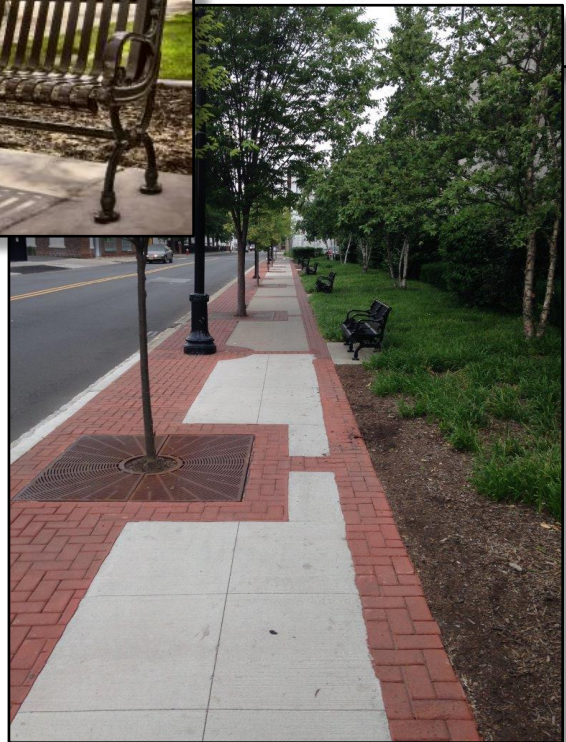


STREETSCAPE DESIGN MANUAL

City of Plainfield, Union County, NJ



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June 2016

It is the intent and expectation that with the adoption of these standards, the City Council, the city land use boards (Planning Board, Zoning Board of Adjustment and the Historic Preservation Commission), and developers in the City's commercial districts (including mixed use residential districts) will all 'be on the same page' with shared and equal knowledge of user friendly standards that the city wishes incorporated in its public ROW. These standards will advance consistent and comprehensive installation of all public ROW improvements, from sidewalks to benches and litter receptacles, to street light poles. The adoption and use of these standards will give developers the information that they need to determine anticipated costs and advance a project.

The physical realization of these standards will be the result of four actions:

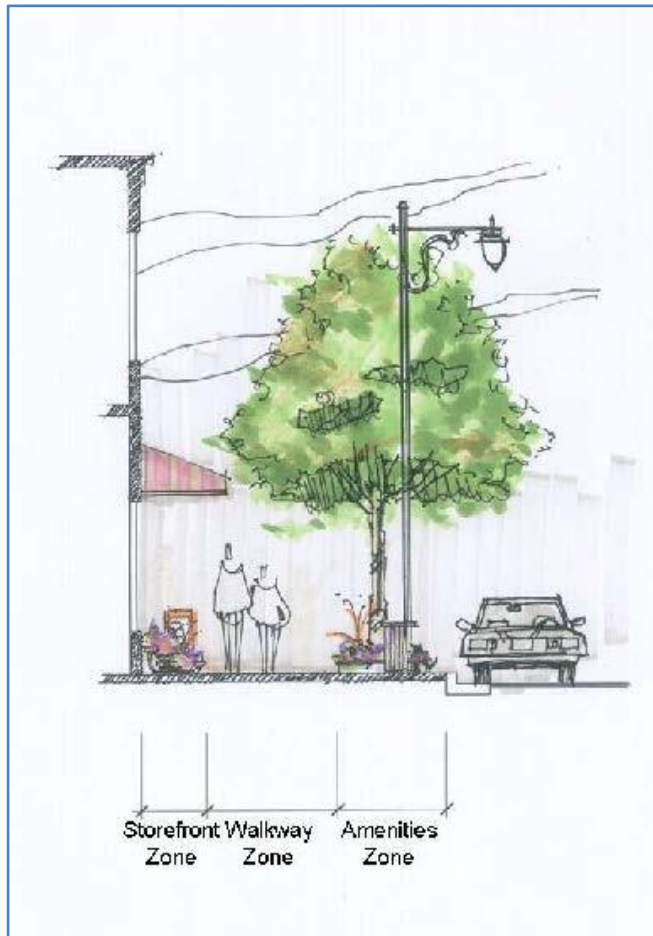
1. Developers and the city working together to develop standards of approval as part of the development application process.
2. The city applying for and receiving Urban Enterprise Zone (UEZ) funds for streetscape improvement projects.
3. The city applying for and receiving New Jersey Department of Transportation (NJDOT) grants for ROW improvements and incorporating these standards into engineering designs.
4. The city applying for applicable streetscape grants in the designated Transit Oriented and Transit Village Zone(s) to improve the aesthetics of the designated ROW.

The adoption of these standards will not change the physical appearance of Plainfield's commercial/retail areas overnight, but it is one of many steps that will ensure that when the time is right, development will occur in a coordinated, consistent and comprehensive fashion. This comprehensive approach will ensure the foundation of a vibrant and visually pleasing environment that will be attractive to shoppers and return Plainfield to the 'Shopping Center of Central Jersey' that it once was. A review of these standards for a specific location is triggered when there is an application before the land use boards, major site work or change of use necessitating city zoning review. When applicable, plans shall be submitted and will require the input and consent of the Divisions of Planning, Engineering, Public works Police and Fire, and the applicable land use board.

The purpose of this manual is to provide property owners, merchants and developers with design details on products and materials to be used for all public sidewalk areas adjacent to within the public ROW which are to be applied on both sides of the streets in all of the commercial districts including the Transit Oriented District Downtown, Transit Oriented Development –Netherwood, Neighborhood Commercial, Mixed Use, and North Avenue Historic District (NAHD). These standards may also be applied to any/all at the discretion of the Planning Division and applicable land use board. Any work proposed within the NAHD requires the approval of the Historic Preservation Commission. Additional standards have been established in this document for the Netherwood Train Station walkway. Due to its county classification, Seventh Street streetscape guidelines will be developed as a collaborative effort between the County of Union and the City of Plainfield.

The physical, visual, and spatial characteristics of a streetscape, neighborhood, district and the city shall be established and reinforced through the consistent use of compatible design elements. The main objective

of these guidelines is to present together the important components of building façade and site design that must be carefully examined for both aesthetic value as well as conformance with the City’s Land Use Ordinance (LUO). The intent, therefore, is to illustrate the City’s relevant development guidelines and regulations in an easily discernable format. Deviations from this list of required materials and products will not be permitted unless specifically approved in writing by the appropriate city agency. By repeatedly utilizing these materials and products, the City intends to achieve a harmonious, unified “look” for all the commercial districts.



Typical Streetscape Section

Walkway Zone The walkway zone is the middle section of the sidewalk, and is flanked by the storefront zone and the amenity zone. Its primary function is to accommodate the efficient movement of pedestrians. As such, it needs to provide an unobstructed, linear sidewalk space that is free of street furniture, street trees, planters, and other vertical elements such as light poles, fire hydrants and transit facilities, and be wide enough to accommodate projected volumes of pedestrian traffic.

Amenity Zone The amenity zone is the section of sidewalk that adjoins the street and buffers pedestrians from the adjacent roadway. This zone is the appropriate location for the majority of the public facilities and streetscape amenities that enhance and serve the pedestrian zone, including features such as street trees, landscaping, street lights, transit stops, parking meters, fire hydrants, benches, news racks, and other street furniture and amenities.

Storefront Zone The storefront zone forms the outer edge of the public ROW and typically is defined by a building façade, landscaping, fence, wall, plaza, or park (or, in less desirable, interim conditions, a surface parking lot). It functions as the interface between the public ROW and adjoining uses. As such, the design of this zone should be responsive to and support the adjoining use, which, depending on context, may mean providing a clear zone for store entrances, a “slow” zone for retail displays and window shopping, or a furnished zone for outdoor dining.

GUIDING PRINCIPLES

Qualities of a “Pedestrian Friendly” Streetscape

Good street environments come in many forms. Some are distinguished for their commercial bustle, others by their wide sidewalks and tree lined streets, and others still by the quality of the architecture that frames them. Regardless of their shape and size, most good streets obtain their “friendliness” from three conditions: a safe and comfortable environment, a sense of human scale or intimacy, and distinct character or sense of identity.

Environment refers to the basic conditions by which, at first glance a street is perceived as comfortable and approachable. Key elements that contribute to a feeling of comfort and approachability are street trees (shade), clear and accessible directional and informational signage and pedestrian friendly barrier free sidewalks. A basic level of comfort and approachability throughout districts has a major impact in the way the Commercial Districts are perceived by the general public.

Intimacy refers to the scale and collection of streetscape elements that directly support pedestrian life as opposed to vehicular movement. The pedestrian realm is the sidewalk, and for sidewalks to be intimate they need to function as a bubble for human activity. Where sidewalks abut moving traffic, for example, a safety barrier, such as a row of trees, bollards or parallel parking is desirable; where sidewalks abut parking lots or open land, some form of screening (trees, shrubs, walls) is desirable. Anywhere street lighting is provided by single fixtures (cobra heads) supplementary pedestrian lighting is desirable. Street furniture (benches, waste receptacles, bicycle racks etc.) also contributes to making sidewalks more intimate for pedestrians.

Identity refers to a distinctive streetscape character obtained by out of the ordinary or unique elements such as informational kiosks, street light pole ornamentation, building awnings, special plantings or civic art. Each district should generally stand out from the norm, helping pedestrians identify the specific area and reaffirming its commercial and civic vitality.

Guideline 1: Make Streets Multi-Purpose

Streets should not be limited to the singular purpose of moving automobile traffic. Vehicular traffic, public transit, pedestrians and cyclists all need to be considered in the streets. Most importantly, streets must be amenable to walking, strolling, meeting and conversing. Traffic flows should not inhibit the public life of the community.

- Design all streets for safe and comfortable movement on foot, incorporate a high level of streetscape amenities where possible.
- Use public landscape and streetscape improvements to communicate the public character and quality of the streets.
- Detail streets and streetscape amenities to high standards; show evidence of quality that is appealing to pedestrians.
- Treat Transit stops as important public places; focus improvements on bus stops at or near important pedestrian crossings.

- Provide enhanced bus stops with seats, leaning poles and shelter to increase safety and comfort; consider additional amenities such as trash receptacles, fountains, and directional mapping.
- Provide adequate bicycle parking facilities.

Guideline 2: Minimize Pedestrian Conflicts

Every time a car crosses a crosswalk there is potential danger and inconvenience to the pedestrian. Minimizing the number of curb-cuts along streets reduces potential conflicts in favor of the pedestrian. Utility equipment placed within the public ROW also creates impediments to persons on foot and especially those with impaired mobility. Equipment placed on the sidewalk at or near the intersection is especially problematic, as this is a zone that needs to accommodate considerable pedestrian activity. Public utilities and streetscape amenities should be located to support safe, convenient and unimpeded pedestrian flows.

- Minimize the number of drive approaches along a block to reduce conflicts between pedestrians and automobiles.
- Consolidate and place drive approaches near mid-block, when necessary; alley access should be provided for service and parking, if feasible.
- Public sidewalks should be a sufficient width to walkway, amenity and storefront zones.
- Maintain a minimum **5-foot clear** pedestrian passage along public sidewalks without conflicts from utility equipment, street trees, street amenities, or other potential interferences. (where possible)
- Design public sidewalks and connecting paths to meet at grade; sidewalks extending across private property should also continue at grade, where feasible. Pedestrian crossings should take precedence over vehicular driveways where possible.

Guideline 3: Protect and Shade Pedestrians

The physical safety and comfort of pedestrians is critical to the success of any streetscape. Pedestrians must feel that they are in a safe situation, and that they are a welcome presence in the community. Streetscape design and amenities should emphasize pedestrian safety and comfort. For instance, the proper placement of street furniture introduces distance and a perceived protection from vehicular traffic. On the other hand, the overhead cover provided by street trees offers shade and reasonable protection from the sun and rain.

- Locate street amenities in the amenity zone along or near the curb as a barrier to automobile traffic; this is especially applicable to street lights, parking meters, street trees, trash receptacles, news racks, and heavy planters.
- Emphasize the planting of street trees to provide overhead cover; species choices should consider access to both shade and sun along sidewalks.
- Plant street trees in the zone adjacent to the curb that is also devoted to other streetscape amenities.
- Encourage buildings adjacent to the sidewalk to provide overhead cover in the form of canopies, awnings, and overhangs, especially where there is an insufficient or immature street tree canopy, or along a southern exposure.

Guideline 4: Plant and Maintain Street Trees

Street trees provide numerous benefits and are an indispensable part of the streetscape environment. Most obviously, they enhance the visual quality of the area. Street trees also provide cooling effects and contribute to the spatial definition of the street to create a human-scaled space with a comfortable sense of enclosure. In general, street trees add a gracious quality to streets.

- Plant street trees so as to define the street and sidewalk; emphasize the consistent use of tree species, size and spacing along a street to create a pleasant rhythm and reinforce the space of the street.
- Choose street trees that withstand urban conditions and provide shady canopies at maturity; reference the Street Trees standards in this report.
- Allow sufficient room for tree canopies to grow without conflict with other building elements, where feasible.
- Use tree grates in areas with considerable commercial and pedestrian activity; tree grates increase sidewalk width, reduce safety hazards, and prevent compaction of the root-ball.
- Maintain existing tree lawns, within the areas that are predominantly residential; new tree lawns are appropriate where residential use prevails.
- Utilize street trees to unify areas with a distinct identity. Tree species may vary from district to district, while still unifying the entire corridor.

Guideline 5: Provide Ample Street Furniture

Walking should be a pleasant and comfortable experience. Long walks without places to pause and rest may become daunting some pedestrians. Street furniture, when combined with street trees and proper lighting, humanize and communicate the true public nature of streets. Street furnishings should include benches and trash receptacles.

- Place street furniture, especially benches and trash receptacles at frequent intervals along sidewalks for pedestrian comfort and use; sidewalks accommodating street furniture of this kind allow for proper spacing to support seating and pedestrian activity
- Consider the provision of other street furnishings, especially along wide sidewalks with the heaviest foot traffic; these may include drinking fountains, public restrooms, public telephones, newsstands, bicycle racks, planters, and kiosks.
- Coordinate the design and appearance of street furnishings and other street amenities to unify areas with a distinct identity.

Guideline 6: Include Pedestrian-Scaled Lights

Light affects the quality of place; harsh light feels uncomfortable yet too little light seems unsafe. The size and scale of light standards also affects the character of a street. Large, cobra head fixtures communicate that the street is the car's domain, whereas smaller, human-scaled fixtures suggest that the street is safe to walk on. Street lighting should assure that sidewalks are the pedestrian's realm.

- Incorporate pedestrian scaled fixtures that emit a warm light along streets and sidewalks; streets and sidewalks should be well-lit.

- Direct lighting along sidewalks and pedestrian walks to produce minimal glare.
- Choose pole fixtures of a consistent type and size along a single block or district.
- Coordinate fixture design with other street amenities to unify areas.

Guideline 7: Assist Visitor Orientation

People seek to readily understand and remember the physical layout of the places they inhabit. Landmarks and views help residents and visitors alike orient themselves and find their destinations. The presence of signs, maps, and other wayfinding tools in the public realm is also important. Environmental graphics orient vehicles and pedestrians; point out places of interest; add visual interest to the street; contribute to a sense of place; and encourage further exploration of the area.

- Consider the use of special paving and landscape treatment to give distinctive accents to areas with a unique identity; also consider special treatment to mark important intersections and identify notable historical and cultural landmarks.
- Utilize signs and environmental graphic systems to aid pedestrian and vehicular orientation and way-finding; identify special districts, historical and cultural landmarks, and local attractions.
- Provide a coordinated system of signs and maps that direct visitors to important public services and facilities; the public should be easily directed to government buildings, parks and plazas, transit stops, and public restrooms.
- Coordinate environmental graphic systems with other street amenities to unify areas with a distinct identity.

DEFINITIONS

Amenity Zone

Paved area along the back of the curb in a commercial streetscape that organizes trees, plantings, furnishings and lighting. It may range from 4 to 12 feet wide. Ample clear space must be provided between the amenity zone and building facades on the sidewalk for pedestrian circulation.

Attached Sidewalk

A sidewalk attached directly to the back of the roadway curb.

Bicycle Lane

A portion of a roadway which has been designated for preferential or exclusive use by bicycles. It is distinguished from the portion of the roadway for motor vehicular traffic by a paint stripe, or other similar device.

Bikeway

Any road, path or way which is specifically designated being open to bicycle travel, regardless of whether such facilities are designated for the exclusive use of bicycles or are to be shared with other transportation modes. Sidewalks are generally not designated as bikeways.

Bollards

Any small vertical element such as a decorative steel or iron pole, or a short concrete column intended to allow pedestrian traffic but to restrict vehicular traffic. Bollards are normally used in groups to indicate an edge between pedestrian and vehicular areas.

Branching Height

The height of the lowest branch of a tree where it overhangs the sidewalk or curb.

Caliper

The diameter of the trunk of a tree. A 3 inch caliper tree has a diameter of 3 inches measured 6 at breast height.

Character

The distinctive structure, form, materials and style of a place. Character is apparent to people as a result of the landscape, buildings, trees, spaces, furniture, materials, colors, and organization of the area.

Clear Zones

The area located in the pedestrian ROW that is free of any obstacles (furniture, trees, trash receptacles, etc.) and allows the unimpeded flow of pedestrian traffic.

Commercial Street

Any street that is primarily shops, stores, offices or services. Commercial streets range in scale from local to retail centers.

Compatibility

a) In the context of protection of historic structures or historic districts: the visual sense of authenticity or historic “correctness” of a building, feature or visual element. b) In the context of appropriateness of a new structure, feature or visual element in proximity to a historic building or district: the sense of visual agreeability and lack of aesthetic discord presented by the building, feature or element, relative to the surrounding neighborhood.

Curb Cut

Any break in the curb for a vehicle entry or driveway apron.

Curb Ramp

A sloping area of sidewalk allowing access for bikes, wheelchairs and people with disabilities, generally located at corners.

Design Guidelines

Minimum guidelines or recommendations intended to guide the design of ROW in the city. Where conditions are not specifically addressed in the guidelines, it is the responsibility of the proponent to show that the proposed design solution meets the intent of the most closely related guidelines.

Detached Sidewalk

A sidewalk that is not attached to the street curb. Detached sidewalks generally occur in residential areas and are normally separated from the curb by a tree lawn.

Dry Well

A gravel sump or closed drain below a tree that provides for water storage and seepage into the root zone. Trees in dry wells must be hand-watered.

Façade

The front or principal face of a building, which appears to have been intended to provide primary visual accessibility to the public or by people approaching the building. It is usually that part facing onto a street or courtyard.

Face Block

The entire length of a block (on one side of the street) from curb to property line including the structures that front the street. This is a useful design term and as commonly used, refers to both the long or short side of a block.

Furnishings

Any of numerous types of street amenities, most commonly used on commercial streets. Examples are pedestrian lights, benches, newspaper vending boxes, trash receptacles, bollards, planters, tree grates, fences, railings, bicycle racks, mailboxes, fountains and kiosks.

Groundcovers

Low plantings used instead of turf where space does not allow turf or where a more decorative affect is desirable. Ground covers are generally lower than 6 inches in height.

Human scale

An inexact term implying that the scale and features of a building have an appropriate relationship to the size and proportions of the human body.

Infill development

Construction on vacant land within a built-up area.

Kiosk

Any vertical structure which stands independently in the streetscape and is intended for the display of information or graphic material such as posters.

Luminaries

Luminaries contain the lamp light source of lights, and can sit on poles or mount on walls..

Mature Tree

Any well-established tree of sizable caliper is considered mature. A 12 inch caliper tree would be considered a mature tree.

Median

The area of raised paving or planting running down the center of a street, separating the directions of traffic. A traffic island is a special type of median.

Pedestrian Lighting

Special lighting that adds drama, character and light to pedestrian areas. Pedestrian lighting may consist of pole-mounted luminaries 14 feet or lower in height, lighted bollards or other low-level light sources.

Planting Zones

The area located from the edge of curb to the beginning of the sidewalk treatment. This area can be vegetated in more residential areas or can consist of paver/sidewalk treatments in commercial core areas.

Residential Street

Any street which is primarily residential in use, and usually not a major through street.

Right-of Way (ROW)

The boundary of public ownership of the street. The area between private property lines is generally referred to as the public ROW.

Scale

The perceived size of a building, space, or roadway in relation to a human or automobile. Scale affects the apparent size of street spaces and how comfortable they are for drivers and pedestrians. Architectural design details and overall organization of the street affect scale.

Sidewalk

A paved surface intended for pedestrians. Bicycling is prohibited by law on sidewalks and should not be included in sidewalk design.

Stop Bars

Street pavement striping at parking lot or street intersections that indicates to drivers a safe stopping point, sometimes used in combination with pedestrian crosswalk striping.

Streetscape

A generic term referring to pedestrian and landscape improvements in the ROW. A streetscape is generally associated with improved sidewalks, street trees, lighting, furnishings, and landscaped medians.

Street Light

Street lights are intended to light the roadway, and will be similar in design to the pedestrian scale lights. They are generally 25 feet high or more and will be concentrated at the intersections.

Street Trees

Trees that line the street in a straight, regularly spaced row between the curb and property line.

View corridors

Existing views from streets, public places, and private properties that are unobstructed by structures or plantings.

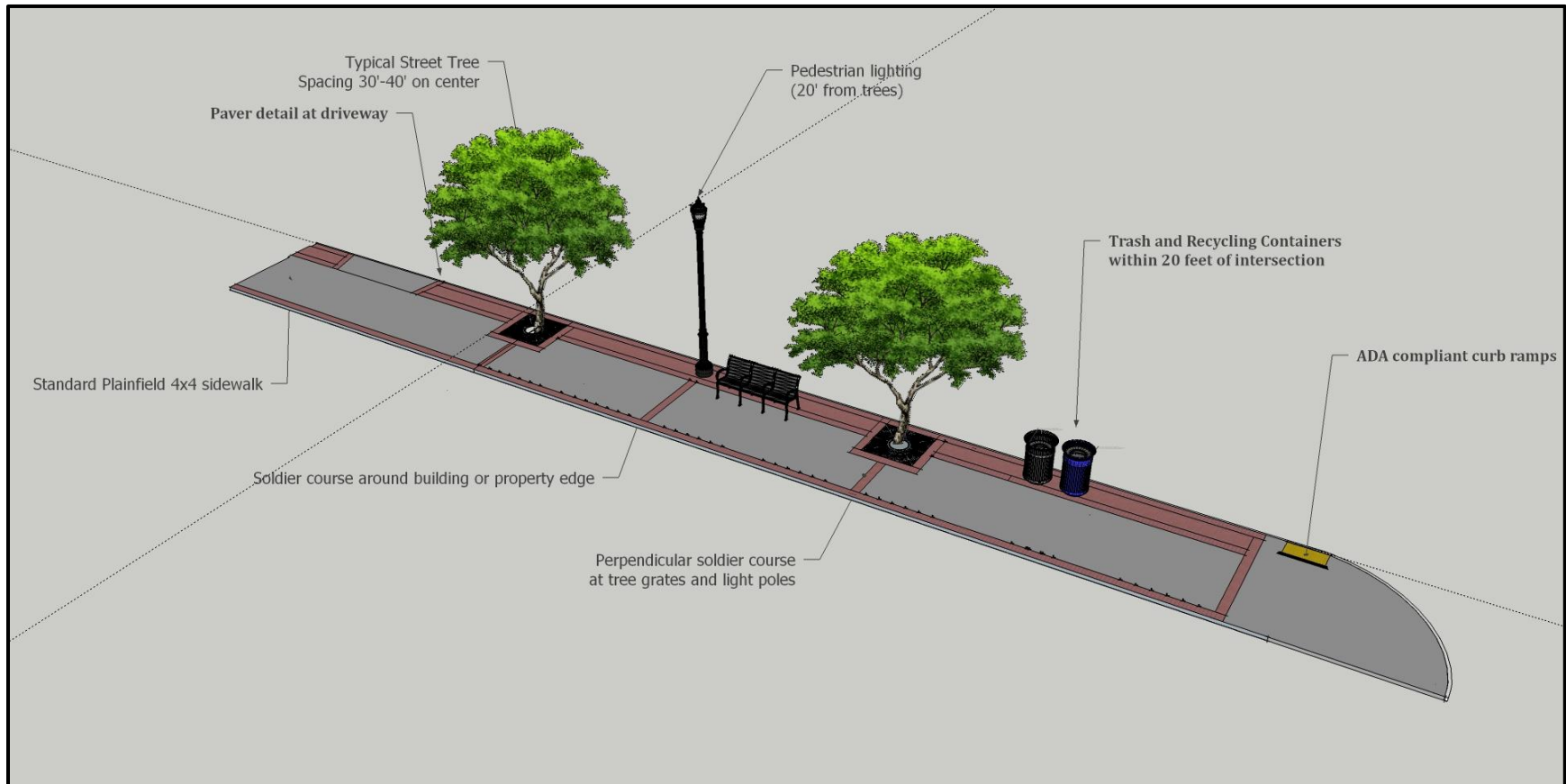
Walkways, Private

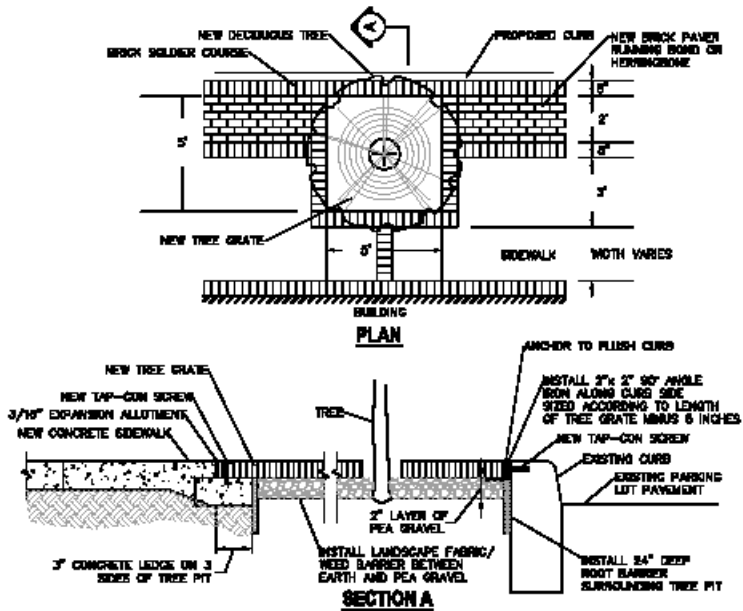
The narrow walkway in residential areas that leads from and is perpendicular to the curb and the detached sidewalk, crossing the tree lawn.

Walkway Zone The walkway zone is the middle section of the sidewalk, and is flanked by the storefront zone and the amenity zone. Its primary function is to accommodate the efficient movement of pedestrians.

DESIGN GUIDELINES

The following “typical” streetscape profile is provided to graphically depict the relationship between the streetscape amenities and the build environment. Details for each amenity are provided in their specific sections of the report. This depiction of the streetscape is for reference and has not been drawn to scale.

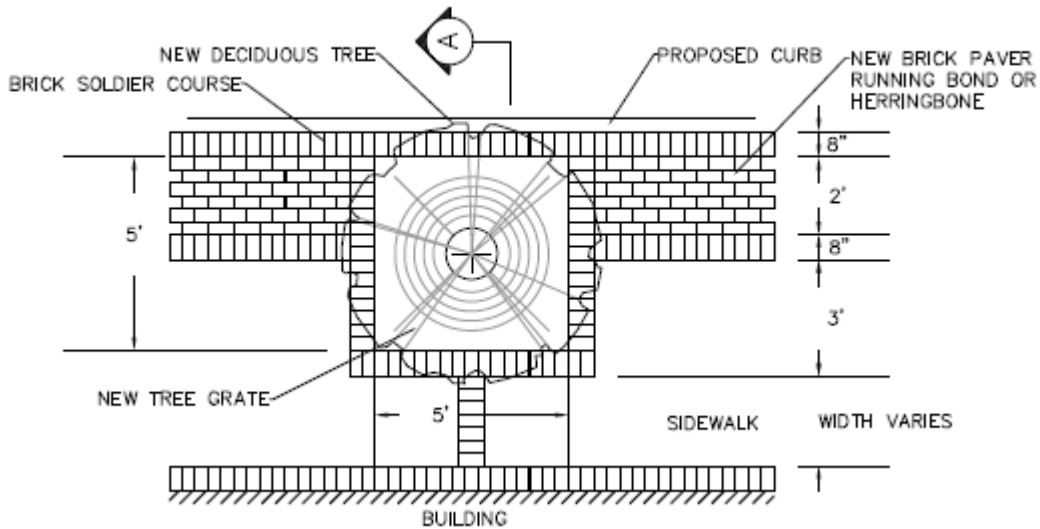




- NOTE:**
1. TREE GRATE SHALL BE CAST IRON OR CAST ALUMINUM MODEL R-6767 4'X4' SQUARE, COLOR/FINISH BLACK AS MANUFACTURED BY HESNAH FOUNDRY COMPANY OR EQUAL. INSTALL TREE GRATE AND ROOT BARRIER IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS AND AS DIRECTED BY THE ENGINEER.
 2. ELECTRICAL OUTLETS IN WEATHER-RATED ENCLOSURES SHALL BE PROVIDED IN THE TREE GRATE AREA IN ACCORDANCE WITH MUNICIPAL REQUIREMENTS FOR SAME.

TREE GRATE AND ROOT BARRIER DETAIL

17B



PLAN VIEW OF PAVER DETAIL

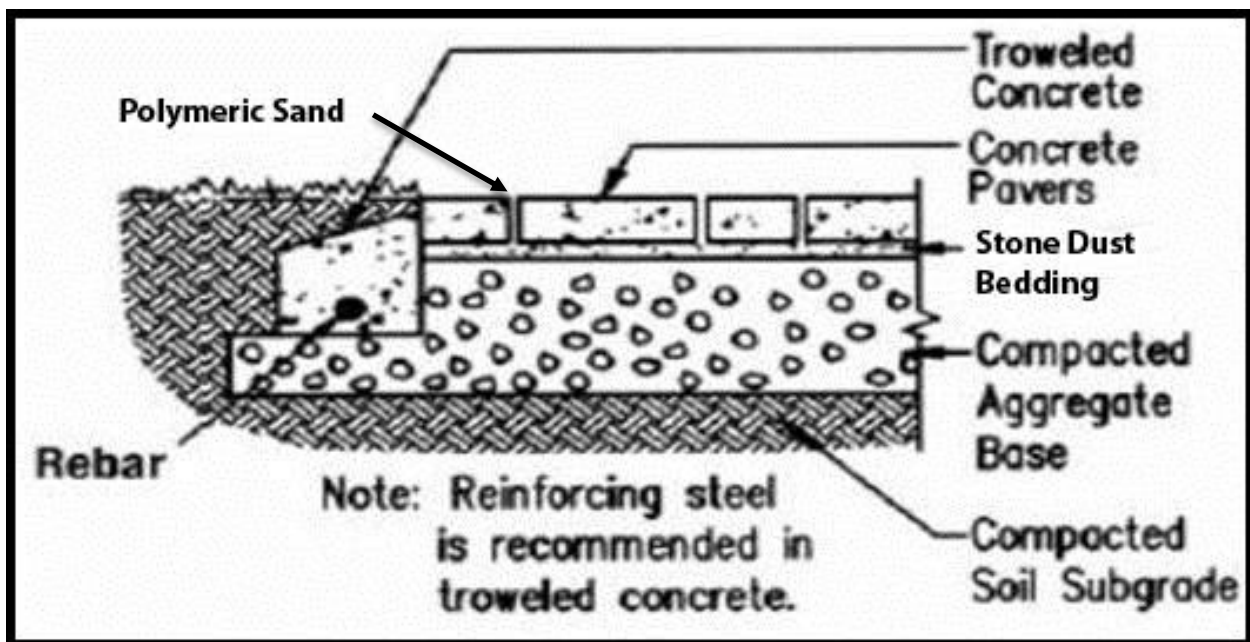
A single soldier course of precast concrete brick pavers are to be placed perpendicular to the center of all tree grates and light poles along the streetscape and run until it meets the soldier course along the property or building edge as discussed above. When the paver details are interrupted by a driveway, the soldier

course along the curb line should end at the beginning of the driveway edge and begin again on the other side of the driveway. (See detail provide at beginning of chapter) All other areas within the above bands are to be poured, all grey tinted concrete consistent with the following specifications.

- Finish – Medium broom finish with a 2-inch tooled edge.
- Color – Manufacturer : Scofield http://www.scofield.com/coloredconcrete_main.html
 - Type- Color Integral Concrete - Chromix Admixtures
 - Color : C31 Shadow Slate

Pre-cast concrete brick pavers shall be placed atop a 2” stone dust setting bed, which in turn shall be placed atop 6” thick gravel base course. A Polymeric Sand as manufactured by QUIKRETE or approved equal shall be swept into the joints of the pavers to provide a barrier to vegetation and to reduce paver shifting and heaving due to water infiltration. Paver color shall be red and approved by the municipal engineer or the Historic Preservation Commission in historic districts at time of plan submission. Where the limits of the streetscape meet the existing sidewalk pattern the streetscape pattern is to supersede the entire curb radius. A sample display panel 6’ x 6’ shall be prepared and submitted for approval by the City Engineer prior to installation of the pavers. Ramps for the handicap are to be installed at the corners of all street intersections.

In locations approved in advance by the City Engineer, pre-cast concrete brick paver sidewalks may be used in conjunction with a concrete sidewalk 2’ – 3’ wide running parallel to the roadway curbing and/or building facades.



CROSSWALKS

The design/material used at all public crosswalks can vary based upon the individual district and traffic pattern. Crosswalks shall consist of “Brick Print”, paint, Epoxy Resin, or inlay tape, the three criteria that are considered in each of the crosswalk materials are (1) durability, (2) retroreflectivity, and (3) cost. The width of the crosswalk shall be a minimum of 6’ inclusive of the other bands. The crosswalk layouts where painted or otherwise composed of white lines, shall be ladder, diagonal ladder design, or approved equivalent. Crosswalk type shall be based on the predominant type existing in the field and/or engineering/division of public works review and approval.

Brick

Brick is the most suitable paver material, as granite and cobblestones become slippery when wet and are difficult to cross by the disabled. When installed properly, brick pavers provide the longest service life. When pavers are not installed properly, however, they will settle and/or shift and become subject to damage. Granite strips are often installed between the pavers and the striping to help prevent shifting. Brick pavers are the most expensive type of crosswalk enhancements. Brick is recommended for the North Avenue Historic District.

Imprint or Stamped Asphalt



An imprint is a resin-based synthetic bituminous compound that is applied to the roadway while hot, about half an inch to an inch thick. It consists of stamping a template into freshly placed or re-heated asphalt followed by the application of a polymer modified coating is imprinted with a mold and comes in a variety of colors. Imprint is well suited for high-traffic and intersection areas.

Epoxy Resins

Epoxy resin is similar in appearance to paint. It is durable material consisting of two parts: a pigmented resin base and a hardener. Each component is heated separately, then mixed and immediately applied, followed by the addition of glass beads for retroreflectivity. The low profile on the roadway resists damage from snowplows. An epoxy resin is slower to cure than paint but maintains its retroreflectivity longer. However, three times the number of glass beads is required as compared to paint. Epoxy resin is initially two or three times as expensive as paint though it is more durable and therefore requires less maintenance.

Inlay Tape

Inlay tape is a retro reflective of or pertaining to a surface, material, or device that reflects light or other radiation back to its source) skid-resistant paint polymer pavement marking material. It is highly reflective, long-lasting, and slip-resistant, and does not require a high level of maintenance. Inlay tape can only be applied on new or repaved roadways. The tape should be pressed into the surface while the pavement is still warm. Although inlay tape has the highest initial expense, it is the most durable of available materials

and therefore the longest-lasting. It also has the highest initial retroreflectivity. When inlaid into the pavement, the tape is sufficient resistant to snowplow damage

Painted Crosswalk Layouts

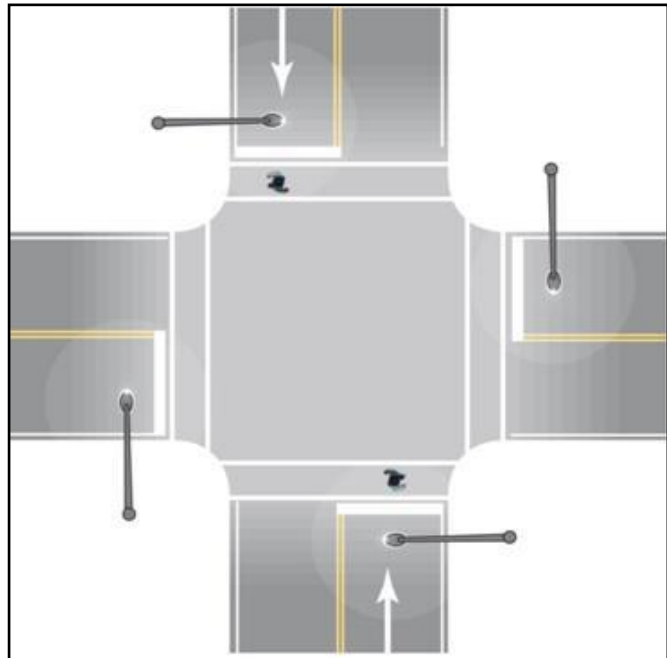
Paint is the most common material to be used for marking crosswalks. It is generally hot-applied and water based. The paint is sprayed onto the road using a pressurized machine, followed by an application of glass beads that provide retroreflectivity. Paint is the least expensive type of material to install. It can be applied quickly and will dry quickly under favorable conditions, usually less than seven minutes. Water-borne paint does not require use of a solvent for cleaning. Paint is particularly sensitive to temperature and humidity. Also, it is least durable type of material. Painted crosswalks should be repainted once or twice a year in order to maintain adequate visibility and retroreflectivity and high-volume roads.



Painted- Standard

The standard, or transverse, layout is considered the most basic option. The markings are perpendicular to the roadway, spaced at least 6 feet apart (including the width of the lines), and are commonly 12 inches wide. The standard layout is favorable because it requires the least amount of pavement markings. It is also, however, the least visible for motorists. Therefore, it is best used at signalized intersections.

The area between the standard crosswalk lines may be enhanced with pavers or another aesthetic treatment, most common in commercial or school areas. Aesthetic treatments involve stamping the asphalt with a pattern and often colorizing it.



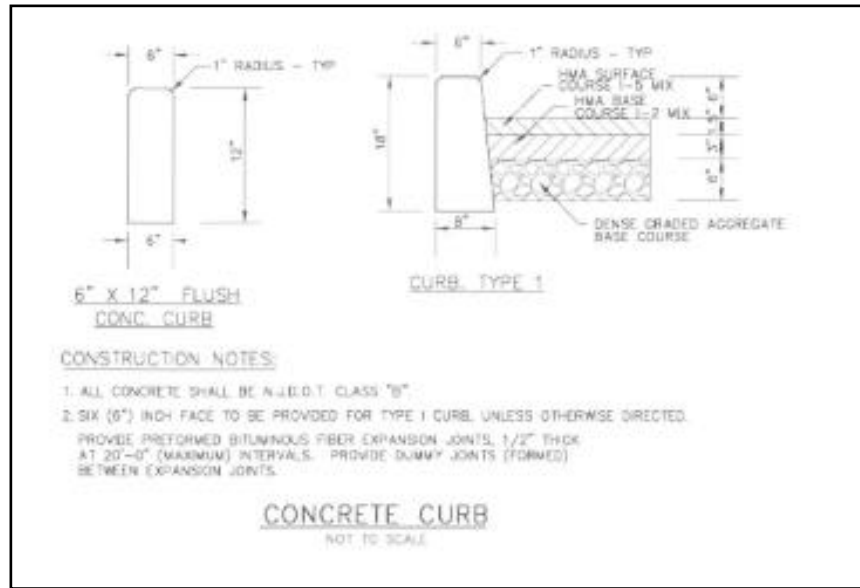
Ladder - Standard

The ladder layout consist of the standard layout with additional longitudinal lines that are parallel to traffic flow. The longitudinal lines should be 12 to 24 inches wide and spaced 12 to 60 inches apart. It is desirable to set the spacing of the longitudinal lines to avoid wheel paths in order to prolong the life of the crosswalk. According to the Design & Safety of Pedestrian Facilities (Report No. FHWA-RD-88/038), the optimal crosswalk pattern is the ladder design with a 12-inch strip and a 24-inch space.



CURBING

Consistent curbing shall be standard N.J.D.O.T. concrete curbing, 18” in depth, with a 6” reveal. Concrete shall be colored dark grey or French grey in the historic district and a lighter blue or grey in the non-historic districts NJDOT highway “white” concrete is not permitted. A sample section shall be provided for approval by the City Engineer before acceptance for use throughout the commercial districts.



BENCHES

The intent of this manual is to provide benches throughout the Commercial Districts for shoppers to rest, groups to meet, and mass transit users to comfortably wait for transport to arrive. Benches shall be located and sized in accordance with the functional need of such. Selection of benches shall take into consideration issues of durability, maintenance, and vandalism. Benches shall be **Victor Stanley model # CR-10**, or approved equal 6'-0" length, with black metal frame, steel ribbon seating, center arm rest and vertical slats. Benches shall be secured to the sidewalk via anchor bolts. This manual is not



Model # CR-10

prescribing a requirement of one bench in an equalized spacing throughout the downtown, but rather the placement of benches in a manner so as to create public spaces and to locate them where people tend to gather. When determining the number of required benches, the standard of one bench for every fifty feet (50') is to be utilized. The benches, themselves, however are to be located based on specific streetscape needs. Where individual property owners/developers are required to provide benches, individual benches may be located on the “inside” of the planting strip or the public area furthest from the curb if possible, as shown in the picture above. If that is not possible, the bench is to be located within the area defined by the curb and the tree grate width in the adjacent streetscape. Benches shall be installed a minimum of two feet (2') from the curb to allow for car door openings. Benches shall face the street when used in conjunction with a bus stop and face the sidewalk/building in other situations.

LITTER RECEPTACLES – INDIVIDUAL UNIT

The intent of this manual is to provide necessary and adequate litter receptacles so that those using the commercial district will deposit their trash properly, and not in the city ROW. Selection of litter receptacles shall take into consideration issues of durability, maintenance, and vandalism. Litter receptacles, individual units, shall be **Victor Stanley Economy Series, model # ES-142-S2A** or approved equal, with black metal frame, dome lid, and vertical slats. Each individual litter receptacle shall contain one (1) 36 gallon plastic removable container. Litter receptacle shall



Model # ES-142-S2A (color - black)

be secured to the sidewalk via bolts. Litter receptacles are to be placed within twenty feet (20') of all street intersections and a minimum of two hundred feet (200') apart. All trash receptacles are to be located within the area defined by the curb and the tree grate width in the adjacent streetscape and adjacent to litter receptacles. Litter units should include the optional S-2A formed dome lid.

LITTER RECEPTACLES- RECYCLING UNIT

The intent of this manual is to provide necessary and adequate recycling containers so that those using the downtown commercial districts will place recyclable containers in proper receptacles for recycling and not litter receptacles or in the city ROW. Selection of litter receptacles recycling unit shall take into consideration issues of durability, maintenance, and vandalism. All recycling units shall be architecturally compatible with the style, materials, colors, and details of the buildings on the site. Recycling units shall be **Victor Stanley, model # S-42** or approved equal, with center individual receptacles labeled for recycling and trash. Recycling units shall be powder-coated black. Each of the individual receptacles shall contain one (1) 36 gallon plastic removable container. Recycling units, shall be secured to the sidewalk via center anchor bolts. Recycling units are to be placed within twenty feet of all street intersections and a minimum of two hundred feet (200') apart. All trash receptacles are to be located within the area defined by the curb and the tree grate width in the adjacent streetscape and adjacent to recycling receptacles. All recycling units should include the optional recycling package which provides recycling labels on the receptacle face and dome lid.



Model # S-42 w/ recycling package

STREET TREES

The intent of this manual is to provide standards for the planting of appropriate shade and street trees in the commercial districts. No tree can be planted in the public right of way without the City Shade Tree Commission approval. That approval is granted for specific trees in specific locations, not as blanket approval for any given species. All trees shall be placed in a location that will allow for adequate space for growth without interfering with below-grade utilities, roadways, sidewalks, over-headed wires, or streetlights and shall not be permitted within the sight triangle. All trees shall be planted a minimum of 20 feet from pedestrian or roadway lighting and should be spaced 20-30 feet on center. All branches are to be trimmed away to a height of at least eight (8) feet above the curb level as required in Article IX of the Land Use Ordinance (LUO). Large street trees shall be planted at a minimum size of three (3) inches in caliper, a minimum of twelve (12) feet in height, all branches are to be trimmed away to a height of at least eight (8) feet above the curb level and shall be planted according to accepted horticultural standards, including soil specifications. Medium street trees shall be planted at a minimum size of 2-2.5 inches in caliper, a minimum of eight(8) feet in height, all branches are to be trimmed away to a height of at least five to six feet (5-6) feet above the curb level and shall be planted according to accepted horticultural standards, including soil specifications.

All street trees to be planted shall be nursery grown, of substantially uniform size and shape, balled, and burlapped with fully biodegradable burlap and twine, and shall have straight trunks. All cut and fill areas, terraces, berms, and roadway embankments with slopes steeper than one increment to three increments horizontal shall be sufficiently landscaped and mulched to prevent erosion. Trees shall be selected to compliment the surrounding streetscape. Street trees may be massed at critical points along the street, such as the visual termination of a curve in the roadway. All street tree planting sites shall be indicated on the plans. Street trees shall be planted a minimum of three and one-half (3 ½) feet between the sidewalk, and the ROW line, or if such location's not possible, in the planting strip between the curb and the sidewalk, a minimum of two feet (2') from the curb line centered in a tree grate. On streets where existing shade trees are consistently located at a certain location so as to form a line parallel to the street, shade trees may be placed to continue this pattern. The guidelines should make clear that Shade Tree Commission approval of the species listed below shall not be construed as Shade Tree Commission acceptance of any planting plan.

Tree Selection

All trees should fit the microclimate, soils, sun, moisture, budget and maintenance environment in which they are planted. This is a major concern in areas with high levels of pollution, salt, snow storage or automobile and pedestrian damage. Trees selected for urban streets should be able to endure pollution, compacted soils, minimal water, and low maintenance. To partially offset the numerous environmental stresses imposed upon urban trees, appropriate species selection for tolerance of urban conditions and ability to grow within confined areas (overhead wires, nearby building facades, limited root zones) is essential when choosing a species.

When selecting new street trees for an entire block or for a more limited area, it is not essential to replicate the species of existing trees within the same area. It is imperative, however, that due consideration be given to the following guidelines for correct tree species selection, size, placement, and planting practices.

1. Trees near walks should be thornless and fruitless to minimize maintenance and to reduce pedestrian hazards. They must be strong wooded, resistant to most diseases and insects, single trunked, with upright growth and a medium to long life expectancy. Branches should resist breaking.
2. Trees and irrigation techniques that require minimal water should be considered. Irrigation should be installed for street trees in all commercial streets. Irrigation must be designed to deliver the appropriate amount of water to each tree with minimum waste. Easily adjustable, automatic irrigation controls are recommended.
3. Along commercial streets, trees should be selected that will minimize the obstruction of views to retail signs. Employ trees with appropriate forms and character.
4. Installers should utilize the publication “Trees for New Jersey Streets” in the latest publication from the New Jersey Shade Tree Federation, Rutgers University for technical direction and discussions of alternate species.

Medium Shade Trees

1. *Prunus cerasifera* ‘Thundercloud’ Thundercloud Flowering Plum
2. *Syringa reticulata* ‘Ivory Silk’-Japanese Tree Lilac
3. *Cercis canadensis*- Eastern Red Bud
4. *Acer ginnala* ‘Ruby slippers’ Amur Maple
5. *Koelreuteria paniculata*- Golden Raintree
6. *Crataegus viridis* ‘Winter King’ Hawthorne
7. *Acer compestre* – Hedge Maple
8. *Celtis occidentalis*- Hackberry

Large Street Trees

1. *Zelkova serrata* ‘Village Green’ - Japanese Zelkova
2. *Ulmus parvifolia*- Chinese Elm/Lacebark Elm
3. *Gleditsia triacanthos* - Hornless Honey Locust
4. *Ginkgo biloba*- Ginkgo (male only)
5. *Carpinus betulus*- European Horn Beam
6. *Tilia cordata*- Little Leaf Linden
7. *Sophora japonica* – Japanese Paradox Tree
8. *Ulmus americana* – American Elm

Medium Shade Trees



1. *Thunder Cloud Flowering Plum*



4. *Ruby Slippers' Amur Maple*



2. *Japanese Tree Lilac*



5. *Golden Rain Tree*



3. *Eastern Red Bud*



6. *Winter King' Haethorne*



7. *Hedge Maple*



8. *Hackberry*

Large Street Trees



1. Japanese Zelkova



5. European Hornbeam



2. Chinese Elm



6. Little Leaf Linden



3. Thornless Honey Locust



7. Japanese Pagoda



4. Ginkgo



8. Japanese Pagoda

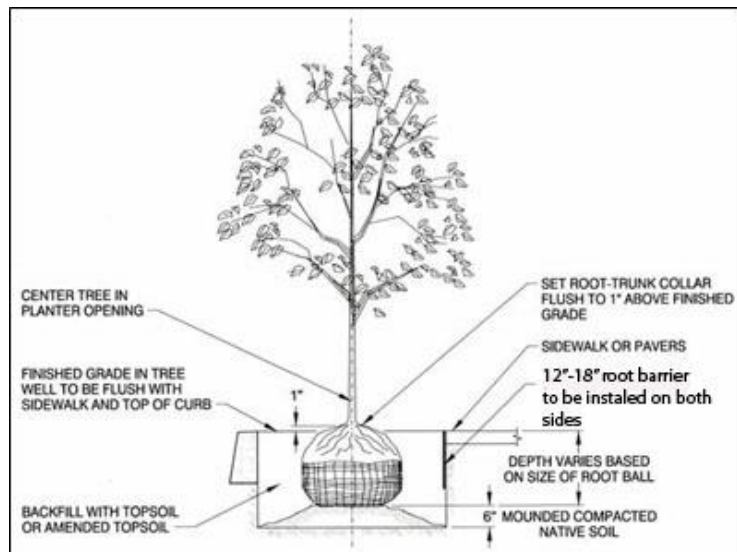
Tree Installation

For newly installed tree plantings in areas without lawn Amenity Zone, continuous trenches of engineered soil should be provided under the Planting Zone's pavement. Such planting trenches located parallel to curb lines and under non-mortared brick pavers will provide greater volumes of soil for root growth, while permitting air and water to reach critical tree root zones. Individual tree planting pits are not permitted within paved Planting Zones unless only a single tree is to be installed due to a limited streetscape improvement area, or where existing tree and utility locations render continuous

trenches impossible. Single tree pits, when initially dug for new tree planting should be at least 5-foot wide to allow for root transition. Where inadequate area for root growth exists, sidewalk pavements often fail. Forced into limited growth areas, shallow tree roots frequently grow laterally and cause sidewalks to crack and heave. Uneven displacement of adjoining concrete or brick paving sections typically follows. To provide un-compacted soil for root growth and compacted sub-surface base materials for sidewalk pavements, engineered/structural soil soils are now being used for many urban plantings. Such soils contain a mix of soil loam, stone, water, and a moisture-retaining polymer so that weight-bearing loads are transferred from stone to stone, leaving the soil between the stones essentially unaffected by compaction. Larger volumes of soil with increased porosity, nutrient holding capacity and drainage are thereby created.

Tree planting height is critical. The base of the root collar (area where the trunk transitions to the trees root mass) shall be above surrounding soil backfill, if the tree root ball height has been properly established. If the collar is too low, the entire root ball must be raised and reset over compacted soil to the correct elevation.

Engineered/structural soil, such as Cornell University's CU-Structural Soil® and CU-Soil™ or approved equal should be installed around tree root balls for all tree plantings where lawn areas do not exist within the Amenity Zone. Where unpaved areas will remain within the Planting Zone, soil loam amended with ample organic matter may be used in place of engineered soil. Root barriers should be installed around all tree planting areas to limit the root damage to existing or proposed sidewalk areas.



TREE GRATES

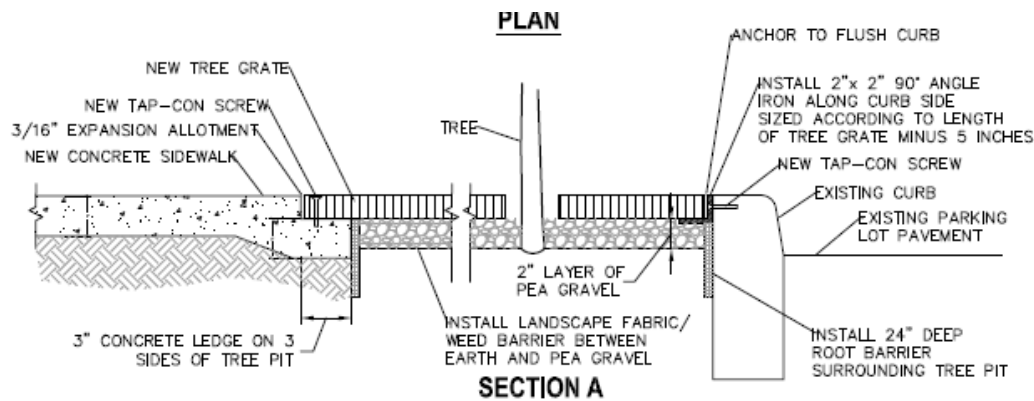
Cast iron tree grates are required wherever trees are planted within a paved sidewalk Amenity Zone area within the commercial districts in order to protect the tree roots from compaction and provide air and water infiltration to the roots.

Cast iron tree grates have the benefits of strength, durability, stability, low maintenance, non-flammability,



Landscape Centrae Inc. model # LCCG1753

and the ability to be cast in varying thicknesses and patterns. The grate must have an opening with a minimum diameter of 16 inches to allow for years of growth. All tree grates must have breakout rings or removable bolted tree rings cast into the grate, which allows the center of the tree grate to be broken out or removed to accommodate the growth of the tree trunk. Tree grates shall rest within a metal frame and be completely flush with the adjacent sidewalk and curb when installed. Tree grate openings must comply with ADA accessibility guidelines, which means that the slots of the tree grate must not be more than 3/8" wide.



The City has adopted two standard expandable tree grates: **Landscape Centrae Inc. model # LCCG1753, 5' – 0" square**, or approved equal, and if spatial area restricts a 5' – 0" square tree grate, then a 4' – 0" square grate **LCCG1751** in the same pattern shall be acceptable, as long as there is consistency throughout the streetscape. Powder coating is not suggested on the tree grates as the salt and tough winters will cause the deterioration of the coating. If string lights or up lighting are anticipated in the trees, electrical outlets should be provided in the tree grate area.

STREETSCAPE PLANTING BEDS

Streetscape planters come in a wide range of styles and sizes, much of which is dictated by the size of the ROW on a given street. When placing planters, it is important to consider accessibility and location along the street with regards to additional streetscape elements, storefront locations and on street parking. Planters should enhance the corridor, not restrict sight lines, accessibility or pedestrian movements.

Flush Planters: Flush planters have no curb and are placed at the same elevation as the surrounding sidewalk. They can be installed with or without railings, with turf, or with more intense plantings including groundcover, annuals, perennials, and shrubs. When more intense plantings are used, a railing is recommended to protect the plantings. The best example of a flush planter is typical residential turf adjacent to a sidewalk. Pedestrian traffic levels must be taken into account when designing flush planters, as they will be used for additional walking space if adequate space is not allocated. In this scenario, railings may be warranted.



Curbed Planters: Curbed planters can be poured in place or constructed of precast concrete, granite, or other natural stone. These planters, varying in length, are generally 6”-8” in height and may have a variety of profiles depending on the design intent of the project. The minimum size for planters, as measured from the inside of the planter curbs, is 4’ in width and a variety of lengths. Planters can be installed with or without railings. Sidewalk drainage is a key consideration when designing curbed planters. Sidewalks should be graded so that water on the sidewalk, behind the planter, drains in between the planters to the street. Planters may also be constructed to allow 2”-3” breaks to allow for water to enter the planting bed area so that plants get the water.



Railings

Low, ornamental railings add interest and identity to a streetscape, as well as protection from pedestrians and animals, when placed in combination with flush or curbed landscape planters. These railings vary in



height from 12”-18”. The panels of pickets between the posts are secured in place with tamper proof bolts. This allows panels to be removed for access to the planter area for tree stump removal and/or tree planting equipment. No railing posts or spindles shall have pointed tops due to safety concerns. In areas where there are existing trees, it is often advisable to install a railing without a curb. Unlike a curb, which has a



continuous footing, the railing posts have narrow foundations that do not require tree roots to be removed or cut to accommodate railing installation. If tree planting areas and railings exist on the street at the time of site plan approval, construction etc, the applicant or city shall use the existing detail for continuity on the street. However if one does not exist then one similar to the following representative images of approved railings may be used.

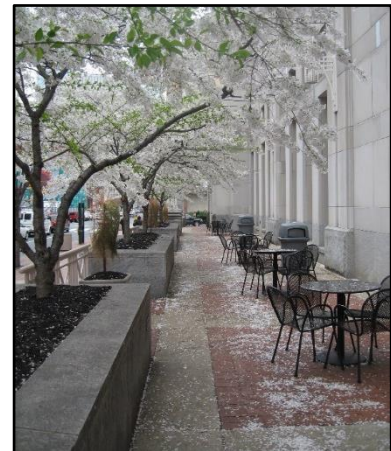


SEATING WALLS

Low masonry walls can serve several purposes; they create transitions between grade changes, mark entrances, highlight architectural elements, serve as raised planters, and create the walls of water features. Masonry walls that are at a comfortable seat height can serve both as a structural element and a seat wall. Seat walls and raised planters can create an edge to a gathering space or performance space, and can act as landmarks in the streetscape.

High-quality masonry products and applications that complement adjacent architecture shall be used.

- Locate and design walls that are integrated into the architectural design of the building façade or urban park spaces.
- Walls should not be located in the sidewalk or landscape amenity panel zones of the streetscape or impede pedestrian traffic in any way.
- Construct seat walls 18” – 22” high and a minimum of 12” deep to provide a comfortable seating area.
- Use innovative design elements such as raised decorative features to discourage damage from skateboards, bicycles or maintenance equipment.



TREE GUARDS



Victor Stanley Ironsite Series model # S-6

The intent of this manual is to require the installation of trees guards for all street tree plantings in the commercial district in order to protect the trees from damage. Tree guards shall be located and sized in accordance with the functional need of such selection of a tree guard shall take into consideration issues of durability, maintenance, and vandalism. All tree guards shall be architecturally compatible with the style, materials, colors, and details of the tree grate. Tree guards must have a minimum opening of 18". The tree guard must be expandable in order to accommodate trees as they age. Tree guards shall be **Victor Stanley Ironsite Series model # S-6, 3' – 0" tall with black metal frame** or approved equal. Tree guards shall be carefully installed to not damage the enclosed tree. Tree guards shall be secured to the sidewalk and/or tree grate via anchor bolts.

STREET LIGHTS

As required by Article IX and XII of the LUO minimum walkway illumination levels must be provided along public ROW. All walkway illumination levels must be provided. All walkway lighting fixtures shall be designed to be architecturally compatible with the style, materials, colors and details of the other lighting fixtures and streetscape furniture. Sufficient lighting shall be provided on each site or along roadways to ensure the security of property and to protect the safety of persons during hours of sunset and sunrise when establishments or facilities are not used. Lighting shall be so designed to avoid the creation of hazards to motorists and pedestrians or nuisance to adjoining property owners or residents. Lighting levels, lamp color, and fixture type shall be consistent throughout the commercial district and shall compliment building architecture and landscaping. All walkway lighting levels shall meet the standards set forth in Article IX of the LUO. Underground cabling shall supply electricity for street lights. All street lighting shall be shown on a lighting plan in sufficient detail to allow determination of the effects upon adjacent properties, traffic safety, and overhead sky glow. No light shall shine into building windows, or onto the streets or driveways so as to interfere with or distract drivers' vision. Lighting shall be provided by fixtures with a mounting height not more than fourteen (14) feet or the height of the building, whichever is less, measured from the ground level to the centerline of the light source. All street light base covers shall be **Valmont model "Huntington" AC1**, which are compatible to the height requirements. Street light arms for mid-block shall be custom **HADCO model "SA5650"**. Street light poles for the corners shall be **HADCO model SP7565B**, the pole is 21' 4" in height, the shaft is 6" in diameter, flat fluted straight. Street light poles for mid-block shall be custom **HADCO model SP7565B** 20' 2" in height, the shaft is 6" in diameter, flat fluted straight. Pedestrian street lights are typically spaced 40-50 feet apart and approximately 20-feet from street trees depending on site situations and light types. (See detail sheet below)

DECORATIVE BASE COVER “HUNTINGTON” AC1.

FEATURES

- Aesthetically pleasing scalable family for lighting and traffic applications
- Clamshell design for quick, easy assembly
- Durable, high quality aluminum casting provides clean, crisp details
- Provided with stainless steel hardware
- Tamper proof hardware available as special order
- Long-lasting finish available in a variety of colors
- Install on existing poles to enhance streetscape

POLE BASE DIAMETER RANGE		DIMENSIONS OF BASE COVER			
TAPERED 0.14' FT (IN)	NON-TAPERED (IN)	DIA (IN)	HEIGHT (IN)	QTY OF ACCESS DOORS	MODEL NUMBER
3.00 - 4.25	2.75 - 4.00	12.00	16.50	0	HN12AC
3.50 - 6.00	3.13 - 5.75	17.00	26.00	1	HN17AC
6.00 - 10.13	5.63 - 9.75	24.00	34.00	1	HN24AC
9.13 - 13.75	8.63 - 13.25	27.00	39.00	1	HN27AC
13.13 - 18.75	12.63 - 18.25	33.00	43.00	1	HN33AC

All dimensions shown are nominal and do not include handhole projection.



HN12AC



HN17AC



HN24AC



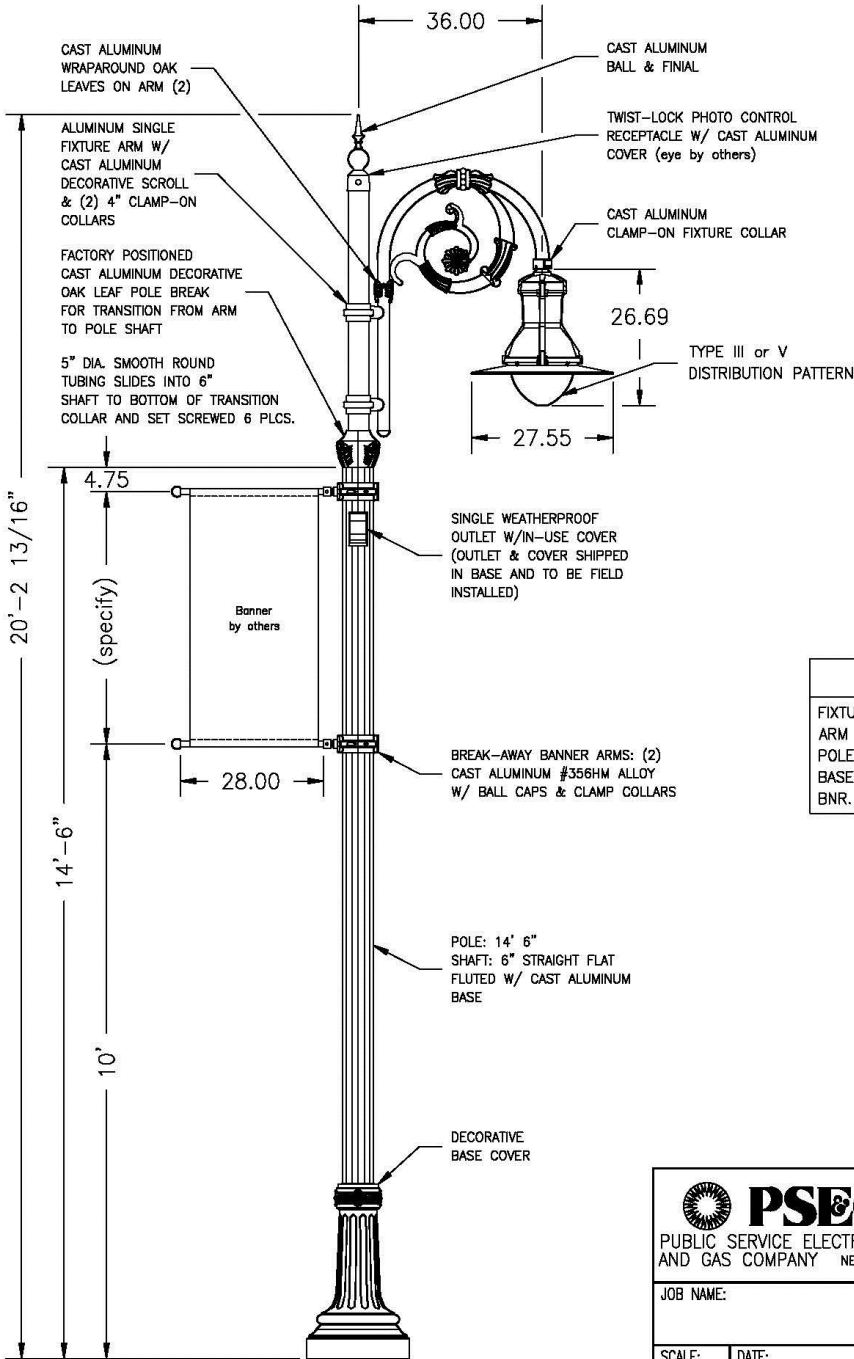
HN27AC



HN33AC

STREET LIGHTS (MID-BLOCK)

CONFIDENTIAL: This drawing is confidential and proprietary to Philips Hadco and may not be reproduced without the express written consent of Philips Hadco. Any use hereof or of any of the information or detail herein shall be for the sole benefit of Philips Hadco.		PRODUCT APPROVALS	
HADCO	JAZ		
CUST.			



CAUTION:
 MINIMUM CLEARANCE FOR TRUCK TRAFFIC IS 14'. BANNER ARMS AS SHOWN ARE LOWER THAN 14'.

NOTE:
 HOLIDAY DECORATIONS APPLIED TO EQUIPMENT MUST BE APPROVED BY PSE&G.

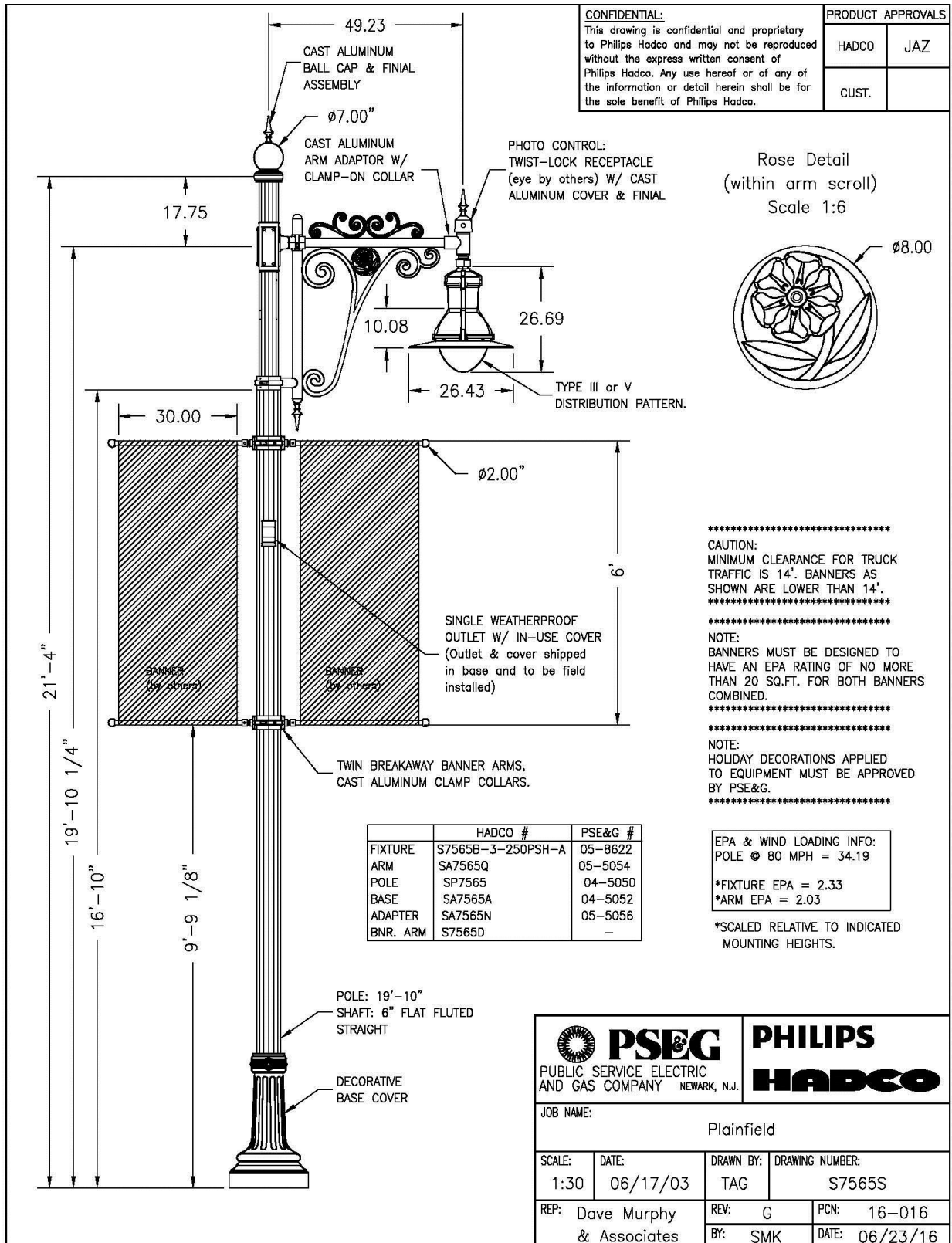
EPA & WIND LOADING INFO:	
POLE @ 80 MPH = 20.20	
*FIXTURE EPA = 2.33	
*ARM EPA = 3.00	
*BANNER EPA = 9.11	

*SCALED RELATIVE TO INDICATED MOUNTING HEIGHTS.

	HADCO #	PSE&G #
FIXTURE	S7565B-3-150PSH-A	05-8198
ARM	SA75650	05-5052
POLE	SP7565B	04-5054
BASE	SA7565A	04-5052
BNR. ARM	SA7565E	-

PSEG PUBLIC SERVICE ELECTRIC AND GAS COMPANY NEWARK, N.J.		PHILIPS HADCO	
JOB NAME: Plainfield			
SCALE: 1:30	DATE: 04/21/03	DRAWN BY: TAG	DRAWING NUMBER: S7565Q
REP: Dave Murphy & Associates	REV: P	PCN: 16-007	DATE: 03/29/16
	BY: SMK		

STREET LIGHTS (CORNERS)



BICYCLE RACK

The intent of this manual is to require the installation of bicycle racks in locations at least as convenient as auto parking spaces are provided on private developments and within municipal parking lots. Bicycle racks shall be located and sized in accordance with bicycle circulation need. Selection of bicycle racks shall take into consideration issues of durability, maintenance, convenience, security, and vandalism. All bicycle racks shall be architecturally compatible with the style, materials, colors, and details of other streetscape furniture. Bicycle rack shall be **Dumor model # 103 Series**, or approved equal, **36- 5/8"** in length with a black metal frame and upright circular piping. Bicycle racks shall be secured to the sidewalk via anchor bolts and collars. Locations for bicycle racks shall first be approved by the City engineer prior to installation. One Bicycle rack is required to be provided along each block face. (intersection to intersection) and at a ratio of one rack for every twenty five vehicular parking spaces. Bicycle racks shall be located within the previously defined tree line with grate width area, so that at least five feet (5') of unobstructed sidewalk width is maintained.



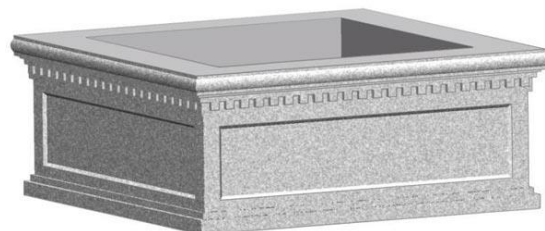
PLANTERS

The intent of this manual is to require planters at intersections in order to define pedestrian crossings, provide landscape plant relief where street tree planters for outdoor dining separation from pedestrians. Planters shall be located and sized in accordance with their functional needs. Selection of planters shall take into consideration issues of durability, maintenance, and vandalism. All planters shall be architecturally compatible with the style, materials, colors and details of other streetscape elements where all other streetscape furniture is detailed as being black in color; planters are to be contrasting those elements by being white in color. Planters shall not exceed two feet (2') in height at the time of placement and space. Planters shall be placed to avoid the creation of hazards to pedestrians and motorist or nuisance to property owners. Planters shall be **Planters model# PP154-1147 , 60"Lx60"Wx24"H Square Concrete Planter or model # PP261-1036, 30" Square Stackable Planter** or approved equivalent. Planters shall be rectangular and made of concrete. Planters shall be secured to the sidewalk via anchor bolts or approved equivalent. Planters shall be filled with screened topsoil or other suitable planting medium. Planters can be free-standing or clustered in groups at designated locations approved by the City Engineer, Planning Division or Land Use Board.

60"Lx60"Wx24"H Square Concrete Planter.

This product uses Portland cement grade ASTM C150 Type 1 or 3. All exposed surfaces of the product are treated to remove the surface matrix and expose the aggregate produced by chemical retardant - not sandblasting. All concrete products are treated with water repellent sealer applied in strict accordance with manufacturer's specifications. The products are designed using structural analysis and all tolerances are within 1/8" of specified dimensions.

PP154-1147
60"Lx60"Wx24" H
Square Concrete Planter



PP261-1036, 30"

30" Square Stackable Planter

Add some color to your downtown, park, or business with flowers and plantings in our concrete planters. They may be placed individually or in groups to accent property or to provide a security barrier in front of buildings.

These planters are steel-reinforced for added strength.

Natural Pebble stone and Charcoal Pebble stone finishes are an additional charge.

Item #: PP261-1036

Weight: 378 LB

Dimensions: 30"L x 30"W x 11"H

Square Stackable Planter



INFORMATION KIOSK

It is the intent of this manual to require the installation of information kiosks at the Downtown Train Station, the Park-Madison Development, the YMCA street frontage, and other appropriate locations for public announcements and city information. Information Kiosks shall be located and sized in accordance with the functional need of the intended site. Selection of Information Kiosks shall take into consideration issues of durability, maintenance, and vandalism. All Information Kiosks shall be architecturally compatible with the style, materials, colors, and details of buildings on the site and the surrounding area. Information kiosk shall be placed in well illuminated areas to ensure the security of persons during the hours of sunset and sunrise when the facilities or establishments within area of the information kiosks are not functioning. Information kiosks shall be located on sites where a variety of public transportation is accessible to provide information that will enhance the efficient circulation throughout the city. Information kiosks shall be **The Table & Ticket Co. illuminated or non-illuminated Information Kiosk** or approved equivalent. The kiosk design should be site specific, but the recommended material is black anodized metal. Information Kiosks shall be secured to the sidewalk via anchor bolts or approved alternative method. Locations for information kiosks shall first be approved by the Municipal engineer and Planning Division.

Illuminated Kiosks

Custom and standard kiosks are ideal for downtowns, campuses, transit centers, parks or other locations needing maps, events and other information readily available to pedestrians. Kiosks and pylons can be made to your specifications allowing many different shapes, sizes, and styles.

Construction:

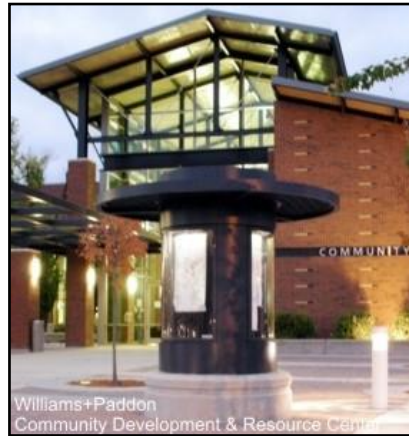
- Rigid Outer Frame
- Custom Design and Sizes
- Illuminated
- Exterior, Interior

Finishes:

- Aluminum
- Stainless Steel
- Brass
- Clear
- Dark Bronze
- Black Anodized
- Mirror (No.8)
- Brushed (No. 4)
- Painted
- Acrylic Polyurethane

Backgrounds:

- Fabric Covered Cork
- Changeable Letter Board
- Steel (magnetic inserts)
- Rear Illuminated Graphics
- Graphic Inserts/Maps



Non-Illuminated Kiosks & Pylons

Tablet & Ticket information kiosks are ideal for downtowns, campuses, parks or other locations needing maps, events and other information readily available to pedestrians. Kiosks and pylons are made to your specifications allowing many different shapes, sizes, and styles.



Construction:

- Rigid Outer Frame
- Custom Design and Sizes
- Non-Illuminated
- Exterior, Interior

Finishes:

- Aluminum
- Stainless Steel
- Brass
- Clear
- Dark Bronze
- Black Anodized
- Mirror (No. 8)
- Brushed (No. 4)
- Painted
- Acrylic Polyurethane


Backgrounds:

- Fabric Covered Cork
- Changeable Letter Board
- Steel (magnetic inserts)
- Rear Illuminated Graphics
- Graphic Inserts/Maps



BOLLARDS

The intent of this manual is to provide for the installation of bollards where appropriate and necessary. Bollards shall be located to facilitate pedestrian access between the public sidewalk, buildings, parking lots, and other facilities and to provide safety for pedestrians from vehicular traffic by providing a barrier. Bollards shall be spaced at an average of three (3) feet on center to ensure adequate width for efficient pedestrian traffic. Bollards shall be located and sized in accordance with their functional needs. Selection of bollards shall take into consideration issues of durability, maintenance, safety, and vandalism. All bollards shall be architecturally compatible with the style, materials, colors and details of buildings on the site. Bollards shall be **Custom Design Precast model # CDP4050-52, Square Bollards or model #CDP4047-49**. Round Security Bollard or the approved equivalent. Bollards shall be pre-casted concrete. Bollards and ground collar shall be secured to the sidewalk as per the manufacturer's recommendations.



CDP4047-49

Round Security Bollard
Available in three standard sizes:
CDP4047 14" Dia. x 48" High 690 Lbs.
CDP4048 14" Dia. x 36" High 518 Lbs.
CDP4049 14" Dia. x 30" High 432 Lbs.

- *Ribbed NaturaStone*
- *Protect your building with a decorative flar*
- *Steel-reinforced precast concrete*
- *Attractive way to keep traffic access under control*
- *Group with benches, trash receptacles and planters to add continuity*
- *Many customization possibilities*

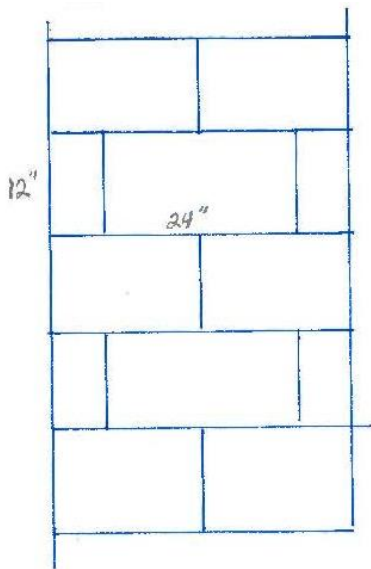
NETHERWOOD TRANSIT WALKWAY STANDARDS

The recent Transit Oriented Development Netherwood (TODN) zoning designation and accompanying zoning changes has the City looking to the future for the revitalization of the transit corridor by encouraging the development of retail, mixed use and residential housing to support existing and proposed commercial uses and to offer new housing opportunities for its residents. With that there is also the opportunity to enhance the access residents and visitors alike will have to the train station via a 10 foot wide bike path and pedestrian walkway proposed along the rear of properties adjacent to the railroad ROW. Each applicant shall submit detailed drawings for the walkway to the Land Sue Board and City Engineer for approval in order to assure continuity of the walkway. The following are standards for the development of the Netherwood Walkway. In addition, a typical section detail has been provided at the end of the guidelines.

Walkway/Paver Pattern Details

The 10 foot walkway shall be constructed of a 12" x 24" alternating joint patterned concrete, with expansion joints every 8 feet, including the use of 4" x 8" pre-cast red concrete brick pavers (not shown in image) in a running bond pattern, as a soldier course around the perimeter of the walkway, surrounding tree grates and provided perpendicular to fence post locations along the walkway. (See typical section). Paver installation shall be the same as the details provided on page 14 of the ordinance. Details for concrete are as follows:

- Finish – Medium broom finish with a 2-inch tooled edge.
- Color – Manufacturer : Scofield http://www.scofield.com/coloredconcrete_main.html
 - Type- Color Integral Concrete - Chromix Admixtures
 - Color : C31 Shadow Slate
- Scoring Pattern – 1 ft. x 2 ft. Alternating pattern. See illustration on this page.



Lighting

Bollard lighting shall be used to offer security and visibility to users of the walkway. **The Landscape Forms 6" diameter embedded style Annapolis Smart Bollard**, with solar powered lighting shall be used along the walkway. The Smart Bollard was developed in response to customer requests for a lighted bollard designed for use in areas where wiring is unfeasible or inconvenient, or where security concerns demand lighting that is off the grid. It is a reliable, economical, energy-saving solution for marking pathways, dividing pedestrian and vehicular traffic, and providing security in settings ranging from corporate and university campuses to urban streetscapes. Smart Bollard casts diffused light above the ground. Its high output white LEDs provide 360° visibility. Installation shall be according to manufactures specifications.



6" Embedded Annapolis Smart Bollard

The placement of bollards for lighting shall be located opposite of every other fence post (every 12') however due to varying site conditions the placement shall be reviewed by the City Engineer for each application in order to determine the appropriate placement of bollards based on any adjacent installation.

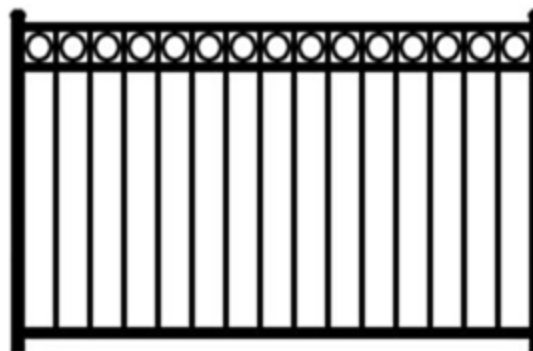
<http://www.landscapeforms.com/en-US/ProductData/Pages/annapolis-bollard.aspx>

Tree Grates

Tree grates shall be Landscape **Centrae Inc. model # LCCG1751, 4'X4' cast iron grates** specified in the as specified above. The smaller sizes tree grates are being utilized to allow for additional pedestrian and/bicycle space along the walkway. Soldier course brick shall be placed around the tree grates as per the cross section provided below.

Ornamental Fence Screen

Because of the location of the proposed walkway and bike path along the railroad ROW, it is imperative that fencing be used to separate the activity from the rail line, where no rail embankment/retaining wall is provided. This needs to be done without sacrificing the aesthetic components of the walkway. Therefore a 4 foot decorative metal fence such as the **Windsor Plus Jerith Aluminum Fence** or equal substitute shall be installed on the train side of the walkway.



<http://discountfence.com/jerith/style%20windsor%20plus.htm>

Component Sizes	Regency Strength
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Pickets: 3/4 " sq. x .050" thick	1
Rails: Top Walls: 1" x .055" thick	
Side Walls: 1 1/2 " x .082" thick	
Standard Posts: 2" sq. x .060" thick	
Gate Posts: 4" sq. x .125" thick	
Spacing Between 3 31/32"	
Pickets:	
Post Spacing: 72" on center	
Height: 48"	

Tree Selection

The Eastern Red Bud shall be planted along the walkway at intervals of every 30', following the same planting standards as noted in the above sections. The Redbud tree is a relatively small ornamental tree with spreading branches and a small short trunk. The tree is one of the earliest flowering trees and is often used to add color to gardens and streetscapes. The purple pink flowers of the eastern redbud appear all over the tree in early spring. The flowers are even produced on large trunks. Redbud has a yellow fall color and is shade tolerant. The red bud will add a distinctive design element to the walkway with its spring flowers and "different" shaped leaves.

Benches

Benches shall be **Victor Stanley model # CR-10, 6'-0"** length, with black metal frame, steel ribbon seating, center arm rest and vertical slats. Benches shall be secured to the sidewalk via anchor bolts. Benches shall be located and sized in accordance with the functional need of such.

NETHERWOOD TYPICAL SECTION

