

POLICY MANUAL

TREE PROTECTION AND PRESERVATION FOR CITY OF GREENFIELD



**Prepared by: Tree Commission
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SECTION I: Purpose and Intent

- A. The purpose of these standards is to facilitate the preservation and/or replacement of trees as part of the land development, building construction process within the City of Greenfield.

- B. Benefits derived from tree protection and replanting include:
 - 1. Improved control of soil erosion.
 - 2. Moderation of storm water runoff, and improved water quality.
 - 3. Interception of airborne particulate matter, and the reduction of some air pollutants.
 - 4. Enhanced habitat for desirable wildlife.
 - 5. Reduction of noise and glare.
 - 6. Climate moderation.
 - 7. Aesthetics, scenic amenity.
 - 8. Increased property value.

GENERAL PERMIT REQUIREMENTS
RESIDENTIAL SINGLE AND TWO FAMILY DWELLINGS

1. Permit application and forms to complete:
 - A. Local permit application.
 - B. State permit application (including License # of all contractors. (Plumbing, Electrical, HVAC and General)
 - C. Erosion control and Driveway Approach forms.
 - D. Plumbing and electrical permits to be obtained by the respective trades.
 - E. Cautionary statement to owners (completed when owner acts as his own General Contractor).
 - F. Uniform Dwelling Code Energy worksheet. (Heat/Loss Calc.)
 - G. Driveway Approach Permit.

2. Two sets of complete plans to be submitted for review. One of the plans should be approved by the Subdivision's Architectural Review Board, prior to submission to the city.

Plans should be complete and show at a minimum:

- a) Elevations.
- b) Foundation and plans for each floor.
- c) Section view through home showing construction materials and insulation values.

3. Five stamped and sealed surveys of the property to be submitted for review.

One of the surveys needs to show erosion control measures:

- a) Location of silt fence or hay bales.
- b) #2 stone tracking drive.

One of the surveys need to show:

- a) Location of proposed buildings.
- b) All existing deciduous trees four (4) inches DBH or greater and all existing conifers six (6) feet in height or greater and the boundaries of existing woodcuts. To be shown are the trees that are to be protected as well as the trees that are to be removed.
- c) The natural drainage patterns throughout the lot.
Survey must be submitted PRIOR TO tree removal/inspection by City Forester. The City Forester (thru Inspection Services) will verify/instruct on Tree Preservation and Protection Requirements.
- d) The location and width of proposed driveway. The center of the driveway shall be staked 5' behind the edge of the pavement or curb when the building is being staked in the field.

The remaining surveys should show:

- e) Exact size and location of proposed home including setback dimensions.
- f) Proposed grade and existing grade elevations at the proposed home adjoining lots and homes, lot corners and existing curbs and catch basins.

4. Once plans, permits and surveys have been submitted to the Inspection Department for review, the contractor may proceed with installing erosion control devices and tracking drive. Call Engineering Department of 329-5314, for inspection of erosion control measures. (Building permit cannot be released until erosion control measures are inspected and approved).

INSPECTION SERVICES & ZONING
329-5331 or FAX 543-9615

Procedure for Tree Preservation In Building Development Projects

I. Pre-Plan

(Prior to Grading)

Builder or Developer:

1. Submit pre-plan proposal to Inspection &/or Plan Dept.
2. Obtain further procedural information, including Silt Fence/Soil Erosion Control requirements and tree protection from Engineering Dept.
3. Submit any additional required information to proper department.

II. Application for Building Permit

Inspection &/or Plan Department:

Give Tree Preservation Packet to Builder/Developer:

1. Enclosed Tree Preservation Procedure
2. Permit Application
3. Tree Preservation Ordinance and Policy Manual
4. Selected Tree City USA Bulletins
5. Other material provided by the Tree Commission

III. Site & Plan Preparation (Pre-approval)

A. Builder or Developer:

1. Inspect building site to fulfill Tree Preservation Requirements. Note onto Plan & Survey: tree locations, trunk diameters, trees to be removed and trees to be protected. (See Tree Ordinance and Policy Manual).
2. Stake out site.
3. Mark items on Site & Landscape Plan.
4. Submit proposed Site & Landscape Plan & Survey:
 - a. For Residential Projects: To Inspection Dept.
 - b. For Commercial & Multi Family Projects: To Plan Dept.

B. For Commercial & Multi-Family Projects:

1. Plan Department:

Send Site & Landscape Plan & Survey to Forester for on-site inspection of trees.

2. Forester:

- a. Complete site inspection according to Tree Preservation requirements.
- b. Determine amount of security deposit, if any, for guarantee of compliance.
- c. Submit written report to Plan Dept., including tree barrier and signage requirements, then:

3. Plan Department:

Forward plans to Plan Commission for their review/revisal/approval.

4. Plan Commission & Common Council, in turn:

Meet for review/revisal/approval process.

C. Residential Projects:

1. Inspection Department:

Send Site & Landscape Plan & Survey to Forester for Inspection of tree site.

2. Forester:

- a. Complete site inspection for tree preservation requirements.
- b. Determine amount of security deposit, if any, for guarantee of compliance.
- c. Submit written report to Inspection Department.

Procedure for Tree Preservation In Building Development Projects

IV. Collection of Security Deposit

Inspection Department:

1. Collect letter of credit or cash deposit from applicant.
2. Issue permit to applicant.

Builder or Developer:

Install tree barriers and tree protection signage at time of erosion control installation.

V. Inspections for Tree Preservation

A. Initial Inspection at Start of Construction

1. Inspection Department:

- a. Do initial inspection of construction site to assure installation of tree barriers, signage and other tree preservation requirements are in place.
- b. Report findings to Forester.

B. During Construction:

1. Inspection Department:

Periodic Inspections when on site: notify Forester if requirements are no longer being met.

2. Forester

May recommend issuance of a stop work order if necessary.

VI. Post Construction

(At end of predetermined time limit)

1. Applicant:

Request refund or deposit (Can request extra time if necessary).

2. Inspection Department:

Notify Forester to inspect site.

3. Forester:

1. Complete on-site inspection to verify fulfillment of Tree Preservation Ordinance and Policy Manual rulings.
2. Notify Inspection Dept. of compliance

4. Inspection Department:

1. Release credit or refund deposit.
 - a. For Residential Building: For refund of deposit, tree replacement shall be installed within 18 months of occupancy.

Prepared by Joan Stevens 06/1998

Revised: 10/1998, 10/2001,

12/2001, 5/2004

SECTION II: Definitions

For the purposes of this section, the following terms, phrases, words and their derivation shall have the meanings below. When not inconsistent with the context, words used in the present tense include the future and words in the singular number include the plural number.

Building Activity Area:

The build able area of a lot or parcel of land construction and building activities and shall be the smallest possible build able area of a lot or parcel of land within which building activity may take place. This includes the entire area affected by building and grading activities related to the proposed construction. Maximum regard is to be given for existing mature trees. This does not include flood plain, wetland, conservancy or similarly designated unbuildable lands.

City:

The City of Greenfield

City Forester:

The actual individual, Director of Public Works, or his agent assigned to enforce this section.

DBH:

Diameter-at-breast-height is a standard measure of tree size, and is a tree trunk diameter measured in inches at a height of four (4) feet above the ground. If a tree splits into multiple trunks below the 4-foot mark, then the trunk is measured at its most narrow point beneath the split.

Landscape Plan:

A plan which identifies the Building Activity Area, limits of land disturbance, an inventory of existing plant material within the Protected Zone, areas of tree preservation and methods of tree protection within the Protected Zone of the development site, as well as all area of (re) planting. Within the (re) planting areas, the common and botanical names of the proposed species, the number of plants of each species, the size of all plant materials, the proposed location of all plant materials, and any unique features of the plant materials shall be indicated. The landscape plan shall be a scaled drawing at not less than 1" = 20'.

Lot:

A portion of platted territory measured, set apart, and subdivided as a distinct parcel having its principal frontage upon a street and shown upon a plat or subdivision or a resubdivision approved by the Mayor and Common Council of the City of Greenfield.

Person:

Any public or private individual, group, company, firm, corporation, partnership, association, society of any other combination of human beings, whether legal or natural.

Protected (Protective) Zone:

All lands in the City of Greenfield, including but not limited to those that fall outside of the building footprint of a lot, all areas of the lot required to remain in open space and all areas required as landscaping strips according to provisions of the City of Greenfield zoning code, or conditions of zoning/site plan approval. The protected zone shall include the required offset, setback and other designated unbuildable areas such as wetland, woodlands, flood plain and conservancy areas within the City of Greenfield.

Public Place:

Property under the jurisdiction of the Department of Public Works and the City including, but not limited to, the City right-of-way.

Removal:

The actual removal or causing the effective removal through damaging, poisoning or other direct or indirect actions resulting in the death of a tree.

Street Tree:

Any tree in a public place.

Scrub:

Any woody plant of low height with several stems.

Specimen Tree(s) or Stand:

Any tree or grouping of trees which has been determined to be of a high value by a Professional Forester because of its species, size, age, historic significance or other professional criteria and has been so designated in the administrative guidelines developed by the Tree Commission.

Tree:

Any self supporting woody plant having a well-defined stem, a more or less well-defined crown and which has attained a height of at least eight feet with a trunk of not less than four (4) inches diameter at breast height (DBH), or a cluster of main stems having an aggregate diameter of not less than four (4) inches DBH, (measured at a point four and one-half (4-½) feet above the ground). Containerized Trees and nursery stock Trees kept for resale in licensed commercial nurseries are exempt.

Tree Worthy of Preservation:

Any tree which can reasonably be determined by the City Forester to have a remaining life span equal to or greater than that of a proposed structure included in a site plan or subdivision plat or any tree which is unique by reason of age, size, rarity or status as a landmark or species specimen or other outstanding quality.

SECTION III. Policies for Subdividers and Developers in Residential, Commercial and Industrial Properties.

Residential Development

- A. The “Detail Plan of the Subdivision or Development” shall include:
 1. The natural drainage patterns throughout the entire subdivision.
 2. Indicate all trees that are to be removed that are four (4) inches or greater in diameter at breast height (DBH), and all existing conifer trees six (6) feet or greater in height, and the boundaries of any existing woodlot.
- B. Seventy percent (70%) of the total inches of tree DBH occupying the site shall be protected. If more than thirty percent (30%) of the total DBH of trees on the site are removed due to the installation of streets and utilities, and the grading necessitated by subdividing, the excess shall be replaced at a ratio of 2 inches of DBH of replacement for every inch of DBH of removal above thirty percent (30%).
- C. There shall be no movements, cleaning or storage of equipment within the designated tree protection zone (s). The developer shall not permit the placement of construction material, debris, or fill, no cause or permit disposal of waste materials such as paints, oils, solvents, asphalt, concrete, mortar or any other harmful material within the drip line of any protected tree(s).
- D. The Erosion Control Permit may authorized the removal of protected trees where the approved site and landscape plan provides for tree removal, replacement and additional tree planting with the result that there will be an overall improvement in the environmental condition and aesthetic character of the subdivision; or where the tree(s):
 1. Pose a safety hazard to buildings or structures.
 2. Pose a safety hazard to pedestrian or vehicular traffic or threaten to cause disruption to public utility services.
 3. Prevent access to a lot or parcel of land.
 4. Unreasonably prevents development of a lot or parcel of land or the physical use thereof, provided the developer has not failed to design and locate the proposed improvements to minimize the removal of trees(s).
 5. If diseased or weakened by age, storm, fire or other cause, so as to pose a danger to persons, property, improvements or other trees.

- E. Prior to and during the construction or land disturbance, the developer shall clearly mark (with red flagging or red paint) all trees proposed to be removed and shall erect barricades around all trees to be protected. The barricades shall remain in place and in good condition throughout the construction and land disturbance activity. Unless otherwise approved by the City Forester, required tree protective barricades shall be installed no closer than ten (10) feet from the outer edge of the drip line to shield all trees or groups of trees to be protected.

Commercial and Industrial Development

Same policies as stated above for Residential Development.

See appropriate sections of the most current City of Greenfield Site Development Standards (for example, pages 16, 17, & 18) as needed.

SECTION IV:

Policies for Building Contractors and/or Property Owners

Policies of Tree Protection and Preservation during construction or excavation – after Subdivision or when not connected with Subdivision.

- A. All building contractors and/or property owners shall be responsible to work within the City of Greenfield's "Policy Manual – Tree Protection and Preservation" for the protection of trees to be preserved on a particular lot.
 - 1. On R-3A and R-4 lots, zero (0%) percent of existing trees shall be protected, and 100% of specimen trees shall be protected.
 - 2. On R-3 and R-4A lots, thirty (30%) of existing trees shall be protected, and 100% of specimen trees shall be protected.
 - 3. On R-1, R-2 and R-2A lots, sixty (60%) of existing trees shall be protected, and 100% of specimen trees shall be protected.
- B. All building sites listed above shall submit a plan prior to construction work with the following data:
 - 1. Location of buildings, patios, and driveways to be installed on the lot.
 - 2. All existing deciduous trees four (4) inches DBH or greater and all existing conifers six (6) feet in height or greater, and the boundaries of existing woodlots. To be shown are the trees that are to be protected as well as the trees that are to be removed.
 - 3. The natural drainage patterns throughout the lot.
 - 4. Any landscape plantings to be installed, if known.
- C. Removal of existing trees higher than the quotas listed for the building sites shall require replacement with 2 inches DBH for every inch DBH removed higher than the quota permits.
- D. The Erosion Control Permit may authorize the removal of protected trees where the landscape plan provides for tree removal, replacement and additional tree planting with the result that there will be an overall improvement in the environmental condition and aesthetic character of the lot, or where the tree(s):
 - 1. Pose a safety hazard to buildings or structures.
 - 2. Pose a safety hazard to pedestrian or vehicular traffic or threaten to cause disruption to public utility services.

3. Prevent access to a lot or parcel of land.
4. Unreasonably prevents development of a lot or parcel of land or the physical use thereof, provided the contractor or owner has not failed to design and locate the proposed improvements to minimize the removal of tree(s).
5. If diseased or weakened by age, storm, fire or other cause, so as to pose a danger to persons, property, improvements or other trees.

E. There shall be no movements, cleaning or storage of equipment within the designated tree protection zone(s). The contractor shall not permit the placement of construction material, debris or fill, nor cause or permit disposal of waste materials such as paints, oils, solvents, asphalt, concrete, mortar or any other harmful material within the drip line of any protected tree(s).

F. Prior to and during the construction or land disturbance, the contractor or owner shall clearly mark (with red flagging or red paint) all trees proposed to be removed and shall erect barricades around all trees to be protected. The barricades shall remain in place and in good condition throughout the construction and land disturbance activity. Unless otherwise approved by the City Forester, required tree protective barricades shall be installed no closer than ten (10) feet from the outer edge of the drip line to shield all trees or groups of trees to be protected.

ADDENDUM 1: Addition to the Policy Manual

APPEAL PROCESS FOR STREET TREE REMOVAL

The following is the process which will be followed for an appeal by a resident to the Tree Commission when requesting a City Street Tree be removed or not placed in the City right-of-way:

1. The citizen is to submit a written request to the Department of Public Works stating that they are requesting a tree be removed or not be placed in the City right-of-way for what reasons they are making this request. (Upon receipt of the request, the Department of Public Works staff will make the request an Agenda item for the next Tree Commission meeting.) The resident will be informed by DPW staff which meeting will have their request as an agenda item.
2. The City Forester, after being notified by staff that there is a request for appeal, will go out and inspect the site(s) of the questioned tree placement(s) (prior to the meeting) and then prepare a written analysis for the Tree Commission Meeting/Appeal Hearing.
3. The Tree Commission will at one of its regularly scheduled meetings -- when there is an agenda item relative to an appeal -- hold an appeal hearing to review such requests and make a decision/recommendation.
4. The resident will be notified after Council action, by DPW staff, of the results of the hearing.

Prepared by: Tree Commission
September 1996

ADDENDUM 2: Addition to Policy Manual

Agreement to Replace Trees - Security Deposit

Where replacement trees are required for compliance with the city's Tree Preservation Policy:

- a. The developer or builder shall provide financial guarantee in the form of a letter of Credit or Cash Deposit.
- b. The security shall be 125% of the estimated value of replacement.
- c. The estimated replacement value shall be established by multiplying the tree diameter in inches by \$125.00.
- d. The Letter of Credit is placed in the Property File until compliance has been confirmed.

OR

- e. Cash security is deposited in a Culvert Account earmarked for "Trees".
- f. Deposit will be forfeited if the on-site tree replacements are not fulfilled within 1-1/2 years of occupancy.
- g. Refer to Municipal Code, Ordinance 20.13 (8).

Prepared by Joan Stevens: 7/30/98

Revisions: 12/7/98

08/2001

08/2019

APPENDIX A: Specimen Tree(s) or Stand

Specimen Tree(s) or Stand: Any tree or grouping of trees which has been determined to be of a high value by the Professional Arborist/Forester because of its species, size, age or other professional criteria.

1. Specimen Tree:

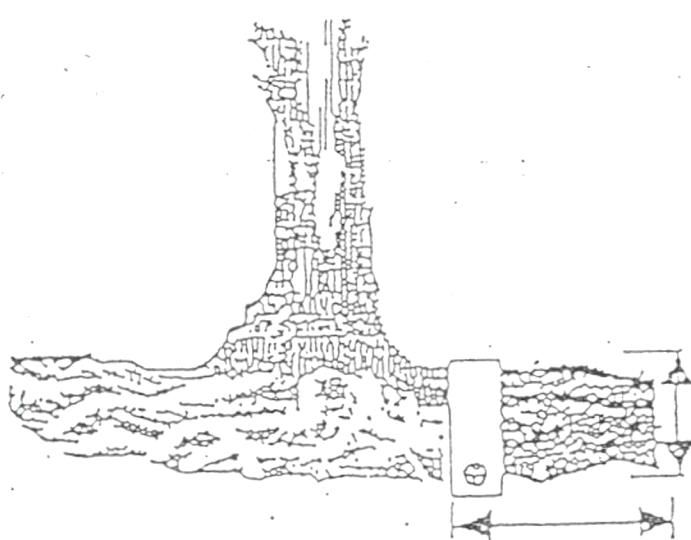
- a. Any tree in fair or better condition which equals or exceeds the following diameter sizes.

| | | | |
|----------------------|-----|----------------|-----|
| Norway Spruce | 12" | Muscle wood | 6" |
| Colorado Spruce | 12" | All Hickories | 12" |
| White Pine | 12" | Amur Corktree | 12" |
| Austrian Pine | 8" | Hackberry | 16" |
| Scotch Pine | 10" | Ohio Buckeye | 16" |
| Tamarack | 12" | Catalpa | 16" |
| Red Cedar | 8" | All Oaks | 12" |
| White Cedar | 8" | Sugar Maple | 12" |
| Firs | 10" | Red Maple | 10" |
| Horse chestnut | 16" | Norway Maple | 16" |
| Kentucky Coffee tree | 12" | Black Cherry | 12" |
| Butternut | 12" | White Ash | 16" |
| Redbud | 6" | Amelanchiers | 6" |
| Mulberries | 12" | American Beech | 12" |
| Sycamore | 16" | European Beech | 12" |
| Pagoda Dogwood | 6" | Honey locust | 16" |
| Ironwood | 6" | Black Walnut | 12" |

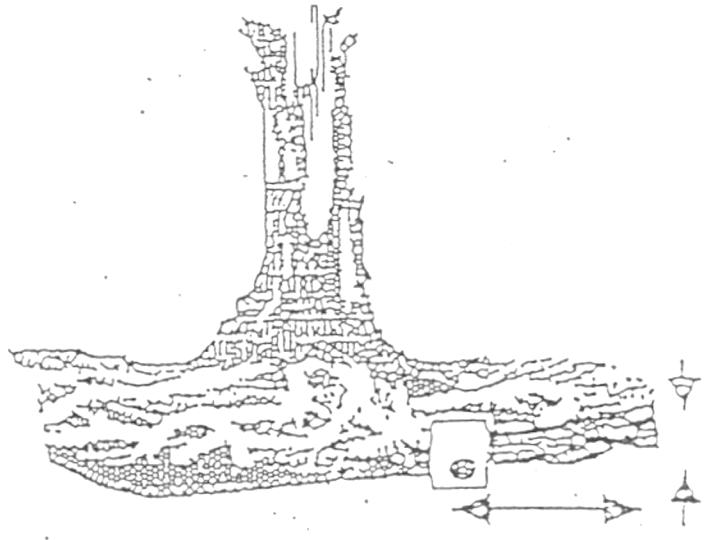
- b. A tree in fair or better condition must meet the following minimum standards:
 1. A life expectancy of greater than 15 years.
 2. A relatively sound and solid trunk with no extensive decay or hollow, and less than 20% radial trunk die-back.
 3. No major insect or pathological problems.
- c. A lesser sized tree can be considered a specimen if it is a rare or unusual species, of exceptional quality, or of historical significance.
- d. A lesser sized tree can be considered a specimen if it serves as a focal point in the landscape plan or project design.

2. Specimen Tree Stands:

- a. A contiguous grouping of trees which has been determined to be of high value based upon the following criteria:
 1. A relatively mature native stand which is in the process of regeneration.
 2. A stand with diversity of native species of a rare or unusual nature.
 3. A stand of historical significance.
 4. A stand with exceptional aesthetic quality.
 5. A stand with endangered wildlife or vegetation.
- b. An attempt shall be made to protect and preserve Specimen Trees in any place.



TRENCHING



TUNNELING

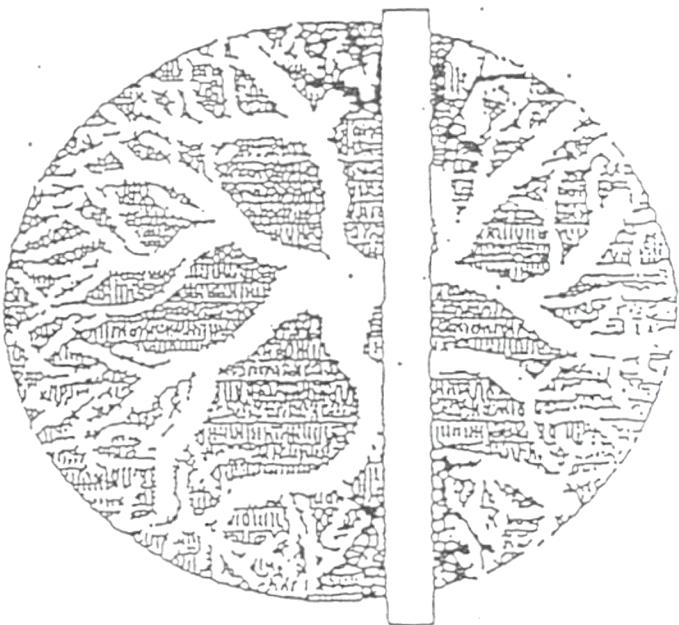


FIGURE 1. ROOT LOSS FROM TRENCHING VERSUS TUNNELING

Heavy shading denotes areas of damaged roots.

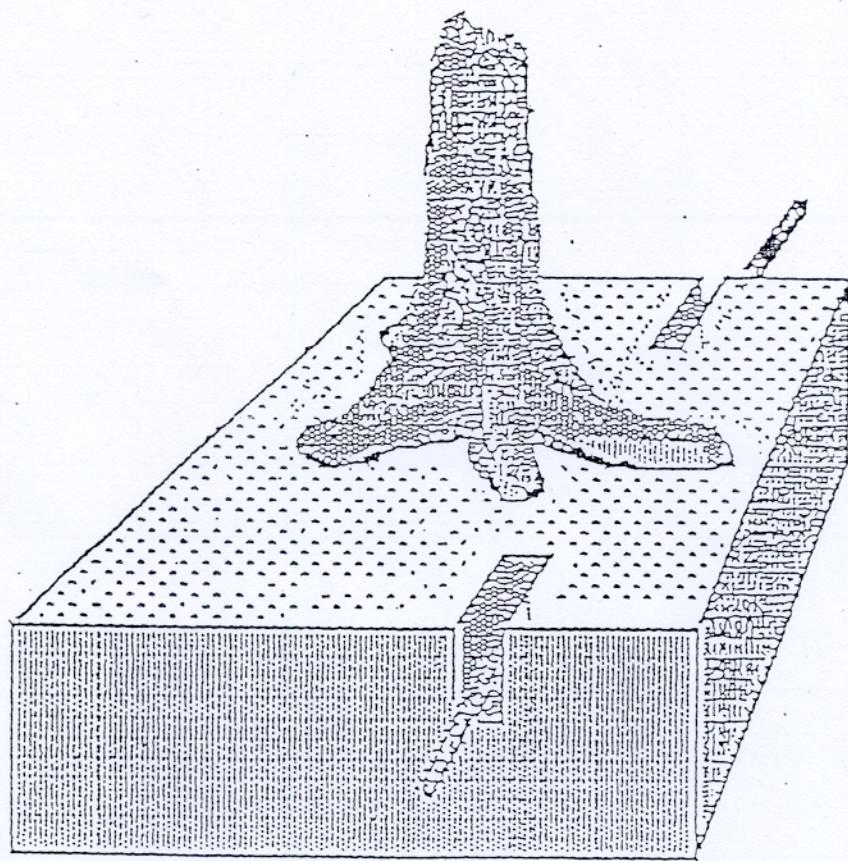


FIGURE 2. TUNNELING FOR UNDERGROUND UTILITIES

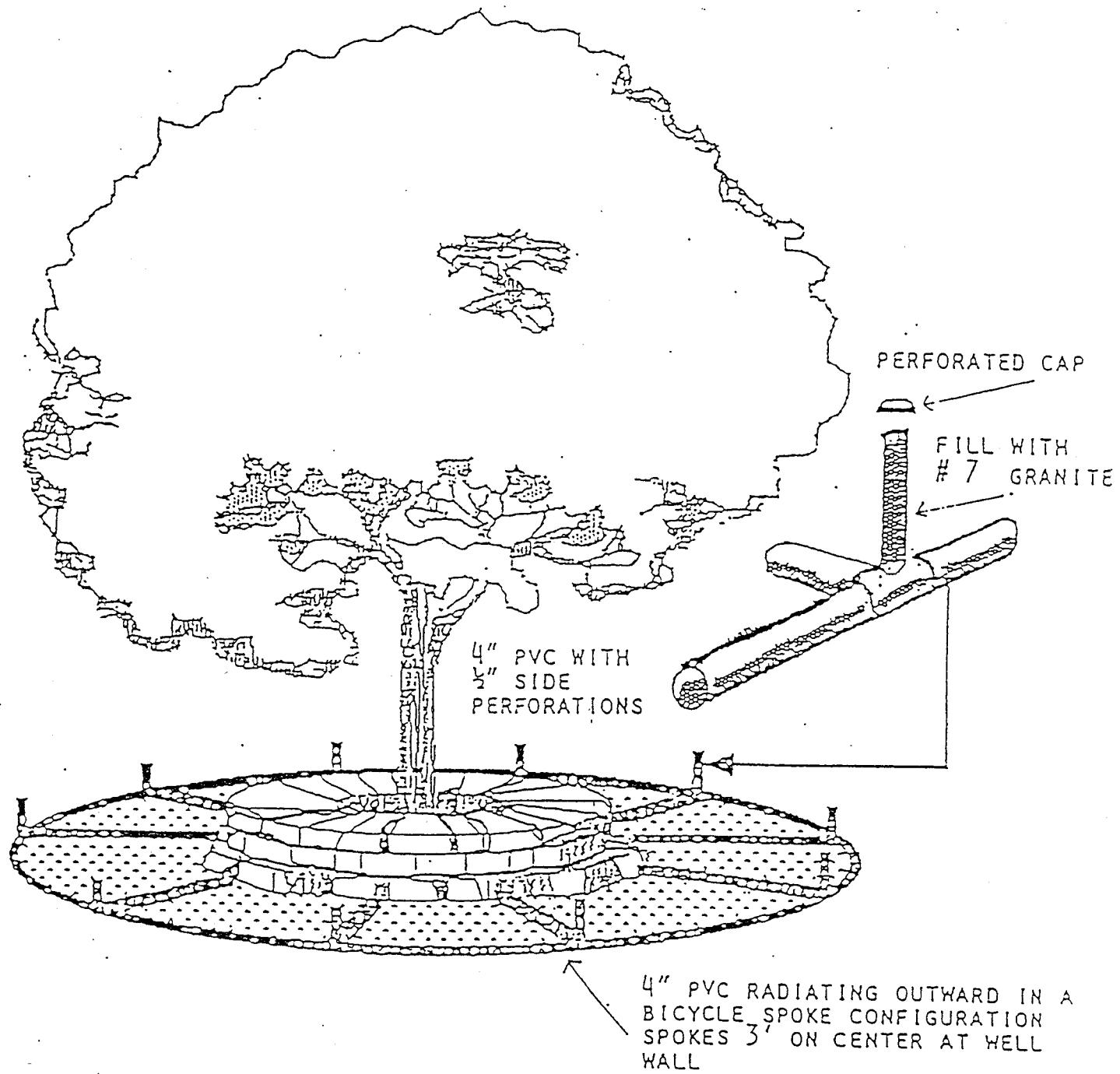


FIGURE 3. AERATION SYSTEM

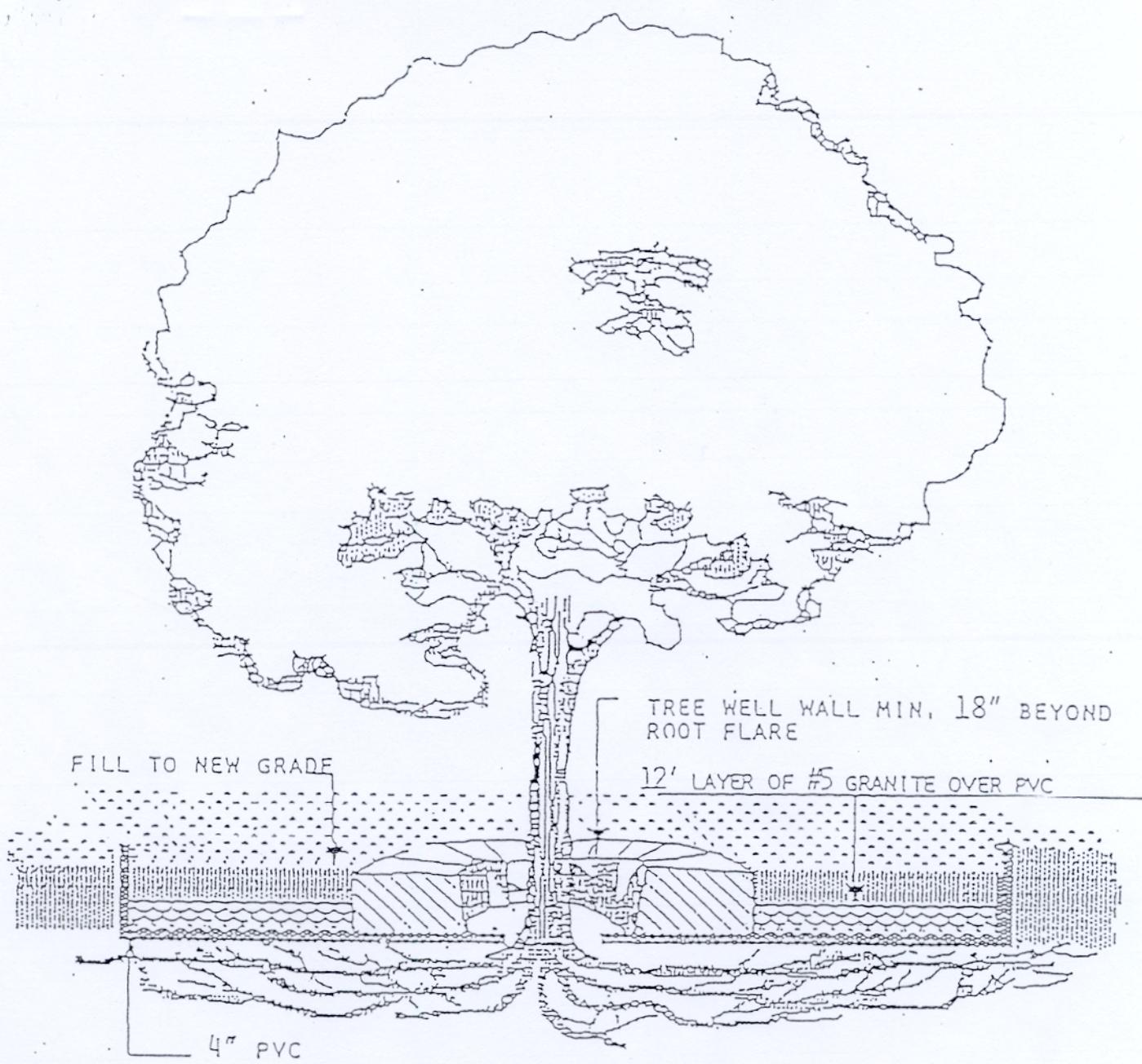


FIGURE 4. AERATION SYSTEM VERTICAL PROFILE

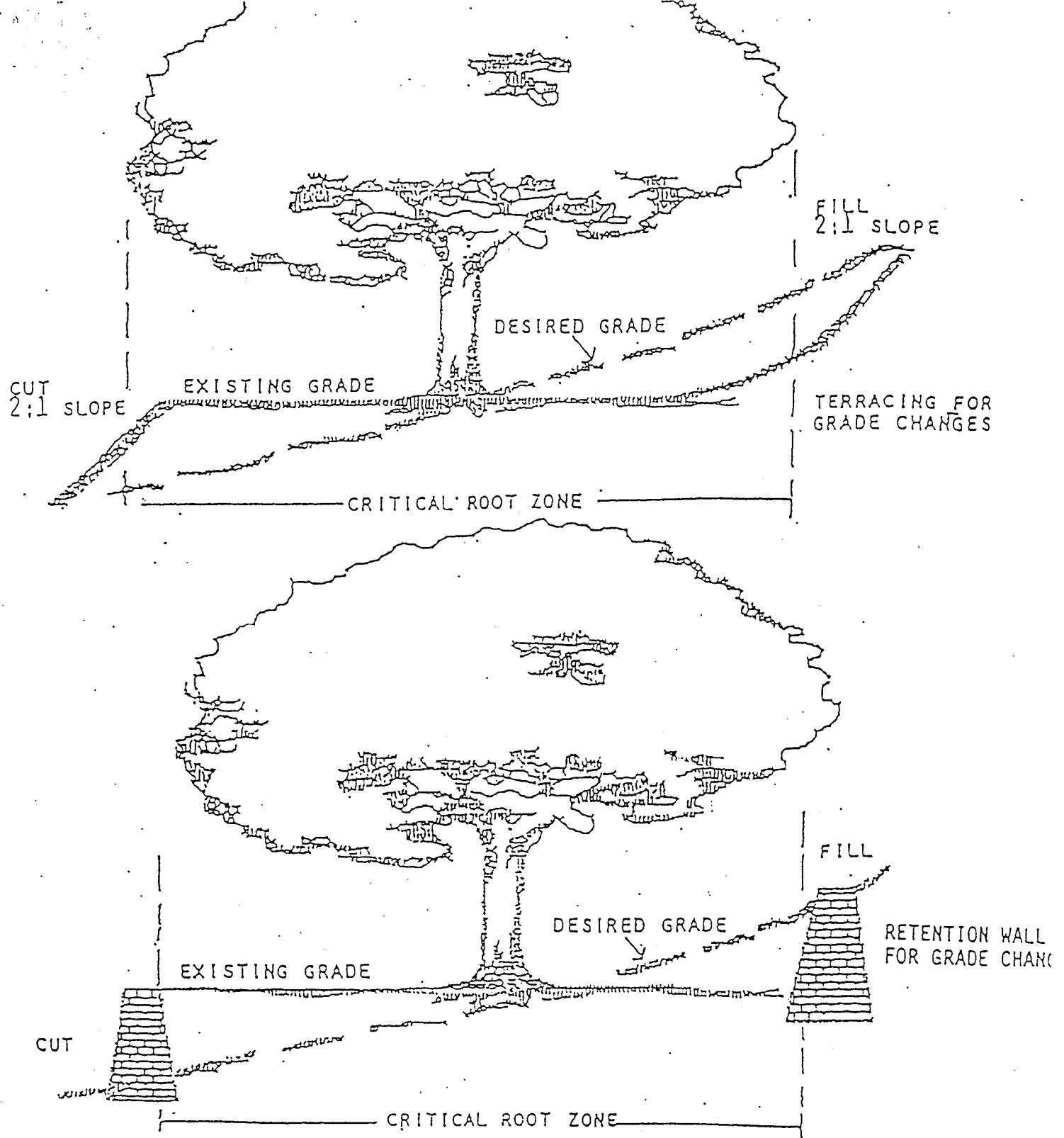


FIGURE 5. GRADE CHANGES