New Home Construction
Northville Township Building Department
Guide to Building a New Home
248-348-5830

INTRODUCTION

New Home Construction Guidebook

Northville Township Building Department has prepared this Guidebook to assist you in the process of building a new home within our City. We recognize that in order for your project to be a success, all parties involved need to work together towards the final goal; a safe, well-built home. We take great pride in being part of your success story and encourage you to keep all lines of communication open from the start to the finish. We want to know how we can help!

Included in this Guidebook is important information to help you understand the Building Permit and construction process, from application to completion. We have included details for areas that have generated confusion or construction delays in the past.

When your Building Permit application is submitted, it will go through a three-step review process:

1. **Grading Review**: This review covers work related to the property, including drainage, sidewalks, driveways, utility locations and connections. We also check for wetlands, steep slopes, watercourses, flood plains and other outside agency permits that may be required.

2. **Zoning Ordinance Review**: This review is performed to verify that your new home will meet the lot coverage, setback, height, and size requirements for your Zoning District. This review will also determine if a tree replacement is required.

3. **Building Plan Review**: This review covers the Michigan Residential Code requirements that apply to your proposed project.

Submitting a complete set of plot plans and construction drawings containing all the necessary information will expedite the plan review process. Details of submittal requirements are included in this Guidebook. The permit applicant will be notified if the information submitted does not meet Northville Township Zoning Ordinance, grading requirements or Michigan Residential Code requirements.

This Guidebook is set up to allow you to quickly reference specific areas of interest.

Please Note: This Guidebook is only intended to be a guide and is not all inclusive of the Michigan Residential Code or City Ordinances. For complete details of all requirements, please refer to the Michigan Residential Code. The guidelines in this Guidebook are subject to change without notice.

We hope this Guidebook is helpful and we encourage you to provide us with any suggestions you may have as we continue to work toward improving our permitting process.

Thank you!

Northville Township Building Department

BEFORE YOU BUILD

New Home Construction

The following should be checked at the beginning of your project. Any of these items can affect the type, location, cost and length of time it takes to build your home.

Permit Process – Please remember to allow time for the Building Permit process. Plan review time varies depending on the Building Department's workload and the completeness of your submittal.

County Roads – If your new home will be located on a County, a C Permit, (county permit) is required from the Wayne County Department of Public Service (WCDPS). This Permit needs to be obtained before a Building Permit can be issued. Your road may be a private road and may not require a county permit. However, you may need a private road agreement signed prior to applying for a permit.

Flood Plains – Flood plains are usually associated with lakes, streams, rivers and drainage courses. They are areas designated as "prone to flooding" during times of rain. Building in these areas is strictly regulated. Floodplain Maps are available from the FEMA website. If you are proposing to fill or build within a regulated floodplain, Engineering drawings completed by a licensed surveyor or Civil Engineer registered in the State of Michigan will be required to obtained from permits from EGLE. Please call the Engineering Department at (248) 348-5830 for more information.

Setbacks – Northville Township Zoning Ordinance contains minimum dimensions required between your home and the property lines. Please see "Setback Requirements. Additional setbacks are required for properties with regulated steep slopes. Additional set backs are required for consent judgment subdivision and plan unit development subdivisions.

Sump Line – A storm sewer or other approved drainage system is required for the connection of a sump line. Sump pump discharges are required to be connected to a drainage structure or established drainage path (ditch, swale, floodplain, etc.) In the absence of such an approved outlet, the sump pump discharge may be routed to a "drywell" if soil conditions are shown to be acceptable. Further questions pertaining to this contact Northville Township engineer 248-348-5830.

Trees – A Tree Removal review is required for trees to be removed. Please refer to Tree Ordinances. Article 23.170.23.1 – 170.23.10 will guide you on the tree and woodland replacement ordinance. https://ecode360.com/16146394

Water and Sewer – You may check to see if City water and sanitary sewer are available by contacting the Engineering Department at (248) 348-5830.

Wetlands – These areas have been determined to be indispensable and are to be protected as a natural resource. They provide numerous beneficial factors including wildlife habitat, water quality, flood controls, pollution reduction, erosion controls, open spaces, recreation areas and aesthetics. If your home will be close to or in regulated wetlands, additional paperwork, including permits, may be required from the State of Michigan prior to your Building Permit approval. Great Lakes and Energy website (formerly MDEQ) and can be used as a guide as to whether further studies shall be performed. If wetlands are located on the property, permits for any disturbance or filling of those areas will need to be obtained from EGLE prior to any Engineering and Building Department permits being issued. Please contact the Engineering Department for additional information.

Deed Restrictions - Your subdivision may have Deed Restrictions that apply. Northville Township cannot enforce Deed Restrictions; however, we encourage you to check for any restrictions that may apply to your project.

Miss Dig – Call Miss Dig 811 before you dig. Michigan's free & easy utility notification system.

BUILDING CONSTRUCTION

Important Information
New Home Construction

The Building Construction Section of this Guidebook contains important information to help you understand the process of building a new home in Northville Township.

The following information is presented in a start-to-finish sequence to guide you as you progress through your project:

Codes Currently in Effect – A list of the current Codes that will apply to your project.

From Application to Completion – Your general guide through the entire process. These pages provide information on application requirements, permits, inspections and Certificates of Occupancy.

Plan Review Checklist – A guide to help you understand the information that is required on your construction drawings. This information should be given to the person preparing your plans. Please take time to make sure your drawings are complete. Construction drawings that contain all the necessary information and details will help expedite the plan review process.

Inspection Requests – This Section contains details required for requesting an inspection, making sure your job is ready for inspection, the time inspections are done and what the inspection tags mean.

Building and Trade Inspections – Explanation of the standard Building and Trade Inspections required and some of the common items the Inspector checks for during an inspection. This should be used as a guide for Builders, Superintendents and Homeowners to verify the project is ready before calling for an inspection.

Sample Roof Truss Schematic – A sample roof truss layout from a truss manufacturer.

It is very important to include the property address on all documents submitted to the Building Department. The use of lot numbers without addresses may cause a delay in responding to your request.

Please take the time to review this information. It may save you valuable time in building your new home.

CODES CURRENTLY IN EFFECT

Northville Township
January 31, 2024

Following is a listing of the current codes we are enforcing and their effective dates:

Michigan Plumbing Code 2015 (Part 7 Rules)	April 20, 2017
Michigan Mechanical Code 2015 (Part 9 Rules)	April 12, 2017
International Fuel Gas Code (IFGC) 2015	April 27, 2017
Michigan Rehabilitation Code for Existing Buildings 2015	December 13, 2016
Michigan Residential Code 2015 (Part 4 Rules)	February 8, 2016
Michigan Building Code 2015	April 20, 2017
Michigan Electrical Code 2017 (NEC 2017+Part 8 Rules)	January 4, 2019
Michigan Uniform Energy Code (MUEC) 2015 (Part 10 Rules)	February 8, 2016

A. Residential – International Energy Conservation Code 2015 (one and two family)
B. Commercial ASHRAE Standard 90.1/2013 Edition

International Property Maintenance Code 2012	April 5, 2012
In addition to the codes our new fee schedule was published on https://www.twp.northville.mi.us/home/showpublisheddocument/686/637650641958200000	May 19, 2011
We adopted the August 2020 ICC Building valuation chart on	February 2021

FROM APPLICATION TO COMPLETION

New Home Construction
A General Guide through the Entire Process

1. Information required for a Building Permit application:

The following shall be submitted with the application. Please note that all forms need to be filled out completely.

- **Building Permit Application** *- The Applicant's signature is required.
- **Application Fee** – $25 check made out to Northville Township at time of applying.
- **Plot Plan – Two Sets Signed and Sealed** – Please see "Plot Plan Requirements".
- **Construction Drawings – Two Complete Sets** – Including braced wall design information – Please see "Plan Review Checklist".
- **Roof Truss Layout – One Complete Set** – Please see sample drawing.
- **Energy Worksheet for New Single-family Residential Buildings** - indicating which method of energy compliance will be used, along with supporting documents.
- **Residential Request for Water, Sanitary Sewer**

Per State of Michigan Law, Owners may submit a permit application for work on property that is, or will be, on completion, their place of residence.
Please note: Any contractor, hired by the Owner for a contract price of $600.00 or more, shall be licensed in accordance with the State of Michigan Residential Builders Laws.

*Forms are available online https://www.twp.northville.mi.us/ or at the Building Department counter.

2. Registration of Builder's License

- Builders shall be registered with Northville Township to submit a Building Permit application.
- Builders not currently registered can register at the time of application by providing the following:
  - The original or a copy of your Builder's License.
  - A copy of the License Holder's Driver's License, if not present in person.
  - A Registration Fee of $35.00

- Registration is required for your Electrical/Mechanical/Plumbing/Sign licenses. Provide a copy of your current license and a legible copy of License holder's Driver's License. Electrical/Plumbing Contractor's also need a copy of Master license. License Registration fees will apply.

3. Plans Reviewed and Approved

- Building and plot plans are reviewed for compliance with the Michigan Residential Code and Township Ordinances.
- Plans are reviewed in the order they are received based on the application date. Plan review time varies depending on the Building Department's workload.
- Plans and construction documents that contain all the necessary information and details will help speed up the review process.
- The Permit Applicant will be notified if the information provided does not meet Northville Township Zoning Ordinance, grading requirements, or Michigan Building Code requirements, or if any other information is required.

4. Permit Ready

- The Permit Applicant will be emailed when the Building Permit is ready to be picked up.
- Building Permit fees are refundable bond are due at the time of the Permit issuance. Permit fees can be paid by cash or check in the building or online through BS&A credit card or debit card.
- The Building Permit shall be secured within 6 months of the application date or the application may be canceled.
- Issued Permits that have no activity for more than 6 months may be canceled.

5. Additional Fees – Water & Sanitary Sewer

- Water, sanitary sewer and sump line fees must be paid to the building department when you pick up your Building Permit.

6. Trade Permits – Plumbing, Mechanical & Electrical

- These types of Permits are required and can be applied for and obtained **after** the Building Permit has been issued.

- When the Building Permit has been obtained, construction may begin. Trade permits may be secured after the Building Permit has been issued. Revisions to the building or grade after issuance of the Building Permit will require re-submittal of revised plans, approval from the Building Department, and the payment of any additional review and Permit fees.

- The following items shall be installed and maintained throughout the construction process:
  - The Street Address and lot number shall be posted and clearly visible from the street.
  - The Street shall be kept clean at all times.
  - Temporary soil erosion control shall be in place and maintained.
  - All construction materials and debris shall be contained on the property.
  - Tree protection (if required) shall be in place and maintained.
  - Bathroom facilities will be provided for contractors.

8. **Water Taps**
   - Once your Water and Sewer connection fees have been paid you must apply for a plumbing permit for the water and sewer tap and sump connection. When the tap work is ready please schedule inspection.

9. **Inspections –** Please refer to Building and Trade Inspections for details regarding Inspections.
   - Water & Sanitary Sewer Open-Trench/sump line.
   - Open Rail
   - Backfill
   - Footings
   - Pre-Masonry
   - Rough Plumbing
   - Underground Plumbing
   - Rough Mechanical
   - Rough Electrical
   - Rough Fireplace – Both Masonry Fireplaces and Pre-fab Fireplaces
   - Rough Building
   - Energy Code Compliance / Insulation
   - Basement Stone
   - Garage Sand
   - Sump Line
   - Sidewalks and Drive Approaches, porch cap (prior to pouring concrete)

10. **Water Meter Installations**
   - You may schedule a water meter installation by calling the Department of Public Works at (248) 348-5800
   - Scheduling varies depending on workload. Please allow time for your scheduling.

11. **Final Inspections –** Please refer to Building and Trade Inspections for details regarding Inspections.
   - Final Plumbing
   - Final Mechanical
   - Final Electrical
   - Final Fireplace – Both Masonry Fireplaces and Pre-fab Fireplaces
   - Final Building and Final Masonry
   - Final Grade, tree replacement if applicable. Provide as built of site for inspections.

12. Certificates of Occupancy (C of O)

- A Certificate of Occupancy (C of O) is required before a new home can be used or occupied.
- All inspections must be completed and approved before a C of O is requested.
- Please allow time for processing a C of O. State Law allows 5 business days from the time the request is received to the issuance of a C of O.

13. Temporary Certificates of Occupancy (TCO)

- A TCO is issued **only** when a Certificate of Occupancy cannot be issued as determined by the Chief Building Official.
- A TCO is issued for a limited length of time for unusual conditions and unforeseen circumstances.
- There is a $150 issuance fee and $150 fee for each extension based on a predetermined time-frame . Cash bond will be assessed for all TCO items as determined by chief building official.
- All outstanding items shall be completed and approved by the expiration date indicated on the TCO.

This itemized list is provided as a guide to help you understand the process for building a new home in Northville Township. It covers the most common types of projects. If your new home is beyond the scope of this Guidebook, it may require additional information, Inspections or Permits. Please call the Building Department at (248) 348-5830 if you have any questions on how to apply this Guidebook to your specific project.

*Forms are available online https://www.twp.northville.mi.us/ or at the Building Department counter.

PLAN REVIEW CHECKLIST

New Home Construction

This list is provided as a guide to help you understand what information is required on your new home construction drawings. Please share this information with the person preparing your plans for their use.

New Home construction documents submitted for plan review shall contain the following information:

1. **Two complete sets of construction drawings** meeting the following requirements.
   - Drawn to scale in a draftsman-like manner, scale not less than 1/8" = 1'0".
   - Drawing shall be clear, readable and understandable.
   - Drawing sets shall consist of a single sheet size no larger than 24" x 36".

   - Drawings for homes with over 3,500 square feet of habitable space shall include complete construction and plumbing plans. All plans for these sizes of homes shall have the original signature, seal and date of a State of Michigan licensed Architect or Engineer.
   - Electrical plans are required when the electrical system rating exceeds 400 amps.
   - Mechanical (HVAC) plans are required for **all** new homes, regardless of the size. Mechanical (HVAC) plans shall include the following information:
     - Equipment sizing and efficiencies.
     - An indication that all ducts shall be sealed.
     - An indication showing R-values for duct insulation and methods of installation.
     - Manual J calculation.

2. **Two complete copies of the Michigan Residential Code Energy Worksheet for New Single-family Residential Buildings** along with all supporting documents, signed and dated by the Builder.

3. **Two complete sets of pre-engineered roof truss schematics** (if applicable) with the following information:
   - The location of all bearing walls and point loads for both interior and exterior walls.
   - The location, direction, span and spacing of all trusses including girder trusses (if trusses are being used). Please see "Sample Roof Truss Schematic". Please note – These schematics may be provided to the Building Inspector during the Rough Frame inspection.

4. **Two sets of plot plans** that match your construction drawings. Designed and stamped by a Michigan Licensed Civil engineer or surveyor.

5. A **Foundation Plan** that contains the following information:
   - Footing and column pad sizes with all layout dimensions.
   - Sizes and spacing of beams and columns.
   - First floor joist direction, size, spacing and span.
   - Size of support for all bearing walls and point loads from above.
   - Framing details at stair and fireplace openings.
   - Basement floor thickness, type of vapor barrier and a 4-inch sand or gravel base shall be indicated.
   - Basement wall types and thickness, and reinforcing steel sizes and spacing (if applicable).
   - Location and sizes of all emergency egress windows and window wells or doors leading directly to the exterior.
   - Sizes and types of sill plates and size, type, and spacing of anchorage shall be indicated.
   - Energy requirements, if applicable to the foundation. Provide a completed Michigan Residential Code Energy Worksheet and submit supporting documentation.
   - Wall bracing anchor requirements, if applicable (other than typical foundation anchors).

6. **Provide 1st & 2nd Floor Plans** (as applicable) that contain the following information:
   - Full dimensions and use of all rooms.
   - Ceiling height of all rooms.
   - 2nd floor joist direction, size, spacing and span.
   - Roof framing direction, size, spacing and span.
   - Sizes and locations of all support for bearing walls and concentrated loads.
   - Sizes of all doors and windows. Please note on the drawings any second floor windows greater than 72" above grade & less than 24" above the finished floor.
   - Sizes and types of all headers indicated for every opening.
   - Operable emergency egress windows or exterior doors in all sleeping rooms.
   - Details of the separation required between the attached garage and home.
   - Locations of all smoke and carbon monoxide alarms on every floor.

7. **Provide a Roof Framing Plan** (if applicable) indicating the location, direction, size, spacing and span of all roof and ceiling framing members. Indicate support for all bearing walls and concentrated loads from ends of hip and valley rafters, ceiling joists, rafters, trusses and girder trusses. Indicate the roof pitch for all portions of the roof.

8. **Provide Building or Wall Sections** showing the following information: (Depending on the complexity of your project, more sections or details may be required.)
   - Footing and basement wall sizes, type and height, and any required reinforcing.
   - Basement wall waterproofing/damp-proofing and drain tile with stone.
   - 1st and 2nd floor ceiling heights.
   - Location of finish grade.
   - All basement egress windows or doors.
   - Insulation types and R-values being used.
   - Attic ventilation calculations and details of attic ventilation types.

9. **Provide Wall Construction Details** including the following information:
   - Interior finishes.
   - Type of exterior sheathing.
   - Anchor bolt size and spacing.
   - Type and thickness of subfloor.
   - Size and spacing of wall studs.
   - Insulation with R values for all areas per the Michigan Residential Code Energy Worksheet for Single-family Residential Buildings.
   - Truss & rafter connectors to plates.
   - Roof construction details with thickness and type of sheathing, felt paper, snow and ice shield, and type of roof covering. Include type and amount of attic ventilation.
   - Brick veneer (if applicable):
     - Base course flashing.
     - Weather-resistant membranes.
     - Lintels and flashing.
     - Brick wall ties and flashing.
     - Weep holes (33 inches on center maximum)
   - Provide details for all walls over 10 feet in height and any walk-out walls. These walls shall be designed to resist wind load and support all other imposed loads.

     Please note: Details may be required to be signed and sealed by a Structural Engineer as determined by the Plan Reviewer.

10. **Provide Crawl Space Details (if applicable)** including the following:
    - Ventilation indicated within 3 feet of each corner.
    - A minimum 18" x 24" access if in the floor, a 16" x 24" access if in a foundation wall.
    - Clearance between ground and floor joists – at least 18 inches required for untreated wood.
    - Clearance between ground and wood beams – at least 12 inches required for untreated wood.

11. **Provide Stair Details** with all tread, riser, guardrail and handrail sizes, heights, spacing, and materials indicated. Indicate headroom height.

12. **Provide Building Elevations** – Front, sides and rear.

- Elevations shall be provided that include the location of proposed grades and clearly indicate all emergency egress windows.

13. **Provide Braced Wall Details** – For each floor

- Details shall clearly indicate the type, size and location of all braced walls, braced wall lines and all related dimensions.
- Details shall be provided for all portal frame openings, including garage door openings.
- References shall be provided showing Michigan Residential Code requirements for each braced wall line vs. what is proposed for each braced wall.
- Any special requirements, including tie-downs, strapping, etc., shall be clearly indicated.

Please note: This is not an all-inclusive list. Depending on the type and complexity of your project, more details or engineering by a State Licensed Architect or Engineer may be required.

INSPECTION REQUESTS

New Home Construction

The building department uses BS&A to schedule inspections if you are a contractor.

Homeowners call Northville Township Building Dept. at 248-348-5830 and have your address and permit number available.

Inspections scheduled before 3:00 p.m. may be added to the workload for the following working day

Joe Leeson and Joel Hamlin	Building Inspections	Monday - Friday
Tom Morrison	Electrical Inspections	Monday - Friday
Bill Weidendorf	Plumbing Inspections	Monday, Wednesday and Friday
Ed Bartram	Mechanical Inspections	Monday, Wednesday and Friday

Inspections scheduled before 3:00 p.m. may be added to the workload for the following working day. Building Inspections will be done Monday through Friday from 9:30 a.m. - 3:30 p.m. Inspections may be done earlier or later depending on the Inspector's workload. Inspectors will be available by phone for questions from 8:00 – 8:30 a.m. on the days they work. Call the building dept. between 8:00-8:30am the morning of your inspection for an estimated inspection time frame between.

A request to cancel an Inspection needs to be called into the Building Department at (248) 348-5830 before 8:30 a.m. on the day of the requested Inspection.

Please make sure your project is ready for an Inspection. Inspections will not be done and a re-inspection fee may be charged if the following items are not completed or in place:

- Contractor or homeowner on site.
- Safe access to the job site and throughout the area to be inspected.
- Approved plans on site.
- The job is ready for inspection
- The Street address and lot number posted and visible from street.
- Temporary soil erosion control properly installed if applicable.
- All building construction debris and materials contained on the property.
- Tree protection properly installed and maintained if applicable.

Inspection results will be left on site after each inspection has been completed.

Northville Twp Sticker This will have a list of all the inspection groups. If signed and dated at inspection requested the Inspection was approved.

Inspector's Correction Notice Inspection not approved. The Inspector's Correction Notice will contain a list of items that need to be addressed before calling for a re-inspection. A re-inspection fee will be due for items not corrected at the time of the second Inspection. Inspections shall be approved before proceeding with the next phase of construction.

It is your responsibility as the permit holder to check the job site for the Inspection results. Please read the information on the Inspector's Correction Notice. If you have any questions regarding this information, please call your Inspector between 8:00 – 8:30 a.m. on a day they are in the office (see above). You can also view your inspection results in BS&A Online. Enter the address in the search bar. Click on the address when it appears, then click on the Building Department tab. Scroll down to the Permits tab.

BUILDING AND TRADE INSPECTIONS

New Home Construction

This list is intended to help you understand the standard inspections and some of the common items the Inspectors look for during an inspection. This is not intended to be an all-inclusive list. Additional inspections may be required depending on the type and complexity of your project.

A safe access shall be provided to the inspection site and through all areas to be inspected.

Water & Sanitary Sewer Open-Trench Inspections – Prior to covering any pipes or connections to public facilities, inspections are to be scheduled the day prior to any digging.

- Requested by calling building department at (248) 348-5830 or schedule on BS&A.
- Proper type of pipe and fittings will be verified.
- Proper depth, location and installation of pipe will be verified.

Open Rail Inspections – After the rails are formed for spread footings. This is done to verify:

- Footing sizes.
- That the footings match the approved plot plan.
- That the footings are being placed on solid undisturbed virgin soil.
- That any required reinforcing steel (rebar) is in place.
- Special footings that may require additional inspections prior to pouring are being inspected.
- Any walkout type footings in the basement are properly installed.
- That ground conditions indicate proper soil.
- That any engineered foundation system is being properly installed.
- That any engineered pile foundation system is being properly installed.
- That tree protection is being maintained as required.
- Electrical bonding is in place.

Backfill Inspections – These occur before backfilling, and after drain tile, stone and waterproofing or damp-proofing have been completed.

Note: Plot plan needs to be on site for inspections of the back fillings. If brick is not being installed on the home, the tar-line height shall be indicated on your construction drawings.

The inspection will verify:

- Proper installation of lead walls with footings to the edge of the excavation.
- 6 inches of stone cover required on drain tile has been installed.
- Foundation anchors have been properly installed.
- Damp-proofing applied from the footings to the proposed grade has been installed.
- Window wells or door openings for the basement are installed per approved plans.
- Temporary bracing is required prior to back fill

Footing Inspections – Usually for garage and porch trench footings, these inspections verify:

- That footings rest on solid undisturbed soil.
- That footings are 42 inches below grade – minimum.
- That forming may be required to provide protection of footing due to ground conditions.
- That footings are installed in accordance with the approved plans.
- That footing locations and dimensions match the approved construction drawings and plot plan.
- That if required reinforcing steel (rebar) is in place and is of the proper size.

Underground Plumbing Inspections – These inspections are performed after all underground plumbing is installed and verify:

- The type and size of piping being used.
- The slope of pipe – 1/8 inch per foot minimum.
- That stone has been installed around the perforated pipe.
- That traps have been installed at all floor drains.
- That no broken or reclaimed concrete has been placed in contact with any pipe.

Concealed Gas Piping Inspections – These inspections are performed after gas piping that will be concealed is installed and fire-stopped with the proper material. The inspection will verify:

- Gas piping has been properly installed and no leaks exist (as witnessed by a gas pressure test).

Rough Plumbing Inspections – These inspections are performed after bathtubs, showers and all piping to be concealed in walls, floors and attics are installed and fire-stopped with proper material. The inspection will verify:

- The type and size of piping being used.
- That all water, sanitary and vent piping has been properly installed.
- That fire-stopping of all tubs, showers and piping per Michigan Residential Code requirements has been installed.
- Pressure testing for concealed waste piping is required by the Inspector.
- Venting methods for each fixture are those allowed for the types of fixtures connected.

Rough Mechanical Inspections – These inspections are performed after all concealed gas piping, duct work, return air, chimneys and electrical wiring are installed and fire-stopped with proper material. Approved Mechanical plans with Manual J calculations shall be on site for all Mechanical inspections. The inspection will verify:

- Proper clearance required between chimneys and combustible materials is maintained.
- Bath fan ducts have been installed and terminate to the outside at an approved location and at least 3 feet from any building opening (door, window, etc.).
- Complete framing and fire-stopping at all chimneys, chimney chases, return air and piping has been properly installed.
- That second floor registers have been covered.
- That floor registers in bathrooms, laundries and kitchen are one (1) inch above the finish floor.
- That floor registers located in bathrooms are located a minimum of 3’ from the water closet.
- That all ductwork has been sealed.
- That any exterior ductwork has been properly insulated and dampered.
- That information showing types, BTU ratings, and efficiencies of all furnaces has been provided and match the approved Mechanical plans.
- That info showing SEER ratings of all AC units has been provided and match the approved Mechanical plans.
- Any ductwork within the thermal envelope assembly and any ductwork outside the thermal envelope shall be leak tested in accordance with the Michigan Residential Energy Code requirements.

Rough Electrical Inspections – These inspections are performed after all wires, boxes and recessed fixtures are installed with grounds and neutrals tied together and all wire holes are fire stopped as required by the Michigan Residential Code. The inspection will verify:

- That wires extend a minimum of 6 inches out from all boxes.
- That all wires are secured as required by the Michigan Residential Code
- That smoke alarms are properly wired and interconnected with 3-wire cable.
- That carbon monoxide alarms are properly located.
- That all wire holes have been fire-stopped with proper material where required by Code.
- That vertical wires are not installed in return air areas.
- That any recessed fixtures installed in insulated ceilings are the proper type fixtures and have been installed per the Michigan Residential Code Energy requirements.
- That all switches, plugs and covers are not installed prior to the rough inspection.

Rough Fireplace

- **Masonry Fireplace Inspections** – These inspections are performed after the damper is installed and the smoke chamber is in place with the first flue set. The inspection will verify:
  - That concealed gas piping has been pressure tested prior to covering.
  - The type of mortar used in the fire box, hearth and smoke chamber construction meets code requirements.
  - The size and location of the exterior air intake.
  - That a minimum 2-inch clearance from combustibles has been maintained from the first floor through the roof construction.
  - The size and construction of the hearth extension.
  - The flue size.
  - The location and construction of the fire damper and the smoke shelf.
  - The size of mortar joints in the fire box.

- **Pre-Fab Fireplace Inspections (A Mechanical Permit is required) –** These inspections are performed after the fireplace, chimney, and hearth extension protection has been installed as required by manufacturer. The inspection will verify:
  - That everything has been installed per the manufacturer's requirements. Installation instructions need to be on site for this type of inspection.
  - That clearance between the chimney and any combustible material is being maintained per the manufacturer's requirements.
  - That the framing and fire-stopping at fireplace and chimney chase is complete.
  - That any concealed gas piping has been properly installed and pressure tested, and fire blocked at floor penetrations.
  - That a proper hearth extension and protection per the manufacturer has been installed.

Pre-Masonry Inspections – These inspections verify: the "brick flashing inspection"

- That the weather resistant building wrap has been installed properly with proper overlaps.
- That all joints and utility penetrations have been protected with the proper material.
- That a proper base course flashing material has been used and installed.
- That all door and window flashings have been properly installed.
- That all foundation anchorage has been properly installed.
- That wall bracing requirements have been met.

Rough Building Inspections – These inspections are performed after all rough plumbing, mechanical, electrical and fireplace inspections have been approved. (Approved plans and truss drawings need to be on site for these inspections.)

Floor Framing – These inspections will verify:

- The approved floor joists spans have been maintained.
- That floor trusses (if used) have not been damaged or modified in any way.
- That proper joist hangers have been installed and are properly nailed.
- That floor joists have not been improperly notched or bored.
- That all structural members have proper bearing.
- That there is proper support under all header studs.
- That there is proper support under all heat, cold air and plumbing cut outs.
- That there is proper support under all bearing walls.
- That the stairway will be a minimum 36-inch wide when all the walls are finished.
- That the stair risers are equal and have a maximum rise of 8-1/4 inches.
- That all stair treads are equal and have a minimum 9-inch depth.
- That all stair winders (if applicable) meet tread width and depth as outlined in the Michigan Residential Code.
- That proper headroom is provided in the stairway, 6'-8" minimum (measured from the nosing of the tread)
- That the approved sill plates have been installed at the perimeter of the foundation and have been properly attached with foundation anchors.
- That a minimum 18" x 24" crawl space access (if applicable) has been installed in the floor, or a 16" x 24" crawl space access has been installed in the foundation.
- That crawl space ventilation has been installed within three feet of all corners.
- That the engineered floor system (if applicable) has been properly laid out per the engineering.
- The steel beam sizing and column spacing and sizes of column footings. Proper bearing and connections will also be verified.

Wall Framing – These inspections will verify:
- Proper support under all beams and girders.
- Proper support under all girder trusses (if applicable).
- That studs have been doubled under any cut plates under joists.
- That the garage door header has proper support and any required straps or hold-downs have been secured to the framing.
- That treated plates have been installed where in contact with concrete.
- That any joints in top plates are staggered at least 24".
- That bottom plates have been properly nailed.
- That solid shims have been installed as necessary under any header bearing point.
- That all narrow wall bracing has been installed per Michigan Residential Code requirements.
- That studs have not been improperly notched or bored.
- That all proper wall bracing (exterior and interior walls) has been installed where required.
- That any damaged sheathing (holes) has been repaired.
- That the sheathing, if part of the brace wall design, covers the bond joist.
- That all holes thru plates (from wiring, plumbing, HVAC, etc.) have been properly fire blocked.
- That the chimney chase has been properly fire blocked.
- That all bathtubs and shower pans have been fire blocked completely and are properly insulated.
- That all dead spaces have been properly fire blocked.
- That all furred walls have been properly fire blocked.
- That all windows have been correctly installed and none are missing.
- That all required safety glass has been installed with readable labeling.
- That fire blocking has been installed in walls at 10' intervals both horizontally and vertically.
- That all bedroom egress windows meet the size requirements of the Michigan Residential Code.
- That all studs at wall intersections have been properly nailed.
- That all wall sheathing has been properly nailed.
- That the exterior house wrap has been installed properly.
- That the opening of any operable window is at least 24" above the finished floor if the window opening is more than 72" above the finished grade or surface below.
- That air barriers have been installed per the Michigan Residential energy code requirements.

Roof Framing – These inspections verify:
- That roof trusses have not been altered or damaged during installation (if applicable).
- That all trusses bear at the design bearing points.
- That properly sized truss hangers have been installed at all girder truss connections.
- That rafters (if used) have not been over spanned.
- That ceiling joists (if used) have not been over spanned.
- That any porch roofs have been properly supported.
- That any bay roof framing has been completed and is weatherproof.
- That the ridge board is not undersized.
- That collar ties and rafter ties have been provided.
- That trusses have been properly braced per manufacturer's requirements and as noted on truss the drawings.
- That roof/ceiling framing members have not been improperly notched or bored.
- That shingles have been installed and nailed properly.
- That the roof sheathing is not over spanned.
- That a 22" x30" attic access has been installed with sturdy sides built up high enough to hold in required depth of blown in attic insulation.
- That all bath fan vents have been connected to their exhaust ductwork.
- That proper roof venting has been provided.
- That all framing hangers have been sized, installed, and nailed correctly.
- That truss drawings have been provided on site.
- That required blocking between trusses or rafters for proper wall bracing has been installed.
- That any valley board that lays on roof framing has been properly sized.
- That there is adequate support at all cut ends of rafters.
- That all truss and rafter wall connectors have been properly installed.
- That multi-ply girders are properly attached together per the truss drawings.

Energy Inspections – These inspections occur after all insulation has been installed. The insulation inspection will verify:

- That insulation has been completed as required by your selected method of energy compliance per the submitted Michigan Residential Code Energy Worksheet for Single-Family Residential Buildings.
- That blown-in attic insulation (if applicable) can be checked at the Final Building Inspection.
- That insulation baffles have been installed for proper attic ventilation.
- That paper facing has been removed within 3 inches of all recessed lighting fixtures.
- That paper facing on insulation will be in substantial contact with wall, ceiling or floor coverings.
- That all doors and windows are labeled showing required U Factors.
- That the house wrap has been installed per manufacturer's installation instructions.

Basement Stone Inspections – These inspections occur after all underground plumbing has been inspected and approved and the floor is ready to pour. This inspection will verify:

- That a 4-inch sand or gravel base with a 6mil vapor barrier has been installed.
- That all foundation and basement walls are free from cracks.
- That the finish floor height matches the approved plot plan.
- The location of columns and column footings are per the approved plan.
- That the columns are installed properly.

Garage Sand Inspections – These inspections occur after all forms are set, the base is compacted, and all required reinforcement is installed. This inspection will verify that:

- A 4-inch sand or gravel base has been installed.
- That any forms required are installed and finish floor height is indicated on the walls.
- That the formwork at the overhead door extends down to top of the footing.
- That reinforcement is installed over the excavated area (by the house typically).
- That the brick ledge and footing have been cleaned off.
- All untreated wood is protected.
- That the floor will slope toward the overhead door.

Sump Line Inspections – These inspections occur after the sump line is installed and connected to the storm lead. An inspection can be requested by calling the Building Department at (248) 348-5830. The inspection will verify:

- That the inspection takes place prior to any piping being covered.
- The type and slope of piping.
- The connection to the existing storm lead will be checked.
- Connections of sump lines to drywells (if approved) are inspected by the Building Department.

Sidewalk and Drive Approach Inspections – These inspections occur prior to concrete installation. The inspection will verify:

- That a 4-inch sand or gravel base has been installed and all forms are properly placed.
- The width and location will be checked according to the approved plot plan.
- That structures in or adjacent to the concrete are properly adjusted to match the finished elevation.
- That the property corners have been staked along the right-of-way to ensure proper location.

Sidewalks

- The cross slope will be checked. A maximum slope of 2.0 % is allowed. (1.5% is recommended)
- That there is a 4-inch minimum thickness. (6" minimum thickness for slabs adjacent to driveway approaches)
- That there is a 2-foot clearance from fixed objects (hydrant, utility pedestal, retaining wall, etc).
- That the sidewalk extends to the property lines and matches existing sidewalks.
- The maximum slope for any sidewalk ramp is 8.33% per sidewalk spec. sheet.
- That side yard drainage is not blocked.
- That detectable warnings are installed at all crosswalk ramps per Engineering Department requirements.

Drive Approach Inspections – This inspection will verify:

- The slope of the approach is a minimum 2% and maximum 7%.
- That the approach will have a 6-inch minimum thickness (including sidewalk at drive).
- That a 5-foot clearance between the drive and any hydrant is maintained.
- That the curb and gutter section has been properly curb and/or replaced if necessary.

Final Plumbing Inspections – These inspections take place after the water meter and all fixtures are installed and operational. This inspection will verify:

- That there is hot water to all fixtures.
- That all items installed have been listed on the Plumbing Permit. If additional items were installed, they need to be added to the Plumbing Permit before final approval can be given by the Inspector.
- Water meter is installed.

Final Mechanical Inspections – These inspections take place after all gas piping, furnace, duct work and return air is installed and operational. **Approved Mechanical Plans shall be on site for all inspections.** This inspection will verify:

- That the furnace manufacturer's installation instructions are on site.
- That all ductwork has been sealed and air tested as necessary.
- That dampers have been installed for all intake and exhaust openings.
- That all items installed have been listed on the Mechanical Permit. If additional items were installed, they need to be added to the Mechanical Permit before final approval can be given by the Inspector.

Final Electrical Inspections – These inspections take place after all electrical equipment, switches, plugs, covers and fixtures are installed and operational. This inspection will verify:

- That the electrical panel has been properly labeled indicating all circuits.
- That smoke alarms and carbon monoxide alarms are installed and operational.
- That light bulbs have been installed in all fixtures.
- That all items installed have been listed on the Electrical Permit. If additional items were installed, they need to be added to the Electrical Permit before final approval can be given by the Inspector.

Final Fireplace Inspections

- **Masonry Fireplace** – These inspections take place during the final Building Inspection. These inspections will verify:
  - That the fireplace and hearth are completed.
  - That proper clearance between the fireplace opening and any combustible materials has been maintained.
- **Pre-fab Fireplace** – These inspections take place after the fireplace surround and hearth extension have been installed as required by manufacturer. The inspection will verify: by mechanical inspector with permit
  - That the manufacturer's installation instructions are on site.
  - That clearances between the fireplace surround and the fireplace meet the manufacturer's requirements.

Final Building Inspections – These inspections take place after final plumbing, mechanical, electrical, and fireplace inspections have been inspected and approved. This inspection will verify:

- That smoke alarms are interconnected and working properly.
- That carbon monoxide alarms are installed and working properly.
- That there is proper and equal height stair risers and tread widths on all stairs.
- That exterior painting and caulking has been completed.
- That proper drainage away from the building has been provided.
- That there is complete fire separation between the home and the garage.
- That all handrails have been terminated properly and meet the grasp ability requirements of the Code.
- That there is a properly installed address on the building.
- That there is at least 6 inches between the final grade and any untreated wood.
- That guardrails have been installed at all raised floor surfaces and open sided stairs located more than 30 inches above the floor or grade below.
- That all intermediate rails or ornamental closures in guardrails do not allow passage of an object 4 inches or more in diameter, or 4-3/8" in diameter for guardrails at stairways.
- That any doors leading to a deck or stairs that are not in place have been secured shut and are not openable, with a temporary guard rail.
- That all weep holes and flashing are visible where required by Michigan Residential Code.
- That all windows in bedrooms and basement areas meet emergency egress requirements.
- That the opening of operable windows is at least 24" above the finished floor if the window opening is more than 72" above the finished grade or surface below.
- That safety glazing properly identified and installed in all hazardous locations.
- All energy compliance items have been completed, including energy information installed by label.
- That the Insulator's Certificate has been provided for all blown insulation.
- That the results of the Blower Door Test have been provided.

Final Grade Inspections

An As-Built plot plan, signed and sealed by a Licensed Surveyor or Engineer showing what was actually constructed at your site, including all sidewalks, driveways, and grading elevations, shall be submitted and approved by the Building Department prior to a Final Grade Inspection request.

Permanent Erosion Control Inspections – These inspections verify:

- That all permanent erosion controls have been installed and are being maintained as required by Ordinance.
  - That sod is installed or grass seed is germinated.
  - The Right-of-Way, from the edge of the road to private property (typically 16.5 ft.).
  - All ditches.
  - The house side of any bike path or sidewalk.
  - At all slopes greater than 1 foot in 5 feet.
  - 10 feet around catch basins and storm manholes.
  - Any other areas prone to erosion as determined by the Inspector.
- The lot and the adjacent properties are free of debris.
- That the As-Built plot plan has been submitted and approved by the Engineering Department.
- That temporary controls have been removed and debris taken off-site by the developer.

Please note – You will need to locate and expose:

- Any gatewells.
- All fire hydrants.
- Any D-Boxes.
- The water stop box.
- All sanitary manholes.
- All storm manholes and catch basins.
- Property Corners.

Items to be Installed per the Approved Plot Plan

- Any ditches.
- All culverts.
- The drive apron and drive material.
- The sump pump discharge.
- Any right side yard swales.
- Any rear yard swales.
- Any left side yard swales.
- All required lot grading.
- Tree protection for final grade inspections.
- All sidewalks.

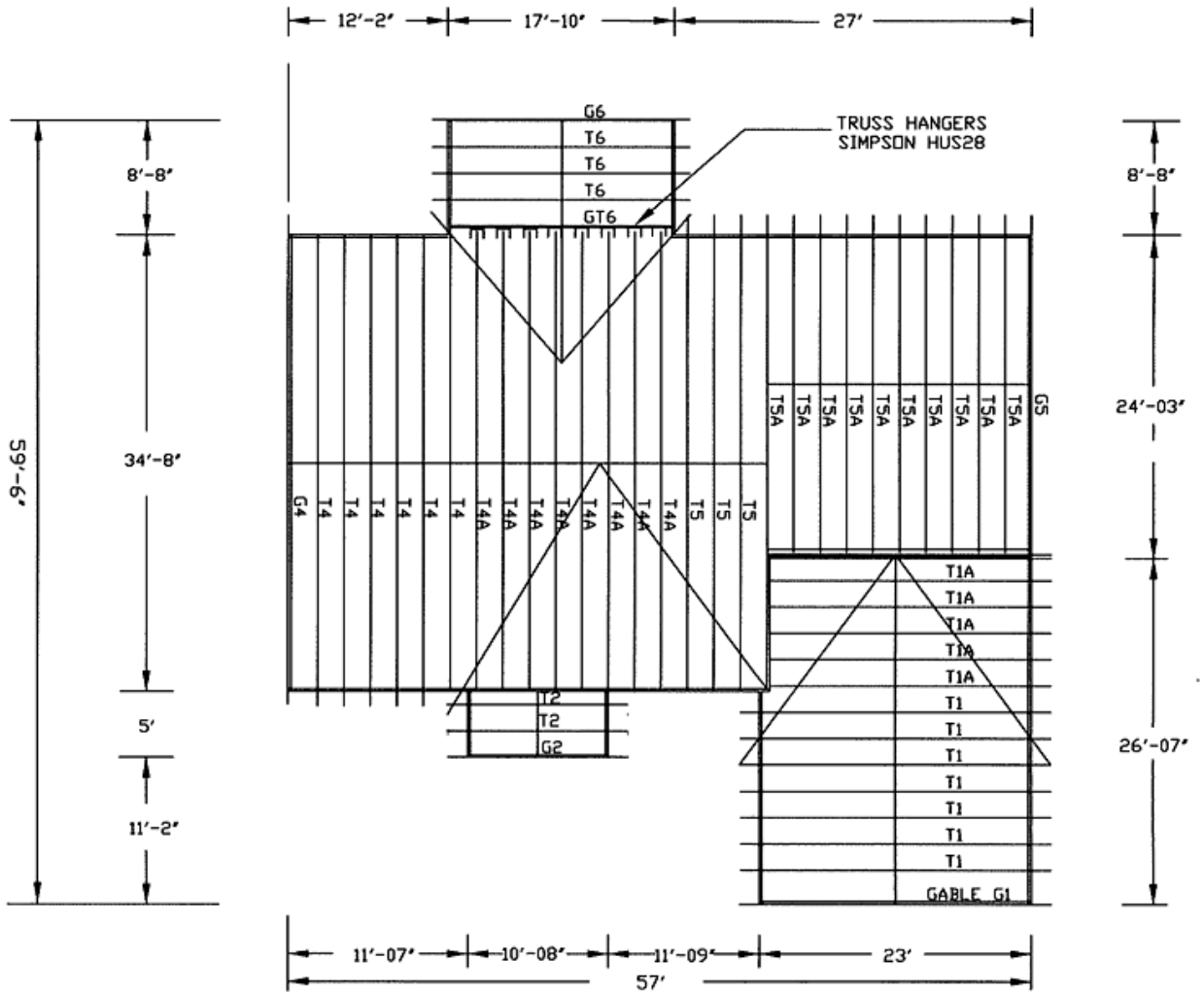
A grade inspection for a Temporary Certificate of Occupancy may be done prior to submitting an As-Built plot plan and grading completion if, in the opinion of the Building Official, weather conditions prevent the work from being completed. Cash bonds will be required for incomplete work, value of work is required for review.

Temporary Erosion Control shall be installed. Approval of the installation will be performed by the Engineering Department. Soil erosion fabric or silt fencing shall be installed at the following locations:

- The Right-of-Way.
- All ditches.
- The home side of the bike path or sidewalk.
- 10 feet around catch basins and storm manholes.
- Any other areas prone to erosion as determined by the Inspector.

NOTE: All wetland, floodplain, and steep slope requirements must be completed and approved by the proper agencies prior to Final Grade approval.

XYZ BUILDERS
LOT 13
XXXX STREET
ROCHESTER HILLS, MI.



ROOF TRUSS NOTES

TRUSS SPACING: 24" O.C.
LOADING: 47 PSF
TOP LL = 30
TOP DL = 7
BOT DL = 10
PITCH = 7/12
TYP OH = 16"

WALL HEIGHTS
1ST FLOOR: 9'-1 1/8"
2ND FLOOR 9'-1 1/8"

1. INDICATE SIZE, TYPE AND LOCATION OF ALL TRUSS HANGERS.

SAMPLE TRUSS SCHEMATIC

ZONING & GRADING

IMPORTANT INFORMATION

New Home Construction

The Zoning and Grading section of this Guidebook contains important information to help you submit a complete set of plot plans for a new home in Northville Township.

The following pages of information are included in this document:

Ordinances and Publications – A list of the Ordinances and publications used to compile the plot plan requirements.

Setback Requirements – Information to help you determine where your house can be located on your property.

Subdivision Zoning Districts – A list of all the City's subdivisions and their zoning classification.

Building Height – A detail page showing how the height of a house is calculated.

Plot Plan Requirements – A list of the items required to be shown on your plot plan. This list should be given to your plot plan preparer. Please take time to make sure your drawings are complete. Plot plans that contain all the necessary information and details will help speed up the review process.

Sample Plot Plan – A sample plot plan is enclosed.

The Zoning and Grading Section is a general guide provided in a format that is more "user friendly" to help you apply the Ordinance requirements to your project. The actual Ordinance language may contain additional requirements or exceptions.

PLEASE NOTE: A Soil Erosion Control Permit from Wayne County is required prior to permitting for all New Home applications.

Please take time to review this information. It may save you valuable time in building your new home.

PLOT PLAN CHECKLIST - OUTLYING LOTS

Address: _____

Sidwell No.: _____

Date: _____ Checked By: _____

Notes:

Waiting for:

WC Soil Erosion Permit

WC Well/Septic Permit

WC Permit for a Drive Approach

In order to check this plot plan the following is required:

T A print out of the information listed in Northville Applications for the parcel. This information will allow you to check the address, zoning and legal description for the parcel.

T A reduced photocopy of the page in the tax map that contains the parcel. This will allow you to identify the adjacent parcels and road right-of-way.

T Water Distribution map, Sanitary Sewer System map, Sanitary Sewer Master Plan and Storm Drainage Facilities map.

T Flood Insurance Rate Map, Northville Township Wetlands map, Northville Township Drainage map.

T Northville Township Thoroughfare Plan. This plan will designate the ultimate road right-of-way.

	Item	Corrections Required
	The plot plan must be signed and sealed by a licensed surveyor/engineer and be	
	The name, address, and phone number of the surveyor, and the client for whom the plot plan was prepared for, is required.	
	The plot plan must indicate the scale it has been drawn to and on a sheet no larger than 11" x 17."	
	The plot plan must have an accurate legend.	
	The plot plan must have a north arrow.	
	The sidwell number and address must correspond with that indicated on Northville Applications.	
	A written legal description that corresponds with the legal description given in Canton Applications and a boundary survey with length and bearing must be shown on plot plan.	
	The unexcavated areas of the house must be labeled or hatched.	
	The length of all the exterior walls of the house must be indicated. Dimensions should also be given for any decks, bay windows, fireplaces or porches.	
	The side, rear and front setbacks must correspond with those listed in the Zoning Ordinance (Article 26, Section 26.02). The front setback must be measured from the ultimate road right-of-way.	
	The road name and road right-of-way must be on the plot plan.	
	Dimensions must be illustrated for the sidewalk (if required by Planning) and driveway. Side entry driveways must have a minimum of 22' from the garage door to the edge of the driveway.	
	There must be 1 street tree for every 40 feet of frontage (if required by Planning).	
	Any easements on the lot must be shown and labeled. There may be easements if this parcel is located within an older platted subdivision. Northville Applications will designate if the parcel is a part of a subdivision and the corresponding plat will be on file.	
	The plot plan must label any adjacent parcels including the sidwell number.	
	A benchmark must be provided.	
	Sump discharge must be illustrated.	

	Item	Corrections Required
	The sanitary lead must be accurately illustrated and labeled on the plot plan (if already existing in DPS records). A reduced photocopy of the page in the tax map that contains the parcel must be included with this request.	
	Any fire hydrants in the vicinity must be illustrated and the finished grade must be labeled and correspond with the Final Measures. A minimum distance of 10' must be maintained between any fire hydrant and the edge of a driveway. This distance must be labeled.	
	All utilities in the vicinity of the parcel must be shown with dimensions from the property must be labeled.	
	The finished grade of the proposed house, as well as the finished grade of any homes on the adjacent parcels, must be labeled.	
	Detailed information on the proposed grades of the lot (existing and proposed lot grades and drainage arrows) must be provided. The plot plan must clearly illustrate that the parcel does not drain runoff into any adjacent parcels.	
	Place a note that: "The builder is responsible for resolving any drainage problems on adjacent properties that are a result of builder activities."	
	The top of curb elevations must be labeled at the corners of the lot.	
	Flood plain contours with the 100-year flood plain elevation and wetland boundaries with the required 25' buffer strip must be illustrated on the plot plan when present.	
	Indicate location of any retaining walls proposed on this site. If no retaining walls are proposed, provide a note on the plan stating "No retaining walls proposed on this building site"	
	The limits of construction must be indicated on the plot plan. If the limits of construction are within 500' of a water way a Wayne County Soil Erosion Permit must be obtained.	
	Any creek, drain, or watercourse on the parcel must be labeled. A natural, undisturbed storm water protection buffer must be maintained along any creek, drain, or watercourse. This buffer must have a minimum width of 50 feet, measured from the centerline of the creek, drain, or watercourse.	

ARTICLE 18
Schedule of Regulations

§ 170-18.1. Schedule of Regulations Limiting Height, Bulk, Density and Area by Land Use.

Residential Districts		Minimum Lot Size per Unit (BB, M)		Maximum Height (N,O,P)	Minimum Yard Setbacks (A, E, I, Q, R, S, T, U, V, W)			Minimum Floor Area per Unit	Maximum % of Lot Coverage by all Buildings
		Area/ Density (B,C,D)	Width (J)		Front (G,J,X)	Sides (F,H)	Rear (G)		
R-1 Single Family Residential		43,560 sf	150’	35’	40’	15’	50’	1,650 sf	15%
R-2 Single Family Residential	Without Public Utilities	43,560 sf	150’	35’	35’	15’	50’	1,350 sf	15%
	With Public Utilities	20,000 sf	125’	35’	35’	15’	50’	1,350 sf	25%
R-3 Single Family Residential	Without Public Utilities	43,560 sf	150’	30’	35’	15’	50’	1,100 sf	15%
	With Public Utilities	15,000 sf	100’	30’	35’	15’	50’	1,100 sf	25%
R-4 Single Family Residential		10,000 sf	60’	30’	30’	5’ min. 20’ total	50’	1,100 sf	25%
MF Multiple Residential		Up to 8 units/acre	--	40’	30’	15’	30’	(K, L)	20%
		Up to 12 units/acre	- -	40’	30’	30’	30’	(K, L)	20%
SH Senior Housing				30’	30’	30’	30’	450 sf	20%

§ 170-18.1 Limiting Height, Bulk, Density and Area by Land Use

Non-Residential Districts	Maximum Height (N, O, P, Y)	Minimum Yard Setbacks (A, E, Q, R, S, T, U, V, W)		
		Front (X)	Sides (AA)	Rear (AA)
OS Office Service	35’	25’	10’	20’
B-1 Local Business	30’	25’	10’	20’
B-3 General Business	30’	30’	10’	20’
CR Commercial Recreation	30’	25’	10’	20’
ORT Office, Research and Technology	48’	50’ (BB)	20’	50’
I Industrial	50’	50’(BB)	20’	50’
CI Consumer Industrial	30’	30’	10’	50’
NRMU Northville Road Mixed Use	50’	25’	10’	35’
PROS Public Recreation and Open Space	35’	25’	10’	20’

§ 170-18.2. Notes to Schedule.

A. Setbacks (all districts). The required setbacks are measured from the property line, future right-of-way, private road easement, greenbelt, buffer, easement, etc., as applicable.

B. Lot area (Residential districts and planned developments). The requirement of "public utilities" shall refer to the provision of both public water and sanitary sewer.

C. Lot area (Residential districts). Modifications to dimensional and density requirements may be permitted using one of the development options permitted in Article 20 Development Options or footnote AA of this Article.

D. Lot area (Residential districts). The actual density may be lower than the permitted maximum density in order to comply with the various dimensional requirements and other applicable ordinance standards. Up to 25% of state regulated wetlands or storm water facilities may be included in area calculations. Dedicated public road right-of-way, private road easements, private driveway easements and water bodies regulated by the Inland Lakes and Streams Act (Public Act 346 of 1972, as amended) shall not be included in area calculations.

E. Setbacks (All districts). A 35' wide greenbelt is required along any public right-of-way or private road easement serving more than four (4) residential dwellings. For nonresidential zoning districts, the width of the greenbelt shall be equal to the required parking lot setback. Building setbacks shall be measured from the interior edge of the greenbelt.

F. Setbacks (R-1, R-2, R-3 and R-4 districts). A minimum 30' is required between buildings and 56' between opposing garages for lots in the R-1, R-2 or R-3 zoning districts. A minimum 20' is required between buildings in the R-4 district. A minimum 15' side yard setback is required for lots in all single family zoning districts when the lot is adjacent to open space or project boundary.

G. Setbacks (R-1, R-2 and R-3 districts). For the purpose of preserving natural features and creating variation along the street edge, the building envelope may be shifted up to 10' (front to back), provided the total required front and rear yard setback of 90' is maintained in the R-1 district and 85' is maintained in the R-2 and R-3 districts.

H. Setbacks (R-1, R-2, R-3, R-4, MF and SH districts). Driveways must be setback a minimum of four (4) feet from the side lot line. The setback may be reduced to two (2) feet upon a finding by the township engineer that positive drainage can be maintained. Eight (8) feet is required between driveways for detached condominiums.

I. Setbacks (R-1, R-2, R-3, R-4, MF and SH districts). Specified building elements and architectural features may encroach into required setbacks in accordance with the following standards:

Key:
P = Permitted
NP = Not permitted

BUILDING ELEMENTS	SIDE	FRONT	REAR
Architectural elements such as window sills, belt courses, eaves and architectural features used exclusively to provide a decorative function and not increase living space within the dwelling (up to two (2) inches for each one (1) foot of side yard and maximum 24" in the front and rear yards)	P	P	P
Awnings and canopies (up to two (2) inches for each one (1) foot of required setback)	NP	P	P
Bay window (up to two (2) inches for each one (1) foot of side yard setback and maximum 24" in the front and rear yard)	P (1st floor) NP (2nd floor)	P	P
Box out (up to 24")	NP	P	P

Build out (one (1) inch per foot of required setback, provided it is an architectural feature with at least 75% of the outer plane consisting of window glazing and not exclusively living or mechanical space)	P (1st floor) NP (2nd floor)	NP	P
Chimney with foundation (up to 30" depth and eight (8) feet in width)	P	NP	P
Chimney without foundation	NP	NP	NP
Chimneys - direct vent	NP	NP	NP
Maximum percent of encroachments per wall, excluding a chimney with foundation	35%	35%	65%
Gutters	P	P	P
Porch/patio/terrace without a roof (up to 12' in front yard and up to 16' in the rear yard including steps and stairs; three (3) feet maximum wall/rail height)	NP	P	P
Porch/patio/terrace with a roof	NP	NP	NP
Wing wall as an architectural feature, not as a screen/privacy wall (up to six (6) feet in length with a maximum pillar height of three (3) feet, provided at least four (4) feet is maintained to the property line)	P	P	P

J. Corner lots (All residential districts). The required front yard setback must be provided on each side of the lot/unit that abuts a public street, private road easement or driveway easement. Corner lots shall be 25' wider in the R-1 Zoning District and 15' wider in all other districts.

K. Minimum floor area per unit (MF district). All units shall have at least one (1) living room and one (1) bedroom, except that up to 10% of the units may be efficiency apartments. A maximum 50% of the dwelling units within a development shall consist of one (1) bedroom units.

L. Minimum floor area per unit (MF district). The minimum net floor area for apartment units shall be as follows:

(1) Efficiency unit: 350 square feet.

(2) One (1) bedroom unit: 700 square feet.

(3) Two (2) bedroom unit: 800 square feet.

(4) Three (3) or more bedroom unit: 900 square feet for three (3) bedrooms, plus 200 square feet for each additional bedroom.

M. Lot area (all districts). The depth to width ratio shall not exceed 3:1.

N. Building height (all districts). Height limitations shall not apply to farm buildings, chimneys, flag poles, public monuments or water towers. With Planning Commission approval, schools, churches and other similar institutional buildings or architectural elements may be erected to a height of 48', provided the front, side and rear yards shall not be less than the height of the building wall abutting such yard.

O. Building height (all districts). Radio, television, cellular phone antennas and other similar apparatus may be erected above the height limit, as permitted by Article 3.1(J).

P. Building height (all districts). Penthouse or rooftop structures for elevators, stairways, heating/air-conditioning equipment and other similar apparatus may be erected above the height limits upon a finding by the Planning Commission that the building elevations illustrate the following:

(1) All rooftop equipment and apparatus shall be housed in a penthouse, parapet wall or architecturally appropriate screening structure.

(2) Penthouses and structures shall be set back from the outermost vertical walls or parapet of the principal structure a distance equal to at least two (2) times the height of the penthouse or screening structure. The height of the penthouse or screening structure shall not exceed 15'.

(3) A penthouse or screening structure shall not have a total floor area greater than 15% of the total roof area of the building.

(4) Roof mounted reception antennas shall comply with Article 3, General Use and Operating Provisions.

Q. Setbacks (all districts). Setbacks apply to principal buildings. Setbacks for accessory structures shall comply with Article 3, General Use and Operating Provisions or as otherwise specified in this ordinance.

R. Setbacks (all districts). All required yard areas shall be lawn, ground cover or living plant materials except for approved access drives, pathways, architectural features, signs, water features, essential service facilities and accessory structures permitted in Article 3, General Use and Operating Provisions.

S. Setbacks (all districts). Where a non-residential use abuts a residential zoning district, the following setbacks shall be provided from the adjoining residential district:

Zoning District / Use	Minimum Building Setback*	Minimum Parking Lot Setback*
B-1, MF, OS, CI	50 feet	50 feet
B-3, CR, SH, PROS, ORT, NRMU, school, church, utilities	100 feet	50 feet
I	200 feet	100 feet

NOTE:
*The setbacks above may be reduced, up to 50%, by the Planning Commission, upon a finding that the abutting area is designated on the Township's future land use map for a use other than residential, is used as a permanent nonresidential use or where the amount of landscaping in the buffer zone adjacent to the residential is increased by 50% above the minimum landscape buffer requirement.

T. Setbacks (all districts). Off-street parking shall be setback a minimum of 30' from any front property line in the B-3, CR, OS, ORT and I Zoning Districts and 25' in all other non-residential zoning districts. Based on the expected traffic operations, a deeper front yard setback may be required at site access points to provide sufficient internal vehicular storage. Setbacks are measured from the street right-of-way or private road access easement. The required parking lot setback shall be maintained as lawn, ground cover or living plant materials except for approved access drives, pathways, architectural features, signs, water features and accessory structures permitted in Article 3, General Use and Operating Provisions or as otherwise specified in this ordinance.

U. Setbacks (all districts). Principal buildings shall be setback at least 25' from water features including wetlands, stormwater facilities, rivers, lakes and streams. A 15' setback is required for accessory structures, accessory uses, pavement and similar items. Principal buildings and accessory structures/uses shall be setback a minimum of 50' from the centerline of the Johnson Creek.

V. Setbacks (all districts). All buildings shall be setback a minimum of 10' from any utility line.

W. Setbacks (all districts). Setbacks shall be measured from the near edge of an access easement or private road. If an easement meeting current Township standards has not been recorded, then the setback shall be equal to the required setback plus an additional 25' measured from the center line of the private road or drive. Where sidewalks are located along the private road, the setback shall be at least 25' from the sidewalk to provide adequate space to park a vehicle without blocking pedestrian traffic.

X. Setbacks (all districts). Where 50% or more of the street frontage between two (2) successive intersecting streets is occupied by buildings having a front yard setback less than required by this ordinance, the minimum front yard for new buildings shall be the average setback of existing buildings located within 200' on either side of the subject lot. The depth of the front yard shall not be less than one half of the setback specified in the Schedule of Regulations.

Y. Setbacks (all districts). For lots without frontage on a public street and at the end of a private road without a turn-around, all buildings shall be setback a minimum of 40' from the property lines or road easment.

Z. Setbacks (nonresidential districts). Parking lots, aisles and drives shall be subject to the side and rear yard setback requirements of the district.

AA. Front Yard Setbacks (ORT and I). Front yard setbacks from local streets within an industrial park may be reduced to 25' provided parking or loading is not located in the front yard.

BB. Lot Clustering (R-1, R-2 or R-3 districts). For developments served by both public utilities and containing at least five (5) single family lots, the required dimensional standards may be reduced in return for the provision of open space or preservation of natural features provided the density does not exceed what could otherwise be built on the property. The density calculation must be supported by a conventional plan alternative as defined in Article 20, Development Options. Setbacks may also be reduced provided the resultant building envelopes are smaller than required if the standard setbacks were applied.

PLOT PLAN REQUIREMENTS

New Home Construction

Three sets of plot plans with a current detailed topographic survey, prepared by a Professional Land Surveyor, Engineer or Architect, are required by Ordinance. Please see "Sample Plot Plan".

These plans shall contain the following information:

General:

The preferred plan size is 8-1/2" x 14". If it is necessary to go to a larger size, please do not exceed 18" x 24".
Builder's name, address and telephone number.

- A North arrow, legal description, street right-of-way and street name.
- The site benchmark that will be used to establish the home and site elevations.
- The dimensions required by the Michigan Residential Code if the building is built on or adjacent to slopes greater than 1 unit vertical to 3 units horizontal.
- A Plan scale between 1" = 20' and 1" = 50'
- Soil erosion control details for temporary construction control and for permanent controls to be placed prior to a final Certificate of Occupancy. (Placement of erosion controls are required to be shown on the plot plan for an approval from the Building Department).
- Percentage of lot coverage of all structures.

A Soil Erosion Control Permit from Engineering is required prior to plot plan approval.

For all lots on public roads with sidewalks, liability insurance is required. Please call the Building Department at (248) 348-5830 for additional information.

Zoning: https://ecode360.com/8501076#8501076

- All the dimensions of the proposed structure and the lowest floor and first floor elevation.
- Exact lot dimensions and all setbacks from all sides of the home, measured at 90 degree angles to the property lines. Setbacks must comply with Ordinance requirements provided.

The plot plan footprint and the construction drawings shall be consistent.

Trees: hhttps://ecode360.com/NO1919m

- The location of all trees and the existing and proposed elevation at the base of all trees, including off site trees and trees located in the Public Right-of-Way.
- The drip line to scale of all trees proposed to be saved. Clearly show which trees will be removed. (The drip line is the outer edge of the tree branches where the water drips to the ground.)

Grading and Drainage – The subdivision Master Grade Plan shall be used as a guide. Elevations may deviate slightly to accommodate the natural topography and drainage requirements.

- A minimum of 6 inches of fall away from the home in the first 10 feet and a minimum of 1% grade for the remainder of the property for drainage.
- Existing and proposed elevations and drainage patterns, including all swales, drainage courses, berms, retaining walls, ditches and culverts. The grade slope from the edge of the driveway to the culvert invert is not to exceed a 1 foot vertical to 2 feet horizontal slope.
- Existing and proposed elevations along all property lines, including property corners, at a minimum of 25-foot intervals, on site and to 100 feet beyond the property line. The survey should continue as far as a storm sewer outlet or "natural" outlet if storm drains are not available in the subdivision.
- The exterior home elevations at no less than the four corners. If the brick ledge of the home drops 2 feet or more, show the location and elevation of the drop. The brick ledge should be stepped uniformly. If the home has a walkout basement proposed, label and show the location and elevation of the walkout area.
- The location and elevation of all easements and utilities including manholes, gatewells, hydrants, phone, electric, gas, cable, etc. on the property and within 100 feet of the property.

The maximum slope allowed is 1 foot vertical to 3 feet horizontal (33%). All slopes exceeding a 1 foot vertical to 3 feet horizontal will require retaining walls with details of construction. Additional information and details may be required for retaining walls. This will be determined during the review process.

Utilities:

- All existing and proposed utilities, including septic systems and wells with elevations.
- If a sanitary sewer lead is not available for the home, contact Engineering department at (248) 348-5830
- The sidewalk (if applicable) with elevations at both side property corners and at the driveway. The cross slope requirements are 2% (1.5% is recommended). The maximum incline is 1 foot vertical to 12 feet horizontal (8.33%). For crosswalks, the maximum incline is 5% (1 foot vertical to 20 feet horizontal).
- The sump line location and indicate on the plan "Sump pump discharge water shall be connected directly to an approved drainage system." If there is no drainage system for this property, contact the Engineering Department at (248) 348-5830 for additional information.

Driveway:

If the road is gravel, the drive approach must be gravel. If the road is paved, the drive approach must be paved.

- The width and type of proposed driveway construction and elevations at the garage floor and at the edge of the road or top of curb at the centerline of the approach. The drive grade requirements are as follows:
- Side entrance slab – minimum 2% - maximum 4% slope.
- Slope down to road – minimum 2% - maximum 7% slope.
- Reverse drive slope – minimum 2% - maximum 7% slope.
- All existing curb drops and all proposed curb cuts.
- The angle of the driveway (should be 90º to the roadway edge).
- All roadside features and the sight distance for the approach.

Minimum Driveway Clearance:

5 feet between the driveway and fire hydrant.

Driveways should avoid all utility manholes. If unavoidable, call Engineering Department (248) 348-5830.

Wetlands and Floodplains:

Please indicate any wetland limits with the 25-foot natural features setback and required protective fencing. Activity within 10 feet of the regulated wetlands will require a Wetlands Use Permit.

Also, please show the location and elevation of all watercourses and provide the floodplain elevation on the plan.

Provide a State of Michigan Department of Environmental Quality permit if the property has state regulated wetlands.

Other Agency Permits That May Be Required:

Wayne County Department of Public Service (WCDPS) if working in right of way.

If there is a septic system on your property, a permit from the Wayne County Health Department is required prior to plot plan approval.

ARTICLE 23
Tree and Woodlands Replacement
[Amended 6-21-2012 ; 9-17-2015]

§ 170-23.1. Intent.

The intent of this article to place priority on the preservation of trees, vegetation and associated natural resources in recognition of the value they provide the Township in terms of physical, aesthetic, recreation and economic assets to residents, visitors and businesses.

§ 170-23.2. Applicability.

A. The standards contained herein shall apply to all parcels requiring site plan review, special land use review, administrative review, subdivision plat review, plot plan review or land divisions/reconfigurations.

B. For legal lots of record which are not located within a new development, trees located within 10 feet of the building footprint and a fifteen-foot-wide driveway area are exempt from the requirements of this article. Replacement of all other trees shall be in accordance with the requirements contained herein.

C. Issuance of a grading permit shall prohibit clearing or grading within 50 feet of a property line prior to site plan or administrative approval.

§ 170-23.3. Health/condition ranking.

Health condition of trees shall be determined by a forester or other qualified professional, utilizing the criteria contained in the table below. Any tree with a score of 16 or greater is regulated by this article.

	Scoring		
Factor	**5 or 4**	**3 or 2**	**1**
Trunk	Sound or solid	Sections of bark missing	Extensive damage or hollow
Growth rate	More than 6" twig elongation	2" to 6" twig elongation	Less than 2" twig elongation
Structure	Sound	1 major or several minor limbs dead	2 or more major limbs dead
Insects/disease	No pest present	1 pest disease present	2 or more pests present
Crown/development	Full and balanced	Balanced but not full	Unbalanced and without full crown
Life expectancy	Over 30 years	15 to 10 years	Less than 5 years

§ 170-23.4. Tree survey.

A. Tree tagging is only required for portions of the site where development is proposed and where the development area is supported by clearly defined clearing limits. Trees with driplines that extend into the area to be developed shall be included in the tree survey, even if the trunk of the tree is not in an area that will be disturbed.

B. Trees eight inches DBH or greater must be identified.

C. Tree locations must be provided on a topographic survey, and the base elevation of all trees proposed for preservation shall be identified.

D. The tree survey shall clearly identify which trees will be preserved, removed or transplanted.

E. Trees must be identified in a tabular format by tree tag number, size, common name, genus, condition and classification. Classifications include: regulated, nonregulated, landmark, or exempt, as regulated by this article.

F. Tree replacement calculations shall indicate the total caliper inches of regulated and landmark trees being removed, as well as any trees being considered for exemption. The total number of replacement trees and caliper inches shall be provided in written form and graphically illustrated on the tree survey.

G. Tree identification tags shall consist of 19-gauge aluminum or similar corrosion-resistant material. Tags shall be a minimum of 1 1/2 inches in diameter and be permanently stamped or engraved with a number that corresponds to a number designation defined on the tree survey. Numbers shall be a minimum of 1/2 inch high. Tags shall be attached to trees by way of galvanized roofing nail or other similar method.

H. The tree survey must be prepared and certified by a registered forester, or other individual possessing related qualifications, with the assistance of a land surveyor or registered engineer. If there are discrepancies in the tree survey information or if the applicant requests that a landmark or protected tree be exempted due to its health/condition, the Township reserves the right to review the situation or engage the services of an independent reviewer.

§ 170-23.5. Tree replacement requirements.

A. "Protected trees" are defined as all trees eight inches DBH or greater, provided they are not classified as landmark trees.

B. Landmark trees are defined by size and species, as listed in the chart below:.

Common Name	Botanical Name	DBH
All trees	--	24"
American hornbeam	Ostrya Virginiana	8"
Arborvitae	Thyja	18"
Beech (American)	Fagur grandifolia	18"
Beech (blue)	Carpinus Caroliniana	8"
Birch	Betula	18"

§ 170-23.5

Common Name	Botanical Name	DBH
Black walnut	Juglans nigra	20"
Cedar (red)	Juniperus Virginiana	12"
Chestnut	Castanea	10"
Crabapple/hawthorne	Malus/crataegus	12"
Dogwood (flowering)	Cornus Florida	8"
Fir	Abies	18"
Ginkgo	Ginkgo	18"
Hemlock	Tsuga	18"
Hickory	Carya	18"
Kentucky coffee tree	Gymnocladus dioicus	18"
Larch/tamarack	Larix	12"
London plane/ sycamore	Platanus	18"
Maple	Acer	18"
Oak	Quercus	18"
Pine	Pinus	18"
Redbud	Cercis canadensis	8"
Sassafras	Sassafras albidum	15"
Serviceberry	Amelanchier	8"
Spruce	Picea	18"
Sweet gum	Liquidamber styraciflua	16"
Tulip poplar	Liriodendrom tulipifera	18"
Wild cherry	Prunus	18"
Witch hazel	Hamamelis Virginiana	8"

C. Landmark trees must be replaced at a rate of 100% of the total DBH removed.

D. Protected trees must be replaced at a rate of 50% of the total DBH removed.

E. Replacement trees shall be at least 2 1/2 caliper inches for deciduous trees and seven feet in height for evergreens. Replacement for evergreens shall be equivalent to one inch equals 2.8 feet in height. Consideration may be given to allow smaller trees if they are part of a replacement plan that specifies a mixture of sizes and is intended to simulate as natural woodland habitat.

F. Deciduous trees shall be replaced with deciduous trees, and evergreen trees shall be replaced with evergreen trees. Where all of the trees being removed are entirely deciduous or evergreen, the Planning Commission may approve substituting up to 10% evergreen for deciduous or deciduous for evergreen. Alternatives may be based on site-specific conditions.

G. The proposed location of transplanted trees and required woodland replacement trees must be provided on the landscape plan. Transplanted and replacement trees shall be clearly distinguished from landscape elements required per Article 24, Landscape Standards.

H. All replacement trees shall satisfy American Association of Nurserymen standards, including:

(1) Nursery-grown.

(2) State Department of Agriculture inspected.

(3) Tree spade transplanted while in the dormant state, or if not in the dormant state, having been balled and burlapped with a solid well-laced root ball when in the dormant state.

(4) No. 1 grade, with straight unscarred trunk and a well-developed uniform crown. Park-grade trees are not acceptable.

(5) Staked, fertilized, watered and mulched in accordance with standard planting practices.

I. Where it is not reasonable and desirable to relocate or replace trees on site, relocation or replacement may be made at another approved location within the Township.

J. Where the Planning Commission finds it is not reasonable, practical and desirable to relocate or replace trees on site or at another approved location within the Township, the Planning Commission may direct the applicant to pay into the Township's Woodlands Trust Fund.

§ 170-23.6. Exemptions.

The following trees may be considered for exemption, provided they are not landmark trees, they do not comprise the predominant species on site or within a vegetated area, and they do not contribute to the overall vigor of the woodland or have significant value for watershed or erosion control. Singular trees in good condition are not exempt.

Ash

Black locust

Box elder

Catalpa

Cottonwood

Elm

Mulberry

Poplar

Silver maple

Tree of heaven
Willow

§ 170-23.7. Review standards.

A. The preservation of wooded areas, individual trees, woody vegetation and related natural resources shall have priority over development when there are other on-site location/design alternatives. The Planning Commission may impose conditions on the method and extent of the proposed activity/use as necessary to ensure it will be conducted in a manner that will minimize damage, encroachment or interference with regulated trees.

B. Because natural systems do not occur in isolation, the location of regulated trees with respect to topography, water features and other significant natural features shall be viewed as having a high priority in terms of preservation value.

C. The removal of regulated trees and wooded areas shall be limited to the following:

(1) When necessary for the location of a structure or site improvement, when a feasible and prudent alternative location does not exist.

(2) The tree is dead, diseased, injured or in danger of falling too close to existing or proposed structures, interferes with existing utility service, interferes with safe vision clearances or conflicts with other ordinances or regulations.

(3) When a landmark tree does not meet the health/condition standards contained herein.

D. The integrity of wooded areas shall be maintained even when such woodlands cross property lines.

E. Existing trees, wooded areas and understory vegetation shall be preserved within the required landscape greenbelt or buffers, unless removal is approved by the Planning Commission. Preserved vegetation may be credited toward landscape requirements contained in Article 24, Landscape Standards.

F. When a designated wooded area abuts a corridor identified as a natural beauty road, as authorized by Wayne County, existing vegetation shall be maintained for an average width of 100 feet, and a minimum of 50 feet, beyond the future right-of-way.

G. The clearing limits and locations of tree protection barriers shall be clearly identified on a plan.

§ 170-23.8. Tree transplanting.

A. Transplanted trees may be counted toward replacement trees, provided trees meet the minimum size and quality requirements of Article 24, Landscape Standards.

B. For deciduous trees over 10 caliper inches and evergreens greater than 30 feet tall, a statement regarding the method of transplanting shall be included, and the work shall be performed by a qualified individual.

C. A Township representative shall review the trees prior to commencing transplanting. The trees shall be reviewed again at their final location to ensure the transplanting operation has been successfully completed.

§ 170-23.9. Tree protection procedures.

A. Before development, land clearing, filling or land alteration, a tree protection fence must be installed at the approved clearing limits, and tree protection measures shall be inspected by the Township.

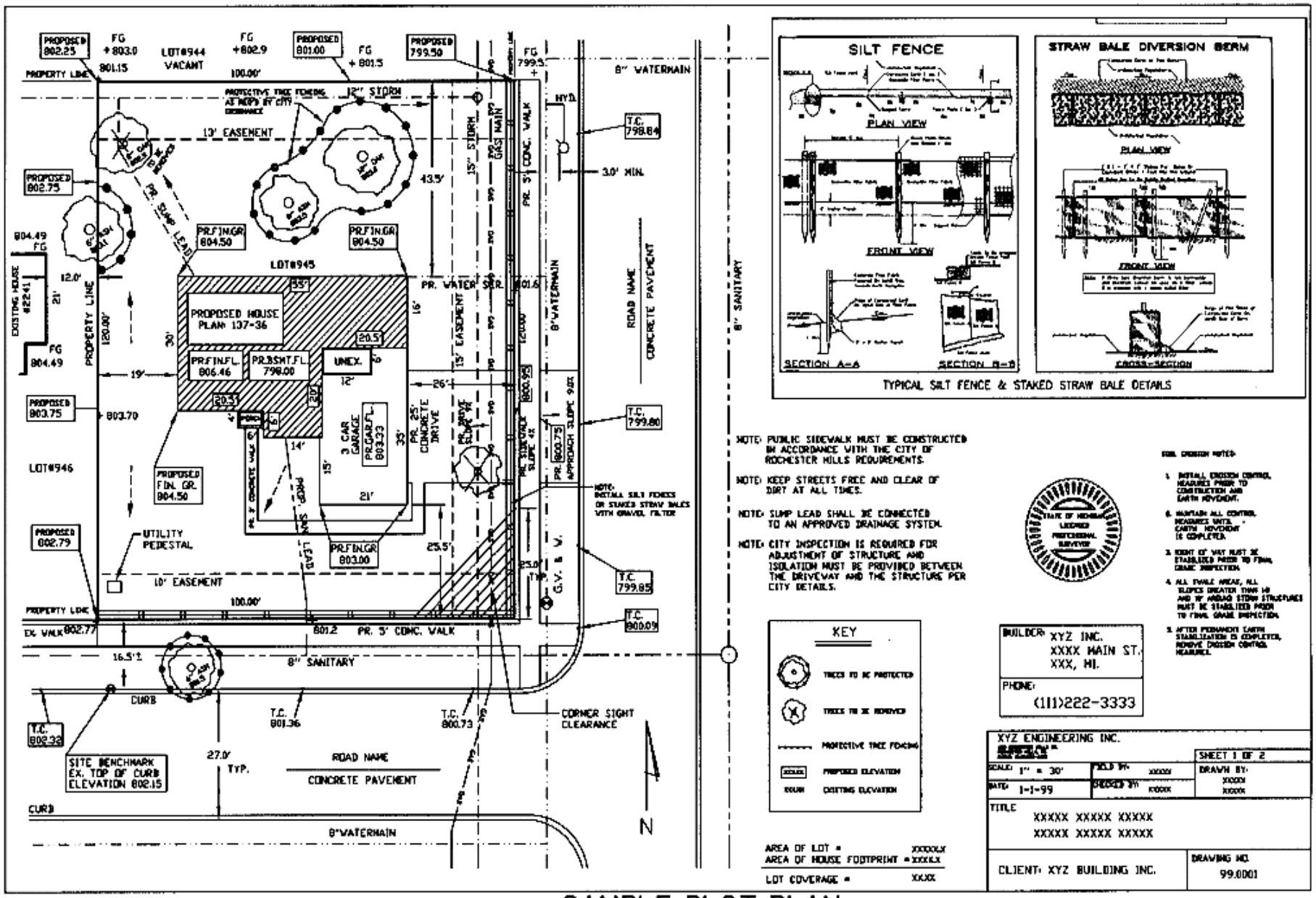
B. Protective fencing shall be located 10 feet outside the tree dripline.

C. Posts for fencing shall be staked at least two feet into the ground, with posts spaced a maximum of 10 feet on center.

D. Tree protection shall remain in its approved location until removal is authorized or directed by the Township.

§ 170-23.10. Replacement of trees damaged during construction.

Trees within preservation areas are subject to replacement when damaged or removed during construction. Trees shall be replaced at a rate of 1 1/2 inches' caliper for each one inch DBH removed or damaged.



SAMPLE PLOT PLAN