



CITY of NOVI CITY COUNCIL

Agenda Item 3
April 24, 2017

SUBJECT: Approval of Zoning Ordinance Text Amendment 18.283 to amend the City of Novi Zoning Ordinance at Article 5.5, Landscape Standards within Article 5, Site Standards, to update the landscape ordinance standards and the landscape design manual, in order to promote health of planted materials and the health of non-built open areas, to improve the visibility of buildings, to update the list of invasive species, to clean up inconsistencies, and to bring the ordinance into agreement with other recently amended ordinances.
FIRST READING.

SUBMITTING DEPARTMENT: Community Development Department – Planning *Barb*

CITY MANAGER APPROVAL: *[Signature]*

BACKGROUND INFORMATION:

Section 5.5 of the City of Novi's Zoning Ordinance and the accompanying Landscape Design Manual sets standards for landscaping in all developed areas within the city, including, but not limited to:

- Required plantings quantities by zoning district and application (greenbelts, parking, building foundations, etc),
- Spacing of plantings,
- Allowed species for plantings, and
- Installation and maintenance standards.

Periodically, the City staff reviews ordinance standards to determine the need for updates. The current Landscape ordinance was introduced in 2003 and there have been no significant updates to it since that time. The City's landscape architect, Rick Meader, has reviewed the ordinance over the past two years and has made notes to address concerns he has had in enforcing the ordinance, and that he has heard from the business community, landscape architects and public safety personnel. Revisions are proposed to Section 5.5 of the Zoning Ordinance (Landscape Standards) and the Landscape Design Manual (LDM) with these broad objectives in mind:

- Better survivability of trees in designed landscapes
- Reduction of building screening from rights-of-way
- Better visibility of street addresses from road for emergency vehicles
- Continued screening of parking areas from roads, especially to block headlights
- More uniformity of street tree location along Novi roads
- Reduction of landscape requirements in and around parking areas that are extremely difficult to meet. In most cases, the current ordinance provisions would require overplanting a site, which is detrimental to the trees and is an unnecessary expense to the applicants.
- 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
- Miscellaneous cleanups in ordinances – inconsistencies, errors

The proposed changes have been shared with thirteen landscape architects who frequently work on projects in Novi in order to seek impressions and comments. Ten replies were received and **are**

summarized in this packet. A number of their comments have been incorporated in the revised ordinance and landscape design manual.

The general hope and expectation in making these revisions is that the city will still benefit from well-landscaped sites that are beneficial to our environment and community character while lessening the burden of land owners and developers from unnecessary landscaping costs. In total, the existing landscaping requirements, if strictly enforced, would not be attractive or conducive to healthy landscaping and would create unnecessary blockage of the view of businesses from public roads.

Some of the proposed changes could be considered as significant, while others could be considered as minor. A summary of each follows:

Significant changes:

1. Greater visibility of buildings fronting rights-of-way:

- a. Right-of-way berms only required in front of parking (not rest of site). (Zoning)
- b. Required greenbelt plantings reduced in front of buildings for commercial and industrial (Zoning)
- c. Reduced greenbelt plantings in front of parking in commercial districts where building is behind parking (Zoning)
- d. Town Center required greenbelt plantings are either the large trees or subcanopy trees, but not both (Zoning).
- e. Reduced required landscaping along industrial subdivision roads (fewer subcanopies, more shrubs) (LDM)
- f. Reduced requirement for 25% of industrial subdivision frontage to have additional landscaping to 10%, focused mainly on entry points. (LDM)
- g. Use 1.5 subcanopy trees instead of 2 subcanopy trees as substitute for a canopy tree under wires. (Zoning)
- h. Request that designs provide visibility to building addresses from 20-40 degree angle to road, per Fire Marshal request (LDM)
- i. Allow substitution of shrubs for deciduous canopy, evergreen and subcanopy trees in the right-of-way greenbelt, for up to 10% of the required trees. 8 shrubs for one canopy or large evergreen, or 5 shrubs for one subcanopy tree, may be used. (Zoning)

2. Less congestion of site plantings in and around parking lots

- a. Greenbelt tree requirements may deduct width of access aisle from basis. (Zoning)
- b. Street tree requirement may deduct width of corner clearance zone from basis. (Zoning)
- c. Parking lot interior landscaping is reduced to 1 tree/200 square feet of paved area vs 1/75 square feet of paved area. (Zoning)
- d. Parking lot vehicular use area for interior parking requirements does not include access drives leading to parking areas. (Zoning)
- e. Access drives to parking areas only have to have perimeter trees (along both sides of drive). (Zoning)
- f. Allow only perimeter planting in sections with parking on one side of access drive. (Zoning)
- g. Additional access drive perimeter trees are not required within the greenbelt if greenbelt canopy trees are within 15 feet of access drive and meet the spatial requirement (1 tree/35 linear feet). (Zoning)
- h. Street tree spacing is the same along an entire parcel instead of more in front of parking (Zoning)
- i. Parking lot perimeter trees now a stand-alone requirement (not a table footnote). (Zoning)
 - i. Parking lot perimeter basis may be reduced by existing trees adjacent to parking (within 15 feet of curb)
 - ii. Parking lot perimeter basis may be reduced by frontage of 20 feet tall or taller buildings within 20 feet of parking lot.

- iii. Parking lot perimeter tree count may be reduced by frontage along greenbelt if greenbelt canopy trees fulfilling perimeter count are within 15 feet of curb.

3. Create conditions that will contribute to better tree survival

- a. Parking lot islands must have a minimum of 200 square feet unpaved area per tree planted in it. (Zoning)
- b. Parking lot island trees must have 3 feet of spacing between back of curb and trunk. (Zoning)
- c. Walkways along islands acceptable but planting area between sidewalk and curb must be 10 feet. (Zoning)

4. Make landscapes more environmentally sensitive and sustainable

- a. Depressed parking lot islands are allowed, as long as design, including drainage and plant choices, allows for trees to survive. (Zoning)
- b. Establishment and maintenance plans should be added to plans for natural area seed plantings. (Zoning)
- c. Pear trees (*Pyrus calleryana*) have been added to the Prohibited Plants list due to their increasingly invasive behavior in southeastern Michigan. Barberry, Privet and Periwinkle are also added as they are listed invasive species in the Midwest. (LDM)
- d. Norway Maple (*Acer platanoides*) will be completely banned (took away 100 foot allowance). They are invasive in woods settings and seeds can easily be transported 100 feet either by air or by people (LDM).

5. Assist developers and builders to save money on landscaping without causing significant reductions in the attractiveness of built landscapes:

- a. Parking lot interior landscaping basis changed to 7.5 percent of paved area for first 50,000 square feet in commercial, 5 percent in industrial (versus 10 percent of parking spaces + 5 percent aisles in commercial and 7 percent parking spaces + 2 percent aisles for industrial). (Zoning)
- b. Irrigation system not required, but allowed (landowners are still responsible for keeping their landscapes alive and in good condition by Section 5.5.7).
- c. Foundation landscaping basis may be reduced by paved access points of building (Zoning)
- d. Foundation landscaping may be along just 80 percent of building (Zoning)
- e. Reduce required landscaping frontage for multi-family buildings from 60 percent to 35 percent to be more consistent with many of our existing developments. (Zoning)
- f. Allow upsizing for greenbelt trees and parking lot perimeter trees – max 1/3 of required trees.
- g. Required greenbelt plantings in front of parking can be reduced by 1/3 if 3 foot tall brick wall is placed along frontage of parking lot in lieu of berm. (Zoning)
- h. Parking lot interior islands must have minimum of 200 square feet (not 300 square feet, as currently required). (Zoning)
- i. Reduced minimum sizes of canopy trees from 3" to 2.5" in most cases (LDM).

6. Responses to specific situations encountered in recent developments:

- a. Allow bays of 25 vehicles for uses like storage of vehicles or large trucks, but still require same amount of area (larger islands will help protect trees in them) (Zoning)
- b. Up to 25 percent of parking lot perimeter trees may be large evergreens to assist with screening.

Proposed Changes more Minor in Nature

1. Clarification of ordinance interpretations and terminology

- a. Foundation landscaping areas may not consist of lawn. (Zoning)
- b. Detention pond landscaping now a separate item (was a sub-item under subdivisions). (Zoning, LDM)
- c. Boulevard islands and cul-de-sac island plantings do not count as street trees (clarification consistent with current interpretation). (Zoning)

- d. Multi-family housing – clarification that street tree count is along both sides of interior streets. (Zoning)
 - e. Addition of plant diversity breakdown table to requirements (LDM).
 - f. Paint added as method of delineating parking spaces (contrasting brick, concrete pavers already allowed in landscape ordinance). (Zoning)
 - g. Added miscellaneous notes and illustrations to make interpretation of rules easier to understand and enforce (LDM and Zoning).
 - h. Changed some minimum spacing requirements for screening spacing, clarified that columnar/ fastigate trees may require closer spacing (LDM)
- 2. Miscellaneous corrections and changes to make wording more consistent with intent of landscape ordinance and with other ordinances.**
- a. Design engineer must sign and seal designs for walls taller than 3.5 feet (currently the ordinance just says engineer). (Zoning)
 - b. Landscaping financial guarantee 1.2 x material cost (not 2x) to match Chapter 26.5 (Zoning).
 - c. Street trees financial guarantees are 1.0 times the \$400/tree cost to match Chapter 26.5. (Zoning).
 - d. Add Licensed Landscape Architect to required signature along with Registered Landscape Architect (MI used to be registered, but is now licensed). (Zoning and LDM)
 - e. Change from maximum to minimum of 3 feet height for Industrial Subdivision shrubs planted as parking lot screening. It is unlikely that a place would want their shrubs to get too tall for their own security, but shrubs shorter than 3 feet won't create the headlight blockage or view of cars that is desired (LDM).
 - f. Reduce spacing behind curb for single-family subdivisions from 4 feet to 3 feet (our right-of-way often limits spacing between curb and sidewalk to less than 8 feet). (LDM)
- 3. Minor changes to improve tree health and environmental sustainability of ordinances**
- a. Native seed mix composition lists should be added to plans (LDM).
 - b. Added Nannyberry, flowering dogwoods and Musclewood to good "under line" trees (LDM).
 - c. Michigan Peat/Bog Peat is not allowed for landscaping purposes (LDM).
 - d. Cypress wood mulch is not allowed for landscaping purposes (LDM).
 - e. Updated planting details to show 3" mulch vs 4", highlight removal of mulch and dirt from root flares (LDM)
- 4. Minor changes in landscape plan requirements to assist with evaluation of plans and inspections of new site landscaping**
- a. Require labels for areas in square feet (SF) for landscape areas (LDM).
 - b. Allow plans to be submitted at 1"=60' for large scale and at 1"=20' for detail scale (LDM).
 - c. Start of inspection period changed from March 15 to April 15 (LDM and Zoning).
 - d. Addition of 10 percent cutoff to changes in plan at which point a new administrative review, with review fees, will be charged. (Zoning)
 - e. Addition of list of other ordinances with landscaping impacts (LDM).

The Planning Commission held a Public Hearing on February 22, and provided a favorable recommendation to the City Council. The matter is ready to be considered by the City Council meeting for First Reading.

RECOMMENDED ACTION: Approval of Zoning Ordinance Text Amendment 18.283 to amend the City of Novi Zoning Ordinance at Article 5.5, Landscape Standards within Article 5, Site Standards, to update the landscape ordinance standards and the landscape design manual, in order to promote health of planted materials and the health of non-built open areas, to improve the visibility of buildings, to update the list of invasive species, to clean up inconsistencies, and to bring the ordinance into agreement with other recently amended ordinances. FIRST READING.

Landscape Ordinance
Strike-through Version

STATE OF MICHIGAN
COUNTY OF OAKLAND
CITY OF NOVI
ORDINANCE NO. 16-18.283

AN ORDINANCE TO AMEND THE CITY OF NOVI ZONING ORDINANCE, AMENDING SECTION 5.5, LANDSCAPE STANDARDS IN ARTICLE 5, SITE STANDARDS, TO MAKE THE ORDINANCE REQUIREMENTS MORE ACHIEVABLE AND REALISTIC GIVEN THE CONSTRAINTS OF MOST SITES, TO PROMOTE THE VISIBILITY OF BUILDINGS, THE HEALTH OF PLANTED MATERIALS AND THE ECOLOGICAL HEALTH OF NON-BUILT OPEN AREAS, TO UPDATE THE LIST OF INVASIVE SPECIES, TO CLEAN UP INCONSISTENCIES AND TO BRING THE ORDINANCE INTO AGREEMENT WITH OTHER RECENTLY AMENDED ORDINANCES.

THE CITY OF NOVI ORDAINS:

PART I. That the City of Novi Zoning Ordinance is amended, by amending Section 5.5, in Article 5 – Site Standards, 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 ~~distinctive-attractive~~ designs that:

- emphasize the preservation of existing natural resources, ~~and~~ the use of native plant materials, and a diversity of plant species;
- preserve and enhance existing woodlands, wetlands and natural open areas;
- ~~which~~ reduces impervious surfaces, enhances storm water management and prevents soil erosion and soil depletion;
- ~~providerequire~~ appealing yet opaque visual and audible buffering between non-compatible land uses; ~~and~~
- ~~and to~~ utilize the best ecological concepts and environmental objectives with preservation ~~and sustainability~~ as a priority,

(+) ~~in order~~ -to protect and enhance the ~~well-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)~~**2. Landscape Plan Required.** 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 ~~twenty five (25)~~**25%** percent increase in the overall square footage of the building or ~~four hundred (400)~~**400** square feet, -whichever is less. With the exception of Section 5.5.5.FG, 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 ~~the~~ this Ordinance and the requirements of the City of Novi "Landscaping Design Manual," as adopted by the City Council by resolution and which may similarly be amended by Council resolution from time to time.

~~(3)~~**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-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 abut or are adjacent to any residential district (RA, R-1, 2, 3, 4, RT, RM-1, RM-2, MH and any TC district 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.

5.5.3.A.ii Residential Adjacent to Non-Residential Berm Requirement Chart		
Use	Zoning	Berm <u>Berm or Wall</u> Height
Parking	P-1 district Off-Street Parking Area	4 ft. 6 in. to 6 ft. high
Residential/Special Land Use	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	OST, OS-1, and OSC districts	4 ft. 6 in. high to 6 foot high
Commercial	B-1, B-2, B-3, RC, and NCC districts	6-6 ft to 8 ft. high
EXPO, EXO district	EXPO district	8 ft ' to 10-10 ft high
Conference	C district	8-8 ft to 10-10 ft high
Freeway Service	FS district	8-8 ft to 10 ft ' high
Town Center	(a.) TC and TC-1 districts	6-6 ft high
	(b.) TC-1 and RM-2 districts	6 ft ' high wall
Industrial	I-1 district	10-15 ft. ht. berm, 6 ft. crest width, 80% winter/90% summer opacity (See Section 1905-43.14.5.Ee)

	I-2 district	15 ft. ht. berm, 15 ft. crest width, 80% winter/90% summer opacity (See Section 2002-43.15.2.C)
	<u>Special Land Use</u>	<u>10 ft. ht. berm, 6 ft. crest width, 80% winter/90% summer opacity (See Section 3.14.5.E)</u>
Auto Wash, Drive-In Restaurants, Service Stations, and Planned Commercial Centers and Regional Shopping Centers	Where permitted or approved	10 ft. to <u>15 ft</u>
Hospital-Ambulance and Delivery Areas	Where permitted or approved	6 ft. 0 in. high
Utility Buildings, Stations, and/or Substations	Where permitted or approved	6 ft. 0 in. high

- iii. [Unchanged]
- 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. [Unchanged]
 - a. [Unchanged]
 - (1) [Unchanged]
 - (2) The site plan shall include the first floor elevation of all adjacent principal structures within ~~two hundred (200)~~200 feet of the subject 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; ~~w. W~~ 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 ~~5v.~~(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 ~~5v.~~(a), above.

~~c.~~ c. The obscuring berm shall have no greater than a maximum slope of ~~thirty-three~~33 (33) percent. (~~Three (3)~~ feet of horizontal plane for each ~~one (1)~~ foot of vertical height.) More gradual slopes are strongly encouraged.

~~e.d.~~ d. Plants shall be specified for any "no mow" areas.

~~d.e.~~ e. The crest of the obscuring berm shall have a nearly flat horizontal area of at least ~~five (5)~~5 feet in width. (See the previous Berm Requirement Chart for exceptions.)

~~e.f.~~ f. [Unchanged]

~~f.g.~~ g. [Unchanged]

~~g.a.~~ a. ~~See Landscape Design Manual for additional requirements.~~

~~h.~~ h. [Unchanged]

~~See Landscape Design Manual for additional requirements.~~

vi. Wall Requirements.

a. [Unchanged]

b. Walls shall be designed to resist the pressure of the retained material, including both live and dead 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 ~~three and one half (3½)~~ feet 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 (Chapter 11, Novi Code of Ordinances).

c. [Unchanged]

d. [Unchanged]

e. [Unchanged]

B. Adjacent to Public Rights-of-Way

- i. [Unchanged]
- ii. [Unchanged]
 - a. [Unchanged]
 - b. Berms shall comply with Section 5.5.3.A.v., with specific requirements as called out in Table 5.5.3.B.ii.f.
 - c. The landscape area, if adjacent to parking and vehicular use areas not between the right-of-way and the principal building, shall be planted to achieve a minimum opacity of ~~ninety (90) percent~~ 90 percent during the summer and ~~eighty (80) percent~~ 80 percent during the winter. The landscape in this area shall provide an ~~intermittent~~ continuous visual obstruction height of ~~thirty-six (36)~~ 36 inches, plus the required canopy/evergreen or subcanopy trees required per Table 5.5.3.B.ii.f.
 - d. 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 requirements of the zoning district as specified in the Right-of-Way Landscape Screening Requirements Chart, and shall have a maximum slope of ~~thirty-three (33) percent (three feet of horizontal plane for each one (1) foot of vertical height)~~ 33% and a crest as specified in the Right-of-Way Landscape Screening Requirements Chart (Table 5.5.3.B.ii.f). ~~A landscape area shall be planted to provide visual interest and yet allow views into the site.~~
 - e. 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 street address from a 20-40 degree angle as you approach the building.
 - f. Parking areas in a Commercial/Office district with parking located between the principal building and right-of-way shall be planted at a reduced rate, per the greenbelt tree and subcanopy 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).
 - g. 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.
 - e-h. For a residential development abutting an arterial or minor arterial roadway, landscape buffers shall be installed and maintained along the entire property line abutting the right-of-way. In a single family site development, the required landscape buffer shall not be part of a residential unit or lot.
 - i. Necessary access ways from public rights-of-way through ~~such~~ required landscaped areas shall be permitted. The width of the access way(s) may be ~~but such access ways shall not be s~~ubtracted from the lineal dimension used to determine the minimum number of trees required for greenbelt landscaping

and street trees (see illustration in Table 5.5.3.B.ii.f, Footnote 17 below for points of measurement for each).

d-j. The buffering shall not prevent visibility of the main building entry and/or building address 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 (2) (3) (5) (feet)	Min. berm crest width (feet)	Min. Berm Height (9) (feet)	3 Foot Wall/ Fence	Canopy Deciduous deciduo cano py or large evergreen trees: 1 per: (4) X (10) (linear feet frontage)	Deciduous Sub-canopy decid Trees: 1 per: (2) (10) X (linear feet frontage)	In area between sidewalk and curb: plant 1 deciduous canopy deciduous tree per: (4) (6) (10)
<u>Footnotes</u>				(4)	(9)	(5,6,7)	(2,8,9,14,17)	(3,8,9,14,17)	(2,9,10,11,12,15,17)
Single Family Residential	R-A R-1 R-2 R-3 R-4		34	4	4	N/A (5,6,7)	35 40	20 25	35
Two-Family Residential	RT	Adjacent to parking	20	22	3	(4,5,6,7) (4) (7) (8)	35	20 25	35
		Not adjacent to parking No parking	30	42	43	(5,6,7) (4) (7) (8)	35 40	25	45 35
Multi - Family Residential	RM-1 RM-2 MH	Adjacent to parking	20	22	3	(4,5,6,7) (4) (7) (8)	35	20 25	35
		Not adjacent to parking No parking	34	42	43	(5,6,7) (4) (7) (8)	35	25	45 35

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

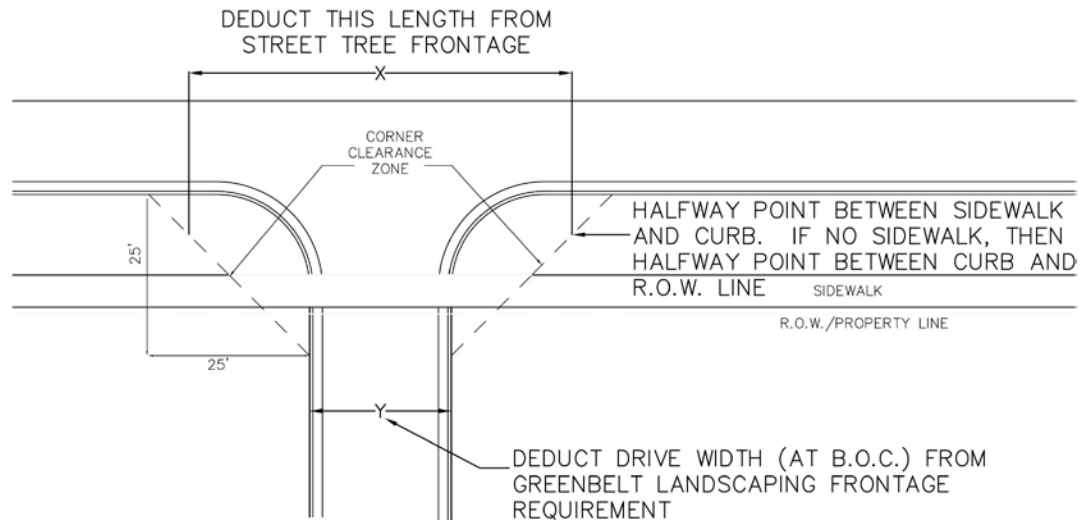
5.5.3.B.ii.f Right-of-Way Landscape Screening Requirements (continued)									
			Requirements						
Use	Zoning	Berm Located	Greenbelt width (feet)	Min berm crest width (feet)	Min. Berm Height (feet)	3 Foot Wall/ Fence 3-Foot Wall	Deciduous canopy or large evergreen trees: 1 per X linear feet frontage	Deciduous Sub-canopy Trees: 1 per X linear feet frontage	In area between sidewalk and curb: 1 deciduous canopy tree per X linear feet frontage
<u>Footnotes</u>				(4)	(9)	(5,6,7)	(1,2,8,9,13,17)	(1,3,8,9,13,14,17)	(1,2,9,10,11,15,18)
Commercial /Office	NCC C OS-1 OSC OST B-1 B-2 B-3	Adjacent to Parking	20	23	3	(4,45) (7,6,7)	35 35	20 20	35
		Not adjacent to parking No parking	25, except OS-1 & B-1 = 20	3, except OS-1 & B-1 = 2 ft, 0	3, except OS-1 & B-1	(45) (7,6,7)	4060	2540	4535
		Parking between ROW and at least 67% of primary building (15)	20	3	3	(4,5,6,7)	75	40 Plus 2 shrubs per 40 lf	35
Industrial (12)	I-1 I-2	Adjacent to Parking	25	3	3	(4,5,6,7) (4)-(7)	4040	3035	45
		Not adjacent to parking No parking	25	—	—	—(7)	4060	3540	5545
Downtown	TC TC-1	Adjacent to Parking	20	—	—	(6,7)(7) (8)	25 (16,17,18)	15 (16,17,18)	—
		Not adjacent to parking	—	—	—	(6,7)(7) (8)	30 (16,17,18)	20 (16,17,18)	—
Misc. Large Use	P-1 Expo RC FS	Adjacent to Parking	20	22	3	(5,6)(4) (7)	30 35	20	45
		Not adjacent to parking	25	3	3	(5,6)(4) (7)	3545	2530	5545

Planned Suburban Low Rise	PSLR	Parking and buildings adjacent to a section line road right-of-way	50	4	3	Not permit ted allow ed	35	20	35
		Parking adjacent to other right-of-ways	To Front of principal building	4	3	Not permit ted allow ed	35	20	35

FOOTNOTES:

- (1) Round fractions to the nearest whole number for the required number of trees and shrubs. — 5.5.3.B.ii.f Right-of-Way Landscape Screening Requirements (continued)
- (2) (1) Subcanopy trees are to be used under overhead utilities. Use 2-1.5 subcanopy trees for each one canopy tree requirement. If columnar/fastigate varieties are used, 2 subcanopy 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.
- (3) (2) Subcanopy trees can be in an informal or formal arrangement. Format spacing shall be 10-foot minimum to 15-foot maximum on center.
- (4) (3) Shrubs, ~~both deciduous and evergreen,~~ 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 ~~and~~ 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) (4) 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. ~~and plantings.~~
- (7) Freestanding walls shall be constructed of masonry or concrete with all exterior sides of face brick with a suitable cap.
- (8) An ornamental fence with shrubs and brick piers may be used instead of a berm if approved by the Planning Commission in Use/Zoning as indicated above. A Planning Commission waiver is required for this substitution.
- ~~— (5) Ornamental Grasses, perennials, annuals shall be planted in massed groupings to highlight entrances and views of key elements.~~
- ~~— (6) With Road Commission for Oakland County approval where applicable.~~
- ~~— (7) Freestanding walls shall be constructed of masonry or concrete with all exterior sides of face brick with a suitable cap.~~
- ~~— (8) An ornamental fence with shrubs and brick piers may be used instead of a wall if approved by the Planning Commission in Use / Zoning as indicated above.~~
- (9) (9) View channels into the site are to be used for safety visibility. Please provide sight lines to the building address for approaching vehicles at an approximately 20-40 degree angle.
- (10) (10) Tree spacing requirements are intended to dictate the tree quantity per linear footage along the proposed right-of-way (ROW). ~~It is~~ They are not intended to dictate exact placement on the site within the area of the requirement. Creative landscape design is encouraged.

- ~~(11)~~ (11) 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.
- ~~(12)~~ (12) Street trees shall not be permitted within the 25-foot ~~clear vision triangle~~ corner clearance zone (Section 5.9). Roads with Road Commission for Oakland County (RCOC) jurisdiction shall utilize their standards for sight distance in locating street trees. If RCOC or does not approve any or all trees, those trees shall not be planted, with no penalty to the applicant.
- ~~(13)~~ (13) 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
- ~~(14)~~ (14) Subcanopy trees used in foundation landscaping may also count toward the right-of-way subcanopy requirement if the building is located at the rear of the required greenbelt width.
- ~~(15)~~ (15) These requirements only pertain to zoning districts B-1, B-2 and B-3.
- ~~(16)~~ (16) In the Town Center districts, deciduous canopy/large evergreen trees or subcanopy trees are required in the greenbelt, but not both.
- ~~(17)~~ (17) The width(s) of access aisles through the greenbelt may be deducted from the basis of calculation (see illustration in footnote #19 below).
- ~~(18)~~ (18) The width(s) of the corner clearance zone(s) may be deducted from the basis of the calculation for street trees (see illustration in footnote #19 below).
- ~~(19)~~ (19) Linear deductions allowed for street trees and right-of-way greenbelt landscaping:



iii.

iv.

- v-iii. 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 ~~Such action by the Commission shall be taken when:~~
- a. [Unchanged]

b. [Unchanged]

c. [Unchanged]

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

a. [Unchanged]

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

~~c. (see Footnote (8) of the Right-of-Way Landscape Screening Requirements Chart).~~

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 to 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 is encouraged, such as islands between rows of parking in long, wide planting strips. See (see Parking Lot Configuration Diagrams in the City of Novi Landscape Design Manual for examples).

d. ~~The minimum width dimension of the islands is to be ten (10) feet from back of curb to back of curb.~~ The use of pedestrian walkways in parking lot islands is encouraged, if the islands' paths are greater than or equal to at least 5 feet wide with no vehicle overhang or 7 feet wide with vehicle overhang and a seventeen-foot in width 10-foot planting area width is maintained.

e. Landscaped islands are to be installed with ~~six (6)~~ 6 inch curbs that are designed to protect landscaping from damage by vehicles. However, periodic openings in curbs, which do not exceed ~~two (2)~~ 2 feet in length, shall be permitted ~~only~~ for the purpose of conveying storm water run-off.

a-f. If more than ~~one (1)~~ 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) Where a parking lot landscape area is required hereunder, it shall be no less A minimum of 200 square feet than three hundred (300) square feet in area

.

(2) A minimum of 200 square feet in unpaved area per tree planted in an island. The unpaved area must be immediately adjacent to the tree(s).

(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.

~~b-h.~~ For any development other than a single one-family or two-family dwelling, tfor any development other than a single one-family dwelling or single 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).

- e.i. Wheel stops or raised curbing shall be installed to prevent vehicles from encroaching more than ~~two (2)~~ 2 feet into any parking landscape area. When adjacent 90 degree parking stalls are reduced from 19 to 17 feet in length, the required six (6) inch curbs shall be reduced to four (4) inches in height when the adjacent ninety (90) degree parking stalls are proposed to be reduced from nineteen (19) feet to seventeen (17) feet in length. This applies to both landscape and sidewalk overhangs. Also, instances where vehicles overhang a sidewalk, the parking stall may be reduced in length to seventeen (17) feet, the curbing shall be reduced to four (4) inches in height, and the sidewalk shall have a minimum width of seven (7) feet.
- i. No plantings with a mature height greater than ~~twelve (12)~~ 12 inches shall be within ~~ten (10)~~ 10 feet of fire hydrants. Plant materials shall not block the visibility of the hydrant and be no taller than 12 inches when below a Fire Department Connection.
- d.k. 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.
- e.l. 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 the plantings are salt-tolerant and the islands are designed to provide drainage adequate for survival of the island plantings and meet all City of Novi engineering standards.
- f.m. Paint, cContrasting brick or concrete pavers may be used to delineate stall lines within parking areas.
- g.n. Any area within a parking lot not dedicated to parking use ~~or,~~ driveways, or sidewalks exceeding ~~one-hundred (100)~~ 100 square feet, shall be landscaped with a minimum of lawn or other living ground cover.
- h.o. 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.
- i.p. The total square footage of required interior landscape islands shall be provided as follows:
 - j-(1) The required square footage shall be provided only within islands that are surrounded by paved parking areas ~~islands or~~ that project into the parking lot from the perimeter of the parking area, if they shall 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) ~~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.~~
- (4) ~~No bay of parking (defined herein as a single row of side by side parking spaces) greater than fifteen (15) parking spaces in length shall be provided unless a landscape island is provided at a minimum interval of one island per fifteen (15) parking spaces.~~
- (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 must be provided.~~
- (6) ~~The design and layout of all parking lots and islands shall be subject to review and approval by the City of Novi.~~ In order to count toward the total landscape area provided, an island must contain at least 1 deciduous canopy tree.

k. _____

iii. 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 Canopy Tree Chart					
	A	B	C	D	E
Category*	Total square footage of parking spaces not including access aisles equals landscaped islands for VUA areas less than or equal	Square footage of all additional paved vehicular use areas (Not including A) under 50,000 square feet equals: Total square footage of landscaped islands for VUA beyond the	Square footage of all additional paved vehicular use areas (Not including A or B) over 50,000 square foot	Total Square footage of landscaped islands required equals number of interior landscape deciduous canopy trees:	Perimeter Deciduous Number of Canopy Trees required equals:
Footnotes	1,2,3	1,2,3		4,5,7	6,7,8
1	$VUA \times 107.5\%$	$(VUA-50000) \times 51.0\%$	$A+B \times 1\%$	Total (A+B) / (+C) / 200	Perimeter (LF) / 7535
2	$VUA \times 75\%$	$(VUA-50000) \times 0.5\% \times 2\%$	$A+B \times 0.5\%$	(A+B) / 200 Total LA+B (+C)	Perimeter (LF) / 35D / 75
*Category 1 = OS-1, OSC, OST, B-1, B-2, B-3, C, NCC, EXPO, FS, TC, TC-1, RC Districts and <u>and</u> Special Land U Uses					
*Category 2 = I-1, I-2					
<u>Notes to table:Footnotes:</u>					

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

(1)(2) A minimum square footage as set forth in Section 5.5.3.C.ii.b is required. Vehicular Use Area (VUA) to be used in this calculation includes parking spaces, loading areas and access aisles. It does not include drives to the Vehicular Use Area. See illustration below.

(3) All calculations are to be rounded to nearest whole number (do not use decimal places). For example, if A = 95.96, it would be rounded to 96 before continuing to the next calculation. 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. 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 $50,000 \times 7.5\%$ plus $15,000 \times 1\% = 3750\text{sf} + 150\text{sf} = 3900\text{sf}$ landscape area within the parking lot boundary.

(2) -

(3) Canopy deciduous trees are required. In instances of overhead utility lines, subcanopy trees may be approved.

(4) Corner areas at the edges of parking areas may also be counted toward square footage of island space.

(4) Perimeter greenspace must contain canopy trees equal in quantity to one (1) per thirty-five (35) linear feet as a minimum. Paved vehicular use areas includes loading/unloading areas. Deciduous canopy

g. Perimeter trees are required for parking areas and access drives to parking areas at a rate of 1 tree per 35 lf of perimeter. See illustration for determination of perimeter length.

(1) Parking lot frontages with existing trees within 15 feet of the parking lot perimeter (as measured to the tree trunk) may be subtracted from the basis of calculation, as long as the trees provided meet or exceed the requirement of 1 tree per 35 lf.

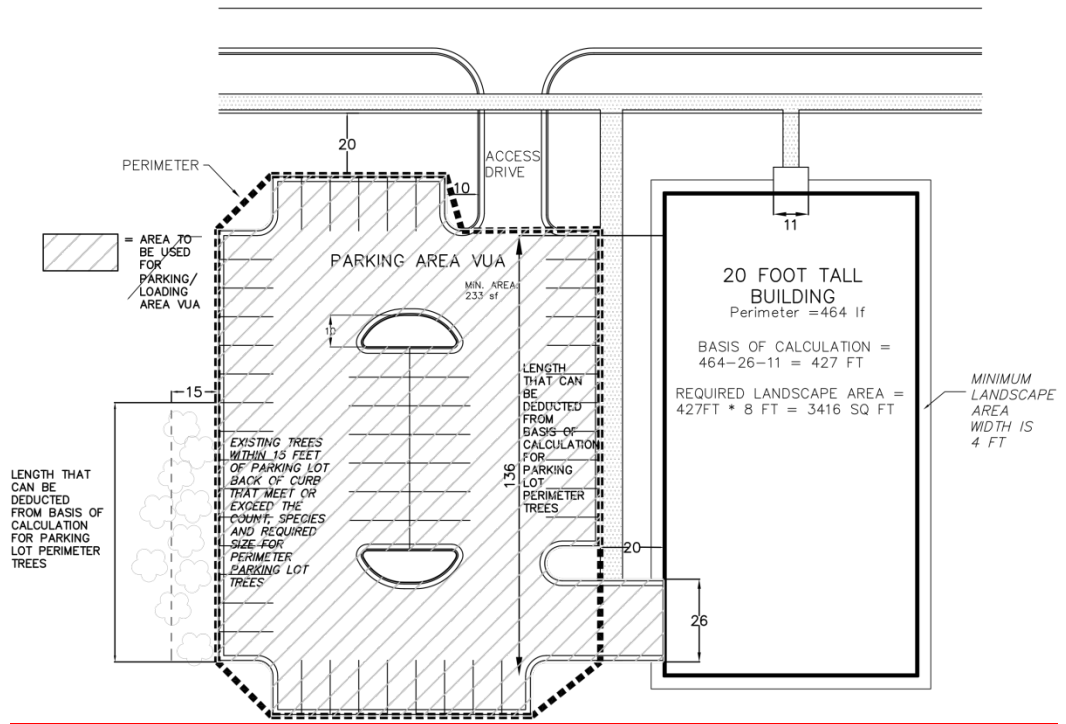
(2) If the front edge of a parking lot is at the rear edge of the greenbelt buffer, and canopy trees in the greenbelt, existing or proposed, are within 15 feet of the parking lot's back of curb (as measured to the trunk), those trees can be counted toward the perimeter requirement.

(3) In the case of a building 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 tree per 70 lf is required along the front parking lot edge. The same allowance for deduction cited in (2) above can also apply in this case.

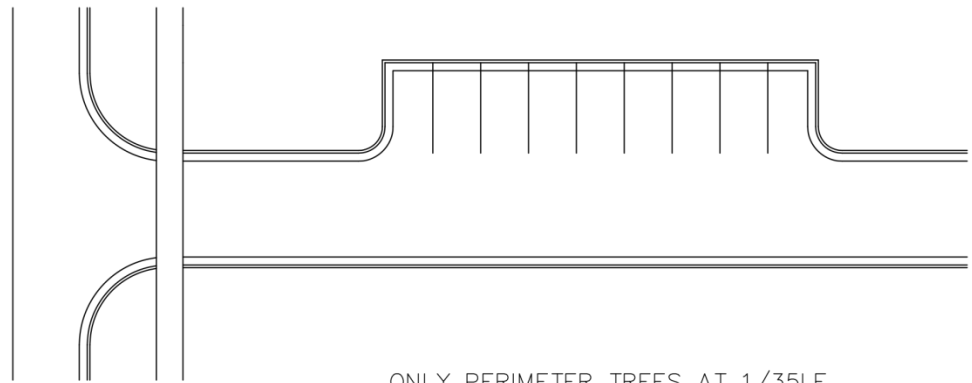
(4) Greenbelt canopy trees within 15 feet of the back of curb of an access drive may count toward the access drive perimeter tree requirement.

(5) 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.

(6) As they may assist with 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.



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

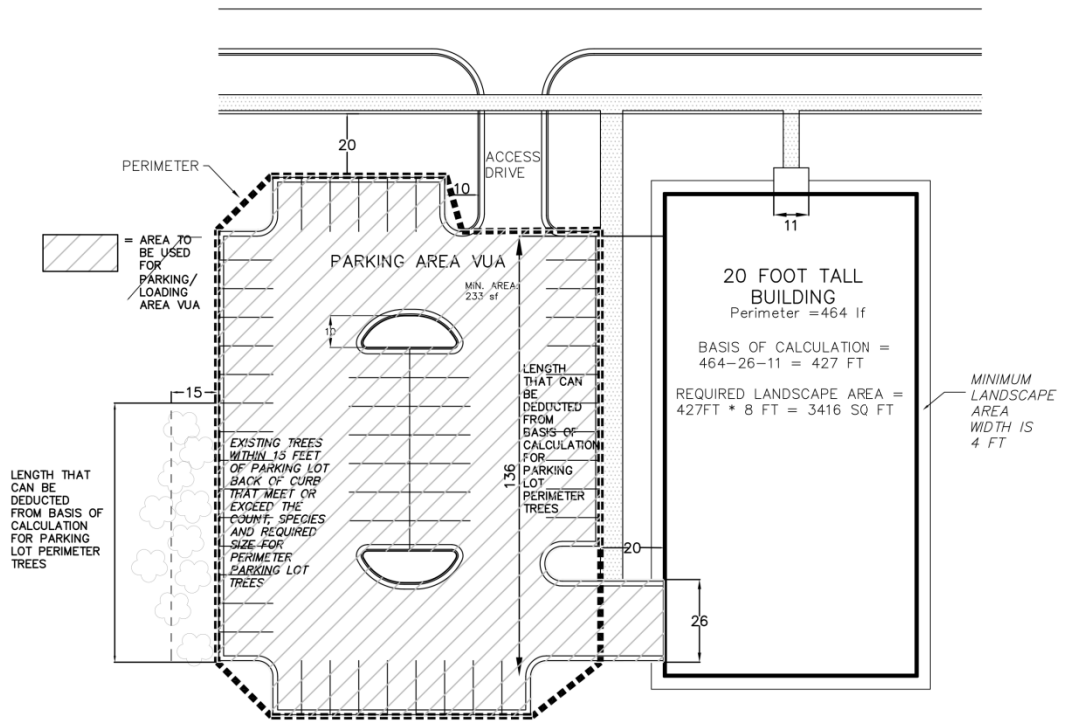


ONLY PERIMETER TREES AT 1/35LF REQUIRED IN THIS SITUATION

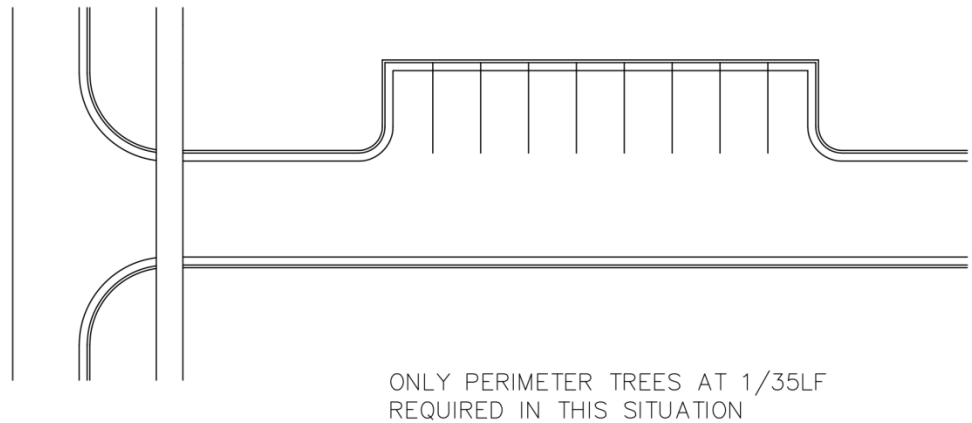
iv. [Unchanged]

D. Building Foundation Landscape Requirements

- i. Intent. The intent of this subsection is to provide greenliving, landscape space around buildings in order to help integrate buildings 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:



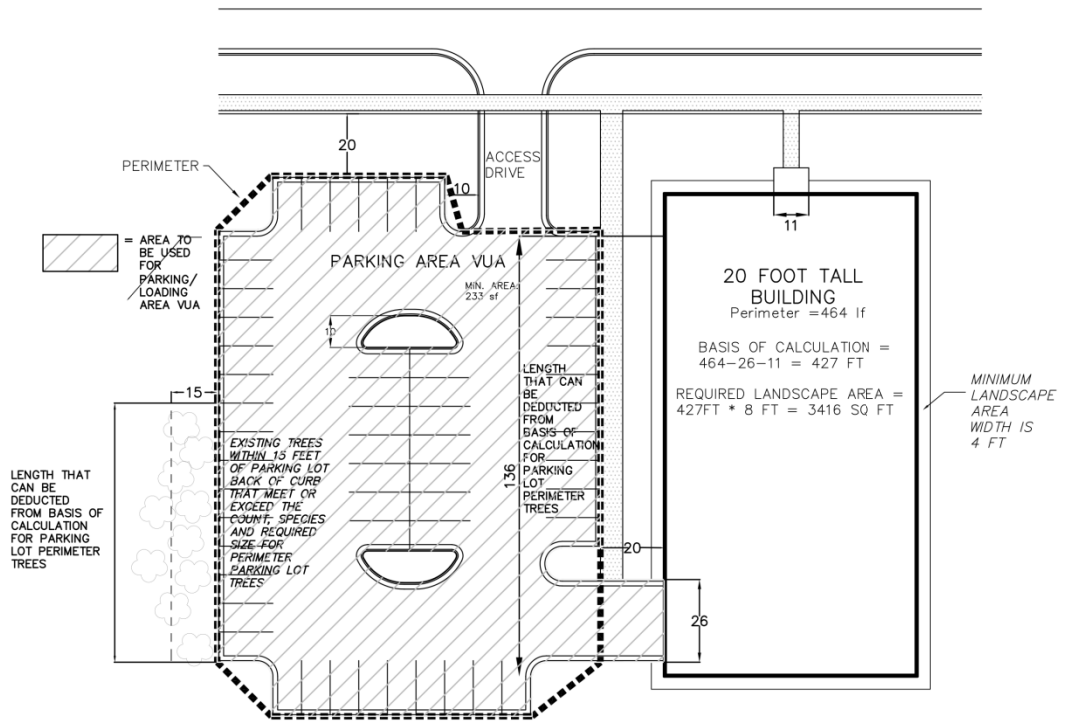
(7) If a parking bay abuts a drive but no other parking bay, only perimeter trees along the drive and parking are required (no interior parking trees). See illustration below:



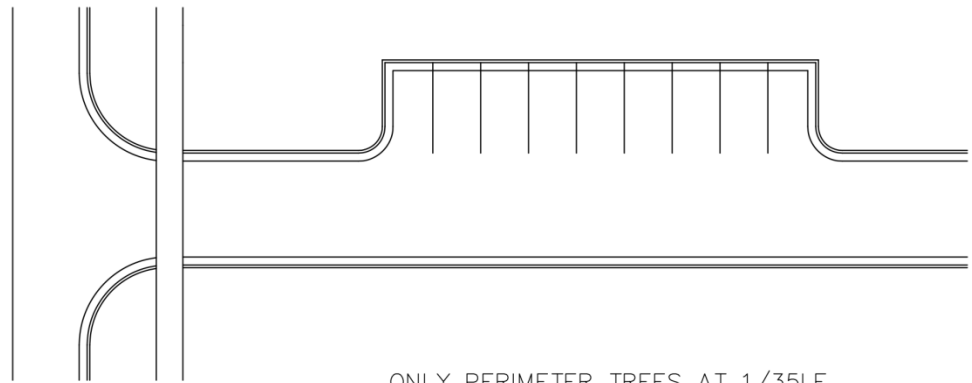
iv. [Unchanged]

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ONLY PERIMETER TREES AT 1/35LF REQUIRED IN THIS SITUATION

iv. [Unchanged]

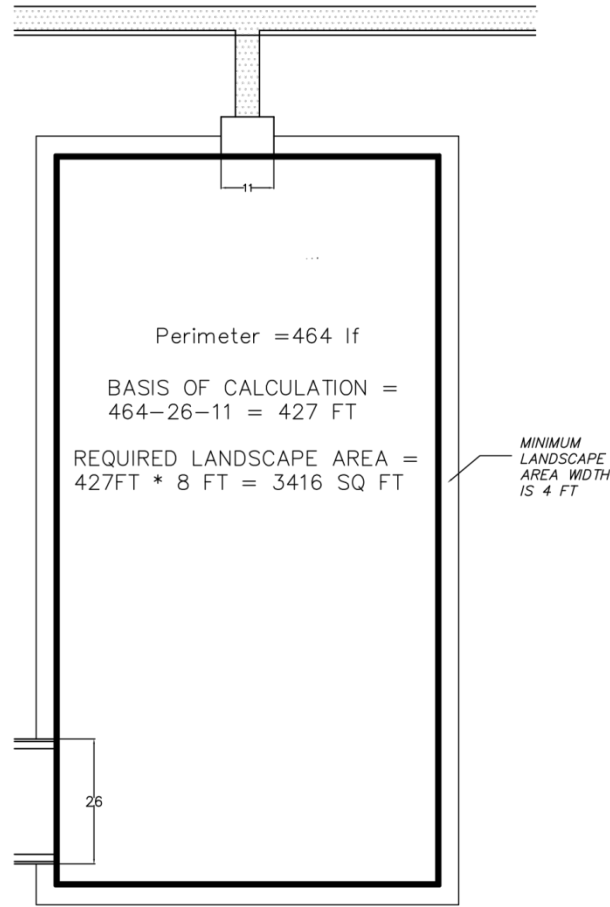
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- i. Intent. The intent of this subsection is to provide greenliving, landscape space around buildings in order to help integrate buildings into the surrounding landscape and to improve the aesthetic appearance of the site.
- ii. Requirements. For 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 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 on all at least 75% of the building foundation four sides and have a minimum width dimension of four feet. 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.
- ~~a-c.~~ All foundation landscaping areas shall be labeled as such on the landscape plan, with the area in square feet of that area.
- d. For the front and any other facades visible from a public street, a minimum of sixty (60) percent 60% of the exterior building perimeter ~~will~~ shall be greenspace planted with a mix of trees, shrubs and groundcovers, perennials, grasses, annuals and bulbs. Canopy deciduous, Deciduous canopy and/or large evergreen trees and subcanopy 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.
- ~~b-f.~~ If the front of the building is at the rear line of the required right-of-way greenbelt, trees included in the foundation plantings for the front of the building may also count toward the required greenbelt plantings.
- ~~e-g.~~ With respect to projects within the TC and TC-1 districts, the Planning Commission may waive the eight (8) 8 foot width calculation requirements, if significant additional planting and/or decorative paving 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. There shall be greenspace adjacent to patios.
- j. 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.
- ~~d-k.~~ 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.

e. In instances where the building has a first floor overhang greater than two (2) feet, the landscaping required under this subsection shall begin at the outside edge of the overhang.



iii. [Unchanged]

- 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
- a-c. Landscaping has been proposed in other areas on the site adjacent to the building that offset the loss.

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 (see Ordinance Code chapter 12, Storm Water Management).

b.

E.F. Subdivision Planting Requirements

i. Single-Family Platted Subdivisions or Residential Site Condominiums

a. [Unchanged].

b. Requirements Adjacent to Major Thoroughfares.

(1) -That portion of these lots abutting major thoroughfares shall include an approved screen planting and 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 ~~forty (40)~~40 feet.

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

~~b-~~(3) -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 front of each lot in accordance with the standards set forth in the Landscape Design Manual.

(2) A Street Tree Financial Guarantee will be collected at a rate of ~~four-~~hundred (400) dollars per street tree 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 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.

~~(2)~~(3) Trees shall be guaranteed by the developer for two (2) growing seasons after installation. All unhealthy and dead plant material shall be replaced by the developer within ~~six-three (63)~~ months following notice, or the next appropriate planting period, whichever occurs first. All replacement trees shall be guaranteed by the developer for an additional two (2) years after which time a final inspection will be conducted at the request of developer. 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.

~~(3)~~(4) The developer shall submit a landscape plan for all of the street trees to be provided within the platdevelopment, 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 ~~three (3)~~3 feet to ~~six (6)~~6 feet as measured from the established street grade. See Landscape Design Manual for additional requirements regarding the type and size of plantings.

~~(4)~~(2) Island and boulevard plantings do not count toward the required street tree totals.

~~(3)~~ If an island's or entry's landscaping is to be re-landscaped by the subdivision association, a landscape plan shall be submitted to the City for administrative approval.

~~(2)~~

ii. Multi-Family/Attached Dwelling Units

a. [Unchanged]

b. Requirements. For all ~~multiple-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 (3)~~ 3 deciduous canopy ~~deciduous~~ trees or large evergreen trees for each dwelling unit on the first floor shall be provided. Evergreens shall be no closer than ~~twenty (20)~~ 20 feet from the roadway.
- (2) In addition, there shall be one deciduous canopy ~~deciduous~~ tree along interior roads for every ~~thirty five (35)~~ 35 feet of lineal interior roadway, 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 ~~deciduous~~ trees shall be a minimum of ~~twenty five (25)~~ 25 feet and a maximum of ~~thirty five (35)~~ 35 feet. In case of overhead utility lines, deciduous subcanopy ~~deciduous~~ trees can be substituted for deciduous canopy ~~deciduous~~ trees at a rate of 1.5 subcanopy tree for each 1 canopy tree. (See Single-Family Platted Subdivisions or Residential Site Condominiums Sections for specific requirements.)
- (3) A mixture of shrubs ~~and~~ subcanopy trees ~~and~~ groundcovers, perennials, annuals, and or ornamental grasses shall be provided as foundation plantings at the front of each ground floor unit covering at least ~~sixty (60)~~ 35% percent of the front building facade.

iii. Non-Residential Subdivisions

a. [Unchanged]

b. [Unchanged]

~~(1)~~ 1. [Unchanged]

~~(2)~~ 2. Required Landscape Screening Requirements where adjacent to residential, 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.

~~(3)~~ 3. [Unchanged]

~~(4)~~ 4. [Unchanged]

~~(5)~~ 5. See the Landscape Design Manual for additional requirements for individual lots.

~~iv.iii. Detention/Retention/Sedimentation Basin Landscape Requirements. All detention basins shall be planted with 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 maintenance shall be provided (see Ordinance Code, Storm Water Management).~~

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

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

- A. [Unchanged]
- B. [Unchanged]
- C. [Unchanged]
- D. [Unchanged]
- E. [Unchanged]
- F. [Unchanged]

~~(5)5.~~ Installation Specifications.

- A. [Unchanged]
- 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 ~~one and one-half (1.5x)~~ times the cost 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 ~~thirty (30)~~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 of ~~two (2)~~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 financial guarantee is 100% of the \$400 per tree.

- C. **Inspections.** A City representative will perform landscape inspections following a request from the developer. The inspection time period is from ~~March-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 ~~March-31~~April 15, a financial guarantee is to be provided based on ~~two 1.2 (2.0)~~ times the ~~percent~~ incomplete material cost of incomplete items for a Temporary Certificate of Occupancy as outlined above. Beginning ~~March-31~~April 15, the Applicant then has ~~thirty (30)~~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 ~~occur~~ beginning at the Final Certificate of Occupancy inspection approval and continue to ~~two (2)~~2 years from that date. All plantings shall be properly planted ~~as to bend be~~ in a healthy, growing condition at commencement of the establishment period. At the end of the establishment period, any plantings, which are ~~twenty (20) percent~~20% dead or ~~greater~~disfigured, shall be replaced.
- 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. Minor changes due to seasonal planting problems and lack of plant availability 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. ~~_____~~ -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 from approved plan, such that the provided plan is not predominately representative of the actual installed plantings, the landscape plan shall be revised and resubmitted for plan approval. a revised or as-built plan and an additional review fee will be required.

~~iii.~~ _____

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

~~i. Street trees shall be provided in front of each single family parcel, in accordance with the standards set forth in the Landscape Design Manual for lots within single family platted subdivisions.~~

~~ii. A Street Tree Financial Guarantee will be collected at a rate of four hundred (400) dollars per street tree required prior to the issuance of a building permit, in accordance with the provisions of Chapter 26.5 of the Novi Code of Ordinances. No Final Certificate of Occupancy will be granted until the trees have been planted by the developer/builder or homeowner and inspected by the City. Trees shall be guaranteed by the developer/builder or homeowner for two (2) growing seasons after installation. 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, whichever occurs first. 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 developer/builder or homeowner. The Street Tree Financial Guarantee will not be reduced until the trees have been planted and accepted by the City.~~

~~iii. The developer/builder or homeowner shall depict the street trees on the plot plan, which shall be reviewed by the City.~~

~~(6)~~ **6. Maintenance**

A. 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. 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.

~~4. Maintenance of required plantings by the owner shall be carried out so as to present a healthy, neat and orderly appearance, free from refuse and debris.~~

B. To insure proper maintenance and as a condition of Final Site Plan approval, the City shall require the property owner to ~~To insure proper maintenance and as a condition of Final Site Plan approval, the property owner shall~~ 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.

C. Such instrument shall also include provisions that:

i. all unhealthy and dead material shall be replaced within ~~one (1)~~three (3) months ~~year~~, or the next appropriate planting period, whichever occurs first;

ii. all landscaped areas shall be provided with ~~an irrigation system~~ method of providing water for the landscaping during establishment . A permanent irrigation system must be installed if plantings that require a consistent source of water for survival are part of the landscape;

iii. tree stakes, guy wires and tree wrap are to be removed after one winter season;

iv. plantings shall be guaranteed for ~~two (2)~~ 2 growing seasons after the date of the acceptance of the installation; and

A.v. 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 ~~the~~ 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.

D. [Unchanged]

~~(?)~~E. [Unchanged]

Landscape Design Manual

Strike-Through Version

CITY OF NOVI

LANDSCAPE DESIGN MANUAL

(Adopted by City Council Resolution dated- 8-25-03) – revised Feb 2017

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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>
<u>3.6</u>	<u>Notes to District Standards</u>
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<u>3.27.1. C,D,F</u>	<u>TC and TC-1 Required Conditions</u>

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CODE OF ORDINANCES

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

SUPPLEMENTAL REQUIREMENTS AND PROCEDURES

The following Supplemental Requirements and Procedures shall apply to any landscape plan required under Section 2509-5.5 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. 1. ~~1.~~ **Landscape Screening/Buffer Requirements**

a. ~~a.~~ Residential Adjacent to Non-Residential

(1) ~~(1)~~ Berm Requirements.

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

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

(c) ~~(c)~~ A minimum opacity shall be provided and maintained at eighty (80%) percent winter opacity and ninety (90%) percent summer opacity at the required height within (2)2 years after of installation. This level of opacity shall be provided wherever screening is called for in this ordinance. Opacity shall be calculated wherever screening or buffering is called for in this ordinance. Opacity includes an intermittent visual obstruction height of twenty (20)20 feet, as well as the required screening or buffering capacity. (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) ~~(d)~~ Landscaping shall provide the required opacity primarily by using a dense planting of large evergreen trees or shrubs. Spacing of the plant materials shall be in accordance with the Plant Material Spacing Chart below and the attached illustrations. Groupings of canopy deciduous trees, subcanopy trees and/or shrubs that provide similar opacity as the illustrations may ~~may~~ also be used to provide screening, especially for the intermittent obstruction. As an example, d~~D~~ensely-branched deciduous plant material two (2) or more layers deep and/or evergreen plant material may be used to achieve the required opacity.

(e) ~~(e)~~ 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.

~~(e)~~ ~~The berm and landscaping materials shall be irrigated.~~

(f) ~~(f)~~ 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:

(Plant Material Spacing Relationship Chart for Landscape Purposes 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)(f): Plant Material Spacing Relationship Chart for Landscape Purposes

Plant Material Types <u>Centerline to centerline Spacing (on-center)</u>		TO					
		Large Evergreen Tree	Narrow Upright Evergreen	Canopy Deciduous <u>Canopy Deciduous Tree*</u>	Deciduous Subcanopy <u>Deciduous Tree*</u>	Large Shrub	Small Shrub
FROM	Large Evergreen Tree	Min. 10-15 ft. Max. 15 <u>25</u> ft.	Min. 10-12 ft.	Min. 20 ft.	Min. 15 ft.	Min. 15 ft.	Min. 10 ft.
	Narrow Upright Evergreen	Min. 10 ft. Max. <u>15</u> ft.	Min. 2.5 ft. Max. 6-10 ft.	Min. 15 ft.	Min. 10 ft.	Min. 5 ft.	Min. 3-5 ft.
	Canopy Deciduous <u>Canopy Deciduous Tree*</u>	Min. 20 ft.	Min. 15 ft.	Min. 22-20 ft. Max. 35 ft.	Min. 15 ft.	Min. 5-7 ft.	Min. 3-5 ft.
	Subcanopy Deciduous <u>Subcanopy Deciduous Tree*</u>	Min. 15 ft.	Min. 10 ft.	Min. 15 ft.	Min. 8-10 ft. Max. 15 ft.	Min. 5-7 ft.	Min. 3-5 ft.
	Large Shrub (<u>6-15+' tall</u>)	Min. 15 ft.	Min. 5-7 ft.	Min. 5-7 ft.	Min. 5-7 ft.	Min. 3-5 ft. Max. 5-10 ft.	Min. 3 ft. Max. <u>6</u> ft.
	Small Shrub (<u>0-5.9' tall</u>)	Min. 10 ft.	Min. 3-5 ft.	<u>Min. 3-5</u> ft. Min. 3 ft.	<u>Min. 3-5</u> ft. Min. 3 ft.	<u>Min. 3-5</u> ft. Min. 3 ft.	Min. 2-3 ft. Max. 4-6 ft.

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

(g) (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 b. 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 vehicle 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) (1) — Auto dealerships may use angled plantings that provide screening of parking lots from the right of way but allow views to display cars. The base of any permitted display platform must be totally screened by evergreen shrubs at least 2 feet in height.
- (c) (2) — 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.

c. —

~~d. Transformers/Utility Boxes~~

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

- ~~—— (1) Plant materials in a layering arrangement shall be specified for screening. Size of plant materials at installation shall be of a height equal to the transformer or utility box.~~
- ~~—— (2) A minimum of two (2) feet separation is required between the transformer or utility box and the full growth potential of plant material at maturity.~~
- ~~—— (3) Groundcover is allowed up to the transformer pad, if it is kept below 4” in height.~~
- ~~—— (4) Doors of transformers must be accessible. No plant materials are to be placed within eight (8) feet of the front of the doors.~~
- ~~—— (5) A detail of transformer screen plantings and locations of all transformers must be provided on landscape plan.~~
- ~~(6) Safety is the first priority when screening transformers and utility boxes. If plantings are above two (2) feet in height, they cannot be placed in the corner clearance (refer to Section 2513). A solid fence may be approved if warranted by safety or site limitations.~~

~~—— d. Parking Area Landscaping Requirements~~

- ~~—— (1) Landscape designs shall utilize native plant materials which enhance infiltration of storm water, lessen runoff where applicable, and utilize vegetated swales, weirs and basins to create an attractive storm water system where possible in parking area design.~~
- ~~—— (2) Parking area landscaping materials, other than trees, refuse screening and landscape screening required under Section 2509 shall be maintained not to exceed three (3) feet in height for clear sight distance within the parking islands.~~
- ~~—— (3) 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 that the City of Novi is not responsible for any accidents caused by the lack of clear sight distance~~
- ~~—— (4) All landscaping shall be maintained in a green and growing condition, seasonal conditions considered.~~
- ~~—— (5) Native plant materials are preferred, where applicable.~~

~~_____ (6) _____ Name, type and number of groundcover plants proposed on islands are to be specified.~~

2. Subdivision Planting Requirements

e. ~~Subdivision Planting Requirements~~

a. ~~(1) Single-family platted subdivisions or residential site condominiums.~~

~~Street~~

(1) ~~(a) Tree spacing~~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 3.a.(1) Recommended Tree Sizes for ROW areas

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

ii. Minimum planting area widths:

Table 3.a.(2) Recommended Tree Spacing for ROW areas

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

(2) Street Tree Location. Large s(b)—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 guidelines in the table above to calculate the number of trees required):

Table 3.a.(3) Street Tree Requirements for Single Family Residential Lots

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

* If space allows, more than the minimum may be planted on a lot.

~~(a) (e)~~—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 25135.9)

~~(b)~~ ~~and that~~ ~~Trees are shall~~ not be planted closer than ~~ten~~ (10) feet from any driveway.

~~(c)~~ ~~Trees shall not be planted within 35 feet of the intersection of the street curb lines.~~ Distances from between trees and curbs and or sidewalks shall be:

1. ~~a~~ ~~At least four~~ (4) feet for deciduous canopy and subcanopy ~~deciduous~~ trees.

2. At least 5 feet for shrubs behind curbs with angled or perpendicular parking

~~(d)~~ ~~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~~ No canopy deciduous tree shall be planted closer than fifteen (15) lateral feet from any overhead utility wire, or closer than ten (10) lateral feet from any fire hydrant, or closer than six (6) feet from any manhole. Once mature, trees shall be maintained to provide (a minimum ground clearance of fourteen (14) feet on the street side and ten (10) feet on the non-street side).

~~(e)~~ 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.

~~(d)~~ ~~Tree species. A diversity of tree species is to be used. Not more than twenty (20) percent of tree population shall be of one specific genus and not more than fifteen (15) percent shall be of a specific species if there are less than 200 trees being planted. Not more than fifteen (15) percent of the tree population shall be of one specific genus and not more than ten (10) percent of the trees shall be of a specific species if there are 200 or greater number of trees being planted. Variations from these percentages shall be at the discretion of the City Forester or Landscape Architect. (See Novi Street Tree List).~~

(3) (e)—Island and Boulevard Planting.

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

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

~~(c) (Refer to Section 2513 for corner clearance requirements in regards to boulevards.)~~ At least ~~seventy five (75) percent~~ 75% of the area shall be landscaped with a combination of canopy and subcanopy trees, shrubs, groundcovers, perennials, annuals, and/or bulbs. The remaining 25% of area can be lawn if desired.

~~(i)~~ Minimum planting area width:

Tree Species Type	Tree lawn Size
Small Tree (Subcanopy Deciduous)	4-6'
Medium Tree (Subcanopy and Canopy Deciduous)	6-8'
Large Tree (Canopy Deciduous)	>8'

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

b. (2) Non-Residential Subdivisions

~~(a)~~ 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)~~ ~~(i)~~ One ~~canopy deciduous~~ deciduous canopy or one large evergreen tree per ~~thirty five (35)~~ linear feet of ~~street~~ frontage ~~along the right-of-way~~ is required. Evergreen trees shall be no closer than 20 feet from the ~~roadway~~ 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, ~~e~~ ~~(ii)~~ Evergreen shrubs are required to provide screening of parking areas only. Shrubs are to be at least 30" in height at planting, ~~three (3) feet~~ height tall at maturity and/or maintained at a minimum height of ~~three (3) foot~~ feet ~~height~~ maximum. A minimum opacity shall be provided and maintained at ~~eighty (80) percent~~ 80% during winter and ~~ninety (90) 90% percent~~ during summer ~~opacity~~ within ~~two (2) 2~~ years ~~after of~~

acceptance by the city installation. 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.

~~(iii) Three (3) subcanopy trees per forty (40) feet of total linear frontage along the right-of-way are required.~~

~~(iv) Massing of ornamental grasses, perennials, and/or annuals and bulbs is required for twenty five (25) percent of total linear footage adjacent to the right-of-way. Use is encouraged at entry points or to highlight significant design. (Also reference Section 2513 corner clearance).~~

3. ~~(3) Detention and /Retention/Sedimentation Basin Landscaping Requirements~~

a. ~~(a) 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 area at the high water elevation.~~

b. ~~(b) A variety of shrub species and cultivars 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.~~

c. ~~(c) Plant the bottom of the basin(s) below the above-mentioned shrubs shall be planted with a mix of native grasses, sedges and wildflowers. or groundcover to discourage use by waterfowl. Allow grass to grow to 10 to 14" tall along sides and bottom of basin to discourage use by waterfowl. Limit the application of fertilizer and pesticides on grass areas in the basin shall be limited to the initial establishment of the groundcover.~~

d. ~~(d) Grass species that go dormant in winter such as feseue are suggested.~~

e. ~~(e) 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.~~

f. ~~(f) 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. If there are less than 200 trees 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 200 or more trees 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 5.d: Sample Species Breakdowns

<u>Symbol</u>	<u>Scientific Name</u>	<u>Common Name</u>	<u>Size</u>	<u>Qty</u>	<u>Genus %</u>	<u>Species %</u>
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. Woodland tree replacement species shall have roughly the same percentage of composition as the native trees removed in order to 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). Native maples may be used as substitutes for boxelders, and varieties of native elm species shown to have better resistance to Dutch elm disease than the straight species are allowed as replacements for elms.

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

- f. 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 native plant materials which enhance infiltration of storm water. 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. Parking area landscaping materials within parking lot islands shall be maintained to not exceed 3 feet in height above adjacent paving for clear sight distance within the parking islands.
- c. 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. All landscaping shall be maintained in a green and growing condition, seasonal conditions considered.
- e. Salt-tolerant plants material native to the state of Michigan are preferred, where applicable.
- f. 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).

6. Transformers/Utility Boxes/Irrigation Control Boxes

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

- a. Size of plant materials at installation shall be of a height 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.
- 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 (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. 2. 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 or greater than a 25% increase in the overall square footage of the building or 400 square feet, whichever is less. An owner of a one-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. 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.
- c. A legal description or boundary line survey of the site on which the work is to be performed.
- d. Project Name and address.
- e. A plan of the site at a scale that matches other plans and is legible with proper north indication. In addition, for reviewing purposes, the landscape plan shall be submitted in a scale not to exceed 1"=20' for detailed areas, 1"=60' for large areas. 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) ~~(1)~~ Proposed topography at a maximum of ~~two (2)~~ 2 foot contour intervals, extending at least ~~fifty (50)~~ 50 feet beyond the site boundary. For berm, wall areas and steep topography, contour intervals shall be shown at ~~one (1)~~ 1 foot.
 - (2) ~~(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 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, the regulated trees 8" d.b.h. and greater in all identified locations and the tree protection fence locations. (Tree protection fence locations should also be provided on Removal/Demolition and Grading Plans)

- (c) Trees in woodlands or other areas at least 50 feet away from construction that will not be impacted do not need to be identified individuals, but the cover of those areas should be generally noted (e.g. dense woodland, open, scrub/shrub, wetland). All trees 8" dbh or greater within 50 feet of construction should be included in the tree survey.
- (d) -See Woodlands Protection Ordinance, Chapter 37 and Wetlands Protection Ordinance, Chapter 12 for additional plan requirements.
- (3) ~~(3)~~ Location, type and size of all proposed plant materials. For Preliminary and Final Site Plan submittals, plants shall be indicated with actual plant material names or symbols linked to a plant list.
- (4) ~~(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) Corner Clearance ~~(5) Intersection Clear~~ Zones at driveways and road intersections. (See Section 25135.9).
- (6) 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.
- ~~f~~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).
- ~~g~~j. Miss Dig contact information on all sheets.
- ~~h~~k. A planting schedule 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.
- l. ~~i~~ Planting details, typical for evergreen trees, canopy 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).
- m. When berms are included on the plans, aj. representative A-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 ~~fifteen (15)~~15 feet from the edge of the utility or ~~twenty (20)~~20 feet from the closest pole for canopy trees. (See Berm Cross-Section Diagram).

- ~~n.~~ k.—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
- ~~p.~~ l.—A note indicating the proposed estimated planting dates (should be between March 15 and November 15).
- ~~q.~~ m.—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.
- ~~r.~~ n.—A note indicating that the plant sources should be Upper Midwest/Great Lakes grown.
- ~~—o.~~ Parking lot landscaping calculations, including the amount required and the amount provided.
- ~~s.~~ p.—Interior landscaping calculation requirements, including the amount required and the amount provided. 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.
- ~~—q.~~ An indication of the snow depositing area for winter.
- ~~—r.~~ The soil type on site as determined by the Soils Survey of Oakland County, Michigan published by the United States Department of Agriculture Soils Conservation Service.
- ~~s.t.~~ An irrigation plan for watering landscaped areas with a fully automatic irrigation system and a method of draining landscaped areas as needed. 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. 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 based on current, accurate planted costs 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.
- t.v. A plan for the successful establishment and maintenance of any native seed mixes.-

~~w. u.~~—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. 3.~~—Plant Material Requirements

~~a. 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, native plants are to be the first choice. The source should be local or of ~~this 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 Section 1.f.
- (4) Plant materials, except ~~sod~~lawn, ground covers or creeping vine type plantings, shall ~~not~~ be located ~~within at least four (4)~~4 feet ~~of 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 ~~two (2)~~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 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. 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) ~~(1)~~—Existing Plant Material

- (a) ~~(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) ~~(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) ~~(c)~~—For approval of substitution, 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) Such existing plant material is to be labeled "To Be Saved" on site plans. 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. Common and botanical names, sizes and the elevations at the base of all existing trees to be saved are also required. Large masses of protected vegetation should be labeled "To be saved" on the Landscape Plan and on the Demolition/Removal Plan and Grading Plan.
- (f) ~~(d)~~—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. These replacements shall be at the following rate:

Table 7.b.(1)(f): Landscape Tree Credit Chart

Diameter of Trunk of Preserved Tree* f	= Number of Trees Substituted <u>Credits</u>
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 -

— f Inches measured at a height of four and one-half (4.5) feet above the natural grade. (Diameter at Breast Height, D.B.H.)

(g) Existing 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.

(2) ~~Proposed Plant Material~~

(a) ~~e. Plant Sizes.~~

i. ~~(1) The minimum sizes are as follows:~~

Table 7.b.(2)(a).i – Minimum plant sizes by application ~~(1)~~

Planted Material Types	Canopy Deciduous Trees	Large Evergreen Trees	Subcanopy Deciduous Trees (4)	Upright Evergreens	Large Shrubs (5)	Small Shrubs (56)	Perennials, Ornamental Grasses
R-O-W Plantings (34)	3-2.5" caliper cal.	8' height.	2-1/2" caliper cal.	6' height.	36-42" ht.	18-24" ht.	1 gallon 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. 2-1/2" cal. iper	7-6' @ 23:1-2 Ratio	n/a(3)	(3)n/a	(3)n/a	(3)n/a	(3)n/a
Subdivision Street Trees	2-1/2" caliper	n/a	2-1/2" caliper	n/a	n/a	n/a	n/a
All other	3" caliper cal.	7' height ht.	2.5" cal. 2-1/2" caliper	6' ht. 6' height	36" height ht.	24" ht.	1 gal. cont. 1 gallon

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 for acceptable species.

(3) Refer to Chapter 37-8.c for use of this plant type for replacement credits.

(34) Shall also apply to private road easements or other equivalent.

(45) Multi-stem trees are to be eight to ten (8-10) foot minimum height.

(56) Spreading or horizontal shrubs are to be eighteen (18) inch width minimum.

n/a: not allowed

ii. ~~(2) To encourage a mixture of sizes, additional landscape credit can be given (except for R-O-W Plantings, Woodlands Replacement, and Street Trees) for larger sized canopy trees, deciduous and evergreen 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.÷~~

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 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 (7.b.(2)(a).i).

For Woodland Replacement Trees, see Chapter 37.

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. ~~d.~~ 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 7.c – Prohibited Plants

Botanical Name	Common Name	Plant Type
<i>Acer negundo</i>	Boxelder	Subcanopy Deciduous Subcanopy Tree
<i>Acer platanoides</i> **	Norway Maple	Deciduous Canopy Tree Canopy Deciduous Tree
<i>Acer saccharinum</i> **	Silver Maple	Deciduous Canopy Tree Canopy Deciduous Tree
<i>Ailanthus altissima</i>	Tree-Of-Heaven	Deciduous Canopy Tree Canopy Deciduous Tree

<i>Alnus glutinosa</i> **	Black Alder	<u>Deciduous Canopy</u> Tree <u>Canopy</u> Deciduous Tree
<i>Berberis spp.</i>	<u>Barberry</u>	<u>Small shrub</u>
<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> <i>umbellata</i>	Oleaster <u>Autumn Olive</u>	Large Shrub
<i>Ginkgo biloba</i> (female)	Ginkgo (female)	Canopy Deciduous <u>Canopy</u> Tree
<i>Gleditsia spp.</i>	<u>Honeylocust (female)</u>	Canopy Deciduous <u>Tree</u>
<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>	<u>Privet</u>	<u>Small shrub</u>
<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	<u>Deciduous Canopy</u> Tree <u>Subcanopy</u> Deciduous Tree
<i>Polygonum persicaria</i>	Spotted Lady's Thumb	Perennial / Grass
<i>Populus alba</i>	White Poplar	<u>Deciduous Canopy</u> Tree <u>Canopy</u> Deciduous Tree
<i>Populus deltoides</i>	Eastern Cottonwood	<u>Deciduous Canopy</u> Tree <u>Canopy</u> Deciduous Tree
<i>Populus nigra</i>	Black Poplar	<u>Deciduous Canopy</u> Tree <u>Canopy</u> Deciduous Tree
<i>Populus tremuloides</i>	Quaking Aspen	<u>Deciduous Canopy</u> Tree <u>Canopy</u> Deciduous Tree
<i>Pyrus calleryana</i>	<u>Flowering Pear</u>	<u>Deciduous Canopy Tree</u>
<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	<u>Deciduous Subcanopy</u> Tree <u>Subcanopy</u> Deciduous Tree
<i>Rosa multiflora</i>	Japanese Rose	Large Shrub
<i>Salix alba</i> **	White Willow	<u>Deciduous Canopy</u>

		Tree Canopy Deciduous Tree
		Deciduous Canopy
<i>Salix babylonica</i> ** *	Weeping Willow	Tree Canopy Deciduous Tree
		Deciduous Canopy
<i>Salix nigra</i> ** *	Black Willow	Tree Canopy Deciduous Tree
<i>Ulmus Americanaamericana</i> *	American Elm	Canopy Deciduous Tree
<i>Ulmus pumila</i>	Siberian Elm	Canopy Deciduous Tree
<i>Vinca minor</i> **	Common Periwinkle	Perennial / Grass Groundcover

* _____ Disease resistant cultivars are acceptable

** _____ Acceptable, if not planted within 100' of Woodland areas

**~~*~~ _____ Only Allowed under special circumstances

d. ~~e.~~ Recommended Trees for Planting Under Overhead Utilities:

Table 7.d – Trees for Under and Near Overhead Utility lines

Botanical Name	Common Name
<i>Acer campestre</i>	Hedge Maple
<i>Acer ginnala</i>	Amur Maple
<i>Acer griseum</i>	Paper Bark Maple
<i>Ame#lanchier sp.</i>	Serviceberry
<i>Carpinus betulus</i>	European Hornbeam
<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>Corylus colurna</i>	Turkish Filbert
<i>Crataegus sp.</i> (thornless)	Hawthorn sp. (thornless)
<i>Magnolia soulangiana</i>	Saucer Magnolia
<i>Malus hybrids</i>	Flowering Crabapple
<i>Malus sp.</i>	Spring Snow Crabapple
<i>Acer griseum</i>	Paper Bark Maple
<i>Cercis canadensis</i>	Red Bud

<i>Cornus alternifolia</i>	Alternate Leaf Dogwood
<i>Syringa reticulata</i> <i>Magnolia soulangiana</i>	Japanese Tree Lilac Saucer Magnolia
<i>Syringa reticulata</i> <i>Viburnum lentago</i>	Japanese Tree Lilac Nannyberry
<i>Viburnum prunifolium</i>	Blackhaw Viburnum

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

e. — f. — Collected or Transplanted Trees

- ~~(i)~~(1) All collected trees shall be from on site and inspected by the City. Trees may be rejected for reasons of insect infestation, disease or standards set forth in this ordinance. Such plant material may be rejected either in full or in part.
- ~~(ii)~~(2) All transplanted trees shall conform to standards set forth in Section 9.
- ~~(iii)~~(3) The root ball of any transplanted tree shall measure 1 foot for each inch of trunk diameter measured 12" above the ground root flare or graft collar.
- ~~(iv)~~(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.
- ~~(v)~~(5) The trees shall be provided with a working irrigation system approved by the City to ensure their viability during storage.

10. 4. — Nonliving Durable Material

- a. Mulch for all plantings shall be premium shredded hardwood, ~~cedar or cypress bark~~ and shall not be artificially colored. No cypress wood mulch or rubber mulch is to be used.
- b. Trees shall be mulched to a ~~four~~ 3(4) inches overall depth at planting.
- c. ~~The mulch depth for Sshrubs, groundcovers and perennials shall be~~ be mulched to a 2-3 inches" overall depth depending upon species at planting.
- d. All lawn trees shall ~~have be planted with a 4'4 foot~~ diameter circle of the shredded hardwood bark mulch.
- e. ~~Bark Mulch~~ shall be pulled back 3 inches from the tree trunk in a ~~3" radius~~ circle down to the root ball dirt to expose the root collar to air. No "volcano" mulching is allowed at planting or in future applications of mulch.
- f. If a rootball's dirt is piled up on the trunk, it should be removed to expose the root flare.
- g. For fire safety, shredded hardwood bark is not to be installed adjacent to or within ~~four (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. The color of such materials shall be natural and compatible with the building.

- h. ~~Gravel type mulches are not permitted within or immediately adjacent to paved parking lots or roadways. Mulch shall be of adequate depth to ensure total coverage. Approval of type, depth and specific location for gravel mulch is to be approved by the City.~~
- i. ~~Michigan Sphagnum Peat 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. ~~is acceptable as mulch for perennial and annual beds or under special circumstances where the planting is in a highly maintained environment.~~ Plastic or other artificial replicas of plant material are prohibited.

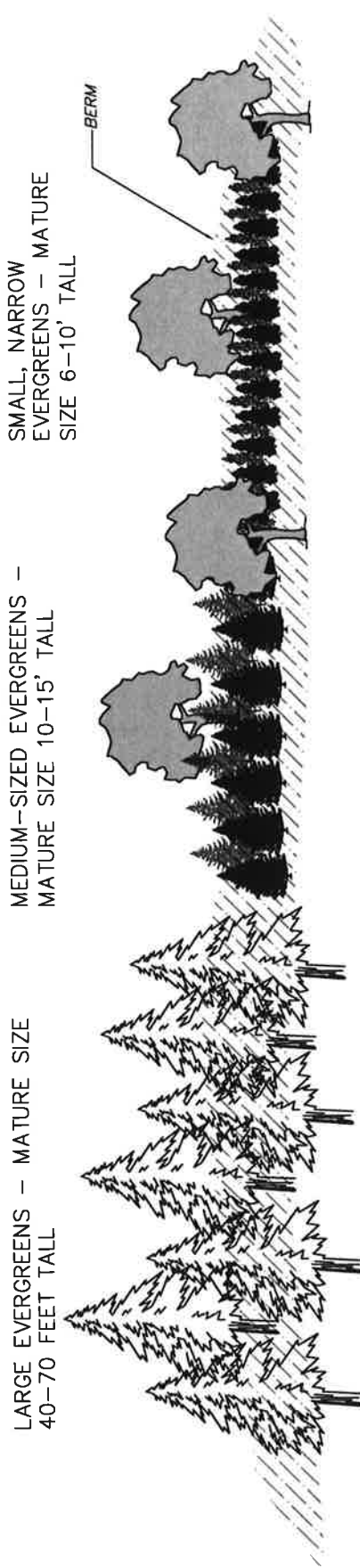
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Landscape Design Manual

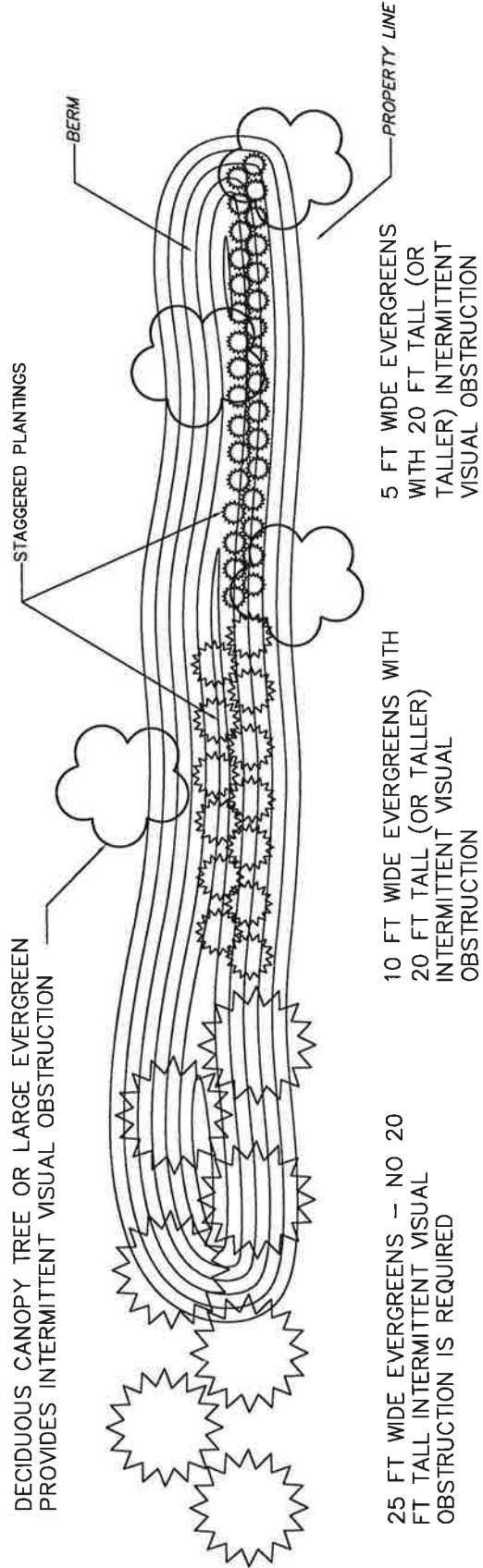
Appendices

Part II. Obscuring Earth Berm/Screening Opacity Diagrams

ELEVATION - FROM RESIDENTIAL PROPERTY



PLAN VIEW



OPACITY OBSCURING DIAGRAM - BERM

ELEVATION - FROM RIGHT-OF-WAY



MIN HT 3'

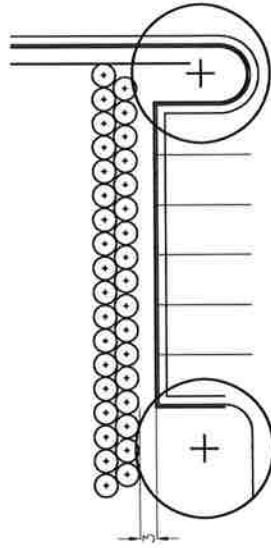
DENSELY-BRANCHED DECIDUOUS SHRUB



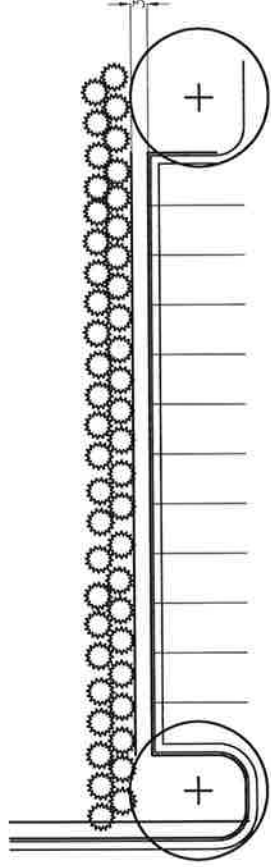
MIN HT 3'

EVERGREEN SHRUB

PLAN VIEW



DENSELY-BRANCHED DECIDUOUS
SHRUB - MIN HT 3'



EVERGREEN SHRUB - MIN HT 3'

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

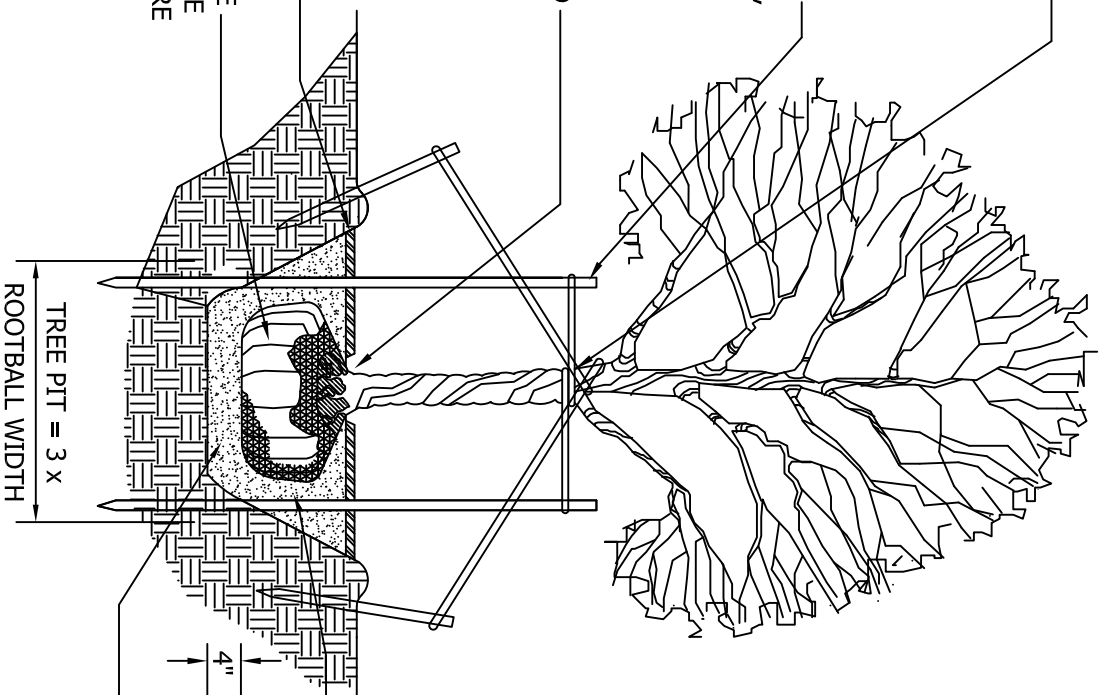
NOTE:
 GUY DECIDUOUS TREES ABOVE
 3" CAL., STAKE DECIDUOUS TREES
 BELOW 3" CAL.

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.

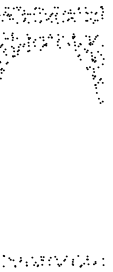
DO NOT PRUNE TERMINAL LEADER.
 PRUNE ONLY DEAD OR BROKEN
 BRANCHES.

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

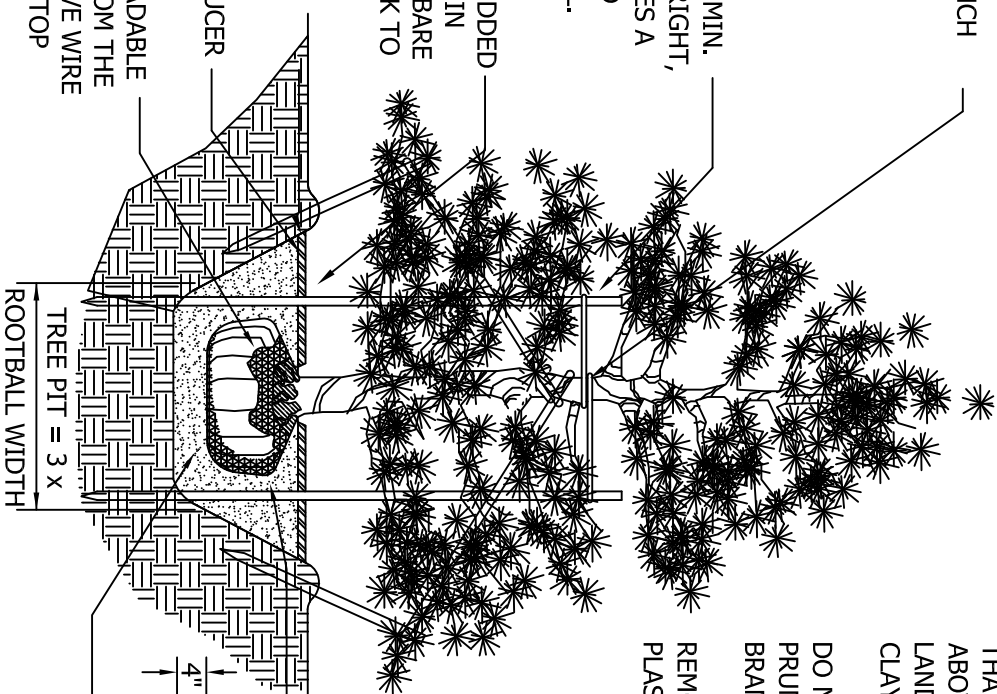
NOTE:
 GUY EVERGREEN TREES ABOVE 12' HEIGHT. STAKE EVERGREEN TREE BELOW 12' HEIGHT.

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.

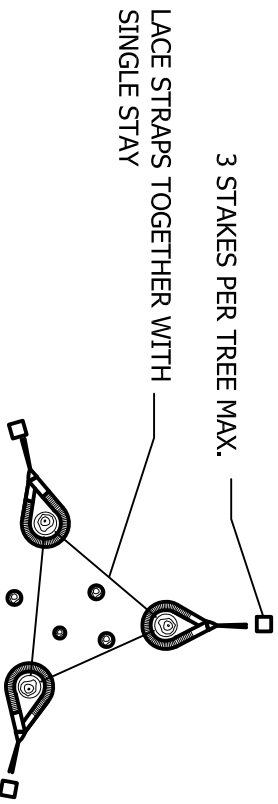
PLANT TREE SO ROOT FLARE IS AT OR ABOVE SURROUNDING GRADE. REMOVE ROOT BALL DIRT TO EXPOSE FLARE IF NECESSARY AND CUT ANY GIRDLING ROOTS.

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

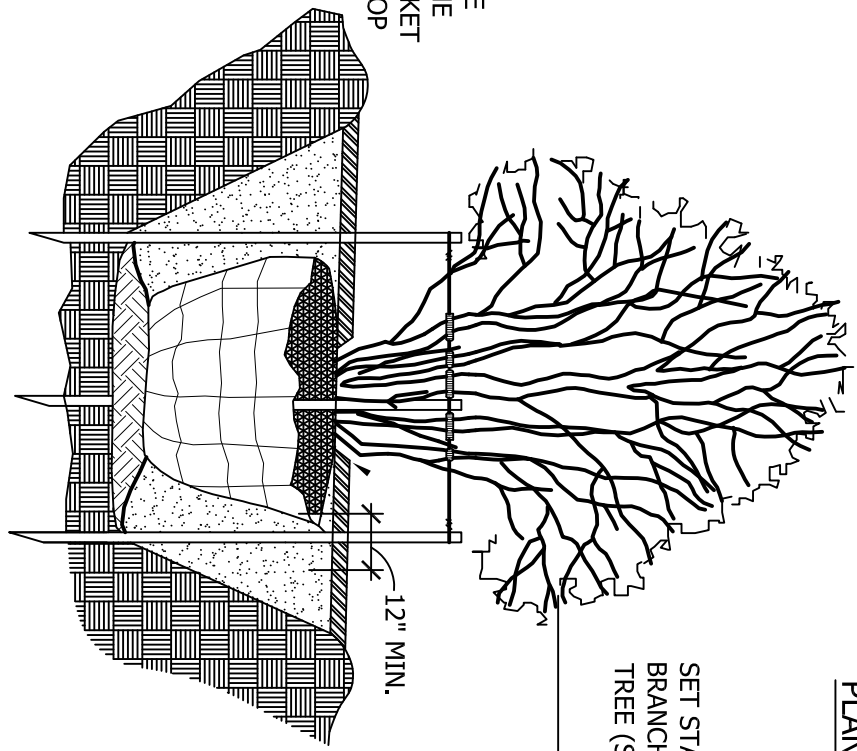


NOTES:
 PRUNE AS SPECIFIED
 STAKE 3 LARGEST STEMS, IF TREE
 HAS MORE THAN 3 LEADERS
 SET TREE STAKES VERTICAL AND
 AT SAME HEIGHT.

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

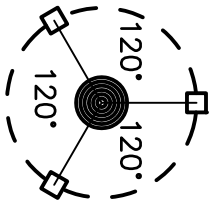
MULCH 3" DEPTH WITH SHREDED
 HARDWOOD BARK. NATURAL IN
 COLOR. LEAVE 3" CIRCLE OF BARE
 SOIL AT BASE OF TREE TRUNK TO
 EXPOSE ROOT FLARE. REMOVE
 EXCESS SOIL TO EXPOSE ROOT
 FLARE IF NECESSARY.

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



MULTI-STEM TREE PLANTING DETAIL

Not to scale



DOWNHILL SLOPE
OR
PREVAILING WIND

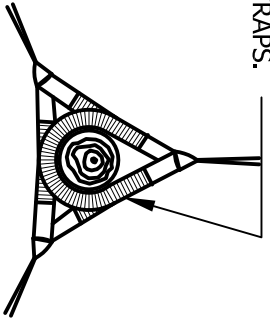
STAKING/GUYING LOCATION

NOTE:

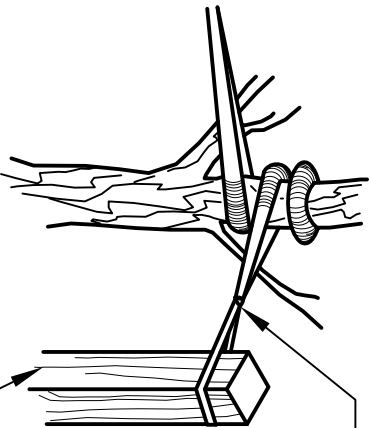
ORIENT STAKING/GUYING TO PREVAILING WINDS, EXCEPT ON SLOPES GREATER THAN 3:1 ORIENT TO SLOPE.

USE SAME STAKING/GUYING ORIENTATION FOR ALL PLANTS WITHIN EACH GROUPING OR AREA

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



GUYING DETAIL



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

STAKING DETAIL
STAKES AS SPECIFIED 3 PER TREE

TREE STAKING DETAIL

Not to scale

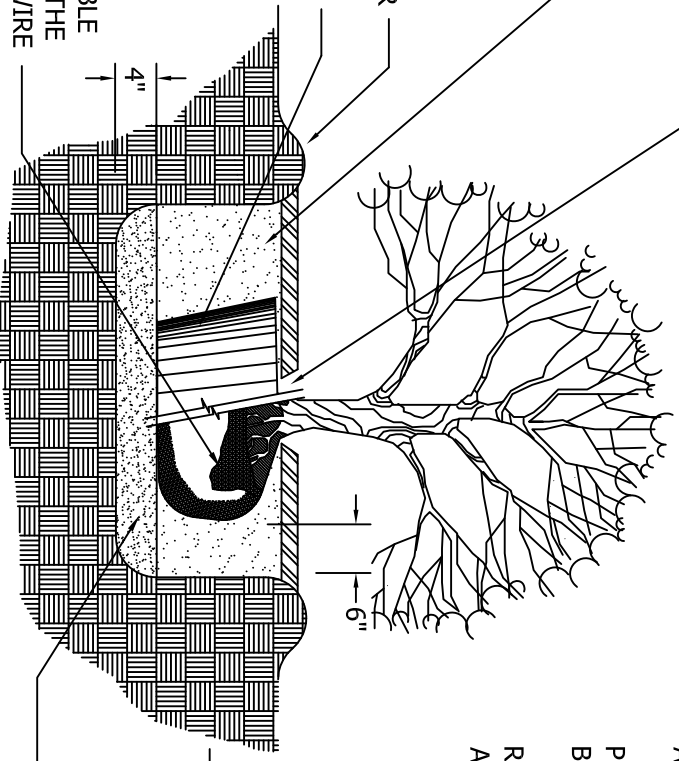
MULCH 2" DEPTH WITH SHREDDED HARDWOOD BARK. NATURAL IN COLOR. LEAVE 3" CIRCLE OF BARE SOIL AT BASE OF TREE TRUNK TO EXPOSE ROOT FLARE.

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.

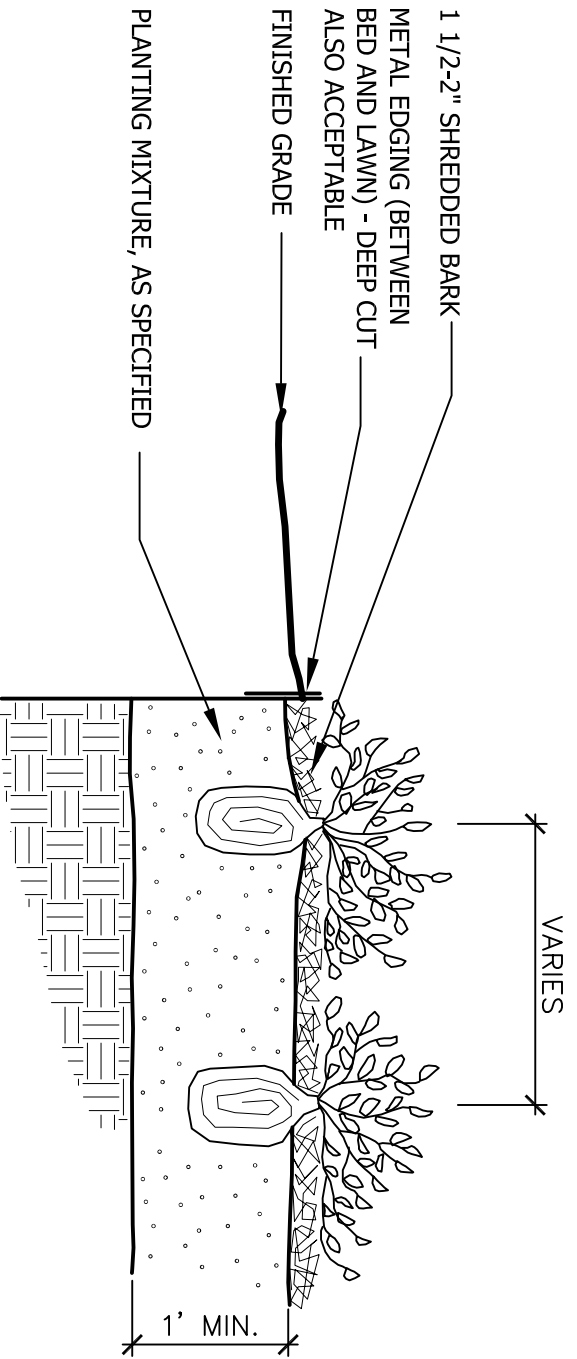
PRUNE ONLY DEAD OR BROKEN BRANCHES.
REMOVE ALL TAGS, STRING, PLASTICS AND OTHER MATERIALS

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.

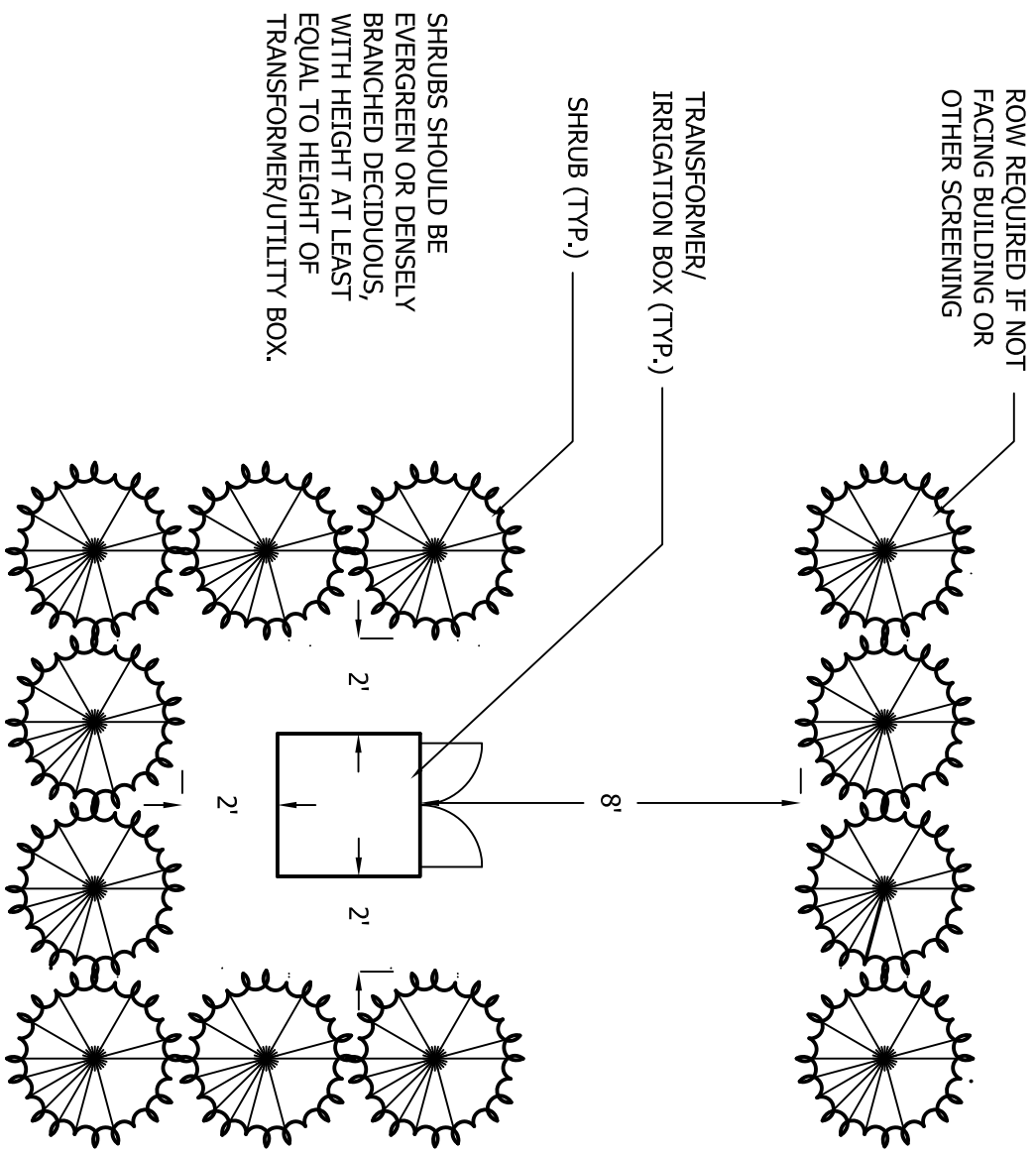
SHRUB PLANTING DETAIL

NOT TO SCALE



PERENNIAL PLANTING DETAIL

Not to scale



TRANSFORMER SCREENING DETAIL

Not to scale

PART IV: STREET TREE LIST

Genus	Species - cultivar	Common Name	Native to Michigan?	Size	App Ht	App Spread	Use	Treelawn Size	Overhead Utilities
Acer	buergeranum	Maple, Trident	Not Native	Small	20'	25'	Special Circumstances	4-6 Feet	Under Utility
Acer	campestre	Maple, Hedge	Not Native	Sm./Med.	30'	30'	Recommended	4-8 Feet	
Acer	freemanii	Maple, Freeman	Cultivar - Native	Large	50'	40'	Special Circumstances	>8 Feet	
Acer	ginnala	Maple, Amur	Not Native	Small	20'	20'	Special Circumstances	4-6 Feet	Under Utility
Acer	griseum	Maple, Paperbark	Not Native	Sm./Med.	25'	20'	Special Circumstances	4-6 Feet	Under Utility
Acer	rubrum	Maple, Red	Native	Large	50'	40'	Recommended	>8 Feet	
Acer	rubrum 'Bowhall'	Maple, Red Bowhall	Cultivar - Native	Med./Lg.	40'	15'	Special Circumstances	>8 Feet	
Acer	rubrum 'Sunset'	Maple, Red Sunset	Cultivar - Native	Large.	45'	35'	Recommended	>8 Feet	
Acer	saccharum	Maple, Sugar	Native	Large	60'	40'	Recommended	>8 Feet	
Aesculus	hippocastanum	Horsechestnut	Not Native	Large	80'	35'	Special Circumstances	>10 Feet	
Amelanchier	arborea	Serviceberry	Native	Small	10'	6'	Special Circumstances	4-6 Feet	Under Utility
Amelanchier	x grandifolia 'Autumn Brilliance'	Serviceberry	Cultivar - Native	Medium	20'	20'	Special Circumstances	6-8 Feet	Under Utility
Carpinus	betulus	European Hornbeam	Not Native	Medium	35'	25'	Recommended	6-8 Feet	
Carpinus	caroliniana	American Hornbeam	Native	Medium	25'	25'	Recommended	6-8 Feet	Under Utility
Celtis	occidentalis	Hackberry	Native	Large	55'	45'	Recommended	>8 Feet	
Cercidiphyllum	japonicum	Katsura Tree	Not Native	Med./Lg.	40'	40'	Recommended	>8 Feet	
Chionanthus	retusus	Chinese fringetree	Not Native	Small	20'	20'	Special Circumstances	4-6 Feet	Under Utility
Clasdrastis	lutea	Yellowwood	Not Native	Medium	30'	40'	Special Circumstances	6-8 Feet	
Cornus	kousa	Dogwood, Kousa	Not Native	Sm./Med.	25'	25'	Special Circumstances		Under Utility
Crataegus	crus-galli inermis	Hawthorn, Cockspur Thornless	Cultivar - Native	Sm./Med.	25'	25'	Special Circumstances	4-6 Feet	Under Utility
Crataegus	laevigata 'Superba '	Hawthorn, Crimson Cloud	Cultivar - Not Native	Sm./Med.	25'	18'	Special Circumstances	4-6 Feet	Under Utility

Genus	Species - cultivar	Common Name	Native to Michigan?	Size	App Ht	App Spread	Use	Treelawn Size	Overhead Utilities
Crataegus	phaenopyrum 'Treeform'	Hawthorn, Washington	Cultivar - Not Native	Sm./Med.	25'	20'	Special Circumstances	4-6 Feet	Under Utility
Eucommia	ulmoides	Hardy Rubber tree	Not Native	Large	45'	40'	Special Circumstances	>8 Feet	
Ginkgo	biloba	Ginkgo (Male Only)	Not Native	Large	60'	30'	Recommended	>8 Feet	
Gleditsia	tricanthos	Honeylocust	Native	Medium	35'	35'	Recommended	6-8 Feet	
Gleditsia	tricanthos inermis 'Impcole'	Honeylocust, Imperial	Cultivar - Native	Medium	35'	35'	Recommended	6-8 Feet	
Gleditsia	tricanthos inermis 'Shademaster'	Honeylocust, Shademaster	Cultivar - Native	Large	45'	35'	Recommended	>8 Feet	
Gleditsia	tricanthos inermis 'Skycole'	Honeylocust, Skyline	Cultivar - Native	Large	45'	35'	Recommended	>8 Feet	
Gymnocladus	dioicus	Kentucky Coffeetree	Native	Large	60'	40'	Special Circumstances	>8 Feet	
Koelreuteria	paniculata	Goldenrain-tree	Not Native	Medium	30'	30'	Special Circumstances	6-8 Feet	
Liriodendron	tulipifera	Tuliptree	Native	Large	75'	40'	Recommended	>10 Feet	
Maackia	amurensis	Manchurain maackia	Not Native	Small	20'	20'	Special Circumstances	4-6 Feet	Under Utility
Malus spp.	'Snowdrift' 'White Angel' 'Profusion'	Crabapple	Cultivar - Not Native	Small	20'	20'	Special Circumstances	6-8 Feet	Under Utility - use lg, upright varieties
Nyssa	sylvatica	Black Gum	Native	Medium	35'	20'	Special Circumstances	6-8 Feet	
Ostrya	virginiana	Hophornbeam, American	Native	Medium	35'	25'	Special Circumstances	6-8 Feet	
Phellodendron	amurense 'Macho'	Amur Corktree, Macho	Not Native	Med./Lg.	40'	30'	Recommended	>8 Feet	
Platanus	x acerfolia	London planetree	Cultivar - Not Native	Large	55'	40'	Special Circumstances	>10 Feet	
Quercus	acutissima	Oak, Sawtooth	Not Native	Large	50'	50'	Special Circumstances	>8 Feet	
Quercus	alba	Oak, White	Native	Large	65'	65'	Recommended	>8 Feet	
Quercus	bicolor	Oak, Swamp White	Native	Large	45'	45'	Recommended	>8 Feet	
Quercus	borealis (rubra) Oak	Oak, Northern Red	Native	Large	60'	45'	Recommended	>8 Feet	
Quercus	coccinea	Oak, Scarlet	Native	Large	65'	40'	Recommended	>10 Feet	
Quercus	imbricaria	Oak, Shingle	Native	Large	60'	55'	Special Circumstances	>8 Feet	
Quercus	macrocarpa	Oak, Burr	Native	Large	65'	60'	Recommended	>10 Feet	

Genus	Species - cultivar	Common Name	Native to Michigan?	Size	App Ht	App Spread	Use	Treelawn Size	Overhead Utilities
Quercus	phellos	Oak, Willow	Not Native	Large	50'	35'	Special Circumstances	>8 Feet	
Quercus	robur	Oak, English	Not Native	Large	50'	40'	Special Circumstances	>8 Feet	fastigate/columnar varieties in special
Sophora	japonica	Pagoda Tree	Not Native	Large	45'	35'	Recommended	>8 Feet	
Syringa	reticulata	Japanese Tree Lilac	Not Native	Small	20'	15'	Recommended	4-6 Feet	Under Utility
Tilia	americana	American Basswood	Native	Large	70'	40'	Recommended	>8 Feet	
Tilia	americana 'Redmond'	Linden, Redmond	Cultivar - Native	Medium	35'	25'	Recommended	6-8 Feet	
Tilia	cordata	Linden, Littleleaf	Not Native	Large	50'	35'	Recommended	>8 Feet	
Tilia	euchlora	Linden, Crimean	Not Native	Med./Lg.	40'	35'	Recommended	>8 Feet	
Tilia	tomentosa	Linden, Silver	Not Native	Large	60'	35'	Recommended	>8 Feet	
Ulmus	americana 'New Harmony'	Elm, New Harmony	Cultivar	Large	65'	60'	Special Circumstances	>8 Feet	
Ulmus	americana 'Valley Forge'	Elm, Valley Forge	Cultivar	Large	65'	60'	Special Circumstances	6-8 Feet	
Ulmus	x 'Homestead'	Elm, Homestead	Cultivar - Not Native	Large	55'	35'	Special Circumstances	>8 Feet	
Ulmus	x 'Frontier'	Elm, Frontier	Cultivar - Not Native	Med./Lg.	40'	30'	Special Circumstances	>8 Feet	
Zelkova	serrata 'Green Vase'	Zelkova, Green Vase	Not Native	Large	50'	40'	Special Circumstances	>8 Feet	
Zelkova	serrata 'Village Green'	Zelkova, Village Green	Not Native	Med./Lg.	40'	38'	Special Circumstances	>8 Feet	

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

Scientific Name	Common Name	Plant Type	Interest/ Bloom Time	Native to Michigan?	Woodland Replacement?	Street Tree Class	Growing Conditions	Nursery Type
<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

Scientific Name	Common Name	Plant Type	Interest/ Bloom Time	Native to Michigan?	Woodland Replace- ment?	Street Tree Class	Growing Conditions	Nursery Type
<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>Aranus 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

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<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

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<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

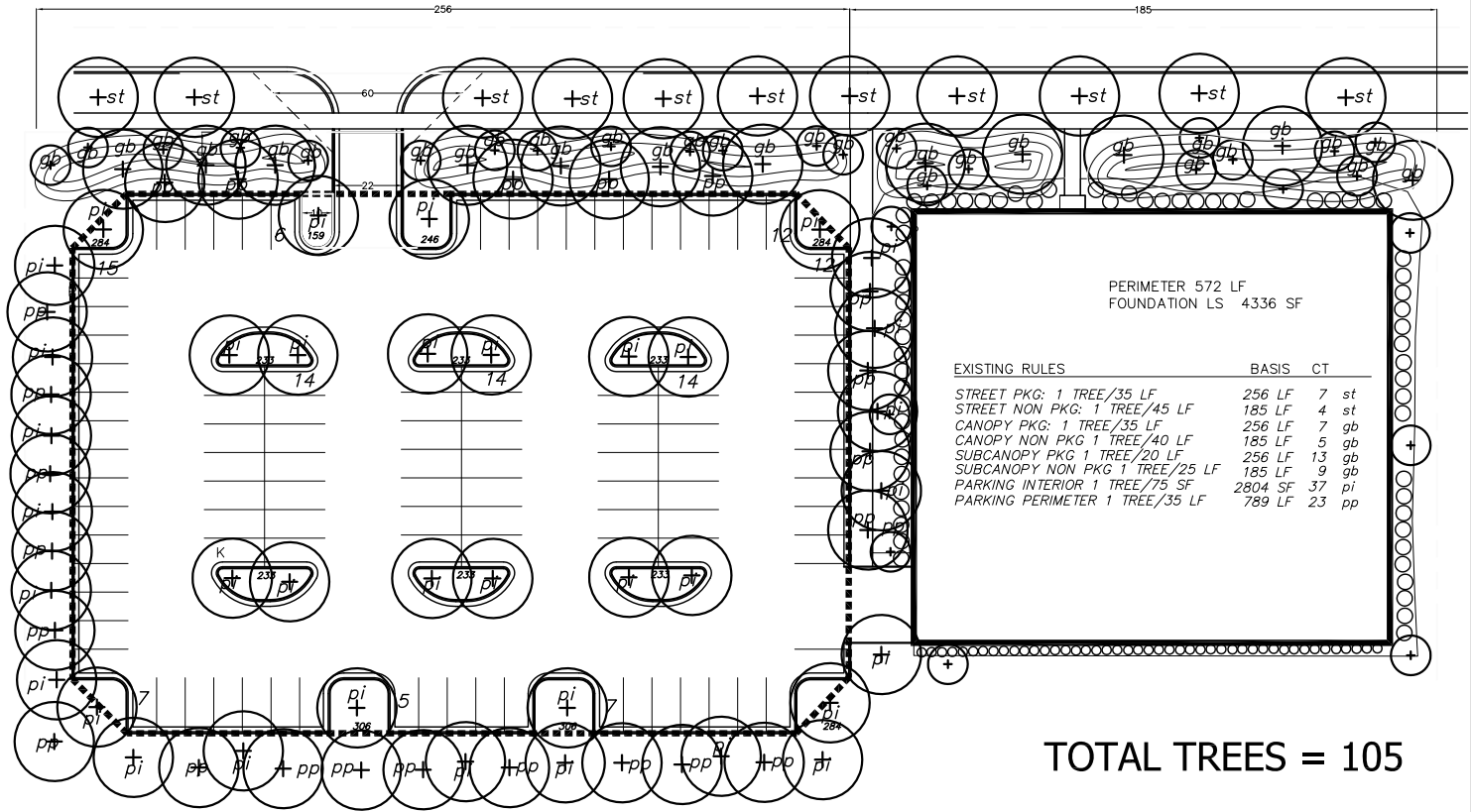
Scientific Name	Common Name	Plant Type	Interest/ Bloom Time	Native to Michigan?	Woodland Replace- ment?	Street Tree Class	Growing Conditions	Nursery Type
<i>Uvularia grandiflora</i>	Bellwort	PG	Spring	NOC	YES	~	SH	CO
<i>Verbena hastata</i>	Blue Vervain	PG	Summer	NOC	YES	~	SU	CO
<i>Verbena uruicifolia</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					

Proposed Ordinance

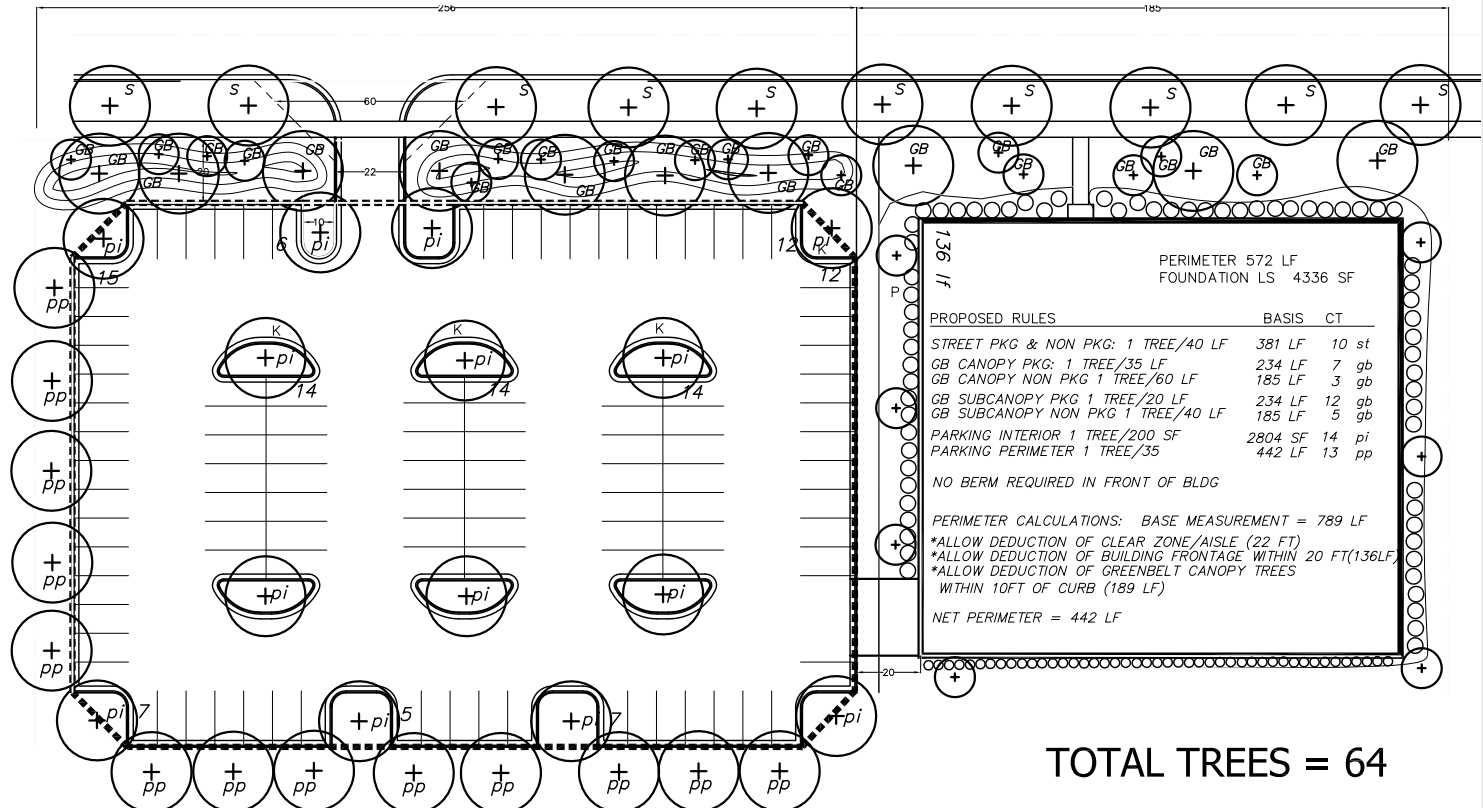
Commercial

Illustration



TOTAL TREES = 105

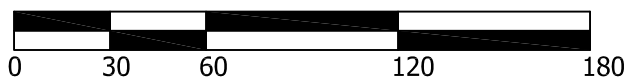
EXISTING RULES



TOTAL TREES = 64

PROPOSED RULES

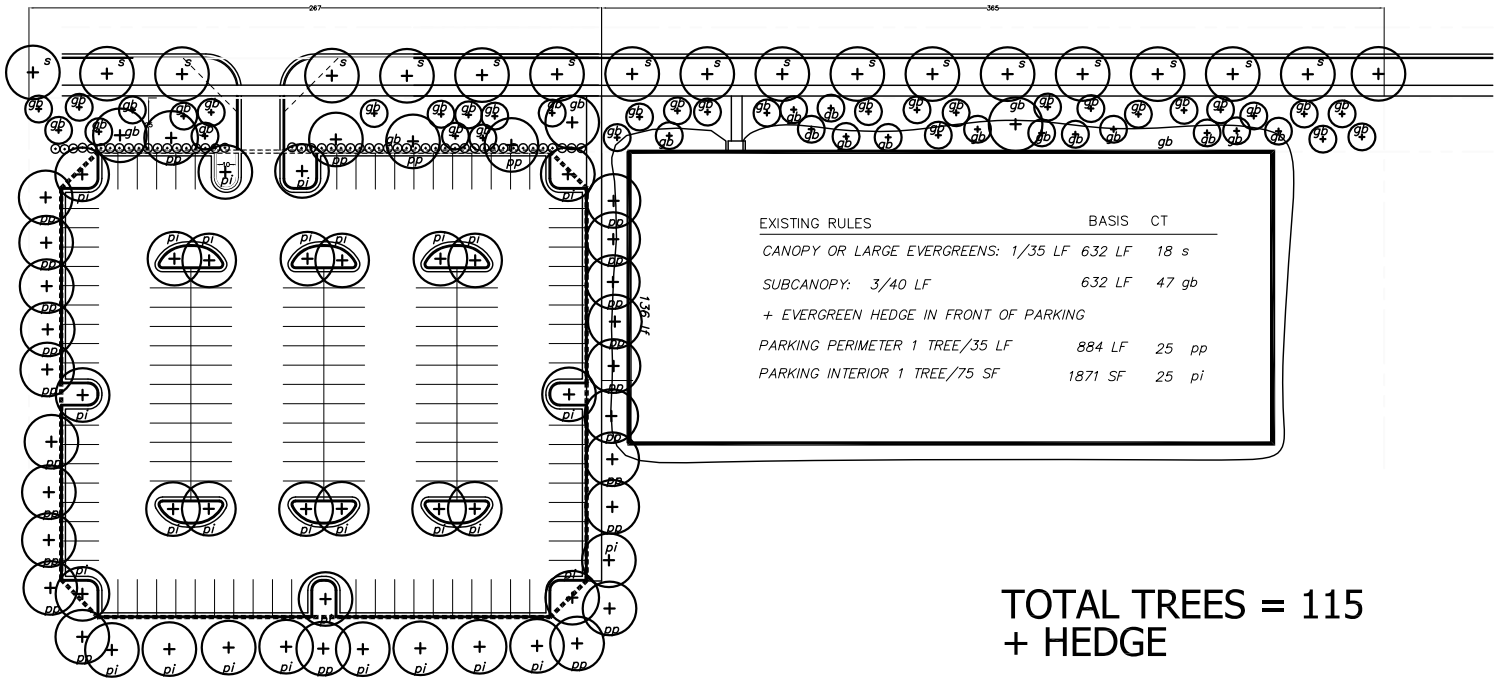
PROJECT: PROPOSED LANDSCAPING ORDINANCE
 SHEET: COMMERCIAL - 1
 ZONING SEC. 5.5.3.B and 5.5.3.C
 DATE: 12/7/2016



SCALE: 1" = 60'

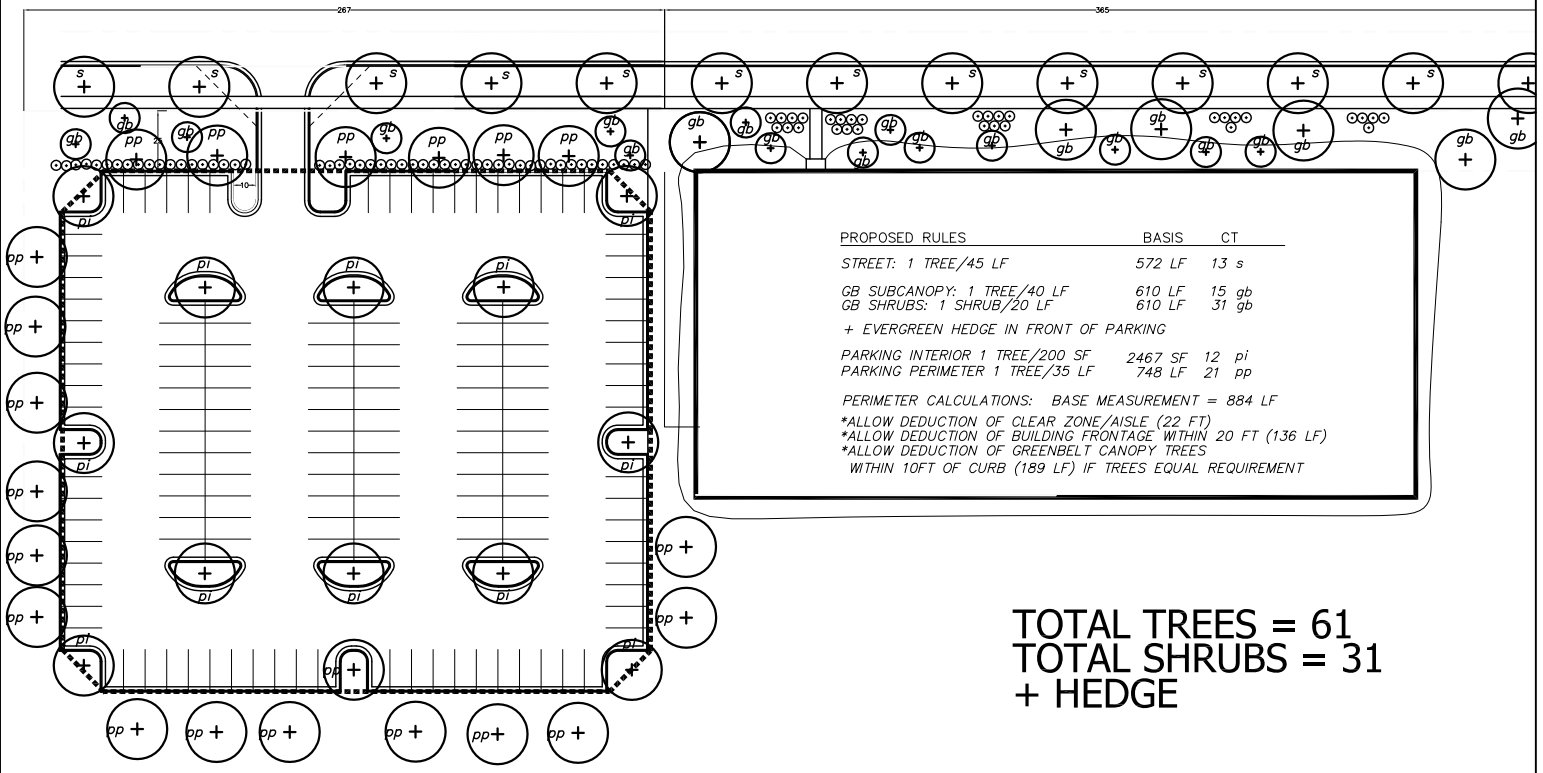


Proposed Ordinance
Industrial
Illustration



**TOTAL TREES = 115
+ HEDGE**

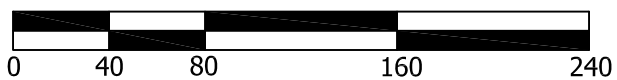
EXISTING RULES



**TOTAL TREES = 61
TOTAL SHRUBS = 31
+ HEDGE**

PROPOSED RULES

PROJECT: PROPOSED LANDSCAPING ORDINANCE
 SHEET: INDUSTRIAL SUBDIVISION
 ZONING SEC. 5.5.3.B and 5.5.3.C
 and LDM SEC 2.b
 DATE: 12/7/2016

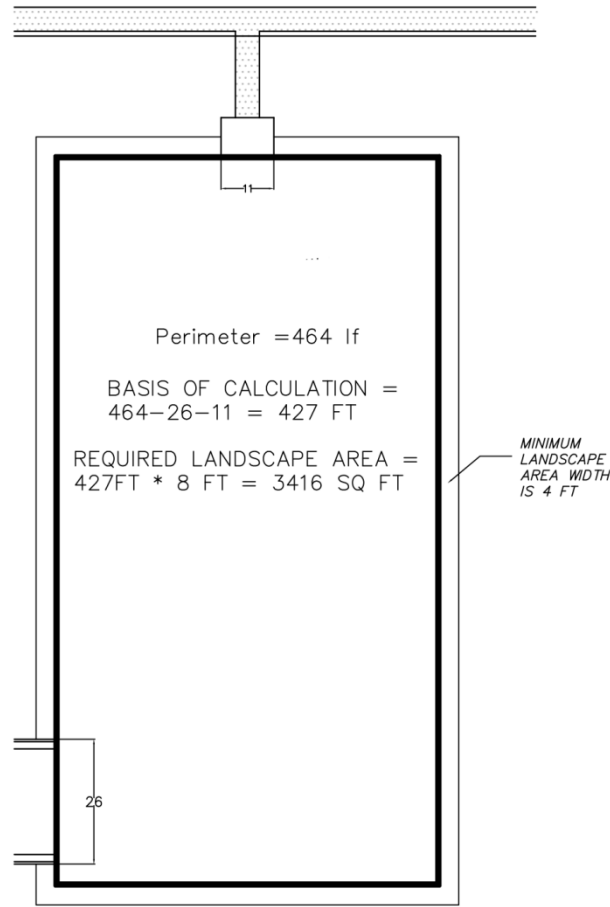


SCALE: 1" = 80'



area in square feet. A Planning Commission waiver is required for the alternate positioning.

e. In instances where the building has a first floor overhang greater than two (2) feet, the landscaping required under this subsection shall begin at the outside edge of the overhang.



iii. [Unchanged]

- 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
- a-c. Landscaping has been proposed in other areas on the site adjacent to the building that offset the loss.

E. Detention/Retention/Sedimentation Basin Landscape Requirements.

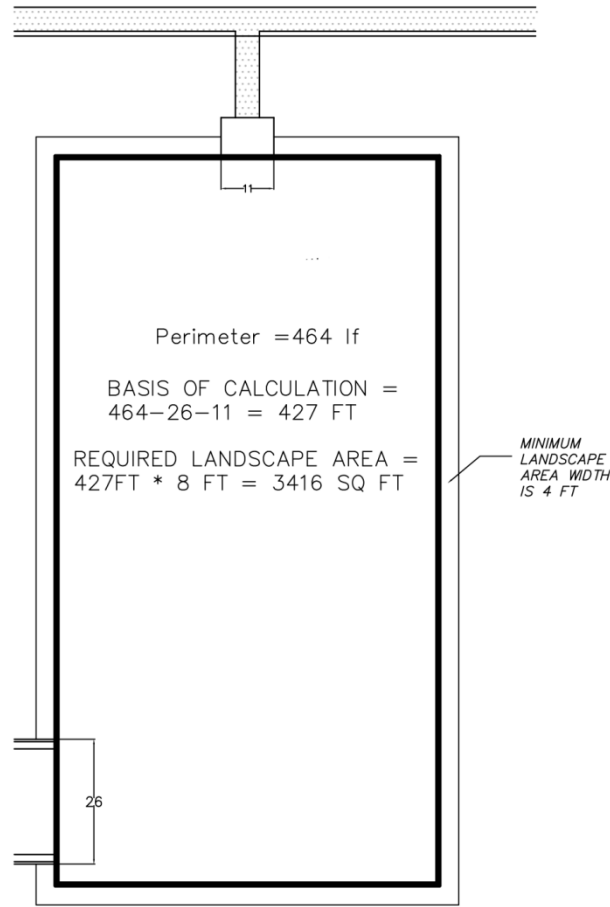
-All detention basins shall be planted with the minimum requirements as set forth in the Landscape Design Manual and shall be designed to have a natural appearance, utilizing natural looking contours and native plant materials whenever possible. Detention basin maintenance shall be provided (see Ordinance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

b.

E.F. Subdivision Planting Requirements

area in square feet. A Planning Commission waiver is required for the alternate positioning.

e. In instances where the building has a first floor overhang greater than two (2) feet, the landscaping required under this subsection shall begin at the outside edge of the overhang.



iii. [Unchanged]

- 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
- a-c. Landscaping has been proposed in other areas on the site adjacent to the building that offset the loss.

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-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 (see Ordinance Code chapter 12, Storm Water Management).

b.

E.F. Subdivision Planting Requirements

Proposed Landscape Ordinance Revisions – Summary of Phone Call with Jim Allen – 2/7/2017

- Proposed changes are generally better.
- Helpful to reduce numbers further to help with tight sites
- Proposed allowing upsizing for replacement trees
- Proposed limiting percentage of evergreens allowed for replacement trees

I requested notes via e-mail but he didn't get a chance to send them to me

From: [Patrick Conroy](#)
To: [Meader, Rick](#)
Subject: Re: City of Novi - proposed ordinance revisions
Date: Monday, February 13, 2017 3:53:28 PM

Ouch, I've been dealing with that for years. As I mentioned, it promotes over planting on almost every site as my Clients have a "tough" time sending in any more money to the City and would rather see extra trees. In many cases, it ends up where we practice "reforestation" not Landscape Architecture.

Many cities, like Auburn Hills allow for the woodland replacement to count for other landscape requirements. I think it ends up allowing for more creativity on the design side as opposed to just adding "circles" to a plan to meet a requirement. This is the one item in the ordinances that I really have a hard time with as it's difficult to jam extra trees in on a formally wooded site that now has a development on it and make it look good and horticulturally sound in the long run.

Again, my opinion for what it's worth.

Thanks again,

Pat

On Mon, Feb 13, 2017 at 3:41 PM, Meader, Rick <rmeader@cityofnovi.org> wrote:

Regarding the woodland ordinance, yes – full replacement, or payment into the tree fund for trees that can't be planted on the site.

From: Patrick Conroy [mailto:pat@conroyla.com]
Sent: Monday, February 13, 2017 3:38 PM
To: Meader, Rick

Subject: Re: City of Novi - proposed ordinance revisions

Rick,

Yes, good point, we do have that note I believe in my planting details. Take a look at my planting details. These were developed by myself and Dr. Schutzki years ago. They are copy righted but would work with you if you want to use any parts of them.

Does the woodland ordinance still require full replacement along with landscape requirements?

Pat

On Mon, Feb 13, 2017 at 3:26 PM, Meader, Rick <rmeader@cityofnovi.org> wrote:

Hi Pat,

Thanks for your suggestions. These changes don't impact the Woodland Protection Ordinance, which hasn't been changed in quite a while.

I see your point about scarifying the bottom of the pit, but think the sides should be, especially in the clay soils we enjoy around here. What do you think?

Thanks again.

Rick

From: Patrick Conroy [mailto:pat@conroyla.com]
Sent: Monday, February 13, 2017 2:53 PM
To: Meader, Rick
Cc: Rick Meader, RLA; McBeth, Barb
Subject: Re: City of Novi - proposed ordinance revisions

Rick,

I did take a quick review of some of the changes. We've been slammed in the office and I am leaving for out of town tomorrow and won't be back until 2/24.

I had a couple of suggestions based upon my "quick" review.

Overall, the changes you are presenting make sense.

With regards to the suggested plant list, I understand what you are trying to accomplish but on my end, I still have to specify plants that are commercially available. Some of the new varieties of trees and shrubs, although technically are "non-native" have very similar overall traits as the "original species" but are improved with respect to form, leaf color, fall color, flower, etc. Again, most likely need to look at overall landscape plan and plant list and make a call at that time.

On the planting details, I would remove any note calling for the "scarify and re-compact" at bottom of root ball. You want the soil at the bottom of the tree pit to be fully compacted to avoid settling. Any scarifying and subsequent re-compacting, unless done properly will result in the tree settling and in many cases causing the tree to lean in the future. This is based upon my 23 years in the landscape construction side and 25 years on the LA side. This is also supported by research from Dr. Robert Schutzki, Associate Professor, at the MSU hort department.

Has there been any change in the woodland replacement ordinance with respect that all required replacement trees are in addition to trees required per the landscape ordinance? This is a very tough requirement, and in my opinion, results in over planting on many sites with long term detrimental results from a design and horticultural perspective. To me, if you remove say 200 trees and put back 200 trees as part of the landscape requirements, you have netted the same amount as was originally on site so it should be a wash. Again, that's my opinion.

Thanks for the opportunity to look at what you have done, it makes sense. I wish I had more time to review in more depth.

I will touch base with you when I get back in town.

Thanks again,

Pat

On Mon, Feb 13, 2017 at 9:54 AM, Meader, Rick <rmeader@cityofnovi.org> wrote:

Hi,

If you are able, would you please send me any comments/suggestions you have regarding the proposed landscape revisions I sent you? I am presenting them next Wednesday and need to have time to incorporate any revisions before we send it on in the process. If you could send me any comments you have by this Wednesday, I would appreciate it. They can be bullet form ideas, markups on the document I sent, whatever.

Thanks very much.



Rick Meader | Landscape Architect

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

t: [248.735.5621](tel:248.735.5621) c: [248.880.5962](tel:248.880.5962) f: [248.735.5633](tel:248.735.5633)

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Patrick S. Conroy, RLA

Conroy & Associates

Email: Pat@Conroyla.com

Office: [248.814.8082](tel:248.814.8082)

Fax: [248.690.7164](tel:248.690.7164)

Cell: [248.802.8082](tel:248.802.8082)

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From: [Steve Deak](#)
To: [Meader, Rick](#)
Subject: Re: City of Novi - proposed ordinance revisions
Date: Tuesday, February 14, 2017 3:42:13 PM

Rick,

Due to my project deadline work load I will not have time to add any comments.

Thank you.

Steve Deak, RLA, LEED AP



deakplanningdesign.com

[p] 866 355-4202 toll free
[c] 248 444-7892

On Mon, Feb 13, 2017 at 9:54 AM, Meader, Rick <rmeader@cityofnovi.org> wrote:

Hi,

If you are able, would you please send me any comments/suggestions you have regarding the proposed landscape revisions I sent you? I am presenting them next Wednesday and need to have time to incorporate any revisions before we send it on in the process. If you could send me any comments you have by this Wednesday, I would appreciate it. They can be bullet form ideas, markups on the document I sent, whatever.

Thanks very much.

Rick Meader | Landscape Architect

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From: [Scott Goldman](#)
To: [Meader, Rick](#)
Subject: RE: Proposed Landscape Ordinance Modifications - City of Novi
Date: Tuesday, February 14, 2017 9:22:20 AM

Hello Rick,

I looked at all of the attachments and I think the proposed changes are great.

FYI...You may find these studies informative as I have...

- I found some great information on street tree plantings from the a document the New York Parks and Recreation department put together. I'm citing some of this information in the RailYard Lofts package. Here is the link...<https://www.nycgovparks.org/pagefiles/53/Tree-Planting-Standards.pdf>
- I have also found this study from the Chicago Department of Transportation very helpful when selecting plants along roadways. The study shows the survival rate of plants along roadways along with some other information and comments. Here is the link...
https://www.cityofchicago.org/dam/city/depts/cdot/RoadwayPlantList_Oct09.pdf

This must have been a lot of work for you...I like the changes you are proposing. The changes seem to make the ordinances more practical and achievable.

Best,

Scott Goldman



JAMES C. SCOTT & ASSOCIATES, INC.
landscape architects - site planners

300 e. long lake road, suite 120
bloomfield hills, michigan 48304
o: 248.646.6564 x 205 f: 248.646.4838
scott@jcsa-la.com
www.jcsa-la.com

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From: Meader, Rick [mailto:rmeader@cityofnovi.org]
Sent: Friday, January 27, 2017 9:52 AM
To: Scott Goldman
Subject: Proposed Landscape Ordinance Modifications - City of Novi

Hi Scott,

I have proposed a number of changes to our Landscape Ordinance and Landscape Design Manual that are going to be considered by the City's Planning Commission and City Council. I believe that a lot of the changes will make creating attractive, workable landscapes on city projects more achievable for you. I have worked to incorporate a lot of the suggestions (and occasionally complaints) I've heard from landscape designers in my time here, and my own experience as a landscape designer.

Please note that the Woodland Protection Ordinance (Section 37), which regulates the woodland replacement trees, is not being modified at this time. Still, if you have suggestions for that, feel free to pass them along as well, for future reference.

As a Landscape Architect who does a lot of work in the city, I would appreciate it if you could take some time and look it over. You may want to look at the memo first, as it summarizes the changes being proposed. Please offer any comments and suggestions you may have. I'm sure you will have some helpful ones. I am attaching the marked up versions, but if you'd prefer to just see the "clean" version, without the markups shown, I'm happy to send them along – just let me know. I am also attaching some illustrations comparing the effects of the current situation, if all of the current ordinance requirements are enforced, versus what would be required under the proposed revisions. These won't be part of the ordinance, but are intended to help summarize visually the effects of some of the changes.

The proposed revisions will first be presented at a Public Hearing on February 22. If you could get your comments to me no later than February 15, that will give me time to make any changes necessary. If you have any questions, please let me know.

Thanks very much!

Rick Meader | [Landscape Architect](#)

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From: [Ozell Gothard](#)
To: [Meader, Rick](#)
Subject: RE: Proposed Landscape Ordinance Modifications - City of Novi
Date: Tuesday, February 14, 2017 11:59:17 AM

Hi Rick,

I am excited about the proposed changes to the City of Novi landscape ordinance. I think it will have a positive effect on the long-term survivability of trees in an urban environment. Many of the problems I've had in the past involves the requirement of too many trees in an limited space. The old ordinance did not take into account for watermain, sanitary sewer, storm sewer, parking lot lights etc...

These utilities usually take up a lot of landscape area along with their required easements, So I believe fewer number of trees located in the right space will better suit most sites, and will eliminate utility conflicts. This will promote the long-term health of the trees installed. The changes will save the developers money while providing attractive projects. Some suggestion I have are:

Street trees in the right of way:

These trees are dependent on RCOC approval. Could these trees be planted after the project is complete? The developer could provide the funds to the City. The city could then install these trees, making sure uniformity, diversity, matching crowns and specimen trees are provided.

Parking lot trees:

Parking lot trees could be provided based on the number of parking spaces to determine required trees. This would simplify the calculation. "Provide one (1) tree per 5 parking spaces". This could greatly reduce the calculation and number of trees required.

i.e. 200 spaces/5=40 parking lot trees required.

The current ordinance might require 75-80 trees, which makes it difficult to avoid utility conflicts and over-crowding of trees. A number of parking lot islands in many situations are required for parking lot lights, to create safe routes to the building entrance, for pedestrian. This limits the number of interior islands for trees, and require parking lot trees, to be placed on the perimeter of the parking area, which conflicts with perimeter parking trees.

I feel the city has been easy to work with on the projects, I've completed in Novi & the proposed revisions will make city projects more efficient, attractive and streamline.

Ozell Gothard

Landscape Architect

From: lind [mailto:mgothem@aol.com]
Sent: Monday, January 30, 2017 7:00 PM
To: ozell@fazalkhan.com
Subject: Fwd: Proposed Landscape Ordinance Modifications - City of Novi

-----Original Message-----

From: Meader, Rick <rmeader@cityofnovi.org>
To: George Ostrowski <gostrowski@nfe-engr.com>; mgothem <mgothem@aol.com>
Sent: Fri, Jan 27, 2017 11:46 am

Subject: Proposed Landscape Ordinance Modifications - City of Novi

Hi Ozell,

As I just mentioned to you on the phone, I have proposed a number of changes to our Landscape Ordinance and Landscape Design Manual that are going to be considered by the City's Planning Commission and City Council. I believe that a lot of the changes will make creating attractive, workable landscapes on city projects more achievable for you. I have worked to incorporate a lot of the suggestions (and occasionally complaints) I've heard from landscape designers in my time here, and my own experience as a landscape designer.

Please note that the Woodland Protection Ordinance (Section 37), which regulates the woodland replacement trees, is not being modified at this time. Still, if you have suggestions for that, feel free to pass them along as well, for future reference.

As a Landscape Architect who does a lot of work in the city, I would appreciate it if you could take some time and look them over. You may want to look at the memo first, as it summarizes the changes being proposed. Please offer any comments and suggestions you may have. I'm sure you will have some helpful ones. I am attaching the marked up versions, but if you'd prefer to just see the "clean" version, without the markups shown, I'm happy to send them along – just let me know. I am also attaching some illustrations comparing the effects of the current situation, if all of the current ordinance requirements are enforced, versus what would be required under the proposed revisions. These won't be part of the ordinance, but are intended to help summarize visually the effects of some of the changes.

The proposed revisions will first be presented at a Public Hearing on February 22. If you could get your comments to me no later than February 15, that will give me time to make any changes necessary. If you have any questions, please let me know.

Thanks 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 f: 248.735.5633

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From: [April McGee-Flournoy](#)
To: [Meader, Rick](#)
Cc: [Sue Grissim](#)
Subject: GMA's Proposed Landscape Ordinance Modifications - City of Novi dated February 14, 2017
Date: Tuesday, February 14, 2017 10:24:44 AM

Rick,

On behalf of Sue Grissim, I have attached GMA's revisions for the Novi Proposed Landscape Ordinance & Design Manual Modifications:

April

From: Meader, Rick [<mailto:rmeader@cityofnovi.org>]
Sent: Friday, January 27, 2017 9:54 AM
To: Sue Grissim <sueg@gma-la.com>
Subject: Proposed Landscape Ordinance Modifications - City of Novi

Hi Sue,

I have proposed a number of changes to our Landscape Ordinance and Landscape Design Manual that are going to be considered by the City's Planning Commission and City Council. I believe that a lot of the changes will make creating attractive, workable landscapes on city projects more achievable for you. I have worked to incorporate a lot of the suggestions (and occasionally complaints) I've heard from landscape designers in my time here, and my own experience as a landscape designer.

Please note that the Woodland Protection Ordinance (Section 37), which regulates the woodland replacement trees, is not being modified at this time. Still, if you have suggestions for that, feel free to pass them along as well, for future reference.

As a Landscape Architect who does a lot of work in the city, I would appreciate it if you could take some time and look it over. Please offer any comments and suggestions you may have. I'm sure you will have some helpful ones. I am attaching the marked up versions, but if you'd prefer to just see the "clean" version, without the markups shown, I'm happy to send them along – just let me know. I am also attaching some illustrations comparing the effects of the current situation, if all of the current ordinance requirements are enforced, versus what would be required under the proposed revisions. These won't be part of the ordinance, but are intended to help summarize visually the effects of some of the changes. If you want to share this with others in your firm, please feel free to do so.

The proposed revisions will first be presented at a Public Hearing on February 22. If you could get your comments to me no later than February 15, that will give me time to make any changes necessary. If you have any questions, please let me know.

Thanks very much!

Rick Meader | Landscape Architect

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

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1. Intent. The intent of this Section is to achieve landscapes with creative placement and distinctive attractive designs that:

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- emphasize the preservation of existing natural resources, and the use of native plant materials, and a diversity of plant species;
- preserve and enhance existing woodlands, wetlands and natural open areas;
- which reduces impervious surfaces, enhances storm water management and prevents soil erosion and soil depletion;
- provide require appealing yet opaque visual and audible buffering between non-compatible land uses; and
- and to utilize the best ecological concepts and environmental objectives with preservation as a priority

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and sustainability

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

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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, and any addition to an existing building that is equal to or greater than a twenty five (25) percent increase in the overall square footage of the building or four hundred (400) square feet, whichever is less. With the exception of Section 5.5.5.FG, 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 Design Manual," as adopted by the City Council by resolution and which may similarly be amended by Council resolution from time to time.

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3. Landscape Requirements

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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.

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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.

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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.

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v. Berm Requirements. The obscuring berm requirements are as follows:

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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 S.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 elevation of the closest adjacent principal structures;
- ii. The first floor elevation of the uses requiring screening;
- iii. The elevation 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 principal structures within ~~two hundred (200)~~ 200 feet of the subject 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

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.

~~g.a. See Landscape Design Manual for additional requirements.~~

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. *- explain ?*

~~See Landscape Design Manual for additional requirements.~~

h.i.

vi. Wall Requirements.

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- 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 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 ~~three~~ and one half (3½) feet 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 (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 retaining walls are permitted for the purpose of terracing.

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

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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.

- a. 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.
- b. Berms shall comply with Section 5.5.3.A.v., with specific requirements as called out in Table 5.5.3.B.ii.f.
- c. The landscape area, if adjacent to parking and vehicular use areas ~~not between the right-of-way and the principal building~~, shall be planted to achieve a minimum opacity of ~~ninety (90) percent~~ 90% during the summer and ~~eighty (80) percent~~ 80% during the winter. The landscape in this area shall provide an ~~intermittent~~ continuous visual obstruction height of ~~thirty-six (36) inches, plus the required canopy/evergreen or subcanopy trees required per Table 5.5.3.B.ii.f.~~
- e. —
- d. 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 requirements of the zoning district as specified in the Right-of-Way Landscape Screening Requirements Chart, and shall have a maximum slope of ~~thirty-three (33) percent (three feet of horizontal plane for each one (1) foot of vertical height)~~ 33% and a crest as specified in the Right-of-Way Landscape Screening Requirements Chart (Table 5.5.3.B.ii.f). ~~A landscape area shall be planted to provide visual interest and yet allow views into the site.~~
- e. 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 street address from a ~~30-40~~ 20-40 degree angle as you approach the building.
- f. Parking areas in a Commercial/Office district with parking located between the principal building and right-of-way shall be planted at a reduced rate, per the greenbelt tree and subcanopy requirements called for in Table 5.5.3.B. (The berm and street tree requirements are the same as if the parking was not ii.f between the building and road).
- e. —

Planned Suburban Low Rise	PSLR	Parking and buildings adjacent to a section line road right-of-way	50	4	3	Not permit to allow ed.	35	20	35	-
		Parking adjacent to other right-of-ways	To Front of principal building	4	3	Not permit to allow ed.	35	20	35	-

FOOTNOTES:

- (1) Round fractions to the nearest whole number for the required number of trees and shrubs.
- 5.5.3.8.ii.f Right of Way Landscape Screening Requirements (continued)
- (2) ~~(1)~~ Subcanopy trees are to be used under overhead utilities. Use ~~2~~ 1.5 subcanopy trees for each one canopy tree requirement. If columnar/fastigate varieties are used, 2 subcanopy 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.
- (3) ~~(2)~~ Subcanopy trees can be in an informal or formal arrangement. Format spacing shall be 10-foot minimum to 15-foot maximum on center.
- (4) ~~(3)~~ Shrubs, both deciduous and evergreen, 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) ~~(4)~~ 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, and plantings.
- (6) ~~(5)~~ Freestanding walls shall be constructed of masonry or concrete with all exterior sides of face brick with a suitable cap.
- (7) ~~(6)~~ An ornamental fence with shrubs and brick piers may be used instead of a berm if approved by the Planning Commission in Use/Zoning as indicated above. A Planning Commission waiver is required for this substitution.
- ~~(8) Ornamental Grasses, perennials, annuals shall be planted in massed groupings to highlight entrances and views of key elements.~~
- ~~(9) With Road Commission for Oakland County approval where applicable.~~
- ~~(10) Freestanding walls shall be constructed of masonry or concrete with all exterior sides of face brick with a suitable cap.~~
- ~~(11) An ornamental fence with shrubs and brick piers may be used instead of a wall if approved by the Planning Commission in Use / Zoning as indicated above.~~
- (8) ~~(9)~~ View channels into the site are to be used for safety visibility. Please provide sight lines to the building address for approaching vehicles at an approximately 30-40 degree angle.
- (9) ~~(10)~~ Tree spacing requirements are intended to dictate the tree quantity per linear footage along the proposed right-of-way (ROW). It is They are not intended to dictate exact placement on the site within the area of the requirement. Creative landscape design is encouraged.
- (10) ~~(11)~~ 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. - test this to make sure

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- 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, ~~require~~ 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

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b.h. For any development other than a single one-family or two-family dwelling, ~~for any development other than a single one-family dwelling or single 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).

e.i. Wheel stops or raised curbing shall be installed to prevent vehicles from encroaching more than ~~two (2)~~ 2 feet into any parking landscape area. When adjacent 90 degree parking stalls are reduced from 19 to 17 feet in length, the ~~required six (6)~~ 6 inch curbs shall be reduced to ~~four (4)~~ 4 inches in height when the adjacent ninety (90) degree parking stalls are proposed to be reduced from nineteen (19) feet to seventeen (17) feet in length. This applies to both landscape and sidewalk overhangs. Also, instances ~~where vehicles overhang a sidewalk, the parking stall may be reduced in length to seventeen (17) feet, the curbing shall be reduced to four (4) inches in height, and the sidewalk shall have a minimum width of seven (7) feet.~~

trucks + others + parked in vehicles can extend up to 3' from face of curb?

← 4"

i. No plantings with a mature height greater than ~~twelve (12)~~ 12 inches shall be within ~~ten (10)~~ 10 feet of fire hydrants. Plant materials shall not block the visibility of the hydrant and be no taller than 12 in inches when below a Fire Department Connection.

h.k. 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.

e.l. 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 the plantings are salt-tolerant and the islands are designed to provide drainage adequate for survival of the island plantings and meet all City of Novi engineering standards.

f.m. Paint, ~~Contrasting brick or concrete pavers may be used to delineate stall lines within parking areas.~~

← move to parking lot engineering section?

g.n. Any area within a parking lot not dedicated to parking use, or driveways, or ~~sidewalk~~ exceeding ~~one hundred (100)~~ 100 square feet, shall be landscaped with a minimum of lawn or other living ground cover.

h.o. All landscaped areas required herein shall consist of a mix of plant materials such as canopy deciduous trees, subcanopy trees, shrubs, groundcovers, ~~lawn?~~ ornamental grasses and perennials.

Category*	Total square footage of parking spaces not including access aisles equal landscaped islands for VUA areas less than 50,000	Square footage of all additional paved vehicular use areas (Not including A) under 50,000 square feet equals Total square footage of landscaped islands for VUA beyond the	Square footage of all additional paved vehicular use areas (Not including A or B) over 50,000 square feet	Total Square footage of landscaped islands required equals number of interior landscape deciduous canopy trees	Perimeter Deciduous Number of Canopy Trees required equals:
Footnotes	1,2,3	1,2,3		4,5,7	6,7,8
1	VUA × 407.5%	(VUA-50000) × 51.0%	A+B × 1%	Total (A+B) / 200	Perimeter (L.F.) / 750
2	VUA × 75%	(VUA-50000) × 0.5%	A+B × 0.5%	(A+B) / 200	Perimeter (L.F.) / 350

2

*Category 1 = OS-1, OSC, OST, B-1, B-2, B-3, C, NCC, EXPO, FS, TC, TC-1, RC Districts and Special Land Uses
 *Category 2 = I-1, I-2

Notes to table/Footnotes:

- (1) Round fractions of trees to the nearest whole number.
- (2) A minimum square footage as set forth in Section 5-5-3.C.i.b is required. Vehicular Use Area (VUA) to be used in this calculation includes parking spaces, loading areas and access aisles. It does not include drives to the Vehicular Use Area. See illustration below.
- (3) All calculations are to be rounded to nearest whole number (do not use decimal places). For example, if A = 95.96, it would be rounded to 96 before continuing to the next calculation. 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. 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.
- (4) Canopy deciduous trees are required. In instances of overhead utility lines, subcanopy trees may be approved.
- (5) Corner areas at the edges of parking areas may also be counted toward square footage of island space.
- (6) Perimeter greenspace must contain canopy trees equal in quantity to one (1) per thirty five (35) linear feet as a minimum. Paved vehicular use areas includes loading/unloading areas. Deciduous canopy

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g. Perimeter trees are required for parking areas and access drives to parking areas at a rate of 1 tree per 35 lf of perimeter. See illustration for determination of perimeter length.

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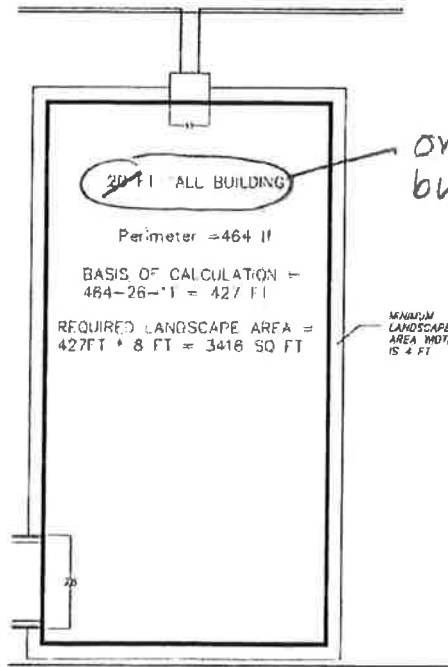
(1) Parking lot frontages with existing trees within 15 feet of the parking lot perimeter (as measured to the tree trunk) may be subtracted from the basis of calculation, as long as the trees provided meet or exceed the requirement of 1 tree per 35 lf.

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(2) If the front edge of a parking lot is at the rear edge of the front greenbelt buffer, and canopy trees, in that greenbelt, existing or proposed, are within 15 feet of the parking lot's back of curb (as measured to the trunk) that section of perimeter may be subtracted from the perimeter length if the number of trees proposed equals the requirement of 1 per 35 lf.

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subsection shall begin at the outside edge of the overhang.



or for all buildings? per Dic

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. ———
- d. Elements or activities that are ancillary to the primary building's function inhibit the application of
- e. ——— this requirement; or

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(2)(3) Trees shall be guaranteed by the developer for two (2) growing seasons after installation. All unhealthy and dead plant material shall be replaced by the developer within six (6) months following notice, or the next appropriate planting period, whichever occurs first. All replacement trees shall be guaranteed by the developer for an additional two (2) years after which time a final inspection will be conducted at the request of developer. 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.

(3)(4) The developer shall submit a landscape plan for all of the street trees to be provided within the plat 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 three (3) feet to six (6) feet as measured from the established street grade. See Landscape Design Manual for additional requirements regarding the type and size of plantings.

(4)(2) Island and boulevard plantings do not count toward the required street tree totals.

(3) If an island's or entry's landscaping is to be re-landscaped by the subdivision association, a landscape plan shall be submitted to the City for administrative approval.

(2)

ii. 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~~ 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 (3)~~ deciduous canopy deciduous trees or large evergreen trees for each dwelling unit on the first floor shall be provided. Evergreens shall be no closer than ~~twenty (20)~~ 20 feet from the roadway.

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~~iv.iii. Detention/Retention/Sedimentation Basin Landscape Requirements. All detention basins shall be planted with 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 maintenance shall be provided (see Ordinance Code, Storm Water Management).~~

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

- i. Street trees shall be provided in front of each single-family parcel, in accordance with the standards set forth in the Landscape Design Manual for lots within single-family platted subdivisions.
- ii. The developer/builder or homeowner shall depict the street trees on the plot plan, which shall be reviewed by the City.
- iii. A Street Tree Financial Guarantee will be collected at a rate of \$400 per street tree required prior to the issuance of a building permit, in accordance with the provisions of Chapter 26.5 of the Novi Code of Ordinances.
- iv. No Final Certificate of Occupancy will be granted until the street trees have been planted by the developer/builder or homeowner and inspected by the City. Once the trees have been inspected, the Financial Guarantee will be reduced to a Maintenance Bond equal to 25% of the material cost of the trees per the Community Development standard costs, or a minimum of \$1000, whichever is higher. The Street Tree Financial Guarantee will not be reduced until the trees have been planted and accepted by the City.
- v. Trees shall be guaranteed by the developer/builder or homeowner for 2 growing seasons after installation. All unhealthy and dead trees shall be replaced by the developer/builder or homeowner within 3 months following notice, or the next appropriate planting period, whichever occurs first. *COMB IN F.C. 3?*
- vi. All replacement trees shall be guaranteed by the developer/builder or homeowner for an additional 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;

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D. Establishment Period. The establishment period for the plant material guarantee will ~~occur~~ beginning at the Final Certificate of Occupancy Inspection approval and continue to two (2) years from that date. All plantings shall be properly planted ~~as to be~~ be in a healthy, growing condition at commencement of the establishment period. At the end of the establishment period, any plantings, which are ~~twenty (20) percent~~ 20% dead or greater, shall be replaced.

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E. Notice of Installation/Minor changes

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- 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. Minor changes due to seasonal planting problems and lack of plant availability 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. 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 from approved plan, such that the provided plan is not predominately representative of the actual installed plantings, the landscape plan shall be revised and resubmitted for plan approval; a revised or as-built plan and an additional review fee will be required.

iii.

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

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- i. Street trees shall be provided in front of each single family parcel, in accordance with the standards set forth in the Landscape Design Manual for lots within single family platted subdivisions.
- ii. A Street Tree Financial Guarantee will be collected at a rate of four hundred (400) dollars per street tree required prior to the issuance of a building permit, in accordance with the provisions of Chapter 26.5 of the Novi Code of Ordinances. No Final Certificate of Occupancy will be granted until the trees have been planted by the developer/builder or homeowner and inspected by the City. Trees shall be guaranteed by the developer/builder or homeowner for

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CITY OF NOVI

LANDSCAPE DESIGN MANUAL

(Adopted by City Council Resolution dated- 8-25-03) – revised Dec-2016

e. Subdivision Planting Requirements:

a. (1) Single-family platted subdivisions or residential site condominiums.
Street

(1) (a) Tree spacing 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 3.a.(1) 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 widths:

Table 3.a.(2) Recommended Tree Spacing for ROW areas

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

(2) Street Tree Location. Large s(h) — 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 guidelines in the table above to calculate the number of trees required):

Table 3.a.(3) Street Tree Requirements for Single Family Residential Lots

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

* If space allows, more than the minimum may be planted on a lot.

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(i) Minimum planting area width:

Tree Species Type	Tree Lawn Size
Small Tree (Subcanopy Deciduous)	4-6'
Medium Tree (Subcanopy and Canopy Deciduous)	6-8'
Large Tree (Canopy Deciduous)	>8'

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

b. (2) Non-Residential Subdivisions

(a) 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) (i) One canopy deciduous canopy or one large evergreen tree per thirty-five (35) linear feet of street frontage along the right-of-way is required. Evergreen trees shall be no closer than 20 feet from the roadway 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 25% of total linear footage adjacent to the street. Use of them is encouraged at entry points or to highlight significant design. (Also reference Section 5.9 corner clearance).
- (4) In addition to the above, (ii) Evergreen shrubs are required to provide screening of parking areas only. Shrubs are to be at least 30" in height at planting, three (3) feet height tall at maturity and/or maintained at a minimum height of three (3) feet height maximum. A minimum opacity shall be provided and maintained at eighty (80) percent 80% during winter and ninety (90) percent 90% percent during summer opacity within two (2) years after of acceptance by the city installation. 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.

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for interior streets
lets discuss rolling lawn + trees only ✓

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- a. If there are less than 200 trees 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 200 or more trees 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 5.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	25%	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. Woodland tree replacement species shall have roughly the same percentage of composition as the native trees removed in order to 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). Native maples may be used as substitutes for boxelders, and varieties of native elm species shown to have better resistance to Dutch elm disease than the straight species are allowed as replacements for elms.
The counts of woodland replacement trees should not be included in the breakdown described above (items a-d).
- f. 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 native plant materials which enhance infiltration of storm water. 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.

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include Fence details? (decorative, safety or screening) (utility section exception)

- n. k.—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. l.—A note indicating the proposed estimated planting dates (should be between March 15 and November 15).
- p. m.—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.
- q. n.—A note indicating that the plant sources should be Upper Midwest/Great Lakes grown. (we use zone 3 to 2)
- o. —Parking lot landscaping calculations, including the amount required and the amount provided.
- r. p.—Interior landscaping calculation requirements, including the amount required and the amount provided. 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.
- q. —An indication of the snow depositing area for winter.
- r. —The soil type on site as determined by the Soils Survey of Oakland County, Michigan published by the United States Department of Agriculture Soils Conservation Service.
- s. An irrigation plan for watering landscaped areas with a fully automatic irrigation system and a method of draining landscaped areas as needed. 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. 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 one year of its discovery, or the next appropriate growing period, whichever comes first.
- t. An itemized cost estimate based on current, accurate planted costs 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.
- u. A plan for the successful establishment and maintenance of any native seed mixes.
- v. w.—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.

non res subdiv is 3mo + 6mo in subdivisions
 make all consistent @ 3 months or even less

9. 3. — Plant Material Requirements

- a. —General Conditions / Plant Requirements.

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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.

- (e) (e) — For approval of substitution, 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).
- (c) Such existing plant material is to be labeled "To Be Saved" on site plans. 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. Common and botanical names, sizes and the elevations at the base of all existing trees to be saved are also required. Large masses of protected vegetation should be labeled "To be saved" on the Landscape Plan and on the Demolition/Removal Plan and Grading Plan.
- (f) (d) — 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. These replacements shall be at the following rate:

Table 7.b.(1)(f): Landscape Tree Credit Chart

Diameter of Trunk of Preserved Tree* ^f	= Number of Trees Substituted 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:

should large evergreen trees have

hts indicated for credits or do they max out for credit @ 2 or 3 trees?

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(2) Proposed Plant Material

(a) Plant Sizes.

i. (1) The minimum sizes are as follows:

Table 7.b.(2)(a).i – Minimum plant sizes by application-(+)

Planted Material Types	Canopy Deciduous Trees	Large Evergreen Trees	Subcanopy Deciduous Trees (4)	Upright Evergreens	Large Shrubs (5)	Small Shrubs (56)	Perennials, Ornamental Grasses
R-O-W Plantings (34)	2-2.5" caliper	8' height	2-1/2" caliper	6' height	36-42" ht.	18-24" ht.	1 gallon cal.
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 2 1/2" caliper	7-8' @ 2:1-2 Ratio	n/a (3)	(3) n/a	(3) n/a	(3) n/a	(3) n/a
Subdivision Street Trees	2 1/2" caliper	n/a	2 1/2" caliper	n/a	n/a	n/a	n/a
All other	3" caliper	7' height	2.5" cal 2 1/2" caliper	6' ht. 6' height	36" height	24" ht.	1 gal. cal. 4 gallon

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 for acceptable species.
- (3) Refer to Chapter 37-8.c for use of this plant type for replacement credits.
- (34) Shall also apply to private road easements or other equivalent.
- (45) Multi-stem trees are to be eight to ten (8-10) foot minimum height.
- (56) Spreading or horizontal shrubs are to be eighteen (18) inch width minimum.

n/a: not allowed

ii. (2) To encourage a mixture of sizes, additional landscape credit can be given (except for R-O-W Plantings, Woodlands Replacement, and Street Trees) for larger sized canopy trees, deciduous and evergreen 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.

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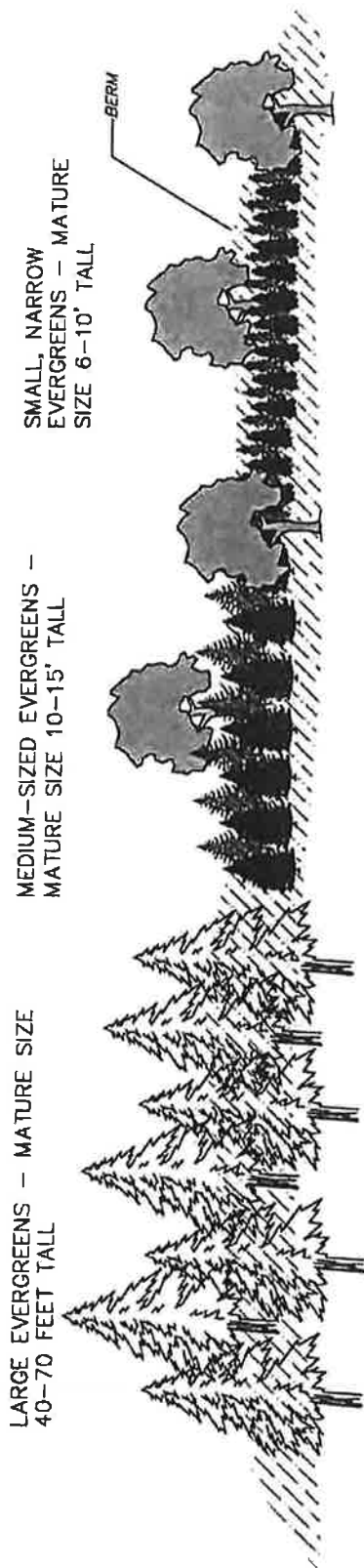
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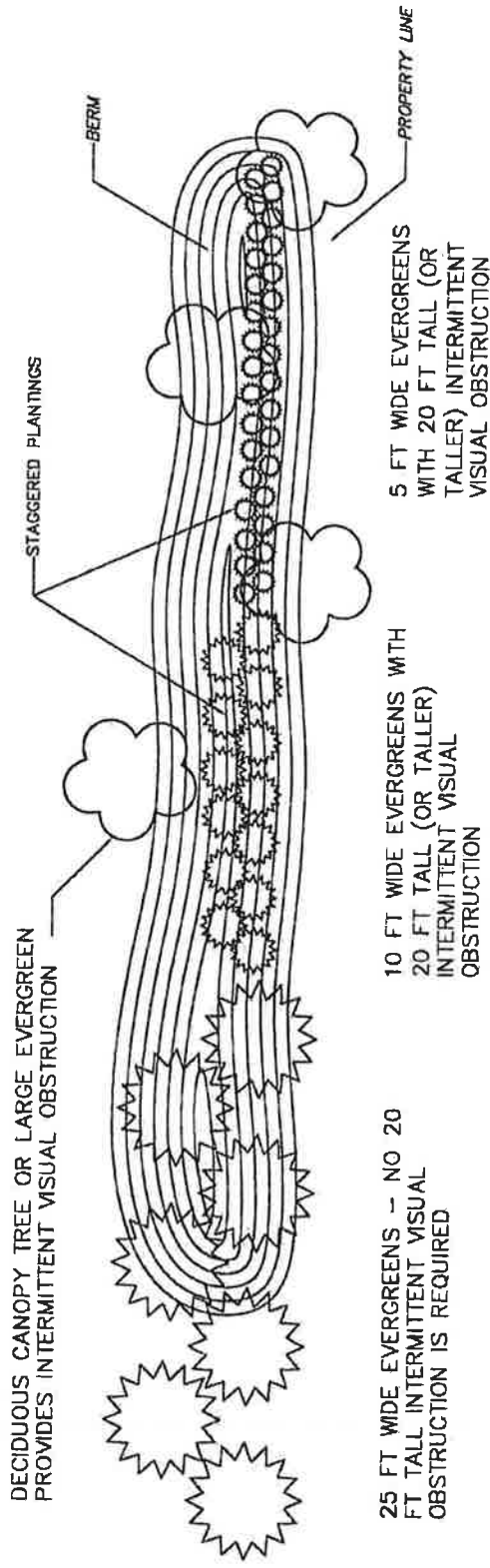
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Part II. Obscuring Earth Berm/Screening Opacity Diagrams

ELEVATION - FROM RESIDENTIAL PROPERTY



PLAN VIEW



OPACITY OBSCURING DIAGRAM - BERM

Part III. Standard Planting Details

NOTE:

GUY EVERGREEN TREES ABOVE 12' HEIGHT. STAKE EVERGREEN TREE BEFORE 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. REMOVE EXCESS SOIL TO EXPOSE ROOT FLARE ~~IF NECESSARY~~.

MOUND EARTH TO FORM SAUCER

REMOVE ALL NON-BIODEGRADABLE MATERIALS COMPLETELY FROM THE ROOTBALL. CUT DOWN WIRE BASKET AND FOLD-DOWN BURLAP FROM TOP 1/2 OF THE ROOTBALL.

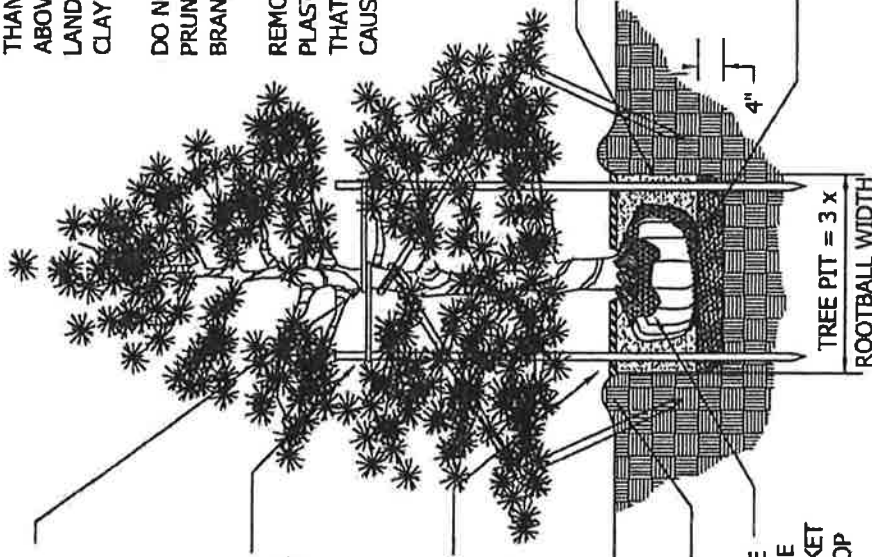
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NOTE:

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.



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

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

TREE PIT = 3 x ROOTBALL WIDTH

revise the same as dec tree

EVERGREEN TREE PLANTING DETAIL

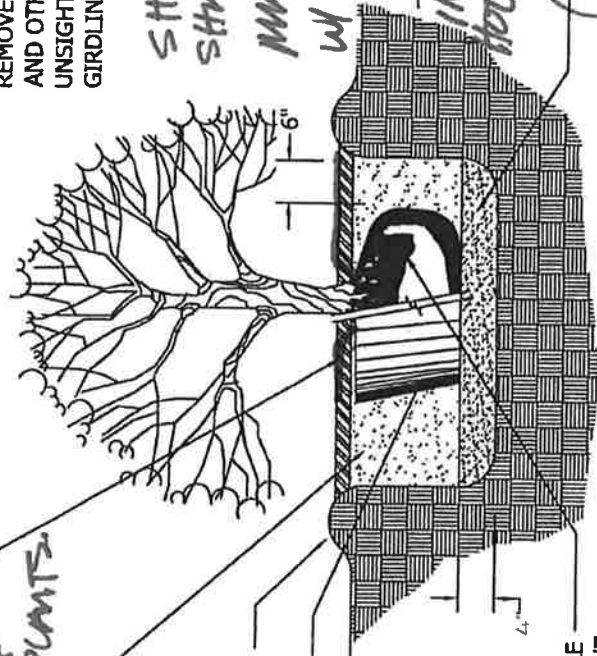
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NOTE:
 SHRUB SHALL BEAR SAME RELATION
 TO FINISH GRADE AS IT BORE
 ORIGINALLY OR SLIGHTLY HIGHER
 THAN FINISH GRADE UP TO 4" ABOVE
 GRADE, IF DIRECTED BY LANDSCAPE
 ARCHITECT FOR HEAVY CLAY SOIL
 AREAS.

PRUNE ONLY DEAD OR BROKEN
 BRANCHES.

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

*SITINGS PLANTED IN POTS
 SHALL HAVE ENTIRE POT
 MASS EXCAVATED + BACKFILLED
 W/ APPROVED PLANT MIX.
 SITINGS SHALL NOT BE
 INSTALLED IN INDIVIDUAL PLANTING
 HOLES.*



MULCH 3" DEPTH WITH SHREDED
 HARDWOOD BARK. NATURAL IN
 COLOR. *KEEP MULCH
 OFF TRUNK OF PLANTS.*

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.

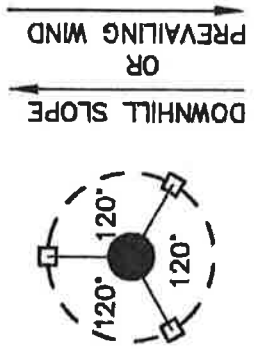
REMOVE ALL NON-BIODEGRADABLE
 MATERIALS COMPLETELY FROM THE
 ROOTBALL. ~~FOR~~ DOWN BURLAP
 FROM TOP 1/3 OF THE ROOTBALL.
REMOVE

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

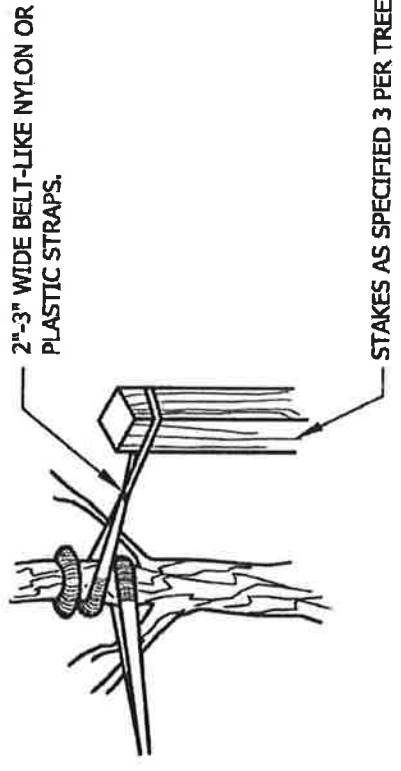
SHRUB PLANTING DETAIL

NOT TO SCALE

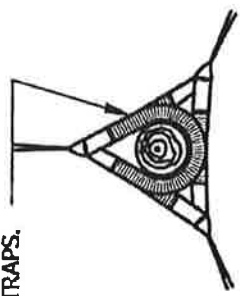
NOTE:
 ORIENT STAKING/GUYING TO PREVAILING WINDS, EXCEPT ON SLOPES GREATER THAN 3:1 ORIENT TO SLOPE.
 USE SAME STAKING/GUYING ORIENTATION FOR ALL PLANTS WITHIN EACH GROUPING OR AREA



STAKING/GUYING LOCATION



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



GUYING DETAIL

STAKING DETAIL

TREE STAKING DETAIL

Not to scale

Part IV. Street Tree List

Native to Michigan or Michigan Native

NOVI STREET TREE LIST

Genus	Species - cultivar	Common Name	Native to Michigan	Size	App. Ht.	App. Spread	Use	Treelawn Size	Overhead Utilities
Acer	buergerranum	Maple, Trident	Not Native	Small	20'	25'	Special Circumstances	4-6 Feet	Under Utility
Acer	campestre	Maple, Hedge	Not Native	Sm./Med.	30'		Recommended	4-8 Feet	
Acer	freemanii	Maple, Freeman	Cultivar - Native	Large	50'	40'	Special Circumstances	>8 Feet	
Acer	ginnala	Maple, Amur	Not Native	Small	20'	20'	Special Circumstances	4-6 Feet	Under Utility
Acer	griseum	Maple, Paperbark	Not Native	Sm./Med.	25'	20'	Special Circumstances	4-6 Feet	Under Utility
Acer	rubrum	Maple, Red	Native	Large	50'	40'	Recommended	>8 Feet	
Acer	rubrum 'Bowhall'	Maple, Red Bowhall	Cultivar - Native	Med./Lg.	40'	15'	Special Circumstances	>8 Feet	
Acer	rubrum 'Sunset'	Maple, Red Sunset	Cultivar - Native	Large	45'	35'	Recommended	>8 Feet	
Acer	saccharum	Maple, Sugar	Native	Large	60'	40'	Recommended	>8 Feet	
Aesculus	hippocastanum	Horsechestnut	Not Native	Large	80'	35'	Special Circumstances	>10 Feet	
Amelanchier	arborescens	Serviceberry	Native	Small	10'	6'	Special Circumstances	4-6 Feet	Under Utility
Amelanchier	x grandifolia 'Autumn Brilliance'	Serviceberry	Cultivar - Native	Medium	20'	20'	Special Circumstances	6-8 Feet	Under Utility
Carpinus	betulus	European Hornbeam	Not Native	Medium	35'	25'	Recommended	6-8 Feet	
Carpinus	caroliniana	American Hornbeam	Native	Medium	25'	25'	Recommended	6-8 Feet	Under Utility
Celtis	occidentalis	Hackberry	Native	Large	55'	45'	Recommended	>8 Feet	
Cercidiphyllum	japonicum	Katsura Tree	Not Native	Med./Lg.	40'	40'	Recommended	>8 Feet	
Chionanthus	retusus	Chinese fringetree	Not Native	Small	20'	20'	Special Circumstances	4-6 Feet	Under Utility
Cladrastis	lutea	Yellowwood	Not Native	Medium	30'	40'	Special Circumstances	6-8 Feet	
Cornus	kousa	Dogwood, Kousa	Not Native	Sm./Med.	25'	25'	Special Circumstances		Under Utility
Crataegus	crus-galli inermis	Hawthorn, Cockspur Thornless	Cultivar - Native	Sm./Med.	25'	25'	Special Circumstances	4-6 Feet	Under Utility
Crataegus	laevigata 'Superba'	Hawthorn, Crimson Cloud	Cultivar - Not Native	Sm./Med.	25'	18'	Special Circumstances	4-6 Feet	Under Utility

Proposed Landscape Ordinance Revisions – Summary of Phone Call with Felino Pascual – 2/14/2017

- Proposed changes are generally better.
- Please add specific requirements for shrubs, evergreens for greenbelt landscaping (eg 1/50 lf for evergreens, 1/10 lf for shrubs) to make a requirement that they be used.
- Add a requirement for a raised curb to protect foundation landscaping, especially near sidewalks, paved areas with salt.
- Allow substitution of shrubs for trees (eg 1 tree equals 8 shrubs) to encourage more use of shrubs.
- Increase the space between the back of curb and plants from 3 feet to 5 feet for better protection, especially for large vehicles.
- Encourage a mix of plant types in designs

SAMPLE CALCULATIONS

Commercial Zoning: NCC, C, OS-1, OSC, OST, B-1, B-2, B-3

EX. A - EXISTING REGS					
Category		Basis	Requirement		# trees /ls area required
STREET TREES	Pkg	256 lf	1 canopy tree per	35 lf frontage	7 trees
	No pkg	185 lf	1 canopy tree per	45 lf frontage	4 trees
GREENBELT LANDSCAPING	Pkg	256 lf	1 large tree per	35 lf frontage	7 trees
	Pkg	256 lf	1 subcanopy tree per	20 lf frontage	13 trees
	No pkg	185 lf	1 large tree per	40 lf frontage	5 trees
	No pkg	185 lf	1 subcanopy tree per	20 lf frontage	9 trees
PARKING PERIMETER		789 lf	1 canopy tree per	35 lf	23 trees
PARKING INTERIOR - AREA		17,550 sf	pkg space area	10%	1,755 sf
		20,975 sf	aisle area	5%	1,049 sf
			excess over 50,000 sf		sf
PARKING INTERIOR - TREES		2,804 sf	1 tree per	75 sf req area	37 trees
Total					105 trees

EX. B - PROPOSED REGS					
Category		Basis	Requirement		# trees /ls area
STREET TREES ¹ OMIT	All	381 lf	1 canopy tree per	40 lf frontage	10 trees
GREENBELT LANDSCAPING ^{1,2}	Pkg	234 lf	1 large tree per	35 lf frontage	7 trees
	Pkg	234 lf	1 subcanopy tree per	20 lf frontage	12 trees
	No pkg	185 lf	1 large tree per	60 lf frontage	3 trees
	No pkg	185 lf	1 subcanopy tree per	40 lf frontage	5 trees
PARKING PERIMETER ^{3,4} OMIT		442 lf	1 canopy tree per	35 lf	13 trees
ACCESS DRIVE PERIMETER ⁵		- lf	1 canopy tree per	35 lf	- trees
PARKING INTERIOR - AREA		37,436 sf	parking area	7.5%	2,808 sf
			excess over 50,000 sf	1%	sf
PARKING INTERIOR - TREES		2,808 sf	1 tree per	200 sf req area	14 trees
Total					64 trees

1: Can deduct clear vision zones from frontage basis for street trees and access drives from frontage basis for greenbelt plantings

2: Can count foundation subcanopy trees toward greenbelt plantings if building front is at greenbelt limit

3: Can deduct parking frontage along right-of-way from perimeter basis if greenbelt canopy trees are within 15 feet of back of curbs of parking lot and equal the number of required trees for that frontage (at 1 per 35 lf).

4: Can deduct frontage along building from perimeter basis if building height within 20' of parking lot is at least 20 feet

5: Canopy greenbelt trees within 15' of access drive curb can be counted toward requirement.

SAMPLE CALCULATIONS

Commercial Zoning: NCC, C, OS-1, OSC, OST, B-1, B-2, B-3

EX. B - PROPOSED REGS - BUILDING BEHIND PARKING (1/2 OF REQ±)					
Category		Basis	Requirement		# trees /ls area required
STREET TREES¹	Pkg	219 lf	1 canopy tree per	40 lf frontage	5 trees
GREENBELT LANDSCAPING¹	Pkg	257 lf	1 large tree per	75 lf frontage	3 trees
	Pkg	257 lf	1 subcanopy tree per	40 lf frontage	6 trees
	Pkg	257 lf	1 shrub* per	20 lf frontage	13 shrubs
	Pkg	Berm or wall must be provided			
PARKING PERIMETER²		1,181 lf	1 canopy tree per	35 lf	34 trees
ACCESS DRIVE PERIMETER³		- lf	1 canopy tree per	35 lf	- trees
PARKING INTERIOR - AREA		50,000 sf	parking area	7.50%	3,750 sf
		15,676	excess over 50,000 sf	1%	157 sf
PARKING INTERIOR - TREES		3,907 sf	1 tree per	200 sf req area	20 trees

Total **68 trees**
13 shrubs

* Shrubs must have minimum mature diameter of 4 feet, height of 2 feet.

1: Can deduct clear vision zones from frontage basis for street trees and access drives from frontage basis for greenbelt plantings

2: Only 50% of parking lot perimeter trees are required along right-of-way frontage of parking lot

3: Can deduct parking frontage along right-of-way from perimeter basis if greenbelt canopy trees are within 15 feet of back of curbs of parking lot and equal the number of required trees for that frontage (at 1 per 35 lf).

SAMPLE CALCULATIONS

Industrial

Zoning: I-1, I-2

		EX. A - EXISTING REGS			
Category		Basis	Requirement		# trees /ls area
STREET TREES	Pkg	267 lf	1 canopy tree per	45 lf frontage	6 trees
	No pkg	365 lf	1 canopy tree per	55 lf frontage	7 trees
GREENBELT LANDSCAPING	Pkg	267 lf	1 large tree per	40 lf frontage	7 trees
	No pkg	365 lf	1 large tree per	40 lf frontage	9 trees
	Pkg	267 lf	1 subcanopy tree per	30 lf frontage	9 trees
	No pkg	365 lf	1 subcanopy tree per	35 lf frontage	10 trees
PARKING PERIMETER		884 lf	1 canopy tree per	35 lf	25 trees
PARKING INTERIOR - AREA		24,796 sf	pkg space area	7.0%	1,736 sf
		25,459 sf	aisle area	2.0%	509 sf
			excess over 50,000 sf	1.0%	
PARKING INTERIOR - TREES		2,245 sf	1 tree per	75 sf req area	30 trees
Total					103 trees

		EX. B - PROPOSED REGS			
Category		Basis	Requirement		# trees /ls area
STREET TREES ¹ OMIT	All	572 lf	1 canopy tree per	45 lf frontage	13 trees
GREENBELT LANDSCAPING ² (adj to parking)	Pkg	245 lf	1 large tree per	40 lf frontage	6 trees
	No pkg	365 lf	1 large tree per	60 lf frontage	6 trees
	Pkg	245 lf	1 subcanopy tree per	35 lf frontage	7 trees
	No pkg	365 lf	1 subcanopy tree per	40 lf frontage	9 trees
PARKING PERIMETER ^{3,4,5} OMIT		537 lf	1 canopy tree per	35 lf	15 trees
PARKING INTERIOR - AREA		49,333 sf	parking area	5.0%	2,467 sf
			excess over 50,000 sf	0.5%	- sf
PARKING INTERIOR - TREES		2,467 sf	1 tree per	200 sf req area	12 trees
Total					68 trees

- 1: Can deduct clear vision zones from frontage basis for street trees and access drives from frontage basis for greenbelt plantings
- 2: Can include foundation subcanopy trees in greenbelt plantings if building front is at greenbelt limit
- 3: Can subtract parking frontage on road from perimeter basis if greenbelt canopy trees are within 10 feet of back of curbs (of access way and parking lot) and the count of trees used equals the required number of trees at 1 per 35 lf frontage
- 4: Can subtract frontage along building from perimeter basis if building height within 20' of parking lot is at least 20 feet.
- 5: Canopy greenbelt trees within 15' of curb can be used to satisfy requirement.

SAMPLE CALCULATIONS

Industrial Subdivision

		EX. A - EXISTING REGS			
Category		Basis	Requirement		# trees /ls area
CANOPY/EVERGREEN TREES		632 lf	1 canopy tree per	35 lf frontage	18 trees
SUBCANOPY TREES		632 lf	3 subcanopy trees per	40 lf frontage	47 trees
PARKING FRONTAGE			1 evergreen hedge in front of parking		
PARKING PERIMETER		884 lf	1 canopy tree per	35 lf	25 trees
PARKING INTERIOR - AREA		17,319 sf	pkg space area	7.0%	1,212 sf
		32,941 sf	aisle area	2.0%	659 sf
PARKING INTERIOR - TREES		1,871 sf	1 tree per	75 sf req area	25 trees
Total					115 trees

		EX. B - PROPOSED REGS			
Category		Basis	Requirement		# trees /ls area
CANOPY/EVERGREEN TREES¹		572 lf	1 canopy tree per	45 lf frontage	13 trees
SUBCANOPY TREES^{2,3}		610 lf	1 subcanopy tree per	40 lf frontage	15 trees
SHRUBS		610 lf	1 shrub per	20 lf frontage	31 shrubs
PARKING FRONTAGE			1 evergreen hedge or 3 ft berm in front of parking		
PARKING PERIMETER^{4,5}		748 lf	1 canopy tree per	35 lf	21 trees
PARKING INTERIOR - AREA		49,338 sf	parking area	5.0%	2,467 sf
			parking area	0.5%	
PARKING INTERIOR - TREES		2,467 sf	1 tree per	200 sf req area	12 trees
Total					61 trees
					31 shrubs

1: Minimum of 1 per 50 lf must be placed along road as street trees

1: Can deduct clear vision zones from frontage basis for street trees and access drives from frontage basis for other greenbelt plantings

3: Can count foundation subcanopy trees toward required subcanopy plantings if building front is at setback limit

3: Can deduct parking frontage along right-of-way from perimeter basis if greenbelt canopy trees are within 15 feet of back of curbs of parking lot and equal the number of required trees for that frontage (at 1 per 35 lf).

5: Can subtract parking lot frontage along building from perimeter basis if building height within 20' of parking lot is at least 20 feet.

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

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1. **Intent.** The intent of this Section is to achieve landscapes with creative placement and distinctive-attractive designs that:

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- emphasize the preservation of existing natural resources, and the use of native plant materials, and a diversity of plant species;
- preserve and enhance existing woodlands, wetlands and natural open areas;
- which reduces impervious surfaces, enhances storm water management and prevents soil erosion and soil depletion;
- provide require appealing yet opaque visual and audible buffering between non-compatible land uses; and
- and to utilize the best ecological concepts and environmental objectives with preservation as a priority,

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

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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, and any addition to an existing building that is equal to or greater than a twenty five (25) 25% percent increase in the overall square footage of the building or four hundred (400) 400 square feet, whichever is less. With the exception of Section 5.5.5.FG, 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 the this Ordinance and the requirements of the City of Novi "Landscaping Design Manual," as adopted by the City Council by resolution and which may similarly be amended by Council resolution from time to time.

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(+) 3. **Landscape Requirements**

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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.

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- ii. Requirements for Obscuring Landscaped Earth Berms and Walls. In all locations which abut or are adjacent to any residential district (RA, R-1, 2, 3, 4, RT, RM-1, RM-2, MH and any TC district 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.

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5.5.3.A.ii Residential Adjacent to Non-Residential Berm Requirement Chart		
Use	Zoning	Berm Height
Parking	P-1 district Off-Street Parking Area	4 ft. 6 in. to 6 ft. high
Residential/Special Land Use	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	OST, OS-1, and OSC districts	4 ft. 6 in. high to 6 foot high
Commercial	B-1, B-2, B-3, RC, and NCC districts	6-6 ft to 8 ft. high
EXPO, EXO district	EXPO district	8 ft. to 10-10 ft high
Conference	C district	8-8 ft to 10-10 ft high
Freeway Service	FS district	8-8 ft to 10 ft. high
Town Center	(a.) TC and TC-1 districts	6-6 ft high
	(b.) TC-1 and RM-2 districts	6 ft. high wall
Industrial	I-1 district	10-15 ft. ht. berm, 6 ft. crest width, 80% winter/90% summer opacity (See Section 1905.43.14.5.Ee)
	I-2 district	15 ft. ht. berm, 15 ft. crest width, 80% winter/90% summer opacity (See Section 2002.43.15.2.C)
	<u>Special Land Use</u>	10 ft. ht. berm, 6 ft. crest width, 80% winter/90% summer opacity (See Section 3.14.5.E) too high?
Auto Wash, Drive-In Restaurants, Service Stations, and Planned Commercial Centers and Regional Shopping Centers	Where permitted or approved	10 ft. to 15-15 ft too high?
Hospital-Ambulance and Delivery Areas	Where permitted or approved	6 ft. 0 in. high
Utility Buildings, Stations, and/or Substations	Where permitted or approved	6 ft. 0 in. high

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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.

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iv. Placement. The berm 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.

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v. Berm Requirements. The obscuring berm requirements are as follows:

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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 elevation of the closest adjacent principal structures;
 - ii. The first floor elevation of the uses requiring screening;
 - iii. The elevation 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 principal structures within ~~two hundred (200)~~200 feet of the subject 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~~ 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 ~~5v.~~(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 ~~5v.~~(a), above.
- ~~c.~~ c. The obscuring berm shall have no greater than a maximum slope of ~~thirty-three~~ ~~33%~~ (~~33~~) percent. (~~Three~~ (~~3~~) feet of horizontal plane for each ~~one~~ (~~1~~) foot of vertical height.) More gradual slopes are strongly encouraged.
- ~~e.d.~~ d. Plants shall be specified for any "no mow" areas.
- ~~e.~~ e. The crest of the obscuring berm shall have a nearly flat horizontal area of at least ~~five~~ (~~5~~) 5 feet in width. (See the previous Berm Requirement Chart for exceptions.)
- ~~e.f.~~ f. The required earth berm shall be located at the lot line, except where such location would interfere with underground utilities or drainage.
- ~~f.g.~~ 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 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.

~~g.a. See Landscape Design Manual for additional requirements.~~

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.

~~See Landscape Design Manual for additional requirements.~~

~~h.i.~~

vi. Wall Requirements.

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- 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 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 ~~three and one-half (3½)~~ feet 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 (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 retaining walls are permitted for the purpose of terracing.

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

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vii. -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:

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- 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

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- 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

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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.

- a. 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.
- b. Berms shall comply with Section 5.5.3.A.v., with specific requirements as called out in Table 5.5.3.B.ii.f.
- c. The landscape area, if adjacent to parking and vehicular use areas ~~not between the right-of-way and the principal building~~, shall be planted to achieve a minimum opacity of ~~ninety (90) percent~~ 90% during the summer and ~~eighty (80) percent~~ 80% during the winter. ~~The landscape in this area shall provide an intermittent~~ continuous visual obstruction height of ~~thirty-six (36)~~ inches, plus the required canopy/evergreen or subcanopy trees required per Table 5.5.3.B.ii.f.
- ~~e.~~
- d. 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 requirements of the zoning district as specified in the Right-of-Way Landscape Screening Requirements Chart, and shall have a maximum slope of ~~thirty-three (33) percent (three feet of horizontal plane for each one (1) foot of vertical height)~~ 33% and a crest as specified in the Right-of-Way Landscape Screening Requirements Chart (Table 5.5.3.B.ii.f). ~~A landscape area shall be planted to provide visual interest and yet allow views into the site.~~
- e. 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 street address from a 30-40 degree angle as you approach the building.
- f. Parking areas in a Commercial/Office district with parking located between the principal building and right-of-way shall be planted at a reduced rate, per the greenbelt tree and subcanopy requirements called for in Table 5.5.3.B. (The berm and street tree requirements are the same as if the parking was not between the building and road).
- ~~d.~~

Residential	MH	Not adjacent to parking	34	42	43	(5.6.7) 4 (7)	35	25	4535
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Planned Suburban Low Rise	PSLR	Parking and buildings adjacent to a section line road right-of-way	50	4	3	Not permitted	35	20	35
		Parking adjacent to other right-of-ways	To Front of principal building	4	3	Not permitted	35	20	35

FOOTNOTES:

- (1) Round fractions to the nearest whole number for the required number of trees and shrubs.
- (2) Subcanopy trees are to be used under overhead utilities. Use 2-1.5 subcanopy trees for each one canopy tree requirement. If columnar/fastigiata varieties are used, 2 subcanopy 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.
- (3) Subcanopy trees can be in an informal or formal arrangement. Format spacing shall be 10-foot minimum to 15-foot maximum on center.
- (4) Shrubs, both deciduous and evergreen, 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).
- (4) 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.
- (6) Freestanding walls shall be constructed of masonry or concrete with all exterior sides of face brick with a suitable cap.
- (7) An ornamental fence with shrubs and brick piers may be used instead of a berm if approved by the Planning Commission in Use/Zoning as indicated above. A Planning Commission waiver is required for this substitution.
- (5) Ornamental Grasses, perennials, annuals shall be planted in massed groupings to highlight entrances and views of key elements.
- (6) With Road Commission for Oakland County approval where applicable.
- (7) Freestanding walls shall be constructed of masonry or concrete with all exterior sides of face brick with a suitable cap.
- (8) An ornamental fence with shrubs and brick piers may be used instead of a wall if approved by the Planning Commission in Use / Zoning as indicated above.
- (9) View channels into the site are to be used for safety visibility. Please provide sight lines to the building address for approaching vehicles at an approximately 30-40 degree angle.
- (10) 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.
- (11) 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.

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(11) ~~(12)~~ Street trees shall not be permitted within the 25-foot ~~clear vision triangle~~ corner clearance zone (Section 5.9). Roads with Road Commission for Oakland County (RCOC) jurisdiction shall utilize their standards for sight distance in locating street trees. If RCOC or does not approve any or all trees, those trees shall not be planted, with no penalty to the applicant.

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(12) 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

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(13) The width of one access aisle through the greenbelt per street frontage may be deducted from the basis of calculation (see illustration in footnote #17 below).

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(14) Subcanopy trees used in foundation landscaping may also count toward the right-of-way subcanopy requirement if the building is located at the rear of the required greenbelt width.

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(15) The width of the corner clearance zone may be deducted from the basis of the calculation for street trees for one access way per street frontage (see illustration in footnote #17 below).

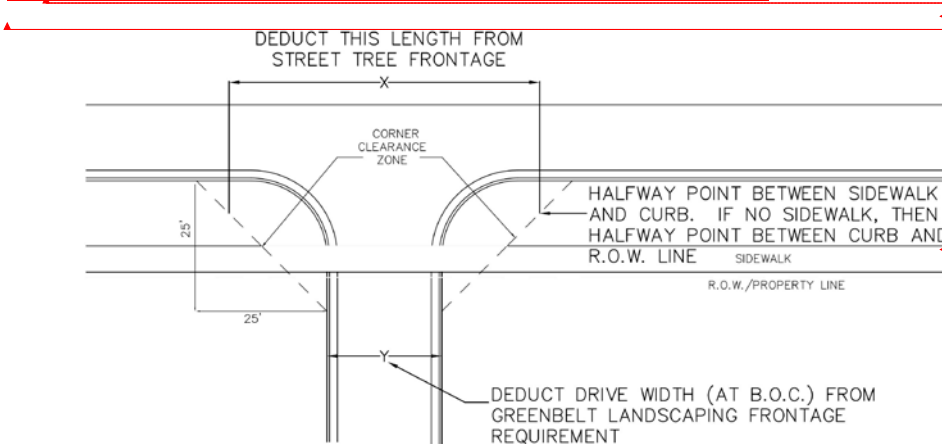
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(16) In the Town Center districts, deciduous canopy/large evergreen trees or subcanopy trees are required in the greenbelt, but not both.

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(17) Linear deductions allowed for street trees and right-of-way greenbelt landscaping:

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~~v.~~ iii. 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 Such action by the Commission shall be taken when:

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- 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, ~~require~~ 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

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b. ~~(see Footnote (8) of the Right-of-Way Landscape Screening Requirements Chart).~~

C. Parking Area Landscaping Requirements.

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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 to create aesthetically pleasing and environmentally enhanced parking areas.

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ii. General Requirements.

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

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

c. Creative island configuration is encouraged, such as islands between rows of parking in long, wide planting strips. See (see Parking Lot Configuration Diagrams in the City of Novi Landscape Design Manual for examples).

d. ~~The minimum width dimension of the islands is to be ten (10) feet from back of curb to back of curb.~~ The use of pedestrian walkways in parking lot islands is encouraged, if the islands' paths are ~~greater than or equal to~~ sufficiently wide and the seventeen-foot-in-width 10-foot planting area width is maintained.

e. Landscaped islands are to be installed with ~~six (6)~~ 6 inch curbs that are designed to protect landscaping from damage by vehicles. However, periodic openings in curbs, which do not exceed ~~two (2)~~ 2 feet in length, shall be permitted ~~only~~ for the purpose of conveying storm water run-off.

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

g. Each parking lot landscape island shall have:

(1) ~~Where a parking lot landscape area is required hereunder, it shall be no less than three hundred (300) square feet in area~~
A minimum of 200 square feet

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(2) A minimum of 200 square feet in unpaved area per tree planted in an island. The unpaved area must be immediately adjacent to the tree(s).

(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.

- ~~b.h.~~ For any development other than a single one-family or two-family dwelling, tfor any development other than a single one-family dwelling or single 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).
- ~~e.i.~~ Wheel stops or raised curbing shall be installed to prevent vehicles from encroaching more than ~~two (2)2~~ feet into any parking landscape area. When adjacent 90 degree parking stalls are reduced from 19 to 17 feet in length, the rRequired ~~six (6)6~~ inch curbs shall be reduced to ~~four (4)4~~ inches in height ~~when the adjacent ninety (90) degree parking stalls are proposed to be reduced from nineteen (19) feet to seventeen (17) feet in length. This applies to both landscape and sidewalk overhangs. Also, instances w~~here vehicles overhang a sidewalk, the ~~parking stall may be reduced in length to seventeen (17) feet, the curbing shall be reduced to four (4) inches in height, and the~~ sidewalk shall have a minimum width of ~~seven (7)7~~ feet.
- ~~j.~~ No plantings with a mature height greater than ~~twelve (12)12~~ inches shall be within ~~ten (10)10~~ feet of fire hydrants. Plant materials shall not block the visibility of the hydrant and be no taller than 12 in inches when below a Fire Department Connection.
- ~~e.k.~~ 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.
- ~~e.l.~~ 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 the plantings are salt-tolerant and the islands are designed to provide drainage adequate for survival of the island plantings and meet all City of Novi engineering standards.
- ~~f.m.~~ Paint, ~~c~~Contrasting brick or concrete pavers may be used to delineate stall lines within parking areas.
- ~~e.n.~~ Any area within a parking lot not dedicated to parking use or driveways, exceeding ~~one hundred (100)100~~ square feet, shall be landscaped with a minimum of lawn or other living ground cover.
- ~~h.o.~~ All landscaped areas required herein shall consist of a mix of plant materials such as canopy deciduous trees, subcanopy trees, shrubs, groundcovers, ornamental grasses and perennials.

p. 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. ~~Islands or~~ that project into the parking lot from the perimeter of the parking area, ~~if they shall~~ meet the requirements of this Section.

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

(3) 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.

(4) No bay of parking (defined herein as a single row of side by side parking spaces) greater than ~~fifteen (15)~~ 15 parking spaces in length shall be provided ~~unless a landscape island is provided at a minimum interval of one island per fifteen (15) parking spaces.~~

(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 must be provided.

~~(6) The design and layout of all parking lots and islands shall be subject to review and approval by the City of Novi.~~ In order to count toward the total landscape area provided, an island must contain at least 1 deciduous canopy tree.

k.

iii. 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.

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

	A	B	C	D	E
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Category*	Total square footage of parking spaces not including access aisles equals landscaped islands for VUA areas less than or equal	Square footage of all additional paved vehicular use areas (Not including A) under 50,000 square feet equals Total square footage of landscaped islands for VUA beyond the	Square footage of all additional paved vehicular use areas (Not including A or B) over 50,000 square feet	Total Square footage of landscaped islands required equals number of interior landscape deciduous canopy trees	Perimeter Deciduous Number of Canopy Trees required equals:
Footnotes	1,2,3	1,2,3		4,5,7	6,7,8
1	VUA × 7.5%	(VUA-50000) × 1.0%	A+B × 1%	Total (A+B) / 35	Perimeter (LF) / 35
2	VUA × 7.5%	(VUA-50000) × 0.5%	A+B × 0.5%	(A+B) / 200	Perimeter (LF) / 35

*Category 1 = OS-1, OSC, OST, B-1, B-2, B-3, C, NCC, EXPO, FS, TC, TC-1, RC Districts and Special Land Uses
 *Category 2 = I-1, I-2

Notes to table:Footnotes:

- (1) Round fractions of trees to the nearest whole number.
- (2) A minimum square footage as set forth in Section 5.5.3.C.ii.b is required. Vehicular Use Area (VUA) to be used in this calculation includes parking spaces, loading areas and access aisles. It does not include drives to the Vehicular Use Area. See illustration below.
- (3) All calculations are to be rounded to nearest whole number (do not use decimal places). For example, if A = 95.96, it would be rounded to 96 before continuing to the next calculation. 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. 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.
- (4) Corner areas at the edges of parking areas may also be counted toward square footage of island space.
- (4) Perimeter greenspace must contain canopy trees equal in quantity to one (1) per thirty five (35) linear feet as a minimum. Paved vehicular use areas includes loading/unloading areas. Deciduous canopy

g. Perimeter trees are required for parking areas and access drives to parking areas at a rate of 1 tree per 35 lf of perimeter. See illustration for determination of perimeter length.

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- (1) Parking lot frontages with existing trees within 15 feet of the parking lot perimeter (as measured to the tree trunk) may be subtracted from the basis of calculation, as long as the trees provided meet or exceed the requirement of 1 tree per 35 lf.
- (2) If the front edge of a parking lot is at the rear edge of the front greenbelt buffer, and canopy trees, in that greenbelt, existing or proposed, are within 15 feet of the parking lot's back of curb (as measured to the trunk) that section of perimeter may be subtracted from the perimeter length if the number of trees proposed equals the requirement of 1 per 35 lf.

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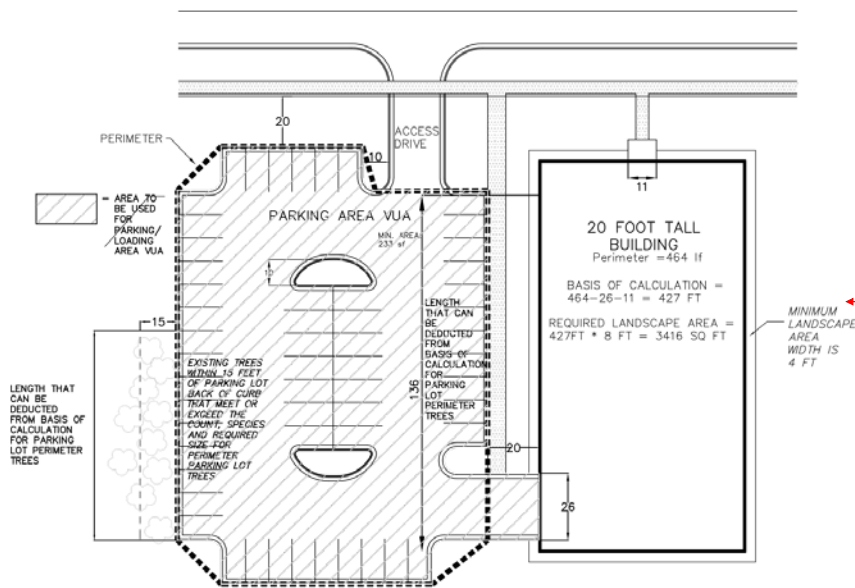
(3) In the case of a building in a Commercial/Office district (NCC, C, OS-1, OSC, OST, B-1, B-2 or B-3) where parking is between the right-of-way and at least 67% of the primary building, only 50% of the normal perimeter parking requirement is required along the parking lot edge that faces the right-of-way. The same allowance for deduction cited in (2) above can also apply in this case.

P. lot perimeter?

(4) Greenbelt canopy trees within 15 feet of the back of curb of an access drive may count toward the access drive perimeter tree requirement.

(5) If a parking lot edge is within 20 feet of a building 20 feet or taller, perimeter trees are not required along the building's frontage facing the parking lot. That length can be subtracted from the basis of calculation.

(6) As they may assist with screening between properties, large evergreen trees may be used for up to 25% of the required perimeter. 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.



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- iv. 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

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- i. Intent. The intent of this subsection is to provide greenliving, landscape space around buildings in order to help integrate buildings 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:

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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 along the building) and vehicular entrance ways to the building interior (i.e. garage doors) by eight feet. See the diagram below.

too restrictive

b. Landscaped planting beds shall be placed immediately adjacent to the building on all at least 80% of the building foundation four sides and have a minimum width dimension of four feet. 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.

~~c.~~ All foundation landscaping areas shall be labeled as such on the landscape plan, with the area in square feet of that area.

d. For the front and any other facades visible from a public street, a minimum of sixty (60) percent 60% of the exterior building perimeter will shall be greenspace planted with a mix of trees, shrubs and groundcovers, perennials, grasses, annuals and bulbs. Canopy deciduous, Deciduous canopy and/or large evergreen trees and subcanopy 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.

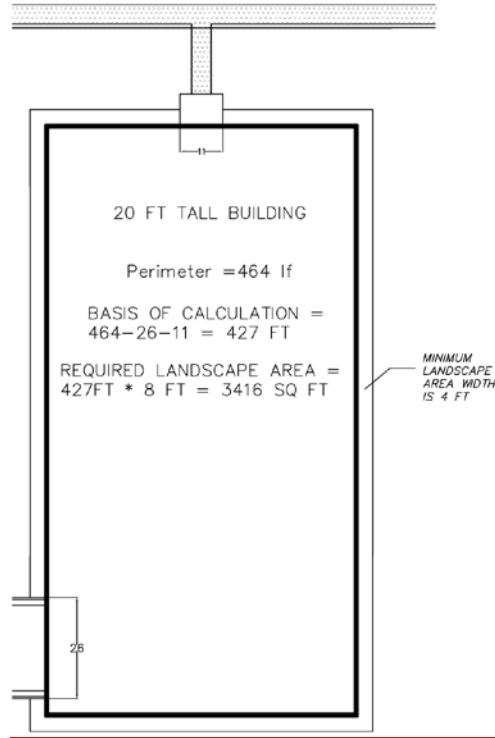
- b.f. If the front of the building is at the rear line of the required right-of-way greenbelt, trees included in the foundation plantings for the front of the building may also count toward the required greenbelt plantings.
- e.g. With respect to projects within the TC and TC-1 districts, the Planning Commission may waive the ~~eight (8)~~8 foot width calculation requirements, if significant additional planting and/or decorative paving 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. -There shall be greenspace adjacent to patios.
- j. 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.
- e.k. 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.

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PC concurs

~~e. In instances where the building has a first floor overhang greater than two (2) feet, the landscaping required under this~~

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subsection shall begin at the outside edge of the overhang.



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:

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iii. Commission when:

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a. Particular pedestrian circulation safety concerns inhibit the application of this requirement; or

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b. Elements or activities that are ancillary to the primary building's function inhibit the application of this requirement; or

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b. — Elements or activities that are ancillary to the primary building's function inhibit the application of

c. — this requirement; or

c. Landscaping has been proposed in other areas on the site adjacent to the building that offset the loss.

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E. Detention/Retention/Sedimentation Basin Landscape Requirements.

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-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 (see Ordinance Code chapter 12, Storm Water Management).

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F. Subdivision Planting Requirements

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i. Single-Family Platted Subdivisions or Residential Site Condominiums

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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.

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(1) -That portion of these lots abutting major thoroughfares shall include an approved screen planting and 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 ~~forty~~(40)40 feet.

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

~~b-~~(3) -The screening -plantings shall be installed at the time of construction of the subdivision.

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c. Street Trees and Boulevard Planting

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(1) Street trees shall be provided in front of each lot in accordance with the standards set forth in the Landscape Design Manual.

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(2) A Street Tree Financial Guarantee will be collected at a rate of ~~four~~-hundred (400) dollars per street tree 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 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.

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if required shouldn't you also perform the review after two years w/o request?

(2)(3) Trees shall be guaranteed by the developer for two (2) growing seasons after installation. All unhealthy and dead plant material shall be replaced by the developer within six (6) months following notice, or the next appropriate planting period, whichever occurs first. All replacement trees shall be guaranteed by the developer for an additional two (2) years after which time a final inspection will be conducted at the request of developer. 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.

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

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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 three (3) feet to six (6) feet as measured from the established street grade. See Landscape Design Manual for additional requirements regarding the type and size of plantings.

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(4)(2) Island and boulevard plantings do not count toward the required street tree totals.

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(3) If an island's or entry's landscaping is to be re-landscaped by the subdivision association, a landscape plan shall be submitted to the City for administrative approval.

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(2) ii. 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.

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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:

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(1) Three (3) deciduous canopy trees or large evergreen trees for each dwelling unit on the first floor shall be provided. Evergreens shall be no closer than twenty (20) feet from the roadway.

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- (2) In addition, there shall be one ~~deciduous~~ canopy ~~deciduous~~ tree along interior roads for every ~~thirty five (35)~~35 feet of lineal interior roadway, 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 ~~deciduous~~ trees shall be a minimum of ~~twenty five (25)~~25 feet and a maximum of ~~thirty five (35)~~35 feet. In case of overhead utility lines, ~~deciduous~~ subcanopy ~~deciduous~~ trees can be substituted for ~~deciduous~~ canopy ~~deciduous~~ trees at a rate of 1.5 subcanopy tree for each 1 canopy tree. (See Single- Family Platted Subdivisions or Residential Site Condominiums Sections for specific requirements.)
- (3) A mixture of shrubs ~~and~~ subcanopy trees ~~and~~ groundcovers, perennials, annuals, and ~~or~~ ornamental grasses shall be provided as foundation plantings at the front of each ground floor unit covering at least ~~sixty (60)~~35% percent of the front building facade.

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)~~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)~~2. Required Landscape Screening, ~~Requirements~~ where adjacent to residential, 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.
- ~~(3)~~3. Building Foundation Landscape Requirements per Section 5.5.3.D shall apply.
- ~~(4)~~4. Screening of outdoor storage, motor vehicles, off street parking, and areas used to [for] vehicle repair, deliveries, unloading, loading or transport is to be accomplished per Sections 3.14, 3.15, 4.55, 4.56 and Section 5.5.
- ~~(5)~~5. See the Landscape Design Manual for additional requirements for individual lots.

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~~iv.iii. Detention/Retention/Sedimentation Basin Landscape Requirements. All detention basins shall be planted with 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 maintenance shall be provided (see Ordinance Code, Storm Water Management).~~

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

- i. Street trees shall be provided in front of each single-family parcel, in accordance with the standards set forth in the Landscape Design Manual for lots within single-family platted subdivisions.
- ii. The developer/builder or homeowner shall depict the street trees on the plot plan, which shall be reviewed by the City.
- iii. A Street Tree Financial Guarantee will be collected at a rate of \$400 per street tree required prior to the issuance of a building permit, in accordance with the provisions of Chapter 26.5 of the Novi Code of Ordinances.
- iv. No Final Certificate of Occupancy will be granted until the street trees have been planted by the developer/builder or homeowner and inspected by the City. Once the trees have been inspected, the Financial Guarantee will be reduced to a Maintenance Bond equal to 25% of the material cost of the trees per the Community Development standard costs, or a minimum of \$1000, whichever is higher. The Street Tree Financial Guarantee will not be reduced until the trees have been planted and accepted by the City.
- v. Trees shall be guaranteed by the developer/builder or homeowner for 2 growing seasons after installation. All unhealthy and dead trees shall be replaced by the developer/builder or homeowner within 3 months following notice, or the next appropriate planting period, whichever occurs first.
- vi. All replacement trees shall be guaranteed by the developer/builder or homeowner for an additional 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.

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request?

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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;

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- 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 ~~one and one-half (1.5x)~~ times the cost 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 ~~thirty (30)~~ 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 of ~~two (2)~~ 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 financial guarantee is only 100% of the \$400 per tree.**

Inspections. A City representative will perform landscape inspections following a request from the developer. The inspection time period is from ~~March-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 ~~March-31~~ April 15, a financial guarantee is to be provided based on ~~two 1.2 (2.0)~~ times the ~~percent incomplete~~ material cost of incomplete items for a Temporary Certificate of Occupancy as outlined above. Beginning ~~March-31~~ April 15, the Applicant then has ~~thirty (30)~~ 30 days to complete items or the City will cash in the amount being held and finish the job with the financial guarantee funds.

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D. **Establishment Period.** The establishment period for the plant material guarantee will occur beginning at the Final Certificate of Occupancy inspection approval and continue to two (2) years from that date. All plantings shall be properly planted as to be in a healthy, growing condition at commencement of the establishment period. At the end of the establishment period, any plantings, which are twenty (20) percent 20% dead or greater, shall be replaced.

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E. **Notice of Installation** 20% will be tough to quantify

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- 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. Minor changes due to seasonal planting problems and lack of plant availability 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. 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 from approved plan, such that the provided plan is not predominately representative of the actual installed plantings, the landscape plan shall be revised and resubmitted for plan approval a revised or as-built plan and an additional review fee will be required.

iii.

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

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- i. ~~Street trees shall be provided in front of each single-family parcel, in accordance with the standards set forth in the Landscape Design Manual for lots within single-family platted subdivisions.~~
- ii. ~~A Street Tree Financial Guarantee will be collected at a rate of four-hundred (400) dollars per street tree required prior to the issuance of a building permit, in accordance with the provisions of Chapter 26.5 of the Novi Code of Ordinances. No Final Certificate of Occupancy will be granted until the trees have been planted by the developer/builder or homeowner and inspected by the City. Trees shall be guaranteed by the developer/builder or homeowner for~~

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~~two (2) growing seasons after installation. 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, whichever occurs first. 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 developer/builder or homeowner. The Street Tree Financial Guarantee will not be reduced until the trees have been planted and accepted by the City.~~

~~iii. The developer/builder or homeowner shall depict the street trees on the plot plan, which shall be reviewed by the City.~~

~~(6)6.~~ **Maintenance**

A. Maintenance of required plantings by the owner shall be carried out so as to present a healthy, neat and orderly appearance, free from refuse and debris.

B. To insure proper maintenance and as a condition of Final Site Plan approval, the property owner shall 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.

C. Such instrument shall also include provisions that:

i. all unhealthy and dead material shall be replaced within ~~one (1)~~ 1 year, or the next appropriate planting period, whichever occurs first;

ii. all landscaped areas shall be provided with an ~~irrigation system~~ method of providing water for the landscaping during establishment . A permanent irrigation system must be installed if plantings that require a consistent source of water for survival are part of the landscape;

iii. tree stakes, guy wires and tree wrap are to be removed after one winter season;

iv. plantings shall be guaranteed for ~~two (2)~~ 2 growing seasons after the date of the acceptance of the installation; and

B-v. 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 ~~the~~ 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.

never have liked this requirement

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D. 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.

~~(E)~~ E. 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.

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From: [Marc Russell](#)
To: [Meader, Rick](#)
Subject: Landscape design Manual
Date: Thursday, February 16, 2017 11:10:37 AM
Attachments: [Landscape Design Manual-original - chgs w markups-dec 2016.pdf](#)

Rick:

Comments are in red text box

**Marc R. Russell, Landscape Architect
Principal**

RUSSELL DESIGN, INC.

Landscape Architecture/ Urban Design/ Site Planning

114 Rayson Street, Suite 2A

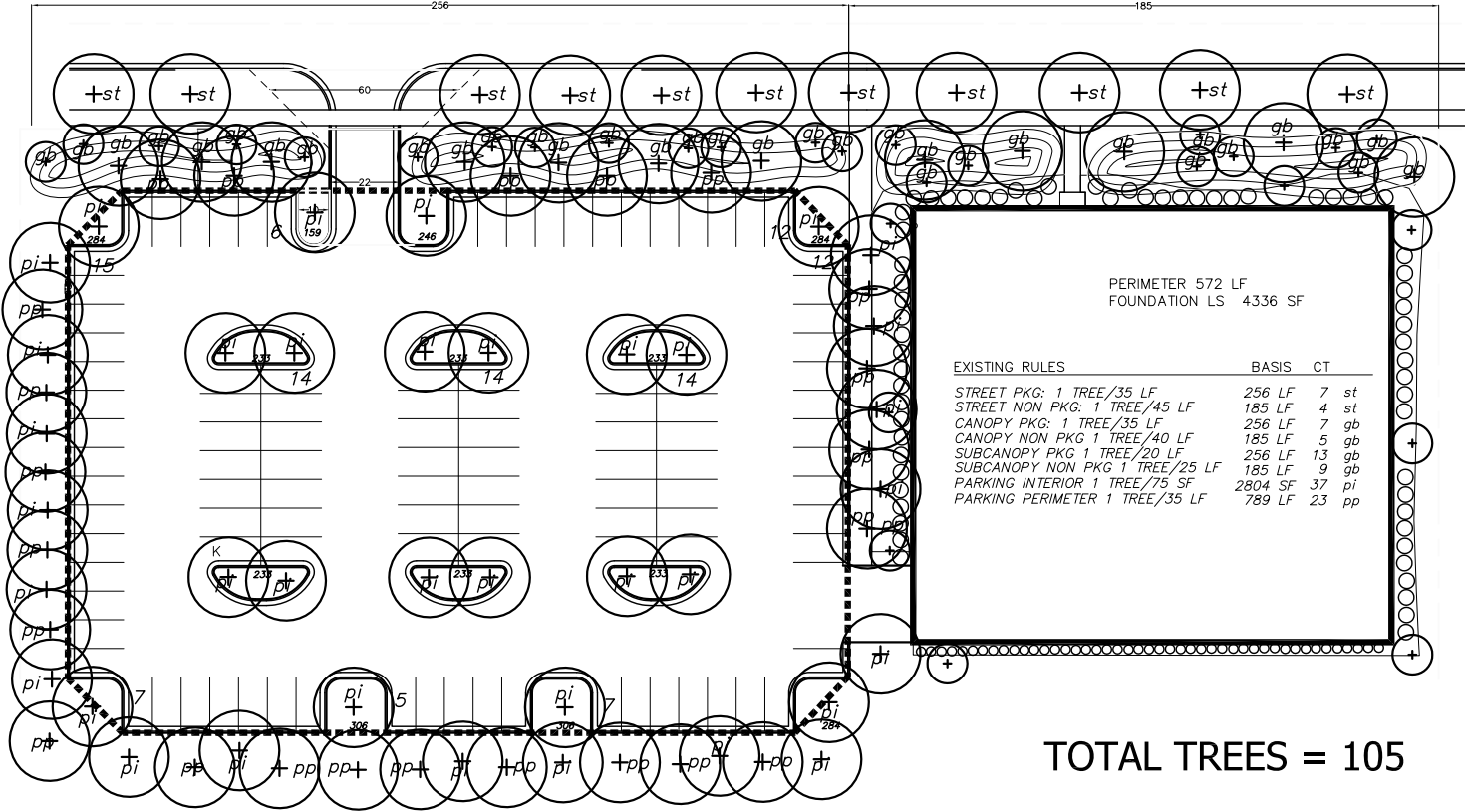
Northville, Michigan 48167

T:(248) 374-3222

M:(248) 231-0895

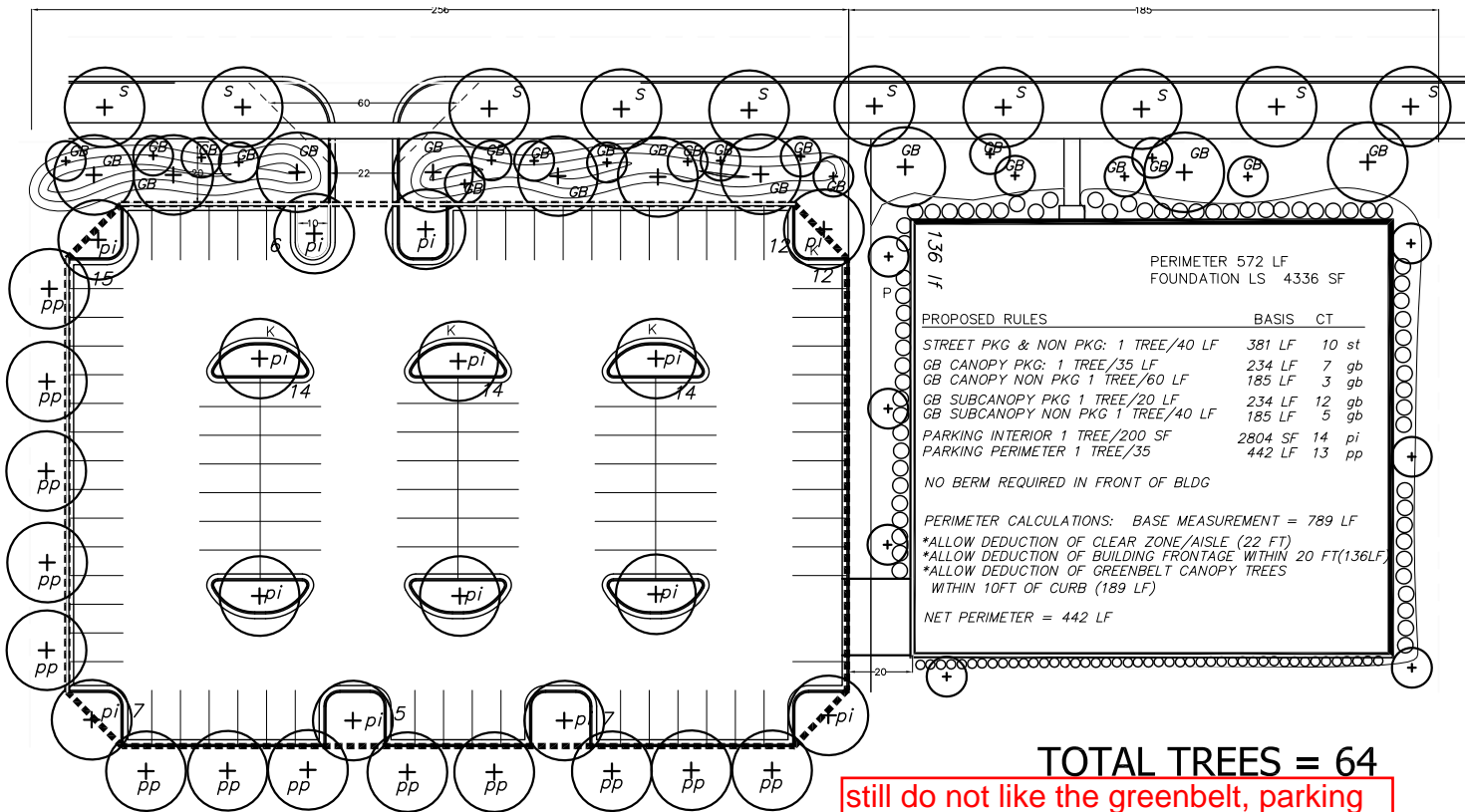
www.russelldesign.net

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TOTAL TREES = 105

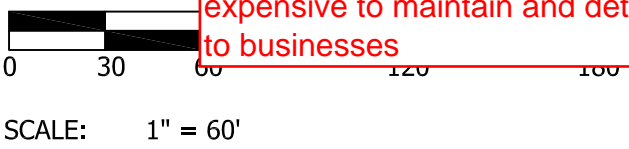
EXISTING RULES

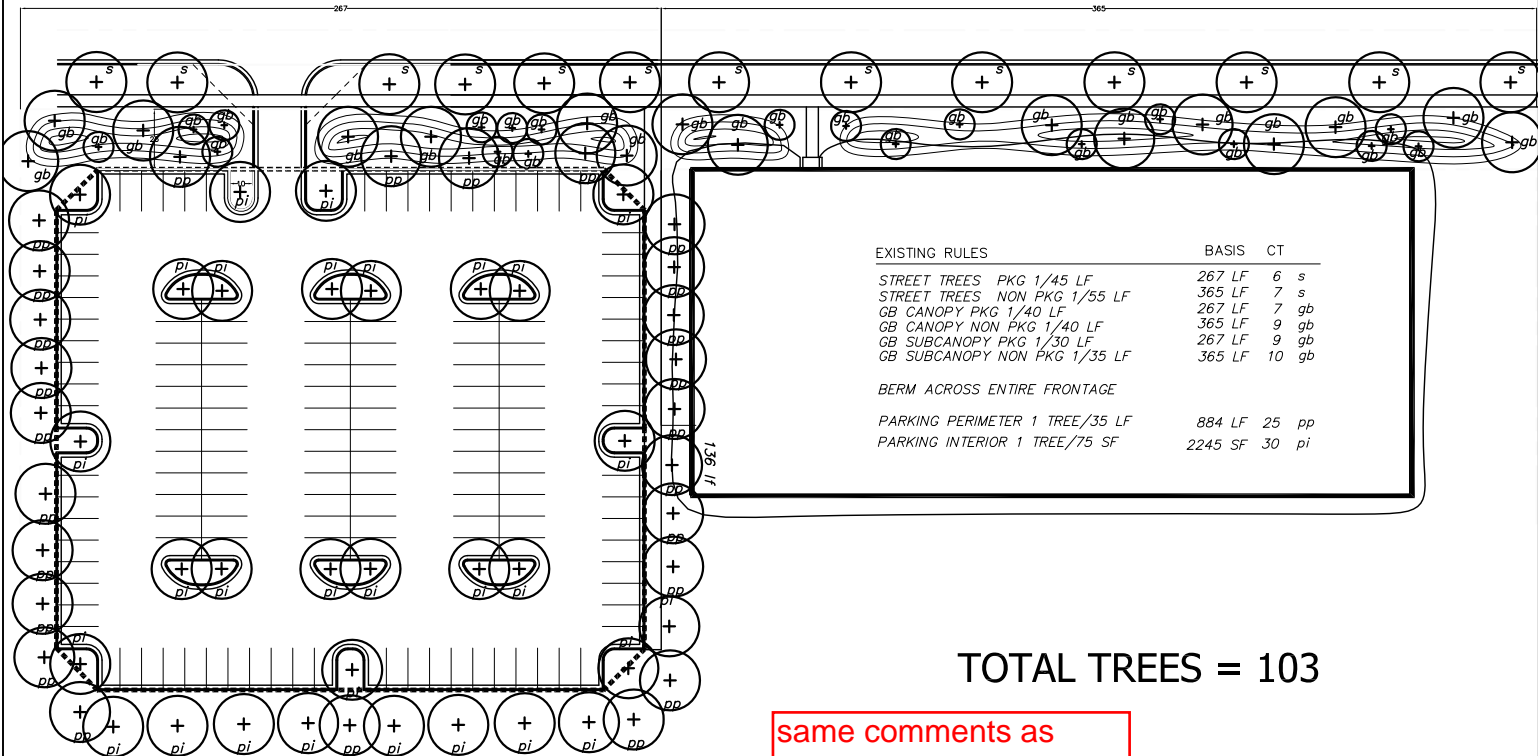


TOTAL TREES = 64

still do not like the greenbelt, parking lot perimeter and parking lot interior counted independently. Result is expensive to maintain and detrimental to businesses

PROJECT: PROPOSED LANDSCAPING ORDINANCE
 SHEET: COMMERCIAL - 1
 ZONING SEC. 5.5.3.B and 5.5.3.C
 DATE: 12/7/2016

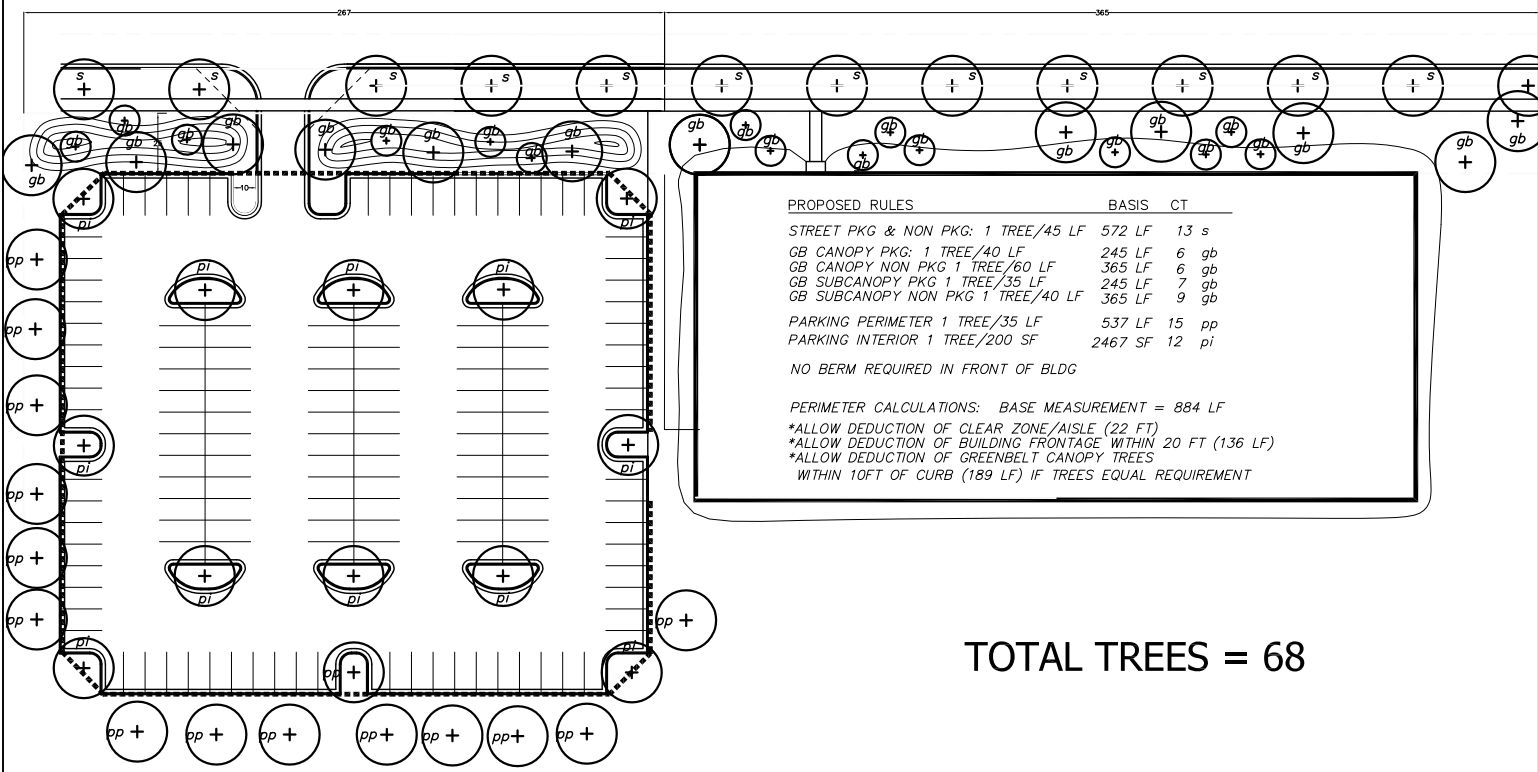




TOTAL TREES = 103

same comments as commercial

EXISTING RULES



TOTAL TREES = 68

PROPOSED RULES

PROJECT: PROPOSED LANDSCAPING ORDINANCE
 SHEET: INDUSTRIAL
 ZONING SEC. 5.5.3.B and 5.5.3.C
 DATE: 12/7/2016



SCALE: 1" = 80'



Part IV. Street Tree List

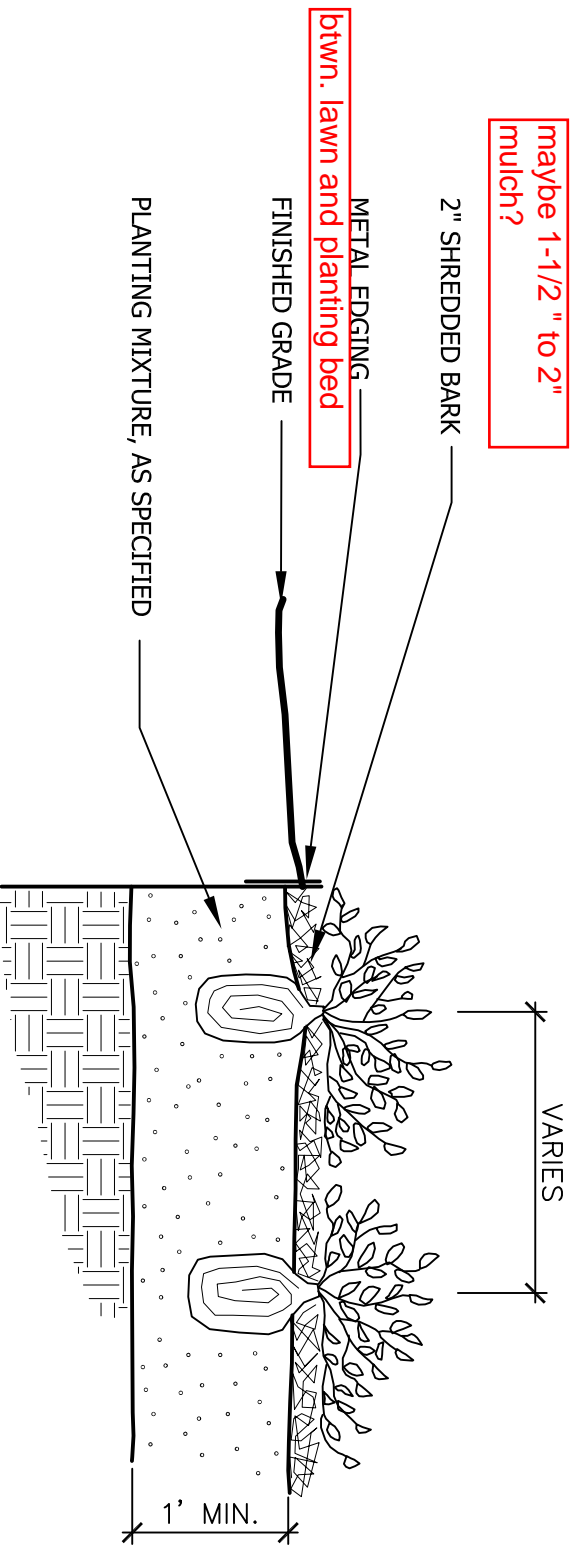
NOVI STREET TREE LIST

Genus	Species - cultivar	Common Name	Nativeness to Michigan	Size	App Ht	App Spread	Use	Treelawn Size	Overhead Utilities
Acer	buergerianum	Maple, Trident	Not Native	Small	20'	25'	Special Circumstances	4-6 Feet	Under Utility
Acer	campestre	Maple, Hedge	Not Native	Sm./Med.	30'	30'	Recommended	4-8 Feet	
Acer	freemanii	Maple, Freeman	Cultivar - Native	Large	50'	40'	Special Circumstances	>8 Feet	
Acer	ginnala	Maple, Amur	Not Native	Small	20'	20'	Special Circumstances	4-6 Feet	Under Utility
Acer	griseum	Maple, Paperbark	Not Native	Sm./Med.	25'	20'	Special Circumstances	4-6 Feet	Under Utility
Acer	rubrum	Maple, Red	Native	Large	50'	40'	Recommended	>8 Feet	
Acer	rubrum 'Bowhall'	Maple, Red Bowhall	Cultivar - Native	Med./Lg.	40'	15'	Special Circumstances	>8 Feet	
Acer	rubrum 'Sunset'	Maple, Red Sunset	Cultivar - Native	Large	45'	35'	Recommended	>8 Feet	
Acer	saccharum	Maple, Sugar	Native	Large	60'	40'	Recommended	>8 Feet	
Aesculus	hippocastanum	Horsechestnut	Not Native	Large	80'	35'	Special Circumstances	>10 Feet	
Amelanchier	arborea	Serviceberry	Native	Small	10'	6'	Special Circumstances	4-6 Feet	Under Utility
Amelanchier	x grandifolia 'Autumn Brilliance'	Serviceberry	Cultivar - Native	Medium	20'	20'	Special Circumstances	6-8 Feet	Under Utility
Carpinus	betulus	European Hornbeam	Not Native	Medium	35'	25'	Recommended	6-8 Feet	
Carpinus	caroliniana	American Hornbeam	Native	Medium	25'	25'	Recommended	6-8 Feet	Under Utility
Celtis	occidentalis	Hackberry	Native	Large	55'	45'	Recommended	>8 Feet	
Cercidiphyllum	japonicum	Katsura Tree	Not Native	Med./Lg.	40'	40'	Recommended	>8 Feet	
Chionanthus	retusus	Chinese fringetree	Not Native	Small	20'	20'	Special Circumstances	4-6 Feet	Under Utility
Cladrasitis	lutea	Yellowwood	Not Native	Medium	30'	40'	Special Circumstances	6-8 Feet	
Cornus	kousa	Dogwood, Kousa	Not Native	Sm./Med.	25'	25'	Special Circumstances		Under Utility
Crataegus	crus-galli inermis	Hawthorn, Cockspur Thornless	Cultivar - Native	Sm./Med.	25'	25'	Special Circumstances	4-6 Feet	Under Utility
Crataegus	laevigata 'Superba'	Hawthorn, Crimson Cloud	Cultivar - Not Native	Sm./Med.	25'	18'	Special Circumstances	4-6 Feet	Under Utility

Genus	Species - cultivar	Common Name	Nativeness to Michigan	Size	App Ht.	App Spread	Use	Treelawn Size	Overhead Utilities
Crataegus	phaenopyrum 'Treeform'	Hawthorn, Washington	Cultivar - Not Native	Sm./Med.	25'	20'	Special Circumstances	4-6 Feet	Under Utility
Eucommia	ulmoides	Hardy Rubber tree	Not Native	Large	45'	40'	Special Circumstances	>8 Feet	
Ginkgo	biloba	Ginkgo (Male Only)	Not Native	Large	60'	30'	Recommended	>8 Feet	
Gleditsia	tricanthos	Honeylocust	Native	Medium	35'	35'	Recommended	6-8 Feet	
Gleditsia	triacanthos inermis 'Impcole'	Honeylocust, Imperial	Cultivar - Native	Medium	35'	35'	Recommended	6-8 Feet	
Gleditsia	triacanthos inermis 'Shademaster'	Honeylocust, Shademaster	Cultivar - Native	Large	45'	35'	Recommended	>8 Feet	
Gleditsia	triacanthos inermis 'Skycole'	Honeylocust, Skyline	Cultivar - Native	Large	45'	35'	Recommended	>8 Feet	
Gymnocladus	dioicus	Kentucky Coffeetree	Native	Large	60'	40'	Special Circumstances	>8 Feet	
Koeleruteria	paniculata	Goldenrain-tree	Not Native	Medium	30'	30'	Special Circumstances	6-8 Feet	
Liriodendron	tulipifera	Tuliptree	Native	Large	75'	40'	Recommended	>10 Feet	
Maackia	amurensis	Manchurian maackia	Not Native	Small	20'	20'	Special Circumstances	4-6 Feet	Under Utility
Malus spp.	'Snowdrift', 'White Angel', 'Profusion'	Crabapple	Cultivar - Not Native	Small	20'	20'	Special Circumstances	6-8 Feet	Under Utility - use lg. upright varieties
Nyssa	sylvatica	Black Gum	Native	Medium	35'	20'	Special Circumstances	6-8 Feet	
Ostrya	virginiana	Hophornbeam, American	Native	Medium	35'	25'	Special Circumstances	6-8 Feet	
Phellodendron	amurense 'Macho'	Amur Corktree, Macho	Not Native	Med./Lg.	40'	30'	Recommended	>8 Feet	
Platanus	x acerfolia	London planetree	Cultivar - Not Native	Large	55'	40'	Special Circumstances	>10 Feet	
Quercus	acutissima	Oak, Sawtooth	Not Native	Large	50'	50'	Special Circumstances	>8 Feet	
Quercus	alba	Oak, White	Native	Large	65'	65'	Recommended	>8 Feet	
Quercus	bicolor	Oak, Swamp White	Native	Large	45'	45'	Recommended	>8 Feet	
Quercus	borealis (rubra) Oak	Oak, Northern Red	Native	Large	60'	45'	Recommended	>8 Feet	
Quercus	coccinea	Oak, Scarlet	Native	Large	65'	40'	Recommended	>10 Feet	
Quercus	imbricaria	Oak, Shingle	Native	Large	60'	55'	Special Circumstances	>8 Feet	
Quercus	macrocarpa	Oak, Burr	Native	Large	65'	60'	Recommended	>10 Feet	

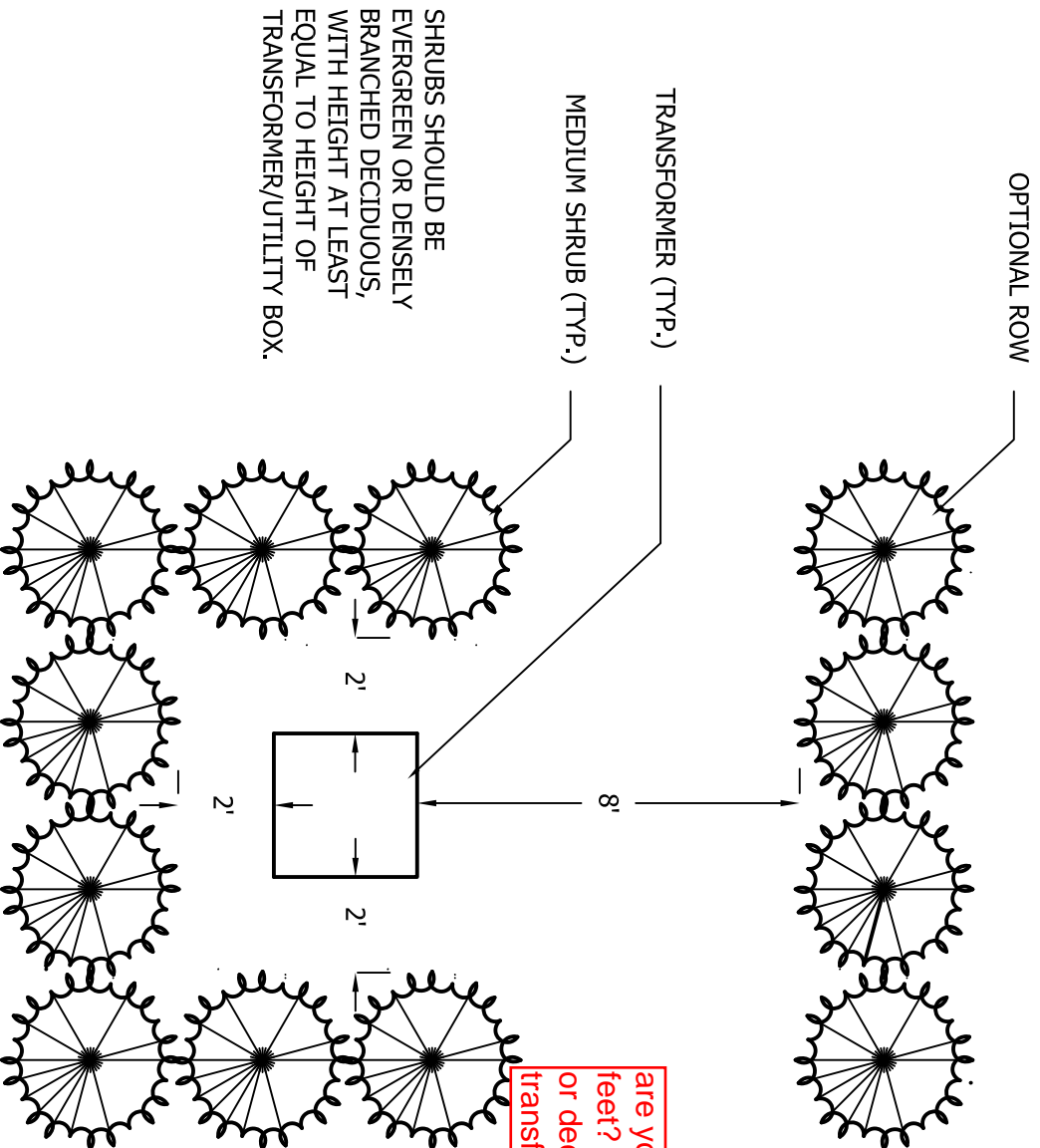
Genus	Species - cultivar	Common Name	Nativeness to Michigan	Size	App Ht	App Spread	Use	Treelawn Size	Overhead Utilities
Quercus	phellos	Oak, Willow	Not Native	Large	50'	35'	Special Circumstances	>8 Feet	
Quercus	robur	Oak, English	Not Native	Large	50'	40'	Special Circumstances	>8 Feet	fastigate/columnar varieties in special
Sophora	japonica	Pagoda Tree	Not Native	Large	45'	35'	Recommended	>8 Feet	
Syringa	reticulata	Japanese Tree Lilac	Not Native	Small	20'	15'	Recommended	4-6 Feet	Under Utility
Tilia	americana	American Basswood	Native	Large	70'	40'	Recommended	>8 Feet	
Tilia	americana 'Redmond'	Linden, Redmond	Cultivar - Native	Medium	35'	25'	Recommended	6-8 Feet	
Tilia	cordata	Linden, Littleleaf	Not Native	Large	50'	35'	Recommended	>8 Feet	
Tilia	euchlora	Linden, Crimean	Not Native	Med./Lg.	40'	35'	Recommended	>8 Feet	
Tilia	tomentosa	Linden, Silver	Not Native	Large	60'	35'	Recommended	>8 Feet	
Ulmus	americana 'New Harmony'	Elm, New Harmony	Cultivar	Large	65'	60'	Special Circumstances	>8 Feet	
Ulmus	americana 'Valley Forge'	Elm, Valley Forge	Cultivar	Large	65'	60'	Special Circumstances	6-8 Feet	
Ulmus	x 'Homestead'	Elm, Homestead	Cultivar - Not Native	Large	55'	35'	Special Circumstances	>8 Feet	
Ulmus	x 'Frontier'	Elm, Frontier	Cultivar - Not Native	Med./Lg.	40'	30'	Special Circumstances	>8 Feet	
Zelkova	serrata 'Green Vase'	Zelkova, Green Vase	Not Native	Large	50'	40'	Special Circumstances	>8 Feet	
Zelkova	serrata 'Village Green'	Zelkova, Village Green	Not Native	Med./Lg.	40'	38'	Special Circumstances	>8 Feet	

greenspire linden?



PERENNIAL PLANTING DETAIL

Not to scale



are you sure the clearance is not 3 feet? Is the medium shrub evergreen or deciduous? Height relative to transformer height?

TRANSFORMER SCREENING DETAIL

Not to scale

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CITY OF NOVI

LANDSCAPE DESIGN MANUAL

(Adopted by City Council Resolution dated- 8-25-03) – revised Dec-2016

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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
<u>3.6.M:</u>	<u>Wetland/Watercourse setback</u>
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

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<u>3.23.1.vi</u>	<u>Conference District</u>
<u>3.27.1. C,D,F</u>	<u>TC and TC-1 Required Conditions</u>
<u>3.28.6&10</u>	<u>One Family Clustering Option</u>
<u>3.29.2</u>	<u>RUD buffering</u>
<u>4.12.1</u>	<u>Day Care screening</u>
<u>4.13.2</u>	<u>Recreation Areas/Centers</u>
<u>4.19.2.F</u>	<u>Accessory Uses – Refuse Bin</u>
<u>4.37.4</u>	<u>Drive-in businesses</u>
<u>4.40.2.F</u>	<u>Fast food restaurants</u>
<u>4.55</u>	<u>Outdoor Storage Yards</u>
<u>4.58</u>	<u>Junkyards</u>
<u>4.74</u>	<u>Parking for Sale of Motor Vehicles in P-1 District</u>
<u>4.80.1.B & 2.B</u>	<u>Open Air Businesses</u>
<u>4.86.H</u>	<u>Other Uses not Included in a District – Towers</u>
<u>5.2</u>	<u>Off-Street Parking</u>
<u>5.3</u>	<u>Off-Street Stacking, Parking Lot Layout Standards</u>
<u>5.9</u>	<u>Corner clearance</u>
<u>5.11</u>	<u>Fences</u>

CODE OF ORDINANCES

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

Part VII. Landscape/Site Maintenance Agreement

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SUPPLEMENTAL REQUIREMENTS AND PROCEDURES

The following Supplemental Requirements and Procedures shall apply to any landscape plan required under Section ~~2509-5.5~~ 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. ~~1.~~ Landscape Screening/Buffer Requirements

a. ~~a.~~ Residential Adjacent to Non-Residential

(1) ~~(1)~~ Berm Requirements.

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

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

(c) ~~(e)~~ A minimum opacity shall be provided and maintained at ~~eighty (80%) percent~~ winter opacity and ~~ninety (90%) percent~~ summer opacity at the required height within ~~(2)2~~ years ~~after of~~ installation. This level of opacity shall be provided wherever screening is called for in this ordinance. Opacity shall be calculated wherever screening or buffering is called for in this ordinance. Opacity includes an intermittent visual obstruction height of ~~twenty (20)20~~ feet, as well as the required screening ~~or buffering~~ capacity. (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) ~~(d)~~ Landscaping shall provide the required opacity primarily by using a dense planting of ~~large~~ evergreen trees or shrubs. Spacing of the plant materials shall be in accordance with the Plant Material Spacing Chart below and the attached illustrations. Groupings of canopy deciduous trees, subcanopy trees and/or shrubs that provide similar opacity as the illustrations may 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) 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.

~~(e) The berm and landscaping materials shall be irrigated.~~

(f) ~~(f)~~ The required minimum and maximum distances between proposed plant materials within this Section for screening and landscape purposes

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are as follows or as determined by the City Landscape Architect or City Forester based upon accepted principles not specified in the chart:

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~~(Plant Material Spacing Relationship Chart for Landscape Purposes)~~ 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).

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

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Plant Material Types <u>Centerline to centerline Spacing (on-center)</u>		TO					
		Large Evergreen Tree	Narrow Upright Evergreen	Canopy Deciduous Canopy Deciduous Tree*	Deciduous Subcanopy Deciduous Tree*	Large Shrub	Small Shrub
FROM	Large Evergreen Tree	Min. 10-15 ft. Max. 15 <u>25</u> ft.	Min. 10-12 ft.	Min. 20 ft.	Min. 15 ft.	Min. 15 ft.	Min. 10 ft.
	Narrow Upright Evergreen	Min. 10 ft. Max. <u>15</u> ft.	Min. 2.5 ft. Max. 6-10 ft.	Min. 15 ft.	Min. 10 ft.	Min. 5 ft.	Min. 3-5 ft.
	Canopy Deciduous Canopy Deciduous Tree*	Min. 20 ft.	Min. 15 ft.	Min. 22-20 ft. Max. <u>35</u> ft.	Min. 15 ft.	Min. 5-7 ft.	Min. 3-5 ft.
	Subcanopy Deciduous Subcanopy Tree*	Min. 15 ft.	Min. 10 ft.	Min. 15 ft.	Min. 8-10 ft. Max. <u>15</u> ft.	Min. 5-7 ft.	Min. 3-5 ft.
	Large Shrub (<u>6-15+</u> ' tall)	Min. 15 ft.	Min. 5-7 ft.	Min. 5-7 ft.	Min. 5-7 ft.	Min. 3-5 ft. Max. <u>5-10</u> ft.	Min. <u>3</u> ft. Max. <u>6</u> ft.
	Small Shrub (<u>0-5.9'</u> tall)	Min. 10 ft.	Min. 3-5 ft.	Min. 3-5 ft. Min. <u>3</u> ft.	Min. 3-5 ft. Min. <u>3</u> ft.	Min. 3-5 ft. Min. <u>3</u> ft.	Min. 2-3 ft. Max. <u>4-6</u> ft.

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

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(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.

maybe 4"; industry standard??

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b. Developments b. Adjacent to Public Rights of Way

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(1) Berm Requirements

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(a) Berms are to vary in height and width

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(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.

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(2) Plant Material Location Spacing

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kind of hard to measure?

(a) In order to assist emergency vehicle location of a property, create view channels to business address at a 20-40 degree angle for approaching vehicles from both directions of traffic

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(b) ~~(1) Auto dealerships may use angled plantings that provide screening of parking lots from the right of way but allow views to display cars.~~ The base of any permitted display platform must be totally screened by ~~evergreen~~ shrubs at least 2 feet in height.

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(c) ~~(2)~~ 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.

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~~d. Transformers/Utility Boxes~~

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

- ~~(1) Plant materials in a layering arrangement shall be specified for screening. Size of plant materials at installation shall be of a height equal to the transformer or utility box.~~
- ~~(2) A minimum of two (2) feet separation is required between the transformer or utility box and the full growth potential of plant material at maturity.~~
- ~~(3) Groundcover is allowed up to the transformer pad, if it is kept below 4" in height.~~
- ~~(4) Doors of transformers must be accessible. No plant materials are to be placed within eight (8) feet of the front of the doors.~~
- ~~(5) A detail of transformer screen plantings and locations of all transformers must be provided on landscape plan.~~
- ~~(6) Safety is the first priority when screening transformers and utility boxes. If plantings are above two (2) feet in height, they cannot be placed in the corner clearance (refer to Section 2513). A solid fence may be approved if warranted by safety or site limitations.~~

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~~**d. Parking Area Landscaping Requirements**~~

- ~~(1) Landscape designs shall utilize native plant materials which enhance infiltration of storm water, lessen runoff where applicable, and utilize vegetated swales, weirs and basins to create an attractive storm water system where possible in parking area design.~~
- ~~(2) Parking area landscaping materials, other than trees, refuse screening and landscape screening required under Section 2509 shall be maintained not to exceed three (3) feet in height for clear sight distance within the parking islands.~~
- ~~(3) 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 that the City of Novi is not responsible for any accidents caused by the lack of clear sight distance~~
- ~~(4) All landscaping shall be maintained in a green and growing condition, seasonal conditions considered.~~
- ~~(5) Native plant materials are preferred, where applicable.~~

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~~(6) Name, type and number of groundcover plants proposed on islands are to be specified.~~

2. Subdivision Planting Requirements

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e. Subdivision Planting Requirements

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a. (1) Single-family platted subdivisions or residential site condominiums.

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Street

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(1) ~~(a)~~ Tree spacing ~~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:

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i. Minimum planting area widths:

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Table 3.a.(1) Recommended Tree Sizes for ROW areas

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

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ii. Minimum planting area widths:

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Table 3.a.(2) Recommended Tree Spacing for ROW areas

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

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(2) Street Tree Location. ~~Large s(b)~~ 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 guidelines in the table above to calculate the number of trees required):

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Table 3.a.(3) Street Tree Requirements for Single Family Residential Lots

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

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* If space allows, more than the minimum may be planted on a lot.

~~(a) (e)~~ 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 25135.9)

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~~(b)~~ ~~and that~~ Trees ~~are shall~~ not be planted closer than ~~ten (10)~~ feet from any driveway.

~~(c)~~ ~~Trees shall not be planted within 35 feet of the intersection of the street curb lines.~~ Distances ~~from between trees and curbs and or~~ sidewalks shall be at least ~~four (4)~~ feet for deciduous canopy ~~deciduous~~ trees. 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 ~~No canopy deciduous tree shall be planted closer than fifteen (15) lateral feet from any overhead utility wire, or closer than ten (10) lateral feet from any fire hydrant, or closer than six (6) feet from any manhole. Once mature, trees shall be maintained to provide (a~~ minimum ground clearance of ~~fourteen (14)~~ feet on the street side and ~~ten (10)~~ feet on the non-street side).

~~(d)~~ 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.

~~(d)~~ Tree species. A diversity of tree species is to be used. Not more than twenty (20) percent of tree population shall be of one specific genus and not more than fifteen (15) percent shall be of a specific species if there are less than 200 trees being planted. Not more than fifteen (15) percent of the tree population shall be of one specific genus and not more than ten (10) percent of the trees shall be of a specific species if there are 200 or greater number of trees being planted. Variations from these percentages shall be at the discretion of the City Forester or Landscape Architect. (See Novi Street Tree List).

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

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

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

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~~(c)~~ ~~(Refer to Section 2513 for corner clearance requirements in regards to boulevards.)~~ At least ~~seventy five (75) percent~~ 75% of the area shall be landscaped with a combination of canopy and subcanopy trees, shrubs, groundcovers, perennials, annuals, and/or bulbs. The remaining 25% of area can be lawn if desired.

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(i) Minimum planting area width:

Tree Species Type	Tree lawn Size
Small Tree (Subcanopy Deciduous)	4-6'
Medium Tree (Subcanopy and Canopy Deciduous)	6-8'
Large Tree (Canopy Deciduous)	≥8

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

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b. Non-Residential Subdivisions

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(a) 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):

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

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(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 25% of total linear footage adjacent to the street. Use of them is encouraged at entry points or to highlight significant design. (Also reference Section 5.9 corner clearance).

(4) In addition to the above, (ii) Evergreen shrubs are required to provide screening of parking areas only. Shrubs are to be at least 30" in height at planting, three (3) feet height tall at maturity and/or maintained at a minimum height of three (3) foot-feet height maximum. A minimum opacity shall be provided and maintained at eighty (80) percent 80% during winter and ninety (90) 90% percent during summer opacity within two (2) years after of acceptance by the city installation. This applies to all sections of parking visible from the street(s).

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(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.

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~~(6) The width of the access drive can be deducted from the frontage in calculating the above landscape requirements.~~

~~(iii) Three (3) subcanopy trees per forty (40) feet of total linear frontage along the right of way are required.~~

~~(iv) Massing of ornamental grasses, perennials, and/or annuals and bulbs is required for twenty-five (25) percent of total linear footage adjacent to the right of way. Use is encouraged at entry points or to highlight significant design. (Also reference Section 2513 corner clearance).~~

3. (3) Detention and Retention/Sedimentation Basin Landscaping Requirements

~~a. (a) 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 area at the high water elevation.~~

~~b. (b) A variety of At least three different native shrub species and cultivars 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.~~

~~c. The bottom and sides (c) Plant the bottom of the basin(s) below the above-mentioned shrubs shall be planted with a mix of native grasses, sedges and wildflowers, or groundcover to discourage use by waterfowl. Allow grass to grow to 10 to 14" tall along sides and bottom of basin to discourage use by waterfowl. Limit the application of fertilizer and pesticides on grass areas in the basin shall be limited to the initial establishment of the groundcover.~~

~~d. (d) Grass species that go dormant in winter such as fescue are suggested.~~

~~e. (e) 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.~~

~~f. (f) 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.

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- a. If there are less than 200 trees 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 200 or more trees 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 5.d: Sample Species Breakdowns

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

- e. Woodland tree replacement species shall have roughly the same percentage of composition as the native trees removed in order to 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). Native maples may be used as substitutes for boxelders, and varieties of native elm species shown to have better resistance to Dutch elm disease than the straight species are allowed as replacements for elms.
The counts of woodland replacement trees should not be included in the breakdown described above (items a-d).
- f. 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 native plant materials which enhance infiltration of storm water. 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.

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- b. Parking area landscaping materials within parking lot islands shall be maintained to not exceed 3 feet in height above adjacent paving for clear sight distance within the parking islands.
- c. 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. All landscaping shall be maintained in a green and growing condition, seasonal conditions considered.
- e. Salt-tolerant plants material native to the state of Michigan are preferred, where applicable.
- f. 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.

6. Transformers/Utility Boxes/Irrigation Control Boxes

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

- a. Size of plant materials at installation shall be of a height 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.
- 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 (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.

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8. ~~2.~~ Landscape Plan Requirements

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A landscape plan shall be submitted for any new commercial or residential development and any addition to an existing building that is equal or greater than a 25% increase in the overall square footage of the building or 400 square feet, whichever is less. An owner of a ~~one~~-single-family home site shall not be required to comply with the provisions of this section.

The landscape plan shall contain the following information:

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- a. ~~Name~~, address and telephone number of the owner and developer or association.
- b. 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.
- c. A legal description or boundary line survey of the site on which the work is to be performed.
- d. Project Name and address.
- e. A plan of the site at a scale that matches other plans and is legible with proper north indication. In addition, for reviewing purposes, the landscape plan shall be submitted in a scale not to exceed 1"=20' for detailed areas, 1"=60' for large areas. 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) ~~(1)~~ Proposed topography at a maximum of ~~two (2)~~ 2 foot contour intervals, extending at least ~~fifty (50)~~ 50 feet beyond the site boundary. For berm, wall areas and steep topography, contour intervals shall be shown at ~~one (1)~~ 1 foot.

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(2) ~~(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 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, the regulated trees 8" d.b.h. and greater in all identified locations and the tree protection fence locations. (Tree protection fence locations should also be provided on Removal/Demolition and Grading Plans)

(c) Trees in woodlands or other areas at least 50 feet away from construction that will not be impacted do not need to be identified individuals, but the cover of those areas should be generally noted (e.g. dense woodland, open, scrub/shrub, wetland). All trees 8" dbh or greater within 50 feet of construction should be included in the tree survey.

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~~(d)~~ -See Woodlands Protection Ordinance, Chapter 37 and Wetlands Protection Ordinance, Chapter 12 for additional plan requirements.

~~(3)~~ ~~(3)~~ Location, type and size of all proposed plant materials. For Preliminary and Final Site Plan submittals, plants shall be indicated with actual plant material names or symbols linked to a plant list.

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~~(4)~~ ~~(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)~~ Corner Clearance ~~(5)~~ ~~Intersection Clear~~ Zones at driveways and road intersections. (See Section 25435.9).

~~(6)~~ 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.

~~k.~~ A planting schedule ~~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.

~~l.~~ ~~i.~~ Planting details, ~~typical~~ for evergreen trees, ~~canopy~~ 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).

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~~m.~~ When berms are included on the plans, ~~aj.~~ representative A-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 ~~fifteen (15)~~ 15 feet from the edge of the utility or ~~twenty (20)~~ 20 feet from the closest pole for canopy trees. (See Berm Cross-Section Diagram).

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- ~~n. k.~~ 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. l.~~ A note indicating the proposed estimated planting dates (should be between March 15 and November 15).
- ~~p. m.~~ 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.
- ~~q. n.~~ A note indicating that the plant sources should be Upper Midwest/Great Lakes grown.
- ~~o.~~ Parking lot landscaping calculations, including the amount required and the amount provided.
- ~~r. p.~~ Interior landscaping calculation requirements, including the amount required and the amount provided. 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 the information can be found should be included on the Landscape Plan.
- ~~q.~~ An indication of the snow depositing area for winter.
- ~~r.~~ The soil type on site as determined by the Soils Survey of Oakland County, Michigan published by the United States Department of Agriculture Soils Conservation Service.
- s. An irrigation plan for watering landscaped areas with a fully automatic irrigation system and a method of draining landscaped areas as needed. 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. 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 one year of its discovery, or the next appropriate growing period, whichever comes first.
- t. An itemized cost estimate based on current, accurate planted costs 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.
- ~~t.u.~~ A plan for the successful establishment and maintenance of any native seed mixes.
- ~~y. u.~~ 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.

not sure why this is important. Never liked this

9. 3. Plant Material Requirements

- a. a. General Conditions / Plant Requirements.

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

- (1) For all plant materials, native plants are to be the first choice. The source should be local or of ~~this 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 Section 1.f.
- (4) Plant materials, except sod, ground covers or creeping vine type plantings, shall ~~not~~ be located ~~within at least four (4) feet of 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 ~~two (2)~~ 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 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.

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~~b.~~ 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.

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- (1) ~~(1)~~ Existing Plant Material
 - ~~(a)~~ (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)~~ (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

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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) ~~(e)~~—For approval of substitution, 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) Such existing plant material is to be labeled "To Be Saved" on site plans. 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. Common and botanical names, sizes and the elevations at the base of all existing trees to be saved are also required. Large masses of protected vegetation should be labeled "To be saved" on the Landscape Plan and on the Demolition/Removal Plan and Grading Plan.
- (f) ~~(d)~~—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. These replacements shall be at the following rate:

Table 7.b.(1)(f): Landscape Tree Credit Chart

Diameter of Trunk of Preserved Tree* f	= Number of Trees Substituted 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-

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~~4~~ Inches measured at a height of four and one-half (4.5) feet above the natural grade. (Diameter at Breast Height, D.B.H.)

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(g) Existing 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.

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(2) ~~Proposed Plant Material~~

(a) ~~e. Plant Sizes.~~

i. ~~(1) The minimum sizes are as follows:~~

Table 7.b.(2)(a).i – Minimum plant sizes by application

Planted Material Types	Canopy Deciduous Trees	Large Evergreen Trees	Subcanopy Deciduous Trees (4)	Upright Evergreens	Large Shrubs (5)	Small Shrubs (56)	Perennials, Ornamental Grasses
R-O-W Plantings (34)	3-2.5" caliper	8' height	2-1/4" caliper	6' height	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. 2 1/4" caliper	7-6' @ 23:1-2 Ratio	n/a(3)	(3)n/a	(3)n/a	(3)n/a	(3)n/a
Subdivision Street Trees	2 1/2" caliper	n/a	2 1/2" caliper	n/a	n/a	n/a	n/a
All other	3" caliper	7' height	2.5" cal. 2 1/2" caliper	6' ht. 6' height	36" height	24" ht.	1 gal. cont. 1 gallon

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 for acceptable species.

(3) Refer to Chapter 37-8.c for use of this plant type for replacement credits.

(34) Shall also apply to private road easements or other equivalent.

(45) Multi-stem trees are to be eight to ten (8-10) foot minimum height.

(56) Spreading or horizontal shrubs are to be eighteen (18) inch width minimum.

n/a: not allowed

ii. ~~(2) To encourage a mixture of sizes, additional landscape credit can be given (except for R O W Plantings, Woodlands Replacement, and Street Trees) for larger sized canopy trees, deciduous and evergreen 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.:~~

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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 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

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* Where greater than minimum size listed in chart above (7.b.(2)(a).i).

For Woodland Replacement Trees, see Chapter 37.

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.

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why not full credit id applicable to avoid overplanting

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. d. 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:

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Table 7.c – Prohibited Plants

Botanical Name	Common Name	Plant Type
<i>Acer negundo</i>	Boxelder	Subcanopy Deciduous Subcanopy Tree
<i>Acer platanoides</i> **	Norway Maple	Deciduous Canopy Tree Canopy Deciduous Tree
<i>Acer saccharinum</i> **	Silver Maple	Deciduous Canopy Tree Canopy Deciduous Tree
<i>Ailanthus altissima</i>	Tree-Of-Heaven	Deciduous Canopy Tree Canopy Deciduous Tree

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<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>	Oliver	Large Shrub
<i>Ginkgo biloba</i> (female)	Ginkgo (female)	Deciduous Canopy Tree
<i>Gleditsia spp.</i>	Honeylocust (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

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		Tree Canopy Deciduous Tree
<i>Salix babylonica</i> ***	Weeping Willow	Deciduous Canopy TreeCanopy Deciduous Tree
<i>Salix nigra</i> ***	Black Willow	Deciduous Canopy TreeCanopy Deciduous Tree
<i>Ulmus</i>		
Americana <i>americana</i> *	American Elm	Canopy Deciduous Tree
<i>Ulmus pumila</i>	Siberian Elm	Canopy Deciduous Tree
<i>Vinca minor</i> ***	Common Periwinkle	Perennial / Grass Groundcover

* Disease resistant cultivars are acceptable

** Acceptable, if not planted within 100' of Woodland areas

*** Only Allowed under special circumstances

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d. e. Recommended Trees for Planting Under Overhead Utilities:

Table 7.d – Trees for Under and Near Overhead Utility lines

Botanical Name	Common Name
<i>Acer campestre</i>	Hedge Maple
<i>Acer ginnala</i>	Amur Maple
<i>Acer griseum</i>	Paper Bark Maple
<i>Ame</i> lanchier sp.	Serviceberry
<i>Carpinus betulus</i>	European Hornbeam
<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>Corylus colurna</i>	Turkish Filbert
<i>Crataegus sp.</i>	Hawthorn sp.
(thornless)	(thornless)
<i>Magnolia soulangiana</i>	Saucer Magnolia
<i>Malus hybrids</i>	Flowering Crabapple
<i>Malus sp.</i>	Spring Snow Crabapple
<i>Acer griseum</i>	Paper Bark Maple
<i>Cercis canadensis</i>	Red Bud

too big

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<i>Cornus alternifolia</i>	Alternate Leaf Dogwood
<i>Syringa reticulata</i> <i>Magnolia soulangiana</i>	Japanese Tree Lilac Sauceer Magnolia
<i>Syringa reticulata</i> <i>Viburnum lentago</i>	Japanese Tree Lilac Nannyberry
<i>Viburnum prunifolium</i>	Blackhaw Viburnum

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

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e. ~~—~~ f. ~~—~~ Collected or Transplanted Trees

~~(i)(1)~~ All collected trees shall be from on site and inspected by the City. Trees may be rejected for reasons of insect infestation, disease or standards set forth in this ordinance. Such plant material may be rejected either in full or in part.

~~(ii)(2)~~ All transplanted trees shall conform to standards set forth in Section 9.

~~(iii)(3)~~ The root ball of any transplanted tree shall measure 1 foot for each inch of trunk diameter measured 12" above the ~~ground~~ ~~root flare or graft collar~~.

~~(iv)(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.

~~(v)(5)~~ The trees shall be provided with a working irrigation system approved by the City to ensure their viability during storage.

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10. ~~4.~~ ~~—~~ Nonliving Durable Material

a. ~~—~~ Mulch for all plantings shall be premium shredded hardwood, ~~cedar or cypress bark~~ and shall not be artificially colored. ~~No cypress wood mulch or rubber mulch is to be used.~~

b. ~~—~~ Trees shall be mulched to a ~~four~~ ~~3(4)~~ inches overall depth ~~at planting.~~

c. ~~—~~ ~~The mulch depth for S~~shrubs, groundcovers and perennials shall ~~be~~ ~~be~~ mulched to a ~~2-3 inches~~ overall depth ~~depending upon species at planting.~~

d. ~~—~~ All lawn trees shall ~~have~~ ~~be~~ planted with a ~~4'~~ ~~4~~ foot diameter circle of the shredded hardwood bark mulch.

e. ~~—~~ ~~Bark~~Mulch shall be pulled back ~~3 inches~~ from the tree trunk in a ~~3"~~ ~~radius~~ circle down to the root ball dirt to expose the root collar to air. ~~No "volcano" mulching is allowed at planting or in future applications of mulch.~~

f. ~~—~~ If a rootball's dirt is piled up on the trunk, it should be removed to expose the root flare.

g. ~~—~~ For fire safety, shredded hardwood bark is not to be installed adjacent to or within ~~four~~ ~~(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. ~~—~~ The color of such materials shall be natural and compatible with the building.

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details say 3" for shrubs

detail does not jive with 4 ft. circle of mulch

but you require foundation planting???

- h. ~~Gravel type mulches are not permitted within or immediately adjacent to paved parking lots or roadways. Mulch shall be of adequate depth to ensure total coverage. Approval of type, depth and specific location for gravel mulch is to be approved by the City.~~
- i. ~~Michigan Sphagnum Peatpeat/bog peat is harvested from functioning wetlands so it shall not be used for landscape purposes. Compost may be used as an alternative.~~
- j. ~~is acceptable as mulch for perennial and annual beds or under special circumstances where the planting is in a highly maintained environment.~~ Plastic or other artificial replicas of plant material are prohibited.

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From: [Jeff Smith](#)
To: [Meader, Rick](#)
Subject: RE: Proposed Landscape Ordinance Modifications - City of Novi
Date: Tuesday, February 14, 2017 9:20:42 AM

I have not really seen that issue addressed in other ordinances other than a requirement that loading areas need to be screened. Buffers and green belts usually cover that. The 1 tree per 8 or 10 space requirement for parking lots generates enough trees to reasonably plant parking lots with an appropriate level of plantings. It would cover most small loading areas which are typically on the front or side of the building. For a store like a Home Depot with a large loading area in the back of the building maybe a separate calculation could be required, but maybe since it's behind the building, nothing additional should be required. You could require 1 evergreen tree per 400 sf of loading area, if a loading area was adjacent to a residential district. That would generate some additional trees to screen the loading areas. You could also keep it vague and just say loading areas adjacent to residential districts need to be 90% Screened or something like that. Could be a berm, wall, fence, or evergreen hedge.

Jeffrey T. Smith, PLA, LEED AP
Director of Landscape Architecture | Branch Manager

PEA

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Direct: 248.509.7235

Mobile: 248.854.1907

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From: Meader, Rick [mailto:rmeader@cityofnovi.org]
Sent: Tuesday, February 14, 2017 8:56 AM
To: Jeff Smith <jsmith@peainc.com>
Subject: RE: Proposed Landscape Ordinance Modifications - City of Novi

Jeff,

Thanks again. One problem with calculating the landscape space requirement by space that I'm wrestling with is what to do with sites with loading areas that are part of a parking lot, which, in Novi, are frequent. If I "bump up" the requirement to account for those spaces, then lots where no loading areas are present are penalized, but if I don't, then we end up with less landscaping than I think should be required for lots with loading areas.

Any suggestions?

Thanks.

Rick

From: Jeff Smith [<mailto:jsmith@peainc.com>]
Sent: Monday, February 06, 2017 5:38 PM
To: Meader, Rick
Subject: RE: Proposed Landscape Ordinance Modifications - City of Novi

To Rick,

After a quick review of the draft ordinance, it looks like you've made a good effort to help address many of these issues where there is overlap of requirements that can result in excessive plantings. If I have one main suggestion it would be to further simplify the text. There are a lot of footnotes, exceptions, calculations and descriptions that add complexity to the ordinance. Trying to address every situation creates an ordinance that is so complex that it's difficult for the applicant to interpret. It makes it difficult for the applicant to properly display how the ordinance was applied via calculations and that in turn makes it hard for the reviewer to interpret the plans. Lengthy ordinances typically result in back and forth between the reviewer and applicant which is frustrating, time consuming and costly and it creates a perception that the City is difficult to work with and not business friendly. We work with probably a hundred different ordinances each year and we find that the more concise, the better for all parties involved. Here are a few suggestions that might work to help simplify the Novi Ordinance.

1. Language that gives the reviewer and PC discretion to approve common sense changes on a case by case basis are more effective than trying to write an ordinance that addresses every unique situation. There is already a statement like this in section 5.5 IV (page 18). This sort of waiver statement could be used more to reduce the many footnotes and exceptions that make the ordinance lengthy.
2. Calculations can be simplified. For example, the vehicular use area calculations and calculations required to determine the required parking lot trees are confusing and time consuming and will most likely result in review comments. The simple calculation of 1 tree / 10 spaces (or something similar) is far more effective. It's extremely easy for the applicant to calculate and easy for the reviewer to verify and can result in the same amount of landscaping as the more complicated use area calcs.

Other than simplifying and shortening the ordinance, I think the intent is good and some of the changes will be well received by the business community.

Thanks,

Jeffrey T. Smith, PLA, LEED AP
Director of Landscape Architecture | Branch Manager

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From: Meader, Rick [<mailto:rmeader@cityofnovi.org>]

Sent: Friday, January 27, 2017 10:01 AM

To: Jeff Smith <jsmith@peainc.com>

Subject: FW: Proposed Landscape Ordinance Modifications - City of Novi

Hi Jeff,

I have proposed a number of changes to our Landscape Ordinance and Landscape Design Manual that are going to be considered by the City's Planning Commission and City Council. I believe that a lot of the changes will make creating attractive, workable landscapes on city projects more achievable for you. I have worked to incorporate a lot of the suggestions (and occasionally complaints) I've heard from landscape designers in my time here, and my own experience as a landscape designer.

Please note that the Woodland Protection Ordinance (Section 37), which regulates the woodland replacement trees, is not being modified at this time. Still, if you have suggestions for that, feel free to pass them along as well, for future reference.

As a Landscape Architect who does a lot of work in the city, I would appreciate it if you could take some time and look them over. You may want to look at the memo first, as it summarizes the changes being proposed. Please offer any comments and suggestions you may have. I'm sure you will have some helpful ones. I am attaching the marked up versions, but if you'd prefer to just see the "clean" version, without the markups shown, I'm happy to send them along – just let me know. I am also attaching some illustrations comparing the effects of the current situation, if all of the current ordinance requirements are enforced, versus what would be required under the proposed revisions. These won't be part of the ordinance, but are intended to help summarize visually the effects of some of the changes.

The proposed revisions will first be presented at a Public Hearing on February 22. If you could get your comments to me no later than February 15, that will give me time to make any changes necessary. If you have any questions, please let me know.

Thanks 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 f: 248.735.5633

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From: [Rick Tuttle](#)
To: [Meader, Rick](#)
Cc: [Gary Roberts](#)
Subject: RE: Proposed Landscape Ordinance Modifications - City of Novi
Date: Monday, February 13, 2017 4:26:42 PM

Rick-

We have reviewed the proposed changes you are considering for the City of Novi Zoning Ordinances and Landscape Design Manual.

We as Landscape Architects, recognize the responsibility of developing creative and aesthetic landscape designs for our clients, but must still conform to the ordinances.

But as Landscape Contractors, we are in the business of selling trees, so we would certainly like to be able to have the revised ordinances strike a balance between what is truly needed and good design aesthetics.

We would offer the following comments..

1. **Greater Visibility of Buildings fronting rights -of-ways:** Obviously, on Commercial or Retail sites, the owners want their buildings to be visible from the street for easy identification for their guests, customers, etc. The proposed changes to the amount of trees required will work toward this goal. However, the proper screening of the parking lots (cars and headlights) which directly abut the roadway is still a concern and it looks like the other proposed changes will address this.
2. **Less congestion of site plantings in and around parking lots:** Same as above for better visibility for the buildings from Street. However, it looks like the proposed ordinances changes will still require enough trees to “break up the expanse of asphalt” in parking lots.
3. **Create conditions that will contribute to better tree survival:** Agree with all of the proposed changes especially increasing to a minimum of 200 sq. ft. unpaved area per tree as well as increasing the minimum width for long walkway “sidewalk to curbs” for the planting areas to 15’.
4. **Make landscapes more environmentally sensitive and sustainable:** We see a lot more parking lot designs with depressed parking lot islands to handle / filter storm water. The plant selections are important in this regard, but this really is a good change to allow this type of parking lot island. Maintenance requirements / language could be added for the natural areas, so they can be better maintained over the long term. Agree with the Pear Tree elimination, but wondering why the Barberry, Privet and Periwinkle were added to the elimination list. We have found that with the deer eating evergreens, Barberry was a good choice / substitute for hedges. Did not know that Privet and Periwinkle (Vinca?) were on the invasive lists.
5. **Assist developers to save money on landscape without causing significant reductions in attractiveness of built landscapes:** Agree with the proposed changes as we hear about the city costs from developers often. Upsizing of trees has long been a request from developers in lieu of planting so many “smaller” trees and since we specialize in larger trees, this is a good change. Due to the shortage of 3” shade trees this year (and possibly the next few years) the decrease to a 2.5” cal. minimum is a good change.

Minor Changes:

1. **Clarifications of Ordinance interpretations and terminology:** the only item here was the “plant diversity” breakdown table – which we did not see the breakdown table in the email
2. **Minor changes to improve tree health and environmental sustainability of ordinances:** Not sure what was the determination on the change that Michigan Peat and Cypress mulch are now not allowed for installation. Also, agree in decreasing mulch depth from 4” to 3” on tree rings and removal of soil for exposure of root flare. However, tree planting detail still shows mulch and backfill soil on top of root flare.

These are our comments, we would be available for any further review and /or discussion. Good luck as you move forward in this process.

Thanks for considering Great Oaks Landscape.

Regards,

Rick



GREAT OAKS
LANDSCAPE

Richard S. Tuttle RLA

Vice President Commercial Sales

Great Oaks Landscape

248-349-8555 office

248-349-8556 fax

248-939-0157 cell

From: Meader, Rick [mailto:rmeader@cityofnovi.org]

Sent: Friday, January 27, 2017 9:59 AM

To: Rick Tuttle <RTUTTLE@greatoakslandscape.com>

Subject: Proposed Landscape Ordinance Modifications - City of Novi

Hi Rick,

I have proposed a number of changes to our Landscape Ordinance and Landscape Design Manual that are going to be considered by the City’s Planning Commission and City Council. I believe that a lot of the changes will make creating attractive, workable landscapes on city projects more achievable for you. I have worked to incorporate a lot of the suggestions (and occasionally complaints) I’ve heard from landscape designers in my time here, and my own experience as a landscape designer.

Please note that the Woodland Protection Ordinance (Section 37), which regulates the woodland replacement trees, is not being modified at this time. Still, if you have suggestions for that, feel free

to pass them along as well, for future reference.

As a Landscape Architect who does a lot of work in the city, I would appreciate it if you could take some time and look them over. You may want to look at the memo first, as it summarizes the changes being proposed. Please offer any comments and suggestions you may have. I'm sure you will have some helpful ones. I am attaching the marked up versions, but if you'd prefer to just see the "clean" version, without the markups shown, I'm happy to send them along – just let me know. I am also attaching some illustrations comparing the effects of the current situation, if all of the current ordinance requirements are enforced, versus what would be required under the proposed revisions. These won't be part of the ordinance, but are intended to help summarize visually the effects of some of the changes. If you'd like to share this e-mail with anyone else in your firm who does landscape designs, please feel free to do so.

The proposed revisions will first be presented at a Public Hearing on February 22. If you could get your comments to me no later than February 15, that will give me time to make any changes necessary. If you have any questions, please let me know.

Thanks very much!

Rick Meader | Landscape Architect
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RICK -
KEN
METAL
COMMENTS

MEMORANDUM

TO: *FATHIGHOUT* BARB MC BETH
FROM: RICK MEADER, LANDSCAPE ARCHITECT
SUBJECT: PROPOSED REVISIONS TO LANDSCAPE ORDINANCE AND LANDSCAPE DESIGN MANUAL
DATE: DECEMBER 16, 2016

*COMMENTS TO
RICK BY FEB 15*

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:

- Better survivability of trees in designed landscapes
- Reduction of building screening from rights-of-way
- Better visibility of street addresses from road for emergency vehicles
- Continued screening of parking areas from roads, especially to block headlights
- More uniformity of street tree location along Novi roads
- Reduction of unachievable landscape requirements in and around parking areas
- 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
- 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. Greater visibility of buildings fronting rights-of-way:**
 - a. Right-of-way berms only required in front of parking (not rest of site). (Zoning) ✓
 - b. Required greenbelt plantings reduced in front of buildings for commercial and industrial (Zoning) ✓
 - c. Reduced greenbelt plantings in front of parking in commercial districts where building is behind parking (Zoning) *good!*
 - d. Town Center required greenbelt plantings are either the large trees or subcanopy trees, but not both (Zoning). *good!*
 - e. Reduced required landscaping along industrial subdivision roads (fewer subcanopies, more shrubs) (LDM)

- f. Use 1.5 subcanopy trees instead of 2 subcanopy trees as substitute for a canopy tree under wires. (Zoning)
- g. Request that designs provide visibility to building addresses from 20-40 degree angle to road, per Fire Marshal request (LDM)

2. Less congestion of site plantings in and around parking lots

- a. Greenbelt tree requirements may deduct width of access aisle from basis. (Zoning)
- b. Street tree requirement may deduct width of corner clearance zone from basis. (Zoning)
- c. Parking lot interior landscaping is reduced to 1 tree/200 sf of paved area vs 1/75sf. (Zoning)
- d. Parking lot vehicular use area for interior parking requirements does not include access drives leading to parking areas. (Zoning)
- e. Access drives to parking areas only have to have perimeter trees (along both sides of drive). (Zoning)
- f. Additional access drive perimeter trees are not required within the greenbelt if greenbelt canopy trees are within 15' of access drive and meet the spatial requirement (1 tree/35 lf). (Zoning)
- g. Street tree spacing is the same along an entire parcel instead of more in front of parking (Zoning)
- h. Parking lot perimeter trees now a stand-alone requirement (not a table footnote). (Zoning)
 - i. Parking lot perimeter basis may be reduced by existing trees adjacent to parking (within 15' of curb)
 - ii. Parking lot perimeter basis may be reduced by frontage of 20' tall or taller buildings within 20' of parking lot.
 - iii. Parking lot perimeter tree count may be reduced by frontage along greenbelt if greenbelt canopy trees fulfilling perimeter count are within 15' of curb.

I vote for more trees, less shrubs. Shrubs get pruned immediately for much more

3. Create conditions that will contribute to better tree survival

- a. Parking lot islands must have a minimum of 200sf unpaved area per tree planted in it. (Zoning)
- b. Parking lot island trees must have 3' spacing between back of curb and trunk. (Zoning)
- c. Walkways along islands acceptable but planting area between sidewalk and curb must be 10'. (Zoning)

4' would be better if possible

4. Make landscapes more environmentally sensitive and sustainable

- a. Depressed parking lot islands are allowed, as long as design, including drainage and plant choices, allows for trees to survive. (Zoning)
- b. Establishment and maintenance plans should be added to plans for natural area seed plantings. *—yes, agreed*
- c. Pear trees (*Pyrus calleryana*) have been added to the Prohibited Plants list due to their increasingly invasive behavior in southeastern Michigan. Barberry, Privet and Periwinkle are also added as they are listed invasive species in the Midwest. *—yes, agreed.*

yes but salty bio-swales are tough to make work.

- d. Norway maple completely banned (took away 100' allowance). They are invasive in woods settings and seeds can easily be transported 100 feet either by air or by people (LDM). *agreed.*

5. Assist developers and builders to save money on landscaping without causing significant reductions in the attractiveness of built landscapes:

- a. Parking lot interior landscaping basis changed to 7.5% of paved area for first 50,000 sf in commercial, 5% in industrial (versus 10% pkg spaces + 5% aisles in commercial and 7% pkg spaces + 2% aisles for industrial). (Zoning)
- b. Irrigation system not required, but allowed (landowners are still responsible for keeping their landscapes alive and in good condition by section 5.5.7). *- drip works well.*
- c. Foundation landscaping basis may be reduced by paved access points of building (Zoning) *new low water grass seed mixes from MSU being tested.*
- d. Foundation landscaping may be along just 80% of building (Zoning)
- e. Reduce required landscaping frontage for multi-family buildings from 60% to 35% to be more consistent with existing developments. (Zoning) *yes.*
- f. Allow upsizing for greenbelt trees and parking lot perimeter trees – max 1/3 of required trees.
- g. Required greenbelt plantings in front of parking can be reduced by 1/3 if 3 foot tall brick wall in is placed along frontage of parking lot in lieu of berm. (Zoning) *good.*
- h. Parking lot interior islands must have minimum of 200sf (not 300sf). (Zoning)
- i. Reduced minimum sizes of canopy trees from 3" to 2.5" in most cases (LDM). *- must follow good Noni plant details.*

6. Responses to specific situations encountered in recent developments:

- a. Allow bays of 25 vehicles for uses like storage of vehicles or large trucks, but still require same amount of area (larger islands will help protect trees in them) (Zoning)
- b. Up to 25% of parking lot perimeter trees may be large evergreens to assist with screening.

Proposed Changes more Minor in Nature

1. Clarification of ordinance interpretations and terminology

- a. Foundation landscaping areas may not consist of lawn. (Zoning)
- b. Detention pond landscaping now a separate item (was a sub-item under subdivisions). (Zoning, LDM) *good.*
- c. Boulevard islands and cul-de-sac island plantings do not count as street trees (clarification consistent with current interpretation). (Zoning) *yes.*
- d. Multi-family housing – clarification that street tree count is along both sides of interior streets. (Zoning) *good.*
- e. Addition of plant diversity breakdown table to requirements (LDM).
- f. Paint added as method of delineating parking spaces (contrasting brick, concrete pavers already allowed in landscape ordinance). (Zoning) ✓
- g. Added miscellaneous notes and illustrations to make interpretation of rules easier to understand and enforce (LDM and Zoning). ✓

- h. Changed some minimum spacing requirements for screening spacing, clarified that columnar/ fastigate trees may require closer spacing (LDM)
2. **Miscellaneous corrections and changes to make wording more consistent with intent of landscape ordinance and with other ordinances.**
- a. Design engineer must sign and seal designs for walls taller than 3.5 feet (currently just says engineer). (Zoning)
 - b. Landscaping financial guarantee 1.2 x material cost (not 2x) to match 26.5 (Zoning).
 - c. Street trees financial guarantees are 1.0 times the \$400/tree cost to match 26.5. (Zoning).
 - d. Add Licensed Landscape Architect to required signature along with Registered Landscape Architect (MI used to be registered, is now licensed). (Zoning and LDM)
 - e. Change from maximum to minimum of 3' height for Industrial Subdivision shrubs planted as parking lot screening. It is unlikely that a place would want their shrubs to get too tall for their own security, but shrubs shorter than 3' won't create the headlight blockage or view of cars that is desired (LDM). *yes-good.*
 - f. Reduce spacing behind curb for single-family subdivisions from 4' to 3' (our right-of-way often limits spacing between curb and sidewalk to less than 8'). (LDM) *- don't understand.*
3. **Minor changes to improve tree health and environmental sustainability of ordinances**
- a. Native seed mix composition lists should be added to plans (LDM).
 - b. Added Nannyberry, flowering dogwoods and Musclewood to good "under line" trees (LDM).
 - c. Michigan Peat/Bog Peat is not allowed for landscaping purposes (LDM). *-good.*
 - d. Cypress wood mulch is not allowed for landscaping purposes (LDM). *good*
 - e. Updated planting details to show 3" mulch vs 4", highlight removal of mulch and dirt from root flares (LDM) *yes - even more clarification - 3" in irrigated areas, 4" in non irrigated areas.*
4. **Minor changes in landscape plan requirements to assist with evaluation of plans and inspections of new site landscaping**
- a. Require labels for areas in square feet (SF) for landscape areas (LDM).
 - b. Allow 1"=60' for large scale and 1"=20' for detail scale (LDM).
 - c. Start of inspection period changed from March 15 to April 15 (LDM and Zoning).
 - d. Addition of 10% cutoff to changes in plan at which point a new administrative review, with review fees, will be charged. (Zoning) *- does this include plant types? trees are still scarce.*
 - e. Addition of list of other ordinances with landscaping impacts (LDM).

Conclusion:

I don't believe that these proposed changes impose any undue hardships on developers, and in most cases will help them in terms of ease of putting together their landscape plans. They will also save them money in many cases by reducing required plant material.

I am happy to answer any and all questions you may have. I'm sure there will be more than one.



TO:

RICK MEADER
NOVI, L.A.

2-14-2017

FROM:

KEN WEIKAL

RICK - THANKS FOR LETTING US BE
A PART OF THIS -

KEN WEIKAL.

SAMPLE CALCULATIONS

Commercial Zoning: NCC, C, OS-1, OSC, OST, B-1, B-2, B-3

EX. A - EXISTING REGS					
Category		Basis	Requirement		# trees /ls area required
STREET TREES	Pkg	256 lf	1 canopy tree per	35 lf frontage	7 trees
	No pkg	185 lf	1 canopy tree per	45 lf frontage	4 trees
GREENBELT LANDSCAPING	Pkg	256 lf	1 large tree per	35 lf frontage	7 trees
	Pkg	256 lf	1 subcanopy tree per	20 lf frontage	13 trees
	No pkg	185 lf	1 large tree per	40 lf frontage	5 trees
	No pkg	185 lf	1 subcanopy tree per	20 lf frontage	9 trees
PARKING PERIMETER		789 lf	1 canopy tree per	35 lf	23 trees
PARKING INTERIOR - AREA		17,550 sf	pkg space area	10%	1,755 sf
		20,975 sf	aisle area	5%	1,049 sf
			excess over 50,000 sf		sf
PARKING INTERIOR - TREES		2,804 sf	1 tree per	75 sf req area	37 trees
Total					105 trees

EX. B - PROPOSED REGS					
Category		Basis	Requirement		# trees /ls area
STREET TREES ¹	All	381 lf	1 canopy tree per	40 lf frontage	10 trees
GREENBELT LANDSCAPING ^{1,2}	Pkg	234 lf	1 large tree per	35 lf frontage	7 trees
	Pkg	234 lf	1 subcanopy tree per	20 lf frontage	12 trees
	No pkg	185 lf	1 large tree per	60 lf frontage	3 trees
	No pkg	185 lf	1 subcanopy tree per	40 lf frontage	5 trees
PARKING PERIMETER ^{3,4}		442 lf	1 canopy tree per	35 lf	13 trees
ACCESS DRIVE PERIMETER ⁵		- lf	1 canopy tree per	35 lf	- trees
PARKING INTERIOR - AREA		37,436 sf	parking area	7.5%	2,808 sf
			excess over 50,000 sf	1%	sf
PARKING INTERIOR - TREES		2,808 sf	1 tree per	200 sf req area	14 trees
Total					64 trees

- 1: Can deduct clear vision zones from frontage basis for street trees and access drives from frontage basis for greenbelt plantings
- 2: Can count foundation subcanopy trees toward greenbelt plantings if building front is at greenbelt limit
- 3: Can deduct parking frontage along right-of-way from perimeter basis if greenbelt canopy trees are within 15 feet of back of curbs of parking lot and equal the number of required trees for that frontage (at 1 per 35 lf).
- 4: Can deduct frontage along building from perimeter basis if building height within 20' of parking lot is at least 20 feet
- 5: Canopy greenbelt trees within 15' of access drive curb can be counted toward requirement.

I always vote for more canopy trees...

Seems like not enough

SAMPLE CALCULATIONS

Commercial Zoning: NCC, C, OS-1, OSC, OST, B-1, B-2, B-3

EX. B - PROPOSED REGS - BUILDING BEHIND PARKING (1/2 OF REQ±)					
Category		Basis	Requirement		# trees /ls area required
STREET TREES¹	Pkg	219 lf	1 canopy tree per	40 lf frontage	5 trees
GREENBELT LANDSCAPING¹	Pkg	257 lf	1 large tree per	75 lf frontage	3 trees
	Pkg	257 lf	1 subcanopy tree per	40 lf frontage	6 trees
	Pkg	257 lf	1 shrub* per	20 lf frontage	13 shrubs
	Pkg	Berm or wall must be provided			
PARKING PERIMETER²		1,181 lf	1 canopy tree per	35 lf	34 trees
ACCESS DRIVE PERIMETER³		- lf	1 canopy tree per	35 lf	- trees
PARKING INTERIOR - AREA		50,000 sf	parking area	7.50%	3,750 sf
		15,676	excess over 50,000 sf	1%	157 sf
PARKING INTERIOR - TREES		3,907 sf	1 tree per	200 sf req area	20 trees
Total					68 trees
					13 shrubs

* Shrubs must have minimum mature diameter of 4 feet, height of 2 feet.

1: Can deduct clear vision zones from frontage basis for street trees and access drives from frontage basis for greenbelt plantings

2: Only 50% of parking lot perimeter trees are required along right-of-way frontage of parking lot

3: Can deduct parking frontage along right-of-way from perimeter basis if greenbelt canopy trees are within 15 feet of back of curbs of parking lot and equal the number of required trees for that frontage (at 1 per 35 lf).

SAMPLE CALCULATIONS

Industrial

Zoning: I-1, I-2

		EX. A - EXISTING REGS			
Category		Basis	Requirement		# trees /ls area
STREET TREES	Pkg	267 lf	1 canopy tree per	45 lf frontage	6 trees
	No pkg	365 lf	1 canopy tree per	55 lf frontage	7 trees
GREENBELT LANDSCAPING	Pkg	267 lf	1 large tree per	40 lf frontage	7 trees
	No pkg	365 lf	1 large tree per	40 lf frontage	9 trees
	Pkg	267 lf	1 subcanopy tree per	30 lf frontage	9 trees
	No pkg	365 lf	1 subcanopy tree per	35 lf frontage	10 trees
PARKING PERIMETER		884 lf	1 canopy tree per	35 lf	25 trees
PARKING INTERIOR - AREA		24,796 sf	pkg space area	7.0%	1,736 sf
		25,459 sf	aisle area	2.0%	509 sf
			excess over 50,000 sf	1.0%	
PARKING INTERIOR - TREES		2,245 sf	1 tree per	75 sf req area	30 trees
Total					103 trees

Id keep 30 LF

		EX. B - PROPOSED REGS			
Category		Basis	Requirement		# trees /ls area
STREET TREES¹	All	572 lf	1 canopy tree per	45 lf frontage	13 trees
GREENBELT LANDSCAPING² (adj to parking)	Pkg	245 lf	1 large tree per	40 lf frontage	6 trees
	No pkg	365 lf	1 large tree per	60 lf frontage	6 trees
	Pkg	245 lf	1 subcanopy tree per	35 lf frontage	7 trees
	No pkg	365 lf	1 subcanopy tree per	40 lf frontage	9 trees
PARKING PERIMETER^{3,4,5}		537 lf	1 canopy tree per	35 lf	15 trees
PARKING INTERIOR - AREA		49,333 sf	parking area	5.0%	2,467 sf
			excess over 50,000 sf	0.5%	- sf
PARKING INTERIOR - TREES		2,467 sf	1 tree per	200 sf req area	12 trees
Total					68 trees

Seems like not enough

- 1: Can deduct clear vision zones from frontage basis for street trees and access drives from frontage basis for greenbelt plantings
- 2: Can include foundation subcanopy trees in greenbelt plantings if building front is at greenbelt limit
- 3: Can subtract parking frontage on road from perimeter basis if greenbelt canopy trees are within 10 feet of back of curbs (of access way and parking lot) and the count of trees used equals the required number of trees at 1 per 35 lf frontage
- 4: Can subtract frontage along building from perimeter basis if building height within 20' of parking lot is at least 20 feet.
- 5: Canopy greenbelt trees within 15' of curb can be used to satisfy requirement.

SAMPLE CALCULATIONS

Industrial Subdivision

EX. A - EXISTING REGS					
Category	Basis	Requirement		# trees /ls area	
CANOPY/EVERGREEN TREES	632 lf	1 canopy tree per	35 lf frontage	18 trees	
SUBCANOPY TREES	632 lf	3 subcanopy trees per	40 lf frontage	47 trees	
PARKING FRONTAGE		1 evergreen hedge in front of parking			
PARKING PERIMETER	884 lf	1 canopy tree per	35 lf	25 trees	
PARKING INTERIOR - AREA	17,319 sf	pkg space area	7.0%	1,212 sf	
	32,941 sf	aisle area	2.0%	659 sf	
PARKING INTERIOR - TREES	1,871 sf	1 tree per	75 sf req area	25 trees	
Total				115 trees	

EX. B - PROPOSED REGS					
Category	Basis	Requirement		# trees /ls area	
CANOPY/EVERGREEN TREES¹	572 lf	1 canopy tree per	45 lf frontage	13 trees	
SUBCANOPY TREES^{2,3}	610 lf	1 subcanopy tree per	40 lf frontage	15 trees	
SHRUBS	610 lf	1 shrub per	20 lf frontage	31 shrubs	
PARKING FRONTAGE		1 evergreen hedge or 3 ft berm in front of parking			
PARKING PERIMETER^{4,5}	748 lf	1 canopy tree per	35 lf	21 trees	
PARKING INTERIOR - AREA	49,338 sf	parking area	5.0%	2,467 sf	
		parking area	0.5%		
PARKING INTERIOR - TREES	2,467 sf	1 tree per	200 sf req area	12 trees	
Total				61 trees	
				31 shrubs	

1: Minimum of 1 per 50 lf must be placed along road as street trees

1: Can deduct clear vision zones from frontage basis for street trees and access drives from frontage basis for other greenbelt plantings

3: Can count foundation subcanopy trees toward required subcanopy plantings if building front is at setback limit

3: Can deduct parking frontage along right-of-way from perimeter basis if greenbelt canopy trees are within 15 feet of back of curbs of parking lot and equal the number of required trees for that frontage (at 1 per 35 lf).

5: Can subtract parking lot frontage along building from perimeter basis if building height within 20' of parking lot is at least 20 feet.

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

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1. Intent. The intent of this Section is to achieve landscapes with creative placement and distinctive-attractive designs that:

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- emphasize the preservation of existing natural resources, and the use of native plant materials, and a diversity of plant species;
- preserve and enhance existing woodlands, wetlands and natural open areas;
- which reduces impervious surfaces, enhances storm water management and prevents soil erosion and soil depletion;
- provide require appealing yet opaque visual and audible buffering between non-compatible land uses; and
- and to utilize the best ecological concepts and environmental objectives with preservation as a priority,

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

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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, and any addition to an existing building that is equal to or greater than a twenty-five (25)25% percent increase in the overall square footage of the building or four hundred (400)400 square feet, whichever is less. With the exception of Section 5.5.5.FG, 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 the this Ordinance and the requirements of the City of Novi "Landscaping Design Manual," as adopted by the City Council by resolution and which may similarly be amended by Council resolution from time to time.

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(3) Landscape Requirements

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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.

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- ii. Requirements for Obscuring Landscaped Earth Berms and Walls. In all locations which abut or are adjacent to any residential district (RA, R-1, 2, 3, 4, RT, RM-1, RM-2, MH and any TC district 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.

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5.5.3.A.ii Residential Adjacent to Non-Residential Berm Requirement Chart		
Use	Zoning	Berm/Berm Height
Parking	P-1 district Off-Street Parking Area	4 ft. 6 in. to 6 ft. high
Residential/Special Land Use	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	OST, OS-1, and OSC districts	4 ft. 6 in. high to 6 foot high
Commercial	B-1, B-2, B-3, RC, and NCC districts	6-6 ft to 8 ft. high
EXPO, EXO district	EXPO district	8 ft to 40-10 ft high
Conference	C district	8-8 ft to 40-10 ft high
Freeway Service	FS district	8-8 ft to 10 ft. high
Town Center	(a.) TC and TC-1 districts	6-6 ft high
	(b.) TC-1 and RM-2 districts	6 ft. high wall
Industrial	I-1 district	10-15 ft. ht. berm, 6 ft. crest width, 80% winter/90% summer opacity (See Section 1905.43.14.5.Ee)
	I-2 district	15 ft. ht. berm, 15 ft. crest width, 80% winter/90% summer opacity (See Section 2002.43.15.2.C)
	<u>Special Land Use</u>	10 ft. ht. berm, 6 ft. crest width, 80% winter/90% summer opacity (See Section 3.14.5.F)
Auto Wash, Drive-In Restaurants, Service Stations, and Planned Commercial Centers and Regional Shopping Centers	Where permitted or approved	10 ft. to 45-15 ft
Hospital-Ambulance and Delivery Areas	Where permitted or approved	6 ft. 0 in. high
Utility Buildings, Stations, and/or Substations	Where permitted or approved	6 ft. 0 in. high

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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.

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iv. Placement. The berm 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.

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v. Berm Requirements. The obscuring berm requirements are as follows:

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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 elevation of the closest adjacent principal structures;
 - ii. The first floor elevation of the uses requiring screening;
 - iii. The elevation 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 principal structures within ~~two hundred (200)~~200 feet of the subject 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~~ ^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 5v.(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 5v.(a), above.
- c. The obscuring berm shall have no greater than a maximum slope of ~~thirty-three~~ ^{33%} ~~(33)~~ percent. (~~Three~~ ³ feet of horizontal plane for each ~~one~~ ¹ foot of vertical height.) More gradual slopes are strongly encouraged.
- e.d. Plants shall be specified for any "no mow" areas. *larger?*
- e.e. The crest of the obscuring berm shall have a nearly flat horizontal area of at least ~~five~~ ⁽⁵⁾ feet in width. (See the previous Berm Requirement Chart for exceptions.)
- e.f. The required earth berm shall be located at the lot line, except where such location would interfere with underground utilities or drainage.
- e.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 Section 5.5, provided that it meets all applicable noise attenuation and

1/3 is good - Thanks.

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.

~~g.a. See Landscape Design Manual for additional requirements.~~

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.

~~See Landscape Design Manual for additional requirements.~~

~~h.i.~~

vi. Wall Requirements.

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- 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 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 ~~three and one half (3½)~~ feet 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 (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 retaining walls are permitted for the purpose of terracing.

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

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to be documented and submitted to the city

~~vii~~ -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:

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- 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

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- 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

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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.

- a. 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.
- b. Berms shall comply with Section 5.5.3.A.v., with specific requirements as called out in Table 5.5.3.B.ii.f.
- c. The landscape area, if adjacent to parking and vehicular use areas not between the right-of-way and the principal building, shall be planted to achieve a minimum opacity of ninety (90) percent 90% during the summer and eighty (80) percent 80% during the winter. The landscape in this area shall provide an intermittent continuous visual obstruction height of thirty-six (36) inches, plus the required canopy/evergreen or subcanopy trees required per Table 5.5.3.B.ii.f.
- e. ~~_____~~
- d. 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 requirements of the zoning district as specified in the Right-of-Way Landscape Screening Requirements Chart, and shall have a maximum slope of thirty-three (33) percent (three feet of horizontal plane for each one (1) foot of vertical height) 33% and a crest as specified in the Right-of-Way Landscape Screening Requirements Chart (Table 5.5.3.B.ii.f). ~~A landscape area shall be planted to provide visual interest and yet allow views into the site.~~
- e. 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 street address from a 30-40 degree angle as you approach the building.
- f. Parking areas in a Commercial/Office district with parking located between the principal building and right-of-way shall be planted at a reduced rate, per the greenbelt tree and subcanopy requirements called for in Table 5.5.3.B. (The berm and street tree requirements are the same as if the parking was not between the building and road).

~~d. _____~~

Residential	MH	Not adjacent to parking	34	42	43	(5,6,7,4)-(7)	35	25	4535
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Planned Suburban Low Rise	PSLR	Parking and buildings adjacent to a section line road right-of-way	50	4	3	Not permitted	35	20	35
		Parking adjacent to other right-of-ways	To Front of principal building	4	3	Not permitted	35	20	35

FOOTNOTES:

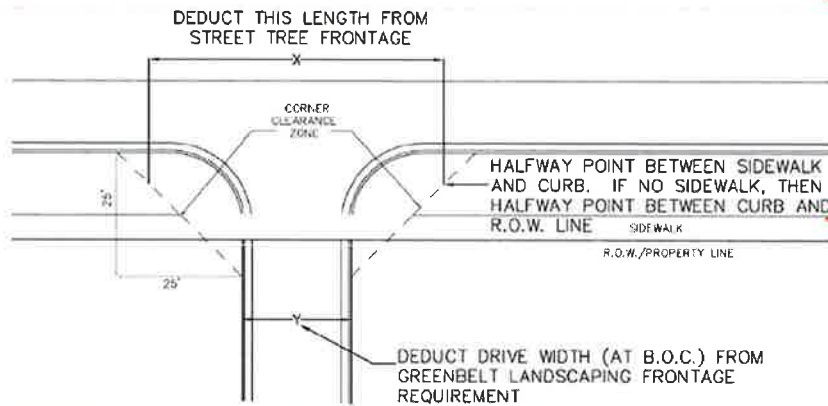
- (1) Round fractions to the nearest whole number for the required number of trees and shrubs.
- 5.5.2.8.ii.f Right-of-Way Landscape Screening Requirements (continued)
- (2) (1) Subcanopy trees are to be used under overhead utilities. Use 2-1.5 subcanopy trees for each one canopy tree requirement. If columnar/fastigate varieties are used, 2 subcanopy 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.
- (3) (2) Subcanopy trees can be in an informal or formal arrangement. Format spacing shall be 10-foot minimum to 15-foot maximum on center.
- (4) (3) Shrubs, both deciduous and evergreen, 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) (4) 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, and plantings.
- (6) Freestanding walls shall be constructed of masonry or concrete with all exterior sides of face brick with a suitable cap.
- (7) An ornamental fence with shrubs and brick piers may be used instead of a berm if approved by the Planning Commission in Use/Zoning as indicated above. A Planning Commission waiver is required for this substitution.
- (5) Ornamental Grasses, perennials, annuals shall be planted in massed groupings to highlight entrances and views of key elements.
- (6) With Road Commission for Oakland County approval where applicable.
- (7) Freestanding walls shall be constructed of masonry or concrete with all exterior sides of face brick with a suitable cap.
- (8) An ornamental fence with shrubs and brick piers may be used instead of a wall if approved by the Planning Commission in Use / Zoning as indicated above.
- (8) (9) View channels into the site are to be used for safety visibility. Please provide sight lines to the building address for approaching vehicles at an approximately 30-40 degree angle.
- (9) (10) Tree spacing requirements are intended to dictate the tree quantity per linear footage along the proposed right-of-way (ROW). It is not intended to dictate exact placement on the site within the area of the requirement. Creative landscape design is encouraged.
- (10) (11) 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.

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but not block view!

- (11) ~~(12)~~ Street trees shall not be permitted within the 25-foot ~~clear vision triangle~~ corner clearance zone (Section 5.9). Roads with Road Commission for Oakland County (RCOC) jurisdiction shall utilize their standards for sight distance in locating street trees. If RCOC or does not approve any or all trees, those trees shall not be planted, with no penalty to the applicant.
- (12) 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
- (13) The width of one access aisle through the greenbelt per street frontage may be deducted from the basis of calculation (see illustration in footnote #17 below).
- (14) Subcanopy trees used in foundation landscaping may also count toward the right-of-way subcanopy requirement if the building is located at the rear of the required greenbelt width.
- (15) The width of the corner clearance zone may be deducted from the basis of the calculation for street trees for one access way per street frontage (see illustration in footnote #17 below).
- (16) In the Town Center districts, deciduous canopy/large evergreen trees or subcanopy trees are required in the greenbelt, but not both.
- (17) Linear deductions allowed for street trees and right-of-way greenbelt landscaping:



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v-iii. 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 such action by the Commission shall be taken 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, ~~require~~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

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~~b. (see Footnote (8) of the Right-of-Way Landscape Screening Requirements Chart).~~

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 to 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 is encouraged, such as islands between rows of parking in long, wide planting strips. See (see Parking Lot Configuration Diagrams in the City of Novi Landscape Design Manual for examples).

d. The minimum width dimension of the islands is to be ten (10) feet from back of curb to back of curb. The use of pedestrian walkways in parking lot islands is encouraged, if the islands' paths are greater than or equal to sufficiently wide and the seventeen feet in width 10-foot planting area width is maintained.

e. Landscaped islands are to be installed with six (6) inch curbs that are designed to protect landscaping from damage by vehicles. However, periodic openings in curbs, which do not exceed two (2) feet in length, shall be permitted only for the purpose of conveying storm water run-off.

a.f. If more than one (1) island is provided in a parking lot, they are to be distributed throughout the lot.

g. Each parking lot landscape island shall have:

(1) Where a parking lot landscape area is required hereunder, it shall be no less than a minimum of 200 square feet than three hundred (300) square feet in area

(2) A minimum of 200 square feet in unpaved area per tree planted in an island. The unpaved area must be immediately adjacent to the tree(s).

(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.

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~~b.h.~~ For any development other than a single one-family or two-family dwelling, ~~for any development other than a single one-family dwelling or single 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).

~~e.i.~~ Wheel stops or raised curbing shall be installed to prevent vehicles from encroaching more than ~~two (2)~~ 2 feet into any parking landscape area. When adjacent 90 degree parking stalls are reduced from 19 to 17 feet in length, the Required ~~six (6)~~ 6 inch curbs shall be reduced to ~~four (4)~~ 4 inches in height ~~when the adjacent ninety (90) degree parking stalls are proposed to be reduced from nineteen (19) feet to seventeen (17) feet in length.~~ This applies to both landscape and sidewalk overhangs. ~~Also, instances w/~~ here vehicles overhang a sidewalk, the parking stall may be reduced in length to ~~seventeen (17) feet,~~ the curbing shall be reduced to ~~four (4) inches in height,~~ and the sidewalk shall have a minimum width of ~~seven (7)~~ 7 feet.

~~l.~~ No plantings with a mature height greater than ~~twelve (12)~~ 12 inches shall be within ~~ten (10)~~ 10 feet of fire hydrants. Plant materials shall not block ~~the~~ visibility of ~~the~~ hydrant and be no taller than 12 in inches when below a Fire Department Connection.

~~d.k.~~ 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.

~~e.l.~~ 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 the plantings are salt-tolerant and the islands are designed to provide drainage adequate for survival of the island plantings and meet all City of Novi engineering standards.

~~f.m.~~ Paint, c Contrasting brick or concrete pavers may be used to delineate stall lines within parking areas.

~~g.n.~~ Any area within a parking lot not dedicated to parking use or driveways, exceeding ~~one hundred (100)~~ 100 square feet, shall be landscaped with a minimum of lawn or other living ground cover.

~~h.o.~~ All landscaped areas required herein shall consist of a mix of plant materials such as canopy deciduous trees, subcanopy trees, shrubs, groundcovers, ornamental grasses and perennials.

at buildings?
See _____ for plant list of acceptable salt tolerant plant materials.

i.p. 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. ~~Islands or~~ that project into the parking lot from the perimeter of the parking area, ~~if they shall~~ meet the requirements of this Section.

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

(3) 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.

(4) No bay of parking (defined herein as a single row of side by side parking spaces) greater than ~~fifteen (15)~~ 15 parking spaces in length shall be provided ~~unless a landscape island is provided at a minimum interval of one island per fifteen (15) parking spaces.~~

(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 must be provided.~~

(6) ~~The design and layout of all parking lots and islands shall be subject to review and approval by the City of Novi.~~ In order to count toward the total landscape area provided, an island must contain at least 1 deciduous canopy tree.

k.

iii. 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.

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

	A	B	C	D	E
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Category*	Total square footage of parking spaces not including access aisles equals landscaped islands for VUA areas less than or equal to 50,000 square feet	Square footage of all additional paved vehicular use areas (Not including A) under 50,000 square feet equals Total square footage of landscaped islands for VUA beyond the 50,000 square foot	Square footage of all additional paved vehicular use areas (Not including A or B) over 50,000 square feet	Total Square footage of landscaped islands required equals number of interior landscape deciduous canopy trees	Perimeter Deciduous Number of Canopy Trees required equals:
Footnotes	1,2,3	1,2,3		4,5,7	6,7,8
1	$VUA \times 7.5\%$	$(VUA-50000) \times 1.0\%$	$A+B \times 1\%$	Total (A+B) / 35	Perimeter (LF) / 35
2	$VUA \times 7.5\%$	$(VUA-50000) \times 0.5\%$	$A+B \times 0.6\%$	$(A+B)/200$ Total (A+B) / 35	Perimeter (LF) / 35

*Category 1 = OS-1, OSC, OST, B-1, B-2, B-3, C, NCC, EXPO, FS, TC, TC-1, RC Districts and Special Land Uses
 *Category 2 = I-1, I-2

Notes to table:
 (1) Round fractions of trees to the nearest whole number.
 (2) A minimum square footage as set forth in Section 5.5.3.C.ii.b is required. Vehicular Use Area (VUA) to be used in this calculation includes parking spaces, loading areas and access aisles. It does not include drives to the Vehicular Use Area. See illustration below.
 (3) All calculations are to be rounded to nearest whole number (do not use decimal places). For example, if A = 95.96, it would be rounded to 96 before continuing to the next calculation 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. 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 $50,000 \times 7.5\%$ plus $15,000 \times 1\% = 3750 \text{ sf} + 150 \text{ sf} = 3900 \text{ sf}$ landscape area within the parking lot boundary.
 (2) -
 (3) Canopy deciduous trees are required. In instances of overhead utility lines, subcanopy trees may be approved.
 (4) Corner areas at the edges of parking areas may also be counted toward square footage of island space.
 (4) Perimeter greenspace must contain canopy trees equal in quantity to one (1) per thirty-five (35) linear feet as a minimum. Paved vehicular use areas include loading/unloading areas. Deciduous canopy

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- g. Perimeter trees are required for parking areas and access drives to parking areas at a rate of 1 tree per 35 lf of perimeter. See illustration for determination of perimeter length.
- (1) Parking lot frontages with existing trees within 15 feet of the parking lot perimeter (as measured to the tree trunk) may be subtracted from the basis of calculation, as long as the trees provided meet or exceed the requirement of 1 tree per 35 lf.
- (2) If the front edge of a parking lot is at the rear edge of the front greenbelt buffer, and canopy trees, in that greenbelt, existing or proposed, are within 15 feet of the parking lot's back of curb (as measured to the trunk) that section of perimeter may be subtracted from the perimeter length if the number of trees proposed equals the requirement of 1 per 35 lf.

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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 greenliving landscape space around buildings in order to help integrate buildings 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 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 on all at least 80% of the building foundation four sides and have a minimum width dimension of four feet. 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.
 - c. All foundation landscaping areas shall be labeled as such on the landscape plan, with the area in square feet of that area.
 - d. For the front and any other facades visible from a public street, a minimum of sixty (60) percent 60% of the exterior building perimeter will shall be greenspace planted with a mix of trees, shrubs and groundcovers, perennials, grasses, annuals and bulbs. Canopy deciduous, Deciduous canopy and/or large evergreen trees and subcanopy 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.

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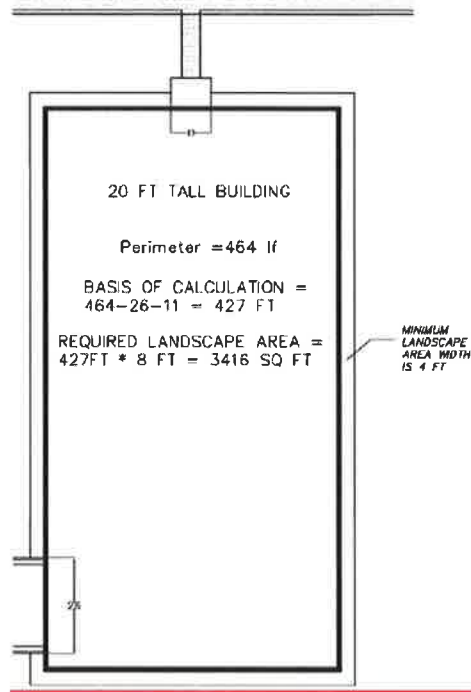
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areas?
Sometimes lawn to the
building in modern
landscape design is
appropriate.

- b.f. If the front of the building is at the rear line of the required right-of-way greenbelt, trees included in the foundation plantings for the front of the building may also count toward the required greenbelt plantings.
- e.g. With respect to projects within the TC and TC-1 districts, the Planning Commission may waive the ~~eight (8)~~ foot width calculation requirements, if significant additional planting and/or decorative paving 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. There shall be greenspace adjacent to patios.
- j. 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.
- d.k. 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.

e. ~~In instances where the building has a first floor overhang greater than two (2) feet, the landscaping required under this~~

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subsection shall begin at the outside edge of the overhang.



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:

iii. 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
 - a. _____
 - b. Elements or activities that are ancillary to the primary building's function inhibit the application of
 - c. this requirement; or

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- c. Landscaping has been proposed in other areas on the site adjacent to the building that offset the loss.

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 (see Ordinance Code chapter 12, Storm Water Management).

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 se lots abutting major thoroughfares shall include an approved screen planting and 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 ~~forty (40)~~ 40 feet.

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

- b.(3) -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 front of each lot in accordance with the standards set forth in the Landscape Design Manual.

(2) A Street Tree Financial Guarantee will be collected at a rate of four-hundred (400) dollars per street tree 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 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.

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~~(2)~~(3) Trees shall be guaranteed by the developer for two (2) growing seasons after installation. All unhealthy and dead plant material shall be replaced by the developer within six (6) months following notice, or the next appropriate planting period, whichever occurs first. All replacement trees shall be guaranteed by the developer for an additional ~~two (2)~~ 2 years after which time a final inspection will be conducted at the request of developer. 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.

~~(3)~~(4) The developer shall submit a landscape plan for all of the street trees to be provided within the plat 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 ~~three (3)~~ 3 feet to ~~six (6)~~ 6 feet as measured from the established street grade. See Landscape Design Manual for additional requirements regarding the type and size of plantings.

~~(4)~~(2) Island and boulevard plantings do not count toward the required street tree totals.

(3) If an island's or entry's landscaping is to be re-landscapevised by the subdivision association, a landscape plan shall be submitted to the City for administrative approval.

~~(2)~~

ii. 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~~ 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 (3)~~ 3 deciduous canopy ~~deciduous~~ trees or large evergreen trees for each dwelling unit on the first floor shall be provided. Evergreens shall be no closer than ~~twenty (20)~~ 20 feet from the roadway.

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- (2) In addition, there shall be one ~~deciduous canopy deciduous~~ tree along interior roads for every ~~thirty-five (35)35~~ feet of lineal interior roadway, ~~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 deciduous~~ trees shall be a minimum of ~~twenty-five (25)25~~ feet and a maximum of ~~thirty-five (35)35~~ feet. In case of overhead utility lines, ~~deciduous~~ subcanopy ~~deciduous~~ trees can be substituted for ~~deciduous canopy deciduous trees at a rate of 1.5 subcanopy tree for each 1 canopy tree~~. (See Single- Family Platted Subdivisions or Residential Site Condominiums Sections for specific requirements.)
- (3) A mixture of shrubs ~~and~~ subcanopy trees ~~and~~ groundcovers, perennials, annuals, and ~~or~~ ornamental grasses shall be provided as foundation plantings at the front of each ground floor unit covering at least ~~sixty (60)35%~~ percent of the front building facade.

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)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)2.~~ Required Landscape Screening Requirements where adjacent to residential, 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.
- ~~(3)3.~~ Building Foundation Landscape Requirements per Section 5.5.3.D shall apply.
- ~~(4)4.~~ Screening of outdoor storage, motor vehicles, off street parking, and areas used to [for] vehicle repair, deliveries, unloading, loading or transport is to be accomplished per Sections 3.14, 3.15, 4.55, 4.56 and Section 5.5.
- ~~(5)5.~~ See the Landscape Design Manual for additional requirements for individual lots.

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~~iv.iii. Detention/Retention/Sedimentation Basin Landscape Requirements. All detention basins shall be planted with 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 maintenance shall be provided (see Ordinance Code, Storm Water Management).~~

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

- i. Street trees shall be provided in front of each single-family parcel, in accordance with the standards set forth in the Landscape Design Manual for lots within single-family platted subdivisions.
- ii. The developer/builder or homeowner shall depict the street trees on the plot plan, which shall be reviewed by the City.
- iii. A Street Tree Financial Guarantee will be collected at a rate of \$400 per street tree required prior to the issuance of a building permit, in accordance with the provisions of Chapter 26.5 of the Novi Code of Ordinances.
- iv. No Final Certificate of Occupancy will be granted until the street trees have been planted by the developer/builder or homeowner and inspected by the City. Once the trees have been inspected, the Financial Guarantee will be reduced to a Maintenance Bond equal to 25% of the material cost of the trees per the Community Development standard costs, or a minimum of \$1000, whichever is higher. The Street Tree Financial Guarantee will not be reduced until the trees have been planted and accepted by the City.
- v. Trees shall be guaranteed by the developer/builder or homeowner for 2 growing seasons after installation. All unhealthy and dead trees shall be replaced by the developer/builder or homeowner within 3 months following notice, or the next appropriate planting period, whichever occurs first.
- vi. All replacement trees shall be guaranteed by the developer/builder or homeowner for an additional 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.

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4. Landscape Plan Review Standards.

- (4) -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;

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- 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 ~~one and one-half (1.52)~~ times the cost 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 ~~thirty (30)~~ 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 of ~~two (2)~~ 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 financial guarantee is only 100% of the \$400 per tree.
- C. **Inspections.** A City representative will perform landscape inspections following a request from the developer. The inspection time period is from ~~March-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 ~~March 31~~ April 15, a financial guarantee is to be provided based on ~~two 1.2 (2.0)~~ times the ~~percent~~ incomplete material cost of incomplete items for a Temporary Certificate of Occupancy as outlined above. Beginning ~~March 31~~ April 15, the Applicant then has ~~thirty (30)~~ 30 days to complete items or the City will cash in the amount being held and finish the job with the financial guarantee funds.

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D. **Establishment Period.** The establishment period for the plant material guarantee will ~~occur~~ beginning at the Final Certificate of Occupancy inspection approval and continue to two (2) years from that date. All plantings shall be properly planted ~~as to be~~ in a healthy, growing condition at commencement of the establishment period. At the end of the establishment period, any plantings, which are ~~twenty (20) percent~~ 20% dead or greater, shall be replaced.

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E. **Notice of Installation/Minor changes**

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- 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. Minor changes due to seasonal planting problems and lack of plant availability 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. 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 from approved plan, such that the provided plan is not predominately representative of the actual installed plantings, the landscape plan shall be revised and resubmitted for plan approval; a revised or as-built plan and an additional review fee will be required.

good.

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

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

- i. ~~Street trees shall be provided in front of each single-family parcel, in accordance with the standards set forth in the Landscape Design Manual for lots within single-family-platted subdivisions.~~
- ii. ~~A Street Tree Financial Guarantee will be collected at a rate of four hundred (400) dollars per street tree required prior to the issuance of a building permit, in accordance with the provisions of Chapter 26.5 of the Novi Code of Ordinances. No Final Certificate of Occupancy will be granted until the trees have been planted by the developer/builder or homeowner and inspected by the City. Trees shall be guaranteed by the developer/builder or homeowner for~~

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~~two (2) growing seasons after installation. 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, whichever occurs first. 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 developer/builder or homeowner. The Street Tree Financial Guarantee will not be reduced until the trees have been planted and accepted by the City.~~

~~iii. The developer/builder or homeowner shall depict the street trees on the plot plan, which shall be reviewed by the City.~~

~~(c)6.~~ Maintenance

A. Maintenance of required plantings by the owner shall be carried out so as to present a healthy, neat and orderly appearance, free from refuse and debris.

B. To insure proper maintenance and as a condition of Final Site Plan approval, the property owner shall 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.

C. Such instrument shall also include -provisions that:

i. all unhealthy and dead material shall be replaced within ~~one (1)~~ 1 year, or the next appropriate planting period, whichever occurs first;

ii. all landscaped areas shall be provided with ~~an irrigation system~~ method of providing water for the landscaping during establishment . A permanent irrigation system must be installed if plantings that require a consistent source of water for survival are part of the landscape;

iii. tree stakes, guy wires and tree wrap are to be removed after one winter season;

iv. plantings shall be guaranteed for ~~two (2)~~ 2 growing seasons after the date of the acceptance of the installation; and

B.v. 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 ~~the 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.

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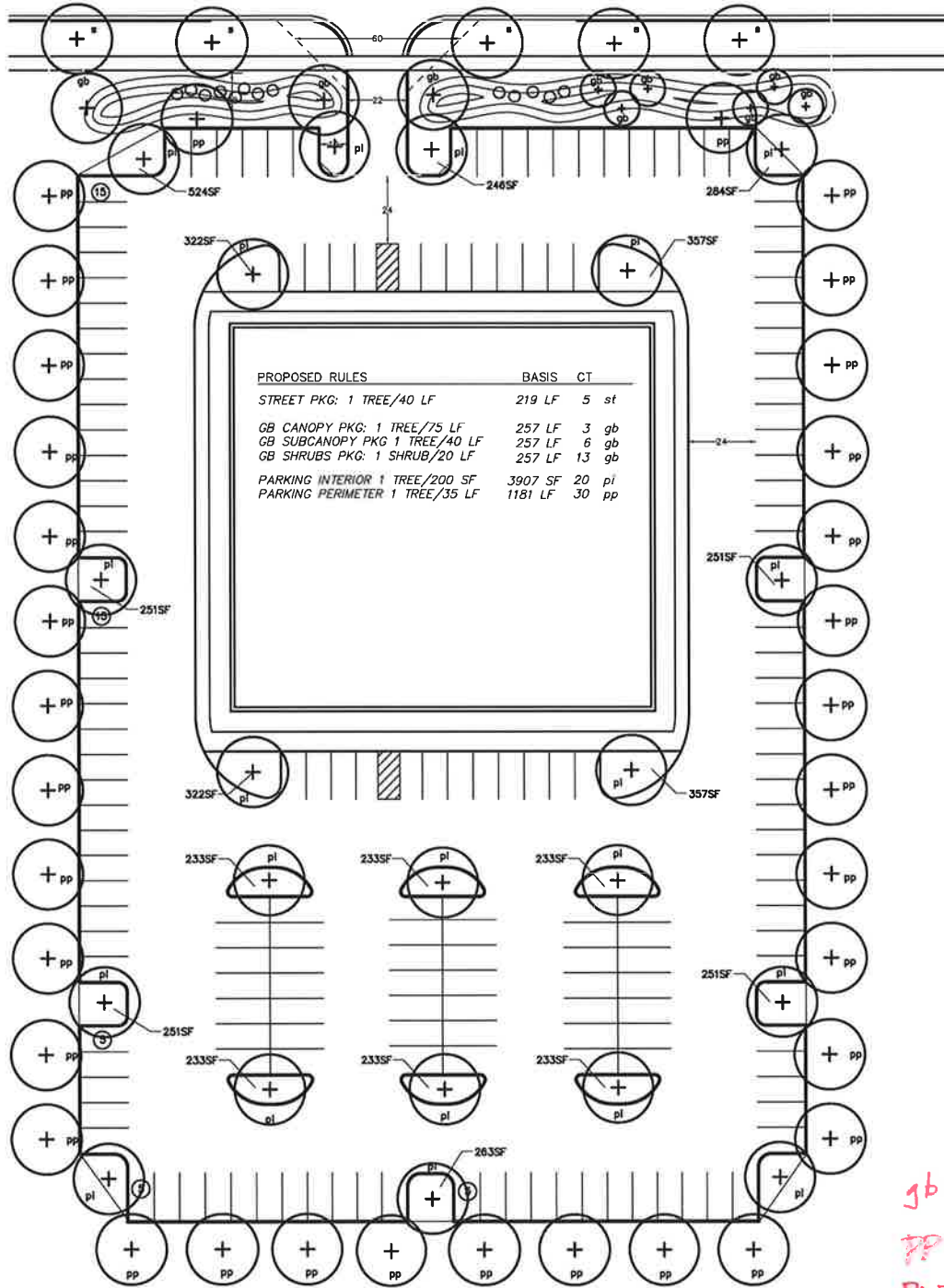
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D. Responsibility and Certificates of Occupancy. The owner of the property subject to the requirements of this Section shall be responsible for installing and maintaining landscaping per the approved final landscape plan as specified in this Section. Where the property is occupied by a person other than the owner, the occupant shall also be responsible for maintenance.

E. 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.

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PROPOSED RULES (NEW SECTION)

1/2 OF GREENBELT REQUIREMENTS, SAME STREET TREE, PARKING REQUIREMENTS

**TOTAL TREES = 64
TOTAL SHRUBS = 13**

PROJECT: PROPOSED LANDSCAPING ORDINANCE
SHEET: COMMERCIAL - BEHIND PARKING
ZONING SEC. 5.5.3.B and 5.5.3.C

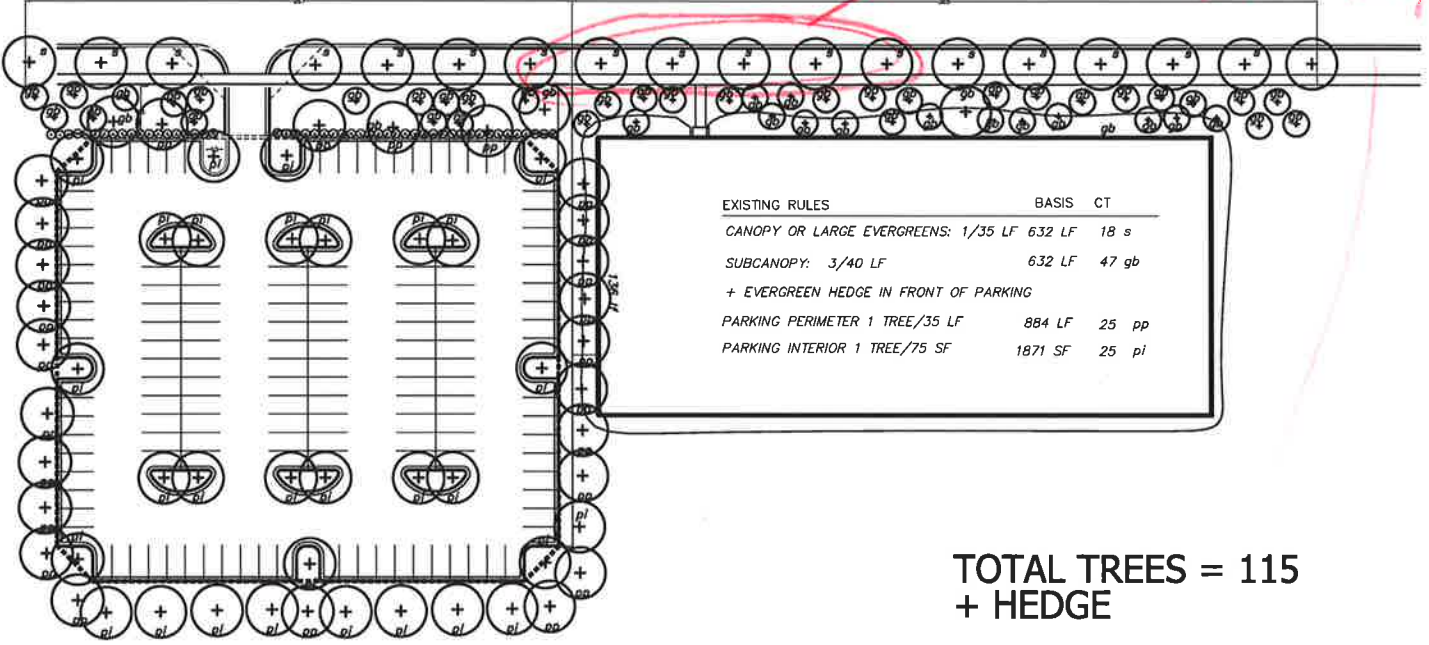
DATE: 12/7/2016



SCALE: 1" = 60'

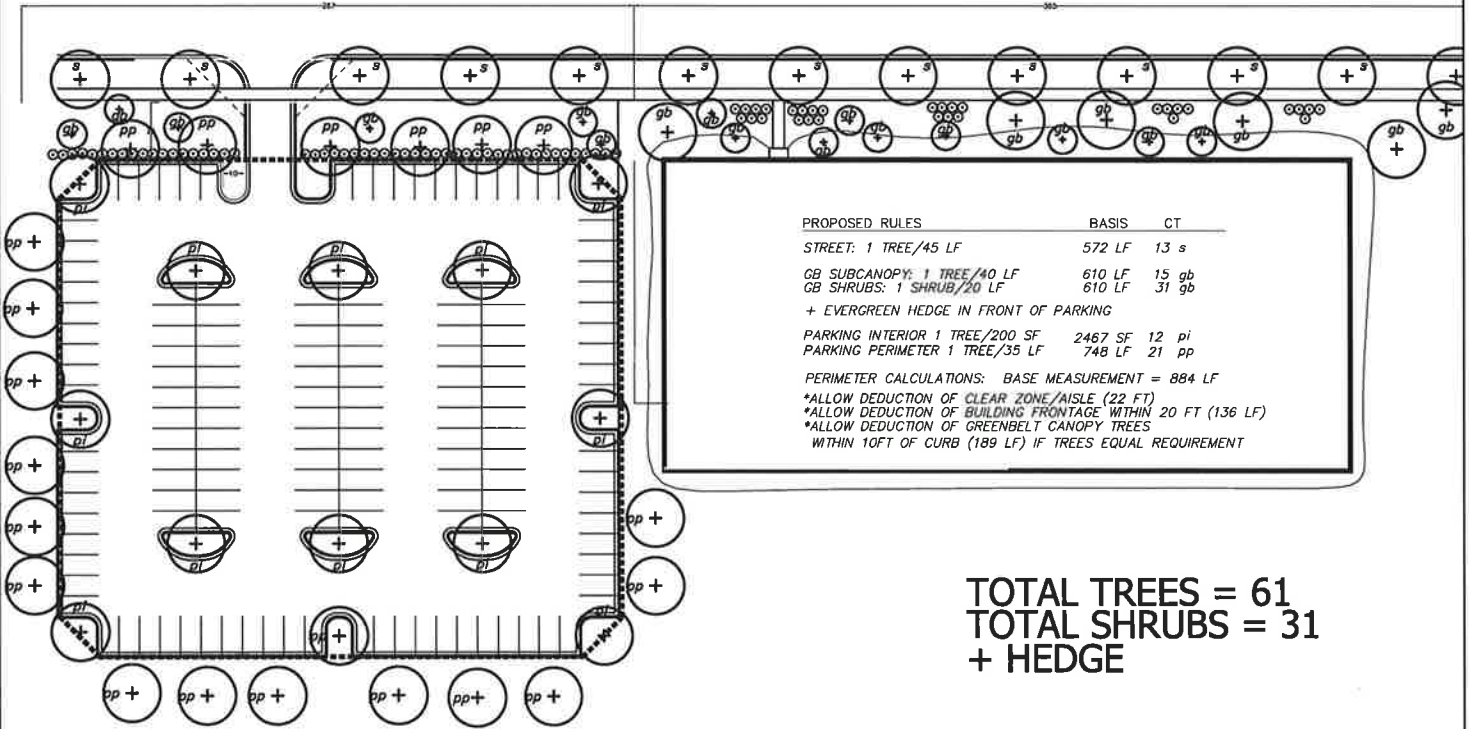


Street trees I think this spacing should stay



TOTAL TREES = 115
+ HEDGE

EXISTING RULES



TOTAL TREES = 61
TOTAL SHRUBS = 31
+ HEDGE

PROPOSED RULES

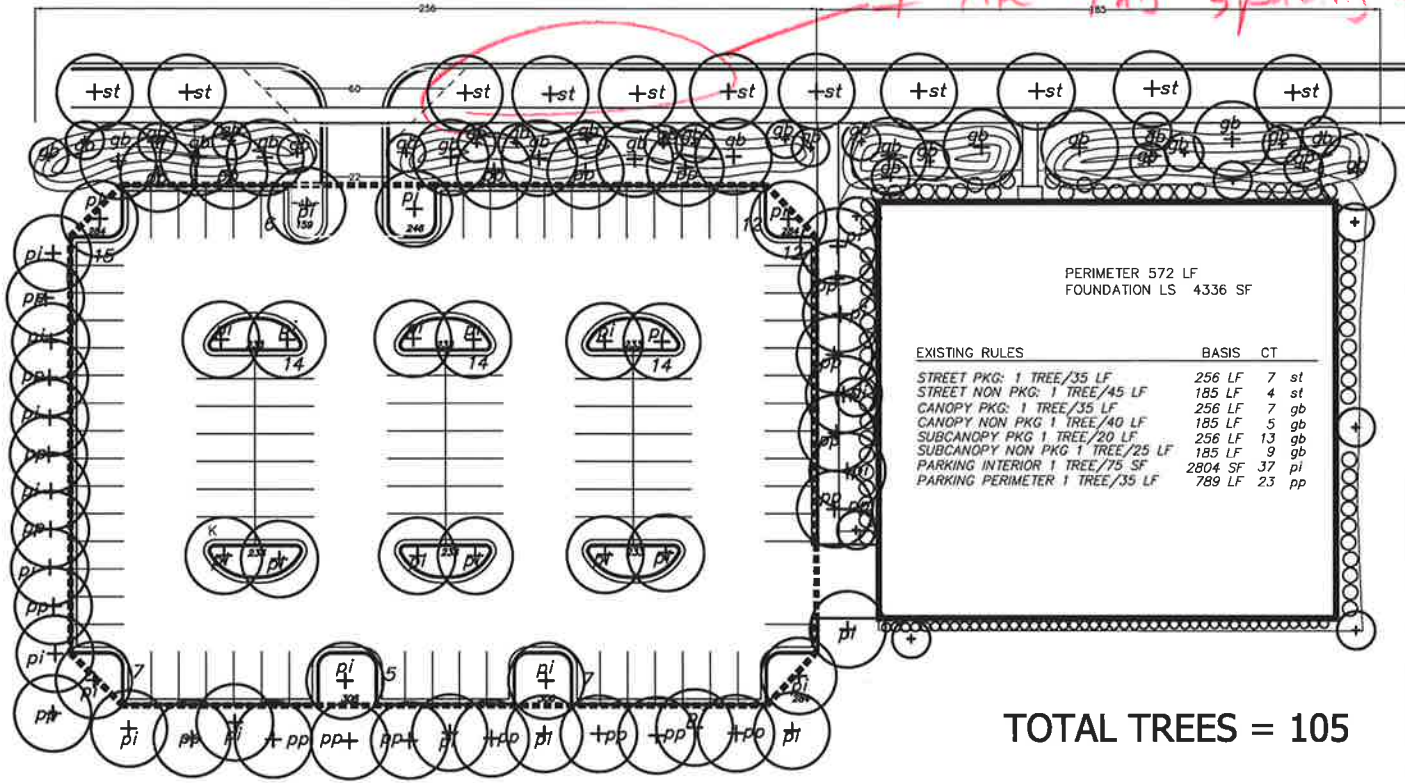
PROJECT: PROPOSED LANDSCAPING ORDINANCE
SHEET: INDUSTRIAL SUBDIVISION
ZONING SEC. 5.5.3.B and 5.5.3.C
and LDM SEC 2.b
DATE: 12/7/2016



SCALE: 1" = 80'

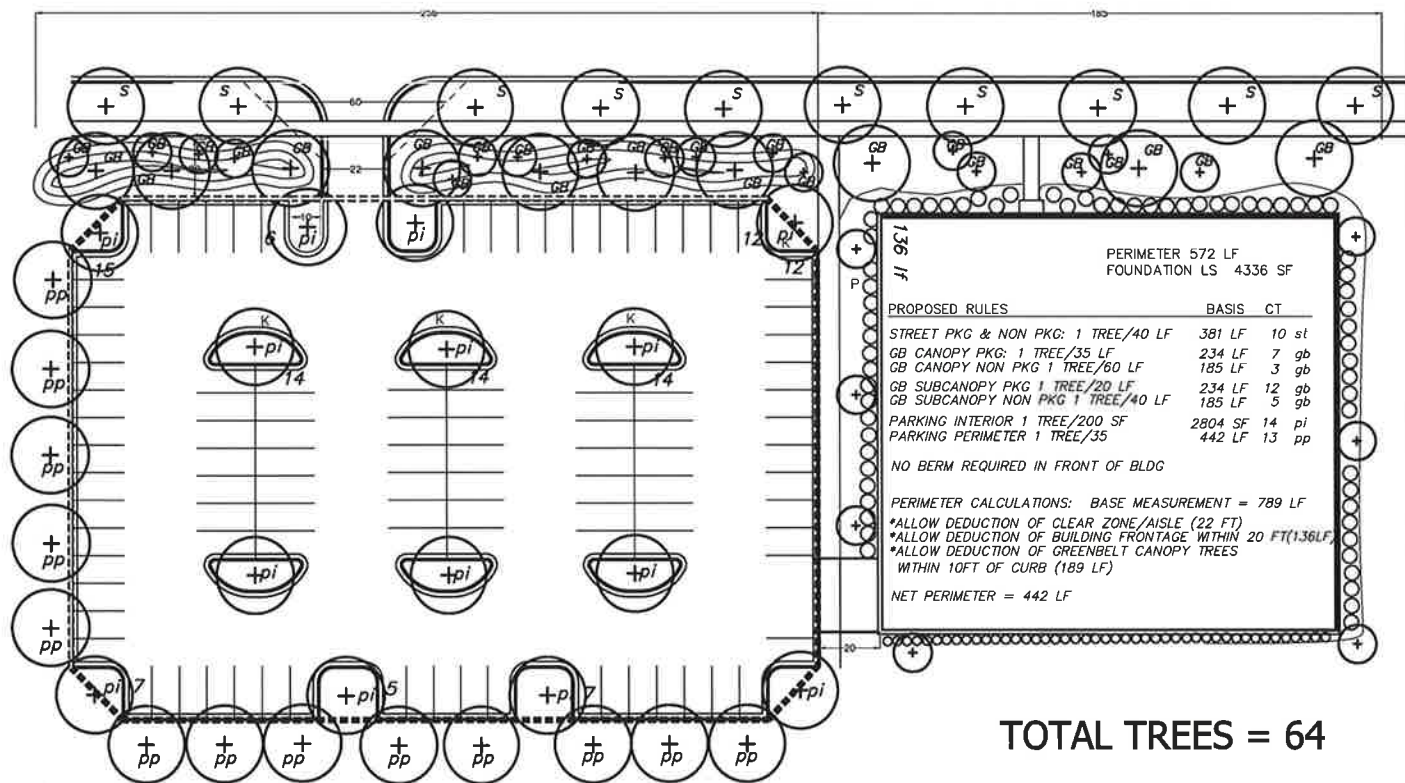


I like this spacing better



TOTAL TREES = 105

EXISTING RULES



TOTAL TREES = 64

PROPOSED RULES

PROJECT: PROPOSED LANDSCAPING ORDINANCE
 SHEET: COMMERCIAL - 1
 ZONING SEC. 5.5.3.B and 5.5.3.C
 DATE: 12/7/2016



SCALE: 1" = 60'



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. REMOVE EXCESS SOIL TO EXPOSE ROOT FLARE IF NECESSARY.

MOUND EARTH TO FORM SAUCER

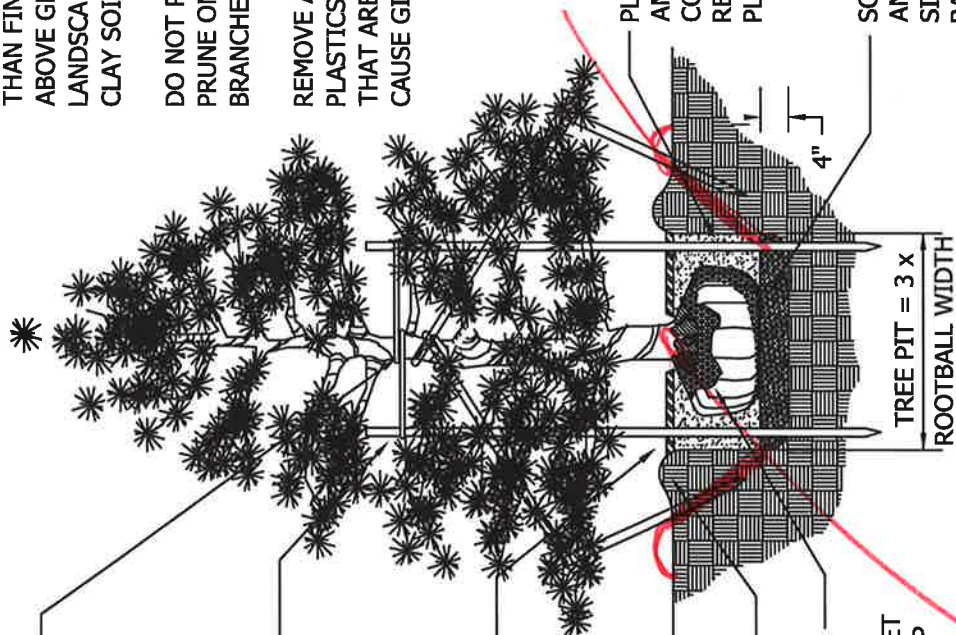
REMOVE ALL NON-BIODEGRADABLE MATERIALS COMPLETELY FROM THE ROOTBALL. CUT DOWN WIRE BASKET AND ~~FOLD DOWN~~ BURLAP FROM TOP 1/2 OF THE ROOTBALL.

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.



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

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

sides at an angle

I would leave bottom from scarify side only

Remove excess soil from top of root ball

EVERGREEN TREE PLANTING DETAIL

Not to scale

to expose root flare. Adjust relation to finished grade if necessary.

remove.

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. REMOVE EXCESS SOIL TO EXPOSE ROOT FLARE IF NECESSARY.

MOUND EARTH TO FORM SAUCER

REMOVE ALL NON-BIODEGRADABLE MATERIALS COMPLETELY FROM THE ROOTBALL. CUT DOWN WIRE BASKET AND FOLD DOWN BURLAP FROM TOP 1/2 OF THE ROOTBALL.

NOTE:

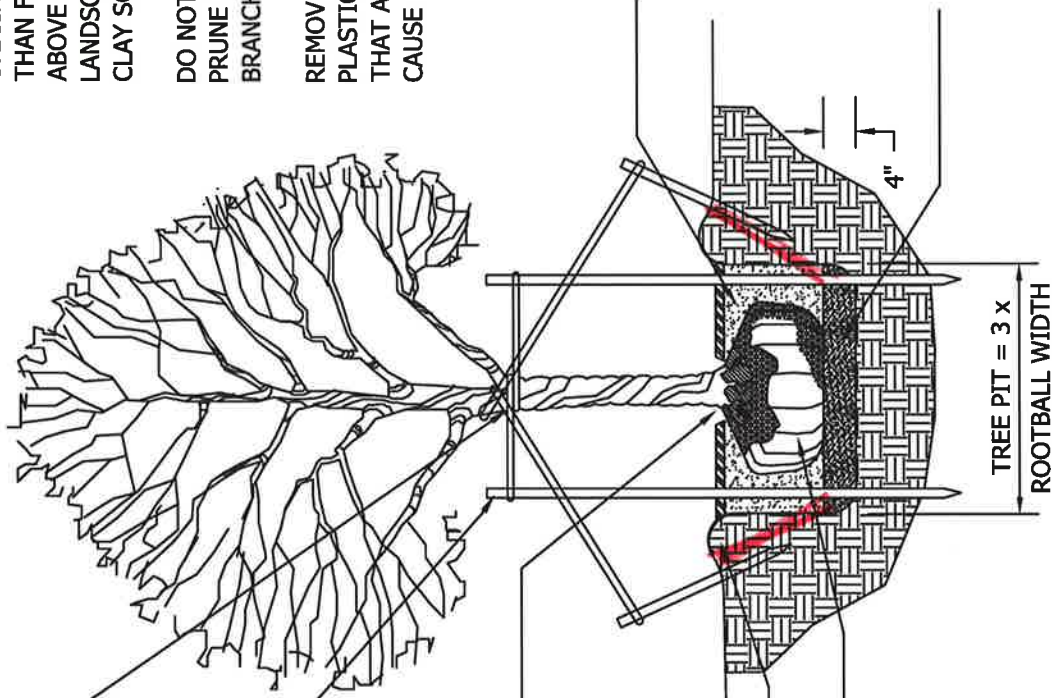
TREE SHALL BEAR SAME RELATION TO FINISH GRADE AS IT BORE ORIGINALLY OR SLIGHTLY HIGHER THAN FINISH GRADE UP TO 6" ABOVE GRADE, IF DIRECTED BY LANDSCAPE ARCHITECT FOR HEAVY CLAY SOIL AREAS.

DO NOT PRUNE TERMINAL LEADER. PRUNE ONLY DEAD OR BROKEN BRANCHES. *do not disfigure form of tree*

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

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

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

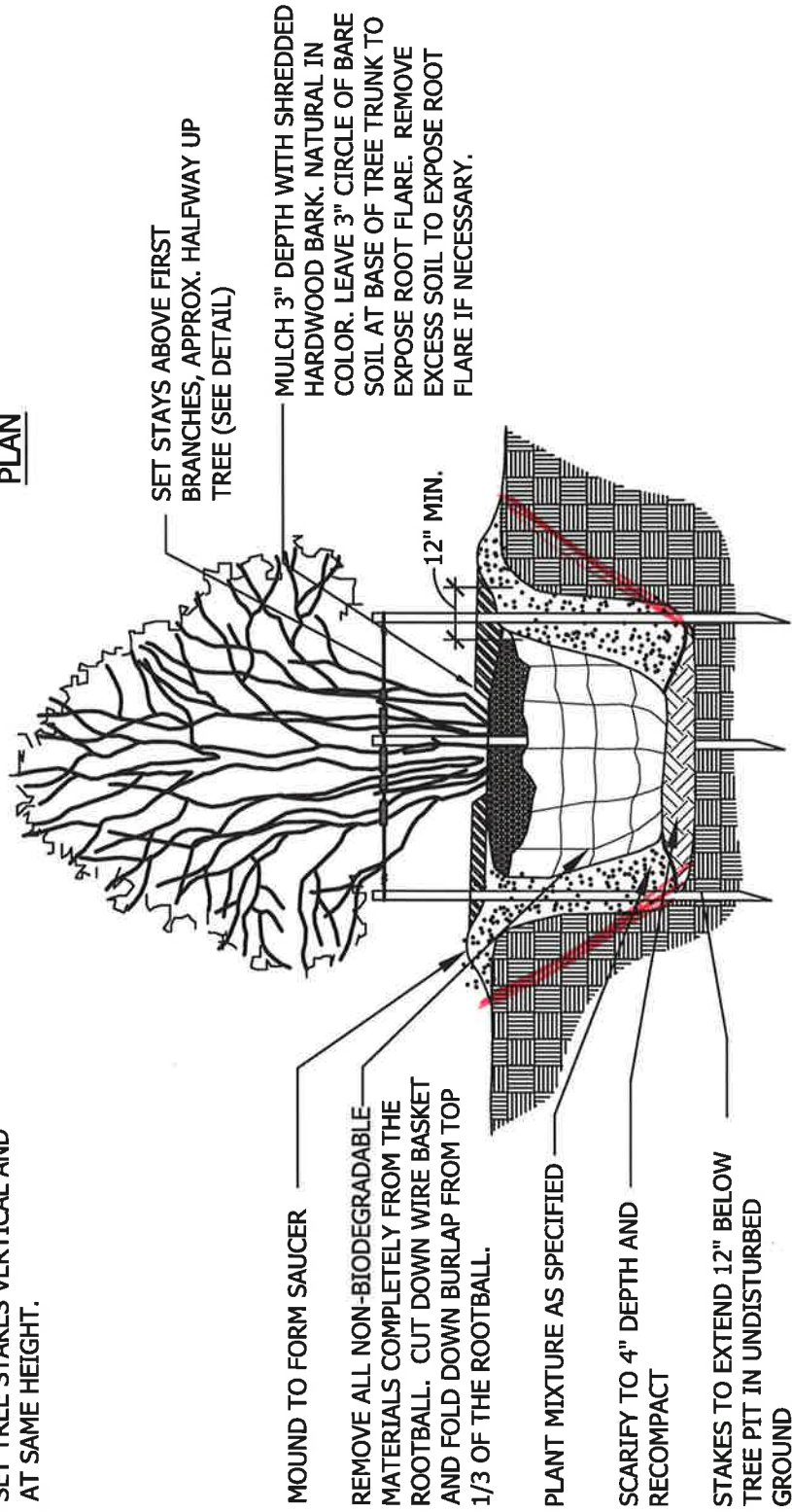
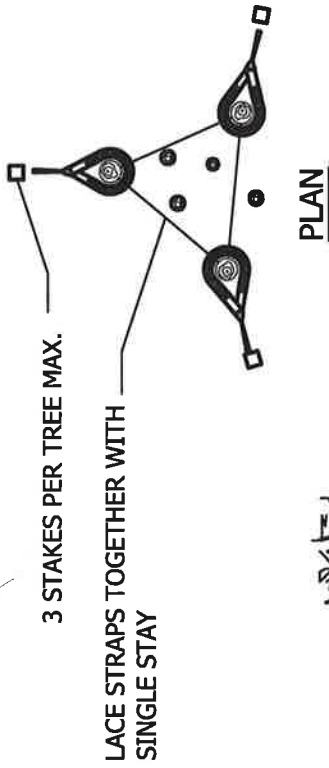


Same width

DECIDUOUS TREE PLANTING DETAIL

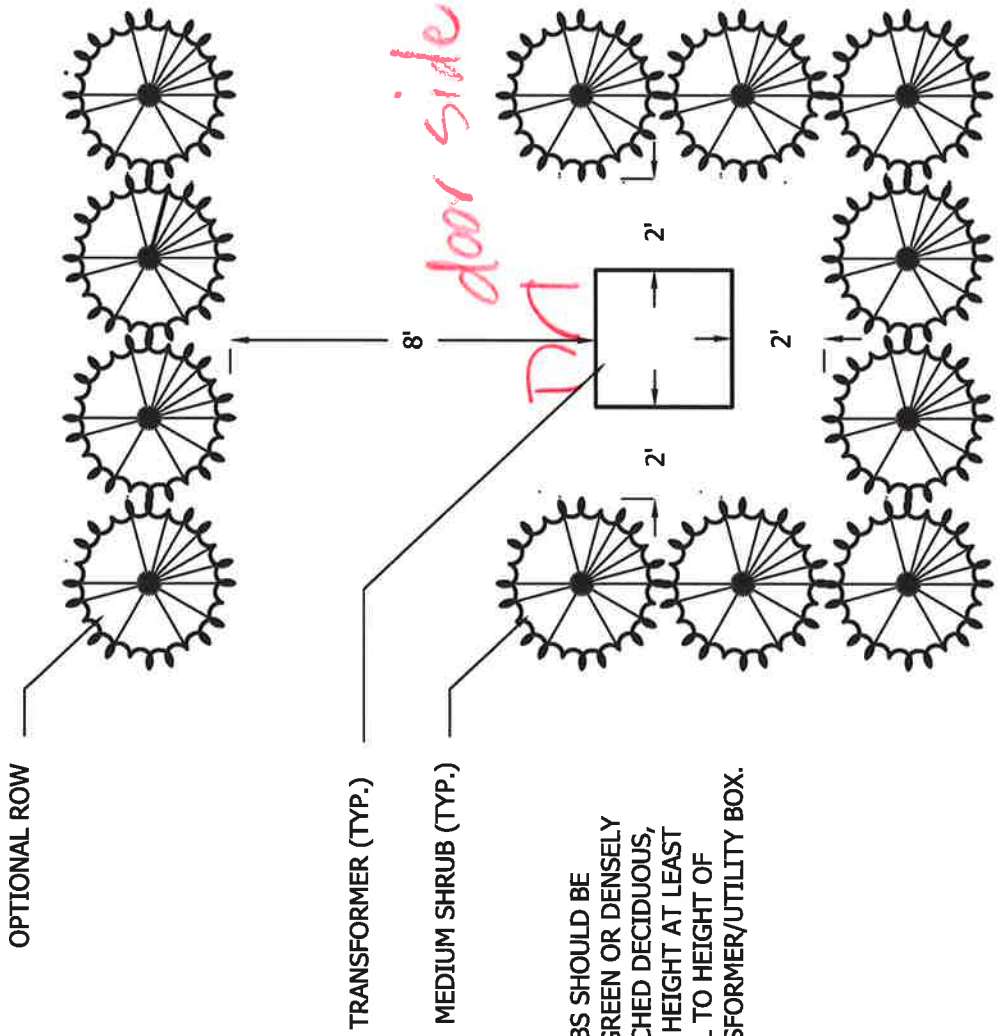
Not to scale

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



MULTI-STEM TREE PLANTING DETAIL

Not to scale



OPTIONAL ROW

TRANSFORMER (TYP.)

MEDIUM SHRUB (TYP.)

SHRUBS SHOULD BE
 EVERGREEN OR DENSELY
 BRANCHED DECIDUOUS,
 WITH HEIGHT AT LEAST
 EQUAL TO HEIGHT OF
 TRANSFORMER/UTILITY BOX.

TRANSFORMER SCREENING DETAIL

Not to scale

Part IV. Street Tree List

NOVI STREET TREE LIST

Genus	Species - cultivar	Common Name	Nativeness to Michigan	Size	App Ht	App Spread	Use	Treelawn Size	Overhead Utilities
Acer	buergerianum	Maple, Trident	Not Native	Small	20'	25'	Special Circumstances	4-6 Feet	Under Utility
Acer	campestre	Maple, Hedge	Not Native	Sm./Med.	30'	30'	Recommended	4-8 Feet	
Acer	freemanii	Maple, Freeman	Cultivar - Native	Large	50'	40'	Special Circumstances	>8 Feet	
Acer	ginnala	Maple, Amur	Not Native	Small	20'	20'	Special Circumstances	4-6 Feet	Under Utility
Acer	griseum	Maple, Paperbark	Not Native	Sm./Med.	25'	20'	Special Circumstances	4-6 Feet	Under Utility
Acer	rubrum	Maple, Red	Native	Large	50'	40'	Recommended	>8 Feet	
Acer	rubrum 'Bowhall'	Maple, Red Bowhall	Cultivar - Native	Med./Lg.	40'	15'	Special Circumstances	>8 Feet	
Acer	rubrum 'Sunset'	Maple, Red Sunset	Cultivar - Native	Large	45'	35'	Recommended	>8 Feet	
Acer	saccharum	Maple, Sugar	Native	Large	60'	40'	Recommended	>8 Feet	
Aesculus	hippocastanum	Horsechestnut	Not Native	Large	80'	35'	Special Circumstances	>10 Feet	
Amelanchier	arborea	Serviceberry	Native	Small	10'	6'	Special Circumstances	4-6 Feet	Under Utility
Amelanchier	x grandifolia 'Autumn Brilliance'	Serviceberry	Cultivar - Native	Medium	20'	20'	Special Circumstances	6-8 Feet	Under Utility
Carpinus	betulus	European Hornbeam	Not Native	Medium	35'	25'	Recommended	6-8 Feet	
Carpinus	caroliniana	American Hornbeam	Native	Medium	25'	25'	Recommended	6-8 Feet	Under Utility
Celtis	occidentalis	Hackberry	Native	Large	55'	45'	Recommended	>8 Feet	
Cercidiphyllum	japonicum	Katsura Tree	Not Native	Med./Lg.	40'	40'	Recommended	>8 Feet	
Chionanthus	retusus	Chinese fringetree	Not Native	Small	20'	20'	Special Circumstances	4-6 Feet	Under Utility
Claudrasia	lutea	Yellowwood	Not Native	Medium	30'	40'	Special Circumstances	6-8 Feet	
Cornus	kousa	Dogwood, Kousa	Not Native	Sm./Med.	25'	25'	Special Circumstances		Under Utility
Crataegus	crus-galli inermis	Hawthorn, Cockspur Thornless	Cultivar - Native	Sm./Med.	25'	25'	Special Circumstances	4-6 Feet	Under Utility
Crataegus	laevigata 'Superba'	Hawthorn, Crimson Cloud	Cultivar - Not Native	Sm./Med.	25'	18'	Special Circumstances	4-6 Feet	Under Utility

not suit for lawn

frost cracks a lot

not suit for lawn

Genus	Species - cultivar	Common Name	Nativeness to Michigan	Size	App Ht	App Spread	Use	Treelawn Size	Overhead Utilities
Crataegus	phaenopyrum 'Treeform'	Hawthorn, Washington	Cultivar - Not Native	Sm./Med.	25'	20'	Special Circumstances	4-6 Feet	Under Utility
Eucommia	ulmoides	Hardy Rubber tree	Not Native	Large	45'	40'	Special Circumstances	>8 Feet	
Ginkgo	biloba	Ginkgo (Male Only)	Not Native	Large	60'	30'	Recommended	>8 Feet	
Gleditsia	tricanthos	Honeylocust	Native	Medium	35'	35'	Recommended	6-8 Feet	
Gleditsia	tricanthos inermis 'Impcole'	Honeylocust, Imperial	Cultivar - Native	Medium	35'	35'	Recommended	6-8 Feet	
Gleditsia	tricanthos inermis 'Shademaster'	Honeylocust, Shademaster	Cultivar - Native	Large	45'	35'	Recommended	>8 Feet	
Gleditsia	tricanthos inermis 'Skycole'	Honeylocust, Skyline	Cultivar - Native	Large	45'	35'	Recommended	>8 Feet	
Gymnocladus	dioicus	Kentucky Coffeetree	Native	Large	60'	40'	Special Circumstances	>8 Feet	
Koeleruteria	paniculata	Goldenrain-tree	Not Native	Medium	30'	30'	Special Circumstances	6-8 Feet	
Liriodendron	tulipifera	Tuliptree	Native	Large	75'	40'	Recommended	>10 Feet	
Maackia	amurensis	Manchurian maackia	Not Native	Small	20'	20'	Special Circumstances	4-6 Feet	Under Utility
Malus spp.	'Snowdrift' 'White Angel' 'Profusion'	Crabapple	Cultivar - Not Native	Small	20'	20'	Special Circumstances	6-8 Feet	Under Utility - use lg, upright varieties
Nyssa	sylvatica	Black Gum	Native	Medium	35'	20'	Special Circumstances	6-8 Feet	
Ostrya	virginiana	Hophornbeam, American	Native	Medium	35'	25'	Special Circumstances	6-8 Feet	
Phellodendron	amurense 'Macho'	Amur Corktree, Macho	Not Native	Med./Lg.	40'	30'	Recommended	>8 Feet	
Platanus	x acerfolia	London planetree	Cultivar - Not Native	Large	55'	40'	Special Circumstances	>10 Feet	
Quercus	acutissima	Oak, Sawtooth	Not Native	Large	50'	50'	Special Circumstances	>8 Feet	
Quercus	alba	Oak, White	Native	Large	65'	65'	Recommended	>8 Feet	
Quercus	bicolor	Oak, Swamp White	Native	Large	45'	45'	Recommended	>8 Feet	
Quercus	borealis (rubra) Oak	Oak, Northern Red	Native	Large	60'	45'	Recommended	>8 Feet	
Quercus	coccinea	Oak, Scarlet	Native	Large	65'	40'	Recommended	>10 Feet	
Quercus	imbricaria	Oak, Shingle	Native	Large	60'	55'	Special Circumstances	>8 Feet	
Quercus	macrocarpa	Oak, Burr	Native	Large	65'	60'	Recommended	>10 Feet	

very invasive

marginally hardy?

Genus	Species - cultivar	Common Name	Nativeness to Michigan	Size	App. Ht.	App. Spread	Use	Tree/Lawn Size	Overhead Utilities
Quercus	phellos	Oak, Willow	Not Native	Large	50'	35'	Special Circumstances	>8 Feet	
Quercus	robur	Oak, English	Not Native	Large	50'	40'	Special Circumstances	>8 Feet	fastigate/columnar varieties in special
Sophora	japonica	Pagoda Tree	Not Native	Large	45'	35'	Recommended	>8 Feet	
Syringa	reticulata	Japanese Tree Lilac	Not Native	Small	20'	15'	Recommended	4-6 Feet	Under Utility
Tilia	americana	American Basswood	Native	Large	70'	40'	Recommended	>8 Feet	
Tilia	americana 'Redmond'	Linden, Redmond	Cultivar - Native	Medium	35'	25'	Recommended	6-8 Feet	
Tilia	cordata	Linden, Littleleaf	Not Native	Large	50'	35'	Recommended	>8 Feet	
Tilia	euchlora	Linden, Crimean	Not Native	Med./Lg.	40'	35'	Recommended	>8 Feet	
Tilia	tomentosa	Linden, Silver	Not Native	Large	60'	35'	Recommended	>8 Feet	
Ulmus	americana 'New Harmony'	Elm, New Harmony	Cultivar	Large	65'	60'	Special Circumstances	>8 Feet	
Ulmus	americana 'Valley Forge'	Elm, Valley Forge	Cultivar	Large	65'	60'	Special Circumstances	6-8 Feet	
Ulmus	x 'Homestead'	Elm, Homestead	Cultivar - Not Native	Large	55'	35'	Special Circumstances	>8 Feet	
Ulmus	x 'Frontier'	Elm, Frontier	Cultivar - Not Native	Med./Lg.	40'	30'	Special Circumstances	>8 Feet	
Zelkova	serrata 'Green Vase'	Zelkova, Green Vase	Not Native	Large	50'	40'	Special Circumstances	>8 Feet	
Zelkova	serrata 'Village Green'	Zelkova, Village Green	Not Native	Med./Lg.	40'	38'	Special Circumstances	>8 Feet	