M E M O R A N D U M

TO: Dan Just, DDOT (via email daniel.just@dc.gov)

FROM: Cene Ketcham, WSSI (via email cketcham@wetlands.com)

CC: Trey Holloway, Maret School (via email tholloway@maret.com)
Sam Doan, DDOT (via email samuel.doan@dc.gov)
Sharon Dendy, DDOT (via email sharon.dendy2@dc.gov)
Peter Lehrer (via email plehrerservices@outlook.com)
Brian Ruhl (via email ruhl@vikacapitol.com)
Luis Yañez, WSSI (via email lyanez@wetlands.com)

RE: Tree Preservation for Nebraska Avenue Heritage Trees
WSSI #31089.01

DATE: February 4, 2022

Maret School is proposing to build athletic fields and associated infrastructure on an undeveloped portion of the property owned by the Episcopal Center for Children (ECC) at 5901 Utah Avenue NW in the District of Columbia. In its review of their plan for the streetscape along Nebraska Avenue NW, the District Department of Transportation (DDOT) has requested a Tree Preservation Plan for the two Heritage Trees adjacent to the work. These trees are identified as Trees 323 and 348 on Exhibit A. This report and the associated Exhibit are intended to satisfy this requirement. Other aspects of tree preservation on site, including transplant of Heritage Trees and preservation measures for other trees to remain are not included in this report. Preservation activities listed here will be included in the full Tree Preservation Plan for the site to be developed by Wetland Studies and Solutions, Inc. (WSSI).

The subject trees were assessed by Cene Ketcham (ISA Certified Arborist #MA-5812A, TRAQ) of WSSI on November 5 and 6, 2020. Tree 348 had an additional assessment with a resistograph on June 29, 2021.

Tree 323 is an Eastern white pine (*Pinus strobus*) measuring 35 inches Diameter at Breast Height (DBH). It was assessed as being in Good condition with only minor damage. This assessment was performed using the assessment methodology described in the *Guide for Plant Appraisal, 10th Ed., Second Printing* by the Council of Tree and Landscape Appraisers, in which separate scores are given for a tree's health, structure, and form; the lowest of the three is the tree's overall rating. Tree 323 was rated 80% for both health and structure and 85% for form. It is currently growing adjacent to a service drive used by ECC — the trunk is about 2.5 ft from the pavement edge. Other built infrastructure within its Critical Root Zone (CRZ) includes a swimming pool to the north, a building to the northwest, and the sidewalk and roadway to the south.

Tree 348 is a red maple (*Acer rubrum*) measuring 38 inches DBH. It was assessed as being in Fair condition, with its component scores being 60% for health and form and 50% for structure. It has

codominant branching, though without a bark inclusion. The large limb on the west side has fungal fruiting bodies consistent with a soft rot fugus. However, no dieback or decline was noted in the branch in the summer of 2021, which suggests that damage to the vascular tissue, if any, is not affecting the tree's health at this time. Mower damage to surface roots was noted on the south side. Girdling roots are not visible, but the lack of trunk flare suggests either a grade change — possibly during installation of a retaining wall — or the presence of belowground girdling roots. Probing the area with a steel surveyor's chaining pin was inconclusive. Three locations on the tree were selected for resistograph drilling — the base of the branch with fungal bodies and two locations near the base. Minor basal decay was detected in one basal location at 14 inches into the trunk. The other locations showed no internal decay. There is a retaining wall approximately 7.5 ft to the south of the trunk, which limits rootable area. While roots may exist below the sidewalk and under the roadway, they are not likely to be significant. Rooting is unconstrained elsewhere.

Tree conditions are summarized in Table 1 below:

Tree #	DBH (Diameter at 4.5 feet above grade)	Common Name	Botanical Name	Condition Rating %	Condition Rating	REGULATED STATUS	Assessment Notes
323	35	pine, eastern white	Pinus strobus	80%	Good	HERITAGE	Mechanical Damage, Broken Limbs
348	38	maple, red	Acer rubrum	50%	Fair	HERITAGE	Surface Roots, Root Damage/Decay, Co-Dominant Stems, Small DW (1-2"), Low Vigor, Broken Limbs, Branch Decay, Insect/Disease Problem, Fungal Fruiting Bodies DBH @ 2 ft. Possible soft rot fungus on large branch. Tar spot fungus. Mower damage/root decay on downhill side.

Table 1: Tree condition table. As assessed November, 2020.

Proposed work near the subject trees is as follows:

- Construction of a parking lot, with connection to the existing ECC service drive;
- Construction of a bioretention facility;
- Installation of a perimeter fence
- Construction of a curb cut (outside CRZs);
- Installation of screening plantings; and,
- Closing the ECC service drive curb cut.

Due to the close proximity of the work to the existing Heritage Trees, close coordination between the design team, contractor, and the contractor's retained arborist is required for successful execution. A summary of recommended tree preservation measures is described as follows, with extents and locations illustrated on Exhibit A.

The following measures apply to both trees:

- All work shall be in conformance with the current ANSI A300 standards for tree care.
- Prior to any demolition or construction work within or adjacent to the subject trees' CRZs, a pre-construction site walk shall be held to include the contractor's retained arborist, project forester,

general contractor, DDOT, and owner. At this time, the proposed measures and locations will be reviewed. Any substitutions or alternative methods or materials must be reviewed and approved by DDOT.

- Tree protection measures must be reviewed and approved by DDOT after installation.
- All tree protection measures must be in place prior to commencement of demolition, site clearing, or construction, and maintained throughout construction. Tree protection measures may only be removed with DDOT approval.
- Work within the CRZs of the subject trees must be overseen by an ISA Certified Arborist. This includes all excavation, pavement installation or removal, root pruning, installation of fencing or erosion and sediment control measures, or other work not specified.
- CRZs must be protected by temporary Tree Protection Fence (TPF) as shown on Exhibit A. Appropriate bilingual signage must be installed designating the area as a Tree Protection Area and restricting entry.
- Silt fence or other erosion and sediment control measures within CRZs must be installed on grade or coordinated with root pruning trenches.
- Root pruning locations, depth, and methods will be determined during the preconstruction meeting. Roots over 1 inch diameter must be hand pruned.
- Mechanized equipment or repeated foot traffic is not permitted in any tree protection areas without explicit approval of the project forester and DDOT and must be on adequate approved root protection devices (e.g., root protection matting (RPM)). Root protection devices to be approved by project forester and DDOT.
- Construction staging, stockpiling, equipment storage, and masonry setup and washout areas are limited to existing pavement areas or outside of CRZs. Masonry setup and washout must be located such that a spill will not enter tree protection areas. Not storage of toxic materials within 100 feet of tree protection areas.
- Proposed fence post footing locations within CRZs must be excavated by the retained arborist with a Supersonic AirTool (SSAT). Field adjust locations if large roots (1.5 inches and greater) are found. Hand prune small roots within the footing location.
- Proposed landscape plantings of B&B and large container landscape plants within CRZs must be reviewed by the retained arborist and contractor in the field to determine the potential for damage. The retained arborist will excavate planting holes with SSAT to the appropriate width and depth in coordination with the relevant sub-contractor. Where practical, flex small roots to the side rather than pruning. If large roots (1.5 inches and greater) are found, field adjust the planting location to retain.
- The following stress reduction measures are to be applied to both trees:
    - Wood Chip Mulch — Mulch ring should cover the entire Structural Root Zone (SRZ) to the extent possible. Mulch should not exceed four (4) inches depth and must not contact the trunk of the tree. Wood chips from trees removed on site may be used. Otherwise, mulch will be double-ground shredded hardwood, aged for at least six months.
    - Vertical Mulching — Use SSAT to bore 2-inch diameter vertical holes 12-18 inches deep in a grid pattern around the trees. Backfill with chip-sized, pre-moistened biochar to top and cover. The area for treatment is to be 30 inches from the tree base to ½ the CRZ radius with grid spacing at 3 × 3 ft. Vertical mulching is also to be applied in areas within

CRZs where pavement was removed or where RPM was used. Follow with high-pressure liquid injection on an offset grid to fracture soil horizontally between vertical mulching holes.

- Supplemental Watering — Retained arborist will supply supplemental watering during drought times during the growing season (typically May to October). Minimum watering will be considered to be six (6) times per growing season with the timing and duration to be determined by the project forester and DDOT. Typical watering dose to be approximately 10 gallons per diameter inch. Drought times will be defined as a period of two weeks or longer where daytime high temperatures reach 80 degrees and less than ¾ inch of rainfall is received. Supplemental watering is to continue for a period of two (2) years following the completion of construction.
- Construction Inspections — An ISA Certified Arborist supplied by the contractor's retained arborist shall actively monitor the site to ensure adherence to all tree protection requirements. Inspections to be weekly during initial clearing and installation of tree protection and erosion and sediment controls. Inspections to be monthly for the duration of construction. Transition from weekly to monthly inspections require owner and DDOT approval. Additional inspections and/or oversight may be required for critical tree preservation activities as determined during the pre-construction meeting.
- Soil Care/Fertilization — Initial soil testing of a representative sample from each tree protection area is required. Fertilization prescription shall be based on the results of the soil analysis. Application rates shall not exceed a rate of one (1) pound of actual nitrogen per 1,000 square feet annually.
- Condition Monitoring Inspections — The retained arborist shall provide monitoring of the condition of retained trees and prescribe treatment of detrimental conditions as they occur or as appropriate for effective management. Inspections shall be performed monthly during the growing season, beginning prior to construction and continuing for one year subsequent to the completion of construction activities. Three (3) inspections during the growing season must be performed the second year following the end of construction activity. A written summary report with recommendation shall be provided to the owner and project forester subsequent to each inspection.

The follow tree preservation activities apply specifically to Tree 323:

- Special demolition of the service drive pavement — Demolition of the existing service drive to be performed by the retained arborist under the supervision of an ISA Certified Arborist. Mechanized equipment to operate from existing improved surfaces or on approved RPM. Where practical, work shall be performed by hand or with SSAT. Arborist to provide review and appropriate treatment for roots encountered. Exposed roots shall be covered with moistened burlap and plastic sheeting to retain moisture until covered by soil.
- Decompact soil under removed pavement — The area under pavement shall be vertical mulched as above. Additionally, the retained arborist is to use an SSAT to break up the surface soil to 1 ft depth or to the extent possible. Top dress with rice-sized biochar and compost, and air till the existing site soil, biochar, and compost until mixed to approximately 1 ft depth. Seed with groundcover and cover the soil with a biodegradable surface fabric to retain soil during establishment.

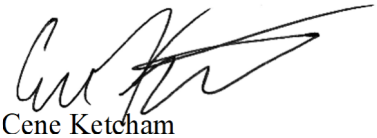
- Excavation for the new pavement section within the CRZ will be done by arborist with SSAT. Exposed roots shall be covered as above. The pavement will be at or above grade but must meet the existing service drive grade. Pavement base course is to be a structural growing medium, such as CU Structural Soil, as approved by the engineer and DDOT. Base course to be spread by hand around the existing roots, then compacted to the appropriate level.
- No curb shall be installed on the connection to the service drive as shown in Exhibit A. Barrier to be curb stops on pavement.
- Root prune for curb footings by existing pool and for parking lot. Curbs in the parking lot are required for stormwater conveyance.

The follow tree preservation activities apply specifically to Tree 348:

- TPF is to be installed in two phases as shown on Exhibit A. Prior to any work within the CRZ, the CRZ must be fenced to the maximum extent to prevent inadvertent damage during staging and site preparation. At the start of work within the CRZ, TPF will be moved to its final location. All work within the CRZ must be overseen by an ISA Certified Arborist provided by the retained arborist.
- Vertical mulching to be performed for the area within the CRZ to be covered by pavement.
- Excavation for the parking lot base shall be performed by the retained arborist as detailed above in the notes for Tree 323. Exposed roots to be preserved as described above.
- Any motorized vehicle traffic, spoils, or staging material must be on approved RPM. No
- The pavement base will be a structural growing medium, such as CU Structural Soil, as approved by the engineer and DDOT. Base course to be spread by hand around the existing roots, then compacted to the appropriate level.
- Root prune for the bioretention retaining wall.
- Curb footings within the CRZ are to be discontinuous, with cantilevered sections to allow roots to extend under the new pavement. Root prune as necessary for footing sections. Alternately, a curb on pavement with no footing may be used. Final design to be determined by engineer.

Please feel free to contact me regarding the contents of this report via email at cketcham@wetlands.com or by phone at 443-591-4203.

Sincerely,
WETLAND STUDIES & SOLUTIONS, INC.



Cene Ketcham
Urban Forester
ISA Certified Arborist #MA-5812A, TRAQ
Maryland Licensed Tree Expert #2475