City of White Bear Lake
Building Department
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FOUNDATIONS / FOOTINGS

This handout is a summary of the permit & inspection process as well as standard requirements based on State Building Code regarding new foundations or foundation repair. *Please note:* A foundation only permit is not required when the foundation plan is included with the building plans for a new house or new commercial structure. Foundation repair work, or if foundation work is needed prior to building permit approval requires a foundation only permit.

Permit Submission Requirements:

- Completed permit application, including valuation (materials & labor).
- Two copies of site plan.
- Two copies of foundation and grading plans, if not previously obtained under a separate permit.

Foundation Only Permit Fees: See the White Bear Lake Fee Schedule at www.whitebearlake.org

Licensing Requirements:

- Contractors must be licensed in the State of Minnesota if performing more than one single trade. Minnesota State license number must be provided on permit application.
- Contractors working on a structure built prior to 1978 are required to provide their Lead Certification Number (see permit application for exceptions.)
- Property owners may perform building related trades on property they own. Property owners may perform mechanical trades, such as plumbing, heating & electrical on property they own and occupy, otherwise a licensed contractor is required. Property owners doing their own work will be required to sign the Property Owner Waiver acknowledging their responsibilities to the Minnesota State Building Code, to Zoning Ordinances and to other applicable rules and regulation when they are acting as general contractor. All sub-contractors hired must be licensed and disclosed on the application.
- Rental property owners may perform building trade work. However, all plumbing, HVAC and electrical work on rental property shall be performed by a licensed contractor.
- Property owners renovating dwellings with the intent to sell must be state licensed if performing work on more than one property in a two-year period.

Inspection Requirements: The inspection card and approved plans must be on site upon the start of work until the final inspection has been performed and passed. All construction work shall remain accessible and exposed for inspection until approved by the Building Inspections Department.

All required inspections will be listed on the permit card. A final inspection is required upon completion of project and approvals for all other inspections have been complete; please call 651-429-8518 to schedule an inspection. A 24 hour notice is required for all inspection (period is subject change during busy times).

- A footing inspection in required prior to pouring any new concrete or other material.
- A foundation form inspection is required prior to pouring any concrete foundation walls.
- A foundation inspection is required prior to backfilling.

Information and Guidelines:

Site and Soils: Foundation construction shall be capable of accommodating and transmitting all resulting leads to the supporting soil. Fill soils that support footings and foundations shall be designed, installed and tested in accordance with accepted engineering practice. Where soils are expansive, compressive, shifting or otherwise questionable, a soils report may be required at the discretion of the building official.

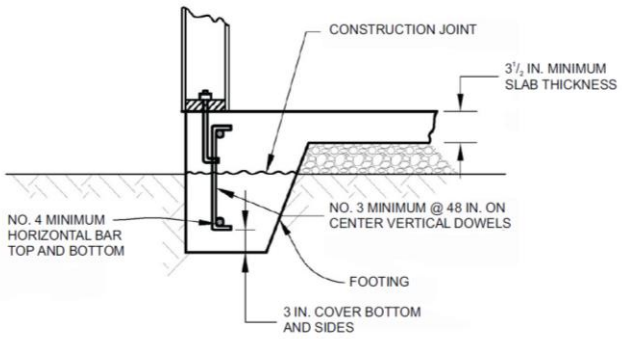
Drainage: Surface drainage shall be diverted to a storm sewer or other point of collection that does not create a hazard. Lots shall be graded to drain surface water away from foundation walls. The grade shall fall a minimum of 2% away from the building.

Footings: All exterior walls shall be supported on continuous solid or fully grouted masonry or concrete footings, crushed stone footings, wood foundations, or other approved structural systems designed to carry the imposed loads. Footing shall be supported on undisturbed natural soils or engineered fill. Footing shall be sized in accordance with IRC Table R403.1. Concrete shall have the minimum compressive strength in accordance with IRC Table R402.2.

Table R403.1 Minimum Width of Concrete Precast or Masonry Footings (Inches) (a)				
Load-Bearing Value of Soil (psf)				
	1,500	2,000	3,000	≥4,000
Conventional light-frame construction				
1-Story	12	12	12	12
2-Story	14	12	12	12
3-Story	17	13	12	12
4-inch brick veneer over light frame or 8-inche hollow concrete masonry				
1-Story	13	12	12	12
2-Story	18	14	12	12
3-Story	27	18	12	12
8-inch solid or fully grouted masonry				
1-Story	17	13	12	12
2-Story	27	20	13	12
3-Story	35	27	18	13

Table R402.2 Minimum Specified Compressive Strength of Concrete			
Type of Location of Concrete Construction	Minimum Specified Compressive Strength Weathering Potential (b)		
	Negligible	Moderate	Severe
Footings	5,000	5,000	5,000
Basement walls, foundations & other concrete no exposed to the weather	2,500	2,500	2,500
Basement slabs and interior slabs on grade, except garage floor slabs	2,500	2,500	2,500
Basement walls, foundation walls, exterior walls & other vertical concrete work exposed to the weather	2,500	3,000	3,000
Porches, carport slabs & steps exposed to the weather & garage floor slabs	2,500	3,000	3,500

Slab on Grade: Detached Garage or Accessory Building Footings. Slab on grade with down turned footings shall have a minimum of one No. 4 bar at the top and the bottom of the footing. The down turned perimeter footing shall be placed at least 12 inches below the undisturbed ground surface.



For SI: 1 inch = 25.4 mm.

FIGURE R403.1.3.2
DOWELS FOR SLABS-ON-GROUND WITH TURNED-DOWN FOOTINGS

Slope: The top surface of footings shall be level. The bottom surface of footings shall not have a slope exceeding one unit vertical in 10 units horizontal. Footings shall be stepped where it is necessary to change the elevation of the top surface of the footing or where the slope of the bottom surface of the footings will exceed one unit vertical in 10 units horizontal (10% slope).

Foundation Anchorage: Sill plates and walls supported directly on continuous foundations shall be anchored to the foundation. Wood sole plates at all exterior walls shall be anchored to the foundation with anchor bolts spaced a maximum of 6 feet on center. Bolts shall be at least ½" in diameter and shall extend a minimum of 7 inches into concrete or grouted cells of concrete masonry units. A nut and washer shall be tightened on each bolt. There shall be a minimum of two bolts per plate section with one bolt located not more than 12 inches or less than 7 bolt diameters from the end of the plate section. Interior bearing wall sole plates shall be positively anchored. Anchor straps can be approved when installed per the manufacturers listing.

Foundation Elevation: On graded sites, the top of any foundation shall extend above the elevation of the street. Gutter at point of discharge or the inlet of an approved drainage device a minimum of 12 inches plus 2%. Alternate elevations are permitted subject to approval of the building official, provided it can be demonstrated that required drainage to the point of discharge & away from the structure is provided at all locations on the site.

Height Above Finished Grade: Concrete and masonry foundation wall shall extend above finished grade a minimum of 6 inches.

Backfill: Backfill shall not be placed against the wall until the wall has sufficient strength and has been anchored to the floor above, or has been sufficiently braced to prevent damage by the backfill.

Foundation Drainage: Drains shall be provided around all concrete or masonry foundation that retain earth and enclose habitable or usable space located below grade. Draintile, gravel or crushed stone drains, perforated pipe or other approved systems or materials shall be installed at or below the area to be protected and shall discharge by gravity or mechanical means into an approved drainage system.

Foundation Waterproofing: Exterior foundation walls that retain earth and enclose below grade interior spaces, floors, and crawl spaces shall be waterproofed. Waterproofing shall be installed from the top of the footing, up the foundation wall and across the top of foundation to the interior edge of the foundation wall.

This document is for informational purposes only and not intended to address every situation for the permitting and plan review process. 2022