



Arborist Inspection & Report · Tree Service

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Tree Risk Assessment and Arborist Report

Introduction

The Longfellow School remediation project requires the removal of contaminated soil within the athletic field. Several mature trees occupy the affected work zone. Proposed air-knifing and soil displacement activities will directly impact the critical root zones (CRZ) of these trees. A limited air-excavation inspection was conducted to evaluate root architecture, structural stability, and overall tree health prior to soil removal.

Tree #39 — Tipuana tree (Tipuana tipu)

ISA Condition Rating

Overall Condition: Fair

Structure: Moderate lean toward the south

Site Factors: Compacted soils; existing root exposure on the south side

Observations

Tree #39 exhibits a southerly lean, with several structural roots already exposed due to soil displacement and compaction. The lean has resulted in partial loss of soil cover over the primary structural roots on the north side.

Proposed Work

The project scope includes air excavation to a depth of 24 inches (2 ft) adjacent to the trunk to remove contaminated soil.

Root Zone Inspection

Air-knifing performed on the north side to a depth of 8 inches revealed structural and anchor roots beginning at approximately 9 inches below grade. These roots provide essential mechanical support and are responsible for resisting overturning forces associated with the tree's existing lean.

Assessment of Impacts

Excavation to 24 inches will expose the majority of the tree's structural and anchor root system. Based on ISA BMPs for Tree Risk Assessment and Root Management, removal of soil to this depth within the CRZ will imminently compromise mechanical stability. Given the tree's existing lean and the depth at which critical roots occur, further excavation will likely result in loss of structural support and may lead to tree failure.

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Conclusion

Tree #39 cannot maintain structural stability if excavation proceeds to the proposed depth. The planned soil removal will expose and destabilize all major structural roots on the north side, creating a high likelihood of failure once root support is compromised.

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Tree #90 — Deodar tree (*Cedrus deodara*)

ISA Condition Rating

Overall Condition: Fair

Structure: Moderate lean toward the south

Site Factors: Uncompacted soils; existing root exposure on the north side

Observations

Tree #90 exhibits a slight southerly lean, with several structural roots already exposed due to soil displacement and uncompaction. The lean has resulted in partial loss of soil cover over the primary structural roots on the north side. Several branches were damaged, creating an unbalanced canopy.

Proposed Work

The project scope includes air excavation to a depth of 12 inches (1 ft) adjacent to the trunk to remove contaminated soil.

Root Zone Inspection

Air-knifing performed on the north side to a depth of 12 inches revealed structural and anchor roots beginning at approximately 10 inches below grade. These roots provide essential mechanical support and are responsible for resisting overturning forces associated with the tree's existing lean.

Assessment of Impacts

Excavation to 12 inches will expose the majority of the tree's structural and anchor root system. Based on ISA BMPs for Tree Risk Assessment and Root Management, removal of soil to this depth within the CRZ will imminently compromise mechanical stability. Given the tree's existing lean and the depth at which critical roots occur, further excavation will likely result in loss of structural support and may lead to tree failure.

Conclusion

Tree #90 cannot maintain structural stability if excavation proceeds to the proposed depth. The planned soil removal will expose and destabilize all major structural roots on all sides of the tree, creating a high likelihood of failure once root support is compromised.

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Tree #92 — Deodar tree (*Cedrus deodara*)

ISA Condition Rating

Overall Condition: Fair

Structure: Strong lean toward the south

Site Factors: Uncompacted soils; existing root exposure on the north side

Observations

Tree #92 exhibits a southerly lean, with several structural roots already exposed due to soil displacement and uncompaction. The lean has resulted in partial loss of soil cover over the primary structural roots on the north side. Several branches were damaged, creating an unbalanced canopy.

Proposed Work

The project scope includes air excavation to a depth of 12 inches (1 ft) adjacent to the trunk to remove contaminated soil.

Root Zone Inspection

Air-knifing performed on the north side to a depth of 12 inches revealed structural and anchor roots beginning at approximately 10 inches below grade. These roots provide essential mechanical support and are responsible for resisting overturning forces associated with the tree's existing lean.

Assessment of Impacts

Excavation to 12 inches will expose the majority of the tree's structural and anchor root system. Based on ISA BMPs for Tree Risk Assessment and Root Management, removal of soil to this depth within the CRZ will imminently compromise mechanical stability. Given the tree's existing lean and the depth at which critical roots occur, further excavation will likely result in loss of structural support and may lead to tree failure.

Conclusion

Tree #92 cannot maintain structural stability if excavation proceeds to the proposed depth. The planned soil removal will expose and destabilize all major structural roots on the north side, creating a high likelihood of failure once root support is compromised.

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Tree #97 — Deodar tree (*Cedrus deodara*)

ISA Condition Rating

Overall Condition: Fair

Structure: Moderate lean toward the south

Site Factors: Uncompacted soils; existing root exposure on the north side

Observations

Tree #97 exhibits a slight southerly lean, with several structural roots already exposed due to soil displacement and uncompaction. The lean has resulted in partial loss of soil cover over the primary structural roots on the north side. Several branches were damaged, creating an unbalanced canopy.

Proposed Work

The project scope includes air excavation to a depth of 12 inches (1 ft) adjacent to the trunk to remove contaminated soil.

Root Zone Inspection

Air-knifing performed on the north side to a depth of 12 inches revealed structural and anchor roots beginning at approximately 8 inches below grade. These roots provide essential mechanical support and are responsible for resisting overturning forces associated with the tree's existing lean.

Assessment of Impacts

Excavation to 12 inches will expose the majority of the tree's structural and anchor root system. Based on ISA BMPs for Tree Risk Assessment and Root Management, removal of soil to this depth within the CRZ will imminently compromise mechanical stability. Given the tree's existing lean and the depth at which critical roots occur, further excavation will likely result in loss of structural support and may lead to tree failure.

Conclusion

Tree #97 cannot maintain structural stability if excavation proceeds to the proposed depth. The planned soil removal will expose and destabilize all major structural roots on the north side, creating a high likelihood of failure once root support is compromised.

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Tree #89 — Glossy Shower (*Senna surattensis*)

ISA Condition Rating

Overall Condition: Fair

Structure: Moderate lean toward the south

Site Factors: Uncompacted soils; existing root exposure on the north side

Observations

Tree #89 exhibits a slight southerly lean, with several structural roots already exposed due to soil displacement and uncompaction. The lean has resulted in partial loss of soil cover over the primary structural roots on the south side. Several branches were damaged, creating an unbalanced canopy.

Proposed Work

The project scope includes air excavation to a depth of 24 inches (2 ft) adjacent to the trunk to remove contaminated soil.

Root Zone Inspection

Air-knifing performed on the north side to a depth of 24 inches revealed structural and anchor roots beginning at approximately 12-18 inches below grade. These roots provide essential mechanical support and are responsible for resisting overturning forces associated with the tree's existing lean.

Assessment of Impacts

Excavation to 24 inches will expose the majority of the tree's structural and anchor root system. Based on ISA BMPs for Tree Risk Assessment and Root Management, removal of soil to this depth within the CRZ will imminently compromise mechanical stability. Given the tree's existing lean and the depth at which critical roots occur, further excavation will likely result in loss of structural support and may lead to tree failure.

Conclusion

Tree #89 cannot maintain structural stability if excavation proceeds to the proposed depth. The planned soil removal will expose and destabilize all major structural roots on the south side, creating a high likelihood of failure once root support is compromised.

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Tree #89



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Tree #98 — Pink trumpet (*Handroanthus heptaphyllus*)

ISA Condition Rating

Overall Condition: Fair

Structure: Moderate lean toward the south east

Site Factors: Uncompacted soils; existing root exposure on the north side

Observations

Tree #98 exhibits a slight southerly lean, with several structural roots already exposed due to soil displacement and uncompaction. The lean has resulted in partial loss of soil cover over the primary structural roots on the south side. Several branches were damaged, creating an unbalanced canopy.

Proposed Work

The project scope includes air excavation to a depth of 24 inches (2 ft) adjacent to the trunk to remove contaminated soil.

Root Zone Inspection

Air-knifing performed on the north side to a depth of 24 inches revealed structural and anchor roots beginning at approximately 12-18 inches below grade. These roots provide essential mechanical support and are responsible for resisting overturning forces associated with the tree's existing lean.

Assessment of Impacts

Excavation to 24 inches will expose the majority of the tree's structural and anchor root system. Based on ISA BMPs for Tree Risk Assessment and Root Management, removal of soil to this depth within the CRZ will imminently compromise mechanical stability. Given the tree's existing lean and the depth at which critical roots occur, further excavation will likely result in loss of structural support and may lead to tree failure.

Conclusion

Tree #98 cannot maintain structural stability if excavation proceeds to the proposed depth. The planned soil removal will expose and destabilize all major structural roots on the south side, creating a high likelihood of failure once root support is compromised.

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Tree #91 — Canary island date palm (*Phoenix canariensis*)

ISA Condition Rating

Overall Condition: Fair

Structure: Moderate lean toward the south

Site Factors: Uncompacted soils; older dry fiber roots.

Observations

The tree #91 exhibits a slight southerly lean, with portions of the older fibrous root system already exposed, consistent with the natural growth habit of date palms. This pre-existing lean reduces structural stability and increases susceptibility to disturbance during air-knife excavation. Date palm fibrous roots are easily deflected, torn, or severed when soil is removed around the root zone, and excavation below approximately 12 inches is expected to result in significant root loss, including portions of the structural root plate responsible for anchorage. Such loss will materially compromise the tree's stability and physiological function, and the tree is unlikely to maintain adequate structural support or long-term health following excavation.

Proposed Work

The project scope includes air excavation to a depth of 12 inches (1 ft) adjacent to the trunk to remove contaminated soil.

Root Zone Inspection

Air-knifing performed on the north side to a depth of 12 inches revealed structural and anchor roots beginning at approximately 2-84 inches below grade. These roots provide essential mechanical support and are responsible for resisting overturning forces associated with the tree's existing lean.

Assessment of Impacts

Excavation to 12 inches will expose the majority of the tree's fiber root system. Based on ISA BMPs for Tree Risk Assessment and Root Management, removal of soil to this depth within the CRZ will imminently compromise mechanical stability. Given the tree's existing lean and the depth at which critical roots occur, further excavation will likely result in loss of structural support and may lead to tree failure.

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Conclusion

Tree #91 cannot maintain structural stability if excavation proceeds to the proposed depth. The planned soil removal will expose and destabilize all major fiber roots, creating a high likelihood of failure once root support is compromised.

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Tree #96 — Canary island date palm (*Phoenix canariensis*)

ISA Condition Rating

Overall Condition: Fair

Structure: Moderate lean toward the south

Site Factors: Uncompacted soils; older dry fiber roots.

Observations

The tree #96 exhibits a slight southerly lean, with portions of the older fibrous root system already exposed, consistent with the natural growth habit of date palms. This pre-existing lean reduces structural stability and increases susceptibility to disturbance during air-knife excavation. Date palm fibrous roots are easily deflected, torn, or severed when soil is removed around the root zone, and excavation below approximately 12 inches is expected to result in significant root loss, including portions of the structural root plate responsible for anchorage. Such loss will materially compromise the tree's stability and physiological function, and the tree is unlikely to maintain adequate structural support or long-term health following excavation.

Proposed Work

The project scope includes air excavation to a depth of 12 inches (1 ft) adjacent to the trunk to remove contaminated soil.

Root Zone Inspection

Air-knifing performed on the north side to a depth of 12 inches revealed structural and anchor roots beginning at approximately 2-84 inches below grade. These roots provide essential mechanical support and are responsible for resisting overturning forces associated with the tree's existing lean.

Assessment of Impacts

Excavation to 12 inches will expose the majority of the tree's fiber root system. Based on ISA BMPs for Tree Risk Assessment and Root Management, removal of soil to this depth within the CRZ will imminently compromise mechanical stability. Given the tree's existing lean and the depth at which critical roots occur, further excavation will likely result in loss of structural support and may lead to tree failure.

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Conclusion

Tree #96 cannot maintain structural stability if excavation proceeds to the proposed depth. The planned soil removal will expose and destabilize all major fiber roots, creating a high likelihood of failure once root support is compromised.

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