

GUIDELINES FOR THE PLANNING AND DESIGN OF TOWN STREETSCAPE PROJECTS

Accepted Provisionally by the Town Council on November 25, 2008
Approved with Amendments by the Town Council on October 27, 2009
With Administrative Changes by staff on

November 16, 2009

As referenced in the Herndon Town Code
Sec. 1-16, Standards for public improvements adopted by reference

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GUIDELINES FOR THE PLANNING AND DESIGN OF
TOWN STREETScape PROJECTS

I.	INTRODUCTION	5
A.	Purpose of the Guidelines.....	5
B.	Objective of the Guidelines	5
C.	Types of Streetscape	6
D.	Standards	7
II.	STREETScape BEYOND THE HERNDON DOWNTOWN	11
A.	Streetscape Design Concept and Special Sidewalk Designations Outside the Downtown Area.....	11
B.	Streets Other than Designated Green Streets.....	11
C.	Green Streets	19
D.	Streetscape Elements	22
(1)	Sidewalks	22
(2)	Crosswalks.....	24
(3)	Lighting	29
(4)	Traffic Signals.....	31
(5)	Landscaping	36
(6)	Streetscape Amenities	37
(a)	Litter and Recycling Receptacles	37
(b)	Bus Stop Shelters	37
	the Swerve Bicycle Rack by American Bicycle Security Company.....	43
	(or approved equal).....	43
(7)	Location of Above-Ground Utilities and Public Signage.....	44
(8)	Burying New and Existing Utilities	44
III.	DOWNTOWN STREETScape.....	46
A.	Streetscape Design Concept and Map.....	46
B.	Downtown Commercial Streetscape.....	48
C.	Downtown Residential Streetscape.....	49
D.	Streetscape Elements	49
(1)	Pavers	49
(2)	Sidewalks	52
(3)	Crosswalks	52
(4)	Other Construction Features.....	52
(5)	Lighting	52
(6)	Landscaping, Planters and Irrigation.....	56
(a)	Street Trees	56
(b)	Other Landscaping Materials	58
(c)	Planters and Irrigation	58
(7)	Streetscape Amenities	59
(a)	Litter and Recycling Receptacles	59
(b)	Benches	60
(c)	Bus Stop Shelters	60
(d)	Tree Grates	60
(e)	Bollards	61

(f)	Drinking Fountain	61
(g)	Fencing	62
(h)	Bicycle Racks	62
(i)	Clocks	63
(8)	Signage	63
(9)	Building Planters and Window Boxes	64
(10)	Location of Above-Ground Utilities and Public Signage	64
(11)	Burying New and Existing Utilities	64
E.	Details and Specifications for the Downtown Streetscape	66
F.	Downtown Streetscape Policy from the Herndon 2030 Comprehensive Plan	112
	<i>Downtown Streetscape Land Use Policies:</i>	112
	<i>Commercial Streetscape Standards:</i>	112
	<i>Residential Streetscape Standards:</i>	112

IV. APPENDIX A: SPEED TABLES, RAISED CROSSWALKS, AND RAISED INTERSECTIONS..... 113

V. APPENDIX B: TOWN COUNCIL ACTIONS AND ADMINISTRATIVE CHANGES WITH RESPECT TO GUIDELINES FOR THE PLANNING AND DESIGN OF TOWN STREETScape PROJECTS116

(1)	November 19, 2009: Administrative Changes to Guidelines for the Planning and Design of Town Streetscape Projects	116
(2)	October 27, 2009: Resolution 09-G-122, Amending “Guidelines for the Planning and Design of Town Streetscape Projects” to allow for wiring to be placed in conduits for Streetscape Type S3, amend standards for bicycle parking racks, and update standards for downtown streetscape pavers.	116
(3)	July 14, 2009: Ordinance 09-O-23, Amending Town Code Chapter 1, General Provisions to add a reference to streetscape guidelines.	116
(4)	November 25, 2008: Resolution 08-G-125, Acceptance of “Guidelines for the Planning and Design of Town Streetscape Projects” provisionally subject to subsequent public hearing and public comment which will be part of separate consideration for adoption of a future Town Code amendment that will incorporate the guidelines into Sec. 1-16, Standards for public improvements adopted by reference.....	116

I. INTRODUCTION

A. Purpose of the Guidelines

These guidelines describe the standards, procedures and requirements for planning and design of streetscape improvement projects, both within the downtown and beyond the downtown. Streetscape may be located on private property or in the public right-of-way or both, and is maintained by the Town of Herndon when it is considered to be part of the public right-of-way.

These guidelines are intended for use by Town staff, development applicants, consultants, and contractors. Streetscape improvement projects addressed by these guidelines may be capital improvement projects designed and constructed by the Town, or private development projects designed and constructed by a development applicant. Streetscape plans follow the standard site plan review process or are part of a larger site plan or subdivision plan.

For any given site, streetscape improvements should be constructed as part of other site improvements and piecemeal or partial improvements to the streetscape are not allowed. Elsewhere, piecemeal or partial streetscape changes should be avoided whenever possible. Interim streetscape improvements are not allowed by the Town.

B. Objective of the Guidelines

Streetscape in the Town presents an image of the Town to passersby and helps give the Town identity. Over the past many decades the Town has established helpful policies that are combined in this manual formally for the first time. The streetscape lies behind the curb line, or outside the portion of the street intended for motorized vehicles. The combination of standards for sidewalks, streetlights, utilities in the public right-of-way, and landscaping on private land adjoining the public right-of-way help create a safe, pleasing and convenient experience along Town streets.

Sidewalks in Herndon serve many types of users including commuters headed for mass transit, walkers, runners, wheelchair users (motorized and non-motorized), people with baby strollers, people walking dogs, bicyclists, and skaters. The streetscape unifies the sidewalk environment with that of the street and adjoining development. The Town Council Vision Statement for 2027 specifies that

Citizens and visitors who journey in, around and through Herndon find modes of transportation that are convenient, safe and accessible. The Town's internal system of sidewalks, streets, trails,

and connections to mass transit ensure that the region and the work are always just a few steps away.

The sidewalk environment in Herndon should be celebrated as being a significant link in the Town's multimodal transportation system, and experiencing it should be safe, convenient, helpful, and pleasant. In consideration of their multiple users, the sidewalks within the streetscape must have a rational scheme of connectivity and convenience. Coordination with the pedestrian circulation system (public or private) outside of the streetscape is important to the success of the town wide sidewalk system. Under Section 78-501.3 of the Zoning Ordinance, standards for pedestrian movement include:

- Pedestrian access is designed so as to provide safe and convenient pedestrian ways to, from and within a proposed development. Pedestrian ways within a development are provided to connect the buildings within the development.
- Sidewalks are provided on both sides of every street (including private streets), except in cases where environmental or topographic features make such provision impractical.
- Connections to existing or planned sidewalks are made at the property boundaries by incorporating and continuing all sidewalks stubbed to or shown as stubbed to the boundary of the development by previously approved plans. In addition, future sidewalk connections to adjacent developable parcels are located at planned or current street connections along each side of the development's boundary.
- Developed recreation space and open space intended for pedestrian use, and schools, religious institutions, and other pedestrian-oriented uses, are connected by pedestrian ways to residential and office uses, with a minimum of street crossings. Where possible, office and residential uses are to be connected by an integrated pedestrian way system.
- Pedestrian crossing(s) at the perimeter of the development are marked and controlled. Where pedestrians are exposed to substantial vehicular traffic, barriers may be warranted to prevent crossing at other than designated points.
- Pedestrian passages over and under vehicular routes are used wherever possible.
- Bicycle paths, trails or lanes are coordinated with the on-site traffic circulation and pedestrian system, to the maximum extent feasible. Where feasible, bicycle crossings and pedestrian crossings are combined.

C. Types of Streetscape

There are different types of streetscape standards in the Town, and each may have variations depending on field conditions. This manual provides standards for the following streetscape types:

Downtown Herndon

- Residential
- Commercial

Beyond the Downtown

- Streets that are designated as “Green Streets” in the comprehensive plan
- Along public streets other than designated “Green Streets” (residential, commercial)

D. Standards

Standards for streetscape outside of the downtown come from many sources including: the Town comprehensive plan, the Town Zoning Ordinance, the Town public facilities manual, some VDOT standards, some standards of the American Association of State Highway and Transportation Officials (AASHTO,) the Americans with Disabilities Act Accessibility design guidelines, and the Virginia Uniform Statewide Building Code.

Flexibility in the use of these guidelines is modeled on VDOT’s policy called “Context Sensitive Design” (CSS.)¹ CSS is a project development approach that promotes:

- Involving relevant stakeholders in the development of transportation improvements;
- Reflecting concerns for scenic, aesthetic, historic, and environmental resources; and
- Providing for transportation safety and mobility.

The 2027 Vision for the Town of Herndon states: “Thoughtful physical development, including the Town’s gateways, public open spaces, buildings and public and private infrastructure, provides both pedestrians and motorists with ample opportunity to experience Herndon’s history and ambiance.” This vision by the Town Council, for a small town within an urbanizing metropolitan area, qualifies the Town for Context Sensitive Design considerations.

CSS policy emphasizes the importance of recognizing the flexibility within established standards², especially AASHTO’s Policy on Geometric Design of Highways and Streets (Green Book.) As stated in the book’s forward, the intent of policy in the Green Book is to provide guidance to the designer by

¹ Instructional and Information Memorandum IIM-LD-235. Virginia Department of Transportation, Richmond, VA. August 23, 2006.

² The Virginia Department of Transportation maintains its Geometric Design Standards in Appendix A of the Road Design Manual, located on the VDOT web site at: <http://www.virginiadot.org/business/locdes/rdmanual-index.asp>. VDOT’s Geometric Design Standards were developed using AASHTO’s A Policy on Geometric Design of Highways and Streets (Green Book), AASHTO’s Geometric Design of Very Low-Volume Local Roads (ADT <400), and AASHTO’s A Policy on Design Standards Interstate System 2005 and 2002 Roadside Design Guide.

referencing a recommended range of values for critical dimensions. Sufficient flexibility is permitted to encourage independent designs tailored to particular situations. In Herndon, for purposes of this manual, individual project development decisions on specific applications of flexibility ultimately rest with the professional staff in responsible charge, working with the community and Town officials. These decisions are made after carefully processing input from all project stakeholders as well as the project team, and evaluating this input with respect to project goals as well as safety and mobility concerns.

- Town Wide Clear Zone

A “clear zone” is an important safety feature within the streetscape. VDOT’s 2005 Road Design Manual, Appendix B, Subdivision Street Design Guide, explains that a “clear zone” is a setback for non-breakaway fixed objects. Town wide, the clear zone on streets without parking lanes is three feet. The clear zone must remain clear of all obstacles that are not designed to break away under impact. Breakaway structures are defined as a single 4"x4" square or 4" diameter wooden post or a standard strength, metal pipe post no greater than a 2" diameter. When curbing is used, the clear zone is measured from the face of the curb, except where a bike lane or parking lane exists between the curb and the traveled way. In such a case, clear zone may be measured from the edge of the traveled way. For shoulder and ditch sections, the clear zone is measured from the edge of pavement.

- Bicycles and the Streetscape

In Herndon, bicyclists are allowed to share the sidewalk with pedestrians.³ Experienced bicyclists, as a rule, tend to favor travel ways other than sidewalks and are entitled to share vehicle lanes with motorized traffic. Although the use of sidewalks by children and novice or occasional adult bicyclists is accepted, the Guidelines for the Planning and Design of Town Streetscape Projects do not encourage dedicated bicycle lanes in the streetscape itself. Bicycle facilities outside of the streetscape and inside the curb line, such as in bicycle lanes or “wide outside lanes” (vehicle lanes that are extra wide to accommodate bicycles) are a better choice.

³ Where the use of sidewalks by bicyclists is not prohibited by local law, the Code of Virginia § 46.2-904 states that “A person riding a bicycle, electric personal assistive mobility device, or an electric power-assisted bicycle on a sidewalk, shared-use path, or across a roadway on a crosswalk, shall yield the right-of-way to any pedestrian and shall give an audible signal before overtaking and passing any pedestrian. . . .” Also, “. . . a person riding a bicycle, electric personal assistive mobility device, or an electric power-assisted bicycle on a sidewalk, shared-use path, or across a roadway on a crosswalk, shall have all the rights and duties of a pedestrian under the same circumstances.”

1999 AASHTO Guide for the Development of Bicycle Facilities (p. 58) states that “. . . Utilizing or providing a sidewalk as a shared use path is unsatisfactory for a variety of reasons. Sidewalks are typically designed for pedestrian speeds and maneuverability and are not safe for higher speed bicycle use. Conflicts are common between pedestrians traveling at low speeds (exiting stores, parked cars, etc.) and bicyclists, as are conflicts with fixed objects (e.g., parking meters, utility poles, sign posts, bus benches, trees, fire hydrants, mail boxes, etc.).” The Guide also states that “. . . where bicyclists are incidental or infrequent users, the sidewalk can serve as an alternate facility. . .”

These guidelines have two streetscape standards that acknowledge the shared use of the sidewalk by both pedestrians and bicyclists. See Part II, Streetscape Beyond the Herndon Downtown, and refer to Streetscape Type G1 (accommodates the “internodal trail” classification) and Streetscape Type G2 (accommodates the “regional trail” classification.)

SEQUENCE OF APPROVALS FOR STREETSCAPE IMPROVEMENTS
Town of Herndon, Virginia

①

Land Use Review of Development
Application

Features evaluated by the staff, the
Planning Commission, and Town Council
(where applicable), based on requirements
in the Zoning Ordinance:



*Focused on land use and site development
(zoning map amendments, special
exceptions, site plans, single lot
development plans, building location
surveys, subdivisions)*



Streetscape Requirements
Setbacks
Building height
Building coverage on individual lot
Side yard
Rear yard
Minimum lot area
Width of lot at setback line
Density
Area paved for parking
Maximum impervious surface
Landscaping
Parking
Drainage
Utilities
other

②

Streetscape Review (as part of
associated development application)

Streetscape features evaluated, based on
criteria in the comprehensive plan, Zoning
Ordinance, and Guidelines for the Planning
and Design of Town Streetscape Projects



*Focused on proposed alterations to the
public right-of-way, pedestrian safety, and
landscape improvements (when required)*



Sidewalk
Landscaping
Street Lights
Safety and Directional Signage
Utility Relocation
Traffic Signalization
Pedestrian Signalization

③

Coordination With Utility Companies

Approval of alterations by appropriate
utilities for electricity, water, storm sewer,
sanitary sewer, natural gas, fiber optic
cable, telephone

II. STREETScape BEYOND THE HERNDON DOWNTOWN

A. Streetscape Design Concept and Special Sidewalk Designations Outside the Downtown Area

Outside of downtown Herndon, there are two principal types of streetscape. One standard is for streets that are designated as "Green Streets" in the comprehensive plan and Zoning Ordinance (Section 78-505.) The other standard is for streets that are not designated as "Green Streets." Within these two types, there are variations depending on whether a street is designated as an Internodal trail, a regional trail, and whether or not landscape options allowed by the Zoning Ordinance are employed by a land owner. See Table 1, Special Sidewalk Designations Outside the Downtown Area.

For purposes of this manual, the streetscape consists of both public and private land, and extends from the back of the curb through the area of landscaping required on private property along public rights-of-way. The streetscape includes the sidewalk, a utility strip planted with grass between the sidewalk and the street curb, street lights, and landscaping as required on private property along public rights-of-way.

B. Streets Other than Designated Green Streets

For streets that are not Green Streets, the streetscape can be as narrow as ten feet or as wide as 20 feet, depending on choices made by the landowner and Town requirements. These streets include any subdivision street and many other streets within the Town. See accompanying diagrams for Streetscape Types S1, S2, S3, and S4.

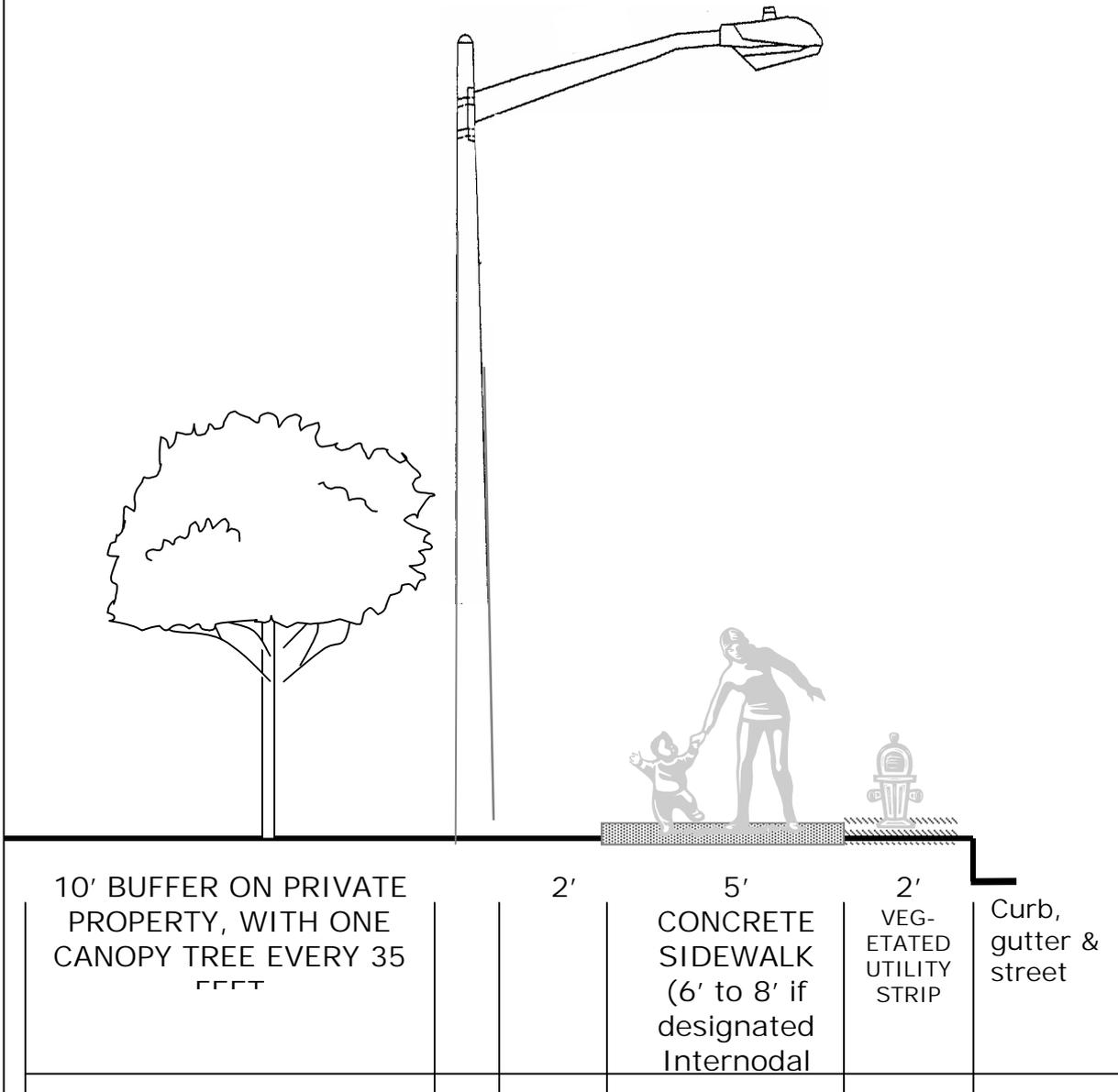
On Streetscape Type S3, wiring for streetlights must be installed in a conduit as shown in the diagram for Streetscape Type S3 Detail A. The Town encourages developers to install other wired utilities in a conduit or duct bank outside of the public right-of-way as shown in Streetscape Type S3 Detail B.

Table 1. Special Sidewalk Designations outside the Downtown Area
 (Streets not listed on this table are anticipated to have sidewalks of five feet in width on each side of the street)

Street	Affected Side of Street	From	To	Also Serving as Regional Trail (minimum 8 feet in width)	Also Serving as Internodal Trail (6 to 8 feet in width)	Also Serving as "Green Street"	Street-scape Type
Crestview Dr.		northern town limits	Sterling Road		✓		S2
Elden Street (east)		Van Buren street	eastern town limits		✓	✓	G1
Elden Street (south)		southern town limits	Sterling Road		✓	✓	G1
Dranesville Road		Park Avenue	northern town limits		✓	✓	G1
Dranesville Road		Madison Street	Park Avenue		✓		S2
Herndon Parkway		Van Buren Street (south)	W&OD Trail (east)		✓	✓	G1
Herndon Parkway		W&OD Trail (east)	Van Buren street (south)		✓	✓	G1
Spring Street		eastern town boundary	Van Buren Street			✓	G1
Sterling Road		Elden Street	Crestview Drive		✓	✓	G1
Sterling Road		Crestview Drive	Herndon Parkway		✓	✓	G1
Sterling Road		western Town Boundary	Herndon Parkway			✓	G1
Third Street		Cavalier Drive	Spring Branch Trail				S2
Van Buren Street	East	Aspen Drive	Spring Street	✓			S4
Van Buren Street		Spring Street	W&OD Trail	✓		✓	G2
Van Buren Street		W&OD Trail	Elden Street			✓	G1
Van Buren Street	East	southern town limits	Aspen Drive	✓			S4

Streetscape Type S1 - commercial [see Zoning Ordinance Section 78-503.4(b)]

Not to scale



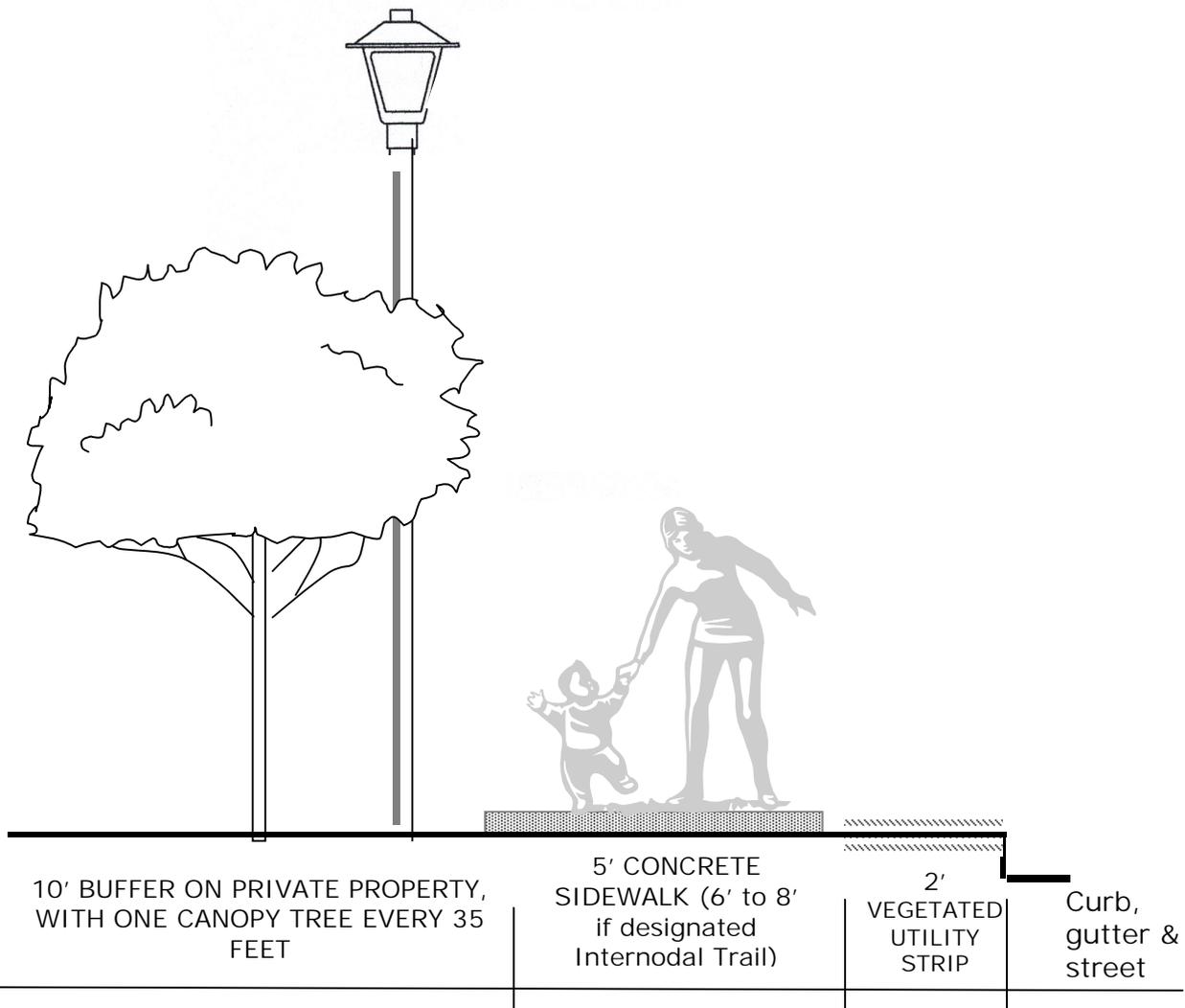
TYPICAL STREETScape BEYOND THE DOWNTOWN: 17-20 FEET IN WIDTH
(Light pole may be in easement)

Applies on streets other than designated Green Streets

Streetscape Type S2 - residential [see Zoning

Ordinance Section 78-503.4(b)]

Not to scale



10' BUFFER ON PRIVATE PROPERTY,
WITH ONE CANOPY TREE EVERY 35
FEET

5' CONCRETE
SIDEWALK (6' to 8'
if designated
Internodal Trail)

2'
VEGETATED
UTILITY
STRIP

Curb,
gutter &
street

EXISTING DEVELOPMENT

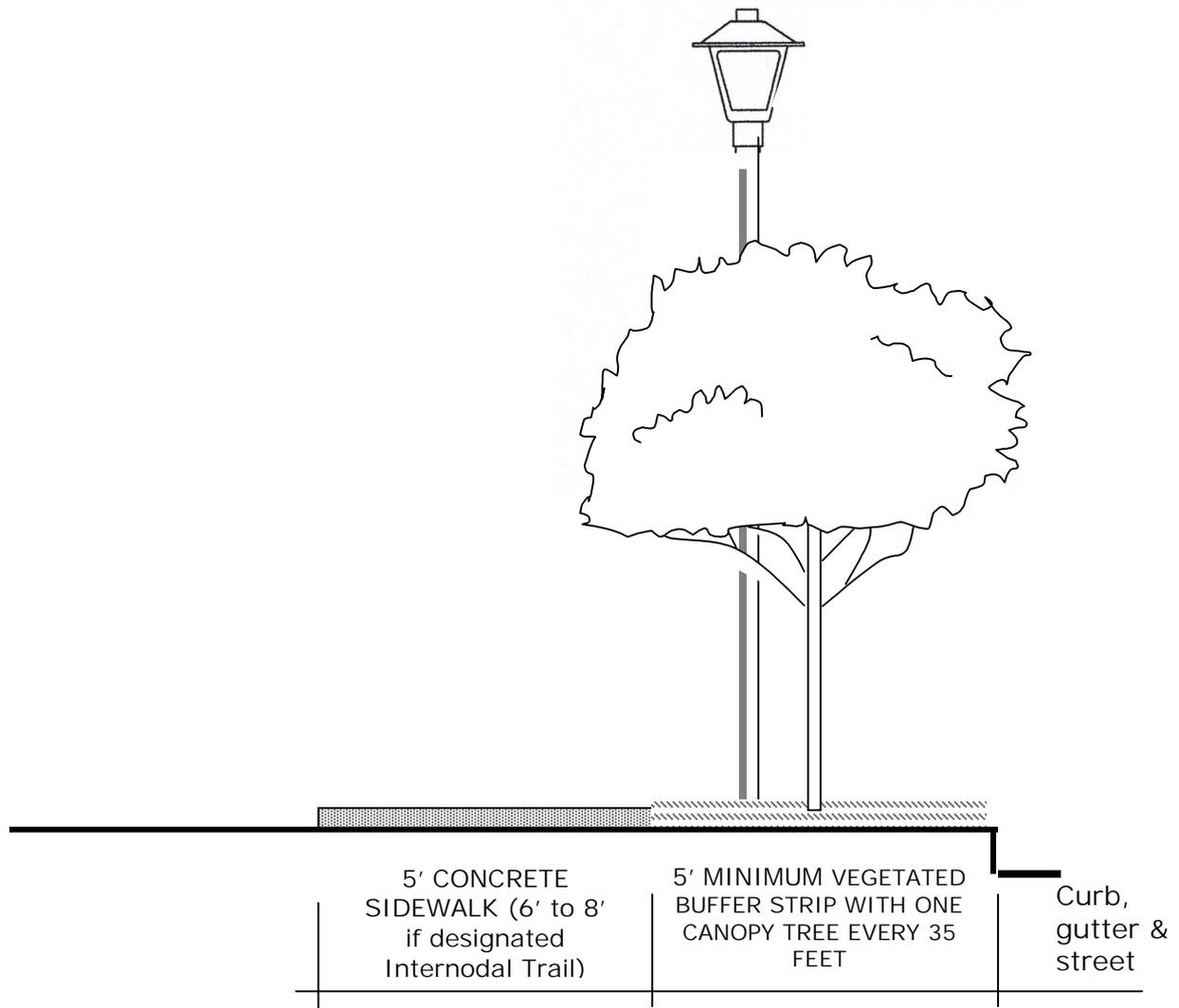
TYPICAL STREETScape BEYOND THE DOWNTOWN: 17-20 FEET IN WIDTH
(Light pole may be in easement)

Applies on streets other than designated Green Streets

Streetscape Type S3 – residential

Not to scale

[see Zoning Ordinance Section 78-503.4(b)]

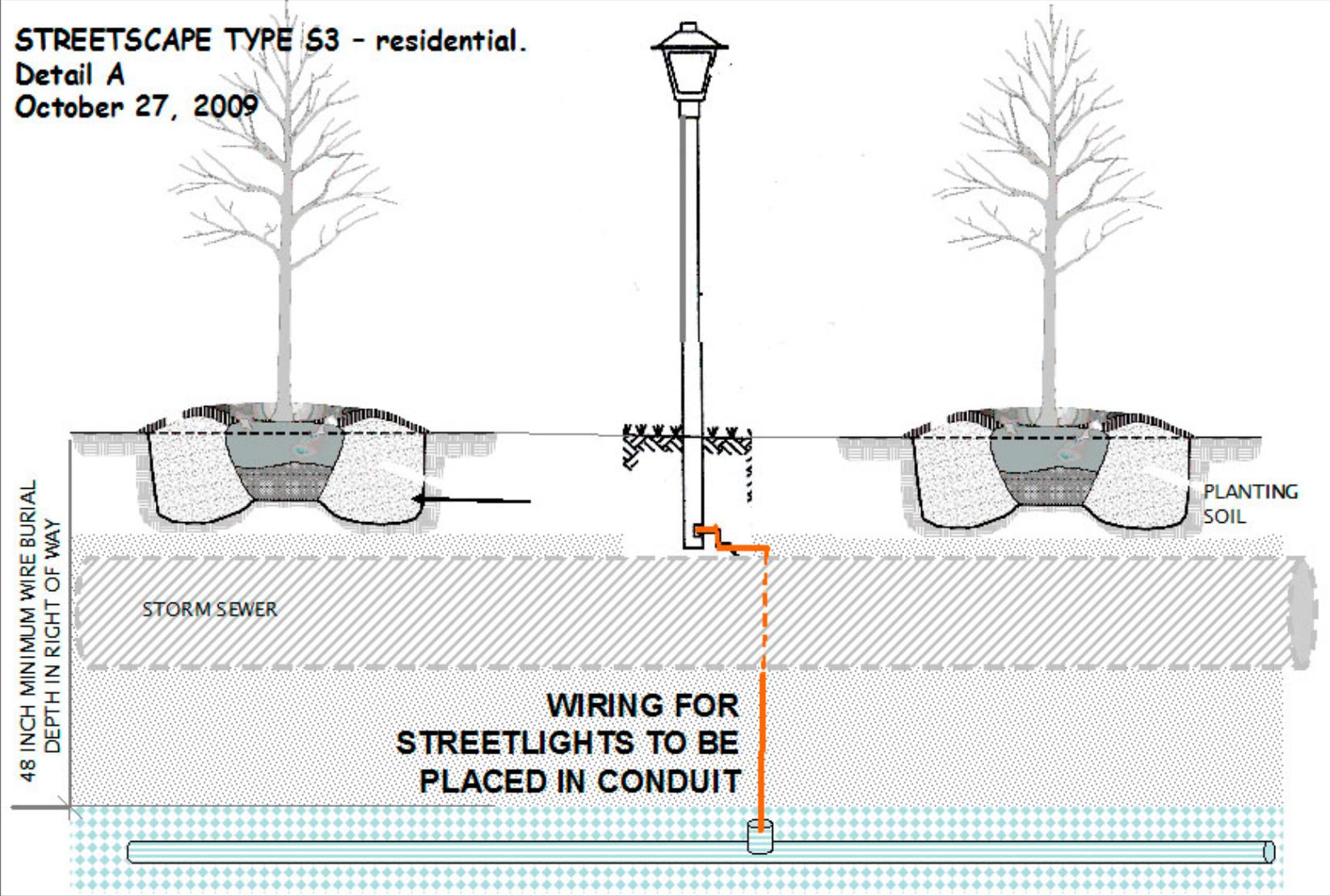


NEW SUBDIVISION DEVELOPMENT

STREETSCAPE BEYOND THE DOWNTOWN: 10-13 FEET IN WIDTH (portion of sidewalk may be in easement)

Applies on streets other than designated Green Streets

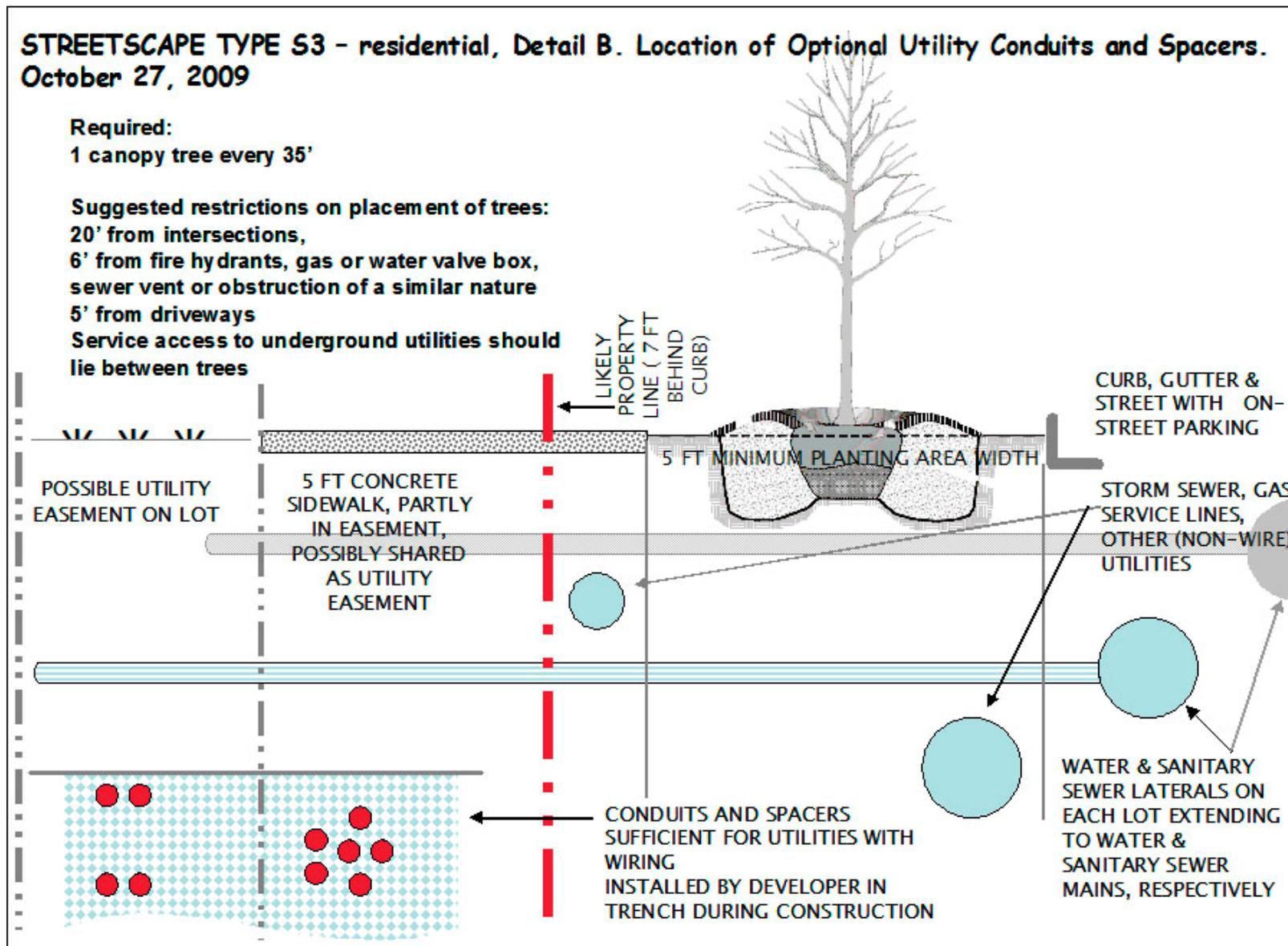
STREETSCAPE TYPE S3 - residential.
Detail A
October 27, 2009



STREETSCAPE TYPE S3 - residential, Detail B. Location of Optional Utility Conduits and Spacers.
October 27, 2009

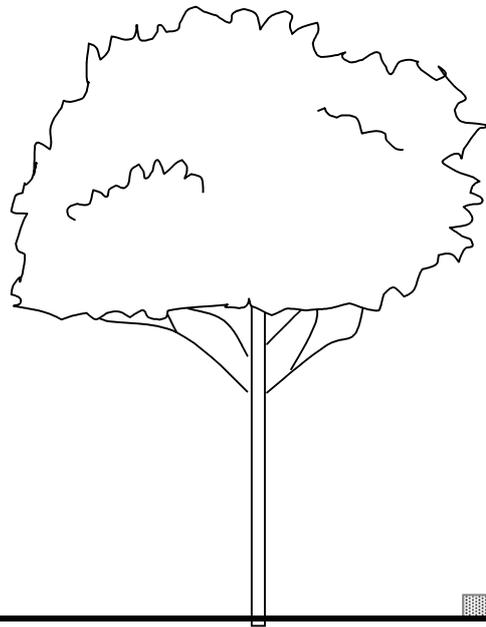
Required:
1 canopy tree every 35'

Suggested restrictions on placement of trees:
20' from intersections,
6' from fire hydrants, gas or water valve box,
sewer vent or obstruction of a similar nature
5' from driveways
Service access to underground utilities should
lie between trees

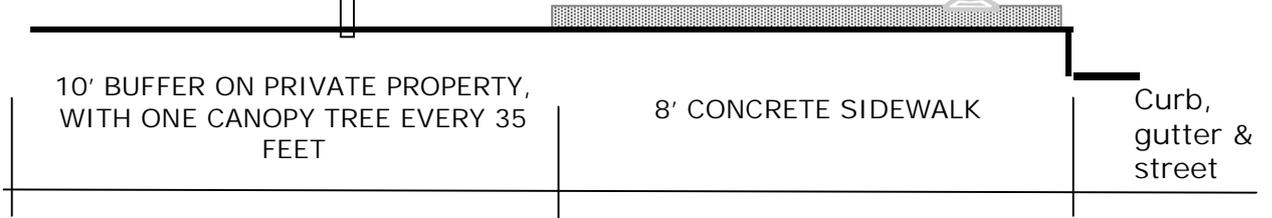


Streetscape Type S4 - residential or commercial [see Zoning Ordinance Section 78-503.4(b)]

Not to scale



Use street lights as appropriate for a residential or commercial area as shown in diagrams for Streetscape Type S1 and S2



STREETSCAPE ALONG ONE SIDE OF STREETS DESIGNATED AS REGIONAL TRAILS:
18 FEET IN WIDTH

Applies on streets other than designated Green Streets

C. Green Streets

Green Streets were first designated by the Town in 1990 for six major routes to be landscaped corridors featuring coherent, enhanced landscape design. The routes targeted were considered important for reasons of intensity of use and distinction as vehicular entrances to the Town.

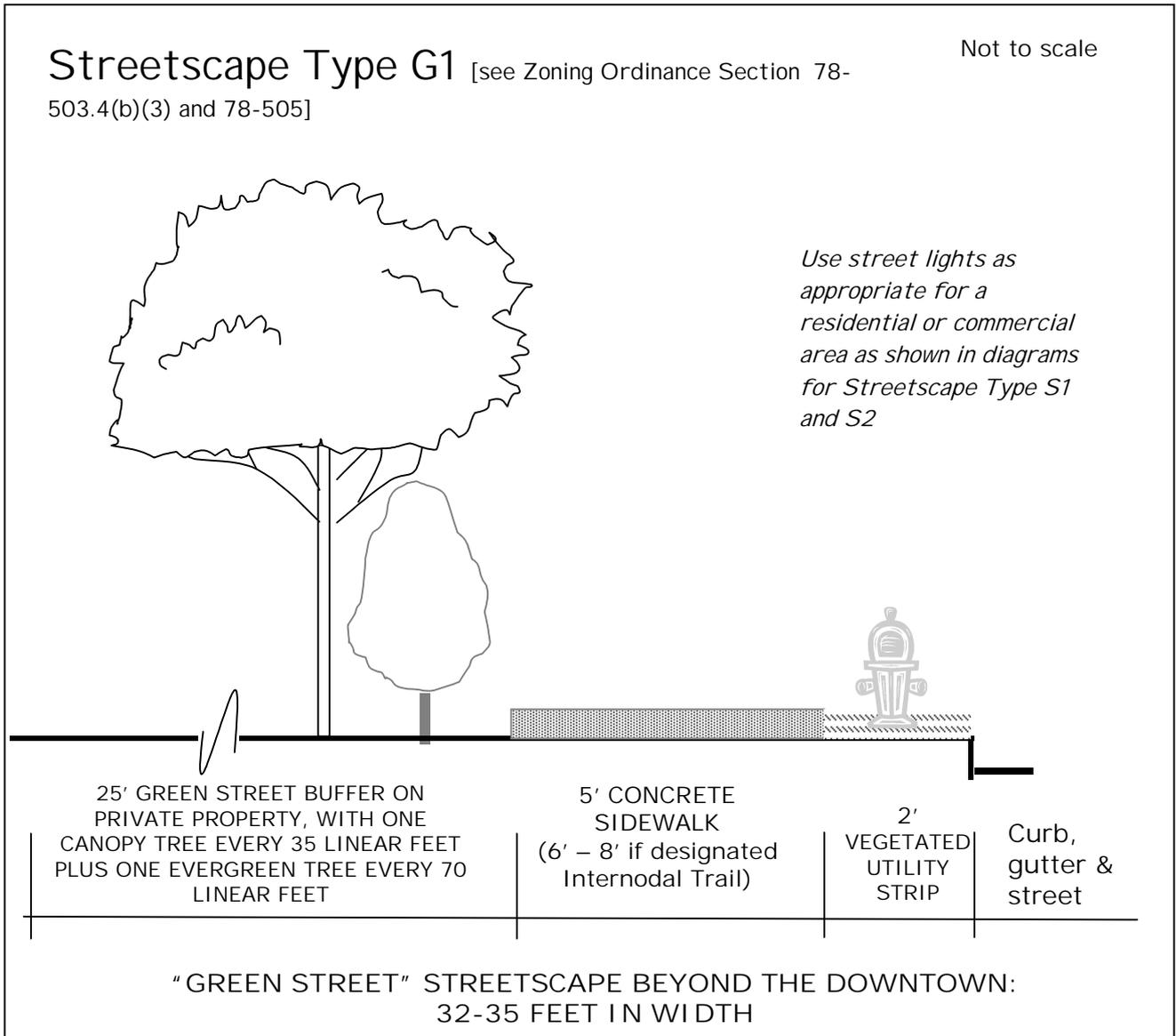
The width of a Green Street streetscape is 32 feet to 35 feet, depending on whether the street is designated as having a typical sidewalk of five feet in width, an internodal trail with a sidewalk of six to eight feet, or a regional trail with a sidewalk of eight feet. In any case, land within 25 feet behind the sidewalk must be landscaped with one canopy tree every 35 linear feet and one evergreen tree every 70 linear feet. Trees and shrubs may be clustered, but a continuous screen of evergreen shrubs is required if parking and vehicle drive-aisles are visible from the right-of-way (Zoning Ordinance Section 78-503.4(B)(3).) See accompanying diagrams for Streetscape Types G1 and G2.

As stated in the Zoning Ordinance (Section 78-505), standards are provided for certain streets to enhance the townscape, provide areas to augment the sense of an urban forest, calm traffic, promote the safe and orderly operation of vehicles in public rights-of-way, and coordinate the interface of public rights-of-way with private development. The standards apply in every zoning district to development that borders the following street segments as identified in the comprehensive plan as "Green Streets:"

- (1) Elden Street;
- (2) Herndon Parkway;
- (3) Washington and Old Dominion Railroad Regional Trail;
- (4) Spring Street from the eastern town boundary to Van Buren Street;
- (5) Van Buren Street from Spring Street to Elden Street;
- (6) Dranesville Road from the northern town boundary to Park Avenue; and
- (7) Sterling Road.

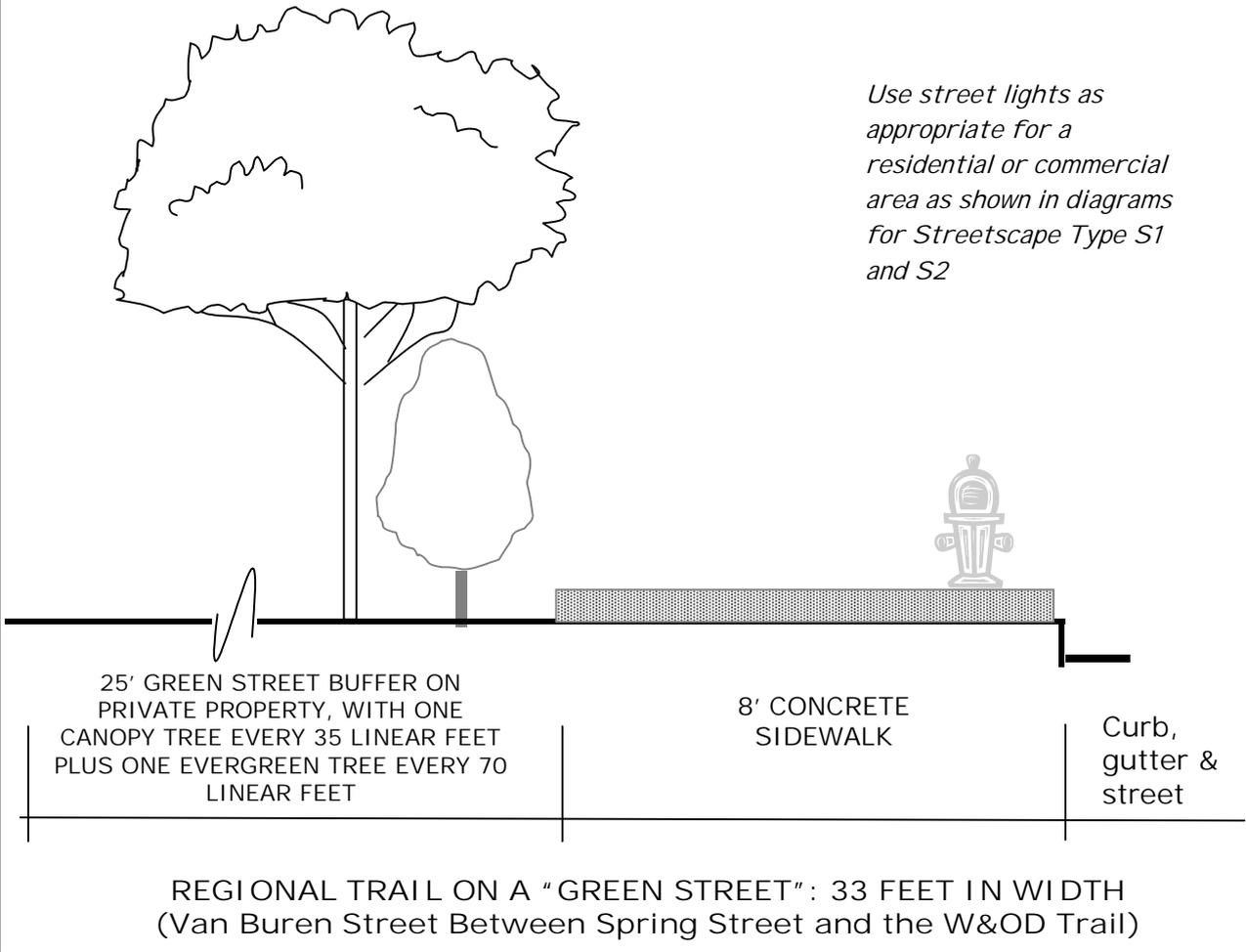
For development within 25 feet of any "Green Street" other than single family detached dwellings, design requirements are:

- No structure, automobile parking area or other impervious area is located except sidewalks, driveways for ingress and egress, and signs.
- No stormwater management pond is located unless the pond meets the standards for inclusion as "open space" as described in the Zoning Ordinance.
- The area shall be landscaped in accordance with the Zoning Ordinance.



Streetscape Type G2 [see Zoning Ordinance Section 78-503.4(b)(3) and 78-505]

Not to scale



D. Streetscape Elements

(1) Sidewalks

Sidewalks are required by Section 70-202(c) of the Subdivision Ordinance and Section 78-501.3(2)(b) of the Zoning Ordinance and shall be provided on both sides of every street, including private streets.

In accordance with Section 1-16 (a)(2)a. of the Herndon Public Facilities Manual, sidewalks are required on both sides of new public streets, regardless of street width, projected traffic volumes, or type of subdivision.

Sidewalks shall be designed and constructed in accordance with the standards of VDOT, the Americans with Disabilities Act Accessibility guidelines and the Virginia Uniform Statewide Building Code. Samples of those standards are that curb cut ramps:

- o are required so as to provide access to and from sidewalks, at each direction of crossing, at intersections;
- o shall have a detectable warning surface with truncated domes;
- o shall have a minimum clear width of 36 inches; and
- o shall have a maximum slope in new construction of 1:12.

On sidewalks using brick pavers, the detectable warning surface shall be "light gray," Federal No. 26280 or similar (see the Federal Standard 595 Color Server at www.colorserver.net.) On sidewalks using conventional concrete, the detectable warning surface shall be "colonial red," Federal No. 20109 or similar.

Sidewalks shall be a minimum of five feet in width, except as noted elsewhere in these guidelines for sidewalks with special designations. The passage along or within a sidewalk shall be clear of obstructions underfoot, overhead, or in between.

The Zoning Administrator may approve sidewalks of less than five feet in width, but not less than three feet in width, where environmental or topographic features make a continuous sidewalk of five feet in width impractical. New sidewalks less than five feet wide must provide a pedestrian passing area, minimum 60"x 60" at reasonable intervals

not to exceed 200 feet. These passing areas can be provided at entrances or street intersections.⁴

The Zoning Administrator may approve a sidewalk on only one side of new streets where environmental or topographic features make provision of a sidewalk on both sides of the street impractical.

Sidewalks shall be located to allow for a vegetated utility strip of a minimum of two feet in width between the sidewalk and the street curb, shoulder, or edge of pavement as applicable.

Sidewalk under-drains are required when warranted. When the street section has been rough graded and CBR tests are made for street pavement design, sieve and PI analysis will be included with the CBR tests. If these tests indicate that under drains are required, additional classification tests will be made of the sidewalk sub grade to determine if sidewalk under drains are required. These tests will be made at all changes of sub grade materials and not more than 500' apart. Based on these tests, plan revisions showing under drains will then be prepared by the design consultant and submitted to the Director of Public Works for review and approval. This revision will include a section of UD-3 under drain.

If the sidewalk is to be maintained by the Town of Herndon or a homeowners association, a minimum of 4" of VDOT21-A, or equivalent stone, shall be placed and compacted on a stable sub grade prior to pouring the concrete.

Sidewalks shall not be less than 4 inches thick, except when used in conjunction with roll top curb, in which case the thickness shall be 7 inches.

Sidewalks are normally at least two feet behind the back of curb on curb and gutter sections and, if trees are to be planted between the curb and the sidewalk, the sidewalk shall be not less than five feet behind the back of curb with the trees planted so that the center of the tree trunk is not less than two feet behind the curb.

⁴ The Americans with Disabilities Act (ADA) became effective January 26, 1992. Additional regulations to be adopted by the Access Board include specific provisions for compliance within "Public Rights-of-Way". These additional regulations are the "Final Report of the Public Rights-of-Way Access Advisory Committee" dated January 2001, the "Draft Guidelines for Accessible Public Rights-of-Way" dated June 17, 2002 and the "Revised Draft Guidelines for Accessible Public Rights-of-Way" dated November 23, 2005 as per the U.S. DOT FHWA Memorandum dated January 23, 2006. The Access Board and the Federal Highway Administration are in agreement with VDOT's policy to adhere to these revised draft guidelines. VDOT is also guided by the Americans with Disabilities Act (ADA) and Architectural Barriers Act (ABA) Accessibility Guidelines for Buildings and Facilities dated July 23, 2004 and amended August 5, 2005.

Sidewalks along ditch section streets:

- o shall be constructed in accordance with VDOT specifications for asphalt concrete sidewalk, on a compacted sub grade, and include under-drains in accordance with the VDOT's Standard UD-3.
- o shall be placed behind the ditch in a manner that will be compatible with the roadway if the roadway is converted to a curb and gutter section. (Note: Placement of sidewalk within the shoulder area is not permitted.)

(2) Crosswalks

Marked crosswalks should be provided at all controlled intersections and all controlled intersections should accommodate a pedestrian access route connecting to other pedestrian areas, elements and facilities. The Town is engaged in an effort to add pedestrian signals whenever possible to intersections that are otherwise controlled by a traffic signal.

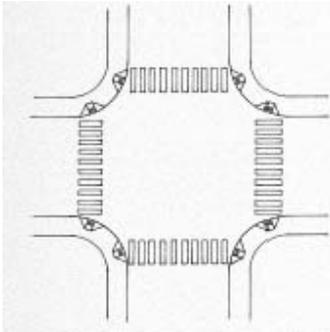
Marked crosswalks are not always appropriate or encouraged at uncontrolled intersections. For uncontrolled intersections, the Virginia Department of Transportation offers guidelines for the placement of marked crosswalks (see accompanying "Flowchart for Justifying Installation of Marked Crosswalks at Uncontrolled Intersections" and "Recommendations for Considering Marked Crosswalks and Other Needed Pedestrian Improvements at Uncontrolled Locations.")

Crosswalks should be provided across commercial entrances with any new development or any site plan revisions for existing development. The crosswalk design across commercial entrances consists of an imprinting system as provided by the Imprint® decorative surfacing system and bordered by a one-foot wide white stripe on each side of the imprinted treatment. Unlike imprinted asphalts and concrete, Imprint® is laid on an existing surface at one-half to one inch thick and is colored throughout its depth so the color does not wear off. For consistency with the downtown crosswalk pattern, a 90-degree herringbone pattern should be used along with a burnt red color complementary to downtown pavers. All crosswalks must have ramps for persons with a mobility impairment. The width of the crosswalk across a commercial entrance should be consistent with the sidewalk on either side of the commercial entrance, or if no sidewalk yet exists, the crosswalk width should match the category of sidewalk planned. Within the commercial development, matching crosswalks should be

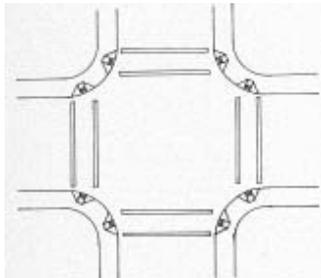
provided to facilitate pedestrian movement around and through the site.

According to the Federal Highway Administration, in Designing Sidewalks and Trails for Access, Part II of II: Best Practices Design Guide, marked crosswalks (other than at commercial entrances and on private property) should be designed in accordance with the Manual of Uniform Traffic Control Devices (MUTCD). Although the MUTCD provides options for crosswalk markings, the ladder design is recommended because research indicates that it is the most visible to drivers. The ladder design is created with white longitudinal lines at a 90 degree angle to the line of the crosswalk. The lines should be approximately 305 mm to 610 mm (12 in to 24 in) wide and spaced 305 mm to 610 mm (12 in to 24 in) apart (USDOT, 1988). Use of the ladder design for crosswalk markings also improves crosswalk detection for people with low vision and cognitive impairments. It is recommended that the continental design be used consistently to mark all crosswalks; otherwise the impact of less visible markings may be weakened by comparison.

GOOD DESIGN: Continental markings should be used at all pedestrian crossings because research has determined that they are most visible to motorists.



ACCEPTABLE DESIGN: Although crosswalks with parallel markings are permitted by the MUTCD, they are less visible to motorists than crosswalks with ladder striping.



S
W

From Designing Sidewalks and Trails for Access, Part II of II: Best Practices Design Guide, Federal Highway Administration

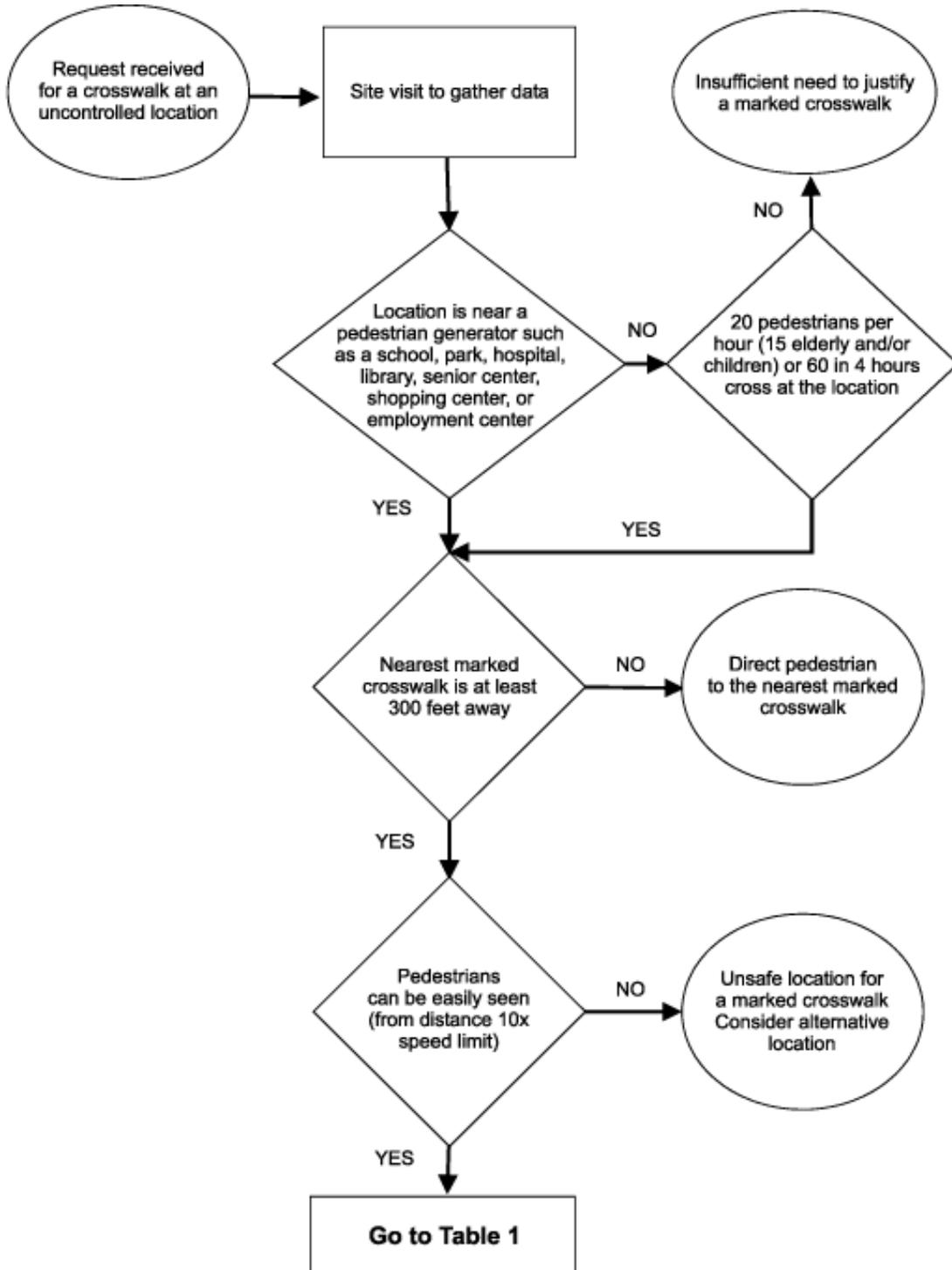
Crosswalks should be painted to be perpendicular to the flow of traffic. This allows a shorter distance for pedestrians to cross the street and better visibility for both pedestrians and vehicle drivers to be aware of each other. The curb ramp should be aligned with the crosswalk so there is a straight path of travel from the top of the ramp to the center of the roadway to the curb ramp on the other side.

Crosswalks may be a different surface treatment than the adjoining street pavement when used as part of a traffic calming approach. Standards for crosswalks in traffic calming settings are provided in the Town of Herndon Public Facilities Manual (Fairfax County PFM 7-1200.) Those standards indicate that

- The maximum elevation for a raised crosswalk is three inches [a detectable warning surface is required at each end of a raised crosswalk];
- Raised crosswalks should be located mid-block with the edge of the ramp at least 20 feet from the nearest intersection.
- Raised crosswalks shall not be placed over utility access points such as manholes, watergates, junction chambers, etc.
- The Town must approve material and placement for raised crosswalks.

For more information about speed tables, raised crosswalks, and raised intersections, see Appendix A which contains more standards From Designing Sidewalks and Trails for Access, Part II of II: Best Practices Design Guide by the Federal Highway Administration

Flowchart for Justifying Installation of Marked crosswalks at Uncontrolled Intersections



from Guidelines for the Installation of Marked Crosswalks. Richmond, VA: Traffic Engineering Division, Virginia Department of Transportation.

Recommendations for Considering Marked Crosswalks and Other Needed Pedestrian Improvements at Uncontrolled Locations

	≤ 9,000 ADT			> 9,000 ADT to ≤ 12,000 ADT			> 12,000 ADT to ≤ 15,000 ADT			> 15,000 ADT		
	≤30 mph	35 mph	≥40 mph	≤30 mph	35 mph	≥40 mph	≤30 mph	35 mph	≥40 mph	≤30 mph	35 mph	≥40 mph ^b
2 lanes												
3 lanes												
++4 lanes, raised median ^c												
++4 lanes, no median												

- Candidate sites for marked crosswalks.** Marked crosswalks must be installed carefully and selectively. First, an engineering study is needed to determine whether the location is suitable for a marked crosswalk. For an engineering study, a site review may be sufficient at some locations, but a more in-depth study of pedestrian volume, vehicle speed, sight distance, vehicle mix, etc., may be needed at other sites. If the speed limit is less than or equal to 30 mph, use **Level 1** or **Level 2** devices. If the speed limit exceeds 30 mph, use **Level 2** devices. Refer to **Level 1** and **Level 2** devices in the *Special Treatments* section.
- Probable candidate sites for marked crosswalks.** Pedestrian crash risk may increase if marked crosswalks are added without other pedestrian facility enhancements. Add **Level 3** or **Level 4** devices if feasible. Refer to **Level 3** and **Level 4** devices in the *Special Treatments* section.
- Marked crosswalks alone are insufficient, since pedestrian crash risk may increase if only marked crosswalks are provided.** Consider using **Level 5** devices if feasible. If not feasible, use multiple treatments from **Level 2**, **Level 3**, or **Level 4** devices. Refer to **Level 5** devices in the *Special Treatments* section.

^aThese guidelines include intersection and mid-block locations with no traffic signal or stop sign on the approach to the crossing. They do not apply to school crossings. A two-way center turn lane is not considered a median. Crosswalks should not be installed at locations that could present an increased safety risk to pedestrians, such as where there is poor site distance, complex or confusing designs, substantial volumes of heavy trucks, or other dangers, without first providing adequate design features and/or traffic control devices. Adding crosswalks alone will not make a crossing safer or necessarily result in more drivers stopping for pedestrians. Whenever marked crosswalks are installed, it is important to consider other pedestrian facility enhancements, as needed, to improve the safety of the crossing (for example, raised median, traffic signal, roadway narrowing, enhanced overhead lighting, traffic calming measures, curb extensions). **These are general recommendations; an engineering study should be performed to determine where to install marked crosswalks.**

^bWhere the posted speed limit or 85th percentile speed exceeds 40 mph, marked crosswalks alone should not be used at uncontrolled intersections with an ADT greater than 15,000.

^cThe raised median or refuge island must be at least 4 feet (1.2 meters) wide and 6 feet (1.8 meters) long to adequately serve as a refuge area for pedestrians.

from Guidelines for the Installation of Marked Crosswalks. Richmond, VA: Traffic Engineering Division, Virginia Department of Transportation.

(3) Lighting

Roadway lighting is an integral part of the streetscape. Standards for roadway lighting are provided in the Town of Herndon Public Facilities Manual (Fairfax County Public Facilities Manual, Section 7-1000.)

There are two standard lighting fixture styles and poles available for use in Herndon outside of the downtown area. The PFM provides detailed criteria for the use of each style and illumination standards. In general, the cobrahead (RF-1 and RF-2) is used on major roadways and non-residential areas. On streets in residential areas, the preferred luminaire is the Colonial (RF-3). See accompanying diagrams from the PFM.

The recent improvements on South Elden Street included use of a fluted style light pole. The Town should pursue necessary approvals to enable the use of that light pole along the entire length of Elden Street.

According to the Town's PFM, on curb sections, poles with cobrahead fixtures shall be placed behind the curb and preferably behind the sidewalk. Poles with colonial fixtures may be placed between the sidewalk and the curb. All lighting proposed within the rights of way must be designed in accordance with the AASHTO guide for Roadway Lighting and shall meet the current Illuminating Engineering Society of North America (IESNA) Standards.

A number of considerations should be included in planning any site-specific or town-wide street lighting system:

- Illuminate "ways" and "places". "Ways" imply movement and lighting that provides "guide-on" illumination. "Places" are points of special illumination as designated usually by increased intensity and/or expressive lighting patterns.
- Mark the points of decision. Intersections, crossings, bus stops, steps, arrival points and other special features should be illuminated in a manner that signals their presence, shape, and nature.
- Differentiate between roadway (vehicular) and walkway (pedestrian) lighting.
- Provide adequate lighting at pedestrian crossings.
- Eliminate all sources of glare.

FAIRFAX COUNTY PUBLIC FACILITIES MANUAL

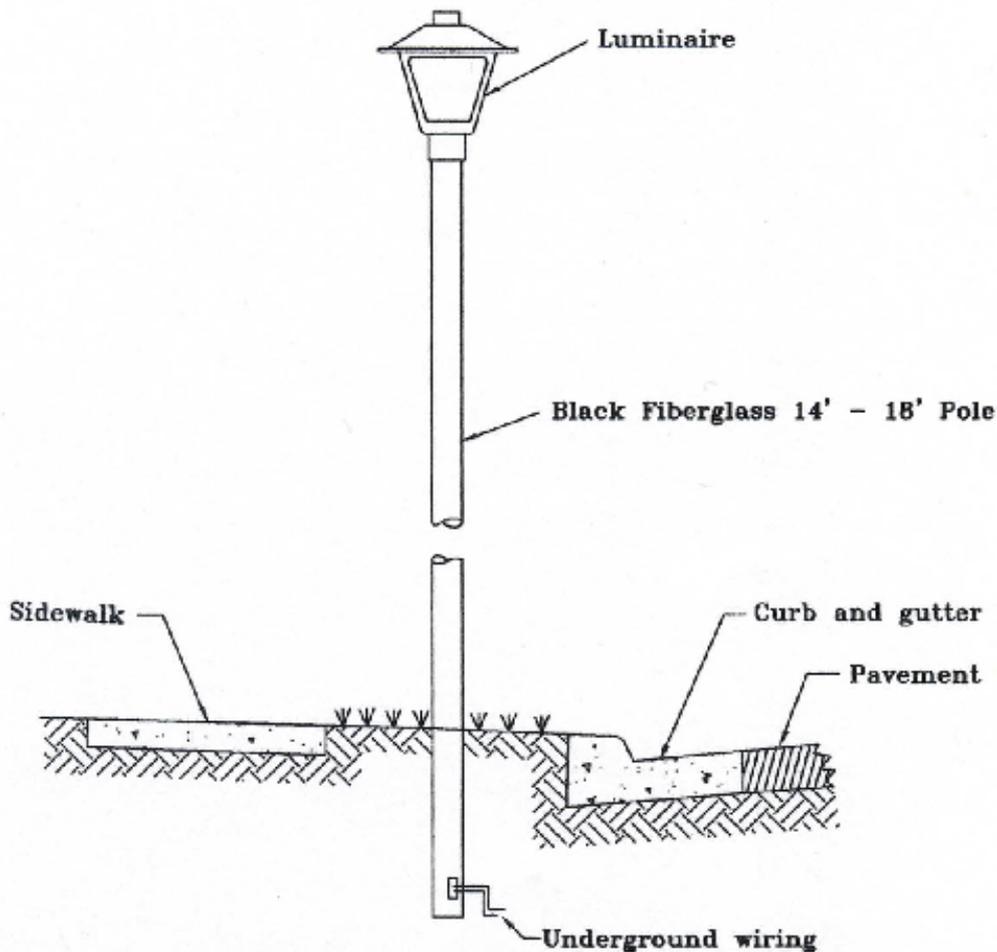
If the streetlight is within the clear zone, it shall be National Cooperative Highway Research Program (NCHRP) 350 certified.

STANDARD SYMBOL (RF-3)

RF-3-[Lumen]-[Bracket Length] (Mounting Height)

Symbol/label to be shown on the plans at each streetlight location. The pole is to be set in the center of the utility strip, in accordance with VDOT clear zone requirements.

The luminaire size and mounting height are to be in accordance to Tables 7.13 and 7.13A. 7.14 and 7.14A.



Ref. Sec. 7-1004

Rev. 07-08

**COLONIAL STYLE FIXTURE
FOR SUBDIVISION ROADWAYS
WITH CURB AND GUTTER**

PLATE NO.

32-7

STD. NO.

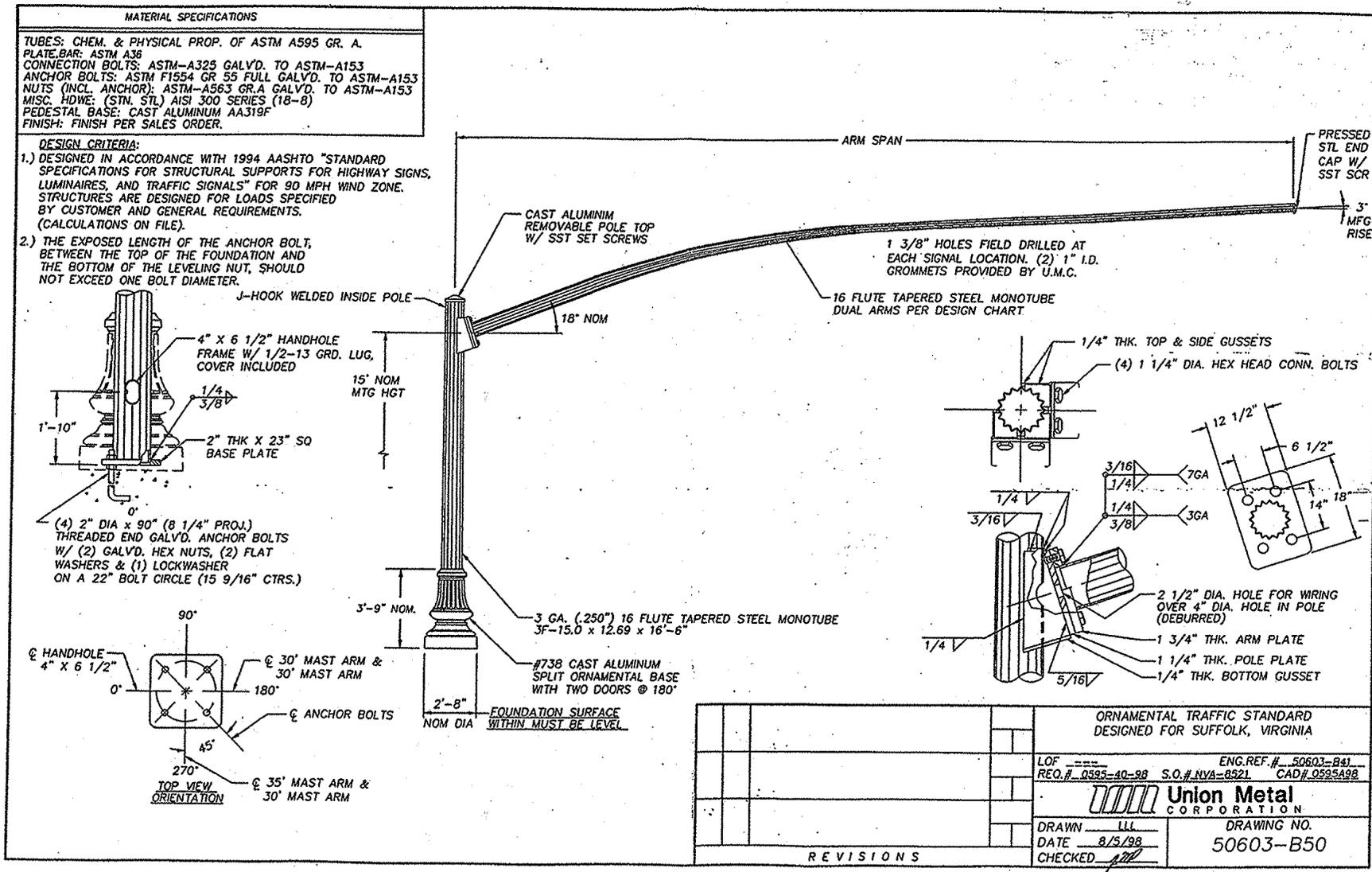
RF-3

(4) Traffic Signals

New traffic signal installations shall include traffic signal poles with an ornamental 16 flute taper as manufactured by Union Metal Corporation or approved equal. This standard was used in the 2007 downtown streetscape improvement project and is shown in the accompanying figure. The pole and mast arm shall be black. Ornamental traffic signal poles shall be designed to meet current AASHTO standards for structural supports, for highway signs, luminaries, and traffic signal, for 90MPH wind zone. Additional figures show: traffic signal equipment (list); pedestrian push buttons – ADA with LED; and mast arm typical details.

At this writing, these standards are anticipated to apply for planned signal improvements at the intersections of Alabama Drive and Elden Street, Van Buren Street and Grove Street, Elden Street and Center Street, Elden Street and Van Buren Street, and any intersections included with the east Elden Street improvements.

Traffic signal standard included in the plans for the 2007 downtown streetscape improvement project



TRAFFIC SIGNAL EQUIPMENT:

P-44 CONTROLLER CABINET, 8 PHASE TS-1 W/PEEK 3000E CONTROLLER (TO INCLUDE COMM PANEL AS COMMUNICATIONS INPUT; MODEM; AND RS232B. ALSO TO INCLUDE MS "D" CONNECTOR); DOUBLE DIAMOND MONITOR. (TS-1 CONTROL CABINET MUST INCLUDE THE FOLLOWING: GENERATOR PLUG - 30 AMP 125V, WEATHERPROOF; 1" RED LED INDICATOR LIGHT FOR POWER; POWER TRANSFER SWITCH)

PEEK (LMD 9200) TRAFFIC SIGNAL CONTROLLER W/ CLMATS FIRMWARE (8216A V1.17) TO BE USED AS A SPARE PART. CONTROLLER TO INCLUDE COMM PANEL AS COMMUNICATIONS INPUT; MODEM; AND RS232B. ALSO TO INCLUDE MS "D" CONNECTOR.

PEEK 910 VIDEO TRAK PLUS VIDEO DETECTION (2 VPM MODULES FOR 8-CAMERA CONFIGURATION)

PEEK SURGE PROTECTOR FOR DETECTION MODULES (4-CAMERA TERMINATIONS PER PANEL) PEEK DOUBLE DIAMOND CONFLICT MONITOR WITH STANDARD CONNECTOR PEEK VPK351-B CAMERAS (CAMERAS ARE TO INCLUDE ALL MOUNTING HARDWARE AND CABLES)

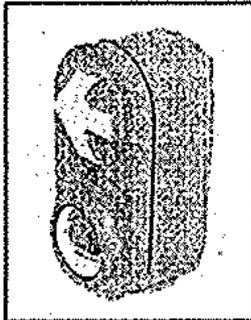
#PLS 152: TASSIMCO 12" HAND/MAN OVERLAY LED SIGNAL #PLC 152: TASSIMCO 12" COUNTDOWN LED SIGNAL

2 SECTION 12" ALUMINUM PEDESTRIAN SIGNAL HOUSING SIDE POLE MOUNTING HARDWARE - POWDER COATED GLOSS BLACK 12" RED LED SIGNALS - PRECISION SOLAR MODEL #2942 12" GREEN LED SIGNALS - PRECISION SOLAR MODEL #2944



PEDESTRIAN PUSH BUTTONS ADA with LED

①



Features:

- ADA (Americans with Disabilities Act) Acceptable
- Available for round pole or flat back mountings
- Stainless steel vandal-proof screws
- Adjustable single or double arrow
- LED indicator

ITEM	DESCRIPTION	PART NO.
①	ADA PUSH BUTTON ASSY: w/ 2" Mushroom Plunger & LED	SE-2039
2	ADA Cover Assy	SE-2048

OPTIONS
MOUNTING TYPE: Round Pole Back Flat Back
ARROW: Single Double Arrow
PAINIT

Notes:

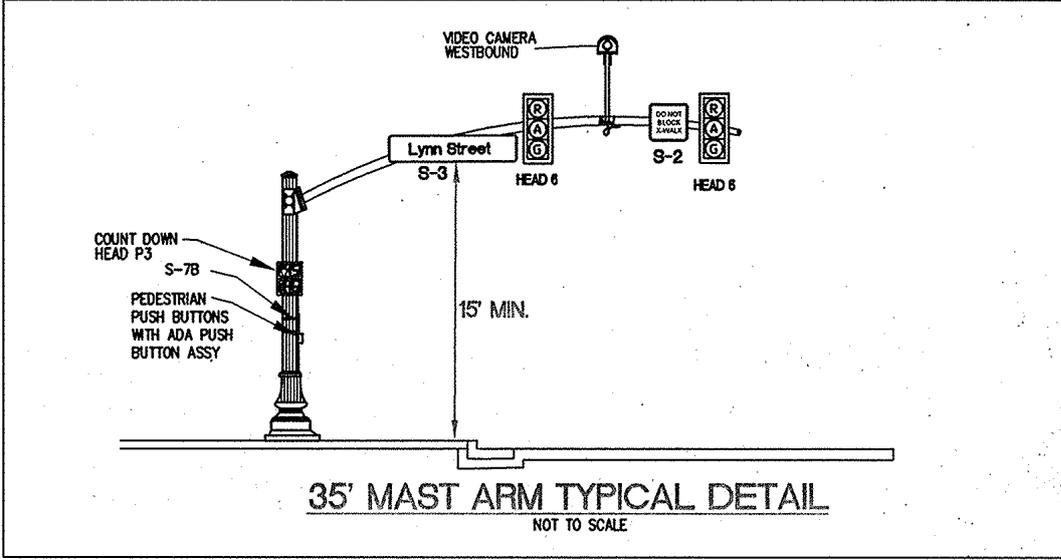
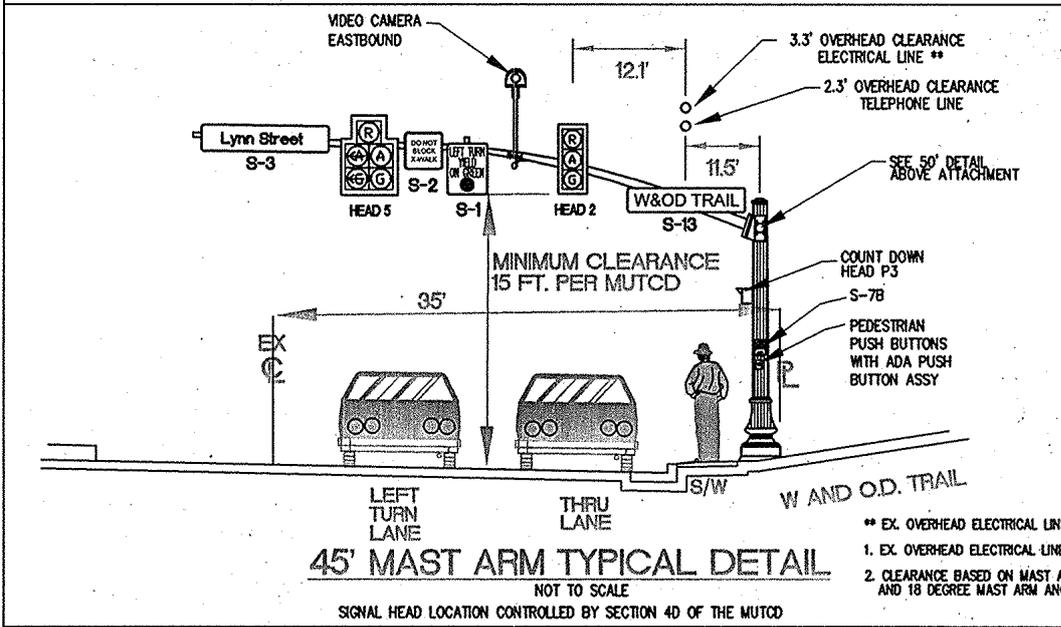
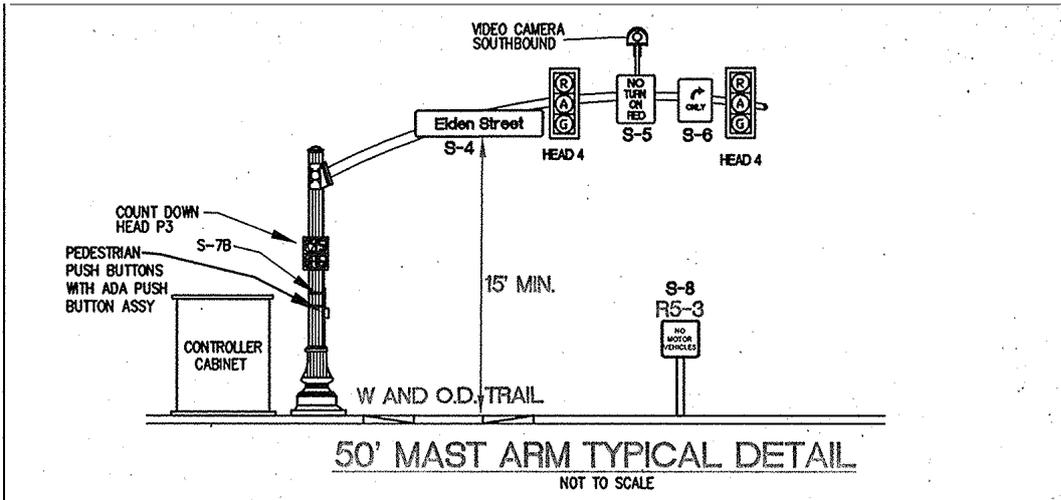
1. All assemblies are supplied standard with stainless steel fasteners.
2. Please specify options when ordering.
3. LED can be latched on during the "Don't Walk" cycle with Pelco Isolator/LED Latch Assembly (see bulletin this section).



Double Arrow
Option
SE-0287



Flat Back
Option
SE-0270



(5) Landscaping

Landscaping along public streets is required on private property as part of the development approval process. This landscaping visually is part of the streetscape, even when it is installed separately or even independently of improvements made within the public right-of-way. Landscaping may also be provided in the public right-of-way, either as part of Town streetscape improvements or, in rare cases, as part of privately funded improvements on public property. For private property, the Zoning Ordinance provides landscaping requirements.

Herndon Zoning Ordinance Sec. 78-503.4

(b) *Buffer requirements for property boundaries that are adjacent to public rights-of-way.*

(1) *In residential districts:* The required buffer width is ten feet. It shall contain one canopy tree every 35 linear feet. Alternatively, the trees may be planted between the sidewalk and curb if the distance between the curb and sidewalk is at least five feet in width, and no other buffer shall be required. In developments where land is subdivided for lots, such as townhouses, the required buffer shall be exclusive of land contained within lots for individual dwelling units.

(2) *In commercial and industrial districts:* The required buffer width is ten feet. It shall contain one canopy tree every 35 linear feet. The trees may be planted between the sidewalk and curb where the distance between the curb and sidewalk is at least five feet in width. When the distance between the curb and sidewalk is less than five feet in width, the trees shall be planted on the property in question, adjacent to the public right-of-way.

(3) *Other requirements:*

a. Along designated Green Streets, the buffers adjacent to public rights-of-way shall be augmented by an average of one canopy tree every 35 linear feet and one evergreen tree every 70 linear feet. Trees and shrubs may be clustered, but a continuous screen of evergreen shrubs shall be required if parking and vehicle drive-aisles are visible from the right-of-way. See section 78-505 for additional standards for green streets.

...

(c) Location of buffers

...

(3) *Development within required buffers.*

a. The required buffer shall not contain any development, impervious surfaces, or site features that do not function to meet the standards of this Section or that require removal of existing vegetation, unless otherwise permitted in this chapter.

b. No grading, development, or land-disturbing activities shall occur within the buffer unless approved by the zoning administrator.

c. Sidewalks and trails may be placed in buffers provided that damage to existing vegetation to be saved is minimized and the town's community forester determines that the required landscape buffer plantings are not adversely impacted.

d. Utilities are not permitted in buffers unless no reasonable alternative exists. When utilities and other easements must intrude into the required buffer, they shall run perpendicular to the property line.

Landscaping within the public right-of-way is maintained by the Town of Herndon unless otherwise indicated at the time of development approval. For reasons of economy and ease of maintenance, the landscaping traditionally has been simple, consisting of a groomed grass strip between the sidewalk and the street curb. As part of the Alabama Drive improvements, street trees were provided in the public right-of-way and this project could serve as a model for other streets outside the downtown. Town wide, the preferred ratio of total plantings in any one streetscape projects is a minimum of 75 percent native plants (trees, shrubs, and perennials in landscaped beds) and 25 percent non-native, subject to evaluation by the Community Forester on a case by case basis and considering field conditions.

(6) Streetscape Amenities

(a) Litter and Recycling Receptacles

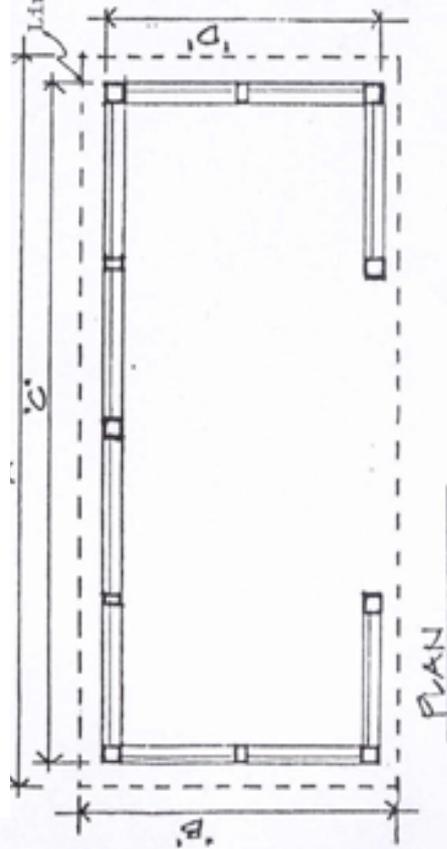
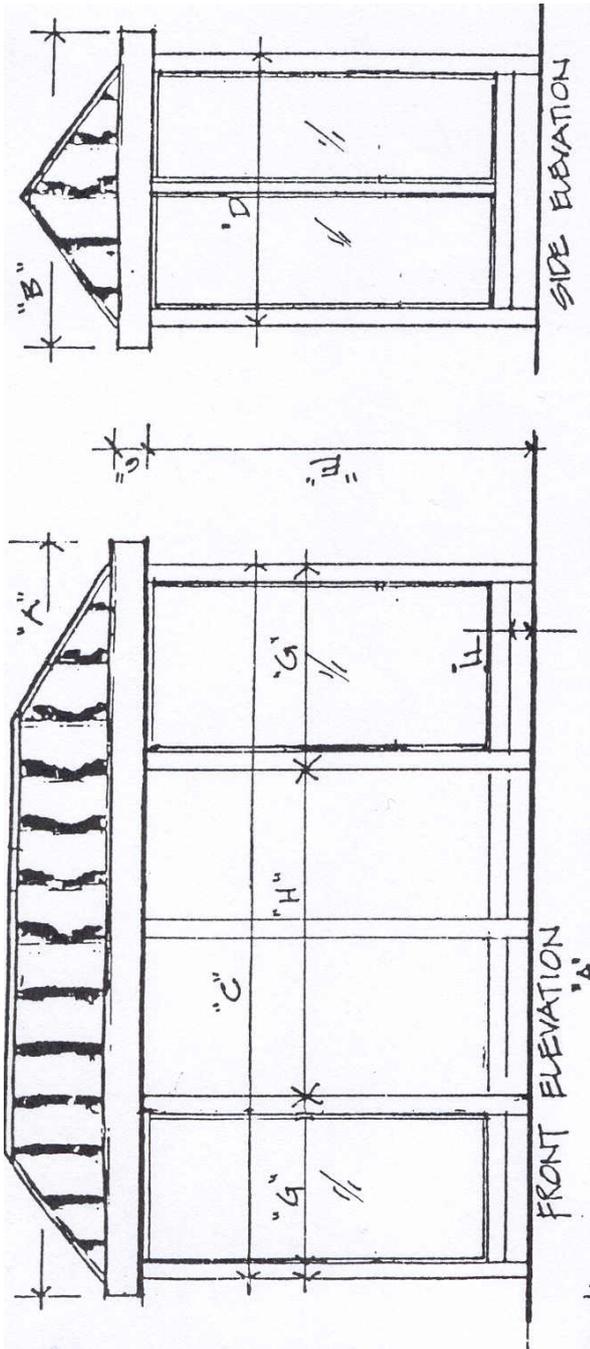
Litter receptacles serve a necessary and utilitarian function. In sufficient numbers and properly placed, receptacles help maintain the cleanliness and neat appearance of the Town's streetscapes. The concourse litter receptacle by Victor Stanley, Inc., or equivalent has been selected for use along streets throughout the Town (mostly, commercial corridors and the downtown.) The Town encourages recycling containers at strategic locations in the town. The recycling containers should be compatible with the streetscape litter receptacles. For detailed information about the litter and recycling receptacles, see Section IV, Details and Specifications, Downtown Streetscape.

(b) Bus Stop Shelters

Bus stop shelters provide comfort and safety to bus riders as well as to other pedestrians in need of a place to wait. Outside of the downtown area, the standard contemporary styled structure constructed of aluminum and lexan is used. The minimum acceptable standards for the bus stop shelter outside of downtown are:

- o The shelter shall consist of a structural aluminum frame, seamed hip roof, and glazed rear and side walls.
- o The shelter, including structural frame, glazing and roof unit, shall be capable of withstanding wind forces as required by the current Building Code.
- o All glazing shall be coated lexan of one quarter inch thickness.
- o Schedule holders shall be provided on the shelter.

- Hard maple benches shall be provided for the shelter. The bench shall run the length of the rear wall of the shelter except as may be altered by ADA regulations to accommodate a wheelchair.
- All structural framing members, unless otherwise specified, shall be extruded aluminum of 064-T52 alloy not less than one eighth of an inch thick. The finish shall be C63-3 (medium turquoise), Sandalor Color Anodizing, by AACOA, or approved equal.
- The roof shall be constructed of similar material but the finish shall be Sandalor medium bronze, by AACOA, or approved equal.
- The shelter is approximately five feet by ten feet and three inches, with a five foot open doorway centered in the front of the shelter.
- A building permit is required.
- Access must meet current ADA requirements.



DIMENSIONS:

"A" 10'-6 1/2"	"E" 7'-0"
"B" 5'-6 1/2"	"F" 8'-1"
"C" 10'-2 1/2"	"G" 2'-9"
"D" 5'-2 1/2"	"H" 4'-9 1/2"

No. OF REAR WINDOWS = 4
 No. OF SIDE WINDOWS = 2 ea side
 No. OF FRONT WINDOWS = 1 ea side

REVISIONS		PLAN & ELEVATION VIEWS OF MODEL #AL10/05SPHR PREFABRICATED SHELTER			
NO.	DATE	BY			
1					
2					
3					
4					
5					

Columbia Equipment Company JAYCE, NEW YORK		SCALE NOT TO SCALE		MATERIAL	
DRAWN BY: AHC	CHK'D	DATE:	10/13/98	DRAWING NO.	FE-AL10/05SPHR
TRACED	APP'D				

DRAWINGS ABOVE ARE DIAGRAMATIC
 FOR PROPER NO. OF WINDOWS SEE CHART.

(c) Bicycle Racks

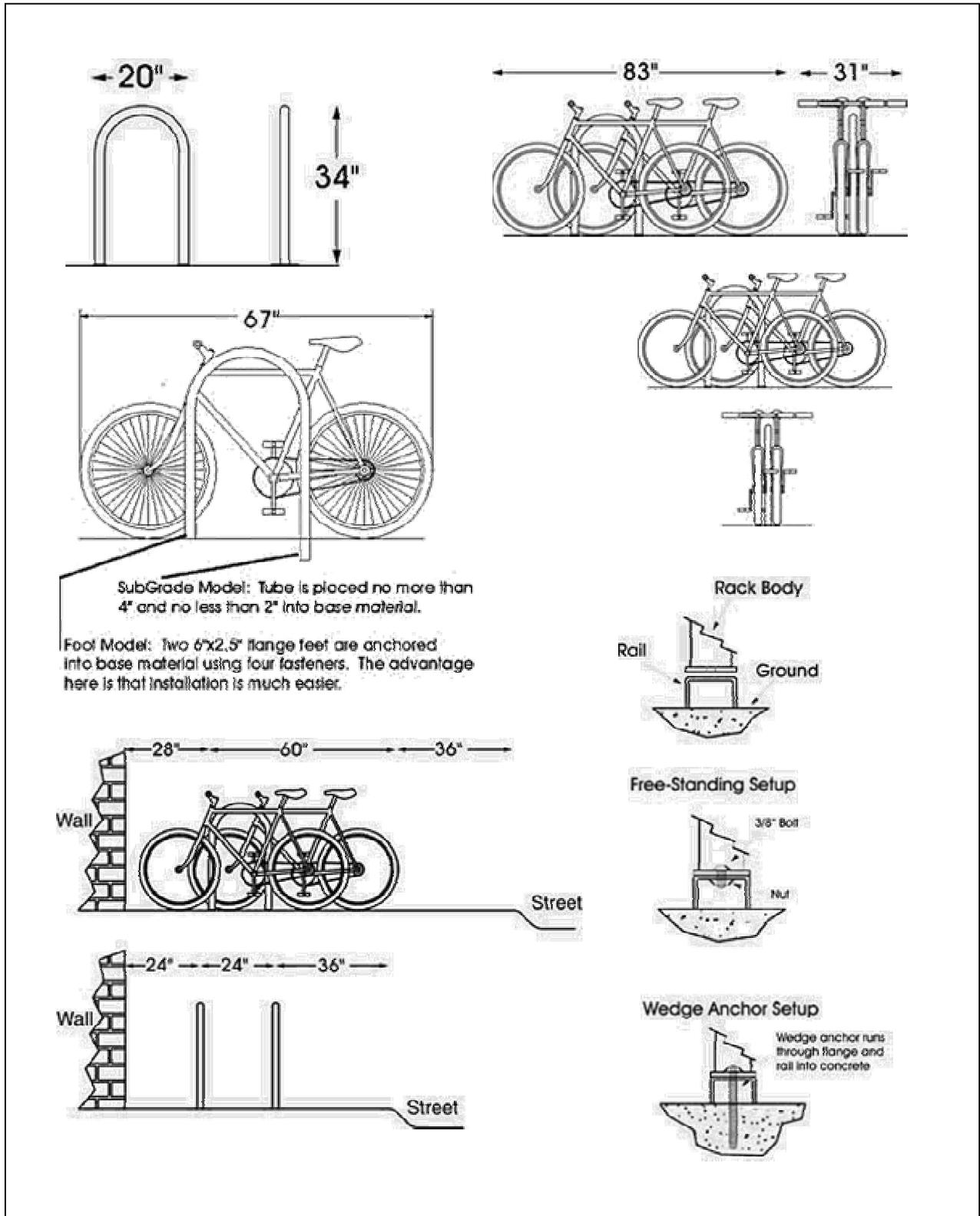
The preferred bicycle rack is the Hoop (Inverted U-style)-manufactured by American Bicycle Security Company or approved equal with a black finish. Use of this rack is appropriate for use at bus stop shelters, public facilities, commercial sites and residential properties when adhering to the Criteria for Selecting and Locating Bicycle Parking Racks. As an option, the Swerve in galvanized steel can be used outside the downtown with staff approval based on site specific conditions and design considerations.

Criteria for Locating and Using Bicycle Parking Racks

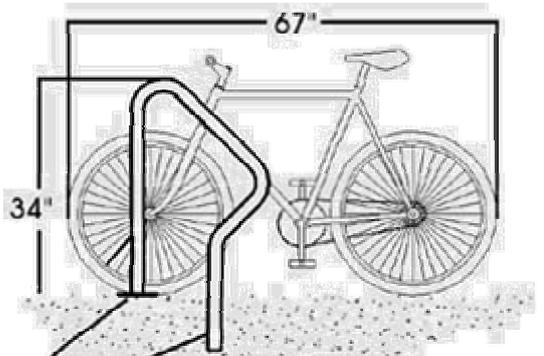
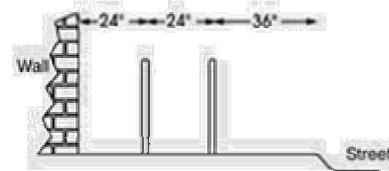
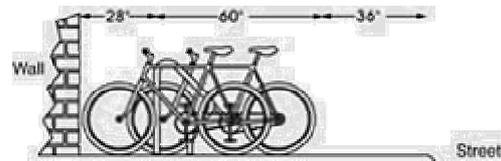
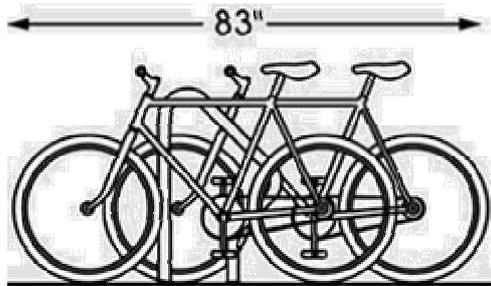
1. Bicycle parking racks should be located in a clearly designated safe and convenient location.
2. The design and location shall be harmonious with the surrounding environment.
3. The racks must be durable and should be securely anchored to the ground or building structure.
4. The surface of the racks should be designed and maintained to be mud and dust free.
5. Bicycle parking spaces should be clearly at least 2 feet wide (2 feet from center of one space to center of adjacent spaces.)
6. The rack allows the frame and wheel(s) to be locked directly to the rack with a U-shaped lock without bending the wheel or otherwise damaging the bicycle.
7. The rack must support the bicycle frame in at least 2 places.
8. The rack must prevent the wheel of the bicycle from tipping over.
9. The rack has a simple design that needs no explanation as to how the rack works (which direction does the bike go in, how is the lock attached, every space is useable for any standard bicycle with typical accessories such as lights and fenders, etc.) and that is difficult to misuse.
10. If the rack is intended to park more than one bicycle at the same time, the handlebars must not overlap.
11. The rack has spaces that are clearly designated for each bicycle (it is obvious to the user where each space is) whether the rack is designed for single or double sided loading.

12. When bicycles are parked at the rack, there must be at least a six-foot clear walkway, to comply with the Americans With Disabilities Act. This does not include frontage occupied by street furniture.
13. The bicycle rack cannot be located directly in front of a store/building entrance or exit, nor in a driveway.
14. Any street utilities, such as light poles, signs, manhole covers, and overhead utility poles must have a two foot clearance from a bicycle parked at a rack, not the rack itself.
15. The bicycle rack cannot be located adjacent to an area intended for parking for persons with disabilities.
16. The rack cannot be located closer to the curb than two feet. Three feet from the curb is ideal, although in certain circumstances, the distance may be greater.

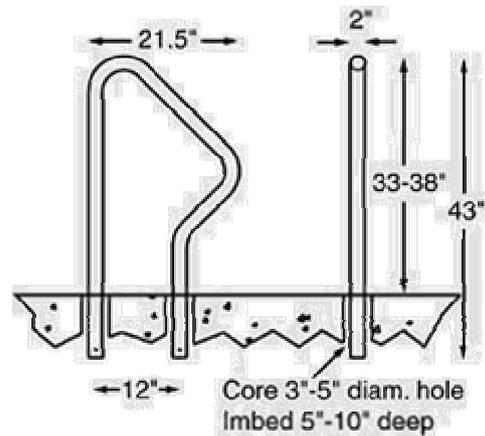
Preferred Bicycle Rack Beyond the Downtown: the Hoop Bicycle Rack by American Bicycle Security Company (or approved equal)



Bicycle Rack Option Beyond the Downtown, with Staff Approval:
the Swerve Bicycle Rack by American Bicycle Security Company
(or approved equal)



SubGrade Model: Tube is placed no more than 9" and no less than 3" into base material.
Foot Model: Two 6"x2.5" flange feet are anchored into base material using four fasteners. The advantage here is that installation is much easier.



American Bicycle Security Company
P.O. Box 7359
Ventura, CA 93006

Phone: 1-800-245-3723 805-933-3688
Fax: 805-933-1865

E-mail: turtle@ameribike.com
URL: <http://www.ameribike.com/>

(7) Location of Above-Ground Utilities and Public Signage

The visual character of the streetscape is significantly affected by the location and appearance of public utility devices, such as traffic control boxes, and by public signage, such as directional units. These streetscape elements need to be addressed specifically and in detail during implementation of streetscape development. Principles for placement include:

- Utilities should not block the view of drivers and their placement should adhere to sight distance standards and visibility clearance standards in Section 78-509 of the Zoning Ordinance.
- Utilities should not block other traffic safety features, such as traffic safety signage and traffic signals, located within the right-of-way.
- The placement of utilities and street trees should be coordinated to minimize conflict with each other and the possibility of damage by one feature upon the other feature (i.e., poles should not be placed within the drip line of street trees.)
- Utilities should be placed outside the sidewalk area (such as within the grassed utility strip) wherever and whenever possible. Placement of poles and signage within the sidewalk area should be avoided if possible.
- Signage on individual poles should not be clustered, as signs tend to block one another and too much text is difficult for drivers to read at a glance.
- Obsolete signage should be removed.

(8) Burying New and Existing Utilities

Few streetscape improvements are as noticeable and provide immediate visual appeal as relocating existing overhead utility poles and wires below ground. Not only does the relocation of utilities immediately improve the appearance of the streetscape, but it increases the useable sidewalk width for pedestrians. The placement of utilities underground also provides additional space for streetlights, street trees, landscaping elements, and street furnishings in the public rights-of-way. Zoning Ordinance Section 70-309, Underground utilities, states that new and existing utilities shall be placed below ground in accordance with standards as established in the Public Facilities Manual and accepted standards of utility practice for underground construction. The subdivider or developer shall be responsible for arranging with the

appropriate utility so that new, existing, or relocated distribution and customer service utility facilities, carrying or used in connection with water, sanitary sewer, electric power, communications, cable television, petroleum, gas or steam, installed within the boundaries of the site, or within the adjacent public right-of-way shall be placed below the surface of the ground.

III. DOWNTOWN STREETScape

A. Streetscape Design Concept and Map

The purpose of the Downtown Streetscape policy as described in the 2030 Comprehensive Plan is to maintain and to enhance Herndon's traditional character of a walkable and inviting small town. The standards and guidelines help create public rights-of-way that have a comfortable pedestrian scale and continuity of the built environment while using visual elements that link the past with the present.

It is the intent of this policy to enhance the existing character of the Town with unifying elements, acknowledging that current irregularities might preclude the use of these elements in all circumstances. For example, in commercial areas where existing building setbacks do not allow for the ideal 12-foot wide streetscape section, existing storefronts should not be altered to permit the installation of wider streetscape areas.

The 2030 Comprehensive Plan specifies the locations for residential and commercial streetscapes. In some situations, opposite sides of the street may be treated differently or only portions of a street may be designated for improvements. On the accompanying map, "Town of Herndon Downtown Streetscape Map," commercial streetscape is shown on map with dashed lines.

Town of Herndon Downtown Streetscape Map



- Legend
- Streetscape**
 - Commercial
 - Residential
 - Pavement Edge**
 - BRIDGE/OVERPASS
 - MEDIAN
 - PAVED ROAD
 - UNPAVED ROAD

1 inch equals 440 feet

This map was prepared by the Town of Herndon on GIS 10/10/07. The content of this map may not be published or used for any other purpose without the express written consent of the Town of Herndon. For additional information, please contact the Town of Herndon at 703-441-1000.

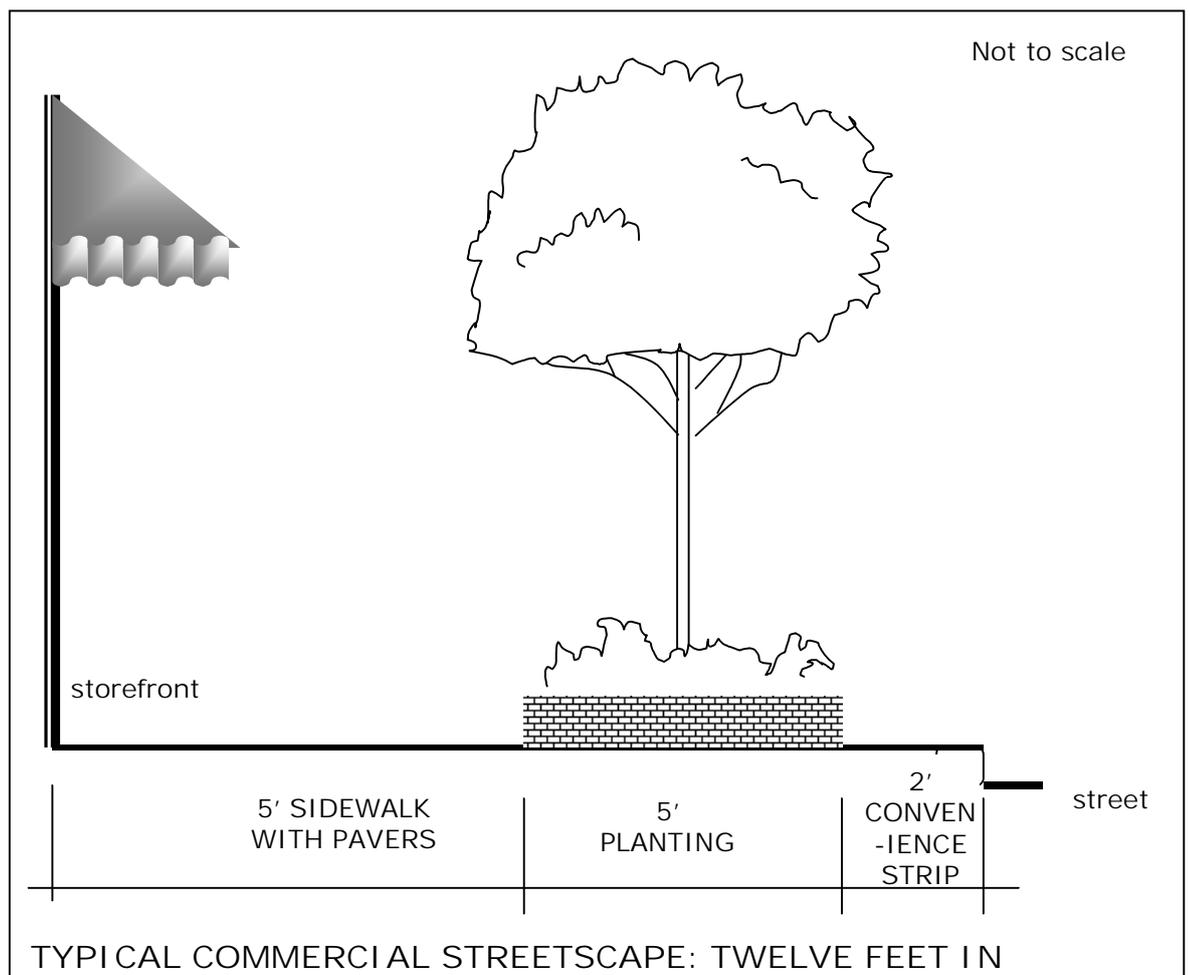
Index Map



B. Downtown Commercial Streetscape

The commercial streetscape section consists of a minimum 12-foot wide area between the face of the curb and the façade of an adjacent building. This area includes a five-foot wide paved sidewalk, which is buffered from the street by a planting bed five feet in width. Tree and landscape planting beds measure a minimum of 5 feet in width by 12 feet in length and are edged with a curb of bull-nose pavers. Between the planting bed and the concrete curb is a two-foot wide paved area.

The spacing and location of streetlights and tree corridors depend on site-specific factors. For example, a typical pedestrian street with plaza trees will feature 14-foot high streetlights and tree spacing that varies from 10 to 35 feet on-center. Streetlight locations will be determined according to needed level of illumination as specified by a general lighting plan for the overlay area and will be coordinated with tree spacing. When possible, lights will be evenly spaced.



C. Downtown Residential Streetscape

The residential streetscape standard is a concrete sidewalk of five feet in width. The standard sidewalk surface should tone down the very bright white finish that appears on new sidewalks when certain curing agents or other additives are used. Eventually, possibly in conjunction with a town capital project to install sidewalks, the town should experiment and establish a color specification that can be used uniformly for the residential streetscape throughout the downtown streetscape area. At the same time or subsequently, the Town may wish to explore the use of permeable pavement for sidewalks.

The sidewalk must meet the Americans with Disabilities Act standards and must feature a finish that matches adjoining or nearby sidewalks as much as possible. All streetlights in the residential streetscape area are to be the HADCO Acorn. Where practical with development occurring after the date of adoption of these guidelines, the Downtown residential streetscape should include a five-foot strip planted with grass between the sidewalk and the drainage way or pavement. Where necessary, an easement may be used for sidewalk construction on land abutting the right-of-way. Where a five foot width is impractical, the grass strip should be a minimum of two feet in width. Section 78-513 of the Herndon Zoning Ordinance requires the provision of curb, gutter and sidewalk, with provisions of a waiver when curb and gutter are not already present in the neighborhood and when the street is not on the Town's plan for installation of curb and gutters. For such areas, standard concrete curb and gutter installation may not be appropriate or desirable, as the existing ditch drainage may be preferred. However, if effective stormwater management or public safety requires replacement of open ditches with curb and gutter, the design should conform to these guidelines to the extent practicable.

D. Streetscape Elements

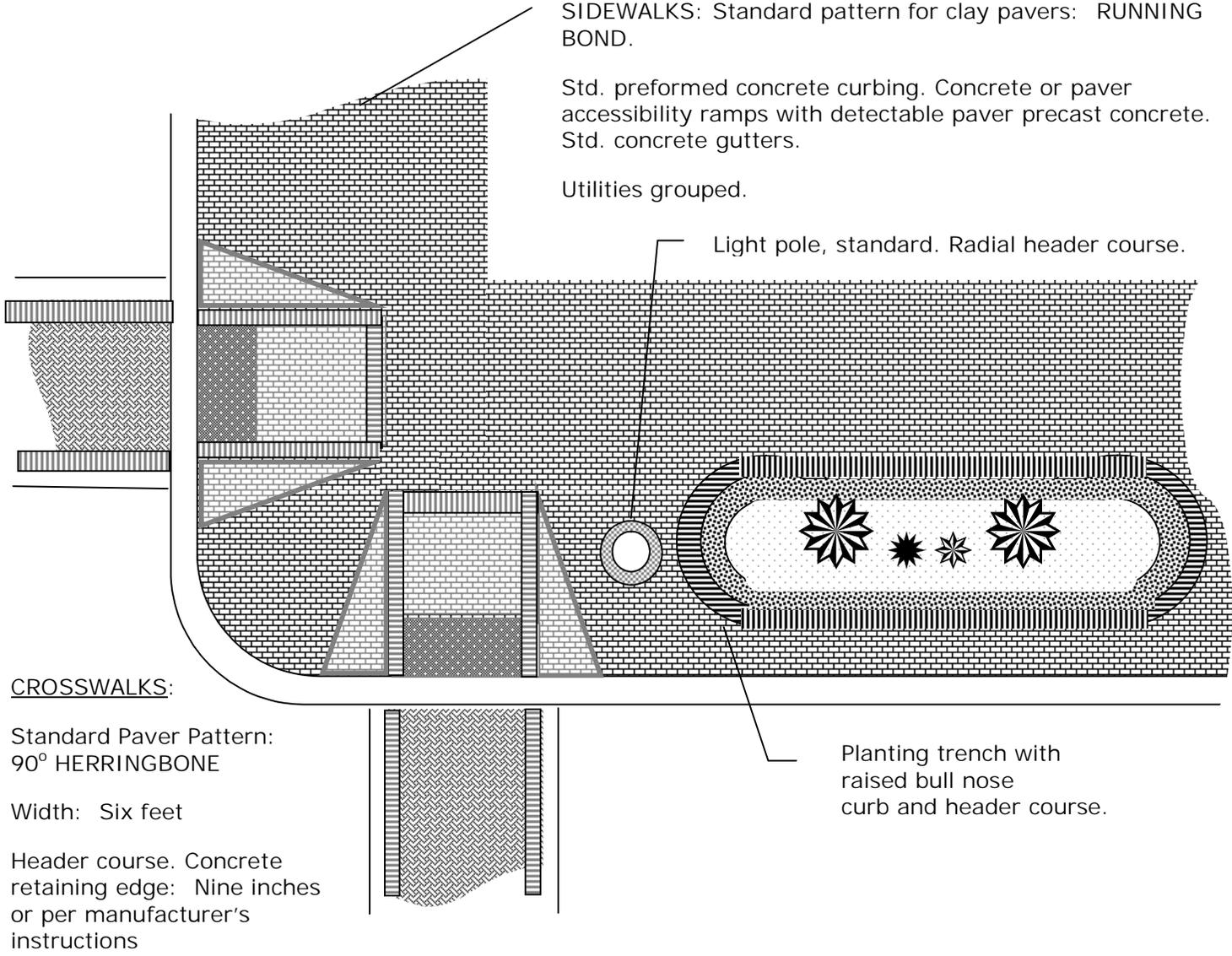
(1) Pavers

As development occurs or as sidewalk replacement is necessary, the required sidewalk pavement surface for designated commercial streetscape areas is clay brick Heartland Flashed Paver by Boral Bricks or approved equal. The rectangular brick paver measures four by eight by two and one quarter inches thick. They are hard pavers that can

easily be engraved by a private engraver. Requests for commemorative pavers are reviewed on a case by case basis and must be approved by the Town Manager if located in the public right-of-way or on other Town-owned property.

Pavers are used as well for seat walls, plaza fountains areas and directional signage bases.

CONCEPT DESIGN: SIDEWALK, CROSSWALK, ACCESSIBILITY RAMPS



(2) Sidewalks

The pavers should be laid in a running bond pattern parallel to the curb and installed on a sand laying course with sand filled joints. This installation pattern is consistent with existing sidewalk laying pattern in the downtown and along Elden Street. For adjacent curbing, standard precast or poured concrete is required. See Section IV, Details and Specifications, Downtown Streetscape.

(3) Crosswalks

The standard crosswalk design consists of a six-foot wide walk with a one-foot wide concrete border on each side. The paving material is load-bearing clay brick Regimental Full Range, Type R by Belden Brick or approved equal to match the sidewalk pavement. For maximum interlock and structural performance, the brick pavers are laid in a 90-degree herringbone pattern. Those pavers abutting asphalt are laid side to side and have saw cut edges for increased stabilization in asphalt roadways, which expand and contract in extreme temperatures. All crosswalks must have ramps for mobility impaired persons.

(4) Other Construction Features

The intersection of driveways with sidewalks in commercial streetscape areas sometimes can be disruptive to the continuity of the streetscape. See Section IV, Details and Specifications, Downtown Streetscape for details of driveway apron design to manage this disruption.

Section IV, Details and Specifications, also include information about wall caps and stair construction.

Retaining walls, seating walls, screening walls, raised planters and other vertical surfaces within or adjacent to the Downtown Streetscape must be faced with brick veneer that matches the color, texture, and general appearance of the standard streetscape pavers.

(5) Lighting

Private developments must utilize the same planning considerations and guidelines as for public lighting. It is important for the entire Downtown Streetscape overlay area to work as a whole. The color (affected by the lighting source whether metal halide or sodium vapor) and patterns of illumination on all properties contribute to lighting effectiveness and to the village atmosphere of downtown Herndon.

Guiding concepts of lighting for the planning process are:

- illuminate circulation and activity zones,
- facilitate safe movement in a secure setting, and
- create a warm, lively visual quality.

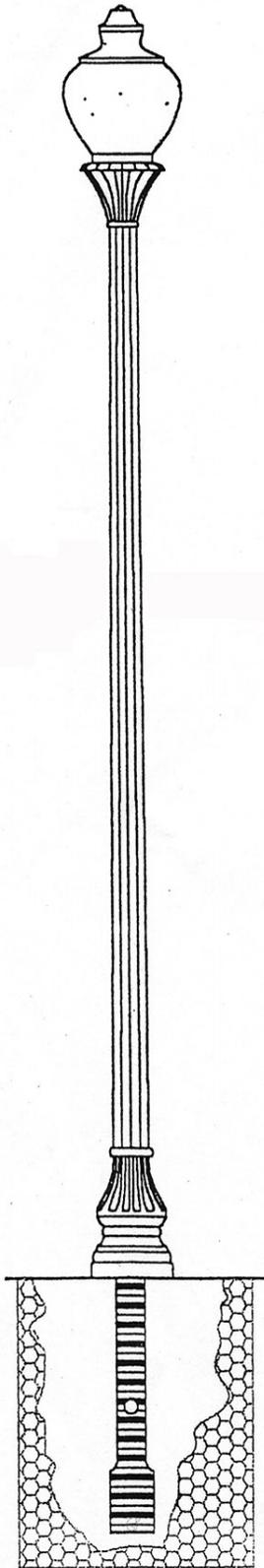
Objectives to be achieved and considered in planning any specific lighting system include:

- Illuminate "ways" and "places". "Ways" imply movement and lighting that provides "guide-on" illumination. "Places" are points of special illumination as designated usually by increased intensity and/or expressive lighting patterns.
- Mark the points of decision. Intersections, crossings, bus stops, steps, arrival points and other special features should be illuminated in a manner that signals their presence, shape, and nature.
- Differentiate between roadway (vehicular) and walkway (pedestrian) lighting.
- Provide adequate lighting at pedestrian crossings.
- Eliminate all sources of glare.
- Establish consistent lighting hardware and levels of illumination in public areas. Safe and comfortable circulation depends more on the consistency of illumination than on the level/brightness of the lighting.
- Highlight the more attractive and important structures and site features such as buildings, specimen trees, fountains or the caboose.
- Couple site lighting with informational and directional signs.
- Borrow light from adjacent areas and buildings. For example, where sidewalks are narrow with no space for light poles, light fixtures may be attached to adjacent buildings.
- Use standard poles, luminaries, and accessories in all public spaces and require the use of compatible designs in private developments.

Specific types of lighting for different locations are determined by the Department of Public Works based on the Roadway Lighting Design Guide, 2005, by the American Association of State Highway and Transportation Officials (AASHTO), and on the Roadway Lighting Handbook, 1983, by the Federal Highway Administration.

Streetlights: The required streetlight for both commercial and residential streets is the HADCO Acorn with a Whatley pole (or equivalent.) It is installed by Virginia Power in accordance with an agreement between the Town, Fairfax County, and Virginia Power.

Downtown Streetscape Streetlight



- Luminaire: HADCO Acorn R34 Wide Refractive Globe. Standard street size: 16 in. diameter, 14 ft. overall pole height. Clear acrylic diffuser.
- Pole: Whatley. Tenon shall be three inches in diameter and three and one half inches high (no taper) and securely bonded to the pole for mounting a post top luminaire. It shall be coated with a matching black finish. It shall have a 14 ft. mounting height for traffic-priority areas. There shall be a burial depth of three feet for the 13 foot pole height. The minimum weight for 13 ft. pole shall be 100 pounds.
- Deflection: The deflection caused by 100 pounds of horizontal force applied one ft. below the top of the pole shall not exceed two percent of the above ground height of the pole.
- Base: The base cover shall be a one piece slip-over of 16.5 inches in width and 20 inches in height, constructed of fiberglass. It shall be attached with stainless steel tamper proof screws.
- Surface Finish: The pole surface shall be of a fluted style uniform and consistent. The pole shall be painted with a pigmented urethane finish, minimum 1.5 ml. in thickness. The pole shall be abrasion resistant and must not craze or crack when the pole sways.
- Optical: High pressure sodium.
- Safety: The pole shall be non-conductive and flame resistant in accordance with ASTM D635.

Lighting for Vehicular Traffic: The older cobra-head light fixtures mounted on telephone poles should be phased out as utilities are placed underground. They should be replaced by the HADCO Acorn streetlights or matching wall-mounted lighting. All existing colonial styled streetlights should be phased out entirely. In the interim, however, it is suggested that their concrete poles be painted matte black to match the proposed streetlights.

Accent and Special Effects Lighting: An opportunity exists to highlight special structural or landscape features and off-street pedestrian ways with privately-provided light fixtures. Public areas, such as the Washington and Old Dominion Railroad Regional Trail and other public trails or alleys might also benefit from accent lighting. In addition, innovative lighting techniques may be used where existing building setbacks prohibit standing streetlights. The style of all visible light fixtures should complement the proposed streetlight and be assembled to reduce glare and minimize wasted light. Along narrow sidewalks, such as along portion of Elden Street, wall mounted streetlights may be installed eight to twelve feet above grade.

Additional features on Light Poles: light poles should be fitted with brackets for the placement of both hanging baskets and vertical banners to be placed seasonally. Methods of watering the hanging baskets (such as irrigation routed through the light pole or other efficient means) should be included.

Off Street Lighting: The standard for private parking areas within the Downtown Streetscape area is the Promenade PRM2 fixture and the Washington Shakespeare pole.

- Pole AP28 shall be 20 feet in height with a 38 inch diameter base. The internal mounting flange shall accommodate four anchor bolts 5/8" x 21" x 3". Four 13/16 wide slots shall be provided to accommodate a 23.5" to 25.5" bolt circle.
- Pole AP20 shall be 9.5, 12 or 14.5 feet in height with a 20" diameter base. The internal mounting flange shall accommodate four anchor bolts 1/2" x 18" x 3". Four 13/16 wide slots shall be provided to accommodate a 12" to 15" bolt circle.
- A 3" diameter by 3" high aluminum tenon shall be provided for luminaire mounting.
- Fixture PRM2 ballast housing shall be a one piece, high strength cast aluminum 1356 alloy. Fixture shall be welded to the cast arm(s): TRA5, TRA6 or TRA7. The fixture is 20" in height, weights 45 lbs., and has an EPA of 1.90.

- Surface Finish: Poles shaft, base and internal mounting flange shall all be molded or non-corrosive fiberglass-reinforced composite, pigmented throughout and finished in the same color as specified. The pole shall be painted with a pigmented weather resistant polyurethane finish, min. 1.5 mils dry film thickness. Pole shall be abrasion resistant and must not craze or crack when the pole sways.
- Optical: Metal halide.
- Safety: Washington style poles are engineered to withstand at least 100 mph wind forces, with luminaries up to 6.2 EPA (sf) weighing up to 150 pounds.

(6) Landscaping, Planters and Irrigation

Street trees and vegetation beautify the downtown pedestrian environment and encourage a comfortable, friendly village atmosphere. Mature street trees ameliorate the effects of heat, glare and wind; absorb airborne pollutants; and visually soften unattractive expanses of asphalt. Appropriately placed trees provide a consistent visual pattern along streetscapes and create necessary buffers between vehicular and pedestrian traffic. Groundcovers, vines on trellises, shrubs and other perennial or annual flowering plants provide seasonal color accents to enhance the pedestrian environment. Where space is too limited to plant street trees, the Town encourages the use of vines, shrubs, and/or flowers in planting boxes or window boxes. Town wide, the preferred ratio of total plantings in any one streetscape projects is a minimum of 75 percent native plants (trees, shrubs, and perennials in landscaped beds) and 25 percent non-native, subject to evaluation by the Community Forester on a case by case basis and considering field conditions.

Landscape effectiveness and economy depend on standards for appropriate selection, location, planting methods and maintenance. These standards, including required planting and performance criteria, apply to all landscaping.

(a) Street Trees

Due to varying field conditions, a street by street planning approach to street tree selection is warranted. Generally, a street is designated as one of three types: a Canopy Tree Street, Columnar and Small Ornamental Tree Street or a Special Treatment Area. These designations are based on the availability of growing space, location of power lines or utilities, type of

adjacent building use and architectural style, and other design criteria. To encourage diversity, several specific street tree types are used throughout the downtown. Native tree, shrub, and perennial plant species shall be utilized to the maximum extent possible. Any non-native species will need to be approved by the town. No species on any invasive plant list will be used in the landscape. Street tree selection should be sensitive to existing trees along the remainder of Elden Street outside of the downtown or any designated "Green Street." Each street should be evaluated by the Community Forester as development proposals occur. The tree species list must be approved by the Town and will be evaluated based on the field conditions of the street where the development is proposed.

Canopy and ornamental tree streets are routes without overhead wires, and that feature buildings with significant setbacks. When mature, canopy trees are large, broad-spreading or vase-shaped. Their overhead canopy provides a ceiling and a sense of enclosure, and regularly spaced trunks provide a sense of rhythm to the streetscape. The tree spacing is required at 25 to 35 feet on-center and compatible with streetlight spacing. Along streets with a right-of-way width of greater than 60 feet, trees may be planted opposite each other. Alternating tree planting along narrower streets allows for healthier and greater crown development. Town wide, the clear zone on streets without parking lanes is three feet, and therefore, trees must be planted no closer than three feet to the edge of the street.

The designated columnar and ornamental tree streets can only accommodate smaller trees, small ornamental trees, and more columnar tree species because of existing or anticipated physical limitations. Overhead power lines, underground storm sewer lines or underground plaza parking can prevent the mature and healthy growth of larger specimen trees. The trees in this category are adaptable to urban conditions, and their growth characteristics are appropriate where root or crown growing space is minimal. Tree spacing will vary from 10 to 15 feet on-center, but most plaza trees will be located in niches, as groups in larger planting areas or as specimen accents. The character of these smaller areas can be further enhanced with different types of ornamental shrub plantings, ground covers or accent vegetation.

Special design considerations are appropriate for areas that, by their location, history and use are unique to Herndon. These

areas include: Town Square, Town Green, the Washington and Old Dominion Railroad Regional Trail, pedestrian nodes and gateways. All tree plantings and landscaping in these areas should conform to site-specific plans and may include other special features or streetscape amenities.

(b) Other Landscaping Materials

In addition to street trees, downtown plant materials may include a variety of shrubs, groundcovers, flowers, ornamental grasses and specimen trees. Simple groundcovers are required in street tree planting beds; planting boxes and window boxes are excellent locations for colorful planting materials. These plant materials should also be incorporated into the landscaping plans of special treatment areas such as the Town Square, Town Green and the Washington and Old Dominion Trail areas. The recommended vegetation for the Downtown Streetscape overlay should include:

1. plants and trees native to the region,
2. plants that are useful or existed in Herndon's past,
3. hardy perennials, including old-fashioned species that were typical of the period in cottage and colorful border gardens,
4. specimen trees in key locations that typify or reflect some aspect of Herndon's past, and
5. preservation of mature vegetative settings, to the greatest possible extent.

Annual bedding plants are always popular and are also recommended in profusion, especially when interplanted with herbaceous perennials, bulbs, tubers and customary shrubs.

(c) Planters and Irrigation

Planters integrated with the commercial streetscape have a Lawrenceville "Old Trail" or approved equal raised bull nose edge and radial header course. Planters include irrigation and root pathways for landscape materials. For streetscape installed by applicants other than the Town, a maintenance agreement is required. The maintenance agreement specifies that the applicant is responsible for the ongoing maintenance of the planter and the irrigation while the Town may assume responsibility for maintenance of the plantings and mulch within the planter.

Section IV, Details and Specifications, Downtown Streetscape contains specifications for design and irrigation expected in planter beds.

(7) Streetscape Amenities

Street furnishings provide essential comfort, convenience, and safety and encourage pedestrian activity and interaction. Well-designed and -placed street furniture, used consistently throughout the overlay area, visually unifies the streetscape. These amenities are an integral part of the village atmosphere and its function and must be closely coordinated with all paving, lighting and landscaping design elements. The street furnishings may include: seat walls, benches, trash receptacles, planters and window boxes, bollards, drinking fountains, tree grates, a clock, bike racks, fencing and bus shelters.

As opportunities arise, design recommendations should be developed for additional streetscape amenities including:

- ❖ locations for convenience elements (mail boxes, and newspaper dispensers),
- ❖ informational elements (kiosks and public identification and directional signage),
- ❖ utility elements (traffic light control boxes, safety fencing, and screening for ground-oriented HVAC units),
- ❖ seasonal or festive decorations, and
- ❖ public art elements and educational heritage displays.

(a) Litter and Recycling Receptacles

Litter receptacles serve a necessary and utilitarian function. In sufficient numbers and properly placed, receptacles help maintain the cleanliness and neat appearance of the Downtown Streetscapes. Generally, the more frequently receptacles appear, the more frequently they will be used. As an element of the streetscape, which is frequently used, it is important that litter receptacles be functional, attractive and coordinate with other street furnishings. The Town encourages recycling containers at strategic locations in the town. The recycling containers should be compatible with the streetscape litter receptacles.

The concourse receptacle by Victor Stanley, Inc., or equivalent has been selected for use in the Downtown Streetscape area for both litter and recycling. For detailed information about the

receptacle, see Section IV, Details and Specifications, Downtown Streetscape.

(b) Benches

The selected benches are made by Victor Stanley, Inc. For detailed information about the bench, see Section IV, Details and Specifications, Downtown Streetscape. Benches may be placed at focal points, bus stops, gathering places such as the Town Square and Town Green, and along the Washington and Old Dominion Trail. Private property owners are encouraged to incorporate benches into development projects and to locate benches along the public rights-of-way adjacent to their property. For safety purposes, benches must not be placed close to the curb or in locations where they obstruct pedestrian walkways.

(c) Bus Stop Shelters

Bus stop shelters provide comfort and safety to bus riders as well as to other pedestrians in need of a place to wait. The standard contemporary styled structures constructed of aluminum or steel and lexan are inappropriate in the overlay area. Such structures are out of character with the heritage district and do not relate well to the proposed streetscape elements or furnishings.

On February 26, 2007, the Town of Herndon Heritage Preservation Review Board granted a Certificate of Appropriateness for use of a bus stop shelter. The Certificate of Appropriateness stipulates that:

- The roof of each shelter shall feature an overhang of approximately one foot, six inches.
- The shelters shall not feature an internally mounted light fixture.
- The shelter is the "Southampton" model manufactured by Columbia Equipment Company. Any variation in the size or materials of the shelter shall require review and approval by the Heritage Preservation Review Board.

For detailed information about the bus stop shelter, see Section IV, Details and Specifications, Downtown Streetscape. The Southampton model should include arched or diagonal braces at the eave line, as shown in the photograph in Section IV.

(d) Tree Grates

Only in narrow sidewalk areas with high pedestrian traffic should tree grates be considered. They should be judiciously used only

when the tree planting methods of open planting beds or longer planting corridors are infeasible. Manufactured by Neenah or equivalent, the tree grate is constructed of cast iron. To be pedestrian friendly and safe for persons with mobility impairments, slots should be less than one half inch in width. Its round or round/square combination is adaptable to different site conditions, and the grates may be obtained in several sizes. See illustrations in See Section IV, Details and Specifications, Downtown Streetscape.

(e) Bollards

Bollards may be incorporated into public rights-of-way or new development projects to control pedestrian and/or vehicular traffic. Manufactured by Ironsmith, the proposed bollard is the "Victorian" M9022 or equivalent. The slim, sculptured bollard is four feet high, and its style is reminiscent of the turn of the century. The cast iron object features a black finish to match other streetscape elements and may be equipped for supporting black metal chain barriers if desired. To highlight special areas, decorative finials may also be added to bollards. For detailed information about the bollard, see Section IV, Details and Specifications, Downtown Streetscape.

(f) Drinking Fountain

Pedestrian comfort and convenience is enhanced by the provision of public drinking fountains. As private infill properties, and as enhancements may occur at the Town Green and Town hall Square, the need for public water refreshment should be considered. The Town commits to providing a drinking fountain that is wheelchair accessible at Town Hall Square. For additional fountains, the selected drinking fountain is Murdock's Model 1776 or equivalent, with semi-gloss black finish to match the proposed streetlights and other street furnishings. For detailed information about the drinking fountain, see Section IV, Details and Specifications, Downtown Streetscape. The fountain is constructed of cast iron and is anti-freezing.

An accessible "path of travel" to restrooms, telephones, and water fountains in the vicinity of an area used for a primary function (such as events on the Town Green or Town Hall Square) should be provided to the maximum extent feasible. Along such a path of travel, the water fountain must be wheelchair accessible. The wheelchair-accessible model of the 1776 style is antifreezing. Installation may consist of the Model

1776 (inaccessible by wheelchairs) plus the Model MC-76-1-AVAF, or if the installation may include only the accessible model (MC-76-1-AVAF.) Other configurations are available with two bowls (inaccessible and accessible) but they are non-antifreezing.

An additional Murdock fountain DFH-4075 with jug-filler is recommended for one carefully selected location along the trail. It is an attractive public service amenity, which reflects the friendly atmosphere of the Town. The fountain is anti-freezing and includes a water-saver feature. This style should not be used in the immediate Town Hall – Depot area, as it is not compatible with the 1776 style.

(g) Fencing

Fences, gates and railings can be used effectively for pedestrian traffic control, safety and security. They can provide perceived continuity of the street wall at alleyways or in locations of building setbacks or architectural indentations.

At the turn of the century, wrought iron fences were popular in both residential and public areas of Herndon. Fencing was used in the central commercial area, around a church at Pine and Monroe, and in other locations. The style most commonly used in Town was made by the Stewart Iron Works Company of Cincinnati, Ohio. One original fence remains today in Town, along the frontage of the historic residential property at 736 Park Avenue. The Stewart Iron Company seal is still in place on one gate.

Stewart Iron Works still carries the same fencing. This fencing or equivalent is therefore recommended for fencing. Gate posts and line posts may be varied to a limited extent, to coordinate with modern architectural design elements. A sense of historical authenticity and cultural continuity in fence design must be retained. For detailed information about fencing, see Section IV, Details and Specifications, Downtown Streetscape.

(h) Bicycle Racks

The preferred bicycle rack is the Bike Post Bicycle Rack-Model BP manufactured by Creative Pipe or approved equal. Use of this compact rack is appropriate for the often confined streetscape in downtown when adhering to the Criteria for Selecting and Locating Bicycle Parking Racks in Section IV, Details and

Specification, Downtown Streetscape. A bike rack should be provided in Town Hall Square. For on-site bike racks associated with a specific development, bike racks other than the post and ring will be considered as part of a Certificate of Appropriateness for the building. The alternative bike racks also are subject to the Criteria for Selecting and Locating Bicycle Parking Racks. For detailed information about bicycle racks, see Section IV, Details and Specifications, Downtown Streetscape.

(i) Clocks

Clocks have historically been used as public focal points in plazas, meeting areas or in large private development projects. There are opportunities to use a freestanding clock as a public focal point in the Downtown Streetscape area. The selected style is marketed by Canterbury International as the "Danbury" model with a solid top. It is a replica of the post clock originally manufactured by the E. Howard Clock Company at the turn of the century. For detailed information about the clock, see Section IV, Details and Specifications, Downtown Streetscape.

(8) Signage

Signage that is well designed can add vitality to the streetscape. Public signage posted for purposes of safety or information should be coordinated with the use of redundant signage minimized. Wherever possible, public signage should not block the path of pedestrians and should not be obstructed by landscape foliage or streetscape fixtures.

The Town allows certain types of private commercial signs to overlap the streetscape environment in the downtown. Specifically, sandwich board signs and projecting signs within the central commercial and planned development-Downtown zoning districts are permitted when appropriate and approved by the Heritage Preservation Review Board (HPRB). Section 78-508.6 of the Zoning Ordinance and the Heritage Preservation Handbook provide standards for each of these types of signs. The specifications for sandwich board signs and projecting signs including color, material, size, means of construction, location, and overall design must meet these standards and remain compatible with the character of the Heritage Preservation Overlay District. The implementation of context-conscious designed signs within the streetscape of the district can enliven the experience of pedestrians and amplify the interaction of those pedestrians with the ground floor uses of adjacent buildings. In that sense, sandwich board and

projecting signs when designed appropriately and used in moderation should be encouraged.

(9) Building Planters and Window Boxes

Well-maintained architectural planting and window boxes are appropriate and encouraged in the Village Streets overlay. Besides being decorative, planters may be designed to provide functional seat walls. Architectural planters may be constructed using the standard Heartland Flashed Paver by Boral Bricks or approved equal, materials consistent with building facades or contrasting compatible materials/textures/colors that relate to the streetscape and/or provide a comfortable transition between building and the street. Window boxes should be made of metal or wood painted to match the color schemes of the building. Before any planters or window boxes are approved for use, a maintenance commitment should be made by the property owner to the Town.

(10) Location of Above-Ground Utilities and Public Signage

The visual character of historic districts is significantly affected by the location and appearance of public utility devices, such as traffic control boxes, and by public signage, such as directional units. These streetscape elements need to be addressed specifically and in detail during implementation of streetscape development.

(11) Burying New and Existing Utilities

Few streetscape improvements are as noticeable and provide as much immediate visual appeal as relocating existing overhead utilities below ground. Not only does the relocation of utilities immediately improve the appearance of downtown, but it increases the useable sidewalk width for pedestrians. The placement of utilities underground also provides additional space for streetlights, street trees, landscaping elements, and street furnishings in the public rights-of-way. The Town should continue its efforts to eliminate above ground utilities in the downtown. Zoning Ordinance Section 70-309, Underground utilities, states that: "new and existing utilities shall be placed below ground in accordance with standards as established in the Public Facilities Manual and accepted standards of utility practice for underground construction. The subdivider or developer shall be responsible for arranging with the appropriate utility so that new, existing, or relocated distribution and customer service utility facilities, carrying or used in connection with water, sanitary sewer, electric power,

communications, cable television, petroleum, gas or steam, installed within the boundaries of the site, or within the adjacent public right-of-way shall be placed below the surface of the ground.”

E. Details and Specifications for the Downtown Streetscape

List of Exhibits:

Pavers

- Pavers – Typical
- Expansion Joint – Typical
- Pavement Layer Construction

Sidewalks

- Sidewalk Enlargement 1
- Sidewalk Enlargement 2
- Sidewalk Enlargement 3
- Sidewalk Enlargement 4
- Sidewalk Enlargement 5

Crosswalks

- Curb Ramp – Typical
- Crosswalk Type 1 - Plan
- Crosswalk Type 1 – Section

Other Construction Details

- Wall Cap
- Stair – Longitudinal Section
- Stair Cross Section
- Driveway Entrance – Plan
- Driveway Section – Section

Lighting

- Hadco Acorn – streetlights
- Promenade PRM2 – off-street light fixture and pole

Landscaping, Planters, and

Irrigation

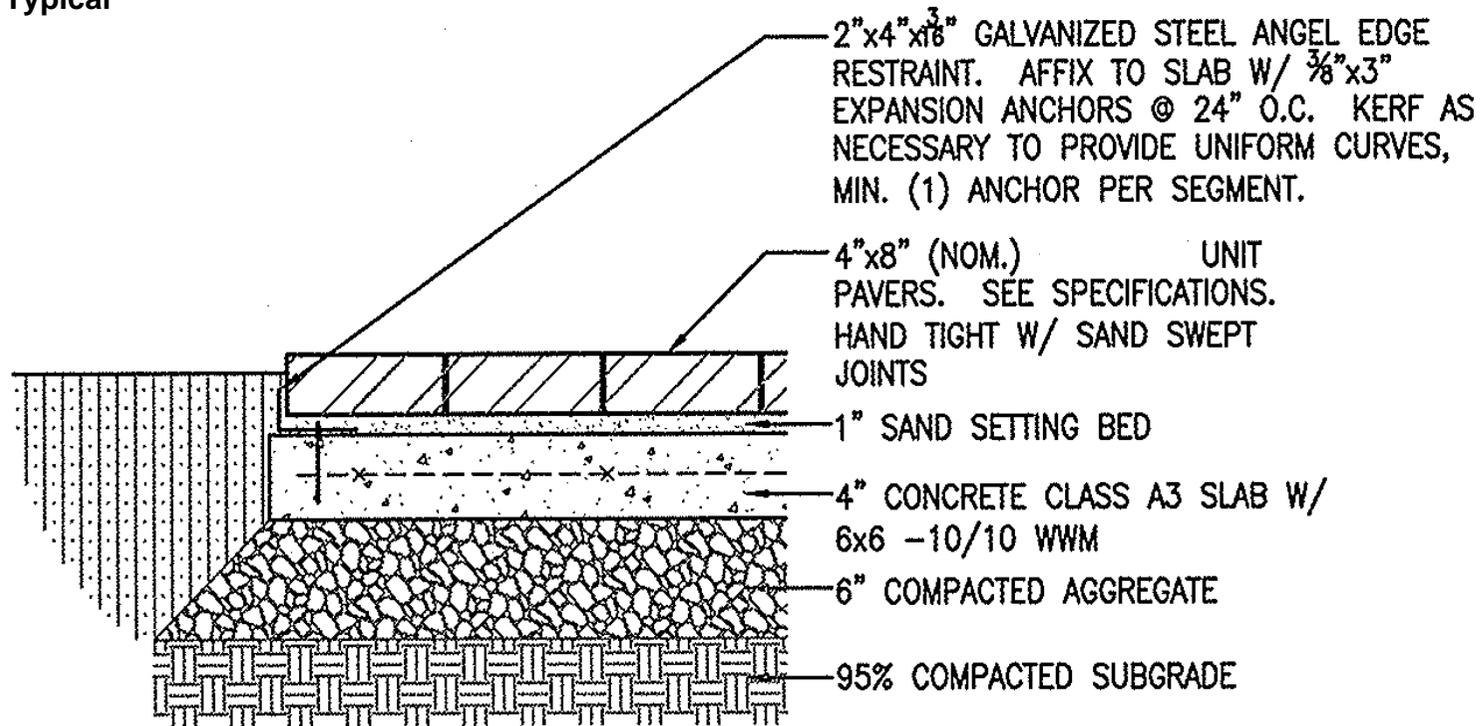
- Streetscape Planting Schedule
- Plant Spacing Diagram
- Planter Curb – Typical
- Root Path
- Single Stem Tree Planting
- Tree Planting – Tree Pit
- Shrub Planting

- Groundcover and Perennial Planting
- Planter Plan – Irrigation
- Planter Section – Irrigation
- Zone Valve with Quick Coupling Valve
- Quick Coupling Valve on Main
- Air/Vacuum Release Valve
- Irrigation – Point of Connection

Streetscape Amenities

- Streetscape Trash Receptacle by Victor Stanley, Inc.
- Streetscape Bench by Victor Stanley, Inc.
- Approved Bus Stop Shelter for Downtown Streetscape Area (Model #AL10/02+HRsp “Southampton” by Columbia Equipment Company)
- Tree Grates from Neenah Foundry Company
- Streetscape Bollard from Ironsmith
- Streetscape Drinking Fountain by Murdock
- Wheelchair Accessible Streetscape Fountain by Murdock
- Fencing, by Stewart Iron Works
- Downtown Streetscape Bicycle Rack, Bike Post Bicycle Rack-Model BP by Creative Pipe
- Streetscape Clock, “Danbury” by Canterbury

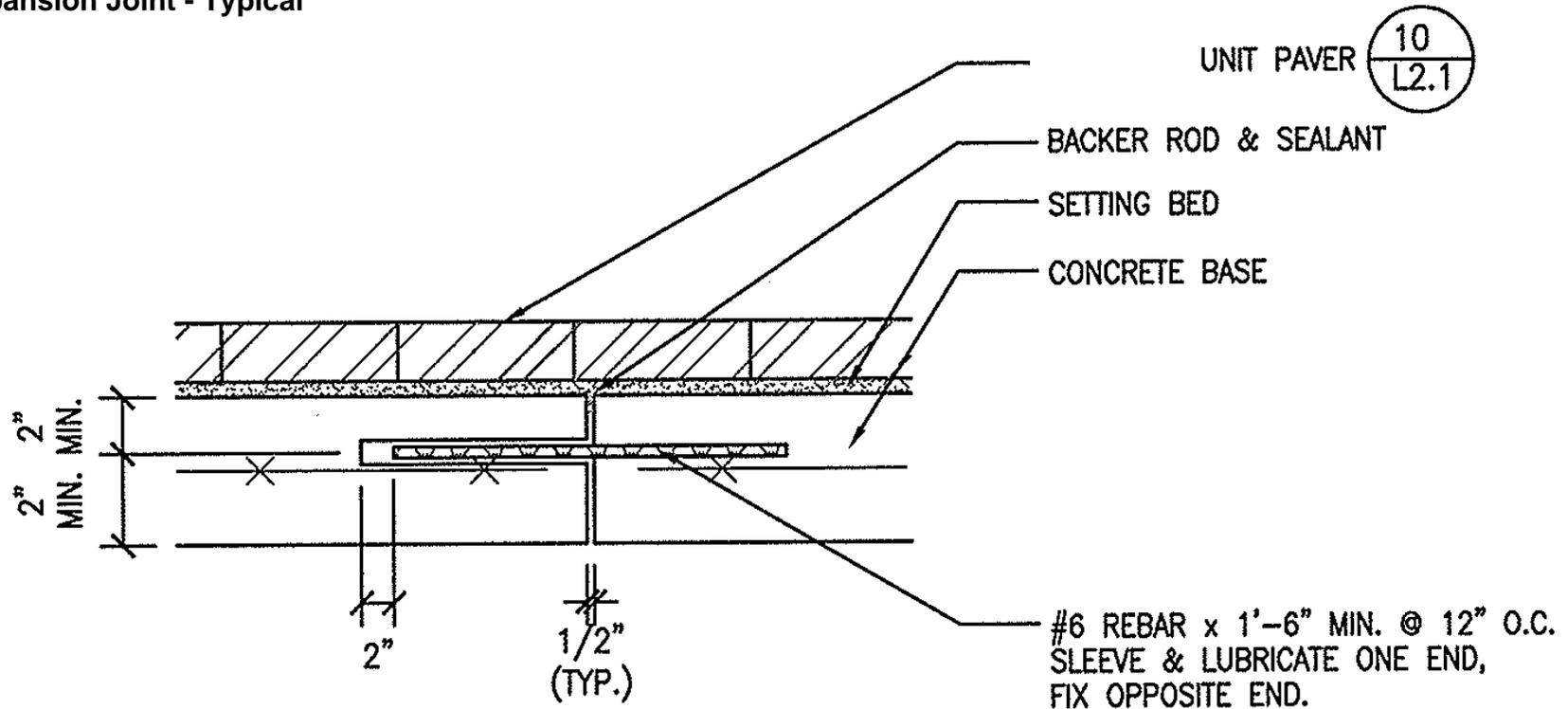
Pavers - Typical



NOTES:

1. ANCHOR EDGE RESTRAINT W/ $\frac{3}{8}$ "x3 $\frac{1}{2}$ " SLEEVE ANCHORS W/ WASHERS & NUTS. INSTALL 24" O.C. & MIN. (1) PER CUT SEGMENT.
2. ADJACENT CONDITIONS VARY. PROVIDE $\frac{1}{2}$ " EXPANSION JOINT & SEALANT PER 6/L2.1 WHERE PAVERS ABUT STRUCTURES.
3. TYPICAL PAVERS (PEDESTRIAN) ARE 6cm DEPTH. PAVERS INSTALLED IN DRIVEWAY ENTRANCES (VEHICULAR) ARE 8cm LOAD BEARING UNITS.
4. CUT EACH PAVER SYMMETRICALLY FOR RADIAL COURSES.

Expansion Joint - Typical



NOTES:

1. INSTALL EXPANSION JOINTS IN PEDESTRIAN PAVEMENTS PARALLEL AND/OR PERPENDICULAR TO ADJACENT CURB & GUTTER. ISOLATE CONCRETE IN MAXIMUM 400 SF SLABS.
2. PROVIDE REBAR DOWEL AS ABOVE BETWEEN ADJACENT CONCRETE BASE SLABS. DELETE DOWEL WHERE CONCRETE BASE ABUTS OTHER STRUCTURES.
3. HOLD JOINTS IN CONCRETE BELOW DRY-SET PAVERS. EXTEND TO SURFACE OF MORTAR-SET PAVERS.

PAVEMENT LAYER CONSTRUCTION

Source: Brick Industry Association, TECHNICAL NOTES on Brick Construction, #14, March 2007, Reston, Virginia.

Subgrade Preparation

The subgrade should be excavated to achieve a uniform pavement thickness, and any substandard or soft materials should be undercut and replaced with acceptable backfill. A subsurface drainage system may be installed as perforated pipes or fin drains if necessary. All utility trenches should be properly backfilled and each layer thoroughly compacted to prevent settlement. The subgrade should be scarified and moisture conditioned to within 2 percent of optimum moisture content as determined by ASTM D 698, Test Methods for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft³ (600 kN-m/m³)) [Ref. 7], to a depth of 6 in. (152 mm). Moisture conditioning clay subgrades can be more complicated, because the clay absorbs water more slowly. It should then be graded to the appropriate profile and compacted by rolling with appropriate static or vibratory rollers. The subgrade should be compacted in accordance with ASTM D 698 to 95 percent maximum dry density for clay and 100 percent maximum dry density for sand/gravel.

Geotextile

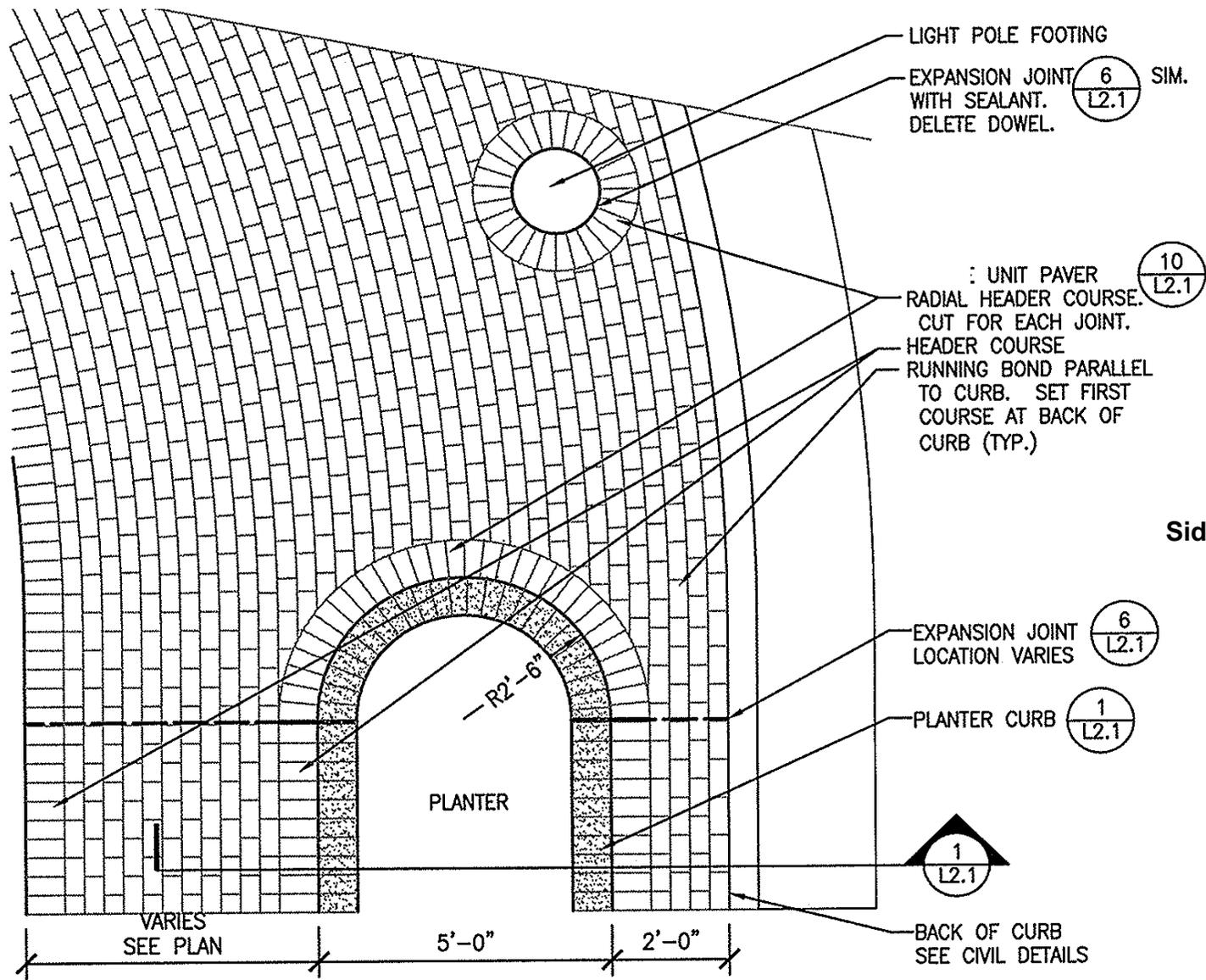
When a geotextile is used, it should be placed immediately before spreading the aggregate subbase or aggregate base. Geotextiles are not used when other base types are constructed directly on the subgrade. Care should be taken to stretch the material as it is unrolled to remove any wrinkles. A minimum lap of 12 in. (305 mm) should be provided at the sides and ends of rolls. Construction equipment should not be allowed to operate directly on the geotextile.

Aggregate Subbase and Base

Aggregate subbase and base courses are spread in layers of up to 6 in. (152 mm) in compacted thickness, dependent upon the proposed compaction process. Material may be end-dumped from the delivery trucks and spread by grader spreaders or by hand with care to avoid segregation. The material should be moisture conditioned to within 2 percent of the optimum moisture content from ASTM D 698. It should then be compacted by rolling with appropriate static or vibratory rollers, or with a plate vibrator. When using a plate vibrator, the layer thickness must be 3 in. (76 mm) or less, and more than one layer may be required. The subbase and base layers should be compacted according to ASTM D 698 to 95 percent maximum dry density. Limited regrading is permissible to achieve correct surface profile and elevations. The maximum variation under the setting bed should be $\pm 3/16$ in. (4.8 mm) when tested with a 10 ft (3.05 m) straightedge laid on the surface. The minimum slope of the aggregate base should be 1 in. (25.4 mm) in 4 ft (1.22 m) to allow for drainage.

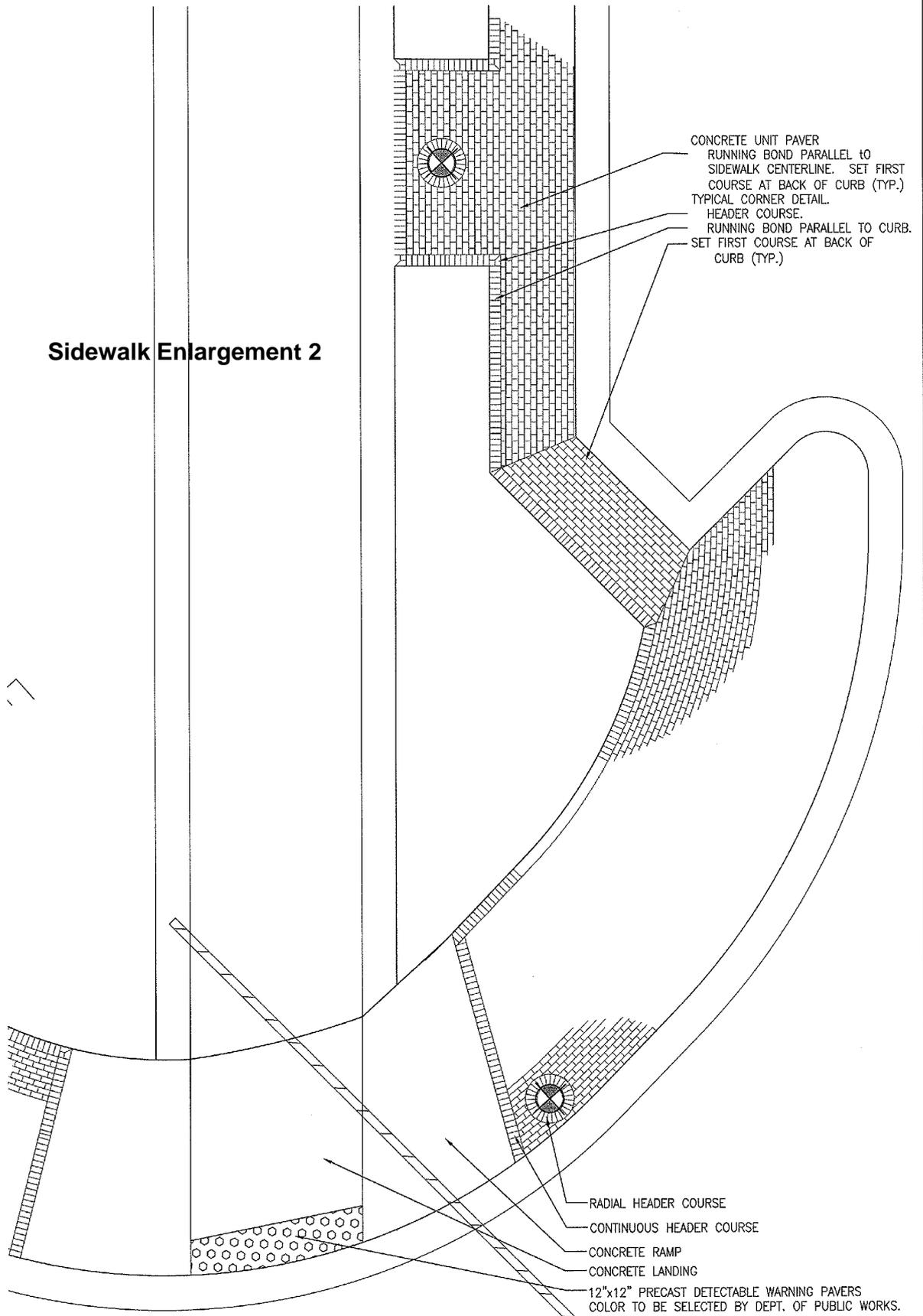
Concrete Base

Concrete usually is plant-mixed and delivered to the site in ready-mix trucks. It is discharged between forms, where it is spread and consolidated. The formwork is set to the correct elevations, and a vibrating screed is drawn between the forms to achieve the appropriate surface elevations. Movement joints containing load-transfer devices may be formed at the edges of each pour, or the devices can be cast into the concrete between forms. Saw cutting may be undertaken to induce cracking at the desired locations. A concrete base may be finished with a broom, brush or wood float. A polished surface finish should be avoided. Care should be taken to follow proper curing procedures for at least 14 days. Vehicular loads should not be permitted for at least 7 days, but paver installation may commence after 3 days. The maximum variation under the setting bed should be $\pm 3/16$ in. (4.7 mm) when a 10 ft (3.05 m) straightedge is laid on the surface. The minimum slope of the concrete base surface should be 1 in. (25.4 mm) in 4 ft (1.22 m) to allow for drainage.

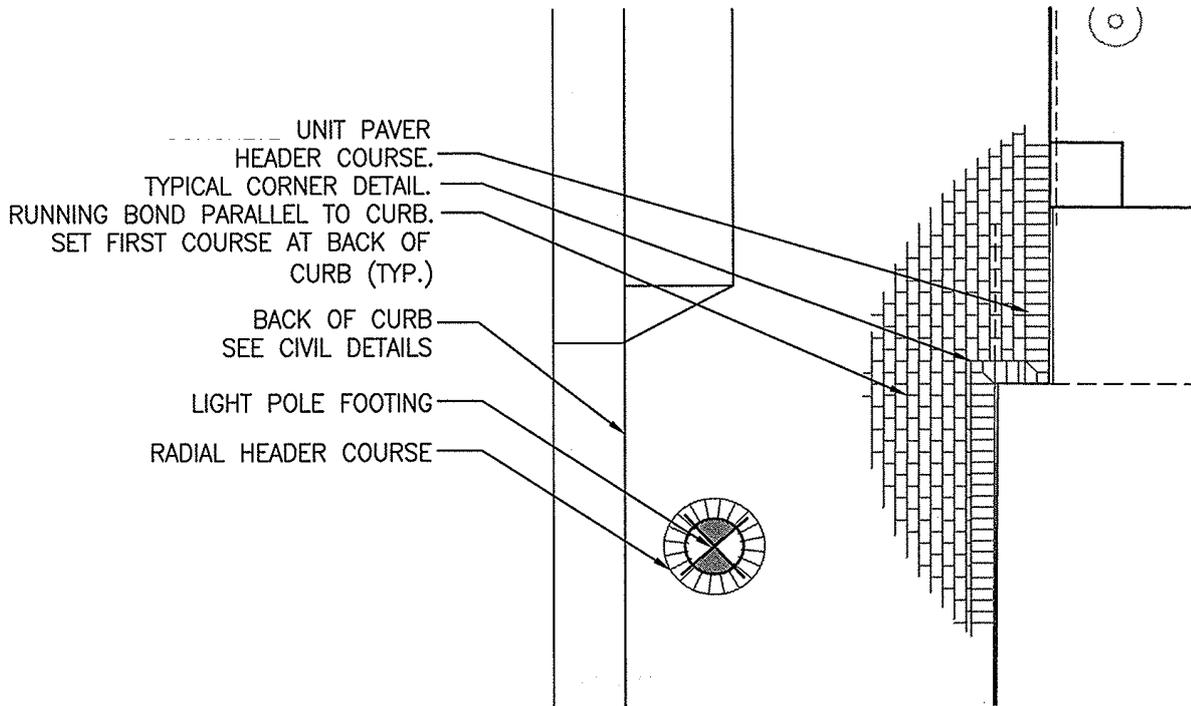


Sidewalk Enlargement 1

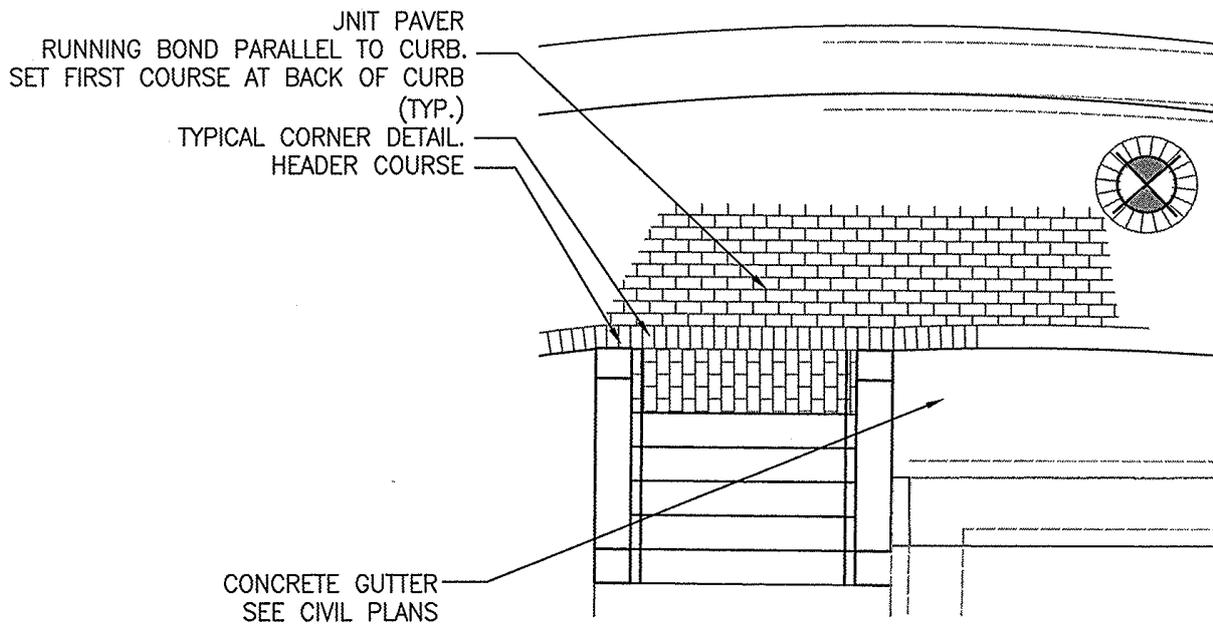
Sidewalk Enlargement 2



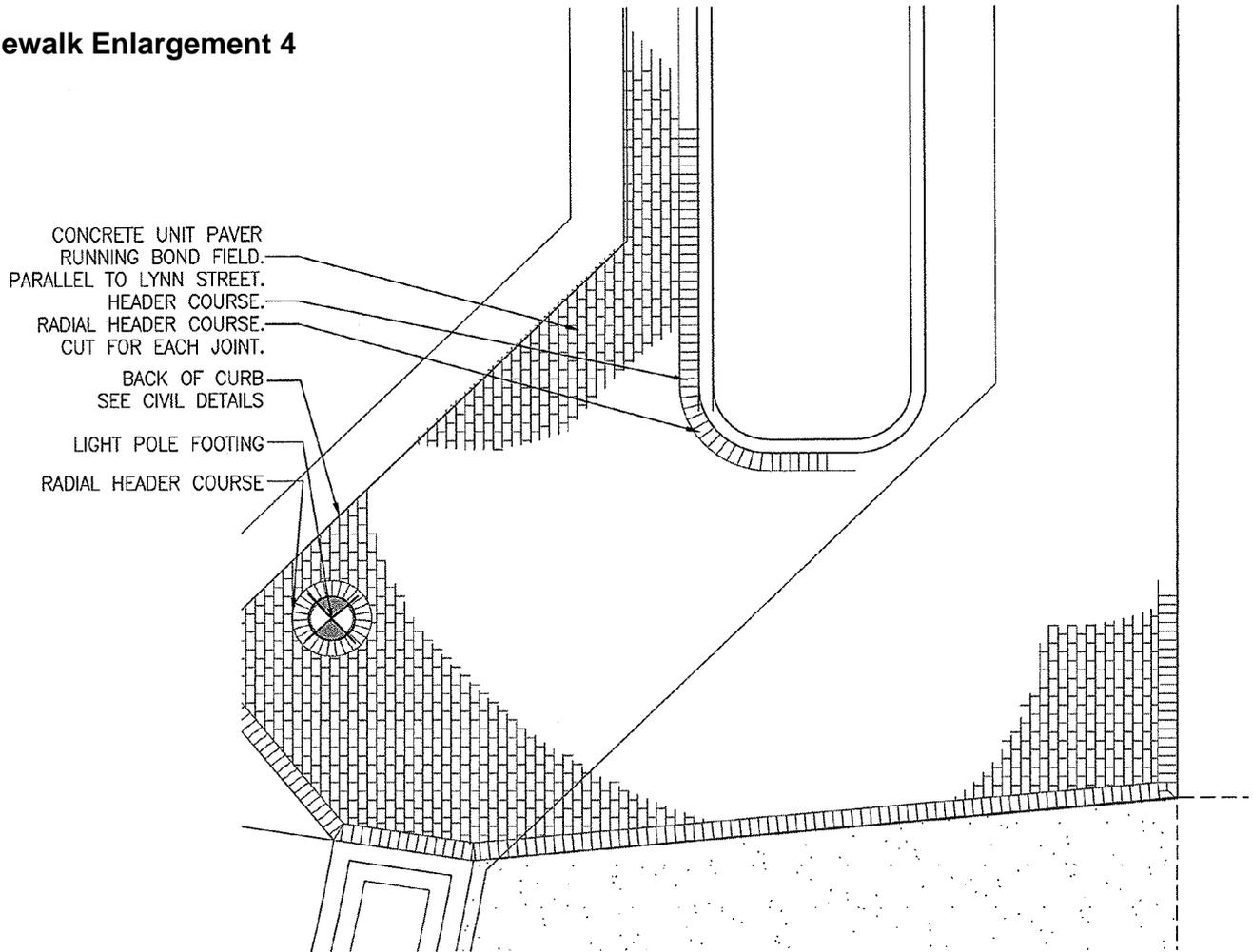
Sidewalk Enlargement 3



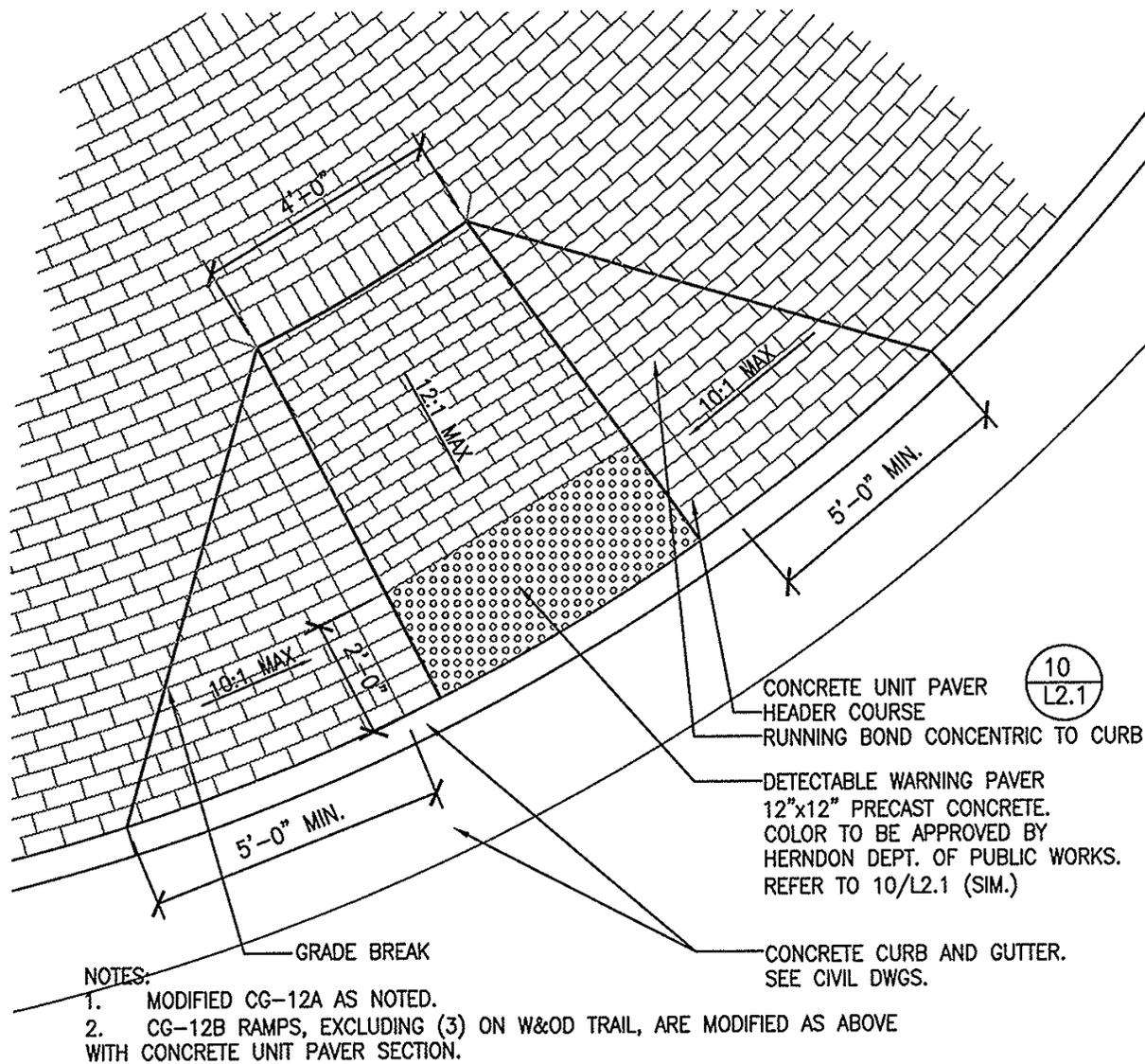
Sidewalk Enlargement 5



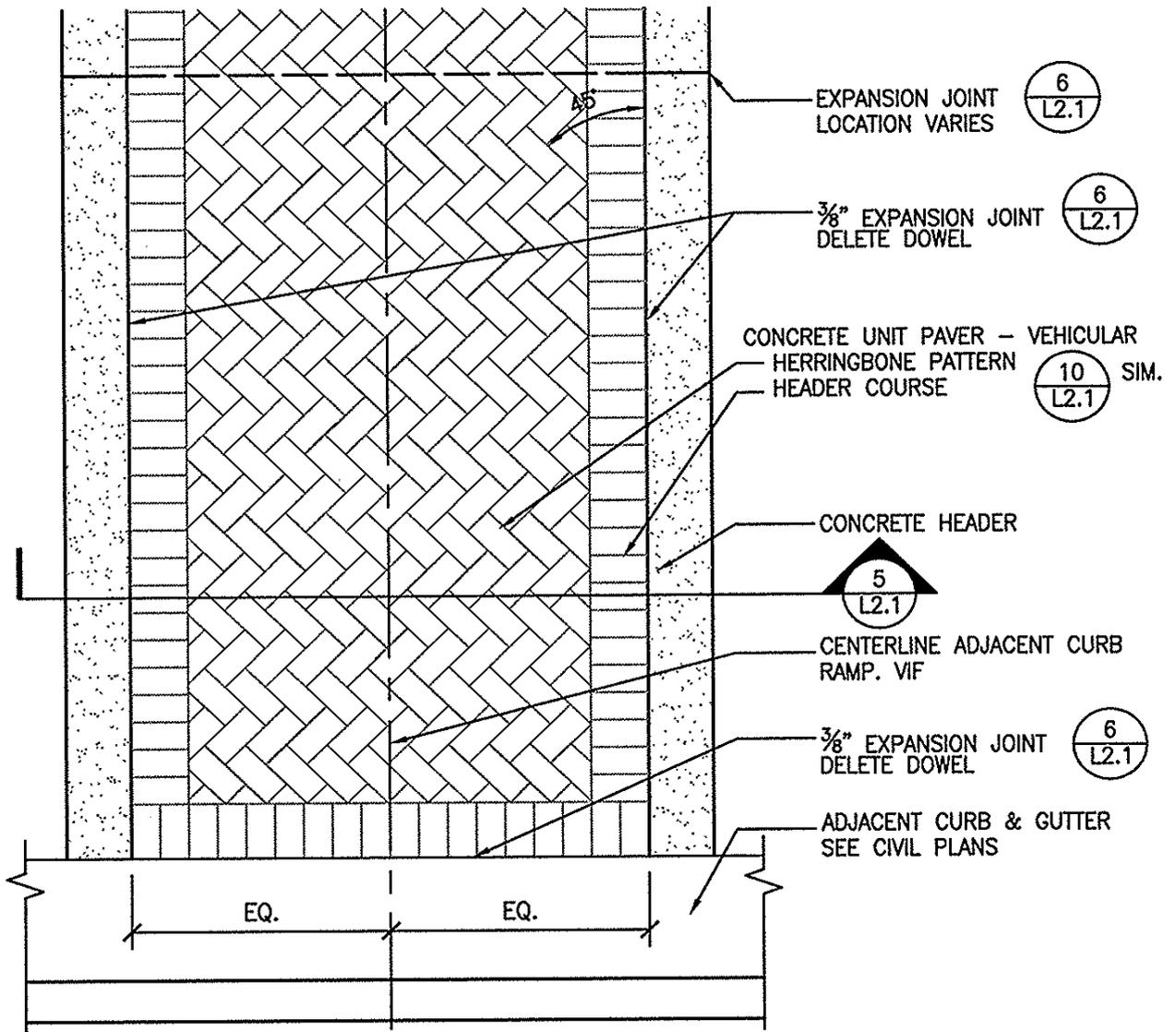
Sidewalk Enlargement 4



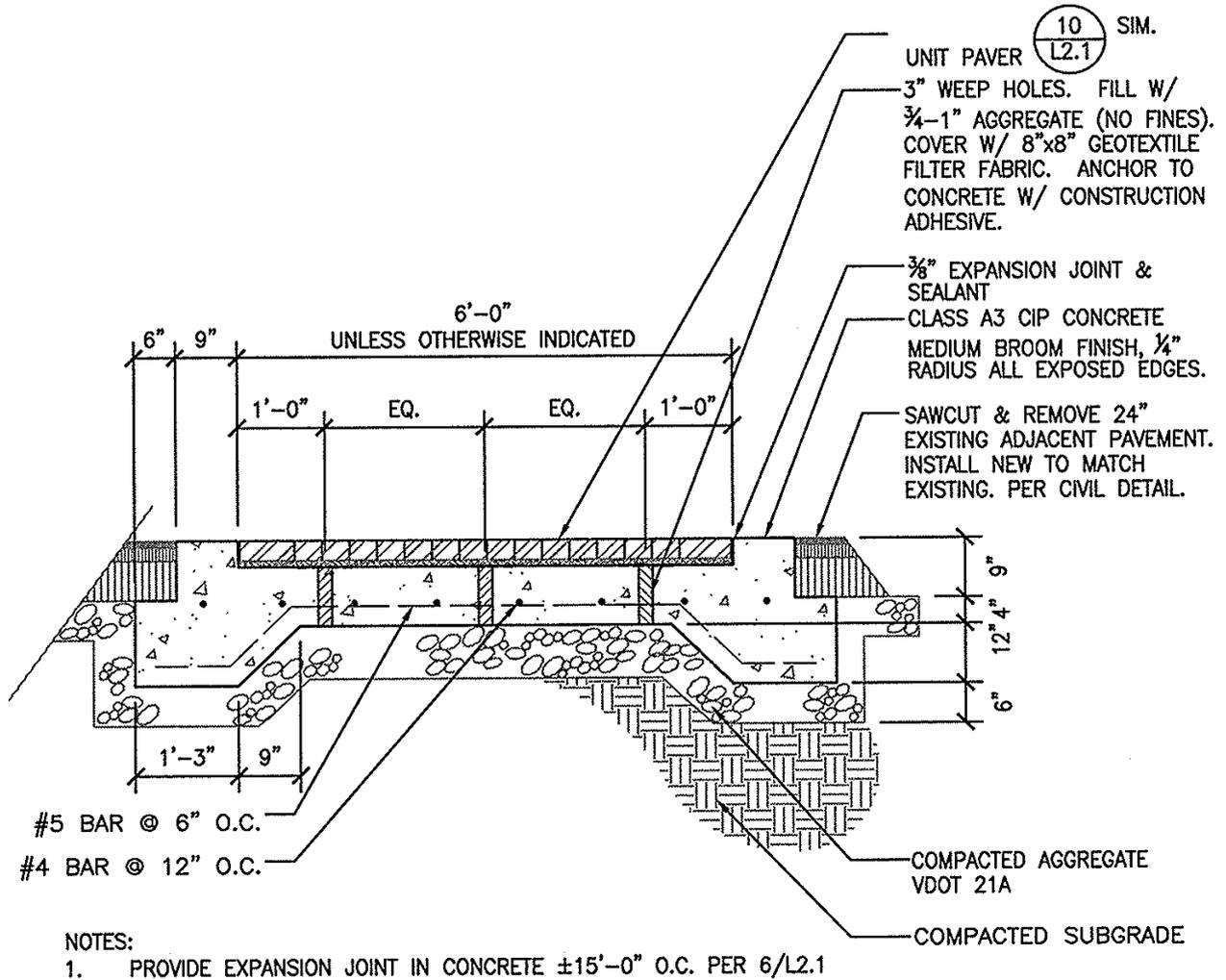
Curb Ramp - Typical



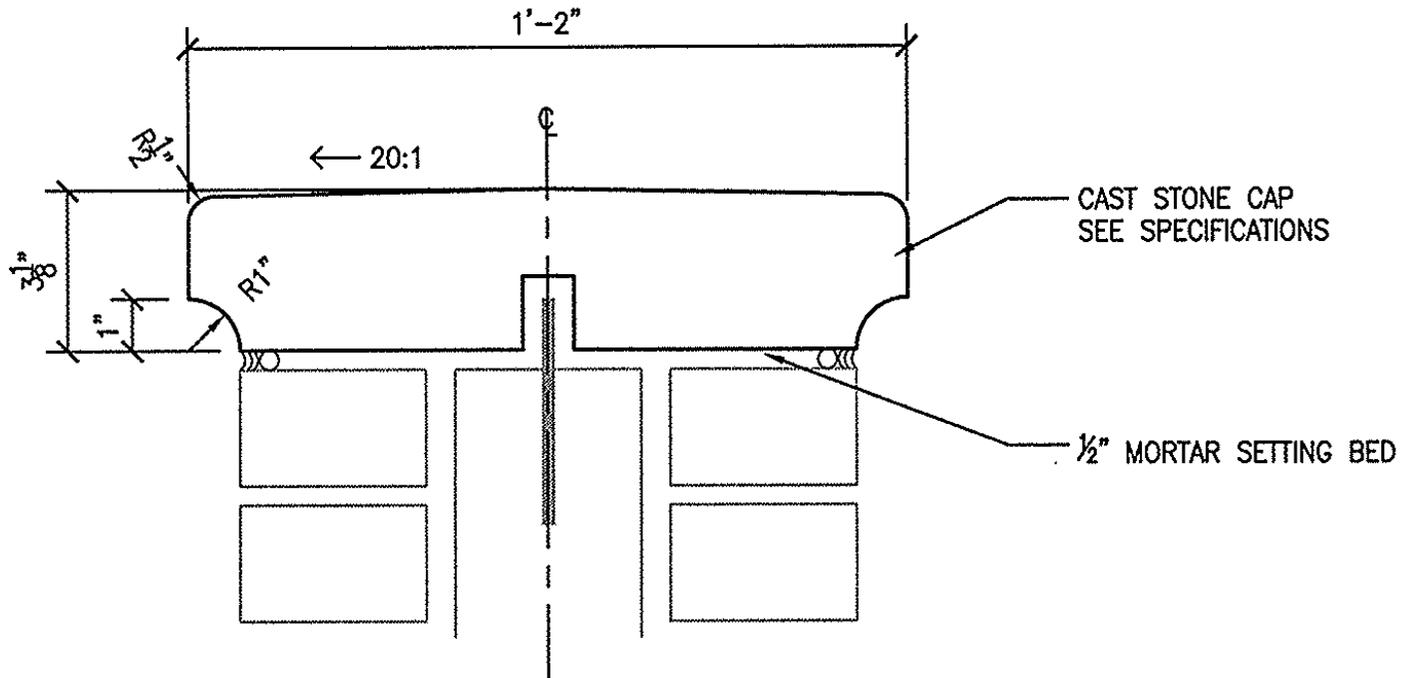
Crosswalk Type 1 - Plan



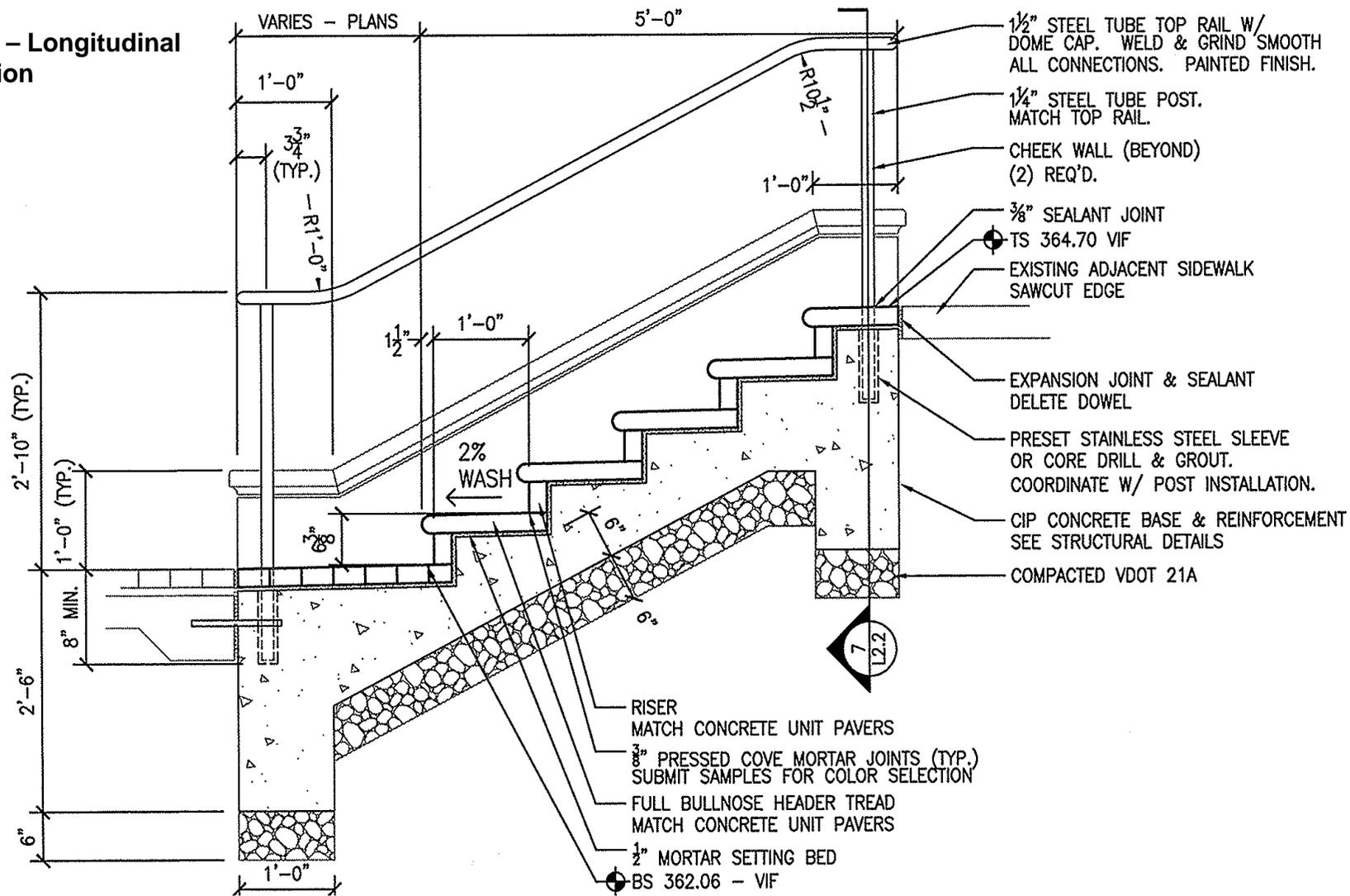
Crosswalk Type 1 - Section

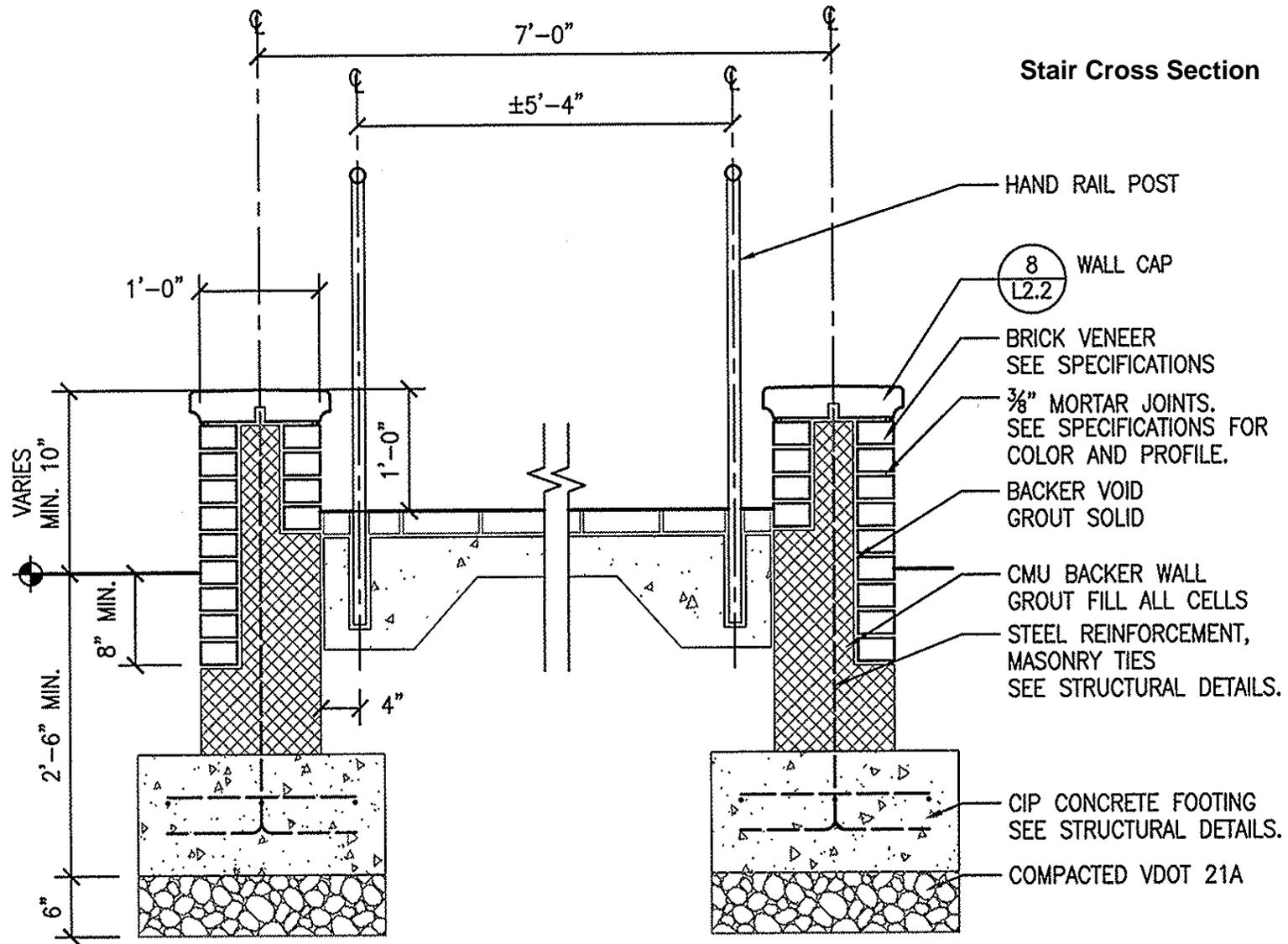


Wall Cap

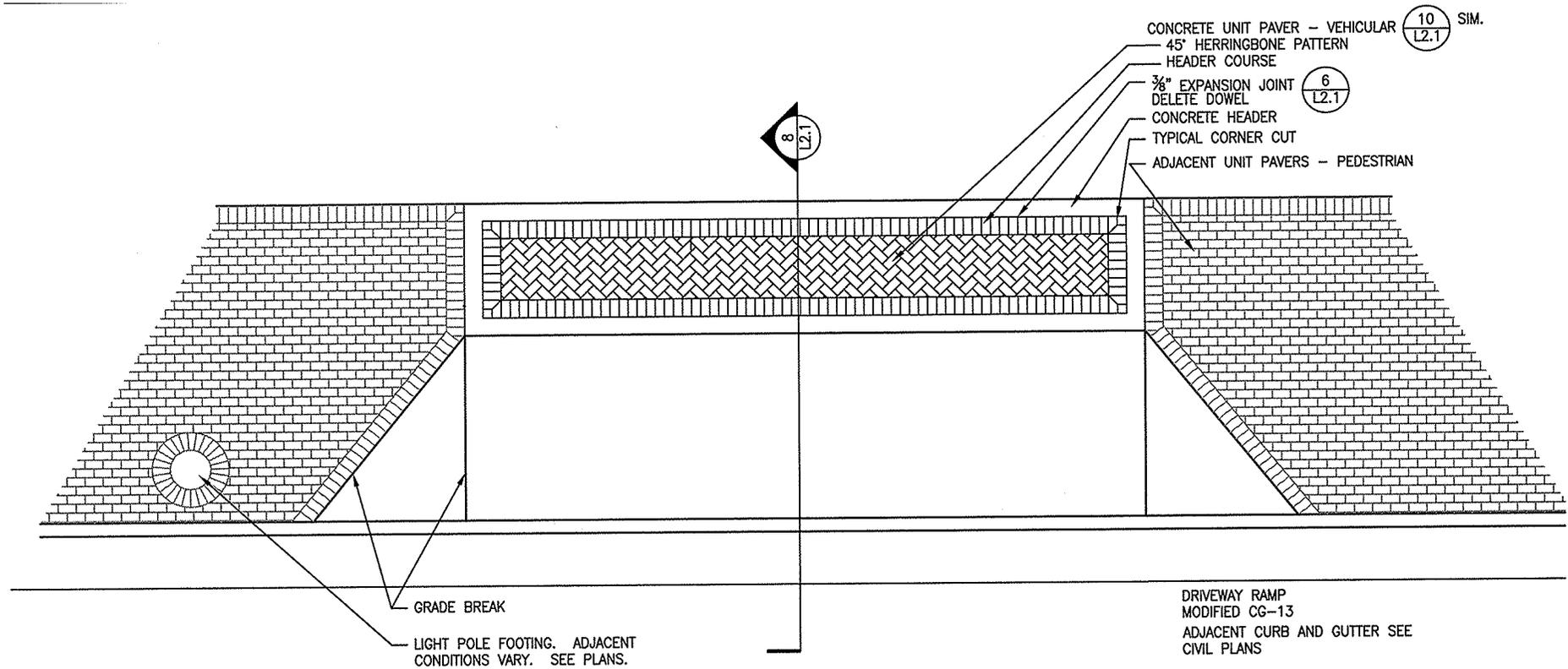


Stair – Longitudinal Section

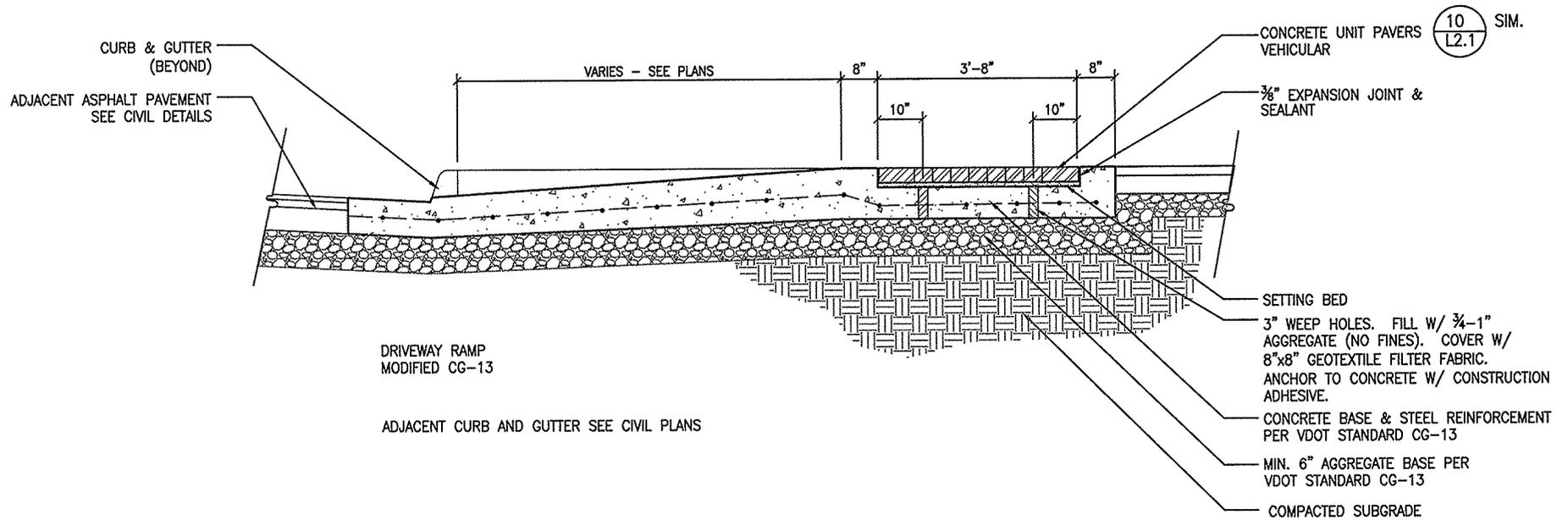




Driveway Entrance - Plan



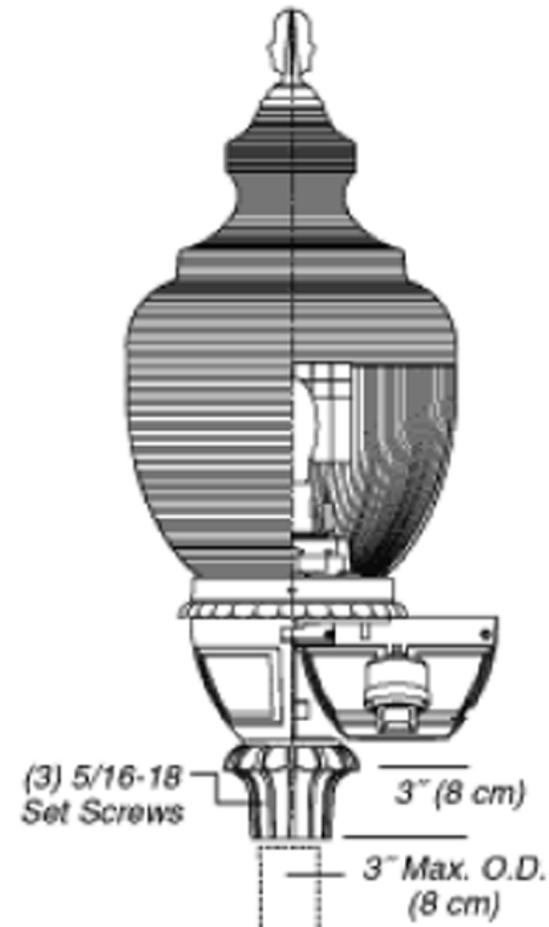
Driveway Section - Section



**Streetscape Light Fixture
Acorn by HADCO**



HADCO ACORN
R34
Type III Wide
Refractive Globe
Commercial
Refractive Globe



Off Street Light Fixture and Pole in Downtown Streetscape Area, by Architectural Area Lighting

Promenade - PRM2

page 1 of 4

DATE

TYPE

Quality design and construction for easy installation and routine maintenance.

FEATURES

- IES Full-Cutoff reflector systems.
- Memory retentive silicone gaskets keep the optical chamber free of dirt and contaminants. IP=54
- Tool-less removal of the reflector module.
- Tool-less access and removal of the ballast module.
- Optical grade acrylic lenses will not yellow from UV radiation from the sun and metal halide lamps.
- All cast aluminum construction and stainless steel hardware for corrosion resistance.



Note: Promenade's PRMS shown for construction reference only.



Architectural Area Lighting

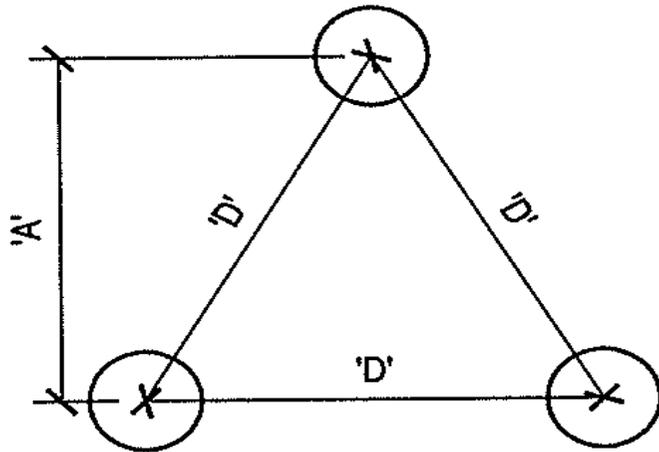
14249 Artesia Blvd La Mirada, CA 90638
www.aal.net 714.994.2700 fax 714.994.0522

Promenade is a registered trademark of AAL. Design patents, Copyright 2005.

**Streetscape Planting Schedule
Used in the Downtown Streetscape
Project, 2007**

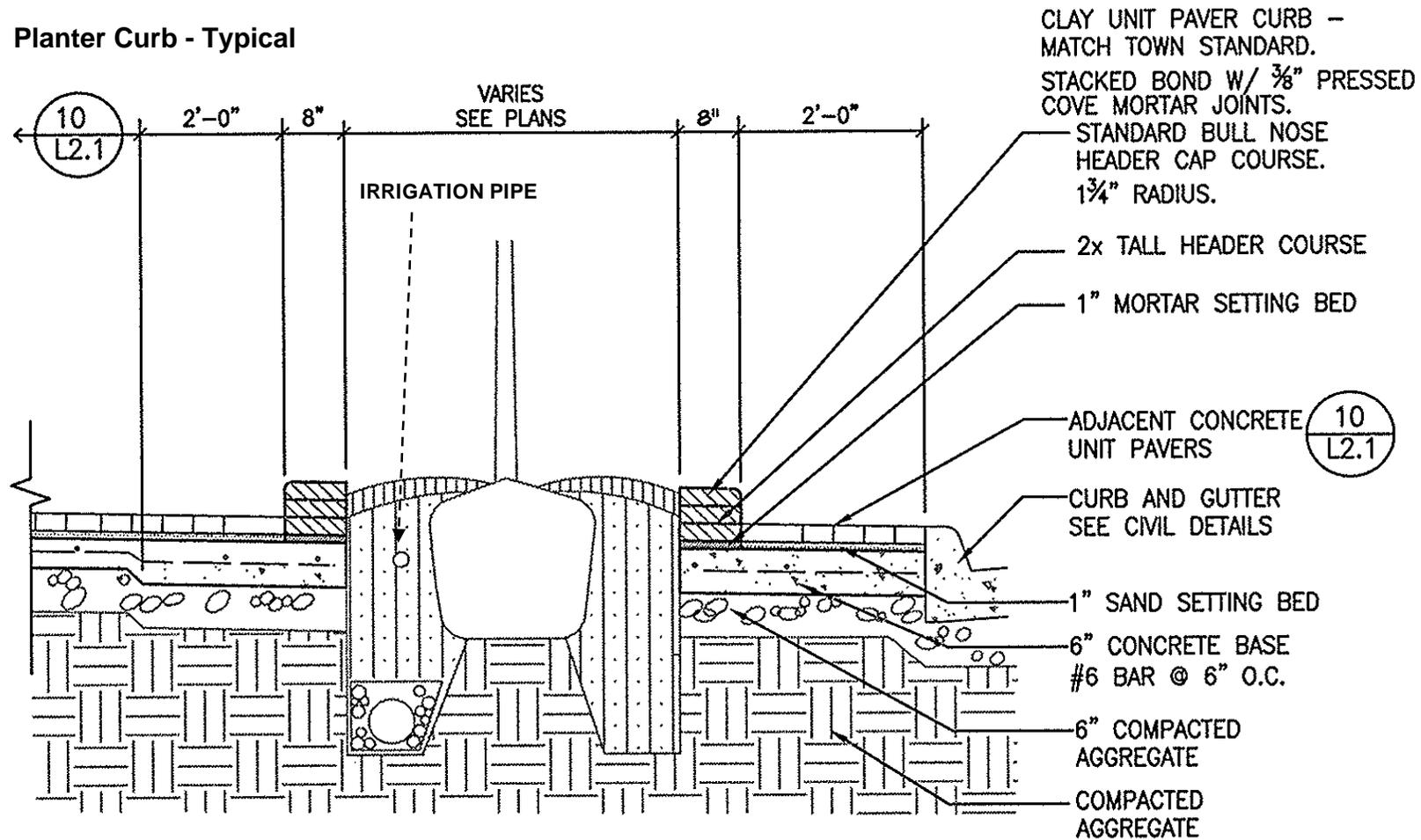
<i>Key</i>	<i>Quan</i>	<i>Botanical Name</i>	<i>Common Name</i>	<i>Size</i>	<i>Type</i>	<i>Spacing</i>	<i>Notes</i>
		TREES					
AC	12	Acer campestre	Hedge Maple	4.5" cal.	B&B	As shown	10' Clear trunk, central Leader, full, balanced, matched
QP	4	Quercus phellos	Willow Oak	3.5" cal.	B&B	As shown	7' Clear trunk, central Leader, full, balanced, matched
		SHRUBS					
IG	53	Ilex glabra 'Densa'	Inkberry Holly	30" ht.	B&B	30" o.c.	Full, dense, mature
		GROUNDCOVERS / VINES / PERENNIALS					
BCP	325	Bergenia crassifolia var. pacifica	Bergenia	1 quart	cont.	15" o.c.	Full, dense, mature
CSS	57	Cotoneaster salicifolius 'Scarlet Leader'	Scarlet Leader Willowleaf Cottoneaster	15-18" spr.	cont.	24" o.c.	Full, dense, mature
HCA	437	Hypericum calycinum	Aaronsbeard St. Johnswort	1 gallon	cont.	15" o.c.	Full, dense, mature
LMB	629	Liriope muscari 'Big Blue'	Big Blue Lilyturf	4" pot	cont.	9" o.c.	Full, dense, mature
SSA	182	Sedum spectabile 'Autumn Joy'	Autumn Joy Sedum	2 quart	cont.	15" o.c.	Full, dense, mature

Plant Spacing Diagram



PLANT SPACING ' D '	ROW OFFSET ' A '
8" O.C.	6.93" O.C.
10" O.C.	8.66" O.C.
12" O.C.	10.4" O.C.
18" O.C.	15.6" O.C.
24" O.C.	20.8" O.C.
36" O.C.	30.0" O.C.
48" O.C.	31.5" O.C.

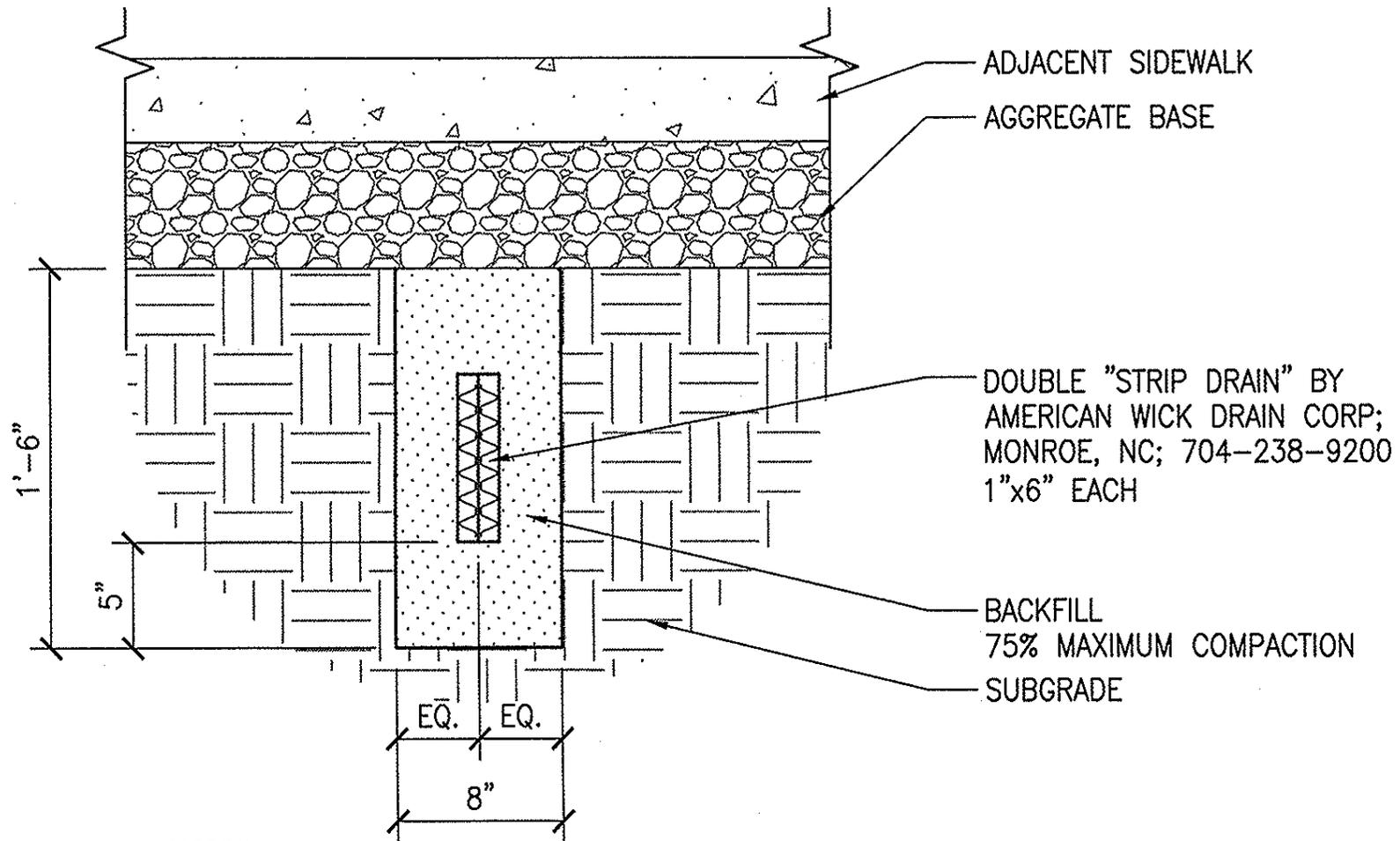
Planter Curb - Typical



NOTES:

1. REFER TO 3/L3.2 FOR PLANTING DETAILS, INCLUDING SUBDRAINAGE AND PLANTING, FG, AND MULCH ELEVATIONS.
2. CUT EACH CURB UNIT PAVER EQUALLY ON BOTH SIDES FOR EACH RADIAL JOINT. SEE 3/L2.1.

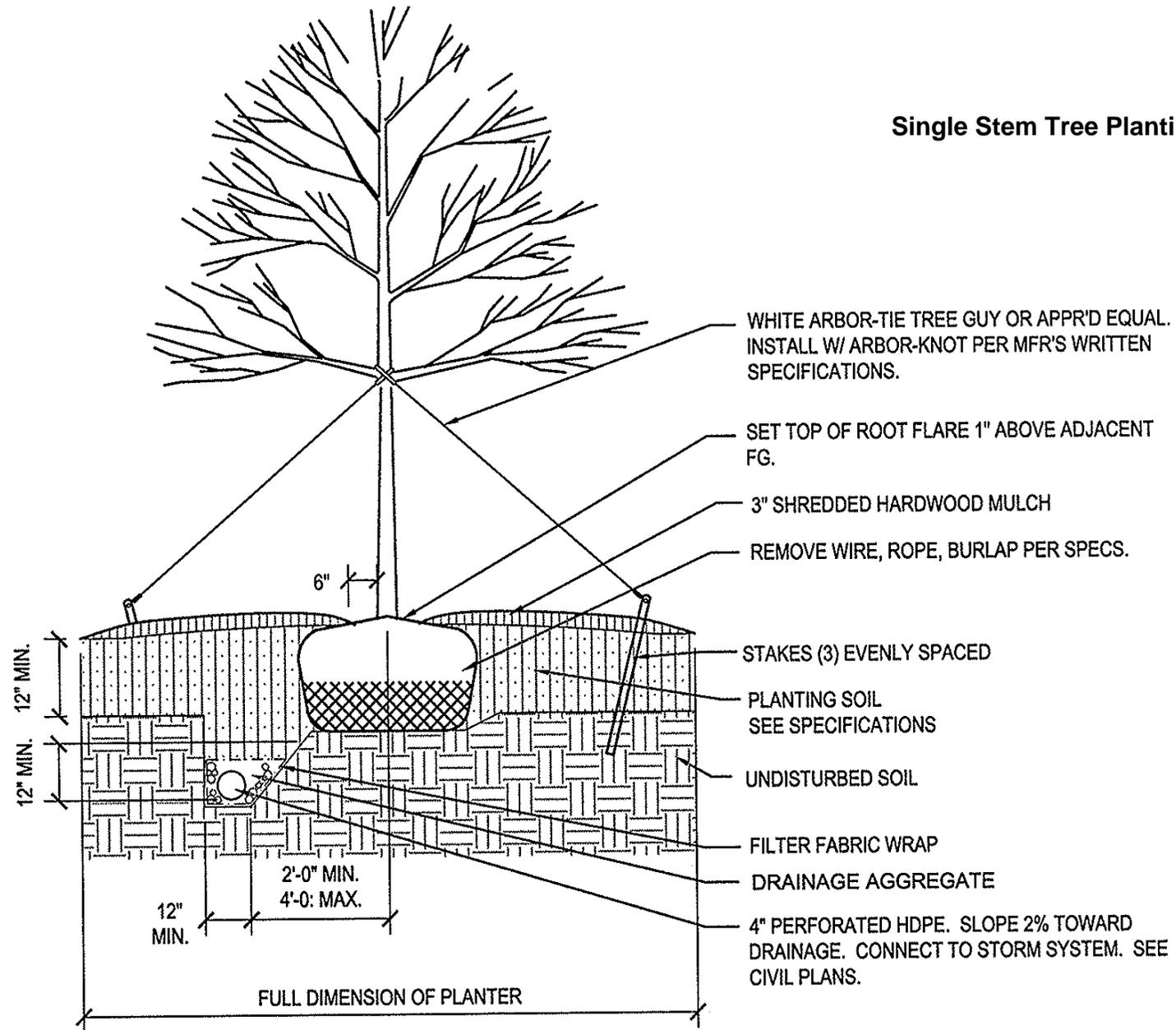
Root Path



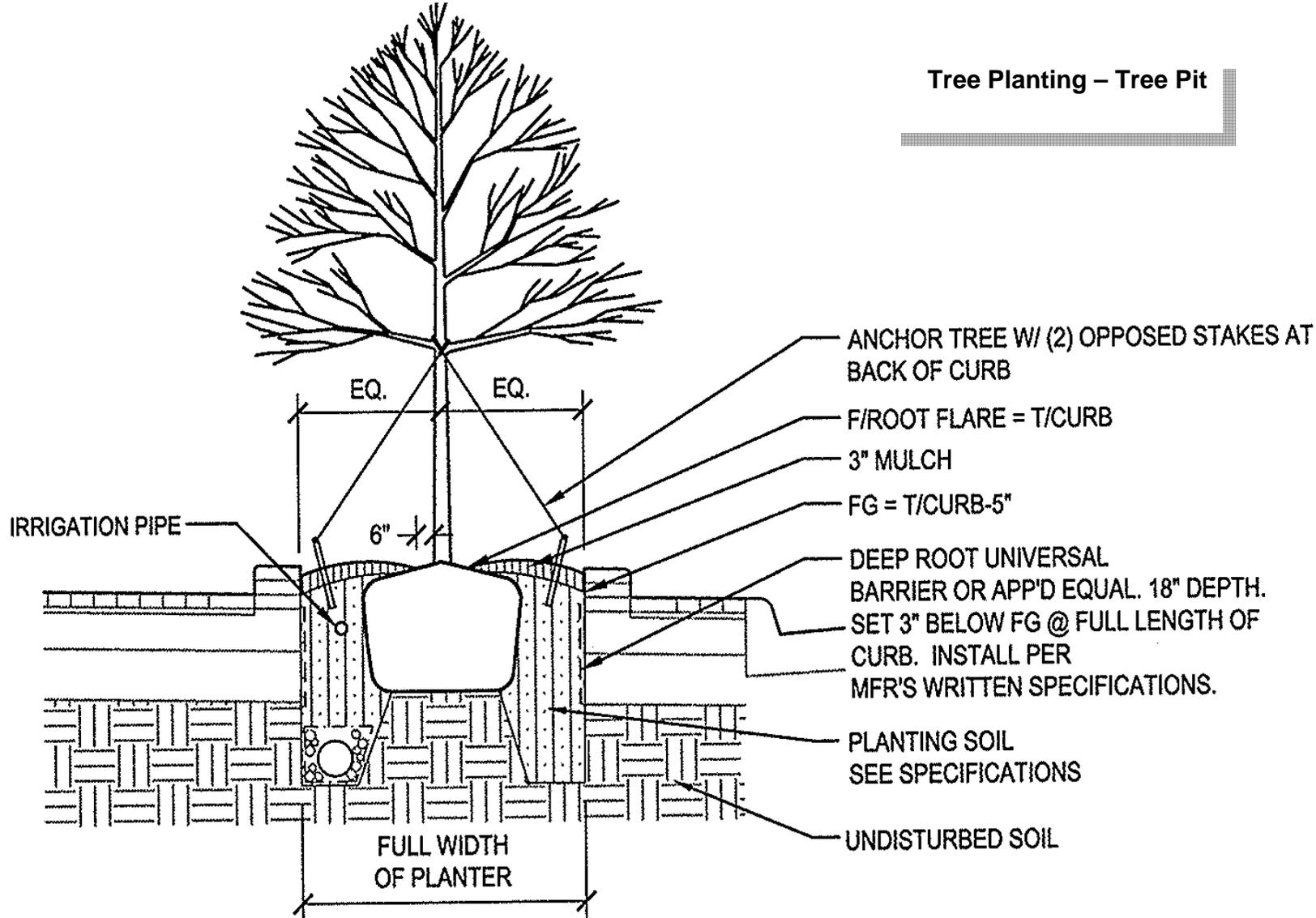
NOTES:

1. BEGIN 6" FROM ROOT BALL.
2. TERMINATE 1'-0" BEYOND EDGE OF PAVING.

Single Stem Tree Planting

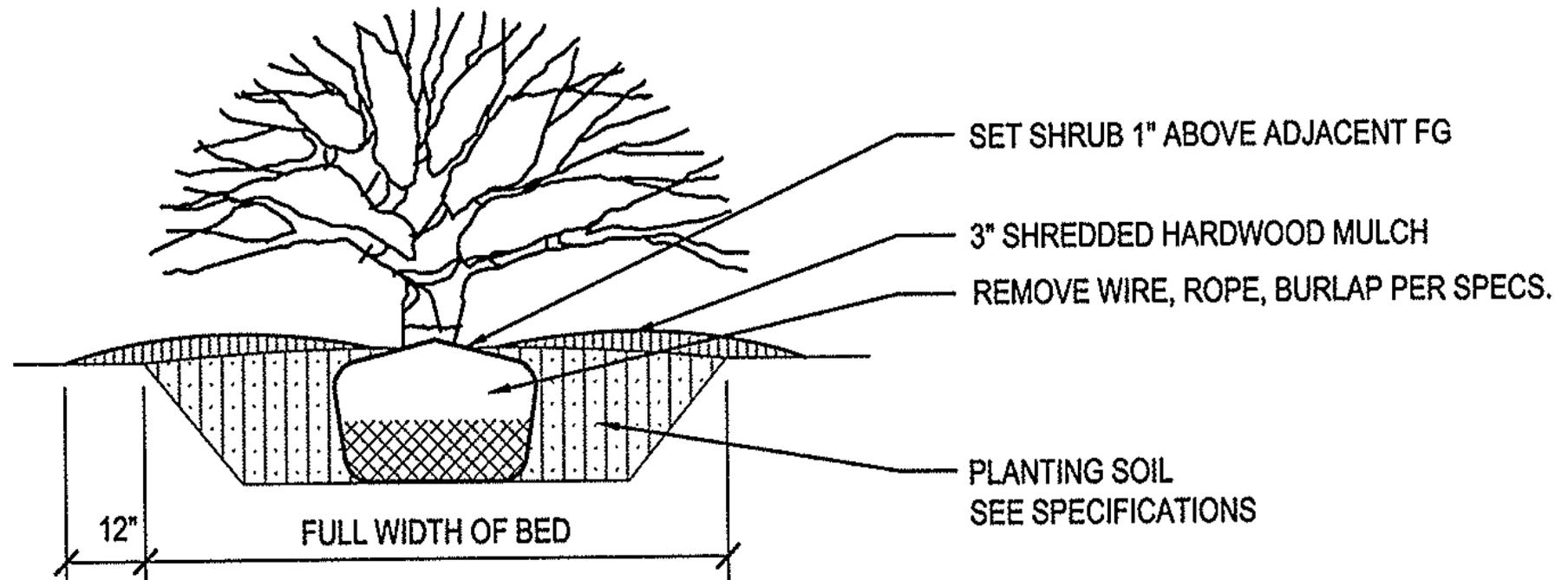


Tree Planting – Tree Pit

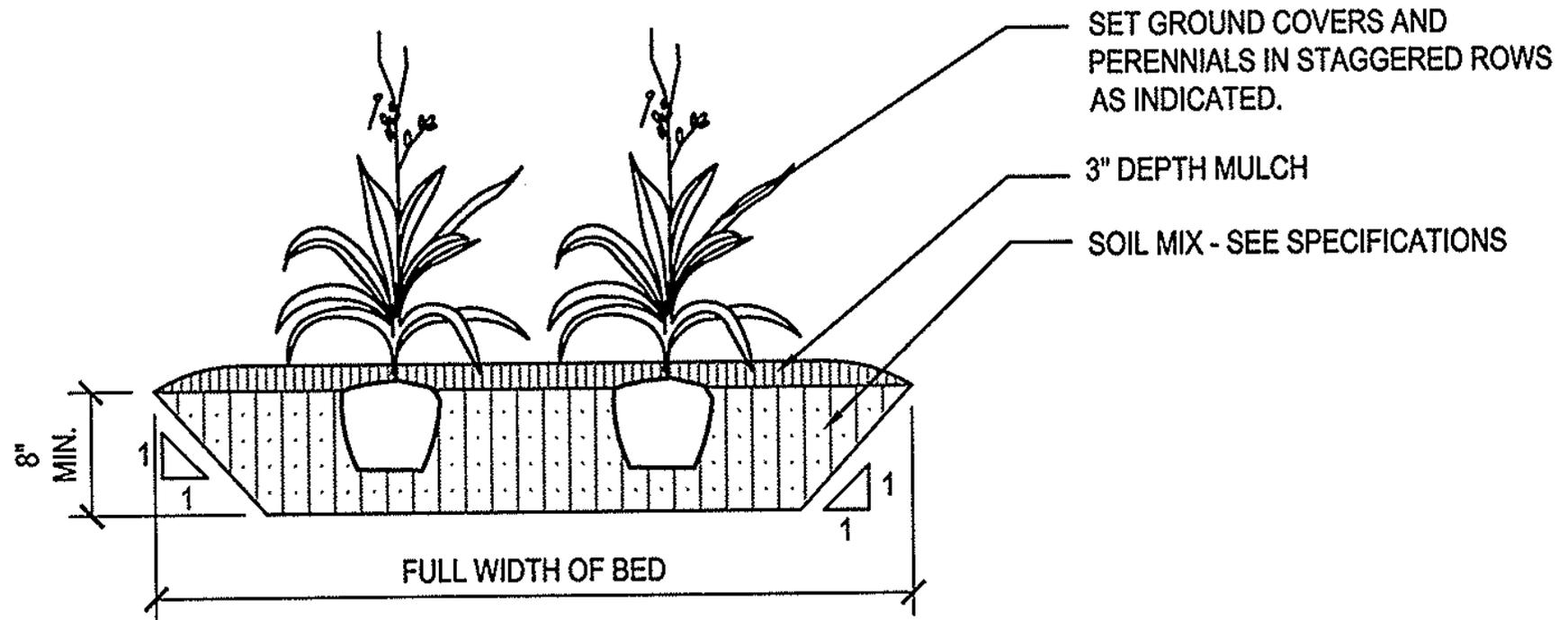


- NOTES:
1. REFER TO SINGLE STEM TREE PLANTING DETAIL 4/L3.2 (SIM.) FOR ADDITIONAL INFORMATION.

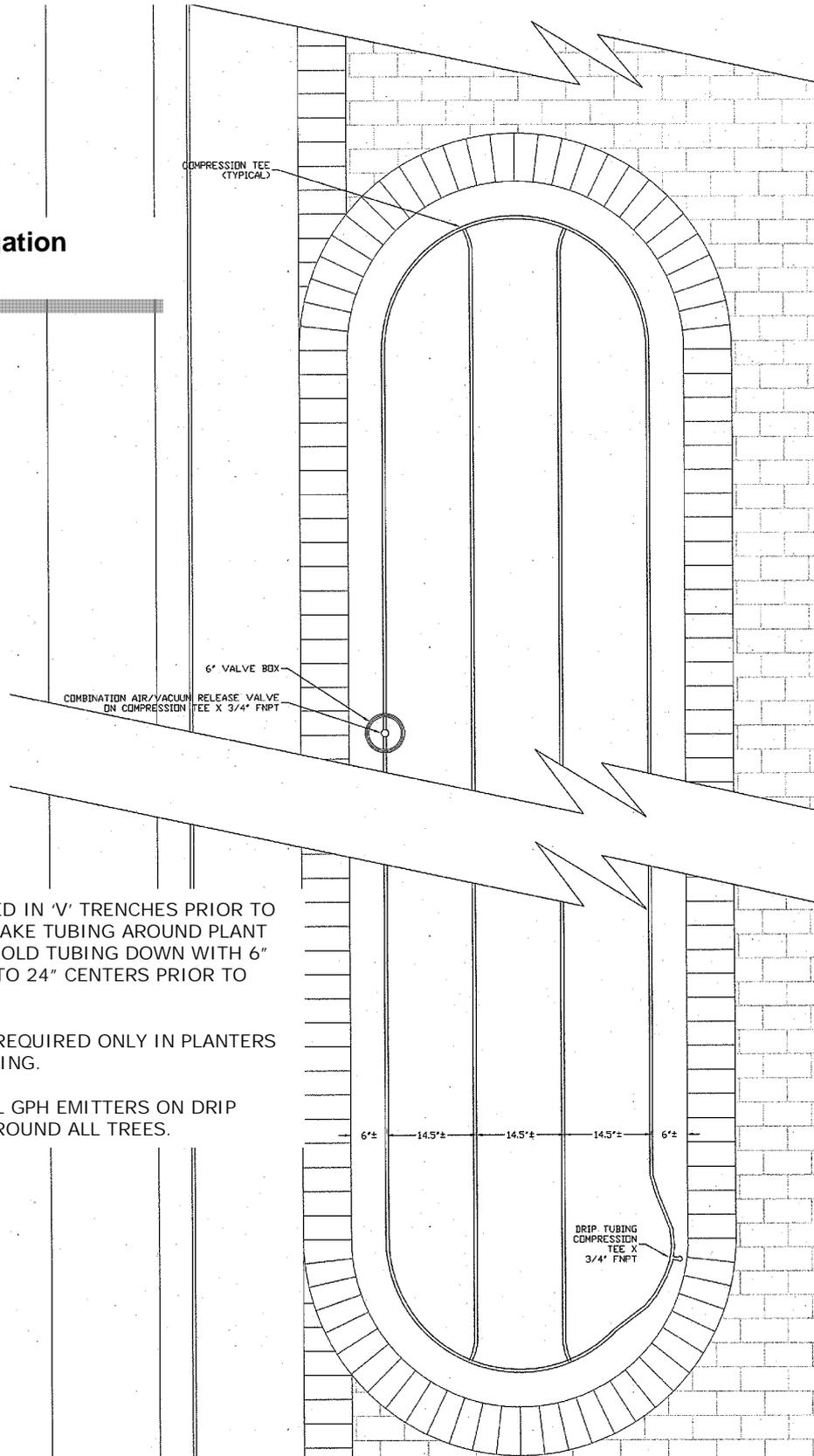
Shrub Planting



Groundcover and Perennial Planting



Planter Plan - Irrigation

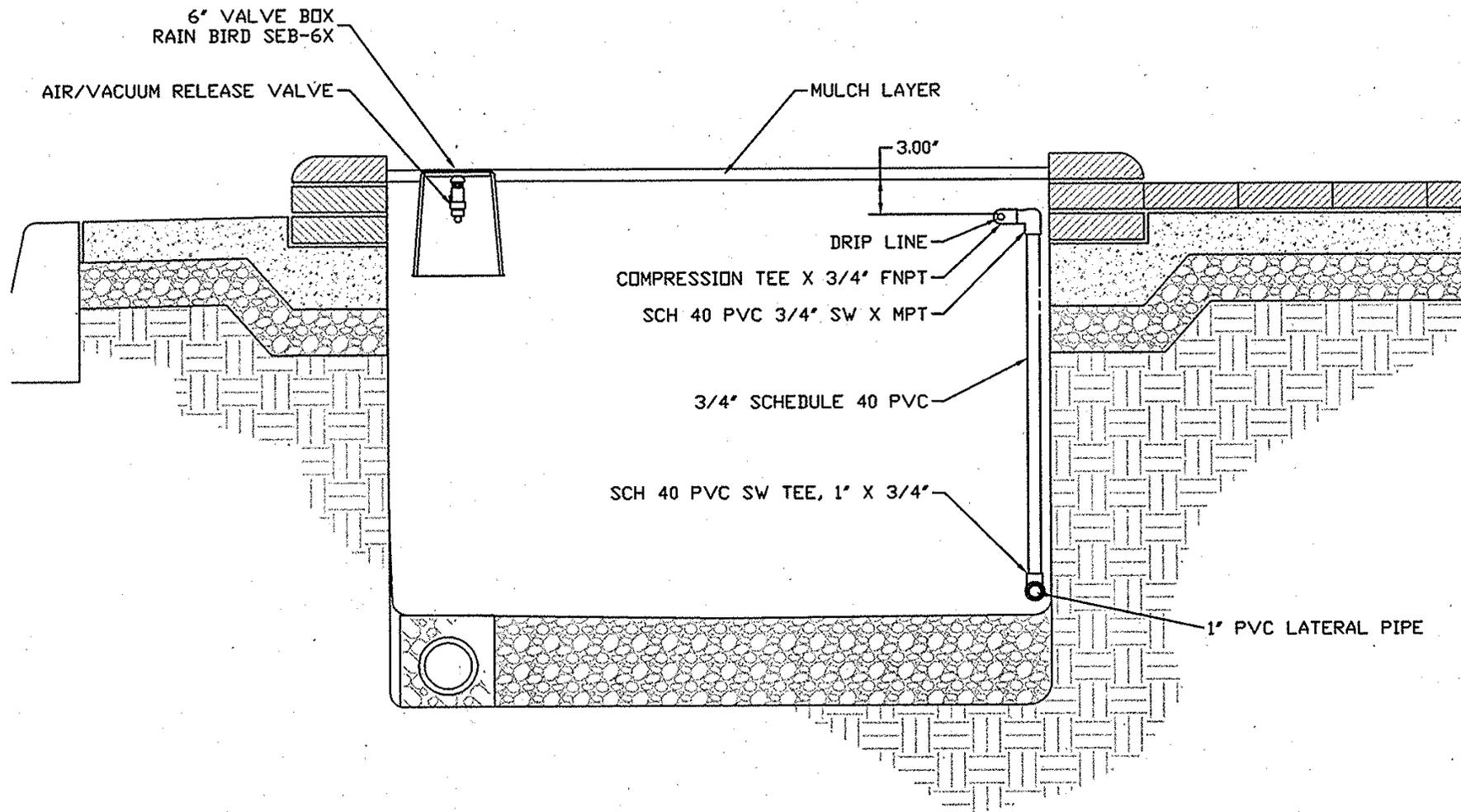


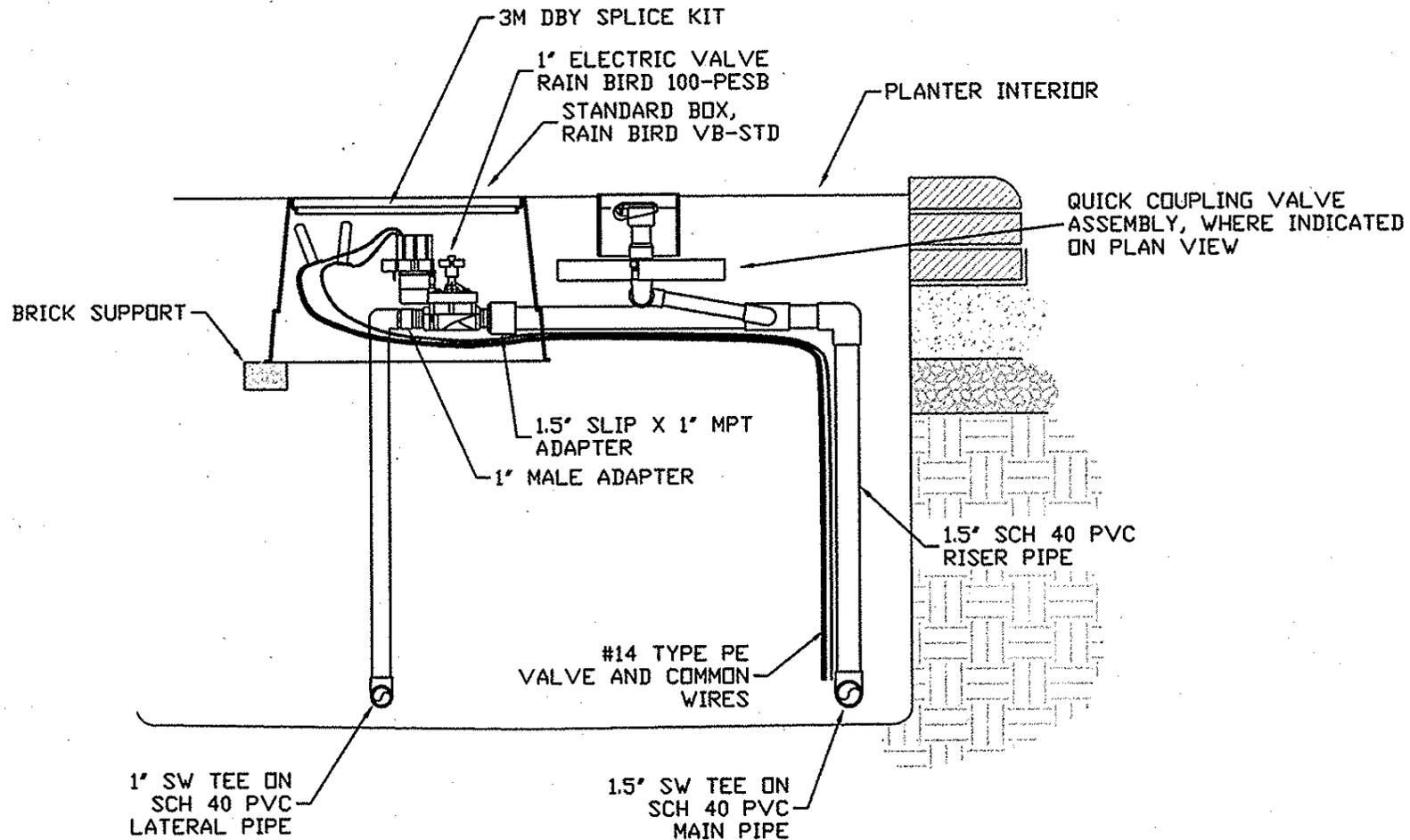
TUBING IS TO BE INSTALLED IN 'V' TRENCHES PRIOR TO MULCH INSTALLATION. SNAKE TUBING AROUND PLANT MATERIAL AS REQUIRED. HOLD TUBING DOWN WITH 6" U SHAPED STAPLE ON 18" TO 24" CENTERS PRIOR TO BACKFILLING TRENCHES.

AIR/VACUUM VALVES ARE REQUIRED ONLY IN PLANTERS IDENTIFIED IN PLAN DRAWING.

INSTALL FOUR ADDITIONAL GPH EMITTERS ON DRIP TUBE ABOVE ROOT BALL AROUND ALL TREES.

Planter Section - Irrigation

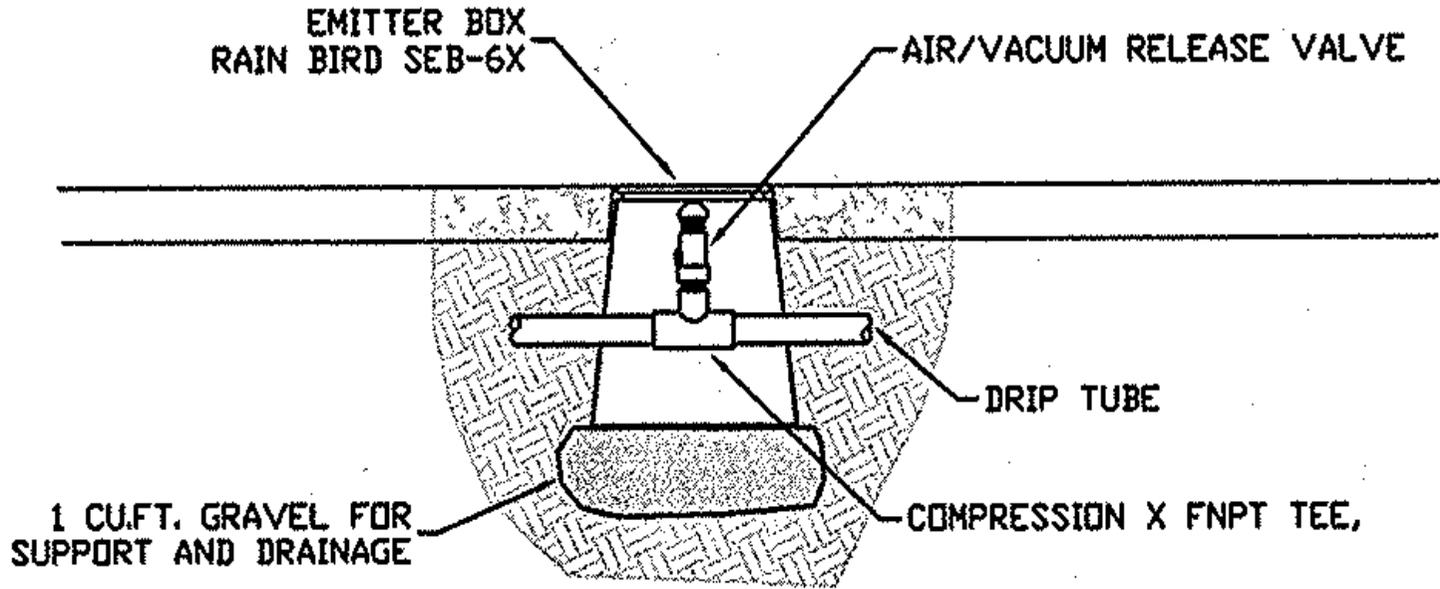




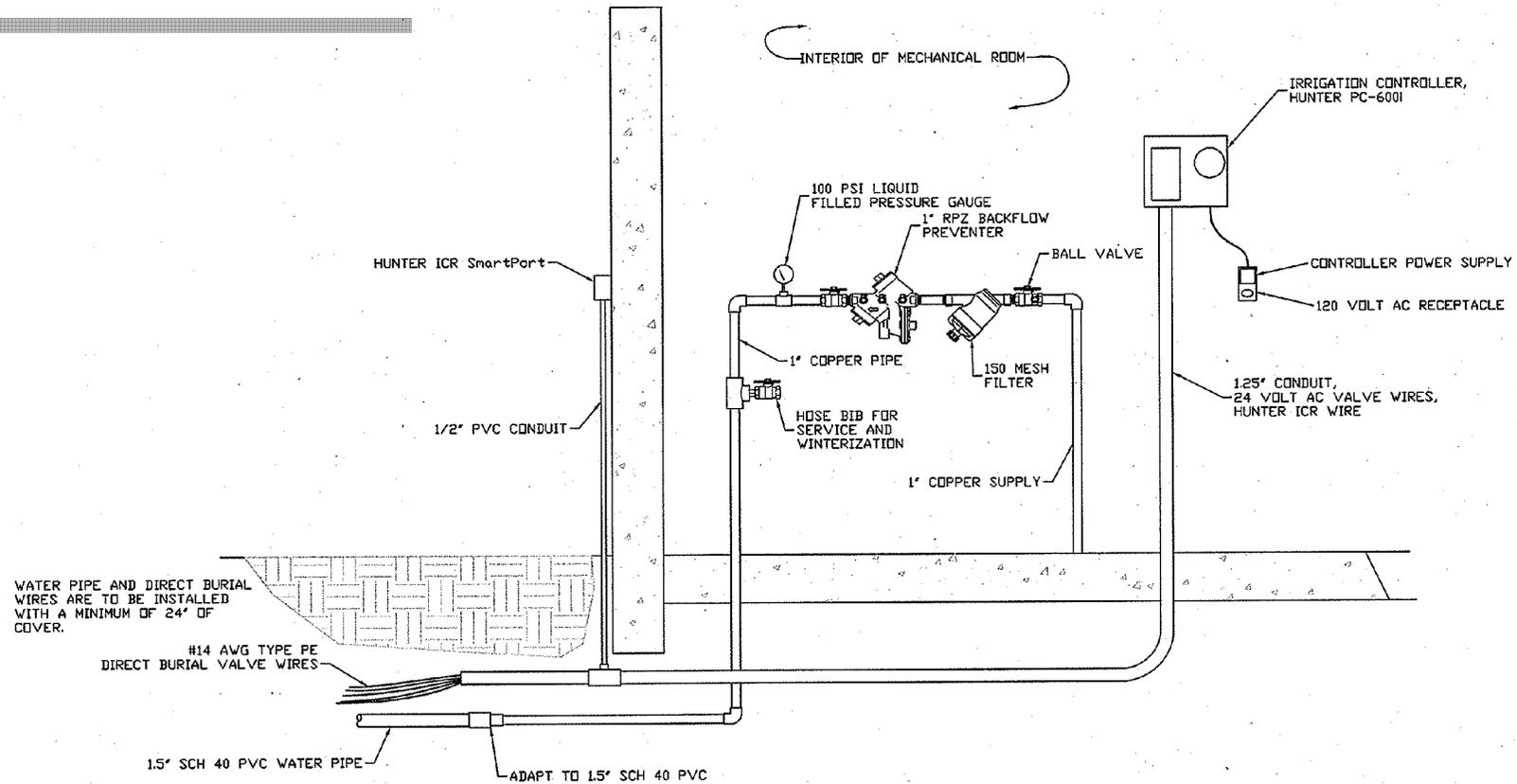
THIS DETAIL APPLIES TO ALL ZONE VALVE INSTALLATIONS. VALVES ARE TO BE PLACED CLOSE TO INTERIOR WALL OF PLANTER SO AS TO MINIMIZE DISTURBANCE TO THE PLANTED MATERIALS.

Zone Valve with Quick Coupling Valve

Air/Vacuum Release Valve



Irrigation – Point of Connection



Streetscape Litter Receptacle (used throughout town)

MANUFACTURER:

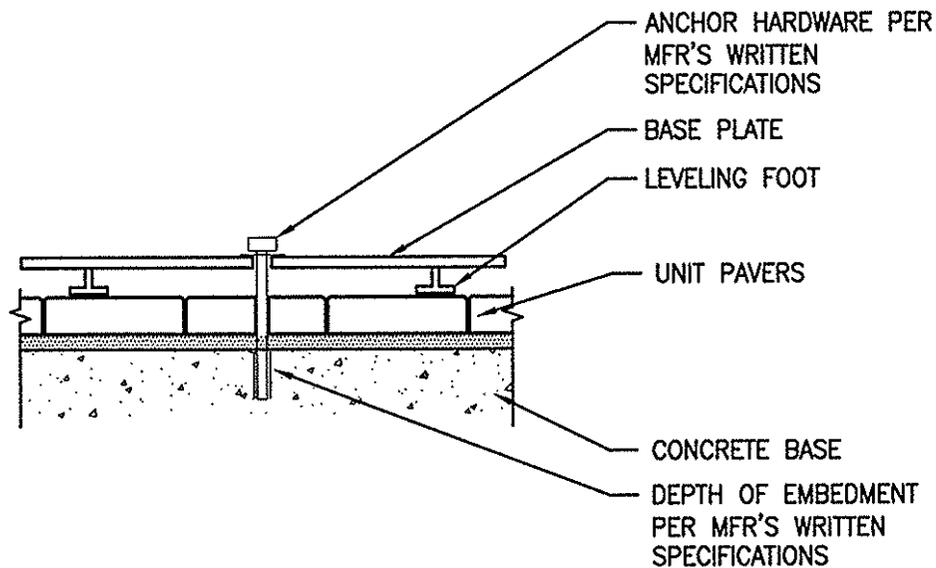
VICTOR STANLEY, INC.; DUNKIRK, MD; (301) 855-8300

MODEL AND OPTIONS:

~~FC-12 CONCOURSE LITTER RECEPTAC~~ RS-12 Concourse Litter Receptacle
36 GALLON CAPACITY
S-1 STEEL DOME LID
BLACK POWDER COAT ALL STEEL
SURFACE MOUNT

NOTES:

1. PROVIDE PRODUCTS AS INDICATED OR EQUAL APPROVED BY ~~OWNER~~ TOWN'S REPRESENTATIVE.
2. ANCHOR TO CONCRETE BASE UNDER PAVERS PER MFR'S WRITTEN SPECIFICATIONS.



Streetscape Recycling Receptacle (used throughout town)



- RS-12 CONCOURSE LITTER RECEPTACLE
- 36 GALLON CAPACITY
- RAIN BONNET LID OR DOME LID REQUIRED TO PREVENT MOISTURE FROM DAMAGING RECYCLED PAPER
- LID TO BE LETTERED WITH "RECYCLING"
- THREE PLAQUES PLACED EVENLY AROUND THE RECEPTACLE AND LETTERED WITH "RECYCLING" IN BLUE AND THE BLUE RECYCLING LOGO
- **DARK GREEN** POWDER COAT ALL STEEL
- SURFACE MOUNT
- PROVIDE PRODUCT AS INDICATED OR EQUAL APPROVED BY TOWN

Victor Stanley, Inc.

P.O. Drawer 330

Dunkirk, Maryland 20754 USA

Toll Free: (800) 368-2573 (USA & Canada)

Tel: (301) 855-8300

Fax: (410) 257-7579 <http://www.victorstanley.com/default.aspx>

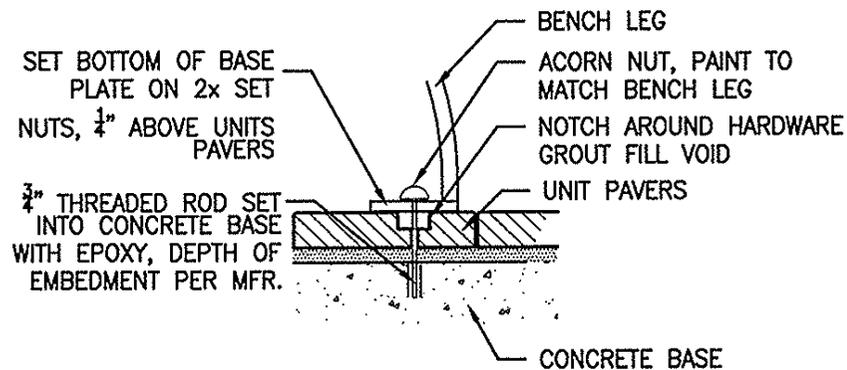
Sales Department E-mail: sales@victorstanley.com

General Information E-mail: info@victorstanley.com

MANUFACTURER:
VICTOR STANLEY, INC.
DUNKIRK, MD
(301) 855-8300

MODEL AND OPTIONS:
C-10 CLASSIC SERIES
CAST IRON FRAME
IPE SLATS
(2) ARMS
TAMPER RESISTANT GROUND ANCHOR HARDWARE
6' LENGTH
MEDALLIONS: BRONZE CAST WITH DEPOT MOTIF AS APPROVED BY THE TOWN
OF HERNDON
BLACK POWDER COAT ALL METAL

- NOTES:
1. PROVIDE PRODUCTS AS INDICATED OR EQUAL APPROVED BY OWNER'S REPRESENTATIVE.
 2. ANCHOR TO CONCRETE BASE UNDER PAVERS PER MFR'S WRITTEN SPECIFICATIONS.



Streetscape Bench



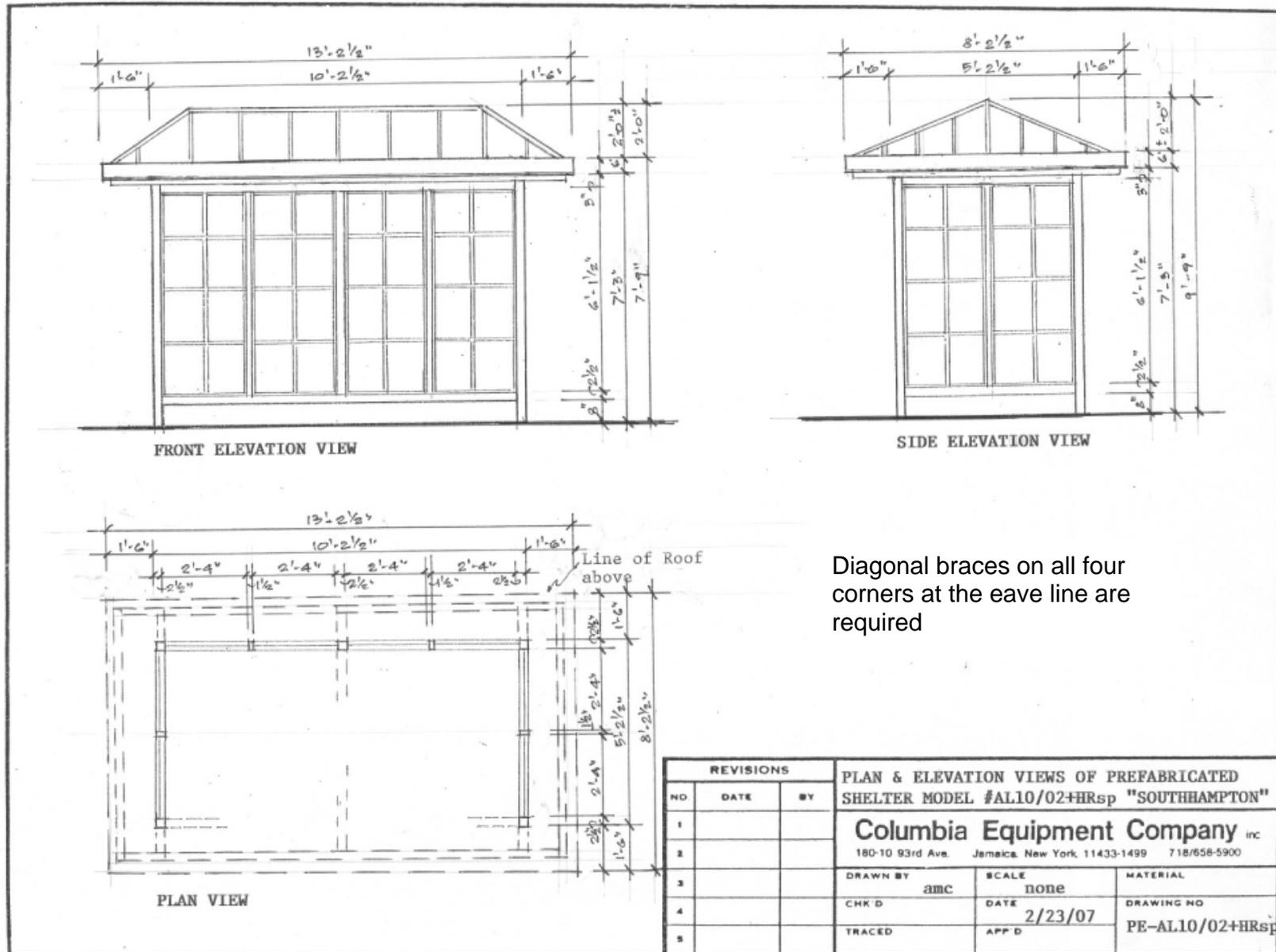
**Approved Bus Stop Shelter for Downtown Streetscape Area
Photo and Contact Information
Model #AL10/02+HRsp,"Southhampton", manufactured by Columbia Equipment Company**

Note: Any variation in the size or materials of the shelter shall require review and approval by the Heritage Preservation Review Board

Diagonal braces as shown in the photograph are required.

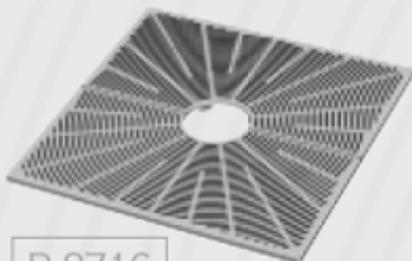
Columbia Equipment
Company Inc.
180-10 93rd Avenue
Jamaica, NY 11433
Phone : 718.658.5900
Fax : 718.526.4110
Toll Free: 800.742.1297
Email: shelterpr@aol.com
<http://www.columbiaequipment.com/index.html>





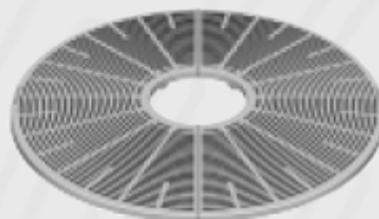
BOULEVARD COLLECTION

The radial pattern of the BOULEVARD collection combines a clean look with narrow slot openings to create a very versatile grate. Contact us for any special requirements and allow us to work with you in meeting your needs.



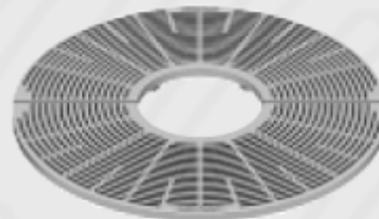
R-8716

72" square with 16" diameter expandable tree opening. 3/8" slot openings.
780 pounds per set.



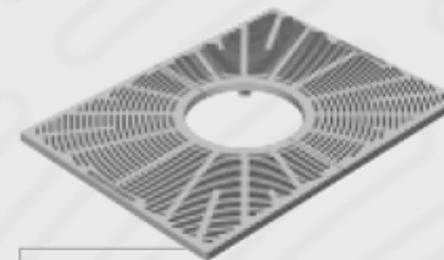
R-8838-A

60" diameter with 16" diameter expandable tree opening. 1/4" slot openings. (Available with light openings, order as R-8838.) (Available with 24" diameter expandable tree opening, order as R-8838-A1.) (Available with 24" cast tree opening and light openings, order as R-8838-1.)
335 pounds per set.



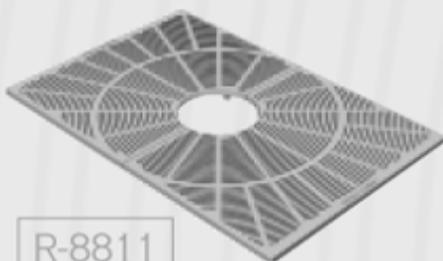
R-8832-A

48" diameter with 16" diameter expandable tree opening. 1/4" slot openings. (Available with light openings, order as R-8832.)
225 pounds per set.



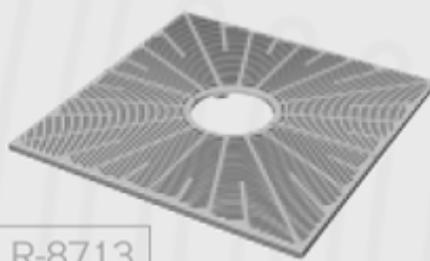
R-8814-A

36"x48" rectangular with 16" diameter tree opening. 1/4" slot openings. (Available with light openings, order as R-8814.)
255 pounds per set.



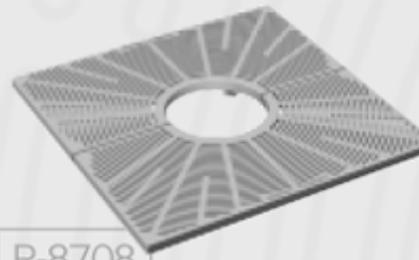
R-8811

48"x72" rectangular with 16" diameter expandable tree opening. Available with cast 12" tree opening. 3/8" slot openings.
345 pounds per set.



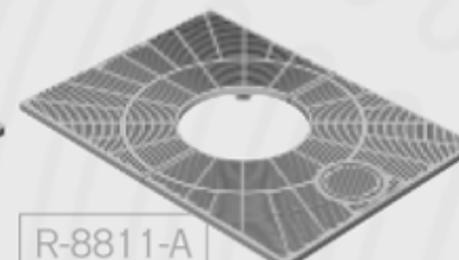
R-8713

60" square with 16" diameter expandable tree opening. Available with cast 18", 24", and 36" tree opening. 1/4" slot openings.
400 pounds per set.



R-8708

48" square with 16" diameter expandable tree opening. Available with cast 20" and 24" tree opening. 1/4" slot openings.
290 pounds per set.

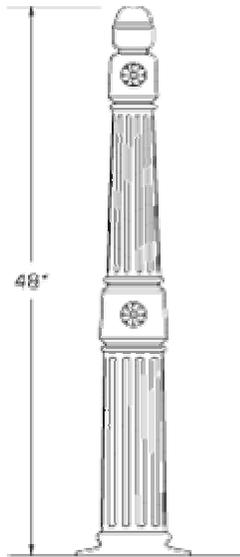


R-8811-A

60"x84" rectangular with 30" diameter expandable tree opening. 3/8" slot openings.
705 pounds per set.

Streetscape Bollard

<http://www.ironsmith.cc/BOLLARD-VIC.htm> - #



Victorian
9022

The Victorian bollard is a slim, sculptured bollard reminiscent of the turn of the century. It can be equipped to support a chain barrier if desired. It is approximately 4 feet tall and 9 3/4" in diameter at the base.



[List Sizes and Specs, PDF & CAD](#)

IRONSMITH Toll Free: 800.338.4766
Fax: 760.776.5080

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<http://www.ironsmith.cc/BOLLARD-VIC.htm>

STANDARD FEATURES

Classic Series

MODEL M-1776 OLD STYLE

SUGGESTED SPECIFICATIONS

- o Standard Model: M-1776
- o 2 ft. (61 cm) o 5 ft. (152.4 cm)
- o 3 ft. (91.4 cm) o 6 ft. (182.9 cm)
- o 4 ft. (121.9 cm)

FREEZE RESISTANT PEDESTAL

DRINKING FOUNTAIN

Please visit www.murdock-supersecur.com

for most current specifications.

8/16/07

Drinking fountain shall be Murdock-Super Secur model M-1776 Old Style. Unit shall be capable of year-round use in freezing weather.

Pedestal shall be heavy, one-piece iron casting extending from grade level to bowl. Pedestal shall be embossed with a decorative filigree and finished with a heavy grade of oil-based black enamel.

Bowl shall be a round, polished solid brass casting. Drain opening in bowl shall adequately protected from stoppage or vandalism. Bubbler shall be polished solid brass casting with angle stream outlet at center of bowl and above bowl rim. Mouth guard shall be polished solid brass casting to meet sanitary requirements. All solid brass castings shall conform to ASTM standards B61 and B62. Lead-free castings are used in all waterways.

Valve shall be foot-pedal operated, spring-loaded to close.

Pedal shall be aluminum bronze, finished with a heavy grade of oil-based black enamel. Mainspring shall be stainless steel wire with a minimum diameter of 0.225 inch (0.57 cm).

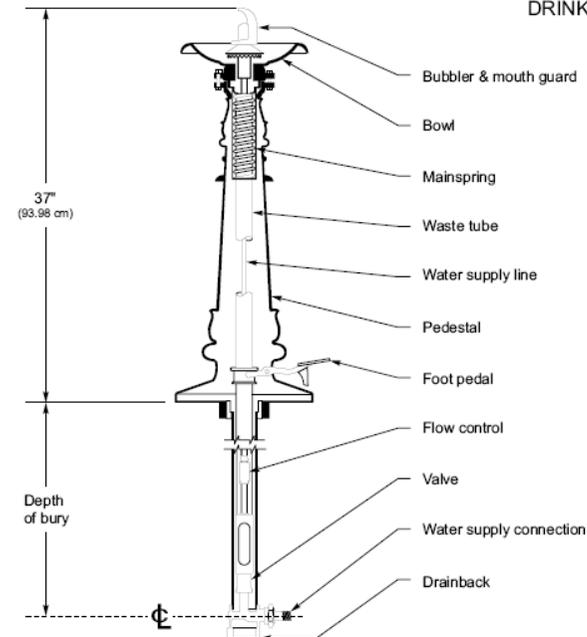
Model M-1776 Old Style is a drinking fountain of Victorian era design. The control valve is located below the frost line to provide freeze resistant functionality. Activating the pedal raises or lowers the internal supply and waste column, controlling the valve. Constructed of cast iron with cast brass bowl, all brass parts and a stainless steel mainspring, this drinking fountain is equipped with an automatic stream control. Model M-1776 is designed for year-round use, trouble-free reliability and easy maintenance.



Streetscape Fountain by Murdock (see also Wheelchair Accessible Fountain by Murdock)

<http://www.murdock-supersecur.com/traditional-fountains/classic-series/m-1776>

Classic Series MODEL M-1776 OLD STYLE FREEZE RESISTANT PEDESTAL DRINKING FOUNTAIN



Wheelchair Accessible Streetscape Fountain by Murdock

STANDARD FEATURES

Classic Series

MODEL MC-7-1-AVAF

Antifreezing Drinking Fountain

Wheelchair Accessible, Pneumatically Actuated

Please visit www.murdock-supersecur.com

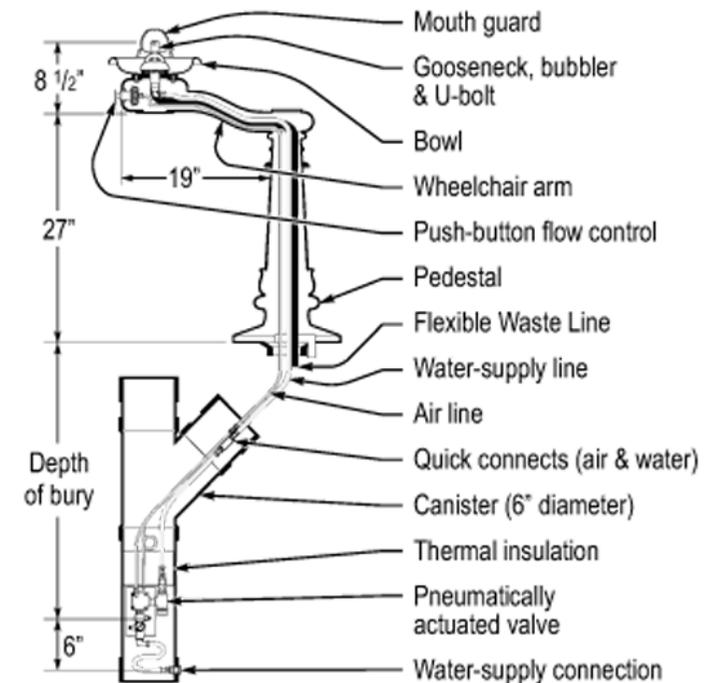
for most current specifications.

Model MC-76-1-AVAF features Victorian design incorporating a wheelchair arm to accommodate users with disabilities in compliance with the Americans with Disabilities Act. Actuated by a pneumatic push button, the control valve is located below the frost line to provide antifreezing functionality. Compressed air is not required. Heavy-duty construction ensures durability, and field serviceable components are easily accessible. Solid-brass castings for bowl and mouth guard are furnished with a polished-brass finish.

Drinking fountain shall be Murdock-Super Secur model MC-76-1-AVAF. Unit shall be capable of year-round use in freezing or inclement weather.

Bowl shall be a round, polished solid brass casting with polished-brass finish; outer edge shall be at least 8.5 inches from center of bubbler outlet. Drain opening in bowl shall be adequately protected from stoppage or vandalism by a polished, solid-brass casting. Bubbler shall be polished solid brass casting with outlet near outer edge of bowl and above bowl rim. Mouth guard shall be polished solid brass casting mounted on outer edge of bowl to meet sanitary requirements. All solid brass castings shall conform to ASTM standards B61 and B62.

Pedestal and wheelchair arm shall be a heavy-duty, grey iron casting. Base shall be furnished with mounting holes to accommodate anchor bolts. Valve shall be actuated pneumatically by a push button at end of arm. Valve shall be located below frost line within a six-inch-diameter STR canister and protected by thermal insulation. Internal water line shall be one quarter inch poly-braided tubing. Unit shall be furnished with three quarter O.D. flexible drain line.



Fencing

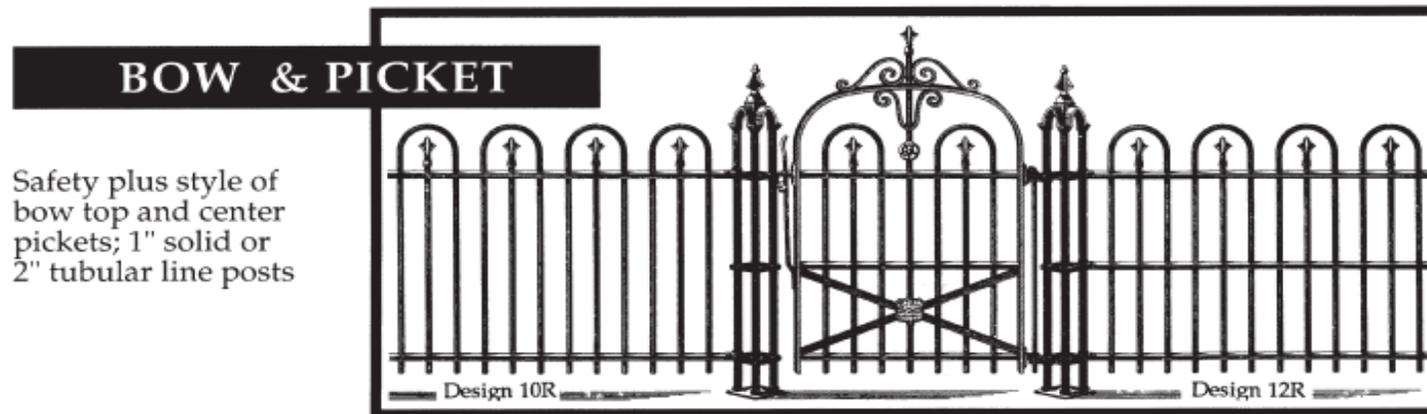
Traditional fence components from Stewart Iron Works, Covington, Kentucky, original crafter of a typical historical fence in Herndon.

Fence

Stewart design number 10-R:
 ½" hoops, ½" round center picket
 5/8" style "e" line posts. Square-set rails
 Flat K-style spears on pickets
 Style#2 (6 ½" across) end, corner and gate posts
 Black only, 42" height when fence is set.

Gates

Stewart number 2 single, number 11 double



Safety plus style of bow top and center pickets; 1" solid or 2" tubular line posts

DESIGN NUMBER	SIZE OF PICKETS	PICKET SPACING CENTER TO CENTER	CHANNEL RAIL	MATCHING GATES	HEIGHT OF FENCE WHEN SET	END, CORNER & GATE POSTS
10R	1/2" round	4 inches	2 rails 1-1/4"x1/2"	#2 single-#11 double	37"-42"-48"	No. 2
12R	1/2" round	4 inches	3 rails 1-1/4"x1/2"	#2 single-#11 double	37"-42"-48"	No. 2

www.stewartironworks.com

1

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This section is historically-based in the Deport and other areas of Town at the turn of the century. No other style should be substituted.

**Downtown Streetscape Bicycle Rack,
Bike Post Bicycle Rack-Model BP by Creative Pipe**



BP-F-P: Bike Post Bicycle
Rack, Flanged Surface
Mount, TGIC Polyester
Powder Coat (black)

Creative Pipe, Inc.
P.O. Box 2458 | Rancho Mirage, California 92270-1087 USA
Toll Free: 1.800.644.8467 | Telephone: 760.340.5555 | Fax:
760.340.5883
Email: sales@creativepipe.com

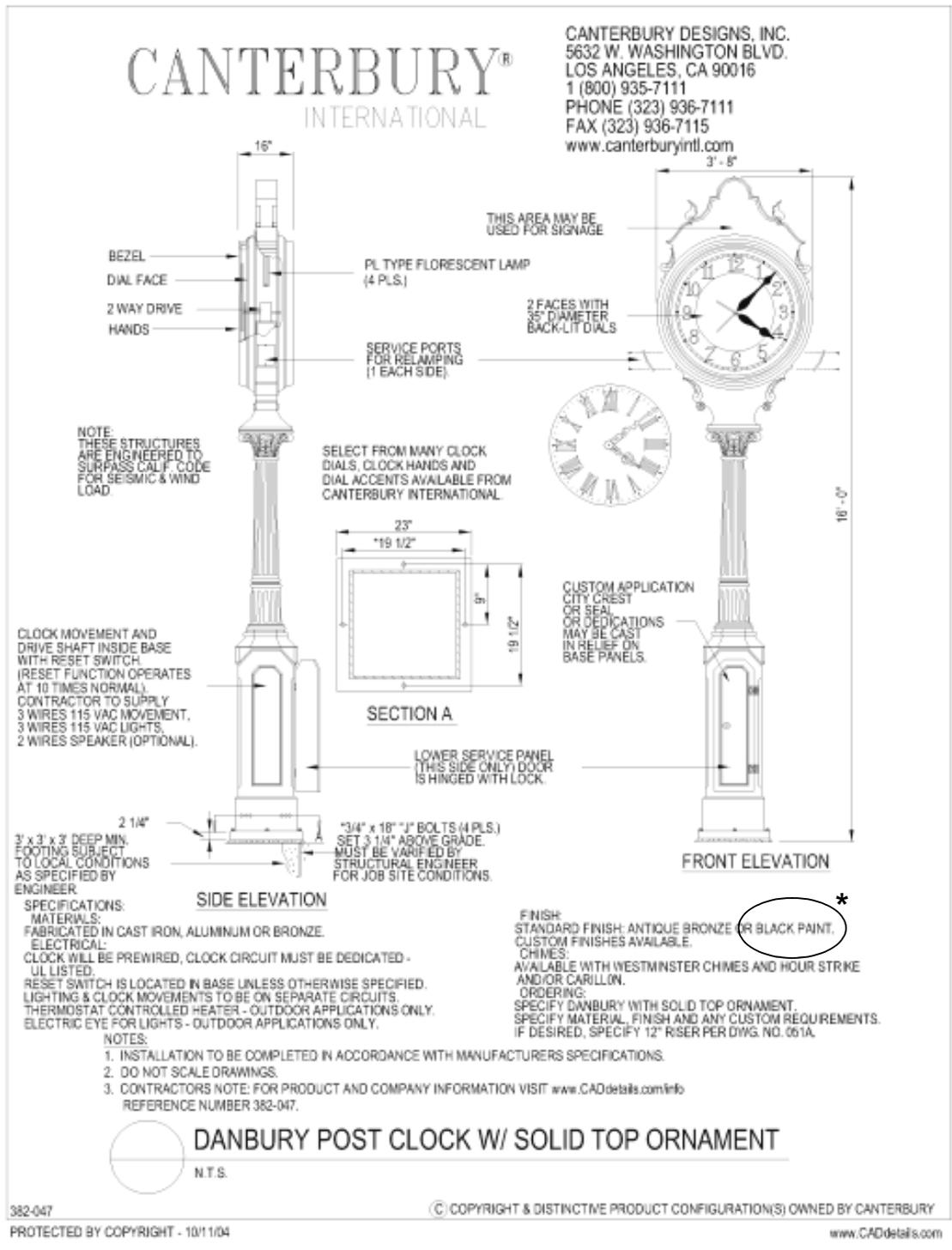
See Criteria for Locating and Using Bicycle Parking Racks, next page

Criteria for Locating and Using Bicycle Parking Racks

1. Bicycle parking racks should be located in a clearly designated safe and convenient location.
2. The design and location shall be harmonious with the surrounding environment.
3. The racks must be durable and should be securely anchored to the ground or building structure.
4. The surface of the racks should be designed and maintained to be mud and dust free.
5. Bicycle parking spaces should be clearly at least 2 feet wide (2 feet from center of one space to center of adjacent spaces.)
6. The rack allows the frame and wheel(s) to be locked directly to the rack with a U-shaped lock without bending the wheel or otherwise damaging the bicycle.
7. The rack must support the bicycle frame in at least 2 places.
8. The rack must prevent the wheel of the bicycle from tipping over.
9. The rack has a simple design that needs no explanation as to how the rack works (which direction does the bike go in, how is the lock attached, every space is useable for any standard bicycle with typical accessories such as lights and fenders, etc.) and that is difficult to mis-use.
10. If the rack is intended to park more than one bicycle at the same time, the handlebars must not overlap.
11. The rack has spaces that are clearly designated for each bicycle (it is obvious to the user where each space is) whether the rack is designed for single or double sided loading.
12. When bicycles are parked at the rack, there must be at least a six-foot clear walkway, to comply with the Americans With Disabilities Act. This does not include frontage occupied by street furniture.
13. The bicycle rack cannot be located directly in front of a store/building entrance or exit, nor in a driveway.
14. Any street utilities, such as light poles, signs, manhole covers, and overhead utility poles must have a two foot clearance from a bicycle parked at a rack, not the rack itself.
15. The bicycle rack cannot be located adjacent to an area intended for parking for persons with disabilities.
16. The rack cannot be located closer to the curb than two feet. Three feet from the curb is ideal, although in certain circumstances, the distance may be greater.
17. With a "post and ring" rack, the ring is typically 18 inches in diameter. The bottom of the ring should be about 12" off the ground. The post and ring rack should be considered a one-bicycle rack, especially when in multiple rack installations. Racks in a parallel series need to be 4 feet apart to provide adequate access to each bicycle.

Streetscape Clock, "Danbury" by Canterbury

http://www.canterburyintl.com/street_danbury_green_draw.htm



F. Downtown Streetscape Policy from the Herndon 2030 Comprehensive Plan

The adopted Downtown Streetscape Map identifies streets that are subject to the Downtown Streetscape policies. These streets are located in downtown Herndon where the pedestrian environment requires a special emphasis to visually establish the connectivity of the downtown through the creation of streetscape standards. There are two types of Downtown Streetscape: Residential and Commercial. The following Downtown Streetscape Map details the desired location for Residential and Commercial Streetscape. The Town Council may change the Downtown Streetscape designation during the development plan review and approval process, if the current designation is inconsistent with the proposed use. For detailed streetscape standards, see Guidelines for the Planning and Design of the Town Streetscape Projects document (Draft July 2008, adoption anticipated November 2008) as well as the Herndon Heritage Preservation Handbook (as amended).

The purpose of the Downtown Streetscape policies is to maintain and to enhance Herndon's traditional character of a walkable and inviting small town. The Downtown streetscape policies and standards help create public rights-of-way that have a comfortable pedestrian scale and continuity of the built environment, while using visual elements that link the past with the present. Streetscape elements are to include sidewalk pavement, street lighting, street trees and plant materials, and streetscape furnishings, such as benches and trash receptacles.

Downtown Streetscape Land Use Policies:

1. Strive to implement and construct Downtown Streetscape as shown on the map.
2. Assure a design character in public spaces that respects Herndon's unique attributes and is consistent with heritage preservation concepts.
3. Successfully blend Herndon's traditional and existing streetscape with proposed new construction and infill development.

4. Implement the Downtown Streetscape by requiring developers to construct these elements as part of the right-of-way improvements for any site.

Commercial Streetscape Standards

The main focus of the Downtown Streetscape policy is the Commercial Streetscape Standard. This standard features a minimum 12-foot width brick or brick paver streetscape with raised planting beds, street trees and special heritage streetlights. The details of this streetscape standard are illustrated on the diagrams on the following pages.

Residential Streetscape Standards

The Residential Streetscape Standard is a concrete sidewalk meeting the Americans with Disabilities Act standards and featuring a special dimple pattern that was used historically in Herndon. All streetlights in the residential streetscape area are to be the special heritage streetlights, such as the HADCO Acorn or equivalent. Where practical, with subdivision development occurring after the date of adoption of this plan, the Downtown Residential Streetscape should include a five-foot strip planted with grass between the sidewalk and the drainage way or pavement. Where necessary, an easement may be used for sidewalk construction on land abutting the right-of-way. Where a five-foot width is impractical, the grass strip should be a minimum of two-feet in width. Section 78-513 of the Herndon Zoning Ordinance requires the provision of curb, gutter and sidewalk, with provisions of a waiver when curb and gutter are not already present in the neighborhood and when the street is not on the town's plan for installation of curb and gutters. For such areas [subject to a waiver] standard concrete curb and gutter installation may not be appropriate or desirable, as the existing ditch drainage may be preferred. However, if effective stormwater management requires curb and gutter, it should be carefully planned and sensitively implemented.

IV. APPENDIX A: SPEED TABLES, RAISED CROSSWALKS, AND RAISED INTERSECTIONS

From Designing Sidewalks and Trails for Access, Part II of II: Best Practices Design Guide by the Federal Highway Administration
<http://www.fhwa.dot.gov/environment/sidewalk2/sidewalks209.htm#des6>

9.2.2 Speed tables and raised crosswalks

Speed tables are similar to speed humps; however, they include a flat section on top. Oftentimes, the top of the speed table is constructed with a decorative surface material. When marked as a pedestrian crossing, speed tables are called raised crosswalks. The length of speed tables or raised crosswalks allow all four wheels of a vehicle to rest on the raised section at the same time. Combined with gently sloped ramps, speed tables permit slightly higher motorist speeds and smoother transitions than speed humps. Additional information about raised crosswalks is contained in Sections 6.3 and 8.5.

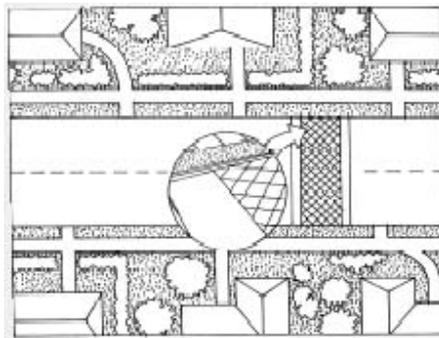


Figure 9-10. Speed tables and raised crosswalks are flush with the curb and do not provide a clear distinction for people with vision impairments unless detectable warnings are installed.

9.2.2.1 Impact on pedestrian access

Speed tables resolve some of the access problems for people with mobility impairments. However, they can be problematic for people with vision impairments if their needs are not considered. Speed tables impact pedestrian access as follows:

Negative impacts

- People with back and neck problems may experience pain or discomfort when traveling over speed tables in motor vehicles (though less jarring than traveling over speed humps); and
- When used as a crosswalk, unless detectable warnings are provided, there is no distinction between the sidewalk and the street for people with vision impairments.

Note: When used as a crosswalk, there is no negative impact on pedestrians with visual impairments when detectable warnings are installed.

Positive impacts

- Speed tables used as raised crosswalks increase pedestrian visibility; and
- Speed tables used as crosswalks eliminate the need for a curb ramp, which improves access for people with mobility impairments and increases the sidewalk area available to pedestrians waiting to cross the street.

9.2.2.2 Design recommendations for speed tables

The following recommendations are intended to enhance pedestrian access at speed tables and raised crosswalks:

- Install detectable warnings whenever speed tables are used as raised crosswalks to identify the transition between the sidewalk and the street; and
- Select colored asphalt rather than brick or other decorative surface materials to enhance rollibility for people with mobility impairments. Brick trim may be used in outlining the pedestrian travel path, but not in the pathway. (See Section 4.3.1.4).

9.2.3 Raised intersections

A raised intersection refers to a roadway intersection that is entirely elevated to the sidewalk level. Raised intersections are designed with ramps for the motorist and often include decorative surface materials on the flat raised section. Raised intersections are usually the same height as the sidewalk creating a pedestrian territory that includes the sidewalk and crosswalks.

9.2.3.1 Impact on pedestrian access

Raised intersections have benefits and drawbacks that are similar to raised crosswalks. For example:

Negative impacts

- People with back and neck problems can experience additional pain or discomfort caused by the jarring effect when traveling over raised intersections in motor vehicles (though less jarring than traveling over raised crosswalks or speed humps); and
- If detectable warnings are not included, people with vision impairments are not able to make the distinction between the sidewalk and the street.

Positive impacts

- Raised intersections increase pedestrian visibility;

- Raised intersections eliminate the need for a curb ramp at an intersection, which improves access for people with mobility impairments and increases the sidewalk area available to pedestrians waiting to cross the street; and
- Raised intersections can provide accessibility solutions for narrow sidewalks.

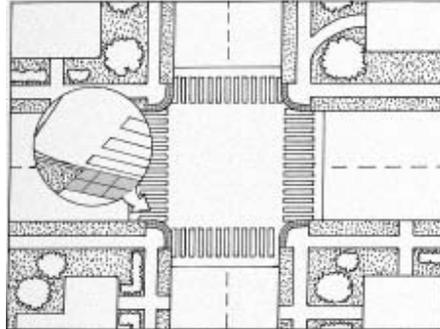


Figure 9-11. When raised intersections are installed, detectable warnings should be included at the edge of the curb so people with vision impairments can identify the transition between the sidewalk and the street.

9.2.3.2 Design recommendations for raised intersections

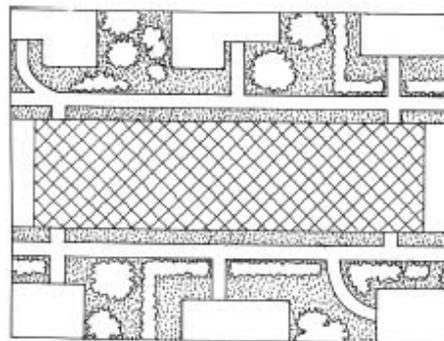
The following recommendations are intended to enhance pedestrian access at raised intersections:

- Install detectable warnings to identify the transition between the sidewalk and the street; and
- Select a smooth surface, such as colored asphalt, rather than brick or other decorative surface materials to enhance access for people with mobility impairments (See Section 4.3.1.4).

9.2.4 Textured pavement

Textured pavement is a surface material on the roadway, such as brick, concrete pavers, and stamped asphalt, which is installed to produce small, constant changes in vertical alignment. Textured pavements do reduce travel speeds; however, they are difficult for bicyclists and some pedestrians to negotiate (see Section 4.3.1.4).

Figure 9-12. When textured pavements are used, wheelchair users experience discomfort during travel and people with vision impairments have difficulty identifying detectable warnings.



9.2.4.1 Impact on pedestrian access

Textured pavement is problematic for people with disabilities. For example:

Negative impacts

- Amount of work is increased for people with mobility impairments to travel over textured pavements.
- Wheelchair users experience a bumpy ride and there is a potential for wheelchair casters to catch and swivel in grooves.
- Decorative materials often lift, settle, and buckle over time which creates a tripping hazard for all people, especially people with low vision.
- Decorative surface materials may make it more difficult for pedestrians with vision impairments to identify detectable warnings which provide critical information about the transition from the sidewalk to the street.

9.2.4.2 Design recommendations for textured pavement

Due to negative impacts on pedestrians and access, the installation of large areas with textured pavement at intersections and midblock crossings should be avoided as a traffic calming tool.

V. APPENDIX B: TOWN COUNCIL ACTIONS AND ADMINISTRATIVE CHANGES WITH RESPECT TO GUIDELINES FOR THE PLANNING AND DESIGN OF TOWN STREETScape PROJECTS

(1) November 19, 2009: Administrative Changes to Guidelines for the Planning and Design of Town Streetscape Projects

(2) October 27, 2009: Resolution 09-G-122, Amending "Guidelines for the Planning and Design of Town Streetscape Projects" to allow for wiring to be placed in conduits for Streetscape Type S3, amend standards for bicycle parking racks, and update standards for downtown streetscape pavers.

(3) July 14, 2009: Ordinance 09-O-23, Amending Town Code Chapter 1, General Provisions to add a reference to streetscape guidelines.

(4) November 25, 2008: Resolution 08-G-125, Acceptance of "Guidelines for the Planning and Design of Town Streetscape Projects" provisionally subject to subsequent public hearing and public comment which will be part of separate consideration for adoption of a future Town Code amendment that will incorporate the guidelines into Sec. 1-16, Standards for public improvements adopted by reference.

**Administrative Changes to
Guidelines for the Planning and Design of Town Streetscape Projects**

November 16, 2009

[Reason for change: Staff in the Department of Public Works requested that the reference to “Heartland Flashed Paver by Boral Bricks or equivalent” be changed to “Regimental Full Range Brick or approved equal.” Therefore, all references to “Heartland” were changed in the guidelines by Town Council action on October 27, 2009. It was later learned that the change to Regimental Full Range Brick was intended to apply only to crosswalks, not to sidewalks or planters. On November 16, 2009, the guidelines were re-issued to re-instate the references to “Heartland Flashed Paver” for sidewalks and planters, as permitted in the Town Council resolution of October 27, 2009. Appendix B was updated accordingly.]

III. Downtown Streetscape

D, Streetscape Elements

(1) Pavers

As development occurs or as sidewalk replacement is necessary, the required sidewalk pavement surface for designated **commercial streetscape** areas is clay brick *Heartland Flashed Paver by Boral Bricks* ~~Regimental Full Range, Type R by Belden Brick~~ or approved equal. The rectangular brick paver measures four by eight by two and one quarter inches thick. They are hard pavers that can easily be engraved by a private engraver. Requests for commemorative pavers are reviewed on a case by case basis and must be approved by the Town Manager if located in the public right-of-way or on other Town-owned property.

(9) Building Planters and Window Boxes

Well-maintained architectural planting and window boxes are appropriate and encouraged in the Village Streets overlay. Besides being decorative, planters may be designed to provide functional seat walls. Architectural planters may be constructed using the standard *Heartland Flashed Paver by Boral Bricks* ~~Regimental Full Range”, Type R by Belden Brick~~ or approved equal, materials consistent with building facades or contrasting compatible materials/textures/colors that relate to the streetscape and/or provide a comfortable transition between building and the street. Window boxes should be made of metal or wood painted to match the color schemes of the building. Before any planters or window boxes are approved for use, a maintenance commitment should be made by the property owner to the Town.

TOWN OF HERNDON VIRGINIA

RESOLUTION

OCTOBER 27, 2009

Resolution- Amending “Guidelines for the Planning and Design of Town Streetscape Projects” to allow for wiring to be placed in conduits for Streetscape Type S3, amend standards for bicycle parking racks, and update standards for downtown streetscape pavers.

WHEREAS, on November 25, 2008, the Town Council accepted provisionally the draft “Guidelines for the Planning and Design of Town Streetscape Projects” dated November 10, 2008; and

WHEREAS, on July 14, 2009, the Town Council amended the Herndon Town Code Chapter 1, General Provisions, to add a reference to streetscape guidelines.

NOW, THEREFORE, BE IT RESOLVED by the Town Council of the Town of Herndon, Virginia, that it amends and approves the list of amendments attached to this resolution and directs that the amendments be incorporated in the “Guidelines for the Planning and Design of Town Streetscape Projects.”

BE IT FURTHER RESOLVED by the Town Council that:

1. The Guidelines for the Planning and Design of Town Streetscape Projects, once the amendments attached to this resolution are incorporated, shall be depicted as “approved” by the Town Council on October 27, 2009.
2. Placement of the dark green Hoop or Inverted-U-shaped bicycle racks on parkland outside the downtown shall be allowed since these racks are available as a one-time opportunity in FY2010 from Fairfax County at no charge.
3. The amended guidelines shall be effective on and after the date of approval of this resolution.
4. The Town Council continues to authorize the staff to make certain revisions to the “Guidelines for the Planning and Design of Town Streetscape Projects” without prior Town Council approval for: correction of clerical and administrative errors; updates to specifications for features when the basic appearance, quality and function of the feature is unchanged by the update; updates based on Federal or State requirements such as the Americans with Disabilities Act and similar regulations; and updates necessitated by changes to those additional standards referenced in Sec. 1-16, Standards for public improvements adopted by reference.

This is certified to be a true and accurate copy of Resolution 09-G-122 adopted at a legally convened meeting of the Town Council of the Town of Herndon on October 27, 2009.

Margie Tacci

Margie C. Tacci, Deputy Town Clerk

Attached is the Guidelines for the Planning & Design of Town Streetscapes Projects

09-G-122

TOWN OF HERNDON, VIRGINIA

ORDINANCE

JULY 14, 2009

Ordinance- Amending Town Code Chapter 1, General Provisions, to add a reference to streetscape guidelines.

BE IT ORDAINED by the Council of the Town of Herndon that:

1. Section 1-16. Standards for public improvements adopted by reference, Herndon Town Code (2000), as amended, is amended and reordained follows:

Sec. 1-16. Standards for public improvements.

(a) The following documents are adopted and incorporated by reference, except as otherwise provided in this section:

- (1) *Water Main Design and Construction Standards*, Town of Herndon, August 2003, as amended, and as may be amended from time to time.
- (2) *2001 Public Facilities Manual*, Fairfax County, Virginia, as amended, and as may be amended from time to time, with necessary changes, except:
 - a. The requirement for sidewalks within this Public Facilities Manual is modified so that sidewalks shall be required on both sides of new public streets, regardless of street width, projected traffic volumes, or type of subdivision.
 - b. The town shall be responsible for structural maintenance of sanitary sewer laterals for single-family dwellings, two-family dwellings, and townhouses from the property or easement line to the main as set out in section 74-267 and the developer shall install a clean out for single-family, two-family, and townhouse residential unit developments at the property or easement line.
 - c. Dry stormwater detention ponds and best management practices (BMP) facilities in condominium developments shall be maintained by the landowner, as set out in section 78-1128(1)(2).
 - d. Underground stormwater detention and BMP facilities may be placed in residential developments. All underground stormwater detention and BMP facilities shall be maintained by the landowner, as set out in section 78-1128(1)(2), except the town shall maintain infiltration trenches and other similar, non-structural facilities that serve more than one lot in single-family detached developments.

- e. This public facilities manual is modified as provided in "Town of Herndon Public Facilities Manual Addendum, December 2004," on file in the office of the town clerk and incorporated by reference.
- (3) *Road and Bridge Specifications*, Virginia Department of Transportation, (January 1994), Vols. I and II, *Road and Bridge Standards*, Virginia Department of Transportation (1993), as amended, and as may be amended from time to time and Vols. I and II, *Road and Bridge Standards*, Virginia Department of Transportation (1996), as amended and may be amended, which contain metric measurements.
- (b) *Guidelines for the Planning and Design of Town Streetscape Projects*, Town of Herndon, as amended, and as may be amended from time to time, is adopted and incorporated by reference.
 - (c) The documents referred to in subsection (a) of this section as here modified shall constitute the Town of Herndon Public Facilities Manual (2004), and shall apply to developments under subdivision, zoning or general law authority in this town.

- 2. This ordinance shall be effective on and after the date of its adoption.

This is certified to be a true and accurate copy of Ordinance 09-O-23 adopted at a legally convened meeting of the Town Council of the Town of Herndon on July 14, 2009.

Margie Tacci
Margie C. Tacci, Deputy Town Clerk

TOWN OF HERNDON VIRGINIA

RESOLUTION

NOVEMBER 25, 2008

Resolution- Acceptance of “Guidelines for the Planning and Design of Town Streetscape Projects,” Provisionally Subject to Subsequent Public Hearing and Public Comment which will be Part of Separate Consideration for Adoption of a Future Town Code amendment that will Incorporate the Guidelines into Sec. 1-16, Standards for Public Improvements Adopted by Reference.

WHEREAS, on May 27, 2008, the Town Council authorized the initiation of a package of town code amendments, including the incorporation of town streetscape guidelines by reference into the town code; and

WHEREAS, the proposed streetscape guidelines combines the many Town standards and regulations for streetscape into a single document, includes guidelines for streetscape both inside of the downtown and outside the downtown, incorporates and strengthens the standards and principles of the Village Streets Overlay Policy adopted in 1991, and updates the Village Streets standards and specifications have been updated to reflect current supplier information, ADA standards, and current practices; and

WHEREAS, the Herndon 2030 Comprehensive Plan was adopted on August 12, 2008 in anticipation of a separate document to replace the Village Street Overlay Policy and the Village Streets Overlay Policy is no longer part of the town’s comprehensive plan; and

WHEREAS, the Heritage Preservation Review Board and the Architectural Review Board have assisted in the preparation of the town streetscape guidelines in discussion at meetings in February 20, 2008, April 16, 2008, and October 15, 2008, and numerous comments were incorporated into the guidelines; and

WHEREAS, the Planning Commission engaged the community in the discussion of the town streetscape guidelines through publication of an article in the Talk of the Town as well as public hearings on August 4, 2008 and September 8, 2008; and

WHEREAS, the Town Council reviewed the preliminary draft guidelines at a work session on June 3, 2008, and numerous comments were incorporated into the guidelines; and

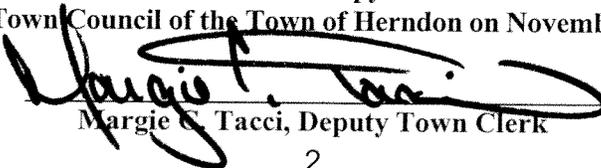
WHEREAS, on September 8, 2008, the Planning Commission unanimously recommended approval of the guidelines at a public hearing; and

WHEREAS, the Town Council held a public hearing on November 25, 2008 about the guidelines.

NOW, THEREFORE, BE IT RESOLVED by the Town Council of the Town of Herndon, Virginia, that it accepts the draft “Guidelines for the Planning and Design of Town Streetscape Projects” dated November 10, 2008, provisionally subject to subsequent public hearing and public comment which will be part of separate consideration for adoption of a future Town Code amendment that will incorporate the guidelines into Sec. 1-16, Standards for public improvements adopted by reference.

BE IT FURTHER RESOLVED by the Town Council that it authorizes the staff to make certain revisions to the “Guidelines for the Planning and Design of Town Streetscape Projects” without prior Town Council approval for: correction of clerical and administrative errors; updates to specifications for features when the basic appearance, quality and function of the feature is unchanged by the update; updates based on Federal or State requirements such as the Americans with Disabilities Act and similar regulations; and updates necessitated by changes to those additional standards referenced in Sec. 1-16, Standards for public improvements adopted by reference.

This is certified to be a true and accurate copy of Resolution 08-G-125 adopted at a legally convened meeting of the Town Council of the Town of Herndon on November 25, 2008.


Margie C. Tacci, Deputy Town Clerk