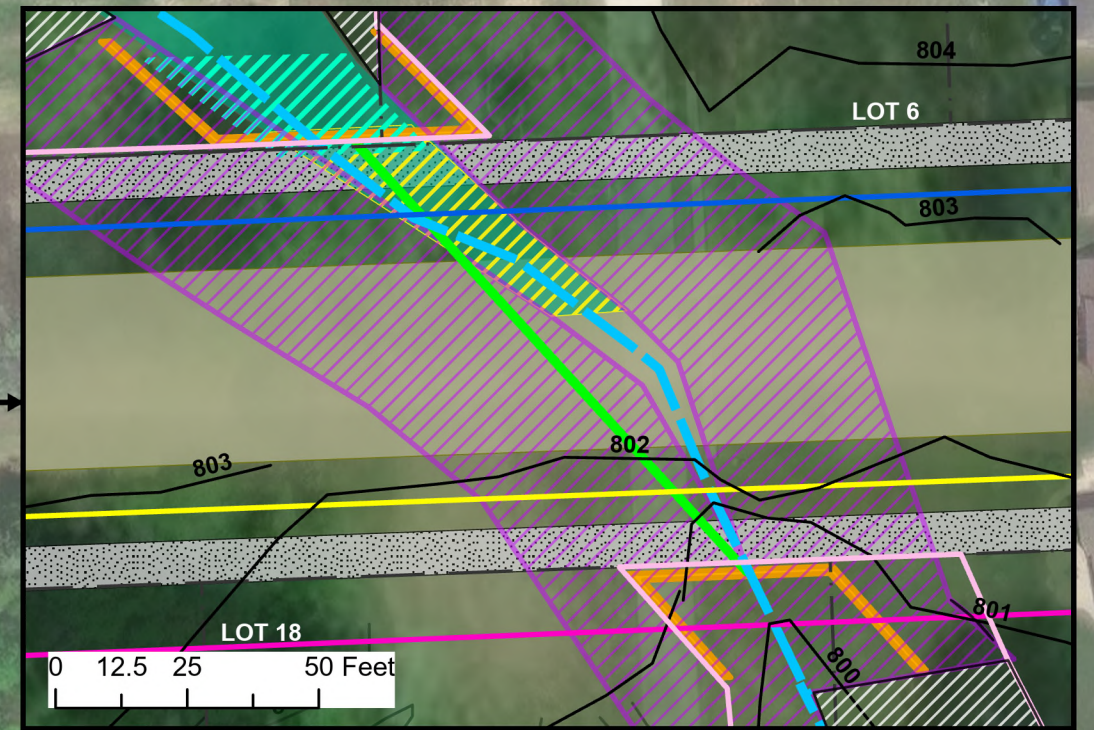
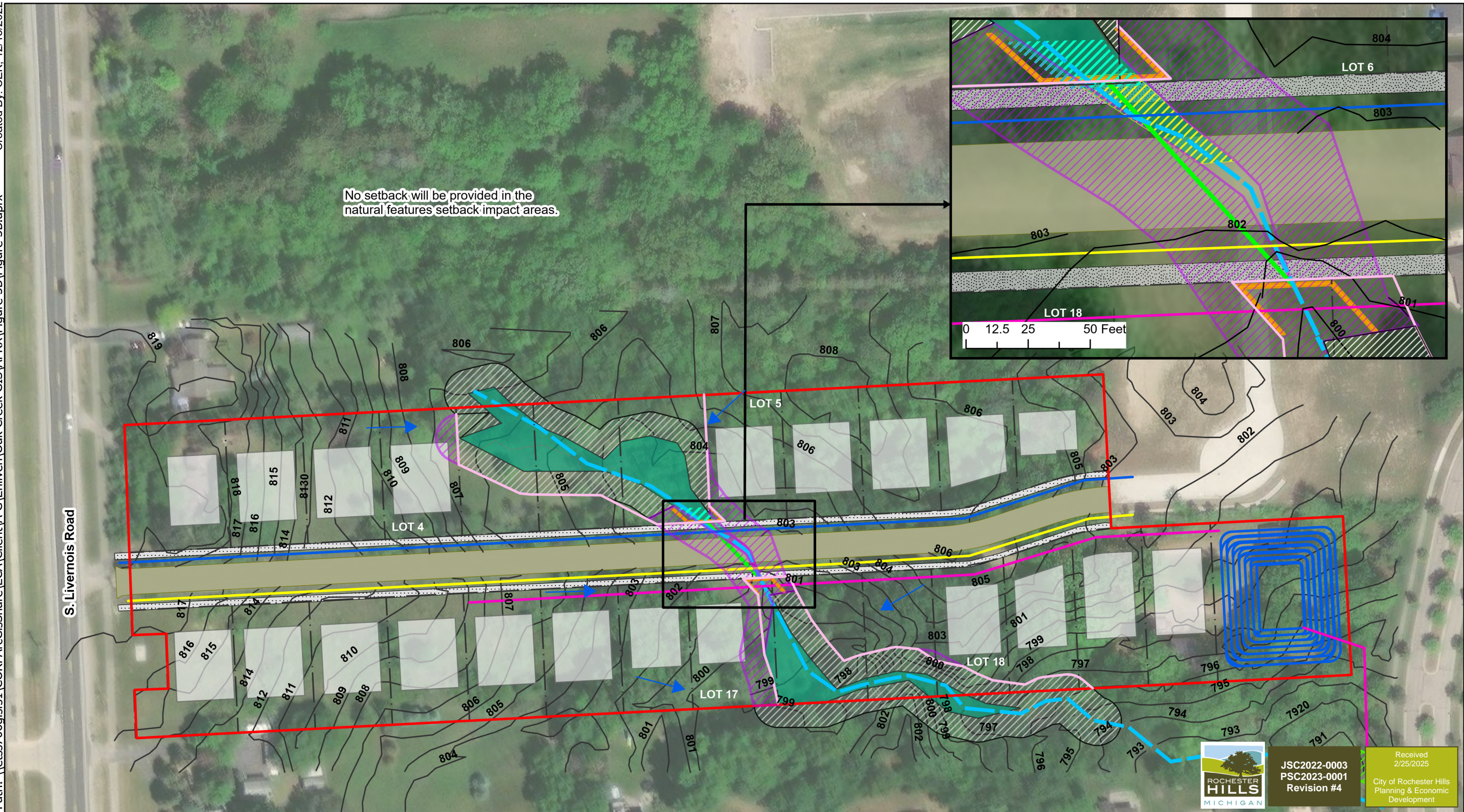


No setback will be provided in the natural features setback impact areas.



S. Livernois Road



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0 75 150 300 Feet

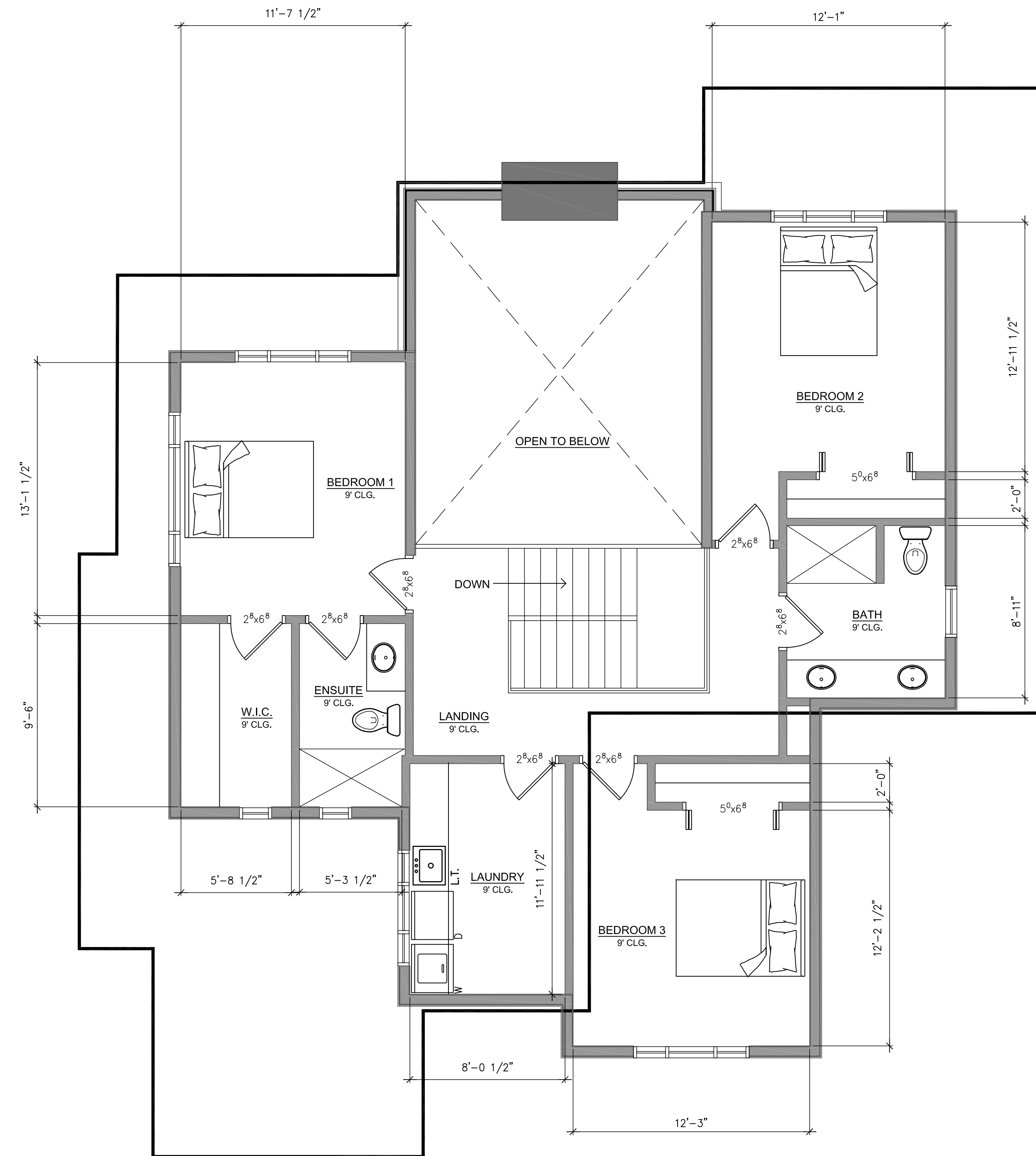
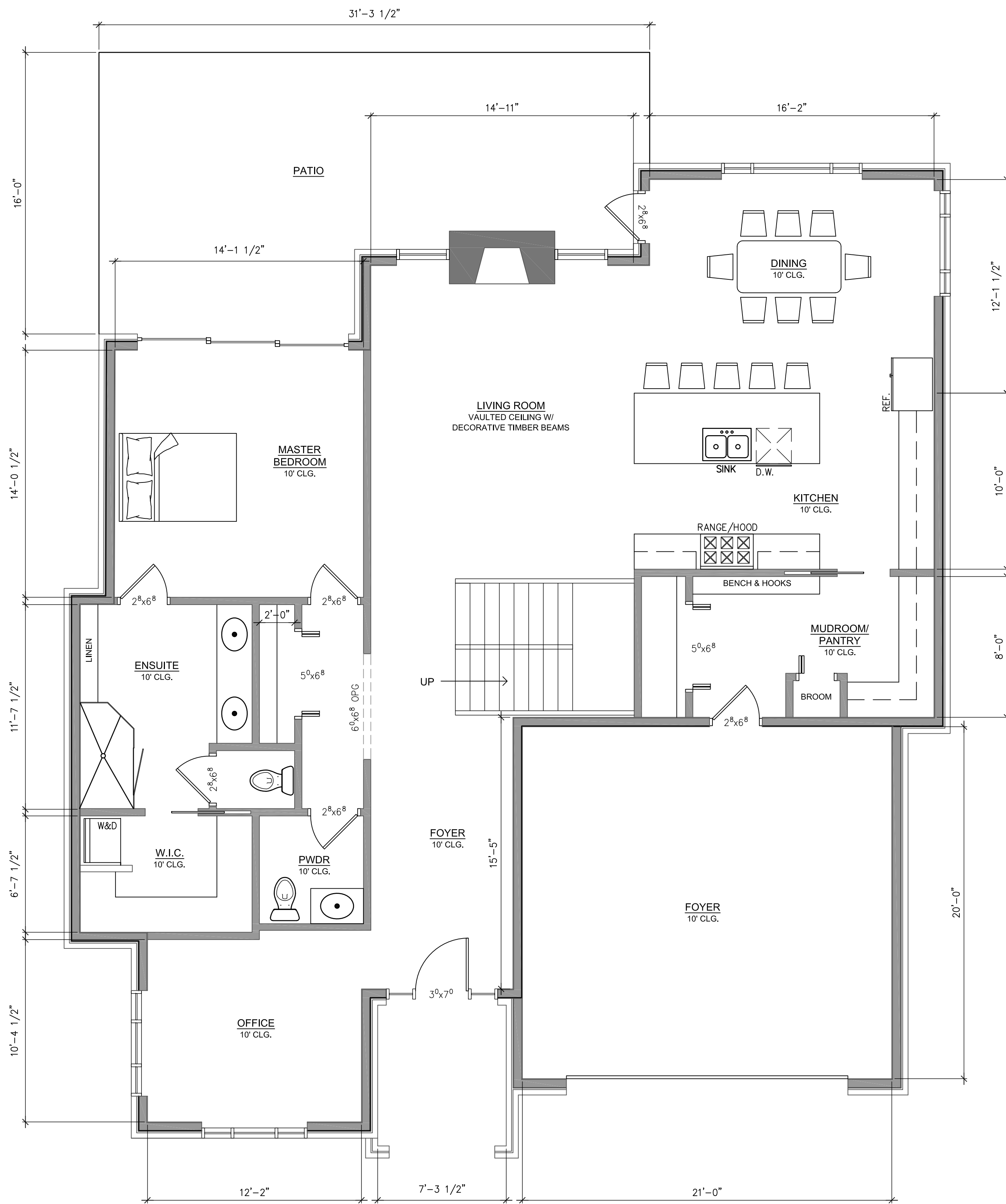


- ▭ Project Boundary
- ▭ Proposed Retention Pond
- ▭ Proposed Retaining Walls
- ▭ Proposed Lots
- ▭ Proposed Sanitary Sewer
- ▭ Proposed Water Main
- ▭ Proposed Storm Sewer
- ▭ Proposed Culvert
- ▭ Existing Stream
- ▭ Wetlands
- ▭ Contour Lines
- ▭ Proposed Road
- ▭ Proposed Sidewalk
- ▭ Proposed Building Setback
- ▭ Natural Features Setback Impact (Reduction)
- ▭ Natural Features Setback (To Remain)
- ▭ Natural Features Setback Impact (Temporary)
- ▭ Temporary Wetland Impact
- ▭ Proposed Barrier (Split Rail Fence)
- ▭ Storm Sewer Outlet
- ▭ Rip Rap
- ➔ Flow Direction



OAK CREEK SUBDIVISION
CITY OF ROCHESTER HILLS SITE PLAN REVIEW SUBMITTAL
3249 AND 3271 S. LIVERNOIS ROAD
ROCHESTER HILLS, OAKLAND COUNTY, MICHIGAN
Wetland, Watercourse, and Natural Feature Setback Impacts

FIGURE
1



PROPOSED FLOOR PLAN
SCALE: 1/4" = 1'-0"

PROPOSED FLOOR PLAN
SCALE: 1/4" = 1'-0"



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8155 ANNISBURY DRIVE, SUITE # 109
SHELBY TWP., MI 48316
OFFICE (616) 786-5533 FAX (616) 786-5575
www.gatewayengineer.com

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Oakland CO., Michigan
PID# 15-34-101-055 &
15-34-101-053

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 NO. DESC. DATE
 01. PRELIM. DESIGN 05/18/2023

REVIEWED BY: J.V.
DESIGNED BY: D.D.
DRAWN BY: D.D.

DRAWING:
PROPOSED
FLOOR PLAN (OPT2)

NO. **A1.2**
PROJECT NO. 20-0102



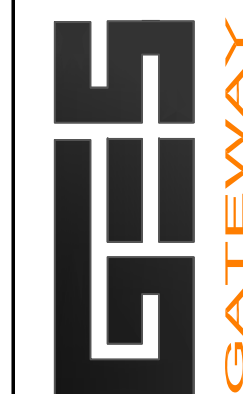
PROPOSED REAR ELEVATION OPT 1

SCALE: 1/4" = 1'-0"



PROPOSED FRONT ELEVATION OPT 1

SCALE: 1/4" = 1'-0"



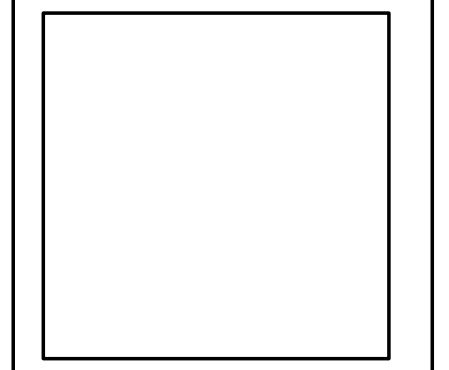
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All contents shall verify and coordinate all dimensions on drawings with the applicable building codes and standards. The user of these drawings shall be responsible for obtaining all necessary permits and for compliance with all applicable laws, codes, and regulations. The user shall indemnify and hold the engineer harmless from and against all claims, damages, and expenses, including reasonable attorneys' fees, arising out of or from the use of these drawings, whether or not caused in whole or in part by the negligence of the engineer. THIS AGREEMENT SHALL BE GOVERNED BY THE LAWS OF THE STATE OF MICHIGAN. NO PART OF THESE DRAWINGS SHALL BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, INCLUDING PHOTOCOPYING, RECORDING, OR BY ANY INFORMATION STORAGE AND RETRIEVAL SYSTEM, WITHOUT THE WRITTEN PERMISSION OF GATEWAY ENGINEERS. ALL RIGHTS RESERVED.

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REVIEWED BY: J.V.
DESIGNED BY: D.D.
DRAWN BY: D.D.

DRAWING:
PROPOSED EXTERIOR ELEVATION (OPT1)

NO. **A2.1**
PROJECT NO. 20-0102

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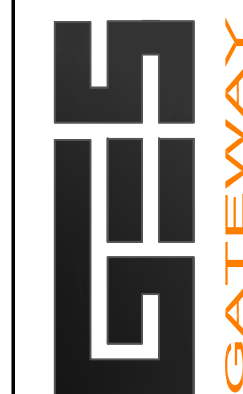
PROPOSED REAR ELEVATION OPT 1

SCALE: 1/4" = 1'-0"



PROPOSED FRONT ELEVATION OPT 1

SCALE: 1/4" = 1'-0"



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REVIEWED BY: J.V.
DESIGNED BY: D.D.
DRAWN BY: D.D.

DRAWING:
PROPOSED EXTERIOR ELEVATION (OPT2)

NO. **A2.2**
PROJECT NO. 20-0102



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PID# 15-34-101-055 &
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01	PRELIM. DESIGN	05/18/2023

REVIEWED BY: J.V.
DESIGNED BY: D.D.
DRAWN BY: D.D.

DRAWING:
PROPOSED
RENDERINGS

NO. **A3.1**
PROJECT NO. 20-0102



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PROPOSED RENDERINGS

SCALE: NTS

Narrative for Conditional Approval of 36-inch RCP

The project proposes 85 linear feet of 36-inch reinforced concrete pipe (RCP) to replace the existing culvert at the access drive. The existing culverts are dual 12-inch corrugated metal pipes that are at least half full of sediment. The proposed RCP will meet the Michigan Department of Environment, Great Lakes, and Energy (EGLE) minor permit standards for new or replacement culverts and bridge structures that are 100 feet or less in length. The proposed culvert will span the 3-foot-wide bankfull width of the stream, will be set on the same slope as the deepest part of the riffle channel measured from the upstream riffle to a downstream riffle outside of the effects of the existing culvert, will align with the centerline of the stream at both the inlet and outlet ends, and the invert elevation will be buried six inches (1/6 of the bankfull width). Since the proposed culvert will span the bankfull width of the stream and will be buried, it will allow for passage of wildlife, prevent erosion upstream and downstream, provide sufficient hydraulic capacity during storm events, and reduce the risk of flooding. The proposed impacts to Wetland A as a result of the culvert installation would be the same for the proposed 36-inch RCP culvert as they are for a small span bridge or box culvert. The permanent impact to Wetland A will be a result of installing the culvert in the wetland, and associated fill and grading for the proposed road and sidewalk that will be placed above the culvert. The installation of a box culvert or small span bridge would also permanently impact Wetland A for the road and sidewalk. Therefore, Enliven Developers are requesting conditional approval for the 36-inch RCP.



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Sent Via Email Only

February 27, 2025

Chris McLeod, Planning Manager
Department of Planning and
Economic Development
City of Rochester Hills
1000 Rochester Hills Drive
Rochester Hills, MI 48309-3033

**Subject: Oak Creek Subdivision
3249 & 3271 Livernois
(Sidwell Nos. 70-15-324-101-053 & -055)
Site Plan Review #5
Site Plans dated February 10, 2025
ASTI File No. A25-1482.05**

Applicant: Enliven Developers

Dear Mr. McLeod:

The above-referenced project proposes to construct twenty-one single family dwellings on 8.46 acres of land located at 3249 and 3271 Livernois Road. The site includes one wetland and one watercourse regulated by the City of Rochester Hills and also likely regulated by the Michigan Department of Environment, Great Lakes, and Energy (EGLE).

ASTI has reviewed the site plans, dated February 10, 2025 (Current Plans), for conformance to the Wetland and Watercourse Protection Ordinance and the Natural Features Setback Ordinance and offers the following comments for your consideration.

COMMENTS

1. **Applicability of Chapter (§126-500).** The Wetland and Watercourse Protection Ordinance is applicable to the subject site because the subject site is not included within a site plan which has received final approval, or a preliminary subdivision plat which received approval prior to January 17, 1990, which approval remains in effect and in good standing, and the proposed activity has not been previously authorized.

2. **Wetland and Watercourse Determinations (§126-531).** This Section lists specific requirements for completion of a Wetland and Watercourse Boundary Determination.

- a. This review has been undertaken in the context of a Wetland and Watercourse Boundary Determination completed on-site by ASTI on August 16, 2022. All flagging is shown on the Current Plans with alpha-numeric flagging as placed in the field by ASTI. Additionally, the Current Plans now show that ASTI completed the delineation on August 16, 2022, which is to ASTI's satisfaction.

The Applicant should be advised that wetland delineations are only considered valid by the City and EGLE for a period of three years.

- b. One wetland and one watercourse were found on-site as shown on the Current Plans (Wetland A and the unnamed watercourse). Their quality assessments are below.

Wetland A/Unnamed Watercourse Quality Assessments

Wetland A is an emergent and forested wetland. The emergent portion of Wetland A was dominated by the non-native species of red top (*Agrostis gigantea*), and the common native herbaceous species of jewelweed (*Impatiens capensis*), path rush (*Juncus tenuis*), and fox sedge (*Carex vulpinoidea*), generally in equal amounts. Scattered shrubs of the invasive species of glossy buckthorn (*Frangula alnus*), and the native species of gray dogwood (*Cornus racemosa*) were also observed. Scattered trees of the common native species of silver maple (*Acer saccharinum*) and box elder (*Acer negundo*) were observed within the emergent portion. The forested portion of Wetland A exhibited a tree layer dominated by the common native tree species of cottonwood (*Populus deltoides*), green ash (*Fraxinus pennsylvanica*), and box elder with a tree canopy coverage of approximately 80-100%. The invasive species of glossy buckthorn dominated the shrub layer. Herbaceous vegetation coverage was generally dominated by the common native species of poison ivy (*Toxicodendron radicans*). Overall, vegetation within Wetland A was generally evenly distributed between non-native species and native species.

Primary wetland hydrology indicators, such as sparsely vegetated concave surfaces and oxidized rhizospheres on living roots, were observed throughout Wetland A. These hydrological indicators show Wetland A likely detains small amounts of seasonal localized surface water runoff. Soils within Wetland A were comprised of silty/sandy loams and appeared to be in a natural state.

The unnamed watercourse associated with Wetland A was not flowing on the day of the wetland delineation completed by ASTI. However, previous inspections by ASTI on the Property and adjacent properties have shown this watercourse does exhibit seasonal and intermittent flow. This watercourse appears to be a surface

water drainage discharge component and did not appear to be in direct contact with ground water; no groundwater inputs were observed on the Property on the day of the site inspection.

Wetland A is a portion of a larger riparian wetland system associated with the unnamed watercourse that flows from the adjacent property to the west and extends to the east to the Gibson Drain, appearing to be in contact with other wetlands and watercourses along its route that are a part of the City's natural drainage system. Extensive riparian wetlands, such as Wetland A and the unnamed watercourse, can provide permanent, seasonal, and migratory habitat for many bird species and small mammals. However, the complex associated with Wetland A and the unnamed watercourse appears to be adjacent to residential developments throughout its off-site extent. Consequently, this wetland complex likely supports only small wildlife and birds common to suburban backyards. The unnamed watercourse could potentially provide seasonal and transient habitat for species of small fish, as well as small reptiles and amphibians. Based on these factors, it is ASTI's opinion that Wetland A and the unnamed watercourse are of medium ecological quality but an important part of the natural drainage system of the City, and thus, should be considered a valuable natural resource to the City.

3. **Use Permit Required (§126-561).** This Section establishes general parameters for activity requiring permits, as well as limitations on nonconforming activity. This review of the Current Plans has been undertaken in the context of those general parameters, as well as the specific requirements listed below.
 - a. Wetland A is regulated by the City and likely EGLE, because it is directly connected to the on-site unnamed watercourse, which meets the definition of an intermittent stream under Part 301.
 - b. The Current Plans now include all proposed impacts to the on-site wetlands and watercourse on the grading sheet (Sheet C3.1) and all wetland and watercourse impacts are stated in square feet and linear feet, respectively, which is to ASTI's satisfaction.
 - a. Sheet C3.1 shows that 355 ft² of temporary impacts and 417 ft² of permanent impacts to Wetland A will occur and 85 linear feet of permanent impacts to the unnamed watercourse will occur from the construction of the proposed access road and from the installation of a proposed culvert beneath the road to replace the existing culvert/bridge. ASTI recognizes that constructing the proposed access road in the same area as the existing driveway is the most prudent area to do so. Moreover, installing a proposed drainage conveyance in the area of the existing culvert/bridge is also the most prudent location for this action. As stated in previous reviews, ASTI recommended the construction of a small span bridge or box culvert in this area that minimizes permanent impacts to Wetland A. This

action could result in allowing the unnamed watercourse to have a natural bed and more natural flow pattern.

The applicant responded to this assertion per the following: “The project proposes 85 linear feet of 36-inch reinforced concrete pipe (RCP) to replace the existing culvert at the access drive. The existing culverts are dual 12-inch corrugated metal pipes that are at least half full of sediment. The proposed RCP will meet the Michigan Department of Environment, Great Lakes, and Energy (EGLE) minor permit standards for new or replacement culverts and bridge structures that are 100 feet or less in length. The proposed culvert will span the 3-foot-wide bankfull width of the stream, will be set on the same slope as the deepest part of the riffle channel measured from the upstream riffle to a downstream riffle outside of the effects of the existing culvert, will align with the centerline of the stream at both the inlet and outlet ends, and the invert elevation will be buried six inches (1/6 of the bankfull width). Since the proposed culvert will span the bankfull width of the stream and will be buried, it will allow for passage of wildlife, prevent erosion upstream and downstream, provide sufficient hydraulic capacity during storm events, and reduce the risk of flooding. The proposed impacts to Wetland A as a result of the culvert installation would be the same for the proposed 36-inch RCP culvert as they are for a small span bridge or box culvert. The permanent impact to Wetland A will be a result of installing the culvert in the wetland, and associated fill and grading for the proposed road and sidewalk that will be placed above the culvert. The installation of a box culvert or small span bridge would also permanently impact Wetland A for the road and sidewalk.” After review of this information, it is ASTI’s opinion the applicant has provided an adequate analysis for installing the culvert as proposed on the Current Plans.

Any temporary wetland impacts to Wetland A must be restored to original grades with original soils and seeded with a City-approved wetland seed mix. This is now noted on Sheet C3.1 of the Current Plans to ASTI’s satisfaction.

4. **Use Permit Approval Criteria (§126-565).** This Section lists criteria that shall govern the approval or denial of an application for a Wetland and Watercourse Use Permit. The following items must be addressed on a revised and dated Wetland and Watercourse Use Permit application and additional documentation submitted for further review:
 - a. A Wetland and Watercourse Use Permit from the City is required for this project as proposed on the Current Plans. It is likely that a Part 303/301 permit from EGLE will also be required. However, EGLE should be contacted to confirm this assertion. Any applicable permits from EGLE and any other applicable agencies must be obtained by the applicant prior to construction activities.

- b. The proposed detention pond in the eastern portion of the site is proposed to discharge off-site to the south through a run storm water pipe. The off-site area is within a “Notice of Wetlands and/or Floodplain Designation” (NWFD) as recorded with Oakland County (Liber 24166 Page 889-891). The Current Plans now state that Tetra Tech completed a wetland delineation in this area on April 12, 2024, which determined that no wetland was observed; just the off-site portion of the watercourse associated with this project. ASTI reviewed this area on January 9, 2025, and agrees that no wetland is present within the proposed easement area as shown on the Current Plans.

The Current Plans also indicate that 127ft² of permanent impacts and 25 ft² of temporary impacts to the stream within the proposed easement area will occur from the installation of a rip-rap spillway flowing from the proposed detention basin in the southeast. This use as a stormwater conveyance qualifies for an exemption to the Wetland and Watercourse Ordinance provided that: (1) a prior written notice is given to the City Engineer and written consent is obtained from the City Mayor prior to work commencing; (2) the work is conducted using best management practices (BMPs) to ensure flow and circulation patterns and chemical and biological characteristics of the watercourse is not impacted; and (3) such that all impacts to the aquatic environment are minimized. Any disturbed areas from installation of the discharge structure around and adjacent to the watercourse must be seeded with a City-approved wetland edge seed mix. This is noted on the Current Plans to ASTI’s satisfaction. Please note a permit from EGLE will likely be required for this activity.

The applicant must also provide any legal permission to utilize this area from the NWFD entity, Hazelwood Condo Development, LLC, the City of Rochester Hills, or Oakland County, as applicable, prior to construction.

5. **Natural Features Setback (§21.23).** This Section establishes the general requirements for Natural Features Setbacks and the review criteria for setback reductions and modifications.
 - a. All Natural Features Setbacks and all impacts to Natural Features Setback stated in linear feet are now shown on Sheet C3.1 of the Current Plans, which is to ASTI’s satisfaction.

The on-site Natural Features Setback areas provide at least minimal natural buffering to Wetland A and the unnamed watercourse, even low-quality portions. Therefore, steps should be taken to preserve the remaining Natural Features Setback areas. To help minimize unplanned impacts to the remaining Natural Features Setbacks, and presumably Wetland A and the unnamed watercourse, ASTI previously recommended that a permanent barrier, such a boulder wall at least 18” high or some other structure subject to City approval, be constructed along all remaining Natural Features Setback Areas. The Current Plans show a

- detail of a split rail wooden fence (Sheet LP-2), which is subject to City approval, within portions of the Natural Features Setback on-site; other comments detailing specific areas of split rail fencing are below. ASTI also recommended that signs stating no mowing, application of chemicals, etc. and as approved by the City should be placed around all Natural Features Setback areas on-site; this is now noted on Sheet C3.1 on the Current Plans. These actions should minimize any unplanned disturbances, such as mowing, land clearing, application of herbicides, etc., within the Natural features Setback along with Wetland A and the unnamed watercourse.
- b. Sheet C3.1 shows 73 linear feet of permanent Natural Features Setback impacts will occur from the construction of Lot 4. These impacts are small and the Natural Features Setback in this area is generally of low quality, being dominated by common lawn species such as Kentucky blue grass (*Poa pratensis*), heal-all (*Prunella vulgaris*), and clover (*Trifolium* spp.). Therefore, ASTI recommends the City allow for these impacts.
- c. Sheet C3.1 shows 284 linear feet of permanent Natural Features Setback impacts will occur from the construction of Lot 17. The Natural Features Setback in this area is comprised of upland scrub/shrub/old-field and is of low to medium quality. The tree canopy layer was moderate and was comprised of the common native species of box elder and the non-native species crack willow (*Salix fragilis*) and multiflora rose (*Rosa multiflora*), generally in equal distribution. The shrub layer was thick and was dominated by the common native species of box elder (saplings) and staghorn sumac (*Rhus typhina*). The herbaceous layer was moderate and was dominated by Kentucky blue grass and the common native species of red raspberry (*Rubus ideaus*) and woodbine (*Parthenocissus inserta*). Overall, the Natural Features Setback in this area is comprised of native and non-native species in equal distribution (50% and 50%, respectively) and is of medium to low quality. Moreover, the impacts are small, do not impact the entire width of the Natural Features Setback, and split rail fencing is proposed for the remaining Natural Features Setback in this area as a barrier. Therefore, ASTI recommends the City allow for these impacts.

Sheet C3.1 shows 150 linear feet of Natural Features Setback will be permanently impacted from the construction of the proposed access road, sidewalk, and associated utilities. The access road, which is required to gain adequate access to the eastern portion of the property, is planned in an area that minimizes natural feature impacts. Moreover, the Natural Features Setback in this area is of low quality and function, being comprised of common lawn species. Thus, ASTI recommends the City allow for Natural Features Setback impacts in this area. This must be specifically noted on final plans for the development.

- d. Sheet C3.1 shows 140 linear feet of Natural Features Setback will occur from the construction of Lot 5. The Natural Features Setback in this area is forested and dominated by generally young trees of the common native species of shagbark hickory (*Carya ovata*), white oak (*Quercus alba*), and linden (*Tilia americana*). The shrub layer was sporadic and was comprised of the common native species of shagbark hickory and green ash, as well as the non-native species of glossy buckthorn and honeysuckle (*Lonicera tatarica*), generally in equal amounts. Herbaceous coverage was sparse at the time of the inspection and was generally dominated by the common native species of woodbine and poison ivy. The Natural Features Setback in this area was dominated by common native species (75%) with significant inclusions of non-native species (25%). Due to the higher percentage of native species within the Natural Features Setback in this area, it should be considered a medium quality buffer to Wetland A and impacts should be minimized to the greatest degree possible. However, the impacts are small, and ASTI recommends the City allow for these impacts subject to approval by the City's Parks and Natural Resources Department concerning tree removal activities proposed in this area. A split rail fence is shown alongside the remaining Natural features Setback in this area, which extends to the northern property boundary. This is to ASTI's satisfaction.
- e. Sheet C3.1 shows 45 linear feet of Natural Features Setback will occur from the construction of Lot 18. The Natural Features Setback in this area is forested and dominated by a mix of young to mature trees of the native species of shagbark hickory, ironwood (*Ostrya virginiana*), red oak (*Quercus rubra*), and black cherry (*Prunus serotina*). The shrub layer was very sparse and was dominated by the native species of white oak, red oak, and black cherry with minor inclusions of the non-native species honeysuckle. The herbaceous layer was sporadic and was dominated by the common native species of woodbine and poison ivy. The Natural Features Setback in this area was dominated by native species (95%) with slight inclusions of non-native species (5%). Due to the high percentage of native species within the Natural Features Setback in this area, it should be considered a high-quality buffer to the unnamed watercourse in this area, and impacts should be minimized to the greatest degree possible. However, the impacts associated with Lot 18 are small, and ASTI recommends the City allow for these impacts subject to approval by the City's Parks and Natural Resources Department concerning tree removal activities proposed in this area. A split rail fence along the remaining Natural Features Setback boundary from Lot 18 to the proposed access road. This action, along with the installation of the signage described above, should protect the remaining Natural Features Setback in this area. This is all shown on the Current Plans to ASTI's satisfaction.

- f. Sheet C3.1 does not indicate that any Natural Features Setback impacts will occur from the construction of Lots 19 and 20. Moreover, the Current Plans now show the Natural Features Setbacks associated with Lots 19 and 20 with split rail fencing and signage to protect against unplanned future impacts. This is to ASTI's satisfaction.
- g. The Current Plans show that approximately 25 linear feet of Natural Features Setback will be temporarily impacted from the installation of the outlet pipe associated with the on-site watercourse and detention basin drainage system off-site.

This action would qualify for an exception to the Natural Features Setback ordinance provided that: (1) a prior written notice is given to the City Engineer and written consent is obtained from the City Mayor prior to work commencing; (2) the work is conducted using best management practices (BMPs) to ensure flow and circulation patterns and chemical and biological characteristics of the watercourse are not impacted; and (3) such that all impacts to the aquatic environment are minimized. BMPs must be implemented during the construction phase of the proposed project and any temporarily impacted areas must be restored to original grade with original soils or equivalent soils, where applicable, and seeded with a City-approved seed mix. This is noted on the Current Plans to ASTI's satisfaction.

The applicant must also provide any legal permission to utilize this area from the NWFD entity, Hazelwood Condo Development, LLC, the City of Rochester Hills, or Oakland County, as applicable, prior to construction.

RECOMMENDATION

ASTI recommends the City approve the Current Plans on the condition that the items in Comment 5.d are addressed on final plans.

Respectfully submitted,

ASTI ENVIRONMENTAL



Kyle Hottinger
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