# Stantec Consulting Ltd. 300W-675 Cochrane Drive, Markham ON L3R 0B8



May 16, 2023 File: 160500051

Attention: Moheb Michael 2188 Robinwood Court, Mississauga, ON M5M 5B9

Dear Mr. Michael,

Reference: St. Mark and St. Demiana Church Parking Utilization Study

#### 1 INTRODUCTION

Stantec has been retained to conduct a parking utilization study for the St. Mark and St. Demiana Church development rezoning application. The proposed Church and Community Services Center will be located on Ninth Line, south of the intersection of Ninth Line and Burnhamthorpe Road in the City of Mississauga. The development will comprise of a 11,592 m² church in phase 1 and a 9,589 m² Community Services building in phase 2 and proposes the inclusion of 233 dedicated parking spaces for the community services building, and 360 parking spaces for the church. It has to be noted that a total of 101 parking spaces (63 in Phase 1 and 38 In Phase 2) are subject to a shared parking agreement with the MTO as they fall within the MTO's Highway 403 14-metre setback. The proposed site plan and the approximate location of the site is illustrated in **Figure 1** and **Figure 2**, respectively.

This study assesses the expected parking demand based on proxy surveys collected at similar land uses in accordance with the City of Mississauga *Terms of Reference Parking Utilization Studies for Site Specific Applications* (Terms of Reference) to identify whether the proposed parking will satisfy the expected parking demand.

A Terms of Reference (ToR), including the location of proxy survey sites to be surveyed, was previously submitted by Stantec and was approved by the City staff in 2019 before undertaking the study. An earlier version of this memorandum was submitted in May 2020. This version of the report documents the changes applied in the updated site plan.



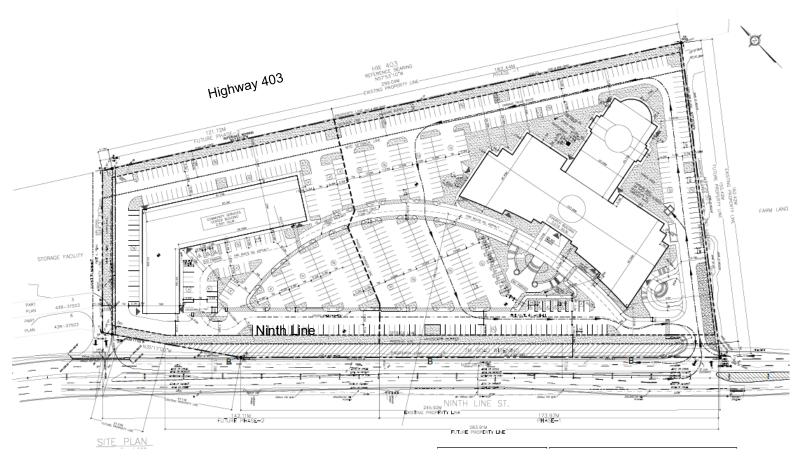


Figure 1 - Proposed Site Plan





Figure 2 - Site Location

### 2 SITE CHARACTERISTICS

The proposed development is located on Ninth Line, south of the intersection of Ninth Line and Burnhamthorpe Road in the City of Mississauga. The site is bounded by Highway 403 to the east, a self-storage facility to the north, greenfield to the south, and Ninth Line to the west. The existing site is largely a greenfield and stores some heavy vehicles and equipment on the north-eastern edge of the site. Transit service is currently not available near the subject development.

One access is proposed onto Ninth Line at the south end of the property. The left outbound turn at this access will be restricted.

The site is currently zoned as E2-93 as illustrated in the City of Mississauga Zoning Map 59. As per Part 8 – Employment Zones of the City of Mississauga Zoning By-law, the E2-93 zone shall only be used for active recreation use and cemetery use. A rezoning application is being submitted to the City to allow the Church and Community Services uses on-site.

The following **Table 1** summarizes the proposed on-site uses and the corresponding required number of parking spaces per use, based on the City of Mississauga's *Zoning By-law Part 3: Parking, Loading and Stacking Lane Regulations*.

Table 1 – Mississauga Zoning Bylaw Parking Requirement Calculation

Land Use	Size (m <sup>2</sup> )	By-Law Rate	Required	Provided
Church Building (Phase 1)				
Corridors, Lobbies	1,586	10/100	159	
Maintenance & Instruments storage	508	-	-	
Worship Area	1,746	See Note*	210	
Sunday Classes Area	1,678	4.5/100	76	
Multi-purpose Room	432			
Washrooms & Change Rooms	859	-	-	
M & E	256	-	-	
Office	477	3.0/100	14	
Lounges & Lunchroom	439	-	-	
Conference Hall	1,049			
Gym	959	4.5/100	43	
Fitness Area	754	-	-	
Miscellaneous Storage	429	-	-	
Stairwells / Elevators	420	-	-	
Sub-Total	11,592	-	501	360
Community Services Center Building (Phase 2)				
Corridors, Lobbies	1,118	3.0/100	34	
Fitness Room	550	-	-	
Washrooms	900	-	-	
Storage	1,370	-	-	
M & E	101	-	-	
Office Area	5,190	3.0/100	156	
Stairwells / Elevators	360	-	-	
Sub-Total	9,589	-	189	233
Total	21,181		690**	593**
* NOTE: Based on 1.0 parking space/4.5 seats (9	)46 seats, ba	sed on PEW leng	gth)	
** Including 15 accessible.				

As per the City of Mississauga parking by-laws, the site will require 501 parking spaces for phase 1 (i.e. the church) and 189 parking spaces for phase 2 (i.e. the Community Services uses), resulting in a total of 690 required spaces for full build-out phase. The development proposes to provide 360 parking spaces for Phase 1 including 297 dedicated parking spaces and an additional 63 parking spaces within the MTO set back and a total of 593 parking spaces for full-build-out phase, which consists of 492 dedicated parking spaces and an additional 101 parking spaces that are subject to a shared parking agreement with the MTO

as they fall within the MTO's Highway 403 14-metre setback. A deficiency of 97 parking spaces results from proposed parking supply for full build-out of the site relative to the City's by-law requirements.

## 3 SURVEY METHODOLOGY

Two proxy parking demand survey locations were identified in consultation with the City of Mississauga considering their similarities to the subject site:

- Church of Archangel Michael & St. Tekla (12091 Hurontario Street, Brampton); and
- St. Peter & St. Paul (1177 Invicta Drive, Oakville).

The parking demand surveys were conducted in 30-minute increments at both locations on Sunday, November 3<sup>rd</sup>, 2019 and Sunday, November 10<sup>th</sup>, 2019 from 7:30 a.m. to 1:00 p.m. The weather during the surveyed periods on both days was observed to be cloudy. Both proxy sites hold liturgies from 8:00 a.m. to 11:00 a.m. on Sundays and typically experience peak parking demand between 9:30 a.m. and 11:00 a.m. The data collection period was extended to 1:00 p.m. to ensure that the peak parking demand was captured. Vehicles parked illegally on-site (outside of delineated parking spaces) were recorded along with overflow parking extending onto the side streets.

The on-site uses, GFA, maximum church capacity, and parking supply for the subject site and the proxy sites is summarized in **Table 2**. The parking survey results are attached for reference.

Table	2 -	Suhi	oct 8	Provv	Sita	<b>Statistics</b>
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Site	Land Use	GFA (m <sup>2</sup> )	Church Capacity	Parking		
	Church	11,592				
St. Mark & St. Demiana	Community Services	9,589	800 people	593 spaces		
	Total	21,181				
Charab of Arabanasi	Church Area	3,308				
Church of Archangel Michael & St. Tekla	Activity Area	2,965	612 people	252 spaces		
WICHAEL & St. TEKIA	Total	6,273				
	Church & Accessories	2,312				
St. Peter & St. Paul	Activity Area	2,008	860 people	188 spaces		
	Total	4,320				

#### 4 PARKING SURVEY RESULTS

In accordance with the City of Mississauga Terms of Reference, a detailed summary of the parking survey results is attached which includes the following data by time interval:

- Days of the surveys;
- Total on-site parking spaces (parking supply);
- Total GFA;
- Observed parking;

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Reference: St. Mark and St. Demiana Church Parking Utilization Study

- Percentage of total parking capacity; and
- Observed parking demand ratio per 100 m<sup>2</sup> of occupied GFA.

Both proxy locations exhibited peak parking demand during the period of 10:30 a.m. to 11:00 a.m.; the results for both locations and days collected are summarized in **Figure 3**, **Figure 4**, and **Table 3**. A utilization above 100% was observed at the church of St. Peter and St. Paul due to vehicles parking along the adjacent street (Invicta Drive) however, it is noted that the church is located at the end of Invicta Drive in a built-out commercial area which does not experience through traffic and may not have significant business activity during the peak church activity. In contrast, vehicles would be deterred from parking along Ninth Line adjacent to the proposed development due to the significant through traffic along the roadway and high vehicular speeds.

It also shall be noted that while the capacity of the church of St. Peter and St. Paul (860 people) is +7.5% higher than the capacity of the subject site (800 people), provided parking spaces at this church (188 spaces) are considerably lower than the subject site provided parking at Phase 1 (360 spaces, +91.5% higher) and full build-out (593 spaces, +215.4% higher).

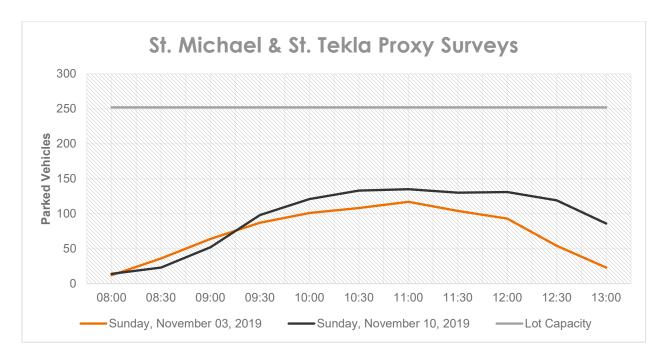


Figure 3 - St. Michael & St. Tekla Proxy Surveys

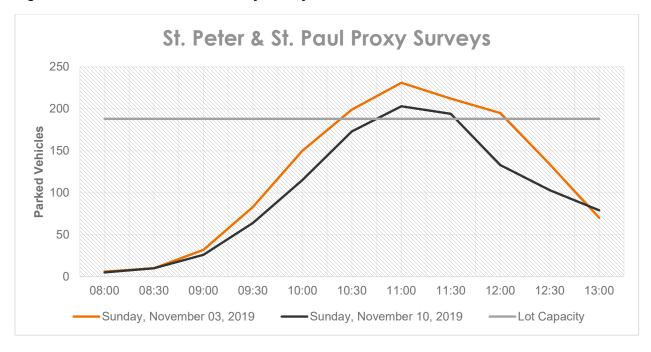


Figure 4 - St. Peter & St. Paul Proxy Surveys

Reference:

St. Mark and St. Demiana Church Parking Utilization Study

Table 3 - Parking Survey Results Peak Utilization (10:30 a.m. to 11:00 a.m.)

Site Location	Date	Total Cars Parked	Capacity Utilized	Ratio (spaces / 100 m <sup>2</sup> )
St. Michael & St. Tekla	November 3, 2019	117	46%	1.87
St. Michael & St. Tekla	November 10, 2019	135	54%	2.15
St. Peter & St. Paul	November 3, 2019	231	123%	5.35
St. Peter & St. Paul	November 10, 2019	203	108%	4.70

#### 5 ANALYSIS

With a conservative approach applying the highest parking demand ratio from the St. Michael & St. Tekla (2.15 spaces per 100 m<sup>2</sup>) and the St. Peter & St. Paul (5.35 spaces per 100 m<sup>2</sup>) sites, the proposed St. Mark and St. Demiana church would require between 249 and 620 parking spaces, respectively, with a GFA of 11,592 m<sup>2</sup> (excluding the Community Services Center building).

Applying the highest parking demand ratio from the St. Michael and St. Tekla (2.15 spaces per 100 m²) and the St. Peter and St. Paul (5.35 spaces per 100 m²) sites, results in a wide range for estimated parking supply demand between 249 and 620 parking spaces at St. Mark and St. Demiana, respectively, with a GFA of 11,592 m² (excluding the Community Services Center building). Using this approach is not recommended due to the wide range observed for parking rate per GFA. A review of the church capacity at St. Peter and St. Paul (860 people) and its total GFA (4,320 m²) shows that while its capacity is 7.5% higher than the subject site, its GFA is only at 20% of the subject site that results in calculating a very high parking demand to area ratio. Considering this, utilizing the mass capacity to determine the parking rate is recommended.

As shown in **Table 2**, the St. Peter and St. Paul church provides a very high mass capacity relative to its overall GFA and number of parking spaces available on-site, resulting in parking demand rates that are not expected to translate directly for the proposed development. The St. Peter and St. Paul church provides a higher mass capacity with fewer available parking spaces than the St. Michael and St. Tekla church and, as shown in **Table 3**, experiences parking demand that exceeds the available supply.

As shown in **Table 1**, the subject development will have many community uses within the church and the Community Services Center building, however, these uses will not coincide with the use of the mass. The peak demand on-site is expected to occur during holiday seasons when mass is attended the most, at which time the other uses within the church will not be in operation. The office spaces in the Community Services Center building will be used for counselling, mentoring, community services like food banks, teaching, etc. and will operate during weekdays only such that it will not be in operation at the same time as the church mass. The parking around the Community Services Center building will be used as additional parking to accommodate the church's seasonal peaks.

Using the mass capacity to determine the parking rate (spaces per person) results in a maximum rate of 0.22 spaces per person for the St. Michael & St. Tekla church and 0.27 spaces per person for the St. Peter & St. Paul church. Applying the more conservative rate of 0.27 spaces per person to the proposed development (800 maximum mass capacity) results in a maximum parking demand of 216 which is considerably lower than the parking spaces provided in Phase 1 for the Church. A total of 360 spaces (including the additional 63 parking spaces within the MTO setback) will be provided in Phase 1 that is 60% higher than this estimated parking requirement. The parking demand rates derived from the mass capacity

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Reference: St. Mark and St. Demiana Church Parking Utilization Study

are much closer to each other than those derived from the building GFA and are expected to more accurately forecast the demand of the subject development.

Additionally, using the data from the Institute of Transportation Engineers (ITE) *Parking Generation Manual,* 5<sup>th</sup> *Edition* (LU 560 Church), results in an average Sunday parking demand of 109 parking spaces based on the GFA independent variable, and 176 parking spaces based on the seats independent variable, both of which are significantly below the proposed parking supply on-site in Phase 1 and full build-out. As such, it is expected that the initial proposed parking supply of 360 spaces in Phase 1 and 593 spaces in full build-out will be sufficient to accommodate the parking demand of the proposed development.

### **6 TRANSPORTATION DEMAND MANAGEMENT**

The location of the subject development is not conducive to the implementation of transportation demand management strategies due to the isolated location bounded by Highway 403 and the lack of transit service to the site. Therefore, it is assumed that trips to and from the site will primarily be accommodated by personal automobiles.

It is worth considering promoting carpooling for both the Community Services Center building and the church to improve efficiency and reduce emissions.

#### 7 CONCLUSIONS AND RECOMMENDATIONS

The conclusions of the study are as follows:

- The City of Mississauga Zoning By-law parking rates result in a requirement of 501 spaces for the Church building and 189 spaces for the Community Services Center building, totaling 690 spaces. The development proposes to provide 360 parking spaces for Phase 1 including 297 dedicated parking spaces and an additional 63 parking spaces within the MTO set back and a total of 593 parking spaces for full-build-out phase, which consists of 492 dedicated parking spaces and an additional 101 parking spaces that are subject to a shared parking agreement with the MTO as they fall within the MTO's Highway 403 14-metre setback.. A deficiency of 97 parking spaces exists between the proposed parking supply for full build-out and the City of Mississauga's by-law requirements.
- Both proxy sites evaluated exhibited peak parking demand during the period of 10:30 a.m. to 11:00
   a.m. A utilization above 100% was observed at the church of St. Peter and St. Paul as a result of
   the limited parking and high mass capacity.
- Applying the highest parking demand ratio from the St. Michael and St. Tekla (2.15 spaces per 100 m²) and the St. Peter and St. Paul (5.35 spaces per 100 m²) sites, results in a wide range for estimated parking supply demand between 249 and 620 parking spaces at St. Mark and St. Demiana, respectively, with a GFA of 11,592 m² (excluding the Community Services Center building). Using this approach is not recommended due to the wide range observed for parking rate per GFA. A review of the church capacity at St. Peter and St. Paul (860 people) and its total GFA (4,320 m²) shows that while its capacity is 7.5% higher than the subject site, its GFA is only at 20% of the subject site that results in calculating a very high parking demand to area ratio. Considering this, utilizing the mass capacity to determine the parking rate is recommended.
- The peak demand on-site is expected to occur during holiday seasons when mass is attended the
  most, at which time the other uses within the church will not be in operation. The office spaces in
  the Community Services Center building will be used for counselling, mentoring, teaching, etc. and
  will operate during weekdays only such that it will not be in operation at the same time as the
  church mass.
- Using the mass capacity to determine the parking rate (spaces per person) results in a maximum rate of 0.22 spaces per person for the St. Michael and St. Tekla church and 0.27 spaces per person for the St. Peter and St. Paul church. Applying the more conservative rate of 0.27 spaces per person to the proposed development (800 maximum mass capacity) results in a maximum parking demand of 216.
- Using the data from the Institute of Transportation Engineers (ITE) Parking Generation Manual, 5<sup>th</sup>
   Edition (LU 560 Church) results in an average Sunday parking demand of 109 parking spaces
   based on the GFA variable, and 176 parking spaces based on the seats variable, both of which are
   significantly below the proposed parking supply on-site.

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Reference: St. Mark and St. Demiana Church Parking Utilization Study

- It is expected that the proposed opening day parking supply of 360 spaces will be sufficient to accommodate the parking demand of the proposed development based on the estimated parking demand of 216 spaces during mass. The full build-out parking supply of 593 parking spaces will also be sufficient for the site as provided parking spaces for Phase 2 are more than required parking supply for this building. We note that the subject development will have many community uses within the church and the Community Services Center building, however, operations time for these uses and their peak demand for parking will not coincide during hours when mass will occur. The peak demand on-site is expected to occur during holiday seasons when mass is attended the most, at which time the other uses within the church will not be in operation. The office spaces in the Community Services Center building will be used for counselling, mentoring, community services like food banks, teaching, etc. and will operate during weekdays only such that it will not be in operation at the same time as the church mass. The parking around the Community Services Center building will be used as additional parking to accommodate the church's seasonal peaks and vice-versa.
- It is recommended to monitor the parking utilization throughout the peak seasons to ensure that adequate parking is provided.

Regards,

Stantec Consulting Ltd.

Arash Mirhoseini M.Sc., P.Eng., PMP.

Senior Associate, Transportation Planning and Traffic Engineering

Phone: 416-722-8270

Arash.mirhoseini@Stantec.com

Attachment: Parking Survey Results Analysis Summary, Site Plan

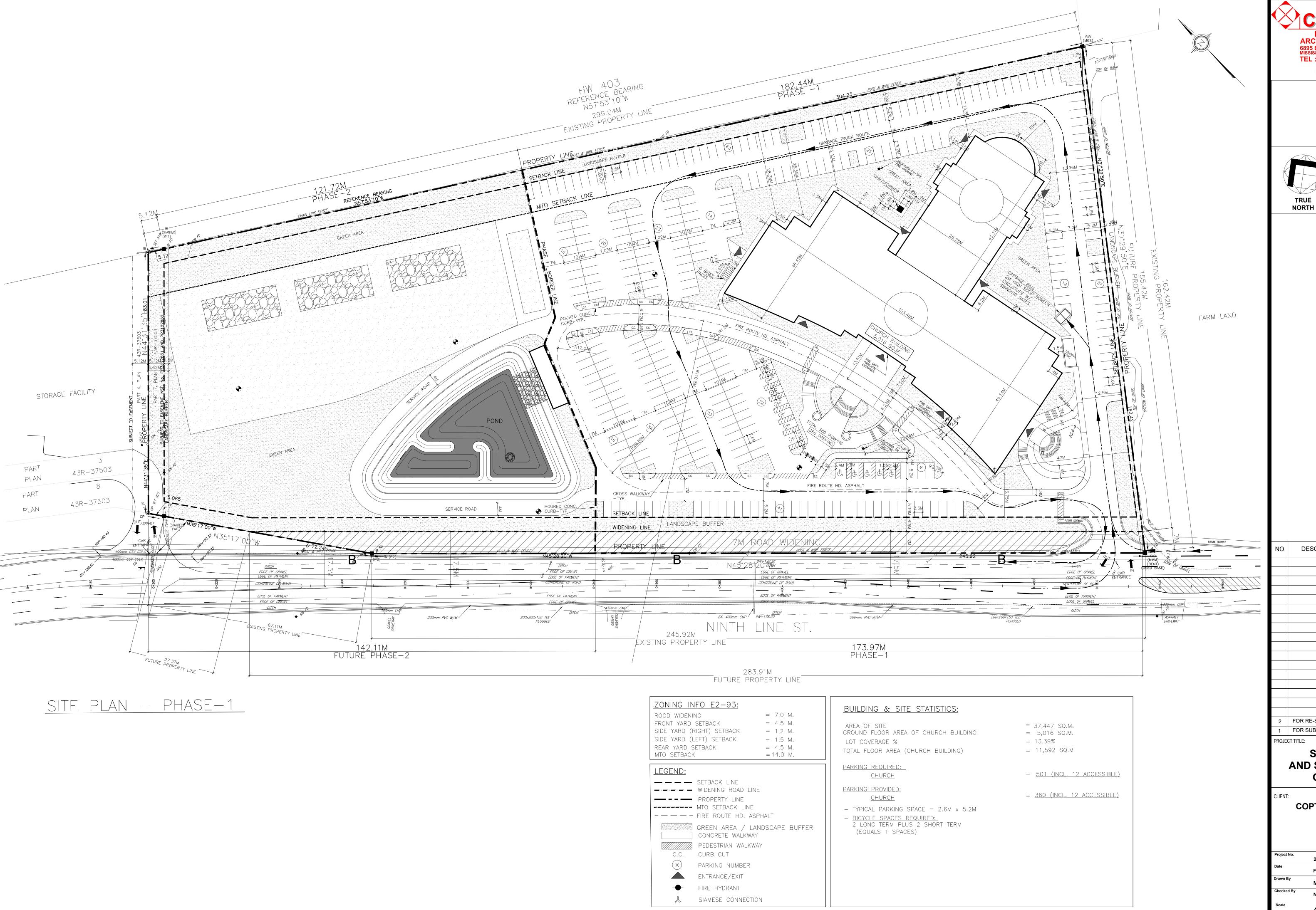
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				Sunday, November 03, 2019											
St. Mic					& St. Tekla	(12091 Hu	ırontario S	t)	St. Peter & St. Paul (1177 Invicta Dr)						
	Time				Parked \	/ehicles					Parked \	/ehicles			
	Time		Chur	ch Lot	Adiacent	Total	Conneitu	Ratio	Church Lot Adjacent		Adjacont	Total	Total Capacity	Ratio	
			2	52	Streets	Parked	Capacity Util.	(spaces /			Streets	Parked	Util.	(spaces /	
			Parked	Available	Streets	raikeu	Otil.	Otii.	100 m2)	Parked	Available	Streets	Parkeu	Otil.	100 m2)
07:30	to	08:00	12	240	0	12	5%	0.19	6	182	0	6	3%	0.14	
08:00	to	08:30	36	216	0	36	14%	0.57	10	178	0	10	5%	0.23	
08:30	to	09:00	64	188	0	64	25%	1.02	32	156	0	32	17%	0.74	
09:00	to	09:30	87	165	0	87	35%	1.39	83	105	0	83	44%	1.92	
09:30	to	10:00	101	151	0	101	40%	1.61	150	38	0	150	80%	3.47	
10:00	to	10:30	108	144	0	108	43%	1.72	191	-3	8	199	106%	4.61	
10:30	to	11:00	117	135	0	117	46%	1.87	189	-1	42	231	123%	5.35	
11:00	to	11:30	104	148	0	104	41%	1.66	177	11	35	212	113%	4.91	
11:30	to	12:00	93	159	0	93	37%	1.48	168	20	27	195	104%	4.51	
12:00	to	12:30	54	198	0	54	21%	0.86	123	65	11	134	71%	3.10	
12:30	to	13:00	23	229	0	23	9%	0.37	67	121	3	70	37%	1.62	

				Sunday, November 10, 2019												
	St. Michael & St. Tekla (12091 Hurontario S						t)	St. Peter & St. Paul (1177 Invicta Dr)								
	Time				Parked \	/ehicles			Parked Vehicles							
	Time		Chur	ch Lot	Adiacent	Total	Capacity	Ratio	Chur	ch Lot	Adiacont	Total	Total Conscitu	Ratio		
			2	52	Streets	Parked	Util.	(spaces /	188		8				Capacity Util.	(spaces /
			Parked	Available	Streets	Parkeu	Otil.	100 m2)	Parked	Available	Streets	Parked	Otili.	100 m2)		
07:30	to	08:00	14	238	0	14	6%	0.22	5	183	0	5	3%	0.12		
08:00	to	08:30	23	229	0	23	9%	0.37	10	178	0	10	5%	0.23		
08:30	to	09:00	52	200	0	52	21%	0.83	26	162	0	26	14%	0.60		
09:00	to	09:30	98	154	0	98	39%	1.56	64	124	0	64	34%	1.48		
09:30	to	10:00	121	131	0	121	48%	1.93	115	73	0	115	61%	2.66		
10:00	to	10:30	133	119	0	133	53%	2.12	172	16	1	173	92%	4.00		
10:30	to	11:00	135	117	0	135	54%	2.15	191	-3	12	203	108%	4.70		
11:00	to	11:30	130	122	0	130	52%	2.07	180	8	14	194	103%	4.49		
11:30	to	12:00	131	121	0	131	52%	2.09	124	64	9	133	71%	3.08		
12:00	to	12:30	119	133	0	119	47%	1.90	98	90	5	103	55%	2.38		
12:30	to	13:00	86	166	0	86	34%	1.37	76	112	3	79	42%	1.83		

St. Michael & St. Tekla GFA: 6,273 m2 St. Peter & St. Paul GFA: 4,320 m2







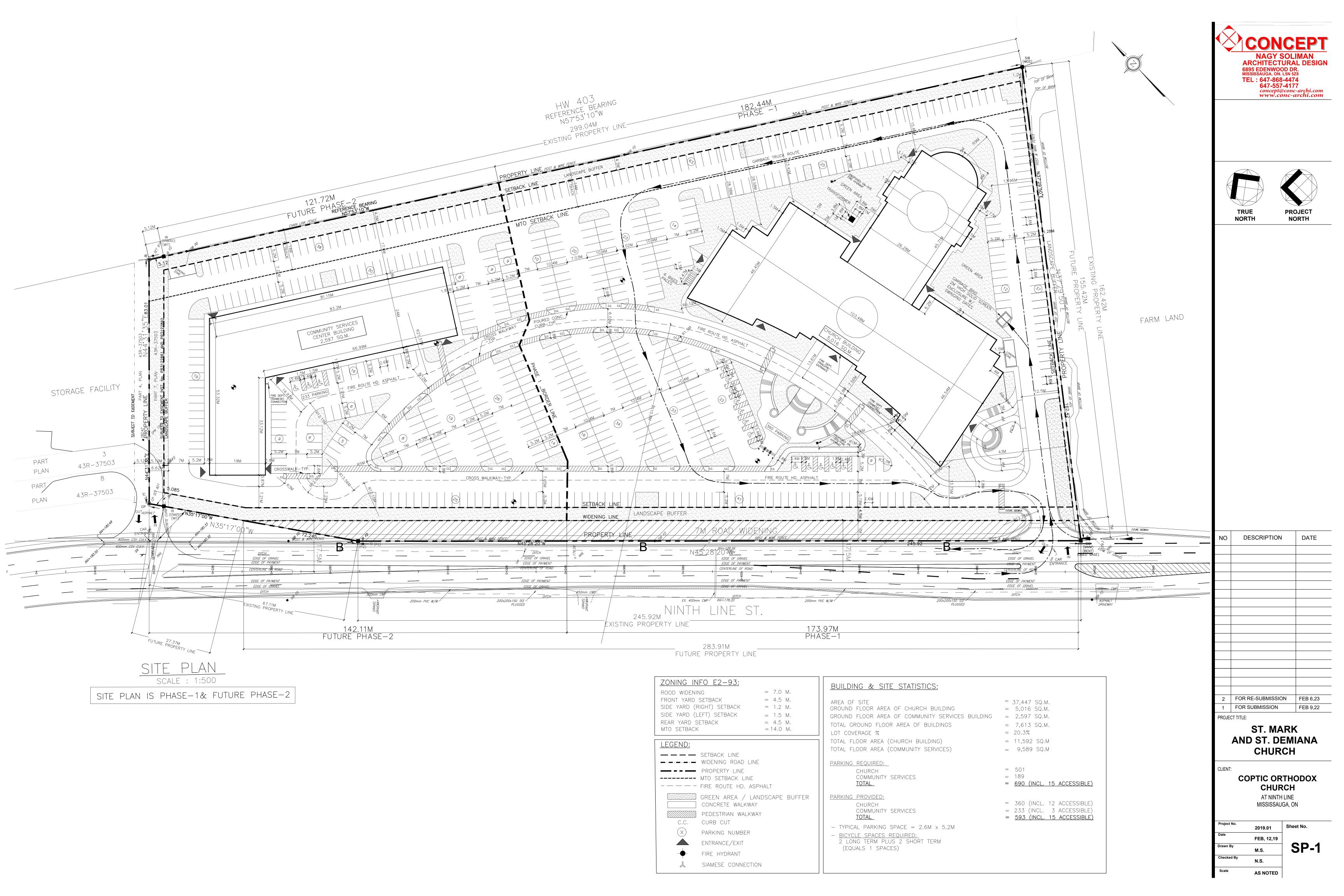


DESCRIPTION DATE FOR RE-SUBMISSION FOR SUBMISSION FEB 9,22

# ST. MARK **AND ST. DEMIANA** CHURCH

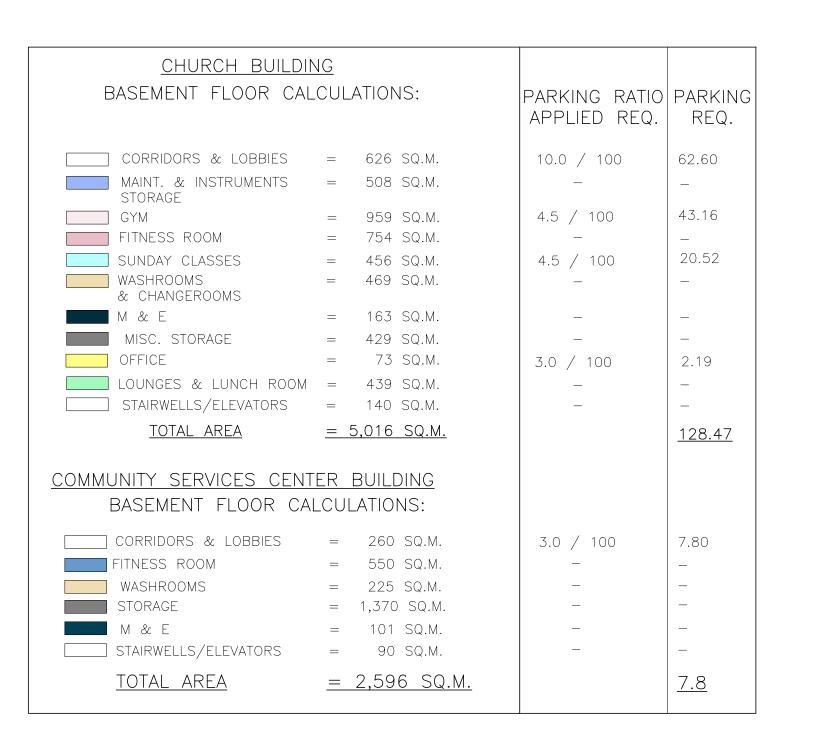
COPTIC ORTHODOX CHURCH AT NINTH LINE MISSISSAUGA, ON

2019.01 FEB, 12,19 M.S. N.S.





BASEMENT FLOOR PLAN SCALE : 1:500









NO	DESCRIPTION	DATE
2	FOR RE-SUBMISSION	FEB 6,23
1	FOR SUBMISSION	FEB 9,22
PROJE	CT TITLE:	

CHURCH **COPTIC ORTHODOX** CHURCH

AT NINTH LINE

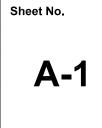
ST. MARK

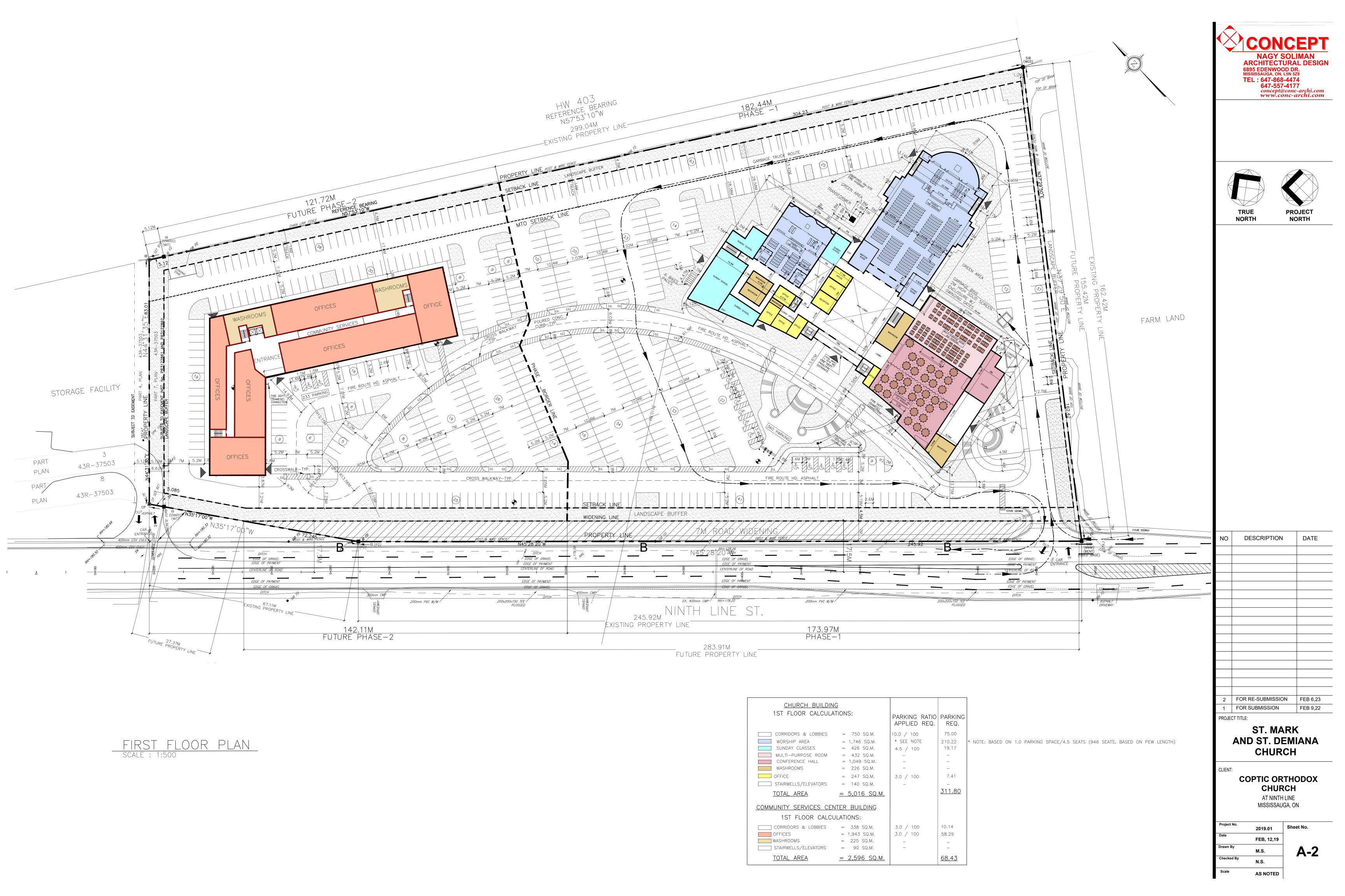
**AND ST. DEMIANA** 

MISSISSAUGA, ON 2019.01 Sheet No. FEB, 12,19 M.S. Checked By

N.S.

AS NOTED







SECOND FLOOR PLAN

SCALE: 1:500

CHURCH BUILDIN 2ND FLOOR CALCULA	PARKING RATIO APPLIED REQ.	PARKING REQ.	
M / E OFFICE	= 796 SQ.M. = 164 SQ.M. = 93 SQ.M. = 157 SQ.M.	10.0 / 100 4.5 / 100 - - 3.0 / 100	21.00 35.82 - - 4.71
TOTAL AREA  COMMUNITY SERVICES CE	= 1,560 SQ.M.  NTER BUILDING	_	61.53
2ND FLOOR CALCULA  CORRIDORS & LOBBIES  OFFICE AREA  WASHROOMS  STAIRWELLS/ELEVATORS	= 260 SQ.M. = 1,766 SQ.M. = 225 SQ.M.	3.0 / 100 3.0 / 100 —	7.80 52.98 -
TOTAL AREA			60.78







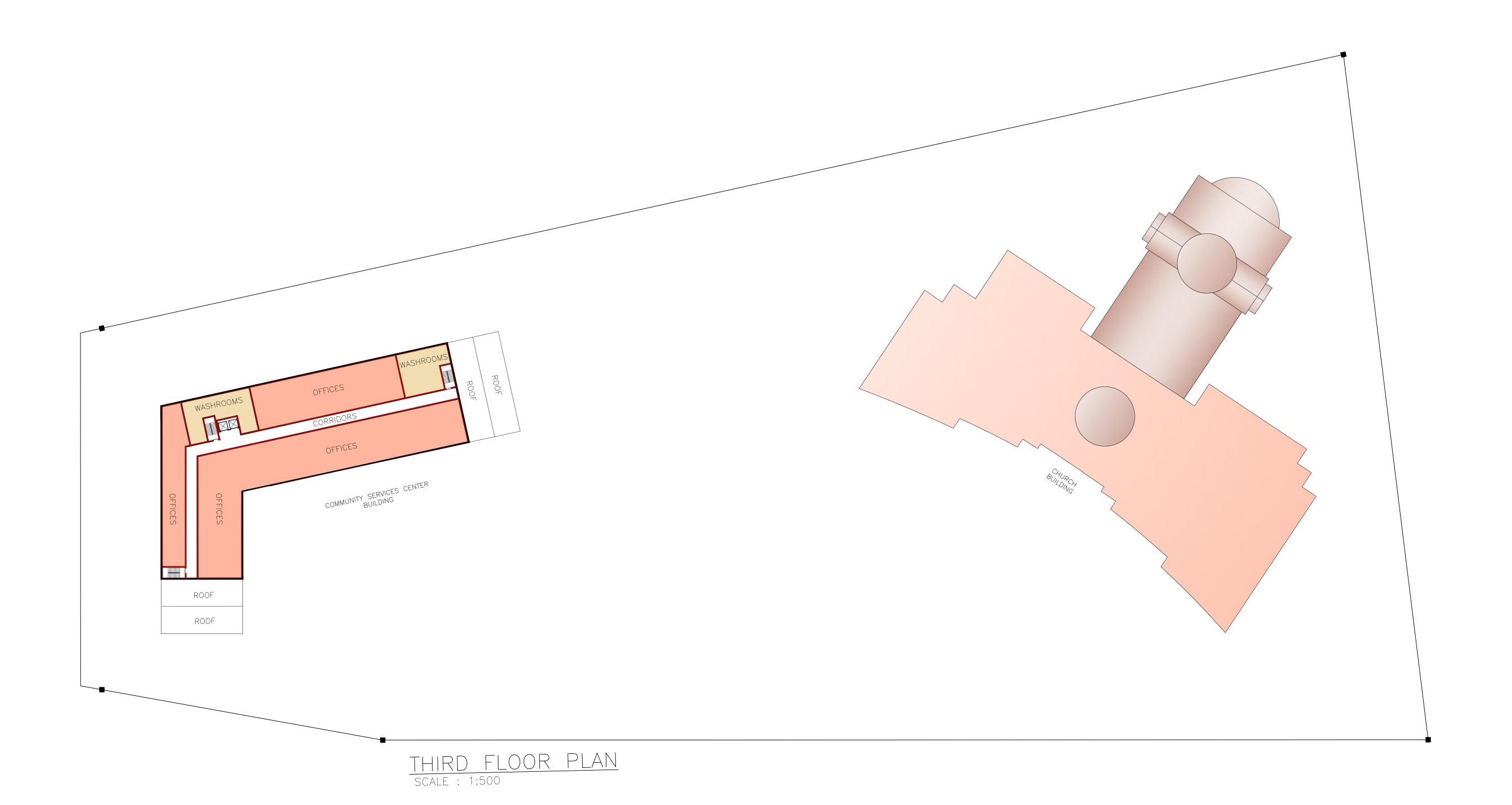
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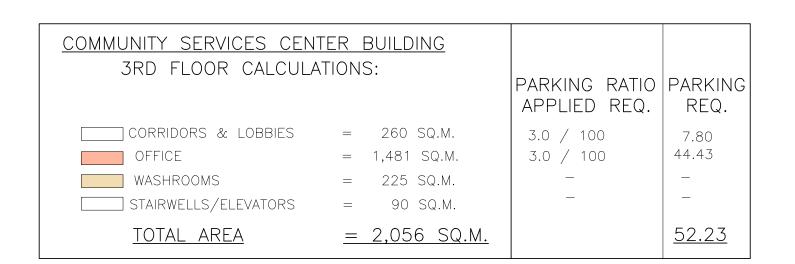
ST. MARK AND ST. DEMIANA CHURCH

> COPTIC ORTHODOX CHURCH AT NINTH LINE MISSISSAUGA, ON

MISSISSAUGA, ON

Project No.	2019.01	Sheet No.
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DESCRIPTION	DATE
FOR RE-SUBMISSION	FEB 6,23
FOR SUBMISSION	FEB 9,22
	FOR RE-SUBMISSION

# ST. MARK AND ST. DEMIANA CHURCH

CLIENT:

PROJECT TITLE:

COPTIC ORTHODOX CHURCH AT NINTH LINE MISSISSAUGA, ON

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