

ARTICLE 7

ENVIRONMENTAL PROTECTION AND DESIGN PROVISIONS

Section 7.1 Intent.

Environmental protection and design standards are established in order to preserve the short and long-term environmental health, safety, and quality of the Township. No parcel, lot, building or structure in any district shall be used or occupied in any manner so as to create any dangerous, injurious, noxious or otherwise objectionable element or condition so as to adversely affect the surrounding area or adjoining premises. Any use permitted by this Ordinance may be undertaken and maintained if acceptable measures and safeguards are employed to limit dangerous and objectionable elements to acceptable limits as established by the following performance standards. No use, otherwise allowed, shall be permitted within any district that does not conform to the following standards of use, occupancy, and operation, and to any County, State, and Federal regulations.

Section 7.2 Airborn Emissions.

(a) Smoke.

- (1) A person shall not cause or permit to be discharged into the atmosphere from a single source of emission, visible air contaminant of a density darker than No. 1.0 of the Ringlemann Chart or not more than twenty (20%) percent opacity except:
 - A. A visible air contaminant of a density not darker than No. 2 of the Ringlemann Chart or not more than forty (40%) percent opacity may be emitted for not more than three (3) minutes in any sixty (60) minute period but this emission shall not be permitted on more than three (3) occasions during any twenty-four (24) hour period.
 - B. Where the presence of uncombined water vapor is the only reason for failure of an emission to meet the requirements of this rule.
- (2) The density of an air contaminant emission shall be measured at the point of its emission, except when the point of emission cannot be readily observed, it may be measured at an observable point on the plume nearest the point of emission.
- (3) Darkness of a visible emission of an air contaminant shall be graded by using the Ringlemann Chart or by means of a device or technique which results in a measurement of equal or better accuracy.

(4) Opacity of a visible emission of an air contaminant shall be graded by observers trained by and certified by the Department of Environmental Quality (DEQ).

(b) Dust, Dirt and Fly Ash.

(1) No person, firm or corporation shall operate or cause to be operated, maintained or cause to be maintained, any process for any purpose, or furnace or combustion device for the burning of coal or other natural or synthetic fuels, without maintaining and operating, while using said process or furnace or combustion device, recognized and approved equipment, means, method, device or contrivance to reduce the quantity of gas borne or airborne solids or fumes emitted into the open air, which is operated in conjunction with said process, furnace, or combustion device so that the quantity of gas borne or airborne solids shall not exceed those allowed by state regulations.

(2) Method of Measurement. For the purpose of determining the adequacy of such devices these conditions are to be conformed to when the percentage of excess air in the stack does not exceed fifty (50%) percent at full load. The foregoing requirement shall be measured by the A.S.M.E. test code for the dust-separating apparatus. All other forms of dust, dirt, and fly ash shall be completely eliminated insofar as escape or emission into the open air is concerned. The Zoning Administrator may require such additional data as is deemed necessary to show that adequate and approved provisions for the prevention and elimination of dust, dirt, and fly ash have been made.

(c) Air Contaminants, Water Vapors and Odors.

(1) Air Contaminants and Water Vapors. A person shall not cause or permit the emission of an air contaminant or water vapor in quantities that cause, alone or in reaction with other air contaminants, either of the following:

- A. Injurious effects to human health or safety, animal life, plant life of significant economic value, or property.
- B. Unreasonable interference with the comfortable enjoyment of life and property.

(2) Odors. Odorous emissions shall be classified according to the following scale:

0	A concentration of an odorant which produces no sensation.
1	Concentration which is just barely detectable.
2	A distinct and definite odor whose characteristic is clearly detectable.
3	An odor strong enough to cause a person to attempt to avoid it completely.
4	An odor so strong as to be overpowering and intolerable for any length of time.

An odor which has an odor intensity of two (2) or more but does not cause a reasonable person to believe that the odor unreasonably interferes with the comfortable enjoyment of life and property does not constitute a violation of this Section. A person in violation of this Section is subject to enforcement activities pursuant to this Ordinance.

(d) Gases. The escape of or emission of any gas which is injurious, a nuisance, destructive or explosive shall be unlawful and may be summarily caused to be abated.

(e) Wind Borne Pollutants. It shall be unlawful for any person to operate or maintain, or cause to be operated or maintained, on any premise, open area, right-of-way, storage pile of materials, or vehicle, or construction, alteration, demolition, or wrecking operation or any other enterprise that involves any handling, transportation, or disposition of any material or substance likely to be scattered by the wind, or susceptible to being wind-borne, without taking precautions or measures that will eliminate the escape of air contaminants. No person shall maintain or conduct, or cause to be maintained or conducted any parking lot, or automobile and/or truck sales lot, or cause or permit the use of any roadway under his control unless such lot or roadway is maintained in such a manner as to eliminate the escape of air contaminants.

Section 7.3 Building Grades.

(a) Any building requiring yard space shall be located at such an elevation that a finished grade shall be maintained to cause the flow of surface water to run away from the walls of the building. All grades shall be established and maintained so that surface water run-off damage does not occur to adjoining properties prior to, during, and after construction.

(b) When a new building is constructed on a vacant lot between two (2) existing buildings or adjacent to an existing building, the Zoning Administrator shall use the existing established finished grade or the minimum established (natural) grade, in determining the proper grade around the new building. The yard around the new building shall be graded in such a manner as to meet existing codes and to preclude excessive quantities of run-off of surface water to flow onto the adjacent property.

(c) Final grades shall be approved by the Zoning Administrator who may require a grading plan that has been duly completed and certified by a registered engineer or land surveyor.

Section 7.4 Electrical Disturbance, Electromagnetic, or Radio Frequency Interference.

No use shall:

(a) Create any electrical disturbance that adversely affects any operations or equipment other than those of the creator of such disturbance.

(b) Cause, creates, or contributes to the interference with electronic signals (including television and radio broadcasting transmission) to the extent that the operation of any equipment not owned by the creator of such disturbance is adversely affected.

Section 7.5 Fire and Explosive Hazard.

Any activity involving the use or storage of flammable or explosive materials shall comply with federal and state rules and regulations. The storage and handling of flammable liquids, liquefied petroleum, gases and explosives shall comply with the State's Rules and Regulations as established by Public Act No. 207 in 1941, as amended.

Section 7.6 Glare and Exterior Lighting.

(a) Glare from any process (including, but not limited to arc welding or acetylene torch cutting) which emits harmful ultraviolet rays shall be performed in such a manner as not to be seen from any point beyond the property line, and as not to create a public nuisance or hazard along lot lines.

(b) The design and/or screening of the development shall insure that glare from automobile and commercial or industrial vehicle headlights shall not be directed into any adjacent property, particularly residential property. Vehicle access drives are the only exclusion to this provision.

(c) Exterior lighting shall be located and maintained to prevent the reflection and glare of light in a manner which creates a nuisance or safety hazard to operators of motor vehicles, pedestrians, and neighboring land uses. This provision is not intended to apply to public street lighting.

(d) Any operation, which produces intense glare, shall be conducted within an enclosure so as to completely obscure and shield such operation from direct view from any point along the lot lines.

(e) Exterior doors shall be located, operated, and maintained so as to prevent any glare and light from creating a nuisance or hazard to operators of motor vehicles, pedestrians, and neighboring land uses.

(f) On-site lighting, i.e. pole or wall mounted lights, etc. shall conform to the following regulations:

- (1) It is the goal of the Township to minimize lighting levels to reduce off-site impacts, prevent the reflection and glare of light in a manner which creates a nuisance or safety hazard to operators of motor vehicles, pedestrians, and neighboring land uses, and to promote "dark skies" in keeping with the rural character of Sanilac Township.

- (2) When site plan review is required, all lighting, including signage and ornamental lighting, shall be shown on site plans in sufficient detail with appropriate photometric studies to allow determination of the effects of such lighting upon adjacent properties, traffic safety, and overhead sky glow. The objectives of these specific actions are to minimize undesirable on-site effects.
- (3) For all non-residential uses, full cutoff shades are required for light sources so as to direct the light onto the site and away from adjoining properties. The light source shall be recessed into the fixture so as not to be visible from off site. Building and pole mounted fixtures shall be parallel to the ground. Wall-pak type lighting shall be prohibited.
- (4) Lighting for uses adjacent to residentially zoned or used property shall be designed and maintained such that illumination levels when measured at five (5) feet above grade do not exceed 0.1 foot-candles along property lines. Lighting for uses adjacent to non-residential properties shall be designed and maintained such that illumination levels do not exceed 0.3 foot-candles along property lines.
- (5) Where lighting is required, maximum light levels shall not exceed twenty-five (25) foot-candles directly beneath a light fixture. Lighting levels shall not exceed three (3) foot-candles as measured directly between two (2) fixtures. The Planning Commission may allow for an increased level of lighting above maximum permissible levels when determined that the applicant has demonstrated that such lighting is necessary for safety and security purposes.
- (6) For the purposes of this section, all lighting measurements shall be taken at five (5) feet above ground level.
- (7) For parking lots of less than one hundred (100) parking spaces, lighting fixtures shall not exceed a height of sixteen (16) feet measured from the ground level to the centerline of the light source. For parking lots of more than one hundred (100) spaces, lighting fixtures shall not exceed a height of eighteen (18) feet measured from the ground level to the centerline of the light source. The Planning Commission may allow for an increased height when determined that the applicant has demonstrated that the additional height is necessary for safety and security purposes.
- (8) Signs shall be illuminated only in accordance with the regulations set forth in this ordinance. In addition, signs within residential districts shall not be illuminated.

Section 7.7 Landscaping and Screening.

(a) The purpose of this section is to:

- (1) Protect and preserve the appearance, character, and value of the community.

- (2) Minimise noise, air, and visual pollution.
- (3) Improve the overall aesthetics and appearance, divide the expanse of pavement, and define parking areas and vehicular circulation within off-street parking lots and other vehicular use areas.
- (4) Require buffering of residential areas from more intense land uses and public road rights-of-way.
- (5) Prevent soil erosion and soil depletion and promote sub-surface water retention.
- (6) Encourage an appropriate mixture of plant material, including, but not limited to evergreen and deciduous trees and shrubs, to protect against insect and disease infestation and produce a more aesthetic and cohesive design.
- (7) Encourage the integration of existing woodlands in landscape plans.

(b) Application of Requirements. These requirements shall apply to all uses for which site plan review is required under Section 3.6 of this Ordinance, condominium and site condominium review as required under Section 3.7 of this Ordinance, and subdivision plat review as required under the Subdivision Control Ordinance. No site plan, condominium/site condominium plan, or subdivision plat shall be approved unless a landscape plan is provided which meets the requirements set forth herein.

(c) Landscape Plan Requirements. A separate detailed landscape plan shall be required to be submitted to the Township as part of the site plan review or tentative preliminary plat review. The landscape plan shall demonstrate that all requirements of this section are met and shall include, but not necessarily be limited to, the following items:

- (1) Location, spacing, size, root type and descriptions for each plant type.
- (2) Typical straight cross section including slope, height, and width of berms.
- (3) Typical construction details to resolve specific site conditions, including, but not limited to landscape walls and tree wells used to preserve existing trees or maintain natural grades.
- (4) Details in either text or drawing form to ensure proper installation and establishment of proposed plant materials.
- (5) Identification of existing trees and vegetative cover to be preserved.
- (6) Identification of grass and other ground cover and method of planting.

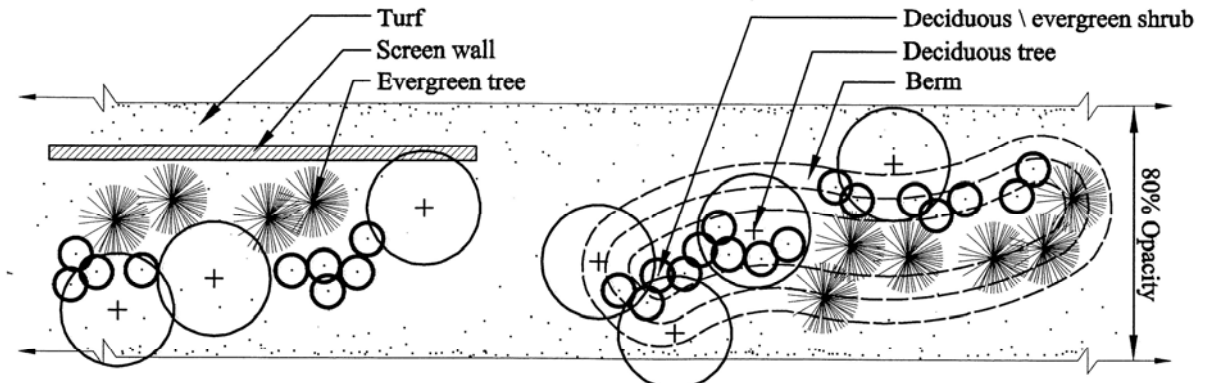
- (7) Identification of landscape maintenance program including statement that all diseased, damaged, or dead materials shall be replaced in accordance with standards of this Ordinance.

(d) Screening Between Land Uses.

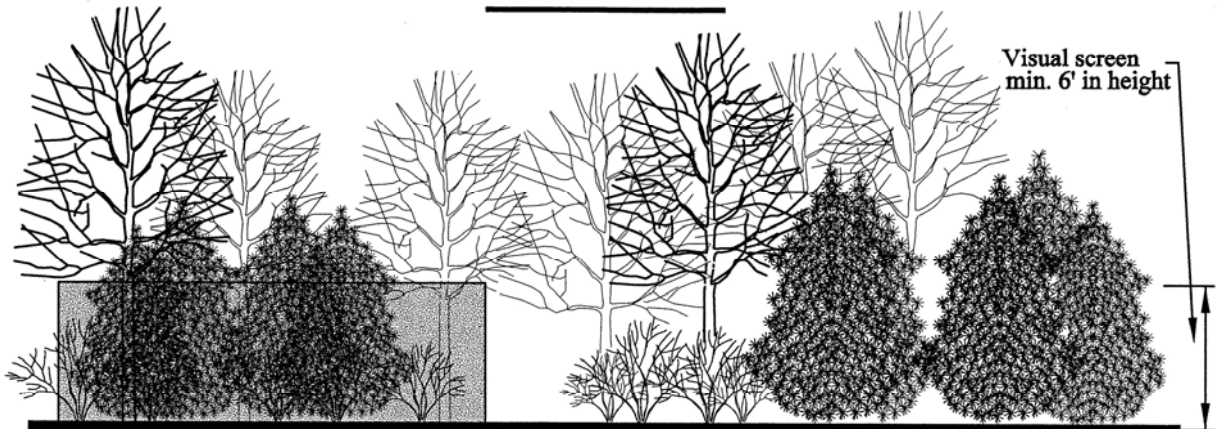
- (1) Upon any improvement for which a site plan is required, a landscape buffer shall be constructed to create a visual screen at least six (6) feet in height along all adjoining boundaries between either a conflicting non-residential or conflicting residential land use and residentially zoned or used property **(See Exhibit #1)**. A landscape buffer may consist of earthen berms and/or living materials so as to maintain a minimum opacity of at least eighty (80%) percent. Opacity shall be measured by observation of any two (2) square yard area of landscape screen between one (1) foot above the established grade of the area to be concealed and the top or the highest point of the required screen.
- (2) Where there is a need to provide a greater noise or dust barrier or to screen more intense development, a solid wall or fence shall be required by the Township. Such wall or fence shall be a minimum of six (6) feet in height as measured on the side of the proposed wall having the higher grade (see Section 5.4, Fences, Walls and Screens).

A required wall shall be located on the lot line except where underground utilities interfere and except in instances where this Zoning Ordinance requires conformity with front yard setback requirements. Upon review of the landscape plan, the Township may approve an alternate location of a wall. The Township shall approve the construction materials of the wall or fence which may include face brick, poured-in-place simulated face brick, precast brick face panels having simulated face brick, stone or wood.

Exhibit #1: Screening Between Land Uses



PLAN VIEW



ELEVATION



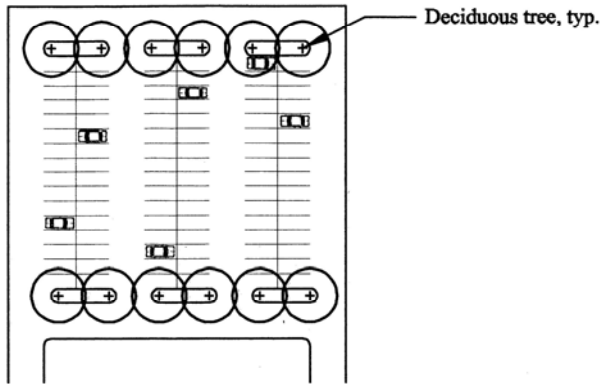
SECTION

- Screening options
- * Landscape buffer
- * Earth berm
- * Wall
- * Combination of the above

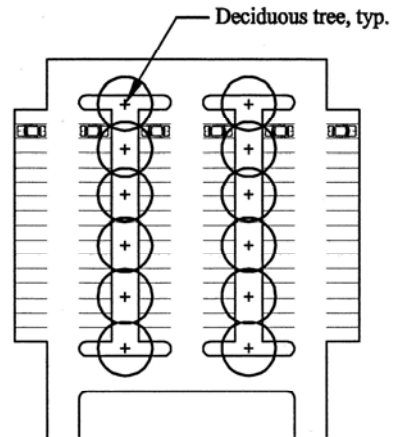
(e) Parking Lot Landscaping.

- (1) Required Landscaping Within Parking Lots. Separate landscape areas shall be provided within parking lots in accordance with the following requirements and **Exhibit #2:**
- A. There shall be a minimum of one (1) tree for every eight (8) parking spaces, provided that a landscape island shall be provided for no more than sixteen (16) continuous spaces.
 - B. Landscaping shall be arranged in curbed islands within the parking lot which shall not be less than fifty (50) square feet in area.
 - C. A minimum distance of three (3) feet from the backside of the curb and the proposed landscape plantings shall be provided. Where vehicles overhang a landscape island or strip, a minimum distance of five (5) feet from the backside of the curb and the proposed landscape plantings shall be provided.
 - D. Each interior parking lot island shall be no less than ten (10) feet wide.
 - E. The Township, at its discretion, may approve alternative landscape plantings at the perimeter of parking lots where landscaping within parking lots would be impractical due to the size of the parking lot or detrimental to safe and efficient traffic flow, or would create an unreasonable burden for maintenance and snowplowing.
- (2) Required Landscaping at the Perimeter of Parking Lots. Separate landscape areas shall be provided at the perimeter of parking lots in accordance with the following requirements and **Exhibit #3:**
- A. Parking lots which are considered to be a conflicting land use as defined by this Section shall meet the screening requirements set forth in subsection (e) above.
 - B. Parking lots shall be screened from view with a solid wall at least three (3) feet in height along the perimeter of those sides which are visible from a public road. The Township, at its discretion, may approve alternative landscape plantings in lieu of a wall.

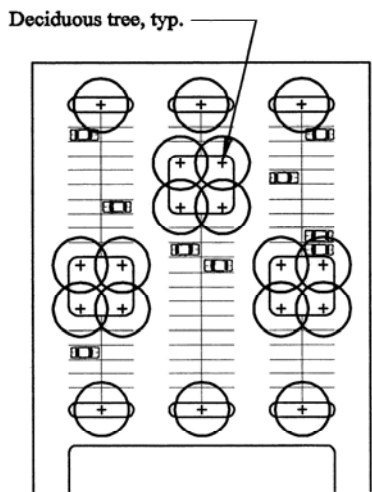
Exhibit #2: Design Options for Landscaping Within Parking Lots



TREES IN END ISLANDS



LANDSCAPE MEDIAN

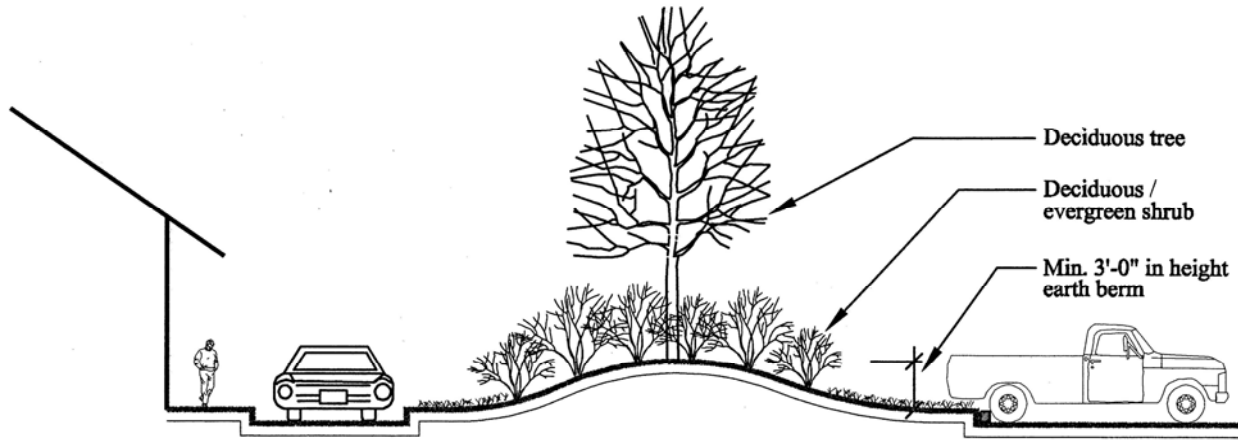


LANDSCAPE ISLANDS

(f) Greenbelts. A greenbelt shall be provided, the depth of which shall be the applicable zoning district's required yard setback dimension as measured around the entire perimeter of the development, and be landscaped as follows and as depicted in **Exhibit #4**:

- (1) The greenbelt shall be landscaped with a minimum of one (1) tree for every thirty (30) lineal feet, or fraction thereof, of the entire parcel perimeter. Non-ornamental deciduous trees within a greenbelt shall be a minimum caliper of two and one-half (2 1/2) inches or greater. Evergreen trees within a greenbelt shall be a minimum height of six (6) feet.
- (2) If ornamental deciduous trees are substituted for either non-ornamental deciduous trees or evergreen trees, they shall be provided at a minimum of one (1) tree for every twenty (20) lineal feet, or fraction thereof, of frontage abutting a public road right-of-way. Ornamental deciduous trees within a greenbelt shall be a minimum caliper of two (2) inches or greater.
- (3) Existing trees may be counted towards the greenbelt planting requirements provided they are located within the perimeter setback area as defined above. However, mitigation/replacement trees may not be used to satisfy the greenbelt planting requirements.
- (4) In addition to the required trees within the greenbelt, the remainder of the greenbelt shall be landscaped in grass, ground cover, shrubs and other natural landscape materials.
- (5) Access drives from public rights-of-way through required greenbelts shall be permitted, but such drives shall not be subtracted from the lineal dimension used to determine the minimum number of trees required.
- (6) The only circumstance under which the greenbelt depth can be modified is as follows:
 - A. An existing lot is less than the minimum lot width requirements of the ordinance and thus results in a restricted building site. Under these circumstances the Planning Commission may consider a reduced front yard greenbelt which in no case shall be less than 50% of the required front yard setback.
 - B. When no more than 20% of the required parking is provided between the building and the front property line, the Planning Commission may consider a reduced front yard greenbelt which in no case shall be less than ten (10) feet.
 - C. When a parcel abuts a non-residentially zoned or used lot, the side and rear greenbelts may be reduced to no less than ten (10) feet.

Exhibit #3: Design Option for Landscaping at the Perimeter of Parking Lots

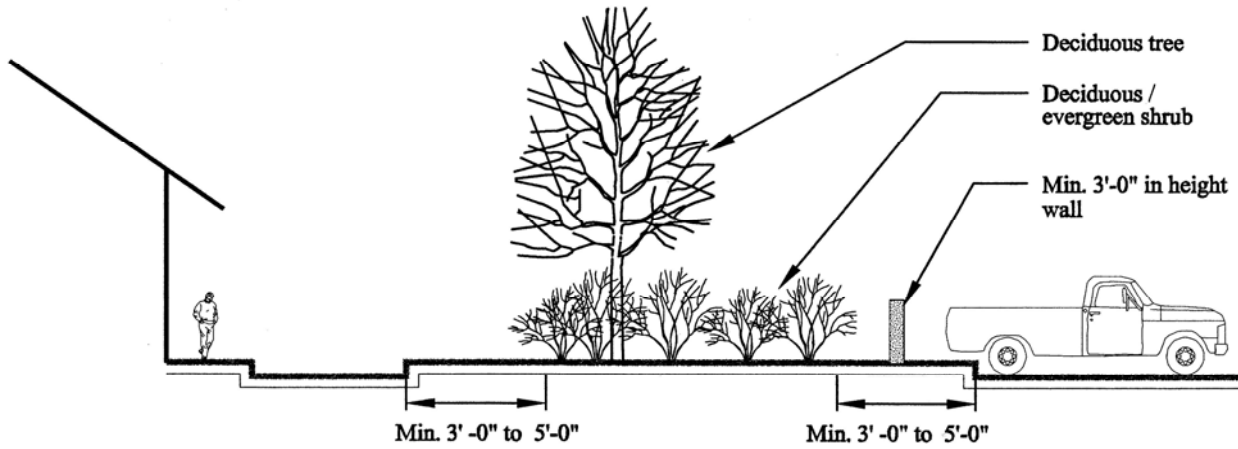


Deciduous tree

Deciduous /
evergreen shrub

Min. 3'-0" in height
earth berm

BERM OPTION



Deciduous tree

Deciduous /
evergreen shrub

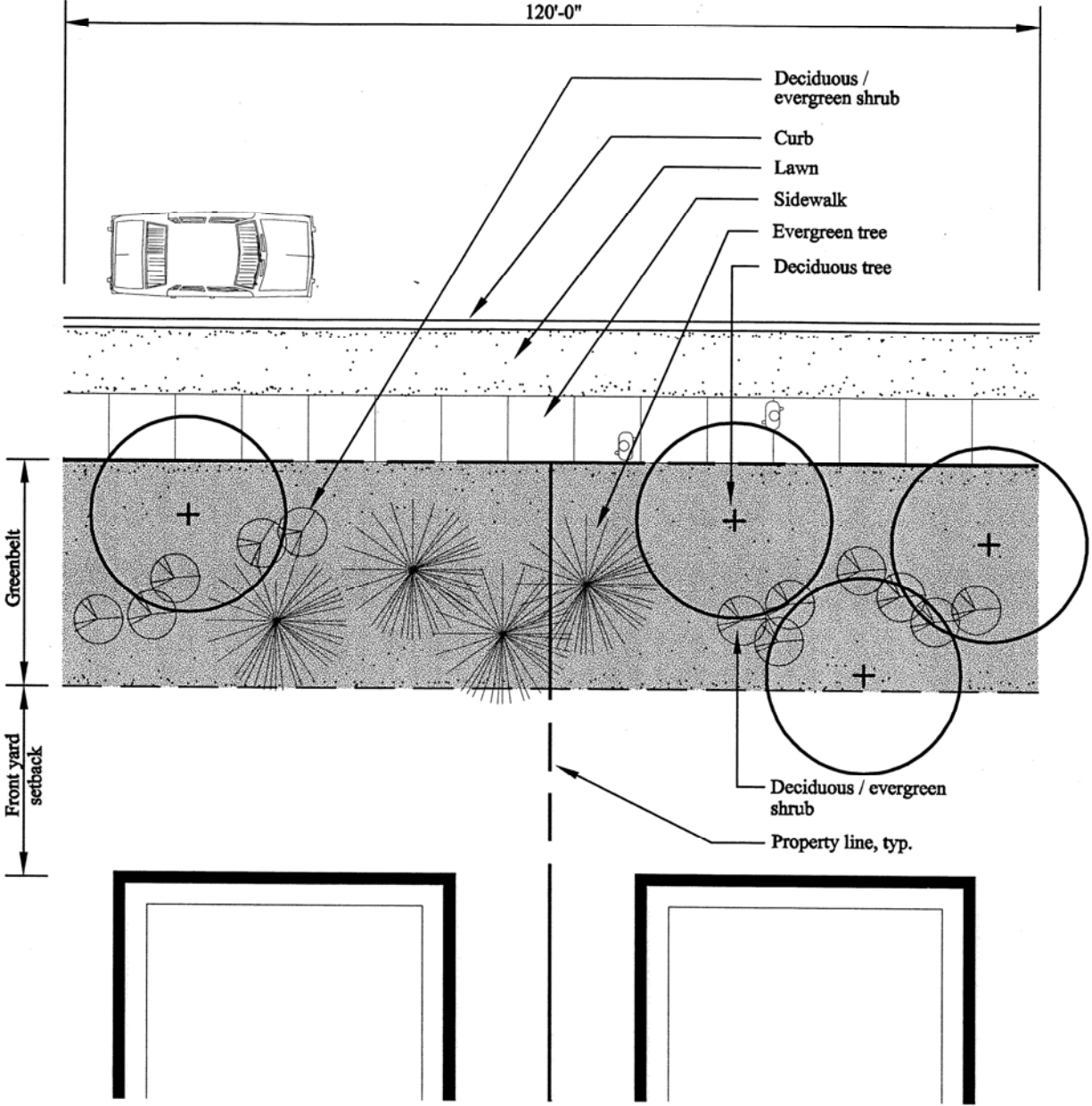
Min. 3'-0" in height
wall

Min. 3'-0" to 5'-0"

Min. 3'-0" to 5'-0"

LANDSCAPE PLANTINGS / WALL OPTION

Exhibit #4: Perimeter Greenbelt



(g) Site Landscaping. In addition to any landscape greenbelt and/or parking lot landscaping required by this section, ten (10%) percent of the site area, excluding existing public rights-of-way, shall be landscaped. Such site area landscaping may include a combination of the preservation of existing tree cover, planting of new trees and plant material, landscape plazas and gardens and building foundation planting beds. Site area landscaping shall be provided to screen potentially objectionable site features including, but not limited to, transformer pads, air-conditioning units, and loading areas.

(h) Stormwater Retention/Detention Basins. All such ponds shall be designed as an integral part of the overall site plan and considered a natural landscape feature having an irregular shape. The following standards shall be considered minimum landscaping requirements for the zones within a retention/detention pond/basin:

(1) Retention/Detention Pond/Basin Zones.

- A. Pond Zone (depths from 0 to 3 feet). Plants in this zone are entirely or partially submerged, utilize nutrients from storm water runoff, and provide habitat for wildlife including, but not limited to waterfowl and aquatic insects.
- B. Edge Zone (permanent water elevation to high water mark). Plants in this zone can withstand periods of inundation and drought and function to stabilize the side slopes of the basin, utilize nutrients, provide habitat for waterfowl, reduce water temperatures, and conceal drawdown in typical mowed ponds.
- C. Upland Zone (high water mark to 100-year floor elevation and beyond). Plants in this zone can withstand periods of inundation and drought and function to stabilize side slopes, provide habitat for waterfowl, songbirds and other wildlife, consist of low maintenance species, and are selected based on soil condition and light, and function as little or no inundation of storm water may occur.

(2) Minimum Planting Standards by Zone.

- A. Pond Zone. Plants shall be a combination of submerged, emergent and wetland edge plantings, generally plugs and bare-root stock, and consisting of no less than four (4) plant species or a suitable seed mix. No less than 25% of the outer fifteen (15) foot perimeter of the zone shall be landscaped as noted.
- B. Edge Zone. Plants shall be a combination of wetland edge or sedge meadow seed mixes. No less than 50% of the zone shall be landscaped as noted.

- C. Upland Zone. Plants shall be a combination of sedge meadow or prairie seed mixes. As measured along the pond perimeter (i.e. top of bank elevation), no less than one (1) deciduous or evergreen tree and five (5) shrubs shall be planted for every fifty (50) lineal feet of pond perimeter. The required trees shall be planted in a random pattern or in groups, and their placement of not limited to the top of the pond bank.

(i) Subdivision and Site Condominium Landscaping. Landscaping for single-family residential subdivisions and site condominiums shall be provided in accordance with the following requirements:

- (1) Street Trees. The frontage of all internal public or private streets shall be landscaped in accordance with the greenbelt requirements of subsection (f). Such street trees shall meet the minimum size and spacing requirements set forth in subsection (l).
- (2) Screening Between Land Uses. Where a subdivision or site condominium contain uses which are defined as conflicting land uses by this Ordinance, the screening requirements set forth in subsection (d) shall be met.
- (3) Screening From Public Roads. Where a subdivision or site condominium abuts a public road right-of-way located outside of the proposed subdivision or site condominium, the screening requirements set forth in subsection (d) shall be met.
- (4) Front Yard Landscaping. No less than 50% of all front yards shall contain pervious materials including, but not limited to sod (not seed), ground cover, hedges, trees, etc.
- (5) Wetland and Watercourse Buffers. No less than a twenty-five (25) foot buffer shall be maintained upland from the ordinary high water mark of a wetland and/or watercourse. No structures or exotic invasive plants may be placed within the buffer. The area shall also be maintained in its natural state, free of turf grass and the use of native plantings is encouraged.
- (6) Water Supply. All landscaped common areas shall be provided with a readily available and acceptable water supply, or at least one (1) outlet within one hundred (100) feet of all planted material to be maintained. Adequate provisions may also be accomplished by installation of an irrigation system or outside hose bibs of sufficient quantity and location to provide water for the landscape common areas.
- (7) Other Site Improvements. A landscape plan for a subdivision or site condominium development shall also include landscaping details of the entrance to the development, stormwater retention and/or detention areas, community buildings and other recreational areas, and any other site improvement which would be enhanced through the addition of landscaping. Where applicable, all

such areas shall be sodded or hydro-seeded to minimize weeds and invasive species.

(j) Screening of Trash Containers.

- (1) Outside trash disposal containers shall be screened on all sides with an opaque fence or wall, and gate at least as high as the container, but no less than six (6) feet in height, and shall be constructed of material which is compatible with the architectural materials used in the site development.
- (2) Containers shall be consolidated to minimize the number of collection sites, and located so as to reasonably equalize the distance from the buildings they serve.
- (3) Containers and enclosures shall be located away from public view insofar as possible.
- (4) Containers and enclosures shall be situated so that they do not cause excessive nuisance or offense to occupants of nearby buildings.
- (5) Concrete pads of appropriate size and construction shall be provided for containers or groups of containers having a capacity of six (6) 30-gallon cans or more. Aprons shall be provided for loading of bins with a capacity of 1.5 cubic yards or more.
- (6) For storage of recyclable materials, the enclosure area and pad size shall be increased to amply accommodate the extra materials and their containers.
- (7) Screening and gates shall be of a durable construction.

(k) Landscape Elements. The following minimum standards shall apply:

- (1) Quality. Plant materials shall be of generally acceptable varieties and species, free from insects and diseases, hardy to southeast Michigan, conform to the current minimum standard of the American Association of Nurserymen, and shall have proof of any required governmental regulations and/or inspections.
- (2) Size. In determining conformance with the planting requirements of this Ordinance, all plant material shall be measured in accordance with the current American Standard for Nursery Stock, ANSI Z60.1.
- (3) Composition. A mixture of plant material, including, but not limited to evergreen deciduous trees and shrubs, is recommended as a protective measure against insect and disease infestation. A limited mixture of hardy species is recommended rather than a large quantity of different species to produce a more aesthetic, cohesive design and avoid a disorderly appearing arrangement.

- (4) Installation, Maintenance, and Completion. All landscaping required by this section shall be planted prior to obtaining a certificate of occupancy, unless the time of year prevents planting to commence. In the latter case, cash, a letter of credit, and/or a certified check shall be placed in escrow in the amount of the cost of landscaping to be released only after landscaping is completed.

If a project is constructed in phases, the landscape may also be constructed in phases. The Township shall determine the extent and timing of landscaping within each phase based on (a) the necessity to buffer the proposed development from adjacent uses; (b) anticipated commencement on subsequent phases; and (c) building heights and physical characteristics of the site including, but not limited to the topography or existing vegetation.

The owner of property required to be landscaped by this section shall maintain such landscaping in a reasonably healthy condition, free from refuse and debris. All unhealthy and dead material shall be replaced within one (1) year of damage or death or the next appropriate planting period, whichever comes first.

Minor revisions and deviations from the approved landscape plan may be permitted if approved by the Zoning Administrator. In reviewing such changes, the Zoning Administrator shall ensure that the changes do not constitute a wholesale change of the landscape plan and shall ensure that the revisions to the landscape plan are consistent with the spirit and intent of this article and the previously approved site plan.

- (5) Berms. A berm shall consist of a minimum height of five (5) to six (6) feet with a side slope no steeper than 3:1 (three (3) foot horizontal to one (1) foot vertical). The top of all berms shall have a level horizontal area of at least four (4) feet in width.

The berm shall be graded in a manner that will blend with existing topography, shall be graded smooth, and shall be appropriately sodded, seeded and mulched, or planted. Included, as part of the berm shall be deciduous shade trees, small deciduous ornamental trees and/or evergreen trees planted along the berm area.

- (6) Existing Trees. The preservation and incorporation of existing trees is encouraged.

(1) Minimum Size and Spacing Requirements. Where landscaping is required the following schedule sets forth minimum size and spacing requirements for representative landscape materials. All plantings shall be located no less than half of the recommended on-center spacing from all on- and off-site structures:

SIZE AND SPACING REQUIREMENTS

	Minimum Size Allowable				Recommended On-Center Spacing			
	Height		Caliper		(in feet)			
TREES	6'	3'-4'	2"	2.5"	30	25	15	10
Evergreen Trees:								
Fir	◆						◆	
Spruce	◆						◆	
Pine	◆						◆	
Hemlock	◆						◆	
Douglas Fir	◆						◆	
Narrow Evergreen Trees:								
Red Cedar		◆						◆
Arborvitae		◆						◆
Juniper (selected varieties)		◆						◆
Large Deciduous Trees:								
Oak				◆	◆			
Maple				◆	◆			
Beech				◆	◆			
Linden				◆		◆		
Ginko (male only)				◆	◆			
Honeylocust (seedless, thornless)				◆	◆			
Birch				◆		◆		
Sycamore				◆	◆			
Small Deciduous Trees (ornamental)								
Flowering Dogwood (disease resistant)			◆				◆	
Flowering Cherry, Plum, Pear			◆			◆		
Hawthorn			◆				◆	
Redbud			◆			◆		
Magnolia			◆				◆	
Flowering Crabapple			◆				◆	
Mountain Ash			◆				◆	
Hornbeam			◆			◆		

SIZE AND SPACING REQUIREMENTS (con't.)

	Minimum Size Allowable				Recommended On-Center Spacing				
	Height		Spread		(in feet)				
SHRUBS	6'	3'-4'	24"-36"	18"-24"	10	6	5	4	3
Large Evergreen Shrubs:									
Pyramidal Yew		◆			◆				
Hicks Yew				◆				◆	
Spreading Yew			◆				◆		
Alberta Spruce		◆						◆	
Chinese Juniper Varieties			◆			◆			
Sabina Juniper				◆			◆		
Mugho Pine				◆		◆			
Small Evergreen Shrubs:									
Brown's Ward's Sebion Yews				◆					◆
Horizontalis Juniper Varieties				◆		◆			
Boxwood				◆				◆	*
Euonymus Spreading varieties				◆			◆		
Large Deciduous Shrubs:									
Lilac			◆		◆				
Sumac			◆			◆			
Pyracantha				◆			◆		
Weigela		◆						◆	
Flowering Quince			◆			◆			
Cotoneaster (Peking and Spreading)			◆				◆		
Dogwood (Red Osier & Grey)			◆			◆			
Viburnum varieties			◆			◆			
Small Deciduous Shrubs:									
Spiraea (except Japanese)				◆				◆	
Fragrant Sumac				◆					
Japanese Quince				◆					◆
Cotoneaster (Rockspray, Cranberry)				◆					◆
Potentilla				◆					◆

Section 7.8 Radioactive Materials.

Use and storage of radioactive materials and wastes, including electromagnetic radiation, but not limited to x-ray machine operation shall comply with all State and Federal requirements.

Section 7.9 Safety.

Existing hazards or potential hazards and nuisances, including, but not limited to construction sites, auto wrecking yards, junk yards, land fills, sanitary land fills, demolition sites, unused basements, sand, gravel, and stone pits or stone piles are to be enclosed by suitable fencing or barriers, as determined by the Zoning Administrator, so as not to endanger public health, safety and welfare. Abandoned wells and cistern are to be capped or filled in to the satisfaction of the Zoning Administrator.

Section 7.10 Stormwater Management.

All developments and earth changes subject to review under the requirements of this section shall be designed, constructed, and maintained to prevent flooding and protect water quality. The particular facilities and measures required on-site shall reflect the natural features, wetlands, and watercourses on the site; the potential for on-site and off-site flooding, water pollution, and erosion; and the size of the site. Storm water management shall comply with the following standards:

- (a) The design of storm sewers, detention/retention facilities, and other storm water management facilities shall comply with the standards of the Sanilac County Drain Commission.
- (b) Storm water management conveyance, storage and infiltration measures and facilities shall be designed to prevent flood hazards and water pollution related to storm water runoff and soil erosion from the proposed development.
- (c) The use of swales and vegetated buffer strips are encouraged in cases where the Planning Commission deems to be safe and otherwise appropriate as a method of storm water conveyance so as to decrease runoff velocity, allow for natural infiltration, allow suspended sediment particles to settle, and to remove pollutants.
- (d) Alterations to natural drainage patterns shall not create additional flooding or water pollution for adjacent upstream or downstream property owners.
- (e) Discharge of runoff from any site, which may contain oil, grease, toxic chemicals, or other polluting materials, is prohibited. If a property owner desires to propose measures to reduce and trap pollutants, the owner must meet the requirements of Sanilac County Drain Commission and the Township, based upon professionally accepted principles; such a proposal shall be submitted and reviewed by the Township Engineer, with consultation of appropriate experts.

(f) Drainage systems shall be designed to protect public health and safety and to be visually attractive, taking into consideration viable alternatives.

(g) On-Site Stormwater Detention/Retention. For the purpose of controlling drainage to off-site properties and drainage ways, all properties with the exception of single-family residences and agricultural operations, which are developed under this zoning ordinance, whether new or improved shall provide for on-site detention/retention storage of storm water in accordance with the current Sanilac County Drain Commission standards.

Section 7.11 Use, Storage and Handling of Hazardous Substances, Storage and Disposal of Solid, Liquid and Sanitary Wastes.

(a) It shall be unlawful for any person, firm, corporation or other legal entity to pollute, impair or destroy the air, water, soils or other natural resources within the Township through the use, storage and handling of hazardous substances and/or wastes or the storage and disposal of solid, liquid, gaseous and/or sanitary wastes.

(b) Any person, firm, corporation or other legal entity operating a business or conducting an activity which uses, stores or generates hazardous substances shall obtain the appropriate permits or approval from the Department of Environmental Quality (DEQ), Michigan Fire Marshal Division, Sanilac County, or other designated enforcing agencies.

(c) Any person, firm, corporation or other legal entity operating a business or conducting an activity which uses, stores, or generates hazardous substances shall complete and file a Hazardous Chemicals Survey to the Township in conjunction with the following: HAZARDOUS SUBSTANCE REPORTING FORM or MATERIAL SAFETY DATA SHEET (MSDS).

(1) Upon submission of a site plan.

(2) Upon any changes of use or occupancy of a structure or premise.

(3) Upon any change of the manner in which such substances are handled, and/or in the event of a change in the type of substances to be handled.

(d) All business and facilities which use, store, or generate hazardous substances shall comply with all Federal, State, and County standards.

(e) All site plans for business or facilities which use, store or generate hazardous substances shall comply with County, State, and Federal regulations for those substances.