

ARTICLE XXII

SUPPLEMENTAL REGULATIONS

The provisions of this Article are designed to promote the conservation or wise use of important natural resources and to protect the desirable qualities of the natural environment which may involve the saving of important vegetation, wildlife cover, watersheds, areas which periodically flood, features controlling wind or water erosion, wetlands, and areas of topographical, archaeological, geological, historical or agricultural significance for present and future generations in accordance with the adopted Master Plan.

Section 22.1 Groundwater Protection Standards in all Zoning Districts

- A. General purpose floor drains shall be connected to public sanitary sewer or an on-site holding tank in accordance with Township, Barry County and state standards, unless a groundwater discharge permit has been issued by the Michigan Department of Environmental Quality.
- B. All sites on which hazardous substances or materials are stored, used or generated shall have a containment system designed to prevent discharge or spill onto the ground or into a storm drain, surface water or wetland.
- C. Footing drains shall not directly discharge to a surface water body.
- D. All private groundwater wells that become obsolete, abandoned, or in disuse, shall be sealed in a manner approved by the Barry-Eaton District Health Department.
- E. Above-ground Storage.
 - 1) Containers for hazardous substances shall be product-tight.
 - 2) Secondary containment of hazardous substances shall be provided for all facilities. Secondary containment shall be sufficient to store the substance for the maximum anticipated period of time necessary for the operator to recover any released substance.
 - 3) Outdoor storage of hazardous substances is hereby prohibited except in product-tight containers that are protected from weather, leakage, accidental damage, and vandalism. Secondary containment shall be sufficient to store the substance for the maximum anticipated period of time necessary for the operator to recover any released substance, including an allowance for the expected accumulation of precipitation.
 - 4) Secondary containment structures such as outbuildings, storage rooms, sheds and pole barns shall not have floor drains which outlet into soils, groundwater or nearby drains or rivers.
 - 5) Areas and facilities for loading/unloading of hazardous substances and polluting materials, as well as areas where such materials are handled and used, shall be designed and constructed to prevent discharge or runoff to floor drains, rivers, lakes, wetlands, groundwater or soils.

At a minimum, State of Michigan and federal agency requirements for storage, leak detection, record keeping, spill prevention, emergency response, transport and disposal shall be met.

F. Underground Storage.

- 1) Existing and new underground storage tanks shall be registered with the State of Michigan in accordance with state and federal requirements.
- 2) Installation, operation, maintenance, closure and removal of underground tanks shall be in accordance with the requirements of the Fire Inspector and the State of Michigan. Leak detection, corrosion protection, spill prevention and overflow protection requirements shall be met. Records of monthly monitoring or inventory control must be retained and available for review by state or local officials.
- 3) Out-of-service and/or abandoned underground tanks shall be emptied and removed from the ground in accordance with the requirements of the State Police Fire Marshall Division, the Michigan Department of Environmental Quality and Thornapple Township.

Section 22.2 Flood Plain Management

Notwithstanding any other provisions of this Ordinance, land within a 100-year flood plain shall be used only for agriculture and recreation uses, provided no structures, except as otherwise provided in this Ordinance, are located within the flood plain.

The location and boundaries of land within the 100-year flood plain shall be determined by reference to the Federal Housing Administration, U.S. Army Corps of Engineers, the U.S. Soil Conservation Service or other official U.S. or Michigan public agency responsible for defining and determining flood plain areas. When such data is unreliable or not available, the Zoning Administrator or Planning Commission may require flood plain limits documentation by a registered professional engineer.

No building shall be located within a designated floodway, except as approved by the Michigan Department of Environmental Quality (DEQ). The Township Planning Commission may permit bridges, dams, other public facilities, piers, wharves, or boat houses but only if the Michigan Department of Environmental Quality has approved placement of a structure within the floodway. Before any such structure is built within the floodway, it shall be shown that such structure will not form a significant obstruction or retard the movement of floodwaters, except as part of a plan for flood control.

Intensive livestock operations are prohibited within any defined 100-year flood plain area.

Section 22.3 Site Grading and Steep Slope Requirements

This section is intended to address protection of land forms comprising areas of steep slopes by limiting earth changes and grading activities.

- A. Grading. The general site topography and any natural landforms unique to the property shall be maintained and made part of the development to reinforce the neighborhood character. Property grading and elevation relationships to adjacent properties shall be maintained. All necessary grading shall complement natural landforms.
- B. Slopes. Cut and fill slopes shall be minimized. Unstable slopes or slopes subject to erosion shall be protected. Slopes shall be re-vegetated using low-maintenance techniques.
- C. Steep Slopes. Steep slopes are slopes of 20 percent or greater. Grading or removal of vegetative cover shall not be permitted on land with existing steep slopes. Areas containing existing steep slopes shall be included as open space and not be a part of a building site.
- D. Clustered Development. The most significant slopes and ridgelines shall be maintained in their natural state by clustering development.
- E. Berms. Berms shall:
 - 1) Not exceed a four to one (4:1) horizontal to vertical ration, with a top width of at least one-half (1/2) the berm height, and a maximum height of 5 feet above the base of the berm.
 - 2) Be stabilized with a ground cover or suitable vegetation and properly located outside of clear vision areas.
 - 3) Retain in good condition, existing healthy vegetation, designated for preservation.
- F. Stormwater. Stormwater runoff that could result from major changes in topography shall be minimized.
- G. Adaptive Architecture. Architectural designs that respond to a site and its topography shall be used.
- H. Phased Construction. Large tracts shall be graded in workable units following a scheduled timeline so that construction does not result in large areas left bare and exposed to seasonal runoff.

Section 22.4 Tree Protection Requirements

Existing Trees. Site plans should preserve existing trees greater than eight (8) inches in caliper when ever feasible, especially in buffer areas. Relocation of existing trees within the site is also encouraged. Prohibited tree species may be removed.

- A. Exemption. Trees that are determined to be dead or dying; a nuisance or threat to an existing structure, underground utility or to public health, safety or welfare shall be exempt from the requirements of this Section. Trees within public rights-of-way shall not be disturbed except with consent of the agency with jurisdiction.

- B. Tree Protection Zone. Trees retained on a development site shall be located within an area referred to as a “Tree Protection Zone,” which shall include the area occupied by the critical root zone.

Trees shall be retained on the site based on the quality of natural resources and tree condition, with the following locations considered as priority areas in the establishment of a Tree Protection Zone:

- 1) Areas containing specimen trees and their associated critical root zones.
- 2) Hillside with slopes of 20 percent or greater.
- 3) Areas needed to buffer existing residential zone districts and/or historic structures.
- 4) Scenic corridors, gateways and views.
- 5) Riparian buffers, wetlands or natural drainage courses.
- 6) Areas needed for required landscape (e.g. buffers, perimeter landscape strips, etc.)

The area below the drip line of an existing tree to be saved should remain undisturbed. The drip line is an imaginary vertical line that extends downward from the outermost tips of the tree branches to the ground.

No impervious material shall be placed under the drip line and a tree protection fence shall be installed around the trees during construction to limit disturbance.

Existing trees may be used to fulfill landscaping requirements if such trees are in healthy growing condition, are at least the required minimum size, are the appropriate type, and are spaced according to their projected size at maturity.

Tree Protection fencing, notes and details shall be shown on the site plan.

- C. Replacement Trees. Should any tree designated for preservation and included as part of minimum required landscaping under this Article, be damaged, removed or die, the owner shall replace the tree with equivalent species. The replacement tree(s) shall be a minimum of 2 ½ inches caliper.

Section 22.5 Wetlands

All areas designated as wetlands by the Michigan Department of Environmental Quality are hereby declared to be “Wetlands” in the Township and are subject to the provisions of this Ordinance as follows:

- A. All wetlands in the Township are hereby subject to the provisions of 203 PA of 1979, “The Wetlands Protection Act” [now part of 451 PA of 1994] [MCL 324.30301 et seq.] in order to encourage property conservation, use and development of the wetlands.

Section 22.6 Storm Water Management

All areas within the Township not served by a public drainage district under jurisdiction of the Barry County Drain Commission or the Village of Middleville shall conform to provisions of this section

This section is intended to provide for the protection of the environment against pollution from storm water runoff; to provide flood control and adequate drainage within and around the Township; to prevent pollution within and around the Township; to provide for the implementation of a storm water management program in the Township; to provide for the issuance of storm water construction approvals for certain construction activities within the Township’s jurisdiction; to provide design and construction criteria for storm water management systems; to provide for administration and enforcement of this Ordinance; to require long-term maintenance and financial assurance; to authorize inspections of construction activities governed by this Ordinance; to provide for the continuation of all pre-existing legal requirements to preserve and protect the environment; to provide for the severability of this Ordinance; to provide for the effective date hereof; and to establish penalties for violations hereof.

Stormwater management facilities shall be designed and maintained, in accordance with the requirements and policies in the Stormwater Management Best Practices Design and Maintenance Standards manual adopted by the Township Board of Trustees on advice of the Township Planning Commission.

Section 22.7 – 22.99 [Reserved]