

ARTICLE XIII
SITE DESIGN REGULATIONS

SECTION 1300. PURPOSE

It is the purpose of these site design regulations to set minimum standards for the protection and enhancement of the environment through requirements for site design and the use of landscape materials.

SECTION 1301. APPLICATION

These requirements shall apply to nonresidential uses, multiple family uses and mobile home uses, as set forth herein which are developed or expanded following the effective date of this ordinance, except that these standards shall not apply to property zoned or used for agriculture. No site plan shall be approved unless said site plan shall be consistent with the provisions herein. In cases where the use of an existing building changes, or an existing building is expanded or otherwise altered, all of the site design standards set forth herein shall be met. In cases where the existing structure or its site present practical difficulties to meeting all of the site design standards, the Zoning Board of Appeals shall approve variances from the site design standards based on the standards for variances set forth in Section 2004-2.

SECTION 1302. LANDSCAPE BUFFER AND OPEN SPACE STANDARDS

1302-1. Buffering of Nonresidential Uses [Except Churches (1104-9), Schools (1104-16), Hazardous Waste Incineration Facilities (1104-17), Junk Yards (1104-18), Mining and Quarrying (1105) and Sanitary Land Fill Uses (1106)] Adjacent to Residential Property

The owner of property which is used for nonresidential purposes (except churches, schools, hazardous waste disposal facilities, junk yards, mining and quarrying and sanitary land fill uses) shall install and maintain in good condition along the entire edge of said property adjacent to property which is used or zoned for residential purposes either a protective screen wall OR, upon Planning Commission determination, a landscape buffer strip. Protective screen walls and buffer strips required hereby shall have the following specifications:

- a. Protective screen wall:
 1. The wall shall be of brick, decorative concrete, other decorative masonry, or comparably durable and aesthetic wood and steel construction at least five (5) feet high.
 2. It shall contain no openings whatsoever except for such gates as may be approved by the Planning Commission in the course of site plan review.

3. It shall extend the full length of the nonresidential property where such property is also adjacent to a residential district or property used for residential purposes, except that it shall not be erected within twenty (20) feet of a residential front property line.
- b. Landscape buffer strip:
1. The buffer strip shall be a minimum of twenty (20) feet in depth.
 2. It shall be graded with a continuous berm at least two (2) feet eight (8) inches above the grade elevation at the common property line. All or a portion of the berm may be sloped on one side and backed by a retaining wall on the other side. The retaining wall shall be of brick decorative concrete or other decorative masonry if it is on the exterior side of the berm. A two (2) foot eight (8) inch high brick, decorative concrete, other decorative masonry or comparably durable wood and steel screen wall may be substituted for the berm.
 3. All portions of the buffer strip shall be planted with grass, ground covers, shrubbery, or other suitable live plant material.
 4. A minimum of one (1) deciduous tree shall be planted for each thirty (30) lineal feet or portion thereof of required buffer strip length. Required deciduous trees may be planted at approximately thirty (30) foot intervals, or may be clustered if the Planning Commission determines that a particular clustering configuration would improve the effectiveness of the buffer strip in screening the property in question from adjacent property.
 5. A minimum of one (1) evergreen tree shall be planted for each ten lineal feet or portion thereof of required buffer strip length. Required evergreen trees may be planted at ten (10) foot intervals, or may be clustered if the Planning Commission determines that a particular clustering configuration would improve the effectiveness of the buffer strip in screening the property in question from adjacent property.
 6. A minimum of one (1) intermediate shrub shall be planted for each ten (10) lineal feet or portion thereof of required buffer strip length. Required intermediate shrubs may be planted at ten (10) foot intervals or may be clustered if the Planning Commission determines that a particular clustering configuration would improve the effectiveness of the buffer strip in screening the property in question from adjacent property.
 7. For the purpose of determining required plant material, required buffer strip length shall be measured along the centerline of the buffer strip.

1302-2. Buffering of Non-Residential Uses (Except Churches, Schools, Hazardous Waste Disposal Facilities, Junk Yards, Mining and Quarrying Sites and Sanitary Land Fills) Adjacent to a Public Thoroughfare

The owner of property which is used for nonresidential purposes (except churches, schools, hazardous waste disposal facilities, junk yards, mining and quarrying sites and sanitary land fills) shall install and maintain in good condition a landscape buffer strip along the entire edge of said property adjacent to a public thoroughfare right-of-way. The buffer strip shall be designed and landscaped as follows:

- a. The buffer strip shall be a minimum of twenty (20) feet for industrial uses and uses in industrial districts, and ten (10) feet for all other nonresidential uses.
- b. It may be interrupted at not more than fifteen (15) percent of its required length to provide for vehicular access, except that the buffer strip may be interrupted at more than fifteen (15) percent of its required length if necessary to provide for one (1) vehicular access and one (1) egress lane.
- c. Grass, ground cover, or other suitable live plant material shall be planted over the entire buffer strip area except that paving maybe used in areas of intensive pedestrian circulation.
- d. A minimum of one (1) deciduous tree shall be planted for each thirty (30) lineal feet or portion thereof of required buffer strip length. Paved areas used for pedestrian circulation and vehicular access shall be counted in measuring the length of the buffer strip for the purpose of determining the required number of trees. Trees need not be planted at thirty (30) foot intervals, but may be clustered along the buffer strip if the Planning Commission determines that a particular clustering configuration will improve the screening and aesthetic function of the buffer strip.
- e. For the purpose of determining required plant material, required buffer strip length shall be measured along the center line of the buffer strip.

1302-3. Screening and Landscaping of Multiple-Family and Mobile Home Park Residential and Nonresidential (Except Churches, Schools, Hazardous Waste Disposal Facilities, Junk Yards, Mining and Quarrying Sites and Sanitary Land Fills) Parking Areas, Loading Areas, and Drive-in Service Areas Adjacent to or Visible from Public Thoroughfares or Residential Areas.

The owner of a multiple-family, mobile home park, or nonresidential (except churches, schools, hazardous waste disposal facilities, junk yards, mining and quarrying sites and sanitary land fills) off-street parking area, loading area, or drive-in service area adjacent to or visible from a public right-of-way or residential use or district shall install and maintain in good condition the following screening and landscaping:

- a. Off-street parking areas, loading areas, and drive-in service areas shall be screened from public thoroughfares and residential uses and districts by a thirty-six (36) inch high brick, decorative concrete, other decorative masonry, or comparably durable wood and steel wall around their periphery. The wall may be interrupted at not more than twenty (20) percent of its required length to provide for vehicular access, except that the wall may be interrupted at more than twenty (20) percent of its required length if necessary to provide for one (1) vehicular access and one (1) egress lane. The wall SHALL NOT be required along the portion of parking and vehicular loading and circulation area periphery which lies immediately adjacent to a protective screen wall or landscape buffer strip of the types requires in Section 1302-1 herein, or along the portion of the parking and vehicular loading and circulation area periphery which lies adjacent to a building on the same lot as the parking area, or within twenty (20) feet of the parking area on an immediately adjacent lot.
- b. Off-street parking areas shall have a minimum of one (1) deciduous tree and (3) evergreen shrubs for every group of ten (10) parking spaces. The trees and shrubs shall be located in landscape areas within the parking lot and such landscape areas shall be equal to ten percent (10%) of the total parking lot. The landscaping required herein is meant to break up large expanses of asphalt or concrete paving so it shall begin to be applied to a parking lot with 10 or more spaces in it. The final arrangement of the parking and landscaping will be subject to the review and approval of the Planning Commission. Trees counted for meeting requirements herein specified shall not be counted toward meeting other buffer strip or landscape area requirements.

1302-4. Screening and Landscaping of Recreation Vehicle Parking Areas

The owner of an area required for recreation vehicle parking shall install and maintain in good condition along the entire edge of said parking area either a protective screen wall OR, upon Planning Commission determination, a landscape buffer strip. Protective screen walls and buffer strips required hereby shall have the following specifications:

- a. Protective screen wall:
 1. The wall shall be of brick, decorative concrete, other decorative masonry, or comparably durable wood and steel construction at least five (5) feet high, and it shall be reinforced with steel.
 2. It shall contain only the minimum openings as required for access and egress.
- b. Landscape buffer strip:
 1. The buffer strip shall be a minimum of twenty (20) feet in depth.
 2. It shall be graded with a continuous berm at least two (2) feet eight (8) inches above the grade elevation at the common property line. All or a portion of the berm may be sloped on

one side and backed by a retaining wall on the other side. The retaining wall shall be of brick, decorative concrete or other decorative masonry if it is on the exterior side of the berm. A two (2) foot eight (8) inch high brick, decorative concrete, other decorative masonry, or comparably durable wood and steel screen wall may be substituted for the berm.

3. All portions of the buffer strip shall be planted with grass, ground cover, shrubbery, or other suitable live plant material.
4. A minimum of one (1) deciduous tree shall be planted for each thirty (30) lineal feet or portion thereof of required buffer strip length. Required deciduous trees may be planted at approximately thirty (30) foot intervals, or may be clustered if the Planning Commission determines that a particular clustering configuration would improve the effectiveness of the buffer strip in screening the property in question from adjacent property.
5. A minimum of one (1) evergreen tree shall be planted for each ten lineal feet or portion thereof of required buffer strip length. Required evergreen trees may be planted at ten (10) foot intervals, or may be clustered if the Planning Commission determines that a particular clustering configuration would improve the effectiveness of the buffer strip in screening the property in question from adjacent property.
6. For the purpose of determining required plant material, required buffer strip length shall be measured along the centerline of the buffer strip.

1302-5. Buffering of Multiple Dwellings and Mobile Home Parks from Streets

The owner of property used for five (5) or more multiple-dwellings or for a mobile home park shall install and maintain in good condition a landscape buffer at least twenty (20) feet in depth along the entire edge of said property adjacent to a public right-of-way line.

The buffer strip shall be designed and landscaped as follows:

- a. The buffer strip may be interrupted at not more than twenty (20) percent of its required length to provide for vehicular access, except that it may be interrupted at more than twenty percent of its required length if necessary to provide for one (1) vehicular access and one (1) egress lane.
- b. All portions of the buffer strip shall be planted with grass, ground cover, shrubbery, or other suitable plant material.
- c. A minimum of one (1) deciduous tree shall be planted for each thirty (30) lineal feet or portion thereof of required buffer strip length. Required deciduous trees may be planted at approximately thirty (30) foot intervals, or may be clustered if the Planning Commission determines that a particular

clustering configuration would improve the effectiveness of the buffer strip in screening the property in question from adjacent property.

- d. Paved areas used for pedestrian circulation and vehicular access shall be counted in measuring the length of the buffer strip for the purpose of determining the required number of trees and shrubs.
- e. For the purpose of determining required plant material and permitted buffer strip interruptions, required buffer strip length shall be measured along the centerline of the buffer strip.

1302-6. Landscape Open-Space Area

Whenever in this Ordinance a landscaped open-space area is required, it shall be landscaped according with the following standards:

- a. All portions of the landscaped open-space area shall be planted with grass, ground cover, shrubbery, or other suitable plant material, except that paved active recreation areas, patios, terraces, pedestrian circulation areas, swimming pools, and other similar site components may be incorporated with the approval of the Township Board. Where paved patios, terraces, pedestrian circulation areas, and swimming pool decks are used, at least ten (10) percent of these areas shall be paved with brick or, with Planning Commission approval, other decorative paving material.
- b. A minimum of one (1) deciduous tree shall be planted for each 1,000 square feet or portion thereof of required landscaped open-space area, or for each residential unit in the development, whichever is greater. Required trees may be planted on individual mobile home sites in mobile home parks.
- c. A minimum of one (1) evergreen tree and one intermediate shrub shall be planted for each 300 square feet or portion thereof of required landscape open space area. Required evergreen trees and intermediate shrubs may be planted at uniform intervals, at random or in groupings.
- d. The total landscaped open-space area required shall be the basis for determining the number of trees, evergreens, and shrubs, irrespective of the portion of the required landscaped open-space area which is devoted to active recreation purpose, patios, terraces, or pedestrian circulation.

1302-7 Site Barriers for Church, School, College and University Parking Areas and Loading Areas Adjacent to or Visible from Public Thoroughfares or Residential Areas.

The owner of church, school, college and university off- street parking and loading areas adjacent to or visible from a public right-of-way or residential area shall install and maintain in good condition sight barriers which conform to the following standards:

- a. Requirements for a landscape buffer strip where parking and loading areas adjacent to or visible from property used or zoned for residential purposes.

1. The buffer strip shall be a minimum of twenty (20) feet wide.
 2. It shall be graded with a continuous berm at least two feet-eight inches (2'-8") above the grade elevation along the adjacent parking surface. All or a portion of the berm may be sloped on one side and backed by a decorative concrete, brick or treated lumber retaining wall to the same height as is required for the berm.
 3. All portions of the buffer strip shall be planted with grass, ground cover, shrubbery, or other suitable live plant material.
 4. A minimum of one (1) deciduous tree shall be planted for each thirty (30) lineal feet or portion thereof of required buffer strip length. Required deciduous trees may be planted at approximately thirty (30) foot intervals, or may be clustered if the Planning Commission determines that a particular clustering configuration would improve the effectiveness of the buffer strip in screening the property in question from adjacent property.
 5. A minimum of one (1) evergreen tree shall be planted for each ten lineal feet or portion thereof of required buffer strip length. Required evergreen trees may be planted at ten (10) foot intervals, or may be clustered if the Planning Commission determines that a particular clustering configuration would improve the effectiveness of the buffer strip in screening the property in question from adjacent property.
 6. A minimum of one (1) intermediate shrub shall be planted for each ten (10) lineal feet or portion thereof required buffer strip length. Required intermediate shrubs may be planted at ten (10) foot intervals or may be clustered if the Planning Commission determines that a particular clustering configuration would improve the effectiveness of the buffer strip in screening the property in questions from adjacent property.
 7. For the purpose of determining required plant material, required buffer strip length shall be measured along the centerline of the buffer strip.
- b. Requirements for a landscape buffer strip where parking is adjacent to Public Thoroughfare.
1. The buffer strip shall be a minimum of ten (10) feet wide.
 2. It shall be graded with a continuous berm at least two feet-eight inches (2'-8") above the grade elevation along the adjacent parking surface. All or a portion of the berm may be sloped on one side and backed by a decorative concrete, brick or treated lumber retaining wall to the same height as is required for the berm.
 3. It may be interrupted at not more than fifteen (15) percent of its required length to provide for vehicular access, except that the buffer strip may be interrupted at more than fifteen (15) percent of its required length if necessary to provide for one (1) vehicular access and one (1) egress lane.

4. Grass, ground cover, or other suitable live plant material shall be planted over the entire buffer strip area except that paving may be used in areas of intensive pedestrian circulation.
5. A minimum of one (1) deciduous tree shall be planted for each thirty (30) lineal feet or portion thereof of required buffer strip length. Paved areas used for pedestrian circulation and vehicular access shall be counted in measuring the length of the buffer strip for the purpose of determining the required number of trees. Trees need not be planted at thirty (30) foot intervals, but may be clustered along the buffer strip if the Planning Commission determines that a particular clustering configuration will improve the screening and aesthetic function of the buffer strip.
6. A minimum of one (1) intermediate shrub shall be planted for each ten (10) lineal feet or portion thereof of required buffer strip length. Required intermediate shrubs may be planted at ten (10) foot intervals or may be clustered if the Planning Commission determines that a particular clustering configuration will improve the effectiveness of the buffer strip in screening the property in question from adjacent property.
7. For the purpose of determining required plant material, required buffer strip length shall be measured along the center line of the buffer line of the buffer strip.

1302-8. General Landscaping Along Property Lines Adjacent to Residential Property and Public Thoroughfares for Church, School, College and University Properties.

The owner of church, school, college and university properties shall install and maintain in good condition general landscaping along the property line adjacent to residential property and public thoroughfares which conform to the following standards:

- a. A minimum of one (1) deciduous tree shall be planted for each thirty (30) linear feet or portion thereof of property line. Required trees may be planted at approximately thirty (30) foot intervals, or may be clustered if the Planning Commission determines that a particular clustering configuration will improve the effectiveness of the buffer strip in screening the property in question from adjacent residential property.
- b. The required trees in (a) above, shall not apply if landscaping is already required per Section 1302-7.a. or b.
- c. If the total property for the proposed use is larger than the area actually being developed for any principal or accessory building, structure or outdoor activity area, then in the discretion of the Planning Commission, the additional general landscaping along the undeveloped portion of the property line may be waived per Section 1302-10.
- d. Existing trees and general landscaping may be counted as the required landscaping for this section upon review and approval by the Planning

Commission. All existing trees, shrubs, etc. must be equal in size or greater than the minimum requirements outlined in Section 1303-4 and they must be a type of planting that is permitted by this Ordinance.

1302-9. Sight Barriers for Hazardous Waste Disposal Sites, Junk Yard Sites, Sand and Gravel Extraction, Sanitary Land Fills (Dumps), and Yard Waste Composting Facilities

The owner of property which is used for a hazardous waste disposal site, junkyard, mining or quarrying operation, sanitary landfill, or yard waste composting facility shall install and maintain in good condition sight barriers which conform to the following standards:

- a. Sight barriers may be of one of the following three (3) optional types:
 1. Earth berms which are constructed to a height of six (6) feet above the mean elevation of the centerline of the adjacent roadway where the berms are adjacent to a roadway, or six (6) feet above the general level of terrain where the berms are not adjacent to a roadway. Berms shall have slopes not in excess of one (1) foot vertical to three (3) feet horizontal, and shall be planted with grass, trees, and shrubs, OR
 2. Plantations of coniferous or other suitable species in parallel rows with the spacing of rows and the spacing of trees within rows sufficient to provide immediate year around screening substantially equivalent to the berm described in Section 1302-9,a,1. above, OR
 3. Natural topographic or vegetative conditions sufficient to provide year around screening substantially equivalent to the berm described in Section 1302-9,a,1. above.
- b. Sight barriers shall be provided along the entire periphery of the area in which hazardous waste disposal activities, junk yard activities, sand or gravel extraction activities, sanitary landfill activities, or yard waste composting activities take place. Required sight barriers may be interrupted only where necessary to provide for access and egress.
- c. If an area screened pursuant to (1) above is topographically lower than adjoining property or rights-of-way and therefore can be seen from said adjoining property or rights-of-way, then the setback of activity areas from the property line shall be increased over and above that which is otherwise required by an amount sufficient to diminish the visual impact of activities and site conditions associated with the use. The amount of the increase setback shall be approved pursuant to special land use review if special land use approval is required for the subject use or site plan approval if special land use approval is not required.

- d. Where site barriers are provided in accordance with the requirements of this section (Section 1302-9), the buffering and screening requirements of Section 1302-1, 1302-2, and 1302-3 shall not apply.

1302-10. Site Design Flexibility

A site plan which does not meet the requirements set forth in Sections 1302-1 through 1302-6 may be approved provided that said site plan contains specific features which fulfill the regulatory intent of each requirement of Sections 1302-1 through 1302-6 which is not met. The purpose of this section is to provide site design flexibility so that the intent of the requirements herein addressed may be fulfilled in creative and innovative ways. It is not the purpose of this section merely to reduce the development costs which would otherwise result. All applications for site plan approval under the terms of this section shall specify which features of the site plan are intended to serve in lieu of specific requirements in Section 1302-1 through 1302-6. Site plan features which may be considered in lieu of specific requirements of Section 1302-1 through 1302-6 include, but are not limited to, topographic changes and setbacks which are several times the minimum zoning ordinance requirements. Site plans shall be approved under the terms of this section upon a positive vote of six members of the Planning Commission.

1302-11. Landscaping of Rights-of-Way

Public rights-of-way adjacent to required buffer strips and landscaped open-space areas shall be planted with grass or other suitable ground cover and maintained by the owner of the adjacent property as if they were part of required buffer strips and landscaped open-space areas.

1302-12. Regulations Pertaining to Corner Clearance

Landscaping shall be installed in accordance with the corner clearance provisions of 1706.

SECTION 1303. MATERIAL STANDARDS AND SPECIFICATIONS

All plant and nonplant material shall be installed in accordance with the following standards:

1303-1. Maintenance-Free Nonplant Material

All nonplant material shall be durable and as maintenance-free as reasonably practical.

1303-2. Plant Quality

Plant and grass materials used in compliance with provisions of this Ordinance shall conform to standards of the Michigan Association of Nurserymen and shall have passed any inspections required under state regulations. Grass shall be clean and free of weeds and noxious pests or diseases.

1303-3. Plastic Plant Material Prohibited

Plastic or other nonorganic plant materials shall be prohibited from use and shall not be in compliance with the spirit or intent of this Ordinance.

1303-4. Required Plant Material Specifications

The following specifications shall apply to all plant material required by this Article:

- a. Deciduous shade trees (for parking lots and buffer strips).

All tree plantings shall be a minimum of 2" to 2-1/2" in caliper at a point on the trunk 6" above the ground.

Red Maple	Tupelo (black gum)
Sugar Maple	Linden
Norway Maple	River Birch
Ash (improved grafted varieties)	Paper Birch
Honey locust (thorn- less, seedless varieties)	Hackberry
Pin Oak	Beech
Red Oak	English Oak

- b. Deciduous ornamental trees (for buffer strips)

All single stem plants shall be a minimum of 1-1/2" to 2" caliper when installed.

Floribunda Flw. Crab	Japanese Tree Lilac
Snowdrift Flw. Crab	Washington Hawthorn
Zumi Calocarpa Flw. Crab	Cockspur Hawthorn
Siberian Pea Tree	Amur Maple
Redbud	Amelanchier
Hornbeam	Euonymus europaea

- c. Evergreen trees

All plantings shall be a minimum of 3' to 4' in height with an average spread of 21" to 30".

Pyramid Arborvitae	Sparton Juniper
Nigra Arborvitae	Keteleeri Juniper
Techny Arborvitae	Burki Juniper
Douglas Arborvitae	

- d. Larger evergreen trees

All plants shall be a minimum of 4' to 5' in height.

Pine	White Cedar
Spruce	Red Cedar
Douglas Fir	Hemlock
White Fir	

- e. Intermediate shrubs

All plantings shall be a minimum height of 2-1/2' to 3' in height when installed.

Tartarian Honeysuckle	Witch Hazel
Sweet Scented Mock Orange	Pussy Willow
Common Purple Lilac	Staghorn Sumar
Persian Lilac	Ibolium Privet
Winged Euonymus	Hazelnut
Buckthorn	Ninebark
Autumn Olive	Forsythia
Dogwoods	Acanthapanax
Peking Cotoneaster	Nannyberry
Arrowood	Black Haw
Wayfaring Tree	High-Bush Cranberry

- f. Plants smaller than those specified in subsections (1) through (5) above may be approved for locations adjacent to undeveloped areas. In determining the size of plant material permitted under the terms of this subsection, the Planning Commission shall consider the number of growing seasons needed for plants to reach the minimum size requirements set forth in subsections (1) through (5) and the likely timing of future development.

- g. Trees not permitted

Box Elder	Horse Chestnut
Silver Maple	(nut bearing)
Elm	Catalpa
Poplar	Black Locust
Willow	Osage Orange
Tree of Heaven	

- h. Root systems

Plant materials shall be selected so as to insure that the root system will not interfere with public utilities and that fruit and other debris (other than leaves) will not constitute a nuisance within public rights-of-way or to abutting property owners.

1303-5. Ground Covers

Ground covers used in lieu of grass in whole or in part shall be planted in such a manner as to present a finished appearance and reasonably complete coverage after one growing season.

1303-6. Berm Specifications

Required berms shall be constructed as landscaped earth mounds with a crest area at least three (3) feet in width and with an incline not to exceed one (1) foot of vertical rise to three (3) feet of horizontal distance. Berm slopes shall be protected from erosion by sodding or seeding. Seeded slopes shall be protected with a straw mulch held in place by jute netting until the seed germinates and a permanent lawn is established. The straw mulch is not required if the seeded slope is protected by a net that is specifically designed to control erosion.

(berm illustration)

(berm illustration)

SECTION 1304. INSTALLATION AND MAINTENANCE

In the cases where an owner of property is required to install and maintain landscape materials, said owner shall observe the following standards:

1304-1. Installation

a. Procedure

Landscaping shall be installed in a sound, workmanlike manner and according to acceptable good planting procedures.

b. Quality

Plant materials shall be healthy and meet the minimum size requirements as herein specified.

c. Preparation

Plant materials shall be so located and installed as to provide proper surface and subsurface irrigation and drainage of the root system.

d. Protection

Landscaped areas must be protected from vehicular encroachment by such means as, but not limited to, wheel stops, concrete curbs or posts. Landscape areas shall be elevated above the grade level of parking lots and driveways if the Planning Commission determines such a change in elevation is necessary to protect plant materials from salt, snow removal or other hazards.

e. Occupancy Requirements

The landscaping as herein required shall be completed in every detail prior to the issuance of a certificate of occupancy. Temporary occupancy may be permitted subject to the conditions specified in Section 1906 of this Ordinance.

1304-2. Maintenance

The owner of landscaping required by this Ordinance shall maintain such landscaping in good condition so as to present a healthy, neat, and orderly appearance, free from refuse and debris. All unhealthy and dead material shall be replaced within one (1) year or the next appropriate planting period, whichever comes first. All landscape areas shall be provided with a readily available and acceptable water supply, or with at least one (1) outlet located within 100 feet of all plant material to be maintained. Maintenance of landscaped areas in public rights-of-way adjacent to required landscape areas shall be the responsibility of the owner of the adjacent private property.

SECTION 1305. OUTDOOR STORAGE FOR NONRESIDENTIAL USES, AND FOR MULTIPLE-FAMILY AND MOBILE HOME RESIDENTIAL USES

1305-1. Storage and Disposal of Trash and Garbage

No incinerator, garbage, or trash receptacle, oil or propane tank, or storage rack shall be located on the grounds outside the building, except when enclosed on at least three sides by a wall of adequate height to completely obscure all stored material, provided, however, that this requirement shall not apply to litter containers placed for the convenience of pedestrians. The required wall shall be of brick, decorative concrete, other decorative masonry, or comparably durable wood and steel construction. A four-sided enclosure with an appropriate obscuring gate may be required as a condition for site plan approval if a four-sided enclosure with an obscuring gate is necessary to screen unsightly views from neighboring property and public rights-of-way. All areas for the storage and disposal of trash and garbage shall be paved with asphaltic or concrete surface of such thickness and design as may be required by engineering standards duly adopted by the Township Board.

1305-2. Storage and Disposal of Goods, Merchandise, Equipment and Materials

a. Screen Wall Required.

No storage of goods, merchandise, equipment or materials outside the building shall be permitted, except when enclosed on all sides by a brick, decorative concrete, other decorative masonry, or comparably durable wood and steel wall of adequate height to completely obscure all stored material. Openings in such wall shall have obscuring gates and shall be approved by the Planning Commission through the Site Design Review process. All areas for the storage and disposal of goods, merchandise, and materials shall be covered

with either asphaltic or concrete paving or crushed rock of such specification and design as may be required by engineering standards duly adopted by the Board of Trustees.

- b. Screen Wall Exempted for Certain Types of Outdoor Storage.
 1. Temporary outdoor storage of bulk garden and farming supplies such as wood chips, peat moss, flower flats and similar items shall not be subject to the provisions of Section 1305-2, a.
 2. Storage of automobiles and other motor vehicles may be stored subject to the requirements of Section 1302-3 Screening and Landscaping of Multiple-Family and Mobile Home Park Residential and Nonresidential Parking Areas instead of the requirements of Section 1305-2,a at the property owner's discretion.

SECTION 1306. REGULATIONS PERTAINING TO EXISTING PLANT MATERIAL

1306-1. Consideration of Existing Plant Material

In instances where healthy plant materials exist on a site prior to its development, the Planning Commission pursuant to site design approval may adjust the application of the above standards to allow credit for such plant material if such an adjustment is in keeping with, and will preserve, the intent of this Ordinance.

1306-2. Preservation of Existing Plant Material.

Site designs shall show all existing trees 4 inches in diameter located within the proposed development's contract limits. Any tree to be removed shall be labeled as such on the site designs. All trees to be removed must be approved by the Planning Commission.

SECTION 1307. PEDESTRIAN/BICYCLE WAYS FOR MULTIPLE-FAMILY AND MOBILE HOME DEVELOPMENT AND, FOR NONRESIDENTIAL DEVELOPMENT

The owner of a site used for multiple-family or mobile home residential purposes or for nonresidential purposes shall provide and maintain in good condition in all public rights-of-way adjacent to said property a pedestrian/bicycle way. Required pedestrian/bicycle ways shall be constructed in accordance with the width and paving specifications of engineering standards duly adopted by the Township Board.

SECTION 1308. REGULATIONS PERTAINING TO TOXIC AND HAZARDOUS MATERIALS

1308-1. Purpose

The purpose of these regulations is to protect groundwater from contamination from toxic and hazardous materials. All businesses which generate or use substances listed on the State of Michigan 1980 Critical Materials Register as maybe amended are subject to the regulations set forth in this section (Section 1308).

1308-2. Underground Storage Tanks

Underground storage tanks shall be subject to the following regulations:

- a. Underground storage tanks shall be composed of corrosion resistant fiberglass or bituminous-coated cathode protected steel, and they shall otherwise meet Petroleum Equipment Institute specifications.
- b. Prior to placing any underground tank "bedding material", an impervious barrier shall be installed along the bottom and up the side of the excavation to a height not less than two (2) feet above the proposed tank bottom (creating a bath tub effect under the tank). Any penetration of this barrier must be sealed prior to placement of bedding or backfill material.
- c. A four (4) inch perforated drain tile (running the length of the tank) shall be placed on the impervious surface and connected into the bottom of a six (6) inch monitoring well. The monitoring well shall be constructed of six (6) inch perforated material and be carried to the ground surface. A standard six (6) inch cleanout fitting shall be installed flush with finish grade. All materials used shall be inert to the stored material.
- d. Fill pipes shall be protected at the surface by a fence, bollards or concrete berm.
- e. Tanks shall be allowed to settle and be anchored when needed before connections are made. Clean sand back fill shall be used to minimize corrosion.
- f. Float activated vent valves shall be installed to prevent over-filling.
- g. Unused underground tanks shall be properly abandoned or removed in accordance with Michigan Fire Marshal regulations.

1308-3. Indoor Storage of Toxic and Hazardous Materials

Toxic and hazardous materials shall be stored indoors whenever possible to prevent container deterioration due to weather or vandalism. All indoor storage areas shall be developed and used in accordance with the following requirements:

- a. Indoor toxic and hazardous material storage areas shall be developed with impervious paved surfaces designed in accordance with engineering standards duly adopted by the Township Board.
- b. Indoor toxic and hazardous materials storage areas shall be provided with a concrete berm or other secondary spill containment protection with a capacity of 150 percent of the volume of stored material. Oil separators feeding a holding tank shall be installed to catch floating materials washed or swept into floor drains. Floor drains shall connect to secondary spill containment facilities, but not to septic tanks or drain fields.
- c. Weather resistant containers shall be used for indoor storage of toxic and hazardous materials.

- d. Containers for the indoor storage of toxic and hazardous materials shall be equipped with secured plugs to protect against spillage.
- e. Spigot-equipped containers for the indoor storage of toxic and hazardous materials shall be kept on drip pans.

1308-4. Outdoor Storage of Toxic and Hazardous Materials

Outdoor storage of toxic and hazardous materials shall be approved only when indoor storage is economically infeasible. Such outdoor storage areas shall be developed and operated in accordance with the following requirements:

- a. Outdoor toxic and hazardous material storage areas shall be developed with impervious paved surfaces designed in accordance with engineering standards duly adopted by the Township Board.
- b. Outdoor toxic and hazardous material storage areas shall be covered with a permanent roof structure designed to prevent storm water from reaching the storage area.
- c. Outdoor toxic and hazardous material storage areas shall be surrounded with a chain link fence at least six feet in height, or with other barriers which provide equivalent security.
- d. Outdoor toxic and hazardous material storage areas shall be provided with a concrete berm or other secondary spill containment protection with a capacity of 150 percent of the volume of stored material. Oil separators feeding a holding tank shall be installed to catch floating materials washed or swept into floor drains. Floor drains shall connect to secondary spill containment facilities, but not to septic tanks or drain fields.
- e. Weather resistant containers shall be used for the outdoor storage of toxic and hazardous materials.
- f. Containers for the outdoor storage of toxic and hazardous materials shall be equipped with secured plugs to protect against spillage and prevent rainwater from overflowing the contents.
- g. Spigot-equipped containers for the outdoor storage of toxic and hazardous materials shall be kept on drip pans.
- h. Storm water runoff shall be directed away from said storage areas.

1308-5. Toxic and Hazardous Materials Loading and Unloading Areas

Areas for the loading and unloading of toxic and hazardous waste shall be provided with a continuous concrete curb and shall be sloped at vehicular entry points to prevent spillage from escaping. Drain closing devices shall be installed on all drains.

1308-6. Maintenance of Required Facilities for Toxic and Hazardous Materials

Facilities required by this section (section 1308) shall be maintained in good working condition by their operators in order to ensure their continued functioning for the

purposes identified herein. Failure to maintain required facilities in good working condition shall be deemed a violation of this ordinance and each day that a facility is in less than good working condition shall be deemed a separate offense.

1308-7. State-of-the-Art Technology Required Facilities for Toxic and Hazardous Materials

a. Initial Employment of State-of-the-Art Technology

The specific requirements of subsections 'b' through 'e' of this section (section 1308) shall be deemed minimal requirements of this ordinance. In addition to these minimal requirements, users, generators and handlers of toxic and hazardous materials shall be required to employ the most advanced technology generally available to ensure that toxic and hazardous materials are handled without threat to public health, safety and welfare. When submitting applications for site plan approval, users of toxic and hazardous materials shall be required to provide documentation which shows that proposed facilities for toxic and hazardous materials conform with this subsection (section 1308).

b. Annual Upgrading to Ensure State-of-the-Art Technology

Users, generators and handlers of toxic and hazardous materials shall be required to annually review the available technology which helps ensure that toxic and hazardous materials are handled without threat to public health, safety and welfare and to upgrade their facilities to state-of-the-art capabilities as technology improves. Documentary evidence of such annual reviews and changes in technology shall be a condition for ongoing conformance to this ordinance. Such documentary evidence shall be submitted with requests for renewal of any license required by Township general law. Failure to produce such documentary evidence within sixty (60) days of a Zoning Administrator request for such evidence shall be deemed a violation of this ordinance and each day after sixty (60) days after the request shall be deemed a separate violation.

SECTION 1309. RELATIONSHIP OF LANDSCAPE BUFFER AND OTHER OPEN SPACE AREAS TO PARKING SPACES

Whenever any required landscape buffer or other required open space area lies adjacent to a parking space, said parking space shall be provided with wheel stops or other appropriate structures which will ensure that no part of any vehicle will encroach upon the required landscape buffer or open space area. Wheel stops and other structures required by this Section shall be located at least two (2) feet from the required landscape buffer or open space area.