

MINUTES
**BOARD OF BUILDING STANDARDS/
ARCHITECTURAL BOARD OF REVIEW/SIGN REVIEW BOARD**
NOVEMBER 13, 2014
5:30 P.M. – Lakewood City Hall
Auditorium
(Audio Recording Available)

The meeting was called to order at 5:30 P.M.

1. **ROLL CALL**

MEMBERS PRESENT:

Bryan Evans, Vice-Chairman
Daniel Musson
Carl Orban, Chairman
David Robar
Cynthia Stockman

OTHERS PRESENT:

Bryce Sylvester, Board Secretary, City Planner
Michael Molinski, Building Commissioner and City Architect
Dru Siley, Director of Planning and Development

2. Approve the minutes of the October 9, 2014 meeting

A motion was made by Mr. Evans, seconded by Mr. Orban to **APPROVE** the minutes of the October 9, 2014 meeting. All of the members voting yea, the motion passed.

3. Opening Remarks

There were no Opening Remarks from the city staff.

The Chairman read the following into record:

The public was advised that applicants and anyone wanting to make a statement were asked to come to the podium, print and sign one's name on the oath sheet and slowly and clearly state one's name and address. If one had a business card, please give one to the secretary. Anyone else wishing to address the board was asked to follow the same procedure.

REOPEN ITEM

ARCHITECTURAL BOARD OF REVIEW

6.	Docket No. 07-60-14	C	13200 Madison Avenue Mahall's 20 Lanes
	() Approve		Kelly Flamos
	() Deny		Mahall's 20 Lanes
	() Defec		13200 Madison Avenue Lakewood, Ohio 44107

The applicant requests the review and approval for a proposal to expand the main entrance into the building. This item was deferred from the meeting of July 10, 2014. (Page 7)

Leon Sampat, architect was present to explain the request. The front paned glass and bulkhead of the building had failed and needed to be replaced. The proposal was to recess the window area by ten feet. The exterior storefront wall would have stained four-inch cedar planking placed horizontally; the brick exterior would remain as is. A black aluminum band would go across the top. The priority and first phase of the project was to fix the failed window system. Discussion

A motion was made by Mr. Orban, seconded by Mr. Robar to APPROVE the application with the following stipulations:

- Columns will be changed to 12x12,
- Submit final column details for administrative approval,
- Handrail on both sides of the steps,
- Confirmation that the existing lattice will remain in place; if not, submit new drawings to replace the lattice, and
- Material of the rail system will be wood and painted.

All of the members voting yea, the motion passed.

REOPEN ITEM

SIGN REVIEW

7. Docket No. 08-80-14

12118 Madison Avenue
Bird Town Beverage

Approve

Deny

Defer

Mohammad Alnjada
Bird Town Beverage
14840 E. Bagley Road
Middleburg Heights, Ohio 44130

The applicant requests the review and approval of proposed signage for a new business. (Page 8)

Mohammad Alnjada, applicant was present to explain the request. City staff said that modifications to the approved sign submission at the August meeting had been made without approval from the Board. Mr. Alnjada said the modifications could be removed at any time. The Board stated the effect was not appropriate for the City of Lakewood. The applicant explained there would be awnings in the future.

Public comment was closed as there was no one to speak on the matter. City staff advised the exposed conduit should be removed from the front of the building.

A motion was made by Mr. Orban, seconded by Ms. Stockman to APPROVE the original submission as approved at the August 14, 2104 meeting. The applicant is to remove the light fixtures, exposed conduit, neon lighting in the windows, and vinyl in the windows. All of the members voting yea, the motion passed.

NEW BUSINESS

ARCHITECTURAL BOARD OF REVIEW

8. Docket No. 11-107-14

R 18153 Clifton Road

Approve

Deny

Defer

M. Rose & Associates
1273 Belle Avenue
Lakewood, Ohio 44107

The applicant requests the review and approval for the addition of a portico over the front door of the house. (Page 9)

Marc Rose, applicant was present to explain the request. Steps repair and sandstone improvement had been done, and the owner wanted to add curb appeal. The columns would be constructed of permacast material; the top and bottom would match the architectural period of the house. A copper ridge vent would top the porch roof. The Board took issue with the pitch of the porch roof as it did not match the existing hip roof. Discussion ensued about the windows. The decoration above the existing front door would be removed and replaced with matching shingle siding. Balusters would not be against the house.

Silvia Weber, 13431 Lake Avenue suggested the columns be increased to 12 inches.

Public comment was closed as there was no one else to speak on the matter. City staff said it was a good addition to the house.

A motion was made by Mr. Orban, seconded by Mr. Evans to **APPROVE** the application with the following stipulations:

- Increase the corner board to 10 inches,
- Increase the rounded column to 12 inches,
- There was to be no flare or fluting on the columns.

All of the members voting yea, the motion passed.

9.	Docket No. 11-108-14	R	1031 Nicholson Avenue
	<input type="checkbox"/> Approve		Stephen M. Schill
	<input type="checkbox"/> Deny		Schill Architecture, LLC
	<input type="checkbox"/> Defer		P.O. Box 45609
			Westlake, Ohio 44145

The applicant requests the review and approval to raze and rebuild an existing garage and add a second floor bedroom and bath. (Page 22)

Stephanie Schill, representative for the applicant was present to explain the request. All materials would match the existing including the stucco and slate roof. The garage door was yet to be selected; it would match the integrity of the home.

Public comment was closed as there was no one to speak on the matter. City staff thought the addition was appropriate. The Board did not like the look of the vertical timbers, stucco area, being inside the edges of the windows. Ms. Schill said there would not be light fixtures on the walls.

A motion was made by Mr. Orban, seconded by Mr. Musson to **APPROVE** the application with the following stipulations:

- Submit a cut sheet of the garage for administrative review and approval, and
- Reduce the number of trim treatments on the stucco façade.

All of the members voting yea, the motion passed.

10.	Docket No. 11-109-14	R	1043 Wilbert Road
	<input type="checkbox"/> Approve		Nora Loftus
	<input type="checkbox"/> Deny		1043 Wilbert Road
	<input type="checkbox"/> Defer		Lakewood, Ohio 44107

The applicant requests the review and approval of a second floor master bedroom addition. (Page 29)

Gerry Weber, Weber Architecture, thought the wood slats on the west window would require much maintenance and wondered if there might be an alternative material. He did not like the red paint planned for the window trim. He said the drop-off area would contribute to vehicular congestion at that intersection and increased traffic on Parkwood Road. Parking was a problem.

Public comment was closed as there was no else to speak on the matter.

Asked to address the comments, Ms. Gendr said the best material for the slats was a piece of an extruded aluminum covered with wood look vinyl. As far as the color of the window trim, it had not been finalized yet. Regarding the parking situation, the Board said that issue was not under the review of the Architectural Board.

City staff supported the Board's comments. However, sensitivity to the Parkwood Road neighborhood needed to be displayed. The front signage was good even with the multiple colors. A deferral was recommended to allow for more development of the plan. It was mentioned that the applicant would appear before the Board of Zoning Appeals on Thursday, November 20, 2014 to discuss parking.

Discussion continued about the signage. The proposed front sign was 3/4 inch thick with six colors. There would be dimension off the building because of the pins. There would be no lighting.

A motion was made by Mr. Orban, seconded by Mr. Evans to DEFER the application for Docket No. 11-110-14 - A and Docket No. 11-110-14 - S until the meeting of December 11, 2014. All of the members voting yea, the motion passed.

Items 12 & 15 are called together as they are the same property.

ARCHITECTURAL BOARD OF REVIEW

12. Docket No. 11-111-14 - A C 13368 Madison Avenue
Saloon on Madison

- Approve
- Deny
- Defer

Tim Comerford
Install Erie Design
14629 Westland Avenue
Cleveland, Ohio 44111

The applicant requests the review and approval of modifications to the front of the building; the addition of corrugated metal. (Page 66)

SIGN REVIEW

15. Docket No. 11-111-14 - S 13368 Madison Avenue
Saloon on Madison

- Approve
- Deny
- Defer

Tim Comerford
Install-Erie Design
14629 Westland Avenue
Cleveland, Ohio 44111

The applicant requests the review and approval of new signage. (Page 66)

Tim Comerford, applicant was present to explain the request. A business name change was warranted because there was a new business partner and updated concept. Eric Design was doing the sign. The corrugated material would be at the top of the building and fit into the existing recessed areas. The lighting would remain, and the flags would be removed. The Board liked the simplified look as opposed to what had been there with Brew 133 but thought the metal material might be too shiny. The Board suggested the use of awnings as opposed to shades. Mr. Comerford said the awnings had been removed from the front window area and tables and chairs had been placed there. Awnings were too expensive at this time. The Board said the sign looked too flat and suggested to add an edge or trim for dimension. City staff said that corrugated metal had been proposed for a couple of businesses for use as a structural element, and the Board had denied them. As a decorative piece, it worked well at the top, not the bulkhead. Mr. Comerford said the corrugated metal would be removed from the bulkheads and painted to match.

Public comment was closed as there was no one to speak to the matter.

A motion was made by Mr. Orban, seconded by Ms. Stockman to APPROVE Docket No. 11-111-14 - A with the following stipulations:

- Remove the corrugated material on the bulkheads and paint to match, and
- Use a less shiny, thicker material for the trim around the sign.

All of the members voting yea, the motion passed.

A motion was made by Mr. Orban, seconded by Mr. Evans to APPROVE Docket No. 11-111-14 - S with the following stipulation:

- Use a 3-D, thicker molded trim around the sign

All of the members voting yea, the motion passed.

SIGN REVIEW

16. Docket No. 11-113-14

12415 Madison Avenue
The Coffee Pot

- Approve
- Deny
- Defeat

Thomas A. Dus
Lorain County Aerocase
44050 Russia Road
Elyria, Ohio 44035

The applicant requests the review and approval to replace the existing window sign with the original blade sign.
(Page 75)

Joanne Zingale, 12415 Madison Avenue business owner was present to explain the request. She found the original sign that was used over 30 years ago; its colors are burgundy, sage green, cream, and outlined in red. Visibility through the window will be enhanced once the neon sign is removed.

Public comment was closed as there was no one to speak to the matter. City staff had no comment and supported the application as submitted.

A motion was made by Mr. Orban, seconded by Ms. Stockman to APPROVE the application as submitted. All of the members voting yea, the motion passed.

17. Docket No. 11-114-14

11922 Madison Avenue
East End Bistro & Pub

- Approve
- Deny
- Defer

Brandy Maxey
East End Bistro & Pub
34399 Puth Drive
Avon, Ohio 44011

The applicant requests the review and approval of the name change to an existing sign. (Page 81)

Brandy Maxey, applicant was present to explain the request. She removed the former sign, repainted and rehung it. The lights, awning, and exposed conduits were there already. The Board said the hand painting was too obvious, and the sign needed dimension. The Board suggested that Ms. Maxey appear at the December 4, 2014 pre-review meeting. City staff said the applicant had a temporary sign permit which allowed the sign to remain in place until a more permanent one was approved.

Public comment was closed as there was no one to speak on the matter.

A motion was made by Mr. Orban, seconded by Mr. Evans to DEFER the item until the meeting of December 11, 2014. All of the members voting yea, the motion passed.

18. Docket No. 11-115-14

15027 Madison Avenue
Rhythm & Grace Ballroom Dance School

- Approve
- Deny
- Defer

Angel Criado
Rhythm & Grace
9330 Outlook Drive
Brooklyn, Ohio 44144

The applicant requests the review and approval of window signage for a new business. (Page 84)

Angel Criado, applicant was present to explain the request. The material would be a decal with white vinyl lettering.

Public comment was closed as there was no one to speak to the matter. City staff had no comment and supported the application as submitted.

A motion was made by Mr. Orban, seconded by Ms. Stockman to APPROVE the application as submitted. All of the members voting yea, the motion passed.

19. Docket No. 11-116-14

44849-18119 Detroit Avenue
The Modern Bohemian

- Approve
- Deny
- Defer

Erika Laine Hansen
The Modern Bohemian
6701 Plainfield Avenue
Cleveland, Ohio 44144

The applicant requests the review and approval of window signage for a new business. (Page 91)

Erika Laine Hansen, applicant was present to explain the request. The material was the same as the other businesses in the building; white vinyl lettering. In addition to featuring her jewelry, there would be an art gallery. Her studio would be at the rear of the store.

Public comment was closed as there was no one to speak to the matter. City staff had no comment and supported the application as submitted.

A motion was made by Mr. Orban, seconded by Mr. Evans to **APPROVE** the application as submitted. All of the members voting yea, the motion passed.

ARCHITECTURAL BOARD OF REVIEW

13. Docket No. 11-112-14

C

1381 West Clifton Boulevard
Former McKinley School Site

- Approve
- Deny
- Defer

Dru Siley, Director of Planning and Development
City of Lakewood
12650 Detroit Avenue
Lakewood, Ohio 44107

The applicant requests the review of approximately 40 single-family townhouses with a combination of first floor living and traditional townhouse design. (Page 71)

Dru Siley, applicant was present to explain the request. He started by asking for a deferral and to treat the evening's presentation as a work session. The developer and architects would be presenting their take on the project.

Tom Kuluris, President of Liberty Development Co. and Greg Soltis, RDL Architects began by describing the proposed site plan as displayed via their PowerPoint presentation (made part of record). First floor master bedroom two-story units sandwiching three floor townhouses faced West Clifton Boulevard and the church. The different elevations were described.

The Board suggested changing the placement of the two-story first floor master bedroom unit from the church side to the Northwood Avenue because of the church height. Mr. Kuluris replied things depended upon what the customer wanted. The Board commented that contemporary style elevation looked like it belonged in another city as a second home perhaps. Another comment was that some of the windows looked small. Mr. Soltis stated they were attempting to "marry" the bungalow-style first floor master bedroom units with the other architectural forms. The Board said the scale of the second floor windows ought to be different from the first floor. Also, the gable needed to be brought "down". Mr. Soltis said it was because of the high ceilinged living room. Mr. Kuluris said they would work harder on the rooflines. Regarding the streetscape, it looked like the foundation was too high off the ground. They were attempting to provide every unit with a viable front porch. Perhaps a change in materials would remedy it; reducing the height of the brick work to the line of the porch deck. Mr. Siley interjected the brick work on the apartment building located across the street rose to above the second floor, and he wondered if it could work with this development. A smaller foundation added to the top heavy look. The Board sought the use of cedar for lap siding for the top portion; EIFS was not allowed. A true stucco finish was another option. Asked about the window trim, it was disclosed that was yet to be decided. Further discussion was about the depth of the townhouses in relation to the two-story units, windows, style, and etc. Mr. Siley asked for the Board's thoughts about the entrances of the two-story units from the side onto the porches; they preferred to see the doors facing the front.

Monique Smith (address illegible) had hoped to see more detached units with a less multi-unit unit. She wanted to see more architectural details with colors and overhangs and true porches.

Gerry Weber, Weber Architecture, thought that grouping the townhouses together and the larger units together that would help with scale. It was difficult to distinguish things. He advised to have more ADA units. The design reminded him of the contemporary townhouses on Sloane Avenue. The windows needed to be large and more of them. The design needed more architectural detail and charm. The rooflines were too complicated.

Kathy Haber, 18917 Lake Avenue thought there were too many levels giving the development a busy look, the windows were too small, the porch overhangs needed to be larger, the bungalows should be detached, and the proposal was not a look for Lakewood.

Silvia Weber, 13431 Lake Avenue suggested the inspiration for the project should be drawn from a different source such as the Bonne Bell buildings located on Graber Drive, detach the bungalows from the townhouses, detail with wrought iron, use French windows and doors, and vary the straight linear lines.

Jeanne Mackay, 13428 Lake Avenue agreed with Mr. Siley's comments about the front doors. She agreed the bungalows should be detached.

Public comment was closed as there was no one else to speak on the matter. Mr. Siley said the economics of the site were tied directly tied to the housing density of about 30 units; 13.5 units per acre. Whatever design was built had to allow for flexibility and durability. Mr. Orban recapped some of the issues posed during the meeting such as the detail and trim of the windows, the full glass front doors, the porches resembled decks, and the craftsmanship. He did not know if it would work to separate the townhouses from the bungalows.

Mr. Kuharis said he liked the look of townhouses and bungalows being together. He would like to build a free-standing bungalow, but there was not enough space to allow it. The finished product would not look exactly like the proposed because of customer changes. Allowing for accessibility of emergency vehicles, they might lose one unit. Details of the development, including the doors and windows, were not finalized, and the public comments would be taken into consideration.

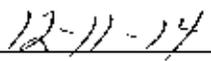
A motion was made by Mr. Orban, seconded by Mr. Evans to DEFER the item until the meeting of December 11, 2014. All of the members voting yea, the motion passed.

ADJOURN

A motion was made by Mr. Orban, seconded by Mr. Evans to ADJOURN the meeting at 8:14 p.m. All of the members voting yea, the motion passed.



Signature



Date



Oath

(You need not give an oath if you object. If you object to giving an oath, please notify the hearing officer or secretary before signing below.)

I, the undersigned, hereby solemnly swear that the testimony I give at this proceeding will be the truth, the whole truth and nothing but the truth:

PRINT NAME:

SIGN NAME:

1. Colin McEwen

[Signature]

2. Leon Sampat

[Signature]

3. Jermad Sherr Green Home Solutions

[Signature]

4. *[Signature]*

[Signature]

5. *[Signature]*

[Signature]

6. Marc Rose

7. Zimu Welpa

8. Stephanie Schill

9. DEW MCKEOWN

10. ERIN GENDT

11. GENEVIE WELSON

[Signature]

[Signature]

[Signature]

[Signature]

Prepared by: The City of Lakewood Law Department, 12650 Detroit Ave., Lakewood, Ohio 44107

FOR CITY USE ONLY

Lakewood Administrative Procedure: ABR/BRS Citizens Advisory Civil Svc. Dangerous Dog Income Tax Appeals Loan Approval Nuisance Abatement Appeals Parking Planning Zoning Appeals Other:

Date of Proceeding: Thursday, November 13, 2014



Oath

(You need not give an oath if you object. If you object to giving on oath, please notify the hearing officer or secretary before signing below.)

I, the undersigned, hereby solemnly swear that the testimony I give at this proceeding will be the truth, the whole truth and nothing but the truth:

PRINT NAME:

SIGN NAME:

- 1. Tim Comerford
- 2. Joann Zyzka
- 3. Brandy Mayes
- 4. ANGEL CRISTOP
- 5. Erika Laine Hansen
- 6. Tom Kucwicz
- 7. Manuel Smith
- 8. Kathy Heber
- 9. JR Mackay
- 10. _____
- 11. _____

- Tim Comerford
- Joann Zyzka
- Brandy Mayes
- ANGEL CRISTOP
- Erika Laine Hansen
- Tom Kucwicz
- Manuel Smith
- Kathy Heber
- JR Mackay
- _____
- _____

Prepared by: The City of Lakewood Law Department, 12650 Detroit Ave., Lakewood, Ohio 44107

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Lakewood Administrative Procedure: ABR/BBS Citizens Advisory Civil Svc. Dangerous Dog Income Tax Appeals Loan Approval Nuisance Abatement Appeals Parking Planning Zoning Appeals Other:

Date of Proceeding: Thursday, November 13, 2014

TRAFFIC IMPACT STUDY PROPOSED DAYCARE FACILITY Lakewood, Ohio

November 10, 2014

Prepared for:
Kidzenia Learning Center, LLC
13710 Madison Avenue
Lakewood, OH 44107



Providing Practical Experience
Technical Excellence and
Client Responsiveness

TMS Engineers, Inc.

Transportation Management Services

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TRAFFIC IMPACT STUDY

PROPOSED DAYCARE FACILITY

LAKESWOOD, OHIO

NOVEMBER 10, 2014

Prepared For:

**KIDZENIA LEARNING CENTER, LLC
13710 MADISON AVENUE
LAKESWOOD, OH 44107**

Prepared By:

**TMS ENGINEERS, INC.
4547 HUDSON DRIVE
STOW, OHIO 44224**

TABLE OF CONTENTS

	Page
Executive Summary	
1. Introduction	1-4
1.1 Purpose of the Report	1
1.2 Study Objectives	4
2. Area Conditions	5-10
2.1 Transportation Network Study Area	5
2.2 Traffic	9
3. Projected Traffic Conditions	11-21
3.1 Site Traffic	11
3.2 Non-Site Traffic	16
3.3 Future Traffic	17
4. Traffic Analysis	22-31
4.1 Capacity and LOS at Study Intersections	22
4.2 Comparative Analysis	28
4.3 Improvements to Accommodate Study Area Traffic	30
5. Conclusions	32-33

APPENDICES

- A. Traffic Counts
- B. Trip Generation Worksheets
- C. Growth Rate Calculations
- D. Existing Capacity Analysis Worksheets
- E. No Build Capacity Analysis Worksheets - 2015
- F. No Build Capacity Analysis Worksheets - 2035
- G. Build Capacity Analysis Worksheets - 2015
- H. Build Capacity Analysis Worksheets - 2035

LIST OF FIGURES

	Page
1. Location Map	2
2. Site Plan	3
3. Aerial View	6
4. Existing Lane Use and Traffic Control	7
5. Lane Use and Traffic Control - Madison Avenue Project	8
6. Existing 2014 Weekday Traffic Volumes	10
7. New Generated Traffic Distribution	13
8. New Generated Trips	15
9. 2015 No-Build Peak Hour Traffic Volumes	18
10. 2035 No-Build Peak Hour Traffic Volumes	19
11. 2015 Build Peak Hour Traffic Volumes	20
12. 2035 Build Peak Hour Traffic Volumes	21
13. Recommend Lane Use and Traffic Control	31

Recommended Improvements to Serve Existing Conditions

No improvements were found to be necessary to accommodate the existing 2014 traffic at the intersection of Madison Avenue and Parkwood Road/Wascana Avenue.

Recommend Improvements to Serve Future Conditions without the Development

No improvements were found to be necessary to accommodate the expected 2015 and 2035 No Build traffic at the intersection of Madison Avenue and Parkwood Road/Wascana Avenue.

Recommended Improvements to Mitigate the Traffic Associated with the Development

No improvements were found to be necessary to accommodate the expected 2015 and 2035 Build traffic at the intersection of Madison Avenue and Parkwood Road/Wascana Avenue.

Conclusion

Based upon the results of the analysis in this study, it can be seen that the development traffic can be accommodated with the recommended lane use and traffic control at the intersection of Madison Avenue and Parkwood Road/Wascana Avenue.

EXECUTIVE SUMMARY

This Traffic Impact Study (TIS) has been prepared at the request of Kidzenia Leaning Center, LLC for a proposed daycare facility. The project site is located at the northeast corner of the Madison Avenue and Parkwood Road/Wascana Avenue in the City of Lakewood, Cuyahoga County, Ohio.

The proposed development is expected to consist of a daycare facility at 13714 Madison Avenue. The daycare facility is expected to have a staff of 20 with a capacity of 148 children. The development is expected to open with a staff of 5 and approximately 30-40 children and to reach half capacity within a year. This traffic study will analyze full capacity conditions.

The site shares a driveway with the residential unit (1679 Parkwood Road) to the north. The driveway provides access to approximately 4 parking spaces along the north side of the building. On-street parking is permitted along both sides of Madison Avenue and the east side of Parkwood Road.

The proposed development is expected to be constructed in 2015. Therefore, 2015 will be analyzed as the opening year and 2035 will be analyzed for the twenty year analysis.

The following intersections were analyzed as part of this study:

1. Madison Avenue & Parkwood Road/Wascana Avenue

The weekday AM peak hour of traffic was determined to be 7:30 AM to 8:30 AM and the weekday PM peak hour of traffic was found to be 4:45 PM to 5:45 PM. These periods will be analyzed since they reflect the period of the highest volume of traffic flow for both the roadway and the development.

The proposed development will generate additional traffic which may impact the area roadways. This traffic impact study presents an assessment of the impact of the traffic generated by the proposed development on the existing road network adjacent to the site. The results of the analysis have been used to determine what improvements will be required to handle the traffic which will be associated with this use.

The proposed development is expected to generate the following average hourly traffic during the peak periods after construction of the development:

ITE TRIP GENERATION		# of Employees	TRIP ENDS			
ITE Code	ITE Description		Peak Hour Between 7-9 AM (Enter/Exit)		Peak Hour Between 4-6 PM (Enter/Exit)	
565	Day Care Center	20	52	46	44	50
TOTAL NEW TRIPS			98		94	

1. INTRODUCTION

1.1 Purpose of Report

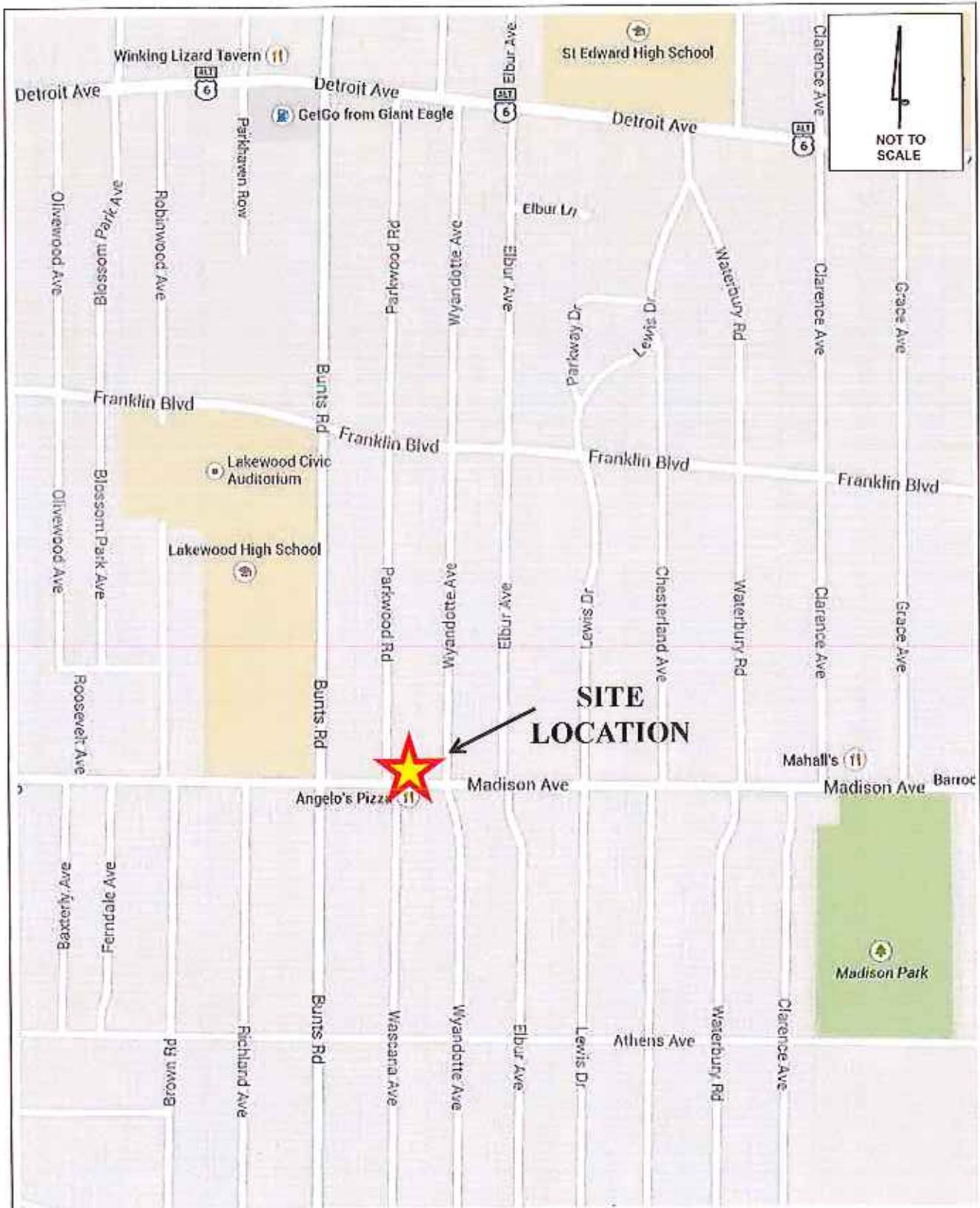
This Traffic Impact Study (TIS) has been prepared at the request of Kidzenia Leaning Center, LLC for a proposed daycare facility. The project site is located at the northeast corner of the Madison Avenue and Parkwood Road/Wascana Avenue in the City of Lakewood, Cuyahoga County, Ohio. **Figure 1, Page 2** shows the proposed location of the development.

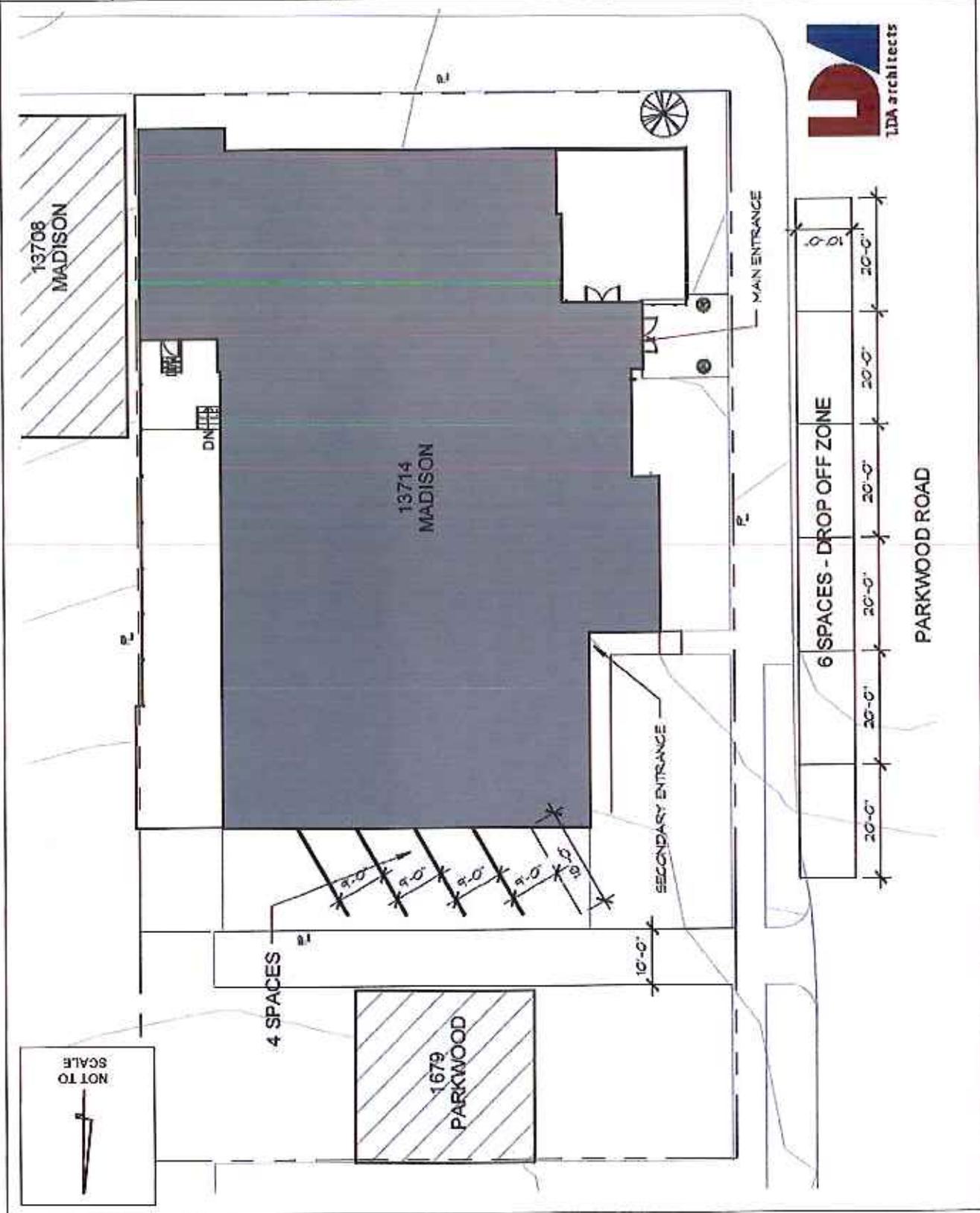
The proposed development is expected to occupy the existing building (13714 Madison Avenue) located at the northeast corner of Madison Avenue and Parkwood Road. The daycare facility is expected to have a staff of 20 with a capacity of 148 children. The development is expected to open with a staff of 5 and approximately 30-40 children and to reach half capacity within a year. This traffic study will analyze full capacity conditions.

The site shares a driveway with the residential unit (1679 Parkwood Road) to the north. The driveway provides access to approximately 4 parking spaces along the north side of the building. On-street parking is permitted along both sides of Madison Avenue and the east side of Parkwood Road. **Figure 2, Page 3** shows the proposed site plan for the proposed development.

The proposed development is expected to be constructed in 2015. Therefore, 2015 will be analyzed as the opening year and 2035 will be analyzed for the twenty year analysis.

It should be noted that a construction project is currently underway on Madison Avenue. The project will resurface the roadway as well as change the lane utilization. The project will convert Madison Avenue from a four-lane roadway with on-street parking to a three-lane roadway with bike lanes and on-street parking. The project is slated for completion in late 2015. This study will analyzed Madison Avenue based on the geometrics of the completed roadway project as the opening year for the daycare facility and the roadway project are in the same year.





1.2 Study Objectives

This study is structured for the following purposes;

- to adequately assess the traffic impacts associated with the proposed development and to identify the level of on-site access and traffic,
- to provide a comprehensive study which evaluates and documents the traffic impacts and on-site improvements, where warranted,
- and to provide a technically sound basis to identify mitigation requirements to on-site traffic impacts.

This study documents the methodologies, findings and conclusions of the analysis, including the basis for all assumptions, traffic parameters utilized and conclusions reached.

The traffic impacts will be determined by comparing the existing intersection levels-of-service before the construction of the development to the anticipated intersection levels-of-service after the opening of the development. Levels-of-service for the study area intersections and access driveway will be calculated using the computerized version of the Transportation Research Board's **Highway Capacity Manual, HCM2010 (HCS2010, Release 6.65)**.

2. AREA CONDITIONS

2.1 Transportation Network Study Area

The Ohio Department of Transportation functionally classifies roadways to help define a roadway's characteristics as well as identify roadways that are eligible for federal funds. Functional classification is the grouping of roads, streets, and highways in a hierarchy based on the type of highway service they provide. Generally, streets and highways perform two types of service. They provide either traffic mobility or land access and can be ranked in terms of the proportion of service they provide. The functional classification of the roadways in the study area can be seen on ODOT's website at:

<http://www.dot.state.oh.us/Divisions/Planning/SPPM/SystemsPlanning/Pages/RoadwayFunctionalClass.aspx>

Madison Avenue is an east-west urban collector as designated by the Ohio Department of Transportation. Madison Avenue runs between Rocky River Drive to the west and the east corporation line of the City of Lakewood. Within the study area, Madison Avenue has four lanes with on-street parking on both sides of the roadway. The land use Madison Avenue consists of a variety of residential, commercial, and institutional land uses. The Average Daily Traffic (ADT) on Madison Avenue is approximately 8,600 vehicles per day (vpd) at the intersection with Parkwood Road/Wascana Avenue based on the traffic data collected for this study.

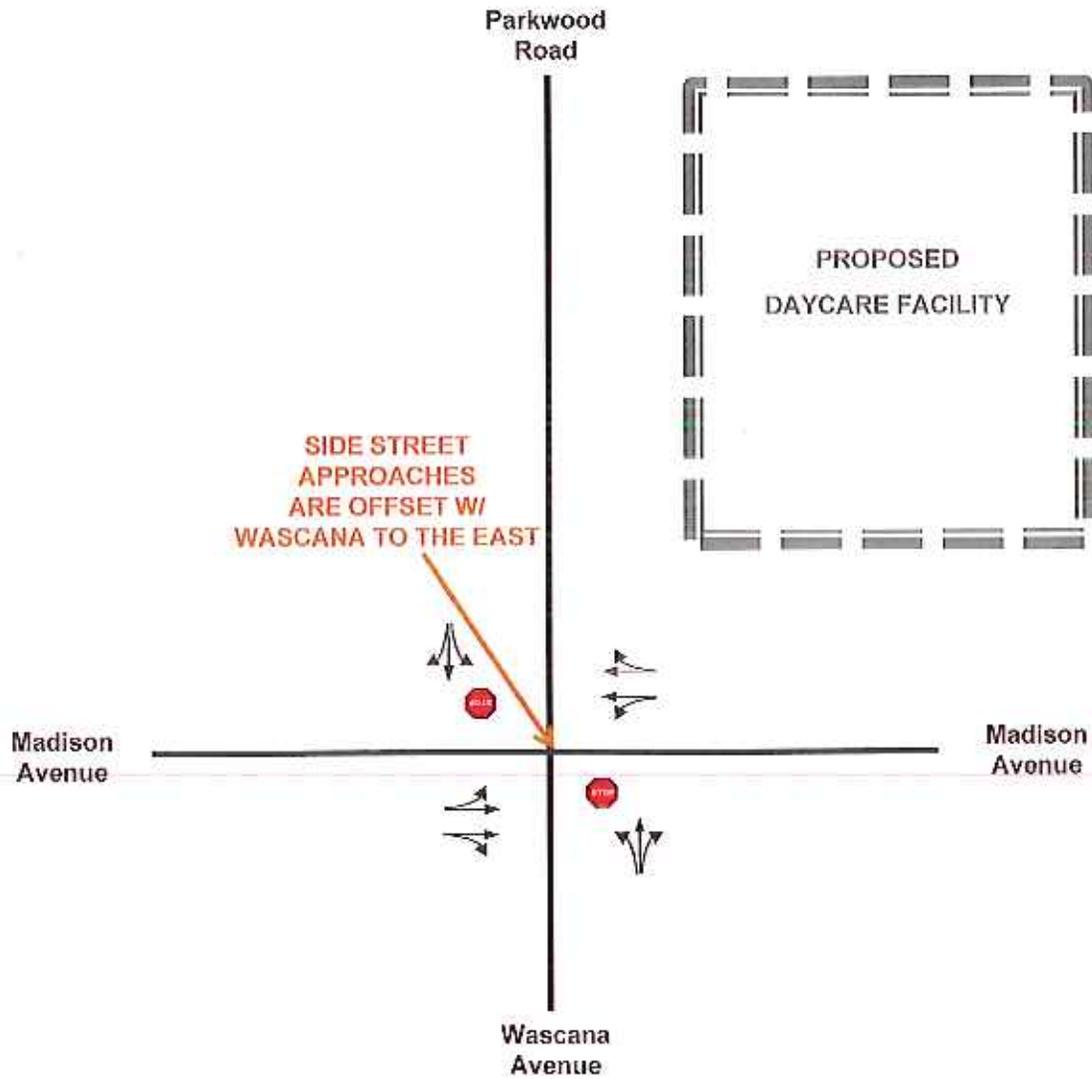
Parkwood Road and Wascana Avenue are local roadways in Lakewood, Ohio. Within the study area, these roadways have one through lane in each direction with on-street parking along the east side of the roadways. The land use along these roadways is residential. The Average Daily Traffic (ADT) on Parkwood Road is approximately 1,100 vehicles per day (vpd). The Average Daily Traffic (ADT) on Wascana Avenue is approximately 1,150 vehicles per day (vpd).

Parkwood Road and Wascana Avenue intersect Madison Avenue at a stop sign controlled intersection. The Parkwood Road and Wascana Avenue approaches are controlled by stop signs and the Madison Avenue approaches operate under free-flow conditions. It should be noted the minor street approaches do not line up directly across from each. Wascana Avenue is offset to the east of Parkwood Road.

Figure 3, Page 6 shows an aerial view of the study area. **Figure 4, Page 7** shows the lane use and traffic control conditions based upon the existing conditions in the study area. **Figure 5, Page 8** shows the roadway conditions after completion of the Madison Avenue construction project.



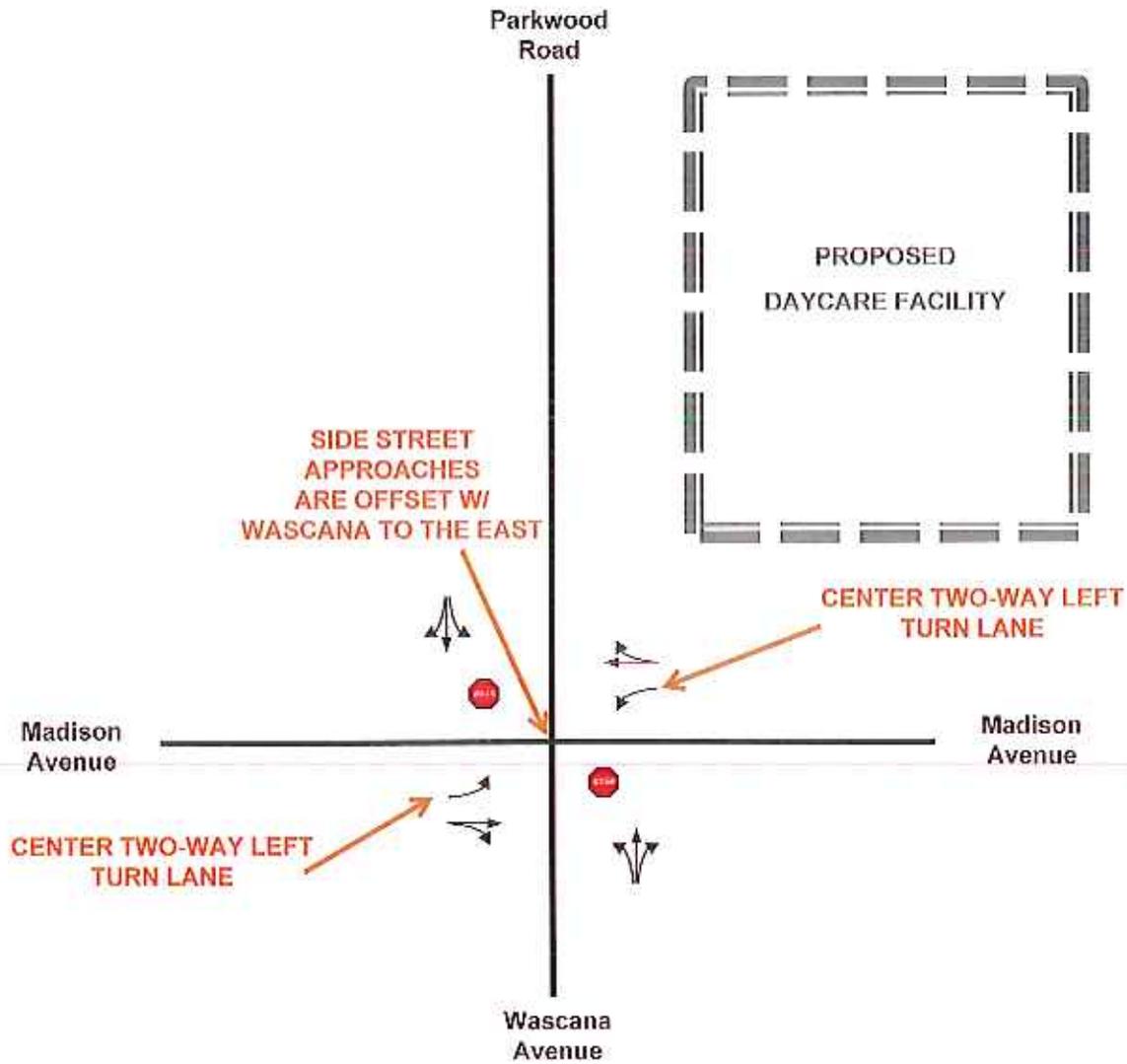
NOT TO SCALE



LEGEND

- Existing Laneage
- Existing Traffic Signal
- Existing Stop Sign

NOT TO SCALE



LEGEND

-  Existing Laneage
-  Existing Traffic Signal
-  Existing Stop Sign

2.2 Traffic

A weekday nine hour turning movement counts was performed at the intersection of Madison Avenue and Parkwood Road/Wascana Avenue

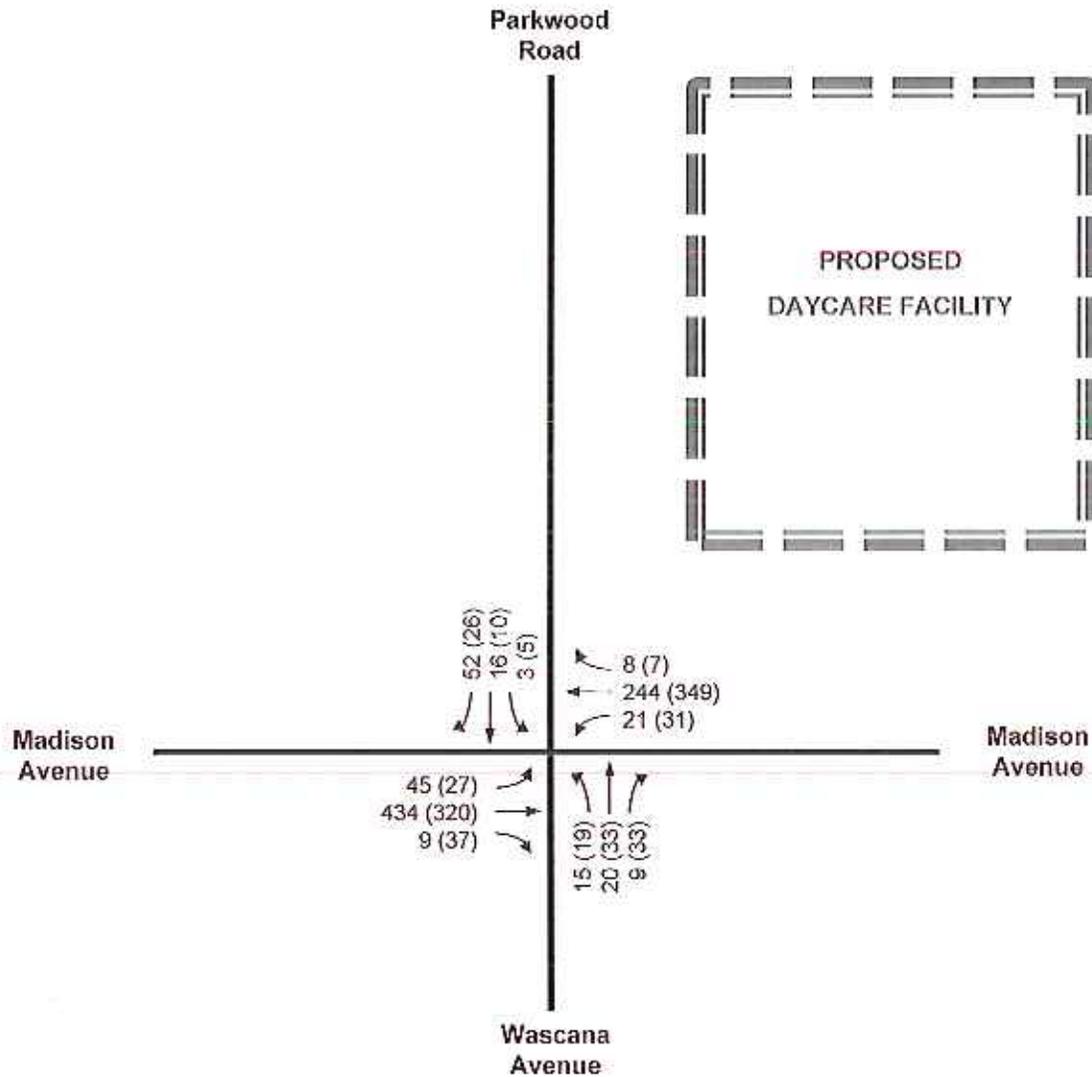
The traffic count was conducted on Tuesday, October 14, 2014. The weekday traffic count was conducted in fifteen (15) minute intervals between the hours of 7 AM - 10 AM, 11 AM - 2 PM, and 3 PM - 6 PM, then hourly totals were calculated. Copies of the intersection turn movement counts are included in **Appendix A**.

Average daily traffic was calculated for each of the study roads using expansion factors to account for daily and seasonal variations according to the recommendations and latest data from the Ohio Department of Transportation.

From the data, the weekday AM peak hour of traffic was determined to be 7:30 AM to 8:30 AM and the PM peak hour of traffic was determined to be 4:45 PM to 5:45 PM. These periods will be analyzed since they reflect the period of the highest volume of traffic flow for both the roadway and the proposed development. It will provide a worst case scenario for future traffic.

The 2014 existing AM and PM peak hour traffic volumes can be seen in **Figure 6, Page 10**.

NOT TO SCALE



LEGEND	
XX	AM Peak Hour Traffic
(XX)	PM Peak Hour Traffic

3. PROJECTED TRAFFIC CONDITIONS

3.1 Site Traffic

Trip Generation

Calculating future total driveway trips requires an estimate of the traffic generated by the proposed development. The most widely accepted method of determining the amount of traffic that a proposed development will generate is to compare the proposed site with existing facilities of the same use. The Institute of Transportation Engineers (ITE) has prepared a manual titled "Trip Generation Manual", which is a compilation of hundreds of similar traffic generation studies to aide in making such a comparison. The most recent update of this manual is the 9th edition and was utilized for this study.

Trip generation calculations for the development were performed utilizing data contained in the Trip Generation Manual and the methods outlined in the (ITE) Trip Generation Handbook. The proposed development is expected to consist of a daycare facility with a 20 person staff for 148 children. The Day Care Center, Land Use #565 will be used to generate the expected development traffic.

Calculations made for the proposed development are shown in the following table: Copies of the trip generation worksheets can be found in Appendix B.

DAYCARE FACILITY - NEW TRIP GENERATION

Lakewood, Ohio

ITE TRIP GENERATION		# of Employees	TRIP ENDS			
ITE Code	ITE Description		Peak Hour Between 7-9 AM (Enter/Exit)		Peak Hour Between 4-6 PM (Enter/Exit)	
565	Day Care Center	20	52	46	44	50
TOTAL NEW TRIPS			98		94	

Distribution of Generated Traffic

The directional distribution for the new generated traffic is a function of several variables including size and type of the proposed development, the prevailing operating conditions on the existing roadways, population distribution within the defined area of influence and current land uses. The distribution pattern that was assumed is shown in the table that follows and is based upon engineering judgment of the preceding variables.

ORIGIN AND DESTINATION

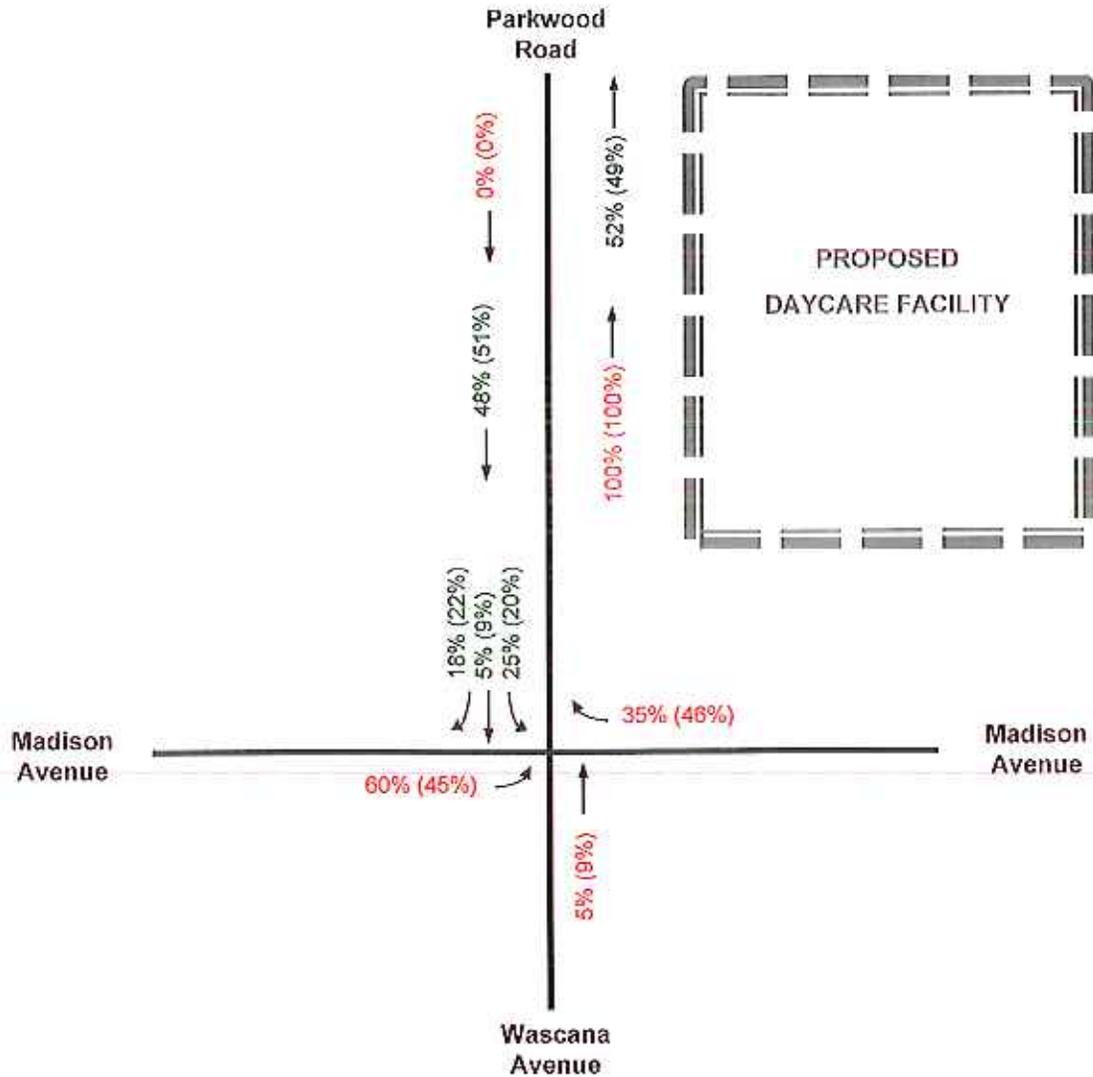
ORIGIN/DESTINATION	AM		PM	
	TO	FROM	TO	FROM
East (Madison Avenue)	51%	31%	40%	43%
West (Madison Avenue)	36%	56%	44%	43%
North (Parkwood Road)	8%	8%	7%	5%
South (Wascana Avenue)	5%	5%	9%	9%
Total	100%	100%	100%	100%

The site plan indicates that 6 on-street parking spaces along the east side of Parkwood Road will be used a drop-off zone. It is assumed that the 4 parking spaces in the rear of the building will be used by staff. In order to drop-off and pick-up motorist will have to use the designated parking spaces or additional on-street parking along the study area roadways. For the purpose of this study several assumptions were made regarding the distribution of traffic in the study area. The assumptions were as follows:

1. All vehicle trips will be destined to or originate from Parkwood Road.
2. All "entering" trips would enter Parkwood Road from Madison Avenue. The trips from the north (Parkwood Road) would be evenly split between the east and west directions on Madison Avenue.
3. The "exiting" trips to west and east on Madison Avenue would be split evenly between going north and south on Parkwood Road.
5. All south "exiting" trips would go south on Parkwood Road to Wascana Avenue.

The directional distribution for the new AM and PM peak hour generated traffic volumes are shown graphically in **Figure 7, Page 13** for the proposed development.

NOT TO SCALE



LEGEND

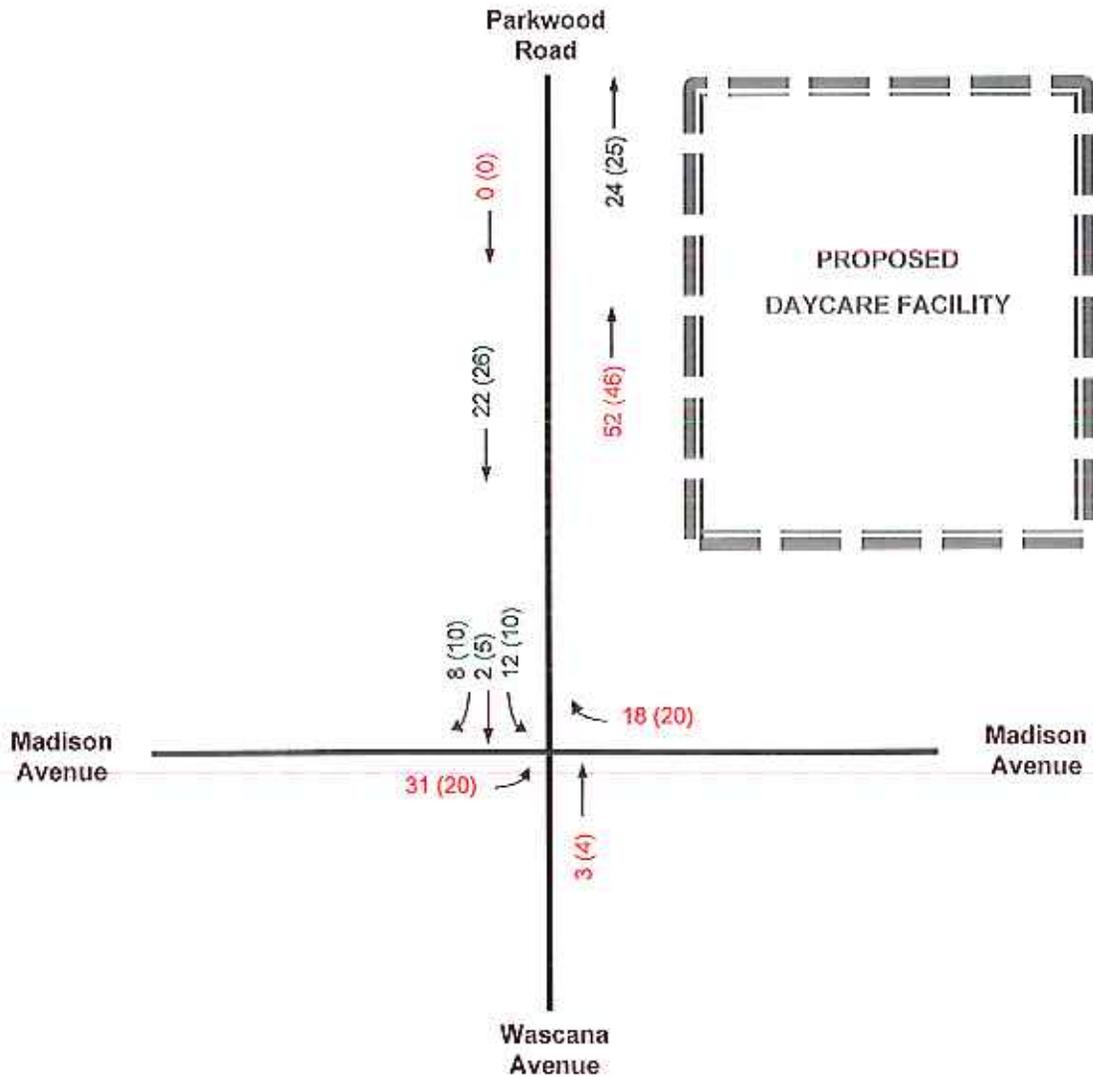
XX% AM Peak Hour Distribution
 (XX%) PM Peak Hour Distribution

RED = Entering Volumes
GREEN = Exiting Volumes

Assignment of Generated Traffic

Based upon this distribution pattern, the new AM and PM peak generated traffic were assigned to the study intersections. The assignments of the estimated new generated traffic to the study area roadways for the proposed development are shown graphically in **Figure 8, Page 15**.

NOT TO SCALE



NEW GENERATED TRAFFIC		
	AM	PM
TOTAL TRIPS	98	94
ENTER	52	44
EXIT	46	50

LEGEND
XX% AM Peak Hour Site Trips
(XX%) PM Peak Hour Site Trips
RED = Entering Volumes
GREEN = Exiting Volumes

3.2 *Non-Site Traffic*

Design of new roadways or improvements to existing roadways should not usually be based on current traffic volumes alone, but should consider future traffic volumes expected to make use of the facilities. Roadways should be designed to accommodate the traffic volume that is likely to occur within the design life of the facility. In a practical sense, this design volume should be a value that can be estimated with reasonable accuracy. It is believed that the maximum design period is in the range of 15 to 24 years. Therefore, a period of twenty years is widely used as a basis for design. Traffic cannot usually be forecasted accurately beyond this period on a specific facility because of probable changes in the general regional economy, population, and land development along the roadway.

Roadways like Madison Avenue carry a significant amount of through traffic due to their functional characteristics. This through traffic component generally increases as regional growth occurs. Therefore it is anticipated that existing traffic on this street will increase in future years.

The years 2015 and 2035 will be analyzed for the proposed development. Therefore it is necessary to estimate a historical growth rate in order to establish the future traffic on the study area roadways.

The ODOT traffic count website was consulted to determine past historical trends along the state routes in the vicinity of the study area. Data was available for US Route 6 in the study area. The data can be seen at the following web address:

<http://www.dot.state.oh.us/techservsite/offceorg/traffmonit/CountInformation/>

To provide a conservative estimate of the anticipated traffic volumes for the analysis years for this project, a growth rate of 0.25% per year for Madison Avenue was used to determine the anticipated study area volumes under the No-Build conditions. This growth rate was determined based upon the historical trends in the ODOT traffic count data, traffic count data that was collected for this report, and the functional classification of the roadways. A copy of the growth rate analysis can be seen in **Appendix C**.

3.3 Future Traffic

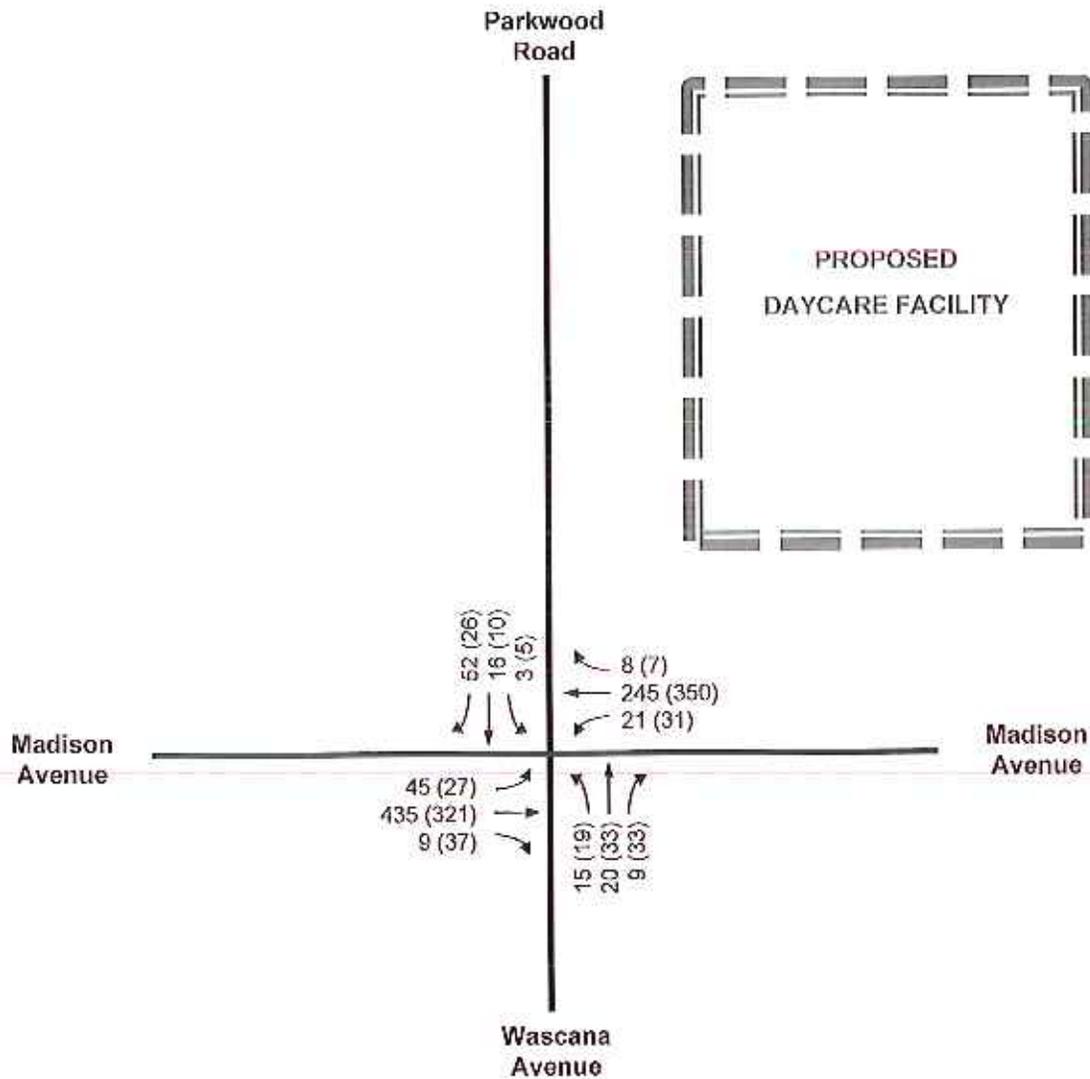
No-Build Condition

In order to estimate the future traffic considering non-project traffic conditions, the above mentioned historical growth rates were applied to the traffic data collected for this report. The estimated 2015 and 2035 No-Build traffic volumes for the study area are shown graphically in **Figures 9 & 10, Pages 18 & 19**. This traffic is the expected traffic if the proposed development is not constructed, the “No-Build” condition.

Build Condition

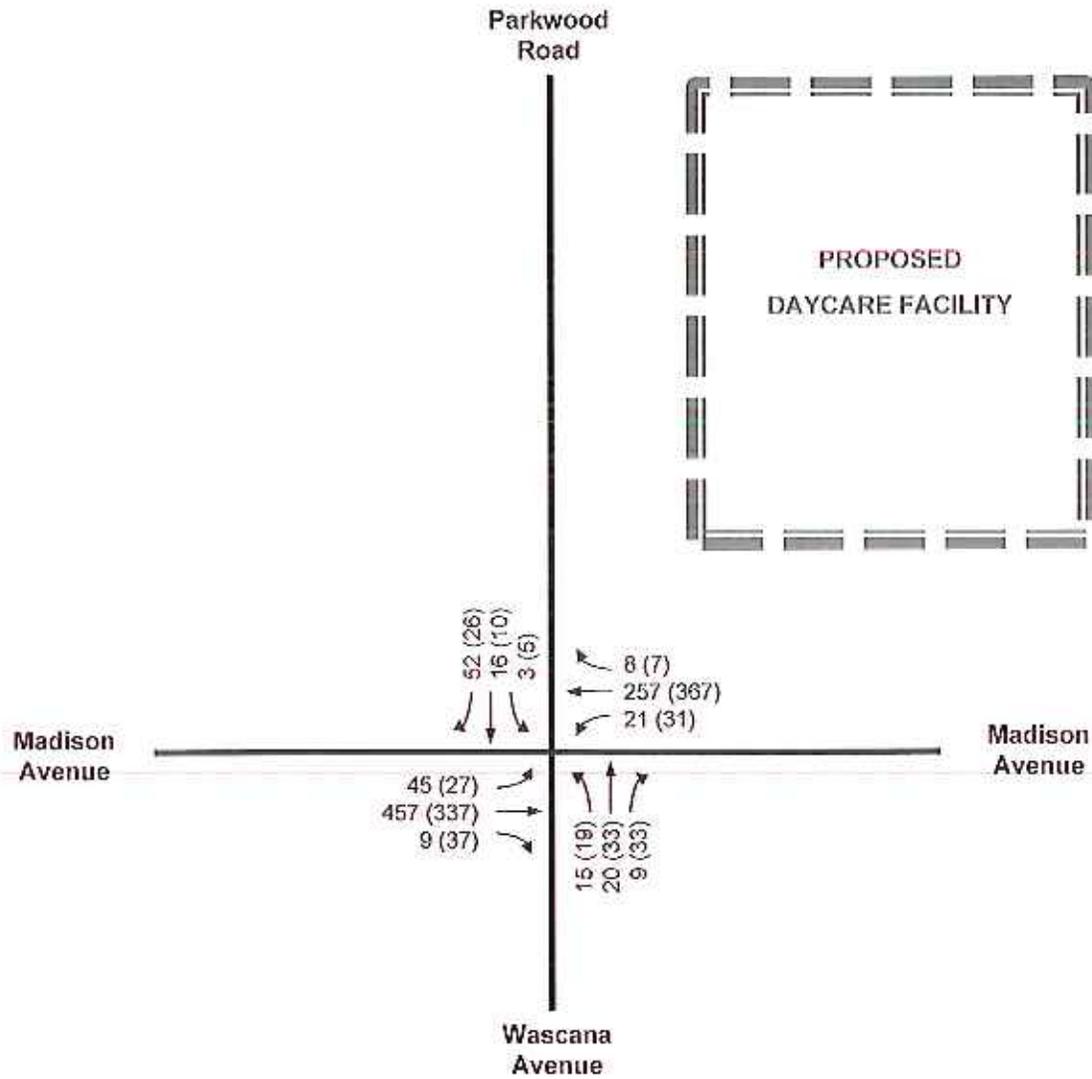
In order to estimate the future traffic considering project traffic conditions, the sum of the No-Build volumes, shown in the previous figures, were added to the new generated traffic to equal the future Build peak hour volumes. The estimated Build traffic volumes for the study area are shown graphically in **Figures 11 & 12, Pages 20 & 21** for the proposed development. These traffic volumes are the expected volumes if the proposed development is constructed, or the “Build” condition.

NOT TO SCALE



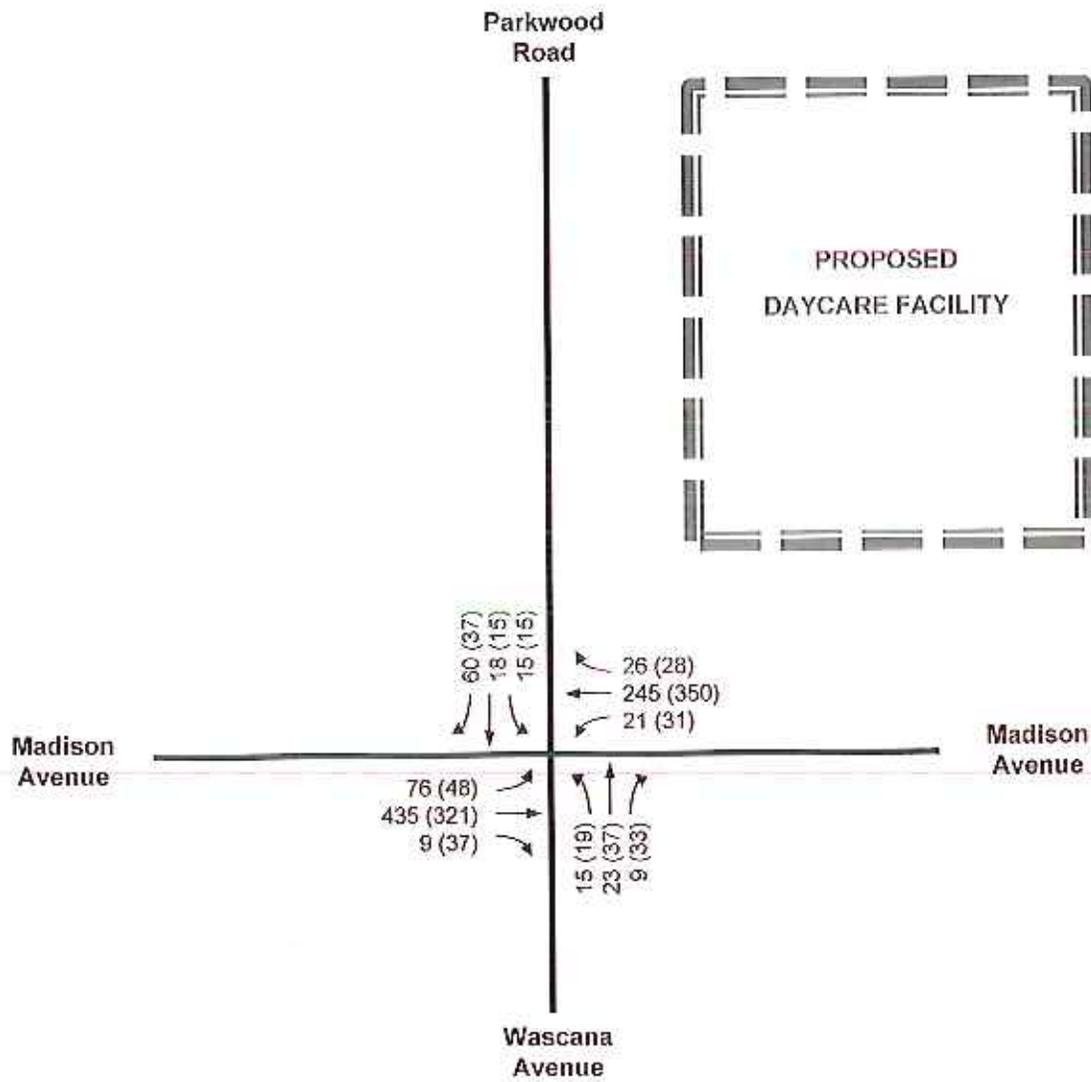
LEGEND	
XX	AM Peak Hour Traffic
(XX)	PM Peak Hour Traffic

NOT TO SCALE



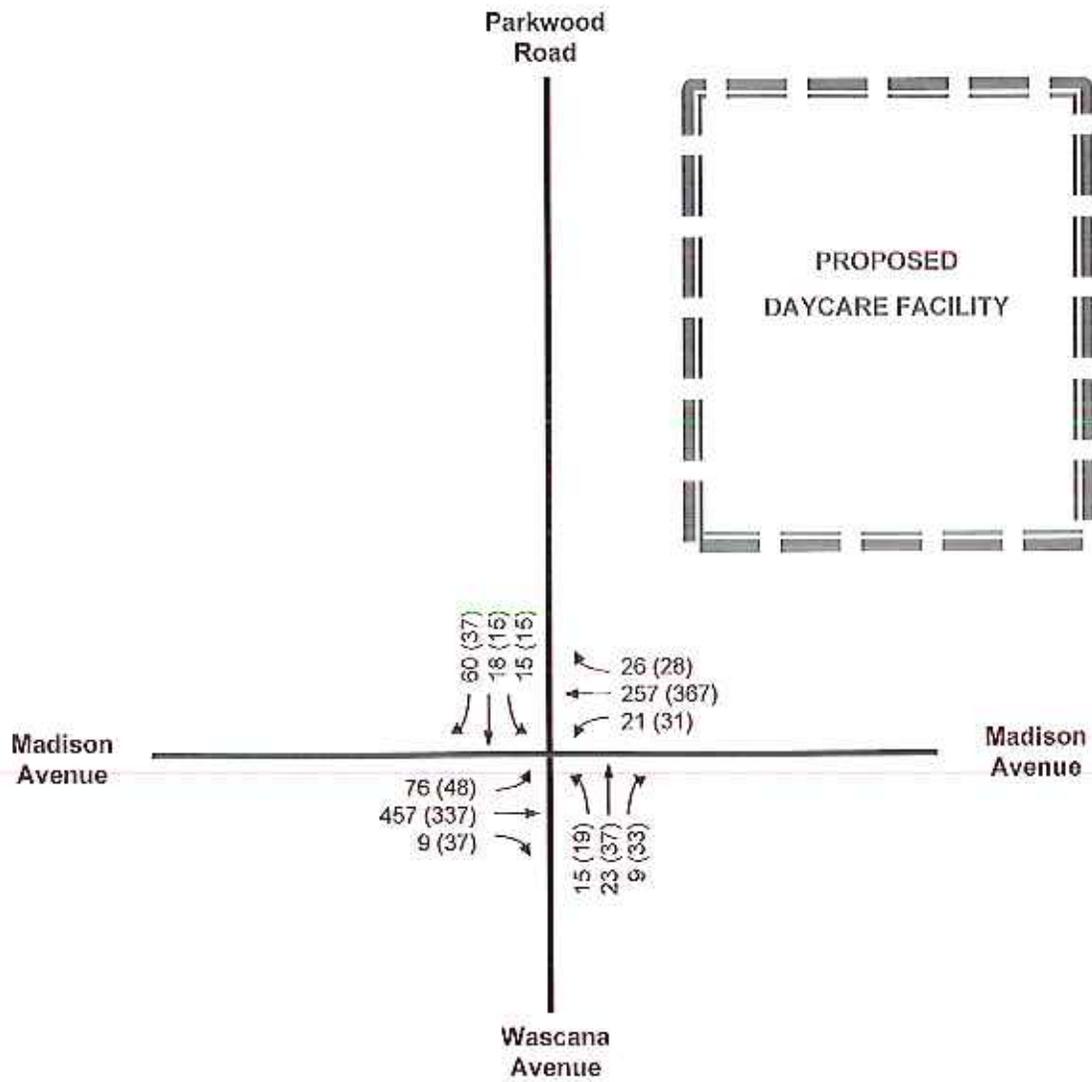
LEGEND	
XX	AM Peak Hour Traffic
(XX)	PM Peak Hour Traffic

NOT TO SCALE



LEGEND	
XX	AM Peak Hour Traffic
(XX)	PM Peak Hour Traffic

NOT TO SCALE



LEGEND	
XX	AM Peak Hour Traffic
(XX)	PM Peak Hour Traffic

4. TRAFFIC ANALYSIS

4.1 Capacity and LOS at Study Intersections

Intersection capacity analyses were performed at the study intersections using the procedures outlined in the computerized version of the Transportation Research Board's **Highway Capacity Manual, HCM2010 (HCS2010, Release 6.65)**. The capacity analyses were performed in order to estimate the maximum amount of traffic that can be accommodated by a roadway facility while maintaining recommended operational qualities. Existing, No-Build, and Build peak hour traffic volumes were analyzed to determine the level-of-service (LOS) at the study area intersections.

The capacity analysis procedures provide a calculated "average vehicle delay", which is based on traffic volumes, number of lanes, type of traffic control, channelization, grade, and percentage of large vehicles in the traffic stream at each intersection. The average delay calculated at an intersection is then assigned a "grade" or level of service (LOS) ranging from LOS A, the best, to LOS F, the worst based upon driver expectation. The intersection LOS "grades" as defined by the Transportation Research Board are as follows:

INTERSECTION LOS

LOS	UNSIGNALIZED AVERAGE DELAY PER VEHICLE (sec)	SIGNALIZED AVERAGE DELAY PER VEHICLE (sec)
A	≤ 10.0	< 10.0
B	10.1 to 15.0	10.1 to 20.0
C	15.1 to 25.0	20.1 to 35.0
D	25.1 to 35.0	35.1 to 55.0
E	35.1 to 50.0	55.1 to 80.0
F	> 50	> 80

The capacity analysis procedures and the resulting level of service grades and delays are a recognized traffic engineering standard for measuring the efficiency of intersection operations by such organizations as the Institute of Transportation Engineers, American Association of State Highway and Transportation Officials, and the Ohio Department of Transportation.

2014 Existing Conditions

The LOS for the AM and PM peak hour under the existing conditions for the study area intersections were calculated. These LOS's are used to identify existing capacity and/or operational deficiencies. Existing lane use and traffic control were used in the computations. The analysis assumed that the signal timing would be optimized to balance critical lane delays. The results of the capacity analyses are summarized in the table below. Copies of the analysis worksheets are included in Appendix D.

2014 LEVELS OF SERVICE (Existing Conditions)

LOCATION	MOVEMENTS	AM PEAK LOS (DELAY)	PM PEAK LOS (DELAY)
Madison Avenue & Parkwood Road/Wascana Avenue	Eastbound	A (8.0)	A (8.1)
	Westbound	A (8.6)	A (8.1)
	Northbound	C (22.6)	C (16.6)
	Southbound	B (13.4)	B (12.9)

(XX.X) = Average vehicle delay in seconds per vehicle

The analysis indicates that the intersection approaches are currently operating with acceptable levels of service during the AM and PM peak hours.

2015 No Build Capacity Analysis

Analyses were performed for the projected 2015 conditions under the no-build scenario. These analyses will be used to compare with the conditions expected under the build scenario. The results of the 2015 no build analyses are shown in the following tables. Copies of the capacity worksheets are included in **Appendix E**.

2015 LEVELS OF SERVICE (No Build Conditions)

LOCATION	MOVEMENTS	AM PEAK LOS (DELAY)	PM PEAK LOS (DELAY)
Madison Avenue & Parkwood Road/Wascana Avenue	Eastbound	A (7.9)	A (8.1)
	Westbound	A (8.4)	A (8.1)
	Northbound	C (20.8)	C (19.3)
	Southbound	B (13.3)	B (14.6)

(XX.X) = Average vehicle delay in seconds per vehicle

The analysis indicates that the intersection approaches are expected to continue operating with acceptable levels-of-service during the AM and PM peak hours.

2035 No Build Capacity Analysis

Analyses were performed for the projected 2035 conditions under the no-build scenario. These analyses will be used to compare with the conditions expected under the build scenario. The results of the 2035 no build analyses are shown in the following tables. Copies of the capacity worksheets are included in **Appendix F**.

2035 LEVELS OF SERVICE (No Build Conditions)

LOCATION	MOVEMENTS	AM PEAK LOS (DELAY)	PM PEAK LOS (DELAY)
Madison Avenue & Parkwood Road/Wascana Avenue	Eastbound	A (7.9)	A (8.2)
	Westbound	A (8.4)	A (8.2)
	Northbound	C (22.0)	C (20.2)
	Southbound	B (13.6)	C (15.1)

(XX.X) = Average vehicle delay in seconds per vehicle

The analysis indicates that the intersection approaches are expected to continue operating with acceptable levels-of-service during the AM and PM peak hours.

Build Condition - 2015 Capacity Analysis

Using the future (build) peak hour volumes, Highway Capacity Analyses (HCM) were performed to determine the future level of service at the study intersections. For the 2015 build conditions the resulting level of services are shown in the tables below. Copies of the capacity worksheets are provided in **Appendix G**.

2015 LEVELS OF SERVICE (Build Conditions)

LOCATION	MOVEMENTS	AM PEAK LOS (DELAY)	PM PEAK LOS (DELAY)
Madison Avenue & Parkwood Road/Wascana Avenue	Eastbound	A (8.4)	A (8.2)
	Westbound	A (8.4)	A (8.2)
	Northbound	C (24.3)	C (22.3)
	Southbound	C (16.8)	C (18.6)

(XX.X) = Average vehicle delay in seconds per vehicle

The analysis indicates that the intersection approaches are expected to continue operating with acceptable levels-of-service during the AM and PM peak hours. No improvements are necessary at the intersection of Madison Avenue and Parkwood Road/Wascana Avenue under the 2015 build peak hour conditions.

Build Condition - 2035 Capacity Analysis

Using the future (build) peak hour volumes, Highway Capacity Analyses (HCM) were performed to determine the future level of service at the study intersections. For the 2035 build conditions the resulting level of services are shown in the table below. Copies of the capacity worksheets are provided in Appendix H.

2035 LEVELS OF SERVICE
(Build Conditions)

LOCATION	MOVEMENTS	AM PEAK LOS (DELAY)	PM PEAK LOS (DELAY)
Madison Avenue & Parkwood Road/Wascana Avenue	Eastbound	A (8.0)	A (8.3)
	Westbound	A (8.4)	A (8.2)
	Northbound	D (25.8)	C (23.6)
	Southbound	C (17.5)	C (19.4)

(XX.X) = Average vehicle delay in seconds per vehicle

The analysis indicates that the intersection approaches are expected to continue operating with acceptable levels-of-service during the AM and PM peak hours. No improvements are necessary at the intersection of Madison Avenue and Parkwood Road/Wascana Avenue under the 2035 build peak hour conditions.

4.2 Comparative Analysis

A comparison was performed to show the incremental effects on the capacity of the study area intersections due to the development of the proposed commercial development in the years 2015 and 2035. The following tables show a side by side comparison of the Build versus No Build conditions for the 2015 and 2035 AM and PM peak hours.

2015 LEVELS OF SERVICE
(AM Peak Hour)

LOCATION	MOVEMENTS	NO BUILD LOS (DELAY)	BUILD LOS (DELAY)	DIFFERENCE + / -
Madison Avenue & Parkwood Rd/Wascana	Eastbound	A (7.9)	A (8.4)	+0.5
	Westbound	A (8.4)	A (8.4)	0.0
	Northbound	C (20.8)	C (24.3)	+3.5
	Southbound	B (13.3)	C (16.8)	+3.5

(XX.X) = Average vehicle delay in seconds per vehicle

2015 LEVELS OF SERVICE
(PM Peak Hour)

LOCATION	MOVEMENTS	NO BUILD LOS (DELAY)	BUILD LOS (DELAY)	DIFFERENCE + / -
Madison Avenue & Parkwood Rd/Wascana	Eastbound	A (8.1)	A (8.2)	+0.1
	Westbound	A (8.1)	A (8.2)	+0.1
	Northbound	C (19.3)	C (22.3)	+3.0
	Southbound	B (14.6)	C (18.6)	+4.0

(XX.X) = Average vehicle delay in seconds per vehicle

The 2015 comparison table shows that the expected increase in average delay experienced is expected to be less than 5 seconds during the AM and PM peak periods with the addition of the development generated traffic.

**2035 LEVELS OF SERVICE
(AM Peak Hour)**

LOCATION	MOVEMENTS	NO BUILD LOS (DELAY)	BUILD LOS (DELAY)	DIFFERENCE + / -
Madison Avenue & Parkwood Rd/Wascana	Eastbound	A (7.9)	A (8.0)	+0.1
	Westbound	A (8.4)	A (8.4)	0.0
	Northbound	C (22.0)	D (25.8)	+3.8
	Southbound	B (13.6)	C (17.5)	+3.9

(XX.X) = Average vehicle delay in seconds per vehicle

**2035 LEVELS OF SERVICE
(PM Peak Hour)**

LOCATION	MOVEMENTS	NO BUILD LOS (DELAY)	BUILD LOS (DELAY)	DIFFERENCE + / -
Madison Avenue & Parkwood Rd/Wascana	Eastbound	A (8.2)	A (8.3)	+0.1
	Westbound	A (8.2)	A (8.2)	0.0
	Northbound	C (20.2)	C (23.6)	+3.4
	Southbound	C (15.1)	C (19.4)	+4.3

(XX.X) = Average vehicle delay in seconds per vehicle

The 2035 comparison table shows that the expected increase in average delay experienced is expected to be less than 5 seconds during the AM and PM peak periods with the addition of the development generated traffic.

4.3 Improvements to Accommodate Study Area Traffic

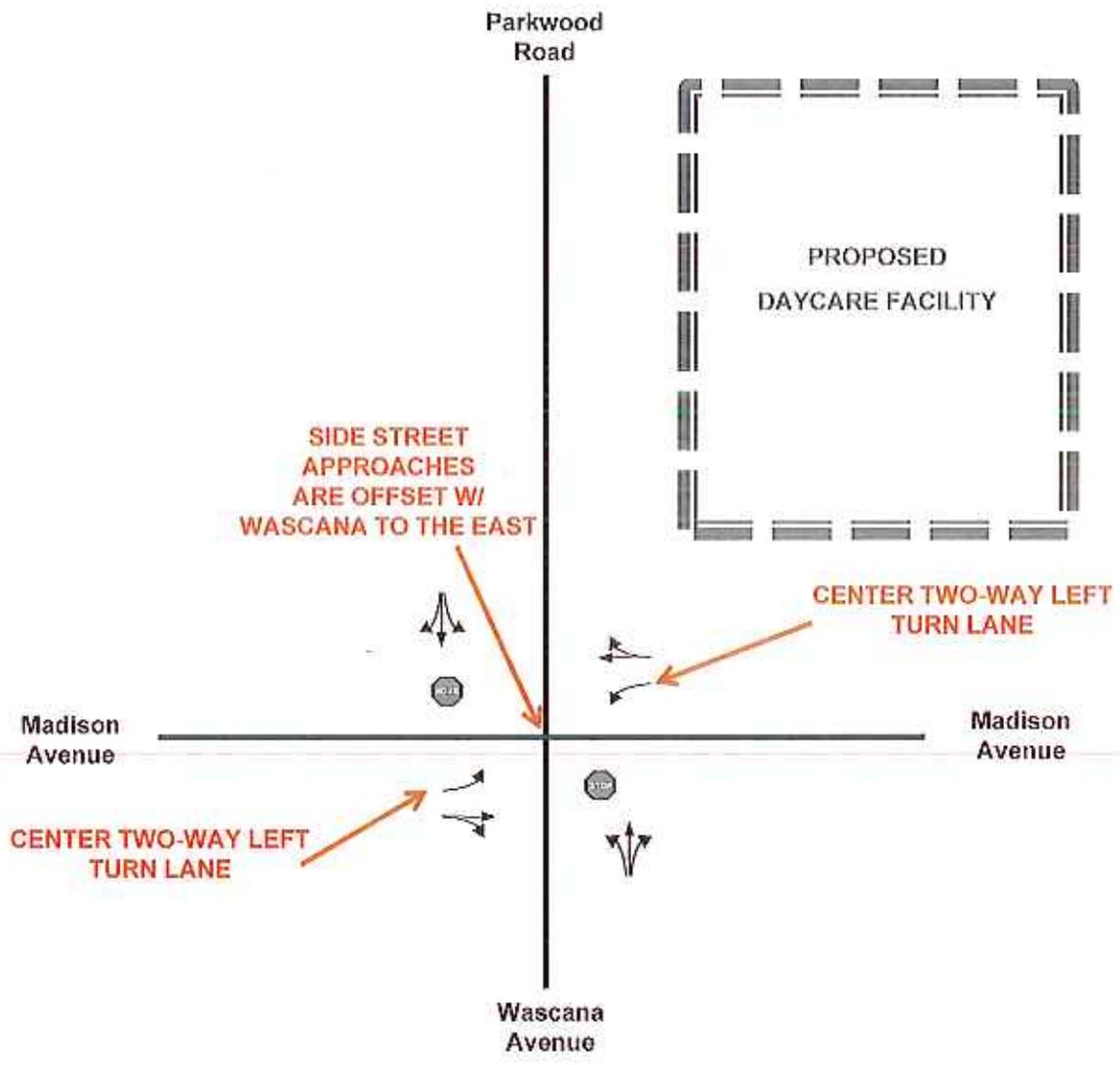
No improvements were found to be necessary to accommodate the existing 2014 traffic at the intersection of Madison Avenue and Parkwood Road/Wascana Avenue.

No improvements were found to be necessary to accommodate the expected 2015 and 2035 No Build traffic at the intersection of Madison Avenue and Parkwood Road/Wascana Avenue.

No improvements were found to be necessary to accommodate the expected 2015 and 2035 Build traffic at the intersection of Madison Avenue and Parkwood Road/Wascana Avenue.

The recommended lane use and traffic control for the study area to accommodate expected traffic volumes can be seen in **Figure 13, Page 31**.

NOT TO SCALE



LEGEND

- Existing Laneage
- Existing Traffic Signal
- Existing Stop Sign
- Recommended Laneage
- Recommended Traffic Signal
- Recommended Stop Sign

5. CONCLUSIONS

Based on the results of the analyses, we offer the following conclusions and recommendations:

- 5.1 The weekday AM peak hour of traffic was determined to be 7:30 AM to 8:30 AM and the weekday PM peak hour of traffic was found to be 4:45 PM to 5:45 PM. These periods will be analyzed since they reflect the period of the highest volume of traffic flow for both the roadway and the development.
- 5.2 The proposed development is expected to consist of a daycare facility at 13714 Madison Avenue. The daycare facility is expected to have a staff of 20 with a capacity of 148 children. The development is expected to open with a staff of 5 and approximately 30-40 children and to reach half capacity within a year.
- 5.3 The site shares a driveway with the residential unit (1679 Parkwood Road) to the north. The driveway provides access to approximately 4 parking spaces along the north side of the building. On-street parking is permitted along both sides of Madison Avenue and the east side of Parkwood Road.
- 5.4 The proposed development is expected to be constructed in 2015. Therefore, 2015 will be analyzed as the opening year and 2035 will be analyzed for the twenty year analysis.
- 5.5 The proposed development is expected to generate the following average hourly traffic during the peak periods after construction:

ITE TRIP GENERATION		# of Employees	TRIP ENDS			
ITE Code	ITE Description		Peak Hour Between 7-9 AM (Enter/Exit)		Peak Hour Between 4-6 PM (Enter/Exit)	
565	Day Care Center	20	52	46	44	50
TOTAL NEW TRIPS			98		94	

- 5.6 No improvements were found to be necessary to accommodate the existing 2014 traffic at the intersection of Madison Avenue and Parkwood Road/Wascana Avenue.

- 5.7 No improvements were found to be necessary to accommodate the expected 2015 and 2035 No Build traffic at the intersection of Madison Avenue and Parkwood Road/Wascana Avenue.
- 5.8 No improvements were found to be necessary to accommodate the expected 2015 and 2035 Build traffic at the intersection of Madison Avenue and Parkwood Road/Wascana Avenue.
- 5.9 Based upon the results of the analysis in this study, it can be seen that the development traffic can be accommodated with the recommended lane use and traffic control at the intersection of Madison Avenue and Parkwood Road/Wascana Avenue.

APPENDIX A
TRAFFIC COUNTS

VEHICULAR TRAFFIC COUNT SUMMARY

Municipality: Lakewood At Intersection of Madison Avenue and Parkwood Road / Waseana Avenue
 Date: 10/14/2014 Day: Tue Comments: _____ Project: 14-124
 Weather: Clear Recorder(s): SJC Date entry by: JJD Date entered: Oct. 15, 2014

TIME BEG/END	Parkwood Rd. FROM NORTH						Waseana Ave. FROM SOUTH						TOTAL NORTH SOUTH						Madison Ave. FROM EAST						Madison Ave. FROM WEST						TOTAL EAST WEST	TOTAL ALL DIRS	PEAK HOUR FACTOR			
	Left	Thru	Right	Total	Trk	Bus	Left	Thru	Right	Total	Trk	Bus	Left	Thru	Right	Total	Trk	Bus	Left	Thru	Right	Total	Trk	Bus	Left	Thru	Right	Total	North	South			East	West		
06:00																																				
07:00	2	12	37	57	0	0	0	18	13	30	0	0	91	20	102	5	217	3	2	33	341	4	378	3	2	595	686	0.694	0.696	0.678	0.606					
08:00	2	19	51	72	1	0	5	10	20	35	1	0	107	14	240	7	261	11	2	21	280	12	413	3	3	674	751	0.818	0.875	0.906	0.860					
09:00	3	6	17	26	0	0	6	5	10	21	1	0	47	9	191	1	191	4	1	9	219	9	227	5	2	428	475	0.650	0.666	0.653	0.731					
10:00																																				
11:00	1	4	25	32	0	0	5	4	16	25	1	0	57	12	219	3	226	4	2	10	272	19	291	13	1	456	543	0.667	0.721	0.932	0.951					
12:00	6	5	14	25	0	0	13	0	9	30	0	0	55	12	252	7	272	7	2	15	213	16	244	13	1	516	571	0.791	0.682	0.810	0.950					
1:00	2	5	23	30	1	0	9	4	15	28	0	0	59	2	251	4	263	12	1	15	244	14	273	10	1	526	594	0.682	0.778	0.822	0.910					
2:00																																				
3:00	6	15	34	55	0	0	7	10	16	33	0	0	88	32	370	3	410	3	2	22	272	13	307	3	2	717	805	0.550	0.750	0.561	0.943					
4:00	2	8	18	28	1	0	10	10	26	46	0	0	74	28	351	9	389	1	2	22	260	32	322	4	2	711	785	0.589	0.630	0.815	0.961					
5:00	7	8	35	50	1	0	24	12	32	68	0	0	118	35	539	8	575	2	2	27	328	32	387	0	1	762	880	0.726	0.810	0.901	0.820					
6:00																																				
7:00																																				
8:00																																				
9:00																																				
TOTALS	32	84	254	570	4	0	87	81	157	325	3	0	695	172	2388	52	2612	47	17	174	2488	151	2813	54	16	5425	6120									
ADT	51	133	402	585	1.7%	0	138	128	248	514	0.9%	0	1089	272	3775	82	4129	2.5%	2.5%	275	3033	239	4447	2.5%	2.5%	6576	9675									

HOURLY FACTOR: 1.69 MONTHLY FACTOR: 0.94 COMBINED FACTOR: 1.58

TMS ENGINEERS, INC.
 4547 Hudson Drive
 Steubenville, Ohio 44224
 (330) 686-6402 FAX: (330) 686-6417

TMS Engineers, Inc.

4547 Hudson Drive
Stow, Ohio 44224

Tel: (330) 686-6402 - Fax: (330) 686-6417

Start Time	PARKWOOD ROAD From North				MADISON AVENUE From East				WASCANA AVENUE From South				MADISON AVENUE From West								
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 09:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:30 AM																					
07:30 AM	12	3	0	7	22	2	57	4	0	63	4	4	5	24	37	1	105	9	0	115	237
07:45 AM	13	4	2	10	29	2	70	8	0	80	4	9	1	11	25	2	135	19	0	156	290
08:00 AM	14	4	0	2	20	2	63	7	0	72	5	4	1	1	11	4	106	10	0	120	223
08:15 AM	13	5	1	4	23	2	54	2	0	58	2	3	2	7	14	2	88	7	1	98	193
Total Volume	52	16	3	23	94	8	244	21	0	273	15	20	9	43	87	9	434	45	1	489	943
% App. Total	55.3	17	3.2	24.5		2.9	89.4	7.7	0		17.2	23	10.3	49.4		1.8	88.8	9.2	0.2		
PHF	.929	.800	.375	.575	.810	1.00	.871	.658	.000	.853	.750	.558	.450	.448	.588	.563	.804	.592	.250	.784	.813

Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Entire Intersection Begins at 04:45 PM

04:45 PM	5	2	1	2	10	2	93	11	2	108	11	3	4	12	30	11	64	4	0	79	227
05:00 PM	3	3	2	6	14	1	98	5	0	104	4	2	7	12	25	10	79	5	3	97	240
05:15 PM	6	1	1	5	13	2	81	8	0	91	9	5	4	11	29	9	97	12	1	119	252
05:30 PM	12	4	1	7	24	2	77	7	3	89	9	3	4	13	29	7	80	6	0	93	255
Total Volume	28	10	5	20	61	7	349	31	5	392	33	13	19	48	113	37	320	27	4	388	954
% App. Total	42.6	16.4	8.2	32.8		1.8	89	7.9	1.3		28.2	11.5	16.8	42.5		9.5	82.5	7	1		
PHF	.542	.625	.625	.714	.635	.875	.890	.705	.417	.907	.750	.650	.679	.923	.942	.841	.825	.563	.333	.815	.946

APPENDIX B
TRIP GENERATION WORKSHEETS

DAY CARE CENTER

ITE CODE = 565

Lakewood, Ohio

Date: **11/4/2014**

Trip Generation based on:

Size of Analysis Area: **20** Employees

# of Employees	Average Rate	Standard Deviation	Adjustment factor	Driveway Volume
Average Weekday 2-way Volume	26.78	0.00	1.00	536
7-9 AM Peak Hour Enter	2.57	0.00	1.00	52
7-9 AM Peak Hour Exit	2.28	0.00	1.00	46
7-9 AM Peak Hour Total	4.85	3.04	1.00	97
4-6 PM Peak Hour Enter	2.22	0.00	1.00	44
4-6 PM Peak Hour Exit	2.51	0.00	1.00	50
4-6 PM Peak Hour Total	4.73	3.20	1.00	95
Saturday 2-way Volume	2.61	3.07	1.00	52
Saturday Peak Hour Enter	0.45	0.00	1.00	9
Saturday Peak Hour Exit	0.26	0.00	1.00	5
Saturday Peak Hour Total	0.71	1.09	1.00	14

****The above rates were calculated from the equations shown below:**

Average Weekday 2-way Volume	$T = 26.88(X) - 2.06$		
7-9 AM Peak Hour Total	Not Given - Use ITE Rates	Enter	0.53
		Exit	0.47
4-6 PM Peak Hour Total	Not Given - Use ITE Rates	Enter	0.47
		Exit	0.53
Saturday 2-way Volume	Not Given - Use ITE Rates		
Saturday Peak Hour Volume	Not Given - Use ITE Rates	Enter	0.63
		Exit	0.37

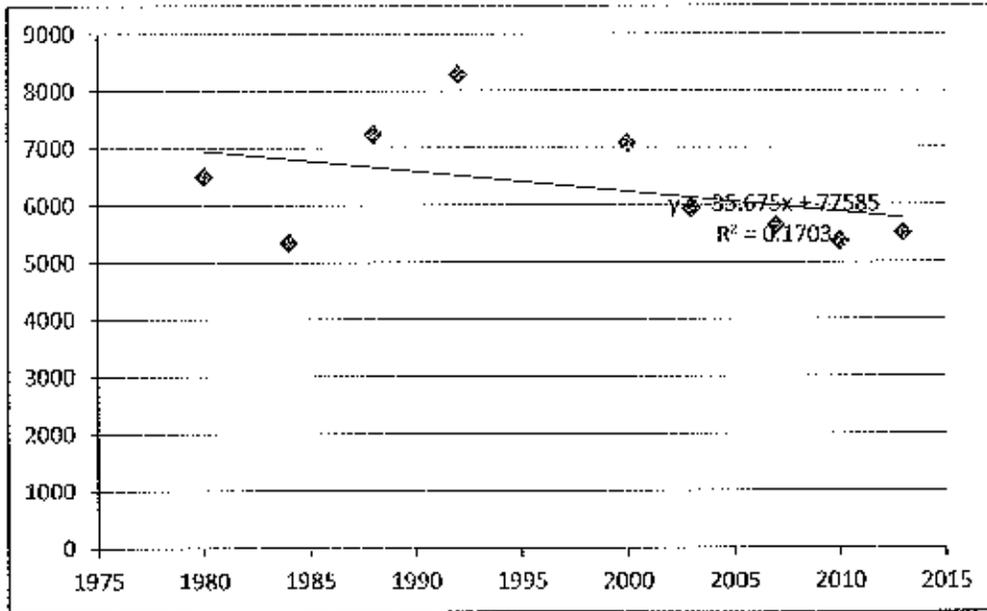
Source: Institute of Transportation Engineers
Trip Generation, 9th Edition, 2012.

APPENDIX C
GROWTH RATE

US 6 @ WEST 117TH COUNT DATA FROM ODOT WEBSITE/TRAFFIC COUNT DATA

Year	Volume	% Diff per Yr to Prev Yr Count	% Diff per Yr Since 2011
2013	5520	0.93%	
2010	5370	-1.60%	0.93%
2007	5640	-1.26%	-0.35%
2003	5940	-5.41%	-0.71%
2000	7090	-1.81%	-1.70%
1992	8290	3.63%	-1.59%
1988	7240	8.90%	-0.95%
1984	5340	-4.46%	0.12%
1980	6500		-0.46%

AVG/YEAR Since 1980 -0.46%
AVG/YEAR Since 1999 -1.59%
AVG/YEAR Since 2004 -0.71%



APPENDIX D
EXISTING CAPACITY ANALYSIS WORKSHEETS
2014

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	ABC	Intersection	Madison & Parkwood/Wascana
Agency/Co.	TMS Engineers, Inc.	Jurisdiction	Lakewood, OH
Date Performed	11/4/2014	Analysis Year	2014
Analysis Time Period	AM Peak		
Project Description <i>Existing Conditions</i>			
East/West Street: <i>Madison Avenue</i>		North/South Street: <i>Parkwood Rd/Wascana Ave</i>	
Intersection Orientation: <i>East-West</i>		Study Period (hrs): <i>0.25</i>	

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound			
	Movement	1	2	3	4	5	6
	L	T	R	L	T	R	
Volume (veh/h)	45	434	9	21	244	8	
Peak-Hour Factor, PHF	0.81	0.81	0.81	0.81	0.81	0.81	
Hourly Flow Rate, HFR (veh/h)	55	535	11	25	301	9	
Percent Heavy Vehicles	0	--	--	0	--	--	
Median Type	<i>Undivided</i>						
RT Channelized			0			0	
Lanes	0	2	0	0	2	0	
Configuration	LT		TR	LT		TR	
Upstream Signal		0			0		

Minor Street	Northbound			Southbound			
	Movement	7	8	9	10	11	12
	L	T	R	L	T	R	
Volume (veh/h)	15	20	9	3	16	52	
Peak-Hour Factor, PHF	0.81	0.81	0.81	0.81	0.81	0.81	
Hourly Flow Rate, HFR (veh/h)	18	24	11	3	19	64	
Percent Heavy Vehicles	0	0	0	0	0	0	
Percent Grade (%)		0			0		
Flared Approach		N			N		
Storage		0			0		
RT Channelized			0			0	
Lanes	0	1	0	0	1	0	
Configuration		LTR			LTR		

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
	1	4	7	8	9	10	11	12
Movement	LT	LT		LTR			LTR	
v (veh/h)	55	25		53			86	
C (m) (veh/h)	1262	1033		257			514	
v/c	0.04	0.02		0.21			0.17	
95% queue length	0.14	0.07		0.76			0.60	
Control Delay (s/veh)	8.0	8.6		22.6			13.4	
LOS	A	A		C			B	
Approach Delay (s/veh)	--	--		22.6			13.4	
Approach LOS	--	--		C			B	

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	ABC	Intersection	Madison & Parkwood/Wascana
Agency/Co.	TMS Engineers, Inc.	Jurisdiction	Lakewood, OH
Date Performed	11/4/2014	Analysis Year	2014
Analysis Time Period	PM Peak		
Project Description <i>Existing Conditions</i>			
East/West Street: <i>Madison Avenue</i>		North/South Street: <i>Parkwood Rd/Wascana Ave</i>	
Intersection Orientation: <i>East-West</i>		Study Period (hrs): <i>0.25</i>	

Vehicle Volumes and Adjustments						
Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	27	320	37	31	349	7
Peak-Hour Factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Hourly Flow Rate, HFR (veh/h)	28	336	38	32	367	7
Percent Heavy Vehicles	0	--	--	0	--	--
Median Type	<i>Undivided</i>					
RT Channelized			0			0
Lanes	0	2	0	0	2	0
Configuration	<i>LT</i>		<i>TR</i>	<i>LT</i>		<i>TR</i>
Upstream Signal		0			0	
Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	19	33	33	5	10	26
Peak-Hour Factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Hourly Flow Rate, HFR (veh/h)	20	34	34	5	10	27
Percent Heavy Vehicles	0	0	0	0	0	0
Percent Grade (%)		0			0	
Flared Approach		<i>N</i>			<i>N</i>	
Storage		0			0	
RT Channelized			0			0
Lanes	0	1	0	0	1	0
Configuration		<i>LTR</i>			<i>LTR</i>	

Delay, Queue Length, and Level of Service								
Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	<i>LT</i>	<i>LT</i>		<i>LTR</i>			<i>LTR</i>	
v (veh/h)	28	32		88			42	
C (m) (veh/h)	1196	1196		397			497	
v/c	0.02	0.03		0.22			0.08	
95% queue length	0.07	0.08		0.84			0.28	
Control Delay (s/veh)	8.1	8.1		16.6			12.9	
LOS	<i>A</i>	<i>A</i>		<i>C</i>			<i>B</i>	
Approach Delay (s/veh)	--	--		16.6			12.9	
Approach LOS	--	--		<i>C</i>			<i>B</i>	

APPENDIX E
NO-BUILD CAPACITY ANALYSIS WORKSHEETS - 2015

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	ABC	Intersection	Madison & Parkwood/Wascana
Agency/Co.	TMS Engineers, Inc.	Jurisdiction	Lakewood, OH
Date Performed	11/4/2014	Analysis Year	2015
Analysis Time Period	AM Peak		
Project Description: <i>No Build Conditions</i>			
East/West Street: <i>Madison Avenue</i>		North/South Street: <i>Parkwood Rd/Wascana Ave</i>	
Intersection Orientation: <i>East-West</i>		Study Period (hrs): <i>0.25</i>	

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound			
	Movement	1	2	3	4	5	6
		L	T	R	L	T	R
Volume (veh/h)		45	435	9	21	245	8
Peak-Hour Factor, PHF		0.92	0.92	0.92	0.92	0.92	0.92
Hourly Flow Rate, HFR (veh/h)		48	472	9	22	266	8
Percent Heavy Vehicles		0	--	--	0	--	--
Median Type	<i>Undivided</i>						
RT Channelized				0			0
Lanes		1	1	0	1	1	0
Configuration		L		TR	L		TR
Upstream Signal			0			0	

Minor Street	Northbound			Southbound			
	Movement	7	8	9	10	11	12
		L	T	R	L	T	R
Volume (veh/h)		15	20	9	3	16	52
Peak-Hour Factor, PHF		0.92	0.92	0.92	0.92	0.92	0.92
Hourly Flow Rate, HFR (veh/h)		16	21	9	3	17	56
Percent Heavy Vehicles		0	0	0	0	0	0
Percent Grade (%)		0			0		
Flared Approach		N			N		
Storage		0			0		
RT Channelized				0			0
Lanes		0	1	0	0	1	0
Configuration		LTR			LTR		

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
			7	8	9	10	11	12
Movement	1	4						
Lane Configuration	L	L		LTR			LTR	
v (veh/h)	48	22		46			76	
C (m) (veh/h)	1301	1092		273			511	
v/c	0.04	0.02		0.17			0.15	
95% queue length	0.11	0.06		0.60			0.52	
Control Delay (s/veh)	7.9	8.4		20.8			13.3	
LOS	A	A		C			B	
Approach Delay (s/veh)	--	--		20.8			13.3	
Approach LOS	--	--		C			B	

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	ABC	Intersection	Madison & Parkwood/Wascana
Agency/Co.	TMS Engineers, Inc.	Jurisdiction	Lakewood, OH
Date Performed	11/4/2014	Analysis Year	2015
Analysis Time Period	PM Peak		
Project Description: No Build Conditions			
East/West Street: Madison Avenue		North/South Street: Parkwood Rd/Wascana Ave	
Intersection Orientation: East-West		Study Period (hrs): 0.25	

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
	1	2	3	4	5	6
Movement	L	T	R	L	T	R
Volume (veh/h)	27	321	37	31	350	7
Peak-Hour Factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Hourly Flow Rate, HFR (veh/h)	29	348	40	33	380	7
Percent Heavy Vehicles	0	--	--	0	--	--
Median Type	Undivided					
RT Channelized			0			0
Lanes	1	1	0	1	1	0
Configuration	L		TR	L		TR
Upstream Signal		0			0	

Minor Street	Northbound			Southbound		
	7	8	9	10	11	12
Movement	L	T	R	L	T	R
Volume (veh/h)	19	33	33	5	10	26
Peak-Hour Factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Hourly Flow Rate, HFR (veh/h)	20	35	35	5	10	28
Percent Heavy Vehicles	0	0	0	0	0	0
Percent Grade (%)		0			0	
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	1	0	0	1	0
Configuration		LTR			LTR	

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
	1	4	7	8	9	10	11	12
Movement	L	L	LTR			LTR		
v (veh/h)	29	33	90			43		
C (m) (veh/h)	1183	1182	341			417		
v/c	0.02	0.03	0.26			0.10		
95% queue length	0.08	0.09	1.04			0.34		
Control Delay (s/veh)	8.1	8.1	19.3			14.6		
LOS	A	A	C			B		
Approach Delay (s/veh)	--	--	19.3			14.6		
Approach LOS	--	--	C			B		

APPENDIX F
NO-BUILD CAPACITY ANALYSIS WORKSHEETS - 2035

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	ABC	Intersection	Madison & Parkwood/Wascana
Agency/Co.	TMS Engineers, Inc.	Jurisdiction	Lakewood, OH
Date Performed	11/4/2014	Analysis Year	2035
Analysis Time Period	AM Peak		
Project Description: <i>No Build Conditions</i>			
East/West Street: <i>Madison Avenue</i>		North/South Street: <i>Parkwood Rd/Wascana Ave</i>	
Intersection Orientation: <i>East-West</i>		Study Period (hrs): <i>0.25</i>	

Vehicle Volumes and Adjustments						
Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	45	457	9	21	257	8
Peak-Hour Factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Hourly Flow Rate, HFR (veh/h)	48	496	9	22	279	8
Percent Heavy Vehicles	0	--	--	0	--	--
Median Type	<i>Undivided</i>					
RT Channelized			0			0
Lanes	1	1	0	1	1	0
Configuration	L		TR	L		TR
Upstream Signal		0			0	
Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	15	20	9	3	16	52
Peak-Hour Factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Hourly Flow Rate, HFR (veh/h)	16	21	9	3	17	56
Percent Heavy Vehicles	0	0	0	0	0	0
Percent Grade (%)	0			0		
Flared Approach	<i>N</i>			<i>N</i>		
Storage	0			0		
RT Channelized			0			0
Lanes	0	1	0	0	1	0
Configuration	<i>LTR</i>			<i>LTR</i>		

Delay, Queue Length, and Level of Service								
Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	L	L		LTR			LTR	
v (veh/h)	48	22		46			76	
C (m) (veh/h)	1287	1070		258			493	
w/c	0.04	0.02		0.18			0.15	
95% queue length	0.12	0.06		0.64			0.54	
Control Delay (s/veh)	7.9	8.4		22.0			13.6	
LOS	A	A		C			B	
Approach Delay (s/veh)	--	--		22.0			13.6	
Approach LOS	--	--		C			B	

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	ABC	Intersection	Madison & Parkwood/Wascana
Agency/Co.	TMS Engineers, Inc.	Jurisdiction	Lakewood, OH
Date Performed	11/4/2014	Analysis Year	2035
Analysis Time Period	PM Peak		
Project Description: No Build Conditions			
East/West Street: Madison Avenue		North/South Street: Parkwood Rd/Wascana Ave	
Intersection Orientation: East-West		Study Period (hrs): 0.25	

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound			
	Movement	1	2	3	4	5	6
		L	T	R	L	T	R
Volume (veh/h)		27	337	37	31	367	7
Peak-Hour Factor, PHF		0.92	0.92	0.92	0.92	0.92	0.92
Hourly Flow Rate, HFR (veh/h)		29	368	40	33	398	7
Percent Heavy Vehicles		0	--	--	0	--	--
Median Type	Undivided						
RT Channelized				0			0
Lanes		1	1	0	1	1	0
Configuration		L		TR	L		TR
Upstream Signal			0			0	

Minor Street	Northbound			Southbound			
	Movement	7	8	9	10	11	12
		L	T	R	L	T	R
Volume (veh/h)		19	33	33	5	10	26
Peak-Hour Factor, PHF		0.92	0.92	0.92	0.92	0.92	0.92
Hourly Flow Rate, HFR (veh/h)		20	35	35	5	10	28
Percent Heavy Vehicles		0	0	0	0	0	0
Percent Grade (%)			0			0	
Flared Approach			N			N	
Storage			0			0	
RT Channelized				0			0
Lanes		0	1	0	0	1	0
Configuration			LTR			LTR	

Delay, Queue Length, and Level of Service

Approach	Eastbound		Westbound		Northbound			Southbound		
	Movement	1	4	7	8	9	10	11	12	
Lane Configuration		L	L		LTR			LTR		
v (veh/h)		29	33		90			43		
C (m) (veh/h)		1165	1164		326			401		
v/c		0.02	0.03		0.28			0.11		
95% queue length		0.08	0.09		1.10			0.36		
Control Delay (s/veh)		8.2	8.2		20.2			15.1		
LOS		A	A		C			C		
Approach Delay (s/veh)		--	--		20.2			15.1		
Approach LOS		--	--		C			C		

APPENDIX G
BUILD CAPACITY ANALYSIS WORKSHEETS - 2015

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	ABC	Intersection	Madison & Parkwood/Wascania
Agency/Co.	TMS Engineers, Inc.	Jurisdiction	Lakewood, OH
Date Performed	11/4/2014	Analysis Year	2015
Analysis Time Period	AM Peak		
Project Description: <i>Build Conditions</i>			
East/West Street: <i>Madison Avenue</i>		North/South Street: <i>Parkwood Rd/Wascania Ave</i>	
Intersection Orientation: <i>East-West</i>		Study Period (hrs): <i>0.25</i>	

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	76	435	9	21	245	26
Peak-Hour Factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Hourly Flow Rate, HFR (veh/h)	82	472	9	22	266	28
Percent Heavy Vehicles	0	--	--	0	--	--
Median Type	<i>Undivided</i>					
RT Channelized			0			0
Lanes	1	1	0	1	1	0
Configuration	L		TR	L		TR
Upstream Signal		0			0	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	15	23	9	15	18	60
Peak-Hour Factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Hourly Flow Rate, HFR (veh/h)	16	24	9	16	19	65
Percent Heavy Vehicles	0	0	0	0	0	0
Percent Grade (%)	0			0		
Flared Approach	N			N		
Storage	0			0		
RT Channelized			0			0
Lanes	0	1	0	0	1	0
Configuration		LTR			LTR	

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	L	L		LTR			LTR	
v (veh/h)	82	22		49			100	
C (m) (veh/h)	1279	1092		235			404	
w/c	0.06	0.02		0.21			0.25	
95% queue length	0.21	0.06		0.77			0.96	
Control Delay (s/veh)	8.0	8.4		24.3			16.8	
LOS	A	A		C			C	
Approach Delay (s/veh)	--	--		24.3			16.8	
Approach LOS	--	--		C			C	

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	ABC	Intersection	Madison & Parkwood/Wascana
Agency/Co.	TMS Engineers, Inc.	Jurisdiction	Lakewood, OH
Date Performed	11/4/2014	Analysis Year	2015
Analysis Time Period	PM Peak		
Project Description: <i>Build Conditions</i>			
East/West Street: <i>Madison Avenue</i>		North/South Street: <i>Parkwood Rd/Wascana Ave</i>	
Intersection Orientation: <i>East-West</i>		Study Period (hrs): <i>0.25</i>	

Vehicle Volumes and Adjustments						
Major Street Movement	Eastbound			Westbound		
	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	48	321	37	31	350	28
Peak-Hour Factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Hourly Flow Rate, HFR (veh/h)	52	348	40	33	380	30
Percent Heavy Vehicles	0	—	—	0	—	—
Median Type	Undivided					
RT Channelized			0			0
Lanes	1	1	0	1	1	0
Configuration	L		TR	L		TR
Upstream Signal		0			0	

Minor Street Movement	Northbound			Southbound		
	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	19	37	33	15	15	37
Peak-Hour Factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Hourly Flow Rate, HFR (veh/h)	20	40	35	16	16	40
Percent Heavy Vehicles	0	0	0	0	0	0
Percent Grade (%)	0			0		
Flared Approach	N			N		
Storage	0			0		
RT Channelized			0			0
Lanes	0	1	0	0	1	0
Configuration	LTR			LTR		

Delay, Queue Length, and Level of Service								
Approach Movement	Eastbound	Westbound	Northbound			Southbound		
	1	4	7	8	9	10	11	12
Lane Configuration	L	L		LTR			LTR	
v (veh/h)	52	33		95			72	
C (m) (veh/h)	1160	1182		302			337	
v/c	0.04	0.03		0.31			0.21	
95% queue length	0.14	0.09		1.31			0.80	
Control Delay (s/veh)	8.2	8.1		22.3			18.6	
LOS	A	A		C			C	
Approach Delay (s/veh)	—	—		22.3			18.6	
Approach LOS	—	—		C			C	

APPENDIX H
BUILD CAPACITY ANALYSIS WORKSHEETS - 2035

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information						
Analyst	ABC	Intersection	Madison & Parkwood/Wascana					
Agency/Co.	TMS Engineers, Inc.	Jurisdiction	Lakewood, OH					
Date Performed	11/4/2014	Analysis Year	2035					
Analysis Time Period	AM Peak							
Project Description <i>Build Conditions</i>								
East/West Street: <i>Madison Avenue</i>			North/South Street: <i>Parkwood Rd/Wascana Ave</i>					
Intersection Orientation: <i>East-West</i>			Study Period (hrs): <i>0.25</i>					
Vehicle Volumes and Adjustments								
Major Street	Eastbound			Westbound				
Movement	1	2	3	4	5	6		
	L	T	R	L	T	R		
Volume (veh/h)	76	457	9	21	257	26		
Peak-Hour Factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92		
Hourly Flow Rate, HFR (veh/h)	82	496	9	22	279	28		
Percent Heavy Vehicles	0	--	--	0	--	--		
Median Type	<i>Undivided</i>							
RT Channelized			0			0		
Lanes	1	1	0	1	1	0		
Configuration	L		TR	L		TR		
Upstream Signal		0			0			
Minor Street	Northbound			Southbound				
Movement	7	8	9	10	11	12		
	L	T	R	L	T	R		
Volume (veh/h)	15	23	9	15	18	60		
Peak-Hour Factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92		
Hourly Flow Rate, HFR (veh/h)	16	24	9	16	19	65		
Percent Heavy Vehicles	0	0	0	0	0	0		
Percent Grade (%)		0			0			
Flared Approach		N			N			
Storage		0			0			
RT Channelized			0			0		
Lanes	0	1	0	0	1	0		
Configuration		LTR			LTR			
Delay, Queue Length, and Level of Service								
Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	L	L		LTR			LTR	
v (veh/h)	82	22		49			100	
C (m) (veh/h)	1265	1070		222			387	
v/c	0.06	0.02		0.22			0.26	
95% queue length	0.21	0.06		0.82			1.02	
Control Delay (s/veh)	8.0	8.4		25.8			17.5	
LOS	A	A		D			C	
Approach Delay (s/veh)	--	--		25.8			17.5	
Approach LOS	--	--		D			C	

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	ABC	Intersecton	Madison & Parkwood/Wascana
Agency/Co.	TMS Engineers, Inc.	Jurisdiction	Lakewood, OH
Date Performed	11/4/2014	Analysis Year	2035
Analysis Time Period	PM Peak		
Project Description <i>Build Conditions</i>			
East/West Street: <i>Madison Avenue</i>		North/South Street: <i>Parkwood Rd/Wascana Ave</i>	
Intersection Orientation: <i>East-West</i>		Study Period (hrs): <i>0.25</i>	

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	48	337	37	31	367	28
Peak Hour Factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Hourly Flow Rate, HFR (veh/h)	52	368	40	33	398	30
Percent Heavy Vehicles	0	--	--	0	--	--
Median Type	<i>Undivided</i>					
RT Channelized			0			0
Lanes	1	1	0	1	1	0
Configuration	L		TR	L		TR
Upstream Signal		0			0	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	19	37	33	15	15	37
Peak Hour Factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Hourly Flow Rate, HFR (veh/h)	20	40	35	16	16	40
Percent Heavy Vehicles	0	0	0	0	0	0
Percent Grade (%)	0			0		
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	1	0	0	1	0
Configuration		LTR			LTR	

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	L	L		LTR			LTR	
v (veh/h)	52	33		95			72	
C (m) (veh/h)	1142	1184		287			321	
v/c	0.05	0.03		0.33			0.22	
95% queue length	0.14	0.09		1.40			0.84	
Control Delay (s/veh)	8.3	8.2		23.6			19.4	
LOS	A	A		C			C	
Approach Delay (s/veh)	--	--		23.6			19.4	
Approach LOS	--	--		C			C	

TRAFFIC IMPACT STUDY

PROPOSED
DAYCARE FACILITY

LAKESWOOD, OHIO

NOVEMBER 10, 2014

Prepared For:
Kidzenia Learning Center, LLC
13710 Madison Avenue
Lakewood, Ohio 44107

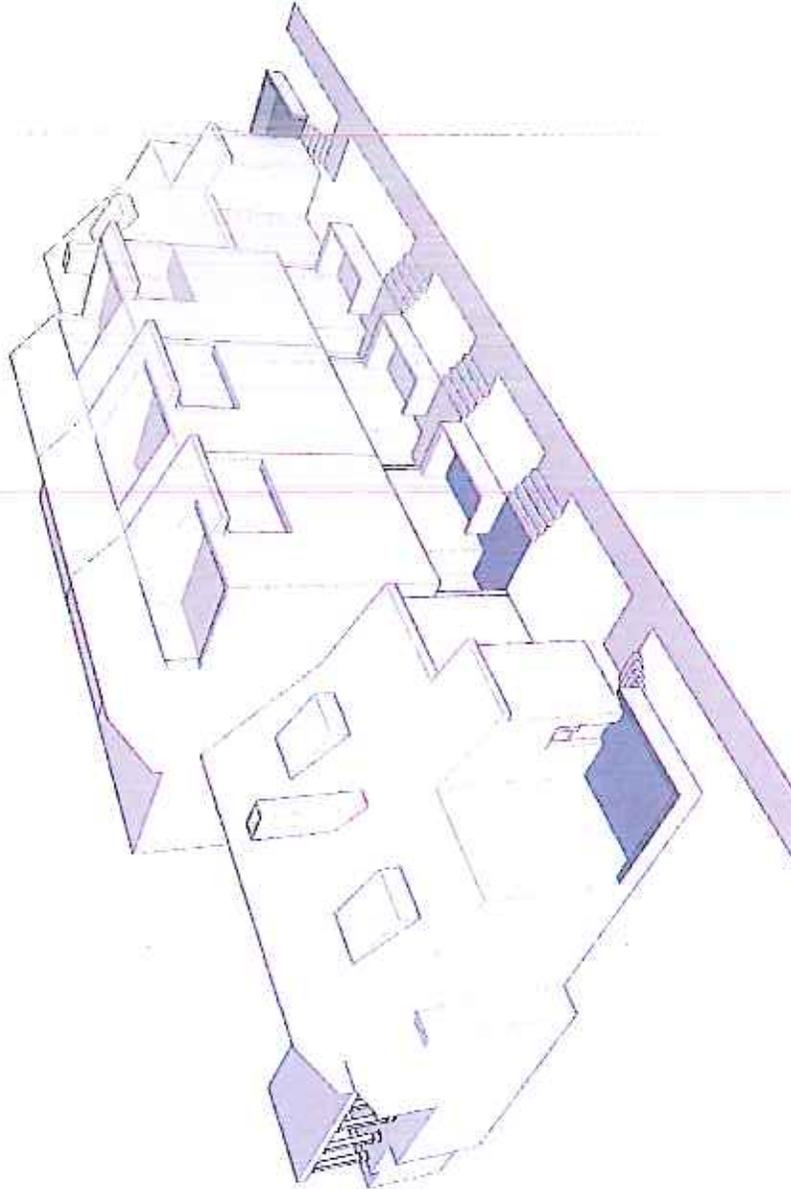
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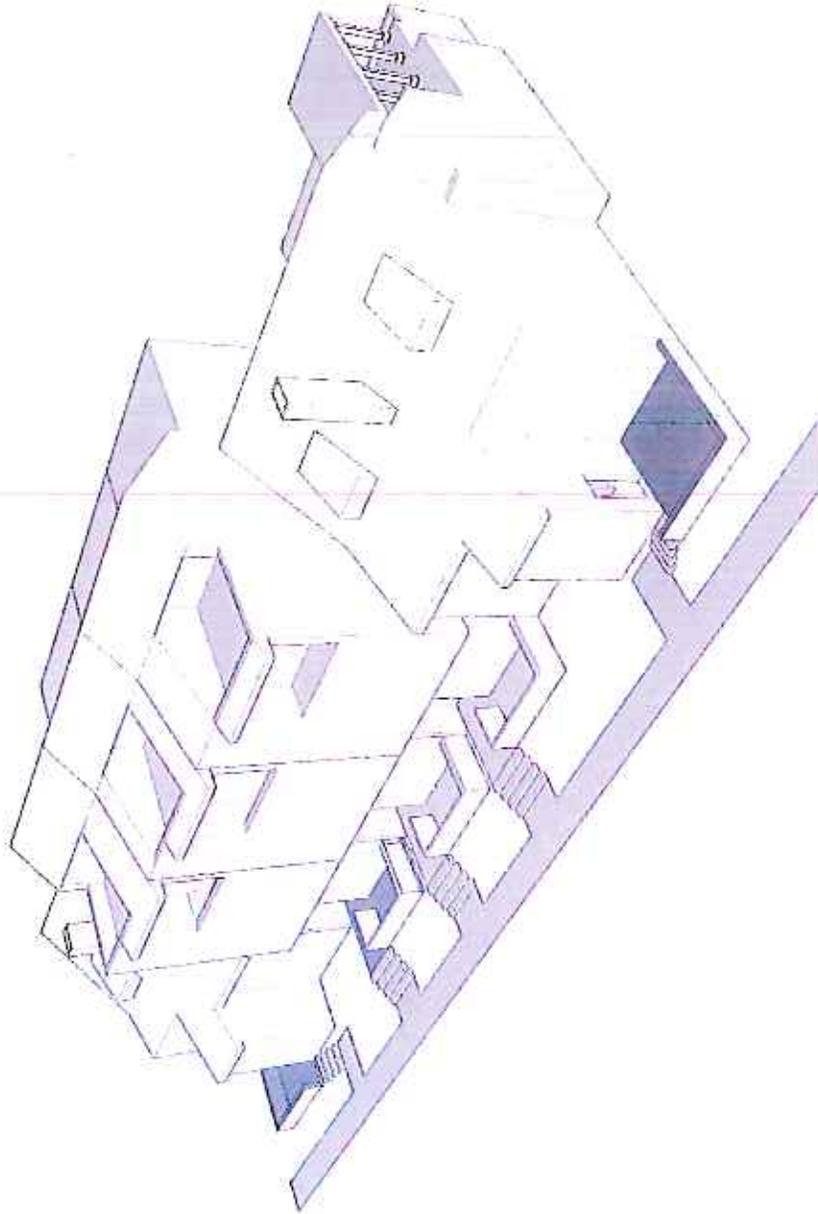
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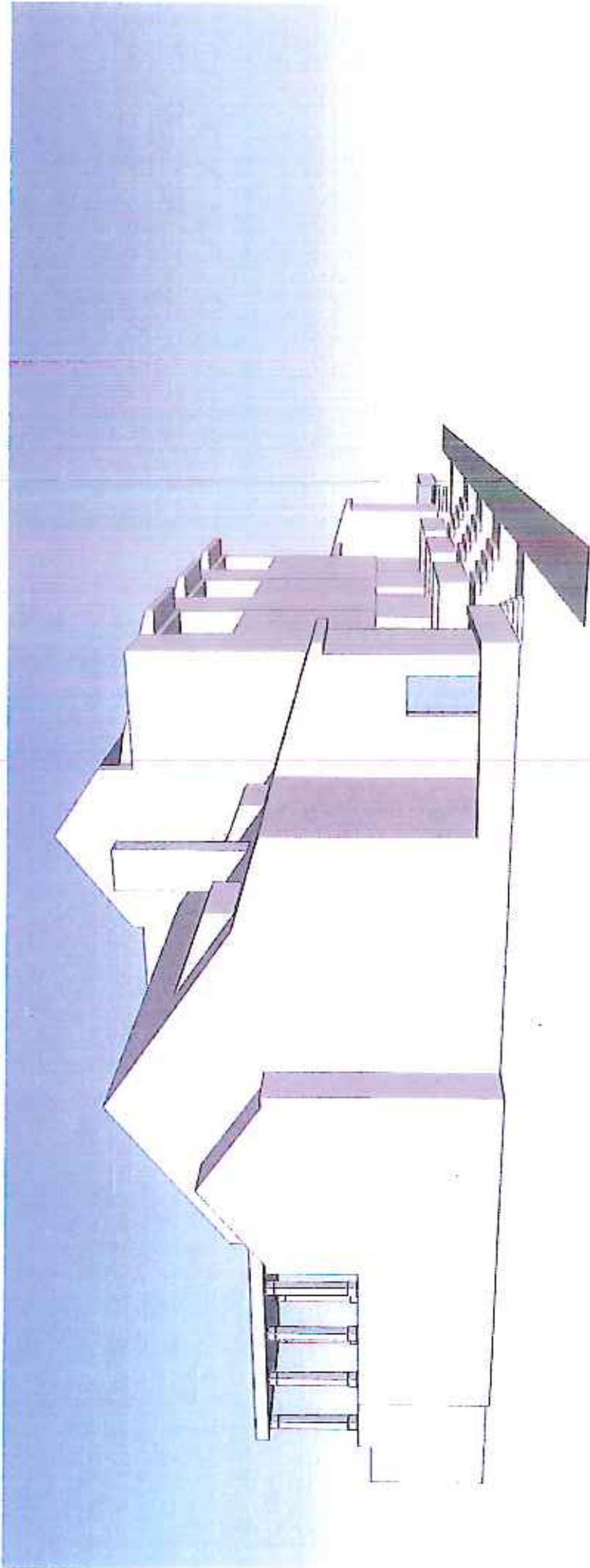


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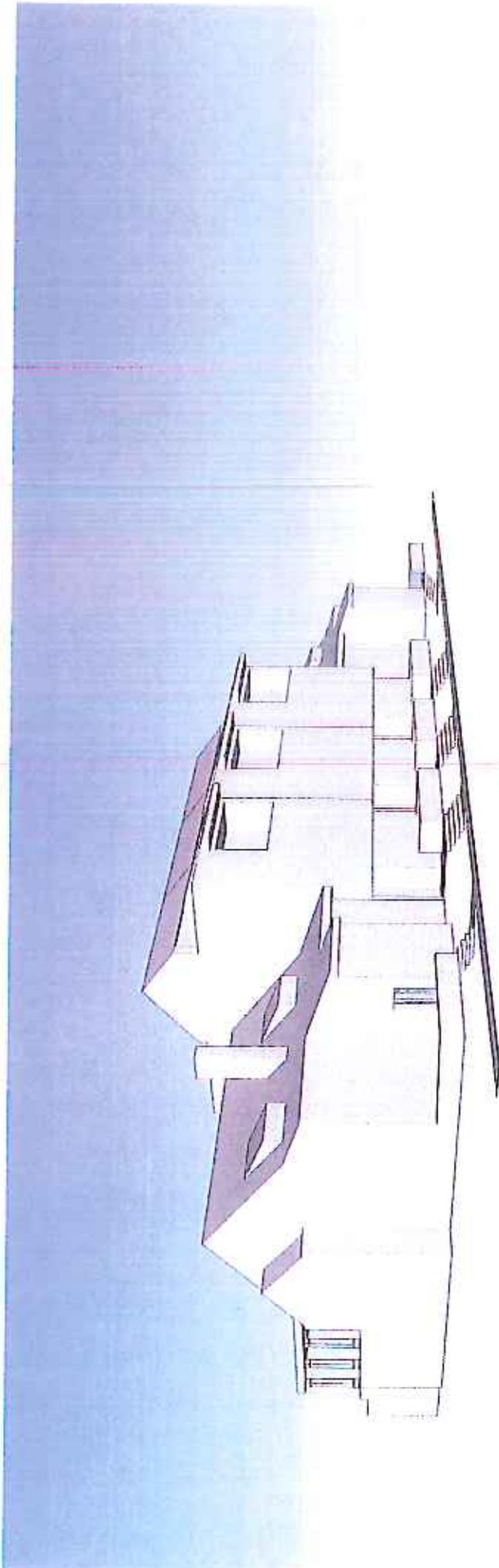
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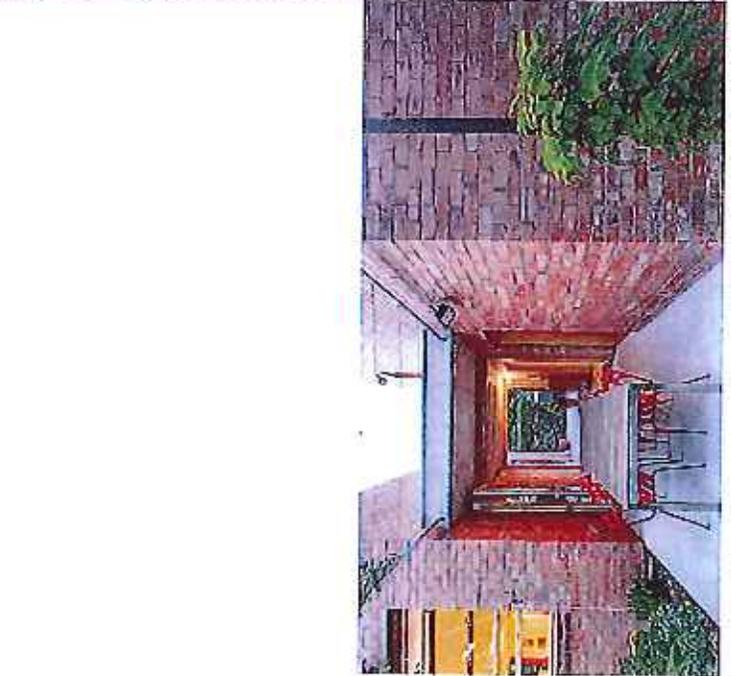


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MATERIALS

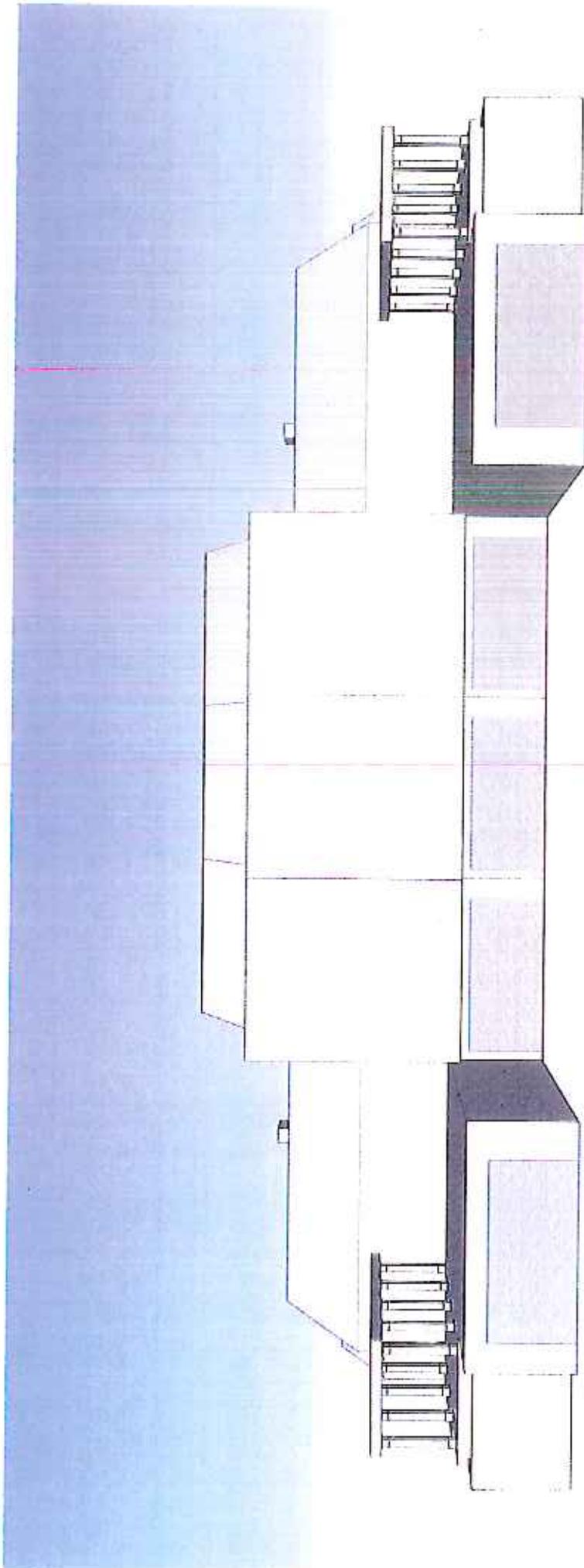
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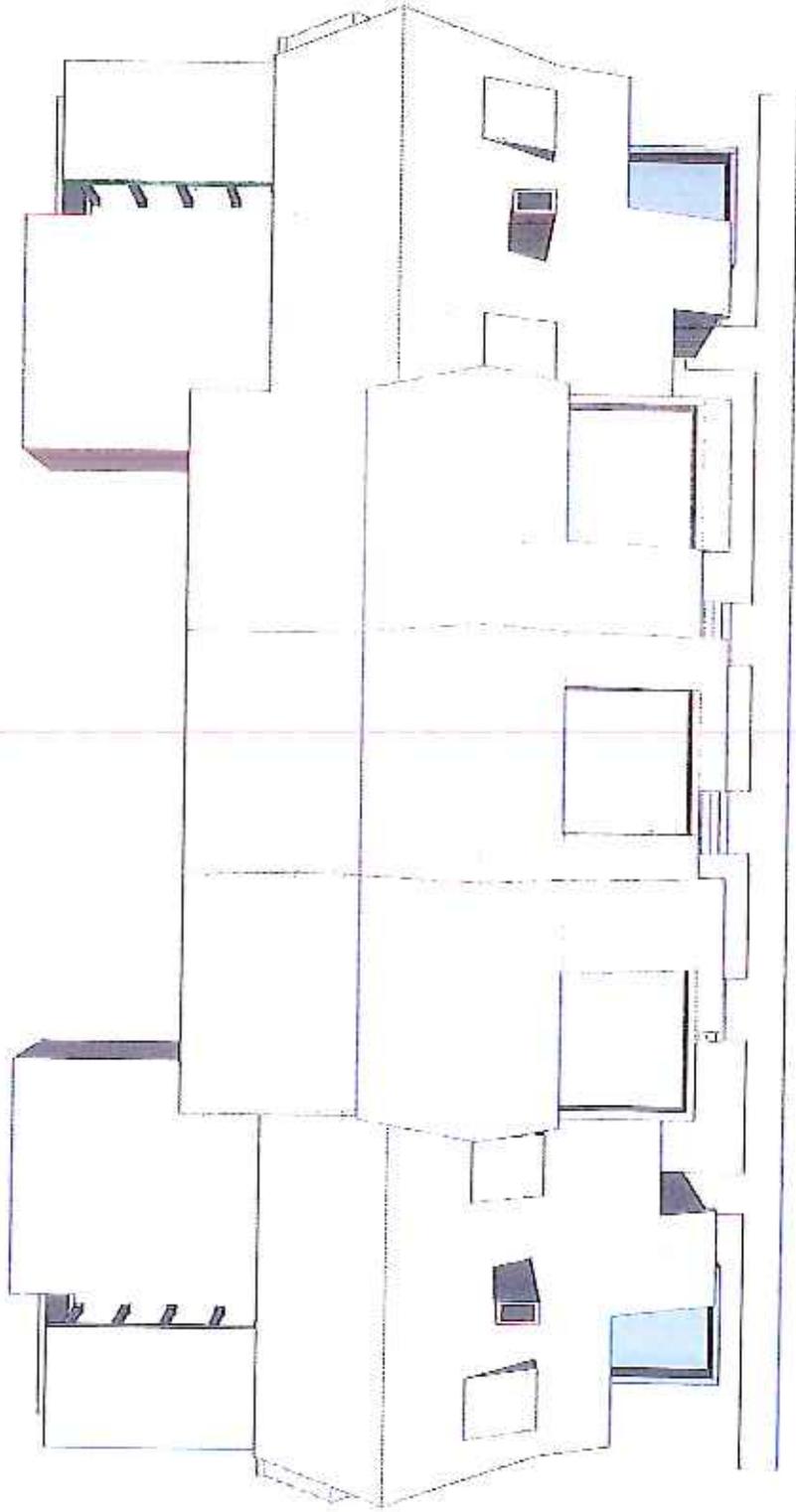
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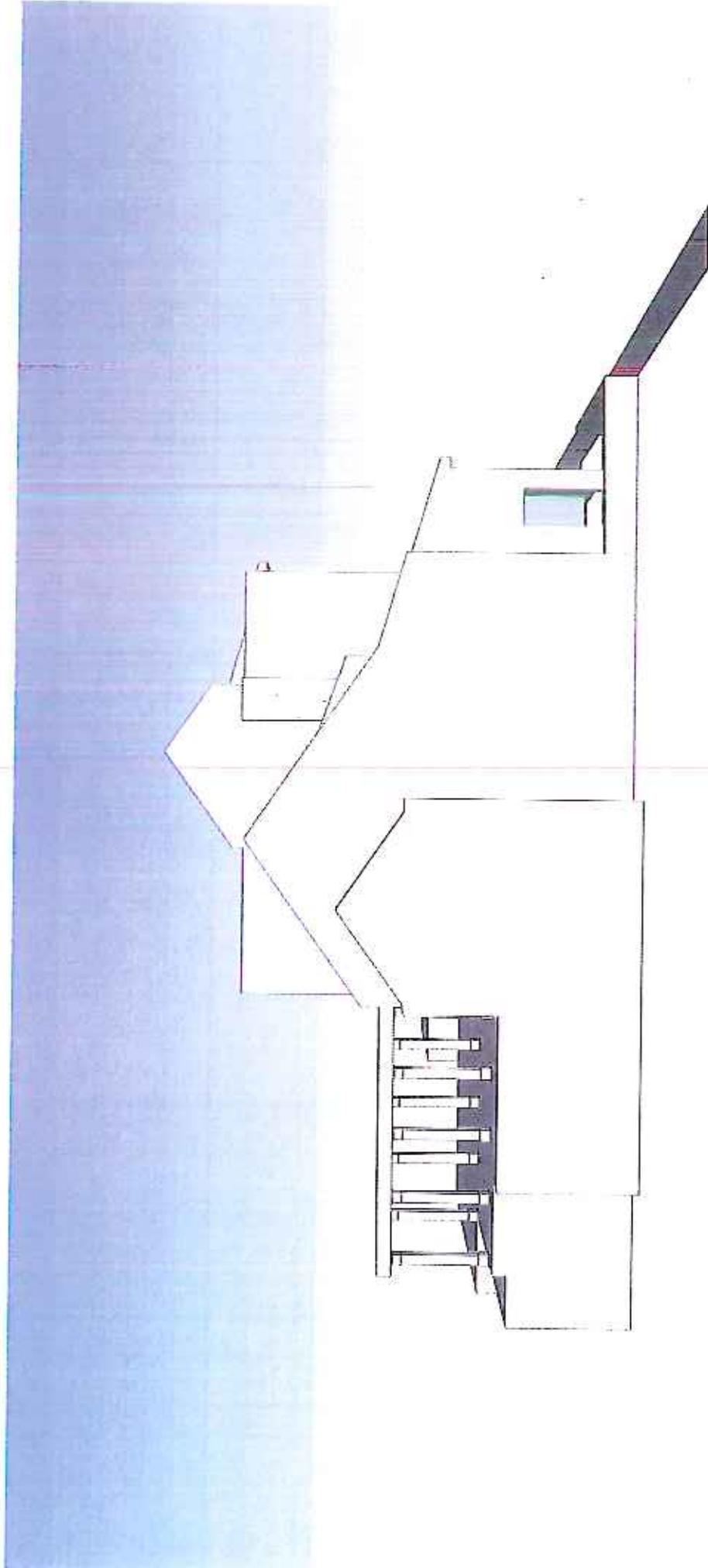
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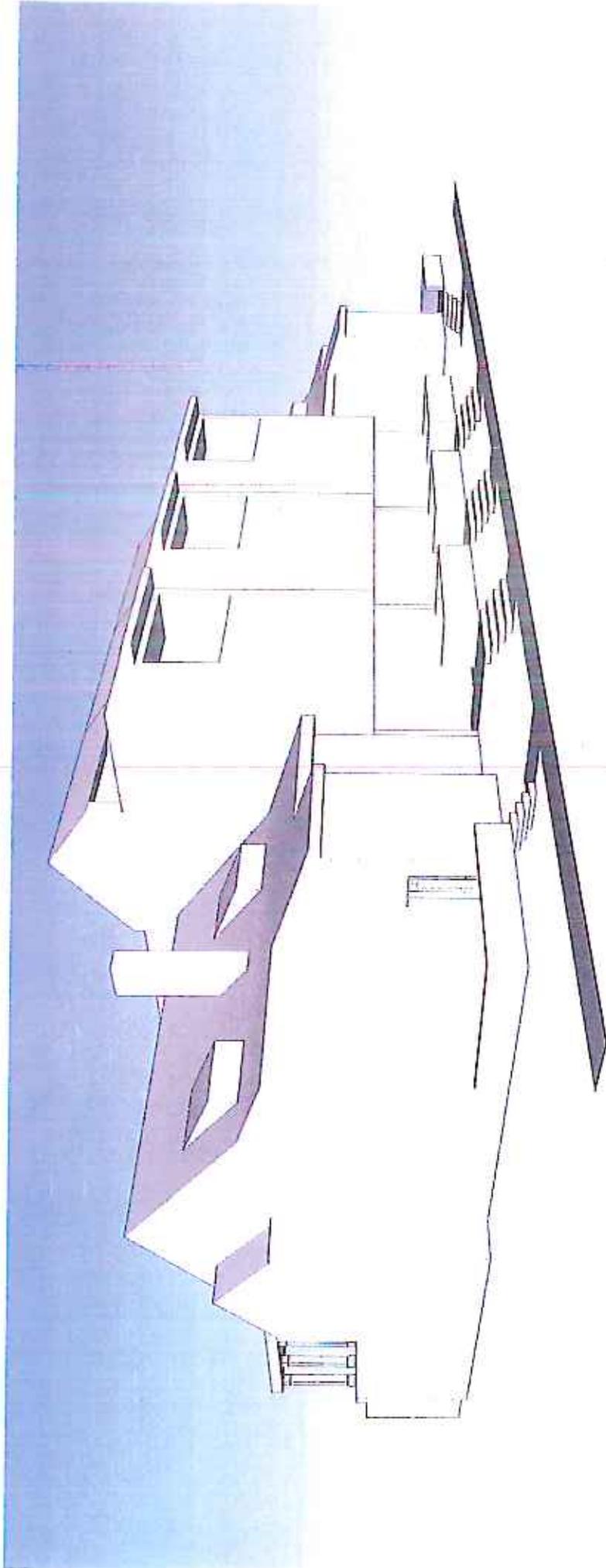
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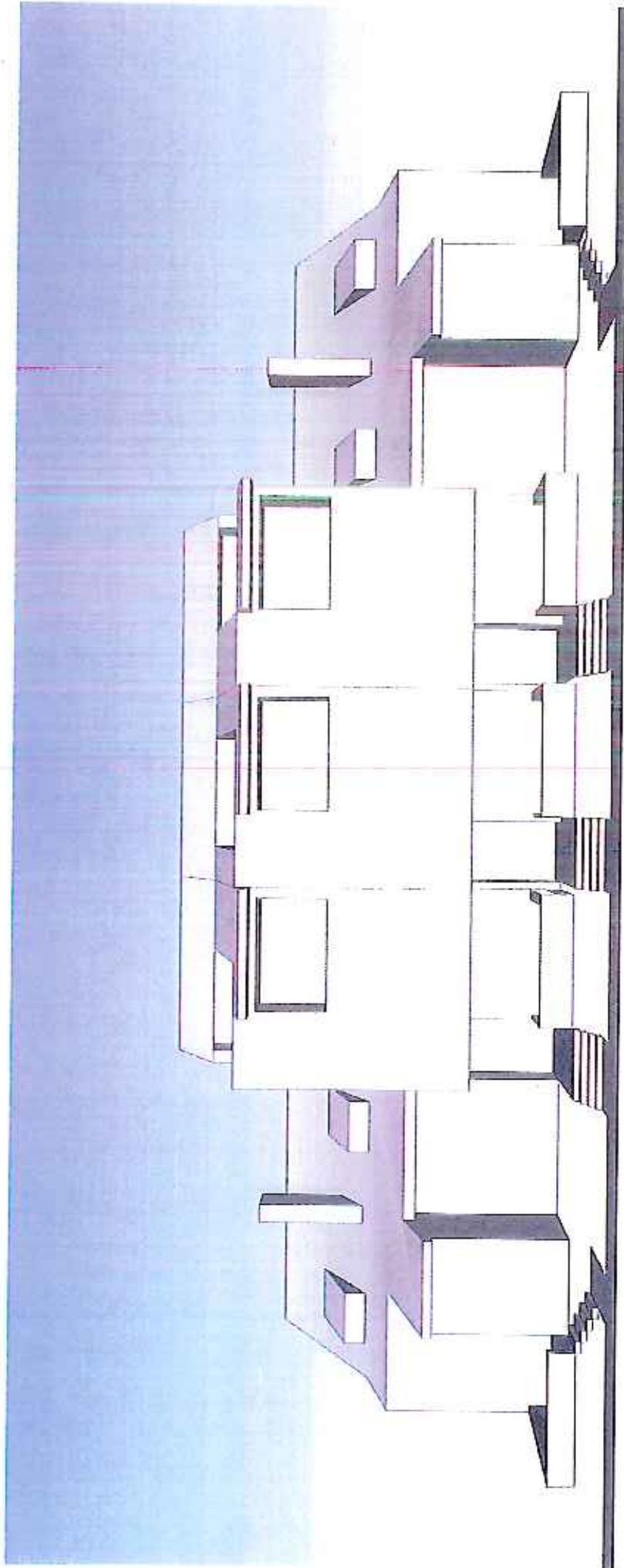
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McKinley Place

November 11, 2014

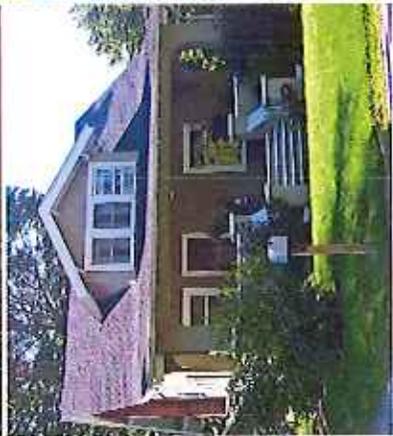


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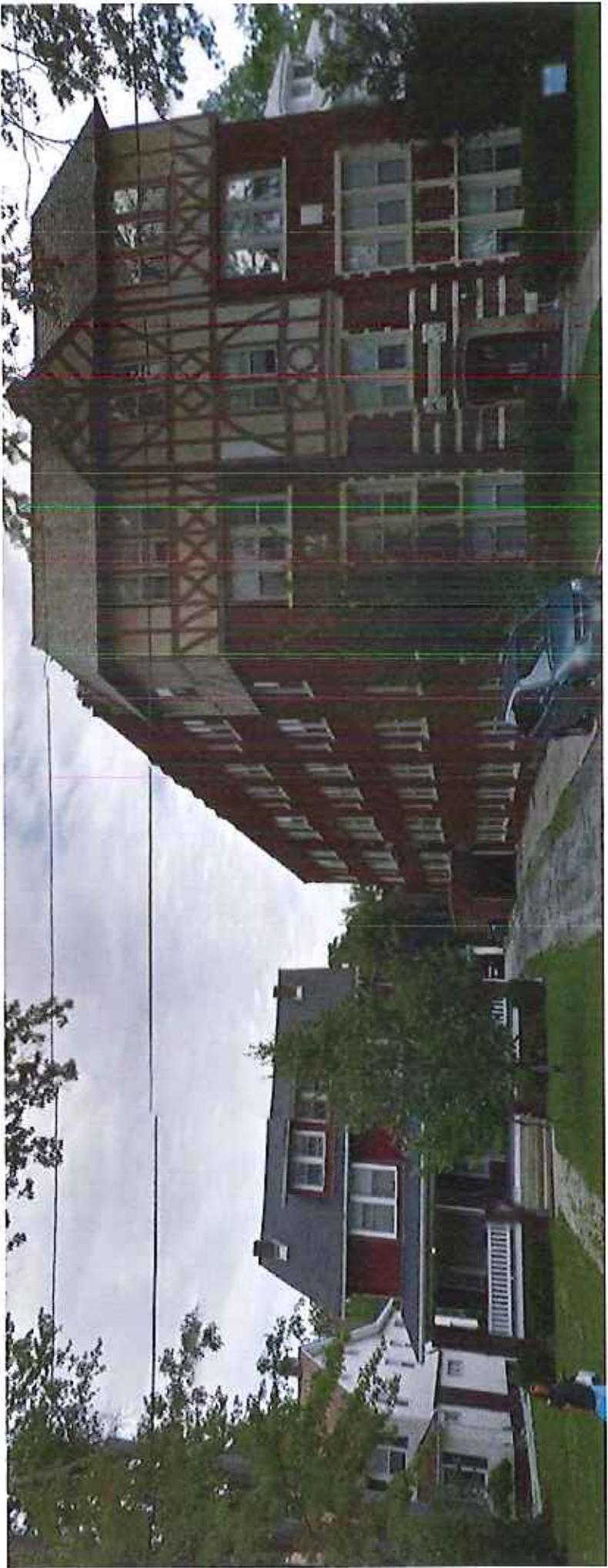


CONTEXT

CONTEXT



CONTEXT



SITE PLAN



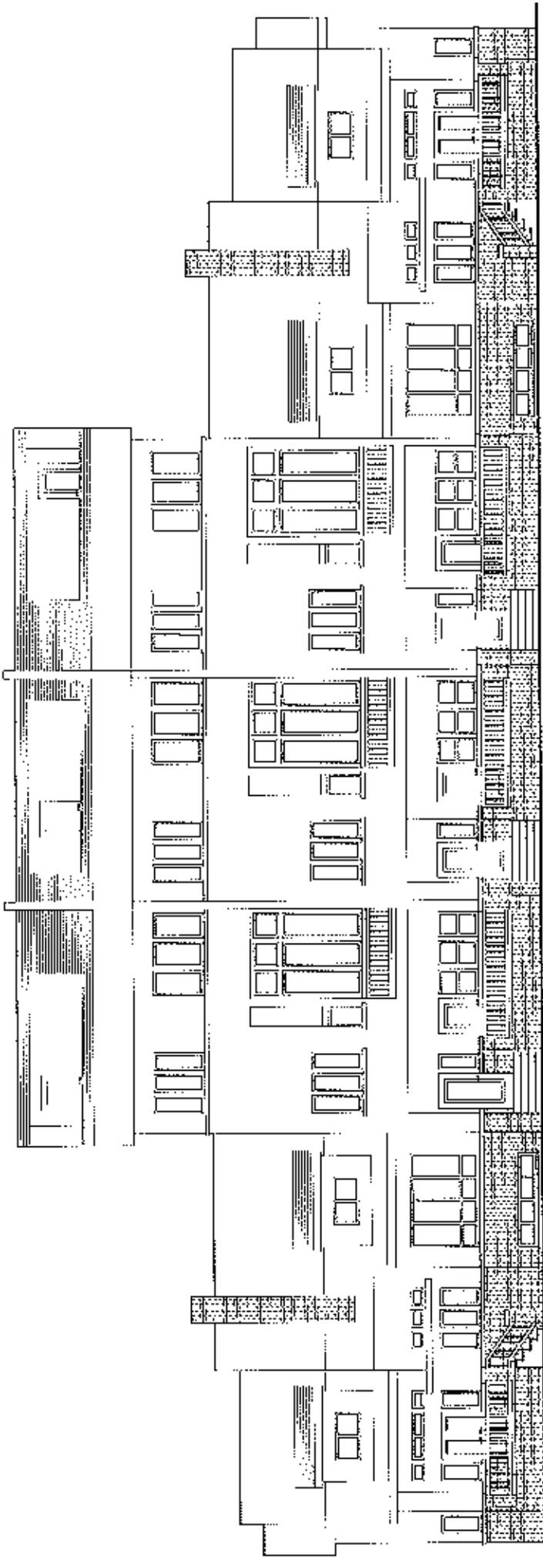
CANNON ALLEY - 20'

Church Drive Access

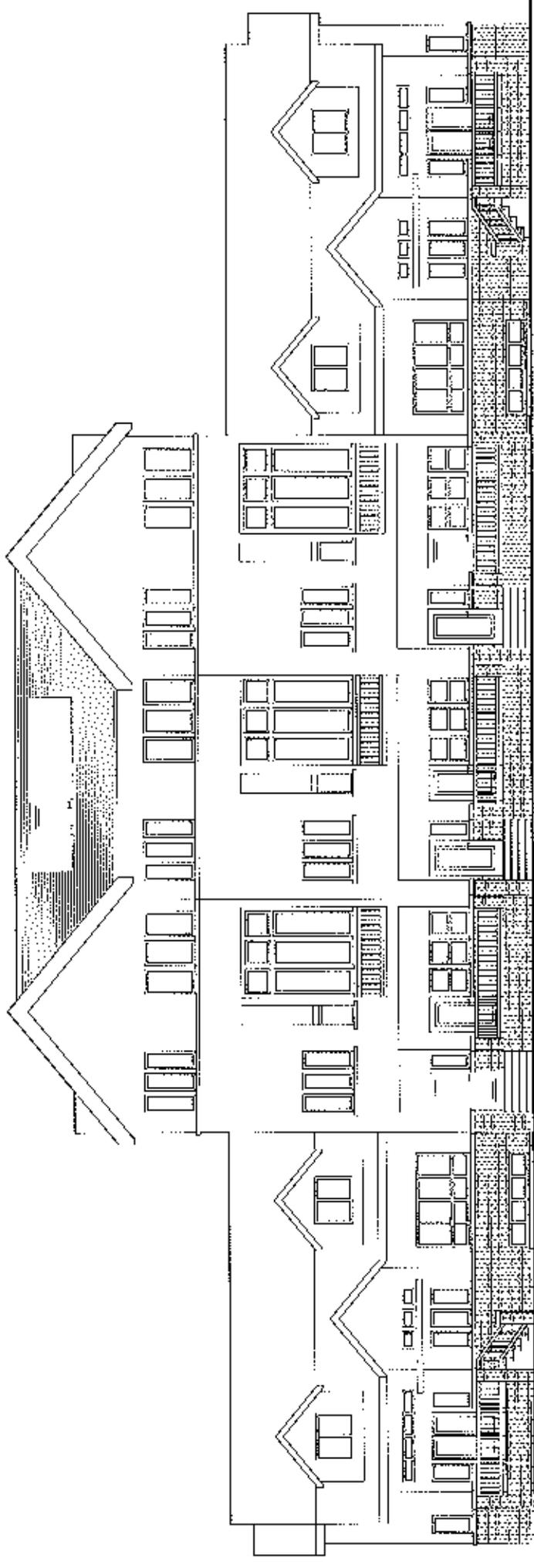
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TYPE A	TYPE B
6	4
5	13
TOTAL 12 28	
TOTAL YIELD 40 UNITS	

E.C. & O.T.H.R.M.
VOL. 34. P. 10

ELEVATION



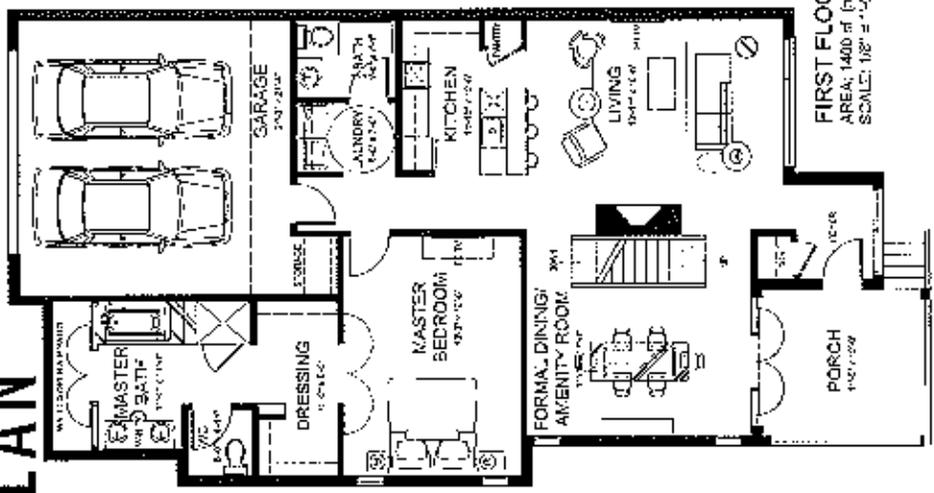
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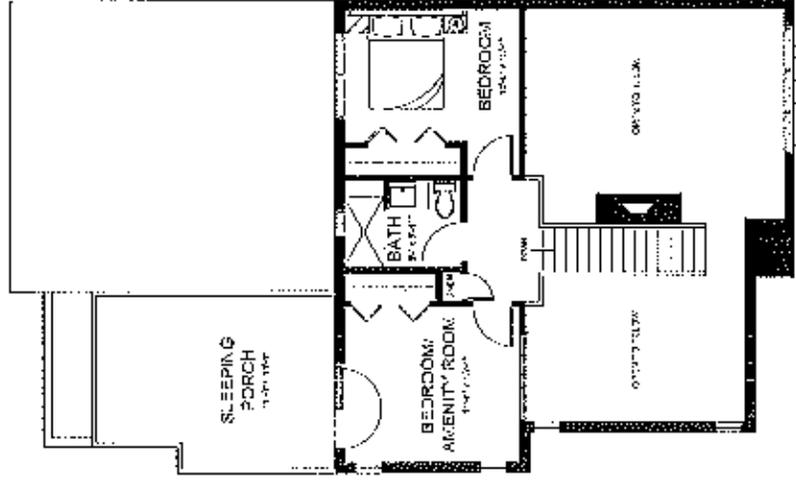
ELEVATION



FLOOR PLAN

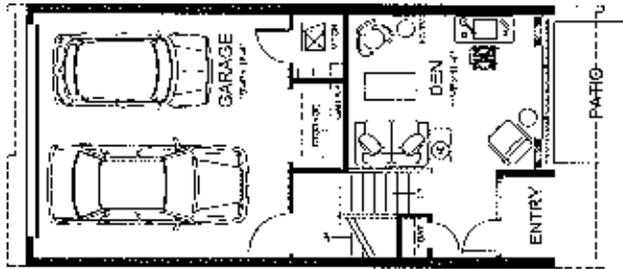


FIRST FLOOR
 AREA: 1400 sf (not including garage, patio, or to boxes)
 SCALE: 1/8" = 1'-0"

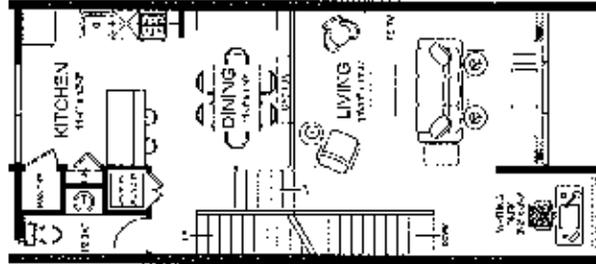


SECOND FLOOR
 AREA: 450 sf (not including sleeping porch)
 SCALE: 1/8" = 1'-0"
TOTAL: 1850 sf

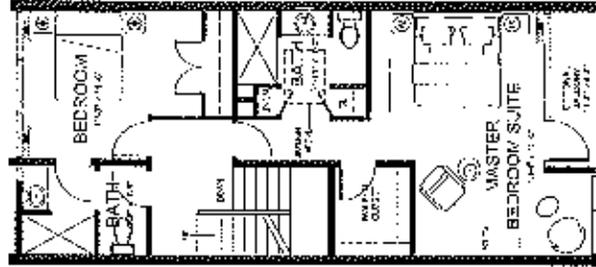
FLOOR PLAN



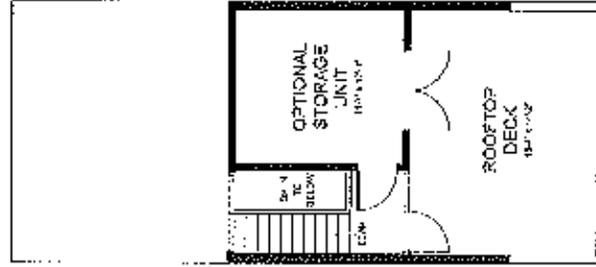
BONUS ROOM
 AREA: 322 sf (net including garage & patio)
 SCALE: 1/8" = 1'-0"



SECOND FLOOR
 AREA: 710 sf
 SCALE: 1/8" = 1'-0"



THIRD FLOOR
 AREA: 710 sf
 SCALE: 1/8" = 1'-0"

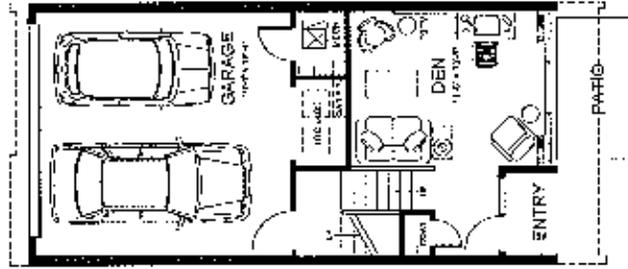


ROOFTOP
 AREA: 710 sf
 SCALE: 1/8" = 1'-0"

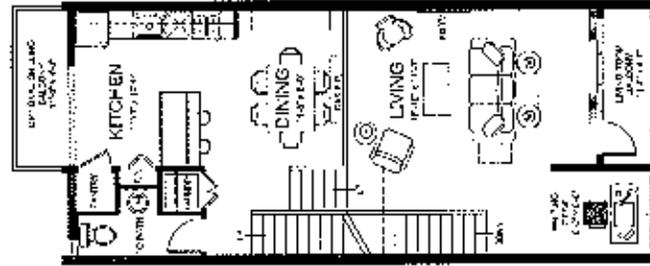
TOTAL W/ STORAGE = 1,887 sf

TOTAL = 1,740 sf

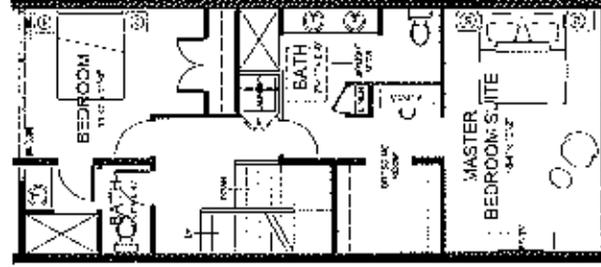
FLOOR PLAN



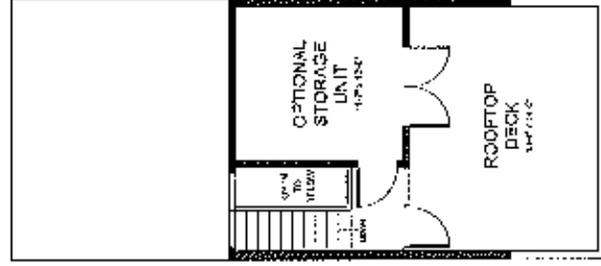
BONUS ROOM
 AREA: 320 sf (incl. including garage & patio)
 SCALE: 1/8" = 1'-0"



SECOND FLOOR
 AREA: 700 sf
 SCALE: 1/8" = 1'-0"



THIRD FLOOR
 AREA: 770 sf
 SCALE: 1/8" = 1'-0"



ROOFTOP
 AREA: 770 sf
 SCALE: 1/8" = 1'-0"

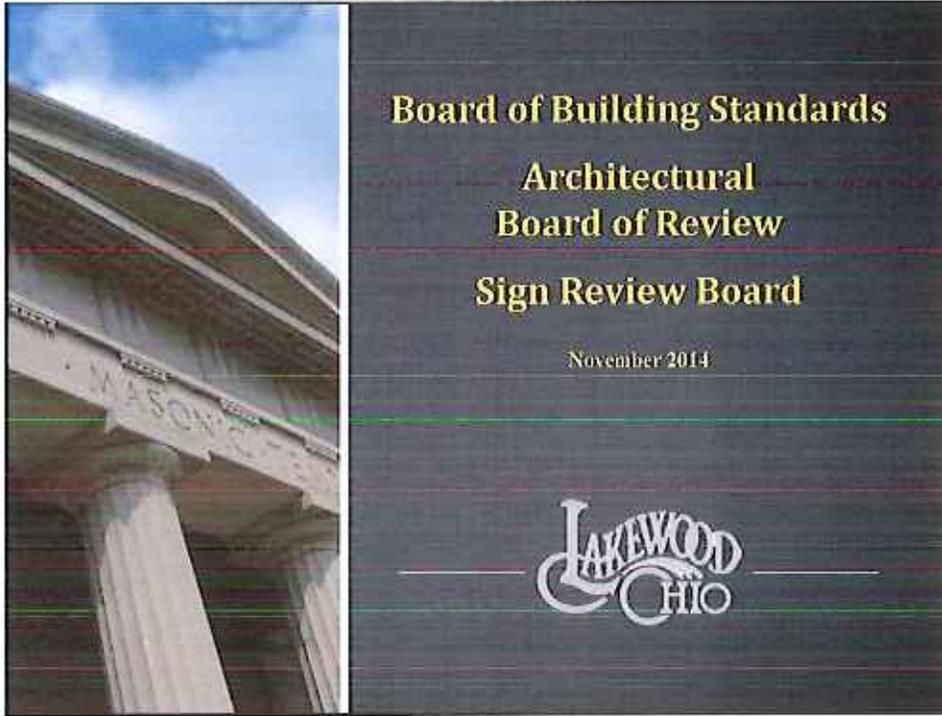
TOTAL W/ STORAGE = 1947 sf

TOTAL = 1800 sf

SITE PLAN



DEVELOPMENT YIELD	
TYPE A	TYPE B
6	5
5	13
TOTAL	12
TOTAL YIELD	40 UNITS



Board of Building Standards
Architectural
Board of Review
Sign Review Board

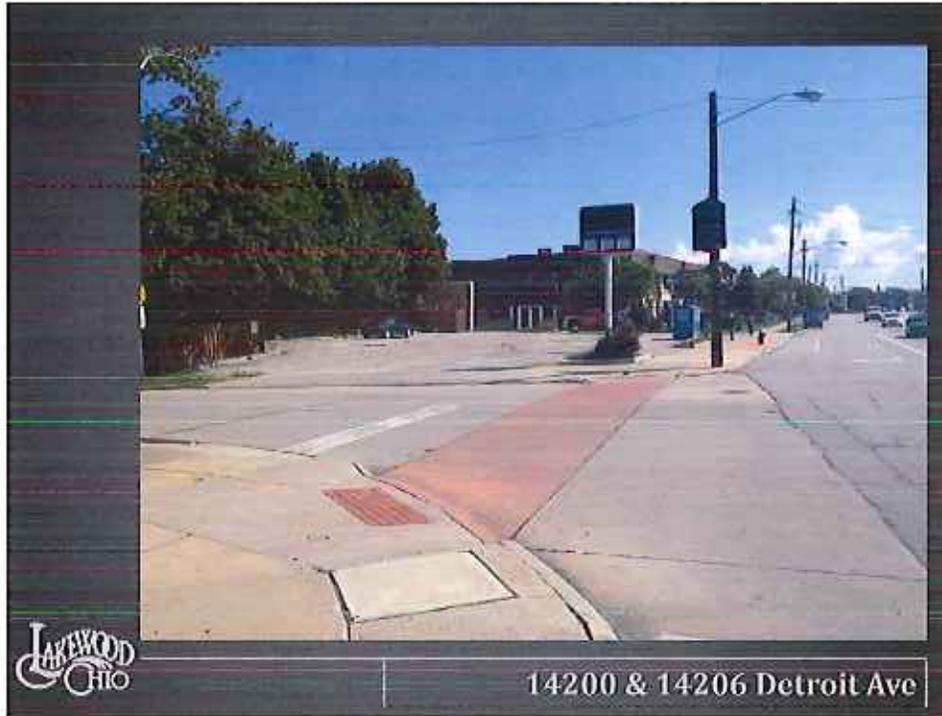
November 2014

LAKWOOD
OHIO



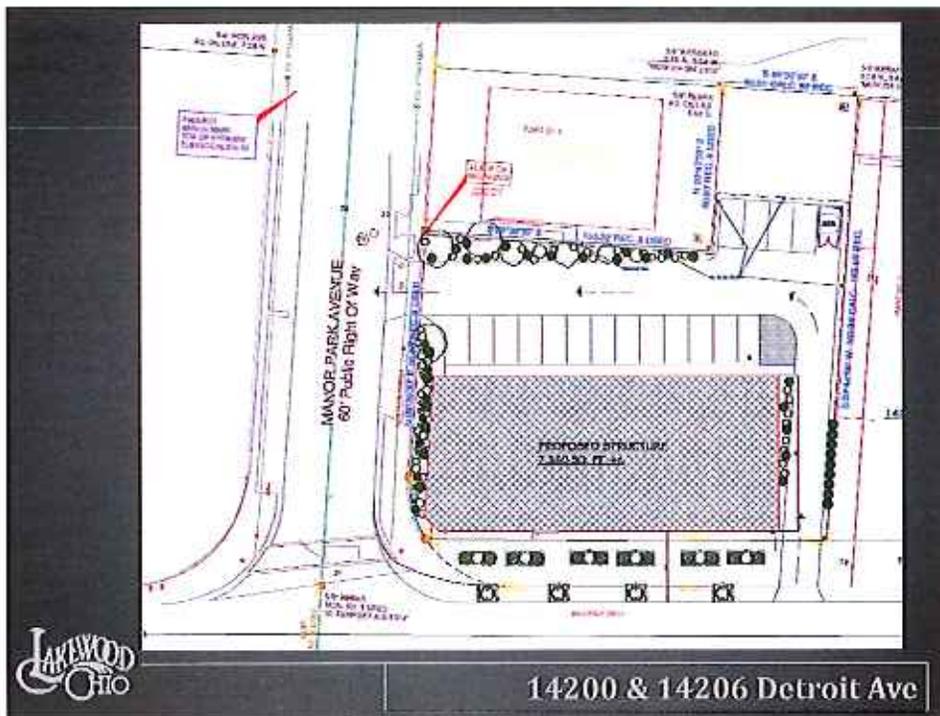
LAKWOOD
OHIO

14200 & 14206 Detroit Ave

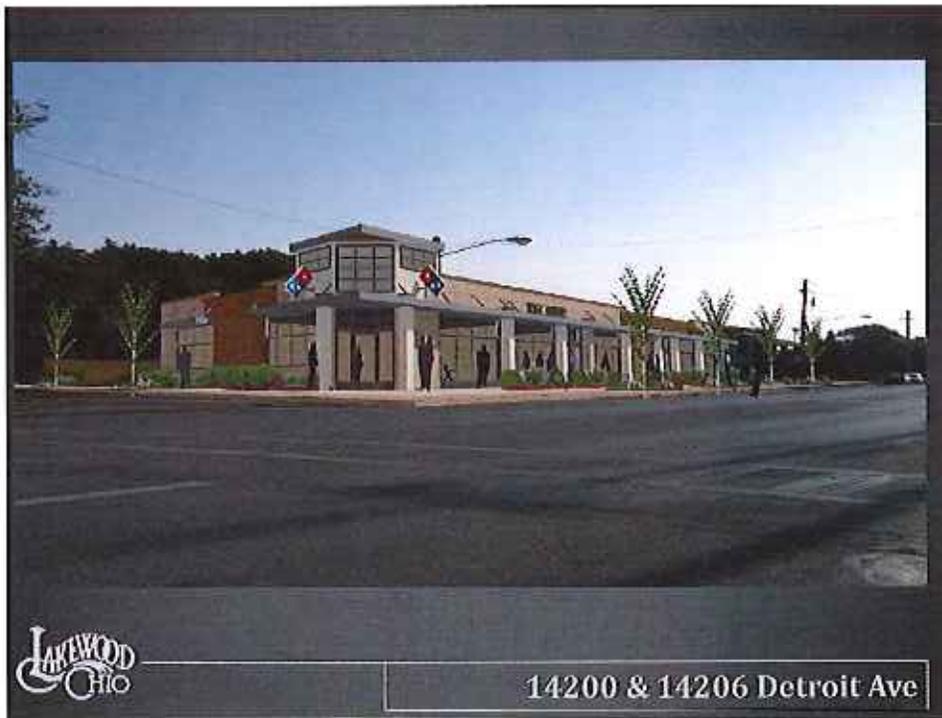
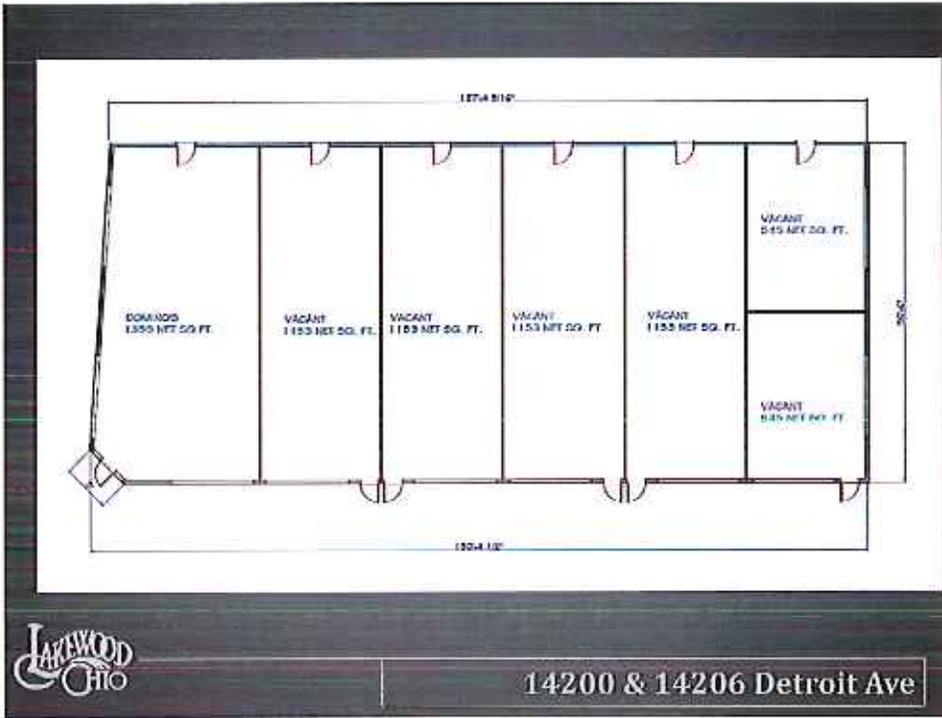




14200 & 14206 Detroit Ave



14200 & 14206 Detroit Ave





PERSPECTIVE FROM SOUTHEAST
11/14



14200 & 14206 Detroit Ave



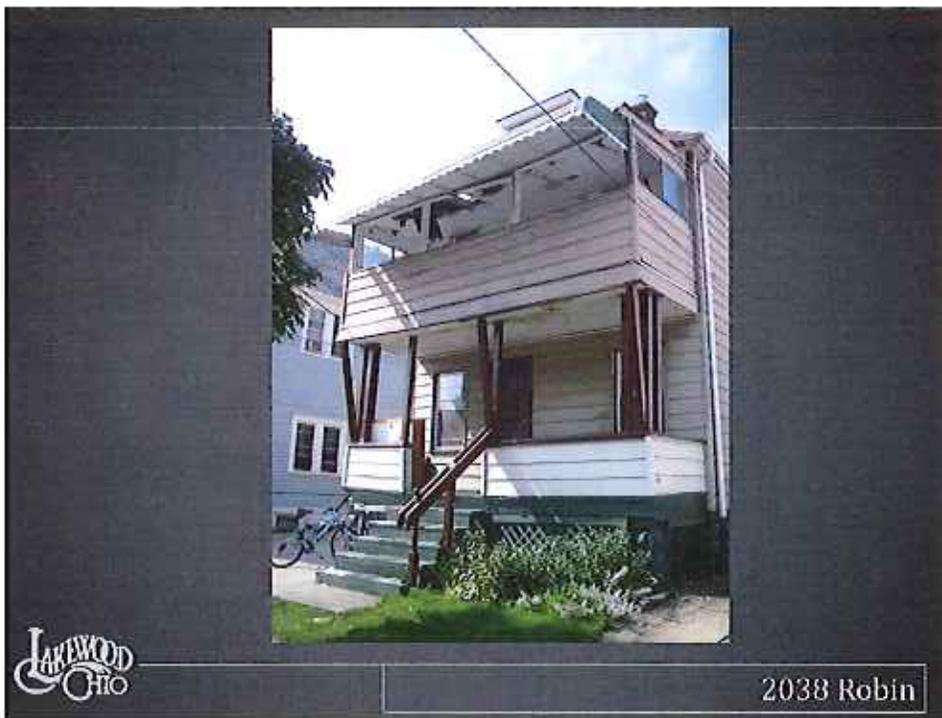
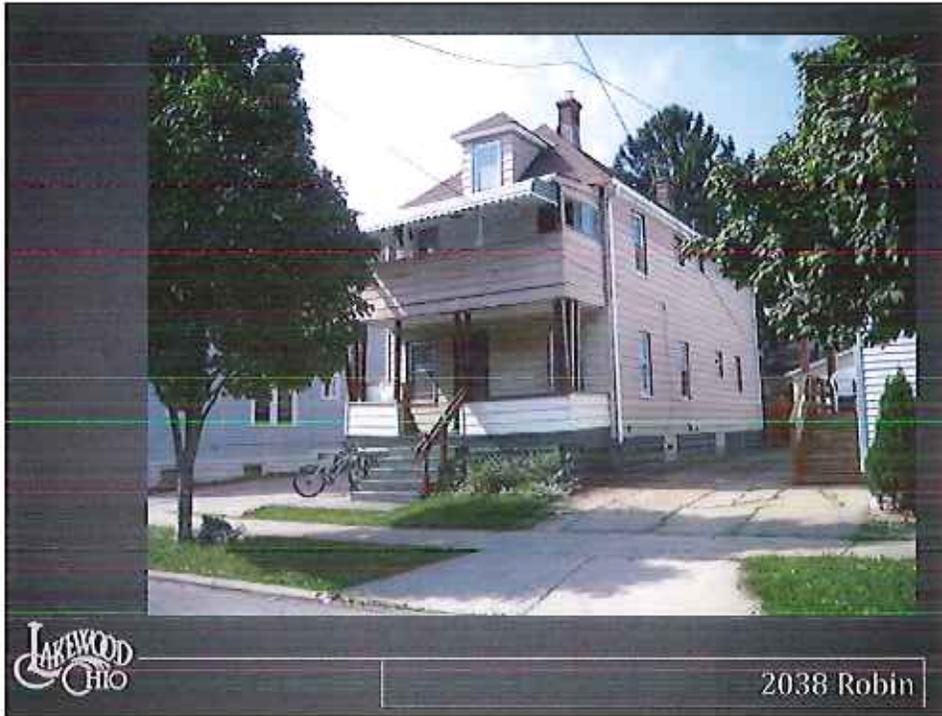
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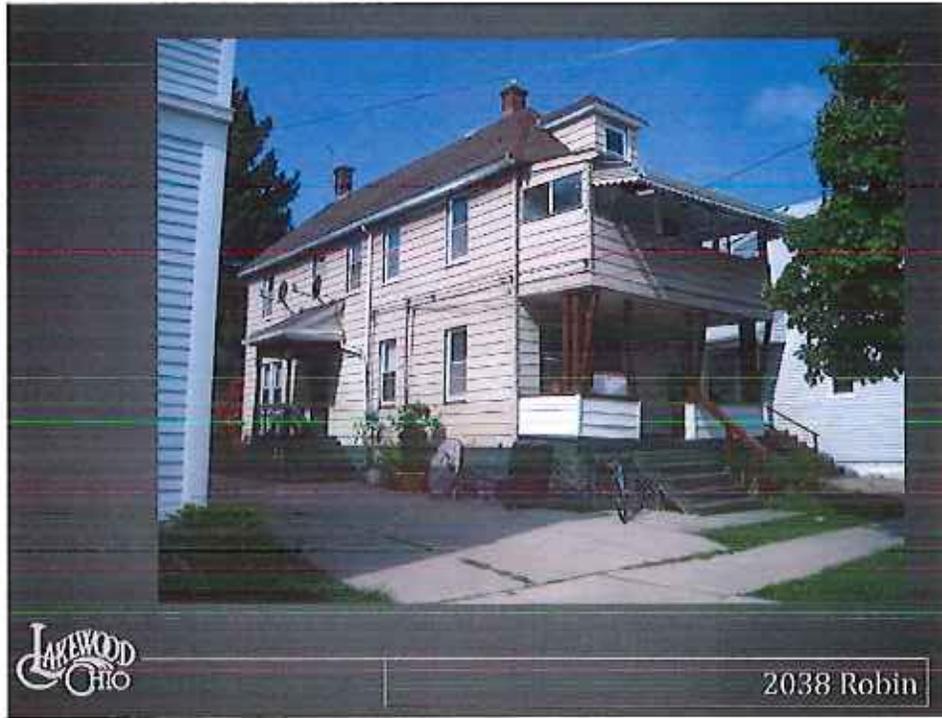


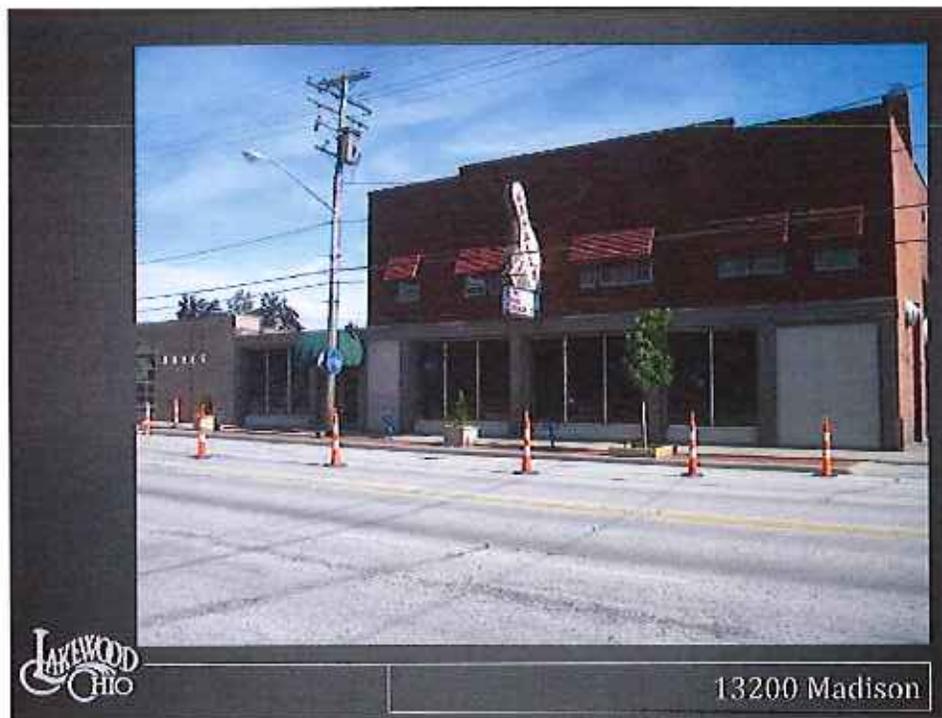
EAST ELEVATION
11/14

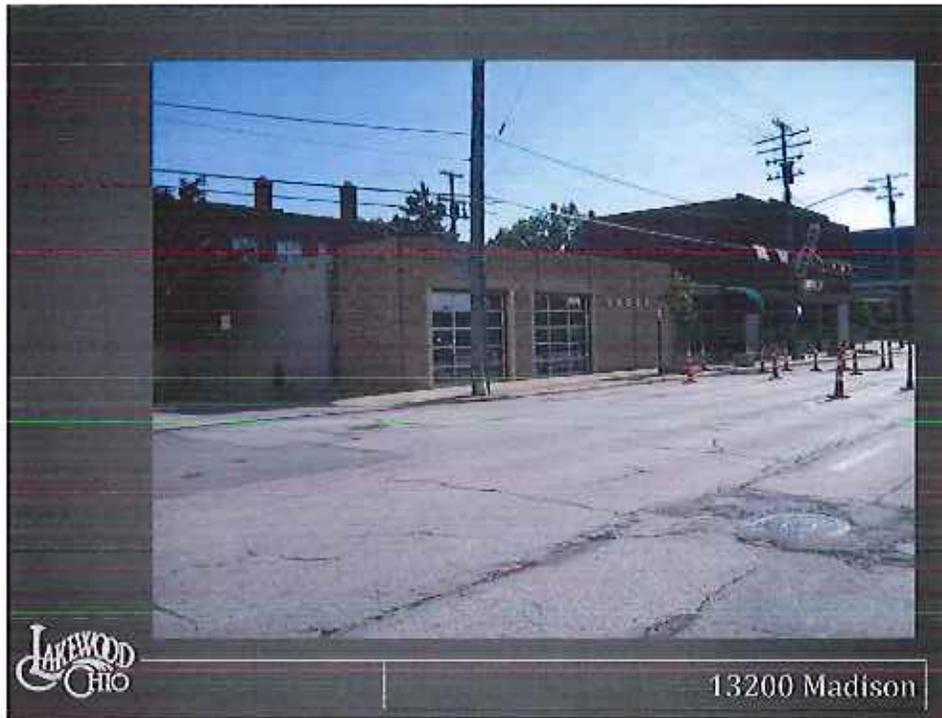


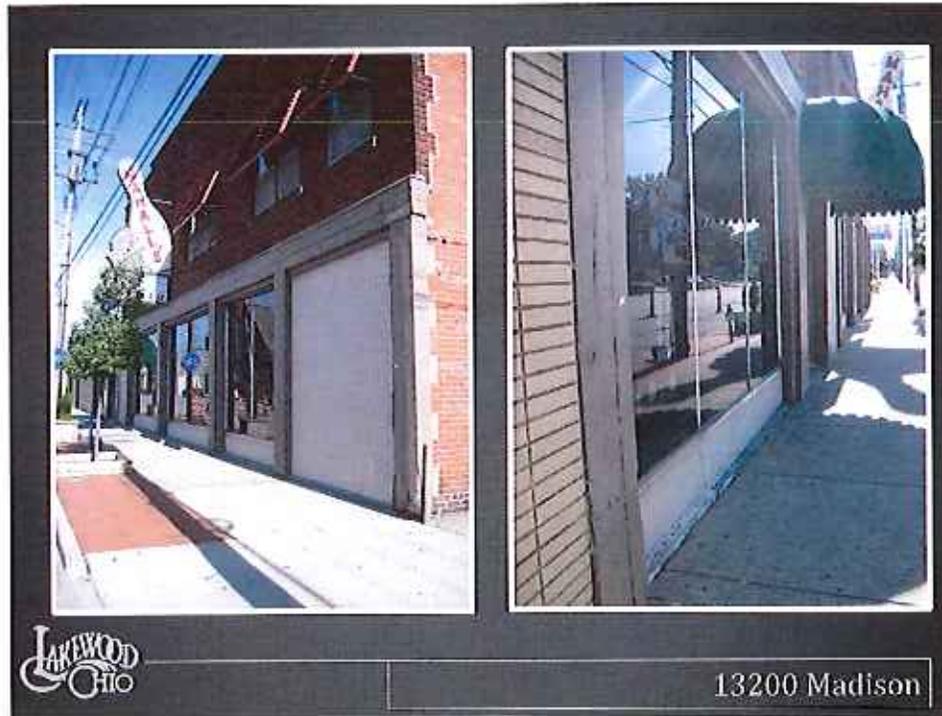
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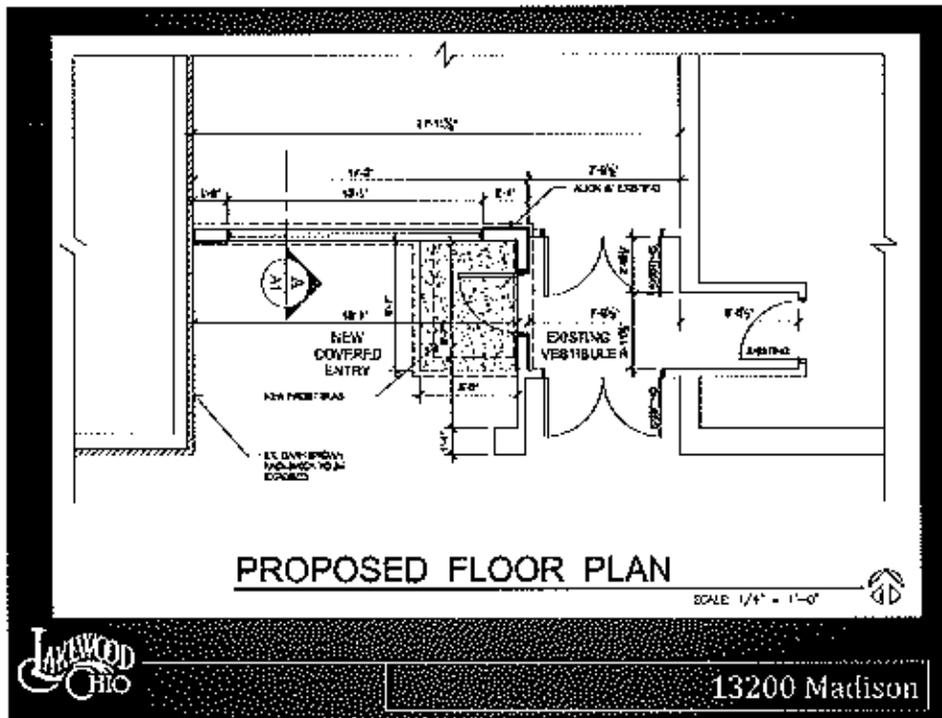
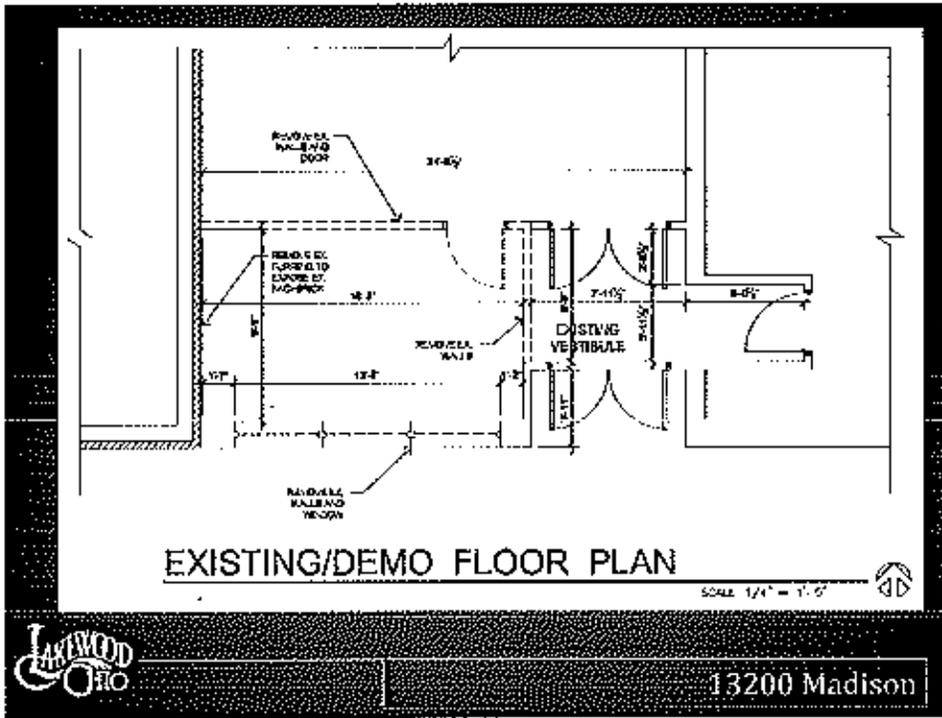


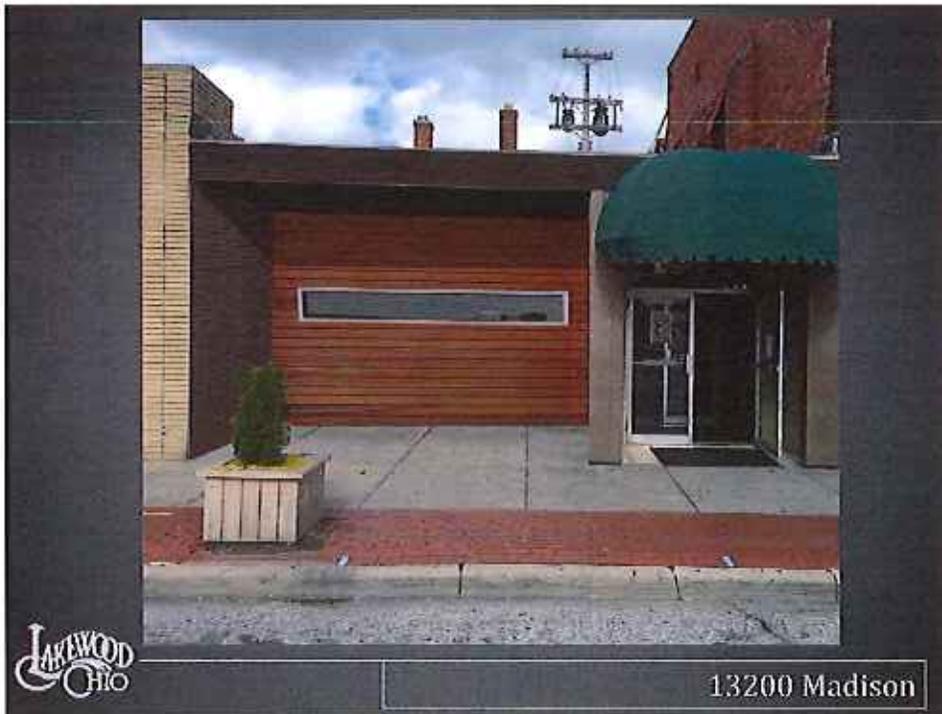
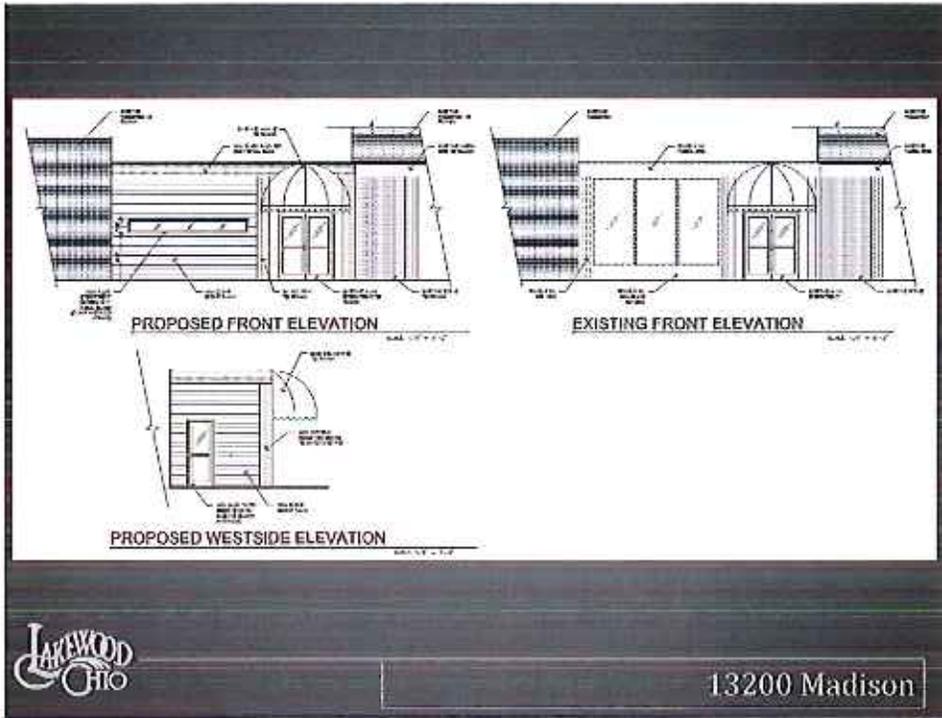


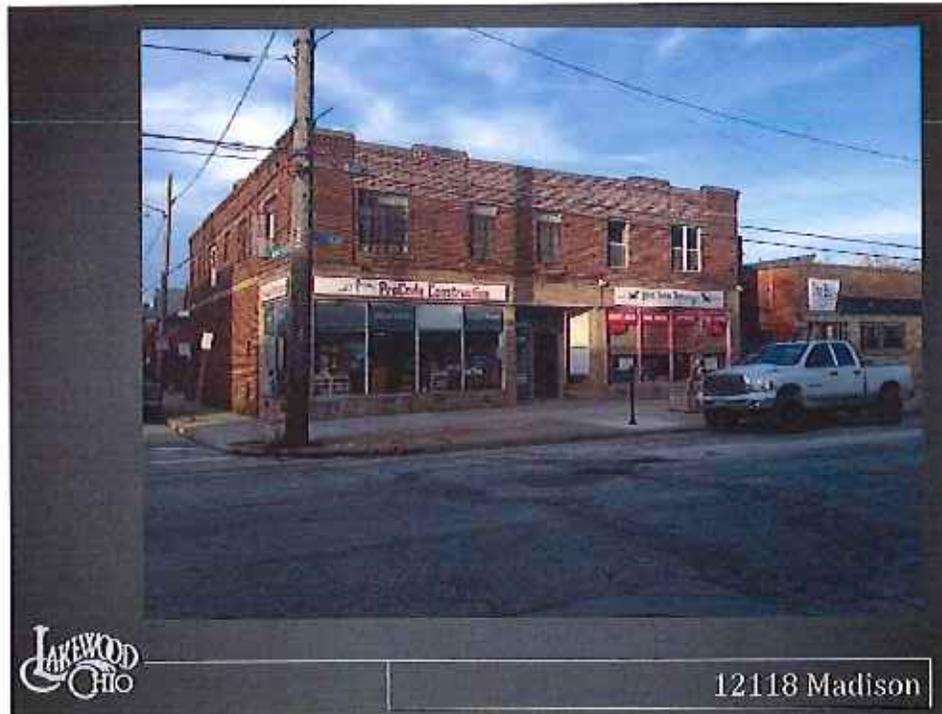


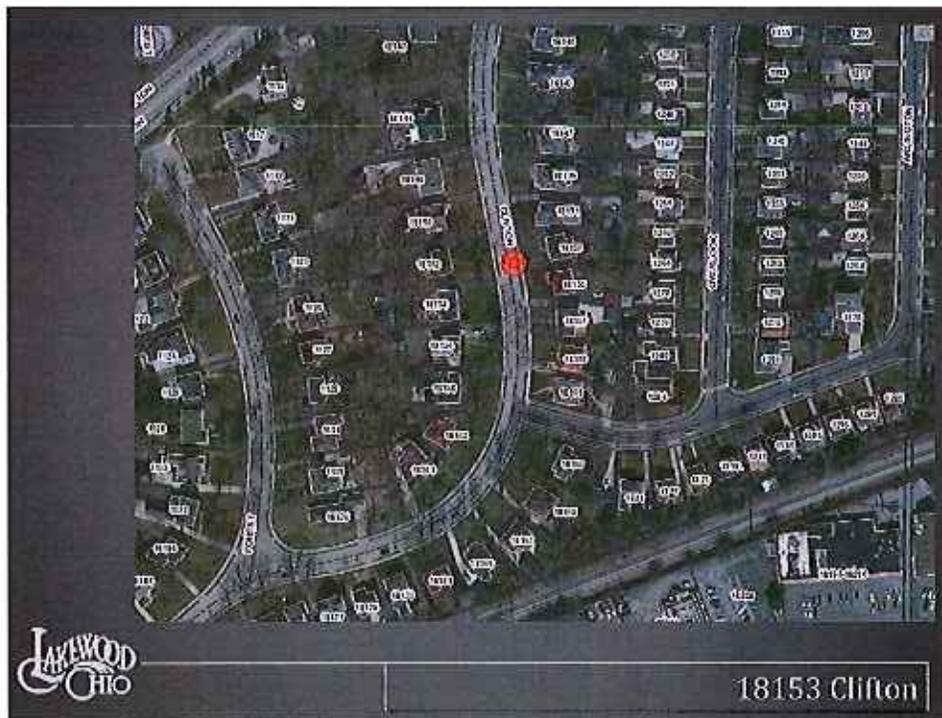


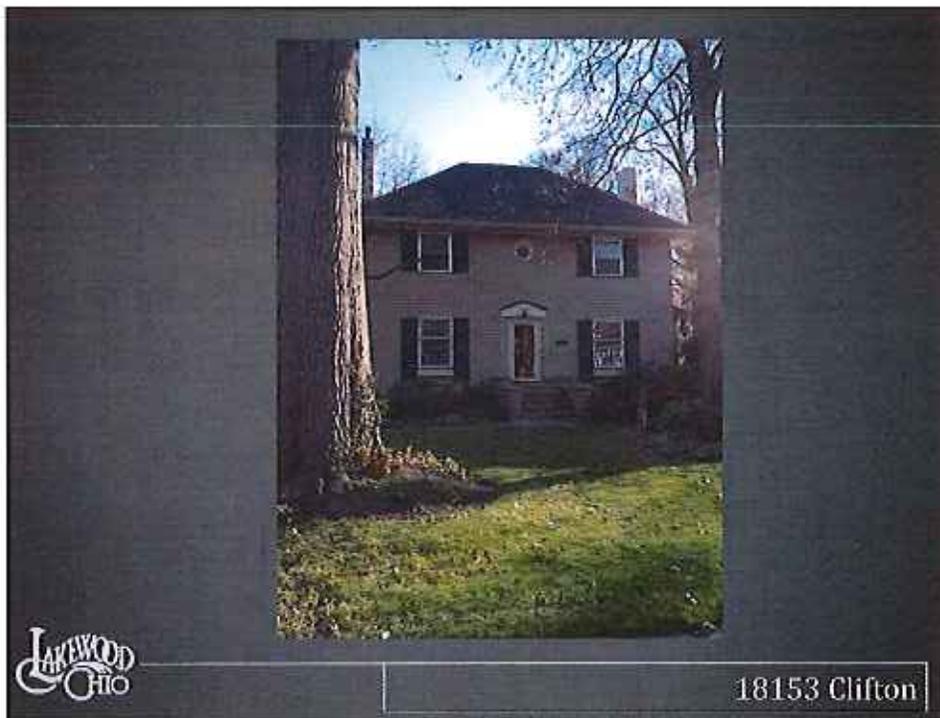
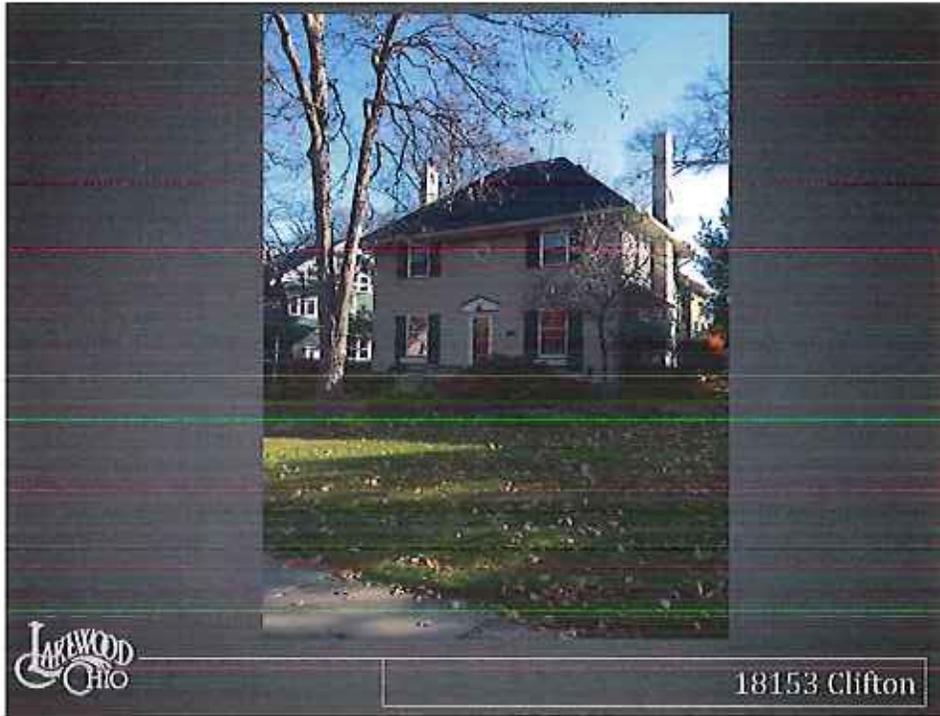


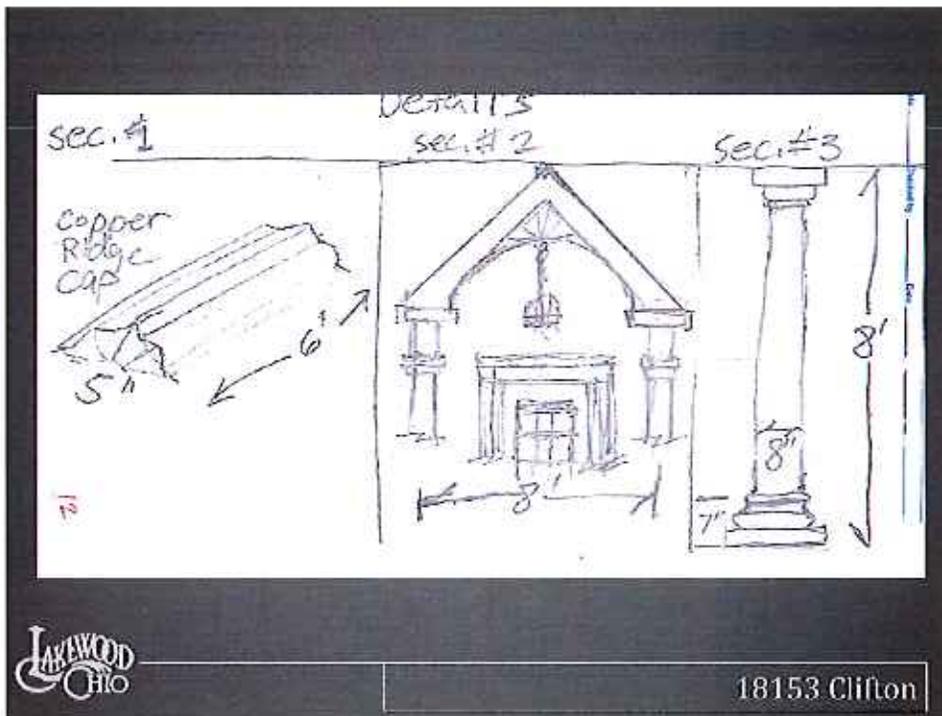
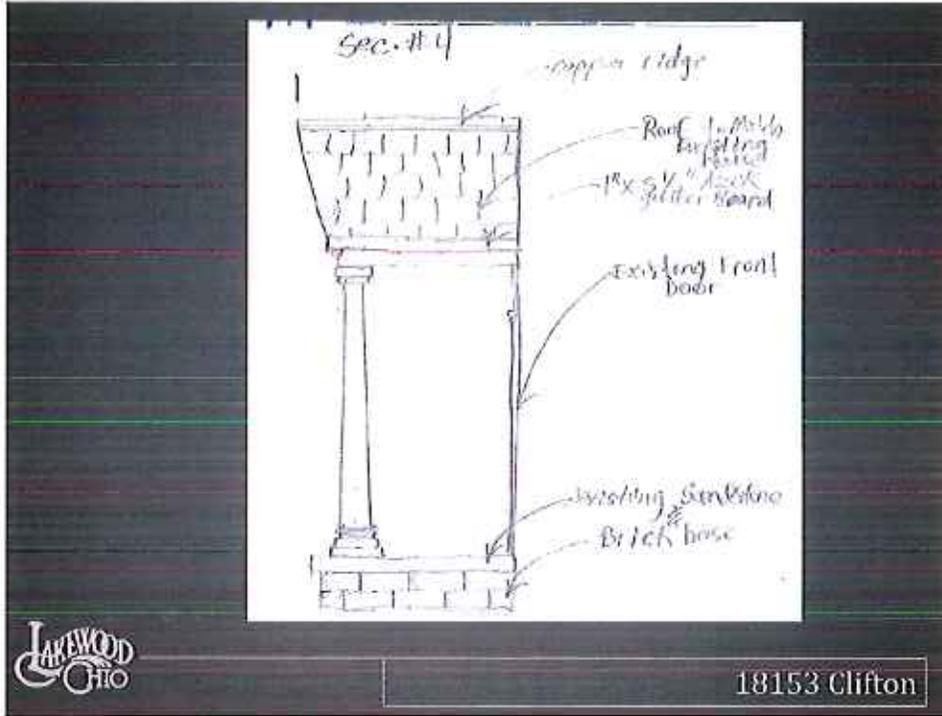


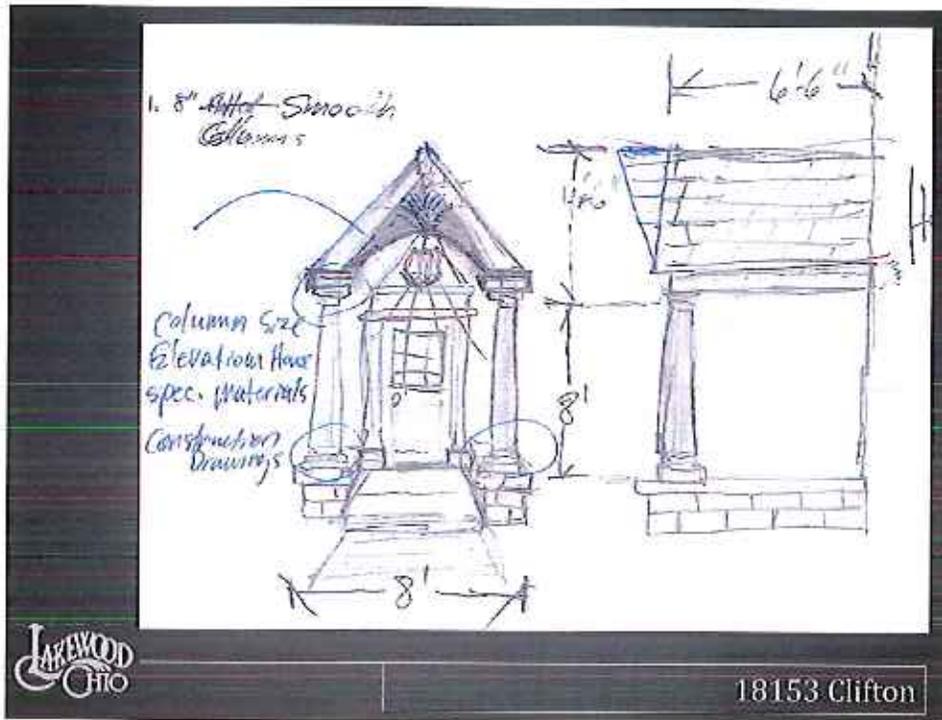


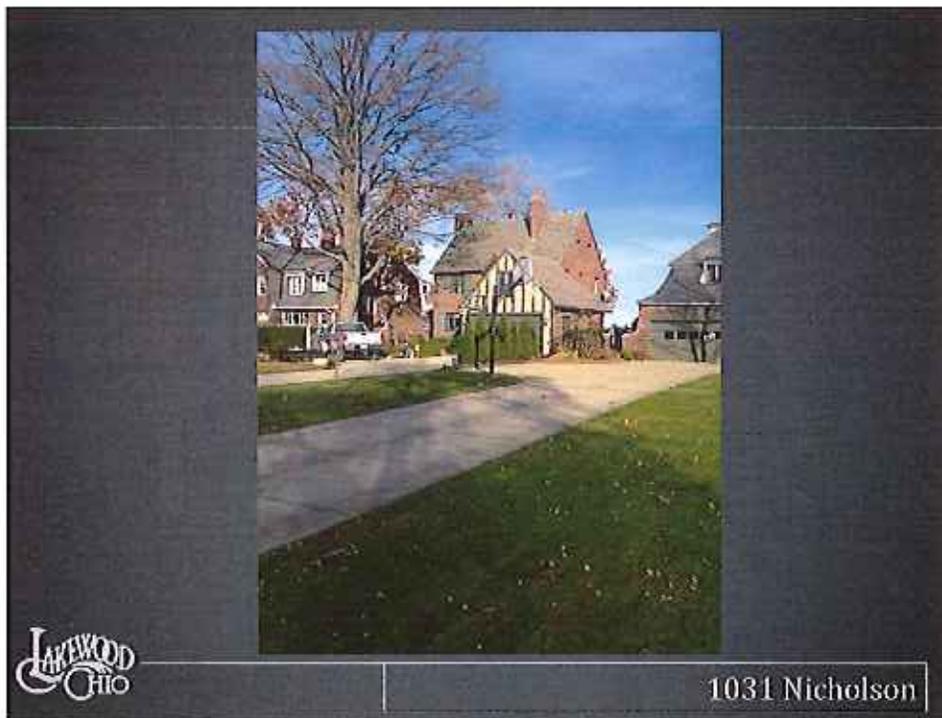
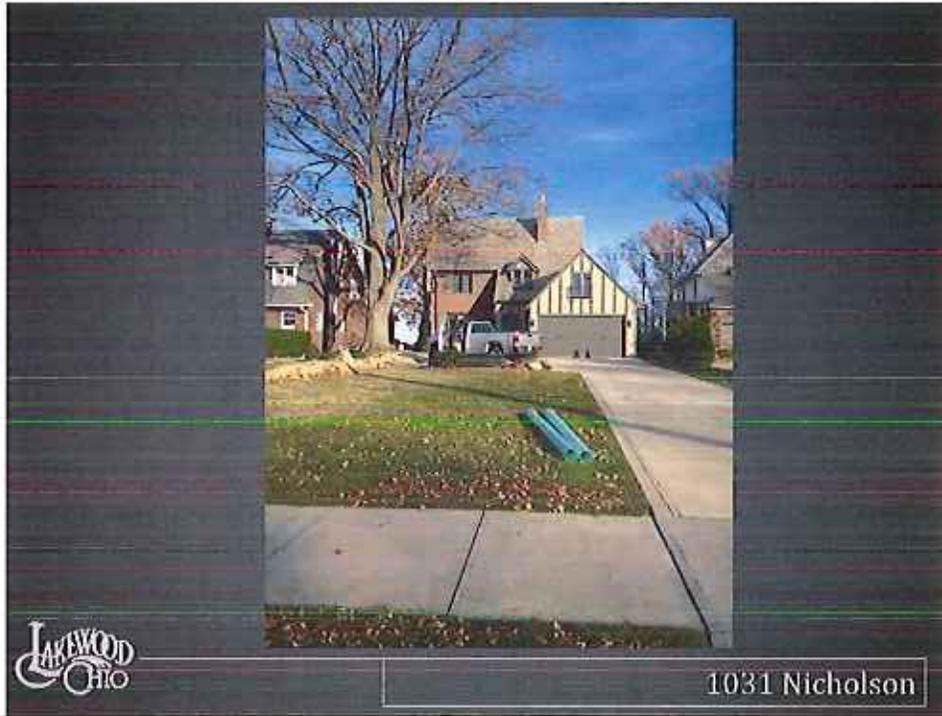


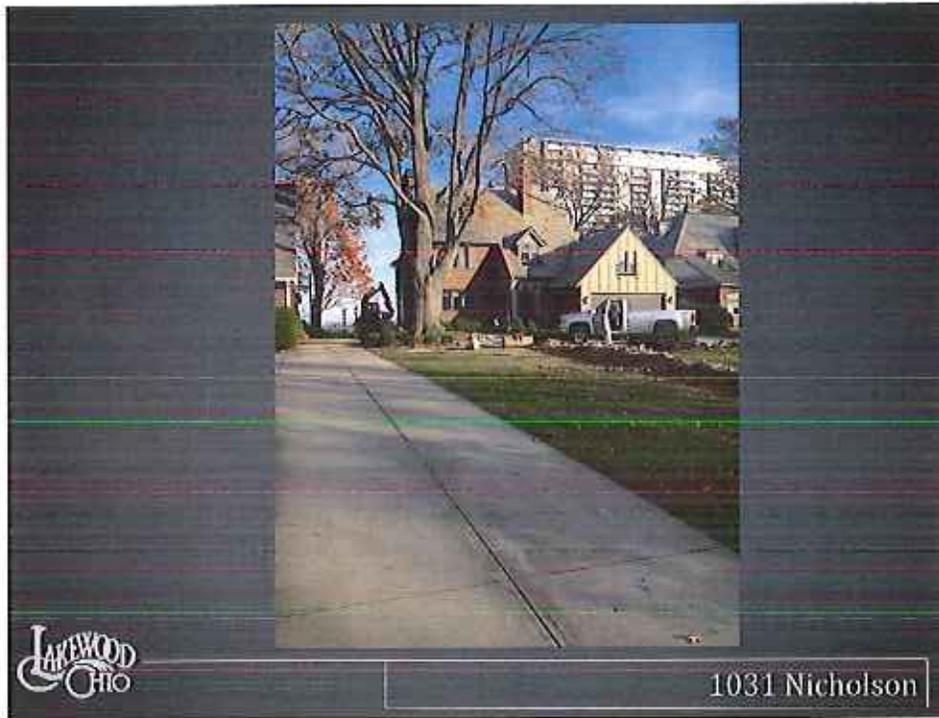






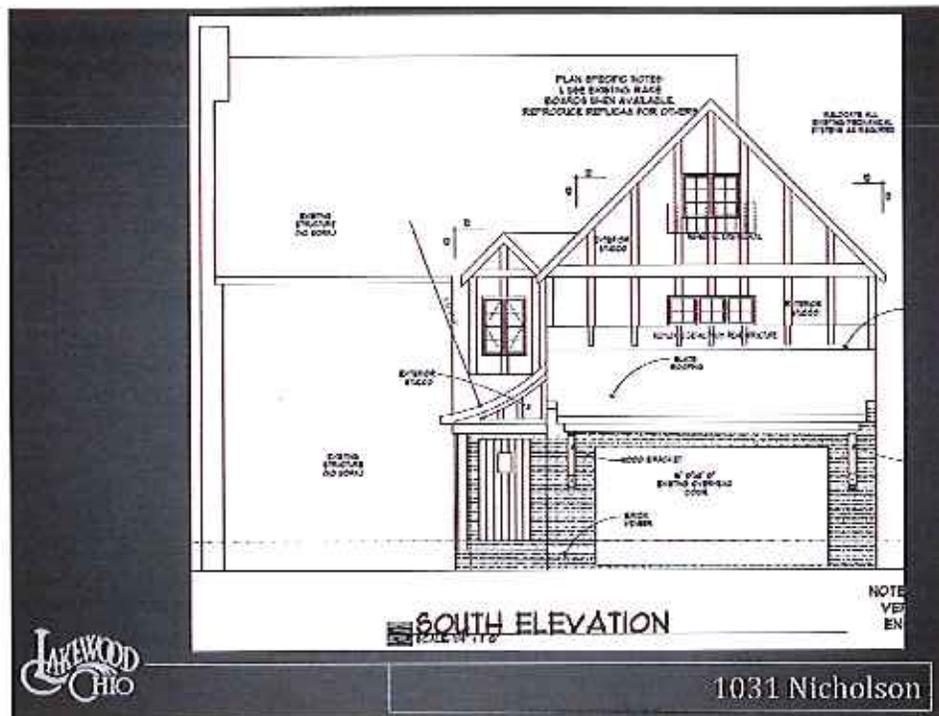






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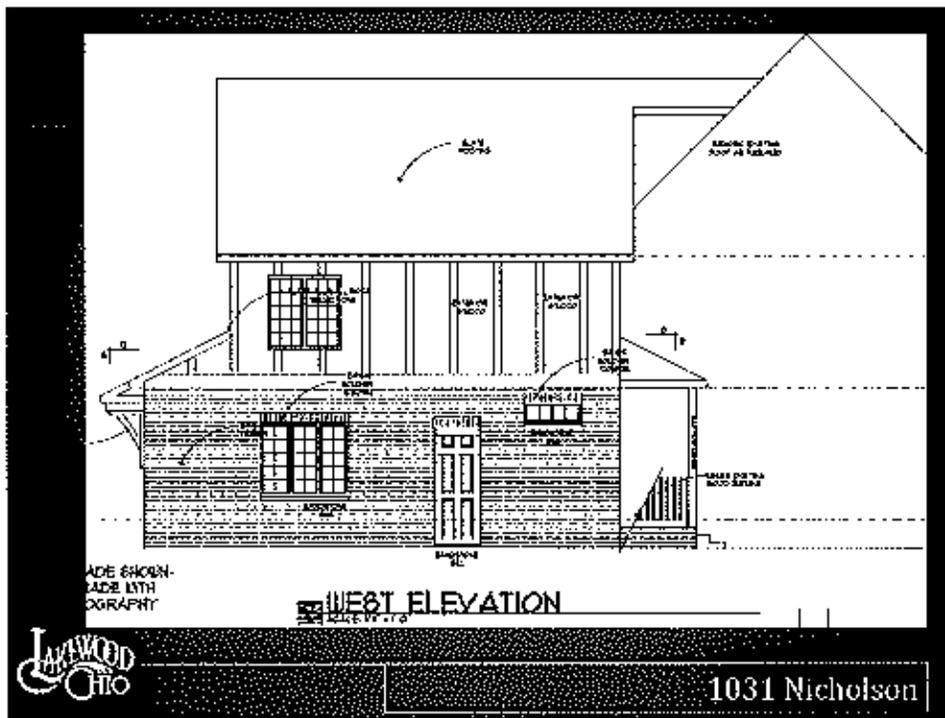
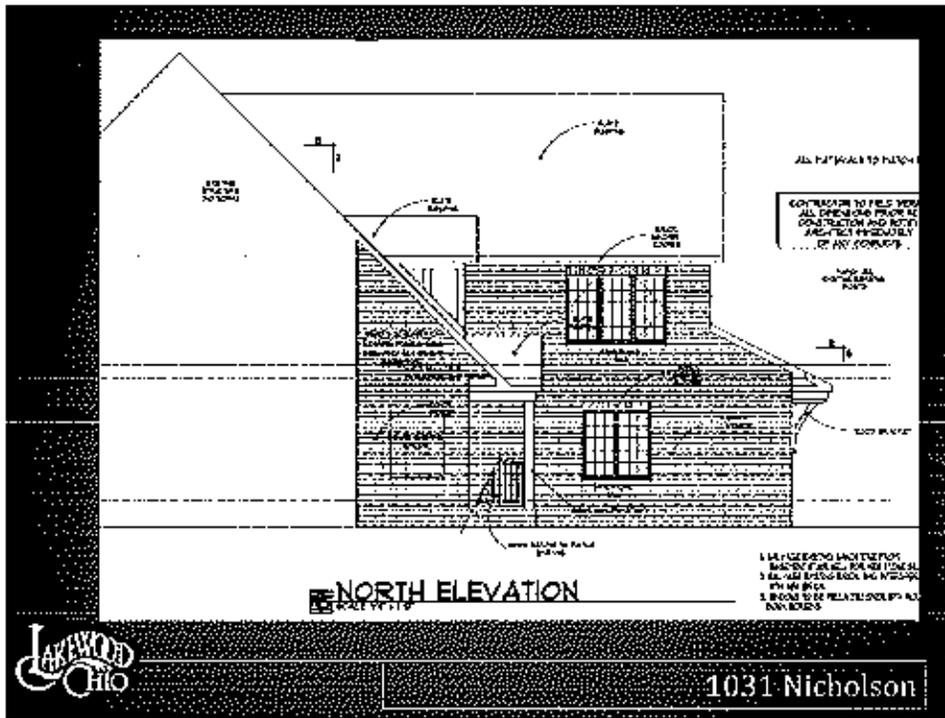
1031 Nicholson

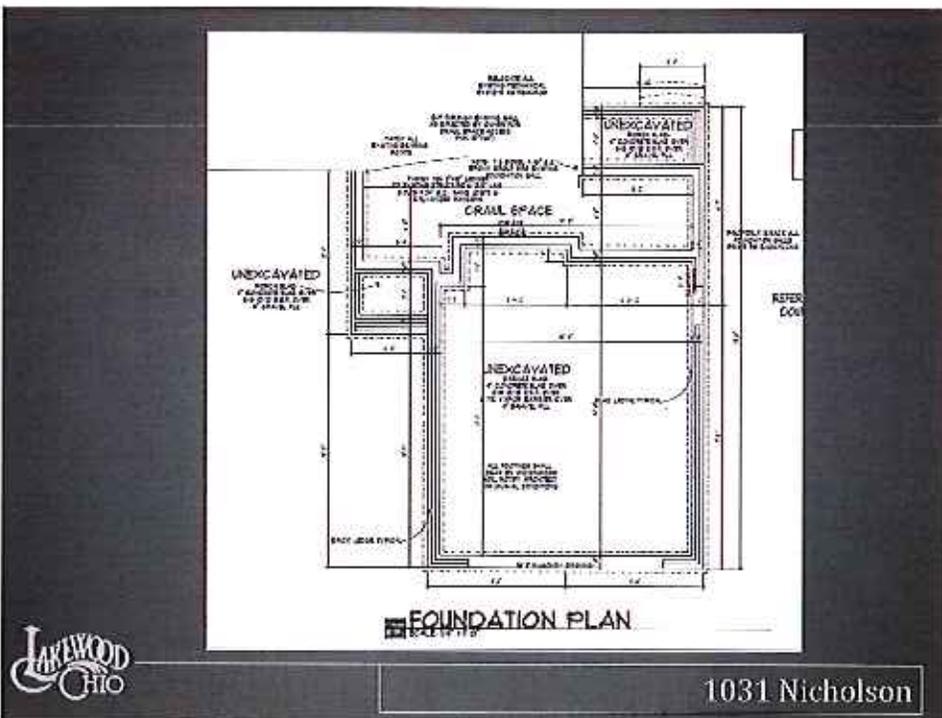
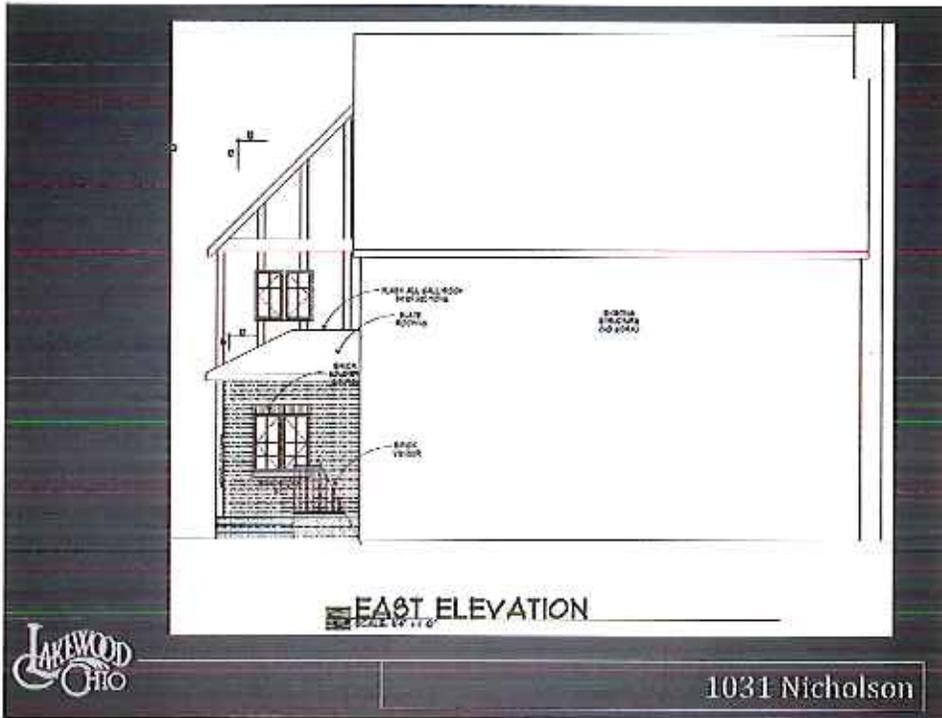


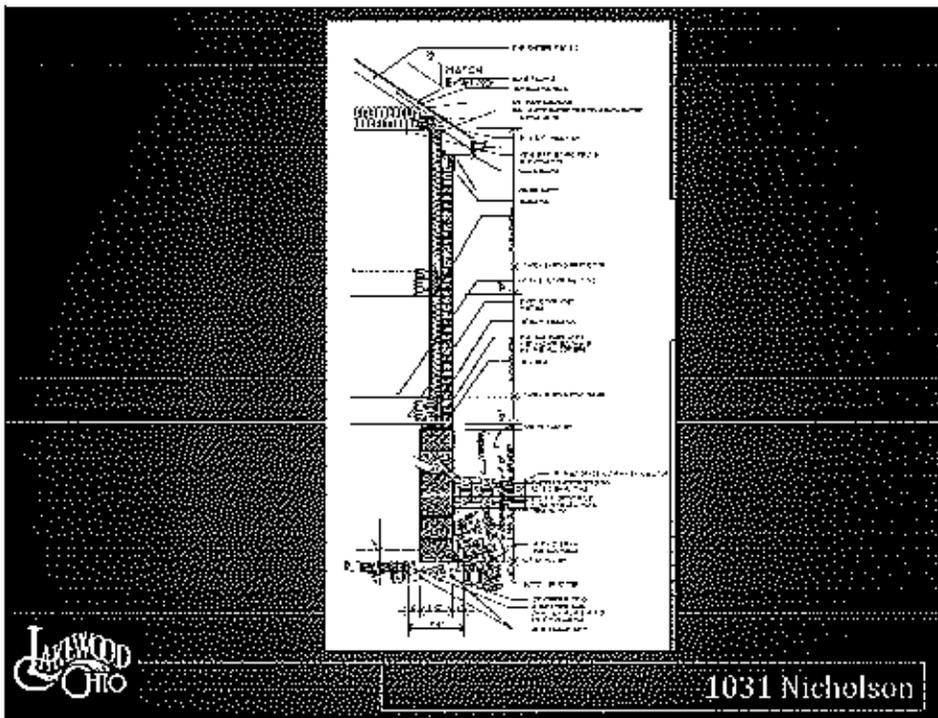
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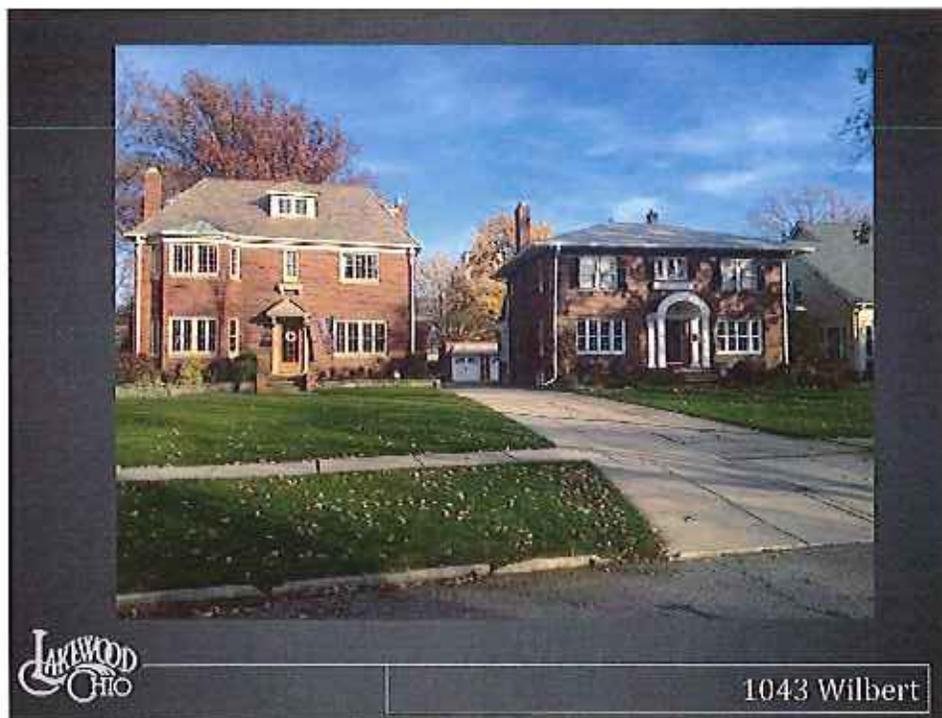
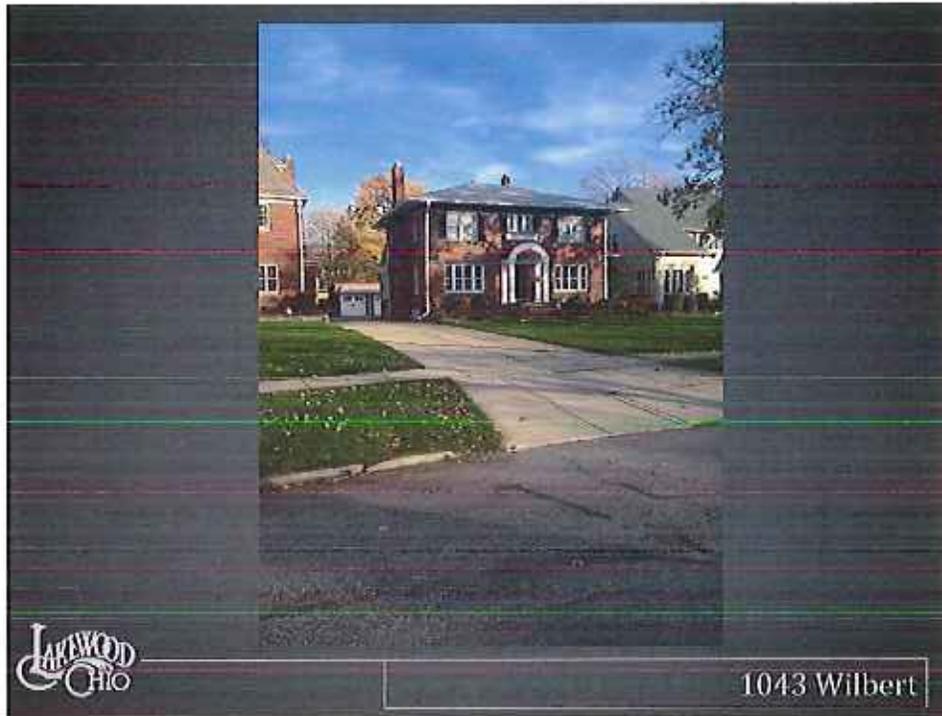
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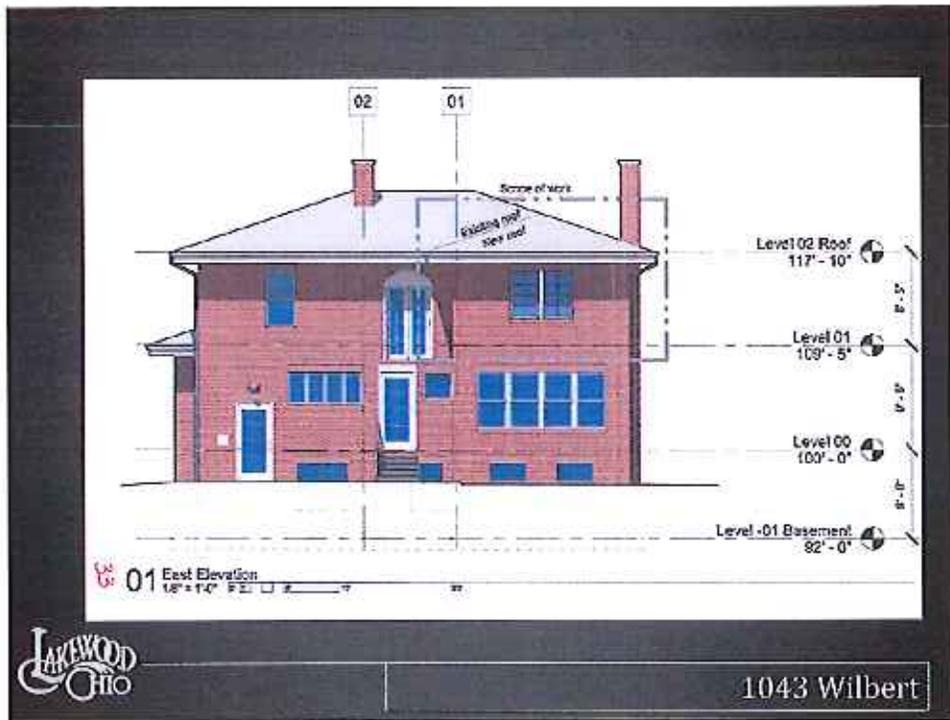
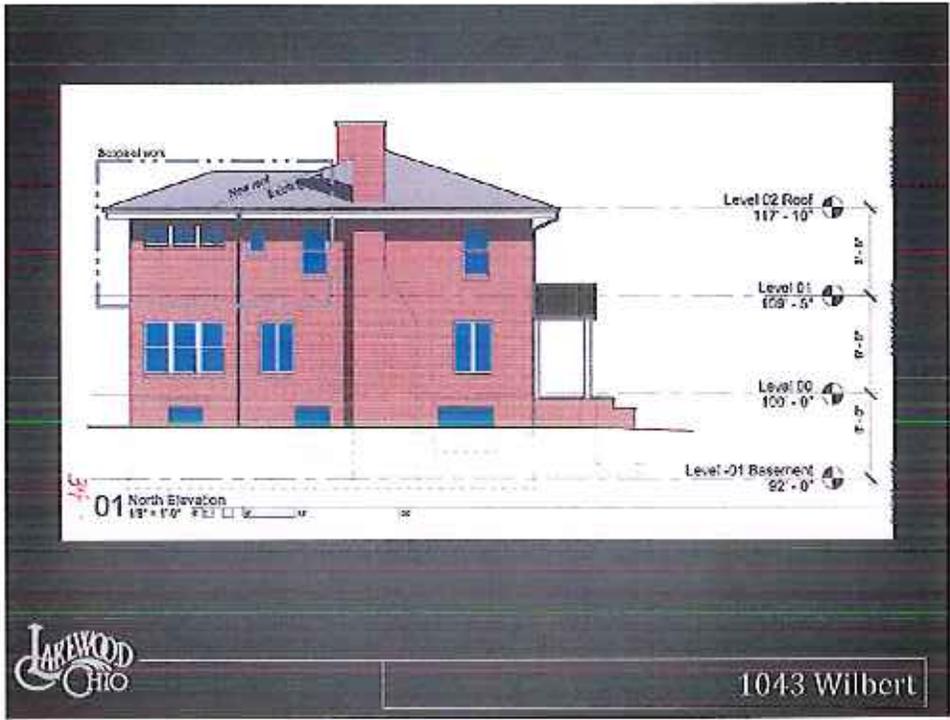
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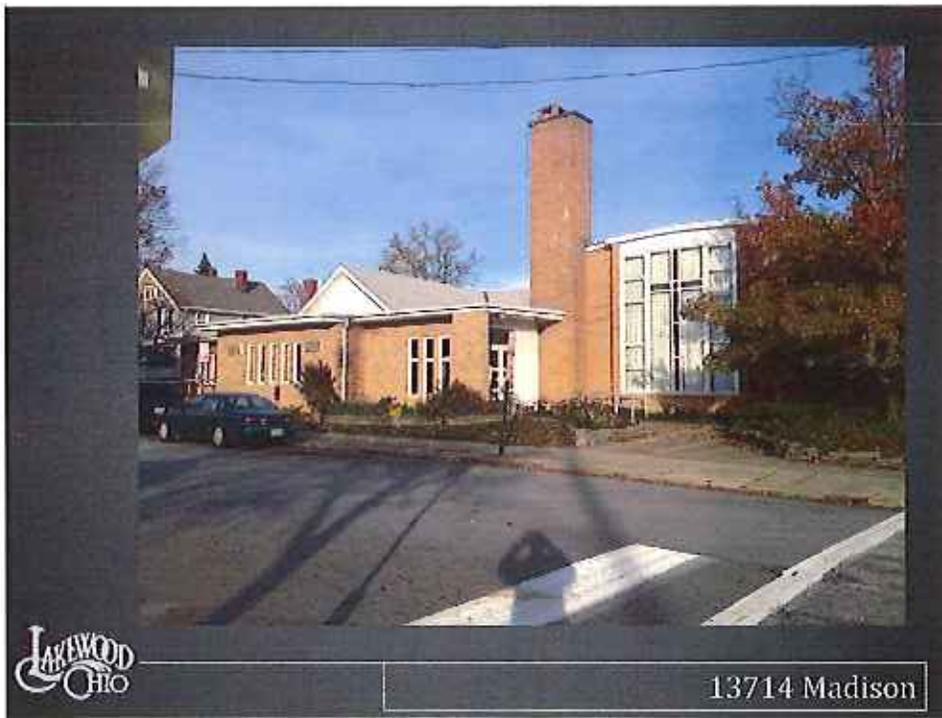
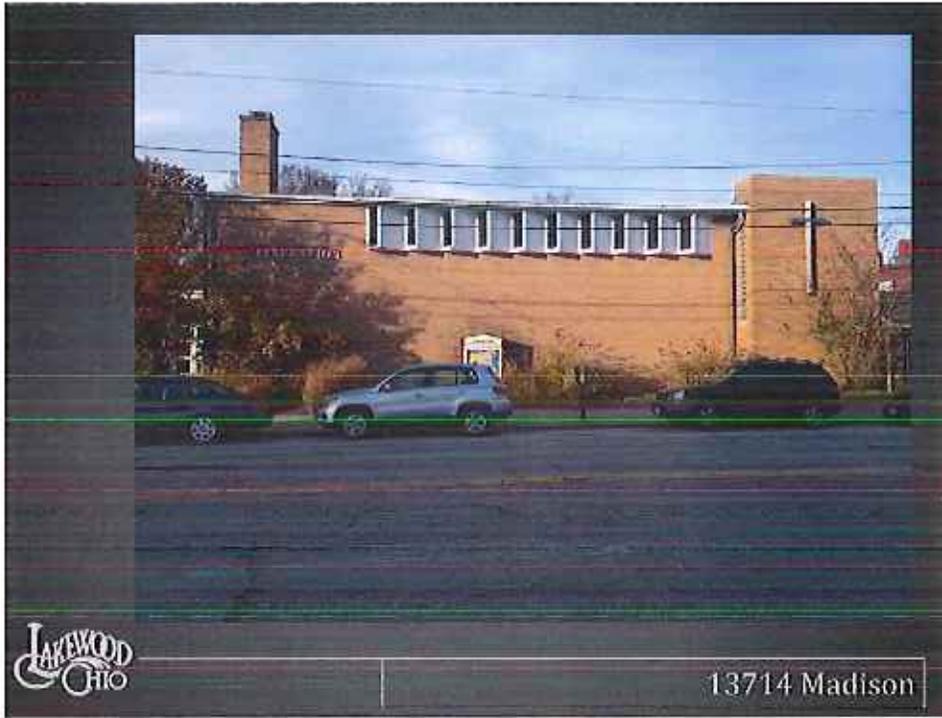


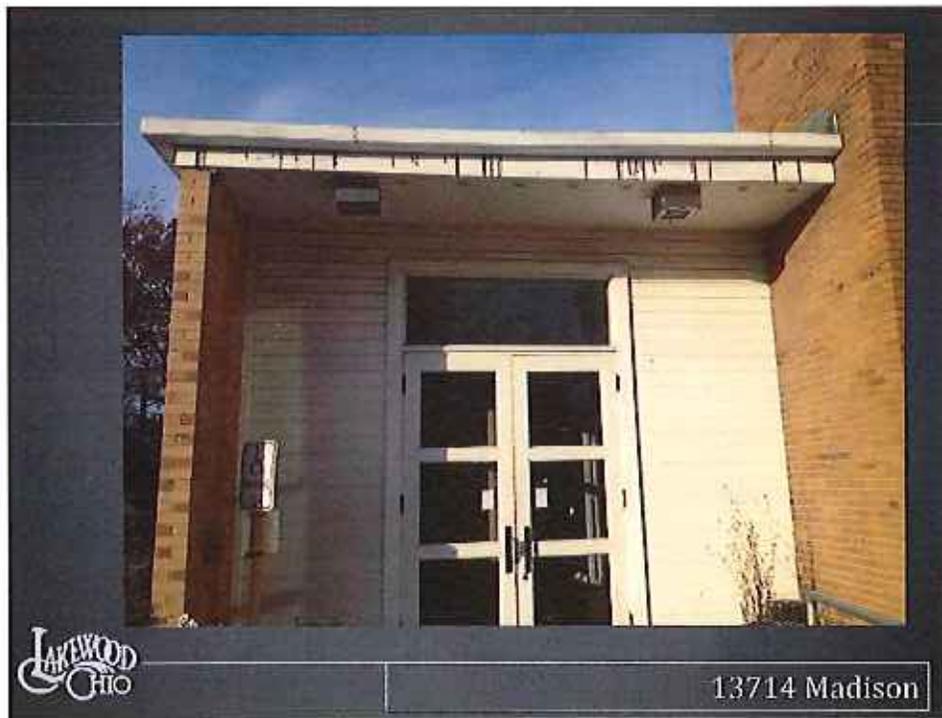
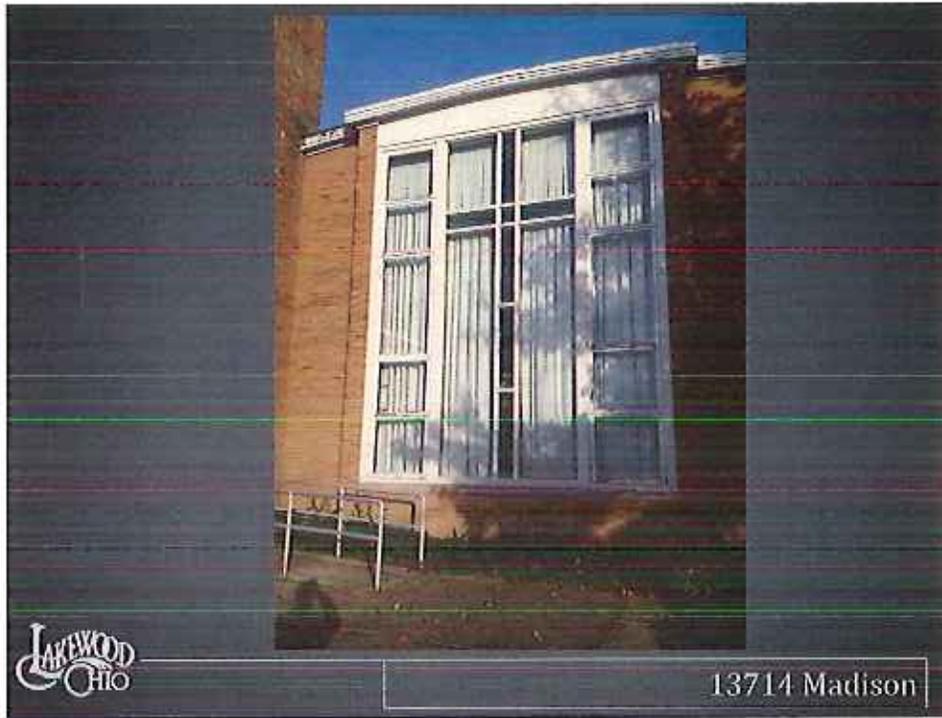


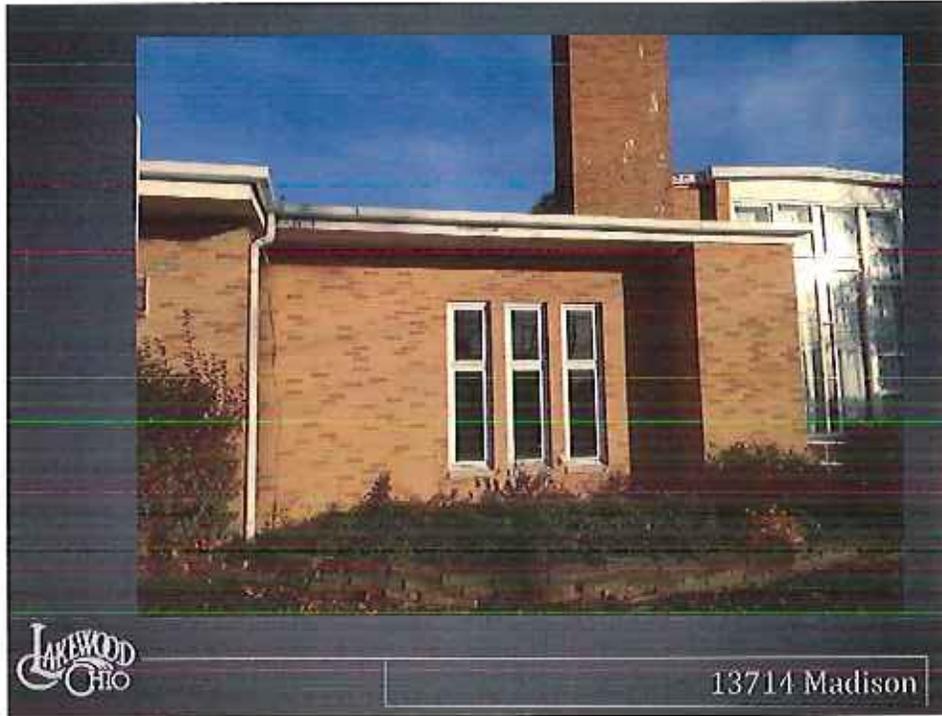






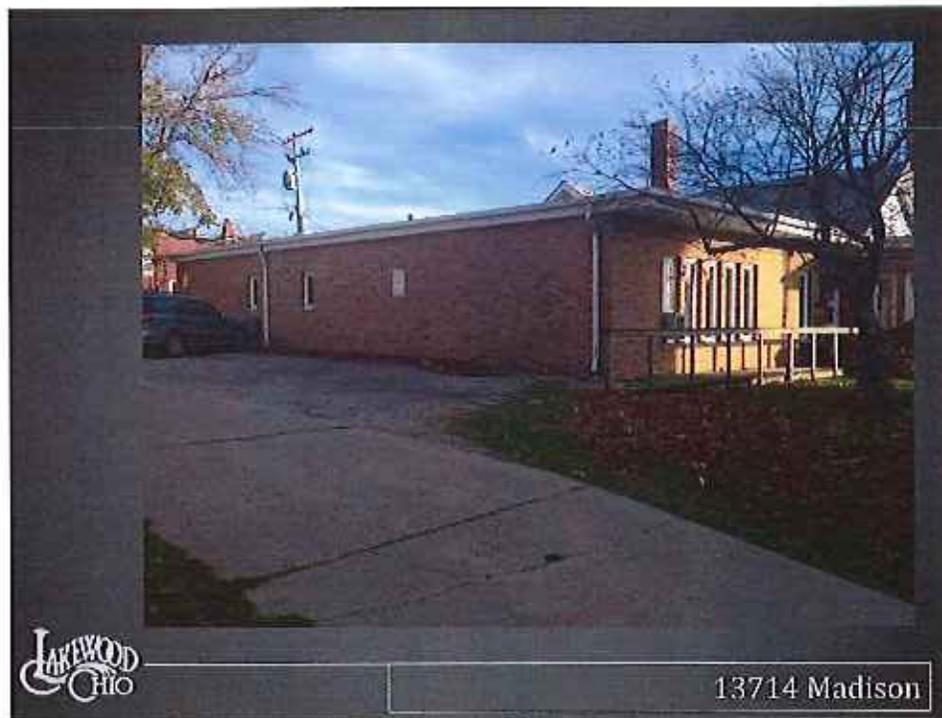






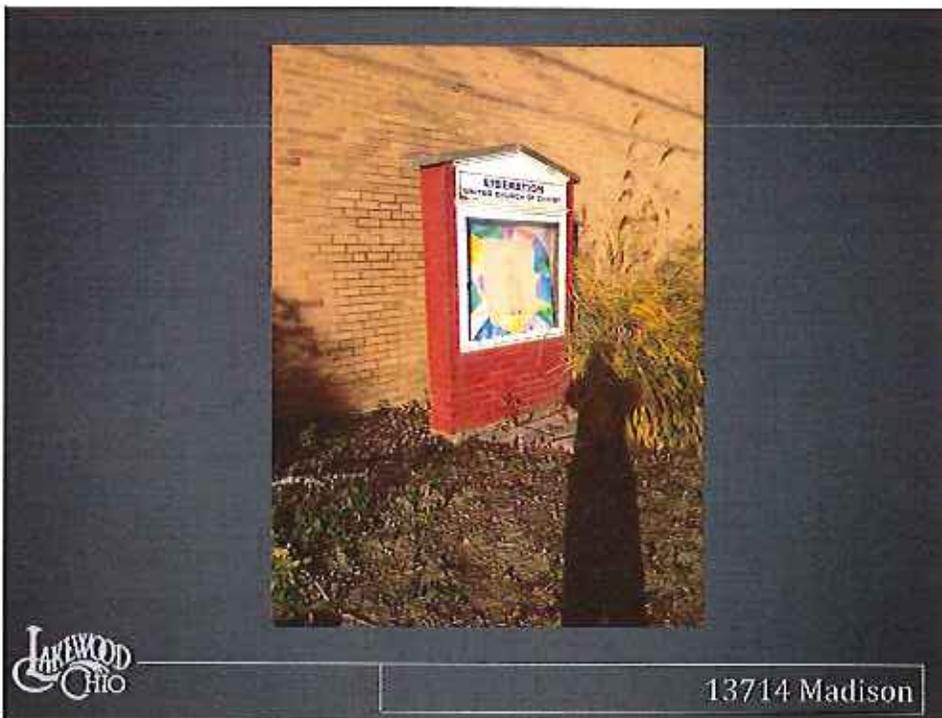
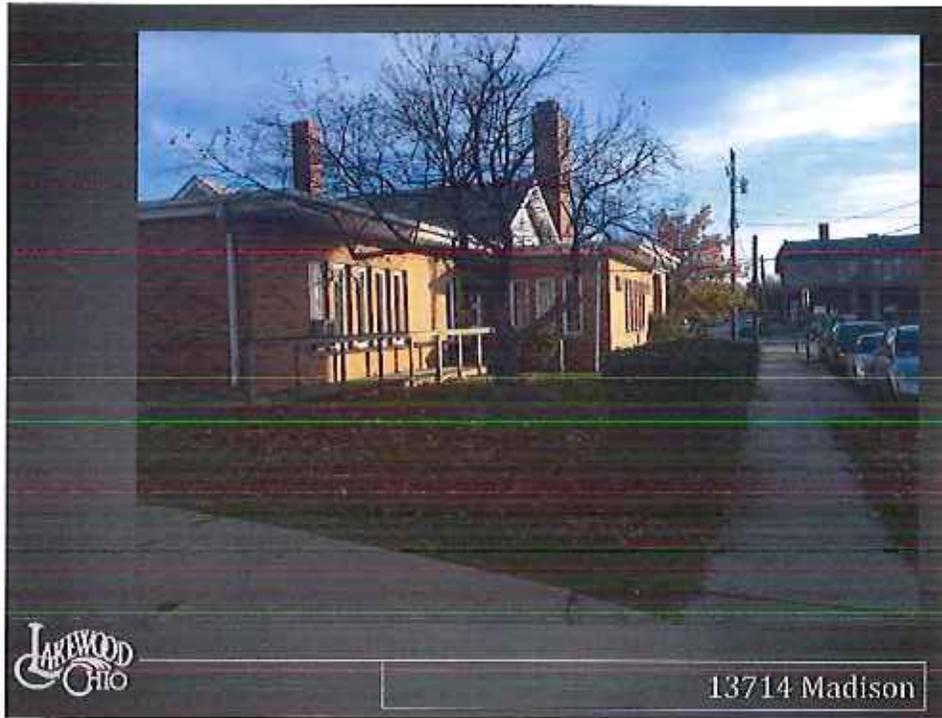
LAKWOOD
OHIO

13714 Madison

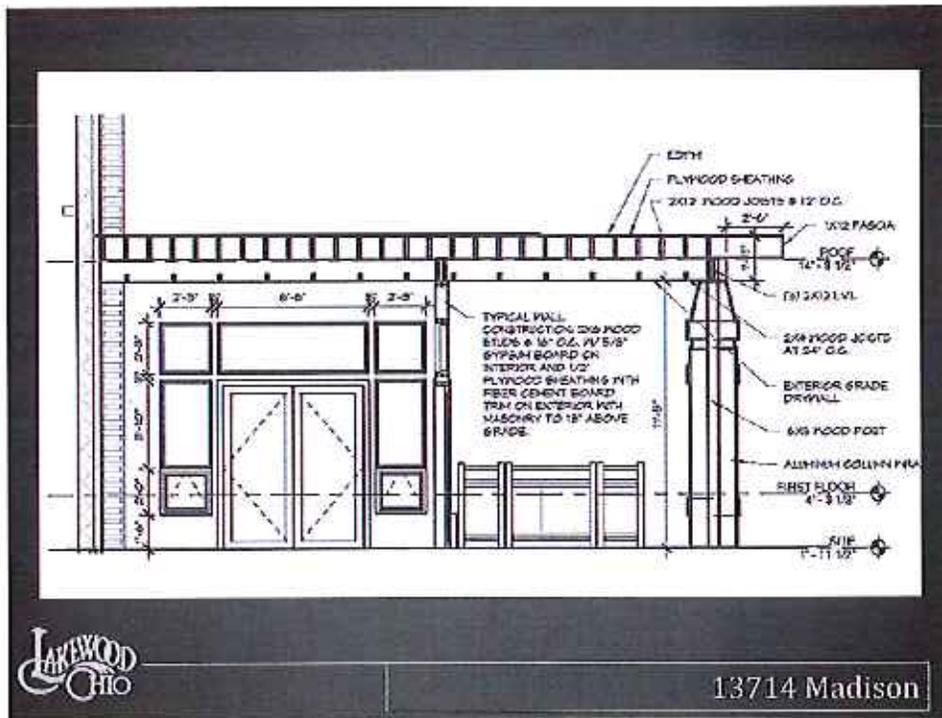
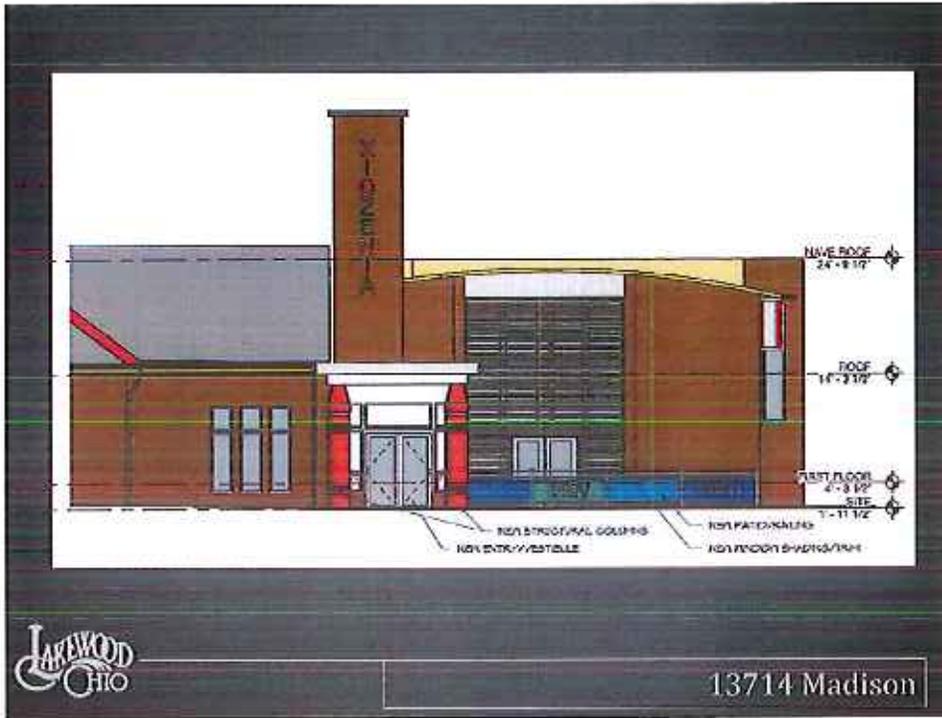


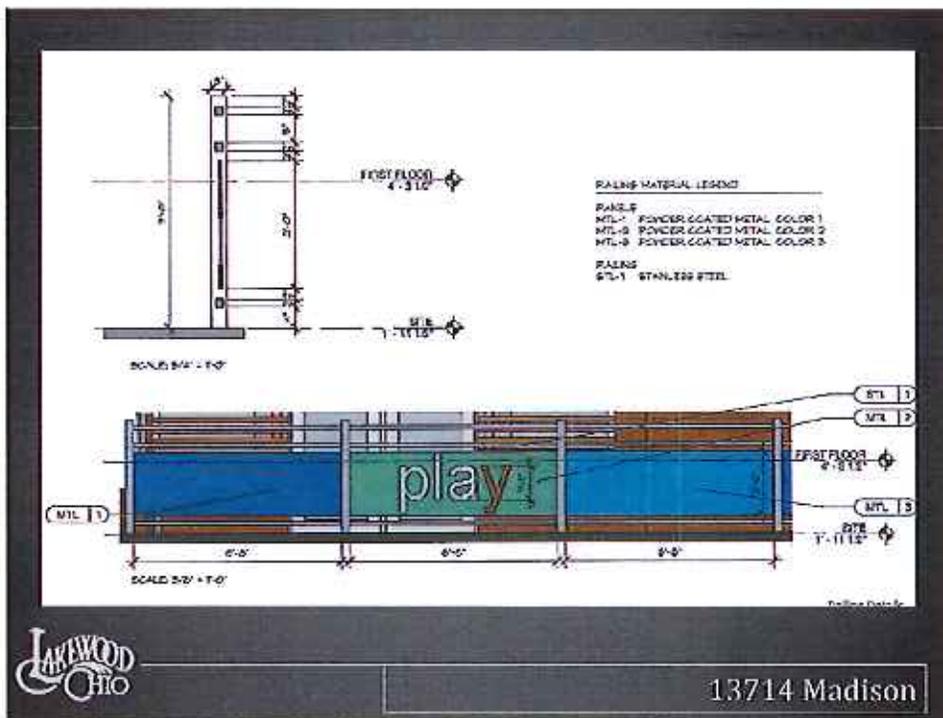
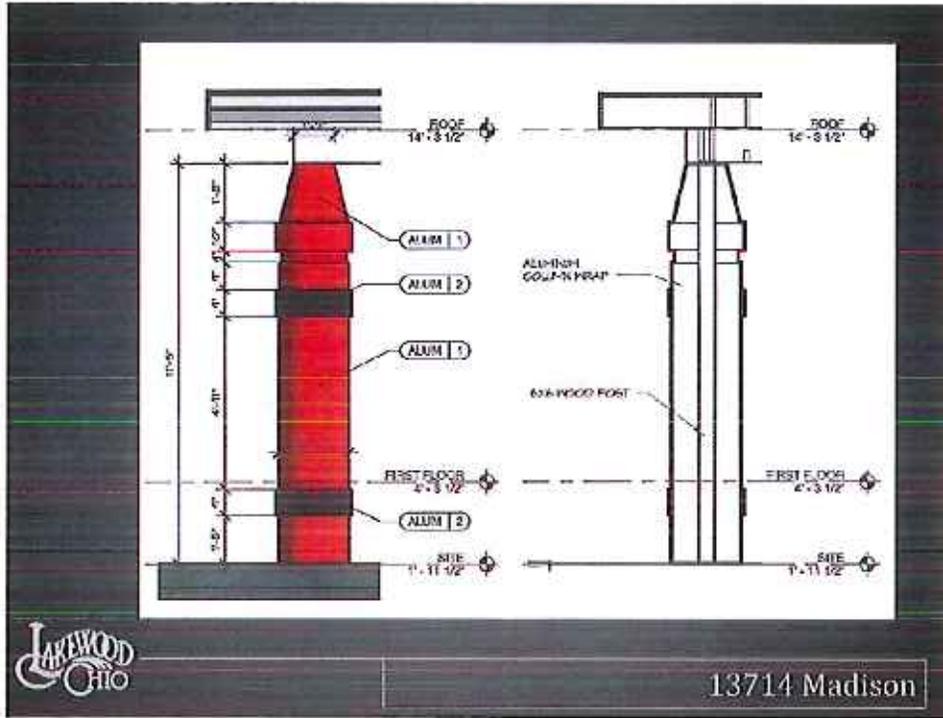
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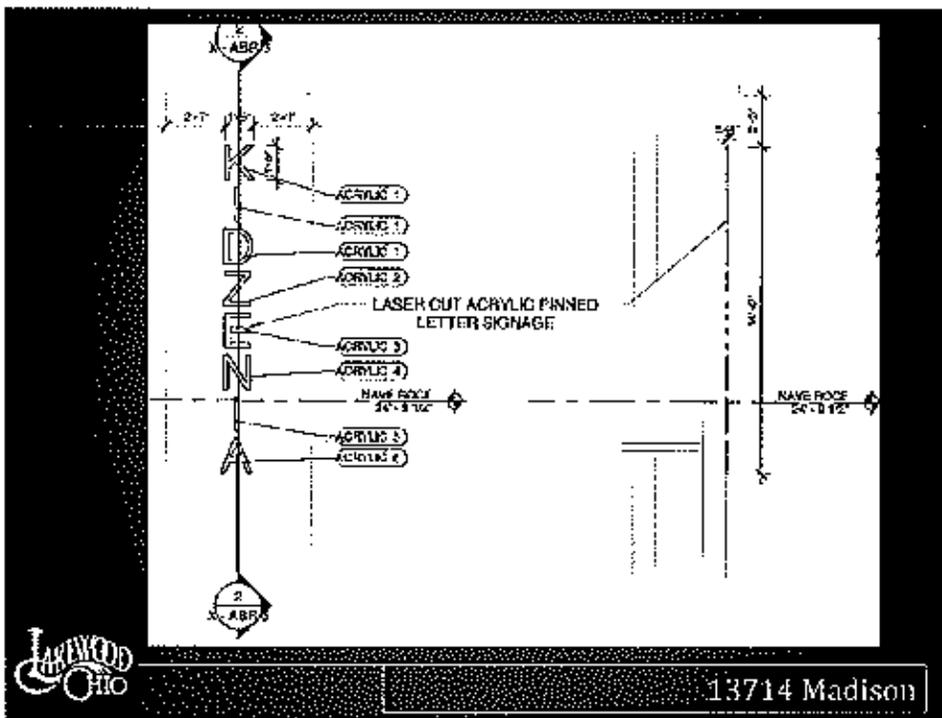
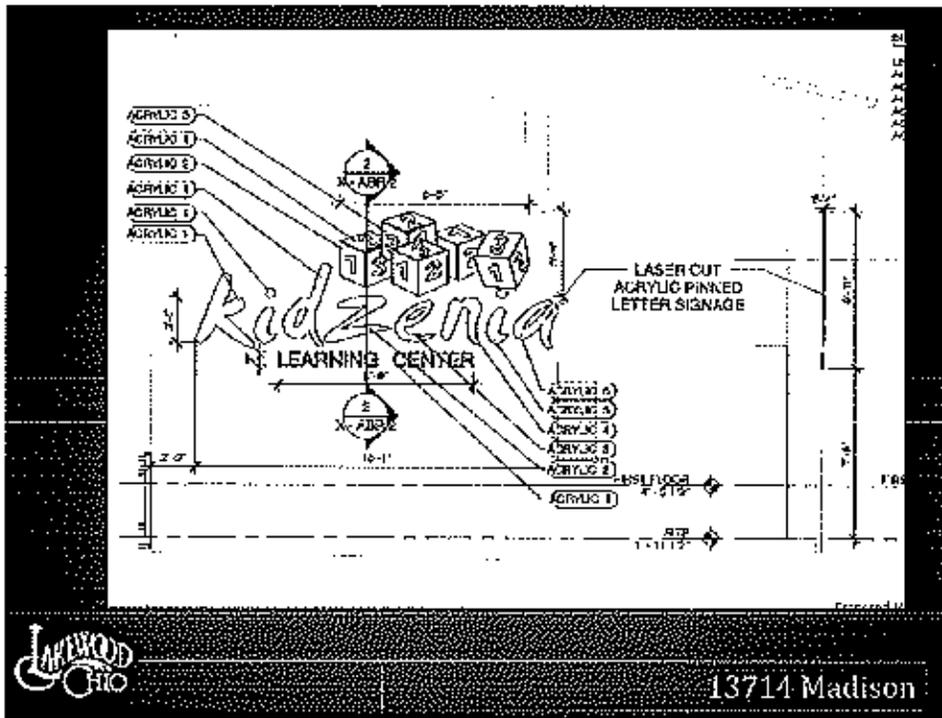
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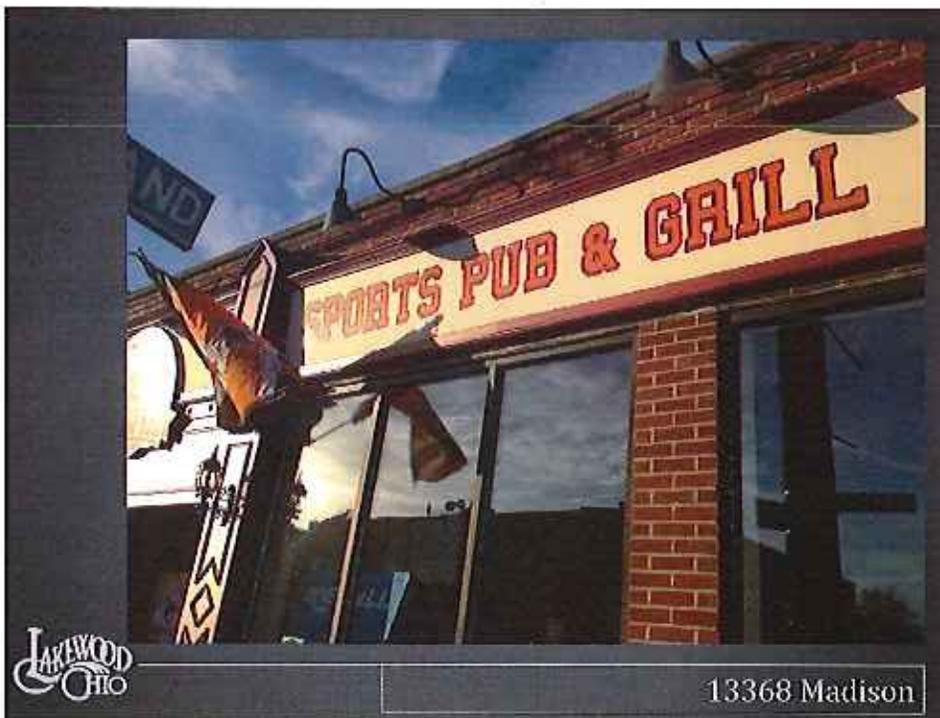
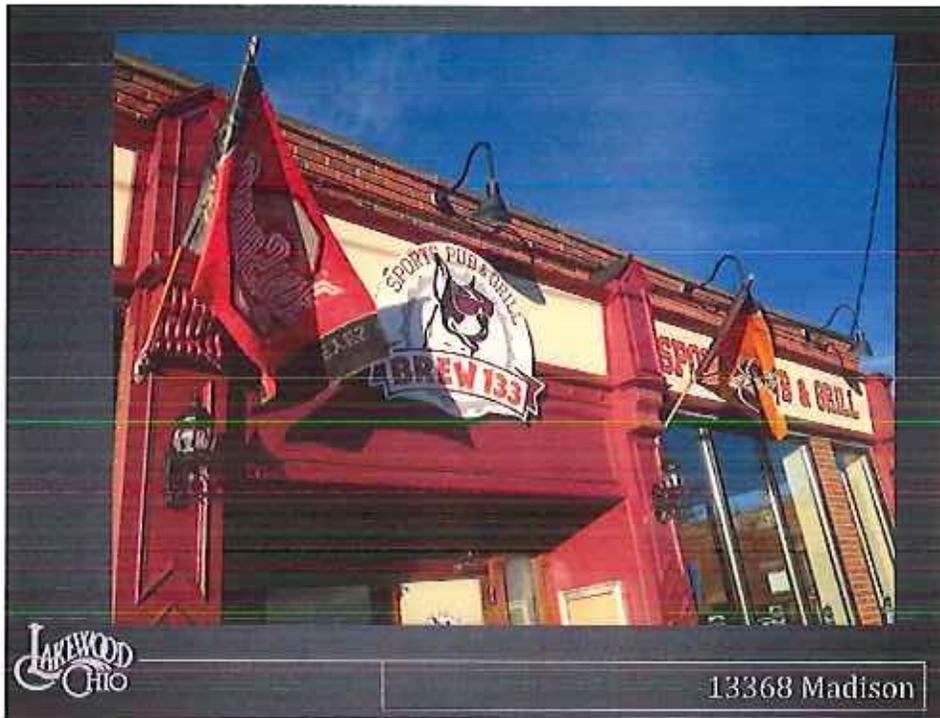


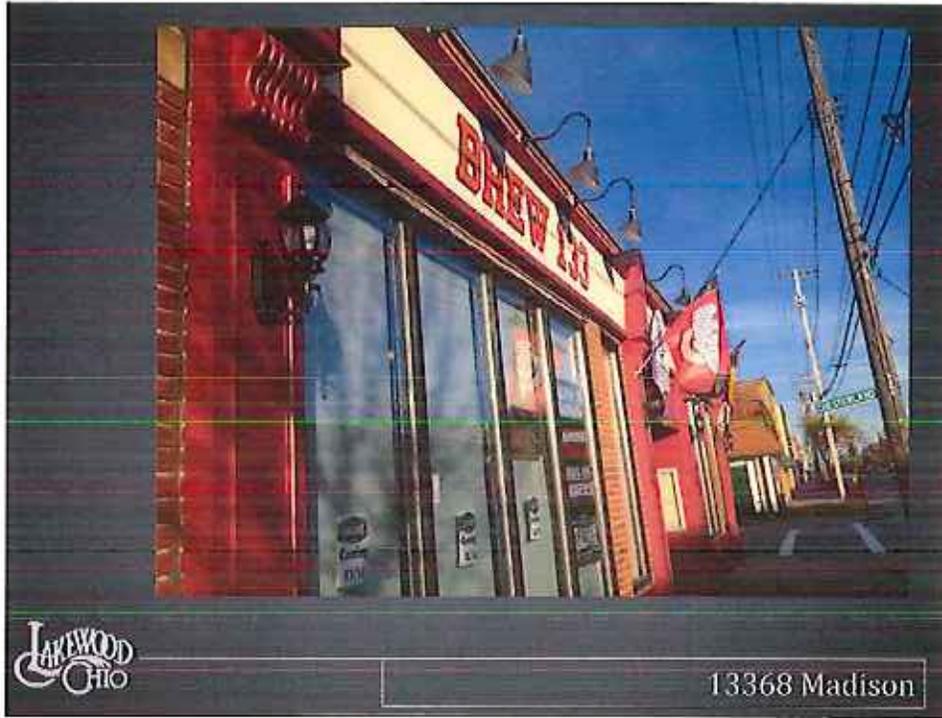


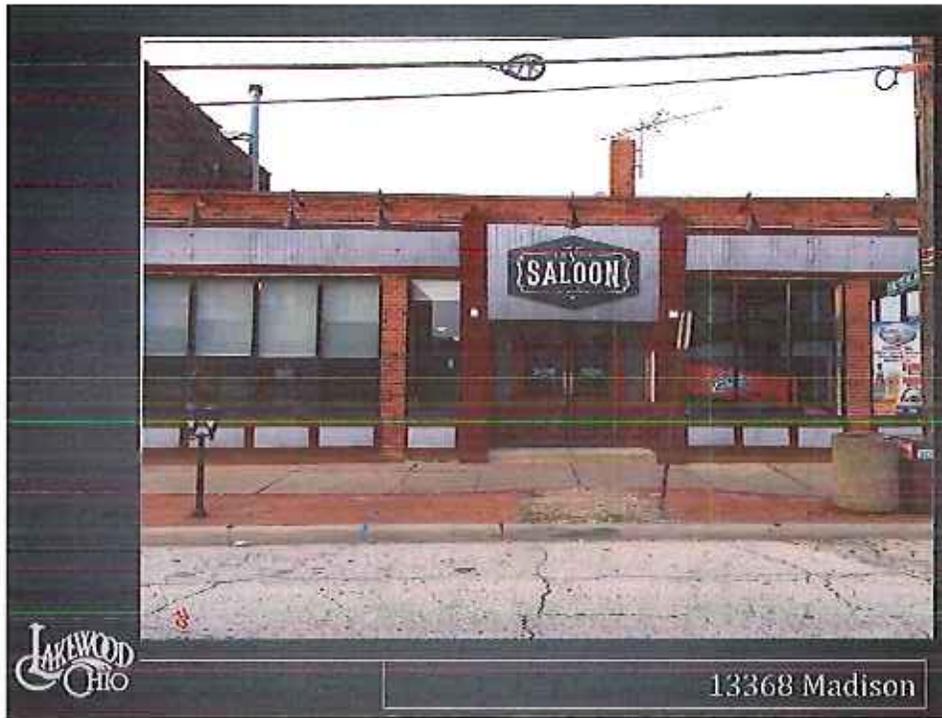






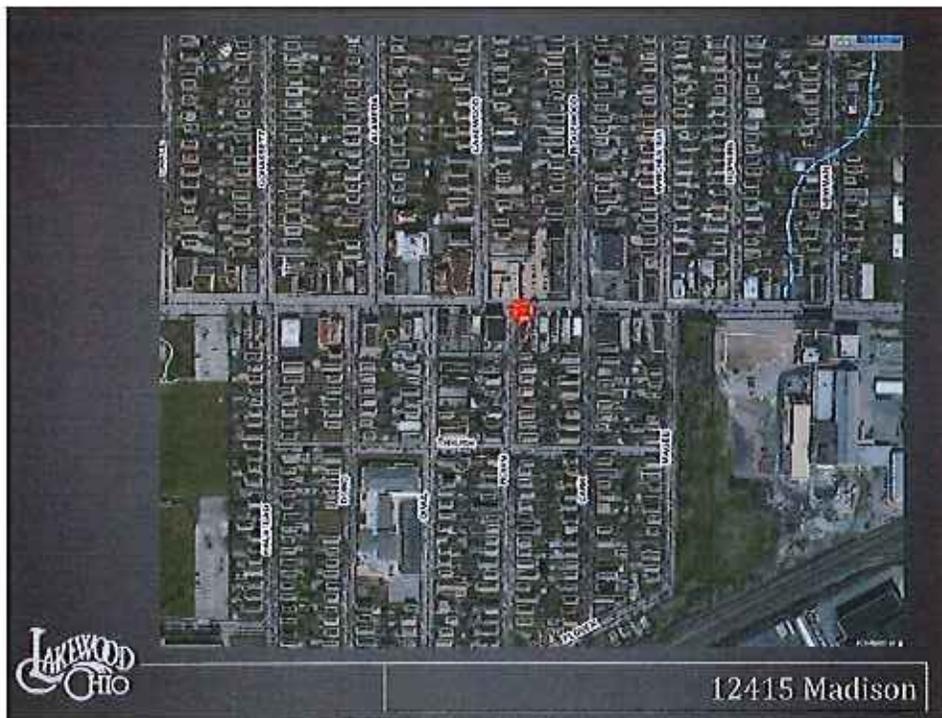






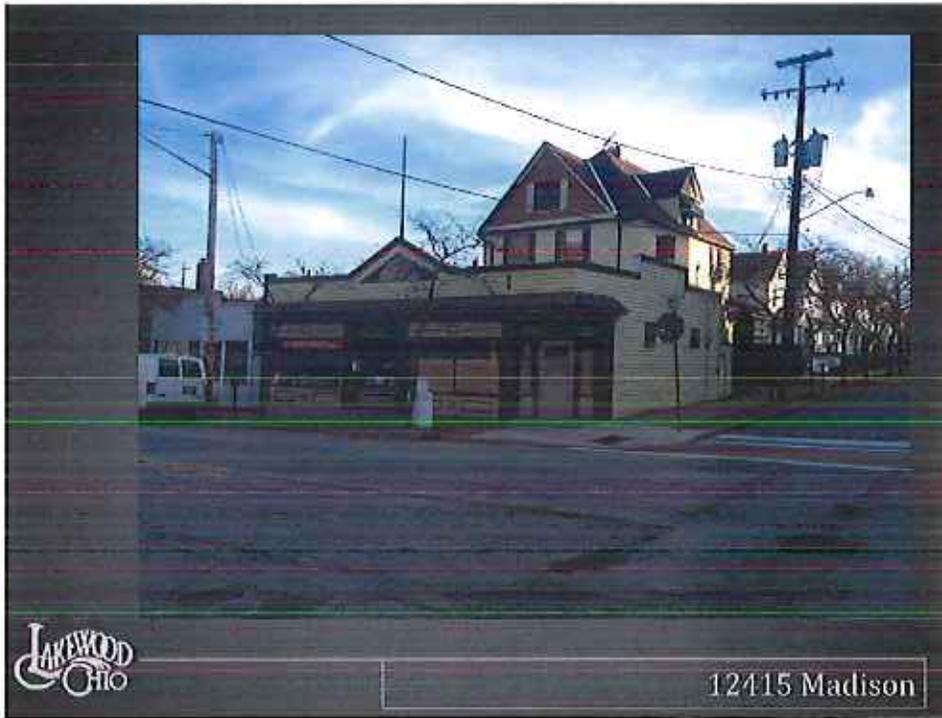
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13368 Madison

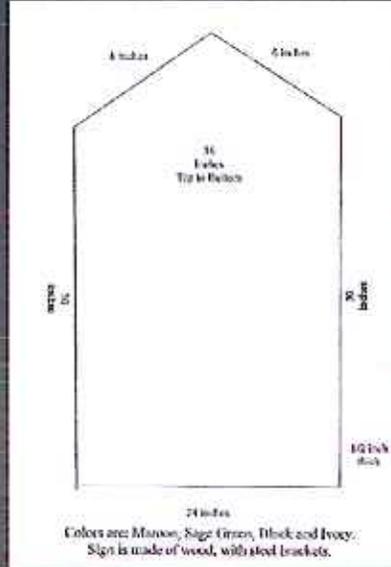
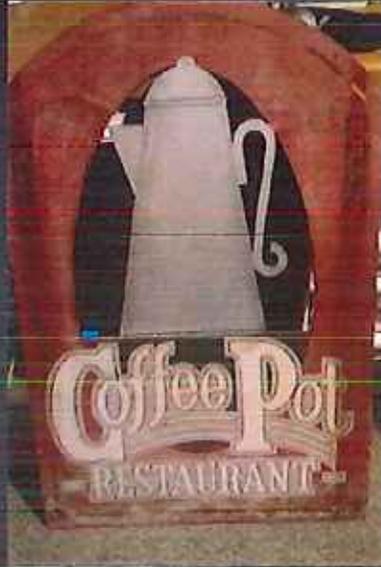


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12415 Madison



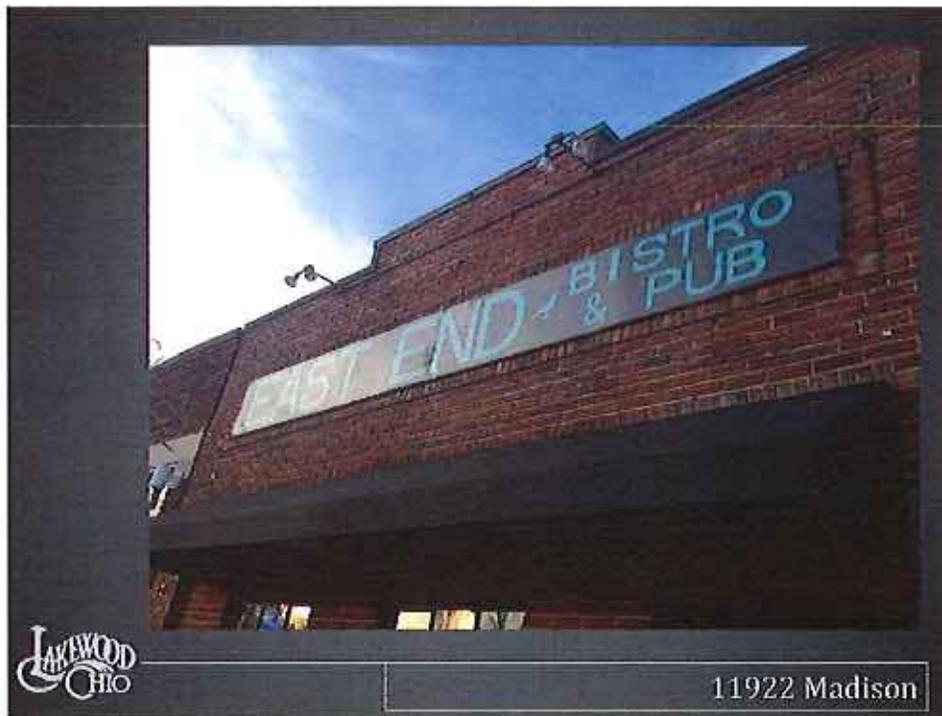
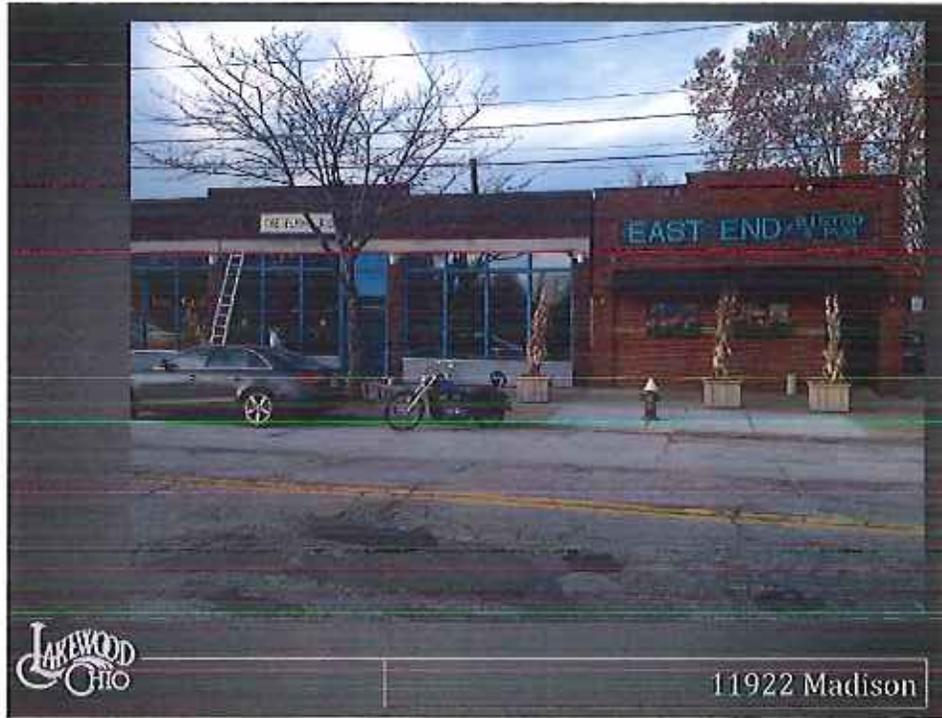




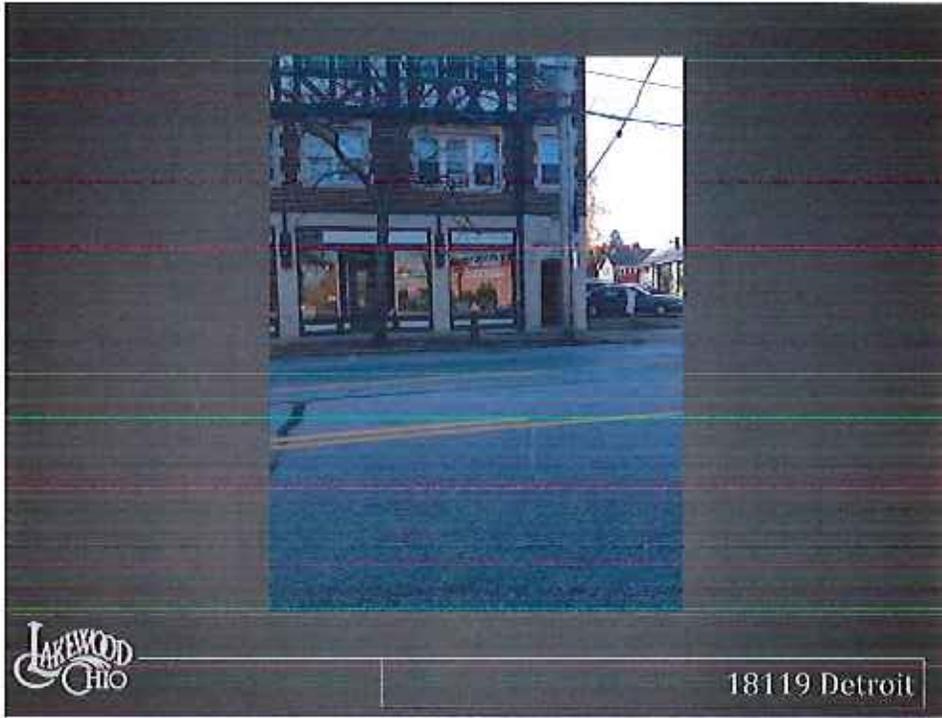
12415 Madison



11922 Madison







the modern bohemian

one-of-a-kind handmade accessories
for you and your home

the home of
-originals

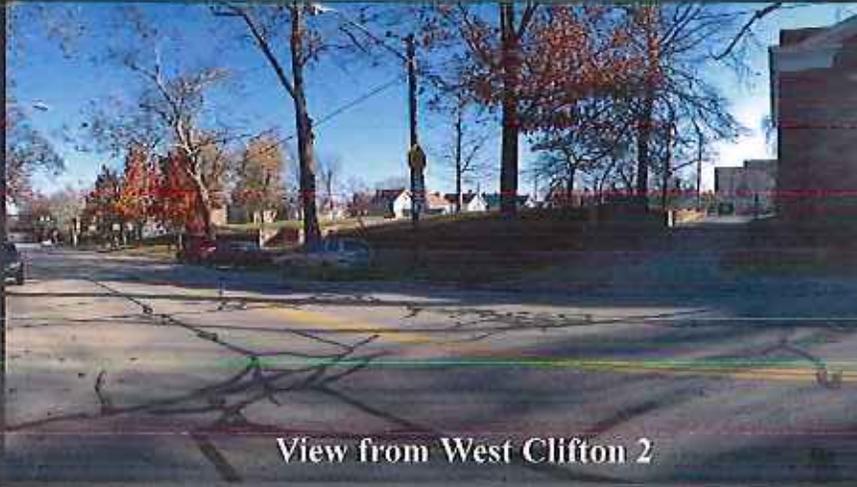
LAKWOOD OHIO

18119 Detroit

LAKWOOD OHIO

1381 West Clifton





View from West Clifton 2



1381 West Clifton



Looking North



Looking South



1381 West Clifton

