

**PROPOSED MOSQUE
(WORSHIP AREA) AT 27 WINONA DR,
WITHCHURCH STOUFFVILLE, ONTARIO**

PARKING JUSTIFICATION STUDY



PROJECT NO. n2271

Prepared By:



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Version History

Version Number	Reason for Issue	Date
01	2 nd DA Submission (Issued for ZBA)	13-Mar-2025

1. Introduction

n Engineering Inc. is pleased to submit this parking justification study in support of the proposed Mosque (Place of Worship) at 27 Winona Dr, Town of Stouffville, Ontario. Figure 1 shows the site location.

This study reviews the following main aspects of the development from a transportation engineering perspective:

- The Town of Stouffville Zoning By-Law minimum parking requirements for the proposed land-uses of the building;
- Parking demand assessment of a comparable proxy sites in surrounding areas
- Compare the parking demand and supply and evaluate if the total parking spaces can meet the building's total peak parking demand

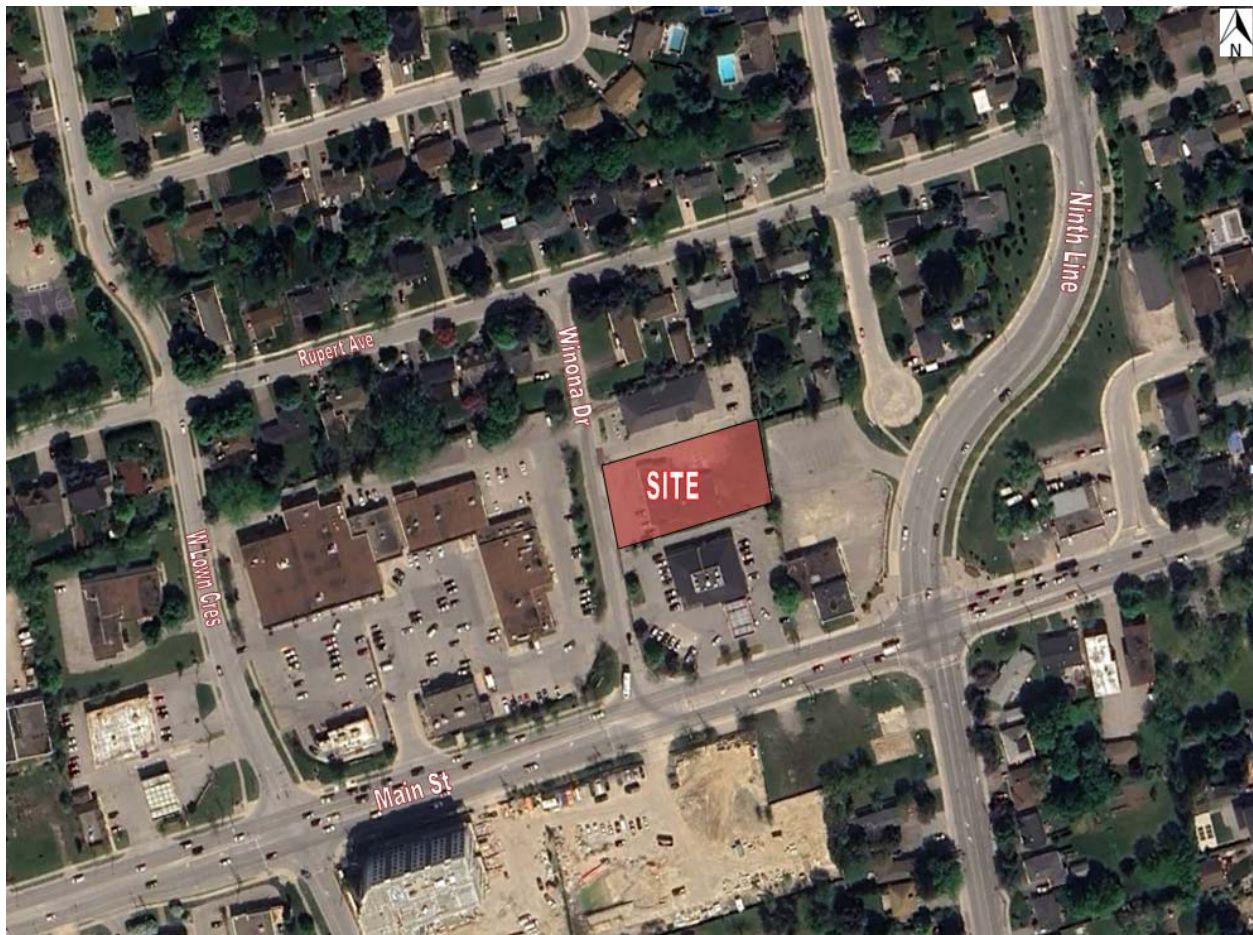


Figure 1 – Site Location

2. Site Description and Assessments

A new mosque is proposed for development at 27 Winona Drive, Town of Stouffville. The mosque, currently operating temporarily as Darul-Khair at 86 Ringwood Drive in a commercial unit, will relocate to the new site upon completion to better serve the Muslim community in Stouffville.

According to the preliminary site plan, the proposed mosque will be a three-story structure with a total Gross Floor Area (GFA) of 2,294.45 m². The planned facilities include:

- Prayer Area: 213.84 m² GFA
- Gymnasium (for mosque users only): 514 m² GFA
- Community Amenities: Including a community hall, multipurpose senior lounge, classrooms, and various service areas
- Parking: 53 spaces (38 stilt parking spaces on the ground floor and 15 parking spaces on the second floor)

Figure 2 illustrates the floor plan, detailing the proposed functions, while the site plan can be found in Appendix A.

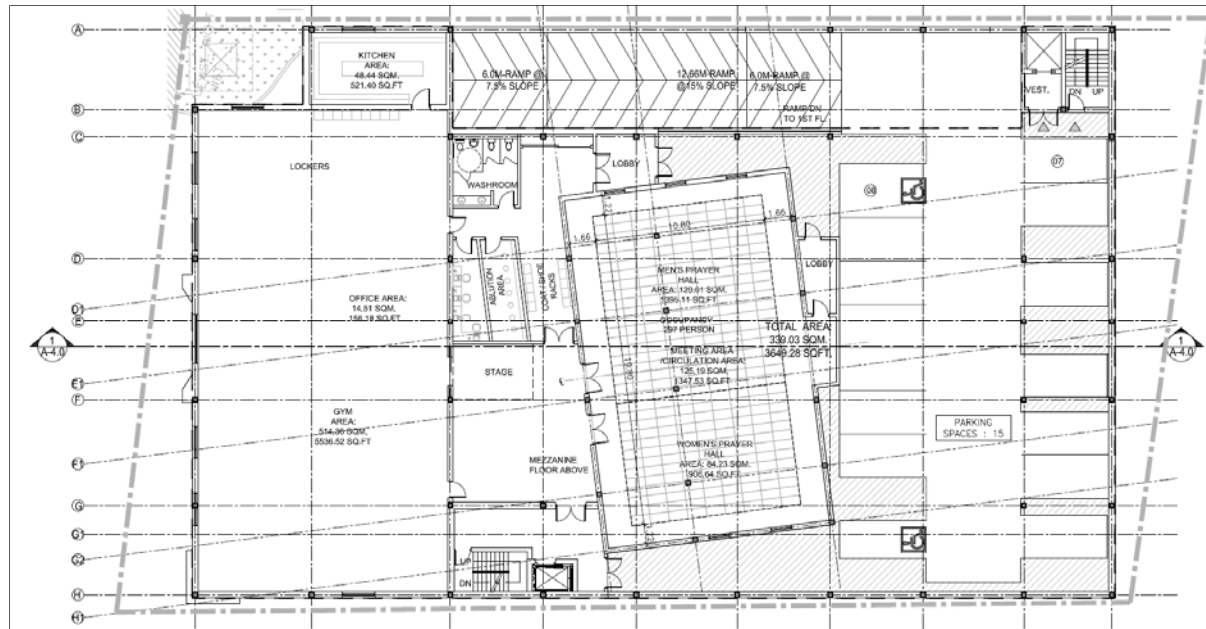


Figure 2 – Proposed 2nd Floor Plan

According to the Town of Stouffville Zoning By-Law, the proposed development would require 79 spaces (Refer – Proposed Site Plan in Appendix A). The Site Plan also indicates a 21 surplus

parking according to the Worship area as the main functional area and means of parking generation. Table 1 shows the parking calculations presented in the Site Plan.

Table 1 – Parking Calculations Based on Landuse Functions as per Zoning By-Law

Land-use	ZBL Parking Rate	Required Spaces	Proposed Spaces Site Plan	Difference
Parking Calculation for All Functions As Per Zoning By-Law				
Worship Area (men & women Net Prayer Area) 213.84 m² :	10 spaces/ 100 m ²	21	53	-26
Assembly Hall Gym, Multi-Purpose Hall, Senior Lounge, Meeting Room, Class Rooms, Imam Room Office Area, and all other service areas (1667.88 m²)	4 spaces/100 m ²	58		
Total		79	53	-26
Parking Calculation as Per Main Function				
Worship Area (men & women Net Prayer Area) 213.84 m² :	10 spaces/ 100 m ²	21	53	+32
Total		21	53	+32

Table 1 indicates that with the application of parking rates provided in the Zoning By-Law for individual functions proposed in the site plan, the total required parking spaces are 79 spaces. However, keeping the prayer as a main and only peak traffic generator function of the mosque, the required parking for the building is calculated as 21 spaces showing a surplus of 32 spaces in the site plan.

Therefore, to assess this discrepancy, a parking justification study is warranted to evaluate whether the proposed parking supply will sufficiently meet the site's future parking demand.

n Engineering Inc. has conducted the parking demand and supply analysis for the proposed mosque based on the actual Parking Survey results, engineering judgment and site condition.

The following sections in this report will provide detailed explanations based on Mosque's functionality and parking survey data of the proxy site Mosque's parking usage to evaluate the trip generation and parking pattern and see if the number of proposed parking spaces will be sufficient to meet the total parking demand of the building.

3. Mosque a space for Community Gathering

A mosque is a place of worship for Muslims, where congregants gather to perform prayers (*salat*) and participate in various religious and community activities. Muslims observe five daily

prayers at specific times: early morning (*Fajr*), midday (*Dhuhr*), afternoon (*Asr*), evening (*Maghrib*), and night (*Isha*).

Special prayers include the **Friday prayer**, the **Tarawih prayer** during late nights in the month of Ramadan, and the **Eid prayers** held twice a year, which typically draw larger congregations than regular daily prayers. In addition to prayer services, mosques often host community gatherings, children's Islamic studies, funeral services, and other religious functions.

Among these activities, the five daily prayers and the Friday congregational prayer are the core functions that define the mosque's role as a focal point within an urban and transportation planning context.

Refer to **Appendix B** for detailed information on the current activities and functions of Darul-Khair at 86 Ringwood Drive.

4. Mosques in Canadian Cities

Similar to schools, mosques are essential elements of the neighborhood fabric in towns and cities with Muslim communities. In urbanized areas of Islamic countries, most trips to local mosques are made on foot, as mosques are typically located within a 5 to 10-minute walking distance. Larger or special-purpose mosques may provide parking facilities to accommodate congregants traveling from wider catchment areas.

In the context of Canadian cities, however, mosques primarily generate vehicular trips, as users are more widely dispersed and rely on various transportation modes (e.g., cars, buses, bicycles). Despite this, daily prayers typically attract fewer attendees due to lower accessibility, with the exception of evening prayers, which tend to have higher participation.

The highest volume of congregants occurs during **Friday prayers**. To address capacity constraints and accommodate work schedules, many mosques schedule multiple Friday prayer sessions. This practice helps distribute attendance and manage parking demand during peak times.

Figure 3 illustrates the locations of existing mosques within the Stouffville area (York Region), showing that mosques are generally within a **3.5 km radius** of each other. This proximity provides residents with convenient access to their nearest mosque, reducing travel distances and alleviating parking pressure during Friday prayers.

Smaller mosques situated in commercial plazas may face parking shortages during Friday prayer times, which coincide with peak parking demand for nearby businesses. However, as Friday prayers are relatively short (typically **15–30 minutes**), the peak parking impact is brief, with the highest utilization occurring in the final 15 minutes of prayer time. As a result, the overall impact remains temporary and manageable.

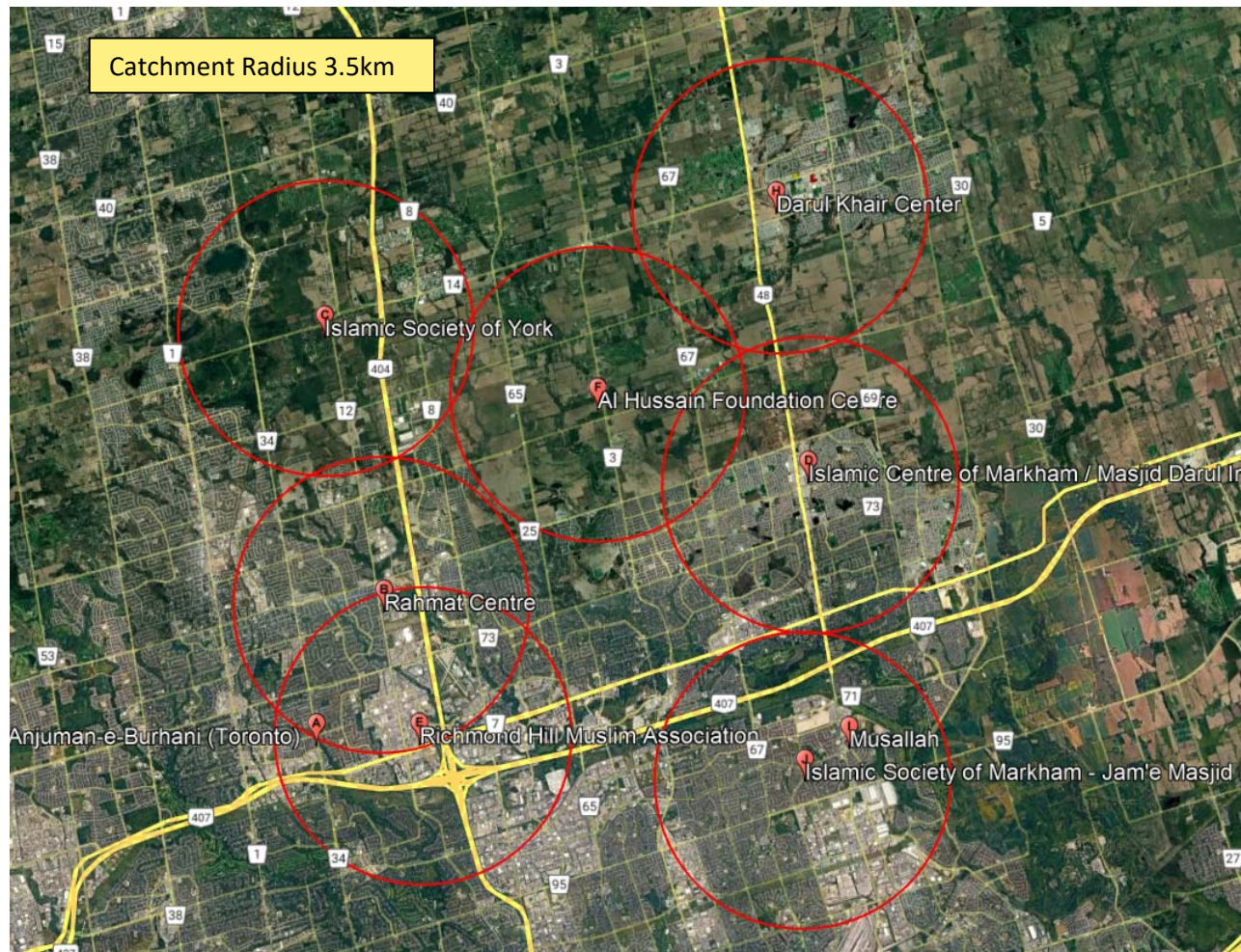


Figure 3 –Existing Mosques within York Region

5. Mosque Parking Demand

In order to understand the trip generation and parking pattern of mosque, proxy sites were studied to evaluate the parking behavior.

Two proxy sites were selected depending on its locality and replication of similar characteristics. The current Darul-Khair Mosque at Stouffville was studied for Friday , Monday

and Tuesday. Similarly, Islamic Society of York Region (ISYR) Mosque was surveyed on a Friday to understand the parking behavior of a larger mosque.

The actual parking demand was compared with the Zoning By-Law Minimum requirements. Finally the total parking demand was calculated based on actual demand values of both proposed site and proxy sites and rationale is provided on optimum parking supply.

6. Parking Survey Methodology

Parking utilization survey was conducted at two existing proxy sites to capture the actual peak parking demand and usage pattern of a Mosque. Four days parking surveys were conducted by staff members from n Engineering Inc. and volunteers from the mosque.

The details of the parking surveys are described in the following subsequent sections.

1. Parking Survey at Proxy Site No. 1 : Darul-Khair Mosque: Existing Mosque in Stouffville

- **Purpose** : To understand the Existing Mosques Parking Demand
- **Address** : Unit 36-86 Rignwood Dr, Stouffville, Ontario
- **Type of Building** : Religious Facility, 204 m² GFA located within commercial plaza. This mosque is expected to be shifted to the proposed site at 27 Winona Dr
- **Parking Capacity** : No reserved spaces, the visitors use the available parking spaces of plaza during prayer times
- **Survey Date** : Friday February 7, Monday February 10 and Tuesday February 11 2025
- **Survey Time** : From 6 AM to 7:30 PM. To capture parking demand of 5 prayer times
- **Data Collection Method** : Two data collection methods were utilized to assess parking demand:

1. **Physical Counting:**

Parking occupancy was observed and recorded at **15-minute intervals**. The data collection included the number of **occupied parking spaces, vehicles parked in unmarked areas, and curbside parking**. Only visitors attending the mosque for prayers were counted to ensure accurate representation of prayer-related parking demand.

2. Interviews:

A **questionnaire** was prepared and used to gather information of congregants about their travel modes and parking locations. This approach captured additional parking demand, including vehicles parked at the rear of the building or outside the plaza, which may not have been visible to the on-site surveyor.

It is important to note that the mosque is currently operating in a commercial plaza. Visitors coming to the mosque also parked on back side and other plazas when there is no space available at the front of the mosque. Therefore, In order to capture all those vehicles parked for the purpose of mosque, a questionnaire form was prepared which includes travel mode information of the mosque visitors.

During the interview at the entrance of the mosque - each individual was asked the following questions:

- Are you driving for the prayer today? If Yes - How many passengers were in the car?
- Are you driving for the prayer today? If No -How did you come to Mosque?
- The answers were recorded as passenger those who came with drivers, walk, bike and transit

The survey was carried out on February 10th and 11th by the volunteers for the prayer timing only since the mosque is only open at the prayer timing for the whole week.

2. Parking Survey at the Proxy Site No. 2: Islamic Society of York Region

- **Address** : 1380 Stouffville Rd, Richmond Hill
- **Type of Building& Land-use** : Individual building approximately 1200 m² GFA (including Gym)with large landscape and parking area
- **Parking Capacity** : 120 spaces + large vacant unpaved space that can accommodate large number of vehicles
- **Survey Date** : Friday, February 14th, 2025
- **Survey Time** : From 11 AM to 7:30 PM
- **Data Collection Method** : Cars in parking spots were counted at every 15 minutes interval
:Observed parking data was collected to include Occupied parking spaces and Vehicles Parked on Unmarked Places.

7. Parking Survey Results

The Parking surveys results are tabulated in the following subsequent tables for both sites respectively:

1. Proxy Site 1 (Darul-khair Center) Parking Survey Results

- Survey Date & Time : Friday February 7, Monday Feb 10 and Tuesday Feb 11 from 6:30 AM to 7:45 PM
- Data Collection :mosque visitors parking their cars at the parking lot or curbside were counted at every 15 minutes interval
:questionnaire survey was conducted from Mosque visitors about the travel mode to ensure all vehicle users are captured
- Parking Supply Rate : There are no reserved spaces in the plaza, 51 parking spaces are available at the front yard of mosque. Parking spaces are used randomly by visitors.
- Parking Utilization :The peak parking utilization on Friday prayer was observed as 62 vehicles parked for 1st prayer and 48 vehicles parked on 2nd prayer for the purpose of mosque visit.
:The peak parking utilization for 5 times prayer was observed during (Isha), night time prayer as 22 spaces occupied
- Parking Utilization Rate :The maximum observed parking utilization rate on Friday Prayer was **30.39** spaces/100m² Gross worship area
:The maximum observed parking utilization rate of daily 5 times prayer was observed at Nighth time prayer (Isha) on Friday indicating **10.78** spaces/100m² Gross worship area
- Utilization pattern :Parking spaces usage was observed to be much lower on 5 daily prayer times, while the Friday prayer parking utilization was unlikely very high (3 times higher than daily peak).

Due to surge of Friday prayer visitors, vehicles parked at the curbside due to unavailability of parking spaces. However, this situation only happened at the last 15-30 minutes.

- **Peak Hour Parking Timings** :The peak parking utilization for the mosque occurs exclusively during **Friday prayers**, aligning with peak parking demand from other surrounding land uses. During **nighttime prayers**, the majority of parking spaces remained vacant, and visitors primarily parked in front of the mosque.

Maximum Occupancy Load was observed at the 1st Friday prayer time as 82 persons.

Figures 4 and 5 show the parking utilization pattern during the day based on the survey data for the Friday at Proxy Site No. 1 Darul-Khair Site.

Table 2 and Figure 6 shows parking utilization pattern for 5 times daily prayer at the Proxy Site No. 1 Darul-Khair Site. Refer Appendix C and D for the parking survey sheets and Tables.

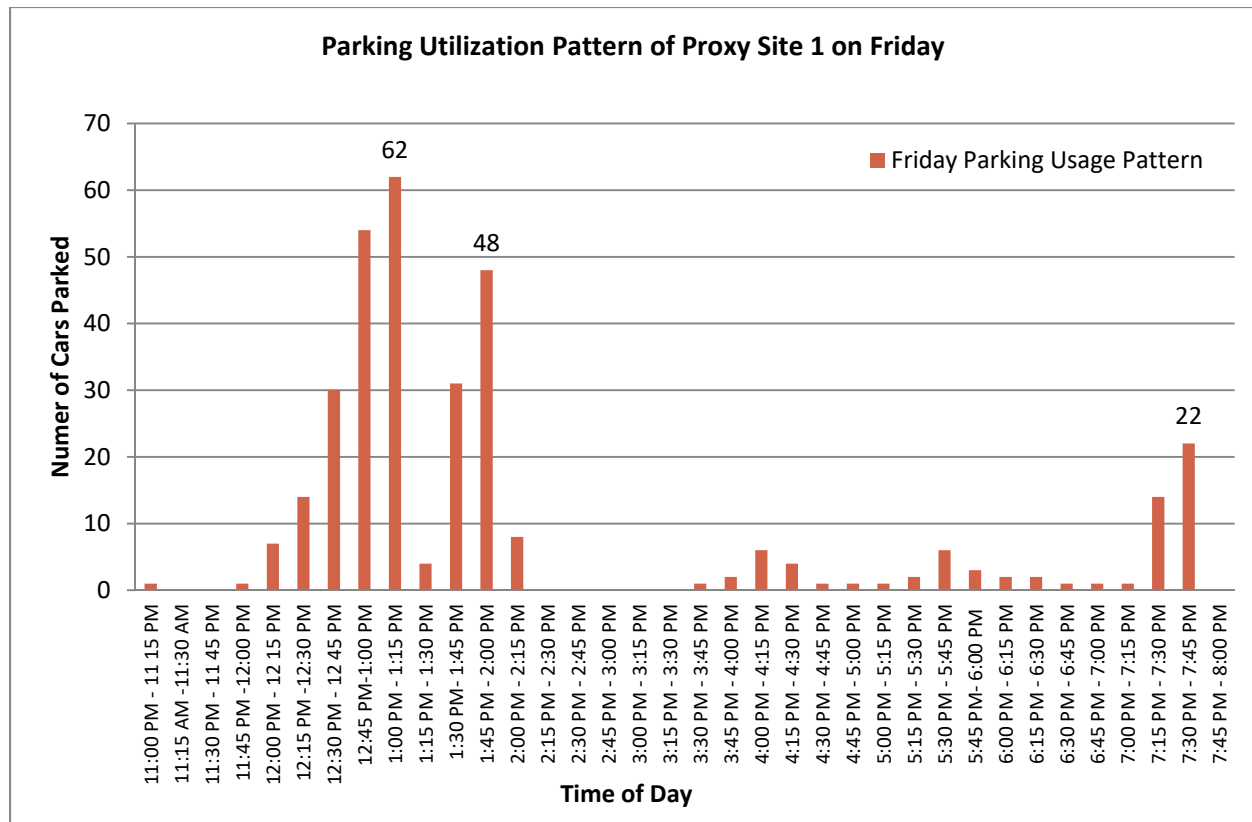


Figure 4 – Parking Utilization Pattern of Mosque Proxy Site No. 1 on Friday

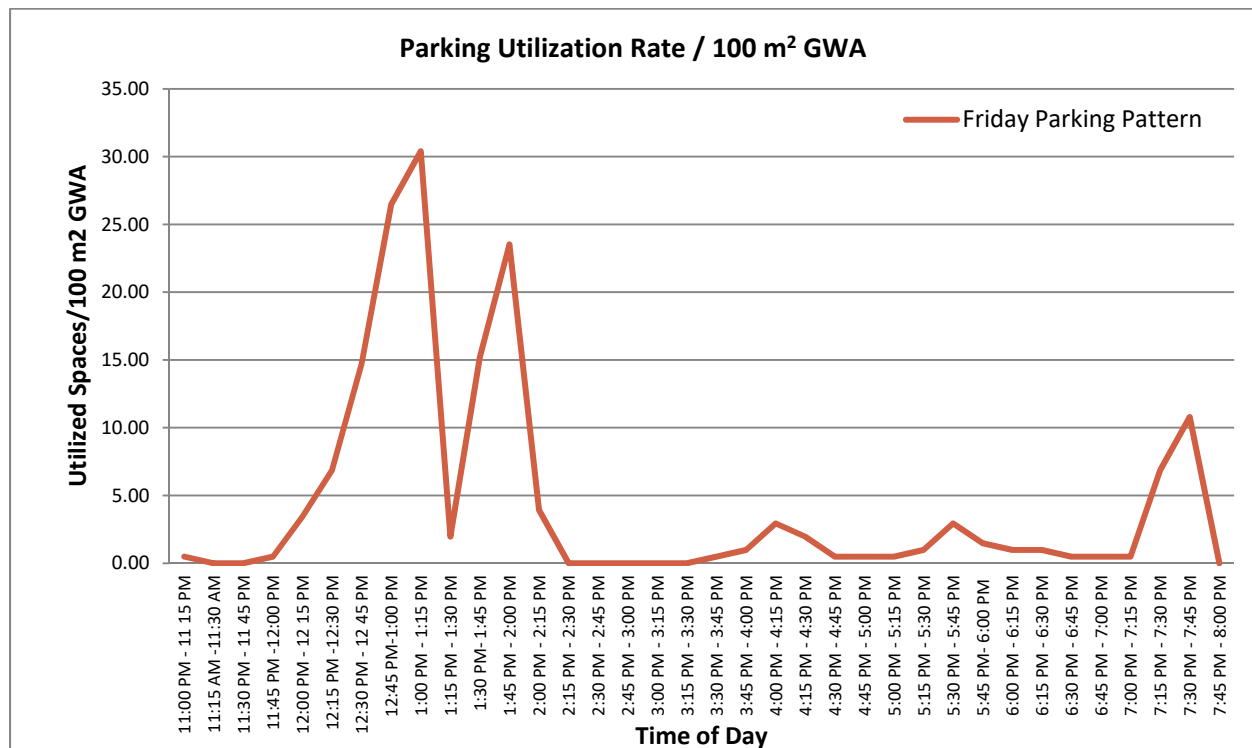
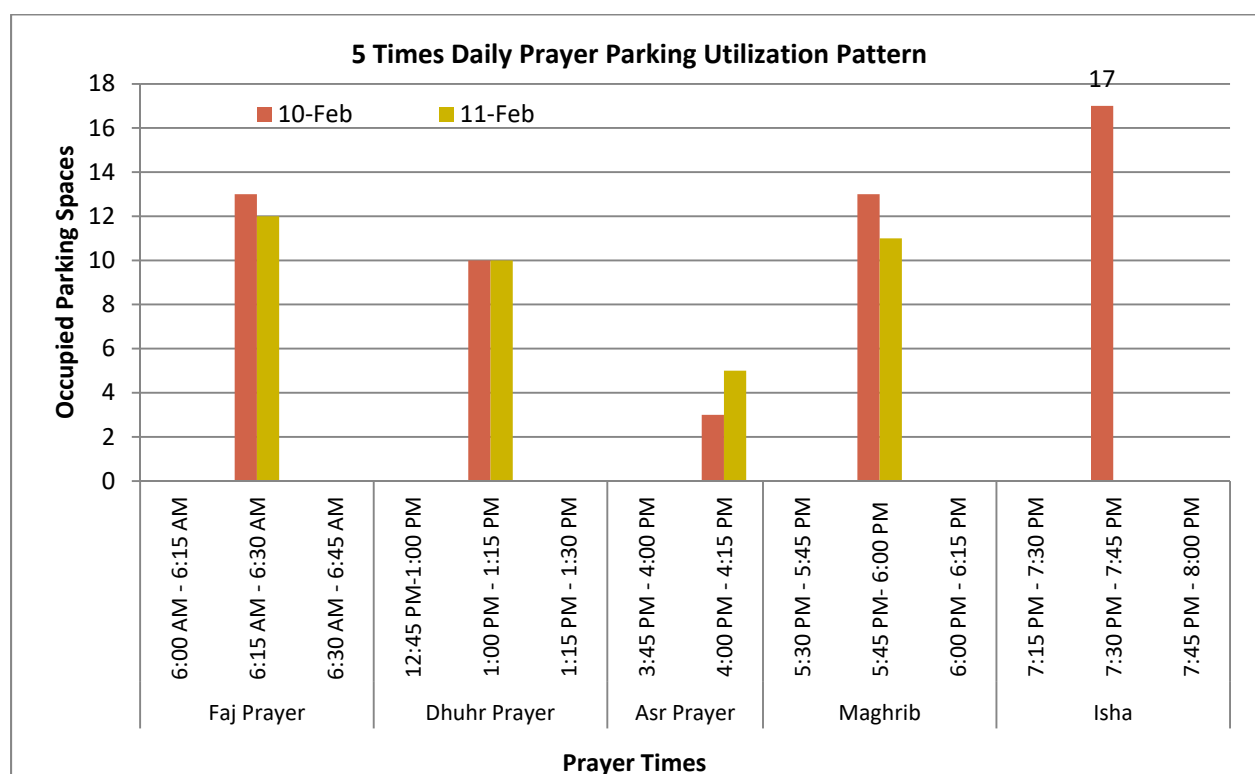


Figure 5 – Parking Demand Rate/100m² GFA OF Darul-Khair Mosque on Friday

Table 2 –Parking Utilization of 5 Times Daily Prayer at (Darulkhair Mosque) 86 Ringwood Dr

Prayer	Time	Occupied Parking Spaces	
		10-Feb	11-Feb
Fajr Prayer	6:00 AM - 6:15 AM	-	-
	6:15 AM - 6:30 AM	13	12
	6:30 AM - 6:45 AM	-	-
Dhuhr Prayer	12:45 PM-1:00 PM	-	-
	1:00 PM - 1:15 PM	10	10
	1:15 PM - 1:30 PM	-	-
Asr Prayer	3:45 PM - 4:00 PM	-	-
	4:00 PM - 4:15 PM	3	5
Maghrib	5:30 PM - 5:45 PM	-	-
	5:45 PM- 6:00 PM	13	11
	6:00 PM - 6:15 PM	-	-
Isha	7:15 PM - 7:30 PM	-	-
	7:30 PM - 7:45 PM	17	-
	7:45 PM - 8:00 PM	-	-

**Figure 6 – Parking Utilization Pattern OF Darul-Khair Mosque on 5 Times Daily Prayer**

The survey indicates that Friday prayer parking demand has tripled as compared to the regular prayer times.

2. Proxy Site No. 2 (York Islamic Society Mosque) Parking Survey Results

- Survey Date & Time : Friday February 14th, 2025 from 11:00 AM to 7:30 PM
- Data Collection : Occupied Parking spaces were counted at every 15 minutes interval
- Peak Parking Utilization Friday Prayer : Maximum parking utilization was observed as 221 vehicles parked. The total building occupancy load was approximately 280 persons.
- Parking Utilization Rate : The maximum observed parking utilization rate was observed as 17.95 spaces/100m² GFA for and 36.83 m²/100 m² Net Worship Area
- Other Prayer Times : Parking accumulation observed only for Friday Prayer (Jumah) prayer time. The representatives from Mosque also confirmed that maximum attendees for other prayer times don't exceed 10 people. The occupancy load was approximately 280 persons.

Figure 7 and 8 shows the parking utilization pattern of Friday Prayer based on the survey data at 1380 Stouffville Rd. Refer Appendix C and D for the parking survey sheets and data tables.

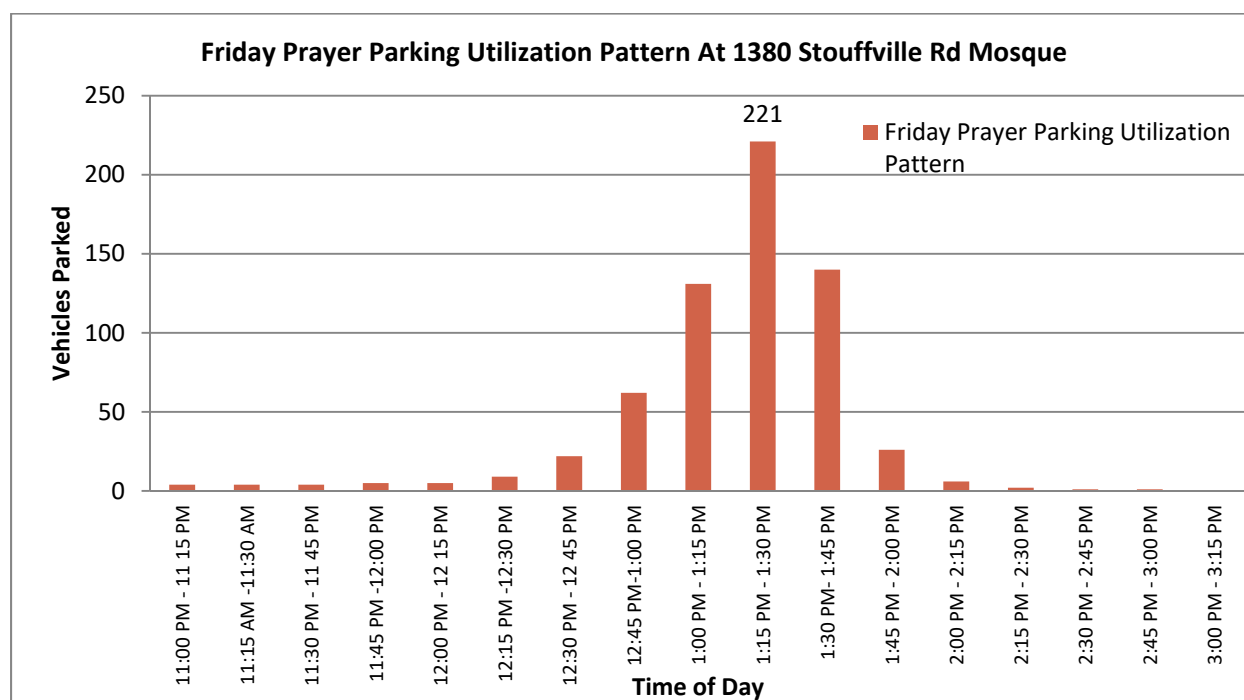


Figure 7 – Parking Utilization Pattern of Friday Prayer at 1380 Stouffville Rd

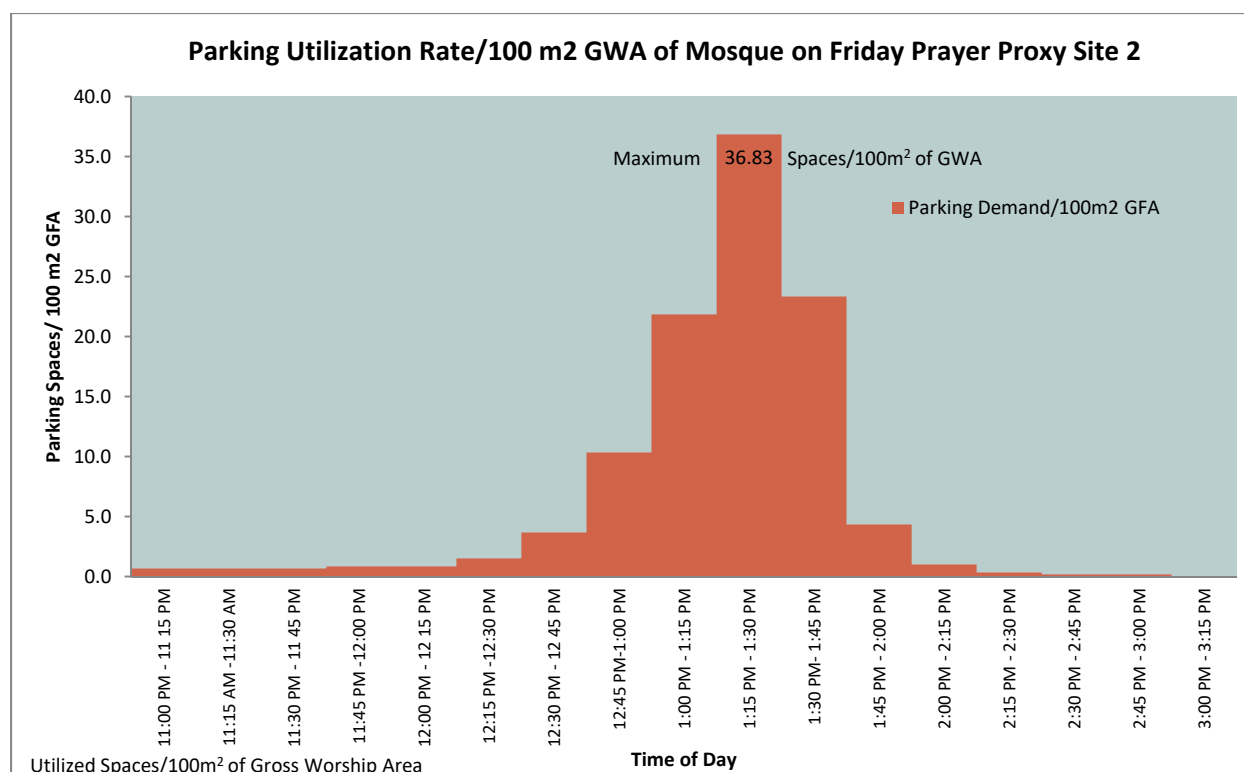


Figure 8 – Parking Utilization Rate/100m² GWA of Mosque for Friday Prayer at Proxy Site 2

The parking survey results indicate that the parking usage of the mosque has different behavior as compared to other facilities. The daily prayer parking demand is comparatively lower since less people are attending at Darul-Khair while no congregants were observed at Proxy Site No. 2 for other prayers. The overall parking utilization during the day is very low for both sites as the spaces are only used for a shorter period of time (15- 30 minutes) for the prayer only. Friday prayer is the only occasion during the week with the highest parking usage.

8. Analysis

The survey results provides necessary inputs for calculating proposed mosque's future parking demand. Table 3 shows the summary of peak parking demand rates calculated based on the **Gross Worship Area** of the mosque from parking survey data.

Table 3- Comparison of Parking Rates

Site	Parking Usage Time	Peak Utilization	Utilization Rate Spaces / 100 m ² Worship Area	9 th % Percentile Value of Peak Demand
Proxy Site 1	1st Prayer	62	30.39	25.44
	2nd Prayer	48	23.53	-
	5 Time Daily Prayer (Isha Prayer)	22	10.78	-
Proxy Site 2	Friday Prayer	221	36.83	26.71

Using the peak utilization values of survey, the peak utilization rates were calculated based on the Gross Worship Area of the mosque. Darul-Khair Mosque worship area is 204 m² and ISYR mosque has 600 m². Furthermore, the 95th Percentile values of the highest peak demand rates from the two proxy sites were also calculated so it can be examined in comparison.

Table 4- Calculated Parking Demand Based on Parking Rates Derived From Survey

Description	Proxy Site1		Proxy Site 2	
	Friday Prayer		5 Times Daily Prayer Max	Friday Prayer
	1st Prayer	2nd Prayer		
Peak Parking Utilization (spaces)	62	48	22	221
Observed Peak Utilization Rate (Space / 100 m ² of Worship Area)	30.39	23.53	10.78	36.83
95th % Value of Peak Demand	25.4	-	-	26.7
Proposed Mosque Worship Area (m ²)	213.84			
Required Spaces Based on Maximum Peak	65	50	23	79
Required Spaces Based on 95th % Peak Demand value	54	-	-	57
Proposed Spaces in the Site Plan	53			
Supply Deficit from Peak Demand	-9	+3	+30	-26
Supply Deficit from 95th % Demand	-1	-	-	-4

The table above shows that parking demand is lower than the parking supply for all daily prayer times. However, the Friday prayer calculations indicated that parking will be deficit of between 9 to 25 spaces using the highest calculated rates from two proxy sites but using the 95th % values, the supply deficit is between 1 to 4 spaces. This means that there is 95% likelihood that the parking demand will remain below 54 to 57 spaces. Therefore it can be concluded that the proposed parking supply can meet the proposed Mosque's future parking demand.

9. Effective Parking Utilization % Over Period of Time

A cumulative percentile curve was developed based on the Proxy Site 1 parking data to evaluate the effective parking usage over a period of day from 6:00 AM to 8:00 PM. The data recordings were plotted with respect to its usage over 15 minutes period and 50th, 75th, 85th and 95th % values were derived. Refer Appendix E for the analysis sheet and details. Figure 9 shows the results of cumulative percentile curve.

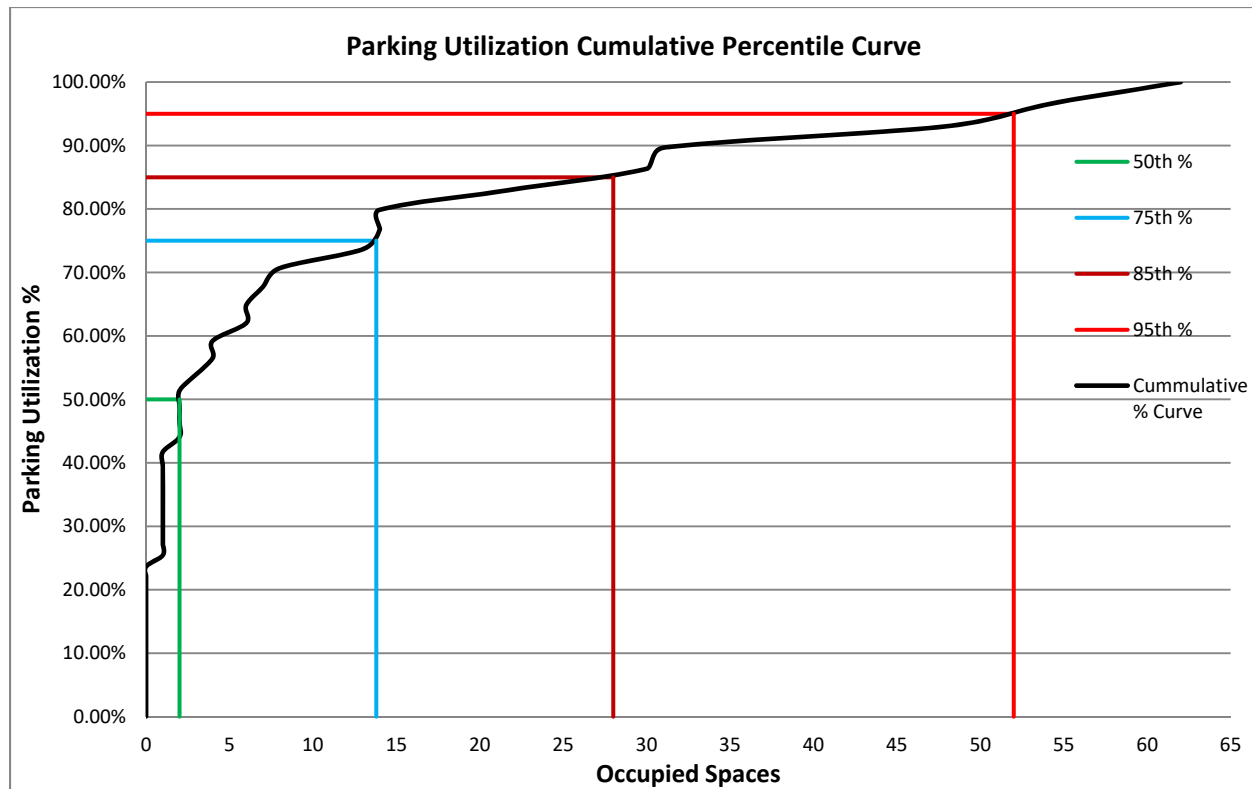


Figure 9 – Parking Utilization Cumulative % Curve

The percentile curve shows that from 6:00 AM to 8:00 PM:

- 50% of time, the parking usage will be under 2 spaces
- 75 % of time, parking usage will be under 14 spaces
- 85% of time, the parking usage will be under 28 spaces
- 95 % of time, the parking usage will be under 52 spaces for the whole site.

This means that parking usage will remain under capacity for 95% of the time of the day. The parking supply need beyond 95% is negligible or would require short term arrangements. Therefore the proposed parking supply is expected to effectively serve the parking demand.

10. Comparison of Parking Tables

The site plan shows two tables for parking calculation in reference to the zoning by law. In table 1, all the land-uses are accounted for based on the ZBL which is usual practice for parking calculation. In the 2nd table, parking demand is calculated based on the worship area only – which is the main function of the facility. Parking rates of proxy sites in this report are also calculated based on net worship area.

Table 5- Parking Calculation Tables Given in the Site Plan

PARKING CALCULATION						PARKING CALCULATION		
FUNCTION	FLOOR	RATE	AREA (SQ.M)/QTY	SPACES REQUIRED (SUB-TOTAL)	SPACES REQUIRED (BY FUNCTION)		REQUIRED	PROPOSED
WORSHIP AREA SPACES INCLUDE: SECOND FLOOR- WOMEN'S PRAYER HALL, MEN'S PRAYER HALL.	SECOND FLOOR	10 SPACES/ 100 SQ.M.	213.84	21 SPACES	21 SPACES	PLACE OF WORSHIP: 10 PARKING SPACES FOR EACH 100 M ² OF GFA DEVOTED TO PUBLIC USE (WORSHIP AREA) (213.84 SQ.M.)	21	53
ASSEMBLY HALL SPACES INCLUDE: FIRST FLOOR- LOBBY, VESTIBULE, SECOND FLOOR- OFFICE AREA, KITCHEN, GYM, LOBBY, STAGE AREA, COAT AREA, ABLUTION AREA, MEETING AREA. THIRD FLOOR- MULTI-PURPOSE HALL, CLASS ROOM, MULTI-PURPOSE SENIOR LOUNGE, JANITOR ROOM, MEETING ROOM, IMAM ROOM, COLD STORAGE, STORAGE, THIRD FLOOR- BABY SITTER ROOM, ABLUTION AREA	FIRST FLOOR		101.42	4 SPACES		TOTAL # PARKING SPACES	21	
	SECOND FLOOR	4 SPACES/ 100 SQ.M.	770.04	31 SPACES	58 SPACES	DIFFERENCE		+32
	THIRD FLOOR		582.58	23 SPACE		ACCESSIBLE PARKING : 26-100 PARKING SPACES = 4% OF TOTAL REQUIRED PARKING	01	04
TOTAL PARKINGS SPACES REQUIRED						DIFFERENCE		+3
TOTAL PARKINGS SPACES PROVIDED						LOADING CALCULATION:		
1. THE MAXIMUM OCCUPANCY IN THE BUILDING IS DURING PRAYER TIME, DURING WHICH OTHER ACTIVITIES IN THE BUILDING CEASE TO OPERATE AND ALL OCCUPANTS IN THE BUILDING CONGREGATE IN THE PRAYER AREAS. THEREFORE IN PRACTICE, THE MAXIMUM PARKING SPACES OCCUPIED WILL BE DURING FULL CAPACITY OF THE PRAYER AREAS.						OVER 950M ² UP TO 2481.65M ² OF GFA 4 LARGE LOADING SPACES REQUIRED (9M X 3.5M)	02	00

Below is a discussion justifying the proposed parking supply based on mosque usage patterns and findings from proxy survey data:

- **Primary Trip and Parking Generator:**

Unlike other facilities, the **prayer area** is the primary factor influencing trip generation and parking demand for the mosque. Other land uses, such as service areas and support spaces, are provided to enhance the mosque's operations but do not generate independent trips.

- **Complementary Facilities:**

Amenities like the **gym, multi-purpose hall, and senior's lounge** are considered secondary trip generators. However, these facilities are exclusively for mosque users and are not expected to attract additional visitors or generate separate trips.

- **Peak Parking Demand:**

Peak parking demand was observed only during **Friday prayers**. Since most mosque users attend Friday prayers in congregation, auxiliary facilities like the gym and multipurpose hall are not in use during prayer times. As a result, these facilities do not contribute to increased parking demand, as their usage is paused during peak prayer hours.

- **Proxy Site Survey Findings:**

Parking surveys conducted at **two proxy sites** confirmed that mosque usage is predominantly for prayers, with minimal use of secondary functions during prayer times. For instance, despite **ISYR (Proxy Site No. 2)** having a gym exceeding **600 m²**, no gym usage or related parking impact was observed during prayer times. Sports and recreational facilities within mosques are generally used only by congregants and not the broader public, limiting their influence on parking needs.

Given these factors, applying standard zoning by-law requirements for all land uses within the mosque would lead to an **overestimation of parking needs**.

Therefore, the **53 proposed parking spaces** are expected to adequately serve all mosque functions, including the **five daily prayers** and **Friday congregational prayers**. The gym and other smaller activity areas are anticipated to remain closed during peak prayer times, ensuring that parking capacity remains sufficient even during high-demand periods.

11. Summary

A mosque (worship place) is proposed to be developed at 27 Winona Drive, Town of Stouffville, featuring 53 parking spaces. As per the Zoning By-Law requirements for worship areas, the parking supply indicated in the proposed site plan was required to undergo a detailed analysis.

n Engineering Inc. conducted a comprehensive parking supply and demand analysis using empirical data from comparable proxy sites to confirm that the proposed parking provision would sufficiently meet future demands. Parking utilization surveys were carried out across four days—three at Proxy Site 1 and one at Proxy Site 2—to analyze parking usage patterns and demand levels.

The survey findings revealed maximum parking utilization rates during Friday prayers for both proxy sites, at 30.39 and 36.83 spaces per 100 m² of worship area. For the evening (Isha) prayer, the utilization was recorded at 10.78 spaces per 100 m² of worship area among the five daily prayers. Based on the 95th percentile values of peak demand rates, the estimated parking demand for the proposed mosque ranges from 54 to 57 spaces for the entire facility.

To manage parking demand and reduce occupant load during peak times, the mosque is expected to schedule two Friday prayer sessions, providing flexibility for congregants to attend at convenient times. If necessary, the number of sessions can be increased to three. As prayer services constitute the mosque's primary function, the supportive and service land uses are not anticipated to generate additional traffic or parking demand. The surveys of the proxy sites also suggest that other mosque functions are minimally active.

A location map of existing mosques within a 3 to 5 km radius in York Region indicates that these facilities are readily accessible, meaning the proposed mosque would primarily serve residents of the Town of Stouffville. This reinforces the conclusion that occupancy load and parking demand at the new mosque are unlikely to change significantly.

Additionally, a survey of the temporary Darulkhair Mosque at 86 Ringwood Drive (Proxy Site 1) identified an existing attendance of 110 congregants across two Friday prayer shifts. Since this mosque is relocating to the proposed site with the same functions, the peak attendance for Friday prayers is expected to remain consistent.

12. Recommendation

- It is recommended to suspend the operation of ancillary functions, such as the gym and multipurpose hall, on Fridays between 10:00 AM and 4:00 PM to ensure the availability of all parking spaces for prayer attendees.
- Should the number of congregants increase in the future, it is recommended to introduce a third Friday prayer session. This adjustment would effectively distribute attendees across three shifts, facilitating better management of parking demand.

We trust that this analysis fulfills the technical requirements set forth by the Town of Stouffville and offers sufficient evidence to address parking demand for the proposed development. For further inquiries, please do not hesitate to contact the undersigned.

Respectfully Submitted,

n Engineering Inc.

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Transportation Analyst

Reviewed by:



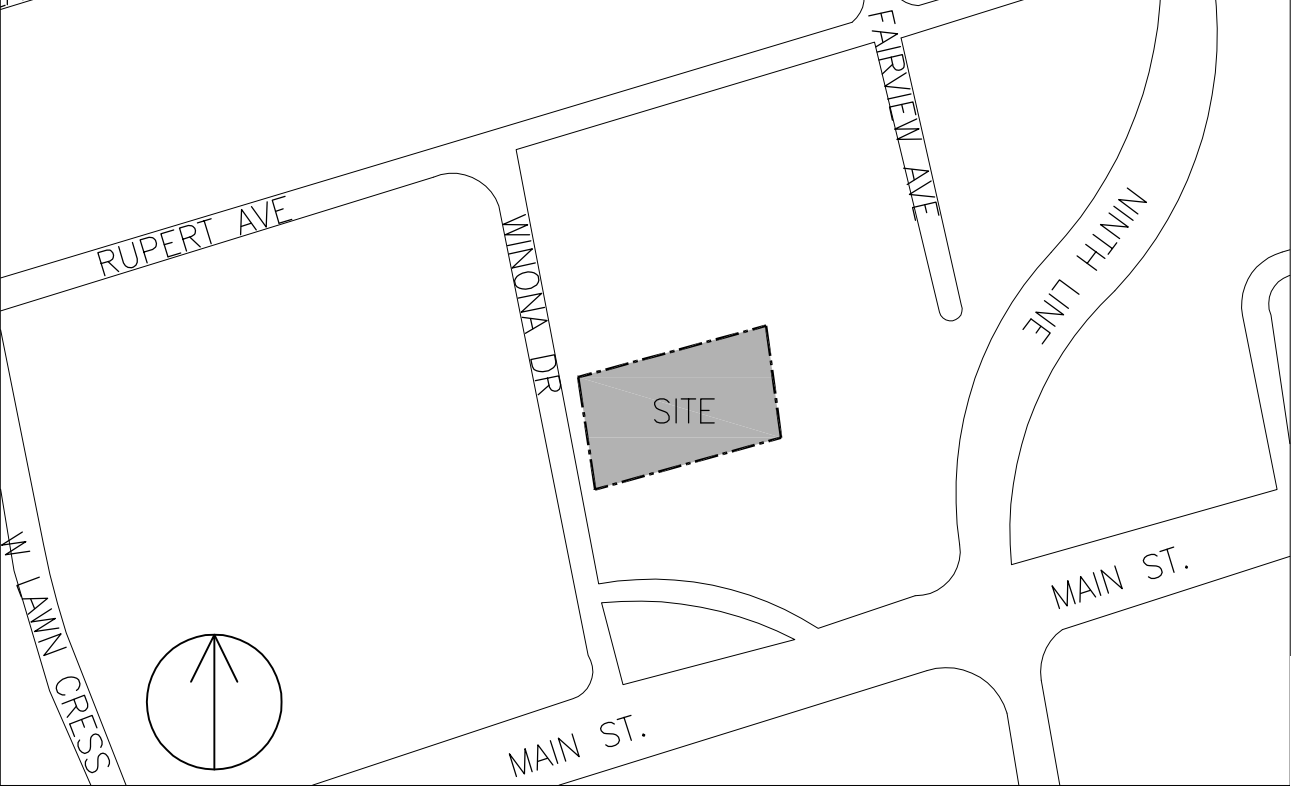
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MUNICIPAL ENGINEER / PROJECT MANAGER

APPENDIX A

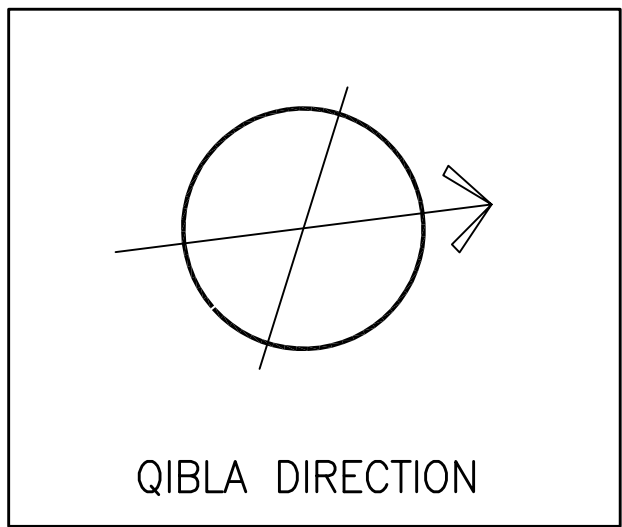
Site Plan

PARKING CALCULATION					
FUNCTION	FLOOR	RATE	AREA (SQ.M)/QTY	SPACES REQUIRED (SUB-TOTAL)	SPACES REQUIRED (BY FUNCTION)
WORSHIP AREA SPACES INCLUDE: SECOND FLOOR- WOMEN'S PRAYER HALL, MEN'S PRAYER HALL.	SECOND FLOOR	10 SPACES/ 100 SQ.M.	213.84	21 SPACES	21 SPACES
ASSEMBLY HALL SPACES INCLUDE: FIRST FLOOR- LOBBY, VESTIBULE. SECOND FLOOR- OFFICE AREA, KITCHEN, GYM, LOBBY, STAGE AREA, COAT AREA, ABLUTION AREA. THIRD FLOOR- MULTI-PURPOSE HALL, CLASS ROOM, MULTI-PURPOSE SENIOR LOUNGE,JANITOR ROOM, MEETING ROOM, IMAM ROOM,COLD STORAGE, LOBBY STORAGE, ABLUTION AREA	FIRST FLOOR		101.42	4 SPACES	
	SECOND FLOOR	4 SPACES/ 100 SQ.M.	702.98	28 SPACES	57 SPACES
	THIRD FLOOR		614.90	25 SPACE	
TOTAL PARKINGS SPACES REQUIRED					78 SPACES
TOTAL PARKINGS SPACES PROVIDED					53 SPACES
1. THE MAXIMUM OCCUPANCY IN THE BUILDING IS DURING PRAYER TIME, DURING WHICH OTHER ACTIVITIES IN THE BUILDING CEASE TO OPERATE AND ALL OCCUPANTS IN THE BUILDING CONGREGATE IN THE PRAYER AREAS. THEREFORE IN PRACTICE, THE MAXIMUM PARKING SPACES OCCUPIED WILL BE DURING FULL CAPACITY OF THE PRAYER AREAS.					

PARKING CALCULATION		REQUIRED	PROPOSED
PLACE OF WORSHIP: 10 PARKING SPACES FOR EACH 100 M ² OF GFA DEVOTED TO PUBLIC USE (WORSHIP AREA) (213.84 SQM.)		21	53
TOTAL # PARKING SPACES		21	
DIFFERENCE		+32	
ACCESSIBLE PARKING : 26-100 PARKING SPACES = 4% OF TOTAL REQUIRED PARKING		01	04
DIFFERENCE		+3	
LOADING CALCULATION:			
OVER 950M ² UP TO 2481.65M ² OF GFA 4 LARGE LOADING SPACES REQUIRED (9M X 3.5M)		02	00



KEY MAP
SCALE: N.T.S.



PROJECT STATISTICS		
ADDRESS: 27 , WINONA DR, WHITCHURCH, STOUFFVILLE, ON		
	REQUIRED	PROPOSED
ZONING : COMMERCIAL RESIDENTIAL MIXED -WESTERN APPROACH(CM2) (BYLAW 2010-001-70 TOWN OF WHITCHURCH STOUFFVILLE,2010)	CM-2	CM-2
LOT AREA (SQ.M)	0 SQ.M. (MIN)	2408.29 SQ.M. (0.59 ACRES)
LOT FRONTAGE	0 M	37.80 M
BUILDING COVERAGE	N/A	1972.67 SQM (81.91%)
GFA (SQ.M) (Excluding Mech./Elec. Room and Garbage Room)		2294.45 SQ.M
LANDSCAPED AREA	MIN.4.5M B/W STREET OF PARKING AREAS OR DRIVEWAYS	181.02 SQ.M (7.51%) STRIP DISTANCE VARIES MIN- 0.99 M MAX- 6.45 M
PAVED AREA	-	1939.96 SQ.M. (80.55%)
MAX. BUILDING HEIGHT	20M	9.20M 19.05M (HEIGHT OF MINARET)

BUILDING SETBACKS	REQUIRED	PROPOSED
FRONT YARD (WEST)	(MIN)3 M (MAX)3 M	1.00 M
REAR YARD (EAST)	(MIN)0 M	0.99 M
INTERIOR SIDE YARD (NORTH)	(MIN)0 M	0.45 M
INTERIOR SIDE YARD (SOUTH)	(MIN)0 M	0.30 M

AREA DISTRIBUTION	SPACES	AREA
MEN' PRAYER HALL		129.61 SQM.
WOMEN'S PRAYER HALL		84.23 SQM.
MEETING AREA		125.19 SQM.
TOTAL WORSHIP AREA		339.03 SQM.

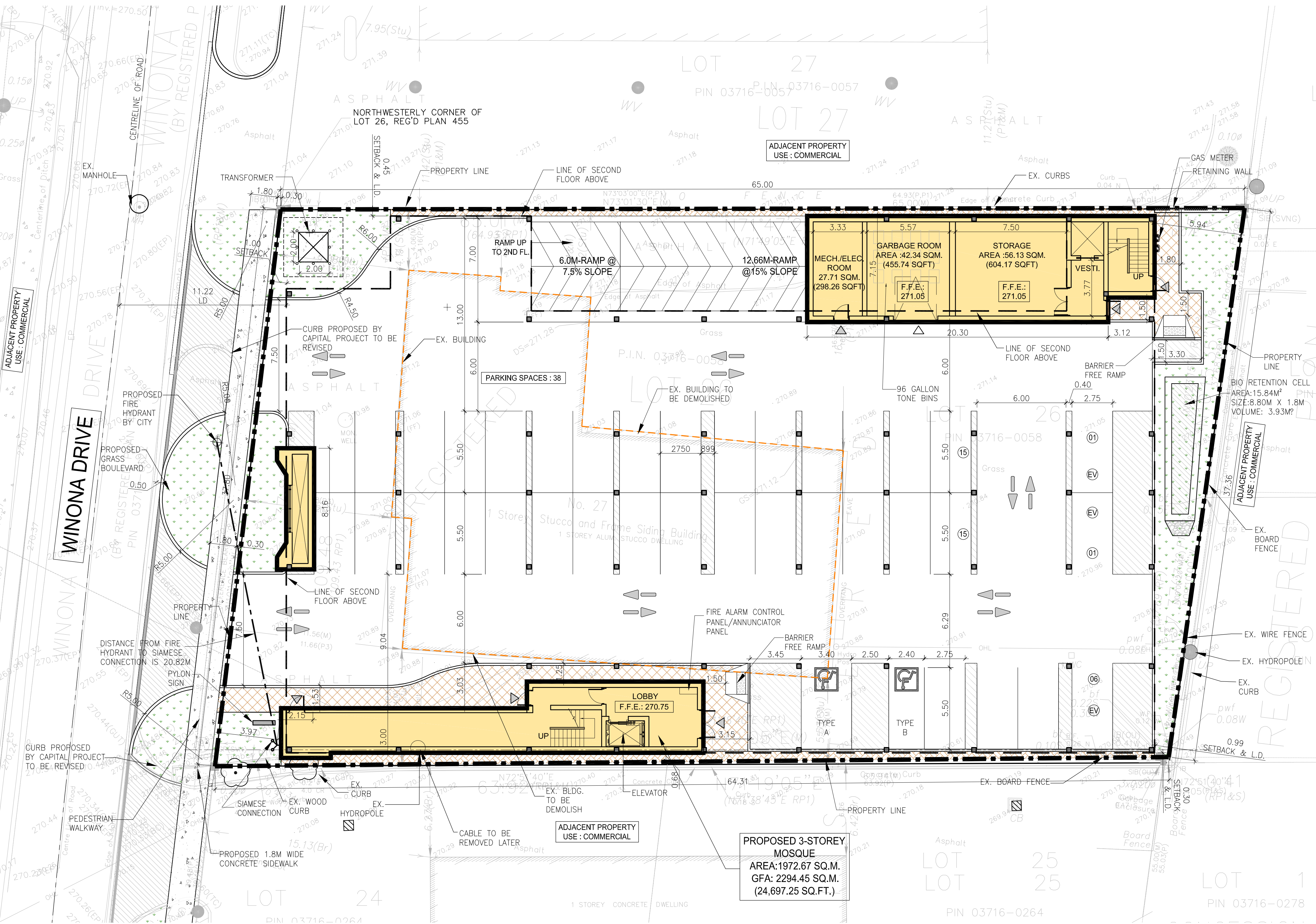
LEGEND	
	PROPERTY LINE
	NEW BUILDING
	EXISTING BUILDING
	LANDSCAPE
	CONC. PAVEMENT,150MM RAISED
	ASPHALT
	MAIN DOOR ENTRANCE
	OVERHEAD DOOR
	TACTILE WALKING SURFACE

APPLICANT:
n ARCHITECTURE INC.
9120 Leslie Street,
Suite-208
Richmond Hill, ON. L4B 3J9
T: 416.256.9741
E: info@narchitecture.com
www.narchitecture.com

OWNER'S INFO:
DARUL KHAIR CENTER STOUFFVILLE
86 RINGWOOD DR. UNIT 36
WHITCHURCH-STOUFFVILLE , ON

LEGAL DESCRIPTION:
PART 1 PLAN OF LOT 26 REGISTERED
PLAN 455
TOWN OF WHITCHURCH STOUFFVILLE
REGIONAL MUNICIPALITY OF YORK

SURVEY INFORMATION:
RICHMOND SURVEYING INC.
344-9471 YONGE STREET, RICHMOND HILL, ON
PH:647-333-6200
MAIL: MOJITO.TAVALLAI@GMAIL.COM
PLAN DATED: AUGUST 18,2024



1 SITE PLAN
A-1.0 SCALE: 1:150

n Architecture Inc
PRINCIPAL: NITIN MALHOTRA, ARCHITECT.
9120 Leslie Street, Suite-208
Richmond Hill, Ontario. L4B 3J9
T : 4 1 6 . 2 5 6 . 9 7 4 1
E: info@narchitecture.com
www.narchitecture.com

13 MAR. 2025

13th MARCH 2025
ISSUED FOR ZBA
NOT FOR CONSTRUCTION

5.	13 MAR. 2025	ISSUED FOR ZBA	ZP
4.	06 MAR. 2025	ISSUED FOR COORDINATION	ZP
3.	05 NOV. 2024	ISSUED FOR PRE-CON #3	ZP
2.	24 APR. 2024	ISSUED FOR PRE-CON #2	JB
1.	13 JUN. 2023	ISSUED FOR PRE-CON	JB
No.	Date	Version	Dwn.

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any discrepancies to the architect before
proceeding with work.

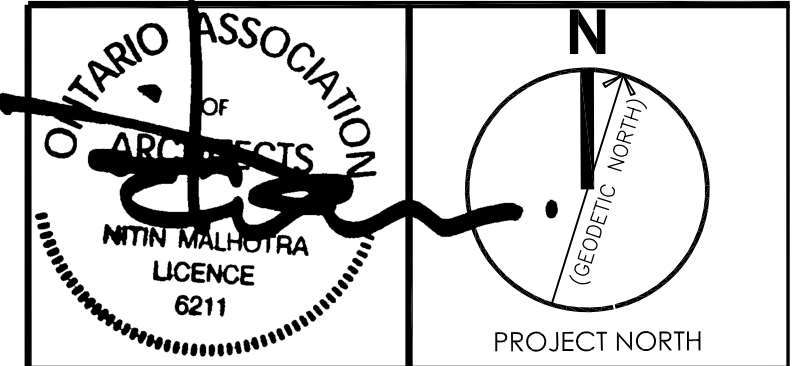
PROJECT:
**27 WINONA DR,
WHITCHURCH
STOUFFVILLE, ON
PLACE OF
WORSHIP-MOSQUE**

DRAWING TITLE:
**SITE PLAN
GROUND FLOOR
LEVEL**

DRAWN BY: JB	DATE: 12 DEC 2022
CHECKED BY: NM	SCALE: AS NOTED
PROJECT NO.:	DRAWING NO.:
22-71	A-1.0



n Architecture Inc
PRINCIPAL: NITIN MALHOTRA, ARCHITECT.
9120 Leslie Street, Suite-208
Richmond Hill, Ontario, L4B 3J9
T : 4 1 6 . 2 5 6 . 9 7 4 1
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13 MAR. 2025

13th MARCH 2025
ISSUED FOR ZBA
NOT FOR CONSTRUCTION

5.	13 MAR. 2025	ISSUED FOR ZBA	ZP
4.	06 MAR. 2025	ISSUED FOR COORDINATION	ZP
3.	05 NOV. 2024	ISSUED FOR PRE-CON #3	ZP
2.	24 APR. 2024	ISSUED FOR PRE-CON #2	JB
1.	13 JUN. 2023	ISSUED FOR PRE-CON	JB
No.	Date	Version	Dwn.

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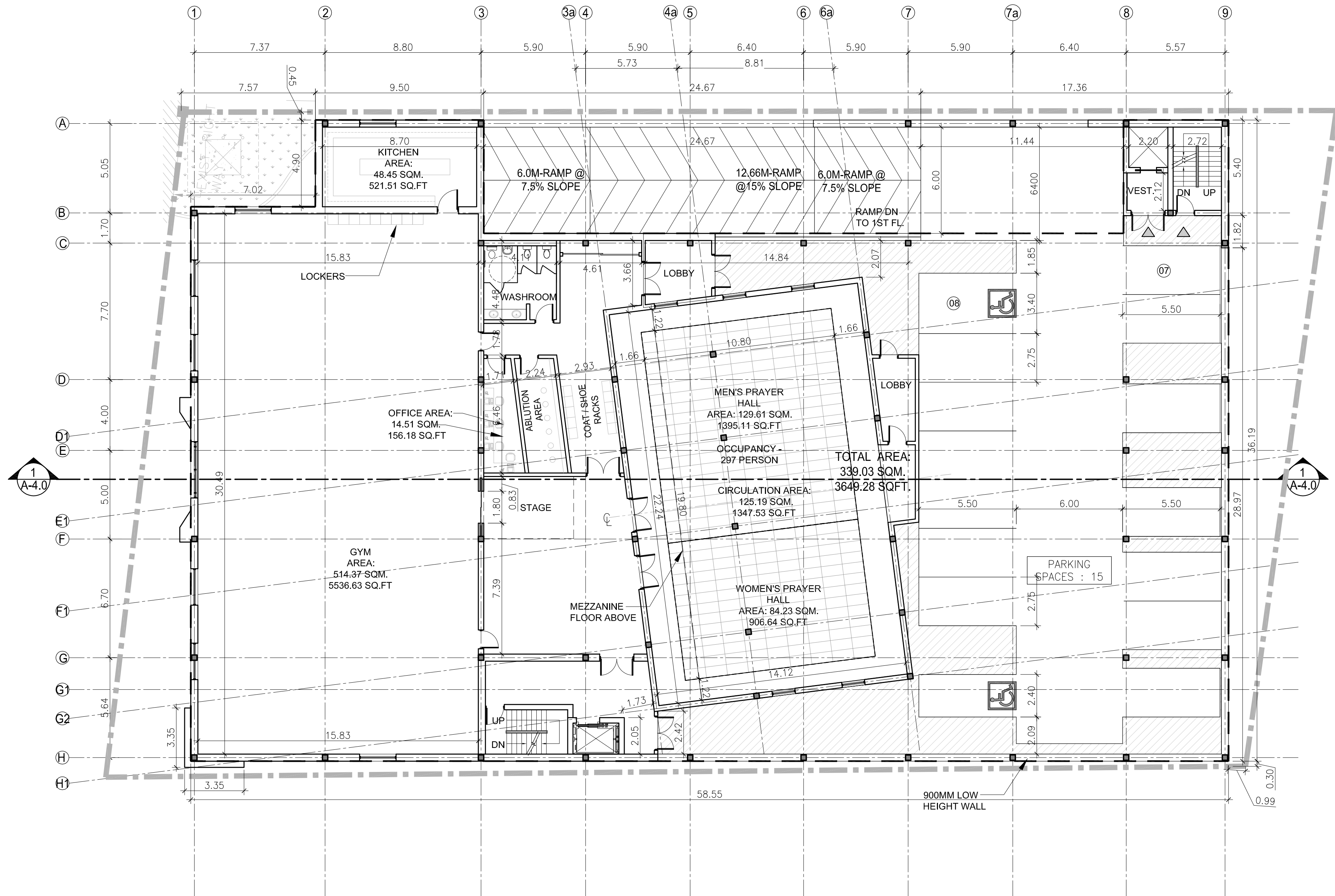
PROJECT:
**27 WINONA DR,
WHITCHURCH
STOUFFVILLE, ON
PLACE OF
WORSHIP-MOSQUE**

DRAWING TITLE:
**SECOND FLOOR
PLAN**

DRAWN BY: JB	DATE: 12 DEC 2022
CHECKED BY: NM	SCALE: AS NOTED
PROJECT NO.:	DRAWING NO.:

22-71

A-2.1



1 SECOND FLOOR PLAN
A-2.1 SCALE: 1:150

APPENDIX B

Outline of Darul-khair Mosque Current Functions & Activities

Outline typical weekly schedule of prayer and supportive community uses (operation and programming).

Darul Khair Center, Stouffville (DKC) current location is at Unit 36, at 86 Ringwood Drive and this is the only centre where Muslims who live in Stouffville and its vicinity visit to attend prayers and other programs. Once the new Mosque will be built at 27 Winona Drive, all these programs will be shifted there, and the same programs will continue to take place at the new Mosque.

The new Mosque will be built with the donation from the community and this Mosque in addition to having a prayer area, will also have space for all ages of our congregants, a class room for religious learning for kids, sitting area with chairs for congregants to meet and greet after the prayers, a separate room for our senior congregants, a Gym for our youth, a kitchen to warm and serve catered food, office for DKC, meeting room for management and Imam office.



PRAYERS





There are five daily prayers in Islam which are called **Fajr, Dhuhr, Asr, Maghrib, and Isha**. On Fridays, the Dhuhr prayer is also known as Jumma prayer with a sermon and this weekly prayer is attended by many more congregants compared to other daily prayers. To limit the number of attendees for Friday Jumma prayers, we have been conducting two separate Jumma prayers with a time gap of about 1 hrs currently and the same will continue at the new mosque location. Each prayer has specific timings as presented in the Table-1a below and photos of prayer are included to show the number of congregants attend each prayer in the Table-1b:

Table 1a: DKC Prayer Schedule

Prayer Name	Time	No. of Attendees
Fajr (Dawn)	6.45 AM	10-15
Dhuhr (Noon)	1.00 PM	10-15
Asr (Afternoon)	3.45 PM	10-15
Maghrib (Evening)	5.00 PM	20-25
Isha (Night)	7.30 PM	20-30
Jumma-First	12.30 PM	75-100
Jumma-Second	1.45 PM	75-100

Table-1b: Photos of prayers

	
Fajr (Dawn) prayer attended by 9 congregants	Dhuhr (Noon) prayer attended by 15 congregants

	
Asr (Afternoon) payer, about 10 congregants waiting for prayer to start	Maghrib (Evening) payer attended by 15 congregants
	
Isha (Night) payer attended by 26 congregants	Jumma prayer attended by 75 congregants

PROGRAMS









There are community programs happens at DKC and the list of such programs are presented in the Table-2a below and photos of such events are presented in the table 2 b:

Table 2a: DKC Programs Schedule

Program Name	Time	No. of Attendees
Evening Quran Classes (Monday to Thursday)	5.30 PM to 7.00 PM	20-25 students
Friday Quran Tafseer Session (Every Friday)	8.00 to 9.30 PM	30-50
Sunday Quran Classes (Every Sunday)	12.00 to 2.00 PM	15-20 students
DKC Management Biweekly Meetings (alternate Tuesdays)	8.00 to 9.30 PM	8-10
DKC Students Annual Award Ceremony- currently at rented facilities July of each year	1.00 to 4.00 PM	100-120
Games for Children and Youth currently at rented facilities (Saturdays / Sundays)	2.00 to 4.00 PM	30-40
*Ramadan-Iftaar/community Dinner-currently at rented facilities Every Saturday and Sunday in Ramadan	6 to 7.00 PM	80-100
*Ramdan Night Prayers 25 days in Ramadan	8.00 to 9.30 PM	80-100

*(Ramadan happens one month each year, in 2024 it was from mid march to mid April)		
Summer Camp (July & Aug)	10.00 to 2.30 PM	25-30
Community BBQ Once a year	During daytime	80-100

Table 2b: Photos of community programs

	
Evening Quran Classes	Weekly Friday Quran Tafseer Session
	
Management Meetings (bi-weekly) on every other Tuesday evening	DKC Students Annual Award Ceremony at Royal Canadian Legion Hall, attended by DKC students and their parents
	
DKC Badminton game at Stouffville Leisure Center	DKC Basketball game at Stouffville Leisure Center
	

Ramadan-Iftaar Dinner at Royal Canadian Legion Hall	Ramadan-Iftaar Dinner at Ballantrae Community Hall
 <p>A group of children are seated in a room with Islamic architectural features, holding up white certificates or diplomas. They are dressed in casual clothing, and the room has a warm, indoor lighting.</p>	 <p>A group of people are gathered outdoors on a grassy area under a large, open-sided pavilion. The scene is bright and sunny, with trees in the background, suggesting a community event like a BBQ.</p>
Summer Camp	Community BBQ at Memorial Park

APPENDIX C

Survey Data

- **Proxy Site 1 (Darul-Khair Center) 86 Ringwood Dr, Stouffville, ON**
- **Proxy Site 2 (Islamic Society of York Region) 1380 Stouffville Rd, Richmond Hill, ON**

Proxy Site 1 Parking Survey Data

Darul-Khair Center

86 Ringwood Dr, Whitchurch Stouffville, ON

**n Engineering Inc**

9120 Leslie Street, Suite-208, Richmond Hill, Ontario. L4B3J9 T: 416-256-9741

Proxy Site Parking Utilization Survey Sheet

Surveyor : Jorge Hernandez

Date : Friday February 7th 2025

Site Plan Location: 27 Winona Dr, Whitchurch Stouffville

Proxy Site Survey Location: 86 Ringwood Dr Stouffville, ON

Available Parking Spots			Data Collection Time	Count Interval
Reserved	Visitor:	Total:	From 11:00 AM to 7:45 PM	Every 15 minutes

Time	Occupied Parking Spots	Number of Cars on Unmarked Spaces	Notes
11:00 AM	1	0	
11:15 AM	0	0	
11:30 AM	0	0	
11:45 AM	1	0	
12:00 PM	0	0	
12:15 PM	7	0	
12:30 PM	8	6	
12:45 PM	9	4	
1:00 PM	0	11	
1:15 PM	4	31	
1:30 PM	0	0	
1:45 PM	4	28	
2:00 PM	8	30	
2:15 PM	7	1	
2:30 PM	0	0	
2:45 PM	0	0	
3:00 PM	0	0	
3:15 PM	0	0	
3:30 PM	0	0	
3:45 PM	1	0	
4:00 PM	2	0	
4:15 PM	6	0	
4:30 PM	4	0	
4:45 PM	1	0	
5:00 PM	1	0	
5:15 PM	1	0	
5:30 PM	2	0	
5:45 PM	6	0	
6:00 PM	3	0	

6:15 PM	2	0	
6:30 PM	2	0	
6:45 PM	1	0	
7:00 PM	1	0	
7:15 PM	1	0	
7:30 PM	14	0	
7:45 PM	22	0	

Notes:

Signed: 

Photos of Parked Vehicles From Darul-Khair Mosque During Friday Prayer





9120 Leslie Street, Suite-208, Richmond Hill, Ontario. L4B3J9 T: 416-256-9741

Project No.: n2271 Place of Worship

Surveyor: _____ **Date:** 07-Feb-2025

Project Location: 27 Winona Drive, Stouffville, ON

Proxy Site Location: 86 Ringwood Drive Stouffville ON

Proxy Site (Mosque) Trip Generation & Parking Survey

Prayer Time	Survey Time	Persons Entered			Parking Accumulation
		Driver	Passenger	Walk/bike/other	
Fajr Prayer (6:30 AM)	6:15 AM – 6:30 AM				0
	6:30 AM – 6:45 AM				0
1 st Juma Prayer 12:30 PM	12:15 PM – 12:30 PM	14	5	1	14
	12:30 PM-12:45 PM	16	7	1	30
	12:45 PM-1:00 PM	24	6	0	54
	1:00 PM-1:15 PM	8	0	2	62
	1:15 PM-1:30 PM	4	0	1	4
2 nd Juma Prayer 1:45 PM	1:30 PM-1:45 PM	27	4	1	31
	1:45 PM-2:00 PM	17	2		48
	2:00 PM-2:15 PM				0
Asr Prayer 4:00 PM	3:45 PM-4:00 PM				
	4:00 PM – 4:15 PM				
Maghrib Prayer 6:00 PM	5:45 PM – 6:00 PM				
	6:00 PM – 6:15 PM				
Isha Prayer 7:30 PM	7:15PM-7:30 PM				
	7:30 PM – 7:45 PM				

Surveyor Name:

Signature:



n Engineering Inc

9120 Leslie Street, Suite-208, Richmond Hill, Ontario. L4B3J9 T: 416-256-9741

Form No: NENG-01-25/01

Project No.: n2271 Place of Worship

Surveyor: KHURSHID ANWER / Abdul W Date: Feb 07, 2025

Project Location: 27 Winona Drive, Stouffville, ON

Proxy Site Location: 86 Ringwood Drive Stouffville ON

Proxy Site (Mosque) Trip Generation & Parking Survey

Prayer Time	Survey Time	Persons Entered			Person using washroom
		Driver	Passenger	Walk/bike/other	
Fajr Prayer (6:30 AM)	6:15 AM – 6:30 AM				
	6:30 AM – 6:45 AM				
1 st Juma Prayer 12:30 PM	12:15 PM – 12:30 PM	1,1,1,1,1,1,1 (7)	1,1,1 (3)	1,0 (1)	1 (1)
	12:30 PM- 12:45 PM	1,1,1,1,1,1,1 (7)	1,1,1 (3)		1 (1)
	12:45 PM- 1:00 PM	1,1,1,1,1,1,1,1,1,1,1,1,1 (13)	1,2 (3)		1,1,1,1 (4)
	1:00 PM- 1:15 PM	1,1,1,1,1,1,1,1 (8)		1,1 (2)	1 (1)
	1:15 PM- 1:30 PM	1,1,1,1 (4)		1 (1)	1 (1)



n Engineering Inc

9120 Leslie Street, Suite-208, Richmond Hill, Ontario. L4B3J9 T: 416-256-9741

Form No: NENG-01-25/01

Project No.: n2271 Place of Worship

Surveyor: Saira Rashid Date: Feb 7, 2025
Abdul Wahid

Project Location: 27 Winona Drive, Stouffville, ON

Proxy Site Location: 86 Ringwood Drive Stouffville ON

(4/12)

Proxy Site (Mosque) Trip Generation & Parking Survey

Prayer Time	Survey Time	Persons Entered			Person using washroom
		Driver	Passenger	Walk/bike/other <i>Ride</i>	
Fajr Prayer (6:30 AM)	6:15 AM – 6:30 AM				
	6:30 AM – 6:45 AM				
1 st Juma Prayer 12:30 PM	12:15 PM – 12:30 PM	1			
	12:30 PM- 12:45 PM		1, 1 2		
	12:45 PM- 1:00 PM	1 1	2 2		
	1:00 PM- 1:15 PM				
	1:15 PM- 1:30 PM				



n Engineering Inc

9120 Leslie Street, Suite-208, Richmond Hill, Ontario. L4B3J9 T: 416-256-9741

Form No: NENG-01-25/01

Project No.: n2271 Place of Worship

Surveyor: ALAMGIR MALIK Date: 07-Feb-2025
M. AMIR

Project Location: 27 Winona Drive, Stouffville, ON

Proxy Site Location: 86 Ringwood Drive Stouffville ON

Proxy Site (Mosque) Trip Generation & Parking Survey

Prayer Time	Survey Time	Persons Entered			Person using washroom
		Driver	Passenger	Walk/bike/other	
Fajr Prayer (6:30 AM)	6:15 AM – 6:30 AM				
	6:30 AM – 6:45 AM				
1 st Juma Prayer 12:30 PM	12:15 PM – 12:30 PM	4, 1, 1, 1, 1, 1 6	1, 1 2		0, 1, 1
	12:30 PM- 12:45 PM	1, 1, 1, 1, 1, 1, 1, 1 8	1, 1 2	1 1	
	12:45 PM- 1:00 PM	1, 1, 1, 1, 1, 1, 1, 1, 1, 1 10	1 1		1, 1 2
	1:00 PM- 1:15 PM				
	1:15 PM- 1:30 PM				

2 nd Juma Prayer 1:45 PM	1:30 PM- 1:45 PM				
	1:45 PM- 2:00 PM				
	2:00 PM- 2:15 PM				
Asr Prayer 4:00 PM	3:45 PM- 4:00 PM				
	4:00 PM – 4:15 PM				
Maghrib Prayer 6:00 PM	5:45 PM – 6:00 PM				
	6:00 PM – 6:15 PM				
Isha Prayer 7:30 PM	7:15PM- 7:30 PM				
	7:30 PM – 7:45 PM				

Surveyor Name: *Abdul Wahed*

Signature: *Handwritten Signature*

Q.1: Are you Driving for Prayer Today?

Q.2: How did you come to Mosque?

Q.3: Are you doing Wudhu in Mosque today?

9120 Leslie Street, Suite-208, Richmond Hill, Ontario. L4B3J9 T: 416-256-9741

Project No.: n2271 Place of Worship

Surveyor: _____ **Date:** 10-Feb-2025

Project Location: 27 Winona Drive, Stouffville, ON

Proxy Site Location: 86 Ringwood Drive Stouffville ON

Proxy Site (Mosque) Trip Generation & Parking Survey Summary Sheet

Prayer Time	Survey Time	Persons Entered			Parking Accumulation
		Driver	Passenger	Walk/bike/other	
Fajr Prayer (6:30 AM)	6:15 AM – 6:30 AM	13	-	-	13
	6:30 AM – 6:45 AM	-	-	-	0
Dhuhr 12:30 PM	12:45 PM-1:00 PM	-	-	-	0
	1:00 PM-1:15 PM	10	-	-	10
Asr Prayer 4:00 PM	3:45 PM-4:00 PM	-	-	-	0
	4:00 PM – 4:15 PM	3	-	-	3
Maghrib Prayer 6:00 PM	5:45 PM – 6:00 PM	13	-	-	13
	6:00 PM – 6:15 PM	-	-	-	0
Isha Prayer 7:30 PM	7:15PM-7:30 PM	-	-	-	0
	7:30 PM – 7:45 PM	17	7	-	17

Project No.: n2271 Place of Worship

Surveyor: Sibylant ulah Date: Feb 10, 2025

Project Location: 27 Winona Drive, Stouffville, ON

Proxy Site Location: 86 Ringwood Drive Stouffville ON

Proxy Site (Mosque) Trip Generation & Parking Survey

Prayer Time	Survey Time	Persons Entered			Person using washroom
		Driver	Passenger	Walk/bike/other	
Fajr Prayer (6:30 AM)	6:15 AM – 6:30 AM	A,,L,t,l,,l, l,l,l,l,t,l,t,l,			
	6:30 AM – 6:45 AM				
Zuhr 1st Juma Prayer 12:30 PM	12:15 PM – 12:30 PM				
	12:30 PM- 12:45 PM				
	12:45 PM- 1:00 PM				
	1:00 PM- 1:15 PM	L,L,l,l,l,l,l,l,l,l			
	1:15 PM- 1:30 PM				

9120 Leslie Street, Suite-208, Richmond Hill, Ontario. L4B3J9 T: 416-256-9741

Project No.: n2271 Place of Worship

Surveyor: _____ **Date:** 11-Feb-2025

Project Location: 27 Winona Drive, Stouffville, ON

Proxy Site Location: 86 Ringwood Drive Stouffville ON

Proxy Site (Mosque) Trip Generation & Parking Survey Summary Sheet

Prayer Time	Survey Time	Persons Entered			Parking Accumulation
		Driver	Passenger	Walk/bike/other	
Fajr Prayer (6:30 AM)	6:15 AM – 6:30 AM	12	-	-	12
	6:30 AM – 6:45 AM	-	-	-	0
Dhuhr 12:30 PM	12:45 PM-1:00 PM	-	-	-	0
	1:00 PM-1:15 PM	10	-	-	10
Asr Prayer 4:00 PM	3:45 PM-4:00 PM	-	-	-	0
	4:00 PM – 4:15 PM	5	-	-	5
Maghrib Prayer 6:00 PM	5:45 PM – 6:00 PM	11	-	-	11
	6:00 PM – 6:15 PM	-	-	-	0
Isha Prayer 7:30 PM	7:15PM-7:30 PM	-	-	-	0
	7:30 PM – 7:45 PM	-	-	-	0



n Engineering Inc

9120 Leslie Street, Suite-208, Richmond Hill, Ontario. L4B3J9 T: 416-256-9741

Project No.: n2271 Place of Worship

Surveyor: _____

Date: FEB. 11, 2025

Project Location: 27 Winona Drive, Stouffville, ON

Proxy Site Location: 86 Ringwood Drive Stouffville ON

Proxy Site (Mosque) Trip Generation & Parking Survey

Prayer Time	Survey Time	Persons Entered			Person using washroom
		Driver	Passenger	Walk/bike/other	
Fajr Prayer (6:30 AM)	6:15 AM – 6:30 AM				
	6:30 AM – 6:45 AM		1,		
Zuhr 1st Juma Prayer 12:30 PM	12:15 PM – 12:30 PM				
	12:30 PM- 12:45 PM				
	12:45 PM- 1:00 PM				
	1:00 PM- 1:15 PM				1,
	1:15 PM- 1:30 PM				

2 nd Juma Prayer 1:45 PM	1:30 PM- 1:45 PM				
	1:45 PM- 2:00 PM				
	2:00 PM- 2:15 PM				
Asr Prayer 4:00 PM	3:45 PM- 4:00 PM				
	4:00 PM – 4:15 PM	٤,١,١,١,١,		٤,	
Maghrib Prayer 6:00 PM	5:45 PM – 6:00 PM	٥,١,١,١,١,١, ١,١,١,١,١,	٤,١,١,١,		
	6:00 PM – 6:15 PM				
Isha Prayer 7:30 PM	7:15PM- 7:30 PM				
	7:30 PM – 7:45 PM				

Surveyor Name:

Signature:

- Q.1: Are you Driving for Prayer Today?
Q.2: How did you come to Mosque?
Q.3: Are you doing Wudhu in Mosque today?

Proxy Site 2 Parking Survey Data

York Region Islamic Society Mosque
1380 Stouffville Rd, Richmond Hill, ON

**n Engineering Inc**

9120 Leslie Street, Suite-208, Richmond Hill, Ontario. L4B3J9 T: 416-256-9741

Proxy Site Parking Utilization Survey Sheet

Surveyor : Jorge Hernandez

Date : Friday February 14th 2025

Site Plan Location: 27 Winona Dr, Whitchurch Stouffville

Proxy Site Survey Location: 1380 Stouffville Rd, Richmond Hill

Available Parking Spots			Data Collection Time	Count Interval
Reserved	Visitor:	Total:	From 11:00 AM to 7:45 PM	Every 15 minutes

Time	Occupied Parking Spots	Number of Cars on Unmarked Spaces	Notes
11:00 AM	1	0	
11:15 AM	4	0	
11:30 AM	4	0	
11:45 AM	4	0	
12:00 PM	5	0	
12:15 PM	5	0	
12:30 PM	9	0	
12:45 PM	22	0	
1:00 PM	60	2	
1:15 PM	113	18	
1:30 PM	173	48	
1:45 PM	108	32	
2:00 PM	24	2	
2:15 PM	6	0	
2:30 PM	2	0	
2:45 PM	1	0	
3:00 PM	1	0	
3:15 PM	0	0	
3:30 PM	0	0	
3:45 PM	0	0	
4:00 PM	0	0	
4:15 PM	0	0	
4:30 PM	0	0	
4:45 PM	0	0	
5:00 PM	0	0	
5:15 PM	0	0	
5:30 PM	0	0	
5:45 PM	0	0	
6:00 PM	0	0	

6:15 PM	0	0	
6:30 PM	1	0	
6:45 PM	0	0	
7:00 PM	0	0	
7:15 PM	0	0	
7:30 PM	0	0	
7:45 PM	0	0	

Notes:

Signed:



APPENDIX D

Calculation & Data Sheets

Parking Survey Data at Proxy Site 1 (Darulkhair Center) Friday Feb 7 2025						
Prayer	Time	Total Drivers Entered Mosque (Questionnaire Data)		Parking Utilization Survey	Combined Data	Demand Rate/100 m2 GFA
		Drivers	Parking Accumulation			
	11:00 PM - 11 15 PM	-	-	1	1	0.49
	11:15 AM -11:30 AM	-	-	0	0	0.00
	11:30 PM - 11 45 PM	-	-	0	0	0.00
	11:45 PM -12:00 PM	-	-	1	1	0.49
	12:00 PM - 12 15 PM	-	-	7	7	3.43
Friday Prayer	12:15 PM -12:30 PM	14	14	14	14	6.86
	12:30 PM - 12 45 PM	16	30	13	30	14.71
	12:45 PM-1:00 PM	24	54	11	54	26.47
	1:00 PM - 1:15 PM	8	62	35	62	30.39
	1:15 PM - 1:30 PM	4	4	0	4	1.96
	1:30 PM- 1:45 PM	27	31	32	31	15.20
	1:45 PM - 2:00 PM	17	48	38	48	23.53
	2:00 PM - 2:15 PM		0	8	8	3.92
	2:15 PM - 2:30 PM	-	-	0	0	0.00
	2:30 PM - 2:45 PM	-	-	0	0	0.00
	2:45 PM - 3:00 PM	-	-	0	0	0.00
	3:00 PM - 3:15 PM	-	-	0	0	0.00
	3:15 PM - 3:30 PM	-	-	0	0	0.00
	3:30 PM - 3:45 PM	-	-	1	1	0.49
Asr	3:45 PM - 4:00 PM	-	-	2	2	0.98
	4:00 PM - 4:15 PM	-	-	6	6	2.94
	4:15 PM - 4:30 PM	-	-	4	4	1.96
	4:30 PM - 4:45 PM	-	-	1	1	0.49
	4:45 PM - 5:00 PM	-	-	1	1	0.49
	5:00 PM - 5:15 PM	-	-	1	1	0.49
Maghrib	5:15 PM - 5:30 PM	-	-	2	2	0.98
	5:30 PM - 5:45 PM	-	-	6	6	2.94
	5:45 PM- 6:00 PM	-	-	3	3	1.47
	6:00 PM - 6:15 PM	-	-	2	2	0.98
	6:15 PM - 6:30 PM	-	-	2	2	0.98
	6:30 PM - 6:45 PM	-	-	1	1	0.49
	6:45 PM - 7:00 PM	-	-	1	1	0.49
Isha	7:00 PM - 7:15 PM	-	-	1	1	0.49
	7:15 PM - 7:30 PM	-	-	14	14	6.86
	7:30 PM - 7:45 PM			22	22	10.78
	7:45 PM - 8:00 PM	0		0	0	0.00
Max		27	62	38	62	30.39

Legend: colored cell shows Data Utilized in the analysis



5 Times Prayer Survey Data			
Prayer	Time	10-Feb	11-Feb
Faj Prayer	6:00 AM - 6:15 AM	-	-
	6:15 AM - 6:30 AM	13	12
	6:30 AM - 6:45 AM	-	-
Dhuhr Prayer	12:45 PM-1:00 PM		-
	1:00 PM - 1:15 PM	10	10
	1:15 PM - 1:30 PM	-	-
Asr Prayer	3:45 PM - 4:00 PM	-	-
	4:00 PM - 4:15 PM	3	5
Maghrib	5:30 PM - 5:45 PM	-	-
	5:45 PM- 6:00 PM	13	11
	6:00 PM - 6:15 PM	-	-
Isha	7:15 PM - 7:30 PM	-	-
	7:30 PM - 7:45 PM	17	-
	7:45 PM - 8:00 PM	-	-

Parking Survey Data at Proxy Site 2 (ISYR) Friday Feb 14 2025			
Time	Occupied Parking Spots	Utilization Rate/ Prayer Area	Utilization / GFA
11:00 PM - 11 15 PM	4	0.67	0.32
11:15 AM -11:30 AM	4	0.67	0.32
11:30 PM - 11 45 PM	4	0.67	0.32
11:45 PM -12:00 PM	5	0.83	0.40
12:00 PM - 12 15 PM	5	0.83	0.40
12:15 PM -12:30 PM	9	1.50	0.71
12:30 PM - 12 45 PM	22	3.67	1.74
12:45 PM-1:00 PM	62	10.33	4.91
1:00 PM - 1:15 PM	131	21.83	10.37
1:15 PM - 1:30 PM	221	36.83	17.50
1:30 PM- 1:45 PM	140	23.33	11.08
1:45 PM - 2:00 PM	26	4.33	2.06
2:00 PM - 2:15 PM	6	1.00	0.48
2:15 PM - 2:30 PM	2	0.33	0.16
2:30 PM - 2:45 PM	1	0.17	0.08
2:45 PM - 3:00 PM	1	0.17	0.08
3:00 PM - 3:15 PM	0	-	-
3:15 PM - 3:30 PM	0	-	-
3:30 PM - 3:45 PM	0	-	-
3:45 PM - 4:00 PM	0	-	-
4:00 PM - 4:15 PM	0	-	-
4:15 PM - 4:30 PM	0	-	-
4:30 PM - 4:45 PM	0	-	-
4:45 PM - 5:00 PM	0	-	-
5:00 PM - 5:15 PM	0	-	-
5:15 PM - 5:30 PM	0	-	-
5:30 PM - 5:45 PM	0	-	-
5:45 PM- 6:00 PM	0	-	-
6:00 PM - 6:15 PM	0	-	-
6:15 PM - 6:30 PM	0	-	-
6:30 PM - 6:45 PM	0	-	-
6:45 PM - 7:00 PM	0	-	-
7:00 PM - 7:15 PM	0	-	-
7:15 PM - 7:30 PM	0	-	-
7:30 PM - 7:45 PM	0	-	-
7:45 PM - 8:00 PM	0	-	-

95th % Values of Parking Utilization Rates		
No	Proxy Site 1	Proxy Site 2
1	0.49	0.67
2	0.49	0.67
3	0.49	0.67
4	0.49	0.83
5	0.49	0.83
6	0.49	1.50
7	0.49	3.67
8	0.49	10.33
9	0.49	21.83
10	0.98	36.83
11	0.98	23.33
12	0.98	4.33
13	0.98	1.00
14	1.47	0.33
15	1.96	0.17
16	1.96	0.17
17	2.94	-
18	2.94	-
19	3.43	-
20	3.92	-
21	6.86	-
22	6.86	-
23	10.78	-
24	14.71	-
25	15.20	-
26	23.53	-
27	26.47	-
28	30.39	-
95th %	25.44	26.71

APPENDIX E

Parking Utilization 95th Percentile Analysis

Effective Parking Utilization, % of Darul-Khair Mosque Over a Period of Time (Cumulative Percentile Analysis)

Time	Parking Utilization Values in Ascending Order (Smallest to Largest)	Ascending Order Numbers	Relative % Order Number	cumulative % of Order Number
6:00	0	1	0.001	0%
6:30	0	2	0.001	0%
6:45	0	3	0.002	0%
7:00	0	4	0.003	0.6%
7:15	0	5	0.003	0.9%
7:30	0	6	0.004	1.3%
7:45	0	7	0.004	1.8%
8:00	0	8	0.005	2.3%
8:15	0	9	0.006	2.8%
8:30	0	10	0.006	3.4%
8:45	0	11	0.007	4.1%
9:00	0	12	0.008	5%
9:15	0	13	0.008	6%
9:30	0	14	0.009	7%
9:45	0	15	0.009	8%
10:00	0	16	0.010	9%
10:15	0	17	0.011	10%
10:30	0	18	0.011	11%
10:45	0	19	0.012	12%
11:15	0	20	0.013	13%
11:30	0	21	0.013	14%
14:15	0	22	0.014	16%
14:30	0	23	0.014	17%
14:45	0	24	0.015	19%
15:00	0	25	0.016	20%
15:15	0	26	0.016	22%
19:45	0	27	0.017	24%
11:00	1	28	0.018	25%
11:45	1	29	0.018	27%
15:30	1	30	0.019	29%
16:30	1	31	0.019	31%
16:45	1	32	0.020	33%
17:00	1	33	0.021	35%
18:30	1	34	0.021	37%
18:45	1	35	0.022	39%
19:00	1	36	0.023	42%
15:45	2	37	0.023	44%

17:15	2	38	0.024	46%
18:00	2	39	0.024	49%
18:15	2	40	0.025	51%
17:45	3	41	0.026	54%
13:15	4	42	0.026	57%
16:15	4	43	0.027	59%
16:00	6	44	0.028	62%
17:30	6	45	0.028	65%
12:00	7	46	0.029	68%
14:00	8	47	0.029	71%
6:15	13	48	0.030	74%
12:15	14	49	0.031	77%
19:15	14	50	0.031	80%
19:30	22	51	0.032	83%
12:30	30	52	0.033	86%
13:30	31	53	0.033	90%
13:45	48	54	0.034	93%
12:45	54	55	0.034	96%
13:00	62	56	0.035	100%
Sum of Order Numbers		1596	Each cell/1596	
X Axis	Y Axis Data			

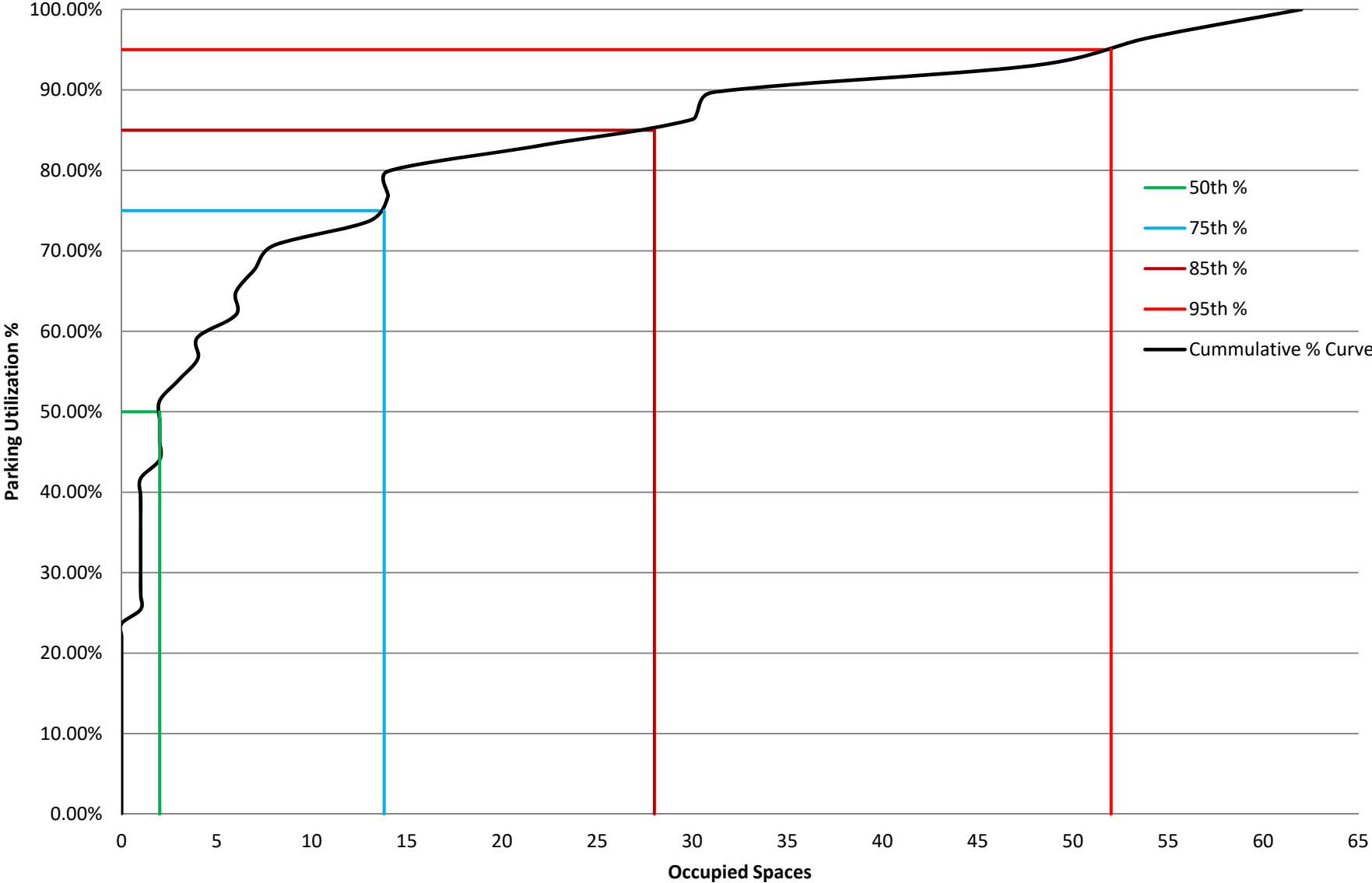
- 50th % Parking Utilization = 2 spaces occupied
- 75th % Parking Utilization = 14 Spaces Occupied
- 85th % Parking Utilization = 28 Spaces Occupied
- 95th % Parking Utilization = 52 Spaces Occupied

Notes about Columns:

- **Time:** Each reading is counted in 15 minutes slot from 6:00 AM to 8:00 PM which is effective time of parking usage for the prayer times. The data is organized in ascending order.
- **Parking Utilization Values in Ascending Order (Smallest to Largest):** The parking data has been organized in ascending order (0 occupied spaces have also been counted as it shows no demand)
- **Ascending Order numbers:** The parking data has been organized in ascending order
- **Relative % Parking Utilization:** the ascending numbers were changed into relative % with respect to sum of the order numbers
- **cumulative % of Parking Utilization: the cumulative percentile is sum of the values from beginning to the end**

The data has been plotted in terms of Occupied Parking Spaces vs Cumulative %

Parking Utilization Cumulative Percentile Curve



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