



Planning Commission

Larry Fox, Chairperson Summer L. McMullen, Trustee
Michael Mitchell, Vice-Chairperson Keith Voight, Secretary
Michelle LaRose, Commissioner Sue Grissim, Commissioner
Tom Murphy, Commissioner

Planning Commission Meeting Agenda
Hartland Township Hall
Thursday, June 24, 2021
7:00 PM

1. Call to Order
2. Pledge of Allegiance
3. Roll Call
4. Approval of the Agenda
5. Approval of Meeting Minutes
 - a. Planning Commission Minutes of April 8, 2021
6. Call to Public
7. Public Hearing
 - a. Site Plan/PD Application #21-005 Redwood Living Planned Development (PD) – Preliminary Site Plan
8. Call to Public
9. Planner's Report
10. Committee Reports
11. Adjournment

HARTLAND TOWNSHIP PLANNING COMMISSION **DRAFT** REGULAR MEETING MINUTES

April 8, 2021 – 7:00 p.m.

1. **Call to Order:** Chair Fox called the meeting to order at approximately 7:00 p.m.
2. **Pledge of Allegiance:**
3. **Roll Call and Recognition of Visitors:**
Present – Commissioners Fox, Grissim, LaRose, McMullen, Mitchell, Voight
Absent – Commissioner Murphy
4. **Approval of the Agenda:**
A Motion to approve the April 8, 2021 Planning Commission Regular Meeting Agenda was made by Commissioner Mitchell and seconded by Commissioner Voight. Motion carried unanimously.
5. **Approval of Minutes**
 - a. **Planning Commission Minutes of March 11, 2021**
A Motion to approve the March 11, 2021 Planning Commission Regular Meeting Minutes was made by Commissioner Grissim and seconded by Commissioner LaRose. Motion carried unanimously.
6. **Call to Public:**
None
7. **Public Hearing:**
 - a. **Site Plan with Special Land Use Application #21-003 (Hungry Howie’s)** a request to construct a multi-tenant building approximately 4,550 square feet in size, with retail/office space and two (2) carry out restaurants, each having drive-through/pick-up service.

Chair Fox explained the Public Hearing process.

Chair Fox opened the Public Hearing at 7:03 PM stating all noticing requirements have been met.

Director Langer summarized the request, location and process stating the following:

- Site is in front of Bella Vita.
- Road name will be Bella Vita Court
- Not a traditional drive-through but drive-up window
 - No menu boards
 - No stacking lanes
 - No indoor dining
 - Orders placed by phone or online
 - Pick-up window only
- Planning Commission will approve the Site Plan and make a recommendation for the Special Use Permit to the Township Board. The Township Board has final approval.

The Applicant, Steve Peterson, had nothing to add.

Call to Public

None

Chair Fox closed the Public Hearing at 7:09 PM

Chair Fox asked the Planning Commission to review the **Special Land Use Review – General Standards** found in Section 6.6, Special Uses, of the Hartland Township Zoning Ordinance and listed in the staff memorandum.

The Planning Commission had no concerns.

Chair Fox continued with the **Special Land Use Review – Applicable Site Standards**. Section 4.28

Location of driveways. Ingress and egress points shall be located at least sixty (60) feet from the intersection of any two (2) streets (measured from the nearest right-of-way line). The use of secondary access drives in accordance with Section 5.10.2 is required.

Director Langer stated the most southern of the two (2) commercial driveways into the site is located approximately 47 feet from the right-of way line of Highland Road and does not comply with this standard. However, when Bella Vita was being developed, MDOT did not seem to have any negative concerns with the road, so we are moving ahead with it as shown.

Stacking space and lanes shall be provided as specified in Section 5.8, Off-Street Parking Requirements. Additionally, the site design must allow for unimpeded circulation around the building outside of the drive-through lanes.

Director Langer stated the following:

- The two (2) proposed restaurants provide carry out service/pick up service and each restaurant has its own drive-through window.
- Per Section 5.8.4.H., the restaurant category for carry-out or delicatessen, with less than six (6) tables or booths, does not require stacking spaces.
- Pick-up window only. No menu board or ordering stations or stacking spaces.

The Applicant added following the order, the customer will be given a time to pick up their items, so they do not anticipate cars stacking. Most payments will be handled online but someone could pay at the window if they chose.

Director Langer continued there is no known tenant for the second business so they have asked the Applicant to provide a letter indicating their understanding that there are limitations; this site cannot accommodate a standard fast-food restaurant with a drive-through. It is for pick up only. Chair Fox asked if that is how it would be conveyed to a potential future tenant, that this site was developed from day one with this in mind. Director Langer confirmed and stated the Applicant has provided that letter. The Applicant confirmed. The Planning Commission briefly discussed the wording in the Motion addressing this issue.

SITE PLAN REVIEW – Applicable Site Standards

Chair Fox referred to the staff letter dated April 1, 2021.

Site Requirements

Off-Street Parking

Director Langer explained there are two ways to calculate parking here: based on building square footage which generates a number of spaces required that serves for all allowed uses present and future; or by use, which generates a specific number for that use but must be recalculated for each new use. This complies with either one. The Planning Department would like direction going forward for what types of restaurant uses could be permitted on this site, given the potential parking and stacking limitations.

Commissioner LaRose asked what the parking requirement is for the current location of Hungry Howie's. The Applicant estimated there are fewer than 25 parking spots.

There was a brief discussion on parking at the current site and future options including off-site parking.

Commissioner Mitchell expressed concern about setting a precedent and does not understand why there are two ways of calculating parking standards.

Director Langer replied with the following:

- The Zoning Ordinance has many different ways of calculating parking based on the different uses.
- If it were solely a Hungry Howie's Restaurant, they would use the restaurant calculation process determined by the number of seats and the square footage of the building available to the public.
- If the use changed and it became an office, it would be recalculated using the office standards.
- For any use, parking calculations must be checked.
- For multi-tenant buildings, with many different uses, a general retail parking standard is applied.
- This building is unusual as it is multi-tenant, has a restaurant with no indoor seating, is carry-out only, and is only 4000 square feet.
- Normally a building of this size would be only one tenant, but Hungry Howie's wants to recoup some of their investment by renting out the additional space.
- Planning is looking for direction on how to calculate parking for this unusual situation.

Commissioner Mitchell asked if the property were sold, and the new owner wanted to remodel and make it a restaurant with indoor seating, would the parking requirements previously approved be able to be revised.

Director Langer stated if it were a complete change in use, yes, the parking could be recalculated; however, if parking is calculated using the general retail standards, any business allowed in the GC district could go into one of those spaces without recalculating the parking, assuming it remains a multi-tenant building.

The Planning Commission directed staff to use the calculations using general retail/office formula for GFA (Gross Floor Area) of building (4,550 sq. ft.).

Landscaping and Screening

Foundation Landscaping

Commissioner Grissim expressed some concern over the Foundation Landscaping on the south side, the width, and the type of plants being used.

The Planning Commission discussed the following Foundation Landscaping items:

- Which plants are being counted as part of the Foundation Landscaping requirement.
- Redundancy.
- Size of planters.
- Location of planters.
- Width of sidewalk.
- ADA ramp regulations.
- Location of building and the option to move it back on the site.
- Reducing the size of the Loading area to allow for more space.
- Cannot only be flowers as there needs to be something there during the winter months.
- Planters acting as bollards to protect the building.

The Planning Commission indicated they are willing to work with the Applicant to make it look as nice as possible with the size and space limitations.

Parking Lot Landscaping

Commissioner Grissim asked that the westernmost endcap, the most exposed, be widened to 10 feet which would allow the easternmost endcap to be narrower, place the Landscaping in areas where it can have the greatest impact and lessen it in other areas.

Commissioner Voight commented he would like to avoid the same issue they had with Culver's who came back after the fact stating the required trees were impeding the visibility of their sign.

Perimeter Landscaping

Commissioner Grissim stated the screening for the parking lot could also be counted as Greenbelt Landscaping to reduce the number of required plantings. There are many items on the plan that are shown so close together in ten years it would not produce the desired result. She stated staff will work with the Applicant. Chair Fox agreed this is an unusual lot with a tight space where the requirements overlap; relief has to be given.

Buffering or Screening

Commissioner Grissim supported staff's suggestion to eliminate the row of deciduous shrubs by the lawn area and replace with lawn between the back of curb and the first boulder wall, as this area is limited in width and the shrubs could overtake the space. It will be easier to maintain and repair the negative effects of salt in the spring.

Chair Fox summarized staff will work with the Applicant to reduce the amount of Landscaping shown on the plan to achieve a pleasing visual without being overplanted and difficult to maintain.

Sidewalks and Pathways

Chair Fox stated if the asphalt pathway abutting M-59 is still on the site it should be removed prior to the conclusion of this project.

Lighting

Director Langer stated the Photometric Plan must be revised as the light intensity (footcandle value) was taken at ground level, and the Ordinance requires light intensity to be measured at five (5) feet above ground level. A revised plan is required as part of the construction set of plans.

Architecture / Building Materials

Chair Fox expressed concern about the product being used. The Applicant stated the previous sample board had masonry brick, the new sample board indicated clay brick; the accent bands at the top and the bottom are masonry. Chair Fox stated the clay brick shown is the kind that has been allowed on large structures such as Walmart; smaller structures typically use standard size brick.

The Planning Commission discussed types/sizes of brick, location, consistency, cost, style, modern trends.

Commissioner Voight stated he can see both arguments and does not really have a preference.

Commissioner LaRose stated she sees the choices as complementary to Bella Vita and if it requires less maintenance and costs less to install, she approves.

Commissioner Grissim stated she is torn as well; the new larger style as opposed to the smaller scale for smaller buildings. She continued as long as quality materials are being used, the Applicant's choices are acceptable.

Chair Fox stated he is fine with it either way and mentioned it as a historical reference. He would like to ensure the brick used is clay and not masonry as the masonry brick color fades over time, the size of the brick does not matter. The Planning Commission concurred.

Chair Fox asked if they had any questions regarding the review letters. The Applicant stated he was unsure if he had read all of them. Chair Fox stated for the record they are part of the record and if there are any concerns, those can be handled by staff or the agency providing them. The Applicant stated they have questions for Department of Public Works (DPW) and will follow up with them.

Commissioner Voight asked about a monument sign and the landscaping required. Chair Fox stated there is one sign at the corner for all of the businesses. Director Langer confirmed the signage will be handled separately by staff.

Commissioner LaRose offered the following Motion:

Move to recommend approval of Site Plan with Special Land Use Application #21-003, a request to construct a multi-tenant building approximately 4,550 square feet in size, with retail/office space and two (2) carry out restaurants, each having drive-through/pick-up service, as a special land use, on a vacant parcel in Section 22 of the Township, north of Highland Road and East of Bella Vita Drive (Parcel ID #4708-22-400-025). The recommendation for approval is based on the following findings:

- 1. The proposed special land use, carry out restaurant with drive-through service, meets the intent and purposes of the Ordinance as well as the specific Special Use standards outlined in Section 6.6 (Special Uses) and the Planning Commission has determined**

the proposed drive lanes do not have to comply with the standards in Section 4.28 (Fast Food and Drive-through Restaurants), as the proposed drive lanes are of a different nature, but still shall be permitted as a special land use in the GC-General Commercial zoning district.

- 2. The proposed use is compatible with the existing and future land uses in the vicinity.**
- 3. The proposed use will be served by public sanitary sewer and municipal water. The proposed use will be adequately served by existing essential facilities and public services, and the Fire Department has no objection.**
- 4. The proposed use will not be detrimental, hazardous, or disturbing to the existing or future neighboring uses, persons, or the public welfare.**
- 5. The proposed use will not create additional requirements at public cost for public facilities as the proposed site will be served by public sanitary sewer and municipal water.**

Approval is subject to the following conditions:

- 1. The proposed Special Land Use, restaurant with drive-through service, is subject to approval by the Township Board.**
- 2. The applicant shall adequately address the outstanding items noted in the Planning Department’s memorandum, dated April 1, 2021. Revised plans, if necessary, shall be subject to an administrative review by the Planning staff prior to the issuance of a land use permit.**
- 3. The applicant understands and is in full agreement that the drive lanes as indicated on the site plans shall not be used for a drive-through restaurant, as outlined in Section 4.28 of the Ordinance, unless the site plan has been modified to comply with the Ordinance and approved by the Planning Commission.**
- 4. A land use permit is required after approval of the Site Plan and Special Use Permit and prior to construction.**
- 5. Applicant complies with any requirements of the Department of Public Works Director, Township Engineering Consultant (HRC), Hartland Deerfield Fire Authority, and all other government agencies, as applicable.**

Seconded by Commissioner Voight. Motion carried unanimously.

8. Call to Public:

None

9. Planner's Report:

None

10. Committee Reports:

Commissioner Mitchell asked if an ordinance amendment is needed to specifically define a pick-up window as opposed to a drive-through window with menu boards.

The Planning Commission briefly discussed the following:

- Pick-up windows vs drive-throughs
- Dry cleaning
- Stacking issues
- Pharmacy uses/COVID testing
- Food service without a menu board

Chair Fox stated this topic could be a discussion item for a future workshop.

11. Adjournment:

A Motion to adjourn was made by Commissioner Mitchell and seconded by Commissioner LaRose. Motion carried unanimously. The meeting was adjourned at approximately 8:20 p.m.

Hartland Township Planning Commission Meeting Agenda Memorandum

Submitted By: Troy Langer, Planning Director

Subject: Site Plan/PD Application #21-005 Redwood Living Planned Development (PD) – Preliminary Site Plan

Date: June 17, 2021

Recommended Action

Move to recommend approval of Site Plan Application #21-005, the Preliminary Planned Development Site Plan for the Redwood Living Planned Development, subject to the following:

1. The Preliminary Planned Development Site Plan for Redwood Living, SP PD #21-005, is subject to the approval of the Township Board.
2. The applicant shall adequately address the outstanding items noted in the Planning Department’s memorandum, dated June 17, 2021, on the Construction Plan set, subject to an administrative review by Planning staff prior to the issuance of a land use permit.
3. As part of the Final Plan Review, the applicant, and/or any future owners shall agree to not interfere or object to any future roadway and/or pedestrian connections to the east. Any future ingress-egress easement agreement shall comply with the requirements of the Township Attorney.
4. As part of the Final Plan Review, the applicant shall provide a Planned Development (PD) Agreement that includes any easements and access agreements. A landscape easement and maintenance agreement are required for properties to the north, and an access and maintenance agreement will be required for the use of the Hartland Glen Lane.
5. The applicant shall obtain any permits from the Livingston County Road Commission for any and all improvements to Hartland Glen Lane within the road right-of-way of Cundy Road.
6. Applicant complies with any requirements of the Township Engineering Consultant, Department of Public Works Director, Hartland Deerfield Fire Authority, and all other governmental agencies, as applicable.

Discussion

Applicant: Redwood Living

Site Description

The proposed Redwood Living Planned Development (PD) is shown in the northeast portion of Hartland Glen Golf Course. Hartland Glen Golf Course has been in operation on the property for over 30 years. The golf course property, addressed as 12400 Highland Road, is approximately 383.15 acres in size, and is west of Pleasant Valley Road, south of Cundy Road, and west of Hartland Glen Lane (Parcel ID #4708-26-100-019). The golf course property is zoned CA (Conservation Agricultural). The proposed project area currently functions as a golf course. Existing wetland areas/ponds are shown on the submitted plans.

The proposed PD project occupies approximately 27.13 acres of the golf course property, in the northeast part of the golf course. The plan shows proposed parcel lines that delineate the project area. A land division request and application will be reviewed separately. To be noted, is that the proposed boundary lines for the PD will essentially create two (2) new parcels with frontage along Cundy Road. The applicant has not provided information on this subject. One area (west of 12396 Cundy Road, currently has two (2) accessory buildings that presumably are associated with the golf course. It appears that this land area could comply with the CA zoning standards for lot width and lot area. The other area of land, east of 12398 Cundy Road, at the corner of Cundy Road and Hartland Glen Lane, may not comply with the CA zoning standards. Additional details will be required during the review of a land division request and application.

The property east of the proposed PD project area (Tax ID #4708-26-200-002) is vacant and zoned CA (Conservation Agricultural). Two (2) single-family residential properties, north of the project area, are zoned CA. Those properties are addressed as 12396 Cundy Road (Tax ID #4708-26-100-001) and 12398 Cundy Road (Tax ID #4708-26-100-012). The PD project area is surrounded by Hartland Glen Golf Course on the south and partially on the west. A single-family residence occupies the parcel addressed as 12250 Cundy Road (Tax ID #4708-26-100-002), zoned CA, and shares a portion of the west property line of the planned development.

Hartland Glen Golf Course was previously designated as Medium Suburban Density Residential on the 2015 Future Land Use Map (FLUM), however in 2020-2021 several amendments were made to the FLUM and Comprehensive Development Plan. The amendments were approved by the Township Board on May 18, 2021. One of the areas that was amended is the Hartland Glen Golf Course property, which is now designated as a Special Planning Area (SPA), thus the proposed Redwood Living PD project area is designated as SPA.

The 2015 FLUM designates the parcel east of Hartland Glen Lane as a Special Planning Area. The 2020-2021 Amendment to the FLUM now designates the two (2) properties north of the project area as a Special Planning Area (12396 and 12398 Cundy Road). The parcel west of the project area, addressed as 12250 Cundy Road, is designated as Medium Suburban Density Residential on the 2015 FLUM.

Public access to the planned development is via two (2) access points onto Hartland Glen Lane from internal roads in the PD. Staff is unsure if Hartland Glen Lane is considered a private road or an internal access drive. Historically this road has been the only access route to the golf club and parking associated with Hartland Glen Golf Course. Based on the submitted plans Hartland Glen Lane is twenty (20) feet wide and is without curb and gutter.

The applicant has been involved in discussions with the Township about the extension of a water main down M-59 that could serve this site. The Public Works Director has indicated that municipal sanitary sewer currently is located near this subject property and the development would be required to connect. Those details will be worked out later.

Site History

REZ #361 (2017)

In 2017, approximately 71 acres of Hartland Glen Golf Club property was rezoned from CA to HDR in 2017 under REZ #361. In 2017, approximately 73 acres were rezoned from CA-Conservation Agricultural to HDR-High Density Residential, under RZ #361. The property associated with the rezoning request included approximately 71 acres of the golf course property (the northern nine (9) holes of the golf course) and two (2) single-family residences on Cundy Road, equating to an additional two (2)

acres of land, or 73 acres. The properties on Cundy Road are addressed as 12396 and 12398 Cundy Road. The remaining portion of Hartland Golf Club property is zoned CA. The current (2012) Township Zoning Map does not reflect the zoning changes that were approved under RZ #361.

During the rezoning request, the applicant had also submitted a concept plan. This plan was never formally reviewed during the rezoning, as it was not part of the rezoning request. However, at that time, the property owner indicated that the entire property, which consists of 386 acres, has been allocated 602 Residential Equivalent Units (REU) sanitary sewer taps. The Planning Department has not been able to verify that number of REU's with the Public Works Department; however, it is believed the number would at a minimum be fairly close, since there has been litigation on this topic and this property.

Site Plan Application #20-008 (Redwood Living Planned Development) – Concept Plan

The Concept Plan was discussed under Site Plan Application #20-008. The Planning Commission reviewed the project on August 20, 2020, followed up by the Township Board's review at their September 15, 2020 meeting.

Planned Development Procedure

Section 3.1.18 of the Township's Zoning Ordinance provides standards and approval procedures for a PD Planned Development. Approval of a Planned Development is a three-step process. A Concept Plan, Preliminary Plan, and Final Plan are all reviewed by the Planning Commission and the Township Board, with the Planning Commission making a recommendation and the Board having final approval at each step. The process usually requires a rezoning from the existing zoning district to the Planned Development (PD) zoning district. As part of the rezoning, a public hearing is held before the Planning Commission consistent with the Michigan Zoning Enabling Act; this public hearing is held at the same meeting during which the Planning Commission reviews and makes a recommendation on the Preliminary Plan. Approval of the Final Plan by the Township Board usually constitutes a rezoning of the subject property to PD. Given the requirements for publishing a notice for the planned development, the public hearing has been scheduled for the June 24, 2021 Planning Commission meeting. Approval of the Final Plan by the Township Board usually constitutes a rezoning of the subject property to PD.

For all intents and purposes, the Preliminary Plan step is essentially the same as a preliminary site plan review for a conventional project in the Township. All the information and details required for a preliminary site plan approval must be provided for the Preliminary PD review and approval. Final PD review will involve detailed plans for those phases for which construction is intended to begin immediately, review of the Planned Development Agreement, and other written documents as applicable.

Overview of the Preliminary Plan and Proposed Use

The proposed residential planned development consists of thirty (30) single-story, multi-unit apartment buildings. The target market for this development includes empty nesters, seniors, and young professionals; however, the development is not age restricted. Per the applicant the projected rent rate for the Hartland project is anticipated to be between \$1,650 and \$2,050 per month.

There are four (4) types of apartment buildings: 3-unit, 4-unit, 5-unit, and 6-unit. In total there are 30 apartment buildings and 148 units. Six (6) different building models are offered, with varying architectural designs and interior layout options. Architectural plans and floor plans have been submitted by the applicant. Each apartment unit has 2 bedrooms, 2 bathrooms, and an attached 2-stall garage. The unit size ranges from 1,300 to 1,600 square feet. The driveway for each unit is 25 feet long, as measured from the leading edge of the unit to the back of the street or sidewalk pavement, to accommodate residents parking two (2) vehicles in the driveway and not impeded with the accessible sidewalk along the road.

A leasing office/maintenance building is shown in the northeast portion of the site, at the eastern end of Building A, which is shown as a 4 -unit apartment building. A floor plan of the leasing office is provided as an attachment.

Public access to the development is via two (2) access points from Hartland Glen Lane on the east. Hartland Glen Lane intersects with Cundy Road. Cundy Road generally runs west to east in this area, and then travels north to intersect Highland Road. Internally the residential units are served by several private roadways. It appears the roadways will not meet the design standards for a private road as outlined in Section 5.23 of the Zoning Ordinance, thus staff is using the term roadway in this memorandum.

The Preliminary Plan shows the footprint of each of the 30 apartment buildings. The plan states the proposed building setbacks. Guest parking spaces are scattered throughout the development. A 4-post pavilion is located in the center of the site, with benches. A mail kiosk is shown east of the leasing/maintenance building.

Five (5) foot wide sidewalks (walking paths) are provided within the development, along Hartland Glen Lane, and as an integral sidewalk along one side of each private (internal) roadway. The total width of the concrete roadway is twenty-seven (27) feet, with 22 feet dedicated as the driving lane/roadway and the outer five (5) feet (on one side of the roadway) dedicated as the sidewalk, which is scored and stained a different color than the roadway so as to distinguish it as a pedestrian walkway. Curb and gutter are not part of the roadway design in order to provide an ADA-compliant accessible route and avoid ramps, per the applicant.

Three (3) existing ponds with wetland areas are found within or adjacent to the proposed development. The applicant has noted these will be not be disturbed or impacted. A proposed stormwater detention basin is located in the southwest corner of the development. Two (2) fountains are to be placed in the bottom of the detention pond per the applicant however the fountains are shown on Sheet C200.

The Concept Plan, dated July 16, 2020, was reviewed under SP #20-008. On that plan, a 15-foot-wide off-site landscape easement was shown on two (2) adjacent properties north of the PD, addressed as 12396 and 12398 Cundy Road, which are under the same ownership as Hartland Glen Golf Course. The property owner had indicated to staff he would provide the 15-foot-wide landscape easement within those two (2) properties, in order to provide screening of the apartment buildings along the north property line of the Redwood Living PD.

The current set of plans does not show a 15-foot-wide off-site landscape easement on the 12396 or 12398 Cundy Road properties. It appears that the Preliminary Plan instead shows a 15-foot-wide landscape area within the PD site, along the north property line of the PD, and it is not labeled as an easement. A copy of the Landscaping Easement Agreement is provided however staff is requesting clarification on the document regarding the actual location of the proposed Landscaping Easement. A maintenance agreement should be considered as well.

The Open Space Plan states approximately 16.02 acres of the site is open space (59.1% of the PD area), with approximately 12.15 acres designated as usable open space (44.8%).

Municipal sewer access is available and an adequate number of REU's (Residential Equivalency Units) are attached to the planned development property. A proposed off-site lift station is shown south of the PD property. Additional details were not provided by the applicant. The applicant will work with the Township and the Livingston County Drain Commission regarding the design details. The Township is currently exploring extension of municipal water lines down M-59 that could provide water service to this

property, on both sides of Highland Road. The Public Works Director has provided a review letter dated June 15, 2021.

As noted, the project area is approximately 27.13 acres in area, in the northeast portion of the Hartland Glen Golf Club property. The estimated proposed density is 5.45 dwelling units per acre, using 148 dwelling units. More discussion on density is provided in the next section of this report.

Eligibility Criteria (Section 3.1.18.B.)

To be eligible for PD approval, the applicant must demonstrate that the criteria in Section 3.1.18.B. will be met.

- 1. Recognizable Benefits.** *The planned development shall result in a recognizable and substantial benefit to the ultimate uses of the project and to the community and shall result in a higher quality of development than could be achieved under conventional zoning.*

The applicant has provided a letter, dated May 13, 2021, that addresses this topic.

- 2. Minimum Size.** *Planned Developments must be a minimum of 20 acres of contiguous land.*

The proposed project is approximately 27.13 acres in size, of contiguous land, and meets the criteria.

- 3. Use of Public Services.** *The proposed type and density of use shall not result in an unreasonable increase in the use of public services, facilities and utilities, and shall not place an unreasonable burden upon the subject site, surrounding land, property owners and occupants, or the natural environment.*

The development is serviced via existing and proposed private roadways. The north end of Hartland Glen Lane intersects Cundy Road, which is under the jurisdiction of the Livingston County Road Commission (LCRC). The applicant states this development will generate a low trip generation as opposed to a higher density use. Public water and sanitary sewer services are proposed via the proposed extension of these services, which could potentially benefit adjacent lands with future connections.

- 4. Compatibility with Comprehensive Plan.** *The proposed development shall not have an adverse impact upon the Comprehensive Plan for the Township. Notwithstanding this requirement, the Township may approve a Planned Development proposal that includes uses which are not called for on the Future Land Use Map, provided that the Planning Commission and Township Board determine that such a deviation from the Future Land Use Map is justified in light of the current planning and development objectives of the Township.*

The 2020-2021 Comprehensive Plan Amendment and Amendment to the Future Land Use Map, were approved by the Township Board on May 18, 2021. As part of those Amendments, the M-59/Cundy Road/Hartland Glen Golf Course was designated as a Special Planning Area (SPA), which is approximately 385.9 acres in size (Hartland Glen Golf Courses property). The intention of the Planning Commission is to work closely with the landowners in this area to establish the terms of an agreement for a mixed-use Planned Development. The Commission has agreed that the SPA should have a density that is flexible. Overall, the SPA shall have a base density of four (4) dwelling units per acre. However, the Commission agrees that a high density is more desirable in the northern portion of the site while a lower density is more desirable in the lower portion of the site. The surrounding properties in the northern portion of the site are at a much higher density than the surrounding properties along the southern portion of the site. As a result, up to 25% of the density may be increased in the northern portion of the site (up to

five (5) dwelling units per acre) if the southern portion of the site is decreased by 25% (up to three (3) units per acre). Overall, the entire site shall remain at four (4) units per acre.

The Commission has agreed that if the developers of the SPA are able to include certain desirable design features that significantly enhance the appearance and function of the site, additional “bonus” density dwelling units can be awarded to the development as an incentive to promote a high-quality development. However, such a density “bonus” will only be awarded at the discretion of the Township in accordance with established development regulations of the Township and State of Michigan.

Further, the Planning Commission has determined the PD can be created with an environment that encourages pedestrian linkage between activity nodes and resource features. Specific principles were agreed upon for the Special Planning Area in the 2020-2021 Comprehensive Plan Amendment, as listed below.

1. Development within the Special Planning Area shall provide for a variety of housing forms (for example, single family, townhouses, condominium, apartments, and senior housing), along with retail, office, recreation, and entertainment space. *The applicant proposes a residential development comprised of single-story apartment buildings, with a variety of building styles and interior layout options. The Redwood Living PD is intended to provide a housing style that is currently under-represented in the Township, that is designed as a residential community.*
2. Development within the Special Planning Area shall provide for public facilities and other neighborhood amenities. *The proposed extension of the public watermain and sewer to serve this site could potentially serve adjacent sites in the future. This could be considered an asset to the Township. The design of the PD provides open space areas that can be enjoyed by the Redwood Living community, that include a covered pavilion and internal walking paths.*
3. Special Planning Area shall provide pedestrian and vehicular links between land uses and adjacent property (that may not be directly included within this Special Planning Area development). *The proposed plan shows a 5-foot-wide concrete sidewalk along the west side of Hartland Glen Lane, which extends to Cundy Road at the north terminus. Two vehicular access points are provided from the PD to Hartland Glen Lane, which allows for a connection to the Hartland Glen Golf Course facility (clubhouse and parking to the south).*
4. Special Planning Area shall also coordinate with the Township’s goal of creating walkable pathways to the Township settlements and other public and private facilities. *The PD provides an internal system of sidewalks. Additionally, a 5-foot-wide concrete sidewalk along Hartland Glen Lane provides pedestrian access from the development to Cundy Road and to Hartland Glen Golf Course facilities. Currently sidewalks are not present on Cundy Road or Highland Road in this area.*
5. Developments shall be developed in harmonious coexistence with pre-existing historical and natural features within the Township. *The intent of the PD is to retain the existing natural features such as the wetland and pond areas. The site will follow the existing topography and thus limit the need for major earthwork changes. The existing drainage patterns will be maintained.*
6. Special Planning Area shall include landscape, streetscape, traffic and architectural solutions that are superior in design and visually enhancing the local community with sensitivity to the existing

historic features in the Township. *The apartment buildings are single-story which are in keeping with the surrounding neighborhoods and less impactful than the allowed 35-foot building height in other residential zoning categories. The proposed landscape plan provides buffering of the buildings on the north, with additional plantings shown on the borders of the PD and internal to the site. Street trees and planting areas around each apartment unit are also provided.*

- 5. Unified Control.** *The proposed development shall be under single ownership or control such that there is a single person or entity having responsibility for completing the project, or assuring completion of the project, in conformity with the Ordinance.*

Redwood would be the only owner of the 27.13-acre PD parcel, and Redwood will construct the entire development, maintain the development, and manage the development after it is completed and filled with occupants.

Planned Development Design Standards (Section 3.1.18.C.)

This section outlines the design standards for a planned development. Additional site standards will be discussed from applicable sections of the Zoning Ordinance.

- 1. Permitted Uses.** *The predominant use on the site shall be consistent with the uses specified for the parcel on the Township's Comprehensive Plan for Future Land Uses.*

The subject area for the planned development project is designated as Special Planning Area (SPA) on the 2020-2021 Amended Future Land Use Map, for the M-59/Cundy Road/Hartland Glen Golf Course area. Per the 2020-2021 Comprehensive Plan Amendment, this SPA would be developed as a planned development with a density that is flexible, with regards to the north and south portions of the SPA. A high density is envisioned for the northern portion of the Hartland Glen Golf Course property, up to five (5) dwelling units per acre, with a potential for a bonus density. The project area is located in the north portion of the SPA where a higher density is desired, thus is consistent with the FLUM.

- 2. Residential Density.** *Residential density in a planned development shall be consistent with the density designation within the Township's Comprehensive Plan.*

Per the 2020-2021 Comprehensive Plan Amendment and Amended FLUM, the SPA is to have a base density of four (4) dwelling units per acre but allows for a higher density in the northern portion of the site, up to five (5) dwelling units per acre, and the southern portion of the site to have up to three (3) dwelling units per acre.

The Preliminary Plan proposes 148 dwelling units with a density of 5.45 dwelling units per acre. The proposed density exceeds the maximum allowed density of up to five (5) units per acre in the northern portion of the SPA. Per Section 3.1.18.C.iv., the Planning Commission may agree to recommend up to a forty (40%) percent increase in dwellings on a site in recognition of outstanding attributes as listed in this section. The Township Board in its sole discretion shall have the ability to approve such density increase up to forty (40%) percent subsequent to an affirmative recommendation from the Planning Commission. In this case the planned development land area could accommodate 136 dwelling units (27.13 acres x 5 dwelling units per acre), in accordance with the Comprehensive Plan. The planned development plan could include up to 190 dwelling units (136 + 54 additional dwellings) if a maximum bonus (40% increase) were awarded by the Planning Commission and Township Board. The proposed development has 148 dwelling units; thus, consideration of a density bonus is applicable.

3. **Design Details.** *The applicant shall prepare a detailed description of design details to be implemented in the proposed planned development, to be presented in a Pattern Book.*

The design details are provided on the submitted site plans and architectural drawings for the Planned Development. A Pattern Book was not provided.

4. **Minimum Yard Requirements.** The minimum yard requirements are noted in the chart below per Section 3.1.18.C.vi.a.

Yard Location	Minimum PD Standard	Proposed setback*	Complies Yes/No
Along perimeter adjacent to public road	50 ft.	NA (PD is not adjacent to a public road)	NA
Along perimeter, but not adjacent to a road (north, south & west property lines)	40 ft.	24 ft. (north) 34 ft. (south) 46 ft. (west)	No No Yes
Along an internal collector or local road (east)	40 ft.	100 ft. from bldg. to east property line; 57 ft. from bldg. to edge of Hartland Glen Lane pavement-ROW not indicated on plans	Yes

* As measured to closest point of building

Sheet C200 lists the proposed setbacks for the project area are as follows: front (50 feet); side (15 feet) and rear (25 feet), and setback lines for side and rear are shown on the plans. The front setback line is not shown. Staff is unsure how the applicant arrived at those setback designations or locations for the setback lines. Clarification may be required.

5. **Distances Between Buildings.** Spacing requirements for buildings in a planned development are outlined in Section 3.1.18.C.vi.b.3. *Residential buildings containing more than one unit (including: apartments; townhouses; and other attached dwellings) shall conform to the spacing requirements set forth in Section 3.1.7 (MDR – Medium Density Residential).*

Per Section 3.1.7, the required setbacks are as follows: front yard (30 feet); side yard (10 feet); and rear yard (25 feet). These standards are somewhat difficult to apply in this development as the buildings are not on individual parcels nor are individual building envelopes proposed. Sheet C200 provides proposed dimensional standards for building separation. The following chart lists the proposed standards and closest distance between buildings for each category.

Proposed Building Separation Standards

Front to Front: 15 feet
Rear to Rear: 25 feet
Side to Side: 15 feet
Side to Rear: 15 feet

Closest Distance between Buildings on Plans

NA
31.5 feet
20.0 feet
20.4 feet

Based on the plans, the buildings are placed to comply with the building separation standards as proposed by the applicant, although staff was unable to find an example where the Front to Front standard could be applied on the proposed plans. The proposed building separation standards would apply to future buildings or building additions. Each apartment building is placed a minimum of twenty-five (25) feet from the edge of the roadway or integral sidewalk.

There are no dedicated right-of-way or easement lines for any of the internal roads, so the residential structures are located twenty-five (25) feet from the actual pavement. Also, the structures, at their closest point, are located thirty (30) feet from the Hartland Glen Road pavement. There is no dedicated easement or right-of-way line for Hartland Glen Road.

6. **Building Height.** *No building in a planned development shall be greater than thirty-five (35) feet in height.*

The one-story buildings comply with this regulation. The mean building height is approximately twelve (12) feet.

7. **Parking and Loading.** *Planned Developments shall comply with the parking and loading requirements specified in Section 5.8, Off-Street Parking requirements, and Section 5.9, Loading Space Requirements of the Zoning Ordinance.*

Parking requirements are listed in Section 5.8.4.H (Table of Minimum Parking Space Requirements). For the category, Residential, Family, two (2) parking spaces are required for each dwelling unit, plus one (1) additional space for each four (4) dwellings. In this case, with 148 units, thirty-seven (37) additional parking spaces are required ($148 \div 4 = 37$), beyond the required two (2) spaces per dwelling unit.

Each apartment unit has an attached 2-stall garage, plus a 25-foot long, 16-foot-wide driveway, which could potentially accommodate up to two (2) additional vehicles. Parking is not permitted on the street, except in designated parking areas. A total of twenty-two (22) guest parking spaces are provided within the development, scattered throughout. Two (2) barrier-free parking spaces (van accessible) are provided by the leasing office. It appears sufficient parking is provided. To be noted, the required parking space dimensions are ten (10) feet wide by twenty (20) feet in length per the Zoning Ordinance standards. The guest parking spaces are shown as nine (9) feet wide by eighteen (18) feet in length.

8. **Landscaping.** Landscaping requirements are provided in Section 3.1.18.C.vi.e. These are considered minimum design standards, typically for a commercial or office development. A more detailed review of the landscaping is provided in this memorandum using applicable landscape standards outlined in Section 5.11 (Landscaping and Screening).

9. **Open Space.** *Open space shall be provided to complement and accentuate the high-quality design of the proposed planned development. At minimum the planned development shall provide open space consistent with the previous zoning designation for the site.*

Per this section of the Zoning ordinance (Section 3.1.18.C.vi.f.), the planned development shall provide open space consistent with the previous zoning designation for the site, at a minimum. Currently the site is zoned CA-Conservation Agricultural. In CA, the open space requirement is a minimum of 85%, for a single-family detached dwelling. The proposed plan states the open space is 42% of the site, and thus would not comply. Historically however, open space requirements outlined in Section 3.15 of the Zoning Ordinance have been applied for other single-family residential planned developments in the Township such as Walnut Ridge Estates and Fiddler Grove.

Section 3.15 of the Zoning Ordinance states residential condominium developments (in several zoning district classifications) should provide a minimum of 25% open space, with a minimum of 10% of the total open space to be useable open space (“useable open space” is defined as land area suitable for active recreation). For the proposed development consisting of 27.13 acres, this would equate to a minimum of 6.79 acres of open space, with a minimum of 2.71 acres of useable open space.

The Open Space Plan states the proposed open space is approximately 16.02 acres, or 59% of the PD; and 12.15 acres as useable open space, or 44.8% of the site. Open space areas include lawn area, sidewalk area, detention pond, and wetlands. Lawn areas and sidewalk are noted as usable open space.

10. Natural Features. *Consistent with the stated intentions for creation of these regulation, the preservation of the natural features of the Township are an important planning consideration. A PD proposal must consider the natural topography and geologic features, scenic vistas, trees and other vegetation and natural drainage patterns that exist on the site and propose a development pattern which preserves and avoids disruption of those natural features as much as possible.*

Alta surveys are provided which show existing features of the site. The site is currently functioning as a golf course. Three (3) existing ponds and associated wetland areas are shown. The applicant states these features will remain undisturbed. The intention is to utilize the existing topography without the need for major earthwork changes. Existing drainage patterns will be maintained and treated in accordance with County and State regulations, per the applicant.

11. Sidewalks and Pedestrian Access. *The applicant must demonstrate the PD site, and all uses within the site, will be connected to any existing pedestrian and nonmotorized vehicle paths and trails within a public right-of-way or easement open to the public.*

A 5-foot-wide integral sidewalk is shown on one side of each private road within the development. five (5) foot wide sidewalks are provided in the central open space areas, as well as along the west side of Hartland Glen Lane. This sidewalk terminates at the north at the intersection of Cundy Road and Hartland Glen Lane. Currently sidewalks are not found along Highland Road or properties north of the PD site on Cundy Road.

Requirements for Preliminary Review (Section 3.1.18.E.ii)

Following is a summary of items that have not been addressed in the previous review as part of the Design Standards section.

1. Traffic Impacts.

The proposed planned development is directly accessed via a private roadway, Hartland Glen Lane. Access to Hartland Glen Lane can occur via Cundy Road, which terminates at Highland Road. A traffic generation memo, dated January 14, 2021, prepared by Bergmann Associates, provides a summary of trip generations studies that were completed for seven (7) other Redwood developments, three (3) sites in Ohio and four (4) in Michigan. Those results indicate that a Redwood development can be expected to generate 0.33 trips per unit during the AM peak hour and 0.43 trips per unit during the peak PM hour. Based on this data, the site-generated vehicle trips do not meet the minimum threshold (50 peak hour directional trips) to require a traffic impact analysis or further study.

2. Fiscal Impacts.

The applicant has provided a response to this topic in the document labeled “Hartland Impact Analysis - Redwood Neighborhood”.

3. Vehicular Circulation.

As noted, the site is accessed at two (2) points via a private roadway, Hartland Glen Lane. This paved roadway has provided access to the Hartland Glen Golf Course and clubhouse for years. The plans indicate the roadway is approximately twenty (20) feet wide, but additional details were not provided. It is anticipated that Hartland Glen Lane will be able to effectively serve as the access road to Redwood Living PD.

Concrete private roadways provide internal circulation within the Planned Development. A construction detail of the roadway is shown on Sheet C700. The travel lane width is twenty-two (22) feet plus there is an integral 5-foot-wide integral sidewalk on one side of the roadway, for a total road width of twenty-seven (27) feet. In a few instances the 5-foot integral sidewalk is shown on both sides of the roadway, thus the total width is thirty-two (32) feet. The integral sidewalk is scored and stained to delineate it from the travel lane. Curb and gutter are not provided. The private roadways will not meet the private road standards as outlined in Section 5.23 of the Zoning Ordinance.

Per the applicant this type of roadway design is appropriate for the PD as the internal roads handle low traffic volumes, a posted speed limit of 12 MPH is required by Redwood, and on-street parking is not allowed by Redwood.

It should be noted that currently the only access to the PD site is via Hartland Glen Lane; however, it is anticipated that future development will occur to the east, west and south of the PD site, and there will be new opportunities for vehicular connections for this PD. Hartland Glen Lane was never formally approved as a private roadway and would be considered a non-conforming roadway. Since Redwood and Hartland Glen Golf Course will both use this road, staff has requested a maintenance agreement be required and submitted as part of the Final PD for this roadway. In addition, any connection to the east should be permitted and made part of the Final PD agreement.

4. Landscaping (Section 5.11).

Applicable sections of Section 5.11 (Landscaping and Screening) will be applied to the PD, as outlined below.

A. Canopy trees along Internal Roadways (Sec. 5.11.2.C.ii.) –

- Required – 15-foot-wide landscaped area along the length of internal roadways, planted with a minimum of 1 canopy tree or evergreen tree for every 30 feet or portion thereof. Required canopy tree size is a minimum 3-inch caliper tree at the time of planting
- Proposed – 1 canopy tree per unit, planted in front of each unit but not at a standard interval; street tree placed approximately ten (10) feet from the edge of the integral sidewalk. Proposed canopy tree size is 2.5-inch caliper tree, except at along the main entry (from the north property line to the northern access road into the PD). These trees are 3” caliper trees.
- Meets Requirement? – **TDB; street trees planted at varying intervals; tree size is not compliant except for trees along main entry**
- Comment – **Per the applicant tree spacing varies due to the varied building types and driveway locations. Regarding the tree size, the applicant states the smaller caliper trees have less stress when planted and the lawn areas are irrigated which will promote tree growth. Planning Commission to determine if the proposed street tree locations and tree caliper (size) are acceptable.**

B. Buffering or Screening (Sec. 5.11.2.G.i.) – Screening between Land Uses (north property line where abutting single-family zoned properties)

- Required – landscape buffer shall be provided to create a year-round visual screen at least eight (8) feet in height along all adjoining boundaries of a non-residential use or a residential use of higher density and abutting a single family residential zoned property. Evergreen trees to be planted in a staggered or clustered pattern with varying tree heights.
- Proposed – plantings along the PD north property line, within the 15-foot setback area of the PD property; plant materials include a mix of a variety of deciduous/canopy trees and evergreen trees of varying heights and sizes; deciduous shrubs; and ornamental trees. The 15-foot-wide planting area appears to be located within the PD property and is not labeled as a landscape easement.
- Meets Requirement? – **TBD; the proposed screening is a mix of deciduous and evergreen trees, deciduous shrubs, and ornamental trees, and not an evergreen screen as required; proposed evergreen trees are not staggered or clustered.**
- Comment – **Planning Commission to determine if the proposed planting plan meets the intent of the screening requirement. Additionally, clarification is required from the applicant/property owner(s) regarding the location of the proposed Landscaping Easement area. Revised plans may be required to show the proposed Landscape Easement and labeled accordingly. Revisions to the Landscape Easement Agreement may be required as well.**

C. Detention/Retention Area Landscaping (Sec. 5.11.2.H.)

- Required – detention/retention ponds must be integrated into the overall design of the property and landscaped to provide a natural setting; 1 canopy or evergreen tree and 10 medium, 6 large shrubs or ornamental trees must be planted for every 50 ft. of pond perimeter. Pond Perimeter - approx. 1,715 lineal ft. EQUATES TO: 34 canopy or evergreen trees, and 340 medium shrubs, or 204 large shrubs or ornamental trees
- Proposed – 20 trees (10 deciduous trees and 10 evergreen trees); 37 medium shrubs; 39 medium shrubs; and 85 ornamental trees – total equates to 124 (large shrubs + ornamental trees)
- Meets Requirement? – **TBD; plant number deficiencies in each category.**
- Comment – **Planning Commission to determine if the proposed planting plan meets the intent of the detention landscaping requirements. To be noted, the proposed spacing on some of the tree species should be adjusted, as some are planted too close together. The side slopes of the detention pond are 4 to 1. The Township Engineer (HRC) has noted detention basin side slopes greater than one vertical to five horizontal require fencing. The side slopes should be adjusted to avoid fencing.**

D. Apartment Unit Landscaping

Section 5.11 does not provide landscape standards for apartment buildings. Foundation planting plans for each building model are provided in the plan set on Sheet L1.4 (Typical Foundation Planting). All planted areas will be maintained by Redwood. Irrigation is provided for all front lawns and a minimum of ten (10) feet surrounding the sides and rear of each building. Planting plans for the entrance sign, leasing office, and pavilion are shown on Sheet L1.3.

Comments:

The entrance sign and landscaping feature as well as street trees are landscaped with hardwood mulch. Apartment units are landscaped with washed river rock (approximately 1 inch in diameter in the front, side and rear landscape beds. This is a deviation from the Zoning Ordinance requirement to use shredded hardwood mulch. The applicant notes that the river rock is used to protect the siding from damage caused by mowers and landscaping equipment. Additionally, river rock is used in the rear of the units where AC compressors are placed. Some areas are labeled as ‘Gravel mow strip’ or ‘native gravel mulch’, which staff assumes is a reference to river rock.

5. Architecture/Building Materials (Sec. 5.24)

Architectural standards for façade materials are not provided in Section 5.24 for multiple family buildings. A facade materials summary document was submitted by the applicant which lists the façade material percentages for each building model. Generally, the façade materials for each building model include vinyl horizontal siding; vinyl shakes; glass; and stone veneer. The proposed exterior colors for the siding and shakes are earthtones, of tan, khaki, russet, and light green tones.

Typically, higher quality façade materials are expected in a residential planned development, with limited use of vinyl for siding, shakes, or other architectural details. The use of other products such as cementitious siding is encouraged. The Planning Commission may want to discuss the proposed façade materials and suggest other options.

There are six (6) building styles: Haydenwood; Breezewood; Forestwood; Willowood; Meadowood; and Capewood. The single-story buildings are comprised of multiple apartment units as follows: 3-unit (1 building), 4-unit (12 buildings), 5-unit (5 buildings), and 6-unit (12 buildings).

Variation in the architecture is offered with the option of a screened-in rear porch, front porch, sunroom, roof dormers, and varying roof profiles. Outdoor patio areas on the rear side of the building are offered for some of the models. There are several floor plan options depending on the building model. The buildings are staggered along the road frontage to enhance the view of the buildings and avoid a “barracks” feel to the development.

The site plans outline the building materials and percentages of building materials. For this staff memorandum, staff did not outline those in the memorandum; however, they are available on the plans and in a separate document as an attachment.

Other Requirements-Zoning Ordinance Standards

Nothing additional at this time.

Hartland Township DPW Review

A review letter is provided from the Hartland Township DPW Director, dated June 15, 2021

Hartland Township Engineer’s Review (HRC)

The Township Engineer (HRC) has reviewed the Preliminary PD plans and recommends approval subject to items being addressed in the letter dated June 16, 2021.

Hartland Deerfield Fire Authority Review

The Hartland Deerfield Fire Authority has reviewed the plans and provided comments in the letter dated May 26, 2021. Approval is subject to the contingencies being addressed as outlined in the letter.

Attachments:

1. DPW review letter dated 06.15.2021-PDF version
2. Hartland Deerfield Fire Authority review letter dated 05.26.2021- PDF version
3. Applicant letter dated 05.13.2021- PDF version
4. Applicant’s Narrative on plan changes dated 05.13.2021- PDF version
5. Hartland Impact Analysis 02.19.2021- PDF version
6. Trip Generation Memo dated 01.14.2021- PDF version
7. General Development Schedule- PDF version
8. Landscape Easement letter 05.11.2021- PDF version

9. Owner Authorization letter – Hartland Glen 06.10.2020- PDF version
10. Redwood plan with housing types- PDF version
11. Redwood site plan color rendering- PDF version
12. Fountain detail- PDF version
13. Leasing office floor plan- PDF version
14. Redwood Hartland unit exterior material calcs. -PDF version
15. Screened patio & front porch elevations-PDF version
16. Open space plan dated 05.14.2021- PDF version
17. Redwood PD concept Plan 07.16.2020-PDF version
18. Redwood Hartland Preliminary PD Plan 05.14.2021
19. Township Engineer (HRC) review letter dated 06.16.2021- PDF version

CC:

HRC, Twp Engineer (via email)

M. Luce, Twp DPW Director (via email)

A. Carroll, Hartland FD Fire Chief (via email)

T:\PLANNING DEPARTMENT\PLANNING COMMISSION\2021 Planning Commission Activity\Site Plan Applications\SP PD #21-005 Redwood Prelim Plan\Staff Reports\SP #21-005 Redwood PD Prelim PC Staff report 06.17.2021.docx



DEPARTMENT OF PUBLIC WORKS

Michael T. Luce, Public Works Director
2655 Clark Road
Hartland MI 48353
Phone: (810) 632-7498

TO: Planning Department
DATE: 06/15/2021
DEVELOPMENT NAME: Redwood
PIN#: 12400 Highland Road

REVIEW TYPE: Site Plan

Municipal Sewer access is available for the proposed property and an adequate number of REU's are attached to the property for the planned development. This development will be served by municipal water as negotiations are ongoing with the Township to bring water to the property.

Subsequently Public Works would like to see the basis of the design for the proposed lift station on the southeast side of the property. This lift station must meet the Livingston County standards for the design as well.

Public Works approves the above plans subject to applicant securing the required number of REUs and the inclusion of the following details on site and construction plans:

1. Water service lead location, size and materials including fittings.
2. Sanitary sewer material and sizes and connection detail sheet.
3. Monitoring manhole for sewer connection and location if required
4. Utility easements noted as public.
5. A note that all existing utility infrastructure within the development envelope is required to be upgraded to the current design and engineering standards.

Prior to interior construction, applicant will be required to purchase a water meter from the Township.

Please feel free to contact me with any further questions or comments regarding this matter, and thank you for your time.

Michael T Luce,
Public Works Director



HARTLAND DEERFIELD FIRE AUTHORITY

FIRE MARSHALS OFFICE

Hartland Area Fire Dept.
3205 Hartland Road
Hartland, MI. 48353-1825

Voice: (810) 632-7676

Fax: (810) 632-2176

E-Mail: jwhitbeck@hartlandareafire.com

May 26, 2021

Troy Langer
Zoning/Planning Dept.
Hartland Township
2655 Hartland Road
Hartland, MI 48353

RE: Redwood
Development Plans
Dated May 14, 2021

Dear Troy:

1. The Hartland Deerfield Fire Authority has reviewed the above mentioned development plan. The plans were stamped and received for review on May 17, 2021, to the Hartland Township office. The two access points off Hartland Glen Lane are sufficient for this current layout of Phase 1.
2. Hydrant spacing is appropriate and should be fitted with a 5" Storz connection with a 36" clearance around the hydrant.
3. Addresses should be visible from the street.
4. A rapid entry box to be installed on the leasing office building.
5. Foliage height clearance should be 13' 6" on all streets.

The Fire Marshal's Office approves the layout submittal of site plan undated with the above contingencies. Any revised drawings affecting the Fire Department must be submitted for review.

Yours In Fire Safety,

Jenn Whitbeck
Fire Inspector



Mr. Troy Langer
Hartland Township
2655 Clark Road
Hartland, MI 48353
(810) 632-7498

May 13, 2021

RE: Application for Preliminary Plan Review
Redwood Living; Parcel 4708-26-100-019

RECEIVED
MAY 17 2021
HARTLAND TOWNSHIP

Dear Mr. Langer,

On the behalf of Redwood Living, we are submitting our project for preliminary plan review in accordance with the Hartland Township planned development section in the zoning ordinance. Sections from the PD section in the zoning ordinance are described below with responses in bold.

Intent

1. A choice of living environments by allowing a variety of housing and building types and permitting an increased density per acre or a reduction in lot dimensions, yards, building setbacks, and area requirements. **Redwood offers a unique living experience of single-story, attached units, private garages, and zero maintenance. This is a low to medium density neighborhood that offers varying unit and building types.**
2. A more useful pattern of open space and recreation areas and, if permitted as part of the project, more convenience in the location of accessory commercial uses and services accessory to the recreation uses. **Redwood's proposed site plan offers connectivity throughout the site via an integral sidewalk along the internal private streets and additional walkways throughout the interior of the site.**
3. A development pattern which preserves and utilizes natural topography and geologic features, scenic vistas, trees and other vegetation, and prevents the disruption of natural drainage patterns. **The site will follow the existing topography without the need for major earthwork changes. The existing drainage patterns will be maintained and treated in accordance with County and State regulations.**
4. A more efficient use of land than is generally achieved through conventional development resulting in substantial savings through shorter utilities and streets. **Redwood will utilize private streets which eliminates any maintenance via taxpayer expense.**
5. A development pattern in harmony with the Goals and Objectives of the Hartland Township Comprehensive Plan. **Redwood aligns with the Township's residential goals in the comprehensive plan by providing pedestrian linkages via sidewalks throughout the neighborhood. Redwood's neighborhoods typically attract an age-in-place resident which aligns with the goal of providing housing for people of all ages and keeps the residents within Hartland Township. While Redwood is a multi-family use, the density associated with their neighborhood is low to medium which aligns with the goal of not having a high density development with access to Township sanitary sewer. Finally Redwood meets the goal of improving Township services to match growth by providing a housing type that is currently under-represented in the Township.**



Eligibility

1. Recognizable Benefits. The Planned Development shall result in a recognizable and substantial benefit to the ultimate users of the project and to the community, and shall result in a higher quality of development than could be achieved under conventional zoning. **By pursuing a planned development, Redwood has the ability to propose private streets in lieu of public roads which would encumber difficult building setbacks, more paving, and additional maintenance at taxpayer expense.**
2. Minimum Size. **The zoning ordinance for minimum size details PD districts that are around 20 or less acres. Redwood complies with this as they are proposing a PD over 27.15 acres**
3. Use of Public Services. The proposed type and density of use shall not result in an unreasonable increase in the use of public services, facilities and utilities, and shall not place an unreasonable burden upon the subject site, surrounding land, property owners and occupants, or the natural environment. **This development utilizes a private road as access and generates a low trip generation as opposed to a higher density use. This development will increase the accessibility to public water and sanitary sewer available in this area via the watermain and sanitary sewer extensions.**
4. Compatibility with Comprehensive Plan. The proposed development shall not have an adverse impact upon the Comprehensive Plan for the Township. Notwithstanding this requirement, the Township may approve a Planned Development proposal that includes uses which are not called for on the Future Land Use Map, provided that the Planning Commission and Township Board determine that such a deviation from the Future Land Use Map is justified in light of the current planning and development objectives of the Township. **While the future land use call for medium suburban density residential, Redwood meets nearly all of the same standards required in said district. Redwood matches the use with respect to residential, it is a similar density with only a minor 1-2 unit per acre density, and Redwood is a single story community which is less impactful than the allowed 35' building height in the SR district.**
5. Unified Control. The proposed development shall be under single ownership or control such that there is a single person or entity having responsibility for completing the project, or assuring completion of the project, in conformity with this Ordinance. **Redwood, as a single owner, will own the entire parcel, construct, maintain, and manage the proposed neighborhood.**



Please find enclosed material related to a request for Preliminary Plan Review to continue the Planned Development review process:

- The completed Planned Development Application;
- Narrative description of the revisions made from the previously submitted application;
- Copy of the Landscaping Easement Agreement;
- Legal description including land area of the development;
- Impact analysis showing fiscal impact to property tax, local schools, and community and business;
- General development schedule;
- Photos of existing Redwood neighborhoods;
- Five (5) – 11" x 17" copies of the architectural features plan and colored site plan rendering;
- Five (5) - 24"x36" copies of the preliminary plan review submittal set including a topographic survey, preliminary grading and utilities, water and sewer basis of design, building floor plans and elevations, and landscaping plans;

Electronic copies of the information listed above (along with this cover letter) will be e-mailed to you for your records. Should you have any questions about the enclosed material or if you require any additional information, feel free to contact me by phone at (517) 827-8681 or e-mail at igraham@bergmannpc.com.

Sincerely,

Ian Graham, PE
Enclosures

cc: Patricia Rakoci, Redwood (via E-mail)
Emily Engelhart, Redwood (via E-mail)



7007 E. Pleasant Valley Rd.
Independence, OH 44131
(216) 360-9441 P.



RECEIVED

MAY 17 2021

HARTLAND TOWNSHIP

May 13, 2021

Hartland Township Planning
2655 Clark Road,
Hartland, Michigan 48353

RE: Narrative regarding Site Plan Review changes

In response to the comments provided to our initial submittal we wanted to address the changes made in this follow-up resubmittal document. We hope this feedback provides context for our decisions and design revisions for our site plan.

Site Design Layout:

We are pleased that after diligently working with the planning staff and design review committee we have settled on a layout that compliments the site and is aesthetically pleasing for our residents and the Township.

Street and Sidewalk Design:

Our proposed road section is: 22 feet of concrete roadway with a 5 foot integral sidewalk on one side of the roadway and 5 foot internal pathways throughout the interior of the development.

Width:

Redwood is amenable to increasing the width of our internal sidewalks along the roadways and throughout the development by 1 foot (from 4' to 5') as requested throughout the development.

Length:

Our driveways are a minimum of 25 feet from the back of the street or sidewalk pavement to accommodate residents parking two vehicles in their driveway and not impeding the FHA accessible sidewalk.

Location:

Our 5' sidewalks are planned to be integral with the roadway and located on one side of the road. We do this for a number of reasons. First and foremost, we strive to have our sites achieve full compliance with FHA/ADA regulations. In keeping the sidewalks adjacent and at grade with the roadway we can create a neighborhood that is available to everyone and allows our residents and guests to access their home and the onsite amenities through a simple accessible route.

The integral sidewalk is scored/stained to delineate it from the travel lane and eliminates the need for curb ramps. Additionally, our internal streets are private, handle low traffic volumes, require a posted speed limit of approximately 12 mph, and Redwood does not allow on-street parking for residents or guests and posts “No Parking” signage.

Single Sidewalk:

We do not include sidewalks on both sides of the street primarily because adding the extra five feet of concrete to our road section increases the impervious area of the site, reduces green space throughout the development, we find that our residents are adequately serviced in terms of an accessible route from their apartment home with the single sidewalk.

Greenbelt:

We have not incorporated a landscaping area between the sidewalk and travel lane has been reviewed and in addition to the above, we found that the concept of a “greenbelt” between the travel lane and the sidewalk poses significant obstacles. Namely, that in addition to widening the sidewalk this greenbelt will decrease our overall unit count achievable on the site due to the setbacks and required driveway length from the back of pavement to accommodate safe driveway parking for our resident’s vehicles (we provide a minimum of 25’). In addition to a significant loss of units the open space within the interior of our Neighborhood is reduced.

In addition, Redwood provides irrigation around our apartment homes and the area within a greenbelt proves difficult to properly maintain and water. By designing our streetscape as proposed we allow for more green space in front of each unit and in the rear yard areas when units back up to each other and more open space overall.

Additional Sidewalk – Hartland Glen:

With regard to incorporating a sidewalk along Hartland Glen Rd. we are agreeing to the addition of that sidewalk along our eastern property line and going up to Cundy Rd. so our residents and any future users of the Hartland Glen golf course can utilize that walkway. We prefer not to extend the sidewalk to M-59 as this is a safety hazard as no sidewalk exists along the highway.

Architecture:**High Profile Elevations:**

Redwood has also agreed to provide the upgraded “High Profile Side” elevations on the buildings noted in the comments (buildings BB, Z, W, and U) to further improve the views of the Neighborhood from Hartland Glen.

Screened-In Patios:

Regarding the questions on unit design, we wanted to clarify that both the Willowood unit and the Breezewood units have inset / screened-in patio areas. Example photos are attached.

Garages:

Our units all contain 2-car garages/garage doors. There are no 3-car garages proposed.

As Redwood strives to provide 100% FHA accessible units throughout our Neighborhoods we are unable to construct side-entry garages due to the nature of their design. This is because the required slope of the garage floors and their proximity to the main entry door of the units in combination with the required slopes of the connecting walkways and landing areas are in most cases in excess of current FHA acceptable standards and guidelines.

Landscaping:**Easement:**

A letter from the owner of the two residential properties in the NEQ of the development is attached confirming he is willing to grant an easement for landscaping along the rear yards of the two single family properties.

Water Feature:

The water feature will contain two fountains and that has been noted on the plan.

The slopes of the basin have been addressed to meet the 4 to 1 ratio.

Trees:

Due to the nature of our development and varied building types along our private streets the street trees proposed will be placed in front of each unit rather than at a standard interval in a public road context. This provides for a natural look while traveling within the development and accommodates the driveway locations.

We are proposing a 3" caliper tree along our main entry from the Northern property line to our primary entrance along Hartland Glen. All the remaining trees onsite shall be a minimum of 2.5" caliper. Our landscape architect has shared that smaller caliper trees have less stress when replanted. In addition Redwood irrigates our Neighborhood (all front lawns and a minimum of 10 feet surrounding the sides and rear of the buildings). This irrigation can increase growth cycles of the trees.

Walkways:

As mentioned above our walkway width is proposed to be increased to 5 feet and walkways have been added along Hartland Glen Ln. out to Cundy Rd.

Unit Landscaping:

Our entrance sign and landscaping feature as well as all street trees are landscaped with mulch. Units are landscaped with washed 3/4 River Rock (approx. 1 inch in diameter) in the front beds and around the building sides and rear. It is used to protect siding from damage by



7007 E. Pleasant Valley Rd.
Independence, OH 44131
(216) 360-9441 P.

mowers/landscaping equipment and used in the area between patios in the rear of some units between A/C compressors.

The patio sizes noted on Willowood and Breezewood units are the exterior area meant for a grill or small outdoor accessories. The majority of the patio space is inset into the unit as a “screened in patio area”. Other outdoor patios on Forestwood/Meadowood/Capewood units have a larger patio area that is entirely outdoors.

Summary

Overall, you will find that Redwood designs its neighborhoods to provide a peaceful, quiet, safe, single-story, maintenance free, housing option for communities. We take pride in building and maintaining beautiful Redwood Neighborhoods that allow residents who want to rent to have the opportunity to do so without sacrificing the comfort, benefits, and feeling of a single-family home.

If there are any further questions, please contact Patricia Rakoci or Emily Engelhart. We look forward to being on a Planning Commission Meeting in the near future for our development.

Thank you,

Patricia Rakoci
V.P. of Acquisition
Redwood Apartment
Neighborhoods

Emily Engelhart
Acquisition Manager
Redwood Apartment
Neighborhoods

Ian Graham
Senior Project Engineer
Bergmann PC

Hartland Impact Analysis – Redwood Neighborhood

After an extensive review of our project, similar projects in our portfolio, and the Hartland market we have assembled some data on the economic impact that we feel a Redwood Neighborhood will have in Hartland Township.

Property Tax Impact:

Our plan currently proposes a 148-unit Neighborhood and we project that property taxes for each residence will amount to approximately \$3,000.00 per unit or \$425,000.00 annually for the entire project, once complete.

Local School Impact:

While we are able to offer estimates based on historical data throughout our portfolio; Redwood Apartment Neighborhoods complies with all Fair Housing Administration guidelines and is not an age restricted property thus we cannot provide any concrete data on the ages of our residents for a specific project. However, due to a number of factors including our apartment home layout, neighborhood design, and pricing we have found that our Redwood Neighborhoods often appeal to empty nesters, seniors, and working professionals. After looking at data on our 100+ existing Neighborhoods; we have estimated that approximately 20% of our residences house school aged children (primarily those who would attend K-8). Again, this number will vary as we will rent to any applicant who qualifies – however – we provide it as a baseline calculation to help assess impact on the schools. Using this baseline and assuming an average of 20% we have estimated that our Hartland Neighborhood could have approximately 44 children in the 148-unit project. Based on this projection, it is unlikely that our Redwood Neighborhood will greatly impact the Hartland School System.

Community and Business Impact:

As all our Redwood Apartment Homes have 2 bedrooms and 2 bathrooms; we have been able to calculate our occupancy average to be about 1.5 individuals living in each unit. Using this calculation, we would expect an average of 222 residents to live at the Hartland Redwood Neighborhood. An addition of 220+ individuals to this area will help support local commercial business and add vibrancy to the growing eastern part of the Township.



To: Ms. Patricia Rakoci
Redwood

Re: Redwood – Hartland Township, MI
Trip Generation Study

From: Steven J. Russo, PE
Transportation Engineer

Date: January 14, 2021

INTRODUCTION

This memorandum presents an evaluation of traffic generation for the proposed Redwood development in Hartland Township, Livingston County, Michigan. The subject site is located on the south side of Highland Road (M-59) and Cundy Road approximately $\frac{3}{4}$ mile west of Pleasant Valley Road / Fenton Road and is currently occupied by the Hartland Glen Golf Course. The proposed project involves construction of 146 single-story residential units with site access provided via two driveways to Hartland Glen Lane. Hartland Glen Lane is a private roadway, whereby access permitting will be subject to an easement and agreement with Hartland Glen Development, LLC. No access drives are proposed to roadways under the jurisdiction of the Michigan Department of Transportation (MDOT) or Livingston County Road Commission (LCRC).

SITE TRIP GENERATION

The number of AM and PM peak hour vehicle trips that will be generated by the proposed residential development was forecast based on the rates and equations published by ITE in Trip Generation, 10th Edition, as well as trip generation studies completed for other Redwood developments. ITE publishes average trip generation rates for a wide variety of land uses, as well as regression equations for some. For some land uses, both rates and equations are available, and selection of the appropriate method was based on the guidelines outlined in the ITE Trip Generation Manual.

The characteristics of a Redwood development are not explicitly reflected by the land use categories published by ITE. With attached rental homes and a majority of residents over the age of 55, this development will generate less trips than a typical multifamily development. Two separate trip generation studies have previously been performed for Redwood developments: one by CESO, Inc. in 2019, and one by Oxbow Engineering in 2010. The CESO study included four sites in Michigan, and the Oxbow study included three sites in Ohio, and were completed consistent with ITE recommended practice. Data from the two studies were combined to calculate a trip generation rate specific to Redwood developments based on the seven sites surveyed. These results indicate that a Redwood development can be expected to generate 0.33 trips per unit during the AM peak hour and 0.43 trips per unit during the PM peak hour as summarized in **Table 1**.

Comparison with the most similar ITE land use categories indicates that the trip making characteristics of a Redwood development are between that of an attached senior housing development and low-rise multifamily uses. Based on this comparison, the trip generation data specific to Redwood was determined to be valid and most appropriate for use as it represents conditions specific to the proposed development. The results of the trip generation forecast, and comparison are summarized in **Table 2**.



Table 1: Redwood Trip Generation Data

Location	Dwelling Units	AM Peak Hour			PM Peak Hour		
		In	Out	Total	In	Out	Total
Brownstown Township, MI	115	9	32	41	34	20	54
Canton Township, MI	93	4	22	26	29	10	39
Commerce Township, MI	98	7	24	31	24	14	38
Shelby Township, MI	140	8	38	46	35	21	56
Findley, OH	84	6	33	39	31	13	44
Akron, OH	95	4	19	23	22	10	32
Wooster, OH	158	11	43	54	50	25	75
Total	783	49	211	260	225	113	338
Average Trip Rates		19%	81%	0.33	67%	33%	0.43

Table 2: Site Trip Generation Comparison

Land Use	ITE Code	Amount	Units	Average Daily Traffic	AM Peak Hour			PM Peak Hour		
					In	Out	Total	In	Out	Total
Attached Senior Housing	252	146	Dwelling Units	562	10	19	29	20	17	37
Multifamily Low-Rise	220	146	Dwelling Units	1,063	16	52	68	52	31	83
Redwood		146	Dwelling Units	-	9	39	48	42	21	63

According to Section 6.5 of the Township Zoning Ordinance, the forecast number of site-generated vehicle trips does not meet the minimum thresholds (50 peak hour directional trips) to require traffic impact analysis or further study. Furthermore, this project would result in only an approximate 2% increase in traffic volumes on M-59 during the peak hours as summarized in Table 3. **Therefore, the proposed project would have no significant traffic impact and the change in traffic volume on the adjacent road network would not be discernable or require further study.**

Table 3: M-59 Proportional Impact

Peak Hour	2020 Volumes	Site Generated	% Increase
AM	2,638	48	1.79%
PM	3,052	63	2.02%

Please direct any questions regarding this memorandum to Bergmann.

Attached: Redwood Trip Generation Studies
M-59 Traffic Volumes

TRIP GENERATION RATES SUMMARY

for

THE TRAILS AT MONTVILLE

	<i>A.M. PEAK</i>			<i>P.M. PEAK</i>		
	<i>Trip Rate</i>	<i>Enter</i>	<i>Exit</i>	<i>Trip Rate</i>	<i>Enter</i>	<i>Exit</i>
<i>Findley - Hunters Crossing 84 Units</i>	.46	15%	85%	.52	70%	30%
<i>Akron - Village of Northampton 95 Units</i>	.24	17%	83%	.34	69%	31%
<i>Wooster - Milltown Point 158 Units</i>	.34	20%	80%	.47	67%	33%

**Average AM Rate: 0.35 17% Enter
83% Exit**

**Average PM Rate: 0.44 69% Enter
31% Exit**

HUNTERS CROSSING
(Findley)
February 2, 2010

TIME	IN	OUT
7:00 - 7:15	2	6
7:15 - 7:30	3	6
7:30 - 7:45	1	9
7:45 - 8:00	0	12
8:00 - 8:15	1	4
8:15 - 8:30	1	3
8:30 - 8:45	1	5
8:45 - 9:00	2	2

PEAK HOUR: 7:00 - 8:00

TIME	IN	OUT
4:00 - 4:15	7	7
4:15 - 4:30	3	2
4:30 - 4:45	2	2
4:45 - 5:00	5	2
5:00 - 5:15	10	4
5:15 - 5:30	4	3
5:30 - 5:45	12	4
5:45 - 6:00	3	2

PEAK HOUR: 4:45 - 5:45

FINDLEY: HUNTERS CROSSING

	<i>IN</i>	<i>OUT</i>	<i>TOTAL</i>
<i>A.M. PEAK</i> <i>7:00 - 8:00</i>	6	33	39
<i>P.M. PEAK</i> <i>4:45 - 5:45</i>	31	13	44

TRIP GENERATION DETERMINATION:

A.M. Peak: $\frac{39 \text{ Trip Ends}}{84 \text{ Units}} = 0.46 \text{ Trip Ends/Unit}$

$\frac{6 \text{ Enter}}{39 \text{ Total}} = 15\% \text{ Enter}$

$\frac{33 \text{ Exit}}{39 \text{ Total}} = 85\% \text{ Exit}$

P.M. Peak: $\frac{44 \text{ Trip Ends}}{84 \text{ Units}} = 0.52 \text{ Trip Ends/Unit}$

$\frac{31 \text{ Enter}}{44 \text{ Total}} = 70\% \text{ Enter}$

$\frac{13 \text{ Exit}}{44 \text{ Total}} = 30\% \text{ Exit}$

**VILLAGE OF NORTHAMPTON
(Akron)
February 3, 2010**

TIME	IN	OUT
7:00 - 7:15	1	5
7:15 - 7:30	0	6
7:30 - 7:45	0	3
7:45 - 8:00	1	5
8:00 - 8:15	3	5
8:15 - 8:30	1	3
8:30 - 8:45	0	3
8:45 - 9:00	0	4

PEAK HOUR: 7:15 - 8:15

TIME	IN	OUT
4:00 - 4:15	4	1
4:15 - 4:30	3	1
4:30 - 4:45	4	1
4:45 - 5:00	2	4
5:00 - 5:15	6	1
5:15 - 5:30	6	4
5:30 - 5:45	6	3
5:45 - 6:00	4	2

PEAK HOUR: 5:00 - 6:00

AKRON: VILLAGE OF NORTHAMPTON

	<i>IN</i>	<i>OUT</i>	<i>TOTAL</i>
<i>A.M. PEAK</i> <i>7:15 - 8:15</i>	4	19	23
<i>P.M. PEAK</i> <i>5:00 - 6:00</i>	22	10	32

TRIP GENERATION DETERMINATION:

A.M. Peak: $\frac{23 \text{ Trip Ends}}{95 \text{ Units}} = 0.24 \text{ Trip Ends/Unit}$

$\frac{4 \text{ Enter}}{23 \text{ Total}} = 17\% \text{ Enter}$

$\frac{19 \text{ Exit}}{23 \text{ Total}} = 83\% \text{ Exit}$

P.M. Peak: $\frac{32 \text{ Trip Ends}}{95 \text{ Units}} = 0.34 \text{ Trip Ends/Unit}$

$\frac{22 \text{ Enter}}{32 \text{ Total}} = 69\% \text{ Enter}$

$\frac{10 \text{ Exit}}{32 \text{ Total}} = 31\% \text{ Exit}$

**MILLTOWN POINT
(Wooster)
February 4, 2010**

TIME	IN	OUT
7:00 - 7:15	3	9
7:15 - 7:30	0	11
7:30 - 7:45	0	12
7:45 - 8:00	5	13
8:00 - 8:15	2	8
8:15 - 8:30	4	10
8:30 - 8:45	1	5
8:45 - 9:00	2	1

PEAK HOUR: 7:30 - 8:30

TIME	IN	OUT
4:00 - 4:15	8	9
4:15 - 4:30	9	5
4:30 - 4:45	8	1
4:45 - 5:00	5	8
5:00 - 5:15	12	3
5:15 - 5:30	12	4
5:30 - 5:45	14	11
5:45 - 6:00	12	7

PEAK HOUR: 5:00 - 6:00

WOOSTER: MILLTOWN POINT

	<i>IN</i>	<i>OUT</i>	<i>TOTAL</i>
<i>A.M. PEAK</i> <i>7:30 - 8:30</i>	11	43	54
<i>P.M. PEAK</i> <i>5:00 - 6:00</i>	50	25	75

TRIP GENERATION DETERMINATION:

A.M. Peak: $\frac{54 \text{ Trip Ends}}{158 \text{ Units}} = 0.34 \text{ Trip Ends/Unit}$

$\frac{11 \text{ Enter}}{54 \text{ Total}} = 20\% \text{ Enter}$

$\frac{43 \text{ Exit}}{54 \text{ Total}} = 80\% \text{ Exit}$

P.M. Peak: $\frac{75 \text{ Trip Ends}}{158 \text{ Units}} = 0.47 \text{ Trip Ends/Unit}$

$\frac{50 \text{ Enter}}{75 \text{ Total}} = 67\% \text{ Enter}$

$\frac{25 \text{ Exit}}{75 \text{ Total}} = 33\% \text{ Exit}$

TRIP GENERATION STUDY

Prepared for:
Redwood USA, LLC.
7510 East Pleasant Valley Road
Independence, OH 44131

Prepared by:
CESO, Inc.
13060 Old US 27, Suite D
Dewitt, MI 48820
(517) 622-3000

May 2019

Contents

List of Figures	1
List of Tables	2
List of Appendices	2
1. Introduction	3
1.1. Purpose	3
1.2. Study Procedure	3
1.3. References	3
2. Definition of Terms	5
3. Data Collection	6
3.1. Site Characteristics	6
3.2. Summary of Count Data	6
4. Data Analysis	12
4.1. Reported Statistics	12
4.1a. Average Trip Rate (Weighted).....	12
4.1b. Regression Analysis.....	12
4.2. Data Plots	13

List of Figures

Figure	Page
1. Site Locations.....	4
2. Brownstown Township, MI	8
3. Canton, MI.....	9
4. Commerce Charter Township, MI.....	10
5. Shelby Charter Township, MI	11
6. Weekday AM Peak Hour of Adjacent Street Traffic Data Plot	14
7. Weekday Mid-Day Peak Hour of Adjacent Street Traffic Data Plot	15
8. Weekday PM Peak Hour of Adjacent Street Traffic Data Plot	16

List of Tables

Table	Page
1. Site Characteristics	6
2. Summary of Driveway Volumes (Inbound & Outbound) During Peak Hour Time Periods	7
3. Summary of Average Trip Rate During Peak Hour Time Periods	12
4. Summary of Average Trip Rate (Weighted) During Peak Hour Time Periods.....	12

List of Appendices

Appendix	Page
A. Existing Traffic Count Data for Brownstown Township, MI.....	A
B. Existing Traffic Count Data for Canton, MI	B
C. Existing Traffic Count Data for Commerce Charter Township, MI.....	C
D. Existing Traffic Count Data for Shelby Charter Township, MI	D

1. Introduction

1.1. Purpose

The purpose of this report is to determine the trip generation data for a typical Redwood development. Currently, trip generation data must be obtained from the 10th Edition of the Institute of Transportation Engineers (ITE) Trip Generation Manual.

Four (4) sites were selected within the state of Michigan (see Figure 1). These sites were relatively similar in size and design. Trip generation data was obtained at the selected sites according to guidelines set forth in the ITE Trip Generation Manual.

The following sections of this report discuss the methodology in determining the trip generation data for a typical Redwood development.

1.2. Study Procedure

In order to determine the trip generation data for a typical Redwood development, the following steps were taken:

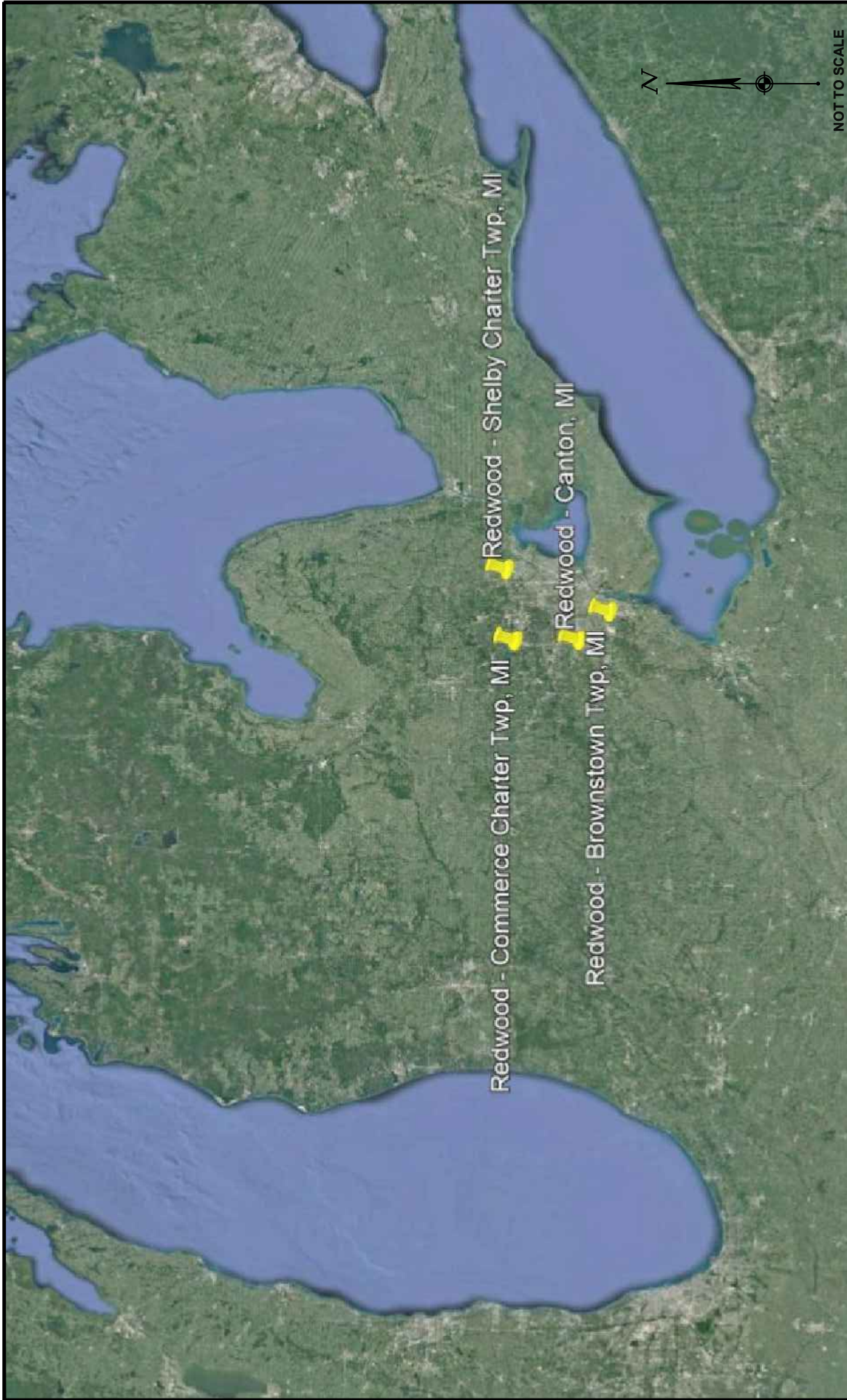
1. Four (4) similar Redwood developments were chosen within the state of Michigan to be included in this analysis.
2. Manual driveway counts were conducted by Gewalt Hamilton Associates, Inc. at each of the selected sites during a typical weekday (Tuesday, Wednesday, Thursday) during the following AM, Mid-Day, and PM Peak Hour time frames: 7:00 AM – 9:00 AM, 11:00 AM – 1:00 PM, and 4:00 – 6:00 PM.
3. Summarize the data to determine inbound and outbound trips at each access driveway for each study location.
4. Determine the average trip rate for each study location based on a weighted average trip rate.
5. Perform a regression analysis for each study location to determine the percent of variance in the number of trips associated with the variance in the size of the independent variable.
6. Summarize the trip rates for each site individually and summarize trip rates of all six (6) study locations together.

1.3. References

This report utilizes information provided by the following sources:

1. Trip Generation Manual. 10th ed. Washington, DC: Institute of Transportation Engineers, 2017.

○ ○ ○ ○ ○



NOT TO SCALE

FIGURE 1	
DATE:	05/10/2019
JOB NO.:	786452-01
DESIGN:	TMC
DRAWN:	TMC
CHECKED:	REM
PAGE:	4

STUDY LOCATIONS

REDWOOD TRIP GENERATION STUDY



2. Definition of Terms

The following is a summary of the terms that are used in the study. These terms are defined in order to explain the data analysis and results obtained from this study. These terms were taken from Chapter 3 of the 10th Edition of the ITE Trip Generation Manual.

Average Trip Rate

The average trip rate is the weighted average of the number of vehicle or person trips entering or exiting a development site per one unit of the independent variable (e.g., trip ends per occupied dwelling unit or employee) using a site's driveway(s). The weighted average rate is calculated by summing all trips or trip ends and all independent variable units where paired data are available, and then dividing the sum of the trip ends by the sum of the independent variable units. The weighted average rate is used rather than the average of the individual rates because of the variance within each data set or generating unit. Data sets with a large variance will over-influence the average rate if they are not weighted. The data plot includes a dashed line corresponding to the weighted average rate, extending between the lowest and highest independent variable values for data points.

Average Trip Rate for the Peak Hour of the Adjacent Street Traffic

The average trip rate for the peak hour of the adjacent street traffic is the one-hour weighted average vehicle trip generation rate at the site between 7 AM and 9 AM, 11 AM and 1 PM, and 4 PM and 6 PM, when the combination of its traffic and the traffic on the adjacent street is the highest. If the adjacent street traffic volumes are unknown, the average trip rate for the peak hour of the adjacent street represents the highest hourly vehicle trip ends generated by the site during the traditional commuting peak periods of 7 AM to 9 AM, 11 AM to 1 PM, and 4 PM to 6 PM.

AM, Mid-Day, and PM Peak Hour Volume of Adjacent Street Traffic

The AM, Mid-Day, and PM peak hour volume of adjacent street traffic is the highest hourly volume of traffic on the adjacent street during the AM, Mid-Day, and PM, respectively.

Average Trip Rate for the Peak Hour of the Generator

The average trip rate for the peak hour of the generator is the weighted average vehicle trip generation rate during the hour of highest volume of traffic entering and exiting the site during the AM, the Mid-Day, or the PM hours. It may or may not coincide in time or volume with the trip rate for the peak hour of the adjacent street traffic. The trip rate for the peak hour of the generator will be equal to or greater than the trip rate for the peak hour between 7 AM and 9 AM, 11 AM and 1 PM, or between 4 PM and 6 PM.

Dwelling Unit

A residential location such as a house, apartment, condominium, townhouse, mobile home, or manufactured home in which people may live. An occupied dwelling unit is a dwelling unit in which people currently live.

Independent Variable

An independent variable is a physical, measurable, or predictable unit describing the study site or generator that can be used to predict the value of the dependent variable (trip ends). Some examples of independent variables used in this book are GFA (gross floor area), employees, seats, and dwelling units.

Trip or Trip End

A trip or trip end is a single or one direction vehicle movement with either the origin or the destination (exiting or entering) inside a study site. For trip generation purposes, the total trip ends for a land use over a given period of time are the total of all trips entering plus all trips exiting a site during a designated time period.

3. Data Collection

3.1. Site Characteristics

Data was collected at four (4) similar sites within the state of Michigan. The following is a summary of each site in terms of dwelling units.

**Table 1
Site Characteristics**

Redwood Location	Size	Unit
Brownstown Township, MI – Red Hawk Landing	115	Dwelling Units
Canton, MI – Enclave at Brownstown	93	Dwelling Units
Commerce Charter Township, MI – Four Seasons	98	Dwelling Units
Shelby Charter Township, MI – River Birch Bend	140	Dwelling Units

These study sites range in size from 93 dwelling units to 140 dwelling units.

3.2. Summary of Count Data

Manual counts were conducted at each of the above listed study locations during the following time periods:

- Weekday AM Peak Hour (7:00 AM – 9:00 AM)
- Weekday Mid-Day Peak Hour (11:00 AM – 1:00 PM)
- Weekday PM Peak Hour (4:00 PM – 6:00 PM)

These counts focused on collecting the inbound and outbound volumes at each driveway for each study location. Traffic Count Data Sheets for each of the four (4) study locations can be found in Appendix A through Appendix D.

Table 2 summarizes the inbound and outbound volumes for the following peak time periods.

- Weekday – AM Peak Hour of Adjacent Street Traffic
- Weekday – Mid-Day Peak Hour of Adjacent Street Traffic
- Weekday – PM Peak Hour of Adjacent Street Traffic

**Table 2
Summary of Driveway Volumes (Inbound & Outbound)
During Peak Hour Time Periods**

Location	Size	Unit	Total Generated Trips								
			Weekday AM Peak Hour			Weekday Mid-Day Peak Hour			Weekday PM Peak Hour		
			Trips			Trips			Trips		
			Tot	In	Out	Tot	In	Out	Tot	In	Out
Brownstown Township, MI	115	Dwelling Units	41	9	32	29	12	17	54	34	20
<i>Entering (%) / Exiting (%)</i>			100%	22%	78%	100%	41%	59%	100%	63%	37%
Canton, MI	93	Dwelling Units	26	4	22	26	8	18	39	29	10
<i>Entering (%) / Exiting (%)</i>			100%	15%	85%	100%	31%	69%	100%	74%	26%
Commerce Charter Township, MI	98	Dwelling Units	31	7	24	46	20	26	38	24	14
<i>Entering (%) / Exiting (%)</i>			100%	23%	77%	100%	43%	57%	100%	63%	37%
Shelby Charter Township, MI	140	Dwelling Units	46	8	38	49	25	24	56	35	21
<i>Entering (%) / Exiting (%)</i>			100%	17%	83%	100%	51%	49%	100%	63%	37%
<i>Total Average Rate</i>											

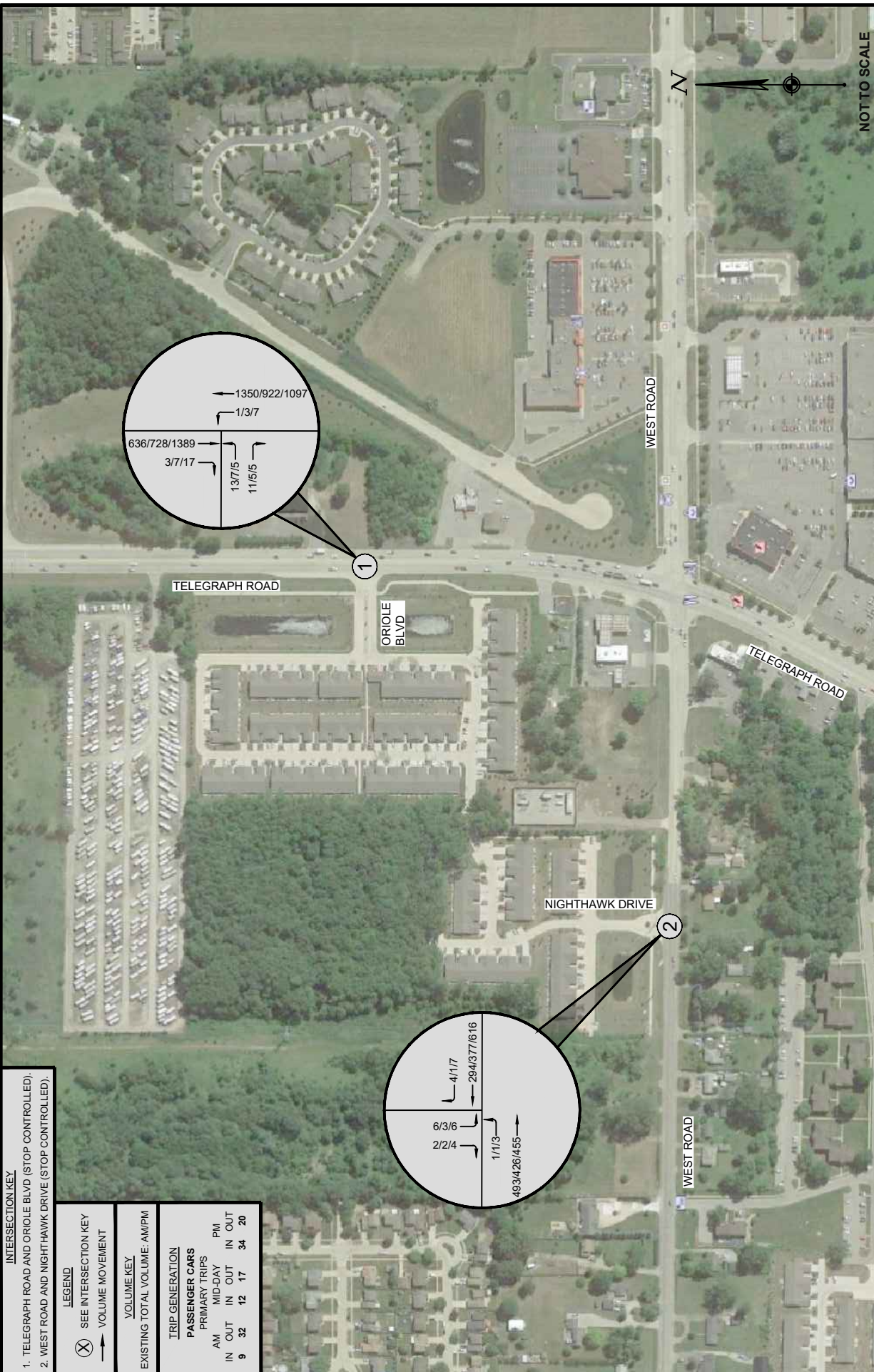
The Weekday AM, Mid-Day, and PM inbound and outbound traffic volumes for each of the four (4) locations are illustrated on Figures 2-5 of the report.

INTERSECTION KEY
 1. TELEGRAPH ROAD AND ORIOLE BLVD (STOP CONTROLLED).
 2. WEST ROAD AND NIGHTHAWK DRIVE (STOP CONTROLLED).

LEGEND
 ⊗ SEE INTERSECTION KEY
 → VOLUME MOVEMENT

VOLUME KEY
 EXISTING TOTAL VOLUME: AM/PM

TRIP GENERATION		PASSENGER CARS		PRIMARY TRIPS		MID-DAY		PM	
IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT
9	32	12	17	34	20				



NOT TO SCALE

FIGURE 2

DATE:	05/10/2019
JOB NO.:	756452-01
DESIGN:	TMC
DRAWN:	TMC
CHECKED:	REM
PAGE:	8

EXISTING WEEKDAY PEAK HOUR TRAFFIC VOLUMES (YEAR 2019) - TOTAL VOLUMES

REDWOOD TRIP GENERATION STUDY

BROWNSTOWN TOWNSHIP
 WAYNE COUNTY, MICHIGAN

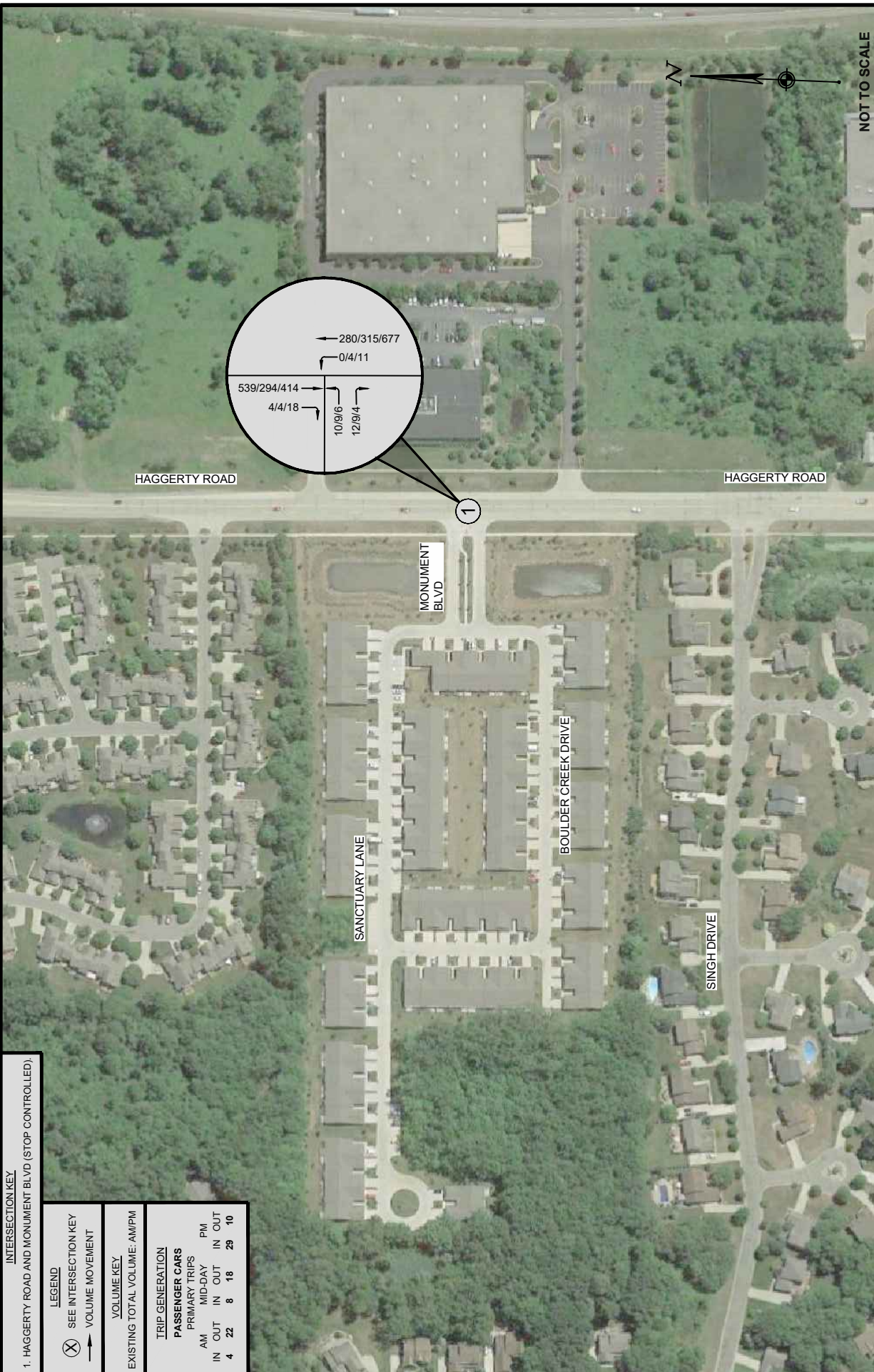


INTERSECTION KEY
 1. HAGGERTY ROAD AND MONUMENT BLVD (STOP CONTROLLED).

LEGEND
 (X) SEE INTERSECTION KEY
 → VOLUME MOVEMENT

VOLUME KEY
 EXISTING TOTAL VOLUME: AM/PM

TRIP GENERATION	
PASSENGER CARS	
PRIMARY TRIPS	
AM	PM
IN	OUT
4	22
8	18
29	10



NOT TO SCALE

FIGURE 3	
DATE:	05/10/2019
JOB NO.:	756452-01
DESIGN:	TMC
DRAWN:	TMC
CHECKED:	REM
PAGE:	9

EXISTING WEEKDAY PEAK HOUR TRAFFIC VOLUMES (YEAR 2019) - TOTAL VOLUMES

REDWOOD TRIP GENERATION STUDY

WAYNE COUNTY, MICHIGAN

CANTON



- INTERSECTION KEY**
1. UNION LAKE ROAD AND GROVE STREET/GROVE ROAD (STOP CONTROLLED).
 2. GROVE STREET AND WENDY'S DRIVEWAY (STOP CONTROLLED).

- LEGEND**
- SEE INTERSECTION KEY
 - VOLUME MOVEMENT
 - BALANCED VOLUME

VOLUME KEY
EXISTING TOTAL VOLUME: AM/PM

TRIP GENERATION

PASSENGER CARS

PRIMARY TRIPS

AM	MID-DAY	PM
IN	OUT	IN
7	24	20
26	24	14



INTERSECTION KEY
 1. LAKESIDE BLVD AND BEACON DRIVE (STOP CONTROLLED).

LEGEND
 (X) SEE INTERSECTION KEY
 → VOLUME MOVEMENT

VOLUME KEY
 EXISTING TOTAL VOLUME: AM/PM

TRIP GENERATION

PASSENGER CARS		PRIMARY TRIPS		MID-DAY		PM	
IN	OUT	IN	OUT	IN	OUT	IN	OUT
8	38	25	24	35	21		

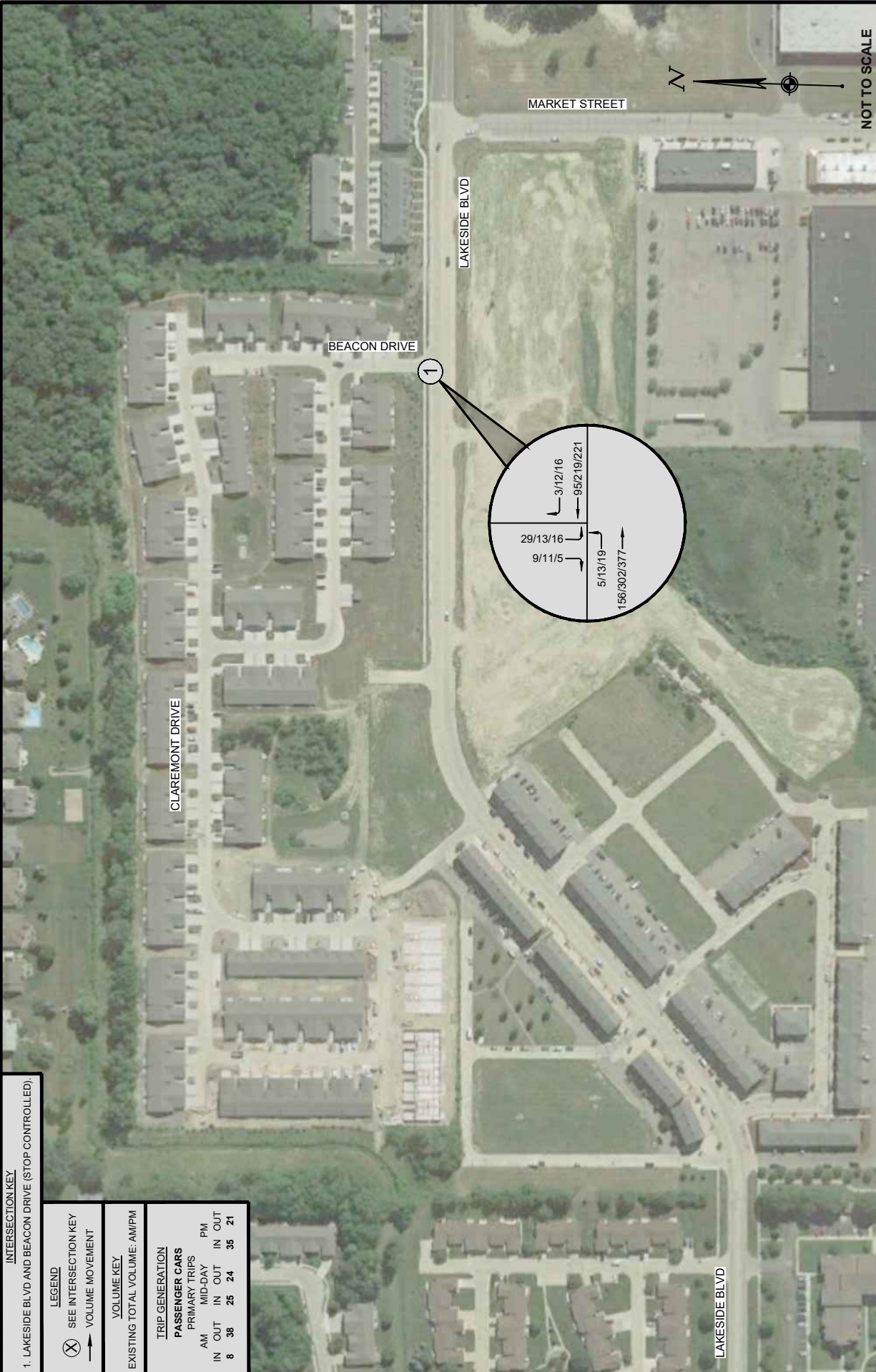


FIGURE 5
 DATE: 05/10/2019
 JOB NO.: 756452-01
 DESIGN: TMC
 DRAWN: TMC
 CHECKED: REM
 PAGE 11

EXISTING WEEKDAY PEAK HOUR TRAFFIC VOLUMES (YEAR 2019) - TOTAL VOLUMES

REDWOOD TRIP GENERATION STUDY

SHELBY CHARTER TOWNSHIP
 MACOMB COUNTY, MICHIGAN

4. Data Analysis

4.1. Reported Statistics

Each of the four (4) study locations were analyzed to determine the weighted average trip rate and regression analysis. The following is a discussion of each of the above reported statistics and how they were obtained:

4.1a. Average Trip Rate (Weighted)

The average trip generation rates shown in this study were calculated on the basis of a weighted average trip rate. As with the ITE Trip Generation Manual, 10th Edition, the weighted average trip rate was used rather than the average of the individual rates because of the variance found within each data set. Sites with a large variance from the mean would have over-influenced the average rate had they not been weighted. Table 3 summarizes the average trip rate for each study.

4.1b. Regression Analysis

This analysis examined the independent variable and the number of trips in order to generate a regression curve, a regression equation, and a coefficient of determination (R^2) for each time period. According to the information found in the ITE Trip Generation Manual, 10th Edition, “the coefficient of determination is defined as the percent of the variance in the number of trips associated with the variance in the size of the independent variable. If the R^2 value is 0.75, then 75 percent of the variance in the number of trips is accounted for by the variance in the size of the independent variable.”

Table 3
Summary of Average Trip During Peak Hour Time Periods

Location	Dwelling Units	Weekday AM Peak Hour of Adjacent Street Traffic	Weekday Mid-Day Peak Hour of Adjacent Street Traffic	Weekday PM Peak Hour of Adjacent Street Traffic
Brownstown Township, MI	115	0.36	0.25	0.47
Canton, MI	93	0.28	0.28	0.42
Commerce Charter Township, MI	98	0.32	0.47	0.39
Shelby Charter Township, MI	140	0.33	0.35	0.40
Average Trip Rate		0.32	0.34	0.42

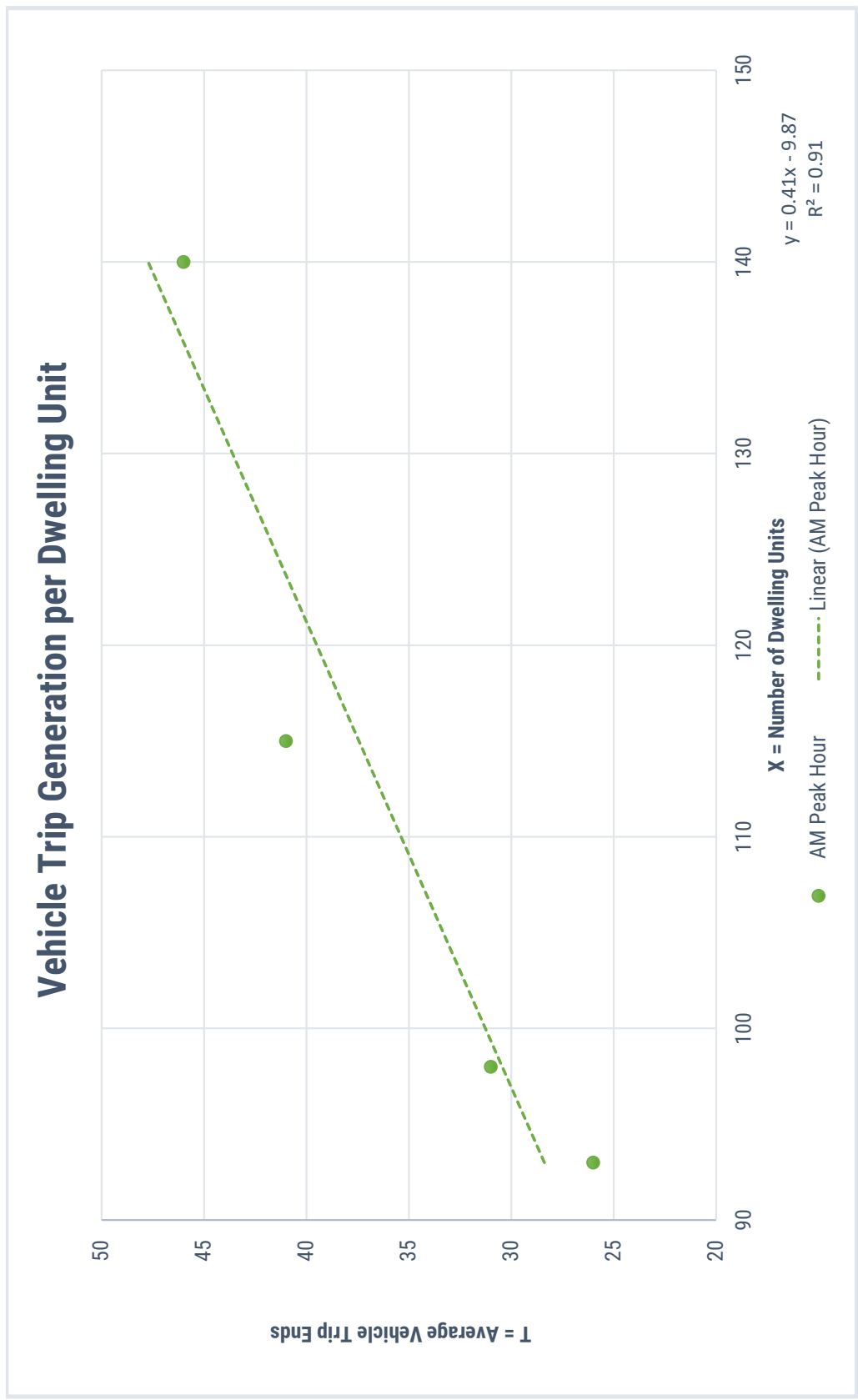
Table 4
Summary of Average Trip Rate (Weighted) During Peak Hour Time Periods

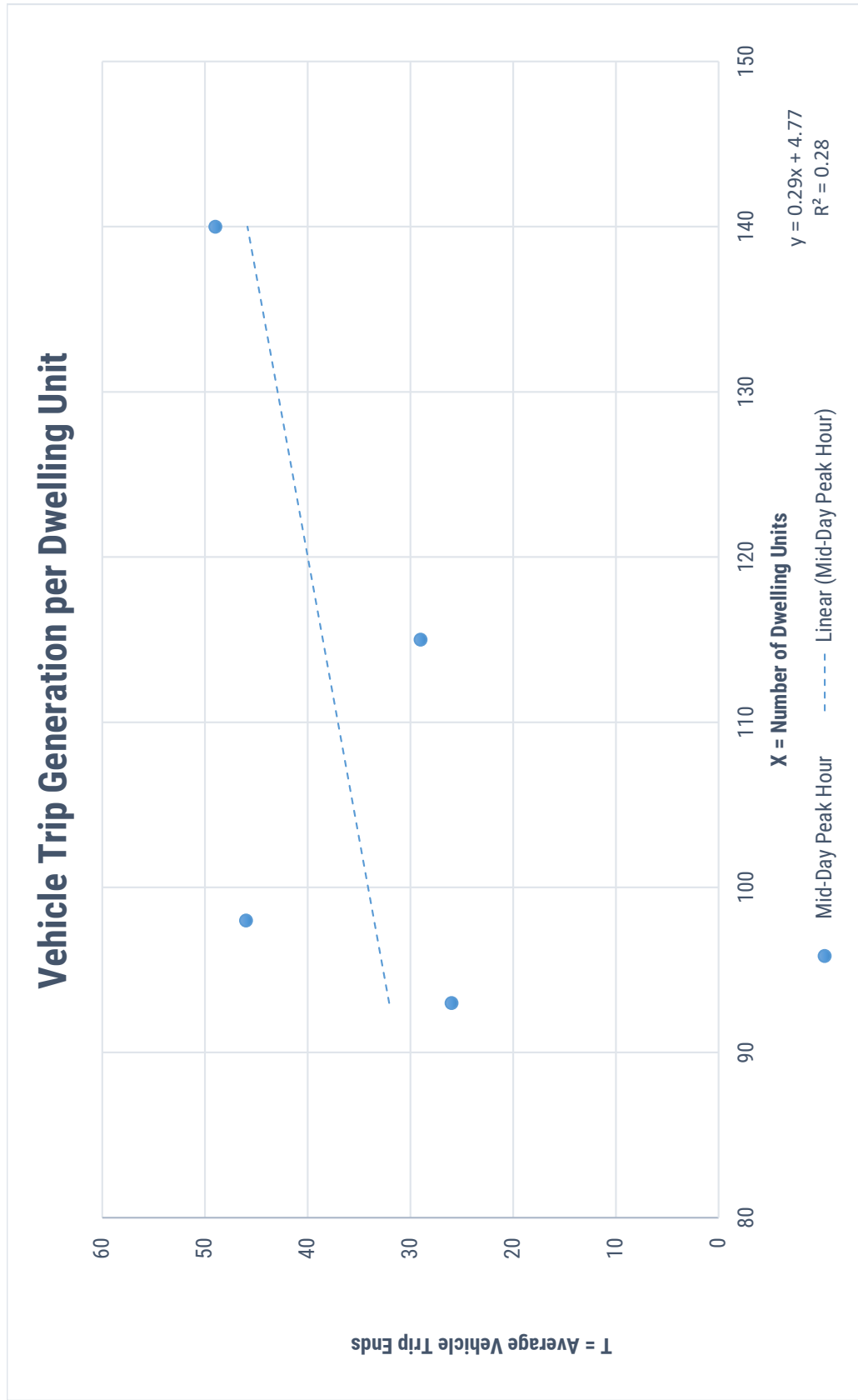
Location	Dwelling Units	Weekday AM Peak Hour of Adjacent Street Traffic	Weekday Mid-Day Peak Hour of Adjacent Street Traffic	Weekday PM Peak Hour of Adjacent Street Traffic
Brownstown Township, MI	115	41	29	54
Canton, MI	93	26	26	39
Commerce Charter Township, MI	98	31	46	38
Shelby Charter Township, MI	140	46	49	56
Total Trips		144	150	187
Average Trip Rate		0.32	0.34	0.42

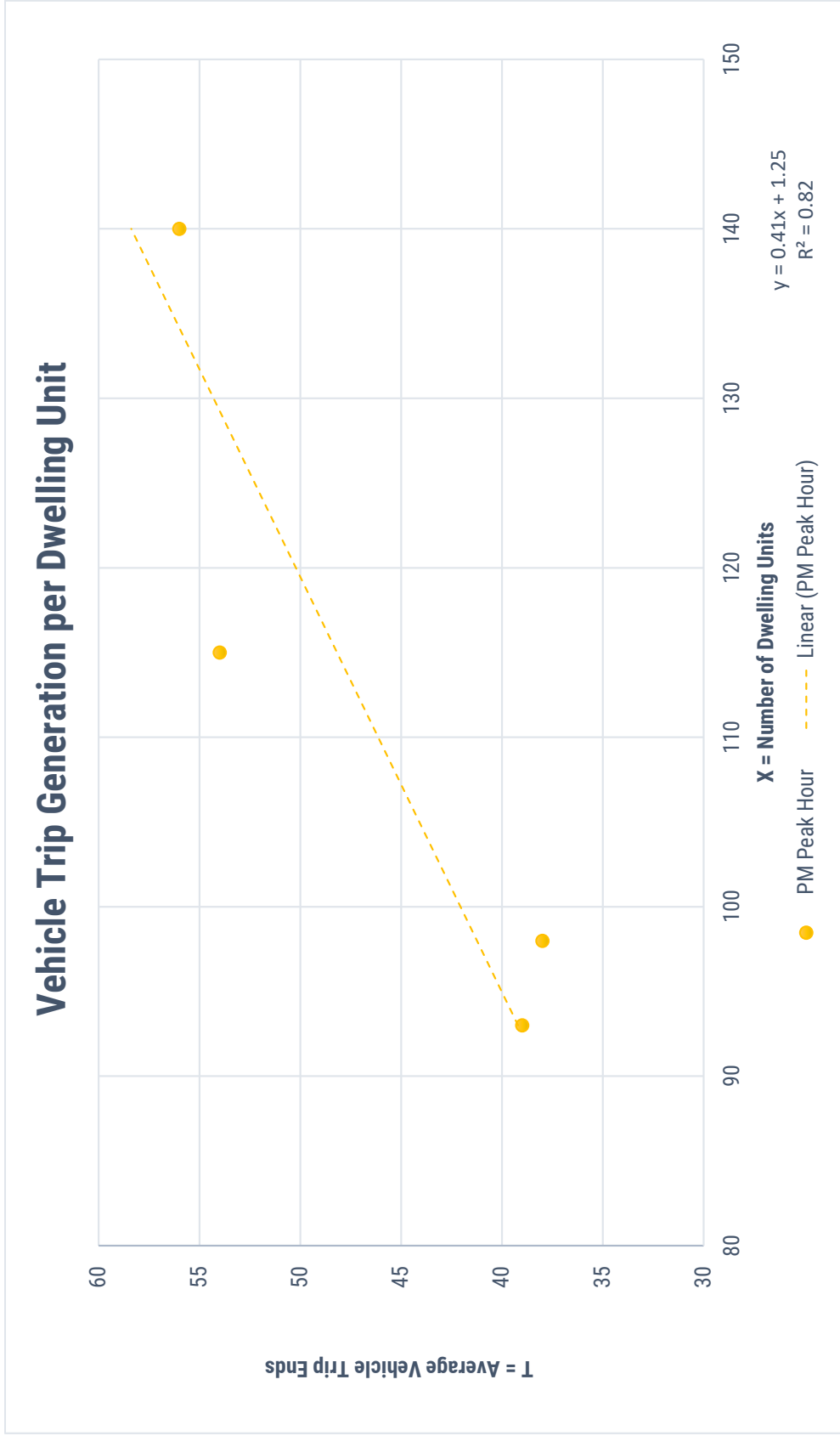
4.2. Data Plots

Each of the four (4) study locations were converted into data plots. Data plots provide a display of the variance within the data base. The data points represented on the plots are not trip generation rates; rather, they are the observed number of trips, plotted against the size of the independent variable (dwelling units). Data plots have been made for each of the four (4) study locations (illustrated on Figures 6-8) for the following time periods:

- Weekday – AM Peak Hour of Adjacent Street Traffic
- Weekday – Mid-Day Peak Hour of Adjacent Street Traffic
- Weekday – PM Peak Hour of Adjacent Street Traffic







Location Info	
Location ID	47-0091
County ID	47
Station ID	0091
Type	I-SECTION
Functional Class	3
Located On	M-59
	EAST OF FENTON/PLEASANT VALLEY RD(HARTLAND TWP)
Direction	2-WAY
Community	-
MPO_ID	55666
HPMS ID	
Agency	Michigan Department of Transportation

Count Data Info	
Start Date	11/15/2016
End Date	11/16/2016
Start Time	3:00 PM
End Time	3:00 PM
Direction	
Notes	
Count Source	
File Name	Volume_QTR_Short_Axel_Catchup
Weather	
Study	
Owner	LEGACY
QC Status	Accepted

Interval: 15 mins					
Time	15 Min				Hourly Count
	1st	2nd	3rd	4th	
00:00 - 01:00	52	40	38	18	148
01:00 - 02:00	22	14	27	14	77
02:00 - 03:00	14	7	19	17	57
03:00 - 04:00	28	12	21	34	95
04:00 - 05:00	28	48	53	109	238
05:00 - 06:00	138	209	228	279	854
06:00 - 07:00	403	440	526	581	1950
07:00 - 08:00	668	643	651	624	2586
08:00 - 09:00	639	633	583	570	2425
09:00 - 10:00	498	495	443	432	1868
10:00 - 11:00	392	367	396	417	1572
11:00 - 12:00	409	385	429	463	1686
12:00 - 13:00	426	431	428	409	1694
13:00 - 14:00	412	428	456	469	1765
14:00 - 15:00	430	544	609	559	2142
15:00 - 16:00	562	598	661	661	2482
16:00 - 17:00	708	738	740	739	2925
17:00 - 18:00	726	779	748	664	2917
18:00 - 19:00	637	613	517	451	2218
19:00 - 20:00	364	355	311	268	1298
20:00 - 21:00	263	276	266	215	1020
21:00 - 22:00	214	176	159	147	696
22:00 - 23:00	121	127	91	93	432
23:00 - 24:00	72	73	64	56	265
TOTAL					33410

SOIL EROSION/SEDIMENTATION CONTROL OPERATION TIME SCHEDULE

	JUNE				JULY				AUGUST				SEPTEMBER				OCTOBER				NOVEMBER				DECEMBER				JANUARY				FEBRUARY				MARCH				APRIL				MAY			
CONSTRUCTION SEQUENCE	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
TEMPORARY CONSTRUCTION EXITS	■																																															
TEMPORARY CONTROL MEASURES	■	■	■																																													
SITE DEMOLITION																																																
SEDIMENT CONTROL BASIN(S)/TRAP(S)					■	■	■	■																																								
STRIP & STOCKPILE TOPSOIL									■	■	■	■																																				
ROUGH GRADING													■	■	■	■																																
STORM FACILITIES																	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
SITE CONSTRUCTION																																																
FINISH GRADING																																																
PERMANENT CONTROL STRUCTURES																																																
LANDSCAPING/SEED/FINAL STABILIZATION																																																

May 11, 2021

Hartland Township
2655 Clark Road
Hartland, Michigan 48353



RECEIVED

MAY 17 2021

HARTLAND TOWNSHIP

Re: Landscaping Easement for Redwood Neighborhood Hartland Glen

Members of the Planning Commission and Township Board:

Hartland Glen Development, LLC is the owner of two parcels of real property, 12396 Cundy Rd. (Parcel # 4708-26-100-001) and 12398 Cundy Rd. (Parcel # 4708-26-100-012) located in the Township of Hartland, County of Livingston, and State of Michigan (the "Residential Properties")

Redwood Apartment Neighborhoods is under contract to purchase a portion of real property located at 12400 Highland Rd. (part of Parcel #4708-26-100-019) adjacent to the Residential Properties (the "Redwood Property").

In connection with the proposed development of the Redwood Property, Hartland Glen Development, LLC desires to grant to Redwood a fifteen (15) foot wide easement to install and maintain additional landscaping area between the Redwood Property and the Residential Properties.

This Easement will be agreed to and shall be granted simultaneously with Redwood Apartment Neighborhoods closing on the Redwood Property.

Sincerely,

A handwritten signature in black ink, appearing to read "Isam Yaldo".

Isam Yaldo
Hartland Glen Development, LLC

June 10, 2020

Troy Langer
Planning Director
Hartland Township
2655 Clark Road
Hartland, Michigan 48353

Dear Troy:

Hartland Glen Development, LLC, as the owner of approximately 382.85 acres of real property known as "Tax Identification No. 4708-26-100-019" (the "Property") which is located on the south side of Cundy Road at Hartland Glen Rd. in the Township of Hartland, Michigan hereby authorizes Redwood USA LLC and its third party engineer, Bergmann Associates, to submit rezoning, site plan approval, variance, and any related permit applications for the Property.

Yours,

Hartland Glen Development,
a Michigan Limited Liability Corporation

By: 

Its: *Manager*

Date: 6-14-2020

Exhibit A
The Property



FORESTWOOD/MEADOWOOD WITH STEPPED ROOF



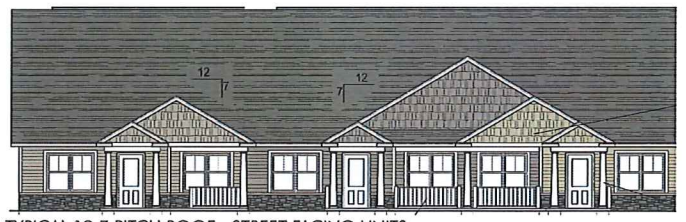
WILLOWOOD UNITS WITH DORMERS



LEGEND

- FRONT PORCH - HAYDENWOOD BUILDING
- REAR PRIVATE CONCRETE PATIOS - FORESTWOOD/MEADOWOOD BUILDING
- SCREENED IN REAR PORCH - BREEZEWOOD BUILDING
- SCREENED IN REAR PORCH - WILLOWOOD BUILDING
- SUNROOMS
- HIGH PROFILE ELEVATIONS
- RESIDENT SHELTER

SCALE: 1" = 100'-0"



TYPICAL 12:7 PITCH ROOF - STREET FACING UNITS



TYPICAL 12:5 PITCH ROOF - INTERNAL UNITS



TYPICAL 12:5 PITCH ROOF - INTERNAL UNITS

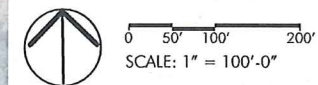


RECEIVED
MAY 17 2021
HARTLAND TOWNSHIP

- PLAN MODIFICATIONS**
- STAGGERED BUILDINGS ALONG FRONTAGE TO REDUCE BARRACKS FEEL OF VIEWS
 - PROVIDE MORE CURVILINEAR STREET NETWORK TO ENHANCE VIEWS AND REDUCE BARRACKS VIEW
 - PROVIDE VARIETY OF BUILDING TYPES AND UNIT CONFIGURATIONS
 - ADDITION OF PEDESTRIAN PATHS AND 4 POST SHELTER (ON STREET SIDEWALK AND OFF STREET PATHS)
 - ADDITION OF HIGH PROFILE ELEVATIONS AND OTHER ARCHITECTURAL FEATURES TO ENHANCE AND HIGHLIGHT THE VISUAL EXPERIENCE
 - PRESERVATION OF NATURAL OPEN SPACE

SITE DATA

TOTAL ACREAGE: ± 27.15 AC
TOTAL UNITS: 148
DENSITY: 5.45 DU /AC





Equinox



Gemini



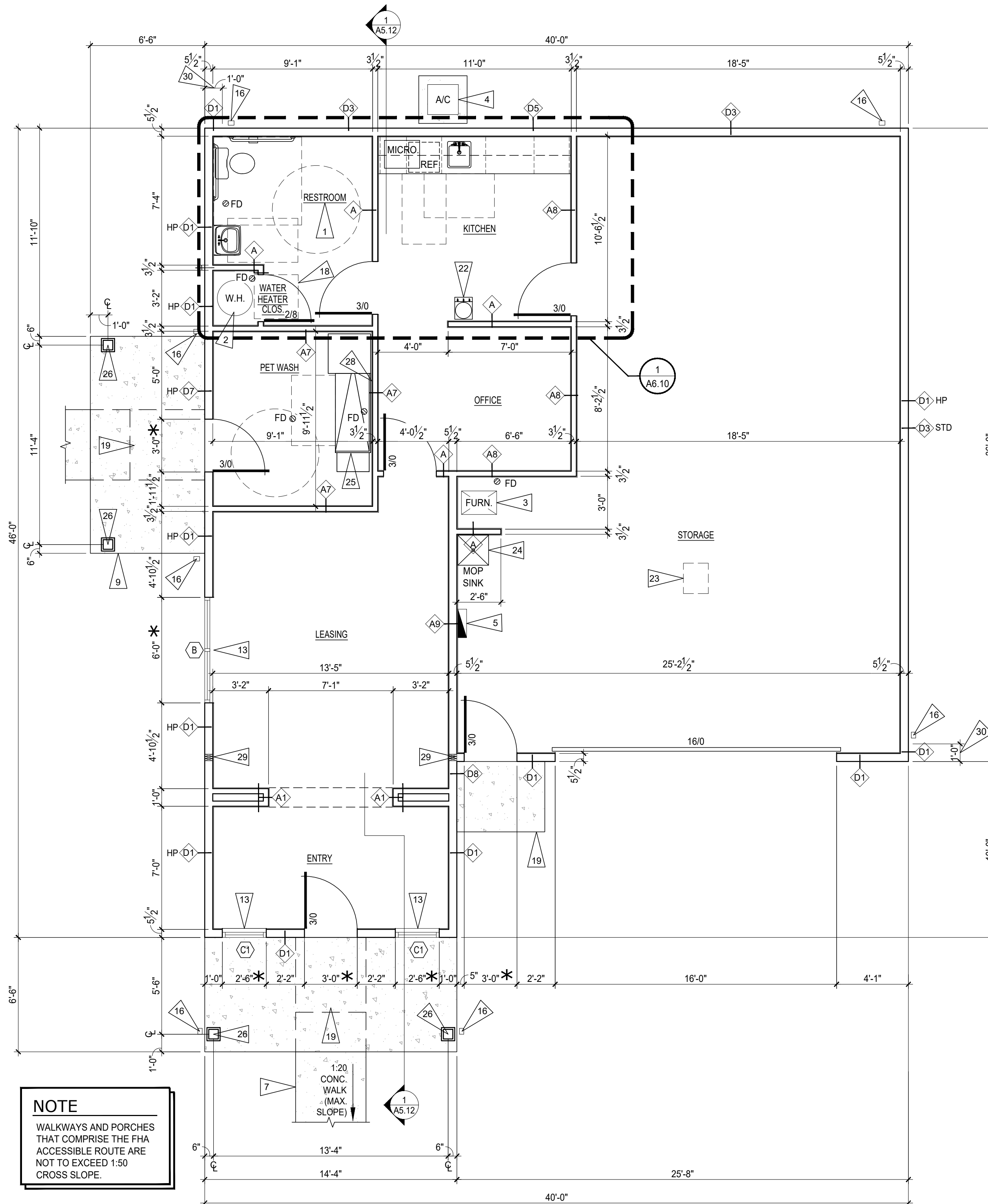
Aerator



Giant Fountain



High Voltage Light System



1 LEASING OFFICE LEFT
SCALE: 1/4" = 1'-0"

SYMBOLS LEGEND

- INDICATES WALL CONSTRUCTION TYPE. REFER TO THIS SHEET FOR DETAILED ASSEMBLY DESCRIPTIONS
- INDICATES ROOM NAME REFER TO SHEET A6.10 FOR ROOM FINISH MATERIALS
- TYPICAL SECTION AND DETAIL FLAGS:
 - REFERS TO SECTION OR ELEVATION NUMBER
 - REFERS TO DRAWING SHEET NUMBER
- INDICATES WINDOW TYPES- REFER TO SHEET A6.10 FOR WINDOW SCHEDULE
- INDICATES DOOR SIZES- REFER TO SHEET A6.10 FOR DOOR AND FRAME MATERIALS AND ELEVATIONS

FLAG NOTES:

1. PROVIDE WOOD BLOCKING IN WALLS AS REQUIRED FOR GRAB BAR MOUNTING. SEE INTERIOR ELEVATIONS SHEET A6.2 FOR MORE INFORMATION.
2. ELECTRIC WATER HEATER. SEE MECHANICAL DRAWINGS FOR MORE INFORMATION.
3. FURNACE. SEE MECHANICAL DRAWINGS FOR MORE INFORMATION.
4. A/C. CONDENSING UNIT. SEE MECHANICAL DRAWINGS FOR MORE INFORMATION.
5. ELECTRICAL PANEL. SEE ELECTRICAL DRAWINGS FOR MORE INFORMATION.
6. NOT USED.
7. REINFORCED CONCRETE ADA ACCESSIBLE WALK (1:20 SLOPE MAXIMUM). REFER TO CIVIL DRAWINGS FOR GRADES. RISE NOT TO EXCEED 6".
8. NOT USED.
9. 4" REINFORCED CONCRETE PAD WITH FIBER MESH OVER 2" COMPACTED GRAVEL.
10. NOT USED.
11. NOT USED.
12. NOT USED.
13. VINYL CLAD INSULATED WINDOWS ARE BASED ON SIMONTON STANDARD WINDOW SIZES. SUBMIT ALTERNATE WINDOWS BASED ON NEAREST AVAILABLE STANDARD SIZE. SUBJECT TO OWNERS APPROVAL. WRAP (3) SIDES OF WINDOW OPENING WITH GYP. BD. INSTALL 1x TRIM WITH CASING ON SILL.
14. NOT USED.
15. NOT USED.
16. DOWNSPOUT - SEE CIVIL DRAWINGS.
17. NOT USED.
18. 30" x 30" CLEAR FLOOR SPACE FOR MAINTENANCE OF APPLIANCES.
19. PORCH FROST SLAB. SEE FOUNDATION PLAN AND DETAILS.
20. WASHER TO BE INSTALLED ON LEFT SIDE OF OPENING. DRYER TO BE INSTALLED ON THE RIGHT SIDE OF OPENING.
21. BUILD WALLS TIGHT TO UNDERSIDE OF TRUSS BOTTOM CHORD. PROVIDE 2x4 CEILING JOISTS AT 8'-1" A.F.F. WITH 5/8" GYP. BD.
22. BOTTLED WATER DISPENSER TO BE SUPPLIED AND INSTALLED BY OWNER.
23. O.H. DOOR OPENER. SEE ELECTRICAL PLAN FOR MORE INFORMATION.
24. MOP SINK. SEE MECHANICAL DRAWINGS FOR MORE INFORMATION.
25. PET WASH STATION. TO BE SUPPLIED AND INSTALLED BY CONTRACTOR.
26. 6x6 P.T. WOOD POST WITH PVC SLEEVE. COLOR: WHITE.
27. NOT USED.
28. PROVIDE HOT & COLD WATER SUPPLY FOR HOOK-UP OF PETWASH STATION. SEE M1.9 FOR MORE INFORMATION.
29. PROVIDE SOLID BEARING FOR GIRDER TRUSS (ABOVE).
30. 1'-0" STONE RETURN.

NOTES:

1. ALL SINGLE STORY UNITS MUST MEET FAIR HOUSING ACT ACCESSIBILITY GUIDELINES FOR ADAPTABILITY.
 2. THESE ARE TYPE 'B' DWELLING UNITS AS PER ICC A117.1-2009, SECTION 1004.
- * VERIFY ROUGH OPENING WITH DOOR, WINDOW OR FIXTURE MANUFACTURER PRIOR TO WOOD FRAMING.
- ** WALL SECTION NOTE:
REFER TO EXTERIOR ELEVATION SHEETS FOR EXTERIOR FINISHES.

GENERAL FLOOR PLAN NOTES:

1. ALL PARTITION DIMENSIONS ARE FROM THE FACE OF STUD TO FACE OF STUD, AND/OR FACE OF MASONRY, UNLESS NOTED OTHERWISE.
2. VERIFY ALL DIMENSIONED CONDITIONS IN THE FIELD. WHEN DIMENSIONS AND/OR CONDITIONS AS INDICATED ON THE DRAWINGS CONFLICT WITH ACTUAL, CONTACT THE ARCHITECT FOR CLARIFICATION.
3. WALL THICKNESS INDICATED ON FLOOR PLAN(S) SHALL BE CONSTANT FOR THE ENTIRE LENGTH OF WALL (U.N.O.)
4. PROVIDE BEHIND WALL REINFORCING AND BLOCKING AS REQUIRED BEHIND DOOR STOPS, ATTACHMENT OF MILLWORK, CASEWORK, TOILET ACCESSORIES, ETC. SEE SHEET A6.2 FOR MORE INFORMATION.
5. ALL EXTERIOR CORNERS THROUGHOUT SPACE TO HAVE METAL CORNER BEADS.

WALL TYPE LEGEND (CONT'D.)

- NOT USED.
- EXTERIOR WALL CONSTRUCTION - 2x6 AT 24" O.C.
 ** HORIZONTAL SIDING OVER TYVEK WRAP OVER 7/16" O.S.B. EXT. GRADE SHEATHING OVER 2x6 WOOD STUDS AT 24" O.C. WITH R-21 KRAFT-FACED BATT INSULATION AND 5/8" GYP. BD. INTERIOR.
 LOWER WALL
 STONE VENEER OVER 1/16" PROSOCO R-GUARD SYSTEM (OR APPROVED EQUAL) OVER 7/16" O.S.B. EXT. GRADE SHEATHING OVER 2x6 WOOD STUDS AT 24" O.C. WITH R-21 KRAFT-FACED BATT INSULATION AND 5/8" GYP. BD. INTERIOR.
 REFER TO ELEVATIONS FOR STONE LOCATIONS
- NOT USED.
- EXTERIOR WALL CONSTRUCTION - 2x6 AT 24" O.C.
 ** HORIZONTAL SIDING OVER TYVEK WRAP OVER 7/16" O.S.B. EXT. GRADE SHEATHING OVER 2x6 WOOD STUDS AT 24" O.C. WITH R-21 KRAFT-FACED BATT INSULATION AN 5/8" GYP. BD. INTERIOR.
- NOT USED.
- EXTERIOR WALL CONSTRUCTION - 2x6 AT 16" O.C.
 ** HORIZONTAL SIDING OVER TYVEK WRAP OVER 7/16" O.S.B. EXT. GRADE SHEATHING OVER 2x6 WOOD STUDS AT 16" O.C. WITH R-21 KRAFT-FACED BATT INSULATION AND 5/8" GYP. BD. INTERIOR.
- NOT USED.
- EXTERIOR WALL CONSTRUCTION - 2x6 AT 24" O.C.
 ** HORIZONTAL SIDING OVER TYVEK WRAP OVER 7/16" O.S.B. EXT. GRADE SHEATHING OVER 2x6 WOOD STUDS AT 24" O.C. WITH R-21 KRAFT-FACED BATT INSULATION AND FULL HEIGHT FIBER-REINFORCED PANEL OVER 1/2" GREEN MOISTURE RESISTANT GYP. BD. INTERIOR.
 LOWER WALL
 STONE VENEER OVER 1/16" PROSOCO R-GUARD SYSTEM (OR APPROVED EQUAL) OVER 7/16" O.S.B. EXT. GRADE SHEATHING OVER 2x6 WOOD STUDS AT 24" O.C. WITH R-21 KRAFT-FACED BATT INSULATION AND FULL HEIGHT FIBER-REINFORCED PANEL OVER 1/2" GREEN MOISTURE RESISTANT GYP. BD. INTERIOR.
 REFER TO ELEVATIONS FOR STONE LOCATIONS
- EXTERIOR WALL CONSTRUCTION - 2x4 AT 24" O.C.
 ** HORIZONTAL SIDING OVER TYVEK WRAP OVER 7/16" O.S.B. EXT. GRADE SHEATHING OVER 2x4 WOOD STUDS AT 24" O.C. WITH R-15 KRAFT-FACED BATT INSULATION AND 5/8" GYP. BD. INTERIOR.
 LOWER WALL
 STONE VENEER OVER 1/16" PROSOCO R-GUARD SYSTEM (OR APPROVED EQUAL) OVER 7/16" O.S.B. EXT. GRADE SHEATHING OVER 2x4 WOOD STUDS AT 24" O.C. WITH R-15 KRAFT-FACED BATT INSULATION AND 5/8" GYP. BD. INTERIOR.
 REFER TO ELEVATIONS FOR STONE LOCATIONS

WALL TYPE LEGEND

- 1/2" GYP. BD. EACH SIDE OF 2x4 WOOD STUDS AT 24" O.C. BUILD WALL TIGHT TO BOTTOM CHORD OF TRUSSES. USE MOISTURE RESISTANT GYP. BD. AT WET/RESTROOM SIDE OF WALL.
- 1/2" GYP. BD. ON ONE SIDE OF 2x4 WOOD STUDS AT 24" O.C. BUILD WALL TIGHT TO BOTTOM CHORD OF TRUSSES. USE MOISTURE RESISTANT GYP. BD. AT WET/RESTROOM SIDE OF WALL.
- NOT USED.
- NOT USED.
- NOT USED.
- NOT USED.
- NOT USED.
- FULL HEIGHT FIBER-REINFORCED PANEL OVER 1/2" GREEN MOISTURE RESISTANT GYP. BD. OVER 2x4 WOOD STUDS AT 24" O.C. WITH 3-1/2" SOUND BATT INSULATION WITH 1/2" GYP. BD.
- 1/2" GYP. BD. EACH SIDE OF 2x4 WOOD STUDS AT 24" O.C. WITH R-15 KRAFT-FACED BATT INSULATION, BUILD WALL TIGHT TO BOTTOM CHORD OF TRUSSES. USE MOISTURE RESISTANT GYP. BD. AT WET / RESTROOM SIDE OF WALL.
- 1/2" GYP. BD. EACH SIDE OF 2x6 WOOD STUDS AT 24" O.C. WITH R-21 KRAFT-FACED BATT INSULATION, BUILD WALL TIGHT TO BOTTOM CHORD OF TRUSSES. USE MOISTURE RESISTANT GYP. BD. AT WET / RESTROOM SIDE OF WALL.
- NOT USED.
- NOT USED.

PRELIMINARY
NOTE!!!
THIS DRAWING IS NOT FOR CONSTRUCTION

REVISIONS

phone 330.666.5770 fax 330.666.8812
3660 Embassy Parkway Fairlawn, OH 44333
MPG ARCHITECTS
MANN • PARSONS • GRAY
mpg-architects.com

LEASING OFFICE LEFT PLAN
DATE: SEPTEMBER XX, 2019
PROJECT #: XXXX
PROJECT NAME
ADDRESS

A2.XL
X OF X

Redwood Heartland Highland Road

Exterior material calculations	Façade	Material	Coverage Gross	Window Gross	Coverage Net	Material coverage percentage
						%
Forestwood	Front	Siding	154	30	124	92%
		Stone	10.5		10.5	8%
		Total			134.5	100%
	Rear	Siding	178.5	30	148.5	100%
Meadowood	Front	Siding	101.5	30	71.5	87%
		Stone	10.5		10.5	13%
		Total			82	100%
	Side STD	Siding	766	30	736	99.7%
		Stone	2.25		2.25	0.3%
		Total			738.25	100.0%
	Side HP	Siding	633	60	573	80.9%
Stone		135.3		135.3	19.1%	
	Total			708.30	100.0%	
	Rear	Siding	178.5	30	148.5	100%
Capewood	Front	Siding	182	60	122	74%
		Stone	42		42	26%
		Total			164	100%
	Side STD	Siding	760.5	66	694.5	99.4%
		Stone	4.5		4.5	0.6%
		Total			699.00	100.0%
	Side HP	Siding	617.65	96	521.65	78.4%
Stone		144		144	21.6%	
	Total			665.65	100.0%	
	Rear	Siding	301.5	55	246.5	100%

Willowood Mid	Front	Siding	201.25	30	171.25	95%	
		Stone	9		9	5%	
		Total			180.25	100%	
	Rear	Siding	247.3	55	192.3	100%	
Willowood End	Front	Siding	201.25	30	171.25	95%	
		Stone	9		9	5%	
			Total			180.25	100%
	Side STD	Siding	665	66	599	99.6%	
		Stone	2.25		2.25	0.4%	
			Total			601.25	100.0%
Side HP	Siding	550.7	96	454.7	79.6%		
	Stone	116.6		116.6	20.4%		
		Total			571.30	100.0%	
	Rear	Siding	247.3	55	192.3	100%	
Breezewood Mid	Front	Siding	129.75	17.5	112.25	93%	
		Stone	8		8	7%	
		Total			120.25	100%	
	Rear	Siding	224	75	149	100%	
Breezewood End	Front	Siding	129.9	17.5	112.4	93%	
		Stone	8		8	7%	
			Total			120.4	100%
	Side STD	Siding	890	36.7	853.3	99.7%	
		Stone	2.25		2.25	0.3%	
			Total			855.55	100.0%
Side HP	Siding	733.7	36.7	697	81.5%		
	Stone	158.6		158.6	18.5%		
		Total			855.60	100.0%	
	Rear	Siding	224	75	149	100%	
Breezewood Sunroom	Front	Siding	233.75	60	173.75	80%	
		Stone	42.85		42.85	20%	
			Total			216.6	100%
	Side STD	Siding	824.8	66	758.8	99.4%	
		Stone	4.5		4.5	0.6%	
		Total			763.30	100.0%	
Side HP	Siding	678.2	66	612.2	80.2%		
	Stone	150.7		150.7	19.8%		
		Total			762.90	100.0%	
	Rear	Siding	301.5	55	246.5	100%	

Haydenwood Mid	Front	Siding	203.8	30	173.8	83%
		Stone	34.5		34.5	17%
				Total	208.3	100%
	Rear	Siding	129.7	17.5	112.2	93%
		Stone	8		8	7%
				Total	120.2	100%
Haydenwood End	Front	Siding	129.9	17.5	112.4	93%
		Stone	8		8	7%
				Total	120.4	100%
	Side STD	Siding	888	36.7	851.3	99.5%
		Stone	4.5		4.5	0.5%
				Total	855.80	100.0%
	Side HP	Siding	734	36.7	697.3	81.5%
		Stone	158.6		158.6	18.5%
				Total	855.90	100.0%
	Rear	Siding	224	75	149	100%
Haydenwood Sunroom	Front	Siding	267.6	90	177.6	73%
		Stone	66		66	27%
				Total	243.6	100%
	Side STD	Siding	874.6	66	808.6	99.2%
		Stone	6.75		6.75	0.8%
				Total	815.35	100.0%
	Side HP	Siding	729.1	66	663.1	80.6%
		Stone	159.5		159.5	19.4%
				Total	822.60	100.0%
	Rear STD	Siding	207.2	36.7	170.5	96%
		Stone	8		8	4%
				Total	178.5	100%
	Rear HP	Siding	188	36.7	151.3	85%
		Stone	26.1		26.1	15%
				Total	177.4	100%



Screened In Patios and Front Porch Units

RECEIVED

MAY 17 2021

HARTLAND TOWNSHIP





Willowood Facade

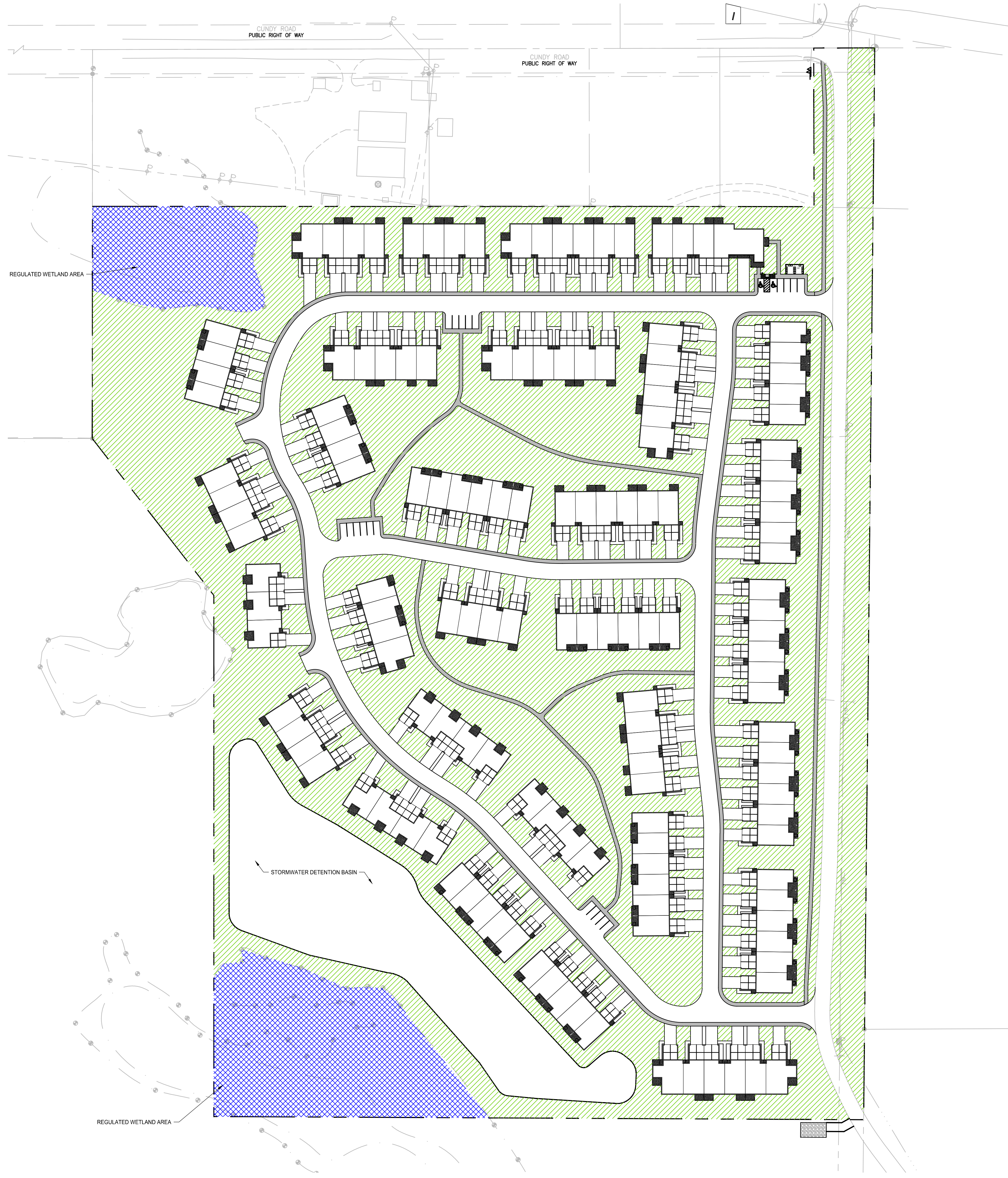
**Forestwood /
Meadowood /
Capewood Facades**



Breezewood Facade

**Haydenwood
Facade**

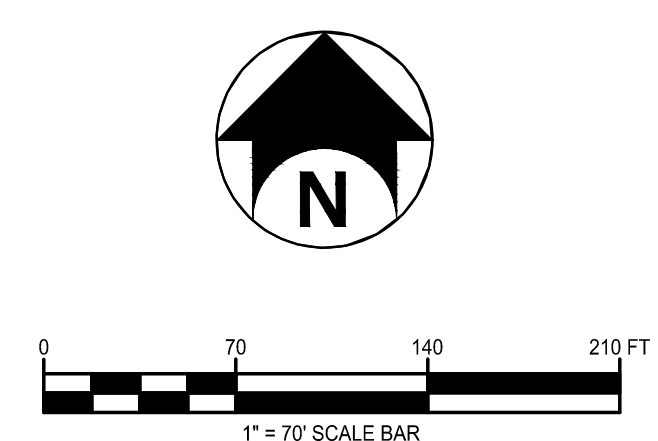




OPEN SPACE		
TOTAL PARCEL AREA	27.13	AC
REQUIRED OPEN SPACE	6.79	AC
REQUIRED USABLE OPEN SPACE	2.71	AC
LAWN AREA	11.35	AC
SIDEWALK AREA	0.80	AC
DETENTION POND AREA	1.87	AC
WETLAND AREA	2.02	AC
TOTAL USABLE OPEN SPACE (LAWN AREA + SIDEWALK AREA) =	12.15	AC
TOTAL OPEN SPACE (LAWN AREA + SIDEWALK AREA + DETENTION POND + WETLANDS) =	16.02	AC

SITE LEGEND:

	PROPERTY SETBACK LINE
	PROPERTY LINE
	USABLE OPEN SPACE AREA
	REGULATED WETLAND AREA
	PROPOSED SIDEWALK



REDWOOD HARTLAND TOWNSHIP

HIGHLAND ROAD (M-59)
HARTLAND, MI 48353



7007 E. PLEASANT VALLEY RD
INDEPENDENCE, OH 44131



Bergmann Associates, Architects, Engineers,
Landscape Architects & Surveyors, D.P.C.
7050 West Saginaw Hwy.
Suite 200
Lansing, MI 48917

office: 517.272.9835
fax: 517.272.9836

www.bergmannpc.com

DATE	DESCRIPTION
5/14/2021	ISSUE FOR PRELIMINARY PLAN REVIEW

Not For Construction

Copyright © Bergmann Associates, Architects, Engineers,
Landscape Architects & Surveyors, D.P.C.

Project Manager I. GRAHAM, PE	Checked By I. GRAHAM, PE
Designed By I. GRAHAM, PE	Drawn By J. ARSENEAULT
Date Issued JANUARY 14, 2021	Project Number 14648.00

OPEN SPACE PLAN

Drawing Number:

C203

SITE DATA:

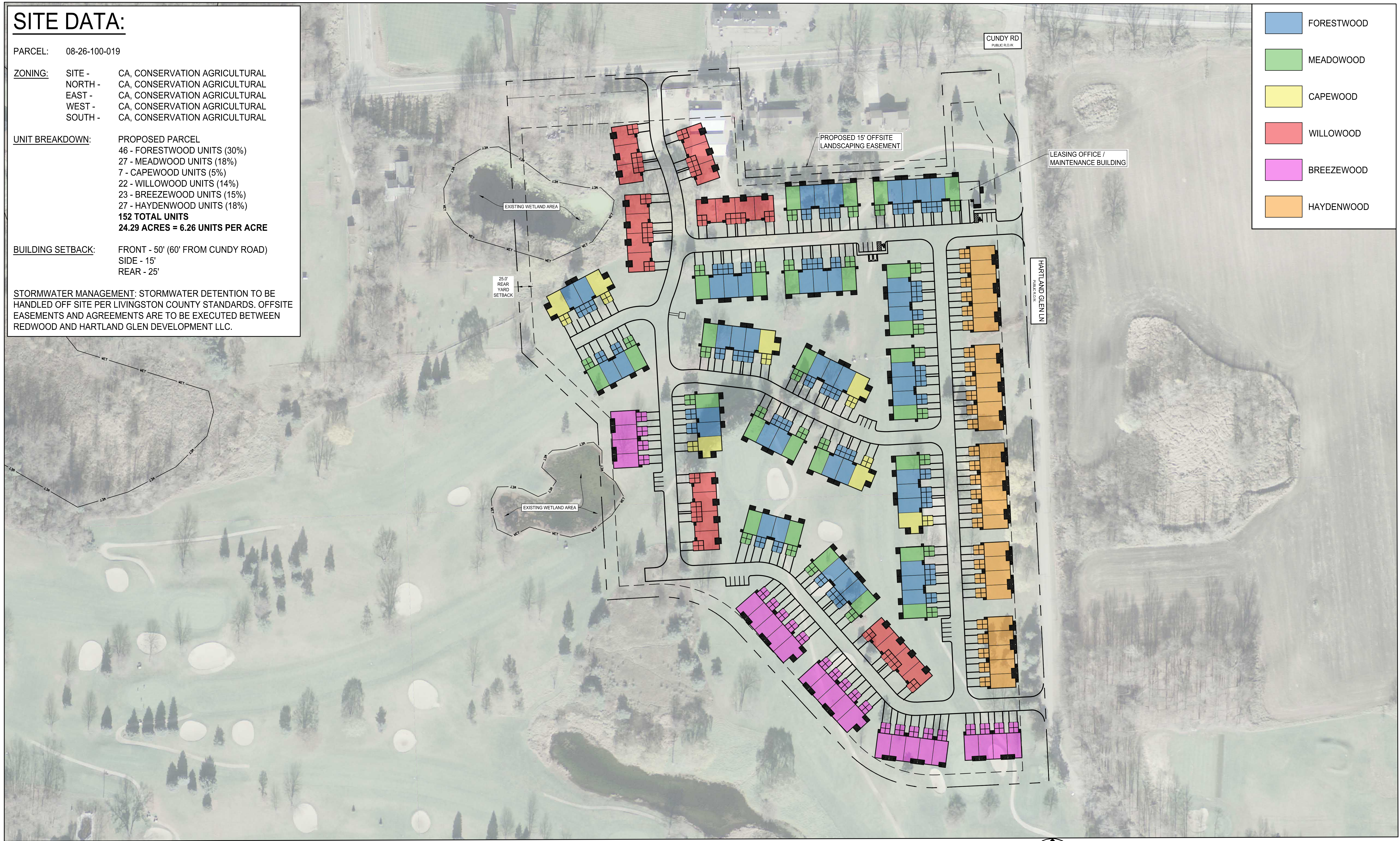
PARCEL: 08-26-100-019



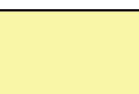



ZONING: SITE - CA, CONSERVATION AGRICULTURAL
 NORTH - CA, CONSERVATION AGRICULTURAL
 EAST - CA, CONSERVATION AGRICULTURAL
 WEST - CA, CONSERVATION AGRICULTURAL
 SOUTH - CA, CONSERVATION AGRICULTURAL

UNIT BREAKDOWN: PROPOSED PARCEL
 46 - FORESTWOOD UNITS (30%)
 27 - MEADOWOOD UNITS (18%)
 7 - CAPEWOOD UNITS (5%)
 22 - WILLOWOOD UNITS (14%)
 23 - BREEZEWOOD UNITS (15%)
 27 - HAYDENWOOD UNITS (18%)
152 TOTAL UNITS
24.29 ACRES = 6.26 UNITS PER ACRE

BUILDING SETBACK: FRONT - 50' (60' FROM CUNDY ROAD)
 SIDE - 15'
 REAR - 25'

STORMWATER MANAGEMENT: STORMWATER DETENTION TO BE HANDLED OFF SITE PER LIVINGSTON COUNTY STANDARDS. OFFSITE EASEMENTS AND AGREEMENTS ARE TO BE EXECUTED BETWEEN REDWOOD AND HARTLAND GLEN DEVELOPMENT LLC.



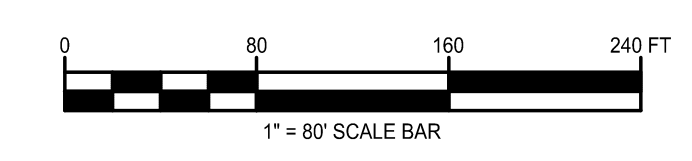
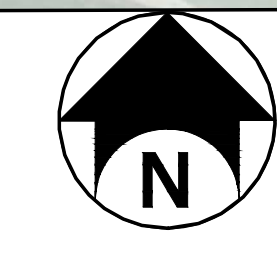
	FORESTWOOD
	MEADOWOOD
	CAPEWOOD
	WILLOWOOD
	BREEZEWOOD
	HAYDENWOOD



HARTLAND TOWNSHIP, MICHIGAN

PROPOSED SITE PLAN

7/16/2020



DEVELOPMENT PLANS FOR PROPOSED REDWOOD LIVING RESIDENTIAL DEVELOPMENT CUNDY ROAD HARTLAND TOWNSHIP, MICHIGAN

**REDWOOD
HARTLAND
TOWNSHIP**

HIGHLAND ROAD (M-59)
HARTLAND, MI 48353



7007 E. PLEASANT VALLEY RD
INDEPENDENCE, OH 44131



Bergmann Associates, Architects, Engineers,
Landscape Architects & Surveyors, D.P.C.
7350 West Saginaw Hwy.
Suite 200
Lansing, MI 48917

office: 517.272.9835
fax: 517.272.9836

www.bergmannpc.com

DATE	DESCRIPTION
5/14/2021	ISSUE FOR PRELIMINARY PLAN REVIEW

PROJECT CONTACTS

CIVIL ENGINEER
BERGMANN
7050 W SAGINAW HWY
LANSING, MI 48917
IAN GRAHAM, P.E.
(517) 272-9835

OWNER
REDWOOD LIVING
7007 EAST PLEASANT VALLEY ROAD
INDEPENDENCE, OH 44131
PATRICIA RAKOCI
(216) 505-8581

UTILITY AND JURISDICTIONAL CONTACTS

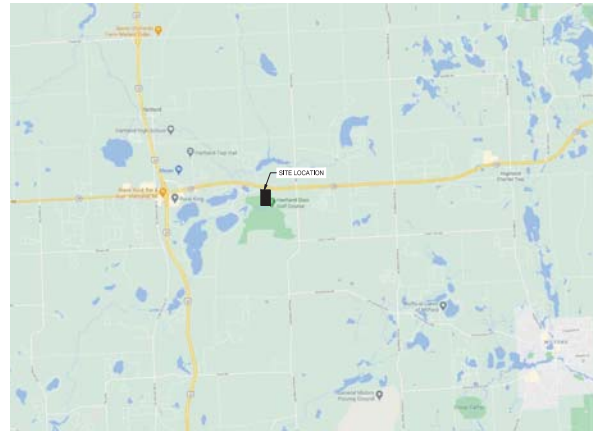
PLANNING AND ZONING
HARTLAND TOWNSHIP
2855 CLARK ROAD
HARTLAND, MICHIGAN 48353
TROY LANGER
810-632-7498

WATER MAIN
HARTLAND TOWNSHIP
2855 CLARK ROAD
HARTLAND, MICHIGAN 48353
MICHAEL LUCE
810-632-7498

SANITARY SEWER
LIVINGSTON COUNTY DRAIN COMMISSIONER
2300 E GRAND RIVER AVE
SUITE 105
HOWELL, MICHIGAN 48843
517-546-0040

STORM WATER AND SOIL EROSION AND SEDIMENTATION
LIVINGSTON COUNTY DRAIN COMMISSIONER
2300 E GRAND RIVER AVE
SUITE 105
HOWELL, MICHIGAN 48843
517-546-0040

ROADS & ENTRANCE
LIVINGSTON COUNTY ROAD COMMISSION
3535 GRAND OAKS DRIVE
HOWELL, MICHIGAN 48843
517-546-4250



SITE LOCATION MAP
NOT TO SCALE



DRAWING KEY

- INCLUDED IN PLAN SET
- NOT INCLUDED IN PLAN SET

Sheet Number	Sheet Title
<input checked="" type="checkbox"/> C000	COVER SHEET
<input checked="" type="checkbox"/> X100	ALTA SURVEY
<input checked="" type="checkbox"/> X101	ALTA SURVEY
<input checked="" type="checkbox"/> X102	ALTA SURVEY
<input checked="" type="checkbox"/> C000	PRELIMINARY SITE PLAN
<input checked="" type="checkbox"/> C201	NORTH PRELIMINARY SITE PLAN
<input checked="" type="checkbox"/> C202	SOUTH PRELIMINARY SITE PLAN
<input checked="" type="checkbox"/> C300	PRELIMINARY GRADING PLAN
<input checked="" type="checkbox"/> C301	NORTH PRELIMINARY GRADING PLAN
<input checked="" type="checkbox"/> C302	SOUTH PRELIMINARY GRADING PLAN
<input checked="" type="checkbox"/> C400	PRELIMINARY UTILITY PLAN
<input checked="" type="checkbox"/> C401	NORTH PRELIMINARY UTILITY PLAN
<input checked="" type="checkbox"/> C402	SOUTH PRELIMINARY UTILITY PLAN
<input checked="" type="checkbox"/> C403	OFF-SITE PRELIMINARY UTILITY PLAN
<input checked="" type="checkbox"/> C700	SITE DETAILS
<input checked="" type="checkbox"/> A1.1	BUILDING FLOOR PLANS AND ELEVATIONS
<input checked="" type="checkbox"/> A1.2	BUILDING FLOOR PLANS AND ELEVATIONS
<input checked="" type="checkbox"/> A1.3	BUILDING FLOOR PLANS AND ELEVATIONS
<input checked="" type="checkbox"/> A1.4	BUILDING FLOOR PLANS AND ELEVATIONS
<input checked="" type="checkbox"/> A1.5	BUILDING FLOOR PLANS AND ELEVATIONS
<input checked="" type="checkbox"/> A1.6	BUILDING FLOOR PLANS AND ELEVATIONS
<input checked="" type="checkbox"/> A1.7	BUILDING FLOOR PLANS AND ELEVATIONS
<input checked="" type="checkbox"/> L1.0	OVERALL REFERENCE PLAN
<input checked="" type="checkbox"/> L1.1	NORTH LANDSCAPE PLAN
<input checked="" type="checkbox"/> L1.2	SOUTH LANDSCAPE PLAN
<input checked="" type="checkbox"/> L1.3	LANDSCAPE PLAN ENLARGEMENTS
<input checked="" type="checkbox"/> L1.4	TYPICAL FOUNDATION PLANTING
<input checked="" type="checkbox"/> 001.0	LANDSCAPE AND SITE DETAILS

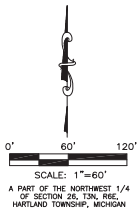
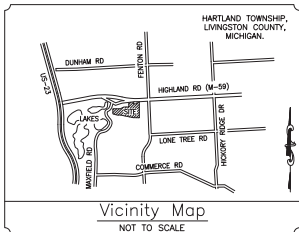
Not For Construction

Copyright © Bergmann Associates, Architects, Engineers,
Landscape Architects & Surveyors, D.P.C.

Prepared By	Checked By
I. GRAHAM, PE	I. GRAHAM, PE
I. GRAHAM, PE	J. JARSENEAULT
DATE	DATE
JANUARY 14, 2021	1/14/2021

COVER SHEET

C000



GENERAL NOTES

- 1) THIS DOCUMENT IS A TOPOGRAPHIC SURVEY ONLY AND MUST NOT BE USED TO CONVEY TITLE OR DETERMINE TITLE LINES. THIS DRAWING IS NOT A CERTIFIED SURVEY BUT IS COMPILED FROM EXISTING FIELD SURVEYS DATA. THE DRAWING DOES NOT COMPLY WITH MCL 54.211-54.213.
- 2) UTILITY LINES SHOWN WERE BASED ON PLANS PROVIDED UNDER A MISS DIG DEMARC TICKET NO. A03080672.
- 3) DIMENSIONS SHOWN ARE IN INTERNATIONAL FEET AND DECIMALS THEREOF.
- 4) THE WORD "SURVEY" OR "CERTIFICATION" AS USED HEREIN IS AN EXPRESSION OF A PROFESSIONAL OPINION BY THE SURVEYOR BASED UPON HIS BEST KNOWLEDGE, INFORMATION, AND BELIEF. AS SUCH, IT DOES NOT CONSTITUTE A GUARANTEE OR WARRANTY, EXPRESSED OR IMPLIED, OR LEGAL OPINION.
- 5) SEE SHEET 3 OF 3 FOR LEGAL DESCRIPTION.

NOTES CORRESPONDING TO SCHEDULE B

- 1) Right of Way granted to the Consumers Power Company recorded in Liber 509, Page 543, Livingston County Records, as to Parcel 1, this is shown hereon.
- 2) Terms and conditions of Drainage Agreement recorded in Liber 1124, Page 572, Livingston County Records, as to Parcel 1, this is not shown hereon.
- 3) Rights of others over that portion of subject property known as Lene Tree Road, which is used as an easement to other roads, as to Parcel 1, this lies outside of the mapping area and is not shown hereon.
- 4) Temporary Wastewater Treatment System and Access Easement in favor of Forestbrook Hills Condominium Association recorded in Liber 2625, Page 242, Livingston County Records, this lies outside of the mapping area and is not shown hereon.
- 5) Permanent Drainage and Access Easement in favor of Forestbrook Hills Condominium Association recorded in Liber 2625, Page 245, Livingston County Records, this lies outside of the mapping area and is not shown hereon.
- 6) Rights of the United States, State of Michigan and the public for commerce, navigation, recreation and fisheries in any portion of the land comprising the bed of the Canal and Silver Lake, or land created by fill or artificial accretion, as to Parcel 3 this is located in nature and is not shown hereon.
- 7) The nature, extent or lack of riparian rights or the riparian rights of riparian owners and the public in and to the use of the waters of the Canal and Silver Lake, as to Parcel 3, this is located in nature and is not shown hereon.
- 8) Oil, gas, mineral, and aboriginal antiquities reserved by the State of Michigan, and terms, covenants and provisions contained in Deed recorded in Liber 1314, Page 716, Livingston County Records, as to Parcel 3, this lies outside of the mapping area and is not shown hereon.
- 9) Terms, conditions and restrictions contained in Deed recorded in Liber 2637, Page 738, Livingston County Records, this is not shown hereon.
- 10) Declaration of Easements recorded in Instrument No. 2011 R-026098, Livingston County Records, this is shown hereon. (The description describes the easement centerline, but the easement width is not clearly defined. An estimated width of 100' lying on each side of the described centerline is shown based on the diagram on page 6 of 7 of the provided documents.)

BENCHMARKS

- ELEVATIONS ARE DERIVED FROM GPS OBSERVATIONS REFERENCING GED018 TO DETERMINE ELEVATIONS IN THE NAD83 VERTICAL DATUM.
- BENCHMARK NO 2
"MCM" NAIL IN THE WEST SIDE OF A UTILITY POLE.
NORTHING: 412547.5
EASTING: 13302311.4
ELEVATION: 972.59 (NAD83 DATUM).
- BENCHMARK NO 3
BENCH TIC IN THE EAST SIDE OF A UTILITY POLE.
NORTHING: 412599.6
EASTING: 1330274.2
ELEVATION: 983.26 (NAD83 DATUM).

LEGEND

- | | | |
|-----------------------|-------------------------------|-----------------------|
| Power Pole | Flag Pole | Storm Manhole |
| Power Pole w/Light | Sign (As Noted) | Storm Catchment |
| Light Pole | Well Head | Deciduous Tree |
| Telephone Pole | Satellite Dish | Coniferous Tree |
| Guy Wire | Tower | Sanitary Manhole |
| Transformer | Water Valve | Sanitary Clean Out |
| Electric Manhole | Fire Hydrant | Gas Valve |
| Telephone Manhole | Water Manhole | Gas Manhole |
| Telephone Pedestal | Water Meter Pit | Gas Meter |
| Electric Meter | Water Meter | Gas Marker |
| Cable Box | Industria Handicapped Parking | Section Corner |
| Air Conditioning Unit | Parking Count | Gas 8" Bar & Cap |
| Easement Identifier | | Found Corner Monument |
| Distance not to scale | | Monitoring Well |

ABBREVIATIONS

- | | | |
|----------------|-----------------------|---------------------------------------|
| R = RECORDED | T-N = TOWN - NORTH | AVE. = AVENUE |
| M = MEASURED | R-E = RANGE - EAST | BLVD. = BOULEVARD |
| C = CALCULATED | SQ. FT. = SQUARE FEET | CT. = COURT |
| N = NORTH | NE = NORTHEAST | RD. = ROAD |
| E = EAST | SE = SOUTHEAST | ST. = STREET |
| S = SOUTH | SW = SOUTHWEST | PIB = PARCEL AND OWNER IDENTIFICATION |
| W = WEST | NW = NORTHWEST | |

BEARING BASIS

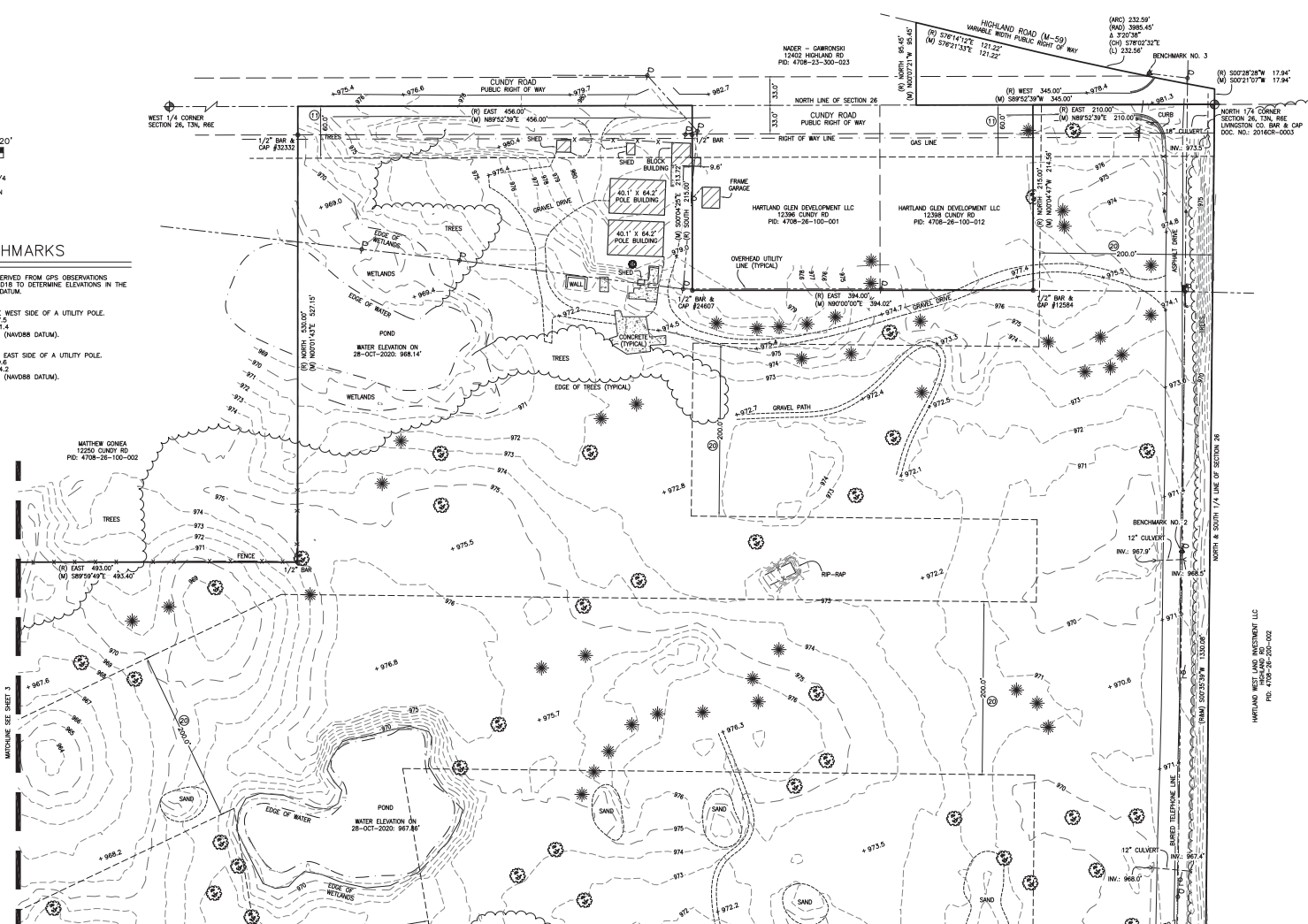
BEARINGS ARE BASED ON THE NORTH & SOUTH 1/4 LINE OF SECTION 26 RECORDED AS BEARING SOUTH 02°30'30" WEST.

FLOOD NOTE

BY GRAPHIC PLOTTING ONLY, THIS PARCEL IS LOCATED IN ZONE X OF THE FLOOD INSURANCE RATE MAP NUMBER 2609002200E WHICH BEARS AN EFFECTIVE DATE OF 08-17-2008 AND IS NOT IN A SPECIAL FLOOD HAZARD AREA. AN ELEVATION CERTIFICATE MAY BE REQUIRED TO VERIFY THIS DETERMINATION OR APPLY FOR A VARIANCE FROM THE FEDERAL EMERGENCY MANAGEMENT AGENCY.

UNDERGROUND UTILITY NOTE

THE UNDERGROUND UTILITIES SHOWN WERE LOCATED FROM FIELD OBSERVATIONS AND/OR EXISTING DRAWINGS AS PROVIDED BY THE FACILITY OWNER. THE UNDERGROUND UTILITIES SHOWN MAY NOT COMPRISE ALL SUCH UTILITIES ON OR NEAR THE SURVEYED PARCEL, EITHER IN SERVICE OR ABANDONED. THE LOCATION OF BURIED UTILITIES ARE SHOWN TO INDICATE THAT A UTILITY EXISTS, BUT MAY REQUIRE SUB-SURFACE INVESTIGATION TO DETERMINE THE EXACT LOCATION.



TOPOGRAPHIC MAPPING

PREPARED BY:

GEODETIC DESIGNS, INC.
2300 N. GRAND RIVER AVE.
LANSING, MI 48906
PHONE: (517) 908-0008
FAX: (517) 908-0039
WWW.GEODETICDESIGNS.COM

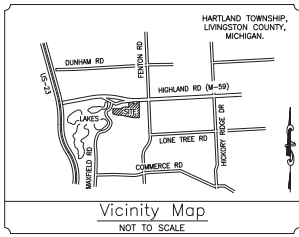
MARK	DATE	REVISION	BY	REVIEWER

Bergmann & Associates

12400 Highland Road
Hartland Township, MI

SCALE: 1" = 60'
DATE: October 30, 2020
DRAWN BY: JUC
CHECKED BY: DJV

SHEET 1 OF 3
JOB NUMBER: S161-2020



GENERAL NOTES

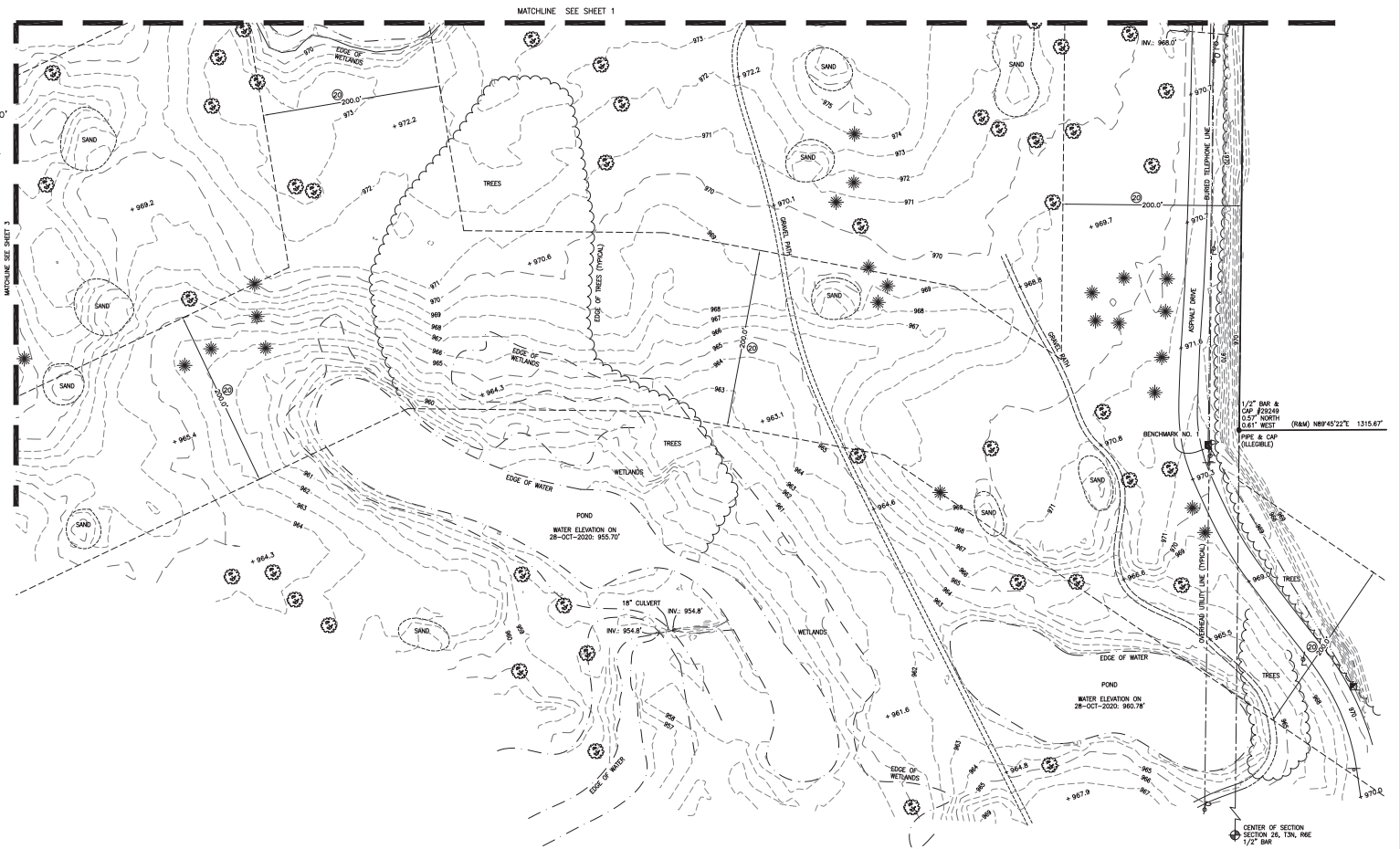
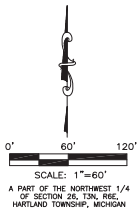
- 1) THIS DOCUMENT IS A TOPOGRAPHIC SURVEY ONLY AND MUST NOT BE USED TO CONVEY TITLE OR DETERMINE TITLE LINES. THIS DRAWING IS NOT A CERTIFIED SURVEY BUT IS COMPILED FROM EXISTING FIELD SURVEY DATA. THE DRAWING DOES NOT COMPLY WITH MCL 54.211-54.213.
- 2) UTILITY LINES SHOWN WERE BASED ON PLANS PROVIDED UNDER A MISS DIG DEMARC TICKET NO. A0308072.
- 3) DIMENSIONS SHOWN ARE IN INTERNATIONAL FEET AND DECIMALS THEREOF.
- 4) THE WORDS "SURVEY" OR "CERTIFICATION" AS USED HEREIN IS AN EXPRESSION OF A PROFESSIONAL OPINION BY THE SURVEYOR BASED UPON HIS BEST KNOWLEDGE, INFORMATION, AND BELIEF AS SUCH, IT DOES NOT CONSTITUTE A GUARANTEE OR WARRANTY, EXPRESSED OR IMPLIED, OR LEGAL OPINION.
- 5) SEE SHEET 3 OF 3 FOR LEGAL DESCRIPTION.

BENCHMARKS

ELEVATIONS ARE DERIVED FROM GPS OBSERVATIONS REFERENCING GEOID18 TO DETERMINE ELEVATIONS IN THE NAVD83 VERTICAL DATUM.
 BENCHMARK NO. 1
 "MAG" NAIL IN THE WEST SIDE OF A UTILITY POLE.
 NORTHING: 412174.6
 EASTING: 1330030.1
 ELEVATION: 971.69 (NAVD83 DATUM).

CONTROL POINTS

CONTROL POINT NO. 86753
 "MAG" NAIL IN ASPHALT PARKING LOT
 NORTHING: 412330.15
 EASTING: 1330078.78
 ELEVATION: 972.71 (NAVD83 DATUM).



LEGEND

- | | | |
|-------------------------|---------------------------------|-------------------------|
| ⊕ Power Pole | ⊕ Flag Pole | ⊕ Storm Manhole |
| ⊕ Power Pole w/Light | ⊕ Sign (As Noted) | ⊕ Storm Catch Basin |
| ⊕ Light Pole | ⊕ Well Head | ⊕ Deciduous Tree |
| ⊕ Telephone Pole | ⊕ Satellite Dish | ⊕ Coniferous Tree |
| → Guy Wire | ⊕ Tower | ⊕ Sanitary Manhole |
| ⊕ Transformer | ⊕ Water Valve | ⊕ Sanitary Clean Out |
| ⊕ Electric Manhole | ⊕ Fire Hydrant | ⊕ Gas Valve |
| ⊕ Telephone Manhole | ⊕ Water Manhole | ⊕ Gas Manhole |
| ⊕ Telephone Pedestal | ⊕ Water Meter Pit | ⊕ Gas Meter |
| ⊕ Electric Meter | ⊕ Water Meter | ⊕ Gas Marker |
| ⊕ Cable Box | ⊕ Indicates Handicapped Parking | ⊕ Section Corner |
| ⊕ Air Conditioner Unit | ⊕ Parking Count | ⊕ Set 5/8" Bar & Cap |
| ⊕ Easement Identifier | | ⊕ Found Corner Monument |
| ⊕ Distance not to scale | | ⊕ Monitoring Well |

ABBREVIATIONS

- | | | |
|----------------|-----------------------|---------------------------------------|
| R = RECORDED | T-N = TOWN - NORTH | AVE. = AVENUE |
| M = MEASURED | R-E = RANGE - EAST | BLVD. = BOULEVARD |
| C = CALCULATED | SQ. FT. = SQUARE FEET | CT. = COURT |
| N = NORTH | NE = NORTHEAST | RD. = ROAD |
| E = EAST | SE = SOUTHEAST | ST. = STREET |
| S = SOUTH | SW = SOUTHWEST | PIB = PARCEL AND OWNER IDENTIFICATION |
| W = WEST | NW = NORTHWEST | |

BEARING BASIS

BEARINGS ARE BASED ON THE NORTH & SOUTH 1/4 LINE OF SECTION 26 RECORDED AS BEARING SOUTH 02°30'30" WEST.

FLOOD NOTE

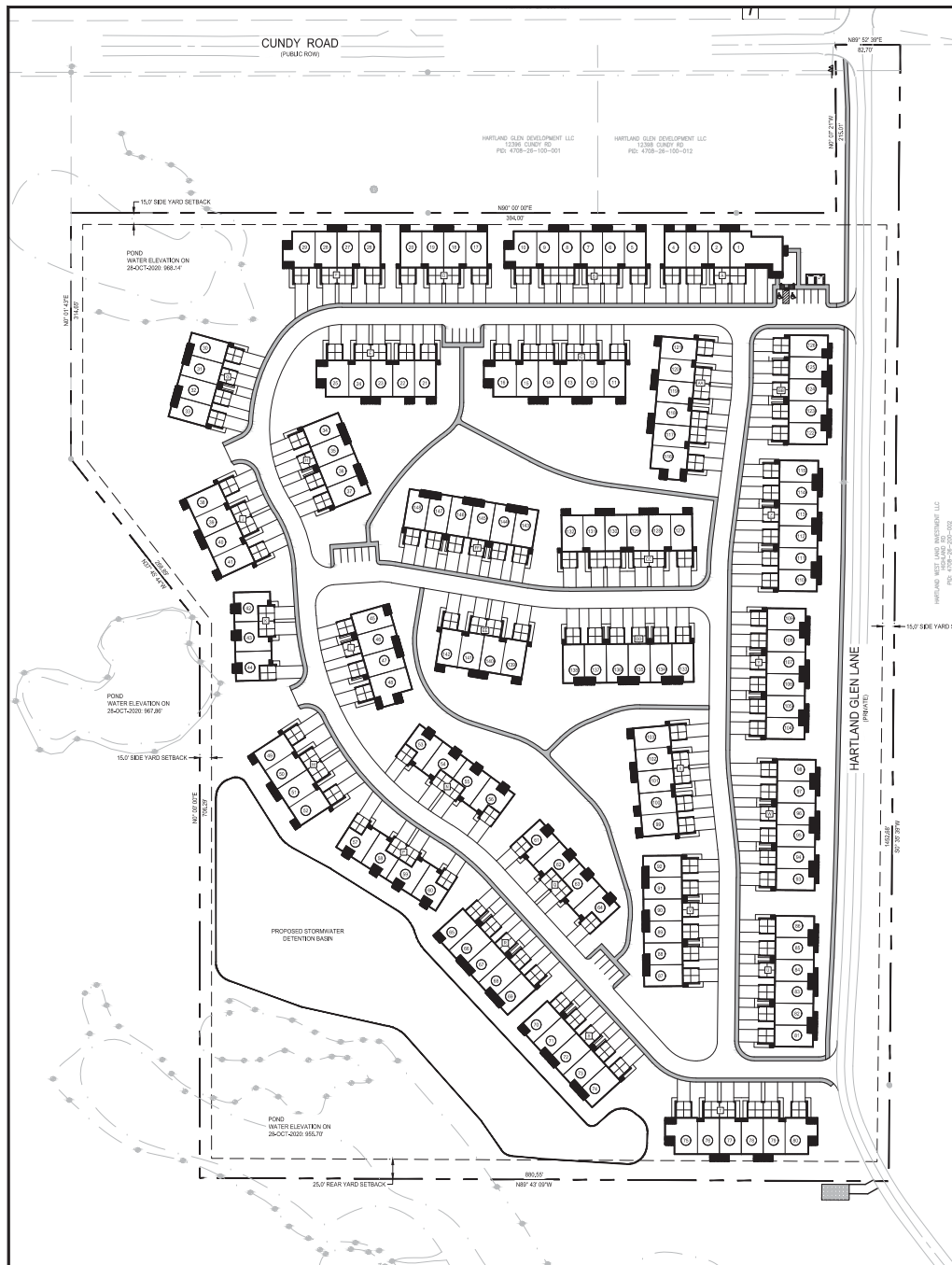
BY GRAPHIC PLOTTING ONLY, THIS PARCEL IS LOCATED IN ZONE X OF THE FLOOD INSURANCE RATE MAP NUMBER 260302023006 WHICH BEARS AN EFFECTIVE DATE OF 08-17-2008 AND IS NOT IN A SPECIAL FLOOD HAZARD AREA.
 AN ELEVATION CERTIFICATE MAY BE REQUIRED TO VERIFY THIS DETERMINATION OR APPLY FOR A VARIANCE FROM THE FEDERAL EMERGENCY MANAGEMENT AGENCY.

UNDERGROUND UTILITY NOTE

THE UNDERGROUND UTILITIES SHOWN HAVE BEEN LOCATED FROM FIELD OBSERVATIONS AND/OR EXISTING DRAWINGS AS PROVIDED BY THE FACILITY OWNER. THE UNDERGROUND UTILITIES SHOWN MAY NOT COMPRISE ALL SUCH UTILITIES ON OR NEAR THE SURVEYED PARCEL, EITHER IN SERVICE OR ABANDONED. THE LOCATION OF BURIED UTILITIES ARE SHOWN TO INDICATE THAT A UTILITY EXISTS, BUT MAY REQUIRE SUB-SURFACE INVESTIGATION TO DETERMINE THE EXACT LOCATION.

TOPOGRAPHIC MAPPING

PREPARED BY:		DATE		REVISION		BY		REVIEWER	
		Bergmann & Associates 12400 Highland Road Hartland Township, MI		SCALE: 1" = 60'		DATE: October 30, 2020		SHEET 2 OF 3	
				DRAWN BY: JUC		CHECKED BY: DJV		JOB NUMBER: S161-2020	



SITE DATA:

ADDRESS: 0000-B0470
OWNER: SITE - CA CONSERVATION AGRICULTURAL NORTH - CA CONSERVATION AGRICULTURAL EAST - CA CONSERVATION AGRICULTURAL WEST - CA CONSERVATION AGRICULTURAL SOUTH - CA CONSERVATION AGRICULTURAL
LOT AREA: 27.13 ACRES
BUILDING COVERAGE: 30% ALLOWED 21.0% PROPOSED
BUILDING SEPARATION: FRONT TO FRONT: 15' REAR TO REAR: 25' SIDE TO SIDE: 15' SIDE TO REAR: 15'
SETBACKS: FRONT: 30' BUILDING REAR: 30' BUILDING SIDE: 15' BUILDING
UNIT BREAKDOWN: 18 - FORESTWOOD (20%) 10 - MEADOWWOOD (17%) 7 - CAPERWOOD (25%) 10 - HILKWOOD (17%) 10 - BRIDGEWOOD (27%) 10 - HAZELWOOD (20%) 148 TOTAL UNITS - 545 UNITS PER ACRE

GENERAL NOTES:

1. THE UNDERGROUND STRUCTURES AND UTILITIES SHOWN ON THESE PLANS HAVE BEEN PLOTTED FROM AVAILABLE SURVEYS AND RECORD MAPS. THEY ARE NOT GUARANTEED TO THE ACCURACY OF THEIR LOCATION AND/OR COMPLETENESS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY THE LOCATION AND EXTENT OF ALL UNDERGROUND STRUCTURES AND UTILITIES PRIOR TO ANY DRIVING OR CONSTRUCTION ACTIVITIES IN THEIR VICINITY.
2. THE CONTRACTOR SHALL PERFORM ALL WORK IN COMPLIANCE WITH TITLE 29 OF FEDERAL REGULATIONS, PART 192, SAFETY AND HEALTH REGULATIONS FOR CONSTRUCTION (OSHA).
3. ALL RESIDE AND PRIVATE DRIVES SHALL BE KEPT CLEAR OF MUD, DEBRIS ETC. AT ALL TIMES.
4. REFER TO ARCHITECTURAL DRAWINGS FOR PRECISE BUILDING DIMENSIONS.
5. THE CONTRACTOR SHALL CONSULT THE CONSTRUCTION MANAGER BEFORE DEVIATING FROM THESE PLANS.
6. IN ALL TRENCH EXCAVATIONS, CONTRACTOR MUST LAY THE TRENCH SIDE SLOPES BACK TO A SAFE SLOPE. USE A TRENCH SHIELD OR PROVIDE SHEETING AND BRACING.
7. ALL EXISTING SURFACE APPURTENANCES (IE. WATER VALVES, CATCH BASIN FRAMES AND GRATES, MANHOLE COVERS) WITHIN THE PROJECT LIMITS SHALL BE ADJUSTED TO FINISHED GRADE.
8. AREAS DETURBED OR DAMAGED AS PART OF THE PROJECT'S CONSTRUCTION THAT ARE OUTSIDE OF THE PRIMARY WORK AREA SHALL BE RESTORED, AT THE CONTRACTOR'S EXPENSE, TO THE SATISFACTION OF THE OWNER'S REPRESENTATIVE.
9. THE CONTRACTOR SHALL CALL "NEED OUT" AT LEAST WORKING DAYS (EXCLUDING WEEKENDS AND HOLIDAYS) PRIOR TO CONSTRUCTION.
10. ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE APPLICABLE CODES, ORDINANCES, DESIGN STANDARDS AND STANDARD SPECIFICATIONS OF THE AGENCIES WHICH HAVE THE RESPONSIBILITY OF REVIEWING PLANS AND SPECIFICATIONS FOR CONSTRUCTION OF ALL ITEMS INCLUDED IN THESE PLANS.
11. UNLESS SPECIFICALLY STATED, THE CONTRACTOR SHALL APPLY FOR AND OBTAIN ALL NECESSARY PERMITS AS REQUIRED FOR CONSTRUCTION OF THIS PROJECT PRIOR TO THE BEGINNING OF WORK FROM THE PROJECT'S METHOEN-ADVISOR(S).
12. THE CONTRACTOR WILL BE REQUIRED TO ASSUME SOLE RESPONSIBILITY FOR JOB SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION OF THE PROJECT, INCLUDING THE SAFETY OF ALL PERSONS AND PROPERTY. THIS REQUIREMENT SHALL BE MADE TO APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS.
13. WHEN ANY EXISTING UTILITY REQUIRES ADJUSTMENT OR RELOCATION, THE CONTRACTOR SHALL NOTIFY THE PROPER UTILITY COMPANY AND COORDINATE THE WORK ACCORDINGLY. THERE SHALL BE NO CLAIM MADE BY THE CONTRACTOR FOR ANY COSTS CAUSED BY DELAYS IN CONSTRUCTION DUE TO THE ADJUSTMENT OR RELOCATION OF UTILITIES.
14. THE CONTRACTOR TO VERIFY THAT THE PLANS AND SPECIFICATIONS THAT THESE BUILDING FROM ARE THE VERY LATEST PLANS AND SPECIFICATIONS THAT HAVE BEEN APPROVED BY ALL APPLICABLE PERMITS-ISSUING AGENCIES AND THE OWNER. ALL ITEMS CONSTRUCTED BY THE CONTRACTOR PRIOR TO RECEIVING THE FINAL APPROVAL AND PERMITS HAVING TO BE ADJUSTED OR RE-DO, SHALL BE DONE AT THE CONTRACTOR'S EXPENSE.
15. SHOULD THE CONTRACTOR ENCOUNTER CONFLICT BETWEEN THESE PLANS AND SPECIFICATIONS, EITHER AMONG THEMSELVES OR WITH THE REQUIREMENTS OF ANY AND ALL RELEVANT AND PERMITS-ISSUING AGENCIES, THESE SHALL SEEK CLARIFICATION IN WRITING FROM THE CONTRACTOR MANAGER BEFORE COMMENCEMENT OF CONSTRUCTION, FAILURE TO DO SO SHALL BE AT THE SOLE EXPENSE TO THE CONTRACTOR.
16. THE CONTRACTOR SHALL FURNISH AS-BUILT DRAWINGS INDICATING ALL CHANGES AND DEVIATIONS FROM APPROVED DRAWINGS.
17. ALL RESIDE AND TRAFFIC CONTROL DEVICES DURING CONSTRUCTION AND MAINTENANCE ACTIVITIES SHALL BE CONSTRUCTED AND INSTALLED PER THE LATEST EDITION OF THE MD-DEAN MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (M.U.T.C.D.).
18. ALL WORK WITHIN THE PUBLIC RIGHT OF WAY SHALL CONFORM TO THE STANDARDS OF THE MICHIGAN DEPARTMENT OF TRANSPORTATION OR THE AUTHORITY HAVING JURISDICTION.

SITE LEGEND:

- PROPERTY SETBACK LINE
- PROPERTY LINE
- (A) KEY NOTE
- (1) UNIT NUMBER
- (B) BUILDING IDENTIFICATION

REDWOOD HARTLAND TOWNSHIP
 HIGHLAND ROAD (M-59)
 HARTLAND, MI 48333



7007 E. PLEASANT VALLEY RD
 INDEPENDENCE, OH 44131



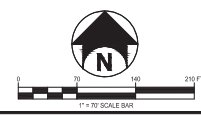
Bergmann Associates, Architects, Engineers,
 Landscape Architects & Surveyors, D.P.C.
 7350 West Saginaw Hwy.,
 Suite 200
 Lansing, MI 48917
 office: 517.272.8835
 fax: 517.272.8836
 www.bergmannpc.com

DATE	DESCRIPTION
01/10/21	ISSUE FOR PRELIMINARY PLAN REVIEW

Not For Construction
 Copyright © Bergmann Associates, Architects, Engineers,
 Landscape Architects & Surveyors, D.P.C.

Prepared By:	Checked:
J. GRAHAM, PE	J. GRAHAM, PE
J. GRAHAM, PE	J. JARSENIAULT
DATE:	DATE:
JANUARY 14, 2021	1/14/2021

PRELIMINARY SITE PLAN



REDWOOD HARTLAND TOWNSHIP

HIGHLAND ROAD (M-59)
HARTLAND, MI 48333



7007 E. PLEASANT VALLEY RD
INDEPENDENCE, OH 44131



Bergmann Associates, Architects, Engineers,
Landscape Architects & Surveyors, D.P.C.
7350 West Sagway Way,
Suite 200
Lansing, MI 48917
office: 517.272.8835
fax: 517.272.8836
www.bergmannpc.com

DATE	DESCRIPTION
5/14/2021	ISSUE FOR PRELIMINARY PLAN REVIEW



HARTLAND WEST LAND INVESTMENT LLC
HIGHLAND RD

- KEY NOTES:**
- STANDARD PRIVATE CONCRETE PAVING SECTION (MINI-STRIP) COLORED CONCRETE SIDEWALK (TYP.) SEE DETAIL ON SHEET C700
 - STANDARD CONCRETE DRIVEWAY, 18" X 20" UNLESS OTHERWISE NOTED.
 - NOT USED.
 - AT GRADE, NONSTRUCTURAL PATIO/PORCH (TYP.) REFER TO ARCH. PLANS.
 - STANDARD PARKING SPACES (9' X 18')
 - MAN. MS30K
 - ADA STRIPING AND SIGNAGE (TYP.)
 - LEADING OFFICE / MAINTENANCE BUILDING
 - NOT USED.

- SITE LEGEND:**
- PROPERTY SETBACK LINE
 - PROPERTY LINE
 - Ⓐ KEY NOTE
 - ① UNIT NUMBER
 - Ⓒ BUILDING IDENTIFICATION



Not For Construction

Copyright © Bergmann Associates, Architects, Engineers,
Landscape Architects & Surveyors, D.P.C.

Prepared By:	Checked:
J. GRAHAM, PE	J. GRAHAM, PE
Drawn By:	Reviewed:
J. GRAHAM, PE	J. JARSENEN, AIA
Date:	Scale:
JANUARY 14, 2021	1/4" = 1' AS SHOWN

NORTH PRELIMINARY SITE PLAN

C201

REDWOOD HARTLAND TOWNSHIP

HIGHLAND ROAD (M-59)
HARTLAND, MI 48353



7007 E. PLEASANT VALLEY RD
INDEPENDENCE, OH 44131



Bergmann Associates, Architects, Engineers,
Landscape Architects & Surveyors, D.P.C.
7350 West Sagamore Hwy.
Suite 200
Lansing, MI 48917
office: 517.272.8835
fax: 517.272.8836
www.bergmannpc.com

DATE	DESCRIPTION
5/14/2021	ISSUE FOR PRELIMINARY PLAN REVIEW



POND
WATER ELEVATION ON
28-OCT-2020: 955.70'

35.0' REAR YARD SETBACK

KEY NOTES:

- A. STANDARD PRIVATE CONCRETE PAVING SECTION WITH INTEGRAL COLORED CONCRETE SIDEWALK (TYP.) SEE DETAIL ON SHEET C201
- B. STANDARD CONCRETE DRIVEWAY, 16" X 25' UNLESS OTHERWISE NOTED.
- C. STORMWATER MANAGEMENT FACILITY
- D. AT GRADE, NONSTRUCTURAL PATIOPORCH (TYP.) REFER TO ARCH PLANS.
- E. STANDARD PARKING SPACES (9' X 18')
- F. NOT USED.
- G. NOT USED.
- H. NOT USED.
- I. LIFT STATION

SITE LEGEND:



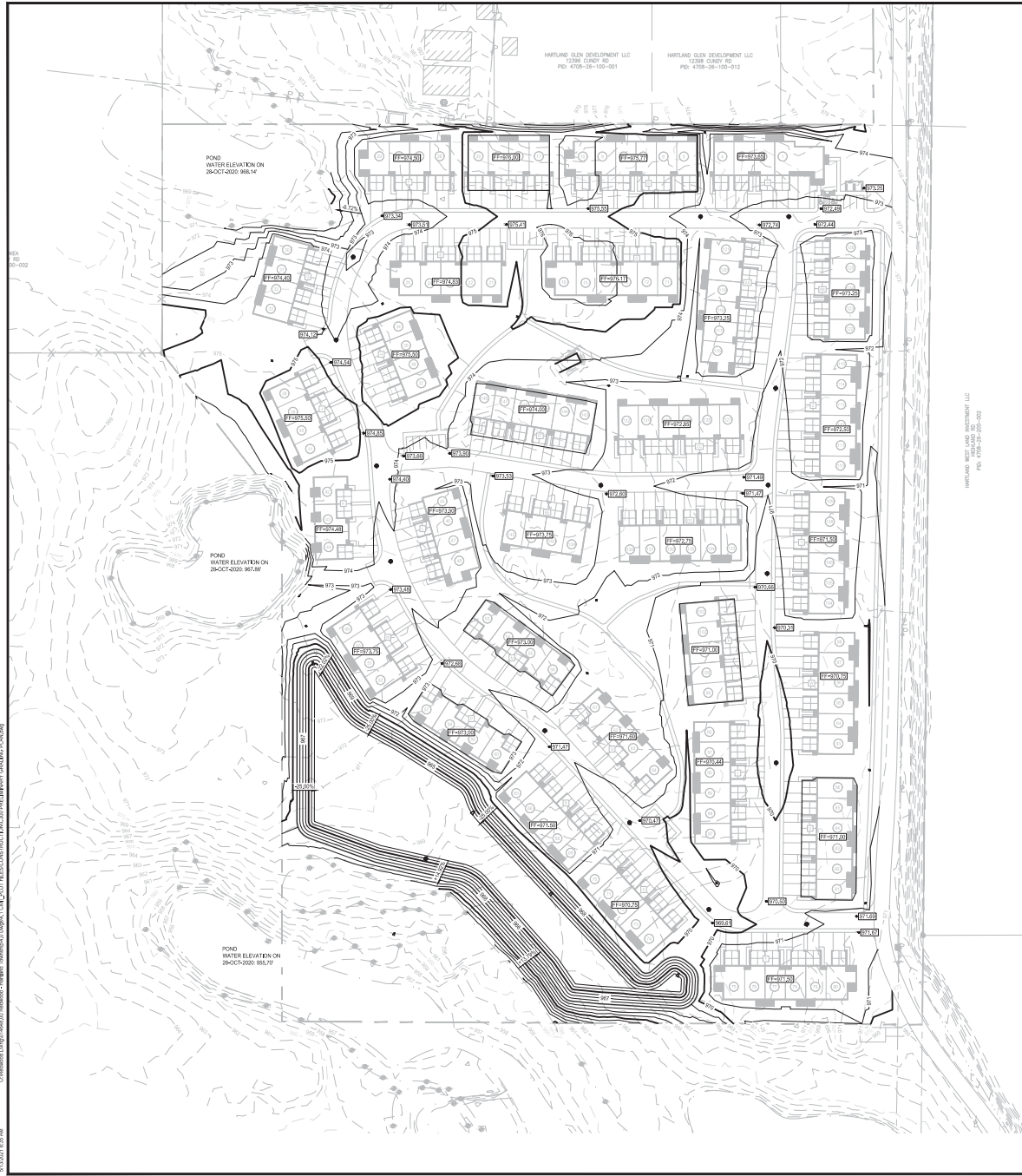
Not For Construction

Copyright © Bergmann Associates, Architects, Engineers,
Landscape Architects & Surveyors, D.P.C.

Prepared By	Checked By
I. GRAHAM, PE	E. GRAHAM, PE
I. GRAHAM, PE	J. JENSEN, PE
Issue Date	Issue Number
JANUARY 14, 2021	14548.00

**SOUTH PRELIMINARY SITE
PLAN**

C202



GRADING NOTES

1. REFER TO EROSION AND SEDIMENT CONTROL PLAN FOR REQUIRED EROSION AND SEDIMENT CONTROL MEASURES.
2. CONTRACTOR SHALL BE RESPONSIBLE FOR THE MAINTENANCE AND REMOVAL OF TEMPORARY EROSION CONTROL MEASURES. EROSION CONTROL MEASURES SHALL NOT BE REMOVED BEFORE VEGETATION HAS OCCURRED COMPLETELY.
3. ALL SILT FENCE TO BE REPLACED WHENEVER THEY BECOME CLOGGED OR IMPERFORABLE AND SHALL BE REPLACED AT A MINIMUM OF EVERY 3 MONTHS.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR RESTORATION OF TORPSE TO ALL DISTURBED AREAS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO MAINTAIN EROSION CONTROL MEASURES AT ALL TIMES.
5. SILT FENCE, SLOPE MATS AND/OR EROSION CONTROL BLANKETS SHALL BE USED ON STEEP SLOPES AND WHEREVER NECESSARY TO CONTROL EROSION AND BE TAKEN OFF BEFORE DRAINAGE SYSTEMS AS ORDERED BY THE ENGINEER OR SPECIFIED ON PLANS.
6. THE CONTRACTOR SHALL DESIGNATE A MEMBER OF HIS/HER FIRM TO BE RESPONSIBLE TO MONITOR EROSION CONTROL, EROSION CONTROL STRUCTURES, TREE PROTECTION AND PRESERVATION THROUGHOUT CONSTRUCTION.
7. ALL DISTURBED AREAS SHALL BE PROTECTED FROM EROSION EITHER BY MULCH OR TEMPORARY SEEDING WITHIN 2 WEEKS OF DISTURBANCE.
8. ALL SITE GRADING MUST BE PERFORMED TO INSURE POSITIVE DRAINAGE ACROSS THE ENTIRE SITE THROUGHOUT THE PERIOD OF CONSTRUCTION AND AFTER PROJECT COMPLETION.
9. ALL SEDIMENTATION AND SOIL EROSION CONTROL MEASURES SHALL BE CONSTRUCTED PRIOR TO THE COMMENCEMENT OF SITE GRADING AND MUST CONFORM TO PART 91 OF ACT 45 OF THE PUBLIC ACTS OF 1904 AS AMENDED. ALL APPLICABLE PERMITS SHALL BE OBTAINED BEFORE IMPLEMENTING THESE MEASURES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING THE SEDIMENTATION AND SOIL EROSION CONTROL MEASURES THROUGHOUT CONSTRUCTION.
10. IN GENERAL, EARTHWORK AND PAVEMENT CONSTRUCTION SHOULD BE PERFORMED IN ACCORDANCE WITH THE LATEST STANDARD SPECIFICATIONS FOR CONSTRUCTION UNLESS OTHERWISE NOTED.
11. REMOVE ANY EXISTING TORPSE, ORGANIC SOILS, UNSTABLE FILL, VEGETATION, TREES AND OTHER DESTRUCTIVE MATERIAL TO EXPOSE THE SUBGRADE SOIL. TREE ROOTS SHOULD BE COMPLETELY REMOVED.
12. EXCAVATE TO THE DEPTH OF THE FINAL SUBGRADE ELEVATION TO ALLOW FOR GRADE CHANGES AND THE FINISHING OF THE RECOMMENDED PAVEMENT SYSTEM.
13. ON SITE FILL MATERIAL CAN BE USED IF THE SPECIFIED COMPACTION REQUIREMENTS CAN BE ACHIEVED. IF ON SITE MATERIAL IS USED IT SHOULD BE CLEAN AND FREE OF FROZEN SOIL, ORGANICS, OR OTHER DESTRUCTIVE MATERIALS.
14. THE FINAL SUBGRADE SHOULD BE THOROUGHLY PROFILESSED USING A LOADED TANDEM AXLE TRUCK UNDER THE OBSERVATION OF GEOTECHNICAL PAVEMENT ENGINEER. LOSSES OR TAILING AREAS THAT CANNOT BE MECHANICALLY ESTABLISHED SHOULD BE REMOVED AND REPLACED WITH ENGINEERED FILL OR AS DIRECTED BY FIELD CONDITIONS.
15. THE AGGREGATE BASE SHOULD BE COMPACTED TO ACHIEVE A MINIMUM OF 95 PERCENT OF THE MAXIMUM ACHIEVED PROCTOR DRY DENSITY. THE BASE AND SUBGRADE COMPACTION SHOULD EXCEED A MINIMUM OF 10 INCHES BEYOND THE PAVED EDGE OR BACK OF CURB.

GRADING LEGEND:

- 72 — PROPOSED MAJOR CONTOUR
- 70 — PROPOSED MINOR CONTOUR
- TC-78.61 PROPOSED TOP OF CURB / BOTTOM OF CURB ELEVATION
- BC-77.61 PROPOSED TOP OF WALL / BOTTOM OF WALL
- XW-88.00 PROPOSED TOP OF WALL / BOTTOM OF WALL
- X T1.33 PROPOSED SPOT ELEVATION
- X EG-77.23 EXISTING ELEVATION
- X HP-77.23 PROPOSED HIGH POINT ELEVATION
- X TG-77.23 PROPOSED TOP OF GRATE ELEVATION
- X FF-77.23 FINISHED FLOOR ELEVATION
- 2.25 PROPOSED SLOPE
- 72 - EXISTING CONTOUR
- — — — — EDGE LINE



**REDWOOD
HARTLAND
TOWNSHIP**

HIGHLAND ROAD (M-59)
HARTLAND, MI 48353



7007 E. PLEASANT VALLEY RD
INDEPENDENCE, OH 44131



Bergmann Associates, Architects, Engineers,
Landscape Architects & Surveyors, D.P.C.
7350 West Sagway Hwy.
Suite 200
Lansing, MI 48917
office: 517.272.8835
fax: 517.272.8830
www.bergmannpe.com

DATE	DESCRIPTION
5/14/2021	ISSUE FOR PRELIMINARY PLAN REVIEW

Not For Construction

Copyright © Bergmann Associates, Architects, Engineers,
Landscape Architects & Surveyors, D.P.C.

Prepared By	Checked
J. GRAHAM, PE	J. GRAHAM, PE
J. GRAHAM, PE	J. JARSEN, PE
DATE	DATE
JANUARY 14, 2021	1/14/2021

PRELIMINARY GRADING PLAN

C300

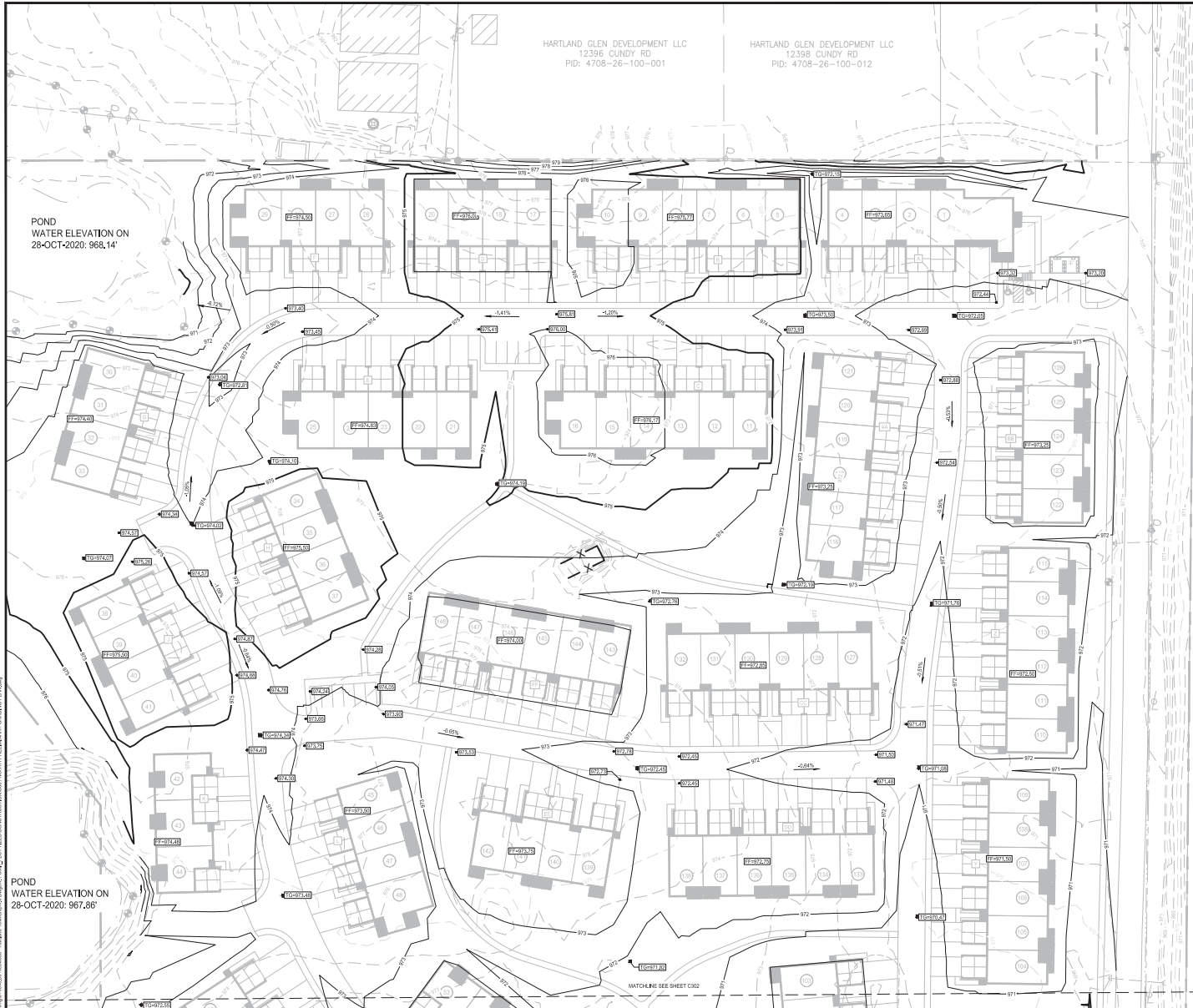
HARTLAND GLEN DEVELOPMENT LLC
12396 CUNDY RD
PID: 4708-26-100-001

HARTLAND GLEN DEVELOPMENT LLC
12398 CUNDY RD
PID: 4708-26-100-012

POND
WATER ELEVATION ON
28-OCT-2020: 966.14'

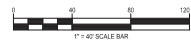
POND
WATER ELEVATION ON
28-OCT-2020: 967.86'

0:\Projects\12396-12398 Cundy Rd\12396-12398 Cundy Rd.dwg, 28-OCT-2020 10:45:10 AM, PLOT: 12396-12398 CUNDY RD



GRADING LEGEND:

- 72 — PROPOSED MAJOR CONTOUR
- 71 — PROPOSED MINOR CONTOUR
- TC-78.61 PROPOSED TOP OF CURB / BOTTOM OF CURB ELEVATION
- BC-77.61 PROPOSED TOP OF WALL / BOTTOM OF WALL
- ATW-76.50 PROPOSED TOP OF WALL / BOTTOM OF WALL
- X 71.33 PROPOSED SPOT ELEVATION
- X 68.77.23 EXISTING ELEVATION
- X 48.77.23 PROPOSED HIGH POINT ELEVATION
- X 76.77.23 PROPOSED TOP OF GRADE ELEVATION
- X 47.77.23 FINISHED FLOOR ELEVATION
- 2.2% PROPOSED SLOPE
- 7.2% EXISTING SLOPE
- - - - - EXISTING CONTOUR
- - - - - EDGE LINE



REDWOOD HARTLAND TOWNSHIP

HIGHLAND ROAD (M-59)
HARTLAND, MI 48353



7007 E. PLEASANT VALLEY RD
INDEPENDENCE, OH 44131



Bergmann Associates, Architects, Engineers,
Landscape Architects & Surveyors, D.P.C.
7350 West Sagway Way,
Suite 200
Lansing, MI 48917
office: 517.272.9835
fax: 517.272.9836
www.bergmannpc.com

DATE	DESCRIPTION
5/14/2021	ISSUE FOR PRELIMINARY PLAN REVIEW

Not For Construction

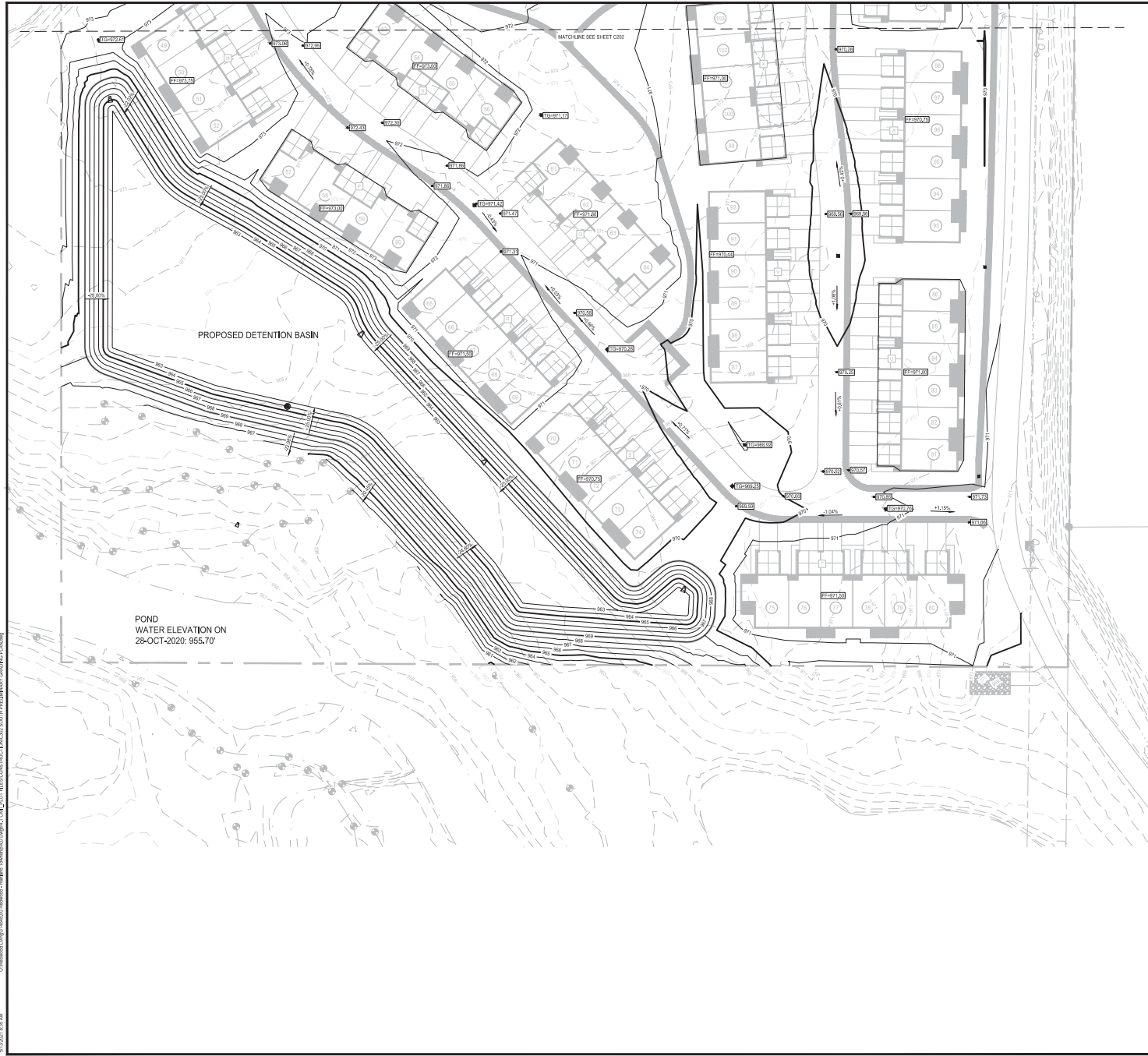
Copyright © Bergmann Associates, Architects, Engineers,
Landscape Architects & Surveyors, D.P.C.

Prepared By	Checked By
I. GRAHAM, PE	I. GRAHAM, PE
I. GRAHAM, PE	J. JARSENALL, PE
JANUARY 14, 2021	14648.00

NORTH PRELIMINARY GRADING PLAN

C301

© Bergmann Associates, Architects, Engineers, Landscape Architects & Surveyors, D.P.C. 2021. All Rights Reserved. C302 SOUTH PRELIMINARY GRADING PLAN



POND
WATER ELEVATION ON
28-OCT-2020: 955.70'

GRADING LEGEND:

— 2' —	PROPOSED MAJOR CONTOUR
— 1' —	PROPOSED MINOR CONTOUR
TC-78.61	PROPOSED TOP OF CURB / BOTTOM OF CURB ELEVATION
BC-77.61	PROPOSED TOP OF WALL / BOTTOM OF WALL
ATW-78.50	PROPOSED TOP OF WALL / BOTTOM OF WALL
X 77.33	EXISTING SPOT ELEVATION
X EG-77.23	EXISTING HIGH POINT ELEVATION
X HP-77.23	PROPOSED HIGH POINT ELEVATION
X TG-77.23	PROPOSED TOP OF GRATE ELEVATION
X FF-77.23	FINISHED FLOOR ELEVATION
2.0%	PROPOSED SLOPE
- - - 72 - - -	EXISTING CONTOUR
- - -	EDGE LINE



REDWOOD HARTLAND TOWNSHIP

HIGHLAND ROAD (M-59)
HARTLAND, MI 48353



7007 E. PLEASANT VALLEY RD
INDEPENDENCE, OH 44131



Bergmann Associates, Architects, Engineers,
Landscape Architects & Surveyors, D.P.C.
7350 West Sagamore Hwy.,
Suite 200
Lansing, MI 48917
office: 517.272.9835
fax: 517.272.9836
www.bergmannpc.com

DATE	DESCRIPTION
5/14/2021	ISSUE FOR PRELIMINARY PLAN REVIEW

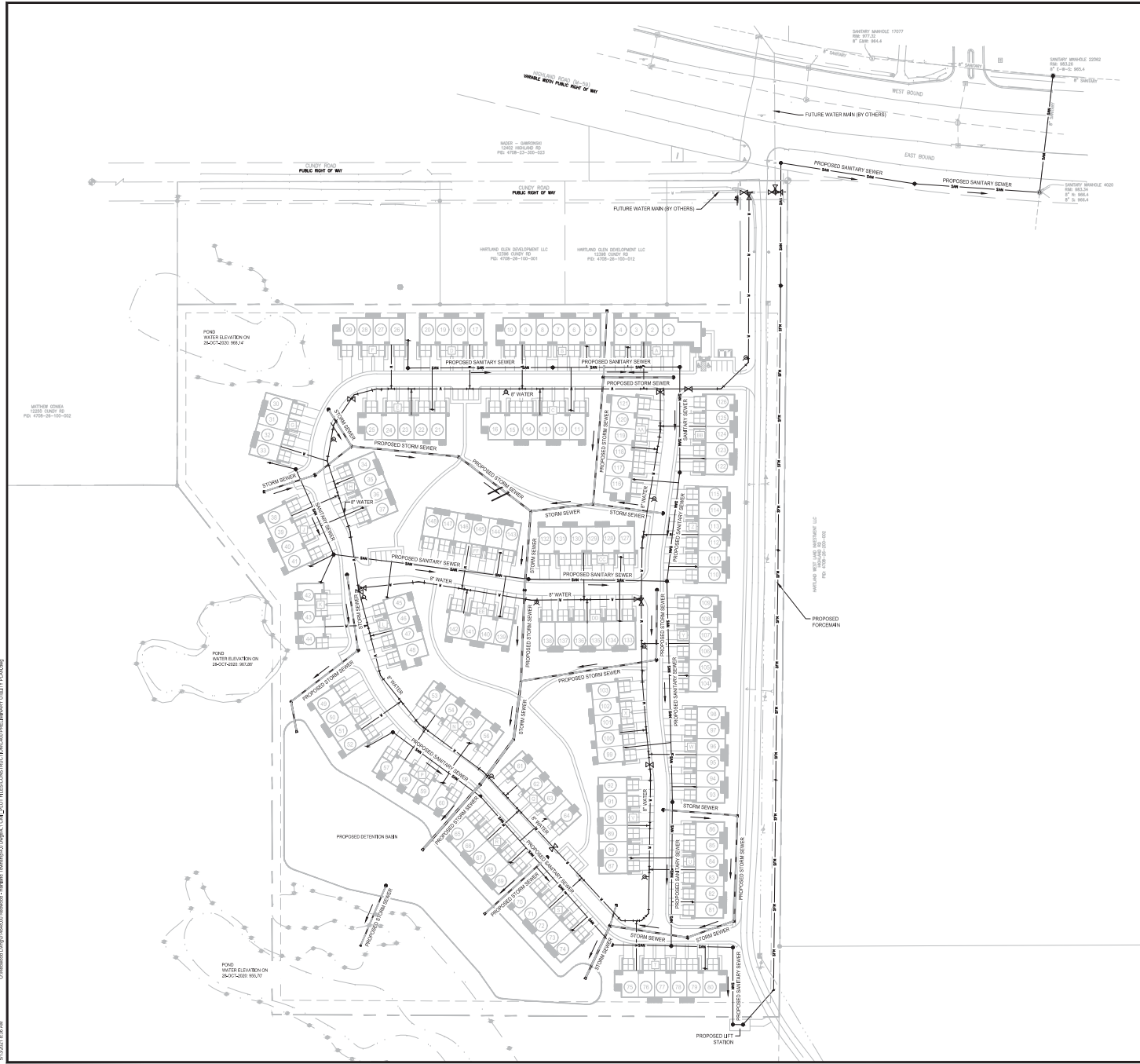
Not For Construction

Copyright © Bergmann Associates, Architects, Engineers,
Landscape Architects & Surveyors, D.P.C.

Prepared by: I GRAHAM PE	Checked by: I GRAHAM PE
Reviewed by: I GRAHAM PE	Reviewed by: J ARSENEAULT
Date: JANUARY 14, 2021	Date: 1/14/2021

SOUTH PRELIMINARY GRADING PLAN

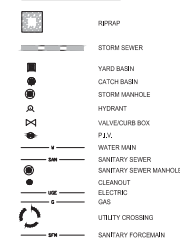
C302



UTILITY NOTES:

1. ALL WORKMANSHIP, MATERIALS, AND CONSTRUCTION PRACTICES SHALL CONFORM TO THE REQUIREMENTS OF HARTLAND TOWNSHIP OR THE AGENCY HAVING JURISDICTION OVER THE APPLICABLE UTILITY.
2. CONTRACTOR IS RESPONSIBLE FOR REPAIRS OF DAMAGE TO ANY EXISTING UTILITY DURING CONSTRUCTION AT NO COST TO THE OWNERS.
3. ALL FILL MATERIAL IS TO BE IN PLACE AND COMPACTED BEFORE INSTALLATION OF PROPOSED UTILITIES.
4. CONTRACTOR SHALL NOTIFY THE UTILITY COMPANIES 72 HOURS BEFORE CONNECTING TO ANY EXISTING LINE.
5. IN THE EVENT OF A VERTICAL CONFLICT BETWEEN WATER LINES, SANITARY LINES, STORM LINES AND GAS LINES EXISTING AND PROPOSED, THE CONTRACTOR SHALL NOTIFY THE ENGINEER AS SOON AS THE CONFLICT IS DISCOVERED.
6. TOPS OF EXISTING UTILITY STRUCTURES SHALL BE ADJUSTED TO FINISHED GRADE.
7. EXISTING UTILITIES SHALL BE VERIFIED IN FIELD PRIOR TO INSTALLATION OF ANY NEW LINES.
8. CONTRACTOR IS RESPONSIBLE FOR COMPLYING TO THE CONSTRUCTION REQUIREMENTS OF THE UTILITY COMPANIES.
9. THE CONTRACTOR IS SPECIALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF THE VARIOUS UTILITY COMPANIES, AND WHERE POSSIBLE, REQUIREMENTS JUDGED TO BE THE BEST. THESE UTILITIES MAY NOT BE RE-LOCATED AS BEING EXACT OR COMPLETE. THE CONTRACTOR MUST CALL THE APPROPRIATE UTILITY COMPANIES AT LEAST 72 HOURS BEFORE ANY EXCAVATION TO REQUEST EXACT FIELD LOCATION OF UTILITIES. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THE PLANS.
10. CONTRACTOR SHALL COORDINATE WITH ALL UTILITY COMPANIES FOR INSTALLATION REQUIREMENTS AND SPECIFICATIONS.
11. CONTRACTOR SHALL REFER TO ARCHITECTURAL PLANS AND SPECIFICATIONS FOR ACTUAL LIGHTING AND ELEVATIONS OF ALL UTILITY COMPANIES TO INCLUDE SANITARY SEWER, LATERAL, DOMESTIC, AND FIRE PROTECTION, WATER SERVICE, ELECTRICAL, TELEPHONE, AND GAS SERVICES. CONTRACTOR SHALL COORDINATE INSTALLATION OF UTILITIES IN SUCH A MANNER AS TO AVOID CONFLICTS AND ASSURE PROPER SEPTIC AND AS WELL AS, AS COORDINATING WITH UTILITY REQUIREMENTS AS TO LOCATION AND SCHEDULING FOR THE CONNECTIONS PRIOR TO CONNECTING TO EXISTING UTILITIES.
12. THE CONTRACTOR SHALL CONDUCT ALL REQUIRED TESTS TO THE SATISFACTION OF THE RESPECTIVE UTILITY COMPANIES AND THE OWNERS INSPECTING AUTHORITIES.
13. CONTRACTOR SHALL COMPLY TO THE FULLEST EXTENT WITH THE LATEST STANDARDS OR ORDINANCES OF ANY OTHER AGENCY HAVING JURISDICTION FOR EXCAVATION AND TRENCHING PROCEDURES. THE CONTRACTOR SHALL USE SUPPORT SYSTEMS, SHIELDING, BRACING, AND OTHER MEANS OF PROTECTION, THE TO INCLUDE BUT NOT LIMITED FOR ACCESS AND EGRESS FROM ALL EXCAVATION AND TRENCHING. CONTRACTOR IS RESPONSIBLE TO COMPLY WITH PERFORMANCE CRITERIA FOR OSHA.
14. CONTRACTOR SHALL FIELD VERIFY ALL EXISTING PIPE, SIZES AND INVERTS ELEVATIONS BEFORE CROSSING MANHOLE AND CATCH BASIN STRUCTURES.
15. ALL UTILITIES BELOW PAVED AREAS SHALL BE BACKFILLED WITH 100% GRANULAR MATERIAL (OR APPROVED OTHER) AND COMPACTED TO 95% OF ITS MAXIMUM DENSITY.
16. ALL RFI ELEVATIONS IN OUTLARK AREAS ARE APPROXIMATE ONLY AND SHALL BE ADJUSTED BY THE CONTRACTOR AFTER FINAL GRADES ARE ESTABLISHED.

UTILITY LEGEND:



REDWOOD HARTLAND TOWNSHIP
 HIGHLAND ROAD (M-59)
 HARTLAND, MI 48353



7007 E. PLEASANT VALLEY RD
 INDEPENDENCE, OH 44131



Bergmann Associates, Architects, Engineers,
 Landscape Architects & Surveyors, D.P.C.
 7350 West Sagway Way,
 Suite 200
 Lansing, MI 48917
 office: 517.272.8835
 fax: 517.272.8836
 www.bergmannpc.com

DATE	DESCRIPTION
5/14/2021	ISSUE FOR PRELIMINARY PLAN REVIEW

Not For Construction

Copyright © Bergmann Associates, Architects, Engineers,
 Landscape Architects & Surveyors, D.P.C.

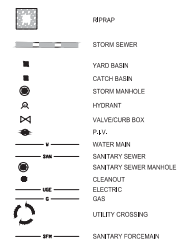
Prepared by:	Checked:
J. GRAHAM, PE	J. GRAHAM, PE
J. GRAHAM, PE	J. JARSENEN, LT
DATE:	DATE:
JANUARY 14, 2021	1/14/2021

PRELIMINARY UTILITY PLAN

C400



UTILITY LEGEND:



KEY NOTES:

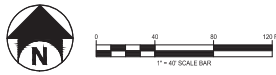
- A. MINIMUM 18" VERTICAL SEPARATION BETWEEN WATER MAIN AND SEWER.

SANITARY STRUCTURE TABLE

STRUCTURE NAME	STRUCTURE INFORMATION
H	RM = 871.48 INV IN = 965.00 N 8" INV IN = 965.20 N 8" INV OUT = 965.00 E 8"
I	RM = 872.26 INV IN = 965.20 N 8" INV OUT = 965.00 E 8"
J	RM = 873.01 INV IN = 965.00 N 8" INV IN = 965.20 E 8" INV IN = 965.00 E 8"
K	RM = 874.43 INV IN = 965.20 N 8" INV OUT = 965.00 E 8"
L	RM = 872.27 INV IN = 965.00 N 8" INV IN = 965.20 E 8"
M	RM = 872.70 INV IN = 965.00 N 8" INV OUT = 965.00 E 8"
N	RM = 874.36 INV IN = 965.20 N 8" INV OUT = 965.00 E 8"
O	RM = 873.25 INV IN = 965.20 N 8" INV OUT = 965.00 E 8"
P	RM = 872.15 INV IN = 965.20 N 8" INV OUT = 965.00 E 8"

STORM STRUCTURE TABLE

STRUCTURE NAME	STRUCTURE INFORMATION
13	RM = 871.83 INV IN = 965.00 N 12" INV IN = 965.00 E 12" INV OUT = 965.00 S 20"
14	RM = 870.98 INV IN = 965.20 N 15" INV OUT = 965.00 E 15"
15	RM = 872.07 INV OUT = 965.00 S 15"
16	RM = 872.63 INV IN = 965.00 N 24" INV OUT = 965.00 S 24"
19	RM = 875.00 INV IN = 965.20 N 15" INV OUT = 965.00 S 15"
20	RM = 874.20 INV IN = 965.00 N 15" INV IN = 965.20 N 15" INV OUT = 965.00 S 24"
21	RM = 872.11 INV IN = 965.00 N 15" INV IN = 965.20 N 15" INV OUT = 965.00 S 24"
22	RM = 874.18 INV IN = 965.00 N 15" INV OUT = 965.00 E 15"
23	RM = 874.00 INV IN = 965.00 N 15" INV IN = 965.20 N 15" INV OUT = 965.00 S 15"
24	RM = 873.27 INV IN = 965.00 N 15" INV OUT = 965.00 E 15"
25	RM = 874.58 INV OUT = 972.14 E 12"
26	RM = 872.00 INV OUT = 965.00 S 15"
27	RM = 872.85 INV IN = 965.00 N 15" INV IN = 965.20 E 15" INV OUT = 965.00 S 15"
28	RM = 871.79 INV OUT = 965.00 N 12"
29	RM = 873.60 INV IN = 965.00 N 15" INV IN = 965.20 N 15" INV OUT = 965.00 S 15"
30	RM = 872.04 INV OUT = 965.00 S 15"
31	RM = 872.25 INV OUT = 965.00 S 15"



REDWOOD HARTLAND TOWNSHIP

HIGHLAND ROAD (M-59)
HARTLAND, MI 48353



7007 E. PLEASANT VALLEY RD
INDEPENDENCE, OH 44131



Bergmann Associates, Architects, Engineers,
Landscape Architects & Surveyors, D.P.C.
7350 West Saginaw Hwy.,
Suite 200
Lansing, MI 48917
office: 517.272.9835
fax: 517.272.9830
www.bergmannpc.com

DATE	DESCRIPTION
5/14/2021	ISSUE FOR PRELIMINARY PLAN REVIEW

Not For Construction

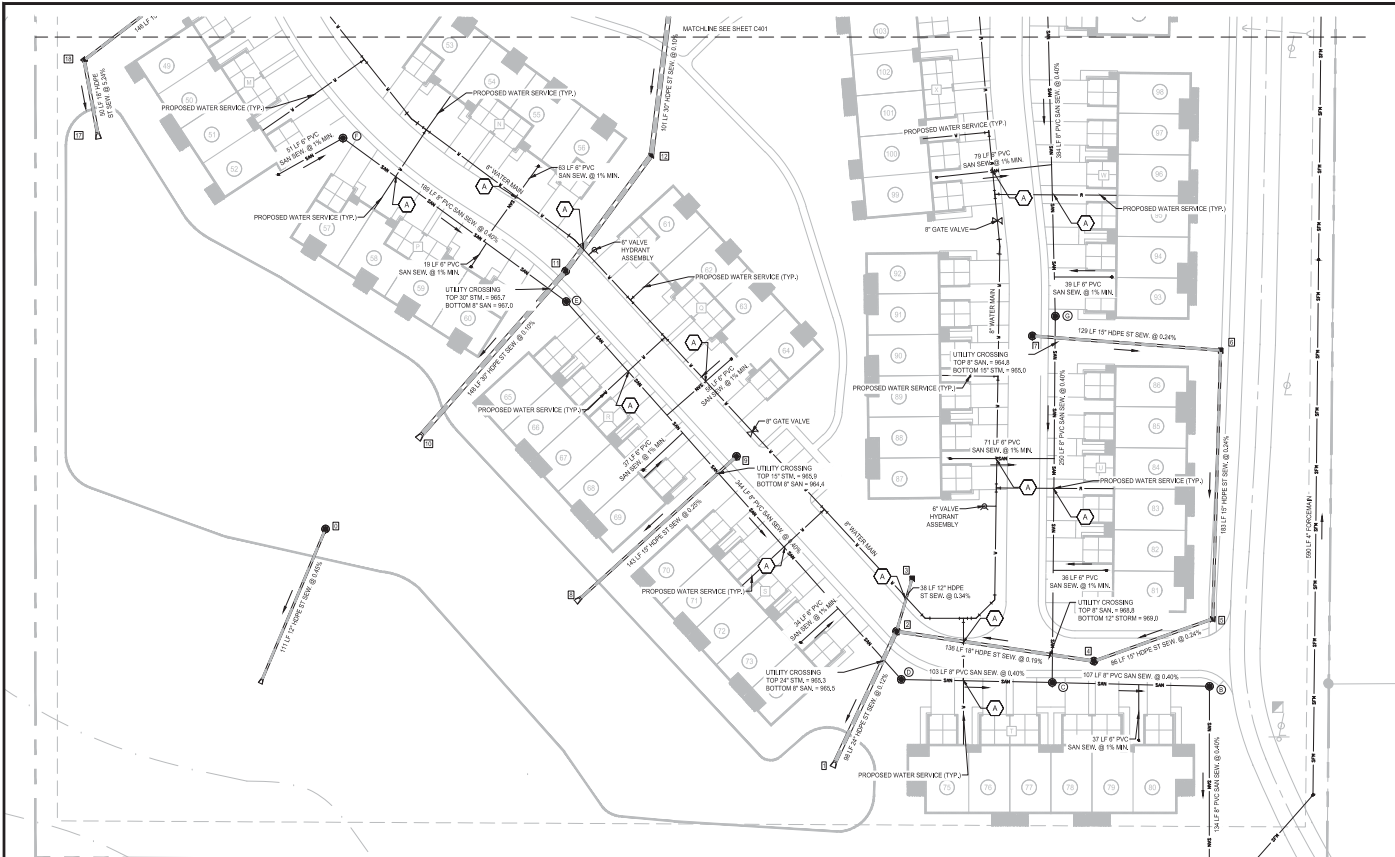
Copyright © Bergmann Associates, Architects, Engineers,
Landscape Architects & Surveyors, D.P.C.

Prepared by	Checked by
I. GRAHAM PE	I. GRAHAM PE
I. GRAHAM PE	J. JENSEN PE
DATE	DATE
JANUARY 14, 2021	1/14/2021

NORTH PRELIMINARY UTILITY PLAN

C401

© 2021 by Bergmann Architects, Engineers, Landscape Architects & Surveyors, D.P.C. All rights reserved. No part of this document may be reproduced without written permission from Bergmann Architects, Engineers, Landscape Architects & Surveyors, D.P.C.



UTILITY LEGEND:

- RFRWP
- STORM SEWER
- YARD BASIN
- CATCH BASIN
- STORM MANHOLE
- HYDRANT
- VALVE/CLOSURE BOX
- PAV
- WATER MAIN
- SANITARY SEWER
- SANITARY SEWER MANHOLE
- CLEANOUT
- ELECTRIC
- GAS
- UTILITY CROSSING
- SANITARY FORCE MAIN

KEY NOTES:

A. MANHOLE MINIMUM 18" VERTICAL SEPARATION BETWEEN WATER MAIN AND SEWER.

SANITARY STRUCTURE TABLE

STRUCTURE NAME	STRUCTURE INFO.
A	RM = 870.25 INV IN = 962.02 N 8" INV OUT = 962.72 E 8"
B	RM = 871.50 INV IN = 962.68 W 8" INV OUT = 962.36 S 8"
C	RM = 870.30 INV IN = 962.88 W 8" INV IN = 962.28 N 8" INV OUT = 962.95 E 8"
D	RM = 869.00 INV IN = 962.88 W 8" INV OUT = 962.58 S 8"
E	RM = 871.47 INV IN = 962.55 W 8" INV OUT = 962.25 S 8"
F	RM = 872.32 INV IN = 962.75 W 8" INV OUT = 962.45 S 8"
G	RM = 869.00 INV IN = 962.88 W 8" INV OUT = 962.58 S 8"
LS	RM = 969.00 INV IN = 962.00 N 8" INV OUT = 962.34 NE 4"

STORM STRUCTURE TABLE

STRUCTURE NAME	STRUCTURE INFO.
Stratum + (180)	RM = 999 INV IN = 962.50 NE 12"
0	RM = 964.00 INV IN = 962.00 W 12"
1	RM = 965.76 INV IN = 962.00 NE 24"
2	RM = 969.23 INV IN = 964.74 NE 12" INV IN = 962.02 SE 18" INV OUT = 962.12 SW 24"
3	RM = 969.00 INV OUT = 964.25 S 12"
4	RM = 870.74 INV IN = 962.13 E 18" INV OUT = 962.08 W 18"
5	RM = 870.26 INV IN = 964.34 W 18" INV OUT = 964.34 W 18"
6	RM = 870.04 INV IN = 964.78 W 18" INV OUT = 964.78 S 18"
7	RM = 969.16 INV IN = 966.09 E 18"
8	RM = 969.00 INV IN = 964.00 NE 18"
9	RM = 870.00 INV IN = 964.36 SW 18"
10	RM = 864.21 INV IN = 962.00 NE 30" INV OUT = 962.00 NE 30"
11	RM = 871.38 INV IN = 962.15 NE 30" INV OUT = 962.15 SW 30"
12	RM = 871.17 INV IN = 962.20 W 30" INV OUT = 962.25 SW 30"
17	RM = 969.00 INV IN = 962.14 W 18"
18	RM = 872.67 INV IN = 962.00 NE 18" INV OUT = 962.25 S 18"

REDWOOD HARTLAND TOWNSHIP
 HIGHLAND ROAD (M-59)
 HARTLAND, MI 48353



7007 E. PLEASANT VALLEY RD
 INDEPENDENCE, OH 44131



Bergmann Associates, Architects, Engineers,
 Landscape Architects & Surveyors, D.P.C.
 7350 West Sagway Way,
 Suite 200
 Lansing, MI 48917
 office: 517.272.9835
 fax: 517.272.9836
 www.bergmannpc.com

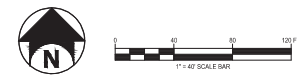
DATE	DESCRIPTION
01/14/2021	ISSUE FOR PRELIMINARY PLAN REVIEW

Not For Construction

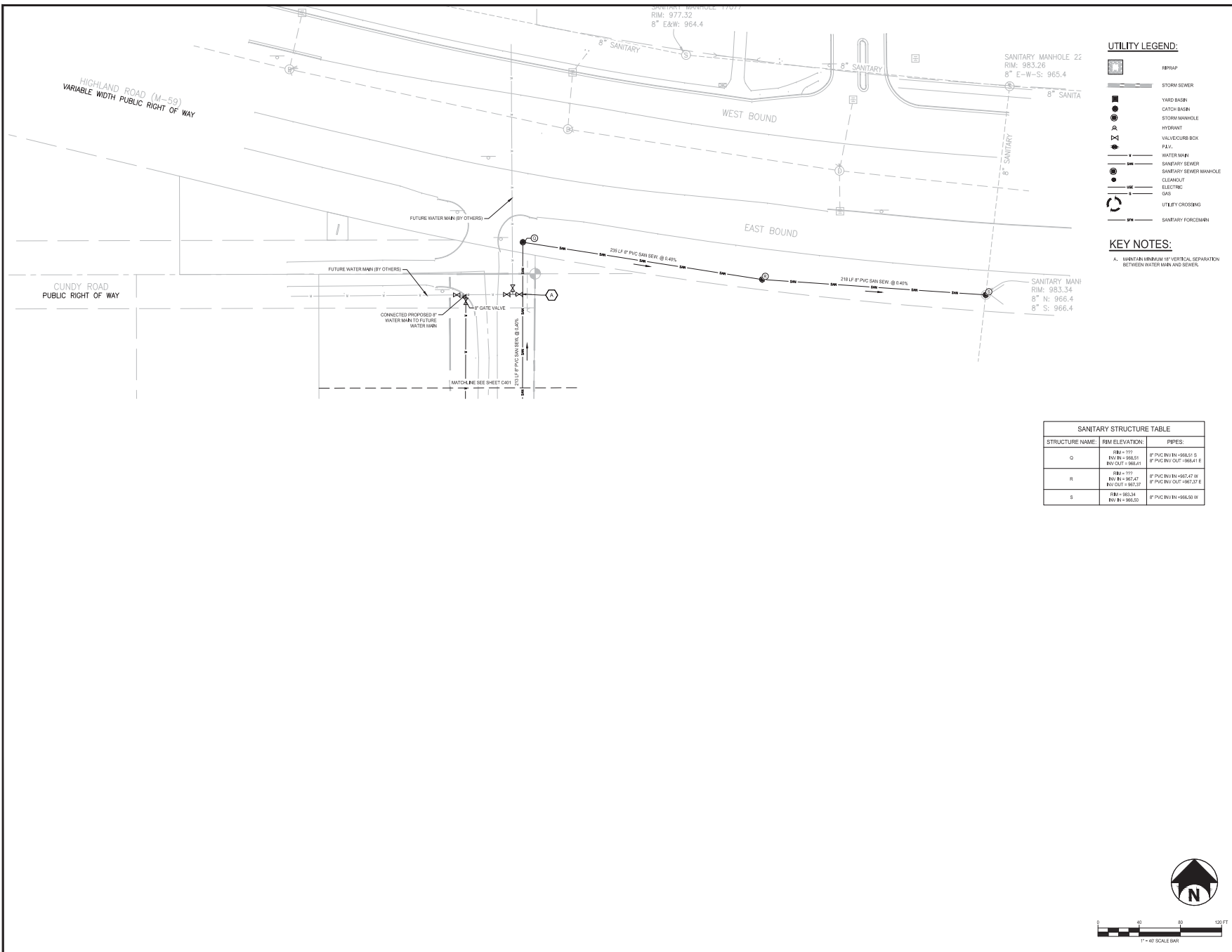
Copyright © Bergmann Associates, Architects, Engineers,
 Landscape Architects & Surveyors, D.P.C.

Prepared by	Checked by
I. GRAHAM, PE	I. GRAHAM, PE
I. GRAHAM, PE	J. JARSENIAULT
DATE	DATE
JANUARY 14, 2021	1/14/2021

SOUTH PRELIMINARY UTILITY PLAN



© 2021 Bergmann Associates, Architects, Engineers, Landscape Architects & Surveyors, D.P.C. All rights reserved. No part of this document may be reproduced without the written permission of Bergmann Associates, Architects, Engineers, Landscape Architects & Surveyors, D.P.C.



- UTILITY LEGEND:**
- BRAP
 - STORM SEWER
 - YARD BASIN
 - CATCH BASIN
 - STORM MANHOLE
 - HYDRANT
 - VALVE/CURB BOX
 - P.V.
 - WATER MAIN
 - SANITARY SEWER
 - SANITARY SEWER MANHOLE
 - CLEANOUT
 - ELECTRIC
 - GAS
 - UTILITY CROSSING
 - SANITARY FOREMAN

KEY NOTES:

A. MAINTAIN MINIMUM 18" VERTICAL SEPARATION BETWEEN WATER MAIN AND SEWER.

SANITARY STRUCTURE TABLE

STRUCTURE NAME	RIM ELEVATION	PIPES
O	RIM = 179 INV IN = 188.61 INV OUT = 188.61	8" PVC IN/IN = 188.61 S 8" PVC IN/OUT = 188.61 E
R	RIM = 179 INV IN = 187.37 INV OUT = 187.37	8" PVC IN/IN = 187.47 W 8" PVC IN/OUT = 187.37 E
S	RIM = 183.24 INV IN = 195.53	8" PVC IN/IN = 186.59 W

REDWOOD HARTLAND TOWNSHIP

HIGHLAND ROAD (M-59)
HARTLAND, MI 48353



7007 E. PLEASANT VALLEY RD
INDEPENDENCE, OH 44131



Bergmann Associates, Architects, Engineers,
Landscape Architects & Surveyors, D.P.C.
7350 West Sagway Hwy.,
Suite 200
Lansing, MI 48917
office: 517.272.8835
fax: 517.272.8835
www.bergmannpc.com

DATE	DESCRIPTION
5/14/2021	ISSUE FOR PRELIMINARY PLAN REVIEW

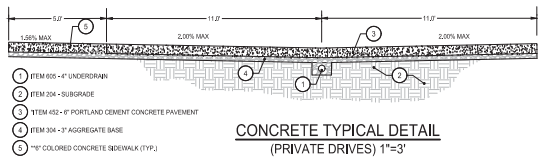
Not For Construction

Copyright © Bergmann Associates, Architects, Engineers,
Landscape Architects & Surveyors, D.P.C.

Drawn By	Checked
J. GRAHAM, PE	J. GRAHAM, PE
J. GRAHAM, PE	J. JARSENIAULT
DATE	DATE
JANUARY 14, 2021	1/14/2021

OFF-SITE PRELIMINARY UTILITY PLAN

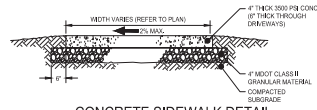
C403



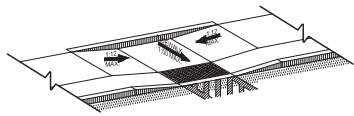
**CONCRETE TYPICAL DETAIL
(PRIVATE DRIVES) 1"=3'**

- 1 ITEM 005 - 4" UNDERDRAIN
- 2 ITEM 304 - SURGRADE
- 3 ITEM 402 - 6" PORTLAND CEMENT CONCRETE PAVEMENT
- 4 ITEM 304 - 2" AGGREGATE BASE
- 5 1/2" COLORED CONCRETE SIDEWALK (TYP.)

- * USE 6" PORTLAND CEMENT CONCRETE PAVEMENT WITHIN THE PUBLIC ROW, OR UNLESS OTHERWISE SPECIFIED.
- ** CONTRACTOR TO COORDINATE WITH OWNER ON COLOR SPECIFICATIONS.

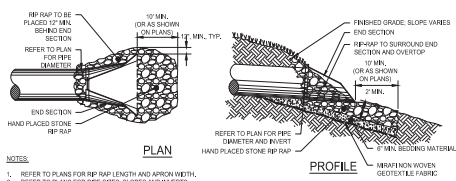


**CONCRETE SIDEWALK DETAIL
N.T.S.**



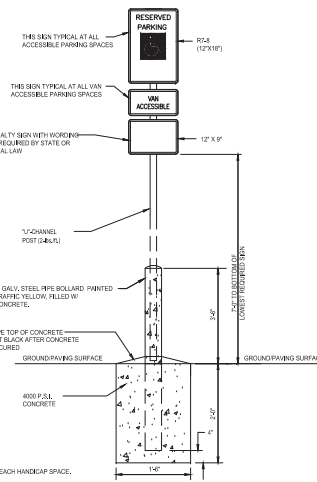
COMBINED PARALLEL/PERPENDICULAR CURB RAMP (TYPE 10)

**ACCESSIBLE RAMPS
N.T.S.**



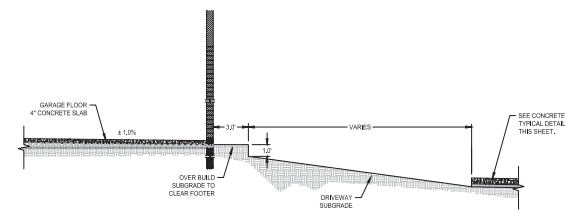
**FLARED END SECTION AND OUTLET PROTECTION DETAIL
N.T.S.**

- NOTES:**
- REFER TO PLANS FOR RFP RAMP LENGTH AND APRON WIDTH.
 - REFER TO PLANS FOR PIPE SIZES, SLOPES AND INVERTS.



**ACCESSIBLE PARKING SIGN
DETAIL
N.T.S.**

- NOTES:**
- ONE AT EACH HANDICAP SPACE.
 - WHERE HANDICAP SPACES FACE EACH OTHER WITHOUT HANDWAY, THESE SHALL BE ONE POST WITH SIGNS MOUNTED BOTH SIDES.



**DRIVEWAY EXCAVATION DETAIL
N.T.S.**

C:\Users\jgibson\OneDrive\Documents\Projects\2021\210101\210101.dwg
 1/14/2021 10:41 AM

**REDWOOD
HARTLAND
TOWNSHIP**

HIGHLAND ROAD (M-59)
HARTLAND, MI 48333



7007 E. PLEASANT VALLEY RD
INDEPENDENCE, OH 44131



Bergmann Associates, Architects, Engineers,
Landscape Architects & Surveyors, D.P.C.
7350 West Saginaw Hwy.,
Suite 200
Lansing, MI 48917
office: 517.272.8835
fax: 517.272.8836
www.bergmannpc.com

DATE	DESCRIPTION
5/14/2021	ISSUE FOR PRELIMINARY PLAN REVIEW

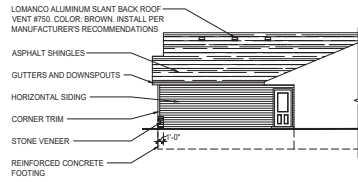
Not For Construction

Copyright © Bergmann Associates, Architects, Engineers,
Landscape Architects & Surveyors, D.P.C.

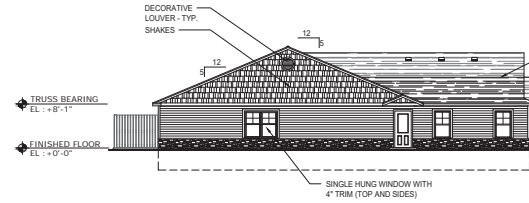
Project Manager	Checker
J. GRAHAM, PE	J. GRAHAM, PE
J. GRAHAM, PE	J. JARSENIAULT
Issue Date	Issue Number
JANUARY 14, 2021	14648.00

SITE DETAILS

C700

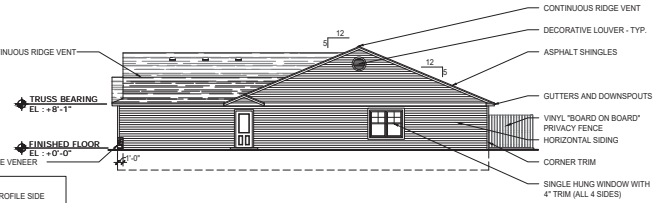


5 PARTIAL SIDE ELEVATION FORESTWOOD
SCALE: 3/32" = 1'-0"

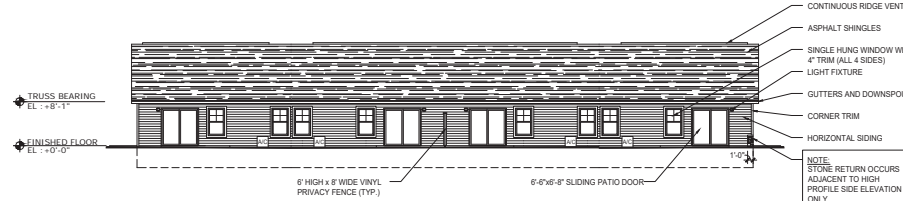


4 HIGH PROFILE SIDE ELEVATION MEADOWOOD
SCALE: 3/32" = 1'-0"

NOTE: HIGH PROFILE SIDE ELEVATION OCCURS AT STREET VIEW ONLY.

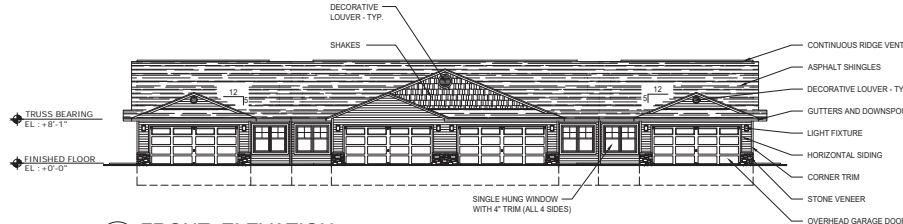


3 STANDARD SIDE ELEVATION MEADOWOOD
SCALE: 3/32" = 1'-0"

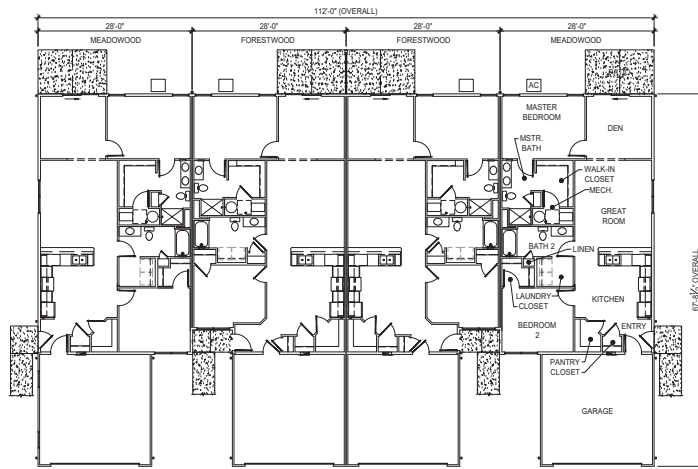


2 REAR ELEVATION MEADOWOOD, FORESTWOOD
SCALE: 3/32" = 1'-0"

NOTE: STONE RETURN OCCURS ADJACENT TO HIGH PROFILE SIDE ELEVATION ONLY.



1 FRONT ELEVATION MEADOWOOD, FORESTWOOD
SCALE: 3/32" = 1'-0"



OVERALL FLOOR PLAN MEADOWOOD, FORESTWOOD
SCALE: 3/32" = 1'-0"

EXTERIOR FINISH MATERIAL SELECTIONS

ITEM	MATERIAL / STYLE	COLOR
DECORATIVE LOUVER	VINYL	WHITE
ASPHALT SHINGLES	DIMENSIONAL 30 YEAR LAMINATED	WEATHERED WOOD
GUTTERS AND DOWNSPOUTS	PREFINISHED ALUMINUM	WHITE
HORIZONTAL SIDING	VINYL	VARIES
SHAKES	VINYL	VARIES
CORNER TRIM	VINYL	WHITE
STONE VENEER	PRESTIGE	OHIO WHITE VEIN
OVERHEAD GARAGE DOOR	RAISED PANEL PAN STEEL	WHITE
SINGLE HUNG	VINYL	STANDARD WHITE WITH COLONIAL PATTERN FLAT GRIDS
6'-6" X 8'-8" SLIDING PATIO DOOR	VINYL	WHITE

NOTE: ADDRESS FOR EACH UNIT TO BE PLACED IN SUCH A POSITION AS TO BE PLAINLY VISIBLE AND LEGIBLE FROM THE STREET OR ROAD.

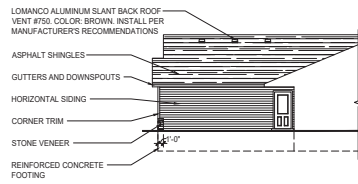
PRELIMINARY
NOTE!!! THIS DRAWING IS NOT FOR CONSTRUCTION

REVISIONS

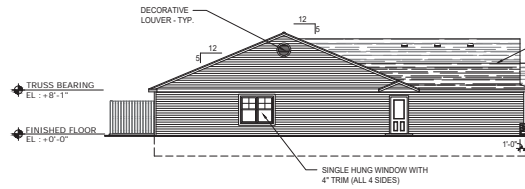
phone 330.666.5770
fax 330.666.8812
3660 Embassy Parkway
Fairlawn, OH 44333
MPG ARCHITECTS
MANN • PARSONS • GRAY

BUILDING FLOOR PLAN AND ELEVATIONS
DATE: JANUARY 8, 2021
PROJECT #: 9920
REDWOOD STANDARDS
Redwood

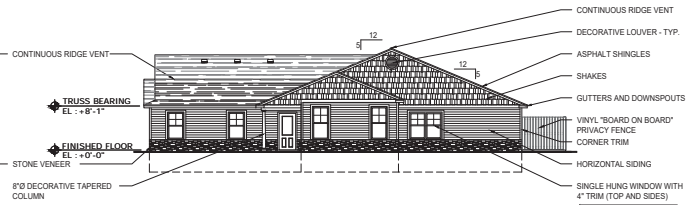
A1.1



5 PARTIAL SIDE ELEVATION FORESTWOOD
SCALE: 3/32" = 1'-0"

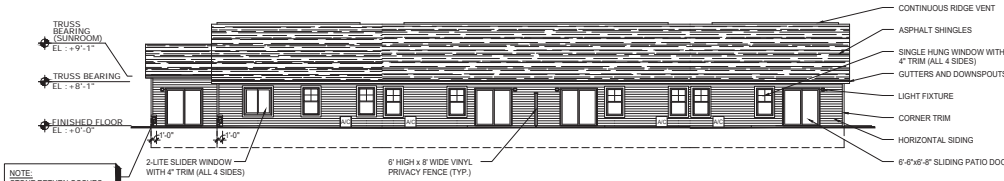


4 STANDARD SIDE ELEVATION MEADOWOOD
SCALE: 3/32" = 1'-0"



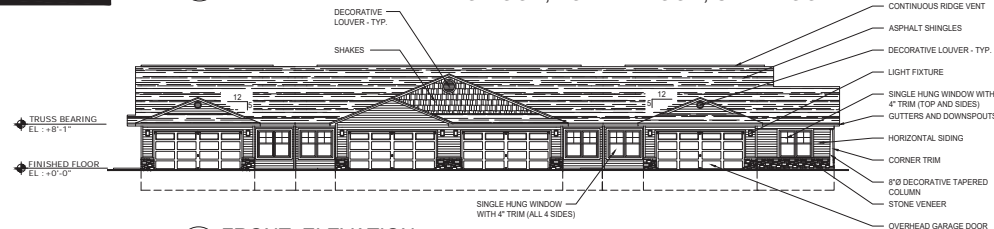
3 HIGH PROFILE SIDE ELEVATION CAPEWOOD
SCALE: 3/32" = 1'-0"

NOTE: HIGH PROFILE SIDE ELEVATION OCCURS AT STREET VIEW ONLY

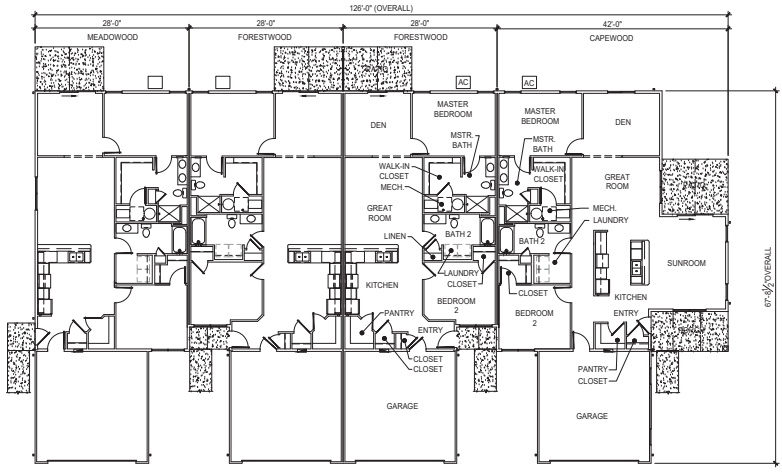


2 REAR ELEVATION MEADOWOOD, FORESTWOOD, CAPEWOOD
SCALE: 3/32" = 1'-0"

NOTE: STONE RETURN OCCURS ADJACENT TO HIGH PROFILE SIDE ELEVATION ONLY



1 FRONT ELEVATION MEADOWOOD, FORESTWOOD, CAPEWOOD
SCALE: 3/32" = 1'-0"



OVERALL FLOOR PLAN MEADOWOOD, FORESTWOOD
SCALE: 3/32" = 1'-0"

EXTERIOR FINISH MATERIAL SELECTIONS

ITEM	MATERIAL / STYLE	COLOR
DECORATIVE LOUVER	VINYL	WHITE
ASPHALT SHINGLES	DIMENSIONAL 30 YEAR LAMINATED	WEATHERED WOOD
GUTTERS AND DOWNSPOUTS	PREFINISHED ALUMINUM	WHITE
HORIZONTAL SIDING	VINYL	VARIES
SHAKES	VINYL	VARIES
CORNER TRIM	VINYL	WHITE
STONE VENEER	PRESTIGE	OHIO WHITE VEIN
OVERHEAD GARAGE DOOR	RAISED PANEL PAN STEEL	WHITE
SINGLE HUNG	VINYL	STANDARD WHITE WITH COLONIAL PATTERN FLAT GRIDS
6'-6" X 6'-6" SLIDING PATIO DOOR	VINYL	WHITE

NOTE: ADDRESS FOR EACH UNIT TO BE PLACED IN SUCH A POSITION AS TO BE PLAINLY VISIBLE AND LEGIBLE FROM THE STREET OR ROAD.

PRELIMINARY
NOTE!!! THIS DRAWING IS NOT FOR CONSTRUCTION

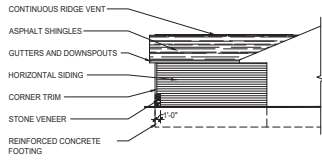
REVISIONS

phone 330.666.5770
fax 330.666.8812
3660 Embassy Parkway
Fairlawn, OH 44333

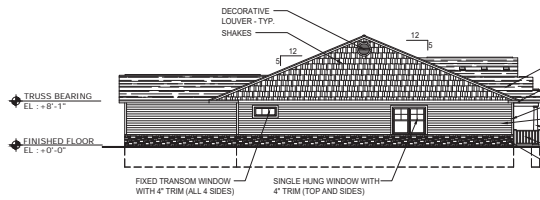


BUILDING FLOOR PLAN AND ELEVATIONS
DATE: JANUARY 8, 2021
PROJECT #: 9920
REDWOOD STANDARDS

A1.2

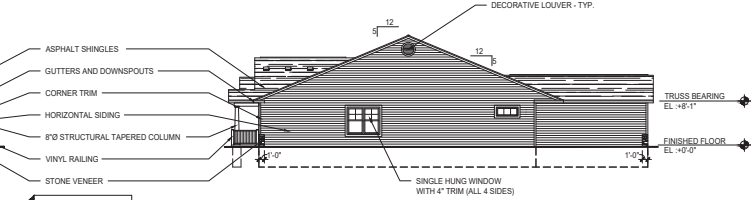


5 PARTIAL SIDE ELEVATION
SCALE: 3/32" = 1'-0"
HAYDENWOOD

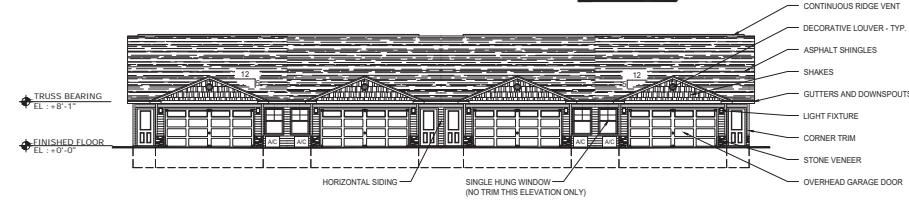


4 HIGH PROFILE SIDE ELEVATION
SCALE: 3/32" = 1'-0"
HAYDENWOOD

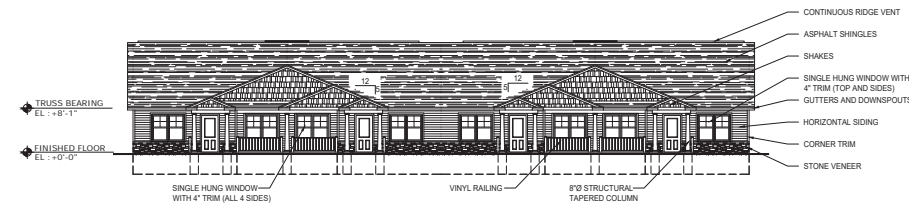
NOTE:
HIGH PROFILE SIDE ELEVATION OCCURS AT STREET VIEW ONLY



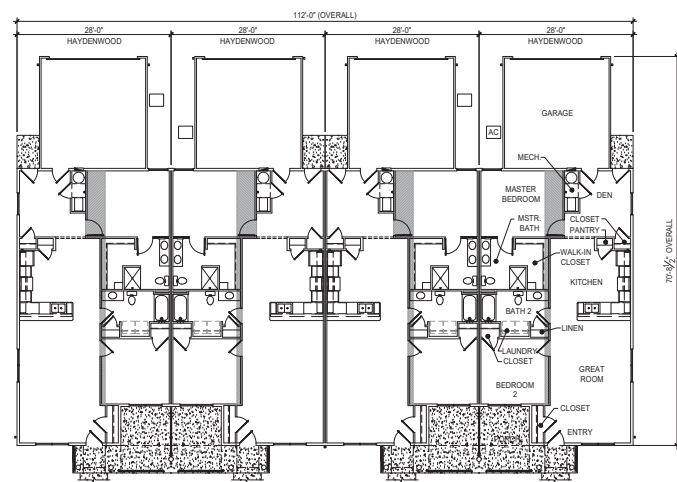
3 STANDARD SIDE ELEVATION
SCALE: 3/32" = 1'-0"
HAYDENWOOD



2 REAR ELEVATION
SCALE: 3/32" = 1'-0"
HAYDENWOOD



1 FRONT ELEVATION
SCALE: 3/32" = 1'-0"
HAYDENWOOD



OVERALL FLOOR PLAN
SCALE: 3/32" = 1'-0"
HAYDENWOOD

EXTERIOR FINISH MATERIAL SELECTIONS

ITEM	MATERIAL / STYLE	COLOR
DECORATIVE LOUVER	VINYL	WHITE
ASPHALT SHINGLES	DIMENSIONAL 30 YEAR LAMINATED	WEATHERED WOOD
GUTTERS AND DOWNSPOUTS	PREFINISHED ALUMINUM	WHITE
HORIZONTAL SIDING	VINYL	VARIES
SHAKES	VINYL	VARIES
CORNER TRIM	VINYL	WHITE
STONE VENEER	PRESTIGE	OHIO WHITE VEIN
OVERHEAD GARAGE DOOR	RAISED PANEL PAN STEEL	WHITE
SINGLE HUNG	VINYL	STANDARD WHITE WITH COLONIAL PATTERN FLAT GRIDS

NOTE:
ADDRESS FOR EACH UNIT TO BE PLACED IN SUCH A POSITION AS TO BE PLAINLY VISIBLE AND LEGIBLE FROM THE STREET OR ROAD.

PRELIMINARY
NOTE!!!
THIS DRAWING IS NOT FOR CONSTRUCTION

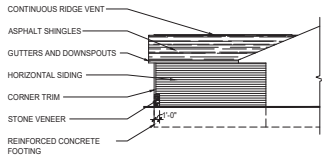
REVISIONS

phone 330.666.5770
fax 330.666.8812
3660 Embassy Parkway
Fairlawn, OH 44333
mpg-architects.com

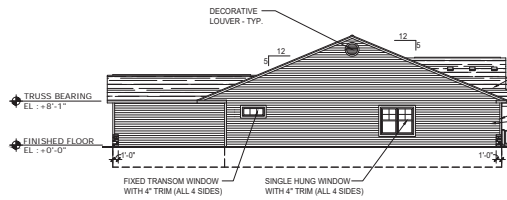
MPG ARCHITECTS
MANN • PARSONS • GRAY

BUILDING FLOOR PLAN AND ELEVATIONS
DATE: JANUARY 8, 2021
PROJECT #: 9920
REDWOOD STANDARDS
Redwood

A1.4

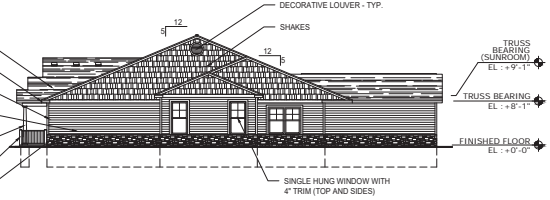


5 PARTIAL SIDE ELEVATION
SCALE: 3/32" = 1'-0"
HAYDENWOOD

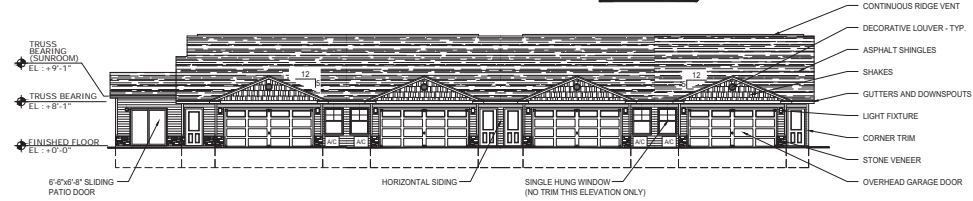


4 STANDARD SIDE ELEVATION
SCALE: 3/32" = 1'-0"
HAYDENWOOD

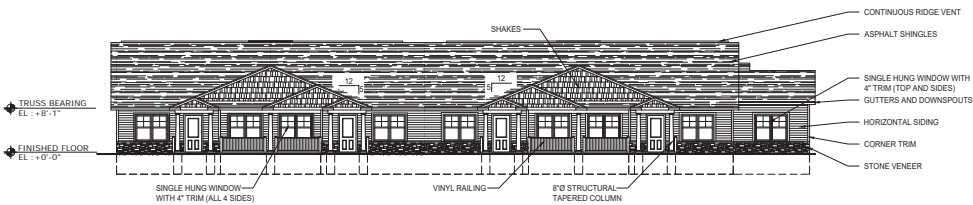
NOTE:
HIGH PROFILE SIDE ELEVATION OCCURS AT STREET VIEW ONLY



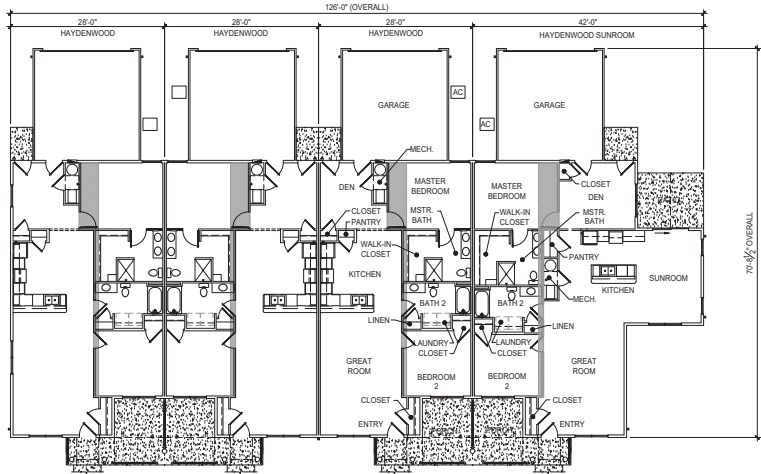
3 HIGH PROFILE SIDE ELEVATION
SCALE: 3/32" = 1'-0"
HAYDENWOOD SUNROOM



2 REAR ELEVATION
SCALE: 3/32" = 1'-0"
HAYDENWOOD, HAYDENWOOD SUNROOM



1 FRONT ELEVATION
SCALE: 3/32" = 1'-0"
HAYDENWOOD, HAYDENWOOD SUNROOM



OVERALL FLOOR PLAN
SCALE: 3/32" = 1'-0"
HAYDENWOOD, HAYDENWOOD SUNROOM

EXTERIOR FINISH MATERIAL SELECTIONS

ITEM	MATERIAL / STYLE	COLOR
DECORATIVE LOUVER	VINYL	WHITE
ASPHALT SHINGLES	DIMENSIONAL 30 YEAR LAMINATED	WEATHERED WOOD
GUTTERS AND DOWNSPOUTS	PREFINISHED ALUMINUM	WHITE
HORIZONTAL SIDING	VINYL	VARIES
SHAKES	VINYL	VARIES
CORNER TRIM	VINYL	WHITE
STONE VENEER	PRESTIGE	OHIO WHITE VEIN
OVERHEAD GARAGE DOOR	RAISED PANEL PAN STEEL	WHITE
SINGLE HUNG	VINYL	STANDARD WHITE WITH COLONIAL PATTERN FLAT GRIDS

NOTE:
ADDRESS FOR EACH UNIT TO BE PLACED IN SUCH A POSITION AS TO BE PLAINLY VISIBLE AND LEGIBLE FROM THE STREET OR ROAD.

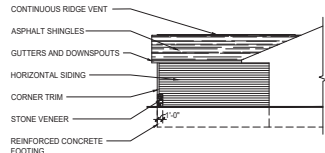
PRELIMINARY
NOTE!!!
THIS DRAWING IS NOT FOR CONSTRUCTION

REVISIONS

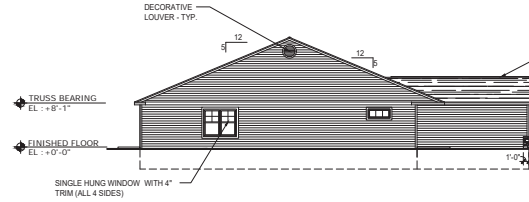
phone 330.666.5770
fax 330.666.8812
3660 Embassy Parkway
Fairlawn, OH 44333
MPG ARCHITECTS
MANN • PARSONS • GRAY
mpg-architects.com

BUILDING FLOOR PLAN AND ELEVATIONS
DATE: JANUARY 8, 2021
PROJECT #: 9920
REDWOOD STANDARDS
Redwood

A1.5

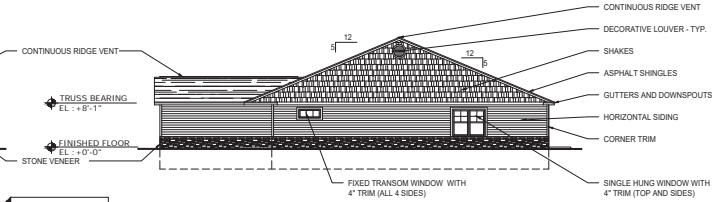


5 PARTIAL SIDE ELEVATION
 SCALE: 3/32" = 1'-0"
 BREEZEWOOD

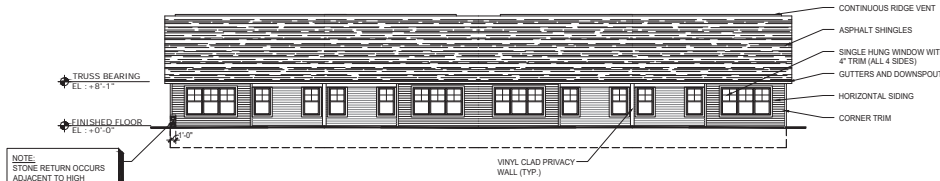


4 STANDARD SIDE ELEVATION
 SCALE: 3/32" = 1'-0"
 BREEZEWOOD

NOTE:
 HIGH PROFILE SIDE ELEVATION OCCURS AT STREET VIEW ONLY

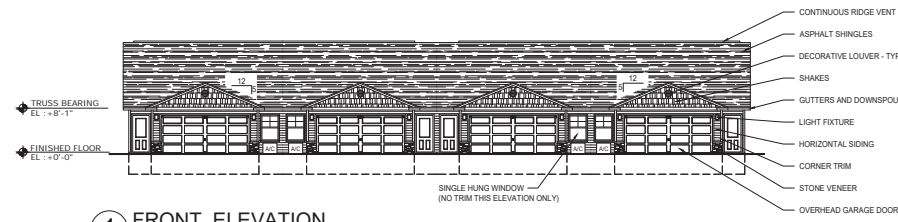


3 HIGH PROFILE SIDE ELEVATION
 SCALE: 3/32" = 1'-0"
 BREEZEWOOD

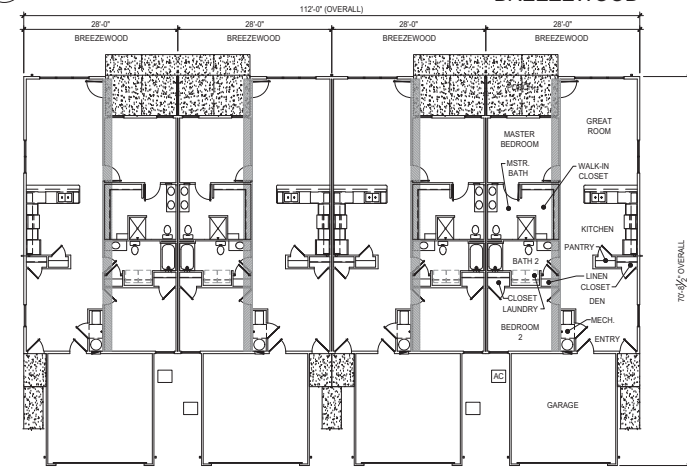


NOTE:
 STONE RETURN OCCURS ADJACENT TO HIGH PROFILE SIDE ELEVATION ONLY

2 REAR ELEVATION
 SCALE: 3/32" = 1'-0"
 BREEZEWOOD



1 FRONT ELEVATION
 SCALE: 3/32" = 1'-0"
 BREEZEWOOD



OVERALL FLOOR PLAN
 SCALE: 3/32" = 1'-0"
 BREEZEWOOD

EXTERIOR FINISH MATERIAL SELECTIONS

ITEM	MATERIAL / STYLE	COLOR
DECORATIVE LOUVER	VINYL	WHITE
ASPHALT SHINGLES	DIMENSIONAL 30 YEAR LAMINATED	WEATHERED WOOD
GUTTERS AND DOWNSPOUTS	PREFINISHED ALUMINUM	WHITE
HORIZONTAL SIDING	VINYL	VARIES
SHAKES	VINYL	VARIES
CORNER TRIM	VINYL	WHITE
STONE VENEER	PRESTIGE	OHIO WHITE VEIN
OVERHEAD GARAGE DOOR	RAISED PANEL PAN STEEL	WHITE
SINGLE HUNG	VINYL	STANDARD WHITE WITH COLONIAL PATTERN FLAT GRIDS

NOTE:
 ADDRESS FOR EACH UNIT TO BE PLACED IN SUCH A POSITION AS TO BE PLAINLY VISIBLE AND LEGIBLE FROM THE STREET OR ROAD.

PRELIMINARY
 NOTE!!!
 THIS DRAWING IS NOT FOR CONSTRUCTION

REVISIONS

phone 330.666.5770
 fax 330.666.8812
 3660 Embassy Parkway
 Fairlawn, OH 44333
MPG ARCHITECTS
 MAIN • PARSONS • GRAY
 mpg-architects.com

BUILDING FLOOR PLAN AND ELEVATIONS
 DATE: JANUARY 8, 2021
 PROJECT #: 9920
REDWOOD STANDARDS
 Redwood

A1.6

PRELIMINARY
NOTE!!!
THIS DRAWING IS NOT
FOR CONSTRUCTION

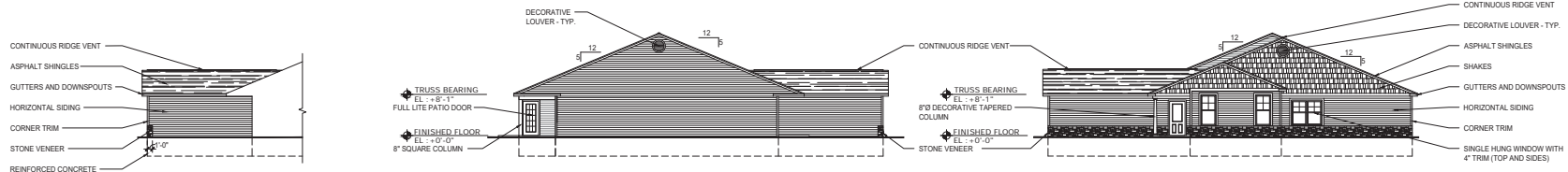
REVISIONS

phone 330.666.5770
 fax 330.666.8812
 3660 Embassy Parkway
 Fairlawn, OH 44333
MPG ARCHITECTS
 mpg-architects.com



BUILDING FLOOR PLAN AND ELEVATIONS
 DATE: JANUARY 8, 2021
 PROJECT # 9920
REDWOOD STANDARDS

A1.7

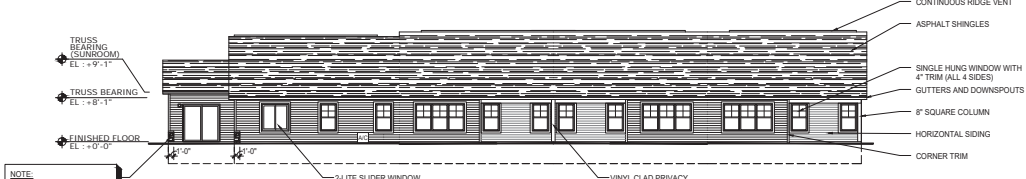


5 PARTIAL SIDE ELEVATION
 SCALE: 3/32" = 1'-0"
BREEZWOOD

4 STANDARD SIDE ELEVATION
 SCALE: 3/32" = 1'-0"
BREEZWOOD

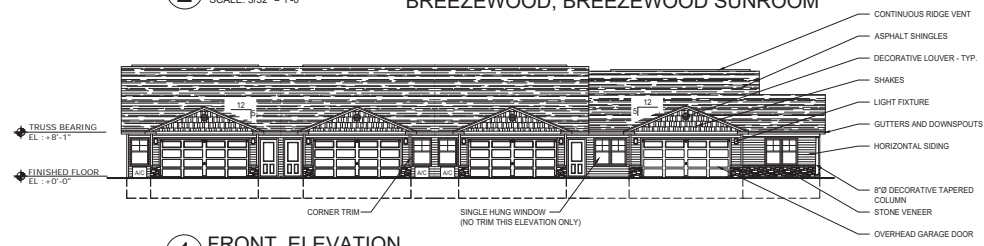
3 HIGH PROFILE SIDE ELEVATION
 SCALE: 3/32" = 1'-0"
BREEZWOOD SUNROOM

NOTE:
 HIGH PROFILE SIDE
 ELEVATION OCCURS AT
 STREET VIEW ONLY

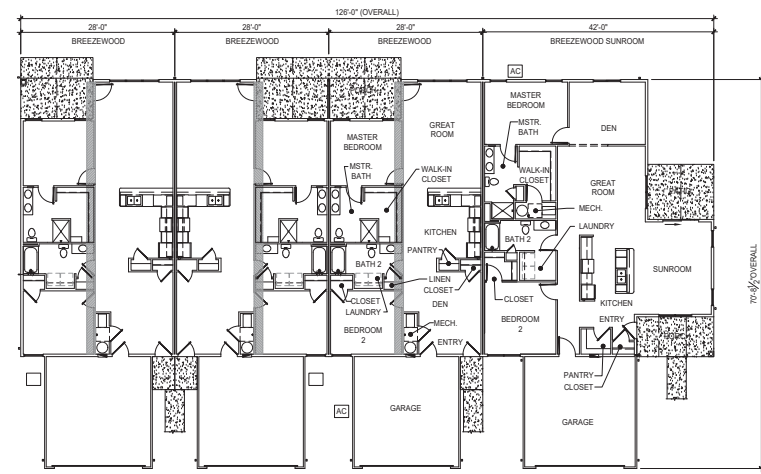


2 REAR ELEVATION
 SCALE: 3/32" = 1'-0"
BREEZWOOD, BREEZWOOD SUNROOM

NOTE:
 STONE RETURN OCCURS
 ADJACENT TO HIGH
 PROFILE SIDE ELEVATION
 ONLY



1 FRONT ELEVATION
 SCALE: 3/32" = 1'-0"
BREEZWOOD, BREEZWOOD SUNROOM

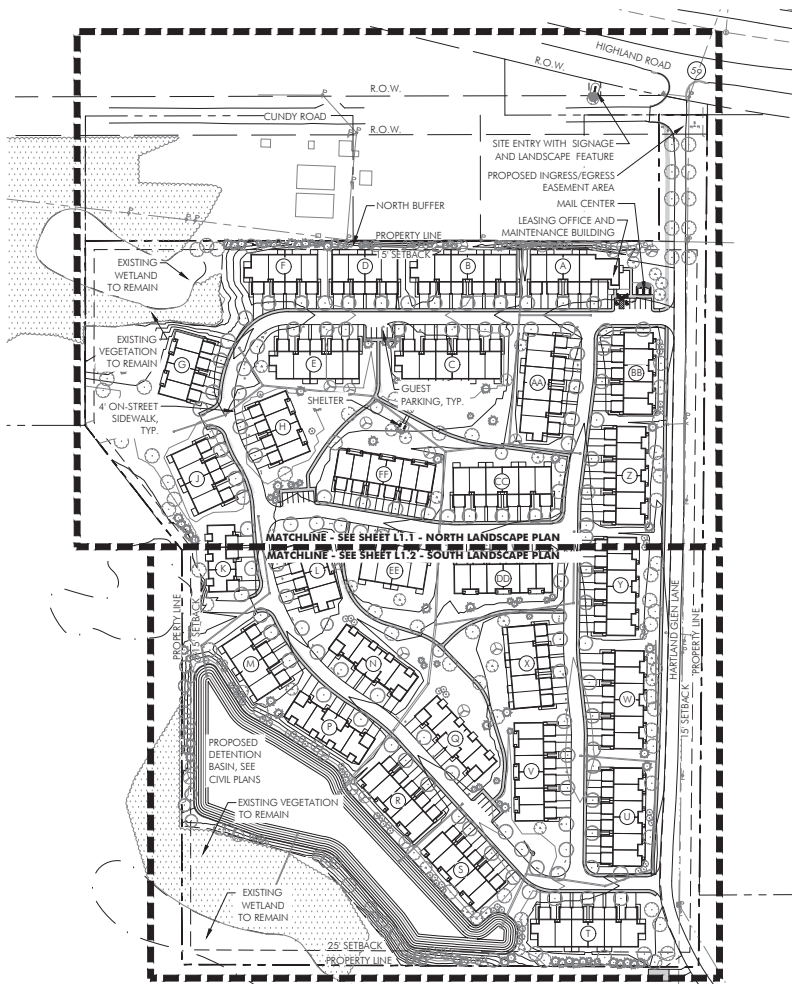


OVERALL FLOOR PLAN
 SCALE: 3/32" = 1'-0"
BREEZWOOD, BREEZWOOD SUNROOM

EXTERIOR FINISH MATERIAL SELECTIONS

ITEM	MATERIAL / STYLE	COLOR
DECORATIVE LOUVER	VINYL	WHITE
ASPHALT SHINGLES	DIMENSIONAL 30 YEAR LAMINATED	WEATHERED WOOD
GUTTERS AND DOWNSPOUTS	PREFINISHED ALUMINUM	WHITE
HORIZONTAL SIDING	VINYL	VARIES
SHAKES	VINYL	VARIES
CORNER TRIM	VINYL	WHITE
STONE VENEER	PRESTIGE	OHIO WHITE VEIN
OVERHEAD GARAGE DOOR	RAISED PANEL PAN STEEL	WHITE
SINGLE HUNG	VINYL	STANDARD WHITE WITH COLONIAL PATTERN FLAT GRIDS

NOTE:
 ADDRESS FOR EACH UNIT TO BE PLACED IN SUCH A POSITION AS TO BE PLAINLY VISIBLE
 AND LEGIBLE FROM THE STREET OR ROAD.



Overall Landscape Plan
SCALE: 1" = 100'

ZONING REQUIREMENTS

H.IV. DETENTION/RETENTION AREAS SHALL HAVE A MINIMUM OF ONE CANOPY OR EVERGREEN TREE WITH TEN MEDIUM SHRUBS, OR SIX LARGE SHRUBS OR SIX ORNAMENTAL TREES FOR EVERY 50 LF OF POND PERIMETER.

POND PERIMETER: 1671 LF
CREDIT: EX. WETLAND BUFFER: 436 LF ADJACENT TO THE EXISTING VEGETATION
CALCULATED POND PERIMETER: 1671 - 436 = 1235 LF

REQUIRED: 1235 / 50 = 25 CANOPY OR EVERGREEN TREES
PROVIDED: 13 CANOPY TREES
12 EVERGREEN TREES

REQUIRED: (1235 X 6) / 50 = 148 COMBINED ORNAMENTAL TREES AND LARGE SHRUBS
PROVIDED: 80 ORNAMENTAL TREES
72 LARGE EVERGREEN AND DECIDUOUS SHRUBS

PLANT LIST:

SYMBOL	BOTANICAL NAME	COMMON NAME	SIZE	COND.	COMMENTS
DECIDUOUS TREES					
AC FR	<i>Acer x freemanii</i> 'Armstrong'	Armstrong Maple	2.5' cal.	B&B	As Shown
AC RU	<i>Acer rubrum</i> 'October Glory'	October Glory Maple	2.5' cal.	B&B	As Shown
AM GR	<i>Aamelanchier x grandiflora</i> 'Autumn Brilliance'	Autumn Brilliance Serviceberry	10' multi-stem	B&B	As Shown
BE PO	<i>Betula populifolia</i> 'Whitespire'	Whitespire Birch	10' multi-stem	B&B	As Shown
CA CA	<i>Carpinus caroliniana</i>	American Hornbeam	2.5' cal.	B&B	As Shown
CR PU	<i>Crotaegus punctata</i> 'Ohio Pioneer'	Ohio Pioneer Hawthorn	2' cal.	B&B	As Shown
CE OC	<i>Celtis occidentalis</i>	Common Hackberry	2.5' cal.	B&B	As Shown
CE CA	<i>Cercis canadensis</i>	Eastern Redbud	2' cal.	B&B	As Shown
GL TR	<i>Gleditsia tricanthos</i> f. <i>inermis</i> 'Skycole'	Skyline Honeylocust	2.5' cal.	B&B	As Shown
MA VI	<i>Magnolia virginiana</i> 'Moonglow'	Moonglow Sweetbay/Magnolia	6' ht.	B&B	As Shown
QU AL	<i>Quercus alba</i>	White Oak	2.5' cal.	B&B	As Shown
TI AM	<i>Tilia americana</i> 'Redmond'	Redmond Linden	2.5' cal.	B&B	As Shown
UL PA	<i>Ulmus parvifolia</i>	Loebark Elm	3' cal.	B&B	As Shown
EVERGREEN TREES					
AB CO	<i>Abies concolor</i>	White Fir	8' ht.	B&B	As Shown
PI ST	<i>Pinus strobus</i>	Eastern White Pine	8' ht.	B&B	As Shown
TS CA	<i>Tsuga canadensis</i>	Canadian Hemlock	8' ht.	B&B	As Shown
SHRUBS					
CH CO	<i>Chamaecyparis p. compacta variegata</i>	Dwarf Variegated False Cypress	18' ht	Cont.	
CO SE	<i>Cornus sericea</i> 'Bailei'	Redosier Dogwood	36' ht	B&B	As Shown
IL GL	<i>Ilex glabra</i> 'Dense'	Dense Compact Inkberry	24' spread	Cont.	As Shown
IT VI	<i>Itea virginica</i> 'Little Henry'	Little Henry Virginia Sweetspire	18' ht	Cont.	As Shown
JU CH	<i>Juniperus chinensis</i> 'Sea Green'	Sea Green Juniper	24' spread	Cont.	As Shown
JU SA	<i>Juniperus sabina</i> 'Buffalo'	Buffalo Juniper	24' spread	Cont.	As Shown
JU VI	<i>Juniperus virginiana</i> 'Emerald Sentinel'	Emerald Sentinel Juniper	6' ht.	B&B	As Shown
SP JA	<i>Spiraea japonica</i> 'Goldflame'	Goldflame Spirea	18' hgt.	Cont.	As Shown
SY ME	<i>Syringa meyeri</i> 'Palibin'	Palibin Lilac	24' ht	B&B	As Shown
TH TE	<i>Thuja o. 'Techny'</i>	Mission Arborvitae	8' ht.	B&B	As Shown
VI PR	<i>Viburnum x pragnense</i>	Prague Viburnum	36' ht	B&B	As Shown
PERENNIALS AND ORNAMENTAL GRASSES					
HE HR	<i>Hemerocallis</i> 'Stella de Oro'	Stella de Oro Daylily	#1	cont.	18" o.c.
PA VI	<i>Panicum virgatum</i> 'Ratstrahlbusch'	Red Rays Switch Grass	#1	cont.	As Shown
FE HA	<i>Pennisetum a. 'Hameln'</i>	Dwarf Fountain Grass	#1	cont.	As Shown

*Plant substitutions may be required depending on plant availability. Any substitutions must be approved by landscape architect and Redwood.

PLANT INSTALLATION NOTES

- CONTRACTOR SHALL VERIFY WITH THE OWNER AND UTILITY COMPANIES THE LOCATIONS OF THE EXISTING UTILITIES PRIOR TO STARTING WORK. CALL THE MICHIGAN UTILITIES PROTECTION SERVICE AT 800-482-7171. CONTRACTOR TO REPAIR ALL DAMAGES TO EXISTING UTILITIES, CURBS, PAVEMENTS, ETC. RESULTING FROM LANDSCAPE INSTALLATIONS WHICH OCCUR DURING THE CONSTRUCTION OF THE PROJECT.
- PLANT MATERIAL SHALL BE FURNISHED IN THE QUANTITIES AND/OR SPACING AS SHOWN OR NOTED. IN CASE OF DISCREPANCIES BETWEEN THE PLAN AND THE PLANT LIST, THE PLAN SHALL DICATE.
- CONTRACTOR SHALL VERIFY SIZES AND LOCATIONS OF ALL SITE ELEMENTS AND IMMEDIATELY INFORM THE OWNER AND DESIGN CONSULTANT OF ANY DISCREPANCY BETWEEN THE DRAWINGS AND/OR SPECIFICATIONS AND ACTUAL CONDITIONS. NO WORK SHALL BE DONE IN ANY AREA WHERE THERE IS A DISCREPANCY WITHOUT OWNERS APPROVAL.
- CONTACT THE OWNER TO REQUEST ELECTRONIC FILES FOR LAYOUT AND STAKING.
- CONTRACTOR SHALL BE RESPONSIBLE FOR ALL FINISH GRADING IN THE PROJECT REQUIRED TO PROVIDE A PROPER SOD AND PLANTING BED.
- CONTRACTOR SHALL PROVIDE THE FOLLOWING SOIL AMENDMENTS:
SOIL AMENDMENT:
TOP GRADE SITE MANAGEMENT CONTRACTORS COMPOST (OR EQUIVA)
3407 58TH STREET
HAMILTON, MI 49419
269-751-8898

PERENNIAL BED AREAS:
SPREAD 3" OF ORGANIC COMPOST OVER NEW LANDSCAPE AREAS AND INCORPORATE INTO THE TOP 8" OF THE SOIL BY MECHANICAL TILLER.

TREES AND SHRUBS:
MIX 30% ORGANIC COMPOST TO 70% EXISTING SOIL FROM PLANT PIT EXCAVATION. IF EXCAVATED SOIL IS NOT SUITABLE, SUPPLEMENT WITH IMPORTED TOPSOIL.
- ALL PLANT MATERIAL TO MEET OR EXCEED AMERICAN STANDARD FOR NURSERY STOCK, 2014 EDITION, AS SET FORTH BY AMERICAN ASSOCIATION OF NURSERYMEN.
- ALL PLANT MATERIALS SUBJECT TO INSPECTION PRIOR, DURING AND AFTER INSTALLATION. ANY PLANT NOT MEETING THE REQUIREMENTS WILL BE CAUSE FOR REJECTION BY THE OWNER. ALL REJECTED PLANTS SHALL BE IMMEDIATELY REMOVED AND DISPOSED OF BY THE CONTRACTOR AND THE REPLACEMENT MATERIAL SHALL BE PROVIDED.
- ALL SUBSTITUTIONS AND PLANT CHANGES MUST BE APPROVED BY THE OWNER AND DESIGN CONSULTANT PRIOR TO ANY ACTION TAKEN. TREES SHALL BE PROTECTED AND HANDLED CAREFULLY AT ALL TIMES DURING TRANSPORT & HANDLING TO PREVENT DRYING OF TREE OR ROOT BALL BY WINDS AND TO PREVENT ANY DAMAGE OR BREAKAGE OF THE ROOT BALL BARK SHALL BE PROTECTED FROM BRUISING OR ABRASION.
- WATER TREES IMMEDIATELY AFTER PLANTING AND CONTINUE TO WATER UNTIL FINAL ACCEPTANCE BY THE OWNER.
- PLANT LOCATIONS AND BEDS SHALL BE LOCATED BY CONTRACTOR AND APPROVED BY OWNER AND DESIGN CONSULTANT BY PRIOR TO PLANT INSTALLATION.
- BED LINE TO BE 18" FROM BASE OF PLANT MATERIAL UNLESS OTHERWISE INDICATED ON THE DRAWINGS.

- ALL SHRUB AND BED AREAS, EXCEPT AT PROJECT ENTRY TO BE MULCHED WITH 3" DEPTH MIN. NO. 34 WASHED RIVERROCK OVER WEED BARRIER FABRIC. DECIDUOUS TREES IN LAWN AREAS SHALL BE MULCHED WITH A 3" DIAMETER TREE RING USING 3" SHREDDED HARDWOOD BARK MULCH. DO NOT MOUND MULCH AROUND TREE ROOT COLLAR. SUBMIT SAMPLE TO OWNER FOR APPROVAL.
- ALL AREAS OUTSIDE OF PLANTING BEDS SHALL BE SODDED AS SHOWN AND NOTED.
- ALL SEEDED AREAS TO BE INSTALLED WITH HYDROSEED MIXTURE PER SEED SUPPLIER AND MANUFACTURERS SPECIFICATIONS.
- ALL SLOPES IN EXCESS OF 3:1 (H:V) TO BE HYDROSEED AND MATTED WITH HAG 575 MINIMUM WITH ROLLS ORIENTED DOWN SLOPE AND STAKED TO MANUFACTURERS RECOMMENDATIONS.
- FINISHED TURF (SOD) TO BE FLUSH WITH TOP OF ADJACENT CURB OR WALK. COORDINATE WITH OWNER IN FIELD AS REQUIRED.
- THE CONTRACTOR SHALL GUARANTEE ALL TREES, SHRUBS AND GROUND COVERS FOR A PERIOD OF ONE (1) YEAR FROM DATE OF FINAL ACCEPTANCE. REPLACE MATERIAL WITHIN SEVEN (7) DAYS OF NOTIFICATION OF THE OWNER.
- PERFORM CLEANING DURING INSTALLATION OF LANDSCAPE WORK AND UPON COMPLETION. REMOVE FROM SITE ALL EXCESS LANDSCAPE RELATED MATERIAL, SOIL DEBRIS AND EQUIPMENT. REPAIR DAMAGE RESULTING FROM LANDSCAPING OPERATIONS. SWEEP AND HOSE DOWN PAVED SURFACES AFFECTED BY LANDSCAPING OPERATIONS. ALL HARD SURFACES INCLUDING BUILDINGS, PAVEMENTS, SIGNS, A/C UNITS AND FENCES SHALL HAVE HYDROSEED OVERSPRAY REMOVED BY LANDSCAPE CONTRACTOR AS PART OF THEIR CLEANUP. COORDINATE WITH OWNER AND OTHER CONTRACTORS FOR FINAL CLEANUP PRIOR TO CLEANING.
- MAINTENANCE: THE LANDSCAPE CONTRACTOR SHALL MAINTAIN THE COMPLETED LANDSCAPE AND IRRIGATION SYSTEMS UNTIL THE DATE OF FINAL ACCEPTANCE.
 - MOWING - MINIMUM ONCE PER WEEK.
 - TRIMMING - SHRUBS, TREES, AND GROUND COVERS MINIMUM TWO TIMES PER YEAR OR AS REQUIRED.
 - FERTILIZING - APPLY FERTILIZER AT A RATE EQUAL TO 1 LB. OF ACTUAL NITROGEN/1000 S.F. IN THE SPRING AND FALL TO ALL TURF AND PLANTINGS.
 - BED EDGING - EDGE ALL BEDS BY HAND, SPADE AT LEAST TWO TIMES PER YEAR AND TOP-MULCH AS NEEDED WITH NO. 34 RIVER STONE IN FALL AND SPRING.



Columbus
100 Northwoods Blvd, Ste A
Columbus, Ohio 43235
p 614.255.3399

Cincinnati
20 Village Square
Floor 3
Cincinnati, Ohio 45246
p 614.360.3066

PODdesign.net

Project Name
Redwood
Hartland MI
Hartland Township, MI

Prepared For



Redwood Living
7007 East Pleasant Valley Road
Independence, OH 44131

Project Info

Project # 20011
Date 05/14/2021
By SF, SO, TF
Scale As Noted

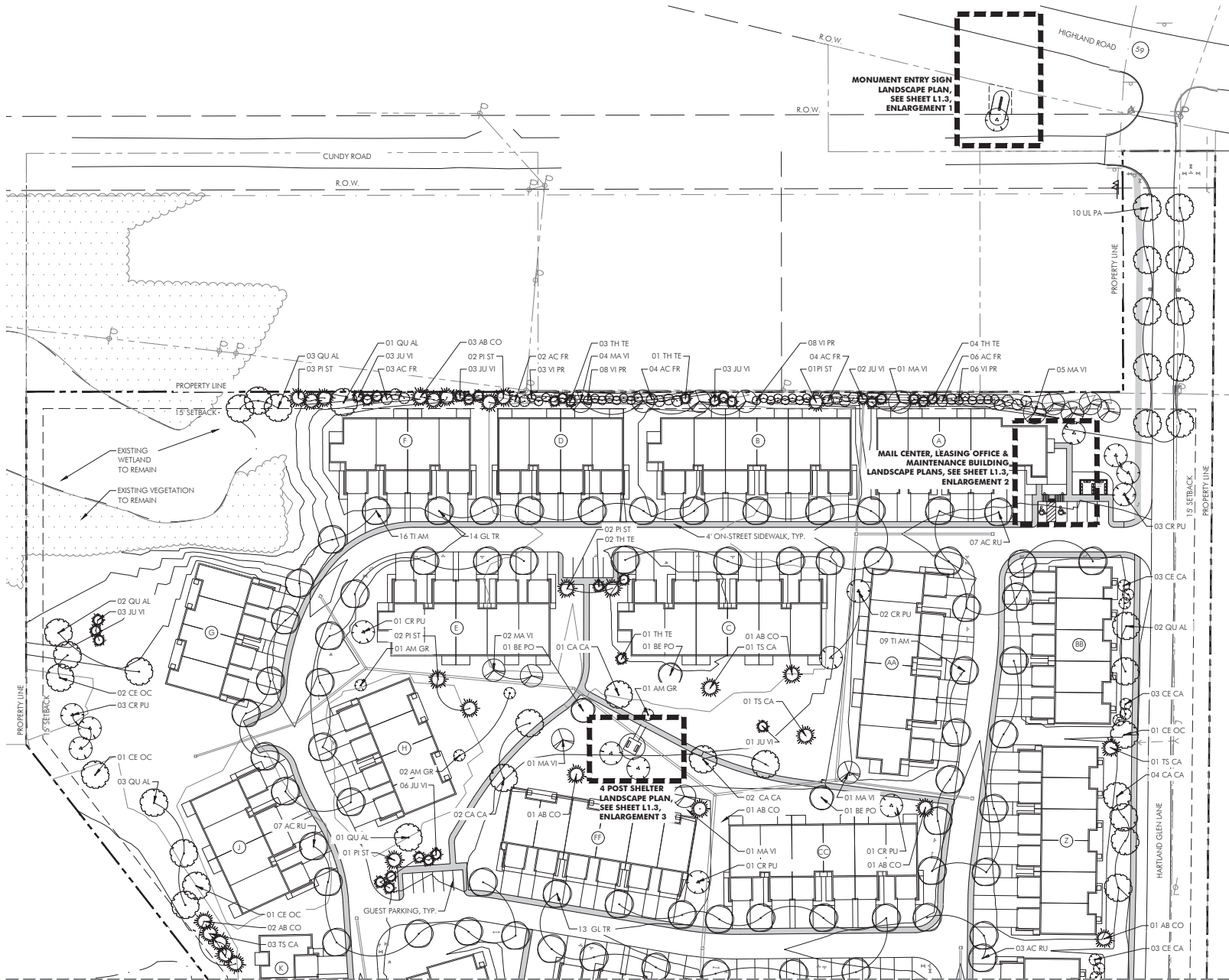
Revisions

Sheet Title

OVERALL REFERENCE PLAN

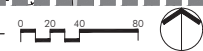
Sheet #

L1.0



North Landscape Plan
SCALE: 1" = 40'

MATCHLINE - SEE SHEET L1.2 - SOUTH LANDSCAPE PLAN



Columbus
100 Northwoods Blvd, Ste A
Columbus, Ohio 43235
p 614.255.3399

Cincinnati
20 Village Square
Floor 3
Cincinnati, Ohio 45246
p 614.360.3066

PODdesign.net

Project Name

Redwood MI
Hartland Township, MI

Prepared For



Project Info

Project # 20011
Date 05/14/2021
By SF, SO, TF
Scale As Noted

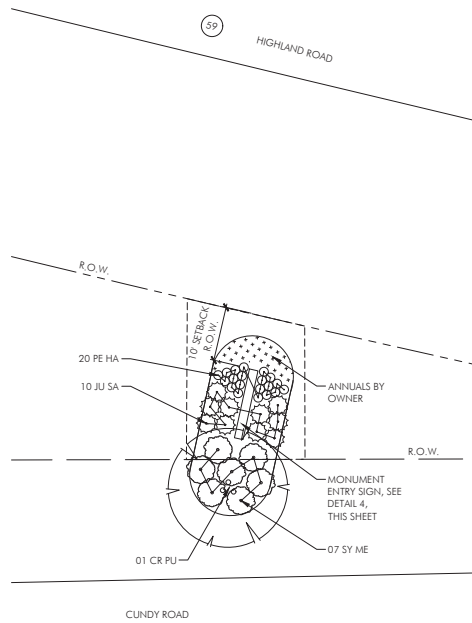
Revisions

Sheet Title

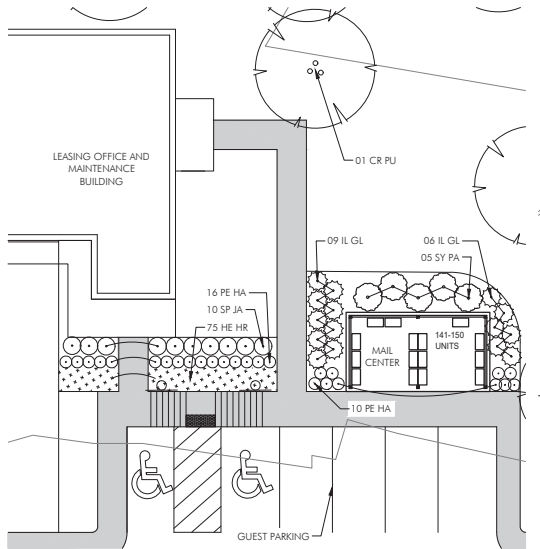
NORTH LANDSCAPE PLAN

Sheet #

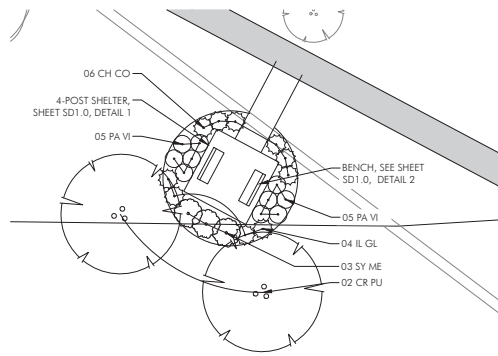
L1.1



1 Entry Signage Landscape Plan
SCALE: 1" = 10'



2 Leasing Office & Maintenance Building, & Center Landscape Plan
SCALE: 1" = 10'



3 4-Post Shelter Landscape Plan
SCALE: 1" = 10'



4 Monument Entry Sign (32 SF face)
1/2" = 1'-0"

NOTE: CONTRACTOR TO VERIFY THAT ALL ARTWORK, SIZES, COLORS, SPELLING AND GRAMMAR ARE CORRECT. ONCE APPROVED BY OWNER, THE ARTWORK IS FINAL AND WILL BE PRINTED AS PICTURED. THE DESIGN SHOWN IS THE PROPERTY OF A SIGN ABOVE, INC. NO TRANSMITTAL OR DISCLOSURE SHALL BE MADE TO ANY PERSON, FIRM, OR CORPORATION WITHOUT PRIOR CONSENT



Columbus
100 Northwoods Blvd, Ste A
Columbus, Ohio 43235
p 614.255.3399

Cincinnati
20 Village Square
Floor 3
Cincinnati, Ohio 45246
p 614.360.3066

PODdesign.net

Project Name
Redwood Hartland MI
Hartland Township, MI

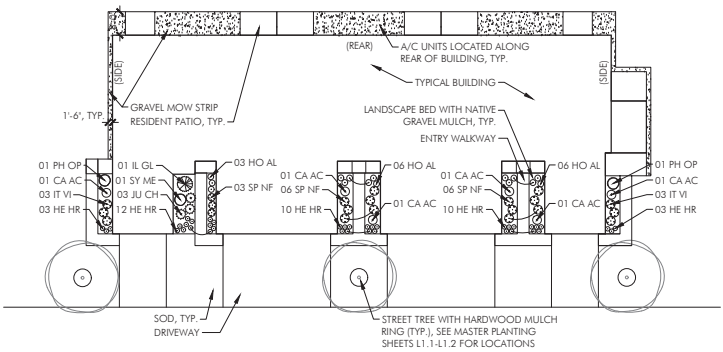
Prepared For
Redwood
Redwood Living
7007 East Pleasant Valley Road
Independence, OH 44131

Project Info
Project # 20011
Date 05/14/2021
By SF, SO, TF
Scale As Noted

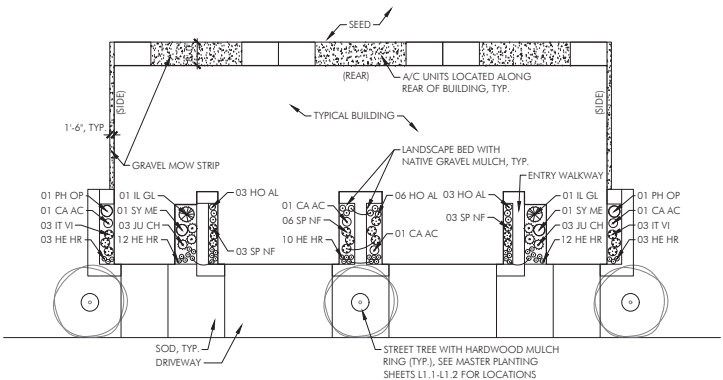
Revisions

Sheet Title
LANDSCAPE PLAN ENLARGEMENTS

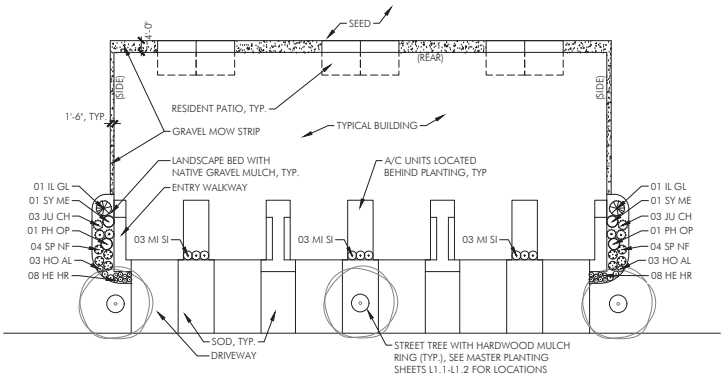
Sheet #
L1.3



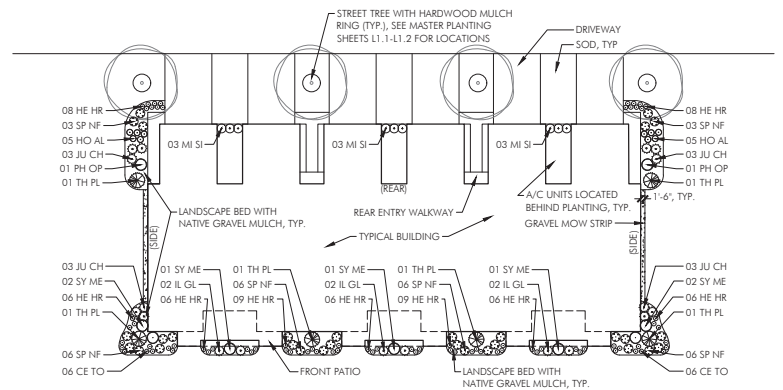
1 Meadowood/Forestwood/Capewood Foundation Planting - Buildings: AA, B, C, E, F, T
SCALE: 1" = 20'



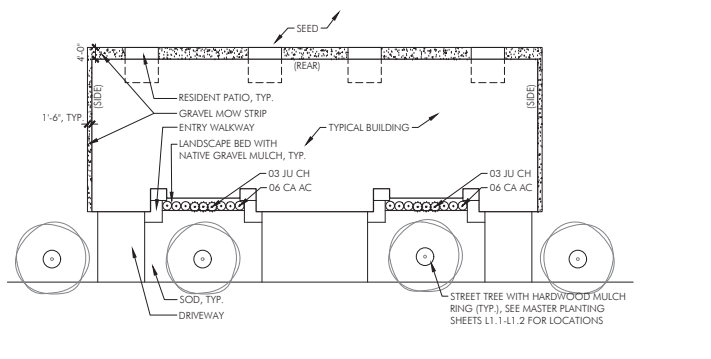
2 Meadowood/Forestwood Foundation Planting - Buildings: A, CC, D, EE, J, M, X
SCALE: 1" = 20'



3 Brezewood Foundation Planting - Buildings: DD, G, H, FF, L, R, S, V
SCALE: 1" = 20'



4 Hayden Foundation Planting - Buildings: BB, U, W, Y, Z
SCALE: 1" = 20'



5 Willowood Foundation Planting - Buildings: K, N, P, Q
SCALE: 1" = 20'

PLAN LIST

SYMBOL	BOTANICAL NAME	COMMON NAME	SIZE	COND.	SPACING
SHRUBS					
IL GL	Ilex glabra 'Densa'	Densa Compact Inkberry	18" hgt.	Cont.	As Shown
IT VI	Itea virginiana	Virginia Sweetpire	18" hgt.	Cont.	As Shown
JU CH	Juniperus chinensis 'Nicks Compact'	Nicks Compact Juniper	18" hgt.	Cont.	As Shown
PH OP	Physocarpus opulifolius 'Little Devil'	Little Devil Ninebark	18" hgt.	Cont.	As Shown
SP NF	Spiraea x 'Neon Flash'	Neon Flash Spiraea	18" hgt.	Cont.	As Shown
SY ME	Syringa meyeri	Paladin Lilac	30" hgt.	Cont.	As Shown
TH PL	Thuja plicata 'Gelderland'	Gelderland Western Arborvitae	4' hgt.	Cont.	As Shown
PERENNIALS & ORNAMENTAL GRASSES					
CA AC	Calamagrostis x acutiflora 'Karl Foerster'	Karl Foerster Feather Reed Grass	2 gal.	Cont.	As Shown
CE TO	Cerastium tomentosum	Snow in the Summer	1 gal.	Cont.	As Shown
HE HR	Heimerocallis 'Happy Returns'	Happy Returns Daylily	1 gal.	Cont.	As Shown
HO AL	Hosta 'Fortunei Albamarginata'	Variegated Hosta	1 gal.	Cont.	As Shown
MI SI	Miscanthus sinensis 'Gracillimus'	Maiden Grass	1 gal.	Cont.	As Shown

*Plant substitutions may be required depending on plant availability. Any substitutions must be approved by landscape architect and Redwood.



Columbus
100 Northwoods Blvd, Ste A
Columbus, Ohio 43235
p 614.255.3399

Cincinnati
20 Village Square
Floor 3
Cincinnati, Ohio 45246
p 614.360.3066

PODdesign.net

Project Name

**Redwood
Hardland MI**
Hardland Township, MI

Prepared For

Redwood
Redwood Living
7007 East Pleasant Valley Road
Independence, OH 44131

Project Info

Project # 20011
Date 05/14/2021
By SF, SO, TF
Scale As Noted

Revisions

Sheet Title

**TYPICAL
FOUNDATION
PLANTING**

Sheet #

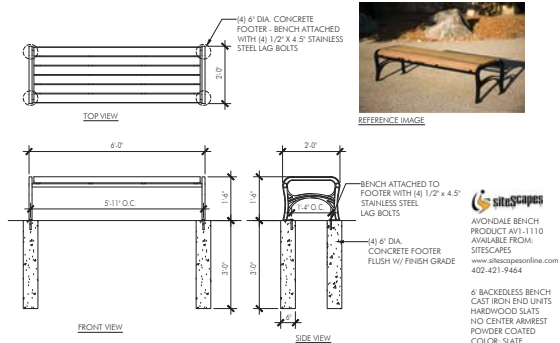
L1.4



NOTE:
 1. STRUCTURE SHALL BE 12'x12'
 2. COLOR AND MATERIAL TO BE DETERMINED BY OWNER

ADA ACCESSIBLE ROUTE FROM INTERNAL STREET/PATH

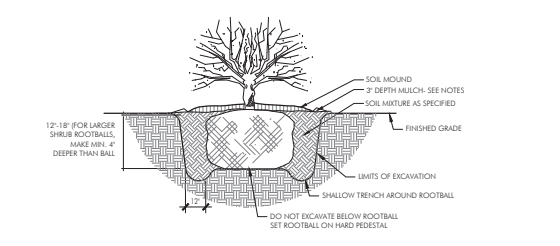
1 Resident Shelter
 N.T.S.



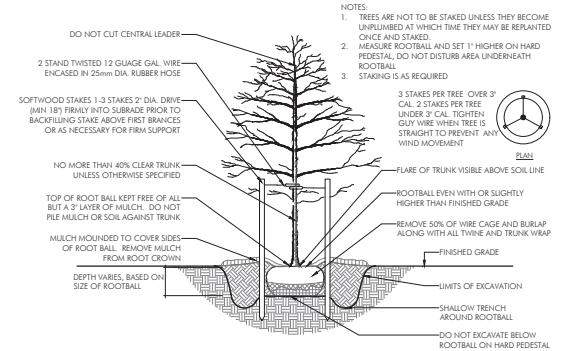
2 Avondale Backless Bench
 1/2" = 1'-0"

NOTES:
 1. DO NOT PRUNE SHRUBS DURING INSTALLATION
 2. MEASURE ROOTBALL AND SET 1" HIGHER ON HARD PEDESTAL. DO NOT DISTURB AREA UNDERNEATH ROOTBALL
 3. ALL MULCH, EXCEPT AT PROJECT ENTRY OR TREE RINGS TO BE 1" NATIVE GRAVEL OR APPROVED EQUAL

THE AMOUNT OF PRUNING SHALL BE LIMITED TO 1/3 OF THE BRANCHES TO COMPENSATE FOR LOSS OF ROOTS FROM TRANSPLANTING. REMOVE DEAD AND INJURED LIMBS. REMOVE BURLAP AND WIRE OR TWINE FROM TOP AND SIDES OF BALL CENTER SHRUB IN HOLE. SET TOP OF BALL 1-3" ABOVE FINISH GRADE.

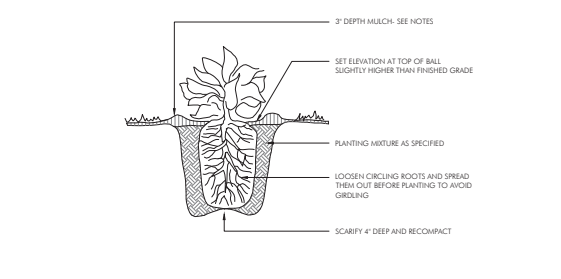


5 Shrub Planting
 N.T.S.

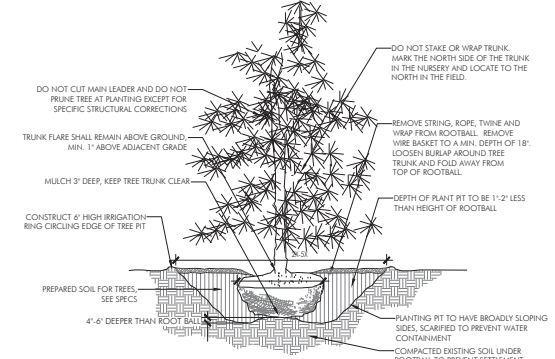


3 Tree Planting
 N.T.S.

NOTE:
 1. ALL MULCH, EXCEPT AT PROJECT ENTRY OR TREE RINGS TO BE 1" NATIVE GRAVEL OR APPROVED EQUAL.

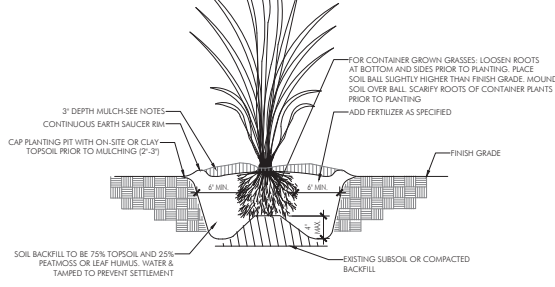


6 Perennial Planting
 N.T.S.

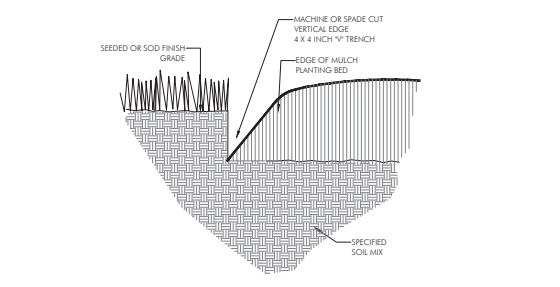


4 Evergreen Planting
 1/2" = 1'-0"

NOTE:
 1. ALL MULCH, EXCEPT AT PROJECT ENTRY OR TREE RINGS TO BE 1" NATIVE GRAVEL OR APPROVED EQUAL.



7 Grass Planting
 1/2" = 1'-0"



8 Mulch Edge Treatment at Lawn
 N.T.S.



Columbus
 100 Northwoods Blvd, Ste A
 Columbus, Ohio 43235
 p 614.255.2399

Cincinnati
 20 Village Square
 Floor 3
 Cincinnati, Ohio 45246
 p 614.360.3066

PODdesign.net

Project Name
Harland MI
 Harland Township, MI

Prepared For



Redwood Living
 7007 East Pleasant Valley Road
 Independence, OH 44131

Project Info

Project # 20011
 Date 05/14/2021
 By SF, SO, TF
 Scale As Noted

Revisions

Sheet Title
LANDSCAPE & SITE DETAILS

Sheet #

SD1.0

June 16, 2021

Hartland Township
2655 Clark Road
Hartland, MI 48353

Attn: Mr. Troy Langer, Planning Director

Re: Preliminary Site Plan Review
Redwood Living

HRC Job No. 20210354.02

Dear Mr. Langer:

As requested, this office has reviewed the site plan for the above project as prepared by Bergmann (plans dated May 14, 2021). The following items will need to be addressed:

General

1. All permits are to be obtained prior to the start of construction. At this time, the permits for this development may include Livingston County Building & Utility Services, EGLE Water Main & Sanitary Sewer, Livingston County Road Commission and Livingston County Drain Commission Soil Erosion.
2. Applicable standard detail sheets shall be attached to the plans.

Water Supply

1. The water supply improvements must be designed in accordance with the Hartland Township Engineering Design Standards. The plans show a future water main by others at the intersection of Cundy Road and Hartland Glen Drive. The actual timing of the installation of the future water main is not known and not guaranteed to be in service prior to this development of this site.
2. The proposed water main sizing and extensions to the property lines for future looping will be reviewed in future construction plan reviews.
3. The fire hydrant coverage must be reviewed and approved by the Hartland Area Fire Department.
4. The plans show only one water service to each group of homes. The Township water department may require that each home be served individually.

Sanitary Sewer

1. The sanitary sewer improvements (sanitary sewer mains and pump station) must be designed in accordance with the Hartland Township Engineering Design Standards and reviewed and approved by the Livingston County Drain Commission.
2. The plans show only one sanitary sewer lead for each group of homes. Each home may need to be served individually.

Bloomfield Hills
555 Hulet Drive
Bloomfield Hills, MI 48302
248-454-6300

Delhi Township
2101 Aurelius Rd.
Suite 2A
Holt, MI 48842
517-694-7760

Detroit
535 Griswold St.
Buhl Building, Ste 1650
Detroit, MI 48226
313-965-3330

Grand Rapids
1925 Breton Road SE
Suite 100
Grand Rapids, MI 49506
616-454-4286

Jackson
401 S. Mechanic St.
Suite B
Jackson, MI 49201
517-292-1295

Kalamazoo
834 King Highway
Suite 107
Kalamazoo, MI 49001
269-665-2005

Lansing
215 S. Washington SQ
Suite D
Lansing, MI 48933
517-292-148

Storm Drainage

1. The proposed storm water collection and detention systems must be designed in accordance with the Hartland Township and Livingston County Engineering Design Standards.
2. A forebay or sediment sump will be required on the detention pond.
3. Detention basin side slopes greater than one vertical to five horizontal will require fencing. The side slopes will need to be adjusted so that fencing is not required.
4. The plans should include a storm water drainage narrative explaining the existing site drainage and how water will be conveyed to its ultimate outlet and that all downstream storm sewers are adequately sized.

Paving & Grading

1. The proposed paving and grading improvements must be designed in accordance with Hartland Township Engineering Design Standards.

Subject to these items being addressed in future plan submissions, we have no objection to the approval of the preliminary site plan. One (1) complete set of the site plan should be submitted to the Township Planning Department for review.

If you have any questions or require any additional information, please contact the undersigned.

Very truly yours,

HUBBELL, ROTH & CLARK, INC.


Michael P. Darga, P.E.

MPD/mpd

pc: Hartland Twp; R. West, M. Wyatt, M. Luce
HRC; R. Alix, File