



Planning Commission

Larry Fox, Chairperson Summer L. McMullen, Trustee
Michael Mitchell, Vice-Chairperson Sue Grissim, Commissioner
Tom Murphy, Secretary Jim Mayer, Commissioner
Matthew Eckman, Commissioner

Planning Commission Meeting Agenda
Hartland Township Hall
Thursday, June 27, 2024
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 Meeting Minutes of May 23, 2024
6. Call to Public
7. Old and New Business
 - a. Site Plan PD Application #24-003 Redwood Living Planned Development (PD) Phase II – Preliminary PD Site Plan (**Revised Plans dated June 6, 2024**)
8. Call to Public
9. Planner's Report
10. Committee Reports
11. Adjournment

HARTLAND TOWNSHIP PLANNING COMMISSION **DRAFT** MEETING MINUTES

May 23, 2024– 7:00 PM

1. **Call to Order:** Chair Fox called the meeting to order at 7:00 p.m.

2. **Pledge of Allegiance:**

3. **Roll Call and Recognition of Visitors:**

Present – Commissioners Eckman, Fox, Mayer, McMullen, Mitchell, Murphy

Absent – Commissioner Grissim

4. **Approval of the Meeting Agenda:**

A Motion to approve the May 23, 2024, Planning Commission Meeting Agenda was made by Commissioner McMullen and seconded by Commissioner Eckman. Motion carried unanimously.

5. **Approval of Meeting Minutes:**

a. Planning Commission Meeting Minutes of April 25, 2024

A Motion to approve the Planning Commission Meeting Minutes of April 25, 2024, was made by Commissioner Mitchell and seconded by Commissioner Murphy. Motion carried unanimously.

b. Planning Commission Meeting Minutes of May 9, 2024

A Motion to approve the Planning Commission Meeting Minutes of May 9, 2024, was made by Commissioner Eckman and seconded by Commissioner McMullen. Motion carried unanimously.

6. **Call to the Public:**

None

7. **Public Hearing**

a. Site Plan PD Site Plan with Special Land Use Application #24-004 Amend Special Land Use to permit microbrewery at winery building, at Spicer Orchards, 10411 Clyde Road

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

Director Langer gave an overview of the location and scope of this application stating the following:

- Located East of US 23, North of Clyde Road, 10411 Clyde Road.
- Add a microbrewery inside the existing winery building.
- Will need to amend their liquor license with the State of Michigan.
- Previously approved for the winery.
- Offer a light menu.

- Special Land Use Permit process is a two-step process where the Planning Commission makes a recommendation and final approval is granted by the Township Board.
- Request is to amend the approved list of activities previously approved in 2018 to include a microbrewery.

The Applicant, Shannon Rowe, introduced herself stating the following:

- Seeking to expand the menu to include a selection of beers to appeal to a wider demographic.
- Winery contains a small, seasonal café, June to December. Other seasons they offer charcuterie and cheeseboards with wine pairings.

Call to the Public:

None

Chair Fox closed the Public Hearing at 7:08 p.m.

Chair Fox referred to the staff memorandum dated May 16, 2024.

The Planning Commission had no questions or comments regarding the Special Land Use Review General Standards.

Director Langer stated the brewing equipment is being added inside an existing building; there are no exterior changes or modifications on the site plan.

Director Langer mentioned a comment from Spaulding DeDecker Associates (SDA) the Township engineers, that a grease receptor may be required following a more in-depth review of the food items being prepared on site. The Applicant stated they already made the decision to install one.

Commissioner Mayer offered the following Motion:

Move to recommend approval of Site Plan with Special Land Use Application #24-004, request to amend the Special Land Use and permit a microbrewery at Spicer Orchards, at 10411 Clyde Road, as outlined in the staff memorandum dated May 16, 2024.

Approval is subject to the following conditions:

- 1. The applicant shall adequately address the outstanding items noted in the Planning Department's memorandum, dated May 16, 2024, on the Construction Plan Set, subject to an administrative review by the Planning staff prior to the issuance of a land use permit.**
- 2. The applicant shall submit an updated Spicer Orchards Farm Market Event Schedule, as was approved under SUP #18-002, with the Construction Plan Set.**
- 3. The plans shall be revised to show a grease interceptor on the Construction Plan Set, as applicable.**
- 4. A land use permit is required prior to commencement of any interior renovations in the winery building for the microbrewery.**

5. **Applicant shall secure all applicable approvals, licenses, and permits from County agencies and any other government entity, as applicable.**
6. **Applicant complies with any requirements of the Township Engineering Consultant, Hartland Deerfield Fire Authority, and all other government agencies, as applicable.**
7. **Any new use, change in use, or modification(s) to the site shall require approvals from the Township prior to any such activities occurring.**
8. **The entire microbrewery shall be located within the existing winery building. No exterior equipment shall be permitted.**

Seconded by Commissioner Mitchell. Motion carried unanimously.

8. Call to the Public:

None

9. Planner Report:

Director Langer mentioned the location for the Township Board, Planning Commission and Zoning Board of Appeals mailbox has changed and is now in a secured area that requires a key card to access or one of the staff can assist during office hours. If any Planning Commissioner desires a key card, please contact the Planning Director.

10. Committee Reports:

11. Adjournment

A Motion to adjourn was made by Commissioner Mitchell and seconded by Commissioner Mayer. Motion carried unanimously. The Regular Meeting was adjourned at approximately 7:14 p.m.

Hartland Township Planning Commission Meeting Agenda Memorandum

Submitted By: Troy Langer, Planning Director

Subject: Site Plan PD Application #24-003 Redwood Living Planned Development (PD) Phase II – Preliminary PD Site Plan (**Revised Plans dated June 6, 2024**)

Date: June 20, 2024

Recommended Action

Move to recommend approval of Site Plan/PD #24-003, the Preliminary Planned Development Site Plan for Redwood Living Planned Development Phase II, as outlined in the staff memorandum dated June 20, 2024.

Approval is subject to the following conditions:

1. The Preliminary Planned Development Site Plan for Redwood Living Planned Development Phase II, SP/PD #24-003, is subject to the approval of the Township Board.
2. Waiver request for the development monument sign to be located off-site is approved.
3. Waiver request for an interim sign to be located off-site is approved.
4. The applicant shall adequately address the outstanding items noted in the Planning Department's memorandums, dated April 18, 2024, and June 20, 2024, on the Construction Plan Set, subject to an administrative review by Planning staff prior to the issuance of a land use permit.
5. As part of the Final Plan Review, the applicant shall provide a Planned Development (PD) Agreement that includes any applicable ingress-egress access easements and agreements between all applicable parties. The applicant, and/or any future owners shall agree to not interfere with or object to any future roadway connection to the south. All applicable easements and documentation for the off-site signage shall be submitted with the Final PD submittals. The documents shall be in a recordable format and shall comply with the requirements of the Township Attorney.
6. The applicant shall obtain approval of a land division for the parcel associated with the proposed project.
7. Applicant complies with any requirements of the Township Engineering Consultant, Department of Public Works Director, Hartland Deerfield Fire Authority, Michigan Department of Environment, Great Lakes, and Energy (EGLE), and all other government agencies, as applicable.
8. (Any other conditions the Planning Commission deems necessary).

Discussion

Applicant: Redwood Living

Site Description

The proposed planned development (PD) is shown in the northwest portion of Hartland Glen Golf Club. Currently the golf course property is primarily zoned CA (Conservation Agricultural), and other portions are zoned HDR (High Density Residential). The golf course property, addressed as 12400 Highland Road, is west of Pleasant Valley Road, south of Cundy Road, and west of Hartland Glen Lane. The golf course property is approximately 352.69 acres (Parcel ID # 4708-26-100-023).

In 2017, the northern portion of the golf course property and two adjacent properties on Cundy Road, were rezoned to HDR under Rezoning Application #361, however the zoning lines are not defined on the current zoning map. The HDR portion is approximately 73 acres.

Redwood Living PD Phase I occupies approximately 27.14 acres (Parcel ID #4708-26-100-020), in the northeast portion of the former golf course property. This phase consists of thirty (30) single-story, multi-unit apartment buildings, with a total of 148 apartment units. Phase I is currently under construction.

The proposed project, Redwood Living Planned Development Phase II, occupies approximately 29.89 acres of the golf course property, in the northwest part of the golf course (Parcel ID #4708-26-100-023). The two (2) residential developments (Phase I and II) are connected via internal private roadways. Phase II has twenty-eight (28) single-story, multi-unit apartment buildings and a total of 130 apartment units.

The proposed site development plan shows proposed parcel/property lines that delineate the project area. A land division request and application will be reviewed separately.

Existing wetland areas/ponds are shown on the submitted plans.

West of the proposed Phase II project area, properties are zoned SR (Suburban Residential) and are part of the Handy Maxfield Shores subdivision, with single-family residences on each lot. Properties to the north are zoned CA and are occupied by single-family residences. Three (3) adjacent properties to the south are zoned CA and are occupied by single-family residences (by southwest corner of the subject site). The golf course property to the south is zoned CA or HDR.

Public access to the proposed development is via two (2) private roadways that are part of Redwood Living PD Phase 1. An emergency access road is shown on the south side of the development, for a future connection. An ingress/egress access agreement for this connection will be required as part of the Final Plan Review.

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 Phase 2 project area is designated as SPA on the amended FLUM.

The 2020-2021 Amended Future Land Use Map designations for properties adjacent to the subject site (29.89-acre site) are as follows:

- North: Medium Suburban Density Residential
- South: Medium Suburban Density Residential and Special Planning Area
- East: Special Planning Area
- West: Medium Urban Density Residential

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. The public hearing was held at the April 25, 2024, 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.

Proposed Use and Project Summary

This section of the memorandum outlines the basic elements of the proposed project. Please refer to the staff memorandum dated April 18, 2024, for additional details about the proposed project. A discussion of the revised plans and submittals from the applicant is also provided in this memorandum.

Redwood PD Phase II is a residential planned development and essentially is a continuation of Redwood Living Phase I. Similar to Redwood Living PD Phase I, the target market for this residential development includes empty nesters, seniors, and young professionals; however, the development is not age restricted. The building styles, building materials, and interior layout options are similar to those found in Phase I.

Phase II of the proposed residential planned development consists of twenty-eight (28), single-story, multi-unit apartment buildings. The project area is approximately 29.89 acres in size. The Preliminary Plan shows the footprint of each of the twenty-eight (28) apartment buildings and with a total of 130 apartment units.

Following is a summary of Phase I and Phase II:

Phase	Development Area (Acres)	#Apartment Units
Phase I	27.14 acres	148 units
Phase II	29.89 acres	130 units
TOTAL	57.03 acres	278 units

There are two (2) types of apartment buildings: 4-unit and 6-unit. Nineteen (19) buildings are 4-unit buildings. Nine (9) buildings are 6-unit buildings. Three (3) of the 6-unit buildings have extended garages (18 units total), with an extra four (4) feet of garage length to accommodate larger vehicles.

Public access to the development is via two (2) private roadways associated with Phase I. Internally the residential units are served by several private roadways. The roadway design is the same as in Phase I, with

a concrete travel lane having a width of twenty-two (22) feet plus an integral 5-foot-wide integral, accessible sidewalk, on one side of the roadway, that is scored and stained to delineate it from the travel lane. The total width is twenty-seven (27) feet. A designated road right-of-way easement is not part of the roadway design. 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's explanation previously (Phase 1). The private roadways will not meet the private road standards as outlined in Section 5.23 of the Zoning Ordinance.

The Open Space Plan states approximately 15.74 acres of the site is open space (52.7% of the PD area), with approximately 8.16 acres designated as usable open space (27.3% of the PD area).

The estimated proposed density is 4.35 dwelling units per acre, using 130 dwelling units.

Municipal sewer access is available and an adequate number of REU's (Residential Equivalency Units) are attached to the planned development property.

An off-site, permanent monument sign is proposed, to be located on a separate parcel of land that is currently under the ownership of Hartland Glen Development LLC. The approximate 1.06 area parcel is zoned CA, and has frontage along Highland Road on the north, Cundy Road on the south, and borders Hartland Glen Lane on the east (Parcel ID #4708-26-100-021). The south property line abuts Redwood Living Phase I.

The revised monument sign drawing shows two (2) sign panels, with one sign panel for Hartland Glen Golf Course and one for Redwood Apartment Neighborhoods. Additionally, a second off-site interim/construction sign is proposed on the same parcel. A drawing of the sign is provided. The applicant has requested a waiver for each off-site sign as part of this request. Additional information is provided in a separate section of this memorandum.

Review of Project – Revised Plans and Submittals from Applicant

The public hearing for SP PD #24-003, Redwood PD Phase II Preliminary Plan, was held at the Planning Commission meeting on April 25, 2024. Comments and questions arose at the public hearing which required additional information or revisions to the plans. As a result, the Planning Commission did not make a recommendation on April 25, 2024, on the project. The applicant was tasked with addressing the comments made at the public hearing and providing revised plans and responses to the questions, to be presented at a future Planning Commission meeting.

In response to the topics discussed at the public hearing, the applicant has provided revised plans and other documents as listed below:

- Applicant's letter dated June 5, 2024, with an itemized list of revisions to the plans. Written responses are provided for comments and questions from the public hearing held at the Planning Commission meeting on April 25, 2024.
- Information on Redwood property operations and staffing
- Community benefit statement/list of benefits
- Revised plan set containing civil and landscape plans (civil set dated June 6, 2024; Landscape plans dated June 6, 2024)
- The landscape plans are signed by a Registered Landscape Architect
- Architectural plans dated February 24, 2023 and March 3, 2023 – same version as previous set for public hearing
- Open space aerial plan

- Phase 2 Concept Plan high profile mark-up plan with new site layout
- Limits of disturbance plan (with and without aerial background)
- Sidewalk distance plan
- Fire truck turning movement exhibit
- Revised off-site monument sign exhibit
- Interim/construction off-site sign exhibit
- Waiver request for off-site signage

In this staff memorandum, plan revisions and other submittals from the applicant will be discussed by topic. Please review the submittals in order to have a complete understanding of the responses from the applicant. Also please refer to the staff memorandum dated April 18, 2024, for SP PD #24-003 (Redwood PD Phase II Preliminary Plan) for all other design details and other topics that will not be discussed in this memorandum.

Revised Site Plans dated June 6, 2024 - Overview

The twenty-eight (28) apartment buildings in Phase II have been re-lettered on the plan, now starting where Phase I lettering left off. A copy of the previous plan for Phase II is not provided as an attachment with this staff memorandum, please reference the previous packet of information to reference to previous site plan, or please contact the Planning Department to obtain a copy. Some of the site plan revisions are noted below, with additional details in other sections of this memorandum, as applicable. Landscaping revisions will be discussed in a separate section.

- Building ZZ (formerly Building T) has been shifted to the west, by swapping the building with a parking area to provide a berm with landscape buffer, to screen the adjacent single-family residence. The parking area now has seven (7) parking spaces (formerly had six (6) parking spaces).
- Thirty-one (31) off-street parking spaces (on the road) are provided throughout the site, in five (5) parking areas on the street. This number includes one (1) barrier-free parking space at the mail kiosk. The previous plan had twenty-nine (29) parking spaces. In several places the applicant states there are thirty-two (32) parking spaces, but staff could not confirm that number on the plan. Additional discussions on parking spaces and parking calculations are provided in a separate section in this memorandum.
- The emergency access (stub street) has been extended to the south property line of Phase II property. A five (5) foot wide sidewalk is shown on the east side of the access street.
- An amenity area has been added to the development, on the east side of the site, between Building GG and HH. The area includes a lending library structure, bench, and landscaping (see Sheet L1.1.).
- Revisions to the landscape plans have been made, which will be discussed in a separate section in this memorandum.

Discussion of Applicable Eligibility Criteria and PD Design Standards – Review of Revised Plans

The next part of this memorandum includes a discussion on specific topics that have been addressed by the applicant via written documentation, revised plans, or other submittals. Essentially this follows the format of the staff memorandum dated April 18, 2024, but only applicable review standards are discussed in this memorandum, as they pertain to revised plans and submittals from the applicant.

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 written document that outlines the Community Benefits that the Redwood Apartment Neighborhood will provide to future residents and Hartland Township. The key points are noted below:

- Site plan is designed to preserve the existing natural buffer and open space areas through clustering the buildings toward the center of the property. This maintains the mature tree line and provides a buffer against the adjacent single-family properties to the west, south, and north.
- Plan exceeds the required setbacks for a planned development. This allows for a large amount of open space (15.74 acres; or 52% of the entire site area).
- Creation of a low to no maintenance residential community that is in demand in Hartland Township and offers an alternative to traditional single-family or multi-family residential options. This option can appeal to seniors, empty-nesters, people who work atypical hours, snowbirds, families who wish to move aging family members nearby, people who want equity out of their homes, etc.
- Redwood’s unique housing style can foster opportunities for making single-family homes available when residents down-size and move from a single-family residence to an apartment community like Redwood.
- The apartments are well designed and are comprised of high-quality energy efficient materials and finishes that their residents seek.
- The single-story building design integrates well with the neighboring single-family uses as opposed to multi-story buildings.
- Attached 2-car garage is provided for every unit which is highly valued by the residents.
- Extensive landscaping is provided throughout the site and around the apartment buildings/units that exceeds the required landscape standards.

Planned Development Design Standards (Section 3.1.18.C.)

This section outlines the design standards for a planned development. For the full review please refer to the staff memorandum dated April 18, 2024. Applicable design standards are discussed below based on the revised plans. Additional site standards will be discussed in applicable sections of the Zoning Ordinance. Most of the discussion here is a repeat from the April 18, 2024, staff memorandum.

1. **Minimum Yard Requirements.** The minimum yard requirements are noted in the chart below per Section 3.1.18.C.vi.a. (for building setbacks):

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 (N, S, E, W) property lines	40 ft.	58 ft. (north) 40 ft. (south)** 17 ft. (east) 256.9 ft. (west)	Yes Yes No Yes
Along an internal collector or local road	40 ft.	25 ft.-measured from bldg. to edge of roadway or integral sidewalk	No

* As measured from property line to closest point of building

**On the previous plan the closest building was 31.7 ft. to the south property line and did not comply

2. **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 130 units, 260 parking spaces are required, plus thirty-three (33) additional parking spaces are required ($130 \div 4 = 33$), for a total of 293 parking spaces.

Each apartment unit has an attached 2-stall garage, plus a 25-foot-long, 18-foot-wide driveway. In some instances, driveways are forty (40) feet wide and twenty-five (25) long, where two garages are adjacent to each other. The driveway for each unit could potentially accommodate up to two (2) additional vehicles

Parking is not permitted on the street, except in designated parking areas.

The revised plan shows a total of thirty-one (31) off-street guest parking spaces which are provided within the development, scattered throughout. One (1) barrier-free parking space (van accessible) is located by the mail kiosk. The previous plan offered a total of twenty-nine (29) off-street parking spaces.

The off-street parking spaces are shown as ten (10) feet wide by twenty (20) feet in length and meet the Ordinance standards.

Following is a summary of the available parking spaces.

Required Parking

2 sp. per unit	130 units x 2 spaces =	260 spaces
1 add'l space per 4 units	130 units ÷ 4 =	33 spaces
Total Required		293 spaces

Provided Parking

2 spaces in each garage	260 spaces
2 spaces each driveway	260 spaces
Off-street parking	31 spaces
Total provided	551 spaces

3. **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.*

As recap on Open Space, 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 land area to be usable open space (“usable open space” is defined as land area suitable for active recreation). For the proposed development consisting of 29.89 acres, this would equate to a minimum of 7.47 acres of open space, with a minimum of 2.98 acres of usable open space (10%).

The following table outlines the Open Space Requirements (required and proposed).

	Required	Proposed	Complies Yes or No
Open Space	25% = 7.47 acres min.	52.6% = 15.74 acres	Yes
Usable Open Space*	10% = 2.98 acres min.	27.3% = 8.16 acres	Yes

**Per the plan, Usable Open Space includes the integral sidewalks (0.45 acres) and common open space (7.71 acres). Wetland areas and the stormwater management area are not counted as open space on the plan.*

The revised plan set includes an aerial version of the Open Space Plan (Sheet C203, separate document) which includes graphics showing open space areas (black stripes), limits of disturbance (red line), and existing tree preservation limits (blue line).

Sheet C203 in the civil plan set is a black and white version of the aerial plan, without the existing vegetation shown. Open space is shown as striped areas on the plan. Common Open Space areas (or usable open space) are defined by a dashed line, with the area listed for each polygon for a total of 7.71 acres (integral sidewalks are not distinguished with a dashed line on this plan).

A note on the Open Space Plan states “*Existing vegetation between the tree line and limits of disturbance to be evaluated for condition and species. If species and condition of tree is compliant with Township standards, the vegetation shall be protected and preserved*”. This is located on Sheet C203, labeled Open Space Plan.

The applicant should submit the tree evaluation plan to the Township prior to the submittal of the Construction Plan Set, for staff to review. The plan should show the trees to be preserved, with tree species, condition of tree, and tree diameter listed for each tree. Protective fencing should be shown on the grading plan, site plan, and all applicable plan sheets. A detailed drawing of the protective fencing shall be shown on all applicable sheets.

4. **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. The sidewalks connect to those found in Redwood Living PD Phase I. The applicant submitted a Sidewalk Exhibit that shows two (2) walking loops with distances stated. The red loop travels through Redwood Phase I and Redwood Phase II, for a stated distance of 6,738 feet (1.25 mile loop). The blue loop is only within Redwood Phase II with a distance of 4,254 feet (0.8 mile loop). Per the applicant’s explanation the

sidewalks provide connectivity throughout the development and are an accessible route for the residents to access open space areas and amenities in both phases.

The applicant states Redwood is providing an access easement to the adjacent residential planned development east of Redwood PD Phase I (Highland Reserve PD/Edwin Allen Homes; SP PD #23-008). The intent is to allow for sidewalk connections between the developments for residents of both communities to enjoy. The access easement is not shown on the current set of plans for Redwood Phase II. The access easement will be reviewed as part of the Final PD.

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

1. Traffic Impacts.

The proposed planned development is directly accessed via private roadways in Redwood Living PD Phase I. The roadways in Phase I connect to Hartland Glen Lane on the east. Hartland Glen Lane intersects with Cundy Road, which terminates at Highland Road.

As background information, a traffic generation memo, dated December 21, 2023, prepared by Colliers Engineering and Design was an attachment with the staff memorandum dated April 28, 2024. The document 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. Based on the 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. The conclusion presented in the memo is that the proposed project would have no significant traffic impact and the change in traffic volume in the adjacent road network would not be discernable or require further study. A Trip Generation Study completed by CESO Inc., dated May 2019 was also submitted. Trip generation data was analyzed from four (4) similarly sized Redwood developments.

Questions about traffic were brought up at the public hearing. The applicant provided responses in the letter dated June 5, 2024, which are noted below:

- Direct vehicular connections to Maxfield Boulevard, Cundy Road, or other Township roadways are not proposed as part of the proposed Redwood Phase II project.
- Internal roadway connections to Redwood Phase I are proposed and a future internal emergency access connection is shown to the south (to the golf course property) on the plans for Redwood Phase II.
- The total percent increase in traffic out to Highland Road is 2.46%. Typically, agencies would require further analysis of all intersections where the projected traffic will represent at least 5% of the intersection volume.
- Redwood Phase II is replacing a portion of the golf course use which would typically generate a larger number of daily trips than the Redwood use.
- If a traffic impact analysis is required by the Livingston County Road Commission (LCRC) or the Michigan Department of Transportation (MDOT), one will be provided.
- Per MDOT guidelines, a traffic impact study is required when a proposed development exceeds 50 directional peak hour trips. A trip generation report for the Redwood development shows 35 directional trips in the AM peak hour and 38 directional trips in the PM peak hour.

2. Fiscal Impacts.

Per the applicant's written statement, the Redwood development will provide an increase in the tax base of Hartland Township and additional residents will support and patronize local businesses. Additionally, the applicant notes the following:

- Redwood as the property owner, will pay the full non-homestead property tax rate on the property and will not seek a homestead exemption.
- Redwood residents will visit local businesses and utilize local services. The Phase I team has developed partnerships with local establishments.
- Redwood uses local vendors now and will require several full-time employees to staff the neighborhood when combined with Phase I.

3. Vehicular Circulation.

The site is accessed at two (2) points via private roadways from Phase I of Redwood Living. 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. 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.

On the south side of the site, a street stub is shown (26-feet wide) and labeled as emergency access, future connection. The intent is to provide a vehicular connection to future development(s) to the south on land currently owned by Hartland Glen Development LLC. The previous plan showed the stub street ending before the south property line, which generated questions at the public hearing.

The revised plans show the stub street being extended to the south property line, with a five (5) foot wide sidewalk on the east side of the stub street. As noted in the previous staff memorandum, ingress-egress access easements and agreements will be required as part of the Final PD documents. The applicant, and/or any future owners shall agree to not interfere with or object to any future roadway connection to the south.

A Fire Truck Turning Movement Exhibit was submitted with the revised set of plans (separate exhibit). The plan shows turning movements for a fire truck on the curved portions of the interior roadways in Phase II.

4. Landscaping (Section 5.11).

Applicable sections of Section 5.11 (Updated Landscaping and Screening standards) will be applied to the revised landscape plans, as outlined below. The landscape plans are prepared by a Registered Landscape Architect and are signed.

A. Landscaping Adjacent to Road (Sec. 5.11.5.A.ii.)

- Required – Street trees to be provided and maintained at one (1) tree per 35 feet of frontage. Street trees to be located in a 4-foot minimum wide lawn strip between road and sidewalk. When this is not feasible, trees to be planted no further than 15 feet from the edge of pavement or back of curb unless otherwise approved by Planning Commission. Required canopy tree size is a minimum 3-inch caliper tree at the time of planting.

- Proposed – 1 canopy tree per apartment unit, planted in front of each unit, with some exceptions but not at a standard interval; street tree placed between approximately 10 feet and 15 feet from the edge of the pavement (travel lane) or edge of integral sidewalk. Proposed canopy tree size is 3” caliper. **Revised plan shows ten (10) additional street trees.**
 - Meets Requirement? – **TBD**
 - Comment – Tree spacing varies due to driveway width (double driveway is 40 feet wide) and driveway locations, thus the trees may be further apart than 35 feet on center in some locations. **Planning Commission to determine if the proposed street tree plan is acceptable.**
- B. Buffering or Screening (Sec. 5.11.2.G.i.) – Screening between Land Uses (north, south, and west property lines where abutting single-family zoned properties: CA and SR zoned)
- 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 – **North and West sides of site: Revised plans show a buffer on the north and west that is comprised of a mix of canopy and evergreen trees. Additional trees have been added to each buffer. Generally speaking, the proposed tree buffer along the north aligns with the line designated as the Limits of Disturbance and abuts the existing tree line that is stated to be preserved.**
 - Proposed – **South side of site adjacent to single-family residence: Revised plans show a landscape screen/buffer that is comprised of a low berm placed between Buildings ZZ and CCC (formerly T and W) and primarily landscaped with a mix of evergreen trees, and a few canopy trees and ornamental trees, for approximately 110 feet. On either side of the berm additional screening is shown with a mix of evergreen trees, canopy trees, and ornamental trees, behind Buildings ZZ and CCC. Two (2) sections of privacy fencing are shown, with one section behind Building ZZ (60 lineal feet) and another section behind Building CCC (48 lineal feet). The fence is placed between the rear of each building and the landscape screening. The vinyl privacy fence ranges in height from approximately five (5) feet to six (6) feet. The color of the fence is white.**
 - Meets Requirement? – **TBD**
 - Comment – **Planning Commission to determine if the proposed planting plan meets the intent of the screening requirement.**
- C. Detention/Retention Area Landscaping (Sec. 5.11.2.H.) – Updated Landscaping and Screening Ordinance standards
- 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 must be planted for every 50 lineal feet of basin perimeter measured along top of bank elevation. Pond Perimeter - approx. 905 lineal ft. (per statement on plan Sheet L1.0). EQUATES TO: 18 canopy or evergreen trees. Side slopes of detention pond not to exceed 1 foot vertical for every 4 feet horizontal.
 - Proposed – 25 trees (8 deciduous trees and 17 evergreen trees) and 13 ornamental trees
 - Meets Requirement? – **TBD – Revised plans do not show the top of bank elevation of the detention pond, thus staff could not confirm the stated pond perimeter or required plant material. Information on side slopes of detention pond was not provided. The landscape detention formula as stated on Sheet L1.0 is the old version.**
 - Comment – **Applicant to provide information on pond perimeter (lineal feet) and side slopes of the detention pond on the Construction Plan Set (Grading Plan and Landscape plans). The Updated Landscaping and Screening standards for a detention pond shall be stated on Sheet L1.0.**

- **Other: The detention pond behind Building LL and MM will be wet and contain a fountain and/or aerator depending on the depth. Details on the fountain and/or aerator shall be provided on the Construction Plan Set.**

Other Comments regarding Landscaping

Plant sizes

The revised plant schedule states the correct size for a conifer tree, as eight (8) feet at the time of planting.

Proposed landscape berms on west side of site

The prior plan set, Sheet C300 contained a note in two locations, on the west side of the site, stating “approximate location of landscaping berm if excess soils are found during construction”. This note has been removed from the revised set of plans.

Mowing Plan (Sheet L2.0)

The mowing plan has been revised to provide additional mowed and maintained areas for active recreation, in the central portion of the site, around the south and east sides of the detention pond, and around the existing pond on the east. Low mow/no mow lawn treatment is found adjacent to the property lines. Sod is shown at the front of each building, between driveways, and along the roadways.

Added Amenities

A seating area with bench, landscaping, and a lending library structure (Free Little Library) is shown south of Building GG, on Sheet L1.1 of the revised landscape plans. Details on the lending library and landscaping are provided on the same sheet. Sheet L1.1 also shows a bench next to the sidewalk that is associated with the stub street/emergency access on the south. Sheet SD1.0 has a detailed drawing of the bench.

5. Architecture/Building Materials (Sec. 5.24)

The revised plan set includes the same architectural drawings as the prior set of plans, which are from the set associated with Redwood PD Phase I. Per the applicant those plans are intended to provide examples of what will be provided for the apartment buildings in Phase II. The same façade materials, building styles, and interior layout options will be used for Phase II. A note has been added to some of the plans regarding the option of extended garages. Construction level plans for Redwood Phase II will be provided with the Construction Plan Set.

An updated site plan, color version, is provided that shows revised development layout and buildings that have a High Profile elevation (shown with a yellow stripe on the side with the High Profile).

Off-site Signage

In the previous submittal in April 2024, one (1) off-site, permanent monument sign was being proposed on a separate parcel of land, owned by Hartland Glen Development LLC (Parcel ID #4708-26-100-021). The approximate 1.07 acre parcel is zoned CA, and has frontage along Highland Road on the north, Cundy Road on the south, and the east property line is adjacent to Hartland Glen Lane. An older, wooden V-shaped sign exists on the parcel, for Hartland Glen Golf Course.

A second off-site sign is proposed with the revised plans. This sign is intended to be an interim/temporary sign for the Redwood community (Phase I and II). Per the applicant’s explanation, the intent is to place the interim sign on the parcel while leaving the existing Hartland Glen wood sign up until the permanent monument sign is installed. At that time both the interim sign and the existing Harland Glen sign will be removed.

The sign details as are as follows:

Permanent Off-site Monument Sign

The revised drawing of the monument sign design is the same as the previous design, except that the overall height is seven (7) feet, and now complies with the Zoning Ordinance. The prior version of the sign measured ten (10) feet in height. The overall square footage of the sign (area above the masonry base) is approximately 64 square feet, which complies with the zoning standards.

As a recap of the sign design, the sign is comprised of a masonry base that matches façade materials found on the buildings in Redwood I and II. The upper portion of the sign consists of two panel signs, one for Redwood Apartment Neighborhoods and another panel that states Hartland Glen Golf Course. Per the applicant, the monument sign provides wayfinding to the Redwood developments and Hartland Glen Golf Course, having visibility on Highland Road.

Interim Off-site Sign

The interim off-site sign is intended to be a temporary sign, until the permanent monument sign is installed. The Zoning Ordinance Sign regulations (Section 5.26) allows for several types of temporary signs that could be considered for the interim sign, as listed below:

Sign Type	Number	Height	Sign Area	Duration
Construction*	1 per development	7 ft.	16 SF	Remove w/i 14 days of CO
Real Estate	1 per lot for each road frontage**	7 ft	32 SF	Removal immediately after property is sold
Temporary	1 per business or tenant per site	7 ft	32 SF	30 days (allowed one time for a business at that location)

*Sign may use pole-type construction

**Residential Districts: lots 10 acres or more with frontage along M-59 or Old US-23, or adjacent to US-23

The proposed interim sign is a polymetal sign with printed graphics and is attached to a metal frame on skids. The overall size of the sign is twenty-four (24) square feet. The sign height is 48.75” (approximately 4 feet). This sign does not exactly meet the requirements for any of the temporary signs listed above; however, it could be considered a type of temporary sign as part of this Planned Development.

Waiver Request for Off-Site Signage

Off-site signage is not permitted per the Zoning Ordinance, thus the applicant has provided a waiver request to allow for off-site signage as presented above, to be considered in conjunction with Planned Development approval process. The applicant has noted that Hartland Glen Development, LLC has agreed to work with Redwood on providing an easement for the replacement of their existing sign with a new shared monument sign. The applicant shall secure a written acknowledgement from Hartland Glen Development, LLC agreeing that the existing wood sign (for Hartland Glen Golf Course) will be removed once the permanent monument sign is installed. All easements and supporting documents for the off-site signage will be required as part of the Final PD review.

Redwood Property Operations, Staffing, and Parking Enforcement

In response to questions raised at the public hearing regarding property operations, the applicant has provided a separate letter that responds to those topics.

Follow-up to Comments at the Public Hearing

In the Comment Response Letter dated June 5, 2024, the applicant offers responses to questions and comments that were raised by the public and the Planning Commission at the public hearing.

Other Comments

It should be noted that a few housekeeping items need attention on the Construction Plan Set. The items are minor in nature and should not delay the Planning Commission from making a recommendation for Redwood PD Phase II Preliminary Plan. The items are noted below.

15-foot side setback – to be shown on the following sheets

C200, C202, C300, C400, L1.1, L2.0, Conceptual Site Plan with High Profile Mark-up, and Sidewalk Exhibit (EX-1)

Building Setback/other Information – to be revised on the following sheets.

- Conceptual Site Plan with High Profile Mark-up: in Site Data Chart, under Building Setback, revise Front setback from 50' to **0'**)
- Conceptual Site Plan with High Profile Mark: revise the number of Parking spaces to **31** guest parking spaces (32 guest parking spaces stated)
- C200: Site Data Chart, Revise Front Setback (Building) from 15' to **0'**, Revise Rear Setback from 15' to **25'**
- C200: Parking data to be revised:
Required Parking - Total Required: revise from 263 spaces to **293 spaces** (260 + 33 = 293 spaces)
Additional Parking Provided above Twp. Requirement – Revise from 288 spaces to **258 spaces** (551 – 293 = 258 spaces)

The revisions should be shown on the Construction Plan Set.

Hartland Township DPW Review

Hartland Township DPW Director has reviewed the revised plans and noted his review letter, dated January 29, 2024, remains as written.

Hartland Township Engineer's Review (SDA) TO DO

The Township Engineer (SDA) has reviewed the Preliminary PD plans and recommends approval subject to items being addressed in the letter dated June 14, 2024.

Hartland Deerfield Fire Authority Review

The Hartland Deerfield Fire Authority reviewed the revised plans and has no comments at this time.

Attachments:

1. Township Engineer (SDA) Review Letter 06.14.2024 – PDF version
2. Staff Memorandum dated 04.18.2024 – PDF version
3. Planning Commission Minutes 04.25.2024 – PDF version
4. Community Benefit Statement – PDF version
5. Comment Response Letter dated 06.05.2024 – PDF version
6. Waiver Request for Off-Site Signage 06.06.2024 – PDF version
7. Redwood Operations Information – PDF version
8. Open Space Plan Aerial – PDF version
9. High Profile Mark-up Plan – PDF version

10. Sidewalk Exhibit – PDF version
11. Fire Exhibit – PDF version
12. Site Plan for Off-Site Monument Sign – PDF version
13. Permanent Monument Sign Exhibit – PDF version
14. Interim Off-Site Sign Exhibit – PDF version
15. Color Site Plan with Former Lettering– PDF version
16. Redwood Phase II Revised Site Plans dated 06.06.2024 – PDF version

T:\PLANNING DEPARTMENT\PLANNING COMMISSION\2024 Planning Commission Activity\Site Plan Applications\SP PD #24-003 Redwood Prelim Phase II\Staff Reports\PC\SP PD #24-003 Redwood Prelim Phase II PC 06.20.2024.docx

June 14, 2024

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

Re: Redwood Living Phase 2 (PD) – Site Plan Review #1
SDA Review No. HL23-105

Dear Troy:

We have received the site plan submittal for the above referenced project prepared by Colliers dated June 7, 2024 and received by our office on June 11, 2024. The plans were reviewed in accordance with the Site Plan Review Checklist, Current Design and Engineering Standards, Standard Details, and Code of Ordinances and the following comments are our observations.

Recommendation

We recommend approval of the site plan, conditional upon all of the below comments being addressed to the satisfaction of the Planning Commission. Final engineering approval is not recommended at this time due to the number and nature of the comments.

Project Summary

- Construction of single-family condominiums at 12400 Highland Road, south of Cundy Road and west of Hartland Glen Lane. The site is proposed to rezone from conservation agricultural (CA) to planned development (PD). Phase 2 is an extension from Phase 1 with 130 rental units. Site access would be provided via private roadways through Phase 1 of Redwood Living. The site is approximately 29.90 acres.
- Water service would be provided by an extension of the 8-inch diameter water main serving Redwood Hartland Phase 1 apartments. 10 additional hydrants are proposed on-site.
- Sanitary sewer service would be provided by an extension from the existing 8-inch sanitary sewer serving Phase 1.
- Storm water would be collected by a single storm sewer collection system and discharged to an on-site detention basin, out letting to regulated wetlands.

General

1. Provide a copy of Lot Split. Include Parcel ID with description on drawing X100.
2. Drawing C200: Offset distances listed in zoning information on Drawing X100 and in PD regulation table 3.1.18.C.vi.a of the township ordinances are not met. Approval from the planning department will be required for design variance.
3. Drawing L2.0: Landscaping shall not be proposed within utility easements unless approved by Hartland Township.

These comments are to assist in plan preparation in anticipation of your engineering review submittal and are not required at this time for site plan approval:

1. A wetland delineation report has not yet been provided. An EGLE permit will be required for any proposed impacts within the regulated wetlands.

Water Main

1. Drawing C400: Water main easement shall follow centerline of utility.

Sanitary Sewer

These comments are to assist in plan preparation in anticipation of your engineering review submittal and are not required at this time for site plan approval:

1. Drawing C400: Easement missing from sanitary sewer northeast of building A extending into Phase 1.

Storm Drainage

These comments are to assist in plan preparation in anticipation of your engineering review submittal and are not required at this time for site plan approval:

1. Drawing C300:
 - a) Surface water discharging directly to wetlands along north portion of property. All effort shall be made to capture storm runoff and direct to detention area.
 - b) The maximum allowable grade shall be 1 vertical to 4 horizontal.

Off-Site Easements

Any off-site utility easements anticipated must be executed prior to final approval of the plans. Including the offsite grading rights to the southerly property (Hartland Glen Golf Course) for the emergency access drive. If you have note already done so, drafts of the easements must be submitted to our office for review and shall be approved prior to executing the easements.

Permits Required

Based on those improvements depicted on the plans, the following permits may be required and will need to be provided to the Township once available. Any changes to the approved site plan from the following agencies that impact the design may require reapproval.

Hartland Township:

1. All necessary easements including water main and sanitary sewer. Easements must be on Hartland Township Standard Easement document and include a sketch. A current title policy for ownership verification shall be provided with all executed easement submittals, if applicable.
2. A Land Use Permit.
3. Storm Water Agreement (drainage system is to be owned and properly maintained by the Condominium and not publicly maintained).
4. Maintenance bond and insurance for the water main to be dedicated to the township.

Livingston County:

1. Copy of LCDC approval and permit for grading, sanitary sewer.
2. Copy of a Soil Erosion and Sedimentation permit from Livingston County Drain Commissioner.

Michigan Department of Environment, Great Lakes, and Energy (EGLE):

1. MDEGLE Permit for all water main installation.
2. MDEGLE Permit for all public sanitary sewer installation.
3. NPDES Notice of Coverage Documentation.
4. MDEGLE Minor Permit for all proposed work impacting the state-regulated wetlands.

The following must be submitted with the Revised Site Plan:

A letter from either the applicant or the applicant's engineer must be submitted with the Site Plan highlighting the changes made to the plans addressing each of the comments listed above and indicating the revised sheets involved.

Please be aware that additional comments may arise with the submittal of the requested revisions and/or additional information. The comments are not to be construed as approvals and are not necessarily conclusive. The final engineering plans for this development are to be prepared in accordance with the Current Design and Engineering Standards, Standard Details, and Code of Ordinances.

If you have any questions regarding this letter, please contact Mark Collins or Luisa Amici at (248) 844-5400 with any questions.

Sincerely,

SPALDING DEDECKER



Luisa Amici
Engineer



Mark Collins, PE
Project Manager

cc: Troy Langer, Planning Director

Hartland Township Planning Commission Meeting Agenda Memorandum

Submitted By: Troy Langer, Planning Director

Subject: Site Plan PD Application #24-003 Redwood Living Planned Development (PD) Phase II – Preliminary PD Site Plan

Date: April 18, 2024

Recommended Action

Move to recommend approval of Site Plan/PD #24-003, the Preliminary Planned Development Site Plan for Redwood Living Planned Development Phase II, as outlined in the staff memorandum dated April 18, 2024.

Approval is subject to the following conditions:

1. The Preliminary Planned Development Site Plan for Redwood Living Planned Development Phase II, SP/PD #24-003, is subject to the approval of the Township Board.
2. Waiver request for the development monument sign to be located off-site is approved.
3. Waiver request for the development monument sign to exceed seven (7) feet in height is approved. The proposed monument sign height is shown as approximately ten (10) feet.
4. The applicant shall adequately address the outstanding items noted in the Planning Department's memorandum, dated April 18, 2024, on the Construction Plan set, subject to an administrative review by Planning staff prior to the issuance of a land use permit.
5. As part of the Final Plan Review, the applicant shall provide a Planned Development (PD) Agreement that includes any applicable ingress-egress access easements and agreements. The applicant, and/or any future owners shall agree to not interfere with or object to any future roadway connection to the south. The documents shall be in a recordable format and shall comply with the requirements of the Township Attorney.
6. Applicant complies with any requirements of the Township Engineering Consultant, Department of Public Works Director, Hartland Deerfield Fire Authority, Michigan Department of Environment, Great Lakes, and Energy (EGLE), and all other government agencies, as applicable.
7. (Any other conditions the Planning Commission deems necessary).

Discussion

Applicant: Redwood Living

Site Description

The proposed planned development (PD) is shown in the northwest portion of Hartland Glen Golf Club. Currently the golf course property is primarily zoned CA (Conservation Agricultural), and other portions are zoned HDR (High Density Residential). The golf course property, addressed as 12400 Highland Road

is west of Pleasant Valley Road, south of Cundy Road, and west of Hartland Glen Lane. The golf course property is approximately 352.69 acres (Parcel ID # 4708-26-100-023).

In 2017, the northern portion of the golf course property and two adjacent properties on Cundy Road, were rezoned to HDR under Rezoning Application #361, however the zoning lines are not defined on the current zoning map. The HDR portion is approximately 73 acres.

Redwood Living PD Phase I occupies approximately 27.14 acres (Parcel ID #4708-26-100-020), in the northeast portion of the former golf course property. This phase consists of thirty (30) single-story, multi-unit apartment buildings, with a total of 148 apartment units. Phase I is currently under construction.

The proposed project, Redwood Living Planned Development Phase II, occupies approximately 29.89 acres of the golf course property, in the northwest part of the golf course (Parcel ID #4708-26-100-023). The two (2) residential developments (Phase I and II) are connected via internal private roadways. Phase II has twenty-eight (28) single-story, multi-unit apartment buildings and a total of 130 apartment units.

The proposed site development plan shows proposed parcel/property lines that delineate the project area. A land division request and application will be reviewed separately.

Existing wetland areas/ponds are shown on the submitted plans.

West of the proposed project area (Phase II), properties are zoned SR (Suburban Residential) and are part of the Handy Maxfield Shores subdivision, with single-family residences on each lot. Properties to the north are zoned CA and are occupied by single-family residences. Three (3) adjacent properties to the south are zoned CA and are occupied by single-family residences (by southwest corner of the subject site). The golf course property to the south is zoned CA or HDR.

Public access to the proposed development is via two (2) private roadways that are part of Redwood Living PD Phase 1. An emergency access road is shown on the south side of the development, for a future connection. An ingress/egress access agreement for this connection will be required as part of the Final Plan Review.

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 Phase 2 project area is designated as SPA on the amended FLUM.

The 2020-2021 Amended Future Land Use Map designations for properties adjacent to the subject site (29.89-acre site) are as follows:

North: Medium Suburban Density Residential

South: Medium Suburban Density Residential and Special Planning Area

East: Special Planning Area

West: Medium Urban Density Residential

Site History

REZ #361 (2017)

In 2017, approximately 73 acres were rezoned from CA (Conservation Agricultural) to HDR (High Density Residential), under Rezoning Application #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) parcels on Cundy Road, with single-family residences, equating to an additional two (2) acres of land, for a total of 73 acres. The properties on Cundy Road are addressed as 12396 and 12398 Cundy Road. The remaining portion of Hartland Golf Club property was zoned CA at that time.

Site Plan/PD Application #20-008 Redwood Living Planned Development (Phase I) – Concept Plan

The Concept Plan for Redwood Living PD 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.

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

The Preliminary Planned Development Site Plan for Redwood Living PD was reviewed by the Planning Commission under Site Plan Application #21-005. On June 24, 2021, the Planning Commission held a public hearing for the project. Upon review of the project, the Planning Commission requested the applicant revise the plans to address several items that were discussed at the public hearing, prior to the Planning Commission making a recommendation on the project. The Planning Commission reviewed the revised plans at their regular meeting on Thursday, July 22, 2021, and recommended approval of Site Plan/PD Application #21-005.

The Township Board approved Site Plan/PD Application #21-005 at their regular meeting on August 17, 2021. The approved plan for SP PD #21-005 shows thirty (30) single-story, multi-unit apartment buildings, with a total of 148 apartment units and a project area of approximately 27.14 acres. The proposed density is 5.42 dwelling units per acre, and a density bonus was recommended by the Planning Commission.

Site Plan/PD Application #22-003 Redwood Living Planned Development (Phase I) – Final PD Site Plan

At their regular meeting on March 17, 2022, the Planning Commission recommended approval of SP/PD #22-003. The Township Board approved SP PD #22-003 at their regular meeting held on April 5, 2022, and included approval of a density bonus. Approval of SP/PD #22-003 constituted a rezoning of the subject properties associated with Redwood Living PD, from CA and HDR to PD (Planned Development). This also constituted an amendment to the Township zoning map.

Site Plan/PD Application #23-007 Redwood Living Planned Development Phase II – Concept Plan

The Concept Plan for Redwood Living PD Phase II was discussed under SP/PD #23-007. The Concept Plan was reviewed by the Planning Commission on July 27, 2023, and the Township Board on August 15, 2023. The Phase II Concept Plan, approximately 28.71 acres, consists of twenty-seven (27) single story apartment buildings, with a total of 130 dwelling units. Public access to the development is via two (2) private roadways associated with Redwood Living PD Phase I. Emergency access is shown on the south side of the site, as a future connection.

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 April 25, 2024 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

Under the current proposal, the project area of Phase II is expanded slightly than was proposed in the Concept Plan. This is due to a larger than expected area of poor soils in the north central portion of the site. The project area increased in size from 28.71 acres (Concept Plan) to 29.89 acres for the Preliminary Plan, with additional land acquired along the south boundary line.

Redwood PD Phase II essentially is a continuation of Phase I. Similar to Redwood Living PD Phase I, the target market for this residential development includes empty nesters, seniors, and young professionals; however, the development is not age restricted. The building styles, building materials, and interior layout options are similar to those found in Phase I.

The proposed residential planned development consists of twenty-eight (28), single-story, multi-unit apartment buildings. The Preliminary Plan shows the footprint of each of the twenty-eight (28) apartment buildings and with a total of 130 apartment units.

Following is a summary of Phase I and Phase II:

Phase	Development Area (Acres)	#Apartment Units
Phase I	27.14 acres	148 units
Phase II	29.89 acres	130 units
TOTAL	57.03 acres	278 units

There are two (2) types of apartment buildings: 4-unit and 6-unit. Nineteen (19) buildings are 4-unit buildings. Nine (9) buildings are 6-unit buildings. Three (3) of the 6-unit buildings have extended garages (18 units total), with an extra four (4) feet of garage length to accommodate larger vehicles.

Five (5) 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 a minimum of twenty-five (25) feet long, as measured from the leading edge of the unit to the back of the street or edge of the 5-foot-wide integral sidewalk. The driveway width is eighteen (18) feet. This is to accommodate residents parking two (2) vehicles in the driveway and not

impede the accessible sidewalk along the road. Several driveways are forty (40) feet wide and twenty-five (25) feet in length where two garages are directly adjacent to each other.

The mail kiosk is shown in the northeast portion of the site however a detail drawing of the kiosk is not provided. Parking spaces are adjacent to the kiosk. Twenty-nine (29) guest parking spaces are scattered throughout the development.

Public access to the development is via two (2) private roadways associated with Phase I. Internally the residential units are served by several private roadways. The roadway design is the same as in Phase I, with a concrete travel lane having a width of twenty-two (22) feet plus an integral 5-foot-wide integral, accessible sidewalk, on one side of the roadway, that is scored and stained to delineate it from the travel lane. The total width is twenty-seven (27) feet. A designated road right-of-way easement is not part of the roadway design. 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's explanation previously (Phase 1). The private roadways will not meet the private road standards as outlined in Section 5.23 of the Zoning Ordinance.

Three (3) areas are labeled as "Regulated Wetlands", as follows: existing wetland area on the northern portion of the site; one (1) pond on the east; and one (1) pond in the southeast corner. A proposed stormwater management basin is located in the north central area of the site, where poor soils were discovered per the applicant. Per the applicant, construction activities will not occur in wetland areas.

The Open Space Plan states approximately 15.74 acres of the site is open space (52.7% of the PD area), with approximately 8.16 acres designated as usable open space (27.3% of the PD area).

As noted, the project area is approximately 29.89 acres in area. The estimated proposed density is 4.35 dwelling units per acre, using 130 dwelling units. More discussion on density is provided in the next section of this report.

Municipal sewer access is available and an adequate number of REU's (Residential Equivalency Units) are attached to the planned development property. The Public Works Director has provided a review letter dated January 29, 2024.

An off-site monument sign is proposed that is located on a separate parcel of land that is currently under the ownership of Hartland Glen Development LLC. The approximate 1.06 area parcel is zoned CA, and has frontage along Highland Road on the north, Cundy Road on the south, and borders Hartland Glen Lane on the east (Parcel ID #4708-26-100-021). The south property line abuts Redwood Living Phase I. The monument sign drawing shows two (2) sign panels – one for Hartland Glen and one for Redwood Apartment Neighborhoods. Additional discussion about the sign is found in this memorandum.

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 January 4, 2024, that addresses this topic.

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

The proposed project is approximately 29.89 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 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 extension of these services from Redwood PD Phase 1.

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 southern 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) dwelling units per acre.

The Planning 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 that is similar to Redwood PD Phase I in design and intent. Phase II essentially offers the same housing options as Phase I, with twenty-eight (28) single-story apartment buildings, with variations in building façade materials and interior living spaces.*

2. Development within the Special Planning Area shall provide for public facilities and other neighborhood amenities. *The existing public watermain and sanitary sewer in Phase I will be extended to serve Phase II. The design of the PD provides open space areas that can be enjoyed by the entire Redwood Living community (Phase I and II) via internal sidewalks that connect the two developments.*
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). *Vehicular links are provided between Phase I and II via the existing roadways in Phase I. Access to Hartland Glen Lane, is available via Phase I, which allows connections to the Hartland Glen Golf Course facility (clubhouse and parking to the south), Cundy Road, and Highland Road.*

A future vehicular connection is shown on the south side of the development (Phase II). Pedestrian access is provided via the 5-foot-wide integral sidewalks that occur in Phase I and II in the Redwood community. Phase I has a 5-foot-wide concrete sidewalk along the west side of Hartland Glen Lane, which extends to Cundy Road at the north terminus and to Hartland Glen Golf Course facilities at the south. These connections allow residents in Phase II to have pedestrian access to Highland Road and Hartland Glen Lane.

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. *Redwood Living PD Phase II provides an internal system of sidewalks with connections to sidewalks in Phase I. As noted above, additional pedestrian access is possible to adjacent walkways and facilities within the Phase I development.*
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 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 along 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 Living will be the only owner of the PD parcel (Phase II). Redwood Living 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 of 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. Overall, the entire site is to remain at four (4) dwelling units per acre.

The Preliminary Plan proposes 130 dwelling units with a density of 4.35 dwelling units per acre. This is consistent with the 2020-2021 Comprehensive Plan Amendment and Amended FLUM, with the allowance for up to five (5) dwelling units per acre on the northern portion of the Special Planning Area.

The following is a chart that summarizes the density for the Special Planning Area:

Development	Area (Acres)	Density	# Dwelling Units
Phase I	27.14 acres	5.45 DU/Acre	148 units
Phase II	29.89 acres	4.35 DU/Acre	130 units
Hartland Glen Golf Course	352.69 acres	3.85 DU/Acre	1,361 units*
TOTAL	409.72 acres	4 DU/Acre – Overall density	1,639 units*

*This does not include a bonus density that could be permitted in a planned development.

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 up to 150 dwelling units (29.89 acres x 5 dwelling units per acre), in accordance with the Comprehensive Plan. The planned development plan could include up to 210 dwelling units (150+ 60 additional dwellings) if a maximum bonus (40% increase) were awarded by the Planning Commission and Township Board. The proposed development has 130 dwelling units and a density bonus is not being considered for this development.

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. (for building setbacks):

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 (N, S, E, W) property lines	40 ft.	58 ft. (north) 31.7 ft. (south) 17 ft. (east) 256.9 ft. (west)	Yes No No Yes
Along an internal collector or local road	40 ft.	25 ft.-measured from bldg. to edge of roadway or integral sidewalk	No

* As measured from property line to closest point of building

Sheet C200 lists the proposed yard setbacks as follows: front (15) feet, side (15 feet), and rear (15). Sheet C201 shows the south property as a 15-foot side yard. Sheet C202 shows a 15-foot front yard. In order to be consistent with the yard setbacks for Redwood Living Phase I, the setbacks for Phase II should be as follows: front yard setback should be eliminated; rear yard setback of 25 feet should be along the south property line; and side yard setback of 15 feet should be along all other boundaries of the property. The revisions should be shown on the Construction Plan Set.

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 (MDR), 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.

<u>Proposed Building Separation Standards</u>	<u>Closest Distance between Buildings on Plan</u>
Side to Side: 20 feet	20.0 feet
Side to Rear: 20 feet	27.1 feet
Rear to Rear: 20 feet	27.0 feet

Based on the plans, the buildings are placed to comply with the building separation standards as proposed by the applicant. Regarding the front yard setback, there are no dedicated right-of-way or easement lines for any of the internal roadways. In this case, the edge of the roadway or integral sidewalk serves as the front lot line, as was applied in Redwood Living Phase I. The residential structures in Phase II are located a minimum of twenty-five (25) feet from the edge of the roadway or integral sidewalk.

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 130 units, thirty-three (33) additional parking spaces are required ($130 \div 4 = 33$), beyond the required two (2) spaces per dwelling unit.

Each apartment unit has an attached 2-stall garage, plus a 25-foot-long, 18-foot-wide driveway, which could potentially accommodate up to two (2) additional vehicles. In some instances, driveways are forty (40) feet wide and twenty-five (25) long where two garages are adjacent to each other. Parking is not permitted on the street, except in designated parking areas. A total of twenty-nine (29) parking spaces are provided within the development, scattered throughout. One (1) barrier-free parking space (van accessible) is provided by the mail kiosk. The guest parking spaces are shown as ten (10) feet wide by twenty (20) feet in length and meet the Ordinance standards. The proposed number of additional parking spaces is deficient by four (4) spaces, based on the Ordinance standards.

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 HDR (High Density Residential). In HDR, the open space requirement is a minimum of 35%, for a single-family detached dwelling. The proposed plan states the open space is 52% of the site, and thus would comply.

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 land area to be usable open space (“usable open space” is defined as land area suitable for active recreation). For the proposed development consisting of 29.89 acres, this would equate to a minimum of 7.47 acres of open space, with a minimum of 2.98 acres of usable open space (10%).

The Open Space Plan (Sheet C203) states the proposed open space area is approximately 15.74 acres, or 52.6% of the PD, as shown as striped areas on the plan. Sheet C200 states approximately 8.16 acres are dedicated as usable open space, or 27.3% of the site. Those areas include the integral sidewalks (0.45 acres)

and common open space (7.71 acres). The Common Open Space areas are defined by a dashed line on Sheet C203. Wetland areas and the stormwater management area are not counted as open space on the plan.

10. Natural Features. *Consistent with the stated intentions for creation of these regulations, 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.*

An Alta survey is provided which shows existing features of the site. Historically the site has functioned as a golf course. Three (3) existing wetland areas/ponds 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, with some exceptions for the construction of the stormwater management basin. 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. The sidewalks connect to those found in Redwood Living PD Phase I.

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

The 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 private roadways in Redwood Living PD Phase I. The roadways in Phase I connect to Hartland Glen Lane on the east. Hartland Glen Lane intersects with Cundy Road, which terminates at Highland Road.

A traffic generation memo, dated December 21, 2023, prepared by Colliers Engineering and Design, 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. Based on the 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. The conclusion presented in the memo, is that the proposed project would have no significant traffic impact and the change in traffic volume in the adjacent road network would not be discernable or require further study. A Trip Generation Study completed by CESO Inc., dated May 2019 was also submitted. Trip generation data was analyzed from four (4) similarly sized Redwood developments.

2. Fiscal Impacts.

The applicant has provided a response to this topic in the document dated January 4, 2024.

3. Vehicular Circulation.

As noted, the site is accessed at two (2) points via private roadways from Phase I of Redwood Living. 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. 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.

On the south side of the site, a street stub is shown (26-feet wide) and labeled as emergency access, future connection. The intent is to provide a vehicular connection to future development(s) to the south on land currently owned by Hartland Glen Development LLC. As shown, the stub street/future connection stops short of the south property line of Redwood Living Phase II. The plans shall be revised to show the street (future connection) being extended to the south property line of the phase II development, on the Construction Plan Set.

Ingress-egress access easements and agreements will be required as part of the Final PD documents. The applicant, and/or any future owners shall agree to not interfere with or object to any future roadway connection to the south.

4. Landscaping (Section 5.11).

Applicable sections of Section 5.11 (Updated Landscaping and Screening standards) will be applied to the PD, as outlined below. The landscape plans are prepared by a Registered Landscape Architect and are signed.

A. Landscaping Adjacent to Road (Sec. 5.11.5.A.ii.) –

- Required – Street trees to be provided and maintained at one (1) tree per 35 feet of frontage. Street trees to be located in a 4-foot minimum wide lawn strip between road and sidewalk. When this is not feasible, trees to be planted no further than 15 feet from the edge of pavement or back of curb unless otherwise approved by Planning Commission. 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, with some exceptions but not at a standard interval; street tree placed between approximately 10 feet and 15 feet from the edge of the pavement (travel lane) or edge of integral sidewalk. Proposed canopy tree size is 3” caliper.
- Meets Requirement? – **TBD**
- Comment – **Tree spacing varies due to driveway width (double driveway is 40 feet wide) and driveway locations. Additional street trees could be added to approach compliance with spacing and number of trees. Planning Commission to determine if the proposed street tree plan is acceptable.**

Based on prior discussions about street tree placement, the Planning Commission strongly prefers street trees to be planted no further than 15 feet from the edge of pavement or back of curb, even if the tree is planted within a utility easement. Deviations are to be approved by the Planning Commission.

B. Buffering or Screening (Sec. 5.11.2.G.i.) – Screening between Land Uses (north, south, and west property lines where abutting single-family zoned properties: CA and SR zoned)

- 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 are shown between the apartment buildings and subject property lines. Plant materials include a mix of a variety of deciduous/canopy trees, evergreen trees/tall junipers, and ornamental trees.
- Meets Requirement? – **TBD; the proposed screening is a mix of canopy trees, evergreen trees, and ornamental trees, and not totally comprised of evergreen trees 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.**

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 must be planted for every 50 lineal feet of basin perimeter measured along top of bank elevation. Pond Perimeter - approx. 905 lineal ft. (per statement on plan). EQUATES TO: 18 canopy or evergreen trees. Side slopes of detention pond not to exceed 1 foot vertical for every 4 feet horizontal.
- Proposed – 25 trees (8 deciduous trees and 17 evergreen trees); 13 ornamental trees, and total of 96 large evergreen and deciduous shrubs
- Meets Requirement? – **TBD** – plan does not show the top of bank elevation of the detention pond, thus staff could not confirm the stated pond perimeter or required plant material. The Updated Landscaping and Screening Standards were not used. Plan complies with standards used by applicant. Information on side slopes of detention pond was not provided.
- Comment – **Applicant to provide information on pond perimeter (lineal feet) and side slopes of the detention pond on the Construction Plan Set.**

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 L1.3 (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. A planting plan for the mail kiosk is shown on Sheet L1.1.

Other comments

Plant sizes

Sheet L1.0 has a Plant Schedule for all plant materials. The required height for an evergreen tree at the time of planting is eight (8) feet and several evergreen trees are less than eight (8) feet in the chart. The plant schedule shall be revised on the Construction Plan set for the height of all evergreen trees (Norway Spruce, Black Hills Spruce, and Eastern White Pine).

Mulch products

Street trees are to be landscaped with hardwood mulch. Landscape beds around the apartment buildings will have washed river rock (native gravel mulch as stated on plans) in the front, side and rear landscape beds. This is a deviation from the Zoning Ordinance requirement to use shredded hardwood mulch; however, the same material was approved as part of Redwood Living Phase I. At that time the applicant noted that the river rock is used to protect the siding from damage caused by mowers and landscaping equipment. The Planning Commission can review the proposed use of washed river rock (native gravel mulch) as a substitute for shredded hardwood mulch and determine if this is acceptable.

Proposed landscape berms on west side of site

Sheet C300 contains a note in two locations, on the west side of the site, stating “approximate location of landscaping berm if excess soils are found during construction”. Details on the berms and landscape materials were not provided but will be required on the Construction Plan set. Potentially the landscape berms could provide screening on the west side of the development. In the event the berm is not constructed, and excess soil is to be deposited or spread elsewhere (on-site or off-site), the applicant shall provide all applicable details prior to any movement of soil. Should soil be spread near a wetland area, separate reviews, approvals, and permits may be required from the Michigan Department of Environment, Great Lakes, and Energy (EGLE).

Shared Off-site Monument Sign

An off-site monument sign is proposed on a separate parcel of land, owned by Hartland Glen Development LLC (Parcel ID #4708-26-100-021). The approximate 1.06 acre parcel is zoned CA, and has frontage along Highland Road on the north, Cundy Road on the south, and the east property line is adjacent to Hartland Glen Lane. Historically, an older wooden pole sign existed on the parcel, for Hartland Glen Golf Course. That sign has been removed and replaced with a temporary sign for Hartland Glen Golf Course. An off-site monument sign is not permitted per the Zoning Ordinance. The applicant submitted a waiver request to permit the off-site sign, for the Planning Commission’s consideration.

The monument sign is comprised of a masonry base that matches façade materials found on the buildings in Redwood I and II. The upper portion of the sign consists of two panel signs, one for Redwood Apartment Neighborhoods and another panel that states Hartland Glen. Per the applicant, the monument sign provides wayfinding to the Redwood developments and Hartland Glen, having visibility on Highland Road.

The total height of the monument sign is approximately ten (10) feet, which exceeds the maximum allowed height of seven (7) feet for a monument sign. It should be noted that 10-foot-tall monument signs have been permitted in the Hartland Marketplace/Walmart PD, as part of the PD request. A 16-foot-tall monument sign was approved for the Hartland Towne Square PD, at the corner of Hartland Road and Highland Road, although the sign has not been constructed. The applicant has provided a waiver request for the sign height for the Planning Commission to consider.

The overall square footage of the sign (area above the masonry base) is approximately 64 square feet, which complies with the zoning standards.

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 is provided on Sheet A4.6 and A4.11. The same façade materials are being used as those for Phase I. Generally, the façade materials for each building style include Celect Cellular Composite 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, as are being used for Phase I

There are five (5) main building styles: Breezewood; Forestwood; Willowood; Meadowood; and Capewood. The single-story buildings are comprised of multiple apartment units as follows: 4-unit (19 buildings) and 6-unit (9 buildings). Three of the 6-unit buildings have an extended garage for each apartment unit, to allow for larger vehicles. This occurs in the Forestwood and Meadowood building options.

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. Building “L” has a high-profile roof line. There are several floor plan options depending on the building model.

A separate document was submitted that outlines the building materials and percentages of building materials. For this staff memorandum, staff did not outline those in the memorandum; however, they are 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 January 29, 2024.

Hartland Township Engineer’s Review (SDA)

The Township Engineer (SDA) has reviewed the Preliminary PD plans and recommends approval subject to items being addressed in the letter dated February 2, 2024.

Hartland Deerfield Fire Authority Review

The Hartland Deerfield Fire Authority reviewed the plans and had no comments at this time.

Attachments:

1. DPW Review Letter 01.29.2024 – PDF version
2. Township Engineer (SDA) Review Letter 02.02.2024 – PDF version
3. Narrative & Impact Analysis 01.04.2024 – PDF version
4. Applicant’s Response Letter 02.23.2024 – PDF version
5. Redwood Phase II Trip Generation Memo 12.21.2023 – PDF version
6. General Development Schedule – PDF version
7. Unit Exterior Material Calculations – PDF version
8. Redwood Phase II Color Site Plan – PDF version
9. Monument Sign Exhibit – PDF version
10. Site Plan for Monument Sign – PDF version
11. Waiver request for off-site monument sign – PDF version
12. Communication – PDF version
13. Cover Sheet with RLA Stamp – PDF version
14. Redwood Phase II Site Plans dated 01.03.2024 – PDF version

HARTLAND TOWNSHIP PLANNING COMMISSION APPROVED MEETING MINUTES

April 25, 2024– 7:00 PM

1. **Call to Order:** Chair Fox called the meeting to order at 7:00 p.m.
2. **Pledge of Allegiance:**
3. **Roll Call and Recognition of Visitors:**
Present – Commissioners Eckman, Fox, Grissim, Mayer, McMullen, Mitchell, Murphy
Absent – None
4. **Approval of the Meeting Agenda:**
A Motion to approve the April 25, 2024, Planning Commission Meeting Agenda was made by Commissioner Mitchell and seconded by Commissioner Grissim. Motion carried unanimously.
5. **Approval of Meeting Minutes:**
 - a. Planning Commission Work Session Meeting Minutes of March 14, 2024
A Motion to approve the Planning Commission Work Session Meeting Minutes of March 14, 2024, was made by Commissioner Eckman and seconded by Commissioner Murphy. Motion carried unanimously.
6. **Call to the Public:**
None
7. **Public Hearing**
 - a. Site Plan PD Application #24-003 Redwood Living Planned Development (PD) Phase II – Preliminary PD Site Plan

Chair Fox opened the Public Hearing at 7:05 PM stating all public noticing requirements have been met.

Director Langer gave an overview of the location and scope of this application stating the following:

- East of Cundy Road, south of M-59, west of Redwood Phase I currently under construction.
- Approximately 28.7 acres of the Hartland Glen Golf Course property.
- Continuation of Phase I, apartments with attached garages.
- There are 130 units in Phase II.
- Planned Development process is being used which is a three-step process occurring before both the Planning Commission and the Township Board: Conceptual, Preliminary and Final. The Township Board is the final decision maker. This project is at the Preliminary step.

The Applicants, Emily Englehart, Director of Acquisitions for Redwood Living; and Ian Graham, P.E., Civil Engineer with Bergmann Associates; introduced themselves stating the following:

- Offered some background information on Redwood and what they do, single story, low density, apartment neighborhoods.
- Grown to over 17,000 units in the Midwest.
- Owned and managed their units since 1991; never sold one.
- Offering a product for which many people see a need with an approximate 97% occupancy rate.
- Reinvented the idea of an apartment and who might live there.
- Not aged restricted but many of their residents are looking to downsize; seniors, empty-nesters, young professionals, people who are already living in the area but are making a change. The average age of their residents is 50.6 years old with 1.89 persons per unit. They perform extensive background checks for potential renters.
- Examine market research to focus on areas where their product will be a good fit.
- Single story units and attached two car garages are the features most in demand.
- Displayed a slide show of various housing styles.

Call to the Public:

- Christine Gregory, Hartland Township; has concerns about potential access onto Maxfield Road; emergency access is fine but not public access.
- Patricia Courie, Hartland Township; has concerns about access to their private unpaved road, current maintenance of the property and the potential increased traffic exiting via Hartland Glen Drive.
- Craig Wipple, Hartland Township. has concerns about access and what will happen to the buffer zone around the existing gold course. Thinks the current phase is set too close to existing houses.
- Kevin Ramus, Hartland Township; has concerns about the long-term plan for the golf course.
- Jason Thelen, Hartland Township; has concerns about multi-family construction – prefers single-family homes be constructed there, has concerns about wetlands and stormwater runoff, would like to see privacy screening around the project.
- George Poy, Hartland Township; has concerns about stormwater runoff, trespass from renters, would like to see some kind of barrier fencing.
- Cathy Ehgotz, Hartland Township; has concerns about increased traffic with all of the new development in the area.
- Randall Samuels, Hartland Township; has concerns about future development on the property, green space, road salt and stormwater negatively affecting the environment, potential trespass onto Maxfield Lake, would like to see a privacy fence or greenbelt for screening.
- Lou Ann Lathrop, Hartland Township; asked about water and traffic studies for this area, wants to know the future plans for the golf course, asked about the road master plan for Hartland Township, asked about the anticipated completion date for Phase I, and asked if golf cart traffic will be allowed in this development.
- Gordon Halt, Hartland Township; questioned the criteria for a traffic study, would like to see a comprehensive traffic study for the entire property and future developments, expressed interest in a funding mechanism to retain green space as some other townships utilize, expressed concern about junipers on the landscape plan.
- Gail Samuels, Hartland Township; has concerns about the legal notification process, access to the information online, greenbelts, would like to know the master plan for the golf course.
- Priscilla Fowler, Hartland Township; expressed concerns about Redwood Living, thinks we should wait and see how Phase I goes.

- Kathy Ballmer, Hartland Township; asked if Redwood Phase I is following through with the changes requested during their approval process, would like a bigger greenbelt and other amenities to make this as harmonious as possible.
- Jason Fowler, Hartland Township; has concerns about traffic and future plans for the roads, wants the developer to improve surrounding roads, interested in the tax generation of multi-family rental as opposed to single-family owner-occupied homes.

Chair Fox closed the Public Hearing at 7:57PM.

Chair Fox referred to the staff memorandum dated April 18, 2024.

Eligibility Criteria (Section 3.1.18.B.)

Commissioner Eckman stated he had questions regarding the Recognizable Benefits as stated in the January 4, 2024 letter from the applicant.

Director Langer stated there is a wide variety use and listed some recognizable benefits other projects have offered:

- Architectural design elements
- Additional open space
- Parks
- Additional landscaping
- Dedicating land for a fire station

Chair Fox listed some Redwood benefits as:

- Architecture
- Landscaping around the buildings when not required
- Participating in the water extension project
- Exceeding open space requirements

Commissioner Mayer stated at the Conceptual Review the Planning Commissioners offered comments. The meeting was brief as it is anticipated this phase will be similar to Phase 1. At the end of that meeting, three Planning Commissioners expressed a concern about benefits to the community and specifically said they look forward to seeing the list of Recognizable Benefits for this phase. He stated he is disappointed with the list as presented.

Planned Development Design Standards (Section 3.1.18.C.)

Residential Density

Director Langer stated the following:

- In 2020-2021, the Future Land Use Map was amended to show this area as a Special Planning Area which matched other Special Planning Areas to the east.
- Density was set at an average of 4 units per acre.
- As this property is larger than the others, a provision was built in to have the area closer to M-59 at a higher density and keep the area to the south at a lower density with an overall average of 4 units per acre.
- Phase II is consistent with the approved density in this Special Planning Area.
- Some asked about Redwood Phase III; there is no Phase III.

- Some asked about a master plan for the golf course; there is no master plan for the golf course. The property owners are present and are most likely working on future plans.
- Some mentioned the number of units that could be proposed in the future for the remainder of this property calculated using the acreage by the maximum density. Many factors affect the number of units per acre in any development; natural features, wetlands, general design, and the availability of REUs. Future development to the south will have a lower density as Redwood is above 4 units per acre.

Director Langer stated someone asked why this information is not available to the public. He explained the full packet is available on the Township website one week prior to any meeting and demonstrated where it can be found.

Minimum Yard Requirements

Director Langer gave an overview of the setbacks. These setbacks match what was approved for Phase 1.

Commissioner Murphy asked about the rear yard distance to the road in Phase 1. Director Langer stated they usually measure to the edge of a right-of-way or easement but in this case as there are no rights-of-way or utility easements, it is measured as 25 feet to the edge of the pavement.

Distances Between Buildings

Director Langer stated the minimum is 20 feet and all that all of the buildings comply. He pointed out a few places where it is closer than others.

Parking and Loading

Director Langer explained the Ordinance requires two spaces per unit, they have a two-stall garage and driveway that can accommodate two cars, totaling four per unit. They have also provided 29 additional off-street parking spaces. The property owners were present during the Phase 1 approval process and offered the golf course clubhouse parking area as overflow parking. He is unaware of such an offer for this phase. Redwood's policy to not allow parking on the street.

Open Space

Director Langer stated 35% is required, 52% has been provided. Over 27% will be usable open space, well above the standard.

Natural Features

Director Langer stated there are three regulated wetlands on the site. It was discovered that one area of the site contained poor soil, so the project was modified slightly to avoid that area. They intend to leave the wetland areas undisturbed. Municipal water will serve this site.

Sidewalks and Pedestrian Access

Director Langer stated in the Redwood developments, sidewalks are located adjacent to the road. They are five-feet wide and colored differently than the roads or driveways. The Township had not seen this approach before so there was some hesitation and concern during the review for Phase I, but it was ultimately accepted and approved. They are proposing to continue this process for Phase II. They are not proposing any sidewalks or pathways outside of this development.

Commissioner Murphy asked about the process for dealing with on-street parking and snow removal.

The Applicant stated the following in response:

- The leasing office polices the parking situation.
- The 25-foot driveway can accommodate larger vehicles so there is no overhang into the road.
- When they plow, they can simultaneously plow the street and sidewalk as they are the same height. Having the sidewalks at the same level as the street maintains maximum accessibility.
- The sidewalk pavement is the same thickness as the road.
- No on-street parking is clearly stated at the time of lease.
- They try to work with tenants and not tow their vehicles or those of their guests, but will if needed.

Commissioner Mayer asked about the hours for the leasing and on-site maintenance staff. The Applicant stated they would confirm that information and forward it.

Commissioner Mayer stated he visited the site in Howell and read that the unit tour was self-guided, which he interprets as there are no on-site agents available. He asked how visitors know not to park on the street if there is no signage as in Howell. The Applicant replied it is up to each community; if Hartland desires signage, signage can be put in place. Commissioner Mayer asked about being four parking spaces deficient. The Applicant stated they can add more parking if it is desired. They also added they do maintain staff at the leasing office; the virtual tour is an option to accommodate after hours viewing.

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

Traffic Impacts.

Director Langer stated the Applicant has provided traffic information prepared by Colliers Engineering and Design, and also brought forward information about their existing developments in the Midwest. The numbers averaged less than 50 peak hour directional trips which is the threshold for requiring further traffic impact analysis. The Applicant clarified the directional statistic is a component; if there were 50 people leaving during peak hours, it might require further analysis per Michigan Department of Transportation (MDOT) standards, but their totals are both leaving and returning so that number is not high enough to warrant further analysis.

Fiscal Impacts

Chair Fox stated, with an assist from Commissioner Mc Mullen, Redwood said they expect to pay \$416,000.00 in taxes when Phase II is complete. He continued explaining apartments do pay taxes; the property owner pays. The apartment dweller pays rent, a portion of which goes to pay property taxes and other expenses. Commission Eckman commented they do not get the Proposal A Property Tax Exemption; like other businesses, they pay more than an owner-occupied property. The Applicant added the units are not completed so they did their best estimate based on other completed communities' assessed values. They can provide additional data using Phase I if desired.

Vehicular Circulation

Director Langer referred to the site plan showing the proposed private roads. Both main roads connect back to Phase I. There is a future stub to the south that will connect to Hartland Glen Golf Course and any future development. There is no access proposed to Maxfield Road, not even an

emergency access. There may have been discussions during the Phase I approval process, but no access is proposed.

Chair Fox stated they try to provide connections between neighborhoods wherever they can. The stub is to provide access to any future development. The property has REUs and is likely to be developed at some point. The Township asks applicants to provide possible future connections during the planning process.

Commissioner Murphy asked if there is emergency access required for Phase II. Chair Fox replied they are required to have two access points per fire department standards, and they do. It does not have to connect to M-59. Director Langer added they asked the Applicant to extend the stub to the property line and put in place documentation to ensure a future access if that property is further developed. The Applicant stated it is their preference that it be an emergency access only as the roads are private; they are also concerned about the feasibility of constructing a stub to the property line not knowing the future elevation of a future connection, but they will do what is required. Chair Fox stated either it will be paved to the property line, or the document will read, “When the access is required, Redwood will build it.” The argument occurs when the new development happens, the previous developer states they will not pay for the additional fifty feet of pavement when it is the new developer that needs the connection.

Commissioner Mayer asked about the change in grade at that location and if they have completed a traffic circulation showing the fire hydrants for the fire department. The Applicant stated the fire department did not request it, but they can. Commissioner Mayer expressed concern over the available turning radius near buildings M and N. The Applicant stated they can model that if desired.

Commissioner Murphy stated he would like to see a sidewalk added to the stub street to the south to maintain connectivity and walkability.

Commissioner Mitchell asked about Phase I showing an access to Cundy Road. The Applicant replied it is a watermain easement.

The Applicant mentioned that as part of the Phase I approval, they were requested to add an access to the east for a future development; one is being developed [Highland Reserve] so that will be another potential access in the event of an emergency.

Commissioner Eckman asked how the decision is made as to whether the access to the south will be emergency only or a public access for those residents. Director Langer stated this stub is labeled on the plans as an emergency access only. Maybe when the future development is constructed, it would serve the same emergency access purpose from that direction; however, if the Planning Commission desires something else, now would be the time to add that provision. It could be an emergency access with a gate for the fire authorities but still allow pedestrian access via the sidewalk. The Applicants have stated they would prefer it not to be public.

The Planning Commission briefly discussed the merits of having that access for emergency use only or available for full access to a future development to the south, and the requested sidewalk.

Commissioner McMullen stated if Redwood wants to be a part of the community and embrace being part of Hartland, the stub road and sidewalk should be built along with Phase II. She does not care for gates as they impede neighborhoods from being cohesive with each other. Chair Fox clarified full access. Commissioner McMullen confirmed.

Commissioner Grissim agreed; full access and it should be constructed with Phase II.

Commissioner Mayer also agreed; full access and it should be constructed with Phase II.

Commissioner Mitchell stated he does not like to see roads and sidewalks to nowhere. He does not think it should be constructed now.

Commissioner Murphy stated full access.

Commissioner Eckman stated he would like it to be emergency access only but constructed with Phase II.

Char Fox stated the consensus of the Planning Commission is the road should be full access to the property line constructed with Phase II.

The Applicant asked for a compromise of signage indicating the access is for emergency only to mitigate people from driving through and allow them a little more control over their private roadways. The Applicant stated they can bring the road and a sidewalk to the edge of the property.

Chair Fox stated the sign will not stop anyone from driving through but he agreed with the Planning Director's comment that most people would not take such a circuitous route through Redwood Phase II and then Redwood Phase I to get to M-59, they would most likely use their own access to Hartland Glen Drive that would be required at the time the property to the south is developed.

After a brief discussion, Chair Fox stated the Applicant may have a sign.

Commissioner Mayer, responding to earlier questions regarding stormwater and pollutants, stated those issues are not determined by the Planning Commission but by professionals. He directed attention to the list of permits and the State and County permitting agencies that make those decisions. Chair Fox concurred stating we defer to them to make those determinations as they are the experts.

Landscaping (Section 5.11)

Landscaping Adjacent to Road (Sec. 5.11.5.A.ii.)

Commissioner Grissim stated the following:

- Prefer a street tree every 35 feet.
- 40-foot-wide driveways create a challenge.
- In Phase I, it was decided to find ways to add the required trees at the required size.
- Phase II should be the same.

The Applicant stated they received notes from staff, but the plans have not yet been updated with that information as they knew there could be additional landscaping requested. They acknowledge they need to add additional street trees and meet the quota.

Buffering or Screening (Sec. 5.11.2.G.i.)

Commissioner Grissim asked about enhanced screening between units R and W on the south. The Applicant stated yes they have agreed add that screening. In the staff letter there was a comment about providing a thorough visual screen in that area specifically in addition to what was shown. Also, some berming or plantings or a fence. They are hoping to present some options for one or the other. Commissioner Grissim stated a complete visual screen is the goal, not a wall, it is not about security, it is a visual screen between this development and the existing single-family homes. Director Langer indicated there is an existing swimming pool near the edge of this development, so they are looking for a pretty good screen, especially in that area. Commissioner Grissim stated a complete visual screen must be provided from any existing single-family lot to this more intense use according to the Ordinance. She stated the Applicant is welcome to submit one or two options. There is existing vegetation, grading to be dealt with, many factors, but if we can get a broad statement that you will provide a complete visual screen, we can work with that. The Applicant stated she is aware of those specific areas but in others where it is several hundred feet to the property line, they intend to provide landscaping which could be augmented if needed. The Applicant asked if the Planning Commission is asking for a fence all the way around the west side. Commissioner Grissim replied no. The Applicant stated they will work with the Township to provide the required screening for the residents of Hartland Township and their own residents. Chair Fox asked if the proposal is for a fence or for plants. Commissioner Grissim stated what has been proposed is either a berm or plantings, but she has not heard about a fence yet. The Applicant stated they are evaluating the two options: a berm with substantial plantings on the top or a privacy fence. They prefer plantings but if it is not sufficient, they could go with a fence.

Commissioner Mayer asked the Applicant to submit a Limits of Disturbance Plan to identify what existing vegetation can be preserved. He thinks those neighbors would appreciate limiting the amount of disturbance in that area. For the berm, behind Building T, there is a significant grade change of nine feet making that structure nine feet taller than the existing houses. Screening that structure, dealing with the stormwater as well as the plantings will be a challenge and there is only 31.7 feet to work with.

Commissioner Murphy asked if they would consider the intense screening discussed between units R and W for the entire development. The Applicant stated they do not see being able to do a fence around the entire development; they do not typically do fences, the goal is to cluster everything away from existing residents as much as possible. When they encountered the poor soils area, they had originally lengthened the development to the west, but modified to go farther south to limit those issues. They certainly can do a Limits of Disturbance Plan to see what vegetation can be kept and how they can further enhance the area but realistically they do not see a fence around the western property line. Commissioner Murphy stated he is not interested in seeing a fence at all, he would like it to look natural with a berm and plants.

Chair Fox stated there is some work to be done on the buffering and screening especially in areas that are close to existing residential.

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

Commissioner Grissim stated they need to update the plans to show the top bank elevation on the detention pond and determine the lineal footage around the pond. They have demonstrated they are aware of the requirements and have met that. She stated they are good.

Apartment Unit Landscaping

Chair Fox reiterated the Ordinance does not require any landscaping around the buildings, but the Applicant is landscaping around the front and exposed ends of the buildings in excess of what is required; that would be considered a community benefit.

Proposed landscape berms on west side of site

Director Langer stated the plans had a note if excess soils are found during grading, a berm would be created in that location but there were no details on what that might be, Landscaping was also shown in the same area which created some confusion about what is planned. In discussions with the Applicant, it has been hard to pin down as they are unsure of what they will have to work with. The Applicant stated they have run into this in other townships. If they find pockets of deep topsoil, it is to everyone's benefit to berm them to provide that buffer and screening. Until they put a shovel in the ground it is unknown what that will be like. The Applicant continued, they do not want a berm in an awkward location; they desire the landscape plan to be as harmonious as possible and to further enhance privacy with the additional berming. They thought it was best to note it on the plan with the privacy concerns and apologized for any confusion.

Commissioner Mayer asked if a cut/fill report had been completed. The Applicant stated it was somewhat balanced now, but they do have to bring in fill for the utilities. They ran into some bad soil in Phase I and were able to export it. Commissioner Mayer expressed concerns that a giant berm will be created negatively affecting drainage; he feels the plan is incomplete. The Applicant stated he is unfamiliar with the exact ordinance requirements for berms other than the slope, but they anticipate a berm of approximately five or six feet.

Shared Off-site Monument Sign

Director Langer stated the following:

- When Phase I was being approved, Redwood proposed to install a sign north of Cundy Road, south of M-59 on a triangular shaped parcel. There currently there is a sign for the golf course on that parcel.
- At that time, the Planning Commission stated if that was their desire, they should do one sign for all three entities: Redwood, the golf course, and any future development.
- Those discussions began to bog down the project, so Redwood abandoned that request.
- Redwood is now reinitiating the request to have an off-site monument sign which are typically not permitted but the PD process allows for some flexibility.
- The existing Hartland Glen Golf Course sign would be removed and replaced with this singular sign.

[Director Langer referred to the proposed drawings of the sign showing both Hartland Glen Golf Course and Redwood included in the packet materials.]

Commissioner Grissim stated she does not feel there is a need for a 10-foot sign. Director Langer stated the Ordinance typically allows for a seven (7) foot monument sign.

The Planning Commission briefly discussed the sign, the site and the elevation.

The consensus of the Planning Commission is to permit the monument sign but limit the height to the Ordinance standard of seven (7) feet.

Commissioner Murphy asked about future additions. Chair Fox stated it is part of the PD as a two-panel sign. The PD would have to be amended to add another panel or one of the panels would need to be removed and replaced with another.

Architecture/Building Materials (Sec. 5.24)

Chair Fox stated the design is similar to Phase I. The Applicant agreed adding there are some units labeled “EX” which indicates an extended garage on three buildings, a new option that allows for slightly longer vehicles and has been very popular in other neighborhoods. Chair Fox confirmed the driveways are still 25 feet with the full area for parking. Chair Fox also stated there was a late addition of some buildings with enhanced sides. The Applicant referred to them as high-profile views.

Director Langer mentioned in the letter dated January 29, 2024, from Spalding DeDecker, the Township Engineer refers to street trees and landscaping not being permitted over water mains or utilities. This puts applicants in the middle as the Ordinance requires this landscaping and the engineers are not permitting them. The goal is to not have landscaping over utility lines but sometimes it is impossible to avoid. This is a directive from the Township Board; if it cannot be avoided there may be landscaping over utility lines.

Commissioner Mayer asked about the wetland delineation report as it was not included in the packet. The Applicant stated the regulated wetlands which they are not impacting, are shown on the map.

Commissioner Mayer asked about the required usable open space that is suitable for active recreation. The plan indicates approximately 8.16 acres, some of which is included in the area around the wetland in the northeast. Not only does the slope not conform to the required ratio around a pond but it would be very difficult for any kind of “active recreation” to occur. Chair Fox commented that historically the Planning Commission has counted any non-wetland area or area able to be walked as active recreation open space. Commissioner Mayer continued it is a highly wooded area, with a Limits of Disturbance Plan indicating you are only going so far north and showing that you are leaving the natural wooded area, you might please many of the residents in that area.

Commissioner Mayer asked if everything shown in blue on page L2.0 will not be mowed. The Applicant stated their intent is to leave it as natural as possible. Commissioner Mayer commented in August when the weeds are three-feet tall, how is that an active recreation area. He feels it is not. He also believes that there will be more children in the neighborhood than the average in most communities because of the quality of Hartland Schools. He would like to see an area included for active play.

Commissioner Murphy asked for a list of recognizable benefits. The Applicant replied yes, they will take a look at those and see if they can encompass everything into a list.

Responses to Questions from Call to the Public

Director Langer the Township does not have anything submitted for a long-term plan for the golf course. He has met with the owners; they want to do a development, but nothing is set in concrete. Chair Fox stated there are REUs on the property, sewer taps, something will happen at some point. Commissioner McMullen added some communities own their golf courses, but this one is private property.

Chair Fox stated the Township cannot require a developer to build roads, that is illegal. It is not under our control. There are traffic studies and other tools from outside agencies that determine what improvements are required for a development.

Commissioner Eckman mentioned trespassing is a criminal offense and beyond the scope of the Township. Chair Fox stated a fence would not look good around this property.

Commissioner Grissim asked about the current status of the property and weed control. Director Langer replied Redwood does not currently own the property, it is owned by Hartland Glen Golf Course. It is not being maintained as a golf course typically is, but there are no issues of blight to be addressed.

Chair Fox asked when Phase I might be complete. The Applicant stated they just received their first Certificate of Occupancy, so she expects at least another year, maybe by next summer. Chair Fox also asked if Phase II is approved and work commences, will the construction traffic will pass through Phase I. The Applicant stated they have a construction pod plan to try and mitigate the traffic and impacts to the roadway. If approvals go according to plan, they do try to keep their workers and subcontractors from one phase to the next, but it is more challenging currently.

Chair Fox asked about golf carts in existing Redwood neighborhoods. The Applicant stated she knows the staff uses golf carts but she is uncertain if their lease allows residents to use them. She will find out.

Commissioner Grissim mentioned a question regarding Juniper Rust and existing apple orchards. She stated she believes there is a distance factor, but it is something that will have to be looked into.

Director Langer responded to a comment that this property should be developed as single-family detached homes. He stated he is not sure that person knows how tricky that topic is. The Township is trying its best to get new single-family, affordable, detached housing. East of Redwood is a new development with single-family detached housing. There is such a demand in the rental market currently it is a huge issue. He is looking for the opinions of Planning Commissioners on that topic.

Chair Fox stated the following:

- It is about providing different types of housing the residential market wants.
- The residential housing market study done several years ago identified deficiencies in Hartland and one of them was available rental properties, we do not have enough.
- People who live here want them; it is not always strangers coming in.
- We take the projects as proposed; we do not go out and recruit them.
- We have the land, the zoning, the Future Land Use Map to guide us; this applicant is proposing something that fits within those parameters right now.

Chair Fox responding to the concern about transparency stated he hopes that was just a lack of knowledge of what is available online via the Township website. The Zoning Ordinance is posted also. Director Langer stated nothing was added since the packet was posted one week ago but the Township did receive a couple of communications from people who could not be at the meeting. People can do both; submit comments in writing and speak at the meeting. The Planning Commission did receive a plan of the high-profile elevations that was provided tonight as well. Chair Fox stated if there are any changes to the packet, typically there is an email notification, and he did not receive any.

Commissioner Murphy asked about the Public Notice requirements. Director Langer stated there is a Graphic Information System (GIS) tool that identifies properties within 300 feet of the parcel in question which is the State of Michigan requirement. Notices were sent to property owners within 300 feet of the entire property, currently the golf course. We stick to that requirement and treat every application the same. Commissioner Murphy asked if it is a physical letter mailed to that address. Director Langer confirmed it is mailed to the address the owner of record has provided to the Township for their tax bill. Chair Fox continued staff does the noticing according to the Statute, they follow the guidelines that are set forth by the State. He likes it when residents attend and the room is full, so people are getting the right information about a project in context.

Director Langer referred to a comment about the impact of this development on M-59, police services and the schools. M-59 is under the jurisdiction of MDOT. There is a lot of potential development in this area and a number of improvements are being looked at as part of that development. As for the police services, the Township has entered into an agreement with the Livingston County Sheriff's Office for some police presence here in the Township. As for the schools, he is not a spokesperson for Hartland Schools, this project was sent to the schools, in his meetings with the schools they are relying heavily on out of district kids and there is no guarantee how long that is going to last. They want as many kids as they can get. If we brought forth plans for a 1000 home subdivision, they would be happy. Chair Fox stated he thinks over 1000 kids in the schools are out of the district and they need those kids. If we do not provide a community which will bring our own kids in we need to draw kids from other communities, or the schools, that rate in the top six percent in the State of Michigan, that help to drive everyone's property values up, will be a different story. He has had many meetings with them, and they are looking for children.

Commissioner Eckman responding to a concern about maintenance of the property, stated he lives in a nice neighborhood with \$300,000.00 homes and some owners do not maintain them. In this situation it is nice the renters do not have to maintain the homes, but rather someone with a profit and loss motive will be doing so. If they are being filled to nearly one hundred percent, he is going to guess the quality of service must be doing well because renters can choose to not renew their lease if they are unhappy.

Chair Fox summarized there is a little work to do. The Planning Commission agreed.

The Applicant thanked the Planning Commission and the residents present for their comments stating the Planning Director has her contact information if anyone has additional questions. They will take everything under advisement and come back with a stronger set of plans with which they hope to seek your approval. Commissioner Murphy commented on the attendance and that people

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are interested in this project. The Applicant stated hopefully they can assuage most of their concerns or all of them ideally.

8. Call to the Public:

- Craig Wipple, Hartland Township; expressed concern about fire danger if the natural areas become dry, and fire department access.
- Lou Ann Lathrop, Hartland Township; expressed a desire for large evergreen trees for screening.
- Jason Fowler, Hartland Township; feels a traffic count should be done to ease the residents' concerns, wants a tax analysis completed, wants to see the list of community benefits, has concerns about gridlocking any future development on the southern portion of the site because of where Hartland Glen Drive ends, wants the developer to cooperate and help with infrastructure improvements, concerned that apartment dwellers' children do not stay in the school system for more than two years, concerned how developments impact current residents.
- Gordon Halt, Hartland Township; has questions regarding Special Planning Area requirements, the use of as shall and should and what the differences are, has concerns that having a multi-phased development precludes a developer from traffic study requirements.

9. Planner Report:

None

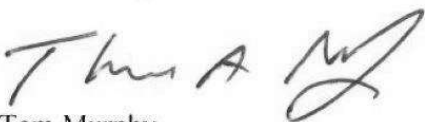
10. Committee Reports:

None

11. Adjournment

A Motion to adjourn was made by Commissioner Murphy and seconded by Commissioner McMullen. Motion carried unanimously. The Regular Meeting was adjourned at approximately 10:15 PM.

Submitted by.



Tom Murphy
Planning Commission Secretary

Statement of Hartland Community Benefit for the Redwood Apartment Neighborhood Project:

Redwood Apartment Neighborhoods will provide the following Community Benefits to the future residents and to the Township as part of its Planned Development Application:

A site plan that was designed to preserve large natural buffer and open space areas throughout the site achieved by clustering the development. This includes:

- Clustering the buildings towards the center and nearest to the Redwood Phase I development and existing golf course creates a larger setback than what was denoted as required in a PD or under many other residential setback standards found in the zoning ordinance. Of our 28 buildings in Phase II only 6 are located less than 100 feet from a neighboring (non-Redwood property line). The properties that abut existing residential maintain more than 50 feet of setback. Redwood was able offer over 250' of space against the western property line.
- Concentrating the development in a more central fashion allows us to maintain most of the existing established natural tree line against the single-family properties to the west, north, and south and keep this outside our limits of disturbance.
- In conjunction with the larger setbacks Redwood is able provide a large amount of open space in Phase II. The Zoning Ordinance defines open space as: *an area that is intended to provide light and air and is designed for either environmental, scenic, or recreational purposes. Open space may include lawns, decorative planting, walkways, gazebos, active and passive recreation areas, playgrounds, fountains, swimming pools, woodlands, wetlands, and water courses.* Under this definition, Redwood Phase II offers 15.74 AC of the site as open space which is ~52% of the entire site area, with over 8 AC of land remaining outside the proposed limits of disturbance.

Creation of a low to no maintenance community that is in demand in Hartland Township by residents seeking an alternative to traditional single family or multifamily residential. This demand is evidenced by the demographic make-up of the township, demand seen from Redwood Phase I and other local Redwood Neighborhoods, as well as discussion in the Comprehensive Plan.

- Redwood's unique housing style can create opportunities for housing filtration in the broader community when residents move to Redwood from single-family homes allowing for new people and families to join the community.
- Redwood can be a solution for people who want to move to the Township or stay within the Township but are in transition (i.e. building a home, sold their home and are looking for a new home, not certain about their timelines)
- Redwood provides a solution for people who do not want maintenance, upkeep, and

costs of owning a home (seniors, empty nesters, people who work atypical hours, snowbirds, families that wish to move aging family members nearby, people that want the equity out of their home etc.)

Quality well designed apartment homes comprised of high-quality energy efficient materials and finishes that our residents seek.

- Redwood is proposing to use the same materials (and colors) as were proposed in Phase I including the upgraded Celect siding material.
- Redwood's single story building design integrates well with neighboring single family uses as opposed to multi-story buildings.
- Redwood provides an attached two-car garage on every unit, which is highly valued by our residents.
- Concrete private drives serve the site which will be maintained by Redwood.
- Redwood's site includes extensive landscaping throughout the site and around the units in a quantity that exceeds what is required.

Fiscal Impact. The Redwood development will provide an increase in the tax base of Hartland Township and additional residents will support and patronize local businesses as residents engage in the Hartland community.

- Redwood, as property owner, will pay the full non-homestead property tax rate on this property and cannot seek a homestead exemption.
- Redwood residents will visit local businesses and utilize local services. Our Phase I team has already created partnerships with local establishments including the Poppa's Pizza, Hartland Glen Golf Course, and Iron Pride fitness.
- Redwood uses local vendors for landscape / overall maintenance and will require several full-time employees to staff the neighborhood when combined with Phase I.

Connectivity and Recreation:

- Redwood is providing sidewalks throughout this development creating a .8 mile loop primarily serving Phase II and creating a larger ~1.25 mile walkway loop when fully combined.
- The internal sidewalks will also provide an accessible route to our residents to the open spaces and amenities in Phase I and Phase II (i.e. shelter/pathways in Phase I, little free library in Phase II).

- We are also providing for an access easement to the adjacent Allen Edwin project to the east of Phase I which will allow for longer future sidewalk connections to and through that development for residents of both communities to enjoy.
- In conjunction with the Phase II development, Redwood is providing additional access for utilities to the remainder of the golf course property and a future emergency access with full sidewalk connections to the Golf Course property to the south.

Parking Availability:

- The Redwood Neighborhood Phase II provides a total of 552 parking spaces when considering that each unit has 2 private garage spaces, two dedicated driveway spaces, and this overall phase has 32 additional guest parking spaces. The ordinance requires a total of 293 spaces. Redwood is providing an additional 259 spaces beyond what is required by code for multifamily developments.

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

June 5, 2024

RE: Preliminary Plan Review – Comment Response Letter
Redwood Living Phase 2; Parcel 4708-26-100-023

Dear Mr. Langer,

We have reviewed the comments and feedback provided by the Township Planning Commission, members of the public, and Township Planning Staff from the April 25th planning commission meeting and previous staff reports. We have revised our submittal in response to these comments and have provided a list of responses are provided below in bold along with the comments.

In addition to this comment response letter, we've included the following items prior to our meeting with the Township Planning Commission:

- Two (2) full size copies of the Preliminary Plan Review plan set containing civil, architectural, and landscaping plans (updated see below)
- Ten (10) 11x17 copies of the plan set (updated see below)
- Offsite Sign Waiver Request (updated and revised see below and exhibit)

Changes Made to Redwood Submittal:

- SITE PLAN: Buildings re-lettered on plan (now starting where Phase I left off)
- SITE PLAN: Building ZZ (formerly building T) shifted to the west by swapping building with parking to provide a larger buffer / berm against the single-family residence.
- SITE PLAN: Limits of Disturbance line shown
- SITE PLAN: Emergency access and sidewalk extended to southern property line
- SITE PLAN: Parking Calculation added
- LANDSCAPE PLAN: Full Visibility Buffering provided behind buildings ZZ and CCC (formerly T and W)
- LANDSCAPE PLAN: Additional street trees added per planning comments
- LANDSCAPE PLAN: Amenity area added - Little Free Library and Bench Seating added near building GG (formerly building A).
- LANDSCAPE PLAN: Scenic Bench seating area added at emergency access area overlooking golf course and wetland area to the east
- LANDSCAPE PLAN: Tree heights updated to meet ordinance
- LANDSCAPE PLAN: Additional Trees added on western/norther border
- LANDSCAPE PLAN: Detention pond behind building LL (formerly building E & F) to be wet and will contain a fountain and/or aerator depending on depth.
- LANDSCAPE PLAN: Mowing plan updated to include additional mowed/maintained areas for active recreation.

- LANDSCAPE PLAN: General existing tree line identified on plans with a preservation of trees outside of limits of disturbance (assuming trees are in healthy condition)
- LANDSCAPE PLAN: Removal of shrubs around the pond not required, trees remain exceed requirements
- SIGN WAIVER: Revised to request offsite permanent sign and offsite interim sign.
- SIGN EXHIBIT: Sign Height reduced to 7 feet.

ADDITIONAL NEW EXHIBITS/DOCUMENTS PROVIDED:

- Limits of Disturbance Plan (with and without aerial background)
- Sidewalk Distance Map
- Information on Redwood Property Operations / Staffing
- Community Benefit List
- Fire Truck Turning Movement Exhibit
- Interim Sign Exhibit
- Updated High Profile Elevation mark-up on updated site plan

Comments from the Public

1. Concern that a connection is proposed from phase 2 of Redwood to Maxfield Boulevard. **No connection to Maxfield Boulevard is proposed.**
2. Concern about the current condition of the golf course (plants and grass height). **Golf course is not owned by Redwood. Redwood has a purchase agreement to acquire the golf course pending development approvals.**
3. Discussion about traffic generated and impacts to local streets. **Redwood is only proposing internal connections to Redwood internal access aisles within Redwood Phase I for this development (with a future emergency access connection internal to the golf course property) and does not propose to connect directly with Maxfield, Cundy, other Township roadways. The total percent increase in traffic out to M-59 is 2.46%. Typically, agencies require further analysis of all intersections where the projected traffic will represent at least 5% of the intersection volume. It should be noted that phase 2 of Redwood is replacing a portion of existing golf course use which would typically generate a larger number of daily trips than the Redwood use. If a traffic impact analysis is required by the LCRC or MDOT, one will be provided.**
4. Concern regarding 100-year floodplain on or near neighboring property. **There are no 100-year floodplain areas on the proposed Redwood Phase 2 property.**
5. Concerns regarding trespassing and hunting on others property and using the golf course as a way to access other properties. **While Redwood has no influence over the concern of trespassing currently, developing on this property and bringing people into the area would eliminate a large and generally vacant use which would likely reduce trespassing and hunting.**
6. Interest from a public comment to the current demographics and leasing at the Redwood neighborhood in White Lake, MI. **Redwood's neighborhood specific data is generally not available due to compliance with national fair housing rules and regulations, however, in a review of past resident data (which is optional and self-reported by residents) of the nearby Redwood Neighborhoods located in White Lake and Howell (Oceola**

Township); we found that the average age of residents in our White Lake Neighborhood is 57 years old (without roommates) and there are 11 roommates listed without an age within 143 units. In our Howell Neighborhood the average age of residents is 59 years old (without roommates) and there are 6 roommates without birthdates provided within 144 units. Redwood Apartment Neighborhoods, however, is not an age restricted development and will rent to who is a qualified applicant so similar leasing patterns may or may not occur at a Redwood Neighborhood in Hartland Township.

7. Question from the public regarding the use of golf carts within the Redwood property. **Golf carts are not currently allowed under the Redwood lease agreement.**
8. Question from the public about why a traffic study is not required. **Per MDOT guidelines, a traffic impact study is required when a proposed development exceeds 50 directional peak hour trips. A trip generation report for Redwood development shows 35 directional trips in the AM peak hour and 38 directional trips in the PM peak hour.**
9. Question from the public about Juniper rust and plant materials. **Based on our research the closest orchard, Roeske Farm, is 1.6 miles away from the Redwood development. Redwood is open to reviewing an alternative plant material if the Township would like us to consider one.**
10. Question from the public about the lack of tax generated when comparing to single-family. **Redwood Apartment Neighborhoods, as the property owner, will be responsible for paying all property taxes for the development. We will be responsible for paying the full non-homestead tax rate as this development would not qualify for homestead tax exemptions (which many single-family home residences may qualify for).**

Comments from the Township Planning Commission

1. List the recognizable benefits of this planned development. **We have expanded upon the recognizable benefits to the Township in the attached list.**
2. How is street parking operated and managed? **No on-street parking is allowed and is a violation of the lease agreement. Parking is policed by the on-site staff. Please see the attached information on property operations and staffing for more details.**
3. How many staff members are on-site and what are the hours of operation? **In a standalone development with 130 units, Redwood would typically have one full-time leasing manager and 1.5 service technician positions, and the hours of operation would be from 10 am – 6 pm Tuesday through Saturday (Saturday hours are 10 am – 4pm). Considering the operation of both Phase I and Phase II Redwood would employ one full-time manager, one full-time leasing professional in addition to 2.5 service technicians at the full buildout of both Phases. The office will operate Monday – Saturday from 10am – 6pm (Saturday hours are 10am-4pm). Please see the attached information on property operations and staffing for more details.**
4. Discussion of tax generated per unit. **Using our financial model for this project as well as looking at other nearby Redwood Neighborhoods we projected the tax per unit once fully assessed could be ~\$3,200/unit. Although this is ultimately dependent on the final assessed value of the units as well as the future millage rate for non-homestead properties.**

5. Clarification on fire truck turning movements. **An exhibit has been included with the submittal showing a fire truck successfully maneuvering the on-site turning movements.**
6. Discussion of the staff comments that a complete visual screening between Redwood and the single-family properties along the southwest corner of the site as well as screening against residential areas. **Additional screening has been added to the landscape plans. Building ZZ (formerly building T) has been moved further west to provide a large buffer, a berm, and additional plantings near the existing single-family home/pool. A limit of disturbance plan has also been prepared and provided showing the existing vegetation that will remain as a natural buffer around the site in addition to the Redwood landscaping.**
7. Clarification on the low mow/no mow area and a comment about providing more lawn area for recreation. **The low mow/no mow area has been reduced and portions of this area replaced with manicured lawn area to increase the area. This is shown on the updated landscaping plans. In addition, we have added benches along the sidewalk on the north and south sides of Phase II. Residents will also be able to use all of Redwood Phase I and its lawn area and internal sidewalk network for recreation and activity.**
8. The offsite shared monument sign shall be no taller than 7-feet. **Shared monument sign has been revised to 7-foot tall and an updated exhibit is included in this submittal.**

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 ian.graham@collierseng.com or Emily Engelhart at (248) 930-2123 or e-mail at eengelhart@byredwood.com.

Sincerely,



Ian Graham, PE
Enclosures

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

June 6, 2024

Re: Combined Waiver Request for Offsite Signage and Offsite Interim Construction Sign related to SP PD application #24-003 for Redwood Phase II

To the members of the Hartland Township Planning Commission, Township Board, & Staff:

Revised Waiver Request for Offsite Signage

I am writing to respectfully revise my request waiver for offsite signage, as outlined in the Hartland Township, MI Zoning ordinance, for the SP PD application #24-003 for the Redwood Apartment Neighborhoods Phase II development based on comments received at the Planning Commission meeting in May 2024. Our request has been updated to comply with the current height restriction after input from Planning Commissioners was incorporated. This request, otherwise, remains the same with the only change being the height of the total sign. The exhibit has also been updated to reflect the height change.

As part of our development, we believe offsite signage at an adequate size is essential to inform the public and potential residents about this project as well as our Phase I Neighborhood and the Hartland Glen Golf Course Property. The submitted proposed signage is a shared monument sign between Redwood Apartment Neighborhoods and Hartland Glen Golf Course, the other current owner/user of this Property. We are including this request with our Planned Development application as it is our understanding that the only way off-site signage can be considered in the Township is in conjunction with a Planned Development approval process.

The location of this offsite sign is on a 1.07 AC parcel 4708-26-100-021 that fronts on M-59 and is owned by Hartland Glen Development, LLC the owners of the Hartland Glen Golf Course property. The general sign location is further detailed in the sign exhibit that was included with our application and Hartland Glen Development, LLC has agreed to work with Redwood on providing an easement for the replacement of their existing sign with a new shared monument sign. The sign will meet all setback requirements.

In considering our request, we wanted to bring attention to a few factors that we feel are relevant. Firstly, the Hartland Glen Golf Course property is one of the larger parcels in the Township consisting of over 350 AC and will be represented primarily by this sign. Secondly, while the vast acreage does not technically front on M-59, the location of the proposed sign is adjacent to the Phase I Redwood parcel (which was split from the Hartland Glen Golf Course parcel during Phase I). This property has over 300' of frontage on M-59 and is currently serving as the location for the existing Hartland Glen Golf Course sign. Thirdly, M-59 is a large freeway with limited traffic signals and higher speed limits which necessitates signage that is visible and easily identifiable

from a distance. Finally, when comparing this request with other PD's/large developments that may have similar precedent in the Township our request does not include multiple directional and/or entrance signs as the primary access to our development is from Hartland Glen Ln. near M-59.

We are proposing a sign that complies with the current Hartland Township Sign Ordinance in terms of size and height per discussions with the Planning Commission. We understand the importance of adhering to zoning regulations and want to assure the Township that the proposed signage will be designed with careful consideration for aesthetics and community impact. Our goal is to create signage that harmonizes with the surrounding environment while fulfilling its functional purpose. As you can see from the proposed signage exhibit that was submitted with our application, we believe this sign meets the requirements in the zoning ordinance. We would also ask that if this sign needs to be amended in the future that there is an ability to do so without the need for a minor/major PD amendment (i.e. via the Sign Permit Process) so long as the proposed amended sign is in compliance with the Zoning Ordinance Sign Regulations and/or the waivers obtained in this PD application.

Request for Interim / Construction Offsite Signage

After discussions with the Planning Department as well as the Neighborhood Manager for Redwood Phase I we are including a request for an interim off-site sign that will advertise the construction of the Phase I Redwood Neighborhood as well as the future Phase II Neighborhood. With the entrance to the projects being offset and the long history of this property being a golf course we believe an interim sign on M-59 advertising Redwood's offerings would be extremely beneficial to our leasing.

I have attached our construction sign for review and would ask the Planning Commission's consideration for this sign to be installed offsite in a similar location to where the permanent sign is proposed until such a time as the permanent sign is constructed (if it is approved).

We kindly request your favorable consideration of this combined waiver request for offsite signage and temporary offsite interim signage. Thank you for your attention to this matter.

Sincerely,

Emily Engelhart
Director of Acquisitions
Redwood Apartment Neighborhoods
eengelhart@byredwood.com / (248) 930-2123 (c)

Redwood Leasing Hours, Staffing Model, and Parking Enforcement:

Staff Requirements:

Redwood P1 consisting of 148 Units would require 1.5 service technicians and one full-time leasing professional/neighborhood manager.

With the addition of Redwood P2 and an additional 130 units we would have one full-time manager and one full-time leasing professional in addition to 2.5 service technicians. If more leasing/management support is needed an additional full or part-time neighborhood management or leasing professional would be added to the staff.

During lease up, we bring in additional leasing assistance with our Management Specialist position to help with leasing, marketing, and management. They are not onsite every day but do provide assistance as needed for heavy traffic and move in days.

Hours:

Redwood Phase I Leasing Office (based on unit count) would be open Tuesday – Friday 10am to 6pm and 10am to 4pm on Saturdays.

With the addition of Phase II (based on unit count) our Leasing office would be staffed and open Monday-Friday from 10am to 6pm and 10am to 4pm on Saturdays.

A Service Technicians will always be on call 24/7 for emergencies even if the office is closed.

Parking Enforcement

For street parking, Redwood manages this daily, as needed. Typically, we will provide a parking violation sticker, and if we know what unit the parking offender lives at or is visiting, we will also provide a lease violation.

Street parking usually isn't an issue if we have adequate Visitor Parking. Residents do report these types of violations, but it is also an expectation of our Neighborhood Manager and Service Technician to drive the site daily. No parking signage is also present along the streets.



LAND USE TABLE		
LAND USE	ACRES	PERCENTAGE
BUILDING AREA	4.57	15%
CONCRETE DRIVES	3.44	12%
CONCRETE SIDEWALK	0.45	2%
STORMWATER MGMT	1.40	5%
PARKING	0.14	<1%
WETLANDS	4.15	14%
OPEN SPACE	15.74	52%
TOTAL SITE AREA	29.89	100%

Colliers
Engineering & Design
www.colliersengineering.com
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Formerly known as **BERGMANN**
811
PROTECT YOURSELF
ALL STATES REQUIRE NOTIFICATION OF EXCAVATORS, DESIGNERS, OR ANY PERSON PREPARING TO DIG THE EARTH'S SURFACE ANYWHERE IN ANY STATE
FOR STATE SPECIFIC DIRECT PHONE NUMBERS VISIT: WWW.CALL811.COM

REV	DATE	DRAWN BY	DESCRIPTION
1	01/02/24	GRAHAM	PRELIMINARY PLAN REVIEW
2	06/07/24	GRAHAM	PRELIMINARY PLAN REVIEW RESUBMITTAL

SITE LEGEND:

- PROPERTY LINE
- PRIVATE CONCRETE DRIVE
- COLORADO CONCRETE SIDEWALK
- OPEN SPACE
- LIMITS OF DISTURBANCE
- EXISTING TREE PRESERVATION LIMITS

REDWOOD LIVING
7007 EAST PLEASANT VALLEY ROAD
INDEPENDENCE, OH 44131

Redwood
APARTMENT NEIGHBORHOODS

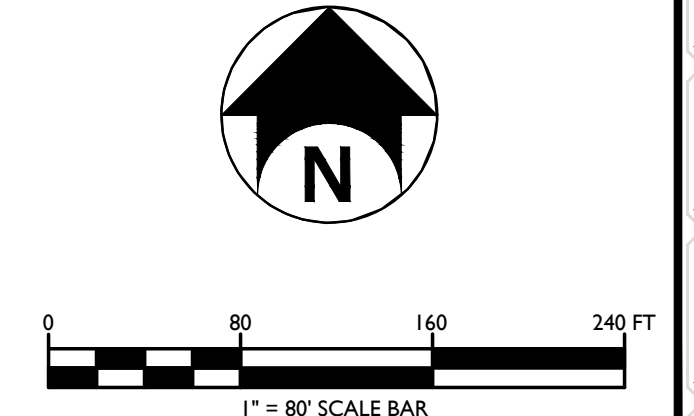
HARTLAND GLEN LANE
HARTLAND, MI 48353

Colliers Lansing (BA)
7050 West Saginaw Hwy., Suite 200
Lansing, MI 48917
Phone: 517.272.9835
COLLIERS ENGINEERING & DESIGN, INC.

SCALE: AS SHOWN DATE: 01/01/24 DRAWN BY: GRAHAM, PE CHECKED BY: P.FURTAW
PROJECT NUMBER: 23008151 DRAWING NAME: C203 OPEN SPACE PLAN

SHEET TITLE: **OPEN SPACE PLAN**

SHEET NUMBER: **C203**



NOTE: DO NOT SCALE DRAWINGS FOR CONSTRUCTION

SITE DATA:

PARCEL: 08-26-100-023

ZONING: SITE* - CA, CONSERVATION AGRICULTURAL
 NORTH - CA, CONSERVATION AGRICULTURAL
 WEST - SR, SUBURBAN RESIDENTIAL
 EAST - PUD, PLANNED UNIT DEVELOPEMNT
 SOUTH - CA, CONSERVATION AGRICULTURAL
 * - PROJECT WILL REZONE TO A PLANNED UNIT DEVELOPMENT

PROPOSED AREA: 29.89 ACRES

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

UNIT DENSITY: 4.35 UNITS PER ACRE PROPOSED
 28 BUILDINGS

PARKING: 32 GUEST PARKING SPACES

DRIVE LINEAL FOOTAGE: ±3,770'

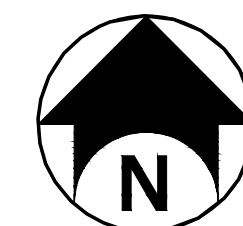
LIMITS OF DISTURBANCE: ±21.7 ACRES

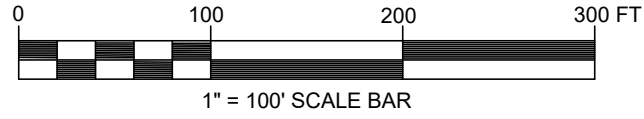
ROAD SECTION: 27' (11' LANE + 11' LANE + 5' SIDEWALK)

- FORESTWOOD
- MEADOWWOOD
- CAPEWOOD
- WILLOWOOD
- BREEZEWOOD
- BREEZEWOOD SUNROOM
- EXTENDED GARAGE

UNIT SUMMARY	
PHASE 2	
FORESTWOOD	42
FORESTWOOD EXT GRG	12
MEADOWWOOD	21
MEADOWWOOD EXT GRG	6
CAPEWOOD	9
WILLOWOOD INTERIOR	16
WILLOWOOD EXTERIOR	16
BREEZEWOOD INTERIOR	4
BREEZEWOOD EXTERIOR	1
BREEZEWOOD SUNROOM	3
SITE TOTAL	130

- SITE LEGEND:**
- PROPERTY SETBACK LINE
 - PROPERTY LINE
 - EXISTING CONTOUR
 - REGULATED WETLANDS
 - LIMITS OF DISTURBANCE





7050 West Saginaw Hwy. // Suite 200 // Lansing, MI 48917 // 517.272.9835



DRAWING TITLE:
FIRE TRUCK TURNING MOVEMENT EXHIBITS

BY:
I. GRAHAM, PE

JOB #:
23008151A

DATE:
5/24/2024

DRAWING NO.:

REFERENCE DRAWING:

SCALE:
1" = 100'



Engineering & Design

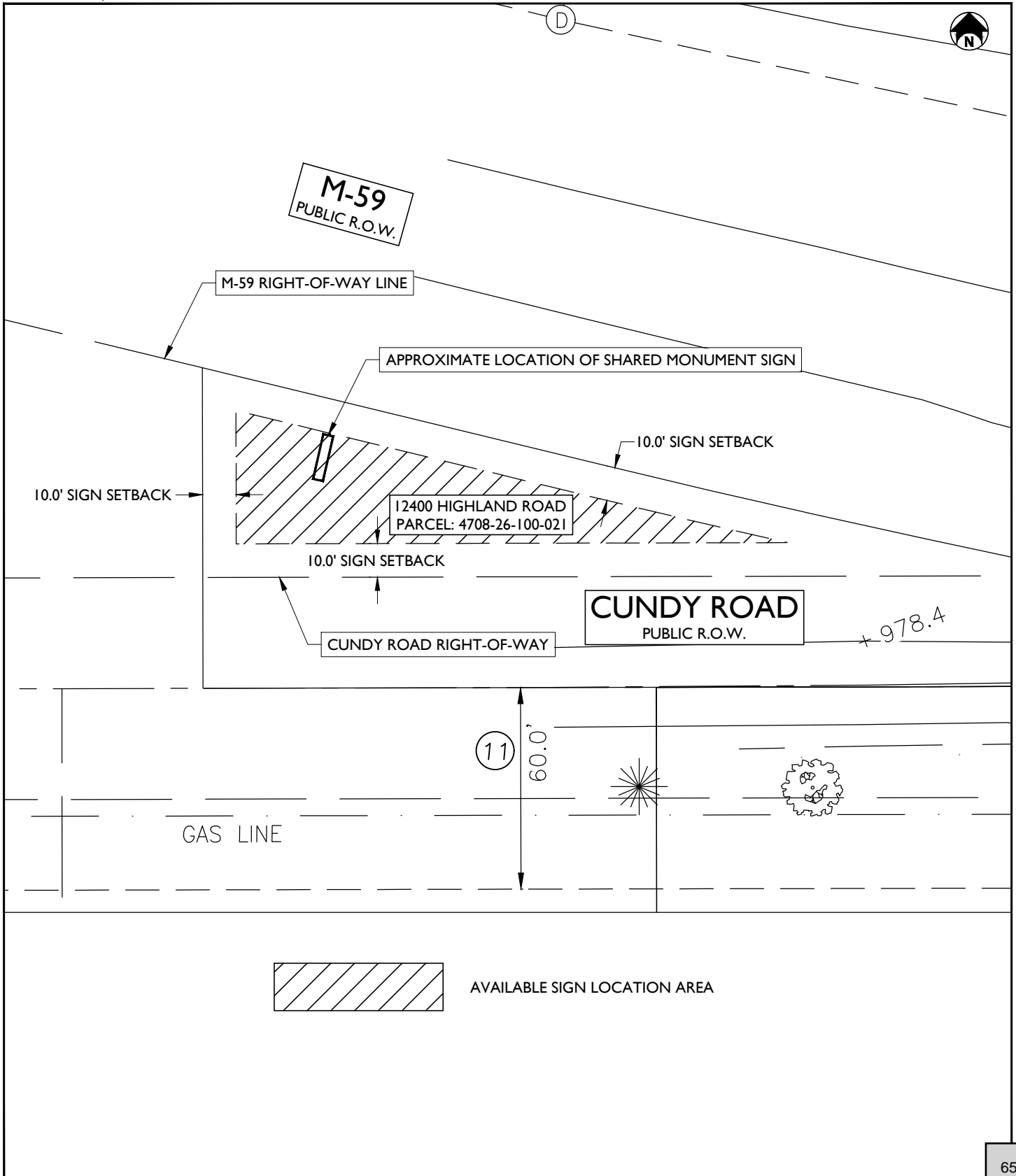
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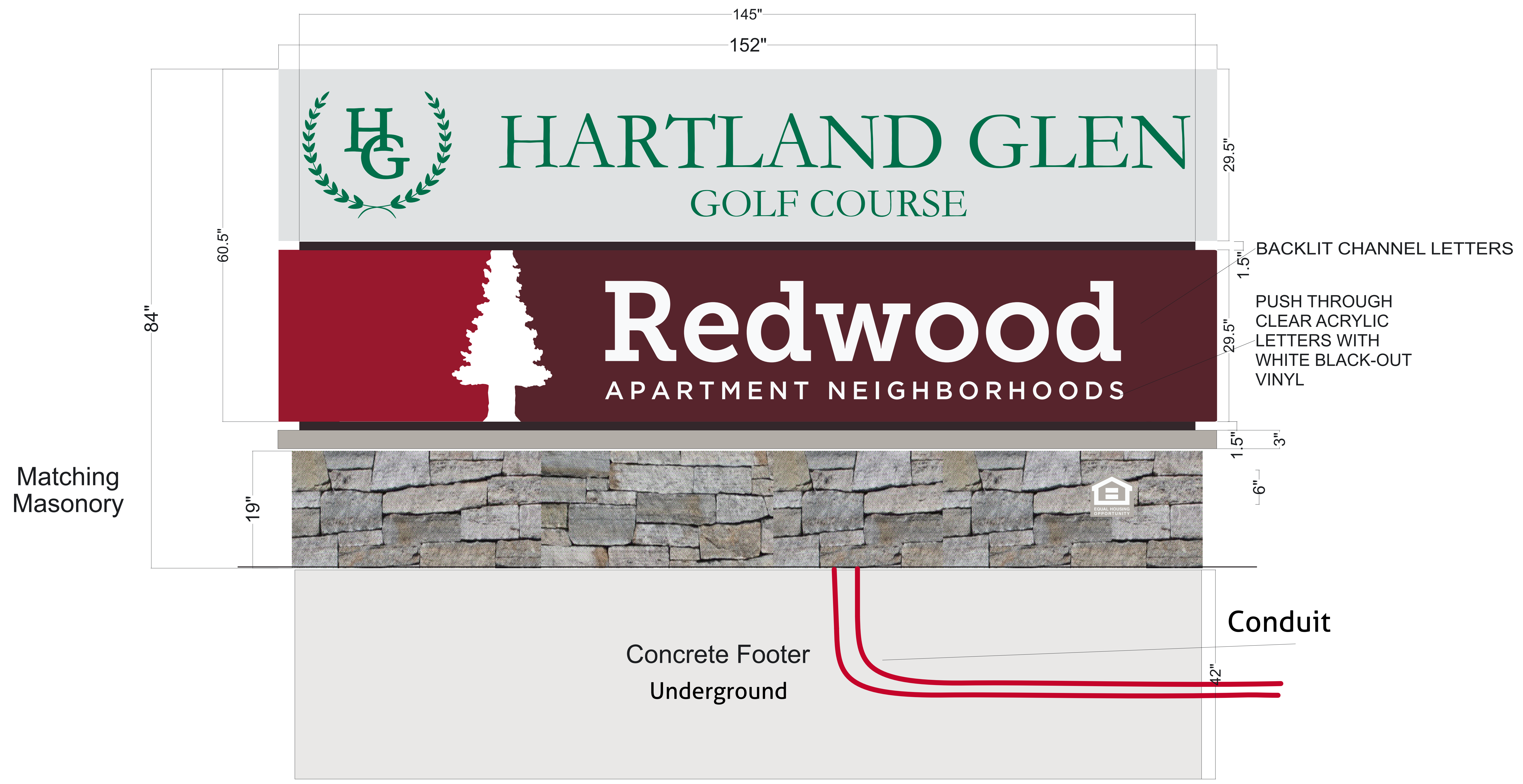
REDWOOD HARTLAND PHASE 2 - SHARED MONUMENT SIGN EXHIBIT

BY:
I. GRAHAM, PE

DATE:
2/21/2024

SCALE:
1"=40'





Total Square Footage of the sign area is 63.86 sqf

Please verify that all artwork, sizes, colors, spelling and grammar are correct. Once approved, 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 written consent.



asa
a sign above
8982 Dutton Drive
Twinsburg, Ohio 44087
Phone: (330) 425-7832
Cell: (216) 337-2201
Email: jerryasignabove@yahoo.com

Client:

**REDWOOD
MANAGEMENT**

File Name:

Proof Date:

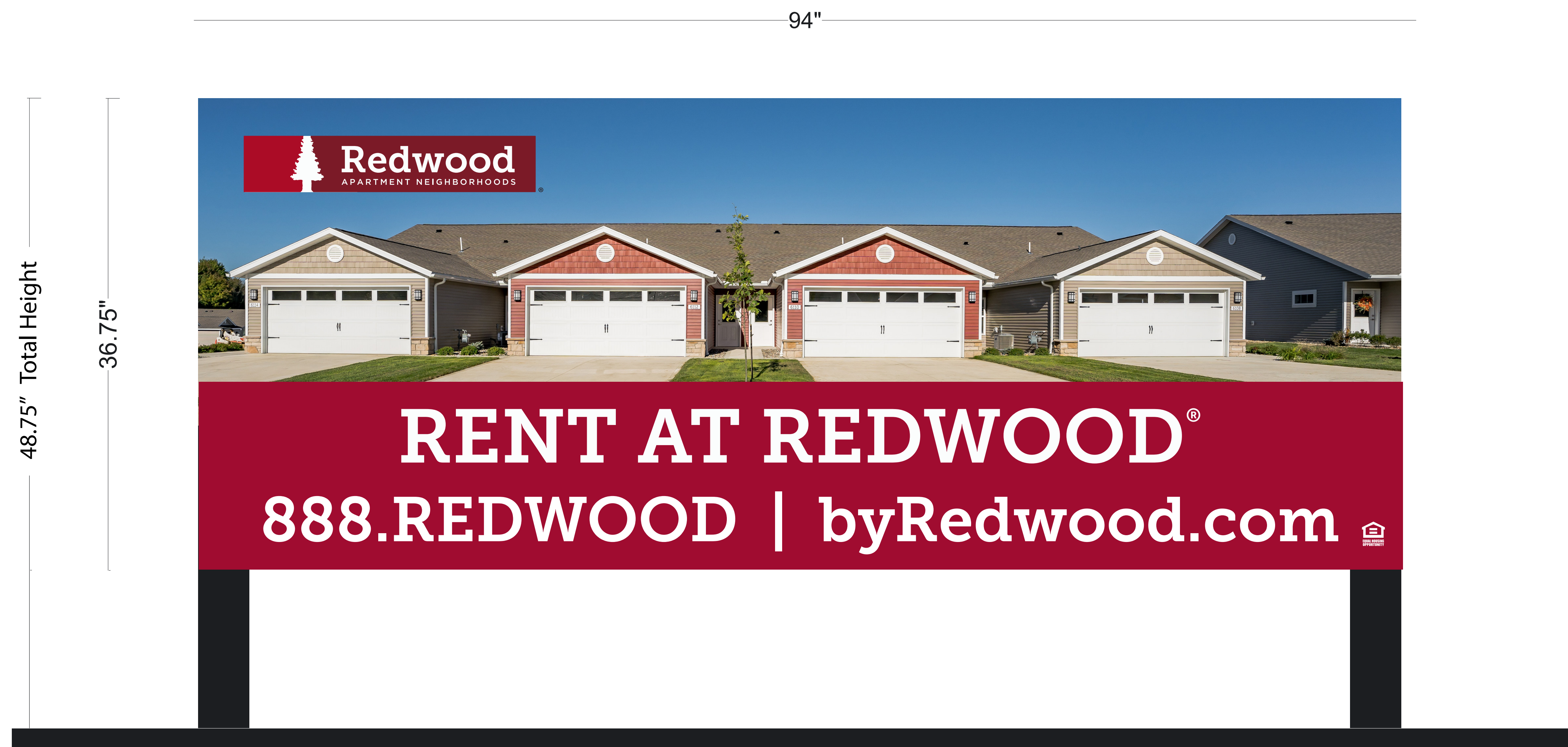
PLEASE CHECK ONE OF THE FOLLOWING:

Approved	Approved With Changes	Revise & Resubmit

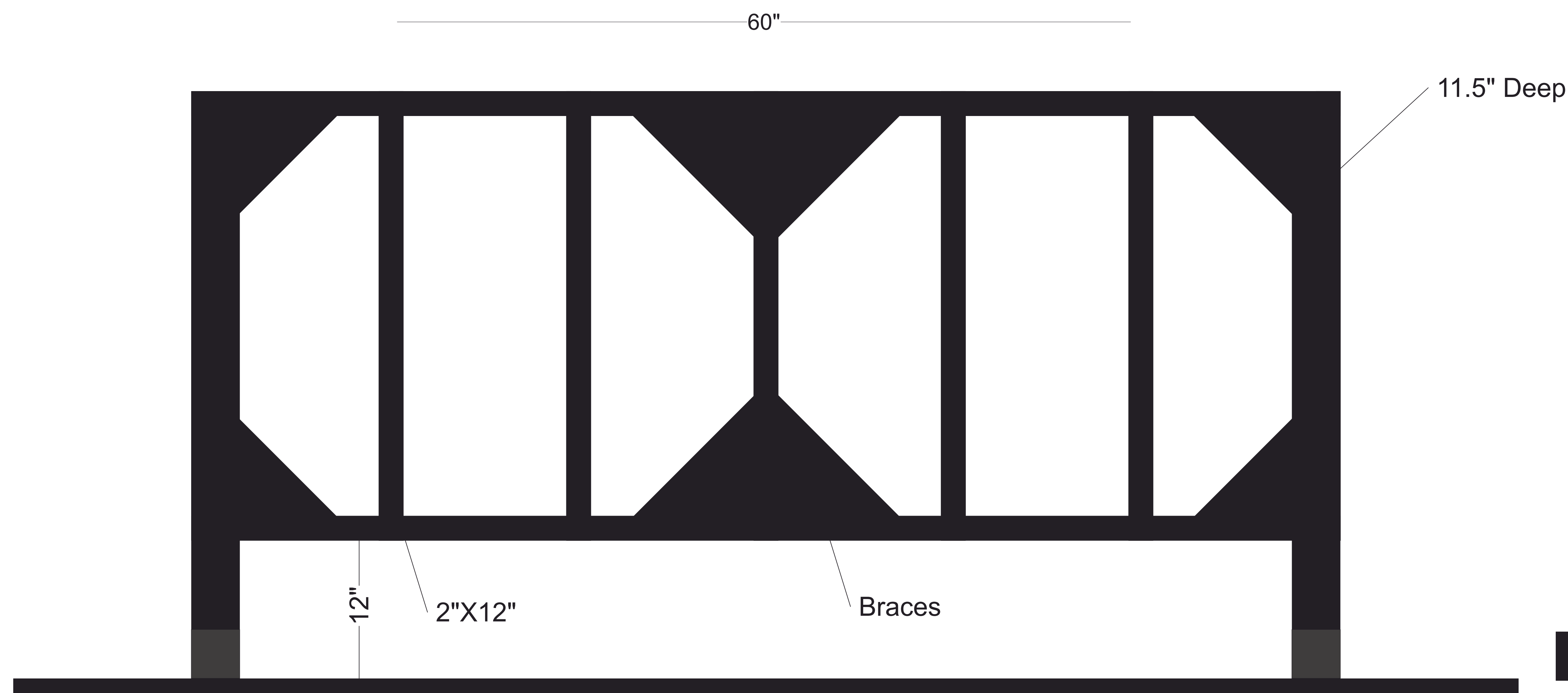
Signature:

X _____

Date of Approval:



- 1/4" Polymetal with printed graphics.
- 2"X12" Studs and frame with black stain.
- Treated 6"X6" with 2"X12" black stained skids.



SITE DATA:

PARCEL: 08-26-100-023

ZONING: SITE* - CA, CONSERVATION AGRICULTURAL
 NORTH - CA, CONSERVATION AGRICULTURAL
 WEST - SR, SUBURBAN RESIDENTIAL
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ROAD SECTION: 27' (11' LANE + 11' LANE + 5' SIDEWALK)

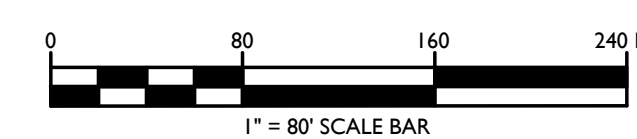
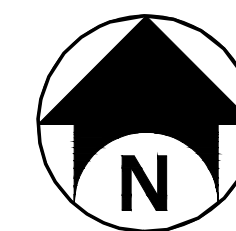
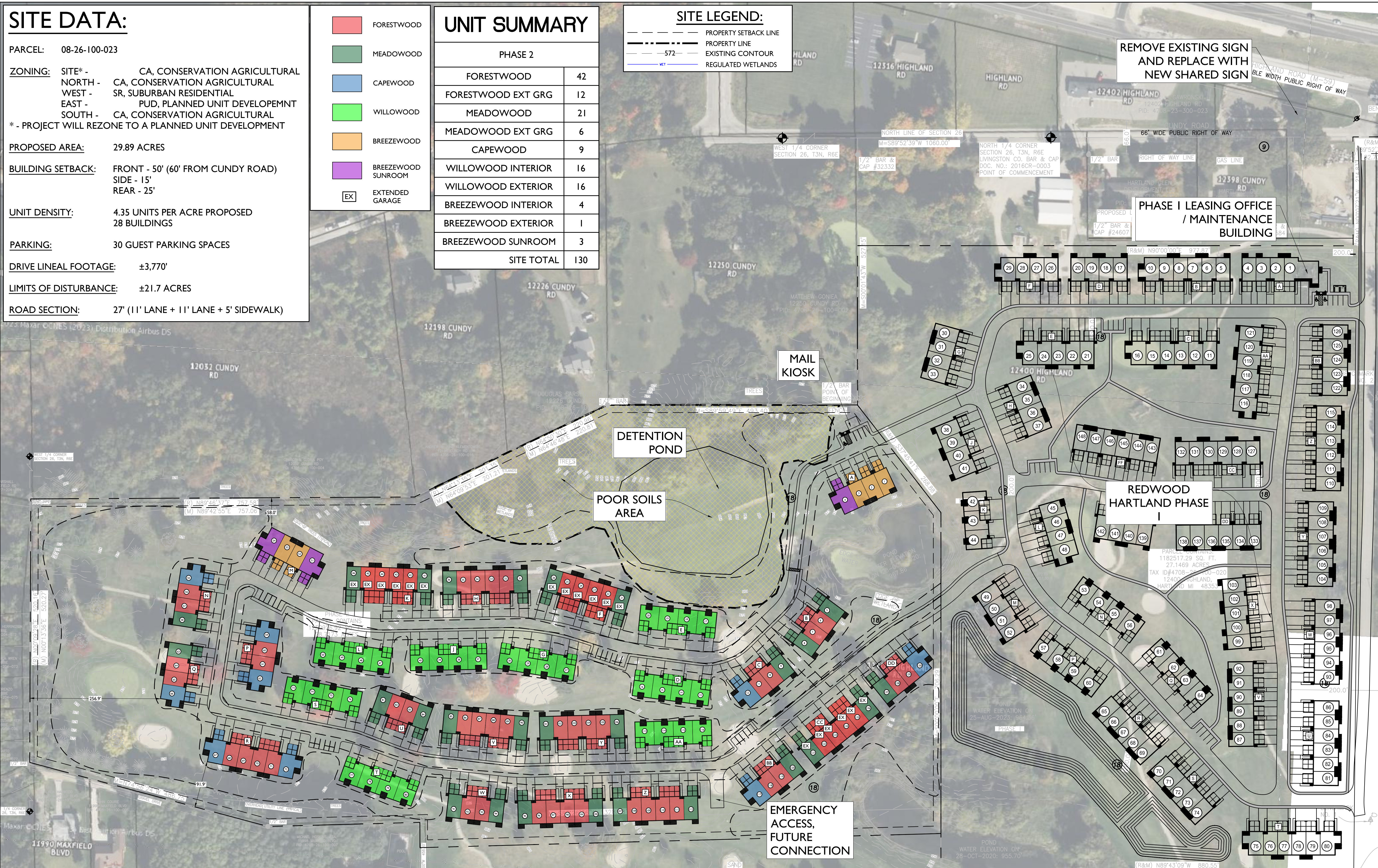
	FORESTWOOD
	MEADOWWOOD
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	WILLOWOOD
	BREEZEWOOD
	BREEZEWOOD SUNROOM
	EXTENDED GARAGE

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BREEZEWOOD SUNROOM	3
SITE TOTAL	130

SITE LEGEND:

- PROPERTY SETBACK LINE
- PROPERTY LINE
- EXISTING CONTOUR
- REGULATED WETLANDS



DEVELOPMENT PLANS FOR PROPOSED REDWOOD LIVING RESIDENTIAL DEVELOPMENT HARTLAND GLEN LANE HARTLAND TOWNSHIP, LIVINGSTON COUNTY, MICHIGAN (T3N, R6E)

PROJECT CONTACTS

OWNER
 REDWOOD LIVING
 7007 EAST PLEASANT VALLEY ROAD
 INDEPENDENCE, OH 44131
 EMILY ENGELHART
 (216) 401-6885

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

UTILITY AND JURISDICTIONAL CONTACTS

PLANNING AND ZONING
 HARTLAND TOWNSHIP
 2655 CLARK ROAD
 HARTLAND, MI 48353
 TROY LANGER
 (810) 632-7498

WATER
 HARTLAND TOWNSHIP
 2655 CLARK ROAD
 HARTLAND, MI 48353
 MICHAEL LUCE
 (810) 632-7498

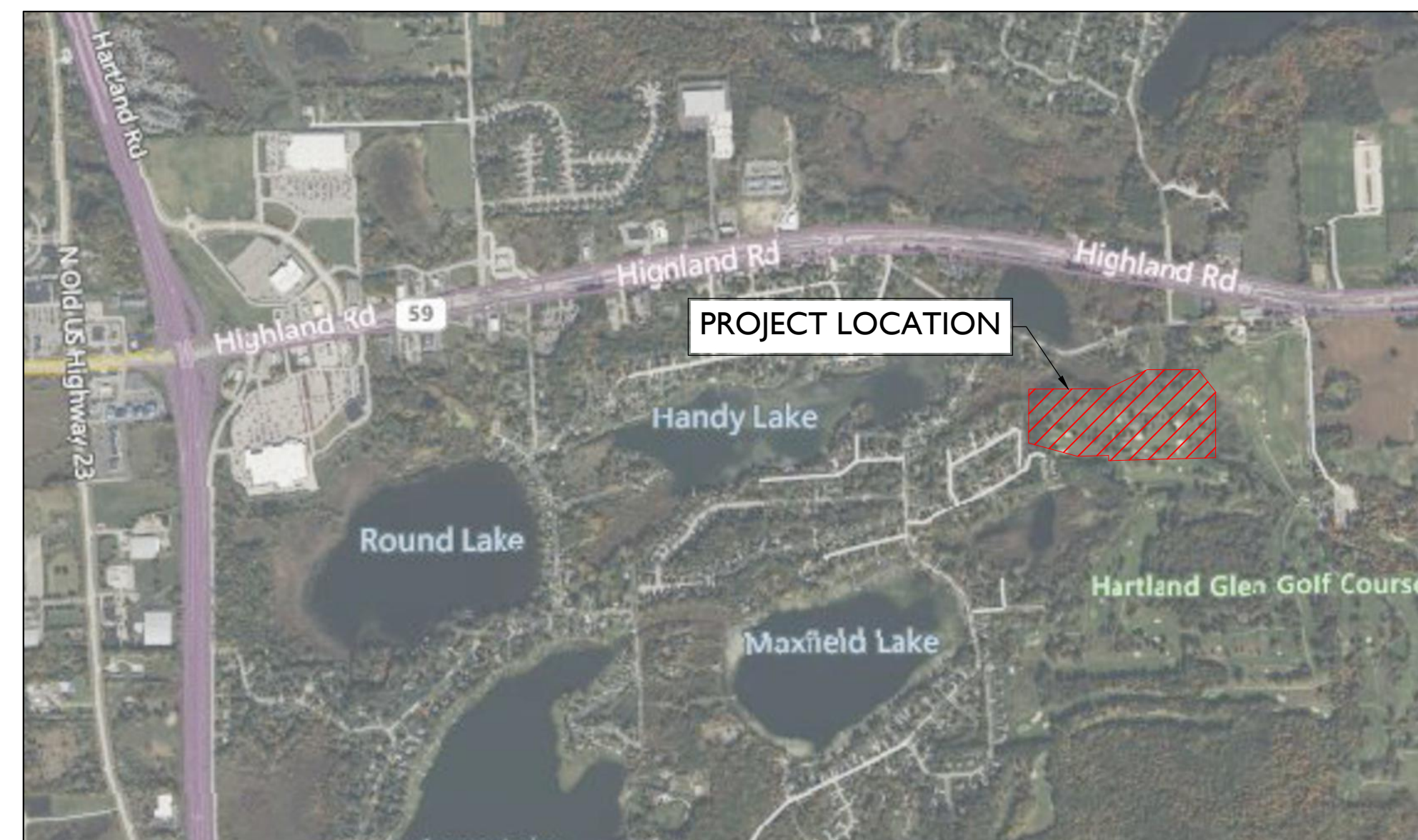
SANITARY SEWER
 LIVINGSTON COUNTY DRAIN COMMISSIONER'S OFFICE
 2300 EAST GRAND RIVER AVE, SUITE 105
 HOWELL, MI 48843
 FRANK ERVIN
 (517) 546-0040

STORM WATER, AND SOIL EROSION AND SEDIMENTATION CONTROL
 LIVINGSTON COUNTY DRAIN COMMISSIONER'S OFFICE
 2300 EAST GRAND RIVER AVE, SUITE 105
 HOWELL, MI 48843
 KEN RECKER
 (517) 546-0040

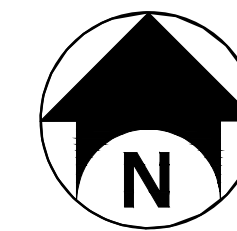
ROADS & ENTRANCE
 LIVINGSTON COUNTY ROAD COMMISSION
 3535 GRAND OAKS DRIVE
 HOWELL, MI 48843
 (517) 546-4250

GAS
 CONSUMERS ENERGY
 1 ENERGY PLAZA
 JACKSON, MI 49201
 (800) 477-5050

ELECTRIC
 DTE
 3751 GREENFIELD ROAD
 MELVINDALE, MI 48122
 SEBASTIAN SARKISSIAN
 (313) 235-4420



SITE LOCATION MAP
 4" = 1 MILE



LIVINGSTON COUNTY
 DRAIN COMMISSIONER
 ACCEPTED FOR PERMITTING AND CONSTRUCTION
 PLANS ACCEPTED FOR CONSTRUCTION BY:

 BRIAN JONCKHEERE, DRAIN COMMISSIONER
 DATE: _____

SHEET INDEX		
INCLUDED	SHEET NUMBER	SHEET TITLE
•	C000	COVER SHEET
•	X100	ALTA-TOPOGRAPHIC SURVEY
•	C200	OVERALL SITE PLAN
•	C201	WEST SITE PLAN
•	C202	EAST SITE PLAN
•	C203	OPEN SPACE PLAN
•	C300	OVERALL GRADING PLAN
•	C400	OVERALL UTILITY PLAN
•	C700	SITE DETAILS
•	C701	HARTLAND TOWNSHIP WATER DETAILS 1 OF 5
•	C702	HARTLAND TOWNSHIP WATER DETAILS 2 OF 5
•	C703	HARTLAND TOWNSHIP WATER DETAILS 3 OF 5
•	C704	HARTLAND TOWNSHIP WATER DETAILS 4 OF 5
•	C705	HARTLAND TOWNSHIP WATER DETAILS 5 OF 5
•	C706	LIVINGSTON CO SANITARY DETAILS 1 OF 2
•	C707	LIVINGSTON CO SANITARY DETAILS 2 OF 2
•	L0.0	LANDSCAPE COVER SHEET
•	L1.0	OVERALL REFERENCE PLAN
•	L1.1	EAST LANDSCAPE PLAN
•	L1.2	WEST LANDSCAPE PLAN
•	L1.3	TYPICAL FOUNDATION PLANTING
•	L2.0	SEED & SOD PLAN
•	SD1.0	SITE DETAILS
•	T1.0	TITLE SHEET - FORESTWOOD MEADOWOOD CAPEWOOD
•	A2.33	OVERALL FLOOR PLAN - CAPEWOOD, FORESTWOOD, MEADOWOOD
•	A4.6	EXTERIOR ELEVATIONS - CAPEWOOD, FORESTWOOD, MEADOWOOD
•	T1.0	TITLE SHEET - BREEZEWOOD, BREEZEWOOD SUNROOM
•	A2.36	OVERALL FLOOR PLAN - BREEZEWOOD, BREEZEWOOD SUNROOM
•	A4.11	EXTERIOR ELEVATIONS - BREEZEWOOD, BREEZEWOOD SUNROOM

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 FOR STATE SPECIFIC DIRECT PHONE NUMBERS VISIT: WWW.CALL811.COM

REV	DATE	DRAWN BY	DESCRIPTION
	01/08/24	GRAHAM	PRELIMINARY PLAN REVIEW
	06/07/24	GRAHAM	PRELIMINARY PLAN REVIEW RESUBMITTAL

STATE OF MICHIGAN
 IAN GRAHAM
 ENGINEER
 NO. 68519
 PROFESSIONAL SEAL

Jan Graham

REDWOOD LIVING
 7007 EAST PLEASANT VALLEY ROAD
 INDEPENDENCE, OH 44131

Redwood
 APARTMENT NEIGHBORHOODS

HARTLAND GLEN LANE
 HARTLAND, MI 48353

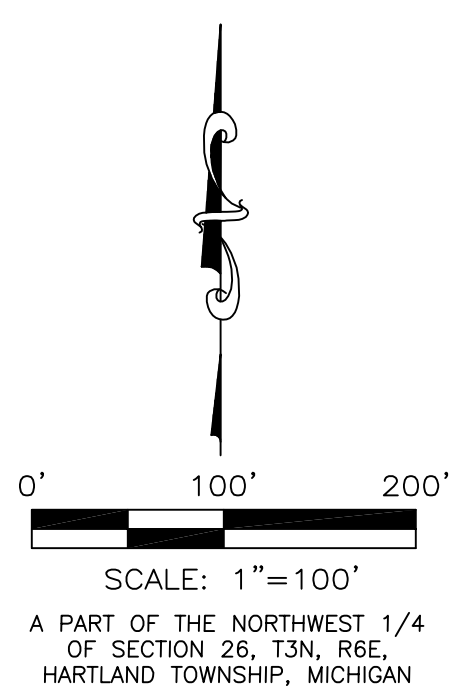
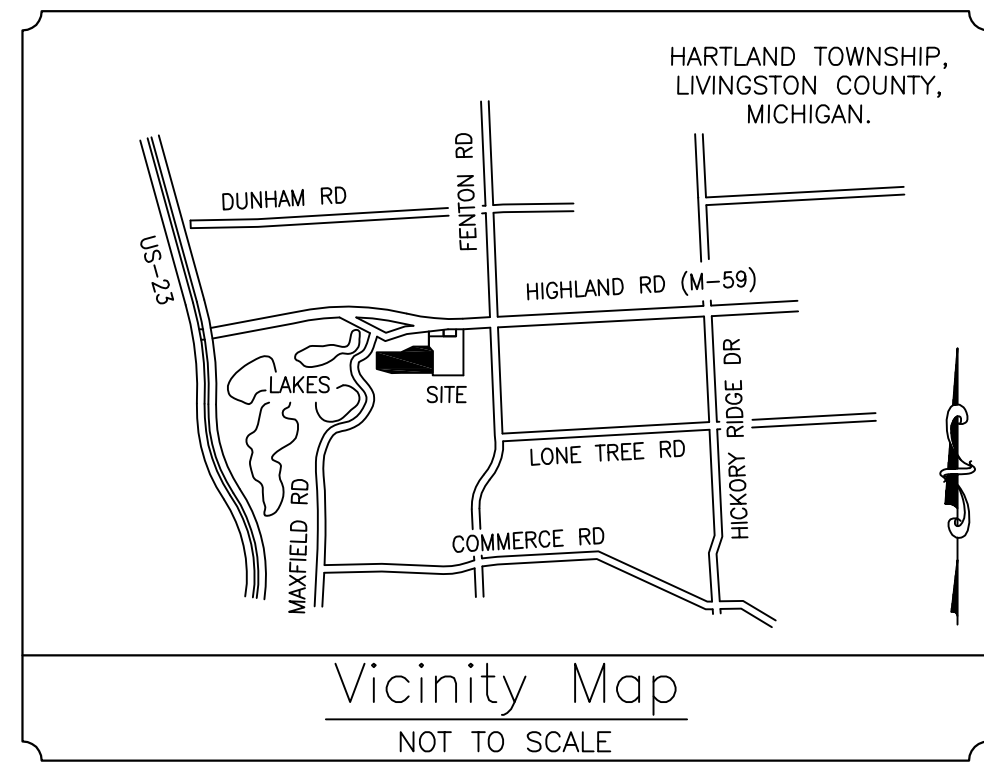
Colliers
 Engineering & Design
 LANSING (BA)
 7050 West Saginaw Hwy, Suite 200
 Lansing, MI 48917
 Phone: 517.272.9835
 COLLIERS ENGINEERING & DESIGN, INC.

SCALE: AS SHOWN DATE: 01/01/24 DRAWN BY: I. GRAHAM, PE CHECKED BY: I. GRAHAM, PE
 PROJECT NUMBER: 23008151 DRAWING NAME: C000 COVER SHEET

SHEET TITLE:
COVER SHEET

SHEET NUMBER:
C000

01/15/24 10:28 AM I:\DWG\1\CONSTRUCTION\CONSTRUCTION\COVER SHEET\ANG000 COVER SHEET BY: I. GRAHAM



GENERAL NOTES

- 1) NO EVIDENCE OF EARTH MOVING OR BUILDING CONSTRUCTION/ADDITIONS WERE OBSERVED WHILE CONDUCTING THE FIELD WORK. (ITEM 16, TABLE A).
- 2) NO EVIDENCE OF PROPOSED STREET RIGHT OF WAY LINE CHANGES WERE PROVIDED BY THE CONTROLLING JURISDICTION. (ITEM 17, TABLE A).
- 3) THERE IS NO OBSERVABLE EVIDENCE OF RECENT STREET OR SIDEWALK CONSTRUCTION OR REPAIRS. (ITEM 17, TABLE A).
- 4) THIS PARCEL HAS INDIRECT ACCESS TO CUNDY ROAD THROUGH PHASE I OF THE DEVELOPMENT.
- 5) THIS SURVEY MAP CORRECTLY REPRESENTS THE FACTS FOUND AT THE TIME OF THE SURVEY.
- 6) THERE ARE NO DISCREPANCIES BETWEEN THE BOUNDARY LINES OF THE PROPERTY AS SHOWN ON THIS SURVEY MAP AND AS DESCRIBED IN THE LEGAL DESCRIPTION PRESENTED IN THE TITLE COMMITMENT.
- 7) THE BOUNDARY LINE DIMENSIONS AS SHOWN ON THIS SURVEY MAP FORM A MATHEMATICALLY CLOSED FIGURE WITHIN +/-0.1 FOOT.
- 8) THE BOUNDARY LINES OF THE PROPERTY ARE CONTIGUOUS WITH THE BOUNDARY LINES OF ALL ADJOINING STREETS, HIGHWAYS, RIGHTS OF WAY AND EASEMENTS, PUBLIC OR PRIVATE, AS DESCRIBED IN THEIR MOST RECENT RESPECTIVE LEGAL DESCRIPTIONS OF RECORD.
- 9) EXCEPT AS OTHERWISE NOTED BELOW, IF THE PROPERTY CONSISTS OF TWO OR MORE PARCELS, THERE ARE NO GAPS OR GORES BETWEEN SAID PARCELS.
- 10) M-59 (HIGHLAND ROAD) IS ±1150 FEET NORTHEAST OF THE NORTHEAST CORNER OF SUBJECT PARCEL. (ITEM 14, TABLE A).
- 11) THERE WAS VISIBLE WETLAND FLAGGING ON THIS PARCEL AT THE TIME OF SURVEY. THE OBSERVED FLAGGED WETLAND AREAS ARE SHOWN HEREON (ITEM 18, TABLE A).
- 12) EASEMENTS AND EXCEPTIONS SHOWN WERE PROVIDED BY THE TITLE INSURANCE COMPANY, NO RESEARCH HAS BEEN CONDUCTED BY GEODETIC DESIGNS INC. TO IDENTIFY ANY ADDITIONAL EASEMENTS THAT MAY AFFECT THIS PARCEL.

DESCRIPTION

A parcel of land situated in the Northwest one-quarter of Section 26, Town 3 North, Range 6 East, Hartland Township, Livingston County, Michigan, being more particularly described as follows:
 Commencing at a Livingston County pipe and cap at the North one-quarter corner of said Section 26, as recorded in document number 2016CR-0003, Livingston County records,
 thence S89°52'39"W, 1060.00 feet along the North line of said Section 26,
 thence S00°01'43"W, 527.15 feet to a 1/2" steel bar at the point of beginning of the following described parcel,
 thence S37°45'41"E, 268.88 feet,
 thence S00°00'00"E, 633.59 feet,
 thence S88°26'36"W, 1028.38 feet,
 thence N00°07'24"W, 50.02 feet,
 thence S88°26'36"W, 300.00 feet,
 thence N74°56'24"W, 486.75 feet to a 1/2" steel bar,
 thence N00°13'36"E, 520.27 feet to a 3/4" iron pipe,
 thence N89°42'55"E, 757.06 feet,
 thence N64°09'53"E, 201.21 feet,
 thence N64°46'48"E, 220.81 feet to a 1/2" steel bar,
 thence S89°59'49"E, 493.40 feet to the Point of Beginning.

Easement Parcel
 Together with the rights and easements as created, limited and defined in Pump Station Easement Agreement recorded as Instrument No. 2022R-026580, Livingston County Records.
 The property described and shown hereon is the same property as described in Stewart Title Guaranty Company commitment number 47-23895856-SCM, dated Oct 31, 2023.

NOTES CORRESPONDING TO SCHEDULE B

- 9) Terms, conditions and provisions contained in, and easement(s) created by, Drainage Agreement recorded in Liber 1124, Page 572, Livingston County Records, this does not affect this parcel and is not shown hereon.
- 9) Temporary Wastewater Treatment System and Access Easement granted to Forestbrook Hills Condominium Association recorded in Liber 2625, Page 242, Livingston County Records, this does not affect this parcel and is not shown hereon.
- 10) Permanent Drainage and Access Easement granted to Forestbrook Hills Condominium Association recorded in Liber 2625, Page 245, Livingston County Records, this does not affect this parcel and is not shown hereon.
- 11) Terms, conditions and provisions contained in, and easement(s) created by, Redwood Planned Development Agreement recorded as Instrument No. 2022R-026576, Livingston County Records, the easements listed within do not affect this parcel and are not shown hereon.
- 12) Terms, conditions and provisions contained in, and easement(s) created by, Easement Agreement recorded as Instrument No. 2022R-026579, Livingston County Records, the easement listed within this document does not affect this parcel and is not shown hereon.
- 13) Terms, conditions and provisions contained in, and easement(s) created by, Pump Station Easement Agreement recorded as Instrument No. 2022R-026580, Livingston County Records, the easement listed within this document does not affect this parcel and is not shown hereon.
- 14) Terms, conditions and provisions contained in, and easement(s) created by, Easement Agreement recorded as Instrument No. 2023R-008039, Livingston County Records, this does benefit this parcel and is shown hereon.

STATEMENT OF POSSIBLE ENCROACHMENTS

NO VISIBLE ENCROACHMENTS AT THE TIME OF SURVEY

ZONING INFORMATION

According to a zoning letter from Hartland Township, the subject property is zoned Planned Development (PD) and is subject to the following conditions:

- Setbacks:
 Along perimeter and adjacent to a public road: 50 feet
 Along perimeter and not adjacent to a public road: 40 feet
 Maximum Building Height: 35 feet
- Parking Requirements:
 Depends on use, current use is vacant parcel.
- Parking Spaces:
 There are no parking spaces on this parcel.

BENCHMARKS

ELEVATIONS ARE DERIVED FROM GPS OBSERVATIONS REFERENCING GEOID18 TO DETERMINE ELEVATIONS IN THE NAVD88 VERTICAL DATUM.

BENCHMARK NO 2
 "MAG" NAIL IN THE WEST SIDE OF A UTILITY POLE.
 NORTHING: 413547.5
 EASTING: 13300311.4
 ELEVATION: 972.59 (NAVD88 DATUM).

BENCHMARK NO 3
 BENCH TIE IN THE EAST SIDE OF A UTILITY POLE.
 NORTHING: 414090.6
 EASTING: 13300274.2
 ELEVATION: 983.26 (NAVD88 DATUM).

LEGEND

- | | | |
|-----------------------|-------------------------------|-----------------------|
| Power Pole | Flag Pole | Storm Manhole |
| Power Pole w/Light | Sign (As Noted) | Storm Catchbasin |
| 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

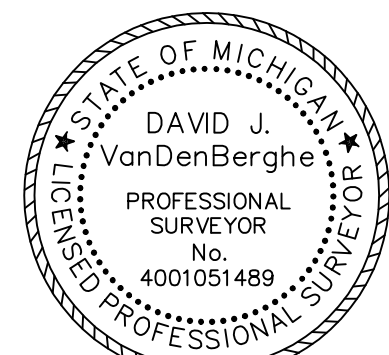
R = RECORDED
 M = MEASURED
 C = CALCULATED
 N = NORTH
 E = EAST
 S = SOUTH
 W = WEST

T-N = TOWN - NORTH
 R-E = RANGE - EAST
 SQ. FT. = SQUARE FEET
 NE = NORTHEAST
 SE = SOUTHEAST
 SW = SOUTHWEST
 NW = NORTHWEST

AVE. = AVENUE
 BLVD. = BOULEVARD
 CT. = COURT
 RD. = ROAD
 ST. = STREET
 PID = PARCEL AND OWNER IDENTIFICATION

SURVEYOR'S CERTIFICATION

TO: Stewart Title Guaranty Company; and Redwood Hartland Highland Road M1 P1 LLC, an Ohio limited liability company:
 This is to certify that this map or plot and the survey on which it is based were made in accordance with the 2021 Minimum Standard Detail Requirements for ALTA/NSPS Land Title Surveys, jointly established and adopted by ALTA and NSPS, and includes Items 2, 3, 4, 5, 6a, 6b, 7a, 7b, 7c, 8, 9, 10, 11, 13, 14, 16, 17, 18 and 19 of Table A thereof. The fieldwork was completed on August 25, 2023.



David J. VanDenBerghe
 DAVID J. VANDENBERGHE
 PROFESSIONAL SURVEYOR #4001051489

Registration No. 4001051489
 Within the State of Michigan

BEARING BASIS

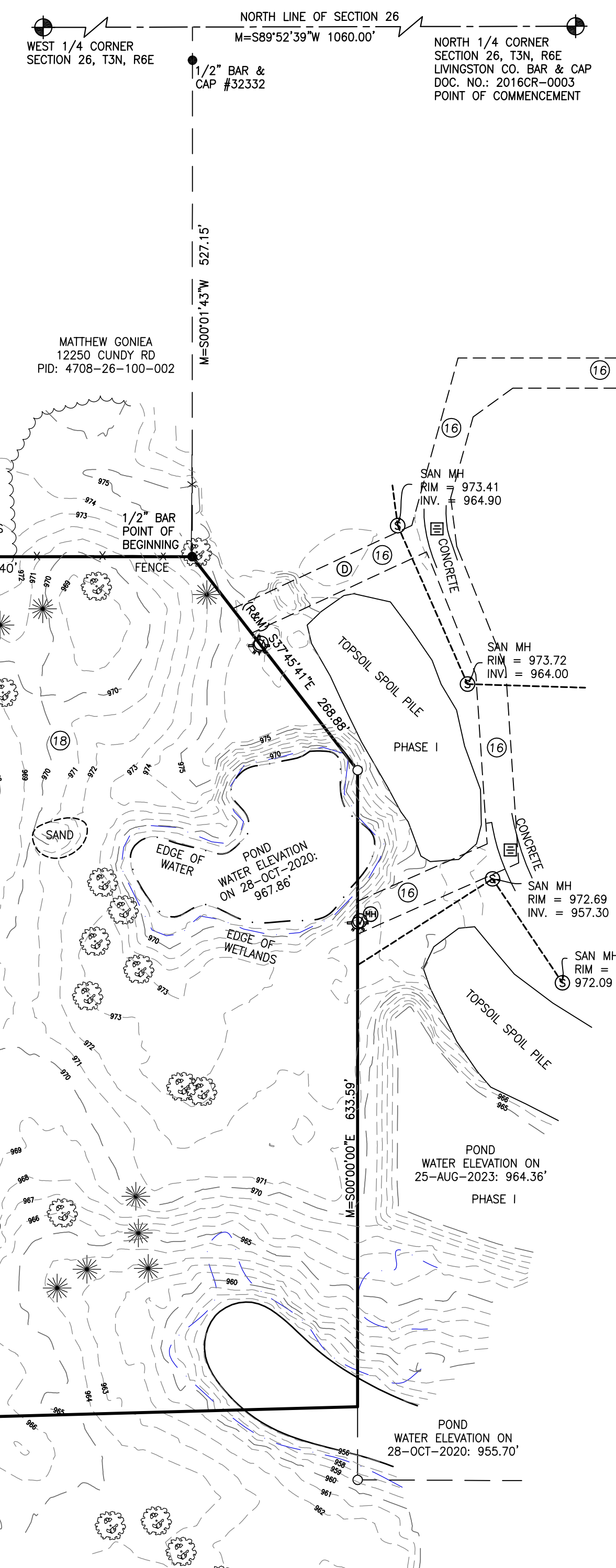
BEARINGS ARE BASED ON THE NORTH & SOUTH 1/4 LINE OF SECTION 26 RECORDED AS BEARING SOUTH 00°35'39" WEST.

FLOOD NOTE

BY GRAPHIC PLOTTING ONLY, THIS PARCEL IS LOCATED IN ZONE X OF THE FLOOD INSURANCE RATE MAP NUMBER 26093C0239DE WHICH BEARS AN EFFECTIVE DATE OF 09-17-2008 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.



"ALTA / NSPS LAND TITLE SURVEY"

PREPARED BY:

GEODETIC DESIGNS, INC.
 2300 N. GRAND RIVER AVE.
 LANSING, MI 48906
 PHONE: (517) 908-0008
 FAX: (517) 908-0009
 WWW.GEODETICDESIGNS.COM

MARK	DATE	REVISION	BY	REVIEWER

Colliers Engineering & Design

12400 Highland Road
 Hartland Township, MI
 Phase II

SCALE: 1" = 100'
 DATE: August 25, 2023
 DRAWN BY: JJC
 CHECKED BY: DJV

SHEET 1 OF 1
 JOB NUMBER: S161-2020

UNIT SUMMARY

PHASE 2	
FORESTWOOD	42
FORESTWOOD EXT GRG	12
MEADOWWOOD	21
MEADOWWOOD EXT GRG	6
CAPEWOOD	9
WILLOWOOD INTERIOR	16
WILLOWOOD EXTERIOR	16
BREEZEWOOD INTERIOR	4
BREEZEWOOD EXTERIOR	1
BREEZEWOOD SUNROOM	3
SITE TOTAL	130

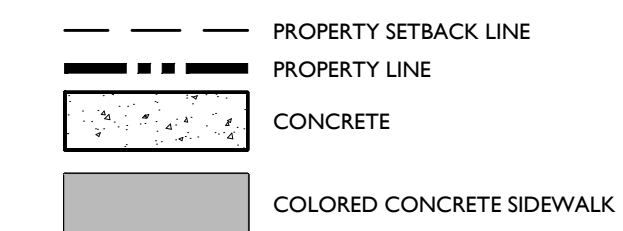
PARKING

REQUIRED PARKING	
TWO(2) SPACES FOR EACH DWELLING UNIT PLUS ONE (1) SPACE FOR EVERY FOUR (4) DWELLING UNITS	
130 UNITS * 2 SPACES =	260 SPACES
130 UNITS / 4 =	33 SPACES
TOTAL REQUIRED =	263 SPACES
PROVIDED PARKING	
TWO (2) SPACES IN EACH GARAGE PLUS TWO (2) SPACES IN EACH DRIVEWAY PER UNIT. FOUR (4) SPACES PROVIDED FOR EACH UNIT	
130 UNITS * 4 SPACES =	520 SPACES
GUEST PARKING SPACES =	31 SPACES
TOTAL PROVIDED SPACES =	551 SPACES
ADDITIONAL PARKING PROVIDED ABOVE TOWNSHIP REQUIREMENT =	288 SPACES

GENERAL NOTES:

1. THE UNDERGROUND STRUCTURES AND UTILITIES SHOWN ON THESE PLANS HAVE BEEN PLOTTED FROM AVAILABLE SURVEYS AND RECORD MAPS. THEY ARE NOT CERTIFIED 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 DIGGING OR CONSTRUCTION ACTIVITIES IN THEIR VICINITY.
2. THE CONTRACTOR SHALL PERFORM ALL WORK IN COMPLIANCE WITH TITLE 29 OF FEDERAL REGULATIONS, PART 1926, SAFETY AND HEALTH REGULATIONS FOR CONSTRUCTION (OSHA).
3. ALL ROADS AND PRIVATE DRIVES SHALL BE KEPT CLEAN 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 (I.E. WATER VALVES, CATCH BASIN FRAMES AND GRATES, MANHOLE COVERS) WITHIN THE PROJECT LIMITS SHALL BE ADJUSTED TO FINISHED GRADE.
8. AREAS DISTURBED OR DAMAGED AS PART OF THIS 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 "MISS DIG" AT LEAST 3 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 PREVIOUSLY MENTIONED AGENCIES.
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 IS TO VERIFY THAT THE PLANS AND SPECIFICATIONS THAT HE/SHE IS BUILDING FROM ARE THE VERY LATEST PLANS AND SPECIFICATIONS THAT HAVE BEEN APPROVED BY ALL APPLICABLE PERMIT-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-DONE, 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 REVIEWING AND PERMIT-ISSUING AGENCIES, HE/SHE SHALL SEEK CLARIFICATION IN WRITING FROM THE CONSTRUCTION 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 SIGNS AND TRAFFIC CONTROL MEASURES DURING CONSTRUCTION AND MAINTENANCE ACTIVITIES SHALL BE CONSTRUCTED AND INSTALLED PER THE LATEST EDITION OF THE MICHIGAN MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (M.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.

SITE LEGEND:



SITE DATA:

ZONING: SITE - CA, CONSERVATION AGRICULTURAL*
 NORTH - CA, CONSERVATION AGRICULTURAL
 EAST - PD, PLANNED DEVELOPMENT (REDWOOD PH 1)
 WEST - SR, SUBURBAN RESIDENTIAL
 SOUTH - CA, CONSERVATION AGRICULTURAL (GOLF COURSE)
 * - SITE IS PROPOSED TO REZONE FROM CA TO PD. ALL SCHEDULE OF REGULATIONS BELOW ARE BASED ON THE PROPOSED PD DEVELOPMENT.

LAND USE: SITE - GOLF COURSE (EXISTING)
 MULTIPLE-FAMILY RESIDENTIAL (PROPOSED)

LOT AREA: 29.89 ACRES

OPEN SPACE: 25% * 29.89 AC = 7.47 ACRES REQUIRED
 15.7 ACRES PROVIDED (52.6%)

USABLE OPEN SPACE: 10% * 29.89 AC = 2.99 ACRES REQUIRED
 SIDEWALK AREA = 0.45 AC
 COMMON SPACE = 7.71 AC
 8.16 ACRES PROVIDED

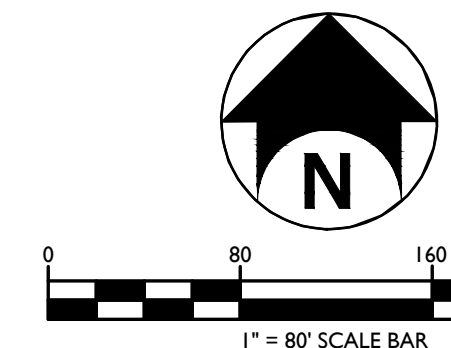
BUILDING COVERAGE: 30% ALLOWED
 15.3% PROPOSED

DENSITY: 130 UNITS PROPOSED
 4.35 UNITS PER ACRE PROPOSED

BUILDING SEPARATION: SIDE TO SIDE: 20'
 REAR TO SIDE: 20'
 REAR TO REAR: 20'

SETBACKS: FRONT: 15' BUILDING
 REAR: 15' BUILDING
 SIDE: 15' BUILDING

BUILDING HEIGHT: 1 STORY PROPOSED



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REV	DATE	DRAWN BY	DESCRIPTION
01/07/24	GRAHAM	GRAHAM	PRELIMINARY PLAN REVIEW
06/07/24	GRAHAM	GRAHAM	PRELIMINARY PLAN REVIEW RESUBMITTAL

REDWOOD LIVING
 7007 EAST PLEASANT VALLEY ROAD
 INDEPENDENCE, OH 44131

Redwood
 APARTMENT NEIGHBORHOODS

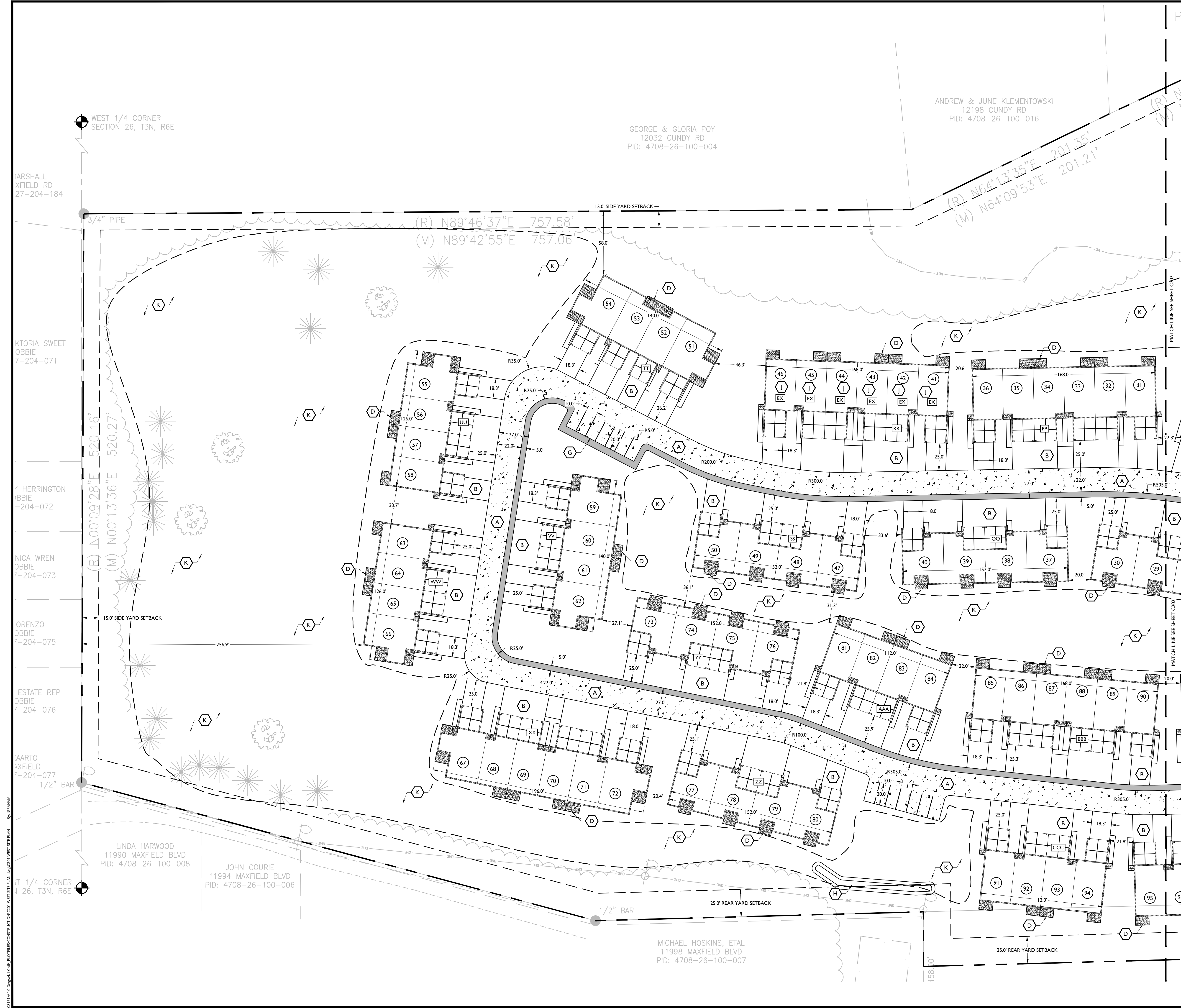
HARTLAND GLEN LANE
 HARTLAND, MI 48353

Colliers
 Engineering & Design
 LANSING (BA)
 7050 West Saginaw Hwy., Suite 200
 Lansing, MI 48917
 Phone: 517.272.9835
 COLLIER'S ENGINEERING & DESIGN, INC.

SCALE:	DATE:	DRAWN BY:	CHECKED BY:
AS SHOWN	01/01/24	GRAHAM, PE	GRAHAM, PE

PROJECT NUMBER:	DRAWING NAME:
23008151	C200 OVERALL SITE PLAN

SHEET TITLE: **OVERALL SITE PLAN**
 SHEET NUMBER: **C200**



ANDREW & JUNE KLEMENTOWSKI
12198 CUNDY RD
PID: 4708-26-100-016

GEORGE & GLORIA POY
12032 CUNDY RD
PID: 4708-26-100-004

WEST 1/4 CORNER SECTION 26, T3N, R6E

MARSHALL XFIELD RD
27-204-184

KTORIA SWEET OBBIE
7-204-071

HERRINGTON OBBIE
-204-072

NICA WREN OBBIE
7-204-073

ORENZO OBBIE
7-204-075

ESTATE REP OBBIE
7-204-076

AARTO XFIELD
7-204-077

LINDA HARWOOD
11990 MAXFIELD BLVD
PID: 4708-26-100-008

JOHN COURIE
11994 MAXFIELD BLVD
PID: 4708-26-100-006

MICHAEL HOSKINS, ETAL
11998 MAXFIELD BLVD
PID: 4708-26-100-007

P11

(R) N64°13'35"E 201.35'
(M) N64°09'53"E 201.21'

(R) N00°09'28"E 520.16'
(M) N00°13'36"E 520.27'

15.0' SIDE YARD SETBACK

15.0' SIDE YARD SETBACK

1/2" BAR

25.0' REAR YARD SETBACK

25.0' REAR YARD SETBACK

KEY NOTES:

- A. STANDARD CONCRETE PAVEMENT SECTION
- B. STANDARD CONCRETE DRIVEWAY, 18' X 25' UNLESS OTHERWISE NOTED
- C. ADA STRIPING AND SIGNAGE (TYP.)
- D. AT GRADE, NON STRUCTURAL PATIO/PORCH (TYP.) REFER TO ARCH. PLANS
- E. STANDARD PARKING SPACES (10' X 20')
- F. MAIL KIOSK
- G. THICKENED EDGE WALK
- H. 3 FOOT TALL MAX BERM
- I. STORMWATER MANAGEMENT AREA
- J. EXTENDED GARAGE UNIT. REFER TO ARCH PLANS
- K. COMMON OPEN SPACE AREA



Engineering & Design

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REV.	DATE	DRAWN BY	DESCRIPTION
0	01/01/24	GRAHAM	PRELIMINARY PLAN REVIEW SUBMITTAL
1	06/07/24	GRAHAM	PRELIMINARY PLAN REVIEW SUBMITTAL

SITE LEGEND:

- PROPERTY SETBACK LINE
- PROPERTY LINE
- CONCRETE
- COLORED CONCRETE SIDEWALK
- KEY NOTE
- UNIT NUMBER
- BUILDING IDENTIFICATION

N

REDWOOD LIVING
7007 EAST PLEASANT VALLEY ROAD
INDEPENDENCE, OH 44131

HARTLAND GLEN LANE
HARTLAND, MI 48353

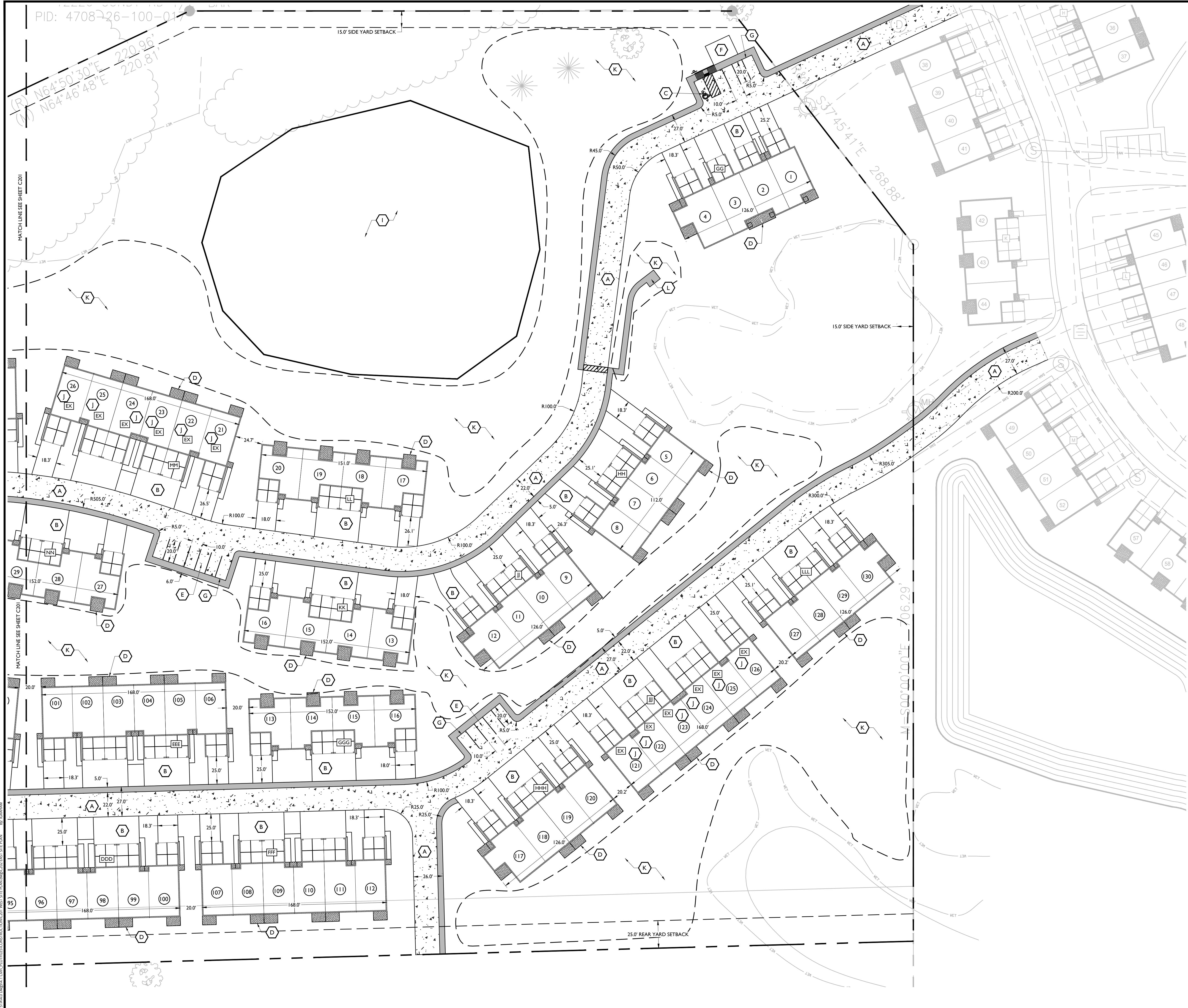
LANSING (BA)
7050 West Saginaw Hwy.
Suite 200
Lansing, MI 48917
Phone: 517.272.9835
COLLIERS ENGINEERING & DESIGN, INC.

SCALE: AS SHOWN	DATE: 01/01/24	DRAWN BY: GRAHAM, PE	CHECKED BY: P.FURTAW
PROJECT NUMBER: 23008151	DRAWING NAME: C201 WEST SITE PLAN	SHEET TITLE:	

WEST SITE PLAN

SHEET NUMBER: C201

PID: 4708-26-100-01

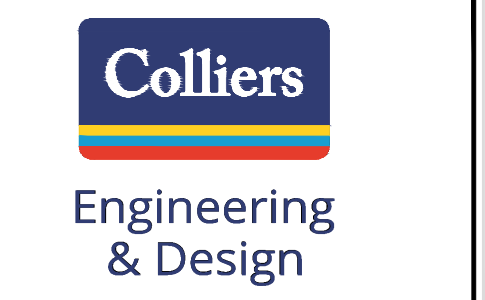
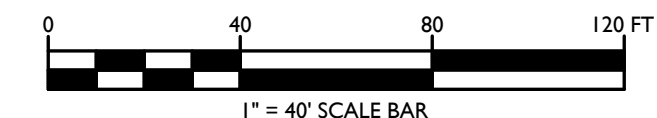
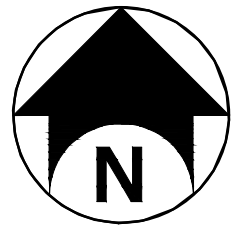


KEY NOTES:

- A. STANDARD CONCRETE PAVEMENT SECTION
- B. STANDARD CONCRETE DRIVEWAY, 18' X 25' UNLESS OTHERWISE NOTED
- C. ADA STRIPING AND SIGNAGE (TYP.)
- D. AT GRADE, NON STRUCTURAL PATIO/PORCH (TYP.) REFER TO ARCH PLANS
- E. STANDARD PARKING SPACES (10' X 20')
- F. MAIL KIOSK
- G. THICKENED EDGE WALK
- H. 3 FOOT TALL MAX BERM
- I. STORMWATER MANAGEMENT AREA
- J. EXTENDED GARAGE UNIT. REFER TO ARCH PLANS
- K. COMMON OPEN SPACE
- L. BENCH AND LITTLE FREE LIBRARY. SEE SHEET L.I. FOR DETAILS.

SITE LEGEND:

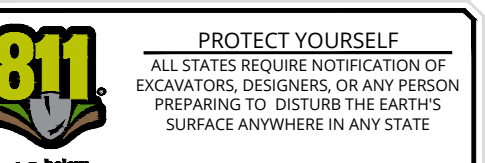
- PROPERTY SETBACK LINE
- PROPERTY LINE
- CONCRETE
- COLORED CONCRETE SIDEWALK
- KEY NOTE
- UNIT NUMBER
- BUILDING IDENTIFICATION



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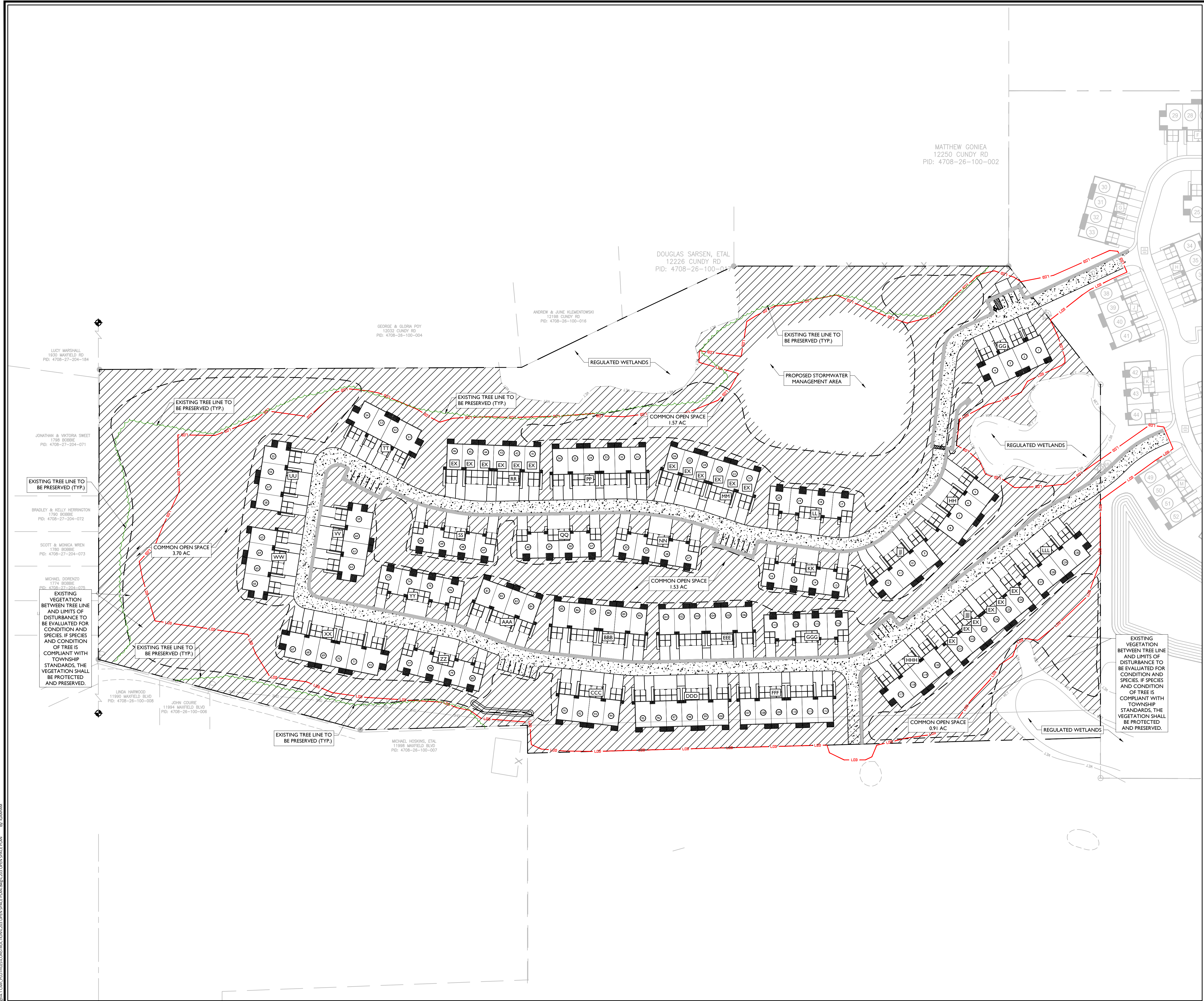
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PROJECT NUMBER: 23008151	DRAWING NAME: C201 WEST SITE PLAN		

SHEET TITLE:
EAST SITE PLAN

SHEET NUMBER:
C202



LAND USE TABLE

LAND USE	ACRES	PERCENTAGE
BUILDING AREA	4.57	15%
CONCRETE DRIVES	3.44	12%
CONCRETE SIDEWALK	0.45	2%
STORMWATER MGMT	1.40	5%
PARKING	0.14	<1%
WETLANDS	4.15	14%
OPEN SPACE	15.74	52%
TOTAL SITE AREA	29.89	100%

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	06/07/24	GRAHAM	PRELIMINARY PLAN REVIEW RESUBMITTAL

SITE LEGEND:

- PROPERTY LINE
- PRIVATE CONCRETE DRIVE
- COLORLED CONCRETE SIDEWALK
- OPEN SPACE
- LIMITS OF DISTURBANCE
- EXISTING TREE PRESERVATION LIMITS

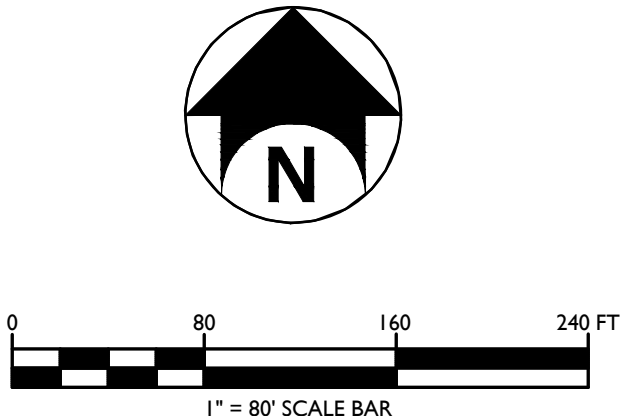
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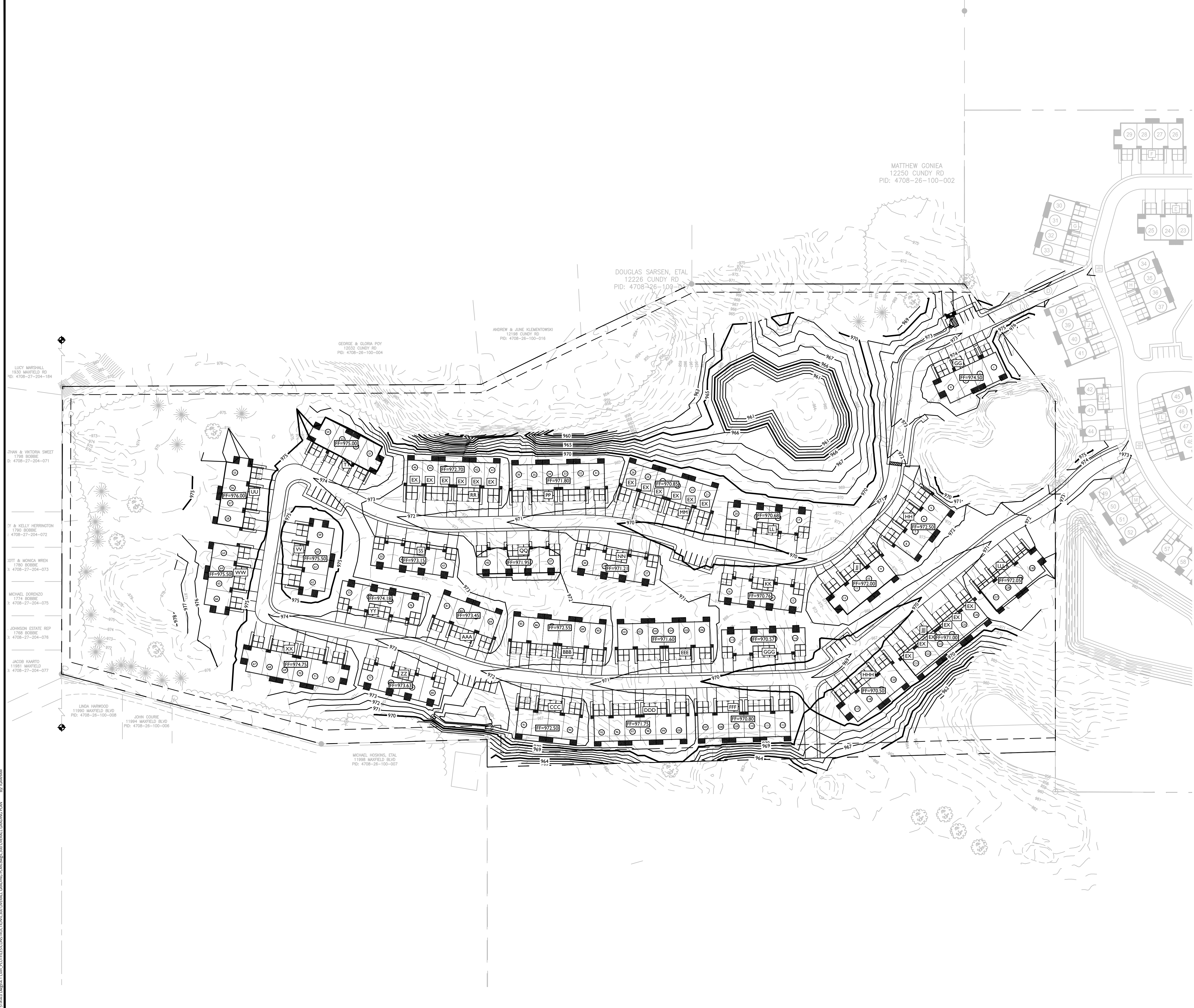
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SCALE: AS SHOWN DATE: 01/01/24 DRAWN BY: GRAHAM, PE CHECKED BY: P.FURTAW
PROJECT NUMBER: 23008151 DRAWING NAME: C203 OPEN SPACE PLAN

SHEET TITLE: **OPEN SPACE PLAN**
SHEET NUMBER: **C203**



B:\11\10\10\DWG\1_CAD_PLOT\CONSTRUCTION\203_OPEN_SPACE_PLAN.dwg (C203) OPEN SPACE PLAN



GRADING NOTES

- REFER TO EROSION AND SEDIMENT CONTROL PLAN FOR REQUIRED EROSION AND SEDIMENT CONTROL MEASURES.
- CONTRACTOR SHALL BE RESPONSIBLE FOR THE MAINTENANCE AND REMOVAL OF TEMPORARY SEDIMENTATION CONTROLS. EROSION CONTROL MEASURES SHALL NOT BE REMOVED BEFORE VEGETATION HAS OCCURRED COMPLETELY.
- ALL SILT FENCE TO BE REPLACED WHENEVER THEY BECOME CLOGGED OR INOPERABLE AND SHALL BE REPLACED AT A MINIMUM OF EVERY 3 MONTHS.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR RESTORATION OF TOPSOIL TO ALL DISTURBED AREAS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO MAINTAIN EROSION CONTROL MEASURES AT ALL TIMES.
- SILT FENCE, JUTE MESH, AND/OR EROSION CONTROL BLANKETS WILL BE USED ON STEEP SLOPES AND WHERE NECESSARY TO CONTROL EROSION AND SILTATION OF EXISTING DRAINAGE SYSTEMS AS ORDERED BY THE ENGINEER OR SPECIFIED ON PLANS.
- THE CONTRACTOR SHALL DESIGNATE A MEMBER OF HIS/FIR FIRM TO BE RESPONSIBLE TO MONITOR EROSION CONTROL, EROSION CONTROL STRUCTURES, TREE PROTECTION AND PRESERVATION THROUGHOUT CONSTRUCTION.
- ALL DISTURBED AREAS SHALL BE PROTECTED FROM EROSION EITHER BY MULCH OR TEMPORARY SEEDING WITHIN 2 WEEKS OF DISTURBANCE.
- ALL SITE GRADING MUST BE PERFORMED TO INSURE POSITIVE DRAINAGE ACROSS THE ENTIRE SITE, THROUGHOUT THE PERIOD OF CONSTRUCTION AND AFTER PROJECT COMPLETION.
- 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 451 OF THE PUBLIC ACTS OF 1994 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.
- IN GENERAL, EARTHWORK AND PAVEMENT CONSTRUCTION SHOULD BE PERFORMED IN ACCORDANCE WITH THE LATEST MDT STANDARD SPECIFICATIONS FOR CONSTRUCTION UNLESS OTHERWISE NOTED.
- REMOVE ANY EXISTING TOPSOIL, ORGANIC SOILS, UNSUITABLE FILL, VEGETATION, TREES AND OTHER DELETERIOUS MATERIALS TO EXPOSE THE SUBGRADE SOIL. TREE ROOTS SHOULD BE COMPLETELY REMOVED.
- EXCAVATE TO THE DEPTH OF THE FINAL SUBGRADE ELEVATION TO ALLOW FOR GRADE CHANGES AND THE PLACEMENT OF THE RECOMMENDED PAVEMENT SYSTEM.
- 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 DELETERIOUS MATERIALS.
- THE FINAL SUBGRADE SHOULD BE THOROUGHLY PROOFROLLED USING A LOADED TANDEN AXLE TRUCK UNDER THE OBSERVATION OF GEOTECHNICAL/PAVEMENT ENGINEER. LOOSE OR YIELDING AREAS THAT CANNOT BE MECHANICALLY STABILIZED SHOULD BE REMOVED AND REPLACED WITH ENGINEERED FILL OR AS DICTATED BY FIELD CONDITIONS.
- THE AGGREGATE BASE SHOULD BE COMPACTED TO ACHIEVE A MINIMUM OF 95 PERCENT OF THE MAXIMUM MODIFIED PROCTOR DRY DENSITY. THE BASE AND SUBGRADE COMPACTION SHOULD EXTEND A MINIMUM OF 12 INCHES BEYOND THE PAVED EDGE OR BACK OF CURB.

GRADING LEGEND:

- 75— PROPOSED MAJOR CONTOUR
- 76— PROPOSED MINOR CONTOUR
- x TC=78.01 PROPOSED TOP OF CURB / BOTTOM OF CURB ELEVATION
- BC=77.51
- x TW/BW=152.50 PROPOSED TOP OF WALL / BOTTOM OF WALL
- x 77.73 PROPOSED SPOT ELEVATION
- x EG=77.73 EXISTING ELEVATION
- x HP=77.73 PROPOSED HIGH POINT ELEVATION
- x TG=77.73 PROPOSED TOP OF GRATE ELEVATION
- x FF=77.73 FINISHED FLOOR ELEVATION
- 2.5% PROPOSED SLOPE
- 72- EXISTING CONTOUR
- - - RIDGE LINE

LUCY MARSHALL
8327 MAUFIELD RD
PID: 4708-27-204-184

SHAN & VIKTORIA SHEET
1700 BOBBIE
PID: 4708-27-204-071

ST & KELLY HERRINGTON
1700 BOBBIE
PID: 4708-27-204-072

JOIT & MONICA WREN
1700 BOBBIE
PID: 4708-27-204-073

MICHAEL DORENZO
1774 BOBBIE
PID: 4708-27-204-075

JOHNSON ESTATE REP
1700 BOBBIE
PID: 4708-27-204-076

JACOB HARTO
1191 MAUFIELD
PID: 4708-27-204-077

LINDA HAWWOOD
1190 MAUFIELD BLVD
PID: 4708-26-100-008

JOHN COURSE
1194 MAUFIELD BLVD
PID: 4708-26-100-006

MICHAEL HOSKINS, ETAL
1198 MAUFIELD BLVD
PID: 4708-26-100-007

DOUGLAS SARSEN, ETAL
12226 CUNDY RD
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MATTHEW GONIA
12250 CUNDY RD
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ANDREW & JUNE KLEMENTOWSKI
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APARTMENT NEIGHBORHOODS

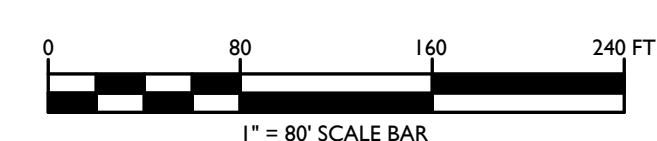
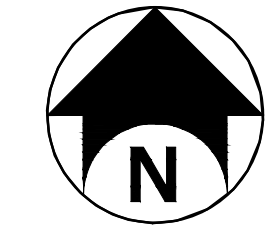
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SCALE: AS SHOWN	DATE: 01/01/24	DRAWN BY: GRAHAM, PE	CHECKED BY: P.FURTAW
PROJECT NUMBER: 23008151	DRAWING NAME: C300 OVERALL GRADING PLAN		

SHEET TITLE: **OVERALL GRADING PLAN**

SHEET NUMBER: **C300**



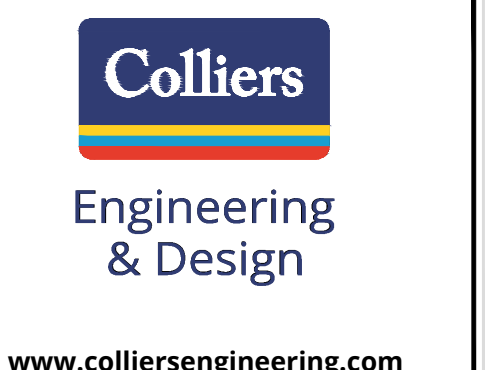
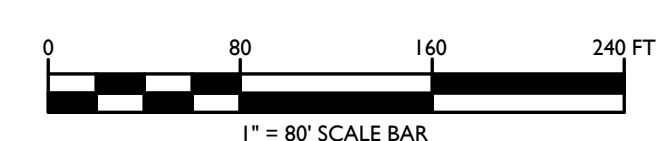
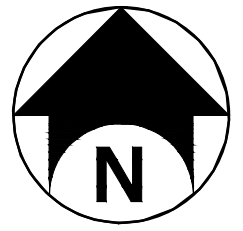
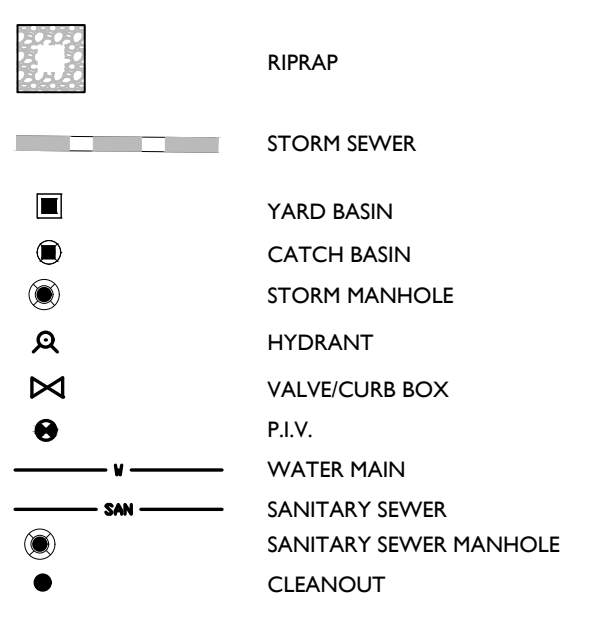
8115 AND DWG 4.1 CIVIL PROJECTS/CONSTRUCTION/03 OVERALL GRADING PLAN/REV C300 OVERALL GRADING PLAN BY: UGRAHAM



UTILITY NOTES:

1. ALL WORKMANSHIP, MATERIALS, AND CONSTRUCTION PRACTICES SHALL CONFORM TO THE REQUIREMENTS OF HARTLAND TOWNSHIP, LIVINGSTON COUNTY DRAIN COMMISSIONER'S OFFICE 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 OWNER.
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 WATERLINES, 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 OWNERS.
9. THE CONTRACTOR IS SPECIFICALLY 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 MEASUREMENTS TAKEN IN THE FIELD. THE INFORMATION IS NOT TO BE RELIED ON 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 LOCATION AND ELEVATIONS OF ALL UTILITY ENTRANCES TO INCLUDE SANITARY SEWER, LATERALS, DOMESTIC AND FIRE PROTECTION WATER SERVICE, ELECTRICAL, TELEPHONE, AND GAS SERVICE. CONTRACTOR SHALL COORDINATE INSTALLATION OF UTILITIES, IN SUCH A MANNER AS TO AVOID CONFLICTS AND ASSURE PROPER DEPTHS ARE ACHIEVED AS WELL AS COORDINATING WITH UTILITY REQUIREMENTS AS TO LOCATION AND SCHEDULING FOR THE INSTALLATION PRIOR TO CONNECTING TO EXISTING UTILITIES.
12. THE CONTRACTOR SHALL CONDUCT ALL REQUIRED TESTS TO THE SATISFACTION OF THE RESPECTIVE UTILITY COMPANIES AND THE OWNER'S INSPECTING AUTHORITIES.
13. CONTRACTOR SHALL COMPLY TO THE FULLEST EXTENT WITH THE LATEST STANDARDS OF OSHA DIRECTIVES OR ANY OTHER AGENCY HAVING JURISDICTION FOR EXCAVATION AND TRENCHING PROCEDURES. THE CONTRACTOR SHALL USE SUPPORT SYSTEMS, SLOPING, BENCHING, AND OTHER MEANS OF PROTECTION. THIS TO INCLUDE BUT NOT LIMITED TO 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 ORDERING 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 UNIT WEIGHT.
16. ALL RIM ELEVATIONS IN OUTLAWN AREAS ARE APPROXIMATE ONLY AND SHALL BE ADJUSTED BY THE CONTRACTOR AFTER FINAL GRADES ARE ESTABLISHED.

UTILITY LEGEND:



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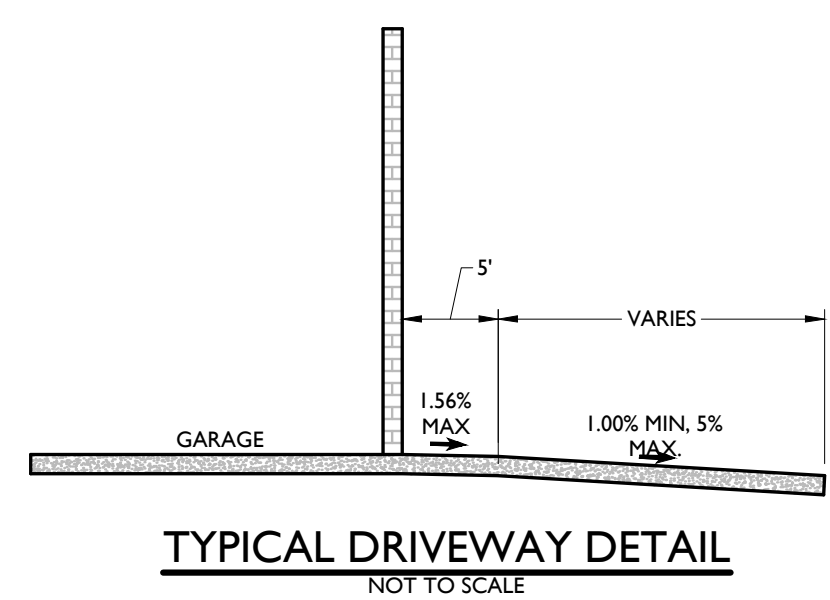
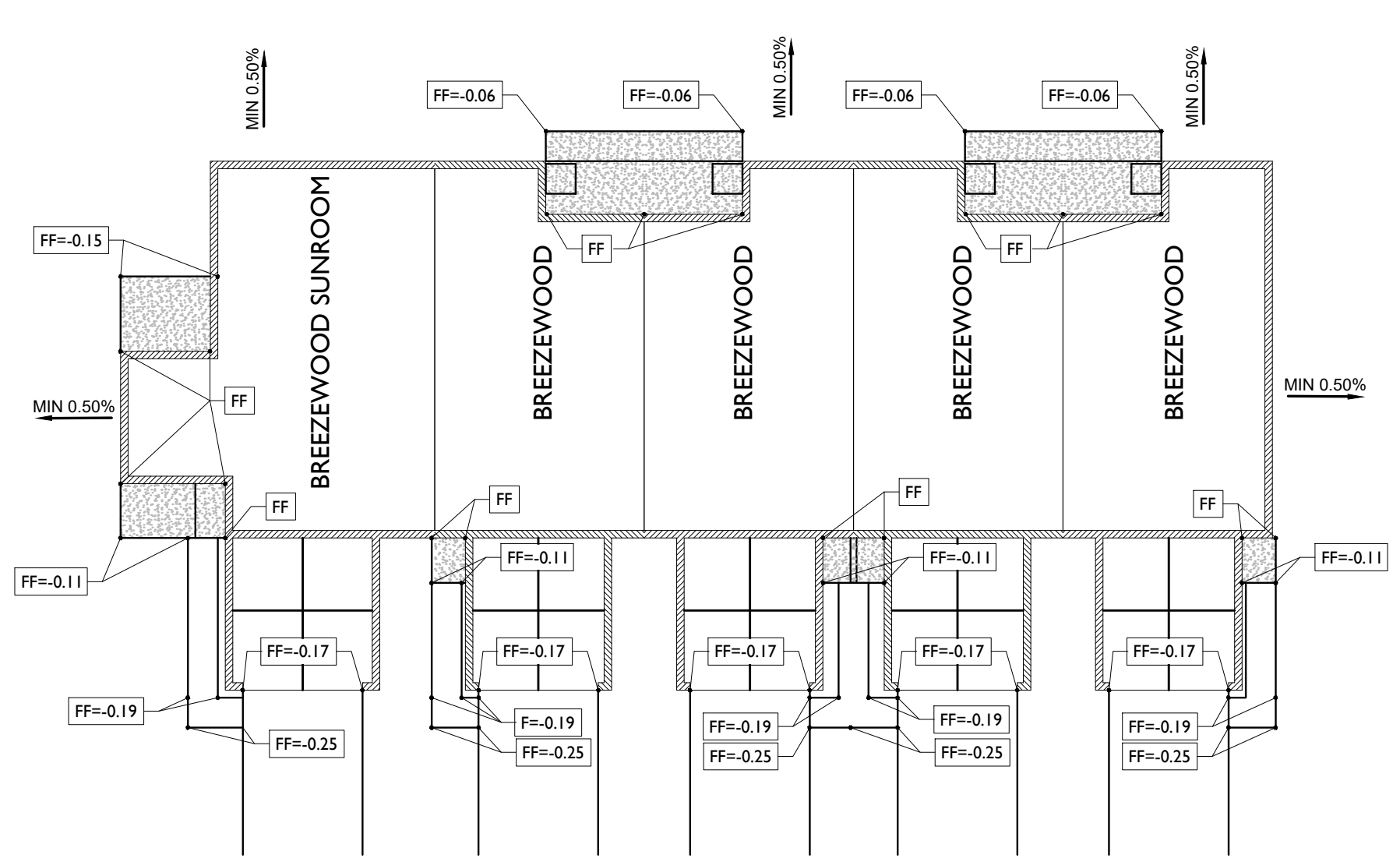
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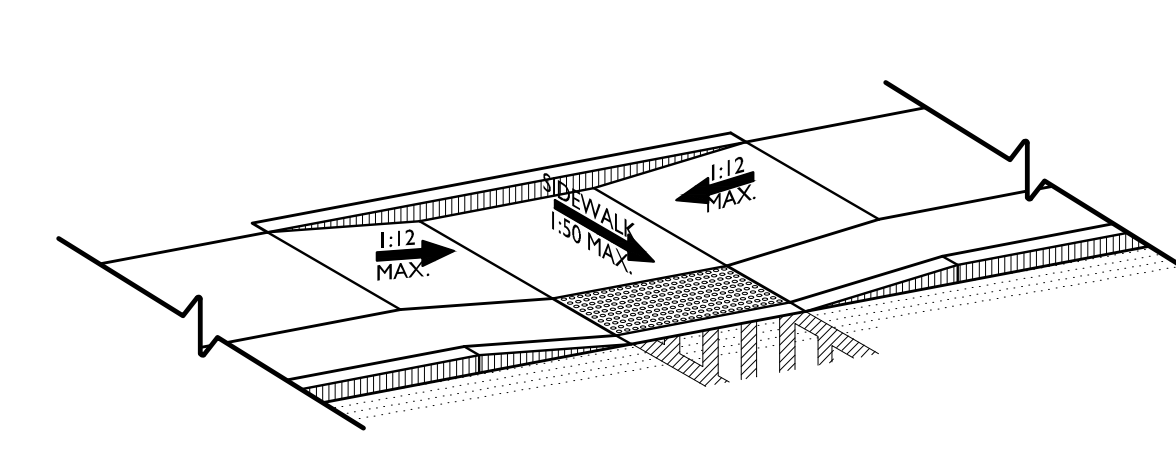
SCALE: AS SHOWN	DATE: 01/01/24	DRAWN BY: GRAHAM, PE	CHECKED BY: P.FURTAW
PROJECT NUMBER: 23008151	DRAWING NAME: C400 OVERALL UTILITY PLAN		

SHEET TITLE:
OVERALL UTILITY PLAN

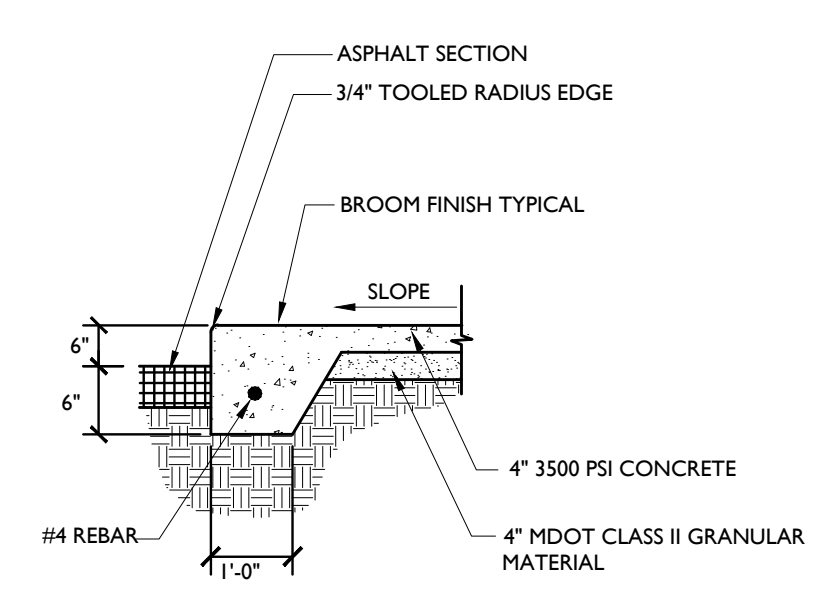
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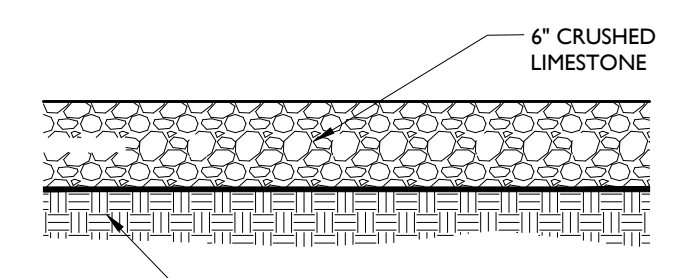
TYPICAL DRIVEWAY DETAIL
NOT TO SCALE



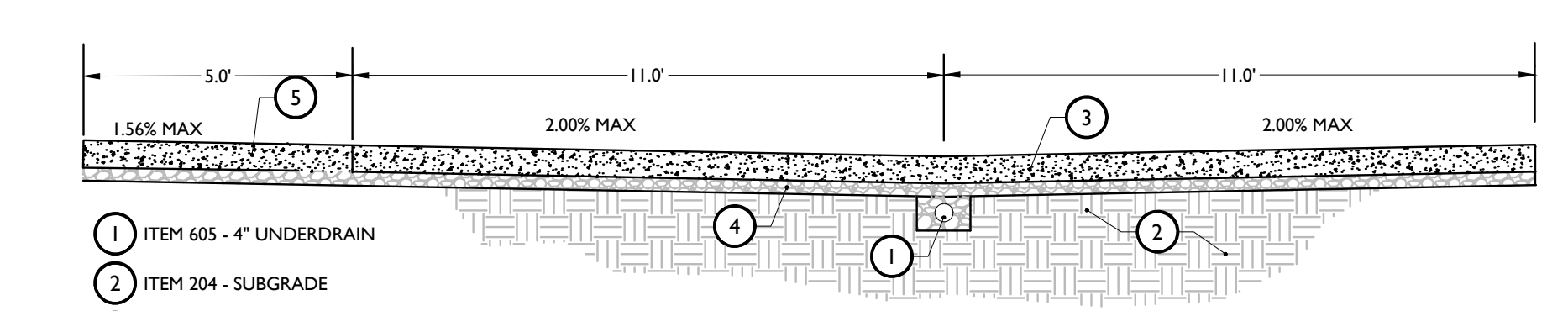
COMBINED PARALLEL/PERPENDICULAR CURB RAMP (TYPE 10)
ACCESSIBLE RAMPS
N.T.S.



THICKENED EDGE WALK DETAIL
N.T.S.



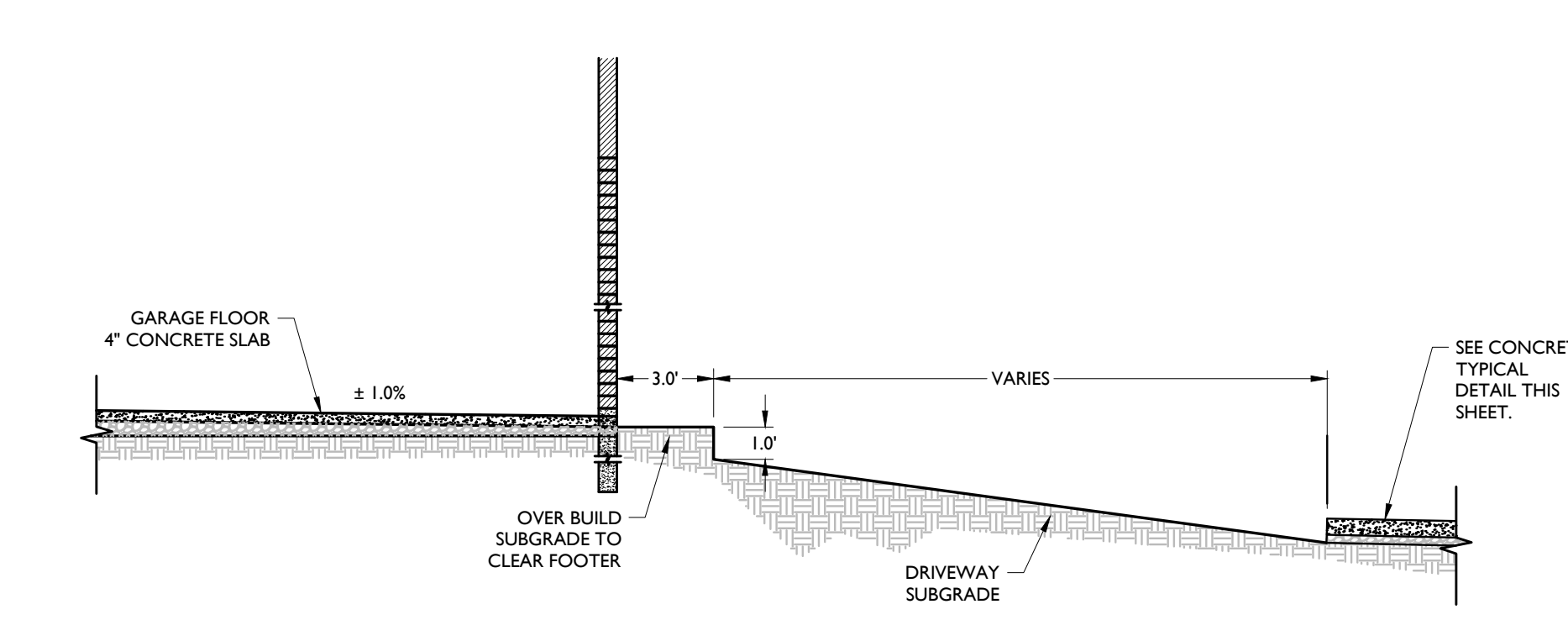
GRAVEL SURFACE
N.T.S.



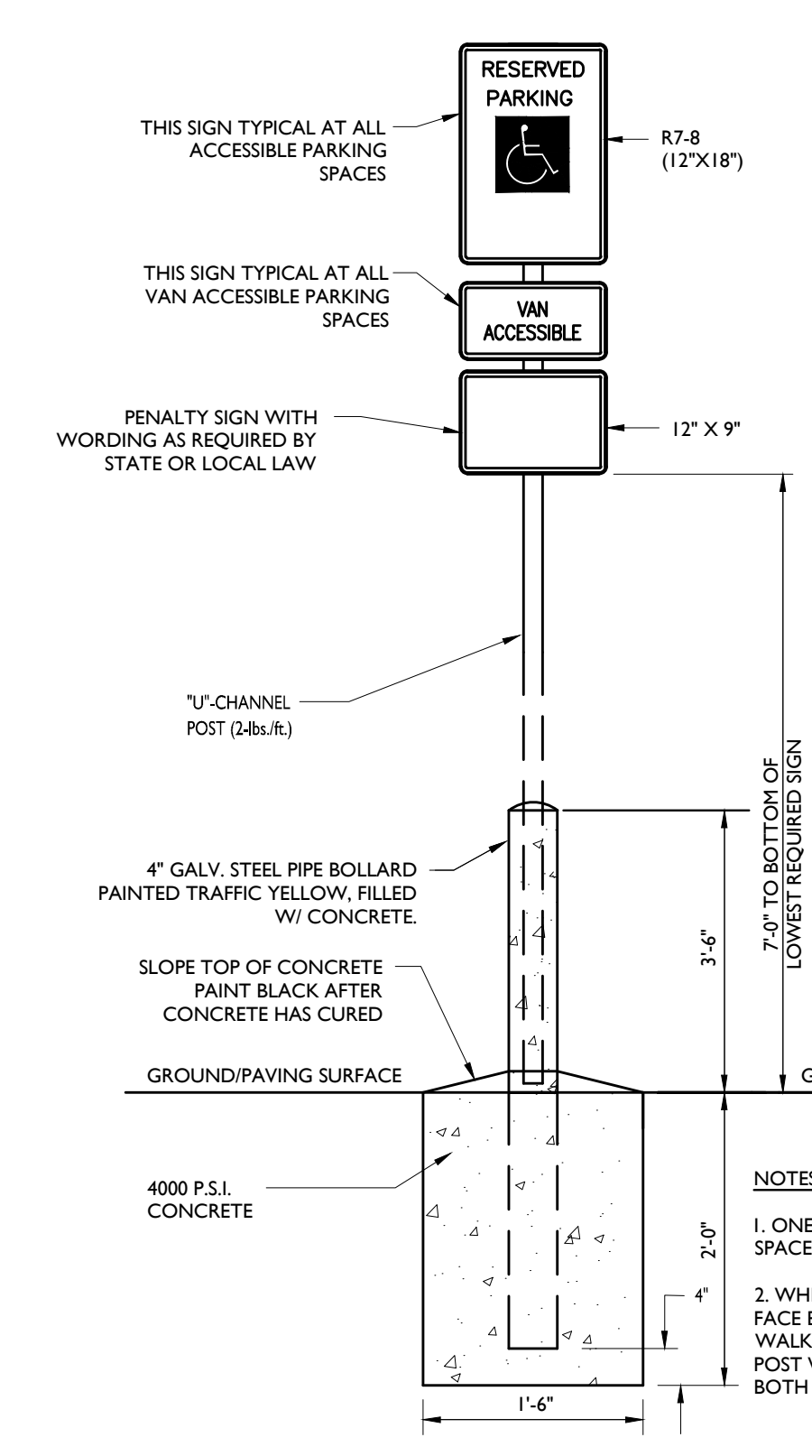
- 1 ITEM 605 - 4" UNDERDRAIN
- 2 ITEM 204 - SUBGRADE
- 3 ITEM 452 - 6" PORTLAND CEMENT CONCRETE PAVEMENT
- 4 ITEM 304 - 3" AGGREGATE BASE
- 5 **6" COLORED CONCRETE SIDEWALK (TYP.)

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

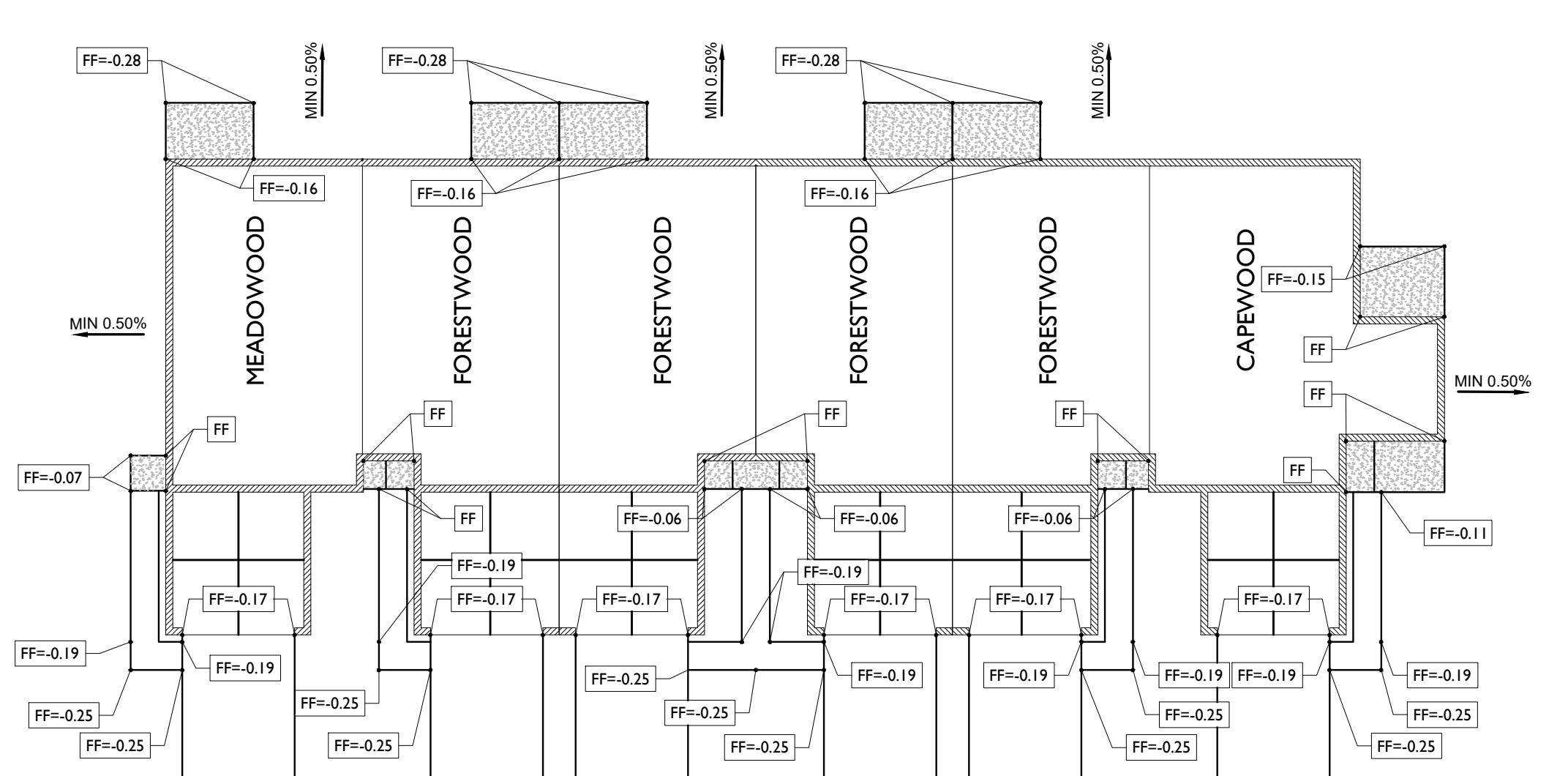
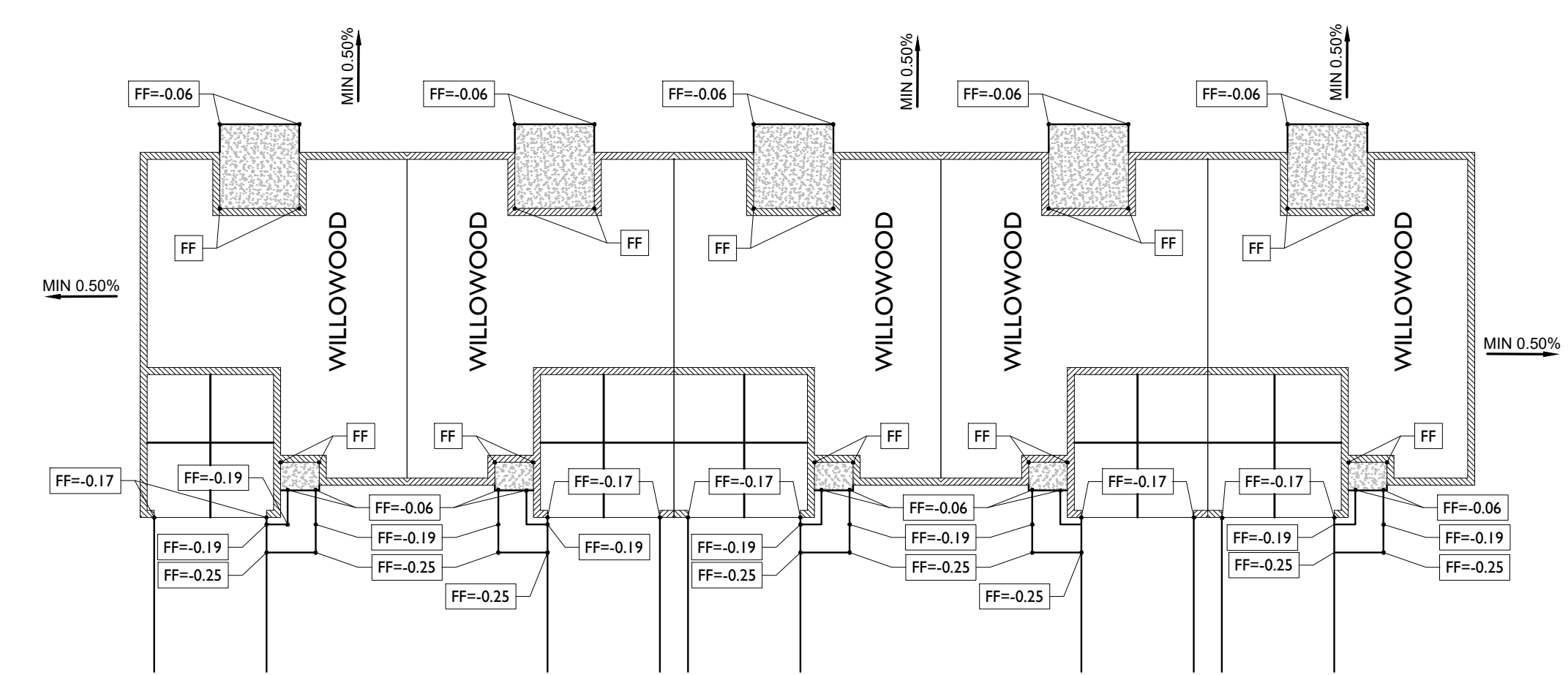
* USE 8" PORTLAND CEMENT CONCRETE PAVEMENT WITHIN THE PUBLIC R.O.W. OR UNLESS OTHERWISE SPECIFIED.
** CONTRACTOR TO COORDINATE WITH OWNER ON COLOR SPECIFICATIONS.



DRIVEWAY EXCAVATION DETAIL
N.T.S.



ACCESSIBLE PARKING SIGN DETAIL
N.T.S.



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	06/07/24	GRAHAM	PRELIMINARY PLAN REVIEW SUBMITTAL

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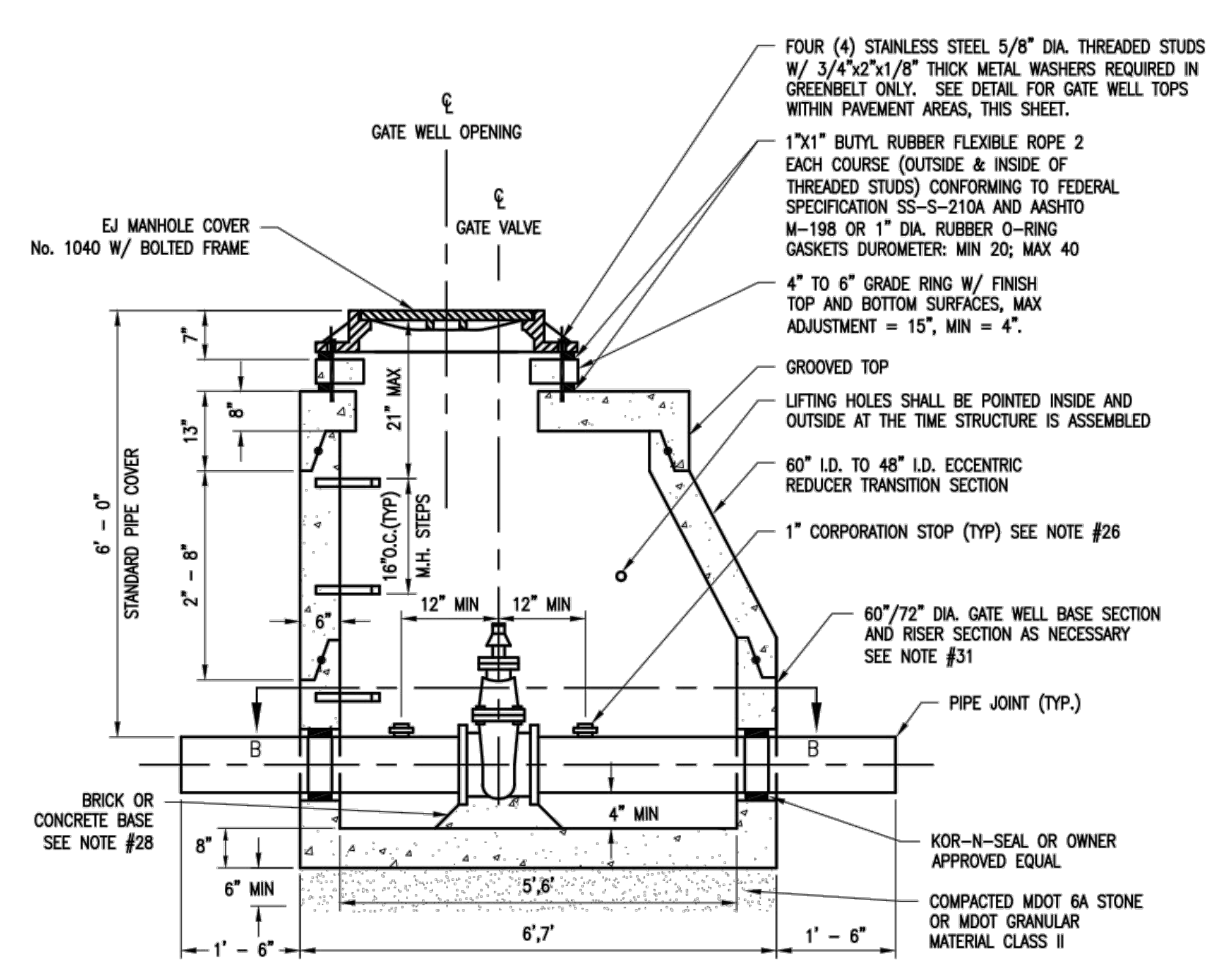
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7050 West Saginaw Hwy.
Suite 200
Lansing, MI 48917
Phone: 517.272.9835
COLLIERS ENGINEERING & DESIGN, INC.

SCALE: AS SHOWN	DATE: 01/01/24	DRAWN BY: GRAHAM, PE	CHECKED BY: P.FURTAW
PROJECT NUMBER: 23008151	DRAWING NAME: C700 SITE DETAILS		

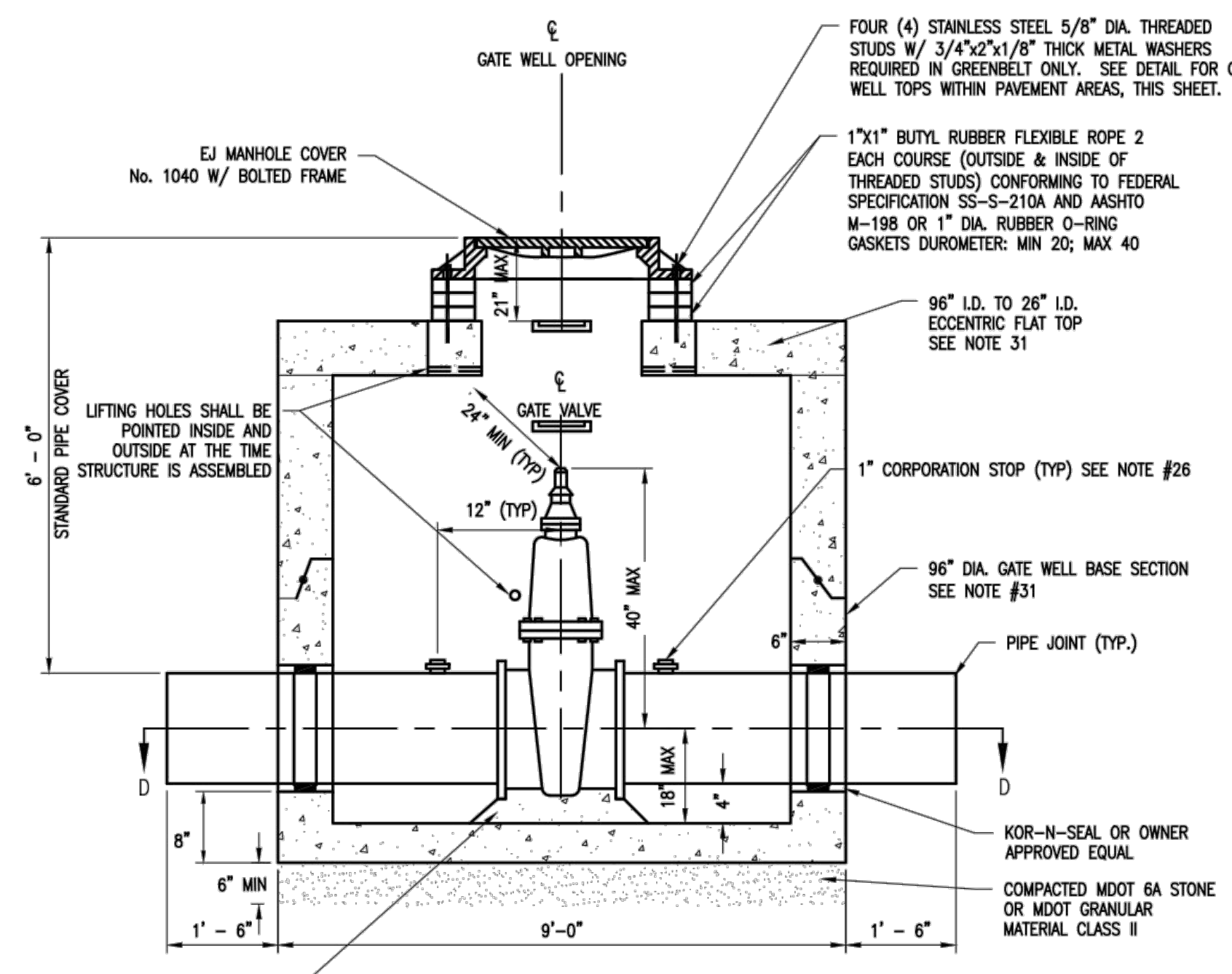
SITE DETAILS

SHEET NUMBER: **C700**



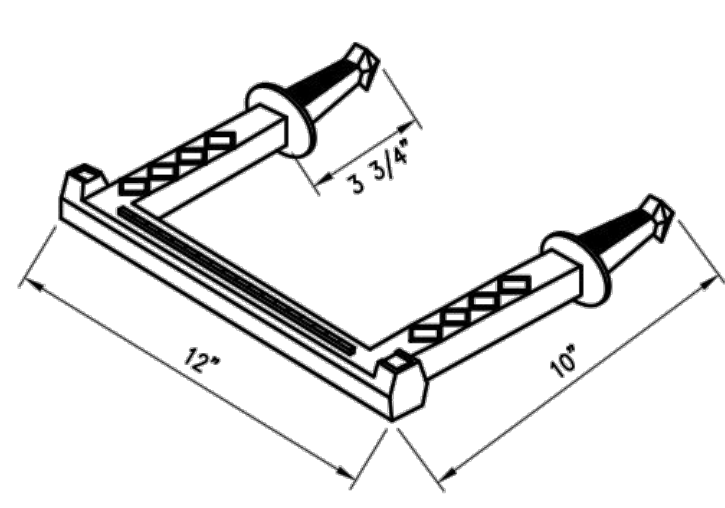
5' AND 6' GATE WELLS

(A-A)
(SEE NOTE #29)

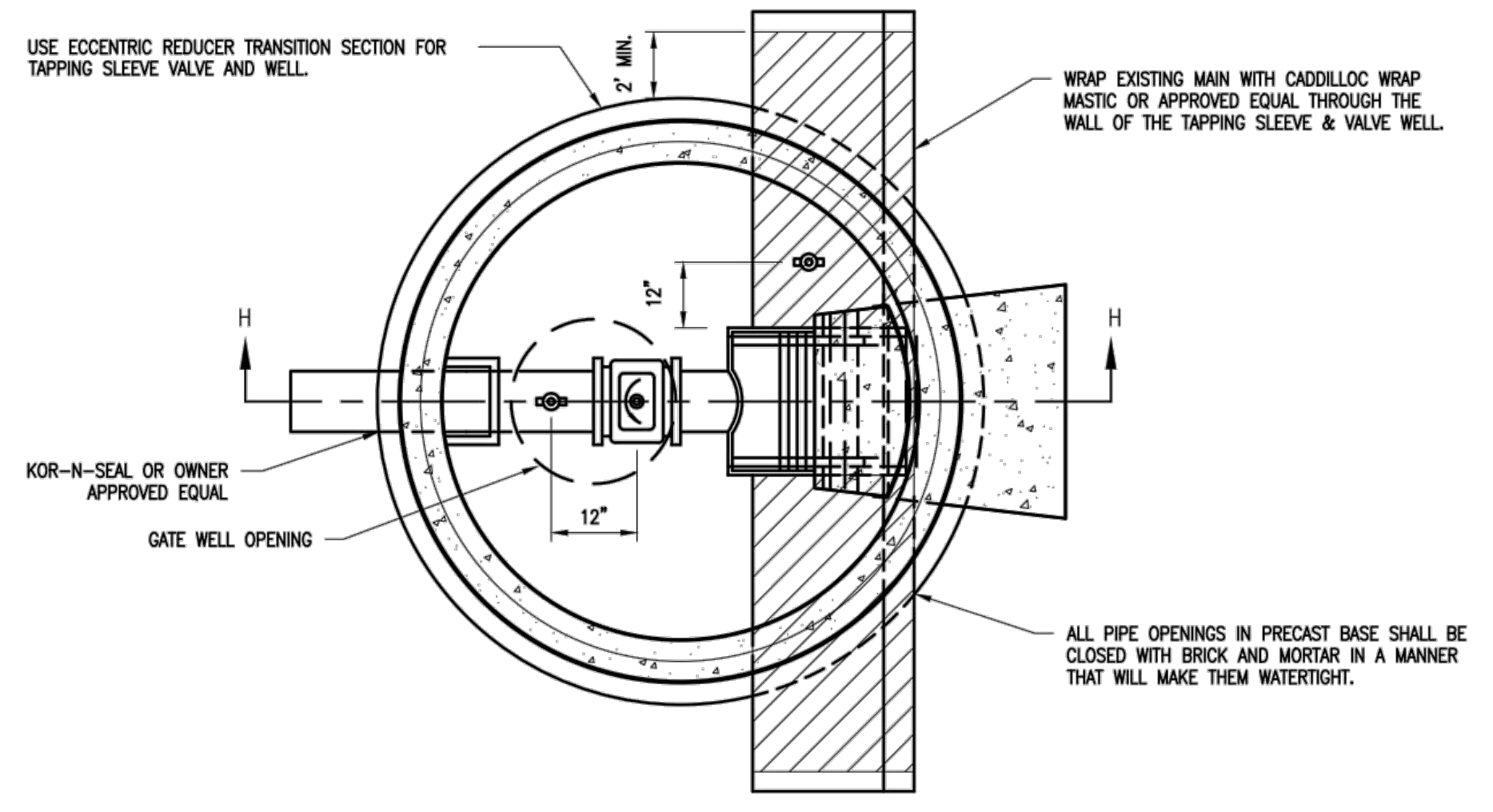


8' TYPICAL GATE WELL

(C-C)

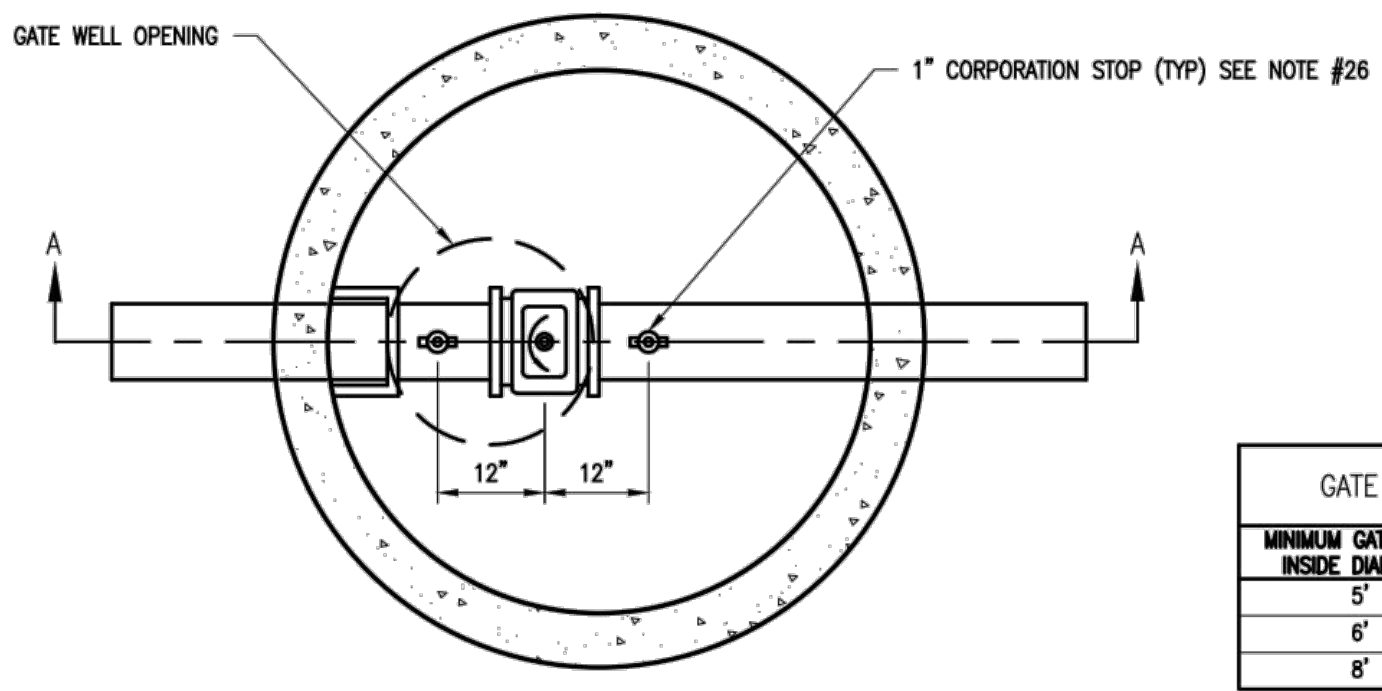


MANHOLE STEP



TAPPING SLEEVE VALVE & WELL TYPICAL

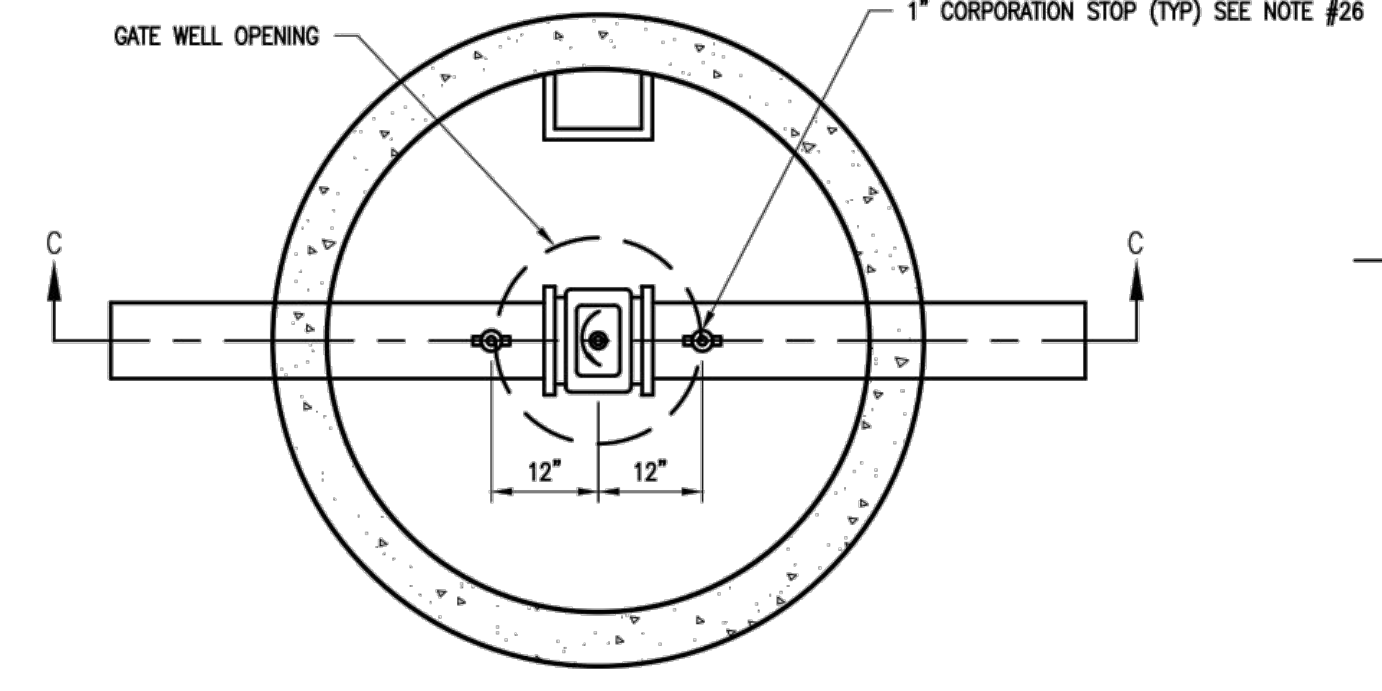
(PLAN VIEW, I-I)
(SEE NOTE #33)



5' AND 6' GATE WELL TYPICAL

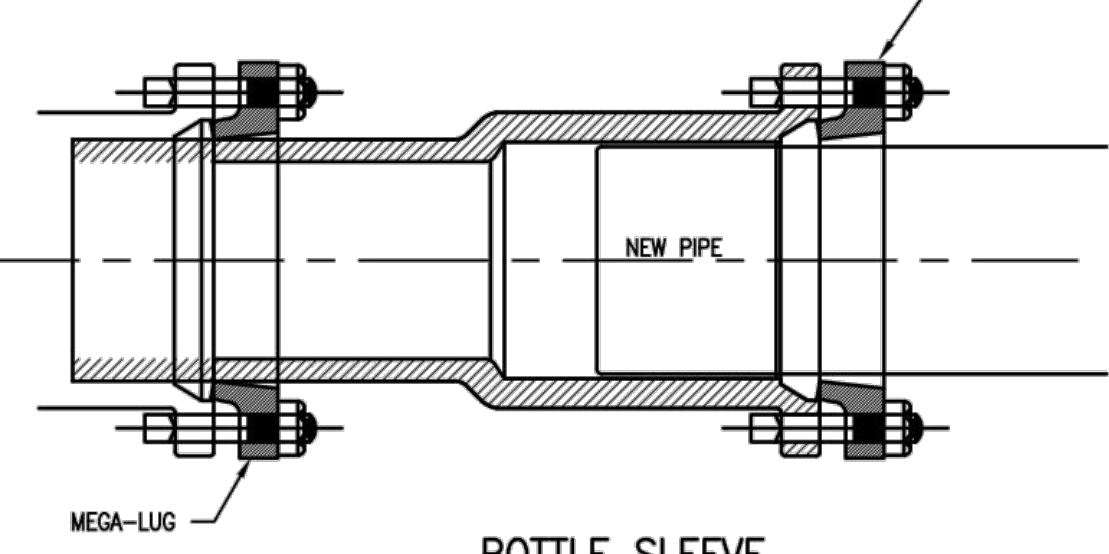
(PLAN VIEW, B-B)

GATE WELL SIZING CHART	
MINIMUM GATE WELL INSIDE DIAMETER	WATER MAIN DIAMETER
5'	6" - 8"
6'	12" - 16"
8'	> 16"



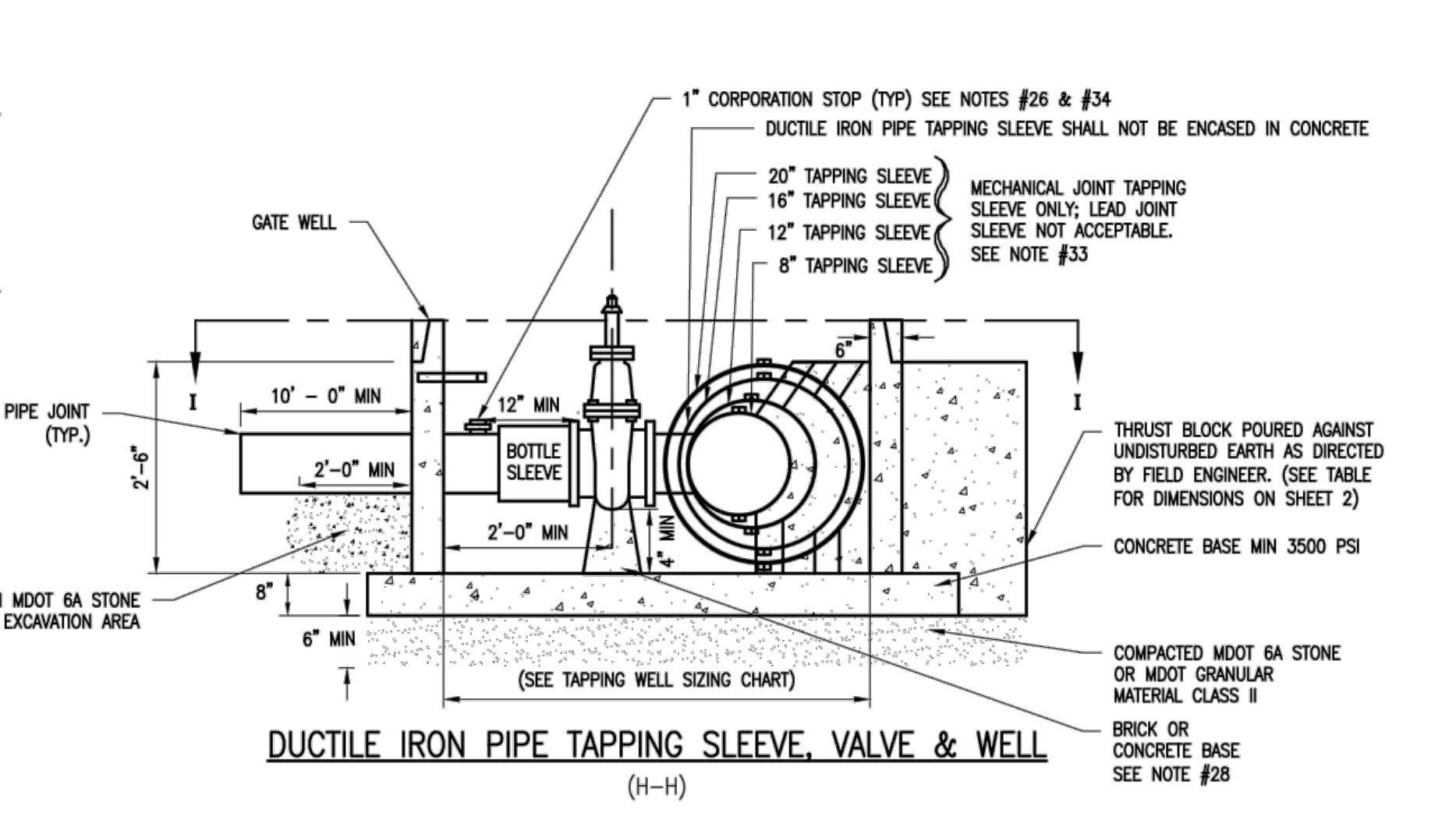
8' GATE WELL TYPICAL

(PLAN VIEW, D-D)



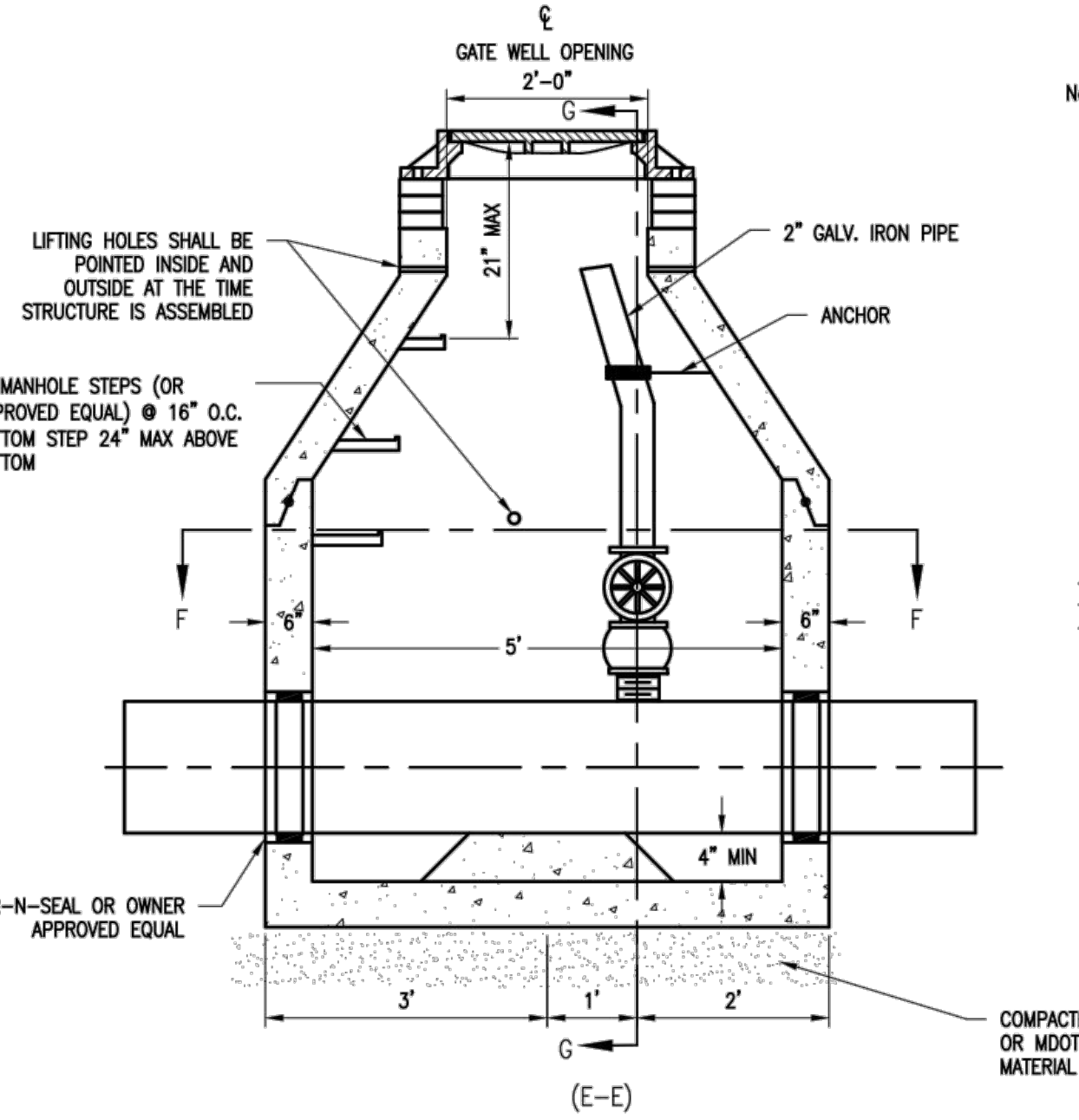
BOTTLE SLEEVE

NOTE: TYLER UNION MJ x PE DUAL-PURPOSE CUTTING-IN SLEEVE OR APPROVED EQUAL



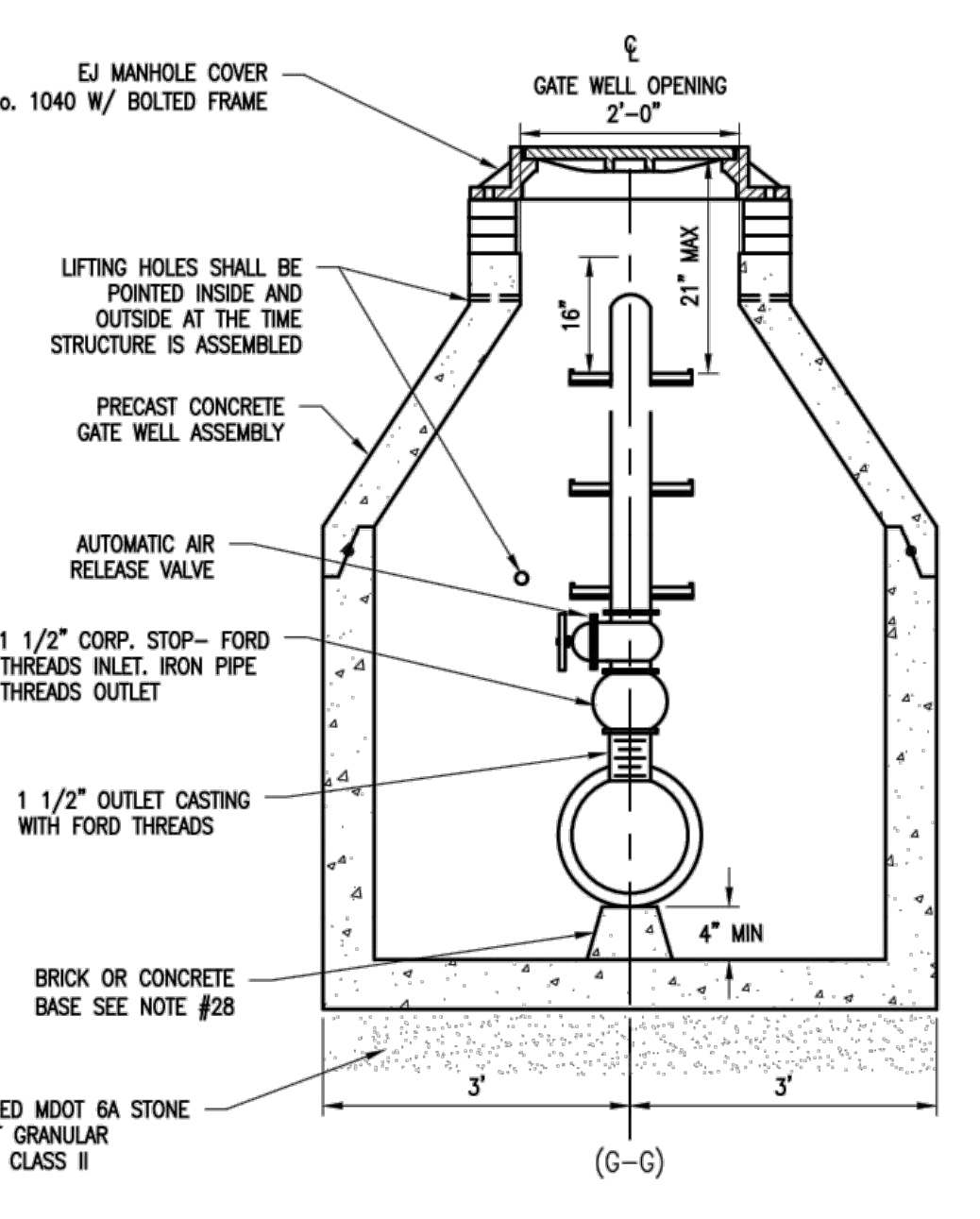
DUCTILE IRON PIPE TAPPING SLEEVE, VALVE & WELL

(H-H)

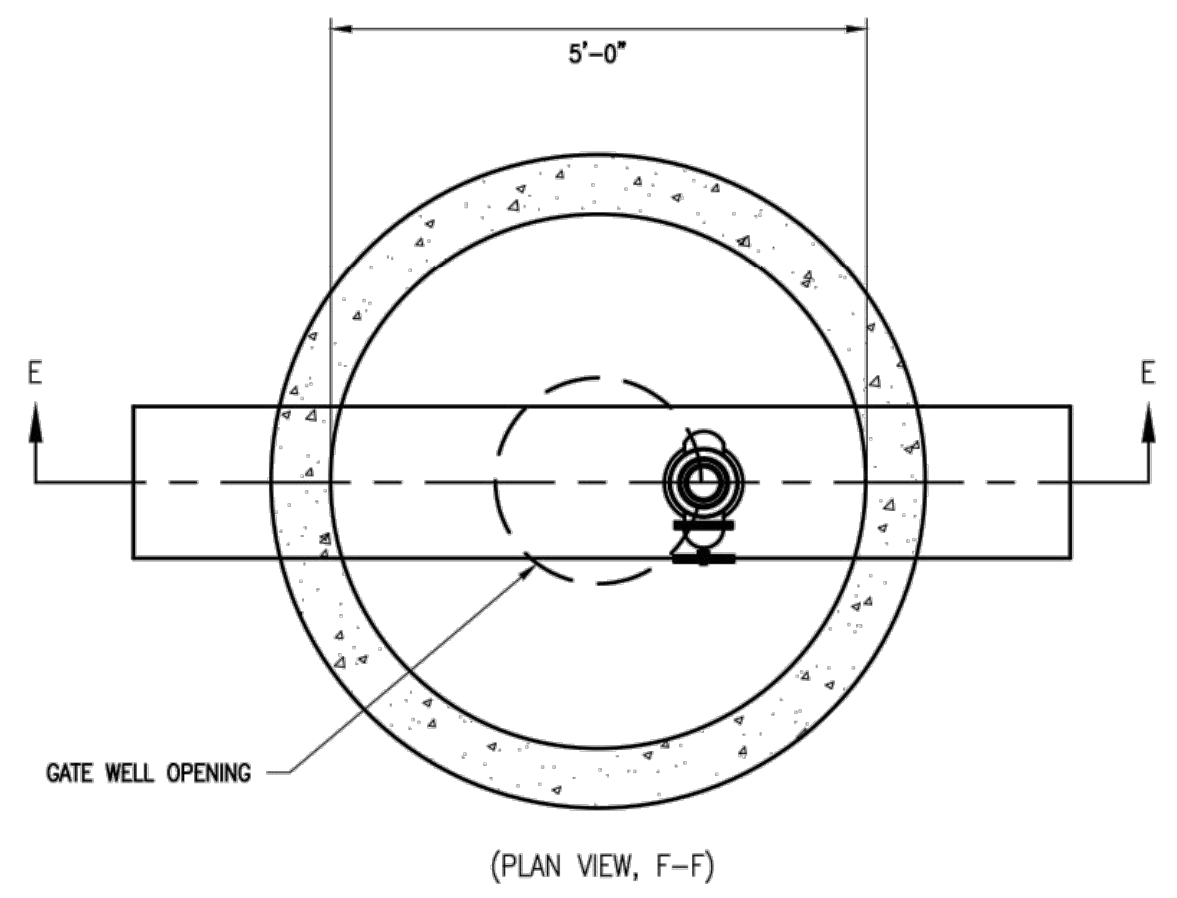


STANDARD AIR RELEASE VALVE & WELL

NOTE: ALL AIR RELEASE VALVES SHALL BE AUTOMATIC PER HARTLAND TOWNSHIP DPS REQUIREMENTS.



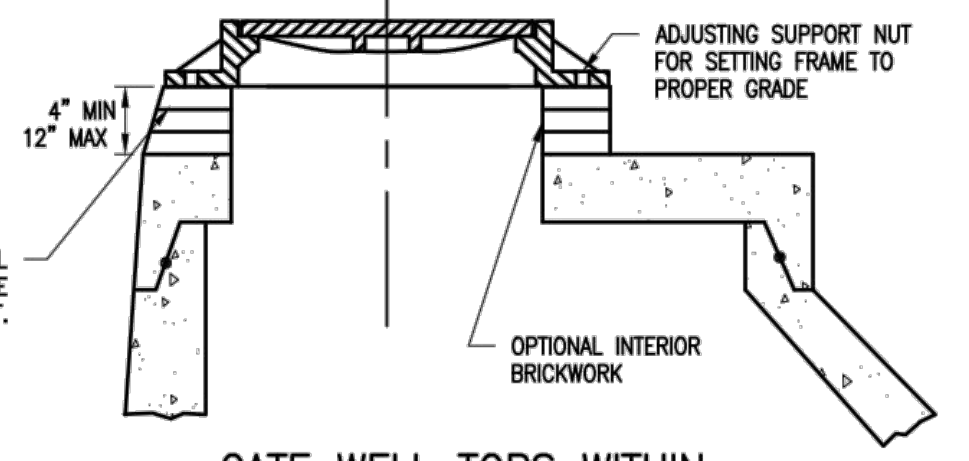
(G-G)



CONCRETE PIPE TAPPING SLEEVE, VALVE & WELL

(H-H)

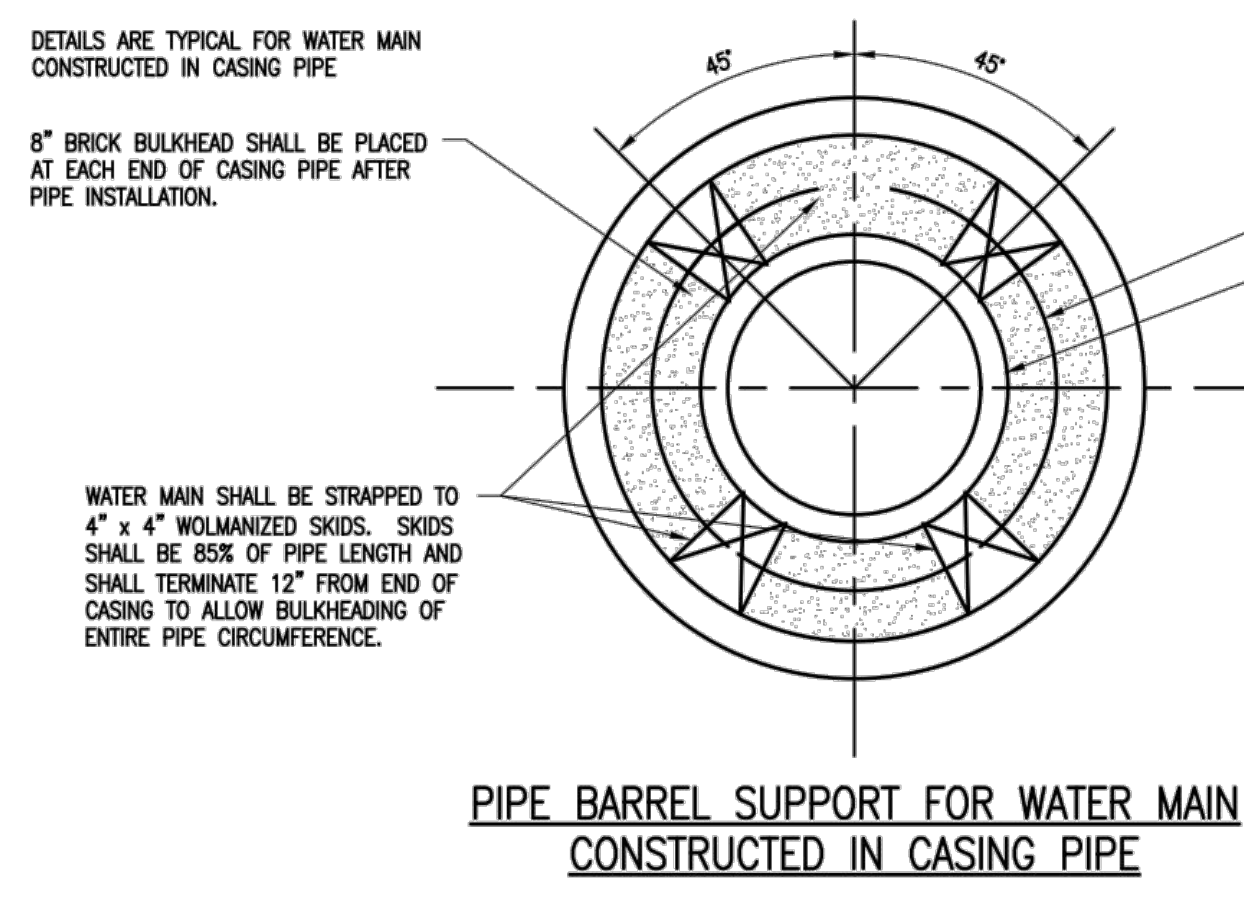
TAPPING WELL SIZING CHART	
MINIMUM GATE WELL INSIDE DIAMETER	WATER MAIN DIAMETER
5'	8"
6'	12"
8'	16" and >



GATE WELL TOPS WITHIN PAVEMENT AREAS

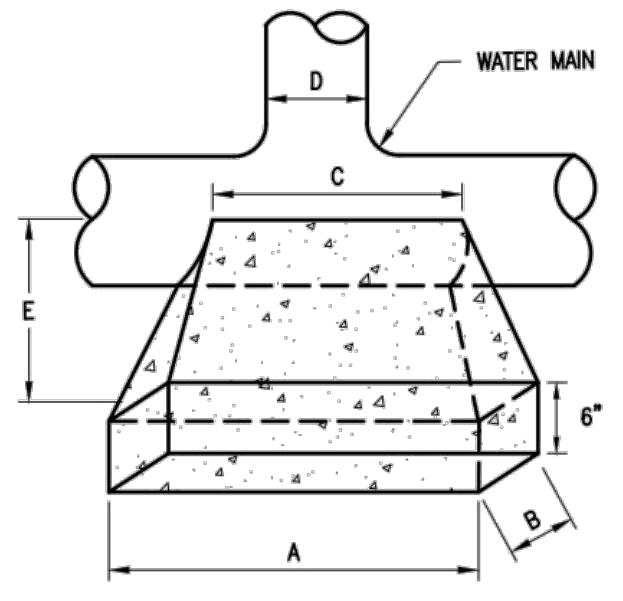
NOTE: RUBBER O-RINGS SHALL NOT BE USED IN PAVEMENT.

DRAWING PATH: J:\H\H\GEN\Standards\Standard Detail Sheets\2023 Updated\CAD\Water Details\Hartland Typ.dwg Mar 30, 2023 - 9:54am



DIA. OF WATER MAIN	ROAD CROSSING		RAILROAD CROSSING	
	MIN "A"	MIN "B"	MIN "B"	MIN "B"
6"	16"	.375	.375	.375
8"	16"	.375	.375	.375
12"	20"	.375	.500	.500
16"	24"	.375	.500	.500
20"	30"	.375	.500	.500
24"	36"	.375	.500	.500

A=INSIDE DIAMETER
 B=WALL THICKNESS
 4" MINIMUM CLEARANCE BETWEEN MAX. O.D. OF THE WATER MAIN AND THE I.D. OF THE CASING PIPE FOR THE TOP 90° ARC OF THE CASING. (SEE DETAIL)

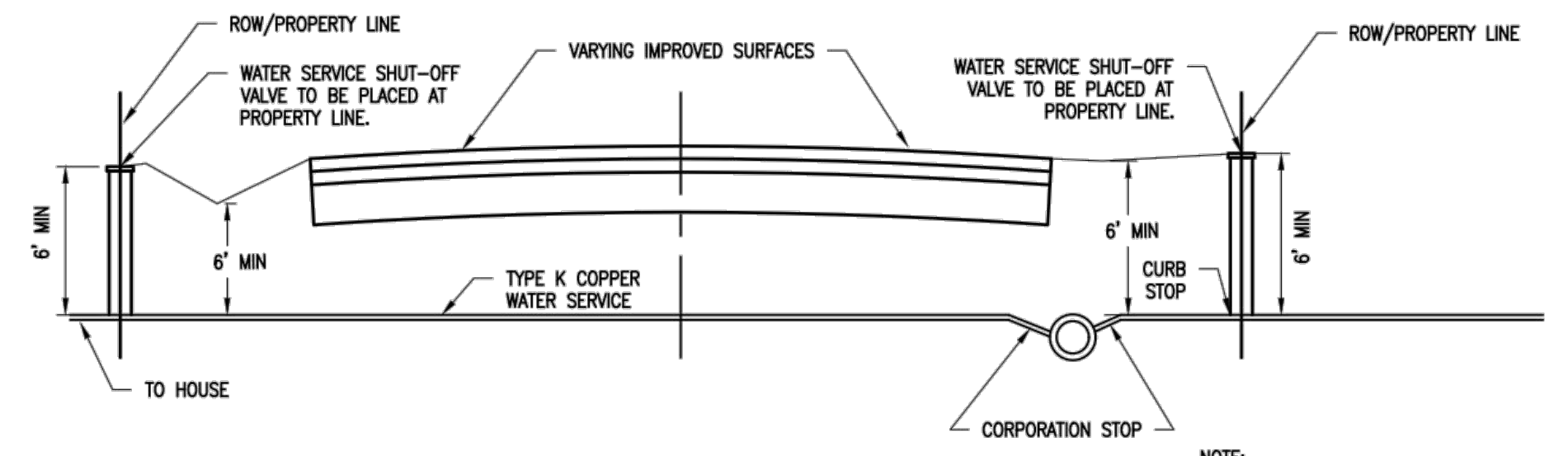


FOR TEES AND TAPPING SLEEVES

D	A	B	C	E MIN
20"	6.5'	4.5'	3.5'	3'
16"	4'-8"	4'-8"	2.5'	2.75'
12"	4'	3'	2.5'	2.5'
10"	3'	2'	2'	2.25'
8"	2'-6"	2'	2'	2.25'
6"	2'	2'	2'	2.25'

THRUST BLOCK DETAILS

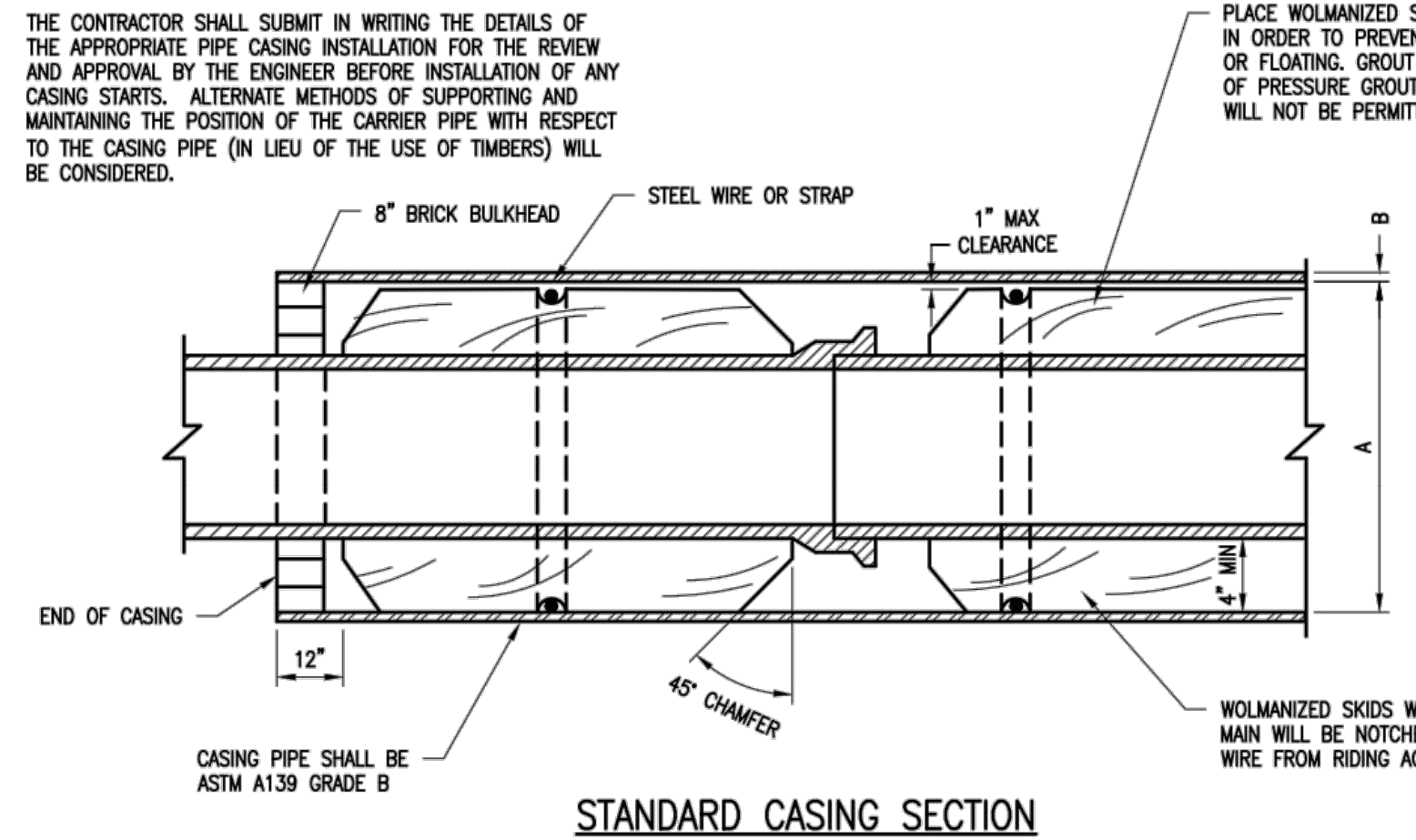
NOTE:
 A. 3000 PSI CONCRETE TO BE USED. THRUST BLOCK TO ABUT & REST AGAINST UNDISTURBED SOIL OR EARTH COMPACTED TO 95% MODIFIED PROCTOR.
 B. THRUST BLOCKS NOT PERMITTED ON THEIR OWN. MUST BE USED IN COMBINATION WITH MEGALUG RESTRAINTS. SEE NOTE #19
 C. TO BE USED AT THE DISCRETION OF THE TOWNSHIP'S CONSULTANT.



TYPICAL PUBLIC ROAD WATER SERVICE CONNECTION

(SEE NOTES #27, #29)

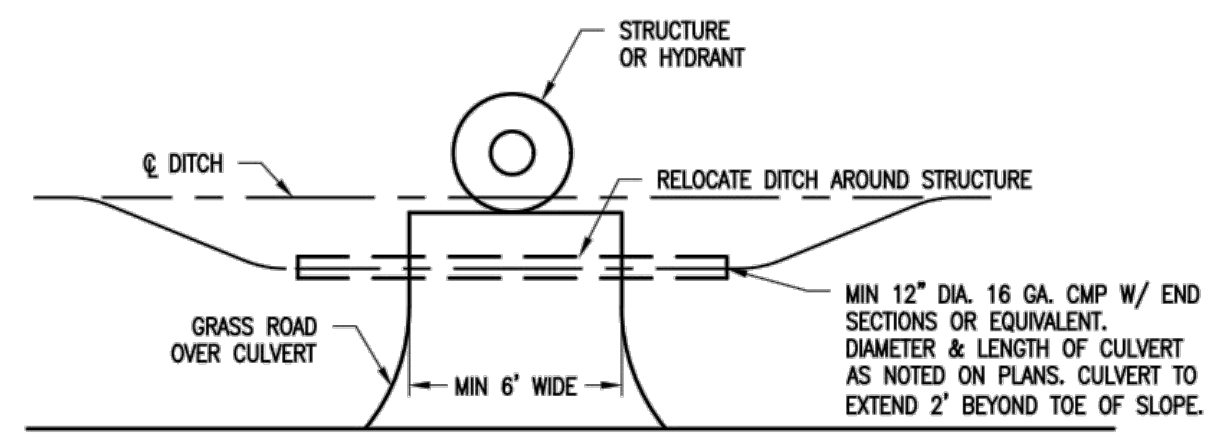
NOTE: LATERAL LOCATION SHALL BE AS REQUESTED BY THE ABUTTING PROPERTY OWNER.



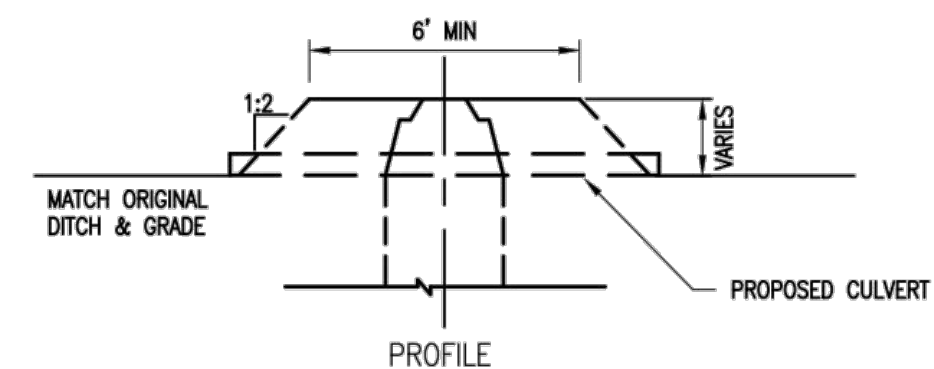
STANDARD CASING SECTION

THE CONTRACTOR SHALL SUBMIT IN WRITING THE DETAILS OF THE APPROPRIATE PIPE CASING INSTALLATION FOR THE REVIEW AND APPROVAL BY THE ENGINEER BEFORE INSTALLATION OF ANY CASING STARTS. ALTERNATE METHODS OF SUPPORTING AND MAINTAINING THE POSITION OF THE CARRIER PIPE WITH RESPECT TO THE CASING PIPE (IN LIEU OF THE USE OF TIMBERS) WILL BE CONSIDERED.

PLACE WOLMANIZED SKIDS ALONG THE TOP OF THE CARRIER PIPE IN ORDER TO PREVENT THE CARRIER PIPE FROM ROLLING OVER OR FLOATING. GROUT PLACEMENT MUST BE ACHIEVED BY MEANS OF PRESSURE GROUTING. GRAVITY FLOW INSTALLATION OF GROUT WILL NOT BE PERMITTED.

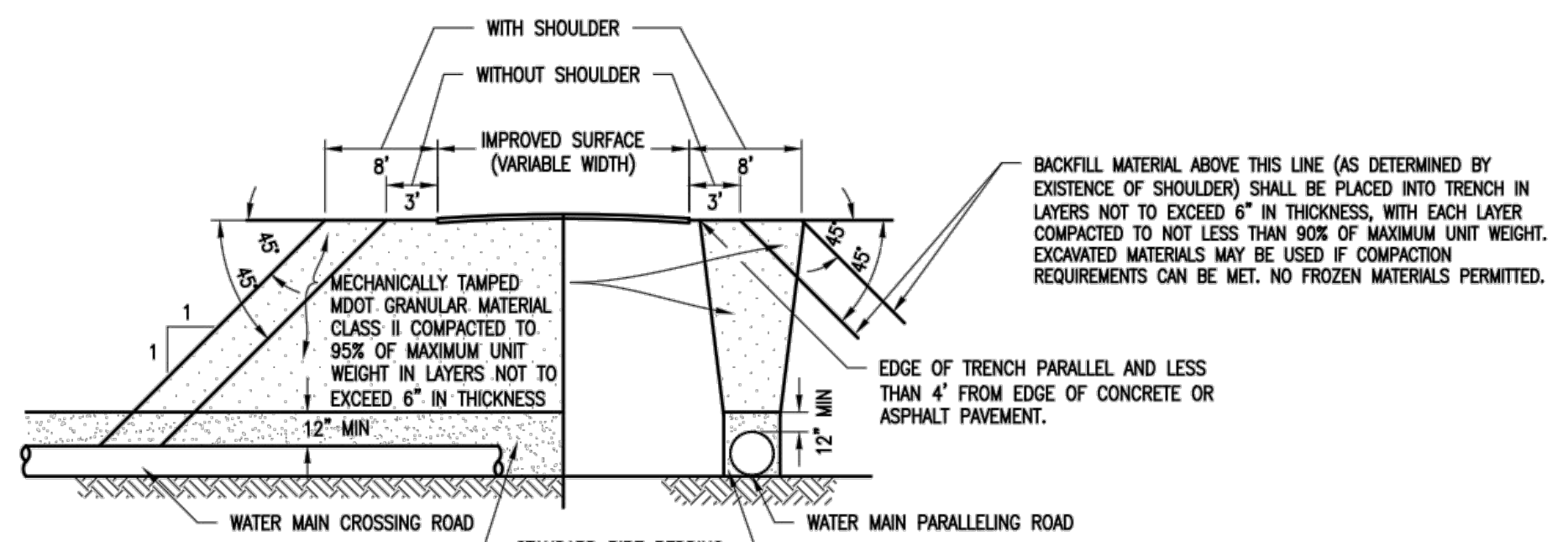


PLAN



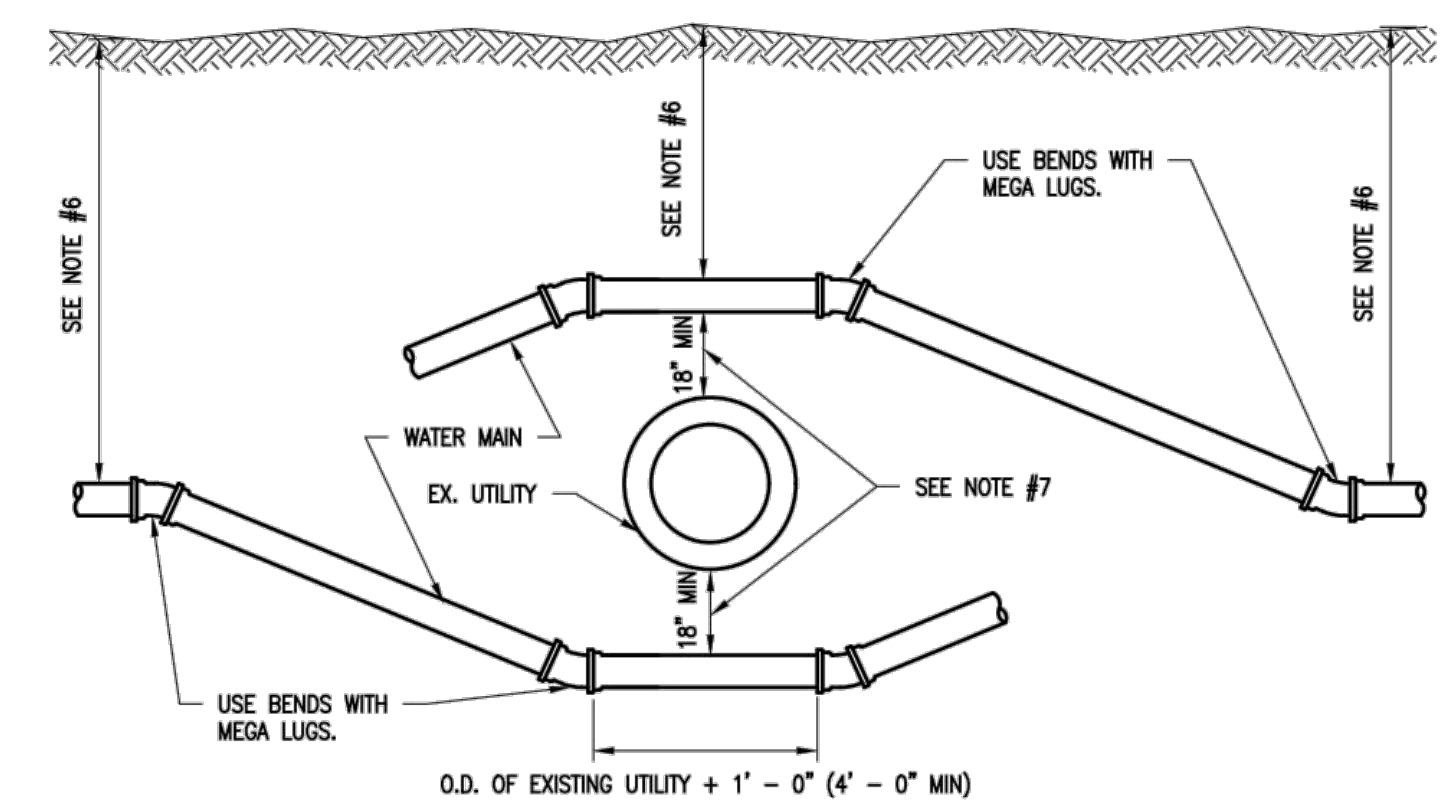
PROFILE

DITCH ENCLOSURE AT GATE WELL OR HYDRANT



SAND OR GRAVEL BACKFILL DETAILS FOR WATER MAINS UNDER GRAVEL, CONCRETE OR ASPHALT PAVEMENTS, SIDEWALKS, DRIVEWAYS AND PARKING AREAS

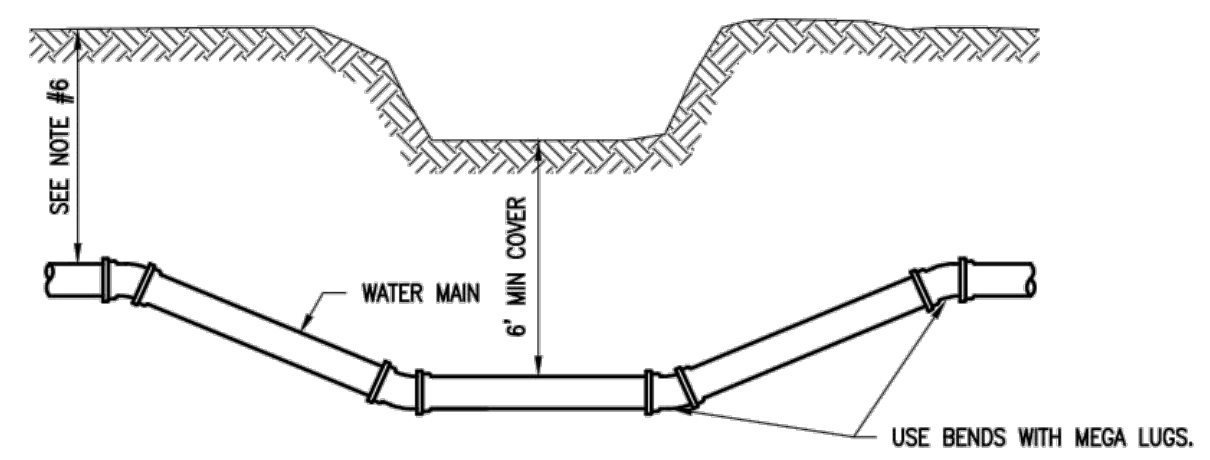
(SEE NOTE #24)



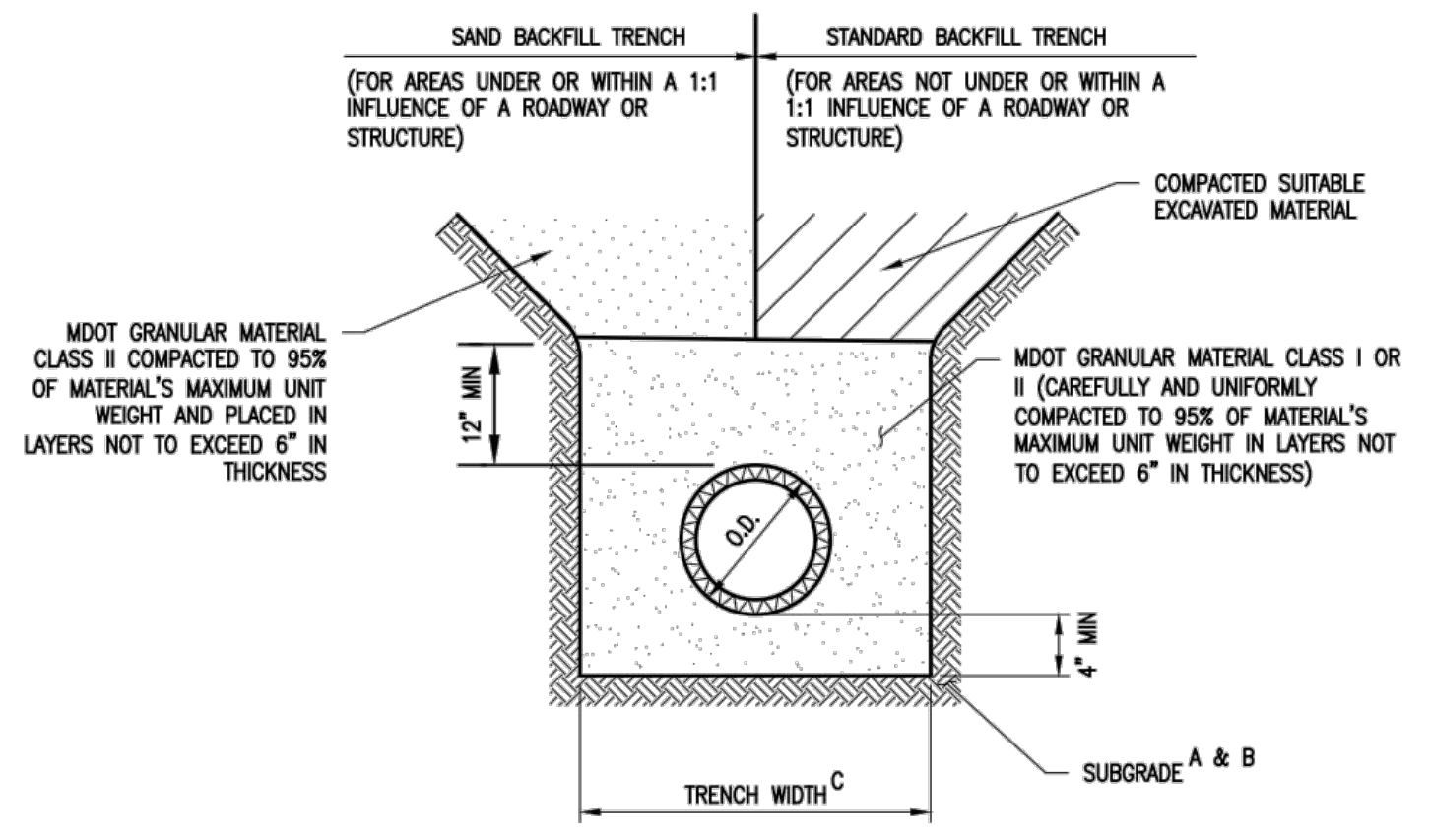
TYPICAL WATER MAIN UTILITY CROSSING

(SEE NOTE #17)

NOTE:
 6A STONE BACKFILL SHALL EXTEND 9" EACH SIDE OF EXISTING PIPE, 12" ABOVE EXISTING PIPE AND SHALL BE AT A ONE ON ONE SLOPE TO THE BOTTOM OF THE TRENCH.



DITCH, STREAM OR WETLAND CROSSING



BEDDING AND TRENCH BACKFILL DETAIL

(SEE NOTE #24)

NOTES:
 A. IF THE EXISTING SUBGRADE SOILS MEET THE REQUIREMENTS FOR MDOT GRANULAR MATERIAL CLASS II (MINIMUM 4" THICK), THEN THE WATER MAIN MAY BE LAID DIRECTLY ON THE COMPACTED NATIVE SUBGRADE SOILS.
 B. FIELD CONDITIONS MAY REQUIRE UP TO 18" OF MDOT 6A STONE IN ORDER TO SECURE A FIRM TRENCH BOTTOM. ADDITIONAL DEPTH OF TRENCH UNDERCUT SHALL BE DIRECTED BY A GEOTECHNICAL ENGINEER AND SHALL BE REFILLED WITH 1" x 3" STONE.
 C.

MAXIMUM TRENCH WIDTHS	
I.D. PIPE SIZE	TRENCH WIDTH
UP TO 12"	30"
15" TO 36"	O.D. + 12"
42" OR LARGER	O.D. + 24"

WATER MAIN CONSTRUCTION NOTES

GENERAL NOTES:

- All construction procedures and materials used on all water main projects shall conform to AWWA and Hartland Township current Standards and Specifications.
- No water main is to be installed without Township inspection.
- Three (3) working days prior to construction, the Contractor shall telephone MISS DIG (811 or 1-800-482-7171) for underground facilities locations and shall also notify representatives of other utilities located in the vicinity of the work.
- All pipe and all pipe fittings shall be made in the U.S.A.
- Unless otherwise specified on plans, top of all water mains shall be six (6) feet below existing or proposed gravel, concrete or asphalt pavements, sidewalks, driveways and parking areas.
- Whenever a water main is installed under existing utility line, GA stone shall be used to properly support or distribute any concentrated loads to avoid any settlement and all possible failure of the lower main. A vertical separation of at least 18 inches between the utility and the water main shall be provided (measured barrel to barrel).
- All required cross connection devices shall be installed as required by the local plumbing code and in accordance with the standards of the Michigan Department of Environmental Quality Water Resources Division and the Michigan Department of Public Health.
- Connection to an existing water main shall be made only after pressure and bacteriological tests have been successfully completed. The Township consultant must be present for the tests and review the results. Testing and disinfection procedures shall meet the requirements of ANSI/AWWA-C600/C651. The water main shall pass a test of 150 psi for a two (2) hour period. Water loss shall not exceed a rate of 11.65 U.S. gallons per inch diameter per mile of water main in twenty-four (24) hours.
- a. All watermain 8" or larger shall be cleaned with a poly pip.
- The Township consultant must witness the connection of the water main to the existing water main. After the Township consultant's approval letter has been issued, residential and commercial taps will be allowed. All water service connections two (2) inches and smaller shall be made by Hartland Township DPS.
- Contractor supplied gauges are required for testing. The minimum size shall be 3.5" diameter graduated in one (1) or two (2) pound increments from 1 to 160 psi (minimum range).
- When temporary water main jumpers are used during water main construction, a testable RPZ backflow preventer with current test report shall be placed on the jumper hose that is connected to the new water main.
- The materials specified below may be substituted with an approved equal as determined by the Township. It is at the sole discretion of the Township to determine if a material is acceptable and can be utilized. Written authorization must be obtained prior to ordering or installing the approved equal.

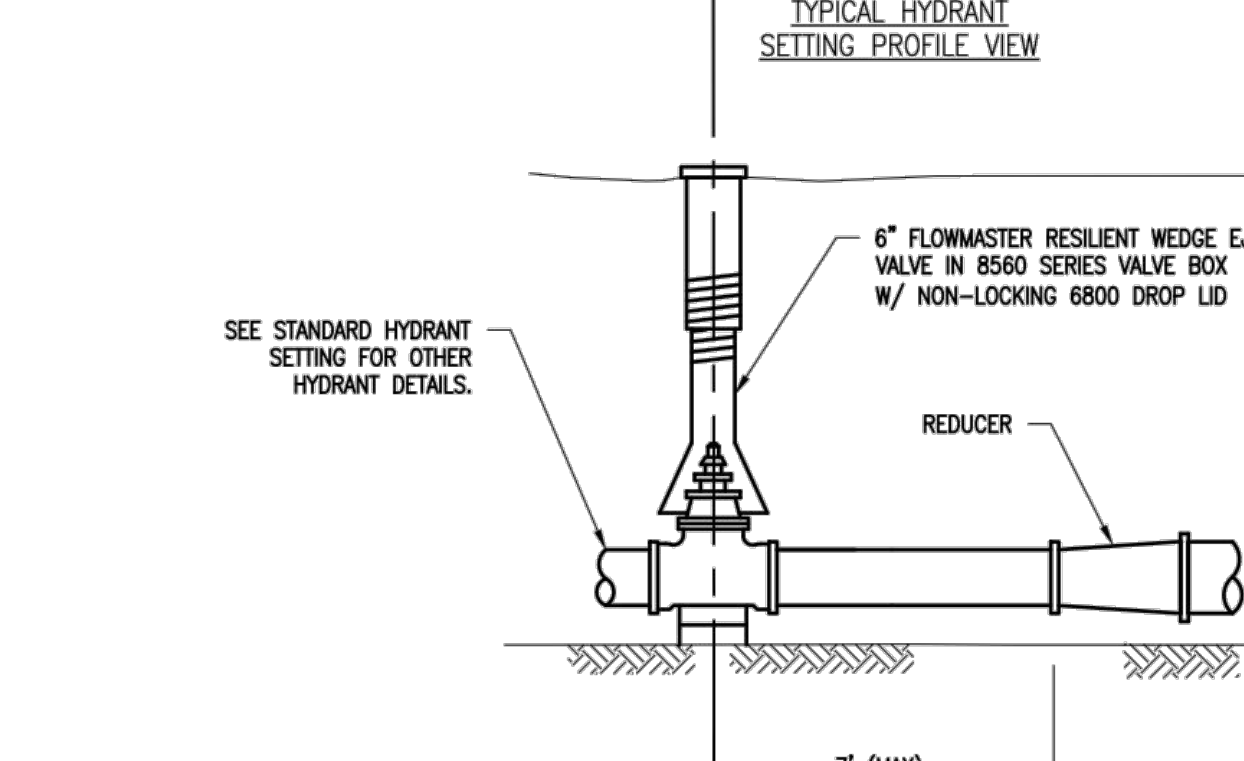
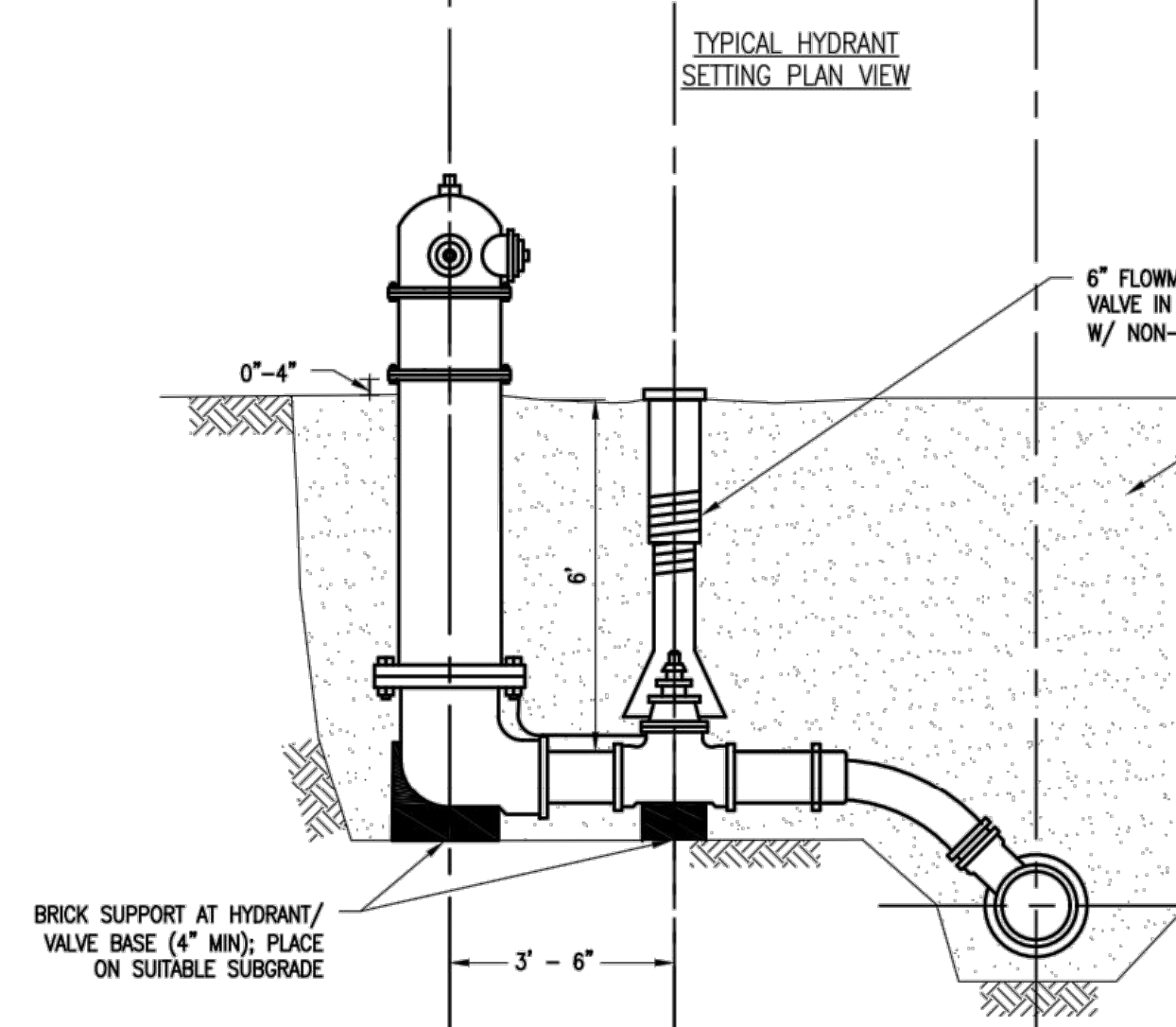
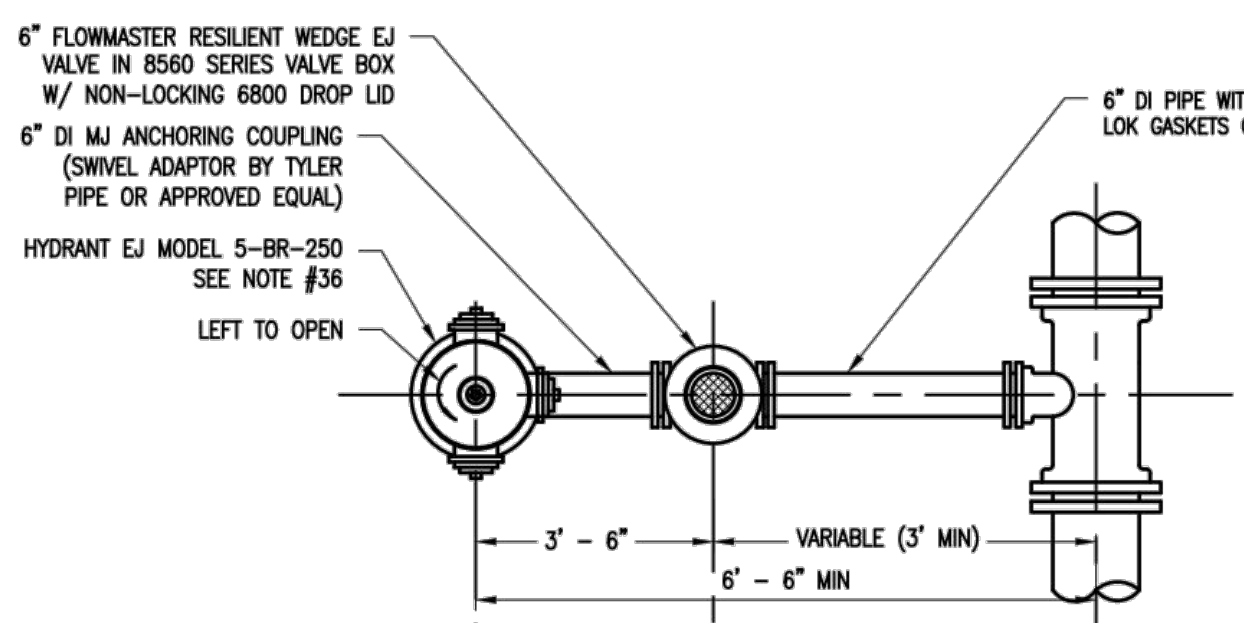
WATER MAIN NOTES:

- All water main shall be ductile iron or concrete. HDPE water main may be permitted upon Township approval. Water main shall be per the following specifications:
 - Ductile iron pipe shall be ANSI/AWWA C151/A21.51 cement lined with bituminous seal coat Class 54 for sizes 3" through 16" and Class 55 for 20" through 24" pipe. Ductile iron pipe shall be designed for a minimum working pressure of 150 psi.
 - Pre-stressed Concrete Cylinder pipe (P.C.C.P.) shall be AWWA C-301 specification for sizes larger than 24".
 - High Density Polyethylene (HDPE) SDR 9 or 11 pipe shall meet the requirements of AWWA C906 (SDR 11) with blue shell or blue stripe.
- Water services up to 2" shall be either Type K soft copper or HDPE DR9 with tracing wire meeting the requirements of ANSI/AWWA C909 for a pressure class of 200 psi. If HDPE is used, a tracing wire shall be run from the meter setup to the curb box (See item #9 for tracing wire requirements). All water services greater than 2" shall follow the standards listed in item #15.
- The maximum allowable deflection at joints for ductile iron water main shall be per manufacturers standards (i.e. 4" - 36" water main - 5" per 20').
- Poly-wrap may be required by the Township and shall be placed around the water main per manufacturers specifications.
- MEGALUG shall be placed at all valves, bends, tees, plugs, hydrants and mechanical fittings. Surrounding joints shall be restrained using U.S. Pipe Field Lok gaskets or approved equal and shall be per the manufacturer's joint restraining schedule and the latest edition of DIPRA's Thrust Restraint Design for Ductile Iron Pipe.
- Water main joints shall be Tyton, Fastite, Mechanical, or approved equal in accordance with ANSI/AWWA C111/A21.11.
- Restrained joints are required in lieu of thrust blocks. Restrained joints for pipe sizes up to 16" shall be Fast Grip Gaskets, Mega Lug or approved equal. Restrained joints for pipe sizes over 16" shall be American Ductile Iron Flex-Ring Joint Pipe or approved equal boltless system.
- Thrust restraint design shall be per the Ductile Iron Pipe Research Association's Manual of Thrust Restraint Design for Ductile Iron Pipe, current edition.
- All bolts on all flanged and mechanical joint fittings shall be domestic origin high strength, low alloy COR-BLUE steel bolts or approved equal. These bolts shall meet the current provisions of American National Standard ANSI/AWWA C111/A21.11 for rubber gasket joints for ductile iron pressure pipes and fittings. Bolt manufacturer's certificate of compliance must accompany each shipment.
- Backfill shall be compacted above pipe as indicated on construction drawings. Trench backfill shall be a suitable material and shall be free of any organic materials and rocks larger than 3" in size. Under road surfaces, pavement, sidewalks, curbs, driveways and areas where trench is within a 1:1 influence of the

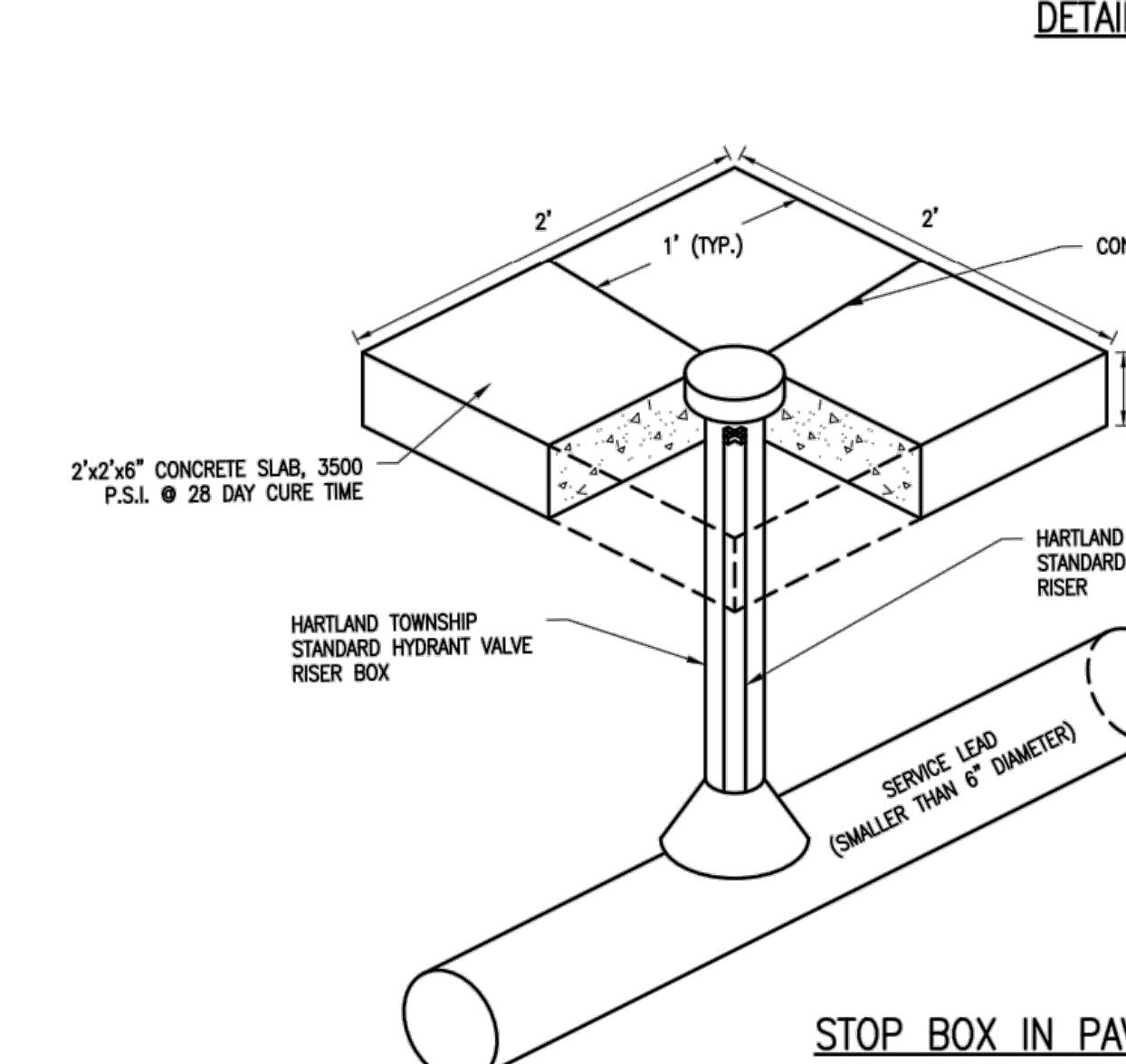
pavement, sand backfill shall be used which shall consist of MDOT granular material Class 1 and shall be compacted in layers not to exceed six (6) inches in thickness to a density of 95% as determined by ASTM D 1557. Where water main is to be placed on fill material, all fill material below the pipe must also be compacted to 95% maximum unit density. All backfill placed within a 1:1 influence of structures shall be approved sand, placed in six (6) inch layers and compacted. Trenches that are to be left open overnight shall be enclosed with suitable fencing and lighted barricades.

VALVE & SLEEVE NOTES:

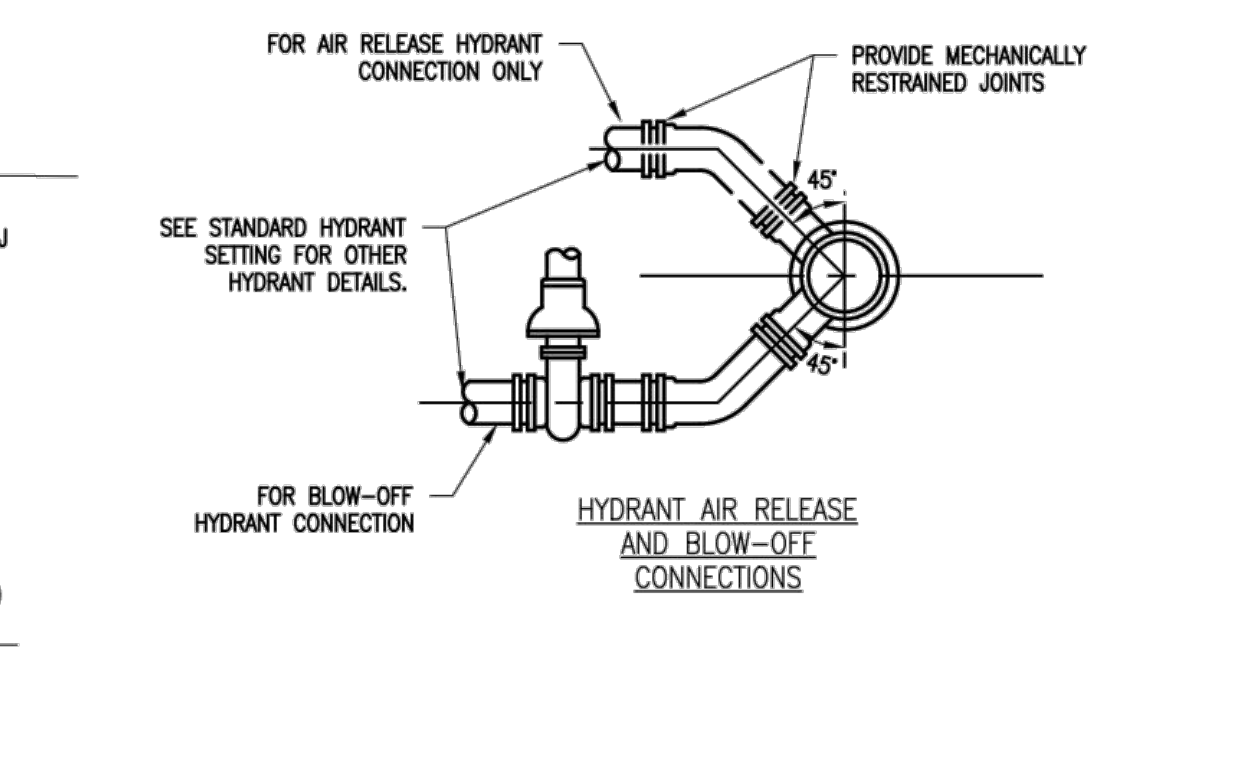
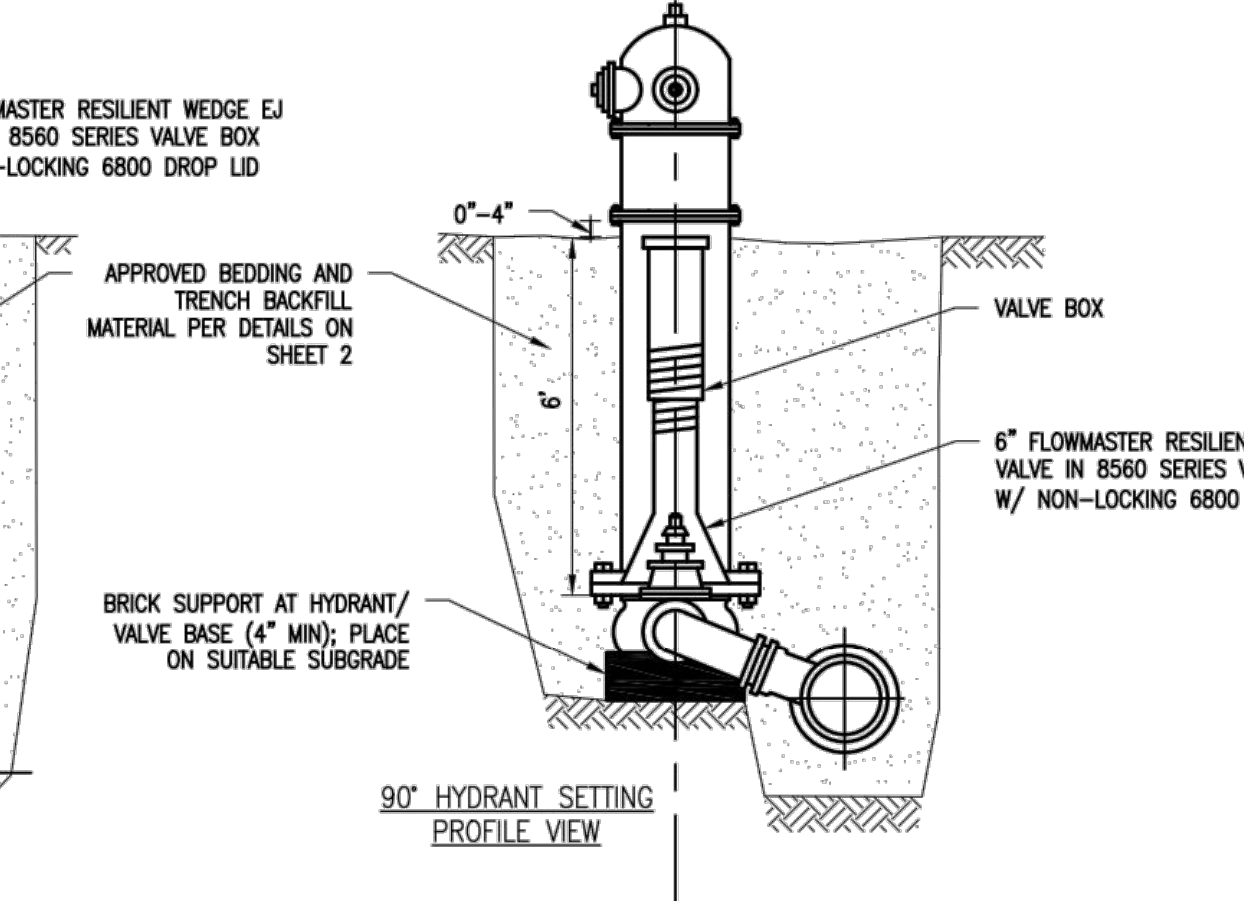
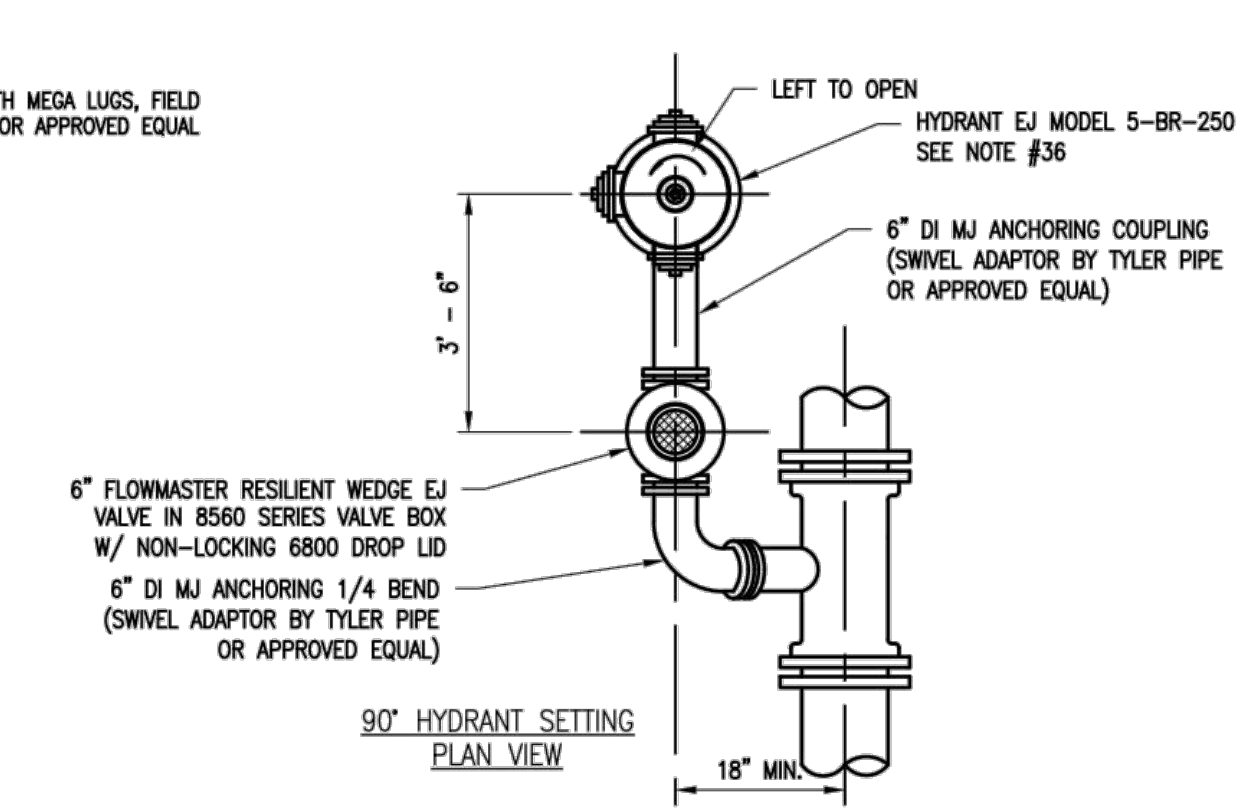
- All Gate Valves less than 16" shall be EJ ductile iron body, fully bronze-mounted, resilient-wedges, non-rising stem (ANSI/AWWA C509), opening counter-clockwise.
 - Corporation Stops shall be 1-inch Ford #B44, or approved equal. Corporation stops shall be securely capped after testing. Must use lead free corps.
 - All service lead corporation stops installed outside of gate wells 1" or less may be direct tapped to main. For corporation stops larger than 1" use bronze double strap tapping saddle.
 - Gate valves and fittings shall be supported by formed concrete or mortared brick bearing on the floor (minimum four (4) inches of clearance between floor and bottom of gate valve).
 - All gate valves 6" or larger shall be placed in a well with the exception of a hydrant shut off valve. A valve shall be placed in a box for water main smaller than 6". A stop box and rod is required for services up to 2" and a hydrant valve box is required for services less than 6". If the box falls within a paved area, a hydrant valve box is required for all service sizes.
 - Butterfly valves shall be used for valves 16" and larger in diameter and shall be Deszurik AWWA style, or approved equal, manufactured in accordance with ANSI/AWWA C504 and conforming to NSF Standard 61.
 - All precast concrete gate well sections shall be manufactured to conform with ASTM C478, except wall thickness shall be as shown on these details. Precast concrete gate well sections shall be modified tongue and groove with premium rubber gasket-type joints manufactured to conform with ASTM C443.
 - All gate well covers shall be EJ #1040A with bolted frame and with lettering per detail on this sheet. All cover bolts shall be stainless steel.
 - Tapping sleeves shall be manufactured by JCM Industries, Romac Industries, Mueller, EJ, Smith-Stier or approved equal and shall be mechanical joint with DNS Mechanical Joint Tapping Gate Valve. Lead joint sleeves shall not be used. Like size tapping sleeves can only be used when the existing main is ductile iron and equal to/less than 12-inch in diameter. For like size connections greater than 12-inch, a cut-in-tee is required. All tapping sleeves must be mechanical tapping sleeves.
 - No tapping of any water main fitting will be permitted.
 - No water main fittings or water service fittings shall contain lead.
- HYDRANT NOTES:**
- All hydrants shall be 6" bury EJ #5BR-250-Traffic Model and shall conform to ANSI/AWWA C502, and shall have a minimum 5 1/4" valve opening that closes with the water pressure. Hydrants shall be traffic style with breakable flange and coupling.
 - Hydrants shall have a swivel flange to allow bonnet to be turned 360 degrees without removing the barrel, and barrel flanges shall be integrally cast with the barrel. Inlet shoe shall have a bronze valve seat, which can be removed without digging.
 - Inlet connection shall be 6" mechanical joint, conforming to AWWA C111 and ASA-A21.11. Stem threads shall be sealed with double "O" rings and shall be permanently lubricated with all weather grease.
 - Hose connections: One (1) 4 1/2" pumper nozzle and two (2) 2 1/2" hose nozzles, with National Standard Thread (NST) threads. Final orientation of the hydrant steamer connection to be determined by Township consultant or Fire Department.
 - Operating Nut: (1) 1 1/8" P-F pentagon, open left.
 - Hydrants shall be factory painted by spray application red above the ground and black below, with a finish coat of Glomortex 501 enamel, color 314 Vermillion, or approved equal.
 - Prior to acceptance, hydrants shall be charged, tested and any leaks are to be repaired. Hydrants and valve boxes shall be plumbed and set to finished grade. Valve boxes shall be in line with the valve.



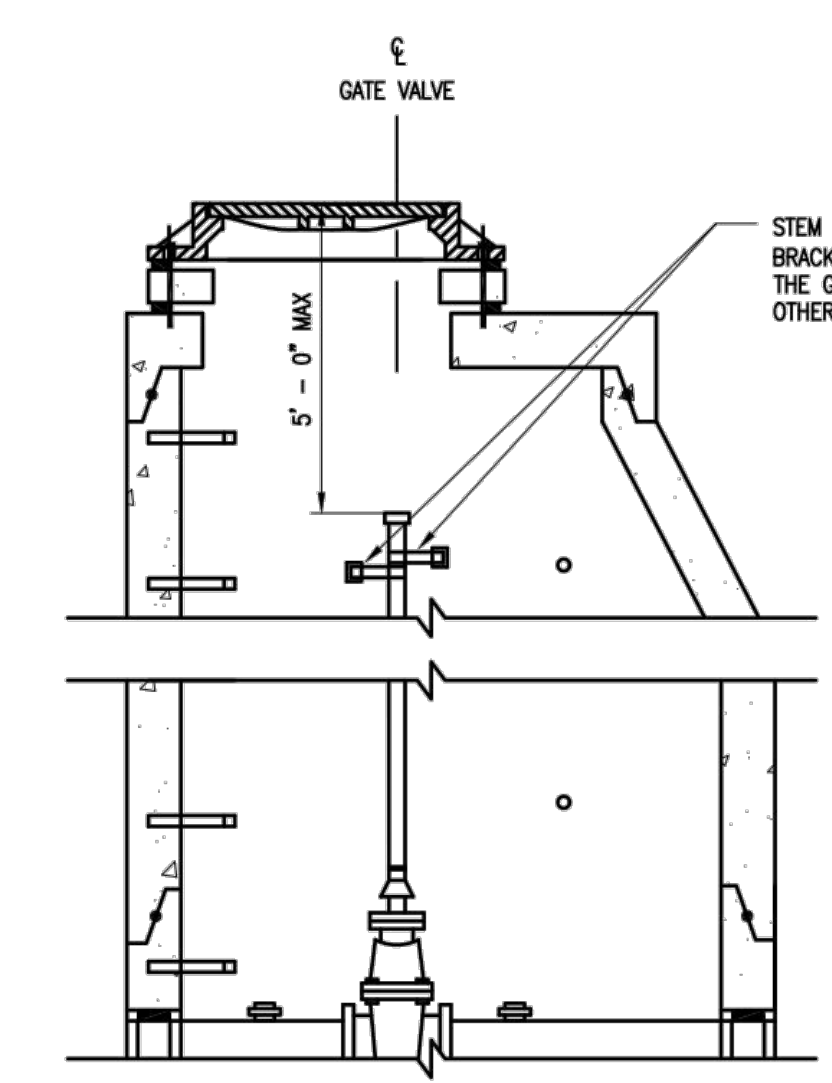
DETAIL OF HYDRANT SETTINGS



NOTE: WHERE WATER SERVICE CORPORATION BOX FALLS WITHIN A PAVED AREA (PARKING LOT, SERVICE DRIVE AREA, ETC.) THE STOP BOX SHALL BE PLACED IN A STANDARD HYDRANT VALVE BOX. THE VALVE BOX SHALL BE CENTERED IN A 2'X2'X6" CONCRETE SLAB. CONCRETE CONTROL JOINTS SHALL BE PLACED IN SLAB AT 1' INTERVALS.

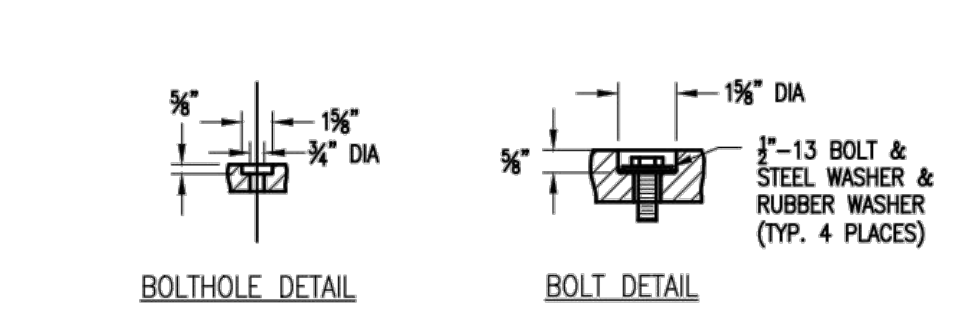
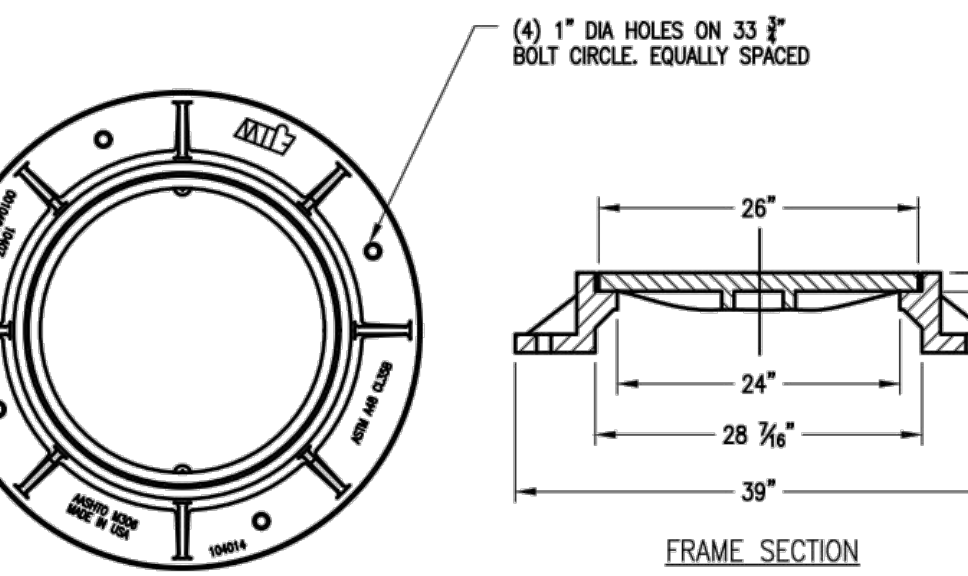
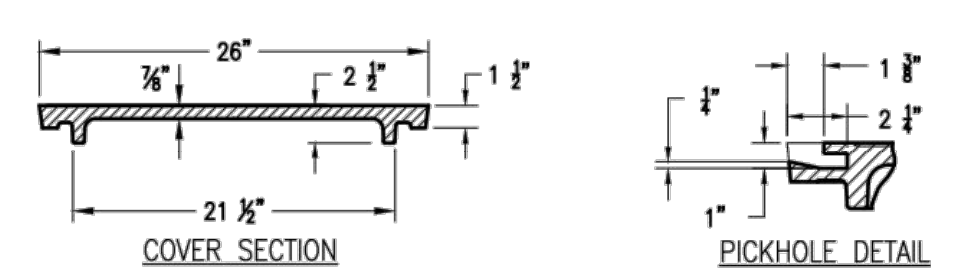
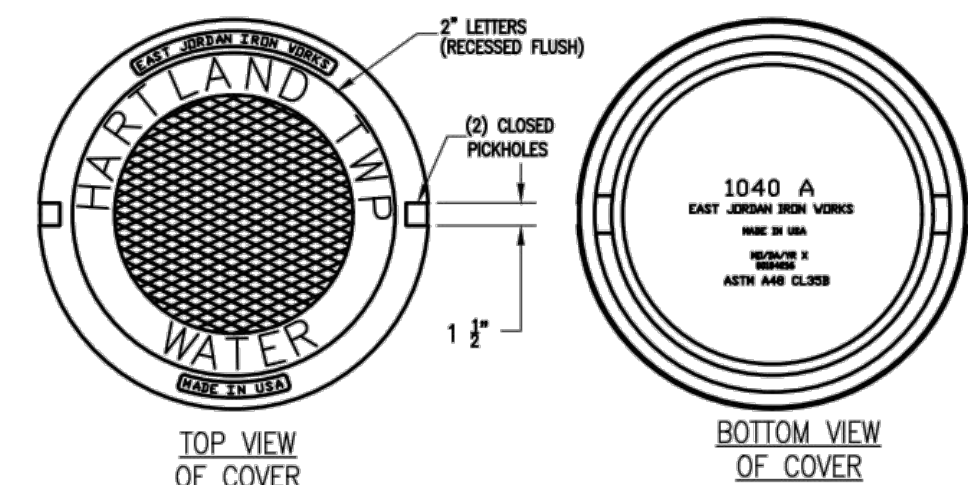


DETAIL OF HYDRANT SETTINGS



STEM EXTENSION DETAIL

NOTE: STEM EXTENSIONS SHALL BE PROVIDED AT ALL GATE VALVES WITH OPERATING NUTS AT A DISTANCE GREATER THAN 5' BELOW THE GROUND SURFACE.



CAST IRON GATE WELL FRAME AND COVER (SEE NOTE #32)

CATALOG NO. 1040A
EST. WT. COVER: 150 LBS
MATL SPEC. COVER - GRAY IRON ASTM A48 CL35B
LOAD RATING HEAVY DUTY
COATING DIPPED

DATE	REVISIONS	SCALE	COUNTY	TOWNSHIP	RANGE	DATE
		H. N.T.S. V. N.T.S.	LIVINGSTON COUNTY	HARTLAND TOWNSHIP	10E	FEB 2023

HARTLAND TOWNSHIP
WATER MAIN
STANDARD DETAILS



**TABLE 23.6.5.A
DUCTILE IRON WATER MAIN PIPE
THRUST RESTRAINT LENGTH FOR HORIZONTAL BENDS**

BEND ANGLES (degrees)	PIPE DIAMETER (inches)													
	3"	4"	6"	8"	10"	12"	14"	16"	18"	20"	24"	30"	36"	42"
11.25°	1	2	2	3	4	4	5	6	7	7	9	11	13	15
22.5°	3	3	5	6	8	9	10	12	13	15	17	21	25	29
30°	4	4	6	8	10	12	14	16	18	20	23	29	34	40
45°	6	7	10	13	16	19	22	25	28	31	36	45	53	61
60°	8	10	14	18	22	26	30	34	39	43	51	62	74	85
90°	14	17	24	31	38	46	53	60	67	74	88	108	128	148
Unit Frictional Force (ft/lbs)	124	151	217	284	349	415	481	547	613	679	811	1,005	1,203	1,398
Unit Bearing Resistance (ft/lbs)	152	185	268	354	437	523	611	699	789	879	1,064	1,344	1,639	1,939

Assumptions: Cover = 6.0 feet
 Design Pressure = 150 psi
 Safety Factor = 1.5
 Laying Condition = Type 3
 Soil Designation = Clay 1
 Non-Polywrapped Pipe

☐ = Not Permitted (for 60°, use two 30° bends; for 90°, use two 45° bends)

* Data Table acquired from the Ductile Iron Pipe Research Association (DIPRA)

**TABLE 23.6.5.D
DUCTILE IRON WATER MAIN PIPE
THRUST RESTRAINT LENGTH FOR TEES**

PIPE DIAMETER OF BRANCH RUN (inches)	PIPE DIAMETER OF MAIN PIPE RUN (inches)															
	3"	4"	6"	8"	10"	12"	14"	16"	18"	20"	24"	30"	36"	42"		
3"	8	7	6	4	2	1	0	0	0	0	0	0	0	0		
4"		10	9	8	6	5	3	2	0	0	0	0	0	0		
6"			16	15	14	13	12	11	10	9	7	4	1	0		
8"				22	22	21	20	19	19	18	16	14	11	8		
10"					28	27	27	26	26	25	24	22	19	17		
12"						34	33	33	32	31	29	27	25	23		
14"							40	39	38	37	36	35	33	31		
16"								46	45	45	44	43	41	40		
18"									52	51	51	49	48	47		
20"										58	57	56	55	54		
24"											69	68	68	67		
30"												87	86	85		
36"													104	104		
42"														122		
Unit Frictional Force (ft/lbs)	249	302	434	569	697	829	961	1,093	1,225	1,357	1,621	2,011	2,406	2,796		
Unit Bearing Resistance (ft/lbs)	152	185	268	354	437	523	611	699	789	879	1,064	1,344	1,639	1,939		

Assumptions: Cover = 6.0 feet
 Design Pressure = 150 psi
 Safety Factor = 1.5
 Laying Condition = Type 3
 Soil Designation = Clay 1
 Non-Polywrapped Pipe

☐ = Not Applicable

* Data Table acquired from the Ductile Iron Pipe Research Association (DIPRA)

**TABLE 23.6.5.B
DUCTILE IRON WATER MAIN PIPE
THRUST RESTRAINT LENGTH FOR VERTICAL UP BENDS**

BEND ANGLES (degrees)	PIPE DIAMETER (inches)													
	3"	4"	6"	8"	10"	12"	14"	16"	18"	20"	24"	30"	36"	42"
11.25°	1	2	2	3	4	4	5	6	7	7	9	11	13	15
22.5°	3	3	5	6	8	9	10	12	13	15	17	21	25	29
30°	4	4	6	8	10	12	14	16	18	20	23	29	34	40
45°	6	7	10	13	16	19	22	25	28	31	36	45	53	61
60°	8	10	14	18	22	26	30	34	39	43	51	62	74	85
90°	14	17	24	31	38	46	53	60	67	74	88	108	128	148
Unit Frictional Force (ft/lbs)	124	151	217	284	349	415	481	547	613	679	811	1,005	1,203	1,398
Unit Bearing Resistance (ft/lbs)	152	185	268	354	437	523	611	699	789	879	1,064	1,344	1,639	1,939

Assumptions: Cover = 6.0 feet
 Design Pressure = 150 psi
 Safety Factor = 1.5
 Laying Condition = Type 3
 Soil Designation = Clay 1
 Non-Polywrapped Pipe

☐ = Not Permitted (for 60°, use two 30° bends; for 90°, use two 45° bends)

* Data Table acquired from the Ductile Iron Pipe Research Association (DIPRA)

**TABLE 23.6.5.E
DUCTILE IRON WATER MAIN PIPE
THRUST RESTRAINT LENGTH FOR REDUCERS**

DIAMETER OF SMALLER PIPE (inches)	DIAMETER OF LARGER PIPE (inches)															
	3"	4"	6"	8"	10"	12"	14"	16"	18"	20"	24"	30"	36"	42"		
3"		4	13	21	27	34	40	46	53	59	71	89	107	124		
4"			10	18	25	32	39	45	52	58	70	88	106	124		
6"				11	19	27	34	41	48	55	67	86	104	122		
8"					11	20	29	37	45	50	64	83	102	120		
10"						11	20	29	37	45	59	79	99	117		
12"							11	21	30	38	54	75	95	114		
14"								11	21	30	47	69	91	110		
16"									11	21	40	63	85	106		
18"										11	31	57	80	101		
20"											22	49	73	96		
24"												31	59	83		
30"													33	60		
36"														32		
42"																
Unit Frictional Force (ft/lbs)		302	434	569	697	829	961	1,093	1,225	1,357	1,621	2,011	2,406	2,796		

Assumptions: Cover = 6.0 feet
 Design Pressure = 150 psi
 Safety Factor = 1.5
 Laying Condition = Type 3
 Soil Designation = Clay 1
 Non-Polywrapped Pipe

☐ = Not Applicable
 ☐ = Not Probable

* Data Table acquired from the Ductile Iron Pipe Research Association (DIPRA)

**TABLE 23.6.5.C
DUCTILE IRON WATER MAIN PIPE
THRUST RESTRAINT LENGTH FOR VERTICAL DOWN BENDS**

BEND ANGLES (degrees)	PIPE DIAMETER (inches)													
	3"	4"	6"	8"	10"	12"	14"	16"	18"	20"	24"	30"	36"	42"
11.25°	2	3	4	5	6	7	8	10	11	12	14	18	21	25
22.5°	4	5	8	10	12	15	17	19	22	24	29	36	43	50
30°	6	7	10	14	17	20	23	26	29	33	39	48	58	67
45°	9	11	16	21	26	31	36	41	45	50	60	75	89	104
60°	13	16	22	29	36	43	50	57	63	70	84	104	124	145
90°	22	27	39	51	62	74	86	98	110	122	145	180	215	250
Unit Frictional Force (ft/lbs)	124	151	217	284	349	415	481	547	613	679	811	1,005	1,203	1,398
Unit Bearing Resistance (ft/lbs)	152	185	268	354	437	523	611	699	789	879	1,064	1,344	1,639	1,939

Assumptions: Cover = 6.0 feet
 Design Pressure = 150 psi
 Safety Factor = 1.5
 Laying Condition = Type 3
 Soil Designation = Clay 1
 Non-Polywrapped Pipe

☐ = Not Permitted (for 60°, use two 30° bends; for 90°, use two 45° bends)

* Data Table acquired from the Ductile Iron Pipe Research Association (DIPRA)

**TABLE 23.6.5.F
DUCTILE IRON WATER MAIN PIPE
THRUST RESTRAINT LENGTH FOR DEAD ENDS**

Pipe Diameter (inches)	3"	4"	6"	8"	10"	12"	14"	16"	18"	20"	24"	30"	36"	42"
Restraint Length (feet)	11	14	19	25	31	37	43	49	55	61	73	90	108	125
Unit Frictional Force (ft/lbs)	249	302	434	569	697	829	961	1,093	1,225	1,357	1,621	2,011	2,406	2,796

Assumptions: Cover = 6.0 feet
 Design Pressure = 150 psi
 Safety Factor = 1.5
 Laying Condition = Type 3
 Soil Designation = Clay 1
 Non-Polywrapped Pipe

* Data Table acquired from the Ductile Iron Pipe Research Association (DIPRA)

DATE: _____
 REVISIONS: _____
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 COUNTY: LIVINGSTON COUNTY
 TOWN: _____
 RANGE: _____
 DATE: FEB 2023

HARTLAND TOWNSHIP
 WATER MAIN
 STANDARD DETAILS

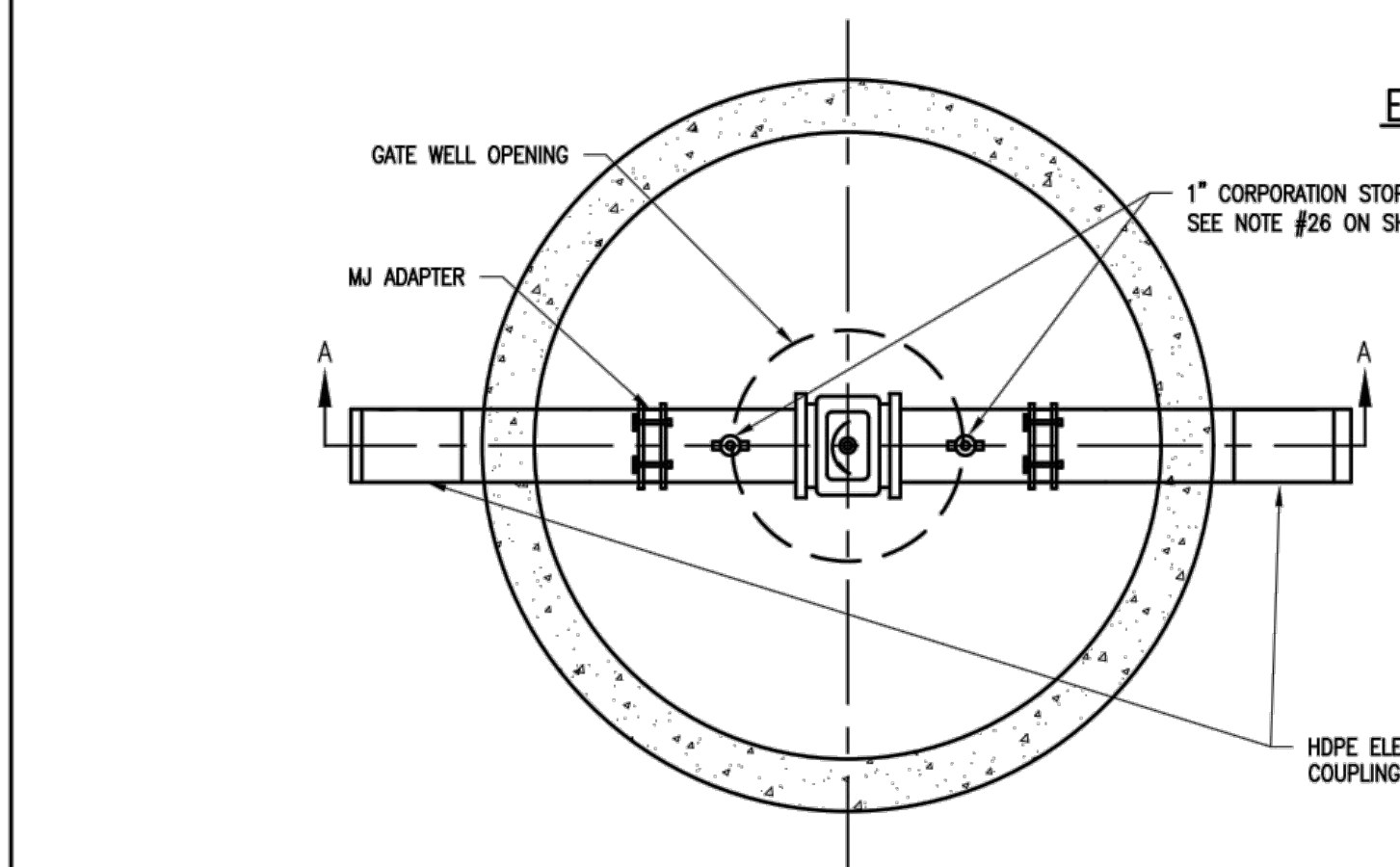
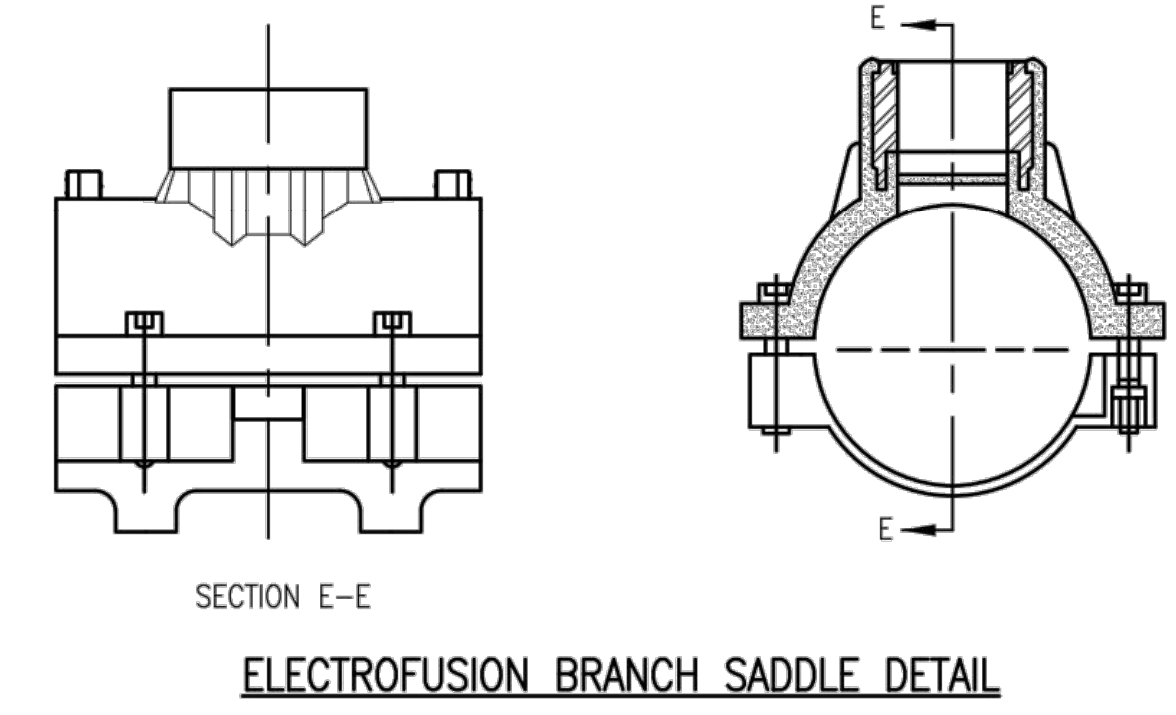
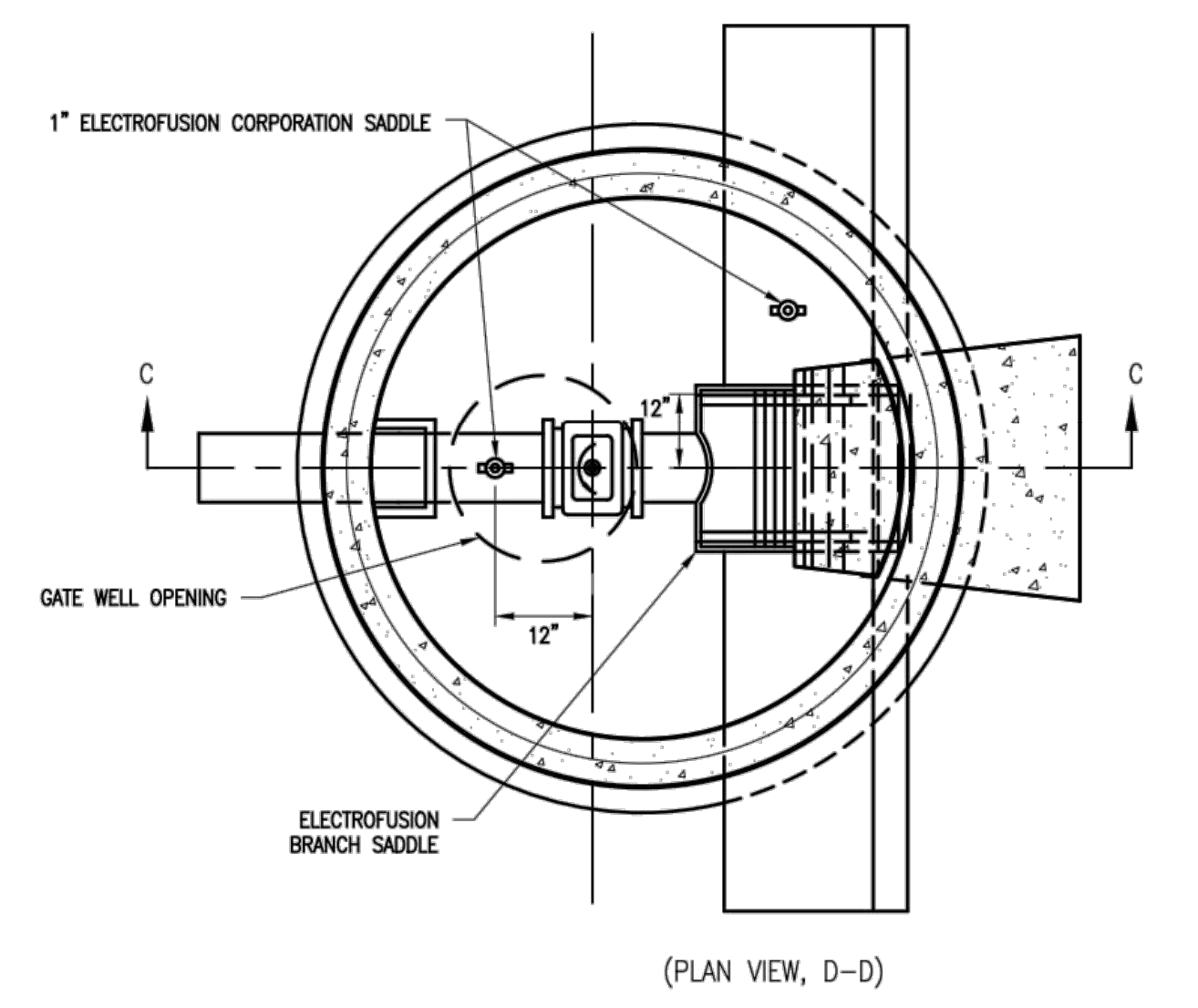
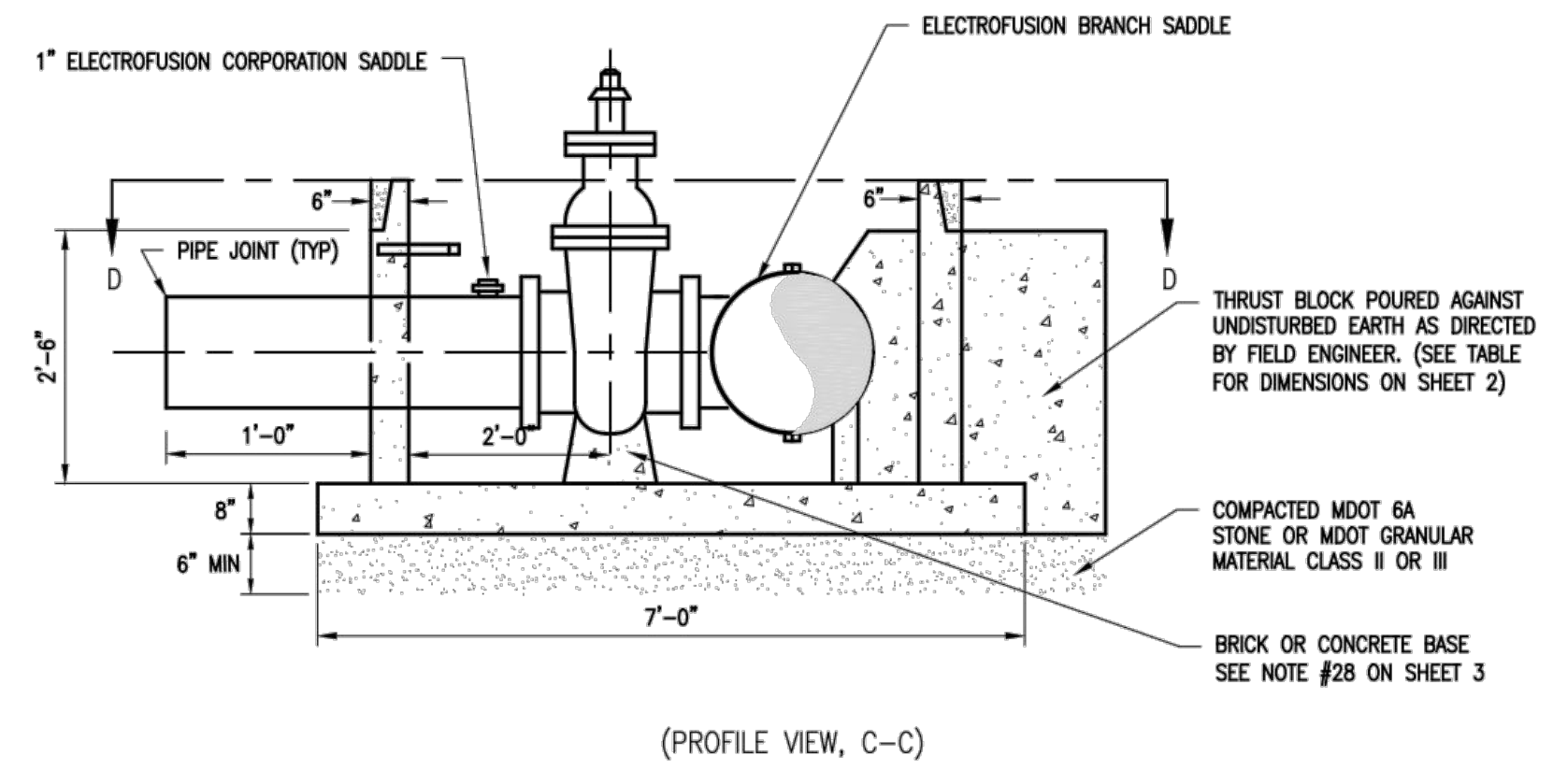
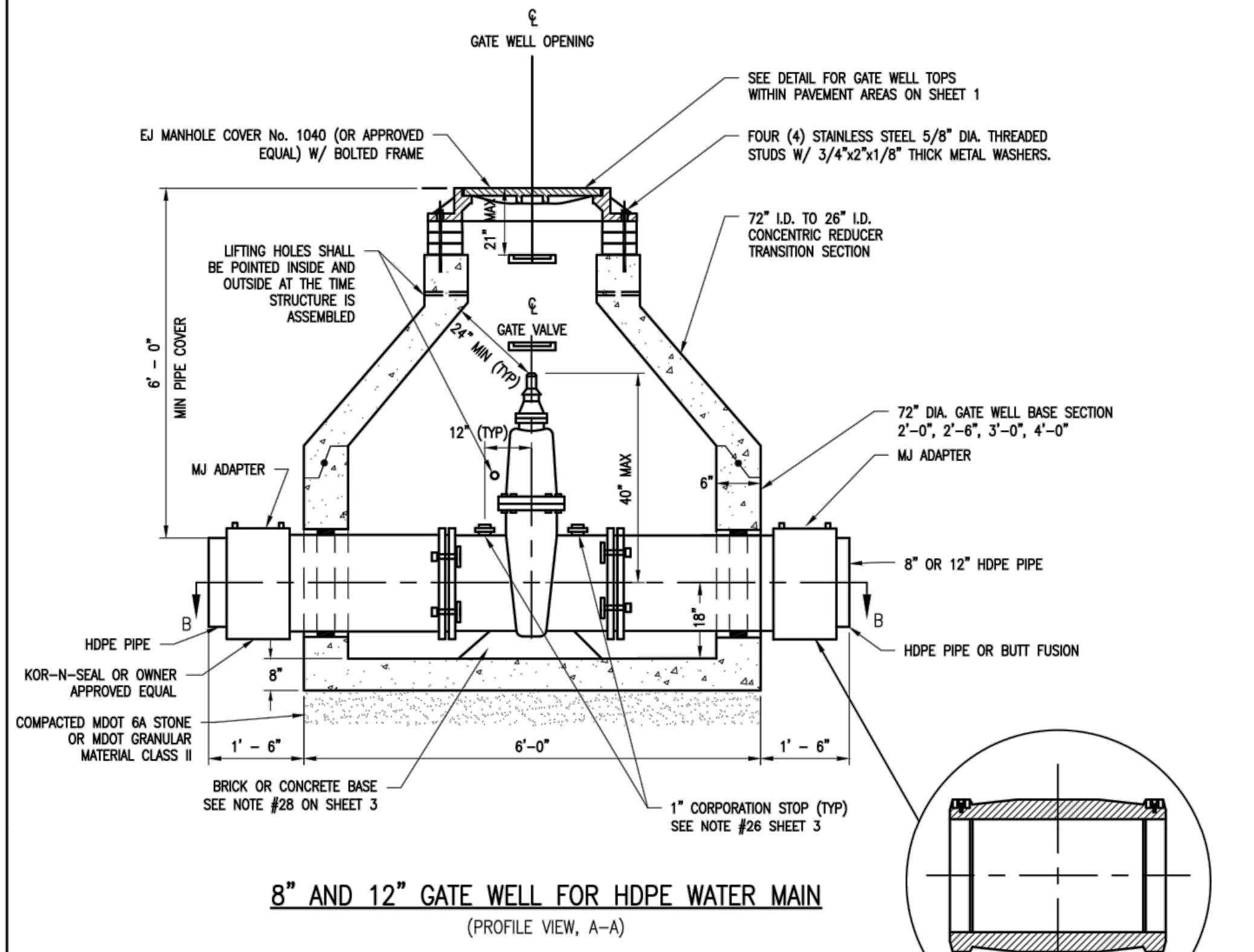
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HIGH-DENSITY POLYETHYLENE (HDPE) WATER MAIN NOTES

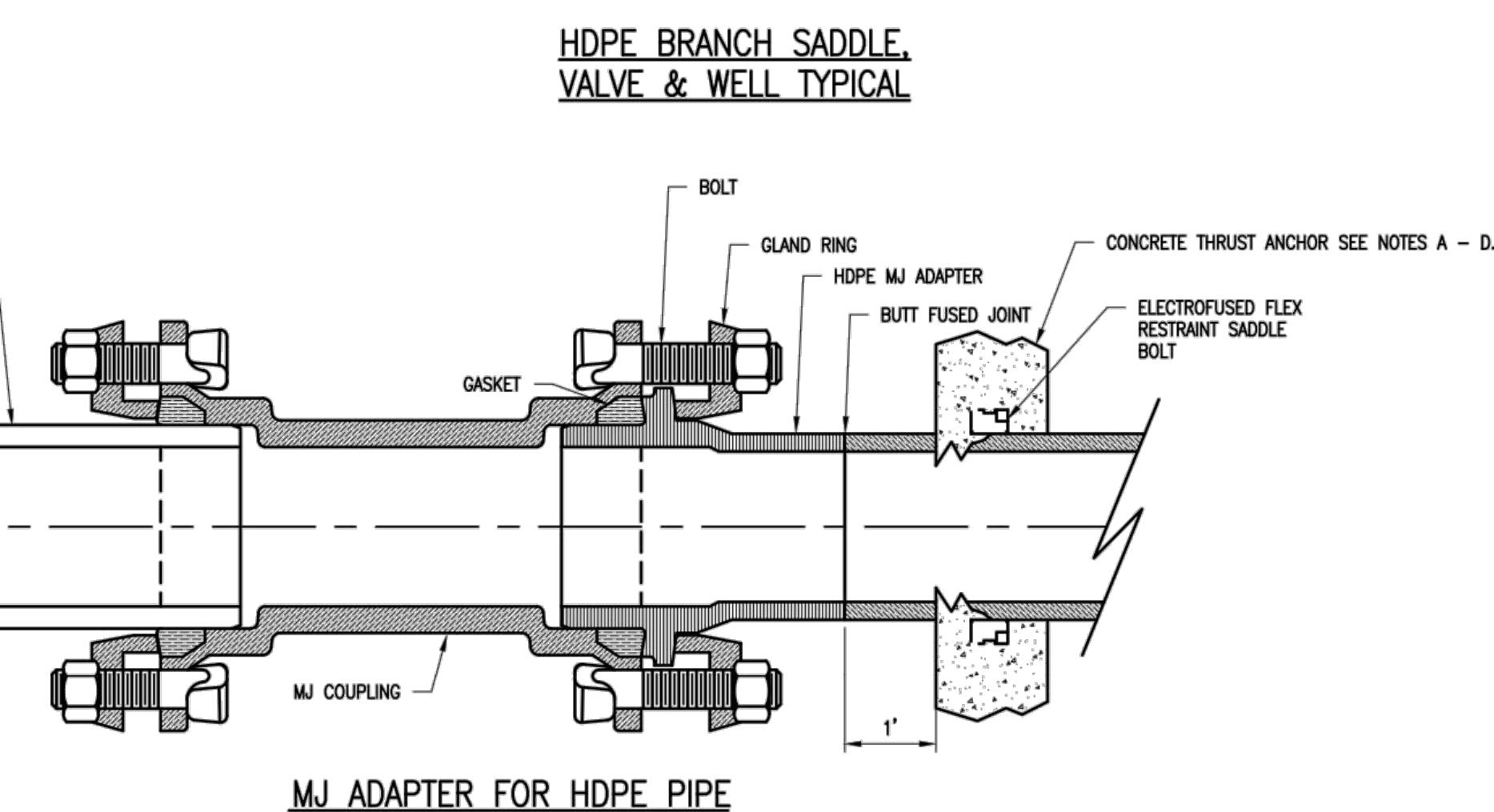
In addition to the water main notes listed on sheet 3 of the standard details, the following notes will apply to construction projects using HDPE water main:

- MATERIALS**
- HDPE pipe, appurtenances, and installation methods shall conform to the most current edition of AWWA standard C906.
 - HDPE pipe shall be manufactured out of virgin material as defined in ASTM D3350. The pipe shall be made from high density PE 3408 polyethylene resin and the materials used must be listed and approved for use under NSF/ANSI Standard 14 and 61. HDPE pipe shall have a standard dimension ratio (SDR) of 11 or less, a hydrostatic design basis (HDB) of 1600 psi for water at 73.4°F and a minimum working pressure rating of 160 psi. No remark except that obtained from the manufacturer's own production of the same formulation shall be used. The pipe shall be homogeneous throughout and shall be free of visible cracks, holes, foreign materials, blisters, or other deleterious faults. A "Certificate of Compliance" shall be furnished for all materials supplied.
 - The physical appearance of the pipe having deformities such as concentrated ridges, discoloration, excessive spot roughness, pitting, varying wall thickness, etc., shall constitute sufficient basis for rejection. Pipe with gouges, nicks, abrasions or any physical damage that occurred during storage and/or handling which are wider or deeper than 10% of the wall thickness shall not be used and must be removed from the construction site. Any pipe that has been damaged or does not meet the Township's approval shall be replaced at the Contractor's expense.
 - Mechanical fittings used with HDPE pipe shall be specifically designed for or tested and found to be acceptable for use with HDPE by the fitting manufacturer. Mechanical fittings designed for other materials shall not be used.
 - Water service saddles on HDPE water main shall be "VA" Electrofusion Service Saddles by Fritec, Inc. or approved equal.
 - The mechanical joint fittings must conform to outside diameter requirements of ANSI/AWWA C111/A21 or ANSI/AWWA C153/A21.53 depending size. Butt fusion fittings shall meet AWWA C906 dimensional requirements.
 - Bolts, nuts, gaskets, and glands meeting ANSI/AWWA C111/A21.11 and ANSI/AWWA C153/A21.53 are required. Mechanical joint components shall be installed in accordance with manufacturer's recommendations.
 - Pipe and fittings must be marked as prescribed by AWWA C906 and NSF. Pipe markings shall include nominal size, OD base, dimension ratio, pressure class, working pressure rating, AWWA C906, material code designation PE 3408, manufacturer's name, manufacturer's production code including day, month, year extruded, and manufacturer's plant and extrusion line; and NSF logo. Permanent identification of piping shall be provided by co-extruding longitudinal blue stripes into the outside surface of the pipe (stripes printed or painted shall not be acceptable) or the pipe material shall be black with a blue stripe.
- INSTALLATION**
- Directional Drilled Water Main and Bore & Jack Water Main must be provided with two tracer wires. Wire shall be copper, 8-gauge stranded, blue insulated per Township's requirements, or Copperhead Industries #8 AWG Blue Coated solid shot extra strength tracer wire.
 - Personnel trained in the use of butt-fusion equipment shall perform the joining of polyethylene pipe by methods recommended for new pipe connections. Personnel directly involved with installing the new pipe shall have received training in the proper methods for handling and installing the HDPE pipe by a qualified representative and certification of this training shall be provided to the Township.
 - Connections to HDPE pipe shall not be made immediately after the pipe has been installed. The fused pipe should be laid in the trench and be allowed to reach an equilibrium temperature overnight (24-hour period) in its surrounding environment.
 - The HDPE pipe must be properly aligned at all transitions to conventional or HDPE water main and appurtenances.
- TESTING**
- The polyethylene pipe shall be pressure tested after the line and all fittings and valves have been installed. Connections may be left exposed for visual leak inspection. Under no circumstances shall HDPE pipe be pressure tested when the temperature of the pipe is above 80°F.
 - Connection to an existing water main shall be made only after pressure and bacteriological test have been successfully completed. The Township consultant must be present for the test and review the results. Testing and disinfection procedures shall meet the requirements of ANSI/AWWA-C600/C651. The water main shall pass a test of 150 psi for a two (2) hour period. Water loss shall not exceed a rate of 11.65 U.S. gallons per inch diameter per mile of water main in twenty-four (24) hours. Bacteria sample (24) hours back to back.
- PIPE BURSTING PROJECTS**
- The method approved for rehabilitation of existing water mains by pipe bursting and installation of new HDPE pipe is T.T. Technologies GRANDCROCK SYSTEMS, (800-533-2076) or approved equal. All contractors must be licensed to use the particular technology proposed for this work.
 - The pipe-bursting tool shall be designed and manufactured to force its way through existing pipe materials by fragmenting the pipe and compressing the old pipe sections into the surrounding soil as it progresses. The bursting unit shall be pneumatic and shall generate enough force to burst and compact the existing pipeline.
 - The Manufacturer's specifications shall dictate what size tool should be used in what diameter pipe, as well as parameters of what size tool for percentage of upset allowed.
 - Prior to construction, the Contractor shall develop and provide to Hartland Township for review and approval a temporary water system plan to supply water services to area residents and businesses during pipe bursting operations. It is anticipated that the temporary system will be fed from existing fire hydrants. The temporary system and hydrants shall have passed bacteriological testing prior to use.
 - All service connections on the existing water main that is to be burst, or will be taken out of service, shall be connected to the temporary water system prior to mainline bursting, disinfection, testing and service reconnection operations. Temporary service connections shall be made at the water service stop box by disconnecting the existing water service and connecting the temporary water line to the stop box.

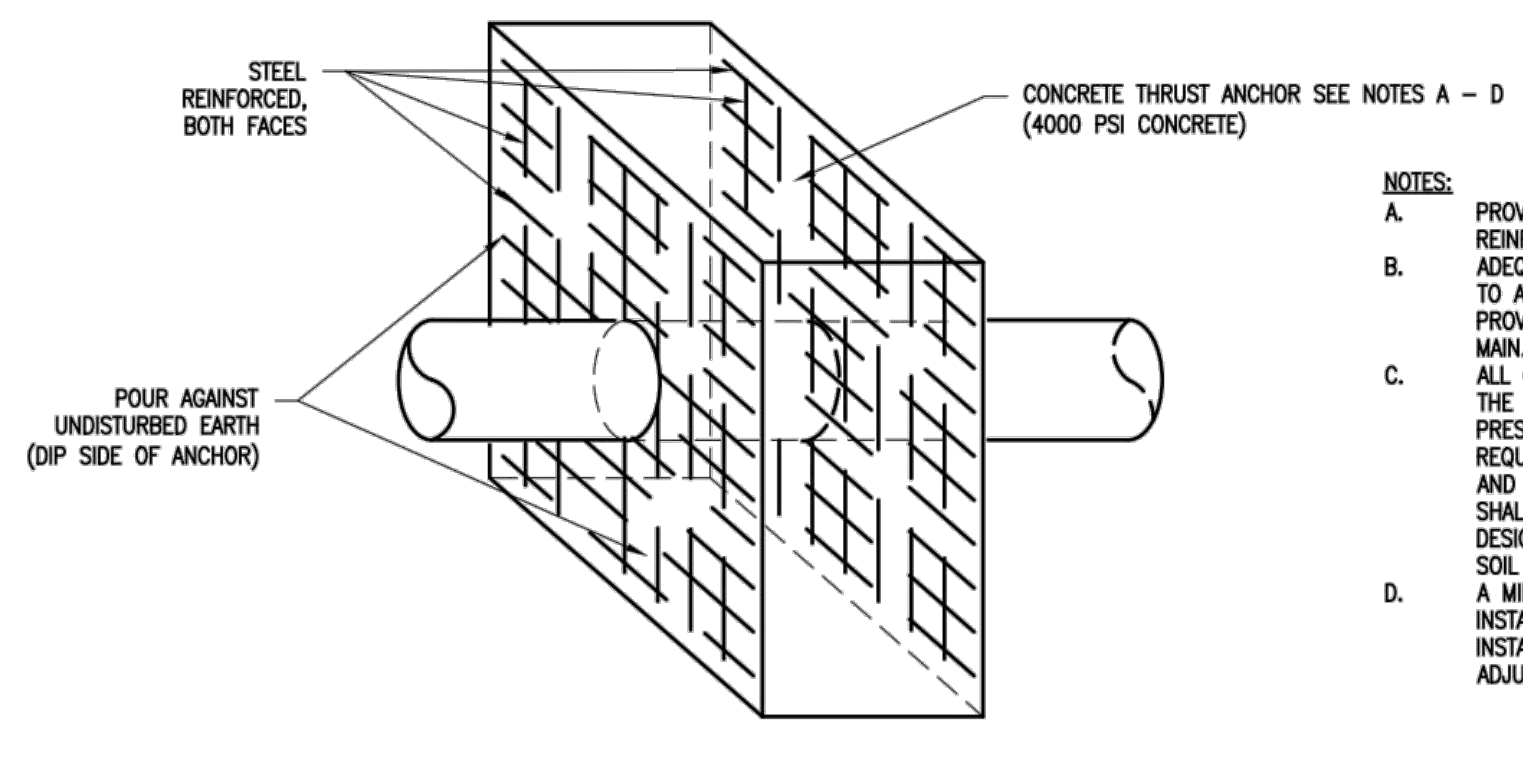
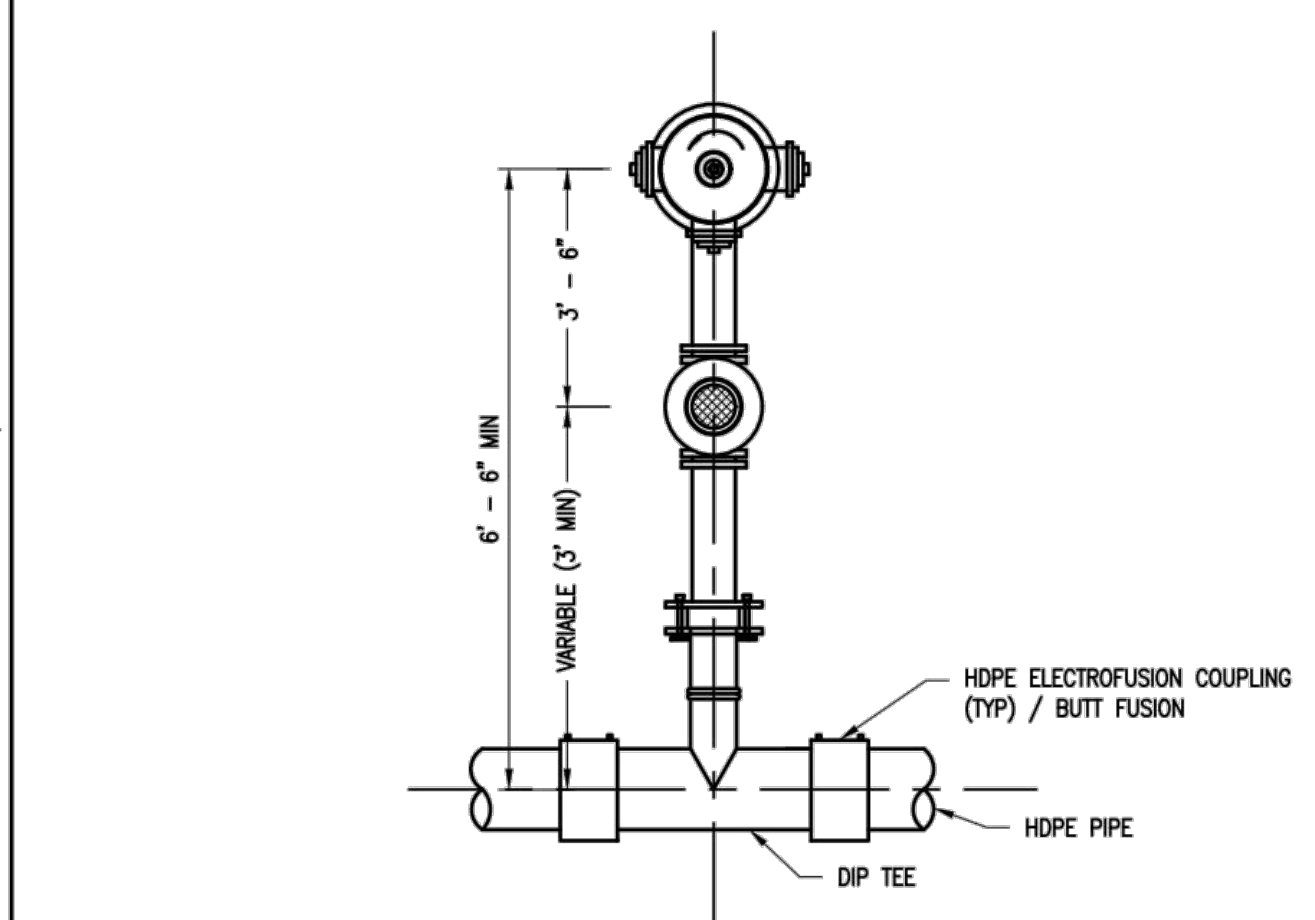
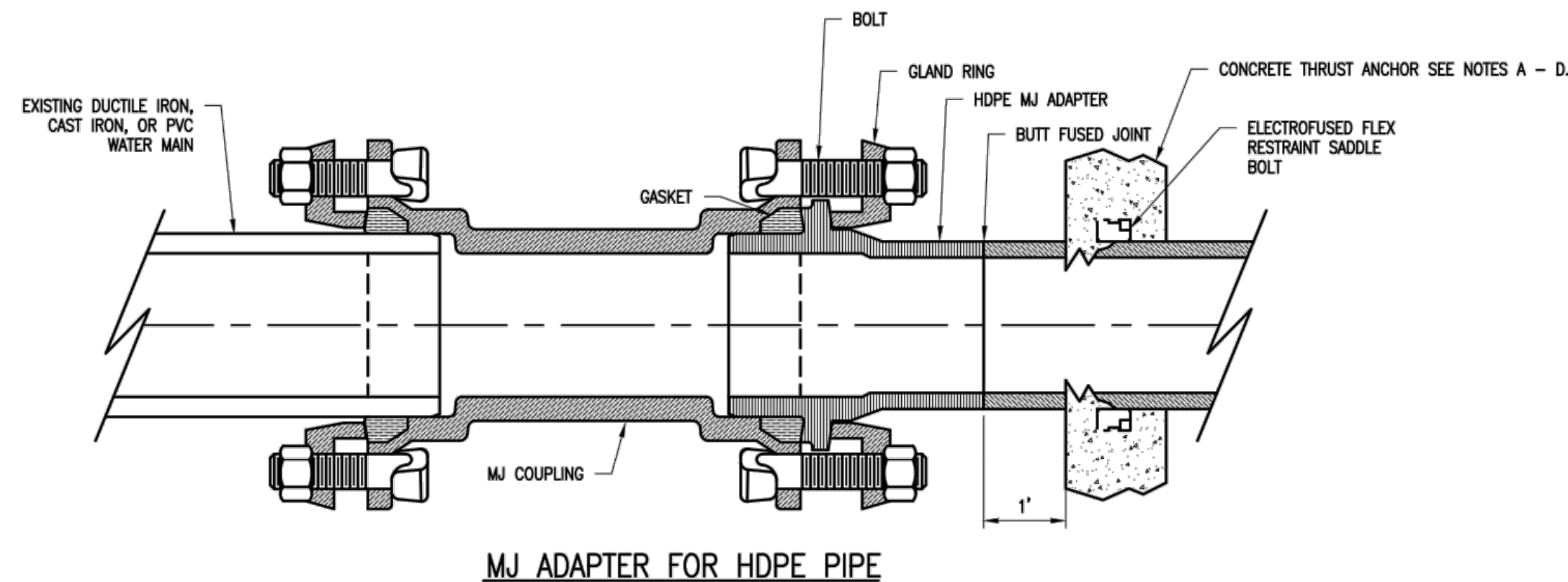
EQUIVALENT DUCTILE IRON PIPE SIZES (DIPS)		
NOMINAL PIPE SIZE (DIPS)	O.D. SIZE (INCHES)	MIN WALL THICKNESS SDR 11 (160 PSI) (INCHES)
6"	6.90	0.627
8"	9.05	0.823
12"	13.20	1.200
16"	17.40	1.582
20"	21.60	1.964
24"	25.80	2.345



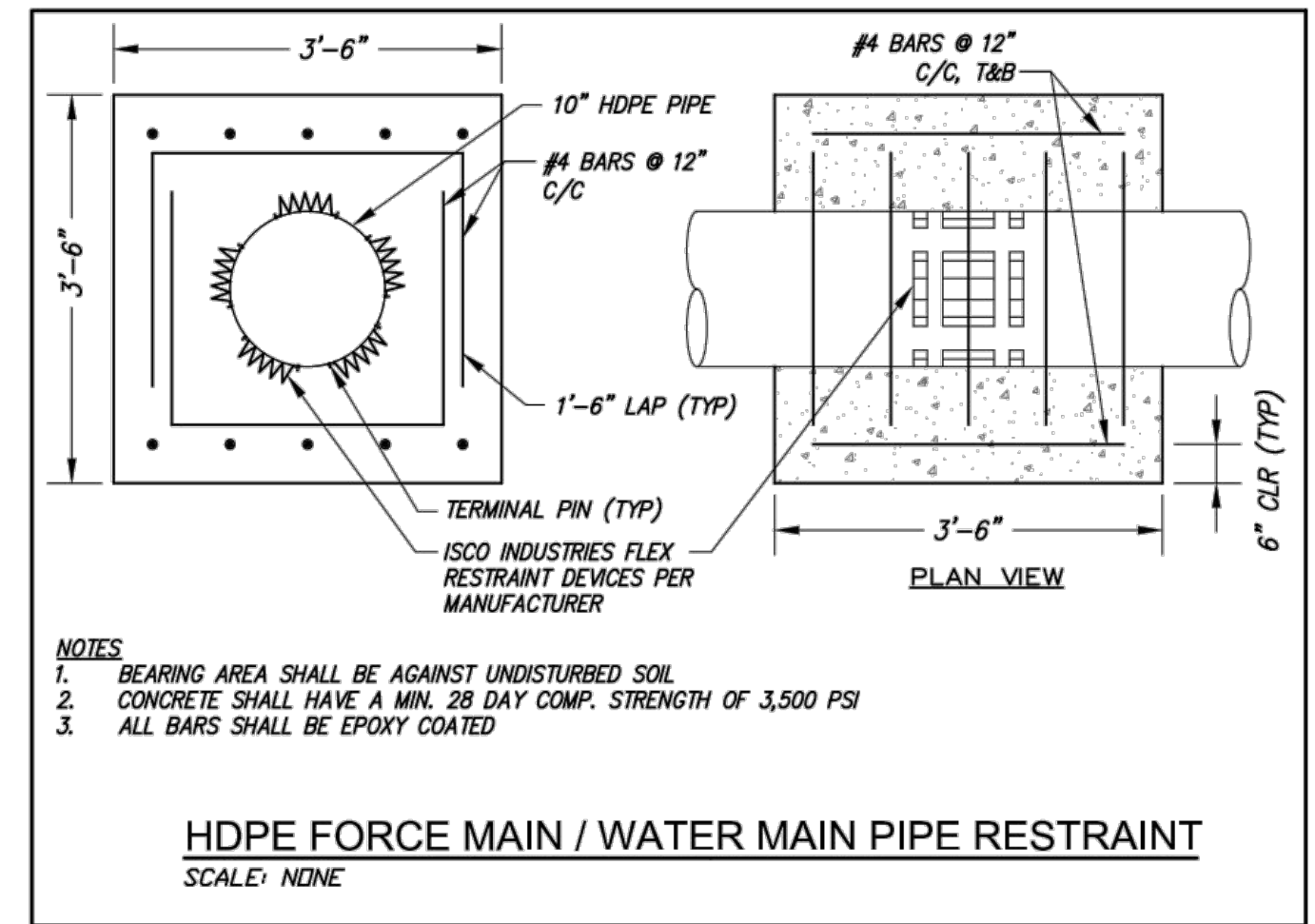
ELECTROFUSION DIPS COUPLINGS



8" AND 12" GATE WELL TYPICAL FOR HDPE WATER MAIN (PLAN VIEW, B-B)



- NOTES:**
- PROVIDE 2" MINIMUM CONCRETE COVER OVER ALL REINFORCING STEEL.
 - ADEQUATE CURING TIME OR USE OF HIGH EARLY CONCRETE TO ACHIEVE THE REQUIRED 4,000 PSI STRENGTH SHALL BE PROVIDED FOR ALL THRUST ANCHORS PRIOR TO TESTING MAIN.
 - ALL CONCRETE THRUST ANCHORS MUST BE DESIGNED FOR THE SITE SPECIFIC SOIL, GROUNDWATER AND SYSTEM PRESSURE CONDITIONS. THE DESIGN ENGINEER WILL BE REQUIRED TO SUBMIT CALCULATIONS SUPPORTING THE SIZE AND REINFORCEMENT. DIMENSIONS OF THE THRUST ANCHOR SHALL BE SPECIFIED BY THE DESIGN ENGINEER AND DESIGNED BASED ON WATER MAIN PRESSURE AND SIZE AND SOIL CONDITIONS.
 - A MINIMUM OF 48 HOURS TIME SHALL BE PROVIDED AFTER INSTALLATION IS COMPLETE PRIOR TO CONSTRUCTING AND INSTALLING THE THRUST ANCHORS TO ALLOW HDPE PIPE TO ADJUST TO GROUND TEMPERATURE.

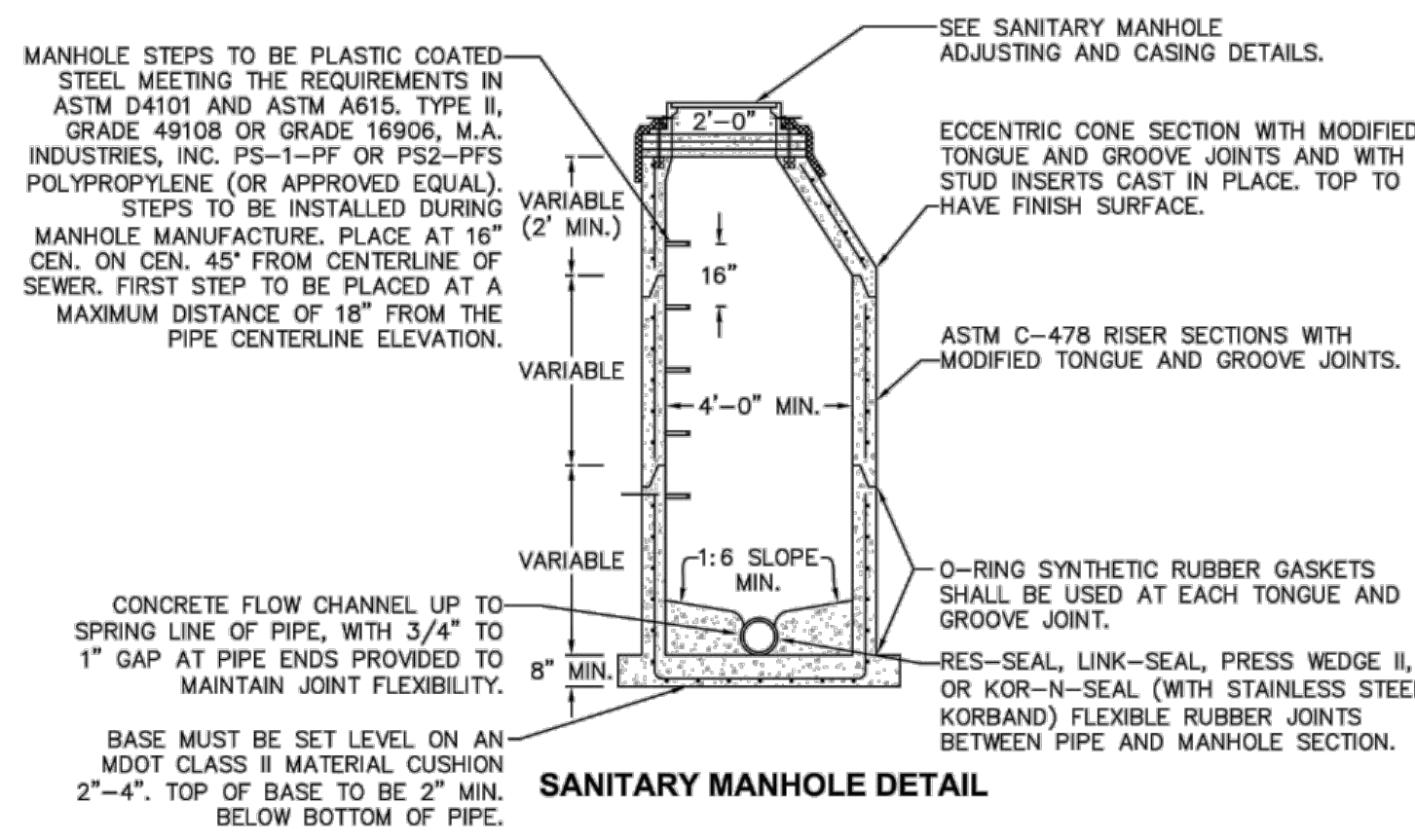


- NOTES:**
- BEARING AREA SHALL BE AGAINST UNDISTURBED SOIL.
 - CONCRETE SHALL HAVE A MIN. 28 DAY COMP. STRENGTH OF 3,500 PSI.
 - ALL BARS SHALL BE EPOXY COATED.

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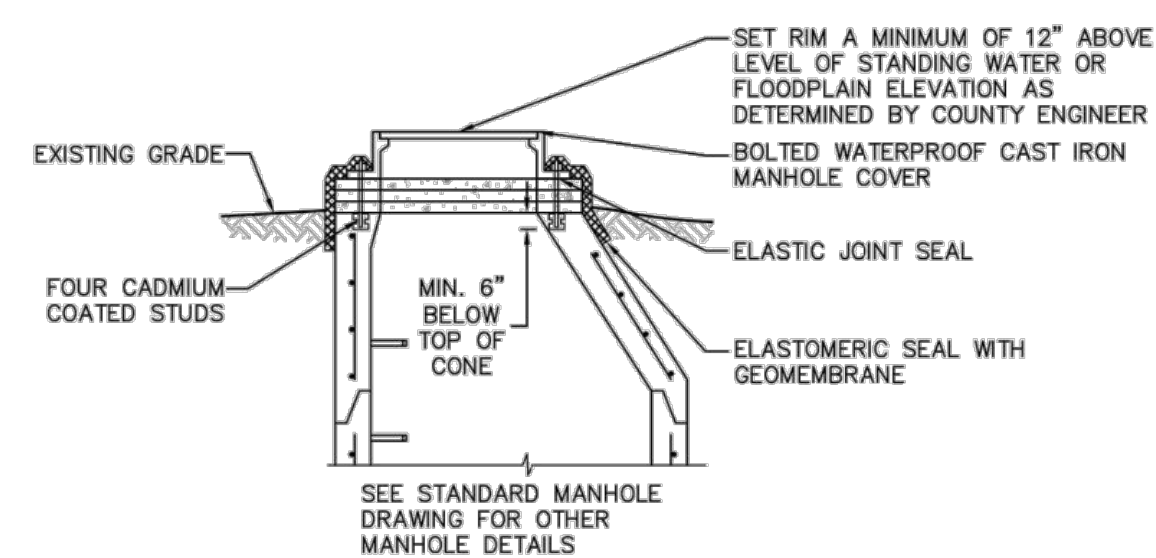
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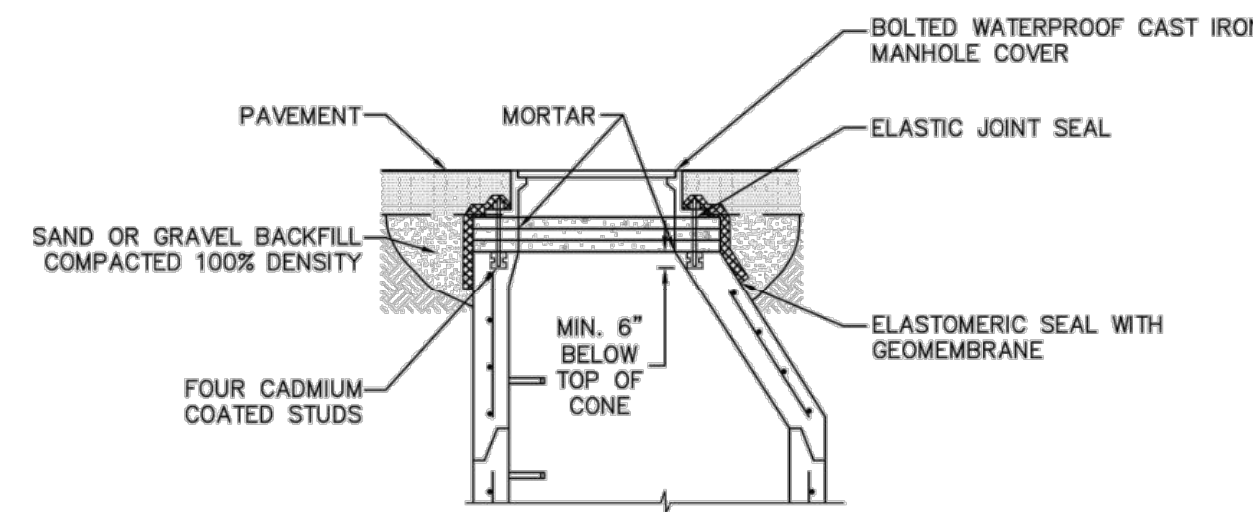
NOTE: MANHOLE MANUFACTURER SHALL INSTALL 1/2" DIA. GALVANIZED STEEL PIPE AND CAP AT PIPE CROWN, FLUSH WITH OUTSIDE WALL AND EXTENDING 3" INSIDE. CONTRACTOR TO SEAL AFTER COMPLETION OF TESTS. LOCATED AT TOP OF PIPE ELEVATION.

MANHOLE DIAMETER	MAX. PIPE SIZE FOR STRAIGHT INST.	MAX. PIPE SIZE FOR RIGHT ANGLE INST.
4'	24"	18"
5'	36"	24"
6'	42"	36"
7'	60"	42"

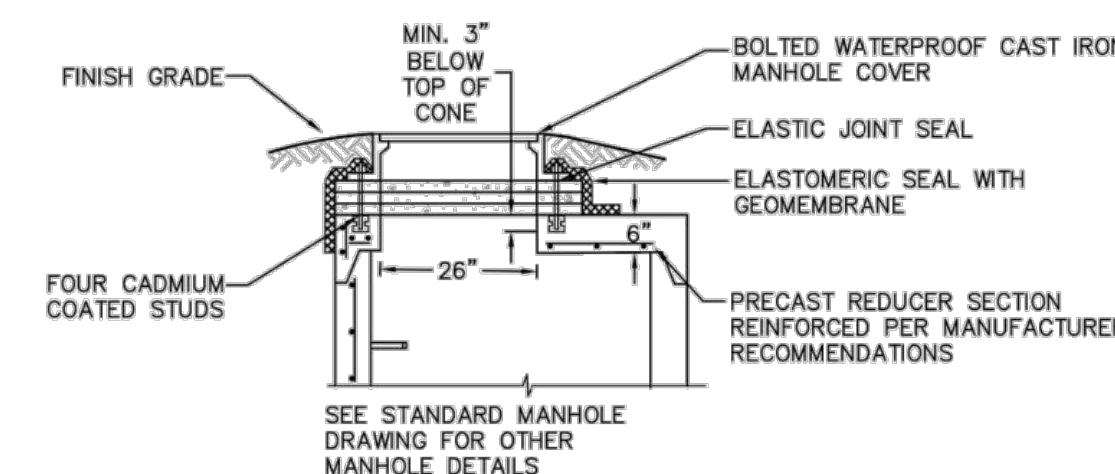
NOTE: RUBBER GASKETS JOINTS SHALL CONFORM TO ASTM SPECIFICATION C443, OR FLEXIBLE BUTYL SEALANT JOINTS SHALL CONFORM TO CURRENT ASTM SPECIFICATION C990.



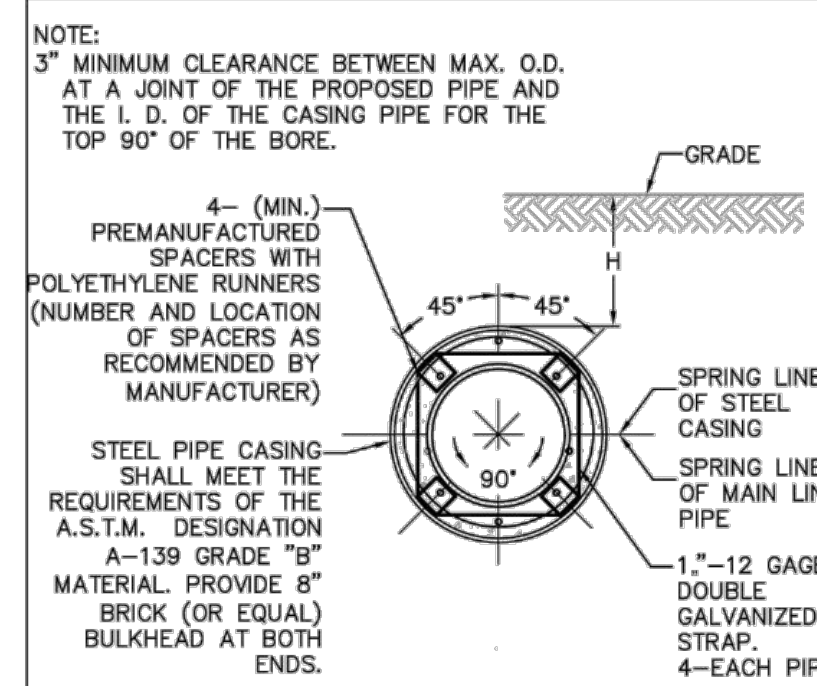
MANHOLE TOPS WITHIN FLOOD PRONE AREAS



MANHOLE TOPS WITHIN PAVEMENT AREAS



FLAT TOP MANHOLE



NOTE: ALL VOIDS BETWEEN THE SEWER PIPE AND THE CASING PIPE SHALL BE CONCRETE GROUTED MATERIAL OR ALTERNATE MATERIAL AS APPROVED BY THE COUNTY ENGINEER.

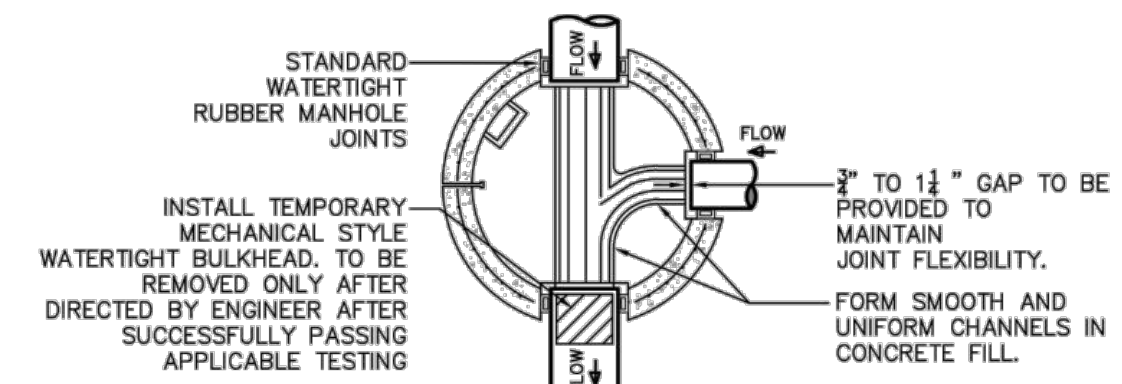
ALLOWABLE HEIGHT OF COVER (H.) IN FT., FOR STEEL CASING

WALL THICKNESS (IN.)	STEEL CASING OUTSIDE DIAMETER (IN.)																
	12	14	16	18	20	24	28	30	36	42	48	54	60	66	72	78	
3/16	.1875	.39	.30	.24	.21	19	17	16									
1/4	.250	50	50	39	31	27	21	19	18	16							
5/16	.3125			50	48	39	28	23	21	18	17						
3/8	.375				50	50	39	29	27	22	19						
7/16	.4375					50	39	34	26	21							
1/2	.500						50	44	31	25							
9/16	.5625							50	39	30							
5/8	.625								50	48	35						

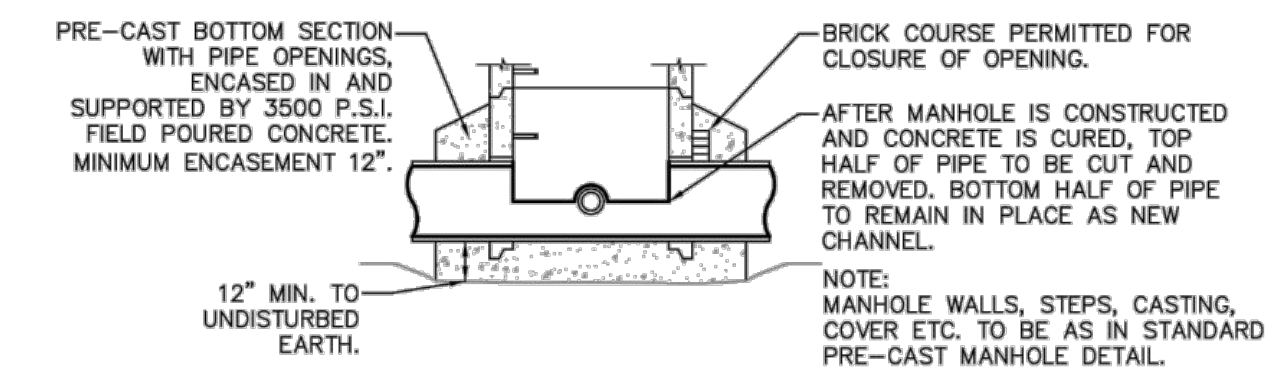
TYPICAL TUNNEL CASING DETAIL

- NOTE:
- FOR 36" SEWER PROVIDE A MIN. OF 60" DIA. CASING WITH 1" WALL THICKNESS.
 - CASING PIPE JOINTS TO BE FULLY WELDED AROUND THE CIRCUMFERENCE BY A CERTIFIED WELDER.

TYPICAL SEWER TUNNEL CASING DETAIL



STANDARD MANHOLE BOTTOM OVER EXIST. SEWER



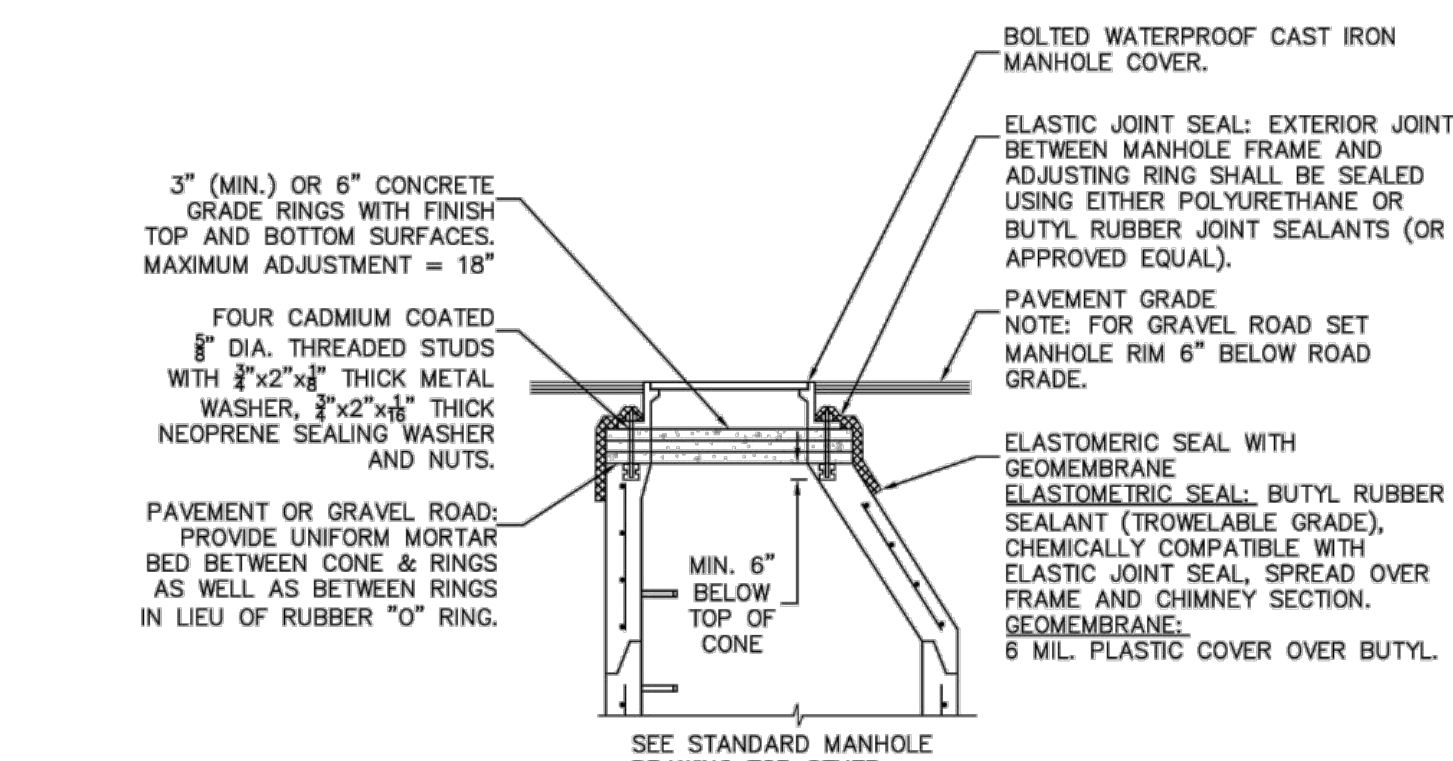
SUMP MANHOLE FOR TESTING, CLEANING AND DEWATERING

SANITARY SEWER CONSTRUCTION NOTES

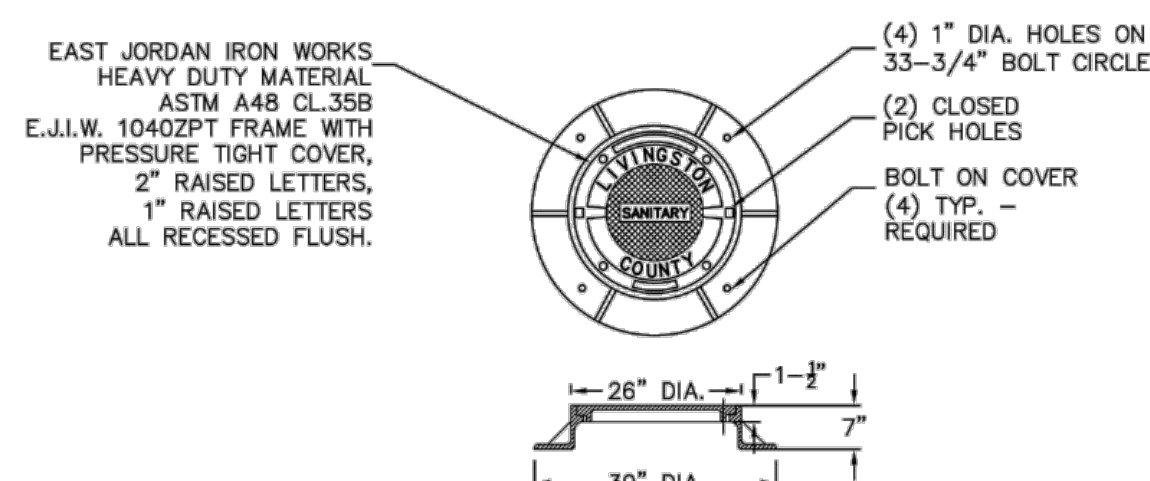
- ALL CONSTRUCTION SHALL CONFORM TO THE CURRENT STANDARDS AND SPECIFICATIONS OF THE LIVINGSTON COUNTY DRAIN COMMISSION (LCDC). ALL SANITARY SEWER CONSTRUCTION SHALL HAVE FULL-TIME INSPECTION SUPERVISED BY A PROFESSIONAL ENGINEER PROVIDED BY, OR CAUSED TO BE PROVIDED BY LCDC.
- BEFORE THE START OF CONSTRUCTION, AT ALL CONNECTIONS, THE CONTRACTOR MUST OBTAIN THE REQUIRED LCDC SEWER INSPECTION PERMITS. THE CONTRACTOR SHALL NOTIFY THE COUNTY 48 HOURS PRIOR TO THE BEGINNING OF ANY CONSTRUCTION. FINAL ACCEPTANCE TESTS MUST BE WITNESSED BY COUNTY PERSONNEL AND MUST BE SCHEDULED IN ADVANCE.
- NO SEWER INSTALLATION SHALL HAVE AN INFILTRATION EXCEEDING 250 GALLONS PER INCH DIAMETER PER MILE OF PIPE IN A 24-HOUR PERIOD, AND THE TOTAL LENGTH OF SEWER IN A GIVEN PROJECT SHALL NOT EXCEED 250 GALLONS PER INCH DIAMETER PER MILE. AIR TESTS IN LIEU OF INFILTRATION TESTS SHALL BE AS SPECIFIED IN THE LCDC STANDARDS. ONLY PIPE AND PIPE JOINTS APPROVED BY THE COUNTY MAY BE USED FOR SANITARY SEWER CONSTRUCTION.
- AT ALL CONNECTIONS TO AN EXISTING SEWER, OR EXTENSION THERETO, A WATERTIGHT BULKHEAD WITH A CAPPED ONE INCH DIAMETER PIPE TO PERMIT MEASURING INFILTRATION SHALL BE PROVIDED. A TEMPORARY 18 INCH DEEP SUMP SHALL ALSO BE PROVIDED IN THE FIRST MANHOLE ABOVE THE CONNECTION WHICH WILL BE FILLED IN UP TO THE STANDARD FILLET PROVIDED FOR THE FLOW CHANNEL. AFTER SUCCESSFUL COMPLETION OF ANY ACCEPTANCE TEST.
- APPROVED BUILDING PIPE MATERIALS FOR GRAVITY SEWER LEADS:
 - ABS PLASTIC, ASTM D2731, SDR 23.5.
 - PVC PLASTIC, ASTM D3034, SDR 26 OR ASTM D2665, SCHEDULE 40.
 - DUCTILE IRON PIPE, AMERICAN WATER WORKS ASSOCIATION (AWWA) C-104/A21.4, CLASS 54. JOINTS SHALL BE PUSH-ON TYPE COUPLED IN ACCORDANCE WITH ANS/AWWA C111/A 21.11. JOINTS SHALL BE SUPER BEL-TITE, TYTON, TY-SEAL, MULTI-TITE, DUAL-TITE, OR VERI-TITE.
 - ANY DEVIATIONS FROM SPECIFIED ABOVE REQUIRE APPROVAL BY LCDC.
- ALL RIGID SEWER PIPE SHALL BE INSTALLED IN CLASS "B" BEDDING OR BETTER.
- ALL NEW MANHOLES SHALL HAVE LCDC APPROVED, FLEXIBLE, WATERTIGHT SEALS WHERE PIPES PASS THROUGH WALLS. MANHOLES SHALL BE OF PRECAST SECTIONS WITH MODIFIED GROOVE TONGUE AND RUBBER GASKET TYPE JOINTS. PRECAST MANHOLE CONE SECTIONS SHALL BE LCDC APPROVED ECCENTRIC CONE TYPE. ALL MANHOLES SHALL BE PROVIDED WITH BOLTED, WATERTIGHT COVERS, AS INDICATED.
- AT ALL CONNECTIONS TO MANHOLES, EXTERNAL DROP CONNECTIONS WILL BE REQUIRED WHEN THE DIFFERENCE IN INVERT ELEVATIONS EXCEEDS 18 INCHES. INTERNAL DROPS REQUIRE SPECIAL APPROVAL FROM THE LCDC.
- TAPS TO EXISTING MANHOLES SHALL BE MADE BY CORING. THE CONTRACTOR SHALL PLACE A CORE-AND-SEAL TYPE "BOOT" PLACED FLUSH WITH INSIDE OF WALL STRUCTURE (KOR-N-SEAL BOOT OR APPROVED EQUAL) AFTER CORING IS COMPLETE.
- NEW MANHOLES CONSTRUCTED DIRECTLY ON LCDC SEWERS SHALL BE PROVIDED WITH COVERS READING "LIVINGSTON COUNTY SANITARY" IN RAISED LETTERS. NEW MANHOLES BUILT OVER AN EXISTING SANITARY SEWER SHALL HAVE MONOLITHIC POURED BOTTOMS.
- NO GROUND WATER, STORM WATER, CONSTRUCTION WATER, DOWNSPOUT DRAINAGE, OR WEEP TILE DRAINAGE SHALL BE ALLOWED TO ENTER ANY SANITARY SEWER.
- BEFORE ANY EXCAVATION, THE CONTRACTOR SHALL TELEPHONE MISS DIG (800-482-7171) FOR THE LOCATION OF UNDERGROUND PIPELINE AND CABLE FACILITIES AND SHALL NOTIFY REPRESENTATIVES OF OTHER UTILITIES LOCATED IN THE VICINITY OF THE WORK.
- AN 18 INCH MINIMUM VERTICAL SEPARATION AND 10 FOOT MINIMUM HORIZONTAL SEPARATION MUST BE MAINTAINED BETWEEN SANITARY SEWER AND WATER MAIN.

STANDARD BEDDING

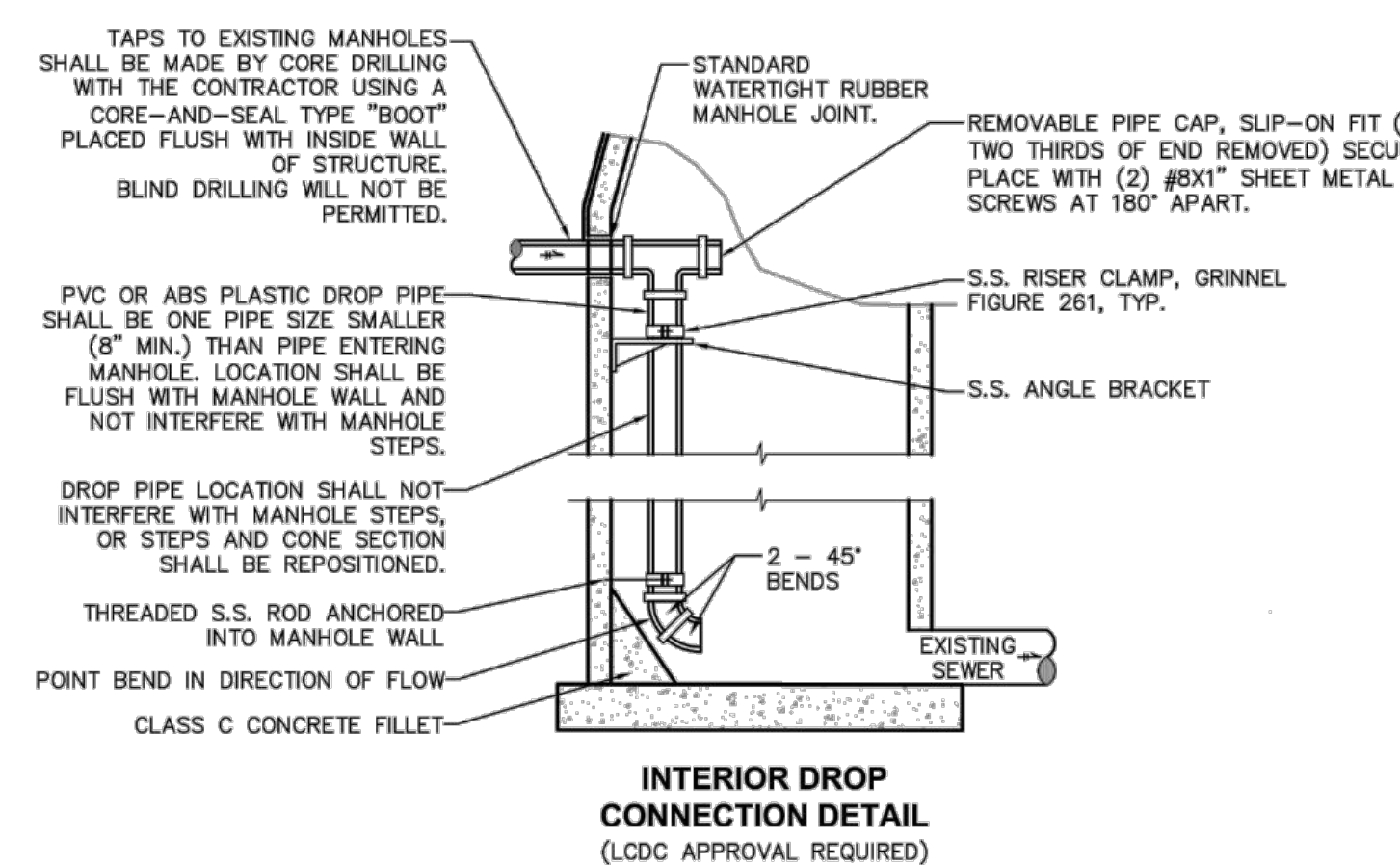
PIPE I.D.	TRENCH WIDTH
4" TO 15"	MAX. 30"
18" TO 24"	O.D. + 18"
27" OR LARGER	O.D. + 24"



SANITARY MANHOLE ADJUSTING RINGS & CASTING DETAIL



L.C.D.C. LETTERED MANHOLE COVER

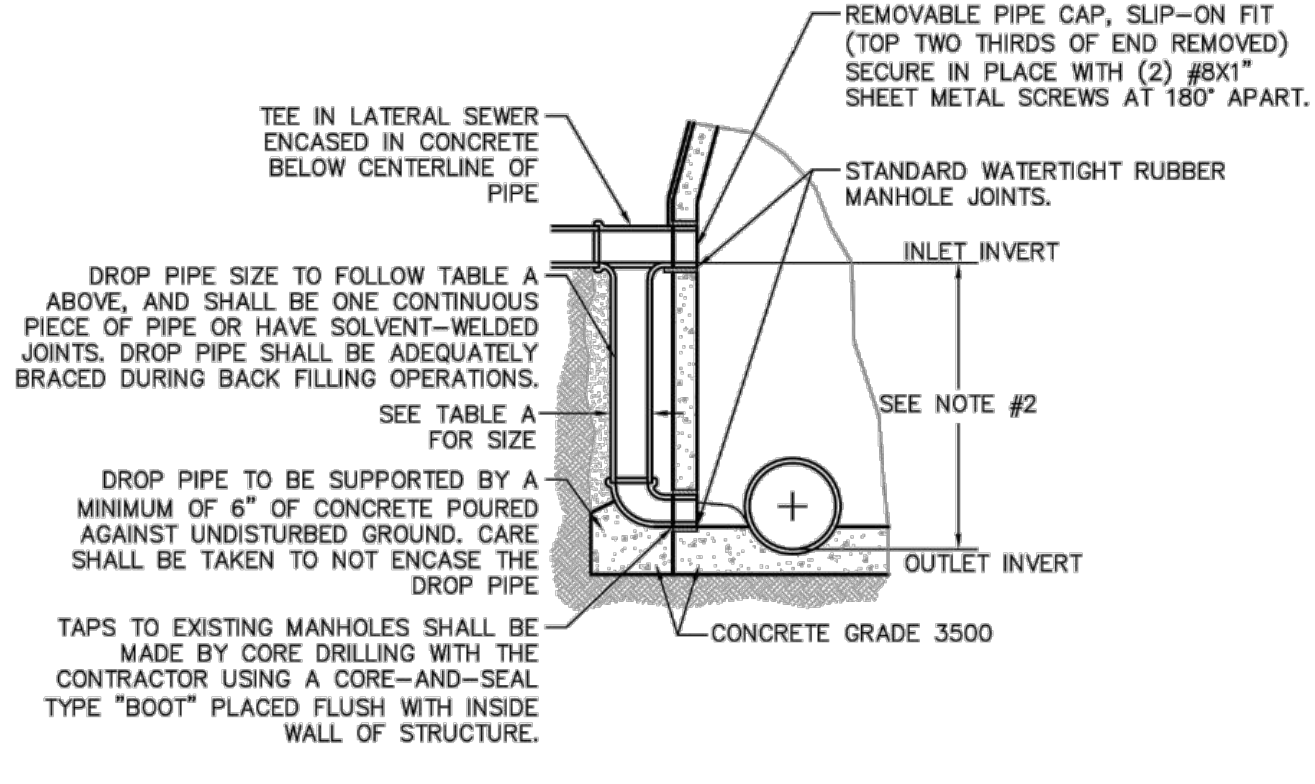


INTERIOR DROP CONNECTION DETAIL (LCDC APPROVAL REQUIRED)

- NOTE:
- DROP CONNECTIONS ON PVC TRUSS PIPE OR PVC SOLID WALL PIPE SHALL NOT BE ENCASED IN CONCRETE. COMPACTED GRANULAR BACKFILL SHALL BE USED IN PLACE OF CONCRETE WHERE APPROVED PLASTIC PIPE IS USED.
 - ALL INLET INVERTS GREATER THAN OR EQUAL TO 18" ABOVE OUTLET INVERT WILL REQUIRE A DROP CONNECTION CONSTRUCTED PER THIS DETAIL.
 - ON PVC TRUSS AND SOLID WALL SEWERS OR LATERALS, ALL OPENINGS (REGARDLESS OF SIZE) SHALL HAVE FLEXIBLE MANHOLE CONNECTIONS.
 - OPENINGS FOR CONCRETE SEWERS OR LATERALS UP TO AND INCLUDING 24" SHALL HAVE FLEXIBLE MANHOLE CONNECTIONS.
 - STEPS AND CONE SECTION SHALL BE REPOSITIONED IF DROP PIPE LOCATION INTERFERES WITH MANHOLE STEPS.

TABLE A

SIZE OF SEWER	DROP CONNECTION
8"	8"
10"	8"
12"	8"
15"	10"
18"	10"
21"	12"
24"	12"
27"	12"
30"	15"
36"	15"



DROP CONNECTION DETAIL



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DATE:	ISSUE:
Date	Issue

LIVINGSTON COUNTY DRAIN COMMISSIONER OFFICE

SANITARY SEWER DETAILS AND NOTES 1

LIVINGSTON COUNTY MICHIGAN

Date: 12.06.22
Scale: N/A
Sheet: N/A
Project: N/A

Redwood Hartland Glen Lane P2

Hartland Township, Michigan

DATE: June 06, 2024

Landscape Plans

PROJECT NO. 23051

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L1.2	WEST LANDSCAPE PLAN
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L1.0	SEED & SOD PLAN
SD1.0	SITE DETAILS

PREPARED FOR



Redwood Living
7007 East Pleasant Valley Road
Independence, Ohio 44131

PREPARED BY



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VICINITY MAP



NOT TO SCALE



PLANT LIST:						
QTY.	SYMBOL	BOTANICAL NAME	COMMON NAME	SIZE	COND.	COMMENTS
DECIDUOUS TREES						
34	AC RU	<i>Acer rubrum</i> 'October Glory'	October Glory Maple	3" cal.	B&B	As Shown
25	AM GR	<i>Amelanchier x grandiflora</i> 'Autumn Brilliance'	Autumn Brilliance Serviceberry	6'-7' ht., multistem	B&B	As Shown
27	BE PO	<i>Betula populifolia</i> 'Whitespire'	Whitespire Birch	12' multi-stem	B&B	As Shown
32	CE CA	<i>Cercis canadensis</i>	Eastern Redbud	1.5" cal.	B&B	As Shown
28	GL TR	<i>Gleditsia tricanthos</i> f. <i>inermis</i> 'Skycole'	Skyline Honeylocust	3" cal.	B&B	As Shown
21	LI ST	<i>Liquidambar styraciflua</i>	American Sweetgum	3" cal.	B&B	As Shown
28	MA VI	<i>Magnolia virginiana</i> 'Moonglow'	Moonglow Sweetbay/Magnolia	6'-7' ht., multistem	B&B	As Shown
3	ME GL	<i>Metasequoia glyptostroboides</i>	Dawn Redwood	3" cal.	B&B	As Shown
56	PL AC	<i>Platanus x acerfolia</i> 'Exclamation!'	Exclamation! London Planetree	3" cal.	B&B	As Shown
22	QU AL	<i>Quercus alba</i>	White Oak	3" cal.	B&B	As Shown
24	TA DI	<i>Taxodium distichum</i>	Bald Cypress	3" cal.	B&B	As Shown
35	TI AM	<i>Tilia americana</i> 'Redmond'	Redmond Linden	3" cal.	B&B	As Shown
13	UL PA	<i>Ulmus parvifolia</i>	Lacebark Elm	3" cal.	B&B	As Shown
EVERGREEN TREES						
62	JU VI	<i>Juniperus virginiana</i>	Eastern Red Cedar	8' ht.	B&B	As Shown
33	PI AB	<i>Picea abies</i>	Norway Spruce	8' ht.	B&B	As Shown
62	PI GL	<i>Picea glauca</i> 'Densata'	Black Hills Spruce	8' ht.	B&B	As Shown
36	PI ST	<i>Pinus strobus</i>	Eastern White Pine	8' ht.	B&B	As Shown
SHRUBS						
14	IL GL	<i>Ilex glabra</i> 'Densa'	Dense Compact Inkberry	24" ht.	Cont.	As Shown
7	VI JU	<i>Viburnum x juddii</i>	Judd Viburnum	36" ht.	Cont.	As Shown
PERENNIALS AND ORNAMENTAL GRASSES						
18	PE HA	<i>Pennisetum a.</i> 'Hameln'	Dwarf Fountain Grass	#1	cont.	As Shown

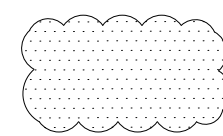

Plant substitutions may be permitted depending on plant availability. Any substitutions must be approved by landscape architect and Redwood Development.

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.

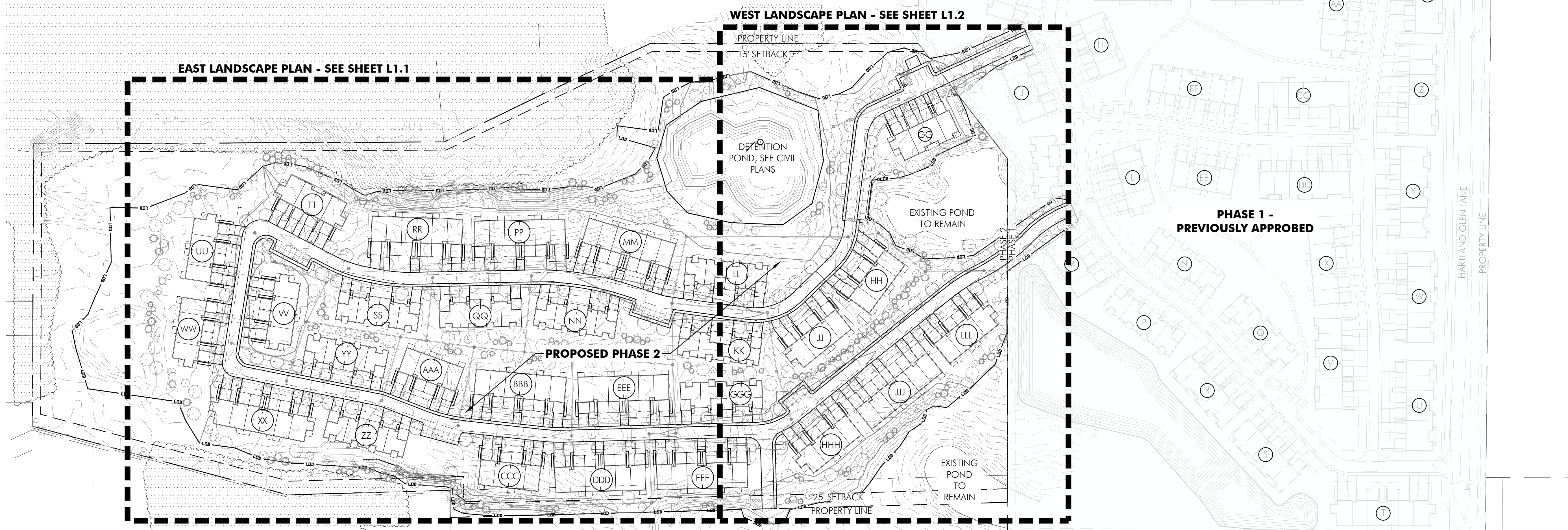
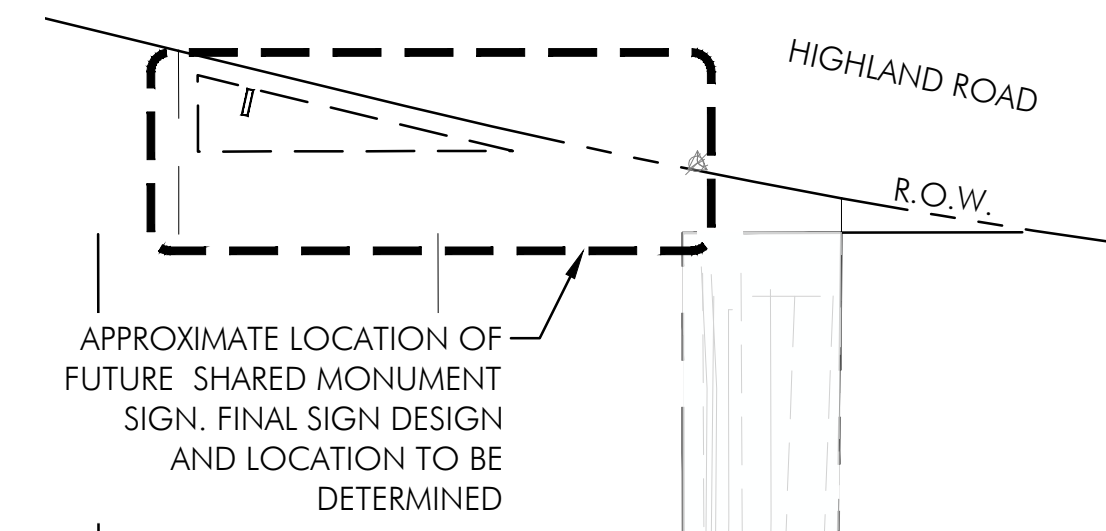
POUND PERIMETER: 905 LF
 REQUIRED: 905 / 50 = 18 CANOPY OR EVERGREEN TREES
 PROVIDED: 8 CANOPY TREES, 17 EVERGREEN TREES, & 13 ORNAMENTAL TREE

LEGEND

-  EXISTING TREES TO REMAIN
-  LIMITS OF DISTURBANCE

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 DICTATE.
- 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 OWNER'S 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 SEED, SOD AND PLANTING BED.
- CONTRACTOR SHALL PROVIDE THE FOLLOWING SOIL AMENDMENTS:
 SOIL AMENDMENT: TOP GRADE SITE MANAGEMENT CONTRACTORS COMPOST (OR EQUAL)
 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.
- IN THE EVENT THE SOIL IS CLAY BASED, THE PLANTS SHOULD BE PLANTED WITH AMENDED TOPSOIL PER SPECIFICATIONS STATED HERE WITHIN. ANY EXCESS CLAY MATERIAL SHALL BE RELOCATED ELSEWHERE ON SITE AND NOT PLACED ADJACENT TO ANY BUILDING FOUNDATION. POSITIVE DRAINAGE AWAY FROM THE BUILDING FOUNDATION MUST BE MAINTAINED.
- 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. USE OF 'GATOR BAGS' (OR EQUAL) IN NON-IRRIGATED AREAS IS ACCEPTABLE AND SHOULD BE CHECKED/FILLED WEEKLY.
- 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 HYDROSEEDDED AND MATTED WITH NAG S75 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.



Overall Reference Plan
 SCALE: 1" = 100'



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Project Name
Redwood Hartland MI
 Hartland Township, MI



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

Project Info
 Project # 23051
 Date 06/06/2024
 By SO, TF
 Scale As Noted

Revisions

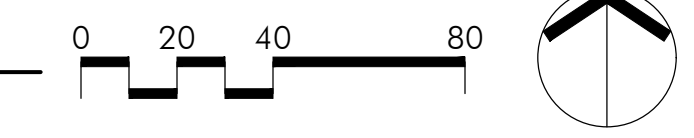
Sheet Title
OVERALL REFERENCE PLAN



Sheet #
L1.0



West Landscape Plan
SCALE: 1" = 40'



LEGEND

EXISTING TREES TO REMAIN



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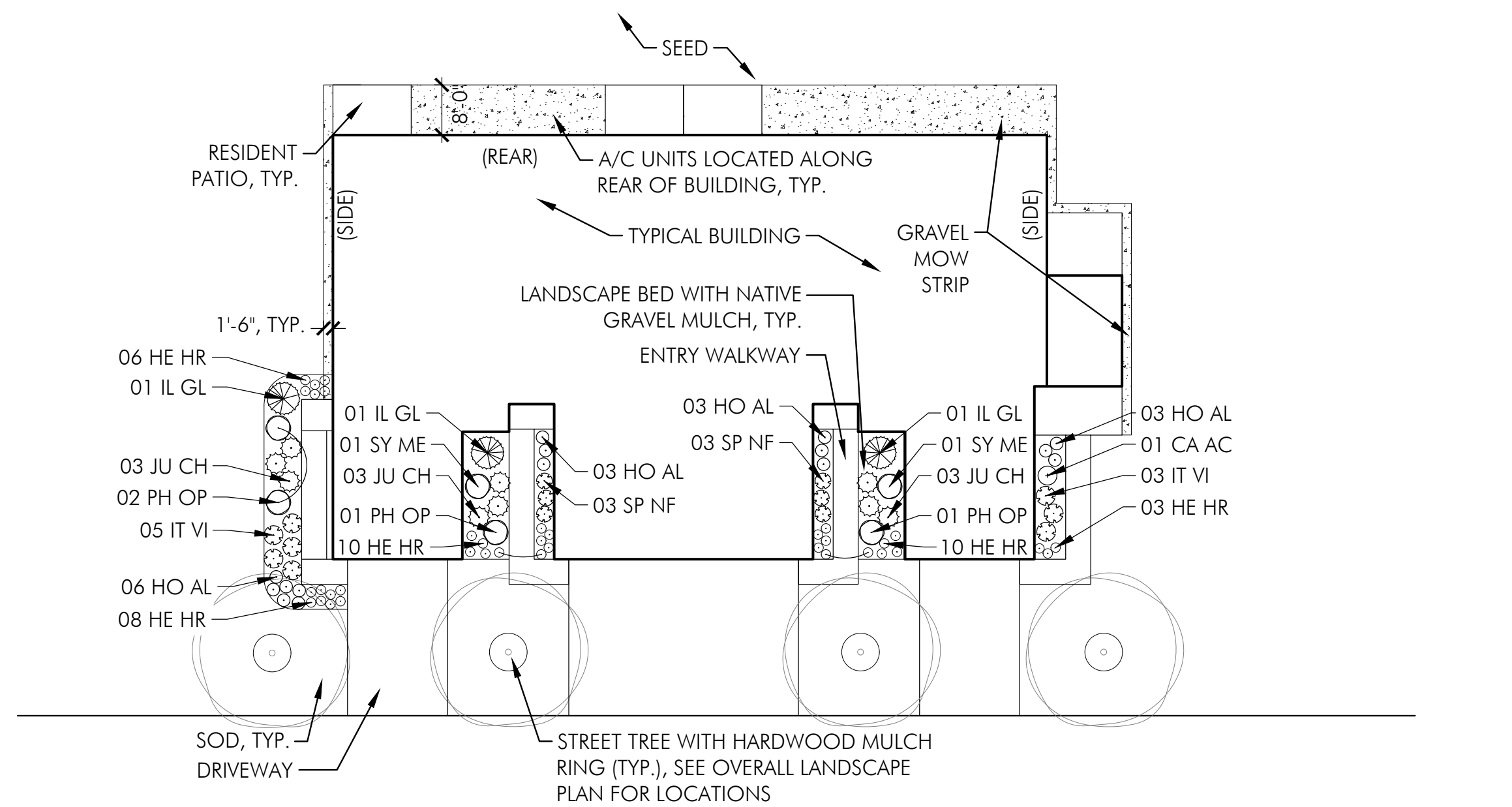
Revisions

Sheet Title
**WEST
LANDSCAPE
PLAN**

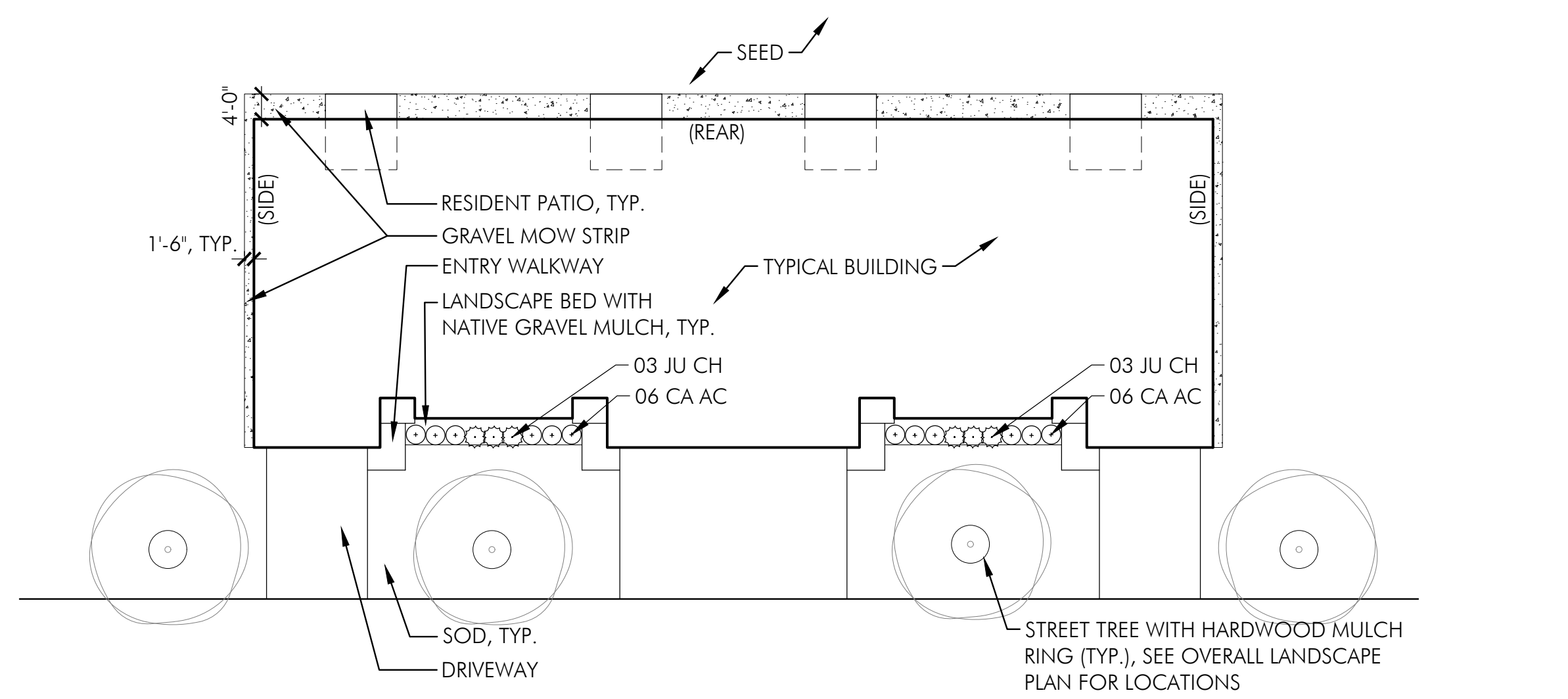


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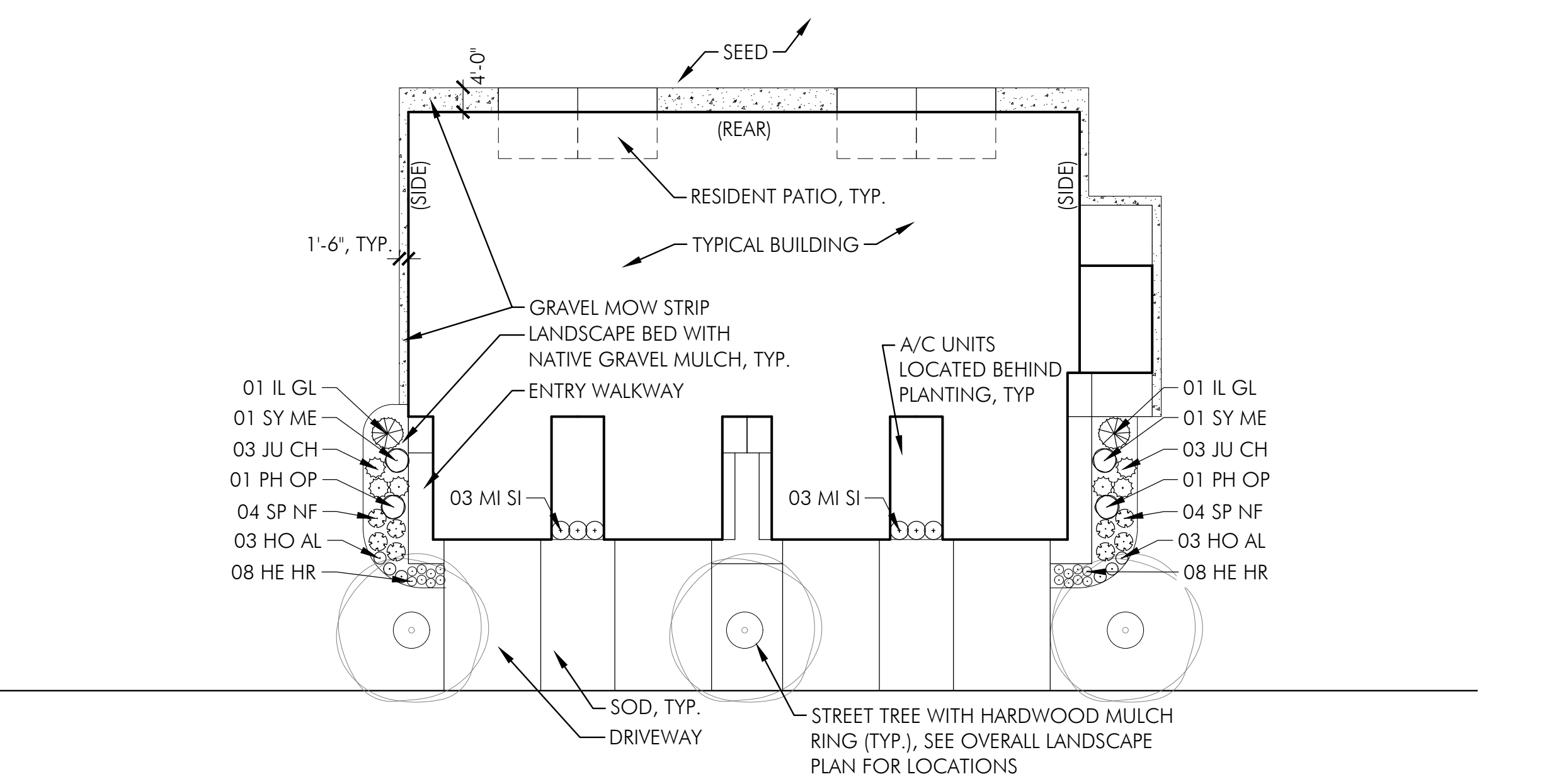
L1.2



1 Meadowood/Forestwood/Capewood Foundation Planting - Buildings: HH, JJ, MM, PP, RR, UU, VV, WW, XX, AAA, BBB, CCC, DDD, EEE, FFF, HHH, JJJ, & LLL
SCALE: 1" = 20'



2 Willowood Foundation Planting - Buildings: KK, LL, NN, QQ, SS, YY, ZZ, & GGG
SCALE: 1" = 20'



3 Breezewood Foundation Planting - Buildings: GG & TT
SCALE: 1" = 20'

PLANT LIST: MEADOWOOD/FORESTWOOD/CAPEWOOD BUILDING - 4 UNIT						
QTY.	SYMBOL	BOTANICAL NAME	COMMON NAME	SIZE	COND.	SPACING
SHRUBS						
3	IL GL	<i>Ilex glabra</i> 'Densa'	Densa Compact Inkberry	18" hgt.	Cont.	As Shown
8	IT VI	<i>Itea virginiana</i>	Virginia Sweetspire	18" hgt.	Cont.	As Shown
9	JU CH	<i>Juniperus chinensis</i> 'Nicks Compact'	Nicks Compact Juniper	18" hgt.	Cont.	As Shown
4	PH OP	<i>Physocarpus opulifolius</i> 'Little Devil'	Little Devil Ninebark	18" hgt.	Cont.	As Shown
6	SP NF	<i>Spiraea</i> x 'Neon Flash'	Neon Flash Spirea	18" hgt.	Cont.	As Shown
2	SY ME	<i>Syringa meyeri</i>	Palabin Lilac	30" hgt.	Cont.	As Shown
PERENNIALS & ORNAMENTAL GRASSES						
1	CA AC	<i>Calamagrostis</i> x <i>acutiflora</i> 'Karl Foerster'	Karl Foerster Feather Reed Grass	2 gal.	Cont.	As Shown
37	HE HR	<i>Hemerocallis</i> 'Happy Returns'	Happy Returns Daylily	1 gal.	Cont.	As Shown
15	HO AL	<i>Hosta</i> 'Fortunei Albamarginata'	Variiegated Hosta	1 gal.	Cont.	As Shown

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

PLANT LIST: WILLOWOOD BUILDING - 4 UNIT						
QTY.	SYMBOL	BOTANICAL NAME	COMMON NAME	SIZE	COND.	SPACING
SHRUBS						
6	JU CH	<i>Juniperus chinensis</i> 'Nicks Compact'	Nicks Compact Juniper	18" hgt.	Cont.	As Shown
PERENNIALS & ORNAMENTAL GRASSES						
12	CA AC	<i>Calamagrostis</i> x <i>acutiflora</i> 'Karl Foerster'	Karl Foerster Feather Reed Grass	2 gal.	Cont.	As Shown

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

PLANT LIST: BREEZEWOOD BUILDING W/ SUNROOM - 4 UNIT						
QTY.	SYMBOL	BOTANICAL NAME	COMMON NAME	SIZE	COND.	SPACING
SHRUBS						
2	IL GL	<i>Ilex glabra</i> 'Densa'	Densa Compact Inkberry	18" hgt.	Cont.	As Shown
6	JU CH	<i>Juniperus chinensis</i> 'Nicks Compact'	Nicks Compact Juniper	18" hgt.	Cont.	As Shown
2	PH OP	<i>Physocarpus opulifolius</i> 'Little Devil'	Little Devil Ninebark	18" hgt.	Cont.	As Shown
8	SP NF	<i>Spiraea</i> x 'Neon Flash'	Neon Flash Spirea	18" hgt.	Cont.	As Shown
2	SY ME	<i>Syringa meyeri</i>	Palabin Lilac	30" hgt.	Cont.	As Shown
PERENNIALS & ORNAMENTAL GRASSES						
16	HE HR	<i>Hemerocallis</i> 'Happy Returns'	Happy Returns Daylily	1 gal.	Cont.	As Shown
6	HO AL	<i>Hosta</i> 'Albomarginata'	'Albomarginata' Hosta	1 gal.	Cont.	As Shown
6	MI SI	<i>Miscanthus sinensis</i> 'Gracillimus'	Maiden Grass	1 gal.	Cont.	As Shown

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



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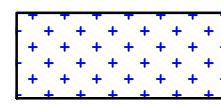
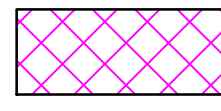

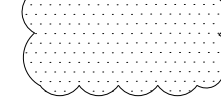
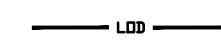
Sheet Title
TYPICAL FOUNDATION PLANTING



Sheet #

L1.3

LEGEND

-  SEED (LOW MOW/NO MOW) AREA - SEE DETAILS THIS SHEET ±150,750 sf (±3.5 ac)
-  SEED (TURF) AREA ±229,900 sf (±5.3 ac)
-  SOD AREA ±94,140 sf (±2.2 ac)
-  EXISTING TREES TO REMAIN
-  LIMITS OF DISTURBANCE

SPECIFICATIONS

- SOD**
- SOD SPECIFICATIONS TO BE PROVIDED FOR OWNER APPROVAL PRIOR TO INSTALLATION
- SEED (TURF)**
- SEED SPECIFICATIONS TO BE PROVIDED FOR OWNER APPROVAL PRIOR TO INSTALLATION

LOW MOW / NO MOW SEED (SEE TABLE THIS SHEET)

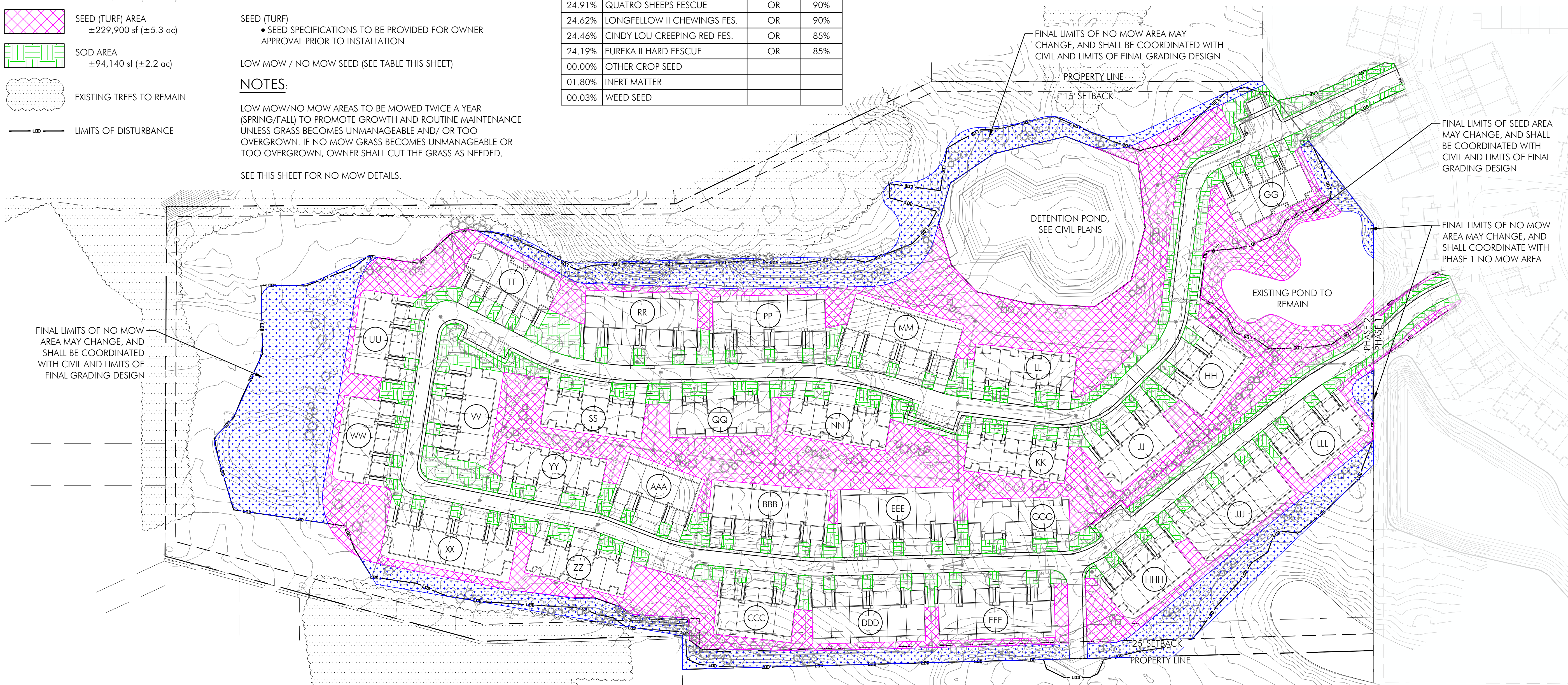
NOTES:

LOW MOW/NO MOW AREAS TO BE MOWED TWICE A YEAR (SPRING/FALL) TO PROMOTE GROWTH AND ROUTINE MAINTENANCE UNLESS GRASS BECOMES UNMANAGEABLE AND/ OR TOO OVERGROWN. IF NO MOW GRASS BECOMES UNMANAGEABLE OR TOO OVERGROWN, OWNER SHALL CUT THE GRASS AS NEEDED.

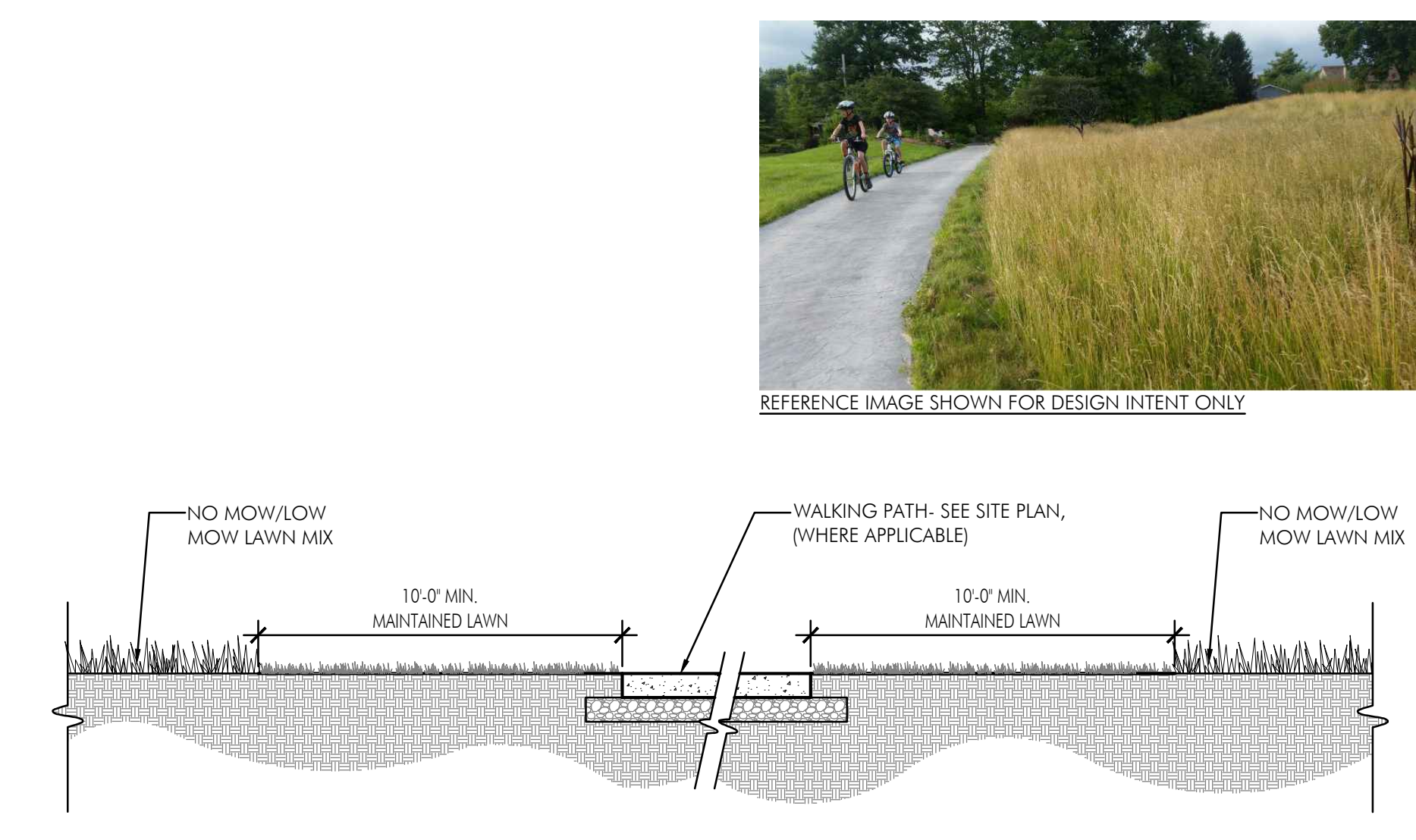
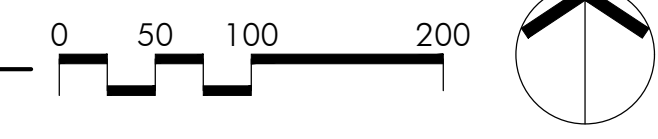
SEE THIS SHEET FOR NO MOW DETAILS.

NO MOW / LOW MOW SEED MIX

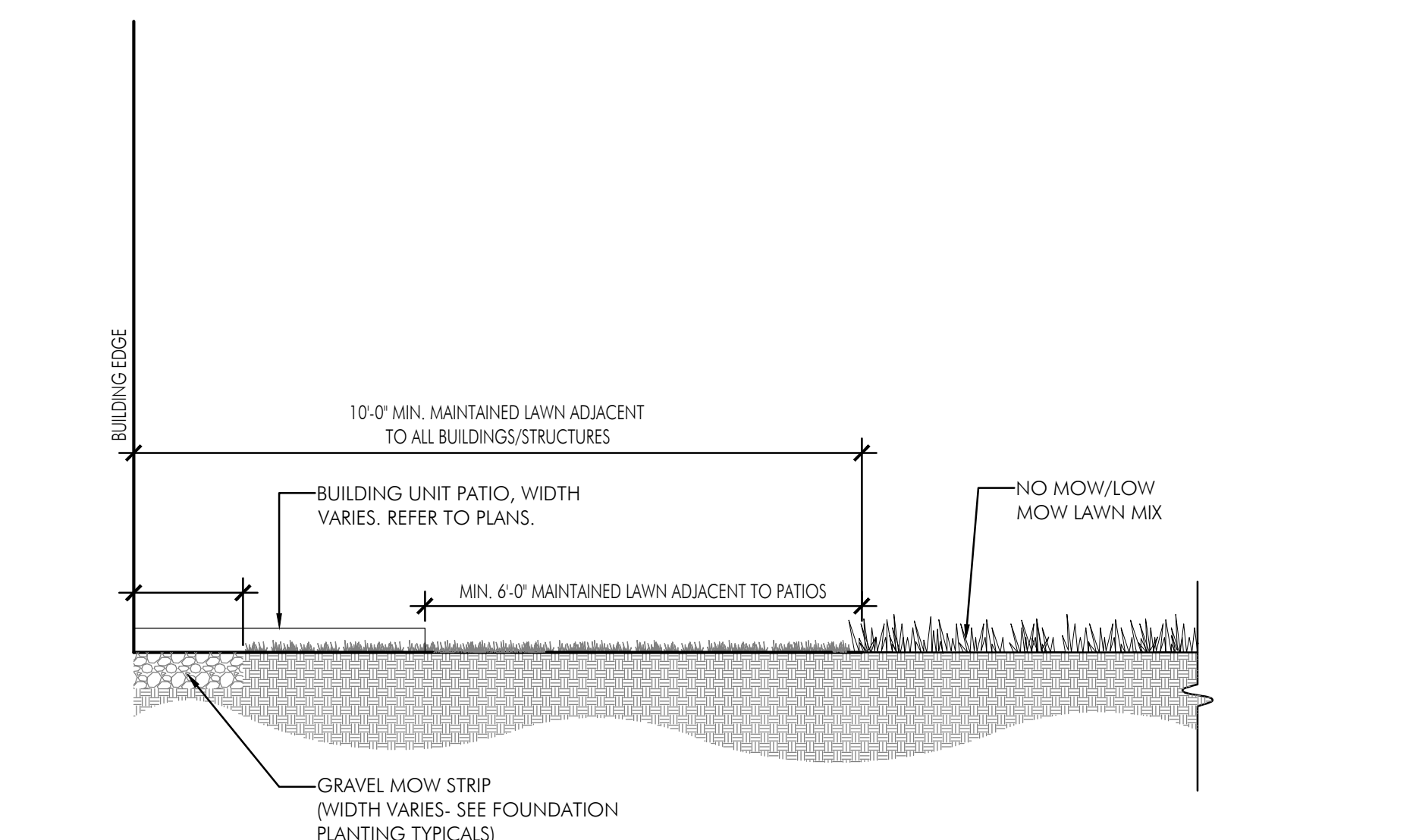
% PURE	SEED VARIETY	ORIGIN	GERM
24.91%	QUATRO SHEEPS FESCUE	OR	90%
24.62%	LONGFELLOW II CHEWINGS FES.	OR	90%
24.46%	CINDY LOU CREEPING RED FES.	OR	85%
24.19%	EUREKA II HARD FESCUE	OR	85%
00.00%	OTHER CROP SEED		
01.80%	INERT MATTER		
00.03%	WEED SEED		



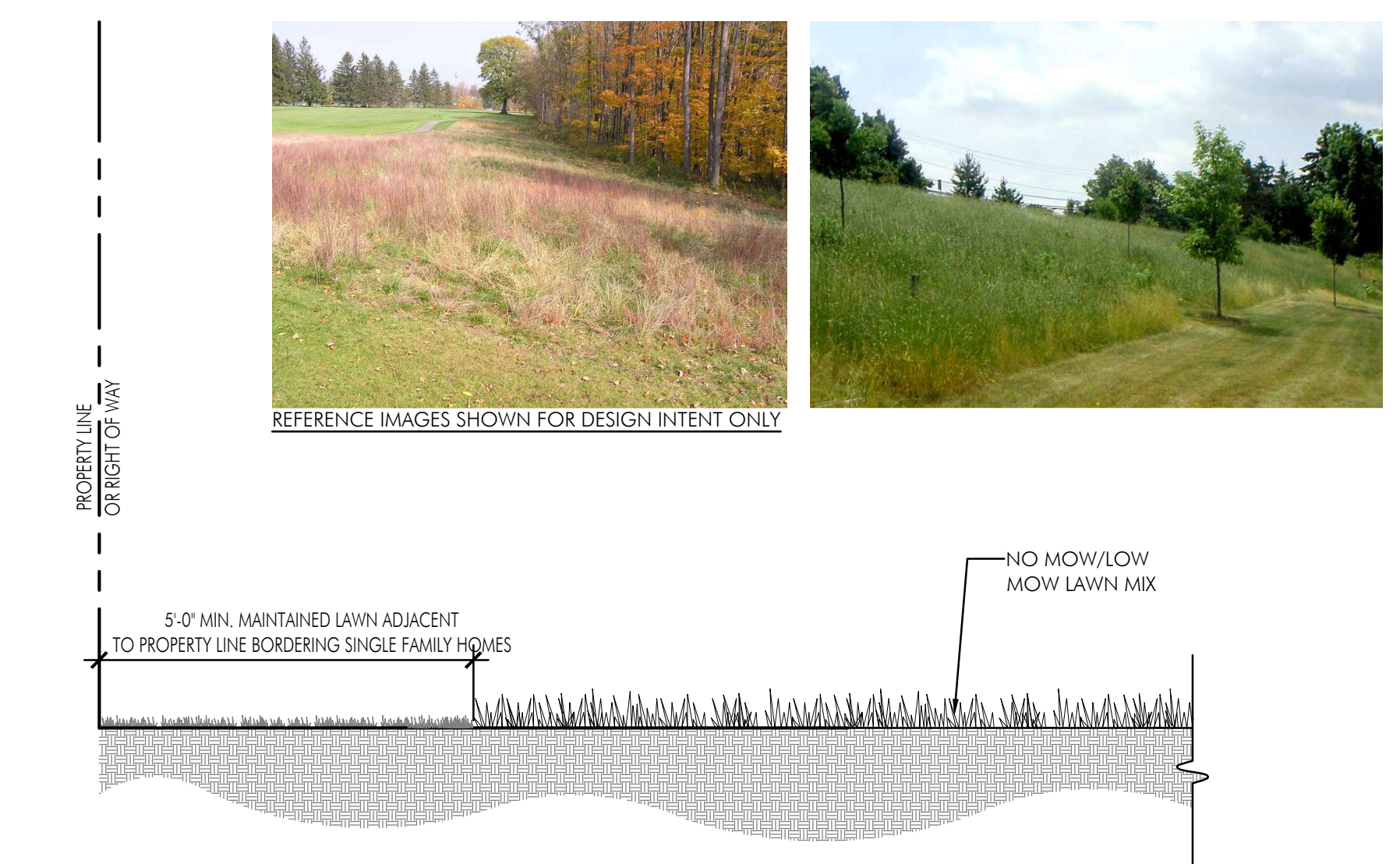
1 Seed & Sod Plan
SCALE: 1" = 100'



2 Typical Low Mow/No Mow Lawn Adjacent to Walking Paths/Sidewalks
1/2" = 1'-0"



3 Typical Low Mow/No Mow Lawn Treatment Adjacent to Buildings/Structures
1/2" = 1'-0"



4 Typical Low Mow/No Mow Lawn Treatment Adjacent to Property Line or ROW
1/2" = 1'-0"



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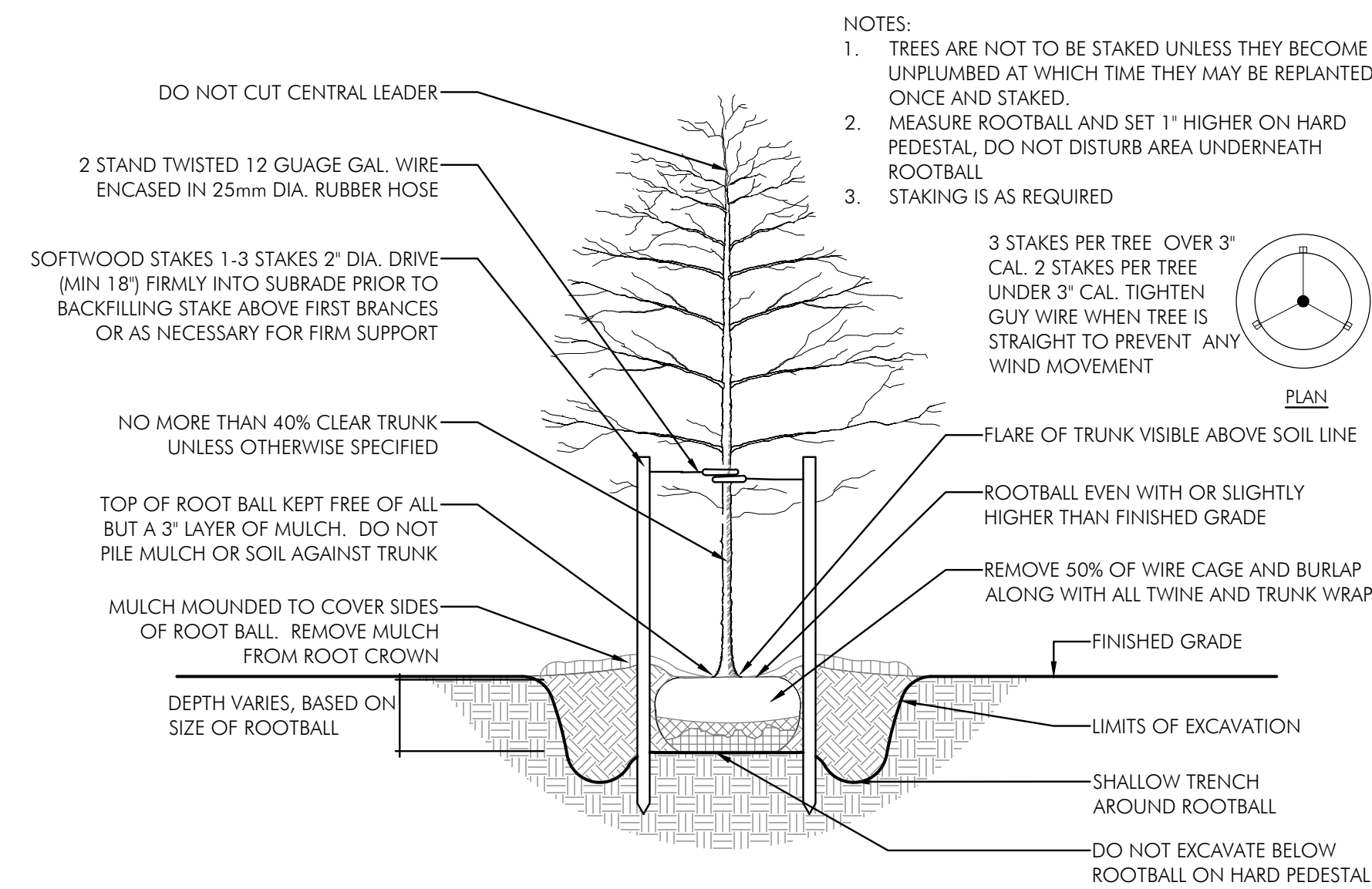
Revisions

Sheet Title
SEED & SOD PLAN



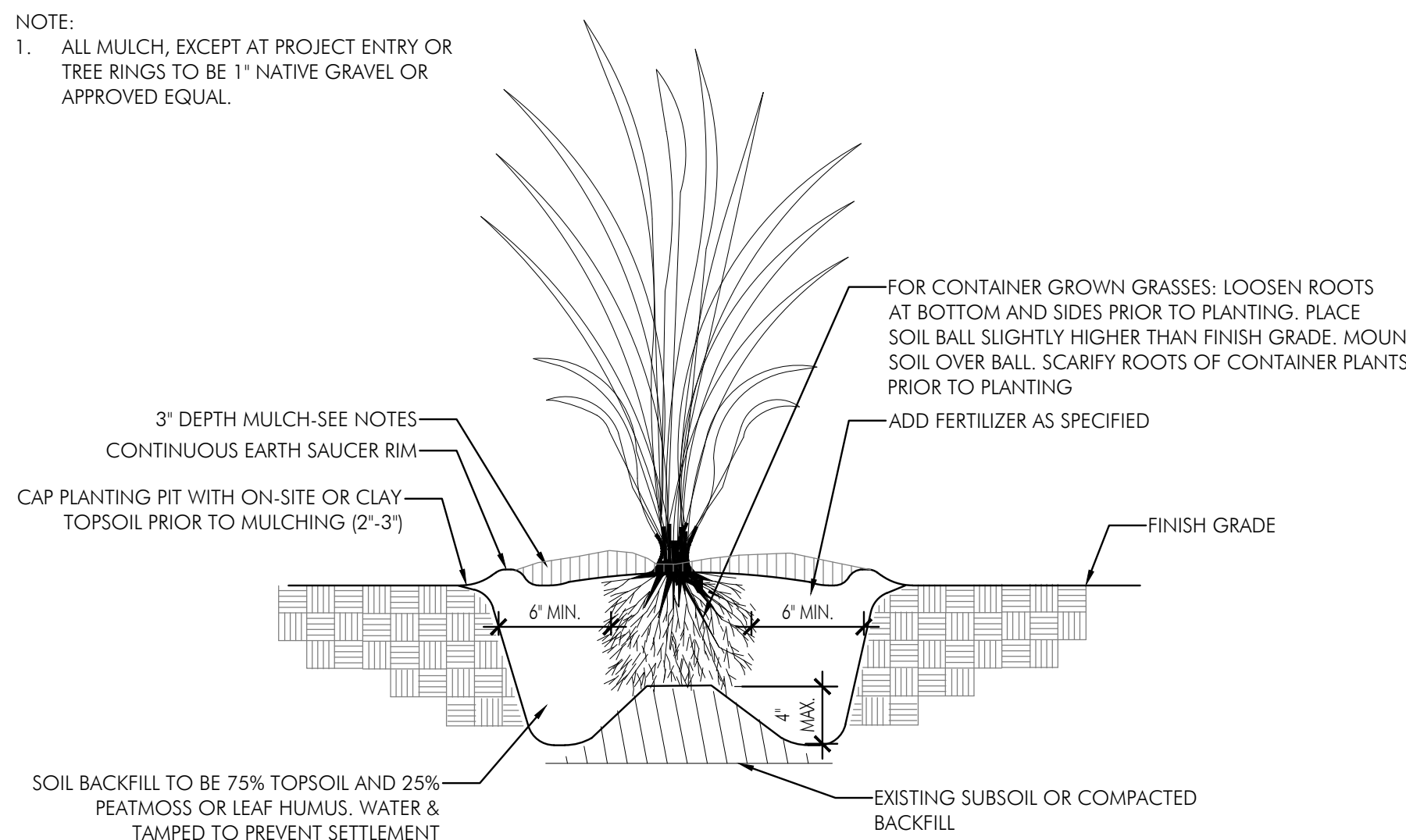
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L2.0

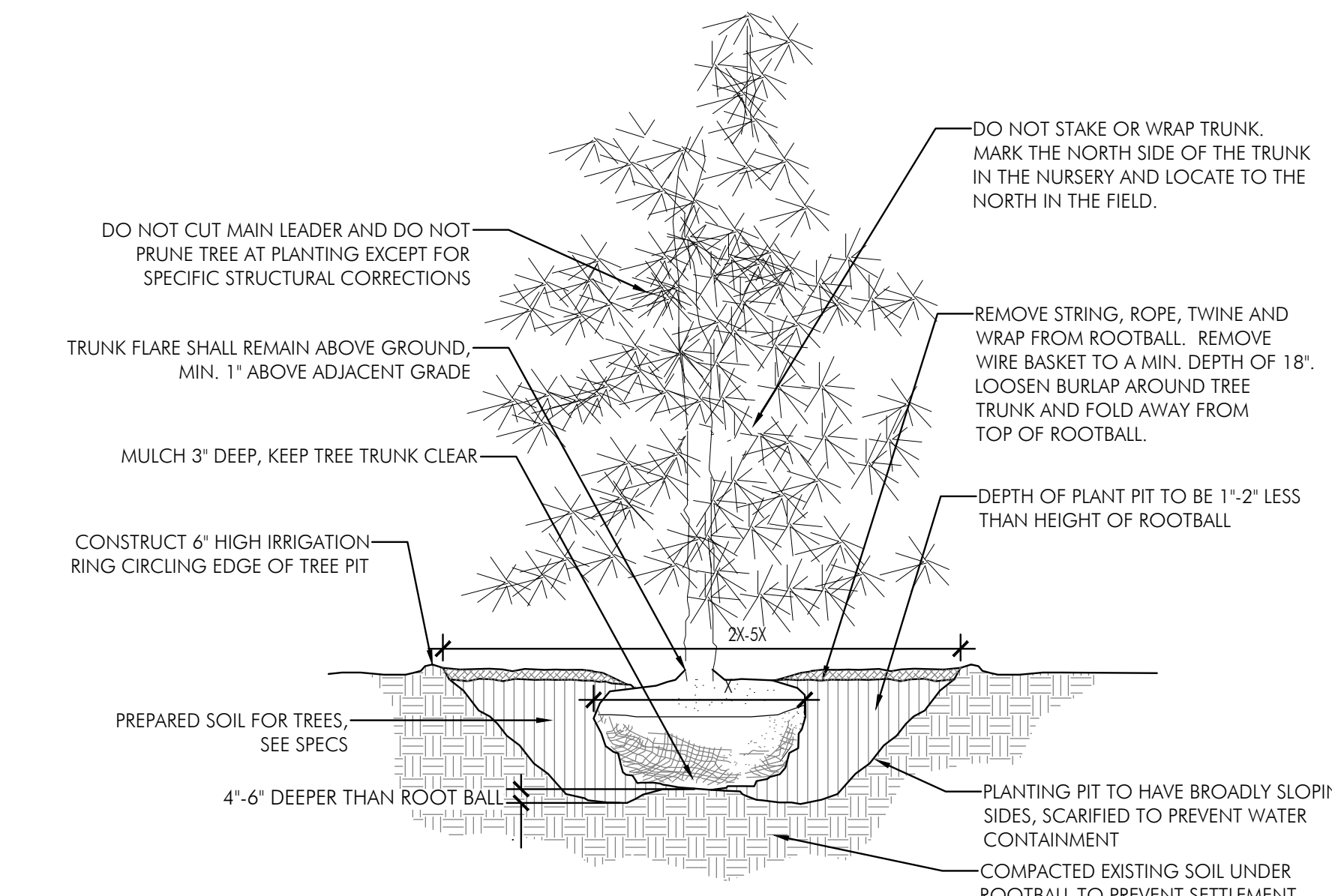


1 Tree Planting
N.T.S.

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

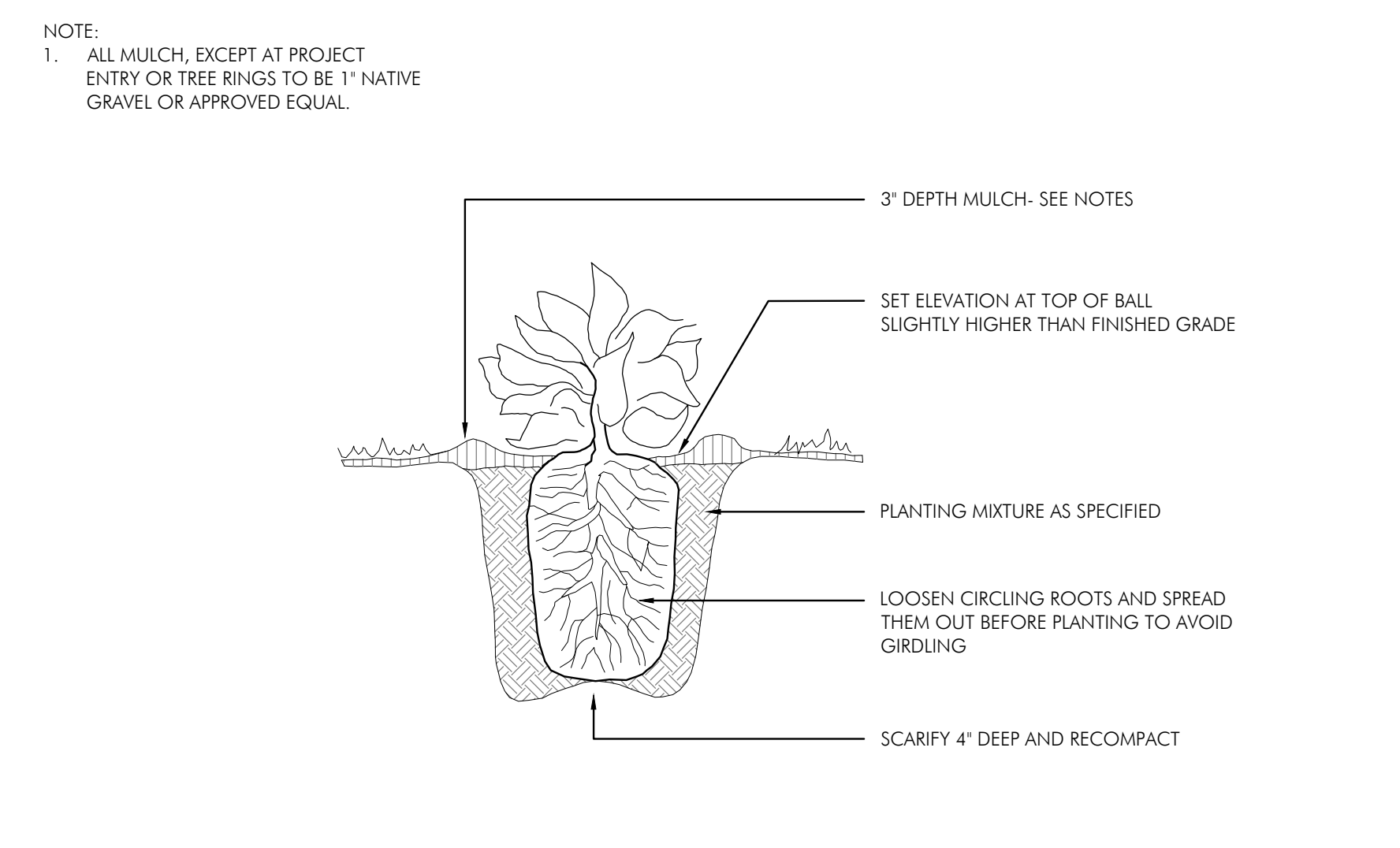


4 Grass Planting
1/2"=1'-0"

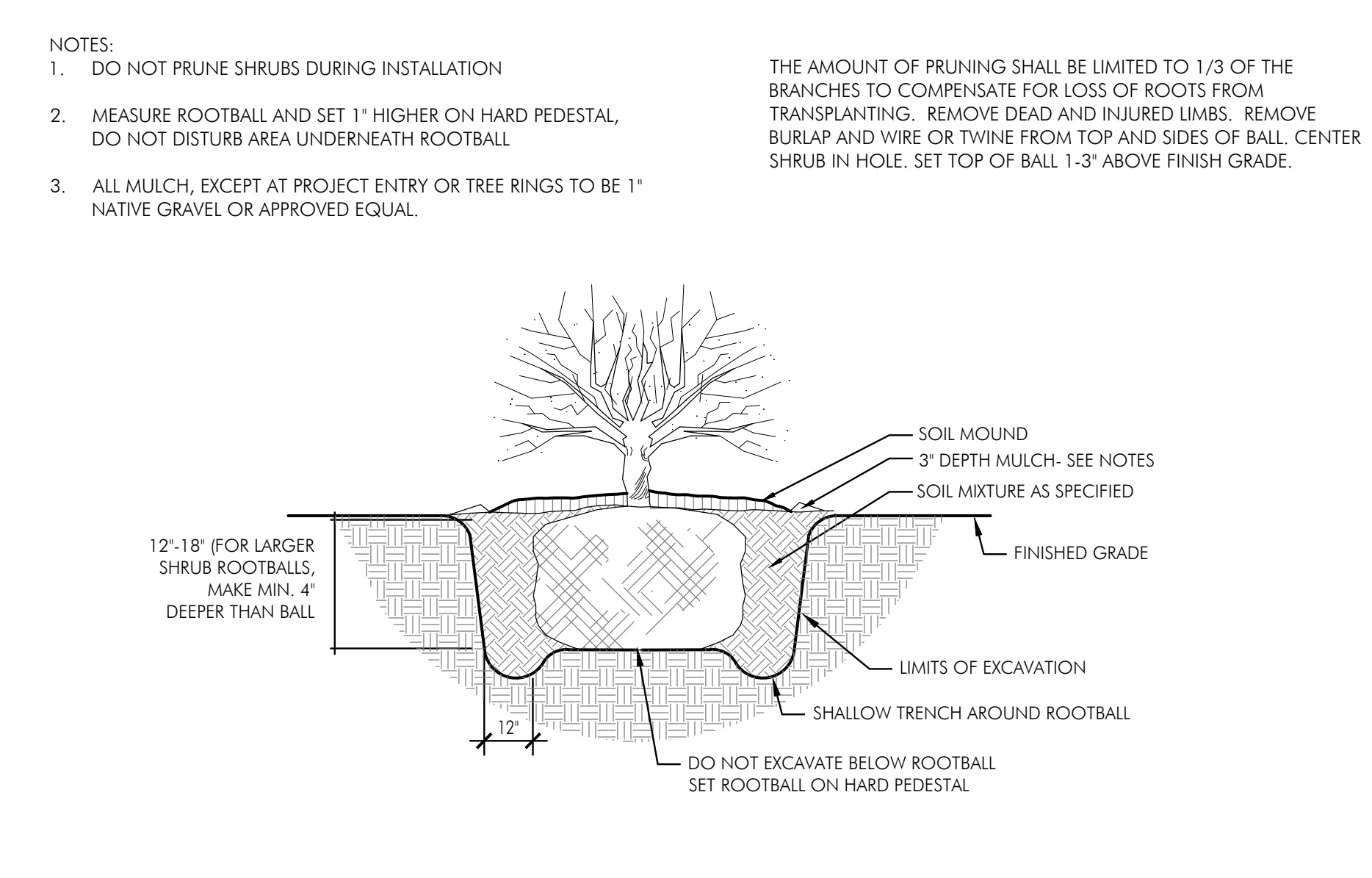


2 Evergreen Planting
1"=1'-0"

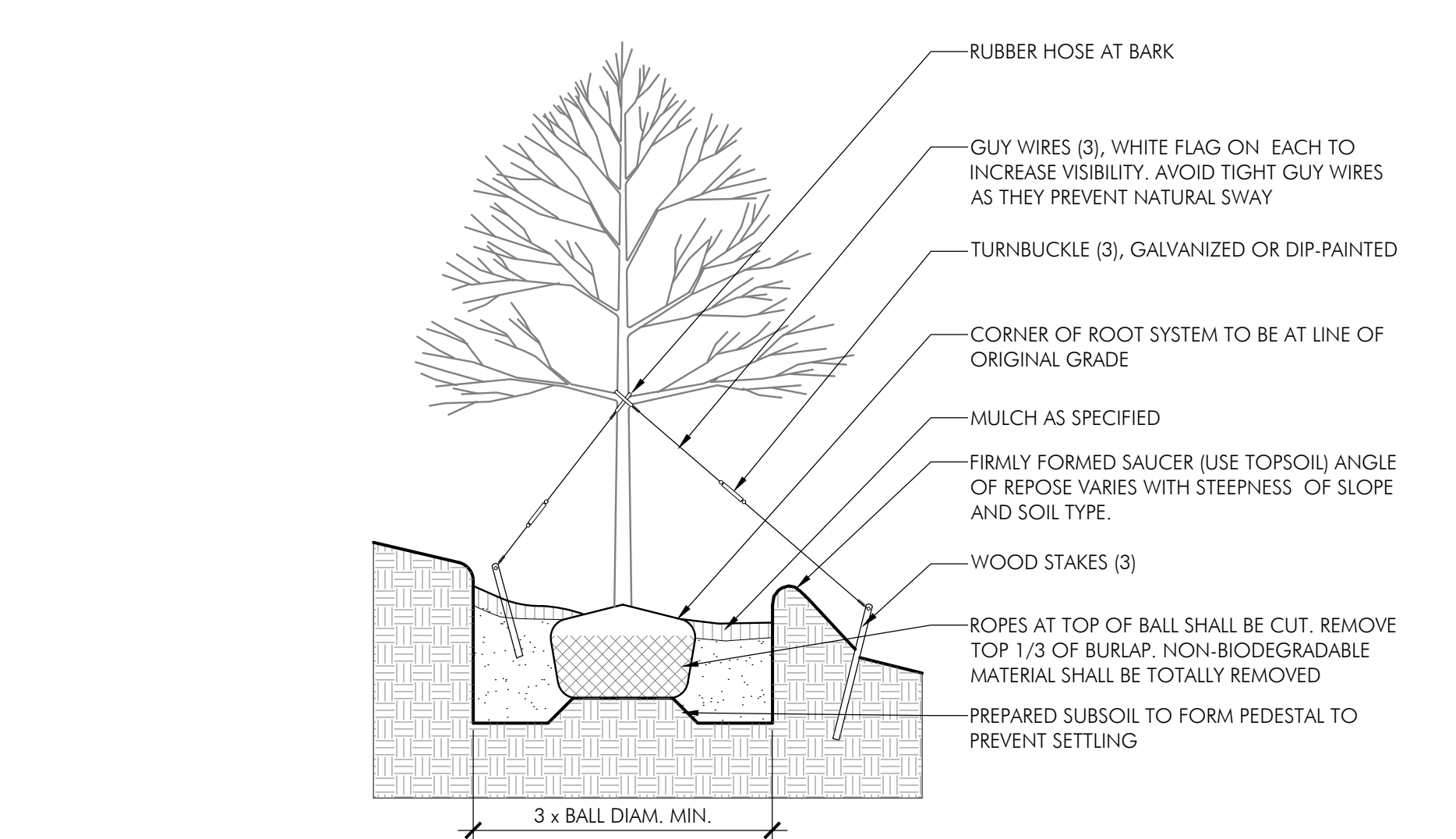
NOTE:
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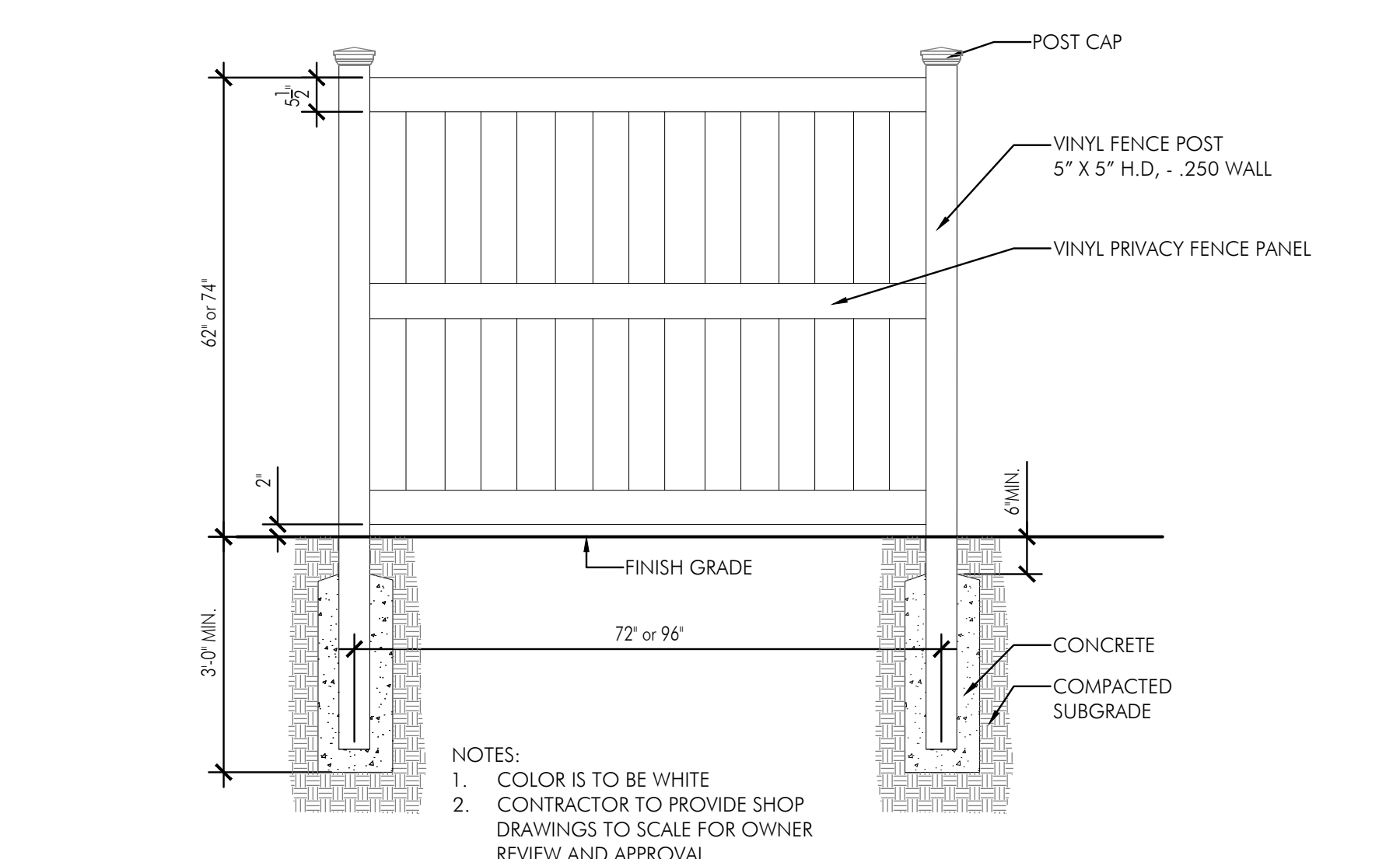
5 Perennial Planting
N.T.S.



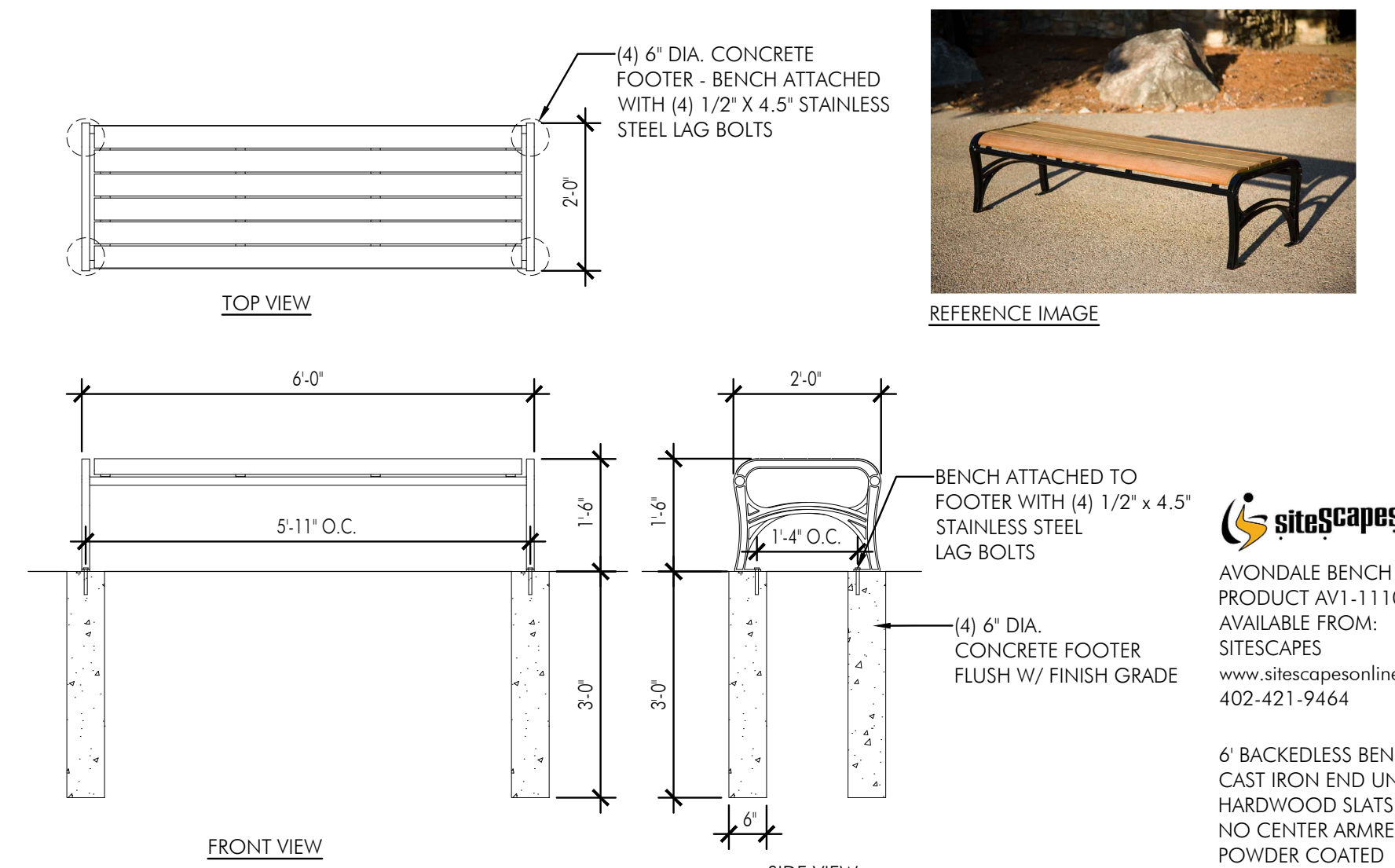
3 Shrub Planting
N.T.S.



6 Tree Planting on a Slope
N.T.S.



7 Vinyl Privacy Fence
1/2"=1'-0"



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

REDWOOD HARTLAND HIGHLAND ROAD PHASE 1

BUILDING: F

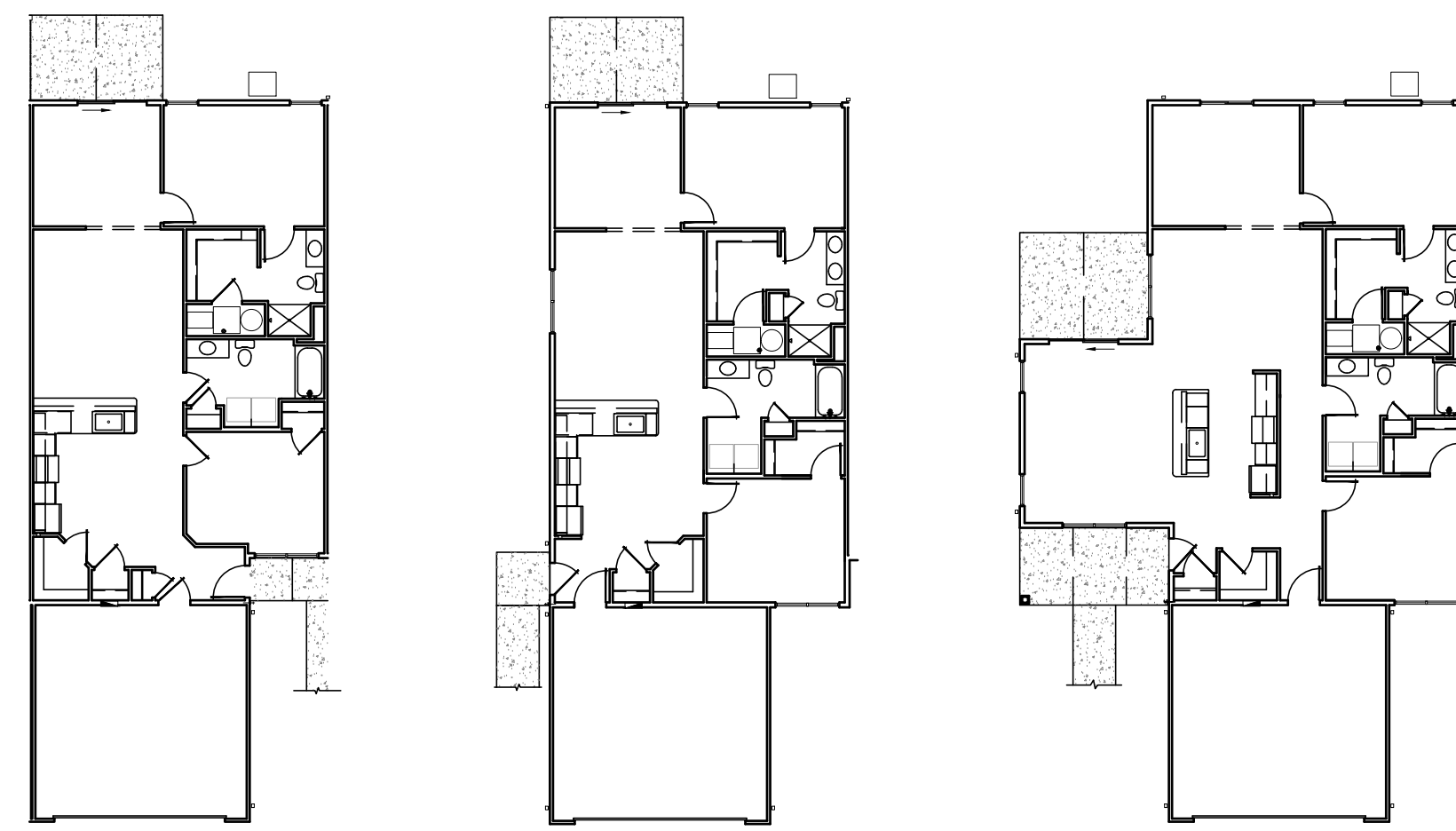
12400 HIGHLAND ROAD
HARTLAND (TWP.), MICHIGAN 4835
PROJECT NO.: 22921
P.P.N.: 4708-26-100-019

JOB CODE: mi076

FEBRUARY 24, 2023



NOTE: RENDERING DOES NOT DEPICT ACTUAL EXTERIOR FINISH MATERIALS, OR SPECIFIC PROJECT BUILDING



FORESTWOOD
SCALE: 1/16" = 1'-0"

MEADOWOOD
SCALE: 1/16" = 1'-0"

CAPEWOOD
SCALE: 1/16" = 1'-0"

MATERIAL NOTE:

- ALL MATERIALS MUST BE INSTALLED PER MANUFACTURER'S SPECIFICATIONS.

BIDDING PRECAUTIONS

- PRIOR TO SUBMITTING PROPOSALS, BIDDERS SHALL EXAMINE DRAWINGS AND SPECIFICATIONS AND CONDUCT A PERSONAL EXAMINATION OF THE SITE AND BECOME AWARE OF ALL EXISTING CONDITIONS AND LIMITATIONS AFFECTING THE WORK AND THEIR PROPOSAL.

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- PROVIDE BEHIND WALL REINFORCING AND BLOCKING AS REQUIRED FOR ATTACHMENT OF MILLWORK, CASEWORK, TOILET ACCESS, ETC.
- THESE DESIGNS AND ALL ITEMS DEPICTED HEREIN, WHETHER IN WRITING OR GRAPHICALLY, AS INSTRUMENTS OF PROFESSIONAL SERVICE, MAY NOT BE ALTERED OR CHANGED, IN ANY WAY, WITHOUT THE PRIOR KNOWLEDGE AND WRITTEN CONSENT OF THE ARCHITECT. ANY CHANGE MADE WITHOUT THE ARCHITECT'S WRITTEN APPROVAL WILL VOID ALL SUCH DOCUMENTS AND INSTRUMENTS AND THE ARCHITECT WILL NOT BE PERSONALLY LIABLE FOR ANY DAMAGE, HARM OR LOSS CAUSED THEREBY.
- THE VARIOUS DRAWINGS COMPRISING THIS SET OF DRAWINGS ARE INTERDEPENDENT AND MUST BE USED JOINTLY TO EXECUTE THE WORK.
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DRAWING INDEX

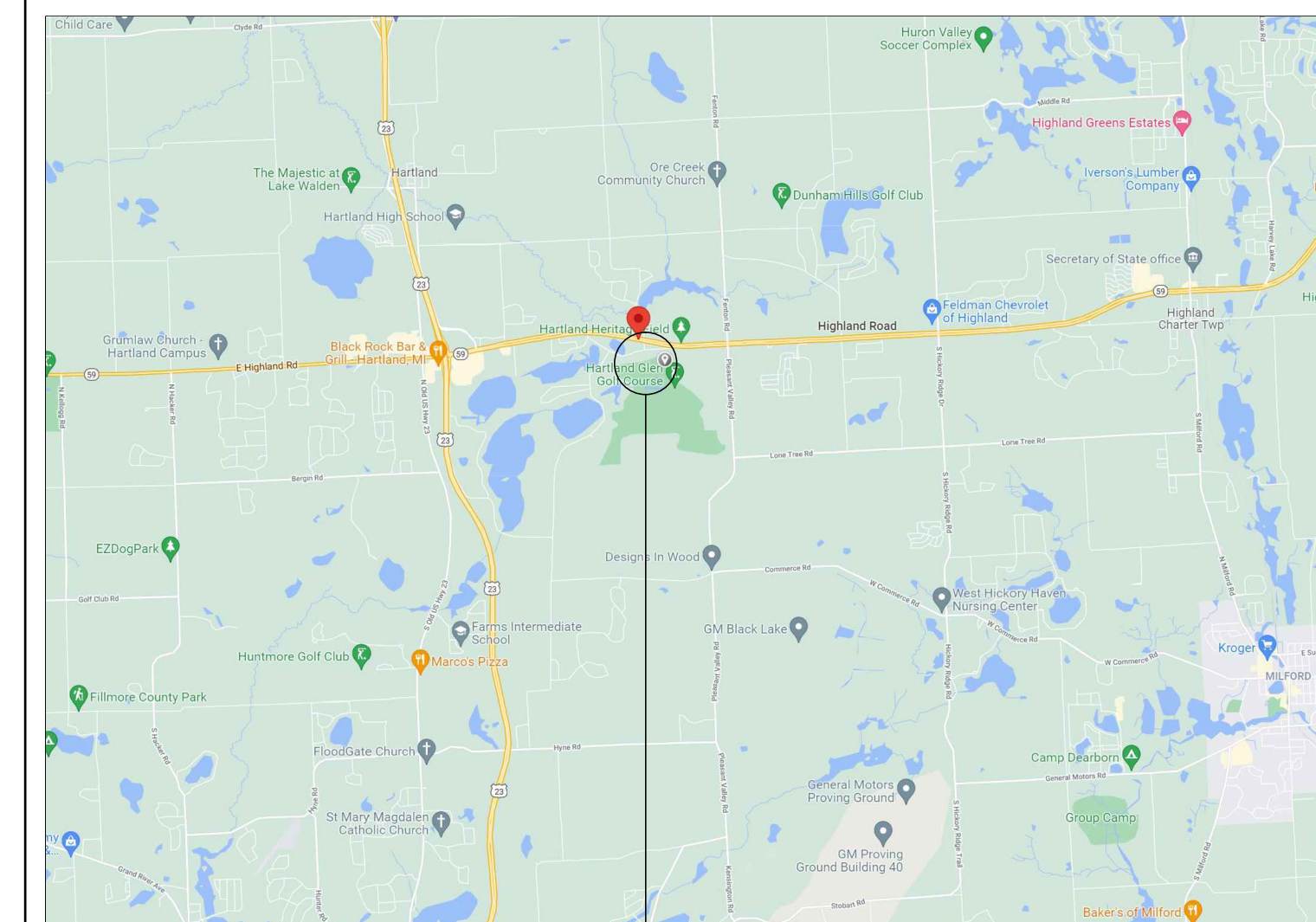
SEE SHEET T1.1 FOR DRAWING INDEX

BUILDING INFORMATION AND ADDRESSES

SEE SHEET T1.1 FOR BUILDING INFORMATION AND ADDRESSES

UNIQUE FEATURES OF PROJECT

- REDWOOD 2021 STANDARD ELEVATION MATERIALS OTHER THAN SIDING AND CORNER TRIM.
- 7" CLAPBOARD 'CELECT' CELLULAR COMPOSITE HORIZONTAL SIDING.
- CELLULAR PVC CORNER TRIM.
- 2HR SEPARATION WALLS BETWEEN EACH UNIT.
- 6" FOUNDATION EXPOSURE, GRADE TO BE 6" BELOW SILL PLATE.



VICINITY MAP
SCALE: N.T.S.



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P.: 517.827.8681

CODE DATA

APPLICABLE CODES:	(ALL RESIDENTIAL UNITS) M.R.C. (MICHIGAN RESIDENTIAL CODE) 2015
	(LEASING OFFICE) M.B.C. (MICHIGAN BUILDING CODE) 2015
	NATIONAL ELECTRIC CODE (NEC) 2020
	MICHIGAN MECHANICAL CODE (MMC) 2015
	MICHIGAN PLUMBING CODE (MPC) 2015

NOTE!

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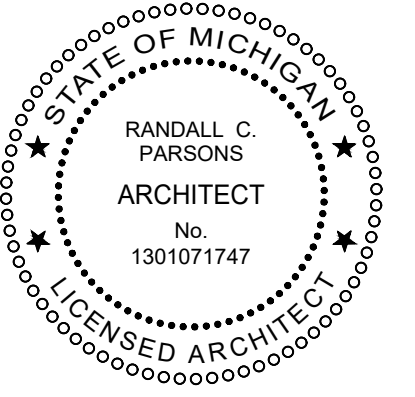
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Fairlawn, OH 44333
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TITLE SHEET
PROJECT #: 22921
DATE: FEBRUARY 24, 2023
REDWOOD HARTLAND HIGHLAND ROAD PH 1
12400 HIGHLAND ROAD
HARTLAND (TWP.), MICHIGAN 4835



T1.0
1 OF 2

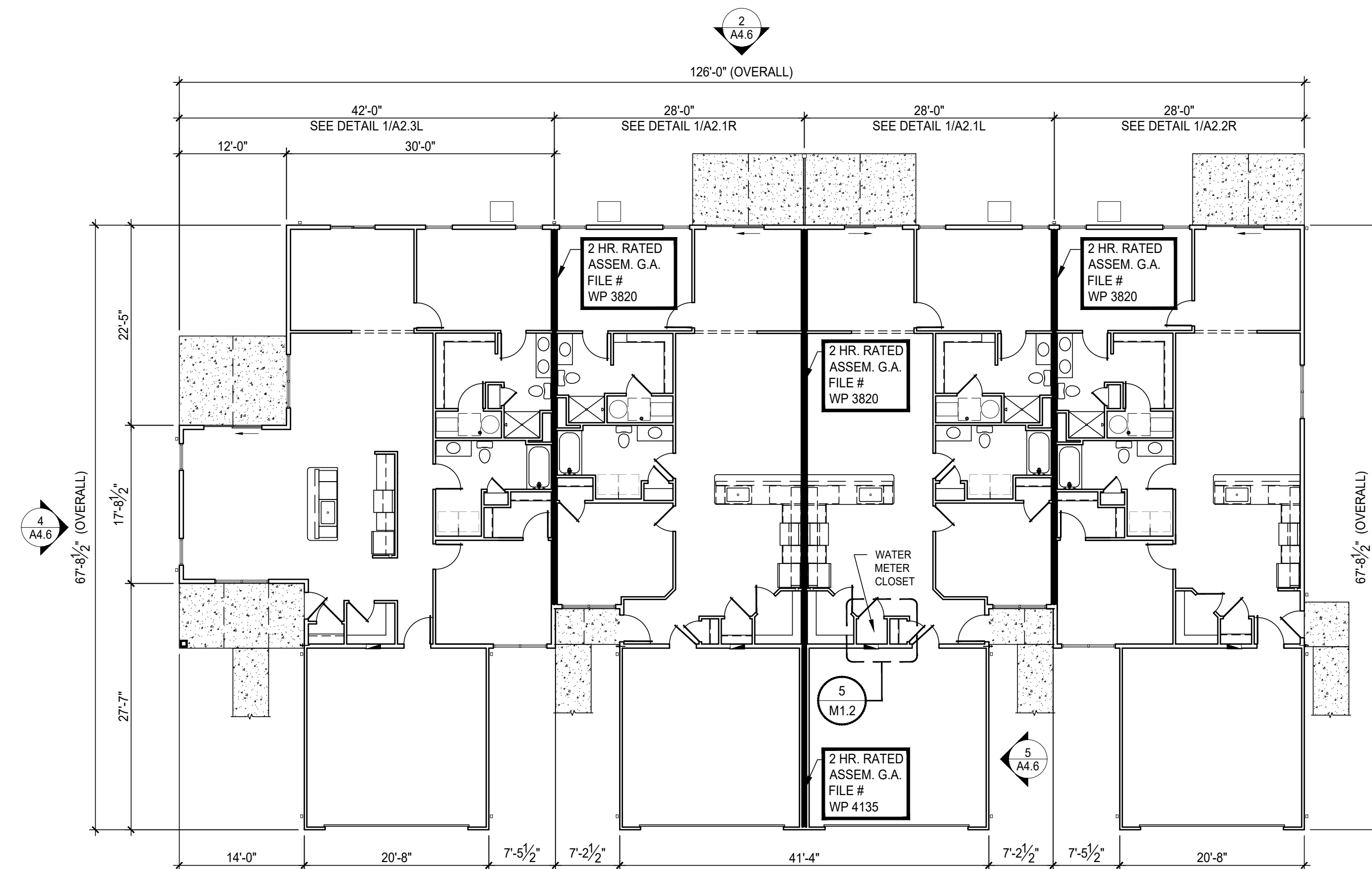


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Extended Garage Footprint is the same with the exception of the garage being 4' longer to accommodate large vehicles



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

GENERAL NOTES:

- REFER TO ENLARGED FLOOR PLANS FOR INTERIOR ROOM DIMENSIONS AND OTHER SPECIFIC INFORMATION.
- SEE SHEET SERIES A6.X FOR DOOR AND WINDOW SCHEDULES.
- CONTRACTOR SHALL PROVIDE ALL WALL BOXES, ETC. AS REQUIRED FOR ROUGH-IN CONDITIONS. TELEPHONE AND T.V. PREWIRE TO BE COMPLETED BEFORE INSTALLATION OF GYPSUM WALLBOARD.
- ALL GRAB BAR BLOCKING FOR FUTURE GRAB BARS AT HANDICAP BATHS MUST BE ABLE TO RESIST A FULL FORCE OF 250 LBS. EXERTED AT ANY POINT IN ANY DIRECTION ON FUTURE GRAB BARS. BLOCKING AT TUBS AND SHOWERS IS TO BE FACTORY INSTALLED.
- ALL DIMENSIONS ARE TO FACE OF STUD UNLESS OTHERWISE NOTED.
- FOR INTERIOR FINISHES FOR WALLS AND CEILINGS REFER TO FLAME AND SMOKE INDEX RATING ON SHEET SERIES A6.X.
- PRIMARY ENTRY DOORS SHALL HAVE "0" CLEARANCE THRESHOLDS TO MEET ALL ANSI REQUIREMENTS
- ALL EXPOSED EXTERIOR WOOD SHALL BE PRESSURE TREATED. SEE FRAMING PLANS & WALL SECTIONS FOR MORE INFORMATION.

NOTES:

- ALL SINGLE STORY UNITS MUST MEET FAIR HOUSING ACT ACCESSIBILITY GUIDELINES FOR ADAPTABILITY.
- ALL UNITS ARE TYPE 'B' DWELLING UNITS AS PER ANSI A117.1-2009, SECTION 1004.

NOTES:

REFER TO ENLARGED FLOOR PLAN SHEETS TO SEE CORRESPONDING PLANS FOR LABELED UNITS.

OVERALL FLOOR PLAN - BLDG.: F

PROJECT #: 22921 DATE: FEBRUARY 24, 2023

REDWOOD HARTLAND HIGHLAND MI P1

12400 HIGHLAND ROAD
 HARTLAND (TWP.), MICHIGAN 48353



A2.33
 11 OF 25

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EXTERIOR ELEVATIONS - BLDG.: F

DATE: FEBRUARY 24, 2023

PROJECT #: 22921

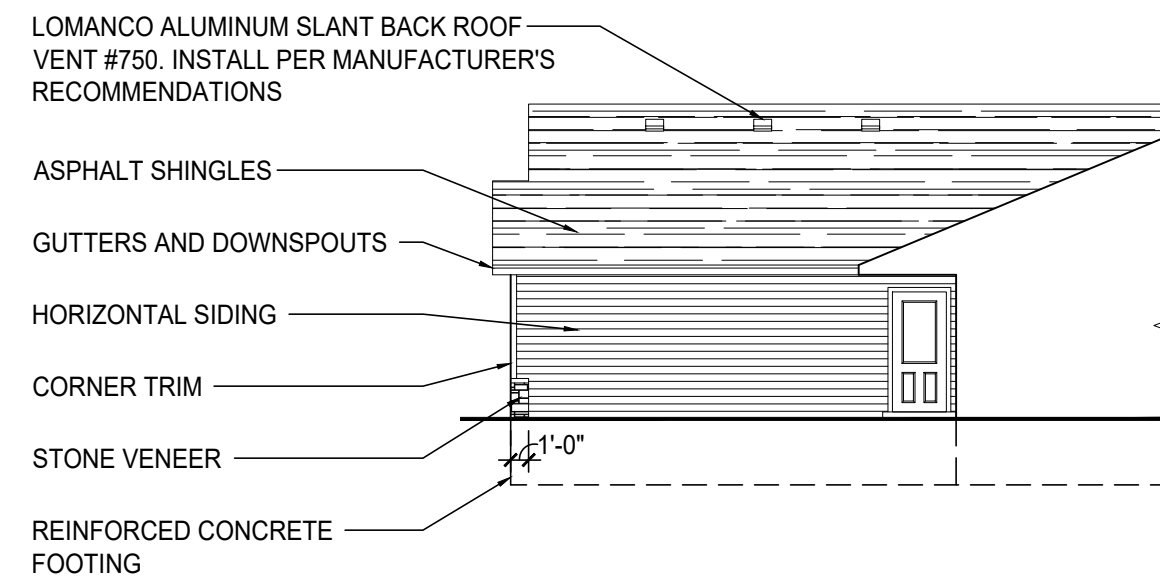
REDWOOD HARTLAND HIGHLAND MI P1



12400 HIGHLAND ROAD
 HARTLAND (TWP.), MICHIGAN 48353

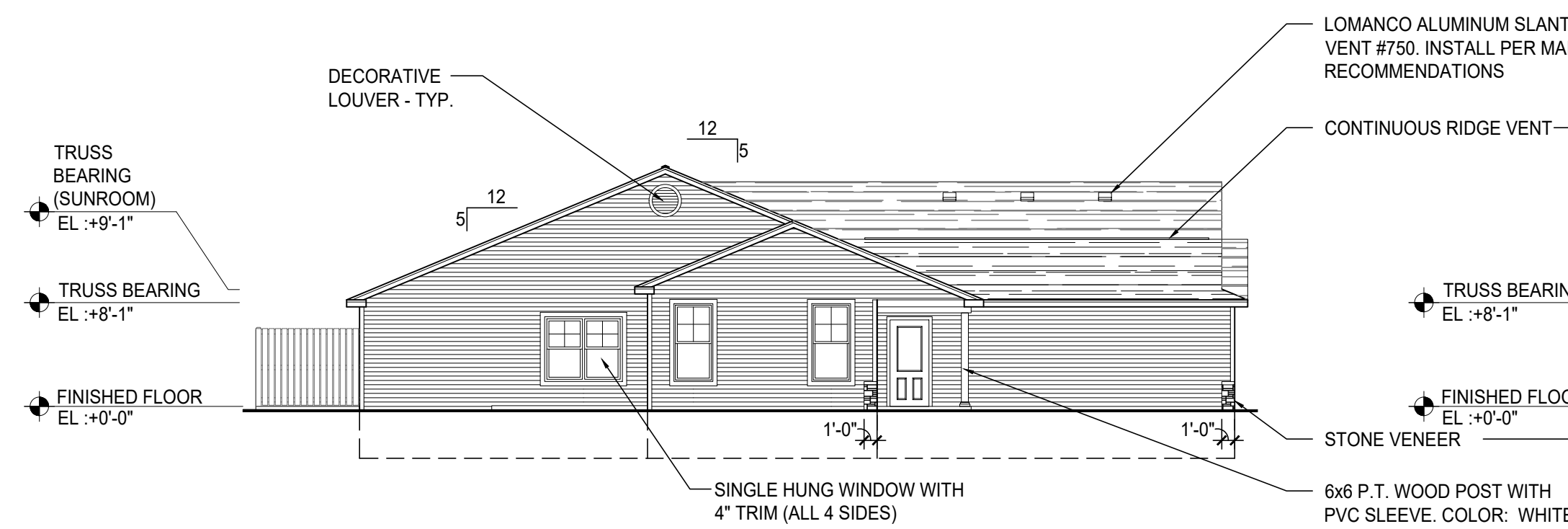
A4.6
 16 OF 25

NOTE:
 DO NOT INSTALL ANY
 VENTS OR PROVIDE ANY
 ROOF PENETRATIONS
 WITHIN FIRE RATED
 SHEATHING AREA 4'-0"
 EACH SIDE OF FIRE RATED
 WALL ASSEMBLIES.

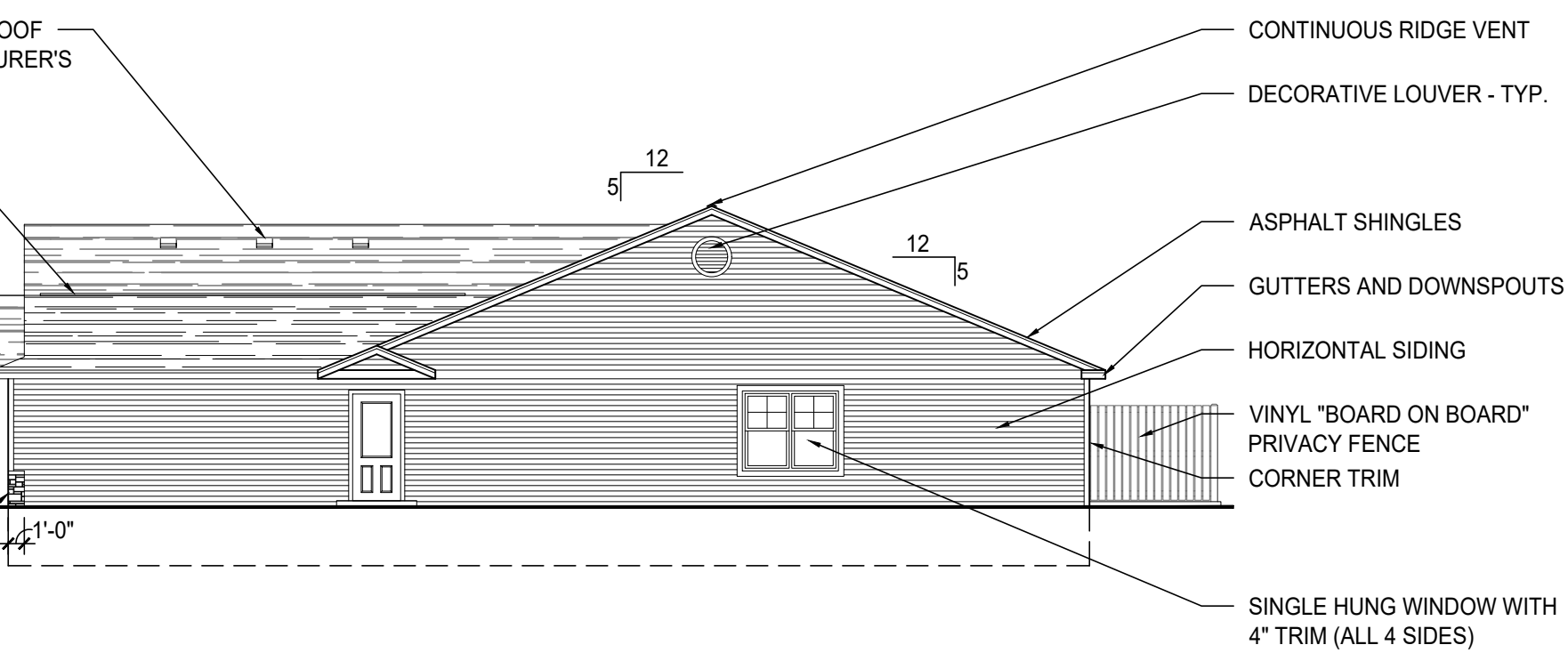


5 PARTIAL SIDE ELEVATION
 SCALE: 3/32" = 1'-0"
 BLDG: F

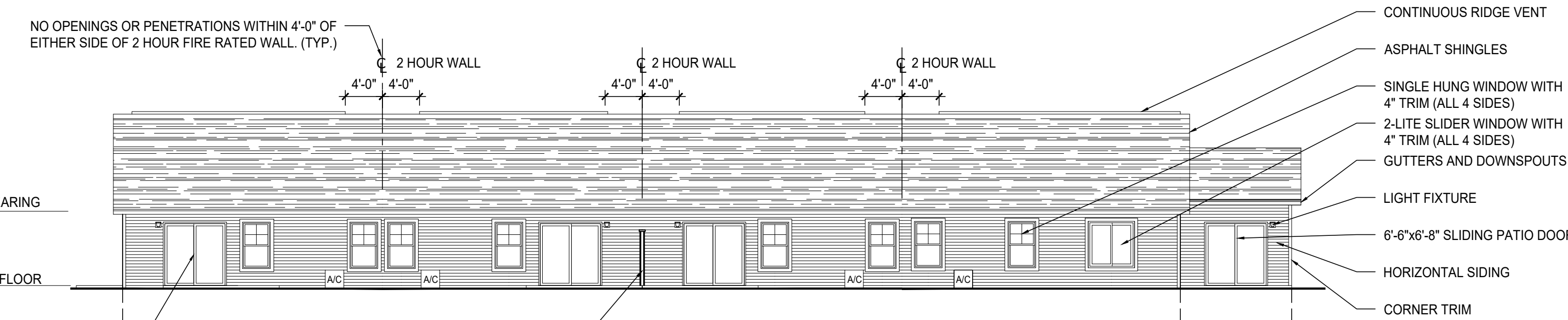
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 ROOF PENETRATIONS
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 SHEATHING AREA 4'-0"
 EACH SIDE OF FIRE RATED
 WALL ASSEMBLIES.



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

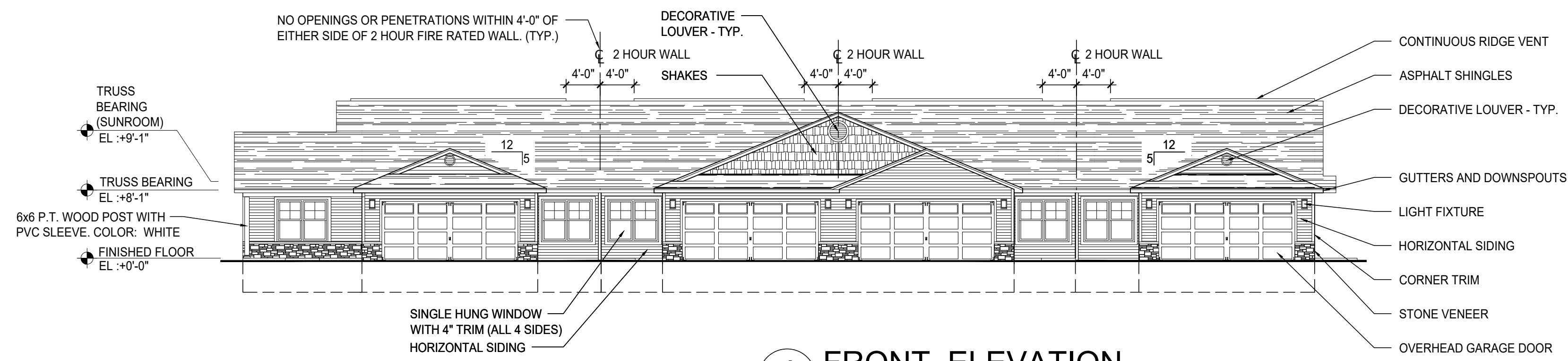


3 STANDARD SIDE ELEVATION
 SCALE: 3/32" = 1'-0"
 BLDG: F



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

PATIO DOOR TO MEET FHA MINIMUM REQUIREMENTS:
 • 1/4" HIGH VERTICAL RISE MAX. AT INTERIOR THRESHOLD
 • 32" CLEAR WIDTH DOOR OPENING (MIN.)
 • 1-1/2" HIGH x 43" WIDE TAPERED MAT (1:12 MAX SLOPE WITH TAPERED SIDES) AT INTERIOR OF PATIO DOOR.



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

ITEM:	MATERIAL / STYLE:	COLOR:
DECORATIVE LOUVER	VINYL	WHITE
ASPHALT SHINGLES	DIMENSIONAL 30 YEAR LAMINATED	WEATHERED WOOD
GUTTERS AND DOWNSPOUTS	PREFINISHED ALUMINUM	WHITE
HORIZONTAL SIDING	7" CLAPBOARD CELECT CELLULAR COMPOSITE	VARIES
SHAKES	VINYL	VARIES
CORNER TRIM	CELLULAR PVC TRIM	WHITE
STONE VENEER	PRESTIGE PROVIA	OHIO SOUTHERN LIMESTONE
OVERHEAD GARAGE DOOR	RAISED PANEL PAN STEEL	WHITE
SINGLE HUNG	VINYL	STANDARD WHITE WITH COLONIAL PATTERN FLAT GRIDS
6'-6" X 6'-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.

REDWOOD HARTLAND HIGHLAND ROAD PHASE 1

BUILDING: L

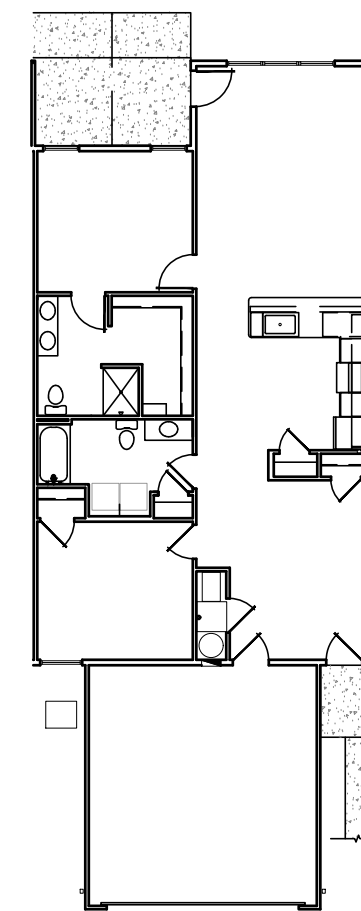
12400 HIGHLAND ROAD
HARTLAND (TWP.), MICHIGAN 4835
PROJECT NO.: 22921
P.P.N.: 4708-26-100-019

JOB CODE: mi076

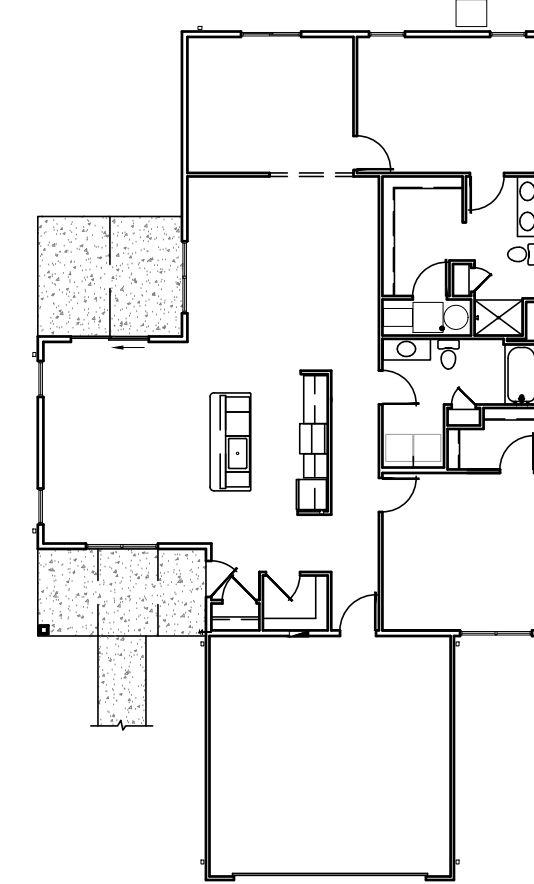
MARCH 3, 2023



NOTE: RENDERING DOES NOT DEPICT ACTUAL EXTERIOR FINISH MATERIALS, OR SPECIFIC PROJECT BUILDING



BREEZEWOOD
SCALE: 1/16" = 1'-0"



BREEZEWOOD SUNROOM
SCALE: 1/16" = 1'-0"

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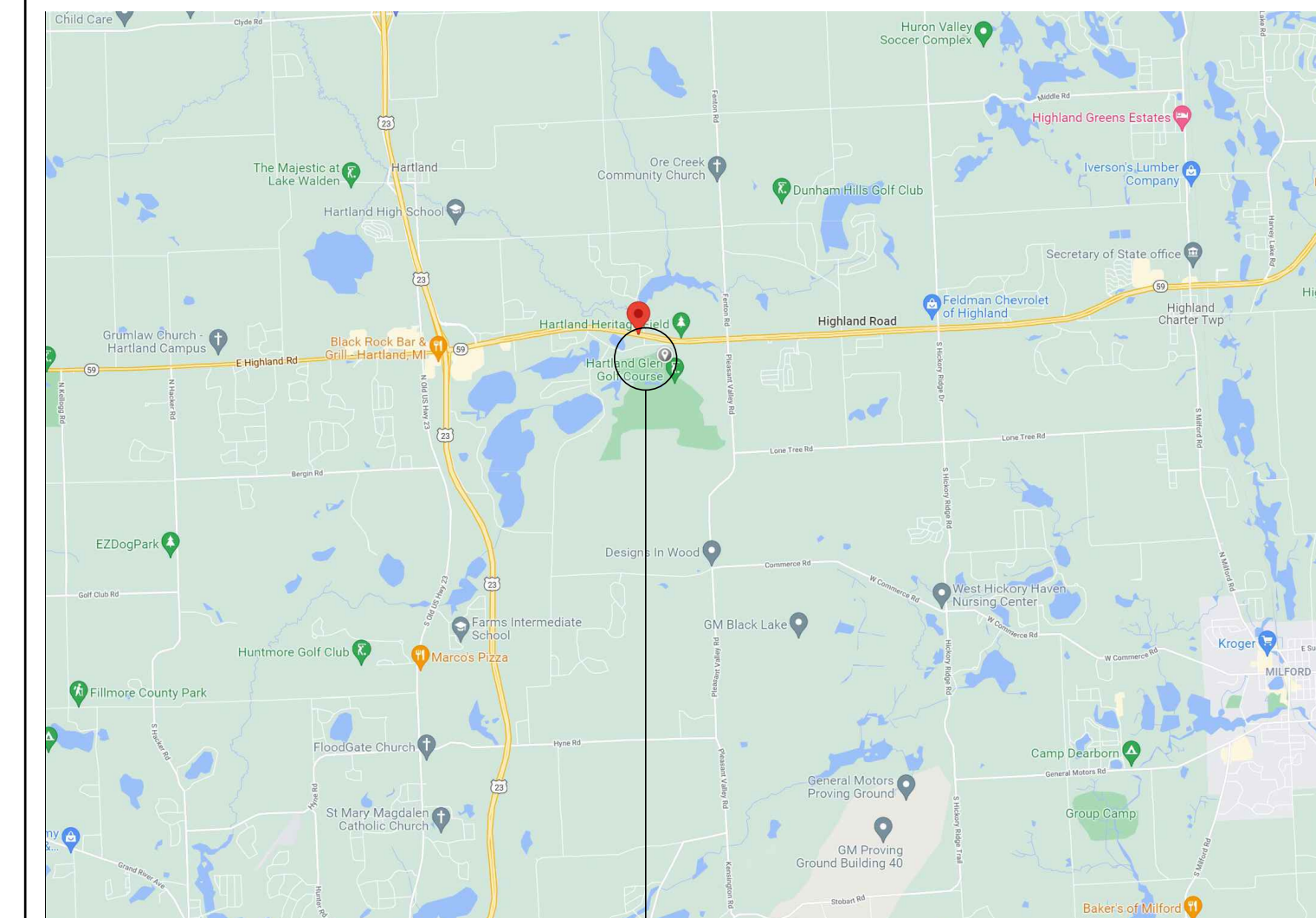
SEE SHEET T1.1 FOR DRAWING INDEX

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SEE SHEET T1.1 FOR BUILDING INFORMATION AND ADDRESSES

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VICINITY MAP
SCALE: N.T.S.



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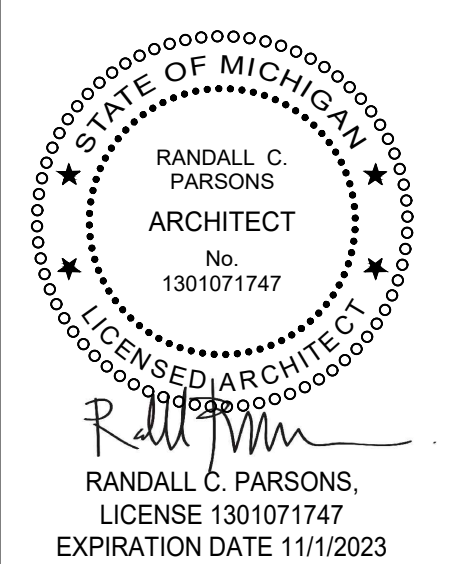
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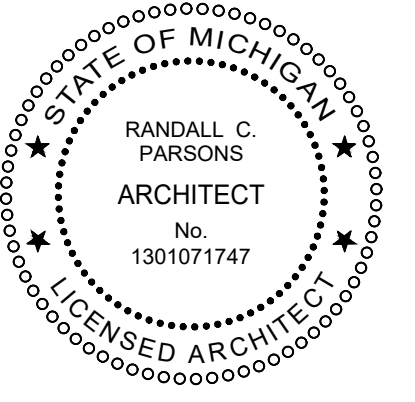
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TITLE SHEET
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REDWOOD HARTLAND HIGHLAND ROAD PH 1
12400 HIGHLAND ROAD
HARTLAND (TWP.), MICHIGAN 4835



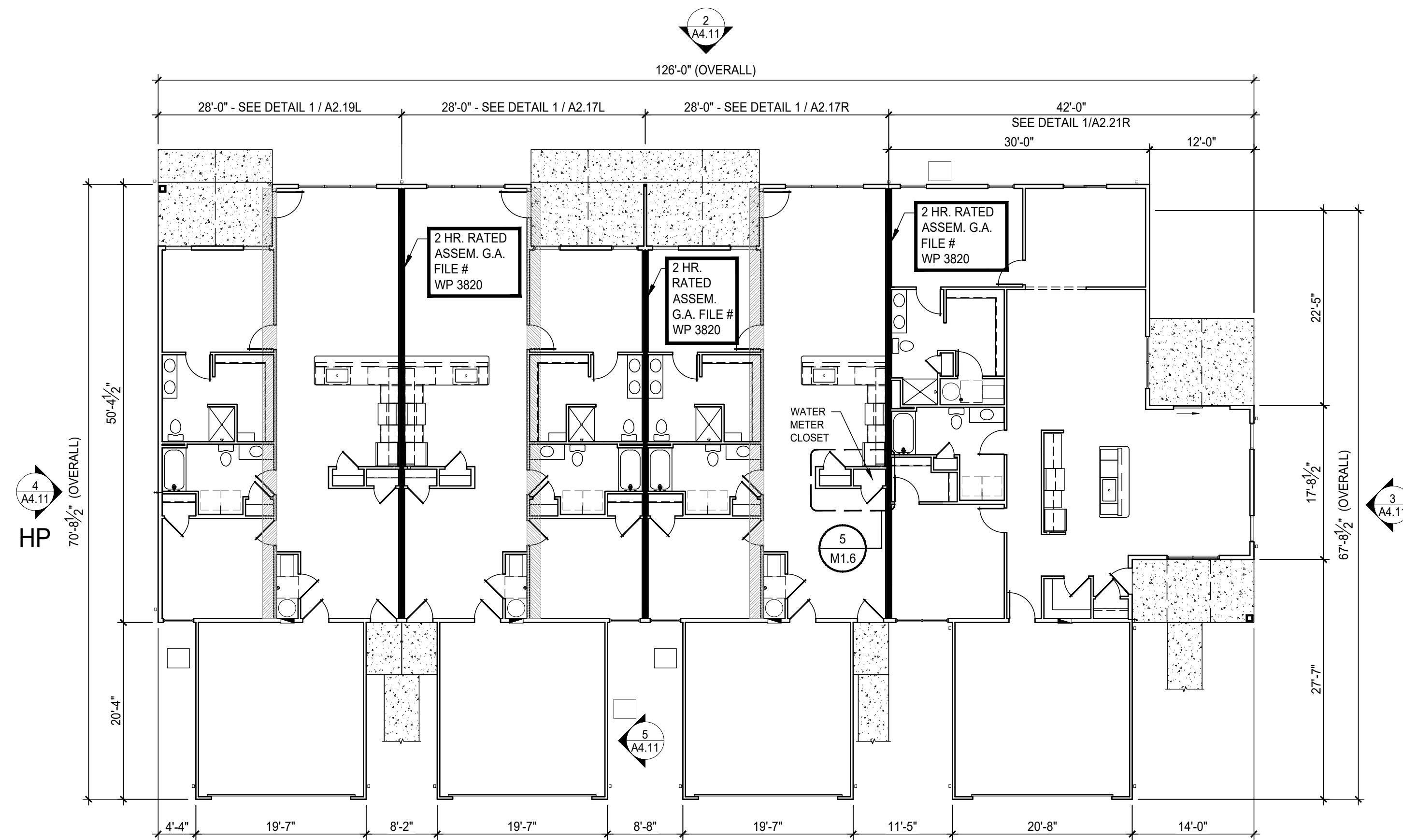
T1.0
1 OF 2



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NOTES:

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NOTE:

STAGGER ADJACENT A/C UNITS TO PROVIDE FOR SUFFICIENT ACCESS AROUND EACH.

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

HP

HP - HIGH PROFILE SIDE ELEVATION. SEE EXTERIOR ELEVATION SHEETS FOR MORE INFORMATION.

OVERALL FLOOR PLAN - BLDG.: L

DATE: MARCH 3, 2023

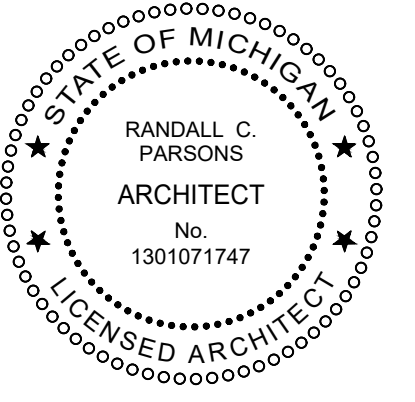
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REDWOOD HARTLAND HIGHLAND MI P1

12400 HIGHLAND ROAD
 HARTLAND (TWP.), MICHIGAN 48353



A2.36
 11 OF 23



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EXTERIOR ELEVATIONS - BLDG.: L

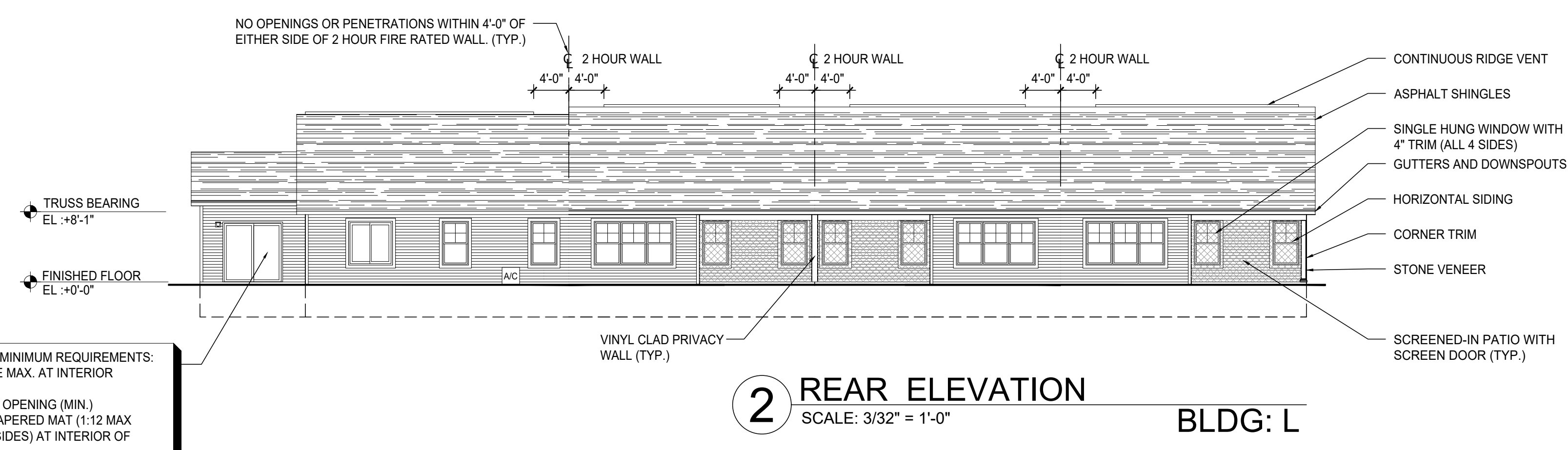
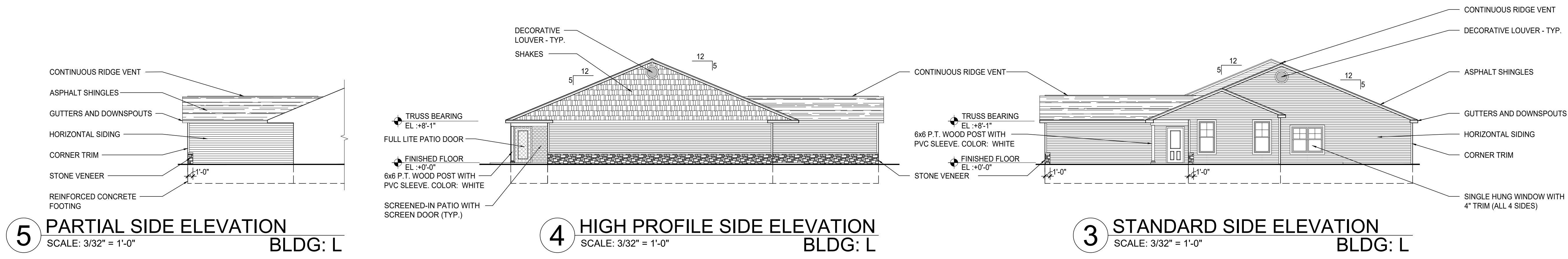
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PROJECT # : 22921
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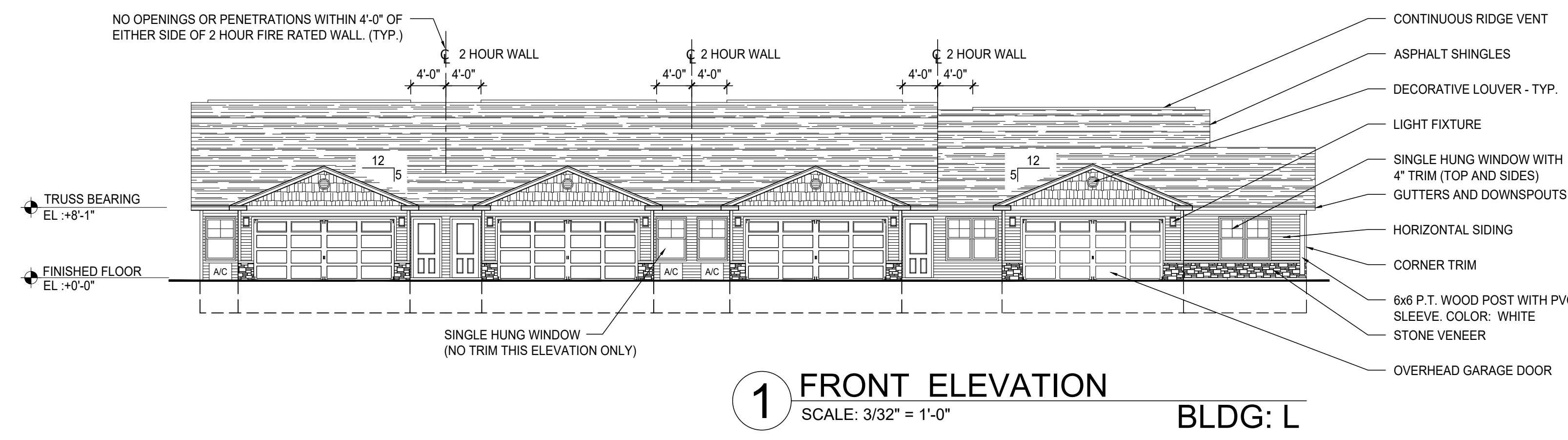


12400 HIGHLAND ROAD
 HARTLAND (TWP.), MICHIGAN 48353

A4.11
 15 OF 23



PATIO DOOR TO MEET FHA MINIMUM REQUIREMENTS:
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 • 32" CLEAR WIDTH DOOR OPENING (MIN.)
 • 1-1/2" HIGH x 43" WIDE TAPERED MAT (1:12 MAX SLOPE WITH TAPERED SIDES) AT INTERIOR OF PATIO DOOR.



ITEM:	MATERIAL / STYLE:	COLOR:
DECORATIVE LOUVER	VINYL	WHITE
ASPHALT SHINGLES	DIMENSIONAL 30 YEAR LAMINATED	WEATHERED WOOD
GUTTERS AND DOWNSPOUTS	PREFINISHED ALUMINUM	WHITE
HORIZONTAL SIDING	7" CLAPBOARD CELECT CELLULAR COMPOSITE	VARIES
SHAKES	VINYL	VARIES
CORNER TRIM	CELLULAR PVC TRIM	WHITE
STONE VENEER	PRESTIGE PROVIA	OHIO WHITE VEIN
OVERHEAD GARAGE DOOR	RAISED PANEL PAN STEEL	WHITE
SINGLE HUNG	VINYL	STANDARD WHITE WITH COLONIAL PATTERN FLAT GRIDS

NOTE:
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