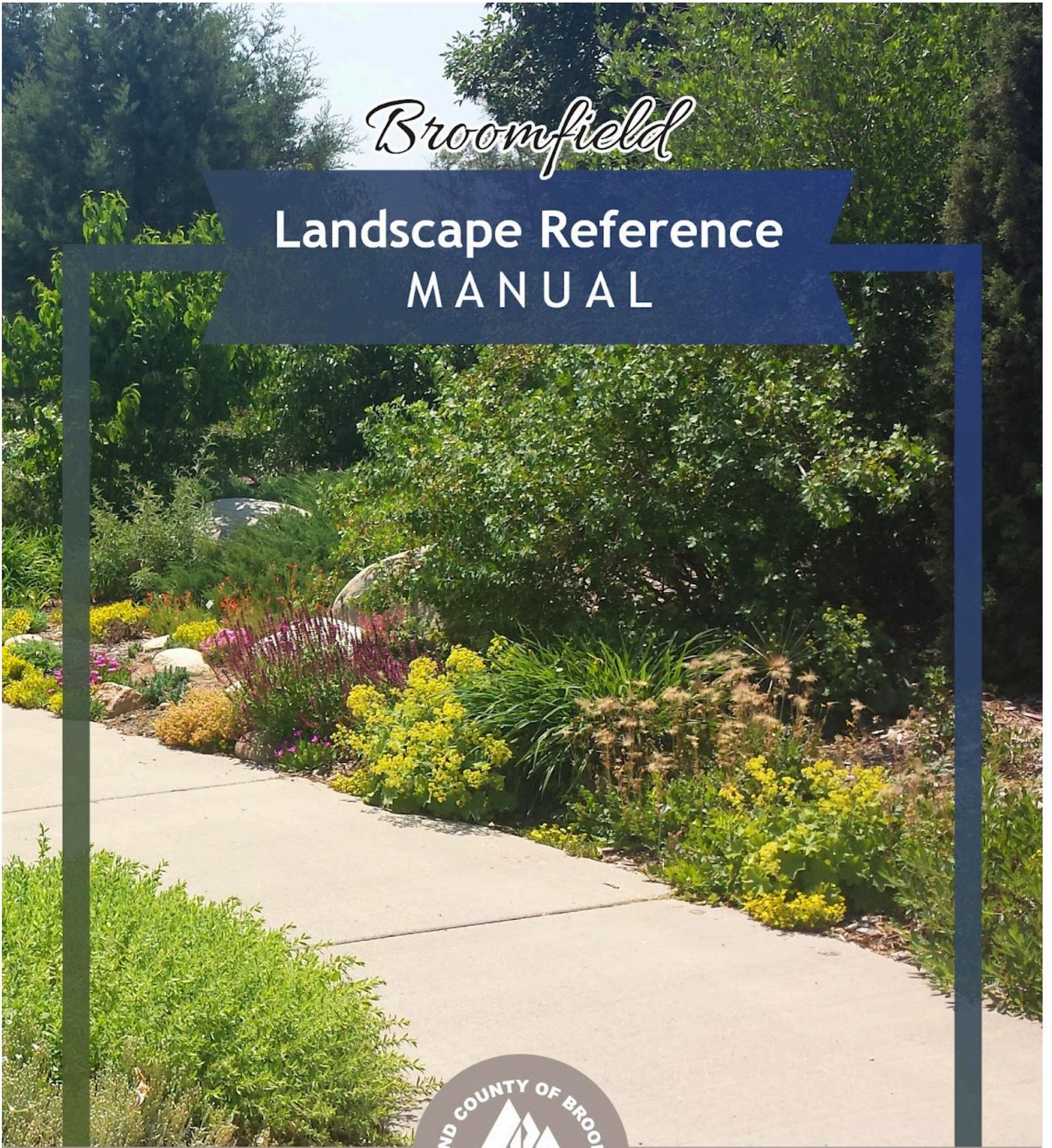


Broomfield

**Landscape Reference
MANUAL**



Landscape Reference Manual

November, 2025

By City and County of Broomfield
Community Development
Planning Division

City and County of Broomfield

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This document is available at Broomfield.org

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Section 1: General Provisions

1.0 INTRODUCTION

This Landscape Reference Manual contains the necessary guidelines, criteria, procedures, standards, maps, plant lists and other provisions essential for the effective implementation of the Landscape Requirements of Chapter 17-70 in the Broomfield Municipal Code (B.M.C). All new or qualifying redevelopment within the City and County of Broomfield shall comply with these requirements. It is the purpose and intent of these Landscape Requirements to:

Promote water conservation

- Assist in decreasing the overall per capita use of water within Broomfield
- Reduce or eliminate outdoor water waste

Encourage appropriate use of materials

- Promote the values and benefits of xeric and native landscapes for new and renovated landscapes
- Promote biodiversity and pollinator habitats through planting a variety of native trees, shrubs, perennials and grasses

Improve compatibility between uses

- Demonstrate how landscaping can affect visual quality between developments and differing land uses while not impacting or obstructing pedestrian or vehicular traffic

1.1 DEVELOPMENT REVIEW STAFF

Staff from multiple departments will comment on landscape design. If you have questions, please contact:

For general questions regarding the development review process, planning@broomfield.org.

Technical questions regarding landscaping may be directed to Kate Volz, PLA, Broomfield Landscape Architect at landscape@broomfield.org

Questions related to water budgets should be directed to Broomfield Water Resources at waterresources@broomfield.org

Note this list is subject to change without notice.

Section 2: Landscape Submittal Requirements

2.0 INTRODUCTION

The requirements presented in this section shall be used to aid the applicant, designer, installer and maintenance contract in the analysis, design, installation and maintenance of landscape. The requirements presented herein are the minimum necessary for landscape plan submittals and should be considered in conjunction with the requirements set forth by the City and County of Broomfield's Community Development Division.

2.1 REVIEW PROCESS

2.1.1 PRE-APPLICATION MEETING

As part of the pre-application process, designated landscape areas should be shown on the preliminary site plan.

2.1.2 LANDSCAPE PLAN

The approved landscape plan is a legally binding document on the developer or owner, their successors and assigns. The landscape plan is a commitment to quality and is a long-term maintenance agreement therefore, the plans must be complete and legible. City staff will not accept the application if the landscape plan is incomplete or information is illegible or missing. The landscape plan shall be prepared and stamped by a Colorado licensed landscape architect, except for plans for a single-family dwelling detached or manufactured home. See Chapter 17-70-020 Applicability for additional information.

The landscape plan is to be submitted as a PDF concurrently with the [Site Development Plan \(SDP\) or Urban Renewal Site Plan \(URSP\) application](#) and will be reviewed for compliance with the landscape code during review. A combined site plan and landscape plan in color is required at SDP submittal. If the property did not require an SDP or URSP, then the landscape plan must be submitted concurrent with the building permit application. Upon approval, construction drawing level landscape and irrigation plans are required as part of the construction drawing set.

2.1.3 LANDSCAPE SUBMITTAL REQUIREMENTS

The following items describe the landscape plan and the information that shall be provided on the plan:

Sheet Size:

Broomfield Standards state the plan set should be 22"x34" or 11"x17". Broomfield will return a signed 11"x17" set. If you submit a 24"x36" set, it will be resized and may not be to scale. Each sheet shall include a title block, north arrow, graphic scale, and key map. The plans are to be drawn at a scale no greater than 1"=40'-0" and shall include all pertinent information as further described below. The cover sheet is to include a vicinity map.

Title Block:

Show project name, developer name, consultant name, designer's name and state license number, revisions table, sheet description, and sheet number. Subdivision name/filing, legal description, or other identifying information to be centered at the top of each page.

Key Map:

To facilitate reviewing sets of plans consisting of two or more sheets, staff recommends providing a key map that shows the overall site and the area covered by each sheet.

North Arrow/Graphic Scale:

Show a numeric and graphic scale for all plans and details, and include a north arrow. Shall have sheet orientated with north generally up and/or to the right.

Section 2: Landscape Submittal Requirements, cont.

Phase Lines:

Phase lines are required on all phased development. Include phase lines in the symbol legend. Buffers next to residential development, arterial and collector street frontages and perimeter buffers, should be included in phase one construction whenever feasible.

Standard Landscape Notes:

The following notes are required on all landscape plans. Statements should describe the information requested and notes shown in quotation marks “ ” should be provided as written without revisions or additions. Modified statements and notes will be rejected unless previously discussed with the case planner.

- a. Provide a statement committing to soil preparation, listing type and quantity of amendment(s) to be applied. Three (3) cubic yards of organic material per 1,000 SF of area is the minimum amount.
- b. Provide a statement generally describing any free standing lights.
- c. Provide a statement generally describing the surface material of walks, vehicular drives, parking lots, plazas, etc.
- d. Show this note, “All utility easements shall remain unobstructed and fully accessible along their entire length for maintenance equipment entry.”
- e. Show this note, “Any landscaping within sight distance triangles at intersections or driveways shall comply with CCOB Standards and Specifications.”
- f. Show this note, “The developer, their successors and assigns, shall be responsible for installation, maintenance and replacement of all landscaping materials shown or indicated on the approved site plan or landscape plan on file in the Planning Division. All landscaping will be installed as delineated on the plan, prior to issuance of certificates of occupancy, unless otherwise agreed upon.”
- g. Show this note, “All landscaped areas and plant material, with the exception of non-irrigated native, restorative, and dryland grass areas must be watered by an automatic underground irrigation system. Irrigation system design, installation, operation, and maintenance shall conform to requirements found in [CCOB 2022 Standards and Specs, Section 161](#).”

General Landscape Notes:

In addition to the required standard landscape notes to be provided above, the applicant may include notes that describe landscape materials such as mulches, pavers, and decorative pavement. Notes that describe tree lawn and residential single-family detached lot landscape responsibilities may be included. Notes giving contractors freedom to make substitutions and field changes without prior case planner approval are not permitted. This does not apply to minor landscaping changes, i.e. plant species substitutions due to availability.

Landscape Plan Legend:

Show property lines; utilities; lighting fixtures; fire hydrants; fences; walls; curb and gutter; concrete and asphalt pavement; decorative pavement; existing and proposed contours and elevations, and top of wall (T.O.W.) and bottom of wall (B.O.W.) elevations; 100 year floodplain boundaries; sightline triangles based on street speed limits ([CCOB 2022 Standards and Specs, Section 700](#)); and all other site improvements that are shown on the site plan should match those shown on the landscape plan and be included in the legend.

Section 2: Landscape Submittal Requirements, cont.

Utility Easements and Utility Hardware Locations:

Show and label all existing and proposed utility easements and utility hardware such as fire hydrants, standpipes, transformers, enclosures, etc. since they will impact plant material locations. Include these items in a legend.

Plant Material Symbol Legend:

Include a separate legend showing deciduous, evergreen and ornamental trees, perennials, ornamental grasses, groundcovers, plant beds; irrigated cool and warm season sod or seed; irrigated and non-irrigated native, restorative, and dryland grasses. Show required sizes at time of installation.

Detailed Plant List:

Provide a plant list including representative plant symbols, labels, quantities, sizes, common and botanical names, special notes/or planting requirements i.e. spacing and water usage requirements for each species.

Plant Material Symbol Scale:

Draw all plant material at the corresponding sizes.

- a. Deciduous shade and street tree species. 25' diameter canopy.
- b. Deciduous ornamental trees. 12'-15' diameter canopy.
- c. Evergreen trees. 15' diameter canopy.
- d. Large shrubs/Small trees. 6'-8' diameter size at maturity.
- e. Medium shrubs. 4'-5' diameter size at maturity.
- f. Small shrubs, perennials, and ornamental grasses. 3'-4' diameter size at maturity.
- g. Annuals and Groundcovers. Cross-hatching, stippling, and shading are acceptable when accompanied by spacing and planting pattern notations. e.g. (Annuals 8" o.c. triangular spacing.)
- h. Existing Plant Material. Special symbols should be provided for existing trees, shrubs, and plant beds that will be protected in place, or when existing trees will be relocated. Symbols should show existing trees and shrubs at their size or tree canopy extent.

Water Hydrozones:

Show water usage requirements for each turf and plant species listed in the Water-Wise Plant List. Usage requirements should be shown as follows:

- i. **High Hydrozone** means any turf or plant using high amounts of water through automatic irrigation connected to a permanent tap to survive in normal weather conditions. A high hydrozone area is an area predominantly consisting of cool season turfgrass and should not use more than 24.9 gallons per square foot of water per season in an average year.
- ii. **Moderate Hydrozone** means any turf or plant using moderate amounts of water through automatic irrigation connected to a permanent tap to survive in normal weather conditions. Any area that will include plant material generally requiring 11.4 gallons per square foot per season or more of supplemental water in an average year will be considered a moderate hydrozone area. Moderate hydrozones do not contain any areas of cool season turfgrass.
- iii. **Low Hydrozone** means any turf or plant using low amounts of water through automatic irrigation connected to a permanent tap to survive in normal weather conditions. Any areas that do not generally require more than 3.5 gallons per square foot per season of supplemental

Section 2: Landscape Submittal Requirements , cont.

water in an average year will be considered a low hydrozone area. Low hydrozones do not contain any areas of cool season turfgrass.

- iv. **Xeric Hydrozone** means any turf or plant species needing no water through automatic irrigation connected to a permanent tap to survive or only needing temporary water for re-establishment in normal weather conditions. This includes hardscaped, mulched (organic and inorganic) and artificial turf areas not containing plant material.

Irrigation Plans:

Following approval of the Landscape Plans, Irrigation Plans following Broomfield's Water Resources Division requirements ([CCOB 2022 Standards and Specs, Section 161.14](#)) are to be submitted. Approved Landscape Plans will be required as part of the Irrigation Plan submittal documents along with the irrigation plan submittal.

Contours:

Show existing and proposed one or two foot contours and label.

404 Permit:

Provide a copy of the Wetlands application and mitigation plan when necessary.

Detention, Retention, and Water Quality Ponds:

Show pond type, area boundary, 100 year flood line, maximum depth below 100 yr. flood line, and show retaining walls and details if applicable.

Surface Treatments:

Including each turf type, decorative pavement, concrete, asphalt, pavers, concrete curb and gutter, and include details.

Fences, Walls and Retaining Walls:

Retaining walls and fence materials, height, and placement are regulated by B.M.C; therefore, always provide design details including dimensions, materials, finishes, color and top and bottom of wall elevations. Graphically show the location of each fence style. The City will not issue fence or wall permits if this information is not shown on the Construction Drawings or if the plans are incomplete. For more information, please see [Chapter 17-32-140, Fences, hedges, and walls](#) in the B.M.C. or as established in an approved/associated Site Development Plan. Fences, wall and retaining walls are not allowed to be located within utility easements, please see [CCOB 2022 Standards and Specs, Section 161.12](#) for additional information. Separate fence permit applications must be submitted and issued by the Planning Division prior to installation of any fence. A separate permit for retaining walls is required through the Building Division prior to installation.

Monumentation Signs and Community Design Elements:

Show the locations of proposed or existing monuments and signs. Include design details with dimensions, materials, finishes, and colors. Reference all details. For more information, please see [Chapter 17-44, Sign Code](#) in the B.M.C. or as established in an approved/associated Site Development Plan. Separate sign permits through the Building Division are required prior to installation of any new signage.

Parking Lot Landscaping:

Include all islands, interior landscape and perimeter screening.

Service Areas and Trash Enclosures:

Show location, label and include design details. Show dimensions, materials, finishes, and colors.

Section 2: Landscape Submittal Requirements, cont.

2.1.4 LANDSCAPE TABLE REQUIREMENTS

Examples of the following tables are provided in Section 3.

Standard Tables:

Standard tables shall be provided on all landscape plan submissions to demonstrate compliance with landscape code requirements. Provide tables for right of way and curbside, detached and attached sidewalk lawns, parking lot islands, internal and perimeter screening, urban street frontages and detention and water quality

Curbside Table:

Provide a table listing each street individually and the required street tree requirements. Street trees are required at a ratio of one tree per 40 linear feet. Detached and attached sidewalk lawns over three feet in width additionally require one shrub per 40 square feet of lawn area. Have columns for required versus provided street trees.

Urban Street Frontage Table:

Provide a table listing each zone and the material or landscape requirements. Street trees are required at a ratio of one tree per 35 linear feet in the Furnishings Zone. Street tree openings shall be at least five feet by 15 feet in size. Additional landscape plantings and/or non-living materials such as rock and wood mulch shall accompany street trees. Have columns for required versus provided.

Parking Lot Table:

Provide a table listing each category individually and the required minimum size requirements i.e. 9' x 19' single parking island required, size provided, trees and shrubs required versus provided trees and shrubs. Areas are measured inward from back of curb or edge of walk to back of curb or edge of walk. Landscaping shall consist of one tree and six shrubs per single parking island, two trees and 12 shrubs per double parking island, one tree per 30 linear feet and six shrubs per 36 linear feet of internal parking medians, one tree per 40 linear feet of parking lot perimeter in addition to an approved screening method – three to four foot height berm, three to four foot height double row of shrubs to form a hedge, or a three foot high decorative masonry wall. Have columns for required versus provided. These are in addition to right of way and curbside requirements.

Detention and Water Quality Ponds Table:

Provide a table for the area within the tract surrounding a pond. Landscaping shall consist of a minimum of one tree and 10 shrubs per 4,000 square feet above the 100-year water surface elevation. Have columns for required versus provided.

Single-Family on Individual Lot Landscape Table:

Provide a landscape table showing the total lot square footage, landscape area square footage, lawn area square footage, and living vegetation coverage.

Water Usage Table:

A water usage table is required whenever common area landscape tracts are proposed.

- a. The table should include the square footage of each tract, and the water usage categories within each tract as follows:
 - i. **High Hydrozone:** 24.9 gallons/SF/season
 - ii. **Moderate Hydrozone:** 11.4 gallons/SF/season
 - iii. **Low Hydrozone:** 3.5 gallons/SF/season
 - iv. **Xeric Hydrozone:** 0 gallons/SF/season

Section 2: Landscape Submittal Requirements, cont.

- b. A Water Budget Chart that shows the total annual water use, which shall not exceed twelve (12) gallons per square foot over the site, including all hydrozones used on the landscape plan. (See Section 3.6: Single-Family on Individual Lots for sample hydrozone plan, See Section 4: Water Budget Chart)

Section 3: Sample Landscape Tables and Figures

3.0 GENERAL

Landscape tables, when properly prepared, provide staff, citizens, and City Council with an important tool when determining compliance with standards, assessing quality, justifying waivers, or comparing similar developments. Sample tables have been shown to assist with their completion. Included are:

- Landscape Area Table
- Curbside Landscape Table
- Urban Street Frontage Landscaping Table
- Parking Lot Landscape Table
- Detention and Water Quality Ponds Landscape Table
- Single-Family on Individual Lots Landscape Table

3.1 LANDSCAPE AREA TABLE

Landscape Area Table.

	Area in SF	%
Total Site Area: (7.5 ac)	326,700 SF	100 %
Building Coverage:	81,675 SF	25 %
Hard Surface Area: (parking lot, sidewalks, etc.)	173,151 SF	53 %
Total Landscape Area:	71,874 SF	22 %
Maximum % of turf grass allowed:	21,562 SF	30 %
% of turf grass provided:	30,187 SF	42 %

In this example, at 42% the amount of turf grass provided is more than the maximum 30% that is allowed for non-residential development. Therefore, the landscape plan does not comply with Chapter 17-70-050.C Turfgrass Requirements. To bring the plan into compliance, at least 8,625 SF of turf grass making up at least 12% of the total landscape area, must be converted to non-irrigated native grasses or additional plant beds. This example has been included to show applicants how to use the table to verify compliance prior to submittal.

Landscaped area coverage:

- 25% max.: Non-living materials including river rock, crushed rock, organic mulches such as shredded bark, pole shaving, pine needles, etc., gravel, aggregate, cobbles, walks, decorative pavement, and artificial turf or other non-living materials.
- 75% min.: Living materials including shrubs, perennials, ornamental grasses, groundcover plants, and turf grasses. The total coverage of turf grasses may not exceed 30% of a non-residential development site's landscape area.

When replacing Bluegrass with xeriscape plant beds refer to Chapter 17-70-050.A.5 Living Material Requirements to determine the number of plants required at installation.

Section 3: Sample Landscape Tables and Figures, cont.

3.2 CURBSIDE LANDSCAPE TABLES

Curbside Table.

Detached Walks				Trees/Shrubs Required/Provided	
Area	Description	Length	Width Provided	Trees 1/40LF	Shrubs 1/40SF
A	Detached Sidewalk (less than 3' wide: rock mulch only)	100'	2'	0	0
B	Curbside 3'-6' (minimum shrubs, ornamental grasses optional)	120'	6'	0/3	18/18
C	Curbside 6'-10' (trees and shrubs required, ornamental grasses optional)	400'	10'	10/10	100/100
D	Curbside over 10' (trees and xeric vegetation required, include landscape beds with shrubs and ornamental grasses)	600'	15'	15/15	80/80

Cool-season turfgrass is prohibited within any size of detached curbside landscape areas.

Attached Walks					
Area	Description	Length	Notes	Trees Req. (1/20LF)	Trees Provided
A	Attached Sidewalk	120LF	Street trees to be located 4' or 5' from back of curb or edge of sidewalk	6	6

See Chapter 17-70-070.A for additional Curbside Landscaping requirements.

Section 3: Sample Landscape Tables and Figures, cont.

3.3 URBAN STREET FRONTAGE LANDSCAPE TABLE

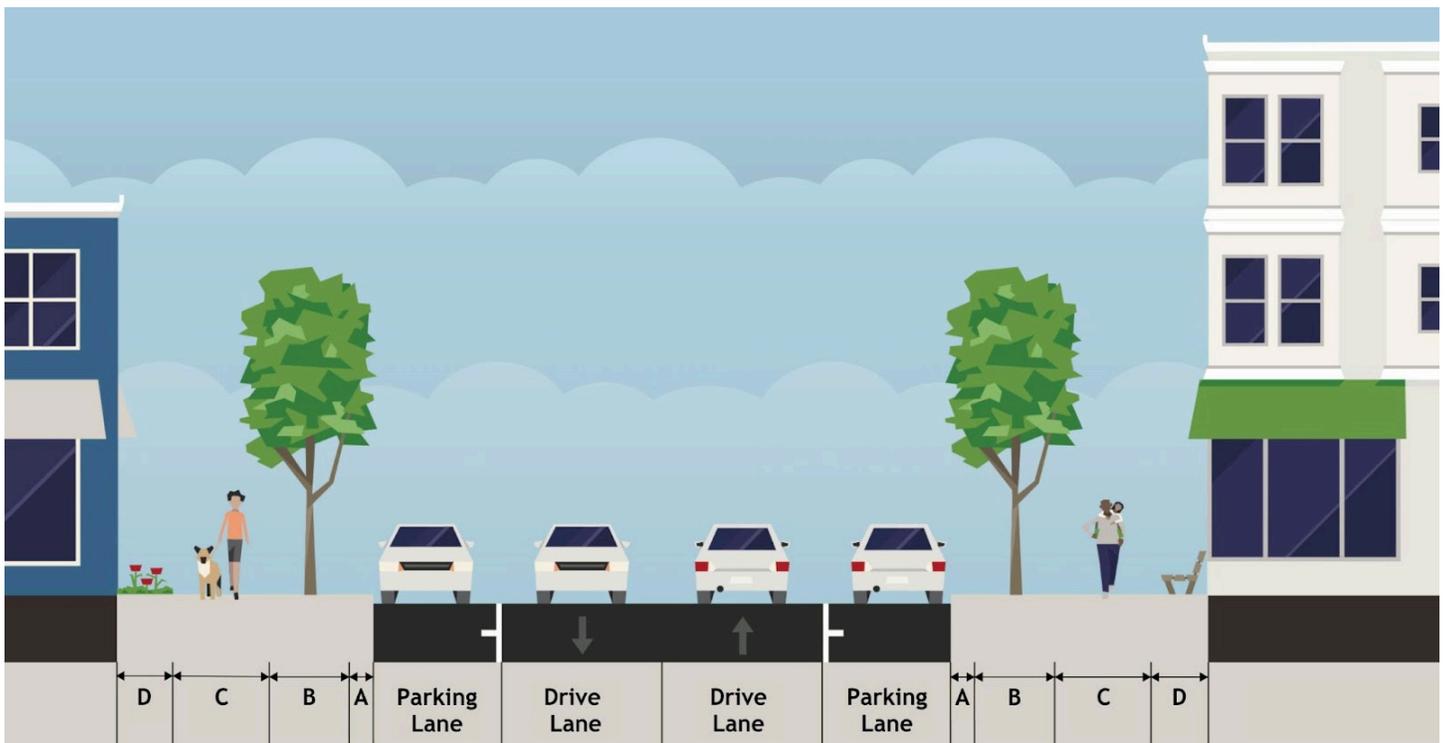
Urban street frontages include widened sidewalks to accommodate outdoor cafes and pedestrian walkways, site amenities such as benches, lighting and wayfinding as well as landscaping to strengthen the urban tree canopy, plant containers and raised planters to enhance the pedestrian realm and minimize the appearance of hardscape. Urban street frontages consist of the following zones:

Urban Street Frontage Table.

Urban Street Frontage					
Area	Description	Width Required	Width Provided	Plant Materials/Surface Treatment Required	Plant Materials/Surface Treatment Provided
A	Edge Zone	1.5'	1.5'	Unobstructed hard surface	Stamped Concrete
B	Furnishings Zone	5'	5'	1 Street Tree/ 35 LF Landscape planting, decorative pavement, site furnishings, bus shelters, and lighting	215 LF @ 5' Width 6 Trees Req/6 Trees Prop
C	Pedestrian Zone	6'	6'	Unobstructed hard surface	Concrete
D	Frontage Zone	3.5'	3.5'	Open hard surface, landscape planting, or outdoor seating	Concrete, landscape planters, outdoor seating

See Chapter 17-70-070.B for additional Urban Street Frontages requirements.

Figure 1.



Section 3: Sample Landscape Tables and Figures, cont.

3.4 PARKING LOT LANDSCAPE TABLES

The following tables provide examples of landscape island requirements for surface Parking Lots with internal parking of more than 10 parking spaces. This example is for a small parking lot with 40 spaces and two double parking islands.

Parking Island Planting Table.

Parking Islands		Trees/Shrubs/Ornamental Grasses Required/Provided		
Island Size Single Island (9'x19' min) Double Island (9'x 38' min)	Number	Trees 1/9'x19' island	Shrubs 6/9'x19' Island	Ornamental Grasses (max. 30%)
9'x38' Double Island	2	4/4	24/24	0/0

Parking Lot Perimeter Planting Table.

Parking Lot			Trees/Shrubs Required/Provided	
Area / Description	Length	Landscape Buffer Width Provided (min. 4' wide)	Trees 1/40LF of Perimeter	Buffer Treatment
North Perimeter	159'	7'	4/4	Double row of shrubs
South Perimeter	159'	7'	4/4	Double row of shrubs
East Perimeter	86'	varies	2/3	Double row of shrubs
West Perimeter	86'	varies	2/3	Double row of shrubs

See Chapter 17-70-080 for additional Parking Lot Landscaping requirements.

Section 3: Sample Landscape Tables and Figures, cont.

3.5 DETENTION AND WATER QUALITY PONDS LANDSCAPE TABLE

Provide a table for the area within the tract surrounding a pond above the 100-year water surface elevation.

Detention and Water Quality Ponds Landscape Table.

Detention Pond						
Area	Area in SF	Notes	Trees Req. (1/4,000SF)	Trees Provided	Shrubs Req. (10/4,000SF)	Shrubs Provided
A	60,000	Detention Pond in Southwest Corner	15	15	150	150

In addition to the table above, the bottom of ponds shall be seeded and/or planted with water tolerant seed or plant materials that are capable of surviving occasional water inundation. Plantings of willows and other wetland plant materials shall be included to the maximum extent practicable. Designated areas shall be maintained free of weeds at all times throughout the year. See Chapter 17-70-090 for additional Detention and Water Quality Ponds Landscaping requirements.

Section 3: Sample Landscape Tables and Figures, cont.

3.6 SINGLE-FAMILY ON INDIVIDUAL LOTS LANDSCAPE TABLE

In this example, a residential unit is on a 7,000 SF lot. The following table and calculations show the landscape requirement and breakdown. See Chapter 17-70-100 for additional requirements.

Calculations:

Lot Size = 7,000 SF

Building, Driveway, Sidewalk = 4,000 SF

Landscape Material Requirement = 75% of remaining area

$(7,000 - 4,000) \times 0.75 = 2,250$ SF landscape area

1,222 SF in of landscape area in the visible front & side yards

Breakdown:

1,222 SF required landscape area

30% max turf grass = 367 SF

25% max non-living plant materials = 306 SF

Minimum 549 SF of required landscape area to be covered with living plant material that does not exceed the moderate water demand landscape standards.

Figure 2 shows the full 30% turf across the visible side and front yards with the remaining open areas to be landscaped and their proposed hydrozones. See **Water Hydrozones** under Section 2 and the **Water Budget Chart** under Section 4 for additional information.

Figure 3 shows how a homeowner may apply the landscape code using the square footages provided above. The front yard contains 30% turf, more than 549 SF of landscape beds with living vegetative cover, and paver steppers surrounded by groundcover to the backyard.

Legend

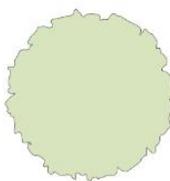
	High Hydrozone		Deciduous Trees
	Moderate Hydrozone		Evergreen Shrubs
	Low Hydrozone		Deciduous Shrubs
	Xeric Hydrozone		Perennials & Grasses
			Groundcover
			Boulder
			Stepper

Figure 2.

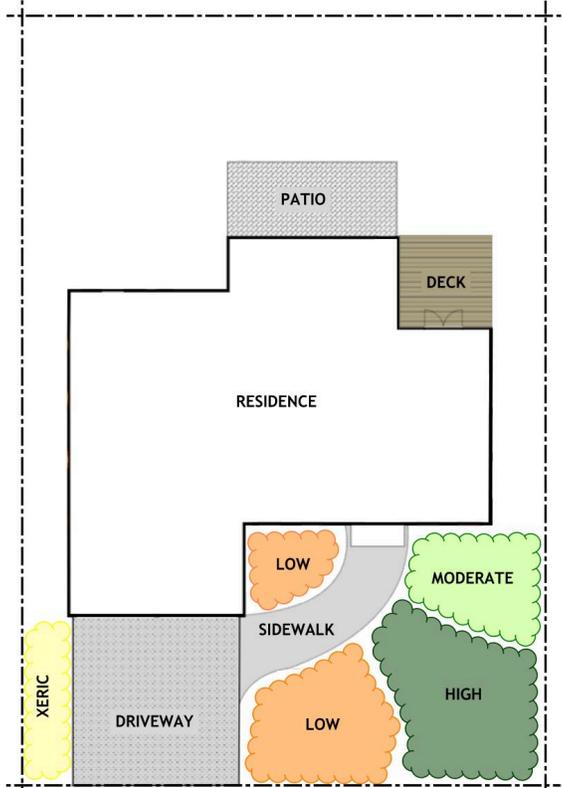
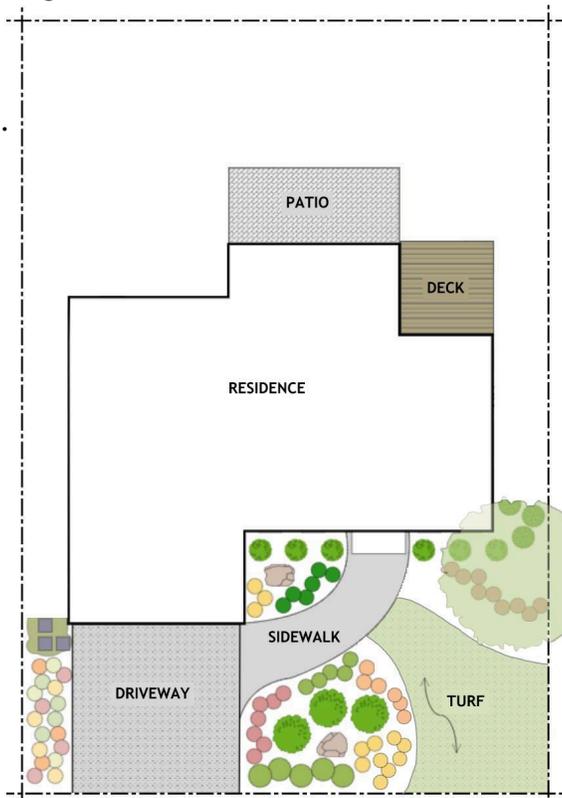


Figure 3.



Section 4: Water Budget Chart

A Water Budget is the target amount of water that should be applied during a typical watering season, post-establishment.

Instructions:

1. Divide the plan into hydrozones: specific areas or grouping of plants together based on their similar water needs – xeric, low, moderate or high. Check the City and County of Broomfield [Water-Wise Plant List](#) to determine the appropriate hydrozones for plants in your design.
2. Calculate the area (in square feet) for each hydrozone and enter the square feet in the green shaded cells in the first table below. Add the square feet together for all the areas that have the same hydrozone designation, even if they are in separate areas within the landscape plan. For example, if there are three Moderate hydrozone areas, add the areas together for a total and use that total in the table below.
3. Calculate the total area for the landscape plan (the sum of all hydrozones) and enter that value in the orange cell below.
4. Calculate a total water use (in gallons) for each type of hydrozone by multiplying the area by the gallons per square foot shown below. Enter the result for each hydrozone in the blue cells below.
5. Add the water use for all the hydrozones together to determine a total annual water use for the site and enter that value in the purple cell below.
6. Divide the total annual water use by the total square footage to determine the overall average water use per square foot for the entire site. **The overall site should use no more than 12 gallons per square foot per watering season.**

Water Budget Chart

Hydrozone	Area (square feet)	times	Water Need (gallons per square foot)	equals	Annual Water Use (gallons)
High (H)		X	24.9	=	
Moderate (M)		X	11.4	=	
Low (L)		X	3.5	=	
Xeric (Z)		X	0	=	
Totals	<i>(sum)</i>		N/A		<i>(sum)</i>

Average water use calculation. Enter numbers where shaded gray below.

$$\text{Average water use per square foot} = \frac{\text{Total Annual Water Use}}{\text{Total Area of Landscape}} = \frac{\text{[Gray Box]}}{\text{[Gray Box]}} = \text{[Gray Box]}$$

Section 5: Legends, Plant Lists, Index Maps

5.0 LANDSCAPE MATERIAL AND SITE FEATURE LEGENDS

1. Symbols shown on the landscape plan should correspond exactly as to what is shown on the site plan or in the plant list.
2. Whenever possible legends, index maps, and in some cases plant lists should be shown on each sheet.

5.1 INDEX MAPS

The following information should be included on all index maps:

- a. Scale and North Arrow
- b. Current sheet highlighted and numbered, match sheet numbers
- c. Tract Labels
- d. Collector and Arterial street names

5.2 PLANT LIST

1. The following information is required for all plant lists:
 - a. **Symbols.** Provide distinctive symbols for proposed and existing plant materials.
 - b. **Quantities.** Are required for each species proposed.
 - c. **Common Name.** To be included.
 - d. **Botanic Name.** To be included.
 - e. **Size.** At installation. Minimum plant material sizes including caliper, height and container size are regulated by code.
 - f. **Description.** Show when applicable.
 - g. **Water Usage.** Include either high, moderate, low, or xeric designations, per City and County of Broomfield [Water-Wise Plant List](#).

Typical Plant List Format:

Symbol	Quantity	Common Name	Botanical Name	Size	Description	Water Usage

2. Typical plant material categories should include:
 - a. Deciduous Canopy Trees - Highlight (*) Recommended Street Trees
 - b. Evergreen Trees
 - c. Ornamental Trees
 - d. Evergreen Shrubs
 - e. Deciduous Shrubs
 - f. Perennials
 - g. Ornamental Grasses
 - h. Vines and Groundcovers
 - i. Seed Mixes, Show Grass Species and Note if Irrigated or Not Irrigated
 - j. Sod, Show Grass Species

Section 5: Legends, Plant Lists, Index Maps, cont.

5.3 DIVERSITY REQUIREMENT

Tree Diversity Scale.

# of Trees	Diversity Percentage
1-4	Can have 100% of one genus
5-8	Maximum of 50% of any one genus
9-15	Maximum of 33% of any one genus
16-50	Maximum of 20% of any one species, 30% genus, 40% family
50+	Maximum of 10% of any one species, 20% genus, 30% family

Plant Diversity Scale.

# of Plants (shrubs, ornamental grasses, perennials)	Diversity Percentage
1-10	Can have 100% of one genus
11-25	Maximum of 50% of any one genus
26-75	Maximum of 33% of any one genus
76-100	Maximum of 20% of any one species, 30% genus, 40% family
101+	Maximum of 10% of any one species, 20% genus, 30% family

Additional plant material information can be found in [CCOB Standards and Specs., Section 1060.](#)

Section 6: Landscape Material Placement Criteria

6.0 STREET TREE PLANTING

Recommended Street Tree Planting Criteria:

Criteria	Recommended Distance/Spacing*
Street Tree Species	Large Deciduous Species - 2 ½ inch caliper min.
Spacing	40 feet on center, centered within tree lawn, or 5 ft from back of curb when no detached walk is present.
Distance from Intersecting Flowline	Local Streets - 54' Collect Streets - 68' Arterial Streets - 87'
Distance from Stop Sign	May Vary; See Distance from Intersecting Flowline
Distance from Traffic Signal	
Street Light	
Electric Power or Utility Pole	8 ft.
Existing Trees	May vary depending on species and location.
Water and Gas Meters Utility Enclosures and Transformers	8 ft.
<u>Intersecting:</u> Driveways Sidewalk Curb Trail Bike Path	5 ft.
Alley Entrances	5 ft.
Railroad Track Crossing	5 ft. from the edge of Railroad R.O.W.

*Distances are always measured from face of object nearest to tree to center of tree; or at a 90 degree angle from a line to center of tree; or from center of tree to center of tree.

Section 6: Landscape Material Placement Criteria, cont.

6.1 PLANT MATERIAL SEPARATIONS

Recommendations for plant material separations at time of installation:

FROM:	Recommended Plant Material Separations*	
	Trees	Shrubs or Edge of Plant Bed
Transformers and Utility Enclosures	10 ft.	8 ft.
Fire Hydrants	10 ft.	5 ft.
Sidewalks, trails, bicycle paths	5 ft.	3 ft.
Building Foundations	10 ft.	5 ft.
Utility Easements	Outside of easement	Outside of easement
Other Structures	10 ft.	5 ft.
Locate thorny trees and shrubs a minimum of 20 ft. and 4 ft. respectively, from public walks.		

*Distances are always measured from face of object nearest to tree or plant bed to center of tree or edge of plant bed; or at a 90 degree angle from a property line, easement line, public or private right-of-way line, curb, or edge of pavement to center of tree or edge of plant bed.

Section 7: Tree Preservation & Mitigation

7.0 INTRODUCTION

The requirements presented in this section are to provide for tree preservation while facilitating responsible land development within Broomfield. This includes both the addition of trees wherever feasible and the utmost effort in maintaining the existing tree population. These measures aim to achieve multiple benefits for the community, including canopy preservation, noise reduction, energy efficiency, soil protection, wildlife habitat, and providing a public resource. These requirements are intended to only cover properties during construction and post-construction in accordance with Broomfield Standards and Specifications. See Chapter 17-71 in the B.M.C. for additional Tree Preservation & Mitigation requirements.

7.1 REVIEW PROCESS

7.1.1 TREE PRESERVATION & MITIGATION PLAN

The tree preservation plan is to be submitted as a PDF concurrently with the [Site Development Plan \(SDP\) or Urban Renewal Site Plan \(URSP\) application](#) and will be reviewed for compliance with the tree preservation code during review. If the property did not require an SDP or URSP, then the tree preservation plan must be submitted concurrent with the building permit application. See Chapter 17-71-020 Applicability for additional information. Upon approval, construction drawing level tree preservation plans are required as part of the construction drawing set.

7.1.2 TREE PRESERVATION & MITIGATION SUBMITTAL REQUIREMENTS

The tree preservation plan shall be submitted and approved prior to any site activity or disturbances and shall include:

- a. Identification of all existing trees four inches (4”) DBH and larger on the site and within fifty feet (50’) of the site boundaries and specifically note any significant trees.
- b. A chart specifying size, species, condition and disposition for each existing tree.
- c. Mitigation actions, including identification of the trees that are proposed to comply with mitigation requirements, the location of removed trees, replacement trees, and the location of trees that are proposed for relocation.
- d. Proposed methods and schedule for implementing tree and other plant preservation measures.
- e. Proposed methods, materials, and schedule for root pruning, branch pruning, and other tree maintenance.
- f. A construction schedule which includes a time frame for work near existing plants and trees.
- g. A maintenance schedule for the preservation of the trees during construction.
- h. A watering plan and schedule that details watering of trees on the project site during construction including the following:
 - i. Area of the project site to be watered and how watering will be phased based on construction.
 - ii. Number of trees to be watered and total caliper inches. Identify the amount of water to be applied based on total caliper inches.
 - iii. Schedule for watering during the duration of the project.

Section 7: Tree Preservation & Mitigation

7.2 TREE PROTECTION MEASURES

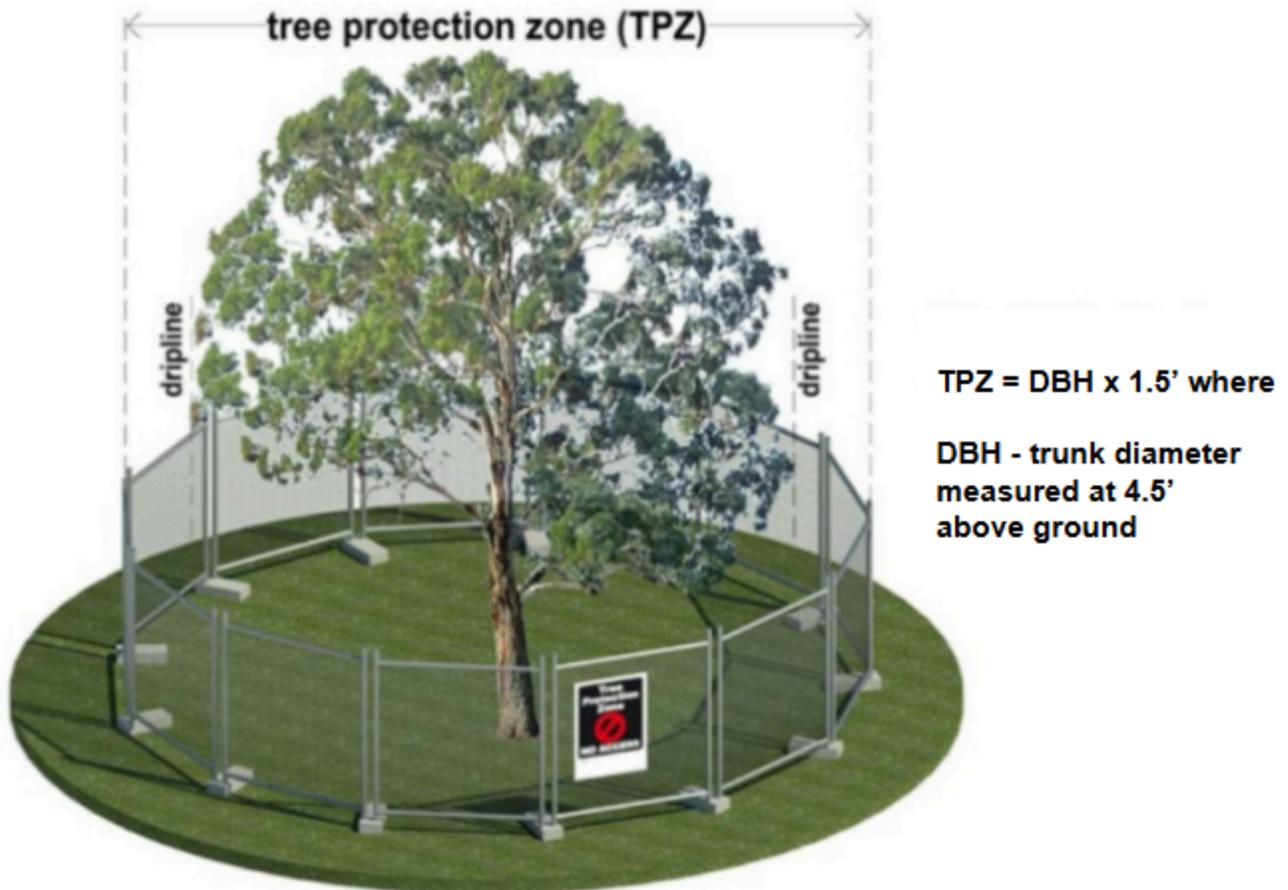
Site construction shall take into account the life and good health of trees preserved on the site. The following procedures shall be followed for tree protection, unless alternate mitigation measures are approved in the tree preservation plan.

7.2.1 TREE PROTECTION FENCING

Tree protection fencing shall be installed prior to any site activity and shall remain in place and be maintained in the condition in which they were installed for the duration of the construction activity.

- a. Chain link fencing six feet (6') tall with steep posts driven into the ground at not more than ten foot (10') internals is required to delineate the tree protection zone (TPZ). See Figure 4.
- b. The TPZ is calculated by taking the Diameter at Breast Height (DBH) and multiplying it by 1.5'. Example: 6" DBH x 1.5' = 9' TPZ
- c. Other barriers may be approved based on site conditions.

Figure 4.



Section 7: Tree Preservation & Mitigation

7.3 TREE INVENTORY CHART

In this example, two trees are being removed and onsite mitigation is being provided. The following charts and notes show the tree mitigation requirement and breakdown. See Chapter 17-71 for additional requirements.

Typical Tree Inventory Format:

Tree ID	Scientific Name	Common Name	DHB (in)	Condition Rating	Action	Notes
1	<i>Pyrus calleryana</i> 'Chanticleer'	Chanticleer Pear	7"	2	Preserve	
2	<i>Pinus leucodermis</i>	Bosnian Pine	3"	3	Preserve	12' Height
3	<i>Gleditsia tricanthos inermis</i> 'Shademaster'	Shademaster Honeylocust	6"	2	Remove & Mitigate	
4	<i>Ulmus pumila</i>	Siberian Elm	16"	5	Remove	Prohibited Species
5	<i>Ulmus pumila</i>	Siberian Elm	12"	6	Remove	Prohibited Species
6	<i>Acer rubrum</i>	Red Maple	8"	2	Remove & Mitigate	
Inches to be Mitigated			14"			

Mitigation Trees Provided:

Height/Caliper Inches	Quantity	Inches
6'/8' Ht. Evergreen Trees		
2.5" Cal. Deciduous Trees	4	10"
2" Cal. Ornamental Tree	2	4"
TOTAL	6	14"

Typical Tree Mitigation Notes:

- Mitigation requirements for trees to be met via replacement trees.
- Refer to landscape plans and plant list with  symbol for tree mitigation species breakdown.
- While tree protection fencing is in place, trees shall be deep-root watered at an interval of once every two weeks when temperatures are at or above 40-degrees fahrenheit. Trees shall be watered at the rate of twenty-five (25) gallons per inch DBH.

Section 8: Appendix A: Water-Wise Plant List

September, 2023

Attached are lists of xeriscape plants recommended for planting in Broomfield. These lists were developed by compiling information from the following sources:

- **Xeriscape Plant Guide** by Denver Water
- [Plant Select Program](#) at Colorado State University
- **Fact Sheets #6.305, 7.229, 7.230, 7.231, 7.234, 7.421, 7.422** from CSU Cooperative Extension
- **Little Valley Wholesale Nursery**, Brighton, CO
- **Colorado Native Plant Society**, Denver, CO

Indications of water usage for various plants were determined by utilizing the recommendations from the sources above, as follows:

High Hydrozone (H):	24.9 gallons/SF/season
Moderate Hydrozone (M):	11.4 gallons/SF/season
Low Hydrozone (L):	3.5 gallons/SF/season
Xeric Hydrozone (Z):	0 gallons/SF/season

These watering recommendations are for plants that have been established for at least one growing season. Newly installed plants will require more water than indicated on the following lists.

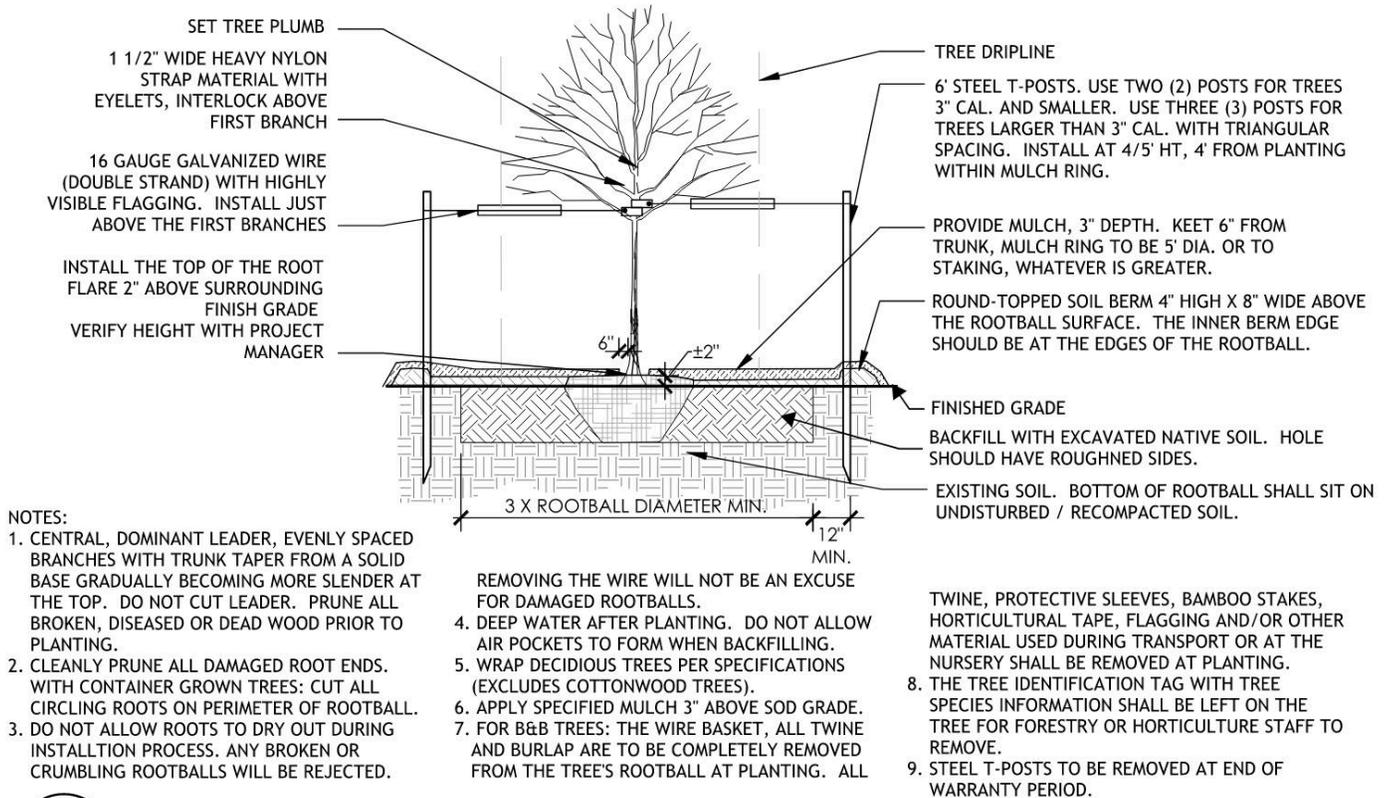
Find the City and County of Broomfield [Water-Wise Plant List](#). This is not an all inclusive list, trees and shrubs specified from another source other than the Water-Wise Plant List will be considered if the source for the Water-wise designation is listed on the plan. See Chapter 17-70-030 for additional information.

Section 9: Appendix B: Landscape Details

9.0 GENERAL

The following are a series of standard landscape planting details for reference only. Landscape and irrigation details are not required until the Construction Drawings, they are not to be included within Site Development Plan sets. Additional information and CCOB standard details can be found in [CCOB 2022 Standards and Specs., Section 1000.](#)

9.1 DECIDUOUS TREE PLANTING DETAIL

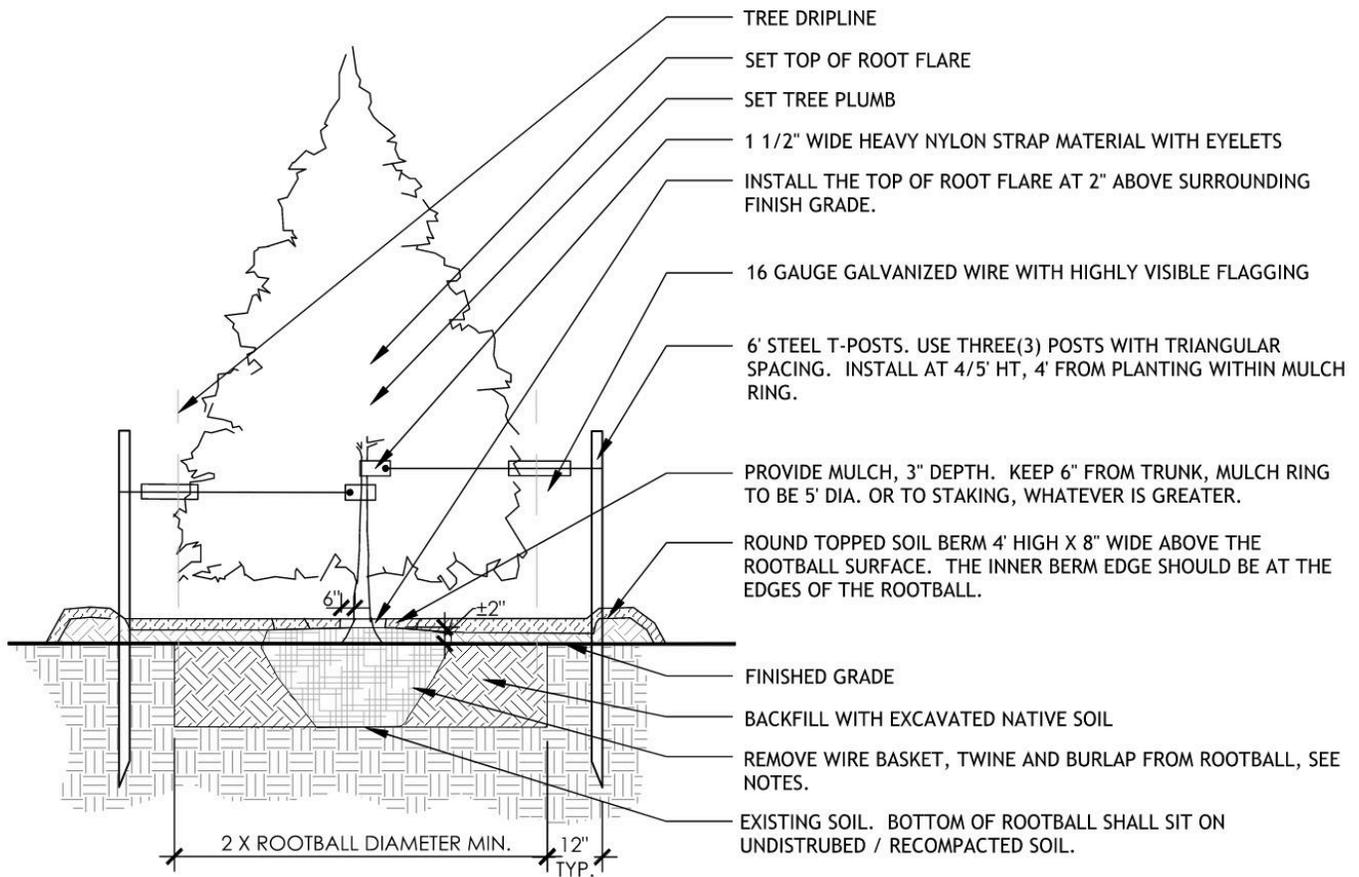


DECIDUOUS TREE PLANTING SECTION

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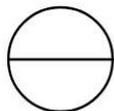
Section 9: Appendix B: Landscape Details, cont.

9.2 EVERGREEN TREE PLANTING DETAIL



NOTES:

1. DO NOT CUT OR DAMAGE LEADER. PRUNE ALL BROKE, DISEASED OR DEAD WOOD IMMEDIATLY PRIOR TO PLANTING.
2. CLEANLY PRUNE ALL DAMAGED ROOT ENDS. WITH CONTAINER GROWN TREES: CUT ALL CIRCLING ROOTS ON PERIMETER OF ROOTBALL.
3. DO NOT ALLOW ROOTS TO DRY OUT DURING INSTALLTION PROCESS. ANY BROKEN OR CRUMBLING ROOTBALLS WILL BE REJECTED. REMOVING THE WIRE WILL NOT BE AN EXCUSE FOR DAMAGED ROOTBALLS.
4. DEEP WATER AFTER PLANTING. DO NOT ALLOW AIR POCKETS TO FORM WHEN BACKFILLING.
5. APPLY SPECIFIED MULCH 3" ABOVE SOD GRADE.
6. FOR B&B TREES: THE WIRE BASKET, ALL TWINE AND BURLAP ARE TO BE COMPLETELY REMOVED FROM THE TREE'S ROOTBALL AT PLANTING. ALL TWINE, PROTECTIVE SLEEVES, HORTICULTURAL TAPE, FLAGGING AND/OR OTHER MATERIAL USED DURING TRANSPORT OR AT THE NURSERY SHALL BE REMOVED AT PLANTING.
7. THE TREE IDENTIFICATION TAG WITH TREE SPECIES INFORMATION SHALL BE LEFT ON THE TREE FOR FORESTRY OR HORTICULTURE STAFF TO REMOVE.
8. STEEL T-POSTS TO BE REMOVED AT END OF WARRANTY PERIOD.

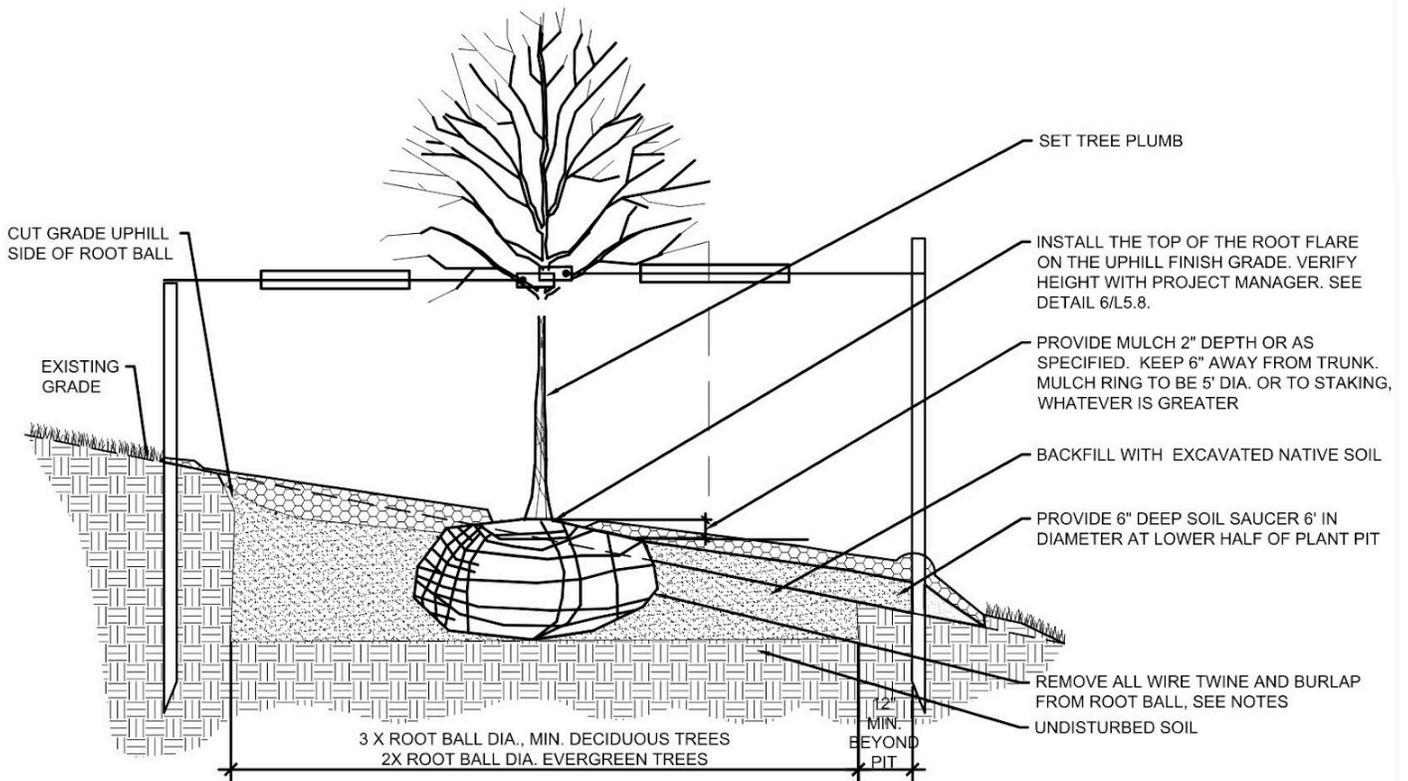


EVERGREEN TREE PLANTING
SECTION

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Section 9: Appendix B: Landscape Details, cont.

9.3 TREE PLANTING ON A SLOPE DETAIL



NOTES:

1. PRUNE ALL BROKEN, DISEASED OR CROSSING LIMBS.
2. CLEANLY PRUNE ALL DAMAGED ROOT ENDS.
3. DO NOT ALLOW ROOTS TO DRY OUT DURING INSTALLATION PROCESS.
4. DEEP WATER AFTER PLANTING.
5. REFER TO DECIDUOUS AND EVERGREEN TREE PLANTING DETAILS FOR GUYING, MULCHING, ETC.
5. THIS INSTALLATION SHALL APPLY TO ALL TREE TYPES AND SIZES PLANTED ON SLOPES 4:1 OF GREATER.
6. MULCH TO BE
7. FOR B&B TREES THE WIRE BASKET, ALL TWINE AND ALL BURLAP ARE TO BE COMPLETELY REMOVED FROM THE TREE'S ROOT BALL AT PLANTING. ALL TWINE, PROTECTIVE SLEEVES, FLAGGING AND/OR OTHER MATERIAL USED DURING TRANSPORT OR AT THE NURSERY SHALL BE REMOVED AT PLANTING.
8. THE TREE IDENTIFICATION TAG W/ TREE SPECIES INFORMATION SHALL BE LEFT ON THE TREE FOR FORESTRY OR HORTICULTURE STAFF TO REMOVE.
8. STEEL T- POSTS AND GUY WIRES TO BE REMOVED AT END OF WARRANTY PERIOD.

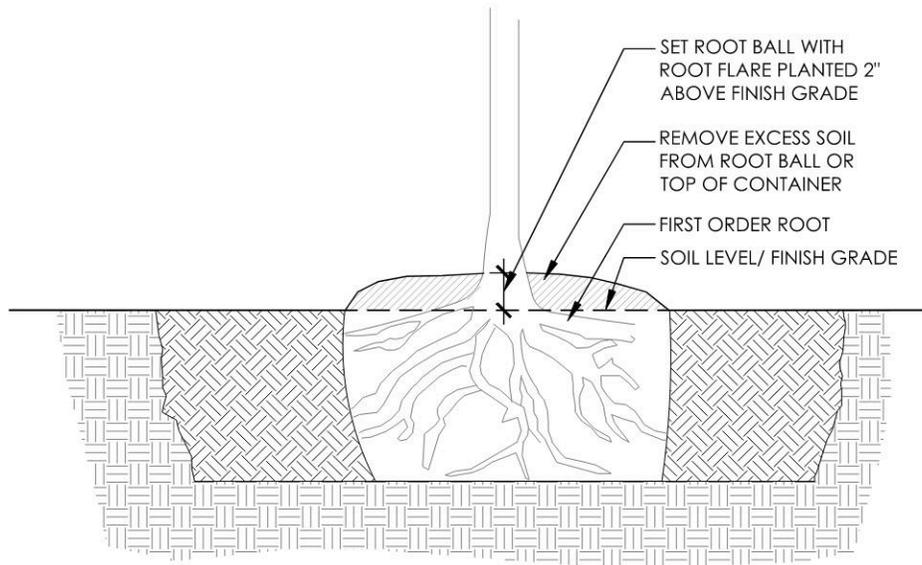


DECIDUOUS AND EVERGREEN TREE PLANTING ON A SLOPE

Scale: NOT TO SCALE

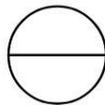
Section 9: Appendix B: Landscape Details, cont.

9.4 ROOT FLARE DETAIL



NOTES:

1. PROBE ROOTBALL TO FIND THE FIRST MAIN ORDER ROOT TO DETERMINE THE DEPTH OF THE ROOT FLARE IN THE ROOTBALL. THE ROOT FLARE MAY BE 2"-3" OR DEEPER IN THE ROOTBALL. REMOVE EXCESS SOIL DOWN TO THE TOP OF THE ROOT FLARE ONCE THE TREE IS IN THE PLANTING PIT.
2. VERIFY PLANTING HEIGHT WITH PROJECT MANAGER BEFORE PLANTING THE TREE.

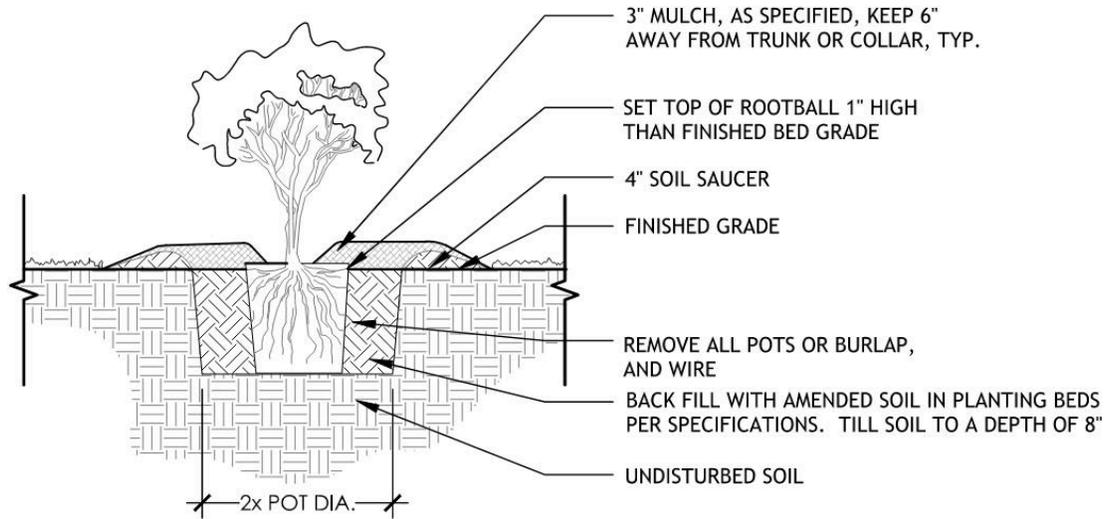


ROOT FLARE
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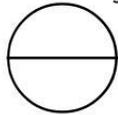
Section 9: Appendix B: Landscape Details, cont.

9.5 SHRUB PLANTING DETAIL



NOTES:

1. BROKEN OR CRUMBLING ROOTBALLS WILL BE REJECTED. CLEANLY PRUNE ALL DAMAGED ROOT ENDS.
2. CARE SHOULD BE TAKEN NOT TO DAMAGE THE SHRUB OR ROOTBALL WHEN REMOVING FROM IT'S CONTAINER.
3. DO NOT ALLOW ROOTS TO DRY OUT DURING INSTALLATION PROCESS.
4. DIG PLANT PIT TWICE AS WIDE AND HIGH AS THE CONTAINER.
5. DEEP WATER AFTER PLANTING.

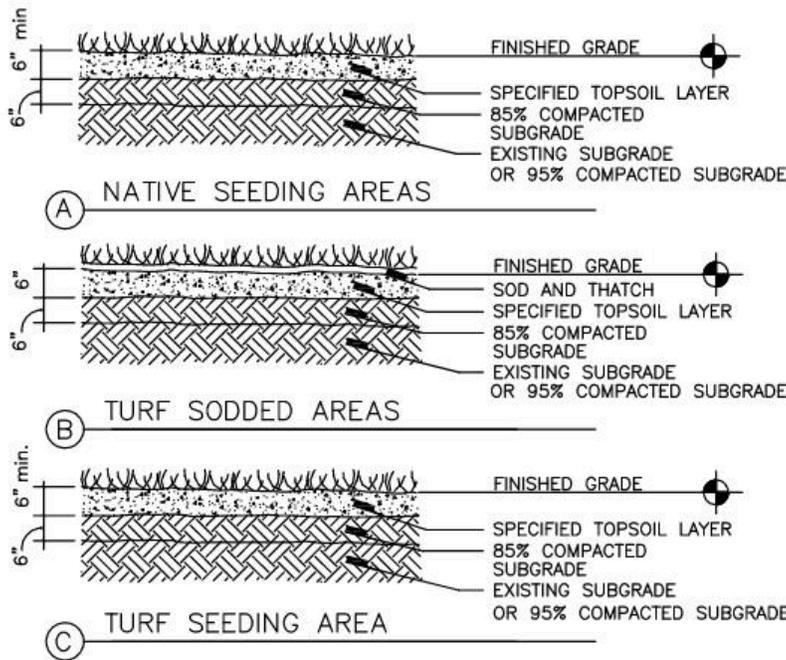


SHRUB PLANTING
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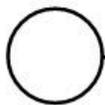
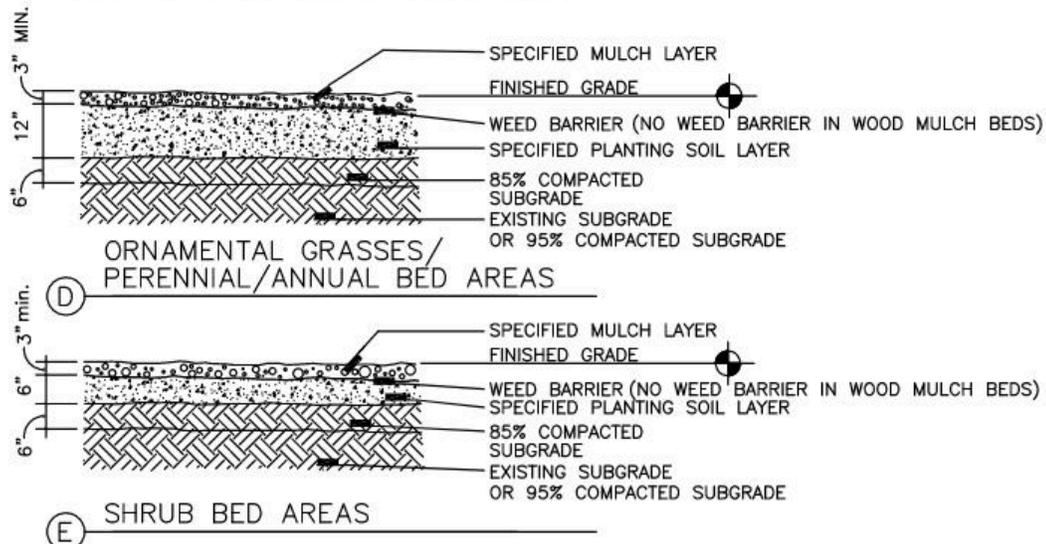
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Section 9: Appendix B: Landscape Details, cont.

9.6 SPECIAL SECTION AREA DETAILS



NOTE: EXCLUDE MULCH LAYER IN ALL ANNUAL AREAS.

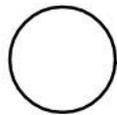
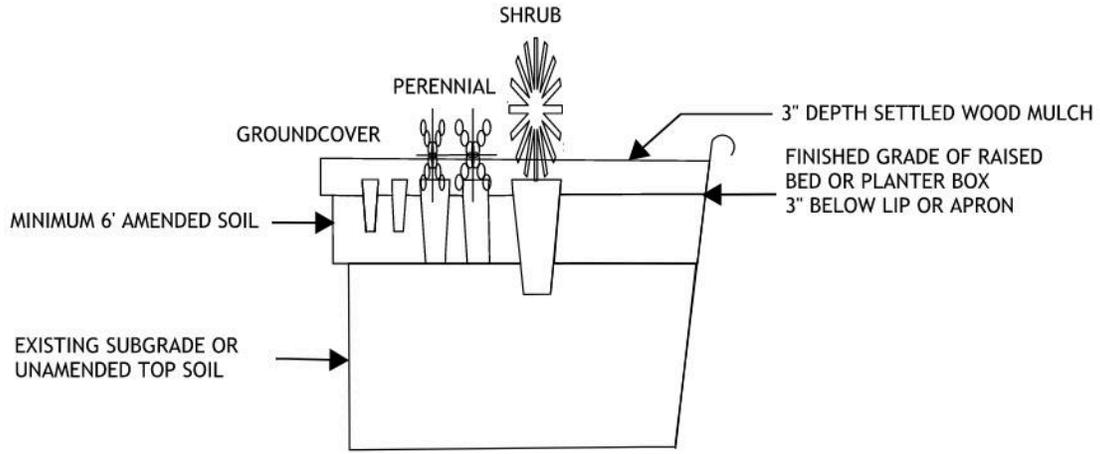


SPECIAL SECTION AREAS

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Section 9: Appendix B: Landscape Details, cont.

9.7 RAISED PLANTING BED DETAIL

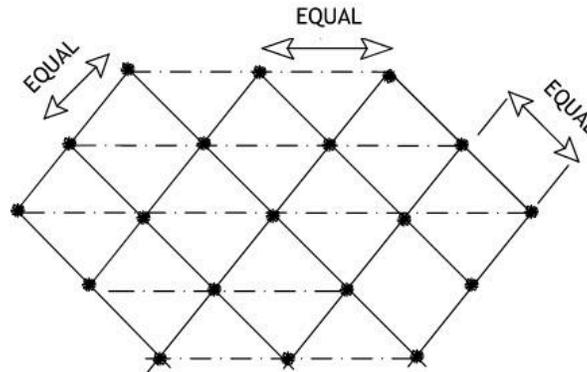


RAISED PLANTING BED

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Section 9: Appendix B: Landscape Details, cont.

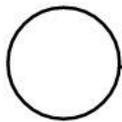
9.8 PLANT SPACING DETAIL



NOTE: ALL PLANTS SHALL BE PLANTED AT EQUAL TRIANGULAR SPACING (EXCEPT AS SHOWN ON PLAN AS INFORMAL GROUPINGS). REFER TO PLANT LEGEND FOR SPACING DISTANCE BETWEEN PLANTS.

PLANT SPACING	AREA DIVIDER TO DETERMINE NO. OF PLANTS
6"	0.25
8"	0.45
10"	0.69
12"	1
15"	1.56
18"	2.25
24"	4
30"	6.25
36"	9

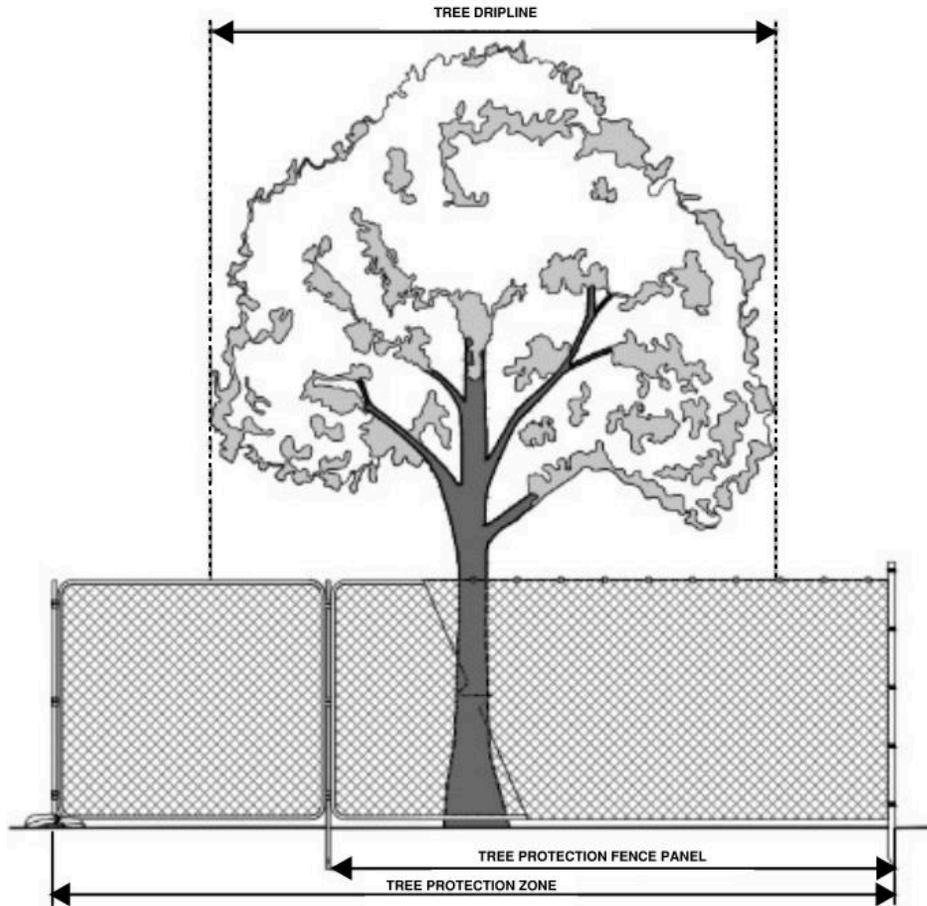
EXAMPLE: PLANTS AT 18' OC IN 100SF OF PLANTING AREA - $100/2.25 = 44$ PLANTS



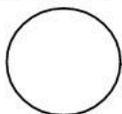
PLANT SPACING

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Section 10: Appendix C: Tree Protection Detail



1. TREE PROTECTION FENCING SHALL BE INSTALLED PRIOR TO ANY SITE ACTIVITY AND SHALL REMAIN IN PLACE AND BE MAINTAINED IN THE CONDITION IN WHICH THEY WERE INSTALLED FOR THE DURATION OF THE CONSTRUCTION ACTIVITY. PROTECTIVE FENCING OR BARRIERS SHALL BE SET UP TO VISIBLY SHOW THE TREE PROTECTION ZONE. CHAIN LINK FENCING SIX FEET (6') HIGH, WITH STEEL POSTS DRIVEN INTO THE GROUND AT NOT MORE THAN TEN FOOT (10') INTERVALS IS REQUIRED, AVOID POSTS OR STAKES INTO MAJOR ROOTS. OTHER BARRIERS MAY BE APPROVED IN THE TREE PRESERVATION PLAN BASED ON SITE CONDITIONS.
2. ALL EQUIPMENT, INCLUDING FOOT TRAFFIC SHALL REMAIN OUTSIDE OF THE TREE PROTECTION ZONE.
3. IF ROOTS GREATER THAN ONE-INCH (1") IN DIAMETER REQUIRE REMOVAL, A CLEAN CUT SHALL BE ACCOMPLISHED USING A SHARP HAND TOOL. A MAXIMUM OF TWO, THREE-INCH (3") DIAMETER ROOTS PER TREE ARE PERMITTED FOR REMOVAL. THE REMOVAL OF ADDITIONAL ROOTS THREE-INCHES (3") OR GREATER IN DIAMETER REQUIRES APPROVAL OF THE CITY AND COUNTY LANDSCAPE ARCHITECT, CITY AND COUNTY FORESTER, OR THEIR DESIGNEE.
4. LIMB REMOVAL SHALL BE ACCOMPLISHED UNDER THE DIRECTION OF A CERTIFIED/REGISTERED ARBORIST, FORESTER OR LICENSED LANDSCAPE ARCHITECT BEFORE CONSTRUCTION BEGINS.
5. CONCRETE WASHOUT AREAS SHALL BE DESIGNATED ON THE PROPERTY, AND SUCH AREAS SHALL NOT FLOW INTO OR ACROSS THE TREE PROTECTION ZONE.
6. NO EXCAVATION IS PERMITTED WITHIN THE TREE PROTECTION ZONE. IF EXCAVATION IS REQUIRED WITHIN THE TREE PROTECTION ZONE, THE CITY AND COUNTY FORESTER, THE CITY AND COUNTY LANDSCAPE ARCHITECT OR THEIR DESIGNEE MUST BE NOTIFIED PRIOR TO START OF EXCAVATION ACTIVITIES.
7. NO BRANCHES OR BARK ARE TO BE DAMAGED WITHIN THE TREE PROTECTION ZONE. IF IT APPEARS ANY WORK MAY CAUSE DAMAGE TO THE BRANCHES OF A TREE, THE PROPERTY OWNER OR THEIR CONTRACTOR SHALL CONTACT THE CITY AND COUNTY FORESTER OR THE CITY AND COUNTY LANDSCAPE ARCHITECT, OR THEIR DESIGNEE FOR A DETERMINATION AS TO WHETHER SUCH DAMAGE IS LIKELY AND PRUNING IS NECESSARY.
8. NO STOCKPILING OF SOIL, MATERIALS, OR SUPPLIES OF ANY KIND ARE PERMITTED WITHIN THE TREE PROTECTION ZONE.
9. NO VEHICLE PARKING IS PERMITTED WITHIN THE TREE PROTECTION ZONE.
10. THE SOIL SHALL NOT BE COMPACTED WITHIN THE TREE PROTECTION ZONE.



TREE PROTECTION FENCING

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