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A. INTRODUCTION

The **Interstate Zoning District** (herein referred to as the "**IZD**") is a Planned Unit Development within the *Village of South Holland* conceived to capitalize on the adjacency to- and visibility from- Interstate 94 that is unique to the property. By creating an exciting new business and commercial "gateway" into the community visible from the expressway, the Village's presence in the area will be enhanced. Existing businesses and residences will therefore benefit from a broadened customer base and improved amenities. The **IZD** will become a unique place within the *Village of South Holland*, creating a destination for residents and visitors alike.

These Design Guidelines serve as minimum standards which must be met when developing parcels within the **IZD.** They are not intended to limit development choices or design alternatives, but rather to encourage innovation and creativity above an appropriate standard.

Section A1.0 - Design Guideline Objectives

Design Guidelines were conceived to allow planning and design professionals the opportunity to create within a unique **IZD** context. Goals for successful development include:

A1.1 ...creation of a cohesive, aesthetically pleasing, user friendly, comfortable environment which fosters a distinctively unique and positive image for the *Village of South Holland*;

A1.2 ...promotion of high quality mixed-use developments that honor efficient use of land, and ensure high levels of aesthetic value in order to benefit land owners, and the community as a whole;

A1.3 ...sensitivity to the preservation of the watercourse and existing vegetation (where applicable) and development of unifying landscape improvements that enhance the architecture and appearance of each site;

A1.4 ...thoughtful consideration given to the impact of site, building, parking, lighting and signage within each development;

A1.5 ...protection and promotion of the health, safety and welfare of the residents of the *Village of South Holland* and surrounding communities;

A1.6 ...a comprehensive storm water management system designed as an amenity

Section A2.0 - Guideline Application

These Design Guidelines are applicable to all new developments on all properties within the boundaries of the **IZD**. They are not applicable to interior alterations which do not affect exterior elevations or views as seen only from within a structure, or general maintenance not involving building modification. These Design Guidelines are also applicable to any building or site renovation if the following elements are changed:

A2.1 **Use** – any change in the use of the existing building or property.

A2.2 **Lot Standards** – any subdivision or change in the size or dimensions of a property.

A2.3 **Setbacks** – any building addition or other change in building setback.

A2.4 **Architectural Design**– any change in a building's exterior design such as the windows, doors, roof lines, color schemes and coverings or other features.

A2.5 **Parking** – any addition to or reconstruction of parking spaces including resurfacing projects.

All proposed developments must be reviewed by the *Village of South Holland Planning and Development Commission* (herein referred to as "the Authority") to ensure conformity with the intent and spirit of these Guidelines. In addition, all proposed developments must conform to the **Master Plan of Development of the Interstate Zoning District** (herein referred to as the "Master Plan"), the provisions of Planned Unit Development **Ordinance No. 2007-8,** the provisions of Zoning **Ordinance No. 2007-9,** and any more stringent requirements of the subdivision ordinance not superseded by the standards set forth herein.

If any development within the **IZD** is sought which will not meet these Design Guidelines, the Authority may still agree to allow the parcel to be developed. All approvals of requested deviations from these Design Guidelines must be approved by written resolution of the *Village of South Holland Board of Trustees*. No other approval, written or oral, will be binding upon the Authority.

While the Authority is reviewing the requested deviation or deviations from the Design Guidelines, the developer may proceed with attempting to obtain any necessary regulatory approvals for the use of the land; however, if the developer proceeds with such attempt, it shall do so at its own risk and without any effect on the Authority's ability to grant or deny the requested deviation.

The Authority has sole and absolute discretion to deny any requested deviation from the Design Guidelines. Any approval by the Authority of a requested deviation shall not serve as binding precedent for allowing that deviation or a similar deviation in the future. All requested deviations shall be reviewed on a case-by-case basis and shall not be subject to any type of review or collateral attack. If the Master Plan, Design Guidelines or Ordinances

are silent on any issues, the Authority reserves the right to evaluate each issue on a case-by case basis.

While the Master Plan has been thoughtfully conceived to unify development through strong design principles and consistent landscape treatment, it remains flexible in order to accept and accommodate change as market conditions, regulatory policy, and user preferences demand. Thus, the Master Plan is viewed as a structural framework for development, not a fixed plan to be implemented exactly as drawn. It is important that developers, architects, engineers, and landscape architects understand this approach to the Master Plan so that as incremental changes occur over time, they are not in conflict with the **IZD** original design concept.

B SITE PLAN DESIGN – GENERAL PLANNING PRINCIPLES

Section B1.0 - Use

The site plan design intent of the **IZD** (per Zoning **Ordinance No. 2007-9**) begins with the premise that there are four development sub-zones within the boundaries of the District as depicted in the attached Exhibit "A " (the precise boundaries of which may be modified and refined by an amendment to these Design Guidelines). Each of the four sub-zones contains uses unique to that sub-zone which compliment the whole of the **IZD.** The four zones (each bound on the east by the Little Calumet River and Thorn Creek) consist of:

B1.1 Zone 'A' — Approximately 30.0 acres (north of 159th Street and east of I-94), designated for Banquet/Conference facilities, Hotels/Motels, Restaurants (not including drive-up establishments), Department Stores, Grocery Stores, Home Improvement Stores, Wholesale Membership Stores and Automobile Service Stations (as an accessory to the primary use only);

B1.2 Zone 'B' — Approximately 36.6 acres (south of 159th Street and east of I-94) designated for any permitted use in Zone 'A' and Automobile and Motorcycle Dealerships, Automobile Parts and Accessory Stores;

B1.3 Zone 'C' — Approximately 35.8 acres (north of 170th Street and east of I-94), designated for Business Offices, Professional Offices, Medical and Dental Clinics, Public Utility and Governmental Services;

B1.4 Zone 'D' — Approximately 72.6 acres (east of I-94, between Zones A and C), designated for any permitted uses allowed in Zones 'A', 'B' and 'C' (except Automobile Service Stations), General Business, Office/ Warehouse and Distribution, Schools (Arts or Vocational), Business Training Facilities and Light Industry and Assembly.

The site plan design intent of the **IZD** also assumes the premise that, where feasible, buildings will be connected by a continuous landscaped pedestrian pathway permitting pedestrians to walk, bicycle or jog within the District. The path will link building clusters and site amenities, and include a walk along the west banks of the Little Calumet River and Thorn Creek which overlook the adjacent golf course. **IZD** development sites which border designated routes will reflect an access easement for *Village of South Holland* development of the path. Paving brick edged concrete walkways accented with planters, plantings, decorative fencing, seating and lighting will be used for the path. The Master Plan serves as the model for development of this path.

Developers shall consult Zoning **Ordinance No. 2007-9** for permitted uses, bulk regulations, accessory structures and uses, off-street parking, off-street loading and signage

standards. Site, Architectural, Streetscape, Landscape and Green Design Guidelines are detailed herein. A wide variety of uses are encouraged within the **IZD**; however, uses that conflict with activity or compromise conceptual Master Plan building uses are prohibited.

Section B2.0 - Site Concepts

Human scale and comfort are priorities in development of the **IZD**. Where appropriate, clustered building patterns in which two or more buildings are grouped in proximity to each other should be employed to form a series of courtyard spaces unique in form and character. Spaces between buildings shall be considered as important as the buildings themselves as part of a comprehensive open space system in the **IZD**. While smaller in scale to the overall context, such spaces shall be rich in landscape materials and character. They are intended to serve as informal social gathering spaces offering respite for users of the **IZD**. The overall image of the **IZD** should be of clusters of buildings around landscaped amenities, rather than isolated, freestanding buildings sitting within parking lots.

In general, taller buildings may be built along the I-94 ramps and north and south corners of 159th and Van Dam providing a visual gateway into the district. A building's front is to be determined as that façade most perpendicular to the primary access drive serving the building's site.

Section B3.0 - Parking

A clearly organized system for vehicular circulation and parking is a fundamental objective of the **IZD.** Efficient and safe vehicular movement shall be provided within individual lots. Driveways should be located so that access and flow are maximized, entries and circulation routes are clearly marked and simple, regular patterns of traffic are followed. Parking and vehicular circulation shall comply with the Landscape Standards which are part of these Design Guidelines.

Section B4.0 - Vehicular Access and Circulation

Sound transportation planning and engineering principals were employed in conjunction with the planning of the **IZD** and two distinct types of public streets are employed. Collector Streets (two-lane undivided roadways) provide access to multiple parcels and connect directly to 170th and 159th Streets, which are considered major arteries. Collector streets carry moderate traffic. Local Streets (two-lane undivided roadways) offer access to individual parcels, and connect directly to collector streets or arterial streets. Local street traffic is generally lighter traffic.

B4.1 Street and alley widths, curb cuts and radius criteria shall be subject to review and approval of the Village Traffic Engineer for compliance with all State and local ordinances. The Master Plan and associated documents and sketches shall serve as the model accepted for planning circulation on site.

B4.2 Circulation/ traffic flow should be designed to avoid conflicts between vehicular and pedestrian traffic, with pedestrian circulation taking precedence. Redundant circulation (large paved areas, sidewalks too close together, etc.), which unnecessarily reduces the amount of site available for landscaping, should be minimized.

Section B5.0 - Pedestrian Access and Circulation

Pedestrian walkways within individual lots should connect building clusters, courtyards, parking lots and the **IZD** pedestrian pathway. Pedestrian walkways should be concrete, brick or stone pavers (except at the River Walk where asphalt will be used) and shall be at least 6' in width. Gravel or mulch shall not be acceptable paving materials. At building entrances, pathways shall widen and incorporate at least 200 square feet of special paving in an expanded entry area.

Section B6.0 - Outdoor /Waste Storage and Utilities

B6.1 All permitted exterior mechanical systems, transformers, utility meters, and service /loading /trash /storage areas must be enclosed or screened from street and sidewalk views. Screening should be effective and aesthetically pleasing in every season. A landscaped evergreen hedge and /or permanent wall or opaque enclosure is required, of a height at least equal to what is being stored within the enclosure. Screening materials must complement the primary materials, colors and textures of the buildings they serve.

B6.2 Clustered service areas shared by multiple businesses should be maximized to reduce potential views of dumpsters and related equipment to increase site area available for parking and landscaping.

B6.3 Service access, meters, cell towers and storage areas should be located on alleys or in adequately screened areas. When no alley exists, access should be provided on low-volume streets, well away from pedestrian areas.

B6.4 Utility lines which are placed underground shall be at depths designated by licensed professional consultants and as required by authorities having jurisdiction.

B6.5 All required screening shall comply with the Landscape Standards which are part of these Design Guidelines.

Section B7.0 - Loading

On all development parcels in all portions of the **IZD,** regardless of use, building loading docks must be integrated into the rear or side of the buildings they service and shall not be adjacent to any main entrance or common space without benefit of proper screening. They shall be located and sized to accommodate truck maneuvering and to minimize impacts on pedestrians and vehicular traffic. They shall also be screened from view of adjacent buildings and site open spaces and roadways with a minimum ten-foot high (continuous) dense landscaped evergreen hedge and /or berm, wall or opaque enclosure. Screening materials must complement the primary materials, colors and textures of the buildings they serve. Loading areas shall also comply with the Landscape Standards which are part of these Design Guidelines and the requirements of Zoning **Ordinance No. 2007-9.**

Section B8.0 - Phasing

Phased projects shall be designed so each phase is complete regarding construction traffic access, user traffic/ pedestrian circulation, parking, visual appearance, drainage, and landscaping, prior to the commencement of the next phase of construction.

Section B9.0 - Snow Removal/ Clearing and Storage

Site design shall consider the method of snow removal and snow storage in the massing and layouts of all buildings, parking lots, and streetscape/landscape zones. Ample areas for placement of snow shall be provided. Landscaped parking lot islands shall not be used for snow storage. Radiant ice/ snow melt systems may be provided in pedestrian walkways.

C. ARCHITECTURAL DESIGN – GENERAL PLANNING PRINCIPLES

Through massing, height, and configuration, buildings in the **IZD** should help to establish an overall sense of order and character. Architectural design shall reflect high levels of aesthetic design integrated into an environmentally sustainable setting. Architecture should embrace the rich legacy of Chicago's traditional architectural style. While highly subjective, this style draws from the horizontal prairie with infinite horizon, a strong sense of sky and our bracing climate. Gateway buildings shall thus emphasize verticality, with a strong base and powerful silhouette at the crown, while cluster buildings may embrace more horizontal profiles, acting as backgrounds for their more articulated and detailed facades that address the pedestrian users of the spaces they embrace.

Design compatibility between buildings shall be addressed to ensure complimentary building style, colors and materials. The architecture should achieve a balance between simplicity and complexity in form and massing. Articulated elevations, corners and rooflines are encouraged. Corner lots and those directly adjacent to I-94 /I-94 ramps, should be given special consideration due to their visibility. Buildings should be designed to express a richness and complexity at pedestrian scale, while expressing a clarity and simplicity farther away, at highway scale. For example, a three-story cluster of buildings would read as one group from the expressway if similar in size but taller than an adjacent cluster of two-story buildings.

Building heights shall comply with Zoning **Ordinance No. 2007-9.** Building height shall be defined as the total vertical building dimension from the ground floor to the median height of sloped roofs or the parapet wall of the top floor (exclusive of mechanical or electrical equipment).

Section C1.0 - Architectural Features and Massing

C1.1 Buildings shall be oriented with primary consideration given to the visual impact from site open spaces and roadways.

C1.2 Buildings shall be located so as to create a cohesive relationship and design consistency with adjacent buildings and site landscape.

C1.3 Building entry points, corners and special functions should be emphasized to create visual interest.

C1.4 Horizontal and vertical articulation techniques are to be utilized to visually reduce the scale of large buildings and to avoid large, boxy forms. Solid, windowless walls are to be avoided. Changes in plane shall be provided to break down the horizontal scale of buildings with long street frontages. This includes the rear and side yards of buildings visible from I-94 and all **IZD** streets and parking areas.

C1.5 Basic building elements of base, middle and top should be visually differentiated on all buildings.

C1.6 At ground level, architectural design should clearly denote primary entry. Windows, arcades, and multiple entries should reinforce visual and physical access to the building.

C1.7 Ground floor material, detail and scale shall receive special attention to maximize aesthetic impact.

C1.8 If multiple buildings exist on one site, the primary building shall be give an architectural treatment or feature clearly designating it as the primary building. Multiple buildings on the same site should be designed to create a cohesive visual relationship between structures without redundancy or monotony.

C1.9 Airflow and other microclimatic factors are to be considered when locating buildings on site.

Section C2.0 - Materials and Colors

Materials selected for buildings in the **IZD** shall be durable and honestly expressed. The choice of materials should be guided by functional and aesthetic concerns, free of gimmicks, heroics or faux finishes. Materials should read clearly, expressing the function of each, ie: brick for texture, steel for span, concrete for mass. An expected life of 50 years shall be the minimum horizon for durability. Material used shall be expressed on all exterior sides equally.

C2.1 New buildings and building remodeling /expansion in the **IZD** shall constructed of materials that are durable, high quality and easy to maintain. Brick, natural stone, and architectural pre-cast or architectural/ engineered design metals are to be used as the primary building materials. Primary building material is defined for purposes of these minimum Design Guidelines as that material constituting fifty-percent (50%) or more of a building's total exterior surfaces. The use of exterior insulation and finish systems shall be strongly discouraged.

C2.2 Buildings should typically consist of one main building material, with additional materials utilized as accents in featured design areas. Other materials than those listed in 2.1 above (i.e. split-face decorative block, smooth or textured synthetic plaster, wood siding) may be used as decorative accents; however, these shall be considered for limited use only on a case-by-case basis.

C2.3 Architectural metal and new building technologies are allowed if used as featured design areas in conjunction with the primary building materials listed in 2.1 above.

C2.4 Materials that are inappropriate for buildings in the **IZD** include plywood, wood, unfinished concrete masonry units, composite building panels/ gypsum wall panels and plastics

C2.5 All building facades should include changes in color and /or texture at regular intervals, either horizontally or vertically, to enhance visual interest.

C2.6 Prefabricated buildings are not to be utilized in any portion of the **IZD.**

C2.7 Panelized masonry building systems may be utilized only if highly detailed so as to meet the articulation standards and architectural goals outlined herein.

C2.8 All vents, gutters, downspouts, flashing, electrical conduits, etc., should be painted or colored to match the color of the adjacent surface, unless being used expressly as a trim or accent element. Soffits and other architectural elements visible to the public should be finished in a material compatible with other exterior materials.

C2.9 All walls on freestanding parking structures and the exposed edges /walls of parking structures within buildings are required to be architecturally screened, or otherwise articulated to disguise parked vehicles within.

C2.10 Pedestrian scale canvas or metal awnings that enhance the architectural character of a building or storefront are allowed, provided they do not impact site drainage or sun /moisture access to planted areas. Vinyl and backlit vinyl awnings shall not be allowed.

Section C3.0 - Windows

C3.1 Punched window openings are preferred to flush-mounted strip windows as they convey an image of mass and durability.

C3.2 Windows should be used to emphasize human scale and to help define the use and levels of the building.

C3.3 In Zones 'A' and 'B' the surface area of all street-facing building facades that shall be required to consist of transparent glazing shall be determined in conjunction with the building size and use.

C3.4 In Zones 'C' and 'D' a minimum of 25% of the surface area of all street-facing building facades are to consist of transparent glazing, except for uses allowed in Zones 'A' and 'B' where percentage of glazing on the street front shall be determined in conjunction with the building size and use.

Section C4.0 - Mechanical and Security Equipment

C4.1 All rooftop electrical and mechanical equipment is to be screened with materials consistent with the overall building design. Screening materials must complement the primary materials, colors and textures of the buildings they serve.

C4.2 All non-roof-mounted electrical and mechanical equipment, as well as all gas and raw material storage tanks, generators, solar panels, etc. must be screened from view of adjacent buildings and site open spaces and roadways. Screening must be accomplished by a solid, dense landscaped hedge, wall or opaque enclosure of a height at least equal to what is being screened. Screening materials must complement the primary materials, colors and textures of the buildings they serve and comply with the provisions of the Landscape Standards herein.

C4.3 Security equipment such as closed-circuit cameras must be designed and located so as to be as visually inconspicuous as possible without compromising essential functions.

D. STREETSCAPE DESIGN – GENERAL PLANNING PRINCIPLES

Section D1.0 - Streetscape Elements

An attractive and effective streetscape will provide visual continuity from block to block within the **IZD**, defining it as a special place that will entice users, encourage increased pedestrian activity and improve pedestrian interaction and safety. Streetscapes within the **IZD** shall utilize a "family of parts" chosen to organize and add character to the **IZD**. Placement of these elements shall be per the Master Plan and the direction of the Village Architect and Engineer.

Streetscape elements shall be placed to facilitate maintenance, serviceability, snow removal, and to minimize sidewalk clutter. Minimum unobstructed sidewalk width should be 5 feet in the public right-of-way. The maximum unobstructed sidewalk width in the public right-of-way should be 8 feet. Sidewalks and parking lots must be designed to be ADA accessible. Streetscape elements in the IZD shall include the following:

D1.1 Lighting:

a. Street Lighting and Street Signage:

Decorative street lighting fixtures and street signage shall be from Antique Lighting "Chicago" series family of parts as shown in Appendix D (attached herein). Pedestrian paths, including the River Walk and common areas shall also follow this standard.

Light fixtures should be mounted on a five inch diameter, flat flute shaft. Height of the fixture shall be determined by site and location at the discretion of the *Village of South Holland.* Single banner brackets shall be provided on Collector Street fixtures and along the River walk.

Convenience outlets should be included on all poles for holiday lighting purposes. Spacing of the poles shall be per the requirements of the Village Engineer using accepted photometric standards and metal halide lamps. Sodium vapor type lighting is not permitted for streets lighting; however it may be submitted for consideration as a perimeter building light to achieve optimum night presence of certain building materials. Neon lighting is not permitted as a primary light source or as an accent element. Raised light pole bases should be attractively designed and detailed. The use of tube type concrete pole bases is not allowed. Fixtures shall be placed in a pattern arranged on one or both sides of the street or walk to show rhythm and formality in design.

The use of low, bollard-type light fixtures is encouraged as pedestrian area lighting (Appendix D) where full height fixtures would not be a successful

application. Decorative bollards should be used at key locations to create a separation between pedestrians and streets/driveways, and to create visual interest.

b. Parking Lot Lighting:

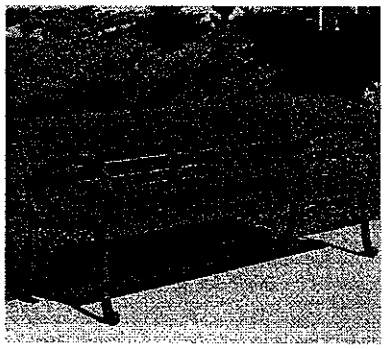
Parking lot lighting shall follow standards for street lighting and utilize metal halide lamps. Fixture heights and quantities shall be subject to the review and approval of the Village Engineer. Developer shall provide photometrics for use of the Engineer with a site plan locating the fixtures proposed.

c. Building Lighting:

Subtle, non-glare highlighting of architectural features and landscape is encouraged. Excessive brightness and brilliant colors should be avoided. Exterior lighting should be architecturally integrated with the building style, materials, and colors. All surface-mounted fixtures specified shall complement the IZD District standard fixture for building mounted lighting and are subject to review and approval by the Village Architect and Engineer. No wall pack lighting shall be allowed. Service areas and secondary entrances shall be provided with the same quality stylized fixtures as primary entrances. Appendix D includes the wall-mounted fixture that shall be used where size and scale are appropriate, and complemented where use would be inappropriate.

D1.2 Benches:

All benches placed in pedestrian areas and along sidewalks shall be the following types:



DuMor, Inc. Bench Style 165
(6 or 8 feet length) frame color: RAL 9011 Graphite Black
Recycled plastic slats, color: grey
(colors not as depicted above)

DuMor, Inc. Bench Style 166
(6 or 8 feet length) frame color: RAL 9011 Graphite Black
Recycled plastic slats, color: grey
(colors not as depicted above)

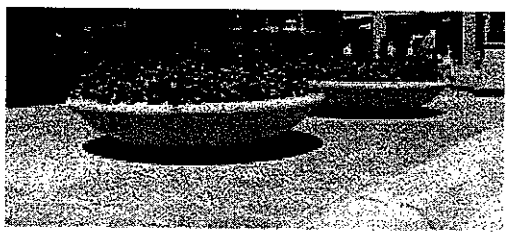
D1.3 **Waste Receptacle**:

All trash cans placed in pedestrian areas and along sidewalks and parking lots shall be the following type:

DuMor, Inc. Receptacle 124 PL (with lid-not pictured)
frame color: RAL 9011 Graphite Black
Recycled plastic slats, color: grey
(frame color not depicted above)

D1.4 **Planters**:

Planters should be used to add landscaping where adequate space for trees and shrubs is lacking. If planters are used they should be of the following type:



72" x 18"
Wausau Tile TF4143 Dish Planter
With Weatherstone Finish

48" x 18"
Wausau Tile TF4144 Dish Planter
with Weatherstone Finish

D1.5 Fencing:

Decorative metal fencing should be used to enhance and define streetscapes, open spaces, landscaped areas, and parking lots throughout the district. Such fencing shall also be used to define the river walk along the banks of the Little Calumet River and Thorn Creek. All fencing placed along the rail walk, pedestrian areas, sidewalks, and parking lots should be the following type:

Ameristar Aegis II Genesis Style
with rings and triads
4 feet high (Black)

D1.6 **Bicycle Racks**:

Bicycle racks should be installed in the **IZD** where feasible to encourage bicycle use within the Village. Where appropriate, bicycle paths should be incorporated in street pavement design, and should connect to the Village's bicycle path system. Bike racks should be located so they are in well lit, secure locations highly visible from the street and/or building entrances, and should not conflict with vehicular or pedestrian movement. (color shall be to match *RAL 9011 Graphite Black)*

D1.7 **Paving**:

Decorative brick pavers should be used along sidewalks and curbs, through all pedestrian crossings, in plazas and open spaces throughout the **IZD**. Where appropriate, paver bands can be placed around special streetscape elements such as planters. Pavers should also be placed at key street corners to further enhance the

streetscape's appearance. Where pavers are used for the streetscape, they should be the following types and patterns:

a. For crosswalk paving:
"Streetprint" by Integrated Paving Concepts
pattern: Ashlar Slate
color: Terra Cotta

b. For plazas, open spaces and corner paving (field paving):
Pine Hall "English Edge"
pattern: Herringbone
color: Full Range

and

For border (perimeter paving) or for patterns within open space/ plaza field:
Pine Hall "English Edge"
pattern: Soldier Course
color: Red Clay

c. For concrete sidewalks (field):
6' x 6' California Finish with troweled edge and broom finish

and

For borders at concrete walks (perimeter):
Pine Hall "English Edge"
pattern: Soldier Course @ ea. side
color: Red Clay

d. River walk pedestrian path shall be asphalt paved. At intersecting paths and /or pedestrian plazas along the River Walk, pavers shall be used as listed in "b" above.

See Appendix E for paving specifications and details.

D1.8 **Water Features**:

In highly visible locations and pedestrian plazas, water features such as fountains, water walls, bubblers, and ground jets should be considered to add visual interest and provide special amenities to draw people to the **IZD**.

D1.9 **Newspaper Corrals and Stands**:

Decorative stands for newspaper vending machines shall be used to consolidate vending machine clutter and screen views. (color shall be to match *RAL 9011 Graphite Black)*

Section D2.0 - Signage

To reinforce the overall sense of order and character, excess signage shall be strongly discouraged within the **IZD.** Visual clutter shall be minimized by limiting the number and size of signs allowed on each façade, and limiting the number of font styles and colors allowed per sign. Signage for cluster buildings shall be consolidated on one monument sign where possible. Consult Zoning **Ordinance No. 2007-9** for specific signage requirements. In addition, the following apply:

D2.1 No exterior identification sign attached to a building shall be placed on canopy roofs extending above the building roof or placed on penthouse walls.

D2.2 No exterior identification sign shall be painted on any surface of the building.

D2.3 No exterior identification sign shall be flashing, moving or audible.

D2.4 No exterior identification sign shall be placed at any angle to the building. This shall not apply to any sign located under a sidewalk canopy if such sign is at least eight feet above the sidewalk.

D2.5 No exterior identification signs shall employ exposed raceways, neon tubing, exposed ballast boxes or exposed transformers.

E. LANDSCAPE STANDARDS

Section E1.0 - General Landscape Improvement Standards and Objectives

This Section defines landscape improvement objectives and sets minimum improvement standards and specifications for the design of the *Village of South Holland* Interstate Zone District (**IZD**). These standards are intended to facilitate the following goals:

E1.1 ...to establish an aesthetically cohesive and functional design throughout the Interstate Zone District;

E1.2 ...to enhance views and minimize the adverse visual and environmental impact of all large paved areas;

E1.3 ...to ensure a high level of aesthetic value which will benefit land owners and the community as a whole;

E1.4 ...to protect and promote the health, safety, and welfare of the residents of the *Village of South Holland* and the surrounding communities;

E1.5 ...to ensure that every development within the **IZD** shall provide sufficient landscaping so that (i) neighboring properties are shielded from any negative visual influence of the development; (ii) the development is shielded from the negative impacts of adjacent uses, including streets; and (iii) the appearance and desirability of the development contributes to the overall attractiveness and economic health of the Village. The standards and requirements set forth in these Guidelines are minimum requirements. Landscape improvements shall be installed in such a matter and to the extent necessary to achieve the objectives of these Guidelines. The standards and regulations are further intended to serve to dissuade the unnecessary clearing and disturbing of land so as to preserve, insofar as practical, the existing natural vegetation with plant material indigenous to the region, and to preserve existing landscape buffers to minimize the impact of adjoining land uses, as well as reduce the surface heat and negative visual impact of vehicular use areas.

E1.6 ...to ensure that landscape improvements shall serve to integrate each development to its site, with particular sensitivity to the natural topography, watercourses, and existing native vegetation. Preservation of the existing landscape material sand landforms shall be taken into account, particularly where trees are a part of the site. Development and landscape improvements shall be performed in compliance with existing ordinances of the Village relating to the protection and preservation of trees. This is of particular importance in cases where specimen trees, groves or tree lines, or tree-lined watercourses are present.

E1.7 ...to ensure that landscape improvements shall serve to enhance the appearance of each site, especially as viewed from an adjacent municipal public right-of- way or interstate highway. Effective year-round screening shall be provided to lessen the visual prominence of parking lots, service yards, loading docks, public utility structures, or unsightly appurtenances. Innovative landscape design proposals are highly encouraged.

E1.8 ...to ensure that no berms, fences or landscaping, including trees, shall be located within the area of any overland drainage easement;

E1.9 ...to ensure landscape improvements shall enhance the architecture of existing and proposed structures and shall be of similar scale where possible;

E1.10 ...to ensure landscape planting shall be protected from vehicular and pedestrian encroachment;

E1.11 ...to require erosion control on berms and embankments; detention/ retention areas, berms, and sloped areas shall be designed to resemble natural land forms, whenever possible. A landscape buffer shall surround all detention/retention areas and shall not exceed 5:1 (horizontal:vertical) slope. Trees, shrubs, native grasslands and turf shall be located above the normal water line and emergent plantings shall be located below the normal water line all in accordance with Section 3.8 (Detention/Retention Basins).

E1.12 ...to consider the aesthetic and functional aspects of landscape improvements both at installation and maturity; groupings of trees or other plantings are recommended for optimal visual effect and ease of maintenance.

E1.13 ...to strongly encourage innovative landscape designs, such as the use of native (drought tolerant) plant species, native prairie and wetland communities, rain gardens, bio-swales and green roofs, which promote sustainability, reduce irrigation needs and that utilize effective on-site stormwater management techniques. The use of regionally native vegetation is encouraged beyond the specific requirements of these Guidelines.

Section E2.0 - Landscape Plan

E2.1 Landscape plans shall be required for all development on **IZD** properties as follows:

a. Any property being developed which involves a planned unit development plat submitted after the date of adoption of these Guidelines.

b. Any property being developed pursuant to an application for lot division submitted after the date of adoption of this Ordinance.

c. Any property on which an existing use or structure on a lot or parcel is proposed to be expanded if the expansion exceeds twenty-five percent (25%) of either the gross floor area or lot area of the existing development or where the cost of improvements exceed the value of the existing structure by fifty percent (50%). Existing value shall be determined by the value of the building as established by the most recent tax bill as provided by the Owner. The Owner shall also provide the estimated costs of improvement.

d. Any property on which a conforming or legally nonconforming building or use which is in existence on the effective date of these Guidelines, which subsequent thereto is damaged or destroyed by fire, collapse, explosion or other cause, and which is reconstructed, reestablished or repaired, at a cost that exceeds fifty percent (50%) of the value of the building or use, or any demolition of an entire structure and construction of new structures on any property, irrespective of the value of such improvements.

E2.2 Landscape plans shall be prepared, sealed and certified by a Landscape Architect licensed by the State of Illinois.

E2.3 Landscape plans shall include or have attached thereto the following:

a. North point and scale.

b. Topographic information and proposed grades.

c. The location and dimensions of all existing and proposed buildings, structures, parking lots and driveways, roadways and rights-of-way, sidewalks, bicycle paths, ground signs, refuse disposal areas, fences, freestanding electrical equipment, light fixtures, surface utility structures, other freestanding structural features, recreational facilities, setbacks and easements. The landscape plan shall be drawn at a scale not larger than one inch equals 50 feet for overall master plan landscaping and one inch equals 30 feet for detailed plantings.

d. The location, quantity, size, scientific and common names of all proposed plant materials, and species and quantities listing for all proposed seed mixes.

e. Delineation of all planting bed lines defining the proposed maintained line between turfgrass and plantings.

f. Existing and proposed contours, including the location of all proposed berming, at a one-foot contour interval, and the location, extent and general elevations of all detention and retention areas and drainageways including normal water level (if any) and high water level elevations.

g. Specification of the type and boundaries of all proposed ground cover (e.g., turfgrass seed, sod & salt sod), including both scientific and common names.

h. A tree Preservation/Mitigation Plan shall accompany the Landscape Plan if the development site contains any existing trees four inches (4") or greater in caliper as measured at breast height (54" above grade). The drawing shall include via survey the (i) location, species and size of all existing trees 4 inches or larger in diameter measured at 54 inches above existing grade at the base of the tree; and (ii) all existing trees to be preserved and the protective methods illustrated as required by the Village Ordinance (Article X. Landscaping Section 6-272 Preservation Standards); (iii) all existing 4 inches or greater trees to be removed and the location, species & size of all replacement trees required by the Village Ordinance (Article X. Landscaping Section 5-272 Preservation Standards); and (iv) all existing 4 inches or greater trees proposed to be transplanted elsewhere on the site. Where existing trees are grouped in a dense cluster (e.g., woodland area), and the trees are to be preserved, a tree mass illustration may be used rather than a detailed survey of each tree's location.

i. Details of all fences and walls proposed to be constructed on the site.

j. Elevations, cross sections and other site or construction details determined by the Village to be necessary.

k. Location of drain tiles, underground irrigation, downspouts, wells, and sump pump discharge, underground water feature vaults, etc.

l. Detailed Plant and landscape materials schedule.

m. Data tables indicating compliance with the standards of these Guidelines, including tables setting forth native species content, compliance with monotony maximums, required bufferyard plant quantities, parking lot trees and percentage(s) and percent of planted pervious area.

n. Certification by the licensed Landscape Architect who prepared the Plan that the Landscape Plan is in compliance with the provisions of these Guidelines and other applicable Village Ordinances.

E2.4 Changes to Landscape Plan:

a. Once a landscape plan has been approved and a building permit issued, the Village Landscape Review Officer may authorize **minor** revisions to the approved landscape plan including the substitution of equivalent plantings and ground covers where such revisions do not diminish the benefits of the approved landscape plan. Such revisions shall require the written approval

of the Village Landscape Review Officer. Notwithstanding the foregoing, revisions which would result in a reduction in five percent (5%) or more of the total number of plant units shall require approval of the Village Board. The Village Landscape Review Officer shall be defined as the individual person or consulting firm designated by the Village Administrator to fulfill that duty.

b. A revision shall be considered **minor** when there is no reduction in the quality of plant material, no significant change in size or location of plant material, and any new plants proposed are of the same general category (overstory, ornamental, evergreen, etc.) and have the same general design characteristics (mature size, spread, density) as the materials being replaced.

E2.5 Plant Material Requirements:

a. Plant material used in conformance with provisions of these Guidelines shall conform to the minimum standards of the most recent edition of the American Nursery & Landscape Association, American Standard for Nursery Stock (ANSI Z60.1). All plant material shall be determined to be hardy for Zone-5 as defined by the USDA Plant Hardiness Zone Map. Planting stock shall be well-branched and well-formed, sound, vigorous, healthy, and free from disease, sun-scald, windburn, abrasion, harmful insects or insect eggs, and shall have healthy, normal and unbroken root systems. Deciduous trees and shrubs shall have symmetrical tops with typical spread of branches for each particular species or variety.

b. Substitutions shall be made only when a plant is not obtainable and the Village Landscape Review Officer, after being notified in writing, authorizes a change order providing for use of the nearest equivalent obtainable size or variety of plant having the same essential characteristics.

c. The minimum acceptable sizes of all plants, measured before pruning and with branches in normal position, shall conform to the measurements indicated on approved plans. Plants larger in size than specified may be used. Minimum required sizes are as follows:

i. Trees *within* the Parkway
   (a) Required deciduous parkway trees shall be a minimum of 3.0-inch caliper;

ii. Trees *outside of* the Parkway
   (a) The median (average) size of all overstory or deciduous street trees and shade trees on a development project shall be 3.25-inch caliper with the minimum size allowed being 2.5-inch caliper, unless otherwise approved by the Village Landscape Review Officer;

(b) The median sizes of all understory or ornamental deciduous trees shall be 8 feet for clump form or 2.5-inch caliper for tree form with the minimum size allowed being 2 inch caliper or an equivalent minimum height of 6 feet forclump form trees, unless otherwise approved by the Village Landscape Review Officer;

(c) The median size of all evergreen trees shall be 8 feet with the minimum size allowed being 6 feet in height, unless otherwise approved by the Village Landscape Review Officer;

iii. Shrubs

(a) Deciduous shrubs shall be a minimum of 36 inches in height for large shrubs and 18 inches in height for dwarf shrubs when measured immediately after planting.

(b) Evergreen shrubs specified by width shall be provided with a minimum size of 24 inches in width, and evergreen shrubs specified by height shall be provided with a minimum height of 24 inches.

iv. Hedges. Hedges, where required, shall be planted and maintained so as to form a continuous, unbroken, solid, visual screen within one year after time of planting.

v. Sod/Seed.

(a) Turfgrass sod shall be clean and reasonably free of weeds and noxious pests or diseases.

(b) Turfgrass sod shall have a mineral base soil mixture. A peat base soil mixture will not be acceptable.

(c) Turfgrass seed shall be in conformance with U.S. Department of Agriculture rules and regulations under the Federal Seed Act and applicable Illinois state seed laws. Turfgrass areas shall be planted in species normally grown as permanent lawn in northeast Illinois.

vi. Ornamental Grasses, Perennials and Climbing Vines. Ornamental grasses, perennials and climbing vines shall be container grown and specified as minimum container size of #1 unless otherwise approved by the Village Landscape Review Officer.

vii. Ground Cover. Ground covers shall be specified as a minimum container size of 3 inches and shall be planted in such a manner as to

present a finished appearance and reasonably complete coverage within one year after planting utilizing the following table as a guideline:

Ground Covers (3" pot min.)

Species	On-Center Spacing
Ajuga	8"
Euonymus f.'Coloratus'	10"
Hedera	8"
Pachysandra	6"
Phlox (ground cover type)	8"
Polygonum reynoutria	8"
Sedum (ground cover type)	9"
Thymus	9"
Vinca	8"

viii. Native Vegetation. Open space or planting bed areas may contain specific mixes or groupings of singular native plants such as prairie grasses and/or forbs, meadow or wetland grasses or sedges, or other specific plant groupings. Specific performance criteria for landscaped areas utilizing native vegetation shall be provided. The performance criteria shall include but not be limited to coverage ratios and inspection schedules. The use of native prairie grasslands in lieu of conventional Eurasian turfgrass is required along pond shorelines and banks and is encouraged in open space areas. All such native areas shall require a minimum five (5) year maintenance program as specified in Appendix-B.

ix. Monotony. To assist in the provision of diverse and enduring landscapes, for all landscape plans which specify five (5) or more plants in a category, the quantity proposed of each species of plant material shall not exceed twenty percent (20%) of the total numbers of plants in each category.

x. Native Regional Vegetation and Content. A minimum of forty percent (40%) of the total number of proposed deciduous shade trees and deciduous ornamental trees shall be comprised of native deciduous shade and ornamental trees as specified in Appendix-A. For the purposes of this requirement, hybrids, cultivars and varieties of native plant material, shall be considered native for this requirement.

E2.6 Plant and Tree Installation

a. Except as otherwise provided herein, all planting shall be performed in accordance with the planting procedures specified in Appendix-C, effective as of the date of these Guidelines. It shall be the developer's/owner's responsibility to insure that the planting specifications are adhered to by all personnel working at the site. The developer/owner should conduct a pre-construction meeting with the landscape contractor to assure their full understanding of the contents of the planting plan and specifications.

b. To alter plant locations or plant installation procedures, the Village Landscape Review Officer must be contacted and authorize such alterations prior to the installation of plant materials on the site.

c. The Village Landscape Review Officer shall be notified at least 7 days prior to: (i) the stockpiling of significant amounts of nursery material on the site in preparation for planting; or (ii) the start of planting operations on the site.

d. All planting is recommended to be done within the following dates. When planting outside these dates, written documentation needs to be provided regarding additional watering (if applicable) and that survival or replacement of plant material will be ensured. No planting shall be done in or on frozen soil.

	Spring (range or begin)	Fall (range or deadline)
Dec. Trees & Shrubs	March 15	whenever backfill is unfrozen
Evergreen Trees	April 1	no later than Oct. 15
Turfgrass Sod	April 1 – June 1*	Whenever sod is workable
Seeding-Turfgrass	March 15 – June 1*	August 15 – September 30
Seeding-Prairie	May 1 – June 30 *	Sept. 1 to freeze-up
Dormant Seeding-Turfgrass & Prairie	N.A.	November 15 to February 28 **
Evergreen Shrubs	March 15	No later than Nov. 1
Emergent Aquatics	May 1 – June 15	Oct. 15 to freeze-up, but Spring preferred
Perennials,Orn. Grasses & Groundcovers	May 1	No later than Oct. 15

Recommended Planting Seasons

*NOTE: Sodding and seeding may be continued between the Spring and Fall seasons if served by an operational underground irrigation system or other approved means of temporary watering.

**NOTE: Dormant seeding will require workable soil and the use of an erosion control blanket (North American Green S150 or equivalent).

e. No planting operations shall be performed before 7:00 AM or after 6:00 PM, Monday through Saturday. No work shall be performed on Sunday or legal holidays without the approval of the Village.

f. A Village representative may make inspections of a site at any time before, during and/or within one year of plant installation. The Village shall inspect plant material, for both quality and quantity, and installation practices to determine developer/contractor compliance with guidelines, regulations and ordinances.

g. All trees shall be balled and burlapped. The use of bare-root stock is not permitted for trees. All trees shall be northern grown in a nursery whose hardiness zone parallels that of the *Village of South Holland* (Zone 5).

h. All nursery stock stockpiled on the site shall be maintained in good condition at all times.

i. All trees shall be tagged and identified as to species, size and origin. Tags are to remain in place until inspection by the Village is complete, at which time the Village will authorize their removal. The developer is responsible for the final removal of all tags.

j. Planting pits for the planting of shade and evergreen trees shall extend a minimum distance of 18 inches beyond the root ball to allow for proper backfilling and to promote root penetration. All tree pit sides shall slope away from the tree ball to allow for roots to grow up into the adjacent upper soil level in accordance with the specifications set forth in Appendix-C.

k. Burlap wrapping, twine or other material used to secure the root ball of balled and burlapped plant material shall be removed from the sides of the root ball prior to backfilling. All excess waste material shall be continuously and promptly removed from the site.

l. All plant material shall be watered on the same day of planting. The water shall saturate the root ball and backfill for woody plants or to a depth of three inches (3") for groundcovers or six inches (6") for perennials or ornamental grasses. Soil used for backfilling of planting pits shall be thoroughly tamped to prevent trees or shrubs from leaning.

m. Each tree shall have a shallow saucer-shaped water basin formed with a ridge of soil to contain water and incorporate the use of water bags or containers, as necessary, to insure a sufficient quantity of water is available to foster survival during the first planting season. The minimum diameter of the saucer-shaped water basin shall be 3 feet.

n. Long term watering shall be required for all trees (i.e., deciduous shade, deciduous ornamental, evergreen) installed between June 1 and Aug. 31. Each tree planted during this time period shall receive a slow-release (20-gal. minimum) watering bag for a period of no less than twenty-eight (28) days. The required twenty-eight (28) days of watering need not be consecutive. Gaps of up to seven (7) days may occur between bag watering intervals to allow for the re-location of bags to other trees on a weekly basis to reduce the number of bags required on a large project. The minimum watering period shall be five (5) consecutive days and the maximum off-watering period shall be seven (7) days. The Developer shall be responsible for monitoring the water bags to assure they are re-filled every other day for a minimum of five (5) days which equals three times (3x).

o. An organic mulch (e.g. shredded hardwood bark or southern pine bark) free from foreign material shall be provided for trees and plant material as follows:

i. Trees and large shrubs. A minimum 2.5 inch and maximum 3.5 inch layer of mulch, spread out from the main trunk a distance equal to the diameter of the saucer-shaped water basin. The mulch shall not be mounded (no mulch volcanoes) around the trunk nor come in contact with the trunk. The layer of mulch shall completely cover the entire outer ridge of the basin and top the surface of the saucer-shaped basin.

ii. Planting beds. A minimum 2.5 inch and maximum 3.5 inch layer of mulch to completely cover the surface to the edges.Large chunk bark, dyed wood mulch or free clearing material run through a chip harvester are not acceptable organic mulches for trees and shrubs.

p. All trees shall be covered with tree wrap (burlap or impregnated paper) from ground level to the height of the first lateral branch. The tree wrap shall be secured with masking tape or biodegradable twine. The use of duct tape, nylon twine or other material used to secure the tree wrap is not permitted. The Developer shall be responsible for the removal of all tree wrap materials in the spring after the first winter season following planting

q. Upon installation, trees should not lean by more than 5 degrees from plumb. The Developer shall be responsible for keeping all trees plumb for a minimum period of one (1) year from the time of installation.

Section E3.0 - Landscaping Requirements by Area

E3.1 Plant Diversity

a. To ensure plant diversity a minimum number of species of trees and shrubs shall be required on each parcel as follows:

Size of Parcel (Acres)	Minimum Quantity of Tree Species	Minimum Quantity of Shrub Species
Less than 5 acres	3	3
5 acres but less than 15 acres	5	5
15 acres but less than 30 acres	7	7
30 or more acres	7	7

b. Credit against the landscape requirements of this Ordinance shall be allowed for existing vegetation on the basis of one (1) preserved tree for one (1) required tree.

E3.2 General Landscape Requirements

The following minimum overall landscape standards shall be met for all land developments within the **IZD**:

a. A minimum of twenty percent (20%) of the total gross lot area shall be comprised of plantable pervious surface area for landscape improvements. The area of permanent open water of a detention pond (area within the normal water line) located on a lot or parcel shall not be included in the minimum required plantable pervious surface area.

E3.3 Parkway Landscaping

a. Parkways should be landscaped according to the following standards:

i. Street trees shall be planted along all public or privately dedicated streets within a development at a rate of one (1) overstory tree per 35 linear feet (excluding driveways) or fraction thereof.

ii. Selection of tree species for street tree planning shall be made from the approved street tree plant list (see Appendix-A). This list shall be updated by the Village as needed to ensure quality, disease resistance and hardiness.

iii. No street tree shall be planted closer than 30 feet to the right-of-way line at an intersection or closer than 8 feet to any drive or alleyway.

iv. Landscape materials shall be selected and located so as to not obstruct visual or physical access to fire hydrants. Trees and shrubs shall not be located closer than 6 feet to fire hydrants, transformers or other aboveground utilities.

v. The parkway shall be grass or low ground cover, except where covered by pavement.

vi. Plantings under utility wires shall be discouraged. If overhead utilities exist, plant selection shall be made from the approved plant list (see Appendix-A) and spacing requirement shall be reduced to one tree per 25 linear feet.

vii. No plant material shall be planted within thirty (30) feet of any intersection in such a way that it will currently, or in the future based upon the anticipated growth of such plant material, block vision from an intersecting street. In order to protect views, a sight triangle, measured thirty (30) fee from the intersection of any two (2) street rights-of-way or lot lines, whichever is greater, will be required. No parking, loading, signs or structures of any kind shall occur or be placed within this sight triangle.

E3.4 Perimeter Landscaping (Bufferyards)

a. All developments shall provide perimeter landscaping along the boundaries of their properties. The requirements for bufferyards are set forth in this Section 3.4, including the classification of land uses and a matrix from which the specific width and physical improvements of the bufferyards shall be determined.

b. The minimum bufferyard width overlays the required yard setbacks. The larger the required yard setback as established by the **IZD** Ordinance or required bufferyard width as established herein, shall prevail as the minimum width of greenspace between property lines and parking lots and buildings. Required bufferyards may not contain any development or impervious surfaces with the exception of pedestrian walkways, bike paths or access drives which cross through the buffer to access the property. Parking lot access drives may encroach these bufferyards to the extent that they cross through the bufferyard but not to the extent that they parallel the bufferyard reducing its width of greenspace.

c. Bufferyards may be used for passive recreation or for utility or drainage easements provided that the utility or drainage requirements and buffer requirements are compatible. If such uses are not compatible in the bufferyard as proposed, additional space will be provided to accommodate the needs and requirements for all such uses within the bufferyard.

d. Bufferyards may remain in the ownership of the lot or may be subjected to added restrictions and subsequently conveyed to an Owner's Association, provided that any such conveyance adequately guarantees the protection and maintenance of the bufferyards for the purposes of these Guidelines.

E3.4.1 Bufferyard Classifications

Class 1:
- Office, medical, professional and administrative uses up to 5,000 square feet and no more than 2-stories in height;

Class 2:
- Offices, medical, professional, administrative and banks up to 50,000 square feet;
- Hotels up to 50,000 square feet;
- Educational uses up to 50,000 square feet;
- Public and Utility uses and structures up to 50,000 square feet;
- Veterinary and Animal Kennels;

Class 3:
- Offices over 50,000 square feet;
- Commercial and retail uses, including storage, warehouses & distribution except vehicle service, up to 50,000 square feet;
- Hotels/Conference Centers over 50,000 square feet;
- Light manufacturing & assembly, HVAC and Plumbing Sales & Service, Printing & Copying Services, Industrial Uses with no emissions or outside sounds up to 50,000 square feet;

Class 4:
- Commercial and retail uses, including storage, warehouses and distribution except vehicle service, up to 200,000 square feet;
- Light manufacturing, assembly or industrial uses with no emissions or outside sounds up to 200,000 square feet;
- Vehicle service up to 50,000 square feet;

Class 5:
- Commercial and retail uses, including storage and warehouses, except vehicle service, over 200,000 square feet;
- Light manufacturing, assembly or industrial uses with no emissions or outside sounds over 200,000 square feet;

E3.4.2 Landscape Classification Notes:

a. The land use class is the principal, not accessory, uses except for vehicle services, including gasoline service. Regardless of other uses on the lot, if vehicle service is part, then the class is vehicle service.

b. Shopping centers will be considered in the commercial and retail category.

c. For other than shopping centers, mixed use developments on the same lots, when the uses are in the same building, the most intense use will be used. If the buildings on the lot are separated by at least 20 feet, the land use class will apply for each separate building therein.

d. Building area or square feet of a use will be the total area of the all buildings on the lot.

e. Wooden fencing shall be of commercial grade wood planks (no stockade), and all fences and wall materials shall be approved by the Director of Planning or his/her authorized designee.

f. The finished side of the fence or wall shall be erected toward the lower intensity side.

g. If determined necessary, due to topographic changes between the abutting uses, an eight foot wall or fence may be required.

h. If a building is added on a lot or tract where other buildings exist; and is within 100 feet of an adjoining lower intensity use, the bufferyard standards shall be applied for the new building and with the lot or tract on which the new building is located, not necessarily for the entire lot or tract having the existing buildings, as determined by the Director of Planning.

E3.4.3 Bufferyard Matrix

	Land Use Classes	1	2	3	4	5	Public R.O.W.	Vacant Land
PROPOSED	1	A	B+	C+	D+	E+	CC	C
LAND	2	B+	A	A+	C+	D+	CC	C
USES	3	C+	A+	A	A	A	CC	C
	4	D+	C+	A	A	A	DD	D
	5	E+	D+	A	A	A	DD	D

ADJACENT LAND USES

E3.4.4 Matrix Notes:

a. (+) minimum requirements shall also include a 6-foot tall solid (opaque) screen for the entire linear footage of all bufferyards where non-like land uses abut each other, except R.O.W. frontage. The solid (opaque) screen requirement may be waived by the Village if it determines this level of screening is not needed (e.g., when adjacent to open space/ creek/ river and or pond).

b. The required Bufferyard is determined by matching a proposed land use to an adjacent land use per the above Bufferyard Matrix. The property with the higher Land Use Class will be responsible for any required 6-foot opaque screening.

E3.4.5 Minimum Bufferyard Improvements

BUFFERYARD CLASSIFICATIONS	MINIMUM WIDTH	MINIMUM IMPROVEMENT REQUIREMENTS (per each 100 Linear Feet)
A	10'	6 Trees NOTES: for developments with yards <150 L.F. the total tree requirement shall be ½ dec. overstory trees; ½ dec. understory trees. >150 L.F. the total tree requirement shall be 1/3 deci. overstory trees; 1/3 dec. understory trees; 1/3 evergreen trees.

B	15'	9 Trees 15 Shrubs 30 Perennials and/or Ornamental Grasses NOTES: Developments with yards <150 L.F. the total tree requirements shall be ½ dec. overstory trees and ½ dec. understory trees. >150 L.F. the total tree requirement shall be 1/3 dec. overstory trees; 1/3 dec. understory trees and 1/3 evergreen trees. Shrubs shall be 50% evergreen and may be large, dwarf or a combination of both.
C	20'	12 Trees Shrubs 40 Ornamental Grasses and/or Perennial NOTES: Same as "B" above.
CC	20'	12 Trees 100 Shrubs 100 Ornamental Grasses and/or Perennials NOTES: Same as "B" above
D	25'	15 Trees 140 Shrubs 120 Ornamental Grasses and/or Perennials NOTES: Same as "B" above.
DD	25'	15 Trees 140 Shrubs 120 Ornamental Grasses and/or Perennials NOTES: Same as "B" above
E	40'	24 Trees 50 Shrubs 80 Perennials & Ornamental Grasses NOTES: Same as "B" above.

E3.4.6 Bufferyard Improvement Notes

a. The Village, at it's discretion, may grant a 25% reduction in plant material requirements of the use of an earth berm at 3-feet in height or taller. Slope may not exceed 3:1.

b. Existing trees which are preserved may count toward the bufferyard tree requirement. This credit shall be at a one (1) existing tree for one (1) proposed tree basis regardless of the size of the existing tree.

c. The required evergreen percentages for trees and shrubs shall be waived if the bufferyard falls within an existing or proposed natural area (e.g., prairie, wetland fringe, woodland) in which case all required plantings shall be 100% native deciduous plants.

d. All required bufferyard plantings shall be in addition to all other required plantings (e.g., parking lot landscaping).

E3.5 - Interior Landscaping (Foundations)

In addition to the landscaping requirements for bufferyards (Section 3.4) and for parking lots (Section 3.6), the following interior lot landscaping standards apply:

a. Areas of the site not covered by structures or pavement shall be planted with live landscaping.

b. Decorative stone, brick, or pavement may be used for edging planting beds but may not cover more than twenty (20) percent of the landscaped area.

c. A landscaped area of at least 10-feet in width shall be located around the perimeter of all buildings up to 3-stories or 30-feet in height. For every additional 10-feet in height, the width of the foundation planting area shall include 1-additional foot of planting up to a maximum of 20-feet in width.

d. Landscaping shall be provided along the entire length of all building facades except where sidewalks, retail storefront windows, driveways and truck docks or loading areas provide access to the building or where fire department connections are necessary. Such landscaping shall be comprised of a combination of overstory trees, understory trees, evergreens, shrubs, roses, ground cover, ornamental grasses, perennials, vines and annual flowers.

e. Retail storefront windows, (which generally have walkway pavements adjacent to them) are exempt from the required minimum foundation planting area. In its place, containerized plantings within the pedestrian pavement areas shall be required. These may consist of free standing pots, inground raised or curbed planters and hanging baskets. These alternate planters may include permanent or annual plantings. If annual plantings are chosen, they must be replaced every planting season.

f. Shade trees should be located on the south side of buildings wherever feasible to block summer sun.

g. Plantings shall be clustered along long walls to soften the visual effect of the horizontal roof line.

h. Plantings shall be designed so as to provide massings of natural colors and shapes to offset the mass of the building and to provide visual relief to the straight lines of building architecture, parking lots and other man-made features.

E3.6 Interior Landscaping (Storage Yards, Ground Utilities & Truck Docks)

a. Service yards and exterior work areas shall be screened from view from residential and commercial areas and public rights-of-way.

b. Open storage yards shall be screened on all sides by solid walls or fences (including solid doors or gates) at least 8-feet high, but in no case lower in height that the materials to be stored. If stored materials exceed 8-feet in height, then landscaping shall be provided along the outside perimeter of that portion of the fence or wall visible from the public right-of-way or adjacent commercial or residential land uses. The landscaping shall be in addition to the fence or wall. The installed height of the landscaping shall be equal to or greater than one-half the height of the fence or wall. Landscaping shall consist of 2-Overstory, 3-Evergreen, 20-Shrub, and 40-perenial or ornamental grass plants per 100 linear feet of fence. Fifty percent (50%) of the required Shrubs must be evergreen.

c. Except as otherwise approved by the Village, all dumpsters shall be fully screened with landscaping from view from residential, adjoining commercial areas, and public rights-of-way.

d. All ground mounted transformers, generators or other ground utilities and loading docks shall be suitably screened with plant material (75% evergreen if in conjunction with a fence or wall or 100% evergreen if landscaping only), wood fences, masonry walls or a combination thereof. All shall be located so as to provide for proper access and maintenance. The screening heights shall be a minimum of ten feet continuous for loading docks and at least the height of the items being screened for utilities. Landscaping shall be the full required height at the time of installation if used alone. If used in conjunction with a required height fence or wall the landscaping may be at one half the height of the fence or wall at the time of planting if positioned directly in front of the fence or wall.

e. When wood fencing is used for screening, all posts and framework shall be steel.

E3.7 Parking Lots

If adjacent to residential uses, public rights-of-way, or private streets, all open, off-street parking lots for automobiles or other vehicular use areas shall have an effectively solid landscape screen of the parking area from adjacent residential uses public rights-of-way or private street. No parking lot shall be closer than ten feet (10') to any building.

a. Perimeter Parking Lot Landscaping.

b. The landscaping shall consist of one (1) of the following options:

i. A solid landscape screen, a minimum of 3-feet in height at maturity (24-inches at the time of planting) shall be provided on all sides of the parking lot which face residential land uses, public rights-of-way, or private roadways. The landscape screen shall be setback a minimum of two feet (2') from back of curb where vehicles overhand the curb. Additionally 1-overstory tree per every 35 linear feet of parking lot requiring screening shall be provided between the parking lot and property line it is adjacent to. A minimum of seventy-five percent (75%) of the shrubs shall be evergreen. A maximum of twenty percent (20%) of the shrubs may be substituted with ornamental grasses which mature at no less than 4-feet. Ornamental grasses must be planted in groups of 5 or more. Adequate areas for snow storage shall be allowed for.

ii. A berm that is at least 2½ feet higher than the finished elevation of the parking lot (at the nearest point) and landscaping that includes 1-overstory tree, 6-evergreen trees, 30-shrubs and 60 perennials and/or ornamental grasses per 100 linear feet. A minimum of fifty percent (50%) of the shrubs must be evergreen. Plantings should be designed in natural grouping; a linear design is discouraged. The berm should be graded in an undulating manner to appear more natural. Vehicle overhang and snow storage shall be allowed for.

iii. A minimum 6-foot wide vegetative screen at the high point along a minimum 3-foot grade drop from the adjacent green area to the parking lot, with landscaping that includes at a minimum 4-evergreen trees (columnar forms acceptable), 15-shrubs and 30-perennials and/or ornamental grasses per 100 linear feet. A

minimum of fifty percent (50%) of the plant material must be evergreen.

iv. A 3-foot high wall of brick, stone or decoratively finished concrete with a minimum 6-foot wide planting strip planted with landscaping that includes as a minimum 4-evergreen trees (columnar form acceptable), 15-shrubs and 30-perennials and/or ornamental grasses per 100 linear feet.

b. Interior Parking Lot Landscaping.

The interior of parking lots shall require landscaped medians and/or islands at a minimum of:

Lot Size (total area inside perimeter curb)	Minimum Area in Landscaped Medians or Islands
< 4.500 S.F.	5%
4,500 S.F. to 30,000 S.F.	8%
30,000 S.F. >	10%

The islands shall be evenly dispersed throughout the parking lot. The planting of the islands shall meet the following requirements:

i. The minimum area of islands for each tree shall be 180 square feet with a minimum dimension of 9 feet in width and 18 feet in length. All planting islands shall be curbed and shall be crowned to allow for positive drainage, except when being used for retention or filtration (e.g., bio-swales, rain gardens). Planting islands may be combined to create larger planting islands within the parking lot.

ii. The maximum run of uninterrupted parking stalls, without an island shall be fifteen (15) stalls.

iii. All double row runs of parking shall have curbed end islands for planting. No end islands may be paved/ striped.

iv. Continuous median type islands shall have 1-overstory tree for every 35 linear feet of island and 30 shrubs or ornamental grass per every 100 linear feet of island. Additionally the development of such median islands as bio-swales, accepting parking lot run-off, is encouraged, wherever feasible. When a median is improved as a bio-swale, the shrub/ornamental grass requirement will be waived in

favor of the swale being planted with native grasses, forbes, rushes, sedges and aquatics for filtration and infiltration purposes.

v. End islands shall have 2-overstory deciduous trees and internal peninsula islands and corner islands shall have 1-overstory tree.

vi. Planting islands shall not be used for snow storage. Rather, separate snow storage areas shall be designated on the landscape plan. All end islands and peninsula islands shall be crowned a minimum of 12-inches above top of curb to allow for winter deicing chemical run-off.

vii. Dwarf shrubs, perennials, ornamental grasses and ground covers (excluding turf grass, unless specifically approved by the Village) shall be planted in all end type planting islands,

viii. in addition to the required overstory trees. Sight lines shall not be blocked. The maximum height shall be 24 inches. Internal peninsula and corner islands may be planted with turfgrass.

viii. Plant materials other than ground cover shall be set back a minimum of 2 feet from the curb to avoid damage from overhanging car bumpers and doors. Setback areas may be finished with decomposed (rotten) granite over fabric.

ix. No overstory trees required per the perimeter parking lot landscaping minimum standards may count toward the required interior overstory tree requirements.

E3.8 Detention/Retention Basins.

a. Detention/retention basins may be dry bottom, wetland bottom or wet types:

i. Dry Bottom basins shall be improved with one hundred percent (100%) native prairie plantings up to the designed high water elevation. Upon the recommendation of the Village Landscape Review Officer, the Village may approve a one hundred percent (100%) turfgrass improvement, in lieu of native prairie, if any of the following can be adequately demonstrated:

(a) The basin is in a viable location and design for recreational usage and can support a full, healthy, maintainable stand of turf grass (provided, however, the use of such detention/retention basins for recreational usage shall not be in lieu of any other requirements created by Village

Ordinance for the provision of parks or other lands, including recreational lands); or

(b) The basin's shape and/or location is such that the aesthetics of a prairie is not in keeping with the overall theme or aesthetics of the development and is unlikely to accept or hold water except under infrequent extreme weather conditions.

ii. Wetland Bottom basins intended to hold several inches of water for extended periods of time shall be improved with a native wetland mix (seed and/or plugs).

iii. Wet basins, which have permanent open water shall, at a minimum, be improved with a native riparian shoreline mix (seed and/or plugs) with coconut blanket for the first 3 feet of the pond bank above

normal water and with a wet/mesic native prairie mix (seed) with straw blanket for the remainder of the pond bank up to the high water level. Turfgrass or additional prairie (mesic) may be used above the high water level. Additionally all wet ponds shall contain shelves which extend 6 feet to 12 feet into the water from the normal water level to a maximum of a 12" depth of water. Such shelves shall provide for both safety and as a surface for the installation of emergent aquatic plants. All shelves shall be planted with native emergent aquatic plugs at a maximum spacing of 18 inches on center. All emergent aquatic shelves shall be provided with adequate predator control devices for a minimum period of 1-full growing season to assure complete rooting of the aquatic plugs. Also cattail eradication shall be performed for a minimum of 3-full growing seasons.

b. All areas improved in native prairie mixes, native wetland mix, native riparian shoreline mix or native emergent aquatics shall be subject to the following required maintenance and monitoring programs:

i. All native grassland mixes (i.e., low-profile prairie, wet/ mesic prairie, wetland mix, riparian mix) shall be monitored by the Owner for a period of five (5) years, subsequent to installation, per the provisions of Appendix-B.

ii. All native emergent aquatic plantings shall be maintained by the Owner for a period of one (1) to three (3) years, subsequent to installation, per the provisions of Appendix-B.

c. In addition to the above native community and turfgrass improvements, all detention basins shall be planted with overstory and understory trees within

the normal water level (if any) to high water level zone. All understory trees shall be clump form planted in groups of 3 or more. The minimum plant unit requirements shall be 4-trees per 500 square feet of basin side slopes calculated from the toe of the slope to the high water line for dry basins or from the normal water level to the high water line for wetland and wet basins in accordance with the following table:

Plant Material/400 S.F.	Quantity
Overstory Tree	1
Understory Tree (clump form)	3

One hundred percent (100%) of these trees shall be native plants. The required trees shall be planted on the pond banks between the normal water and high water levels. Up to twenty-five percent (25%) of the required trees may be planted outside of this zone for design reasons, but must be within

20-feet of the high water line. See Appendix-A for acceptable detention/retention basin trees.

Section E4.0: Landscape Care Requirements

E4.1 Maintenance

The Owner, Tenant or their Agent, if any, shall be responsible for the maintenance of all landscaping located on the site and within boulevard areas adjacent to streets, which is required by the provisions of this Ordinance or by any approved development plan for the site. Landscaping shall be maintained in good condition so as to present a healthy, neat and orderly appearance and shall be kept free from refuse and debris. Any dead or severely damaged or diseased plant shall be replaced by the owner, tenant or their agent during the next planting season for the particular plant or plants in question.

E4.2 Pruning

a. The Owner of trees overhanging public streets or rights-of-way shall prune the branches so that such branches shall not obstruct the light from any street lamp or obstruct the view of any street intersection and so that there shall be a clear space of 8 feet above the surface of the street or sidewalk. Said owners shall remove all dead, diseased or dangerous trees, or broken or decayed limbs which constitute a menace to the safety of the public.

b. The Village shall have the right to prune any tree or shrub on private property when it interferes with the proper spread of light or interferes with visibility of any traffic control device or sign. The property owner will be charged the cost of such service that the Village initiates for public safety.

c. It shall be unlawful for any person to top any street tree, park tree or other tree on private or public property. Topping is defined as the severe cutting back of limbs to stubs larger than 3 inches in diameter within the tree's crown to such a degree so as to remove the normal canopy and disfigure the tree. Trees severely damaged by storms or other causes, or certain trees under utility wires or other obstructions where other pruning practices are impractical may be exempted from the provisions of this Ordinance by the Village Landscape Review Officer.

d. The branches of deciduous trees and shrubs may be selectively thinned by up to one-third in accordance with good horticultural practice; however, in no case shall trimming result in reducing the overall size of the plant below that specified on the approved landscape plan.

Section E5.0: Performance Guarantee

E5.1 The required landscaping shall be completed, weather permitting, prior to the issuance of an occupancy permit within the development or the portion thereof then being developed, but in any event within six (6) months after the date of issuance of the first occupancy permit for the development or the portion thereof then being developed. The property owner/developer shall provide an irrevocable letter of credit payable to the Village to ensure that the landscaping as approved will be installed. The letter of credit shall be in an amount equal to one hundred fifty percent (150%) of the cost of required landscaping as approved to ensure that such landscaping will be installed. The owner must also grant the Village the right to enter upon the land for the purposes of installing the required landscaping in the event that such landscaping is not installed. The letter of credit shall be released when landscape installation is approved by the Village, with twenty percent (20%) retained by the Village for a one year guarantee period. The owner/developer shall advise any purchaser who purchases the land before the expiration of the one (1) year guarantee period of the Village's rights and the owner's/developer's obligations arising under these Guidelines.

5.2 Prior to acceptance of public improvements relating to the development, the Owner or Developer shall submit a current certification from a licensed landscape architect that the provisions of the approved Landscape Plan have been implemented and that all plantings have been installed in accordance with said plan and the provisions of these Guidelines.

F. GREEN DESIGN STANDARDS

Section F1.0 - General

All Developers/Owners proposing new construction or major renovations to existing facilities within the IZD, are highly encouraged to pursue LEED (Leadership in Energy and Environmental Design) Certification for their projects. The Green design, promoted by the LEED system, not only provides a positive impact on public health and the environment, it also serves to reduce operating costs and assists in the provision of a sustainable community. LEED Certification can also benefit the Developer/Owner directly for the following reasons:

- Recognition for commitment to environmental issues in the community
- 3rd party validation of achievement
- Qualify for a growing list of State and local governmental initiatives
- Marketing exposure through the U.S. Green Building Council web site, case studies, conferences and media announcements

The LEED program provides a green rating system which is voluntary, consensus based and market-driven, based on accepted energy and environmental principles which strike a balance between established practices and emerging concepts.

Although LEED Certification is not required for project approval, all LEED Certified projects qualify for incentives offered by the Village to be determined by the Village on a project-by-project basis.

Section - 2.0 Requirements for All Interstate Zoning District Projects

Although LEED Certification is not required for project approval, **the following green/sustainable site improvements are required for all IZD projects.**

2.1 Sustainable Site Design

a. Stormwater Design – Quality Control by limiting the disruption of natural water hydrology and pollution of natural water flows by reducing impervious cover, increasing on-site infiltration, and reducing pollution from stormwater runoff.

i. Requirements include (a) **or** (b) **and** (c) as follows:

(a) Implement a stormwater management plan that prevents the post-development peak discharge rate and quantity from exceeding the pre-development peak discharge rate and quantity of the one- and two-year 24-hour design storms.

OR

(b) Implement a stormwater management plant that results in a 25% decrease in the volume of stormwater runoff from the two-year 24-hour design storm.

AND

(c) Implement a stormwater management plan that reduces impervious cover, promotes infiltration, and captures and treats the stormwater runoff from 90% of the average annual rainfall using acceptable best management practices (BMPs).

BMPs used to treat runoff must be capable of removing 80% of the average annual post development total suspended solids (TSS) load based on existing monitoring reports. BMPs are considered to meet these criteria if (1) they are designed in accordance with standards and specifications from a state or local program that has adopted these performance standards, or (2) there exists in-field performance monitoring data demonstrating compliance with the criteria. Data must conform to accepted protocol (e.g., Technology Acceptance Reciprocity Partnership [TARP], Washing State Department of Ecology) for BMP monitoring.

ii. Potential Technologies to accomplish requirement

(a) Vegetated roofs
(b) Pervious asphalt or concrete pavements

(c) Pervious unit pavers
(d) Rain gardens, bioswales, bio-infiltration cells
(e) Constructed wetlands and naturally vegetated retention ponds. **NOTE: Community/shared facilities to be provided by the Village.**
(f) Rainwater recycling

b. Water Efficiency by limiting the use of potable water for landscape irrigation.

i. Requirements

Reduce potable water consumption for irrigation by a minimum of 50% from a calculated mid-summer baseline case.

ii. Potential Technologies to accomplish requirements:

(a) Use a high percentage of native species plant materials. **NOTE: The Landscape guidelines require a minimum of 40% of proposed dec. shade and ornamental trees of native species.**
(b) Use native grassland communities (native prairie) in lieu of a portion of the eurasian turfgrass (bluegrass).
(c) Use captured rainwater (e.g., pump from retention ponds, utilize rooftop rainwater captured in cisterns).
(d) Use irrigation system with water efficient design.

2.2 All new developments within the Interstate Zoning District shall be required to comply with the requirements of the **2006 ICC International Energy Conservation Code.**

APPENDIX - A

Plant Material Lists

A. PARKWAY TREES & GENERAL USE DECIDUOUS SHADE TREES

BOTANIC NAME	COMMON NAME

1 Approved Narrow Forms

for use in narrow parkways or where overhead wires are closely adjacent

* Acer freemanii 'Armstrong'	Armstrong Freeman Maple (50'x20')
* Acer freemanii 'Celzam"	Celebration Freeman Maple (E4045'x25')
* Acer nigrum ' Greencolumn'	Greencolumn Black Maple (50'x20')
Acer platanoides 'Columnare'	Columnar Norway Maple (50'x'15')
* Acer rubrum 'Bowhall'	Bowhall Red Maple (40'x15')
* Carpinus caroliniana	American Hornbeam (20'x20')
Corlylus colurna	Turkish Hazelnut (45'x25')
Ginkgo biloba 'Princeton Sentry' (male)	Princeton Sentry Maidenhair Tree (55'x25')
Pyrus calleryana 'Chanticleer'	Chanticleer Callery Pear (40'x15')
Quercus bicolor x robar 'Fastigiata'	Regal Prince Oak (45'x20')
Zelcova serrata 'Musashino'	Musashino Columnar Zelcova (45'x15')

2 Approved Wide Forms

for use in normal parkway situations

* Acer fremanii 'Jeffersred'	Autumn Blaze Freeman Maple
* Acer fremanii 'Autumn Fantasy'	Autumn Fantasy Blaze Freeman Maple
* Acer freemanii ' Marmo'	Marmo Blaze Freeman Maple
Acer miyabei 'Morton'	State Street Miyabe Maple
* Acer rubrum	Red Maple
* Acer r.'Autumn Flame'	Autumn Flame Red Maple
* Acer r.'Franksred'	Red Sunset Red Maple
* Acer saccharum	Sugar Maple
* Acer s.'Bonfire'	Bonfire Sugar Maple
* Acer s.'Commemoration'	Commemoration Sugar Maple
* Acer s.'Green Mountain'	Green Mountain Sugar Maple
* Aesculus glabra	Ohio Buckeye
* Celtis occidentalis	Hackberry
* Celtis o.'Chicagoland'	Chicagoland Hackberry
Ginkgo biloba (male)	Maidenhair Tree
Ginkgo b.'Autumn Gold' (male)	Autumn Gold Maidenhair Tree
Ginkgo b.'Magyar' (male)	Magyar Maidenhair Tree
* Gleditsia triacanthos i.'Skyline'	Skyline Honeylocust
* Gleditsia triacanthos i.'Shademaster'	Shademaster Honeylocust
* Ostrya virginiana	Ironwood
Pyrus calleryana 'Aristocrat'	Aristocrat Callery Pear
Pyrus calleryana ' Autumn Blaze'	Autumn Blasé Callery Pear
* Quercus alba	White Oak
* Quercus bicolor	Swamp White Oak
* Quercus ellipsoidalis	Hill's Oak
* Quercus imbricaria	Shingle Oak
* Quercus macrocarpa	Bur Oak
* Quercus rubra	Red Oak
* Quercus schuettii	Swamp Bur Oak

* Tilia americana	American Linden
* Tilia a.'Redmond'	Redmond American Linden
Tilia cordata 'Glenleven'	Glenleven Littleleaf Linden
Ulmus 'Morton Glossy'	Triumph Elm
Ulmus carpinifolia 'Homestead'	Homestead Smoothleaf Elm
Ulmus c.'Pioneer'	Pioneer Smothleaf Elm
Ulmus c.'Prospector'	Prospector Smoothleaf Elm
Ulmus c.'Regal'	Regal Smoothleaf Elm
Ulmus parvifolia 'Frontier'	Frontier Chinese Elm

3 **Approved Under Overhead Wires**

Acer ginnala (tree form)	Amur Maple
* Cercis canadensis (tree form)	Eastern Redbud
* Crataegus crus-galli inermis (tree form)	Thornless Cockspur Hawthorn
Malus 'Adams' (tree form)	Adams Crabapple
Malus 'Donald Wyman' (tree form)	Donald Wyman Crabapple
Malus 'Schmidtcutleaf' (tree form)	Golden Raindrops Crabapple
Malus 'Prairiefire' (tree form)	Prairiefire Crabapple
Malus 'Red Jewel' (tree form)	Red Jewel Crabappple
Malus 'Sutyzam' (tree form)	Sugartyme Crabapple
Syringa pekinensis 'Morton' (tree form)	China Snow Peking Lilac
Syringa reticulata (tree form)	Japanese Tree Lilac
Syringa r.'Ivory Silk' (tree form)	Ivory Silk Japanese Tree Lilac

* = Countable toward satisfying "native species" requirement

B. SUGGESTED GENERAL USE PLANTINGS

1 **Deciduous Shade Trees**

Same as A-1 & A-2 above

2 **Deciduous Ornamental Trees**

Acer ginnala	Amur Maple
Alnus glutinosa	European Black Alder
* Amelanchier (species & cultivars)	Serviceberry
Betula platyphylla j.'Whitespire'	Whitespire Japanese Birch
* Cercis canadensis	Eastern Redbud
* Chionanthus virginiana	White Fringe Tree
Cornus mas	Cornelian Cherry Dogwood
* Crataegus crus-galli inermis	Thornless Cockspur Hawthorn
Magnolia a.'Butterflies'	Butterflies Magnolia
Magnoolia liliiflora 'Jane'	Jane Magnolia
Magnolia stellata	Star Magnolia
Malus 'Adams'	Adams Crabapple
Malus 'Donald Wyman'	Donald Wyman Crabapple
Malus 'Prairie Fire'	Prairie Fire Crabapple
Malus 'Red Jewel'	Red Jewel Crabapple
Malus sargentii	Sargent Crabapple
Malus 'Schmidtcutleaf'	Golden Raindrops Crabapple
Malus 'Sutyzam'	Sugar Tyme Crabapple

Populus tremuloides	Quaking Aspen
* Rhus typhina (cultivars)	Staghorn Sumac
Syringa pekinensis	Peking Lilac
Syringa reticulata	Japanese Tree Lilac
* Viburnum prunifolium	Blackhaw Viburnum

3 **Evergreen Trees**

Picea abies	Norway Maple
Picea glauca 'Densata'	Black Hills Spruce
Picea omorika	Serbian Spruce
Picea pungens	Colorado Spruce
Picea p.'Glauca'	Colorado Blue Spruce
Pinus ayachuite 'Forest Sky'	Forest Sky Mexican White Pine
Pinux flexilis	Limber Pine
Pinus nigra	Austrian Pine
* Pinus strobus	White Pine
Pseudotsuga menziesii	Douglas Fir
Tsuga candensis	Canadian Hemlock

NOTE: Most of the above conifers have improved cultivars too numerous to list which provide additional color, form and size choices.

* = Countable toward satisfying "native species" requirement.

4 **Large / Medium Deciduous Shrubs**

Aronia arbutifolia (& cultivars)	Red Chokeberry
Aronia melanocarpa	Black Chokeberry
Clethera alnifolia	Summersweet Clethera
Cornus racemosa	Gray Dogwood
Corylus americana	American Filbert
Cotoneaster acutifolia	Peking Cotoneaster
Cotonieaster divaricatus	Spreading Coroneaster
Cotoneaster multiflorus	Many-flowered Cotoneaster
Hamamelis vernalis	Vernal Witchhazel
Hamamelis virginiana	Common Witchhazel
Hydrangea a.'Annabelle'	Annabelle Hydrangea
Hydrangea p.'Limelight'	Limelight Panicle Hydrangea
Hydrangea p.'Tardiva'	Tardy Panicle Hydrangea
Hydrangea p.'Unique'	Unique Panicle Hydrangea
Hybiscus syriacus (cultivars)	Rose-of-Sharon
Ilex verticillata (cultivars)	Winterberry
Ribes alpinum	Alpine Currant
Rosa rugosa (species & cultivars)	Rugosa Rose
Syringa p.'Miss Kim'	Miss Kim Dwarf Lilac
Viburnum dentatum (cultivars)	Arrowwood Viburnum
Viburnum x juddii	Judd Viburnum
Viburnum lantana	Wayfaringtree Viburnum
Viburnum l.'Mohican'	Mohican Wayfaringtree Viburnum
Viburnum prunifolium	Blackhaw Viburnum
Viburnum r.'Alleghany'	Alleghany Lantanaphyllum Viburnum
Viburnum trilobum	American Cranberry Viburnum
Wiegelia f.'Red Prince'	Red Prince Weigelia

5 **Dwarf Deciduous Shrubs**

Aronia m.'Morton'	Iroquois Beauty Black Chokeberry
Cotoneaster apiculata	Cranberry Cotoneaster
Fothergilla gardenii	Dwarf Fothergilla
Forsythia i.Happy Centennial'	Happy Centennial Forsythia
Hypericum kalmianum	Kalm St. Johnswort
Hydrangea m.'Bailmer'	Endless Summer Hydrangea
Ribes a.'Green Mound'	Green Mound Alpine Currant
1 Rosa (various)	Shrub Roses
Spiraea b.'Tor'	Tor Birchleaf Spirea
Spiraea j.'Anthony Waterer'	Anthony Waterer Spirea
Spiraea j.'Froebeli'	Froebel's Spirea
Spiraea b.'Goldflame'	Goldflame Spirea
Spiraea j.'Magic Carpet'	Magic Carpet Spirea
Spiraea j.'Neon Flash'	Neon Flash Spirea
Spiraea n.'Snowmound'	Snowmound Spirea
Rhus a.'Gro-Low'	Gro-Low Sumac

FOOTNOTES:

1 Shrub roses include 'Carefree Beauty', 'Carefree Wonder', 'Carefree Sunshine', 'The Fairy', Nearly Wild', 'Flower Carpet Red', 'Knockout' and 'Electric Blanket'.

6 **Broadleaf / Evergreen Shrubs**

Buxus 'Glencoe'	Chicagoland Green Boxwood
Buxus 'Wintergreen'	Wintergreen Boxwood
Euonymus f.'Carrierei'	Glossy Leaf Euonymus
Euonymus f.'Vegetus'	Big-leaf Wintercreeper
2 Juniperus chinensis (cultivars)	Chinese Juniper
3 Juniperus horizontalis (cultivars)	Creeping Juniper
Juniperus procumbens 'Nana'	Nana Japgarden Juniper
Picea abies 'Elegans'	Elegans Dwarf Spruce
Picea abies 'Nidiformis'	Birdsnest Spruce
Picea p.'Montgomery'	Montgomery Dwarf Spruce
Picea p.'Thume'	Thume Dwarf Spruce
Pinus m. var. mugo	Dwarf Mugho Pine
Taxus media (cultivars)	Anglojap Yew
Thuja o.'Technyi'	Mission Arborvitae

FOOTNOTES:

2 Chinese Juniper cultivars include 'Fairview', 'Pfitzeriana', 'Pfitzeriana Compacta', Kallay Compact', sargentii and 'Sea Green'.

3 Creeping Juniper cultivars include 'Blue Rug', 'Hughes', 'Procumbens' and 'P.C. Youngstown'.

7 **Ornamental Grasses**

Calamagrostis a.'Karl Foerster'	Feather Reed Grass
Miscanthus s.'Graziella'	Grazella Maiden Grass
Miscanthus s.'Nov. Sunset'	November Sunset Maiden Grass

Miscanthus s.'Morning Light'	Morning Light Silver Maiden Grass
Miscanthus s.'Purpurascens'	Flame Grass
Miscanthus s.'Silver Feather'	Silver Feather Grass
Miscanthus s.'Strictus'	Porcupine Grass
Miscanthus s.'Variegatus'	Vaiegatd Japanese Silver Grass
Panicum virigatum 'Rotstrahlbusch'	Red Switch Grass
Panicum v.'Dallas Blues'	Dallas Blues Switch Grass
Panicum v.'Shenandoah'	Shenandoah Red Switch Grass
Pennisetum alopecuroides	Fountain Grass
Pennisetum a.'Hamelin'	Dawrf Fountain Grass
Phalaris a.'Picta'	Variegated Ribbon Grass
Sorghastrum nutans	Indian Grass
Sorghastrum n.'Sioux Blue'	Blue Indian Grass
Sporobolus heterolepis	Prairie Dropseed

8 **Perennials**

Achillea (cultivars)	Yarrows
Alchemilla mollis	Lady's Mantle
Allium (species & cultivars)	Ornamental Onions
Asclepias tuberosa	Butterfly Flower
Aster novae-angliae (cultivars)	New England Asters
Aquilegia (cultivars)	Columbines
Boltonia (cultivars)	Boltonias
Buddleia (cultivars)	Butterfly Bushes
Cimicifuga racemosa & simplex	Bugbane
Dianthus (cultivars)	Pinks
Dicentra x 'Luxuriant'	Luxuriant Bleeding Heart
Echinacea purpurea (cultivars)	Coneflower
Eupatorium (cultivars)	Joe Pye Weeds
Geranium sanguineum (cultivars)	Geraniums
Helianthus divaricatus	Woodland Sunflower
Heliopsis (cultivars)	False Sunflowers
Hemerocallis (cultivars)	Daylilies
Hibiscus (cultivars)	Rose Mallows
Hosta (cultivars)	Plantain-lilies
Iris siberica (cultivars)	Siberian Irises
Liatris (cultivars)	Gayfeathers
Monarda (cultivars)	Bee Balms
Nepeta f.'Walkers Low'	Walkers Low Catmint
Paeonia (cultivars)	Peonies
Penstemon 'Husker Red'	Husker Red Beardstongue
Perovskia atriplicifolia	Russian Sage
Phlox paniculata (hybrids)	Garden Phlox
Phlox volcano (various colors)	Volcano Phlox
Physostegia (cultivars)	Obedient Plants
Pulmonaria (cultivars)	Lungworts
Rudbeckia 'Goldsturm'	Black-eyed Susan
Rudbeckia n.'Herbstonne'	Autumn Sun Coneflower
Rudbeckia laciniata	Wild Golden Glow
Sedum 'Autumn Fire'	Autumn Fire Stonecrop
Sedum ' Autumn Joy'	Autumn Joy Stonecrop
Solidago (cultivars)	Goldenrod
Stachys byzantine	Lamb's Ear
Veronica incana	Wooly Veronica

9 **Groundcovers**

Dianthus g.'Firewitch'	Firewitch Cheddar Pinks
Euonymus f.'Coloratus'	Purple-leaf Wintercreeper
Euonymus f.'Emerald Gaiety'	Emerald Gaiety Euonymus
Hedera h.'Bulgaria'	Bulgarian Ivy
Sedum ' Bailey's Gold'	Bailey's Gold Stonecrop
Sedum s.'Dragon's Blood'	Dragon's Blood Stonecrop
Sedum s.'Ruby Glow'	Ruby Glow Stonecrop
Thymus s.'Coccieneus'	Creeping Thyme
Vinca minor	Periwinkle

10 **Vines**

Celastus scandens	Bittersweet
Clematis (hybrids)	Clematis
Clematis paniculata	Sweet Autumn Clematis
Parthenocissus quinquefolia	Virginia Creeper

C. **APPROVED RETENTION / DETENTION BASIN TREES**

1 **Deciduous Shade Trees**

* Acer rubrum	Red Maple
* Celtis occidentalis **	Hackberry
* Taxodium distichum	Bald Cypress
* Quercus bicolor	Swamp White Oak

* Countable toward satisfying "native species" requirement.
** Upper Shoreline areas only.

2 **Deciduous Ornamental Trees**

* Acer rubrum (clump form)	Clump Red Maple
* Alnus rugosa	Speckled Alder
* Betula nigra	River Birch

3 **Deciduous Shrubs**

Cornus racemosa	Gray Dogwood
Viburnum lentago **	Nannyberry

* Countable toward satisfying "native species" requirement.
** Upper Shoreline only.

D. **PROHIBITED TREE & PLANT SPECIES**

The following species are unaceptable for use as required plantings.

1 **Deciduous Shade Trees**

Acer negundo	Boxelder
Acer platanoides	Norway Maple
Acer saccharum	Silver Maple
Ailanthus altissima	Tree-of-Heaven
Catalpa speciosa	Northern Catalpa (acceptble for non-parkway use)
Fraxinus (all species due to Emerald Ash Borer)	Ash
Ginkgo biloba (female)	(Female) Maidenhair Tree

Gleditsia triacanthos inermis (thorns)	Common Honeylocust
Juglans nigra	Black Walnut
Maclura pomifera	Osageorange
Morus (species)	Mulberry
Persimmon diaspyros	Persimmon
Popuus alba	White Poplar
Populus deltoides	Cottonwood
Populus nigra 'Italica'	Lombardy Poplar
Robinia pseudoacacia	Black Locust
Salix (species)	Willows

2 **Deciduous Ornamental Trees & Shrubs**

Berberis (species)	Barberry
Euonymus altatus	Winged Euonymus
Eleagnus angustifolia	Russian Olive
Eleagnus umbellata	Autumn Olive
Lonicera (species)	Honeysuckle
Prunus (species)	Cherries & Plums
Rhamnus cathartica	Common Buckthorn
Rosa multiflora	Multiflora Rose
Viburnum opulus	European Cranberrybush

3 **Vines & Groundcovers**

Celastrus obiculatus	Japaneses Bittersweet
Coronia varia	Crown Vetch

4 **Aquatic & Wetland Plants**

Lythrum salacaria	Purple Loosestrife
Phalaris arundinacea	Reed Canary Grass
Phragmites australis	Common Reed
Typha (species)	Cattail

APPENDIX – B

Native Landscapes Maintenance, Monitoring & Guarantee

A. PRAIRIES, DETENTION/RETENTION BASIN BOTTOMS, SHORELINES & BANKS

1. MAINTENANCE (5-years)

All areas specified for "riparian shoreline mix", "low profile prairie mix", "wet/mesic prairie mix", "wetland mix" or other similar native grassland/forbe mixes shall be monitored and managed (maintained) in accordance with a required five (5) year maintenance contract provided by the Developer. The work must be performed by a specialist maintenance contractor with at least five (5) years experience in the field of native landscape management. There shall be a supervisor available at all times who can identify non-native and native plants by genus and species.

This maintenance program shall consist of mowing, burning, selective herbicide control of invasive perennial weeds and re-planting, as needed, according to the schedule below.

Selective herbicide treatment of certain aggressive perennial weeds may be necessary if mowing and burning fail to control them. Such weeds include Canada Thistle, Horsenettle, Sweet Clover and Spotted Knapweed. Only careful contact application shall be performed. NO SPRAYING WILL BE ALLOWED. Control methods shall include

a. Direct hand application via "herbicide glove" to the individual plant consisting of a rubber glove with large absorbent cotton gloves over the rubber glove. A strong solution of gyyphosate based herbicide (RoundUp, Rodeo, Razor or AquaNeat) shall be mixed in a small non-spill squirt or spray bottle. As needed, use the bottle to carefully saturate the cotton glove(s) and then grab the leaves and stem of the unwanted perennial weed to apply the herbicide to that plant only. Take care not to touch or drip the herbicide on other adjacent plantings. Perform only on cool, non-windy days.

b. Cut unwanted perennial weeds (esp. Canada Thistle) to the ground when they are one foot (1') or taller, but prior to flowering. The cut stumps should then be treated with undiluted Garon-3 using a small plastic spray bottle set on "stream" rather than "spray" or "mist". The herbicide should be applied sparingly so that it just soaks the cut stem of the unwanted weed.

1st Full Growing Season

Mow the planted areas three times (3X) to keep annual weeds from going to seed and to reduce shading of young seedlings. Maintain between 6" and 12". Mowing shall take place prior to or when non-native and weedy species are flowering so as to prevent seed set. Control undesirable plant species, when present in small quantities, by hand pulling prior to the development and maturity of the plant. Hand removal shall include the removal of all above

ground and below ground stems, roots and flower masses prior to development of seeds. Apply herbicide (as necessary) to non-native and weedy species within the naturalized areas with appropriate herbicide.

Herbicide should be applied by a trained and licensed applicator. Non-selective herbicides should be used with the utmost caution. Non-selective herbicides are absorbed through the plant tissues and work their way into the root system, effectively killing the plant. The only acceptable herbicides are glyphosate based such as RoundUp, Rodeo, Razor and AquaNeat.

2nd Growing Season

Mow in Spring to the ground and remove cuttings. Repeat mowing in late spring or early summer if weeds remain a problem. Target biennial weeds by mowing to six inches (6") when in bloom. Sweet Clover in particular must be mowed if present. Mowing when in full bloom (mid-summer) will kill it. (**NOTE:** Controlled burning should be used in lieu of mowing when sufficient plant material fuel is available to conduct a burn.) Continue the control of undesirable plant species as necessary by mowing, hand pulling and herbicide application.

3rd, 4th and 5th Growing Seasons

Undesirable plant species to be controlled (as necessary) by mowing, hand pulling, and/or selective herbicide application. At the completion of the third growing season (dependent on fuel availability; dominance of graminoid species is required for successful burning), fire shall be introduced to the naturalized areas as the primary management tool. Trained professionals experienced in the fuel types present shall conduct burning. State and local permits shall be obtained prior to prescribed burning. Prior to a prescribed burn, surrounding property owners as well as local police and fire departments should be notified. A burn plan designating the preferred wind direction and speed, location of firebreaks, and necessary personnel and equipment shall be prepared and utilized in planning and burn implementation. The initial burn shall be dependant on fuel availability that is directly related to the quantity and quality of grasses and sedges present within the planting area. The burn season runs from November 1 through April 30 and burns shall be conducted whenever conditions are suitable.

Long Term (by Owner)

As the natural area matures required supplemental management will be significantly reduced or eliminated. The plant communities will stabilize and be effectively managed through prescribed burning, if applicable. Mowing to prevent seed set of undesirable species and spot herbicide are recommended when and where applicable. Generally after the 5th growing season, these natural areas are burned every other year, burning approximately 50-75% of the areas per burn.

2. INSPECTION & REPORT

a. The Contractor responsible for the required 5-year maintenance program shall conduct an annual inspection and submit a written report at the end of each growing season for the duration of the maintenance period to the VILLAGE LANDSCAPE REVIEW OFFICER. The report shall summarize the findings of the inspection with respect to the coverage and development of the permanent plantings including a list of species identified and a program for any required remedial action regarding weed control, erosion, etc. This report shall be submitted to the VILLAGE LANDSCAPE REVIEW OFFICER by December 31st of each year.

The naturalized stormwater basins and/or other natural areas shall be monitored and managed annually for five (5) years to ensure successful establishment of the native plantings. Data collection shall be conducted utilizing meander survey methodology. The meander survey shall identify all species encountered, dominant species within each plant community and identify areas that require management. Success of the planted areas will be evaluated based on the following performance criteria:

b. **Performance Criteria:**

1st Year: By the end of the first season, 80% of the ground as measured by aerial coverage shall be vegetated by cover crop. No bare areas greater than four (4) square feet should be present within planting areas.

2nd Year: By the second growing season, 90% of the ground as measured by aerial coverage shall be vegetated and at least 50% of the species present as measured by aerial coverage shall be native and non-invasive.

3rd thru 5th Year: By the end of the third season, 90% of the ground as measured by aerial coverage shall be vegetated and at least 75% of the vegetation present shall be native, non-invasive species. Non-native species shall constitute no more than 25% relative aerial coverage of the planted area. The areas planted shall not be dominated by any of the following species (including but not limited to): Purple Loosestrife (*Lythrum salicaria*), Reed Canary Grass (*Phalaris arundinacea*), White Sweet Clover (*Melilotus alba*), Common Buckthorn (*Rhamnus cathartica*), Honeysuckle (*Lonicera sp.*), Common Reed (*Phragmites australis*), Cattails (*Typha, spp.*), or Sandbar Willow (*Salix interior*).

4th & 5th Year: By the end of the 5th season, 95% of the ground as measured by overall coverage shall be vegetated and at least 85% of the vegetation present shall be native, non-invasive species. Non-native species shall constitute no more than 15% of the planted area. The areas shall not be dominated by any of the species listed above.

3. ACCEPTANCE & GUARANTEE

a. PLANT PLUGS (if specified)

i. The Developer shall be responsible for the satisfactory growth of all plant plugs installed per the approved Drawings & Specifications until VILLAGE acceptance of the work. Plugs shall exhibit vigorous growth and be thoroughly rooted in by the end of the first full growing season, or one (1) year, whichever occurs first.

ii. A minimum of ninety-five percent (95%) of the plugs shall be alive and growing at the end of the first full growing season or one (1) year, whichever comes first, for the work to be accepted (approved). If not accepted, the Developer must re-plant to fulfill the 95% requirement.

b. SEEDED AREAS

i. The Developer shall be responsible for the satisfactory growth of grass, forbe, rush, reed, and sedge species on all areas seeded and/or planted per the approved Drawings and Specifications until VILLAGE acceptance of the work.

ii. Annual inspections shall be performed by the Developer's natural areas management/maintenance Contractor and annual written Reports shall be submitted to the Village per Section A-2a above.

iii. The Developer shall guarantee the provisions of the minimum standards of the Performance Criteria stated in Section A-2b above.

iv. The Developer shall re-plant all areas not meeting the Performance Criteria stated in Section A-2b above. Acceptance shall be granted when all areas meet the minimum Performance Criteria standards.

B. EMERGENT AQUATIC SHELVES

1 INSTALLATION

a. OPEN WATER AQUATIC SPECIES (Waterlily)

Species to be planted in open water shall be placed in individual mesh bags (5 tubers or bare root plants per bag), weighted with rocks and dropped into the

water where the depth is one to four feet deep (1'-4'). Drop in scattered groups of bags at two to three foot on-center (2'-3' o.c.) per the general allocations illustrated on the Drawings.

b. ERECT EMERGENT AQUATIC SPECIES

The erect emergent community species shall be planted at a minimum of 18" o.c. on the pond shelf areas from the normal water line to at least four (4) lineal feet into the water or on the wetland bottom. The emergent plants shall be planted by hand along the shoreline or wetland bottom by shoving the plug firmly into the soft pond bottom (shelf) soil. Where hard bottom areas are encountered, use a seedling planting tool and make a "V" depression in the bottom, insert the root or tuber and heal in.

c. PREDATOR PROTECTION

The installing Native Landscape Contractor shall be responsible for protecting all the erect emergent community plants installed on shelves or wetland bottoms from predators (e.g., geese, ducks). Goose grids, mesh barriers, etc. shall be constructed immediately after planting to insure development of an erect emergent plant community as specified on the Drawings. **Over planting to attain required minimum established quantities is suggested.** The warranty will not be waived due to predator feeding during this period.

2. MAINTENANCE

All emergent aquatic shelves and wetland bottoms planted in basins shall be managed (maintained) as required below by way of a maintenance contract provided by the Developer. The work must be performed by a specialist, maintenance contractor with at least five (5) years experience in the field of native aquatic landscape management. There shall be a supervisor available at all times who can identify non-native and native plants by genus and species.

a. All emergent aquatic plants must be protected immediately after planting with an effective predator control system.

The Contractor is responsible for maintaining all such predator protection systems for a minimum of one (1) full growing season (not less than seven (7) months confined to the months of April through October) or until a community is established to the minimum quantities required. The Warranty will not be waived due to predator feeding during this time.

b. **The Contractor is responsible for volunteer cattail control (eradication) immediately prior to aquatic plant planting and for a period of three (3) years subsequent to aquatic plant planting.** Control shall be via hand harvesting, herbicide wicking with Rodeo and/or burning to the ice level during the winter. The Contractor shall be responsible for any required burning permits

and shall remove all cut, burned or killed vegetation from the basin and dispose of it off-site.

3. ACCEPTANCE

Final Village acceptance shall be grated after the establishment of a healthy aquatic plant community consisting, at a minimum, of ninety-five percent (95%) of the number of plants originally specified. This determination will be made by the VILLAGE LANDSCAPE REVIEW OFFICER no sooner than 12 months after the date of installation.

If less than 95% of the specified plant community is apparent and alive, the Developer shall re-plant to fulfill the Contract. This procedure shall continue until the 95% standard is attained.

The Developer shall be notified in writing regarding Final Acceptance or deficiencies requiring additional work. The granting of final acceptance shall in no way relieve the Developer from the required three (3) years of volunteer cattail eradication.

4. GUARANTEE

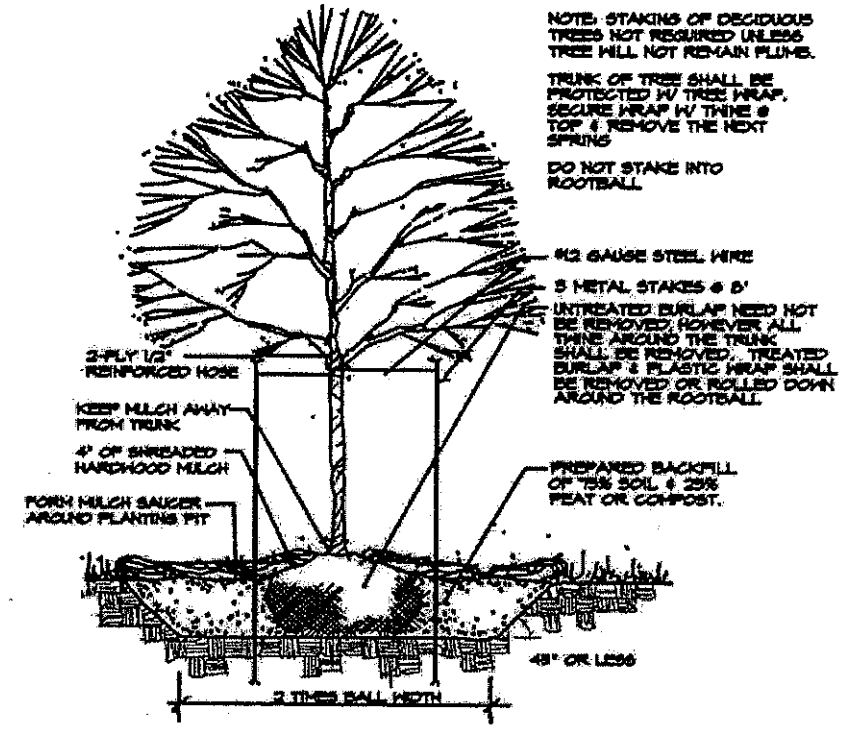
The Developer shall guarantee the establishment of open water and erect emergent aquatic plant communities consisting, at a minimum, of ninety-five percent (95%) of the species and quantities specified on the Drawings. If these plant communities are not at or above this standard, the Developer shall **install and protect additional plantings** until such time as a 95% standard is apparent and healthy for one full growing season.

5. REPLACEMENTS & DAMAGES

The decisions of the VILLAGE LANDSCAPE REVIEW OFFICER for required replacements shall be conclusive and binding upon the Developer. The Developer shall also be responsible for repairing damage to persons and property also caused by defective workmanship and materials.

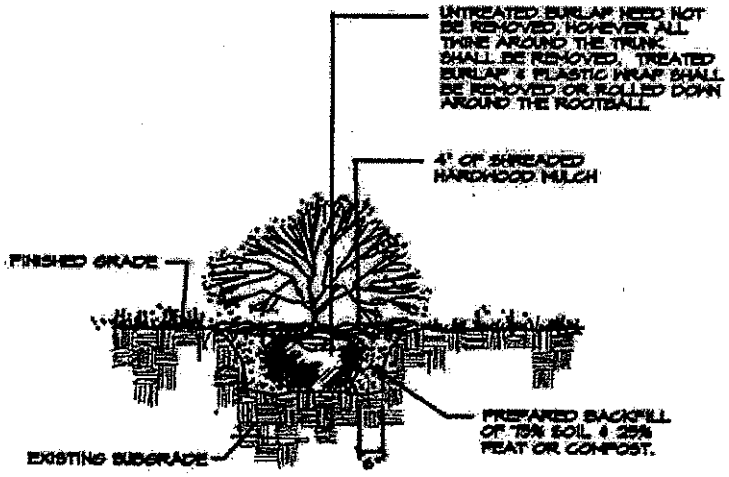
APPENDIX - C1

Planting Details (1 of 2)



DECIDUOUS TREE

NTS



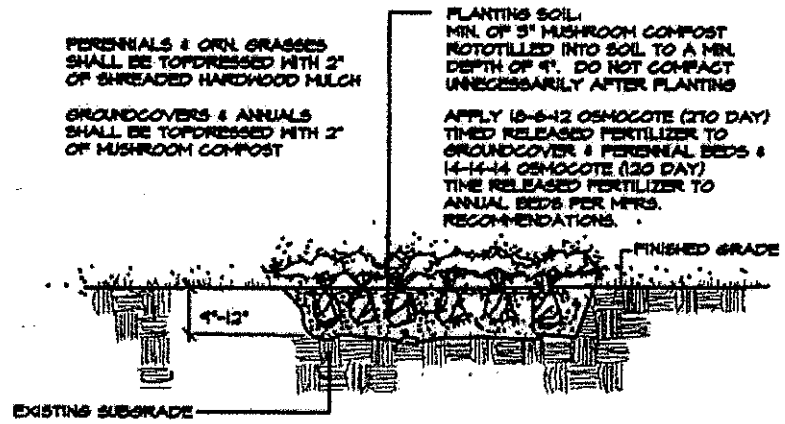
SHRUBS

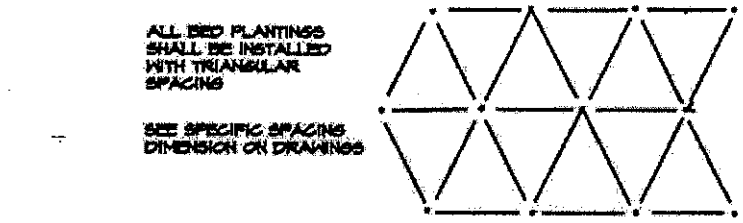
NTS

APPENDIX - C2

Design Guidelines (minimum standards)

Planting Details (2 of 2)

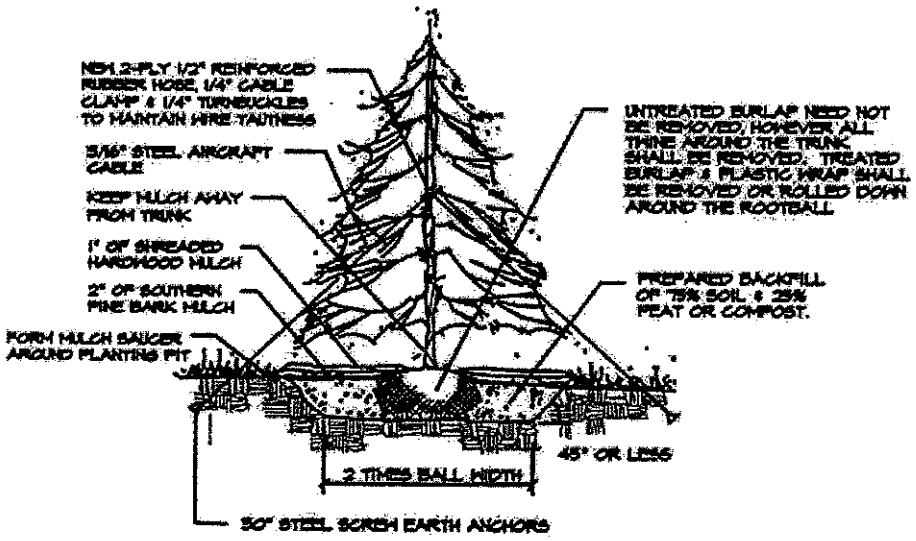




CERTAIN BULBS/PERENNIALS MAY REQUIRE OTHER PLANTING DEPTHS. CONSULT BULB DISTRIBUTOR FOR PRECISE DEPTHS.

SLICE, CUT, OR SEPARATE EXTERIOR ROOTS ON ROOT-BOUND CONTAINER PLANTS TO PROMOTE ROOT GROWTH.

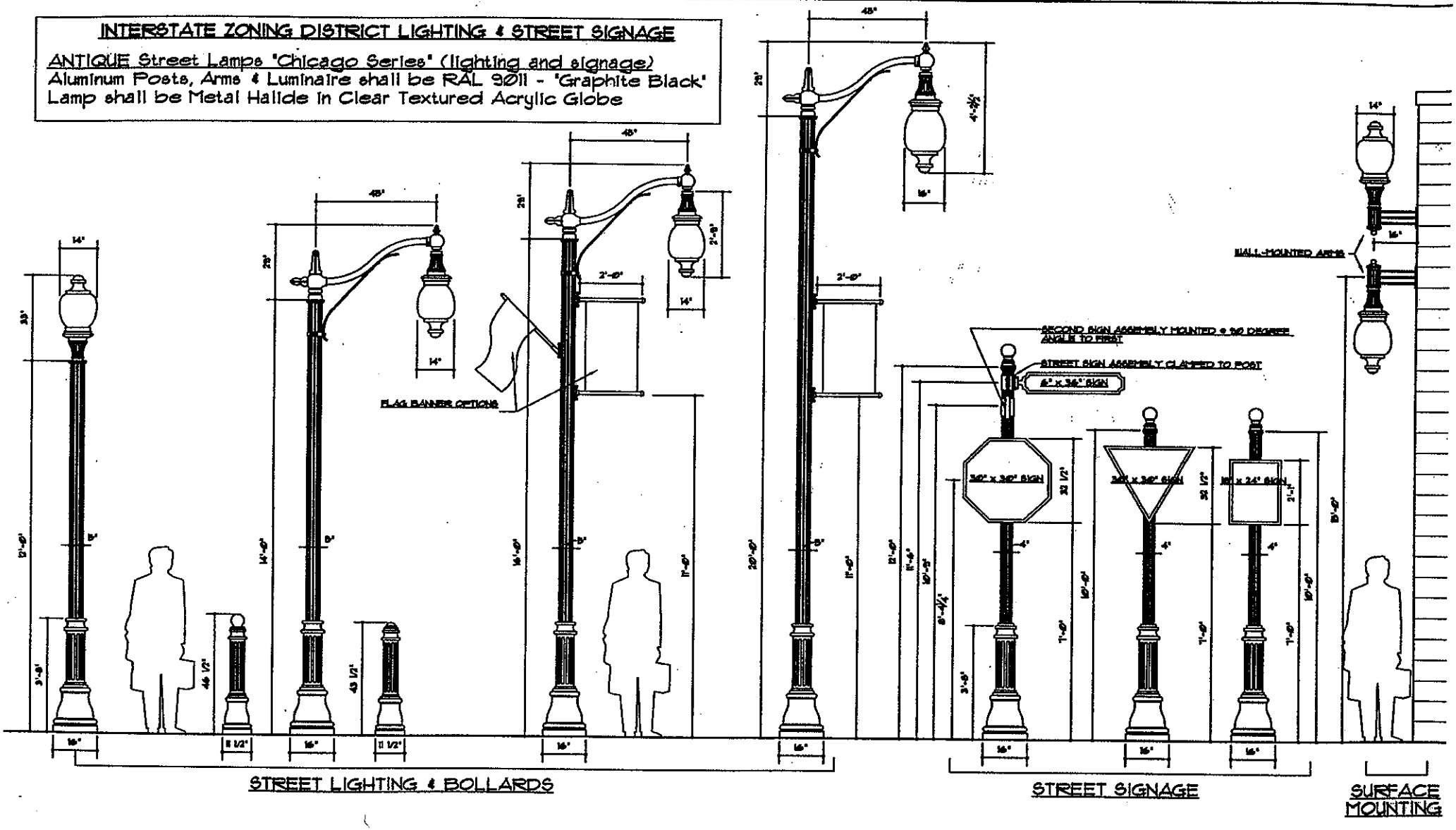
BED PLANTING DETAIL
(PERENNIALS, ORNAMENTAL GRASSES VINES, GROUNDCOVERS & ANNUALS) NTS



EVERGREEN TREE
NTS

INTERSTATE ZONING DISTRICT LIGHTING & STREET SIGNAGE

ANTIQUE Street Lamps "Chicago Series" (lighting and signage)
Aluminum Posts, Arms & Luminaire shall be RAL 9011 - "Graphite Black"
Lamp shall be Metal Halide in Clear Textured Acrylic Globe



DIVISION 2 - SITE WORK

SECTION 02780 - CLAY AND CONCRETE INTERLOCKING PAVERS

PART 1.00 - GENERAL

1.01 SCOPE OF WORK

A. This section includes clay paver and interlocking concrete paver paving for pedestrian and vehicular surfaces as illustrated on the Drawings including clay pavers, concrete pavers, geotextile, aggregate base material, bedding & joint sand and edge restraints.

1.02 REFERENCES (Use latest edition)

A. American Society of Testing and Materials (ASTM):

1. C 33, Specification for Concrete Aggregates.
2. C 136, Method for Sieve Analysis for Fine and Coarse Aggregate.
3. D 698, Test Methods for Moisture Density Relations of Soil and Soil Aggregate Mixtures Using a 5.5-lb. (2.49 kg) and 12 in. (305 mm) drop.
4. D 1557, Test Methods for Moisture Density Relations of Soil and Soil Aggregate Mixtures Using a 10-lb. (4.54 kg) Rammer and 18 in. (457 mm) drop.
5. D 2940, Graded Aggregate Material for Bases of Sub-bases for Highways or Airports.
6. C 902, Specification for Pedestrian & Light Traffic Paving Brick.
7. C1272, Specification for High Volume Heavy Vehicles
7. C 140, Sampling and testing Concrete Masonry Units.
8. C144, Standard Specifications for Aggregate for Masonry Mortar
9. C 936, Specifications for Solid Interlocking Concrete Paving Units
10. C979 Specification for Pigments for Integrally Colored Concrete.

1.03 QUALITY ASSURANCE

A. The installing contractor shall be a firm with a supervisor and crew with at least (5) years of experience in the installation of clay unit pavers and interlocking concrete pavers on projects of similar size and nature of detail. The installing

firm shall submit written evidence of such experience to the Landscape Architect or the Village of South Holland upon request.

B. Contractor shall comply with all applicable laws, ordinances, rules, regulations and insurance requirements of public authorities having jurisdiction over this portion of the work and of the Owners.

C. Materials and methods of clay paver installation shall be in accordance with the current published specifications of the Brick Industry Association.

1.04 SUBMITTALS

A. Product Data consisting of manufacturer's material literature (if requested by the Landscape Architect).

B. Test Report from independent testing lab indicating compliance of unit paver and Interlocking concrete paver product with ASTM C 902 and ASTM C 936 standards or other applicable requirements (if requested by the Landscape Architect).

C. Full size samples of concrete paving units to indicate color, shape and sizes (if requested by the Landscape Architect).

D. Inventory stock to be delivered to the Village of South Holland at the completion of the work consisting of a minimum of fifty (50) full size paving units and interlocking concrete pavers <u>each</u> of the same color, shape and size(s) used on the project.

E. Sieve analysis for grading of bedding and joint sand shall be submitted.

F. The layout, pattern and relationship of paving joints to fixtures and project formed details shall be indicated.

1.05 DELIVERY, STORAGE AND HANDLING

A. Deliver clay and interlocking concrete pavers to site in steel banded, plastic banded, or plastic wrap cubes capable of transfer by fork lift or clamp lift.

B. Unload pavers at job site in such a manner that no damage occurs to the product.

C. Where material is to be stored on Public property, store only in areas designated by the Village of South Holland.

D. All damaged or otherwise unsuitable material shall be immediately removed from the site.

E. Cover bedding and joint sand with a secure waterproof covering to prevent exposure to rainfall or removal by wind.

F. Coordinate delivery and paving schedule to minimize interference with normal use of buildings adjacent to paving.

1.06 MOCK-UP INSTALLATION

A. Prior to the start of clay paver and interlocking concrete paver work, the Contractor shall construct a 7 ft. x 7 ft. (2 m x 2 m) paver area of the paver and pattern specified in the Contract Documents. The mock-up shall be at a project site location mutually agreed to by the Village and Contractor within the Contract work area.

B. The mock-up shall be approved by the Landscape Architect and shall serve as the standard of quality from which the work is to be performed and judged.

1.07 ENVIRONMENTAL CONDITIONS

A. Sand and pavers shall not be installed during heavy rain or snowfall.

B. Sand and pavers shall not be installed over frozen base materials

C. Frozen sand shall not be installed.

PART 2.00 - PRODUCTS & MATERIALS

2.01 CLAY UNIT PAVERS AND CONCRETE INTERLOCKING PAVERS

A. Clay unit pavers shall be as manufactured by Pine Hall Brick, Winston-Salem, North Carolina (1-800-334-8689).

TYPE/ SIZE	COLOR	LOCATION
-Heavy Duty English Edge (4x8x2.75)	Red	Crosswalk (border color)
-English Edge (4x8x2.25)	Red	Corners & Walks (border & accents)
		Rail Walk (field color)
-English Edge (4x8x2.25)	Clay	Rail Walk (border color)

B. Clay unit pavers shall meet the minimum material and physical properties set forth as follows:

1. English Edge: ASTM C 902, Standard Specification for Pedestrian & Light Traffic Paving Brick, Class SX

2. Heavy Duty English Edge: ASTM C 1272, Standard Specification for High Volume Heavy Vehicles Paving Brick, Class SX

C. Concrete interlocking pavers shall be as manufactured by Unilock, Aurora, Illinois (1-630-892-9191)

TYPE/ SIZE	COLOR	LOCATION
-Brussels Block / pattern: AF (or other appr'vd mockup) (Half stone: 4.125x7x2.75, Standard stone: 6.875x8.25x2.75 XL stone: 8.25x13.75x2.75)	Sandstone	Corners (field color) & Easements designated (field color)
-Optilock "Cobble" (10.25x10.25x3.125)	Rustic Red	Crosswalk (field color)

D. Concrete interlocking pavers shall meet the minimum material and physical properties set forth in ASTM C936, Standard Specification for Interlocking Concrete Paving Units.

1. Average compressive strength 8000 psi (55MPa with no individual unit under 7200 psi (50 MPa).

2. Average absorption of 5% with no unit greater than 7% when tested according to ASTM C 140.

3. Resistance to 50 freeze-thaw cycles, when tested according to ASTM C 67, with no breakage greater than 1.0% loss in dry weight of any individual unit. This test method shall be conducted not more than 12 months prior to delivery of units.

2.02 BASE MATERIAL & BEDDING AND JOINT SAND

A. CLAY UNIT PAVERS

1. Granular Base: CA-6 aggregate.
2. Geotextile: Mirafi 500 X, or equivalent.
3. Bedding Sand: Fine, sharp, non-plastic aggregate free from deleterious or foreign mater. The sand shall be natural or manufactured from crushed rock. No limestone screenings or stone dust allowed. Material shall be graded in accordance with ASTM C 33 presented as follows:

Sieve Size	Percent Passing
3/8 in. (9.5 mm)	100
No. 4 (4.75 mm)	95 to 100
No. 8 (2.36 mm)	85 to 100
No. 16 (1.18 mm)	50 to 85
No. 30 (600 µm)	25 to 60
No. 50 (300 µm)	10 to 30
No. 100 (150 µm)	2 to 10

4. Jointing Sand: Fine, sharp, non-plastic aggregate free from deleterious or foreign mater. The sand shall be natural or manufactured from crushed rock. No limestone screenings or stone dust allowed. Material shall be graded in accordance with ASTM C 144 presented as follows:

Sieve Size	Natural Sand Percent Passing	Manufactured Sand Percent Passing
No. 4 (4.75 mm)	100	100
No. 8 (2.36 mm)	95 to 100	95 to 100
No. 16 (1.18 mm)	70 to 100	70 to 100
No. 30 (0.600 mm)	40 to 75	40 to 100
No. 50 (300 µm)	10 to 35	20 to 40
No. 100 (150 µm)	2 to 15	10 to 25
No. 200 (75 µm)	0	0 to 10

Bedding sand may be used for joint sand (except where soldier course pavers are used as sidewalk edging - see polymeric jointing sand requirements in 2.02.5); however, extra effort in sweeping and compacting the pavers may be required in order to completely fill the joints. Joint sand should never be used for bedding sand.

5. Polymeric Jointing Sand: Shall be provided for soldier-coursed paver borders at concrete walks. Provide "Unilock Polymeric Sand for Paver Joints" installed per manufacturer's recommendations.

B. CONCRETE INTERLOCKING UNIT PAVERS

1. Granular Subbase: Material shall consist of granular material graded in accordance with ASTM D 2940 presented as follows:

Sieve Size	Percent Passing
2 in. (50 mm)	100
1 ½ in. (37.5 mm)	90 to 100
¾ in. (19 mm)	
3/8 in. (9.5 mm)	
No. 4 (4.75 mm)	30 to 60
No. 30 (600 µm)	
No. 200 (75 µm)	0 to 12

2. Granular Base: Material shall be graded in accordance with ASTM D 2940 presented as follows:

Sieve Size	Percent Passing
2 in. (50 mm)	100
1 ½ in. (37.5 mm)	95 to 100
¾ in. (19 mm)	70 to 92
3/8 in. (9.5 mm)	50 to 70
No. 4 (4.75 mm)	35 to 55

No. 30 (600 µm)	12 to 25
No. 200 (75 µm)	0 to 8

3. Bedding Sand: Clean, non-plastic aggregate free from deleterious or foreign matter. The sand shall be natural or manufactured from crushed rock. No limestone screenings or stone dust allowed. Where concrete pavers are subject to vehicular traffic, the sands shall be as hard as practically available. Bedding sand shall conform to the grading requirements of ASTM C 33 as follows:

Sieve Size	Percent Passing
3/8 in. (9.5 mm)	100
No. 4 (4.75 mm)	95 to 100
No. 8 (2.36 mm)	85 to 100
No. 16 (1.18 mm)	50 to 85
No. 30 (600 µm)	25 to 60
No. 50 (300 µm)	10 to 30
No. 100 (150 µm)	2 to 10

4. Jointing Sand: Clean, non-plastic aggregate free from deleterious or foreign matter. The sand shall be natural or manufactured from crushed rock. No limestone screenings or stone dust allowed. Where concrete pavers are subject to vehicular traffic, the sands shall be as hard as practically available. Bedding sand shall conform to the grading requirements of ASTM C 33 as follows:

	Natural Sand	Manufactured Sand
Sieve Size	Percent Passing	Percent Passing
No. 4 (4.75 mm)	100	100
No. 8 (2.36 mm)	95 to 100	95 to 100
No. 16 (1.18 mm)	70 to 100	70 to 100
No. 30 (600 µm)	40 to 75	40 to 100
No. 50 (300 µm)	10 to 35	20 to 40
No. 100 (150 µm)	2 to 15	10 to 25
No. 200 (75 µm)	0	0 to 10

2.03 EDGE RESTRAINTS

A. Edge restraints shall be used along all unrestrained paver edges and support on a minimum of six inches (6") of compacted aggregate base. Abut pavers tightly against the restraints to prevent rotation under load and any consequent spreading of joints. The restraints must be sufficiently stable that, in addition to providing suitable edge support for the paver units, they are able to withstand the impact of temperature changes, vehicular traffic and/or snow removal equipment.

Curbs, gutters or curbed gutter, constructed to the dimensions of municipal standards (cast in place concrete sections) are considered acceptable edge restraints for heavy-duty installations.

Edge restraints shall be SNAP EDGE, as manufactured by Snap Edge Corporation, 3925 Stern Avenue, St. Charles, IL 60174 (630) 762-0606 or approved equal.

PART 3.00 - EXECUTION

3.01 EXAMINATION

A. Verify that subgrade preparation, compacted density and elevations conform to the specifications.

B. Verify that geotextiles, if applicable, have been placed according to specifications and drawings.

C. Verify that aggregate base materials, thickness, compaction, surface tolerances and elevations conform to the specifications.

D. Verify that the base is dry, uniform, even and ready to support sand, pavers and imposed loads.

E. Inspect all areas designated on the Drawings for concrete unit paving to determine:

1. All edge restraints (by others) are in designated place, at proper grades, and adhere to specifications. These include concrete curb and gutter for roadways, and concrete foundations for seat walls.

2. Utility trenching in paver work areas has been properly backfilled and compacted and all PVC sleeving (if any) has been set.

F. Notify the Landscape Architect if any work performed by other Contractors is incomplete or incorrect. Do not proceed with the work until all unsatisfactory conditions have been corrected. The installation of concrete unit pavers and associated construction constitutes acceptance of the adjacent and underlying construction by others.

G. Beginning of bedding sand and paver installation shall signify acceptance of base and edge restraints.

3.02 PAVER SUB-BASE PREPARATION

A. The site must be stripped of all topsoil and other objectionable materials to the grades specified. Compact the sub-base uniformly to at least 100 percent of ASTM D 698 Standard Proctor density.

B. All subdrainage of underground services within the pavement area must be completed in conjunction with subgrade preparation, and before the commencement of subbase construction.

C. Contractor to proof-roll prepared sub-base surface to check for unstable areas and areas requiring additional compaction. Soft spots or localized pockets of objectionable material shall be excavated and properly replaced with granular material. Do not proceed with base installation until unsatisfactory conditions have been corrected.

D. The subgrade shall be trimmed to within 0 to ½ in. (0 to 10mm) of the specified grades. The surface of the prepared subgrade shall not deviate by more than 3/8 in. (10mm) from the bottom edge of a 39 in. (1m) straight edge laid in any direction.

E. The Contractor shall insure that the prepared subgrade is protected from damage from inundation by surface water. No traffic shall be allowed to cross the prepared subgrade. Repair of any damage resulting shall be the responsibility of the Contractor and shall be repaired.

F. Paver Contractor to lay geotextile over compacted sub-base.

G. Under no circumstances shall further pavement construction proceed until the subgrade has been inspected by the Owner or Consultant.

3.03 GRANULAR SUBBASE AND BASE INSTALLATION

A. Subbase shall be provided and placed in uniform lifts not to exceed six (6) inches CA-6 loose material over the geotextile and compacted to 100 percent Standard Proctor Density as per ASTM 698 (except at crosswalks where design by an engineer shall be required).

B. After proper construction of the edge restraints for the interlocking concrete pavement as per Section 3.4, and upon approval by the Consultant, aggregate base shall be placed in uniform lifts not exceeding 6 in. (150 mm) loose thickness. Each lift shall be compacted to at least 100 percent Standard Proctor Maximum Dry Density (except at crosswalks where design by an engineer shall be required).

C. The granular base shall be trimmed to within 0 to 3/8 in. of the specified grade. The surface of the prepared base shall not deviate by more than 3/8 in. from the bottom edge of a 10 ft. long straight edge laid in any direction.

D. The upper surface of the base shall be sufficiently well graded an compacted to prevent infiltration of the bedding sand into the base both during construction and throughout its service life. Segregated areas of the granular base shall be blended by the application of crushed fines that have been watered and compacted into the surface.

E. Before commencing the placing of the sand bedding course and the placement of the interlocking concrete pavers, the base shall be inspected by the Owner or the Consultant.

3.04 EDGE RESTRAINTS

A. Adequate edge restraints shall be provided along the perimeter of all paving as specified. Where concrete curbs are not provided as part of the design, poly SNAP EDGE restraints shall be used. The face of all restraints shall be vertical down to the sub-base.

B. All edge restraints shall be constructed to dimensions and levels specified and shall be supported on a compacted aggregate base of not less than six inches (6") thick.

3.05 PAVER INSTALLATION

A. Insure that pavers are free from foreign matter before installation. Do not use pavers with chips, cracks, voids, discoloration or other imperfections which may be visible which are not customary for the paver being used.

B. Provide and install sand bed for leveling. Spread bedding sand evenly over the base course and screed to a thickness of not less than 1 inch nor more than 1-1/2 inches. Bedding sand shall not be used to fill depressions in the base surface. Care shall be taken to maintain a constant moisture level and loose density prior to pavers being laid and compacted. The screeded sand should not be disturbed and should be laid only as needed to stay ahead of the paver laying operation. Pre-compaction of bedding sand prior to placing the pavers shall not be performed.

C. Initiation of paver placement shall be deemed to represent acceptance of the pavers.

D. Set precast concrete pavers on the sand leveling bed in patterns shown on the Drawings. Pavers which have spacer bars shall be placed hard tight against each other. All others shall be set with a 1/16" joint. Utilize string lines as needed to maintain straight lines. Select units from (4) or more cubes to blend color variations.

E. Cut pavers to fit non-uniform spaces with motor drive masonry saw equipment to provide clean, sharp unchipped edges. Use full size pavers wherever possible. Gaps at edges of the paved area shall be filled with cut pavers. No unit shall be narrower than 2 inches (except units where pavers are subject to vehicular traffic where units cuts no smaller than 1/3 of a whole paver are required). Hammer cutting is not acceptable. The paver surface shall be swept clean of all debris prior to compaction in order to avoid damage from point loads.

F. After sweeping and prior to compaction, the paved area must be inspected by the Owner or Consultant to ensure satisfactory color blending. Pavers can be easily moved at this time.

G. Compact pavers into the sand with a low amplitude, high frequency mechanical plate vibrator capable of 3,500 to 5,000 pound compaction force. Perform not

less than 3 passes across the unit paver pavement with the vibrator under the following conditions:

1. When a surface area is completed including all edge restraints.

2. Before any rainfall.

3. Before ending each days work, to within 3 feet of the installation edges.

H. Spread and sweep dry joint sand over the installation (use polymeric sand over the installation of soldier course borders at concrete walks, installed per manufacturer's recommendations) to fill joints immediately after vibrating the pavers into the leveling bed. Brush and vibrate sand until joints are completely filled. Then remove all surplus sand. Do not allow any traffic on the installation until sand has been fully vibrated into all joints. Each days work shall be completely compacted and joints fully filed before work is ended for the day. Open (unfinished) ends should be avoided if at all possible.

I. Cover all open edges of the installation with non-staining plastic sheeting overlapping the exposed edges of the installation by 4 feet and secure with sufficient weights to protect the construction from rain.

3.06 FIELD QUALITY CONTROL

A. After removal of excess sand, check final elevations for conformance with the drawings. The final surface elevations shall not deviate more than three eights inch (3/8") under a ten foot (10') straightedge. The surface elevation of pavers shall be 1/8 to 1/4-inch above adjacent drainage inlets or concrete.

3.07 REPAIR

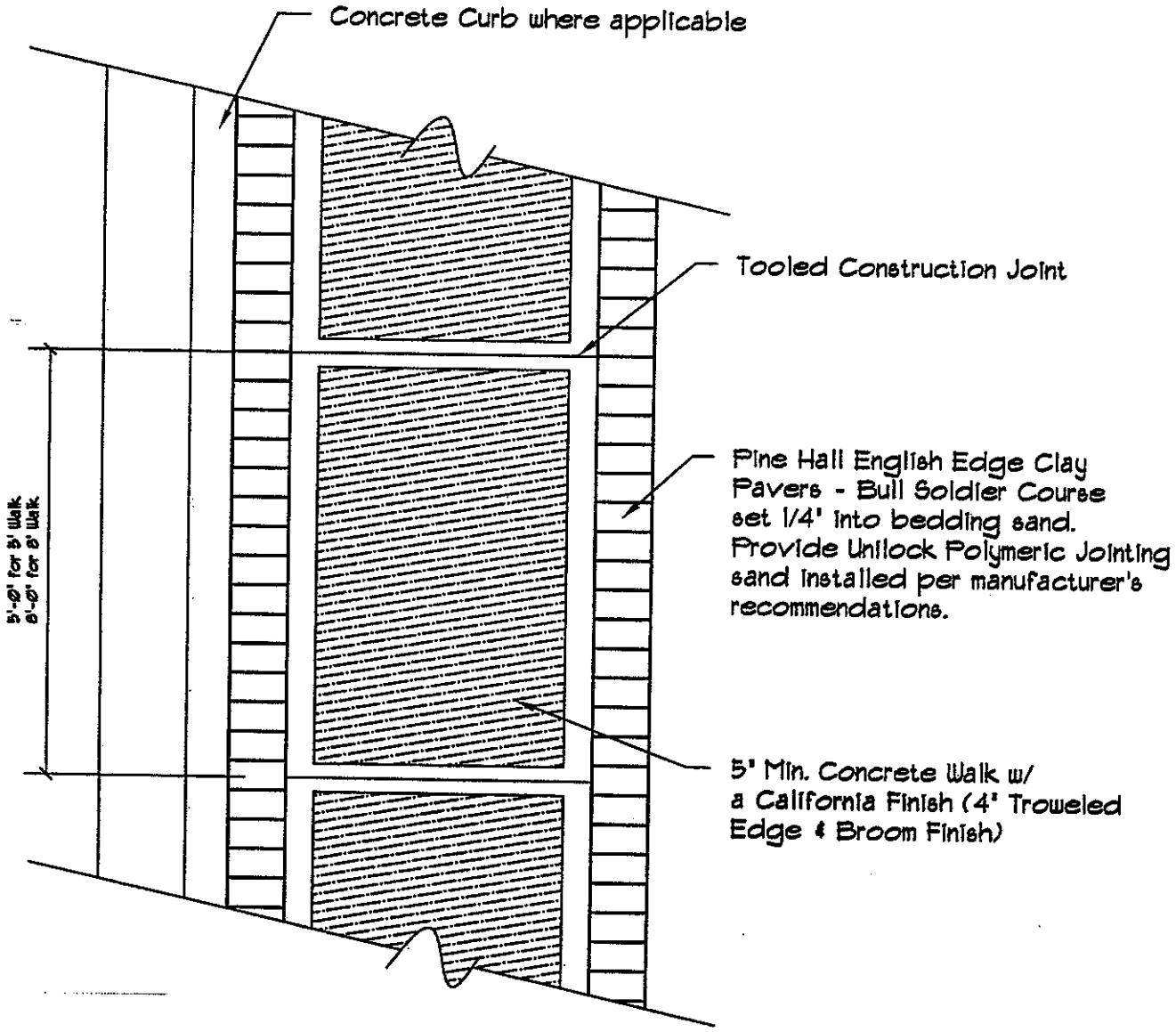
A. Upon completion of this work, remove and replace at no additional cost to the Village any unit pavers which are loose, broken, chipped, stained or otherwise damaged or which do not match adjoining units regarding color. Provide new units to match adjacent units and install in same manner as original units.

3.08 CLEANING & SEALING (if in Contract)

A. No cleaning shall be performed sooner than sixty (60) days after installation completion to allow for efflorescence to rise to the surface.

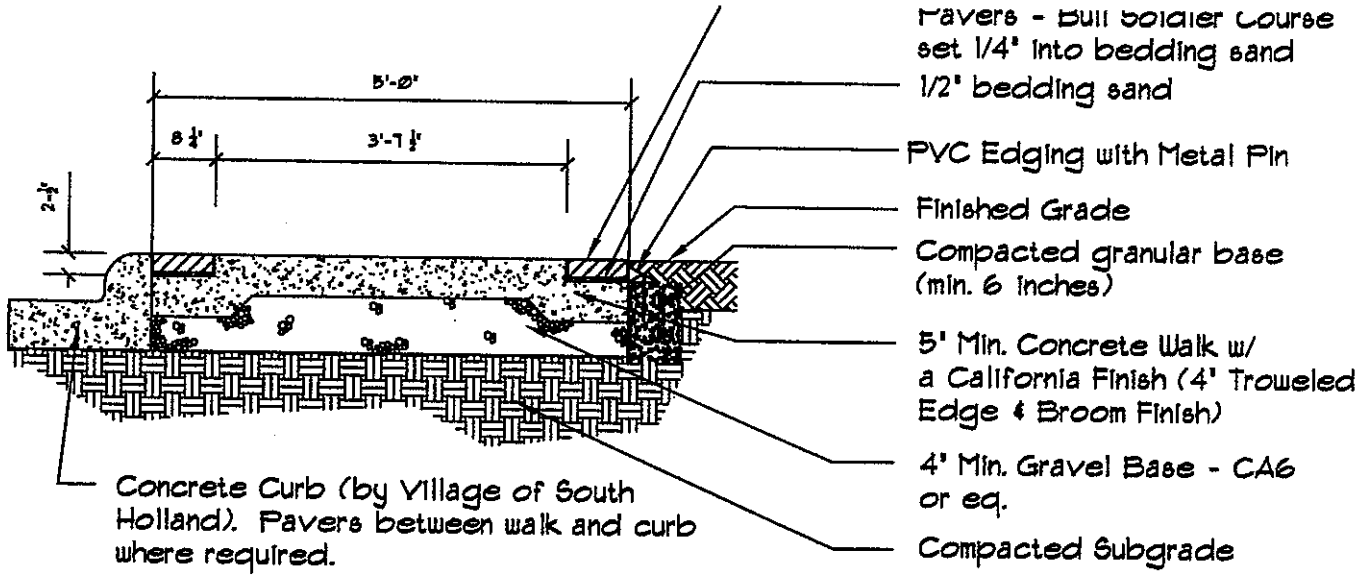
B. Clean all pavers with a high pressure spray (1,000-2,500 P.S.I.) using a wide spray nozzle or other approved method. Care should be taken to avoid blowing or washing sand from joints by keeping the angle of spray from directly penetrating the joints. A test area should be performed first to verify that the method is work effectively.

END OF SECTION 02780

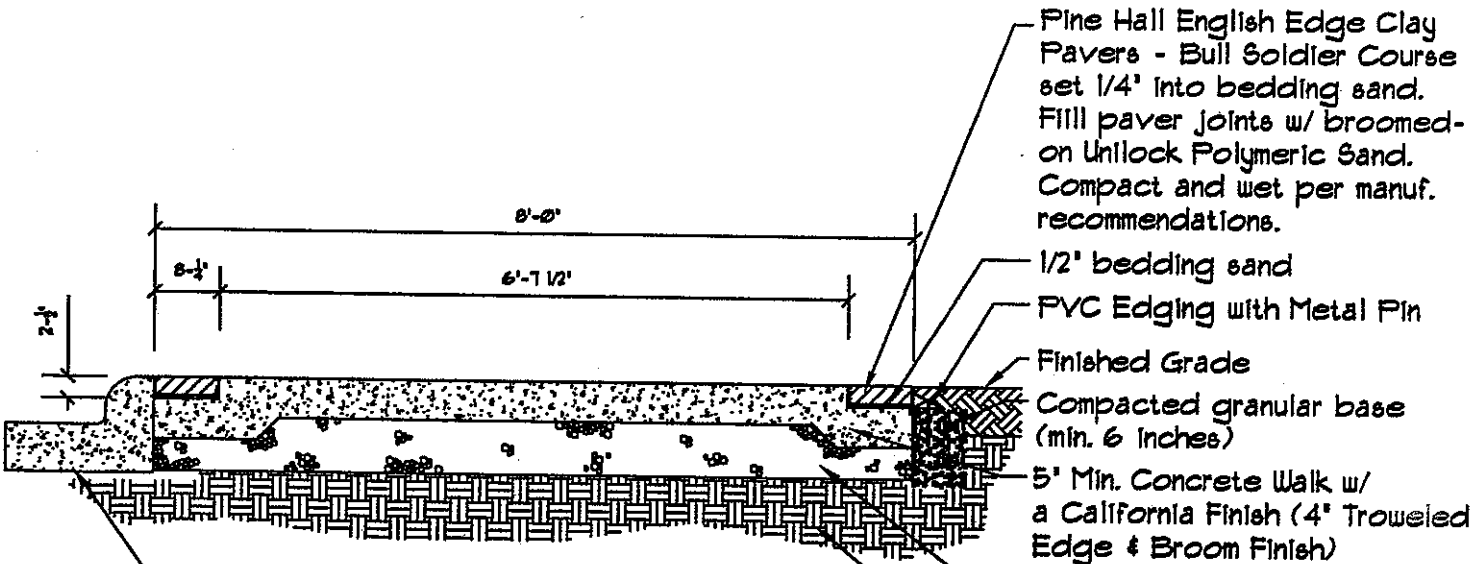


A TYP. SIDEWALK PLAN (UNO)

SCALE: N.T.S.



Note: Expansion Joints shall be installed at a min of every 30'.



Note: Expansion Joints shall be installed at a min of every 30'.

B

TYP. SIDEWALK SECTIONS (UNO)

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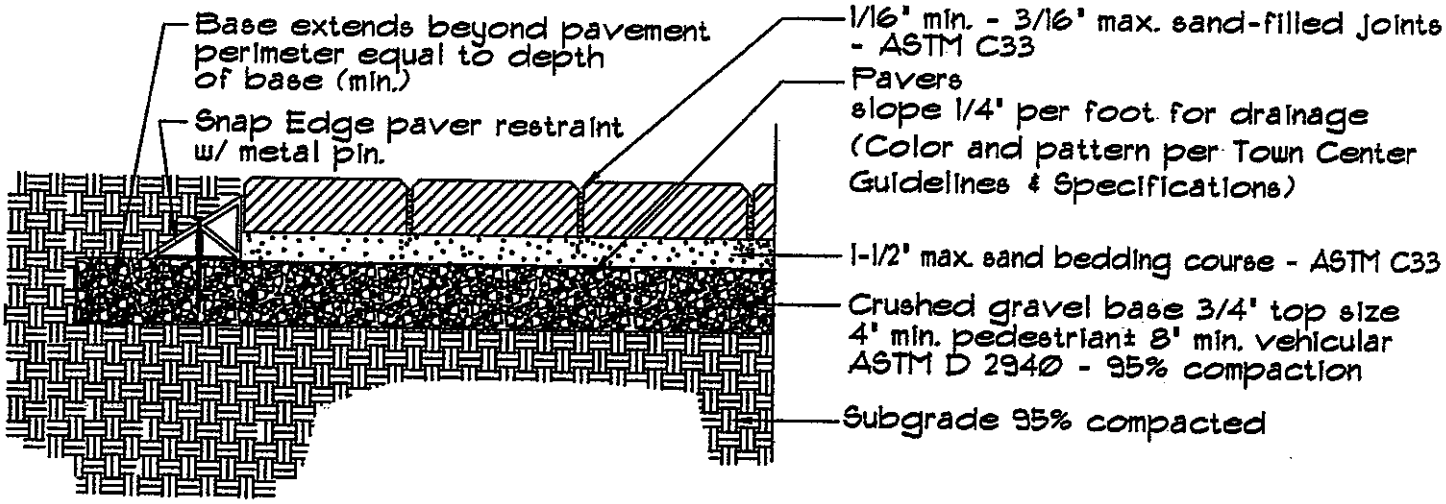

RIVERWALK & CORNER TYP. SECTIONS (UNO)

C

SCALE: N.T.S.