



A GUIDE FOR

RESIDENTIAL ADDITIONS

IN THE CITY OF MADISON HEIGHTS

ECONOMIC AND COMMUNITY DEVELOPMENT DEPARTMENT
BUILDING DIVISION

300 W. THIRTEEN MILE ROAD
MADISON HEIGHTS, MI 48071
(248) 583-0831 Fax (248) 588-4143

WWW.MADISON-HEIGHTS.ORG

INTRODUCTION

Residential Additions

The Building Division of the City of Madison Heights Community Development Department has prepared this handout to assist you in the process of building a residential addition within our City.

This handout contains important information that will help you understand the building permit and construction process from application to completion. We have included details for areas that have generated confusion or delays in the past.

When your permit application is submitted it will go through a three-step review process.

1. A **Plot Plan Review** covers the work related to the property, such as drainage, sidewalks, driveways, as well as utility locations and connections.
2. A **Zoning Ordinance Review** is performed to verify that your residential addition will meet the lot coverage, setback, height and size requirements for your zoning district.
3. A **Building Plan Review** covers all the construction code requirements that apply to your construction drawings.

Submitting a complete set of plot plans and construction drawings containing all the necessary information will expedite the review process. Details of these requirements are included in this handout. The permit applicant will be notified if the information provided does not meet zoning ordinance, plot plan or building code requirements.

This guide contains a summary of our current procedures and requirements, so we urge you to read through it completely. It may save you valuable time in building your residential addition. **It is a guide only and is not intended to be all inclusive.**

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

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HOW TO USE THIS HANDOUT

This handout is set up to allow you to quickly reference specific areas of interest. The titles of the information provided in each section are listed below along with an explanation of what is contained on that sheet with a page number for quick reference.

BUILDING CONSTRUCTION SECTION

Codes Currently in Effect..... Page 6

A list of the current codes that will apply to your project.

Application to Completion..... Page 7

This is intended to be your general guide through the complete process. It provides information on the application requirements, permits, inspections, Certificate of Occupancy and bond refund.

Building Permit Fees Page 11

A list of all the fees related to building a residential addition.

Plan Review Checklist Page 13

A guide to help you understand the information that must be contained in the construction drawings. This information should be given to the person preparing your plans. Please take the time to make sure your drawings are complete. Construction drawings that contain all the necessary information and details will expedite the review process.

Inspection Requests Page 21

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 Inspections Page 21

Explanation of the standard building inspections required and some of the common items the inspector checks for during the inspection. This should be used as a guide by builders, superintendents and homeowners to review the project before calling for an inspection.

ZONING AND GRADING SECTION

Important Information Page 28

Setback Requirements Page 28

A sheet to help you determine where your house can be located on your property.

Building Height Page 30

A detail sheet showing how the height of a house is calculated.

Plot Plan Requirements Page 30

A list of the items that are required to be shown on the 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 expedite the review process.

Sample Plot Plan Page 33
A sample plot plan is enclosed.

Contractor Registration Requirements Page 34
A list of requirements for registering and obtaining permits.

BEFORE YOU BUILD

These issues should be checked at the beginning of your project. They can affect the type, location, cost and length of time it takes to build your house.

Permit Process Allow time for the permit process. Plan review time varies depending on the Building Department's work load.

County or State Roads Are you adding or moving a driveway? If your house will be located on a County or State road, a drive approach permit is required from the Road Commission for Oakland County or the Michigan Department of Transportation.

Setbacks The Zoning Ordinance contains minimum dimensions required between your house and the property lines. See "Setback Requirements" page 28.

Existing Foundation When an addition is constructed, the existing foundation system must be capable of supporting the additional loads. If your house does not have an adequate foundation system, additional work may be required to ensure the existing structure and the new addition are properly supported. An addition can not be constructed on an existing wood deck unless the deck was designed to support the additional loads.

Drainage Will the existing yard drainage be affected by the addition? All changes to the drainage pattern must be shown on the plot plan.

Deed Restrictions Your subdivision may have deed restrictions that apply. The City of Madison Heights cannot enforce deed restrictions, however we encourage you to verify any deed restrictions that may apply to your project.

Sump Line A storm sewer or other approved drainage system must be provided for the connection of your sump line. See plot plan requirements, item (f). Contact the Building Department at (248) 583-0831 if you have any questions.

These are some of the common items that may cause delays in the permit process. If your project is beyond the scope of this handout, additional requirements may be necessary. Please call the Building Department at (248) 583-0831 if you have any questions.

PHONE DIRECTORY
CITY OF MADISON HEIGHTS

Office Hours: Monday Friday (except holidays) 8:00 a.m. 4:30 p.m.

<u>DEPARTMENT</u>	<u>PHONE</u>	<u>FAX</u>
Treasurer	(248) 583-0846	(248) 837-2620
Assessing.....	(248) 583-0820	(248) 588-4143
Building	(248) 583-0831	(248) 588-4143
City Clerk.....	(248) 583-0286	(248) 588-0204
Engineering	(248) 583-0831	(248) 588-4143
Fire Prevention.....	(248) 588-3605	(248) 588-3604
Planning	(248) 583-0831	(248) 588-4143
Public Service.....	(248) 589-2294	(248) 589-2679
Water/Sewer Billing.....	(248) 583-0845	(248) 837-2620

City Website: www.madison-heights.org All applications and handouts are available for download on the web site.

OUTSIDE AGENCIES; PERMITTING AGENCIES

Ameritech (telephone).....	800-244-4444
Cable:	
Comcast Cablevision	800-COMCAST
Wide Open West	800-848-2278
Consumers Energy.....	800-477-5050
Detroit Edison.....	800-477-4747
Michigan Department of Environmental Quality.....	800-662-9278
Michigan Department of Transportation.....	248-483-5100
Michigan Department of Natural Resources.....	734-953-0241
MISS DIG	800-482-7171
Oakland County Customer Service.....	248-858-0720
Oakland County Drain Commission.....	248-858-1105
Oakland County Health Department.....	248-858-1280
Road Commission for Oakland County	248-858-4804

IMPORTANT INFORMATION

The building section of this handout contains important information to help you understand the process of building a residential addition in the City of Madison Heights.

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

The following information is provided:

Codes Currently in Effect Page 6

A list of the current codes that will apply to your project.

Application to Completion Page 7

This is intended to be your general guide through the complete process. It provides information on the application requirements, permits, inspections, Certificate of Occupancy and bond refund.

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A list of all the permit fees related to building a residential addition.

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A guide to help you understand the information that must be contained in the construction drawings. This information should be given to the person preparing your plans. Please take the time to make sure your drawings are complete. Construction drawings that contain all the necessary information and details will expedite the review process.

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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 Inspections Page 21

Explanation of the standard building inspections required and some of the common items the inspector checks for during the inspection. This should be used as a guide for builders, superintendents and homeowners to review the project before calling for an inspection.

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

CODES CURRENTLY IN EFFECT

for the City of Madison Heights

Building:

Residential: Michigan Residential Code 2015

Plumbing: Michigan Plumbing Code 2012

Mechanical: Michigan Mechanical Code 2012

Electrical: Michigan Residential Code MRC 2015

Energy: Michigan Energy Code 2009

The Michigan Residential Code and the Michigan Energy Code can be purchased from:

State of Michigan
Department of Labor and Economic Growth
Building Code Division
(517)241-9313

The codes noted above have been adopted by the City of Madison Heights Municipal Code, Section 6-16 through 6-111.

APPLICATION TO COMPLETION

A General Guide Through The Complete Process

1. Information required for permit application

- A. Building Permit Application**
Applicant or authorized agent signature required
- B. All Fees**
See "Building Permit Fees" page 11.
- C. Plot Plan Three Sets**
See "Plot Plan Requirements" page 30.
- D. Construction Drawings Two Sets**
See "Plan Review Checklist" page 13.
- E. Roof and Floor Truss Layout Two Sets**
- F. Michigan Energy Code Compliance Form Two Copies**
Energy Code information is available from the Building Department.

Owners may submit a permit application for work on property that is, or will be, on completion, their place of residence.

Be advised: Any contractor, hired by the owner who furnishes \$600.00 or more, in labor or materials, must be licensed in accordance with the State of Michigan Residential Builders Laws.

Note: All information noted above must be submitted with the building permit application. All forms to be filled out completely.

2. Registration of Builders License

Builders must be currently registered with the City of Madison Heights to submit a permit application.

All registrations expire on May 31st.

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.

Registration fee of \$15.00.

Contractor Registration form.

The form must have an original signature by license holder.

The form must be notarized (if not presented by license holder).

3. Plans Reviewed and Approved

Building and plot plans are reviewed for compliance to City codes and 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 work load.

Plans that contain all the necessary information and details will expedite the review process.

The permit applicant will be notified if the information provided does not meet zoning ordinance, grade or building code requirements or if any additional information is necessary.

4. Permit Ready

The applicant should contact the Department after the period specified when the application was dropped off to see if the permit is ready to be picked up.

A soil erosion control permit from the Oakland County Drain Commission is required for all

residential addition permits. A copy of the permit must be submitted to the city prior to issuing the building permit.

All remaining permit fees are due at the time of issuance.

Permit fees can be paid by cash or check.

The building permit must be issued within 6 months of the application date or the application will be canceled.

Permits that have no activity for more than 6 months will be canceled.

5. **Plumbing, Mechanical and Electrical Permits** are required and can be obtained after the building permit has been issued.

When all the required permits are obtained, construction may begin. Revisions to the building or grade after issuance of the building permit will require re-submittal and approval.

The following items must be installed and maintained throughout the construction process:

Street address and job card posted & clearly visible from the street.

Street and public sidewalks must be kept clean.

Temporary soil erosion control.

All construction materials and debris must be contained on your property.

6. **Open Rail Inspection**

Before basement footings are poured.

See "Inspection Request" page 21.

Note: For details of all inspections see "Building Inspections" page 21.

7. **Footing Inspection**

Usually for garage and porch trench footings.

Required before pouring concrete.

8. **Backfill Inspection**

Before backfill, after drain tile, stone and water/damp-proofing have been completed.

It is the responsibility of the owner, owner's representative, or contractor to provide this office with an as-built for the foundation before any other constructions will be allowed to be performed. It must be prepared and sealed by a surveyor or engineer to verify compliance with the submitted approved plot plan. **There will be no other permits or inspections allowed on the project until such a plan has been provided.**

9. **Rough Plumbing Inspection**

After bath tubs, showers, and all concealed piping in walls, floors and attics are installed and fire-stopped.

The rough inspection includes all rough and underground plumbing.

A separate underground inspection can be requested prior to the rough inspection for an additional fee of \$70.00 per inspection. This fee must be paid prior to underground plumbing inspection.

10. **Rough Mechanical Inspection**

After all concealed gas piping, duct work, return air, chimneys and electrical wiring are installed and fire-stopped.

11. Rough Electrical Inspection

After the service, all recessed fixtures, wires and boxes are installed and fire-stopped with grounds and neutrals tied together.

A separate service inspection can be requested prior to the rough inspection for an additional fee of \$70.00 per inspection. This fee must be paid prior to the inspection.

12. Rough Fireplace Inspection

Masonry fireplace

Damper inspection required.

After damper is installed and smoke chamber is in place with first flue set.

Inspection required for concealed gas piping prior to covering.

Pre-fab fireplace

Requires a mechanical permit.

After fireplace, chimney and hearth extension protection are installed as required by the manufacturer.

Framing and fire-stopping at the fireplace and chimney chase must be completed.

Manufacturer's installation instructions to be on site at inspection.

13. Pre-Masonry Inspection

Proper type and installation of weather resistant sheathing.

Proper base course flashing and installation.

14. Rough Building Inspection

After rough plumbing, mechanical, electrical and pre-fab fireplace inspections are approved.

Prior to installation of insulation.

Approved plans and truss drawings must be on site at inspection.

15. Insulation Inspection

The house must be insulated in accordance with the Michigan Energy Code.

A "Statement of Energy Code Compliance" must be completed and on site at the final building inspection.

16. Drywall Inspection

After insulation inspection, drywall will be checked for screw/nail patterns.

17. Basement Slab Inspection

After underground plumbing is approved and sump and weep tile are installed.

Stone base and vapor barrier installed.

18. Garage Sand Inspection

After all forms are set, the base is compacted and all required reinforcement is installed.

19. Final Plumbing Inspection

After water meter and all fixtures are installed and operational.

Includes sump discharge.

20. Final Mechanical Inspection

After gas piping, furnace, duct work, and return air is installed and operational.

Furnace manufacturer's installation instructions to be on site.

21. Final Electrical Inspection

After all electrical equipment, switches, plugs, covers and fixtures are installed and operational.

22. Final Building Inspection

After final plumbing, mechanical, electrical, concrete and pre-fab fireplace inspections have been approved.

A "Statement of Energy Code Compliance" must be completed and on site at the final building inspection.

Includes brick and weep holes.

23. Final Grade Inspection

After final grading and all exterior work is completed, an as-built plot plan prepared by a professional land surveyor or engineer must be submitted for review.

Can be done anytime after final as-built plot plan has been submitted and accepted.

24. Certificate of Occupancy

Required before the addition can be used or occupied.

Requested by calling the Building Department at (248) 583-0831.

All inspections must be completed and approved before Certificate of Occupancy is requested.

Please allow time for processing. The Building Department by state law has 5 business days from the time the request is received to issue the Certificate of Occupancy. The normal processing time is 2 business days.

25. Temporary Certificate of Occupancy

Required before the addition can be used or occupied.

Requested by calling the Building Department at (248) 583-0831.

May be issued for a maximum of 90 days for uncompleted site issues only, when, in the opinion of the Building Official, weather conditions prevent the work from being completed.

Fee is \$325.00 for each request or extension.

Each request is evaluated based on the job site and weather conditions to determine if a Temporary Certificate of Occupancy will be issued. The length of time given for the completion of unfinished work will be determined by the building department.

All outstanding items must be completed and approved by the expiration date on the Temporary Certificate of Occupancy.

A bond must be submitted for all outstanding items. The bond amount is \$500 per item, or the actual cost, whichever is greater, to complete all the remaining items.

Proper drainage away from the building is required.

Temporary soil erosion control must be installed.

Two off-street parking spaces usable in all weather conditions are required.

26. Bond Refund

All special bills must be paid.

Street cleaning.

Tap repair.

Debris removal.

Any other fees or bills due.

The bond refund will be processed after the items noted above are completed, all inspections are approved and the Final Certificate of Occupancy has been issued.

Once all requirements have been met, allow 1 week for the bond refund.

The City shall pay no interest on cash bonds submitted to the City. The City shall not return any interest accrued on cash bonds.

This itemized list is provided as a guide to help you understand the process for building a residential addition in the City of Madison Heights and is not inclusive. It covers the most common types of projects. If your house is beyond the scope of this handout, it may require additional information, inspections or permits.

Please call the Building Department at (248) 583-0831 if you have any questions on how to apply this handout to your specific project.

PERMIT FEES

1.0 ELECTRICAL, MECHANICAL & PLUMBING PERMIT FEE SCHEDULE

- 1.1 All permits shall be assessed a non-refundable application fee of \$30.00.
- 1.2 The Permit Fees for any electrical, mechanical or plumbing permit shall be \$70.00 per inspection. One inspection and the application fee are required on all permits. Permit renewals shall be \$35.00. Permit fees are non-refundable after work has started and non-transferable.
- 1.3 Contractor registration fee shall be \$15.00 for electrical (all categories), mechanical and plumbing contractors.
- 1.4 Permits for new construction shall be for the minimum number of inspections required in Section 3.
- 1.5 An investigative fee equal to the amount provided for in Section 1.2, shall be assessed if a permit was not obtained prior to commencement of work.
- 1.6 A fee of \$70.00 per inspection shall be charged for the re-inspection of all failed inspections.

2.0 BUILDING, MOVING, DEMOLITION AND SIGN PERMIT FEE SCHEDULE

- 2.1 All permits shall be assessed a non-refundable application fee of \$30.00.
- 2.2 The Permit Fees for building permits shall be an application fee plus the applicable permit fee. One inspection and the application fee are required on all permits. Permit renewals shall be \$35.00. Permit fees are non-refundable after work has started and non-transferable.
- 2.3 A fee of \$70.00 per inspection shall be charged for the re-inspection of all failed inspections.

Building Permit Fees Residential Alterations, Additions and Accessory Structures

Accessory structures, remodels, repairs, alterations, and other small jobs based on improvement cost as follows:

\$30.00 non-refundable application fee plus permit fees as follows:

<u>Improvement Cost</u>	<u>Fee</u>
\$0.00 to \$1,000.00	= \$70.00
\$1001.00 up	= \$70.00 + \$6.30 per thousand or fraction thereof, over \$1000.00

Plan review fee when required = \$55.00

Certificate of Occupancy including replacement certificates = \$25.00

Exception: Permit and inspection fees for the construction of barrier free ramps serving one and two family dwelling units shall be waived.

Temporary Certificate of Occupancy All Construction

Single-family residential - \$325.00 plus bond of \$500.00 per incomplete item or 100% of cost, whichever is greater.

All temporary certificates are 90 days maximum with one renewal.

Demolition

All permits shall be assessed a non-refundable application fee of \$30.00.

Permit Fees:

\$210.00 (Includes pre and post demolition and final site inspection. Additional inspections \$70.00 each. The inspector shall estimate the number of visits required).

Contractor registration fee:

Registration	\$15.00	
Performance Bond	\$5,000.00	(Note: Bond required for all demolition permits including homeowner permits.)

Moving Buildings

All permits shall be assessed a non-refundable application fee of \$30.00

Permit Fees:

\$140.00 (Includes pre and post move safety inspection. Additional inspections \$70.00 each. The inspector shall estimate the number of visits required)

Contractor registration fees:

Annual Registration	\$15.00
Performance Bond	\$5,000.00

Code Inspections

\$70.00 per inspection/per inspector

Overtime Inspections

\$105.00 per hour.

Additional/Add-on Inspections, All Permits

\$70.00 per inspection

Appeal Boards

Construction or Property Maintenance Board of Appeals \$250.00.

2.4 Except as noted above, contractor registration fee shall be \$15.00.

2.5 An investigation fee equal to the permit fee shall be assessed if a permit was not obtained prior to commencement of work.

PLAN REVIEW CHECKLIST

Building

This list is provided as a guide to help you understand the information that must be contained on the construction drawings. It should be given to the person preparing your plans.

Residential Addition construction drawings submitted for review must contain at least the following information:

1. **Complete drawings**, including an electrical layout plan are required for all buildings and structures. One and two family residential plans under thirty-five hundred (3500) square feet may be submitted by a currently licensed Michigan Residential Builder or a qualified homeowner. All other drawings must bear the countersigned seal of a Michigan registered architect or engineer. The original plan(s), DRAWN TO SCALE, shall be no larger than a 24 x 36 inch format. **At least one set of drawings must be submitted in a format no larger than 11 x 17 inches.** 11 X 17 drawings which are reduced from larger drawings must contain a graphic scale usable on the reduced drawing and must be legible. Drawings larger than 24 x 36 inches will not be accepted. Reverse layout plans with reversed text will not be accepted.

Houses over 3,500 square feet must have complete construction and plumbing plans. All plans must have the original signature, seal and date of a State of Michigan licensed Architect or Engineer. Detailed electrical, plumbing and mechanical requirements are available upon request.

2. Two copies of the Michigan Energy Code Compliance Form.
3. Two sets of pre-engineered roof truss schematics with the following information:

Location of all bearing walls and point loads, both interior and exterior.

Location, direction, span, and spacing of all trusses including girder trusses. See "Sample Roof Truss Schematic".

4. **Construction drawings** must match the submitted plot plan
5. **Foundation plan** must contain the following information:
 - Footing and column pad size and layout with all dimensions
 - Beam size and column spacing
 - First floor joist direction, size, spacing and span
 - Size of support for all bearing walls and point loads above
 - Framing at stair and fireplace openings
 - Basement floor thickness, vapor barrier and 4-inch stone base
 - Basement wall type and thickness
 - Egress window and well or door to exterior if basement is intended to be a habitable space

Test holes may be required to verify the depth of existing footings prior to a permit being issued. This will be determined during plan review.

6. **1st and 2nd floor plan** with 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
 - Size and location of all support for bearing walls and concentrated loads
 - Size of all doors and windows
 - All sleeping rooms must have at least one operable window or exterior door approved for emergency egress
 - Details of the separation required between the attached garage and house
 - Location of all smoke detectors
7. **Roof framing plan** 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 joist, rafters, trusses and girder trusses. Also indicate roof pitch for all portions of the roof.
8. **Building or wall section** with the following information: (Depending on the complexity of your project, more sections or details may be required.)
 - Footing and basement wall size, type and height.
 - Basement wall waterproofing/damp-proofing and drain tile.
 - 1st and 2nd floor ceiling height.
 - Location of finish grade.

Wall construction details

Interior finish.	Truss & rafter connectors.
Type of exterior sheathing .	Insulation.
Anchor bolt size and spacing .	Size and spacing of wall studs.
Type and thickness of flooring.	
Roof construction details with thickness and type of sheathing, felt and snow and ice shield.	
Include type and amount of attic ventilation.	
Brick veneer.	

Base course flashing.
Weather-resistant membrane.
Lintels and flashing.
Brick wall ties and flashing.
Weep holes 33 inches on center or less.

Provide details for all walls over 10 feet in height and walk-out walls. These walls must be designed to resist wind load and support all other imposed loads.

9. Crawl space details

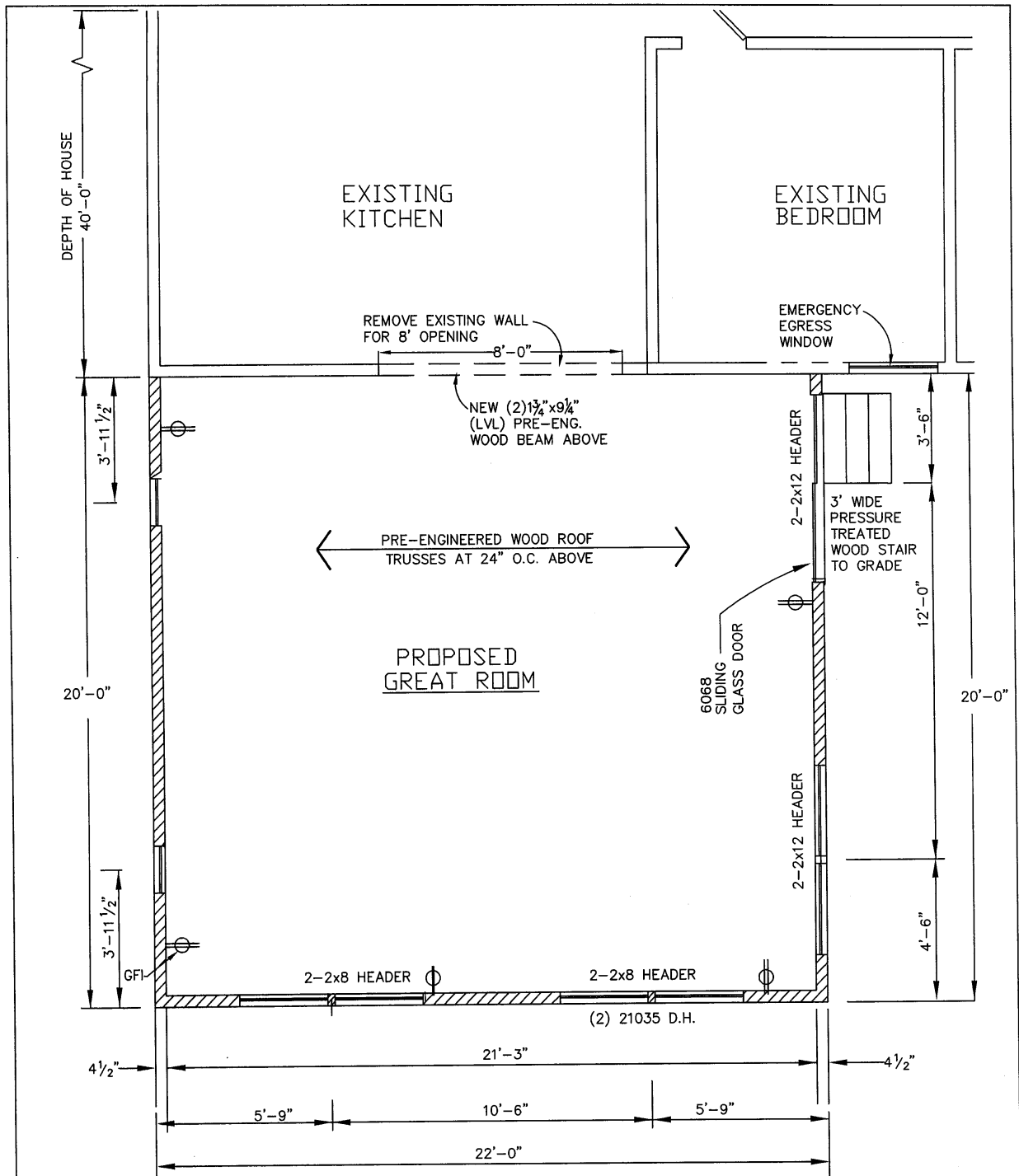
Ventilation required within 3 feet of each corner.
18" x 24" access required if in floor, 16" x 24" if in wall.
Clearance between ground and floor joists must be at least 18 inches.
Clearance between ground and wood beams must be at least 12 inches.

10. **Stair detail** with all tread riser, guardrail and handrail requirements.

11. Building Elevations

Front, sides and rear with location of proposed grades.

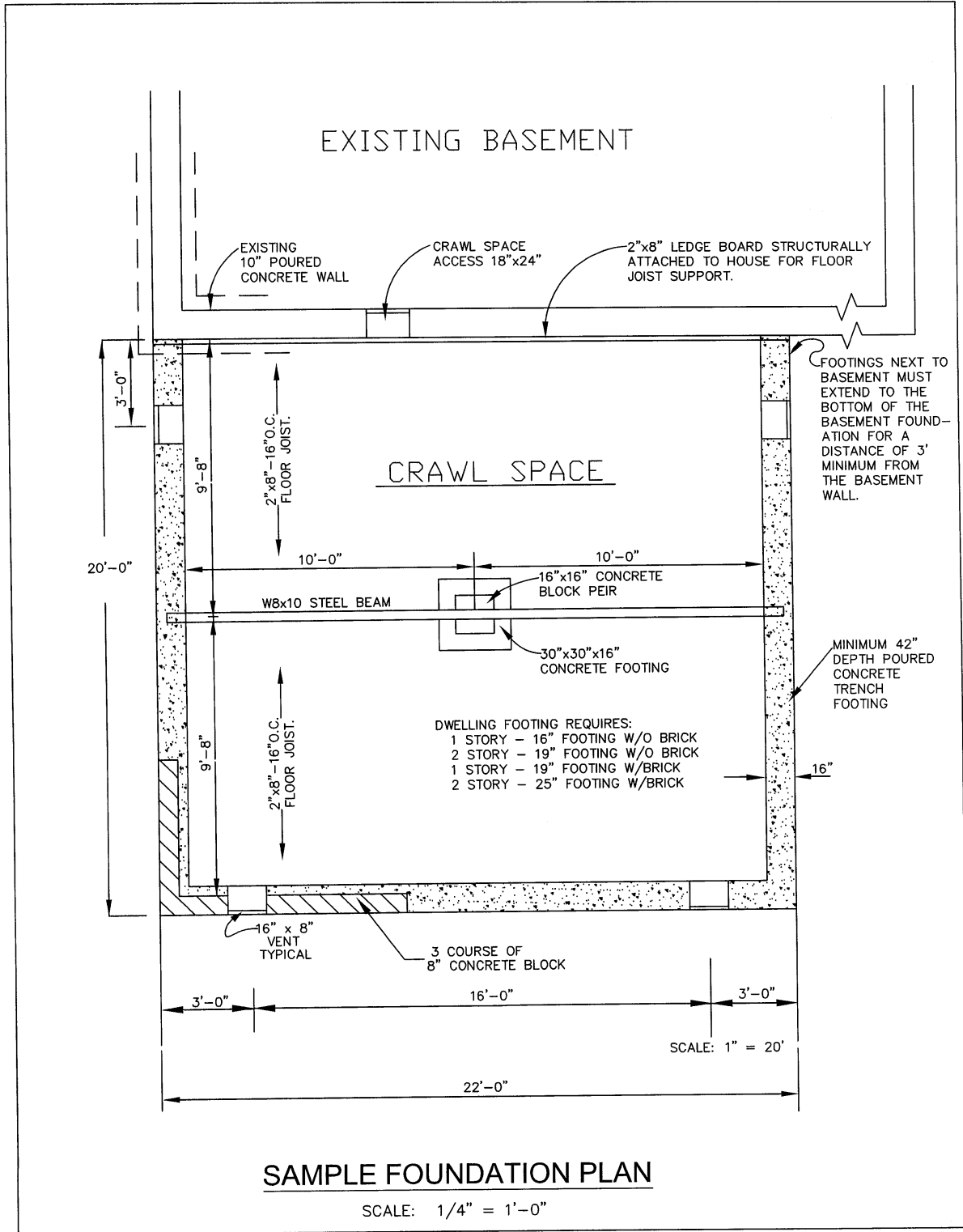
Please note: This is not an all-inclusive list. Depending on the type and complexity of your project, more details or engineering by a state licensed Architect or Engineer may be required.

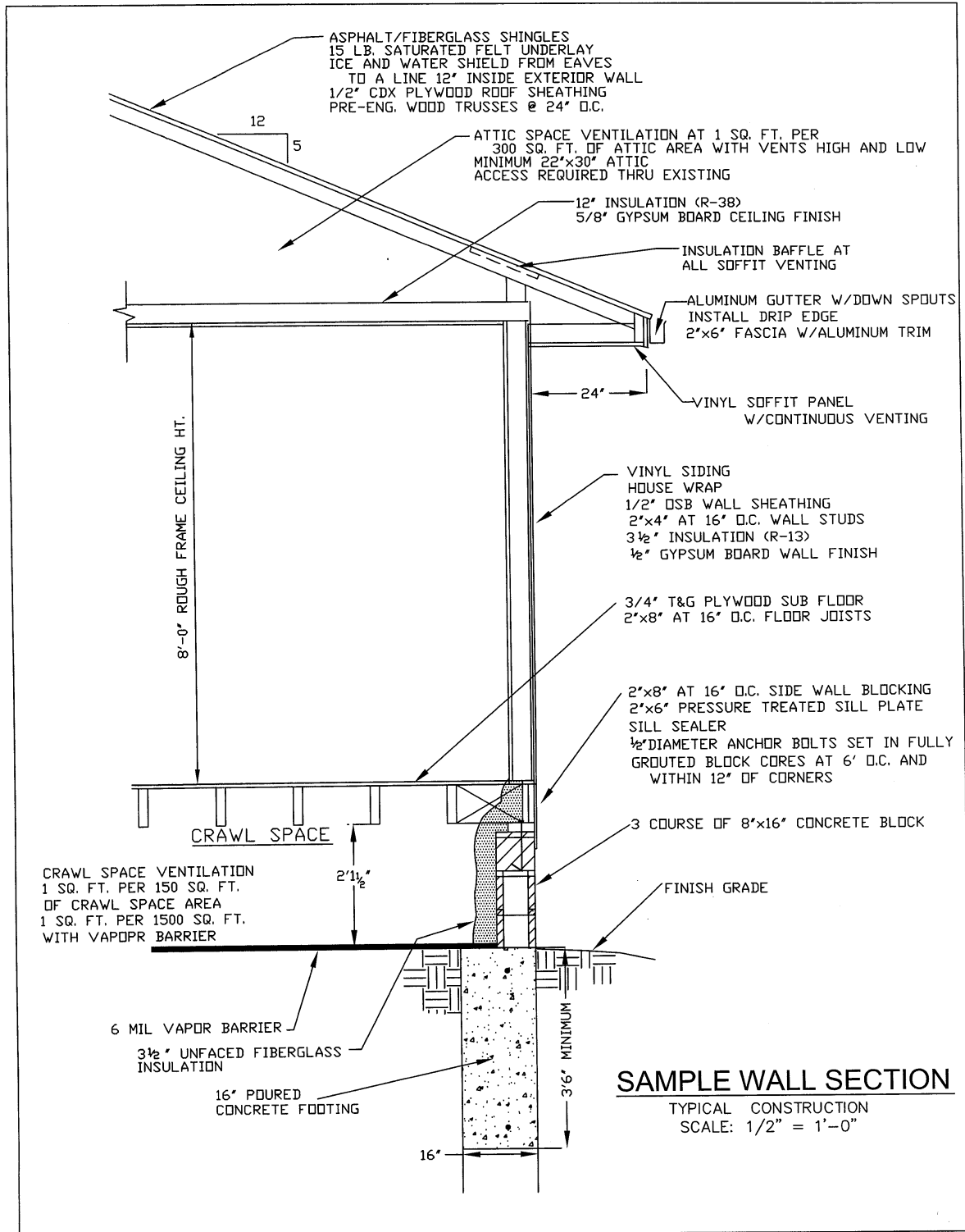


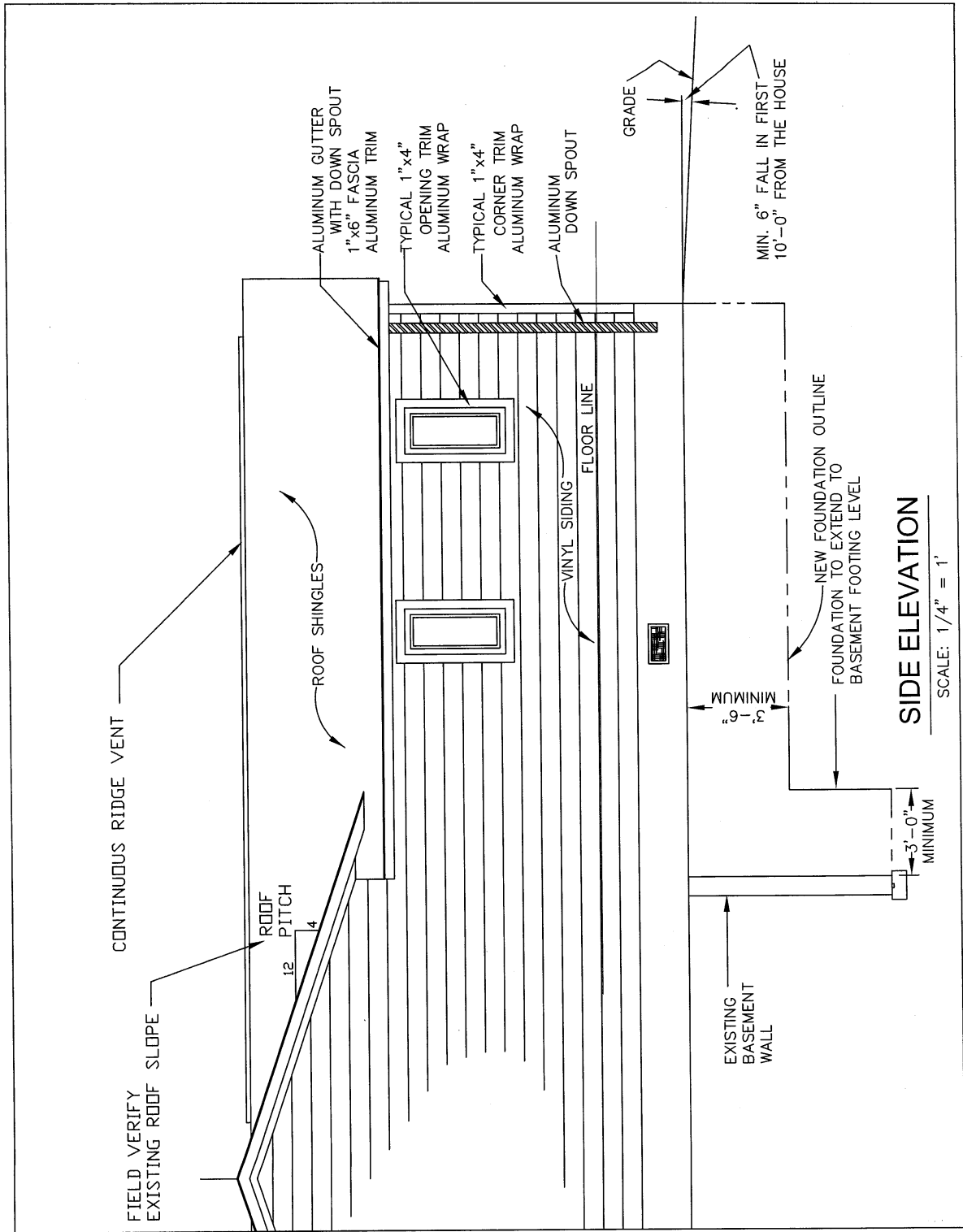
NOTE: SMOKE DETECTORS MUST BE INSTALLED IN THE EXISTING HOUSE. THEY ARE REQUIRED ON EACH FLOOR LEVEL, IN EACH BEDROOM AND OUTSIDE EACH SLEEPING AREA IN THE IMMEDIATE VICINITY OF THE BEDROOMS. SMOKE DETECTORS MUST BE HARDWIRED WITH A BATTERY BACKUP. THE REQUIREMENT FOR INTERCONNECTION WILL BE DETERMINED BY THE ELECTRICAL INSPECTOR.

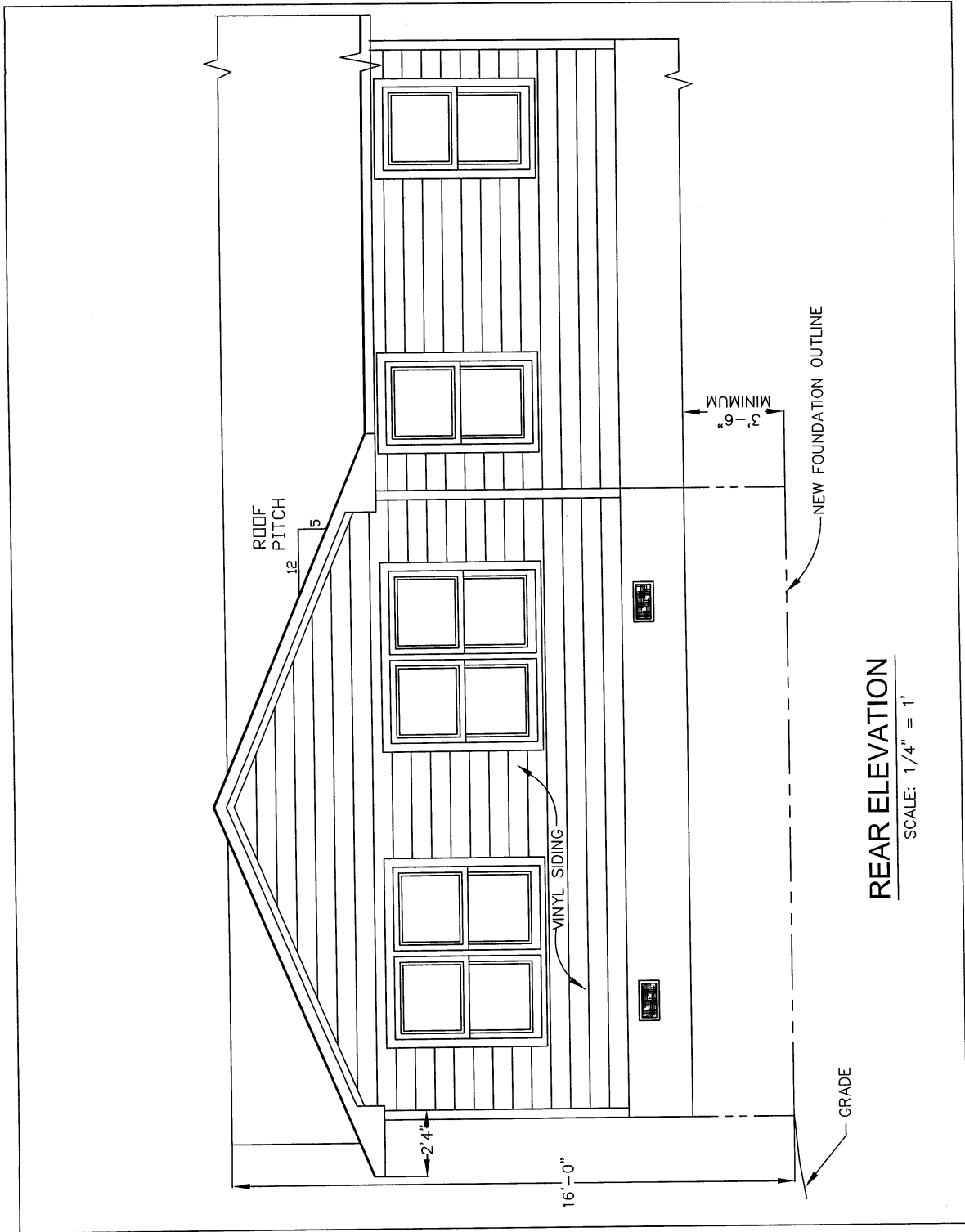
SAMPLE FLOOR PLAN

1/4" = 1'-0"









INSPECTION REQUESTS

Residential Additions

All inspections **MUST** be called to the Inspection Request Line (248) 583-0831

You will be asked for the following information:

The street address of the job site.

Your name and/or the company name.

The permit number.

The type of inspection requested.

Inspections called in before 4:30 p.m. that have been verified, and have no fees due, will be scheduled for the next day between 9:30 a.m. and 3:30 p.m. (1:30 and 3:00 for plumbing/mechanical). You may call the inspector the morning of the inspection to schedule a specific time. Inspections will be done Monday through Friday. Re-inspection fees apply to all failed inspections, missed appointments and lock-outs. Re-inspection fees must be paid prior to scheduling the re-inspection. We do not enter occupied structures without the owner, or their representative, present.

A request to cancel inspections must be called in to the Building Department at (248) 583-0831 before 9:00 a.m. on the day of the requested inspection.

Make sure your project is ready for the inspection. No inspection will be done and a \$70.00 re-inspection fee may be charged if the following items are not completed or in place:

Provide safe access to the job site and throughout the area to be inspected.

An adult must be present if the building is occupied.

Approved plans and truss drawings must be on site.

Job must be ready for inspection. Refer to "Building Inspections" page 22.

Street address and lot number posted and visible from street.

Temporary soil erosion control properly installed and street clean.

All construction materials and debris must be contained on your property.

Inspection tags, or signatures on the job card, will be left on site after each inspection has been completed.

Green Tag or signed job card - Inspection approved.

Red Tag - Inspection not approved. A list of deficiencies will be provided that must be addressed before calling for a re-inspection. A \$70.00 re-inspection fee will be charged. Inspections must 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 all inspection tags and deficiency lists. If you have any questions regarding this information, call (248) 583-0831 between 8:00 a.m. and 9:30 a.m. or between 4:00 p.m. and 4:30 p.m. to speak with the inspector. (1:00 and 1:30 for plumbing/mechanical.)

BUILDING INSPECTIONS

Residential Additions

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

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

Open Rail

After the rails are formed for spread footings.
Footing size.
Footing must match approved plot plan.
Footing must be down to solid undisturbed virgin soil.
Special footings may require additional inspection prior to pouring.
Bad ground condition.
Engineered foundation system.

Backfill

Before backfill, after drain tile, stone and waterproofing or damp-proofing have been completed.
Properly install lead walls with footing to the edge of the excavation.
6 inches of stone cover required on drain tile.
Properly installed foundation anchors.
Damp-proofing applied from footing to proposed grade.
Window well or door opening for habitable basement.

Footings

Usually for garage and porch trench footings.
Footing must rest on solid undisturbed soil.
Footing must be 42 inches below grade minimum.
Forming may be required to prevent projection of footing due to ground conditions.
Footing must be installed in accordance with the approved plans.
Footing location and dimensions must match approved construction drawings and plot plan.

Underground Plumbing

After all underground plumbing is installed.
Type and size of piping.
Slope of pipe 1/8 inch per foot minimum.
Stone installed around perforated pipe.
Traps installed at all floor drains.

Rough Plumbing

After bath tubs, showers and all concealed piping in walls, floors and attics are installed and fire-stopped with proper material.
Type and size of piping.
All water, sanitary and vent piping installed.
Fire-stopping of all tubs, showers and piping per code requirements.
The inspector may require pressure testing for concealed piping depending on job conditions.

Rough Mechanical

After all concealed gas piping, duct work, return air, chimneys and electrical wiring are installed and fire-stopped with proper material.
All concealed gas piping must be pressure tested. If not witnessed by the mechanical inspector, a letter indicating a pressure test has been completed shall be submitted prior to final mechanical inspection.
Proper clearance required between chimneys and combustible materials.
Bath fan duct installed and terminated to the outside.
Complete framing and fire-stopping at all chimneys, chimney chases, return air and piping.
Cover second floor registers.

Floor registers in bathrooms, laundries and kitchens must be one (1) inch above the finish floor.
Floor registers located in bathrooms shall be located 3' from water closet.

Rough Electrical

After all wires, boxes and recessed fixtures are installed with grounds and neutrals tied together and wire holes are fire-stopped as required by code.

Wires must extend a minimum of 6 inches from boxes.

All wires must be secured as required by code.

Smoke detectors wired and interconnected with 3-wire cable.

Fire-stop wire holes where required by code with proper material.

Vertical wires are not permitted in return air areas.

Recessed fixtures installed in insulated ceilings must be ICT type.

Switches, plugs and covers shall not be installed prior to rough inspection.

Arc fault circuit interrupters in bedrooms and on smoke detector circuit.

Rough Fireplace

Masonry fireplace Damper inspection required.

After damper is installed and smoke chamber is in place with first flue set.

Inspection required for concealed gas piping prior to covering.

Type of mortar used in fire box, hearth and smoke chamber construction.

Size and location of exterior air intake.

2-inch clearance from combustibles required from floor through roof.

Size and construction of hearth extension.

Flue size.

Location and construction of fire damper and smoke shelf.

Pre-fab fireplace.

Requires a mechanical permit.

After fireplace, chimney, and hearth extension protection is installed as required by manufacturer.

Install per manufacturer's requirements. Installation instructions to be on site.

Clearance between chimney and combustible material per manufacturer.

Complete framing and fire-stopping at fireplace and chimney chase.

Concealed gas piping installed.

Proper hearth extension and protection per manufacturer.

Please read and follow all manufacturer's installation instructions.

Pre-Masonry

Proper type weather resistant sheathing required with proper lapping.

Joints protected with proper material.

Proper base course flashing material and installation.

Rough Building

After rough plumbing, mechanical, electrical and fireplace inspections have been approved. Approved plans and truss drawings must be on site.

Floors

Floor joists spans.

Floor truss damaged or modified.

Joist hangers installed.

Properly nailed joist hangers.

Improper notching or boring of floor joist.

Improper bearing.

Support under header studs.
Support under heat, cold air and plumbing cut out.
Support under bearing walls.
Stairway must be 36-inch wide minimum when all walls are finished.
Stair risers to be equal maximum rise 8 1/4 inches.
Stair treads to be equal minimum 9-inch width.
Check winder stair tread width.
Proper headroom at stair 6'8" minimum.
Proper sill plate on foundation.
Properly attached foundation anchors.
18" x 24" minimum access to crawl space in floor, 16" x 24" for foundation.
Crawl space ventilation.
Check proper layout for engineered floor system
Check steel beam sizing and column spacing and size of column footing. Proper bearing and connections required.

Walls

Support under beam/girder.
Support under girder truss.
Double studs at cut plates under joist.
Support garage door header studs.
Treated plates required in contact with concrete.
Joint in top plates unsupported.
Bottom plates not properly nailed.
Shim header bearing point.
Improperly notched studs.
Improperly bored studs.
Improper or lack of wind bracing.
Repair damaged sheathing (holes).
Cover bond joist.
Fire-stop all holes thru plates (wiring, plumbing, HVAC).
Fire-stop chimney chase.
Fire-stop drop ceiling completely.
Fire-stop bathtub/shower pan completely.
Fire-stop dead spaces.
Fire-stop furred walls.
Windows missing.
Required safety glass.
Fire-stop walls at 10' intervals both horizontally and vertically.
Bedroom egress window size.
Properly nailed studs at wall intersections.
Properly nailed wall sheathing.
Exterior house wrap.

Roof Framing

Roof trusses altered/damaged.
Trusses not bearing at design bearing points.
Provide properly sized truss hangers at girder truss connection.
Rafters over spanned.
Ceiling joists over spanned.
Support porch roof.

- Complete bay roof (must be weatherproof).
- Ridge board undersized.
- Provide collar ties.
- Brace trusses per manufacturer's requirements noted on truss drawings.
- Improper notching/boring of roof/ceiling framing members.
- Shingles nailed properly.
- Roof sheathing over spanned.
- 22" x 30" attic access required.
- Connect bath fan vents.
- Proper roof venting required.
- Properly nailed hangers.
- Properly sized hangers and connectors.
- Provide truss drawings on site.
- Valley board undersized at lay on roof framing.
- Support cut ends of rafters.
- Truss and rafter connectors.

Insulation

- After insulation is installed.
- Complete insulation as required by your energy calculation worksheet.
- Blown in attic insulation will be checked at final building inspection.
- Install insulation baffles for proper ventilation.
- Secure insulation behind pre-fab fireplace.
- Insulate behind bathtubs.
- Paper backing to be removed within 6 inches of recessed light fixtures.
- Paper backing on insulation must be in substantial contact with wall, ceiling or floor covering.

Basement Slab

- After underground plumbing approval and floor is ready to pour.
- 4-inch stone base, 6 mil vapor barrier installed.
- Check for cracks in foundation and basement wall.
- Finish floor height indicated.
- Location of columns and column footings per approved plan.
- Columns installed properly.

Garage Slab

- After all forms are set, the base is compacted and all required reinforcement is installed.
- 4-inch sand base.
- All forms installed and finish floor height indicated.
- Form at overhead door must be down to top of footing.
- Reinforcement installed over excavated area.
- Clean off brick ledge and footing.
- Protect untreated wood.
- Floor must slope toward overhead door

Sidewalk and Drive Approach

- Prior to concrete installation.
- 4-inch sand base and forms properly placed.
- Check width and location according to approved plot plan.
- Structures in or adjacent to concrete must be properly adjusted to match finish elevation

Sidewalks

Cross slope minimum 2% maximum 4%.

4-inch minimum thickness.

2-foot clearance from fixed objects (hydrant, utility pedestal, retaining wall, etc).

Sidewalk extended to property line and match existing sidewalk.

Slope for crosswalks minimum 2% maximum 5% per sidewalk spec. sheet.

Verify that side yard drainage is not blocked .

Drive approach

Cross slope minimum 2% maximum 6%.

6-inch minimum thickness (including sidewalk at drive).

5-foot clearance between drive and hydrant.

Final Plumbing

After water meter and all fixtures are installed and operational.

Hot water to all fixtures.

All items installed must be listed on the permit. If additional items are installed they must be added to the permit before final approval.

Final Mechanical

After gas piping, furnace, duct work and return air is installed and operational.

Furnace manufacturer's installation instructions to be on site.

All items installed must be listed on the permit. If additional items are installed they must be added to the permit before final approval.

Final Electrical

After all electrical equipment, switches, plugs, covers and fixtures are installed and operational.

Label electrical panel.

Smoke alarms must be installed and operational.

All light bulbs to be installed.

Final Fireplace (with building final)

Masonry fireplace.

After fireplace and hearth are completed.

Clearance between fireplace opening and combustible materials.

Pre-fab fireplace.

After fireplace surround and hearth extension are installed as required by manufacturer

Manufacturer's installation instructions to be on site.

Clearance between fireplace surround and fireplace must meet manufacturer's requirements.

Final Masonry (with building final)

Weep holes, flashing, lintels.

Window flashing and weep holes below brick sill.

Final Building

After final plumbing, mechanical and electrical inspections have been approved.

Smoke detectors interconnected and working.

Improper and unequal height, risers and tread width on stairs; consider finish floor height.

Complete exterior painting and caulking.

Provide proper drainage away from building.

Complete fire separation in garage.

Graspable and returned handrail.

Properly installed address.

6 inches between grade and untreated wood.

Install guardrails at raised floor surfaces and open sided stairs located more than 30 inches above floor or grade below.

Intermediate rails or ornamental closures in guardrails shall not allow passage of an object 4 inches or more in diameter.

Secure door if deck or stairs are not in place.

Weep holes, flashing, lintels.

Window flashing and weep holes below brick sill.

Masonry fireplace

After fireplace and hearth are completed.

Clearance between fireplace opening and combustible materials.

Pre-fab fireplace

After fireplace surround and hearth extension are installed as required by manufacturer Manufacturer's installation instructions to be on site. Clearance between fireplace surround and fireplace must meet manufacturer's requirements.

Final Grade

Permanent Erosion Control must be installed as required by ordinance.

Sod or grass seed at least 50% germinated must be installed in the areas noted below:

Right-of-Way From edge of road to private property (typically 16.5 ft.).

Front setback.

House side of bike path or sidewalk.

Slopes greater than 1 foot on 5 feet.

10 feet around catch basins and storm manholes.

All other areas prone to erosion as determined by the inspector

Locate and Expose

Gateway Manhole.

Hydrant.

D-Box.

Water stop box.

Sanitary Manhole.

Storm Manhole and catch basin

Items to be Installed per Approved Plot Plan

Ditch.

Culverts.

Drive Apron/Material.

Sump pump discharge.

Swales.

Lot Grading.

Sidewalks.

Lot and the adjacent lots free of debris.

As-Built plot plan submitted and accepted.

Temporary Erosion Control must be installed and acceptable.

Soil erosion fabric, silt fencing or straw bales staked in place shall be installed at the following locations:

Right of Way.

Ditches.

- House side of the bike path or sidewalk.
- 10 feet around catch basins and storm manholes.
- All other areas prone to erosion as determined by the inspector.

IMPORTANT INFORMATION

The Zoning and Grading section of this handout contains important information to help you submit a complete plot plan for a residential addition in the City of Madison Heights. The following sheets of information are provided:

Setback RequirementsPage 28
 A sheet to help you determine where your house can be located on your property.

Building HeightPage 30
 A detail sheet showing how the height of a house is calculated.

Plot Plan RequirementsPage 30
 A list of the items that are required to be shown on the 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 expedite the review process.

Sample Plot PlanPage 33
 A sample plot plan is enclosed.

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

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.

SETBACK REQUIREMENTS

How Close Can I Build To My Property Line?

The distance between your house and your property line is called "setback." The Zoning Ordinance outlines specific requirements for minimum setbacks depending on the zoning district you live in. Find your zoning classification in the chart below to determine the setback requirements for your area. If you need further assistance, contact the Building Department at (248) 583-0831.

Zoning District	Front Setback	Side Setback		Rear Setback
		<u>One</u>	<u>Two</u>	
R-2(t)	25(e)	5(a)	14(s)	35
R-3(t)	25(e)	3(a)	12(s)	35

- Notes:
- (a) The side yard abutting a street shall be not less than ten (10) feet when there is a common rear yard. In the case of a rear yard abutting a side yard of an adjacent lot, the side yard abutting a street shall be not less than the required front yard of that district.
 - (e) Where the front yards of fifty (50) percent or more of the principal structures in any block in existence at the time of passage of this ordinance, within the zoned district and on the

same side of the street, are less than the minimum front yard indicated above, then any building subsequently erected on that side of the street shall be not less and need not be greater than the average depth of the front yards of said structures.

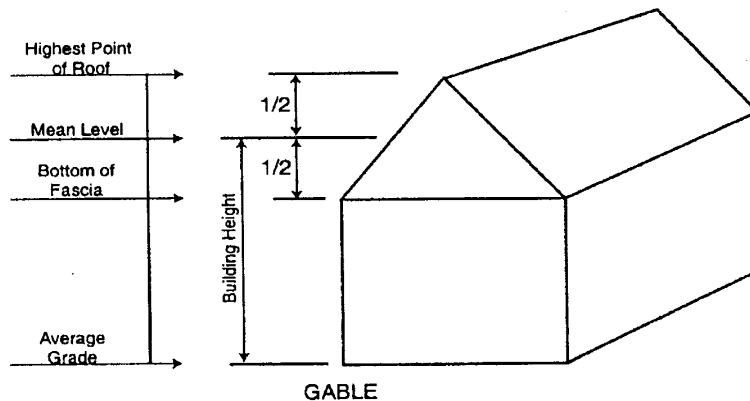
- (s) The distance between houses located on adjacent lots shall be not less than the following:
 - R-2 14 feet
 - R-3 12 feet

- (t) In residential districts, all new buildings shall hereafter be constructed of brick or other stone or masonry materials which are harmonious with the neighborhood and approved by the Building Official except as noted below.
 - 1. An area not to exceed ten (10) per cent of the face of any first story wall as well as all gable ends, dormers and second stories of single-family dwellings may be covered with maintenance free materials such as, but not limited to, aluminum or vinyl siding.
 - 2. If not less than sixty-five percent (65%) of the lots and frontage on both sides of the street in any block where the proposed improvement is contemplated, being the same side as the proposed improvement and the block facing the proposed improvement, contains structures made of material other than brick or other masonry material, the type and style of the remainder of the residences to be constructed, altered or relocated in such block shall be constructed of maintenance free materials and shall be substantially similar in type and style to the existing structures so as to be in harmony with the character of the neighborhood; provided, however, that nothing herein shall prevent any residential block from being upgraded. The Building Official, upon examining the plans and specifications and determining that the application for a variance will not in any way alter the harmony or character of the neighborhood, may grant such approval without the necessity of the applicant submitting an application to the Zoning Board of Appeals. If, however, the Building Official, in his discretion, determines that the harmony or character of the neighborhood may be altered by granting such a variance, he shall submit the application to the Zoning Board of Appeals, upon payment of the proper application fee. In all multiple-family residential districts, all sites are required to have architectural review of building materials by the plan review committee.
 - 3. Additions to residential structures shall be constructed of the same material(s) as the principal structure. Where the applicant desires to use alternate, maintenance free building materials, the Building Official, upon examining the plans and specifications and determining that the application for a variance will not in any way alter the harmony or character of the neighborhood, may grant such approval without the necessity of the applicant submitting an application to the Zoning Board of Appeals.

BUILDING HEIGHT

How Do You Calculate the Building Height?

Building height: Is the vertical distance, measured from the established grade to the highest point of the roof surface for flat roofs; to the deck line of mansard roofs; and to the average height between eaves and ridge, gable, hip and gambrel roofs; and to the average height between the lowest point and the highest point on a shed roof. Where a building is located on sloping terrain, the height may be measured from the average ground level of the grade at the building wall.



Where buildings have multiple or conflicting roof styles, the most restrictive method applies.

Average Grade shall mean a reference plane representing the average of the finished ground level adjoining the building at all exterior walls.

Maximum Building Height of Structures

R-2 and R-3 Single-Family Residential 25 feet (Maximum 2 stories)

PLOT PLAN REQUIREMENTS

Note: Photocopier enlargements of subdivision site plans or plats will not be accepted. Residential site plans may be a maximum of 11 x 17 inches. Others must provide one copy reduced to 11 x 17 along with the required sets to scale.

Residential Additions

A site plan of the parcel or lot is required for all residential construction which involves an addition to, or a change in, the number, size or shape of any structure(s). Structures include such things as outbuildings, pools and fences in addition to houses. The site plan must show the following:

1. STANDARD DRAFTING REQUIREMENTS
 - a. North arrow.

- b. Graphic Scale.
- c. Lot dimensions, bearings or interior angles .
- d. Legal description.
- e. Legend.

2. EXISTING CONDITIONS

- a. All structures, houses, garages, driveways, sheds, etc., on site (if any) and off-site within 50 feet.
- b. All utilities, based on field observations and city records, on site or adjacent thereto.
- c. Existing street catch basins with dimensional tie to the nearest property line.
- d. Ground elevations taken approximately on a one (1) foot contour:
 - 1) on site
 - 2) at finish grade (F.G.) of adjacent houses, garages, driveways
 - 3) 50 Foot off-site in all directions including back of sidewalk, top of curb and gutter
 - 4) 100-foot off-site along the rear lot line (extended) and along the front lot line (extended)
- e. Bench Mark near the site, with an elevation related to the U.S.G.S. Datum.

3. PROPOSED CONDITIONS

- a. Location and dimensions (size) of new house, garage, driveway.
- b. Drainage pattern by arrows.
- c. Location of connections and leads for the water service and sanitary sewer.
- d. Proposed Elevations:
 - 1) finish floor and bottom of footing
 - 2) finish grade (brick ledge) of proposed house
 - 3) every 50 feet along all property lines including the lot corners
 - 4) all driveway corners and at the two points along the front setback line
 - 5) finish grade of proposed garage slab
 - 6) threshold elevation of any side door opening to a driveway.
- e. Location and dimensions of all easements on the property.
- f. Method of discharge, and the location and type, of all underground piping for the sump pump and ground water. The following methods of discharge for ground water and sump pumps may be approved as noted.
 - 1) Connection to a storm structure or storm sewer. This is the preferred method and will be required unless the applicant can demonstrate that using this method is a severe economic hardship or a practical difficulty.
 - 2) On site discharge into a swale. The applicant must furnish soil and engineering information to prove the swale can contain, and dissipate, the discharge within the site. Unobstructed point discharge (sump discharge) into, or onto, public sidewalks or other public right-of-way shall not be permitted.
 - 3) In the case where discharge can not be accomplished by the above methods, and the property is serviced by a combined sewer system, the applicant may request discharge into the combined sewer line pursuant to the provisions of the Michigan Plumbing Code. This is considered a last

resort method. A sump pump installation shall be required in all such cases to facilitate future connection to a separated sewer.

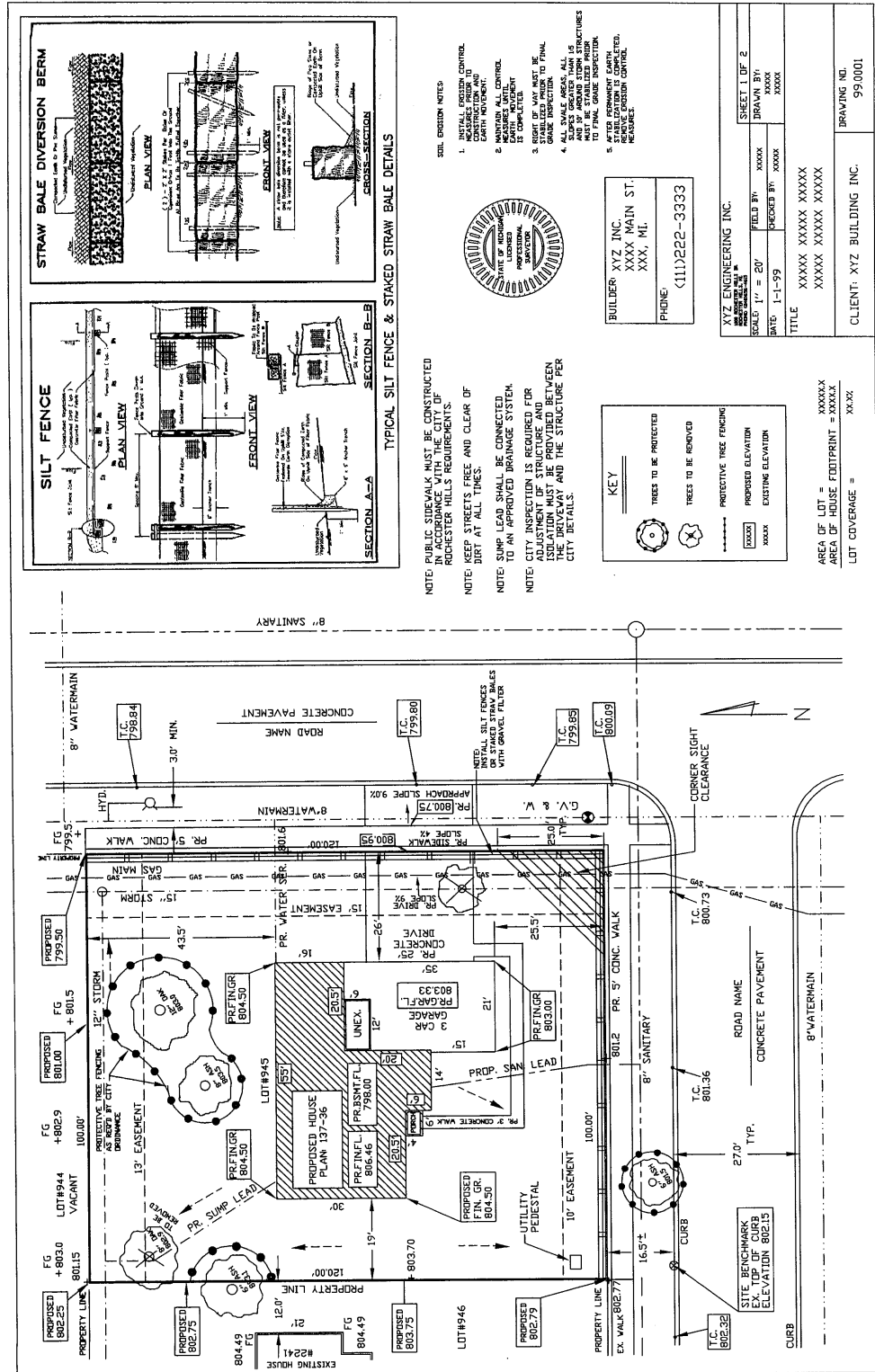
4) All underground storm or ground water piping serving more than one parcel shall be in recorded easements.

- g. Show all the dimensions of the proposed structure and the lowest floor and first floor elevation.
- h. Provide exact lot dimensions and all setbacks from all sides of the house, measured at 90 degree angles to the property lines. Setbacks must comply with ordinance requirements.
- I. Show the location of all trees to remain 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.
Show 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.

4. DRIVES AND WALKS

- 1) Show the sidewalk (if applicable) with elevations at both side property corners and at the driveway. The cross slope requirements are minimum 2% maximum 4%. 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).
- 2) Driveways
The drive approach must be concrete.
Indicate 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 10% slope. Reverse drive slope minimum 2% maximum 7% slope.
Show all existing curb drops and all proposed curb cuts. The angle of the driveway should be 90% to the roadway edge.
A circle drive may be permitted only where an inside radius of twenty-five (25) feet or greater is provided. The total driveway shall not occupy more than thirty-three (33) percent of the required front yard setback area.
Show all roadside features and the sight distance for the approach. Minimum Driveway
Other Agency Permits That May Be Required:
If the road that your house is on is a County road, a drive approach permit from the Road Commission for Oakland County (RCOC) is required prior to plot plan approval.
If the road that your house is on is a State road, a drive approach permit from the Michigan Department of Transportation (MDOT) is required prior to plot plan approval.

A soil erosion control permit from the Oakland County Drain Commission (OCDC) may be required for a permit application.



SAMPLE PLOT PLAN

CONTRACTOR REGISTRATION REQUIREMENTS

Contractor Type	Registration Fee		Information Required for Registration
Building	\$15.00	*	Contractor Registration Form, signed originally by Licensee
		*	State Residential Builder's License
		*	Driver's License, MESC Number, Federal ID Number
Concrete	\$15.00	*	Contractor Registration Form, signed originally by Licensee
		*	Certificate of Liability Insurance.
		*	Driver's License, MESC Number, Federal ID Number
Bond required to work in the ROW by all contractors		*	Right-of-Way Bond in the amount of \$5000 on City form. Bond must be stamped, sealed, and witnessed. Homeowner Bond \$1000
Demolition	\$15.00	*	Contractor Registration Form, signed originally by Licensee
		*	Driver's License, MESC Number, Federal ID Number
		*	Certificate of Liability Insurance.
Bond is required to be posted for clean-up by Builders or Demolition contractors		*	Demolition Bond required in the amount of \$5000 on City form. Bond must be stamped, sealed, and witnessed.
Electrical	\$15.00	*	Contractor Registration Form, signed originally by Licensee
Fire Alarm		*	Electrical Contractor's License
		*	Driver's License, MESC Number, Federal ID Number
Sign Specialty		*	Sign Specialty also requires the Sign Specialist License.
Mechanical	\$15.00	*	Contractor Registration Form, signed originally by Licensee
Fire Suppression		*	Mechanical Contractor's License
		*	Driver's License, MESC Number, Federal ID Number
Moving of Buildings	\$15.00	*	Contractor Registration Form, signed

			originally by Licensee
		*	Surety Bond required in the amount of \$5000.
		*	Certificate of Liability Insurance.
Plumbing	\$15.00	*	Contractor Registration Form, signed originally by Licensee
		*	Plumbing Contractor's License
		*	Driver's License, MESC Number, Federal ID Number
Sign Erector	\$15.00	*	Certificate of Liability Insurance.
Underground	\$15.00	*	Contractor Registration Form, signed originally by Licensee
		*	Certificate of Liability Insurance.
		*	Driver's License, MESC Number, Federal ID Number
Bond required to work in the ROW		*	Right-of-Way Bond in the amount of \$5000 on City form. Bond must be stamped, sealed, and witnessed.
Authorization letters must be originally signed notarized documents. No photo copies will be accepted.			