

MEMORANDUM



TO: BARB MC BETH
FROM: RICK MEADER, LANDSCAPE ARCHITECT
SUBJECT: PROPOSED REVISIONS TO LANDSCAPE ORDINANCE AND LANDSCAPE DESIGN MANUAL
DATE: AUGUST 6, 2020

Attached are proposed revised copies of Section 5.5 of the Zoning Ordinance (Landscape Standards) and the Landscape Design Manual. I am proposing to make a number of revisions to each with these objectives in mind:

- More uniformity of street tree location along Novi roads – public and private
- Reduced need for variances and waivers by developers who propose attractive landscaping that still doesn't conform to all of our standards.
- Greater sensitivity to ecological issues facing our community and others
- Closing some landscape loopholes that result in spirit of ordinance not being followed
- Miscellaneous cleanups in ordinances – inconsistencies, errors

A number of these changes could be considered as significant, and a number of others could be considered as minor. A summary of each follows:

Significant changes:

1. Mixed Use Development Issue

- a. Add a requirement for a 6 foot tall wall in TC/TC-1 districts with mixed use developments between residential and non-residential sections of the development where commercial parking lots or loading areas abut residential for improved sound abatement and visual presence.

2. Street Tree Issues

- a. Add a requirement for street trees along all private roads and access roads at a rate of 1/35lf. There are currently no requirements for private roads in developments other than residential or industrial subdivisions to have street trees.
- b. Add a requirement for street trees along subdivision open spaces.

3. Make landscapes more environmentally sensitive and sustainable

- a. Add requirement for canopy trees around east, south and west sides of detention ponds to help cool the water
- b. Add requirement that plantings include species native to Michigan for at least 50% of the species used, not including woodland replacement plantings and seed mixes. (The

ordinance already calls for native plants to be used as a priority, this just gives a codified standard for number of species to be used at a minimum).

- c. Add Japanese Knotweed to the section requiring treatment and removal of *Phragmites australis* from a development site.

4. Responses to specific situations encountered in recent developments:

- a. Require multi-family units to meet façade requirement (35%) on the side of the building facing access roads, not the “front” which has been used to put landscaping where it will not be seen by traffic passing through the development.
- b. Allow up to 25% of required multi-family development unit trees to be subcanopy trees without requiring a waiver to increase planting diversity on a site.

Proposed Changes more Minor in Nature

Requirements for Landscape Plan

- 5.5.2 Add requirement for a landscape plan for projects that include an increase in a parking lot of (10 spaces, or equivalent paved area) or 10% of the existing parking lot area, whichever is less.

Residential/Non-residential I Screening Berms

- 5.5.3.A.ii. Reduce crest width of industrial berms from 15 feet to 6 feet.
- 5.5.3.A.iii Add railroads as another exception where a screening berm is not required
- 5.5.3.A.v.(a)(2) Reduce requirement of showing first floor elevations of buildings to nearest principal structures to berm from all buildings within 200 feet of the berm or wall
- Clean up table 5.5.3.A.ii

Public Right-of-Way Greenbelt Issues

- 5.5.3.B. Reduce crest width to 2 feet where the required greenbelt is 20’ as that width only allows a 2’ crest with a 3’ tall berm and 1:3 slope. Waivers are technically required if the 3 foot crest width can’t be met, which is impossible, mathematically.
- 5.5.3.B.vi (d). Add concrete masonry unit (CMU) as acceptable retaining wall material
- 5.5.3.B.ii (f) Footnote 14. Require that either the subcanopy or canopy tree requirement be met for consistency, instead of a reduced number of each type.
- 5.5.3.B.vi Allow a landscape waiver for the use of a wall or hedge instead of a berm.

Parking Lot Requirement revisions

- 5.5.3.C.ii Allow a parking island to be less than 200sf if it is adjacent to open space
- 5.5.3.C.ii Require trees in all corner islands and/or at ends of bays.
- 5.5.3.C.ii Allow perimeter trees to be used within edge and corner islands if necessary
- 5.5.3.C.iii. Raise required landscape area for first 50,000sf in I-1 and I-2 from 5% to 6%.
- 5.5.3.C.iv. Define perimeter as the outer edge of parking area for clarity
- 5.5.3.C.iv . Add requirement of 10 feet landscaping space along perimeter for trees to match the spacing requirement in the Zoning Ordinance
- 5.5.3.C.iv. Clarify that dense plantings of existing trees can’t be used to meet requirements of other perimeter areas.

- 5.5.3.C.iv Adjust perimeter requirement for B-1, B-2, B-3 parking lot edge in greenbelt to match the greenbelt requirement

Building Foundation Landscaping

- 5.5.3.D Add requirement that alternative landscaping in the TC and TC-1 districts be equivalent in area to the required landscape area (instead of just “significant”).
- 5.5.3.D. Foundation landscaping could be planted on the street side of a paved walkway or driveway without requiring a landscape waiver.

Multi-family Residential Development

- 5.5.3.F.ii Require that 75% of multi-family unit tree requirement be large evergreen or canopy trees, and 25% can be ornamental trees. This removes the requirement for a landscape waiver that is currently encouraged by staff in order to increase the diversity of plantings on a site.
- 5.5.3.F.ii. Allow financial guarantee for multi-family development’s interior street trees to be calculated as site landscaping, not street trees (10% vs 25%).
- 5.5.3.F.ii Change requirement for façade plantings to state that plantings shall be on portion of building facing the interior drive, not the stated “front” of the building.

Non- Residential Development

- 5.5.3.F.iii. Moved requirements for Non-residential subdivisions from the Landscape Design Manual to Section 5.5. No actual requirements have changed.

Detention Basin Landscaping

- LDM 3.b. Move shrubs down to 10 feet from detention basin normal water line to provide better water source for the plants.
- LDM 3.b Added requirement for native seeding along bottom 25 feet to match Engineering standard
- LDM 3.b Added requirement that landscapers provide a photo of seed bag before seeding to make sure it complies with plans.

Miscellaneous

- LDM 4.f. Add requirement (currently generally enforced) that no more than 10% of replacements may be evergreen trees.
- LDM 6. Add requirement that Fire Hydrants and Fire Department Connections shall be kept clear of obscuring plantings.
- 5.5.5. Added statement that additional review fees or inspection fees may be required depending on the extent of changes or number of reviews/inspections required.

I sent the proposed revised documents to nineteen landscape architects who have worked on projects in Novi in the recent past. So far I have received comments back from three of them, which are attached. I will pass along any other comments I receive as I receive them.

DRAFT ORDINANCE AMENDMENT

ORDINANCE NO. 18.293

**CITY OF NOVI
OAKLAND COUNTY, MICHIGAN**

AN ORDINANCE TO AMEND THE CITY OF NOVI ZONING ORDINANCE AT THE FOLLOWING LOCATIONS: ARTICLE 5.0, "SITE STANDARDS," SECTION 5.5, "LANDSCAPE STANDARDS: OBSCURING EARTH BERMS AND WALLS, RIGHTS-OF-WAY BUFFERS, AND INTERIOR AND EXTERIOR LANDSCAPE PLANTINGS," AND MODIFICATIONS TO THE LANDSCAPE DESIGN MANUAL WHICH IS REFERENCED IN THE ZONING ORDINANCE IN ORDER TO COMPREHENSIVELY REVISE THE LANDSCAPE PLANTING AND BUFFERING REQUIREMENTS OF THE ZONING ORDINANCE, AND OTHER ITEMS AS DEEMED NECESSARY.

THE CITY OF NOVI ORDAINS:

PART I. Ordinance 14-271, the City of Novi Zoning Ordinance, as amended at Section 5.0, "Site Standards," Section 5.5, "Landscape Standards: Obscuring Earth Berms and Walls, Rights-of-Way Buffers, and Interior and Exterior Landscape Plantings," is hereby amended in its entirety to read as follows:

5.5 LANDSCAPE STANDARDS: OBSCURING EARTH BERMS AND WALLS, RIGHTS-OF-WAY BUFFERS, AND INTERIOR AND EXTERIOR LANDSCAPE PLANTINGS

1. **Intent.** The intent of this Section is to achieve landscapes with creative placement and attractive designs that:
 - emphasize the preservation of existing natural resources, the use of native plant materials, and a diversity of plant species;
 - preserve and enhance existing woodlands, wetlands and natural open areas;
 - reduce impervious surfaces, enhance storm water management and prevent soil erosion and soil depletion;
 - provide appealing yet opaque visual and audible buffering between non-compatible land uses; and
 - utilize the best ecological concepts and environmental objectives with preservation and sustainability as a priority,

in order to protect and enhance the well-being of the residents of the City of Novi.

Landscape regulation is intended to establish minimum standards for all property in the City. Property owners and occupants are encouraged to exceed these standards, to minimize paved areas and other run-off areas, and to maximize the areas devoted to attractively designed and well-maintained landscapes.

2. Landscape Plan Required. A landscape plan shall be submitted for:

- any new commercial or residential development
- ~~any~~ and any addition to an existing building that is equal to or greater than a 25% percent increase in the overall square footage of the building or 400 square feet, whichever is less.
- A ny increase to an existing parking lot of 10 spaces or more (or equivalent area), or 10% of the existing paved area, whichever is less.

With the exception of Section 5.5.53.6E, Individual (Non-Subdivision/Non-Site Condominium) Single-Family Street Tree Requirements, an owner of a single-family home-site shall not be required to comply with the provisions of this section.

–All landscape plans shall be prepared in accordance with the requirements of this Ordinance and the requirements of the City of Novi "~~Landscaping~~ Landscape Design Manual," as adopted by the City Council by resolution and which may similarly be amended by Council resolution from time to time.

General Landscape Notes:

- For all numerical calculations, round the required square feet or number of plants to the nearest whole number
- Trees are to be located at least 10 feet away from utility structures including catch basins and manholes, and should be at least 5 feet away from underground utility lines whenever possible.
- Plantings may be in formal or informal arrangements

~~a. (This spacing is required across the entire site, not just in and adjacent to parking areas).~~

~~2.~~

3. Landscape Requirements.

a. Residential Adjacent to Non-Residential

- i. Intent. To make provision for a visual buffer strip in each zoning and use classification when a non-residential use abuts or is adjacent to any residential zoning district.

- ii. Requirements for Obscuring Landscaped Earth Berms and Walls. In all locations ~~which~~ where non-residential uses abut or are adjacent to any residential district (RA, R-1, R-2, R-3, R-4, RT, RM-1, RM-2, MH and any TC district where ~~if~~-developed for residential purposes), an obscuring landscaped earth berm and plantings, as described, shall be proposed, ~~approved~~, installed and maintained in connection with any development or use identified below. ~~Where TC-1 and RM-2 are adjacent to TC-1 and RM-2, a wall and plantings shall be provided as indicated in the following Berm Requirement Chart. See below.~~

5.5.3.A.ii Residential Adjacent to Non-Residential Berm Requirement Chart		
Use <u>Abutting Residential</u>	<u>Zoning Districts Requiring Screening from Residential</u>	<u>Required</u> Berm or Wall Height
<u>New Multi-family residential or Mobile Home adjacent to SF residential</u>	REMOVE THIS COLUMN	<u>6 ft. to 8 ft. high</u>
Parking	P-1 district Off Street Parking Area	4 ft. 6 in. to 6 ft. high
<u>Residential/Special Land Use (churches, schools, nursery schools, day care centers, uses where special land use approval is required)</u>	RM-1, RM-2, and MH districts, churches, schools, nursery schools, day care centers, and other uses where special land use approval is required	4 ft. 6 in. to 6 ft. high
Office Service/Tech. <u>R&D</u>	OST, OS-1, and OSC districts	4 ft. 6 in. high to 6 ft. high
Commercial	B-1, B-2, B-3, RC, and NCC districts	6 ft. to 8 ft. high
EXPO, EXO district	EXPO district	8 ft. to 10 ft. high
Conference	C district	8 ft. to 10 ft. high
Freeway Service	FS district	8 ft. to 10 ft. high
Town Center <u>(Non-residential use)</u> ¹	(a.) TC and TC-1 districts	6 ft. high <u>wall</u>
Industrial <u>(I-1 and I-2 districts)</u>	I-1 district	10-15 ft. ht. berm, 6 ft. crest width, 80% winter/90% summer opacity (See Section 3.14.5.C and E)
	REMOVE THIS ROW I-2 district	15 ft. ht. berm, 15-6 ft. crest width, 80% winter/90% summer opacity (See Section 3.15.2.C)
	REMOVE THIS ROW Special Land Use	10 ft. ht. berm, 6 ft. crest width, 80% winter/90% summer opacity (See Section 3.14.5.E) crest width, 80%

Auto Wash, Drive-In Restaurants, Service Stations, and Planned Commercial Centers and Regional Shopping Centers	Where permitted or approved	10 ft. to 15 ft. high <u>wall or landscaped berm with 6 foot wide crest</u>
Hospital-Ambulance and Delivery Areas	Where permitted or approved	6 ft. high
Utility Buildings, Stations, and/or Substations	Where permitted or approved	6 ft. high

1: Applies when residential sections of TC or TC-1 abut non-residential uses within the same development or other adjacent TC or TC-1 developments' non-residential sections.

- iii. Exceptions. Obscuring landscaped berms and walls are not required to *separate identically zoned uses or where uses* are separated by a street, road, highway, ~~or~~ freeway or railroad.
- iv. Placement. The berm or wall is required to be on the property seeking approval. The berm may be placed upon the adjacent residential property in order to provide continuity with an adjoining berm. In that case, a recorded permanent easement and a maintenance agreement in a form acceptable to the City Attorney will be required from the adjacent property owner.
- v. Berm Requirements. The obscuring berm requirements are as follows:
 - a. The berm height shall be measured as follows:
 - (1) The berm height, as specified in the Residential Adjacent to Non-Residential Berm Requirement Chart (Table 5.5.3.A.ii), shall be analyzed from the following locations, and the final measurement of the berm shall be made from that location which results in the maximum screening:
 - [i] The first floor elevations of the closest adjacent principal structures;
 - [ii] The first floor elevations of the uses requiring screening;
 - [iii] The elevations of the parking lots closest to the property line when only the parking area requires screening; or
 - [iv] The elevation of the nearest property line.

Where a range of height is stated for a use on the Chart, the basic berm height shall be deemed to be the lower measurement, with approving body of the City having the discretion to increase the height up to the higher measurement based upon an application of the following considerations on the non-residential property:

intensity of use; noise generation customarily associated with the use; height and aesthetic appearance of buildings and structures; topography; distance of buildings, structures and activities from the common property line; and, the extent of disharmony with the adjoining residential use as a result of other considerations.

- (2) The site plan shall include the first floor elevation of ~~all adjacent~~the nearest principal structures ~~within 200 feet~~ of the ~~subject adjacent~~ site's property lines.
 - (3) Where the applicant demonstrates, and the Planning Commission finds, that practical difficulties would result from the strict application of berm height standards, as required herein, the Planning Commission may reduce the height of the berm, or eliminate the berm, and may approve an alternate plan which includes landscape treatment or a wall (subject to Section 5.5.3.A.vi below), or a combination of the two, provided that the approved alternate plan achieves adequate noise attenuation and obscuring screening. The Planning Commission may also reduce the height of the berm, or eliminate the berm, where it determines that an alternative design utilizing landscaping or other materials, including a wall subject to Section 5.5.3.A.vi below, provides adequate and effective noise attenuation and screening, or where such alternative design provides a substantial aesthetic or site design benefit while still providing for noise attenuation and screening to the extent reasonably practicable. The intent of this section is not to encourage and allow elimination or reduction of berm height for the sake of convenience or cost savings, but rather to allow reasonable development while achieving design excellence not otherwise possible under these requirements.
- b. The berm shall be natural in appearance and have overlapping and undulating changes in elevation, both horizontally and vertically, without compromising the minimum height requirement and/or intent of the berm. Where a range of height is stated on the Chart for a use, and the approving body determines berm height based upon the criteria specified in sub-paragraph v.(a), above, the height of the undulations on the berm shall be determined by the approving body as part of site plan approval, taking into consideration the location of improvements and activities to be screened, and the criteria in sub-paragraph v.(a), above.

- c. The obscuring berm shall have no greater than a maximum slope of 33 percent. (3 feet of horizontal plane for each 1 foot of vertical height.) More gradual slopes are strongly encouraged.
 - d. Plants shall be specified for any "no mow" areas.
 - e. The crest of the obscuring berm shall have a nearly flat horizontal area of at least ~~5-5~~five (5) feet in width, unless otherwise specified in the. ~~(See the previous Berm Requirement Chart for exceptions.)~~.
 - f. The required earth berm shall be located at the lot line, except where such location would interfere with underground utilities or drainage.
 - g. Where an existing or proposed parking or vehicular use area abuts an existing berm or wall or other durable landscape barrier on an abutting property, said existing landscaping may be used to satisfy the landscape requirements of this part of Section 5.5, provided that it meets all applicable noise attenuation and obscuring screening standards of this Section, and provided that the existing berm, wall, or other durable landscape barrier is required to be maintained consistent with the terms of this section of the ordinance and consistent with the approved site plan. Where the existing berm, wall, or other durable landscape barrier is not otherwise required to be maintained in connection with the adjacent property, the applicant shall be responsible for such maintenance and shall obtain and record a permanent easement and maintenance agreement from the adjoining property owner in a form approved by the City Attorney, making provision for such maintenance.
 - h. Where a property has already been lawfully developed for one of the uses listed in the Residential Adjacent to Non-Residential Berm Requirement Chart (Table 5.5.3.A.ii), adjacent residential property which subsequently develops shall provide and maintain the necessary berm.
 - i. See Landscape Design Manual for additional requirements.
- vi. Wall Requirements.
- a. Freestanding walls shall have all exterior sides constructed of face brick or stone with a suitable cap, and the interior constructed of masonry or reinforced concrete. The Planning Commission may consider materials of equal durability and aesthetic quality.
 - b. Walls shall be designed to resist the pressure of the retained material, including ~~both live and,~~ dead and environmental loads to which they may be subject. Foundations shall be designed to prevent movement due to

frost action and a suitable drainage system shall be provided to assure stability. Walls that are ~~greater than 3½~~4 feet or greater in height shall be designed and sealed by a professional design or structural engineer. Walls shall not cause flooding or impound water at any time and are subject to Final Site Plan review. (See Design and Construction Standards ~~6~~ Chapter 11, Novi Code of Ordinances).

- c. All other obscuring conditions of this subsection and the Landscape Design Manual must be met.
- d. Timber, boulder, and interlocking concrete masonry unit (CMU) retaining walls are permitted as alternatives to poured-in-place retaining walls for the purpose of terracing, with the provision that they meet commonly accepted practices for construction and reinforcement as required.

vii. Waiver of Landscaped Berm or Wall for Preservation of Wooded Area.

The Planning Commission may waive the requirement for an earth berm or obscuring wall adjacent to a residential use district when the proposed development includes the retention of an existing regulated or non-regulated wooded area adjacent to the residential district, or when an existing regulated or non-regulated wooded area is preserved on the adjacent residential property. In either case, the owners of all such area(s), including the owners of the adjacent residential property, shall provide a permanent preservation easement, including requirements for perpetual maintenance and replacement of woodland features, in recordable form acceptable to the City Attorney for such wooded area, and provided all the following conditions are met:

- a. The retained wooded area will provide effective screening consistent with the opacity for visual screening requirements of this Ordinance and intent of this Section.
- b. The retained wooded area shall be of a depth and height equal to or greater than the screening requirement being waived.
- c. The failure to retain the wooded area will have a negative impact on the preservation of woodlands within the City of Novi.
- d. The retained wooded area has been inspected and evaluated by the City relative to the health and desirability of the existing plant material.
- e. The Planning Commission may require, during construction phases, as a condition to the waiver, additional and/or modified plantings and/or the erection of a temporary chain link fence within or adjacent to the preserved wooded area to meet the opacity requirements and/or other

objectives of this Section, and, in the event all or part of the retained wooded area is removed, destroyed, diminished, or altered in any manner such that it no longer provides the screening required under this Section, the berm or wall shall be installed at the applicant's (or its successor's) expense or additional screening material may be required by the City to be installed and maintained at the applicant's (or its successor's) expense in order to achieve the screening objective under this Section.

b. Adjacent to Public Rights-of-Way

- i. Intent. The intent of the landscape planting buffer requirements along public rights-of-way is to improve the appearance of the rights-of-way including screening off-street parking and vehicular use areas of property abutting public rights-of-way.
- ii. Requirements. Landscape plantings shall be installed and maintained adjacent to existing or proposed public ~~rights-of-way~~ according to the standards set forth on the Right-of-Way Landscape Screening Requirements Chart (Table 5.5.3.B.ii.F), and as otherwise established in this ordinance, including the individual zoning district, and in the Landscape Design Manual.
 1. There shall be provided adjacent to the abutting right-of-way or private road a landscape area of sufficient width to accommodate a required berm as indicated in the Right-of-Way Landscape Screening Requirements Chart, except in those use districts or development options that require a greater greenbelt, or except as otherwise provided in the TC and TC-1 districts.
 2. Berms shall comply with Section 5.5.3.A.v. in terms of construction requirements, with specific requirements as called out in Table 5.5.3.B.ii.f.
 3. ~~The landscape area, if adjacent to parking and vehicular use areas not between the right-of-way and the principal building, Hedges planted to screen parking areas~~ shall be planted to achieve a minimum opacity of 90 percent during the summer and 80 percent during the winter and provide ~~a. The landscape in this area shall provide a~~ continuous visual obstruction height of at least 36 inches, ~~plus the required canopy/evergreen or sub-canopy trees required per Table 5.5.3.B.ii.f.~~
 4. All landscape areas between the right-of-way and parking areas that front on the required right-of-way greenbelt shall have a berm meeting the height and crest width requirements of the zoning district as specified in ~~the Right-of-Way Landscape Screening Requirements Chart~~ Table

~~5.5.3.B.ii.f, and shall have a maximum slope of 33%—and a crest as specified in the Right-of-Way Landscape Screening Requirements Chart (Table 5.5.3.B.ii.f)—.~~

5. A landscape area shall be planted to provide visual interest and yet allow views into the site. Particular care should be taken in the arrangement of greenbelt plantings to provide a view of the main entrance street address for emergency vehicles from a 20-40 degree angle as you drive toward the building along the primary road frontage.
6. ~~Parking areas~~Greenbelts in a Commercial/Office (B-1, B-2 or B-3) district with parking located between the principal building and right-of-way ~~shall~~ may be planted at a reduced rate, per the greenbelt ~~tree—and subcanopy~~landscape requirements called for in Table 5.5.3.B.ii.f. ~~(The berm and street tree requirements are the same as if the parking was not between the building and road).~~
7. If a wall is provided in accordance with the city standard, a reduction of up to 33 percent of the required greenbelt plantings ~~(not street trees)~~ is allowed in the right-of-way greenbelt in front of the parking. ~~—This reduction does not apply in cases where parking is between the right-of-way and the building and required landscaping is already reduced.~~
8. For a residential development abutting ~~a—one or more~~ major thoroughfare(s), landscape buffers shall be installed and maintained along the entire property line abutting the right-of-way in a non-access greenbelt. In a single-family site development, the required landscape buffer shall not be part of a residential unit or lot.
9. Necessary access ways from public rights-of-way through required landscaped areas shall be permitted. The width of the access ~~way(s)~~drive(s) shall be subtracted from the lineal dimension used to determine the minimum number of trees and shrubs required for greenbelt landscaping and street trees (see illustration in Table 5.5.3.B.ii.f, Footnote ~~17-130~~ below for points of measurement for each).
- ~~10.—The buffering shall not prevent visibility of the main building entry from the public rights-of-way.~~

5.5.3.B.ii.f Right-of-Way Landscape Screening Requirements	
	Requirements

Use	Zoning	Berm Located	Greenbelt width (feet)	Min berm crest width (feet)	Min. Berm Height (feet)	3 Foot Wall/ Fence	Deciduous canopy or large evergreen trees: 1 per X linear feet frontage	Deciduous Sub-canopy Trees: 1 per X linear feet frontage	In area between sidewalk and curb: 1 deciduous canopy deciduous tree per X linear feet frontage
Footnotes				4,5,6,7,1 2,3(4)	4,5,6,7,1 2,3(9)	(4,5,6,2,4 ,7)	(1,2,3,8,9,1 2,14,13,5,7, 17)	(1,3,11,12,8 ,9, 14,13,5,6,7, 17)	(1,2,9,3,8,9, 10, 11,12,15, 17)13,8,9,10
Single Family Residential	R-A R-1 R-2 R-3 R-4		34	4	4	(5,6,7)	40	25	35
Two-Family Residential	RT	Adjacent to parking	20	2	3	(4,5,6,7)	35	25	35
		Not adjacent to parking	30	2	3	(5,6,7)	40	25	35
Multi - Family Residential	RM-1 RM-2 MH	Adjacent to parking	20	2	3	(4,5,6,7)	35	25	35
		Not adjacent to parking	34	2	3	(5,6,7)	35	25	35
Residential PRO (20163)			Avg 50, Min 34	4	4	(5,6,7)	40	25	35

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5.5.3.B.ii.f Right-of-Way Landscape Screening Requirements (continued)

			Requirements						
Use	Zoning	Berm Located	Greenbelt width (feet)	Min berm crest width (feet)	Min. Berm Height (feet)	3 Foot Wall/ Fence	Deciduous canopy or large evergreen trees: 1 per X linear feet frontage	Deciduous Sub-canopy Trees: 1 per X linear feet frontage	In area between sidewalk and curb: 1 deciduous canopy deciduous tree per X linear feet frontage
Footnotes				1,2,3(4),4,5,6,7	1,2,3,4,5,6,7(9)	2,4,4,5,6,7(5,6,7)	5,7(1,2,3,8,9,13,17,18,19)1	5,6,7,1,2,3,13,14,17,	8,9,10(1,2,3,9,10,11,15,17,18,19)
Commercial /Office	NCC C OS-1 OSC OST B-1 B-2 B-3	Adjacent to Parking	20	3 2	3	(4,5,6,7,8)	35	20	35
		Not adjacent to parking	25	0	0	(5,6,7,8)	60	40	35
		Parking between ROW and at least 67% of primary building (18,15,12)	20	3 2	3	(4,5,6,7,8)	75 70	40 Plus 2 3 shrubs per 40 lf	35
Industrial (12)	I-1 I-2	Adjacent to Parking	25	3	3	(4,5,6,7,8)	40	35	45
		Not adjacent to parking	25	—	—	—	60	40	45
Downtown	TC TC-1	Adjacent to Parking	20	—	—	(6,7,8)4	25 (17,14,1)	15 (17,14,1)	—
		Not adjacent to parking	—	—	—	(6,7,8)4	30 (17,14,1)	20 (17,14,1)	—
Misc. Large Use	P-1 Expo EXO RC FS	Adjacent to Parking	20	2	3	(4,5,6,7)	35	20	45
		Not adjacent to parking	25	3	3	(4,5,6,7)	45	30	45

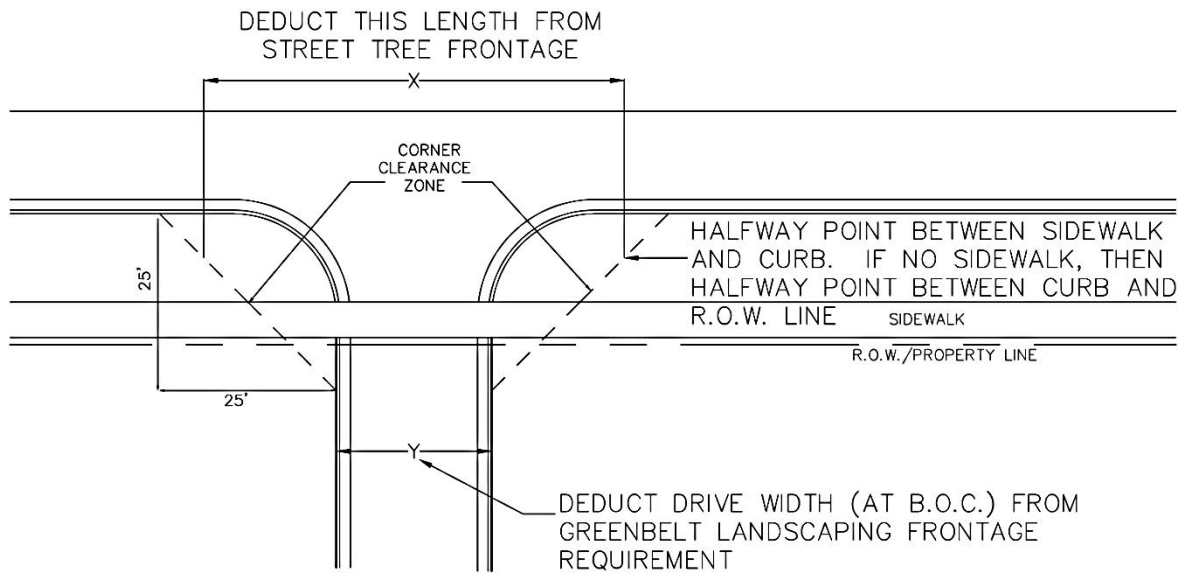
Planned Suburban Low Rise	PSLR	Parking and buildings adjacent to a section line road right-of-way	50	4	3	Not allowed	35	20	35
		Parking adjacent to other right-of-ways	To Front of principal building <u>per Zoning Ordinance Section 3.21.2.A.ii</u>	4	3	Not allowed	35	20	35

FOOTNOTES:

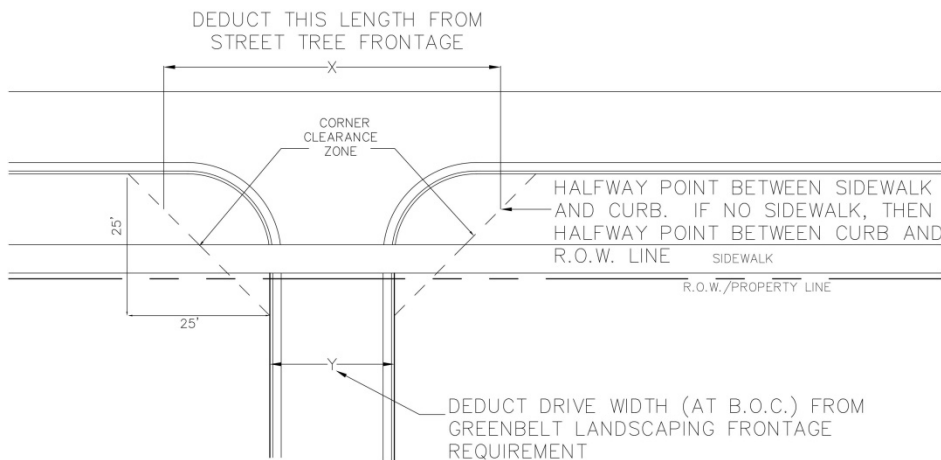
- ~~(1) Round fractions to the nearest whole number for the required number of trees and shrubs.~~
- ~~Sub-canopy trees are to be used under overhead utilities. Use at a rate of 1.5 sub-canopy trees for each one canopy tree requirement required. If columnar/fastigate varieties are used, 2 sub-canopy trees per canopy tree must be used. The minimum total mature canopy width of the provided subcanopy trees should equal or exceed 25 feet. Wherever possible, however, deciduous canopy trees are to be used as street trees.~~
- ~~(2)~~
- ~~Subcanopy trees can be in an informal or formal arrangement.~~
- ~~(3) Format spacing shall be 10-foot minimum to 15-foot maximum on center.~~
- ~~(4)(1) Shrubs are to be used to screen parking and vehicular use areas where no berm or wall is provided, and are encouraged to be used in other areas to provide seasonal interest where no parking occurs. Shrubs in front of parking areas must provide minimum screening opacity of 80% in winter and 90% in summer and be maintained at a height of at least 3 feet. The use of shrubs in place of the required berm requires a Planning Commission Waiver. (berms are preferred).~~
- ~~(5) Up to 10% of the required trees or subcanopy trees may be replaced with shrubs at a rate of 8 shrubs per canopy tree or evergreen tree, or 5 shrubs per subcanopy tree. The shrubs must be maintained at a minimum height of 3 feet.~~
- ~~(6) A wall may be used instead of a berm. If a wall, consistent with footnote (7) below, is provided in front of parking areas, a reduction of up to 33% of the required greenbelt plantings (not street trees) is allowed in the parking greenbelt area. A Planning Commission Waiver is required to use a wall instead of a berm.~~
- ~~(7)(2) Freestanding walls shall be constructed of masonry or concrete with all exterior sides of face brick with a suitable cap.~~
- ~~(8)(3) An ornamental fence with shrubs and brick piers and shrubs may be used instead of a berm if approved by the Planning Commission as a landscape waiver in Use/Zoning as indicated above. A Planning Commission waiver is required for this substitution.~~
- ~~(9)(4) Freestanding walls shall be constructed of masonry or concrete with all exterior sides of face brick with a suitable cap.~~

- ~~(5) Sub-canopy trees are to be used under overhead utilities at a rate of 1.5 sub-canopy trees for each one canopy tree required. If columnar/fastigate varieties are used, 2 sub-canopy trees per canopy tree must be used. Wherever possible, deciduous canopy trees are to be used as street trees.~~
- ~~(10) View channels into the site are to be used provided for safety visibility. Please provide sight lines to the building address for approaching vehicles at an approximately 20-40 degree angle to the road.~~
- ~~(11) Tree spacing requirements are intended to dictate the tree quantity per linear footage along the proposed right-of-way (ROW). They are not intended to dictate exact placement on the site within the area of the requirement. Creative landscape design is encouraged.~~
- ~~(12) In situations where sidewalks are not required, the street trees shall be placed midway between the curb line and right-of-way line where possible.~~
- ~~(13) Street trees shall not be permitted within the 25-foot corner clearance zone (Section 5.9). Roads with Road Commission for Oakland County (RCOC) jurisdiction shall utilize their RCOC standards for sight distance in locating street trees. If RCOC does not approve any or all of the trees, those trees shall not be planted, with no penalty to the applicant.~~
- ~~(14) In industrial subdivisions, a mix of shrubs, ornamental grasses, perennials and/or annuals shall be planted in massed groupings to highlight entrances and views of key elements~~
- ~~(15)(6) Sub-canopy trees used in foundation landscaping shall may also count toward the right-of-way sub-canopy requirement if the building is located at the rear of the required greenbelt width.~~
- ~~(16) The width of access aisles through the greenbelt shall be deducted from the basis of calculation (see illustration in footnote #19-130 below).~~
- ~~(17)(7) Subcanopy trees used in foundation landscaping shall also count toward the right of way subcanopy requirement if the building is located at the rear of the required greenbelt width.~~
- ~~(8) In situations where sidewalks are not required, the street trees shall be placed midway between the curb line and right-of-way line where possible.~~
- ~~(9) Street trees shall not be permitted within the 25-foot corner clearance zone (Section 5.9). Roads with Road Commission for Oakland County (RCOC) jurisdiction shall utilize RCOC standards for sight distance in locating street trees. If RCOC does not approve any or all of the trees, those trees shall not be planted, with no penalty to the applicant.~~
- ~~(18) The width(s) of the corner clearance zone(s) shall be deducted from the basis of the calculation for street trees for one access way per street frontage (see illustration in footnote #17illustration below).~~
- ~~(19)(10) In the Town Center districts, deciduous canopy/large evergreen trees or subcanopy trees are required in the greenbelt, but not both.~~
- ~~(20) These requirements only pertain to zoning districts B-1, B-2 and B-3~~
- ~~(21) Linear deductions allowed for street trees and right-of-way greenbelt landscaping:~~

Figure 5.5.3.B.ii.Footnote 10



FRONTAGE MEASUREMENT



FRONTAGE MEASUREMENT

(22)(11) In the Town Center districts, deciduous canopy/large evergreen trees or subcanopy trees are required in the greenbelt, but not both. One or the other requirement shall be met, not a reduced combination of both types.

(23)(12) These requirements only pertain to zoning districts B-1, B-2 and B-3.

(13) When the development fronts on one or more major thoroughfares(s), the right-of-way greenbelt along that thoroughfare shall be an average of 50 feet width, with a minimum of 34 feet.

iii. Private Roads. All private roads and access roads not covered in other sections of this ordinance shall be landscaped with deciduous canopy street trees at a rate of 1 tree per 35 linear feet along both sides of the road, with the same

allowances for deducting clear vision zones as noted above in 5.5.3.B.ii Footnote 10.

(24)

~~iii~~.iv. Reduction or Waiver. Except as provided in Section 5.5.3.A.v.a.(3), which governs relief relative to berm height, the Planning Commission may reduce or waive the landscaping screening/buffer right-of-way requirements when it determines that practical difficulties exist due to the parcel size or configuration, or where the design of the site would be enhanced by an alternative design solution while still meeting the intent of this Section. Examples of such situations include, but are not limited to, when:

- a. Preservation of Regulated Woodlands or Wetlands or existing trees will occur;
- b. The grade of the site is higher than the road and naturally provides a screen;
- c. Significant architecture or historic buildings, water features, views of natural resources or vistas will be preserved;

The Commission may, as part of its exercise of such authority, allow the:

- a. Use of a wall instead of a berm; or
- b. Use of a wrought iron decorative fence with brick accents or other material of equal aesthetic quality and durability with plantings instead of a berm; or
- c. Use of shrubs/hedge instead of a berm.

b.

c. **Parking Area Landscaping Requirements**

i. Intent. The intent of this subsection is to:

- require curbed landscape islands within parking areas, thereby reducing solid expanses of impervious surfaces
- , to decrease runoff
- , to shade parking areas, and
- i. , and to create aesthetically pleasing and ~~environmentally~~ environmentally-enhanced parking areas.

ii. General Requirements.

~~b.a.~~ The design and layout of all parking lots and islands shall be subject to review and approval by the City of Novi.

~~e.b.~~ Islands are to conform to the general requirements in Section 5.3.12.

~~e.c.~~ Creative island configuration and design is encouraged, such as islands between rows of parking in long, wide planting strips, and/or depressed islands to detain storm water.

~~e.d.~~ The use of pedestrian walkways in parking lot islands is encouraged, if the islands' paths are at least 5 feet wide with no vehicle overhang or 7 feet wide with vehicle overhang and a 10-foot planting area width is maintained.

~~f.e.~~ Landscaped islands are to be installed with 6 inch curbs ~~that are designed~~ to protect landscaping from damage by vehicles (4 inches where vehicles are to overhang the curb). However, periodic openings in curbs, which do not exceed 2 feet in ~~lengthwidth~~, shall be permitted for sidewalks and for the purpose of conveying storm water run-off across an island.

~~g.f.~~ If more than 1 island is provided in a parking lot, they are to be distributed evenly throughout the lot.

~~h.g.~~ Each parking lot landscape island shall have:

(1) A minimum of 200 square feet in area.

(2) A minimum of 200 square feet in unpaved area per tree planted in an island.

(3) A minimum dimension of 10 feet in width from back of curb to back of curb.

~~(4)~~ A minimum of 3 feet between the back of a curb and a tree trunk.

~~(4)(5)~~ Islands that project into the parking lot from the side of the lot may have only be a minimum of 130 square feet -in area or more if that island is at least 10 feet wide and adjoins- contiguous withadjoins 70 square feet or more of green space outside of the parking lot.

~~i.h.~~ For any development other than a single ~~one~~-family or two-family dwelling, the ~~exact~~-square footage of landscape islands required shall be as specified in the Interior Parking Area Landscape Islands and Canopy Tree Chart (Table 5.5.3.C.iii).

~~j.i.~~ Wheel stops or raised curbing shall be installed to prevent vehicles from encroaching more than 2 feet into any parking landscape area. When adjacent 90 degree parking stalls are reduced from 19 to 17 feet in length, the required 6 inch curbs shall be reduced to 4 inches in height. This applies to both landscape and sidewalk overhangs. Where vehicles overhang a sidewalk, the sidewalk shall have a minimum width of 7 feet.

~~k.~~ No plantings with a mature height greater than 12 inches shall be within 10 feet of fire hydrants. Plant materials shall not block the visibility of the hydrant or Fire Department Connections and be no taller than 12 inches when below a Fire Department Connection.

~~l.j.~~ ~~Trees are to be located at least 10 feet away from utility structures including catch basins and manholes, and should be at least 5 feet away from underground utility lines whenever possible. (This spacing is required across the entire site, not just in and adjacent to parking area)~~

~~k.~~ Islands are to have adequate drainage to the nearest catch basin or adequate areas of amended sandy loam soil, as specified on the plan, to achieve proper drainage. Depressed (sunken) islands are allowed if:

~~(1)~~ (1) -the plantings are salt-tolerant

~~(2)~~ (2) ~~and~~ the islands are designed to provide drainage adequate for survival of the island plantings

~~m.(3)~~ (3) ~~they and~~ meet all City of Novi engineering standards.

~~n.l.~~ Paint, contrasting brick or concrete pavers may be used to delineate stall lines within parking areas.

~~o.m.~~ Any area within a parking lot not dedicated to parking use, driveways, or sidewalks exceeding 100 square feet, shall be landscaped with a minimum of lawn or other living ground cover.

~~p.n.~~ All parking lot landscaped areas required herein shall ~~consist of a mix of plant materials such as canopy deciduous trees, subcanopy trees, shrubs, groundcovers (including lawn), ornamental grasses and/or perennials~~ contain at least 1 deciduous canopy tree and lawn or other plantings/groundcovers.

~~q.o.~~ The total square footage of required interior landscape islands shall be provided as follows:

(1) The required square footage shall be provided only within islands that are surrounded by paved parking areas or that project into the

parking lot from the perimeter of the parking area, including corner islands, if they meet the requirements of this Section.

~~(2) Areas abutting but not within the interior of the parking area shall not satisfy the requirements of this Section.~~

~~(3)(2) Within the interior of the parking lot, islands shall be distributed evenly across the paved area so as to distribute the required landscaping throughout the parking area.~~

~~(3) Areas abutting but not within the interior of the parking area shall not be considered as interior landscape area.~~

(4) No bay of parking (defined herein as a single row of side by side parking spaces) greater than 15 parking spaces in length shall be provided except as noted in (5).

(5) If the use is primarily vehicular storage (ie automobile dealer vehicle inventory areas, vehicle stockpile areas, semi-trailer storage areas), bays of 25 spaces will be allowed but the required interior landscape area per Table 5.5.3.C.iii must be provided.

~~(6) In order to count toward the total landscape area provided requirement, an island must contain at least 1 deciduous canopy tree and have the minimum area required of 5.5.3.C.ii.g.~~

~~— All interior islands and corner islands must be landscaped with a deciduous canopy tree and meet the area requirements of 5.5.3.C.ii.g.~~

~~(6)(7) If the parking lot layout requires more islands/area than the table below would indicate (such as to break up long bays), each of those additional islands must still meet the area and planting requirements of 5.5.3.C.ii.g. but perimeter trees may be used in outer and corner islands to help landscape those islands.~~

iii. ~~—~~ Parking Lot Greenspace and Parking Lot Tree Requirements. The following chart is to be used to calculate the square footage of island space and the number of canopy trees required for Parking Area Interior and Perimeter Landscaping.

5.5.3.C.iii Interior Parking Area Landscape Islands and Perimeter Canopy Tree Chart

	A	B	C	D	E
<u>Category*</u> <u>Category 1</u> —: <u>All zoning districts except for I-1 and I-2, Special Land Uses</u>	Total square footage of landscaped islands for VUA areas less than or equal to 50,000 square feet equals:	Total square footage of landscaped islands for VUA beyond the initial 50,000 sf (A) equals:	Total square footage required in interior parking lot islands equals:	Total number of interior landscape deciduous canopy trees:	Perimeter Deciduous Canopy Trees required <u>for parking lot and access drives</u> equals:
<u>Footnotes</u>	<u>1,2,3</u>	<u>1,2,3</u>		<u>4,5,7</u>	<u>6,7,8</u>
1	VUA × 7.5%	(VUA-50000) ×	A+B	(A+B)/200	Perimeter (LF) / 35
2	VUA × <u>56%</u>	(VUA-50000) ×	A+B	(A+B)/200	Perimeter (LF) / 35
<u>Footnotes</u>	<u>1,2,3</u>	<u>1,2,23</u>		<u>4,5,7,3,5,4,5,6</u>	<u>6,7,8,4,5,6</u>

Footnotes:

~~(1) Round fractions of trees to the nearest whole number.~~

~~(2)(1) Vehicular Use Area (VUA) to be used in this calculation includes parking spaces, loading/unloading areas and access aisles within the parking lot. It does not include drives to the Vehicular Use Area or long drives without parking spaces between parking areas adjacent. (See Figure 5.5.3.C.iii (2) See illustration below.~~

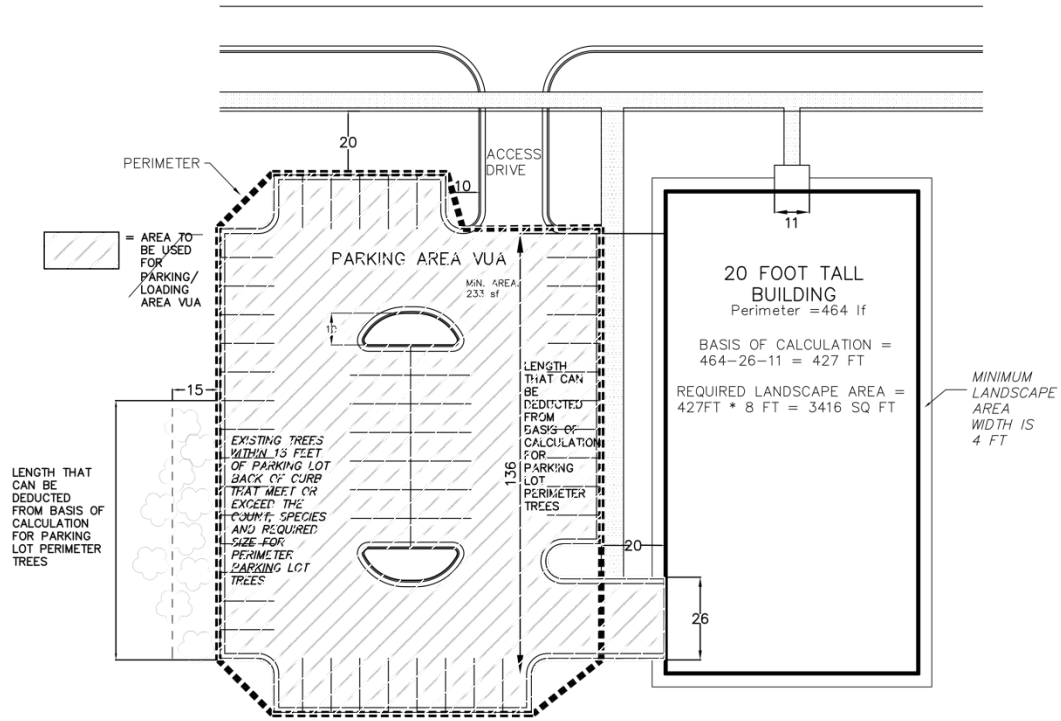
~~(2) If a vehicular use area is greater than 50,000 sf, the landscape requirement for the first 50,000 sf of VUA is to be calculated per Column A, and the requirement for the remaining VUA is to be calculated per Column B.~~

~~(3) The landscaping for the total requirement should be spread evenly across the entire VUA~~

As an example, a 65,000 square foot parking area in Category 1 would require 50,000 x 7.5% plus 15,000 x 1% = 3750sf + 150 sf = 3900 sf landscape area within the parking lot boundary. Loading/Unloading areas also count toward vehicular use area.
have

~~(3) Corner islands projecting into the parking area and areas at the end of bays must also have trees~~

Figure 5.5.3.C.iii (2)

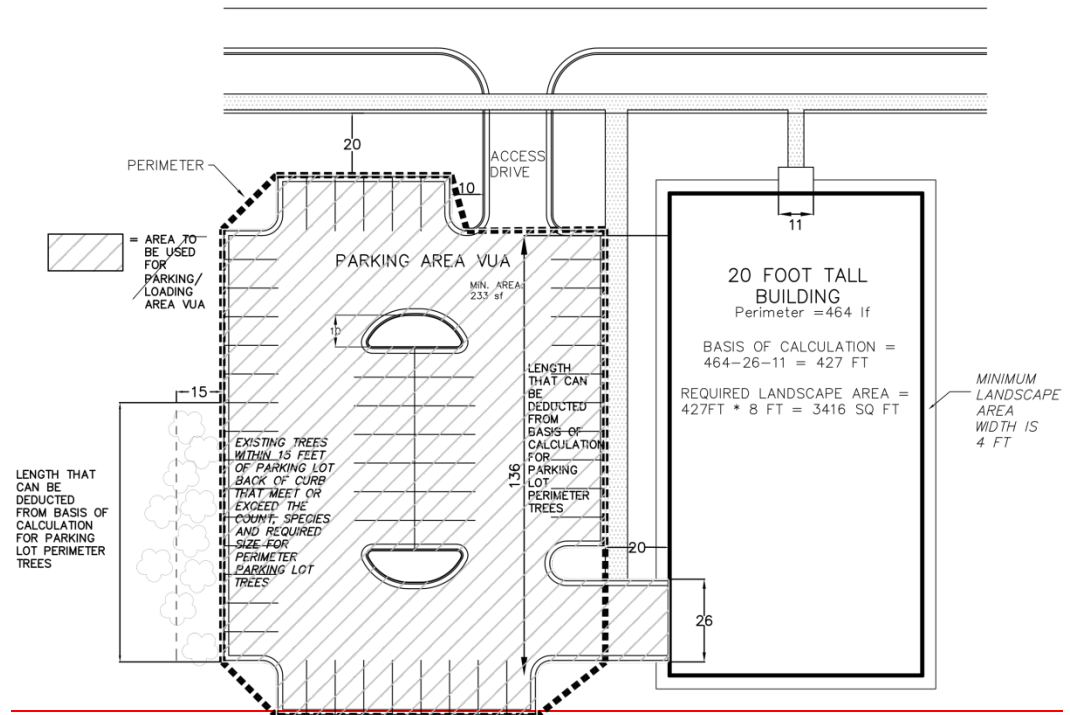


i. Parking lot perimeter trees

- a. Deciduous canopy trees are required for the outer edge of parking areas and both sides of access drives to parking areas at a rate of 1 tree per 35 lf of perimeter. See illustration below for determination of perimeter length and what constitutes an access drive.
- a-b. A landscape area at least 10 feet wide (measured perpendicular to the curb) is required along parking lot perimeters and access drives for planting the required trees.
- b-c. Existing canopy trees ~~Parking lot frontages with existing trees~~ within 15 feet of the parking lot perimeter (as measured to the tree trunk) ~~shall be subtracted from the basis of calculation~~ may be counted as perimeter trees. Dense concentrations of existing trees may not be used to meet requirements for other areas of the parking lot, as long as the trees provided meet or exceed the requirement of 1 tree per 35 lf.
- c-d. If the front edge of a parking lot is at the rear edge of the greenbelt, buffer, and canopy trees in the greenbelt, existing or proposed, are within 15 feet of the parking lot's back of curb (as measured to the trunk), existing or proposed, may these trees can also be counted toward the perimeter requirement.
- d. ~~In the case of a building project in a Commercial/Office Business district (NCC, C, OS-1, OSC, OST, B-1, B-2 or B-3) where parking is between the right-of-way and at least 67% of the primary building, only 1 perimeter tree per 70 lf is required along the front parking lot edge and greenbelt tree canopy trees within 15 feet of the parking lot curb may also be counted toward the perimeter requirement. The same allowance for deduction cited in (2) above can also apply in this case.~~
- e. _____
- e-f. Greenbelt canopy trees within 15 feet of the back of curb of an access drive may double-count toward the access drive perimeter tree requirement.
- f-g. If a parking lot edge is within 20 feet of a building 20 feet or taller and the building's foundation landscaping has at least 1 subcanopy tree per 35 lf of building frontage along the parking lot, that frontage does not have to have perimeter trees but sub-canopy trees should be included in building foundation landscaping along that frontage where possible.-

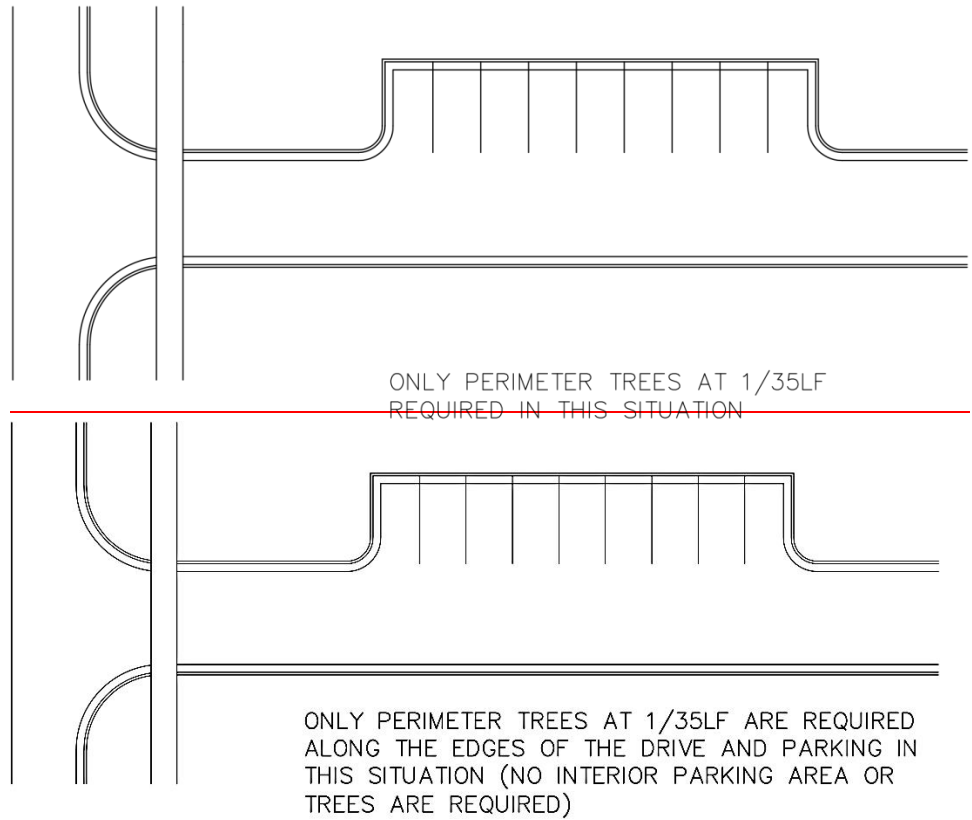
h. While deciduous canopy trees are preferred as perimeter trees, wAs they maywhere they would provideassist with neededdesired screening between properties, large evergreen trees may be used for up to 25% of the required perimeter trees. Sufficient space should be provided between the tree and the curb to allow the evergreens to maintain their branches down to ground level when they mature and the lower branches must be maintained as long as they are healthy.

a. —



i. If a parking bay abuts a drive but no other parking, only perimeter trees along the drive and parking are required (no interior parking). See illustration below:

g. Figure 5.5.3.C.i



j. Perimeter canopy trees are also required along access drives with no parking such as, but not limited to, along a building or between parking areas at a rate of 1 tree per 35lf on both sides of the road unless buildings or natural features make such plantings not feasible or undesirable.

ii.—

iii.—

iv.-ii. Waiver. Based upon a sufficiently documented demonstration by the applicant, the Planning Commission may reduce or waive the parking lot landscape requirements when it determines that practical difficulties exist due to parcel shape or configuration or where the design of the site would be enhanced by an alternative design solution while still meeting the intent of this Section. Such action by the Commission may be taken when any or all of the following conditions will be met:

- a. Preservation of Regulated Woodlands or Wetlands or existing trees will occur;
- b. Storm water runoff impacts will be lessened;
- c. Traffic circulation will be substantially improved;

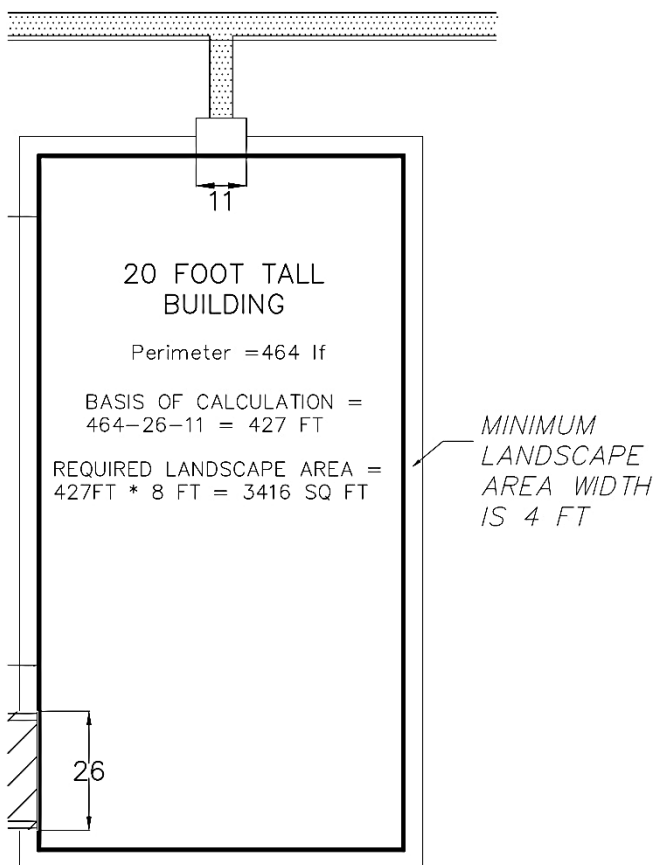
d. Vehicular and pedestrian safety will be enhanced.

~~e.~~

d. Building Foundation Landscape Requirements

- i. Intent. The intent of this subsection is to provide living landscape space around buildings in order to help integrate ~~buildings-them~~ into the surrounding landscape and to improve the aesthetic appearance of the site.
- ii. Requirements. For all buildings or accessory buildings requiring site plan review, the following shall apply:
 - a. There shall be, as a minimum, interior site landscaping square footage equal to the quantity calculated by multiplying the entire perimeter of the building, less the paved access points including walkways to the building (but not including those walkways or drives immediately along the building) and vehicular entrance ways to the building interior (i.e. garage doors) by eight feet. See the diagram below^[BL1].
 - b. Landscaped planting beds shall be placed immediately adjacent to the building ~~on-for as much of the building as possible, with at least a~~ minimum of 75% of the building foundation having landscaping. Landscape beds must have a ~~and have a~~ minimum width measuring dimension of four feet from the building. ~~Lawn areas shall not be considered toward the required greenspace.~~ Creativity of the physical configuration of the landscape planting bed shape and dimension is strongly encouraged. Applicant is encouraged to provide additional greenspace adjacent to the building wherever possible.

Figure 5.5.3.D.



~~b.~~

c. All foundation landscaping areas shall be labeled in square feet as such on the landscape plan, ~~with the area in square feet of that area.~~ Lawn areas shall not be considered towards part of the required greenspace.

d. For the front and any other facades visible from a public street, a minimum of 60% of the exterior building perimeter shall be greenspace planted with a mix of trees, shrubs and groundcovers, perennials, grasses, annuals and bulbs. Deciduous canopy and/or large evergreen trees and sub-canopy trees may also be included around the building if separated from the building by the appropriate distances.

~~e. Also see zoning district Development Standard and Selected References as applicable.~~

f.e. If the front and/or a side of the building is at the rear line of the required right-of-way greenbelt, trees included in the foundation plantings of those sides of the building for the front of the building may also count toward the required greenbelt plantings.

~~g.f.~~ With respect to projects within the TC and TC-1 districts, the Planning Commission may waive the ~~8-8~~-foot width calculation requirements if significant equivalent additional planting and/or decorative paving area or amenities are added adjacent to the building.

~~h.~~ ~~The loading/unloading spaces, entry doors, and drive through aisles are exceptions from having the greenspace adjacent to the building. The length of those elements can be subtracted from the perimeter per the illustration below.~~

~~i.g.~~ There shall be greenspace landscaping adjacent to patios/outdoor dining areas.

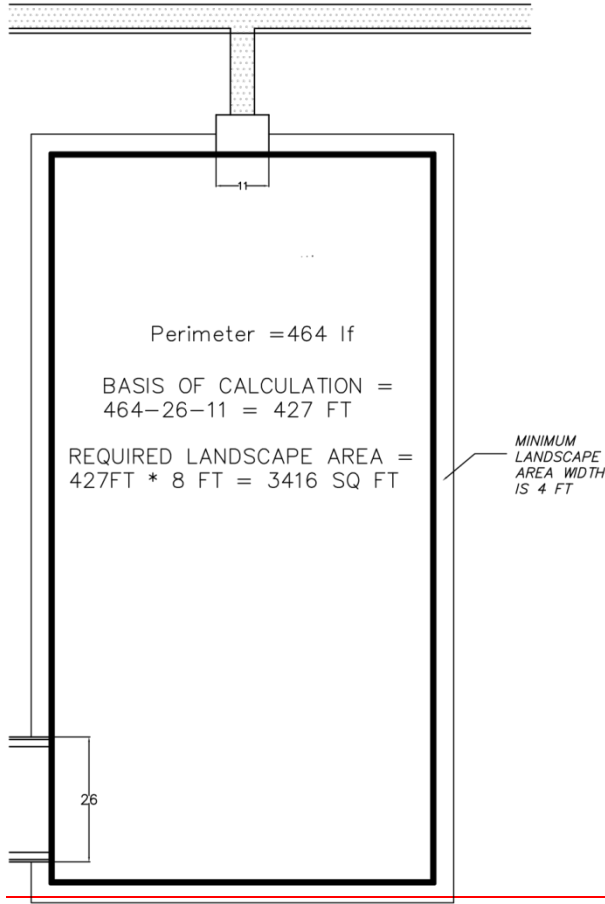
~~j.h.~~ In instances where the building has a first floor overhang greater than 2 feet, the landscaping required under this subsection shall begin at the outside edge of the overhang in order to ensure the landscaping receives sufficient sun and water. In those cases, the extent of the overhang should be shown on the landscape plan with a dashed line or other means.

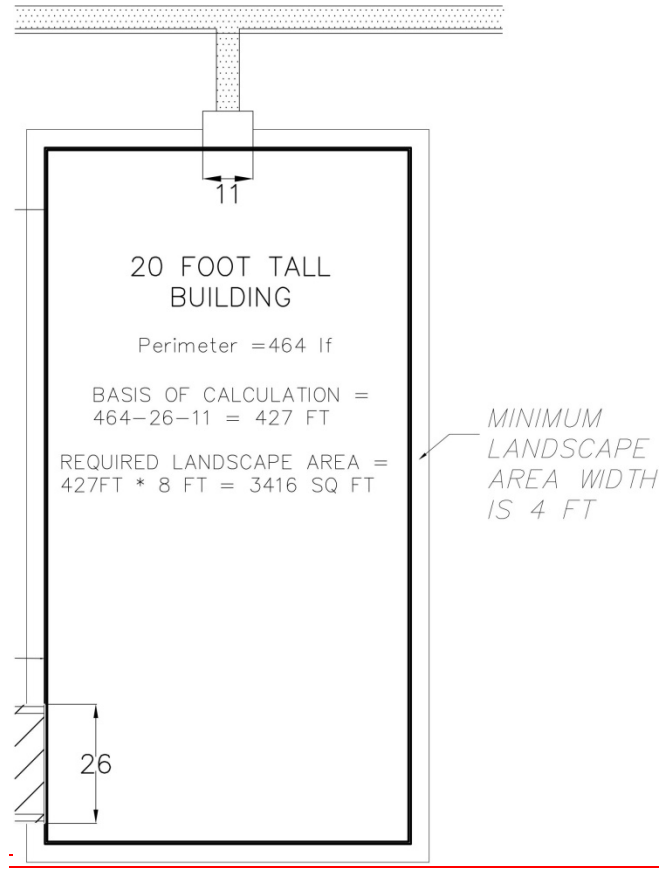
~~i.~~ Foundation landscaping for frontagebuilding perimeter occupied by loading/unloading areas, drive-through lanes or sidewalks along the building may be located on the outside of these areas without requiring a landscape waiver.

~~j.~~ In —situations where the building use does not allow landscaping immediately adjacent to the building, alternate placements of required foundation landscaping may be proposed elsewhere on the property. In that case, the alternative area(s) should be clearly labeled as foundation landscaping, with its area in square feet. A Planning Commission waiver is required for the alternate positioning for all cases except as noted above (i).-

~~k.~~ Plantings shall be no taller than 12 inches when below or adjacent to a building's Fire Department Connection.

~~k.~~—





- iii. Waiver Procedure. The Planning Commission may reduce or waive the building foundation landscaping requirements when it determines that the applicant has established that practical difficulties exist due to parcel size or configuration or where the design of the site would be enhanced by an alternative design solution while still meeting the intent of this Section. Such action will be taken by the Planning Commission when:
- a. Particular pedestrian circulation safety concerns inhibit the application of this requirement; or
 - b. Elements or activities that are ancillary to the primary building's function inhibit the application of this requirement; or
 - c. Landscaping has been proposed in other areas on the site that offset the loss of foundation landscaping at the base of the building.

e. -

e. Detention/Retention/Sedimentation Basin Landscape Requirements.

All detention basins shall be planted with the minimum requirements as set forth in the Landscape Design Manual and shall be designed to have a natural appearance, utilizing natural looking contours ~~and native plant materials~~ whenever possible. Detention basin maintenance shall be provided ~~per (see Ordinance Chapter 12, Storm Water Management)~~ and the plantings shall be maintained per Section 5.5.6 and Section 5.5.7.

f. Subdivision Planting Requirements

i. Single-Family Platted Subdivisions or Residential Site Condominiums

a. Intent. The intent of this subsection is to create visually appealing single-family residential areas that integrate existing natural resources into the overall landscape design.

b. Requirements Adjacent to Major Thoroughfares.

(1) That portion of the ~~lots-site~~ abutting major thoroughfare(s) shall include ~~an approved~~ screening plantings and a raised berm per Section 5.5.3.B, contained in a non-access greenbelt easement, labeled as such on the plans, and having a minimum width of 40 feet.

(2) Said non-access greenbelt easement shall be part of the development's open space, not part of a lot or residential unit.

(3) The screening plantings shall be installed at the time of construction of the subdivision, not individual lots.

c. Street Trees and Boulevard Planting

(1) Street trees shall be provided in the right(s)-of-way front for private access easement for private roads of each lot in accordance with the standards set forth in the Landscape Design Manual, Part I, Section 2.

(2) The developer shall submit a landscape plan for all of the street trees to be provided within the development, which shall be reviewed by the City.

(3) A Street Tree Financial Guarantee will be collected at a per tree rate ~~of four hundred (400) dollars per street trees set by City Council-required~~ prior to the Full Pre-Construction meeting, per Ordinance Chapter 26.5 – Financial Guarantees. There will be no

issuance of any Temporary or Final Certificate of Occupancy in the development until this financial guarantee and the Street Tree Maintenance Fee ~~has~~have been paid. No Final Certificate of Occupancy will be granted until the trees have been planted by the developer and inspected and accepted by the City.

- (4) Trees shall be guaranteed by the developer for two (2) growing seasons after installation and approval by the City. All unhealthy and dead plant material shall be replaced by the developer within three (3) months following notice, or early in the next appropriate planting period, ~~whichever occurs first as determined by the City.~~
~~The Street Tree Financial Guarantee will not be reduced and no Final Certificate of Occupancy will be granted until the trees have been planted and approved.~~

ii. Single-Family Residential Condominiums without lots/units

a. Intent. The intent of this subsection is to create visually appealing single-family residential areas that integrate existing natural resources into the overall landscape design.

b. Requirements Adjacent to Major Thoroughfares.

(1) That portion of the site abutting major thoroughfare(s) shall include screening plantings and a raised berm per Section 5.5.3.B, contained in a non-access greenbelt easement, labeled as such on the plans, and having a minimum width of 40 feet.

(2) The screening plantings shall be installed at the time of construction of the subdivision.

c. Street Trees and Boulevard Planting

(1) Street trees shall be provided in the right(s)-of-way or private access easement for private roads of each residence at the rate of 1 deciduous canopy tree per dwelling unit.

(2) The developer shall submit a landscape plan for all of the street trees to be provided within the development, which shall be reviewed by the City.

(3) A Street Tree Financial Guarantee will be collected at a per tree rate as set by City Council prior to the Full Pre-Construction meeting, per Ordinance Chapter 26.5 – Financial Guarantees. There will be no issuance of any Temporary or Final Certificate of Occupancy in the development until this financial guarantee and

~~the Street Tree Maintenance Fee have been paid. No Final Certificate of Occupancy will be granted until the trees have been planted by the developer and inspected and accepted by the City.~~

~~(5) Trees shall be guaranteed by the developer for two (2) growing seasons after installation and approval by the City. All unhealthy and dead plant material shall be replaced by the developer within three (3) months following notice, or early in the next appropriate planting period as determined by the City. The developer shall submit a landscape plan for all of the street trees to be provided within the development, which shall be reviewed by the City.~~

d. Island and Boulevard Planting

- (1) All islands, boulevards and easements shall be landscaped and irrigated. Islands within a cul-de-sac shall not have any plant materials that may obscure vision across the island between heights of 3 feet to 6 feet as measured from the established street grade. See the Landscape Design Manual for additional requirements regarding the type and size of plantings.
- (2) Island and boulevard plantings ~~do will~~ not count toward the required street tree totals and must be maintained by the developer, property owner or homeowner's association, whichever is applicable.
- (3) If an island's or entry's landscaping is to be revised by the ~~subdivision-homeowner's~~ association, a landscape plan shall be submitted to the City for administrative approval prior to planting.

~~ii-iii.~~ Multi-Family/Attached Dwelling Units

- a. Intent. The intent of this subsection is to create visually appealing multi-family residential areas that integrate ~~existing~~ natural resources into the overall landscape design.
- b. Requirements. For all multiple-family or other development with attached dwelling units (other than a single RT dwelling on an individual lot) the following shall apply:
 - (1) ~~3-Three deciduous canopy trees or large evergreen treestrees~~ for each dwelling unit on the first floor shall be provided across the site. ~~Evergreens shall be no closer than 20 feet from the~~

~~roadway~~At least 75% of those trees shall be deciduous canopy or large evergreen trees. The remainder can be sub-canopy or ornamental trees to add diversity to the site.

~~(2)~~ In addition, there shall be one deciduous canopy tree along interior roads for every 35 feet of lineal interior roadway ~~(excluding driveways, interior roads adjacent to public rights-of-way and parking entry drives)~~, along each side of the roadway, ~~excluding driveways, interior roads adjacent to public rights-of-way and parking entry drives~~. The spacing of the deciduous canopy trees ~~along the drive~~ shall be a minimum of 25 feet and a maximum of 35 feet ~~unless driveways require different spacing~~. In case of overhead utility lines, deciduous sub-canopy trees can be substituted for deciduous canopy trees at a rate of 1.5 sub-canopy tree for each 1 canopy tree. ~~(See Single-Family Platted Subdivisions or Residential Site Condominiums Sections for specific requirements.)~~ Those sub-canopy trees would not count toward the limit placed in subsection (1) above.

~~(2)~~ For purposes of the Financial Guarantee and Maintenance Bond, the trees along the interior drive can be counted as site landscaping, not street trees. Any street trees along public roads are considered to be street trees for Financial Guarantee and Maintenance Bond purposes.

~~(3)~~ A mixture of shrubs, sub-canopy trees, groundcovers, perennials, annuals, and/or ornamental grasses shall be provided as foundation plantings ~~covering at least 35% percent of the building facade~~ perimeter facing the interior drive ~~at the front of each ground floor unit covering at least 35% percent of the front building facade~~.

~~(3)~~(4) Parking lots for these developments shall meet the layout and landscaping requirements of 5.5.3.C but unit trees from Requirements section (1) may be used to meet the parking lot interior and perimeter tree requirements.

iii. Non-Residential Subdivisions

- a. Intent. The intent of this subsection is to create visually appealing non-residential areas that integrate existing natural resources into the overall landscape design.

b. Requirements. For all non-residential subdivisions or non-residential site condominiums, the following landscape requirements shall apply:

1. Areas abutting the ~~Public-public Rightsrights~~-of-Way-way of major roadways shall be landscaped according to Section 5.5.3.B.ii and provided prior to lot development.

~~2.~~ Required ~~Landscape—landscape~~ Screeningscreening, where adjacent to residential, per Section 5.5.3.A.ii, is to be installed ~~at the time of and as a part of construction~~ prior to development of any lots.

~~2.3.~~ Parking lot landscaping requirements per Section 5.5.3.C shall apply to each lot.

~~3.4.~~ Building ~~Foundation—foundation~~ Landscape—landscape Requirements per Section 5.5.3.D shall apply to each lot.

~~4.5.~~ Screening of outdoor storage, motor vehicles, off street parking, and areas used ~~to {for}for~~ vehicle repair, deliveries, unloading, loading or transport is to be ~~accomplished~~ provided per Sections 3.14, 3.15, 4.55, 4.56 and Section 5.5.

~~6.~~ See the Landscape Design Manual for additional requirements for individual lots. Interior streets of the industrialnon-residential subdivision shall be landscaped per each lot as they are built upon as follows (Note: These planting requirements are in place of those in Zoning Section 5.5.3.B except for along public rights-of-way):

a. 1 deciduous canopy or one large evergreen tree per 35 linear feet of street frontage is required. Evergreen trees shall be no closer than 20 feet from the street. At least 1 tree of these trees per 50 linear feet, shall be planted as a street tree (within 15 feet of the street).

b. 1 sub-canopy tree and 2 shrubs per 40 feet of total linear frontage along the street are required (these shrubs are in addition to the parking lot screening requirement below).

c. Massing of ornamental grasses, perennials, and/or annuals and bulbs is required for 10% of total linear footage adjacent to the street. Use of them is especially encouraged at entry points or to highlight significant design. (Also reference Section 5.9 corner clearance).

- d. The width of the access drive(s) shall be deducted from the frontage in calculating the above landscape requirements.
- e. In addition to the above, evergreen shrubs are required to provide screening of parking areas. Shrubs are to be at least 30" in height at planting, 3 feet tall at maturity and/or maintained at a minimum height of 3 feet. A minimum opacity shall be provided and maintained at 80% during winter and 90% percent during summer within 2 years of acceptance by the city. This applies to all sections of parking visible from the street(s).
- f. An undulating berm with a minimum height of 36" may be used in place of the evergreen hedge to screen the parking lot. However, if the berm is found to be lower than 36", an evergreen hedge will be required to provide the required screening. No landscape waiver ~~would be~~ required to use a berm in place of shrubs.

5.—

g-a. Individual (non-subdivision/non-site condominium) single-family requirements

- i-iv. Street trees shall be provided in front of each single-family parcel, in accordance with the standards set forth in the Landscape Design Manual Section 2.a for lots within single-family platted subdivisions.
- ii-v. The developer/builder or homeowner shall depict the street trees on the plot plan, which shall be reviewed by the City.
- iii-vi. A Street Tree Financial Guarantee will be collected at a per tree rate of \$400 ~~per street tree required~~ set by City Council prior to the issuance of a building permit, in accordance with the provisions of Chapter 26.5 of the Novi Code of Ordinances.
- iv-vii. No Final Certificate of Occupancy will be granted until the street trees have been planted by the developer/builder or homeowner and inspected and approved by the City. Once the trees have been ~~inspected~~ approved, the Financial Guarantee will be reduced to a Maintenance Bond ~~equal to 25% established in Section 26.5 of the material cost of the trees per the Community Development standard costs~~, or a minimum ~~of \$1000~~ amount set by City Council, whichever is higher. The Street Tree Financial Guarantee will not be reduced until the trees have been planted and accepted by the City.

viii. Trees shall be guaranteed by the developer/builder or homeowner for two (2) growing seasons after installation and approval. All unhealthy and dead trees shall be replaced by the developer/builder or homeowner within three (3) months following notice, ~~or the next appropriate planting period as determined by the City, whichever occurs first.~~ At the conclusion of the two-year maintenance period, the owner or builder shall request an inspection of the trees. If the trees are healthy, the Maintenance Bond will be returned to the payer. If required, the maintenance bond will be used to replace any trees not replaced by the developer/builder or homeowner.

~~v.~~

~~vi. All replacement trees shall be guaranteed by the developer/builder or homeowner for an additional two (2) years, after which time a final inspection will be conducted at the request of the developer/builder or homeowner. At that time, the Maintenance Bond will be returned to the payer. If required, the maintenance bond will be used to replace any trees not replaced by the developer/builder or homeowner.~~

4. Landscape Plan Review Standards.

The landscape plan shall be reviewed relative to:

- A. The intent of the overall design of the site and the design of the proposed landscape materials to achieve unique, attractive and significant landscaping on the site as a whole;
- B. The proper type, spacing, height, placement and location of plant materials in order to insure that the intent of this ordinance is met;
- C. The choice and selection of plant materials so as to insure that root systems will not interfere with public utilities and so that fruit and other debris, except leaves, will not constitute a nuisance within public rights-of-way or to abutting property owners;
- D. The choice and selection of plant materials so as to insure that the type of plantings selected will be of a type that will survive and thrive in the area in which they are to be located;
- E. The proper relationship between deciduous and evergreen plant materials exists so as to assure that the desired obscuring effect will be accomplished; and
- F. All requirements of this Section and of the Landscape Design Manual.

5. Installation Specifications.

- A. **Approved Planting Plan.** Wherever in this Ordinance landscape plantings are required or permitted, they shall be planted in accordance with the approved final stamped landscape plan.
- B. **Time of Planting.** All plant materials shall be installed between March 15 and November 15. All installed landscapes including plant materials, mulch, staking, irrigation, and sodding, must be installed and inspected by the City prior to issuance of a Temporary Certificate of Occupancy. At that time, a financial guarantee ~~of 1.2 as set in Section 26.5 times the cost to cover of~~ any deficiencies will be held until inspection occurs for a Final Certificate of Occupancy. In order to receive a Final Certificate of Occupancy, the deficiencies must be addressed within 30 days during the March 15 to November 15 planting season. Under extraordinary circumstances related to the inability to plant during the approved installation period, a financial guarantee ~~as set in Section 26.5 to cover of one 1.2 times the cost of~~ any deficiencies will be held until the inspection for a Final Certificate of Occupancy. If the deficiencies are not addressed in the time period outlined above, the City will cash in the amount being held for the outstanding items and remedy those items. **Note:** For street trees, ~~the a separate~~ financial guarantee is ~~100% of the \$400 per tree set in Section 26.5.~~
- C. **Inspections.** A City representative will perform landscape inspections following a request from the developer. The inspection time period is from April 15 to November 15 (actual inspection scheduling depends on plants being in condition to inspect early in the spring or late in fall). If an inspection is requested between November 16 and April 15, a financial guarantee is to be provided based on ~~1.2 times the~~ amount set in Section 26.5 for the material cost of incomplete items for a Temporary Certificate of Occupancy as outlined above. Beginning April 15, the Applicant then has 30 days to complete items or the City will cash in the amount being held and finish the job with the financial guarantee funds.
- D. **Establishment Period.** The establishment period for the plant material guarantee will begin at the Final Certificate of Occupancy inspection approval and continue to 2 years from that date. All plantings shall be properly planted and be in a healthy, growing condition at commencement of the establishment period. At the end of the establishment period, any plantings which are 20% dead or disfigured ~~(or more)~~ shall be replaced before a final maintenance period inspection is requested. At that time, all plantings shall be brought up to the condition of the approved landscaping by the developer. If they are not, the City will cash in the amount being held as a maintenance bond for the landscaping and remedy those items. -
- E. **Notice of Installation/Minor changes**
- i. The owner or developer must notify the City of the installation schedule. The City may reject any material which is defective or in generally poor condition.

- ~~ii. Minor changes regarding plant materials per the approved and stamped landscape plan may be altered upon written notification to, and written sign-off by, the City Landscape Architect of species, size, change, and location. The proposed changes must be in the form of a marked-up or revised approved landscape plan. If only limited areas are impacted, the entire plan does not need to be submitted.~~
- iii.ji. Minor changes due to ~~seasonal planting problems, and~~ lack of plant availability or minor placement changes due to conditions discovered during construction may be approved in writing by the City Landscape Architect when there is no reduction in the quality of plant materials, no significant change in size or location of plant material, the new plant material is compatible with the area and is the same general type (deciduous/evergreen), exhibiting same design characteristics (mature height, crown), as the material being replaced. If the applicant purchases and/or installs unapproved material, they do so at the risk that they may need to be removed if the change is not approved.
- iv.iii. If these criteria are not fulfilled or changes from the approved plan are significant in terms of number of plantings changed or in planting layout, such that the provided plan is not predominately representative of the actual installed plantings, a revised or as-built plan ~~and an additional review fee~~ will be required. An additional review fee or approval by the Planning Commission may also be required, depending on the extent of revisions. An additional inspection fee shall be charged for any landscaping inspection required beyond two.

6. Maintenance

A. Maintenance shall be carried out on an ongoing basis.

1. Maintenance of required plantings by the owner shall be carried out so as to present a healthy, neat and orderly appearance, free from dead plants, weeds, refuse, and debris.
2. It shall be unlawful to intentionally abuse or injure any tree on public or private property.
- A-3. ~~Trees shall be trimmed or pruned in a natural and proportionate manner per the species/cultivar's natural appearance, in accordance with best management practices of the landscape industry. It shall be unlawful to intentionally abuse or injure any tree on public or private property.~~ If severe or aggressive trimming or pruning of a tree that was required to be planted as part of a development plan occurs such that the ordinance's intent for the trees is compromised, the property shall be considered in non-conformity with this

ordinance, and the Director of Community Development or the City's Forester may require the removal and replacement of such tree in accordance with this Chapter.

- B. To insure proper maintenance and as a condition of Final Site Plan approval, the City shall require the property owner to enter into and record with the office of the Oakland County Register of Deeds a Landscape Maintenance Agreement, or include such provisions as part of subdivision restrictions or condominium master deed, each of which shall be approved by the City Attorney. Such instrument shall identify the minimum plan of maintenance, the person or entity responsible for maintenance, and shall provide the procedure, authority and finance for City cure of breaches by the responsible entity. Such instrument shall also include provisions that:
- i. All unhealthy and dead material shall be replaced within three (3) months, or the next— appropriate planting period, whichever ~~occurs first~~ is deemed appropriate by the City;
 - ii. All landscaped areas shall be provided with a method of providing water for the landscaping during establishment and long-term survival. A permanent irrigation system or other method of providing water on a regular basis must be installed if plantings that require a consistent source of water for survival are part of the landscape;
 - iii. The use of plantings that don't require regular watering once established (xeriscaping), is encouraged. In that case, the applicant must provide a method for providing sufficient water for establishment, and a backup source of water, such as hose bibbs or a statement that water trucks or other means will be used in times of extreme drought. Locations of hose bibbs on the building must be shown on the landscape plan if they will be used.
 - iv. Tree stakes, guy wires and tree wrap are to be removed after one winter season;
 - v. Plantings shall be guaranteed for 2 growing seasons after the date of the acceptance of the installation; and
 - vi. If grass or weeds exceed the height specified in Chapter 21 of the Novi Code of Ordinances, or if shrubs are allowed to obstruct vision across any portion of parking or boulevard islands, or within corner clearance vision zones, and the responsible party is unwilling to rectify the problem, the City will abate such violations and shall assess the cost of such abatement measures in the manner proposed by the developer and approved by the City in such instrument.

~~C.~~ Phragmites and Japanese Knotweed Control

- i. If *Phragmites australis* (commonly known as Giant Reed) or Japanese Knotweed (*Fallopia japonica* or related species) ~~are~~ found on the property, all populations of it in the immediate areas of the project shall be shown on the plan. A plan for the species' removal shall be added to the site plan that includes treatment ed for removal by a licensed pesticide applicator, using MDEQ-approved means, at the time of site preparation, or the soonest appropriate time after that, and follow-up treatments shall be performed as necessary. The City's Landscape Architect shall determine the extent to which such treatment is required, given the size and condition and other factors related to the property.
 - ii. The ~~Phragmites-invasive species'~~ population(s) will be inspected by the City's Landscape Architect at the time of the landscape inspection for approval of the installed landscape. If the ~~Phragmites~~ were treated prior to such inspection, a copy of the invoice from the vendor who performed the work shall be provided to the City. If it is to be treated after the inspection, the invoice shall be sent to the City when the work is complete. A note to this effect shall be included in the plans with the other notes regarding treatment of the Phragmites and/or Knotweed on the site.
 - iii. Follow-up treatments during the 2-year maintenance period or beyond may be necessary to completely eradicate regrowth of those populations. Such treatments must be completed as necessary.
 - iv. A follow-up inspection of the status of the ~~Phragmites-invasive species'~~ removal will be done as part of the 2-year landscape maintenance inspection. If further treatment to remove ~~the Phragmites~~ either of the species is determined to be required, such removal shall be done by a licensed pesticide applicator at the appropriate time (per MDEQ recommendations). The 2-year landscape maintenance bond required by this Section will be held until proof of any required follow-up treatment in the form of an invoice for the treatments is provided to the City's Landscape Architect or other approved official.
 - v. Following the 2-year inspection, the landowner is expected to maintain the ~~property-project location~~ in a ~~Phragmites-free~~ condition free of Phragmites and/or Japanese knotweed to the extent reasonably practical.
7. **Responsibility and Certificates of Occupancy.** The owner of the property subject to the requirements of this Section shall be responsible for installing and maintaining landscaping per the approved final landscape plan as specified in this Section. Where the property is occupied by a person other than the owner, the occupant shall also be responsible for maintenance.

All landscaping work required pursuant to this Section shall be treated as a site improvement for purposes of Sections 7.7.8 and 7.7.9.

PART II. Severability. Should any section, subdivision, clause, or phrase of this Ordinance be declared by the courts to be invalid, the validity of the Ordinance as a whole, or in part, shall not be affected other than the part invalidated.

PART III. Savings Clause. The amendment of the Novi Code of Ordinances set forth in this Ordinance does not affect or impair any act done, offense committed, or right accruing, accrued, or acquired or liability, penalty, forfeiture or punishment, pending or incurred prior to the amendment of the Novi Code of Ordinances set forth in this Ordinance.

PART IV. Repealer. All other Ordinances or parts of Ordinances in conflict herewith are hereby repealed only to the extent necessary to give this Ordinance full force and effect.

PART V. Effective Date: Publication. Public hearing having been held hereon pursuant to the provisions of Section 102 of Act 110 of the Public Acts of 2006, as amended, the provisions of this Ordinance shall be published within fifteen (15) days of its adoption by publication of a brief notice in a newspaper circulated in the City of Novi stating the date of enactment and effective date, a brief statement as to its regulatory effect and that a complete copy of the Ordinance is available for public purchase, use and inspection at the office of the City Clerk during the hours of 8:00 a.m. to 5:00 p.m., local time. The provisions of this Ordinance shall become effective seven (7) days after its publication.

Robert J. Gatt, Mayor

Cortney Hanson, City Clerk

Certificate of Adoption

I hereby certify that the foregoing is a true and complete copy of the ordinance adopted at the regular meeting of the Novi City Council held on the ____ day of _____, 2020.

Cortney Hanson, City Clerk

ORDINANCE NO. 18.293

**CITY OF NOVI
OAKLAND COUNTY, MICHIGAN**

AN ORDINANCE TO AMEND THE CITY OF NOVI ZONING ORDINANCE AT THE FOLLOWING LOCATIONS: ARTICLE 5.0, "SITE STANDARDS," SECTION 5.5, "LANDSCAPE STANDARDS: OBSCURING EARTH BERMS AND WALLS, RIGHTS-OF-WAY BUFFERS, AND INTERIOR AND EXTERIOR LANDSCAPE PLANTINGS," AND MODIFICATIONS TO THE LANDSCAPE DESIGN MANUAL WHICH IS REFERENCED IN THE ZONING ORDINANCE IN ORDER TO COMPREHENSIVELY REVISE THE LANDSCAPE PLANTING AND BUFFERING REQUIREMENTS OF THE ZONING ORDINANCE, AND OTHER ITEMS AS DEEMED NECESSARY.

THE CITY OF NOVI ORDAINS:

PART I. Ordinance 14-271, the City of Novi Zoning Ordinance, as amended at Section 5.0, "Site Standards," Section 5.5, "Landscape Standards: Obscuring Earth Berms and Walls, Rights-of-Way Buffers, and Interior and Exterior Landscape Plantings," is hereby amended in its entirety to read as follows:

5.5 LANDSCAPE STANDARDS: OBSCURING EARTH BERMS AND WALLS, RIGHTS-OF-WAY BUFFERS, AND INTERIOR AND EXTERIOR LANDSCAPE PLANTINGS

1. **Intent.** The intent of this Section is to achieve landscapes with creative placement and attractive designs that:
 - emphasize the preservation of existing natural resources, the use of native plant materials, and a diversity of plant species;
 - preserve and enhance existing woodlands, wetlands and natural open areas;
 - reduce impervious surfaces, enhance storm water management and prevent soil erosion and soil depletion;
 - provide appealing yet opaque visual and audible buffering between non-compatible land uses; and
 - utilize the best ecological concepts and environmental objectives with preservation and sustainability as a priority,

in order to protect and enhance the well-being of the residents of the City of Novi.

Landscape regulation is intended to establish minimum standards for all property in the City. Property owners and occupants are encouraged to exceed these standards, to minimize paved areas and other run-off areas, and to maximize the areas devoted to attractively designed and well-maintained landscapes.

2. **Landscape Plan Required.** A landscape plan shall be submitted for:

- any new commercial or residential development
- any addition to an existing building that is equal to or greater than a 25% percent increase in the overall square footage of the building or 400 square feet, whichever is less.
- Any increase to an existing parking lot of 10 spaces or more (or equivalent area), or 10% of the existing paved area, whichever is less.

With the exception of Section 5.5.3.F, Individual (Non-Subdivision/Non-Site Condominium) Single-Family Street Tree Requirements, an owner of a single-family home-site shall not be required to comply with the provisions of this section.

All landscape plans shall be prepared in accordance with the requirements of this Ordinance and the requirements of the City of Novi "Landscape Design Manual," as adopted by the City Council by resolution and which may similarly be amended by Council resolution from time to time.

General Landscape Notes:

- For all numerical calculations, round the required square feet or number of plants to the nearest whole number
- Trees are to be located at least 10 feet away from utility structures including catch basins and manholes, and should be at least 5 feet away from underground utility lines whenever possible.
- Plantings may be in formal or informal arrangements

3. **Landscape Requirements.**

a. Residential Adjacent to Non-Residential

- i. Intent. To make provision for a visual buffer strip in each zoning and use classification when a non-residential use abuts or is adjacent to any residential zoning district.
- ii. Requirements for Obscuring Landscaped Earth Berms and Walls. In all locations where non-residential uses abut or are adjacent to any residential district (RA, R-1, R-2, R-3, R-4, RT, RM-1, RM-2, MH and any TC district where developed for residential purposes), an obscuring landscaped earth berm and

plantings, as described, shall be proposed, installed and maintained in connection with any development or use identified below. *See below.*

5.5.3.A.ii Residential Adjacent to Non-Residential Berm Requirement Chart		
Use Abutting Residential		Required Berm or Wall Height
New Multi-family residential or Mobile Home adjacent to SF residential	REMOVE THIS COLUMN	6 ft. to 8 ft. high
Parking		4 ft. 6 in. to 6 ft. high
Special Land Use (churches, schools, nursery schools, day care centers, uses where special land use approval is required)		4 ft. 6 in. to 6 ft. high
Office Service/Tech, R&D		4 ft. 6 in. to 6 ft. high
Commercial		6 ft. to 8 ft. high
EXPO, EXO district		8 ft. to 10 ft. high
Conference		8 ft. to 10 ft. high
Freeway Service		8 ft. to 10 ft. high
Town Center (Non-residential use) ¹		6 ft. high wall
Industrial (I-1 and I-2 districts)		10-15 ft. ht. berm, 6 ft. crest width, 80% winter/90% summer opacity (See Section 3.14.5.C and E)
	REMOVE THIS ROW	
	REMOVE THIS ROW	
Auto Wash, Drive-In Restaurants, Service Stations, and Planned Commercial Centers and Regional Shopping Centers		10 ft. to 15 ft. high wall or landscaped berm with 6 foot wide crest
Hospital-Ambulance and Delivery Areas		6 ft. high
Utility Buildings, Stations, and/or Substations		6 ft. high

1: Applies when residential sections of TC or TC-1 abut non-residential uses within the same development or other adjacent TC or TC-1 developments' non-residential sections.

- iii. Exceptions. Obscuring landscaped berms and walls are not required to separate identically zoned uses or where uses are separated by a street, road, highway, freeway or railroad.
- iv. Placement. The berm or wall is required to be on the property seeking approval. The berm may be placed upon the adjacent residential property in order to provide continuity with an adjoining berm. In that case, a recorded permanent easement and a maintenance agreement in a form acceptable to the City Attorney will be required from the adjacent property owner.
- v. Berm Requirements. The obscuring berm requirements are as follows:
 - a. The berm height shall be measured as follows:
 - (1) The berm height, as specified in the Residential Adjacent to Non-Residential Berm Requirement Chart (Table 5.5.3.A.ii), shall be analyzed from the following locations, and the final measurement of the berm shall be made from that location which results in the maximum screening:
 - [i] The first floor elevations of the closest adjacent principal structures;
 - [ii] The first floor elevations of the uses requiring screening;
 - [iii] The elevations of the parking lots closest to the property line when only the parking area requires screening; or
 - [iv] The elevation of the nearest property line.
 - (2) The site plan shall include the first floor elevation of the nearest principal structures of the adjacent site's property lines.

- (3) Where the applicant demonstrates, and the Planning Commission finds, that practical difficulties would result from the strict application of berm height standards, as required herein, the Planning Commission may reduce the height of the berm, or eliminate the berm, and may approve an alternate plan which includes landscape treatment or a wall (subject to Section 5.5.3.A.vi below), or a combination of the two, provided that the approved alternate plan achieves adequate noise attenuation and obscuring screening. The Planning Commission may also reduce the height of the berm, or eliminate the berm, where it determines that an alternative design utilizing landscaping or other materials, including a wall subject to Section 5.5.3.A.vi below, provides adequate and effective noise attenuation and screening, or where such alternative design provides a substantial aesthetic or site design benefit while still providing for noise attenuation and screening to the extent reasonably practicable. The intent of this section is not to encourage and allow elimination or reduction of berm height for the sake of convenience or cost savings, but rather to allow reasonable development while achieving design excellence not otherwise possible under these requirements.
- b. The berm shall be natural in appearance and have overlapping and undulating changes in elevation, both horizontally and vertically, without compromising the minimum height requirement and/or intent of the berm. Where a range of height is stated on the Chart for a use, and the approving body determines berm height based upon the criteria specified in sub-paragraph v.(a), above, the height of the undulations on the berm shall be determined by the approving body as part of site plan approval, taking into consideration the location of improvements and activities to be screened, and the criteria in sub-paragraph v.(a), above.
 - c. The obscuring berm shall have no greater than a maximum slope of 33 percent. (3 feet of horizontal plane for each 1 foot of vertical height.) More gradual slopes are strongly encouraged.
 - d. Plants shall be specified for any "no mow" areas.
 - e. The crest of the obscuring berm shall have a nearly flat horizontal area of at least five (5) feet in width, unless otherwise specified in the previous Berm Requirement Chart.
 - f. The required earth berm shall be located at the lot line, except where such location would interfere with underground utilities or drainage.

the purpose of terracing, with the provision that they meet commonly accepted practices for construction and reinforcement as required.

vii. Waiver of Landscaped Berm or Wall for Preservation of Wooded Area.

The Planning Commission may waive the requirement for an earth berm or obscuring wall adjacent to a residential use district when the proposed development includes the retention of an existing regulated or non-regulated wooded area adjacent to the residential district, or when an existing regulated or non-regulated wooded area is preserved on the adjacent residential property. In either case, the owners of all such area(s), including the owners of the adjacent residential property, shall provide a permanent preservation easement, including requirements for perpetual maintenance and replacement of woodland features, in recordable form acceptable to the City Attorney for such wooded area, and provided all the following conditions are met:

- a. The retained wooded area will provide effective screening consistent with the opacity for visual screening requirements of this Ordinance and intent of this Section.
- b. The retained wooded area shall be of a depth and height equal to or greater than the screening requirement being waived.
- c. The failure to retain the wooded area will have a negative impact on the preservation of woodlands within the City of Novi.
- d. The retained wooded area has been inspected and evaluated by the City relative to the health and desirability of the existing plant material.
- e. The Planning Commission may require, during construction phases, as a condition to the waiver, additional and/or modified plantings and/or the erection of a temporary chain link fence within or adjacent to the preserved wooded area to meet the opacity requirements and/or other objectives of this Section, and, in the event all or part of the retained wooded area is removed, destroyed, diminished, or altered in any manner such that it no longer provides the screening required under this Section, the berm or wall shall be installed at the applicant's (or its successor's) expense or additional screening material may be required by the City to be installed and maintained at the applicant's (or its successor's) expense in order to achieve the screening objective under this Section.

b. Adjacent to Public Rights-of-Way

- i. Intent. The intent of the landscape planting buffer requirements along public rights-of-way is to improve the appearance of the rights-of-way including

screening off-street parking and vehicular use areas of property abutting public rights-of-way.

- ii. Requirements. Landscape plantings shall be installed and maintained adjacent to existing or proposed public rights-of-way according to the standards set forth on the Right-of-Way Landscape Screening Requirements Chart (Table 5.5.3.B.ii.F), and as otherwise established in this ordinance, including the individual zoning district, and in the Landscape Design Manual.
 1. There shall be provided adjacent to the abutting right-of-way or private road a landscape area of sufficient width to accommodate a required berm as indicated in the Right-of-Way Landscape Screening Requirements Chart, except in those use districts or development options that require a greater greenbelt, or except as otherwise provided in the TC and TC-1 districts.
 2. Berms shall comply with Section 5.5.3.A.v. in terms of construction requirements, with specific requirements as called out in Table 5.5.3.B.ii.f.
 3. Hedges planted to screen parking areas shall be planted to achieve a minimum opacity of 90 percent during the summer and 80 percent during the winter and provide a continuous visual obstruction height of at least 36 inches.
 4. All landscape areas between the right-of-way and parking areas that front on the required right-of-way greenbelt shall have a berm meeting the height and crest width requirements of the zoning district as specified in Table 5.5.3.B.ii.f, and shall have a maximum slope of 33%.
 5. A landscape area shall be planted to provide visual interest and yet allow views into the site. Particular care should be taken in the arrangement of greenbelt plantings to provide a view of the main entrance street address for emergency vehicles from a 20-40 degree angle as you drive toward the building along the primary road frontage.
 6. Greenbelts in a Commercial (B-1, B-2 or B-3) district with parking located between the principal building and right-of-way may be planted at a reduced rate, per the greenbelt landscape requirements called for in Table 5.5.3.B.ii.f.
 7. If a wall is provided in accordance with the city standard, a reduction of up to 33 percent of the required greenbelt plantings is allowed in the right-of-way greenbelt in front of the parking. This reduction does not

apply in cases where parking is between the right-of-way and the building and required landscaping is already reduced.

8. For a residential development abutting one or more major thoroughfare(s), landscape buffers shall be installed and maintained along the entire property line abutting the right-of-way in a non-access greenbelt. In a single-family site development, the required landscape buffer shall not be part of a residential unit or lot.
9. Necessary access ways from public rights-of-way through required landscaped areas shall be permitted. The width of the access drive(s) shall be subtracted from the lineal dimension used to determine the minimum number of trees and shrubs required for greenbelt landscaping and street trees (see illustration in Table 5.5.3.B.ii.f, Footnote 10 below for points of measurement for each).

5.5.3.B.ii.f Right-of-Way Landscape Screening Requirements									
			Requirements						
Use	Zoning	Berm Located	Greenbelt width (feet)	Min berm crest width (feet)	Min. Berm Height (feet)	3 Foot Wall/ Fence	Deciduous canopy or large evergreen trees: 1 per X linear feet frontage	Deciduous Sub-canopy Trees: 1 per X linear feet frontage	In area between sidewalk and curb: 1 deciduous canopy deciduous tree per X linear feet frontage
Footnotes				1,2,3	1,2,3	2,4	5,7	5,6,7	8,9,10
Single Family Residential	R-A R-1 R-2 R-3 R-4		34	4	4		40	25	35
Two-Family Residential	RT	Adjacent to parking	20	2	3		35	25	35
		Not adjacent to parking	30	2	3		40	25	35
Multi - Family Residential	RM-1 RM-2 MH	Adjacent to parking	20	2	3		35	25	35
		Not adjacent to parking	34	2	3		35	25	35
Residential PRO (13)			Avg 50, Min 34	4	4		40	25	35

5.5.3.B.ii.f Right-of-Way Landscape Screening Requirements (continued)

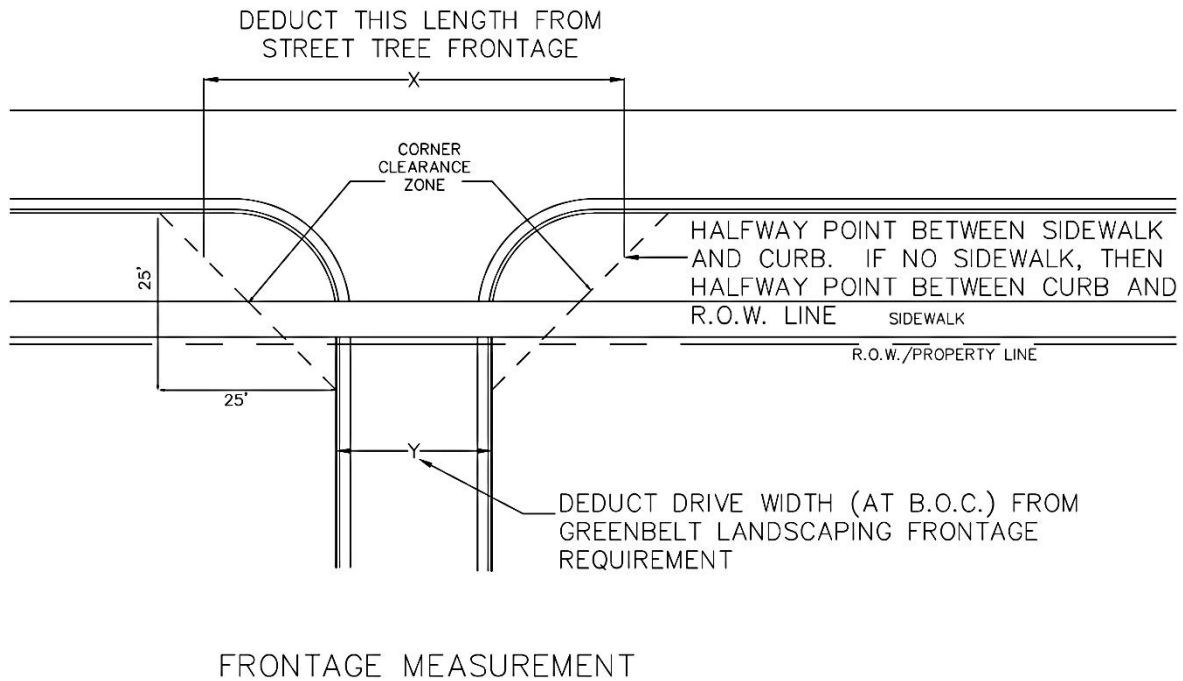
			Requirements						
Use	Zoning	Berm Located	Greenbelt width (feet)	Min berm crest width (feet)	Min. Berm Height (feet)	3 Foot Wall/ Fence	Deciduous canopy or large evergreen trees: 1 per X linear feet frontage	Deciduous Sub-canopy Trees: 1 per X linear feet frontage	In area between sidewalk and curb: 1 deciduous canopy deciduous tree per X linear feet frontage
Footnotes				1,2,3	1,2,3	2,4	5,7	5,6,7	8,9,10
Commercial /Office	NCC C OS-1 OSC OST B-1 B-2 B-3	Adjacent to Parking	20	2	3		35	20	35
		Not adjacent to parking	25	—	—		60	40	35
		Parking between ROW and at least 67% of primary building (12)	20	2	3		70	40 Plus 3 shrubs per 40 lf	35
Industrial	I-1 I-2	Adjacent to Parking	25	3	3		40	35	45
		Not adjacent to parking	25	—	—		60	40	45
Downtown	TC TC-1	Adjacent to Parking	20	—	—	4	25 (11)	15 (11)	—
		Not adjacent to parking	—	—	—	4	30 (11)	20 (11)	—
Misc. Large Use	P-1 Expo EXO RC FS	Adjacent to Parking	20	2	3		35	20	45
		Not adjacent to parking	25	—	—		45	30	45

Planned Suburban Low Rise	PSLR	Parking and buildings adjacent to a section line road right-of-way	50	4	3	Not allowed	35	20	35
		Parking adjacent to other right-of-ways	To Front of principal building per Zoning Ordinance Section 3.21.2.A.ii	4	3	Not allowed	35	20	35

FOOTNOTES:

- (1) Shrubs in front of parking areas must provide minimum screening opacity of 80% in winter and 90% in summer and be maintained at a height of at least 3 feet. The use of shrubs in place of the required berm requires a Planning Commission Waiver.
- (2) A wall may be used instead of a berm. If a wall, consistent with footnote (6) below, is provided in front of parking areas, a reduction of up to 33% of the required greenbelt plantings (not street trees) is allowed in the parking greenbelt area. A Planning Commission Waiver is required to use a wall instead of a berm.
- (3) An ornamental fence with brick piers and shrubs may be used instead of a berm if approved by the Planning Commission as a landscape waiver.
- (4) Freestanding walls shall be constructed of masonry or concrete with all exterior sides of face brick with a suitable cap.
- (5) Sub-canopy trees are to be used under overhead utilities at a rate of 1.5 sub-canopy trees for each one canopy tree required. If columnar/fastigate varieties are used, 2 sub-canopy trees per canopy tree must be used. Wherever possible, deciduous canopy trees are to be used as street trees.
- (6) Sub-canopy trees used in foundation landscaping may also count toward the right-of-way sub-canopy requirement if the building is located at the rear of the required greenbelt width.
- (7) The width of access aisles through the greenbelt shall be deducted from the basis of calculation (see illustration in footnote #10 below).
- (8) In situations where sidewalks are not required, the street trees shall be placed midway between the curb line and right-of-way line where possible.
- (9) Street trees shall not be permitted within the 25-foot corner clearance zone (Section 5.9). Roads with Road Commission for Oakland County (RCOC) jurisdiction shall utilize RCOC standards for sight distance in locating street trees. If RCOC does not approve any or all of the trees, those trees shall not be planted, with no penalty to the applicant.
- (10) The width(s) of the corner clearance zone(s) shall be deducted from the basis of the calculation for street trees (see illustration below).

Figure 5.5.3.B.ii.Footnote 10



- (11) In the Town Center districts, deciduous canopy/large evergreen trees or subcanopy trees are required in the greenbelt, but not both. One or the other requirement shall be met, not a reduced combination of both types.
 - (12) These requirements only pertain to zoning districts B-1, B-2 and B-3.
 - (13) When the development fronts on one or more major thoroughfare(s), the right-of-way greenbelt along that thoroughfare shall be an average of 50 feet width, with a minimum of 34 feet.
- iii. Private Roads. All private roads and access roads not covered in other sections of this ordinance shall be landscaped with deciduous canopy street trees at a rate of 1 tree per 35 linear feet along both sides of the road, with the same allowances for deducting clear vision zones as noted above in 5.5.3.B.ii Footnote 10.
 - iv. Reduction or Waiver. Except as provided in Section 5.5.3.A.v.a.(3), which governs relief relative to berm height, the Planning Commission may reduce or waive the landscaping screening/buffer right-of-way requirements when it determines that practical difficulties exist due to the parcel size or configuration, or where the design of the site would be enhanced by an alternative design solution while still meeting the intent of this Section. Examples of such situations include, but are not limited to, when:

- a. Preservation of Regulated Woodlands or Wetlands or existing trees will occur;
- b. The grade of the site is higher than the road and naturally provides a screen;
- c. Significant architecture or historic buildings, water features, views of natural resources or vistas will be preserved;

The Commission may, as part of its exercise of such authority, allow the:

- a. Use of a wall instead of a berm; or
- b. Use of a wrought iron decorative fence with brick accents or other material of equal aesthetic quality and durability with plantings instead of a berm; or
- c. Use of shrubs/hedge instead of a berm.

c. Parking Area Landscaping Requirements

- i. Intent. The intent of this subsection is to:
 - require curbed landscape islands within parking areas, thereby reducing solid expanses of impervious surfaces
 - decrease runoff
 - shade parking areas, and
 - create aesthetically pleasing and environmentally-enhanced parking areas.
- ii. General Requirements.
 - a. The design and layout of all parking lots and islands shall be subject to review and approval by the City of Novi.
 - b. Islands are to conform to the general requirements in Section 5.3.12.
 - c. Creative island configuration and design is encouraged, such as islands between rows of parking in long, wide planting strips, and/or depressed islands to detain storm water.
 - d. The use of pedestrian walkways in parking lot islands is encouraged, if the islands' paths are at least 5 feet wide with no vehicle overhang or 7

feet wide with vehicle overhang and a 10-foot planting area width is maintained.

- e. Landscaped islands are to be installed with 6 inch curbs to protect landscaping from damage by vehicles (4 inches where vehicles are to overhang the curb). However, periodic openings in curbs, which do not exceed 2 feet in width, shall be permitted for sidewalks and for the purpose of conveying storm water run-off across an island.
- f. If more than 1 island is provided in a parking lot, they are to be distributed evenly throughout the lot.
- g. Each parking lot landscape island shall have:
 - (1) A minimum of 200 square feet in area.
 - (2) A minimum of 200 square feet in unpaved area per tree planted in an island.
 - (3) A minimum dimension of 10 feet in width from back of curb to back of curb.
 - (4) A minimum of 3 feet between the back of a curb and a tree trunk.
 - (5) Islands that project into the parking lot from the side of the lot may be a minimum of 130 square feet in area if that island is at least 10 feet wide and adjoins 70 square feet or more of green space.
- h. For any development other than a single -family or two-family dwelling, the square footage of landscape islands required shall be as specified in the Interior Parking Area Landscape Islands and Canopy Tree Chart (Table 5.5.3.C.iii).
- i. Wheel stops or raised curbing shall be installed to prevent vehicles from encroaching more than 2 feet into any parking landscape area. When adjacent 90 degree parking stalls are reduced from 19 to 17 feet in length, the required 6 inch curbs shall be reduced to 4 inches in height. This applies to both landscape and sidewalk overhangs. Where vehicles overhang a sidewalk, the sidewalk shall have a minimum width of 7 feet.
- j. No plantings with a mature height greater than 12 inches shall be within 10 feet of fire hydrants. Plant materials shall not block the visibility of the hydrant or Fire Department Connections.

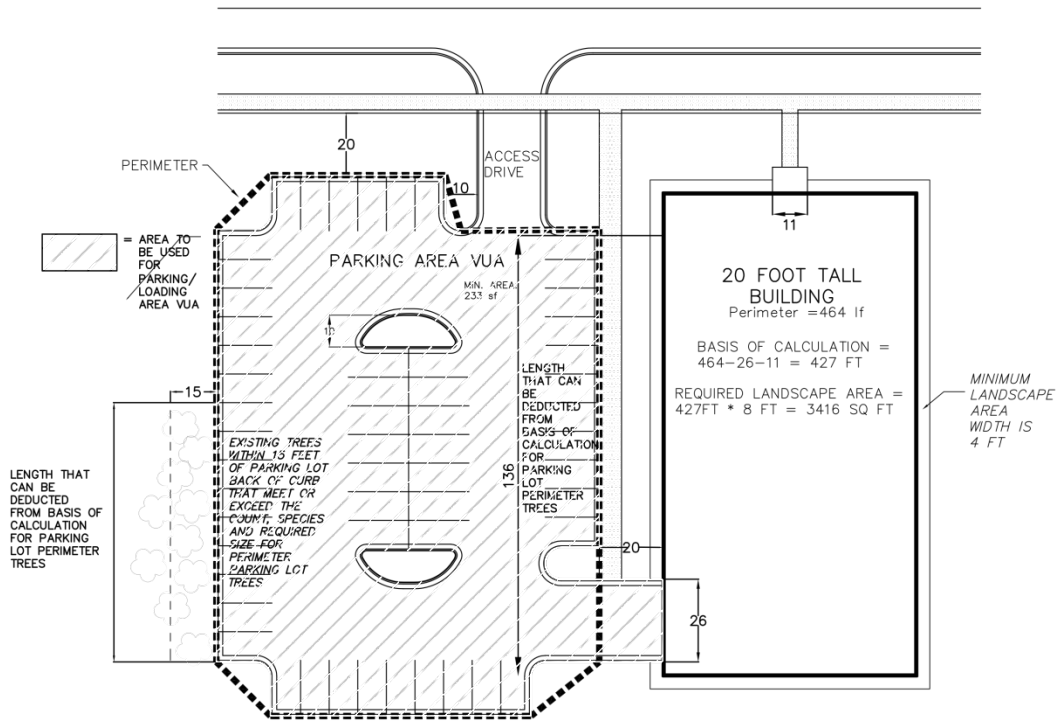
- k. Islands are to have adequate drainage to the nearest catch basin or adequate areas of amended sandy loam soil, as specified on the plan, to achieve proper drainage. Depressed (sunken) islands are allowed if:
 - (1) the plantings are salt-tolerant
 - (2) the islands are designed to provide drainage adequate for survival of the island plantings
 - (3) they meet all City of Novi engineering standards.
- l. Paint, contrasting brick or concrete pavers may be used to delineate stall lines within parking areas.
- m. Any area within a parking lot not dedicated to parking use, driveways, or sidewalks exceeding 100 square feet, shall be landscaped with a minimum of lawn or other living ground cover.
- n. All parking lot landscaped areas required herein shall contain at least 1 deciduous canopy tree and lawn or other plantings/groundcovers.
- o. The total square footage of required interior landscape islands shall be provided as follows:
 - (1) The required square footage shall be provided only within islands that are surrounded by paved parking areas or that project into the parking lot from the perimeter of the parking area, including corner islands, if they meet the requirements of this Section.
 - (2) Within the interior of the parking lot, islands shall be distributed evenly across the paved area.
 - (3) Areas abutting but not within the interior of the parking area shall not be considered as interior landscape area.
 - (4) No bay of parking (defined herein as a single row of side by side parking spaces) greater than 15 parking spaces in length shall be provided except as noted in (5).
 - (5) If the use is primarily vehicular storage (ie automobile dealer vehicle inventory areas, vehicle stockpile areas, semi-trailer storage areas), bays of 25 spaces will be allowed but the required interior landscape area per Table 5.5.3.C.iii must be provided.
 - (6) In order to count toward the total landscape area requirement, an island must contain at least 1 deciduous canopy tree and have the minimum area required of 5.5.3.C.ii.g.

(7) If the parking lot layout requires more islands/area than the table below would indicate (such as to break up long bays), each of those additional islands must still meet the area and planting requirements of 5.5.3.C.ii.g. but perimeter trees may be used in outer and corner islands to help landscape those islands.

iii. Parking Lot Greenspace and Tree Requirements. The following chart is to be used to calculate the square footage of island space and the number of canopy trees required for Parking Area Interior and Perimeter Landscaping.

5.5.3.C.iii Interior Parking Area Landscape Islands and Perimeter Canopy Tree Chart					
	A	B	C	D	E
<u>Category*</u> Category 1: All zoning districts except for I-1 and I-2 Category 2: I-1, I-2	Total square footage of landscaped islands for VUA areas less than or equal to 50,000 square feet equals:	Total square footage of landscaped islands for VUA beyond the initial 50,000 sf (A) equals:	Total square footage required in interior parking lot islands equals:	Total number of interior landscape deciduous canopy trees:	Perimeter Deciduous Canopy Trees required for parking lot and access drives:
1	$VUA \times 7.5\%$	$(VUA-50000) \times$	A+B	$(A+B)/200$	Perimeter (LF) / 35
2	$VUA \times 6\%$	$(VUA-50000) \times$	A+B	$(A+B)/200$	Perimeter (LF) / 35
Footnotes	1,2	1,2		3,5	4,5
<p>(1) Vehicular Use Area (VUA) includes parking spaces, loading/unloading areas and access aisles within the parking lot. It does not include drives to the Vehicular Use Area or long drives without parking spaces adjacent. (See Figure 5.5.3.C.iii (2))</p> <p>(2) If a vehicular use area is greater than 50,000 sf, the landscape requirement for the first 50,000 sf of VUA is to be calculated per Column A, and the requirement for the remaining VUA is to be calculated per Column B. As an example, a 65,000 square foot parking area in Category 1 would require $50,000 \times 7.5\%$ plus $15,000 \times 1\% = 3750sf + 150 sf = 3900 sf$ landscape area within the parking lot boundary.</p> <p>(3) Corner islands projecting into the parking area and areas at the end of bays must also have trees planted in them and be at least 200sf in area. Perimeter trees may be used in corner and edge islands if the required number of interior trees is less than the total number of islands and corners that need trees.</p> <p>(4) Perimeter trees are required for parking area and access drives to and between parking areas.</p> <p>(5) In areas with overhead utility lines, sub-canopy trees may be used.</p>					

Figure 5.5.3.C.iii (2)



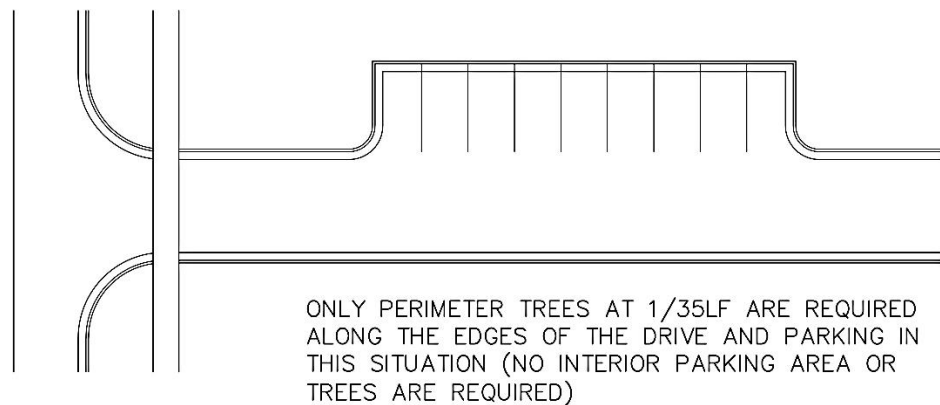
i. Parking lot perimeter trees

- a. Deciduous canopy trees are required for the outer edge of parking areas and both sides of access drives to parking areas at a rate of 1 tree per 35 lf of perimeter. See illustration below for determination of perimeter length and what constitutes an access drive.
- b. A landscape area at least 10 feet wide (measured perpendicular to the curb) is required along parking lot perimeters and access drives for planting the required trees.
- c. Existing canopy trees within 15 feet of the parking lot perimeter (as measured to the tree trunk) may be counted as perimeter trees. Dense concentrations of existing trees may not be used to meet requirements for other areas of the parking lot.
- d. If the front edge of a parking lot is at the rear edge of the greenbelt, canopy trees in the greenbelt within 15 feet of the parking lot's back of curb (as measured to the trunk), existing or proposed, may also be counted toward the perimeter requirement.
- e. In the case of a project in a Business district (B-1, B-2 or B-3) where parking is between the right-of-way and at least 67% of the primary building, only 1 perimeter tree per 70 lf is required along the front

parking lot edge and greenbelt tree canopy trees within 15 feet of the parking lot curb may also be counted toward the perimeter requirement.

- f. Greenbelt canopy trees within 15 feet of the back of curb of an access drive may double-count toward the access drive perimeter tree requirement.
- g. If a parking lot edge is within 20 feet of a building that frontage does not have to have perimeter trees but sub-canopy trees should be included in building foundation landscaping along that frontage where possible.
- h. While deciduous canopy trees are preferred as perimeter trees, where they would provide desired screening between properties, large evergreen trees may be used for up to 25% of the required perimeter trees. Sufficient space should be provided between the tree and the curb to allow the evergreens to maintain their branches down to ground level when they mature and the lower branches must be maintained as long as they are healthy.
- i. If a parking bay abuts a drive but no other parking, only perimeter trees along the drive and parking are required (no interior parking). See illustration below:

Figure 5.5.3.C.i



- j. Perimeter canopy trees are also required along access drives with no parking such as, but not limited to, along a building or between parking areas at a rate of 1 tree per 35lf on both sides of the road unless buildings or natural features make such plantings not feasible or undesirable.
- ii. Waiver. Based upon a sufficiently documented demonstration by the applicant, the Planning Commission may reduce or waive the parking lot landscape requirements when it determines that practical difficulties exist due to parcel

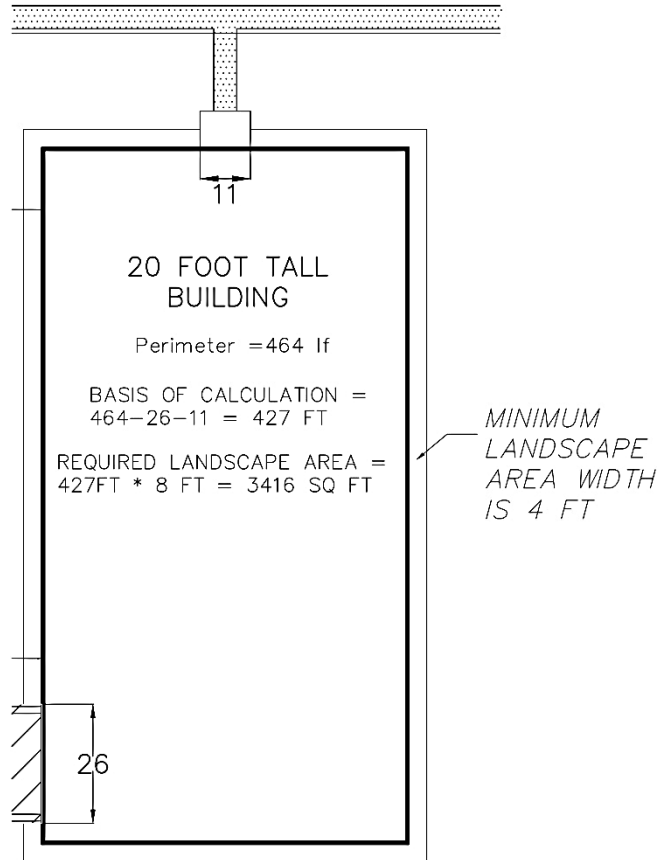
shape or configuration or where the design of the site would be enhanced by an alternative design solution while still meeting the intent of this Section. Such action by the Commission may be taken when any or all of the following conditions will be met:

- a. Preservation of Regulated Woodlands or Wetlands or existing trees will occur;
- b. Storm water runoff impacts will be lessened;
- c. Traffic circulation will be substantially improved;
- d. Vehicular and pedestrian safety will be enhanced.

d. Building Foundation Landscape Requirements

- i. Intent. The intent of this subsection is to provide living landscape space around buildings in order to help integrate them into the surrounding landscape and to improve the aesthetic appearance of the site.
- ii. Requirements. For all buildings or accessory buildings requiring site plan review, the following shall apply:
 - a. There shall be, as a minimum, interior site landscaping square footage equal to the quantity calculated by multiplying the entire perimeter of the building, less the paved access points including walkways to the building (but not including those walkways or drives immediately along the building) and vehicular entrance ways to the building interior (i.e. garage doors) by eight feet. See the diagram below.
 - b. Landscaped planting beds shall be placed immediately adjacent to the building for as much of the building as possible, with a minimum of 75% of the building foundation having landscaping. Landscape beds must have a minimum width measuring four feet from the building. Creativity of the physical configuration of the landscape planting bed shape and dimension is strongly encouraged. Applicant is encouraged to provide additional greenspace adjacent to the building wherever possible.

Figure 5.5.3.D.



- c. All foundation landscaping areas shall be labeled in square feet on the landscape plan. Lawn areas shall not be considered as part of the required greenspace.
- d. For the front and any other facades visible from a public street, a minimum of 60% of the exterior building perimeter shall be greenspace planted with a mix of trees, shrubs and groundcovers, perennials, grasses, annuals and bulbs. Deciduous canopy and/or large evergreen trees and sub-canopy trees may also be included around the building if separated from the building by the appropriate distances.
- e. If the front and/or a side of the building is at the rear line of the required right-of-way greenbelt, trees included in the foundation plantings of those sides of the building may also count toward the required greenbelt plantings.
- f. With respect to projects within the TC and TC-1 districts, the Planning Commission may waive the 8-foot width calculation requirements if equivalent additional planting and/or decorative paving area or amenities are added adjacent to the building.

- g. There shall be landscaping adjacent to patios/outdoor dining areas.
 - h. In instances where the building has a first floor overhang greater than 2 feet, the landscaping required under this subsection shall begin at the outside edge of the overhang in order to ensure the landscaping receives sufficient sun and water. In those cases, the extent of the overhang should be shown on the landscape plan with a dashed line or other means.
 - i. Foundation landscaping for building perimeter occupied by loading/unloading areas, drive-through lanes or sidewalks along the building may be located on the outside of these areas without requiring a landscape waiver.
 - j. In situations where the building use does not allow landscaping immediately adjacent to the building, alternate placements of required foundation landscaping may be proposed elsewhere on the property. In that case, the alternative area(s) should be clearly labeled as foundation landscaping, with its area in square feet. A Planning Commission waiver is required for the alternate positioning for all cases except as noted above (i).
 - k. Plantings shall be no taller than 12 inches when below or adjacent to a building's Fire Department Connection.
- iii. Waiver Procedure. The Planning Commission may reduce or waive the building foundation landscaping requirements when it determines that the applicant has established that practical difficulties exist due to parcel size or configuration or where the design of the site would be enhanced by an alternative design solution while still meeting the intent of this Section. Such action will be taken by the Planning Commission when:
- a. Particular pedestrian circulation safety concerns inhibit the application of this requirement; or
 - b. Elements or activities that are ancillary to the primary building's function inhibit the application of this requirement; or
 - c. Landscaping has been proposed in other areas on the site that offset the loss of foundation landscaping at the base of the building.

e. Detention/Retention/Sedimentation Basin Landscape Requirements.

All detention basins shall be planted with the minimum requirements as set forth in the Landscape Design Manual and shall be designed to have a natural appearance, utilizing natural looking contours whenever possible. Detention basin maintenance shall be provided per Ordinance Chapter 12, Storm Water Management and the plantings shall be maintained per Section 5.5.6 and Section 5.5.7.

f. Subdivision Planting Requirements

i. Single-Family Platted Subdivisions or Residential Site Condominiums

a. Intent. The intent of this subsection is to create visually appealing single-family residential areas that integrate existing natural resources into the overall landscape design.

b. Requirements Adjacent to Major Thoroughfares.

(1) That portion of the site abutting major thoroughfare(s) shall include screening plantings and a raised berm per Section 5.5.3.B, contained in a non-access greenbelt easement, labeled as such on the plans, and having a minimum width of 40 feet.

(2) Said non-access greenbelt easement shall be part of the development's open space, not part of a lot or residential unit.

(3) The screening plantings shall be installed at the time of construction of the subdivision, not individual lots.

c. Street Trees and Boulevard Planting

(1) Street trees shall be provided in the right(s)-of-way or private access easement for private roads of each lot in accordance with the standards set forth in the Landscape Design Manual, Part I, Section 2.

(2) The developer shall submit a landscape plan for all of the street trees to be provided within the development, which shall be reviewed by the City.

(3) A Street Tree Financial Guarantee will be collected at a per tree rate as set by City Council prior to the Full Pre-Construction meeting, per Ordinance Chapter 26.5 – Financial Guarantees. There will be no issuance of any Temporary or Final Certificate of Occupancy in the development until this financial guarantee and the Street Tree Maintenance Fee have been paid. No Final

Certificate of Occupancy will be granted until the trees have been planted by the developer and inspected and accepted by the City.

- (4) Trees shall be guaranteed by the developer for two (2) growing seasons after installation and approval by the City. All unhealthy and dead plant material shall be replaced by the developer within three (3) months following notice, or early in the next appropriate planting period as determined by the City.

ii. Single-Family Residential Condominiums without lots/units

a. Intent. The intent of this subsection is to create visually appealing single-family residential areas that integrate existing natural resources into the overall landscape design.

b. Requirements Adjacent to Major Thoroughfares.

- (1) That portion of the site abutting major thoroughfare(s) shall include screening plantings and a raised berm per Section 5.5.3.B, contained in a non-access greenbelt easement, labeled as such on the plans, and having a minimum width of 40 feet.
- (2) The screening plantings shall be installed at the time of construction of the subdivision.

c. Street Trees and Boulevard Planting

- (1) Street trees shall be provided in the right(s)-of-way or private access easement for private roads of each residence at the rate of 1 deciduous canopy tree per dwelling unit.
- (2) The developer shall submit a landscape plan for all of the street trees to be provided within the development, which shall be reviewed by the City.
- (3) A Street Tree Financial Guarantee will be collected at a per tree rate as set by City Council prior to the Full Pre-Construction meeting, per Ordinance Chapter 26.5 – Financial Guarantees. There will be no issuance of any Temporary or Final Certificate of Occupancy in the development until this financial guarantee and the Street Tree Maintenance Fee have been paid. No Final Certificate of Occupancy will be granted until the trees have been planted by the developer and inspected and accepted by the City.

Trees shall be guaranteed by the developer for two (2) growing seasons after installation and approval by the City. All unhealthy

and dead plant material shall be replaced by the developer within three (3) months following notice, or early in the next appropriate planting period as determined by the City.

d. Island and Boulevard Planting

- (1) All islands, boulevards and easements shall be landscaped and irrigated. Islands within a cul-de-sac shall not have any plant materials that may obscure vision across the island between heights of 3 feet to 6 feet as measured from the established street grade. See the Landscape Design Manual for additional requirements regarding the type and size of plantings.
- (2) Island and boulevard plantings will not count toward the required street tree totals and must be maintained by the developer, property owner or homeowner's association, whichever is applicable.
- (3) If an island's or entry's landscaping is to be revised by the homeowner's association, a landscape plan shall be submitted to the City for administrative approval prior to planting.

iii. Multi-Family/Attached Dwelling Units

- a. Intent. The intent of this subsection is to create visually appealing multi-family residential areas that integrate natural resources into the overall landscape design.
- b. Requirements. For all multiple-family or other development with attached dwelling units (other than a single RT dwelling on an individual lot) the following shall apply:
 - (1) Three trees for each dwelling unit on the first floor shall be provided across the site. At least 75% of those trees shall be deciduous canopy or large evergreen trees. The remainder can be sub-canopy or ornamental trees to add diversity to the site.
 - (2) In addition, there shall be one deciduous canopy tree along interior roads for every 35 feet of lineal interior roadway (excluding driveways, interior roads adjacent to public rights-of-way and parking entry drives), along each side of the roadway. The spacing of the deciduous canopy trees along the drive shall be a minimum of 25 feet and a maximum of 35 feet unless driveways require different spacing. In case of overhead utility

lines, deciduous sub-canopy trees can be substituted for deciduous canopy trees at a rate of 1.5 sub-canopy tree for each 1 canopy tree. Those sub-canopy trees would not count toward the limit placed in subsection (1) above.

For purposes of the Financial Guarantee and Maintenance Bond, the trees along the interior drive can be counted as site landscaping, not street trees. Any street trees along public roads are considered to be street trees for Financial Guarantee and Maintenance Bond purposes.

- (3) A mixture of shrubs, sub-canopy trees, groundcovers, perennials, annuals, and/or ornamental grasses shall be provided as foundation plantings covering at least 35% percent of the building perimeter facing the interior drive.
- (4) Parking lots for these developments shall meet the layout and landscaping requirements of 5.5.3.C but unit trees from Requirements section (1) may be used to meet the parking lot interior and perimeter tree requirements.

iii. Non-Residential Subdivisions

- a. Intent. The intent of this subsection is to create visually appealing non-residential areas that integrate existing natural resources into the overall landscape design.
- b. Requirements. For all non-residential subdivisions or non-residential site condominiums, the following landscape requirements shall apply:
 1. Areas abutting the public rights-of-way of major roadways shall be landscaped according to Section 5.5.3.B.ii and provided prior to lot development.
 2. Required landscape screening, where adjacent to residential, per Section 5.5.3.A.ii, is to be installed prior to development of any lots.
 3. Parking lot landscaping requirements per Section 5.5.3.C shall apply to each lot.
 4. Building foundation landscape requirements per Section 5.5.3.D shall apply to each lot.
 5. Screening of outdoor storage, motor vehicles, off street parking, and areas used for vehicle repair, deliveries, unloading, loading or

transport is to be provided per Sections 3.14, 3.15, 4.55, 4.56 and Section 5.5.

6. Interior streets of the non-residential subdivision shall be landscaped per each lot as they are built upon as follows (Note: These planting requirements are in place of those in Zoning Section 5.5.3.B except for along public rights-of-way):
 - a. 1 deciduous canopy or one large evergreen tree per 35 linear feet of street frontage is required. Evergreen trees shall be no closer than 20 feet from the street. At least 1 of these trees per 50 linear feet, shall be planted as a street tree (within 15 feet of the street).
 - b. 1 sub-canopy tree and 2 shrubs per 40 feet of total linear frontage along the street are required (these shrubs are in addition to the parking lot screening requirement below).
 - c. Massing of ornamental grasses, perennials, and/or annuals and bulbs is required for 10% of total linear footage adjacent to the street. Use of them is especially encouraged at entry points or to highlight significant design. (Also reference Section 5.9 corner clearance).
 - d. The width of the access drive(s) shall be deducted from the frontage in calculating the above landscape requirements.
 - e. In addition to the above, evergreen shrubs are required to provide screening of parking areas. Shrubs are to be at least 30" in height at planting, 3 feet tall at maturity and/or maintained at a minimum height of 3 feet. A minimum opacity shall be provided and maintained at 80% during winter and 90% percent during summer within 2 years of acceptance by the city. This applies to all sections of parking visible from the street(s).
 - f. An undulating berm with a minimum height of 36" may be used in place of the evergreen hedge to screen the parking lot. However, if the berm is found to be lower than 36", an evergreen hedge will be required to provide the required screening. No landscape waiver is required to use a berm in place of shrubs.

a. Individual (non-subdivision/non-site condominium) single-family requirements

- iv. Street trees shall be provided in front of each single-family parcel, in accordance with the standards set forth in the Landscape Design Manual Section 2.a for lots within single-family platted subdivisions.
- v. The developer/builder or homeowner shall depict the street trees on the plot plan, which shall be reviewed by the City.
- vi. A Street Tree Financial Guarantee will be collected at a per tree rate of set by City Council prior to the issuance of a building permit, in accordance with the provisions of Chapter 26.5 of the Novi Code of Ordinances.
- vii. No Final Certificate of Occupancy will be granted until the street trees have been planted by the developer/builder or homeowner and inspected and approved by the City. Once the trees have been approved, the Financial Guarantee will be reduced to a Maintenance Bond established in Section 26.5, or a minimum amount set by City Council, whichever is higher. The Street Tree Financial Guarantee will not be reduced until the trees have been planted and accepted by the City.
- viii. Trees shall be guaranteed by the developer/builder or homeowner for two (2) growing seasons after installation and approval. All unhealthy and dead trees shall be replaced by the developer/builder or homeowner within three (3) months following notice, as determined by the City. At the conclusion of the two-year maintenance period, the owner or builder shall request an inspection of the trees. If the trees are healthy, the Maintenance Bond will be returned to the payer. If required, the maintenance bond will be used to replace any trees not replaced by the developer/builder or homeowner.

4. Landscape Plan Review Standards.

The landscape plan shall be reviewed relative to:

- A. The intent of the overall design of the site and the design of the proposed landscape materials to achieve unique, attractive and significant landscaping on the site as a whole;
- B. The proper type, spacing, height, placement and location of plant materials in order to insure that the intent of this ordinance is met;
- C. The choice and selection of plant materials so as to insure that root systems will not interfere with public utilities and so that fruit and other debris, except leaves, will not constitute a nuisance within public rights-of-way or to abutting property owners;

- D. The choice and selection of plant materials so as to insure that the type of plantings selected will be of a type that will survive and thrive in the area in which they are to be located;
- E. The proper relationship between deciduous and evergreen plant materials exists so as to assure that the desired obscuring effect will be accomplished; and
- F. All requirements of this Section and of the Landscape Design Manual.

5. Installation Specifications.

- A. **Approved Planting Plan.** Wherever in this Ordinance landscape plantings are required or permitted, they shall be planted in accordance with the approved final stamped landscape plan.
- B. **Time of Planting.** All plant materials shall be installed between March 15 and November 15. All installed landscapes including plant materials, mulch, staking, irrigation, and sodding, must be installed and inspected by the City prior to issuance of a Temporary Certificate of Occupancy. At that time, a financial guarantee as set in Section 26.5 to cover any deficiencies will be held until inspection occurs for a Final Certificate of Occupancy. In order to receive a Final Certificate of Occupancy, the deficiencies must be addressed within 30 days during the March 15 to November 15 planting season. Under extraordinary circumstances related to the inability to plant during the approved installation period, a financial guarantee as set in Section 26.5 to cover any deficiencies will be held until the inspection for a Final Certificate of Occupancy. If the deficiencies are not addressed in the time period outlined above, the City will cash in the amount being held for the outstanding items and remedy those items. **Note:** For street trees, a separate financial guarantee is set in Section 26.5.
- C. **Inspections.** A City representative will perform landscape inspections following a request from the developer. The inspection time period is from April 15 to November 15 (actual inspection scheduling depends on plants being in condition to inspect early in the spring or late in fall). If an inspection is requested between November 16 and April 15, a financial guarantee is to be provided based on the amount set in Section 26.5 for the material cost of incomplete items for a Temporary Certificate of Occupancy as outlined above. Beginning April 15, the Applicant then has 30 days to complete items or the City will cash in the amount being held and finish the job with the financial guarantee funds.
- D. **Establishment Period.** The establishment period for the plant material guarantee will begin at the Final Certificate of Occupancy inspection approval and continue to 2 years from that date. All plantings shall be properly planted and be in a healthy, growing condition at commencement of the establishment period. At the end of the

establishment period, any plantings which are 20% dead or disfigured (or more) shall be replaced before a final maintenance period inspection is requested. At that time, all plantings shall be brought up to the condition of the approved landscaping by the developer. If they are not, the City will cash in the amount being held as a maintenance bond for the landscaping and remedy those items.

E. Notice of Installation/Minor changes

- i. The owner or developer must notify the City of the installation schedule. The City may reject any material which is defective or in generally poor condition.
- ii. Minor changes due to, lack of plant availability or minor placement changes due to conditions discovered during construction may be approved in writing by the City Landscape Architect when there is no reduction in the quality of plant materials, no significant change in size or location of plant material, the new plant material is compatible with the area and is the same general type (deciduous/evergreen), exhibiting same design characteristics (mature height, crown), as the material being replaced. If the applicant purchases and/or installs unapproved material, they do so at the risk that they may need to be removed if the change is not approved.
- iii. If these criteria are not fulfilled or changes from the approved plan are significant in terms of number of plantings changed or in planting layout, such that the provided plan is not predominately representative of the actual installed plantings, a revised or as-built plan will be required. An additional review fee or approval by the Planning Commission may also be required, depending on the extent of revisions. An additional inspection fee shall be charged for any landscaping inspection required beyond two.

6. Maintenance

- A. Maintenance shall be carried out on an ongoing basis.
 1. Maintenance of required plantings by the owner shall be carried out so as to present a healthy, neat and orderly appearance, free from dead plants, weeds, refuse, and debris.
 2. It shall be unlawful to intentionally abuse or injure any tree on public or private property.
 3. Trees shall be trimmed or pruned in a natural and proportionate manner per the species/cultivar's natural appearance, in accordance with best management practices of the landscape industry. If severe or aggressive trimming or pruning of a tree that was required to be planted as part of a development plan occurs such that the ordinance's intent for the trees is compromised, the property shall

be considered in non-conformity with this ordinance, and the Director of Community Development or the City's Forester may require the removal and replacement of such tree in accordance with this Chapter.

- B. To insure proper maintenance and as a condition of Final Site Plan approval, the City shall require the property owner to enter into and record with the office of the Oakland County Register of Deeds a Landscape Maintenance Agreement, or include such provisions as part of subdivision restrictions or condominium master deed, each of which shall be approved by the City Attorney. Such instrument shall identify the minimum plan of maintenance, the person or entity responsible for maintenance, and shall provide the procedure, authority and finance for City cure of breaches by the responsible entity. Such instrument shall also include provisions that:
- i. All unhealthy and dead material shall be replaced within three (3) months, or the next appropriate planting period, whichever is deemed appropriate by the City;
 - ii. All landscaped areas shall be provided with a method of providing water for the landscaping during establishment and long-term survival. A permanent irrigation system or other method of providing water on a regular basis must be installed if plantings that require a consistent source of water for survival are part of the landscape;
 - iii. The use of plantings that don't require regular watering once established (xeriscaping), is encouraged. In that case, the applicant must provide a method for providing sufficient water for establishment, and a backup source of water, such as hose bibbs or a statement that water trucks or other means will be used in times of extreme drought. Locations of hose bibbs on the building must be shown on the landscape plan if they will be used.
 - iv. Tree stakes, guy wires and tree wrap are to be removed after one winter season;
 - v. Plantings shall be guaranteed for 2 growing seasons after the date of the acceptance of the installation; and
 - vi. If grass or weeds exceed the height specified in Chapter 21 of the Novi Code of Ordinances, or if shrubs are allowed to obstruct vision across any portion of parking or boulevard islands, or within corner clearance vision zones, and the responsible party is unwilling to rectify the problem, the City will abate such violations and shall assess the cost of such abatement measures in the manner proposed by the developer and approved by the City in such instrument.
- i. *Phragmites* and Japanese Knotweed Control If *Phragmites australis* (commonly known as *Giant Reed*) or Japanese Knotweed (*Fallopia japonica* or related

species) are found on the property, all populations of it in the immediate areas of the project shall be shown on the plan. A plan for the species' removal shall be added to the site plan that includes treatment by a licensed pesticide applicator, using MDEQ-approved means, at the time of site preparation, or the soonest appropriate time after that, and follow-up treatments shall be performed as necessary. The City's Landscape Architect shall determine the extent to which such treatment is required, given the size and condition and other factors related to the property.

- ii. The invasive species' population(s) will be inspected by the City's Landscape Architect at the time of the landscape inspection for approval of the installed landscape. If they were treated prior to such inspection, a copy of the invoice from the vendor who performed the work shall be provided to the City. If it is to be treated after the inspection, the invoice shall be sent to the City when the work is complete. A note to this effect shall be included in the plans with the other notes regarding treatment of the *Phragmites* and/or *Knotweed* on the site.
 - iii. Follow-up treatments during the 2-year maintenance period or beyond may be necessary to completely eradicate regrowth of those populations. Such treatments must be completed as necessary.
 - iv. A follow-up inspection of the status of the invasive species' removal will be done as part of the 2-year landscape maintenance inspection. If further treatment to remove either of the species is determined to be required, such removal shall be done by a licensed pesticide applicator at the appropriate time (per MDEQ recommendations). The 2-year landscape maintenance bond required by this Section will be held until proof of any required follow-up treatment in the form of an invoice for the treatments is provided to the City's Landscape Architect or other approved official.
 - v. Following the 2-year inspection, the landowner is expected to maintain the project location in a condition free of *Phragmites* and/or Japanese knotweed to the extent reasonably practical.
7. **Responsibility and Certificates of Occupancy.** The owner of the property subject to the requirements of this Section shall be responsible for installing and maintaining landscaping per the approved final landscape plan as specified in this Section. Where the property is occupied by a person other than the owner, the occupant shall also be responsible for maintenance.

All landscaping work required pursuant to this Section shall be treated as a site improvement for purposes of Sections 7.7.8 and 7.7.9.

PART II. Severability. Should any section, subdivision, clause, or phrase of this Ordinance be declared by the courts to be invalid, the validity of the Ordinance as a whole, or in part, shall not be affected other than the part invalidated.

PART III. Savings Clause. The amendment of the Novi Code of Ordinances set forth in this Ordinance does not affect or impair any act done, offense committed, or right accruing, accrued, or acquired or liability, penalty, forfeiture or punishment, pending or incurred prior to the amendment of the Novi Code of Ordinances set forth in this Ordinance.

PART IV. Repealer. All other Ordinances or parts of Ordinances in conflict herewith are hereby repealed only to the extent necessary to give this Ordinance full force and effect.

PART V. Effective Date: Publication. Public hearing having been held hereon pursuant to the provisions of Section 102 of Act 110 of the Public Acts of 2006, as amended, the provisions of this Ordinance shall be published within fifteen (15) days of its adoption by publication of a brief notice in a newspaper circulated in the City of Novi stating the date of enactment and effective date, a brief statement as to its regulatory effect and that a complete copy of the Ordinance is available for public purchase, use and inspection at the office of the City Clerk during the hours of 8:00 a.m. to 5:00 p.m., local time. The provisions of this Ordinance shall become effective seven (7) days after its publication.

Robert J. Gatt, Mayor

Cortney Hanson, City Clerk

Certificate of Adoption

I hereby certify that the foregoing is a true and complete copy of the ordinance adopted at the regular meeting of the Novi City Council held on the ____ day of _____, 2020.

Cortney Hanson, City Clerk

**DRAFT LANDSCAPE
DESIGN MANUAL**

CITY OF NOVI

LANDSCAPE DESIGN MANUAL

(Adopted by City Council Resolution dated 8-25-03) – revised ~~Jun 5, 2017~~2020

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Part I.	Supplemental Requirements and Procedures
Part II	Screening Opacity Diagrams
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NOTE:

In addition to this Landscape Design Manual and Section 5.5 of the Zoning Ordinance, issues related to landscaping are also addressed in the following sections of the Novi Code of Ordinances. Please consult these for other possible impacts on a project.

(Note: the following list is provided as an aid and does not guarantee that other ordinances may not have an impact on landscaping):

ZONING ORDINANCE:

<u>Ordinance Section #</u>	<u>Title/Relevant Section</u>
3.6	Notes to District Standards
3.6.M:	Wetland/Watercourse setback
3.9.7	MH-Mobile Home district buffer
3.11:	GE Gateway East District – particularly section 6
3.12:	Special Development Option (SDO) for the GE District
3.14.4, 3.14.5.B&E:	I-1
3.15.1.B, 3.15.2:	I-2
3.19.3&7.D:	OST Retail Service Overlay
3.20.2.A&C:	OST Required Conditions
3.21.2.A.iii&iv:	PSLR Overlay
3.22	P-1
3.23.1.vi	Conference District
3.27.1. C,D,F	TC and TC-1 Required Conditions
3.28.6&10	One Family Clustering Option
3.29.2	RUD buffering
4.12.1	Day Care screening
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4.40.2.F	Fast food restaurants
4.55	Outdoor Storage Yards
4.58	Junkyards
4.74	Parking for Sale of Motor Vehicles in P-1 District
4.80.1.B & 2.B	Open Air Businesses
4.86.H	Other Uses not Included in a District – Towers
5.2	Off-Street Parking
5.3	Off-Street Stacking, Parking Lot Layout Standards
5.9	Corner clearance
5.11	Fences

CODE OF ORDINANCES

<u>Ordinance Section #</u>	<u>Title/Relevant Section</u>
11-143	Design Considerations – drainage/slopes
12 Article V, 12-275	Wetland and Watercourse Protection
29	Soil – including Sedimentation Control
36	Waterways
37	Woodlands Protection

PART 1: SUPPLEMENTAL REQUIREMENTS AND PROCEDURES

—The following Supplemental Requirements and Procedures shall apply to any landscape plan required under Section 5.5 of the City of Novi Zoning Ordinance. In the event of inconsistency between the provisions of that ordinance, or any other ordinance of the City, and these supplemental requirements and procedures, the ordinance provisions shall prevail.

1. Landscape Screening/Buffer Requirements

a. Residential Adjacent to Non-Residential

(1) Berm Requirements.

~~(a)~~ Berms shall be constructed of loam soils with a 6” top layer of topsoil and shall be free of construction materials and debris. Where possible, they shall be undulating in height, and they shall always maintain at least the minimum height required in Zoning Section 5.5.3.A.ii.

~~(a)(b)~~ The berm shall be landscaped and maintained in a clean, orderly, and growing condition, ~~considering seasonal circumstances.~~

~~(b)(c)~~ The berm must be planted with a combination of trees, shrubs, sod or other ~~evergreen-living~~ ground covers.

~~(e)(d)~~ A minimum opacity shall be provided and maintained at 80% winter opacity and 90% summer opacity at the required height within 2 years of installation. This level of opacity shall be provided wherever screening is called for in this ordinance. Opacity includes an intermittent visual obstruction height of 20 feet, as well as the required screening capacity for the berms required by Section 5.5.3.A. (See Obscuring Earth Berm Diagrams in this section for examples of landscaping layouts that provide the required opacity.) The intermittent screening does not have to provide 80-90% opacity above 6 feet, but it should have at least 50% summer opacity.

~~(d)(e)~~ Landscaping shall provide the required opacity primarily by using a dense planting of evergreen trees or shrubs. Spacing of the plant materials shall be in accordance with the Plant Material Spacing Chart below and the attached illustrations (Part II). Groupings of canopy deciduous trees, subcanopy trees and/or shrubs that provide similar opacity as the illustrations may also be used to provide screening, especially for the intermittent obstruction. As an example, densely-branched deciduous plant material two (2) or more layers deep and/or evergreen plant material may be used to achieve the required opacity.

~~(e)(f)~~ The berm and landscaping materials shall be irrigated with an underground watering system or have an operational hose bibb within 100 feet of the landscaping.

(f)(g) The required minimum and maximum distances between proposed plant materials within this Section for screening and landscape purposes are as follows or as determined by the City Landscape Architect or City Forester based upon accepted principles not specified in the chart:

~~(Recommended distances are dependent on species' mature sizes and their size within 2 years of planting to attain opacity requirements. Recommended maximum spacing distances do not apply to other landscape requirements such as street tree spacing, greenbelt buffering, woodland replacement trees or foundation plantings).~~

Table 1.a.(1)(fg): Plant Material Spacing Relationship Chart for Landscape Purposes

Plant Material Types Spacing (on-center)		TO					
		Large Evergreen Tree	Narrow Upright Evergreen	Deciduous Canopy Tree*	Deciduous Subcanopy Tree*	Large Shrub	Small Shrub
FROM	Large Evergreen Tree	Min. 15 ft Max. 25 ft	Min. 12 ft	Min. 20 ft	Min. 15 ft	Min. 15 ft	Min. 10 ft
	Narrow Upright Evergreen	Min. 10 ft Min. 12 ft Max. 15 ft	Min. 2.5 ft Max. 10 ft	Min. 15 ft	Min. 10 ft	Min. 5 ft	Min. 3-5 ft
	Deciduous Canopy Tree*	Min. 20 ft	Min. 15 ft.	Min. 20 ft	Min. 15 ft	Min. 5-7 ft	Min. 3-5 ft
	Deciduous Subcanopy Tree*	Min. 15 ft	Min. 10 ft	Min. 15 ft	Min. 10 ft	Min. 5-7 ft	Min. 3-5 ft
	Large Shrub (6-15+' tall)	Min. 15 ft	Min. 5-7 ft	Min. 5-7 ft	Min. 5-7 ft	Min. 5 ft Max. 10 ft	Min. 3 ft Max. 6 ft
	Small Shrub (0-5.9' tall)	Min. 10 ft	Min. 3-5 ft	Min. 3-5 ft	Min. 3-5 ft.	Min. 3-5 ft Min. 3 ft Max. 6 ft	Min. 3 ft Max. 6 ft

* Fastigate/columnar trees may require closer spacing to achieve required opacity.

~~(Recommended distances are dependent on species' mature sizes and their size within 2 years of planting to attain opacity requirements. Recommended maximum spacing distances do not apply to other landscape requirements such as street tree spacing, greenbelt buffering, woodland replacement trees or foundation plantings).~~

~~(g) Berms shall be constructed of loam soils with a 6" top layer of topsoil and shall be free of construction materials and debris. Where possible, they shall be undulating in height, and they shall always maintain at least the minimum height required in Zoning Section 5.5.3.A.ii.~~

b. Developments Adjacent to Public Rights of Way

(1) Berm Requirements

- (a) Berms are to vary in height and width
- (b) The minimum height specified in Zoning Section 5.5.3.B.ii.f should always be met by the berm, with variations in height taller than the minimum.

(2) Plant Material Location Spacing

- (a) In order to assist emergency vehicles ~~location of a property~~, create view channels to business address at a 20-40 degree angle for approaching vehicles from both directions of traffic
- (b) The base of any permitted display platform must be totally screened by shrubs at least 2 feet in height.

~~(e)~~(3) Shopping Centers and sites adjacent to freeways or other major corridors are highly visible. Therefore, a strong emphasis shall be placed on the design of landscaping that achieves substantial aesthetic enhancement, and a diminution of paving and parking views along these corridors.

2. **Residential Subdivision Planting Requirements**

a. Single-family platted subdivisions or residential site condominiums.

(1) Street Tree Spacing. Trees shall be provided in front of each residential lot in the area between the sidewalk and the curb as described in the Charts below:

i. Minimum planting area widths:

Table 32.a.(1).i Recommended Tree Sizes for ROW areas

Tree Species Type	Lawn width (curb to sidewalk)
Small Tree (Deciduous Subcanopy)	4-6 feet
Medium Tree (Deciduous Subcanopy and Canopy)	6-8 feet
Large Tree (Deciduous Canopy)	>8 feet

ii. Minimum ~~planting area width~~ spacing:

Table 32.a.(21).ii Recommended Tree Spacing for ROW areas

Tree Species Type	Tree Height	Distance Spacing between trees (on average)
Small Tree (Deciduous Subcanopy)	Up to 20'	Min. 20'

Medium Tree (Deciduous Canopy and Subcanopy)	20-40'	Min. 30'
Large Tree (Deciduous Canopy)	>40	Min. 35'

- (2) Street Tree Location. Large street trees shall be planted in front of each lot in the right-of-way in accordance with the following standards for large deciduous canopy trees (smaller trees should use the maximum ~~distance-spacing~~ guidelines in the table above to calculate the number of trees required):

Table 32.a.(32) Street Tree Requirements for Single Family Residential Lots

Lineal Frontage*	Trees Required*
<70 feet	1 tree
> or =70 feet	2 trees
> or =105 feet	3 trees
> or =140 feet	4 trees
> or =175 feet	5 trees

* ~~If space allows, more than the minimum may be planted on a lot. Driveway width and corner clearance zones may be subtracted from the lineal frontage.~~

~~(a)~~ Corner lots shall have trees planted along both streets in accordance with the above requirements for each frontage, provided that trees are not planted within the 25 foot corner clearance zone (Section 5.9) or Road Commission for Oakland County (RCOC) required clear vision zone, depending on the road jurisdiction.

~~(a)(b)~~ Subdivision open spaces shall have street trees located within the right-of-way at a rate of 1 tree per 35lf (not including frontage in clear vision zones).

~~(b)(c)~~ Trees shall not be planted closer than 10 feet from any driveway.

~~(e)(d)~~ Distances between trees and curbs or sidewalks shall be:

1. At least ~~(4)~~four feet for deciduous canopy trees where the space between curb and walk is at least 8 feet. For subcanopy trees where the distance between the curb and walk is less than 8 feet, the trees should be centered.~~and subcanopy trees.~~
2. At least 5 feet for shrubs behind curbs with angled or perpendicular parking

~~(d)(e)~~ If subcanopy trees are to be used as street trees for tight plantings areas and under utility lines, only use species/varieties which can be attractively pruned per city standards (a minimum ground clearance of 14 feet on the street side and 10 feet on the non-street side).

~~(f)~~ No deciduous canopy tree, subcanopy tree or evergreen tree shall be planted closer than 15 lateral feet from any overhead utility wire, or closer than 10 lateral feet from any fire hydrant, catch basin or manhole. Effort should also be made to keep all trees at least 5 feet away from underground utility lines.

~~(e)~~

b. Single-family residential site condominiums with no lot lines.

(1) Street Tree Requirement: 1 canopy or 1.5 ornamental trees per residential unit.

(2) Tree Placement: In front of residential unit in the area between the sidewalk and the curb as described in the Chart below:

Table 2.b.(2) Recommended Tree Sizes for ROW area widths

<u>Tree Species Type</u>	<u>Lawn width (curb to sidewalk)</u>
<u>Small Tree (Deciduous Subcanopy)</u>	<u>4-6 feet</u>
<u>Medium Tree (Deciduous Subcanopy and Canopy)</u>	<u>6-8 feet</u>
<u>Large Tree (Deciduous Canopy)</u>	<u>>8 feet</u>

~~(3)~~c. Island and Boulevard Planting.

~~(a)~~(1) A mixture of shrubs, groundcover, perennials, and/or ornamental grasses, as well as canopy and sub-canopy trees, is to be provided.

~~(b)~~(2) Maintenance of such areas shall be the responsibility of the subdivision association.

~~(e)~~(3) At least 75% of the island area shall be landscaped with a combination of canopy and subcanopy trees, shrubs, groundcovers, perennials, annuals, and/or bulbslive plantings other than lawn. The remaining 25% of area can be lawn if desired.

(4) Refer to Zoning Ordinance Section 5.9 for corner clearance requirements for boulevards.

~~(d)~~ _____

~~b.~~ Non-Residential Subdivisions

~~Interior streets to the Industrial Subdivision shall be landscaped per each lot as they are built upon as follows (Note: These planting requirements are in place of those in Zoning Section 5.5.3.B except for along public rights of way):~~

~~(1) 1 deciduous canopy or one large evergreen tree per 35 linear feet of street frontage is required. Evergreen trees shall be no closer than 20 feet from the street. At least 1 tree per 50 linear feet shall be planted as a street tree.~~

~~(2) 1 subcanopy tree and 2 shrubs per 40 feet of total linear frontage along the street are required (these shrubs are in addition to the parking lot screening requirement).~~

~~(3) Massing of ornamental grasses, perennials, and/or annuals and bulbs is required for 10% of total linear footage adjacent to the street. Use of them is especially encouraged at entry points or to highlight significant design. (Also reference Section 5.9 corner clearance).~~

- ~~(4) In addition to the above, evergreen shrubs are required to provide screening of parking areas only. Shrubs are to be at least 30" in height at planting, 3 feet tall at maturity and/or maintained at a minimum height of 3 feet. A minimum opacity shall be provided and maintained at 80% during winter and 90% percent during summer within 2 years of acceptance by the city. This applies to all sections of parking visible from the street(s).~~
- ~~(5) An undulating berm with a minimum height of 36" may be used in place of the evergreen hedge to screen the parking lot. However, if the berm is found to be lower than 36", an evergreen hedge will be required to provide the required screening.~~
- ~~(6) The width of the access drive can be deducted from the frontage in calculating the above landscape requirements.~~

3. Detention and Retention Basin Landscaping Requirements

- a. Large deciduous canopy trees shall be planted at a rate of 1 tree per 35lf of the pond edge measured at the permanent water line, 6-10 feet away from the permanent water level, around the east, west and south sides of the pond to provide cooling shade for the pond. Woodland replacement trees may be used to meet this requirement.
- a.b. Clusters of large native shrubs in a dense planting shall be planted at and above the high water elevation of the basin. Clusters shall cover 70-75% of the basin rim areaperimeter measured 10 feet from at the high water elevationthe permanent water level, or pond bottom for ponds designed to empty after 24-48 hours. Shrubs shall be placed along this line instead of the high water line and be clustered, not arranged in a straight line.
- b.c. At least three different native shrub species native to Michigan shall be used. Shrubs are to have a dense structure from top to bottom. Straight species are preferred. Dwarf cultivars with mature heights less than 5 feet do not fulfill the size requirement. The shrubs shall be allowed to grow to their natural height and form.
- d. The bottom and sides of the basin(s), below the above-mentioned shrubextending 25 feet from the permanent water level shall be planted with a mix of native grasses, sedges and wildflowers and be maintained at a natural height (not mowed as lawn). Allow grass to grow to 10 to 14" tall along sides and bottom of basin to discourage use by waterfowl. The application of fertilizer and pesticides on grass areas in the basin shall be limited to the initial establishment of the groundcover. Seeding is not required on the required maintenance access pathway.
- e. —
- e. Contact the City's wetland consultant or landscape architect when specifying a basin seed mix. All seed mix(es)' species composition and cover crop(s) shall be included on the landscape plan, as well as clear indications of where each mix should be applied. A plan for the successful establishment and maintenance of the groundcover shall also be included on the landscape plan.

f. Prior to seeding, the area to be seeded shall be ripped to a depth of 18” to alleviate soil compaction. After ripping, the seeding area shall be prepared per the recommendations of the native seed vendor.

d. ~~Also prior to seeding, Grass species that go dormant in winter are suggested.~~

g. ~~Contact the City’s wetland consultant when specifying basin seed mix. The seed mix(es)’ species composition and cover crop(s) should be included on the landscape plan, as well as clear indications of where each mix should be applied. A plan for the successful establishment and maintenance of the groundcover should also be included on the landscape plan. the landscape contractor shall send a photo of the seed bag from the seed being planted to the city landscape architect or city environmental consultant to verify that an acceptable mix is being used. A note to this effect shall be added to the plan sheet with the seed mixes. Once approval is given, the seeding may take place.~~

e. —

h. Utilize anti-waterfowl devices while establishing plantings, such as string matrix or string edge or other approved method.

f.

4. Tree species diversity (includes canopy, subcanopy and evergreen trees).

In order to avoid landscape disasters like the Dutch elm disease and Emerald Ash Borer infestations, where overplanting of a single type of tree (elm, ash) resulted in large scale tree replacements, a diversity of tree species is to be used for all projects requiring site plan approval.

- a. ~~If there are~~When fewer less than 200 trees are proposed, not more than 25% of the proposed tree plantings shall be of one genus and not more than 15% shall be of a single species.
- b. ~~If there are~~When 200 or more trees are proposed, not more than 15% percent of the tree plantings shall be of one genus and not more than 10% shall be of a single species.
- c. Variations from these percentages shall be at the discretion of the City Forester or Landscape Architect. (See Novi Street Tree List).
- d. The breakdown of the species and genera used shall be added to the plant list in a format similar to that shown in the table below:

Table 54.dd: Sample Species Breakdowns

Symbol	Scientific Name	Common Name	Size	Qty	Genus %	Species %
AL	Amelanchier laevis	Serviceberry	6-7' ht	20	12%	12%
AR	Acer rubrum	Red Maple	2.5" cal.	25	15%	15%
CA	Cornus alternifolia	Pagoda Dogwood	6-7' ht	20	18%	12%
CF	Cornus florida	Flowering Dogwood	1.75" cal.	10		6%
MS	Malus 'Snowdrift'	Snowdrift Flowering Crabapple	1.75" cal.	5	3%	3%
PO	Platanus occidentalis	Sycamore	2.5" cal.	25	15%	15%
PS	Pinus strobus	Eastern White Pine	6-7' ht	10	6%	6%

QB	Quercus bicolor	Swamp White Oak	2.5" cal.	10	21%	6%
QR	Quercus rubra	Red Oak	2.5" cal.	25		15%
UA	Ulmus americana 'Princeton'	Princeton American Elm	2.5" cal.	15	9%	9%
Total				165	100%	100%

e. ~~The above requirements do not apply to woodland replacement trees. Those trees should not be included in the above calculation.~~

f. Woodland tree replacement species shall have roughly the same ~~percentage of~~ composition as the native trees removed in order to ~~restore~~ maintain some semblance of the impacted woodland (except in the cases of elm, ash or other species which are known to have major survivability issues due to environmental factors).

i. ~~No more than 10% of the credits planted on site may be evergreen trees.~~

ii. Native maples may be used as substitutes for boxelders. ~~V~~ and varieties of native elm species shown to have ~~better~~ good resistance to Dutch elm disease ~~than the straight species are allowed~~ may be used as replacements for elms.

~~e.~~

~~The counts of woodland replacement trees should not be included in the breakdown described above (items a-d).~~

a. ~~Shrubs:~~ While shrubs are not subject to the requirements above, efforts toward using a diversity of shrub species should also be used for the same reasons described above.

g.

5. Parking Area Landscaping Requirements

a. Landscape designs shall utilize ~~native~~ plant materials which enhance infiltration of storm water, such as those with deep root systems. Designs to lessen runoff are preferred. Wherever possible, designs should utilize vegetated swales, weirs and basins within and around the parking areas to create an attractive storm water system that promotes storm water infiltration.

b. Salt-tolerant plants material native to the state of Michigan are preferred.

~~b.c.~~ Parking area landscaping materials within parking lot islands shall be maintained ~~to not exceed~~ at -3 feet in height or less or 6 feet or more above adjacent paving for clear sight distance ~~within~~ across the parking islands.

~~e.d.~~ Evergreen trees are not allowed in any parking islands unless the applicant can demonstrate that all clear sight distances shall be maintained and a note in a form approved by the City Attorney is added on the final approved site plan stating that the City of Novi is not responsible for any accidents caused by the lack of clear sight distance

~~d.e.~~ All landscaping shall be maintained in a ~~green and growing~~ healthy condition and replaced as plants die or are in poor condition. ~~seasonal conditions considered.~~

- ~~e. Salt-tolerant plants material native to the state of Michigan are preferred, where applicable.~~
- f. The nName, type and number of groundcover plants (including seed or sod) proposed on islands are to be specified on the landscape plan.
- g. Parking area islands may not utilize mulch as the only groundcover. It is only allowed in association with trees or shrubs planted within an island (the ring of mulch around a tree, or within and around shrub beds). Rock or gravel mulches shall not be used within or adjacent to vehicular use areas.
- ~~g.~~

6. Transformers/Utility Boxes/Irrigation Control Boxes

All transformers, ~~and~~ utility boxes and irrigation control equipment shall be screened from public view in an attractive manner, but shall allow safe access to said facilities.

- a. ~~Size of plant~~ Plant materials ~~at installation~~ shall be ~~of-maintained at~~ a height at least equal to the transformer, utility box or irrigation control box.
- b. Screening plant material shall be evergreen or densely-branched deciduous shrubs.
- c. A minimum of 2 feet separation is required between the structure and the full growth potential of plant material at maturity.
- d. Groundcover is allowed up to the transformer pad, if it is kept below 4" in height.
- e. Doors of transformers must be accessible. No plant materials are to be placed within 8 feet of the front of the doors but the doors shall be screened from view.
- f. A detail of transformer screen plantings and locations of all transformers must be provided with the landscape plans. It is included with other landscape details in Part III.
- g. Safety is the first priority when screening transformers and utility boxes. If plantings are above 2 feet in height, they cannot be placed in the corner clearance zone (refer to Section 5.9).
- h. A solid fence may be approved if warranted by safety or site limitations.

~~h.~~

7. **Dumpsters/Trash Containers** – Required screening for Dumpsters/Trash Containers is described in Chapter 21-145 and Zoning Ordinance Section 4.19.2.f. No additional landscaping is required.

7.8. **Fire Hydrants/Fire Department Connections** – Plantings shall be kept away from or below hydrants and Fire Department Connections, so they are not obscured from view and are easily accessed.

8.9. **Landscape Plan Requirements**

A landscape plan shall be submitted for:

- any new commercial or residential development
- ~~and~~ any addition to an existing building that is equal to or greater than a 25% increase in the overall square footage of the building or 400 square feet, whichever is less

- ~~a. any increase to a parking lot of 10 spaces or more (or equivalent paving area) or 10% of paved area, whichever is less.~~

An owner of a single-family home site shall not be required to comply with the provisions of this section.

The landscape plan shall contain the following information:

- a. Name, address and telephone number of the owner and developer or association.
- b. Landscape Architect Information
 - (1) Name, address and telephone number of the Registered or Licensed Landscape Architect who created the design or is responsible for its accuracy and adherence to city standards (all landscape plans must be created by a landscape architect).
 - ~~b.~~
 - (2) The seal of a Registered or Licensed Landscape Architect responsible for the plans (on Final Site Plans and Stamping Sets).
 - (3) A live signature of the landscape architect is required on Stamping Sets.
- c. A legal description or boundary line survey of the site on which the work is to be performed. Can be provided on existing conditions plan or topographical survey.
- d. Project Name and address (or other information showing the site location).
- e. Zoning districts of the proposed site and adjacent properties.
- f. Miss Dig contact information on all sheets.
- g. The soil type(s) on site as determined by the Soils Survey of Oakland County, Michigan published by the United States Department of Agriculture Soils Conservation Service must be included on Landscape Plans or elsewhere in set.
- e.h. A landscape plan of the site at a scale that matches other plans in the plan set and is legible with proper north indication. ~~In addition, for reviewing purposes, t~~The landscape plan shall be submitted in a scale not to exceed 1"=20' for detailed areas, 1"=60' for large areas. An engineering scale shall be used. Variations from this scale requirement may be approved by the City Landscape Architect as long as the different scale provides sufficient detail, legibility and ease of use for evaluation. This plan should include:
 - (1) Proposed topography at a maximum of 2 foot contour intervals, extending at least 50 feet beyond the site boundary. For berm, wall areas and steep topography, contour intervals shall be shown at 1 foot.
 - (2) Location, type and size of all existing plant materials showing those materials to be saved, to be moved and to be removed.
 - (a) If there is no existing vegetation, the plan shall ~~so state in a note that on the plan.~~
 - (b) If the site includes regulated woodlands or wetlands, the plan shall so state and identify the locations of regulated natural resources with the appropriate boundary determinations.

- ~~(c) A tree survey that includes all the regulated trees within the area of disturbance and a corresponding tree chart that includes tree tag #, species, size (dbh), 8" d.b.h. and greater in all identified locations and the tree protection fence locations and whether it will be saved or removed.~~
- ~~(d) All trees 8" dbh or greater within 50 feet of construction shall also be included in the tree survey.~~
- ~~(b) (Tree protection fence locations should also be provided on Removal/Demolition and Grading Plans)~~
- ~~(e) Trees in woodlands or other areas at least 50 feet away from construction that will not be impacted do not need to be identified individually, but the cover of those areas should be generally noted (e.g. dense woodland, open, scrub/shrub, wetland) and the area noted as "To Remain" or "To Be Saved". All trees 8" dbh or greater within 50 feet of construction should be included in the tree survey.~~
- ~~(e) See Woodlands Protection Ordinance, (Chapter 37) and Wetlands Protection Ordinance (Chapter 12) for additional plan requirements.~~
- ~~(f) Tree protection fence locations must be shown on Removal/Demolition and Grading Plans/Soil Erosion Control plans.~~

~~(d) —~~

- ~~(3) Locations of all existing and proposed buildings, easements, parking spaces, vehicular use areas, proposed ground sign locations, flagpole locations, public rights-of-way, existing and proposed overhead and underground utilities, including the locations of hydrants, utility boxes and trash receptacles. Dimensions shall be shown from overhead utility poles.~~
- ~~(4) Locations of all existing light poles to remain and proposed light poles.~~
- ~~(5) Calculations for all right-of-way greenbelt landscaping, street trees, parking lot landscaping, foundation landscaping and other landscaping, including the amount required and the amount provided. Include labels in square feet for all landscape areas intended to satisfy parking lot interior area and foundation landscape requirements.~~
- ~~(3)(6) Location, type and size of all proposed plant materials. For On Preliminary and Final Site Plans submittals, plants shall be indicated with actual plant material names or symbols linked to a plant list.~~
- ~~(7) All plantings shall have unique labeling to indicate the requirement they are intended to satisfy (i.e. interior parking, parking perimeter, woodland replacement, right-of-way greenbelt, street trees, foundation planting, etc.)~~
- ~~(4) Locations of all existing and proposed buildings, easements, parking spaces, vehicular use areas, proposed ground sign locations, flagpole locations, public rights of way, existing and proposed overhead and underground utilities, including the locations of hydrants, utility boxes and trash receptacles. Dimensions shall be shown from overhead utility poles.~~

~~(5)~~(8) Corner Clearance Zones at driveways and road intersections. (See Section 5.9 or Road Commission for Oakland County clear vision requirements, depending on the road jurisdiction).

~~(6)~~(9) An indication of area(s) clear of trees or shrubs for snow depositing areas in winter.

~~(7)~~ All plantings shall have unique labeling to indicate the requirement they are intended to satisfy (i.e. interior parking, parking perimeter, woodland replacement, right of way greenbelt, street trees, foundation planting, etc.)

~~f.~~ Parking lot landscaping calculations, including interior and perimeter requirements, should include the amount required and the amount provided—include labels in square feet for all landscape areas intended to satisfy landscape requirements.

~~g.~~ Right of way greenbelt, street tree, foundation and other landscaping calculation requirements, including the amount required and the amount provided—include labels in square feet for all landscape areas intended to satisfy landscape requirements.

~~h.~~ Zoning districts of the proposed site and adjacent properties.

~~i.~~ The seal of a Registered or Licensed Landscape Architect responsible for the plans (on Final Site Plans and Stamping Sets).

~~j.~~ Miss Dig contact information on all sheets.

(10) A ~~planting schedule~~plant list for all proposed landscape materials showing the quantity of materials for each species, botanical and common names of plant materials, caliper sizes or container sizes, height of material where applicable, root type balled and burlapped or potted), type and amount of mulch.

~~k.~~

(11) An itemized cost estimate for all new plantings, mulch, seed and sod contained on the planting plan must be provided on the Final Site Plans. The costs for this should be from the Community Development Fees standard costs on the Community Development website, not estimates, unless there is no comparable standard cost, in which case estimates are acceptable.

~~l.~~(12) Planting details for evergreen trees, deciduous trees, multi-stem trees, tree guys, shrubs, and perennials/ground covers, as applicable to the plan. (See typical City of Novi Tree Planting Details).

(13) A plan for site preparation, seeding, establishment and maintenance of any native seed mixes per the direction of the native seed vendor.

~~m.~~ When berms are included on the plans, a representative berm cross-section including slope, height and width, construction of loam with 6" top layer of topsoil, type of ground cover, and labeled contour lines. Show where overhead utility lines exist or are planned, and the required setback of 15 feet from the edge of the utility or 20 feet from the closest pole for canopy trees. (See Berm Cross-Section Diagram).

- ~~n. — Wall detail(s), when applicable, with notes indicating materials, height and type of construction and footings. Wall calculations for any walls greater than 3 ½ feet in height must be provided by a design or structural engineer.~~
- ~~o. — Fencing details~~
- (14) Landscaping Notes required:
- ~~p.(a) A note indicating the proposed estimated planting dates (should be between March 15 and November 15).~~
- ~~q.(b) A statement of intent to install and guarantee the plant materials for 2 years from the date of acceptance and maintain all such landscaped areas in accordance with the requirements of this ordinance.~~
- ~~(c) A note indicating that the plants should be Upper Midwest/Great Lakes grown.~~
- ~~(d) A note stating that the property’s landscape will be maintained per the approved final site plan in perpetuity, per Zoning Ordinance Section 5.5.7, including replacement of all dead or failing plant material within three (3) months of its discovery, or the next appropriate time as determined by the City Landscape Architect.~~
- ~~(e) A note stating that any plant species substitutions from the approved plan must be approved in writing by the City Landscape Architect.~~
- ~~i. When berms are included on the plans, a representative berm cross-section including slope, height and width, construction of loam with 6” top layer of topsoil, type of ground cover, and labeled contour lines. Show where overhead utility lines exist or are planned, and the required setback of 15 feet from the edge of the utility or 20 feet from the closest pole for canopy trees. (See Berm Cross-Section Diagram).~~
- ~~f. —~~
- ~~s. — The soil type(s) on site as determined by the Soils Survey of Oakland County, Michigan published by the United States Department of Agriculture Soils Conservation Service. This may be included on other sheets in the set, but in that case a note indicating where they information can be found should be included on the Landscape Plan.~~
- ~~j. If an area is landscaped with plant species that do not require irrigation, no permanent irrigation system is required, but the plants must be watered as necessary until they are established with a temporary system, hose(s) or portable water tanks. Wall detail(s), when applicable, with notes indicating materials, height and type of construction and footings. Wall designs and calculations for any walls 4 feet or in height must be provided by a design or structural engineer and approved with building plans~~
- ~~k. Fencing details – tree protection, screening and decorative fencing.~~
- ~~l. Plans for irrigation, or alternative means of providing sufficient water for establishment and long-term survival must be provided with final site plans. If an area is landscaped with plant species that do not require irrigation (xeriscaping), no~~

permanent irrigation system is required, but the plants must be watered as necessary until they are established with a temporary system, hose(s) or portable water tanks. In that case, hose bibb locations within 100 feet of the plantings or other water sources must be noted on the plans.

- m. If an irrigation system will be used, plans for it must be provided with final site plans.
- ~~t. The property's landscape must be maintained per the approved final site plan in perpetuity, per Zoning Ordinance Section 5.5.7, including replacement of all dead or failing plant material within three (3) months of its discovery, or the next appropriate growing period, whichever comes first.~~
- ~~u. An itemized cost estimate for all new plantings, mulch, seed and sod contained on the planting plan should be part of the Final Site Plans. The costs for this compilation should use the Community Development Fees standard costs on the Community Development website, not estimates, unless there is no comparable standard cost, in which case estimates are acceptable.~~
- ~~v. A plan for the successful establishment and maintenance of any native seed mixes.~~
- w.n. Other information or data as may be required in other sections of this ordinance, and additional information or data as reasonably required by the Planning Commission.

9.10. Plant Material Requirements

- a. General Conditions / Plant Requirements.

Wherever in this Ordinance landscaping plantings are required, such landscape plantings shall be subject to the following conditions:

- ~~(1) For all plant materials, plants native to Michigan and, ideally, Oakland County, are to be the first choice. No fewer than 50% of the species used, not including those for woodland replacements or in seed mixes, shall be native. The source of the native plants should be local or of the North Midwest America/Great Lakes region. (www.michiganflora.net may be used as a reference to determine whether a species is native).~~
- ~~(1) For all plant materials, native plants are to be the first choice. The source should be local or of the North Midwest America/Great Lakes region.~~
- (2) All plant materials shall be northern nursery grown, No. 1 grade, and installed according to accepted planting procedures. All plant materials shall meet current American Association of Nurserymen Standards. They shall be planted according to City of Novi Planting Details and specifications. The City shall have the right to inspect the plant materials prior to planting and to reject any plant materials deemed not to meet the standards of this ordinance.
- (3) The selection, spacing, and sizing of plant materials shall depend on the use to which the plantings are to be placed. A mixture of plant materials (evergreen and deciduous trees and shrubs) and plant species is required in all landscape plans as a protective measure against disease and insect infestation. Plant

materials used together in groupings for screening shall meet the on-center spacing requirements as set forth in this [Manual](#) Section 1.f.a..

- (4) Plant materials, except lawn, ground covers or creeping vine type plantings, shall be located at least 4 feet from the property line, as measured to the trunk of deciduous canopy or subcanopy trees, or to the mature dripline of shrubs and evergreens.
- (5) Where plant materials are placed in 2 or more rows for screening, plantings shall be staggered from row to row.
- (6) All trees shall have a central leader and a radial branching structure. Park grade trees are not acceptable. All trees, except those of 1" caliper or less, shall be balled and burlapped (B & B).
- (7) Any deciduous canopy trees with branches that might tend to develop into "V" crotches shall be subordinated so as not to become dominant branches.
- (8) Miss Dig must be notified to locate all underground utilities before planting begins.

b. Plant Materials.

~~For suggested plant materials and information by categories of Native, Interest, Woodlands Replacement, Canopy, Street Tree, Growing Conditions, and Nurseries, see separate Suggested Plant Materials List (Part VI). This list is not to be considered all inclusive of acceptable plant materials and may be amended periodically.~~

(1) Existing Plant Material

- (a) Existing plant material is to be preserved as a first priority. Refer to Chapter 37, Woodlands Preservation Ordinance or Chapter 12, Wetlands and Watercourse Ordinance, for specific standards regarding preservation of these natural resources.
- (b) In instances where existing healthy plant material is proposed to be saved on a site prior to its development and is *not* regulated by Chapter 37, Woodlands Preservation Ordinance, or Chapter 12, Wetlands and Watercourse Ordinance, the applicant may apply to adjust the application of the landscape standards to allow such plant material to substitute for planting if such an adjustment is in keeping with, and will preserve, the intent of this Section.
- (c) For approval of substitutions, the existing preserved plant material shall be of high quality as determined by the City. Trees listed as Prohibited Plantings, and materials required to be preserved under Chapter 12, Article V, and under Chapter 37 of the Ordinance Code, will not receive credit under this provision.
- (d) All removals shall be clearly marked as to be removed with an X or R ~~on the tree symbol~~ on the plan view, and on the accompanying tree chart/list (show as Saved or Removed). The tree labels for existing trees 8 inches

dbh and larger to remain should appear on the Landscape Plan (plan view).

- (e) Protective fencing and preservation techniques will be required for all vegetation to be saved where there is a chance that construction activities could damage it. The location of tree protection fencing and the City Protection Fencing Detail are to be shown on the Demolition/Removal Plan and Grading plans. Large masses of protected vegetation should be labeled “To be saved” or “To Remain” on the Landscape Plan and on the Demolition/Removal Plan and Grading Plan.
- (f) Landscape credit for preserved canopy trees, which do not fall within a regulated Wetland or Woodland, may be used to fulfill woodland replacement credits that may be required, if they are not prohibited and/or invasive species. These replacements shall be at the following rate:

Table 710.b.(1)(f): Landscape Tree Credit Chart

Diameter of Trunk of Preserved Tree*	=Number of Tree Credits
36” or greater caliper	7 trees
>29 to 36” caliper	6 trees
>23 to 29” caliper	5 trees
>17 to 23” caliper	4 trees
>12 to 17” caliper	3 trees
>7 to 12” caliper	2 trees
3 to 7” caliper	1 tree

* The tree trunk diameter measurement shall be rounded off to the nearest whole inch at a height of four and one-half (4.5) feet above the natural grade. (Diameter at Breast Height, D.B.H.)

- (g) Existing, non-prohibited trees may also be used to fulfill some or all of the required street tree, greenbelt or parking lot perimeter plantings, at a 1 for 1 basis. ~~In cases such as these, a tree may be used to fulfill both this requirement and the Landscape Tree Credit shown above if they are located in appropriate locations. See the actual requirement in Section 5.5 for specifics.~~

~~(g)~~.

(2) Proposed Plant Material

For suggested plant materials and information by categories of Native, Interest, Woodlands Replacement, Canopy, Street Tree, Growing Conditions, and Nurseries, see separate Suggested Plant Materials List (Part V). This list is not to be considered all-inclusive of acceptable plant materials and may be amended periodically.

~~(2) Proposed Plant Material~~

(a) Plant Sizes.

i. The minimum sizes are as follows:

Table 710.b.(2)(a).i – Minimum plant sizes by application

Planted Material Types	Canopy Deciduous Canopy Trees	Large Evergreen Trees	Subcanopy Deciduous Subcanopy Trees (5)(4)	Upright Evergreens	Large Shrubs (5)	Small Shrubs (6)	Perennials, Ornamental Grasses
R-O-W Plantings (4)	2.5" cal.	8' ht.	2" cal.	6' ht.	36-42" ht.	18-24" ht.	1 gal. cont.
Street Trees (4)	2.5" cal.	n/a	2" cal.	n/a	n/a	n/a	n/a
Woodland Replacement Trees (2)	2.5" cal.	6'@ 3:2 Ratio	(3)	(3)	(3)	(3)	(3)
All other	3" cal.	7' ht.	2.5" cal.	6' ht.	36" ht.	24" ht.	1 gal. cont.

Footnotes:

- (1) The City Landscape Architect may permit smaller sizes upon receipt and review of sufficient documentation that required minimum sizes are not readily available.
- (2) Refer to Chapter 37-8**(b)** for acceptable species.
- (3) Refer to Chapter 37-8-~~e(c)~~ -for use of this plant type for replacement credits.
- (4) Shall also apply to private road easements or other equivalent.
- (5) Multi-stem trees are to ~~be~~ be eight to ten (8-10) ~~foot~~ feet in minimum height.
- (6) Spreading or horizontal shrubs are to be eighteen (18) inch width minimum.

~~(7)~~ n/a: not allowed

ii. To encourage a mixture of sizes, additional landscape credit can be given for ~~larger~~ larger-sized deciduous canopy trees, ~~deciduous~~ and large evergreen trees as follows for Right-of-Way Greenbelt trees and Parking Lot Perimeter trees. (Upsizing credit is not allowed for woodland replacement trees, street trees or interior parking lot trees.)

ii.

Table 10.b.(2)(a).ii

Size	Total Tree Credits *
Large Evergreen Trees	
8' height	1.0
> 8' to 10' height	1.25
>10' to 12' height	1.5
>12' to 14' height	2.0
>14' height	2.5
Canopy Deciduous <u>Canopy</u> Trees	
3" caliper	1.0

>3" to 3.5" caliper	1.25
>3.5" to 4.5" caliper	1.5
>4.5" to 5" caliper	1.75
>5" caliper	2.0

* Where greater than minimum size listed ~~in chart~~ above (Table 710.b.(2)(a).i).

Example: a 4" caliper deciduous canopy tree would count as 1.5 required landscape trees. A 13' high evergreen canopy tree would count as 2 required landscape trees.

The total number of trees required may be reduced through the use of these credits by a maximum of 33% (per category) (i.e. the total number of trees provided must be at least 67% of the total number of trees required based on the standard tree size, per category)

c. Prohibited Plants.

In order to promote native plant species diversity and to prevent the loss of habitat due to the spread of naturalized non-native plant species, the following species will be prohibited in planting plans:

Table 710.c – Prohibited Plants

Botanical Name	Common Name	Plant Type
<i>Acer negundo</i>	Boxelder	Deciduous Subcanopy Tree
<i>Acer platanoides</i>	Norway Maple	Deciduous Canopy Tree
<i>Acer saccharinum</i> **	Silver Maple	Deciduous Canopy Tree
<i>Ailanthus altissima</i>	Tree-Of-Heaven	Deciduous Canopy Tree
<i>Alnus glutinosa</i>	Black Alder	Deciduous Canopy Tree
<i>Berberis spp.</i>	Barberry	Small shrub
<i>Celastrus orbiculatus</i>	Round-Leaved Bittersweet	Vine
<i>Coronilla varia</i>	Crown Vetch	Perennial / Grass
<i>Echinochloa crus-galli</i>	Barnyard Grass	Perennial / Grass
<i>Elaeagnus umbellata</i>	Autumn Olive	Large Shrub
<i>Ginkgo biloba</i> (female)	Ginkgo (female)	Deciduous Canopy Tree
<i>Gypsophila paniculata</i>	Baby's Breath	Perennial / Grass
<i>Hypericum perforatum</i>	Common St. Johns-Wort	Small Shrub
<i>Iris pseudacorus</i>	Water Flag	Perennial / Grass
<i>Ligustrum spp.</i>	Privet	Small shrub
<i>Lonicera japonica</i>	Japanese Honeysuckle	Large Shrub
<i>Lonicera maackii</i>	Amur Honeysuckle	Large Shrub
<i>Lonicera tatarica</i>	Tartarian Honeysuckle	Large Shrub
<i>Lythrum salicaria</i>	Purple Loosestrife	Perennial / Grass
<i>Melilotus alba</i>	White Sweet Clover	Perennial / Grass

<i>Melilotus officinalis</i>	Yellow Sweet Clover	Perennial / Grass
<i>Morus alba</i>	White Mulberry	Deciduous Canopy Tree
<i>Polygonum persicaria</i>	Spotted Lady's Thumb	Perennial / Grass
<i>Populus alba</i>	White Poplar	Deciduous Canopy Tree
<i>Populus deltoides</i>	Eastern Cottonwood	Deciduous Canopy Tree
<i>Populus nigra</i>	Black Poplar	Deciduous Canopy Tree
<i>Populus tremuloides</i>	Quaking Aspen	Deciduous Canopy Tree
<i>Pyrus calleryana</i>	Flowering Pear	Deciduous Canopy Tree
<i>Rhamnus cathartica</i>	Common Buckthorn	Large Shrub
<i>Rhamnus frangula</i>	Glossy Buckthorn	Large Shrub
<i>Rhamnus frangula angustifolia</i>	Narrow-Leaved Glossy Buckthorn	Large Shrub
<i>Ribes americanum</i>	Wild Black Current	Small Shrub
<i>Robinia pseudoacacia</i>	Black Locust	Deciduous Subcanopy Tree
<i>Rosa multiflora</i>	Japanese Rose	Large Shrub
<i>Salix alba**</i>	White Willow	Deciduous Canopy Tree
<i>Salix babylonica**</i>	Weeping Willow	Deciduous Canopy Tree
<i>Salix nigra**</i>	Black Willow	Deciduous Canopy Tree
<i>Ulmus americana*</i>	American Elm	Canopy Deciduous Tree
<i>Ulmus pumila</i>	Siberian Elm	Canopy Deciduous Tree
<i>Vinca minor</i>	Common Periwinkle	Groundcover

* Disease resistant cultivars are acceptable

** Allowed under special circumstances

d. Recommended **Trees-Species** for Planting Under Overhead Utilities:

Table 710.d – ~~Trees-Species~~ for Under and Near Overhead Utility lines

Botanical Name	Common Name
<i>Acer campestre</i>	Hedge Maple
<i>Acer ginnata</i>	Amur Maple
<i>Acer griseum</i>	Paper Bark Maple
<i>Amelanchier sp.</i>	Serviceberry
<i>Carpinus caroliniana</i>	Musclewood
<i>Cercidiphyllum japonicum</i>	Katsura Tree
<i>Cercis canadensis</i>	Eastern Redbud
<i>Cornus alternifolia</i>	Alternate Leaf Dogwood
<i>Cornus florida</i>	Flowering Dogwood
<i>Cornus kousa</i>	Japanese Dogwood
<i>Cornus mas</i>	Cornelian Cherry Dogwood
<i>Crataegus sp.(thornless)</i>	Hawthorn sp. (thornless)

<i>Magnolia soulangiana</i>	Saucer Magnolia
<i>Malus hybrids</i>	Flowering Crabapple
<i>Syringa reticulata</i>	Japanese Tree Lilac
<i>Viburnum lentago</i>	Nannyberry
<i>Viburnum prunifolium</i>	Blackhaw Viburnum

(Choose varieties with mature heights less than lowest power line if directly below lines)

- e. Collected or Transplanted Trees - If trees will be transplanted within the site, the below instructions must appear on the landscape plans.
- (1) All collected trees shall be from on site and inspected by the City. Trees may be rejected for reasons of species, insect infestation, disease or standards set forth in this ordinance. Such plant material may be rejected either in full or in part.
 - (2) All transplanted trees shall conform to standards set forth in Section 9.
 - (3) The root ball of any transplanted tree shall measure 1 foot for each inch of trunk diameter measured 12” above the root flare or graft collar.
 - (4) If trees are to be stored, they shall be burlapped and heeled in with mulch in a pre-determined area approved by the City.
 - (5) The trees shall be provided with a working irrigation system approved by the City to ensure their viability during storage.

10.11. Nonliving Durable Material

- a. Mulch for all plantings shall be premium shredded hardwood and shall not be artificially colored. No cypress wood mulch or rubber mulch is to be used.
- b. Trees shall be mulched to a maximum of 3 inches overall depth at planting.
- c. Shrubs, groundcovers and perennials shall be mulched to a maximum of 2 inches overall depth at planting.
- d. All lawn trees shall be planted with a 4 foot diameter circle of the shredded hardwood bark mulch.
- e. Mulch shall be pulled back 3 inches from the tree trunk in a circle down to the root ball dirt to expose the root collar to air. No “volcano” mulching/mounding of mulch on the tree trunk is allowed at planting or in future applications of mulch.
- f. If a root ball’s dirt is piled up on the trunk, it should also be removed to expose the root flare.
- g. For fire safety, shredded hardwood bark is not to be installed adjacent to or within 4 feet of buildings that are constructed of combustible materials. Plantings adjacent to combustible buildings shall be mulched with a non-combustible material typically marketed as landscape mulch or rock. The color of such materials shall be natural and compatible with the building.

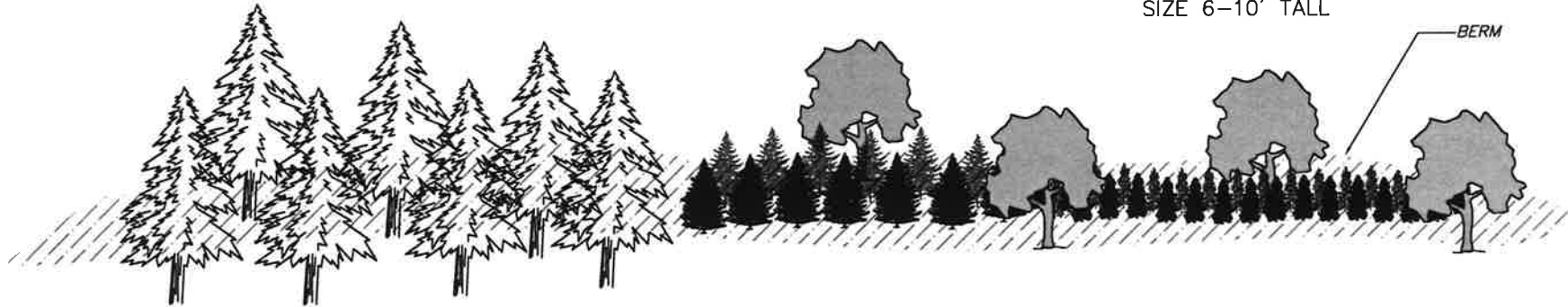
- h. Gravel ~~type or rock~~ mulches are not permitted within or immediately adjacent to paved parking lots or roadways. Approval of type, depth and specific location for gravel mulch is to be approved by the City.
- i. Sphagnum peat/bog peat is harvested from functioning wetlands so it shall not be used for landscape purposes. Compost may be used as an alternative.
- j. Plastic or other artificial replicas of plant material are prohibited.

ELEVATION – FROM RESIDENTIAL PROPERTY

LARGE EVERGREENS – MATURE SIZE
40–70 FEET TALL

MEDIUM-SIZED EVERGREENS –
MATURE SIZE 10–15’ TALL

SMALL, NARROW
EVERGREENS – MATURE
SIZE 6–10’ TALL

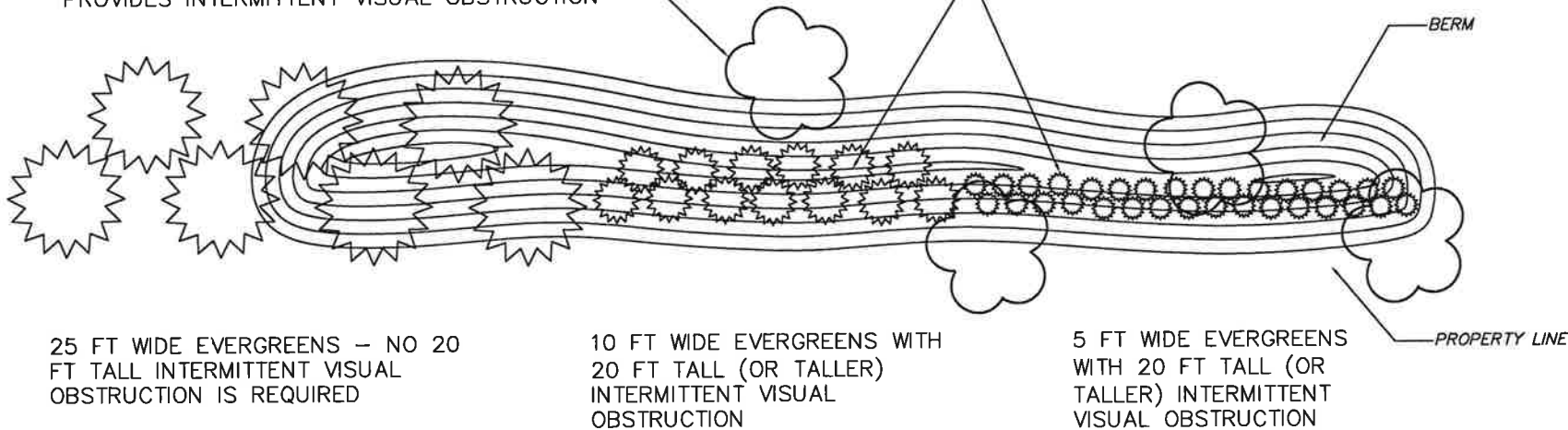


PLAN VIEW

DECIDUOUS CANOPY TREE OR LARGE EVERGREEN
PROVIDES INTERMITTENT VISUAL OBSTRUCTION

STAGGERED PLANTINGS

BERM



25 FT WIDE EVERGREENS – NO 20
FT TALL INTERMITTENT VISUAL
OBSTRUCTION IS REQUIRED

10 FT WIDE EVERGREENS WITH
20 FT TALL (OR TALLER)
INTERMITTENT VISUAL
OBSTRUCTION

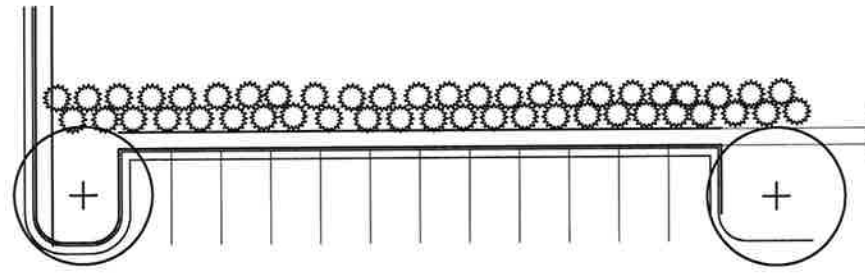
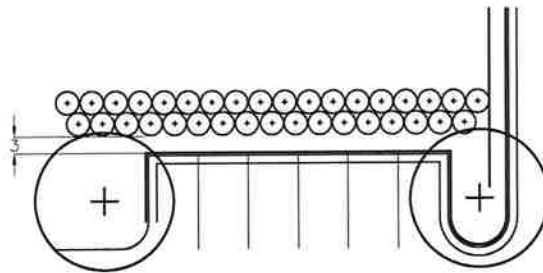
5 FT WIDE EVERGREENS
WITH 20 FT TALL (OR
TALLER) INTERMITTENT
VISUAL OBSTRUCTION

OPACITY OBSCURING DIAGRAM – BERM

ELEVATION – FROM RIGHT-OF-WAY



PLAN VIEW



OPACITY OBSCURING DIAGRAM – PARKING, NO BERM

(NOTE: DIAGRAM DOES NOT INCLUDE RIGHT-OF-WAY GREENBELT LANDSCAPING WHICH IS REQUIRED IN ADDITION TO SHRUB SCREENING)

Part III. Standard Planting Details

NOTE:

GUY DECIDUOUS TREES ABOVE 3" CAL.. STAKE DECIDUOUS TREES BELOW 3" CAL.

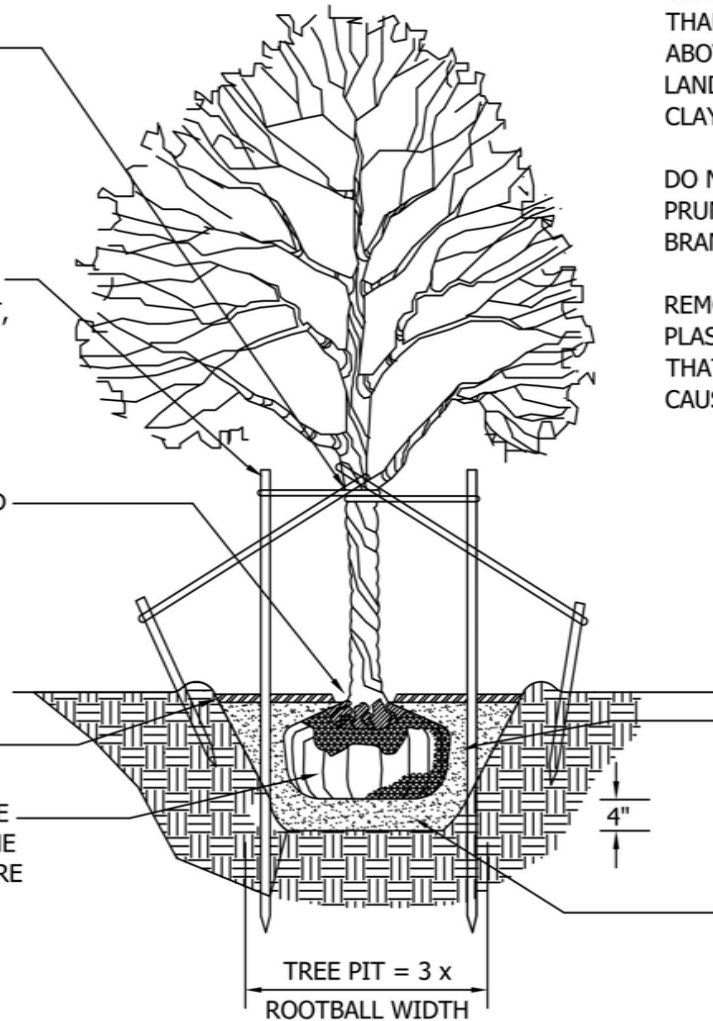
STAKE TREES AT FIRST BRANCH USING 2"-3" WIDE BELT-LIKE NYLON OR PLASTIC STRAPS. ALLOW FOR SOME MINIMAL FLEXING OF THE TREE. REMOVE AFTER ONE YEAR.

2" X 2" HARDWOOD STAKES, MIN. 36" ABOVE GROUND FOR UPRIGHT, 18" IF ANGLED. DRIVE STAKES A MIN. 18" INTO UNDISTURBED GROUND OUTSIDE ROOTBALL. REMOVE AFTER ONE YEAR.

MULCH 3" DEPTH WITH SHREDDED HARDWOOD BARK. NATURAL IN COLOR. LEAVE 3" CIRCLE OF BARE SOIL AT BASE OF TREE TRUNK TO EXPOSE ROOT FLARE.

MOUND EARTH TO FORM SAUCER

REMOVE ALL NON-BIODEGRADABLE MATERIALS COMPLETELY FROM THE ROOTBALL. CUT AND REMOVE WIRE BASKET AND BURLAP FROM TOP HALF OF THE ROOTBALL.



NOTE:

TREE SHALL BEAR SAME RELATION TO FINISH GRADE AS IT BORE ORIGINALLY OR SLIGHTLY HIGHER THAN FINISH GRADE UP TO 6" ABOVE GRADE, IF DIRECTED BY LANDSCAPE ARCHITECT FOR HEAVY CLAY SOIL AREAS.

DO NOT PRUNE TERMINAL LEADER. PRUNE ONLY DEAD OR BROKEN BRANCHES.

REMOVE ALL TAGS, STRING, PLASTICS AND OTHER MATERIALS THAT ARE UNSIGHTLY OR COULD CAUSE GIRDLING.

PLANT TREE SO ROOT FLARE IS AT OR ABOVE SURROUNDING GRADE. REMOVE ROOT BALL DIRT TO EXPOSE FLARE IF NECESSARY AND CUT ANY GIRDLING ROOTS.

PLANTING MIXTURE: AMEND SOILS PER SITE CONDITIONS AND REQUIREMENTS OF THE PLANT MATERIAL.

SCARIFY PLANTING PIT SIDES ONLY. RECOMPACT BASE TO 4" DEPTH.

DECIDUOUS TREE PLANTING DETAIL

Not to scale

NOTE:
 GUY EVERGREEN TREES ABOVE 12'
 HEIGHT. STAKE EVERGREEN TREE
 BELOW 12' HEIGHT.

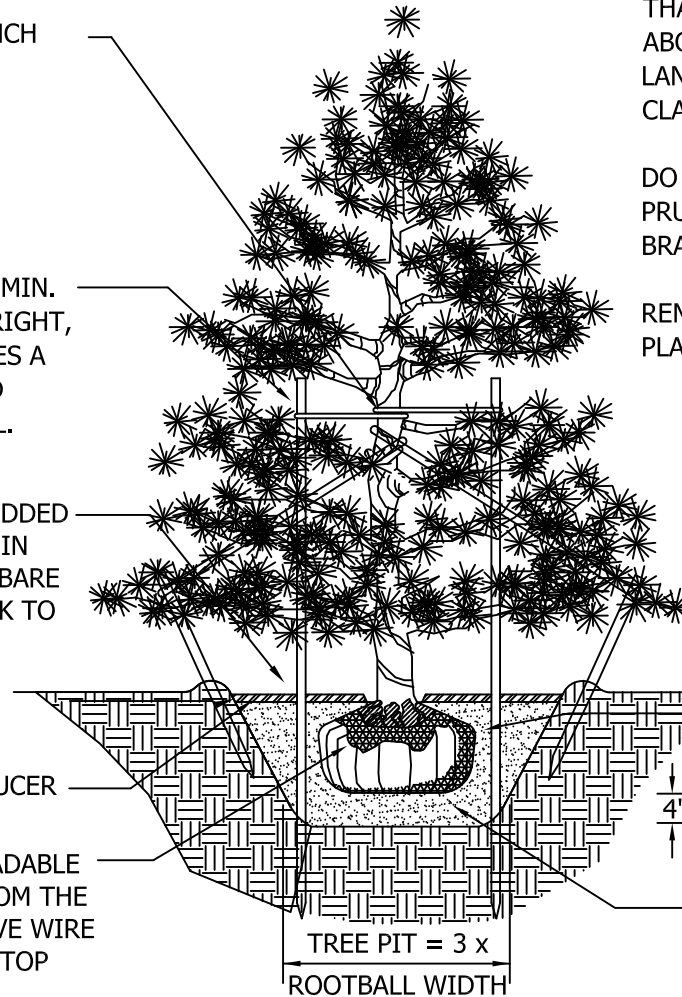
STAKE TREES AT FIRST BRANCH
 USING 2"-3" WIDE BELT-LIKE
 NYLON OR PLASTIC STRAPS.
 ALLOW FOR SOME MINIMAL
 FLEXING OF THE TREE.
 REMOVE AFTER ONE YEAR.

2" X 2" HARDWOOD STAKES, MIN.
 36" ABOVE GROUND FOR UPRIGHT,
 18" IF ANGLED. DRIVE STAKES A
 MIN. 18" INTO UNDISTURBED
 GROUND OUTSIDE ROOTBALL.
 REMOVE AFTER ONE YEAR.

MULCH 3" DEPTH WITH SHREDDED
 HARDWOOD BARK. NATURAL IN
 COLOR. LEAVE 3" CIRCLE OF BARE
 SOIL AT BASE OF TREE TRUNK TO
 EXPOSE ROOT FLARE.

MOUND EARTH TO FORM SAUCER

REMOVE ALL NON-BIODEGRADABLE
 MATERIALS COMPLETELY FROM THE
 ROOTBALL. CUT AND REMOVE WIRE
 BASKET AND BURLAP FROM TOP
 HALF OF THE ROOTBALL.



NOTE:
 TREE SHALL BEAR SAME RELATION
 TO FINISH GRADE AS IT BORE
 ORIGINALLY OR SLIGHTLY HIGHER
 THAN FINISH GRADE UP TO 6"
 ABOVE GRADE, IF DIRECTED BY
 LANDSCAPE ARCHITECT FOR HEAVY
 CLAY SOIL AREAS.

DO NOT PRUNE TERMINAL LEADER.
 PRUNE ONLY DEAD OR BROKEN
 BRANCHES.

REMOVE ALL TAGS, STRING,
 PLASTICS ETC.

PLANT TREE SO ROOT
 FLARE IS AT OR ABOVE
 SURROUNDING GRADE.
 REMOVE ROOT BALL
 DIRT TO EXPOSE FLARE
 IF NECESSARY AND CUT
 ANY GIRDLING ROOTS.

PLANTING MIXTURE:
 AMEND SOILS PER SITE
 CONDITIONS AND
 REQUIREMENTS OF THE
 PLANT MATERIAL.

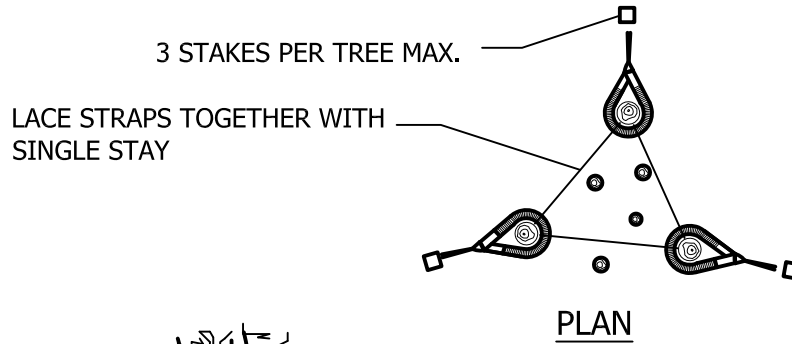
SCARIFY PLANTING PIT
 SIDES. RECOMPACT
 BASE TO 4" DEPTH.

EVERGREEN TREE PLANTING DETAIL

Not to scale

NOTES:

PRUNE AS SPECIFIED
STAKE 3 LARGEST STEMS, IF TREE
HAS MORE THAN 3 LEADERS
SET TREE STAKES VERTICAL AND
AT SAME HEIGHT.



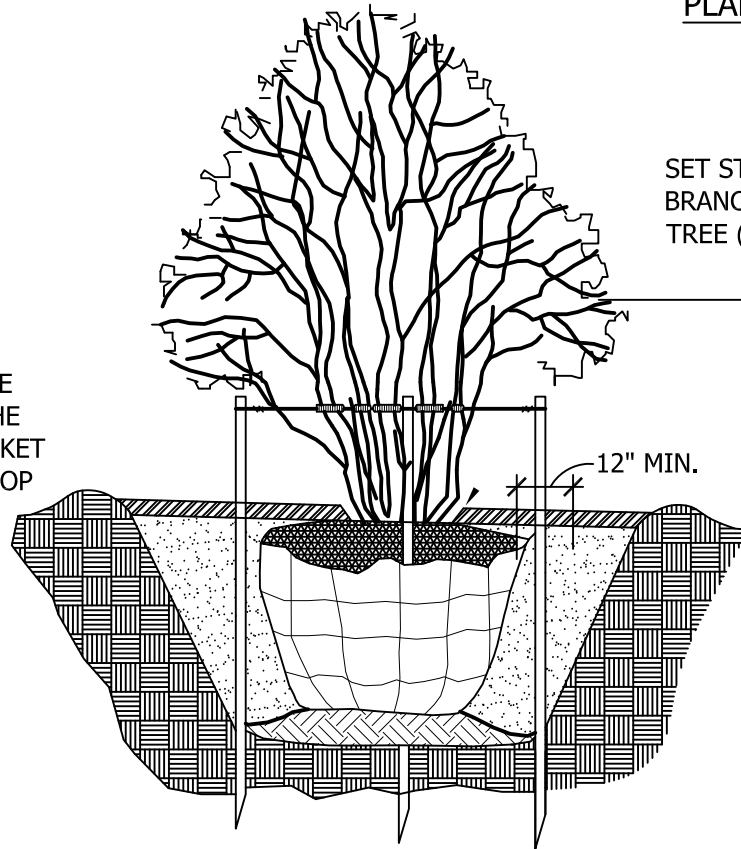
MOUND TO FORM SAUCER

REMOVE ALL NON-BIODEGRADABLE
MATERIALS COMPLETELY FROM THE
ROOTBALL. CUT DOWN WIRE BASKET
AND FOLD DOWN BURLAP FROM TOP
1/3 OF THE ROOTBALL.

PLANT MIXTURE AS SPECIFIED

SCARIFY SIDES TO 4" DEPTH
AND RECOMPACT

STAKES TO EXTEND 12" BELOW
TREE PIT IN UNDISTURBED
GROUND



SET STAYS ABOVE FIRST
BRANCHES, APPROX. HALFWAY UP
TREE (SEE DETAIL)

MULCH 3" DEPTH WITH SHREDDED
HARDWOOD BARK. NATURAL IN
COLOR. LEAVE 3" CIRCLE OF BARE
SOIL AT BASE OF TREE TRUNK TO
EXPOSE ROOT FLARE. REMOVE
EXCESS SOIL TO EXPOSE ROOT
FLARE IF NECESSARY.

MULTI-STEM TREE PLANTING DETAIL

Not to scale

2-15-2016

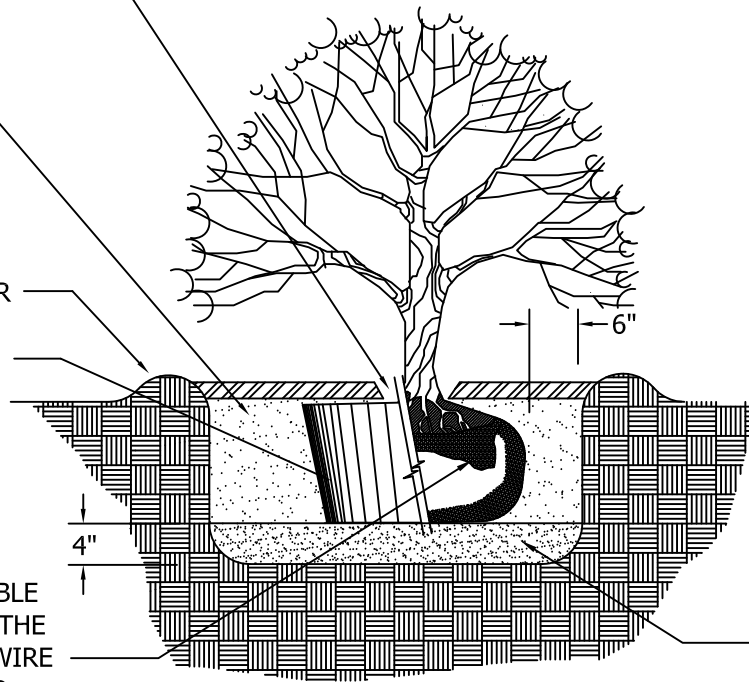
MULCH 2" DEPTH WITH SHREDDED HARDWOOD BARK. NATURAL IN COLOR. LEAVE 3" CIRCLE OF BARE SOIL AT BASE OF TREE TRUNK TO EXPOSE ROOT FLARE.

PLANTING MIXTURE: AMEND SOILS PER SITE CONDITIONS AND REQUIREMENTS OF THE PLANT MATERIAL.

MOUND EARTH TO FORM SAUCER

REMOVE COLLAR OF ALL FIBER POTS. POTS SHALL BE CUT TO PROVIDE FOR ROOT GROWTH. REMOVE ALL NONORGANIC CONTAINERS COMPLETELY.

REMOVE ALL NON-BIODEGRADABLE MATERIALS COMPLETELY FROM THE ROOTBALL. CUT AND REMOVE WIRE BASKET AND BURLAP FROM TOP HALF OF THE ROOTBALL.



NOTE:

SHRUB SHALL BEAR SAME RELATION TO FINISH GRADE AS IT BORE ORIGINALLY OR SLIGHTLY HIGHER THAN FINISH GRADE UP TO 4" ABOVE GRADE, IF DIRECTED BY LANDSCAPE ARCHITECT FOR HEAVY CLAY SOIL AREAS.

PRUNE ONLY DEAD OR BROKEN BRANCHES.

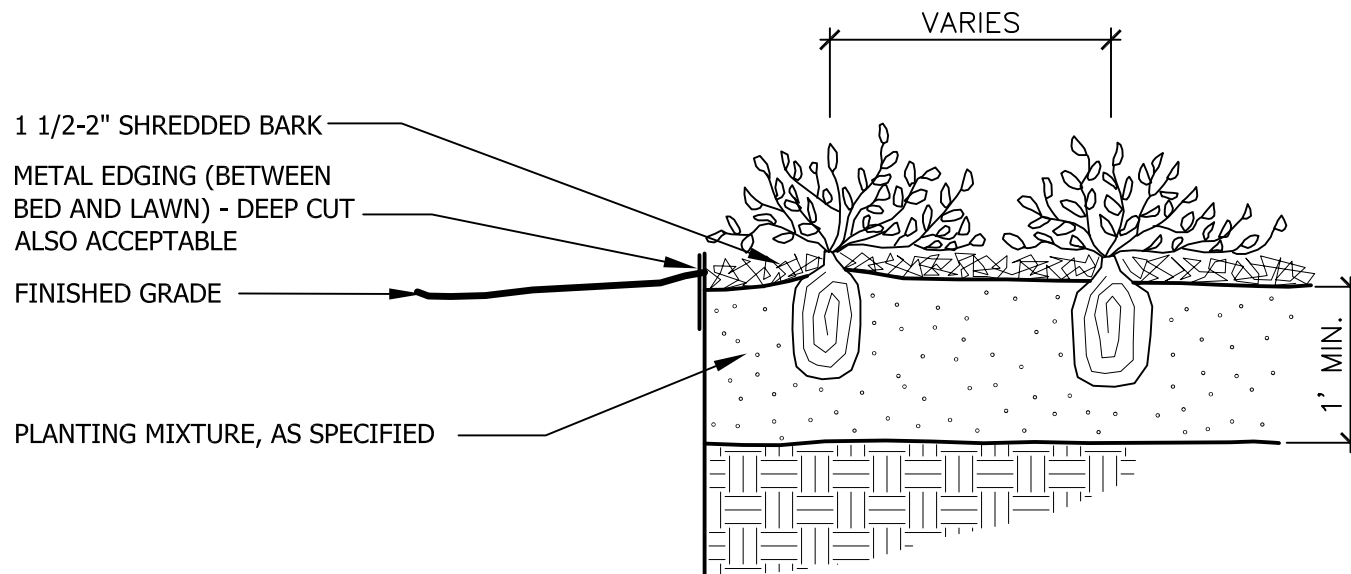
REMOVE ALL TAGS, STRING, PLASTICS AND OTHER MATERIALS

SHRUBS PLANTED IN BEDS SHALL HAVE ENTIRE BED MASS EXCAVATED AND BACKFILLED WITH APPROVED PLANT MIX. PLANTS SHALL NOT BE INSTALLED IN INDIVIDUAL HOLES.

SCARIFY PLANTING PIT SIDES. RECOMPACT BASE OF TO 4" DEPTH.

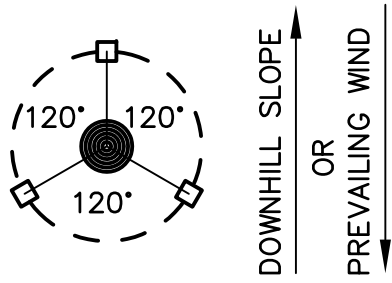
SHRUB PLANTING DETAIL

NOT TO SCALE



PERENNIAL PLANTING DETAIL

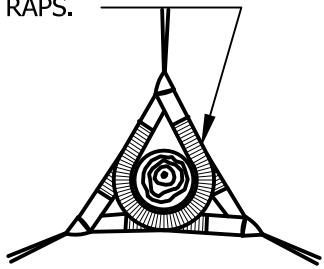
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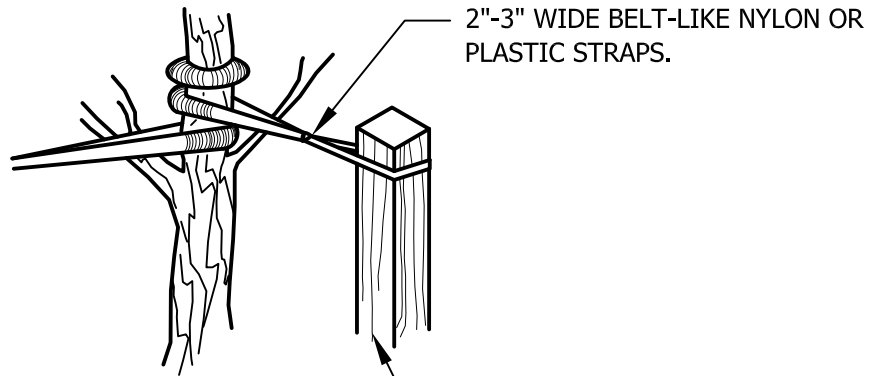
NOTE:
 ORIENT STAKING/GUYING TO PREVAILING WINDS, EXCEPT ON SLOPES GREATER THAN 3:1 ORIENT TO SLOPE.
 USE SAME STAKING/GUYING ORIENTATION FOR ALL PLANTS WITHIN EACH GROUPING OR AREA

STAKING/GUYING LOCATION

2"-3" WIDE BELT-LIKE NYLON OR PLASTIC STRAPS.



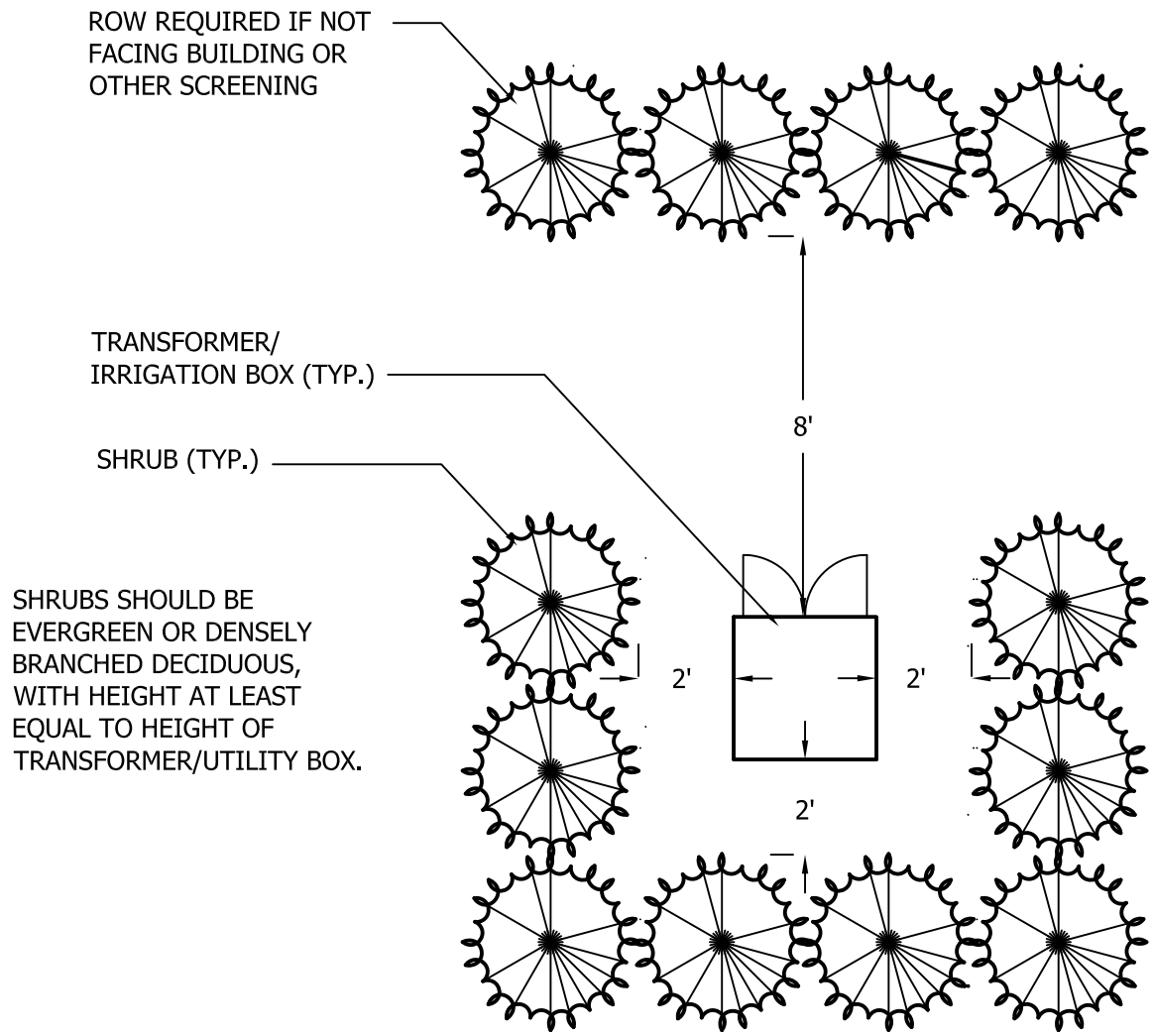
GUYING DETAIL



STAKING DETAIL
 STAKES AS SPECIFIED 3 PER TREE

TREE STAKING DETAIL

Not to scale



TRANSFORMER SCREENING DETAIL

Not to scale

PART IV : APPROVED STREET TREE SPECIES LIST

Scientific Name	Common Name	Native to MI?	Suitable for Overhead Utilities?	Tolerates Wet Sites?	Drought Tolerant?	Salt Tolerant?	Surface Roots?	Fall Leaf Color	Flower Type	Fruit Type	Species Density in Novi	Mature Height	Growth Rate
LARGE DECIDUOUS TREES - Mature Height Greater Than 40 Feet													
<i>Acer rubrum</i>	Red Maple	X					X	Yellow- Red	Small/red-petaled clusters	Winged seeds	9.49%	40-60'	Fast
<i>Acer saccharum</i>	Sugar Maple	X						Yellow - Red	Small/pale yellow clusters	Winged seeds	5.91%	60-75'	Moderate
<i>Acer x freemanii</i>	Autumn Blaze Maple	X			X	Moderate		Orange - Red	Inconspicuous/Clusters	Winged seeds	4.19%	40-60'	Fast
<i>Betula papyrifera</i>	Paper Birch	X				X		Yellow	Inconspicuous/Catkins	Cone-like clusters	0.13%	50-70'	Fast
<i>Carya cordiformis</i>	Bitternut Hickory	X						Yellow - Brown	Small/Green catkins	Large, pear-shaped nuts	< 0.01%	50-70'	Slow
<i>Carya glabra</i>	Pignut Hickory	X			Moderate			Golden brown	Small/Green catkins	Large, pear-shaped nuts	0.15%	60-100'	Slow
<i>Carya ovata</i>	Shagbark Hickory	X			X			Golden brown	Small/Green catkins	Large, rounded nuts	0.13%	60-80'	Slow
<i>Celtis occidentalis</i>	Hackberry	X			X	Moderate	X	Yellow	Inconspicuous/Clusters	Small, fleshy drupes	0.59%	40-60'	Fast
<i>Cercidiphyllum japonicum</i>	Katsuratree					Moderate	X	Yellow	Small/red-petaled clusters	Small pods	0.50%	40-60'	Moderate
<i>Cladrastis lutea</i>	Yellowwood				Moderate	Moderate	X	Yellow	Long/White catkins/Fragrant	Large pods	0.18%	30-50'	Moderate
<i>Diospyros virginiana</i>	Persimmon				X			Yellow - Red	Small/white/fragrant	Large, orange berry	< 0.01%	30-60'	Slow
<i>Eucommia ulmoides</i>	Hardy Rubbertree				X	Moderate		No color change	Inconspicuous	Waxy, winged capsule	0.13%	40-60'	Moderate
<i>Fagus grandifolia</i>	American Beech	X					X	Golden bronze	Inconspicuous/Clusters	Small nuts in prickly husk	0.05%	50-70'	Slow
<i>Fagus sylvatica</i>	European Beech							Bronze	Inconspicuous/Clusters	Small nuts in prickly husk	0.03%	50-60'	Slow
<i>Ginkgo biloba</i>	Ginkgo				X	X		Gold	Inconspicuous	Fleshy with strong odor	1.26%	50-80'	Slow
<i>Gleditsia triacanthos inermis</i>	Thornless Honeylocust	X			X	X	X	Gold	Inconspicuous/Spikes	Large brown pods	5.05%	30-70'	Fast
<i>Gymnocladus dioicus</i>	Kentucky Coffeetree	X			X	X		Yellow	Long/White clusters	Large leathery pods	0.27%	60-75'	Slow
<i>Juglans nigra</i>	Black Walnut	X			Moderate		X	Yellow	Inconspicuous/Clusters	Large nut in green husk	1.39%	50-75'	Moderate
<i>Liquidambar styraciflua</i>	Sweetgum			X	X	X	X	Red - Purple	Inconspicuous/Spikes	Round, spiky capsules	2.97%	60-75'	Moderate
<i>Liriodendron tulipifera</i>	Tuliptree	X					X	Gold	Yellow/Tulip-like	Cluster of winged seeds	2.94%	70-90'	Fast
<i>Nyssa sylvatica</i>	Blackgum	X			Moderate	Moderate		Red	Long/White clusters	Small, purple drupes	0.36%	30-50'	Slow
<i>Platanus occidentalis</i>	American Sycamore	X			X		X	Brown	Dense clusters on stalks	Dense ball of seeds	0.03%	75-100'	Fast
<i>Prunus serotina</i>	Black Cherry	X			Moderate	X		Yellow - Orange	Small/White clusters	Small, purple cherries	1.09%	50-60'	Fast
<i>Quercus alba</i>	White Oak	X			X			Red	Green catkins	Small acorns	0.48%	50-80'	Slow
<i>Quercus bicolor</i>	Swamp White Oak	X		X	X	Moderate		Gold - Orange	Green catkins	Small acorns	1.98%	50-60'	Moderate
<i>Quercus coccinea</i>	Scarlet Oak				Moderate	X		Red	Green catkins	Small acorns	0.03%	40-75'	Moderate
<i>Quercus ellipsoidalis</i>	Hill's Oak	X			X			Red	Green catkins	Small acorns	0.06%	40-75'	Moderate
<i>Quercus imbricaria</i>	Shingle Oak	X			X			Yellow - Brown	Green catkins	Small acorns	0.18%	50-60'	Slow
<i>Quercus macrocarpa</i>	Bur Oak	X			X	Moderate		Yellow - Brown	Green catkins	Large, fringed acorns	0.59%	70-80'	Slow
<i>Quercus muehlenbergii</i>	Chinkapin Oak	X			X			Yellow - Orange	Green catkins	Small acorns	0.03%	50-80'	Slow
<i>Quercus palustris</i>	Pin Oak	X		X			X	Red - Brown	Green catkins	Small acorns	0.56%	60-70'	Fast
<i>Quercus rubra</i>	Red Oak	X			X	Moderate	X	Red	Green catkins	Small acorns	2.89%	60-75'	Moderate
<i>Quercus shumardii</i>	Shumard Oak	X			X	X		Red	Green catkins	Small acorns	0.02%	40-60'	Moderate
<i>Quercus velutina</i>	Black Oak	X			X			Yellow	Green catkins	Small acorns	0.15%	50-60'	Moderate
<i>Tilia americana</i>	American Basswood	X			Moderate			Yellow	Yellow clusters/Fragrant	Small nuts	1.27%	60-80'	Moderate
<i>Tilia cordata</i>	Little Leaf Linden				X	Moderate	X	Yellow	Yellow clusters/Fragrant	Small nuts	4.89%	60-70'	Moderate
<i>Tilia tomentosa</i>	Silver Linden					X	X	Yellow	Yellow clusters/Fragrant	Small, egg-shaped nuts	1.02%	50-70'	Moderate
<i>Ulmus parvifolia</i>	Chinese Elm				X	X	X	Yellow - Red	Inconspicuous	Winged seeds	3.31%	50-70'	Fast
<i>Ulmus spp.</i>	Hybrid Elm	X			Moderate	Moderate	X	Yellow	Inconspicuous	Winged seeds	1.65%	40-60'	Fast
<i>Zelkova serrata</i>	Zelkova				X	X		Orange - Red	Inconspicuous	Small drupe	2.30%	50-80'	Fast

Scientific Name	Common Name	Native to MI?	Suitable for Overhead Utilities?	Tolerates Wet Sites?	Drought Tolerant?	Salt Tolerant?	Surface Roots?	Fall Leaf Color	Flower Type	Fruit Type	Species Density in Novi	Mature Height	Growth Rate
MEDIUM DECIDUOUS TREES - Mature Height Between 25-40 Feet													
<i>Acer campestre</i>	Hedge Maple		X		X			Light yellow	Inconspicuous/Green clusters	Small winged seeds	1.69%	25-35'	Moderate
<i>Aesculus hippocastanum</i>	Horsechestnut							Yellow	White or red upright clusters	Seed in a prickly husk	1.13%	30-40'	Moderate
<i>Betula nigra</i>	River Birch			X		Moderate		Yellow	Inconspicuous/Catkins	Cone-like clusters	0.34%	25-40'	Fast
<i>Carpinus betulus 'Fastigiata'</i>	European Hornbeam		X		X			Yellow	Inconspicuous/Catkins	Nuts in dangling clusters	0.09%	30-40'	Slow
<i>Catalpa bignonioides</i>	Eastern Catalpa				X			No fall color	White upright clusters	Long pods	0.04%	30-40'	Moderate
<i>Cornus florida</i>	Flowering Dogwood	X	X					Red	White or red petals	Bright red and berry-like	0.19%	20-40'	Slow
<i>Koelreuteria paniculata</i>	Golden Rain Tree				X			Yellow	Yellow upright clusters	Seeds in yellow capsules	0.04%	25-40'	Moderate
<i>Magnolia spp.</i>	Magnolia		X					Yellow	Varies by cultivar	Pink aggregate structure releases seeds	0.03%	Varies by cultivar	Moderate
<i>Ostrya virginiana</i>	Ironwood	X			X			Yellow	Inconspicuous/Catkins	Hops-like clusters	0.06%	25-40'	Slow
SMALL DECIDUOUS TREES - Mature Height Less Than 30 Feet													
<i>Acer ginnala</i>	Amur Maple		X		X			Yellow - Red	Small/White clusters/Fragrant	Winged seeds	0.29%	15-20'	Moderate
<i>Acer griseum</i>	Paperbark Maple		X		Moderate	Moderate		Bronze - Red	Inconspicuous	Winged seeds	0.08%	20-30'	Slow
<i>Acer palmatum</i>	Japanese Maple		X					Yellow - Red	Small/Red clusters	Winged seeds	0.02%	15-25'	Slow
<i>Acer spicatum</i>	Mountain Maple	X	X					Yellow - Red	Inconspicuous/Clusters	Winged seeds	0.04%	15-25'	Moderate
<i>Amelanchier spp.</i>	Serviceberry	X	X	X				Orange - Red	White clusters	Red and berry-like	0.93%	10-20'	Moderate
<i>Carpinus caroliniana</i>	American Hornbeam	X	X	X	Moderate			Yellow - Orange	Inconspicuous/Catkins	Yellow clusters contain nuts	0.14%	20-30'	Slow
<i>Cercis canadensis</i>	Eastern Redbud	X	X				X	Yellow	Small/Pink clusters	Small brown pods	0.30%	20-30'	Moderate
<i>Chioanthus retusus</i>	Chinese Fringe Tree		X					Yellow	White upright clusters/Fragrant	Blue and berry-like	0.02%	15-25'	Slow
<i>Cornus kousa</i>	Kousa Dogwood		X		Moderate			Red - Purple	Large/White petals	Large, red and berry-like	0.14%	20-30'	Slow
<i>Cotinus coggyria</i>	Common Smoketree		X		Moderate			Red - Purple	Stalks covered in fine hairs	Stalks covered in fine hairs	0.04%	20-30'	Slow
<i>Crataegus crus-galli inermis</i>	Cockspur Hawthorn	X	X		X			Red - Purple	Small/White clusters/Odor	Large, red and berry-like	0.56%	20-30'	Moderate
<i>Malus spp.</i>	Flowering Crabapple		X					Yellow - Red	Pink or white clusters/Fragrant	Large, green and apple-like	3.40%	15-25'	Moderate
<i>Sassafras albidum</i>	Sassafras	X			X			Yellow- Red	Yellow clusters	Blue and berry-like	0.05%	20-30'	Moderate
<i>Syringa reticulata</i>	Japanese Tree Lilac		X			X		Yellow	Large/White clusters	Small brown capsules	1.73%	20-30'	Moderate

Scientific Name	Common Name	Plant Type	Interest/ Bloom Time	Native to Michigan?	Woodland Replace- ment?	Street Tree Class	Growing Conditions	Nursery Type
DECIDUOUS CANOPY TREES								
<i>Acer nigrum</i>	Black Maple	DC	SU/Fall	NOC	YES		SS	SP
<i>Acer nigrum</i> 'Greencolumn'	Black Maple	DC	SU/Fall	~	YES	SC	SS	CO
<i>Acer platanoides</i>	Norway Maple	DC	SU/Fall	EX	NO		SU	CO
<i>Acer pseudoplatanus</i>	Sycamore Maple	DC	SU/Fall	EX	NO		SU	CO
<i>Acer rubrum</i>	Red Maple	DC	SU/Fall	NOC	YES	RC	SU	CO
<i>Acer rubrum</i> 'Bowhall'	Bowhall Red Maple	DC	SU/Fall	~	YES	RC	SU	CO
<i>Acer rubrum</i> 'Franksred'	Red Sunset Red Maple	DC	SU/Fall	~	YES	RC	SU	CO
<i>Acer rubrum tomentosum</i>	Red Maple	DC	SU/Fall	~	YES		SU	SP
<i>Acer rubrum trilobum</i>	Red Maple	DC	SP/SU/FA	~	YES		SU	SP
<i>Acer saccharum</i>	Sugar Maple	DC	SU/Fall	NOC	YES		SU	CO
<i>Acer saccharum</i> 'Commemoration'	Sugar Maple	DC	SU/Fall	~	YES	RC	SU	CO
<i>Acer saccharum</i> 'Green Mountain'	Sugar Maple	DC	SU/Fall	~	YES	RC	SU	CO
<i>Aesculus glabra</i>	Ohio Buckeye	DC	SU/Fall	NOC	YES		SH	CO
<i>Aesculus hippocastanum</i>	Horsechestnut	DC	Spring/SU	EX	NO	SC	SS	SP
<i>Betula alleghaniensis</i>	Yellow Birch	DC	SU/Winter	NOC	YES	PR	WT	SP
<i>Betula nigra</i>	River Birch	DC	SU/Winter	NU	NO		WT	CO
<i>Betula papyrifera</i>	Canoe Birch	DC	SU/Winter	NOC	YES		SU	CO
<i>Carya cordiformis</i>	Bitternut Hickory	DC	SU/Fall	NOC	YES		SU	SP
<i>Carya glabra</i>	Pignut Hickory	DC	SU/Fall	NOC	YES		SU	SP
<i>Carya laciniosa</i>	Big Shellbark Hickory	DC	SU/Fall	NOC	YES		SU	SP
<i>Carya ovata</i>	Shagbark Hickory	DC	SU/Winter	NOC	YES		SU	SP
<i>Celtis occidentalis</i>	Hackberry	DC	Summer	NOC	YES	RC	SU	CO
<i>Cladrastis lutea</i>	Yellowwood	DC	Spring/SU	NU	NO	SC	SU	CO
<i>Fagus grandifolia</i>	American Beech	DC	SU/Winter	NOC	YES		SH	CO
<i>Fagus sylvatica</i>	European Beech	DC	SU/Winter	EX	NO		SU	CO
<i>Ginkgo biloba</i> (male)	Ginkgo	DC	Summer	EX	NO	RC	SU	CO
<i>Ginkgo biloba</i> 'Autumn Gold'	Ginkgo	DC	Summer	EX	NO	RC	SU	CO
<i>Ginkgo biloba</i> 'Magyar'	Ginkgo	DC	Summer	EX	NO	RC	SU	CO
<i>Gleditsia triacanthos</i>	Honeylocust	DC	Summer	NOC	YES		SU	SP
<i>Gleditsia triacanthos inermis</i>	Thornless Honeylocust	DC	Summer	~	YES	RC	SU	CO
<i>Gleditsia triacanthos</i> 'Skyline'	Honeylocust	DC	Summer	~	YES	RC	SU	CO
<i>Gymnocladus dioicus</i>	Kentucky Coffeetree	DC	SU/Winter	NS	YES	SC	SS	CO
<i>Juglans cinerea</i>	Butternut	DC	Summer	NOC	YES		SU	CO
<i>Juglans nigra</i>	Black Walnut	DC	Summer	NOC	YES		SU	SP
<i>Liquidambar styraciflua</i>	Sweetgum	DC	SU/Fall	NU	NO		SU	CO
<i>Liriodendron tulipifera</i>	Tuliptree	DC	SU/Fall	NOC	YES	RC	SS	CO
<i>Nyssa sylvatica</i>	Tupelo	DC	SU/Fall	NOC	YES	SC	SU	CO
<i>Platanus acerifolia</i> 'Columbia'	Columbia Planetree	DC	Summer	EX	NO	SC	SS	CO
<i>Platanus occidentalis</i>	American Sycamore	DC	Summer	NOC	YES	SC	SS	SP
<i>Prunus serotina</i>	Black Cherry	DC	Fall	NOC	YES		SU	SP
<i>Quercus alba</i>	White Oak	DC	Summer	NOC	YES		SU	CO
<i>Quercus bicolor</i>	Swamp White Oak	DC	Summer	NOC	YES	RC	SU	SP
<i>Quercus coccinea</i>	Scarlet Oak	DC	Summer	NOC	YES		SU	SP
<i>Quercus ellipsoidalis</i>	Hill's Oak	DC	SU/Fall	NS	YES		SU	SP
<i>Quercus imbricaria</i>	Shingle Oak	DC	Summer	NS	YES		SU	SP
<i>Quercus macrocarpa</i>	Bur Oak	DC	Summer	NOC	YES	RC	SU	CO
<i>Quercus muehlenbergii</i>	Chinkapin Oak	DC	Summer	NOC	YES		SU	SP
<i>Quercus prinus</i>	Chestnut Oak	DC	Summer	NU	NO		SU	SP
<i>Quercus robur</i>	English Oak	DC	Summer	EX	NO	SC	SU	CO
<i>Quercus robur</i> 'Skymaster'	English Oak	DC	SU/Fall	EX	NO	SC	SU	CO
<i>Quercus rubra</i>	Red Oak	DC	Summer	NOC	YES	RC	SU	CO
<i>Quercus velutina</i>	Black Oak	DC	Summer	NOC	YES		SU	SP
<i>Sophora japonica</i>	Pagoda Tree	DC	Spring/SU	EX	NO	RC	SU	SP
<i>Tilia americana</i>	American Basswood	DC	Summer	NOC	YES	RC	SS	CO
<i>Tilia cordata</i>	Little Leaf Linden	DC	Summer	EX	NO	RC	SU	CO
<i>Tilia cordata</i> 'Chancellor'	Little Leaf Linden	DC	Summer	EX	NO	RC	SU	CO
<i>Tilia cordata</i> 'Corzam'	Little Leaf Linden	DC	Summer	EX	NO	RC	SU	CO
<i>Tilia cordata</i> 'Greenspire'	Little Leaf Linden	DC	Summer	EX	NO	RC	SU	CO
<i>Tilia platyphyllos</i>	Large-leaf Linden	DC	SU/Fall	EX	NO	RC	SU	
<i>Tilia tomentosa</i>	Silver Linden	DC	Summer	EX	NO	RC	SU	CO

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<i>Tilia x euchlora</i> 'Laurelhurst'	Crimean Linden	DC	Summer	EX	NO		SU	
<i>Zelkova serrata</i>	Zelkova	DC	Summer	EX	NO	SC	SU	CO
CONIFEROUS TREES - see Section 37-8 for woodland replacement ratio								
<i>Abies balsamea</i>	Balsam Fir	LE	Winter	NU	YES	PR	SS	CO
<i>Abies concolor</i>	Concolor Fir	LE	Winter	NU	NO	PR	SU	CO
<i>Larix laricina</i>	Tamarack	LE	Fall	NOC	YES		WT	SP
<i>Metasequoia glyptostroboides</i>	Dawn Redwood	LE	SU/Fall	EX	NO		SU	CO
<i>Picea abies</i>	Norway Spruce	LE	Winter	EX	NO	PR	SU	CO
<i>Picea pungens</i>	Colorado Spruce	LE	Winter	NU	NO	PR	SU	CO
<i>Picea glauca</i>	White Spruce	LE	Winter	NS	YES	PR	SU	CO
<i>Picea mariana</i>	Black Spruce	LE	Winter	NOC	YES	PR	SU	SP
<i>Picea omorika</i>	Serbian Spruce	LE	Winter	EX	NO	PR	SU	CO
<i>Pinus nigra</i>	Austrian Pine	LE	Winter	EX	NO	PR	SU	CO
<i>Pinus resinosa</i>	Red Pine	LE	Winter	NU	YES	PR	SU	CO
<i>Pinus strobus</i>	White Pine	LE	Winter	NOC	YES	PR	SU	CO
<i>Pinus sylvestris</i>	Scotch Pine	LE	Winter	EX	NO	PR	SU	CO
<i>Pseudotsuga menziesii</i>	Douglas Fir	LE	Winter	NU	NO	PR	SS	CO
<i>Taxodium distichum</i>	Bald Cypress	LE	SU/Winter	NU	NO		WT	CO
<i>Tsuga canadensis</i>	Canada Hemlock	LE	Winter	NOC	YES	PR	SS	CO
UPRIGHT EVERGREENS - see Section 37-8 for woodland replacement ratios								
<i>Juniperus virginiana</i>	Eastern Red Cedar	UE	Winter	NOC	YES	~	SU	CO
<i>Thuja occidentalis</i>	Arborvitae	UE	Winter	NOC	YES	~	SS	CO
DECIDUOUS SUBCANOPY TREES - see Section 37.8 for woodland replacement ratios								
<i>Acer campestre</i>	Hedge Maple	DS	Summer	EX	NO	SC	SU	CO
<i>Acer campestre</i> 'Queen Elizabeth'	Hedge Maple	DS	Fall	EX	NO	UO	SU	CO
<i>Acer ginnala</i>	Amur Maple	DS	Fall	EX	NO		SU	CO
<i>Acer griseum</i>	Paperbark Maple	DS	Winter	EX	NO	SC	SU	CO
<i>Acer pensylvanicum</i>	Striped Maple	DS	Fall	NU	YES		SH	SP
<i>Acer spicatum</i>	Mountain Maple	DS	Fall	NOC	YES		SH	SP
<i>Alnus rugosa</i>	Speckled Alder	DS	Fall	NOC	YES	PR	WT	SP
<i>Amelanchier xAutumn Brilliance</i>	Serviceberry	DS	Spring	~	YES	UO	SS	CO
<i>Asimina triloba</i>	Paw Paw	DS	Fall	NOC	YES	PR	SH	SP
<i>Carpinus betulus</i>	European Hornbeam	DS	Winter	EX	NO	UO	SS	CO
<i>Carpinus caroliniana</i>	American Hornbeam	DS	Summer	NOC	YES		SS	CO
<i>Cercis canadensis</i>	Eastern Redbud	DS	Spring	NS	YES		SS	CP
<i>Chionanthus virginicus</i>	Fringetree	DS	Spring	NU	NO		SU	CO
<i>Cornus alternifolia</i>	Alternate-Leaved Dogwood	DS	Summer	NOC	YES	~	SS	CO
<i>Cornus florida</i>	Flowering Dogwood	DS	Spring	NOC	YES	PR	SS	CO
<i>Cornus kousa</i>	Japanese Dogwood	DS	Spring	EX	NO	UO	SS	CO
<i>Cornus mas</i>	Corneliancherry Dogwood	DS	Spring	EX	NO	UO	SS	CO
<i>Crataegus crus-galli inermis</i>	Cockspur Hawthorn	DS	Winter	~	YES	UO		CO
<i>Crataegus phaenopyrum</i>	Washington Hawthorn	DS	Winter	NU	NO	SC		CO
<i>Koeleruteria paniculata</i>	Golden-Rain Tree	DS		EX	NO	SC		CO
<i>Magnolia stellata</i>	Star Magnolia	DS	Spring	NU	NO			CO
<i>Malus hybrids</i>	Flowering Crabapple	DS	Spring	~	NO	UO	SU	CO
<i>Ostrya virginiana</i>	Hophornbeam	DS	Summer	NOC	YES		SS	CO
<i>Ptelea trifoliata</i>	Wafer-Ash	DS	Fall	NOC	YES	SC	SU	SP
LARGE SHRUBS - see Section 37-8 for woodland replacement ratio								
<i>Amelanchier alnifolia</i>	Saskatoon Serviceberry	SL	Spring	NU	NO	~	SS	SP
<i>Amelanchier arborea</i>	Juneberry	SL	Spring	NOC	YES	~	SS	SP
<i>Amelanchier canadensis</i>	Shadblow	SL/DS	Spring	NU	NO	~	SS	CO
<i>Amelanchier laevis</i>	Shadbush	SL/DS	Spring	NOC	YES	~	SS	CO
<i>Aronia melanocarpa (prunifolia)</i>	Black Chokecherry	SS	Summer	NOC	YES	~	SS	CO
<i>Betula pumila</i>	Dwarf Birch	SL	Winter	NOC	YES	~	SU	SP
<i>Calycanthus floridus</i>	Strawberry-Shrub	SL	Summer	NU	NO	~	SS	CO
<i>Cephalanthus occidentalis</i>	Buttonbush	SL	Summer	NOC	YES	~	WT	CO
<i>Cornus amomum</i>	Silky Dogwood	SL	Summer	NOC	YES	~	SS	CO
<i>Cornus foemina</i>	Gray Dogwood	SL	Spring	NOC	YES	~	SS	SP
<i>Cornus rugosa</i>	Round-Leaved Dogwood	SL	Summer	NOC	YES	~	SS	SP

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<i>Cornus stolonifera</i>	Red Osier Dogwood	SL	Winter	NOC	YES	~	SS	CO
<i>Corylus americana</i>	American Hazelnut	SL	Fall	NOC	YES	~	SS	CO
<i>Corylus cornuta</i>	Beaked Hazelnut	SL	Spring	NS	YES	~	SS	SP
<i>Euonymus alatus</i>	Burning Bush	SL	Fall	EX	NO	~	SS	CO
<i>Fothergilla major</i>	Large Fothergilla	SL	Spring	NU	NO	~	SS	CO
<i>Hamamelis vernalis</i>	Vernal Witchhazel	SL	Spring	NU	NO	~	SS	CO
<i>Hamamelis virginiana</i>	Witch-Hazel	SL	Winter	NOC	YES	~	SS	CO
<i>Hibiscus syriacus</i>	Rose-Of-Sharon	SL	Summer	EX	NO	~	SS	CO
<i>Ilex opaca</i>	American Holly	SL	Winter	NOC	NO	~	SS	CO
<i>Ilex verticillata</i>	Winterberry	SL	Fall	NOC	YES	~	SS	CO
<i>Itea virginica</i>	Virginia Willow	SL	Summer	NU	NO	~	SS	CO
<i>Lindera benzoin</i>	Spicebush	SL	Fall	NOC	YES	~	SS	CO
<i>Physocarpus opulifolius</i>	Common Ninebark	SL	Summer	NOC	YES	~	WT	CO
<i>Rhus copallina</i>	Dwarf Sumac	SL	Summer	NOC	YES	~	SU	SP
<i>Rhus glabra</i>	Smooth Sumac	SL	Summer	NOC	YES	~	SU	CO
<i>Rhus typhina</i>	Staghorn Sumac	SL	Summer	NOC	YES	~	SU	CO
<i>Salix discolor</i>	Pussy Willow	SL	Spring	NOC	YES	~	WT	CO
<i>Sambucus canadensis</i>	Common Elder	SL	Summer	NOC	YES	~	SU	CO
<i>Sambucus racemosa (pubens)</i>	Red-Berried Elder	SL	Winter	NOC	YES	~	SU	CO
<i>Staphylea trifolia</i>	Bladdernut	SL	Winter	NOC	YES	~	SH	SP
<i>Syringa vulgaris</i>	Lilac	SL	Spring	EX	NO	~	SU	CO
<i>Viburnum dentatum</i>	Arrowwood	SL	Spring	NOC	YES	~	SS	CO
<i>Viburnum lantana</i>	Wayfaring Tree	SL	Spring	EX	NO	~	SU	CO
<i>Viburnum lentago</i>	Nannyberry	SL	Spring	NOC	YES	~	SS	CO
<i>Viburnum opulus</i>	European High-Bush Cranberry	SL	Spring	EX	NO	~	SU	CO
<i>Viburnum prunifolium</i>	Black Haw	SL	Winter	NS	YES	~	SS	CO
<i>Viburnum rafinesquianum</i>	Downy Arrowwood	SL	Spring	NOC	YES	~	SS	SP
<i>Viburnum trilobum</i>	High-Bush Cranberry	SL	Spring	NOC	YES	~	SS	CO
SMALL SHRUBS - see Section 37-8 for woodland replacement ratios								
<i>Arctostaphylos uva-ursi</i>	Bearberry	SS	Summer	NU	NO	~	SU	CO
<i>Aronia melanocarpa (prunifolia)</i>	Black Chokecherry	SS	Summer	NOC	YES	~	SS	CO
<i>Berberis thunbergii</i>	Japanese Barberry	SS	Winter	EX	NO	~	SS	CO
<i>Chaenomeles japonica</i>	Japanese Quince	SS	Spring	EX	NO	~	SU	CO
<i>Comptonia peregrina</i>	Sweet Fern	SS	Summer	NOC	YES	~	SS	CO
<i>Euonymus fortunei</i>	Climbing Euonymus	SS	Winter	EX	NO	~	SS	CO
<i>Euonymus kiautschovicus</i>	Climbing Euonymus	SS	Winter	EX	NO	~	SS	CO
<i>Euonymus obovatus</i>	Running Strawberry Bush	SS	Winter	NOC	YES	~	SS	SP
<i>Fothergilla gardenii</i>	Dwarf Fothergilla	SS	Spring	NU	NO	~	SS	CO
<i>Ilex glabra</i>	Inkberry	SS	Winter	NU	NO	~	SS	CO
<i>Juniperus communis</i>	Common Juniper	SS	Winter	NOC	YES	~	SU	CO
<i>Juniperus horizontalis</i>	Trailing Juniper	SS	Winter	NU	NO	~	SU	CO
<i>Potentilla fruticosa</i>	Bush Cinquefoil	SS	Summer	NOC	YES	~	SS	CO
<i>Rhus aromatica</i>	Fragrant Sumac	SS	Summer	NOC	YES	~	SU	CO
<i>Taxus canadensis</i>	Canada Yew	SS	Winter	NOC	YES	~	SH	SP
<i>Viburnum acerifolium</i>	Maple-Leaved Arrowwood	SS	Spring	NOC	YES	~	SS	SP
HERBACEOUS PLANTS - see Section 37-8 for woodland replacement ratios								
<i>Acorus calamus</i>	Sweet-Flag	PG	Spring	NOC	YES	~	WT	SP
<i>Actaea pachypoda</i>	White Baneberry	PG	Summer	NOC	YES	~	SH	SP
<i>Actaea rubra</i>	Red Baneberry	PG	Summer	NOC	YES	~	SH	SP
<i>Adiantum pedatum</i>	Maidenhair Fern	PG	Summer	NOC	YES	~	SH	SP
<i>Aegopodium podagraria</i>	Bishop's Weed	PG	Summer	EX	NO	~	SH	CO
<i>Agastache nepetoides</i>	Yellow Giant Hyssop	PG	Summer	NOC	YES	~	SS	SP
<i>Agrimonia gryposepala</i>	Tall Agrimony	PG	Summer	NOC	YES	~	SH	SP
<i>Agrimonia parviflora</i>	Swamp Agrimony	PG	Summer	NOC	YES	~	SS	SP
<i>Ajuga reptans</i>	Bugleweed	PG	Summer	EX	NO	~	SS	CO
<i>Alcea rosea</i>	Hollyhock	PG	Summer	EX	NO	~	SU	CP
<i>Allium cernuum</i>	Nodding Wild Onion	PG	Summer	NS	YES	~	SS	CO
<i>Allium schoenoprasum</i>	Chives	PG	Summer	NU	YES	~	SU	CO
<i>Allium tricoccum</i>	Wild Leek	PG	Spring	NOC	YES	~	SH	UN
<i>Amorpha canescens</i>	Lead Plant	PG	Summer	NU	YES	~	SU	UN
<i>Amphicarpaea bracteata</i>	Hog Peanut	PG	Summer	NOC	YES	~	SS	SP

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<i>Amsonia tabernaemontana</i>	Blue Star	PG	Summer	NU	NO	~	SS	CO
<i>Andropogon gerardii</i>	Big Bluestem	PG	Summer	NOC	YES	~	SU	SP
<i>Andropogon scoparius</i>	Little Bluestem	PG	Summer	NOC	YES	~	SU	SP
<i>Andropogon virginicus</i>	Broom Sedge	PG	Summer	NS	YES	~	SU	SP
<i>Anemone canadensis</i>	Meadow Anemone	PG	Spring	NS	YES	~	SU	SP
<i>Anemone cylindrica</i>	Prairie Thimbleweed	PG	Spring	NOC	YES	~	SS	SP
<i>Anemone patens</i>	Pasque Flower	PG	Spring	NU	NO	~	SU	UN
<i>Anemone virginiana</i>	Thimbleweed	PG	Summer	NOC	YES	~	SH	SP
<i>Anemonella thalictroides</i>	Rue Anemone	PG	Spring	NOC	YES	~	SH	SP
<i>Angelica atropurpurea</i>	Great Angelica	PG	Spring	NS	YES	~	SU	SP
<i>Apocynum androsaemifolium</i>	Spreading Dogbane	PG	Spring	NOC	YES	~	SS	SP
<i>Aquilegia canadensis</i>	Wild Columbine	PG	Spring	NOC	YES	~	SH	CP
<i>Arisaema triphyllum</i>	Jack-In-The-Pulpit	PG	Summer	NOC	YES	~	SH	CO
<i>Araluncus dioicus</i>	Goat's-Beard	PG	Summer	NU	NO	~	SS	CO
<i>Asarum canadense</i>	Wild Ginger	PG	Spring	NOC	YES	~	SH	CO
<i>Asclepias exaltata</i>	Poke Milkweed	PG	Summer	NOC	YES	~	SH	SP
<i>Asclepias incarnata</i>	Swamp Milkweed	PG	Summer	NOC	YES	~	WT	CO
<i>Asclepias syriaca</i>	Common Milkweed	PG	Summer	NOC	YES	~	SU	SP
<i>Asclepias tuberosa</i>	Butterfly Weed	PG	Summer	NOC	YES	~	SU	CO
<i>Asclepias verticillata</i>	Horsetail Milkweed	PG	Summer	NOC	YES	~	SU	SP
<i>Aster cordifolius</i>	Heart-Leaved Aster	PG	Fall	NOC	YES	~	SH	SP
<i>Aster ericoides</i>	Heath Aster	PG	Fall	NOC	YES	~	SU	SP
<i>Aster laevis</i>	Smooth Aster	PG	Fall	NOC	YES	~	SU	SP
<i>Aster macrophyllus</i>	Big-Leaved Aster	PG	Fall	NOC	YES	~	SH	UN
<i>Aster novae-angliae</i>	New England Aster	PG	Fall	NOC	YES	~	SS	CO
<i>Aster novi-belgii</i>	New Belgium Aster	PG	Fall	NU	NO	~	SU	CO
<i>Aster oolentangiensis</i>	Sky Blue Aster	PG	Fall	NOC	YES	~	SU	SP
<i>Aster pilosus</i>	Hairy Aster	PG	Fall	NOC	YES	~	SU	SP
<i>Aster sagittifolius</i>	Arrow Aster	PG	Fall	NOC	YES	~	SS	SP
<i>Aster sericeus</i>	Silky Aster	PG	Fall	NU	YES	~	SU	SP
<i>Aster umbellatus</i>	Flattop Aster	PG	Fall	NOC	YES	~	SU	SP
<i>Athyrium filix-femina</i>	Lady Fern	PG	Summer	NOC	YES	~	SH	CO
<i>Aureolaria pedicularia</i>	Annual False Foxglove	PG	Summer	NOC	YES	~	SS	SP
<i>Baptisia australis</i>	Blue Wild Indigo	PG	Summer	NU	NO	~	SU	CO
<i>Baptisia leucophaea</i>	Cream Wild Indigo	PG	Summer	NU	YES	~	SU	SP
<i>Bouteloua curtipendula</i>	Sideoats Grama	PG	Summer	NOC	YES	~	SU	SP
<i>Bromus latiglumis</i>	Vibrant Shade Grass	PG	Summer	NOC	YES	~	SH	SP
<i>Calamagrostis canadensis</i>	Blue Joint Grass	PG	Summer	NOC	YES	~	WT	SP
<i>Calla palustris</i>	Water Arum	PG	Spring	NOC	YES	~	WT	CO
<i>Calopogon tuberosus</i>	Grass Pink Orchid	PG	Spring	NOC	YES	~	WT	SP
<i>Caltha palustris</i>	Marsh-marigold	PG	Spring	NOC	YES	~	WT	SP
<i>Campanula glomerata</i>	Clustered Bellflower	PG	Spring	EX	NO	~	SS	CO
<i>Campanula rotundifolia</i>	Bellflower	PG	Spring	NOC	YES	~	SS	SP
<i>Carex sp.</i>	Sedges	PG	Spring	~	~	~	WT	SP
<i>Caulophyllum thalictroides</i>	Blue Cohosh	PG	Summer	NOC	YES	~	SH	SP
<i>Ceanothus americanus</i>	New Jersey Tea	PG	Fall	NOC	YES	~	SU	CO
<i>Chasmanthium latifolium</i>	Sea Oats	PG	Summer	NU	YES	~	WT	CO
<i>Chelone glabra</i>	Turtlehead	PG	Fall	NOC	YES	~	SU	CO
<i>Cimicifuga racemosa</i>	Black Cohosh	PG	Fall	NS	NO	~	SH	CO
<i>Cinna arundinacea</i>	Common Wood Reed	PG	Summer	NOC	YES	~	WT	SP
<i>Cirsium discolor</i>	Pasture Thistle	PG	Summer	NOC	YES	~	SU	SP
<i>Collinsonia canadensis</i>	Citronella Horse Balm	PG	Summer	NOC	YES	~	SH	SP
<i>Convallaria majalis</i>	Lily Of The Valley	PG	Spring	EX	NO	~	SS	CO
<i>Coreopsis grandiflora</i>	Large-Flowered Coreopsis	PG	Fall	NU	NO	~	SU	CO
<i>Coreopsis lanceolata</i>	Sand Coreopsis	PG	Fall	NS	YES	~	SU	CO
<i>Coreopsis palmata</i>	Prairie Coreopsis	PG	Fall	NU	NO	~	SU	SP
<i>Coreopsis tripteris</i>	Tall Coreopsis	PG	Summer	NU	YES	~	SU	SP
<i>Cornus canadensis</i>	Bunchberry	PG	Fall	NOC	YES	~	SS	CO
<i>Cryptotaenia canadensis</i>	Honewort	PG	Summer	NOC	YES	~	SH	SP
<i>Dennstaedtia punctilobula</i>	Hay-Scented Fern	PG	Summer	NS	NO	~	SU	CO
<i>Desmodium canadense</i>	Showy Tick Trefoil	PG	Summer	NOC	YES	~	SS	SP
<i>Desmodium glutinosum</i>	Pointed-Leaved Tick-Trefoil	PG	Summer	NOC	YES	~	SH	SP
<i>Dianthus deltoides</i>	Maiden Pink	PG	Spring	EX	NO	~	SU	CO

Scientific Name	Common Name	Plant Type	Interest/ Bloom Time	Native to Michigan?	Woodland Replacement?	Street Tree Class	Growing Conditions	Nursery Type
<i>Dicentra cucullaria</i>	Dutchman's Breeches	PG	Spring	NOC	YES	~	SH	SP
<i>Dicentra eximia</i>	Wild Bleeding Heart	PG	Spring	NU	NO	~	SS	CO
<i>Dodecatheon meadia</i>	Shooting Star	PG	Spring	NS	NO	~	SS	SP
<i>Dryopteris carthusiana</i>	Spinulose Woodfern	PG	Spring	NOC	YES	~	SH	CO
<i>Echinacea pallida</i>	Pale Purple Coneflower	PG	Fall	NU	NO	~	SU	SP
<i>Echinacea purpurea</i>	Purple Coneflower	PG	Summer	NU	NO	~	SS	CO
<i>Echinops sphaerocephalus</i>	Globe Thistle	PG	Summer	EX	NO	~	SU	CO
<i>Elymus canadensis</i>	Canada Wild Rye	PG	Summer	NOC	YES	~	SS	SP
<i>Elymus virginicus</i>	Virginia Wild Rye	PG	Summer	NOC	YES	~	SS	SP
<i>Eragrostis spectabilis</i>	Purple Love Grass	PG	Summer	NOC	YES	~	SU	SP
<i>Eryngium yuccifolium</i>	Rattlesnake Master	PG	Summer	NU	YES	~	SU	SP
<i>Erythronium americanum</i>	Yellow Trout Lily	PG	Spring	NOC	YES	~	SH	SP
<i>Eupatorium maculatum</i>	Joe Pye Weed	PG	Summer	NOC	YES	~	SU	CO
<i>Eupatorium perfoliatum</i>	Common Boneset	PG	Summer	NOC	YES	~	WT	CO
<i>Eupatorium purpureum</i>	Sweet-Smelling Joe Pye	PG	Summer	NOC	YES	~	SH	CO
<i>Eupatorium rugosum</i>	White Snakeroot	PG	Summer	NOC	YES	~	SH	CO
<i>Euthamia graminifolia</i>	Grass-Leaved Goldenrod	PG	Fall	NOC	YES	~	SU	SP
<i>Filipendula rubra</i>	Queen Of The Prairie	PG	Spring	NU	NO	~	SU	CO
<i>Gaultheria procumbens</i>	Wintergreen	PG	Winter	NOC	YES	~	SS	CO
<i>Gentiana andrewsii</i>	Closed Gentian	PG	Summer	NOC	YES	~	SU	SP
<i>Geranium maculatum</i>	Wild Geranium	PG	Spring	NOC	YES	~	SH	SP
<i>Geranium sanguineum</i>	Blood-Red Cranesbill	PG	Spring	EX	NO	~	SS	CO
<i>Geum canadense</i>	White Avens	PG	Spring	NOC	YES	~	SH	SP
<i>Geum triflorum</i>	Prairie Smoke	PG	Fall	NU	NO	~	SU	SP
<i>Glyceria striata</i>	Fowl Meadow (Manna) Grass	PG	Summer	NOC	YES	~	SS	WT
<i>Helenium autumnale</i>	Sneezeweed	PG	Summer	NOC	YES	~	SU	CO
<i>Helianthus divaricatus</i>	Woodland Sunflower	PG	Fall	NOC	YES	~	SU	SP
<i>Helianthus occidentalis</i>	Western (Or Naked) Sunflower	PG	Fall	NOC	YES	~	SU	SP
<i>Helianthus strumosus</i>	Pale-Leaved Sunflower	PG	Fall	NOC	YES	~	SU	SP
<i>Heliopsis helianthoides</i>	False Sunflower	PG	Fall	NOC	YES	~	SU	CO
<i>Heracleum maximum</i>	Cow Parsnip	PG	Summer	NOC	YES	~	WT	SP
<i>Hibiscus moscheutos</i>	Swamp Rose Mallow	PG	Spring	NOC	YES	~	SU	CO
<i>Hosta lancifolia</i>	Plantain Lily	PG	Summer	EX	NO	~	SS	CO
<i>Hydrophyllum virginianum</i>	Virginia Waterleaf	PG	Spring	NOC	YES	~	SH	SP
<i>Hystrix patula</i>	Bottlebrush Grass	PG	Summer	NOC	YES	~	SS	SP
<i>Impatiens capensis</i>	Spotted Touch-Me-Not	PG	Summer	NOC	YES	~	SH	SP
<i>Iris germanica</i>	Flag	PG	Spring	EX	NO	~	SU	CO
<i>Iris pumila</i>	Dwarf Iris	PG	Spring	EX	NO	~	SU	CO
<i>Iris versicolor</i>	Wild Blue Flag	PG	Spring	NU	YES	~	WT	CO
<i>Iris virginica</i>	Southern Blue Flag	PG	Spring	NOC	YES	~	WT	CO
<i>Juncus effusus</i>	Common Rush	PG	Spring	NOC	YES	~	WT	SP
<i>Koeleria macrantha</i>	June Grass	PG	Summer	NOC	YES	~	SU	SP
<i>Kuhnia eupatorioides</i>	False Boneset	PG	Summer	NU	NO	~	SU	SP
<i>Lamium maculatum</i>	Spotted Dead Nettle	PG	Summer	EX	NO	~	SU/SH	CO
<i>Leersia oryzoides</i>	Rice Cut Grass	PG	Summer	NOC	YES	~	WT	SP
<i>Lespedeza capitata</i>	Round Headed Bush Clover	PG	Summer	NOC	YES	~	SU	SP
<i>Liatis aspera</i>	Rough Blazing Star	PG	Summer	NOC	YES	~	SU	SP
<i>Liatis cylindracea</i>	Cylindrical Blazing Star	PG	Summer	NOC	YES	~	SU	SP
<i>Liatis spicata</i>	Spiked Blazing Star	PG	Summer	NOC	YES	~	SU	CO
<i>Lilium michiganense</i>	Michigan Lily	PG	Summer	NOC	YES	~	SS	SP
<i>Lilium superbum</i>	Superb Lily	PG	Summer	NU	NO	~	SU	CO
<i>Liriope spicata</i>	Lilyturf	PG	Summer	EX	NO	~	SU/SH	CO
<i>Lobelia cardinalis</i>	Cardinal Flower	PG	Spring	NOC	YES	~	SH	CO
<i>Lobelia siphilitica</i>	Blue Cardinal-Flower	PG	Summer	NOC	YES	~	SU	SP
<i>Lobelia spicata</i>	Pale Spiked Lobelia	PG	Summer	NOC	YES	~	SU	SP
<i>Lycopus americanus</i>	Common Water Horehound	PG	Summer	NOC	YES	~	WT	SP
<i>Lysimachia clethroides</i>	White Loosestrife	PG	Summer	EX	NO	~	WT	CO
<i>Lysimachia nummularia</i>	Moneywort	PG	Fall	EX	NO	~	WT	CO
<i>Lysimachia punctata</i>	Dotted Loosestrife	PG	Summer	EX	NO	~	WT	CO
<i>Matteuccia struthiopteris</i>	Ostrich Fern	PG	Summer	NS	YES	~	SH	CO
<i>Mentha canadensis</i>	Wild Mint	PG	Summer	NOC	YES	~	SU	SP
<i>Mertensia virginica</i>	Virginia Bluebells	PG	Spring	NU	YES	~	SH	CO

Scientific Name	Common Name	Plant Type	Interest/ Bloom Time	Native to Michigan?	Woodland Replace- ment?	Street Tree Class	Growing Conditions	Nursery Type
<i>Milium effusum</i>	Millet Grass	PG	Summer	NOC	YES	~	SH	SP
<i>Mimulus ringens</i>	Monkey Flower	PG	Summer	NOC	YES	~	SU	SP
<i>Monarda didyma</i>	Oswego Tea	PG	Summer	NS	NO	~	SU	CO
<i>Monarda fistulosa</i>	Wild Bergamot (Beebalm)	PG	Summer	NOC	YES	~	SS	SP
<i>Oenothera biennis</i>	Common Evening Primrose	PG	Summer	NOC	YES	~	SU	SP
<i>Oenothera fruticosa</i>	Shrubby Sundrops	PG	Summer	NS	NO	~	SU	CO
<i>Oenothera speciosa</i>	Showy Evening Primrose	PG	Summer	NS	NO	~	SU	CO
<i>Onoclea sensibilis</i>	Sensitive Fern	PG	Summer	NOC	YES	~	WT	SP
<i>Osmorhiza claytonii</i>	Hairy Sweet-Cicely	PG	Summer	NOC	YES	~	SH	SP
<i>Osmunda cinnamomea</i>	Cinnamon Fern	PG	Summer	NOC	YES	~	WT	CO
<i>Panicum virgatum</i>	Switch Grass	PG	Summer	NOC	YES	~	SU	CO
<i>Parthenium integrifolium</i>	Wild Quinine	PG	Summer	NU	NO	~	SU	SP
<i>Peltandra virginica</i>	Arrow Arum	PG	Summer	NOC	YES	~	WT	CO
<i>Pennisetum alopecuroides</i>	Fountain grass	PG	Summer	EX	NO	~	SU	CO
<i>Penstemon digitalis</i>	Foxglove Beardtongue	PG	Summer	NOC	YES	~	SS	CO
<i>Penstemon hirsutus</i>	Hairy Beardtongue	PG	Summer	NOC	YES	~	SU	SP
<i>Phlox divaricata</i>	Blue Phlox	PG	Spring	NOC	YES	~	SS	CO
<i>Phlox paniculata</i>	Garden Phlox	PG	Spring	NU	NO	~	SU	CO
<i>Phlox subulata</i>	Moss-Pink	PG	Spring	NU	~	~	SU	CO
<i>Physostegia virginiana</i>	Obedient Plant	PG	Summer	NS	YES	~	SS	CO
<i>Phytolacca americana</i>	Pokeweed	PG	Summer	NOC	YES	~	SH	SP
<i>Podophyllum peltatum</i>	Mayapple	PG	Spring	NOC	YES	~	SH	SP
<i>Polygonatum biflorum</i>	Solomon's Seal	PG	Summer	NOC	YES	~	SH	SP
<i>Polygonum virginianum</i>	Jumpseed	PG	Summer	NOC	YES	~	SH	SP
<i>Polystichum acrostichoides</i>	Christmas Fern	PG	Winter	NOC	YES	~	SH	CO
<i>Pontederia cordata</i>	Pickrel Weed	PG	Summer	NOC	YES	~	WT	SP
<i>Potentilla arguta</i>	Prairie Cinquefoil	PG	Summer	NOC	YES	~	SU	SP
<i>Prenanthes altissima</i>	White Lettuce	PG	Summer	NOC	YES	~	SH	SP
<i>Pycnanthemum virginianum</i>	Mountain Mint	PG	Summer	NOC	YES	~	SU	SP
<i>Ratibida pinnata</i>	Grey-Headed Coneflower	PG	Summer	NS	YES	~	SU	SP
<i>Rudbeckia fulgida</i>	Orange Coneflower	PG	Summer	NOC	YES	~	SU	CO
<i>Rudbeckia hirta</i>	Black-Eyed Susan	PG	Summer	NOC	YES	~	SU	CO
<i>Rudbeckia laciniata</i>	Cut-Leaved Coneflower	PG	Summer	NOC	YES	~	SU	SP
<i>Rudbeckia triloba</i>	Brown-Eyed Susan	PG	Summer	NOC	YES	~	SU	CO
<i>Sagittaria latifolia</i>	Common Arrowhead	PG	Summer	NOC	YES	~	WT	CO
<i>Salvia verticillata</i>	Sage	PG	Summer	EX	NO	~	SU	CO
<i>Sanguinaria canadensis</i>	Bloodroot	PG	Summer	NOC	YES	~	SH	CO
<i>Sanicula marilandica</i>	Black Snakeroot	PG	Summer	NOC	YES	~	SH	SP
<i>Scirpus atrovirens</i>	Dark Green Rush	PG	Summer	NOC	YES	~	WT	SP
<i>Scirpus validus</i>	Great Bulrush	PG	Summer	NOC	YES	~	WT	SP
<i>Silphium terebinthinaceum</i>	Prairie Dock	PG	Summer	NOC	YES	~	SU	SP
<i>Smilacina racemosa</i>	False Solomon's Seal	PG	Summer	NOC	YES	~	SH	SP
<i>Solidago caesia</i>	Blue Stemmed Goldenrod	PG	Summer	NOC	YES	~	SH	SP
<i>Solidago flexicaulis</i>	Zig Zag Goldenrod	PG	Summer	NOC	YES	~	SH	SP
<i>Solidago nemoralis</i>	Gray Goldenrod	PG	Summer	NOC	YES	~	SU	SP
<i>Solidago ohioensis</i>	Ohio Goldenrod	PG	Summer	NOC	YES	~	SS	SP
<i>Solidago riddellii</i>	Riddell's Goldenrod	PG	Summer	NOC	YES	~	SU	SP
<i>Solidago rigida</i>	Stiff Goldenrod	PG	Summer	NOC	YES	~	SU	SP
<i>Solidago speciosa</i>	Showy Goldenrod	PG	Summer	NOC	YES	~	SU	CO
<i>Solidago sphacelata</i>	Goldenrod	PG	Summer	NS	NO	~	SU	CO
<i>Sorghastrum nutans</i>	Indian Grass	PG	Summer	NOC	YES	~	SU	CO
<i>Spartina pectinata</i>	Prairie Cordgrass	PG	Summer	NOC	YES	~	WT	SP
<i>Sporobolus heterolepis</i>	Prairie Dropseed	PG	Summer	NS	YES	~	SU	SP
<i>Stipa spartea</i>	Porcupine Grass	PG	Summer	NOC	YES	~	SU	SP
<i>Teucrium canadense</i>	American Germander	PG	Summer	NOC	YES	~	SH	SP
<i>Thalictrum diocum</i>	Early Meadowrue	PG	Summer	NOC	YES	~	SH	SP
<i>Tradescantia ohioensis</i>	Spiderwort	PG	Summer	NS	YES	~	SS	SP
<i>Trillium erectum</i>	Stinking Benjamin	PG	Spring	NOC	YES	~	SS	CO
<i>Trillium grandiflorum</i>	Large White Trillium	PG	Spring	NOC	YES	~	SS	CO
<i>Trillium spp.</i>	Trillium	PG	Spring	~	~	~	SH	SP
<i>Triosteum aurantiacum</i>	Horse Gentian	PG	Spring	NOC	YES	~	SH	SP
<i>Typha angustifolia</i>	Narrow-Leaved Cattail	PG	Summer	EX	NO	~	WT	CO
<i>Typha latifolia</i>	Common Cattail	PG	Summer	NOC	NO	~	WT	CO

Scientific Name	Common Name	Plant Type	Interest/ Bloom Time	Native to Michigan?	Woodland Replace- ment?	Street Tree Class	Growing Conditions	Nursery Type
<i>Uvularia grandiflora</i>	Bellwort	PG	Spring	NOC	YES	~	SH	CO
<i>Verbena hastata</i>	Blue Vervain	PG	Summer	NOC	YES	~	SU	CO
<i>Verbena uruicifolia</i>	White Vervain	PG	Summer	NOC	YES	~	SU	SP
<i>Vernonia missurica</i>	Ironweed	PG	Summer	NS	YES	~	SU	SP
<i>Veronica longifolia</i>	Garden Speedwell	PG	Summer	EX	NO	~	SU	CO
<i>Veronicastrum virginicum</i>	Culver's Root	PG	Summer	NOC	YES	~	SU	CO
<i>Zizia aptera</i>	Heart-Leaf Meadow Parsnip	PG	Summer	NU	NO	~	SS	CO
<i>Zizia aurea</i>	Golden Alexanders	PG	Summer	NOC	YES	~	SU	SP
<i>Eupatorium fistulosum</i>	Hollow Joe-Pye Weed	PS	Summer	NS	YES	~	WT	SP

SUGGESTED PLANT LIST KEY							
Note: Plants must be grown in Upper Midwest/Great Lakes Region							
Legend							
Plant Type							
	DC	Deciduous Canopy Tree					
	LE	Large Evergreen Tree					
	SL	Large Shrub					
	PG	Perennial/Grass					
	DS	Deciduous Sub-canopy Tree					
	SS	Small Shrub					
	UE	Upright Evergreen Tree					
Interest							
	SP	Spring					
	SU	Summer					
	FA	Fall					
	WI	Winter					
Native to Michigan?							
	EX	Exotic or Non-Hardy					
	NOC	Native to Oakland County					
	NS	Native SE Michigan					
	NU	Native US/Canada					
Woodl. Repl. * subcanopy trees, shrubs, herbaceous plants require greater numbers - see Sec 37-8							
	YES	Can be used as woodland replacement					
	NO	Can not be used as woodland replacement					
Street Tree							
	RC	Recommended					
	UO	Recommended Under Overhead Utilities					
	SC	Special Circumstances					
	PR	Prohibited					
	~	Does not apply					
Growing Conditions							
	SH	Shade					
	SS	Sun/Shade					
	SU	Sun					
	WT	Wet					
Nurseries							
	CO	Commonly found most nurseries					
	SP	Specialty nurseries					
	UN	Unknown					

CITY OF NOVI

LANDSCAPE DESIGN MANUAL

(Adopted by City Council Resolution dated 8-25-03) – revised 2020

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Part I.	Supplemental Requirements and Procedures
Part II	Screening Opacity Diagrams
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NOTE:

In addition to this Landscape Design Manual and Section 5.5 of the Zoning Ordinance, issues related to landscaping are also addressed in the following sections of the Novi Code of Ordinances. Please consult these for other possible impacts on a project.

(Note: the following list is provided as an aid and does not guarantee that other ordinances may not have an impact on landscaping):

ZONING ORDINANCE:

<u>Ordinance Section #</u>	<u>Title/Relevant Section</u>
3.6	Notes to District Standards
3.6.M:	Wetland/Watercourse setback
3.9.7	MH-Mobile Home district buffer
3.11:	GE Gateway East District – particularly section 6
3.12:	Special Development Option (SDO) for the GE District
3.14.4, 3.14.5.B&E:	I-1
3.15.1.B, 3.15.2:	I-2
3.19.3&7.D:	OST Retail Service Overlay
3.20.2.A&C:	OST Required Conditions
3.21.2.A.iii&iv:	PSLR Overlay
3.22	P-1
3.23.1.vi	Conference District
3.27.1. C,D,F	TC and TC-1 Required Conditions
3.28.6&10	One Family Clustering Option
3.29.2	RUD buffering
4.12.1	Day Care screening
4.13.2	Recreation Areas/Centers

4.19.2.F	Accessory Uses – Refuse Bin
4.37.4	Drive-in businesses
4.40.2.F	Fast food restaurants
4.55	Outdoor Storage Yards
4.58	Junkyards
4.74	Parking for Sale of Motor Vehicles in P-1 District
4.80.1.B & 2.B	Open Air Businesses
4.86.H	Other Uses not Included in a District – Towers
5.2	Off-Street Parking
5.3	Off-Street Stacking, Parking Lot Layout Standards
5.9	Corner clearance
5.11	Fences

CODE OF ORDINANCES

<u>Ordinance Section #</u>	<u>Title/Relevant Section</u>
11-143	Design Considerations – drainage/slopes
12 Article V, 12-275	Wetland and Watercourse Protection
29	Soil – including Sedimentation Control
36	Waterways
37	Woodlands Protection

PART 1: SUPPLEMENTAL REQUIREMENTS AND PROCEDURES

The following Supplemental Requirements and Procedures shall apply to any landscape plan required under Section 5.5 of the City of Novi Zoning Ordinance. In the event of inconsistency between the provisions of that ordinance, or any other ordinance of the City, and these supplemental requirements and procedures, the ordinance provisions shall prevail.

1. Landscape Screening/Buffer Requirements

a. Residential Adjacent to Non-Residential

(1) Berm Requirements.

- (a) Berms shall be constructed of loam soils with a 6" top layer of topsoil and shall be free of construction materials and debris. Where possible, they shall be undulating in height, and they shall always maintain at least the minimum height required in Zoning Section 5.5.3.A.ii.
- (b) The berm shall be landscaped and maintained in a clean, orderly, and growing condition.
- (c) The berm must be planted with a combination of trees, shrubs, sod or other living ground covers.
- (d) A minimum opacity shall be provided and maintained at 80% winter opacity and 90% summer opacity at the required height within 2 years of installation. This level of opacity shall be provided wherever screening is called for in this ordinance. Opacity includes an intermittent visual obstruction height of 20 feet, as well as the required screening capacity for the berms required by Section 5.5.3.A. (See Obscuring Earth Berm Diagrams in this section for examples of landscaping layouts that provide the required opacity.) The intermittent screening does not have to provide 80-90% opacity above 6 feet, but it should have at least 50% summer opacity.
- (e) Landscaping shall provide the required opacity primarily by using a dense planting of evergreen trees or shrubs. Spacing of the plant materials shall be in accordance with the Plant Material Spacing Chart below and the attached illustrations (Part II). Groupings of canopy deciduous trees, subcanopy trees and/or shrubs that provide similar opacity as the illustrations may also be used to provide screening, especially for the intermittent obstruction. As an example, densely-branched deciduous plant material two (2) or more layers deep and/or evergreen plant material may be used to achieve the required opacity.
- (f) The berm and landscaping materials shall be irrigated with an underground watering system or have an operational hose bibb within 100 feet of the landscaping.

- (g) The required minimum and maximum distances between proposed plant materials within this Section for screening and landscape purposes are as follows or as determined by the City Landscape Architect or City Forester based upon accepted principles not specified in the chart:

Table 1.a.(1)(g): Plant Material Spacing Relationship Chart for Landscape Purposes

Plant Material Types Spacing (on-center)		TO					
		Large Evergreen Tree	Narrow Upright Evergreen	Deciduous Canopy Tree*	Deciduous Subcanopy Tree*	Large Shrub	Small Shrub
FROM	Large Evergreen Tree	Min. 15 ft Max. 25 ft	Min. 12 ft	Min. 20 ft	Min. 15 ft	Min. 15 ft	Min. 10 ft
	Narrow Upright Evergreen	Min. 12 ft	Min. 2.5 ft Max. 10 ft	Min. 15 ft	Min. 10 ft	Min. 5 ft	Min. 3-5 ft
	Deciduous Canopy Tree*	Min. 20 ft	Min. 15 ft.	Min. 20 ft	Min. 15 ft	Min. 5-7 ft	Min. 3-5 ft
	Deciduous Subcanopy Tree*	Min. 15 ft	Min. 10 ft	Min. 15 ft	Min. 10 ft	Min. 5-7 ft	Min. 3-5 ft
	Large Shrub (6-15+' tall)	Min. 15 ft	Min. 5 ft	Min. 5-7 ft	Min. 5-7 ft	Min. 5 ft Max. 10 ft	Min. 3 ft Max. 6 ft
	Small Shrub (0-5.9' tall)	Min. 10 ft	Min. 3-5 ft	Min. 3-5 ft	Min. 3-5 ft.	Min. 3 ft Max. 6 ft	Min. 3 ft Max. 6 ft

* Fastigate/columnar trees may require closer spacing to achieve required opacity.

(Recommended distances are dependent on species' mature sizes and their size within 2 years of planting to attain opacity requirements. Recommended maximum spacing distances do not apply to other landscape requirements such as street tree spacing, greenbelt buffering, woodland replacement trees or foundation plantings).

b. Developments Adjacent to Public Rights of Way

(1) Berm Requirements

- (a) Berms are to vary in height and width
- (b) The minimum height specified in Zoning Section 5.5.3.B.ii.f should always be met by the berm, with variations in height taller than the minimum.

(2) Plant Material Location Spacing

- (a) In order to assist emergency vehicles, create view channels to business address at a 20-40 degree angle for approaching vehicles from both directions of traffic
 - (b) The base of any permitted display platform must be totally screened by shrubs at least 2 feet in height.
- (3) Shopping Centers and sites adjacent to freeways or other major corridors are highly visible. Therefore, a strong emphasis shall be placed on the design of landscaping that achieves substantial aesthetic enhancement, and a diminution of paving and parking views along these corridors.

2. Residential Subdivision Planting Requirements

- a. Single-family platted subdivisions or residential site condominiums.
 - (1) Street Tree Spacing. Trees shall be provided in front of each residential lot in the area between the sidewalk and the curb as described in the Charts below:

- i. Minimum planting area widths:

Table 2.a.(1).i Recommended Tree Sizes for ROW areas

Tree Species Type	Lawn width (curb to sidewalk)
Small Tree (Deciduous Subcanopy)	4-6 feet
Medium Tree (Deciduous Subcanopy and Canopy)	6-8 feet
Large Tree (Deciduous Canopy)	>8 feet

- ii. Minimum spacing:

Table 2.a.(1).ii Recommended Tree Spacing for ROW areas

Tree Species Type	Tree Height	Spacing between trees (on average)
Small Tree (Deciduous Subcanopy)	Up to 20'	Min. 20'
Medium Tree (Deciduous Canopy and Subcanopy)	20-40'	Min. 30'
Large Tree (Deciduous Canopy)	>40'	Min. 35'

- (2) Street Tree Location. Large street trees shall be planted in front of each lot in the right-of-way in accordance with the following standards for large deciduous canopy trees (smaller trees should use the maximum spacing guidelines in the table above to calculate the number of trees required):

Table 2.a.(2) Street Tree Requirements for Single Family Residential Lots

Lineal Frontage*	Trees Required
<70 feet	1 tree
> or =70 feet	2 trees
> or =105 feet	3 trees
> or =140 feet	4 trees
> or =175 feet	5 trees

* Driveway width and corner clearance zones may be subtracted from the lineal frontage.

- (a) Corner lots shall have trees planted along both streets in accordance with the above requirements for each frontage, provided that trees are not planted within the 25 foot corner clearance zone (Section 5.9) or Road Commission for Oakland County (RCOC) required clear vision zone, depending on the road jurisdiction.
 - (b) Subdivision open spaces shall have street trees located within the right-of-way at a rate of 1 tree per 35lf (not including frontage in clear vision zones).
 - (c) Trees shall not be planted closer than 10 feet from any driveway.
 - (d) Distances between trees and curbs or sidewalks shall be:
 - 1. At least four feet for deciduous canopy trees where the space between curb and walk is at least 8 feet. For subcanopy trees where the distance between the curb and walk is less than 8 feet, the trees should be centered..
 - 2. At least 5 feet for shrubs behind curbs with angled or perpendicular parking
 - (e) If subcanopy trees are to be used as street trees for tight planting areas and under utility lines, only use species/varieties which can be attractively pruned per city standards (a minimum ground clearance of 14 feet on the street side and 10 feet on the non-street side).
 - (f) No deciduous canopy tree, subcanopy tree or evergreen tree shall be planted closer than 15 lateral feet from any overhead utility wire, or closer than 10 lateral feet from any fire hydrant, catch basin or manhole. Effort should also be made to keep all trees at least 5 feet away from underground utility lines.
- b. Single-family residential site condominiums with no lot lines.
- (1) Street Tree Requirement: 1 canopy or 1.5 ornamental trees per residential unit.
 - (2) Tree Placement: In front of residential unit in the area between the sidewalk and the curb as described in the Chart below:

Table 2.b.(2) Recommended Tree Sizes for ROW area widths

Tree Species Type	Lawn width (curb to sidewalk)
Small Tree (Deciduous Subcanopy)	4-6 feet
Medium Tree (Deciduous Subcanopy and Canopy)	6-8 feet
Large Tree (Deciduous Canopy)	>8 feet

- c. Island and Boulevard Planting.
 - (1) A mixture of shrubs, groundcover, perennials, and/or ornamental grasses, as well as canopy and sub-canopy trees, is to be provided.
 - (2) Maintenance of such areas shall be the responsibility of the subdivision association.
 - (3) At least 75% of the island area shall be landscaped with a combination of live plantings other than lawn. The remaining 25% of area can be lawn if desired.
 - (4) Refer to Zoning Ordinance Section 5.9 for corner clearance requirements for boulevards.

3. Detention and Retention Basin Landscaping Requirements

- a. Large deciduous canopy trees shall be planted at a rate of 1 tree per 35lf of the pond edge measured at the permanent water line, 6-10 feet away from the permanent water level, around the east, west and south sides of the pond to provide cooling shade for the pond. Woodland replacement trees may be used to meet this requirement.
- b. Clusters of large native shrubs shall cover 70-75% of the basin perimeter measured 10 feet from the permanent water level, or pond bottom for ponds designed to empty after 24-48 hours. Shrubs shall be placed along this line instead of the high water line and be clustered, not arranged in a straight line.
- c. At least three different shrub species native to Michigan shall be used. Straight species are preferred. Dwarf cultivars with mature heights less than 5 feet do not fulfill the size requirement. The shrubs shall be allowed to grow to their natural height and form.
- d. The bottom and sides of the basin(s), extending 25 feet from the permanent water level shall be planted with a mix of native grasses, sedges and wildflowers and be maintained at a natural height (not mowed as lawn) to discourage use by waterfowl. The application of fertilizer and pesticides on grass areas in the basin shall be limited to the initial establishment of the groundcover. Seeding is not required on the required maintenance access pathway.
- e. Contact the City’s wetland consultant or landscape architect when specifying a basin seed mix. All seed mix(es)’ species composition and cover crop(s) shall be included on

the landscape plan, as well as clear indications of where each mix should be applied. A plan for the successful establishment and maintenance of the groundcover shall also be included on the landscape plan.

- f. Prior to seeding, the area to be seeded shall be ripped to a depth of 18” to alleviate soil compaction. After ripping, the seeding area shall be prepared per the recommendations of the native seed vendor.
- g. Also prior to seeding, the landscape contractor shall send a photo of the seed bag from the seed being planted to the city landscape architect or city environmental consultant to verify that an acceptable mix is being used. A note to this effect shall be added to the plan sheet with the seed mixes. Once approval is given, the seeding may take place.
- h. Utilize anti-waterfowl devices while establishing plantings, such as string matrix or string edge or other approved method.

4. Tree species diversity (includes canopy, subcanopy and evergreen trees).

In order to avoid landscape disasters like the Dutch elm disease and Emerald Ash Borer infestations, where overplanting of a single type of tree (elm, ash) resulted in large scale tree replacements, a diversity of tree species is to be used for all projects requiring site plan approval.

- a. When fewer than 200 trees are proposed, not more than 25% of the proposed tree plantings shall be of one genus and not more than 15% shall be of a single species.
- b. When 200 or more trees are proposed, not more than 15% percent of the tree plantings shall be of one genus and not more than 10% shall be of a single species.
- c. Variations from these percentages shall be at the discretion of the City Forester or Landscape Architect. (See Novi Street Tree List).
- d. The breakdown of the species and genera used shall be added to the plant list in a format similar to that shown in the table below:

Table 4.d: Sample Species Breakdowns

Symbol	Scientific Name	Common Name	Size	Qty	Genus %	Species %
AL	Amelanchier laevis	Serviceberry	6-7' ht	20	12%	12%
AR	Acer rubrum	Red Maple	2.5" cal.	25	15%	15%
CA	Cornus alternifolia	Pagoda Dogwood	6-7' ht	20	18%	12%
CF	Cornus florida	Flowering Dogwood	1.75" cal.	10		6%
MS	Malus 'Snowdrift'	Snowdrift Flowering Crabapple	1.75" cal.	5	3%	3%
PO	Platanus occidentalis	Sycamore	2.5" cal.	25	15%	15%
PS	Pinus strobus	Eastern White Pine	6-7' ht	10	6%	6%
QB	Quercus bicolor	Swamp White Oak	2.5" cal.	10	21%	6%
QR	Quercus rubra	Red Oak	2.5" cal.	25		15%
UA	Ulmus americana 'Princeton'	Princeton American Elm	2.5" cal.	15	9%	9%
Total				165	100%	100%

- e. The above requirements do not apply to woodland replacement trees. Those trees should not be included in the above calculation.
- f. Woodland tree replacement species shall have roughly the same composition as the native trees removed in order to restore some semblance of the impacted woodland (except in the cases of elm, ash or other species which are known to have major survivability issues due to environmental factors).
 - i. No more than 10% of the credits planted on site may be evergreen trees.
 - ii. Native maples may be used as substitutes for boxelders. Varieties of native elm species shown to have good resistance to Dutch elm disease may be used as replacements for elms.
- g. Shrubs: While shrubs are not subject to the requirements above, efforts toward using a diversity of shrub species should also be used for the same reasons described above.

5. Parking Area Landscaping Requirements

- a. Landscape designs shall utilize plant materials which enhance infiltration of storm water, such as those with deep root systems. Designs to lessen runoff are preferred. Wherever possible, designs should utilize vegetated swales, weirs and basins within and around the parking areas to create an attractive storm water system that promotes storm water infiltration.
- b. Salt-tolerant plants material native to the state of Michigan are preferred.
- c. Parking area landscaping materials within parking lot islands shall be maintained at 3 feet in height or less or 6 feet or more above adjacent paving for clear sight distance across the parking islands.
- d. Evergreen trees are not allowed in any parking islands unless the applicant can demonstrate that all clear sight distances shall be maintained and a note in a form approved by the City Attorney is added on the final approved site plan stating that the City of Novi is not responsible for any accidents caused by the lack of clear sight distance
- e. All landscaping shall be maintained in a healthy condition and replaced as plants die or are in poor condition.
- f. The name, type and number of groundcover plants (including seed or sod) proposed on islands are to be specified on the landscape plan.
- g. Parking area islands may not utilize mulch as the only groundcover. It is only allowed in association with trees or shrubs planted within an island (the ring of mulch around a tree, or within and around shrub beds). Rock or gravel mulches shall not be used within or adjacent to vehicular use areas.

6. **Transformers/Utility Boxes/Irrigation Control Boxes**

All transformers, utility boxes and irrigation control equipment shall be screened from public view in an attractive manner, but shall allow safe access to said facilities.

- a. Plant materials shall be maintained at a height at least equal to the transformer, utility box or irrigation control box.
- b. Screening plant material shall be evergreen or densely-branched deciduous shrubs.
- c. A minimum of 2 feet separation is required between the structure and the full growth potential of plant material at maturity.
- d. Groundcover is allowed up to the transformer pad, if it is kept below 4" in height.
- e. Doors of transformers must be accessible. No plant materials are to be placed within 8 feet of the front of the doors but the doors shall be screened from view.
- f. A detail of transformer screen plantings and locations of all transformers must be provided with the landscape plans. It is included with other landscape details in Part III.
- g. Safety is the first priority when screening transformers and utility boxes. If plantings are above 2 feet in height, they cannot be placed in the corner clearance zone (refer to Section 5.9).
- h. A solid fence may be approved if warranted by safety or site limitations.

7. **Dumpsters/Trash Containers** – Required screening for Dumpsters/Trash Containers is described in Chapter 21-145 and Zoning Ordinance Section 4.19.2.f. No additional landscaping is required.

8. **Fire Hydrants/Fire Department Connections** – Plantings shall be kept away from or below hydrants and Fire Department Connections, so they are not obscured from view and are easily accessed.

9. **Landscape Plan Requirements**

A landscape plan shall be submitted for:

- any new commercial or residential development
- any addition to an existing building that is equal to or greater than a 25% increase in the overall square footage of the building or 400 square feet, whichever is less
- any increase to a parking lot of 10 spaces or more (or equivalent paving area) or 10% of paved area, whichever is less.

An owner of a single-family home site shall not be required to comply with the provisions of this section.

The landscape plan shall contain the following information:

- a. Name, address and telephone number of the owner and developer or association.

- b. Landscape Architect Information
 - (1) Name, address and telephone number of the Registered or Licensed Landscape Architect who created the design or is responsible for its accuracy and adherence to city standards (all landscape plans must be created by a landscape architect).
 - (2) The seal of a Registered or Licensed Landscape Architect responsible for the plans (on Final Site Plans and Stamping Sets).
 - (3) A live signature of the landscape architect is required on Stamping Sets.
- c. A legal description or boundary line survey of the site on which the work is to be performed. Can be provided on existing conditions plan or topographical survey.
- d. Project Name and address (or other information showing the site location).
- e. Zoning districts of the proposed site and adjacent properties.
- f. Miss Dig contact information on all sheets.
- g. The soil type(s) on site as determined by the Soils Survey of Oakland County, Michigan published by the United States Department of Agriculture Soils Conservation Service must be included on Landscape Plans or elsewhere in set.
- h. A landscape plan of the site at a scale that matches other plans in the plan set and is legible with proper north indication. The landscape plan shall be submitted in a scale not to exceed 1"=20' for detailed areas, 1"=60' for large areas. An engineering scale shall be used. Variations from this scale requirement may be approved by the City Landscape Architect as long as the different scale provides sufficient detail, legibility and ease of use for evaluation. This plan should include:
 - (1) Proposed topography at a maximum of 2 foot contour intervals, extending at least 50 feet beyond the site boundary. For berm, wall areas and steep topography, contour intervals shall be shown at 1 foot.
 - (2) Location, type and size of all existing plant materials showing those materials to be saved, to be moved and to be removed.
 - (a) If there is no existing vegetation, the plan shall note that.
 - (b) If the site includes regulated woodlands or wetlands, the plan shall identify the locations of regulated natural resources with the appropriate boundary determinations.
 - (c) A tree survey that includes all regulated trees within the area of disturbance and a corresponding tree chart that includes tree tag #, species, size (dbh), and whether it will be saved or removed.
 - (d) All trees 8" dbh or greater within 50 feet of construction shall also be included in the tree survey.
 - (e) Trees in woodlands or other areas at least 50 feet away from construction that will not be impacted do not need to be identified individually, but the cover of those areas should be generally noted (e.g. dense woodland, open, scrub/shrub, wetland) and the area noted as "To Remain" or "To Be

Saved". See Woodlands Protection Ordinance (Chapter 37) and Wetlands Protection Ordinance (Chapter 12) for additional plan requirements.

- (f) Tree protection fence locations must be shown on Removal/Demolition and Grading Plans/Soil Erosion Control plans.
- (3) Locations of all existing and proposed buildings, easements, parking spaces, vehicular use areas, proposed ground sign locations, flagpole locations, public rights-of-way, existing and proposed overhead and underground utilities, including the locations of hydrants, utility boxes and trash receptacles. Dimensions shall be shown from overhead utility poles.
- (4) Locations of all existing light poles to remain and proposed light poles.
- (5) Calculations for all right-of-way greenbelt landscaping, street trees, parking lot landscaping, foundation landscaping and other landscaping, including the amount required and the amount provided. Include labels in square feet for all landscape areas intended to satisfy parking lot interior area and foundation landscape requirements.
- (6) Location, type and size of all proposed plant materials. On Final Site Plans, plants shall be indicated with actual plant material names or symbols linked to a plant list.
- (7) All plantings shall have unique labeling to indicate the requirement they are intended to satisfy (i.e. interior parking, parking perimeter, woodland replacement, right-of-way greenbelt, street trees, foundation planting, etc.)
- (8) Corner Clearance Zones at driveways and road intersections. (See Section 5.9 or Road Commission for Oakland County clear vision requirements, depending on the road jurisdiction).
- (9) An indication of area(s) clear of trees or shrubs for snow depositing areas in winter.
- (10) A plant list for all proposed landscape materials showing the quantity of materials for each species, botanical and common names of plant materials, caliper sizes or container sizes, height of material where applicable, root type balled and burlapped or potted), type and amount of mulch.
- (11) An itemized cost estimate for all new plantings, mulch, seed and sod contained on the planting plan must be provided on the Final Site Plans. The costs for this should be from the Community Development Fees standard costs on the Community Development website, not estimates, unless there is no comparable standard cost, in which case estimates are acceptable.
- (12) Planting details for evergreen trees, deciduous trees, multi-stem trees, tree guys, shrubs, and perennials/ground covers, as applicable to the plan. (See typical City of Novi Tree Planting Details).
- (13) A plan for site preparation, seeding, establishment and maintenance of any native seed mixes per the direction of the native seed vendor.
- (14) Landscaping Notes required:

- (a) A note indicating the proposed estimated planting dates (should be between March 15 and November 15).
 - (b) A statement of intent to guarantee the plant materials for 2 years from the date of acceptance and maintain all such landscaped areas in accordance with the requirements of this ordinance.
 - (c) A note indicating that the plants should be Upper Midwest/Great Lakes grown.
 - (d) A note stating that the property's landscape will be maintained per the approved final site plan in perpetuity, per Zoning Ordinance Section 5.5.7, including replacement of all dead or failing plant material within three (3) months of its discovery, or the next appropriate time as determined by the City Landscape Architect.
 - (e) A note stating that any plant species substitutions from the approved plan must be approved in writing by the City Landscape Architect.
- i. When berms are included on the plans, a representative berm cross-section including slope, height and width, construction of loam with 6" top layer of topsoil, type of ground cover, and labeled contour lines. Show where overhead utility lines exist or are planned, and the required setback of 15 feet from the edge of the utility or 20 feet from the closest pole for canopy trees. (See Berm Cross-Section Diagram).
 - j. Wall detail(s), when applicable, with notes indicating materials, height and type of construction and footings. Wall designs and calculations for any walls 4 feet or in height must be provided by a design or structural engineer and approved with building plans
 - k. Fencing details – tree protection, screening and decorative fencing.
 - l. Plans for irrigation, or alternative means of providing sufficient water for establishment and long-term survival must be provided with final site plans. If an area is landscaped with plant species that do not require irrigation (xeriscaping), no permanent irrigation system is required, but the plants must be watered as necessary until they are established with a temporary system, hose(s) or portable water tanks. In that case, hose bibb locations within 100 feet of the plantings or other water sources must be noted on the plans.
 - m. If an irrigation system will be used, plans for it must be provided with final site plans.
 - n. Other information or data as may be required in other sections of this ordinance, and additional information or data as reasonably required by the Planning Commission.

10. Plant Material Requirements

- a. General Conditions / Plant Requirements.

Wherever in this Ordinance landscaping plantings are required, such landscape plantings shall be subject to the following conditions:

- (1) For all plant materials, plants native to Michigan and, ideally, Oakland County, are to be the first choice. No fewer than 50% of the species used, not including

those for woodland replacements or in seed mixes, shall be native. The source of the native plants should be local or of the North Midwest America/Great Lakes region. (www.michiganflora.net may be used as a reference to determine whether a species is native).

- (2) All plant materials shall be northern nursery grown, No. 1 grade, and installed according to accepted planting procedures. All plant materials shall meet current American Association of Nurserymen Standards. They shall be planted according to City of Novi Planting Details and specifications. The City shall have the right to inspect the plant materials prior to planting and to reject any plant materials deemed not to meet the standards of this ordinance.
 - (3) The selection, spacing, and sizing of plant materials shall depend on the use to which the plantings are to be placed. A mixture of plant materials (evergreen and deciduous trees and shrubs) and plant species is required in all landscape plans as a protective measure against disease and insect infestation. Plant materials used together in groupings for screening shall meet the on-center spacing requirements as set forth in this Manual Section 1.a..
 - (4) Plant materials, except lawn, ground covers or creeping vine type plantings, shall be located at least 4 feet from the property line, as measured to the trunk of deciduous canopy or subcanopy trees, or to the mature dripline of shrubs and evergreens.
 - (5) Where plant materials are placed in 2 or more rows for screening, plantings shall be staggered from row to row.
 - (6) All trees shall have a central leader and a radial branching structure. Park grade trees are not acceptable. All trees, except those of 1" caliper or less, shall be balled and burlapped (B & B).
 - (7) Any deciduous canopy trees with branches that might tend to develop into "V" crotches shall be subordinated so as not to become dominant branches.
 - (8) Miss Dig must be notified to locate all underground utilities before planting begins.
- b. Plant Materials.
- (1) Existing Plant Material
 - (a) Existing plant material is to be preserved as a first priority. Refer to Chapter 37, Woodlands Preservation Ordinance or Chapter 12, Wetlands and Watercourse Ordinance, for specific standards regarding preservation of these natural resources.
 - (b) In instances where existing healthy plant material is proposed to be saved on a site prior to its development and is *not* regulated by Chapter 37, Woodlands Preservation Ordinance, or Chapter 12, Wetlands and Watercourse Ordinance, the applicant may apply to adjust the application of the landscape standards to allow such plant material to substitute for planting if such an adjustment is in keeping with, and will preserve, the intent of this Section.

- (c) For approval of substitutions, the existing preserved plant material shall be of high quality as determined by the City. Trees listed as Prohibited Plantings, and materials required to be preserved under Chapter 12, Article V, and under Chapter 37 of the Ordinance Code, will not receive credit under this provision.
- (d) All removals shall be clearly marked as to be removed with an X or R on the plan view, and on the accompanying tree chart/list (show as Saved or Removed). The tree labels for existing trees 8 inches dbh and larger to remain should appear on the Landscape Plan (plan view).
- (e) Protective fencing and preservation techniques will be required for all vegetation to be saved where there is a chance that construction activities could damage it. The location of tree protection fencing and the City Protection Fencing Detail are to be shown on the Demolition/Removal Plan and Grading plans. Large masses of protected vegetation should be labeled “To be saved” or “To Remain” on the Landscape Plan and on the Demolition/Removal Plan and Grading Plan.
- (f) Landscape credit for preserved canopy trees, which do not fall within a regulated Wetland or Woodland, may be used to fulfill woodland replacement credits that may be required, if they are not prohibited and/or invasive species. These replacements shall be at the following rate:

Table 10.b.(1)(f): Landscape Tree Credit Chart

Diameter of Trunk of Preserved Tree*	Number of Tree Credits
36” or greater caliper	7 trees
>29 to 36” caliper	6 trees
>23 to 29” caliper	5 trees
>17 to 23” caliper	4 trees
>12 to 17” caliper	3 trees
>7 to 12” caliper	2 trees
3 to 7” caliper	1 tree

* The tree trunk diameter measurement shall be rounded off to the nearest whole inch at a height of four and one-half (4.5) feet above the natural grade. (Diameter at Breast Height, D.B.H.)

- (g) Existing, non-prohibited trees may also be used to fulfill some or all of the required street tree, greenbelt or parking lot perimeter plantings, at a 1 for 1 basis if they are located in appropriate locations. See the actual requirement in Section 5.5 for specifics.

(2) Proposed Plant Material

For suggested plant materials and information by categories of Native, Interest, Woodlands Replacement, Canopy, Street Tree, Growing Conditions, and Nurseries, see separate Suggested Plant Materials List (Part V). This list is not

to be considered all-inclusive of acceptable plant materials and may be amended periodically.

(a) Plant Sizes.

i. The minimum sizes are as follows:

Table 10.b.(2)(a).i – Minimum plant sizes by application

Planted Material Types	Deciduous Canopy Trees	Large Evergreen Trees	Deciduous Subcanopy Trees (5)	Upright Evergreens	Large Shrubs	Small Shrubs (6)	Perennials, Ornamental Grasses
R-O-W Plantings (4)	2.5" cal.	8' ht.	2" cal.	6' ht.	36-42" ht.	18-24" ht.	1 gal. cont.
Street Trees (4)	2.5" cal.	n/a	2" cal.	n/a	n/a	n/a	n/a
Woodland Replacement Trees (2)	2.5" cal.	6'@ 3:2 Ratio	(3)	(3)	(3)	(3)	(3)
All other	3" cal.	7' ht.	2.5" cal.	6' ht.	36" ht.	24" ht.	1 gal. cont.

Footnotes:

- (1) The City Landscape Architect may permit smaller sizes upon receipt and review of sufficient documentation that required minimum sizes are not readily available.
- (2) Refer to Chapter 37-8(b) for acceptable species.
- (3) Refer to Chapter 37-8(c) for use of this plant type for replacement credits.
- (4) Shall also apply to private road easements or other equivalent.
- (5) Multi-stem trees are to be eight to ten (8-10) feet in minimum height
- (6) Spreading or horizontal shrubs are to be eighteen (18) inch width minimum.
- (7) n/a: not allowed

ii. To encourage a mixture of sizes, additional landscape credit can be given for larger-sized deciduous canopy trees and large evergreen trees as follows for Right-of-Way Greenbelt trees and Parking Lot Perimeter trees. (Upsizing credit is not allowed for woodland replacement trees, street trees or interior parking lot trees.)

Table 10.b.(2)(a).ii

Size	Total Tree Credits *
Large Evergreen Trees	
8' height	1.0
> 8' to 10' height	1.25
>10' to 12' height	1.5
>12' to 14' height	2.0
>14' height	2.5
Deciduous Canopy Trees	
3" caliper	1.0
>3" to 3.5" caliper	1.25

>3.5” to 4.5” caliper	1.5
>4.5” to 5” caliper	1.75
>5” caliper	2.0

* Where greater than minimum size listed above (Table 10.b.(2)(a).i).

Example: a 4” caliper deciduous canopy tree would count as 1.5 required landscape trees. A 13’ high evergreen canopy tree would count as 2 required landscape trees.

The total number of trees required may be reduced through the use of these credits by a maximum of 33% (per category) (i.e. the total number of trees provided must be at least 67% of the total number of trees required based on the standard tree size, per category)

c. Prohibited Plants.

In order to promote native plant species diversity and to prevent the loss of habitat due to the spread of naturalized non-native plant species, the following species will be prohibited in planting plans:

Table 10.c – Prohibited Plants

Botanical Name	Common Name	Plant Type
<i>Acer negundo</i>	Boxelder	Deciduous Subcanopy Tree
<i>Acer platanoides</i>	Norway Maple	Deciduous Canopy Tree
<i>Acer saccharinum</i> **	Silver Maple	Deciduous Canopy Tree
<i>Ailanthus altissima</i>	Tree-Of-Heaven	Deciduous Canopy Tree
<i>Alnus glutinosa</i>	Black Alder	Deciduous Canopy Tree
<i>Berberis spp.</i>	Barberry	Small shrub
<i>Celastrus orbiculatus</i>	Round-Leaved Bittersweet	Vine
<i>Coronilla varia</i>	Crown Vetch	Perennial / Grass
<i>Echinochloa crus-galli</i>	Barnyard Grass	Perennial / Grass
<i>Elaeagnus umbellata</i>	Autumn Olive	Large Shrub
<i>Ginkgo biloba(female)</i>	Ginkgo (female)	Deciduous Canopy Tree
<i>Gypsophila paniculata</i>	Baby's Breath	Perennial / Grass
<i>Hypericum perforatum</i>	Common St. Johns-Wort	Small Shrub
<i>Iris pseudacorus</i>	Water Flag	Perennial / Grass
<i>Ligustrum spp.</i>	Privet	Small shrub
<i>Lonicera japonica</i>	Japanese Honeysuckle	Large Shrub
<i>Lonicera maackii</i>	Amur Honeysuckle	Large Shrub
<i>Lonicera tatarica</i>	Tartarian Honeysuckle	Large Shrub
<i>Lythrum salicaria</i>	Purple Loosestrife	Perennial / Grass
<i>Melilotus alba</i>	White Sweet Clover	Perennial / Grass
<i>Melilotus officinalis</i>	Yellow Sweet Clover	Perennial / Grass
<i>Morus alba</i>	White Mulberry	Deciduous Canopy Tree
<i>Polygonum persicaria</i>	Spotted Lady's Thumb	Perennial / Grass

<i>Populus alba</i>	White Poplar	Deciduous Canopy Tree
<i>Populus deltoides</i>	Eastern Cottonwood	Deciduous Canopy Tree
<i>Populus nigra</i>	Black Poplar	Deciduous Canopy Tree
<i>Populus tremuloides</i>	Quaking Aspen	Deciduous Canopy Tree
<i>Pyrus calleryana</i>	Flowering Pear	Deciduous Canopy Tree
<i>Rhamnus cathartica</i>	Common Buckthorn	Large Shrub
<i>Rhamnus frangula</i>	Glossy Buckthorn	Large Shrub
<i>Rhamnus frangula angustifolia</i>	Narrow-Leaved Glossy Buckthorn	Large Shrub
<i>Ribes americanum</i>	Wild Black Current	Small Shrub
<i>Robinia pseudoacacia</i>	Black Locust	Deciduous Subcanopy Tree
<i>Rosa multiflora</i>	Japanese Rose	Large Shrub
<i>Salix alba</i> **	White Willow	Deciduous Canopy Tree
<i>Salix babylonica</i> **	Weeping Willow	Deciduous Canopy Tree
<i>Salix nigra</i> **	Black Willow	Deciduous Canopy Tree
<i>Ulmus americana</i> *	American Elm	Canopy Deciduous Tree
<i>Ulmus pumila</i>	Siberian Elm	Canopy Deciduous Tree
<i>Vinca minor</i>	Common Periwinkle	Groundcover

* Disease resistant cultivars are acceptable

** Allowed under special circumstances

d. Recommended Species for Planting Under Overhead Utilities:

Table 10.d – Species for Under and Near Overhead Utility lines

Botanical Name	Common Name
<i>Acer campestre</i>	Hedge Maple
<i>Acer griseum</i>	Paper Bark Maple
<i>Amelanchier sp.</i>	Serviceberry
<i>Carpinus caroliniana</i>	Musclewood
<i>Cercidiphyllum japonicum</i>	Katsura Tree
<i>Cercis canadensis</i>	Eastern Redbud
<i>Cornus alternifolia</i>	Alternate Leaf Dogwood
<i>Cornus florida</i>	Flowering Dogwood
<i>Cornus kousa</i>	Japanese Dogwood
<i>Cornus mas</i>	Cornelian Cherry Dogwood
<i>Crataegus sp.(thornless)</i>	Hawthorn sp. (thornless)
<i>Magnolia soulangiana</i>	Saucer Magnolia
<i>Malus hybrids</i>	Flowering Crabapple
<i>Syringa reticulata</i>	Japanese Tree Lilac

<i>Viburnum lentago</i>	Nannyberry
<i>Viburnum prunifolium</i>	Blackhaw Viburnum

(Choose varieties with mature heights less than lowest power line if directly below lines)

- e. Collected or Transplanted Trees - If trees will be transplanted within the site, the below instructions must appear on the landscape plans.
- (1) All collected trees shall be from on site and inspected by the City. Trees may be rejected for reasons of species, insect infestation, disease or standards set forth in this ordinance. Such plant material may be rejected either in full or in part.
 - (2) All transplanted trees shall conform to standards set forth in Section 9.
 - (3) The root ball of any transplanted tree shall measure 1 foot for each inch of trunk diameter measured 12” above the root flare or graft collar.
 - (4) If trees are to be stored, they shall be burlapped and heeled in with mulch in a pre-determined area approved by the City.
 - (5) The trees shall be provided with a working irrigation system approved by the City to ensure their viability during storage.

11. Nonliving Durable Material

- a. Mulch for all plantings shall be premium shredded hardwood and shall not be artificially colored. No cypress wood mulch or rubber mulch is to be used.
- b. Trees shall be mulched to a maximum of 3 inches overall depth at planting.
- c. Shrubs, groundcovers and perennials shall be mulched to a maximum of 2 inches overall depth at planting.
- d. All lawn trees shall be planted with a 4 foot diameter circle of the shredded hardwood bark mulch.
- e. Mulch shall be pulled back 3 inches from the tree trunk in a circle down to the root ball dirt to expose the root collar to air. No mounding of mulch on the tree trunk is allowed at planting or in future applications of mulch.
- f. If a root ball’s dirt is piled up on the trunk, it should also be removed to expose the root flare.
- g. For fire safety, shredded hardwood bark is not to be installed adjacent to or within 4 feet of buildings that are constructed of combustible materials. Plantings adjacent to combustible buildings shall be mulched with a non-combustible material typically marketed as landscape mulch or rock. The color of such materials shall be natural and compatible with the building.
- h. Gravel or rock mulches are not permitted within or immediately adjacent to paved parking lots or roadways. Approval of type, depth and specific location for gravel mulch is to be approved by the City.
- i. Sphagnum peat/bog peat is harvested from functioning wetlands so it shall not be used for landscape purposes. Compost may be used as an alternative.
- j. Plastic or other artificial replicas of plant material are prohibited.

CORRESPONDENCE

Meader, Rick

From: Jim Allen <jca@wideopenwest.com>
Sent: Thursday, August 6, 2020 9:18 AM
To: Meader, Rick
Subject: Street trees
Attachments: Canton.JPG

Hi Rick,

A suggestion for the street tree calculation. Your current ordinance requires trees for lots only and omits open space areas. Many communities calculate street trees using the entire street frontage divided by tree spacing. The end result is better since trees will be provided along open space areas and this method is much easier than lot widths and corner lots.

Also, look into median requirements. Canton and Lyon Twp. do this.

Jim Allen
Allen Design
557 Carpenter
Northville, MI 48167
248.467.4668

Street Trees

Street Frontage	1,597'
Trees Required	40 Trees (1,597' / 40')
Trees Provided	40 Trees

Median Trees

Trees Required	1 Tree (1 per 30')
Trees Provided	1 Tree

Lyon Twp

Street trees in single-family districts. One deciduous shade tree shall be planted for each 40 feet of frontage along a street frontages for a corner lot, rounded up to the next whole number. The required street trees shall be planted in the road right-of-way except in the following instances the trees may be planted on private property: 1) where there is insufficient planting area between the sidewalk and curb edge, or 2) planting in the road right-of-way is not permitted by the Road Commission for Oakland County.

One deciduous shade tree shall be planted for each 40 linear feet along a median boulevard, except where such trees would conflict with driveways, street lights, fire hydrants, or utility locations.

Meader, Rick

From: Sue Grissim <sueg@gma-la.com>
Sent: Thursday, August 6, 2020 2:26 PM
To: Meader, Rick
Cc: McBeth, Barb
Subject: FW: Landscape Ordinance and LDM updates
Attachments: Novi questions.pdf

From: Sue Grissim
Sent: Thursday, August 6, 2020 2:21 PM
To: Steve Endres <SteveE@gma-la.com>
Subject: Landscape Ordinance and LDM updates

Hi Rick, I went through both documents and think everything you clarified is really helpful and more concise. – What a huge task – you have to feel relieved now that you are in the final phase of implementing this.

I just have a few items which I have attached that I would like to clarify.

And the last item that I have not sent an attachment on is the discussion of why the city feels we need the ordinance to require a 6' wall in mixed use developments. I feel the developer should make this decision. To me mixed use projects are similar to downtowns where the residential is next to all sort of uses including parking lots, service areas, alleys, etc and many have no separation between. The resident goes into this seeing their neighbors and decides accordingly. Yes sometimes they don't realize trash pick up is at 6am on Saturdays but when they do – they either live with it or move as I don't believe they can require a sound barrier or rescheduling of services.

I am in the office all afternoon and tomorrow am until 10a if you would like to discuss my comments – thanks again for sharing these with us!

Susan L. Grissim, ASLA

Vice President | Principal

Grissim Metz Andriese Associates

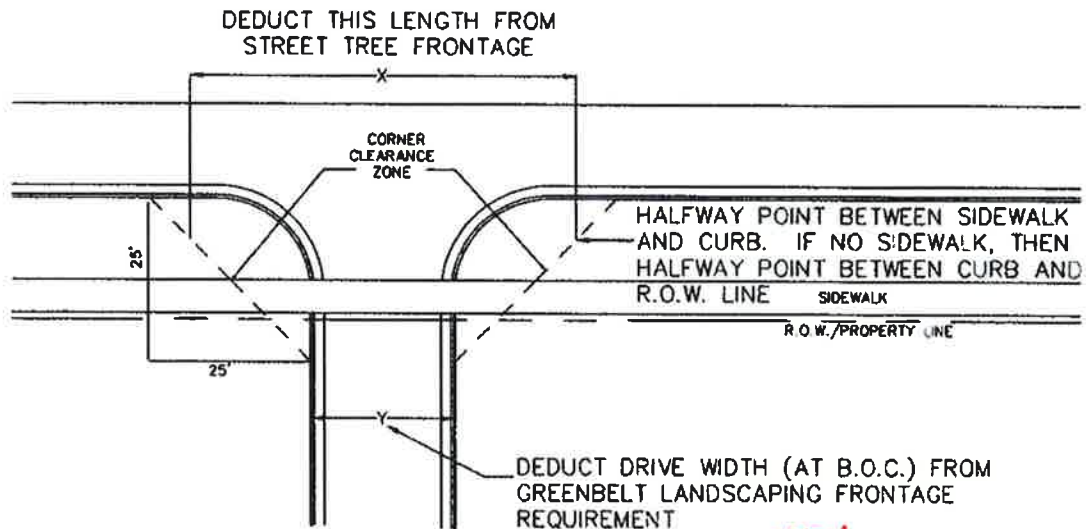
311 East Cady Street
Northville, MI 48167
248.347.7010 x222
248.869.2323 Direct
gma-la.com



**For your reference, our address has changed per the USPS.*

Ordinance

Figure 5.5.3.B.ii.Footnote 10



FRONTAGE MEASUREMENT

This is in current ordinance

TC 1
ex 100' greenbelt.
not adj to parking
60ft = (2) lg + 40ft = 2 sub-

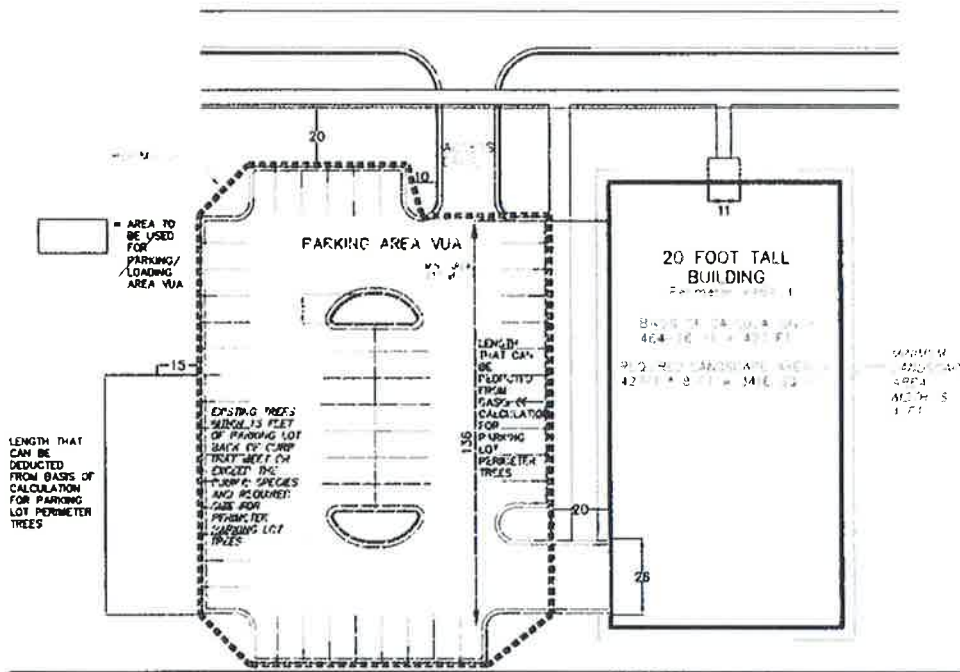
is this ok?

- (11) In the Town Center districts, deciduous canopy/large evergreen trees or subcanopy trees are required in the greenbelt, but not both. One or the other requirement shall be met, not a reduced combination of both types.
- (12) These requirements only pertain to zoning districts B-1, B-2 and B-3.
- (13) When the development fronts on one or more major thoroughfare(s), the right-of-way greenbelt along that thoroughfare shall be an average of 50 feet width, with a minimum of 34 feet.

iii. Private Roads. All private roads and access roads not covered in other sections of this ordinance shall be landscaped with deciduous canopy street trees at a rate of 1 tree per 35 linear feet along both sides of the road, with the same allowances for deducting clear vision zones as noted above in 5.5.3.B.ii Footnote 10.

iv. Reduction or Waiver. Except as provided in Section 5.5.3.A.v.a.(3), which governs relief relative to berm height, the Planning Commission may reduce or waive the landscaping screening/buffer right-of-way requirements when it determines that practical difficulties exist due to the parcel size or configuration, or where the design of the site would be enhanced by an alternative design solution while still meeting the intent of this Section. Examples of such situations include, but are not limited to, when:

Figure 5.5.3.C.iii (2)



i. Parking lot perimeter trees

- a. Deciduous canopy trees are required for the outer edge of parking areas and both sides of access drives to parking areas at a rate of 1 tree per 35 lf of perimeter. See illustration below for determination of perimeter length and what constitutes an access drive.
- b. A landscape area at least 10 feet wide (measured perpendicular to the curb) is required along parking lot perimeters and access drives for planting the required trees.
- c. Existing canopy trees within 15 feet of the parking lot perimeter (as measured to the tree trunk) may be counted as perimeter trees. Dense concentrations of existing trees may not be used to meet requirements for other areas of the parking lot.
- d. If the front edge of a parking lot is at the rear edge of the greenbelt, canopy trees in the greenbelt within 15 feet of the parking lot's back of curb (as measured to the trunk), existing or proposed, may also be counted toward the perimeter requirement.
- e. In the case of a project in a Business district (B-1, B-2 or B-3) where parking is between the right-of-way and at least 67% of the primary building, only 1 perimeter tree per 70 lf is required along the front

why do you say "dense concentrations"?



LDM

Table 2.a.(2) Street Tree Requirements for Single Family Residential Lots

Lineal Frontage*	Trees Required
<70 feet	1 tree
> or =70 feet	2 trees
> or =105 feet	3 trees
> or =140 feet	4 trees
> or =175 feet	5 trees

* Driveway width and corner clearance zones may be subtracted from the lineal frontage.

- (a) Corner lots shall have trees planted along both streets in accordance with the above requirements for each frontage, provided that trees are not planted within the 25 foot corner clearance zone (Section 5.9) or Road Commission for Oakland County (RCOC) required clear vision zone, depending on the road jurisdiction.
- (b) Subdivision open spaces shall have street trees located within the right-of-way at a rate of 1 tree per 35lf (not including frontage in clear vision zones).
- (c) Trees shall not be planted closer than 10 feet from any driveway.
- (d) Distances between trees and curbs or sidewalks shall be:
 1. At least four feet for deciduous canopy trees where the space between curb and walk is at least 8 feet. For subcanopy trees where the distance between the curb and walk is less than 8 feet, the trees should be centered..
 2. At least 5 feet for shrubs behind curbs with angled or perpendicular parking
- (e) If subcanopy trees are to be used as street trees for tight planting areas and under utility lines, only use species/varieties which can be attractively pruned per city standards (a minimum ground clearance of 14 feet on the street side and 10 feet on the non-street side).
- (f) No deciduous canopy tree, subcanopy tree or evergreen tree shall be planted closer than 15 lateral feet from any overhead utility wire, or closer than 10 lateral feet from any fire hydrant, catch basin or manhole. Effort should also be made to keep all trees at least 5 feet away from underground utility lines.

can street trees be grouped with some portions of roadway without street trees?

- b. Single-family residential site condominiums with no lot lines.
 - (1) Street Tree Requirement: 1 canopy or 1.5 ornamental trees per residential unit.
 - (2) Tree Placement: In front of residential unit in the area between the sidewalk and the curb as described in the Chart below:

LDM

Table 2.b.(2) Recommended Tree Sizes for ROW area widths

Tree Species Type	Lawn width (curb to sidewalk)
Small Tree (Deciduous Subcanopy)	4-6 feet
Medium Tree (Deciduous Subcanopy and Canopy)	6-8 feet
Large Tree (Deciduous Canopy)	>8 feet

c. Island and Boulevard Planting.

- (1) A mixture of shrubs, groundcover, perennials, and/or ornamental grasses, as well as canopy and sub-canopy trees, is to be provided.
- (2) Maintenance of such areas shall be the responsibility of the subdivision association.
- (3) At least 75% of the island area shall be landscaped with a combination of live plantings other than lawn. The remaining 25% of area can be lawn if desired.
- (4) Refer to Zoning Ordinance Section 5.9 for corner clearance requirements for boulevards.

3. Detention and Retention Basin Landscaping Requirements

- a. Large deciduous canopy trees shall be planted at a rate of 1 tree per 35lf of the pond edge measured at the permanent water line, 6-10 feet away from the permanent water level, around the east, west and south sides of the pond to provide cooling shade for the pond. Woodland replacement trees may be used to meet this requirement.
- b. Clusters of large native shrubs shall cover 70-75% of the basin perimeter measured 10 feet from the permanent water level, or pond bottom for ponds designed to empty after 24-48 hours. Shrubs shall be placed along this line instead of the high water line and be clustered, not arranged in a straight line.
- c. At least three different shrub species native to Michigan shall be used. Straight species are preferred. Dwarf cultivars with mature heights less than 5 feet do not fulfill the size requirement. The shrubs shall be allowed to grow to their natural height and form.
- d. The bottom and sides of the basin(s), extending 25 feet from the permanent water level shall be planted with a mix of native grasses, sedges and wildflowers and be maintained at a natural height (not mowed as lawn) to discourage use by waterfowl. The application of fertilizer and pesticides on grass areas in the basin shall be limited to the initial establishment of the groundcover. Seeding is not required on the required maintenance access pathway.
- e. Contact the City's wetland consultant or landscape architect when specifying a basin seed mix. All seed mix(es)' species composition and cover crop(s) shall be included on

Lets discuss
not clear to us ?

do detention basins have 25' of side slope above the permanent water level?

do you mean from permanent water level up to top or 10' ?

10 sakura had < 10'

From: [Marc Russell](#)
To: [Meader, Rick](#)
Cc: [McBeth, Barb](#)
Subject: RE: Proposed changes to the Landscape Ordinance and Landscape Design Manual
Date: Monday, August 3, 2020 1:34:44 PM

Some quick thoughts in red.

From: Meader, Rick <rmeader@cityofnovi.org>
Sent: Monday, August 3, 2020 11:01 AM
To: Meader, Rick <rmeader@cityofnovi.org>
Cc: McBeth, Barb <bmcbeth@cityofnovi.org>
Subject: Proposed changes to the Landscape Ordinance and Landscape Design Manual

Hello,

As you are a landscape architect who has submitted plans for review in Novi fairly recently, we wanted to give you a chance to see some proposed revisions to the Landscape Ordinance and Landscape Design Manual that will be up for review by the Planning Commission on Wednesday, August 12. The proposed changes are not as significant as those made in 2017, but do touch on a number of areas. They are being proposed for these reasons:

- More uniformity of street tree location along Novi roads – public and private
- Reduced need for variances and waivers by developers who propose attractive landscaping that still doesn't conform to all of our standards.
- Greater sensitivity to ecological issues facing our community and others
- Closing some landscape loopholes that result in spirit of ordinance not being followed
- Miscellaneous cleanups in ordinances – inconsistencies, errors

A number of these changes could be considered as significant, and a number of others could be considered as minor. A summary of each follows:

Significant changes:

1. **Mixed Use Development Issue**

- a. Add a requirement for a 6 foot tall wall in TC/TC-1 districts with mixed use developments between residential and non-residential sections of the development where commercial parking lots or loading areas abut residential for improved sound abatement and visual presence.

What materials? Are there alternate materials being considered. So a residential use in a mixed use development (single family and multiple family)does not require screening? Is the existing residential development thought to be single family?

2. **Street Tree Issues**

- a. Add a requirement for street trees along all private roads and access roads at a rate of 1/35lf. There are currently no requirements for private roads in developments other than residential or industrial subdivisions to have street trees.
- b. Add a requirement for street trees along subdivision open spaces.

Existing preserved vegetation will not satisfy the intent? Over planting? I think its kind of nice to have a break in the monotony of street trees with naturalized planting. Also helps to add diversity. Do street trees have a diversity percentage? As you know us designer types don't like to break up the rhythm of street trees if the design warrants such a planting.

3. Make landscapes more environmentally sensitive and sustainable

- a. Add requirement for canopy trees around east, south and west sides of detention ponds to help cool the water **Can you quantify the entire requirement**
- b. Add requirement that plantings include species native to Michigan for at least 50% of the species used, not including woodland replacement plantings and seed mixes. (The ordinance already calls for native plants to be used as a priority, this just gives a codified standard for number of species to be used at a minimum).
- c. Add Japanese Knotweed to the section requiring treatment and removal of *Phragmites australis* from a development site. **As you know these species are very invasive. How will this be enforced beyond the 2 year establishment period. Is the owner still obligated to mitigate?**

4. Responses to specific situations encountered in recent developments:

- a. Require multi-family units to meet façade requirement (35%) on the side of the building facing access roads, not the "front" which has been used to put landscaping where it will not be seen by traffic passing through the development.
- b. Allow up to 25% of required multi-family development unit trees to be subcanopy trees without requiring a waiver to increase planting diversity on a site.

Proposed Changes more Minor in Nature

Requirements for Landscape Plan

- 5.5.2 Add requirement for a landscape plan for projects that include an increase in a parking lot of (10 spaces, or equivalent paved area) or 10% of the existing parking lot area, whichever is less.

Residential/Non-residential I Screening Berms

- 5.5.3.A.ii. Reduce crest width of industrial berms from 15 feet to 6 feet. **Shouldn't this be consistent with Greenbelt?**
- 5.5.3.A.iii Add railroads as another exception where a screening berm is not required
- 5.5.3.A.v.(a)(2) Reduce requirement of showing first floor elevations of buildings to nearest principal structures to berm from all buildings within 200 feet of the berm or wall **Do we need tis at all if we are required to show sections of proposed berms?**
- Clean up table 5.5.3.A.ii

Public Right-of-Way Greenbelt Issues

- 5.5.3.B. Reduce crest width to 2 feet where the required greenbelt is 20' as that width only allows a 2' crest with a 3' tall berm and 1:3 slope. **See above** Waivers are technically required if the 3 foot crest width can't be met, which is impossible, mathematically.
- 5.5.3.B.vi (d). Add concrete masonry unit (CMU) as acceptable retaining wall material **Instead or including veneer? Are you thinking a decorative block? Burnished or split faced? Not your standard CMU?**
- 5.5.3.B.ii (f) Footnote 14. Require that either the subcanopy or canopy tree requirement be met for consistency, instead of a reduced number of each type.
- 5.5.3.B.vi Allow a landscape waiver for the use of a wall or hedge instead of a berm.

Parking Lot Requirement revisions

- 5.5.3.C.ii Allow a parking island to be less than 200sf if it is adjacent to open space

Should consider requirement of interior parking lot tree. Is there sufficient room?

- 5.5.3.C.ii Require trees in all corner islands and/or at ends of bays.
- 5.5.3.C.ii Allow perimeter trees to be used within edge and corner islands if necessary
Certain acceptable distance?
- 5.5.3.C.iii. Raise required landscape area for first 50,000sf in I-1 and I-2 from 5% to 6%.
- 5.5.3.C.iv. Define perimeter as the outer edge of parking area for clarity
- 5.5.3.C.iv . Add requirement of 10 feet landscaping space along perimeter for trees to match the spacing requirement in the Zoning Ordinance Do you mean Lawn?
- 5.5.3.C.iv. Clarify that dense plantings of existing trees can't be used to meet requirements of other perimeter areas. Not sure why this wouldn't count as it could satisfies the intent of the ordinance.
- 5.5.3.C.iv Adjust perimeter requirement for B-1, B-2, B-3 parking lot edge in greenbelt to match the greenbelt requirement

Building Foundation Landscaping

- 5.5.3.D Add requirement that alternative landscaping in the TC and TC-1 districts be equivalent in area to the required landscape area (instead of just "significant").
- 5.5.3.D. Foundation landscaping could be planted on the street side or parking lot side? of a paved walkway or driveway without requiring a landscape waiver.

Multi-family Residential Development

- 5.5.3.F.ii Require that 75% of multi-family unit tree requirement be large (how large?) evergreen or canopy trees, and 25% can be ornamental trees. This removes the requirement for a landscape waiver that is currently encouraged by staff in order to increase the diversity of plantings on a site.
- 5.5.3.F.ii. Allow financial guarantee for multi-family development's interior street trees to be calculated as site landscaping, not street trees (10% vs 25%).
- 5.5.3.F.ii Change requirement for façade plantings to state that plantings shall be on portion of building facing the interior drive, (or parking lot?) not the stated "front" of the building.

Non- Residential Development

- 5.5.3.F.iii. Moved requirements for Non-residential subdivisions from the Landscape Design Manual to Section 5.5. No actual requirements have changed.

Detention Basin Landscaping

- LDM 3.b. Move shrubs down to 10 feet from detention basin normal water line to provide better water source for the plants.
- LDM 3.b Added requirement for native seeding along bottom 25 feet to match Engineering standard
- LDM 3.b Added requirement that landscapers provide a photo of seed bag before seeding to make sure it complies with plans.

Miscellaneous

- LDM 4.f. Add requirement (currently generally enforced) that no more than 10% of replacements may be evergreen trees.
- LDM 6. Add requirement that Fire Hydrants and Fire Department Connections shall be kept clear of obscuring plantings. (Clearance requirement? Just around utility and not a clear pathway to utility? Certainly could mess with a consistent design along the façade frontage.
- 5.5.5. Added statement that additional review fees or inspection fees may be required depending on the extent of changes or number of reviews/inspections required.

If you can send me any comments you have about any of these proposed changes by this Thursday afternoon, we can compile them and include them in the packet for the Planning

Commission so they can consider them as they review the proposed changes.

Thank you very much.

Rick Meader | Landscape Architect

City of Novi | 45175 Ten Mile Road | Novi, MI 48375 USA

t: 248.735-5621 | c: 248.880-5962

cityofnovi.org | InvestNovi.org

To receive monthly e-news from Novi or follow us on social media, [click here](#).

VIA ELECTRONIC MAIL

June 24, 2020

Novi Planning Commission
City of Novi Community Development
45175 10 Mile Road
Novi, MI 48375



NORTHERN
EQUITIES
GROUP

39000 COUNTRY CLUB DRIVE
FARMINGTON HILLS, MI 48331
(248) 848-6400 FAX (248) 848-6700

RE: City of Novi Landscape Proposed Revisions to the Landscape Ordinance and Landscape Design Manual

Dear Planning Commission Members:

Northern Equities Group has reviewed the proposed revisions to the city's landscape ordinance and design manual. In general, many of the proposed revisions to the ordinance will result in overplanted, unimaginative and unattractive building sites. In addition, the ordinance does not take into consideration what happens to the over-landscaped site when the trees mature, e.g., trees at corner of buildings that continually need to be trimmed back. In time, it is an aesthetic issue and also ends up being an ongoing expense to our tenants. We also have issues with the street tree requirements. From its initial inclusion in the ordinance and over the years, we have voiced our concerns to Charles Boulard and to Rick Meader. We feel this adds to the overplanting of the site and street tree requirement adds nothing to the curb appeal of building sites. Over the ten years, the costs of landscaping a building in Novi has almost tripled, without any real increase in aesthetic value to the buildings. Additionally, we have safety concerns for the tenants as they exit the sites and their line of sight. Instead of focusing on closing loopholes, we feel there should be provisions where the City works with the developer in creating a plan that works for all.

Below you will see some specific comments on certain aspects of proposed changes. They are highlighted in yellow.

As I believe all of you know we take great pride in our developments. We are routinely complimented by our tenant base in the care we put forward in having park-like landscaping. We appreciate your consideration and would gladly make ourselves available to further discuss.

Sincerely,



Matthew S. Sosin
President

cc: Novi City Council
Charles Boulard – City of Novi
Rick Meader – City of Novi
Joe Drolshagen – Northern Equities Group
Brian Hughes – Northern Equities Group

Attached are proposed revised copies of Section 5.5 of the Zoning Ordinance (Landscape Standards) and the Landscape Design Manual. The highlighted portions are comments from Northern Equities Group and our expert advisors:

- More uniformity of street tree location along Novi roads – public and private

It is not uncommon for our landscape architect to ask for waivers regarding street trees along public roads due to utility conflicts and not enough room between back of curb and sidewalk to plant a tree. This then requires them to “locate street trees elsewhere on site” which is fine if there’s room but most Novi plans end up getting pretty tight with all of the ordinance requirements.

Regarding trees along private roads within a development we see this as a potential conflict with two of their existing ordinances: access way perimeter trees and vehicular perimeter parking lot trees. This would essentially be the same as the access way perimeter trees, so we’re hoping one would have precedence over the other or this would be pretty tricky to accommodate both. A lot of times our architect has to place the vehicular perimeter parking lot trees along these long private access way roads due to utility conflicts again so unless we can “double dip” We foresee another issue with this.

- Reduced need for variances and waivers by developers who propose attractive landscaping that still doesn’t conform to all of our standards.
- Greater sensitivity to ecological issues facing our community and others
- Closing some landscape loopholes that result in spirit of ordinance not being followed
- Miscellaneous cleanups in ordinances – inconsistencies, errors

As most of these changes will not significantly impact the ease or difficulty of meeting the ordinance, I haven’t sent these proposed changes out to landscape designers.

A number of these changes could be considered as significant, and a number of others could be considered as minor. A summary of each follows:

Significant changes:

1. Mixed Use Development Issue

a. Add a requirement for a 6 foot tall wall in TC/TC-1 districts with mixed use developments between residential and non-residential sections of the development where commercial parking lots or loading areas abut residential for improved sound abatement and visual presence.

2. Street Tree Issues

a. Add a requirement for street trees along all private roads and access roads at a rate of 1/35lf. There are currently no requirements for private roads in developments other than residential or industrial subdivisions to have street trees.

- b. Add a requirement for street trees along subdivision open spaces.
- 3. Make landscapes more environmentally sensitive and sustainable

MEMORANDUM

2

- a. Add requirement for canopy trees around east, south and west sides of detention ponds to help cool the water . Our landscape architect commonly add replacement trees around the basins. If the City begins to require trees there, then that will be one less place we can locate replacement trees, which is already a challenge.
 - b. Add requirement that plantings include species native to Michigan for at least 50% of the species used, not including woodland replacement plantings and seed mixes. (The ordinance already calls for native plants to be used as a priority, this just gives a codified standard for number of species to be used at a minimum).
 - c. Add Japanese Knotweed to the section requiring treatment and removal of Phragmites australis from a development site.
4. Responses to specific situations encountered in recent developments:
- a. Require multi-family units to meet façade requirement (35%) on the side of the building facing access roads, not the “front” which has been used to put landscaping where it will not be seen by traffic passing through the development.
 - b. Allow up to 25% of required multi-family development unit trees to be subcanopy trees without requiring a waiver to increase planting diversity on a site.

Proposed Changes more Minor in Nature

Requirements for Landscape Plan

- 5.5.2 Add requirement for a landscape plan for projects that include an increase in a parking lot of (10 spaces, or equivalent paved area) or 10% of the existing parking lot area, whichever is less.

Residential/Non-residential | Screening Berms

- 5.5.3.A.ii. Reduce crest width of industrial berms from 15 feet to 6 feet.
- 5.5.3.A.iii Add railroads as another exception where a screening berm is not required
- 5.5.3.A.v.(a)(2) Reduce requirement of showing first floor elevations of buildings to nearest principal structures to berm from all buildings within 200 feet of the berm or wall
- Clean up table 5.5.3.A.ii

Public Right-of-Way Greenbelt Issues

- 5.5.3.B. Reduce crest width to 2 feet where the required greenbelt is 20' as that width only allows a 2' crest with a 3' tall berm and 1:3 slope. Waivers are technically required if the 3 foot crest width can't be met, which is impossible, mathematically.
- 5.5.3.B.vi (d). Add concrete masonry unit (CMU) as acceptable retaining wall material
- 5.5.3.B.ii (f) Footnote 14. Require that either the subcanopy or canopy tree requirement be met for consistency, instead of a reduced number of each type.
- 5.5.3.B.vi Allow a landscape waiver for the use of a wall or hedge instead of a berm.

Parking Lot Requirement revisions

- 5.5.3.C.ii Allow a parking island to be less than 200sf if it is adjacent to open space
- 5.5.3.C.ii Require trees in all corner islands and/or at ends of bays.

We almost never are able to fulfill this requirement due to utilities / fire hydrant at the end of at least one corner island / bay.

- 5.5.3.C.ii Allow perimeter trees to be used within edge and corner islands if necessary
- 5.5.3.C.iii. Raise required landscape area for first 50,000sf in I-1 and I-2 from 5% to 6%.

This will result in more trees on plans that are already tight.

- 5.5.3.C.iv. Define perimeter as the outer edge of parking area for clarity

3

- 5.5.3.C.iv . Add requirement of 10 feet landscaping space along perimeter for trees to match the spacing requirement in the Zoning Ordinance
- 5.5.3.C.iv. Clarify that dense plantings of existing trees can't be used to meet requirements of other perimeter areas.

If existing trees can't be counted towards ordinances, this again results in more proposed trees on plans that are already tight. Also, if there are already dense plantings in the area of a required buffer, where are supposed to plant new trees?

- 5.5.3.C.iv Adjust perimeter requirement for B-1, B-2, B-3 parking lot edge in greenbelt to match the greenbelt requirement

Building Foundation Landscaping

- 5.5.3.D Add requirement that alternative landscaping in the TC and TC-1 districts be equivalent in area to the required landscape area (instead of just "significant").
- 5.5.3.D. Foundation landscaping could be planted on the street side of a paved walkway or

driveway without requiring a landscape waiver.

Multi-family Residential Development

- 5.5.3.F.ii Require that 75% of multi-family unit tree requirement be large evergreen or canopy trees, and 25% can be ornamental trees. This removes the requirement for a landscape waiver that is currently encouraged by staff in order to increase the diversity of plantings on a site.
- 5.5.3.F.ii. Allow financial guarantee for multi-family development's interior street trees to be calculated as site landscaping, not street trees (10% vs 25%).
- 5.5.3.F.ii Change requirement for façade plantings to state that plantings shall be on portion of building facing the interior drive, not the stated "front" of the building.

Non- Residential Development

- 5.5.3.F.iii. Moved requirements for Non-residential subdivisions from the Landscape Design Manual to Section 5.5. No actual requirements have changed.

Detention Basin Landscaping

- LDM 3.b. Move shrubs down to 10 feet from detention basin normal water line to provide better water source for the plants.
- LDM 3.b Added requirement for native seeding along bottom 25 feet to match Engineering standard
- LDM 3.b Added requirement that landscapers provide a photo of seed bag before seeding to make sure it complies with plans.

Miscellaneous

- LDM 4.f. Add requirement (currently generally enforced) that no more than 10% of replacements may be evergreen trees.

This would be a problem as we normally replace with as many evergreen trees that is allowed. This is due to trying to fit replacement trees on site that is tight on space. There's a lot of situations where we can place a 12-14' evg. Symbol but can't place a 25' dia. canopy tree symbol.

- LDM 6. Add requirement that Fire Hydrants and Fire Department Connections shall be kept clear of obscuring plantings.
- 5.5.5. Added statement that additional review fees or inspection fees may be required depending on the extent of changes or number of reviews/inspections required.

Subsequent reviews sometimes generate comments on parts of the landscape plan that have not changed from the original submission. It would be helpful if additional comments were only made on those changes that have been submitted as a result of changes made to the original plan.

The Planning Commission is asked to set a Public Hearing to consider the proposed changes when it has concluded its review and is satisfied with the changes.