

AGENDA

Grand Haven Charter Township Planning Commission
Monday, February 5, 2018 – 7:00 p.m.

- I. Call to Order
- II. Roll Call
- III. Pledge to the Flag
- IV. Approval of the January 16, 2018 Meeting Minutes
- V. Correspondence
- VI. Brief Public Comments & Questions (Limited to 3 minutes)
- VII. New Business
 - A. Platted Lot Division – Dwyer
 - B. Presentation & Discussion – Robbins Centre Pointe PUD
- VIII. Reports
 - A. Attorney’s Report
 - B. Staff Report
 - C. Other
- IX. Extended Public Comments & Questions (Limited to 4 minutes)
- X. Adjournment

Note: Persons wishing to speak at public hearings, on agenda items, or extended comments, must fill out a “Speakers Form” located on the counter. Completed forms must be submitted to the Zoning Administrator prior to the meeting.

MEETING MINUTES
GRAND HAVEN CHARTER TOWNSHIP
PLANNING COMMISSION
JANUARY 16, 2018

I. CALL TO ORDER

Wilson called the meeting of the Grand Haven Charter Township Planning Commission to order at 7:00 p.m.

II. ROLL CALL

Members present: LaMourie, Taylor, Kieft, Chalifoux, Reenders, Wilson, Hesselsweet, and Wagenmaker

Members absent: Cousins

Also present: Community Development Director Fedewa, Attorney Bultje, and Assistant Zoning Administrator Hoisington

Without objection, Wilson instructed Fedewa to record the minutes.

III. PLEDGE TO THE FLAG

IV. APPROVAL OF MINUTES

Without objection, the minutes of the December 4, 2017 meeting were approved.

V. CORRESPONDENCE – None

VI. PUBLIC COMMENTS – None

VII. PUBLIC HEARING

A. Special Land Use – Outdoor Pond – Pushaw

Wilson opened the public hearing at 7:02pm.

Hoisington provided an overview through a memorandum dated January 8th.

The applicant, Tom Pushaw, was present and available to answer questions.

There being no comments, Wilson closed the hearing at 7:04pm.

VIII. OLD BUSINESS

A. Special Land Use – Outdoor Pond – Pushaw

The application was discussed by Commissioners and focused on:

- Inquired if a Soil Erosion and Sedimentation Control permit and/or floodplain permit was required.
 - Staff explained that two conditions have been included with the sample motion to approve. Applicant will have to provide a new Soil Erosion permit (*current permit has expired*), Additionally, the applicant will need to provide a DEQ permit or a Letter of No Authority stating a permit is not required.
- Questioned if a fence should be installed.
 - Barriers of some kind are required for pools under the state construction codes. However, ponds are not required to have the barriers because it has a 1:3 slope. It would be the discretion of the Planning Commission, but historically it has not required a fence around ponds.

Motion by Taylor, supported by LaMourie, to **conditionally approve** the Outdoor Pond Special Land Use application for 14766 Ammeraal Avenue, based on the application meeting applicable requirements and standards set forth by the Grand Haven Charter Township Zoning Ordinance. This motion is subject to, and incorporates, the following report and conditions:

1. Shall provide the Township with a copy of the Soil Erosion and Sedimentation Control permit prior to digging the pond.
2. Prior to construction the applicant must submit an MDEQ permit for the Outdoor Pond, or provide a Letter of No Authority if a permit is not required.

Which motion carried unanimously.

REPORT – PUSHAW OUTDOOR POND

1. This approval is based on the affirmative findings that each of the following Special Land Use standards has been fulfilled:
 - A. The proposed use is consistent with, and promotes the intent and purpose of this Ordinance.
 - B. The proposed use is of such location, size, density, and character as to be compatible with adjacent uses of land and the orderly development of the district in which situated and of adjacent districts.
 - C. The proposed use does not have a substantially detrimental effect upon, nor substantially impair the value of, neighborhood property.
 - D. The proposed use is reasonably compatible with the natural environment of the subject premises and adjacent premises.
 - E. The proposed use does not unduly interfere with provision of adequate light or air, nor overcrowd land or cause a severe concentration of population.
 - F. The proposed use does not interfere or unduly burden water supply facilities, sewage collection and disposal systems, park and recreational facilities, and other public services.

- G. The proposed use is such that traffic to, from, and on the premises and the assembly of persons relation to such use will not be hazardous, or inconvenient to the neighborhood, nor unduly conflict with the normal traffic of the neighborhood, considering, among other things: safe and convenient routes for pedestrian traffic, particularly of children, the relationship of the proposed use to main thoroughfares and to streets and intersections, and the general character and intensity of the existing and potential development of the neighborhood.
 - H. The proposed use is consistent with the health, safety, and welfare of the Township.
2. The application meets the site plan review standards of Section 23.06 of the Zoning Ordinance. Specifically, the Planning Commission finds as follows:
- A. The uses proposed will not adversely affect the public health, safety, or welfare. Uses and structures located on the site take into account topography, size of the property, the uses on adjoining property and the relationship and size of buildings to the site.
 - B. The site will be developed so as not to impede the normal and orderly development or improvement of surrounding property for uses permitted in this ordinance.
 - C. Safe, convenient, uncontested, and well defined vehicular and pedestrian circulation is provided for ingress/egress points and within the site. Drives, streets and other circulation routes are designed to promote safe and efficient traffic operations within the site and at ingress/egress points.
 - D. The arrangement of public or private vehicular and pedestrian connections to existing or planned streets in the area are planned to provide a safe and efficient circulation system for traffic within the township.
 - E. Removal or alterations of significant natural features are restricted to those areas which are reasonably necessary to develop the site in accordance with the requirements of this Ordinance. As appropriate, the Planning Commission has discretion to require that landscaping, buffers, and/or greenbelts be preserved and/or provided to ensure that proposed uses will be adequately buffered from one another and from surrounding public and private property.
 - F. Areas of natural drainage such as swales, wetlands, ponds, or swamps are protected and preserved insofar as practical in their natural state to provide areas for natural habitat, preserve drainage patterns and maintain the natural characteristics of the land.
 - G. The site plan provides reasonable visual and sound privacy for all dwelling units located therein and adjacent thereto. Landscaping shall be used, as appropriate, to accomplish these purposes.
 - H. All buildings and groups of buildings are arranged so as to permit necessary emergency vehicle access as requested by the fire department.
 - I. All streets and driveways are developed in accordance with the Ottawa County Road Commission specifications, as appropriate.
 - J. Appropriate measures have been taken to ensure that removal of surface waters will not adversely affect neighboring properties or the public storm drainage system. Provisions have been made to accommodate storm water, prevent erosion and the formation of dust.
 - K. Exterior lighting is arranged so that it is deflected away from adjacent properties and so it does not interfere with the vision of motorists along adjacent streets, and consists of sharp cut-off fixtures.
 - L. All loading and unloading areas and outside storage areas, including areas for the storage of trash, which face or are visible from residential districts or public streets, are screened.
 - M. Entrances and exits are provided at appropriate locations so as to maximize the convenience and safety for persons entering or leaving the site.

- N. The site plans conforms to all applicable requirements of County, State, Federal, and Township statutes and ordinances.
- O. The general purposes and spirit of this Ordinance and the Master Plan of the Township are maintained.

IX. NEW BUSINESS

A. Discussion – Future Land Use Map

Fedewa provided an overview through a memorandum dated January 11th.

Discussions by the Commissioners included:

- Requested an explanation of the rezoning process, and how that is impacted by the Future Land Use (FLU) Map.
 - Rezoning application relies upon the FLU Map to determine if the proposed rezoning is consistent with the goals and objectives of the master plan and zoning ordinance. Ignoring this Map and approving a rezoning that is not consistent will be problematic in the future if other rezoning applications should be denied.
 - Per Attorney Bultje, the Michigan Planning Enabling Act has certain exceptions that allow revisions to the master plan and FLU Map, but changing the designation of specific properties on the Map is not allowed. That process requires the 42-day comment period and subsequent public hearings, in addition to the variety of mailings.
- Concerns were raised that the Map is taking away property rights.
 - Per Attorney Bultje, the zoning district and FLU Map establish the property rights, and at no time do these take away property rights. The zoning district lists the allowable uses, and the Map identifies the additional uses that may be allowed if rezoned. Although these may not be the uses desired by a specific person, they establish the property rights and are not equivalent to a takings.
- Some properties owners choose to buy large tracts of land for future investment purposes. Changes to the FLU Map can cause significant hardship for these investments because it limits their ability to split and develop.
 - If property owners have such investments and the key to their success is reliant upon the FLU Map it is important for the owner to stay apprised of potential changes to the Map in order to protect the asset.
- Expressed concern that residents are not made aware of the changes to the Map, so they do not have an opportunity to protect their assets.
 - Per Fedewa, although staff has complied with the law for noticing changes to the Map—more can always be done.

- Buying into a zoned community includes certain assurances and limitations to property. One property owners desire and intentions may not align with an adjacent property owner. Thus, the zoning ordinance and FLU Map dictate the outcome because appointed officials without a financial interest made a long-term decision as to how that area should be developed, or in some cases remain undeveloped.
- Existing infrastructure should be used as a guide for development. Their existence creates a natural development pattern.
- Questioned why so much of the FLU Map is shown as Agricultural Preservation.
 - Per Fedewa, there are three main reasons. First, historically that has been the rural area of the Township and the Map ensures that character will be maintained. Second, there is a thriving agricultural industry in the Township and it is important to support that use by protecting the land in rural areas. By not allowing large tracts to be subdivided the Township is ensuring there is additional land available for expansion. Third, this designation is a “safe” choice. Agricultural land is easily converted to another use. Whereas, if areas were master-planned for a more intense use it is extremely difficult and complicated to reverse development. Infrastructure, principal buildings, occupants, businesses, etc. have since located on the land. If the Township later realizes that was an inappropriate location for the development it cannot be undone. By master-planning for Agricultural Preservation the Township is protecting that asset until if/when it is ripe for development.
- Fedewa explained that anticipated changes to the zoning ordinance will likely result in the need to revise the Map in late-2018. It was then requested a roll-call be done to determine where each Commissioner stands on the question—do you want to begin the process of revising the Map today?
 - Ayes – Wilson, Wagenmaker, Reenders
 - Nays – Taylor, LaMourie, Hesselsweet, Chalifoux, Kieft

Based on a 5-3 vote to not begin the process of revising the Map, this discussion was closed.

X. REPORTS

A. Attorney Report – None

B. Staff Report

- The next Zoning Ordinance Update Committee meeting is scheduled for Thursday, February 1st @ 6pm in the Main Conference Room.
- The Robbins Centre Pointe PUD application will need a Joint-Planning Commission meeting between the City and Township. Inquired if Tuesday,

February 13th @ 6pm at City Hall would be acceptable. The majority of Commissioners agreed upon that date. Fedewa will confirm the scheduling.

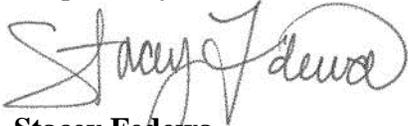
C. Other – None

XI. EXTENDED PUBLIC COMMENTS – None

XII. ADJOURNMENT

Without objection, the meeting adjourned at 8:35 p.m.

Respectfully submitted,

A handwritten signature in black ink that reads "Stacey Fedewa". The signature is written in a cursive, flowing style.

Stacey Fedewa
Acting Recording Secretary



GRAND HAVEN CHARTER TOWNSHIP

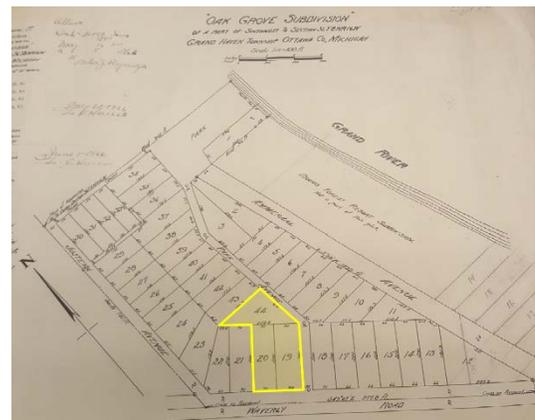
Community Development Memo

DATE: January 31, 2018
 TO: Planning Commission
 FROM: Stacey Fedewa, Community Development Director
 RE: Platted Lot Division – Dwyer

PROPERTY DETAILS			
Property Address	Parcel Number	Parcel Size	Application Type
15169 Mercury	70-03-36-301-023	1.02 Acres	Platted Lot Division
Existing Zoning	Existing Land Use	Existing Infrastructure	Existing Site Improvements
R-1	Single Family Residential	Paved Roadway Municipal Water Private Septic Tank	Single Family Dwelling 2 Accessory Buildings
Master-Planned Zoning	Surrounding Zoning & Land Uses		
	Direction	Zoning	Land Use
Medium Density Residential	N	R-1	Single Family
	S	R-2	Single Family
	E	R-1	Single Family
	W	R-1	Single Family

BACKGROUND

There are two types of land divisions— unplatted and platted. All unplatted (*i.e., metes and bounds legal description*) land divisions are processed by the Township Assessor, and must meet the requirements of the Land Division Act. A platted lot division occurs when a subdivision has already been created, and a property owner wants to further subdivide a lot.



Michigan Dublier LLC (*managed by David Dwyer*) owns the subject property. The owner purchased the property through a tax sale in August 2011.

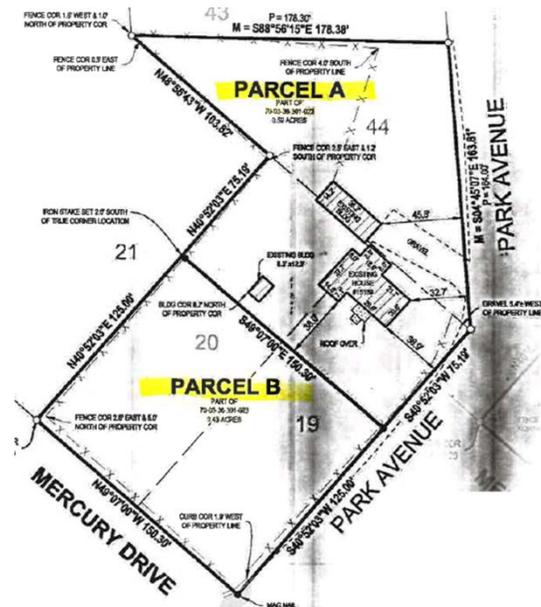
The property is comprised of Lots 19, 20, and 44, in the Oak Grove Subdivision. This subdivision was platted in 1926, and at some point over the last 92 years these three lots were combined into one parcel.

The applicant is proposing to re-divide these platted lots into two child parcels. Only two child parcels are possible because new lots have to conform with current zoning requirements. They cannot be reverted back to their original sizes because two of them cannot meet the 15,000 sqft minimum lot area.

The two child parcels are proposed to be:

- A. 25,700 sqft or 0.59-acres
- B. 18,730 sqft or 0.43-acres

Staff notes, the owner will demolish the existing house and accessory buildings, which will eliminate some non-conforming setbacks that would have been created with these structures.



SUBDIVISION CONTROL ORDINANCE

Platted lot divisions are governed by Section 4.10 of the Township’s Subdivision Control Ordinance, which includes eight requirements:

No.	Regulation	Requirement	Compliant?
1	Conform to Zoning	Must meet all design requirements for R-1	Yes
2	Lot Lines	Must avoid oddly shaped lots	Yes
3	Depth Related to Width	1:4 ratio limitation	Yes

4	Uninhabitable Areas	Cannot create unbuildable lots due to floodplain, wetland, critical dune, etc.	N/A
5	Outlot	If present, must describe restrictions	N/A
6	Back-Up Lots	Lots cannot front on intense land uses; if backed-up to said uses a landscape screen is required	N/A
7	Lot Division	Application process followed	Yes
8	Frontage	Must front on public roads	Yes

SAMPLE MOTIONS

If the Planning Commission finds the application meets the required standards, the following motion can be offered:

Motion to recommend the Township Board **conditionally approve** the Platted Lot Division for 15169 Mercury Drive with current Parcel No. 70-03-36-301-023, based on the application meeting the requirements and standards set forth by the Grand Haven Charter Township Subdivision Control Ordinance and Zoning Ordinance. Approval is conditioned upon:

1. Parcel B shall only have driveway access on Park Avenue. No driveways are permitted on Mercury Drive.
2. All residential dwellings shall connect to municipal water.
3. Existing structures shall be demolished within 1-year.

If the Planning Commission finds the application does not meet the required standards, the following motion can be offered:

Motion to recommend the Township Board **deny** the Platted Lot Division application, and direct staff to draft a formal motion and report for those discussion points which will be reflected in the meeting minutes. This will be reviewed and considered for adoption at the next meeting.

If the Planning Commission finds the applicant must make revisions, the following motion can be offered:

Motion to **table** the Platted Lot Division application, and direct the applicant to make the following revisions:

1. *List the revisions.*

Please contact me prior to the meeting with questions or concerns.



GRAND HAVEN CHARTER TOWNSHIP

PLATTED LOT DIVISION APPLICATION

Application Type	Fee	Escrow*
Platted Lot Division	\$125	\$300

Applicant Information

Name (as listed on Deed) Michigan Dublier, LLC
 Phone 720-422-4028 Fax _____
 Address PO Box 11, Rothbury, MI 49452
 Email Address dwyer.david@gmail.com

Owner Information (If different from applicant)

Name David Dwyer
 Phone 720-422-4028 Fax _____
 Address 15169 Mercury Drive, Grand Haven, MI 49417

Property Information

Address/Location 15169 Mercury Drive, Grand Haven, MI 49417
 Current Zoning Residential Master-Planned Zoning _____
 Parent Parcel Number 70 - 03 - 36 - 301 - 023 Size (acres) 1.02 acres
 Legal Description of Parent Parcel (attach extra sheets if needed) _____
Lots 19, 20 and 44, Oak Grove Subdivision, Grand Haven Township, Ottawa County, Michigan, as recorded in Liber 8 of Plats, Page 18.

Other Information

Total Number of New Parcels Requested (parent parcel + splits) One (1) parent parcel into two (2 lots) split
 Intended Use of Property (residential, commercial, etc.) Residential

Each Parcel Created by this Division will be provided with Public Access as follows (check one):

- Each Parcel will have 125' or more Feet of Frontage on an existing public roadway
 Each Parcel will have _____ Feet of Frontage on a new public roadway

Proposed Road Name _____
 Legal Description of Proposed Access by a New Roadway (attach extra sheets if needed) _____

Will any of the New Parcel(s) be Serviced by Municipal Water? Yes

- Yes, the Service Line(s) will be Located (indicate on map) Parcel A (existing on map) Parcel B (tbd)
 No

Legal Description for Each Proposed New Parcel (attach extra sheets if needed) See attachment;
 last page for complete legal description

RE: Grand Haven Charter Township - Request for Land Division

5. A. Required Information

- 1) Boundaries (as of March 31, 1997), and
See Oak Grove Subdivision, Diagram 1
- 2) All previous divisions made after March 31, 1997, indicated when made or none),
None
- 3) The proposed division(s):

Divide the parcel below and build/sell lots for two single family homes.

Divide parcel 70-03—36-301-023 at 15169 Mercury Drive, Grand Haven in Charter township into two (2) parcels:

1. **Parcel B: 150' x 125' lot, with 150' along Mercury Drive and 125' along Park Avenue**
2. **Parcel A: Remaining parcel**

- 4) Dimensions of the proposed divisions, including area and square footage (excluding any ingress/egress right of way easements),

Parcel A:
N40°52'03"E = 75.19'
N48°56'43"W = 103.82'
S88°56'15"E = 178.38'
S04°45'07"E = 163.81'
S40°52'03"W = 75.19'
S49°07'00"W = 150.30'
Area = .59 acres, Sqf = 25,700'

Parcel B:
N40°52'03"E = 125.00'
S49°07'00"E = 150.30'
S40°52'03"W = 125.00'
N49°07'00"W = 150.30'
Area = .43, Sqf = 18,730'

- 5) Existing and proposed road/easements rights-of-way, and
See Nederveld drawing, dated 10-11-2017
- 6) Any existing improvements (buildings, pools, sheds, etc.) square footage (excluding
Distance of buildings from lot lines must show on map
See Nederveld drawing dated 10-11-2017
* Upon land division approval, the existing building, shed, etc. at 15169 Mercury Drive will be torn-down and removed. See Anchor Excavating quote (document #6b).
- 7) Legal description of all parcels
See Nederveld drawing dated 10-11-2017

Ex 07 26
07 27 1

DEDICATION

KNOW ALL MEN BY THESE PRESENTS,

That we Sidney Sustema and Adriana P. Sustema his wife as proprietors have caused the land embraced in the annexed plat to be surveyed, laid out, and platted, to be known as Oak Grove Subdivision as a part of Southwest 1/4 Section 36 T20N16W Grand Haven Township, Ottawa Co., Michigan and that the streets and alleys as shown on said plat are hereby dedicated to the use of the public, and the Park is dedicated to the use of all owners.

Signed and Sealed in Presence of

Sidney Sustema (L. S.)
Adriana Poluskova (L. S.)
Orrie J. Sluiter (L. S.)
Carl T. Bowen (L. S.)

STATE OF MICHIGAN ss.
County of OTTAWA

On this 15th day of May 1926 before me, a Notary public in and for said county, personally came the above named Sidney Sustema and Adriana P. Sustema known to me to be the persons who executed the above dedication and acknowledged the same to be their free act and deed.

Carl T. Bowen
Notary Public OTTAWA Co.
My commission expires Nov. 19, 1926

DESCRIPTION OF LAND PLATTED

The land embraced in the annexed plat of Oak Grove Subdivision is described as beginning at the West 1/4 Corner of Section 36 T20N16W running thence South 80 ft., thence S40°07' 07" E 278 ft., thence N48°00' 53" E 33 ft., thence N15°16' 12" E 123 ft., thence East 306 ft., thence North 176.5 ft., thence West 302 ft., to the place of beginning. All measurements are in feet and decimals thereof.

SURVEYOR'S CERTIFICATE

I hereby certify that the plat heron delineated is a correct one, and that permanent monuments consisting of one-inch by fifteen-inch gas pipe set in a concrete base four inches in diameter and 43 inches in depth have been planted at points marked thus \odot on thereon shown at all angles in the boundaries of the land platted, and at all intersections of streets or streets and alleys.

Carl T. Bowen
Registered Civil Engineer
This plat was approved by the Township Board of the Township of Grand Haven at a meeting held May 21, 1926

Robert Schell
Township Clerk
This plat was approved on the 24th day of May 1926
James J. Zwickel
Judge of Probate
William Wicks
Clerk
John H. Don Herder
County Treasurer

COUNTY TREASURER'S CERTIFICATE

Office of the County Treasurer OTTAWA County
I hereby certify, that there are no tax liens or titles held by the State on the lands described herein, and that there are no tax liens or titles held by individuals on said lands, for the five years preceding the 15th day of May 1926, and that the taxes for said period of five years are paid, as shown by the records of this office.

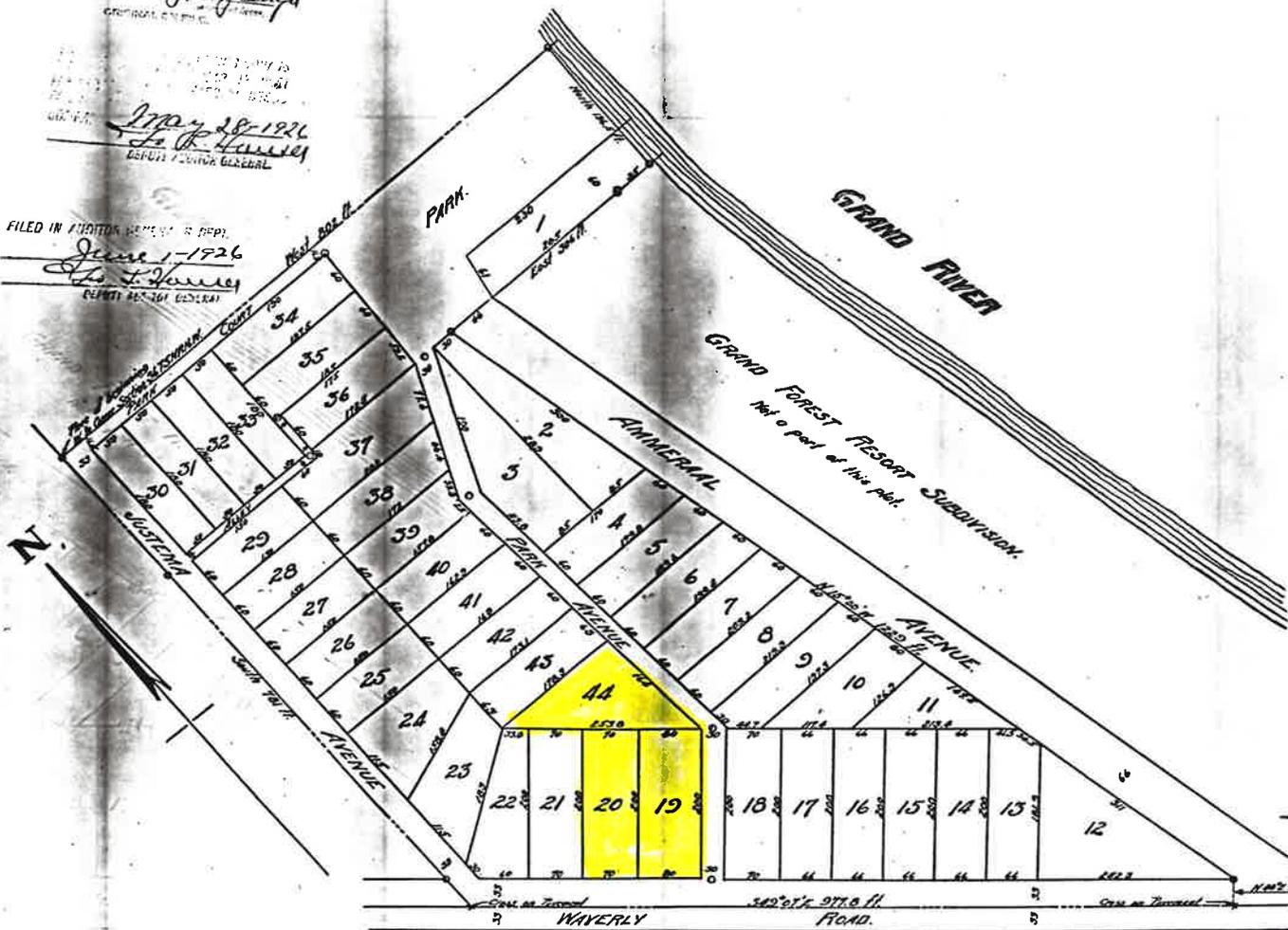
John H. Don Herder
County Treasurer

Part of Oak Grove Subdivision
Platted May 1-1926
By Carl T. Bowen
Notary Public
Ottawa Co., Michigan

FILED IN REGISTERED RECORDS

June 1-1926
John T. Harvey
Deputy Notary General

OAK GROVE SUBDIVISION
OF A PART OF SOUTHWEST 1/4 SECTION 36 T20N16W.
GRAND HAVEN TOWNSHIP OTTAWA CO., MICHIGAN
Scale 1 in = 100 ft.



CERTIFICATE AS TO STATE TRUNK LINES ON FEDERAL AIDED ROADS.
We hereby certify that said plat does not appear to include land located on a State Trunk Line or a Federal Aided Road.

James J. Zwickel
Judge of Probate
William Wicks
Clerk
John H. Don Herder
County Treasurer

Note:
Lot No. 1 Extends to the waters edge.
The Park Extends to the waters edge.

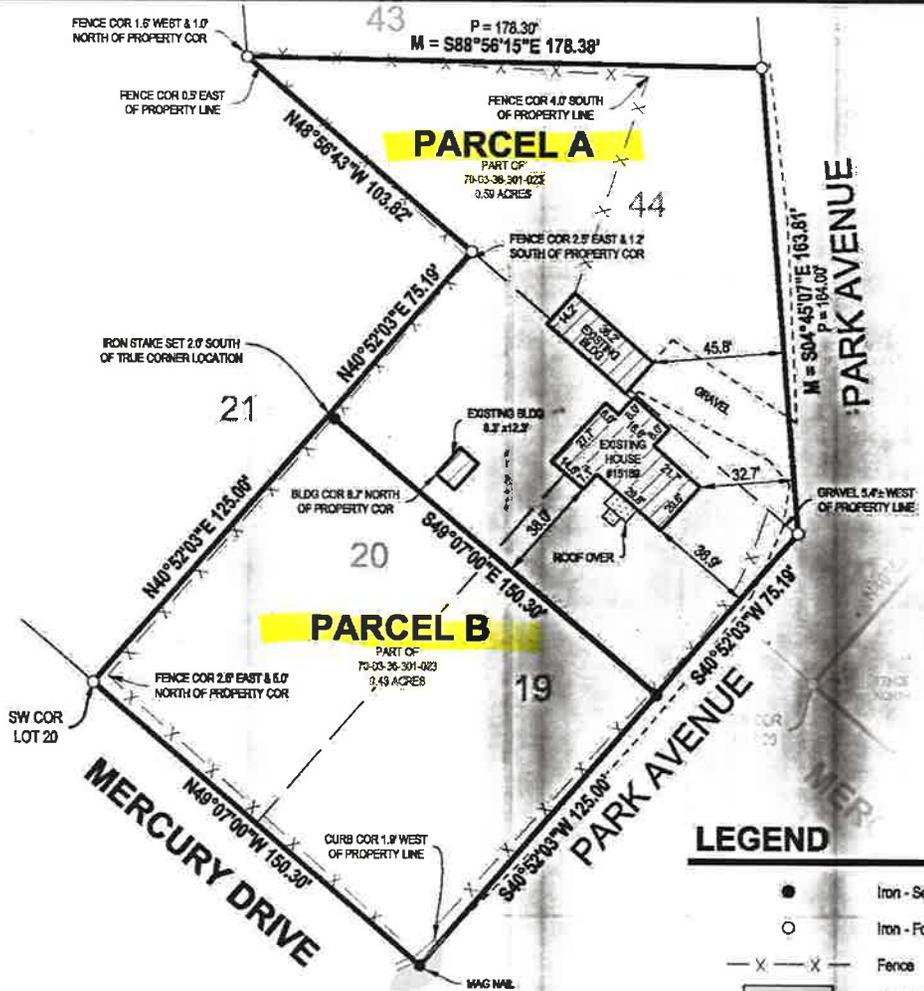
Examined and Approved
May 28-1926
John T. Harvey
Deputy Auditor General

AD Boundaries AS OF MARCH 31, 1997

22696

(2) None — All previous divisions made
after March 31, 1997

(3) Proposed Division
 Also used for (5), (6), and (7)



LEGEND

- Iron - Set
- Iron - Found
- X - X - Fence
- ▒ Asphalt
- ▒ Concrete
- ▒ Building

We hereby certify that we have examined the premises herein described, that the improvements are located entirely thereon as shown and that they do not encroach except as shown hereon. This survey was made from the legal description shown above. The description should be compared with the Abstract of Title or Title Policy for accuracy, easements and exceptions.

DESCRIPTIONS

Parcel A Description: Part of Lots 19, 20 & 44 Oak Grove Subdivision as recorded in Liber 8 of Plats, Page 18, Ottawa County Records, Section 36, Town 8 North, Range 16 West, Grand Haven Township, Ottawa County, Michigan, described as: Commencing at the Southwest corner of said Lot 20; thence N40°52'03"E 125.00 feet along the Westerly line of said Lot 20 to the Point of Beginning; thence continuing N40°52'03"E 75.19 feet along said Westerly line; thence N48°56'43"W 103.82 feet along the Southwesterly line of said Lot 44; thence S88°56'15"E 178.38 feet (previously recorded as 178.30 feet) along the Northerly line of said Lot 44; thence S04°45'07"E 163.81 feet (platted as 164.00 feet); thence S40°52'03"W 75.19 feet (the 2 previous calls being along the Westerly right-of-way line for Park Avenue); thence N49°07'00"W 150.30 feet to the Point of Beginning. Contains 0.59 acres. Subject to easements, restrictions and rights-of-way of record.

Parcel B Description: Part of Lots 19, 20 & 44 Oak Grove Subdivision as recorded in Liber 8 of Plats, Page 18, Ottawa County Records, Section 36, Town 8 North, Range 16 West, Grand Haven Township, Ottawa County, Michigan, described as: Beginning at the Southwest corner of Lot 20; thence N40°52'03"E 125.00 feet along the Westerly line of said Lot 20; thence S49°07'00"E 150.30 feet; thence S40°52'03"W 125.00 feet along the Westerly right-of-way line for Park Street; thence N49°07'00"W 150.30 feet along the Northeasterly right-of-way line for Mercury Drive to the Point of Beginning. Contains 0.43 acres. Subject to easements, restrictions and rights-of-way of record.

By: *Scott A. Hendges*
 Scott A. Hendges Licensed Professional Surveyor No. 47853
 SCALE: 1" = 50'

STATE OF MICHIGAN
 SCOTT A. HENDGES
 PROFESSIONAL SURVEYOR
 NO. 47853

Dave Dwyer
 15189 Mercury Drive
 Grand Haven, MI 49417

15189 Mercury Drive

DRAWN BY: HM
 REV. BY:
 REV.:

DATE: 10-11-2017
 REV. DATE:

PRJ #: 17201731DSC
 1 OF 1

NEDERVELD
 www.nederveld.com • 800.222.1868
 Holland
 347 Hoover Blvd.
 Holland, MI 49423
 Ann Arbor, Chicago, Columbus, Grand Rapids, Indianapolis, St. Louis

(4) Dimensions of proposed Division

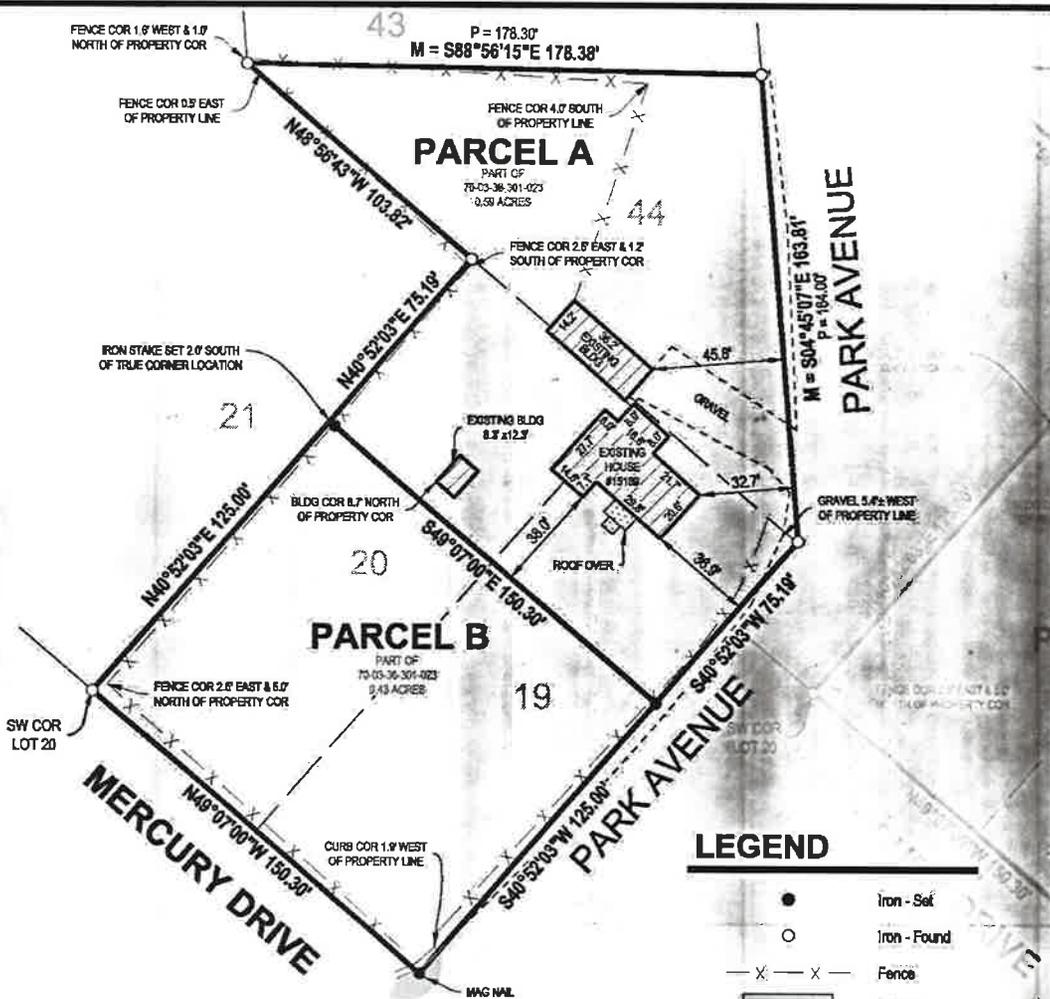
(A) Parcel A: $N 40^{\circ} 52' 03'' E = 75.19'$
 $N 48^{\circ} 56' 43'' W = 103.82'$
 $S 88^{\circ} 56' 15'' E = 178.38'$
 $S 04^{\circ} 45' 07'' E = 163.81'$
 $S 40^{\circ} 52' 03'' W = 75.19'$
 $S 49^{\circ} 07' 00'' W = 150.30'$

Area = .59 Acres, SqF = 25,700'

(B) Parcel B: $N 40^{\circ} 52' 03'' E = 125.00'$
 $S 49^{\circ} 07' 00'' E = 150.30'$
 $S 40^{\circ} 52' 03'' W = 125.00'$
 $N 49^{\circ} 07' 00'' W = 150.30'$

Area = .43 Acres, SqF = 18,730'

(5) Existing/Proposed Roads/Easements
 (6) Any Existing Buildings
 (7) Legal descriptions of All Parcels



DESCRIPTIONS

Parcel A Description: Part of Lots 19, 20 & 44 Oak Grove Subdivision as recorded in Liber 8 of Plats, Page 18, Ottawa County Records, Section 36, Town 8 North, Range 16 West, Grand Haven Township, Ottawa County, Michigan, described as: Commencing at the Southwest corner of said Lot 20; thence N40°52'03"E 125.00 feet along the Westerly line of said Lot 20 to the Point of Beginning; thence continuing N40°52'03"E 75.19 feet along said Westerly line; thence N48°56'43"W 103.82 feet along the Southwesterly line of said Lot 44; thence S88°56'15"E 178.38 feet (previously recorded as 178.30 feet) along the Northerly line of said Lot 44; thence S04°45'07"E 163.81 feet (platted as 164.00 feet); thence S40°52'03"W 75.19 feet (the 2 previous calls being along the Westerly right-of-way line for Park Avenue); thence N49°07'00"W 150.30 feet to the Point of Beginning. Contains 0.59 acres. Subject to easements, restrictions and rights-of-way of record.

Parcel B Description: Part of Lots 19, 20 & 44 Oak Grove Subdivision as recorded in Liber 8 of Plats, Page 18, Ottawa County Records, Section 36, Town 8 North, Range 16 West, Grand Haven Township, Ottawa County, Michigan, described as: Beginning at the Southwest corner of Lot 20; thence N40°52'03"E 125.00 feet along the Westerly line of said Lot 20; thence S49°07'00"E 150.30 feet; thence S40°52'03"W 125.00 feet along the Westerly right-of-way line for Park Street; thence N49°07'00"W 150.30 feet along the Northeasterly right-of-way line for Mercury Drive to the Point of Beginning. Contains 0.43 acres. Subject to easements, restrictions and rights-of-way of record.

LEGEND

- Iron - Set
- Iron - Found
- X - X - Fence
- ▒ Asphalt
- ▒ Concrete
- ▒ Building

By: *Scott A. Hendges*
 Scott A. Hendges Licensed Professional Surveyor No. 47853
 SCALE: 1" = 50' 0" 25' 50'



We hereby certify that we have examined the premises herein described, that the improvements are located entirely thereon as shown and that they do not encroach except as shown hereon. This survey was made from the legal description shown above. The description should be compared with the Abstract of Title or Title Policy for accuracy, easements and exceptions.

Dave Dwyer 15169 Mercury Drive Grand Haven, MI 49417		 www.nederveld.com • 800.222.1968 Holland 347 Hoover Blvd. Holland, MI 49423 Ann Arbor, Chicago, Columbus, Grand Rapids, Indianapolis, St. Louis
15169 Mercury Drive		
DRAWN BY: HM	DATE: 10-11-2017	PRJ #: 17201731DSC
REV. BY:	REV. DATE:	1 OF 1

ANCHOR EXCAVATING LLC

16101 Delta View Dr.
Grand Haven MI 49417

(6b) Existing Improvements
Estimate

Estimate #	Date
239	11/5/2017

Dave Dwyer



Phone #	6166385380	Terms	Project Location
E-mail	lukeolechnowicz@gmail.com	Est. Exp. 60 Days	15169 Mercury Dr.

Description	Qty	Rate	Total
Demo entire home and remove all concrete foundation. Construction debris will be hauled to a landfill for disposal. concrete will be hauled off site for recycling.		4,800.00	4,800.00

This is an estimate on the goods and services named. Pricing is based on best judgment prior to work beginning. Price monitoring will occur during work being performed. The client will be updated throughout the job on schedule and budget items. If more funds are required to continue a project, the contractor and client will come to an agreement on new terms at that time.

Total	\$4,800.00
Thank you for using Anchor Excavating!	



GRAND HAVEN CHARTER TOWNSHIP

Community Development Memo

DATE: February 1, 2018

TO: Planning Commission

FROM: Stacey Fedewa, Community Development Director

RE: Commercial PUD – Robbins Centre Pointe – Presentation & Discussion

BACKGROUND

In October 2015, Robbins Road Real Estate LLC purchased the 7-acres of land in the Township at 17200 Robbins Road (*i.e.*, the “VandenBerg property”) along with the small barbershop parcel, which is attached to one of the buildings at 17200. In early-January 2018, the developers signed a purchase agreement to buy the Pizza Hut property. Altogether, this has resulted in approximately 8-acres of land dedicated to the proposed development.

This property is subject to the Joint Robbins Road Corridor Plan between the City and Township. The Plan calls for a joint meeting between the two planning commissions for new development. This joint meeting is scheduled for February 13th @ 6pm in City Hall. The purpose of this meeting is to provide the Township Planning Commission with an opportunity to hear a presentation by the development team, review the plans, and partake in a discussion.

The timeline for this development is important because part of the purchase agreement is to relocate Pizza Hut into the new multi-tenant retail building by December 31st. Failure to do so will result in stiff financial penalties from the franchise. In order to meet that goal, the development team needs to break ground April 1st.

PROPOSED PROJECT DESCRIPTION

Phase 1

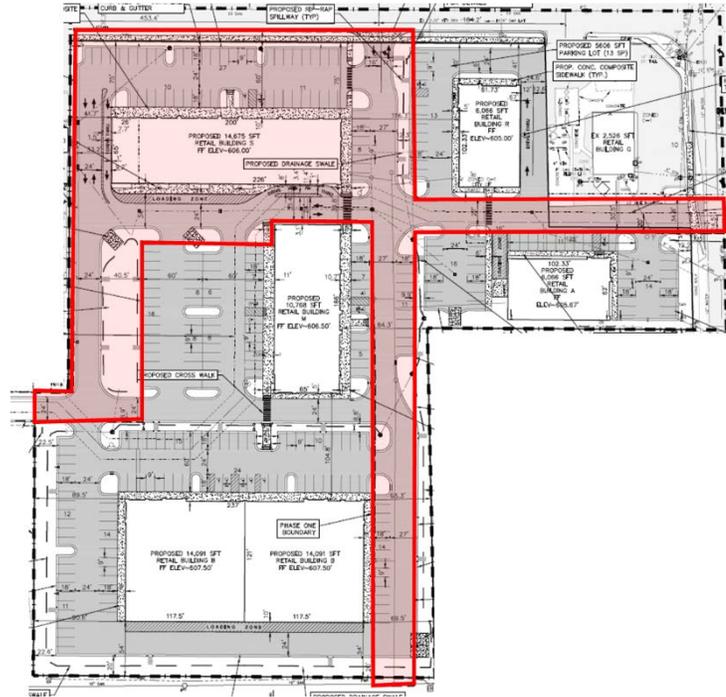
Phase 1 for this development was the gas station at the corner of Robbins Road and 172nd Avenue. This was approved as a Special Land Use in April 2017. Although it was approved under a separate application the developer is requesting it be included in the PUD for rezoning purposes and continuity.

This phase did not require a joint meeting with the Planning Commissions because the only change impacting the Corridor Plan was closing one curb-cut and reshaping another. These two actions were goals set forth by the Corridor Plan, so upon review of the project the City Planner decided a joint meeting was not needed.

Phase 2

Phase 2 will consist of:

- The major portions of the underground work with utilities.
- Building the large swale for stormwater management via infiltration.
- Reconstructing the two main entrances.
- Closing the continuous curb-cut on Robbins Road.
- Constructing a nearly 15,000 sqft multi-tenant retail building, which would include Pizza Hut as an end-anchor.



Future Phases

Development of future phases will depend on market demand to determine the order and sequencing of the remaining buildings:

- | | | |
|--------------------------------|--------------------|------------|
| • Big box retailer | 20,000 – 30,000 sf | Building B |
| • Automotive-related retailer | 7,000 sf | Building A |
| • Multi-tenant retail building | 11,000 sf | Building M |
| • Restaurant – full service | 7,000 sf | Building R |

PROPOSED PROCESS FOR FUTURE PHASES

Staff is proposing a unique way to address future phases for this development. Timing is what prompted this unique solution. Future tenants have not been identified. When tenants are found, they need to move quickly because “time is money,” and in the best of circumstances a Major PUD Amendment takes a minimum of 78-days.

As you can imagine, that is a daunting timeframe for a new business to absorb. As well as the development team that would need to go through that process approximately 4 times, in addition to the original PUD approval.

If that timeframe is extrapolated for this project there would be approximately 450-days dedicated to staff review, public hearings, Planning Commission and Board meetings. And keep in mind—that is best case scenario. In all likelihood, it would be significantly longer.

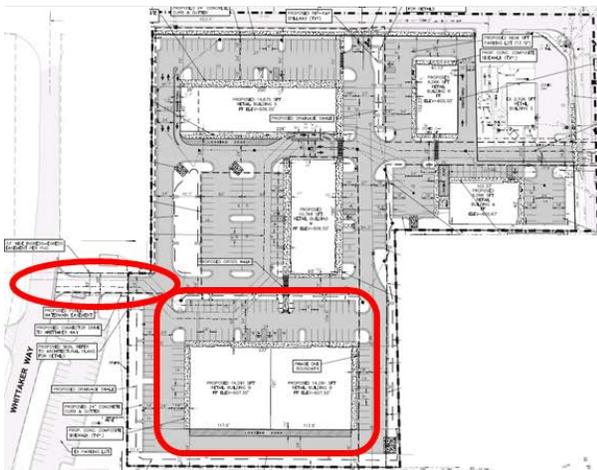
As such, staff is proposing a unique way to address the future phases. Within the Motion and Report of Findings the Township would indicate the overall project, design, and concept are approved; and that **future phases are only subject to Site Plan Review with the Planning Commission**.

Approaching the development in this fashion would reduce the 450-days down to 220-days. That is a **51% savings in time**.

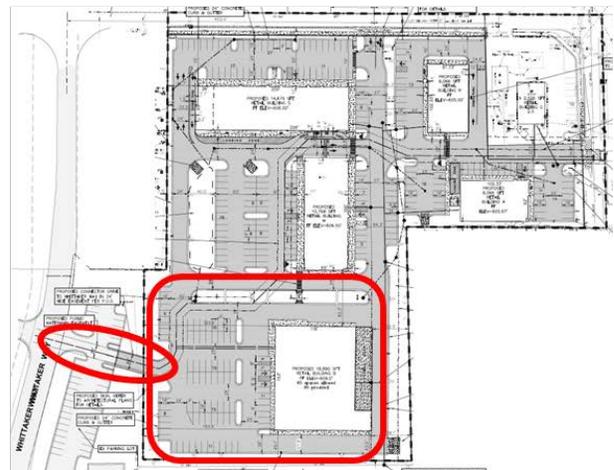
Option A vs. Option B

Another new concept being proposed by staff is an Option A and an Option B site plan. The reason for this is predominately due to the uncertainty of which big box retailer will locate on the site. Based on conversations the development team has had with some big box stores there are basically two layouts that would work.

Option A



Option B



In addition, you’ll notice a difference in access through the Health Pointe site onto Whittaker Way. The desired version is Option A, which would include an amendment to the Health Pointe PUD to shift the point of access. For now, Health Pointe is only focused on getting their project operational. At a later date, they have indicated their willingness to discuss an access management adjustment.

Thus, Option B is the alternative layout for the big box retailer and access to Whittaker Way. Staff has reviewed both sets of drawings and confirmed they comply with the zoning ordinance (*with the exceptions of the departures requested by the developer*).

Similar to the proposal for future phases, staff is recommending the Motion and Report of Findings would include an avenue for **staff to administratively approve a conversion to Option B** if that becomes necessary; and follow that up with an email to the Board and Planning Commission notifying you of the conversion.

ANTICIPATED DEPARTURE REQUESTS

Staff believes this is a good opportunity to review the anticipated departure requests. This will provide valuable feedback to the development team, and give staff a better understanding of the Commissions position on each item. That will enable the proposed Report of Findings (*that will be presented at the public hearing*) to include the departures. Doing so, should avoid the need to adopt a formal motion and report of findings at a separate meeting, which has been the current practice for large-scale developments.

Section	Requirement	Comments
15A.06.1 15A.06.2	<p>Only 1 driveway is permitted, but a second can be allowed if conditions A & B are met.</p> <ul style="list-style-type: none"> • A – 660’ of frontage; • B – additional driveways will not prevent compliance for other sites. 	<p>4 driveways requested: 1 on Whittaker Way, 2 on Robbins Rd, and 1 on 172nd Ave. Condition A – just shy of 660’; B – is met, other adjacent properties are in City.</p> <ul style="list-style-type: none"> • Robbins Rd Sub-Area Plan calls for the closure of numerous curb-cuts. Current site has a continuous driveway the length of Robbins Rd. • 17.05.4.A allows the PC to approve additional driveways if it allows other uses within the PUD, or adjoining principal uses or existing lot.
15A.06.7	<p>Access point spacing standards based on a signalized non-trunkline street measured pavement edge to pavement edge. Requirement is 200’.</p> <ul style="list-style-type: none"> • Easternmost driveway on Robbins Rd = 100’ • Main entrance on 172nd = 160’ 	<ul style="list-style-type: none"> • Requesting to allow the gas station to maintain its existing driveway on Robbins Rd. • Requesting to allow the existing driveway to remain in current location on 172nd Ave. This will act as a main entrance, and shifting further south will cause misalignment with adjacent driveways and potentially make Building A impossible to construct.
15A.10.5	<p>Minimum width for an interior landscape island = 18’</p>	<p>Requesting to allow a smaller landscape island in an effort to maximize the parking on site while still providing for visual and paving breaks.</p>

<p>15A.10.3 17.05.2.A.5</p>	<p>Onsite landscaping must abut the walls to reduce the visual impact of the building mass.</p>	<p>Developer’s narrative says it best, “requesting departure from landscaping abutting walls of retail buildings in order to meet the functional needs of a retail use and allow for future <u>flexibility in placement of door openings</u> within a storefront, reduces the likelihood of <u>trip hazards</u> along the main walking path, allows <u>pedestrians to circulate farther away from vehicular traffic</u> and make snow removal easier. Landscaping around the perimeter of the building has been pulled back and consolidated in designated planting beds dispersed along the edge of the parking area at the front (north) elevation of Retail S but is still in close proximity and related to the architecture. The <u>planting areas will feature ornamental trees and shrubs to soften the visual appearance of the building from Robbins Rd.</u> The back (south) side of Retail S has landscaped pockets identified immediately adjacent to the building wall, coordinated with rear service doors as required. Plantings around future retail buildings on site will follow suit with a similar concept and meet the plant size and type requirements of the ordinance.”</p> <p>Staff notes—a similar multi-tenant retail building does not have landscaping that abuts the walls, and appears to use the landscape islands as a replacement as well.</p>
<p>24.04.2</p>	<p>Maneuvering lanes shall be 24’ in width.</p>	<p>Requesting an allowance of 27’ for the main entrance off Robbins Rd to provide additional space for an anticipated high traffic corridor, allowing more space for passing vehicles and/or delivery trucks.</p>
<p>20.13.5.H*</p>	<p>Minimum caliper size for an ornamental tree = 3”</p>	<ul style="list-style-type: none"> Developer is proposing to use native Michigan species. Per the landscape architect certain species are best to be planted as “clumps.” The final result would be several trees grown together in a “clump” that would total 3+-inch caliper.

		<ul style="list-style-type: none"> • Similarly, several native species can only be found in a 2½” size. <ul style="list-style-type: none"> ○ Staff is still waiting on a narrative from the landscape architect to provide justification for this departure request.
--	--	---

*not officially requested as a departure yet, but is anticipated to be included at the public hearing.

EXECUTIVE SUMMARY – TRAFFIC STUDY

The developer has ordered a traffic study, but is not complete yet. However, the traffic engineer was able to review the preliminary data and provide a general summary of the impact this development would have on the surrounding area.

The study is proposing improvements. LaMourie has been involved with this study and can provide a synopsis.



NEXT STEPS

The anticipated schedule for this project is:

- February 13th Joint Planning Commission Meeting with City of Grand Haven
- February 19th Public Hearing with Planning Commission
- March 12th Public Hearing & First Reading with Township Board
- March 26th Second Reading & PUD Approval with Township Board
- April 1st Demolition of Site Begins
- December First Multi-Tenant Building Completed and Pizza Hut Relocates

Please contact me if this raises questions.

RECEIVED
11/9/17

Clear Form

Print



GRAND HAVEN CHARTER TOWNSHIP

PLANNED UNIT DEVELOPMENT (PUD) APPLICATION

Application Type	Fee	Escrow*	Sewer Escrow**
Overlay Zone	\$310	\$2,500	Main Extension \$5,000
Non-Overlay Zone	\$300	\$1,500	Lift Station \$2,000

Applicant Information

Name Robbins Center Pointe
 Phone (616) 732-5018 Fax (616) 732-5098
 Address P.O. Box 1029 Saugatuck, MI 49453
 Email Address kpw@msblaw.com

Owner Information (If different from applicant)

Name _____
 Phone _____ Fax _____
 Address _____

Property Information

Address/Location Robbins Rd. & 172nd Ave.
 Parcel Number 70 - - - - * Size (acres) _____
 Current Zoning ZONED C-1 Zoning Requested PUD
 Adjacent Zoning North: COMMERCIAL South: PUD East: COMMERCIAL West: COMMERCIAL
 Master-Planned Zoning C-1 Consistent with Master Plan? YES

Other Information *70-03-33-100-010, 70-03-33-100-047 & 70-03-33-10-049

Does Property Abut Township Border? YES
 Present Use of the Subject Property? MIXED COMMERCIAL
 Number & Type of Existing Structures? 9 COMMERCIAL
 Subject Property Located on a Paved Road? YES
 Municipal Water within 2,700 Feet of Subject Property? YES
 Municipal Sewer within 2,700 Feet of Subject Property? YES

NOTE: The architect, engineer, planner, or designer shall be responsible for utilizing the Township Ordinance Books and following the procedures and requirements as specified in Chapters 17 and 23 (and Chapter 15A if located in the Overlay Zone), and any other applicable ordinances. Initially, submit five copies of the required information for staff review. Once staff has granted tentative approval, additional copies will be required as requested by staff.

I hereby attest the information on this application is, to the best of my knowledge, true and accurate.

[Signature]
 Signature of applicant

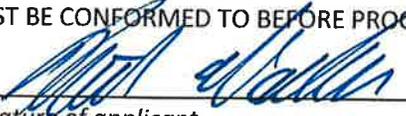
11/9/17
 Date

** To cover cost of legal and consulting fees, may be increased as necessary*

*** If approval of this application requires/includes the extension of a municipal sanitary sewer main, an additional \$5,000.00 escrow fee shall be required, and an additional \$2,000.00 escrow fee shall be required for the installation of a lift station.*

NOTICE

IF I PLAN TO SPLIT THE PARCEL(S) AFTER THE ZONING APPROVALS ARE GRANTED, I REALIZE THAT I MUST APPLY FOR A LAND DIVISION WITH THE ASSESSING DEPARTMENT. ALL LAND DIVISION REQUIREMENTS MUST BE CONFORMED TO BEFORE PROCEEDING WITH FURTHER DEVELOPMENT.



Signature of applicant

11/8/17

Date

For Office Use Only

Date Received _____ Fee Paid? _____
Materials Received: Site Plans _____ Location Map _____
Survey _____ Legal Description _____

Dated copy of approved minutes sent to applicant? _____ Date Sent _____

PLANNING COMMISSION USE ONLY

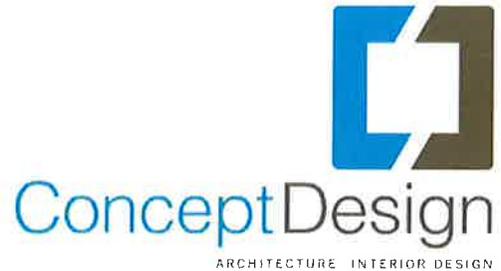
Approval _____
Tabled _____
Denied _____
Conditional Approval _____

The following conditions shall be met for approval:

Signature of Planning Commission Chair

Date

1/24/2018



ROBBINS CENTRE POINTE: PROJECT NARRATIVE

About a year ago our team purchased the almost 8 acres that runs from 172nd West on Robbins road toward 31. We have recently added the Pizza Hut site to our project. Therefore, the project will run west from 172nd for approximately 700 feet to almost Whitaker Way. The site has a North to South depth of 315 feet to 660 feet.

We upgraded, remodeled and environmentally addressed the service station on the corner of 172nd and Robbins road and now have a long term Lease with Spartan Nash to operate the station. We will tear down the existing Pizza Hut and add them as an end anchor to our 15,000 sf center that will front on Robbins Road.

We have an easement to travel over all of the Spectrum property for ingress and egress to our site and are showing only two other curb cuts (one on Robbins Road and one on 172 and in turn giving up our continuous curb cut on Robbin's road and one of the two curb cuts we now have on 172nd. The existing curb cut serving the oil change building on 172nd is also proposed to be removed and connected to the internal site circulation.

We are upgrading the site utilities and in fact looping the water at our cost. We expect to build a 20,000 to 30,000 big box in the back toward our South Property line and a small 7000 sf building that could serve a Tire Store or Auto Parts store or something in that vein. We also expect to build a second center between the strip on Robbins and the big box store proposed at the South end of the site. Finally we expect a full service restaurant to come to the site between the main entrance off of Robbins and the Service Station.

We expect to start demolition in April, as soon as we receive site plan approvals, and hope to demo the entire site at that time. But, we are cognizant of several tenants that may need some occupancy past April and we are working with them to see if there is any way we can accommodate them for a longer period. The next phase of the project will consist of the main retail building (Retail S) and looping the public water main through the site to make it ready for further development. Market demand will determine the order and sequencing for the remaining buildings.

The development team is comprised of 3 experienced individuals, with expertise in legal, development, construction, and brokerage encompassing 1000's of developments and transaction totaling several billion dollars. We expect to start construction on phase 2 (phase one was the service station) in April and finish in December of 2018. The balance of the site should be finished in another year after that. We have not attempted any leasing activities up to this point until we have site plan approval.

1/24/2018



ROBBINS CENTRE POINTE: REQUESTED DEPARTURES

15A.06.1 & 15A.06.2:

- Request to allow the 4 driveways (One on Whittaker Way, two on Robbins Roads and one on 172nd Ave). The site currently has a continuous curb cut on Robbins Road and two curb cuts on 172nd. Per 17.05.4.A- A maximum of one driveway or street opening per existing public street frontage shall be permitted for the PUD. Additional driveways may be permitted provided that such drive is constructed ad permitted to share access with other uses within the PUD, or an adjoining principal us or existing lot. The four driveways provided share access with other uses, as well as an adjoining principle use and existing lot.

15A.06.7:

- Request departure to allow easternmost drive on Robbins Road, in front of the gas station, to remain as existing, at 100' from intersection of 17nd. Departing from required 200' to allow existing drives to remain as-is.
- Request departure to allow main drive on 172nd Ave to remain as existing, at 160' from intersection. Departing from required 200' to allow existing drives to remain as-is. Adjacent drive to the south, serving the oil change building, is proposed to be removed.

15A.10.5:

- Request departure from the minimum 18' wide parking island in an effort to maximize the amount of parking on the site while still providing for visual and paving breaks.

17.05.2.A.5

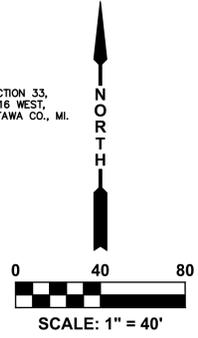
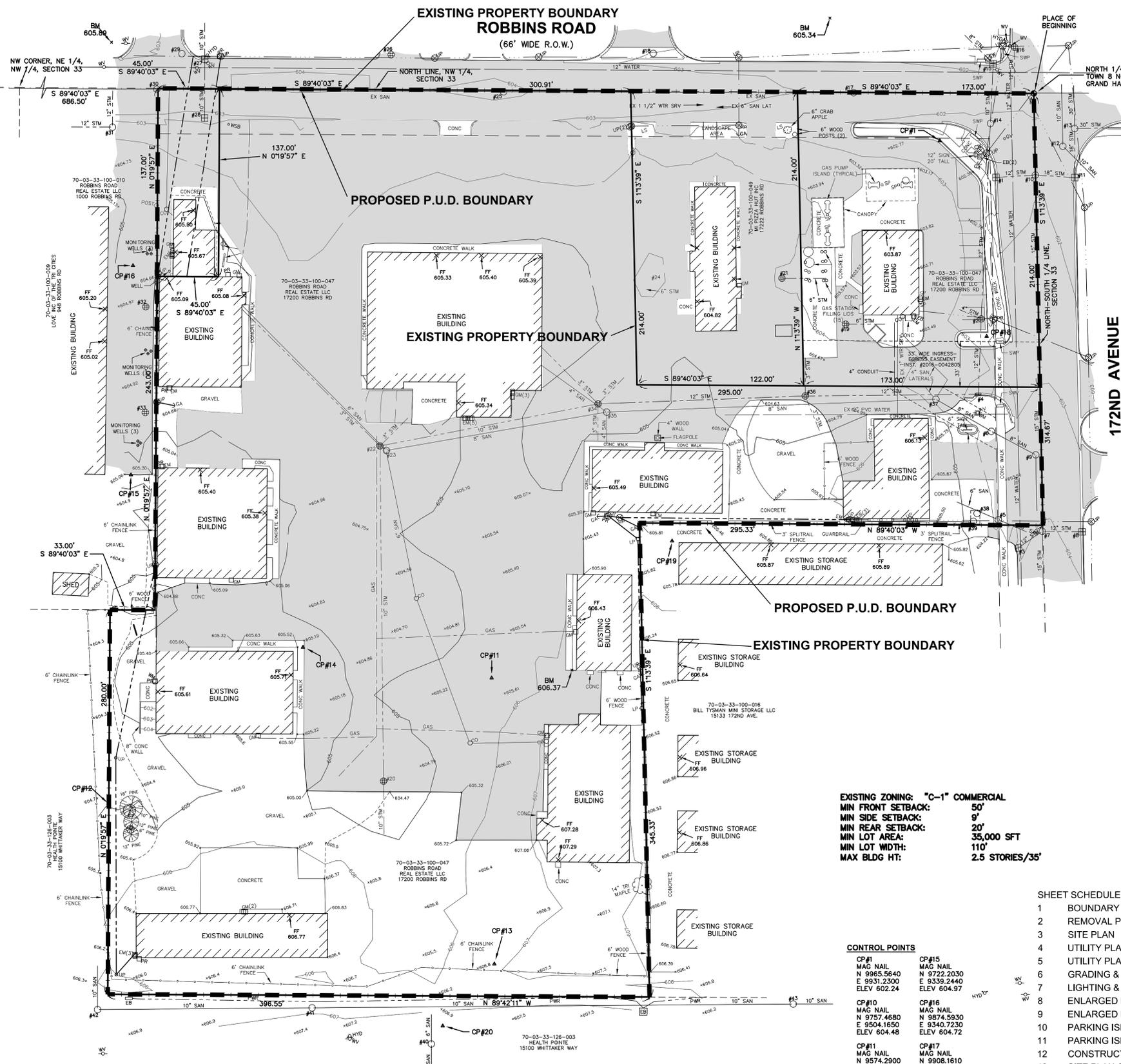
- Request departure from landscaping abutting walls of retail buildings in order to meet the functional needs of a retail use and allow for future flexibility in placement of door openings within a storefront, reduces the likelihood of trip hazards along the main walking path, allows pedestrians to circulate farther away from vehicular traffic and make snow removal easier. Landscaping around the perimeter of the building has been pulled back and consolidated in designated planting beds dispersed along the edge of the parking area at the front (north) elevation of Retail S but it still in close proximity and related to the architecture. The planting areas will feature ornamental trees and shrubs to soften the visual appearance of the building from Robbins Road. The back (south) side of Retail S has landscaped pockets identified immediately adjacent to the building wall, coordinated with rear service doors as required. Plantings around future retails buildings on site will follow suit with a similar concept and meet the plant size and type requirements of the ordinance.

24.04.2:

- Request departure to increase the main maneuvering lane from 24' to 27' in order to provide additional space for an anticipated high traffic corridor, allowing more space for passing vehicles and/or delivery trucks.

EXISTING UNDERGROUND UTILITY DATA

- STORM CB#1
RIM 601.16
12" CONC INV E 598.31
2" SQUARE RIM
2' DIA BLOCK STRUCTURE
- STORM CB#2
RIM 602.24
4" PVC INV WNW 599.69
12" PVC INV N-S 599.39
2' DIA RIM
2' DIA BLOCK STRUCTURE
- STORM CB#3
RIM 603.74
12" CONC INV NE
2" SQUARE RIM
UNABLE TO SEE INTO STRUCTURE
SILT BAG FILLED WITH SAND
- STORM CB#4
RIM 602.72
12" PVC INV N 599.57
12" PVC INV W 599.57
2" SQUARE RIM
4' DIA BLOCK STRUCTURE
- SANITARY MH#5
RIM 603.96
6" PVC INV WNW 599.96
6" PVC INV ESE 599.86
2' DIA RIM
4' DIA PRECAST STRUCTURE
- SANITARY MH#6
RIM 603.66
8" PVC INV NW 597.66
8" PVC INV SE 597.66
2' DIA RIM
4' DIA PRECAST STRUCTURE
- STORM MH#7
RIM 604.07
12" CONC INV E 598.97
12" CONC INV SW 598.97
15" CONC INV S 598.87
15" CONC INV N 598.77
2' DIA RIM
4' DIA PRECAST STRUCTURE
- STORM CB#8
RIM 603.49
12" CONC INV W 599.84
2" SQUARE RIM
2' DIA PRECAST STRUCTURE
LEACHING BASIN
- SANITARY MH#9
RIM 603.51
8" PVC INV NW 594.16
8" PVC INV S 594.01
2' DIA RIM
4' DIA PRECAST STRUCTURE
- STORM MH#10
RIM 601.84
12" CONC INV W 596.99
15" CONC INV S 597.29
18" CONC INV E 596.99
2' DIA RIM
4' DIA PRECAST STRUCTURE
- STORM CB#11
RIM 601.23
18" CONC INV W 596.93
18" CONC INV N 596.93
2" SQUARE RIM
4' DIA PRECAST STRUCTURE
- SANITARY MH#12
RIM 601.62
10" PVC INV N 594.12
10" PVC INV SE 594.12
2' DIA RIM
4' DIA PRECAST STRUCTURE
- STORM MH#13
RIM 601.49
18" CONC INV S 596.14
30" CONC INV N 596.14
30" CONC INV E 595.84
2' DIA RIM
5' DIA BLOCK STRUCTURE
- STORM MH#14
RIM 601.52
10" CONC INV N 599.12
12" PVC INV S 599.12
2' DIA RIM
2' DIA CONC STRUCTURE
- STORM CB#15
RIM 601.61
8" PVC INV NW 598.76
10" CONC INV S 597.86
2" SQUARE RIM
2' DIA BLOCK STRUCTURE
POSSIBLE GREASE/OIL TRAP
SHARED WITH MH#39
- STORM CB#16
RIM 601.75
12" CONC INV S 597.25
2' DIA RIM
4' DIA PRECAST STRUCTURE
- MH#17
RIM 602.91
- MH#18
RIM 602.99
- STORM CB#19
RIM 603.25
6" PVC INV E 600.75
2' DIA RIM
2' DIA BLOCK STRUCTURE
- STORM CB#20
RIM 604.32
10" PVC INV NNW 602.12
10" PVC INV SSE 602.02
2' DIA RIM
2' DIA BLOCK STRUCTURE
- STORM CB#21
RIM 603.82
6" CLAY INV E 602.57
2' DIA RIM
4' DIA BLOCK STRUCTURE
- STORM CB#22
RIM 604.04
3" PVC INV NE 601.0
3" PVC INV NW 601.0
10" PVC INV S 601.0
10" PVC INV E 601.0
2' DIA RIM
2' DIA BLOCK STRUCTURE
- STORM CB#23
RIM 603.96
6" PVC INV NW 601.56
6" PVC INV S 601.56
8" PVC INV E 601.51
2' DIA RIM
3' DIA BLOCK STRUCTURE
- STORM CB#24
RIM 603.53
6" CLAY INV SSW 602.53
2' DIA RIM
3' DIA BLOCK STRUCTURE
- MH#25
RIM 604.14
- STORM CB#26
RIM 603.34
- STORM CB#27
RIM 603.28
10" CONC INV S 599.38
10" CONC INV N 598.88
2" SQUARE RIM
2' DIA BLOCK STRUCTURE
- STORM CB#28
RIM 602.57
10" CONC INV N 600.97
2" SQUARE RIM
2' DIA CONC STRUCTURE
- MH#29
RIM 603.39
- MH#30
RIM 603.86
- STORM MH#31
RIM 603.47
12" CONC INV N 599.47
12" CONC INV W 599.37
2' DIA RIM
4' DIA BRICK STRUCTURE
- STORM CB#32
RIM 604.32
2' DIA RIM
4' DIA PRECAST STRUCTURE
LEACHING BASIN
- STORM CB#33
RIM 604.52
2' DIA RIM
4' DIA PRECAST STRUCTURE
LEACHING BASIN
- STORM CB#34
RIM 604.30
3" PVC INV NW 601.50
3" PVC INV S 601.35
10" PVC INV W 600.35
12" PVC INV E 600.30
2' DIA RIM
4' DIA BLOCK STRUCTURE
- SANITARY MH#35
RIM 604.42
4" PVC INV NW 601.72
4" PVC INV S 601.22
2' PVC INV E 600.42
8" PVC INV W 600.42
2' DIA RIM
3' DIA BLOCK STRUCTURE
- STORM CB#36
RIM 604.25
3" PVC INV N 601.35
3" PVC INV SSE 601.30
12" PVC INV E 600.05
12" PVC INV W 600.05
2' DIA RIM
3' DIA BLOCK STRUCTURE
- SANITARY MH#37
RIM 603.75
4" PVC INV NE 599.25
4" PVC INV NW 599.25
8" PVC INV W 599.05
8" PVC INV SE 597.85
2' DIA RIM
3' DIA BLOCK STRUCTURE
- MH#38
RIM 603.75
4" PVC INV E
2' DIA RIM
PRECAST VAULT
POSSIBLE GREASE/OIL TRAP
SHARED WITH MH#39
- MH#39
RIM 603.75
4" PVC INV W
2' DIA RIM
PRECAST VAULT
POSSIBLE GREASE/OIL TRAP
SHARED WITH MH#39
- SANITARY MH#40
RIM 607.08
6" PVC INV N 598.28
6" PVC INV S 598.28
2' DIA RIM
4' DIA PRECAST STRUCTURE
- SANITARY MH#41
RIM 605.88
10" PVC INV W 593.88
10" PVC INV E 593.88
2' DIA RIM
4' DIA PRECAST STRUCTURE
- SANITARY MH#42
RIM 607.00
10" PVC INV N 594.80
10" PVC INV E 594.70
2' DIA RIM
- SANITARY MH#43
RIM 607.18
10" PVC INV W 592.31
10" PVC INV E 592.31
2' DIA RIM
4' DIA PRECAST STRUCTURE



EXISTING PROPERTY DESCRIPTION

Part of the Northeast one-quarter of the Northwest one-quarter, Section 33, Town 8 North, Range 16 West, Grand Haven Township, Ottawa County, Michigan, described as: COMMENCING at the North one-quarter corner; thence South 01°13'39" East 314.67 feet along the North-South one-quarter line; thence North 89°40'03" West 295.33 feet; thence South 01°13'39" East 345.33 feet parallel with the North-South one-quarter line; thence North 89°42'11" West 396.55 feet; thence North 00°19'57" East 280 feet; thence South 89°40'03" East 330.00 feet parallel with the North line of said Northwest one-quarter; thence North 00°19'57" East 243 feet; thence South 89°40'03" East 45 feet; thence North 00°19'57" East 137 feet to the North line of the Northwest one-quarter, said point being South 89°40'03" East 686.50 feet from the Northwest corner of the Northeast one-quarter of the Northwest one-quarter, thence South 89°40'03" East 300.91 feet; thence South 01°13'39" East 214 feet parallel with the North-South one-quarter line; thence South 89°40'03" East 122 feet parallel with the North line of the Northwest one-quarter; thence North 01°13'39" West 214 feet parallel with the North-South one-quarter line to the North line of the Northwest one-quarter; thence South 89°40'03" East 173 feet to the place of beginning.

PROPOSED P.U.D. PROPERTY DESCRIPTION

Part of the Northeast one-quarter of the Northwest one-quarter, Section 33, Town 8 North, Range 16 West, Grand Haven Township, Ottawa County, Michigan, described as: COMMENCING at the North one-quarter corner of said Section 33; thence South 01°13'39" East 33.01 feet along the North-South one-quarter line of said section; thence North 89°40'03" West 33.01 feet parallel with the North line of said section to the PLACE OF BEGINNING; thence South 01°13'39" East 281.66 feet parallel with the North line of said section; thence North 89°42'11" West 396.55 feet; thence North 00°19'57" East 280.00 feet; thence South 89°40'03" East 33.00 feet parallel with the North line of said section; thence North 00°19'57" East 347.00 feet; thence South 89°40'03" East 608.80 feet parallel with and 33.00 South of the North line of said section to the place of beginning.

EXISTING ZONING: "C-1" COMMERCIAL
MIN FRONT SETBACK: 50'
MIN SIDE SETBACK: 9'
MIN REAR SETBACK: 20'
MIN LOT AREA: 35,000 SFT
MIN LOT WIDTH: 110'
MAX BLDG HT: 2.5 STORIES/35'

CONTROL POINTS

- CP#1
MAG NAIL
N 985.5640
E 9931.2300
ELEV 602.24
- CP#2
MAG NAIL
N 975.4680
E 9504.1650
ELEV 604.48
- CP#3
MAG NAIL
N 974.2900
E 9603.2260
ELEV 605.51
- CP#4
MAG NAIL
N 9482.9780
E 9322.8830
ELEV 604.09
- CP#5
MAG NAIL
N 972.2030
E 9339.2440
ELEV 604.97
- CP#6
MAG NAIL
N 9874.5930
E 9340.7230
ELEV 604.72
- CP#7
MAG NAIL
N 9808.1610
E 9462.2420
ELEV 603.58
- CP#8
MAG NAIL
N 9823.0430
E 9855.5370
ELEV 602.70
- CP#9
MAG NAIL
N 9674.0020
E 9735.3070
ELEV 605.67
- CP#10
MAG NAIL
N 9757.4680
E 9504.1650
ELEV 604.48
- CP#11
MAG NAIL
N 974.2900
E 9603.2260
ELEV 605.51
- CP#12
M&S RED CAP
N 9482.9780
E 9322.8830
ELEV 604.09
- CP#13
M&S RED CAP
N 9365.9130
E 9605.2210
ELEV 606.83
- CP#14
NAIL
N 9596.6370
E 9465.1490
ELEV 605.5
- CP#15
MAG NAIL
N 9823.0430
E 9855.5370
ELEV 602.70
- CP#16
MAG NAIL
N 9874.5930
E 9340.7230
ELEV 604.72
- CP#17
MAG NAIL
N 9808.1610
E 9462.2420
ELEV 603.58
- CP#18
MAG NAIL
N 9823.0430
E 9855.5370
ELEV 602.70
- CP#19
MAG NAIL
N 9674.0020
E 9735.3070
ELEV 605.67
- CP#20
NAIL
N 9320.8330
E 9567.4270
ELEV 607.32

BENCHMARKS

- ELEVATION 605.34
CHISELED SQUARE ON THE TOP SOUTH SIDE OF A CONC BASE TO LIGHT POLE, LOCATED ON THE NORTH SIDE OF ROBBINGS ROAD, POLE IS THE SECOND POLE EAST OF DRIVE TO WALGREENS PHARMACY.
- ELEVATION 605.89
TOP OF SOUTH BOLT OF A 1.5x1.5' CONC LIGHT POLE BASE, LOCATED AT THE NORTHWEST CORNER OF ROBBINGS ROAD AND DE SPELDER STREET, 2.5' ABOVE WALK
- ELEVATION 606.37
SOUTHEAST CORNER OF A 5' WIDE NORTH-SOUTH CONC WALK, 3.0' WEST OF THE SOUTHWEST CORNER OF BUILDING #17232 ROBBINGS ROAD

LEGEND

- SANITARY SEWER (SAN)
- STORM SEWER (STM)
- WATERMAIN (WAT)
- GAS MAIN (GAS)
- UG ELECTRIC CABLE (PWR)
- UG PHONE CABLE (TEL)
- AERIAL UTILITY LINE (AERIAL)
- FENCE
- PROPERTY BOUNDARY LINE
- PROPOSED P.U.D. BOUNDARY LINE
- BITUMINOUS SURFACE
- SURVEY IRON (SET)
- SURVEY IRON (FOUND)
- M - MEASURED DIMENSION
- D - DEEDED DIMENSION
- P - PLATTED DIMENSION
- R - RECORDED DIMENSION
- SWP - SIDEWALK WARNING PAD
- FF - FINISHED FLOOR
- ▲ - HYDRANT (HYD)
- ▲ - WATER VALVE (WV)
- - MANHOLE (MH)
- - CATCH BASIN (CB)
- - GAS MAIN (GAS)
- - UTILITY POLE (UP)
- - GUY ANCHOR (GA)
- - WATER METER (WM)
- - WATER STOP BOX (WSB)
- - SAN CLEANSOUT (CO)
- - PHOS RISER (PR)
- - GAS METER (GM)
- - GAS VALVE (GV)
- - ELECTRIC METER (EM)
- - ELECTRIC BOX (EB)
- - STEEL POST (SP)
- - PEDESTRIAN CROWSPALK POLE (CW)
- - LIGHT POLE (LP)

SHEET SCHEDULE

- 1 BOUNDARY & TOPOGRAPHIC SURVEY
- 2 REMOVAL PLAN
- 3 SITE PLAN
- 4 UTILITY PLAN (PRIVATE)
- 5 UTILITY PLAN (PUBLIC)
- 6 GRADING & SOIL EROSION CONTROL PLAN
- 7 LIGHTING & SIGNAGE PLAN
- 8 ENLARGED LANDSCAPE PLAN (NORTH)
- 9 ENLARGED LANDSCAPE PLAN (SOUTH)
- 10 PARKING ISLAND DETAILS "A" - "O"
- 11 PARKING ISLAND DETAILS "P" - "T"
- 12 CONSTRUCTION DETAILS
- 13 SITE PLAN OPTION "B"

PLAN REVISIONS	
ISSUED 11/09/17	
SCHEMATIC DESIGN REVIEW	
REV 12/28/17	
REV PER REVIEW COMMENTS	
REV 01/16/18	
REV PER REVIEW COMMENTS	

BOUNDARY & TOPOGRAPHIC SURVEY
 FOR
ROBBINS CENTER POINT P.U.D.
 GRAND HAVEN TOWNSHIP, OTTAWA COUNTY, MICHIGAN

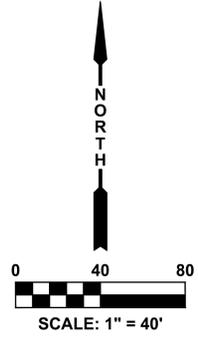
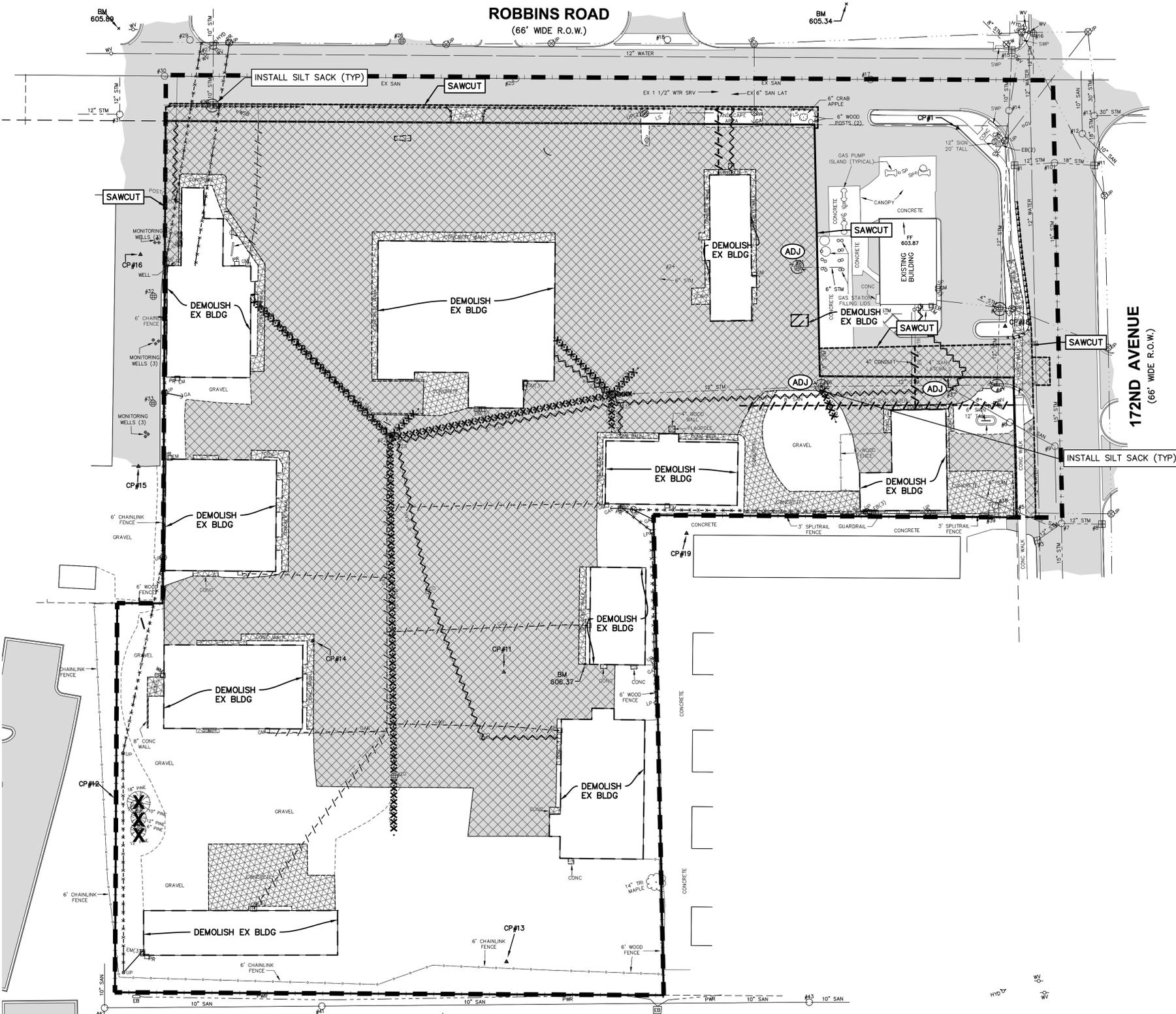
MOORE & BRUGGINK, INC.
 Consulting Engineers
 2020 Monroe Avenue N.W.
 Grand Rapids, Michigan 49505-6298
 Phone: (616) 363-9801 Web: www.mbce.com

FIELD SURVEY / DATE:
M&B-10-05-16
 DESIGNED BY: JFL
 DESIGN DRAWN BY: FEF
 CHECKED BY: JFL
 PLAN DATE: 11/6/17
 PROJECT NO.: 160190.01
 SHEET NUMBER
1 OF 13



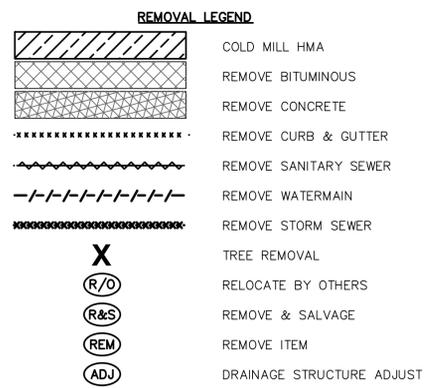
Utility locations are approximate only. Please contact "Miss Dig" three working days prior to the start of construction for exact locations. (1-800-482-7171)

P:\160190.1\160190.1_Visser - Robbins Road\CAD\DWG\160190 PUD PLAN SHEETS (2017).dwg, 1/24/2018 11:32:56 PM, tel



GENERAL DEMOLITION NOTES:

1. THE CONTRACTOR SHALL OBTAIN ALL PERMITS AND SURETY AS PART OF THIS WORK.
2. THE CONTRACTOR SHALL CALL MISS DIG 3 WORKING DAYS PRIOR TO THE START OF CONSTRUCTION.
3. THE CONTRACTOR SHALL REMOVE ALL CONCRETE, BIT PAVEMENT, STORM SEWER STRUCTURES, STORM SEWER PIPE, LIGHT POLES, FENCING, UNDERGROUND ELECTRIC, VEGETATION AND SO ON TO PREPARE THE SITE FOR IMPROVEMENTS, CASTINGS, VALVE BOXES AND/OR OTHER UTILITY STRUCTURES TO REMAIN SHALL BE ADJUSTED AND PROTECTED FROM DAMAGE.
4. COORDINATE PRIVATE UTILITY REMOVALS WITH THE CORRESPONDING UTILITY COMPANY.
5. GROUND WATER WELLS SHALL BE ABANDONED IN ACCORDANCE WITH APPLICABLE RULES AND REGULATIONS.
6. WORK ITEMS WITHIN THE RIGHT OF WAY SHALL BE PERFORMED IN ACCORDANCE WITH THE OTTAWA COUNTY ROAD COMMISSION STANDARDS AND PERMITS.
7. ALL SOIL EROSION CONTROL MEASURES SHALL COMPLY ACT 451 OF PUBLIC ACTS OF 1997, SOIL EROSION AND SEDIMENTATION CONTROL, NATURAL RESOURCES AND ENVIRONMENTAL PROTECTION ACT.
8. ALL SOIL EROSION CONTROL MEASURE SHALL BE IN PLACE PRIOR TO COMMENCEMENT OF EARTHWORK ACTIVITIES.
9. THE CONTRACTOR SHALL CLEAN PUBLIC STREETS DAILY OF ANY DIRT AND/OR DEBRIS FROM CONSTRUCTION SITE.
10. ABANDON ALL EXISTING UTILITY SERVICES TO EXISTING BUILDINGS TO BE REMOVED UPON DEMOLITION.



- SHEET SCHEDULE**
- 1 BOUNDARY & TOPOGRAPHIC SURVEY
 - 2 REMOVAL PLAN
 - 3 SITE PLAN
 - 4 UTILITY PLAN (PRIVATE)
 - 5 UTILITY PLAN (PUBLIC)
 - 6 GRADING & SOIL EROSION CONTROL PLAN
 - 7 LIGHTING & SIGNAGE PLAN
 - 8 ENLARGED LANDSCAPE PLAN (NORTH)
 - 9 ENLARGED LANDSCAPE PLAN (SOUTH)
 - 10 PARKING ISLAND DETAILS "A" - "O"
 - 11 PARKING ISLAND DETAILS "P" - "T"
 - 12 CONSTRUCTION DETAILS
 - 13 SITE PLAN OPTION "B"

PREPARED FOR:
VISSER BROTHERS, INC
 1946 TURNER AVENUE, NW
 GRAND RAPIDS, MI 49504
 PH (616) 363-3825
 FX (616) 363-6477
 WWW.VISSERBROTHERS.COM
 ATTN: MR BILL MAST



Utility locations are approximate only. Please contact "Miss Dig" three working days prior to the start of construction for exact locations. (1-800-482-7171)

PHASE ONE CONSTRUCTION SCHEDULE

ITEM	J	F	M	A	M	J	J	A	S	O	N	D
TEMP. EROSION CONTROL												
TOPSOIL STRIPPING												
SITE GRADING												
SITE UTILITIES												
DETENTION POND												
BUILDING CONSTRUCTION												
PERM. EROSION CONTROL												
LANDSCAPING												
PAVING												
REMOVE TEMP. EROSION CONTROL												

- LEGEND**
- SANITARY SEWER (SAN)
 - STORM SEWER (STM)
 - WATERMAIN (WAT)
 - GAS MAIN (GAS)
 - UG ELECTRIC CABLE (PWR)
 - UG PHONE CABLE (TEL)
 - AERIAL UTILITY LINE (AERIAL)
 - FENCE
 - PROPERTY BOUNDARY LINE
 - PROPOSED P.U.D. BOUNDARY LINE
 - PROPOSED DRAINAGE SWALE
 - PROPOSED CURB & GUTTER
 - EX BITUMINOUS SURFACE
 - PROPOSED BITUMINOUS SURFACE
 - PROPOSED CONCRETE SURFACE
 - △ - HYDRANT (HYD)
 - - WATER VALVE (WV)
 - - MANHOLE (MH)
 - - CATCH BASIN (CB)
 - ⊕ - UTILITY POLE (UP)
 - ⊕ - GUY ANCHOR (GA)
 - - WATER METER (WM)
 - - WATER STOP BOX (WSB)
 - - SAN CLEANOUT (CO)
 - - PHONE RISER (PR)
 - - GAS METER (GM)
 - - GAS VALVE (GV)
 - - ELECTRIC METER (EM)
 - - ELECTRIC BOX (EB)
 - - STEEL POST (SP)
 - - PEDESTRIAN CROSSWALK POLE (CW)
 - - LIGHT POLE (LP)
 - - SURVEY IRON (FOUND)
 - - SURVEY IRON (SET)
 - M - MEASURED DIMENSION
 - D - DEEDED DIMENSION
 - P - PLATTED DIMENSION
 - R - RECORDED DIMENSION
 - SWP - SIDEWALK WARNING PAD
 - FF - FINISHED FLOOR

PLAN REVISIONS

ISSUED	REVISION
11/09/17	SCHEMATIC DESIGN REVIEW
12/28/17	REV PER REVIEW COMMENTS
01/18/18	REV PER REVIEW COMMENTS

REMOVAL PLAN
 FOR
ROBBINS CENTER POINT P.U.D.
 GRAND HAVEN TOWNSHIP, OTTAWA COUNTY, MICHIGAN

MOORE & BRUGGINK, INC.
 Consulting Engineers
 2020 Monroe Avenue N.W.
 Grand Rapids, Michigan 49505-6298
 Phone: (616) 363-9801 Web: www.mbce.com

FIELD SURVEY / DATE:
 M&B-10-05-16

DESIGNED BY: JFL

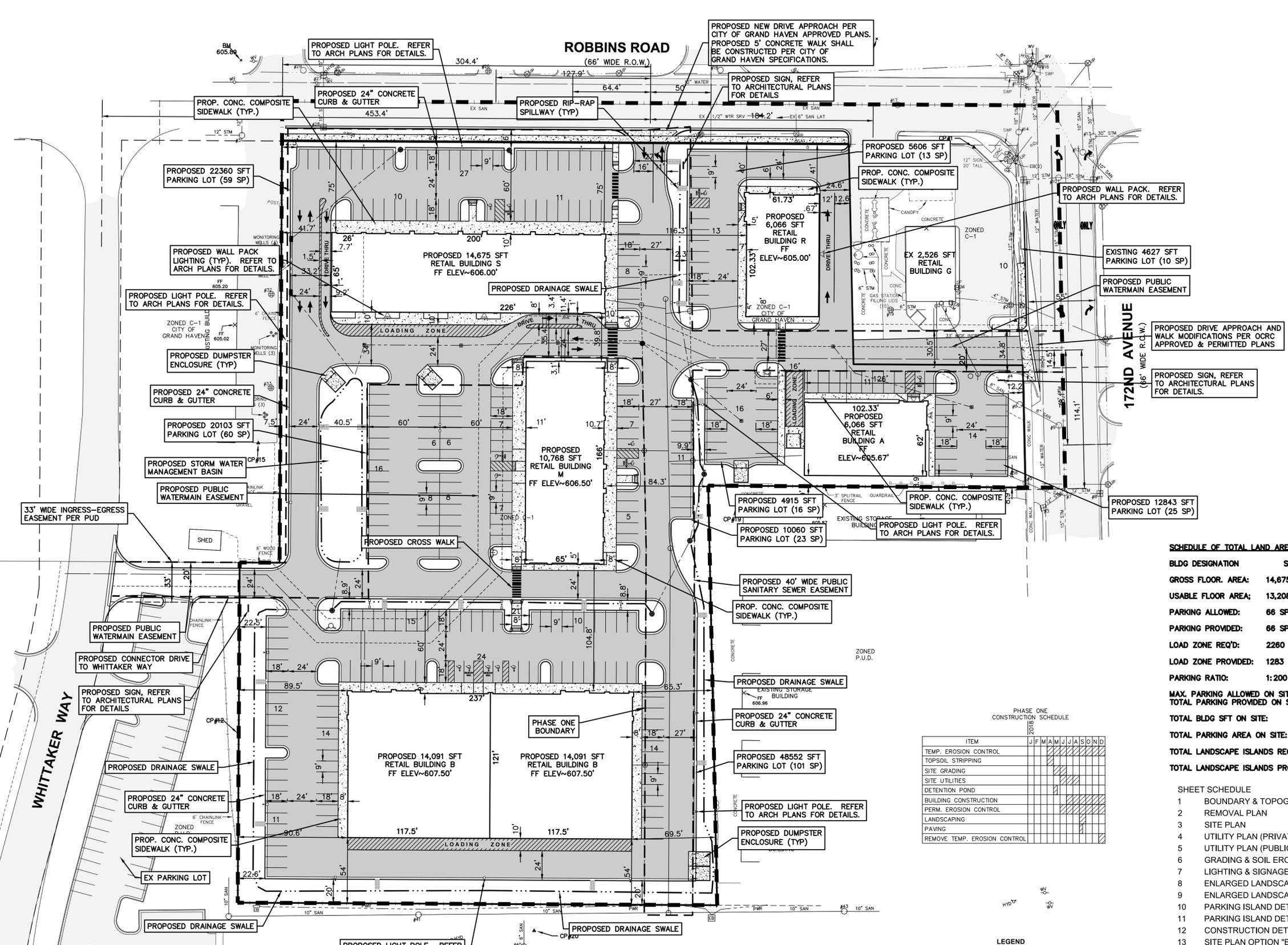
DESIGN DRAWN BY: FEF

CHECKED BY: JFL

PLAN DATE: 11/6/17

PROJECT NO.: 160190.01

SHEET NUMBER:
2 OF 13



- SITE PLAN GENERAL NOTES:**
- THE CONTRACTOR SHALL OBTAIN ALL PERMITS AND SURETY AS PART OF THIS WORK.
 - THE CONTRACTOR SHALL CALL MISS DIG 3 WORKING DAYS PRIOR TO THE START OF CONSTRUCTION.
 - THE CONTRACTOR SHALL FURNISH AND PLACE THE DRIVE APPROACH, NEW CURBING, WALK, AND DRIVE CLOSURES WITHIN THE PUBLIC RIGHT OF WAY IN ACCORDANCE WITH OTTAWA COUNTY ROAD COMMISSION PERMITS & STANDARD CONSTRUCTION SPECIFICATIONS.
 - ALL STORM SEWER PIPE SHALL BE ADS N-12 PLASTIC PIPE UNLESS OTHERWISE SPECIFIED.
 - ALL CATCH BASINS AND MANHOLES SHALL BE MINIMUM 4' DIAMETER PRECAST CONCRETE, UNLESS NOTED OTHERWISE.
 - PAVED AREAS SHALL BE CONSTRUCTED WITH:
 - 12" MDOT CL-2 SAND SUBBASE (C.I.P)
 - 6" 22-A GRAVEL BASE (C.I.P)
 - 1 1/2" 3C HMA LEVELING COURSE
 - 1 1/2" 4C HMA WEARING COURSE
 - THE CONTRACTOR SHALL BED AND BACKFILL ALL UNDERGROUND PIPING WITH MDOT CL-2 SAND TO A MINIMUM OF 95% MAXIMUM DRY DENSITY PER ASTM - 1557.
 - THIS SITE PLAN SHALL NOT BE USED TO STAKE THE LOCATION OF PROPOSED BUILDING COLUMN LINES. THE SURVEYORS ARE TO USE THE BUILDING FOUNDATION PLANS.
 - THE CONTRACTOR SHALL PLACE AND COMPACT FILL UNDER THE PROPOSED BUILDING AREA TO A MINIMUM OF 95% MAXIMUM DRY DENSITY PER ASTM-1557. ALL OTHER AREAS SHALL BE COMPACTED TO A MINIMUM OF 90% MAXIMUM DRY DENSITY.
 - THE CONTRACTOR SHALL REQUEST CONSTRUCTION STAKING BY FAX USING THE MOORE & BRUGGINK, INC. CONTRACTORS CONSTRUCTION STAKING REQUEST FORM. ONLY COMPLETED REQUESTS WILL BE SCHEDULED. NOTE THE PROJECT OWNER WILL PAY THE SURVEYOR TO PLACE STAKES ONLY ONCE. ALL LOST AND DAMAGED STAKES ARE THE CONTRACTORS RESPONSIBILITY.
 - REGULATORY AGENCIES AS FOLLOWS:
 - GRAND HAVEN CHARTER TOWNSHIP
 - CITY OF GRAND HAVEN
 - OTTAWA COUNTY ROAD COMMISSION
 - OTTAWA COUNTY WATER RESOURCES COMMISSIONER
 - OTTAWA COUNTY ENVIRONMENTAL HEALTH DEPARTMENT
 - MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY.

SCHEDULE OF TOTAL LAND AREAS:

BLDG DESIGNATION	S	M	B	R	A	G
GROSS FLOOR AREA:	14,675 SFT	10,768 SFT	28,182 SFT	6,066 SFT	6,066 SFT	2,526 SFT
USABLE FLOOR AREA:	13,208 SFT	9,681 SFT	25,364 SFT	5,459 SFT	5,459 SFT	2,273 SFT
PARKING ALLOWED:	66 SPACES	48 SPACES	127 SPACES	27 SPACES	27 SPACES	11 SPACES
PARKING PROVIDED:	66 SPACES	48 SPACES	123 SPACES	27 SPACES	27 SPACES	10 SPACES
LOAD ZONE REQ'D:	2260 SFT	1660 SFT	2370 SFT	620 SFT	620 SFT	608 SFT
LOAD ZONE PROVIDED:	1283 SFT	0	2370 SFT	624 SFT	630 SFT	624 SFT

PARKING RATIO: 1:200 SFT USABLE FLOOR AREA

MAX. PARKING ALLOWED ON SITE: 306 SPACES
 TOTAL PARKING PROVIDED ON SITE: 301 SPACES

TOTAL BLDG SFT ON SITE: 68,283 SFT

TOTAL PARKING AREA ON SITE: 143,989 SFT (/15 = 9599)

TOTAL LANDSCAPE ISLANDS REQUIRED: 9599 SFT
 TOTAL LANDSCAPE ISLANDS PROVIDED: 9962 SFT

SHEET SCHEDULE

1	BOUNDARY & TOPOGRAPHIC SURVEY
2	REMOVAL PLAN
3	SITE PLAN
4	UTILITY PLAN (PRIVATE)
5	UTILITY PLAN (PUBLIC)
6	GRADING & SOIL EROSION CONTROL PLAN
7	LIGHTING & SIGNAGE PLAN
8	ENLARGED LANDSCAPE PLAN (NORTH)
9	ENLARGED LANDSCAPE PLAN (SOUTH)
10	PARKING ISLAND DETAILS "A" - "O"
11	PARKING ISLAND DETAILS "P" - "T"
12	CONSTRUCTION DETAILS
13	SITE PLAN OPTION "B"

PREPARED FOR:
 VISSER BROTHERS, INC
 1946 TURNER AVENUE, NW
 GRAND RAPIDS, MI 49504
 PH (616) 363-2825
 FX (616) 363-5477

WWW.VISSERBROTHERS.COM
 ATTN: MR BILL MAST

LEGEND

—	SANITARY SEWER (SAN)	▲	HYDRANT (HYD)	●	SURVEY IRON (FOUND)
—	STORM SEWER (STM)	+	WATER VALVE (WV)	○	SURVEY IRON (SET)
—	WATERMAIN (WAT)	○	MANHOLE (MH)	M	MEASURED DIMENSION
—	GAS MAIN (GAS)	■	CATCH BASIN (CB)	D	DEEDED DIMENSION
—	UG ELECTRIC CABLE (PWR)	□	UTILITY POLE (UP)	P	PLATED DIMENSION
—	UG PHONE CABLE (TEL)	+	GUY ANCHOR (GA)	R	RECORDED DIMENSION
—	AERIAL UTILITY LINE (AERIAL)	○	WATER METER (WM)	SWP	SIDEWALK WARNING PAD
—	FENCE	○	WATER STOP BOX (WSB)	FF	FINISHED FLOOR
—	PROPERTY BOUNDARY LINE	○	SAN CLEANOUT (CO)		
—	PROPOSED P.U.D. BOUNDARY LINE	○	PHONE RISER (PR)		
—	PROPOSED DRAINAGE SWALE	○	GAS METER (GM)		
—	PROPOSED CURB & GUTTER	○	GAS VALVE (GV)		
—	EX BITUMINOUS SURFACE	○	ELECTRIC METER (EM)		
—	PROPOSED BITUMINOUS SURFACE	○	ELECTRIC BOX (EB)		
—	PROPOSED CONCRETE SURFACE	○	STEEL POST (SP)		
—		○	PEDESTRIAN CROSSWALK POLE (CW)		
—		○	LIGHT POLE (LP)		

EXISTING ZONING: "C-1" COMMERCIAL
 MIN FRONT SETBACK: 50'
 MIN SIDE SETBACK: 9'
 MIN REAR SETBACK: 20'
 MIN LOT AREA: 35,000 SFT
 MIN LOT WIDTH: 110'
 MAX BLDG HT: 2.5 STORIES/35'

PROPOSED ZONING: P.U.D. PLANNED UNIT DEVELOPMENT

PLAN REVISIONS

ISSUED 11/09/17	SHEMATIC DESIGN REVIEW
REV 12/28/17	REV PER REVIEW COMMENTS
REV 01/18/18	REV PER REVIEW COMMENTS

SITE PLAN
 FOR
ROBBINS CENTER POINT P.U.D.
 GRAND HAVEN TOWNSHIP, OTTAWA COUNTY, MICHIGAN

MOORE & BRUGGINK, INC.
 Consulting Engineers
 2020 Monroe Avenue N.W.
 Grand Rapids, Michigan 49505-6298
 Phone: (616) 363-9801 Web: www.mbce.com

FIELD SURVEY / DATE:
 M&B-10-05-16

DESIGNED BY: JFL

DESIGN DRAWN BY: FEF

CHECKED BY: JFL

PLAN DATE: 11/6/17

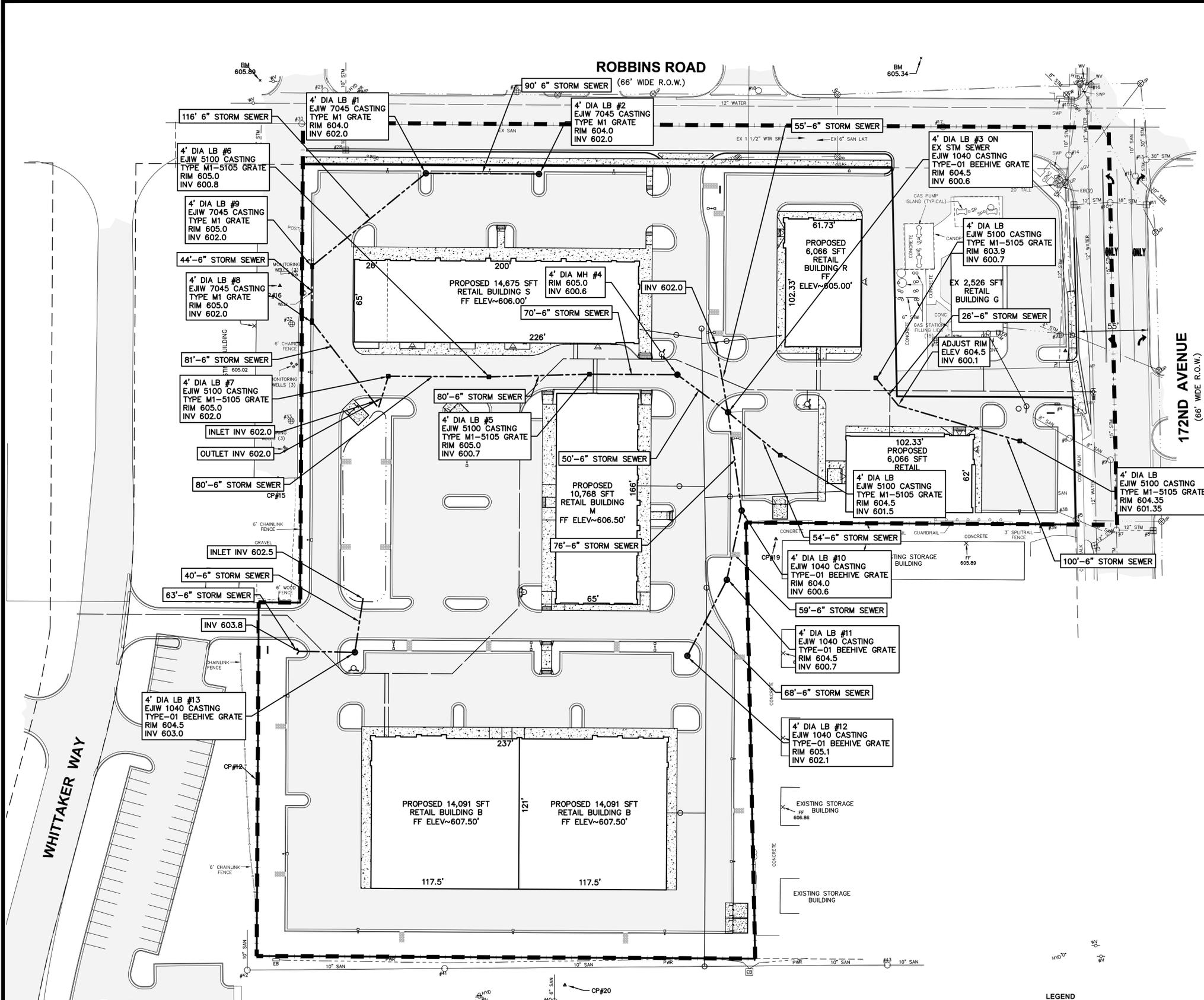
PROJECT NO.: 160190.01

SHEET NUMBER:
3 OF 13

811
 Know what's below.
 Call before you dig.

Utility locations are approximate only.
 Please contact "Miss Dig" three working days prior to the start of construction for exact locations. (1-800-482-7171)

P:\160190.1\Visser - Robbings Road\CAD\DWG\160190 PUD PLAN SHEETS (2017).dwg_1/24/2018 1:33:04 PM LISA FRIZZELL



- UTILITY PLAN GENERAL NOTES:**
1. THE CONTRACTOR SHALL OBTAIN ALL PERMITS AND SURETY AS PART OF THIS WORK.
 2. THE CONTRACTOR SHALL CALL MISS DIG 3 WORKING DAYS PRIOR TO THE START OF CONSTRUCTION.
 3. ALL STORM SEWER PIPE SHALL BE ADS N-12 PLASTIC PIPE UNLESS OTHERWISE SPECIFIED.
 4. ALL LEACH BASINS AND MANHOLES SHALL BE MINIMUM 4' DIAMETER PRECAST CONCRETE, UNLESS NOTED OTHERWISE.
 5. THE CONTRACTOR SHALL BED AND BACKFILL ALL UNDERGROUND PIPING WITH MDOT CL-2 SAND TO A MINIMUM OF 95% MAXIMUM DRY DENSITY PER ASTM- 1557.
 6. THE PROPOSED PUBLIC WATERMAIN AND PUBLIC SANITARY SEWER SHALL BE CONSTRUCTED PER SEPARATE APPROVED AND PERMITTED UTILITY PLANS.
 7. THE CONTRACTOR SHALL REQUEST CONSTRUCTION STAKING BY FAX USING THE MOORE & BRUGGINK, INC. CONTRACTORS CONSTRUCTION STAKING REQUEST FORM. ONLY COMPLETED REQUESTS WILL BE SCHEDULED. NOTE THE PROJECT OWNER WILL PAY THE SURVEYOR TO PLACE STAKES ONLY ONCE. ALL LOST AND DAMAGED STAKES ARE THE CONTRACTORS RESPONSIBILITY.
 8. ALL UTILITIES WILL BE LOCATED UNDERGROUND.

PHASE ONE CONSTRUCTION SCHEDULE

ITEM	J	F	M	A	M	J	J	A	S	O	N	D
TEMP. EROSION CONTROL												
TOPSOIL STRIPPING												
SITE GRADING												
SITE UTILITIES												
DETENTION POND												
BUILDING CONSTRUCTION												
PERM. EROSION CONTROL												
LANDSCAPING												
PAVING												
REMOVE TEMP. EROSION CONTROL												

- SHEET SCHEDULE**
- 1 BOUNDARY & TOPOGRAPHIC SURVEY
 - 2 REMOVAL PLAN
 - 3 SITE PLAN
 - 4 UTILITY PLAN (PRIVATE)
 - 5 UTILITY PLAN (PUBLIC)
 - 6 GRADING & SOIL EROSION CONTROL PLAN
 - 7 LIGHTING & SIGNAGE PLAN
 - 8 ENLARGED LANDSCAPE PLAN (NORTH)
 - 9 ENLARGED LANDSCAPE PLAN (SOUTH)
 - 10 PARKING ISLAND DETAILS "A" - "O"
 - 11 PARKING ISLAND DETAILS "P" - "T"
 - 12 CONSTRUCTION DETAILS
 - 13 SITE PLAN OPTION "B"

PREPARED FOR:
 VISSER BROTHERS, INC
 1946 TURNER AVENUE, NW
 GRAND RAPIDS, MI 49504
 PH (616) 363-3825
 FX (616) 363-6477
 WWW.VISSERBROTHERS.COM
 ATTN: MR BILL MAST

LEGEND

— SANITARY SEWER (SAN)	▲ - HYDRANT (HYD)	● - SURVEY IRON (FOUND)
--- STORM SEWER (STM)	○ - WATER VALVE (WV)	○ - SURVEY IRON (SET)
--- WATERMAIN (WAT)	○ - MANHOLE (MH)	M - MEASURED DIMENSION
--- GAS MAIN (GAS)	■ - CATCH BASIN (CB)	D - DEEDED DIMENSION
--- UG ELECTRIC CABLE (PWR)	⊕ - UTILITY POLE (UP)	P - PLATTED DIMENSION
--- UG PHONE CABLE (TEL)	⊕ - GUY ANCHOR (GA)	R - RECORDED DIMENSION
--- AERIAL UTILITY LINE (AERIAL)	○ - WATER METER (WM)	SWP - SIDEWALK WARNING PAD
--- FENCE	○ - WATER STOP BOX (WSB)	FF - FINISHED FLOOR
--- PROPERTY BOUNDARY LINE	○ - SAN CLEANOUT (CO)	
--- PROPOSED P.U.D. BOUNDARY LINE	○ - PHONE RISER (PR)	
--- PROPOSED DRAINAGE SWALE	○ - GAS METER (GM)	
--- PROPOSED CURB & GUTTER	○ - GAS VALVE (GV)	
--- EX BITUMINOUS SURFACE	○ - ELECTRIC METER (EM)	
--- PROPOSED BITUMINOUS SURFACE	○ - ELECTRIC BOX (EB)	
--- PROPOSED CONCRETE SURFACE	○ - STEEL POST (SP)	
	○ - PEDESTRIAN CROSSWALK POLE (CW)	
	○ - LIGHT POLE (LP)	

PLAN REVISIONS

ISSUED	REVISION
11/09/17	SCHEMATIC DESIGN REVIEW
12/28/17	REV PER REVIEW COMMENTS
01/18/18	REV PER REVIEW COMMENTS

UTILITY PLAN (PRIVATE)
 FOR
ROBBINS CENTER POINT P.U.D.
 GRAND HAVEN TOWNSHIP, OTTAWA COUNTY, MICHIGAN

MOORE & BRUGGINK, INC.
 Consulting Engineers
 2020 Monroe Avenue N.W.
 Grand Rapids, Michigan 49505-6298
 Phone: (616) 363-9801 Web: www.mbce.com

FIELD SURVEY / DATE:
 M&B-10-05-16

DESIGNED BY:
 JFL

DESIGN DRAWN BY:
 FEF

CHECKED BY:
 JFL

PLAN DATE:
 11/6/17

PROJECT NO.:
 160190.01

SHEET NUMBER
4 OF 13

811
 Know what's below.
 Call before you dig.

Utility locations are approximate only.
 Please contact "Miss Dig" three working days prior to the start of construction for exact locations. (1-800-482-7171)

P:\160190.1\Visser - Robbins Road\CADD\DWG\160190 PUD PLAN SHEETS (2017).dwg_1/24/2018 1:33:09 PM LISA FRIZZELL

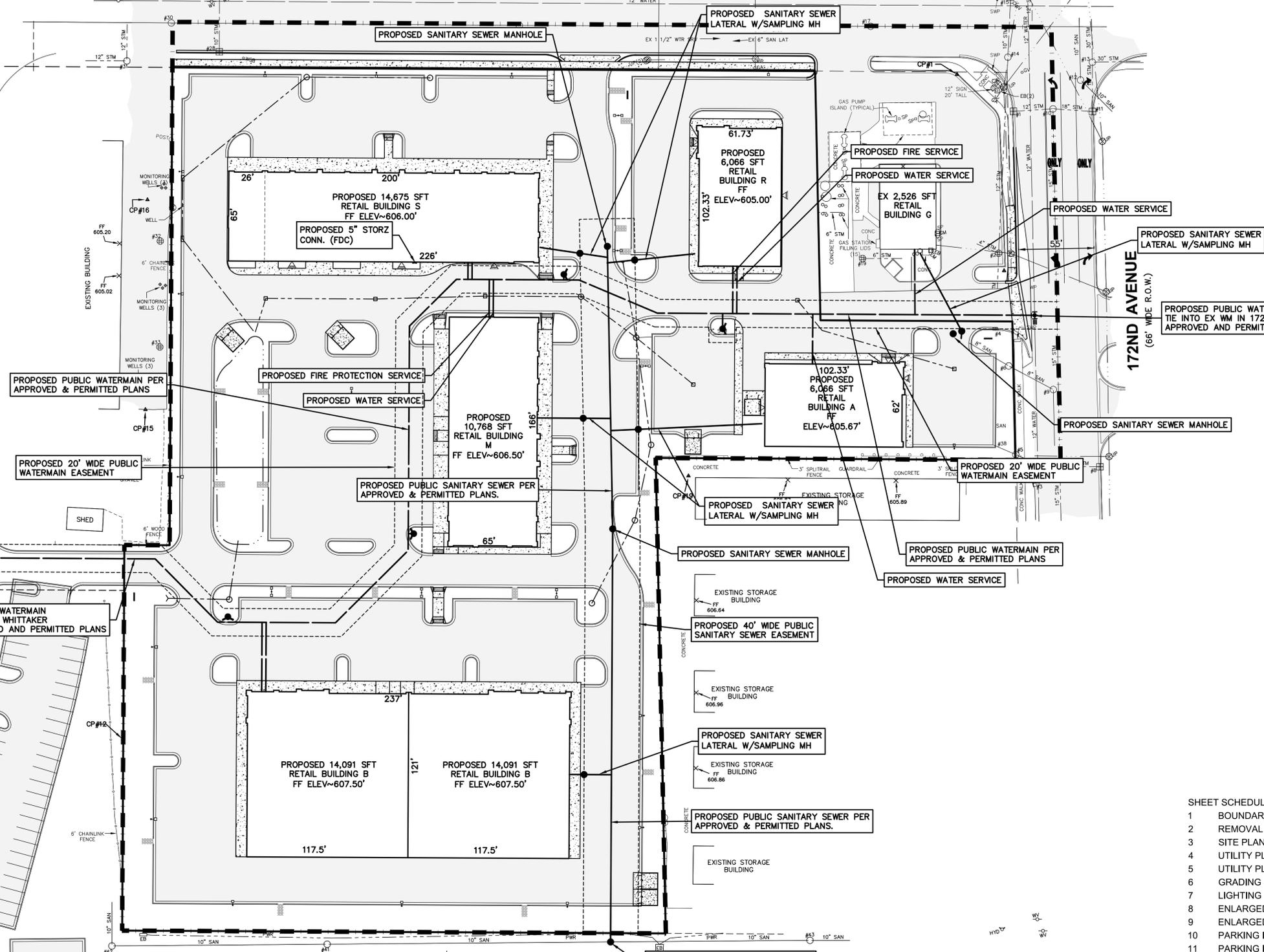
ROBBINS ROAD
(66' WIDE R.O.W.)



SCALE: 1" = 40'

UTILITY PLAN GENERAL NOTES:

1. THE CONTRACTOR SHALL OBTAIN ALL PERMITS AND SURETY AS PART OF THIS WORK.
2. THE CONTRACTOR SHALL CALL MISS DIG 3 WORKING DAYS PRIOR TO THE START OF CONSTRUCTION.
3. ALL STORM SEWER PIPE SHALL BE ADS N-12 PLASTIC PIPE UNLESS OTHERWISE SPECIFIED.
4. ALL LEACH BASINS AND MANHOLES SHALL BE MINIMUM 4' DIAMETER PRECAST CONCRETE, UNLESS NOTED OTHERWISE.
5. THE CONTRACTOR SHALL BED AND BACKFILL ALL UNDERGROUND PIPING WITH MDOT CL-2 SAND TO A MINIMUM OF 95% MAXIMUM DRY DENSITY PER ASTM- 1557.
6. THE PROPOSED PUBLIC WATERMAIN AND PUBLIC SANITARY SEWER SHALL BE CONSTRUCTED PER SEPARATE APPROVED AND PERMITTED UTILITY PLANS.
7. THE CONTRACTOR SHALL REQUEST CONSTRUCTION STAKING BY FAX USING THE MOORE & BRUGGINK, INC. CONTRACTORS CONSTRUCTION STAKING REQUEST FORM. ONLY COMPLETED REQUESTS WILL BE SCHEDULED. NOTE THE PROJECT OWNER WILL PAY THE SURVEYOR TO PLACE STAKES ONLY ONCE. ALL LOST AND DAMAGED STAKES ARE THE CONTRACTORS RESPONSIBILITY.
8. ALL UTILITIES WILL BE LOCATED UNDERGROUND.



PHASE ONE CONSTRUCTION SCHEDULE

ITEM	J	F	M	A	M	J	J	A	S	O	N	D
TEMP. EROSION CONTROL												
TOPSOIL STRIPPING												
SITE GRADING												
SITE UTILITIES												
DETENTION POND												
BUILDING CONSTRUCTION												
PERM. EROSION CONTROL												
LANDSCAPING												
PAVING												
REMOVE TEMP. EROSION CONTROL												

- SHEET SCHEDULE**
- 1 BOUNDARY & TOPOGRAPHIC SURVEY
 - 2 REMOVAL PLAN
 - 3 SITE PLAN
 - 4 UTILITY PLAN (PRIVATE)
 - 5 UTILITY PLAN (PUBLIC)
 - 6 GRADING & SOIL EROSION CONTROL PLAN
 - 7 LIGHTING & SIGNAGE PLAN
 - 8 ENLARGED LANDSCAPE PLAN (NORTH)
 - 9 ENLARGED LANDSCAPE PLAN (SOUTH)
 - 10 PARKING ISLAND DETAILS "A" - "O"
 - 11 PARKING ISLAND DETAILS "P" - "T"
 - 12 CONSTRUCTION DETAILS
 - 13 SITE PLAN OPTION "B"

PREPARED FOR:
VBSER BROTHERS, INC
1946 TURNER AVENUE, NW
GRAND RAPIDS, MI 49504
PH (616) 363-3825
FX (616) 363-6477

WWW.VISSERBROTHERS.COM
ATTN: MR BILL MAST

PLAN REVISIONS

ISSUED	REVISION
11/09/17	SCHEMATIC DESIGN REVIEW
12/28/17	REV PER REVIEW COMMENTS
01/18/18	REV PER REVIEW COMMENTS

UTILITY PLAN (PUBLIC)
FOR
ROBBINS CENTER POINT P.U.D.
GRAND HAVEN TOWNSHIP, OTTAWA COUNTY, MICHIGAN

MOORE & BRUGGINK, INC.
Consulting Engineers
2020 Monroe Avenue N.W.
Grand Rapids, Michigan 49505-6298
Phone: (616) 363-9801 Web: www.mbce.com

FIELD SURVEY / DATE:
M&B-10-05-16

DESIGNED BY: JFL

DESIGN DRAWN BY: FEF

CHECKED BY: JFL

PLAN DATE: 11/6/17

PROJECT NO.: 160190.01

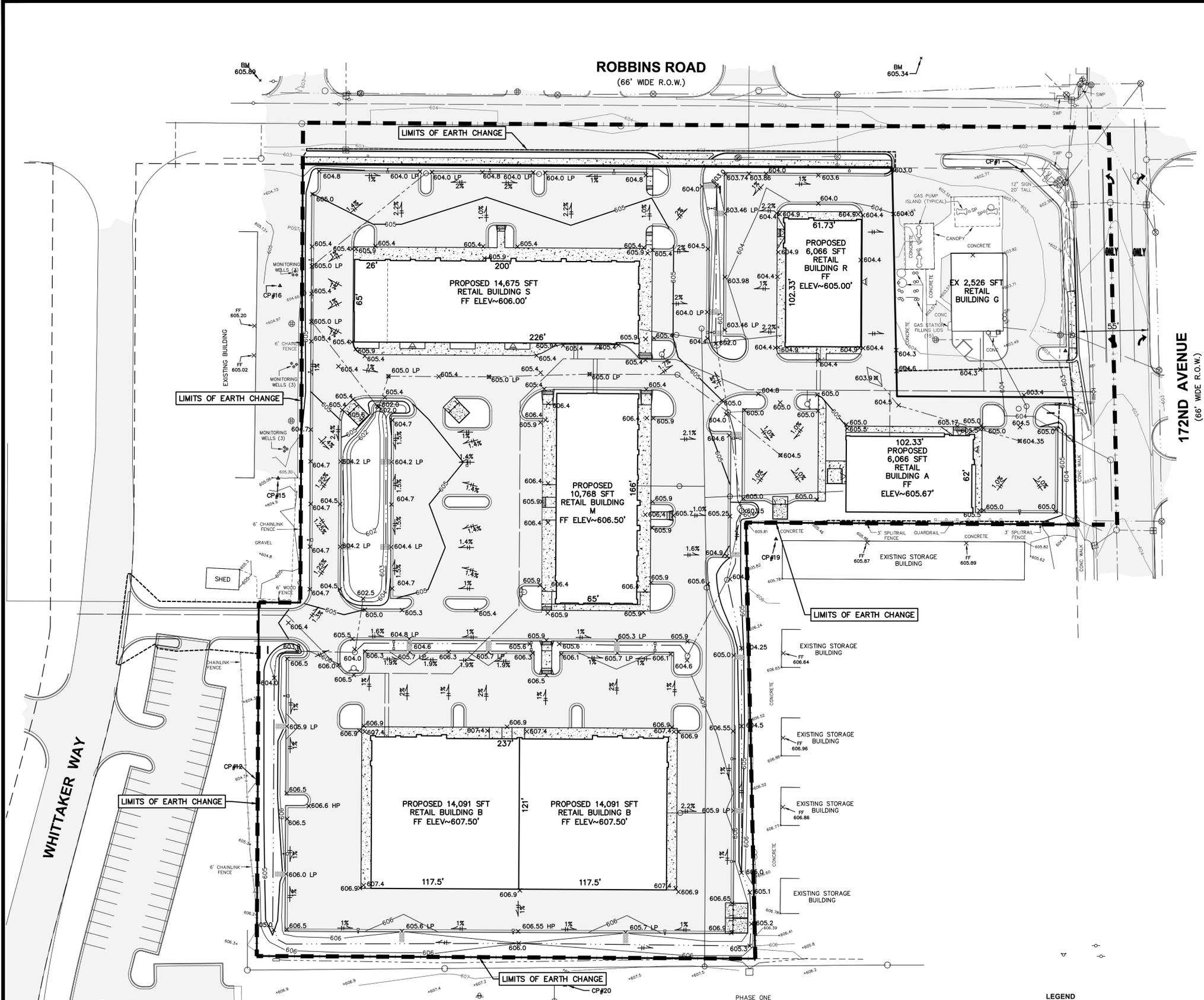
SHEET NUMBER: 5 OF 13

- LEGEND**
- SANITARY SEWER (SAN)
 - STORM SEWER (STM)
 - WATERMAIN (WAT)
 - GAS MAIN (GAS)
 - UG ELECTRIC CABLE (PWR)
 - UG PHONE CABLE (TEL)
 - AERIAL UTILITY LINE (AERIAL)
 - FENCE
 - PROPERTY BOUNDARY LINE
 - PROPOSED P.U.D. BOUNDARY LINE
 - PROPOSED DRAINAGE SWALE
 - PROPOSED CURB & GUTTER
 - EX BITUMINOUS SURFACE
 - PROPOSED BITUMINOUS SURFACE
 - PROPOSED CONCRETE SURFACE
 - HYDRANT (HYD)
 - WATER VALVE (WV)
 - MANHOLE (MH)
 - CATCH BASIN (CB)
 - UTILITY POLE (UP)
 - GUY ANCHOR (GA)
 - WATER METER (WM)
 - WATER STOP BOX (WSB)
 - SAN CLEANOUT (CO)
 - PHONE RISER (PR)
 - GAS METER (GM)
 - GAS VALVE (GV)
 - ELECTRIC METER (EM)
 - ELECTRIC BOX (EB)
 - STEEL POST (SP)
 - PEDESTRIAN CROSSWALK POLE (CW)
 - LIGHT POLE (LP)
 - SURVEY IRON (FOUND)
 - SURVEY IRON (SET)
 - MEASURED DIMENSION
 - DEEDED DIMENSION
 - PLATTED DIMENSION
 - RECORDED DIMENSION
 - SWP - SIDEWALK WARNING PAD
 - FF - FINISHED FLOOR



Know what's below.
Call before you dig.

Utility locations are approximate only. Please contact "Miss Dig" three working days prior to the start of construction for exact locations. (1-800-482-7171)



- SOIL EROSION CONTROL NOTES:**
1. THE CONTRACTOR SHALL OBTAIN ALL PERMITS AND SURETY AS PART OF THIS WORK.
 2. THE CONTRACTOR SHALL CALL MISS DIG 3 WORKING DAYS PRIOR TO THE START OF CONSTRUCTION.
 3. THE CONTRACTOR SHALL REQUEST CONSTRUCTION STAKING BY FAX USING THE MOORE & BRUGGINK, INC. CONTRACTORS CONSTRUCTION STAKING REQUEST FORM. ONLY COMPLETED REQUESTS WILL BE SCHEDULED. NOTE THE PROJECT OWNER WILL PAY THE SURVEYOR TO PLACE STAKES ONLY ONCE. ALL LOST AND DAMAGED STAKES ARE THE CONTRACTORS RESPONSIBILITY.
 4. THE CONTRACTOR SHALL REMOVE ALL CONCRETE, BIT PAVEMENT, STORM SEWER STRUCTURES, STORM SEWER PIPE, LIGHT POLES, FENCING, UNDERGROUND ELECTRIC, VEGETATION AND SO ON TO PREPARE THE SITE FOR IMPROVEMENTS. CASTINGS, VALVE BOXES AND/OR OTHER UTILITY STRUCTURES TO REMAIN SHALL BE ADJUSTED AND PROTECTED FROM DAMAGE.
 5. NORTH AMERICAN GREEN DS-150 EROSION CONTROL BLANKET SHALL BE PLACED ON ALL SLOPES 1:3 OR GREATER. SECURE BLANKET TO SLOPE PER MANUFACTURERS SPECIFICATIONS.
 6. ALL SILT FENCING SHALL BE TRENCHED PRIOR TO COMMENCEMENT OF EARTHWORK ACTIVITIES.
 7. SILT FENCING IS REQUIRED ALONG ALL DOWNSTREAM EDGES OF THE GRADING LIMITS AND MUST REMAIN IN PLACE UNTIL VEGETATION IS UNIFORMLY RE-ESTABLISHED.
 8. ALL SOIL EROSION CONTROL MEASURES SHALL COMPLY WITH THE CITY OF GRAND RAPIDS LUDS PERMIT, ACT 451 OF PUBLIC ACTS OF 1997, SOIL EROSION AND SEDIMENTATION CONTROL, NATURAL RESOURCES AND ENVIRONMENTAL PROTECTION ACT.
 9. NEW & EXISTING STORM SEWER INLET POINTS SHALL BE PROTECTED FROM SEDIMENT INFILTRATION WITH INLET FABRIC DROP (SILT SACK) PER CITY OF GRAND RAPIDS APPROVED MANUFACTURERS (H-FLOW AND/OR ACF BRANDS). CONTRACTOR SHALL PROVIDE PRODUCT INFORMATION TO THE CITY PRIOR TO INSTALLATION.
 10. ALL SOIL EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE INSPECTED AND MAINTAINED ON A DAILY BASIS, AND IMMEDIATELY FOLLOWING EVERY SIGNIFICANT RAINFALL EVENT.
 11. ALL EXCESS SPOILS ARE TO BE REMOVED FROM THE SITE. OTHERWISE STOCKPILES MUST BE PROVIDED WITH TEMPORARY AND PERMANENT STABILIZATION MEASURES.
 12. IF EXCESS DIRT IS TO BE PLACED ON SITE, THE LOCATION SHALL BE APPROVED BY THE PROPERTY OWNER & ENGINEER.
 13. ALL TEMPORARY EROSION CONTROLS MUST REMAIN IN PLACE UNTIL VEGETATION IS UNIFORMLY RE-ESTABLISHED.
 14. DUST CONTROL SHALL BE PROVIDED BY MEANS OF WATER DISTRIBUTION ON A REGULAR BASIS OVER AREAS THAT COULD POTENTIALLY PRODUCE DUST CONDITIONS.
 15. A TRACKING PAD MUST BE PROVIDED AT CONSTRUCTION ACCESS POINTS TO PREVENT SOILS FROM BEING TRACKED OFF-SITE, PER DETAIL THIS SHEET.
 16. CONTRACTOR SHALL SWEEP PAVED AREAS EACH DAY (OR MORE AS NEEDED) BY MECHANICAL MEANS FOR ALL PAVED AREAS IN AND AROUND THE PERIMETER OF THE PROJECT AFFECTED BY TRUCKING OPERATIONS.
 17. CONSTRUCTION ENTRANCE SHALL BE PROVIDED FROM 172ND AVENUE.
 18. APPROXIMATELY 8180 CYDS OF MATERIAL TO BE REMOVED FROM THE SITE.
 19. SEE LANDSCAPE PLAN FOR RESTORATION SPECIFICATIONS IN YARD AREAS.

- SHEET SCHEDULE**
- 1 BOUNDARY & TOPOGRAPHIC SURVEY
 - 2 REMOVAL PLAN
 - 3 SITE PLAN
 - 4 UTILITY PLAN (PRIVATE)
 - 5 UTILITY PLAN (PUBLIC)
 - 6 GRADING & SOIL EROSION CONTROL PLAN
 - 7 LIGHTING & SIGNAGE PLAN
 - 8 ENLARGED LANDSCAPE PLAN (NORTH)
 - 9 ENLARGED LANDSCAPE PLAN (SOUTH)
 - 10 PARKING ISLAND DETAILS "A" - "O"
 - 11 PARKING ISLAND DETAILS "P" - "T"
 - 12 CONSTRUCTION DETAILS
 - 13 SITE PLAN OPTION "B"

PREPARED FOR:
 VISSER BROTHERS, INC
 1946 TURNER AVENUE, NW
 GRAND RAPIDS, MI 49504
 PH (616) 363-3825
 FX (616) 363-5477
 WWW.VISSERBROTHERS.COM
 ATTN: MR BILL MAST

PHASE ONE CONSTRUCTION SCHEDULE

ITEM	J	F	M	A	M	J	A	S	O	N
TEMP. EROSION CONTROL										
TOPSOIL STRIPPING										
SITE GRADING										
SITE UTILITIES										
DETENTION POND										
BUILDING CONSTRUCTION										
PERM. EROSION CONTROL										
LANDSCAPING										
PAVING										
REMOVE TEMP. EROSION CONTROL										

- LEGEND**
- SANITARY SEWER (SAN)
 - STORM SEWER (STM)
 - WATERMAIN (WAT)
 - GAS MAIN (GAS)
 - US ELECTRIC CABLE (PWR)
 - US PHONE CABLE (TEL)
 - AERIAL UTILITY LINE (AERIAL)
 - FENCE
 - PROPERTY BOUNDARY LINE
 - PROPOSED P.U.D. BOUNDARY LINE
 - PROPOSED DRAINAGE SWALE
 - PROPOSED CURB & GUTTER
 - EX BITUMINOUS SURFACE
 - PROPOSED BITUMINOUS SURFACE
 - PROPOSED CONCRETE SURFACE
 - Δ - HYDRANT (HYD)
 - - WATER VALVE (WV)
 - - WATER MAIN (WAT)
 - - MANHOLE (MH)
 - - CATCH BASIN (CB)
 - ⊕ - UTILITY POLE (UP)
 - ⊕ - GUY ANCHOR (GA)
 - - WATER METER (WM)
 - - WATER STOP BOX (WSB)
 - - SAN CLEANOUT (CO)
 - - PHONE RISER (PR)
 - - GAS METER (GM)
 - - GAS VALVE (GV)
 - - ELECTRIC METER (EM)
 - - ELECTRIC BOX (EB)
 - - STEEL POST (SP)
 - - PEDESTRIAN CROSSWALK POLE (CW)
 - ☆ - LIGHT POLE (LP)
 - - SURVEY IRON (FOUND)
 - - SURVEY IRON (SET)
 - M - MEASURED DIMENSION
 - D - DEEDED DIMENSION
 - P - PLATTED DIMENSION
 - R - RECORDED DIMENSION
 - SWP - SIDEWALK WARNING PAD
 - FF - FINISHED FLOOR

PLAN REVISIONS

NO.	DATE	DESCRIPTION
ISSUED	11/09/17	SCHMATIC DESIGN REVIEW
REV	12/28/17	REV PER REVIEW COMMENTS
REV	01/18/18	REV PER REVIEW COMMENTS

GRADING & SOIL EROSION CONTROL PLAN
 FOR
ROBBINS CENTER POINT P.U.D.
 GRAND HAVEN TOWNSHIP, OTTAWA COUNTY, MICHIGAN

MOORE & BRUGGINK, INC.
 Consulting Engineers
 2020 Monroe Avenue N.W.
 Grand Rapids, Michigan 49505-6298
 Phone: (616) 363-9801 Web: www.mbce.com

FIELD SURVEY / DATE:
 M&B-10-05-16
DESIGNED BY: JFL
DESIGN DRAWN BY: FEF
CHECKED BY: JFL
PLAN DATE: 11/6/17
PROJECT NO.: 160190.01
SHEET NUMBER: 6 OF 13

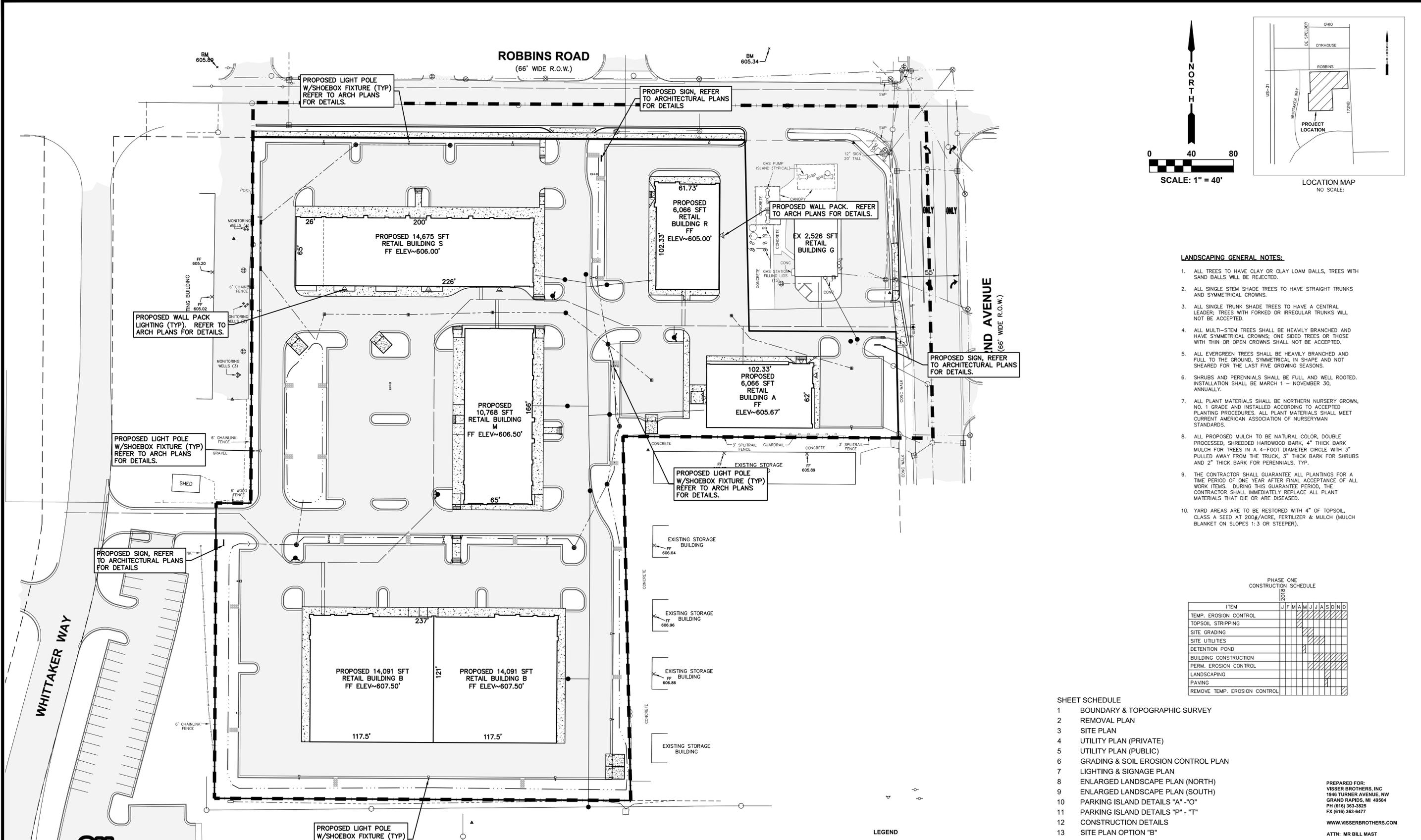
P:\160190.1\Visser - Robbins Road\CADD\DWG\160190 PUD PLAN SHEETS (2017).dwg, 1/24/2018 1:32:20 PM, LISA FRIZZELL



Utility locations are approximate only. Please contact "Miss Dig" three working days prior to the start of construction for exact locations. (1-800-482-7171)

P:\160190.1\Visser - Robbins Road\CAD\DWG\160190 PUD PLAN SHEETS (2017).dwg, 1/24/2018 11:33:23 PM, tel

P:\160190.1\Visser - Robbins Road\CAD\DWG\160190 PUD PLAN SHEETS (2017).dwg, 1/24/2018 1:32:25 PM, LISA FRIZZELL



- LANDSCAPING GENERAL NOTES:**
- ALL TREES TO HAVE CLAY OR CLAY LOAM BALLS, TREES WITH SAND BALLS WILL BE REJECTED.
 - ALL SINGLE STEM SHADE TREES TO HAVE STRAIGHT TRUNKS AND SYMMETRICAL CROWNS.
 - ALL SINGLE TRUNK SHADE TREES TO HAVE A CENTRAL LEADER; TREES WITH FORKED OR IRREGULAR TRUNKS WILL NOT BE ACCEPTED.
 - ALL MULTI-STEM TREES SHALL BE HEAVILY BRANCHED AND HAVE SYMMETRICAL CROWNS; ONE SIDED TREES OR THOSE WITH THIN OR OPEN CROWNS SHALL NOT BE ACCEPTED.
 - ALL EVERGREEN TREES SHALL BE HEAVILY BRANCHED AND FULL TO THE GROUND, SYMMETRICAL IN SHAPE AND NOT SHEARED FOR THE LAST FIVE GROWING SEASONS.
 - SHRUBS AND PERENNIALS SHALL BE FULL AND WELL ROOTED. INSTALLATION SHALL BE MARCH 1 - NOVEMBER 30, ANNUALLY.
 - ALL PLANT MATERIALS SHALL BE NORTHERN NURSERY GROWN, NO. 1 GRADE AND INSTALLED ACCORDING TO ACCEPTED PLANTING PROCEDURES. ALL PLANT MATERIALS SHALL MEET CURRENT AMERICAN ASSOCIATION OF NURSERYMAN STANDARDS.
 - ALL PROPOSED MULCH TO BE NATURAL COLOR, DOUBLE PROCESSED, SHREDED HARDWOOD BARK, 4" THICK BARK MULCH FOR TREES IN A 4-FOOT DIAMETER CIRCLE WITH 3" PULLED AWAY FROM THE TRUCK, 3" THICK BARK FOR SHRUBS AND 2" THICK BARK FOR PERENNIALS, TYP.
 - THE CONTRACTOR SHALL GUARANTEE ALL PLANTINGS FOR A TIME PERIOD OF ONE YEAR AFTER FINAL ACCEPTANCE OF ALL WORK ITEMS. DURING THIS GUARANTEE PERIOD, THE CONTRACTOR SHALL IMMEDIATELY REPLACE ALL PLANT MATERIALS THAT DIE OR ARE DISEASED.
 - YARD AREAS ARE TO BE RESTORED WITH 4" OF TOPSOIL, CLASS A SEED AT 200#/ACRE, FERTILIZER & MULCH (MULCH BLANKET ON SLOPES 1:3 OR STEEPER).

PHASE ONE CONSTRUCTION SCHEDULE

ITEM	2018	J	F	M	A	M	J	J	A	S	O	N	D
TEMP. EROSION CONTROL													
TOPSOIL STRIPPING													
SITE GRADING													
SITE UTILITIES													
DETENTION POND													
BUILDING CONSTRUCTION													
PERM. EROSION CONTROL													
LANDSCAPING													
PAVING													
REMOVE TEMP. EROSION CONTROL													

- SHEET SCHEDULE**
- BOUNDARY & TOPOGRAPHIC SURVEY
 - REMOVAL PLAN
 - SITE PLAN
 - UTILITY PLAN (PRIVATE)
 - UTILITY PLAN (PUBLIC)
 - GRADING & SOIL EROSION CONTROL PLAN
 - LIGHTING & SIGNAGE PLAN
 - ENLARGED LANDSCAPE PLAN (NORTH)
 - ENLARGED LANDSCAPE PLAN (SOUTH)
 - PARKING ISLAND DETAILS "A" - "O"
 - PARKING ISLAND DETAILS "P" - "T"
 - CONSTRUCTION DETAILS
 - SITE PLAN OPTION "B"

PREPARED FOR:
VISSER BROTHERS, INC
 1946 TURNER AVENUE, NW
 GRAND RAPIDS, MI 49504
 PH (616) 363-3825
 FX (616) 363-6477
 WWW.VISSERBROTHERS.COM
 ATTN: MR BILL MAST

- LEGEND**
- SANITARY SEWER (SAN)
 - STORM SEWER (STM)
 - WATERMAIN (WAT)
 - GAS MAIN (GAS)
 - UG ELECTRIC CABLE (PWR)
 - UG PHONE CABLE (TEL)
 - AERIAL UTILITY LINE (AERIAL)
 - FENCE
 - PROPERTY BOUNDARY LINE
 - PROPOSED P.U.D. BOUNDARY LINE
 - PROPOSED DRAINAGE SWALE
 - PROPOSED CURB & GUTTER
 - EX BITUMINOUS SURFACE
 - PROPOSED BITUMINOUS SURFACE
 - PROPOSED CONCRETE SURFACE
 - △ - HYDRANT (HYD)
 - ⊕ - WATER VALVE (WV)
 - - MANHOLE (MH)
 - ⊞ - CATCH BASIN (CB)
 - ⊕ - UTILITY POLE (UP)
 - ⊕ - GUY ANCHOR (GA)
 - ⊕ - WATER METER (WM)
 - ⊕ - WATER STOP BOX (WSB)
 - ⊕ - SAN CLEANOUT (CO)
 - ⊕ - PHONE RISER (PR)
 - ⊕ - GAS METER (GM)
 - ⊕ - GAS VALVE (GV)
 - ⊕ - ELECTRIC METER (EM)
 - ⊕ - ELECTRIC BOX (EB)
 - ⊕ - STEEL POST (SP)
 - ⊕ - PEDESTRIAN CROSSWALK POLE (CW)
 - ⊕ - LIGHT POLE (LP)
 - - SURVEY IRON (FOUND)
 - - SURVEY IRON (SET)
 - M - MEASURED DIMENSION
 - D - DEEDED DIMENSION
 - P - PLATTED DIMENSION
 - R - RECORDED DIMENSION
 - SWP - SIDEWALK WARNING PAD
 - FF - FINISHED FLOOR

PLAN REVISIONS

NO.	DATE	DESCRIPTION
ISSUED	11/09/17	SCHMATIC DESIGN REVIEW
REV	12/28/17	REV PER REVIEW COMMENTS
REV	01/18/18	REV PER REVIEW COMMENTS

LIGHTING & SIGNAGE PLAN
 FOR
ROBBINS CENTER POINT P.U.D.
 GRAND HAVEN TOWNSHIP, OTTAWA COUNTY, MICHIGAN

MOORE & BRUGGINK, INC.
 Consulting Engineers
 2020 Monroe Avenue N.W.
 Grand Rapids, Michigan 49505-6298
 Phone: (616) 363-9801 Web: www.mbcnc.com

FIELD SURVEY / DATE:
 M&B-10-05-16

DESIGNED BY: JFL

DESIGN DRAWN BY: FEF

CHECKED BY: JFL

PLAN DATE: 11/6/17

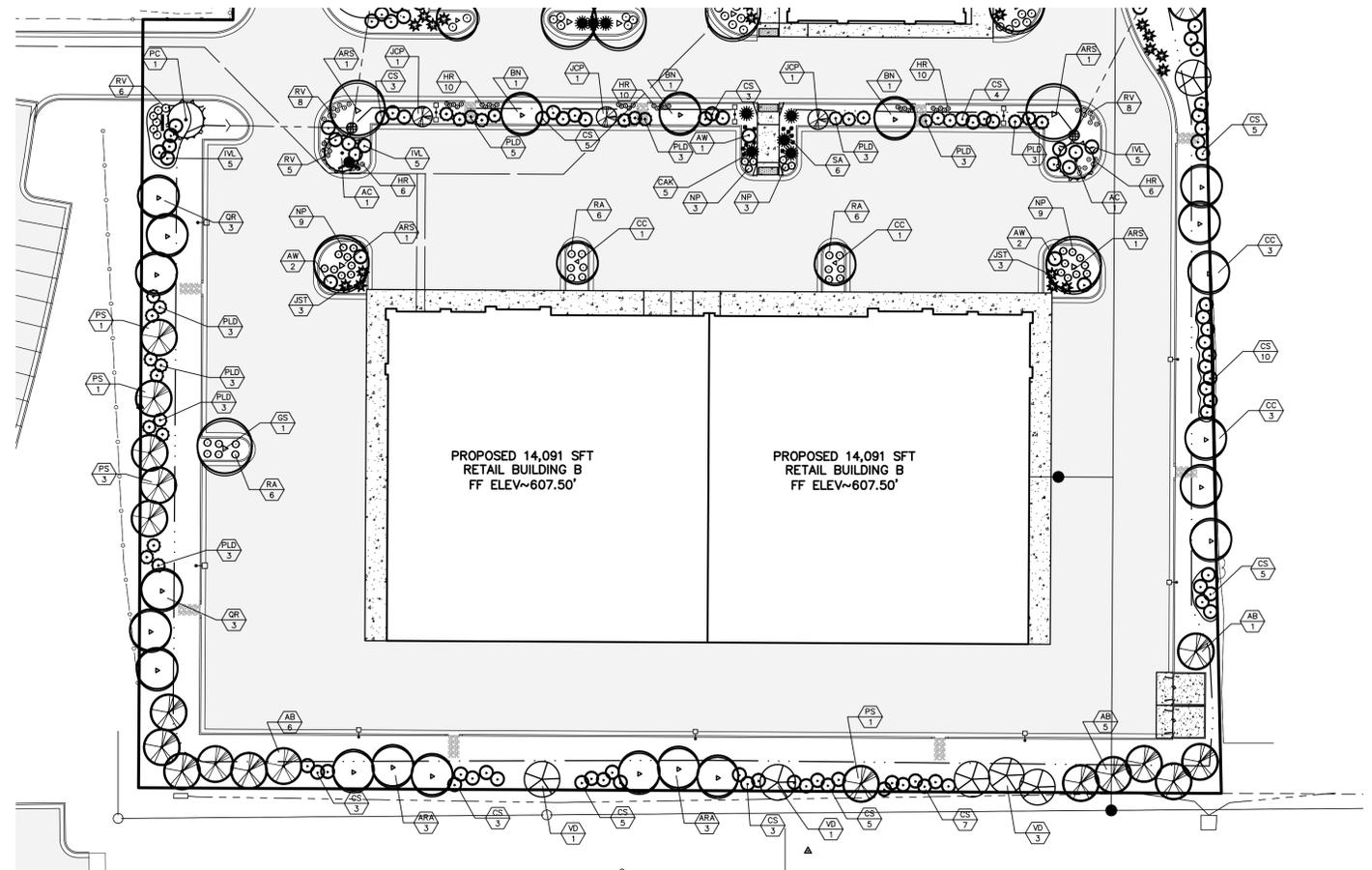
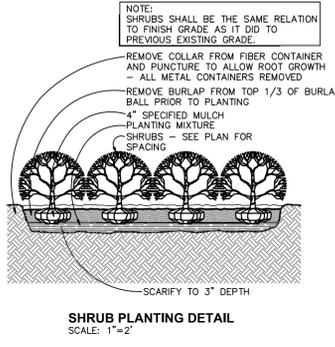
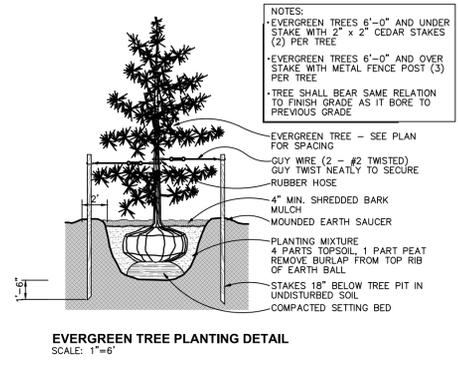
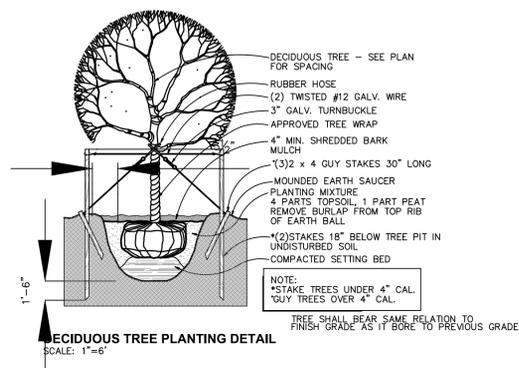
PROJECT NO.: 160190.01

SHEET NUMBER: 7 OF 13

Know what's below.
 Call before you dig.

Utility locations are approximate only.
 Please contact "Miss Dig" three working days prior to the start of construction for exact locations. (1-800-482-7171)





CODE	QNTY.	BOTANICAL NAME	COMMON NAME	SIZE	DESCR.
DECIDUOUS CANOPY TREES					
ARS	12	Acer freemanii 'Red Sunset'	Clump Red Sunset Maple	14-16'	B&B
ARA	13	Acer freemanii 'Autumn Blaze'	Autumn Blaze Red Maple	36"	B&B
OS	14	Gleditsia tricanthos 'Suncole'	Sunburst Honey Locust	3 1/2'	B&B
OV	8	Ostrya virginiana	Hophornbeam	3 1/2'	B&B
QA	6	Quercus bicolor	Swamp White Oak	3 1/2'	B&B
EVERGREEN TREES					
AB	19	Abies balsamea	Balsam Fir	6'	B&B
PS	15	Pinus strobus	White Pine	6'	B&B
ORNAMENTAL TREES					
AC	6	Amelanchier canadensis 'Autumn Brilliance'	Autumn Brilliance Juneberry	10' Clump	B&B
CK	3	Cornus kousa	Clump Chinese Dogwood	10' Clump	B&B
CC	12	Crataegus inermis 'Cruzam'	Thornless Crusader Hawthorn	2 1/2'	B&B
BN	6	Betula nigra	River Birch	10' Clump	B&B
PC	9	Fyrus calleryana 'Redspire'	Redspire Flowering Pear	2 1/2'	B&B
SR	2	Syringa reticulata 'Ivory Silk'	Ivory Silk Tree Lilac	2 1/2'	B&B
EVERGREEN SHRUBS					
BJ	21	Buxus microphylla japonica 'Winter Gem'	Winter Gem Boxwood	36"	B&B
JO	3	Juniperus chinensis 'Old Gold'	Old Gold Juniper	36"	B&B
JCP	14	Juniperus chinensis 'Keteleer'	Upright Green Juniper	5-6'	B&B
JCS	12	Juniperus chinensis 'Sea Green'	Sea Green Juniper	36"	B&B
JST	59	Juniperus sabinna tamaricifolia	Tamarix Juniper	24"	B&B
PAN	5	Picea abies nidiformis	Bird's Nest Spruce	24"	B&B
TMD	51	Taxus x. media densiformis	Dense Yew	36"	B&B
TD	1	Thuja occidentalis 'Techny'	Techny Arborvitae	6'	B&B
DECIDUOUS SHRUBS					
CS	125	Cornus sericea 'Farrow'	Arctic Fire Red Twig Dogwood	36"	B&B
AW	11	Spiraea 'Anthony Waterer'	Anthony Waterer Spiraea	24"	B&B
IVL	31	Itea virginica 'Little Henry'	Little Henry Virginia Sweetspire	36"	B&B
PLD	38	Physocarpus 'Little Devil'	Little Devil Ninebark	36"	B&B
RA	111	Rhus aromatica 'Gro-low'	Gro-low Sumac	36"	B&B
VD	5	Viburnum dentatum	Arrowwood Viburnum	4-5'	B&B
VTC	17	Viburnum trilobum 'Compactum'	Compact American Cranberry	36"	B&B
ORNAMENTAL GRASSES					
CAK	33	Calamagrostis 'Karl Foerster'	Karl Foerster Reed Grass	#5	Pot.
MSM	5	Miscanthus sinensis 'Morning Light'	Morning Light Japanese Silver Grass	#5	Pot.
PERENNIALS					
VS	12	Acorus calamus 'Variegatus'	Variegated Sweet Flag	#1 Pot. 18" o.c.	
ABF	30	Agastache x 'Blue Fortune'	Blue Fortune Anise Hyssop	#1 18" o.c.	
EP	11	Echinacea purpurea 'Magnus'	Magnus Purple Coneflower	#1 14" o.c.	
HR	134	Hemerocallis 'Happy Returns'	Happy Returns Daylily	#1 Pot.	
NP	101	Nepeta x Fassenii 'Walkers Low'	Walkers Low Catmint	#3 Pot.	
PAL	12	Perovskia atriplicifolia 'Little Spire'	'Little Spire' Russian Sage	#1 Pot.	
RV	83	Rubus 'Vette's Little Suzy'	Little Suzy Dwarf Orange Coneflower	#1 Pot.	
SA	68	Sedum 'Autumn Joy'	Autumn Joy Sedum	#1 Pot.	

- LANDSCAPING GENERAL NOTES:**
- ALL TREES TO HAVE CLAY OR CLAY LOAM BALLS, TREES WITH SAND BALLS WILL BE REJECTED.
 - ALL SINGLE STEM SHADE TREES TO HAVE STRAIGHT TRUNKS AND SYMMETRICAL CROWNS.
 - ALL SINGLE TRUNK SHADE TREES TO HAVE A CENTRAL LEADER; TREES WITH FORKED OR IRREGULAR TRUNKS WILL NOT BE ACCEPTED.
 - ALL MULTI-STEM TREES SHALL BE HEAVILY BRANCHED AND HAVE SYMMETRICAL CROWNS; ONE SIDED TREES OR THOSE WITH THIN OR OPEN CROWNS SHALL NOT BE ACCEPTED.
 - ALL EVERGREEN TREES SHALL BE HEAVILY BRANCHED AND FULL TO THE GROUND, SYMMETRICAL IN SHAPE AND NOT SHEARED FOR THE LAST FIVE GROWING SEASONS.
 - SHRUBS AND PERENNIALS SHALL BE FULL AND WELL ROOTED. INSTALLATION SHALL BE MARCH 1 - NOVEMBER 30, ANNUALLY.
 - ALL PLANT MATERIALS SHALL BE NORTHERN NURSERY GROWN, NO. 1 GRADE AND INSTALLED ACCORDING TO ACCEPTED PLANTING PROCEDURES. ALL PLANT MATERIALS SHALL MEET CURRENT AMERICAN ASSOCIATION OF NURSERYMAN STANDARDS.
 - ALL PROPOSED MULCH TO BE NATURAL COLOR, DOUBLE PROCESSED, SHREDDED HARDWOOD BARK, 4" THICK BARK MULCH FOR TREES IN A 4-FOOT DIAMETER CIRCLE WITH 3" PULLED AWAY FROM THE TRUCK, 3" THICK BARK FOR SHRUBS AND 2" THICK BARK FOR PERENNIALS, TYP.
 - THE CONTRACTOR SHALL GUARANTEE ALL PLANTINGS FOR A TIME PERIOD OF ONE YEAR AFTER FINAL ACCEPTANCE OF ALL WORK ITEMS. DURING THIS GUARANTEE PERIOD, THE CONTRACTOR SHALL IMMEDIATELY REPLACE ALL PLANT MATERIALS THAT DIE OR ARE DISEASED.
 - YARD AREAS ARE TO BE RESTORED WITH 4" OF TOPSOIL, CLASS A SEED AT 200#/ACRE, FERTILIZER & MULCH (MULCH BLANKET ON SLOPES 1:3 OR STEEPER).
 - YARD AREAS THAT ARE CONSIDERED STORM AREAS AND SWALES TO BE SEED WITH A STORMWATER SEED MIX AND MULCH BLANKET.
 - ALL UTILITY BOXES WILL BE SCREENED WITH PLANTINGS ONCE THE LOCATION IS DETERMINED.

PHASE ONE CONSTRUCTION SCHEDULE

ITEM	J	F	M	A	M	J	J	A	S	O	N	D
TEMP. EROSION CONTROL												
TOPSOIL STRIPPING												
SITE GRADING												
SITE UTILITIES												
DETENTION POND												
BUILDING CONSTRUCTION												
PERM. EROSION CONTROL												
LANDSCAPING												
PAVING												
REMOVE TEMP. EROSION CONTROL												

- SHEET SCHEDULE**
- BOUNDARY & TOPOGRAPHIC SURVEY
 - REMOVAL PLAN
 - SITE PLAN
 - UTILITY PLAN (PRIVATE)
 - UTILITY PLAN (PUBLIC)
 - GRADING & SOIL EROSION CONTROL PLAN
 - LIGHTING & SIGNAGE PLAN
 - ENLARGED LANDSCAPE PLAN (NORTH)
 - ENLARGED LANDSCAPE PLAN (SOUTH)
 - PARKING ISLAND DETAILS "A" - "O"
 - PARKING ISLAND DETAILS "P" - "T"
 - CONSTRUCTION DETAILS
 - SITE PLAN OPTION "B"

PREPARED FOR:
VISSER BROTHERS, INC.
1946 TURNER AVENUE, NW
GRAND RAPIDS, MI 49504
PH (616) 363-3825
FX (616) 363-6477

WWW.VISSERBROTHERS.COM
ATTN: MR BILL MAST

PLAN REVISIONS

ISSUED	DATE	DESCRIPTION
ISSUED	01/18/18	

LANDSCAPE PLAN (SOUTH)
FOR
ROBBINS CENTER POINT P.U.D.
GRAND HAVEN TOWNSHIP, OTTAWA COUNTY, MICHIGAN

MOORE & BRUGGINK, INC.
Consulting Engineers
2020 Monroe Avenue N.W.
Grand Rapids, Michigan 49505-6298
Phone: (616) 363-9801 Web: www.mbce.com

FIELD SURVEY / DATE:
M&B-10-05-16

DESIGNED BY: JFL

DESIGN DRAWN BY: FEF

CHECKED BY: JFL

PLAN DATE: 11/6/17

PROJECT NO.: 160190.01

SHEET NUMBER: 9 OF 13

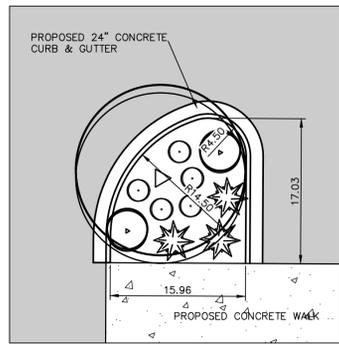
- LEGEND**
- SANITARY SEWER (SAN)
 - STORM SEWER (STM)
 - WATERMAIN (WAT)
 - GAS MAIN (GAS)
 - UG ELECTRIC CABLE (PWR)
 - UG PHONE CABLE (TEL)
 - AERIAL UTILITY LINE (AERIAL)
 - FENCE
 - PROPERTY BOUNDARY LINE
 - PROPOSED P.U.D. BOUNDARY LINE
 - PROPOSED DRAINAGE SWALE
 - PROPOSED CURB & GUTTER
 - EX BITUMINOUS SURFACE
 - PROPOSED BITUMINOUS SURFACE
 - PROPOSED CONCRETE SURFACE
 - HYDRANT (HYD)
 - WATER VALVE (WV)
 - MANHOLE (MH)
 - CATCH BASIN (CB)
 - UTILITY POLE (UP)
 - GUY ANCHOR (GA)
 - WATER METER (WM)
 - WATER STOP BOX (WSB)
 - SAN CLEANOUT (CO)
 - PHONE RISER (PR)
 - GAS METER (GM)
 - GAS VALVE (GV)
 - ELECTRIC METER (EM)
 - ELECTRIC BOX (EB)
 - STEEL POST (SP)
 - PEDESTRIAN CROSSWALK POLE (CW)
 - LIGHT POLE (LP)
 - SURVEY IRON (FOUND)
 - SURVEY IRON (SET)
 - MEASURED DIMENSION
 - DEEDED DIMENSION
 - PLATTED DIMENSION
 - RECORDED DIMENSION
 - SWP - SIDEWALK WARNING PAD
 - FF - FINISHED FLOOR



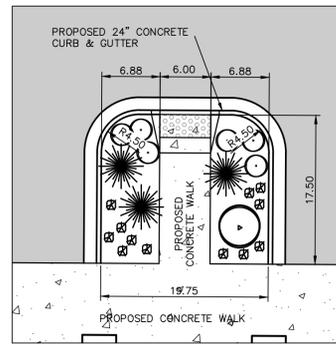
Utility locations are approximate only. Please contact "Miss Dig" three working days prior to the start of construction for exact locations. (1-800-482-7171)

P:\160190.1\Visser - Robbins Road\CADD\DWG\160190 PUD PLAN SHEETS (2017).dwg_1/24/2018 1:33:36 PM_LISA FRIZZELL

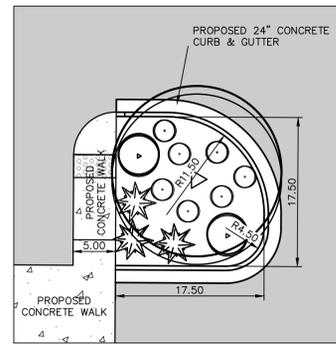
P:\160190.1\Visser - Robbins Road\CADD\DWG\160190 PUD PLAN SHEETS (2017).dwg_1/24/2018 1:33:33 PM - Tel



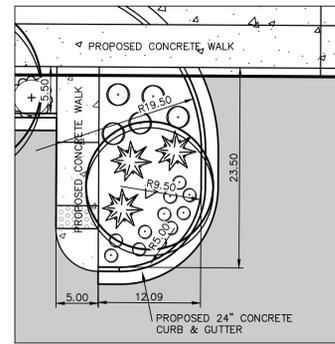
ISLAND "A"
228 SFT
SCALE: 1" = 10'



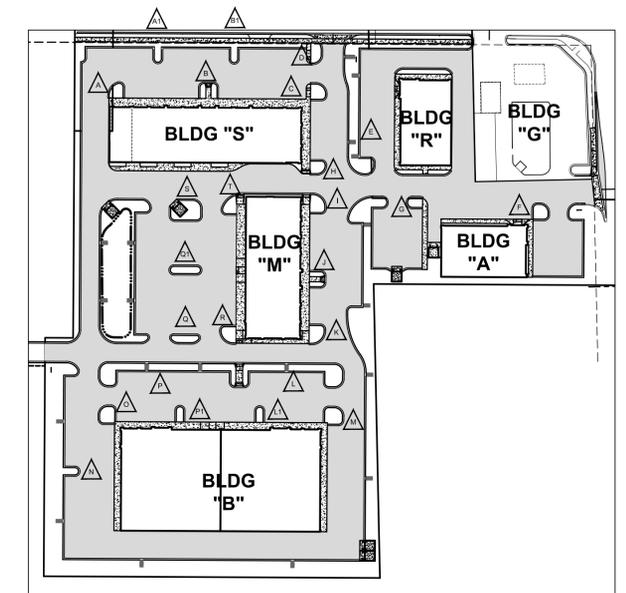
ISLAND "B"
228 SFT
SCALE: 1" = 10'



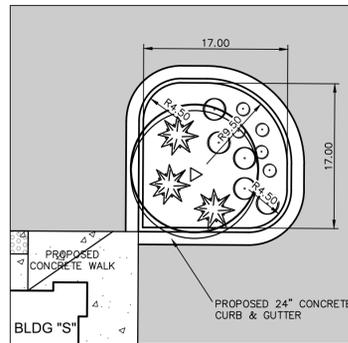
ISLAND "C"
274 SFT
SCALE: 1" = 10'



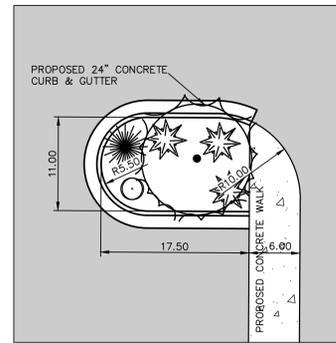
ISLAND "D"
247 SFT
SCALE: 1" = 10'



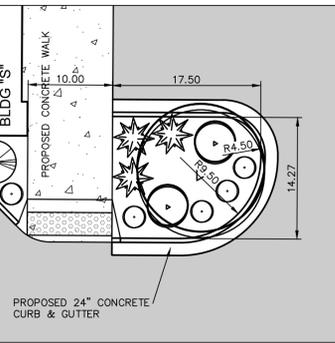
ISLAND MAP
SCALE: 1" = 100'



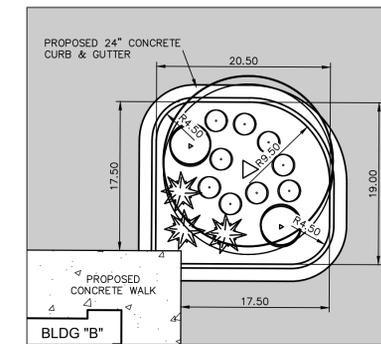
ISLAND "F"
261 SFT
SCALE: 1" = 10'



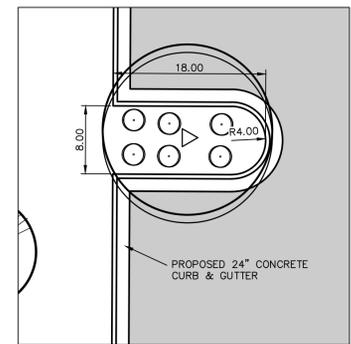
ISLAND "G"
178 SFT
SCALE: 1" = 10'



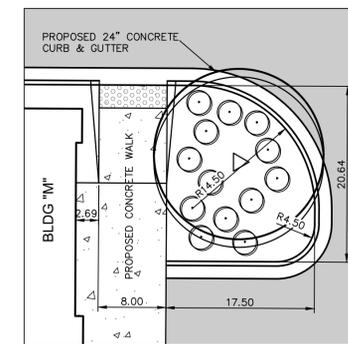
ISLAND "H"
224 SFT
SCALE: 1" = 10'



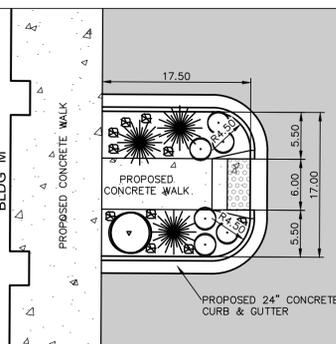
ISLAND "M"
357 SFT
SCALE: 1" = 10'



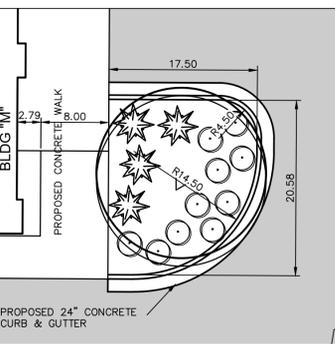
ISLAND "N"
137 SFT
SCALE: 1" = 10'



ISLAND "I"
306 SFT
SCALE: 1" = 10'



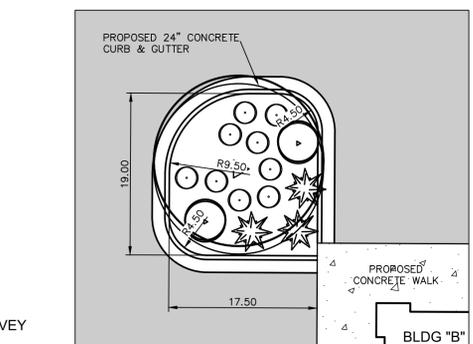
ISLAND "J"
180 SFT
SCALE: 1" = 10'



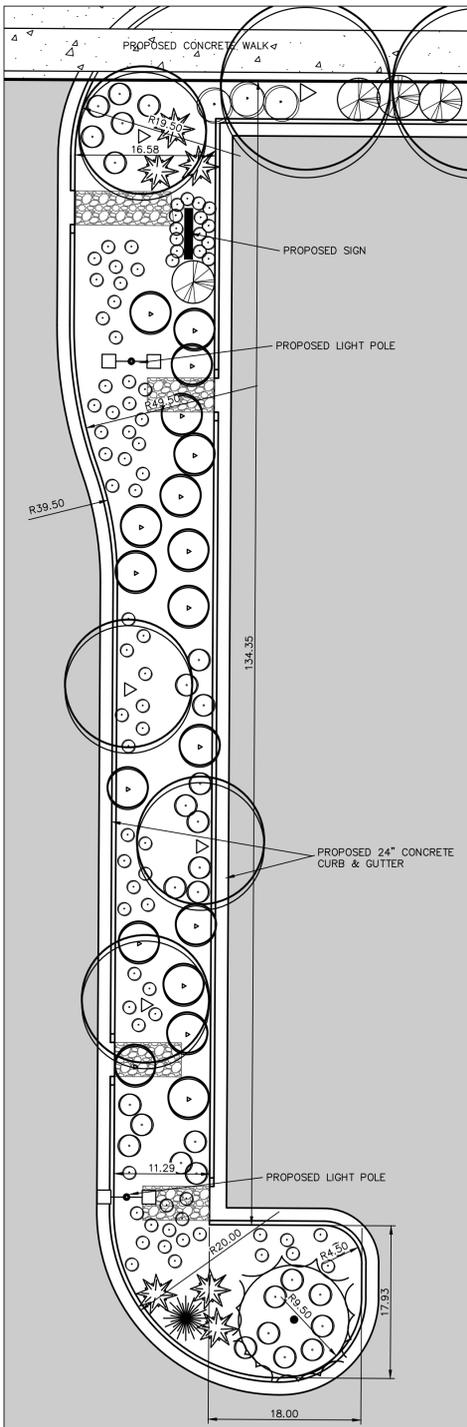
ISLAND "K"
280 SFT
SCALE: 1" = 10'



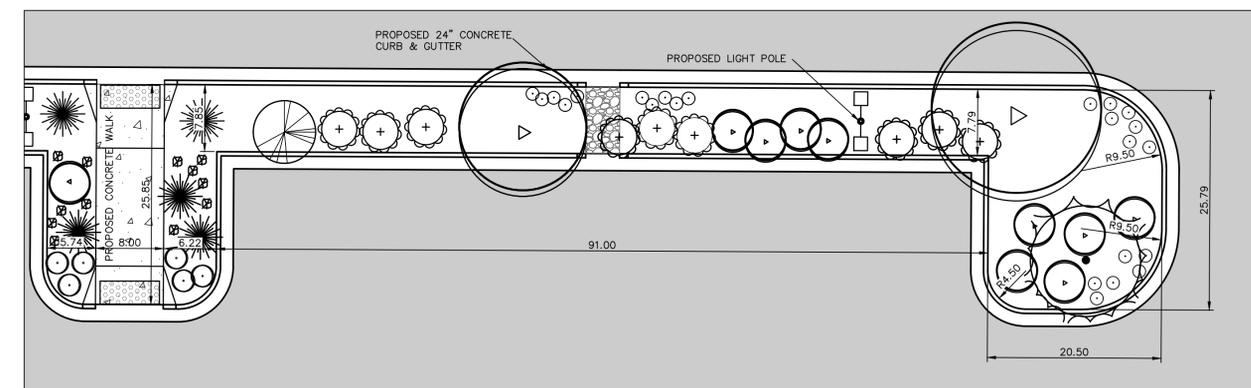
ISLAND "O"
308 SFT
SCALE: 1" = 10'



ISLAND "P"
308 SFT
SCALE: 1" = 10'



ISLAND "E"
2163 SFT
SCALE: 1" = 10'

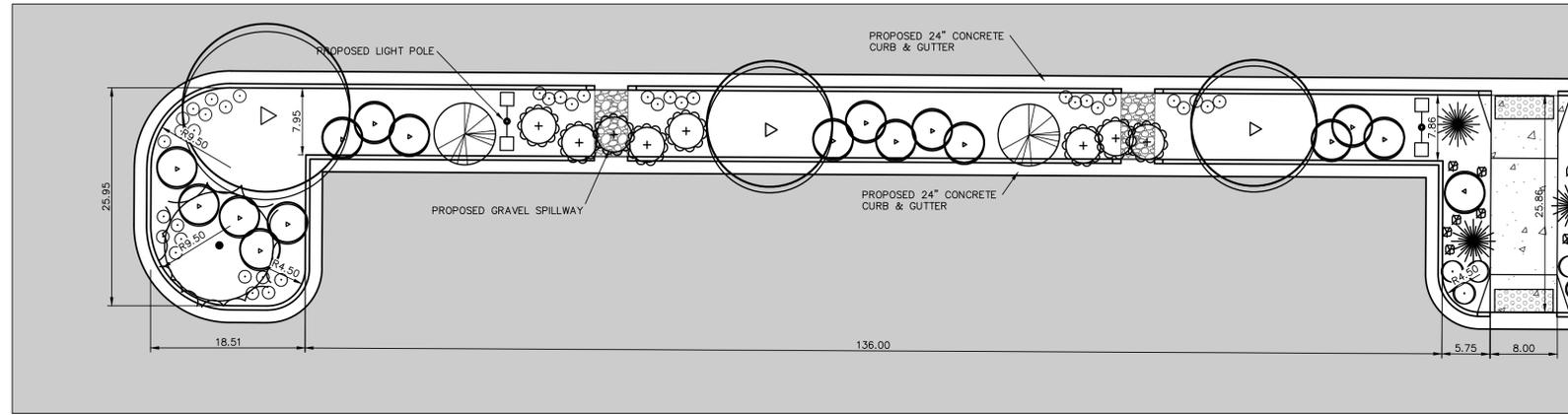


ISLAND "L"
1347 SFT
SCALE: 1" = 10'

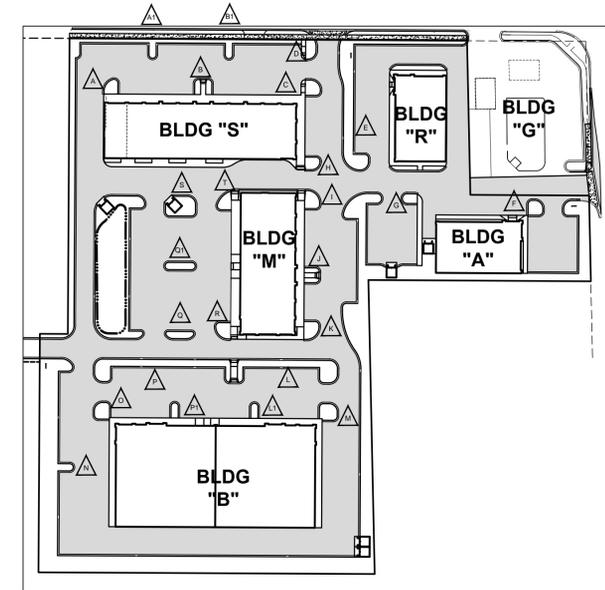
ISLAND	AREA
A	228
B	228
C	274
D	247
E	2163
F	261
G	178
H	224
I	306
J	180
K	280
L	1347
M	357
N	137
O	308
P	1347
Q	234
R	276
S	542
T	267
A1	137
B1	137
L1	133
P1	133
Q1	266
TOTAL	9962

- SHEET SCHEDULE**
- BOUNDARY & TOPOGRAPHIC SURVEY
 - REMOVAL PLAN
 - SITE PLAN
 - UTILITY PLAN (PRIVATE)
 - UTILITY PLAN (PUBLIC)
 - GRADING & SOIL EROSION CONTROL PLAN
 - LIGHTING & SIGNAGE PLAN
 - ENLARGED LANDSCAPE PLAN (NORTH)
 - ENLARGED LANDSCAPE PLAN (SOUTH)
 - PARKING ISLAND DETAILS "A" - "O"
 - PARKING ISLAND DETAILS "P" - "T"
 - CONSTRUCTION DETAILS
 - SITE PLAN OPTION "B"

<p>PLAN REVISIONS</p> <p>ISSUED 11/09/17 SCHEMATIC DESIGN REVIEW</p> <p>REV 12/28/17 REV PER REVIEW COMMENTS</p> <p>REV 01/18/18 REV PER REVIEW COMMENTS</p>	<p>PARKING ISLAND DETAILS A-O</p> <p>FOR</p> <p>ROBBINS CENTER POINT P.U.D.</p> <p>GRAND HAVEN TOWNSHIP, OTTAWA COUNTY, MICHIGAN</p> <p>MOORE & BRUGGINK, INC. Consulting Engineers 2020 Monroe Avenue N.W. Grand Rapids, Michigan 49505-6298 Phone: (616) 363-9801 Web: www.mbcce.com</p>	<p>FIELD SURVEY / DATE: M&B-10-05-16</p> <p>DESIGNED BY: JFL</p> <p>DESIGN DRAWN BY: FEF</p> <p>CHECKED BY: JFL</p> <p>PLAN DATE: 11/6/17</p> <p>PROJECT NO.: 160190.01</p> <p>SHEET NUMBER 10 OF 13</p>
		<p>PREPARED FOR: VISSER BROTHERS, INC 1946 TURNER AVENUE, NW GRAND RAPIDS, MI 49504 PH (616) 363-3825 FX (616) 363-6477</p> <p>WWW.VISSERBROTHERS.COM ATTN: MR BILL MAST</p>

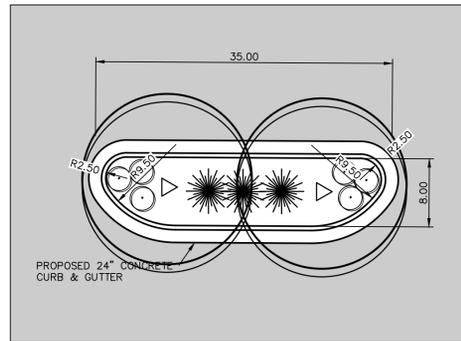


ISLAND "P"
1347 SFT
SCALE: 1" = 10'

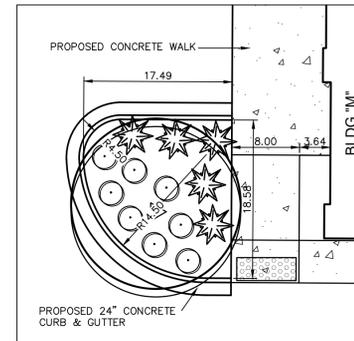


ISLAND MAP
SCALE: 1" = 100'

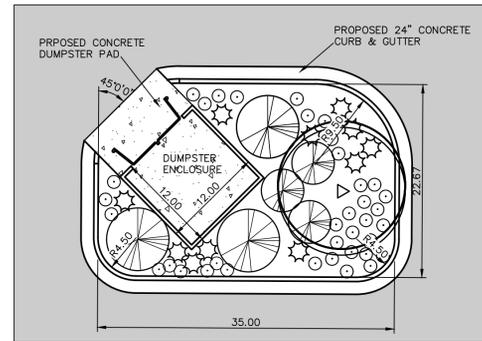
ISLAND	AREA
A	228
B	228
C	274
D	247
E	2163
F	261
G	178
H	224
I	306
J	180
K	280
L	1347
M	357
N	137
O	308
P	1347
Q	234
R	276
S	542
T	267
A1	137
B1	137
L1	133
P1	133
Q1	266
TOTAL	9962



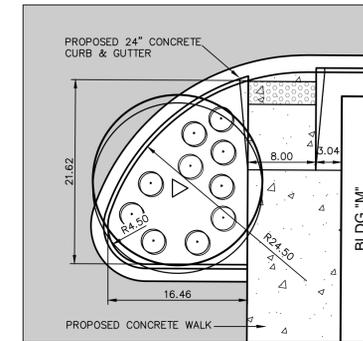
ISLAND "Q"
234 SFT
SCALE: 1" = 10'



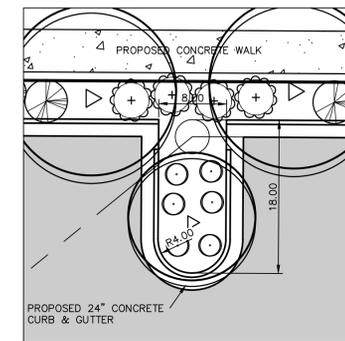
ISLAND "R"
276 SFT
SCALE: 1" = 10'



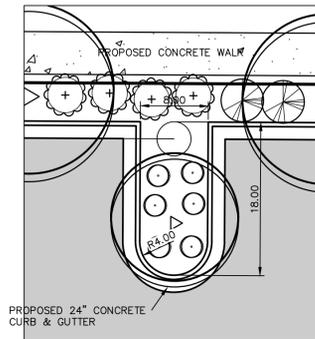
ISLAND "S"
542 SFT
SCALE: 1" = 10'



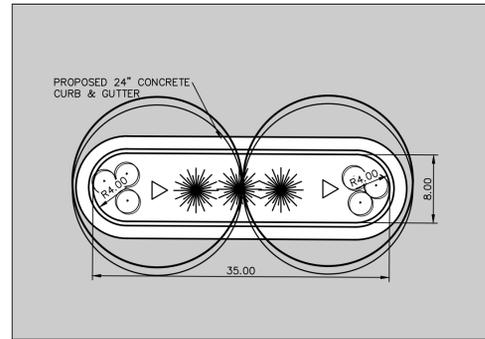
ISLAND "T"
267 SFT
SCALE: 1" = 10'



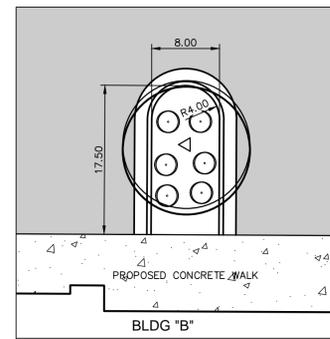
ISLAND "A1"
137 SFT
SCALE: 1" = 10'



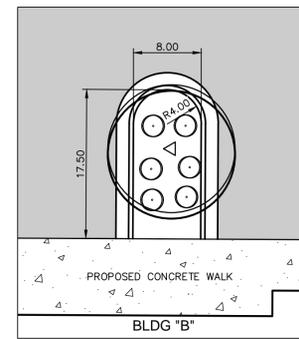
ISLAND "B1"
137 SFT
SCALE: 1" = 10'



ISLAND "Q1"
266 SFT
SCALE: 1" = 10'



ISLAND "P1"
133 SFT
SCALE: 1" = 10'



ISLAND "L1"
133 SFT
SCALE: 1" = 10'

SHEET SCHEDULE

- BOUNDARY & TOPOGRAPHIC SURVEY
- REMOVAL PLAN
- SITE PLAN
- UTILITY PLAN (PRIVATE)
- UTILITY PLAN (PUBLIC)
- GRADING & SOIL EROSION CONTROL PLAN
- LIGHTING & SIGNAGE PLAN
- ENLARGED LANDSCAPE PLAN (NORTH)
- ENLARGED LANDSCAPE PLAN (SOUTH)
- PARKING ISLAND DETAILS "A" - "O"
- PARKING ISLAND DETAILS "P" - "T"
- CONSTRUCTION DETAILS
- SITE PLAN OPTION "B"

PREPARED FOR:
VISSER BROTHERS, INC
1946 TURNER AVENUE, NW
GRAND RAPIDS, MI 49504
PH (616) 363-3825
FX (616) 363-8477

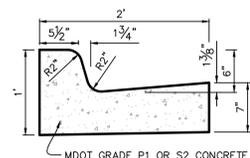
WWW.VISSERBROTHERS.COM
ATTN: MR BILL MAST

PLAN REVISIONS
ISSUED 11/09/17
SCHEMATIC DESIGN REVIEW
REV 12/28/17
REV PER REVIEW COMMENTS
REV 01/18/18
REV PER REVIEW COMMENTS

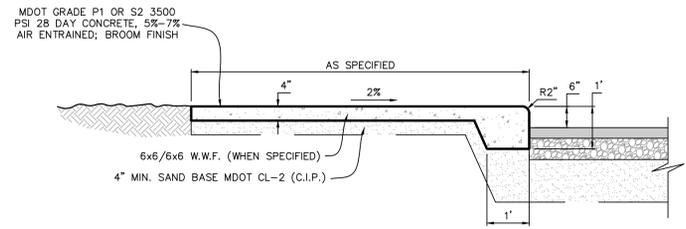
PARKING ISLAND DETAILS P-T
FOR
ROBBINS CENTER POINT P.U.D.
GRAND HAVEN TOWNSHIP, OTTAWA COUNTY, MICHIGAN

MOORE & BRUGGINK, INC.
Consulting Engineers
2020 Monroe Avenue N.W.
Grand Rapids, Michigan 49505-6298
Phone: (616) 363-9801 Web: www.mbcc.com

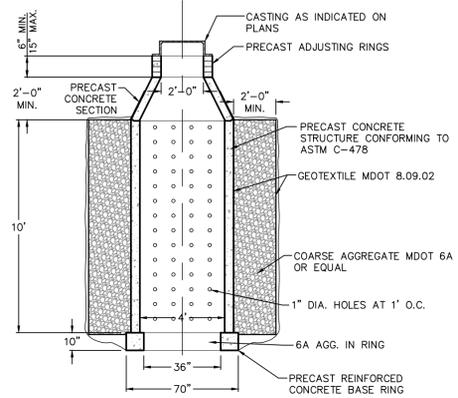
FIELD SURVEY / DATE:	M&B-10-05-16
DESIGNED BY:	JFL
DESIGN DRAWN BY:	FEF
CHECKED BY:	JFL
PLAN DATE:	11/6/17
PROJECT NO.:	160190.01
SHEET NUMBER	11 OF 13



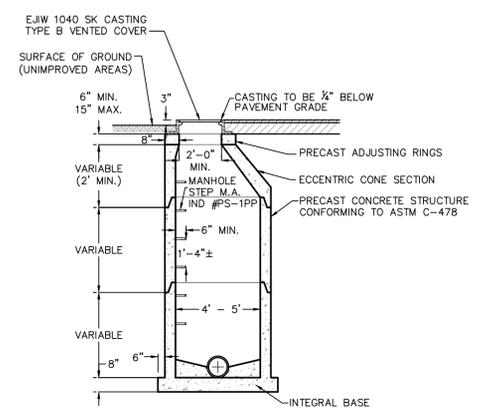
24" CURB & GUTTER DETAIL
(STANDARD RESIDENTIAL/COMMERCIAL)
SCALE: 1"=1'



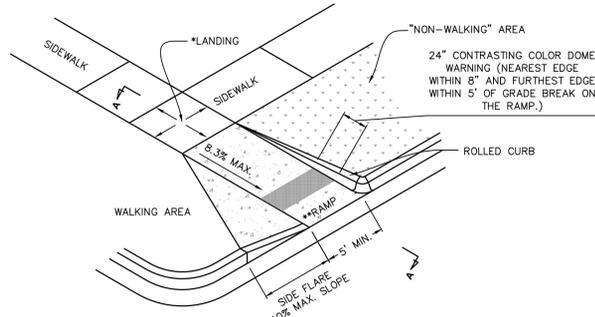
COMPOSITE CONCRETE WALK & CURB DETAIL
SCALE: 1"=2'



LEACHING BASIN DETAIL
SCALE: 1"=4'

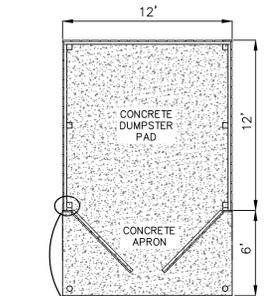
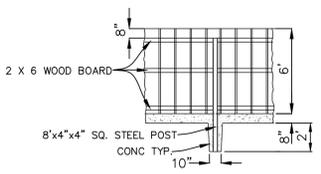


STORM SEWER MANHOLE DETAIL
SCALE: 1"=4'

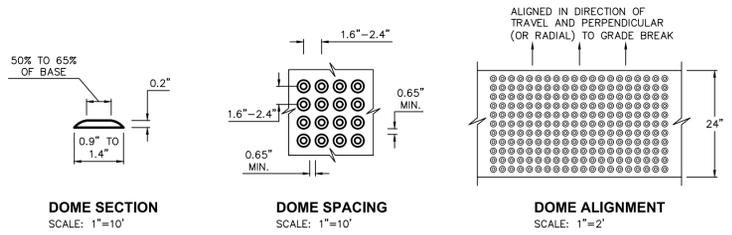


- * MAXIMUM LANDING SLOPE IN ANY DIRECTION IS 2%. MINIMUM LANDING DIMENSIONS 5'x5'.
- ** MAXIMUM CROSS SLOPE ON RAMP IS THE SAME AS THAT FOR SIDEWALK (2%).

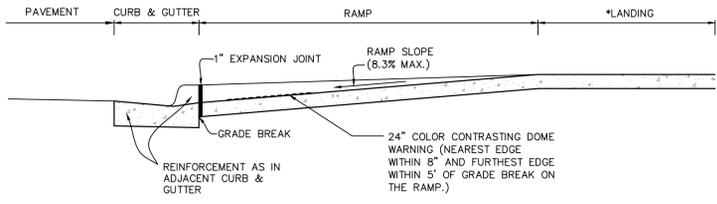
SIDEWALK RAMP TYPE F DETAIL
SCALE: 1"=8'



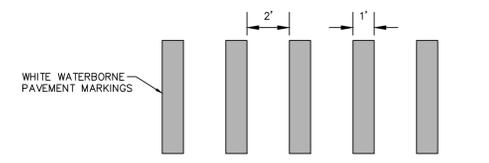
WOOD DUMPSTER ENCLOSURE DETAIL
SCALE: 1"=6'



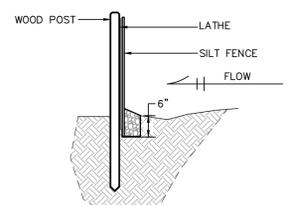
DOME SECTION SCALE: 1"=10'
DOME SPACING SCALE: 1"=10'
DOME ALIGNMENT SCALE: 1"=2'



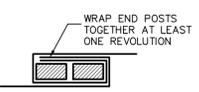
SECTION A-A
SCALE: 1"=4'



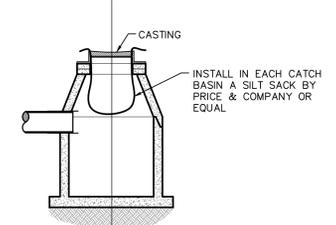
CROSS HATCHING PAVEMENT MARKING DETAIL
SCALE: 1"=4'



SILT FENCE DETAIL
SCALE: 1"=2'



SPLICE DETAIL



INLET PROTECTION DETAIL
SCALE: 1"=4'

- SHEET SCHEDULE**
- BOUNDARY & TOPOGRAPHIC SURVEY
 - REMOVAL PLAN
 - SITE PLAN
 - UTILITY PLAN (PRIVATE)
 - UTILITY PLAN (PUBLIC)
 - GRADING & SOIL EROSION CONTROL PLAN
 - LIGHTING & SIGNAGE PLAN
 - ENLARGED LANDSCAPE PLAN (NORTH)
 - ENLARGED LANDSCAPE PLAN (SOUTH)
 - PARKING ISLAND DETAILS "A" - "O"
 - PARKING ISLAND DETAILS "P" - "T"
 - CONSTRUCTION DETAILS
 - SITE PLAN OPTION "B"

PREPARED FOR:
VISSER BROTHERS, INC
1946 TURNER AVENUE, NW
GRAND RAPIDS, MI 49504
PH (616) 363-3825
FX (616) 363-6477
WWW.VISSERBROTHERS.COM
ATTN: MR BILL MAST

PLAN REVISIONS	
ISSUED 11/09/17	SHEMATIC DESIGN REVIEW
REV 12/28/17	REV PER REVIEW COMMENTS
REV 01/18/18	REV PER REVIEW COMMENTS

CONSTRUCTION DETAILS
FOR
ROBBINS CENTER POINT P.U.D.
GRAND HAVEN TOWNSHIP, OTTAWA COUNTY, MICHIGAN

MOORE & BRUGGINK, INC.
Consulting Engineers
2020 Monroe Avenue N.W.
Grand Rapids, Michigan 49505-6298
Phone: (616) 363-9801 Web: www.mbcc.com

FIELD SURVEY / DATE:	
M&B-10-05-16	DESIGNED BY: JFL
DESIGN DRAWN BY: FEF	CHECKED BY: JFL
PLAN DATE: 11/6/17	PROJECT NO.: 160190.01

SHEET NUMBER
12 OF 13

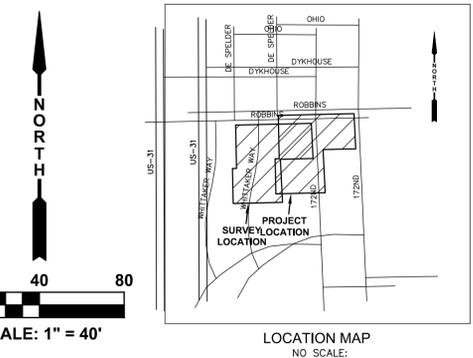
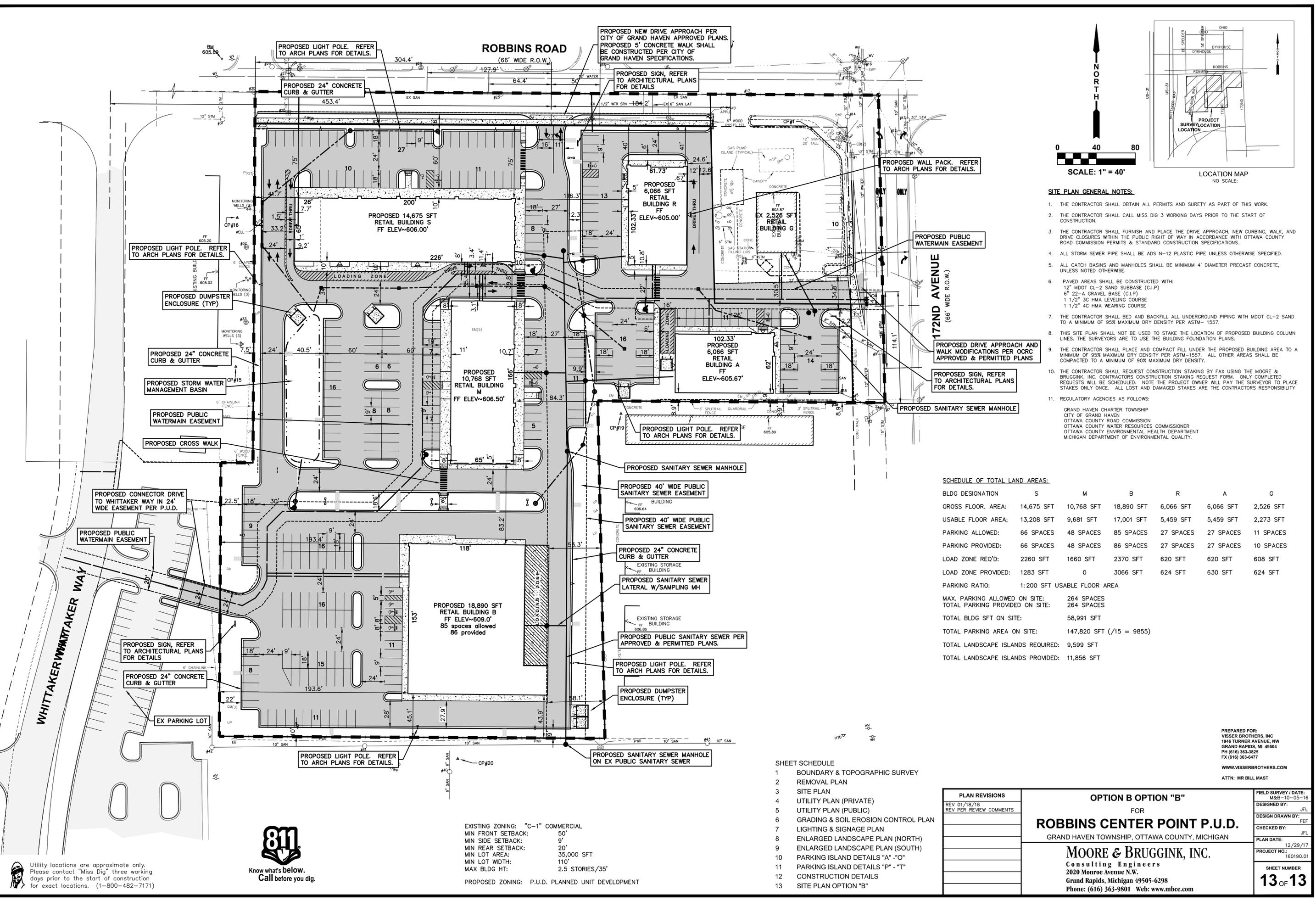


Utility locations are approximate only. Please contact "Miss Dig" three working days prior to the start of construction for exact locations. (1-800-482-7171)

P:\160190.1_Visser - Robbins Road\CAD\DWG\160190 PUD PLAN SHEETS (2017).dwg_1/24/2018 1:34:32 PM_LISA FRIZZELL

P:\160190.1\Visser - Robbins Road\CAD\DWG\160190_Robbins Rd Dev Design Alt. 4 - OPTION B (2017).dwg, 1/24/2018 1:35:03 PM, .ief

P:\160190.1\Visser - Robbins Road\CAD\DWG\160190_Robbins Rd Dev Design Alt.4 - OPTION B (2017).dwg, 1/24/2018 1:35:05 PM, LISA_FRIZZELL



- SITE PLAN GENERAL NOTES:**
- THE CONTRACTOR SHALL OBTAIN ALL PERMITS AND SURETY AS PART OF THIS WORK.
 - THE CONTRACTOR SHALL CALL MISS DIG 3 WORKING DAYS PRIOR TO THE START OF CONSTRUCTION.
 - THE CONTRACTOR SHALL FURNISH AND PLACE THE DRIVE APPROACH, NEW CURBING, WALK, AND DRIVE CLOSURES WITHIN THE PUBLIC RIGHT OF WAY IN ACCORDANCE WITH OTTAWA COUNTY ROAD COMMISSION PERMITS & STANDARD CONSTRUCTION SPECIFICATIONS.
 - ALL STORM SEWER PIPE SHALL BE ADS N-12 PLASTIC PIPE UNLESS OTHERWISE SPECIFIED.
 - ALL CATCH BASINS AND MANHOLES SHALL BE MINIMUM 4' DIAMETER PRECAST CONCRETE, UNLESS NOTED OTHERWISE.
 - PAVED AREAS SHALL BE CONSTRUCTED WITH:
12" MDOT CL-2 SAND SUBBASE (C.I.P)
6" 22-A GRAVEL BASE (C.I.P)
1 1/2" 3C HMA LEVELING COURSE
1 1/2" 4C HMA WEARING COURSE
 - THE CONTRACTOR SHALL BED AND BACKFILL ALL UNDERGROUND PIPING WITH MDOT CL-2 SAND TO A MINIMUM OF 95% MAXIMUM DRY DENSITY PER ASTM-1557.
 - THIS SITE PLAN SHALL NOT BE USED TO STAKE THE LOCATION OF PROPOSED BUILDING COLUMN LINES. THE SURVEYORS ARE TO USE THE BUILDING FOUNDATION PLANS.
 - THE CONTRACTOR SHALL PLACE AND COMPACT FILL UNDER THE PROPOSED BUILDING AREA TO A MINIMUM OF 95% MAXIMUM DRY DENSITY PER ASTM-1557. ALL OTHER AREAS SHALL BE COMPACTED TO A MINIMUM OF 90% MAXIMUM DRY DENSITY.
 - THE CONTRACTOR SHALL REQUEST CONSTRUCTION STAKING BY FAX USING THE MOORE & BRUGGINK, INC. CONTRACTORS CONSTRUCTION STAKING REQUEST FORM. ONLY COMPLETED REQUESTS WILL BE SCHEDULED. NOTE THE PROJECT OWNER WILL PAY THE SURVEYOR TO PLACE STAKES ONLY ONCE. ALL LOST AND DAMAGED STAKES ARE THE CONTRACTORS RESPONSIBILITY.
 - REGULATORY AGENCIES AS FOLLOWS:
GRAND HAVEN CHARTER TOWNSHIP
CITY OF GRAND HAVEN
OTTAWA COUNTY ROAD COMMISSION
OTTAWA COUNTY WATER RESOURCES COMMISSIONER
OTTAWA COUNTY ENVIRONMENTAL HEALTH DEPARTMENT
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY.

SCHEDULE OF TOTAL LAND AREAS:

BLDG DESIGNATION	S	M	B	R	A	G
GROSS FLOOR AREA:	14,675 SFT	10,768 SFT	18,890 SFT	6,066 SFT	6,066 SFT	2,526 SFT
USABLE FLOOR AREA:	13,208 SFT	9,681 SFT	17,001 SFT	5,459 SFT	5,459 SFT	2,273 SFT
PARKING ALLOWED:	66 SPACES	48 SPACES	85 SPACES	27 SPACES	27 SPACES	11 SPACES
PARKING PROVIDED:	66 SPACES	48 SPACES	86 SPACES	27 SPACES	27 SPACES	10 SPACES
LOAD ZONE REQ'D:	2260 SFT	1660 SFT	2370 SFT	620 SFT	620 SFT	608 SFT
LOAD ZONE PROVIDED:	1283 SFT	0	3066 SFT	624 SFT	630 SFT	624 SFT
PARKING RATIO:	1:200 SFT USABLE FLOOR AREA					
MAX. PARKING ALLOWED ON SITE:	264 SPACES					
TOTAL PARKING PROVIDED ON SITE:	264 SPACES					
TOTAL BLDG SFT ON SITE:	58,991 SFT					
TOTAL PARKING AREA ON SITE:	147,820 SFT (/15 = 9855)					
TOTAL LANDSCAPE ISLANDS REQUIRED:	9,599 SFT					
TOTAL LANDSCAPE ISLANDS PROVIDED:	11,856 SFT					

- SHEET SCHEDULE**
- BOUNDARY & TOPOGRAPHIC SURVEY
 - REMOVAL PLAN
 - SITE PLAN
 - UTILITY PLAN (PRIVATE)
 - UTILITY PLAN (PUBLIC)
 - GRADING & SOIL EROSION CONTROL PLAN
 - LIGHTING & SIGNAGE PLAN
 - ENLARGED LANDSCAPE PLAN (NORTH)
 - ENLARGED LANDSCAPE PLAN (SOUTH)
 - PARKING ISLAND DETAILS "A" - "O"
 - PARKING ISLAND DETAILS "P" - "T"
 - CONSTRUCTION DETAILS
 - SITE PLAN OPTION "B"

EXISTING ZONING: "C-1" COMMERCIAL
 MIN FRONT SETBACK: 50'
 MIN SIDE SETBACK: 9'
 MIN REAR SETBACK: 20'
 MIN LOT AREA: 35,000 SFT
 MIN LOT WIDTH: 110'
 MAX BLDG HT: 2.5 STORIES/35'
 PROPOSED ZONING: P.U.D. PLANNED UNIT DEVELOPMENT



Utility locations are approximate only. Please contact "Miss Dig" three working days prior to the start of construction for exact locations. (1-800-482-7171)

PLAN REVISIONS

REV 01/18/18	REV PER REVIEW COMMENTS

OPTION B OPTION "B"
 FOR
ROBBINS CENTER POINT P.U.D.
 GRAND HAVEN TOWNSHIP, OTTAWA COUNTY, MICHIGAN

MOORE & BRUGGINK, INC.
 Consulting Engineers
 2020 Monroe Avenue N.W.
 Grand Rapids, Michigan 49505-6298
 Phone: (616) 363-9801 Web: www.mbcce.com

PREPARED FOR:
 VISSER BROTHERS, INC
 1946 TURNER AVENUE, NW
 GRAND RAPIDS, MI 49504
 PH (616) 363-3825
 FX (616) 363-6477

WWW.VISSERBROTHERS.COM
 ATTN: MR BILL MAST

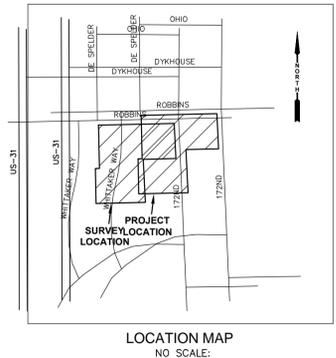
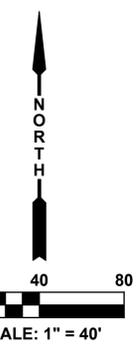
FIELD SURVEY / DATE:	M&B-10-05-16
DESIGNED BY:	JFL
DESIGN DRAWN BY:	FEF
CHECKED BY:	JFL
PLAN DATE:	12/29/17
PROJECT NO.:	160190.01
SHEET NUMBER	13 OF 13

P:\160190.1\Visser - Robbins Road\CAD\DWG\160190_Robbins Rd.Dwg, 1/24/2018 8:09:45 AM, JUSTIN LONGSTRETH

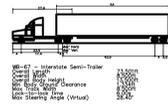
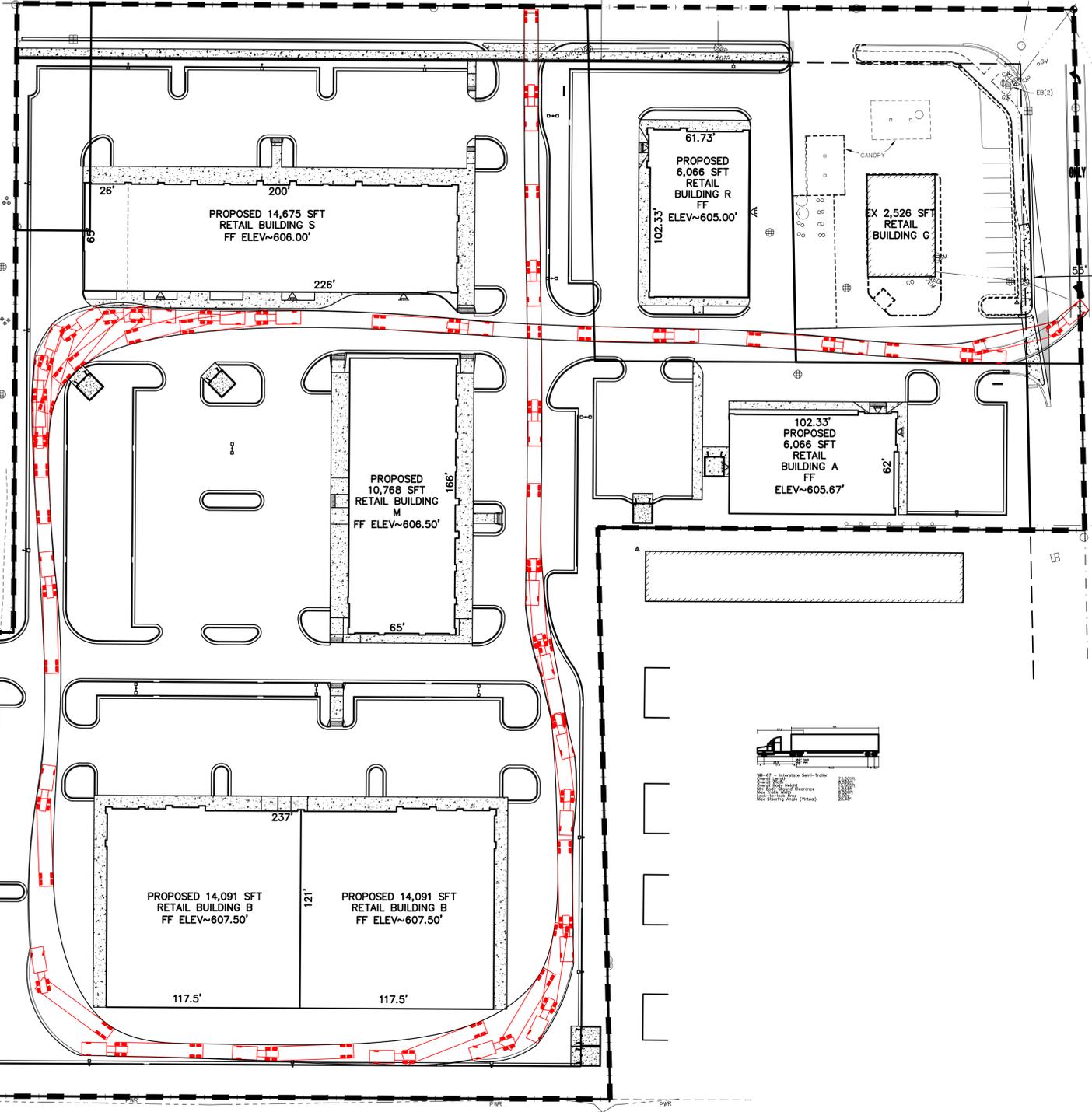
ROBBINS ROAD
(66' WIDE R.O.W.)

BM 605.34

BM 605.89



172ND AVENUE
(66' WIDE R.O.W.)



WHITTAKER WHITTAKER WAY



Utility locations are approximate only. Please contact "Miss Dig" three working days prior to the start of construction for exact locations. (1-800-482-7171)

PREPARED FOR:
VISSER BROTHERS, INC
1946 TURNER AVENUE, NW
GRAND RAPIDS, MI 49504
PH (616) 363-3825
FX (616) 363-5477

WWW.VISSERBROTHERS.COM
ATTN: MR BILL MAST

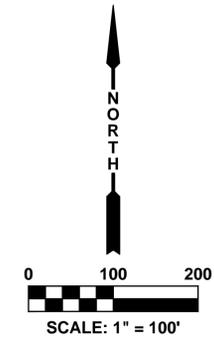
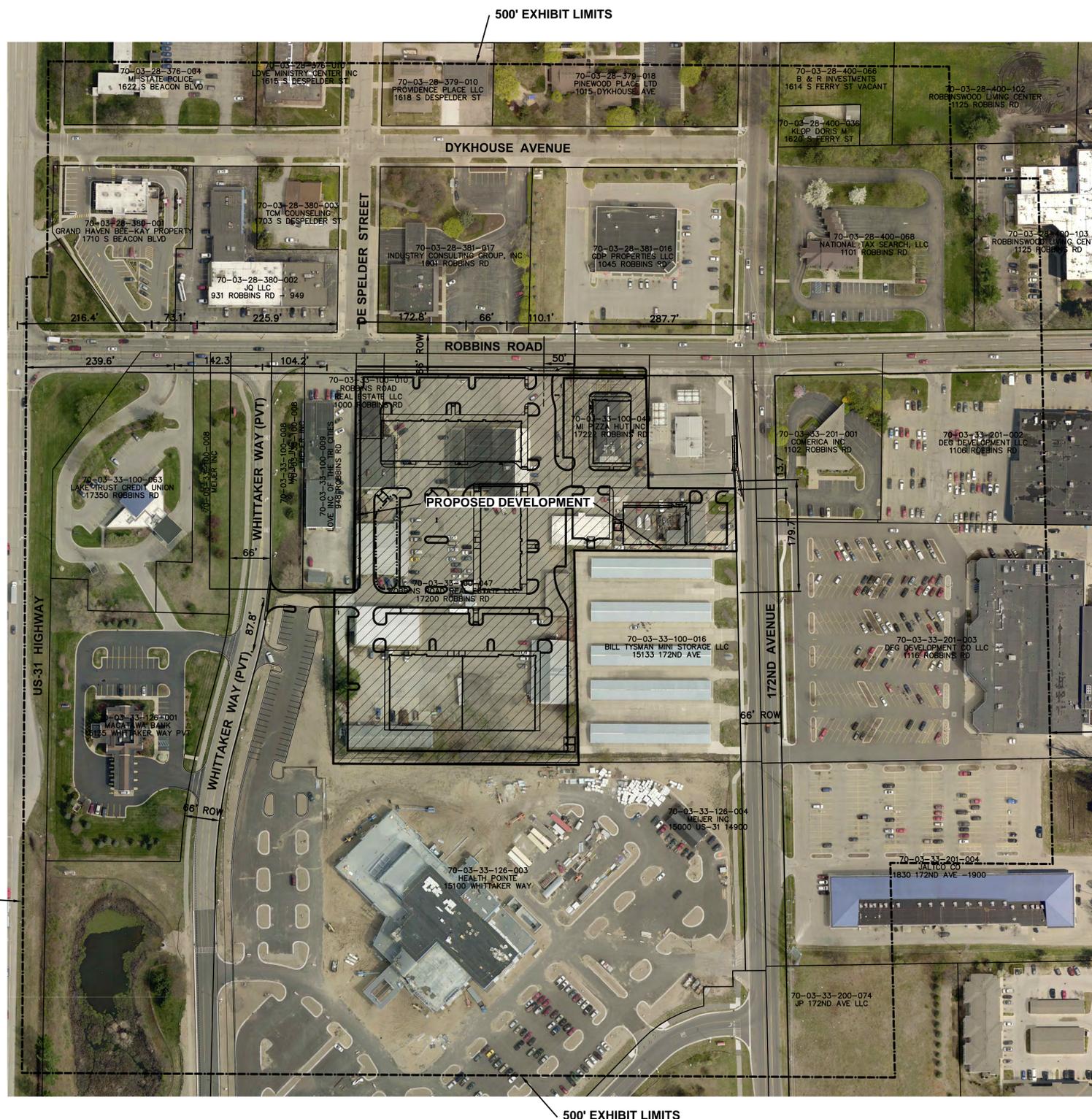
PLAN REVISIONS	TRUCK TURNING EXHIBIT	FIELD SURVEY / DATE: M&B-10-05-16
	FOR	DESIGNED BY: JFL
	ROBBINS CENTER POINT P.U.D.	DESIGN DRAWN BY: JFL
	GRAND HAVEN TOWNSHIP, OTTAWA COUNTY, MICHIGAN	CHECKED BY: JFL
	MOORE & BRUGGINK, INC. Consulting Engineers 2020 Monroe Avenue N.W. Grand Rapids, Michigan 49505-6298 Phone: (616) 363-9801 Web: www.mbce.com	PLAN DATE: 1/23/18 PROJECT NO.: 160190.01
	SHEET NUMBER 1 OF 1	

P:\160190.1_Visser - Robbins Road\CAD\DWG\160190_GIS BASE.dwg, 1/18/2018 10:38:11 AM, tef
 P:\160190.1_Visser - Robbins Road\CAD\DWG\160190_GIS BASE.dwg, 1/18/2018 10:38:11 AM, Lisa Frizzell



Know what's below.
 Call before you dig.

Utility locations are approximate only.
 Please contact "Miss Dig" three working
 days prior to the start of construction
 for exact locations. (1-800-482-7171)



500' EXHIBIT LIMITS

500' EXHIBIT LIMITS

500' EXHIBIT LIMITS

PREPARED FOR:
 VISSER BROTHERS, INC.
 1946 TURNER AVENUE, NW
 GRAND RAPIDS, MI 49504
 ATTN: BILL MAST
 PH: (616) 363-3825
 FAX: (616) 363-6477
 WWW.VISSERBROTHERS.COM

PLAN REVISIONS	DRIVE EXHIBIT MAP FOR ROBBINS CENTER POINT PUD GRAND HAVEN TOWNSHIP, OTTAWA, MICHIGAN	FIELD SURVEY / DATE: REGIS-10-25-17
ISSUED 11/09/17	MOORE & BRUGGINK, INC. Consulting Engineers 2020 Monroe Avenue N.W. Grand Rapids, Michigan 49505-6298 Phone: (616) 363-9801 Web: www.mbce.com	DESIGNED BY: -
SCHEMATIC DESIGN REVIEW		DESIGN DRAWN BY: FEF
REV 01/18/18		CHECKED BY: JFL
REV PER REVIEW COMMENTS		PLAN DATE: 11/1/2017
		PROJECT NO.: 160190.01
		SHEET NUMBER 1 OF 1

ROBBINS CENTRE POINTE

BUILDING A&S

Robbins Road at 172nd
Grand Haven (Township), Michigan 49417

ISSUED:

01/24/2018

SCHEMATIC DESIGN REVIEW

SHEET INDEX:

CIVIL 1 OF 11	BOUNDRY & TOPOGRAPHIC SURVEY
CIVIL 2 OF 11	REMOVAL PLAN
CIVIL 3 OF 11	SITE PLAN
CIVIL 4 OF 11	UTILITY PLAN (PRIVATE)
CIVIL 5 OF 11	UTILITY PLAN (PUBLIC)
CIVIL 6 OF 11	GRADING & SOIL EROSION CONTROL PLAN
CIVIL 7 OF 11	LANDSCAPE, LIGHTING AND SIGNAGE PLAN
CIVIL 8 OF 11	PARKING ISLAND DETAILS A-O
CIVIL 9 OF 11	PARKING ISLAND DETAILS P-T
CIVIL 10 OF 11	CONSTRUCTION DETAILS
CIVIL 11 OF 11	SITE PLAN OPTION B
CIVIL DRIVE 1 OF 1	DRIVE EXHIBIT MAP
ES101	SITE LIGHTING
A111	RETAIL S FLOOR PLAN
A121	RETAIL A FLOOR PLAN & ELEVATIONS
A511	RETAIL S EXTERIOR ELEVATIONS
A513	SITE SIGNAGE
AP101	RETAIL S PERSPECTIVE

APPLICABLE CODES AND STANDARDS

THE PRIMARY CODE USED FOR THIS SUMMARY IS NFPA 101 LIFE SAFETY 2015. THE IBC 2015 IS ONLY USED WHEN NFPA 101 IS SILENT ON THE SUBJECT MATTER, OR THE IBC IS SPECIFICALLY REFERENCED.

NEW CONSTRUCTION

JURISDICTION:
GRAND HAVEN CHARTER TOWNSHIP, MICHIGAN

- APPLICABLE CODES:**
- BUILDING: 2015 MICHIGAN BUILDING CODE (MBC)
 - MECHANICAL: 2015 MICHIGAN MECHANICAL CODE (MMC)
 - PLUMBING: 2015 MICHIGAN PLUMBING CODE (MPC)
 - ELECTRICAL: 2014 NATIONAL ELECTRIC CODE
 - ICC/ANSI A117.1 2009 (ACCESSIBILITY CODE)

CHAPTER 3 OCCUPANCY CLASSIFICATION:

- GROUP M, MERCANTILE / A2, ASSEMBLY

CHAPTER 5 ALLOWABLE HEIGHT AND BUILDING AREA:
CONSTRUCTION CLASS: 2B SPRINKLED
ALLOWABLE HEIGHT: 1 STORY
ALLOWABLE AREA: A-2 38,000 SQ. FT.
ACTUAL: 14,808 SQ. FT.

CHAPTER 6 CONSTRUCTION TYPE:
BUILDING CONSTRUCTION: 2B SECTION 5.3 OF M.B.C. 2015

- EXTERIOR WALLS: ANY MATERIAL PERMITTED BY CODE
- INTERIOR WALLS: ANY MATERIAL PERMITTED BY CODE

Fire Resistance Requirements for Building Elements - Table 601 / 713

Building Element	Required	Provide
Structural Framing	0 hr.	0 hr.
Bearing Walls - <5'	0 hr.	0 hr.
Bearing Walls - >30'	0 hr.	0 hr.
Nonbearing - Exterior <5'	0 hr.	0 hr.
Nonbearing - Exterior >30'	0 hr.	0 hr.
Nonbearing - Interior	0 hr.	0 hr.
Supporting beams and joist	0 hr.	0 hr.
Roof Structure	0 hr.	0 hr.

CHAPTER 7 FIRE RATING:
Section 508.4 (Building is Sprinkled)

CHAPTER 8 INTERIOR WALL AND CEILING FINISHES:
Class B finishes shall be provided for exit enclosures and exit passageways.

- Flame spread 26-75, smoke development 0-450

Class C finishes shall be provided for corridors.

- Flame spread 76-200, smoke development 0-450

Class C finishes shall be allowed in all other areas

- Flame spread 76-200, smoke development 0-450

CHAPTER 9 FIRE SUPPRESSION SYSTEM:

FIRE SUPPRESSION IS REQUIRED PER 903.2.8

- Fire suppression drawings shall be submitted by others for review and approval prior to installation

PORTABLE FIRE EXTINGUISHERS IS REQUIRED PER 906

- Provide in the following locations:
- Near exits and pull stations and as directed by Fire Marshall
 - Within 30' of commercial cooking equipment.
 - Special-hazard areas including but not limited to laboratories, computer rooms, and generator rooms; where required by the fire code official.
 - Maximum travel distance to extinguisher is 75 feet.

FIRE ALARM SYSTEM IS REQUIRED PER 907.2.9

- Fire alarm drawings shall be submitted by others for review and approval and approval prior to installation.

CHAPTER 10 EGRESS REQUIREMENTS: OCCUPANCY: SECTION 1004

*Refer to future tenant interior final plans by others.

NUMBER OF EXITS PROVIDED:

Tenant 1:	2 Exits
Tenant 2:	2 Exits
Tenant 3:	2 Exits
Tenant 4:	2 Exits
Tenant 5:	2 Exits
Tenant 6:	2 Exits
Tenant 7:	2 Exits
Tenant 8:	2 Exits
Tenant 9:	2 Exits
Tenant 10:	2 Exits

CHAPTER 17 SPECIAL INSPECTIONS:
SPECIAL INSPECTIONS SHALL BE PERFORMED BY A QUALIFIED PERSON PER MBC 2015 SECTION 1704.1 AND SUCH REPORTS WILL BE PROVIDED TO THE BUILDING DEPARTMENT FOR THEIR RECORD.

SPECIAL INSPECTIONS ARE REQUIRED FOR: SOILS (1705.6), MASONRY (1705.4), CONCRETE (1705.3), WOOD TRUSSES (1705.5), STEEL (1705.2)

A DETAILED SOILS INVESTIGATION REPORT PER SECTION 1705.6 AND SPECIAL INSPECTIONS FOR SITE SOILS CONDITIONS PER 1705.6 AND TABLE 1705.6 MUST BE SUBMITTED TO THE TOWNSHIP AND DESIGN PROFESSIONAL FOR THEIR RECORDS.

PRE-ENGINEERED TRUSSES SHALL HAVE SPECIAL INSPECTIONS AT THE MANUFACTURER THOSE TEST SHALL BE SUBMITTED FOR RECORD TO THE DESIGNER AND THE BUILDING OFFICIAL.

MOORE & BRUGINK
CONSULTING ENGINEERS

Classic Engineering, LLC
Engineering Consultants



MOORE & BRUGINK
2020 MONROE CENTER NW
GRAND RAPIDS, MI 49505
(616) 363-9801

CLASSIC ENGINEERING
100 GRAND RAPIDS AVE SW
STATE LODGE
GRAND RAPIDS, MI 49503
(616) 742-2810

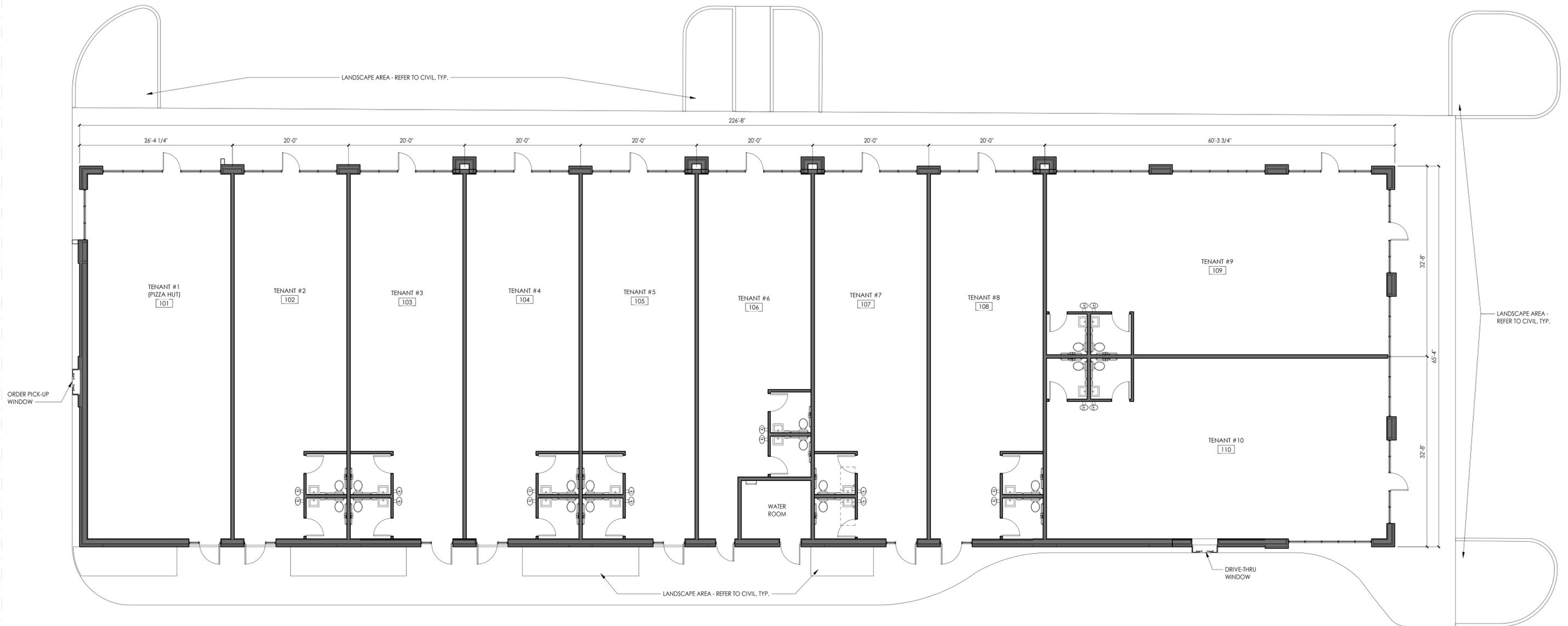
ROBBINS CENTRE POINTE
1604-11



89 MONROE CENTER NW
GRAND RAPIDS, MI 49503
PHONE: (616) 771-0909
WWW.CONCEPTDR.COM



PROGRAM AREA		
Name	Number	Area
FIRST FLOOR		
TENANT #1 (PIZZA HUT)	101	1636 SF
TENANT #2	102	1277 SF
TENANT #3	103	1276 SF
TENANT #4	104	1276 SF
TENANT #5	105	1276 SF
TENANT #6	106	1136 SF
TENANT #7	107	1274 SF
TENANT #8	108	1276 SF
TENANT #9	109	1894 SF
TENANT #10	110	1900 SF
UTILITY	111	139 SF
Grand total		14358 SF

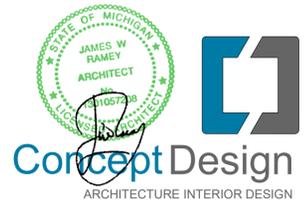


1 FIRST FLOOR PLAN
1/8" = 1'-0"

ROBBINS CENTRE POINTE

Robbins Road, Grand Haven Township

A111



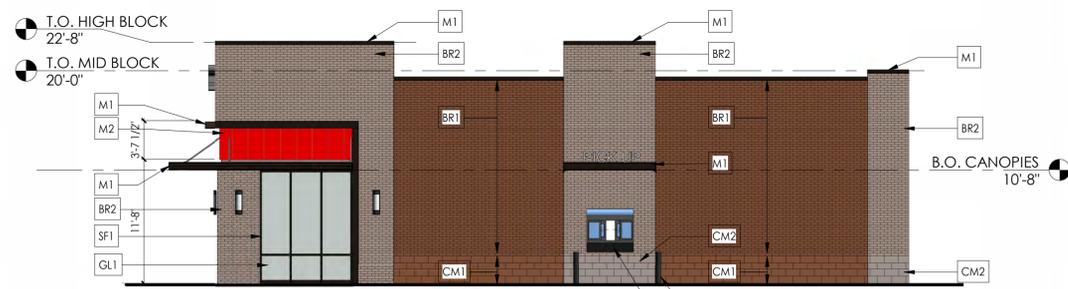
1604-11
01/24/2018

89 MONROE CENTER NW
GRAND RAPIDS, MI 49503
PHONE: (616) 771-0909
WWW.CONCEPTGR.COM

THESE DRAWINGS AND THE WORK REPRESENTED THEREIN ARE THE PROPERTY OF AND NOT TO BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, WITHOUT PERMISSION.
LAST PRINTED: 1/23/2018 5:32:31 PM
C:\Users\jram\Documents\1604-11 Robbins Road_Mcgram.rvt



4 NORTH ELEVATION SCHEMATIC DESIGN
1/8" = 1'-0"



3 WEST ELEVATION SCHEMATIC DESIGN
1/8" = 1'-0"



2 EAST ELEVATION SCHEMATIC DESIGN
1/8" = 1'-0"



1 SOUTH ELEVATION SCHEMATIC DESIGN
1/8" = 1'-0"

EXTERIOR WALL AREA MATERIAL UTILIZATION:

WALL SURFACE AREAS:	
A. NORTH ELEVATION TOTAL AREA = 4,970 S.F.	
• STOREFRONT AREA =	1,906 S.F.
• OPAQUE AREA =	3,064 S.F.
• BRICK AREA =	2,940 S.F.
• BRICK % =	95.9%
B. WEST ELEVATION TOTAL AREA = 1,358 S.F.	
• STOREFRONT AREA =	92 S.F.
• OPAQUE AREA =	1,264 S.F.
• BLOCK AREA =	130 S.F.
• BRICK AREA =	1,068 S.F.
• BRICK AREA % =	84.3%
C. SOUTH ELEVATION TOTAL AREA = 4,486 S.F.	
• STOREFRONT AREA =	584 S.F.
• OPAQUE AREA =	3,902 S.F.
• BLOCK AREA =	3,476 S.F.
• BRICK AREA =	426 S.F.
• BRICK AREA % =	11%
D. EAST ELEVATION TOTAL AREA = 1,424 S.F.	
• STOREFRONT AREA =	584 S.F.
• OPAQUE AREA =	897 S.F.
• BRICK AREA =	897 S.F.
• BRICK AREA % =	100%

EXTERIOR ELEVATION GENERAL NOTES

1. ALL PRE-FINISHED METAL COLORS ARE TO BE SELECTED BY ARCHITECT FROM MANUFACTURER'S (STANDARD - CUSTOM - COLORS) SELECTIONS U.N.O.
 2. AL WALL CAPS, VENTS, LOUVERS, SURFACE MOUNTED PIPES, ETC. ARE TO BE PAINTED OR PRE-FINISHED TO MATCH ADJACENT SURFACES U.N.O.
 3. ALL SOFFITS AND FASCIAS TO ALIGN & MATCH.
 4. SLOPE ALL GUTTERS 1/8" PER FOOT (MIN.)
 5. LOCATE EXTERIOR WALL CONTROL JOINTS AT DOOR / WINDOW / STOREFRONT OPENING AS SHOWN. INTERIOR & EXTERIOR CONTROL JOINTS ON THE SAME WALL ARE TOO ALIGN.
 6. CONNECT ALL DOWNSPOUTS TO CIVIL DRAIN LEADS. COORDINATE WITH CIVIL
 7. DOOR & FRAME TYPES, REFER TO SHEET A201
- CJ = CONTROL JOINT. SEE DETAIL 4 / A202
- T = TEMPERED GLASS
- SF1 DENOTES STOREFRONT TYPE. SEE SHEET A201 FOR STOREFRONT TYPES & INFORMATION
- ◻ DENOTES WALL TYPE. SEE SHEET A202 FOR WALL TYPES & INFORMATION

EXTERIOR MATERIALS

MARK	MATERIAL	LOCATION	MANUFACTURER	COLOR, STYLE	REMARKS
BR1	BRICK (DARK)	-	BELDEN	BISMARCK BLEND	-
BR2	BRICK (LIGHT)	-	BELDEN	LANDMARK GRAY, SMOOTH	OVERSIZED -DOUBLE MONARCH
CM1	DECORATIVE CMU	FIELD	CONSUMERS	RED HILL, SPLIT FACE	COLORIZED MORTAR
CM1B	DECORATIVE CMU	FIELD	CONSUMERS	RED HILL, SMOOTH FACE	COLORIZED MORTAR
CM2	DECORATIVE CMU	FIELD	CONSUMERS	NATURAL, SPLIT FACE	COLORIZED MORTAR
CM2B	DECORATIVE CMU	FIELD	CONSUMERS	NATURAL, SMOOTH FACE	COLORIZED MORTAR
EF1	EIFS	FIELD	STO/DRYVIT	MATCH EP1	ALT SMOOTH CEMENTITIOUS PANEL
M1	METAL (LIGHT)	COPING, CANOPIES, STOREFRONT	-	CLASSIC BRONZE	-
M2	METAL (SPECIALTY)	ACCENT	MBCI OR EQ.	TENANT SPECIFIED RED	VERTICAL METAL PANEL
SF1	ALUM FRAME	-	-	CLASSIC BRONZE	THERMAL BREAK
GL1	GLASS	STOREFRONT	-	CLEAR	1" INSULATED, LOW-E, >75% VLT
EP1	PAINT (LIGHT)	SEE ELEV.	SHERWIN WILLIAMS	SW7043 WORLDLY GRAY	-
EP2	PAINT (DARK)	SEE ELEV.	SHERWIN WILLIAMS	SW6991 BLACK MAGIC	-

THESE DRAWINGS AND THE WORK REPRESENTED THEREIN ARE THE PROPERTY OF AND
 WILL BE THE PROPERTY OF CONCEPT DESIGN AND MAY NOT BE REPRODUCED OR
 TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL,
 WITHOUT PERMISSION.
 LAST PRINTED: 12/20/18 9:01:42 AM
 C:\Users\mgm\Documents\1604-11 Robbins Road_Mcgraw.rvt

ROBBINS CENTRE POINTE

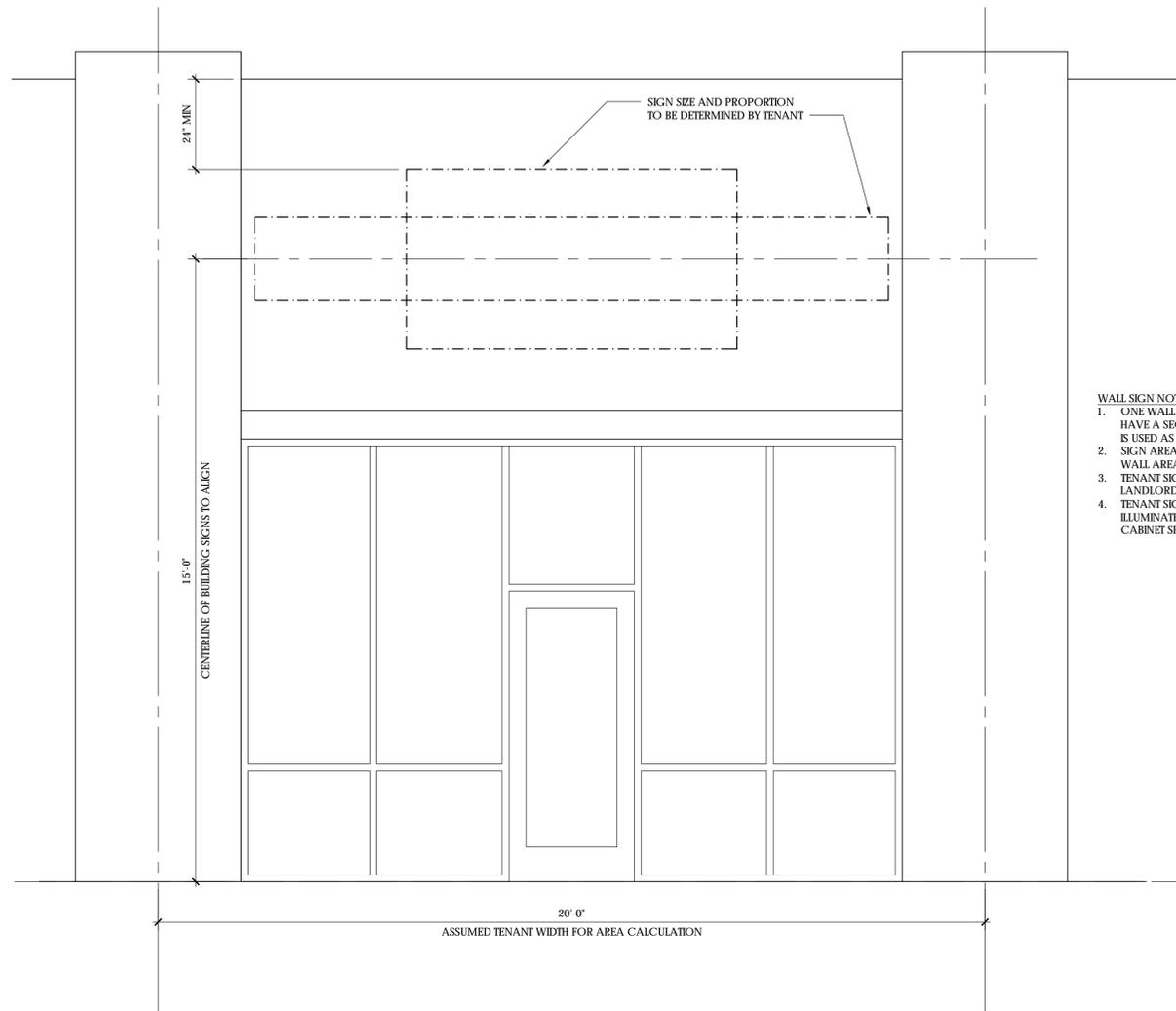
RETAIL S EXTERIOR ELEVATIONS
Robbins Road, Grand Haven Township

A511



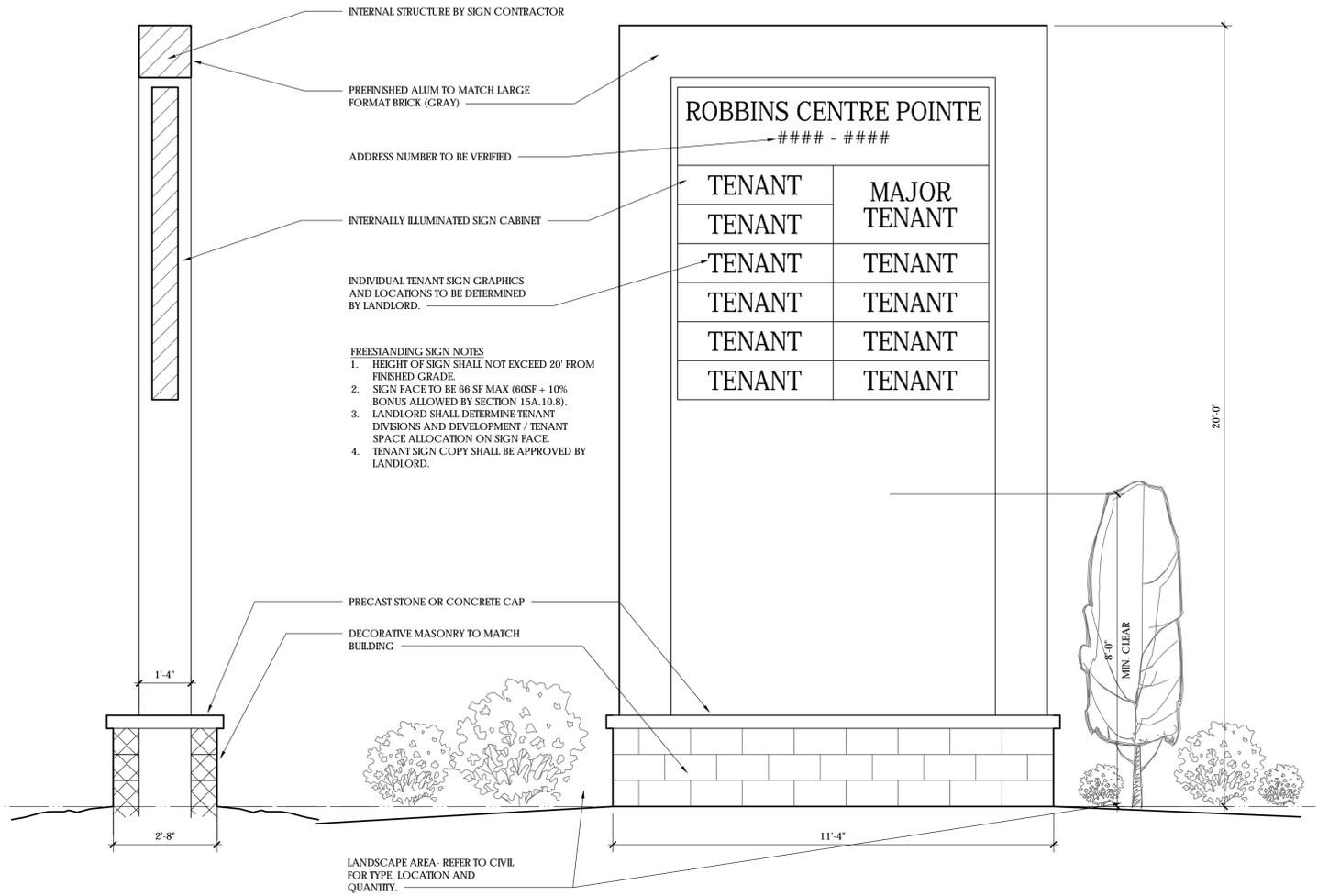
1604-11
01/24/2018

89 MONROE CENTER NW
GRAND RAPIDS, MI 49503
PHONE: (616) 771-0909
WWW.CONCEPTGR.COM



3 TYPICAL RETAIL BUILDING SIGNAGE
1/2" = 1'-0"

- WALL SIGN NOTES**
- ONE WALL SIGN PER TENANT. TENANT MAY HAVE A SECOND SIGN OVER REAR DOOR IF IT IS USED AS A CUSTOMER ENTRANCE.
 - SIGN AREA SHALL NOT EXCEED 10% OF THE WALL AREA. (20' W x 19' H = 380/10 = 38SF).
 - TENANT SIGN COPY SHALL BE APPROVED BY LANDLORD.
 - TENANT SIGN SHALL BE INTERNALLY ILLUMINATED. INDIVIDUAL CHANNEL LETTERS. CABINET SIGNS ARE NOT PERMITTED.



2 FREESTANDING SIGN SECTION
1/2" = 1'-0"

1 FREESTANDING SIGN ELEVATION
1/2" = 1'-0"

THESE DRAWINGS AND THE WORK REPRESENTED THEREIN ARE THE PROPERTY OF AND
 PROVIDED TO YOU BY CONCEPT DESIGN AND MAY NOT BE REPRODUCED, COPIED,
 REPRODUCED, OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR
 MECHANICAL, INCLUDING PHOTOCOPYING, RECORDING, OR BY ANY INFORMATION
 STORAGE AND RETRIEVAL SYSTEM, WITHOUT THE WRITTEN PERMISSION OF
 CONCEPT DESIGN. PROJECT NO. 1604-11. DATE: 01/24/2018. (Revised 01/24/2018)

ROBBINS CENTRE POINTE

Robbins Road, Grand Haven Township

A513



Concept Design
ARCHITECTURE INTERIOR DESIGN

FILE: 1604-11
DATE: 01/24/2018



89 MONROE CENTER NW
GRAND RAPIDS, MI 49503
PHONE: (616) 771-0909
WWW.CONCEPTDR.COM



CSX1 LED Area Luminaire

Specifications

EPA: 0.7 ft²
 Length: 23.52"
 Width: 16.52"
 Height: 5.28"
 Weight: 17 lbs
 (net)

Capable Luminaire

This luminaire is an A+ Capable Luminaire, which has been designed and tested to provide consistent color appearance and system-level interoperability.

- All configurations of this luminaire meet the A+ Capable Brand's specification for chromatic consistency.
- This luminaire is A+ Certified when ordered with DTL controls marked by a **DTL** background. DTL Equipped luminaires meet the A+ specification for luminaire to photocorrel interoperability!
- The luminaire is part of an A+ Certified solution for RDM2P or X-Point™ Wireless control networks, providing out-of-the-box control compatibility with simple commissioning, when ordered with drivers and control options marked by a **W** background.

To learn more about A+, visit www.aaplus.com.

1. See ordering tree for details.
 2. A+ Certified Solutions for RDM2P require the order of one RDM2P node per luminaire. Sold Separately. Link to Room: Link to DTL DCL.

Ordering Information

EXAMPLE: CSX1 LED 60C 1000 40K T4M MVOLT SPA DBSD

Order	Qty	Description	Unit	Material	Notes	Price	Ext. Price
CSX1 LED	14	60C 1000 40K T4M MVOLT SPA DBSD	EA	60C 1000 40K T4M MVOLT SPA DBSD		16711.46	233960.44



SENTINEL™
 WEB-RN™ 740

GENERAL SPECIFICATION

Housing: Die-cast and anodized (see option) aluminum. Front housing hinges open for access and service via a full height hinged access door.

Finish: Electro-galvanized, metallic powder coated paint.

Cast: One piece alum.

Reflector: Aluminum, white powder coated.

Driver: UV stabilized polycarbonate.

Drivers: IFC, electronic for 120-277V. LED modules are wired for a separate circuit.

Minimum Starting Temperature: -30°C.

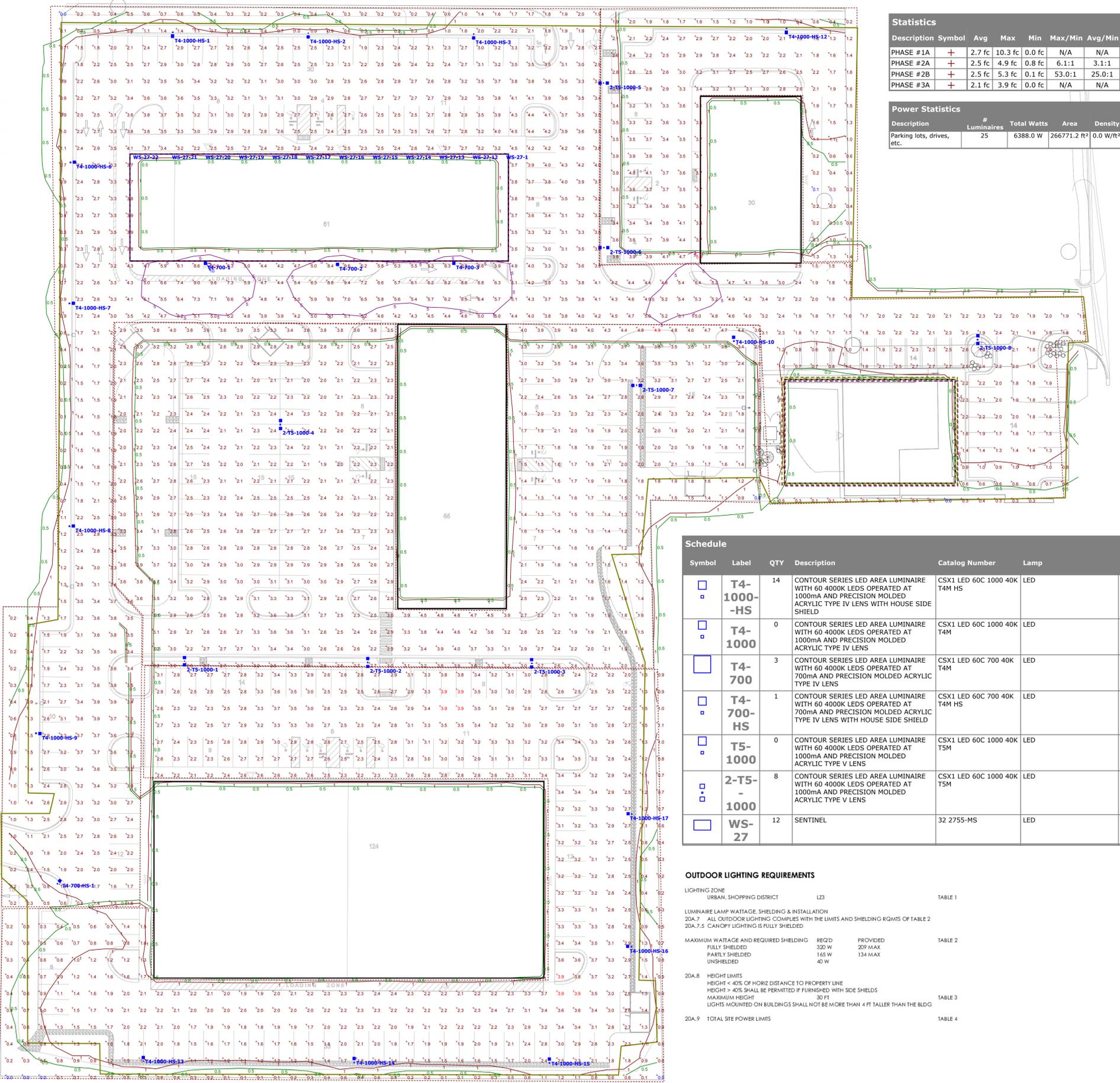
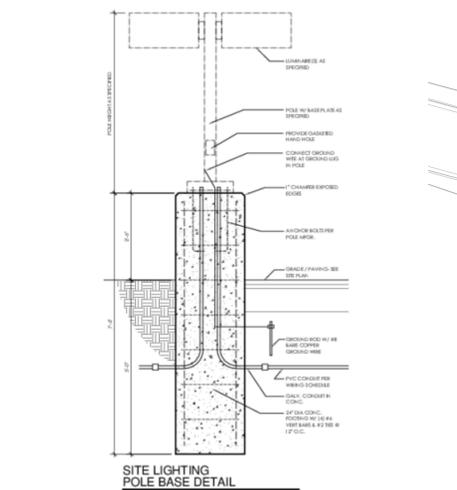
Remote emergency: Emergency system provides a 1.5 hour emergency lighting facility. The remote system includes the inverter module, battery and a remote wall/wiring LED charge indicator and two switch (maximum distance including the inverter and luminaire is 400ft). (See spec for a range cap for not supplied).

Mechanical: Mounts directly over a standard electrical junction box (by other). Mounting hardware (by other).

Approvals: ETL, Wet location, IP65.

PHYSICAL DIMENSIONS

Item	Part No.	Type (B)	Weight	Photometry
LED	32755-MS	32755-MS	1.65 lbs	16711.46
LED	32755-MS	32755-MS	1.65 lbs	16711.46



Statistics

Description	Symbol	Avg	Max	Min	Max/Min	Avg/Min
PHASE #1A	+	2.7 fc	10.3 fc	0.0 fc	N/A	N/A
PHASE #2A	+	2.5 fc	4.9 fc	0.8 fc	6.1:1	3.1:1
PHASE #2B	+	2.5 fc	5.3 fc	0.1 fc	53.0:1	25.0:1
PHASE #3A	+	2.1 fc	3.9 fc	0.0 fc	N/A	N/A

Power Statistics

Description	# Luminaires	Total Watts	Area	Density
Parking lots, drives, etc.	25	6388.0 W	266771.2 ft ²	0.0 W/ft ²

X

No.	Label	MH
1	2-T5-1000	30.00
2	2-T5-1000	30.00
3	2-T5-1000	30.00
4	2-T5-1000	30.00
5	2-T5-1000	30.00
6	2-T5-1000	30.00
7	2-T5-1000	30.00
8	2-T5-1000	30.00
1	T4-700-HS	30.00
1	T4-1000-HS	30.00
2	T4-1000-HS	30.00
3	T4-1000-HS	30.00
6	T4-1000-HS	30.00
7	T4-1000-HS	30.00
8	T4-1000-HS	30.00
9	T4-1000-HS	30.00
10	T4-1000-HS	30.00
12	T4-1000-HS	30.00
13	T4-1000-HS	30.00
14	T4-1000-HS	30.00
15	T4-1000-HS	30.00
16	T4-1000-HS	30.00
17	T4-1000-HS	30.00
1	T4-700	16.00
2	T4-700	16.00
1	WS-27	8.00
12	WS-27	8.00
13	WS-27	8.00
14	WS-27	8.00
15	WS-27	8.00
16	WS-27	8.00
17	WS-27	8.00
18	WS-27	8.00
19	WS-27	8.00
20	WS-27	8.00
21	WS-27	8.00
22	WS-27	8.00

Schedule

Symbol	Label	QTY	Description	Catalog Number	Lamp	Number Lamps	Lumens per Lamp	LLF	Wattage
□	T4-1000-HS	14	CONTOUR SERIES LED AREA LUMINAIRE WITH 60 4000K LEDS OPERATED AT 1000mA AND PRECISION MOLDED ACRYLIC TYPE IV LENS WITH HOUSE SIDE SHIELD	CSX1 LED 60C 1000 40K T4M HS	LED	1	16711.46	1	209
□	T4-1000	0	CONTOUR SERIES LED AREA LUMINAIRE WITH 60 4000K LEDS OPERATED AT 1000mA AND PRECISION MOLDED ACRYLIC TYPE IV LENS	CSX1 LED 60C 1000 40K T4M	LED	1	22247.2	1	209
□	T4-700	3	CONTOUR SERIES LED AREA LUMINAIRE WITH 60 4000K LEDS OPERATED AT 700mA AND PRECISION MOLDED ACRYLIC TYPE IV LENS	CSX1 LED 60C 700 40K T4M	LED	1	16478.29	1	134
□	T4-700-HS	1	CONTOUR SERIES LED AREA LUMINAIRE WITH 60 4000K LEDS OPERATED AT 700mA AND PRECISION MOLDED ACRYLIC TYPE IV LENS WITH HOUSE SIDE SHIELD	CSX1 LED 60C 700 40K T4M HS	LED	1	12377.95	1	134
□	T5-1000	0	CONTOUR SERIES LED AREA LUMINAIRE WITH 60 4000K LEDS OPERATED AT 1000mA AND PRECISION MOLDED ACRYLIC TYPE V LENS	CSX1 LED 60C 1000 40K T5M	LED	1	22329.02	1	209
□	2-T5-1000	8	CONTOUR SERIES LED AREA LUMINAIRE WITH 60 4000K LEDS OPERATED AT 1000mA AND PRECISION MOLDED ACRYLIC TYPE V LENS	CSX1 LED 60C 1000 40K T5M	LED	1	22329.02	1	418
□	WS-27	12	SENTINEL	32 2755-MS	LED	72	11.51157	1	16

OUTDOOR LIGHTING REQUIREMENTS

LIGHTING ZONE: URBAN, SHOPPING DISTRICT L23 TABLE 1

LUMINAIRE LAMP WATTAGE, SHIELDING & INSTALLATION: 20A.7 ALL OUTDOOR LIGHTING COMPLIES WITH THE LIMITS AND SHIELDING RQMS OF TABLE 2. 20A.7.5 CANOPY LIGHTING IS FULLY SHIELDED.

MAXIMUM WATTAGE AND REQUIRED SHIELDING: REQ'D PROVIDED FULLY SHIELDED 320 W 209 MAX PARTLY SHIELDED 165 W 134 MAX UNSHIELDED 40 W TABLE 2

20A.8 HEIGHT LIMITS: HEIGHT < 40% OF HORIZ DISTANCE TO PROPERTY LINE. HEIGHT > 40% SHALL BE PERMITTED IF FURNISHED WITH SIDE SHIELDS. MAXIMUM HEIGHT: 30 FT. LIGHTS MOUNTED ON BUILDINGS SHALL NOT BE MORE THAN 4 FT TALLER THAN THE BLDG. TABLE 3

20A.9 TOTAL SITE POWER LIMITS: TABLE 4

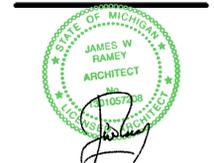
Proposed Development:

ROBBINS CENTRE POINTE

Robbins Road at 172nd
 Grand Haven (Township), Michigan

ISSUED: 11/08/2017
 01/02/2018

SCHEMATIC DESIGN REVIEW: REVISED



TITLE: **SITE LIGHTING**

SHEET: **ES101**

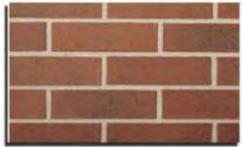
FILE: 1604-11





ROBBINS CENTRE POINTE

Robbins Road at 172nd
Grand Haven (Township), Michigan 49417



FACE BRICK
MODULAR SIZE

FACE BRICK
LARGE FORMAT

DECORATIVE CONCRETE MASONRY
UNITS - SPLIT/GROUND FACE

ROBBINS CENTRE POINTE

Robbins Road, Grand Haven Township



CM2B - NATURAL SMOOTH FACE



CM2 - NATURAL SPIT FACE



M1 - CLASSIC BRONZE



EP2 - SW 1091
BLACK MAGIC



EP1 - SW 7043
WORLDLY GRAY



EP3 - SW 6047
HOT COCOA



BR2 - LANDMARK GRAY



BR1 - BISMARK BLEND



CM1B - RED HILL SMOOTH FACE



CM1 - RED HILL SPIT FACE



ROBBINS CENTER POINT PUD STORMWATER NARRATIVE

The proposed Robbins Center Point PUD project is located on the south side of Robbins Road, between 172nd Avenue and Whitaker Way in Grand Haven Township. Currently there are several buildings on site with associated parking lots. A majority of the existing site currently is covered with impervious surface with no formal stormwater management. The existing parking lots sheet flow to the greenspace around the perimeter of the site and infiltrates into the existing sand soil. To our knowledge, there are no stormwater drainage issues on or adjacent to the site.

The proposed project will consist of demolition of the existing site buildings and parking lots and reconstruction of 5 new buildings, parking lots, utilities and stormwater management. The first phase of the development will consist of the commercial building on the north side of the site along Robbins Road frontage along with the necessary parking and utilities to support that building.

The proposed development will provide stormwater management which will be accomplished through a combination of best management practices (BMPs) and stormwater infrastructure. The goal of the stormwater management practices is to promote stormwater infiltration while providing a reliable overflow system. The proposed impervious surface will sheet flow to several open space areas throughout the site, including rain garden islands within the parking lots and bio-swales along the perimeter. While the site has curb and gutter, several cuts in the curb will allow the stormwater to get into the designed areas. Stone rip-rap will be provided at these curb cuts to prevent erosion from occurring. The rain gardens and bio-swale areas will function the same by utilizing the existing sand subgrade to allow stormwater to infiltrate into the native soils. A bioretention soil mixture consisting of sand, planting soil and mulch will be installed to provide the planting media for the proposed landscaping in these areas. These plantings have been selected to be water tolerant, native materials, which have substantial root systems to maximize the amount of water uptake.

In the event there is a large rain event, an overflow storm sewer system is also provided to provide stormwater conveyance from the site to the adjacent county drain located in the intersection of Robbins Road and 172nd Avenue. The catch basins will be located in the rain gardens with the castings elevated such that the water will be forced to infiltrate into the soil prior to spilling over into the drainage structures. Leech basins and perforated pipe will be provided to maximize infiltration prior to discharge to the county drain. Final design details and calculations will be submitted to the Ottawa County Water Resources Commissioner's Office for review and approval.

Robbins Center Pointe P.U.D. Traffic Impact Study

Executive Summary

Robbins Road Real Estate, LLC is proposing to construct a new commercial development south of Robbins Road between Whittaker Way and 172nd Avenue in Grand Haven Charter Township. The proposed commercial development known as Robbins Center Point is expected to have 65,757 square feet of retail development and is anticipated to be complete within a five-year timeframe.

The report analyzes and presents the traffic impacts that the proposed commercial development will have on the following intersections in the project study area:

- US-31 (Beacon Blvd) & Robbins Road
- US-31 (Beacon Blvd) & NB to SB Crossover North of Robbins Road
- US-31 (Beacon Blvd) & SB to NB Crossover South of Robbins Road
- Robbins Road & Whittaker Way
- Robbins Road & DeSpelder Street
- Robbins Road & 172nd Avenue

The above-mentioned intersections were analyzed for the morning peak (7:00-9:00AM) and afternoon peak (4:00-6:00PM) hours for the following conditions:

- Existing 2018 Conditions
- Future 2023 No-Build Conditions
- Projected 2023 Build Conditions

The elements to be covered in the traffic study were discussed with Grand Haven Township prior to the study commencing.

Existing 2018 Conditions

Based on the intersection counts, the morning peak hour was found to occur between the hour of 7:15 a.m. and 8:15 a.m. while the afternoon peak hour was found to occur between the hour of 4:30 p.m. and 5:30 p.m. These hours were selected for analysis of existing and future year conditions.

Based on the recreational nature of this area, the existing traffic volumes collected during the winter months were adjusted to normalize the traffic volumes between peak summer months and low volume winter months. Per MDOT's PTR Pattern Assignments and discussions with Grand Haven Charter Township, a seasonal adjustment factor of 1.25 was used to adjust the through volumes along US-31 while a seasonal adjustment factor of 1.18 was used to adjust the remaining traffic volumes in in the study area. These adjusted traffic volumes formed the basis of the existing conditions analysis.

The capacity analyses for existing conditions revealed that all study area intersections and movements operate at an acceptable level of service during both the weekday morning and afternoon peak hours. It should be noted that although the southbound US-31 through movement at Robbins Road operates at a level of service C during both the morning and afternoon peak hours, the volume to capacity (v/c) ratio exceeds 1.0 during both peak hours indicating that the amount of southbound through traffic exceeds the capacity of the facility.

Future 2023 No-Build Conditions

An evaluation of traffic impacts associated with the proposed commercial development relies on an understanding of the future traffic conditions in the study area without the proposed development. Future traffic for the 2023 analysis year is expected to come from background traffic growth expected to occur on the street network between 2018 and 2023, and adding any expected traffic from approved developments in the area. Per our discussions with Grand Haven Charter Township, a 1.5% per year growth rate was utilized over the five-year study period.

One committed development was identified as needing to be coordinated along with the Robbins Center Point project; Spectrum Health. The Spectrum Health medical office building has been constructed but was not occupied at the time traffic counts were collected. The Spectrum Health property lies immediately south of the proposed development and has access to Whittaker Way, 172nd Avenue, and the Meijer North Drive. Spectrum Health consists of a 120,000-square foot medical office building. A traffic study was prepared for Spectrum Health by URS in August of 2015. Trip generation and distribution for this facility was taken directly from their report.

The future no build capacity analyses revealed that all of the study area intersections will continue to operate with acceptable levels of service with the exception of the US-31 and Robbins Road intersection. During the morning peak hour, the southbound through movement will operate at a LOS F. During the afternoon peak hour, the southbound through movement and westbound right turn movement will operate at a LOS E. During the morning peak hour, adjustments to the existing traffic signal timing splits by providing three more seconds to the north/south approaches from the east/west approaches will result in all movements operating acceptably. In order to mitigate the afternoon peak hour, the cycle length will need to be increased to a 90 second cycle length from the existing 70 second cycle length. Increasing the cycle length of the traffic signal and optimizing the splits will result in all movements operating at acceptable levels of service. Since the signalized crossover south of Robbins Road is in coordination with this signalized intersection, the cycle length at that study area intersection will also need to be increased. It should be noted that even with the traffic signal timing adjustments, the southbound through traffic still has v/c ratios exceeding 1.0. During the afternoon peak hour, the v/c ratio for the northbound through movement is 0.99.

Projected 2023 Build Conditions

The projected traffic impacts for the commercial development were determined based on the analysis of future year 2023 traffic volumes upon full development of the proposed site.

Site Access

Access to the development is proposed to be served via three full movement accesses. One access is proposed to Robbins Road at the existing middle curb cut of the five existing curb cuts located along Robbins Road. A second access is proposed to Whittaker Way immediately north of the Spectrum Health parking lot. The third access is to 172nd Avenue through the existing access for the D&W Quick Stop. The 172nd Avenue and Robbins Road accesses currently exist for the property. The proposed Robbins Road access will be reconstructed to consolidate five existing driveways to one main driveway. The 172nd Avenue access would remain as-is since it was just reconstructed for the D&W Quick Stop. The Whittaker Way access would consist of a new curb cut.

Trip Generation

New trips to be generated by the proposed commercial development were estimated based on information and procedures contained in the Institute of Transportation Engineer's (ITE) report *Trip Generation, Tenth Edition, September 2017*. Final build-out of the entire development was anticipated in 2023.

Since tenants for this development are unknown at this time and land uses, as well as building sizes, are not fully defined, the trip estimates for the site were developed with a more general use and were not specific for each possible use. In addition, two different options exist for the southern portion of the site. Option A consists of 28,182 square feet of general box retail while Option B consists of a 19,000 square foot retail building. To be conservative, the gross leasable area of the land was assumed to be 65,757 square feet (assuming the larger of the two options). Once the tenants are known and a final site plan is completed, the actual square footage may be lower than what is anticipated in this study.

Shopping Center, Land Use Code (820), is an integrated group of commercial establishments that is planned, developed, owned, and managed as a unit. It typically includes uses other than that of general retail such as restaurants, banks, and offices. This land use seemed to cover most anything that would possibly develop on this site. Therefore, trip estimates were based on Land Use Code 820 for the entire site. The weekday morning and afternoon peak hour trip generation estimates are shown in Table 3.

Table 1 Robbins Center Point PUD Trip Generation

Time Period	Total Trips			Pass-by Trips			New Trips		
	Total	In	Out	Total	In	Out	Total	In	Out
AM Peak Hour	185	115	70	63	39	24	122	76	46
PM Peak Hour	398	191	207	135	65	70	263	126	137

“New Trips” are those that are new to the study area and consist of motorists whose primary destination is the Robbins Center Point development. “Pass-by Trips” involve motorists who are diverted off of the adjacent street system to visit this development. A portion of the trips generated by Robbins Center Point development were assumed to be pass-by trips. These trips divert from existing travel paths to stop at the site and then resume the original trip path. Thus, additional trips are not added to the area road system by these pass-by trips. Pass-by rates were based on information provided in ITE’s *Trip Generation Handbook, Tenth Edition*. A pass-by rate of 34% was used for the morning and afternoon peak hours. When examining the pass-by rates for smaller shopping center sizes between 50-85,000 square feet, an average pass-by rate of 44% was calculated, therefore the 34% provides a worse-case scenario for new trips on the street network.

“Internal Trips” are those that will visit more than one use within the site. Since trips for the Robbins Center Point development were estimated with Land Use Code 820, Shopping Center, internal capture rates are not applicable and should not be used to estimate trips for shopping centers. Data has been collected directly for shopping centers as a stand-alone development, therefore, the associated trip generation data presented in the manual already reflect the effects of internal capture and the mixed-use nature of the center.

Internal traffic utilizing Whittaker Way between the Spectrum Health, Meijer, and Robbins Center Point uses was also not included other than the small percentage assigned to Whittaker Way. It is likely that there will be some internal trips on Whittaker Way between these adjacent developments. However, this analysis assumes a worse-case scenario for the overall road network.

Traffic from the existing uses on the proposed site was also not subtracted from the existing volumes. The existing traffic volumes used in the analysis include traffic from the existing businesses that currently sit at the proposed site.

Directional Distribution and Assignment

Trip distribution for the site was determined based on existing peak hour traffic volumes on the study area roadways. The resultant trip distribution pattern for the proposed commercial development is as follows:

- To/from the north on US-31 37%
- To/from the south on US-31 32%
- To/from the west on Robbins Road 8%
- To/from the east on Robbins Road 9%
- To/from the north on Ferry Street 6%
- To/from the south on 172nd Avenue 7%
- To/from the south on Whittaker Way 1%.

Projected 2023 Build Operational Analysis

The capacity analysis for the projected 2023 build conditions revealed that all of the study area intersections remained operating at acceptable levels of service with the exception of the US-31 and Robbins Road intersection. During the morning peak hour, the southbound through movement and the westbound right turn movement will both operate at a LOS E. During the afternoon peak hour, the southbound through movement is expected to operate at a LOS E while the westbound right turn movement degrades to a LOS F. Investigations were conducted to determine mitigation for this intersection. Since the traffic signal has a two-phase operation, any time taken from one direction of travel impacts the other direction of travel and since the intersection has poor levels of service for both directions, adjusting the splits further would not alleviate these delays for one travel direction. Several attempts were made to examine different cycle lengths as well, none of which mitigated all of the unacceptable movements at this intersection. In order to fully mitigate the movements to acceptable levels, construction of a second westbound right turn lane is required. During the morning peak hour, construction of the second westbound right turn lane allows an adjustment in the splits to provide more green time to the north/south approaches within the existing 70-second cycle length. All movements will operate acceptably during the morning peak hour with construction of the additional westbound right turn lane and traffic signal timing adjustments within the existing cycle length. During the afternoon peak hour, the cycle length will need to be increased to a 100 second cycle length from the proposed 90 second cycle length in addition to the dual westbound right turns. These improvements will result in all movements operating at acceptable levels of service.

Site Driveway Analysis

In order to determine the configurations of the proposed site driveways to Robbins Road, 172nd Avenue, and Whittaker Way, warrants for left and right-turn lanes were evaluated, and a capacity analysis was conducted. Michigan Department of Transportation (MDOT) traffic volume guidelines for right-turn lanes and tapers were reviewed for the necessity of constructing a right turn lane at the proposed site driveways. It was found that the proposed driveway to Whittaker Way does not meet the guidelines for a lane or taper. The existing driveway to 172nd Avenue was found to meet warrants for a right turn deceleration taper only and the proposed driveway to Robbins Road meets guidelines for a full right turn lane. The full right turn lane should be designed in accordance with the City of Grand Haven requirements.



Whittaker Way was examined to determine the need for an exclusive left-turn lane along Whittaker Way at the proposed driveway location. The proposed driveway location is located within the existing taper area prior to the two-way center left-turn lane which begins south of the proposed driveway. It was found that the left-turn volume utilizing this driveway in conjunction with the through volumes do not meet warrants for an exclusive left turn lane.

The capacity analysis for the site driveways revealed that all movements at all three site accesses will operate acceptably with the exception of the northbound exiting movement to Robbins Road during the afternoon peak hour. As proposed, the exit lane from the proposed development onto Robbins Road has one lane for all movements. This approach is expected to operate at a level of service E during the afternoon peak hour with a delay of 37.5 seconds. In order to mitigate this exiting movement, separate left and right turn exit lanes should be provided for this proposed driveway to Robbins Road. These improvements result in a level of service D for the northbound left turn and level of service B for the northbound right turn lane.

Summary

The existing analyses revealed that all of the study area intersections currently operate at acceptable levels of service. However, the southbound through movement at the US-31 and Robbins Road intersection currently has v/c ratios exceeding 1.0 indicating that this movement is over capacity.

The analysis results for the future no build conditions revealed that movements at the intersection of US-31 and Robbins Road operate at a level of service E or F. Improvements are needed at this study area intersection in order to mitigate the future no build conditions. The improvement strategies for the future no build conditions are summarized below.

- Increase cycle length from 70 to 90 seconds during the afternoon peak hour
- Adjust traffic signal timing splits during both the morning and afternoon peak hours.

The analysis results for the future no build scenario revealed that these signal timing adjustments will result in acceptable levels of service.

The analysis results for the projected 2023 build scenario for the proposed commercial development revealed that additional mitigation will be needed upon full build out in order to mitigate the traffic impacts caused by adding the project traffic. The roadway improvements that will be required at full build of the commercial development include the following:

US-31 & Robbins Road

- Construct an additional westbound right turn lane
- Increase cycle length to 100-seconds during the afternoon peak hour
- Adjust the traffic signal splits during the morning peak hour.

Robbins Road & Main Site Driveway

- Construct eastbound right-turn lane along Robbins Road
- Construct two-lane exit for separate left and right turn movements from the proposed site