 L/s	0.84 L/s



- Based on the Ministry of Environment's (MOE) design guidelines for drinking water systems, the average flow is 70–140 L/d/student for schools, which is expected to be similar for office spaces as well.
- Schools and office buildings do not exhibit large maximum-to-average day ratios, and a factor of 1.5 will cover this variation for the existing office space.

According to the results obtained by using the UFF, the proposed sanitary flow is 2.01 L/s higher than the existing usage. Additionally, using the MOE peaking factor, the proposed flow is 1.20 L/s higher than the existing usage. Therefore, the proposed development flows calculated by the UFF add an additional sanitary peak flow of 2.01 L/s to the existing combined sewer system. This flow is considered negligible and should have no negative impact on the existing combined sewer infrastructure.

It is worth noting that the UFF proposed by the City of Windsor Development Manual is significantly more conservative than the peak factors obtained using the Harmon formula, which is an industry standard.

To mitigate the additional flow of 2.01 L/s to the existing 750mm combined sewer on McDougall Street, the storm sewer flow from the existing parking lot can be throttled. Alternatively, during the resurfacing of the existing asphalt parking lot, the impervious area can be reduced slightly to decrease the storm flow and mitigate the sanitary flow increase.

The existing office seating plan, proposed floor plans, and concept site plan are attached to this submission.

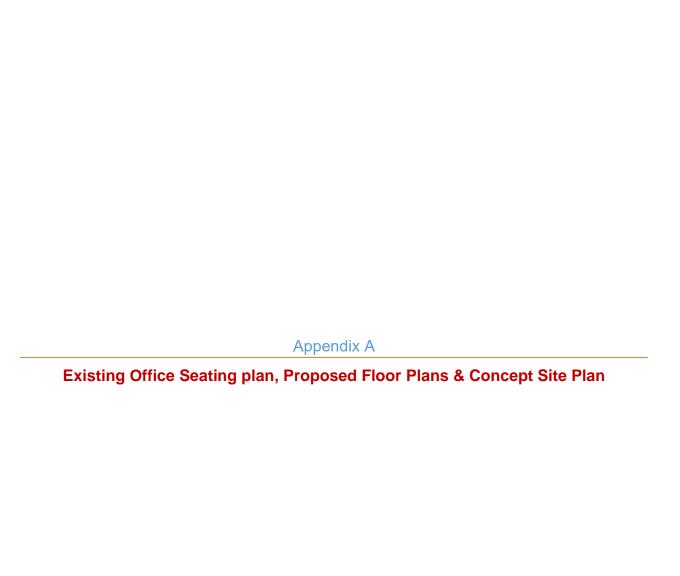
All of which is respectfully submitted.

BAIRD AE INC.

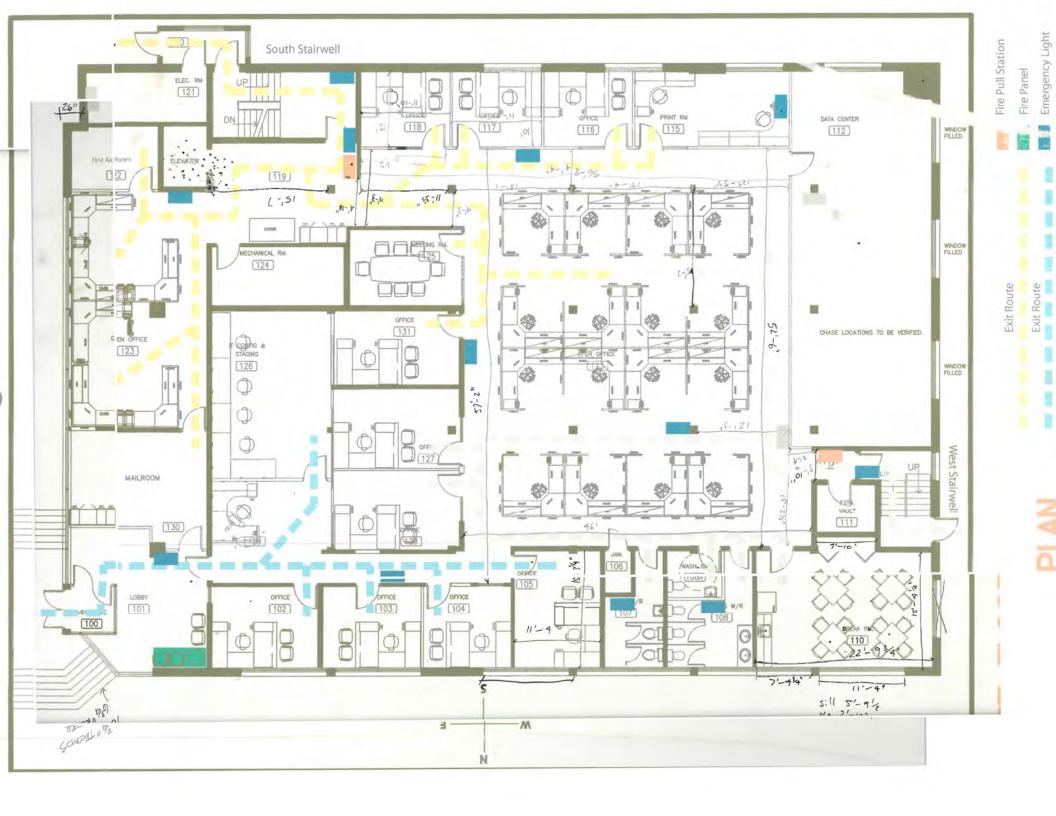


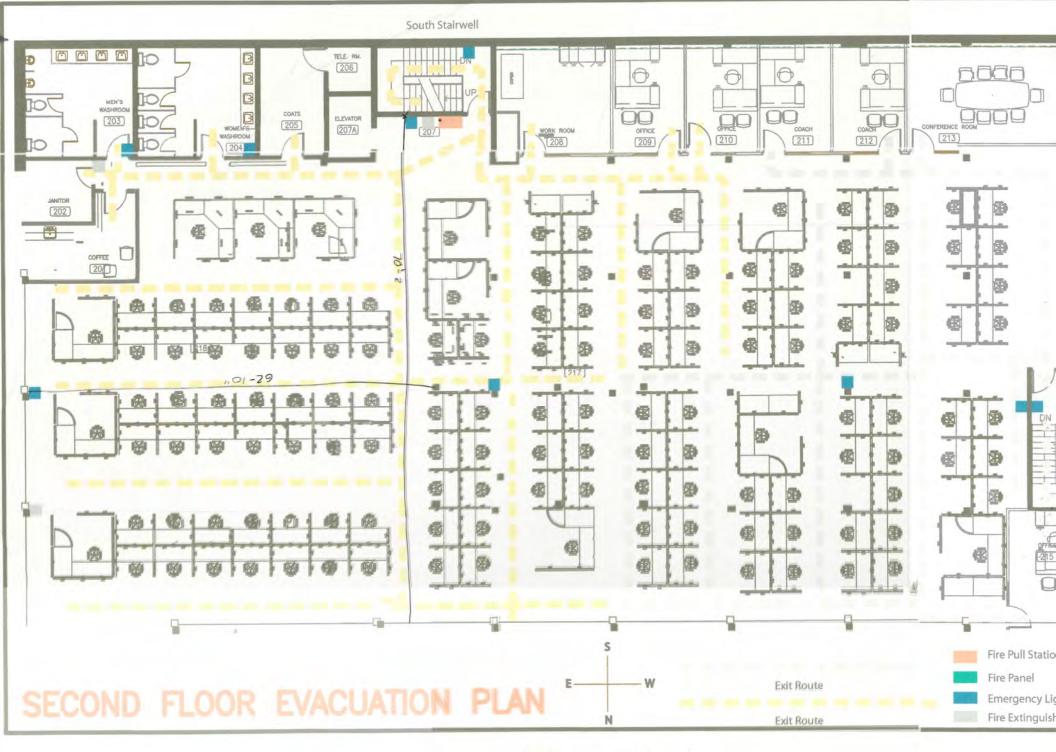
Gowtham Sivakumar, P. Eng



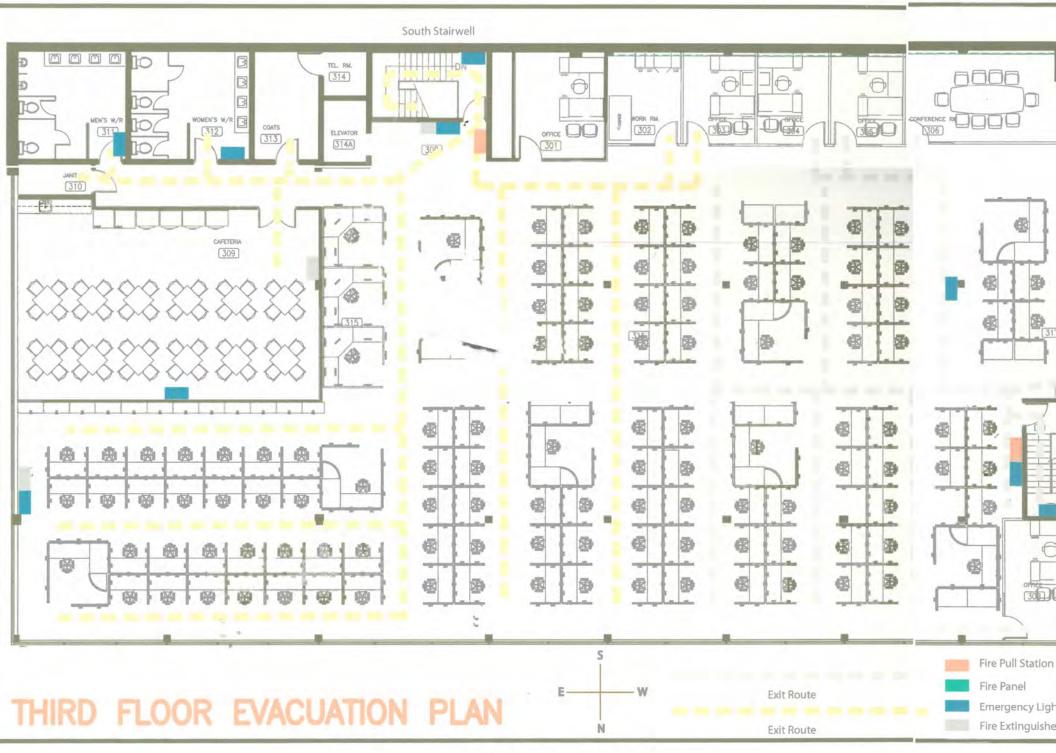






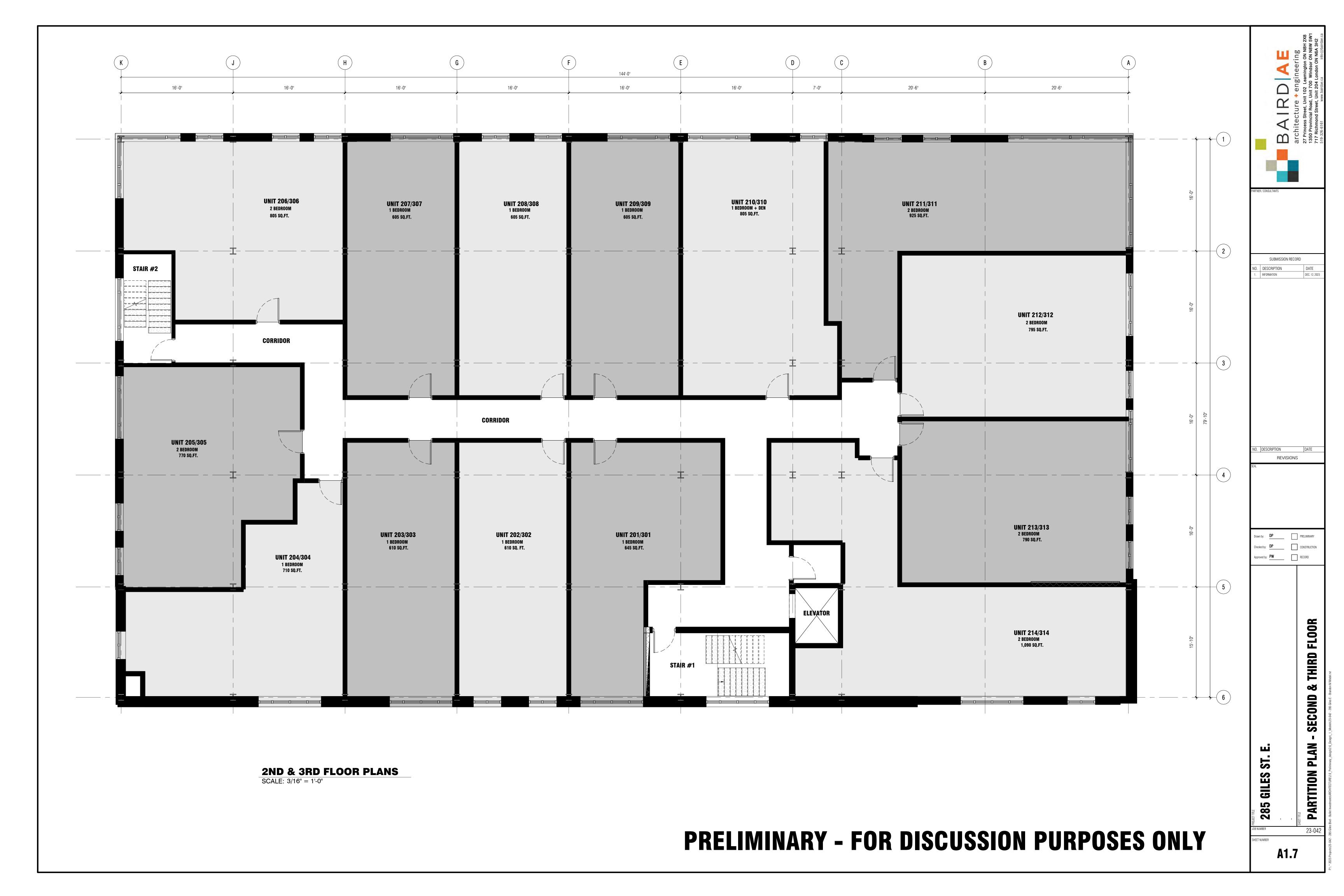


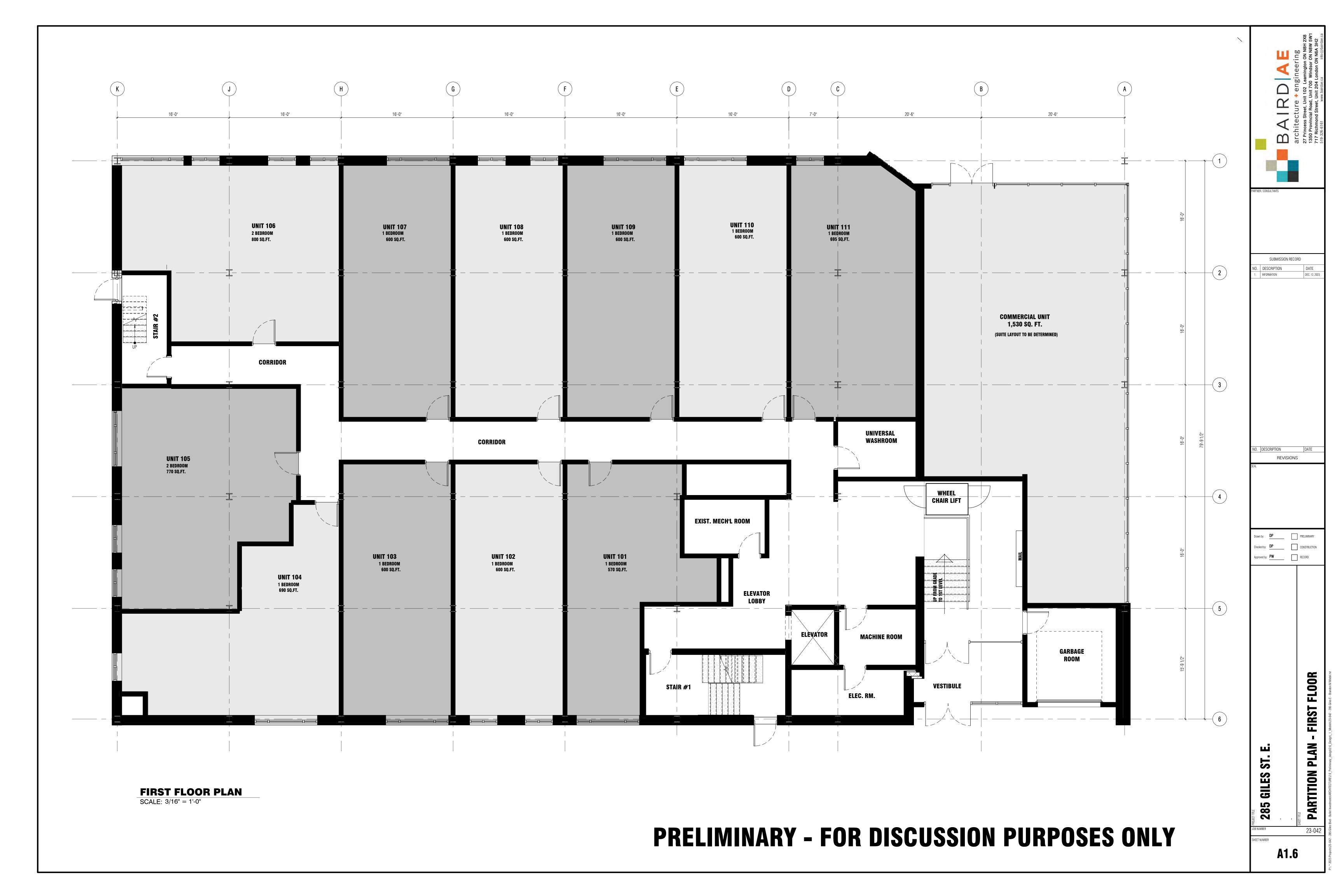
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OVERALL CONCEPT PLAN

| 285 GILES E. - BULLET INVESTMENTS

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