Town of Thomson, Carlton County
25 Harney Road East, PO Box 92
Esko, Minnesota
(218) 879-9719
(218) 879-9114 Fax

Building Inspector: Jerry Manthey
Tuesday & Thursday 1:15 - 4:30 PM

Plumbing Inspector: Paul Sandstrom
On-call (218) 729-8648

NEW GARAGE
(INCLUDING ATTACHED GARAGE)
Any Accessory Structure over 200 Sq. Ft.

The following items MUST BE INDICATED on the plan pages before submitting for review. Verify ALL items that apply are on your plans, then sign, date, and return the checklist.

1. Foundation Plan Page showing all of the following:
   - ☐ Footing Type
   - ☐ Footing Size, Spacing & Depth
   - ☐ Footing Location
   - ☐ Footing Reinforcement
   - ☐ Engineered Slab Design (over 1,000 sq. ft. needs a design by a MN Licensed Engineer)
   - ☐ Concrete Slab Thickness

2. Framing Plan Page *(Each Level on a Separate Page)* showing all of the following:
   - ☐ All Walls and Openings *(Bearing and Non-Bearing)*
   - ☐ Window sizes, locations, & types.
   - ☐ All Header/Beam Type and Size at Location
   - ☐ Roof Framing Type *(Trusses, Rafters, Etc.)*
   - ☐ *If Trusses - Engineered Statement of Load Design*
   - ☐ Roof Framing Size and Spacing
   - ☐ Attic Access Location ***(ATTACHED ONLY)***
   - ☐ Garage/House Separation Including Rated Door to House ***(ATTACHED ONLY)***

3. Cross-Section Plan Page showing all of the following:
   - ☐ Exterior Wall Covering *(Vinyl Siding, Cedar Shakes, Stucco, Stone Veneer, Brick, Etc.)*
   - ☐ Exterior Wall Weather Barrier *(Tyvek, 2 Layers Grade-D Paper, Etc.)*
   - ☐ Exterior Wall Sheathing Type and Size *(OSB, Plywood, Etc.)*
   - ☐ Exterior Wall Framing Size and Spacing (Studs, Plates, Etc.)
   - ☐ Rigid Wind-wash Barrier ***(ATTACHED ONLY)***
   - ☐ Roof Covering *(Asphalt Shingles, Cedar Shakes, Etc.)*
   - ☐ Roof Underlayment and Ice Dam Protection
   - ☐ Roof Sheathing Type and Size *(OSB, Plywood, Etc.)*
   - ☐ Roof Framing Size and Spacing (Trusses, Rafters, Etc.)
   - ☐ Attic Ventilation *(1" Air Space, Air Chutes, Vents, Etc.)* ***(ATTACHED ONLY)***
   - ☐ Attic Insulation Type and R-Value
   - ☐ Ceiling Interior Vapor Barrier (Warm Side of Insulation)
   - ☐ Ceiling Interior Covering (Drywall, T & G Paneling, Etc.)

4. Site Plan
   - ☐ Show Entire Parcel With North/South Directional, Roadways, Driveway Access, Easements, Etc.
   - ☐ Show Setbacks from ALL property lines.
   - ☐ Show all Utility locations *(I.E. Well, Septic System, Sewer Line W/Tap, etc.)*
   - ☐ Show all Existing Structures in addition to New Structures
   - ☐ Show all Waterways on the property

5. Additional Items that must be included with the plans
   - ☐ Carlton County Zoning approval for Waterways or Township Variance Approval
   - ☐ Plumbing Permit and Specifications of Items and their placement *(If Applicable)*
   - ☐ HVAC Permit and Specifications of Equipment and its placement *(If Applicable)*
   - ☐ Building Permit Application
   - ☐ Application for Zoning Certification

Other items that may be needed after plan submittal but prior to permit issuance:

* Electrical Permit - State of Minnesota (www.electricity.state.mn.us)
James Kilian, Inspector 218-851-9648 (phone availability 7:00 - 8:30 AM only)

Incomplete applications will not be accepted for plan review. Plan review begins when complete applications for Building, HVAC & Plumbing are submitted.

Please allow a minimum of two weeks for plan review after submittal.

I have looked through the plan and confirmed that all the above information is indicated on the pages being submitted.

_____ _____

Signature **Print Name**

Date:_____

CARLTON COUNTY SOIL & WATER CONSERVATION DISTRICT

Received 5-27-09

115 5th Street South
PO Box 29
Carlton, MN 55718-0029

Phone: 218-384-3891
Email: contact@carltonswcd.org
www.carltonswcd.org

Dear Thomson Twp Staff,

A reminder. Though the MN Wetlands Conservation Act (WCA) does not require that every building and earth moving job gets an inspection, if there is a wetland impact there may be state and federal regulations that apply. Each project does not necessarily get a 10,000 sq ft exemption. It depends on wetland type, distance to streams, percentage of the wetland basin that's on the property, and other things. If the landowner suspects wetlands will be impacted (drained, filled, graded, or excavated) I recommend the Township recommend that the landowner contact Heather Cunningham at County Zoning.

Sincerely;

Kelly Smith,
Carlton SWCD

Please review info below. If you even think you might be working near a wetland, save yourself future problems and contact Heather Cunningham at the Carlton Co. Zoning Office – 218-384-9176

WETLAND CONSERVATION ACT (WCA)

DEFINITION OF A WETLAND

Essentially, it must meet three criteria to be identified as a wetland: 1) The area must have mostly hydric soils, which are soils that are inundated or saturated to the surface for more than two weeks during the growing season in most years; 2) The area must be inundated or saturated to the surface for at least 5% of the growing season (or approximately 2 weeks) in most years; 3) The prevalent vegetation in the area are plants that have adapted to the conditions stated above. These plants are known as hydrophytes. Descriptions and pictures of wetland types are in the "Wetland Information Guide," which is available at the Carlton County Zoning Office.

STATUES AND RULES

The Wetland Conservation Act was first passed in 1991 as Minnesota Laws Chapter 354, as amended (codified, as amended, as Minnesota Statues, section 103G.222-2373 and in other scattered sections). Rules were promulgated by the Minnesota Board of Water and Soil Resources in Minnesota Rules, chapter 8420, as amended.

SCOPE OF THE ACT

Draining, filling and in some cases, excavating in wetlands is prohibited unless (a) the drain, fill, or excavation activity is exempt or (b) wetlands are replaced by restoring or creating wetland areas of at least equal public value. The overall goal is no net loss of wetlands.

The local government unit (LGU) has the primary responsibility for administering WCA and for making key determinations. Generally, the LGU is the city or county. Carlton County is the LGU except in the cities of Cloquet and Wright.

WCA does not supersede other regulations such as those of the Army Corps of Engineers (ACOE) or Minnesota Department of Natural Resources (MDNR). WCA does not apply to public waters wetlands, which are regulated by the MDNR. Persons proposing to do wetland projects may need approval from these agencies. The combined application forms should be used to notify these agencies prior to commencing a project in or near wetlands.

EXEMPTIONS

WCA specifies 9 categories of exempt draining and filling activities. Interested property owners can contact the Carlton County Planning and Zoning office (LGU) to find out whether the property owner qualifies for any of these exemptions.

1. Agricultural activities. A replacement plan for wetlands is not required for certain agricultural activities.
2. Drainage. For the purposes of this exemption, a public drainage system is defined as any ditch or tile lawfully connected to the drainage system.
3. Federal Approvals. A replacement plan for wetlands is not required for activities authorized under section 404 of the federal Clean Water Act or section 10 of the Rivers and Harbors Act.
4. Wetland Restoration. A replacement plan for wetlands is not required for activities in a wetland restored or created for conservation purposes under a contract or easement providing the landowner has the right to drain the restored or created wetland.
5. Incidental wetlands. A replacement plan for wetlands is not required for activities in wetland areas created solely as a result of beaver dam construction, blockage of culverts, actions by public or private entities that were taken for a purpose other than creating wetlands, or any of the above combinations.

6. Utilities; public works. A wetland replacement plan is not needed for specific types of utility placement, maintenance, repair, enhancement or replacement of utilities or utility-type work.
7. Forestry. A wetland replacement plan is not required for certain silvicultural activities.
8. De minimis. A replacement plan for wetlands is not required for draining, excavating, or filling the following amounts of wetlands as part of a project:
    a) 10,000 square feet of a type 1, 2, 6 or 7 wetland, excluding white cedar and tamarack wetlands, outside of the shoreland wetland protection zone (1,000 feet of a lake or 300 feet of a river).
    b) 400 square feet of type 1, 2, 6, or 7 wetland, except for white cedar and tamarack wetland, outside of the building setback, but within the shoreland wetland protection zone.
    c) 100 square feet of type 3, 4, 5, or 8, and white cedar and tamarack wetland outside of the building setback zone.
    d) 20 square feet of wetland, regardless of type, inside the building setback zone.

    The amounts listed above may not be combined on a project. A project is defined as a specific plan, contiguous activity, proposal, or design necessary to accomplish a goal as defined by the LGU. A project may not be combined into phases or components.
9. Wildlife habitat. A replacement plan for wetlands is not required for wildlife habitat improvement projects.

EXEMPTION DETERMINATIONS

A landowner intending to drain or fill a wetland without replacement can contact the Carlton County Planning and Zoning office for determination whether or not the activity is exempt. The landowner can fill out an application requesting exemption. This is the combined application referenced above.

NO-LOSS DETERMINATIONS

A landowner can apply to the LGU (Carlton County) for a no-loss determination. Requests can be made to the LGU for activities that will result in no net loss of wetlands. Typical requests for no-loss determinations include the conversion of type 1, 2, 6, or 7 wetlands into wildlife ponds that results in no net loss of wetlands. Certain criteria need to be met and interested parties should contact the Carlton County Planning and Zoning office.

REPLACEMENT PLANS

A landowner intending to drain, excavate, or fill a wetland who does not qualify for an exemption or no-loss determination needs to obtain approval of a replacement plan from the LGU before draining or filling activities. Applications can be obtained from the Carlton County Planning and Zoning office. A person who does not do so is subject to the enforcement provisions in Minnesota Statues, section 103G.2372.

If landowners have any questions, please call me at 218-384-9178.

Thanks!
Heather Cunningham
Resource and Recycling Coordinator
Carlton County

8/6/07

WHAT TO THINK ABOUT BEFORE SELECTING A CONTRACTOR

- ✓ **Get bids from at least three contractors** - Although it is not a requirement, we urge you to try to get three different contractors to bid. Competition will increase the likelihood of getting the best price for the same work.

- ✓ **You can request any contractor you know to bid on the job but you will want to check their references before the contract is signed.** While you are the person selecting the contractor and signing the contract, the Township will require that all participating contractors show proof of insurance and licensing and that they have enough experience to finish the work to everyone's satisfaction.

- ✓ **Rehabilitation contractors must have appropriate licenses and adequate insurance.** As of January 1993, the State of Minnesota requires licensed contractors. We require insurance to cover property damage and injury protection while they work on your project.

- ✓ **ALSO** As of February 1, 2011, the State of Minnesota requires municipalities to verify lead certification for the residential builders, remodelers, roofers and manufactured home installers when they are requesting a permit to work on homes constructed prior to 1978.

- ✓ **Do not discriminate when asking contractors to bid.** Property owners getting Small Cities Development Programs funds cannot discriminate on the basis of race, color, creed, religion, sex, national origin, age, handicap or otherwise, as provided by applicable law in the selection of contractors to submit bids.

TOWN OF THOMSON

Application for Zoning Certification

I. Applicant: Name:_____

Address:_____

Telephone Number:_____

II. Activity Proposed: _____

_____

_____

III. Location of property which activity is to be conducted on: _____

_____

_____

IV. Attach plat plan showing the location, dimensions and nature of any structure involved, including set backs from property lines.

V. The undersigned does hereby make application for a Zoning Certificate for the activity described herein. The undersigned has received and/or has reviewed in the Town office a copy of the Town of Thomson's Zoning Ordinance. The Town of Thomson relies on the undersigned's representations and does not waive the enforceability of the Zoning Ordinance in the event that errors, omissions or otherwise result in a non-conforming structure, use or activity. The undersigned shall be liable and responsible for all costs and expenses necessary for the proposed activity in final or completed stage to comply with the Zoning Ordinance, including but not limited to costs of dismantling and/or relocating structures in some instances.

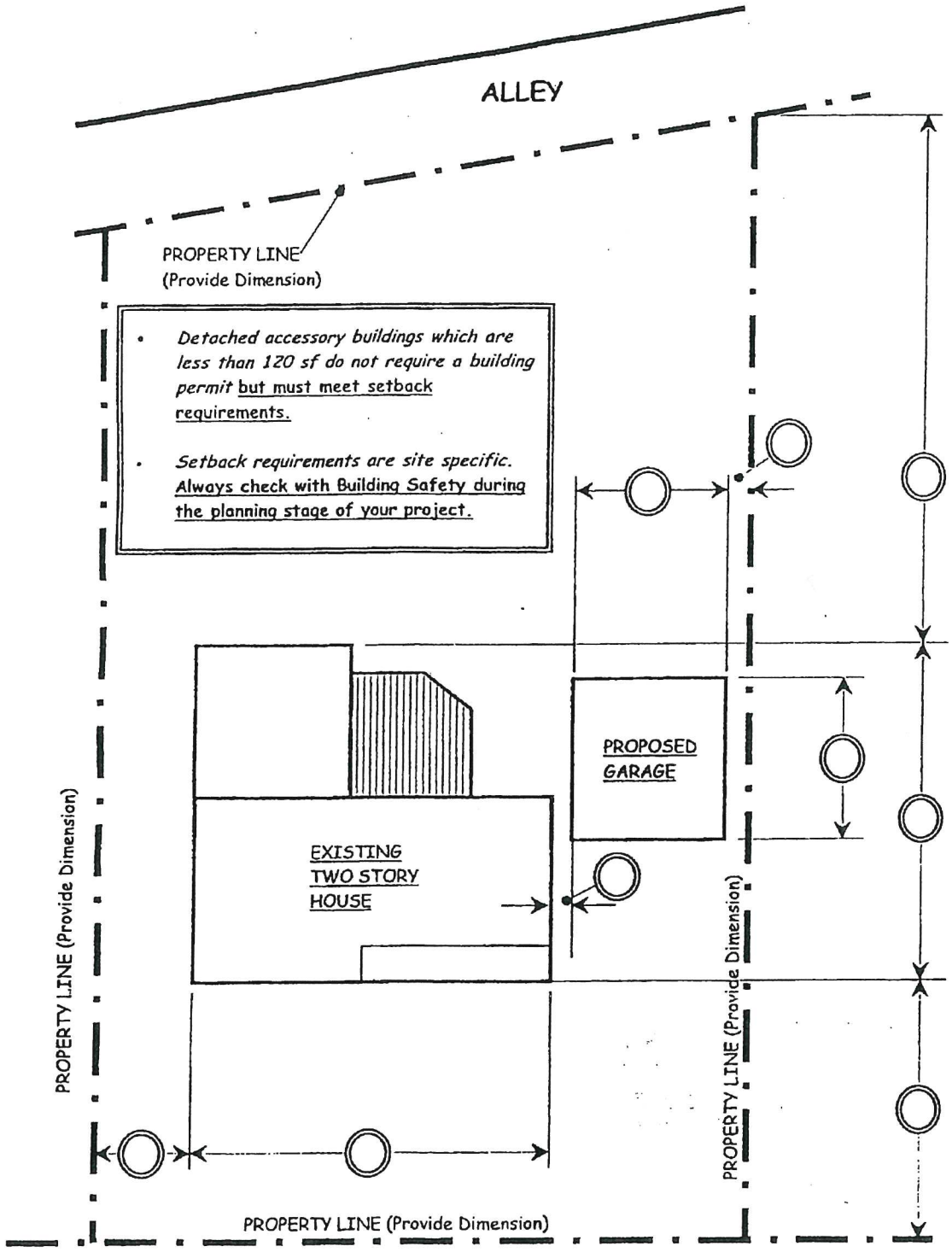
The undersigned is aware of the right and opportunity to employ licensed professionals such as registered surveyors, registered architects and/or contractors, to ensure the proposed activity complies with the Zoning Ordinance.

Dated this _____ day of _____, 20____

_____

Applicant Signature

Adopted 04/21/94
Thomson.zon



Site Plan for Detached Garage

Provide information as indicated with this symbol: ◯

MINNESOTA DEPARTMENT OF
LABOR & INDUSTRY

Department of Labor and Industry
Construction Codes and Licensing Division
443 Lafayette Road N.
St. Paul, MN 55155
Phone: (651) 284-5012 or 1-800-657-3944
TTY: (651) 297-4198 Fax: (651) 284-5749

The State of Minnesota adopts a set of construction standards known as the Minnesota State Building Codes (MSBC). The MSBC contains safety requirements relating to structure, mechanical, plumbing, energy, electrical, elevators, manufactured buildings and life safety.

The information in this brochure is for general reference for residential construction projects. Contact your municipal building official regarding permits and specific code requirements for residential construction within your community.

To confirm if your contractor is licensed in Minnesota contact the:

Department of Labor and Industry
Residential Building Contractors
Phone: (651) 284-5069 or 1-800-657-3944
www.dli.mn.gov/ccld/LicVerify.asp
E-mail: DLI.Contractor@state.mn.us

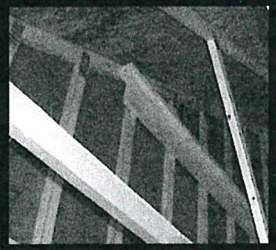
www.dli.mn.gov

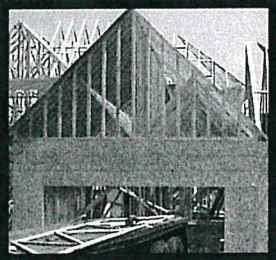
05-07

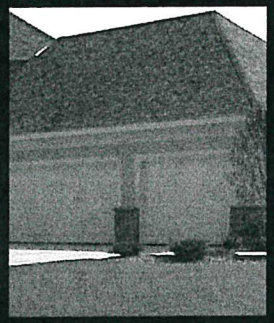
Gopher State One Call
Call at least two full business days before you dig.
Phone: 811 or (651) 454-0002
www.call811.com

GARAGES

Guidelines for planning the construction of a garage.







Permits

Building permits are required for construction of all garages. The Minnesota State Building Code (MSBC) differentiates between attached and detached garages and there are some differences in the requirements. Garages must also meet the land use and setback requirements of the city zoning code. Zoning questions should be directed to the local planning and zoning department.

Municipal permit fees, plan review and inspections

Building fees are established by the municipality. Inspections are performed at various stages of construction to verify code compliance. The plan review is done by the building official in order to spot potential problems or pitfalls that may arise. The building official may make notes on the plan for your use. Inspections are performed at various stages of construction to verify code compliance. Actual permit costs can be obtained by calling your local building inspection department with your estimated construction value.

Note: Setbacks from property lines vary depending upon the city and zoning district your home is located in. Some communities have other zoning provisions that may include lot coverage or screening.

Required inspections

a. **Footing or concrete slab**

To be made after all form work is set and any required reinforcement is in place **but prior to the pouring of the concrete**.

b. **Framing**

To be made after framing is complete and other required rough-in inspections are completed and approved.

c. **Final**

To be made upon completion.

d. **Other inspections**

In addition to the inspections above, the inspector may make or require other inspections to ascertain compliance with the provisions of the code or to assist you with your questions or concerns during the construction process.

Construction Codes and Licensing

General building code requirements

The 2007 Minnesota State Building Code adopts the 2006 International Residential Code (2006 IRC). All "R" code references provided in this brochure pertain to the 2006 IRC.

a. Footings must extend to frost depth for all attached garages. A "floating slab" may be used for the foundation support of detached garages on all soils except peat and muck. The slab perimeter must be sized and/or reinforced to carry all design loads. The minimum-slab thickness must be 3 1/2 inches and reinforcing is recommended. The minimum concrete strength required is 3500-pounds-per-square-inch for floating slab. Protect concrete from freezing until cured.

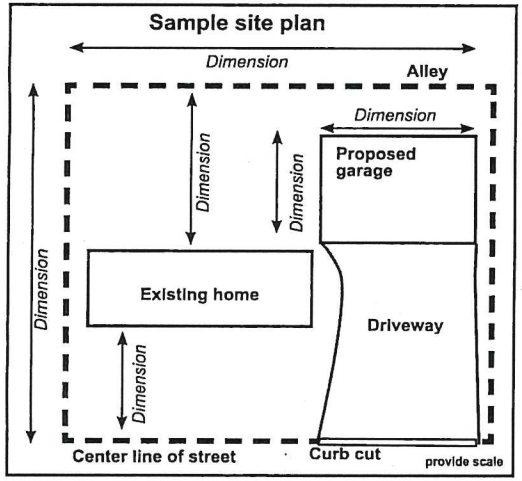
b. Anchor bolts or straps: Foundation plates must be anchored to the foundation with not less than 1/2 inch diameter steel bolts, or approved straps, embedded at least seven inches into the concrete and spaced not more than six feet apart. There must be a minimum of two bolts for each piece of sill plate with one bolt located within 12 inches of each end of each piece of sill plate. Anchor straps must be installed according to manufacturer's specifications.

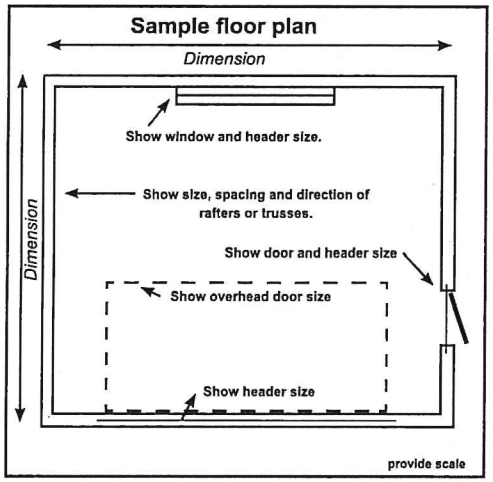
c. Sill plate: All foundation sill plates must be approved pressure-preservative-treated wood, heartwood of redwood, black locust or cedar.

d. Wall framing: Studs must be placed with their wide dimension perpendicular to the wall and not less than three studs must be installed at each corner of an exterior wall. Minimum stud size is two inches by four inches and spaced not more than 24 inches on center.

The following samples show the minimum detail expected on site, floor and elevation plans to ensure the permit process proceeds smoothly. Additional information, such as sectional drawing or elevations, may be required. The plans should include the following information:

1. Proposed size of garage.
2. Location and size of door and window opening.
3. Size of headers over all doors and window openings.
4. Size, spacing and direction of rafter (roof) materials.
5. Type (grade and specie) of lumber to be used.
6. Braced wall panels per R602.10.





e. Top plate: Bearing and exterior wall studs need to be capped with double-top plates installed to provide overlapping at corners and at intersections with other partitions. End joints in double-top plates must be offset at least 24 inches.

f. Sheathing, roofing and siding: Approved wall sheathing, siding, roof sheathing and roof covering must be installed according to the manufacturer's specifications. Wall sheathing may be required to have a weather-resistive barrier installed over the product prior to application of the siding product.

g. Wood and earth separation: Wood used in construction located nearer than 6 inches to earth shall be treated wood.

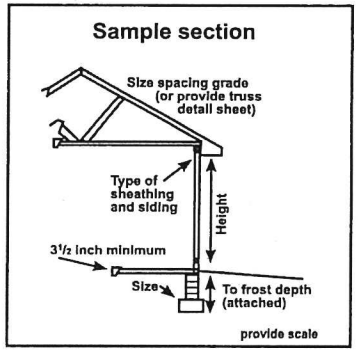
h. Roof framing: Size and spacing of conventional lumber used for roof framing depends upon the roof pitch, span, the type of material being used and the loading characteristics being imposed. Garages must be designed for the appropriate snow load in your area. Contact your local building inspector. A snow load map is online at www.dli.mn.gov/ccld/pdf/bc_map_frost_depth.pdf.

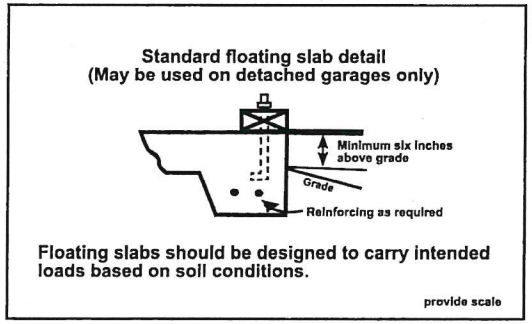
Rafters need to be framed directly opposite each other at the ridge. A ridge board at least one inch (nominal) thickness and not less in depth than the cut end of the rafter is required for hand-framed roofs. At all valleys and hips, there also needs to be a single valley or hip rafter not less than two inches (nominal) thickness and not less in depth than the cut of the rafter. Valley needs to be designed as a beam.

Rafters must be nailed to the adjacent ceiling joist to form a continuous tie between exterior walls when the joists are parallel to the rafters. Where not parallel, rafters must be tied by a minimum one inch by four inch (nominal) cross tie spaced a maximum four foot on center. Manufactured trusses are to be installed per the manufacturer.

i. Separation required: An attached garage shall be separated from the residence and its attic area by not less than 1/2-inch (12.7 mm) gypsum board applied on the garage side. Where the separation is a floor-ceiling assembly, the structure supporting the separation shall be protected by not less than 5/8-inch (15.9 mm) type "X" gypsum board or equivalent.

j. Concrete curb block: Concrete masonry curb blocks shall be at least 6-inch-modular width (4-inch-curb blocks are not permitted by code).





The Minnesota Energy Code requires that all penetrations through an exterior wall air barrier be sealed. Sealing of the opening applies to all penetrations including the service entrance, conduit, cables, panels, recessed luminaires and electrical boxes.

EQUIPMENT LISTING AND LABELING

41 **Minnesota Rules 3800.3620** All electrical equipment, including luminaires, devices and appliances used as part of or in connection with an electrical installation shall be listed and labeled by a Nationally Recognized Testing Laboratory (NRTL) as having been tested and found suitable for a specific purpose.

42 **NEC 110.3** Listed electrical equipment shall be installed and used in accordance with the listing requirements and manufacturer's instructions.

ELECTRICAL SERVICES

43 **NEC 230.70** The service disconnecting means shall be installed at a readily accessible location either outside a building or structure or inside nearest the point of entrance of the service-entrance conductors.

44 **NEC 310.15 Conductor Sizes For 120/240-Volt 3-Wire, Single-Phase, Dwelling Services And Feeders**

Copper	Aluminum	Service Rating
4 AWG	2 AWG	100 amps
1 AWG	2/0	150 amps
2/0	4/0	200 amps
400 kcmil	600 kcmil	400 amps

45 **NEC 110.14** Conductors of dissimilar metals shall not be intermixed unless the device is listed for the purpose. Listed anti-oxidant compound shall be used on all aluminum conductor terminations unless the device manufacturer's instructions state that it is not required.

46 **NEC 300.7** Portions of raceways or sleeves passing from the interior to the exterior of a building or subject to different temperatures shall be filled with an approved material to prevent condensation from entering equipment.

47 **NEC 230.54** Service entrance and overhead service conductors shall be arranged so that water will not enter the service enclosure.

48 **NEC 300.9** The interior of raceways installed in wet locations above grade shall be considered wet locations.

49 **NEC 300.4** Conductors 4 AWG or larger shall be protected by a bushing when entering an enclosure through a raceway.

50 **NEC 230.70** Service disconnecting means shall not be located in a bathroom

51 **NEC 240.24** Overcurrent devices shall be readily accessible and not located in bathrooms or in the vicinity of easily ignitable materials such as clothes closets.

52 **NEC 408.36** Back-fed overcurrent devices that are shall be secured by an additional approved device.

53 **NEC 110.26** Working space shall be a minimum of 3 feet In the direction of access to live parts and the width of the equipment or 30 inches whichever is greater, extending from the floor to 6½-feet and shall not be used for storage. The space below and above the panel from the floor to the ceiling is dedicated for electrical wiring and no piping, ducts or apparatus shall be in this zone.

54 **NEC 110.26** Illumination shall be provided for the working space about service equipment and panelboards.

GROUNDING AND BONDING

55 **NEC 250.32** Buildings supplied by a feeder or branch circuit shall have an equipment grounding conductor run with the supply conductors and connected to the grounding electrode system at the building.

56 **NEC 250.50** All grounding electrodes that are present at each building or structure shall be bonded together to form the grounding electrode system.

57 **NEC 250.50** Acceptable grounding electrodes include a metal underground water pipe, a metal frame of a building or structure, a rod, pipe or plate electrode, a concrete encased electrode and a ground ring

58 **NEC 250.53** A metal underground water pipe electrode shall be supplemented by an additional electrode.

59 **NEC 250.53** Unless a rod, pipe and plate electrode has a resistance to ground of 25 ohms or less, it shall be supplemented with another acceptable electrode.

60 **NEC 250.66** The conductor that is the sole connection to a rod, pipe or plate electrode is not required to be larger than #6 AWG copper.

61 **NEC 250.64** The grounding electrode conductor shall be continuous, securely fastened and protected from physical damage. Grounding electrode conductors are not required to comply with the minimum cover requirements in 300.5

Equivalent Size of Service Entrance Conductor		Size of the Grounding Electrode Conductor	
Copper	Aluminum	Copper	Aluminum
4 AWG	2	8	6
1 AWG	2/0	6	4
2/0 or 3/0	4/0 or 250	4	2

62 **NEC 250.28** The main bonding jumper - generally the green bonding screw provided by the panel manufacturer - shall be installed in the main service panel.

63 **NEC 250.104** The interior metal water piping and other metal piping that may become energized shall be bonded to the service equipment with a bonding jumper sized the same as the grounding electrode conductor.

UNDERGROUND WIRING

64 **NEC 300.5** Direct buried cable or conduit or other raceways shall meet the following minimum cover requirements:

Direct Burial Cable	Rigid or Intermediate Metal Conduit	Non Metallic Raceway (PVC)
24 inches	6 inches	18 inches

The minimum cover for 120-volt residential branch circuits rated 20 amps or less and provided with GFCI protection at their source is permitted to be 12-inches.

65 **NEC 680.10** Underground wiring is not permitted under pools or within 5-feet horizontally from the walls of the pool, unless supplying permitted pool equipment.

66 **NEC 300.5** Underground service laterals shall have their location identified by a warning ribbon placed in the trench at least 12" above the underground installation.

67 **NEC 300.5** Where subject to ground movement, direct buried cables and raceways shall be installed with expansion capability to prevent damage to the enclosed conductors or to the connected equipment.

68 **NEC 110.14** Wire splicing devices for direct burial conductors shall be listed for such use.

69 **NEC 300.5** Conductors emerging from underground shall be installed in rigid metal conduit, intermediate metal conduit, or Schedule 80 rigid nonmetallic conduit from 18" below grade or the minimum cover distance up to the point of termination above ground.

Minnesota Department of Labor & Industry
443 Lafayette Road North
Saint Paul, Minnesota 55155
(651) 284-5026 or 1-800-DIAL DLI
www.dli.mn.gov dli.electricity@state.mn.us
Inspector Directory:
http://workplace.doli.state.mn.us/jurisdiction/

James Kilian
218-851-9648

Electrical Inspection Checklist for Dwellings

Based on the
2014 National Electrical Code® (NEC®).

An owner who files a Request for Electrical Inspection form with the Department of Labor & Industry or other electrical inspection authority is signing an affidavit that they own and occupy the residence and that they will personally perform all of the electrical work, including the planning and laying out.

The term "owner" is defined as a natural person who physically performs electrical work on premises the person owns and actually occupies as a residence or owns and will occupy as a residence upon completion of construction.

A separate request for electrical inspection form with the required fees must be submitted to the Department at or before the start of any electrical work that is required to be inspected.

It is illegal for an owner to install electrical wiring in a mobile home or recreational vehicle park, or on property that is rented, leased, or occupied by others.

All wiring including underground cable and conduit shall be inspected before it is concealed by insulation, sheet-rock, paneling, or other materials. Except for the final connection to switches, receptacles, and lighting fixtures, all ground wires and other wires in boxes must be spliced and pigtailed for the rough-in inspection.

The installer shall notify the inspector for final inspection when the wiring is complete, before the wiring is utilized and the space occupied.

This is a general overview of residential electrical requirements and no claim is made that this information is complete or beyond question.

PLAN YOUR WIRING PROJECT

01 If wiring is concealed before inspection, the person responsible for concealing the wiring shall be responsible for all costs associated with uncovering and replacing the covering material. MN Rules 3801.3770

02 The installer shall schedule a final inspection when the electrical work is completed prior to the wiring being utilized and the space occupied. MN Rules 3801.3780

GENERAL CIRCUIT REQUIREMENTS

03 **NEC 406.4 and 406.12** All 125-volt, 15- and 20- amp receptacles installed or replaced in dwelling units shall be listed tamper-resistant. Three exceptions include receptacles located 5½ feet or more above the floor, a receptacle in space dedicated for an appliance that is not readily moved and receptacles that are part of a luminaire.

04 **NEC 210.12** All branch circuits supplying 125-volt, 15 and 20 amp outlets or devices in dwelling unit kitchens, family rooms, dining rooms, living rooms, parlors, libraries, dens, bedrooms, sunrooms, recreation rooms, laundry areas, closets, hallways, or similar areas shall be protected by a listed combination type AFCI device. AFCI protection is also required where branch circuit wiring in the above locations is modified, replaced or extended.

05 **NEC 210.11 and 422.12** In addition to the branch circuits installed to supply general illumination and receptacle outlets in dwelling units, the following minimum requirements apply:

- Two 20-amp circuits for the kitchen receptacles
- One 20-amp circuit for the laundry receptacles
- One 20-amp circuit for the bathroom receptacles
- One branch circuit for central heating equipment
- One branch circuit for garage receptacles

06 **NEC 406.4 and 406.9** Receptacles that are installed or replaced in wet locations shall be listed as weather-resistant and shall have an enclosure that is weatherproof with the cord inserted. Covers shall be marked "extra duty."

07 **NEC 300.3** All conductors of the same circuit, including grounding and bonding conductors shall be contained in the same raceway, cable, or trench.

08 **NEC 408.4** Every circuit and circuit modification shall be legibly identified as to its clear, evident and specific purpose or use in sufficient detail on a directory located on the face or inside of the electrical panel doors.

09 **NEC 240.4** Conductors shall be protected in accordance with their ampacity per Table 310.15(B)(16) and 240.4(D)

10 **NEC 406.3** Receptacle outlets shall be of the grounding type, be grounded, and have proper polarity.

NEC 310.15 Maximum Overcurrent Protection

Fuse or Circuit Breaker Size	Minimum Wire Size	
	Copper	Aluminum
15 amp	14	N/A
20 amp	12	N/A
30 amp	10	8
40 amp	8	6
50 amp	6	4

Note: Conductors that supply motors, air-conditioning units, and other equipment may have overcurrent protection that exceeds the limitations in the above chart.

11 **NEC 210.52** Receptacle outlets in habitable rooms shall be installed so that no point measured horizontally along the floor line in any wall space is more than 6-feet from a receptacle outlet. A receptacle shall be installed in each wall space 2-feet or more in width.

12 **NEC 210.52** At kitchen countertops, receptacle outlets shall be installed so that no point along the wall line is more than 24 inches measured horizontally from a receptacle outlet in that space. Countertop spaces separated by range tops, sinks or refrigerators are separate spaces.

13 **NEC 210.52** A receptacle outlet shall be installed at each counter space 12-inches or wider and at each island counter or peninsular space greater than 24-inches by 12-inches. Receptacles shall be located not more than 20-inches above the countertop, or not more than 12-inches below the countertop.

14 **NEC 210.52 & 406.9** At least one receptacle accessible from grade shall be installed at the front and back of a dwelling with an extra duty cover that is weatherproof whether or not an attachment plug cap is inserted.

15 **NEC 210.52** Balconies, decks and porches accessible from inside a dwelling unit shall have at least one receptacle located less than 6½ feet above the floor.

16 **NEC 210.52** In attached and detached garages at least one receptacle shall be installed for each car space.

GFCI PROTECTION

17 **NEC 210.8** Ground-fault circuit-interrupter (GFCI) protection shall be provided for all 125-volt, 15 and 20 amp receptacle outlets installed outdoors, in boathouses, crawl spaces, unfinished basements, laundry areas, garages, accessory buildings, bathrooms, at kitchen countertops and within 6-feet of the outside edge of all sinks, bathtubs and shower stalls.

18 **NEC 680.71** Hydro-massage bathtubs shall be supplied by an individual branch circuit and shall have ground-fault circuit-interrupter protection.

19 **NEC 210.8** Ground-fault circuit-interrupter (GFCI) protection shall be provided for outlets that supply dishwashers.

20 **NEC 680.73** Hydro-massage bathtub equipment shall be accessible without damaging the building structure or finish. When accessible through an access panel, the receptacle shall be within 1-foot of and face the opening.

21 **NEC 680.21(C)** All outlets supplying 125- or 240-volt pool pump motors shall be provided with GFCI protection.

An equipotential bonding grid to mitigate step and touch voltage potential shall be installed at outdoor swimming pools, spas and hot tubs and at electrical equipment installed outdoors adjacent to natural and artificially made bodies of water.

WIRING METHODS

22 **NEC 314.23** All electrical boxes shall be rigidly secured to the building structure.

23 **NEC 314.27** A listed fan box shall be installed where spare conductors are installed to a location acceptable to a ceiling fan.

24 **NEC 334.30** Type NM (nonmetallic) cables shall be secured every 4.5-feet and within 12 inches of each box.

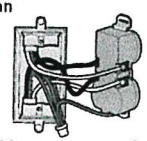
25 **NEC 314.17** The outer jacket of type NM cable shall be secured to the box and extend into the box at least ¼ inch.

26 **NEC 300.14** The minimum length of conductors including equipment grounding conductors at all boxes shall be 6-inches with at least 3 inches outside the box.

27 **NEC 300.4** Cables and raceways shall be protected from damage. Where installed through holes in wood framing, the edge of the hole shall be not less than 1¼ inch from the nearest edge of the wood or shall be protected by a 1/16 inch steel plate.

NOTE: Building codes prohibit holes within 2-inches of the top or bottom of a joist or rafter and notches in the center 1/3 of the span.

28 **NEC 300.22** Type NM cable shall not be installed in plenum spaces, but may be installed perpendicular through joist or stud spaces used as such.



29 **NEC 110.14** Terminals for more than one or for aluminum conductors shall be identified. Where there is more than one grounding wire they shall be tied together with a "pigtail" attached to the grounding terminal of the device.

30 **NEC 200.7** Where permanently re-identified at each location where it is visible and accessible, the conductor with white colored insulation in type NM cable may be used as an ungrounded conductor. The re-identified conductor shall not be used as the return conductor from a switch to an outlet.

31 **NEC 250.134** All non-current carrying metal parts of electrical equipment, including raceways, metal boxes and equipment shall be connected to an equipment grounding conductor.

32 **NEC 110.12** Unused openings in boxes shall be effectively closed. A non-metallic box shall be replaced if cable openings are punched out but not used.

33 **NEC 408.41** Each grounded circuit conductor within a panelboard shall terminate in an individual terminal.

34 **NEC 404.2** Generally, for lighting circuits for habitable rooms the grounded conductor shall be provided at each switch location unless the wiring is installed in a raceway; the switch box remains accessible or the switch controls a receptacle.

35 **NEC 314.29** Junction boxes shall be accessible without removing any part of the building.

36 **NEC 314.16** The number of conductors and devices to be contained within electrical boxes determine the box size. Nonmetallic boxes are marked with their cubic inch capacity.

Cubic Inches Required for Boxes

Conductor Size	14 AWG	12 AWG	10 AWG
Each insulated wire	2	2.25	2.5
All grounding wires combined	2	2.25	2.5
Each switch or receptacle	4	4.5	5
All internal cable clamps	2	2.25	2.5

Example: a box with four 14/2 w/ground type NM cables:

8 insulated wires	**= 16 cubic inches**
All 4 grounding wires	= 2 cubic inches
1 switch	= 4 cubic inches
1 receptacle	= 4 cubic inches
All cable clamps	= 2 cubic inches
Minimum Box Volume	= 28 cubic inches

37 **NEC 410.16** Luminaires in clothes closets shall have the following minimum clearances from the storage space

- 12 inches for totally enclosed surface mounted incandescent or LED luminaires
- 6 inches for recessed totally enclosed incandescent, fluorescent or LED luminaires
- 6 inches for surface mounted or recessed fluorescent luminaires

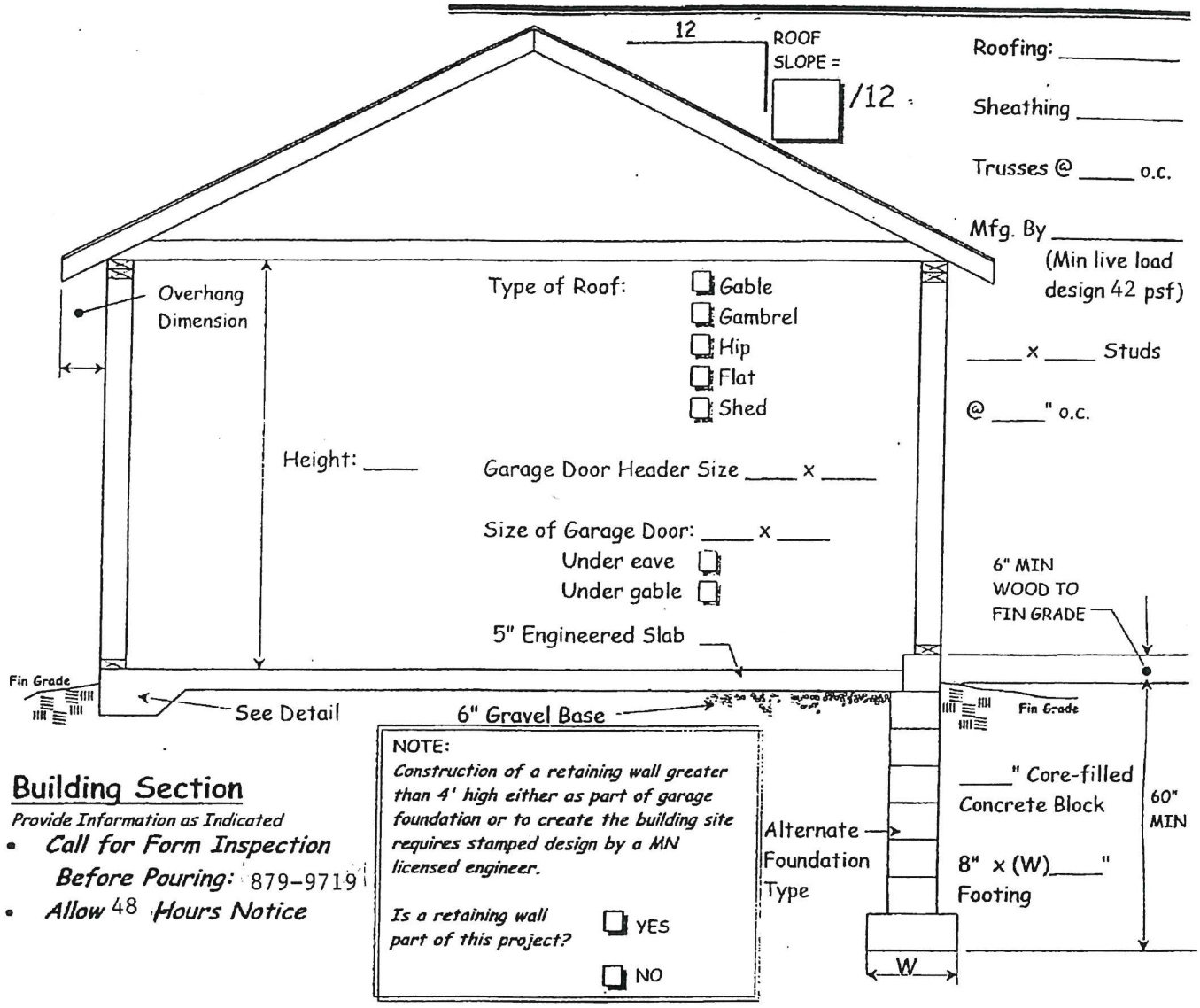
Surface mounted fluorescent or LED luminaires listed for installation within the defined storage space are permitted.

38 **NEC 410.2** Closet storage space extends from the floor to a height of 6-feet or the highest clothes-hanging rod and out 24-inches from the sides and back of the closet walls and continuing to the ceiling at 12-inches or the shelf width, whichever is greater.

39 **NEC 410.16** Incandescent luminaires with open or partially enclosed lamps and pendant fixtures or lamp-holders are not permitted in clothes closets.

40 **NEC 410.10** Luminaires installed in wet or damp locations shall be installed so that water cannot enter or accumulate and shall be marked as suitable for use in wet or damp locations, correspondingly.

GARAGES/Detached Accessory Buildings



Building Section

Provide Information as Indicated

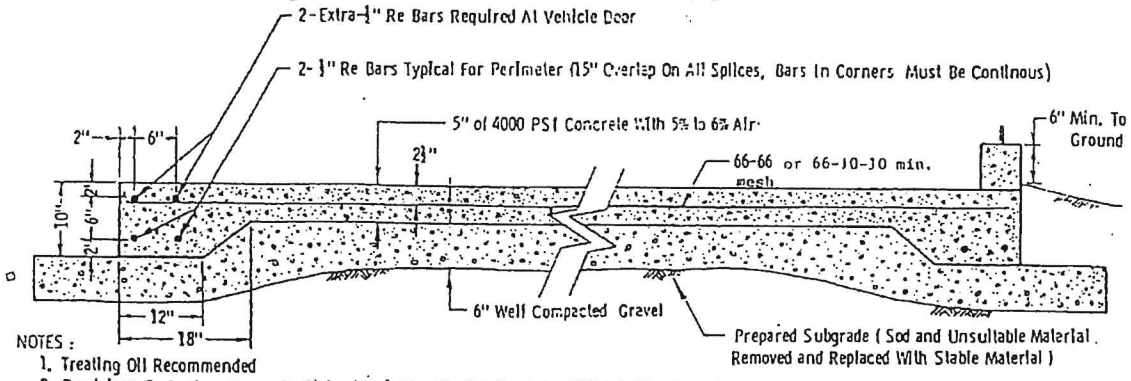
- *Call for Form Inspection Before Pouring:* 879-9719
- *Allow* 48 *Hours Notice*

NOTE:
Construction of a retaining wall greater than 4' high either as part of garage foundation or to create the building site requires stamped design by a MN licensed engineer.

Is a retaining wall part of this project? ☐ YES ☐ NO

Concrete Garage Floor Slab Detail *No Scale*

Minimum Standards for Detached Garages over 400 s.f.



NOTES :

1. Treating Oil Recommended
2. Provisions To Anchor Garage To Slab - Use ½ Dia. Steel Bolts at Least 7" Into The Concrete And Spaced Not More Than 6' Apart Sec. 2907 (e)
3. Foundation Plates On A Concrete Slab Shall Be Treated Wood Or Foundation Redwood Sec. 2517 (3) Unless Kept 6" Above Grade
4. Provide Drainage For Subgrade

OFFICIAL NOTICE OF BUILDING DEPARTMENT
INSPECTION SERVICE PROCEDURES

Inspections will be made during my regular working hours in Thomson Township on Tuesday's and Thursday's, from 1:15 pm to 4:30 pm. A **48 hour notice** is requested.

Work requiring inspections **must be complete** at the time of inspection. Your cooperation in observing these procedures will eliminate the necessity of recalls and enable this department to proved better service.

To request an inspection, please contact the Town Office at 879-9719 between the hours of 9:00 am and 4:00 pm.

IT IS YOUR RESPONSIBILITY TO CALL FOR THE INSPECTIONS

Thank You.

Jerry Manthey
Building Official

REQUIRED INSPECTIONS:

- ☐ Footings or Slab Forms - BEFORE concrete is poured.
  (Rebar must be in place at time of inspection)
- ☐ Foundation before backfilling
- ☐ Framing
- ☐ Plumbing ***(Both before concrete is poured & as a rough-in before drywall is applied)***
- ☐ Insulation
- ☐ Vapor Barrier
- ☐ FINAL

Revised 3-24-2011