APPENDICES F-I:
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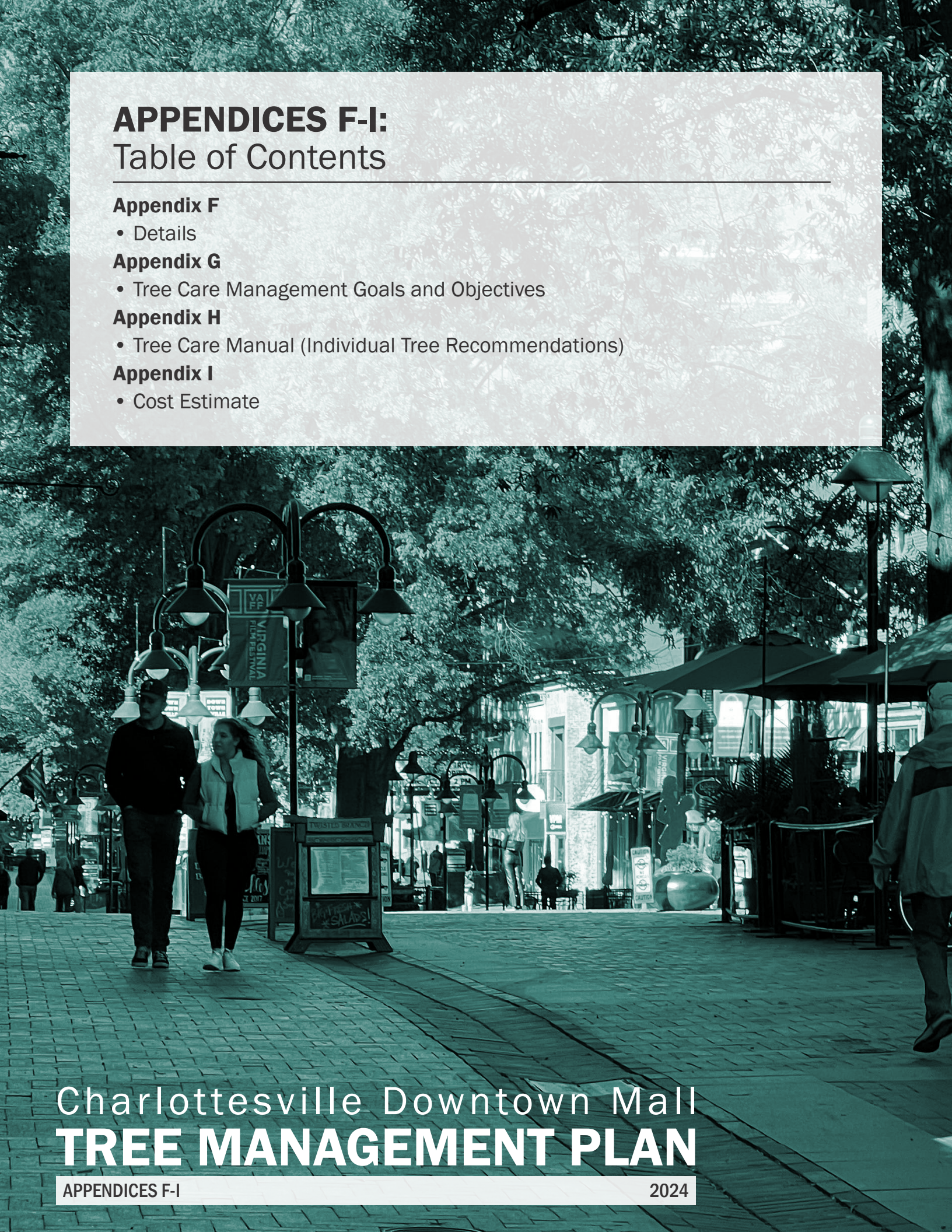

Charlottesville Downtown Mall

TREE MANAGEMENT PLAN

APPENDICES F-I 2024

Charlottesville Downtown Mall

TREE MANAGEMENT PLAN

APPENDICES F-I 2024

Client Team

City of Charlottesville

Riann Anthony	Interim Director of Parks and Recreation
Steven Gaines	Urban Forester
Rob Mathes	Landscape and Natural Resources Manager

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Mary Wolf	Wolf Josey Landscape Architects
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Dustin Smith	Wolf Josey Landscape Architects
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Ryan Cheney	Line + Grade
Joe Adams	Downey & Scott
David Repass	Downey & Scott

WOLF JOSEY
landscape architects

APPENDIX F

Details

Details

Tree Grate

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Tree Replacement

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Soil Remediation

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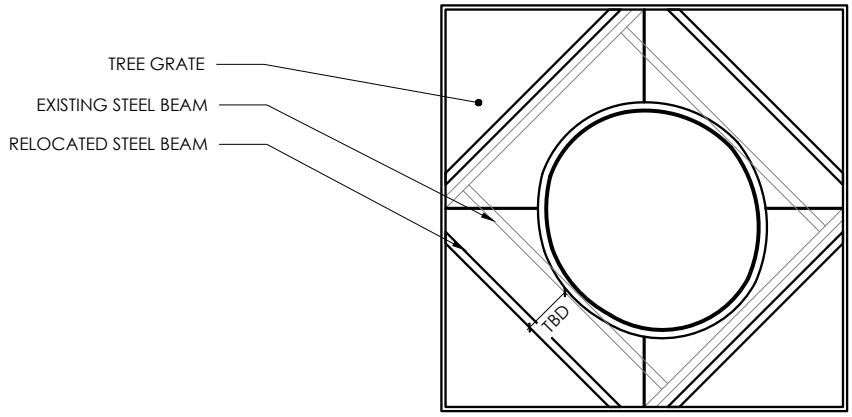
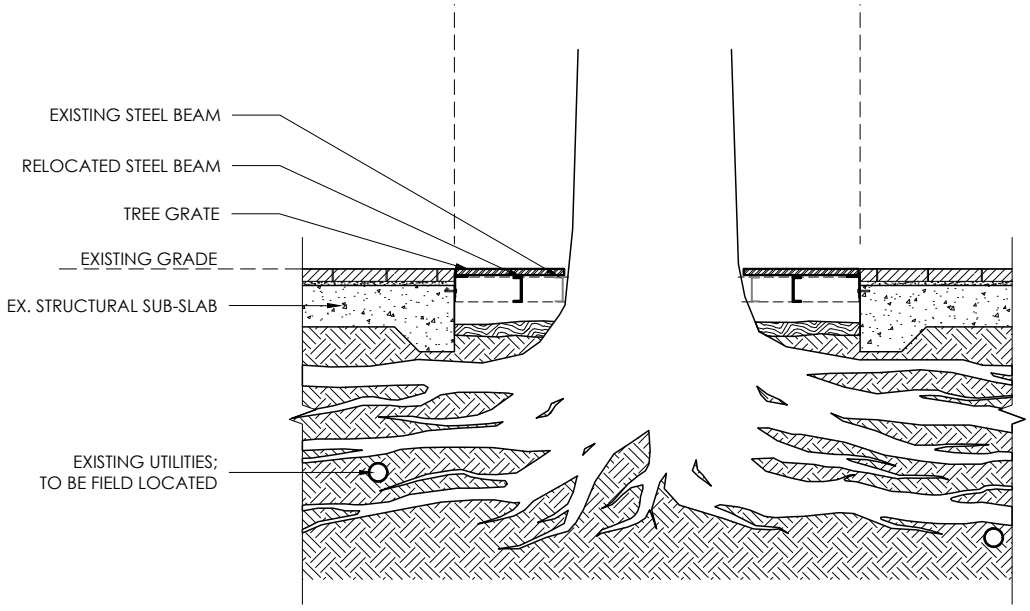


PLAN



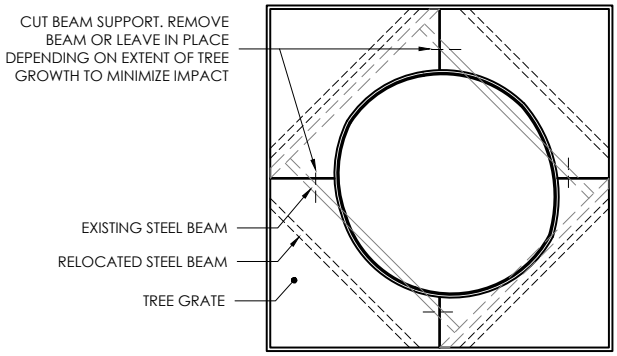
SECTION

NOTE: RELOCATE STEEL BEAM TO MAXIMUM ALLOWABLE DISTANCE FROM TREE TRUNK. STEEL MODIFICATION TO BE REVIEWED BY STRUCTURAL ENGINEER

Tree Grate Modification

1/4" = 1'

0' 2' 4' 8'



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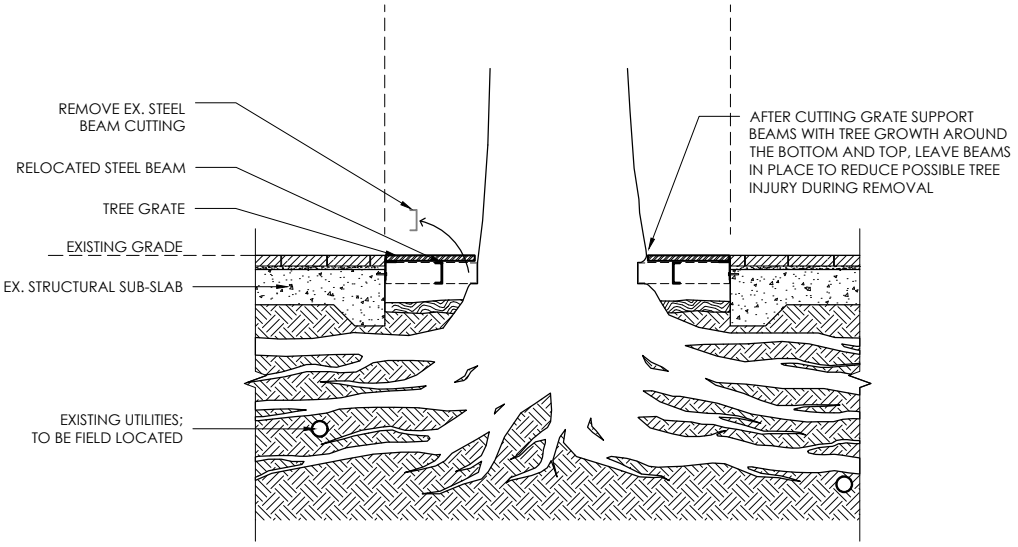

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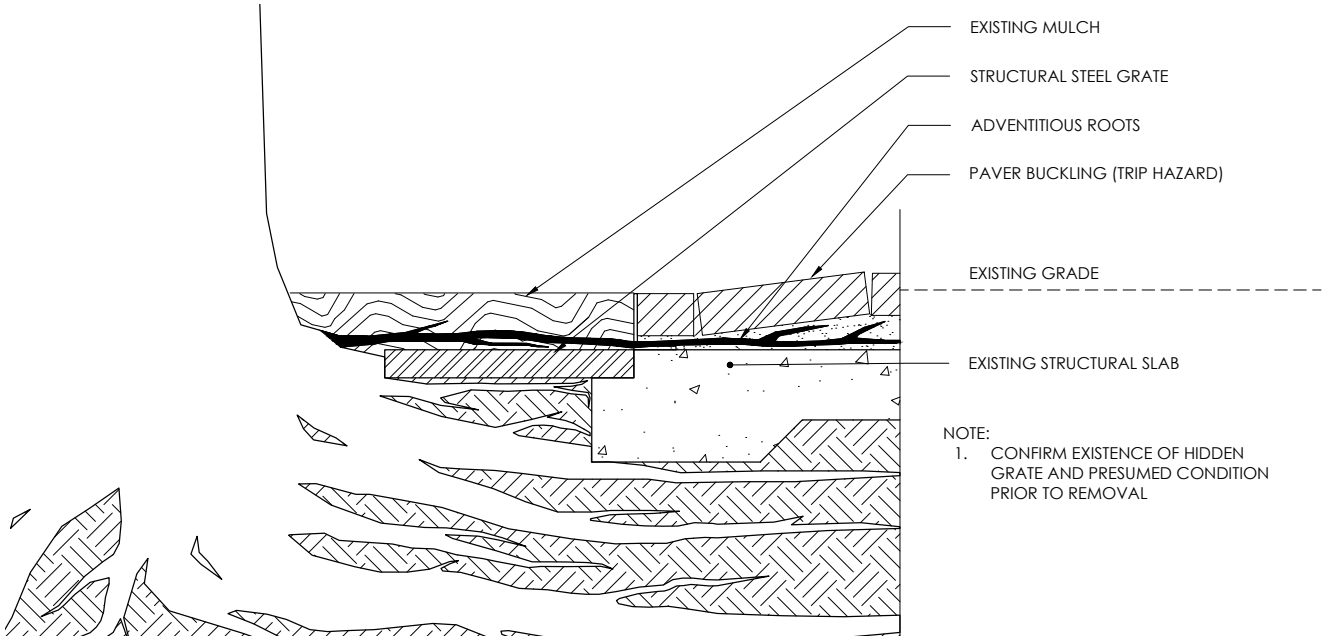
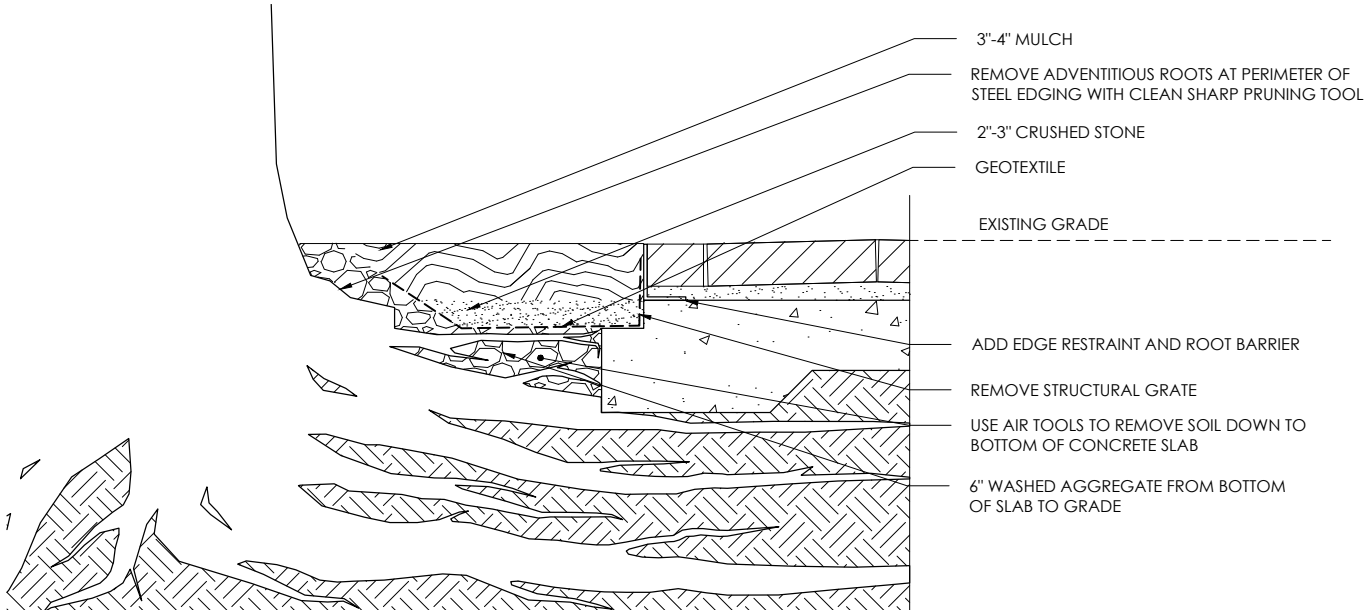


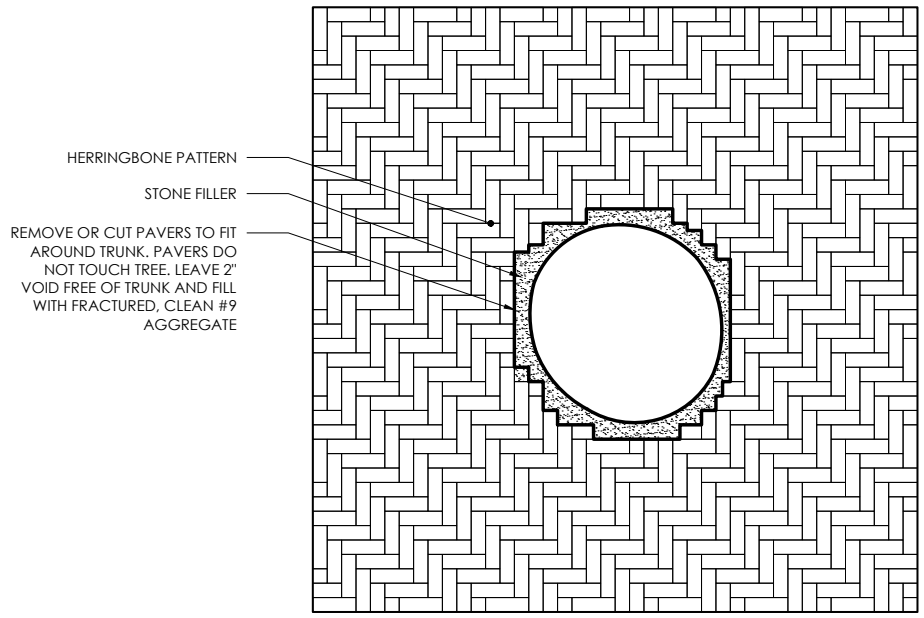
Hidden Grate Removal (Assumed Existing Condition)



Hidden Tree Grate Removal

1" = 1'

0' .5' 1' 2'



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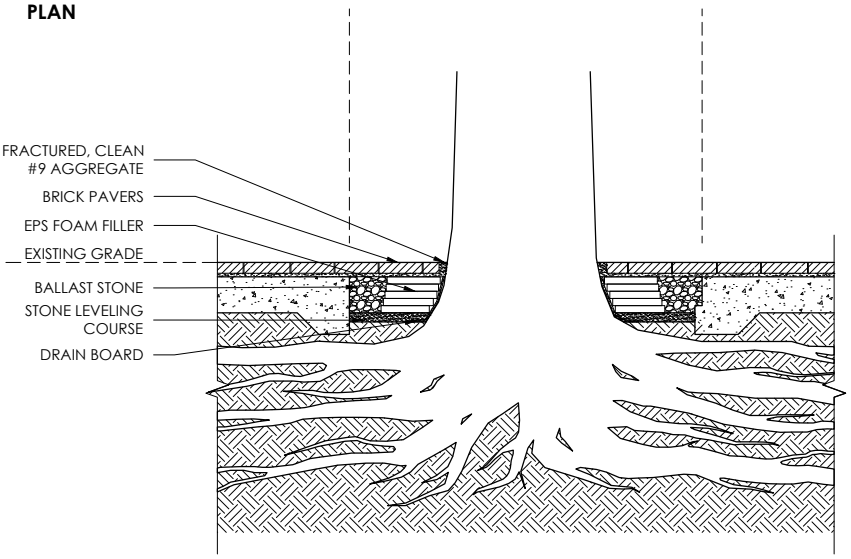
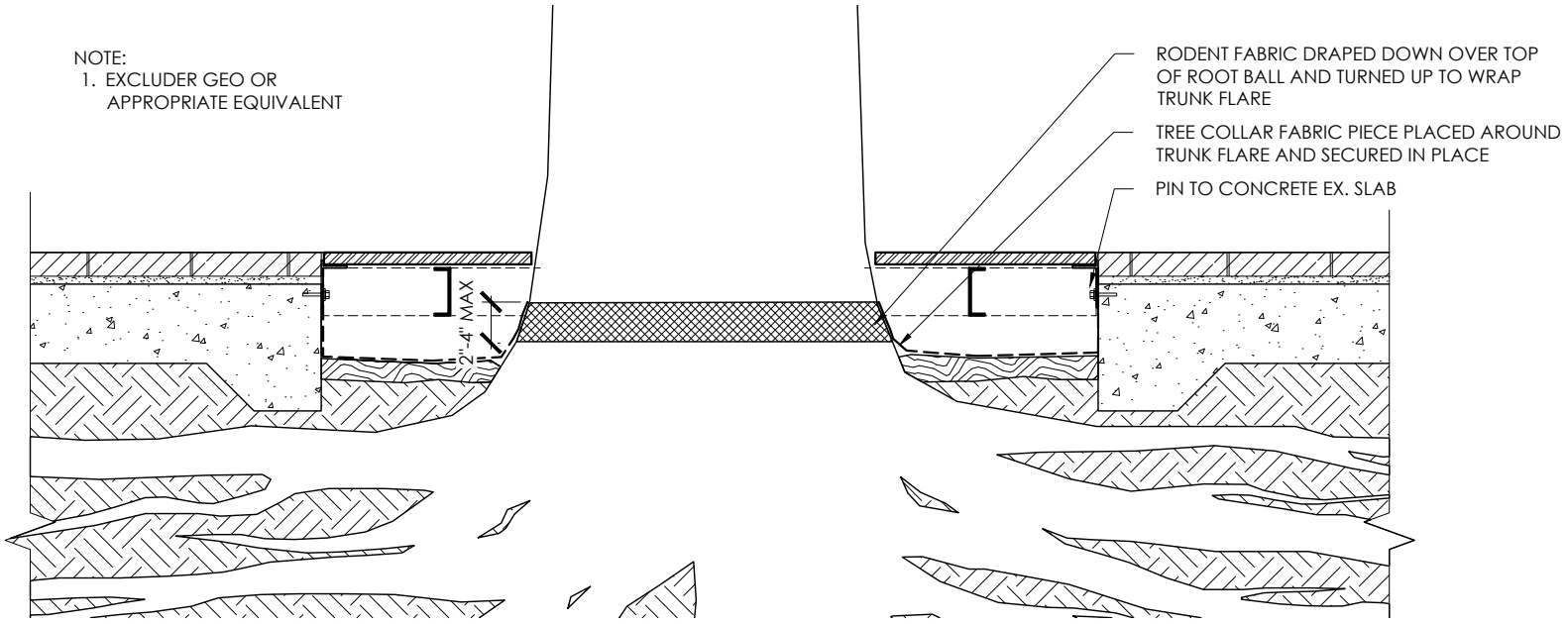


SECTION

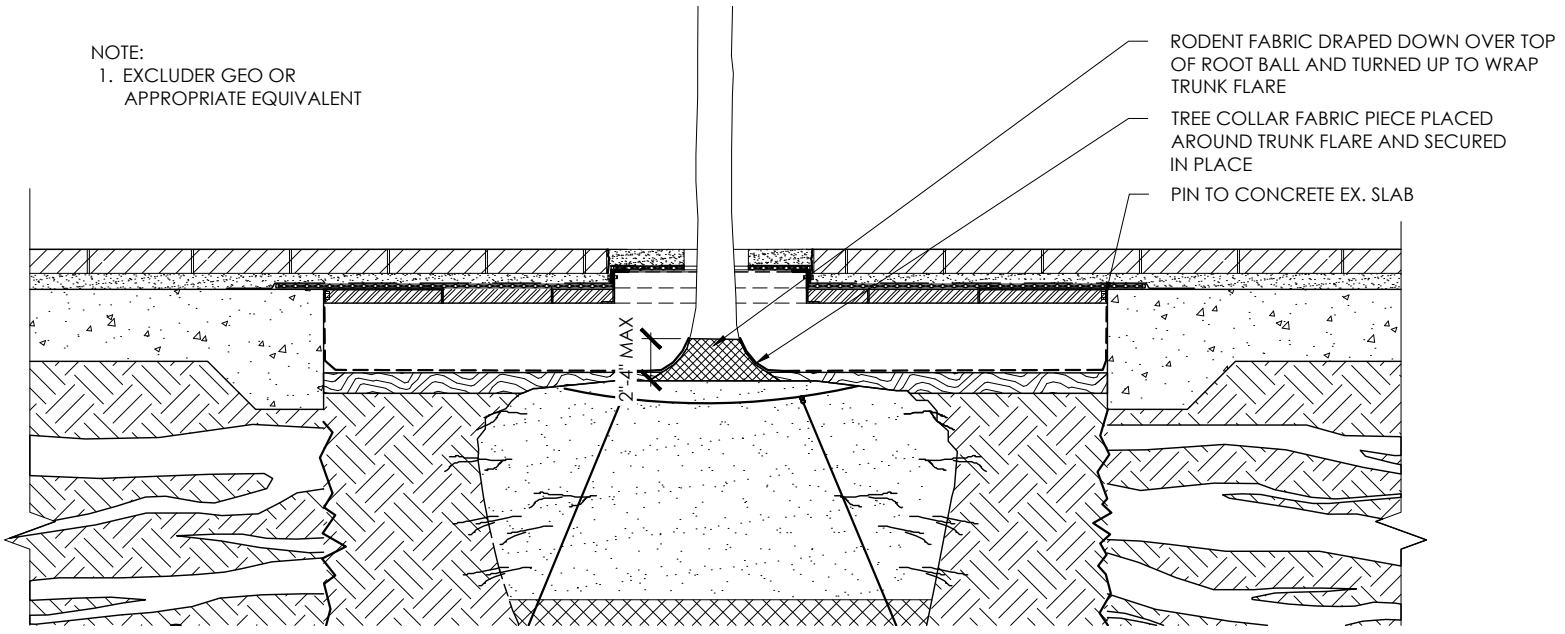
Grate Paver Replacement

1/4" = 1'

0' 2' 4' 8'



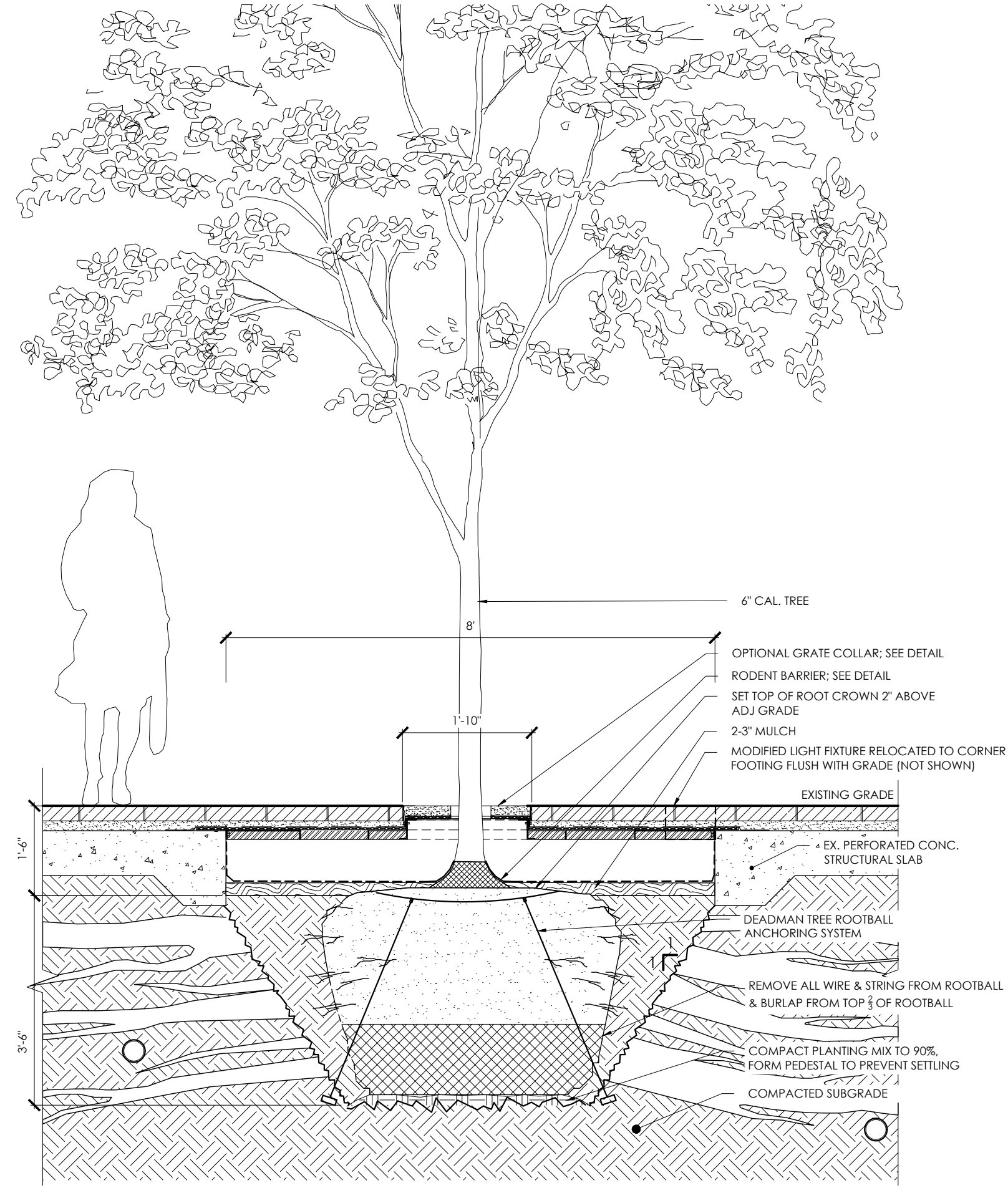
Rodent Barrier (Existing Condition/Grate Modification)



Rodent Barrier (Tree Replacement)

1/2" = 1'

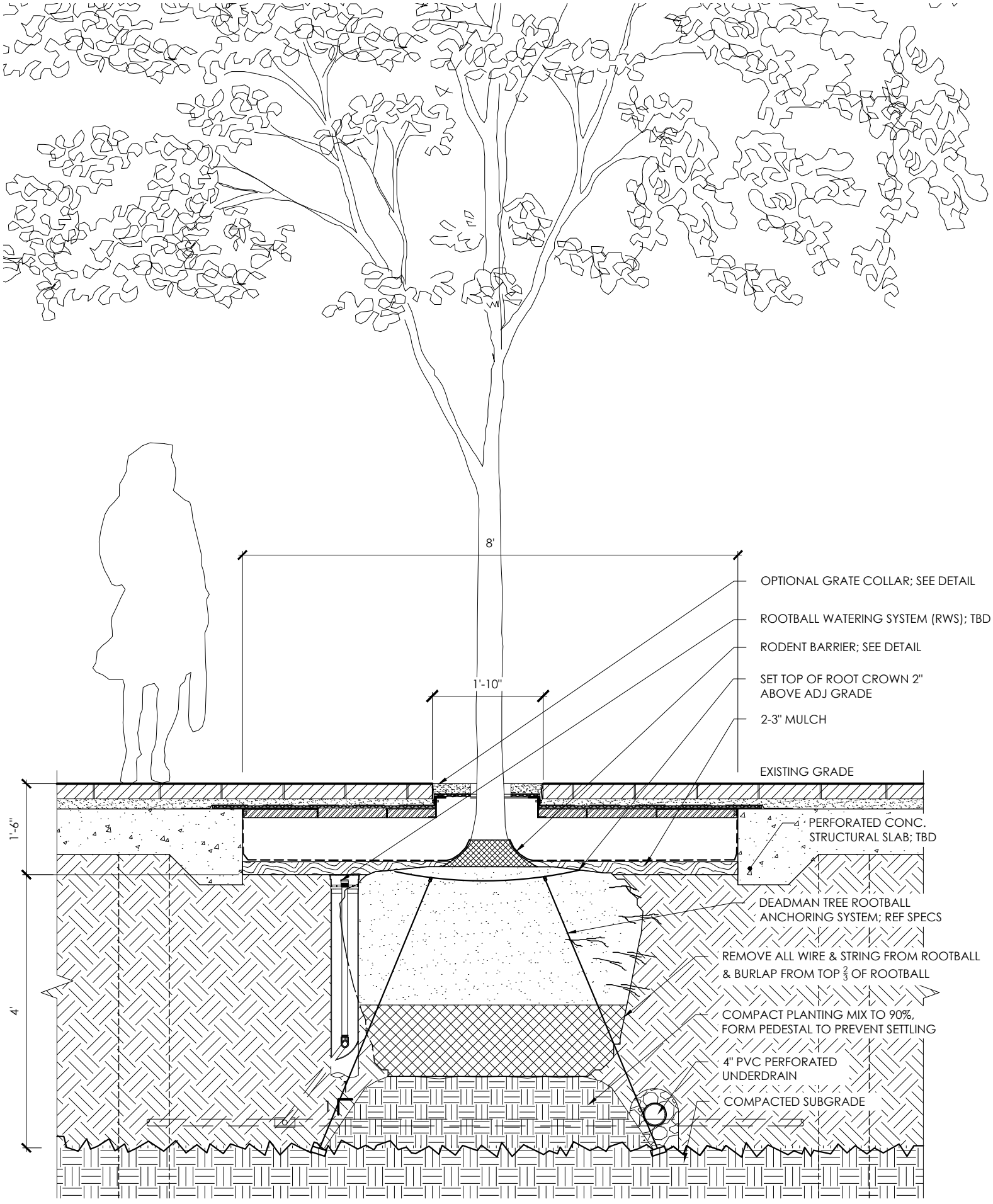
0' 1' 2' 4'



Tree Replacement (Option 1)

1/2" = 1'

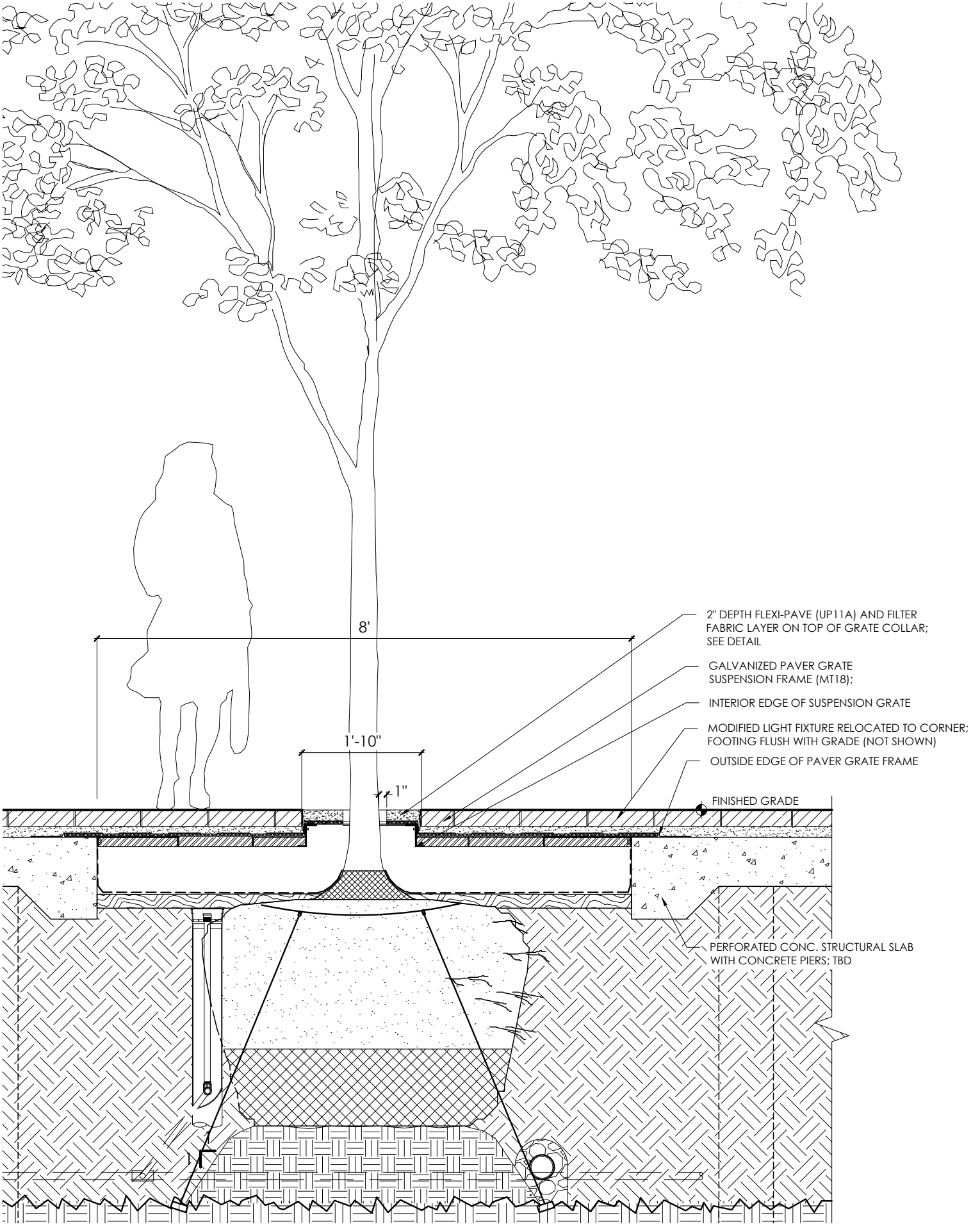
0' 1' 2' 4'



Tree Replacement (Option 2)

1/2" = 1'

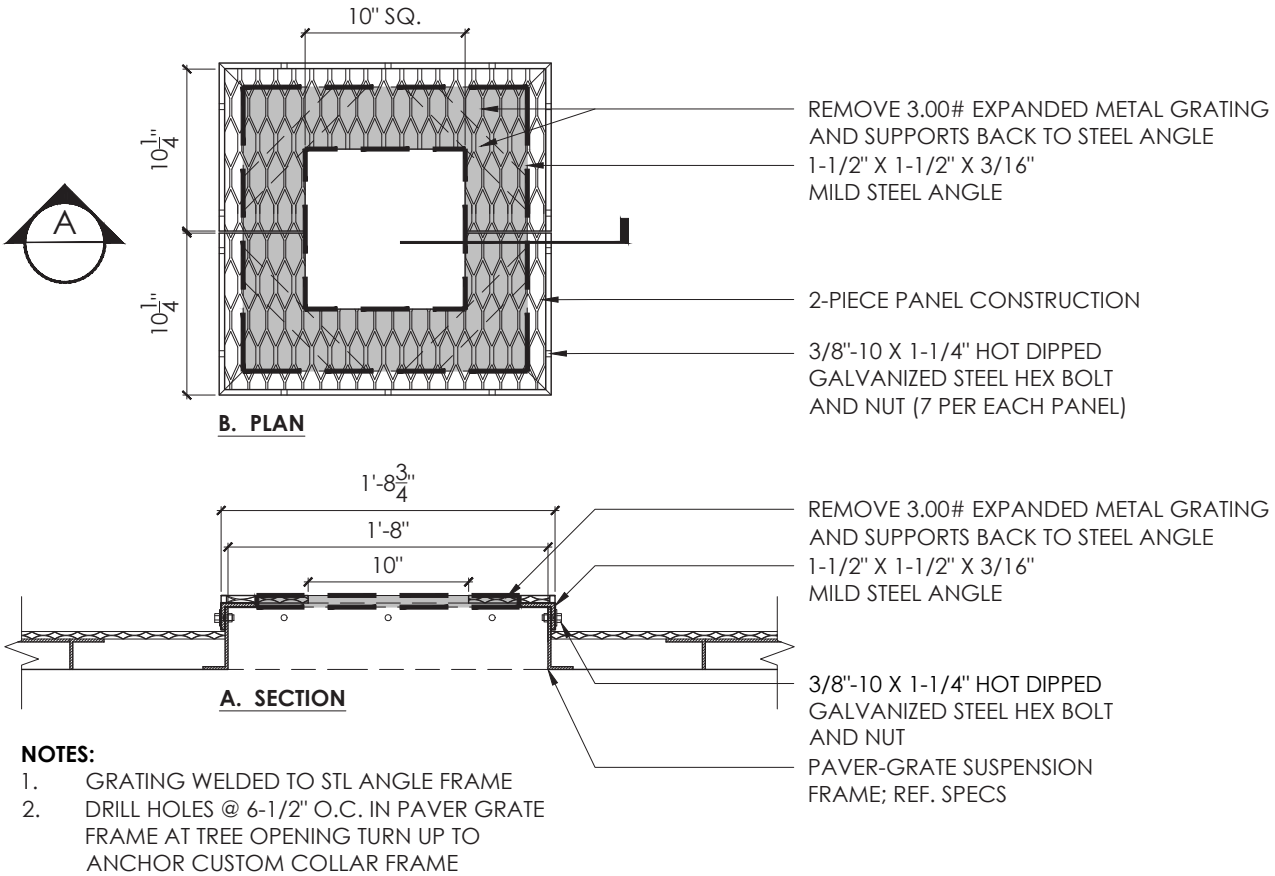
0' 1' 2' 4'



Tree Grate Replacement

1/2" = 1'

0' 1' 2' 4'



NOTES:

1. GRATING WELDED TO STL ANGLE FRAME
2. DRILL HOLES @ 6-1/2" O.C. IN PAVER GRATE FRAME AT TREE OPENING TURN UP TO ANCHOR CUSTOM COLLAR FRAME

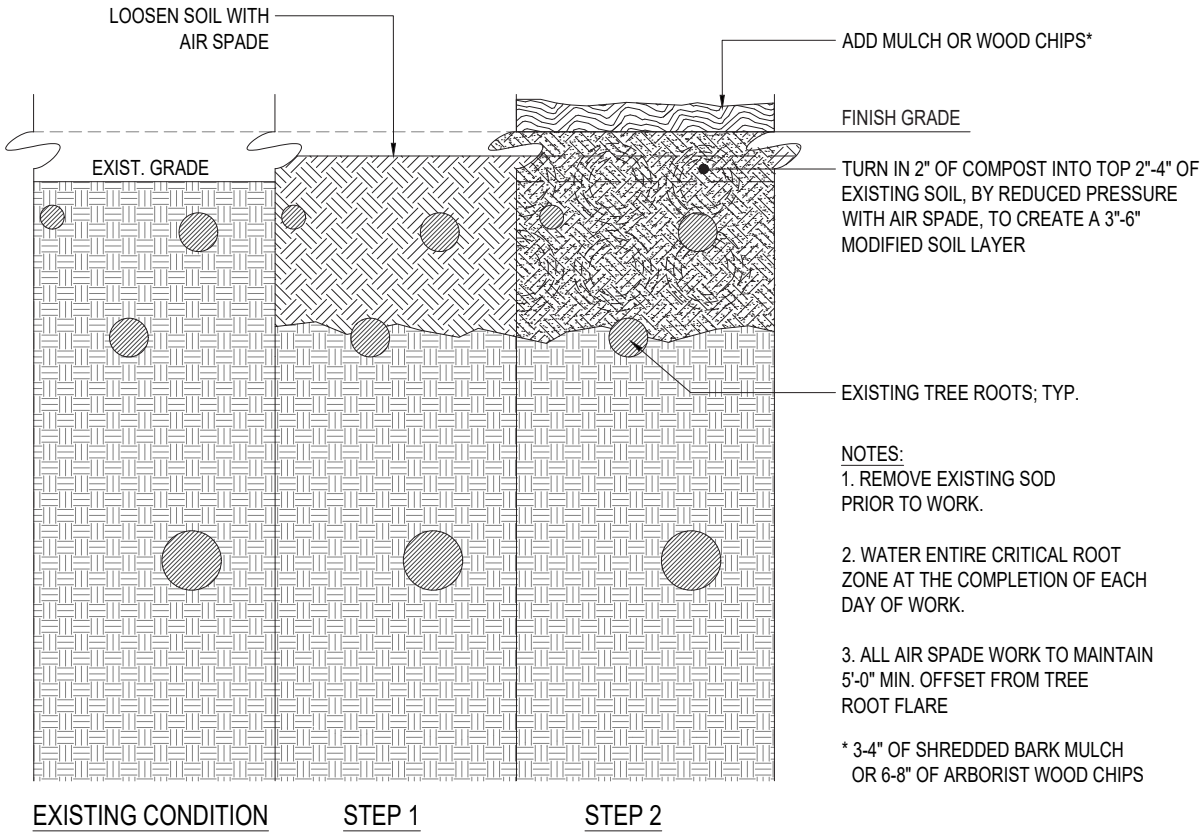
Grate Collar

NTS

NOTES:
1. ALL WORK SHALL BE COMPLETED USING AN AIR SPADE.
2. NO PRUNING SHALL BE PERFORMED EXCEPT BY APPROVED ARBORIST.
3. ALL TRENCHING WORK TO BE COMPLETED DURING TREE DORMANCY PERIOD.

Radial Trenching: Open Space

NTS



Soil Decompaction in Critical Root Zone

NTS

APPENDIX G

Tree Care Management
Goals and Objectives

General Notes:

- **Every tree needs specific and individualized care**
- **The most important pruning objective are to reduce risk of failure and to set the stage for long-term maintenance by maintaining and developing strong structure**

Four essential age classes of trees on the downtown mall have been identified by life stage:

AGE CLASS 1 & 2: Young-to medium-aged trees

Class 1: 6 yrs old, beside the Omni and Code Building
Class 2: 20-25 yrs old, along side streets and near the pavilion

Care/Pruning focus:

- Structural pruning to reduce potential for limb failure
- Encourage strong center leader
- Defect corrections
- Create good limb spacing

1. All pruning shall conform to the Best Management Practices, Pruning, 3rd Edition (ISA), and ANSI A300 (Part 1) Pruning, 2023.
2. Identifying and removing any circling (girdling) roots before they impact tree health.
3. Structural pruning to establish a strong center leader. Every tree in this project area is strongly excurrent and will require this strategy. Live crown removal should remove no more than 25%-50% during any single pruning treatment.
4. Remove or shorten aggressive branches, especially those growing vertically.
5. Restoration pruning to correct inappropriate or inadequate earlier pruning.
6. Create optimal branch spacing and branch aspect.
7. Eliminate crossing or damaged limbs.
8. Remove any tree with basal damage that could lead to future structural failure.

AGE CLASS 3 & 4: Mature - to over mature trees

Class 3: 40-45 yrs old, Willows in front of the Omni
Class 4: 55-60 yrs old, primary trees along the mall

Care/Pruning focus:

- Most have good structure and require no to very little pruning
- Maintaining tree vigor and safety are the two most important goals for these trees

1. All pruning shall conform to the Best Management Practices, Pruning, 3rd Edition (ISA), and ANSI A300 (Part 1) Pruning, 2023.
2. Pruning cuts should be limited to cuts of 3” in diameter, or less, whenever possible.
3. Heading cuts do not appear to be working well, so reduction cuts are preferred and should be to a lateral limb that is at least 30% of the parent stem.
4. Avoid more heading cuts, as there are many in these trees already and these will be difficult for stressed trees to seal the resulting wounds.
5. Reduction cuts to reduce overextended limbs should be done incrementally over 3+ years to reduce the amount of live canopy removed.

6. No pruning of live crown is the preferred treatment, but if required for clearance from buildings, or reducing overextended limbs, removal of live canopy should not exceed 10% of the total live canopy.
7. Avoid pruning practices that removes many, or all, interior branches on a limb in a practice referred to as “lions tailing.”
8. Avoid pruning of live limbs during periods of extended drought. Decay may spread more rapidly in this situation because the sapwood is dry.
9. The addition of structural support systems may be preferable to reduction pruning.
10. Treatments to “balance” the tree must be justified based on the knowledge that removing live limbs is detrimental to these trees. Resist the temptation of pruning unbalanced trees severely unless they pose an imminent risk of failure.

11. Retrenchment pruning to lower the tree canopy, and therefore wind loading, is not
12. The goal for live crown ratio (LCR) should by 60%, or more.
13. Due to the fact that willow oak is a moderately successful compartmentalizer, it is recommended that pruning be done in the early spring as carbohydrates are actively distributed within the tree in response to growth at this time of year.
14. Tree removal should remove trees in poor condition, or which represent a hazard to targets below. Trees could also be removed to increase canopy and rooting area for neighboring trees in better condition.
15. The root collars of all these trees are in good condition. There are no indications of aggressive wood decay pathogens active in any of these trees. Therefore, the risk of windthrow is low. Because of this circumstance, there is little to no need to perform compensatory pruning to balance the canopy.
16. Structural support systems, such as cables and braces, should be considered as a replacement for the pruning of live limbs. Over pruning mature trees can be extremely harmful. It can result in dead bark and cambium higher in the tree, wood decay, excessive adventitious sprouting, energy storage capacity, increased pest susceptibility and even an irreversible decline in vigor.

Tree replacement with 6” caliper trees will require coordination with nursery prior to planting:

Nursery tree selection

1. Nursery care and pruning prior to being dug:
    - 6” caliper trees may need several pruning treatments before dug at nursery
    - Nursery should correct any circling root issues before dug
    - Elevation pruning to accommodate pedestrians or vehicles
    - There should be at least one growing season between elevation pruning and being dug to allow tree to recover
    - Multiple years of lower pruning may be preferable to single elevation pruning
2. All pruning should focus on strong central leader and good branching structure.
3. Trees grown in containers are not acceptable.
4. Nursery preparation and transportation:
    - Canopies should be bound and wrapped for transport and trunks heavily protected
    - Root balls must remain intact and not be broken
    - Digging and installation should be within 48 hour time frame
    - Root ball to remain moist at all times
    - At install, wire baskets should be cut to a level below anticipated root growth
5. Irrigation program for newly installed trees must be in place at installation with at least a 3-year maintenance plan of monitoring and irrigation.
6. Installation of 6” caliper trees should not expect height or caliper appreciation for 3-4 years.

Charlottesville Downtown mall - Tree Management Goals and Objectives:

Pruning:

There are essentially four age classes of trees on the downtown mall. The pruning objectives will be different for each. The most recently established trees in the project zone are those installed between the Omni Hotel and the Code Building. These were planted in 2022 and may be about 6 years old. The next age class includes the trees on the numbered streets and the oaks planted near the pavilion. These were planted between 2003-2009, so they are probably 20-25 years old. The next age class include the willow oaks in front of the Omni Hotel. These were installed in 1985. Therefore, they are roughly 40-45 years old. And finally, the willow oaks that comprise the primary trees of the mall, were installed in 1976. These would be approximately 55-60 years old.

The first two age classes should be classified as young- to medium-aged trees, and the remaining two would be mature to over-mature. When establishing a pruning regime, it is important to understand the life stage of the tree in question and, as a result, what the goals and objectives should be for this age class. It is not enough to say that "crown cleaning" is required. Although this is the correct terminology, it must be accompanied by specifying the goals and objectives for the pruning. In a setting like the downtown mall, the primary goals should be safety and longevity.

There are multiple objectives when it comes to pruning trees. One of the most important objectives is to reduce risk of failure and to set the stage for long-term maintenance by creating, maintaining and developing or restoring strong structure. All of this starts in the tree nursery where good structure is established. In the absence of early structural pruning, the tree manager is tasked with restoring strong structure through a long-term program of incremental pruning cuts. With every pruning cut, live branches are removed to encourage growth in the more-desirable unpruned parts of the canopy. In this way, pruning acts to correct defects.

Regardless of the life stage, there is no harm in removing dead or dying limbs, or those that might be crossing or split. However, when live limbs are removed, it must be clear as to what is the objective and how will it impact the tree's health. Indiscriminately removing live branches can reduce tree health and encourage development of weak structure. This is especially true of mature trees in a stressful environment like the mall setting.

Pruning by life stage: Young to medium-aged trees

Trees in these groups are growing rapidly and can benefit by structural pruning in order to reduce the potential for limb failure in the future. As such, the following strategies should be employed.

1. All pruning shall conform to the Best Management Practices, Pruning, 3rd Edition (ISA), and ANSI A300 (Part 1) Pruning, 2023.
2. Identifying and removing any circling (girdling) roots before they impact tree health.

3. Structural pruning to establish a strong center leader. Every tree in this project area is strongly excurrent and will require this strategy. Live crown removal should remove no more than 25%-50% during any single pruning treatment.
4. Remove or shorten aggressive branches, especially those growing vertically.
5. Restoration pruning to correct inappropriate or inadequate earlier pruning.
6. Create optimal branch spacing and branch aspect.
7. Eliminate crossing or damaged limbs.
8. Remove any tree with basal damage that could lead to future structural failure.

Trees found along the numbered streets, adjacent to the Omni Hotel, and those near the Ting pavilion are suitable for structural pruning. The larger diameter trees near the pavilion and chalkboard will require more pruning rotations with less live material removed, but over a longer period of time.

Pruning should be done to encourage a strong center leader. This work should focus on establishing a strong center leader by subordinating co-dominant stems in order to encourage a dominant center leader. It should also create good limb spacing along the center leader and focus on retaining limbs with an aspect that is no more than 50% of the diameter of the center stem.

Tree #113

For tree #113, a decision must be made regarding which limbs to retain, and how best to undertake restoration pruning with the least amount of damage. It might be possible to improve the branching structure, but it might involve 10 years of incremental pruning. Early structural pruning would have produced a better tree and saved thousands of dollars of pruning costs.

A similar example is found in tree #2C near the pavilion where two limbs are growing in close proximity. Poor pruning in the nursery led to this defect. Exaggerated weight loading on the trunk from these two limbs makes it more likely that limb failure will occur. Therefore, the upper limb of these two should be incrementally subordinated and removed.

Tree 2C

The younger to medium-aged trees along the numbered streets will require structural pruning including trees #93-98. Pruning in trees #3-5 should focus on the removal of crossing limbs, and to encourage good limb spacing along the center leader. Trees #87-90 would benefit by pruning to raise limbs over the walkway. Trees #107-109 are in such poor health that they should simply be removed.

Pruning by life stage: Mature- to over mature trees

The trees in this life stage comprise the majority of the tree population along Main Street. They at an inflection point in terms of their vigor and anticipated longevity. Some are in good condition, but the majority are in fair to poor condition. The primary stressors appear to be competition for rooting and canopy space. However, additional stressors could include a long-term pattern of drought, and inappropriate pruning treatments.

Maintaining tree vigor and safety are the two most important goals of any management plan for these trees. The following guidelines are recommended as a way to best ensure these goals.

1. All pruning shall conform to the Best Management Practices, Pruning, 3rd Edition (ISA), and ANSI A300 (Part 1) Pruning, 2023.
2. Pruning cuts should be limited to cuts of 3" in diameter, or less, whenever possible.
3. Heading cuts do not appear to be working well, so reduction cuts are preferred and should be to a lateral limb that is at least 30% of the parent stem.
4. Avoid more heading cuts, as there are many in these trees already and these will be difficult for stressed trees to seal the resulting wounds.
5. Reduction cuts to reduce overextended limbs should be done incrementally over 3+ years to reduce the amount of live canopy removed.
6. No pruning of live crown is the preferred treatment, but if required for clearance from buildings, or reducing overextended limbs, removal of live canopy should not exceed 10% of the total live canopy.
7. Avoid pruning practices that removes many, or all, interior branches on a limb in a practice referred to as "lions tailing."
8. Avoid pruning of live limbs during periods of extended drought. Decay may spread more rapidly in this situation because the sapwood is dry.
9. The addition of structural support systems may be preferrable to reduction pruning.
10. Treatments to "balance" the tree must be justified based on the knowledge that removing live limbs is detrimental to these trees. Resist the temptation of pruning unbalanced trees severely unless they pose an imminent risk of failure.
11. Retrenchment pruning to lower the tree canopy, and therefore wind loading, is not supported in the research literature for trees in this situation. There are no indications that any of these trees are "collapsing on themselves" and would require weight reduction through retrenchment pruning. Dead limbs found high in the canopy should be removed, but removal of live limb should be avoided or done in small increments over many years.
12. The goal for live crown ratio (LCR) should by 60%, or more.

13. Due to the fact that willow oak is a moderately successful compartmentalizer, it is recommended that pruning be done in the early spring as carbohydrates are actively distributed within the tree in response to growth at this time of year.
14. Tree removal should remove trees in poor condition, or which represent a hazard to targets below. Trees could also be removed to increase canopy and rooting area for neighboring trees in better condition.
15. The root collars of all these trees are in good condition. There are no indications of aggressive wood decay pathogens active in any of these trees. Therefore, the risk of windthrow is low. Because of this circumstance, there is little to no need to perform compensatory pruning to balance the canopy.
16. Structural support systems, such as cables and braces, should be considered as a replacement for the pruning of live limbs. Over pruning mature trees can be extremely harmful. It can result in dead bark and cambium higher in the tree, wood decay, excessive adventitious sprouting, energy storage capacity, increased pest susceptibility and even an irreversible decline in vigor.

Tree #41 – retrenchment pruning gone wrong.

Tree #41 received a retrenchment pruning treatment many years ago. This may have been an effort to lower the wind profile, or to remove deadwood. Regardless of the objective, the result is considerable dead bark and cambium below this cut. Decay will progress down the main stem and will compromise the structural integrity of the lateral limbs adjacent to this cut. These limbs will need to be monitored for an indication of active failure. It could also fail due to the weight and fall to the ground. This is exactly the type of pruning cut that should be avoided on these mature oaks.

In fact, trees such as these, that are stressed by advanced age, drought, or mechanical wounding should be pruned very little, or not at all. The vast majority of these trees have good structure and do not require aggressive pruning cuts such as retrenchment. Because they have good structure, few if any live limbs should be removed. The accompanying spreadsheet identifies a few trees that may require some reduction pruning, or a static support system but no recommendations are made for retrenchment pruning.

Tree #62 – candidate for structural support system

Tree #62 is an example of where a structural support system of either a bracing rod, or cables should be added to add support to this defect. In this situation, it is preferrable to add a support system versus removing live limbs to reduce the weight on these limbs. Too many live limbs would need to be removed to be effective in reducing the risk of this defect. A structural support system is the better option.

Tree #20 – a candidate for reduction pruning on an overextended limb.

Tree #20 has an overextended limb that could fail in the future. It extends over the building to the left, and a seating area. Because the limb is in good condition, with no indications of any defects and plenty of live limbs along its length, this would be a good candidate for incremental reduction pruning.

Tree #33 – another candidate for reduction pruning, or subordination.

This limb in tree #33 has been poorly pruned. This is a heading cut that is detrimental to the tree. It is probably best to prune the limb back to the branch collar at the trunk and accept that there would be a wound larger than is desired but understand that we are eliminating a co-dominant stem.

Some trees are in such an advanced stage of decline that trying to retain them seems futile. They may also represent an unacceptable level of risk. Trees #54 and 59 are in this condition now and should be considered for removal.

Tree #59 - a candidate for removal due to dieback and dangerous branch unions.

This tree is declining in vigor rapidly as evidenced by the extensive amounts of dead wood. What is most concerning is the occurrence of two areas of bark inclusion. Due to the lean of this tree, the weight of the limbs and bark inclusions, this tree could fail in multiple locations at any time.

An accompanying spreadsheet itemizes each tree in the study area and with general pruning and removal recommendations. It is not meant to be a definitive set of specifications, but rather should guide future pruning recommendations.

Tree removals:
Several trees have been identified as removal candidates. Trees #54 and 59 are examples of trees that should be removed in the near future. The limbs of these trees represent a moderate to high level of risk for failure.

Other candidates include trees #1a, 2b, 12, 23, 28, 31, 56, 66, 83, 85, 107, 108, and 109. These trees do not represent an imminent or probable likelihood of failure; however they have poor form which cannot be restored. Their removal would also allow for additional rooting and canopy area for the better trees around them. It would create openings in the canopy to allow sunlight to reach the trunks of the remaining trees. This should produce new limb growth lower on the trunk that can provide carbohydrates for increased diameter growth and wound healing.

In some cases, removals would also allow for the installation of younger trees and offer the potential to improve the rooting areas. Examples of this include trees #107-110.

Root collar observations and recommendations:
In addition to Level 3 Tree Risk Assessments (detailed in other sections of this report), inspections were made of the root crowns of the larger oaks in order to assess the interaction of the roots flares with the beams that support the iron grates.

Root flares are growing against, and in some cases, around the beams. There is also a large population of trees that are not impacted by the supporting beams. In order to better assess the impact of this interaction, and how the beams are affecting the tree stability, I consulted with an expert in the field of biomechanics. Our discussions concluded that given the species profile, wind loading potential and root growth patterns, that in isolated cases, removing the braces would not adversely affect the tree's structural integrity. The one caveat is that if the removal of the beams would inflict wounding to the root flare, then it is best to leave the beams in place. Also, if the root flares are starting to grow around the beam, the recommendation is to leave the beam in place and observe if the flare envelopes the beam and adds new vascular tissue. Each situation should be evaluated individually in terms of wounding potential.

In the event of a concern for how the removal of beams would impact the structural integrity, there is the option of undertaking a pull-test evaluation. In this case, if a tree to be removed were in this condition, it could have the beams removed and a pull test performed. An evaluation would then be made to assess how much loading would be required to destabilize the base. This loading would then be compared to what is anticipated for the larger mall trees during normal weather conditions.

Pruning recommendations for newly installed trees on the downtown mall

Nursery tree selection and pruning:

The need for multiple pruning treatments and root issues at the planting site can be avoided by choosing a high-quality nursery that will undertake regular intervals of pruning. This is especially true for large caliper trees (in this case 6”), which may see several pruning treatments before it is dug. A high-quality nursery will also pay close attention to the tree’s root system and should act to correct any circling root issues before digging.

Trees in the nursery can also receive specialized pruning treatments , such as elevation pruning to accommodate pedestrians or vehicles, at the planting site. These treatments may be requested by the design team to accommodate planting site limitations. Young trees like this can tolerate removal of as much as 50% of the tree canopy at any one treatment in order to establish good structure. However, after a high pruning dose, there should be at least one growing season of little to no additional pruning before the tree is dug. The tree should recover from this amount of foliage loss before it is dug and moved. Multiple years of a lower pruning dose may be preferrable if enough time is available to accomplish the pruning objectives.

All pruning treatments should focus on creating a strong central leader and good branching structure and spacing. Broken, crossing, or over overextended limbs should be corrected in the nursery. Specialized pruning demands should also be done in the nursery, and not at the receiving site.

I am not sure if a tree of this size will have been grown in a specialized container, such as a ‘grow bag.’ I do not support trees grown in any container situation that will create circling, or girdling roots. However, technologies such as a grow bag can be used to naturally prune the roots and capture the vast majority of the tree’s root system. I’m just not sure if a 6” caliper tree could be grown in a grow bag, or similar device?

A high-quality tree nursery will know the seasonal digging requirements for the species selected. Tree canopies should be bound and wrapped for transport, and the trunks heavily protected against mechanical damage. The root balls must remain intact and not be broken or deformed by sloppy handling. It is ideal that the time between digging, and installation does not exceed 48 hours, and that the trees should be handled as few times as possible in order to avoid root ball damage. If more than 48 hours will transpire between digging and installation, then a management plan must be presented by the nursery that addresses how they intend to keep the root ball moist.

An irrigation program for the newly installed trees must be concise. How much water, when, for how long and applied by whom? Irrigation is absolutely essential for the survival of these trees. And because we are dealing with large caliper trees, this will likely entail at least a 3-year maintenance plan of monitoring, irrigation and any insect/disease issues that arise. On trees of this size, we should not anticipate an appreciable amount of tree height or caliper (or diameter) growth for 3-4 years.

I prefer that any wire basket be cut to a level below any anticipated root growth when the tree is in its final position. Although the research is mixed on the impact of wire baskets, I like to remove the chance that the wire could girdle the new root growth. Any burlap should be free of plastic twine, or peeled away from the root ball once the tree is in its final position.

APPENDIX H

Tree Care Manual
(Individual Tree Recommendations)

PITCHFORDASSOCIATES
arboriculture + environmental consulting

CHARLOTTESVILLE DOWNTOWN MALL
TREE CARE RECOMMENDATIONS - June 2024

Tree #	Common name	Pruning recommendations
1a	Shumard oak	Consider removal for poor form
1b	Shumard oak	No pruning required
1c	Shumard oak	Crown clean to remove minor deadwood (d/w)
1d	Shumard oak	Crown clean to remove minor deadwood (d/w)
2a	Shumard oak	No pruning required
2b	Shumard oak	Consider removal for poor form
2c	Shumard oak	Crown clean for structure. Remove crossing limbs
3	Willow oak	Structural pruning for crossing limbs
4	Willow oak	Structural pruning for crossing limbs
5	Willow oak	Structural pruning for crossing limbs
10	Willow oak	No pruning required
11	Willow oak	Bark inclusion. Consider cable. No pruning.
12	Willow oak	Consider removal for poor form
13	Willow oak	No pruning required
14	Willow oak	Elevate off of roof. Overextended limbs
15	Willow oak	No pruning required
17	Willow oak	Elevate off of roof. Overextended limbs
18	Willow oak	No pruning required
20	Willow oak	Elevate off of roof. Overextended limbs
21	Willow oak	No pruning required
22	Willow oak	No pruning required
23	Willow oak	Consider removal for poor form
24	Willow oak	Bark inclusion. Consider cable. No pruning.
25	Willow oak	No pruning required
26	Willow oak	No pruning required
27	Willow oak	Overextended limbs
28	Willow oak	Consider removal for poor form
29	Willow oak	Overextended limbs
30	Willow oak	No pruning required
31	Willow oak	Consider removal for poor form
32	Willow oak	No pruning required
33	Willow oak	Prune one lower limb back to branch collar
34	Willow oak	No pruning required
35	Willow oak	No pruning required
40	Willow oak	No pruning required
41	Willow oak	Retrenchment pruning has created hazard
42	Willow oak	No pruning required
43	Willow oak	No pruning required
44	Willow oak	No pruning required
46	Norway maple	No pruning required
50	Red maple	No pruning required

51	Willow oak	No pruning required
52	Willow oak	Crown cleaning to remove major d/w
54	Willow oak	Consider removal for poor condition and hazard
55	Willow oak	No pruning required
56	Willow oak	Consider removal for poor form
58	Willow oak	No pruning required
59	Willow oak	Consider removal for poor condition and hazard
60	Willow oak	No pruning required
61	Willow oak	No pruning required
62	Willow oak	Add cable. No pruning.
63	Willow oak	No pruning required
64	Willow oak	No pruning required
65	Willow oak	No pruning required
66	Willow oak	Consider removal for poor form
67	Willow oak	Remove major d/w. Subordinate co-dom
68	Willow oak	Overextended limbs
69	Willow oak	Elevation pruning off of roof
70	Willow oak	Major d/w, but not hazard now
72	Willow oak	No pruning required
73	Willow oak	No pruning required
74	Willow oak	No pruning required
75	Willow oak	No pruning required
76	Willow oak	No pruning required
76a	Willow oak	No pruning required
77	Willow oak	No pruning required
78	Willow oak	No pruning required
79	Willow oak	No pruning required
80	Willow oak	No pruning required
81	Willow oak	No pruning required
82	Willow oak	No pruning required
83	Willow oak	Consider removal for poor form
84	Willow oak	No pruning required
85	Willow oak	Consider removal for poor form
86	Willow oak	No pruning required
87	Ginkgo	Elevation pruning over walkway
88	Southern magnolia	Elevation pruning over walkway
89	Ginkgo	Elevation pruning over walkway
90	Ginkgo	Elevation pruning over walkway
91	Norway maple	No pruning required
92	Norway maple	No pruning required
93	Ginkgo	Structural pruning
95	Ginkgo	Structural pruning
96	Ginkgo	Structural pruning
97	Ginkgo	Structural pruning
98	Ginkgo	Structural pruning
99	Ginkgo	No pruning required
100	Ginkgo	No pruning required

101	Ginkgo	No pruning required
102	Ginkgo	No pruning required
103	Ginkgo	No pruning required
104	Ginkgo	No pruning required
105	Ginkgo	No pruning required
106	Ginkgo	No pruning required
107	Ginkgo	Consider removal for poor form
108	Ginkgo	Consider removal for poor form
109	Ginkgo	Consider removal for poor form
110	Shumard oak	No pruning required
111	Shumard oak	No pruning required
112	Shumard oak	Crown cleaning to remove major d/w
113	Shumard oak	Structural pruning
114	Shumard oak	No pruning required
115	Shumard oak	No pruning required
116	Shumard oak	No pruning required
117	Willow oak	No pruning required
118	Willow oak	No pruning required
119	Willow oak	No pruning required
120	American hornbeam	Structural pruning
121	American hornbeam	Structural pruning
122	Sweetbay magnolia	No pruning required
123	Sweetbay magnolia	No pruning required
124	Serviceberry	Structural pruning
125	Serviceberry	Structural pruning
126	Serviceberry	Structural pruning
127	Serviceberry	Structural pruning
128	Serviceberry	Structural pruning
129	Serviceberry	Structural pruning
130	Serviceberry	Structural pruning
131	Serviceberry	Structural pruning
132	Serviceberry	Structural pruning
133	Serviceberry	Structural pruning
134	Serviceberry	Structural pruning
135	Serviceberry	Structural pruning
136	Serviceberry	Structural pruning
137	Serviceberry	Structural pruning
138	Serviceberry	Structural pruning
139	Serviceberry	Structural pruning
140	Serviceberry	Structural pruning
141	Serviceberry	Structural pruning

APPENDIX I

Cost Estimate

DOWNEY & SCOTT, LLC
Construction Management Services

Main Office: 6799 Kennedy Road Unit F Warrenton, Virginia 20187 Phone: 540.347.5001 Fax: 540.347.5021
1388 NW 2nd Ave., Unit 4B, Boca Raton, FL. 33432 Phone: 561.416.1240 Fax: 561.416.1248 www.downeyscott.com

Tree Planning Strategies
Cost Estimate Report

Revision Date October 2, 2024

Prepared for:

WOLF JOSEY
landscape architects

Charlottesville Downtown Mall
Tree Management Plan
Charlottesville, VA

DOWNEY & SCOTT, LLC
Construction Management Services

COST ESTIMATE CLARIFYING NOTES & EXCLUSIONS

- We have incorporated construction costs for a single Contractor procurement via phased construction.
- Without exception, we have included hard construction costs only and all soft construction costs are excluded.
- The Limits of Construction are those indicated on the documents provided.
- We do not include HAZMAT abatement costs.
- Design Contingency accounts for the costs of yet unidentified scope requirements and has been included.
- Construction Contingency accounts for the costs of change orders. A Construction Contingency has not been included. We recommend that the owner carry an additional 3-5% Construction Contingency for unforeseen conditions.
- Escalation accounts for the inflationary effects of elapsed time and the related costs have been included.
- All cost data is based on open shop wage and burden rates.

MARKET CONDITIONS & OPINIONS OF PROBABLE COST

Downey and Scott, LLC has no control over market conditions or acts of God that can create rapid fluctuations in material prices. We have extensive experience in similar projects and have employed our best judgment in analyzing the subject project. We cannot, however, guarantee that actual construction costs will not vary from the opinions of probable construction costs herein provided.

Please contact David Repass or Joe Adams regarding this project should you have any questions or concerns.

Revision 4

Report: Cost Estimate
Project: Downtown Mall Tree Replacement
Location: Charlottesville, VA
Documents Received: July 31, 2024

Prepared by: Downey & Scott, LLC
6799 Kennedy Road, Suite F
Warrenton, Virginia 20187
Ph 540.347.5001 Fax 540.347.5021
www.downeyscott.com

Status: Concept
Client: Wolf Josey Landscape Architects
Submission: August 13, 2024
Run Date: see footer
Revised: October 2, 2024

PM: mv
Check by: ja/dr
Job no: 2024108

Project Hard Construction Costs

LOC REF	SYS #	UNIFORMAT SYSTEM	SPECIFICATION	Unit of Measure	Quantity	UNIT COST	EXTENSION

Short Term Hard Construction Costs **$ 990,597**

Short Term **Short Term**

	Grade Modification	U/M	Quantity	Unit Cost	Extension
Short Term	1. Labor and equipment - cut, relocate and weld support beams	HR	12	$ 150.00	$ 1,800
Short Term	2. Labor and equipment - install rodent barrier around trunk and attach to slab	HR	4	$ 120.00	$ 480
Short Term	3. Labor and equipment - modify and re-install existing tree grate	HR	6	$ 120.00	$ 720
Short Term	4. Labor - relocate light pole/footing and extend conduit/wire	HR	6	$ 50.00	$ 300
Short Term	5. Steel beams	LS	1	$ 350.00	$ 350
Short Term	6. Rodent barrier, anchor bolts and misc steel to attach barrier to slab	LS	1	$ 310.00	$ 310
Short Term	7. Light pole base, conduit, junction box and wiring	LS	1	$ 510.00	$ 510
Short Term	Subtotal				$ 4,470
Short Term	General Requirements		8.00%		$ 358
Short Term	Subtotal				$ 4,828
Short Term	Overhead & Profit		6.25%		$ 302
Short Term	Subtotal				$ 5,129
Short Term	Design Contingency		12.00%		$ 616
Short Term	Subtotal				$ 5,745
Short Term	Escalation (1 year)		4.00%		$ 230
Short Term	**Cost per location**				**$ 5,975**
Short Term					
Short Term	**Total cost of grate modifications**	**EA**	**40**	**$ 5,975**	**$ 238,986**

Revision 4

Report: Cost Estimate
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Ph 540.347.5001 Fax 540.347.5021
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Check by: ja/dr
Job no: 2024108

LOC REF	SYS #	UNIFORMAT SYSTEM	SPECIFICATION	Unit of Measure	Quantity	UNIT COST	EXTENSION
Short Term		**Short Term**					
Short Term		**Grate Replacement**		**U/M**	**Quantity**	**Unit Cost**	**Extension**
Short Term		1. Labor and equipment - cut and dispose of grate and support beams		HR	6	$ 120.00	$ 720
Short Term		2. Labor - remove and dispose of soil/debris to prep for drainage board		HR	2	$ 35.00	$ 53
Short Term		3. Labor and equipment - install stone leveling course, drainage board, filler foam, and ballast stone		HR	12	$ 120.00	$ 1,440
Short Term		4. Labor - relocate light pole/footing and extend conduit/wire		HR	6	$ 50.00	$ 300
Short Term		5. Labor and equipment - install leveling bed and pavers		HR	11	$ 120.00	$ 1,320
Short Term		6. Aggregate leveling course and ballast stone		LS	1	$ 270.00	$ 270
Short Term		7. Drainage board and rigid insulation		SF	56	$ 13.00	$ 728
Short Term		8. Brick pavers and leveling bed		SF	56	$ 10.50	$ 588
Short Term		9. Light pole base, conduit, junction box and wiring		LS	1	$ 510.00	$ 510
Short Term		Subtotal					$ 5,929
Short Term		General Requirements			8.00%		$ 474
Short Term		Subtotal					$ 6,403
Short Term		Overhead & Profit			6.25%		$ 400
Short Term		Subtotal					$ 6,803
Short Term		Design Contingency			12.00%		$ 816
Short Term		Subtotal					$ 7,619
Short Term		Escalation (1 year)			4.00%		$ 305
Short Term		**Cost per location**					**$ 7,924**
Short Term							
Short Term		**Total cost of grate replacement**		**EA**	**12**	**$ 7,924**	**$ 95,089**

Revision 4

Report: Cost Estimate	*Prepared by: Downey & Scott, LLC*	Status: Concept
Project: Downtown Mall Tree Replacement	*6799 Kennedy Road, Suite F*	Client: Wolf Josey Landscape Architects
Location: Charlottesville, VA	*Warrenton, Virginia 20187*	Submission: August 13, 2024
Documents Received: July 31, 2024	*Ph 540.347.5001 Fax 540.347.5021*	Run Date: see footer
	www.downeyscott.com	**Revised: October 2, 2024**

PM: mv
Check by: ja/dr
Job no: 2024108

LOC REF	SYS #	UNIFORMAT SYSTEM	SPECIFICATION	Unit of Measure	Quantity	UNIT COST	EXTENSION
Short Term		**Short Term**					
Short Term		**Hidden Grate Removal**					
Short Term		A. Freedom of Speech Wall		**U/M**	**Quantity**	**Unit Cost**	**Extension**
Short Term		1. Labor and equipment - remove hidden grate and steel structure		HR	6	$ 120.00	$ 720
Short Term		2. Labor and equipment - cut fine roots, air spade and dispose of soil		HR	3	$ 400.00	$ 1,200
Short Term		3. Labor and equipment - install stone, geotextile, and mulch		HR	10	$ 120.00	$ 1,200
Short Term		4. Stone, geotextile and mulch		LS	1	$ 280.00	$ 280
Short Term			Subtotal				$ 3,400
Short Term			General Requirements		8.00%		$ 272
Short Term			Subtotal				$ 3,672
Short Term			Overhead & Profit		6.25%		$ 230
Short Term			Subtotal				$ 3,902
Short Term			Design Contingency		12.00%		$ 468
Short Term			Subtotal				$ 4,370
Short Term			Escalation (1 year)		4.00%		$ 175
Short Term			**Cost per location**				**$ 4,544**
Short Term							
Short Term		**Total cost grate replacements at Freedom of Speech Wall**		**EA**	**3**	**$ 4,544**	**$ 13,633**

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LOC REF	SYS #	UNIFORMAT SYSTEM	SPECIFICATION	Unit of Measure	Quantity	UNIT COST	EXTENSION
Short Term		**Short Term**					
Short Term		**Hidden Grate Removal**		**U/M**	**Quantity**	**Unit Cost**	**Extension**
Short Term		B. Side Streets (6 @ 3rd St, 3 @ 5th St)					
Short Term		1. Labor and equipment - remove hidden grate and steel structure		HR	6	$ 120.00	$ 720
Short Term		2. Labor and equipment - cut fine roots, air spade and dispose of soil		HR	3	$ 400.00	$ 1,200
Short Term		3. Labor and equipment - install stone, geotextile, and mulch		HR	10	$ 120.00	$ 1,200
Short Term		4. Stone, geotextile and mulch		LS	1	$ 280.00	$ 280
Short Term			Subtotal				$ 3,400
Short Term			General Requirements		8.00%		$ 272
Short Term			Subtotal				$ 3,672
Short Term			Overhead & Profit		6.25%		$ 230
Short Term			Subtotal				$ 3,902
Short Term			Design Contingency		12.00%		$ 468
Short Term			Subtotal				$ 4,370
Short Term			Escalation (1 year)		4.00%		$ 175
Short Term			**Cost per location**				**$ 4,544**
Short Term							
Short Term		**Total cost of grate replacements at side streets**		**EA**	**9**	**$ 4,544**	**$ 40,900**

Revision 4

Report: Cost Estimate	*Prepared by: Downey & Scott, LLC*	Status: Concept
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PM: mv
Check by: ja/dr
Job no: 2024108

LOC REF	SYS #	UNIFORMAT SYSTEM	SPECIFICATION	Unit of Measure	Quantity	UNIT COST	EXTENSION
Short Term	**Short Term**			**U/M**	**Quantity**	**Unit Cost**	**Extension**
Short Term		**Grate Replaced with Pavers**					
Short Term		1. Labor and equipment - remove steel support structure		HR	6	$ 120.00	$ 720
Short Term		2. Labor and equipment - install steel paver support structure		HR	12	$ 150.00	$ 1,800
Short Term		3. Labor and equipment - install leveling bed, pavers and flexipave		HR	15	$ 120.00	$ 1,800
Short Term		4. Steel paver support substructure		EA	1	$ 7,600.00	$ 7,600
Short Term		5. Brick pavers and leveling bed		SF	56	$ 10.50	$ 588
Short Term		6. Flexipave materials and installation		LS	1	$ 220.00	$ 220
Short Term							
Short Term			Subtotal				$ 12,728
Short Term			General Requirements		8.00%		$ 1,018
Short Term			Subtotal				$ 13,746
Short Term			Overhead & Profit		6.25%		$ 859
Short Term			Subtotal				$ 14,605
Short Term			Design Contingency		12.00%		$ 1,753
Short Term			Subtotal				$ 16,358
Short Term			Escalation (1 year)		4.00%		$ 654
Short Term			**Cost per location**				**$ 17,012**
Short Term							
Short Term	**Total cost of grate replacements**			**EA**	**2**	**$ 17,012**	**$ 34,025**

Revision 4

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LOC REF	SYS #	UNIFORMAT SYSTEM	SPECIFICATION	Unit of Measure	Quantity	UNIT COST	EXTENSION

Short Term	**Short Term**			**U/M**	**Quantity**		**Unit Cost**		**Extension**
Short Term		**Grate Cover Modification**							
Short Term		1. Labor and equipment - weld steel plate over existing tree opening		HR	6	$	120.00	$	720
Short Term		2. Steel plate to cover existing tree opening		EA	12	$	150.00	$	1,800
Short Term									
Short Term			Subtotal					$	2,520
Short Term			General Requirements		8.00%			$	202
Short Term			Subtotal					$	2,722
Short Term			Overhead & Profit		6.25%			$	170
Short Term			Subtotal					$	2,892
Short Term			Design Contingency		12.00%			$	347
Short Term			Subtotal					$	3,239
Short Term			Escalation (1 year)		4.00%			$	130
Short Term			**Cost per location**					**$**	**3,368**
Short Term									
Short Term	**Total cost of grate cover modifications**			**EA**	**2**	**$**	**3,368**	**$**	**6,737**

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LOC REF	SYS #	UNIFORMAT SYSTEM	SPECIFICATION	Unit of Measure	Quantity	UNIT COST	EXTENSION
Short Term	**Short Term**			**U/M**	**Quantity**	**Unit Cost**	**Extension**
Short Term		**Fountain Grate**					
Short Term		1. Labor and equipment to remove fencing, clean and prep fountain		HR	80	$ 120.00	$ 9,600
Short Term		2. Labor and equipment to install grating and support system		SF	30	$ 150.00	$ 4,500
Short Term		3. Labor and equipment to install metal edging		HR	8	$ 120.00	$ 960
Short Term		4. Stainless steel grate (ADA accessible) and support system		SF	30	$ 290.00	$ 8,700
Short Term		5. Raised steel edging wheel stop		LF	20	$ 42.00	$ 840
Short Term							
Short Term			Subtotal				$ 24,600
Short Term			General Requirements		8.00%		$ 1,968
Short Term			Subtotal				$ 26,568
Short Term			Overhead & Profit		6.25%		$ 1,661
Short Term			Subtotal				$ 28,229
Short Term			Design Contingency		12.00%		$ 3,387
Short Term			Subtotal				$ 31,616
Short Term			Escalation (1 year)		4.00%		$ 1,265
Short Term			**Cost per location**				**$ 32,881**
Short Term							
Short Term	**Total cost of Fountain Grates**			**EA**	**3**	**$ 32,881**	**$ 98,642**

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LOC REF	SYS #	UNIFORMAT SYSTEM	SPECIFICATION	Unit of Measure	Quantity	UNIT COST	EXTENSION
Short Term	**Short Term**			**U/M**	**Quantity**	**Unit Cost**	**Extension**
Short Term		**Fountain at Central Place**					
Short Term		1. Labor and equipment to remove bollards, clean and prep fountain		HR	18	$ 120.00	$ 2,160
Short Term		2. Labor and equipment to install grating and support system		HR	65	$ 150.00	$ 9,720
Short Term		3. Labor and equipment to install metal edging		HR	24	$ 120.00	$ 2,880
Short Term		4. Labor to replace pavers at removed bollards		HR	30	$ 35.00	$ 1,050
Short Term		5. Stainless steel grate (ADA accessible) and support system		SF	324	$ 240.00	$ 77,760
Short Term		6. Safety nosing		LF	80	$ 56.00	$ 4,480
Short Term		7. Allowance to add nearby seating		LS	1	$ 15,000.00	$ 15,000
Short Term							
Short Term			Subtotal				$ 113,050
Short Term			General Requirements		8.00%		$ 9,044
Short Term			Subtotal				$ 122,094
Short Term			Overhead & Profit		6.25%		$ 7,631
Short Term			Subtotal				$ 129,725
Short Term			Design Contingency		12.00%		$ 15,567
Short Term			Subtotal				$ 145,292
Short Term			Escalation (1 year)		4.00%		$ 5,812
Short Term			**Cost per location**				**$ 151,104**
Short Term							
Short Term	**Fountain at Central Place Total Cost**			**LS**	**1**	**$ 151,104**	**$ 151,104**

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LOC REF	SYS #	UNIFORMAT SYSTEM	SPECIFICATION	Unit of Measure	Quantity	UNIT COST	EXTENSION
Short Term		**Short Term**					
Short Term		**Tree Planting**		**U/M**	**Quantity**	**Unit Cost**	**Extension**
Short Term		3rd St. NE Ginkgo Replacement and Grate Modification					
Short Term		1. Labor and equipment - cut, relocate and weld support beams		HR	12	$ 150.00	$ 1,800
Short Term		2. Labor and equipment - install rodent barrier around trunk and attach to slab		HR	4	$ 120.00	$ 480
Short Term		3. Labor and equipment - modify and re-install existing tree grate		HR	6	$ 120.00	$ 720
Short Term		4. Labor - relocate light pole/footing and extend conduit/wire		HR	6	$ 50.00	$ 300
Short Term		5. Steel beams		LS	1	$ 350.00	$ 350
Short Term		6. Rodent barrier, anchor bolts and misc steel to attach barrier to slab		LS	1	$ 310.00	$ 310
Short Term		7. Light pole base, conduit, junction box and wiring		LS	1	$ 510.00	$ 510
Short Term							
Short Term		Subtotal					$ 4,470
Short Term		General Requirements			8.00%		$ 358
Short Term		Subtotal					$ 4,828
Short Term		Overhead & Profit			6.25%		$ 302
Short Term		Subtotal					$ 5,129
Short Term		Design Contingency			12.00%		$ 616
Short Term		Subtotal					$ 5,745
Short Term		Escalation (1 year)			4.00%		$ 230
Short Term		**Cost per location**					**$ 5,975**
Short Term							
Short Term		**Total cost of Ginco replacement and grate modifications**		**EA**	**5**	**$ 5,975**	**$ 29,873**

Revision 4

Report: Cost Estimate	*Prepared by: Downey & Scott, LLC*	Status: Concept
Project: Downtown Mall Tree Replacement	*6799 Kennedy Road, Suite F*	Client: Wolf Josey Landscape Architects
Location: Charlottesville, VA	*Warrenton, Virginia 20187*	Submission: August 13, 2024
Documents Received: July 31, 2024	*Ph 540.347.5001 Fax 540.347.5021*	Run Date: see footer
	www.downeyscott.com	**Revised: October 2, 2024**

PM: mv
Check by: ja/dr
Job no: 2024108

LOC REF	SYS #	UNIFORMAT SYSTEM	SPECIFICATION	Unit of Measure	Quantity	UNIT COST	EXTENSION
Short Term	**Short Term**			**U/M**	**Quantity**	**Unit Cost**	**Extension**
Short Term		**Pavilion Overcup Oaks**					
Short Term		1. Labor and equipment to selectively prune trees		LS	1	$ 20,000.00	$ 20,000
Short Term		2. Labor and equipment to install mulch		HR	16	$ 120.00	$ 1,920
Short Term		3. Mulch		LS	1	$ 600.00	$ 600
Short Term							
Short Term			Subtotal				$ 22,520
Short Term			General Requirements		8.00%		$ 1,802
Short Term			Subtotal				$ 24,322
Short Term			Overhead & Profit		6.25%		$ 1,520
Short Term			Subtotal				$ 25,842
Short Term			Design Contingency		12.00%		$ 3,101
Short Term			Subtotal				$ 28,943
Short Term			Escalation (1 year)		4.00%		$ 1,158
Short Term			**Cost per location**				**$ 30,100**
Short Term							
Short Term	**Total cost of Pavilion scope**			**LS**	**1**	**$ 30,100**	**$ 30,100**

Revision 4

Report: Cost Estimate
Project: Downtown Mall Tree Replacement
Location: Charlottesville, VA
Documents Received: July 31, 2024

Prepared by: Downey & Scott, LLC
6799 Kennedy Road, Suite F
Warrenton, Virginia 20187
Ph 540.347.5001 Fax 540.347.5021
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Status: Concept
Client: Wolf Josey Landscape Architects
Submission: August 13, 2024
Run Date: see footer
Revised: October 2, 2024

PM: mv
Check by: ja/dr
Job no: 2024108

LOC REF	SYS #	UNIFORMAT SYSTEM	SPECIFICATION	Unit of Measure	Quantity	UNIT COST	EXTENSION
Short Term	**Short Term**			**U/M**	**Quantity**	**Unit Cost**	**Extension**
Short Term		**Soil Replacement at Code**					
Short Term		Labor and equipment to remove and dispose of existing soil and trees		CY	457	$ 76.00	$ 34,707
Short Term		Labor and equipment to install drainage system		SF	4,110	$ 2.20	$ 9,042
Short Term		Labor and equipment to install soil		CY	457	$ 92.00	$ 42,013
Short Term		Irrigation system (labor/equipment/materials)		SF	4,110	$ 7.60	$ 31,236
Short Term		Drainage system		SF	4,110	$ 4.80	$ 19,728
Short Term		Tie in to existing water and drainage (includes replacement of existing surfaces)		LS	1	$ 20,000.00	$ 20,000
Short Term		Planting soil		CY	457	$ 29.00	$ 13,243
Short Term		Trees, including installation		EA	14	$ 1,300.00	$ 18,200
Short Term							
Short Term			Subtotal				$ 188,169
Short Term			General Requirements		8.00%		$ 15,054
Short Term			Subtotal				$ 203,223
Short Term			Overhead & Profit		6.25%		$ 12,701
Short Term			Subtotal				$ 215,924
Short Term			Design Contingency		12.00%		$ 25,911
Short Term			Subtotal				$ 241,835
Short Term			Escalation (1 year)		4.00%		$ 9,673
Short Term			**Cost per location**				**$ 251,509**
Short Term							
Short Term	**Total cost of Code Building Planter**			**LS**	**1**	**$ 251,509**	**$ 251,509**

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Project Hard Construction Costs Option 1

		Long Term Option 1					**$ 5,421,279**
Long Term Phase 1		**Long Term Phase 1 Option 1**		**U/M**	**Quantity**	**Unit Cost**	**Extension**
Long Term Phase 1		**Tree Demolition (65' avg. ht.)**					
Long Term Phase 1		1. Labor and equipment to remove tree, leave 6' stump		EA	8	$ 15,000.00	$ 120,000
Long Term Phase 1							
Long Term Phase 1			Subtotal				$ 120,000
Long Term Phase 1			General Requirements		8.00%		$ 9,600
Long Term Phase 1			Subtotal				$ 129,600
Long Term Phase 1			Overhead & Profit		6.25%		$ 8,100
Long Term Phase 1			Subtotal				$ 137,700
Long Term Phase 1			Design Contingency		12.00%		$ 16,524
Long Term Phase 1			Subtotal				$ 154,224
Long Term Phase 1			Escalation (5 years)		20.00%		$ 30,845
Long Term Phase 1			**Cost per location**				**$ 185,069**
Long Term Phase 1							
Long Term Phase 1		**Total cost of tree removals**		**LS**	**1**	**$ 185,069**	**$ 185,069**

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LOC REF	SYS #	UNIFORMAT SYSTEM	SPECIFICATION	Unit of Measure	Quantity	UNIT COST	EXTENSION
Long Term Phase 1	**Long Term Phase 1 Option 1**			**U/M**	**Quantity**	**Unit Cost**	**Extension**
Long Term Phase 1		**Individual Tree Replacement**					
Long Term Phase 1		1. Labor and equipment - cut and dispose of grate and support beams		HR	6	$ 120.00	$ 720
Long Term Phase 1		2. Labor and equipment - air spade excavation of existing soils and dispose		HR	8	$ 400.00	$ 3,200
Long Term Phase 1		3. Labor and equipment - remove and dispose of stump		HR	4	$ 520.00	$ 2,080
Long Term Phase 1		4. Rodent barrier materials and installation		EA	1	$ 550.00	$ 550
Long Term Phase 1		5. Trees, including installation (6" caliper)		EA	1	$ 1,800.00	$ 1,800
Long Term Phase 1		6. Deadman anchoring materials and installation		EA	2	$ 350.00	$ 700
Long Term Phase 1		7. Relocate light fixture materials and installation		EA	1	$ 810.00	$ 810
Long Term Phase 1		8. Planting soil materials and installation		CY	6	$ 122.00	$ 781
Long Term Phase 1		9. Grate replacement materials and installation		EA	1	$ 9,600.00	$ 9,600
Long Term Phase 1		10. Interior grate replacement materials and installation		EA	1	$ 3,600.00	$ 3,600
Long Term Phase 1		11. Brick paver materials and installation		SF	56	$ 72.00	$ 4,032
Long Term Phase 1		12. Flexipave materials and installation		LS	1	$ 220.00	$ 220
Long Term Phase 1		13. Art installations		LS	1	$ 5,000.00	$ 5,000
Long Term Phase 1							

Revision 4

Report: Cost Estimate
Project: Downtown Mall Tree Replacement
Location: Charlottesville, VA
Documents Received: July 31, 2024

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Status: Concept
Client: Wolf Josey Landscape Architects
Submission: August 13, 2024
Run Date: see footer
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PM: mv
Check by: ja/dr
Job no: 2024108

LOC REF	SYS #	UNIFORMAT SYSTEM	SPECIFICATION	Unit of Measure	Quantity	UNIT COST	EXTENSION
Long Term Phase 1		**Slab Replacement**		**U/M**	**Quantity**	**Unit Cost**	**Extension**
Long Term Phase 1		1. Labor and equipment - remove, salvage and store pavers for re-use		SF	100	$ 8.70	$ 870
Long Term Phase 1		2. Labor and equipment - sawcut slab		LF	30	$ 5.20	$ 156
Long Term Phase 1		5. Labor and equipment - excavate soil, haul and dispose		CY	15	$ 82.00	$ 1,230
Long Term Phase 1		6. Underdrain system - materials and installation		LF	30	$ 18.65	$ 560
Long Term Phase 1		7. Labor and equipment - import soil, place, compact, amend with compost		CY	15	$ 126.00	$ 1,890
Long Term Phase 1		8. Install dowels		EA	15	$ 36.00	$ 540
Long Term Phase 1		9. Expansion joint		LF	30	$ 4.65	$ 140
Long Term Phase 1		10. Thickened concrete edge with gravel base		LF	30	$ 32.55	$ 977
Long Term Phase 1		11. Structural concrete slab - labor/equipment/materials, 8" thick, reinforced, weepholes		SF	100	$ 18.35	$ 1,835
Long Term Phase 1		12. Brick paver materials and installation - assumes 75% re-use salvaged pavers/25% new pavers		SF	100	$ 25.00	$ 2,500
Long Term Phase 1							
Long Term Phase 1			Subtotal				$ 43,789
Long Term Phase 1			General Requirements		8.00%		$ 3,503
Long Term Phase 1			Subtotal				$ 47,292
Long Term Phase 1			Overhead & Profit		6.25%		$ 2,956
Long Term Phase 1			Subtotal				$ 50,248
Long Term Phase 1			Design Contingency		12.00%		$ 6,030
Long Term Phase 1			Subtotal				$ 56,278
Long Term Phase 1			Escalation (5 years)		20.00%		$ 11,256
Long Term Phase 1			**Cost per location**				**$ 67,534**
Long Term Phase 1							
Long Term Phase 1		**Total cost of individual tree replacements**		**EA**	**16**	**$ 67,534**	**$ 1,080,538**

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LOC REF	SYS #	UNIFORMAT SYSTEM	SPECIFICATION	Unit of Measure	Quantity	UNIT COST	EXTENSION
Long Term Phase 2		**Long Term Phase 2 Option 1**		**U/M**	**Quantity**	**Unit Cost**	**Extension**
Long Term Phase 2		**Tree Demolition (65' avg. ht.)**					
Long Term Phase 2		1. Labor and equipment to remove tree, leave 6' stump		EA	13	$ 15,000.00	$ 195,000
Long Term Phase 2							
Long Term Phase 2			Subtotal				$ 195,000
Long Term Phase 2			General Requirements		8.00%		$ 15,600
Long Term Phase 2			Subtotal				$ 210,600
Long Term Phase 2			Overhead & Profit		6.25%		$ 13,163
Long Term Phase 2			Subtotal				$ 223,763
Long Term Phase 2			Design Contingency		12.00%		$ 26,852
Long Term Phase 2			Subtotal				$ 250,614
Long Term Phase 2			Escalation (10 years)		35.00%		$ 87,715
Long Term Phase 2			**Cost per location**				**$ 338,329**
Long Term Phase 2							
Long Term Phase 2		**Total cost of tree removals**		**LS**	**1**	**$ 338,329**	**$ 338,329**

Revision 4

Report: Cost Estimate
Project: Downtown Mall Tree Replacement
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LOC REF	SYS #	UNIFORMAT SYSTEM	SPECIFICATION	Unit of Measure	Quantity	UNIT COST	EXTENSION
Long Term Phase 2		**Long Term Phase 2 Option 1**		**U/M**	**Quantity**	**Unit Cost**	**Extension**
Long Term Phase 2		**Individual Tree Replacement**					
Long Term Phase 2		1. Labor and equipment - cut and dispose of grate and support beams		HR	6	$ 120.00	$ 720
Long Term Phase 2		2. Labor and equipment - air spade excavation of existing soils and dispose		HR	8	$ 400.00	$ 3,200
Long Term Phase 2		3. Labor and equipment - remove and dispose of stump		HR	4	$ 520.00	$ 2,080
Long Term Phase 2		4. Rodent barrier materials and installation		EA	1	$ 550.00	$ 550
Long Term Phase 2		5. Trees, including installation (6" caliper)		EA	1	$ 1,800.00	$ 1,800
Long Term Phase 2		6. Deadman anchoring materials and installation		EA	2	$ 350.00	$ 700
Long Term Phase 2		7. Relocate light fixture materials and installation		EA	1	$ 810.00	$ 810
Long Term Phase 2		8. Planting soil materials and installation		CY	6	$ 122.00	$ 781
Long Term Phase 2		9. Grate replacement materials and installation		EA	1	$ 9,600.00	$ 9,600
Long Term Phase 2		10. Interior grate replacement materials and installation		EA	1	$ 3,600.00	$ 3,600
Long Term Phase 2		11. Brick paver materials and installation		SF	56	$ 72.00	$ 4,032
Long Term Phase 2		12. Flexipave materials and installation		LS	1	$ 220.00	$ 220
Long Term Phase 2		13. Art installations		LS	1	$ 5,000.00	$ 5,000
Long Term Phase 2							
Long Term Phase 2							
Long Term Phase 2			Subtotal				$ 33,093
Long Term Phase 2			General Requirements		8.00%		$ 2,647
Long Term Phase 2			Subtotal				$ 35,740
Long Term Phase 2			Overhead & Profit		6.25%		$ 2,234
Long Term Phase 2			Subtotal				$ 37,974
Long Term Phase 2			Design Contingency		12.00%		$ 4,557
Long Term Phase 2			Subtotal				$ 42,531
Long Term Phase 2			Escalation (10 years)		35.00%		$ 14,886
Long Term Phase 2			**Cost per location**				**$ 57,417**
Long Term Phase 2							
Long Term Phase 2		**Total cost of individual tree replacements**		**EA**	**16**	**$ 57,417**	**$ 918,667**

Revision 4

Report: Cost Estimate
Project: Downtown Mall Tree Replacement
Location: Charlottesville, VA
Documents Received: July 31, 2024

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LOC REF	SYS #	UNIFORMAT SYSTEM	SPECIFICATION	Unit of Measure	Quantity	UNIT COST	EXTENSION
Long Term Phase 3		**Long Term Phase 3 Option 1**		**U/M**	**Quantity**	**Unit Cost**	**Extension**
Long Term Phase 3		**Tree Demolition (65' avg. ht.)**					
Long Term Phase 3		1. Labor and equipment to remove tree, leave 6' stump		EA	14	$ 15,000.00	$ 210,000
Long Term Phase 3							
Long Term Phase 3			Subtotal				$ 210,000
Long Term Phase 3			General Requirements		8.00%		$ 16,800
Long Term Phase 3			Subtotal				$ 226,800
Long Term Phase 3			Overhead & Profit		6.25%		$ 14,175
Long Term Phase 3			Subtotal				$ 240,975
Long Term Phase 3			Design Contingency		12.00%		$ 28,917
Long Term Phase 3			Subtotal				$ 269,892
Long Term Phase 3			Escalation (15years)		47.50%		$ 128,199
Long Term Phase 3			**Cost per location**				**$ 398,091**
Long Term Phase 3							
Long Term Phase 3		**Total cost of tree removals**		**LS**	**1**	**$ 398,091**	**$ 398,091**

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LOC REF	SYS #	UNIFORMAT SYSTEM	SPECIFICATION	Unit of Measure	Quantity	UNIT COST	EXTENSION
Long Term Phase 3	**Long Term Phase 3 Option 1**			**U/M**	**Quantity**	**Unit Cost**	**Extension**
Long Term Phase 3		**Individual Tree Replacement**					
Long Term Phase 3		1. Labor and equipment - cut and dispose of grate and support beams		HR	6	$ 120.00	$ 720
Long Term Phase 3		2. Labor and equipment - air spade excavation of existing soils and dispose		HR	8	$ 400.00	$ 3,200
Long Term Phase 3		3. Labor and equipment - remove and dispose of stump		HR	4	$ 520.00	$ 2,080
Long Term Phase 3		4. Rodent barrier materials and installation		EA	1	$ 550.00	$ 550
Long Term Phase 3		5. Trees, including installation (6" caliper)		EA	1	$ 1,800.00	$ 1,800
Long Term Phase 3		6. Deadman anchoring materials and installation		EA	2	$ 350.00	$ 700
Long Term Phase 3		7. Relocate light fixture materials and installation		EA	1	$ 810.00	$ 810
Long Term Phase 3		8. Planting soil materials and installation		CY	6	$ 122.00	$ 781
Long Term Phase 3		9. Grate replacement materials and installation		EA	1	$ 9,600.00	$ 9,600
Long Term Phase 3		10. Interior grate replacement materials and installation		EA	1	$ 3,600.00	$ 3,600
Long Term Phase 3		11. Brick paver materials and installation		SF	56	$ 72.00	$ 4,032
Long Term Phase 3		12. Flexipave materials and installation		LS	1	$ 220.00	$ 220
Long Term Phase 3		13. Art installations		LS	1	$ 5,000.00	$ 5,000
Long Term Phase 3							
Long Term Phase 3							
Long Term Phase 3			Subtotal				$ 33,093
Long Term Phase 3			General Requirements		8.00%		$ 2,647
Long Term Phase 3			Subtotal				$ 35,740
Long Term Phase 3			Overhead & Profit		6.25%		$ 2,234
Long Term Phase 3			Subtotal				$ 37,974
Long Term Phase 3			Design Contingency		12.00%		$ 4,557
Long Term Phase 3			Subtotal				$ 42,531
Long Term Phase 3			Escalation (15 years)		47.50%		$ 20,202
Long Term Phase 3			**Cost per location**				**$ 62,733**
Long Term Phase 3							
Long Term Phase 3	**Total cost of individual tree replacements**			**EA**	**16**	**$ 62,733**	**$ 1,003,728**

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LOC REF	SYS #	UNIFORMAT SYSTEM	SPECIFICATION	Unit of Measure	Quantity	UNIT COST	EXTENSION
Long Term Phase 4	**Long Term Phase 4 Option 1**			**U/M**	**Quantity**	**Unit Cost**	**Extension**
Long Term Phase 4		**Tree Demolition (65' avg. ht.)**					
Long Term Phase 4		1. Labor and equipment to remove tree, leave 6' stump		EA	14	$ 15,000.00	$ 210,000
Long Term Phase 4							
Long Term Phase 4			Subtotal				$ 210,000
Long Term Phase 4			General Requirements		8.00%		$ 16,800
Long Term Phase 4			Subtotal				$ 226,800
Long Term Phase 4			Overhead & Profit		6.25%		$ 14,175
Long Term Phase 4			Subtotal				$ 240,975
Long Term Phase 4			Design Contingency		12.00%		$ 28,917
Long Term Phase 4			Subtotal				$ 269,892
Long Term Phase 4			Escalation (20 years)		57.50%		$ 155,188
Long Term Phase 4			**Cost per location**				**$ 425,080**
Long Term Phase 4							
Long Term Phase 4	**Total cost of tree removals**			**LS**	**1**	**$ 425,080**	**$ 425,080**

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LOC REF	SYS #	UNIFORMAT SYSTEM	SPECIFICATION	Unit of Measure	Quantity	UNIT COST	EXTENSION
Long Term Phase 4	**Long Term Phase 4 Option 1**			**U/M**	**Quantity**	**Unit Cost**	**Extension**
Long Term Phase 4		**Individual Tree Replacement**					
Long Term Phase 4		1. Labor and equipment - cut and dispose of grate and support beams		HR	6	$ 120.00	$ 720
Long Term Phase 4		2. Labor and equipment - air spade excavation of existing soils and dispose		HR	8	$ 400.00	$ 3,200
Long Term Phase 4		3. Labor and equipment - remove and dispose of stump		HR	4	$ 520.00	$ 2,080
Long Term Phase 4		4. Rodent barrier materials and installation		EA	1	$ 550.00	$ 550
Long Term Phase 4		5. Trees, including installation (6" caliper)		EA	1	$ 1,800.00	$ 1,800
Long Term Phase 4		6. Deadman anchoring materials and installation		EA	2	$ 350.00	$ 700
Long Term Phase 4		7. Relocate light fixture materials and installation		EA	1	$ 810.00	$ 810
Long Term Phase 4		8. Planting soil materials and installation		CY	6	$ 122.00	$ 781
Long Term Phase 4		9. Grate replacement materials and installation		EA	1	$ 9,600.00	$ 9,600
Long Term Phase 4		10. Interior grate replacement materials and installation		EA	1	$ 3,600.00	$ 3,600
Long Term Phase 4		11. Brick paver materials and installation		SF	56	$ 72.00	$ 4,032
Long Term Phase 4		12. Flexipave materials and installation		LS	1	$ 220.00	$ 220
Long Term Phase 4		13. Art installations		LS	1	$ 5,000.00	$ 5,000
Long Term Phase 4							
Long Term Phase 4							
Long Term Phase 4			Subtotal				$ 33,093
Long Term Phase 4			General Requirements		8.00%		$ 2,647
Long Term Phase 4			Subtotal				$ 35,740
Long Term Phase 4			Overhead & Profit		6.25%		$ 2,234
Long Term Phase 4			Subtotal				$ 37,974
Long Term Phase 4			Design Contingency		12.00%		$ 4,557
Long Term Phase 4			Subtotal				$ 42,531
Long Term Phase 4			Escalation (20 years)		57.50%		$ 24,455
Long Term Phase 4			**Cost per location**				**$ 66,986**
Long Term Phase 4							
Long Term Phase 4	**Total cost of individual tree replacements**			**EA**	**16**	**$ 66,986**	**$ 1,071,778**

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Project Hard Construction Costs Option 2

LOC REF	SYS #	UNIFORMAT SYSTEM	SPECIFICATION	Unit of Measure	Quantity	UNIT COST	EXTENSION
		Long Term Option 2					**$ 9,467,129**
Long Term Phase 1		**Long Term Phase 1 Option 2**		**U/M**	**Quantity**	**Unit Cost**	**Extension**
Long Term Phase 1		1. Labor and equipment to remove tree, leave 6' stump		EA	8	$ 15,000.00	$ 120,000
Long Term Phase 1		**Individual Tree Replacement**					
Long Term Phase 1		1. Labor and equipment - remove, salvage and store pavers for re-use		SF	6,548	$ 8.70	$ 56,968
Long Term Phase 1		2. Labor to remove, salvage and store light poles		EA	8	$ 70.00	$ 560
Long Term Phase 1		3. Labor and equipment - remove and dispose of grate and support beams		HR	16	$ 120.00	$ 1,920
Long Term Phase 1		4. Labor and equipment - remove and dispose of stump		HR	24	$ 520.00	$ 12,480
Long Term Phase 1		5. Labor and equipment - sawcut slab		LF	526	$ 5.20	$ 2,735
Long Term Phase 1		6. Labor and equipment - remove concrete slab (includes areas over utility relocation)		SF	6,036	$ 8.36	$ 50,461
Long Term Phase 1		7. Labor and equipment - excavate soil, haul and stockpile offsite for re-use (48" depth)		CY	514	$ 82.00	$ 42,148
Long Term Phase 1		8. Structural concrete piers 10' OC, 6' deep - labor/equipment/materials		EA	20	$ 420.00	$ 8,400
Long Term Phase 1		9. Underdrain system - materials and installation		SF	6,036	$ 2.60	$ 15,694
Long Term Phase 1		10. Labor and equipment - import soil, place, compact, amend with compost		CY	514	$ 126.00	$ 64,764
Long Term Phase 1		11. Structural concrete slab - labor/equipment/materials, 8" thick, reinforced, weepholes		SF	6,036	$ 18.00	$ 108,648
Long Term Phase 1		12. Labor and equipment - install rodent barrier		HR	64	$ 120.00	$ 7,680
Long Term Phase 1		13. Trees, including installation		EA	16	$ 1,300.00	$ 20,800
Long Term Phase 1		14. Deadman anchoring materials and installation		EA	32	$ 350.00	$ 11,200
Long Term Phase 1		15. Light pole - re-install existing with new footing, junction boxes, conduit and wiring		EA	8	$ 1,300.00	$ 10,400
Long Term Phase 1		16. Light pole - new pole, footing, junction boxes, conduit and wiring		EA	8	$ 2,400.00	$ 19,200
Long Term Phase 1		17. Irrigation system with moisture meters, per tree		EA	16	$ 3,200.00	$ 51,200
Long Term Phase 1		18. Grate replacement materials and installation		EA	16	$ 9,600.00	$ 153,600
Long Term Phase 1		19. Interior grate replacement materials and installation		EA	16	$ 3,600.00	$ 57,600
Long Term Phase 1		20. Brick paver malt's and installation - assumes 75% re-use salvaged pavers/25% new pavers		SF	6,548	$ 25.00	$ 163,700
Long Term Phase 1		21. Flexipave materials and installation		LOC	16	$ 220.00	$ 3,520
Long Term Phase 1		22. Relocate main gas & water lines to perimeter of mall (both sides), per slab opening		EA	4	$ 40,000.00	$ 160,000
Long Term Phase 1		23. Art installations		LS	1	$ 5,000.00	$ 5,000
Long Term Phase 1							
Long Term Phase 1			Subtotal				$ 1,148,677
Long Term Phase 1			General Requirements		8.00%		$ 91,894
Long Term Phase 1			Subtotal				$ 1,240,572

Revision 4

Report: Cost Estimate
Project: Downtown Mall Tree Replacement
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Status: Concept
Client: Wolf Josey Landscape Architects
Submission: August 13, 2024
Run Date: see footer
Revised: October 2, 2024

PM: mv
Check by: ja/dr
Job no: 2024108

LOC REF	SYS #	UNIFORMAT SYSTEM	SPECIFICATION	Unit of Measure	Quantity	UNIT COST	EXTENSION
Long Term Phase 1		Overhead & Profit			6.25%	$	77,536
Long Term Phase 1		Subtotal				$	1,318,107
Long Term Phase 1		Design Contingency			12.00%	$	158,173
Long Term Phase 1		Subtotal				$	1,476,280
Long Term Phase 1		Escalation (5 years)			20.00%	$	295,256
Long Term Phase 1		**Cost per location**				**$**	**1,771,536**
Long Term Phase 1							
Long Term Phase 1	**Total cost of Phase 1 tree and slab replacement**			**LS**	**1**	**$ 1,771,536**	**$ 1,771,536**

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LOC REF	SYS #	UNIFORMAT SYSTEM	SPECIFICATION	Unit of Measure	Quantity	UNIT COST	EXTENSION
Long Term Phase 2		**Long Term Phase 2 Option 2**		**U/M**	**Quantity**	**Unit Cost**	**Extension**
Long Term Phase 2		1. Labor and equipment to remove tree, leave 6' stump		EA	13	$ 15,000.00	$ 195,000
Long Term Phase 2		**Slab Replacement**					
Long Term Phase 2		1. Labor and equipment - remove, salvage and store pavers for re-use		SF	7,423	$ 8.70	$ 64,580
Long Term Phase 2		2. Labor to remove, salvage and store light poles		EA	13	$ 70.00	$ 910
Long Term Phase 2		3. Labor and equipment - remove and dispose of grate and support beams		HR	26	$ 120.00	$ 3,120
Long Term Phase 2		4. Labor and equipment - remove and dispose of stump		HR	39	$ 520.00	$ 20,280
Long Term Phase 2		5. Labor and equipment - sawcut slab		LF	536	$ 5.20	$ 2,787
Long Term Phase 2		6. Labor and equipment - remove concrete slab (includes areas over utility relocation)		SF	6,591	$ 8.36	$ 55,101
Long Term Phase 2		7. Labor and equipment - excavate soil, haul and stockpile offsite for re-use (48" depth)		CY	976	$ 82.00	$ 80,068
Long Term Phase 2		8. Structural concrete piers 10' OC, 6' deep - labor/equipment/materials		EA	72	$ 300.00	$ 21,600
Long Term Phase 2		9. Underdrain system - materials and installation		SF	6,591	$ 2.60	$ 17,137
Long Term Phase 2		10. Labor and equipment - import soil, place, compact, amend with compost		CY	976	$ 126.00	$ 123,032
Long Term Phase 2		11. Structural concrete slab - labor/equipment/materials, 8" thick, reinforced, weepholes		SF	6,591	$ 18.00	$ 118,638
Long Term Phase 2		12. Labor and equipment - install rodent barrier		HR	64	$ 120.00	$ 7,680
Long Term Phase 2		13. Trees, including installation		EA	16	$ 1,300.00	$ 20,800
Long Term Phase 2		14. Deadman anchoring materials and installation		EA	32	$ 350.00	$ 11,200
Long Term Phase 2		15. Light pole - re-install existing with new footing, junction boxes, conduit and wiring		EA	13	$ 800.00	$ 10,400
Long Term Phase 2		16. Light pole - new pole, footing, junction boxes, conduit and wiring		EA	3	$ 1,900.00	$ 5,700
Long Term Phase 2		17. Irrigation system with moisture meters, per tree		EA	16	$ 3,200.00	$ 51,200
Long Term Phase 2		18. Grate replacement materials and installation		EA	16	$ 9,600.00	$ 153,600
Long Term Phase 2		19. Interior grate replacement materials and installation		EA	16	$ 3,600.00	$ 57,600
Long Term Phase 2		20. Brick paver malt's and installation - assumes 75% re-use salvaged pavers/25% new pavers		SF	7,423	$ 25.00	$ 185,575

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LOC REF	SYS #	UNIFORMAT SYSTEM	SPECIFICATION	Unit of Measure	Quantity	UNIT COST	EXTENSION
				U/M	**Quantity**	**Unit Cost**	**Extension**
Long Term Phase 2		21. Flexipave materials and installation		LOC	16	$ 220.00	$ 3,520
Long Term Phase 2		22. Relocate main gas & water lines to perimeter of mall (both sides), per slab opening		EA	4	$ 40,000.00	$ 160,000
Long Term Phase 2		23. Art installations		LS	1	$ 5,000.00	$ 5,000
Long Term Phase 2							
Long Term Phase 2			Subtotal				$ 1,374,528
Long Term Phase 2			General Requirements		8.00%		$ 109,962
Long Term Phase 2			Subtotal				$ 1,484,490
Long Term Phase 2			Overhead & Profit		6.25%		$ 92,781
Long Term Phase 2			Subtotal				$ 1,577,271
Long Term Phase 2			Design Contingency		12.00%		$ 189,273
Long Term Phase 2			Subtotal				$ 1,766,544
Long Term Phase 2			Escalation (10 years)		35.00%		$ 618,290
Long Term Phase 2			**Cost per location**				**$ 2,384,834**
Long Term Phase 2							
Long Term Phase 2		**Total cost of Phase 2 tree and slab replacement**		**LS**	**1**	**$ 2,384,834**	**$ 2,384,834**

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LOC REF	SYS #	UNIFORMAT SYSTEM	SPECIFICATION	Unit of Measure	Quantity	UNIT COST	EXTENSION
Long Term Phase 3		**Long Term Phase 3 Option 2**		**U/M**	**Quantity**	**Unit Cost**	**Extension**
Long Term Phase 3		1. Labor and equipment to remove tree, leave 6' stump		EA	14	$ 15,000.00	$ 210,000
Long Term Phase 3		**Slab Replacement**					
Long Term Phase 3		1. Labor and equipment - remove, salvage and store pavers for re-use		SF	7,636	$ 8.70	$ 66,433
Long Term Phase 3		2. Labor to remove, salvage and store light poles		EA	14	$ 70.00	$ 980
Long Term Phase 3		3. Labor and equipment - remove and dispose of grate and support beams		HR	28	$ 120.00	$ 3,360
Long Term Phase 3		4. Labor and equipment - remove and dispose of stump		HR	42	$ 520.00	$ 21,840
Long Term Phase 3		5. Labor and equipment - sawcut slab		LF	564	$ 5.20	$ 2,933
Long Term Phase 3		6. Labor and equipment - remove concrete slab (includes areas over utility relocation)		SF	6,740	$ 8.36	$ 56,346
Long Term Phase 3		7. Labor and equipment - excavate soil, haul and stockpile offsite for re-use (48" depth)		CY	658	$ 82.00	$ 53,956
Long Term Phase 3		8. Structural concrete piers 10' OC, 6' deep - labor/equipment/materials		EA	72	$ 300.00	$ 21,600
Long Term Phase 3		9. Underdrain system - materials and installation		SF	6,740	$ 2.60	$ 17,524
Long Term Phase 3		10. Labor and equipment - import soil, place, compact, amend with compost		CY	658	$ 126.00	$ 82,908
Long Term Phase 3		11. Structural concrete slab - labor/equipment/materials, 8" thick, reinforced, weepholes		SF	6,740	$ 18.00	$ 121,320
Long Term Phase 3		12. Labor and equipment - install rodent barrier		HR	64	$ 120.00	$ 7,680
Long Term Phase 3		13. Trees, including installation		EA	16	$ 1,300.00	$ 20,800
Long Term Phase 3		14. Deadman anchoring materials and installation		EA	32	$ 350.00	$ 11,200
Long Term Phase 3		15. Light pole - re-install existing with new footing, junction boxes, conduit and wiring		EA	14	$ 800.00	$ 11,200
Long Term Phase 3		16. Light pole - new pole, footing, junction boxes, conduit and wiring		EA	2	$ 1,900.00	$ 3,800
Long Term Phase 3		17. Irrigation system with moisture meters, per tree		EA	16	$ 3,200.00	$ 51,200
Long Term Phase 3		18. Grate replacement materials and installation		EA	16	$ 9,600.00	$ 153,600
Long Term Phase 3		19. Interior grate replacement materials and installation		EA	16	$ 3,600.00	$ 57,600
Long Term Phase 3		20. Brick paver malt's and installation - assumes 75% re-use salvaged pavers/25% new pavers		SF	7,636	$ 25.00	$ 190,900
Long Term Phase 3		21. Flexipave materials and installation		LOC	16	$ 220.00	$ 3,520

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				U/M	**Quantity**	**Unit Cost**	**Extension**
Long Term Phase 3		22. Relocate main gas & water lines to perimeter of mall (both sides), per slab opening		EA	4	$ 40,000.00	$ 160,000
Long Term Phase 3		23. Art installations		LS	1	$ 5,000.00	$ 5,000
Long Term Phase 3							
Long Term Phase 3		Subtotal					$ 1,335,700
Long Term Phase 3		General Requirements			8.00%		$ 106,856
Long Term Phase 3		Subtotal					$ 1,442,556
Long Term Phase 3		Overhead & Profit			6.25%		$ 90,160
Long Term Phase 3		Subtotal					$ 1,532,716
Long Term Phase 3		Design Contingency			12.00%		$ 183,926
Long Term Phase 3		Subtotal					$ 1,716,642
Long Term Phase 3		Escalation (15 years)			47.50%		$ 815,405
Long Term Phase 3		**Cost per location**					**$ 2,532,047**
Long Term Phase 3							
Long Term Phase 3	**Total cost of Phase 3 tree and slab replacement**			**LS**	**1**	**$ 2,532,047**	**$ 2,532,047**

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LOC REF	SYS #	UNIFORMAT SYSTEM	SPECIFICATION	Unit of Measure	Quantity	UNIT COST	EXTENSION
Long Term Phase 4		**Long Term Phase 4 Option 2**		**U/M**	**Quantity**	**Unit Cost**	**Extension**
Long Term Phase 4		1. Labor and equipment to remove tree, leave 6' stump		EA	16	$ 15,000.00	$ 240,000
Long Term Phase 4		**Slab Replacement**					
Long Term Phase 4		1. Labor and equipment - remove, salvage and store pavers for re-use		SF	8,577	$ 8.70	$ 74,620
Long Term Phase 4		2. Labor to remove, salvage and store light poles		EA	16	$ 70.00	$ 1,120
Long Term Phase 4		3. Labor and equipment - remove and dispose of grate and support beams		HR	32	$ 120.00	$ 3,840
Long Term Phase 4		4. Labor and equipment - remove and dispose of stump		HR	48	$ 520.00	$ 24,960
Long Term Phase 4		5. Labor and equipment - sawcut slab		LF	524	$ 5.20	$ 2,725
Long Term Phase 4		6. Labor and equipment - remove concrete slab (includes areas over utility relocation)		SF	7,553	$ 8.36	$ 63,143
Long Term Phase 4		7. Labor and equipment - excavate soil, haul and stockpile offsite for re-use (48" depth)		CY	816	$ 82.00	$ 66,912
Long Term Phase 4		8. Structural concrete piers 10' OC, 6' deep - labor/equipment/materials		EA	64	$ 300.00	$ 19,200
Long Term Phase 4		9. Underdrain system - materials and installation		SF	7,553	$ 2.60	$ 19,638
Long Term Phase 4		10. Labor and equipment - import soil, place, compact, amend with compost		CY	816	$ 126.00	$ 102,816
Long Term Phase 4		11. Structural concrete slab - labor/equipment/materials, 8" thick, reinforced, weepholes		SF	7,553	$ 18.00	$ 135,954
Long Term Phase 4		12. Labor and equipment - install rodent barrier		HR	64	$ 120.00	$ 7,680
Long Term Phase 4		13. Trees, including installation		EA	16	$ 1,300.00	$ 20,800
Long Term Phase 4		14. Deadman anchoring materials and installation		EA	32	$ 350.00	$ 11,200
Long Term Phase 4		15. Light pole - re-install existing with new footing, junction boxes, conduit and wiring		EA	16	$ 800.00	$ 12,800
Long Term Phase 4		16. Irrigation system with moisture meters, per tree		EA	16	$ 3,200.00	$ 51,200
Long Term Phase 4		17. Grate replacement materials and installation		EA	16	$ 9,600.00	$ 153,600
Long Term Phase 4		18. Interior grate replacement materials and installation		EA	16	$ 3,600.00	$ 57,600

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				U/M	**Quantity**	**Unit Cost**	**Extension**
Long Term Phase 4		19. Brick paver malt's and installation - assumes 75% re-use salvaged pavers/25% new pavers		SF	8,577	$ 25.00	$ 214,425
Long Term Phase 4		20. Flexipave materials and installation		LOC	16	$ 220.00	$ 3,520
Long Term Phase 4		22. Relocate main gas & water lines to perimeter of mall (both sides), per slab opening		EA	2	$ 40,000.00	$ 80,000
Long Term Phase 4		23. Art installations		LS	1	$ 5,000.00	$ 5,000
Long Term Phase 4							
Long Term Phase 4			Subtotal				$ 1,372,753
Long Term Phase 4			General Requirements		8.00%		$ 109,820
Long Term Phase 4			Subtotal				$ 1,482,573
Long Term Phase 4			Overhead & Profit		6.25%		$ 92,661
Long Term Phase 4			Subtotal				$ 1,575,234
Long Term Phase 4			Design Contingency		12.00%		$ 189,028
Long Term Phase 4			Subtotal				$ 1,764,262
Long Term Phase 4			Escalation (20 years)		57.50%		$ 1,014,450
Long Term Phase 4			**Cost per location**				**$ 2,778,712**
Long Term Phase 4							
Long Term Phase 4		**Total cost of Phase 4 tree and slab replacement**		**LS**	**1**	**$ 2,778,712**	**$ 2,778,712**


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