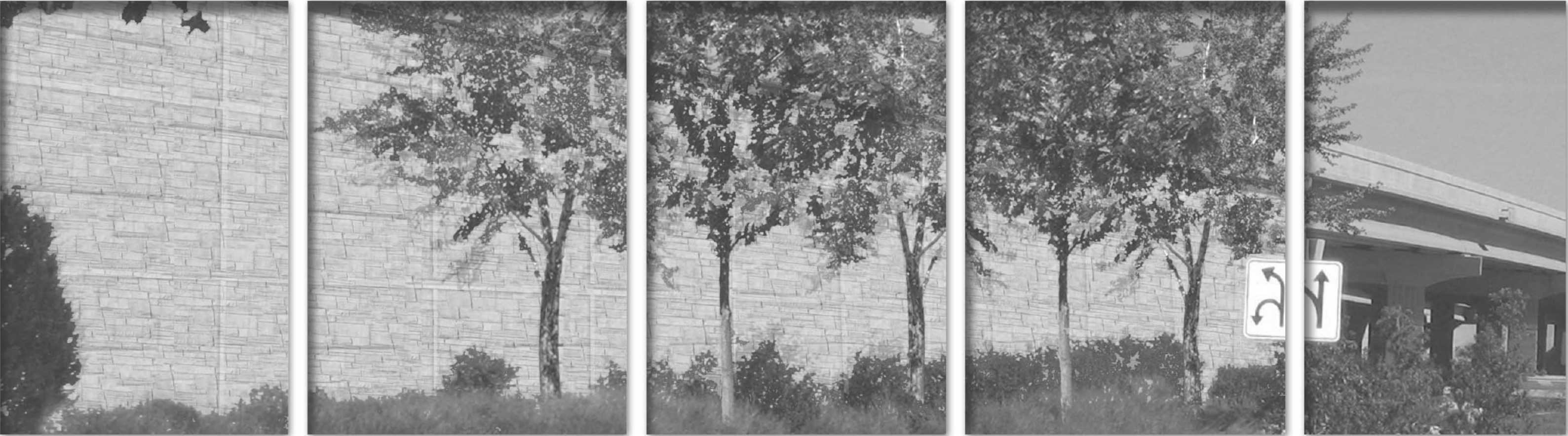


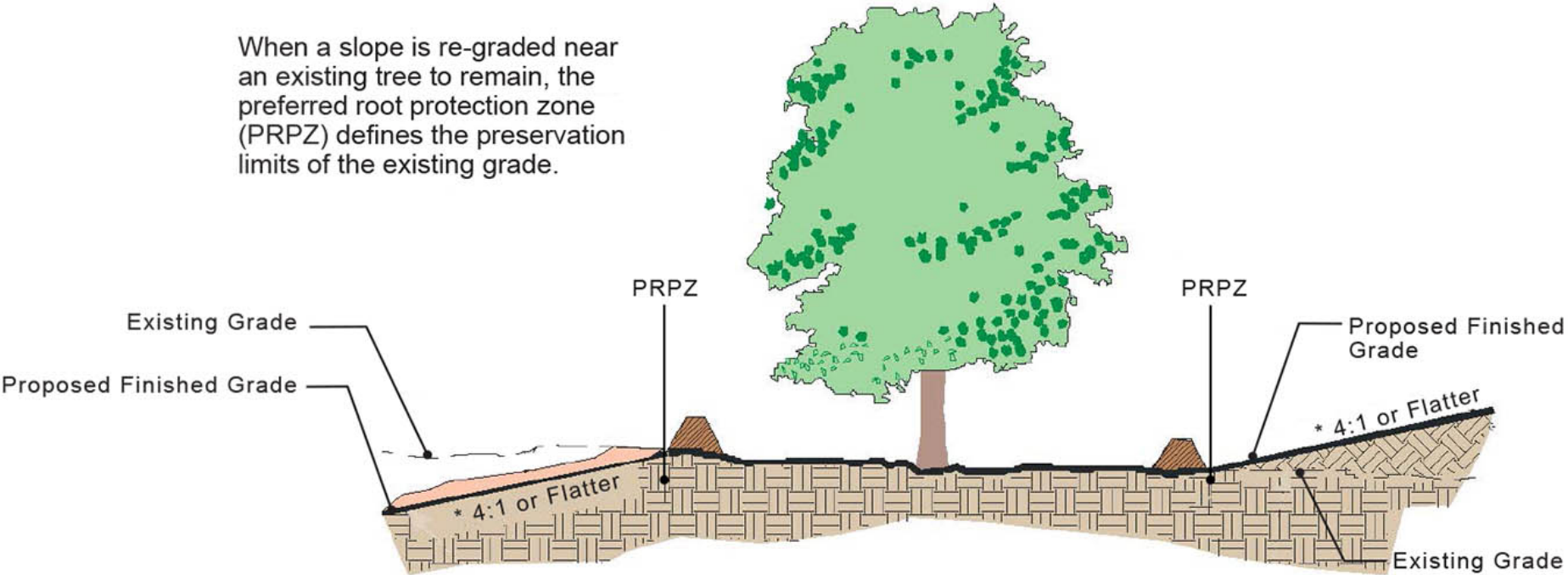
Landscape Enhancements



The following details are guides taken from the Texas Transportation Institute's Recommendations, Procedures, and Guidelines for the Protection of Trees and Sensitive Landforms in an effort to protect trees along the project during the construction phase.

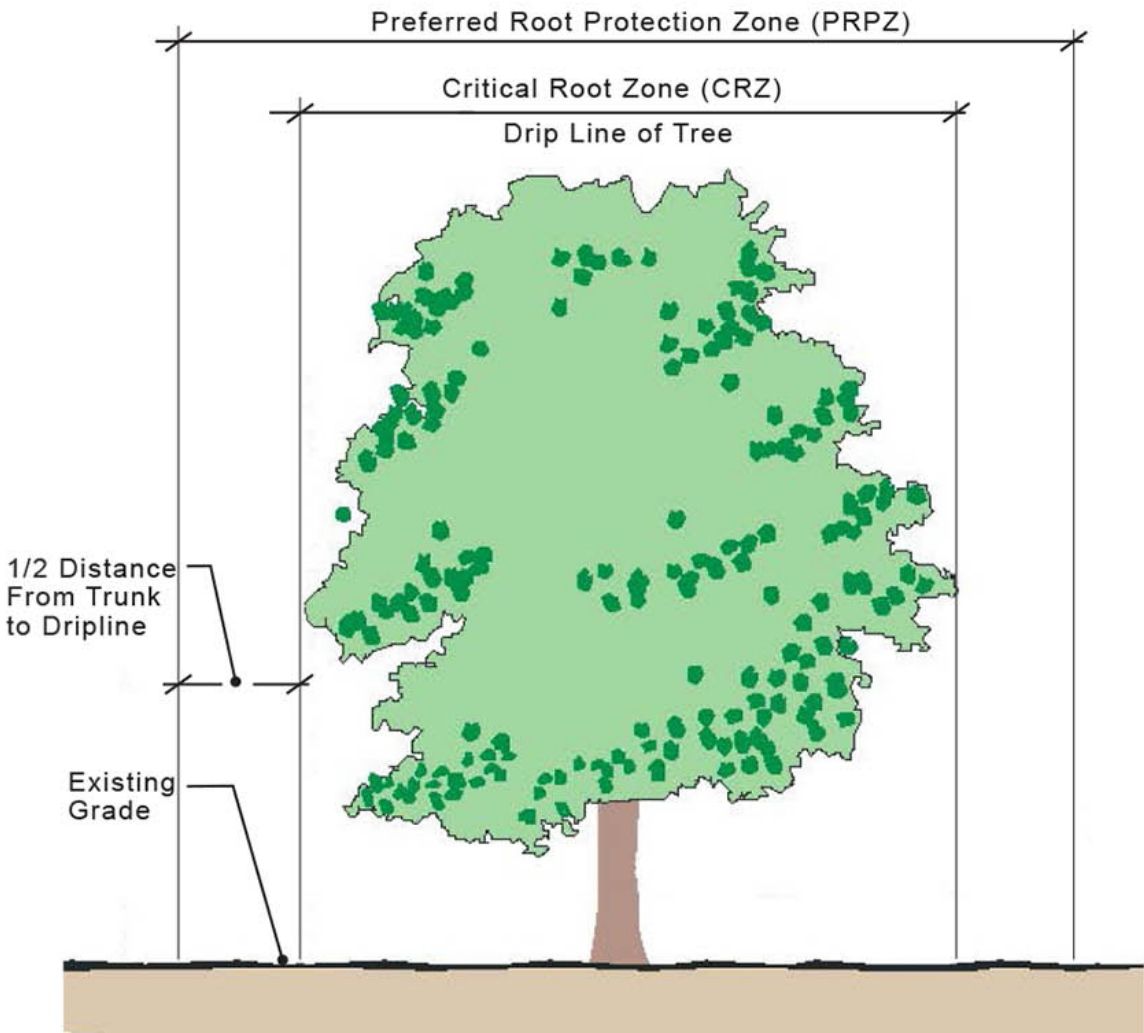
If a tree/trees are determined to be protected, the contractor must follow the City of Austin Standard Notes for Tree and Natural Area Protection.

When a slope is re-graded near an existing tree to remain, the preferred root protection zone (PRPZ) defines the preservation limits of the existing grade.

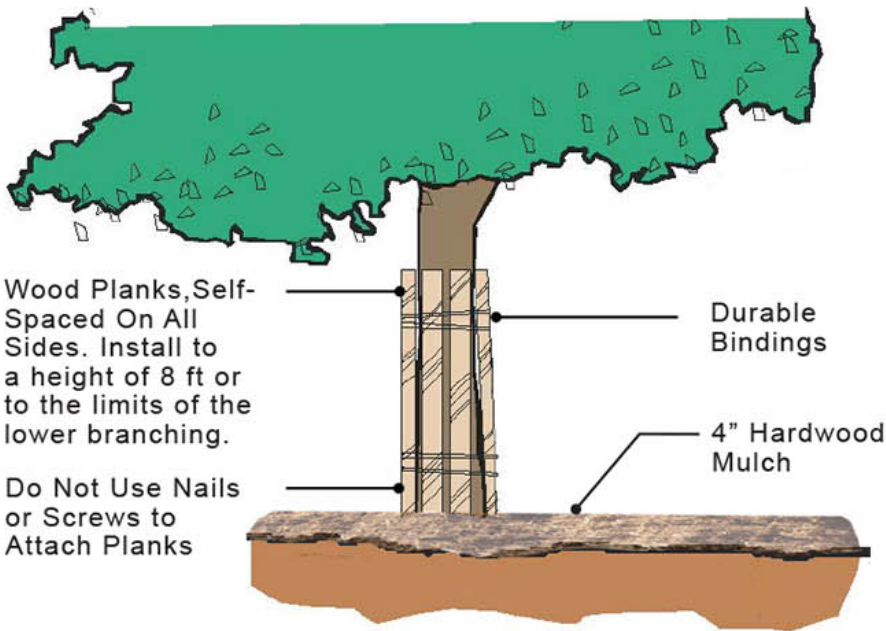


Grade Changes Near Trees

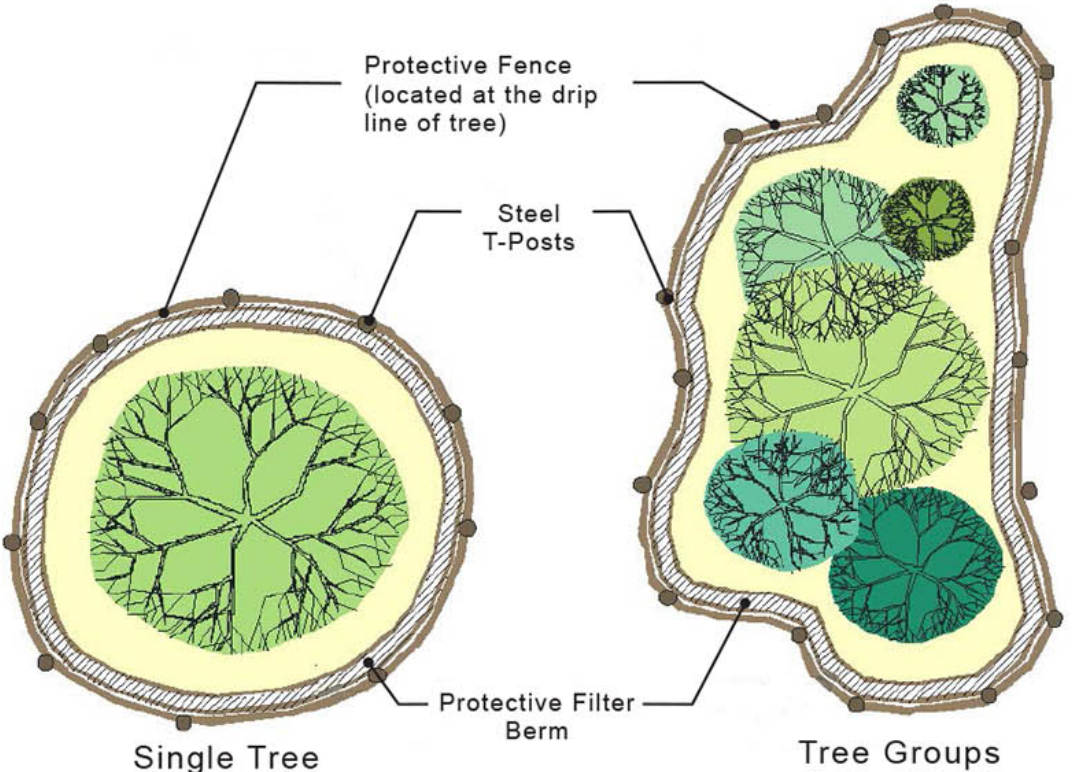
*4:1 slopes or flatter are preferred in the Texas Transportation Institute's Recommendations, Procedures, and Guidelines for the Protection of Trees and Sensitive Landforms. For this project, 3:1 slopes will be evaluated on a case-by-case basis by the project engineer and landscape architect.
** For this project, a mowed area is required on the downslope from the tree, as opposed to TTI's recommendation to install hardwood bark or compost.



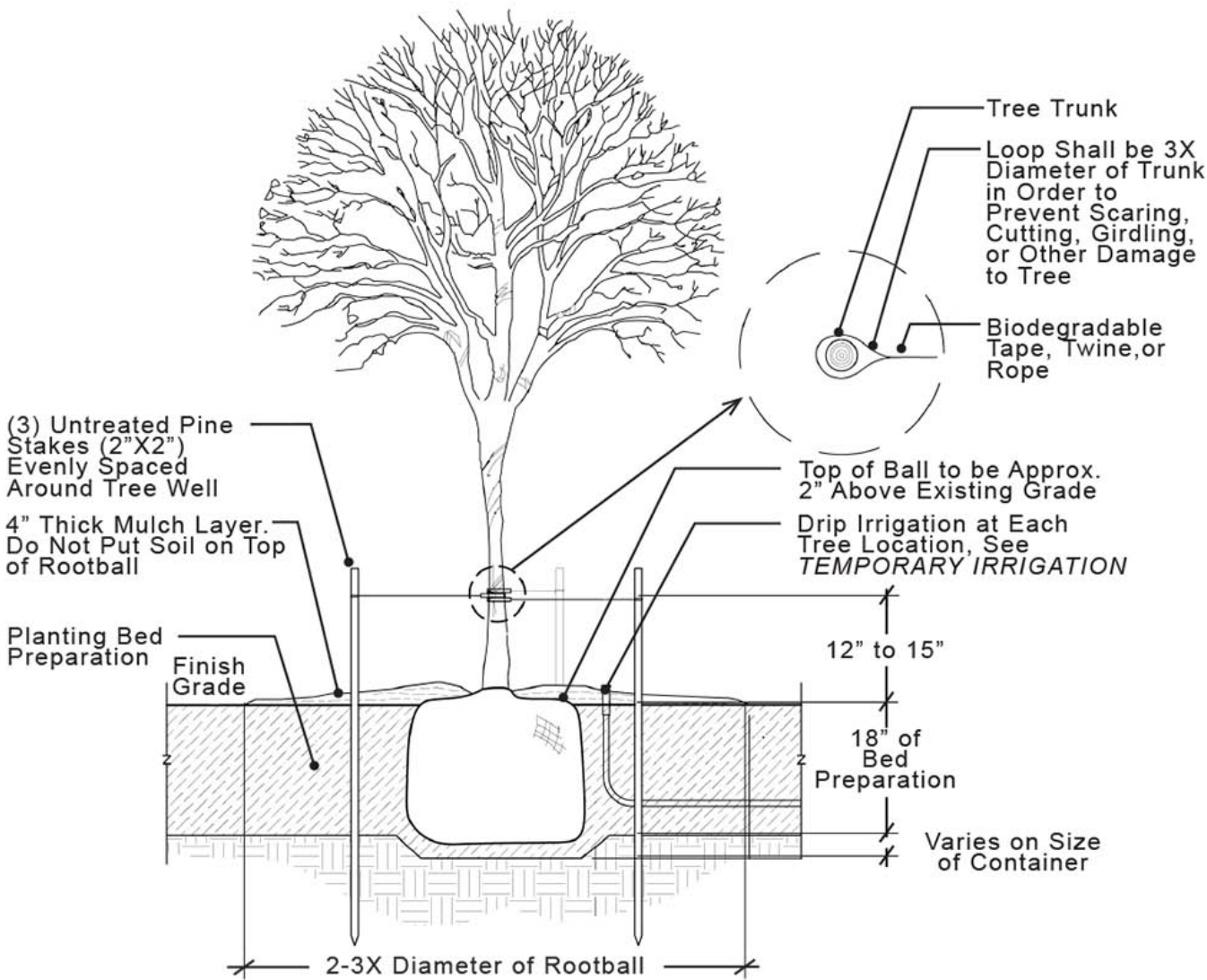
Root Protection Zones



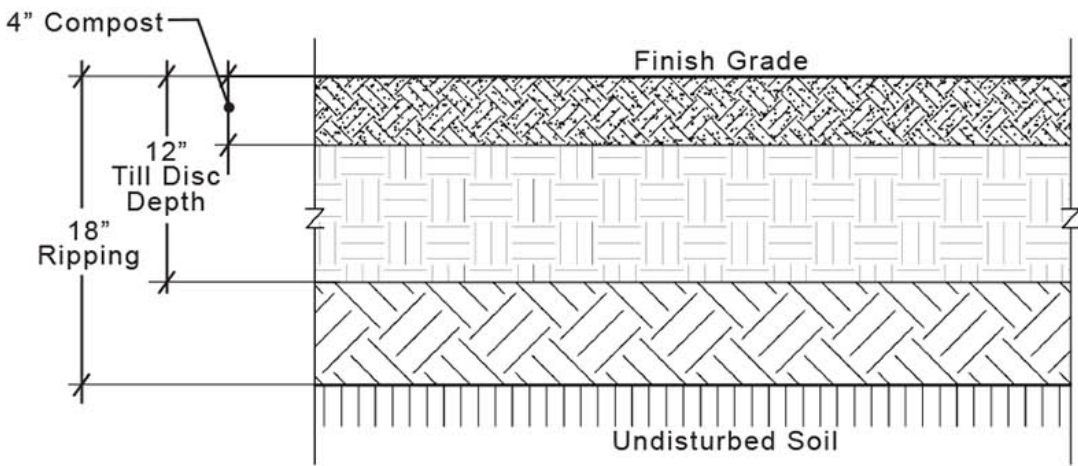
Wood Planking on Trunk



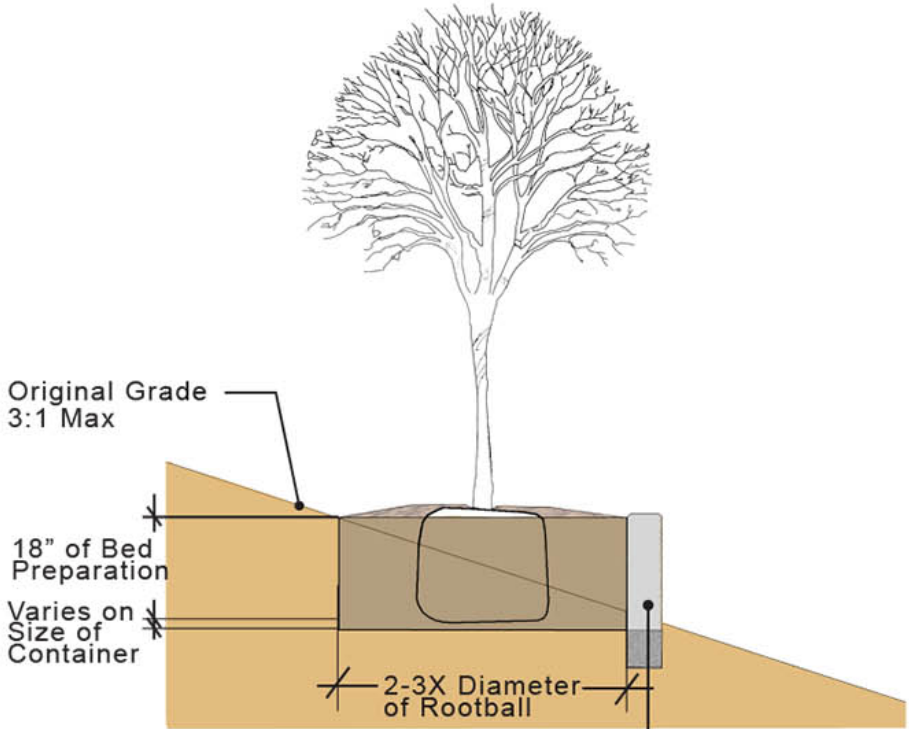
Plan View of Fencing Layout



Tree Planting and Staking-General Detail

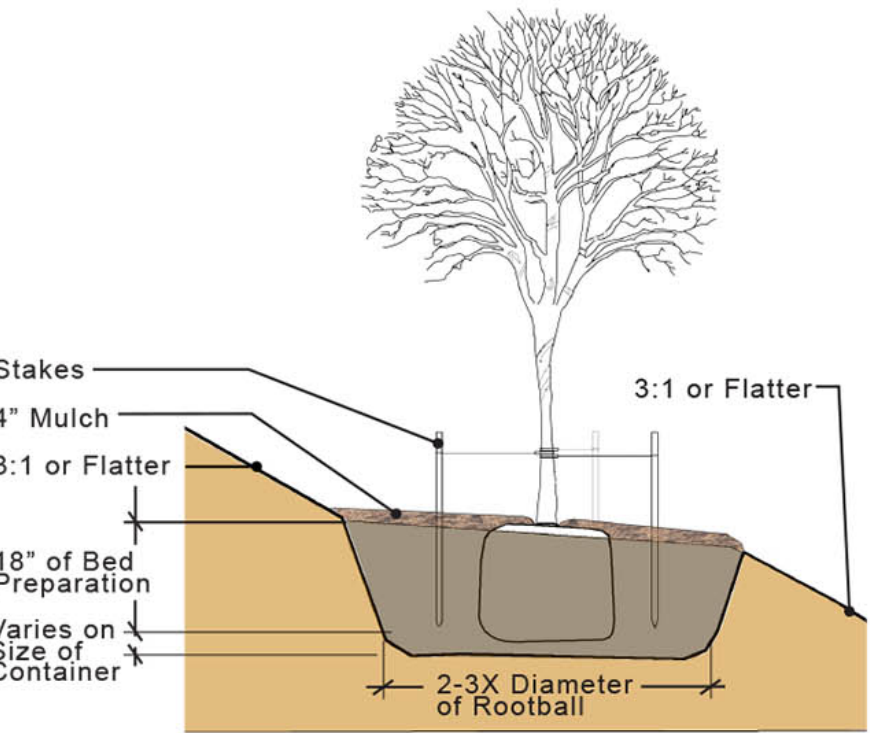


Bed Preparation- General Detail

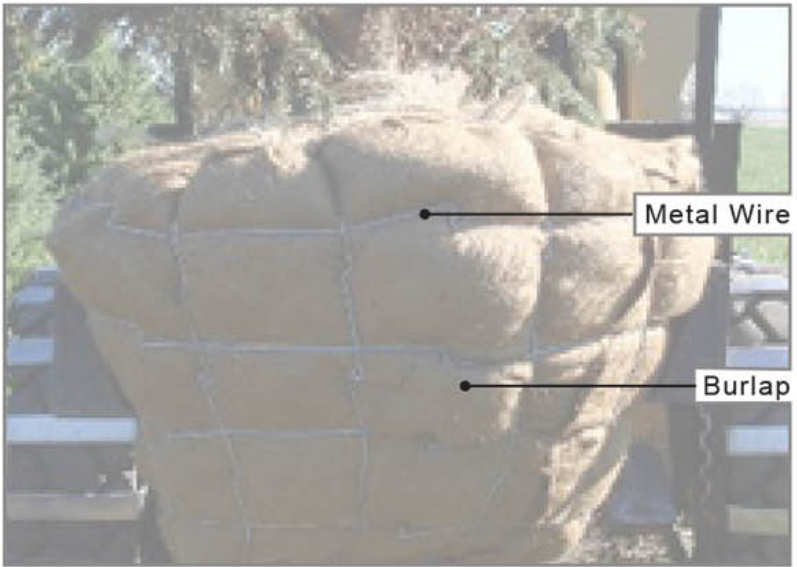


Retaining Wall. Wall to Match Ashlar Block Texture at Sound Wall.

Plant Installation on Slopes Steeper than 6:1



Plant Installation on 6:1 or Flatter Slopes



Ball and Burlap



Cut Burlap



Steps for treating Ball and Burlap Trees

1. Remove Metal Wire
2. Cut and Peel Back Burlap to the Top Third of the Ball.
3. Gently Shave off Excess Soil Until Root Collar is exposed

Shade/Evergreen Trees	Plant Size	Spacing
Monterrey Oak - <i>Quercus polymorpha</i>	2 1/2" CAL	15' min
Live Oak - <i>Quercus virginiana</i>	2 1/2" CAL	15' min
Texas Red Oak - <i>Quercus texana</i>	2 1/2" CAL	15' min
Cedar Elm - <i>Ulmus crassifolia</i>	2 1/2" CAL	15' min
Chinese Pistachio - <i>Pistachia chinensis</i>	2 1/2" CAL	15' min



Monterrey Oak



Live Oak



Texas Red Oak



Cedar Elm



Chinese Pistachio

Ornamental Trees*	Plant Size	Spacing
Texas Mountain Laurel - <i>Sophora secundiflora</i>	2" CAL	8'-15'
Mexican Redbud - <i>Cercis canadensis</i> var. 'mexicana'	2" CAL	8'-15'
Kidneywood - <i>Eysenhardtia texana</i>	2" CAL	8'-15'
Desert Willow - <i>Chilopsis linearis</i>	2" CAL	8'-15'

* If ornamental trees are pit planted, as opposed to being planted inside a landscape bed, they will be planted 15' min apart.



Texas Mountain Laurel



Mexican Redbud



Kidneywood



Desert Willow

Ornamental Grasses/Ground-Covers	Plant Size	Spacing
Beargrass - <i>Nolina microcarpa</i>	5 GAL.	5'
Lindheimer Muhly - <i>Muhlenbergia lindeimeri</i>	5 GAL.	3'-5'
Pink Skullcap - <i>Scutellaria suffrutescens</i>	1 GAL.	1'
Prostrate Rosemary - <i>Rosmarinus officinalis</i> 'Prostratus'	3 GAL.	2'
Damianita - <i>Chrysactinia mexicana</i>	1 GAL.	1'
Mexican Feathergrass - <i>Nassella tenuissima</i>	3 GAL.	18"-2'



Beargrass



Lindheimer Muhly



Pink Skullcap



Prostrate Rosemary



Damianita



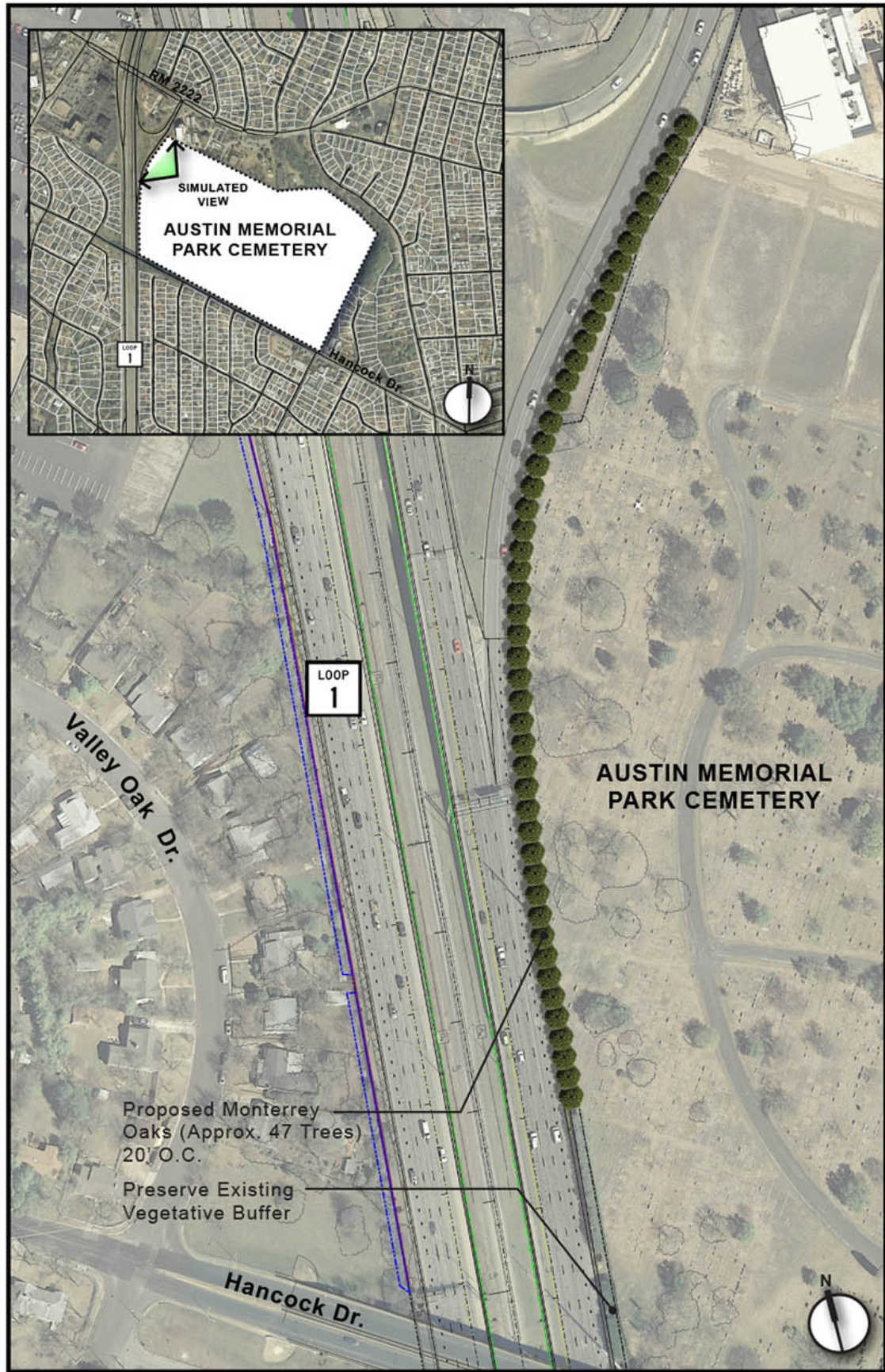
Mexican Feathergrass

Notes:

- All plant material shall be drought tolerant, cold hardy, low maintenance and native or adapted species.
- No shade tree species will be used for more than fifty (50) percent of the project area. A minimum of three (3) shade tree species will be used.
- No ornamental tree species will be used for more than fifty (50) percent of the project area. A minimum of three (3) ornamental tree species will be used.
- It is not required for all recommended plant material to be used.
- If the contractor would like to propose a plant that is not identified in this document, the plant type and its size can be submitted to the Owner for approval.
- The plant sizes listed are minimum requirements. If ornamental grasses/groundcovers are not available in the identified sizes, an alternative plant size with a modified spacing can be submitted to the Owner for approval.



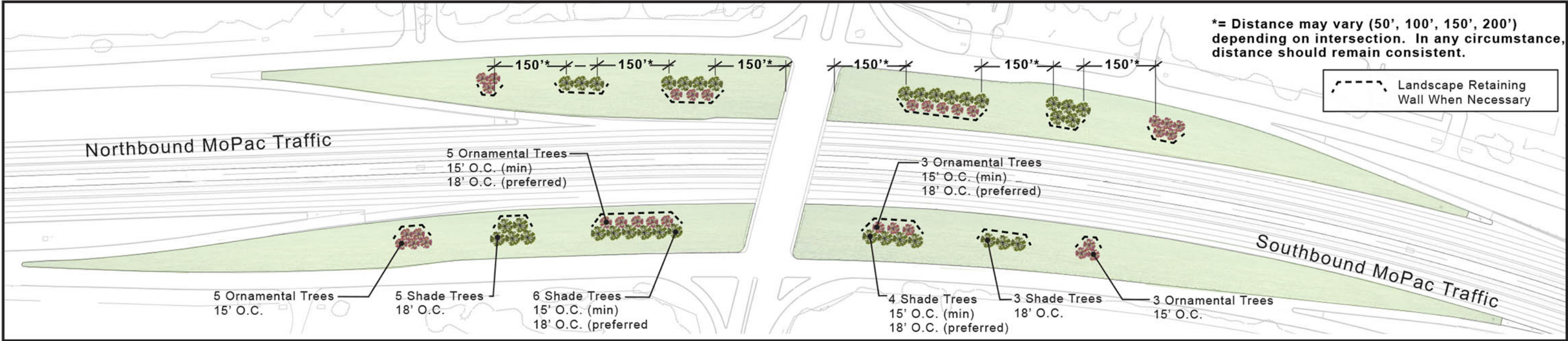
- Notes:
- Vine type to be proposed by City of Austin.
 - All plantings will be irrigated.
 - Public side of sound wall to face Great Northern Blvd.



Existing conditions show little screening of MoPac's retaining wall and vehicular travel.

The simulated tree plantings represent approximately **ten** years of plant growth after installation. To maximize their screening effect, a spacing of approximately 20 ft. is recommended.

Monterrey Oaks average 30-40 ft. in size depending on growing conditions. They are long lived, fast growing, resistant to oak wilt and once established are quite drought tolerant. They hold their leaves for a long time and are semi-evergreen in Austin's climate.



Typical Tree Planting Landscape Module (Exact Planting Layout to be Determined in the Field)



Landscape Enhancement View

Notes:

Although all of the intersections vary to some degree, many exhibit a "diamond" layout. The following guideline is a planting plan for the intersections which could accommodate such a treatment. **Each module consists of four quadrants with a total of 68 drip-irrigated trees.**

The only anticipated conflicts with this guidance are when:

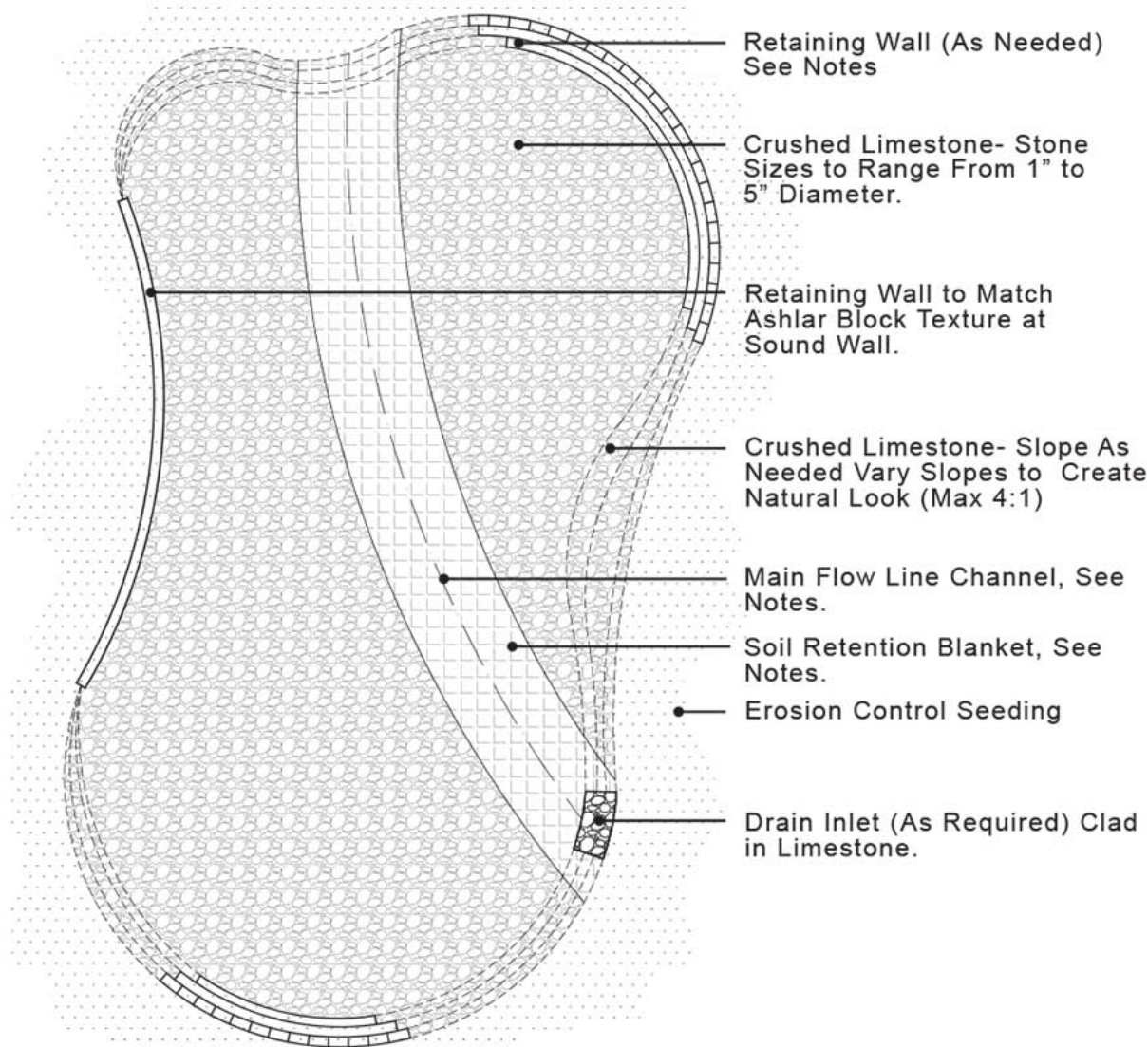
1. A detention area needs to occur within an identified module or
2. An existing tree can be preserved.

If a detention area is identified within a tree planting landscape module, the guidance provided in this document for detention areas plantings will be implemented instead. The tree planting landscape module will be modified to eliminated conflicting tree groupings.

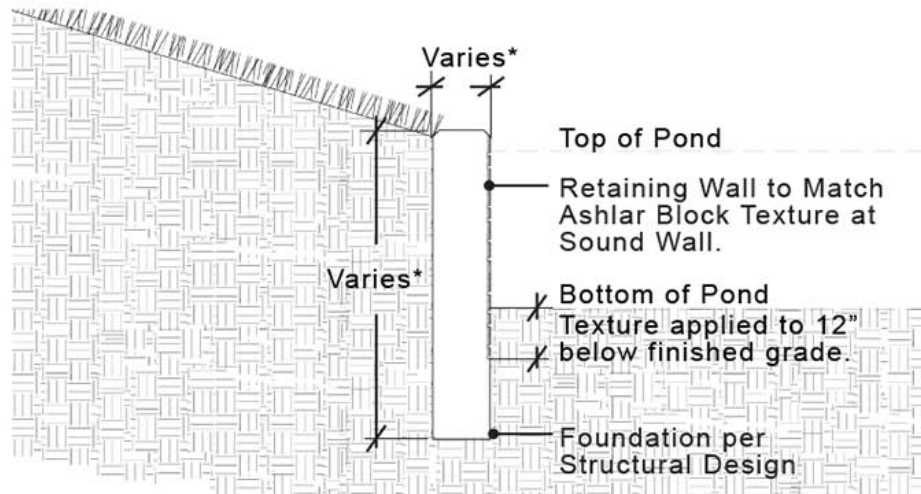
If any existing trees can be maintained within a proposed landscape area, a tree grouping shown with the proposed module layout will be removed.

Intersections where the tree planting landscape modules will be implemented are:

- Far West Blvd (1 module)
- Anderson Ln/Spicewood Springs Rd (1/2 module; southbound quadrants only)
- Steck Ave (1/2 module; southbound quadrants only)
- N. Capital of Texas Hwy (1 module)
- Braker Ln (1 module)
- Duval Rd (1 module)
- Parmer Ln (1 module)

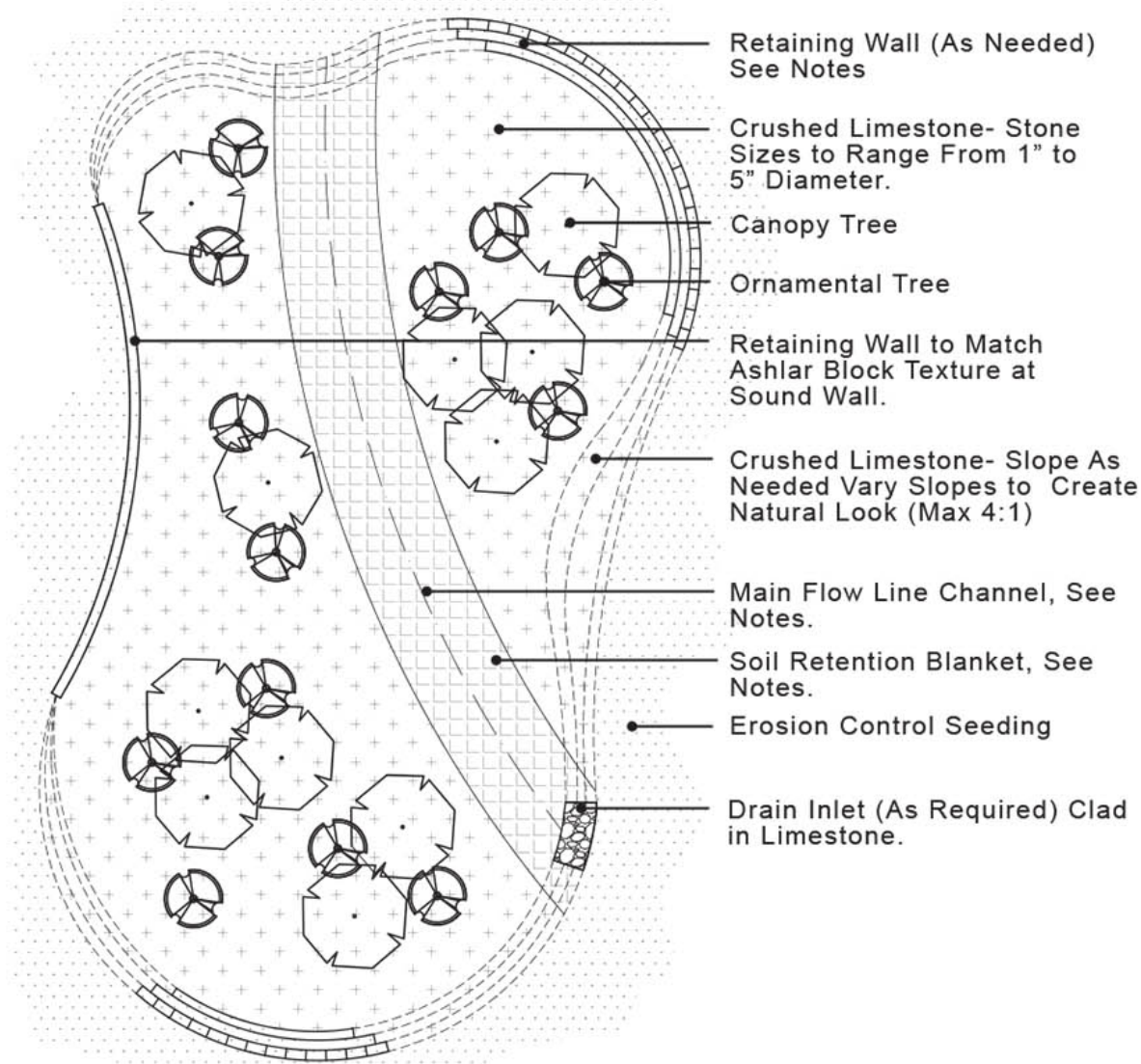


Detention Pond Underneath Structure

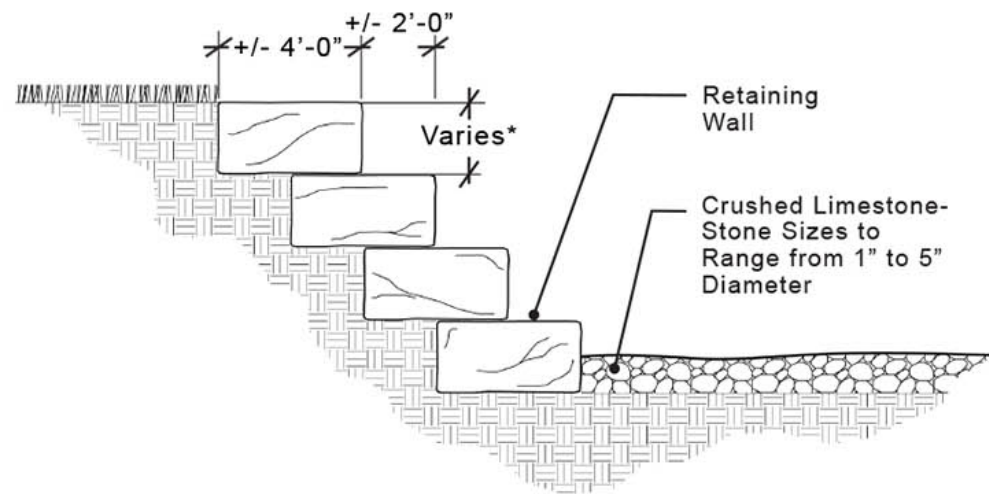


Vertical Retaining Wall

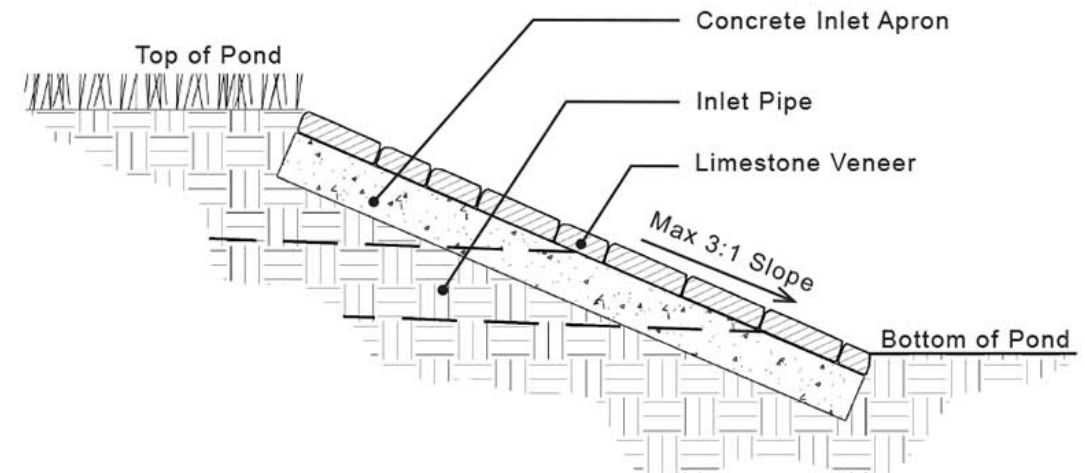
Varies*- Height or width identified in construction plans.



Detention Pond Full to Partial Sun



Modular Block Retaining Wall



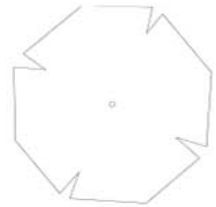
Stone Clad Drain Inlet

Notes:
Shape of detention pond to be curvilinear to create a more natural look.

Modular block retaining walls to be installed as needed. In limited areas, a vertical retaining wall is allowable if it is required to meet capacity needs. All retaining walls (detention, shared use path, roadway) will be designed to match ashlar block texture at sound wall.

Detention pond plantings shall not occur within 10' of main flow centerline or within limits of soil retention blanket, whichever is less.

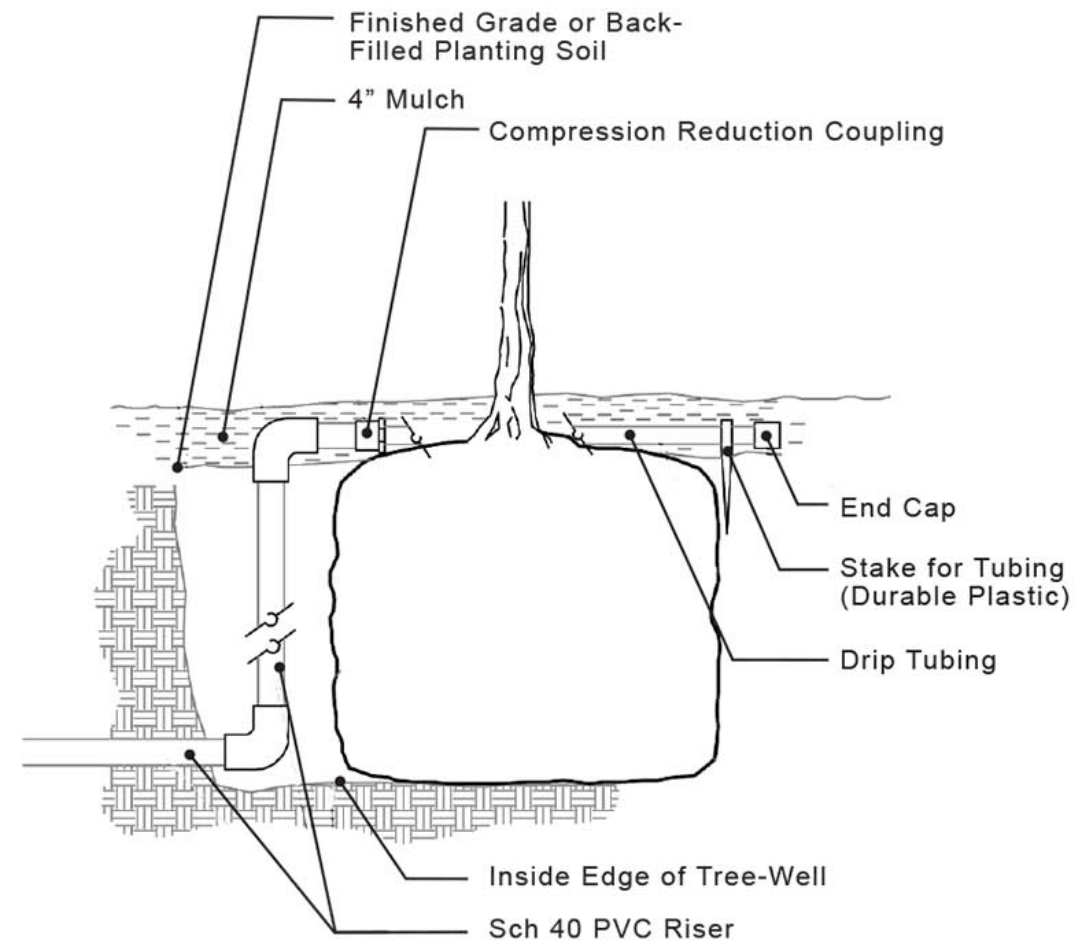
Erosion control seeding is done in accordance with 2004 Texas Standard Specifications for construction and maintenance of highways, streets, and bridges (item 164) with the addition of wildflower seed mix as shown in TXDOT's "Blackland Prairie Region" seed list (found on TXDOT's website)- http://www.dot.state.tx.us/mnt/wildflower/Seed_List_hm/blackland.htm



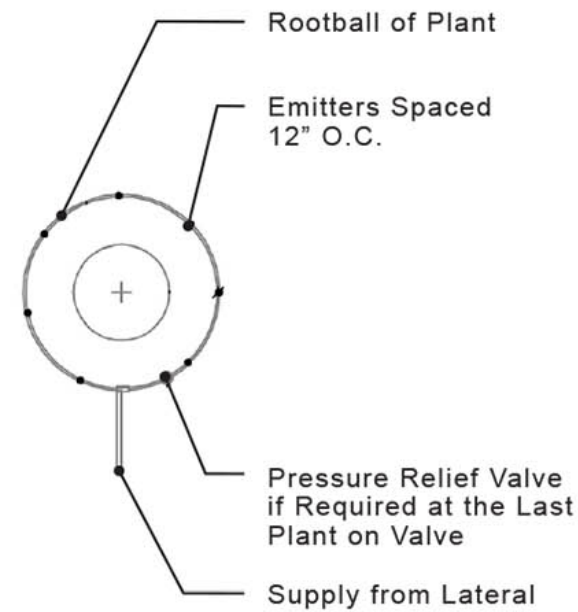
- Canopy Trees**
- QTY: 3 Per 1/4 Acre
 - Spacing in Clusters: 15' Max
 - Species Options: Bald Cypress, Cedar Elm



- Ornamental Trees**
- QTY: 3 Per 1/4 Acre
 - Spacing in Clusters: 10' Max
 - Species Options: Possumhaw

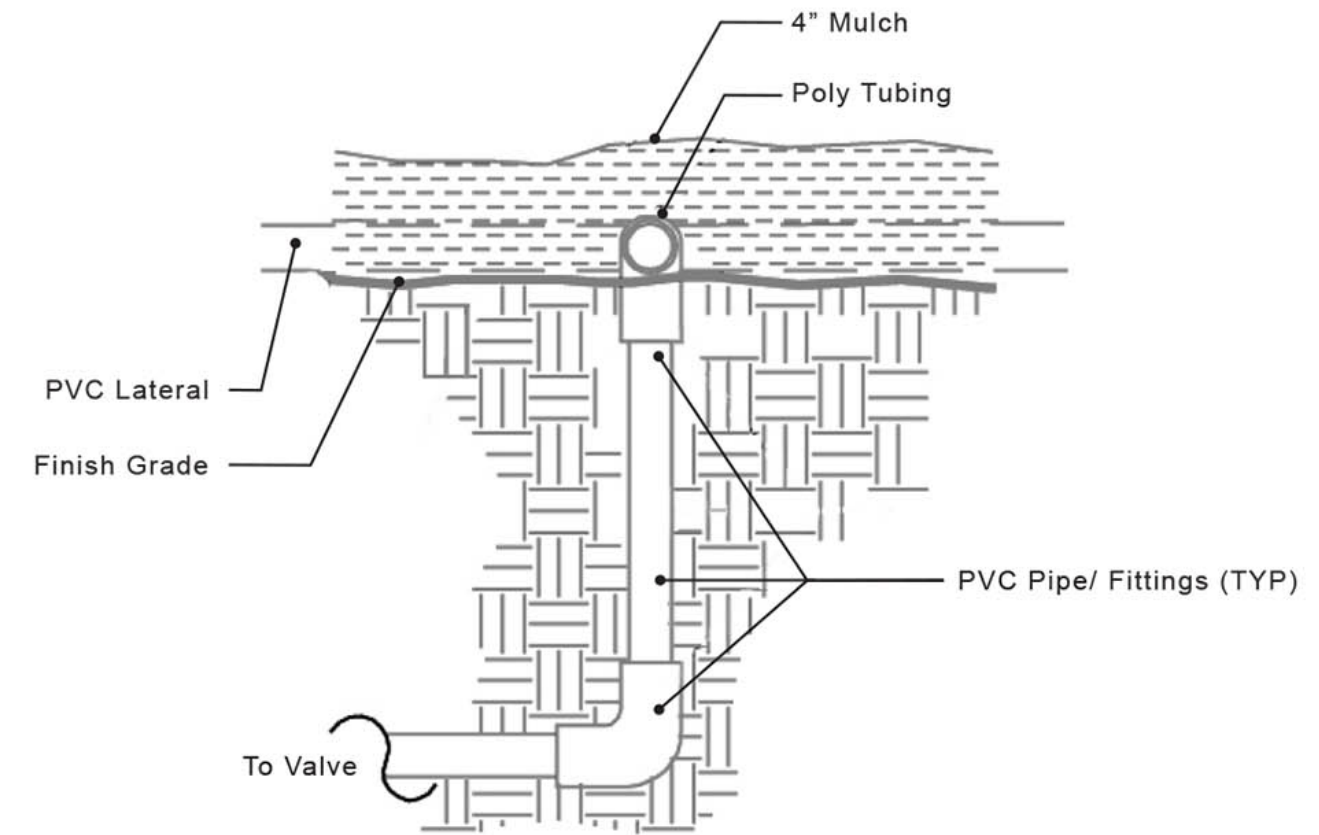


Typical Installation of Drip Irrigation at Trees

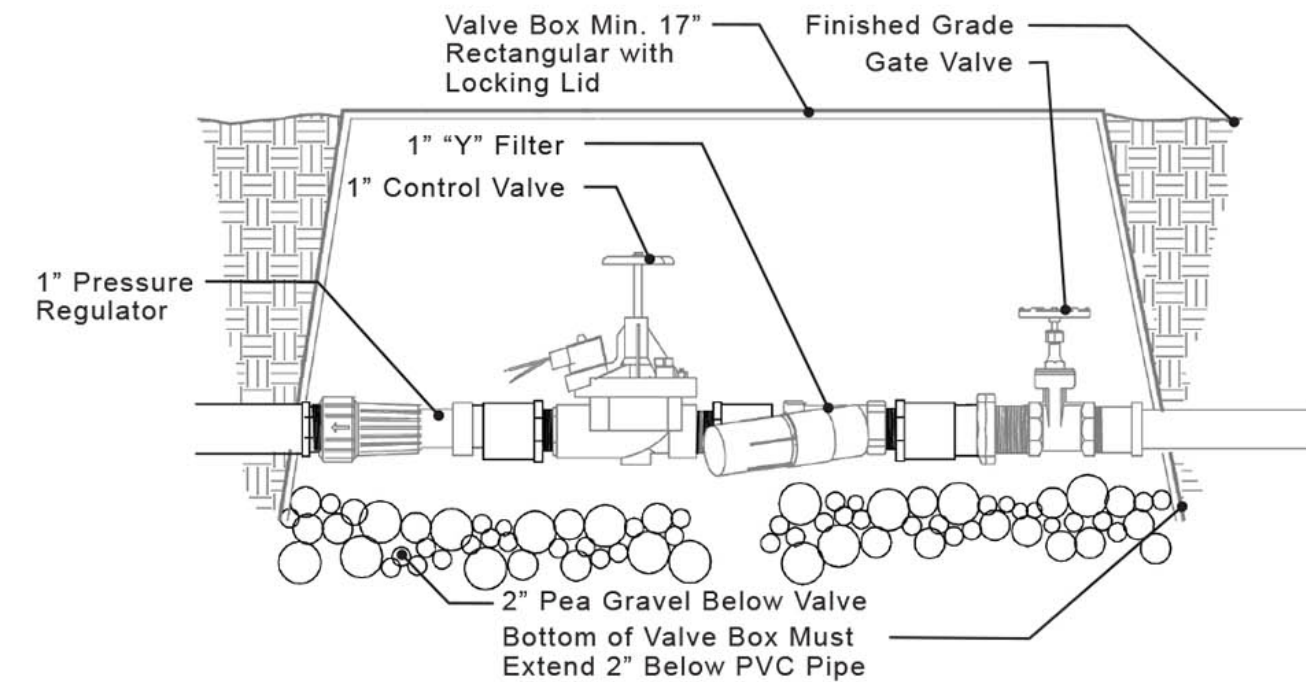


Plan View

- Note:**
1. All landscape planting beds and trees shall have drip irrigation with power controllers. All irrigation improvements should be of operational quality for a minimum of 5 years.
 2. Installation of all irrigation systems shall be done in accordance with the City of Austin Site Development Permit - Irrigation Notes.
 3. The Contractor shall be responsible for obtaining all permits and licenses required, and for the payment of all fees necessary for the installation and operation of the irrigation system.



Typical Drip Irrigation PVC/ Header Connection



Typical Valve Assembly for Drip Irrigation Section

Opaque Sealer and Hardscape Stain



OPAQUE SEAL COLOR 1
Antique White
Mainlane Outer Bridge Rails
Mainlane Outer Bridge Beams
Downtown Connection Ramp Rails
Downtown Connection Ramp Beams

Sound Wall Columns
Sound Wall Caps
Sound Wall Coping
Retaining Wall Columns



HARDSCAPE STAIN COLOR 1
Neutral Balance
Hardscape Band

Texture



Ashlar Block
Sound Wall Panel
MSE Retaining Wall Panel
Retaining Wall

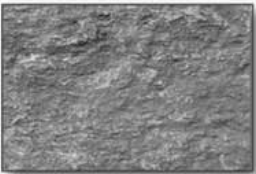


OPAQUE SEAL COLOR 2
Basket Beige
Mainlane Outer Bridge Rail Insets
Downtown Connections Ramp Rail Insets
MSE Retaining Wall Ashlar Block Panel

Sound Wall Ashlar Block Panel
Sound Wall Sandstone Panel
Retaining Wall Ashlar Block



HARDSCAPE STAIN COLOR 2
Sandstone
Hardscape Field



Sandstone
Sound Wall Panel
Sound Wall Column Inset



OPAQUE SEAL COLOR 3
Tanbark
Sound Wall Insets



Brush Finish
Sound Wall Column
Sound Wall Column Trim
Sound Wall Column Cap
Retaining Wall Column



Galvanized Steel
Shared Use Path Pedestrian Rail
Shared Use Path Fencing



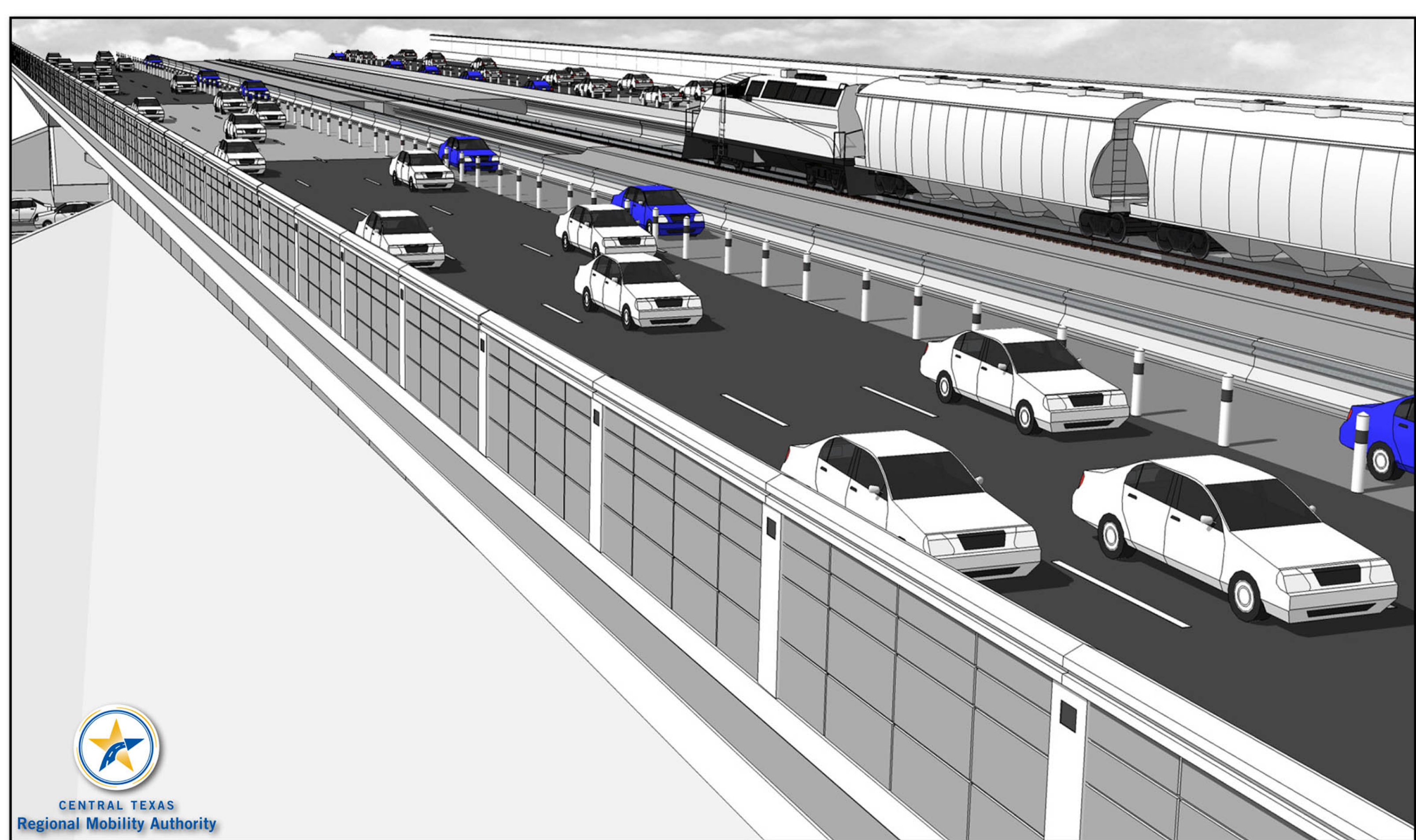
Aluminum 6061-6
Bridge Rail Lettering

Opaque Sealer Description

Water repellent vertical concrete seal per TXDOT Standard Specifications in accordance with item 427- surface finishes for concrete for opaque sealers’ Ex. Sherwin Williams A31 Series (or Approved Equal)

Note:
Contractor to provide a 4’ x 4’ samples of all opaque sealers and concrete mock-ups for approval by CTRMA





CENTRAL TEXAS
Regional Mobility Authority

MOPAC AESTHETIC GUIDELINES

MOPAC IMPROVEMENT PROJECT

Revised December 2012
September 2012