FUNCTIONAL SERVICING BRIEF

ROYAL ROSE COURT

CITY OF OWEN SOUND
GREY COUNTY

PREPARED FOR:

FC ENTERTAINMENT & HOSPITALITY INC.

PREPARED BY:

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APRIL 2023

CFCA FILE NO. 1733-6596

CROZIER
CONSULTING ENGINEERS

Revision Number	Date	Comments
Rev.0	April 2023	1st Submission (OPA/ZBA)

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1.0 INTRODUCTION

C.F. Crozier & Associates Inc. was retained by F.C. Entertainment & Hospitality Inc. to prepare a Functional Servicing Brief in support of the Official Plan Amendment and Zoning By-law Amendment Applications for the proposed site reuse located at 1235 & 1259 3rd Avenue East in the City of Owen Sound, Grey County. For the purposes of this report, the subject property which is subject to the applications will be referred to as the "Site". The location of the site is reflected on the development Site Location Plan included as **Figure 1.**

This Functional Servicing Brief provides information about the existing water and sanitary servicing and stormwater management (SWM) systems within the local area and requirements for future reuse of the Site.

External documents/plans were reviewed over the course of completing this engineering report. As such, the servicing and design considerations contained herein are assisted by the following:

- "Site Plan" – ERS Architects (December 2022)
- "Occupancy & Circulation Plan" – ERS Architects (December 2022)
- "Owen Sound WaterCAD Model Update – Rev.1" – City of Owen Sound (April 2022)
- "Owen Sound Sanitary Model" – City of Owen Sound (March 2022)
- "Owen Sound Jail – Heritage Impact Assessment" – Taylor Hazell Architects (January 2020)
- "East Owen Sounds Master Servicing Study" – R.J. Burnside & Associates Limited (December 2007)

2.0 SITE DESCRIPTION & BACKGROUND

The Site covers an area of approximately 0.65 ha and currently consists of the historic courthouse, governor's residence, prison, and prison yard. The site is bounded by residential properties to the north, 4th Avenue East to the east, Grey Road 15 to the west, and a fire station to the south.

The existing buildings on the Site are proposed to be re-purposed into an event venue, supplemented by restaurants, a shared office space, and an interactive heritage component. Additional surface parking is also proposed on the Site Plan (ERS Architects, December 2022), which has been included as **Figure 2** in this report.

3.0 WATER SUPPLY

Potable water for the Site will be supplied by the City of Owen Sound municipal water distribution system.

3.1 Existing Potable Water Supply Infrastructure

3.1.1 City of Owen Sound Water Treatment Plant

Domestic water is provided through the Owen Sound Water Treatment Plant (WTP), located on the eastern shore on 3rd Avenue East in Owen Sound. Source water is drawn from the Georgian Bay and treated to the Safe Drinking Water Act (SDWA) standards, and the plant has a rated capacity of 27,276 m^3/day. The potable water demand is anticipated to increase from the current maximum

daily demand of 21,179 m^3/day, to 24,797 m^3/day in 2026 and to 40,925 m^3/day at the Ultimate Build-out. Based on this analysis from the Master Servicing Report, and from discussions with the City, the capacity of the WTP is adequate to service the proposed reuse of the Site.

3.1.2 Water Distribution System

The existing water distribution infrastructure at or near the Site includes the following:

- 150 mm diameter watermain on 3rd Avenue East.
- 200 mm diameter watermain on 4th Avenue East.

An existing potable water connection currently services the Site, although due to the age of the infrastructure, no service record sheets exist for the connection to confirm size or material. Refer to **Appendix A** for as-recorded drawings showing the existing potable water distribution infrastructure.

3.2 Proposed Water Servicing Strategy

Water servicing for the Site will be supplied by way of the existing 150 mm diameter watermain on 3rd Avenue East. Since the size, material and age of the existing potable water service connection to the building is unknown, a subsurface utility investigation is recommended during detailed design to confirm the condition of the existing service. If the service is in poor condition, or insufficiently sized, a new service lateral will be installed and the existing service will be decommissioned.

3.3 Water Demand

To estimate the existing and proposed water demands for future development of the Site, the Ontario Building Code (OBC), City of Owen Sound Engineering Standards (2016), and the Ministry of the Environment, Conservation and Parks (MECP) Design Guidelines for Drinking-Water Systems (2008) were consulted to determine the average, maximum day and peak hour water demands generated by past and future use of the Site.

3.3.1 Existing Domestic Water Demand

The Heritage Impact Assessment (Taylor Hazell Architects, January 2020) provides some detail regarding the historical use of the Owen Sound Jail, which can be used to estimate the existing water demand. The report notes that the jail housed approximately 40 prisoners at the same time the Governor's Residence was added.

Since the Owen Sound Design Standards do not provide a daily consumption rate that can be applied to an institutional use, such as a prison, the Ontario Building Code (OBC) was used to estimate the average daily demand based on a similar land use. In this case, it was assumed that the most comparable land use in Table 8.2.1.3.B of the OBC was a Long-Term Care Home. Per the OBC, the average daily demand for a Long-Term Care Home is 450 L/bed/day.

Water demands based on the existing usage of the Site were estimated using the following design criteria:

- Average Flow Rate – Long-Term Care Home (per OBC) 450 L/bed/day
- Average Flow Rate – Residential Dwelling (per OBC) 1100 L/dwelling/day
- Max Day/Peak Hour Factors (per MECP Standards) 9.03/13.59

It is estimated that existing water demands for the Site are as follows:

- Average Day 0.22 L/sec
- Max Day 2.00 L/sec
- Peak Hour 3.00 L/sec

Refer to **Appendix B** for detailed calculations.

3.3.2 Proposed Domestic Water Demand

As noted in Section 2.0 the existing building is to be maintained on site and converted into an event venue, supplemented by restaurants and a shared office space. Based on the Architectural Drawings by ERS Architects in December 2022, the following uses are proposed within the building. Refer to the Occupancy Plan in **Appendix C**.

- Event Venue
- Office Space
- Restaurant
- Speak Easy / Lounge

In order to calculate the proposed water demand, it was assumed that the building would not have all of the above uses operating at the same time; therefore, the following scenarios were established:

- **Scenario #1 – Event Venue Only**
  - Assumes that all other uses are closed during an event.

- **Scenario #2 – Office Space and Restaurant**
  - Assumed to be the typical use during a weekday.

- **Scenario #3 – Restaurant and Speak Easy/Restaurant**
  - Assumed to be the typical use during the evenings.

- **Scenario #4 – 2 Events and Speak Easy/Restaurant**
  - Assumed to be the maximum demand scenario possible.

As noted in Section 3.3.1 the Owen Sound Design Standards do not provide a daily consumption rate that can be applied to certain uses, such as an event venue. Therefore, the Ontario Building Code (OBC) was used to estimate the average daily demand based on a similar land use. In this case, it was assumed that the most comparable land use to an event venue in Table 8.2.1.3.B of the OBC was an Assembly Hall with Food Service Provided. Per the OBC, the average daily demand for an Assembly Hall with Food Service is 36 L/seat/day.

Water demands based on the proposed usage of the Site was determined using the following design criteria:

- Average Flow Rate – Assembly Hall with Food Service (per OBC) 36 L/seat/day
- Average Flow Rate – Office Building (per OBC) 75 L/9.3m^2/day
- Average Flow Rate – Restaurant (per OBC) 125 L/seat/day
- Average Flow Rate – Bar and Cocktail Lounge (per OBC) 125 L/seat/day
- Max Day/Peak Hour Factors (per MECP Standards) 3.60/5.40

Using the criteria above, the average day water demand was calculated for each scenario. The results are presented in **Table 1** below.

Table 1: Average Daily Demand Flows

	Scenario #1	Scenario #2	Scenario #3	Scenario #4
Average Daily Flow Rate (L/s)	0.10	0.27	0.43	0.58

To be conservative, the highest average daily demand flow rate (Scenario #4) has been used to estimate the future water demands for the Site, which are as follows:

- Average Day 0.58 L/sec
- Max Day 2.09 L/sec
- Peak Hour 3.14 L/sec

Refer to **Appendix B** for detailed calculations.

3.3.3 Fire Flows

Fire flows required to service the site were determined to be 183 L/s per the Fire Underwriter's Survey. The total design flow (peak hour + fire flow) for the Site is 186.14 L/s.

At the time this report has been prepared, a hydrant flow test has not been completed. However, upon review of the East Owen Sound Master Servicing Study (R.J. Burnside, 2007), the Site is located in between two Junctions in the City's water model (J-254 and J-256). Based on the model outputs, the fire flows between the two nodes ranges from 144.23 L/s to 228.31 L/s. Refer to the excerpts from the East Owen Sound Master Servicing Study in **Appendix B** for details.

A hydrant flow test will be completed during detailed design to confirm the available fire flows.

4.0 SANITARY SERVICING

4.1 Existing Sanitary Sewer Infrastructure

4.1.1 City of Owen Sound Wastewater Treatment Plant

The City of Owen Sound Wastewater Treatment Plant (WWTP) is located at 2050 3rd Avenue East and discharges into the Georgian Bay. It was constructed in 1962 and has undergone multiple upgrades. It currently has a rated capacity of 24,545 m^3/day and a peak daily flow rate of 65,000 m^3/day. Based on the analysis from the East Owen Sound Master Servicing Study and the City's Sanitary model, along with discussions with the City, it is determined that the capacity of the existing WWTP is adequate.

4.1.2 Sanitary Sewer System

The existing sanitary sewer infrastructure at or near the Site consists of 300 mm diameter trunk sanitary sewer on 3rd Avenue East. There also exists sanitary sewer infrastructure on 4th Avenue East; however, as-recorded drawings were not available when our office requested them from The City.

An existing sanitary sewer connection currently services the Site, although due to the age of the infrastructure, no service record sheets exist for the connection to confirm size or material.

Refer to **Appendix A** for as-recorded drawings showing the existing sanitary sewer infrastructure.

4.2 Proposed Sanitary Servicing Strategy

Sanitary servicing for the Site will be provided through connection to the existing City of Owen Sound sanitary sewer connection network, with flows from the Site ultimately receiving treatment within the Owen Sound Wastewater Treatment Plant.

Since the size, material and age of the existing sanitary service connection to the building is unknown, a subsurface utility investigation is recommended during detailed design to confirm the condition of the existing service. If the service is in poor condition, or insufficiently sized, a new service lateral will be installed on 3rd Avenue East and the existing service will be decommissioned.

4.3 Sanitary Demand

The City of Owen Sound Engineering Standards (2016), MECP Design Guidelines for Sewage works (2008), and the Ontario Building Code were used to determine the estimated sewage demands for the existing and future conditions of the Site.

4.3.1 Existing Sanitary Demand

As noted in Section 3.3.1, the Owen Sound Design Standards do not provide a daily consumption rate that can be applied to an institutional use, such as a prison. Therefore, the Ontario Building Code (OBC) was used to estimate the average daily demand based on a similar land use. In this case, it was assumed that the most comparable land use in Table 8.2.1.3.B of the OBC was a Long-Term Care Home.

Sanitary flows for the existing usage of the Site were determined using the following design criteria:

- Average Flow Rate – Long-Term Care Home (per OBC) 450 L/bed/day
- Average Flow Rate – Residential Dwelling (per OBC) 1100 L/dwelling/day
- Residential Peaking Factor 4.0 (Harmon Formula)
- Institutional Peaking Factor 4.0 (Harmon Formula)
- Infiltration (City of Owen Sound standards) 0.20 L/s/ha

Based on these values it is estimated that peak sanitary flow from the existing conditions of the Site is 1.01 L/sec**.** Refer to the calculations in **Appendix D**.

4.3.2 Proposed Sanitary Demand

In order to calculate the proposed sanitary demand, the same four scenarios that were used to calculate the water demand in Section 3.3.2 were evaluated:

- **Scenario #1 – Event Venue Only**
  - Assumes that all other uses are closed during an event.
- **Scenario #2 – Office Space and Restaurant**
  - Assumed to be the typical use during a weekday.
- **Scenario #3 – Restaurant and Speak Easy/Restaurant**
  - Assumed to be the typical use during the evenings.
- **Scenario #4 – 2 Events and Speak Easy/Restaurant**
  - Assumed to be the maximum demand scenario possible.

Similar to what was done in Section 3.3.2, the Ontario Building Code (OBC) was used to estimate the average daily demand based on a similar land use. In this case, it was assumed that the most comparable land use to an event venue in Table 8.2.1.3.B of the OBC was an Assembly Hall with Food Service Provided. Per the OBC, the average daily demand for an Assembly Hall with Food Service is 36 L/seat/day.

Sanitary flows for the future usage of the Site were determined using the following design criteria:

- Average Flow Rate – Assembly Hall with Food Service (per OBC) 36 L/seat/day
- Average Flow Rate – Office Building (per OBC) 75 L/9.3m^2/day
- Average Flow Rate – Restaurant (per OBC) 125 L/seat/day
- Average Flow Rate – Bar and Cocktail Lounge (per OBC) 125 L/seat/day
- Institutional Peaking Factor 3.9 (Harmon Formula)
- Infiltration (City of Owen Sound standards) 0.20 L/s/ha

Based on these values it is estimated that peak sanitary flow from the future conditions of the Site will be 2.40 L/sec**.** Refer to the calculations in **Appendix D**.

4.3.3 Wastewater PCSWMM Model

A wastewater PCSWMM model was provided by the City on March 3, 2023. This model was used to analyze the sanitary sewers downstream of the site under existing and proposed dry weather flow conditions. The sewers downstream of the site until the 1,000 mm diameter trunk sewer located at the intersection of 13th Street East and 2nd Avenue East were analyzed.

Under existing conditions, the maximum hydraulic grade elevation (HGL) of the manhole immediately downstream of the site (SSMH1368) is 180.99m. The 300 mm diameter sewer fronting the site is at a slope of 0.5% and has a capacity of 68.4 L/s. The results show that the maximum flow in this pipe is 0.14 L/s; therefore, the pipe is 0.2% full under existing conditions. Please refer to **Appendix D** for a sewer profile of existing conditions from Junction SSMH1368 to SSMH1357.

A model was created to demonstrate proposed conditions. A conservative approach was used when updating the site flows to demonstrate proposed conditions. As described in the section above, the sanitary demands for existing and proposed conditions were calculated. The increase in demand (1.39 L/s) was added to the Average Value input in the model at Junction SSMH1366. The proposed model was run and the maximum HGL of Junction SSMH1366 was negligibly increased to 181.01m. The maximum flow of this pipe under proposed conditions is 1.87 L/s, therefore, the pipe is 2.7% full. Please refer to **Appendix D** for a sewer profile of proposed conditions.

Based on the model results, there is sufficient capacity in the existing sanitary sewers to support the proposed reuse without any sewer upgrades.

5.0 STORMWATER MANAGEMENT AND SITE DRAINAGE

5.1 Stormwater Management Criteria

The management of stormwater and Site drainage for the entire Site must comply with the policies and standards of the various agencies including the City of Owen Sound and the Ministry of Environment, Conservation and Parks (MECP).

The stormwater management criteria for the future development include:

- Water Quantity Control
  - "Post to Pre" control for storms up to and including the 100-year event for any future development;
  - Quantity Control is required for future development; and

- Water Quality Control
  - "Enhanced Protection" given Georgian Bay as the ultimate receivers.

5.2 Existing Drainage Conditions

A topographic survey was completed by Hewett and Milne Ltd. (February 2023), which confirmed that the Site drains east to west toward 3rd Avenue East. Both the minor and major storm flows are conveyed via sheet flow across the site before being conveyed on the 3rd Avenue East ROW to the Georgian Bay. Refer to **Appendix E** to view the topographic survey completed for the site.

5.3 Proposed Drainage Conditions

Per the Town's engineering standards, the proposed drainage system within the development will be required to convey internal runoff to an appropriate outlet and all infrastructure must be sized accordingly. Through discussions with the City, it is understood that the preferred stormwater outlet is the existing storm sewer on 12th Street East, which outlets directly to Georgian Bay. Although there is no existing storm sewer on 3rd Avenue East, there is an existing 375mm diameter storm sewer on 4th Avenue East that conveys runoff to the sewer on 12th Street East.

Internal paved areas within the site will be graded with varying slopes typically ranging from 0.5% - 5% to promote stormwater drainage from the parking area, towards proposed catchbasins and ultimately connecting to the existing storm sewer infrastructure on 4th Avenue East.

The proposed reuse of the Site will not significantly alter the current grading and drainage conditions. Under post-development conditions, the minor storm events will be conveyed through a storm sewer network within the proposed parking lot that will connect to the existing 375 mm diameter storm sewer on 4th Avenue East. The major storm events will be conveyed overland towards 3rd Avenue East.

5.4 Stormwater Quantity Control

Based on the Site Plan, the Site will have an increase in impervious area with the additional parking lot off 4th Avenue East. Stormwater runoff for the minor flows will be directed to 4th Avenue East via storm sewers, and major flows will continue to 3rd Avenue East via overland flow. Post-development peak flows will be controlled to meet the existing pre-development peak flows through use of a stormwater management facility on site, providing the required volume of storage.

Per the City of Owen Sound Engineering Standards Section C - Storm Drainage, the Rational Method was used to calculate the pre- and post-development flow rate produced on site for the 2-year to 100-year storm events. The Intensity Duration Frequency Curves for Owen Sound were used in the calculations.

Runoff coefficients were estimated by measuring the impervious and pervious areas for the site under pre- and post- development conditions. Land Use runoff coefficients from Section 3.5 of the City of Owen Sound Engineering Standards were applied to the impervious and pervious areas. A weighted average was calculated to determine a design runoff coefficient for the site in pre- and post-development which was used to estimate peak flows. Pre- and post-development flows are summarized in **Table 2**. Refer to **Appendix F** for the full calculations.

Table 2: Pre and Post Development Peak Flow Rates

Pre-Development Peak Flow Rate (m^3/s)		Post-Development Peak Flow Rate (m^3/s)	
5 yr	**100 yr**	**5 yr**	**100 yr**
0.12	0.26	0.17	0.37

The results of the Preliminary Rational Method calculations shown in **Table 2** establish that on-site storage will be required to control post-development flows to pre-development flows because the added impervious area of the proposed parking lot increased peak flows for all storm events. The preliminary calculations determined that approximately 51 m^3 of storage volume will be required. **Table 3** below provides an overview of various methods of quantity control and their suitability for the site, which may be implemented during detailed design.

Table 3: Stormwater Management (SWM) Facility Options

SWM Facility Type	Comments	Consideration (Yes/No)
Wet Pond	Wet ponds are an effective way to control the flows and are not affected by groundwater and bedrock. This form of quantity control requires a drainage area greater than 5ha to sustain a permanent pool, as per MOE design guidelines. Since the site is less than 5ha it is not recommended as a SWM Facility.	**No**
Dry Pond	Similar to wet ponds, dry ponds take up large areas and are recommended for drainage areas greater than 5 ha. Since the site is less than 5ha it is not recommended as a SWM Facility.	**No**
Infiltration Basin	Infiltration basins are acceptable for smaller areas, but is not a suitable option due to the limited space available on the site.	**No**
Surface Storage	The Municipality's Development Standards allow for surface storage up to a certain depth to reduce peak flow rates to storm sewers. Surface storage will likely be implemented within the proposed parking lot.	**Yes**
Rooftop Storage	Since the proposed building is being maintained, it is unlikely that the roof could be altered in order to provide additional storage.	**No**
Super Pipes	Storage within the pipes, manholes and catchbasins located within a roadway or parking lot can be utilized in conjunction with an orifice plate placed on an outlet structure downstream to provide storage internally. Although this type of facility likely cannot be used as a stand-alone system, as it does not provide sufficient quality controls, it may be used as part of the stormwater management strategy for the site.	**Yes**
Subsurface Storage Tanks	Similar to superpipes, subsurface storage tanks can provide large volumes of storage without reducing the developable area of a site. These types of SWM facilities are typically used in parking lots and may be suitable for this Site.	**Yes**
Low Impact Designs (LIDs)	Landscaped areas provide opportunities to include LIDs such as infiltration trenches and soak-away pits into the grading plans to provide additional quantity control. Based on the available soils mapping, it appears that the soils on site may be suitable for LIDs; however, this would need to be confirmed with a geotechnical investigation and hydrogeologic assessment.	**Maybe**

5.5 Stormwater Quality Control

It will be necessary to implement stormwater best management practices to address the water quality control requirements of the Municipality and other regulatory agencies. Georgian Bay is the ultimate receiver of drainage from the Site and therefore the development will incorporate measures to provide "enhanced protection" to treat runoff from the site. To provide "enhanced protection" an end-of-pipe control is recommended to treat the runoff from the proposed parking lot before it enters the Municipal storm sewer system.

5.5.1 End-Of-Pipe Controls

Oil/grit separators are typically recommended to treat runoff from the roadways and parking lots, which are the main source of oils and sediment from the vehicles. These structures are typically pre-manufactured and provide effective removal of oils and total suspended solids. The oil/grit separators are sized to treat minimum 95% annual runoff and a minimum 80% of annual total suspended solids (TSS) removal.

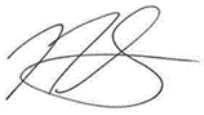
6.0 CONCLUSIONS AND RECOMMENDATIONS

It is concluded that the proposed reuse of the Site can be fully serviced by way of a storm sewer connection to 4th Avenue West, a new sanitary service lateral (if determined to be required by sub-surface investigation), and a new water service lateral (if determined to be required by sub-surface investigation). Stormwater quality control can be met via and oil-grit separator.

We trust that this report will be sufficient in supporting the Official Plan and Zoning By-Law Amendment Applications. Should you have any questions or require further information, please do not hesitate to contact the undersigned. Thank you.

Respectfully submitted,

C.F. CROZIER & ASSOCIATES INC.



Nicholas Sproule, EIT
Engineering Intern

C.F. CROZIER & ASSOCIATES INC.

George Cooper, P.Eng.
Project Manager

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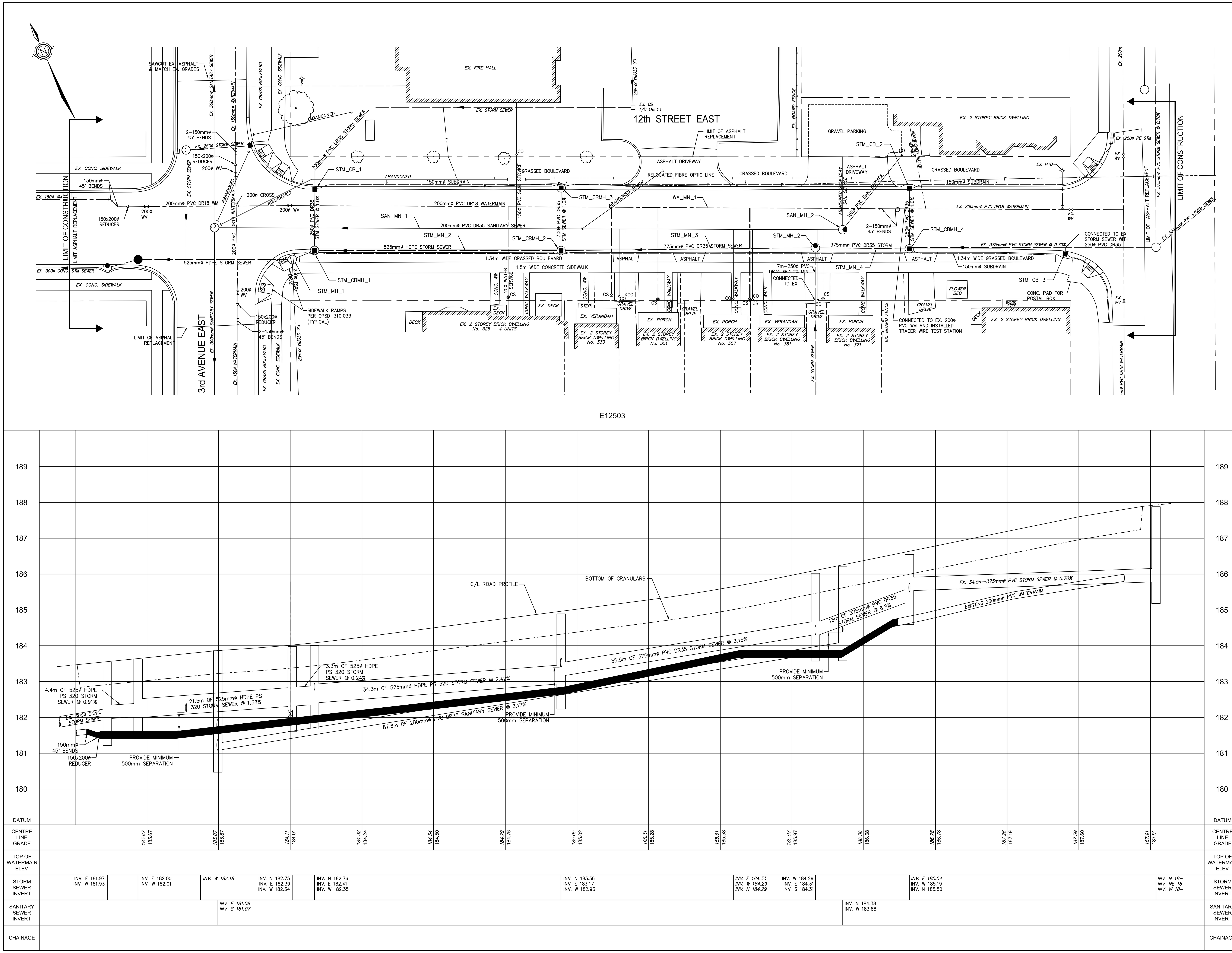
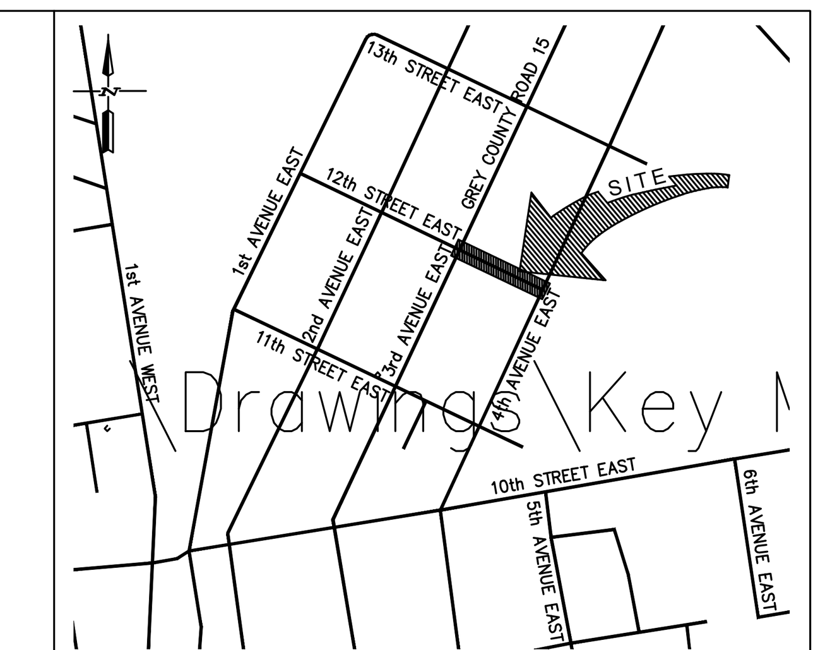
APPENDIX A

As-Recorded Information





CITY OF OWEN SOUND
KEY PLAN
NOT TO SCALE

NOTES :

1. TOPOGRAPHIC SURVEY WAS CONDUCTED BY HEWETT AND MILNE LIMITED ON AUGUST 14, 2013.
2. ALL DIMENSIONS AND ELEVATIONS IN METRIC UNLESS NOTED OTHERWISE.
3. ALL EXISTING WALKWAYS AND DRIVEWAYS TO BE REMOVED AND REPLACED TO THE LIMITS OF THE RIGHT-OF-WAY UNLESS NOTED OTHERWISE.
4. FIELD VERIFY ACTIVE SEWER SERVICE LOCATIONS.
5. ALL STREET SIGNS TO BE REMOVED AND DELIVERED TO THE CITY PUBLIC WORKS YARD AND REPLACED AT LOCATIONS MARKED BY THE CONTRACT ADMINISTRATOR WHEN CONSTRUCTION IS COMPLETE.
6. FULL LENGTH PIPES SHALL BE USED WHERE WATERMAIN CROSSES UNDER SEWER. JOINTS SHALL BE EQUI-DISTANT FROM THE CROSSING LOCATION AND A MINIMUM 0.5m VERTICAL SEPARATION SHALL BE MAINTAINED.
7. GOSS TRAPS TO BE PROVIDED IN ALL 250mmØ CATCHBASIN OUTLETS.
8. FACTORY MADE CONNECTIONS TO STORM SEWERS PER MANUFACTURERS SPECIFICATIONS.
9. ASPHALT DRIVEWAY RESTORATION TO PROPERTY LINE ON NORTH SIDE AND TO FRONT OF SIDEWALK ON SOUTH SIDE.

BENCHMARKS :

BM No. 1 ELEV. 185.11m

TOP OF NUT ON FIRE HYDRANT LOCATED ON THE EAST SIDE OF 3rd AVENUE EAST IN FRONT OF THE FIRE HALL.

BM No. 2 ELEV. 188.82m

TOP OF NUT ON FIRE HYDRANT LOCATED ON THE NORTH WEST CORNER OF 12th STREET EAST AND 4th AVENUE EAST (HYDRANT TO BE RELOCATED).

THE POSITION OF POLE LINES, CONDUITS, WATERMAINS, SEWERS AND OTHER UNDERGROUND AND OVERGROUND UTILITIES AND STRUCTURES IS NOT NECESSARILY SHOWN ON THE CONTRACT DRAWINGS, AND, WHERE SHOWN, THE ACCURACY OF THE POSITION OF SUCH UTILITIES AND STRUCTURES IS NOT GUARANTEED.

BEFORE STARTING WORK, THE CONTRACTOR SHALL INFORM HIMSELF OF THE EXACT LOCATION OF ALL SUCH UTILITIES AND STRUCTURES, AND SHALL ASSUME ALL LIABILITY FOR ANY DAMAGE TO THEM.

NO.	DATE	REVISION DESCRIPTION	CH'KD
6	9/06/16	AS CONSTRUCTED	J.B.S.
5	5/18/16	ISSUED FOR CONSTRUCTION	J.B.S.
4	4/05/16	ISSUED FOR TENDER	J.B.S.
3	2/12/16	ISSUED FOR PERMIT	J.B.S.
2	1/22/16	ISSUED FOR CITY REVIEW	J.B.S.
1	4/01/14	REVISED ROAD CROSS SECTION	J.B.S.

GM [redacted] Plan ENGINEERING

GUELPH | OWEN SOUND | LISTOWEL | KITCHENER | EXETER | HAMILTON | GTA
1260 - 2ND AVENUE EAST, UNIT 1, OWEN SOUND, ON N4K 2J3
TEL. 519-376-1805 www.gmblueplan.ca

300 BLOCK OF 12th STREET EAST

STREET RECONSTRUCTION

CITY OF OWEN SOUND

PLAN AND PROFILE: 12th STREET EAST

DRAWN BY :	APPROVED BY :	PROJECT NO. :	DRAWING NO. :
K.B.	J.B.S.	213286	2
DESIGNED BY : J.B.S.	DATE : SEPT. 2013	SCALE : 1:250 HORIZ. 1:50 VERT.	

APPENDIX B

Potable Water Demand Calculations

CROZIER
CONSULTING ENGINEERS

Project No.: 1733-6596
Project Name: Royal Rose Court
Revision Date: 8-Mar-23
Prepared By: PM
Checked By: NS/GC

OBC Table 8.2.1.3.A

Item	Column 1 *Residential Occupancy*	Column 2 Volume, litres	Per	Unit	Existing Units (Person / Dwelling / m^2 / etc)	Existing Flow (L/day)	Proposed Units (Person /	Proposed Flow (L/day)	
4.	Dwellings								
	b) 2 bedroom dwelling	1100	1	Dwelling	1	1100	0	0	
					Sub-Total Residential	**1100**	**L/d**	**0**	**L/d**

OBC Table 8.2.1.3.B

Item	Column 1 *Establishments*	Column 2 Volume, litres	Per	Unit	Existing Units (Person / Dwelling / m^2 / etc)	Existing Flow (L/day)	Proposed Units (Person / Dwelling / m2 / etc)	Proposed Flow (L/day)	
2.	Assembly Hall - per seat								
	a) No food service, or	8	1	Seat	0	0		0	
	b) Food service provided	36	1	Seat	0	0	242	8712	
12.	Food Service Operations								
	a) Restaurant (not 24 hour), per seat	125	1	Seat	0	0	0	0	
	f) Bar and cocktail lounge, per seat	125	1	Seat	0	0	0	0	
	i) Cafeteria - per meal	12	1	Meal	0	0	0	0	
13.	Hospitals - per bed								
	a) Including laundry facilities, or	750	1	Bed	0	0	0	0	
	b) Excluding laundry facilities	550	1	Bed	0	0	0	0	
14.	Long-Term Care Homes, etc. - per bed	450	1	Bed	40	18000	0	0	
15.	Office Building[3]								
	b) Per each 9.3 m^2 of floor space	75	9.3	m^2	0	0	0	0	
26.	b) Per loading bay	150	1	Loading Bay		0		0	
					Sub-Total Non-Residential	**18000**	**L/d**	**8712**	**L/d**
					Total	**19100**	**L/d**	**8712**	**L/d**

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OBC Table 8.2.1.3.A

Item	Column 1 *Residential Occupancy*	Column 2 Volume, litres	Per	Unit	Existing Units (Person / Dwelling / m^2 / etc)	Existing Flow (L/day)	Proposed Units (Person /	Proposed Flow (L/day)	
4.	Dwellings								
	b) 2 bedroom dwelling	1100	1	Dwelling	1	1100	0	0	
					Sub-Total Residential	**1100**	**L/d**	**0**	**L/d**

OBC Table 8.2.1.3.B

Item	Column 1 *Establishments*	Column 2 Volume, litres	Per	Unit	Existing Units (Person / Dwelling / m^2 / etc)	Existing Flow (L/day)	Proposed Units (Person / Dwelling / m2 / etc)	Proposed Flow (L/day)	
2.	Assembly Hall - per seat								
	a) No food service, or	8	1	Seat	0	0		0	
	b) Food service provided	36	1	Seat	0	0	0	0	
12.	Food Service Operations								
	a) Restaurant (not 24 hour), per seat	125	1	Seat	0	0	172	21500	
	f) Bar and cocktail lounge, per seat	125	1	Seat	0	0	0	0	
	i) Cafeteria - per meal	12	1	Meal	0	0	0	0	
13.	Hospitals - per bed								
	a) Including laundry facilities, or	750	1	Bed		0		0	
	b) Excluding laundry facilities	550	1	Bed		0		0	
14.	Long-Term Care Homes, etc. - per bed	450	1	Bed	40	18000	0	0	
15.	Office Building[3]								
	b) Per each 9.3 m^2 of floor space	75	9.3	m^2	0	0	180	1452	
					Sub-Total Non-Residential	**18000**	**L/d**	**22952**	**L/d**
					Total	**19100**	**L/d**	**22952**	**L/d**

CROZIER
CONSULTING ENGINEERS

Project No.: 1733-6596
Project Name: Royal Rose Court
Revision Date: 8-Mar-23
Prepared By: PM
Checked By: NS/GC

OBC Table 8.2.1.3.A

Item	Column 1 *Residential Occupancy*	Column 2 Volume, litres	Per	Unit	Existing Units (Person / Dwelling / m^2 / etc)	Existing Flow (L/day)	Proposed Units (Person /	Proposed Flow (L/day)	
4.	Dwellings								
	b) 2 bedroom dwelling	1100	1	Dwelling	1	1100	0	0	
					Sub-Total Residential	**1100**	**L/d**	**0**	**L/d**

OBC Table 8.2.1.3.B

Item	Column 1 *Establishments*	Column 2 Volume, litres	Per	Unit	Existing Units (Person / Dwelling / m^2 / etc)	Existing Flow (L/day)	Proposed Units (Person / Dwelling / m2 / etc)	Proposed Flow (L/day)	
2.	Assembly Hall - per seat								
	a) No food service, or	8	1	Seat	0	0		0	
	b) Food service provided	36	1	Seat	0	0	0	0	
12.	Food Service Operations								
	a) Restaurant (not 24 hour), per seat	125	1	Seat	0	0	172	21500	
	f) Bar and cocktail lounge, per seat	125	1	Seat	0	0	127	15875	
	i) Cafeteria - per meal	12	1	Meal	0	0	0	0	
13.	Hospitals - per bed								
	a) Including laundry facilities, or	750	1	Bed	0	0	0	0	
	b) Excluding laundry facilities	550	1	Bed	0	0	0	0	
14.	Long-Term Care Homes, etc. - per bed	450	1	Bed	40	18000	0	0	
15.	Office Building[3]								
	b) Per each 9.3 m^2 of floor space	75	9.3	m^2	0	0	0	0	
					Sub-Total Non-Residential	**18000**	**L/d**	**37375**	**L/d**
					Total	**19100**	**L/d**	**37375**	**L/d**

Project No.: 1733-6596
Project Name: Royal Rose Court
Revision Date: 08-Mar-23
Prepared By: PM
Checked By: NS/GC

OBC Table 8.2.1.3.A

Item	Column 1 *Residential Occupancy*	Column 2 Volume, litres	Per	Unit	Existing Units (Person / Dwelling / m^2 / etc)	Existing Flow (L/day)	Proposed Units (Person /	Proposed Flow (L/day)	
4.	Dwellings								
	b) 2 bedroom dwelling	1100	1	Dwelling	1	1100	0	0	
					Sub-Total Residential	**1100**	**L/d**	**0**	**L/d**

OBC Table 8.2.1.3.B

Item	Column 1 *Establishments*	Column 2 Volume, litres	Per	Unit	Existing Units (Person / Dwelling / m^2 / etc)	Existing Flow (L/day)	Proposed Units (Person / Dwelling / m2 / etc)	Proposed Flow (L/day)	
2.	Assembly Hall - per seat								
	a) No food service, or	8	1	Seat	0	0	0	0	
	b) Food service provided	36	1	Seat	0	0	358	12888	
12.	Food Service Operations								
	a) Restaurant (not 24 hour), per seat	125	1	Seat	0	0	172	21500	
	f) Bar and cocktail lounge, per seat	125	1	Seat	0	0	127	15875	
	i) Cafeteria - per meal	12	1	Meal	0	0	0	0	
13.	Hospitals - per bed								
	a) Including laundry facilities, or	750	1	Bed	0	0	0	0	
	b) Excluding laundry facilities	550	1	Bed	0	0	0	0	
14.	Long-Term Care Homes, etc. - per bed	450	1	Bed	40	18000	0	0	
15.	Office Building[3]								
	b) Per each 9.3 m^2 of floor space	75	9.3	m^2	0	0	0	0	
					Sub-Total Non-Residential	**18000**	**L/d**	**50263**	**L/d**
					Total	**19100**	**L/d**	**50263**	**L/d**

CROZIER & ASSOCIATES Consulting Engineers

File: 1733-6596
Date: 2023.03.08
By: PM
Check By: NS/GC

Royal Rose Court- Preliminary Water Design Flow (Existing)

Developed Site Area	0.65	ha
Number of Residential Units		
Residential Population (Governor's Residence)	2	persons
Commercial/Institutional Population (Jail)	40	persons
Total Population	42	persons
Total Design Water Flows		
Average Daily Residential Flow (Table 8.2.1.3.A Ontario Building Code)	0.01	L/sec
Average Daily Commercial/Institutional Flow (Table 8.2.1.3.B Ontario Building Code)	0.21	L/sec
Total Average Flow	**0.22**	**L/sec**
Max Day Peak Factor (Table 3-3 of MECP Design Guidelines for Drinking Water Systems)	9.03	
Max Day Demand Flow	**2.00**	L/sec
Peak Hour Factor (Table 3-3 of MECP Design Guidelines for Drinking Water Systems)	13.59	
Peak Hour Flow	**3.00**	L/sec

CROZIER & ASSOCIATES Consulting Engineers

File: 1733-6596
Date: 2023.03.08
By: PM
Check By: NS/GC

Royal Rose Court- Preliminary Water Design Flow (Proposed)

Developed Site Area	0.65	ha
Number of Residential Units		
Commercial/Institutional Population	657	persons
Total Population	657	persons
Total Design Water Flows		
Average Daily Commercial/Institutional Flow	0.58	L/sec
Total Average Flow	**0.58**	**L/sec**
Max Day Peak Factor	3.60	
Max Day Demand Flow	**2.09**	L/sec
Peak Hour Factor	5.40	
Peak Hour Flow	**3.14**	L/sec

CROZIER CONSULTING ENGINEERS

PROJECT NAME: Royal Rose Court
PROJECT NUMBER: 1733-6596
PREPARED BY: PM
CHECKED BY: GC
DATE: 2/16/2023

Fire Flow Determination Per Fire Underwriters Survey (2020)

Water Supply for Public Fire Protection - 2020
Fire Underwriters Survey
Part II - Guide for Determination of Fire Flows for Public Fire Protection in Canada

An estimate of fire flow required for a given area may be determined by the formula:

RFF = 220 * C * sqrt A

where:

RFF = the required fire flow in litres per minute (L/min)
C = the construction coefficient is related to the type of construction of the building
= 1.5 for Type V Wood Frame Construction
= 0.8 for Type IV-A Mass Timber Construction
= 0.9 for Type IV-B Mass Timber Construction
= 1.0 for Type IV-C Mass Timber Construction
= 1.5 for Type IV-D Mass Timber Construction
= 1.0 for Type III Ordinary Construction
= 0.8 for Type II Non-combustible Construction
= 0.6 for Type I Fire Resistive Construction
A = the total effective floor area (effective building area) in square metres (excluding basements at least 50 percent below grade) in the building considered

STEP A: Construction Coefficient (C) 1 Type III Ordinary Construction

STEP B: Total Effective Floor Area
Proposed Building Abandoned courthouse to be repurposed as a wedding venue.
Floor areas recorded from "Concept Design" by ERS Architects, 2022-10-14

	Yes/No/Unknown	
Is basement at least 50% below grade?	Yes	If yes, basement floor area excluded
Vertical openings protected?	No	*For consideration for effective area calculations

Calculate Effective Floor Area based on the highlighted cell
-C value from 1.0 to 1.5: 100% of all floor areas are used
-C value below 1 and vertical openings are not protected: Consider two largest floors plus 50% of all floor above to a max of eight
-C value below 1 and vertical openings are protected: Consider single largest floor plus 25% of the two immediately adjoining floors

*A building may be subdivided if there is a vertical firewall with a fire-resistance rating greater than 2 hours, and meets the requirements of the National Building Code.

Floors Above Grade	Total Floor Area (m^2)	% of Area Considered	Effective Floor Area (m^2)	
Basement	201	0%	0.0	
Gross Floor Area	2050	100%	2050.0	*Per Architectural Plans
Total	**2050**		**2050.0**	

Total Effective Floor Area **2050** m^2

STEP C: Therefore RFF = **10,000** **L/min (rounded to nearest 1000 L/min)**

STEP D: Occupancy Contents Adjustment Factor

The required fire flow may be reduced by as much as -25% for occupancies having contents with very low fire hazard or may be increased by up to 25% surcharge for occupancies having a high fire hazard.

Occupancy and Contents Adjustment Factor	
Non-Combustible	-25%
Limited Combustible	-15%
Combustible	0%
Free Burning	15%
Rapid Burning	25%

*Refer to Table 3 for recommended Occupancy and Contents Charges by major occupancy examples.

Type of Occupancy	Adjustment Factor	
Assembly Occupancy	Limited Combustible	-15%

Total Reduction % **-1,500** **L/min (reduction)**

RFF = **8,500** **L/min (not rounded)**

Note: The RFF flow 8500 L/min is used in Step E and F.

CROZIER CONSULTING ENGINEERS

PROJECT NAME: Royal Rose Court
PROJECT NUMBER: 1733-6596
PREPARED BY: PM
CHECKED BY: GC
DATE: 2/16/2023

Fire Flow Determination Per Fire Underwriters Survey (2020)

STEP E: Automatic Sprinkler Protection

Sprinklers - The required fire flow may be reduced by up to 50% for complete automatic sprinkler protection depending upon adequacy of system.

	Yes/No/Unknown	*Possible Reduction Available	Actual Reduction Provided
Automatic sprinkler protection designed and installed in accordance with NFPA 13?	Unknown	-30%	0%
Water supply is standard for both the system and Fire Department hose lines?	Unknown	-10%	0%
Fully supervised system?	Unknown	-10%	0%

*Reduction available assumes complete building coverage
*30% reduction typical for building requiring sprinkler system

Total Reduction % 0% **(reduction)**

Total Reduced Flow 0 **L/min (reduction, not rounded)**

STEP F: Exposure Adjustment Charge

Exposure - A percentage of water for the exposures should be added to the required fire flow for the subject building to provide adequate flow rates for hose streams used to reduce the spreading of fire from the subject building to exposed risks. The required fire flow of a subject building may be increased depending on the severity of exposed risks to the subject building and the distance between the exposed risks and the subject building. This charge considers the usage of water supplies to prevent exposed risks from igniting or being damaged during a major fire incident in the subject building.

Separation Distance	Maximum Exposure Adjustment Charge
0 to 3m	25%
3.1 to 10m	20%
10.1 to 20m	15%
20.1 to 30m	10%
Greater than 30m	0%

*If a vertical fire wall is properly constructed and has a rating of no less than 2 hours, then the boundary can be treated as protected with no exposure charge
*The maximum exposure adjustment charge to be applied to a subject building is 75%
*The distance in metres from the subject building facing wall to the exposed building facing wall, measured to the nearest metre, between the nearest points of the buildings. Where either the subject building or the exposed building is at a diagonal to the other building, the shortest distance should be increased by 3 metres and this adjusted value used as exposure distance.

Exposed buildings		Distance	Surcharge Factor	Surcharge (L/min)
North	Adjacent Dwelling	26	10%	850
East	Adjacent Dwelling	37	0%	0
South	Adjacent Institutional	2	25%	2125
West	Adjacent Dwelling	42	0%	0

Total Reduced Flow 2,975 **L/min Surcharge (not rounded)**

STEP G: Final Required Fire Flow

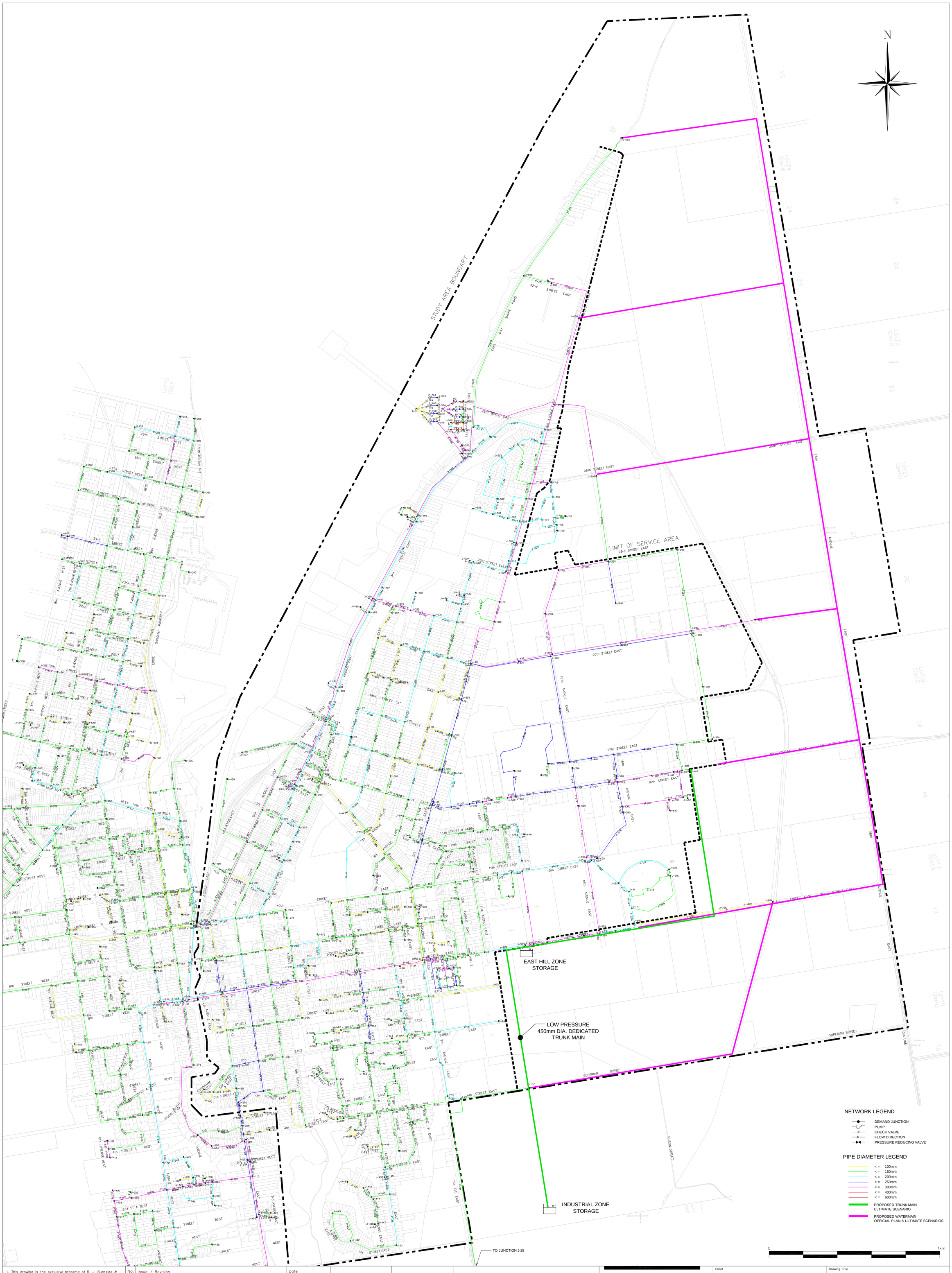
Step D - Occupancy Adjusted Fire Flow Demand	8,500	L/min
Step E - Sprinkler (Reduction)	0	L/min
Step F - Exposure Charge	2,975	L/min
Final Fire Flow:	**11,475**	**L/min**
	11,000	**L/min (rounded to nearest 1000L/min)**
or	**183**	**L/s**
or	**2,906**	**USGPM**
Required duration:	**2.25**	**hours**

Refer to Table 1 for Duration

Table 1 - FUS 2020

Required Duration of Fire Flow	
Flow Required (L/min)	**Duration (hours)**
2,000 or less	1.00
3,000	1.25
4,000	1.50
5,000	1.75
6,000	2.00
8,000	2.00
10,000	2.00
12,000	2.50
14,000	3.00
16,000	3.50
18,000	4.00
20,000	4.50
22,000	5.00
24,000	5.50
26,000	6.00
28,000	6.50
30,000	7.00
32,000	7.50
34,000	8.00
36,000	8.50
38,000	9.00
40,000 and over	9.50

Interpolate for intermediate figures



No.	Issue / Revision	Date
1.	ISSUED – DRAFT REPORT	OCTOBER 12, 2007
2.	ISSUED – FINAL REPORT	DECEMBER 2007

BURNSIDE
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3 Roneli Crescent, Collingwood, Ontario
telephone (705) 446-0515 **fax** (705) 446-2399
web www.rjburnside.com

Client
CITY OF OWEN SOUND
808 SECOND AVENUE E.
OWEN SOUND, ONTARIO
N4K 2H4

Drawing Title
OWEN SOUND
WATER NETWORK MODEL
EXISTING & PROPOSED SYSTEMS

Drawn By	Checked By	Drawing No.
K.M.G.	J.L.L.	WAT1
Scale 1:10,000	Project No. MCG 10665	

G:\WaterCad\Owen Sound WaterCad 2007\OwenSound WaterCad Jan 8 2008.dwg

Feb 07, 2008 – 10:38am

Fire Flow Node
FlexTable: Fire Flow
Report Report

Label	Zone	Fire Flow (Needed) (L/s)	Fire Flow (Available) (L/s)	Pressure (Calculated Residual Lower Limit) (psi)	Junction w/Minimum Pressure (Zone)	Pressure (Residual Lower Limit) (psi)
J-251	Spring	227.0000	153.2162	31.1	J-478	20.0
J-252	Spring	227.0000	151.8341	31.5	J-478	20.0
J-253	Spring	227.0000	151.0734	20.0	J-438	20.0
J-254	Spring	227.0000	144.2366	20.0	J-478	20.0
J-255	Spring	227.0000	196.1942	20.0	J-478	20.0
J-256	Spring	227.0000	228.3143	27.2	J-478	20.0
J-257	Spring	227.0000	199.2494	20.0	J-591	20.0
J-258	Spring	227.0000	385.8813	33.1	J-688	20.0
J-259	Spring	227.0000	159.2749	20.0	J-688	20.0
J-260	Spring	227.0000	197.7299	25.8	J-261	20.0
J-261	Spring	227.0000	147.4473	20.0	J-601	20.0
J-262	Spring	227.0000	154.0893	22.1	J-601	20.0
J-263	Spring	227.0000	92.3967	28.7	J-282	20.0
J-264	Spring	227.0000	100.9409	30.5	J-432	20.0
J-265	Spring	227.0000	86.2573	21.2	J-282	20.0
J-267	Spring	227.0000	74.7711	20.0	J-282	20.0
J-268	Spring	227.0000	66.7131	20.0	J-282	20.0
J-269	Spring	227.0000	75.5471	23.7	J-282	20.0
J-270	Spring	227.0000	80.9376	26.9	J-282	20.0
J-271	Spring	227.0000	64.2104	26.0	J-390	20.0
J-272	Spring	227.0000	69.9967	27.1	J-282	20.0
J-273	Spring	227.0000	72.3029	27.5	J-282	20.0
J-274	Spring	227.0000	73.9415	26.1	J-282	20.0
J-275	Spring	227.0000	56.8105	27.0	J-386	20.0
J-276	Spring	227.0000	57.3883	28.7	J-282	20.0
J-277	Spring	227.0000	62.2800	28.4	J-282	20.0

APPENDIX C

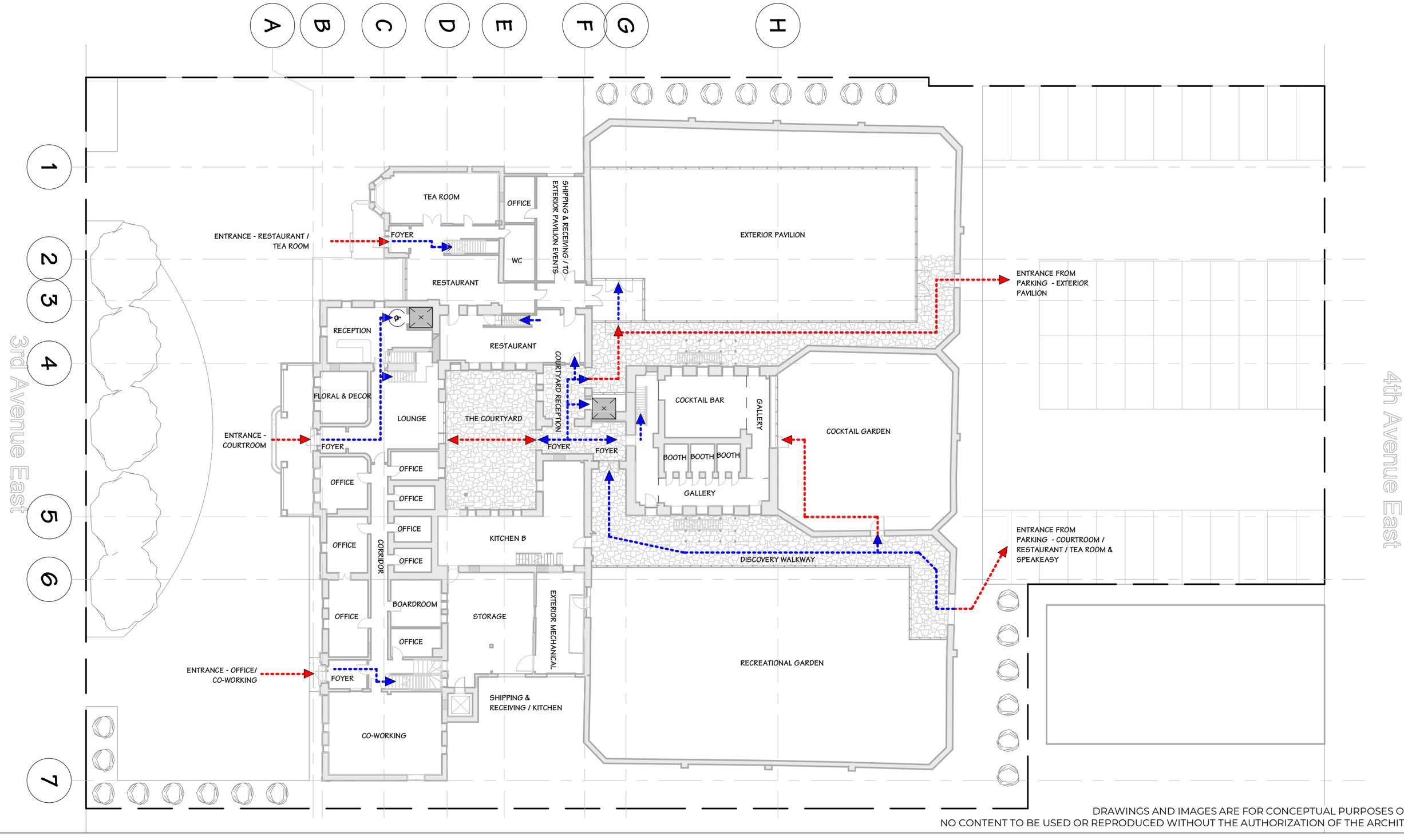
Royal Rose Court - Occupancy Plans
(ERS Architects, December 2022)

Project # 22.0056.00

Royal Rose Court

Occupancy & Circulation Discussion

December 22, 2022



ERS ARCHITECTS

Royal Rose Court

1235-1259 3rd Avenue East
Owen Sound, ON N4K 2L6

EXTERIOR CIRCULATION

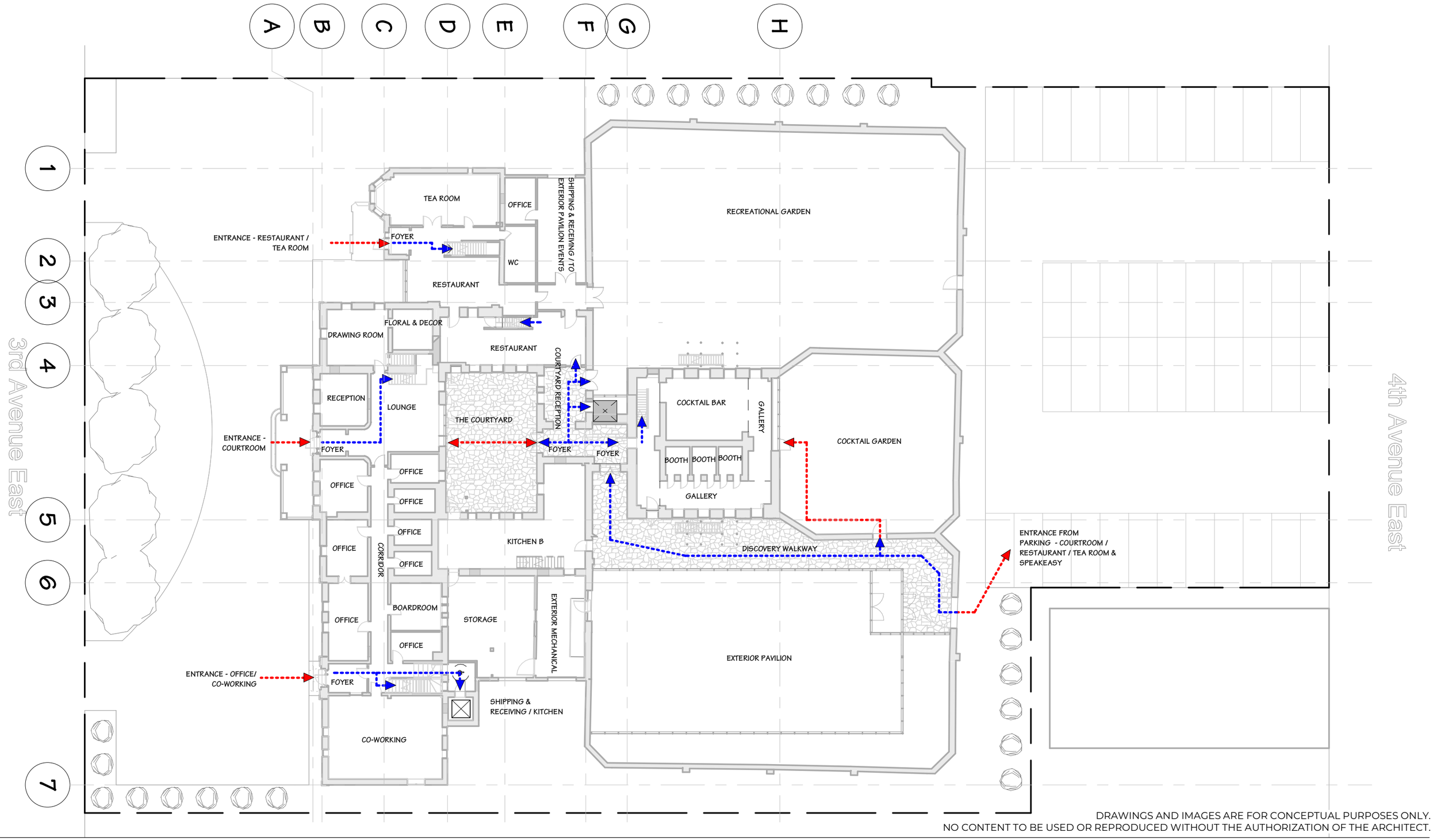
INTERIOR CIRCULATION

FC Entertainment & Hospitality Inc.

LEVEL 01 - CIRCULATION PLAN - OPT 1

Project #	22.0056.00
Scale	As indicated
Date	12/12/22

SK-001



ERS ARCHITECTS

Royal Rose Court

1235-1259 3rd Avenue East
Owen Sound, ON N4K 2L6

EXTERIOR CIRCULATION

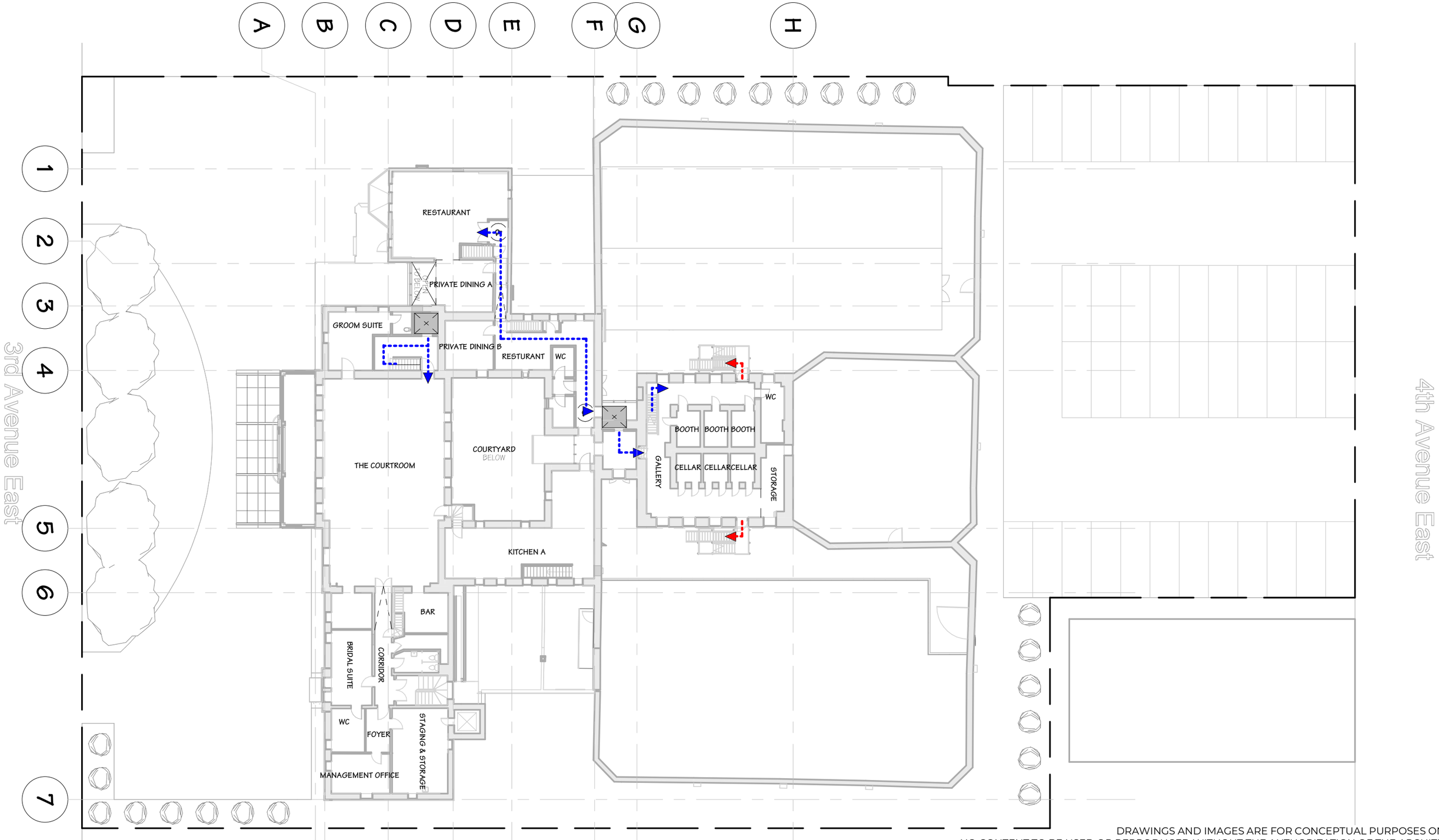
INTERIOR CIRCULATION

FC Entertainment & Hospitality Inc.

LEVEL 01 - CIRCULATION PLAN - OPT 2

Project #	22.0056.00
Scale	As indicated
Date	12/12/22

SK-001b



ERS ARCHITECTS

Royal Rose Court

1235-1259 3rd Avenue East
Owen Sound, ON N4K 2L6

EXTERIOR CIRCULATION

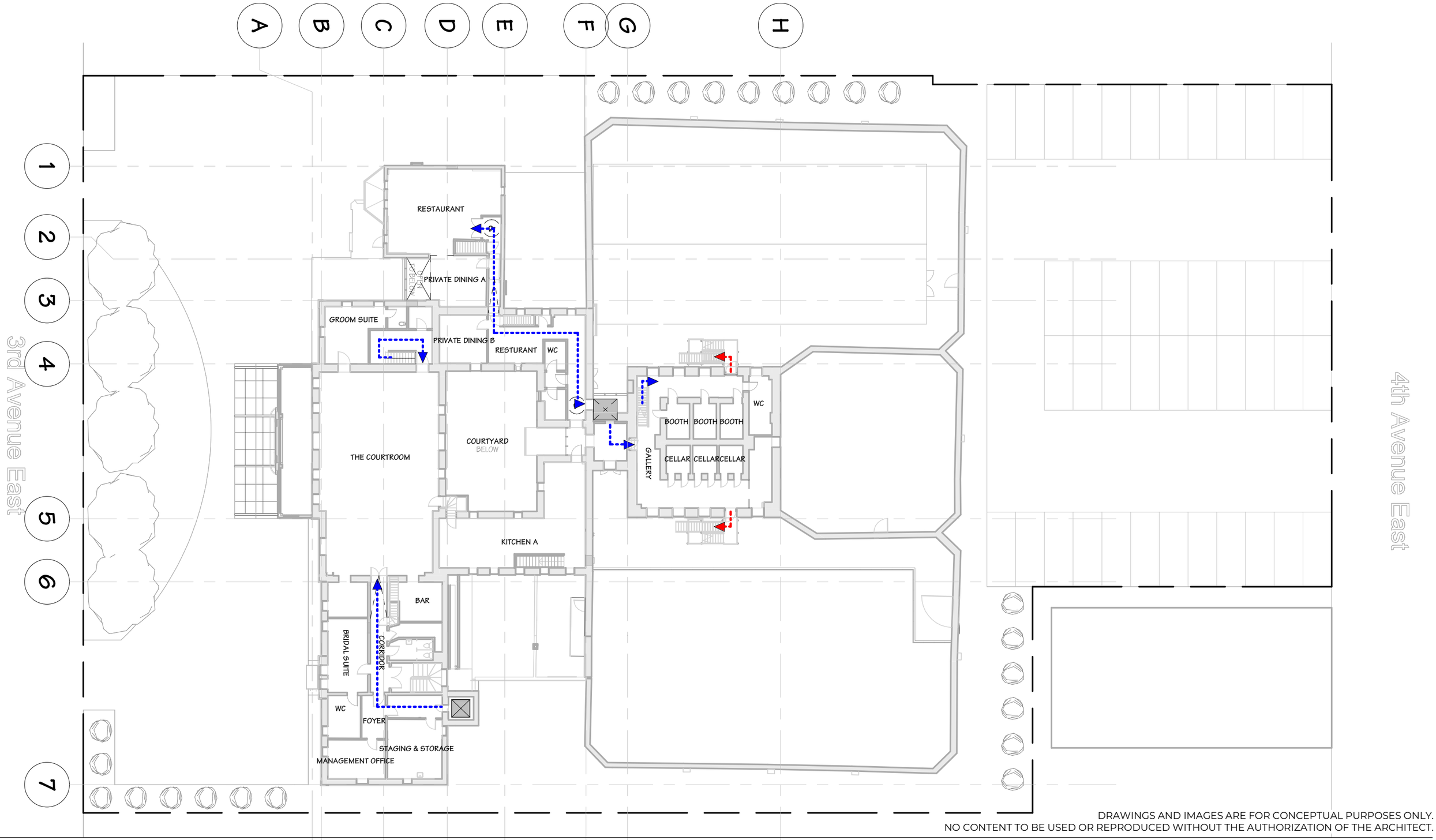
INTERIOR CIRCULATION

FC Entertainment & Hospitality Inc.

LEVEL 02 - CIRCULATION PLAN - OPT 1

Project #	22.0056.00
Scale	As indicated
Date	12/12/22

SK-002



ERS ARCHITECTS

Royal Rose Court

1235-1259 3rd Avenue East
Owen Sound, ON N4K 2L6

EXTERIOR CIRCULATION

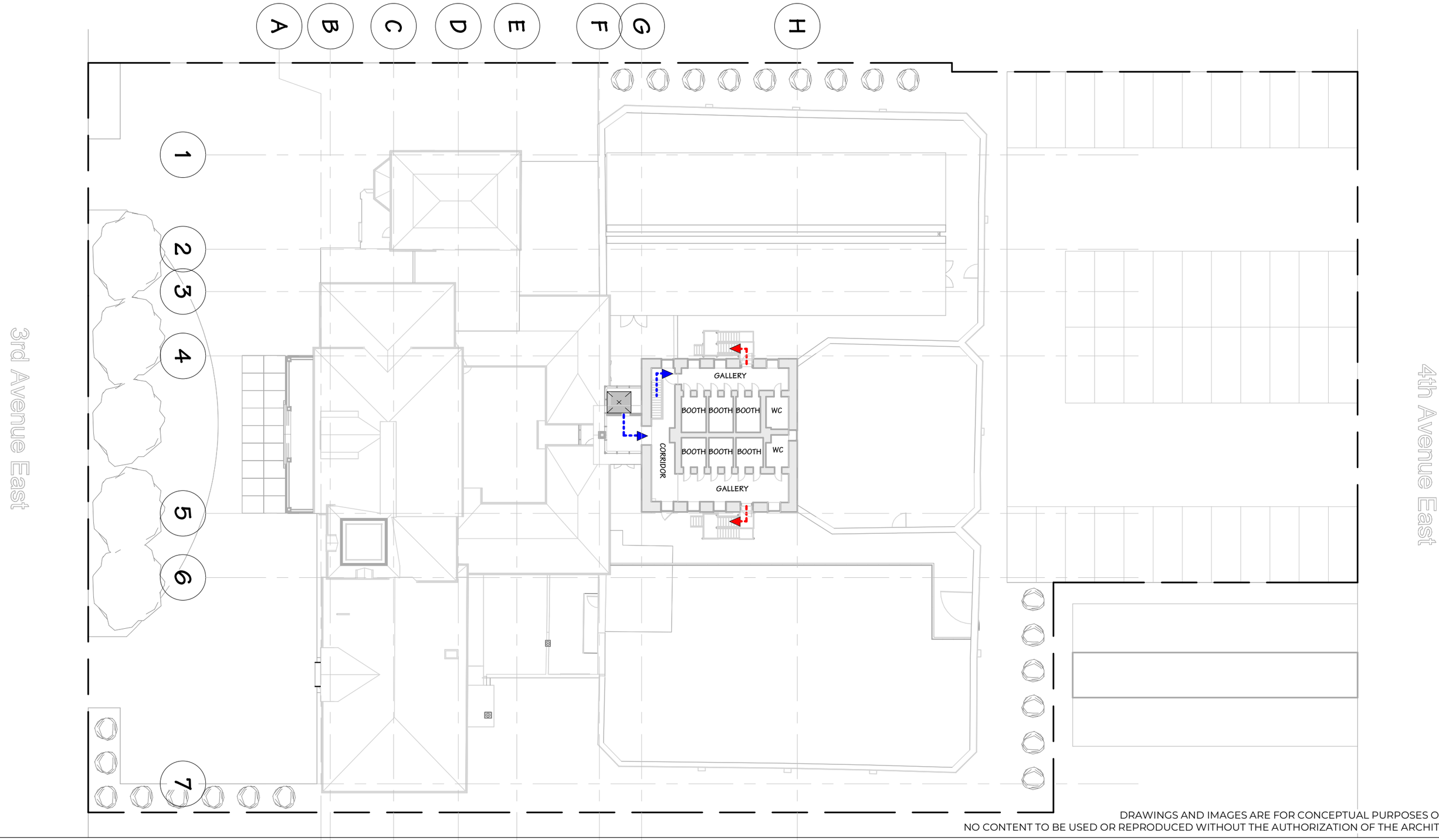
INTERIOR CIRCULATION

FC Entertainment & Hospitality Inc.

LEVEL 02 - CIRCULATION PLAN - OPT 2

Project #	22.0056.00
Scale	As indicated
Date	12/12/22

SK-002b



ERS ARCHITECTS

Royal Rose Court

1235-1259 3rd Avenue East
Owen Sound, ON N4K 2L6

EXTERIOR CIRCULATION

INTERIOR CIRCULATION

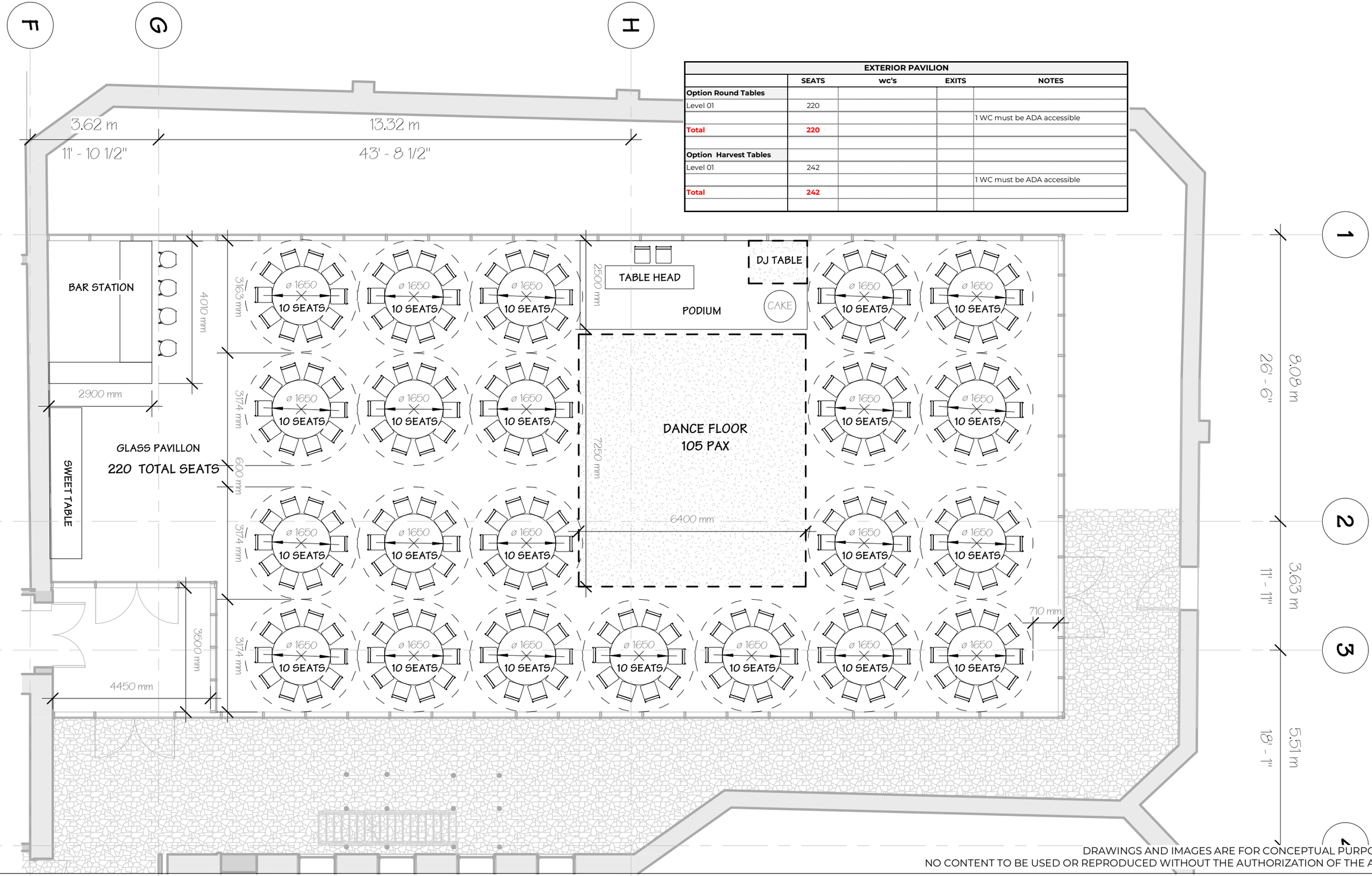
FC Entertainment & Hospitality Inc.

LEVEL 03 - CIRCULATION PLAN - OPT 1

Project #	22.0056.00
Scale	As indicated
Date	12/12/22

SK-003

EXTERIOR PAVILION				
	SEATS	wc's	EXITS	NOTES
Option Round Tables				
Level 01	220			
				1 WC must be ADA accessible
Total	**220**			
Option Harvest Tables				
Level 01	242			
				1 WC must be ADA accessible
Total	**242**			



ERS ARCHITECTS

Royal Rose Court

1235-1259 3rd Avenue East
Owen Sound, ON N4K 2L6

FC Entertainment & Hospitality Inc.

LEVEL 01 - PROPOSED SEATING PLAN - EXT VENUE OPT 1

Project #	22.0056.00
Scale	1 : 100
Date	12/12/22

SK-005

EXTERIOR PAVILION				
	SEATS	wc's	EXITS	NOTES
Option Round Tables				
Level 01	220			
				1 WC must be ADA accessible
Total	**220**			
Option Harvest Tables				
Level 01	242			
				1 WC must be ADA accessible
Total	**242**			

F G H 1 2 3 4

3.62 m
11' - 10 1/2"

13.32 m
43' - 8 1/2"

8.08 m
26' - 6"

3.63 m
11' - 11"

BAR STATION
2400 mm
3800 mm
SWEET TABLE
GLASS PAVILLON
242 TOTAL SEATS
4450 mm
3500 mm

16 SEATS
16 SEATS
16 SEATS
16 SEATS
1995 mm
605 mm
901 mm
900 mm

24 SEATS
24 SEATS
12 SEATS
12 SEATS
7232 mm
3552 mm

HEAD TABLE
DJ TABLE
CAKE
PODIUM
2844 mm
DANCE FLOOR
112 PAX
7400 mm
6350 mm

18 SEATS

24 SEATS
24 SEATS
12 SEATS
12 SEATS

5407 mm
700 mm
1995 mm
600 mm
1995 mm
1352 mm
5432 mm
1085 mm
1995 mm
605 mm
1995 mm
560 mm

ERS ARCHITECTS

Royal Rose Court

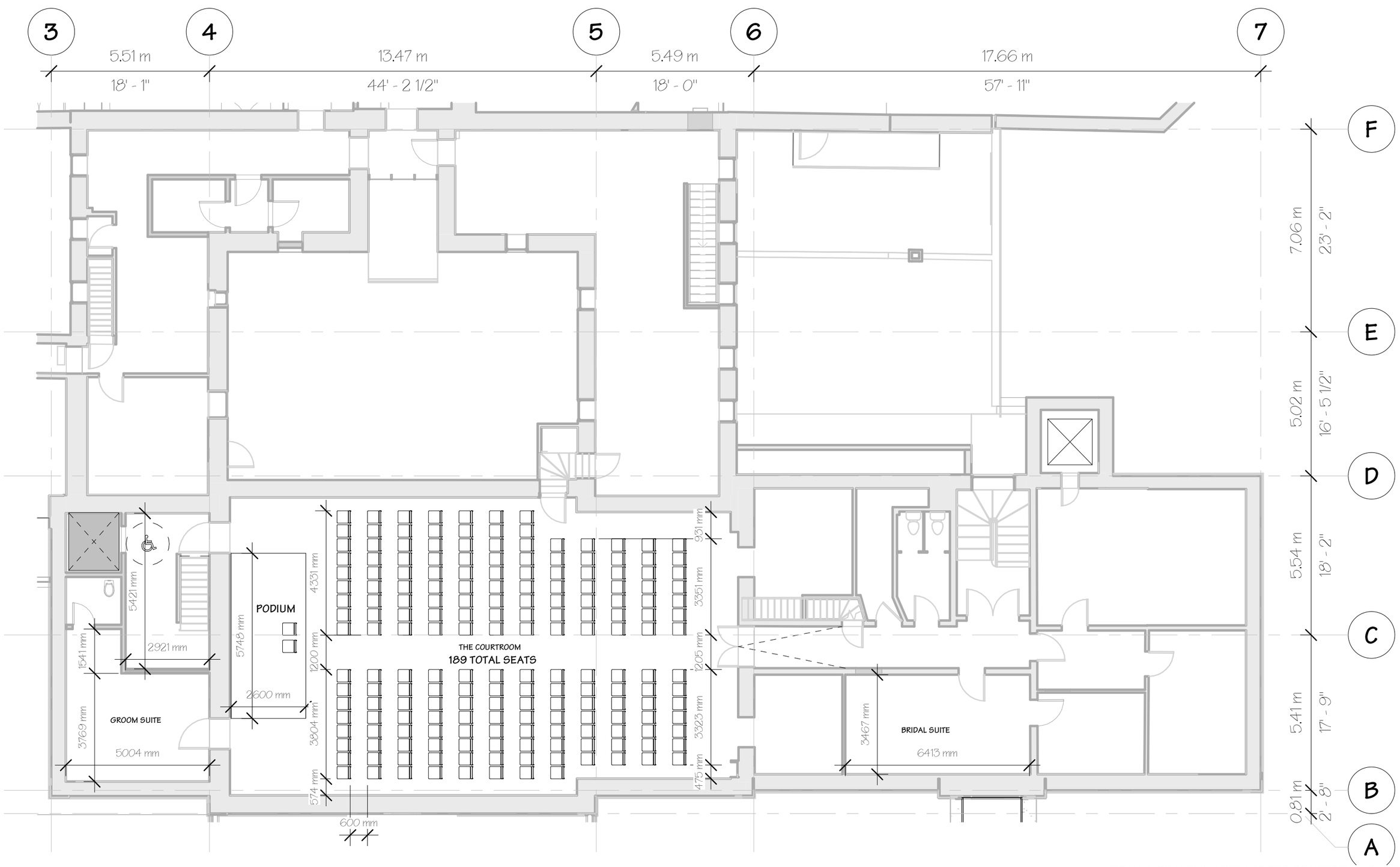
1235-1259 3rd Avenue East
Owen Sound, ON N4K 2L6

FC Entertainment & Hospitality Inc.

LEVEL 01 - PROPOSED SEATING PLAN - EXT VENUE OPT 2

Project #	22.0056.00
Scale	1 : 100
Date	12/12/22

SK-005B



ERS ARCHITECTS

Royal Rose Court

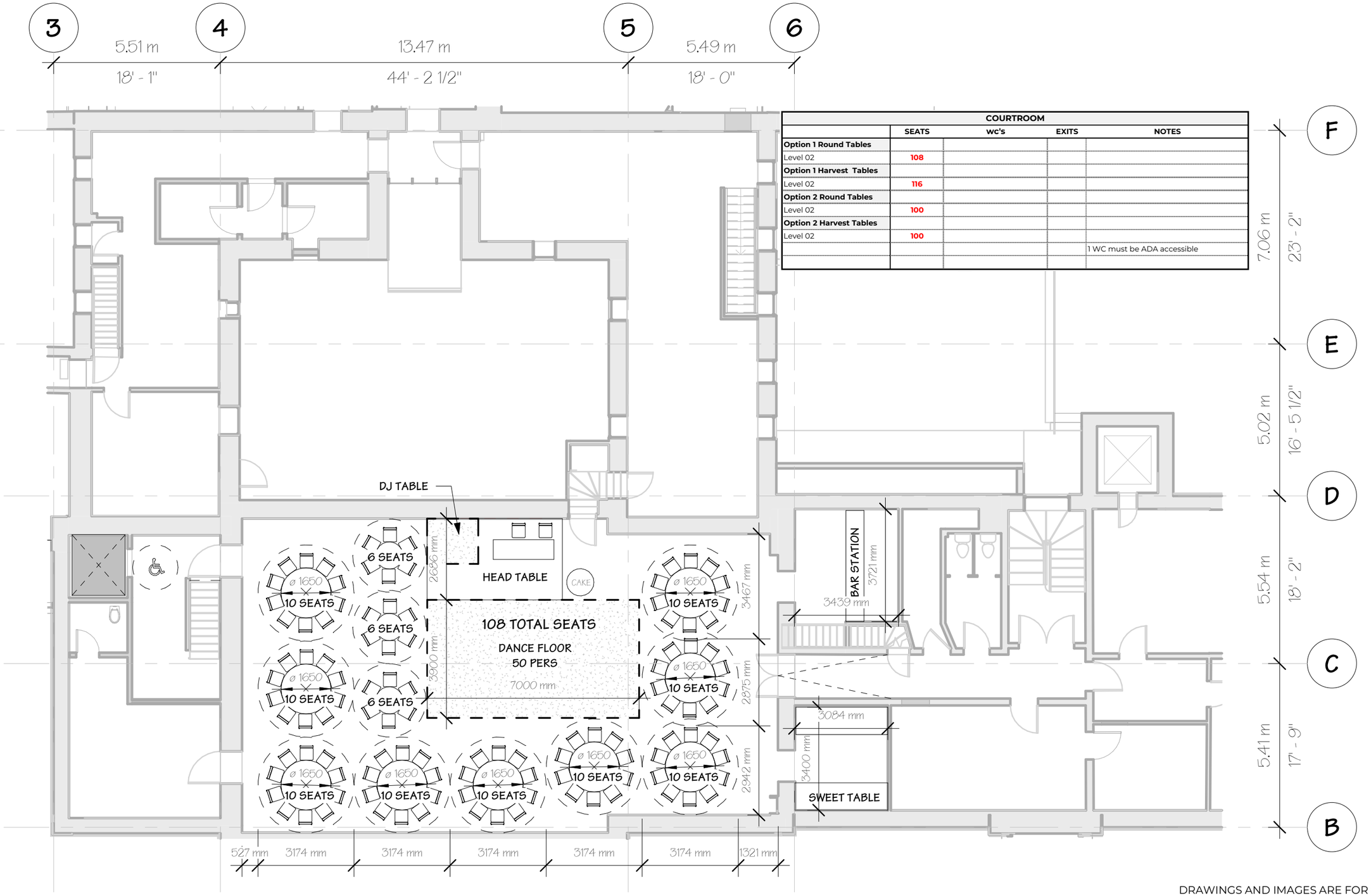
1235-1259 3rd Avenue East
Owen Sound, ON N4K 2L6

FC Entertainment & Hospitality Inc.

LEVEL 01 - PROPOSED SEATING PLAN - COURTROOM CEREMONY ARRANGEMENT

Project #	22.0056.00
Scale	1 : 125
Date	12/12/22

SK-006



COURTROOM				
	SEATS	wc's	EXITS	NOTES
Option 1 Round Tables				
Level 02	108			
Option 1 Harvest Tables				
Level 02	116			
Option 2 Round Tables				
Level 02	100			
Option 2 Harvest Tables				
Level 02	100			
				1 WC must be ADA accessible

ERS ARCHITECTS

Royal Rose Court

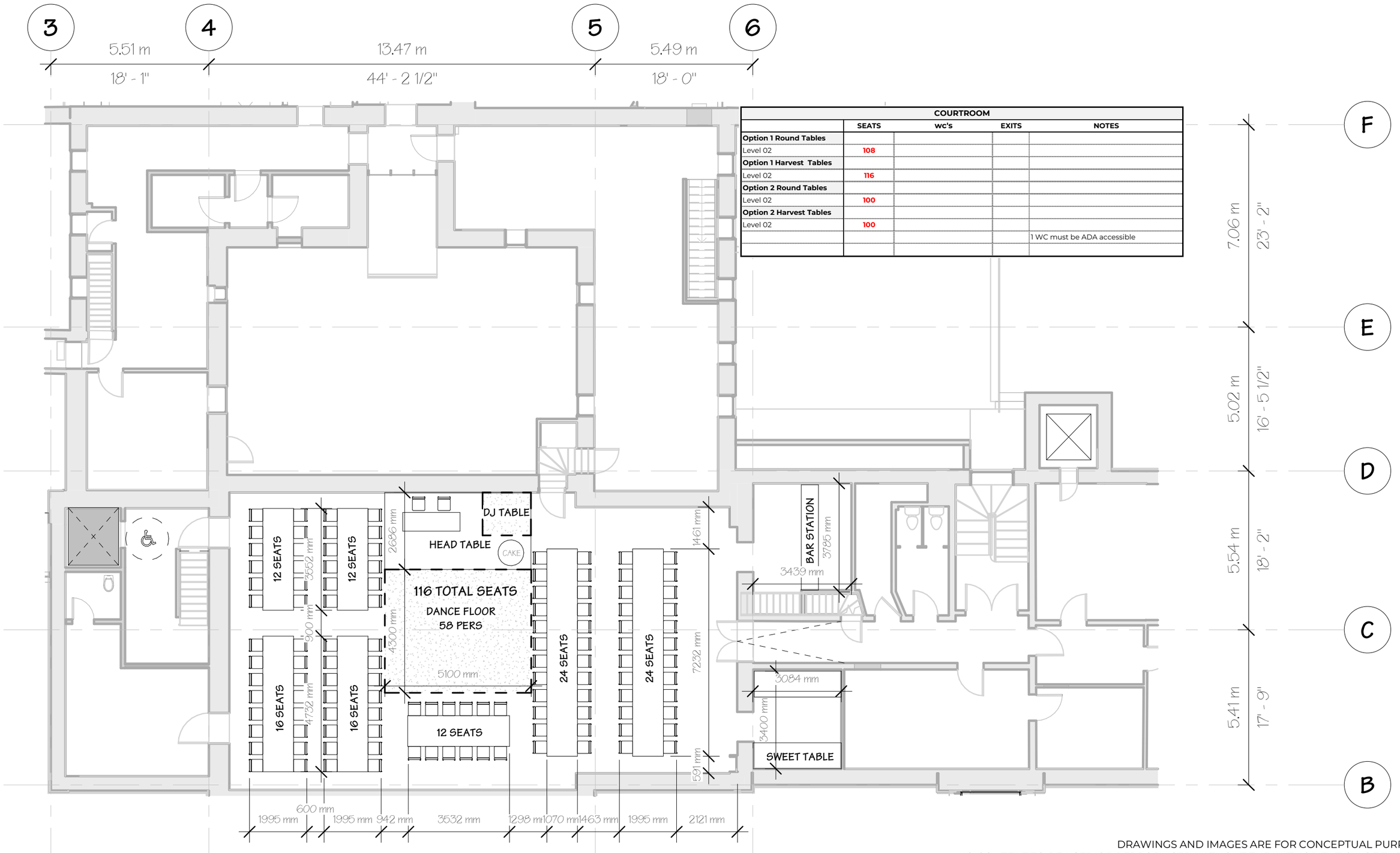
1235-1259 3rd Avenue East
Owen Sound, ON N4K 2L6

FC Entertainment & Hospitality Inc.

LEVEL 01 - PROPOSED SEATING PLAN - COURTROOM OPT 1
Copy 1

Project #	22.0056.00
Scale	1 : 125
Date	12/12/22

SK-007



COURTROOM				
	SEATS	wc's	EXITS	NOTES
Option 1 Round Tables				
Level 02	108			
Option 1 Harvest Tables				
Level 02	116			
Option 2 Round Tables				
Level 02	100			
Option 2 Harvest Tables				
Level 02	100			
				1 WC must be ADA accessible

ERS ARCHITECTS

Royal Rose Court

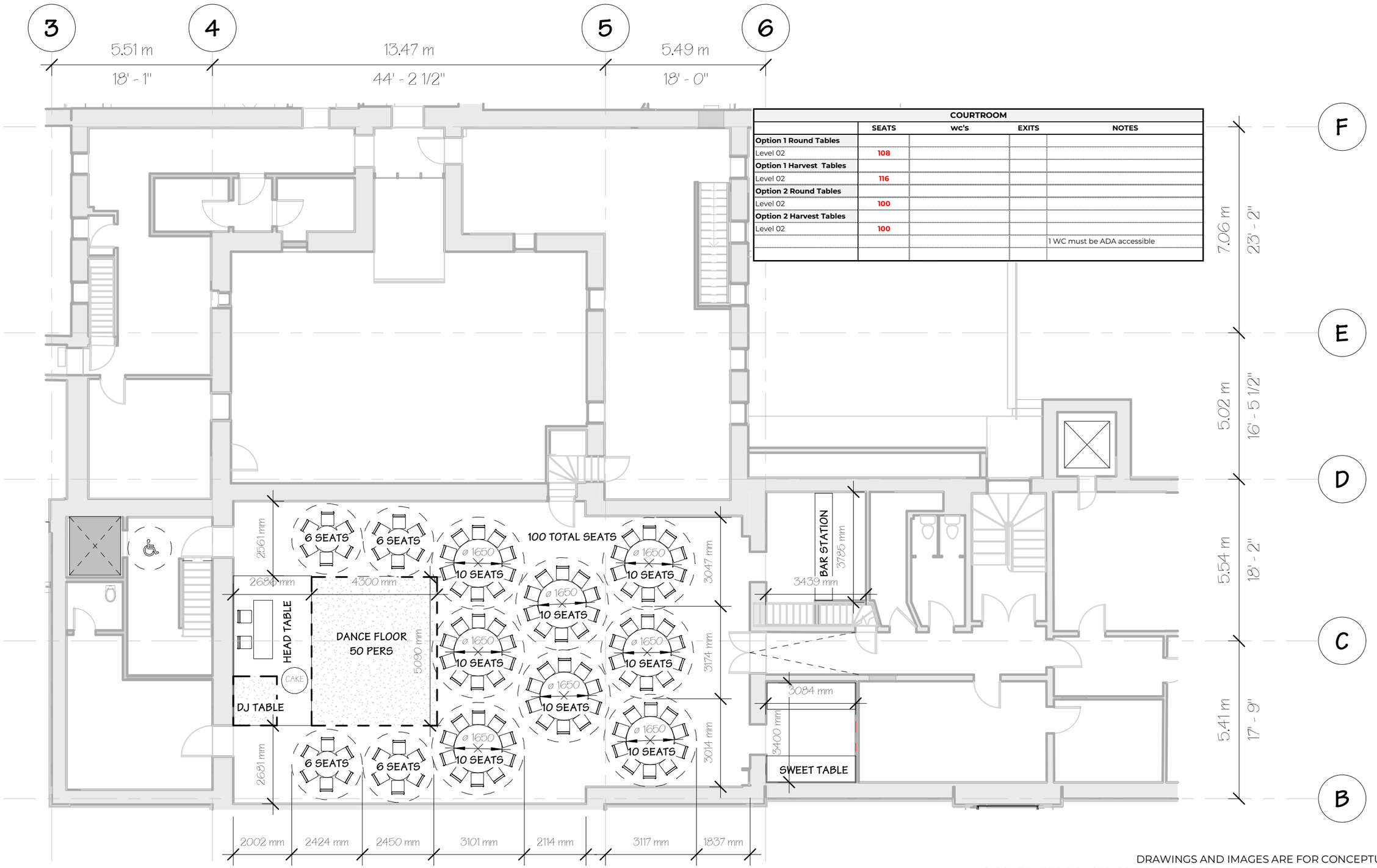
1235-1259 3rd Avenue East
Owen Sound, ON N4K 2L6

FC Entertainment & Hospitality Inc.

LEVEL 01 - PROPOSED SEATING PLAN - COURTROOM OPT 2

Project #	22.0056.00
Scale	1 : 125
Date	12/12/22

SK-007B



COURTROOM				
	SEATS	wc's	EXITS	NOTES
Option 1 Round Tables				
Level 02	108			
Option 1 Harvest Tables				
Level 02	116			
Option 2 Round Tables				
Level 02	100			
Option 2 Harvest Tables				
Level 02	100			
				1 WC must be ADA accessible

ERS ARCHITECTS

Royal Rose Court

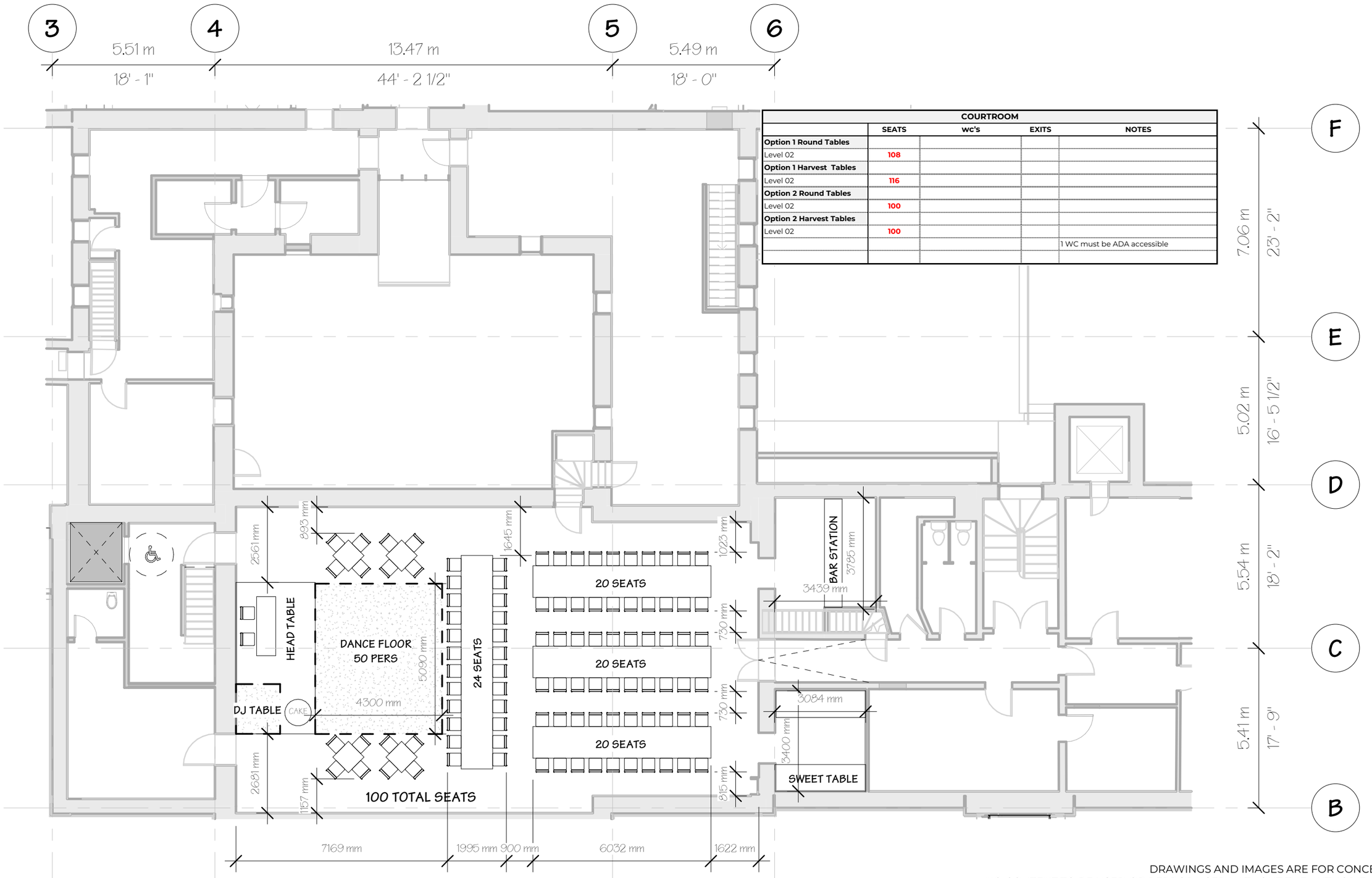
1235-1259 3rd Avenue East
Owen Sound, ON N4K 2L6

FC Entertainment & Hospitality Inc.

LEVEL 01 - PROPOSED SEATING PLAN - COURTROOM OPT 1

Project #	22.0056.00
Scale	1 : 125
Date	12/12/22

SK-007C



COURTROOM				
	SEATS	wc's	EXITS	NOTES
Option 1 Round Tables				
Level 02	108			
Option 1 Harvest Tables				
Level 02	116			
Option 2 Round Tables				
Level 02	100			
Option 2 Harvest Tables				
Level 02	100			
				1 WC must be ADA accessible

ERS ARCHITECTS

Royal Rose Court

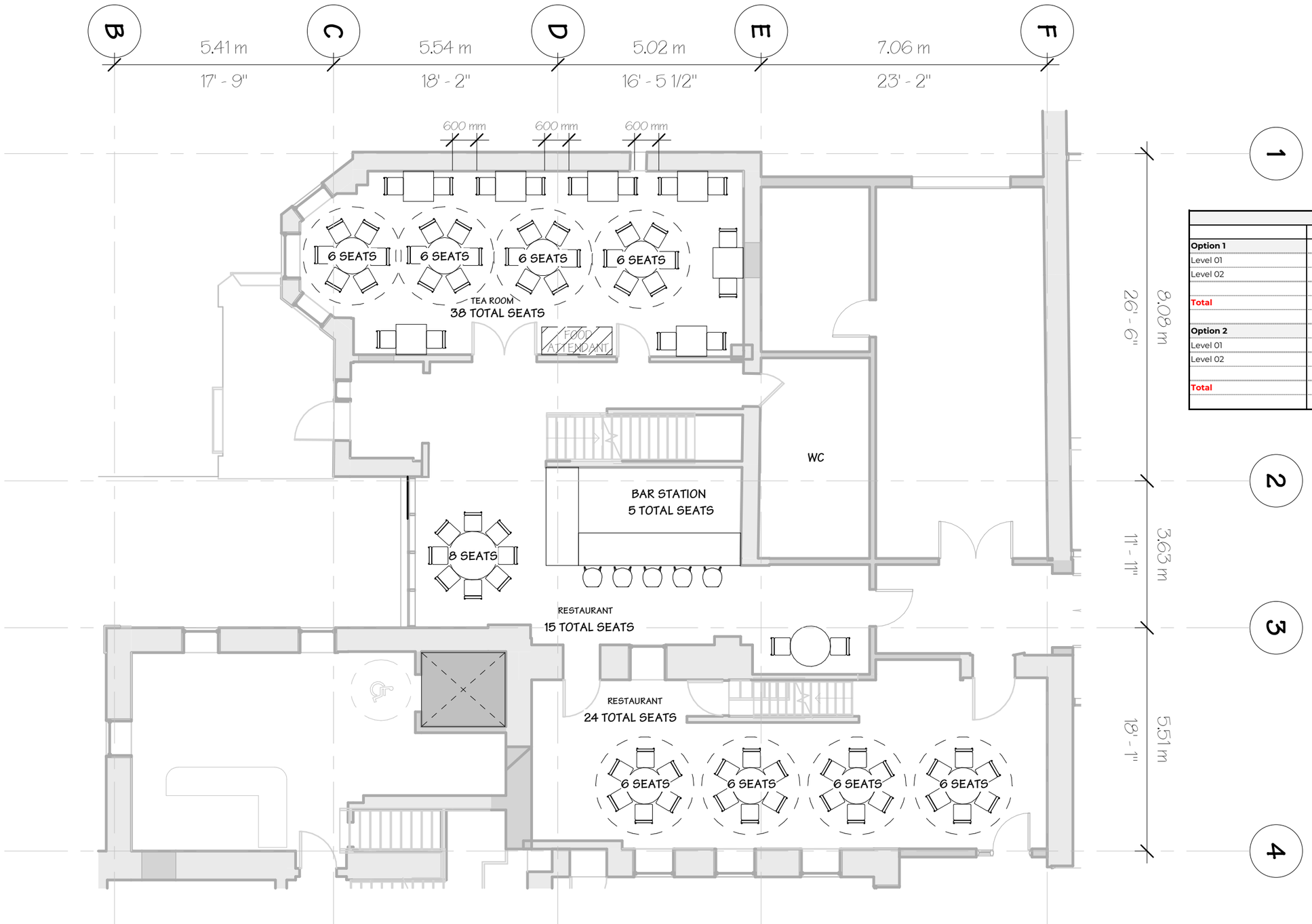
1235-1259 3rd Avenue East
Owen Sound, ON N4K 2L6

FC Entertainment & Hospitality Inc.

LEVEL 01 - PROPOSED SEATING PLAN - COURTROOM OPT 1

Project #	22.0056.00
Scale	1 : 125
Date	12/12/22

SK-007D



RESTAURANT / TEA HOUSE				
	SEATS	wc's	EXITS	NOTES
Option 1				
Level 01	77	1	3	
Level 02	84	2		
				1 WC must be ADA accessible
Total	**161**	**3**		
Option 2				
Level 01	84	1	3	
Level 02	88	2		
				1 WC must be ADA accessible
Total	**172**	**3**		

ERS ARCHITECTS

Royal Rose Court

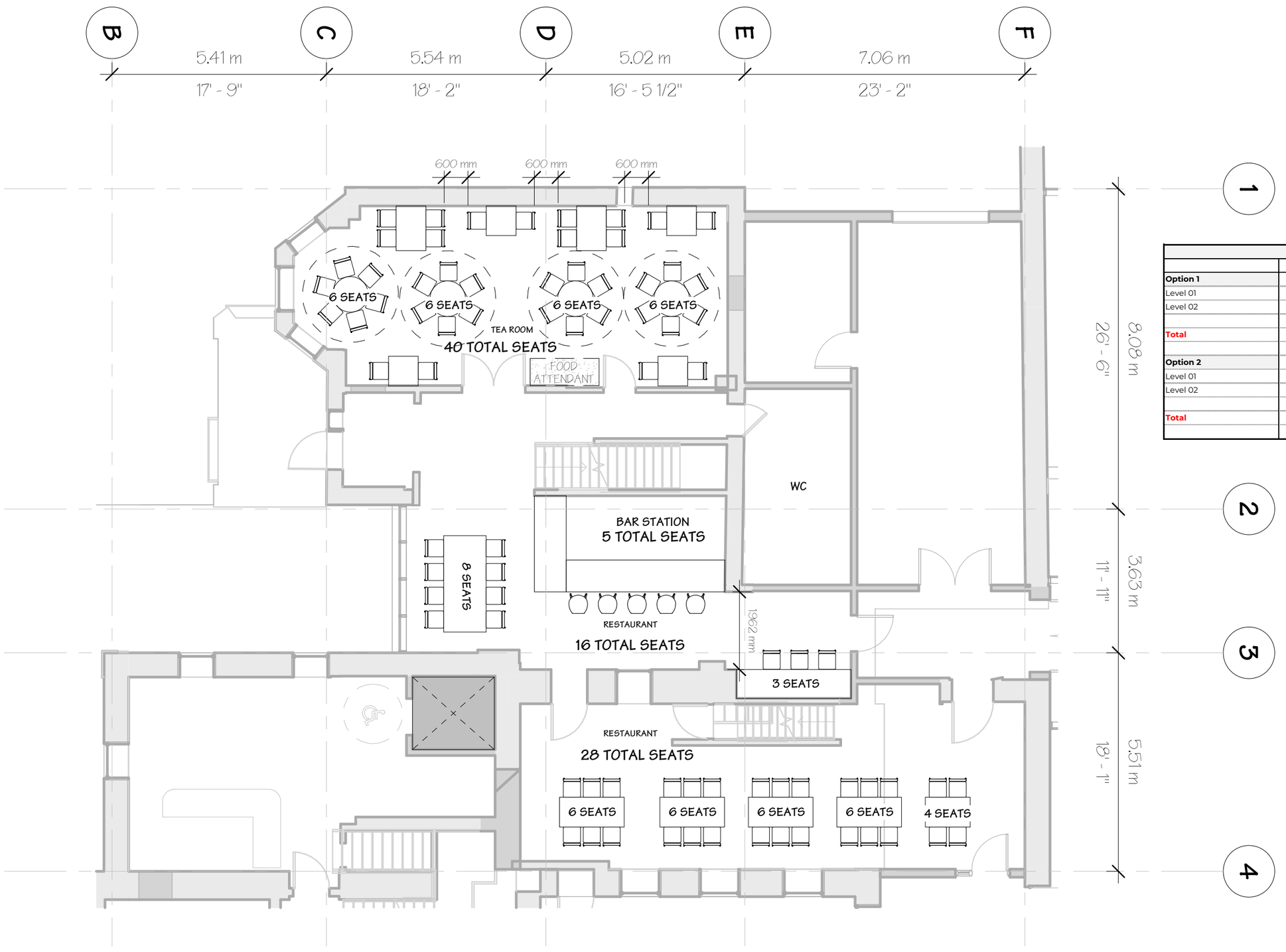
1235-1259 3rd Avenue East
Owen Sound, ON N4K 2L6

FC Entertainment & Hospitality Inc.

LEVEL 01 - PROPOSED SEATING PLAN - RESTAURANT OPTION 1

Project #	22.0056.00
Scale	1 : 100
Date	12/12/22

SK-008



RESTAURANT / TEA HOUSE				
	SEATS	wc's	EXITS	NOTES
Option 1				
Level 01	77	1	3	
Level 02	84	2		
				1 WC must be ADA accessible
Total	**161**	**3**		
Option 2				
Level 01	84	1	3	
Level 02	88	2		
				1 WC must be ADA accessible
Total	**172**	**3**		

ERS ARCHITECTS

Royal Rose Court

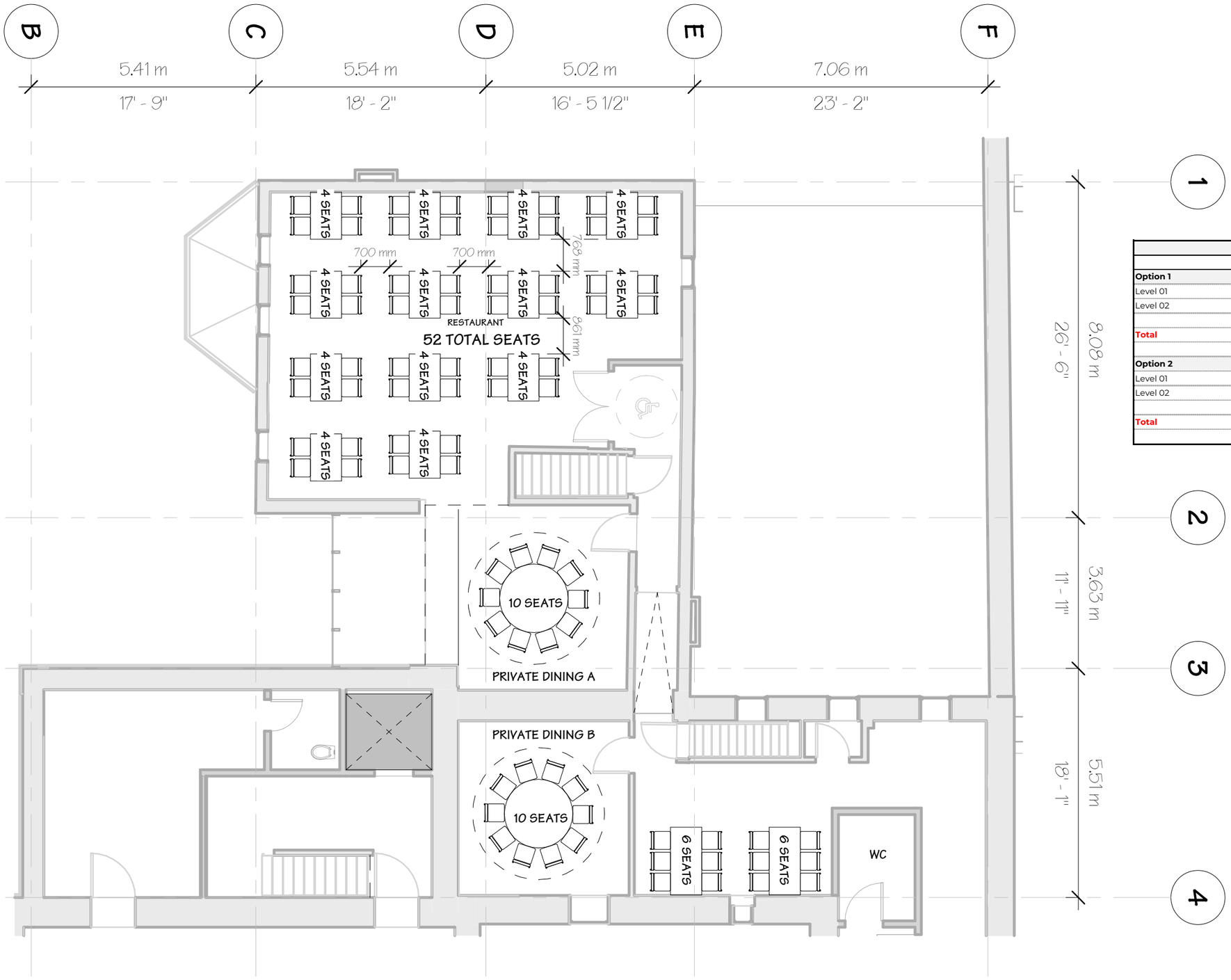
1235-1259 3rd Avenue East
Owen Sound, ON N4K 2L6

FC Entertainment & Hospitality Inc.

LEVEL 01 - PROPOSED SEATING PLAN - RESTAURANT OPTION 2

Project #	22.0056.00
Scale	1 : 100
Date	12/12/22

SK-009



RESTAURANT / TEA HOUSE				
	SEATS	wc's	EXITS	NOTES
Option 1				
Level 01	77	1	3	
Level 02	84	2		
				1 WC must be ADA accessible
Total	**161**	**3**		
Option 2				
Level 01	84	1	3	
Level 02	88	2		
				1 WC must be ADA accessible
Total	**172**	**3**		

ERS ARCHITECTS

Royal Rose Court

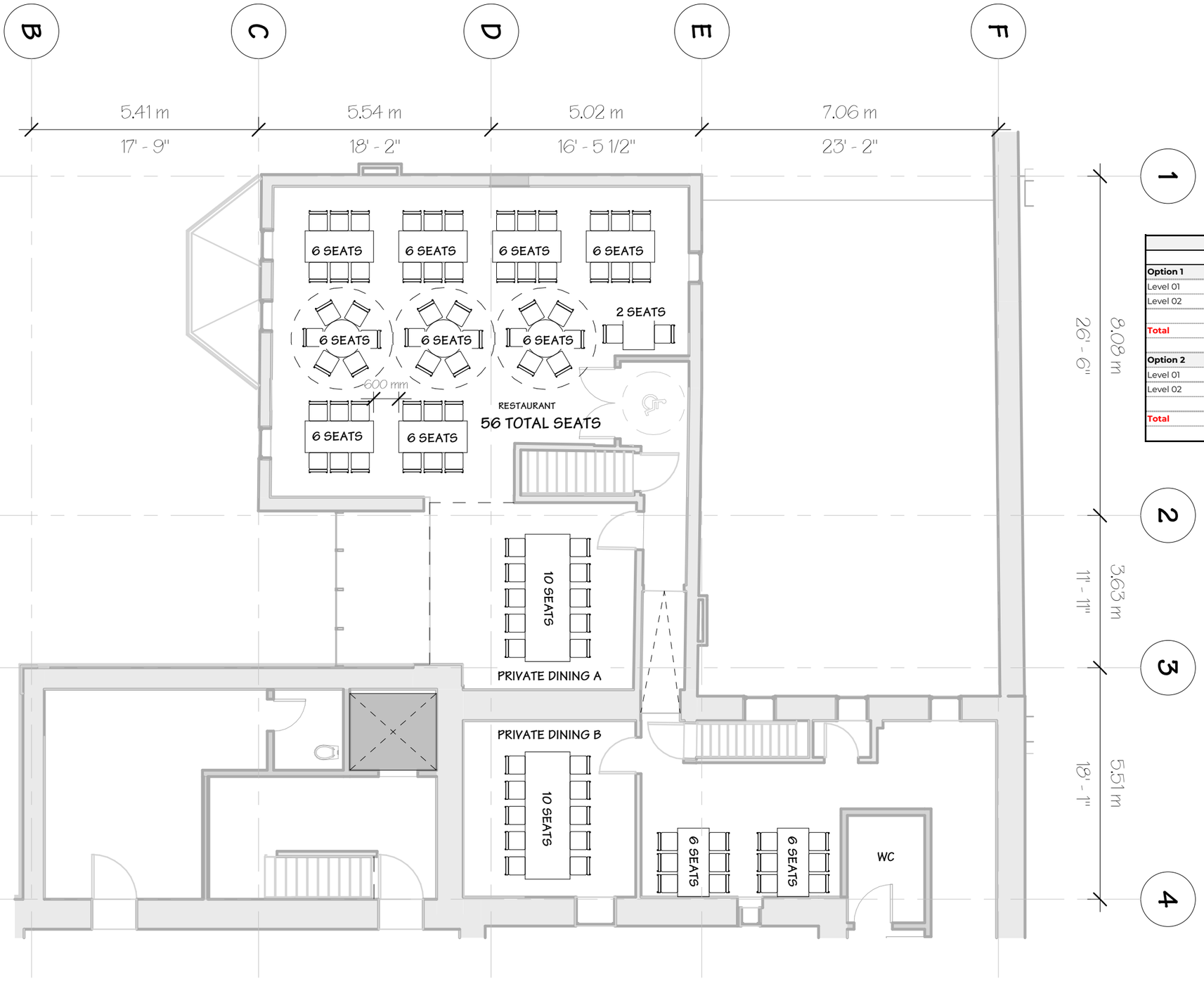
1235-1259 3rd Avenue East
Owen Sound, ON N4K 2L6

FC Entertainment & Hospitality Inc.

LEVEL 02 - PROPOSED SEATING PLAN - RESTAURANT OPTION 1

Project #	22.0056.00
Scale	1 : 100
Date	12/12/22

SK-010



RESTAURANT / TEA HOUSE				
	SEATS	wc's	EXITS	NOTES
Option 1				
Level 01	77	1	3	
Level 02	84	2		
				1 WC must be ADA accessible
Total	**161**	**3**		
Option 2				
Level 01	84	1	3	
Level 02	88	2		
				1 WC must be ADA accessible
Total	**172**	**3**		

ERS ARCHITECTS

Royal Rose Court

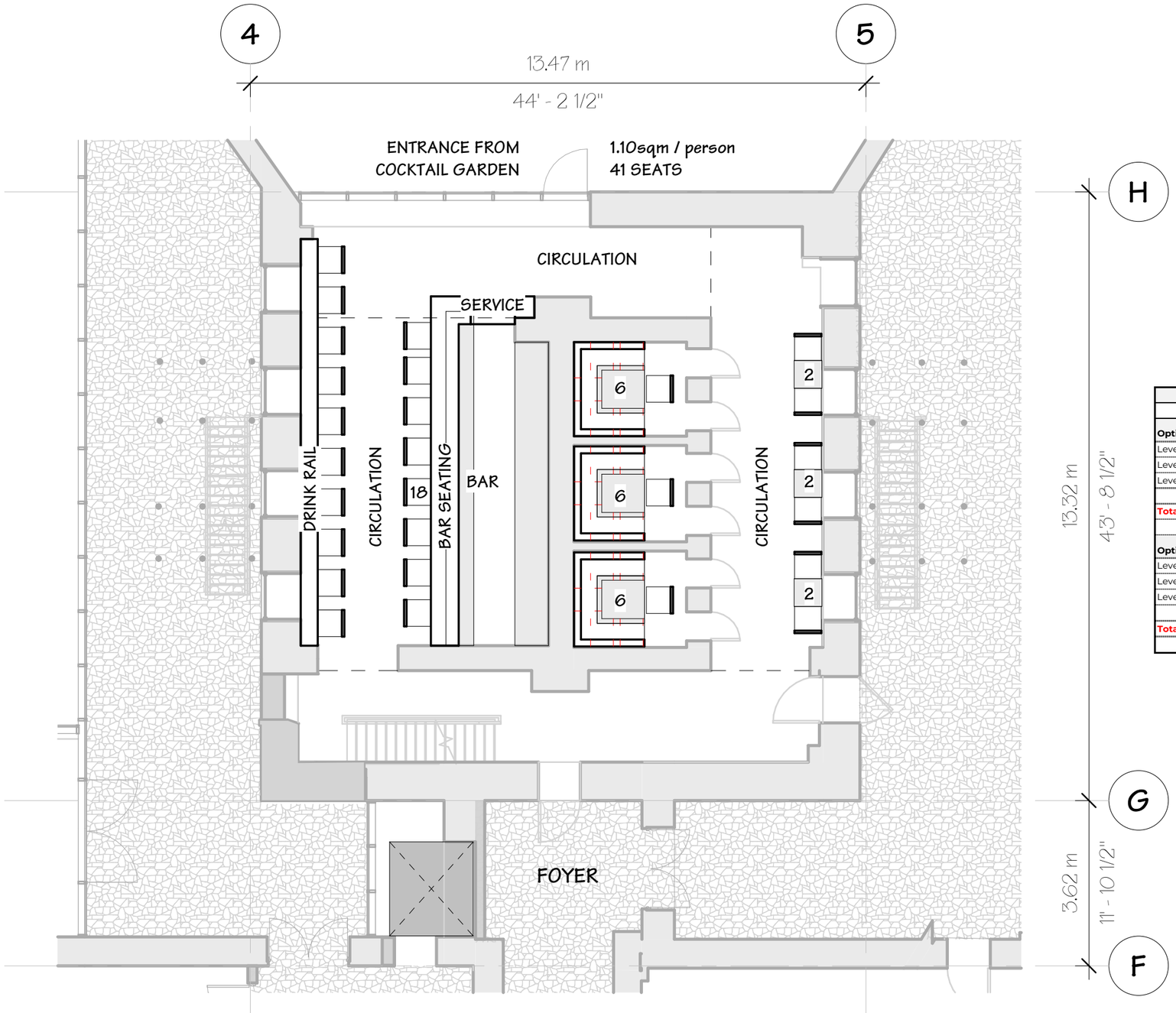
1235-1259 3rd Avenue East
Owen Sound, ON N4K 2L6

FC Entertainment & Hospitality Inc.

LEVEL 02 - PROPOSED SEATING PLAN - RESTAURANT OPTION 2

Project #	22.0056.00
Scale	1 : 100
Date	12/12/22

SK-010b



SPEAKEASY				
	SEATS	WC's	EXITS	NOTES
Option 1		**Require 6 WC's for ea. or unisex layout**		
Level 01	41		2	
Level 02	44	1	2	
Level 03	42	2	2	
				1 WC must be ADA accessible
Total	**127**	**3**		
Option 2		**Require 6 WC's for ea. or unisex layout**		
Level 01	41		2	
Level 02	38	1	2	
Level 03	36	2	2	
				1 WC must be ADA accessible
Total	**115**	**3**		

ERS ARCHITECTS

Royal Rose Court

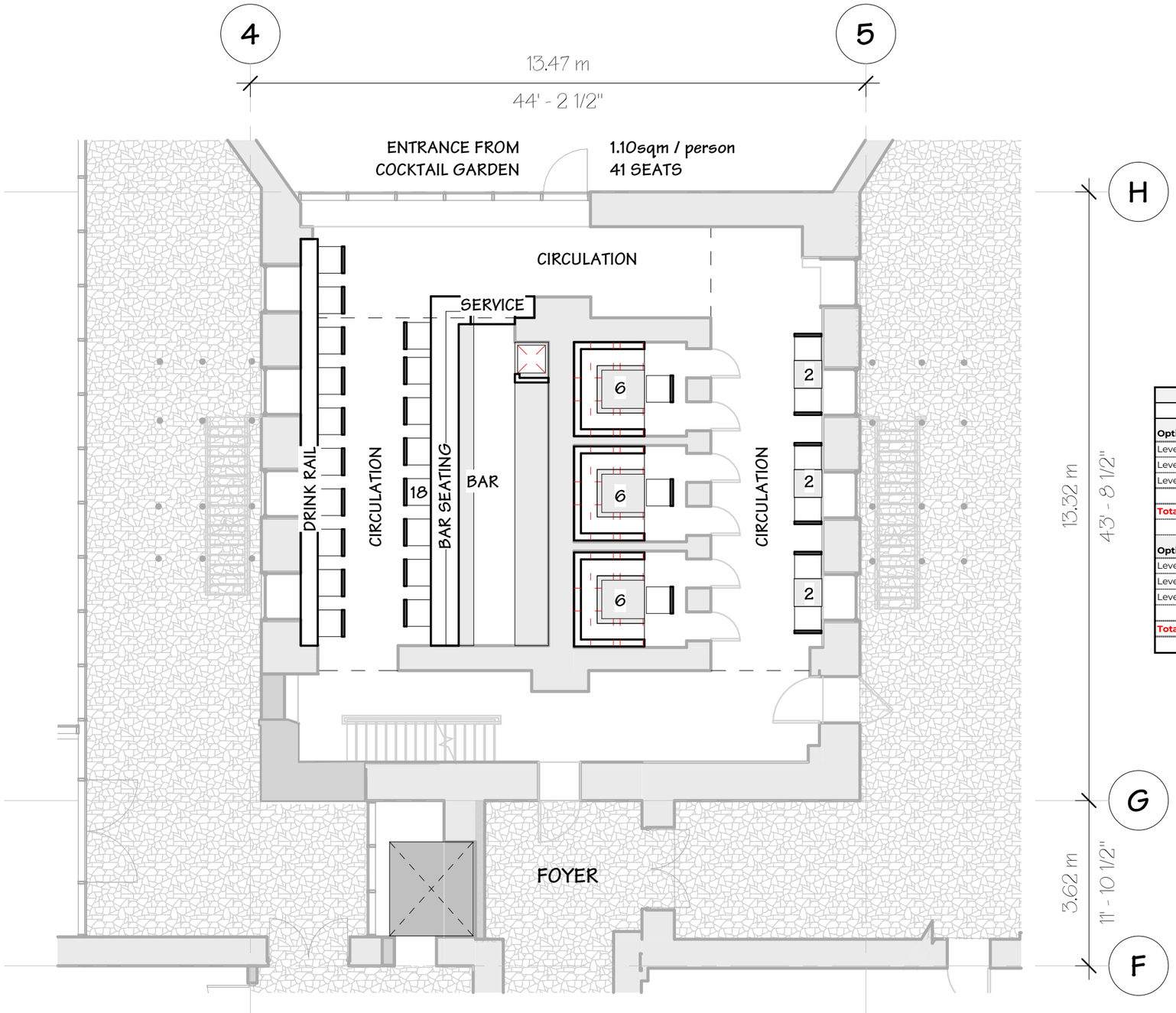
1235-1259 3rd Avenue East
Owen Sound, ON N4K 2L6

FC Entertainment & Hospitality Inc.

LEVEL 01 - PROPOSED SEATING PLAN - SPEAK EASY

Project #	22.0056.00
Scale	1 : 100
Date	12/12/22

SK-011



SPEAKEASY				
	SEATS	WC's	EXITS	NOTES
Option 1		**Require 6 WC's for ea. or unisex layout**		
Level 01	41		2	
Level 02	44	1	2	
Level 03	42	2	2	
				1 WC must be ADA accessible
Total	**127**	**3**		
Option 2		**Require 6 WC's for ea. or unisex layout**		
Level 01	41		2	
Level 02	38	1	2	
Level 03	36	2	2	
				1 WC must be ADA accessible
Total	**115**	**3**		

ERS ARCHITECTS

Royal Rose Court

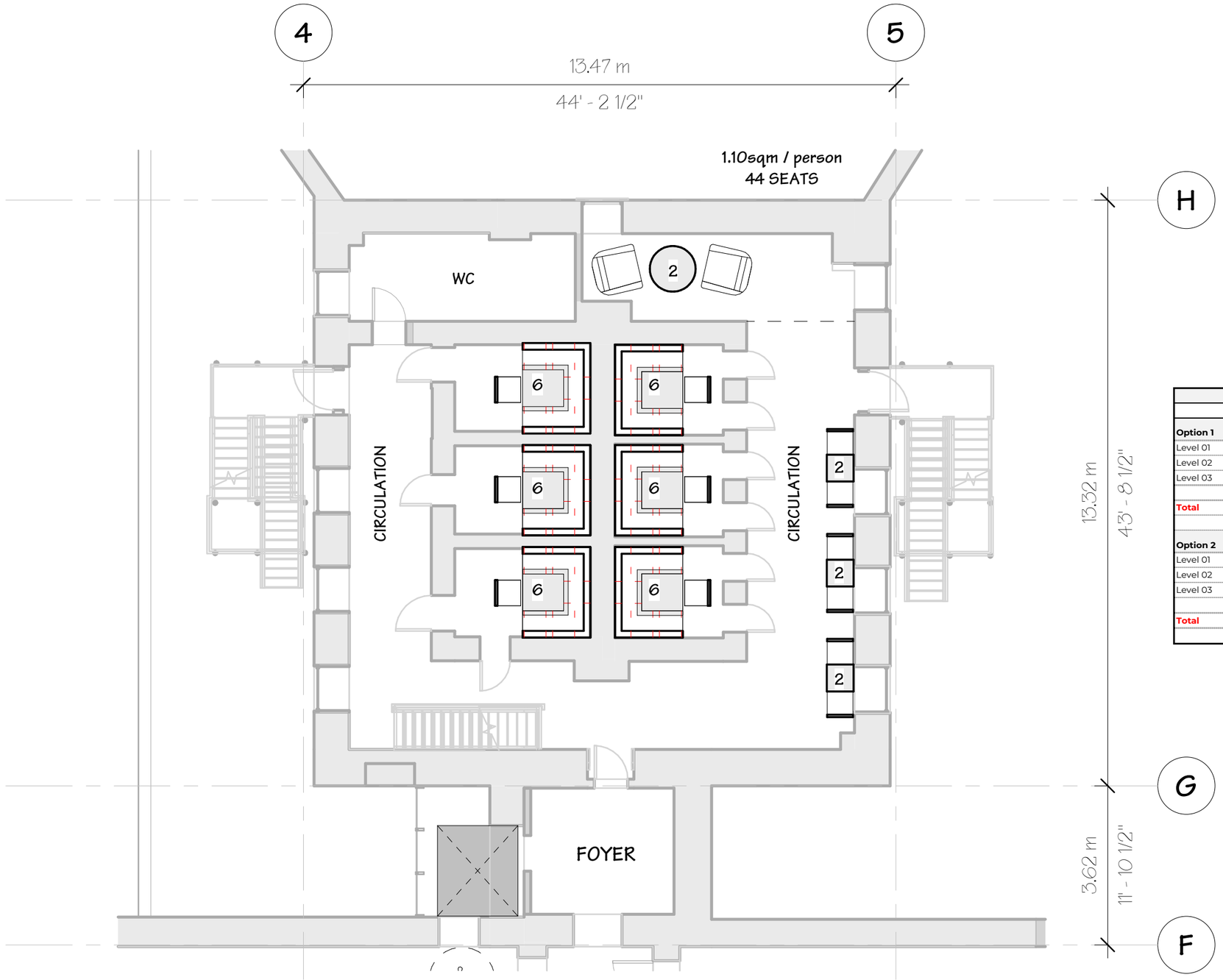
1235-1259 3rd Avenue East
Owen Sound, ON N4K 2L6

FC Entertainment & Hospitality Inc.

LEVEL 01 - PROPOSED SEATING PLAN - SPEAK EASY

Project #	22.0056.00
Scale	1 : 100
Date	12/12/22

SK-011b



SPEAKEASY				
	SEATS	**WC's**	**EXITS**	**NOTES**
Option 1		**Require 6 WC's for ea. or unisex layout**		
Level 01	41		2	
Level 02	44	1	2	
Level 03	42	2	2	
				1 WC must be ADA accessible
Total	**127**	**3**		
Option 2		**Require 6 WC's for ea. or unisex layout**		
Level 01	41		2	
Level 02	38	1	2	
Level 03	36	2	2	
				1 WC must be ADA accessible
Total	**115**	**3**		

ERS ARCHITECTS

Royal Rose Court

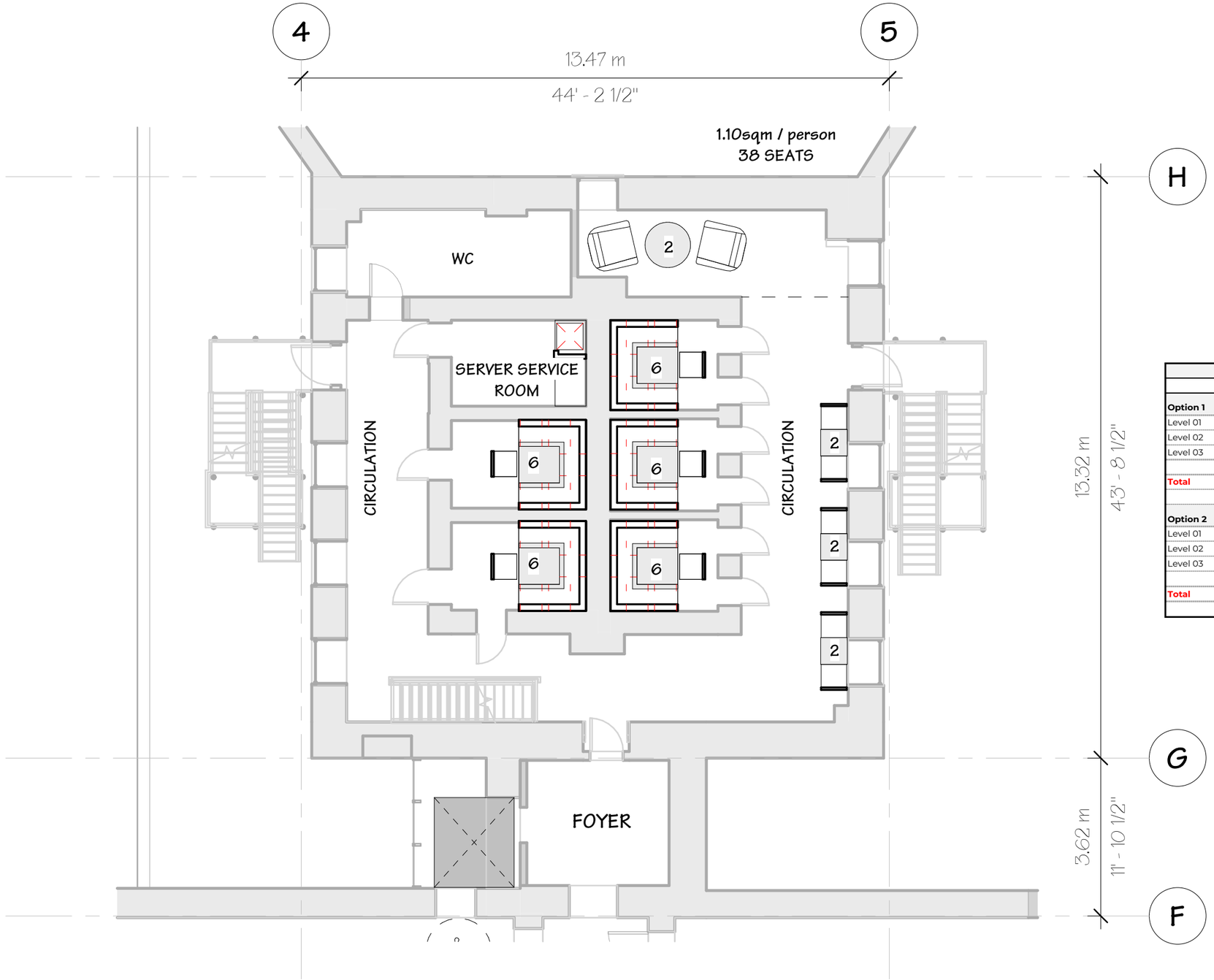
1235-1259 3rd Avenue East
Owen Sound, ON N4K 2L6

FC Entertainment & Hospitality Inc.

LEVEL 02 - PROPOSED
SEATING PLAN - SPEAK EASY

Project #	22.0056.00
Scale	1 : 100
Date	12/12/22

SK-012



SPEAKEASY				
	SEATS	WC's	EXITS	NOTES
Option 1		**Require 6 WC's for ea. or unisex layout**		
Level 01	41		2	
Level 02	44	1	2	
Level 03	42	2	2	
				1 WC must be ADA accessible
Total	**127**	**3**		
Option 2		**Require 6 WC's for ea. or unisex layout**		
Level 01	41		2	
Level 02	38	1	2	
Level 03	36	2	2	
				1 WC must be ADA accessible
Total	**115**	**3**		

ERS ARCHITECTS

Royal Rose Court

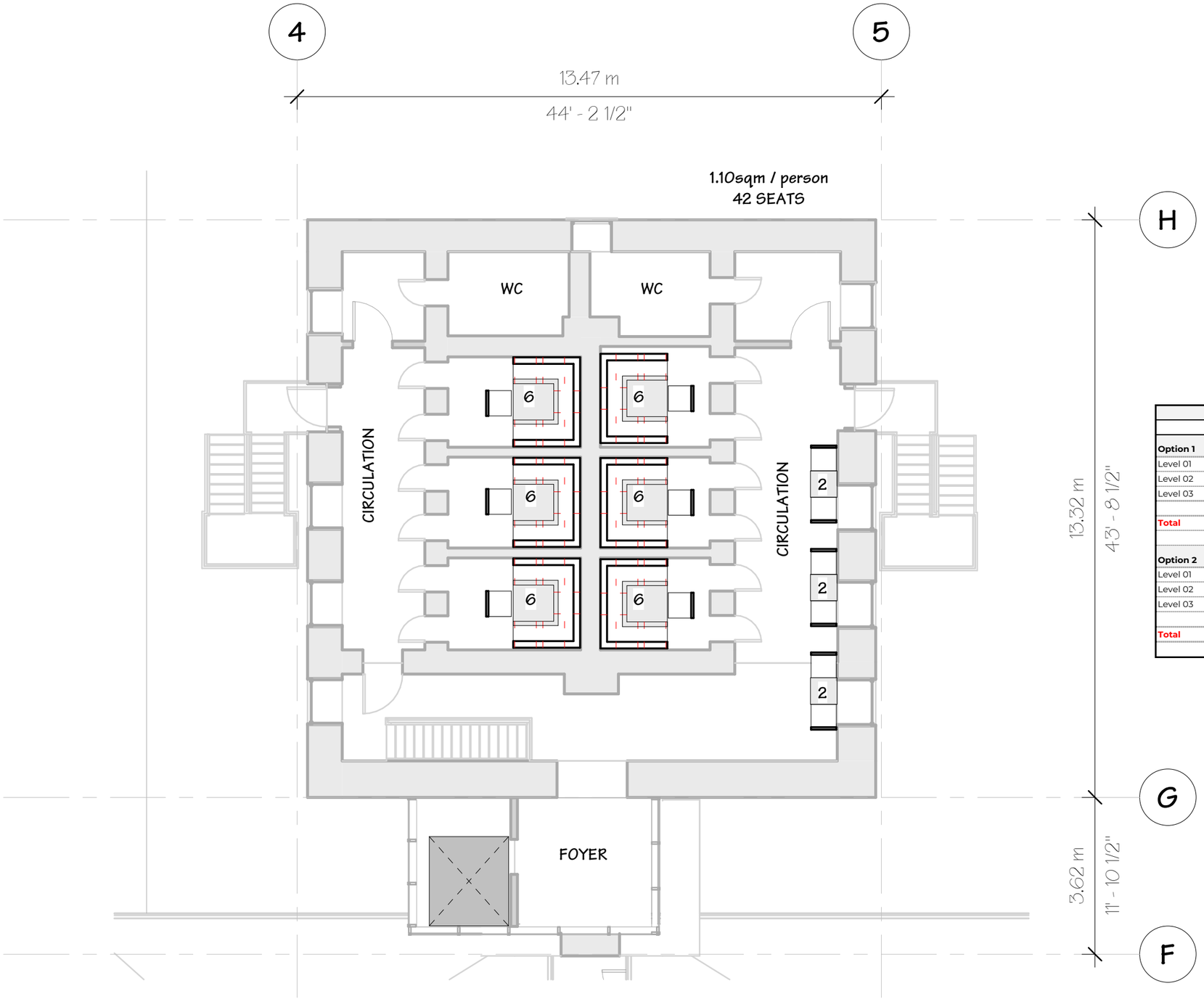
1235-1259 3rd Avenue East
Owen Sound, ON N4K 2L6

FC Entertainment & Hospitality Inc.

LEVEL 02 - PROPOSED SEATING PLAN - SPEAK EASY - Opt B

Project #	22.0056.00
Scale	1 : 100
Date	12/12/22

SK-012b



SPEAKEASY				
	SEATS	**WC's**	**EXITS**	**NOTES**
Option 1		**Require 6 WC's for ea. or unisex layout**		
Level 01	41		2	
Level 02	44	1	2	
Level 03	42	2	2	
				1 WC must be ADA accessible
Total	**127**	**3**		
Option 2		**Require 6 WC's for ea. or unisex layout**		
Level 01	41		2	
Level 02	38	1	2	
Level 03	36	2	2	
				1 WC must be ADA accessible
Total	**115**	**3**		

ERS ARCHITECTS

Royal Rose Court

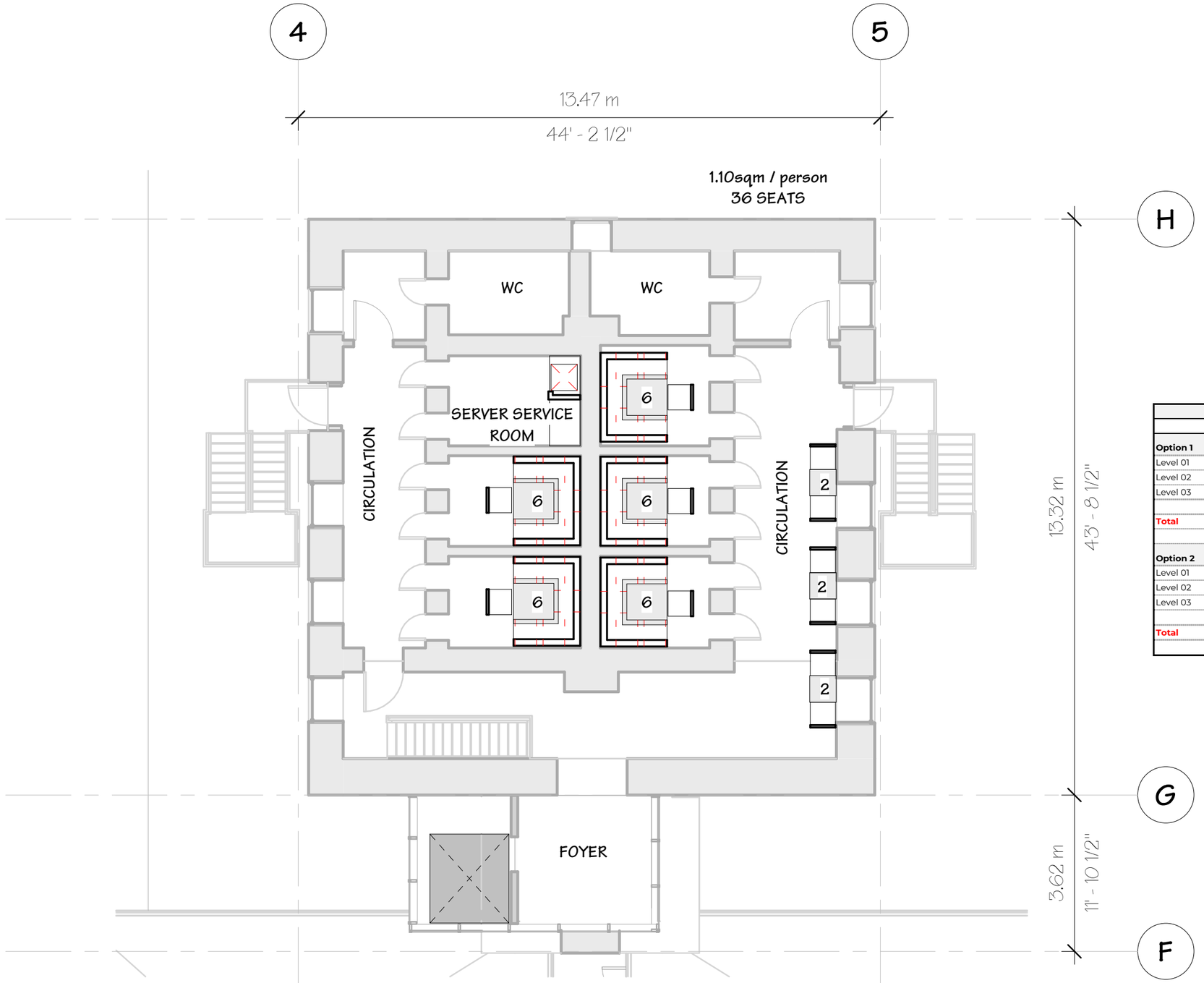
1235-1259 3rd Avenue East
Owen Sound, ON N4K 2L6

FC Entertainment & Hospitality Inc.

LEVEL 03 - PROPOSED
SEATING PLAN - SPEAK EASY

Project #	22.0056.00
Scale	1 : 100
Date	12/12/22

SK-013



SPEAKEASY				
	SEATS	**WC's**	**EXITS**	**NOTES**
Option 1		**Require 6 WC's for ea. or unisex layout**		
Level 01	41		2	
Level 02	44	1	2	
Level 03	42	2	2	
				1 WC must be ADA accessible
Total	**127**	**3**		
Option 2		**Require 6 WC's for ea. or unisex layout**		
Level 01	41		2	
Level 02	38	1	2	
Level 03	36	2	2	
				1 WC must be ADA accessible
Total	**115**	**3**		

ERS ARCHITECTS

Royal Rose Court

1235-1259 3rd Avenue East
Owen Sound, ON N4K 2L6

FC Entertainment & Hospitality Inc.

LEVEL 03 - PROPOSED SEATING PLAN - SPEAK EASY - Opt B

Project #	22.0056.00
Scale	1 : 100
Date	12/12/22

SK-013b

APPENDIX D

Sanitary Demand Calculations & PCSWMM Model

CROZIER
CONSULTING ENGINEERS

Project No.: 1733-6596
Project Name: Royal Rose Court
Revision Date: 8-Mar-23
Prepared By: PM
Checked By: NS/GC

OBC Table 8.2.1.3.A

Item	Column 1 *Residential Occupancy*	Column 2 Volume, litres	Per	Unit	Existing Units (Person / Dwelling / m^2 / etc)	Existing Flow (L/day)	Proposed Units (Person /	Proposed Flow (L/day)	
4.	Dwellings								
	b) 2 bedroom dwelling	1100	1	Dwelling	1	1100	0	0	
					Sub-Total Residential	**1100**	**L/d**	**0**	**L/d**

OBC Table 8.2.1.3.B

Item	Column 1 *Establishments*	Column 2 Volume, litres	Per	Unit	Existing Units (Person / Dwelling / m^2 / etc)	Existing Flow (L/day)	Proposed Units (Person / Dwelling / m2 / etc)	Proposed Flow (L/day)	
2.	Assembly Hall - per seat								
	a) No food service, or	8	1	Seat	0	0		0	
	b) Food service provided	36	1	Seat	0	0	242	8712	
12.	Food Service Operations								
	a) Restaurant (not 24 hour), per seat	125	1	Seat	0	0	0	0	
	f) Bar and cocktail lounge, per seat	125	1	Seat	0	0	0	0	
	i) Cafeteria - per meal	12	1	Meal	0	0	0	0	
13.	Hospitals - per bed								
	a) Including laundry facilities, or	750	1	Bed	0	0	0	0	
	b) Excluding laundry facilities	550	1	Bed	0	0	0	0	
14.	Long-Term Care Homes, etc. - per bed	450	1	Bed	40	18000	0	0	
15.	Office Building[3]								
	b) Per each 9.3 m^2 of floor space	75	9.3	m^2	0	0	0	0	
26.	b) Per loading bay	150	1	Loading Bay		0		0	
					Sub-Total Non-Residential	**18000**	**L/d**	**8712**	**L/d**
					Total	**19100**	**L/d**	**8712**	**L/d**

CROZIER
CONSULTING ENGINEERS

Project No.: 1733-6596
Project Name: Royal Rose Court
Revision Date: 8-Mar-23
Prepared By: PM
Checked By: NS/GC

OBC Table 8.2.1.3.A

Item	Column 1 *Residential Occupancy*	Column 2 Volume, litres	Per	Unit	Existing Units (Person / Dwelling / m^2 / etc)	Existing Flow (L/day)	Proposed Units (Person /	Proposed Flow (L/day)	
4.	Dwellings								
	b) 2 bedroom dwelling	1100	1	Dwelling	1	1100	0	0	
					Sub-Total Residential	**1100**	**L/d**	**0**	**L/d**

OBC Table 8.2.1.3.B

Item	Column 1 *Establishments*	Column 2 Volume, litres	Per	Unit	Existing Units (Person / Dwelling / m^2 / etc)	Existing Flow (L/day)	Proposed Units (Person / Dwelling / m2 / etc)	Proposed Flow (L/day)	
2.	Assembly Hall - per seat								
	a) No food service, or	8	1	Seat	0	0		0	
	b) Food service provided	36	1	Seat	0	0	0	0	
12.	Food Service Operations								
	a) Restaurant (not 24 hour), per seat	125	1	Seat	0	0	172	21500	
	f) Bar and cocktail lounge, per seat	125	1	Seat	0	0	0	0	
	i) Cafeteria - per meal	12	1	Meal	0	0	0	0	
13.	Hospitals - per bed								
	a) Including laundry facilities, or	750	1	Bed		0		0	
	b) Excluding laundry facilities	550	1	Bed		0		0	
14.	Long-Term Care Homes, etc. - per bed	450	1	Bed	40	18000	0	0	
15.	Office Building[3]								
	b) Per each 9.3 m^2 of floor space	75	9.3	m^2	0	0	180	1452	
					Sub-Total Non-Residential	**18000**	**L/d**	**22952**	**L/d**
					Total	**19100**	**L/d**	**22952**	**L/d**

CROZIER
CONSULTING ENGINEERS

Project No.: 1733-6596
Project Name: Royal Rose Court
Revision Date: 8-Mar-23
Prepared By: PM
Checked By: NS/GC

OBC Table 8.2.1.3.A

Item	Column 1 *Residential Occupancy*	Column 2 Volume, litres	Per	Unit	Existing Units (Person / Dwelling / m^2 / etc)	Existing Flow (L/day)	Proposed Units (Person /	Proposed Flow (L/day)	
4.	Dwellings								
	b) 2 bedroom dwelling	1100	1	Dwelling	1	1100	0	0	
					Sub-Total Residential	**1100**	**L/d**	**0**	**L/d**

OBC Table 8.2.1.3.B

Item	Column 1 *Establishments*	Column 2 Volume, litres	Per	Unit	Existing Units (Person / Dwelling / m^2 / etc)	Existing Flow (L/day)	Proposed Units (Person / Dwelling / m2 / etc)	Proposed Flow (L/day)	
2.	Assembly Hall - per seat								
	a) No food service, or	8	1	Seat	0	0		0	
	b) Food service provided	36	1	Seat	0	0	0	0	
12.	Food Service Operations								
	a) Restaurant (not 24 hour), per seat	125	1	Seat	0	0	172	21500	
	f) Bar and cocktail lounge, per seat	125	1	Seat	0	0	127	15875	
	i) Cafeteria - per meal	12	1	Meal	0	0	0	0	
13.	Hospitals - per bed								
	a) Including laundry facilities, or	750	1	Bed	0	0	0	0	
	b) Excluding laundry facilities	550	1	Bed	0	0	0	0	
14.	Long-Term Care Homes, etc. - per bed	450	1	Bed	40	18000	0	0	
15.	Office Building[3]								
	b) Per each 9.3 m^2 of floor space	75	9.3	m^2	0	0	0	0	
					Sub-Total Non-Residential	**18000**	**L/d**	**37375**	**L/d**
					Total	**19100**	**L/d**	**37375**	**L/d**

Project No.: 1733-6596
Project Name: Royal Rose Court
Revision Date: 08-Mar-23
Prepared By: PM
Checked By: NS/GC

OBC Table 8.2.1.3.A

Item	Column 1 *Residential Occupancy*	Column 2 Volume, litres	Per	Unit	Existing Units (Person / Dwelling / m^2 / etc)	Existing Flow (L/day)	Proposed Units (Person /	Proposed Flow (L/day)	
4.	Dwellings								
	b) 2 bedroom dwelling	1100	1	Dwelling	1	1100	0	0	
					Sub-Total Residential	**1100**	**L/d**	**0**	**L/d**

OBC Table 8.2.1.3.B

Item	Column 1 *Establishments*	Column 2 Volume, litres	Per	Unit	Existing Units (Person / Dwelling / m^2 / etc)	Existing Flow (L/day)	Proposed Units (Person / Dwelling / m2 / etc)	Proposed Flow (L/day)	
2.	Assembly Hall - per seat								
	a) No food service, or	8	1	Seat	0	0	0	0	
	b) Food service provided	36	1	Seat	0	0	358	12888	
12.	Food Service Operations								
	a) Restaurant (not 24 hour), per seat	125	1	Seat	0	0	172	21500	
	f) Bar and cocktail lounge, per seat	125	1	Seat	0	0	127	15875	
	i) Cafeteria - per meal	12	1	Meal	0	0	0	0	
13.	Hospitals - per bed								
	a) Including laundry facilities, or	750	1	Bed	0	0	0	0	
	b) Excluding laundry facilities	550	1	Bed	0	0	0	0	
14.	Long-Term Care Homes, etc. - per bed	450	1	Bed	40	18000	0	0	
15.	Office Building[3]								
	b) Per each 9.3 m^2 of floor space	75	9.3	m^2	0	0	0	0	
					Sub-Total Non-Residential	**18000**	**L/d**	**50263**	**L/d**
					Total	**19100**	**L/d**	**50263**	**L/d**

CROZIER & ASSOCIATES Consulting Engineers

File: 1733-6596
Date: 2023.03.08
By: PM
Check By: NS/GC

Royal Rose Court - Preliminary Sanitary Design Flow (Existing)

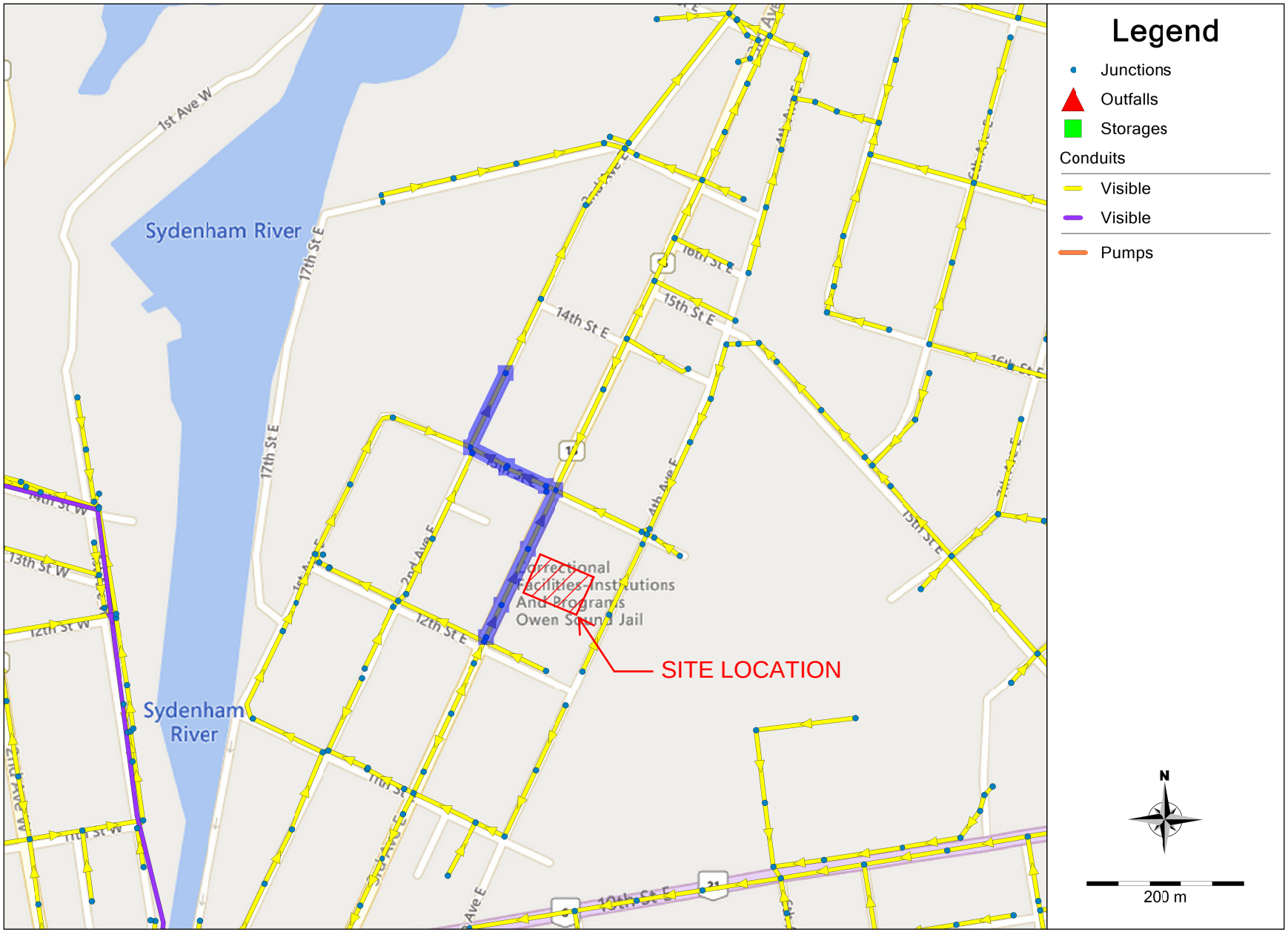
Developed Site Area		0.65	ha
Number of Residential Units			
Concept Plan (ERS Architects, 2022.12.09)			
Townhouse		1	units
	Total Residential:	**1**	**units**
Person Per Residential Unit			
Townhouse		2.30	persons/unit
Residential Population		2	persons
Commercial/Institutional Population		40	persons
Total Population		42	persons
Unit Sewage flows			
Infiltration		0.20	L/s/ha
Total Design Sewage Flows			
Infiltration/Inflow		0.13	L/sec
Average Daily Residential Flow		0.01	L/sec
Average Daily Commercial/Institutional Flow		0.21	L/sec
Residential Peak Factor	(Harmon Formula)	4.0	
Institutional Peak Factor	(Harmon Formula)	4.0	
Total Peak Daily Flow		**1.01**	**L/sec**

CROZIER & ASSOCIATES Consulting Engineers

File: 1733-6596
Date: 2023.03.08
By: PM
Check By: NS/GC

Royal Rose Court - Preliminary Sanitary Design Flow (Proposed)

Developed Site Area	0.65	ha
Number of Residential Units		
Commercial/Institutional Population	657	persons
Total Population	657	persons
Unit Sewage flows		
Infiltration	0.20	L/s/ha
Total Design Sewage Flows		
Infiltration/Inflow	0.13	L/sec
Average Daily Commercial/Institutional Flow	0.58	L/sec
Commercial Peak Factor (Harmon Formula)	3.9	
Total Peak Daily Flow	**2.40**	**L/sec**

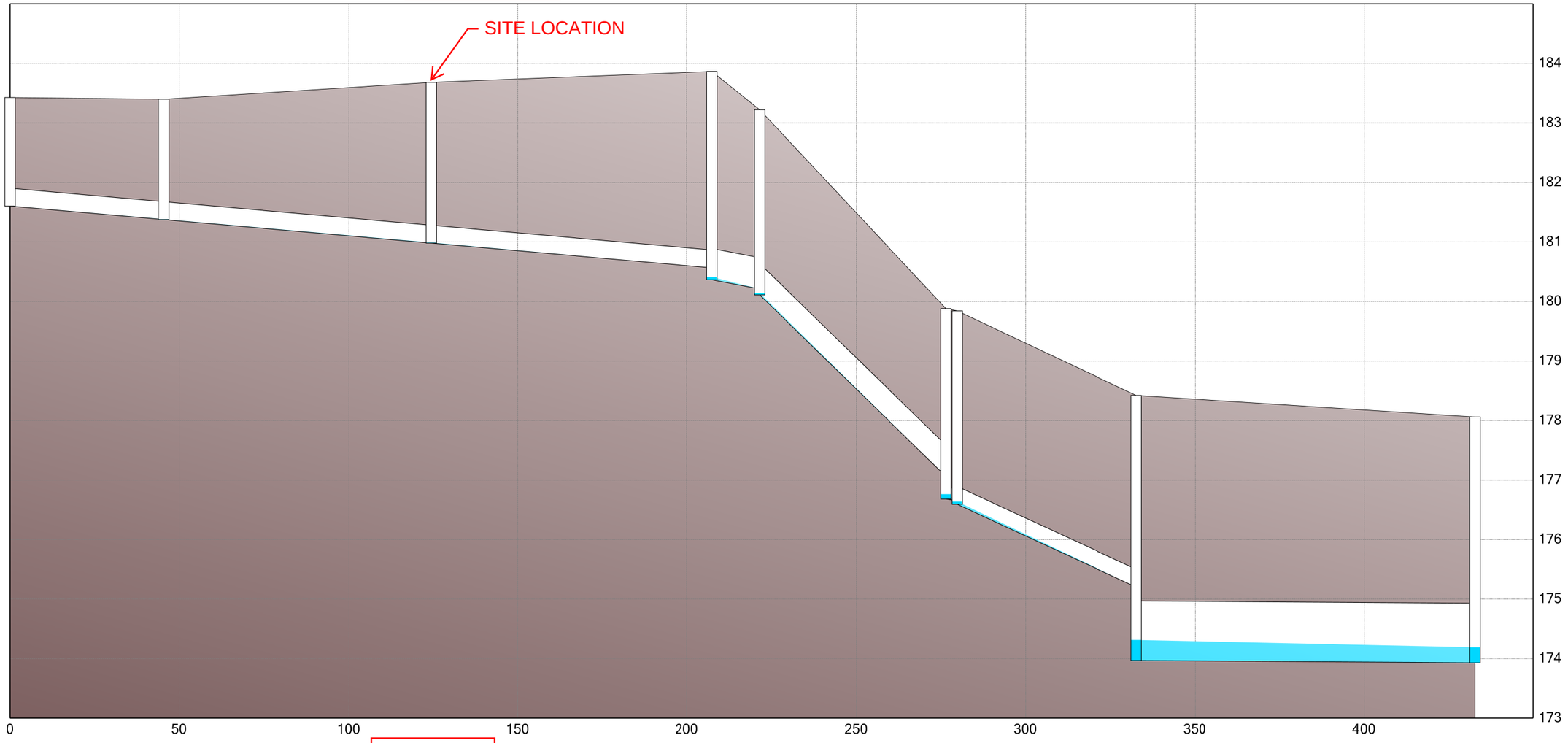

Legend
Junctions
Outfalls
Storages
Conduits
Visible
Visible
Pumps
Sydenham River
Sydenham River
1st Ave W
17th St E
14th St E
15th St E
13th St W
12th St W
12th St E
13th St E
Correctional Facilities-Institutions And Programs
Owen Sound Jail
SITE LOCATION
N
200 m

EXISTING CONDITIONS - DWF

HGL

Peak values

Links:	SAN_MN_1_E03A12	SAN_MN_2_E03A12	SAN_MN_3_E03A12	SAN_MN_5_E13S02	SAN_MN_3_E13S02	SAN_MN_2_E13S02	SAN_MN_1_E13S02	SAN_MN_1_E02A13
	Q=0.02 L/s	Q=0.06 L/s	Q=0.136 L/s	Q=6.183 L/s	Q=6.365 L/s	Q=6.411 L/s	Q=6.544 L/s	Q=123.45 L/s
	S=0.00499 m/m	S=0.005 m/m	S=0.00501 m/m	S=0.011 m/m	S=0.0555 m/m	S=0.00835 m/m	S=0.0263 m/m	S=0.00039 m/m
	I1=181.603 m	I1=181.376 m	I1=180.981 m	I1=180.365 m	I1=180.11 m	I1=176.681 m	I1=176.593 m	I1=173.969 m
	I2=181.376 m	I2=180.981 m	I2=180.565 m	I2=180.21 m	I2=177.061 m	I2=176.653 m	I2=175.202 m	I2=173.93 m



Nodes:	SSMH1368	SSMH1367	SSMH1366	SSMH1255	SSMH1365	SSMH2506	SSMH1363	SSMH1359	SSMH1357
	M=181.6066 m	M=181.3825 m	M=180.991 m	M=180.4132 m	M=180.1416 m	M=176.7628 m	M=176.6378 m	M=174.3136 m	M=174.1901 m
	R=183.427 m	R=183.398 m	R=183.681 m	R=183.865 m	R=183.22 m	R=179.881 m	R=179.843 m	R=178.422 m	R=178.06 m
	I=181.603 m	I=181.376 m	I=180.981 m	I=180.365 m	I=180.11 m	I=176.681 m	I=176.593 m	I=173.969 m	I=173.93 m

PROPOSED CONDITIONS - DWF

HGL

Conduit SAN_MN_1_E03A12
Flow = 0.02 L/s
Slope = 0.00499 m/m
Invert1 = 181.603 m
Invert2 = 181.376 m

Conduit SAN_MN_2_E03A12
Flow = 0.06 L/s
Slope = 0.005 m/m
Invert1 = 181.376 m
Invert2 = 180.981 m

Conduit SAN_MN_3_E03A12
Flow = 1.869 L/s
Slope = 0.00501 m/m
Invert1 = 180.981 m
Invert2 = 180.565 m

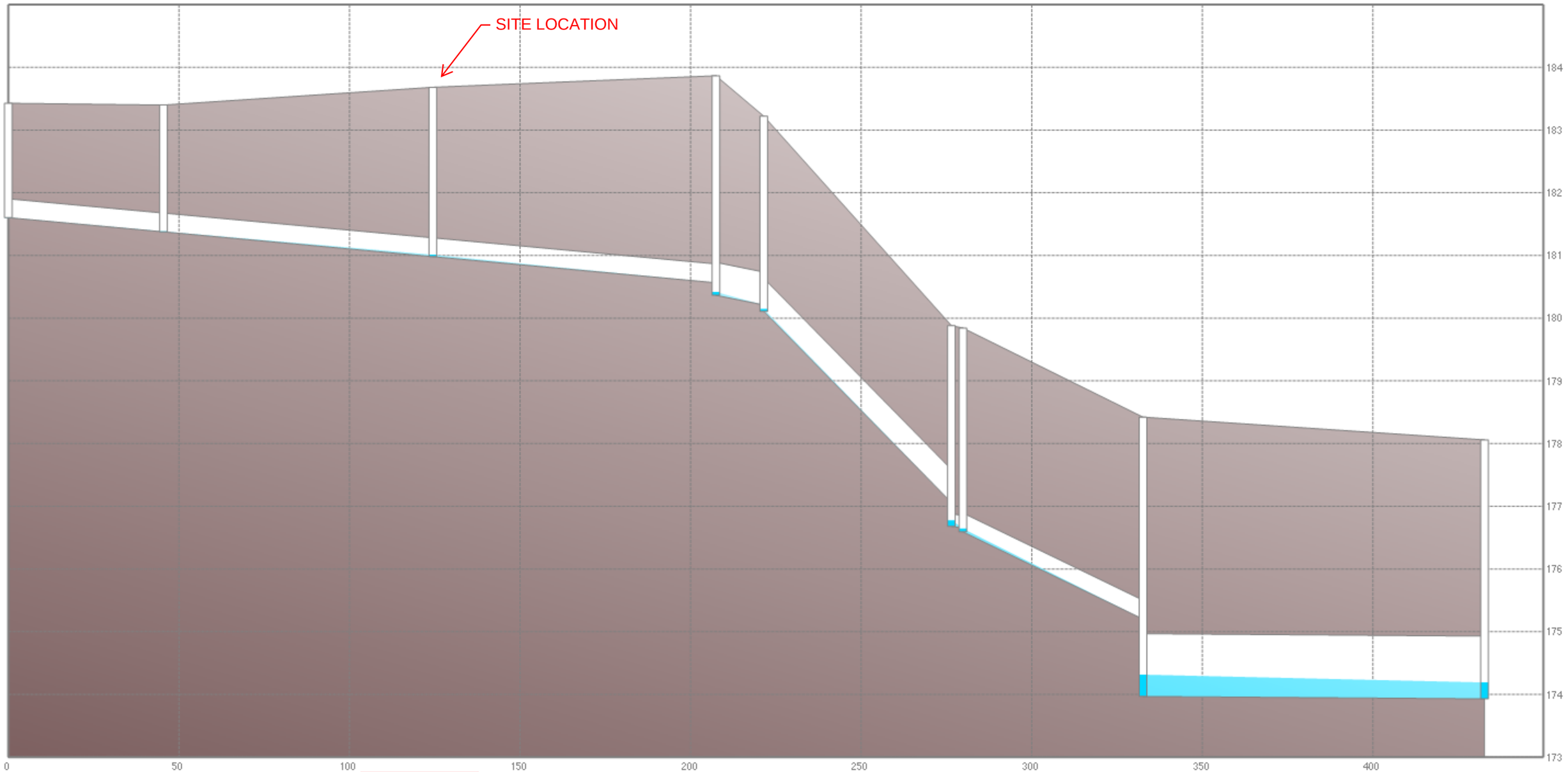
Conduit SAN_MN_5_E13S02
Flow = 7.916 L/s
Slope = 0.011 m/m
Invert1 = 180.365 m
Invert2 = 180.21 m

Conduit SAN_MN_3_E13S02
Flow = 8.098 L/s
Slope = 0.0555 m/m
Invert1 = 180.11 m
Invert2 = 177.061 m

Conduit SAN_MN_2_E13S02
Flow = 8.144 L/s
Slope = 0.00835 m/m
Invert1 = 176.681 m
Invert2 = 176.653 m

Conduit SAN_MN_1_E13S02
Flow = 8.277 L/s
Slope = 0.0263 m/m
Invert1 = 176.593 m
Invert2 = 175.202 m

Conduit SAN_MN_1_E02A13
Flow = 125.162 L/s
Slope = 0.00039 m/m
Invert1 = 173.969 m
Invert2 = 173.93 m



Junction SSMH1368
CWSEL = 181.6066 m
Rim Elev. = 183.427 m
Invert Elev. = 181.603 m
01/19/2022 12:15PM

Junction SSMH1367
CWSEL = 181.3825 m
Rim Elev. = 183.398 m
Invert Elev. = 181.376 m
01/19/2022 12:15PM

Junction SSMH1366
CWSEL = 181.0117 m
Rim Elev. = 183.681 m
Invert Elev. = 180.981 m
01/19/2022 12:15PM

Junction SSMH1255
CWSEL = 180.4189 m
Rim Elev. = 183.865 m
Invert Elev. = 180.365 m
01/19/2022 12:50PM

Junction SSMH1365
CWSEL = 180.1455 m
Rim Elev. = 183.22 m
Invert Elev. = 180.11 m
01/19/2022 12:45PM

Junction SSMH2506
CWSEL = 176.7764 m
Rim Elev. = 179.881 m
Invert Elev. = 176.681 m
01/19/2022 12:55PM

Junction SSMH1363
CWSEL = 176.6443 m
Rim Elev. = 179.843 m
Invert Elev. = 176.593 m
01/19/2022 12:55PM

Junction SSMH1359
CWSEL = 174.316 m
Rim Elev. = 178.422 m
Invert Elev. = 173.969 m
01/19/2022 01:10PM

Junction SSMH1357
CWSEL = 174.1921 m
Rim Elev. = 178.06 m
Invert Elev. = 173.93 m
01/19/2022 02:15PM

APPENDIX E

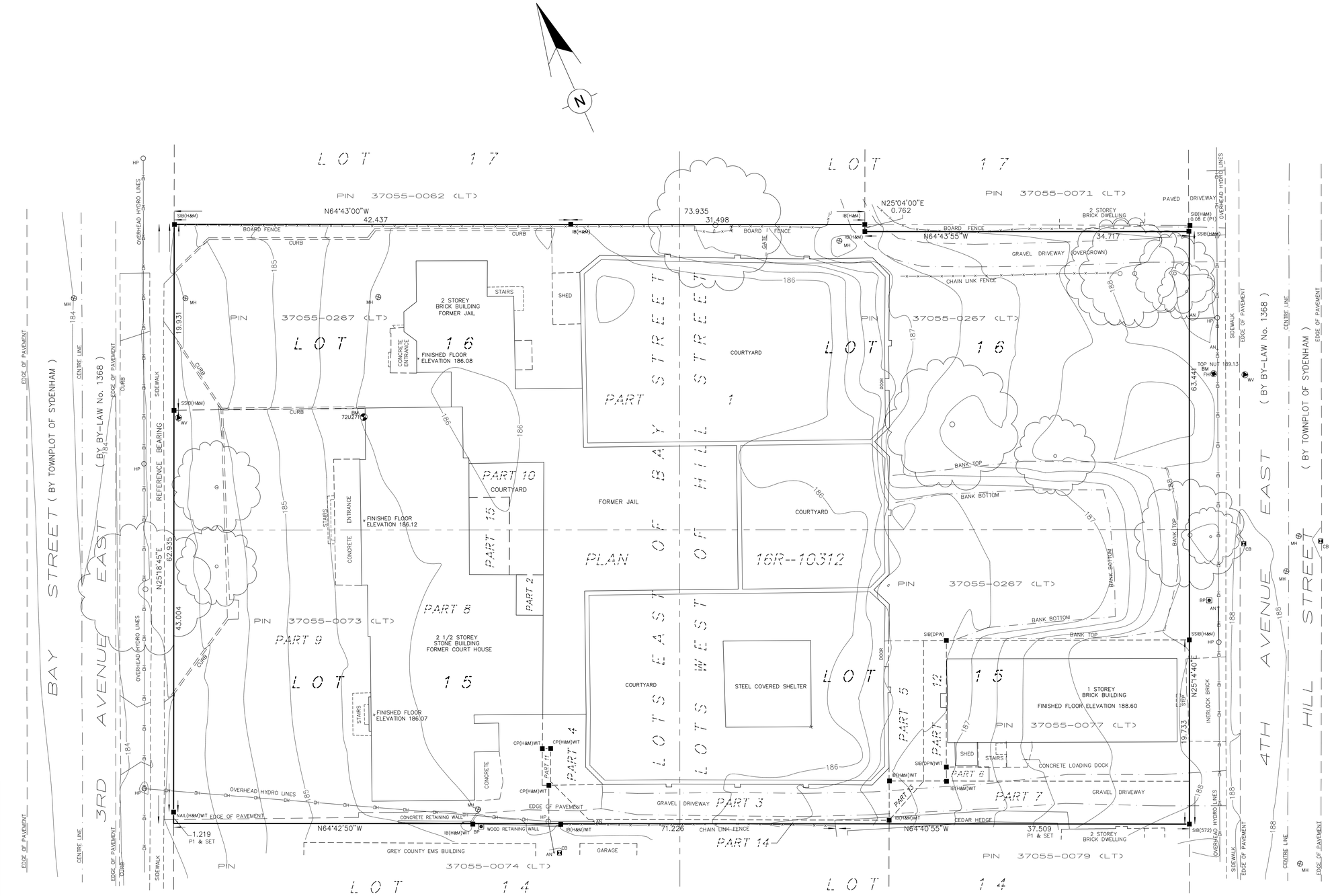
Topographic Survey (Hewett Milne Ltd., February 2023)

TOPOGRAPHIC SURVEY
OF ALL OF
LOTS 15 & 16
EAST OF BAY STREET
OF PART OF
LOTS 15 & 16
WEST OF HILL STREET
CITY OF OWEN SOUND
COUNTY OF GREY

HEWETT & MILNE LIMITED

SCALE – 1 : 250

0 2.5 12.5 25 METRES



LEGEND

■	DENOTES SURVEY MONUMENT FOUND
□	DENOTES SURVEY MONUMENT SET
SIB	DENOTES STANDARD IRON BAR
SSIB	DENOTES SHORT STANDARD IRON BAR
IB	DENOTES IRON BAR
CC	DENOTES CUT CROSS
CP	DENOTES CONCRETE PIN
⊗MH	DENOTES MANHOLE
■CB	DENOTES CATCH BASIN
OHP	DENOTES HYDRO POLE
⊕AN	DENOTES IVAN ANCHOR
◀WV	DENOTES WATER VALVE
⊗FH	DENOTES FIRE HYDRANT
⊙BP	DENOTES BELL PEDESTAL
⊟BM	DENOTES BENCHMARK
WIT	DENOTES WITNESS
H&M	DENOTES HEWETT AND MILNE LTD., O.L.S.
DPW	DENOTES DEPARTMENT OF PUBLIC WORKS CANADA
572	DENOTES JOHN H. BEATTY, O.L.S.
P1	DENOTES PLAN 16R–10312

METRIC NOTE

DISTANCES AND COORDINATES SHOWN ON THIS PLAN ARE IN METRES AND CAN BE CONVERTED TO FEET BY DIVIDING BY 0.3048.

ELEVATION NOTE

ELEVATIONS ARE RELATED TO THE CANADIAN GEODETIC VERTICAL DATUM 1972 VERIFIED BY MEASUREMENTS TO STATION 0011972U271 LOCATED ON NORTHWEST STONE FOUNDATION OF COUNTY CHIEF HALL ON 3RD AVENUE EAST, 93CM SOUTHWEST OF NORTH CORNER UTM–17 N 4935062, E 504698, HAVING A PUBLISHED ELEVATION OF 185.853

SURVEYOR'S CERTIFICATE

I CERTIFY THAT:

THE SURVEY WAS COMPLETED ON THE 20th DAY OF JANUARY 2023.

FEBRUARY 15th 2023

.....
NEIL C. MILNE,
ONTARIO LAND SURVEYOR

HEWETT AND MILNE LIMITED
ONTARIO LAND SURVEYORS
302 8th STREET EAST,
OWEN SOUND, ONTARIO
P. O. BOX 112, N4K 5P1
TEL. 519–376–5528
FAX 519–376–5534
EMAIL : info@hewettmilne.ca

DRAWN BY	FILE #	FILE LOCATION
TB	23–11TOPO	50–6

APPENDIX F

Preliminary Modified Rational Method Calculations

CROZIER CONSULTING ENGINEERS

PROJECT: Royal Rose Court
PROJECT No.: 1733-6596
DATE: 2023.03.09
DESIGN: PM
CHECK: NS/GC

Modified Rational Method

Pre-Development Scenario Data			
Inputs		**Outputs**	
IDF Location	Town of Blue Mountains	Intensity (mm/hr):	136.52
Return Period	5 yr		
Time of Concentration (min)	5		
Coeff A	1234.576		
Coeff B	8.297		
Coeff C	0.851		
Runoff Coeff (Unadjusted)	0.49	Flow (m^3/s)	0.12
Runoff Coeff (Adjusted)	0.49		
Area (ha)	0.64		

Post-Development Scenario Data			
Inputs		**Outputs**	
IDF Location	Town of Blue Mountains	Intensity (mm/hr):	136.52
Return Period	5 yr		
Time of Concentration (min)	5		
Coeff A	1234.576		
Coeff B	8.297		
Coeff C	0.851		
Runoff Coeff (unadjusted)	0.70	Uncont. Flow (m^3/s)	0.17
Runoff Coeff (Adjusted)	0.70		
Area (ha)	0.64		

Target Flow (m^3/s)	0.12

REQUIRED STORAGE VOLUME:	**24.7**

Storage Volume Determination (Detailed)				
T_d	i	T_d	Q_{Uncont}	S_d
min	*mm/hr*	*sec*	*m^3/s*	*m^3*
5	136.52	300	0.173	15.6
10	104.05	600	0.132	24.7
15	84.71	900	0.107	24.1
20	71.79	1200	0.091	18.5
25	62.51	1500	0.079	10.0
30	55.49	1800	0.070	0.0
35	49.99	2100	0.063	0.0
40	45.55	2400	0.058	0.0
45	41.89	2700	0.053	0.0
50	38.81	3000	0.049	0.0
55	36.19	3300	0.046	0.0
60	33.92	3600	0.043	0.0
65	31.94	3900	0.040	0.0
70	30.20	4200	0.038	0.0
75	28.65	4500	0.036	0.0
80	27.26	4800	0.035	0.0

CROZIER CONSULTING ENGINEERS

PROJECT: Royal Rose Court
PROJECT No.: 1733-6596
DATE: 2023.03.09
DESIGN: PM
CHECK: NS/GC

Modified Rational Method

Pre-Development Scenario Data			
Inputs		**Outputs**	
IDF Location	Town of Blue Mountains	Intensity (mm/hr):	230.33
Return Period	100 yr		
Time of Concentration (min)	5		
Coeff A	2171.754		
Coeff B	8.303		
Coeff C	0.867		
Runoff Coeff (Unadjusted)	0.49	Flow (m^3/s)	0.26
Runoff Coeff (Adjusted)	0.61		
Area (ha)	0.64		

Post-Development Scenario Data			
Inputs		**Outputs**	
IDF Location	Town of Blue Mountains	Intensity (mm/hr):	230.33
Return Period	100 yr		
Time of Concentration (min)	5		
Coeff A	2171.754		
Coeff B	8.303		
Coeff C	0.867		
Runoff Coeff (unadjusted)	0.70	Uncont. Flow (m^3/s)	0.37
Runoff Coeff (Adjusted)	0.88		
Area (ha)	0.64		

Target Flow (m^3/s)	0.26

REQUIRED STORAGE VOLUME:	**51.3**

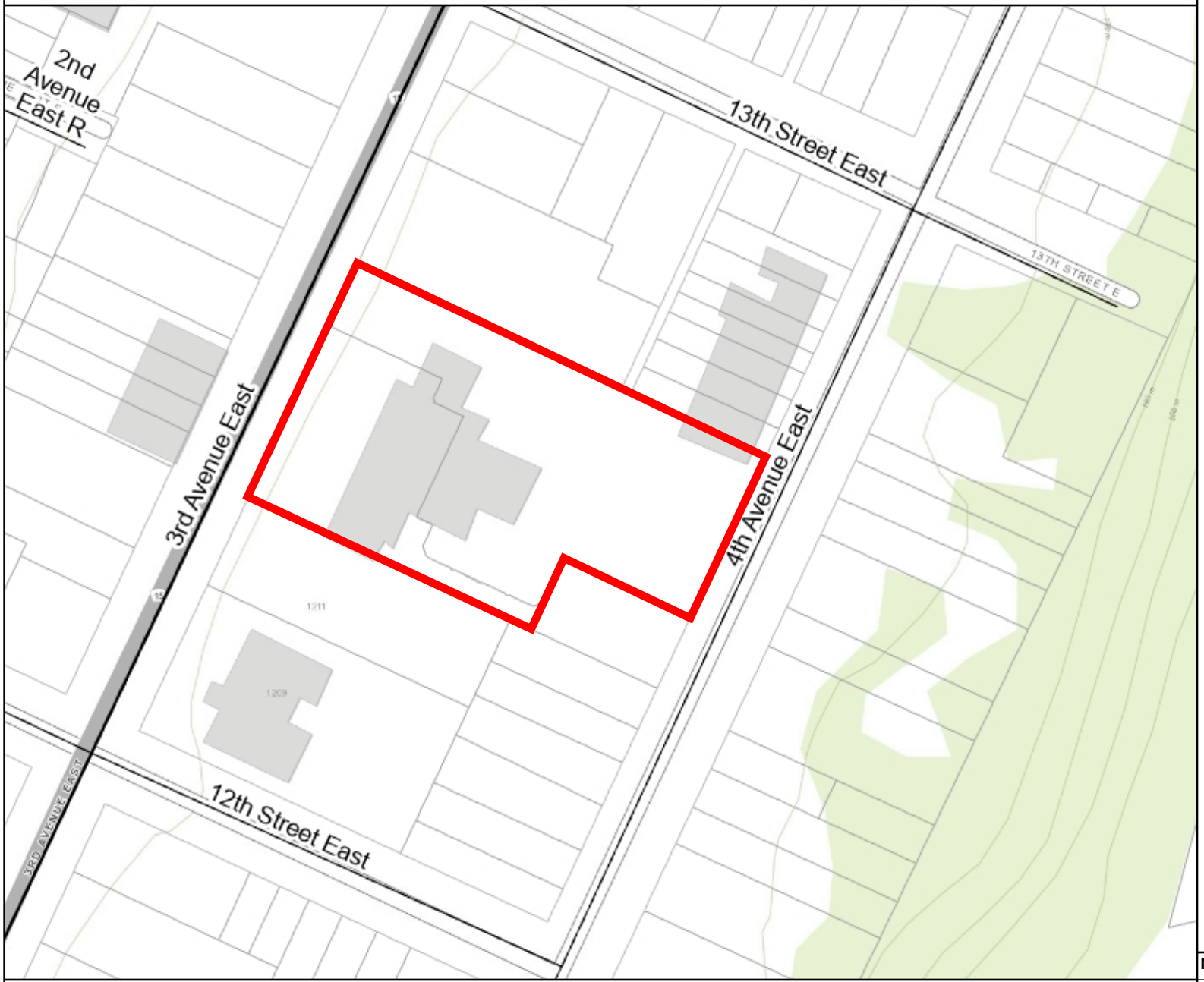
Storage Volume Determination (Detailed)				
T_d	i	T_d	Q_{Uncont}	S_d
min	*mm/hr*	*sec*	*m^3/s*	*m^3*
5	230.33	300	0.365	33.0
10	174.66	600	0.277	51.3
15	141.67	900	0.225	49.0
20	119.69	1200	0.190	36.4
25	103.95	1500	0.165	17.6
30	92.08	1800	0.146	0.0
35	82.78	2100	0.131	0.0
40	75.30	2400	0.119	0.0
45	69.14	2700	0.110	0.0
50	63.97	3000	0.101	0.0
55	59.56	3300	0.094	0.0
60	55.76	3600	0.088	0.0
65	52.45	3900	0.083	0.0
70	49.53	4200	0.079	0.0
75	46.95	4500	0.074	0.0
80	44.63	4800	0.071	0.0

FIGURES

Figure 1: Site Location

Figure 2: Site Plan (ERS Architects, December 2022)

Site Location Plan



Legend

Large Scale Roads
- Provincial Highway
- County Road
- Township Road
- Seasonal Road

Parcels - Current

Grey County Boundary

Subject Site

Notes

98 0 49 98 Meters

WGS_1984_Web_Mercator_Auxiliary_Sphere

This map is a user generated static output from an Internet mapping site and is for reference only. Data layers that appear on this map may or may not be accurate, current, or otherwise reliable.

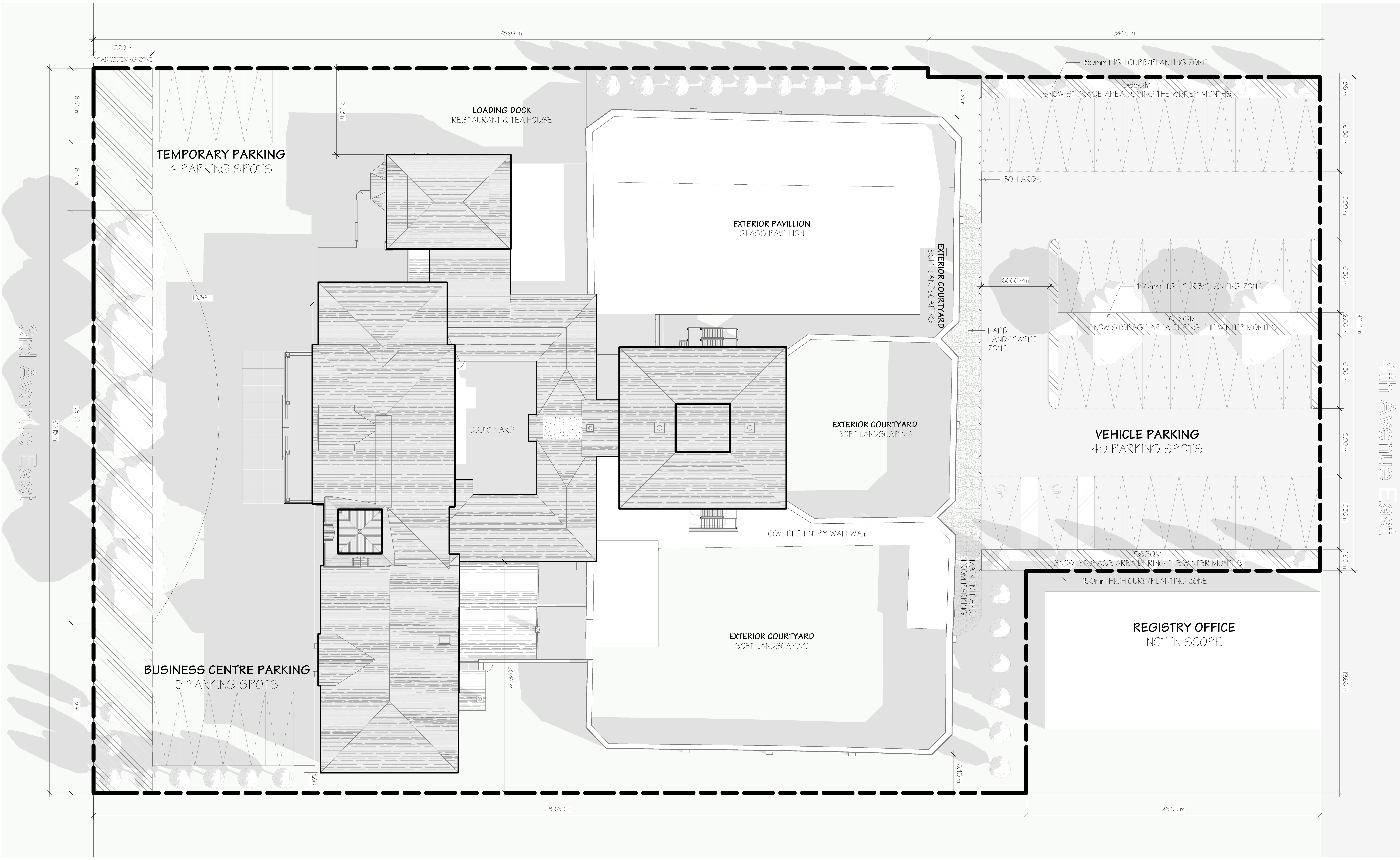
Printed March 10, 2023

THIS MAP IS NOT TO BE USED FOR NAVIGATION

ZONING DESIGNATION	**INSTITUTIONAL**
LEGAL DESCRIPTION	**LOTS 15 & 16 EAST OF BAY ST & LOTS 15 & 16 WEST OF HILL ST**
PROPERTY ADDRESS	1234-1259 3rd AVENUE EAST, OWEN SOUND, ONTARIO
OWNERSHIP	FC Hospitality & Entertainment Inc.

SITE SPECIFICS	PERMITTED	PROPOSED	EXISTING
Building Use	Institutional	Mixed-Use	Institutional
Lot Area		No Change	6434.26 sq.m
Lot Coverage	60 %	20.5 %	21.10 %
GFA		2050 sq.m	1985 sq.m
Front Yard Setback	7.5 m	20 m	20 m
Side Yard Setback (E)	1 m	3.55 m	3.55 m
Side Yard Setback (W)	1 m	3.47	3.47 m
Rear Yard Setback	2 m	31.38 m	31.38 m
Landscaped Surface	25 %	33.5 %	54 %

INFORMATION TAKEN FROM PLAN OF SURVEY



NOT FOR CONSTRUCTION

N

2023-01-12 12:48:30 PM

ERS ARCHITECTS

62 Westmount Avenue
M6H 3K1 Toronto, Ontario

info@ersarchitects.com I **www.ersarchitects.com**

Revision Schedule

No.	Description	Date
1	Issued for Pre-Consultation Meeting	2022-10-14
2	Issued for Client Review	2022-12-09

FC Entertainment & Hospitality Inc.

Royal Rose Court

1235-1259 3rd Avenue East
Owen Sound, ON N4K 2L6

SITE PLAN

Project Number	**22.0056.00**
Date	**2022-12-09**
Drawn by	**JM**
Checked by	**ER**
Scale	**1 : 128**

AP-001