

**CITY OF DEXTER
PLANNING COMMISSION
WORK SESSION
MONDAY, FEBRUARY 1, 2016**

I. CALL TO ORDER AND ROLL CALL:

The meeting was called to order at 6:05 PM by Planning Commission Chairman Kowalski at the Dexter Senior Center located at 7720 Ann Arbor Street in Dexter, Michigan.

| | | |
|----------------|------------------------|--------------------|
| Matt Kowalski | Thomas Phillips- | Jim Carty-arr 6:45 |
| Jack Donaldson | Alison Heatley | Marni Schmid-AB |
| James Smith | Scott Stewart-arr 6:15 | Tom Stoner |

Also present: Michelle Aniol, Community Development Manager; Justine Breyer, Assistant to the City Manager; Zach Michels, City Council Member; Carol Jones, Interim City Clerk; Laura Kreps, Carlisle Wortman Associates; and media.

II. ZONING ORDINANCE UPDATE:

District Use Table

Article IV, Non-Conformities

Article XXII, Administration and Enforcement

Article XXIV, Zoning Board of Appeals

Laura Kreps from Carlisle Wortman Associates presented zoning ordinance updates. The primary discussion revolved around non-conforming structures, non-conforming uses and non-conforming sites. Discussion followed.

Also discussed was District Uses and currently listing of agriculture use within the City as well as Accessory Dwelling Units as an apartment within a home but not as a separate building on one's property.

III. ADJOURNMENT

Chairman Kowalski adjourned the meeting at 6:58 PM

Respectfully submitted,

Carol J. Jones
Interim Clerk, City of Dexter

Approved for Filing: _____

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**CITY OF DEXTER
PLANNING COMMISSION
REGULAR MEETING
MONDAY, FEBRUARY 1, 2016**

I. CALL TO ORDER AND ROLL CALL:

The meeting was called to order at 7:05 PM by Planning Commission Chairman Kowalski at the Dexter Senior Center located at 7720 Ann Arbor Street in Dexter, Michigan with roll call.

Matt Kowalski
Jack Donaldson
James Smith

Thomas Phillips
Alison Heatley
Scott Stewart

Jim Carty
Marni Schmid-AB
Tom Stoner

Also present: Michelle Aniol, Community Development Manager; Justin Breyer, Assistant to the City Manager; Carol Jones, Interim City Clerk; and media.

II. APPROVAL OF THE MINUTES

1. Work Session – January 4, 2016
2. Regular Meeting – January 4, 2016

Motion Smith; support Donaldson to approve the minutes of the Work Session of January 4, 2016 and the Regular Meeting of January 4, 2016 as posted.

Unanimous voice vote approval with Commissioner Schmid absent.

III. APPROVAL OF THE AGENDA

Motion Smith; support Stoner to approve the agenda as presented.

Unanimous voice vote approval with Commissioner Schmid absent.

IV. PUBLIC HEARING(S)

None

V. PRE-ARRANGED PARTICIPATION

None

VI. REPORTS

- A. Chairman Report – Matt Kowalski

None

B. Planning Commissioners and Council Ex-Officio Reports

Council Member Smith reported that City Council passed an ordinance regulating food carts on public property in the city. Ms. Aniol explained the reasons for such an ordinance and the specifics of said ordinance.

C. Community Development Office Reports – Michelle Aniol

Ms. Aniol provided her report in the packet. In addition she provided the Commission with information on PUD (Planned Unit Development) Regulations for the City and the following updates:

- Motion Smith; support Stewart to amend the agenda adding New Business item B – Pros and Cons of a PUD. Unanimous voice vote approval with Commissioner Schmid absent.
- The Tree Board met on January 19.
- The RFQ Committee is working with the attorney on a pre-development agreement with Foremost Development Company.
- There is a proposed redevelopment inquiry regarding the Mill Creek Sport Center for a retail space. Discussion followed regarding the issues with sewer and water and possible annexation to the City.
- In regards to The Strawberry Alarm Clock, had a meeting with the architect today.
- Steve Brouwer and Allison Bishop brought in an area plan today for the Grand Street / Baker Road property.
- Trying to schedule Planning and Zoning Basic Training for Tuesday, February 16 at 7 PM.
- Mr. Breyer spoke about the Parks & Recreation Master Plan and that it will be in the 30 day review period until February 15 for public comment.

VII. CITIZENS WISHING TO ADDRESS THE COMMISSION

None

VIII. OLD BUSINESS

- A. Master Plan Amendment** – Consideration off a resolution recommending adoption of an Amendment to the Master Plan. Action postponed on January 4, 2016 following the Public Hearing.

Motion Carty; support Smith let it be resolved that the City of Dexter Planning Commission does hereby recommend that the City of Dexter Amendment to the Master Plan be adopted by the City Council and let it be resolved that said plan amendment to be dated as recommended this day of February 1, 2016.

Ayes: Phillips, Carty, Donaldson, Heatley, Smith, Stewart, Stoner, and Kowalski.

Nays: None

Absent: Schmid

Motion carries

IX. NEW BUSINESS

A. CIP FY2016-2021 – Review updates to CIP worksheets, Section 2, Parks.

Ms. Aniol and Mr. Breyer gave a brief explanation of the CIP projects from the Parks and Recreation Commission. Discussion followed on the proposals. Both Mr. Phillips and Mr. Carty noted that placing a pathway in Community Park would deter from the uses now for soccer fields. They recommended Marking funds for maintenance and upkeep of the area instead.

B. PUD - Pros and Cons

Ms. Aniol reviewed the Pros and Cons of a PUD development versus the rezoning and site development on property. Ms. Aniol provided previous and current PUD Planning and Development Regulations (Article XIX) from the former Village and the City of Dexter. Discussion followed.

X. PROPOSED BUSINESS FOR NEXT AGENDA – FEBRUARY 1, 2016

A. Work Session

1. Zoning Ordinance Update

B. Regular Meeting

1. Public Hearing for Area Plan Petition for southwest corner of Grand Street and Baker Road.
2. Site Plan review of Dextech Expansion
3. Review draft FY 2016-2021 CIP and schedule Public Hearing

XI. CITIZENS WISHING TO ADDRESS THE COMMISSION

None

XII. ADJOURNMENT

Motion Donaldson; support Smith to adjourn at 8:15 PM.

Unanimous voice vote approval with Commissioner Schmid absent.

XIII. COMMUNICATIONS

None

Respectfully submitted,

Carol J. Jones
Interim Clerk, City of Dexter

Approved for Filing: _____

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Michigan

OFFICE OF COMMUNITY DEVELOPMENT

8140 Main Street • Dexter, Michigan 48130-1092 • (734) 426-8303 • Fax (734) 426-5614

STAFF REVIEW

To: Matt Kowalski, Chairman and Planning Commissioners
Courtney Nicholls, City Manager

From: Michelle Aniol, Community Development Manager

Re: **PUBLIC HEARING TO CONSIDER:** PUD-AP-2016-01 Grandview Commons Mixed Residential Development, Plan dated, 2016-01-27; Plan received, 2016-02-01

Zoning: I-1 Limited Industrial District

Date: March 2, 2016

The Planning Commission is scheduled to conduct a Public Hearing to consider a Planned Unit Development (PUD) Petition and Area Plan for Grandview Commons, submitted by Steve Brouwer on behalf of MMB Equities, LLC, for a 68 mixed residential unit development located at the southwest corner of Grand Street and Baker Road. Accompanying this memo you will find reviews from the planning and engineer consultants and the Dexter Area Fire Department:

- Carlisle Wortman Associates (CWA) dated, February 23, 2016
- OHM dated, February 22, 2016,
- Smith Group/JJR dated, February 19, 2016, and
- DAFD dated, January 1, 2016

The PUD Petition and Area Plan, received February 1, 2016 was distributed to the Planning Commission the week of February 8, 2016.

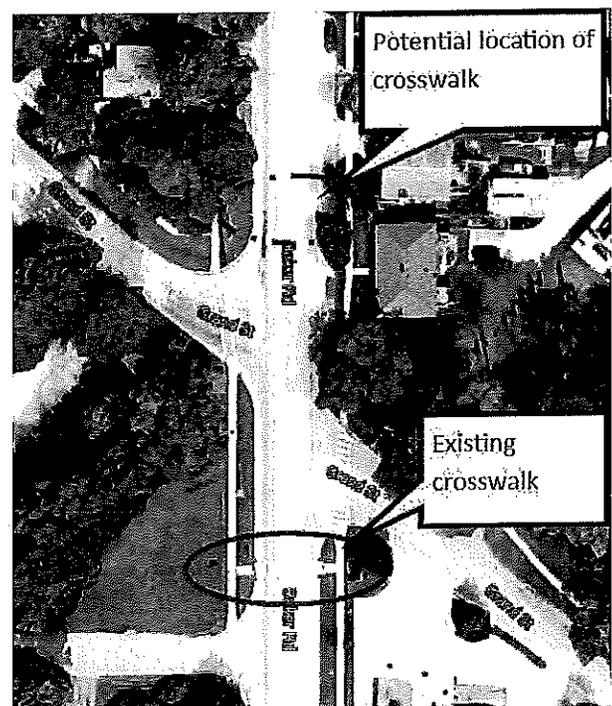
The Pre-application Meeting Committee met with the applicant and his team on December 16, 2015. A summary of that meeting, and one between staff and the planning and engineering consultants, along with comments from others was provided to the Planning Commission on December 28, 2015, and is attached for your review.

Review Updates

There are a couple of issues cited in the consultant and fire department reviews that require follow-up.

1. CWA Letter:

- a. Item 6, page 14, pedestrian crossing. CWA recommends the applicant address pedestrian crossings for Baker Road and Grand Street. In recent years, the City installed a "mid-block" crossing south of Grand Street, across Baker Road. The proposed Area Plan shows an existing public sidewalk on the west side of Baker Road connecting to the existing crosswalk across Baker Road. The plan shows internal sidewalks connecting to the public sidewalks. The Planning Commission must determine if an additional crosswalk across Baker Road is desired north of the intersection of Grand Street and Baker Road.
- b. Sidewalks, page 17. CWA recommends the applicant consider widening the sidewalk along Grand Street and Baker ROW. According to the City's Engineering Standards, the required width of



sidewalks is 5 feet. The revised plan must demonstrate compliance with the Engineering Standards.

2. OHM/Fire Department Letter(s):

- a. Item 5, page 1 Baker Road ROW. The City has planned 120-foot road ROW for Baker Road and Dexter-Ann Arbor Road, since at least the 1994 Master Plan. While this maybe the current standards on the books, the impacts along Baker Road, from Grand Street to Main Street are serious. The current development pattern along Baker Road, from Main Street to Hudson Street reflects the originally platted 99-foot road right-of-way. A 120-foot road right-of-way would wipe out nearly all existing structures, which represent many of the City's (then Village's) historic architectural style. Staff and the engineer doubt the need to advocate for a 120-foot ROW along Baker Road, especially since a 5-lane section easily fits into a 99-foot ROW, as shown below:

| Buffer | Sidewalk | Greenbelt | Parking Lane | SB Lane | SB Lane | Center Turn Lane | NB Lane | NB Lane | Parking Lane | Greenbelt | Sidewalk | Buffer | TOTAL |
|--------|----------|-----------|--------------|---------|---------|------------------|---------|---------|--------------|-----------|----------|--------|-------|
| 1' | 5' | 5.5' | 8' | 12' | 12' | 12' | 12' | 12' | 8' | 5.5' | 5' | 1' | 99' |

Therefore, staff and the Engineer agree this standard is one which the Planning Commission should considering allowing a deviation.

- b. Item 6, page 1, Street Lighting. According to the Engineering Standards, public street lights are required for all developments within the DDA. However, Planning Commission determined there was no plan for implementing the standard, and without a plan, neither the city nor the developer had the direction needed to implement the requirement, and recommended suspension of the standard to City Council. On May 28, 2013, City Council suspended the public street light standard without a developer's obligation and required that the DDA create a lighting plan for the DDA district. Staff will ask the DDA to consider the standard at its March 17th meeting. In the meantime, the applicant has agreed to install street lighting along the site's Baker Road frontage.
- c. Item 7, page 1, Water Main. Extending the water main along the frontage of the site is required per the Engineering Standards. However, due to the layout of the development, looping the water main through the site was logical. The applicant has indicated he would install the water main along Grand Street, in addition to the installation on site, as a public benefit, provided the city designs, tests and inspects the water main work. This is a logical compromise staff and the engineer supports.
- d. Item 20, page 2, Pathway to Mill Creek. Both engineers (OHM and Smith Group/JJR) call for a 10-foot wide asphalt path from Grand Street to Mill Creek. The thought being that a 10-foot multi-use path is planned for Mill Creek and as such the pathway through Grandview Commons should be consistent. However, the B-2-B trail through the City, from Mill Creek Park to Railroad crossing at Central Street, utilizes existing city sidewalks (generally 5 feet in width) for pedestrian's and streets (Alpine, Fifth, Third and Central or Main and Central, depending on the route) for bicyclists. ASHTO standards allow for shared use paths to vary from 8 feet to 12 feet in width. The applicant has agreed to widen the pathway to 8 feet. At the point where the path meets the access drive, pedestrians could use the 5-foot internal sidewalk and bicyclists could use the access drive. Staff and the engineers support this as a logical compromise.
- e. Item 21 and 22, page 2, On-street Parking and Reconstruction of Grand Street. The engineer suggested the applicant consider non-parallel on-site parking (i.e. angled). Additionally, he called for the applicant to reconstruct Grand Street, along the entire frontage of the subject site. While there is no requirement for the developer to reconstruct Grand Street, some might say this would be a public benefit.

However, according to Section 19.01.A, of the Zoning Ordinance, a PUD District is intended to achieve a recognizable and material benefit to the ultimate users of the project and to the

community, where such benefit would otherwise be unfeasible or unlikely to be achieved without application of the PUD regulations. In regards to road improvements, the city has a dedicated millage for planning and implementing road improvements throughout the city.

Improvements to Grand Street, between Mill Creek and Baker Road have not been initiated at this time due to the anticipated construction traffic generated by this project, as well as the 3045 Broad Street Redevelopment project. The applicant is amenable to considering a public private partnership with the City regarding Grand Street road reconstruction; however, additional discussion is needed to figure out the details.

- f. DAFD items 2, 5, 7 and 8, page 3, Road access, widths and smoke/fire detection and suppression. The applicant is proposing 23-foot wide aisle for internal circulation and access within the site. According to Section D105 of the International Fire Code, an access road must have a minimum unobstructed width of 26 feet in the immediate vicinity of a building more than 30 feet in height.

The applicant is proposing building heights ranging from approximately 17' 6" for the duplex buildings, to 24' 9" for the 8-unit apartment, 29' 1" for the 12-unit apartment, and 30' 4" for the townhouses. Fire suppression is required and will be provided in the apartment buildings. DAFD noted that the City of Dexter Fire Protection Ordinance allows for improvements in areas of fire protection/suppression for reductions in other sections of the Ordinance. The applicant has indicated he is willing to consider suppression in the townhouses along Grand Street and detection and monitoring in the duplex buildings.

PUBLIC HEARING AND AREA PLAN APPROVAL PROCEDURE

The applicant must demonstrate the proposed PUD Petition and Area Plan satisfies the characteristics set forth in Section 19.08, sub-section A.4, Procedure for Petition and Area Plan Approvals for PUD, as follows:

- a. General character and substance.
- b. Objective and purposes to be served.
- c. Compliance with regulations and standards.
- d. Scale and scope of development proposed.
- e. Economic feasibility of the proposed uses.
- f. Impact Assessment
 - 1) An impact assessment including reports and maps illustrating the following:
 - (a) Water, noise, and air pollution associated with the proposed use.
 - (b) Effect of the proposed use on public utilities.
 - (c) Historic and archeological significance of the site and adjacent properties.
 - (d) Displacement of people and other land uses by the proposed use.
 - (e) Alteration of the character of the area by the proposed use.
 - (f) Effect of the proposed use on the City's tax base and adjacent property values.
 - (g) Compatibility of the proposed use with existing topography, and topographic alterations required.
 - (h) Impact of the proposed use on surface and groundwater.
 - (i) Operating characteristics and standards of the proposed use.
 - (j) Proposed screening and other visual controls.
 - (k) Impact of the proposed use on traffic.

- (l) Impact of the proposed use on flora and fauna, natural resources and natural features, woodlands, wetlands, etc.
 - (m) Negative short-term and long-term impacts, including duration and frequency of such impacts, and measures proposed to mitigate such impacts.
 - (n) Economic effect the project would have on the City, including, but not limited to, the additional need, if any, for City public services such as the need for additional police or fire services, or public school support, the generation of municipal refuse, etc.
- 2) The Planning Commission shall evaluate the Impact Assessment and determine the proposed PUD Petition and Area Plan meets the following criteria:
- (a) Will be harmonious with and in accordance with the general objectives of the Master Plan.
 - (b) Will be designed, constructed, operated, and maintained in harmony with the existing or future neighboring uses.
 - (c) Will not be hazardous or disturbing to existing or future neighboring uses.
 - (d) Will represent a substantial improvement to property in the immediate vicinity and to the community as a whole.
 - (e) Will be served adequately by essential public services and facilities, such as highways, streets, drainage structures, police and fire protection, and refuse disposal, or persons or agencies responsible for the establishment of the proposed use shall be able to provide adequately for such services.
 - (f) Will not create excessive additional requirements at public cost for public facilities and services, and will not be detrimental to the economic welfare of the community.
 - (g) Will not involve uses, activities, processes, materials, equipment, and conditions of operations that will be detrimental to any persons, property, or the general health, safety and welfare by reason of excessive smoke, fumes, glare, noise, vibration or odors.
- 3) The proposed PUD Petition and Area Plan must comply with all other land development standards in the Zoning Ordinance, and any other City ordinance or other local, State or Federal laws and regulations.
- g. Development schedules
 - h. Compliance with the City's Master Plan
 - i. Ownership of land, identify all parties of interest
 - j. Full and complete disclosure for all parties involved in the development as to ownership, current financial position, experience in previous five (5) years, background on all management personnel. Evidence and expert opinion shall be submitted by the applicant in the form of maps, charts, reports, models and other materials, and in the form of testimony by experts as will clearly state the full nature and extent of the proposal.

In accordance with Section 19.04, sub-section A.5 the Planning Commission shall conduct a public hearing to review and evaluate the proposed PUD Petition and Area Plan. Following the public hearing, the Planning Commission shall make a resolution to recommend approval, denial postponement of the petition (pending receipt of further information), to the City Council. The Planning Commission shall transmit a report to the City Council setting forth its conclusions, decision, recommendations and the basis for its decision, along with comments received at the public hearing. The report shall contain the Planning Commission's analysis of the petition and area plan, findings regarding standards and suggested conditions of approval, if applicable.

SUGGESTED MOTIONS – PUD-AP 2016-01 Grandview Commons PUD Petition and Area Plan

Based on the information provided by the applicant and reflected in the minutes of this meeting, the Planning Commission finds PUD-AP 2016-01 Grandview Commons Planned Unit Development (PUD) Petition and Area Plan, received by the city on February 1, 2016 (**MEETS/FAILS TO MEET**) the qualifications for consideration as a PUD and recommends (**APPROVAL/DENIAL**) to City Council, in accordance with the provisions set forth in Article 19, PUD Planning and Development Regulations for Planned Unit Development Districts, in the City of Dexter Zoning Ordinance.

In making this determination, the following additional conditions shall apply:

1. Comments noted in Staff's Review dated ,March 2, 2016;
2. Concerns noted in the CWA review dated, February 23, 2016;
3. Concerns noted in the OHM review dated, February 22, 2016;
4. Concerns noted in the Smith Group/JJR review dated, February 19, 2016;
5. Concerns noted in the DAFD review dated, January 1, 2016; and
6. Revise the Development Agreement accordingly, and bring back to the Planning Commission for review and recommendation.

OR

Based on the information provided by the applicant and reflected in the minutes of this meeting, the Planning Commission moves to **POSTPONE** action on the PUD-AP 2016-01 Grandview Commons Planned Unit Development (PUD) Petition and Area Plan, received by the city on February 1, 2016, until (**DATE**), to allow the applicant more time to address the following issues:

1. Outstanding issues noted by staff, the engineering and planning consultants, and DAFD;
2. Begin negotiations for the development agreement.
3. _____

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GRANDVIEW COMMONS PLANNED UNIT DEVELOPMENT AREA PLAN

Area Plan and PUD Submission Information for consideration by the
City of Dexter Planning Commission and City Council – March 2016

Submittal Information

City of Dexter

February 1, 2016

**Planned Unit Development
Area Plan Application**

**Project Narrative, Impact Assessment,
Development Schedules**

**Grandview
Commons
Area Plan**

**Area Plan, Preliminary Utility Plan,
Landscaping Concept and Parallel
Plan**

MMB Equities

**Color Rendering, Floor Plans and
Elevations**

**7931 Grand
Street**

Traffic Impact Study

Draft Development Agreement

Property Exchange Survey

City of Dexter

**Articles of Incorporation – Grandview
Commons Condominium Association**

February 1, 2016

Draft Master Deed and Bylaws



DEXTER
Michigan

OFFICE OF COMMUNITY DEVELOPMENT

8140 Main Street • Dexter, Michigan 48130-1092 • (734) 426-8303 • Fax (734) 426-5614

PLANNED UNIT DEVELOPMENT (PUD) AREA PLAN PETITION

\$1,000.00 + \$50.00/ACRE + \$3,000.00 DEPOSIT

Rec# _____
Date: _____

| | |
|------------------------|---|
| PROPERTY ADDRESS | 7931 Grand St |
| TAX I.D. | 08-06-155-001; 08-06-427-001; 08-06-427-002 |
| PROPOSED USE | Mixed Use Residential |
| ZONING DISTRICT | I-1 |
| PROPERTY OWNER NAME | MMB Equities, LLC |
| PROPERTY OWNER ADDRESS | 7444 Dexter Ann Arbor Rd, Suite F, Dexter, MI 48130 |
| PROPERTY OWNER PHONE | 734-426-9980 |
| EMAIL ADDRESS | stevebrouwer@arbrouwer.com |
| APPLICANT NAME | MMB Equities, LLC |
| APPLICANT ADDRESS | 7444 Dexter Ann Arbor Rd, Suite F, Dexter, MI 48130 |
| APPLICANT PHONE | 734-426-9980 |
| EMAIL ADDRESS | stevebrouwer@arbrouwer.com |

| ACCEPTABLE | NOT ACCEPTABLE | N/A | Applicant must provide the following: |
|------------|----------------|-----|--|
| | | | 1. Evidence of full ownership of all land in a PUD, or execution of a binding sales agreement. |
| | | | 2. Evidence regarding the following characteristics of the proposed development. |
| | | | a. General character and substance. |
| | | | b. Objectives and purposes to be served. |
| | | | c. Compliance with regulations and standards. |
| | | | d. Scale and scope of development proposed. |
| | | | e. Economic feasibility of the proposed uses. |
| | | | f. Impact assessment (See Section 19.08 for specifics) |
| | | | g. Development schedules. |

| ACCEPTABLE | NOT ACCEPTABLE | N/A | |
|------------|----------------|-----|---|
| | | | h. Compliance with the adopted Master Plan of the City. |
| | | | i. Ownership of land, identifying all parties of interest. |
| | | | j. Full and complete disclosure of all parties involved in the development as to ownership, current financial position, experience in previous five (5) years, background on all management personnel. |
| | | | 3. Information required for Area Plans - All Applications. |
| | | | a. Density of use for each type of proposed use on the site, including a parallel site plan for residential development as described in Section 19.03A.2. |
| | | | b. General description of the organization to be utilized to own and maintain common open space and facilities. |
| | | | c. General description of covenants or other restrictions; easements for public utilities; by-laws and article of incorporation for homeowners' cooperative or condominium association. |
| | | | d. Description of the petitioner's intentions regarding selling or leasing of land and dwelling units. |
| | | | e. Description of all proposed uses by reference to existing zoning classifications under the City Zoning Ordinance, i.e. residential uses by density and housing type. Office and commercial land uses, open space and recreational facilities, and other land uses. |
| | | | f. General landscape concept showing tree masses to be preserved or added, buffer areas, and similar features. |
| | | | g. Delineation of areas to be platted under the Subdivision Control Act. |
| | | | 4. Information Required for Area Plans - Greater than 80 acres. |
| | | | a. Location and description of site, including dimensions and area. |
| | | | b. General topography and soil information. |
| | | | c. Scale, north arrow and date of plan |
| | | | d. Location, type and land area of each proposed land use; dwelling unit density (dwelling units per acre); type of dwelling units. |
| | | | e. Location, use and size of open areas and recreation areas. |

| ACCEPTABLE | NOT ACCEPTABLE | N/A | |
|------------|----------------|-----|--|
| | | | f. General location, surface width, and right-of-way width of proposed public streets; general location and surface width of major private streets/drives. |
| | | | g. General location of proposed parking areas and approximate number of spaces to be provided in each area. |
| | | | h. General delineation of existing natural features to be preserved or removed; location of existing structures, streets and drives; location and propose of existing easements. |
| | | | i. Adjacent land uses. |
| | | | j. Location and area of each development phase; summary of land use information as required in section 19.08 B.2.(d) for each phase. |
| | | | k. General description of proposed water, sanitary sewer and storm drainage systems. |

[Signature] 2/1/16
 Owner's Signature Date

[Signature] 2/1/16
 Applicant's Signature Date

For Office Use Only

Pre-application Meeting Date(s):
 Planning Commission Notification/Action
 City Council Notification/Action

12/16/15 Date: _____
 _____ Date: _____
 _____ Date: _____

application rec'd 2/1/16
\$1,362.00 app fee
\$3,000 person
#51317

REASONS FOR DENIAL: _____

CONDITIONS OF APPROVAL: _____

APPROVAL STAMP

MMB Equities LLC

7444 Dexter-Ann Arbor Road
Suite F
Dexter, MI 48130

Phone: 734-426-9980
Fax: 734-426-9985

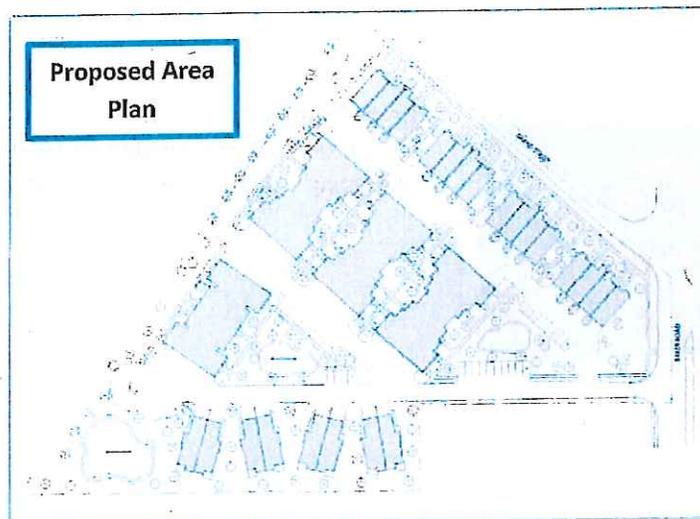
February 1, 2016

City of Dexter
Planning Commission and City Council
8140 Main Street
Dexter, MI 48130

MMB Equities, LLC is submitting this proposal to the City of Dexter for Area Plan approval for the redevelopment of the property at the corner of Grand Street and Baker Road, called Grandview Commons.

We respectfully request that the City consider rezoning the property to a Planned Unit Development (PUD) in order to permit some flexibility in the design standards that promote a development that can provide a variety of alternative housing options for those wishing to move in the City limits.

MMB Equities, LLC is pleased to submit the following information as required by Section 19, Planned Unit Development (PUD), for the Sixty Eight (68) unit Grandview Commons Multi-Family housing project. We are also requesting approval of the Area Plan in order to continue to develop the full engineering plans for review and approval.



Developer –

MMB Equities, LLC is the Property Owner and Developer of Grandview Commons. MMB Equities purchased the development property in 2012 and manages the property and tenants within the building. MMB Equities, LLC is a development partnership that includes Steve Brouwer. Steve Brouwer is also President and owner of A.R. Brouwer Company.

General Contractor –

A.R. Brouwer Company located in Dexter, Michigan, was founded in 1998 by Steve Brouwer. A.R. Brouwer Company provides construction services for projects, utilizing three different approaches: design/build, construction management and general contracting. A.R. Brouwer Company has constructed many new buildings and numerous interior and exterior building renovations within the City of Dexter over the last 18 years along with other projects throughout Southeast, Michigan.

The following are a few projects completed by A.R. Brouwer Company in the City of Dexter:



Dexter Wellness Center
48,000 SF wellness center; includes offices and community meeting rooms; Brownfield site, demolition of existing structure and new construction.



Dexter Pharmacy
22,000 SF mixed use building Brownfield site, demolition of existing structure and new construction.



Monument Park Building
21,600+ SF office building
Brownfield site, clean up and new construction



Bluewater Building
[A.R. Brouwer Company Offices]
22,000+ SF office building
Brownfield site, clean-up
Renovation of a 9,000 SF manufacturing building, and a 13,000 SF expansion to create a 22,000 SF office building



MC3
56,000 +SF Renovation of an existing warehouse into a medical equipment research, design and manufacturing facility

The following are residential projects completed by the A. R. Brouwer Company.



Fraser House

Constructed a 5000 sq ft home including a full basement, timber frame interior, four story elevator, third floor viewing room and a four car garage.



Greve House

Renovated and repaired home after Tornado damage.



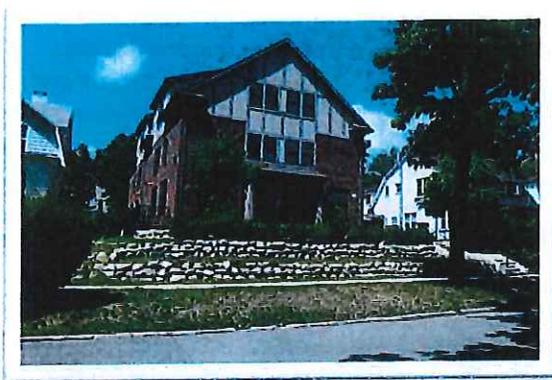
Hill Apartments

Demolished existing house in downtown Ann Arbor and constructed a 24 bedroom student housing building. The framing was a combination of steel and wood. The exterior finishes included an aluminum window system, aluminum trim and slate siding.



Forest Street

Demolition and reconstruction of a 4-unit student apartment building in Ann Arbor.



Hill Street

Demolition and construction of a 4-unit student apartment building in Ann Arbor.

Key Personnel -

A.R. Brouwer Company has a strong core of knowledgeable project managers and superintendents. Our team's collective experience in construction allows us to provide expertise for any project.



**Steven Brouwer –
Company President**

Mr. Brouwer holds a Bachelor's (1984) and Master's Degree (1985) in Civil Engineering from the University of Michigan, and has over 30 years of industry experience. From 1985 to 1994 he worked in commercial construction as a project manager and estimator. In 1994 Steve was promoted to Director of Estimating, and worked as such until 1998 when he founded A.R. Brouwer Company in Dexter, Michigan.



Dave Niswonger – Company Vice President, Lead Project Manager

Mr. Niswonger holds a Bachelor's Degree (1991) in Business Administration from Central Michigan University, with a double major in Marketing and Management. Dave has over 19 years of experience as a Project Manager and Estimator, and over 23 years in the construction industry. Joining A.R. Brouwer Company in 2003 as a Project Manager, Dave accepted the role of Vice President in 2004.



Geoffrey Boyer – On-Site Superintendent

With over 17 years of construction management experience, Mr. Boyer brings a wealth of knowledge to the A.R. Brouwer team. Geoffrey has managed numerous structural, interior and exterior renovations of commercial, retail and municipal properties.



Mary Kaye LaFontaine - Accountant

Mary Kaye has been the accountant for A.R. Brouwer Company for seven years, and has over 16 years of industry-specific accounting experience for commercial construction projects and managed properties. Mary Kaye works with customers and project managers for all billing activities including sworn statements, lien waivers and payment applications.



Allison Bishop – Property and Development Manager

With over 12 years of professional experience in planning, zoning, property development and government administration in Washtenaw County, Allison joined the A.R. Brouwer Company team in 2013. Allison is using her expertise as Property Manager for the company's nine properties, creating local development opportunities for the firm, and is also an integral part of the planning and development stages for projects.



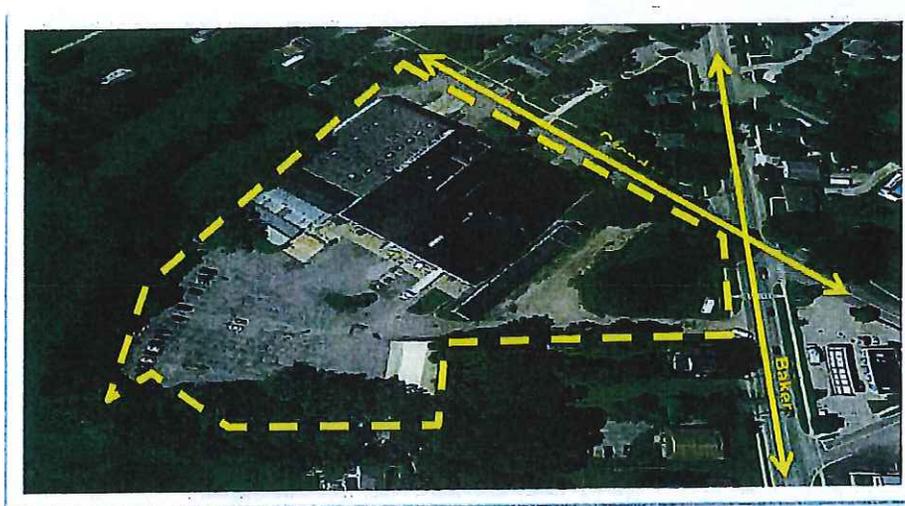
Jodi Trisdale – Office Administrator

Jodi joined the A.R. Brouwer Company team in May of 2014, and has over 13 years of experience in professional office management and administration. Jodi's multi-faceted role includes coordination of project start up and close out activities, verification insurance requirements, distribution and collection of contracts and change orders, management of project bidding and bid documents.

Article 19 – Planned Unit Development Regulations

Purpose and Intent

MMB Equities is requesting rezoning of the subject property to permit a Planned Unit Development (PUD), with underlying VR zoning as the City of Dexter does not currently provide a zoning district to facilitate a development that permits a variety in design, layout and type of structures proposed. It is our intent to redevelop an existing functionally obsolete industrial brownfield to provide a development with variety of housing options/types, to provide the environmental clean-up and demolition of a Brownfield site within 2 blocks of the City's downtown district.



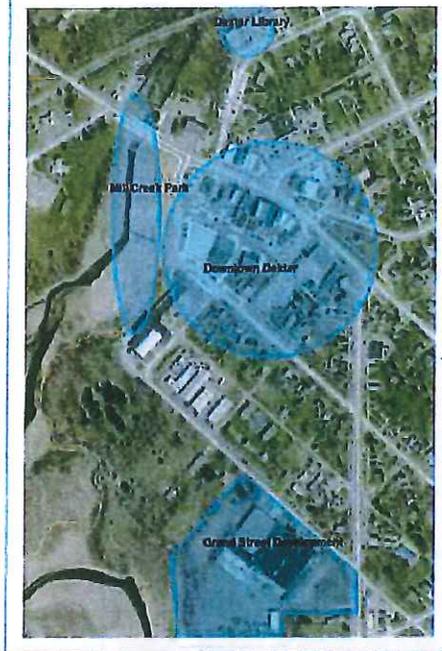
7931 Grand Street – HD-08-06-155-001

7905 Grand Street – HD-08-06-427-001

Vacant – HD-08-06-427-002

MMB Equities is requesting PUD approval because the City's current ordinance, Master Plan and DDA Development Plan are inconsistent. In order to achieve the City's goals of infill development with more urban density a PUD is necessary. The City's current Baker Road Corridor Mixed Use District encourages upgrading of the area, increasing public transit opportunity and developing residential infill, however the densities for multiple family (VR and R-3) support suburban densities. The current ordinance does not have a zoning district or foundation for achieving the goals and objectives of the Master Plan or DDA Development Plan. In addition, a straight rezoning does not achieve the desired densities, therefore making a PUD the best option for developing Grandview Commons as defined in the City's long range planning documents.

Grandview Commons achieves the intent of the PUD District through the demolition of the existing industrial building and environmental clean-up of a brownfield site that will improve surrounding property values, increase tax base and encourage further improvement and redevelopment in the area.



The redevelopment will also provide additional population to patronize downtown further enhancing the economic stability of Dexter businesses achieving the long term planning goals of the Dexter Master Plan and Downtown Development Authorities (DDA) Redevelopment Plan. The project will provide public benefits, including but not limited to: storm water easements, improved storm water management and outlet into the Mill Creek Watershed, a pedestrian access easement for the future Mill Creek Park Phase 2, improved streetscape along Grand Street with on-street parking and public sidewalk. Grandview Commons provides an interconnected community through the pedestrian linkages within the development along with gathering areas, building orientations and connections to the public streets.

A PUD is being requested in order for Grandview Commons to meet the City's Master Plan and DDA

Development Plan and to provide a unique combination of housing types that will attract varying demographics to Dexter. Through our market research and analysis with the Gibbs Planning Group in November 2015 we are providing a number of residential options that will not over saturate the City's housing stock and to meet the demands of the Dexter market. Our Market Analysis indicated that the City of Dexter could support up to 150- two to three bedroom units in the next 5 years. The mixture of housing products provided in Grandview Commons meets the market demand.

Grandview Commons is the largest redevelopment parcel in the City of Dexter and will jump start redevelopment in the downtown area that has been master planned by the City and Downtown Development Authority for over 2 decades. We hope to gain your support for this very exciting opportunity to improve the area and create a reason for more people to move to Dexter and share in the wonderful community.

PUD Regulations

The subject property is currently zoned I-1, Light Industrial. Approximately 7 years ago the City considered changing the zoning of the property to encourage redevelopment, but the owner at the time was not in favor of the rezoning. MMB Equities has owned the property since 2012 with the intention of redeveloping the property.

The subject property is master planned in the Baker Road Corridor as mixed use, however after our market research and analysis we do not anticipate the need for additional office and retail space in this area of the City. Pursuant to the master plan this site is planned as a transitional site from the downtown into the surrounding neighborhood. Grandview Commons is consistent with the Master



Plan and DDA Development Plan in transitional use and master planned surrounding land uses. We anticipate that this project would also promote additional redevelopment in the surrounding neighborhoods and commercial districts.

General Provisions

Per the PUD regulations a Parallel Plan must be developed by the petitioner. It is our understanding that the Parallel Plan is

provided to illustrate what the current zoning would permit, to establish a base density and to assist in the determination of additional density bonuses.

Please see Attachment A – Parallel Plan.

The parallel plan provided as required is, in our opinion, not the best layout for the property; however it could be approved under standard zoning within the VR Village Residential District. As shown there are 56-2 bedroom units. Each building is the same, lacking variety throughout the site. We are proposing a combination of building types, unit types and number bedrooms to offer more diverse housing options and price points for residents, see table below. There are more community and public spaces throughout the development as proposed and the development will attract a variety of demographics. Per the Gibbs Planning Group Market Analysis it was recommended that Dexter could support varied types of units at varied price points for varied ages and family sizes. It suggested that “an innovative site plan could accommodate multiple residential typologies such as cottages, duplexes, townhomes and stacked attached products.” With this information and additional information on aging populations and shrinking household sizes we are confident that we are providing a desirable mix of products for the demographics in the Dexter area.

Residential Density – In accordance with the R-3 District:

| Type of Unit | R-3 District | PROPOSED |
|--------------|----------------------|----------|
| 1 Bedroom | 82.32 units | 16 |
| 2 Bedroom | 61.74 units | 44 |
| 3 Bedroom | 41.16 units | 8 |
| TOTAL | 61.74 unit (average) | 68. |

The proposed density is consistent with the R-3 zoning with variations in the unit type. Through various attempts at site layout, existing/proposed utilities, preliminary engineering, topography, soil conditions, traffic and pedestrian circulation, unit and product types we have determined that the proposed area plan concept best promotes the use of the land in a socially and environmentally sensitive manner and is consistent with the Master Plan and DDA Development Plan.

General Character and Substance

The general character and substance of the development is to create a small village within the City and a sense of Community within the development. Our hope is that Grandview Commons will attract multiple demographic cohorts from millennials to empty nesters and families. We have worked diligently to come up with a mix of housing opportunities for various incomes and amenity seekers. The location is convenient to downtown, miles of nature trails, renowned Dexter Schools, the Dexter Wellness Center and only 2 miles from Interstate 94 and minutes from Ann Arbor.

The scale and economic feasibility of Grandview Commons was determined based on the R-3 Multi-Family Zoning District Regulations and in an attempt to create a development with enough variety to support multiple demographics and market demands. Following completion of a Market Analysis by the Gibbs Planning Group, Birmingham Michigan it was determined that the proposed mix of building and unit types, as well as price points, would appeal to the largest range of potential owners and occupants. Based on the Market Analysis unit prices will range from \$200,000-\$500,000, depending on many variables. The mixture of units and price points should reduce potential market saturation and result in efficient construction and property sales. It is our intention to offer the units for sale and lease.

Architecture within Grandview Commons is consistent with the market demands and provides numerous high quality materials for texture and interest, including brick, stone, siding, shakes, double hung windows, façade undulations, front and rear porches and modern open floor plans. All units offer between 1-3 bedrooms, in unit laundry, wood floors and solid surface counter tops. Each building type will coordinate on the exterior with the other unit types on site, each with their own unique variations. Interior sidewalks connect the neighbors within the community spaces and the open space in the future Mill Creek Park. A public access easement and pathway will be provided to the property line.

Each dwelling will be a condominium unit within the development, with each unit having its proportionate share of common area expenses, such as lawn care and snow removal. We will provide regulations through the creation of a Home Owners Association and Bylaws to maintain continuity and character within the development. The Association will be managed by the Developer. Please see the Draft Master Deed and Bylaws, attachment 2, included in the submission package for more details. We will work with the post office and Dexter Schools to determine the most suitable locations for mailboxes and bus stops upon approval of the Area Plan. At this time we have proposed a small Gatehouse for the mailbox locations and maintenance storage.

Site layout and building placement was determined to meet the market demands as presented in our Market Analysis, as well as through evaluation of existing infrastructure, including access, utilities, soil boring information and preservation of view sheds. The duplex units were placed on the rear of the site because they have access to the most private space, they have the lowest elevation and the soils require the installation of basements. The Brownstone units were placed along Grand Street because they provide the most urban feel along the street frontage and rear entry garages eliminate the need for individual curb cuts along Grand Street. The stacked units were placed in the center of the site to allow for a circular vehicle pattern and interior pedestrian and community spaces.

Impact Assessment

Impact on the surrounding area should be limited to general site construction. We expect that construction will take approximately 24-36 months, depending on sales. We expect that general construction impact will be additional short term traffic and carpentry noise. The development will improve the surface water runoff since the storm water entering Mill Creek will be treated and managed in accordance with modern standards and not flow directly into the stream untreated as it currently does.

The effect of public utilities will be additional capacity requirements. At 68 units the City will receive \$398,366.40 in Water/Sewer Tap Fees, along with additional monthly user fees to support the water/sewer system. Based on the information received from the City Engineer the system has been sized with anticipation of redevelopment on the site. Additional utility upgrades will be necessary on site to service the proposed new units.



The existing building is a functionally obsolete industrial warehouse originally constructed in the 1940's with numerous additions through the 1980's. The building is currently occupied by a variety of warehouse and manufacturing users. The Phase 1 and Phase 2 Environmental Assessments and soil boring studied did not reveal any historic or archeological significance of the site. The southern boundary of the site, along Mill Creek, was filled by the previous owner. Duplex units were located in this area and include basements to deal with this soils issue.

The existing site slopes to the southwest and minimal grading will be required for the development. Storm water treatment does not currently exist, nor does an easement for the City's 36" storm pipe on the property. The development would include storm water treatment, and relocation of a portion of the City storm pipe.

The impact on flora and fauna will be improved. As previously mentioned the site storm water sheet flows off the primarily impervious site. The development will create pre-treatment basins and add additional landscaping treatments to clean storm water prior to it entering the sensitive wetland area to the south of the property. The site will also be improved with landscaping in accordance with the requirements of the City of Dexter. Bio-swales, raingardens, and/or native vegetation will be used to add to the natural features on the site. Street trees and landscaping buffers will also be added throughout the site, which is currently void of landscaping.

There will be no displacement of residents as a result of the redevelopment. Current tenants have been made aware that leases will be renewed only on a month to month basis while approvals are being sought.

It is, and has been, a prime goal of the Master Plan and DDA Development Plans since the late 80's, that all industrial users and buildings be located in the Dexter Business and Research Park. The proposed development will remove one of the last industrial buildings from the vicinity of the downtown district and be a catalyst for redevelopment as proposed for many years.

Please see the Traffic Study results (Attachment C) submitted separately by C&A Engineers. Results from the study reveal that Grandview Commons will increase traffic; however traffic will not exceed standard level of service (LOS) D, which is considered to be an acceptable LOS.

We do not anticipate any long term negative impacts will result from the redevelopment of the site. Long term positive impacts are reduced semi-truck traffic on Baker Road and Grand Street. Short term impacts will be construction traffic and noise; however there are daily deliveries and tenant traffic currently which will cease upon the start of construction.

The character of the Grand Street and Baker Road Corridor will be dramatically improved through the demolition of an obsolete industrial building, improving the streetscape along Baker and Grand Street, adding on street parking and public sidewalk. The proposed improvements are anticipated to cost \$12-15 million dollars resulting in a tax increase of over \$400,000 annually. It would be anticipated that property values in the area will increase given the improvements and the desire to invest in property redevelopment adjacent to the site. Additional police and fire service needs will occur, as they do with any population increase.

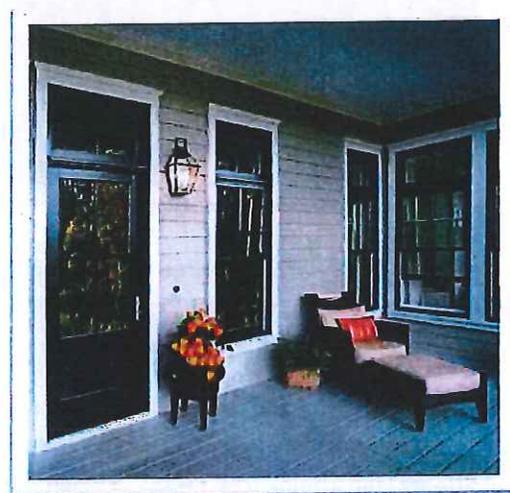
Overall the economic impact of the Grandview Commons Development will be significant not only in tax revenue, but in population to support the businesses, schools and community of Dexter.

Conformance with the Master Plan and DDA Development Plan

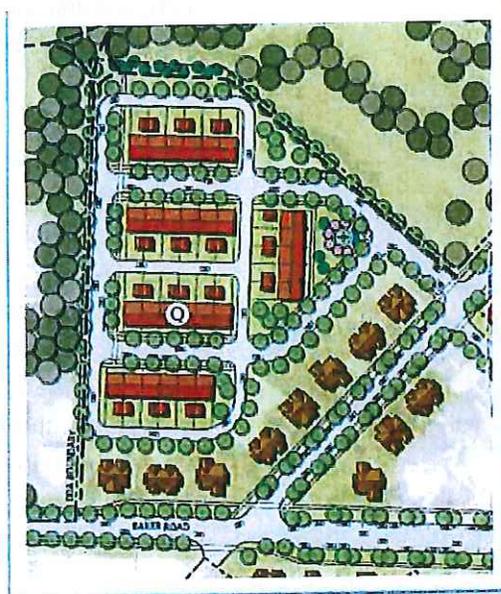
Grandview Commons is consistent with the goals and objectives provided in the Master Plan and DDA Development Plan. The following are excerpts from the City's long range planning documents.

DDA Development Plan

- Promote the Riverfront
- Residential along pond/creek



- Downtown Brownfield Redevelopment
- Dexter as a destination
- Development of Forest, Grand, and Broad Streets to enlarge the downtown
- Dexter has been redeveloped
- All industrial land uses are relocated to industrial park and redeveloped
- Move industrial to industrial park, specifically Pilot (subject site) and Colorbok
- High Density "row houses" developed in village
- Traffic - Pedestrian connections throughout the community
- New Residential in the Downtown
- Downtown dwelling units provide patrons twenty-four hours a day seven days a week, thereby adding vitality to the district as well as creating additional demand for products and services.
- Framework Plan-Identifies additional areas appropriate for residential uses, envisioned as locations for townhouses and single or multiple family houses.



Subject Parcel on
Page 20 of the DDA Development Plan

- The single and multiple family dwelling are located as a transition into the existing historical residential neighborhood on the north side of downtown and along Baker Road.
- Envisions the development of attached 2 story and one-half story or 3 story townhomes for those seeking the advantages of a downtown atmosphere.

City of Dexter Master Plan

- Provide a desirable residential environment with diverse housing options for Village/City residents, recognizing that a viable, healthy residential component is of primary importance to the overall health and vitality of the community.
- Preserve and strengthen the existing character of the downtown area as an historic, pedestrian-scaled community, with traditional site and architectural design creating an aesthetically memorable place with vibrant streetscapes and community spaces.
- Promote safe management of disposal of all waste materials, both hazardous and non-hazardous, which are generated within or transported through the Village/City through coordination with state and local agencies to ensure that contaminated sites are returned to an acceptable environmentally safe condition.
- Provide for a range of housing options for Village residents.
- Allow residential density levels that correspond to available infrastructure (sewer, water and roads) and adjacent land use.



- Preserve and enhance the older, small town residential character of the Village, including the promotion of the visual compatibility of residential buildings in size, setbacks and architectural features, and the provision of design transitions between different types of buildings.
- Identify and redevelop brownfield sites in cooperation with the Washtenaw County Brownfield Redevelopment Authority.
- Encourage residential or mixed-use development (including residential uses) as a buffer between adjacent residential areas and other uses

within this planned area.

- Manage access to development by encouraging consolidation of curb cuts and shared driveway access.
- Integrate public gathering spaces at key points of interest and entrances to intersections within a pedestrian/non-motorized circulation system. Specifically, by promoting a connection to the future parkland and open space adjacent to the Baker Road Corridor and along the Mill Creek.
- Improve pedestrian access.
- expand walkability within the Village by installing sidewalks.
- Baker Road Corridor - Encourage a variety of housing types and higher densities for residential infill projects and encourage redevelopment and infill development.
- Appropriate Uses – High Density Residential.

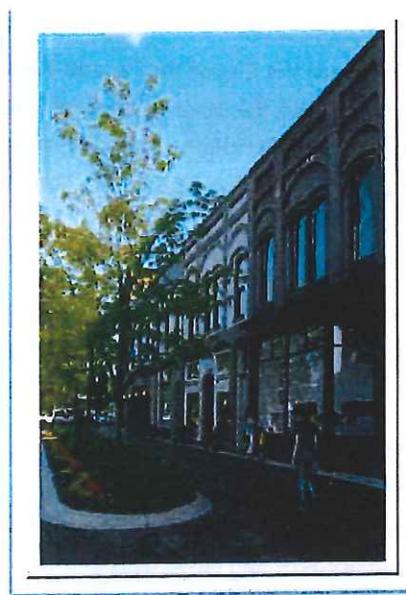
Brownfield Funding

It is our intention to seek approval from the City of Dexter and Washtenaw County for assistance related to the Brownfield clean up associated with the development of Grandview Commons. Preliminary environmental reports show that prior to demolition lead and asbestos abatement will be required. Remediation work will be required to bring the property into conformance with acceptable limits.

Public Benefit

Approval of a PUD requires the demonstration of public benefit. The information provided represents numerous public benefits that will be achieved through the development of Grandview Commons, including but not limited to:

- Elimination of a functionally obsolete building
- Remediation of a Brownfield site
- Demolition of the last industrial building in the downtown district
- Achievement of Master Plan Goals and Objectives
- Achievement of DDA Development Plan Goals and Objectives
- Execution of decades of long range planning
- Improved streetscapes along Baker Road and Grand Street
- Improved infrastructure, including sidewalks, water, sewer and storm
- Improved storm water management
- Public Art pad
- Public access easement to future Mill Creek Park
- Increased tax base
- Facilitates additional redevelopment
- Improves surrounding property values
- Increase in population for more economic stability for Dexter businesses
- Many more.....



Conclusion

The information presented above, along with the supplemental studies, analysis and documentation support approval of the requested PUD Area Plan for Grandview Commons.

We look forward to discussing our vision for the redevelopment of the former Pilot Plant, answering your questions and receiving your feedback at the March 7, 2016 Planning Commission meeting.

Following approvals our anticipated Development Schedule is as follows:



Please feel free to contact us in advance if there is additional information requested.

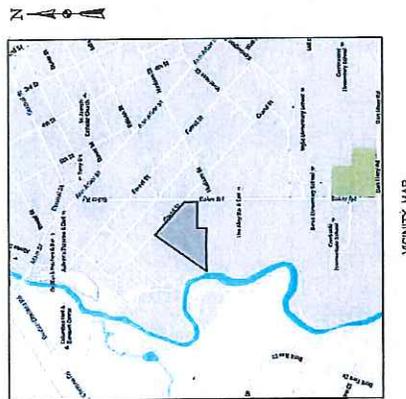
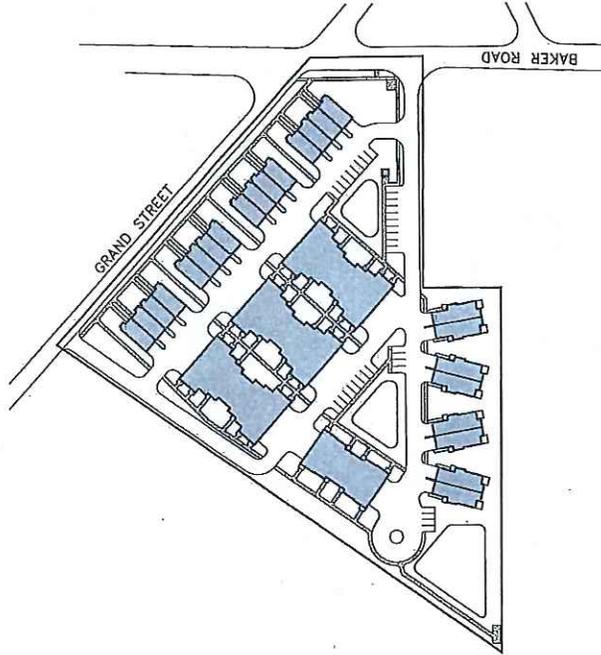
Thank you.

Sincerely,

Steve Brouwer, MMB Equities LLC

GRANDVIEW COMMONS

Proposed PUD at the corner of Grand and Baker
City of Dexter, Michigan



PROJECT DESCRIPTION

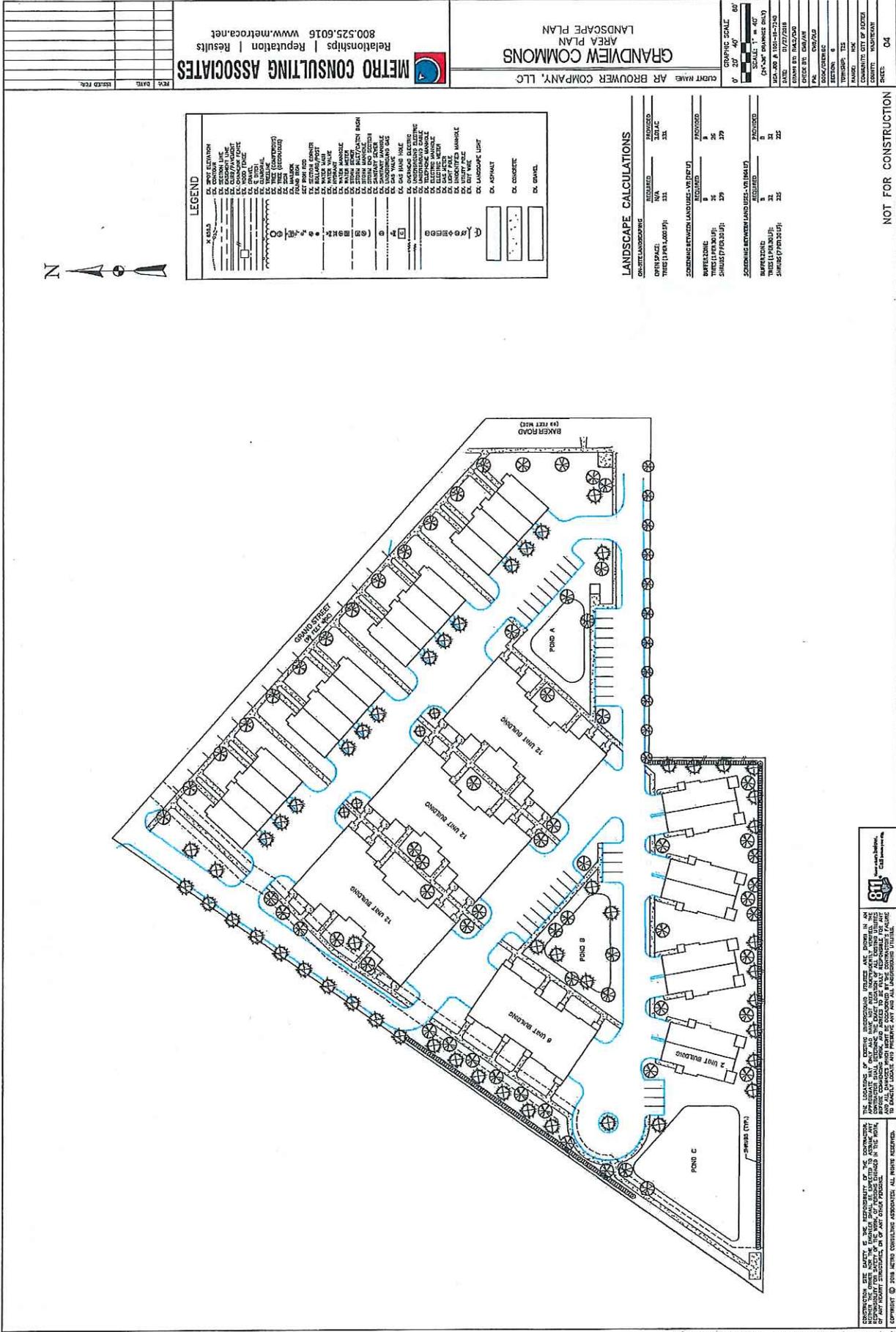
This project is the construction of three varying types of dwelling units on 7.24 acres. Collectively, the site has 11 buildings with 69 - 1 to 3 bedroom units.

Submitted:
February 1, 2016



METRO CONSULTING ASSOCIATES
 Relationships | Reputation | Results
 800.525.6016 www.metroca.net

MMB EQUITIES, LLC
 7444 Dexter Ann Arbor Road, STE. F
 Dexter, MI 48130



METRO CONSULTING ASSOCIATES
 Relationships | Reputation | Results
 800.525.6016 www.metroca.net

GRANDVIEW COMMONS
 AREA PLAN
 LANDSCAPE PLAN
 CLIENT NAME: AR BROUWER COMPANY, LLC

| | |
|-------------|-------------------|
| DATE | 01/27/2018 |
| DESIGNED BY | DAW/AV |
| CHECKED BY | DAW/AV |
| PROJECT NO. | 18-00000000 |
| SECTION | 8 |
| TYPESHEET | 725 |
| SCALE | 1/8" = 1'-0" |
| PROJECT | GRANDVIEW COMMONS |
| CITY | SPRING CITY, TN |
| COUNTY | WASHINGTON |
| SHEET | 04 |

LANDSCAPE CALCULATIONS

| CONCRETE LANDSCAPING | REQUIRED | PROVIDED |
|------------------------|----------|----------|
| OPEN SPACE | N/A | N/A |
| THICK (1 PER 1,000 SF) | 111 | 111 |

| CONCRETE BETWEEN LANDSCAPES - W/ (1 PER 1,000 SF) | REQUIRED | PROVIDED |
|---|----------|----------|
| BARBERIZING | 36 | 36 |
| THICK (1 PER 1,000 SF) | 39 | 39 |
| SHRUBS (1 PER 1,000 SF) | 39 | 39 |

| CONCRETE BETWEEN LANDSCAPES - W/ (1 PER 1,000 SF) | REQUIRED | PROVIDED |
|---|----------|----------|
| BARBERIZING | 31 | 31 |
| THICK (1 PER 1,000 SF) | 35 | 35 |
| SHRUBS (1 PER 1,000 SF) | 35 | 35 |

LEGEND

| | |
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| <ul style="list-style-type: none"> 1. 1/2" SOLID 2. 1/4" SOLID 3. 1/8" SOLID 4. 1/4" SOLID 5. 1/8" SOLID 6. 1/4" SOLID 7. 1/8" SOLID 8. 1/4" SOLID 9. 1/8" SOLID 10. 1/4" SOLID 11. 1/8" SOLID 12. 1/4" SOLID 13. 1/8" SOLID 14. 1/4" SOLID 15. 1/8" SOLID 16. 1/4" SOLID 17. 1/8" SOLID 18. 1/4" SOLID 19. 1/8" SOLID 20. 1/4" SOLID 21. 1/8" SOLID 22. 1/4" SOLID 23. 1/8" SOLID 24. 1/4" SOLID 25. 1/8" SOLID 26. 1/4" SOLID 27. 1/8" SOLID 28. 1/4" SOLID 29. 1/8" SOLID 30. 1/4" SOLID 31. 1/8" SOLID 32. 1/4" SOLID 33. 1/8" SOLID 34. 1/4" SOLID 35. 1/8" SOLID 36. 1/4" SOLID 37. 1/8" SOLID 38. 1/4" SOLID 39. 1/8" SOLID 40. 1/4" SOLID 41. 1/8" SOLID 42. 1/4" SOLID 43. 1/8" SOLID 44. 1/4" SOLID 45. 1/8" SOLID 46. 1/4" SOLID 47. 1/8" SOLID 48. 1/4" SOLID 49. 1/8" SOLID 50. 1/4" SOLID 51. 1/8" SOLID 52. 1/4" SOLID 53. 1/8" SOLID 54. 1/4" SOLID 55. 1/8" SOLID 56. 1/4" SOLID 57. 1/8" SOLID 58. 1/4" SOLID 59. 1/8" SOLID 60. 1/4" SOLID 61. 1/8" SOLID 62. 1/4" SOLID 63. 1/8" SOLID 64. 1/4" SOLID 65. 1/8" SOLID 66. 1/4" SOLID 67. 1/8" SOLID 68. 1/4" SOLID 69. 1/8" SOLID 70. 1/4" SOLID 71. 1/8" SOLID 72. 1/4" SOLID 73. 1/8" SOLID 74. 1/4" SOLID 75. 1/8" SOLID 76. 1/4" SOLID 77. 1/8" SOLID 78. 1/4" SOLID 79. 1/8" SOLID 80. 1/4" SOLID 81. 1/8" SOLID 82. 1/4" SOLID 83. 1/8" SOLID 84. 1/4" SOLID 85. 1/8" SOLID 86. 1/4" SOLID 87. 1/8" SOLID 88. 1/4" SOLID 89. 1/8" SOLID 90. 1/4" SOLID 91. 1/8" SOLID 92. 1/4" SOLID 93. 1/8" SOLID 94. 1/4" SOLID 95. 1/8" SOLID 96. 1/4" SOLID 97. 1/8" SOLID 98. 1/4" SOLID 99. 1/8" SOLID 100. 1/4" SOLID | <ul style="list-style-type: none"> 1. 1/2" SOLID 2. 1/4" SOLID 3. 1/8" SOLID 4. 1/4" SOLID 5. 1/8" SOLID 6. 1/4" SOLID 7. 1/8" SOLID 8. 1/4" SOLID 9. 1/8" SOLID 10. 1/4" SOLID 11. 1/8" SOLID 12. 1/4" SOLID 13. 1/8" SOLID 14. 1/4" SOLID 15. 1/8" SOLID 16. 1/4" SOLID 17. 1/8" SOLID 18. 1/4" SOLID 19. 1/8" SOLID 20. 1/4" SOLID 21. 1/8" SOLID 22. 1/4" SOLID 23. 1/8" SOLID 24. 1/4" SOLID 25. 1/8" SOLID 26. 1/4" SOLID 27. 1/8" SOLID 28. 1/4" SOLID 29. 1/8" SOLID 30. 1/4" SOLID 31. 1/8" SOLID 32. 1/4" SOLID 33. 1/8" SOLID 34. 1/4" SOLID 35. 1/8" SOLID 36. 1/4" SOLID 37. 1/8" SOLID 38. 1/4" SOLID 39. 1/8" SOLID 40. 1/4" SOLID 41. 1/8" SOLID 42. 1/4" SOLID 43. 1/8" SOLID 44. 1/4" SOLID 45. 1/8" SOLID 46. 1/4" SOLID 47. 1/8" SOLID 48. 1/4" SOLID 49. 1/8" SOLID 50. 1/4" SOLID 51. 1/8" SOLID 52. 1/4" SOLID 53. 1/8" SOLID 54. 1/4" SOLID 55. 1/8" SOLID 56. 1/4" SOLID 57. 1/8" SOLID 58. 1/4" SOLID 59. 1/8" SOLID 60. 1/4" SOLID 61. 1/8" SOLID 62. 1/4" SOLID 63. 1/8" SOLID 64. 1/4" SOLID 65. 1/8" SOLID 66. 1/4" SOLID 67. 1/8" SOLID 68. 1/4" SOLID 69. 1/8" SOLID 70. 1/4" SOLID 71. 1/8" SOLID 72. 1/4" SOLID 73. 1/8" SOLID 74. 1/4" SOLID 75. 1/8" SOLID 76. 1/4" SOLID 77. 1/8" SOLID 78. 1/4" SOLID 79. 1/8" SOLID 80. 1/4" SOLID 81. 1/8" SOLID 82. 1/4" SOLID 83. 1/8" SOLID 84. 1/4" SOLID 85. 1/8" SOLID 86. 1/4" SOLID 87. 1/8" SOLID 88. 1/4" SOLID 89. 1/8" SOLID 90. 1/4" SOLID 91. 1/8" SOLID 92. 1/4" SOLID 93. 1/8" SOLID 94. 1/4" SOLID 95. 1/8" SOLID 96. 1/4" SOLID 97. 1/8" SOLID 98. 1/4" SOLID 99. 1/8" SOLID 100. 1/4" SOLID |
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THE LOCATION OF EXISTING UTILITIES AND SERVICES ARE SHOWN IN AN UNOFFICIAL MANNER. THE CONTRACTOR SHALL VERIFY THE LOCATION AND DEPTH OF ALL UTILITIES AND SERVICES PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE LOCAL GOVERNMENT. ALL RIGHTS RESERVED.

NOT FOR CONSTRUCTION



BOWERS+
ASSOCIATES
ARCHITECTURE DESIGN

DUPLEX APARTMENTS - PROPOSED EXTERIOR

BOWERBROS ASSOCIATES
 ARCHITECTS
 2400 24th Street, Suite 100
 Denver, CO 80202
 P: 303.733.2000 F: 303.733.2100
 WWW.BOWERBROS.COM

CONTRACT # _____
 PROJECT # _____

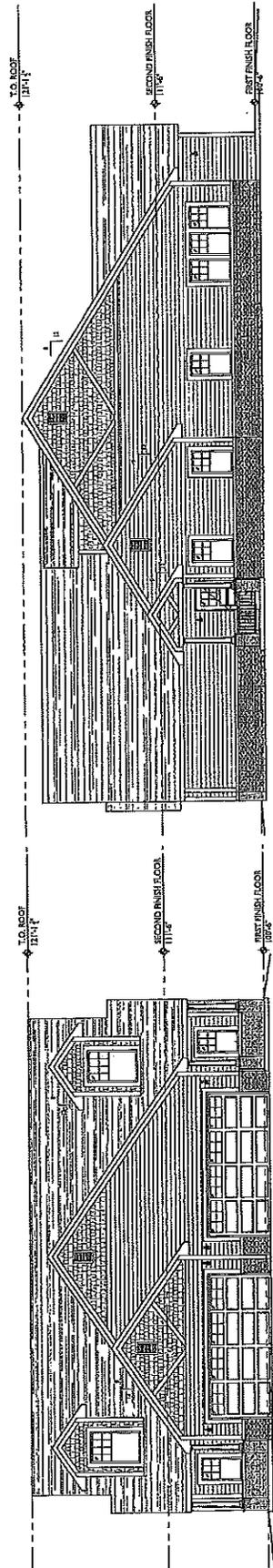
DEXTER / GRAND STREET
 PROJECT # 15-205-02
 GRAND STREET
 DENVER, MICHIGAN

PROJECT # NUMBER
 15-205-02

ISSUE # DATE
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 02 08/2015
 03 08/2015

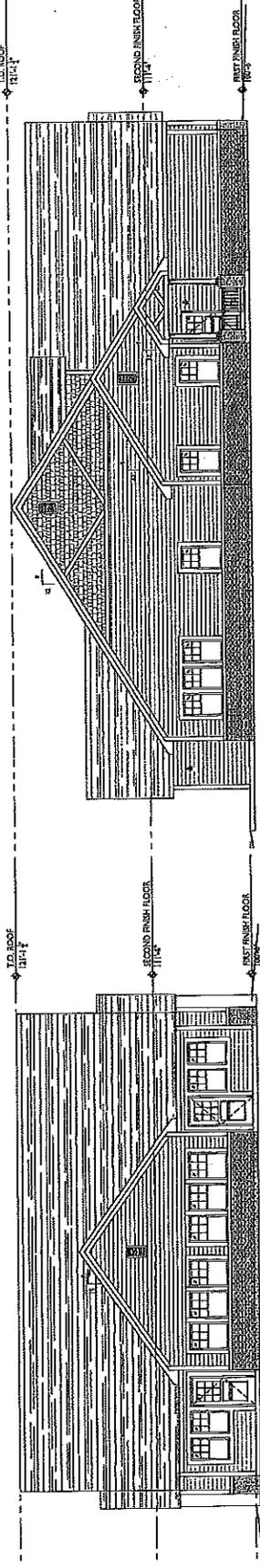
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 EXTERIOR
 ELEVATIONS
 15-205-02-010

SHEET # NUMBER
 A5.00



WEST ELEVATION
SCALE: 1/8" = 1'-0"

NORTH ELEVATION
SCALE: 1/8" = 1'-0"



EAST ELEVATION
SCALE: 1/8" = 1'-0"

SOUTH ELEVATION
SCALE: 1/8" = 1'-0"

BOVER ASSOCIATES
215 SOUTH BROADWAY, SUITE 100
NEW YORK, NY 10038
TEL: 212-693-1100
WWW.BOVERASSOCIATES.COM

Contractor + Name

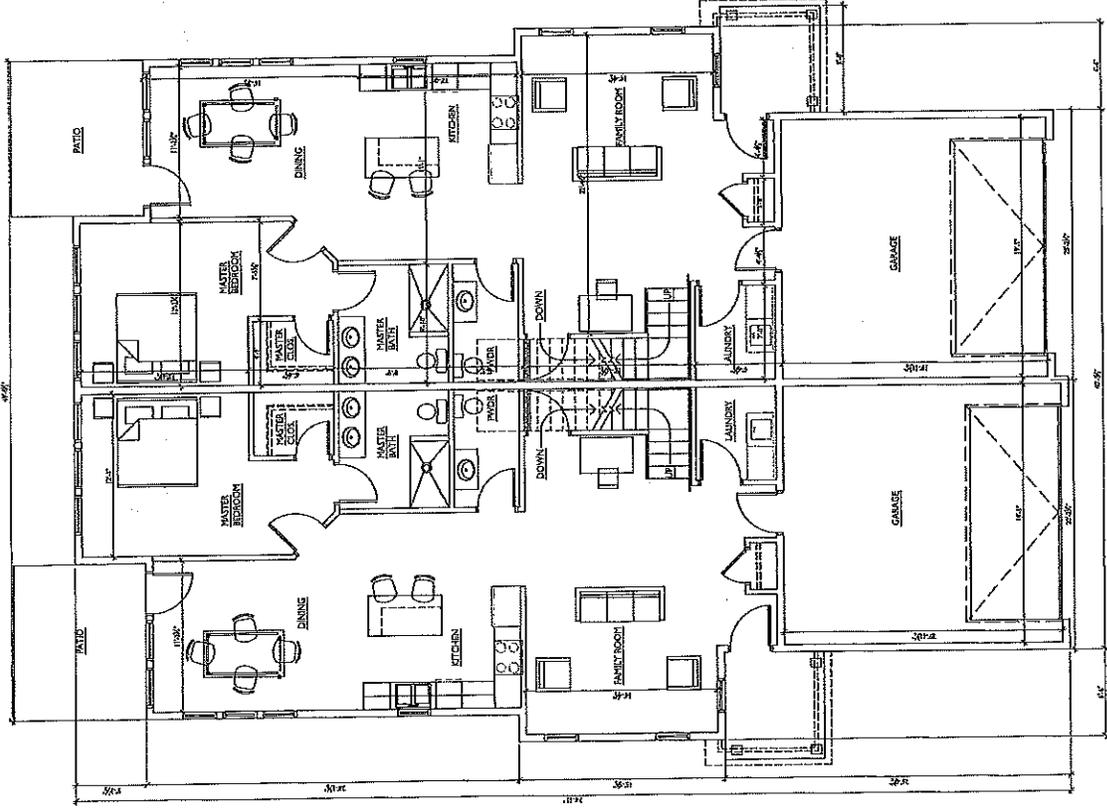
DEXTER, MI
DEXTER/GRAND STREET

PROJECT + NUMBER
15-205-02

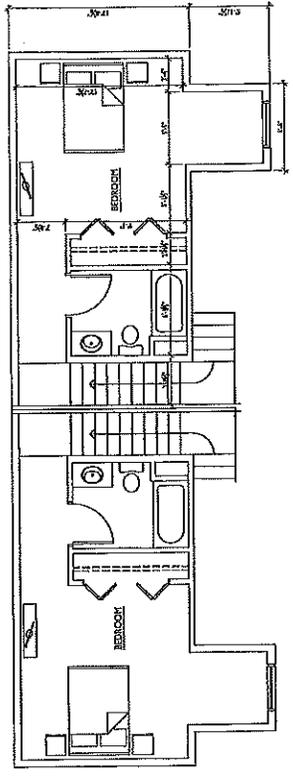
ISSUE + DATE
15-01-2015
15-02-2015
15-03-2015
15-04-2015

SHEET + TITLE
CONSTRUCTION

SHEET + NUMBER
A1.00

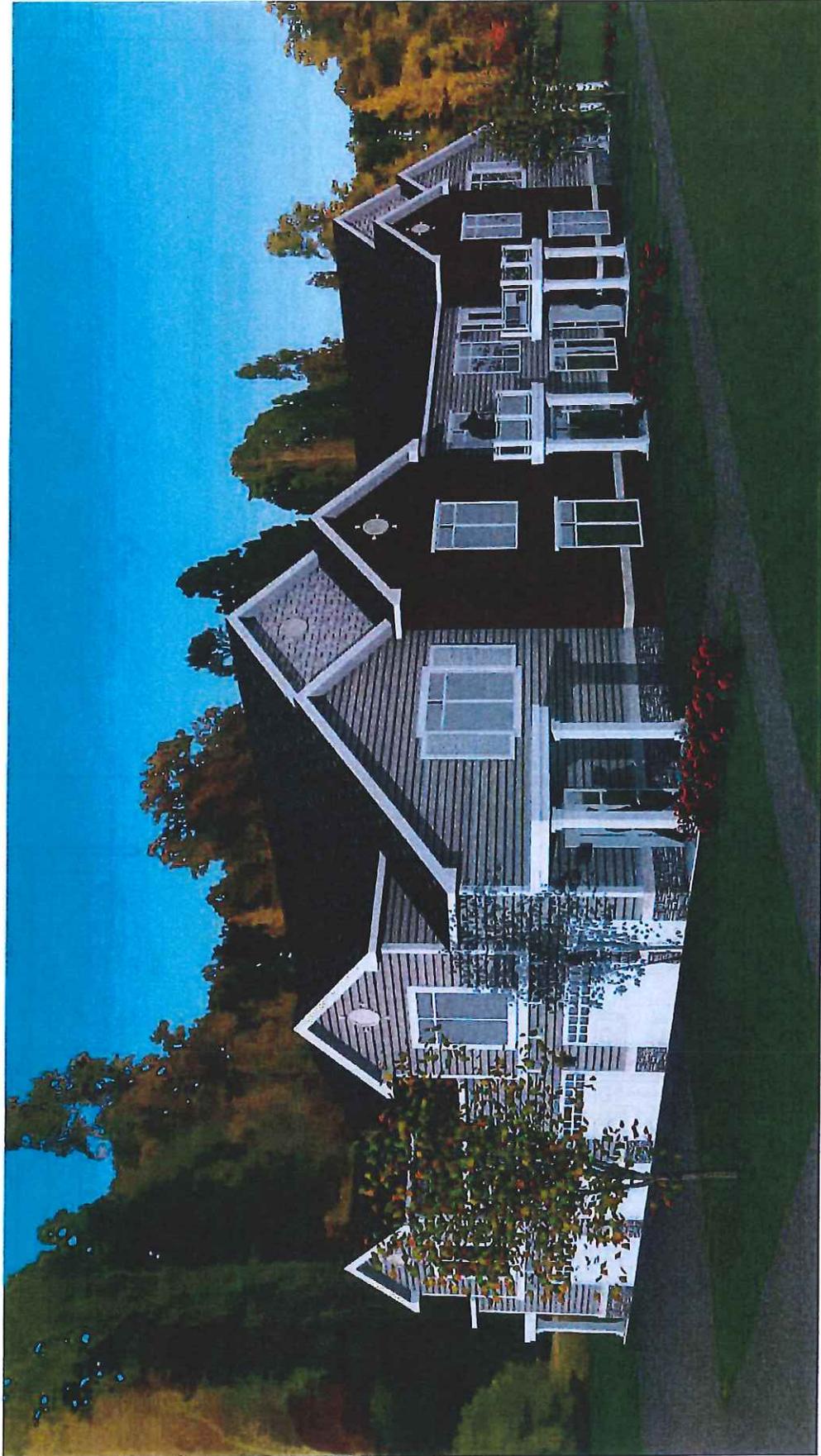


FIRST FLOOR PLAN
FOURTH UNIT



FIRST FLOOR: 1,267 SQUARE FEET EACH UNIT
SECOND FLOOR: 416 SQUARE FEET EACH UNIT

SECOND FLOOR PLAN
FOURTH UNIT



8 UNIT APARTMENTS - PROPOSED EXTERIOR

OVERHEAD PHOTOGRAPHY
2007 EAST 15TH AVENUE, SUITE 400
DENVER, COLORADO 80202
WWW.OVERHEADPHOTOGRAPHY.COM

CONTRACT # NMS

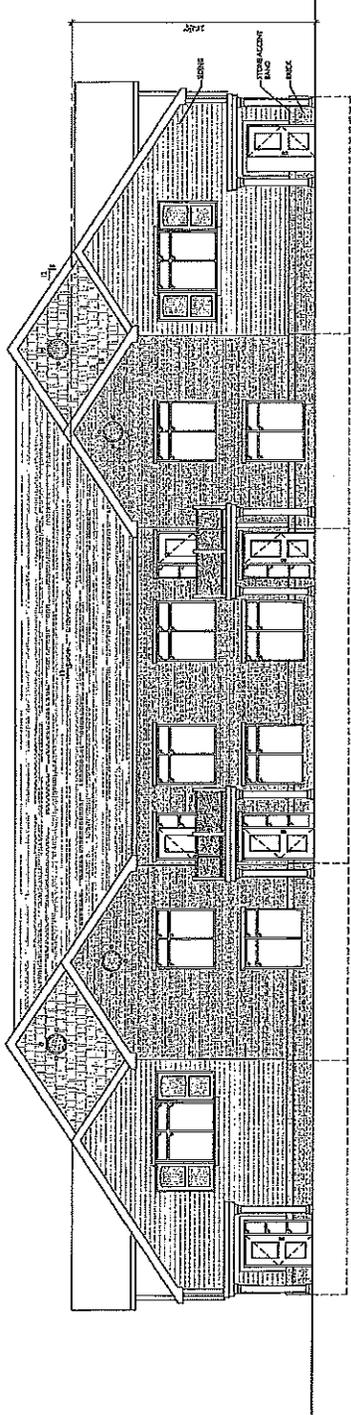
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DEXTER, MI
DEXTER/GRAND STREET
8 UNIT APARTMENTS

PROJECT # NUMBER
15-205-04

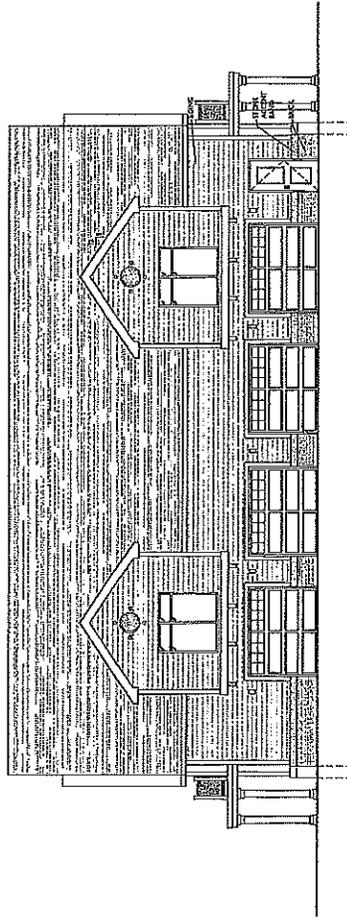
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2/16/2016 REVISED

SHEET # TITLE
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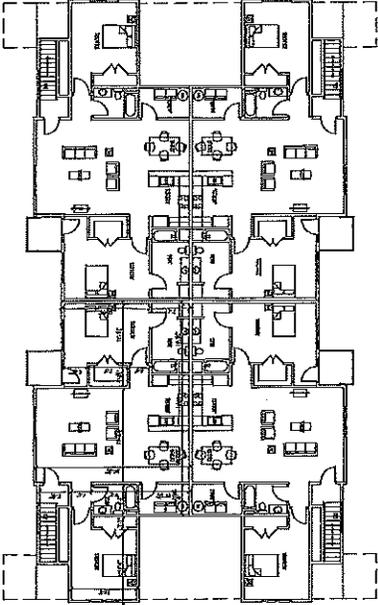


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SCALE: 1/8\"/>

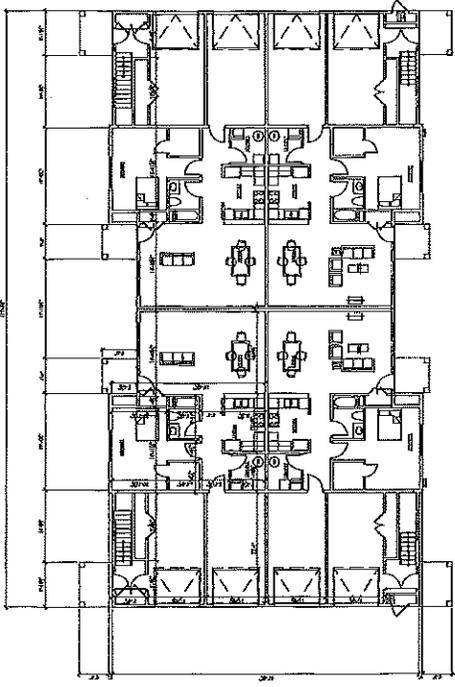


1 EXTERIOR ELEVATION
SCALE: 1/8\"/>

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|--|-------------------|--|--------------------------------------|--|---|--------------------------------|
| ROVERS ASSOCIATES 2100 CENTRAL EXPRESSWAY, SUITE 100 ANN ARBOR, MI 48106 TEL: 734.769.1100 WWW.ROVERS.COM | CONTRACTOR'S NAME | PROJECT + LOCATION DEXTER/GRAND STREET 8 UNIT APARTMENTS DEXTER, MI | PROJECT + NUMBER 15-205-04 | ISSUE + DATE 28 FEBRUARY 2015 REVIEW | SHEET + TITLE APARTMENT FLOOR PLAN 15-205-04 | SHEET + NUMBER A1.00 |
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SECOND FLOOR PLAN
SCALE: 1/8" = 1'-0"



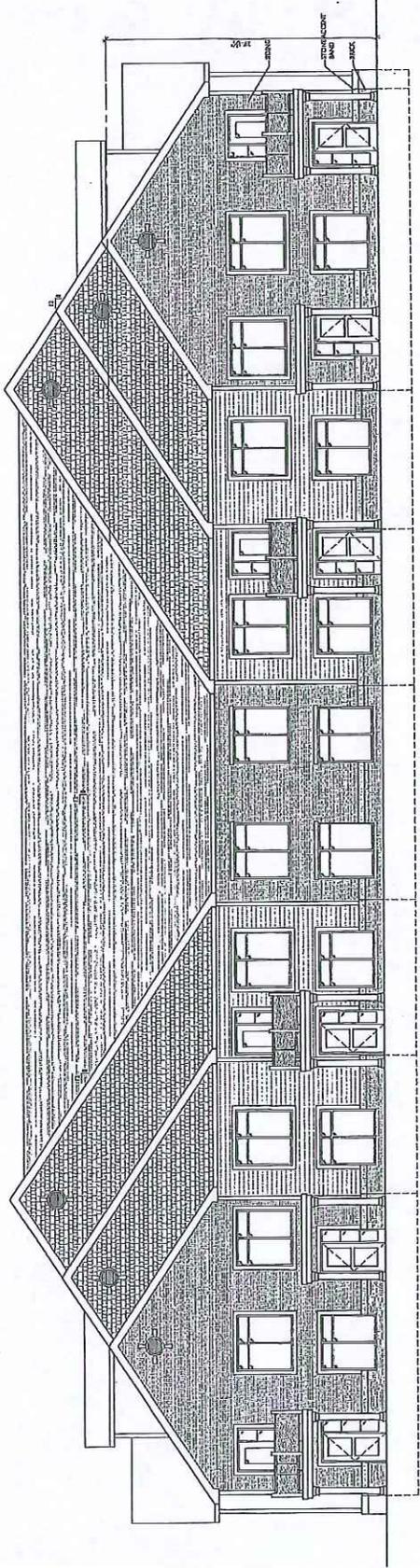
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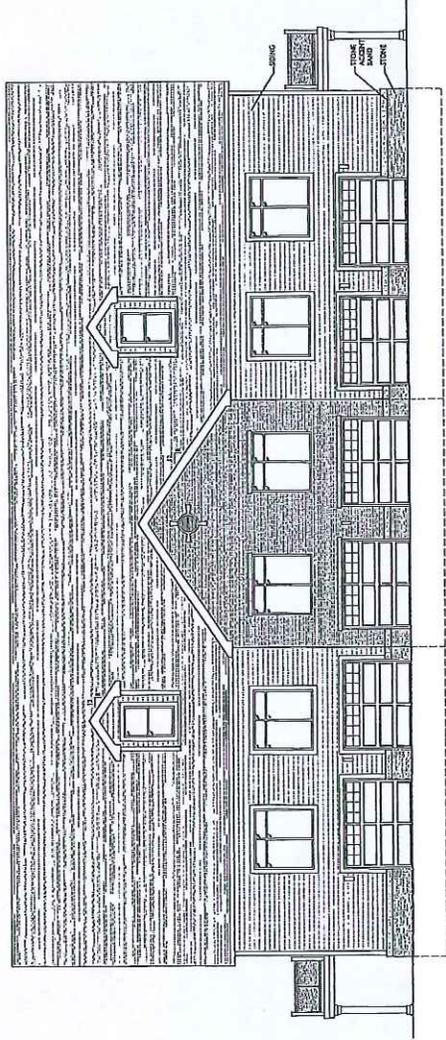
BOWERS+
ASSOCIATES
ARCHITECTURE DESIGN

12 UNIT APARTMENTS - PROPOSED EXTERIOR

| | | | | | | |
|---|--------------------|---|--------------------------------------|--------------------------------|---|--------------------------------|
| BOERS+ASSOCIATES ARCHITECTS 2400 SOUTH ELSTON STREET, SUITE 100 CHICAGO, IL 60616 TEL: 312.587.1100 WWW.BOERSARCHITECTS.COM | CONSULTANT + ISSUE | PROJECT + LOCATION DEXTER/GRAND STREET 12 UNIT APARTMENTS DEXTER, IL | PROJECT + NUMBER 15-205-03 | ISSUE + DATE PREPARE REVIEW | SHEET + TITLE EXTERIOR ELEVATIONS 15-205-03-010 | SHEET + NUMBER A5.00 |
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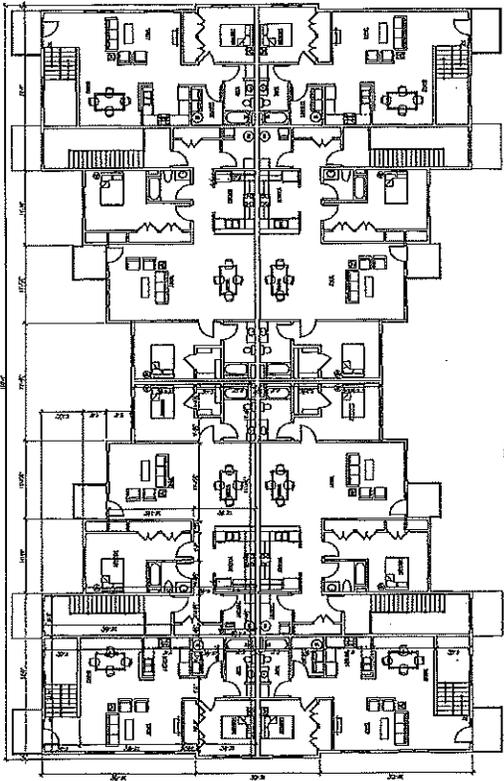


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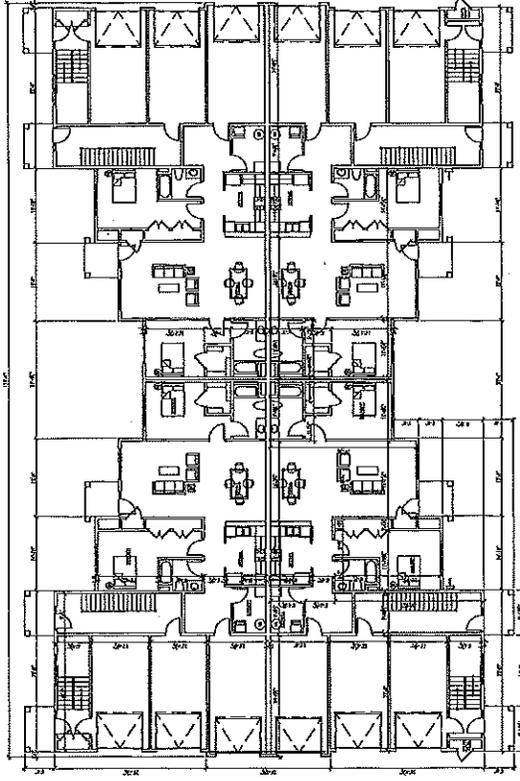


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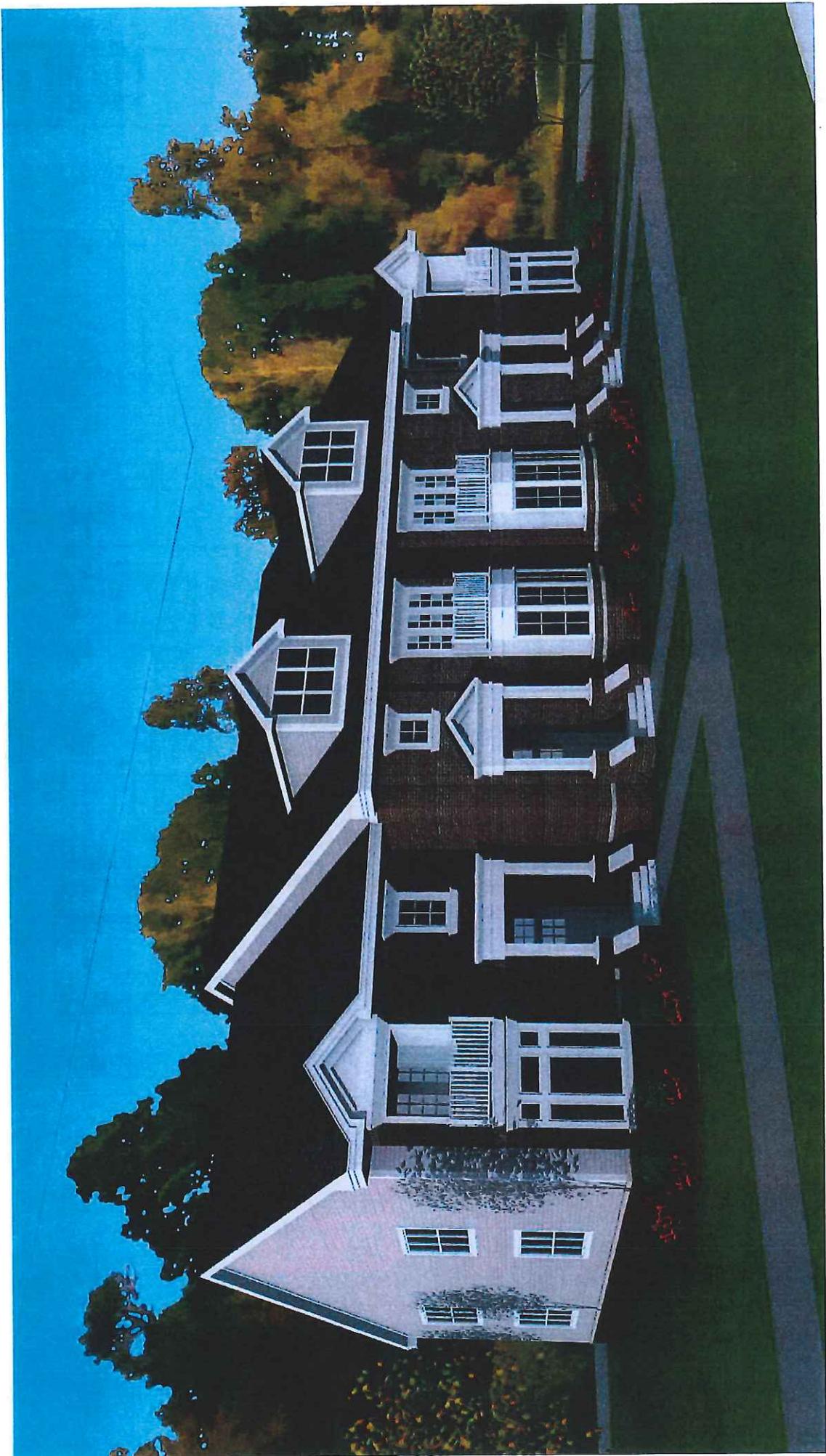
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| <p>BOWERS+ASSOCIATES ARCHITECTS 2400 BOWEN BOULEVARD, SUITE 200 DALLAS, TEXAS 75201 WWW.BOWERSA.COM</p> | <p>OWNER: XXXX + NAME</p> | <p>PROJECT: DEXTER GRAND STREET APARTMENTS DEXTER, TX</p> | <p>PROJECT NUMBER: 15-205-03</p> | <p>ISSUE + DATE 15-000-000 15-000-000 15-000-000 15-000-000</p> | <p>SHEET TITLE: XXXXXXXXXXXXXXXXXXXX</p> | <p>SHEET NUMBER: A1.00</p> |
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SECOND FLOOR PLAN
SCALE: 1/8" = 1'-0"



FIRST FLOOR PLAN
SCALE: 1/8" = 1'-0"



ROVERS ASSOCIATES
 ARCHITECTS
 2002 SOUTH BROAD STREET, SUITE 100
 WASHINGTON, DC 20002
 TEL: 202.462.1100
 WWW.ROVERSASSOCIATES.COM

CONSULTANT + NAME

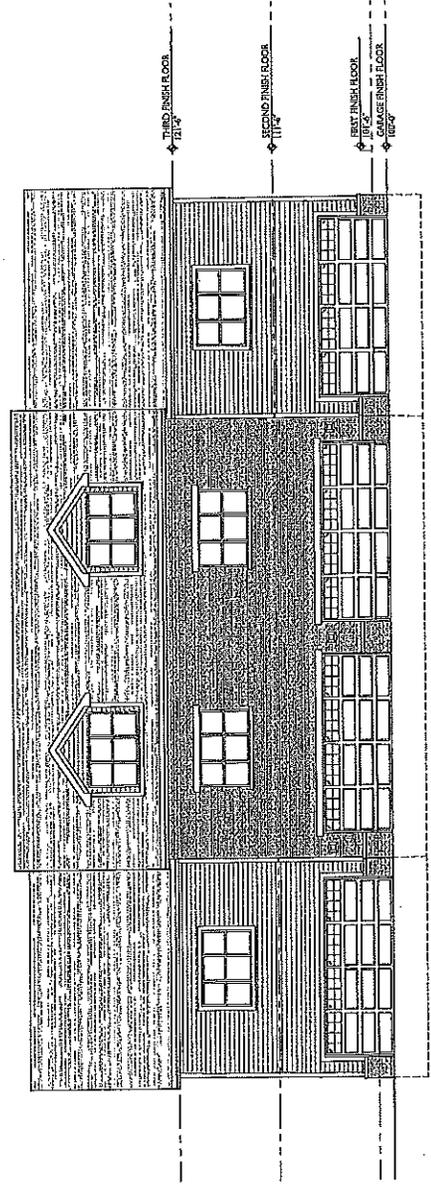
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 DEXTER / GRAND STREET
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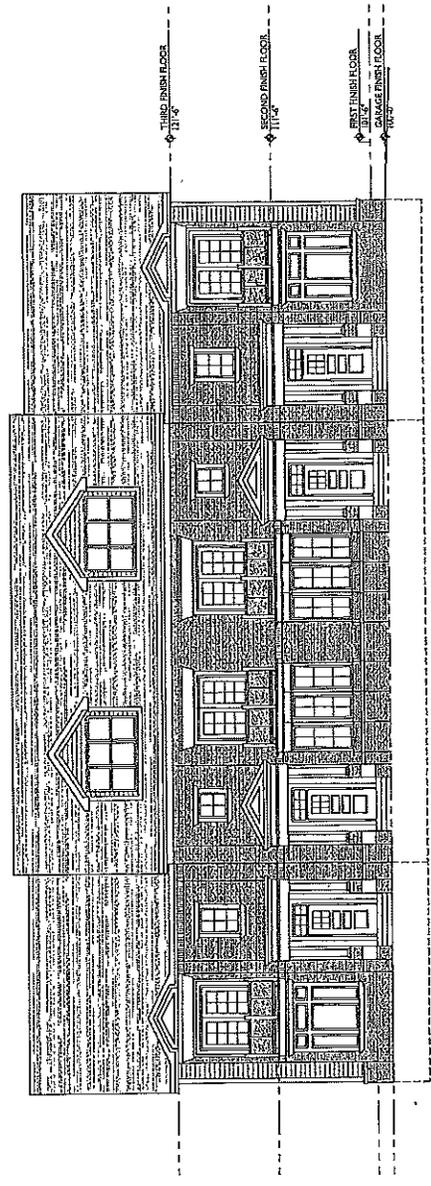
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 20 JAN 2016

SHEET + TITLE
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 TERRACE BUILDING

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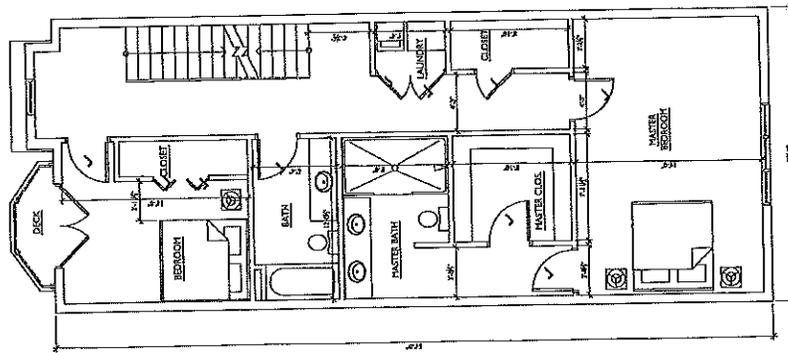
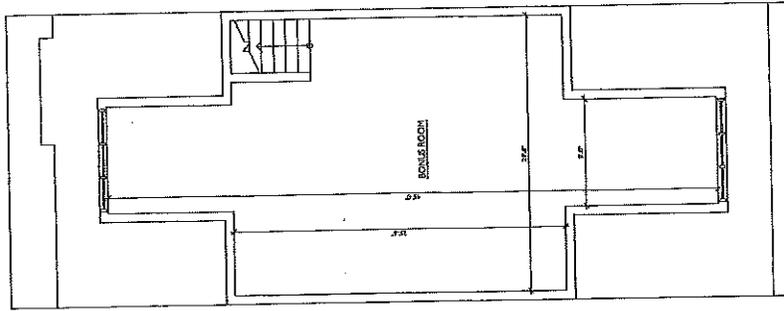


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 SCALE 1/8" = 1'-0"

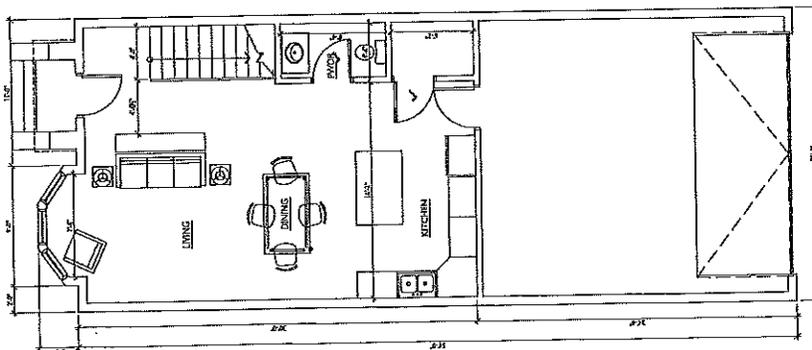
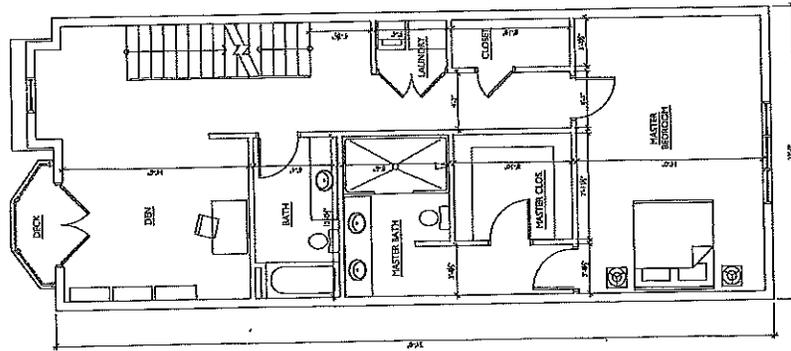


NORTH ELEVATION
 SCALE 1/8" = 1'-0"

| | | | | |
|--|--|-----------------------------|--|---------------------------------|
| BOYER ASSOCIATES ARCHITECTS & DESIGNERS 2108 BOSTON AVENUE, SUITE 200 BOSTON, MASSACHUSETTS 02114 TEL: 617-452-2000 FAX: 617-452-2010 | DESIGNER'S NAME PROJECT & LOCATION DEXTER / GRAND STREET DEXTER, MICHIGAN | PROJECT NUMBER 15-205-01 | ISSUE & DATE 15-205-01 15-205-01 20-01-2014 | SHEET TITLE THIRD FLOOR PLAN |
| | | | | SHEET NUMBER A1.01 |



2,413 SQ. FT. TOTAL
 3,189 SQ. FT. TOTAL
 W/ BONUS ROOM



7931 GRAND COMMONS
TRAFFIC IMPACT ANALYSIS
Dexter, Michigan

Prepared by:

C&A Engineers

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Email: CAEngineersllc@CAEngineersllc.com

January 2016

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I. INTRODUCTION

Project Description

This study determines and evaluates the traffic and impacts associated with for the proposed 7931 Grand Commons (Development) located in the southwest quadrant of the Grand Street and Baker Road intersection, in the City of Dexter, Washtenaw County, Michigan. (See Figure 1).

The proposed development will contain approximately sixty-eight (68) dwelling units. Construction is expected to be completed by in 2017. The development will be condo and townhomes.

Study Area

The scope of work contained in this report is as follows:

- Analysis of traffic conditions on the adjoining street system which will include the following:
 - Grand Street
 - Baker Road.
- Projection of future traffic volumes to be generated by the proposed development.
- Evaluation of the impact of future traffic volumes at the intersections of Grand Street and Baker Road.
- Evaluation of the driveway entrances off of both Grand Street and Baker Road.
- Determination of what roadway and traffic control improvements, if any, will be needed to accommodate future traffic volumes.

This section describes the existing roadway system and analyzes existing intersection operations in the vicinity of the project site.

Roadway System & Intersections

The transportation systems serving the site includes Grand Street (east/west) and Baker Road (north/south). Various other minor arterials, collectors and local access streets are also present in the area.

Baker Road – in the vicinity of the development is a three (3) lane north/south roadway. It is under the jurisdiction of City of Dexter. Baker Road is a bituminous roadway with curb and gutter on both sides, and parking on both sides the roadway north of Grand Street. The speed limit is 25 MPH.

Grand Street – in the vicinity of the development is a two (2) lane southeast/northwest roadway. It is under the jurisdiction of the City of Dexter. Grand Street is a bituminous roadway with no curb and gutter. The speed was not posted, assumed to be 25 MPH.

Intersections

Grand Street and Baker Road – is a three (3) lane north/south roadway with one (1) thru-right lane and one (1) left-turn only lane on the both approaches. Grand Street is a two (2) lane southeast/northwest roadway. The intersection is un-signalized.

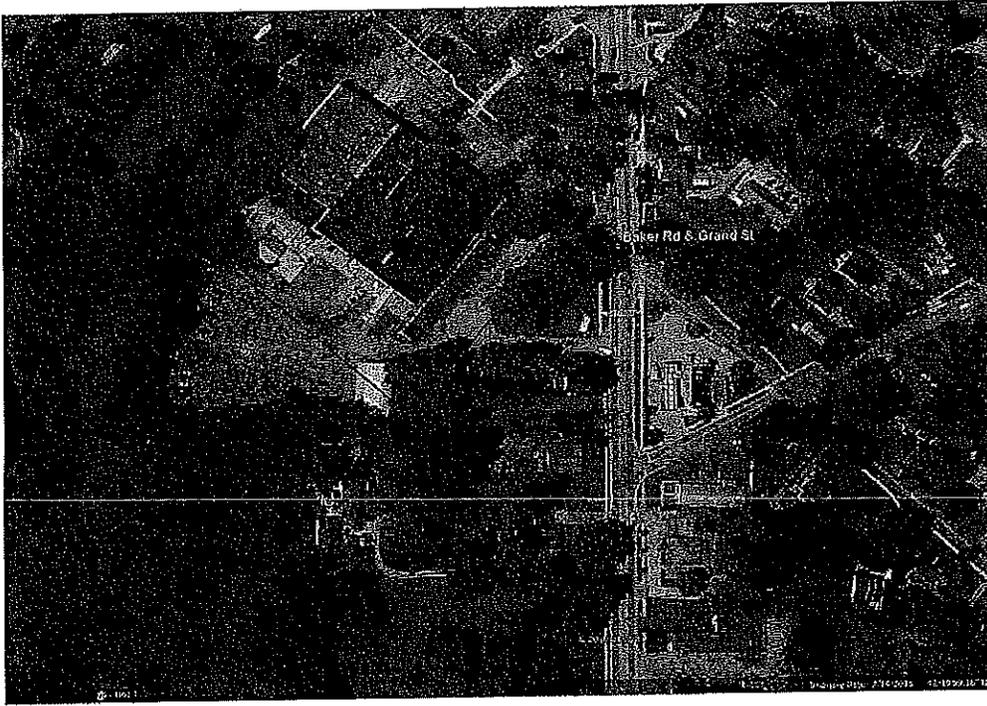


Figure 1: Project Location Map

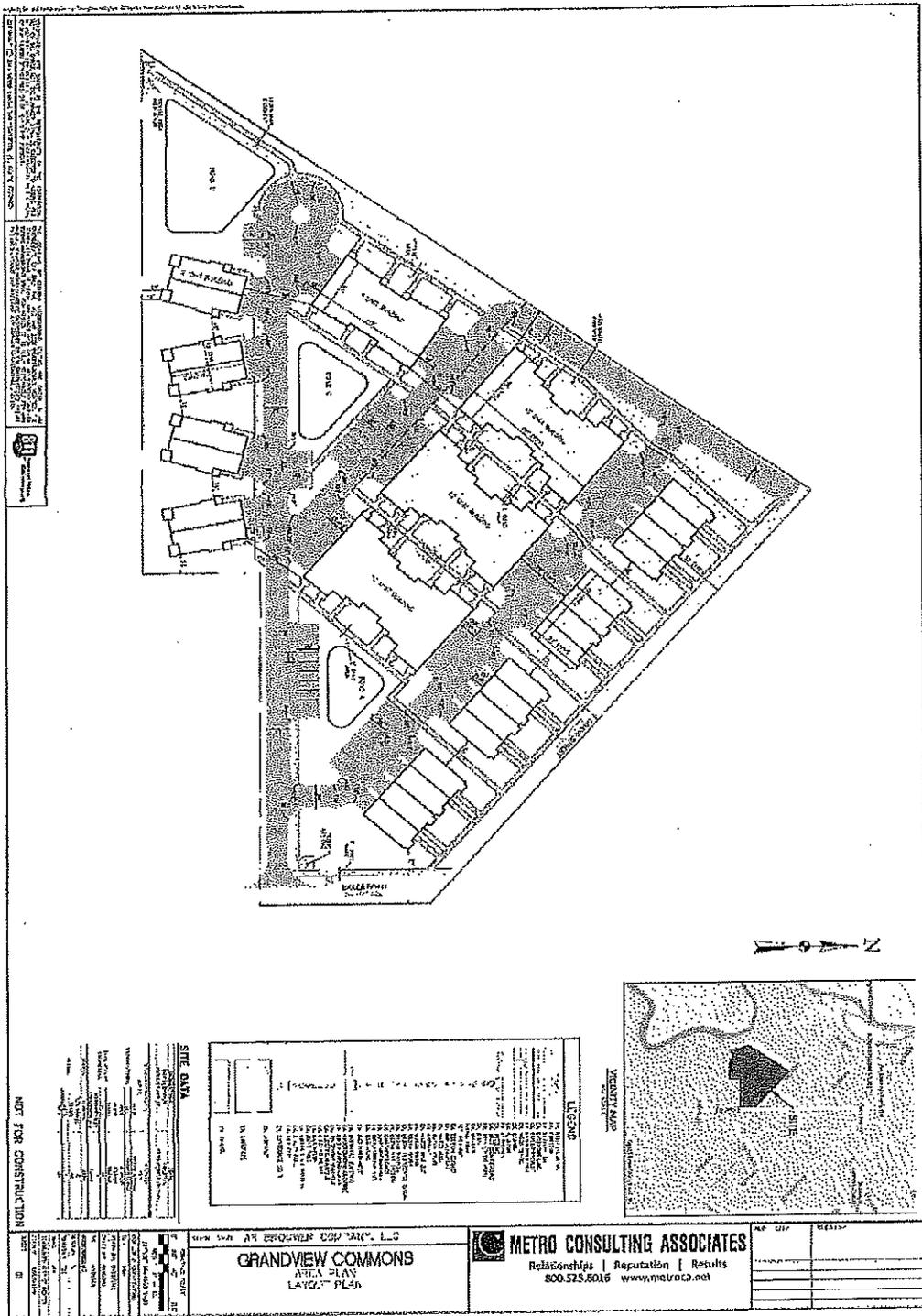


Figure 2: Site Plan

II. EXISTING CONDITIONS

Existing Traffic Volumes

C&A Engineers conducted peak-hour vehicular turning movement surveys at the intersections of Grand Street and Baker Road on January 13, 2016. The AM and PM peak periods on the adjoining road system are 7:30 AM – 8:30 AM and 5:00 PM – 6:00 PM, respectively. Figure 3 displays the existing peak period traffic volumes, lane configurations, and traffic control devices at each study intersection, both intersections are un-signalized.

A field review was conducted along the corridor to gather all pertinent information including the lane width and geometry, posted speed limits, intersection widths, travel distance between intersections, restrictions, and pedestrian facilities.

Traffic Signal Warrant Analysis

A traffic signal warrant study was conducted to determine whether a signal is warranted by the traffic conditions associated with the following location.

- Grand Street & Baker Road

There are eight studies and factors used in warranting the use of a traffic control signal. Traffic control signal should not be installed unless one or more of the signal warrants in the Michigan Manual of Uniform Traffic Control Devices are met. Information should be obtained by means of engineering studies and compared with the requirements set forth in the warrants. C& A Engineers conducted a signal warrant analysis using newly collected traffic counts at the subject intersection. Below is an outline of applicable warrants analyzed;

Warrant 1, requires one of two conditions to be satisfied. The Minimum Vehicular Volume, Condition A, is intended for application at locations where a large volume of intersecting traffic is the principle reason to consider installing a traffic signal. The minimum vehicular volume condition for rural environments and/or smaller municipalities is 70 percent of the requirement for urban conditions. The Interruption of Continuous Traffic, Condition B, is intended for application at location where condition A is not satisfied and where a very high volume of major street traffic restricts entry of cross-street traffic, causing excessive delay.

If neither condition is satisfied, a combination of conditions A and B can be applied, but only after an adequate trial of other alternatives that could cause less delay and inconvenience to traffic has failed to solve the traffic problems.

Warrant 2, is intended to be used where the volumes of intersecting traffic is the principle reason to consider signalization.

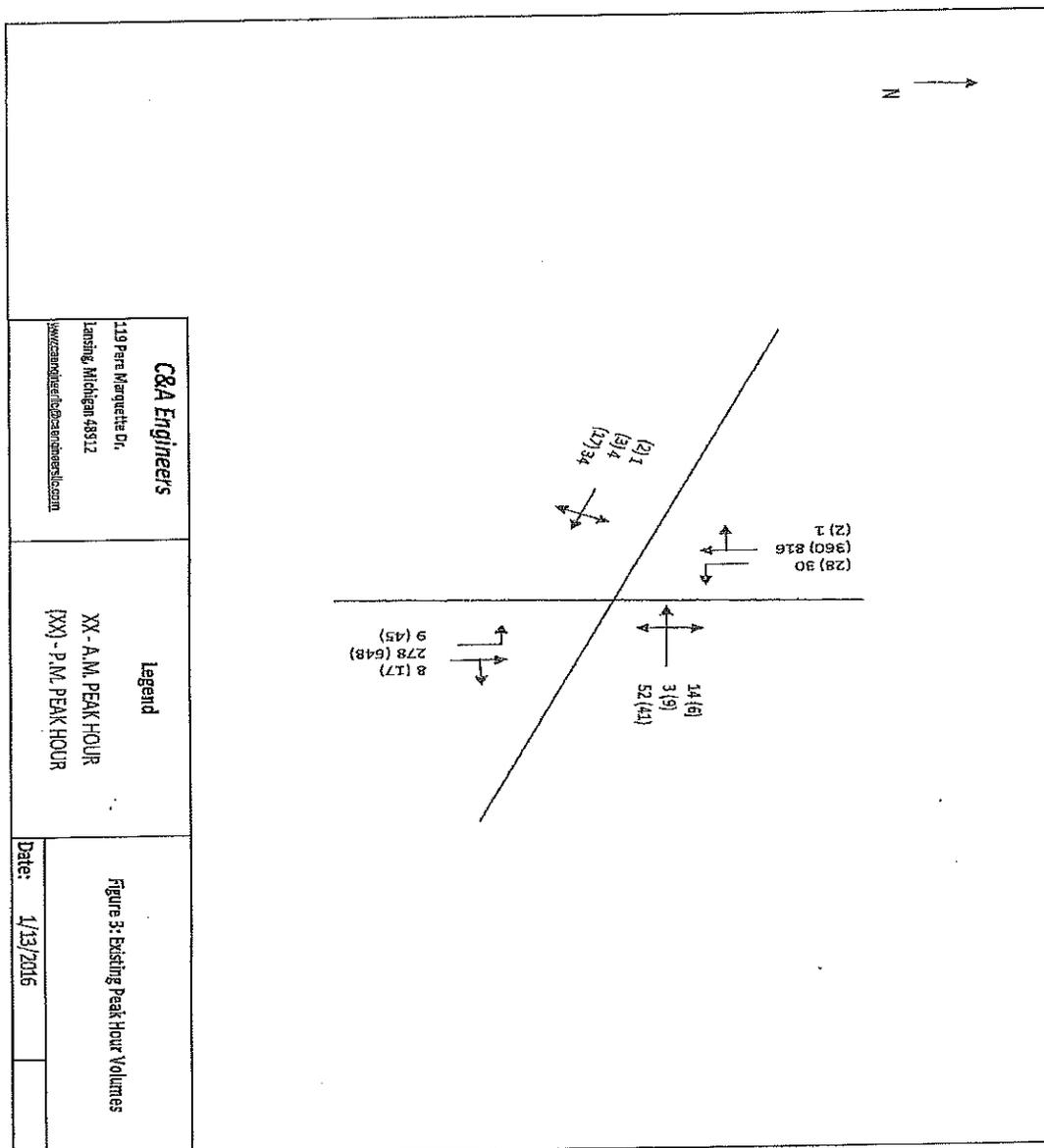
Warrant 3, is intended for application where traffic conditions are such that, for minimum one hour of the day, minor street traffic suffers excessive delay entering the major street.

Warrants 4 through 8 are typically reserved for specific situations. These are:

- **Warrant 4**- High Pedestrian Volumes.
- **Warrant 5**- School Crossing Locations.
- **Warrant 6**- Coordinated signal System- for placement between two widely space signals in a system to regulate traffic.
- **Warrant 7**- Crash Experience- for safety improvement at a high crash location.

- **Warrant 8- Roadway Network-** allows installation of traffic signals at some intersections to encourage concentration and organization of traffic flow networks.

In January 2016, traffic counts were taken at the above location. Warrant 1A was analyzed first. This warrant is most commonly used and approved by City of Dexter; it is focused on the conflict caused by high volumes of intersecting traffic. To satisfy this warrant the major and minor road volumes must exceed the minimum requirements for a total of at least eight hours. Therefore, the location did not meet warrant 1A, and can be seen in Appendix with the rest of warrant. Also, adding the trips generating for all the developments will not meet any signal warrant.



Safety Analysis

Crash data was collected for a three-year period from January 1, 2010 through December 31, 2014 for Baker Rd from WB I-94 Off-Ramp to Dexter/Ann Arbor Road. The data was obtained from SEMCOG. For this segment of roadway, there was an annual average of 25 crashes reported within this time period. At the intersection of Baker Rd & Grand St, there was an annual average of 2 crashes reported. Based on the SEMCOG statistical data obtained, the intersection is ranked number 24th the High-Frequency Crash Locations list in Dexter, Michigan

Traffic Analysis Methodology

To determine the operating conditions of an intersection or roadway, the concept of level of service (LOS) is commonly used. The LOS grading system is a rating scale ranging from LOS "A" to LOS "F", where LOS "A" represents free-flow conditions and LOS "F" represents congested or jammed conditions. A unit of measure, such as vehicle delay, generally accompanies the LOS designation. For this study, the Transportation Research Board's Highway Capacity Manual (2010) signalized and un-signalized methodologies were utilized. For each, operations are defined by the average control delay per vehicle (measured in seconds). This incorporates delay associated with deceleration and acceleration, stopping, and moving up in the queue. Tables 1 and 2 relate the average control delay with each level of service category. For signalized intersections, the delay is typically represented as an average per vehicle for the total intersection. For un-signalized intersections, the delay is typically represented for each movement from the minor approaches only. Throughout this report, the average control delay per vehicle will be referred to as average delay. Operations during peak hours of LOS "D" or better are considered acceptable.

Table 1: Level of Service Criteria (Signalized Intersection)

| | |
|---|----------|
| A | <10 |
| B | 10 TO 20 |
| C | 20 TO 35 |
| D | 35 TO 50 |
| E | 50 TO 80 |
| F | >80 |

Source: TRB HCM 2010

Table 2: Level of Service Criteria (Un-Signalized Intersection)

| | |
|---|----------|
| A | <10 |
| B | 10 TO 15 |
| C | 15 TO 25 |
| D | 25 TO 35 |
| E | 35 TO 50 |
| F | >50 |

Source: TRB HCM 2010

Existing Levels of Service Analysis

LOS are expressed in a range from "A" to "F," with "A" being the highest LOS and "F" representing the lowest LOS. Level of service "D" is considered the minimum acceptable LOS in an urban area. Tables 1 & 2 shows the thresholds for levels of service "A" through "F" for signalized and un-signalized intersections, respectively. All level of service computations contained in this report were based upon the Synchro 9 software "*Synchro Studio, is a complete software package for modeling, optimizing, managing and simulating traffic systems*". Delay per vehicle includes initial deceleration delay, queue move-up time, stopped delay, and final acceleration delay.

Table 3 summarizes the results of the weekday peak hour intersection analysis for the Existing Conditions. Detailed LOS calculations are provided in the Appendix.

Table 3: Existing Level of Service (LOS) Summary

| ID | Intersection | Traffic Control Method | Movement | Existing Condition | | | | | | | |
|----|----------------------|------------------------|---------------|--------------------|-----|----------------|----------|--------------|-----|----------------|----------|
| | | | | AM Peak Hour | | | | PM Peak Hour | | | |
| | | | | Veh Delay | LOS | Appr Veh Delay | Appr LOS | Veh Delay | LOS | Appr Veh Delay | Appr LOS |
| 1 | Baker Rd at Grand St | Un-Signalized | EB | 33.2 | D | | | 25.5 | D | | |
| | | | WB | 52.1 | F | | | 42.5 | E | | |
| | | | NB Left | 11.6 | B | 0.4 | A | 8.8 | A | 0.6 | A |
| | | | NB Thru-Right | 0.0 | A | | | 0.0 | A | | |
| | | | SB Left | 8.4 | A | 0.3 | A | 10.5 | B | 0.6 | A |
| | | | SB Thru-Right | 0.0 | A | | | 0.0 | A | | |

Notes: For unsignalized intersections, the delay values are for the critical minor approach. For signals, the delay values are the overall delay. Delay is expressed in seconds per vehicle. LOS = Level of the delay values are the overall delay.

The results of the existing conditions analysis for the study intersection indicate that all study intersections and approaches currently operate at acceptable LOS D or better, with the exception of northwest bound approach on Grand Street, during both the AM and PM peaks which operate at level of service F and E, respectively. These movement periodically experiences long vehicles delay and queues.

III. Background Traffic Volumes

Background Traffic Volumes

In order to determine the applicable growth rate for the existing traffic volumes to projected build-out, historical traffic count data and population forecasts publish by SEMCOG were referenced. SEMCOG data indicated that traffic volume in the study area will experience growth by 2020. However, the traffic data collected indicated that traffic has decreased during the peak hours since 2009. Based on this data, and since the proposed development is scheduled to open in the 2017 the background without the proposed development is assumed to be equal to existing condition and it was added to the build condition.

IV. Future Site Conditions

This section evaluates the impacts of the proposed project on existing traffic operations in the vicinity of the project site.

Trip Generation

The trip generation rates and volumes used for this analysis were obtained from information published in the Institute of Trip Generation Manual, 9th Edition. This manual is a nationally recognized resource for determining trip generation characteristics for Apartments development and many other land uses.

For the future analysis, the Resd. Condo/Townhouse (Land Use Category 230) was used, based on the number of dwellings units of the proposed development. Resd. Condo/Townhouse (Land Use Category 230) represents the trip making characteristics of this development. The development is estimated to generate 378 daily trips and 29 trips in the AM Peak and 34 trips in the PM peak, which is summarized in Table 4. According to the ITE Trip Generation Manual (9th Edition), ITE does not provide data on pass-by trips for Resd. Condo/Townhouse categories.

Table 4: Trip Generation Characteristics - Resd. Condo/Townhouse 230 (DU)

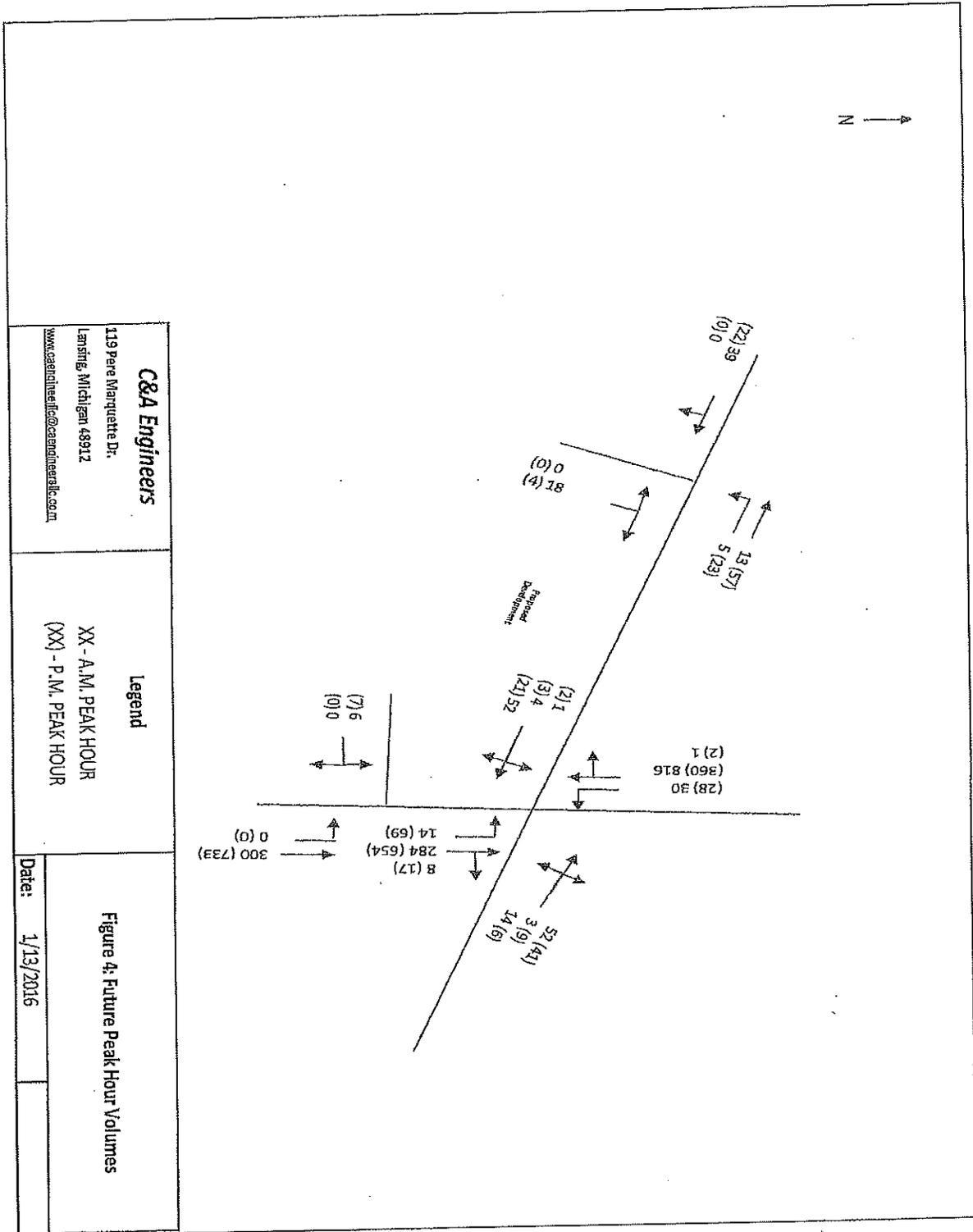
| *DU | A.M. Peak Hour | | | P.M. Peak Hour | | | Daily |
|-----|-----------------|--------------------------|---------|-----------------|--------------------------|---------|-------|
| | Generated Trips | Directional Distribution | | Generated Trips | Directional Distribution | | |
| | | 17% IN | 83% OUT | | 67% IN | 33% OUT | |
| 68 | 29 | 5 | 24 | 34 | 23 | 11 | 378 |

* DU - Dwelling Units

Trip Assignment and Trip Distribution

Traffic expected to be generated by a project must be distributed and assigned to the roadway system so that the impacts of the proposed project on roadway links and intersections within the study area can be analyzed. After an estimate of the total traffic into and out of the site has been made, that traffic must be distributed and assigned to the roadway system. The trip distribution step produces estimates of trip origins and destinations. The assignment step produces estimates of the amount of site traffic that will use certain access routes between their origin and destination.

The vehicle trips that would be generated by the development were assigned to the study road network based on existing peak hour traffic patterns and the methodologies published by ITE. The traffic volumes from the development using these assignment and distribution parameters. The site-generated vehicle trips were assigned to the study road network based on this trip distribution model as shown on are shown on Figure 4.



Future Traffic Level of Service Analysis

The results of the Future conditions analysis for the study intersection indicate that all the approaches currently operate at acceptable LOS D or better, with the exception of both approaches on Grand Street, during the AM peak hour, and the northwest bound Grand Street approach, during the PM peak hour. These movements periodically experience long vehicle delay and queues. The level of service analysis for the future condition is summarized in Table 6.

Table 5: Future Level of Service (LOS) Summary

| ID | Intersection | Traffic Control Method | Movement | 2017 Future Condition | | | | | | | |
|----|----------------------|------------------------|----------------|-----------------------|-----|----------------|----------|--------------|-----|----------------|----------|
| | | | | AM Peak Hour | | | | PM Peak Hour | | | |
| | | | | Veh Delay | LOS | Appr Veh Delay | Appr LOS | Veh Delay | LOS | Appr Veh Delay | Appr LOS |
| 1 | Baker Rd at Grand St | Un-Signalized | EB | 36.9 | E | | | 26.2 | D | | |
| | | | WB Thru-Right | 75.0 | F | | | 50.0 | F | | |
| | | | NB Left | 11.6 | B | 0.3 | A | 9.0 | A | 0.9 | A |
| | | | NB Thru-Right | 0.0 | A | | | 0.0 | A | | |
| | | | SB Left | 8.4 | A | 0.3 | A | 10.5 | B | 0.6 | A |
| | | | SB Thru-Right | 0.0 | A | | | A | A | | |
| 2 | Grand St. Drive | Un-Signalized | NEB Left-Right | 8.6 | A | | | 8.4 | A | | |
| | | | NWB Thru | 0.0 | A | 2.0 | A | 0.0 | A | 2.4 | A |
| | | | NWB LEFT | 7.3 | A | | | 7.3 | A | | |
| | | | SEB Thru-Right | 0.0 | A | | | 0.0 | A | | |
| 3 | Baker Rd. Drive | Un-Signalized | EB Left-Right | 17.5 | C | | | 16.2 | C | | |
| | | | NB Left | 0.0 | A | 0.0 | A | 0.0 | A | 0.0 | A |
| | | | NB Thru | 0.0 | A | | | 0.0 | A | | |
| | | | SB Thru-Right | 0.0 | A | | | 0.0 | A | | |

Notes: For unsignalized intersections, the delay values are for the critical minor approach. For signals, the delay values are the overall delay. Delay is expressed in seconds per vehicle. LOS = Level of the delay values are the overall delay.

Proposed Site Access

The proposed site layout includes two access drives to the site, one (1) on Grand Street and one existing (1) on Baker Road. The Baker Road Drive is located approximately 200 feet south of the Grand Street & Baker Street intersection, Grand Street Drive will be located approximately 600 feet west of the Grand Street & Baker Street intersection. The placement and the geometry of both drives should be designed in accordance with the standards set forth by City of Dexter (See appendix).

V. Conclusions & Recommendations

The proposed development will have minimal if any impact on the traffic operations of Baker Road and Grand Street. A review of operations on Grand Street & Baker Road intersection approaches, using existing and future conditions indicates that the level of service (LOS) will remain the same, except for the southeast bound approach on Grand Street (LOS E), during the PM peak period and the northwest bound approach on Grand Street (LOS F), during both the AM and PM peak periods.

Recommendations

The findings of this study give rise to the following recommendations:

- ✚ The existing Baker Road Drive and proposed Grand Drive be designed and constructed per City of Dexter Standards & Specifications.

Appendix - Supplemental Information

Vehicle Turning Movement Surveys
LOS Computations (Synchro Printouts)
SEMCOG Historical Crash Data
Warrant Analysis
SEMCOG Data Crash Data

Eight Hour Manual & Turning Traffic Counts Summary

| Location: Baker Rd at Grand St | | Date: 1/13/2016 | | | | | | | | | | | | | | |
|---------------------------------------|------------|------------------------|-------|-----------------|-------|-------|------------|--------------------------------|-------|-----------------|-------|-------|-------|-----|----|--|
| Day of Week: Wednesday | | Weather: Cloudy | | | | | | Analyst: Mike Henderson | | | | | | | | |
| Interval starts | Southbound | | | South-Westbound | | | Northbound | | | North-Eastbound | | | Total | | | |
| | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | | | | |
| 07:00 | 3 | 89 | 0 | 2 | 11 | 0 | 3 | 73 | 1 | 2 | 5 | 0 | 193 | | | |
| 07:15 | 7 | 189 | 0 | 0 | 0 | 4 | 4 | 38 | 1 | 0 | 1 | 5 | 238 | | | |
| 07:30 | 4 | 220 | 0 | 4 | 1 | 4 | 4 | 49 | 0 | 0 | 0 | 8 | 288 | | | |
| 07:45 | 9 | 206 | 0 | 2 | 1 | 12 | 3 | 75 | 1 | 0 | 1 | 14 | 318 | | | |
| 08:00 | 11 | 206 | 0 | 6 | 1 | 17 | 1 | 92 | 5 | 0 | 3 | 6 | 348 | | | |
| 08:15 | 6 | 190 | 1 | 2 | 0 | 19 | 1 | 88 | 2 | 1 | 0 | 6 | 296 | | | |
| 08:30 | 7 | 117 | 0 | 0 | 2 | 3 | 2 | 64 | 1 | 0 | 1 | 4 | 201 | | | |
| 08:45 | 5 | 120 | 0 | 0 | 0 | 3 | 1 | 49 | 1 | 0 | 0 | 3 | 182 | | | |
| 847 | | | | | | | | | | | | | 69 | 285 | 99 | |
| Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | | | | | |
| 11:00 | 4 | 79 | 1 | 1 | 3 | 1 | 4 | 56 | 1 | 0 | 0 | 4 | 154 | | | |
| 11:15 | 6 | 76 | 0 | 2 | 1 | 4 | 1 | 51 | 0 | 0 | 0 | 1 | 142 | | | |
| 11:30 | 5 | 85 | 2 | 1 | 0 | 3 | 2 | 77 | 3 | 0 | 1 | 3 | 183 | | | |
| 11:45 | 4 | 68 | 0 | 0 | 0 | 4 | 3 | 78 | 2 | 0 | 1 | 4 | 184 | | | |
| 12:00 | 2 | 69 | 2 | 0 | 2 | 7 | 1 | 82 | 1 | 1 | 1 | 6 | 168 | | | |
| 12:15 | 3 | 97 | 1 | 1 | 1 | 7 | 5 | 63 | 2 | 1 | 0 | 4 | 175 | | | |
| 12:30 | 1 | 62 | 0 | 2 | 3 | 3 | 5 | 64 | 6 | 0 | 1 | 3 | 150 | | | |
| 12:45 | 1 | 62 | 0 | 1 | 2 | 5 | 1 | 69 | 0 | 0 | 1 | 3 | 144 | | | |
| 615 | | | | | | | | | | | | | 64 | 576 | 35 | |
| Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | | | | | |
| 15:00 | 7 | 70 | 1 | 6 | 0 | 17 | 3 | 148 | 4 | 1 | 0 | 3 | 260 | | | |
| 15:15 | 5 | 70 | 0 | 4 | 3 | 21 | 6 | 160 | 1 | 1 | 0 | 5 | 276 | | | |
| 15:30 | 8 | 82 | 1 | 0 | 0 | 14 | 1 | 140 | 1 | 2 | 0 | 1 | 248 | | | |
| 15:45 | 4 | 55 | 0 | 2 | 2 | 10 | 4 | 134 | 1 | 1 | 0 | 4 | 217 | | | |
| 16:00 | 5 | 76 | 2 | 1 | 1 | 5 | 4 | 136 | 1 | 1 | 3 | 3 | 238 | | | |
| 16:15 | 1 | 84 | 1 | 2 | 0 | 7 | 3 | 164 | 4 | 0 | 0 | 6 | 272 | | | |
| 16:30 | 5 | 77 | 0 | 2 | 2 | 13 | 8 | 101 | 3 | 0 | 1 | 11 | 319 | | | |
| 16:45 | 3 | 62 | 1 | 6 | 0 | 5 | 11 | 161 | 2 | 1 | 0 | 5 | 277 | | | |
| 17:00 | 0 | 74 | 1 | 1 | 1 | 13 | 8 | 163 | 2 | 1 | 2 | 4 | 278 | | | |
| 17:15 | 4 | 77 | 0 | 2 | 3 | 9 | 21 | 150 | 2 | 0 | 0 | 5 | 273 | | | |
| 17:30 | 11 | 90 | 0 | 0 | 3 | 11 | 9 | 162 | 3 | 1 | 1 | 2 | 293 | | | |
| 17:45 | 5 | 119 | 1 | 3 | 2 | 8 | 7 | 173 | 10 | 0 | 0 | 6 | 334 | | | |
| 18:00 | 6 | 60 | 1 | 2 | 0 | 10 | 2 | 125 | 5 | 0 | 0 | 4 | 232 | | | |
| 18:15 | 2 | 55 | 0 | 2 | 1 | 9 | 5 | 137 | 3 | 0 | 0 | 5 | 219 | | | |
| 18:30 | 5 | 65 | 0 | 1 | 0 | 7 | 3 | 130 | 1 | 0 | 1 | 3 | 216 | | | |
| 18:45 | 5 | 39 | 0 | 5 | | 7 | 4 | 129 | 1 | 0 | 0 | 1 | 191 | | | |

Intersection AM Peak Hour: 07:30-08:30

| Interval starts | Southbound | | | Westbound | | | Northbound | | | Eastbound | | | Total |
|-----------------|------------|------|-------|-----------|------|-------|------------|------|-------|-----------|------|-------|-------|
| | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | |
| Vehicle Total | 30 | 816 | 1 | 14 | 3 | 52 | 9 | 278 | 8 | 1 | 4 | 34 | 1250 |
| Factor | 0.68 | 0.89 | 0.25 | 0.58 | 0.38 | 0.76 | 0.55 | 0.76 | 0.40 | 0.25 | 0.33 | 0.61 | |
| Approach Factor | 0.98 | | | 0.72 | | | 0.75 | | | 0.65 | | | |

Intersection Off Peak Hour: 11:30-12:30

| Interval starts | Southbound | | | Westbound | | | Northbound | | | Eastbound | | | Total |
|-----------------|------------|------|-------|-----------|------|-------|------------|------|-------|-----------|------|-------|-------|
| | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | |
| Vehicle Total | 15 | 303 | 5 | 2 | 3 | 21 | 11 | 300 | 8 | 2 | 3 | 17 | 690 |
| Factor | 0.63 | 0.87 | 0.63 | 0.50 | 0.38 | 0.75 | 0.55 | 1.19 | 0.67 | 0.50 | 0.75 | 0.71 | |
| Approach Factor | 0.87 | | | 0.72 | | | 0.95 | | | 0.69 | | | |

Intersection PM Peak Hour: 17:00-18:00

| Interval starts | Southbound | | | Westbound | | | Northbound | | | Eastbound | | | Total |
|-----------------|------------|------|-------|-----------|------|-------|------------|------|-------|-----------|------|-------|-------|
| | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | |
| Vehicle Total | 28 | 350 | 2 | 6 | 9 | 41 | 45 | 648 | 17 | 2 | 3 | 17 | 1178 |
| Factor | 0.64 | 0.76 | 0.50 | 0.50 | 0.75 | 0.79 | 0.64 | 0.94 | 0.43 | 0.50 | 0.38 | 0.71 | |
| Approach Factor | 0.76 | | | 1.00 | | | 0.83 | | | 0.79 | | | |

Riley at Fairview

Washtenaw County Road Commission

0080712009 Weekly Volume Report - Mon 09/21/2009 - Sun 09/27/2009

| | |
|--------------|------------|
| Location ID: | 0080712009 |
| Located On: | Baker Rd |
| Direction: | NB |
| Community: | Scio Twp |
| AADT: | 6190 |

| | |
|-----------|---------------------------------|
| Type: | SPOT |
| NORTH OF: | Shield Rd (school) |
| Period: | Mon 09/21/2009 - Sun 09/27/2009 |

| Start Time | Mon | Tue | Wed | Thu | Fri | Sat | Sun | Avg |
|-------------------|----------|-------------|---------------|----------|----------|----------|----------|---------------|
| 12:00 AM | | | 39 | | | | | 39 |
| 1:00 AM | | | 15 | | | | | 15 |
| 2:00 AM | | | 12 | | | | | 12 |
| 3:00 AM | | | 28 | | | | | 28 |
| 4:00 AM | | | 20 | | | | | 20 |
| 5:00 AM | | | 83 | | | | | 83 |
| 6:00 AM | | | 269 | | | | | 269 |
| 7:00 AM | | | 377 | | | | | 377 |
| 8:00 AM | | | 343 | | | | | 343 |
| 9:00 AM | | | 255 | | | | | 255 |
| 10:00 AM | | | 260 | | | | | 260 |
| 11:00 AM | | | 340 | | | | | 340 |
| 12:00 PM | | | 349 | | | | | 349 |
| 1:00 PM | | 362 | | | | | | 362 |
| 2:00 PM | | 537 | | | | | | 537 |
| 3:00 PM | | 573 | | | | | | 573 |
| 4:00 PM | | 707 | | | | | | 707 |
| 5:00 PM | | 816 | | | | | | 816 |
| 6:00 PM | | 535 | | | | | | 535 |
| 7:00 PM | | 357 | | | | | | 357 |
| 8:00 PM | | 284 | | | | | | 284 |
| 9:00 PM | | 153 | | | | | | 153 |
| 10:00 PM | | 82 | | | | | | 82 |
| 11:00 PM | | 55 | | | | | | 55 |
| Total | 0 | 4461 | 2390 | 0 | 0 | 0 | 0 | |
| 24Hr Total | | | 6851 | | | | | 6851 |
| AM PK Hr | | | | | | | | |
| AM Peak | | | | | | | | 0 |
| PM PK Hr | | | | | | | | |
| PM Peak | | | | | | | | 0 |
| % Peak Hr | | | | | | | | |
| % Peak Hr | | | 11.91% | | | | | 11.91% |

Washtenaw County Road Commission

0080711009 Weekly Volume Report - Mon 09/21/2009 - Sun 09/27/2009

| | |
|--------------|------------|
| Location ID: | 0080711009 |
| Located On: | Baker Rd |
| Direction: | SB |
| Community: | Scio Twp |
| AADT: | 6200 |

| | |
|-----------|---------------------------------|
| Type: | SPOT |
| NORTH OF: | Shield Rd (school) |
| Period: | Mon 09/21/2009 - Sun 09/27/2009 |

| Start Time | Mon | Tue | Wed | Thu | Fri | Sat | Sun | Avg |
|------------|-----|------|-------|-----|-----|-----|-----|-------|
| 12:00 AM | | | 21 | | | | | 21 |
| 1:00 AM | | | 22 | | | | | 22 |
| 2:00 AM | | | 9 | | | | | 9 |
| 3:00 AM | | | 16 | | | | | 16 |
| 4:00 AM | | | 46 | | | | | 46 |
| 5:00 AM | | | 199 | | | | | 199 |
| 6:00 AM | | | 421 | | | | | 421 |
| 7:00 AM | | | 847 | | | | | 847 |
| 8:00 AM | | | 598 | | | | | 598 |
| 9:00 AM | | | 428 | | | | | 428 |
| 10:00 AM | | | 271 | | | | | 271 |
| 11:00 AM | | | 363 | | | | | 363 |
| 12:00 PM | | | 362 | | | | | 362 |
| 1:00 PM | | 351 | | | | | | 351 |
| 2:00 PM | | 440 | | | | | | 440 |
| 3:00 PM | | 500 | | | | | | 500 |
| 4:00 PM | | 522 | | | | | | 522 |
| 5:00 PM | | 478 | | | | | | 478 |
| 6:00 PM | | 325 | | | | | | 325 |
| 7:00 PM | | 290 | | | | | | 290 |
| 8:00 PM | | 177 | | | | | | 177 |
| 9:00 PM | | 95 | | | | | | 95 |
| 10:00 PM | | 74 | | | | | | 74 |
| 11:00 PM | | 36 | | | | | | 36 |
| Total | 0 | 3288 | 3603 | 0 | 0 | 0 | 0 | |
| 24H Total | | | 6891 | | | | | 6891 |
| AM Peak Hr | | | | | | | | |
| AM Peak | | | | | | | | 0 |
| PM Peak Hr | | | | | | | | |
| PM Peak | | | | | | | | 0 |
| % Peak Hr | | | | | | | | |
| % Peak Hr | | | 7.58% | | | | | 7.58% |

HCM 2010 TWSC
5: Baker Rd & Grand St

Existing A.M. Peak
1/13/2016 7:30 am

| Intersection | | | | | | | | | | | | |
|--------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Int Delay, s/veh | 4.5 | | | | | | | | | | | |
| Movement | NBL | NBT | NBR | SBL | SBT | SBR | SEB | SET | SEB | NWB | NWT | NWR |
| Traffic Vol, veh/h | 9 | 278 | 8 | 30 | 816 | 1 | 1 | 4 | 34 | 14 | 3 | 52 |
| Future Vol, veh/h | 9 | 278 | 8 | 30 | 816 | 1 | 1 | 4 | 34 | 14 | 3 | 52 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized | None | | | None | | | None | | | None | | |
| Storage Length | 250 | - | - | 250 | - | - | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 69 | 70 | 80 | 82 | 69 | 75 | 75 | 83 | 69 | 67 | 90 | 60 |
| Heavy Vehicles, % | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 |
| Mvmt Flow | 13 | 397 | 10 | 37 | 1183 | 1 | 1 | 5 | 49 | 21 | 3 | 87 |

| Major/Minor | Major1 | | | Major2 | | | Minor2 | | | Minor1 | | |
|----------------------|--------|---|---|--------|---|---|--------|------|------|--------|------|------|
| Conflicting Flow All | 1184 | 0 | 0 | 407 | 0 | 0 | 1729 | 1689 | 1183 | 1711 | 1685 | 402 |
| Stage 1 | - | - | - | - | - | - | 1256 | 1256 | - | 428 | 428 | - |
| Stage 2 | - | - | - | - | - | - | 473 | 433 | - | 1283 | 1257 | - |
| Critical Hdwy | 4.2 | - | - | 4.2 | - | - | 7.2 | 6.6 | 6.3 | 7.2 | 6.6 | 6.3 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | 6.2 | 5.6 | - | 6.2 | 5.6 | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | 6.2 | 5.6 | - | 6.2 | 5.6 | - |
| Follow-up Hdwy | 2.29 | - | - | 2.29 | - | - | 3.59 | 4.09 | 3.39 | 3.59 | 4.09 | 3.39 |
| Pot. Cap-1 Maneuver | 562 | - | - | 1110 | - | - | 66 | 89 | 222 | 68 | 90 | 631 |
| Stage 1 | - | - | - | - | - | - | 202 | 234 | - | 589 | 571 | - |
| Stage 2 | - | - | - | - | - | - | 557 | 568 | - | 195 | 234 | - |
| Platoon blocked, % | - | - | - | - | - | - | - | - | - | - | - | - |
| Mov Cap-1 Maneuver | 562 | - | - | 1110 | - | - | 53 | 84 | 222 | 48 | 85 | 631 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | 53 | 84 | - | 48 | 85 | - |
| Stage 1 | - | - | - | - | - | - | 197 | 226 | - | 575 | 558 | - |
| Stage 2 | - | - | - | - | - | - | 467 | 555 | - | 144 | 226 | - |

| Approach | NB | SB | SE | NW |
|----------------------|-----|-----|------|------|
| HCM Control Delay, s | 0.4 | 0.3 | 33.2 | 52.1 |
| HCM LOS | | | D | F |

| Major Lane/Minor Mvmt | NBL | NBT | NBR | NWB | NWT | NWR | SBL | SBT | SBR |
|-----------------------|-------|-----|-----|-------|-------|-------|-----|-----|-----|
| Capacity (veh/h) | 562 | - | - | 181 | 182 | 1110 | - | - | - |
| HCM Lane V/C Ratio | 0.023 | - | - | 0.613 | 0.305 | 0.033 | - | - | - |
| HCM Control Delay (s) | 11.6 | - | - | 52.1 | 33.2 | 8.4 | - | - | - |
| HCM Lane LOS | B | - | - | F | D | A | - | - | - |
| HCM 95th %tile Q(veh) | 0.1 | - | - | 3.4 | 1.2 | 0.1 | - | - | - |

HCM 2010 TWSC
5: Baker Rd & Grand St

Existing PM. Peak
1/13/2016 7:30 pm

| Intersection | |
|------------------|-----|
| Int Delay, s/veh | 3.2 |

| Movement | NBL | NBT | NBR | SBL | SBT | SBR | SEB | SET | SEB | NWL | NWT | NWR |
|--------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Traffic Vol, veh/h | 45 | 648 | 17 | 28 | 360 | 2 | 2 | 3 | 17 | 6 | 9 | 41 |
| Future Vol, veh/h | 45 | 648 | 17 | 28 | 360 | 2 | 2 | 3 | 17 | 6 | 9 | 41 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT-Channelized | - | - | None |
| Storage Length | 250 | - | - | 250 | - | - | - | - | - | - | - | - |
| Veh In Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 69 | 70 | 80 | 82 | 69 | 75 | 75 | 83 | 69 | 67 | 90 | 60 |
| Heavy Vehicles, % | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 |
| Mvmt Flow | 65 | 926 | 21 | 34 | 522 | 3 | 3 | 4 | 25 | 9 | 10 | 68 |

| Major/Minor | Major1 | | | Major2 | | | Minor1 | | | Minor2 | | |
|----------------------|--------|---|---|--------|---|---|--------|------|------|--------|------|------|
| Conflicting Flow All | 524 | 0 | 0 | 947 | 0 | 0 | 1697 | 1668 | 523 | 1672 | 1660 | 936 |
| Stage 1 | - | - | - | - | - | - | 591 | 591 | - | 1067 | 1067 | - |
| Stage 2 | - | - | - | - | - | - | 1106 | 1077 | - | 605 | 593 | - |
| Critical Hdwy | 4.2 | - | - | 4.2 | - | - | 7.2 | 6.6 | 6.3 | 7.2 | 6.6 | 6.3 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | 6.2 | 5.6 | - | 6.2 | 5.6 | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | 6.2 | 5.6 | - | 6.2 | 5.6 | - |
| Follow-up Hdwy | 2.29 | - | - | 2.29 | - | - | 3.59 | 4.09 | 3.39 | 3.59 | 4.09 | 3.39 |
| Pot Cap-1 Maneuver | 1003 | - | - | 693 | - | - | 70 | 92 | 538 | 73 | 93 | 311 |
| Stage 1 | - | - | - | - | - | - | 480 | 482 | - | 259 | 289 | - |
| Stage 2 | - | - | - | - | - | - | 246 | 286 | - | 471 | 481 | - |
| Platoon blocked, % | - | - | - | - | - | - | - | - | - | - | - | - |
| Mov Cap-1 Maneuver | 1003 | - | - | 693 | - | - | 45 | 82 | 538 | 62 | 83 | 311 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | 45 | 82 | - | 62 | 83 | - |
| Stage 1 | - | - | - | - | - | - | 449 | 458 | - | 242 | 270 | - |
| Stage 2 | - | - | - | - | - | - | 173 | 267 | - | 424 | 457 | - |

| Approach | NB | SB | SE | NW |
|----------------------|-----|-----|------|------|
| HCM Control Delay, s | 0.6 | 0.6 | 25.4 | 42.5 |
| HCM LOS | D | D | D | E |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | NWL | SEL | SBL | SBT | SBR |
|-----------------------|-------|-----|-----|-------|-------|-------|-----|-----|
| Capacity (veh/h) | 1003 | - | - | 180 | 207 | 693 | - | - |
| HCM Lane V/C Ratio | 0.065 | - | - | 0.485 | 0.149 | 0.049 | - | - |
| HCM Control Delay (s) | 8.8 | - | - | 42.5 | 25.4 | 10.5 | - | - |
| HCM Lane LOS | A | - | - | E | D | B | - | - |
| HCM 95th %tile Q(veh) | 0.2 | - | - | 2.3 | 0.5 | 0.2 | - | - |

HCM 2010 TWSC
3: Baker Rd & Drive

Future A.M. Peak
1/13/2016 7:30 am

Intersection

| | |
|------------------|-----|
| Int Delay, s/veh | 0.1 |
|------------------|-----|

| Movement | EBL | EBR | NBL | NBT | SEB | SEB |
|--------------------------|------|------|------|------|------|------|
| Traffic Vol, veh/h | 0 | 0 | 0 | 295 | 864 | 0 |
| Future Vol, veh/h | 6 | 0 | 0 | 300 | 882 | 0 |
| Conflicting Peds. #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | | None | | None | | None |
| Storage Length | 75 | 0 | 75 | - | - | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 7 | 0 | 0 | 326 | 959 | 0 |

| Minor/Minor | Minor? | Major? | Major? | Minor? |
|----------------------|--------|--------|--------|--------|
| Conflicting Flow All | 1285 | 959 | 959 | 0 |
| Stage 1 | 959 | - | - | - |
| Stage 2 | 326 | - | - | - |
| Critical Hdwy | 6.42 | 6.22 | 4.12 | - |
| Critical Hdwy Stg 1 | 5.42 | - | - | - |
| Critical Hdwy Stg 2 | 5.42 | - | - | - |
| Follow-up Hdwy | 3.518 | 3.318 | 2.218 | - |
| Pot Cap-1 Maneuver | 182 | 312 | 717 | - |
| Stage 1 | 372 | - | - | - |
| Stage 2 | 731 | - | - | - |
| Platoon blocked, % | - | - | - | - |
| Mov Cap-1 Maneuver | 182 | 312 | 717 | - |
| Mov Cap-2 Maneuver | 295 | - | - | - |
| Stage 1 | 372 | - | - | - |
| Stage 2 | 731 | - | - | - |

| Approach | EB | NB | SB |
|----------------------|------|----|----|
| HCM Control Delay, s | 17.5 | 0 | 0 |
| HCM LOS | C | | |

| Minor Lane / Major Mvmt | NBL | NBT | EBL1 | EBL2 | SEB | SBR |
|-------------------------|-----|-----|-------|------|-----|-----|
| Capacity (veh/h) | 717 | - | 295 | - | - | - |
| HCM Lane V/C Ratio | - | - | 0.022 | - | - | - |
| HCM Control Delay (s) | 0 | - | 17.5 | 0 | - | - |
| HCM Lane LOS | A | - | C | A | - | - |
| HCM 95th %tile Q(veh) | 0 | - | 0.1 | - | - | - |

HCM 2010 TWSC
5: Baker Rd & Grand St

Future A.M. Peak
1/13/2016 7:30 am

Intersection

Int Delay, s/veh 6.4

| Movement | NBI | NBT | NBR | SBI | SBT | SBR | SEI | SEJ | SER | NWI | NWT | NWR |
|--------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Traffic Vol, veh/h | 9 | 278 | 8 | 30 | 816 | 1 | 1 | 4 | 34 | 14 | 3 | 52 |
| Future Vol, veh/h | 14 | 284 | 8 | 30 | 816 | 1 | 1 | 4 | 52 | 14 | 3 | 52 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized | | | None | | | None | | | None | | | None |
| Storage Length | 250 | - | - | 250 | - | - | - | - | - | - | - | - |
| Veh in Median Storage, # | | 0 | | | 0 | | | 0 | | | 0 | |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 69 | 70 | 80 | 82 | 69 | 75 | 75 | 83 | 69 | 67 | 90 | 60 |
| Heavy Vehicles, % | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 |
| Mvmt Flow | 20 | 406 | 10 | 37 | 1183 | 1 | 1 | 5 | 75 | 21 | 3 | 87 |

| Major/Minor | Major | | | Major? | | | Minor? | | | Minor | | |
|----------------------|-------|---|---|--------|---|---|--------|------|------|-------|------|------|
| Conflicting Flow All | 1184 | 0 | 0 | 416 | 0 | 0 | 1752 | 1712 | 1183 | 1748 | 1708 | 411 |
| Stage 1 | | | | | | | 1256 | 1256 | | 451 | 451 | |
| Stage 2 | | | | | | | 496 | 456 | | 1297 | 1257 | |
| Critical Hdwy | 4.2 | | | 4.2 | | | 7.2 | 6.6 | 6.3 | 7.2 | 6.6 | 6.3 |
| Critical Hdwy Stg 1 | | | | | | | 6.2 | 5.6 | | 6.2 | 5.6 | |
| Critical Hdwy Stg 2 | | | | | | | 6.2 | 5.6 | | 6.2 | 5.6 | |
| Follow-up Hdwy | 2.29 | | | 2.29 | | | 3.59 | 4.09 | 3.39 | 3.59 | 4.09 | 3.39 |
| Pot Cap-1 Maneuver | 562 | | | 1101 | | | 64 | 87 | 222 | 64 | 87 | 624 |
| Stage 1 | | | | | | | 202 | 234 | | 573 | 558 | |
| Stage 2 | | | | | | | 541 | 555 | | 191 | 234 | |
| Platoon blocked, % | | | | | | | | | | | | |
| Mov Cap-1 Maneuver | 562 | | | 1101 | | | 51 | 81 | 222 | 38 | 81 | 624 |
| Mov Cap-2 Maneuver | | | | | | | 51 | 81 | | 38 | 81 | |
| Stage 1 | | | | | | | 195 | 226 | | 553 | 538 | |
| Stage 2 | | | | | | | 446 | 535 | | 119 | 226 | |

| Approach | NB | SB | SE | NW |
|----------------------|-----|-----|------|-----|
| HCM Control Delay, s | 0.5 | 0.3 | 36.9 | 7.5 |
| HCM LOS | | | E | F |

| Minor Lane/Major Mvmt | NBI | NBT | NBR | NWI | SEI | SEJ | SBI | SBT | SBR |
|-----------------------|-------|-----|-----|------|-------|-------|-----|-----|-----|
| Capacity, (veh/h) | 562 | | | 152 | 192 | 1101 | | | |
| HCM Lane V/C Ratio | 0.036 | | | 0.73 | 0.425 | 0.033 | | | |
| HCM Control Delay (s) | 1.6 | | | 7.5 | 36.9 | 8.4 | | | |
| HCM Lane LOS | B | | | F | E | A | | | |
| HCM 95th %ile Q(veh) | 0.1 | | | 4.4 | 1.9 | 0.1 | | | |

HCM 2010 TWSC
7: Drive & Grand St

Future A.M. Peak
1/13/2016 7:30 am

| | |
|---------------------|-----|
| Intersection | |
| Int Delay, s/veh | 2.5 |

| Movement | SE1 | SER | NW1 | NW2 | NE1 | NER |
|--------------------------|------|------|------|------|------|------|
| Traffic Vol, veh/h | 39 | 0 | 0 | 13 | 0 | 0 |
| Future Vol, veh/h | 39 | 0 | 5 | 13 | 0 | 18 |
| Conflicting Peds. #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | None | | None | | None | |
| Storage Length | - | - | 75 | - | 0 | 0 |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 42 | 0 | 5 | 14 | 0 | 20 |

| Major/Minor | Major1 | Major2 | Minor1 | Minor2 |
|----------------------|--------|--------|--------|--------|
| Conflicting Flow All | 0 | 0 | 42 | 0 |
| Stage 1 | - | - | - | 42 |
| Stage 2 | - | - | - | 25 |
| Critical Hdwy | - | 4.42 | - | 6.42 |
| Critical Hdwy Stg 1 | - | - | - | 5.42 |
| Critical Hdwy Stg 2 | - | - | - | 5.42 |
| Follow-up Hdwy | - | 2.218 | - | 3.518 |
| Pol Cap-1 Maneuver | - | 1567 | - | 938 |
| Stage 1 | - | - | - | 980 |
| Stage 2 | - | - | - | 998 |
| Platoon blocked, % | - | - | - | - |
| Mov Cap-1 Maneuver | - | 1567 | - | 935 |
| Mov Cap-2 Maneuver | - | - | - | 935 |
| Stage 1 | - | - | - | 980 |
| Stage 2 | - | - | - | 995 |

| Approach | SE | NW | NE |
|----------------------|----|----|-----|
| HCM Control Delay, s | 0 | 2 | 8.6 |
| HCM LOS | | | A |

| Minor Lane/Major Mvmt | NE1 | NE2 | NW1 | NW2 | SE1 | SER |
|------------------------|-------|-------|-----|-----|-----|-----|
| Capacity (veh/h) | 1029 | 1567 | - | - | - | - |
| HCM Lane V/C Ratio | 0.019 | 0.003 | - | - | - | - |
| HCM Control Delay (s) | 0 | 8.6 | 7.3 | - | - | - |
| HCM Lane LOS | A | A | A | - | - | - |
| HCM 95th %tile Q (veh) | 0.1 | 0 | - | - | - | - |

HCM 2010 TWSC
3: Baker Rd & Drive

Future PM. Peak
1/13/2016 5:00 pm

Intersection

Int Delay, s/veh 0.1

| Movement | EBL | EBR | NBL | NBT | SEB | SBR |
|--------------------------|------|------|------|------|------|------|
| Traffic Vol, veh/h | 0 | 0 | 0 | 710 | 383 | 0 |
| Future Vol, veh/h | 7 | 0 | 0 | 733 | 387 | 0 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | | None | | None | | None |
| Storage Length | 75 | 0 | 75 | - | - | - |
| Veh in Median Storage, # | 0 | | | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 8 | 0 | 0 | 797 | 421 | 0 |

| Major/Minor | Minor1 | Minor2 | Major1 | Major2 |
|----------------------|--------|--------|--------|--------|
| Conflicting Flow All | 1218 | 421 | 421 | 0 |
| Stage 1 | 421 | | | |
| Stage 2 | 797 | | | |
| Critical Hdwy | 6.42 | 6.22 | 4.12 | |
| Critical Hdwy Stg 1 | 5.42 | | | |
| Critical Hdwy Stg 2 | 5.42 | | | |
| Follow-up Hdwy | 3.518 | 3.318 | 2.218 | |
| Pot Cap-1 Maneuver | 199 | 632 | 1138 | |
| Stage 1 | 662 | | | |
| Stage 2 | 444 | | | |
| Platoon blocked, % | | | | |
| Mov Cap-1 Maneuver | 199 | 632 | 1138 | |
| Mov Cap-2 Maneuver | 328 | | | |
| Stage 1 | 662 | | | |
| Stage 2 | 444 | | | |

| Approach | EB | NB | SB |
|----------------------|------|----|----|
| HCM Control Delay, s | 16.2 | 0 | 0 |
| HCM LOS | C | | |

| Minor Lane/Major Mvmt | NBL | NBT | EBL1 | EBL2 | SBL1 | SBR |
|-----------------------|------|-----|-------|------|------|-----|
| Capacity (veh/h) | 1138 | | 328 | | | |
| HCM Lane V/C Ratio | - | - | 0.023 | | | |
| HCM Control Delay (s) | 0 | | 16.2 | 0 | | |
| HCM Lane LOS | A | | C | A | | |
| HCM 95th %ile Q(veh) | 0 | | 0.1 | | | |

HCM 2010 TWSC
5: Baker Rd & Grand St

Future PM. Peak
1/13/2016 5:00 pm

Intersection

Int Delay, s/veh 3.8

| Movement | NBL | NBT | NBR | SBL | SBT | SBR | SEL | SET | SER | NWL | NWT | NWR |
|--------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Traffic Vol, veh/h | 45 | 648 | 17 | 28 | 360 | 2 | 2 | 3 | 17 | 6 | 9 | 41 |
| Future Vol, veh/h | 69 | 654 | 17 | 28 | 360 | 2 | 2 | 3 | 21 | 6 | 9 | 41 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized | - | - | None |
| Storage Length | 250 | - | - | 250 | - | - | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 69 | 70 | 80 | 82 | 69 | 75 | 75 | 83 | 69 | 67 | 90 | 60 |
| Heavy Vehicles, % | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 |
| Mvmt Flow | 100 | 934 | 21 | 34 | 522 | 3 | 3 | 4 | 30 | 9 | 10 | 68 |

| Major/Minor | Major1 | | | Major2 | | | Minor2 | | | Minor1 | | |
|----------------------|--------|---|---|--------|---|---|--------|------|------|--------|------|------|
| Conflicting Flow All | 524 | 0 | 0 | 956 | 0 | 0 | 1775 | 1747 | 523 | 1753 | 1738 | 945 |
| Stage 1 | - | - | - | - | - | - | 591 | 591 | - | 1145 | 1145 | - |
| Stage 2 | - | - | - | - | - | - | 1184 | 1156 | - | 608 | 593 | - |
| Critical Hdwy | 4.2 | - | - | 4.2 | - | - | 7.2 | 6.6 | 6.3 | 7.2 | 6.6 | 6.3 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | 6.2 | 5.6 | - | 6.2 | 5.6 | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | 6.2 | 5.6 | - | 6.2 | 5.6 | - |
| Follow-up Hdwy | 2.29 | - | - | 2.29 | - | - | 3.59 | 4.09 | 3.39 | 3.59 | 4.09 | 3.39 |
| Pot Cap-1 Maneuver | 1003 | - | - | 688 | - | - | 61 | 82 | 538 | 64 | 83 | 307 |
| Stage 1 | - | - | - | - | - | - | 480 | 482 | - | 234 | 265 | - |
| Stage 2 | - | - | - | - | - | - | 222 | 262 | - | 469 | 481 | - |
| Platoon blocked, % | - | - | - | - | - | - | - | - | - | - | - | - |
| Mov Cap-1 Maneuver | 1003 | - | - | 688 | - | - | 38 | 70 | 538 | 52 | 71 | 307 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | 38 | 70 | - | 52 | 71 | - |
| Stage 1 | - | - | - | - | - | - | 432 | 458 | - | 211 | 239 | - |
| Stage 2 | - | - | - | - | - | - | 149 | 236 | - | 417 | 457 | - |

| Approach | NB | SB | SE | NW |
|----------------------|-----|-----|------|----|
| HCM Control Delay, s | 0.9 | 0.6 | 26.2 | 50 |
| HCM LOS | | | D | F |

| Minor and Major Mvmt | NBL | NBT | NBR | NWL | SEL | SBL | SBT | SBR |
|-----------------------|------|-----|-----|-------|-------|------|-----|-----|
| Capacity (veh/h) | 1003 | - | - | 163 | 206 | 688 | - | - |
| HCM Lane V/C Ratio | 0.1 | - | - | 0.536 | 0.178 | 0.05 | - | - |
| HCM Control Delay (s) | 0 | - | - | 50 | 26.2 | 10.5 | - | - |
| HCM Lane LOS | A | - | - | F | D | B | - | - |
| HCM 95th %ile Q(veh) | 0.3 | - | - | 2.7 | 0.6 | 0.2 | - | - |

HCM 2010 TWSC
7: Drive & Grand St

Future PM. Peak
1/13/2016 5:00 pm

Intersection

Int Delay, s/veh 1.9

| Movement | SE1 | SE2 | NWL | NWT | NE1 | NE2 |
|--------------------------|------|------|------|------|------|------|
| Traffic Vol, veh/h | 22 | 0 | 0 | 56 | 0 | 0 |
| Future Vol, veh/h | 22 | 0 | 23 | 57 | 0 | 4 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | | None | | None | | None |
| Storage Length | - | - | 75 | - | 0 | 0 |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 24 | 0 | 25 | 62 | 0 | 4 |

Major/Minor

| | Major1 | Major2 | Minor1 | Minor2 |
|----------------------|--------|--------|--------|--------|
| Conflicting Flow All | 0 | 0 | 24 | 0 |
| Stage 1 | | | 24 | |
| Stage 2 | - | - | - | - |
| Critical Hdwy | - | - | 4.12 | - |
| Critical Hdwy Stg 1 | - | - | - | - |
| Critical Hdwy Stg 2 | - | - | - | - |
| Follow-up Hdwy | - | - | 2.218 | - |
| Pot Cap-1 Maneuver | - | - | 1591 | - |
| Stage 1 | - | - | - | - |
| Stage 2 | - | - | - | - |
| Platoon blocked, % | - | - | - | - |
| Mov Cap-1 Maneuver | - | - | 1591 | - |
| Mov Cap-2 Maneuver | - | - | - | - |
| Stage 1 | - | - | - | - |
| Stage 2 | - | - | - | - |

Approach

| | SE | NW | NE |
|----------------------|----|-----|-----|
| HCM Control Delay, s | 0 | 2.1 | 8.4 |
| HCM LOS | | | A |

Minor Lane/Major Mvmt

| | NE1/1 | NE1/2 | NWL | NWT | SE1 | SE2 |
|-----------------------|-------|-------|-------|-----|-----|-----|
| Capacity (veh/h) | - | 1052 | 1591 | - | - | - |
| HCM Lane V/C Ratio | - | 0.004 | 0.016 | - | - | - |
| HCM Control Delay (s) | 0 | 8.4 | 7.3 | - | - | - |
| HCM Lane LOS | A | A | A | - | - | - |
| HCM 95th %ile Q (veh) | 0 | 0 | 0 | - | - | - |

Crash and Road Data

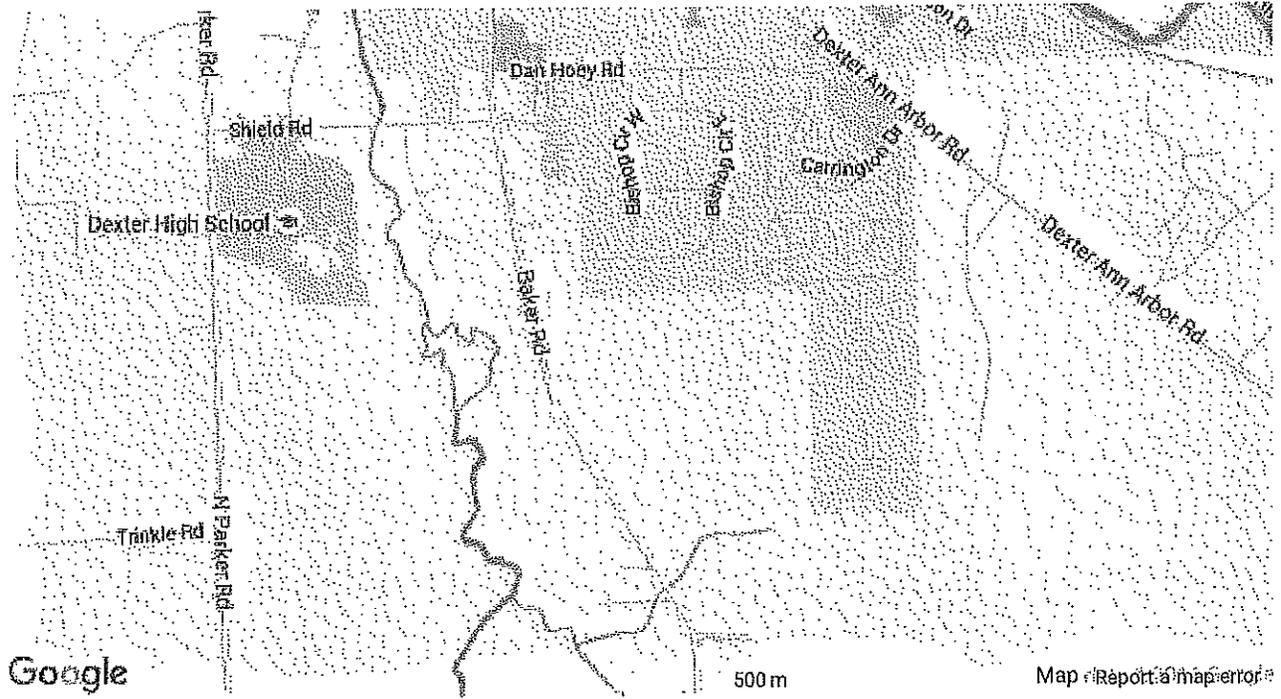
Road Segment Report

Baker Rd, (PR Number 1426608)

| | |
|--|--|
| From: | W I 94/Baker Ramp0.453 BMP |
| To: | Dexter Ann Arbor Rd3.110 EMP |
| FALINK ID: | 7837 |
| Community: | City of Dexter , Scio Township |
| County: | Washtenaw |
| Functional Class: | 16 - Urban Minor Arterial |
| Direction: | - |
| Length: | 2.657 miles |
| Number of Lanes: | 2 |
| Posted Speed: | 50 (source: TCO) |
| Route Classification: | Not a route |
| Annual Crash Average 2010-2014: | <u>24</u> |
| Traffic Volume (2013)*: | 12,400 (Observed AADT) |
| Pavement Type (2014): | Asphalt |
| Pavement Rating (2014): | Fair |
| Short Range (TIP) Projects: | (20687) Rehabilitate Roadway (21321) Road Enhancement |
| Long Range (RTP) Projects: | (2041) Center Left Turn Lane |

* AADT values are derived from Traffic Counts

Street View



Crash and Road Data

Intersection Overview

[← Return to Search](#)

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Baker Rd, (PR Number 1426608)

Date From 2010-2014

81005215

MILE POINT

2.277

CROSS PR

1445304

TRAFFIC SIGNAL?

No

5-YEAR RANK

7

CROSS ROAD

Shield Rd

CROSS MILE

0.639

YEARLY CRASH AVERAGE

2

81005068

MILE POINT

2.391

CROSS PR

1445305

TRAFFIC SIGNAL?

No

5-YEAR RANK

4

CROSS ROAD

Dan Hoey Rd

CROSS MILE

0.000

YEARLY CRASH AVERAGE

4