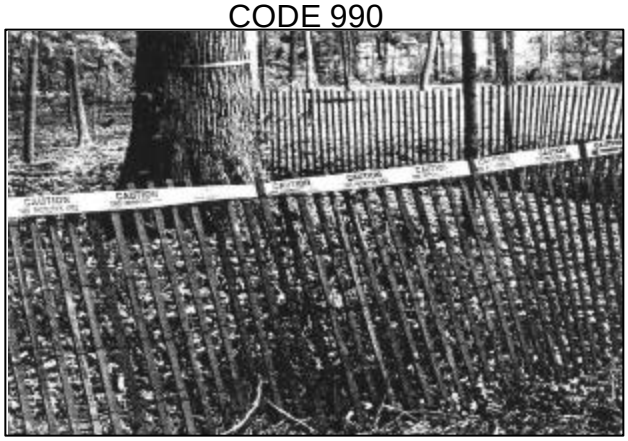
NATURAL RESOURCES CONSERVATION SERVICE
ILLINOIS URBAN MANUAL
PRACTICE STANDARD

TREE PROTECTION

(no.)
CODE 990



(Source: IN Drainage Handbook)

DEFINITION

The protection of individual trees from damage during construction operations.

PURPOSE

The purpose of this practice is to reduce damage to and loss of individual trees during construction by implementing pre- to post-construction tree protection procedures.

CONDITIONS WHERE PRACTICE APPLIES

This practice applies on development sites containing individual trees. Refer to practice standard TREE AND FOREST ECOSYSTEM PRESERVATION 989 for information on preserving stands of trees.

CRITERIA

The Critical Root Zone (CRZ) is one foot outside the perimeter of the leaf canopy of the tree to be protected. This area shall be protected from damage during construction operations. Trees not identified to be protected shall be removed.

All required protection measures shall be installed prior to the commencement of any site development activity and shall remain in place and in working, functional order until all site development activities have ceased or the surrounding area has been stabilized.

No construction activities, including the placement of topsoil, shall be permitted within the CRZ. In addition, all roadways, parking areas, and storage areas shall be located outside any CRZ.

Construction fencing (fluorescent polyethylene laminar safety netting), wooden snow fence, or approved equivalent with a minimum height of 40 inches shall be installed around the CRZ of all trees to be protected, prior to pruning. The fencing shall be secured to ground-mounted metal or wood posts spaced a maximum of 6 feet apart and maintained to prevent clearing, grading

and development activities from encroaching within the CRZ.

If a higher degree or more permanent protection is desired a chain link fence following criteria in Construction Specification 91 CHAIN LINK FENCE, a wire fence following criteria in Construction Specification 92 FIELD FENCE, or a comparable wooden structure may be used.

Signs shall be posted that identify the fenced areas as CRZ.

Appropriate soil erosion and sediment control measures shall be installed outside the CRZ to prevent sediment from reaching the CRZ.

Locate roadways, storage areas, parking pads, etc. at least 25 feet from the CRZ of an individual tree.

Follow natural contours, where feasible to maintain the natural drainage patterns of the site so as not to cause the tree to get reduced moisture.

Do not trench within the CRZ of the protected tree. For roots impacted outside the CRZ, the roots shall be properly pruned according to the Society of American Foresters, National Arborist Association and International Society of Arboriculture standard of using the appropriate pruning tool to make a clean cut. The use of heavy equipment such as a backhoe for tree root pruning shall be prohibited.

In situations where it is not feasible to avoid impact in the critical root zone, follow criteria in practice standard TREE PROTECTION - AUGERING 991.

CONSIDERATIONS

When working within the boundary of a municipality, local authorities such as the Urban Forester, City Arborist, Municipal Forester or Horticulturist, or Public Works officials should be contacted to determine locally enforced tree protection/preservation standards.

A professional forester or certified arborist should be consulted for any clearing of trees and any actions that deviate from criteria within this standard. On-site supervision is recommended.

Trees to be saved should be evaluated using the following criteria in priority order:

1. Species and condition (maintain slower growing trees in good condition),
2. Long-term suitability of the tree for its present location,
3. Length of time to mitigate losses,
4. Cost of mitigating tree losses,
5. Expected long-term maintenance costs for the tree compared to other trees of the same age/size,
6. Soil erosion prevention and reduction of storm water runoff,
7. The number of other trees growing under the same conditions and the precedent that would be set by removing the tree in question,
8. Impact on property value and aesthetics,
9. Ability to screen noise and visual improprieties or ability to enhance privacy, and
10. Ability to moderate temperature changes, provide shade and reduce wind forces.

Trees to be removed should be evaluated using the following criteria in priority order:

1. In the opinion of the professional forester or certified arborist, there is a clear and reasonable risk of failure that could cause injury or property damage including existing utility service and corrective measures are not feasible and/or the tree is a safety hazard.
2. Tree is dead.
3. The tree is in poor condition with several dead branches or major crack(s).
4. Contiguous and fatal disease is present as diagnosed by a trained entomologist, plant pathologist or professional forester.
5. Current tree damage is beyond repair or the tree is in extremely poor shape due to storm damage or previous mechanical injury.
6. There is a potential of the tree to damage existing or future hardscape features such as driveways or sidewalks.
7. There is no feasible way to avoid disturbing the soil around, grading over, or placing a hardened surface within the critical root zone and the tree is an oak, hickory, red bud, horse chestnut, Kentucky coffee tree, larch, honey locust, or conifer. Consultation with a professional forester is required prior to using this criteria for tree removal.
8. Tree has a greater than 45 degree lean toward traffic or another target or it creates an unsafe vision clearance for pedestrians or vehicular traffic.
9. Tree is a fast growing or a weak wooded tree that is invasive such as box elder, silver maple, tree of heaven, Russian olive or black cherry. Exceptions may be made for large healthy specimens of these species.
10. Tree is within five feet of a structure or that when mature will have a canopy spread that will overlap the structure. Consult with an arborist or forester.
11. The tree could be successfully transplanted with a tree spade onto another site.
12. Trees that are non-native species or invasive.

A mitigation plan for damaged trees should be prepared in consultation with a professional forester or certified arborist and included with construction plans and contract documents.

When site soil resources have been greatly altered, it is recommended a soil restoration strategy be implemented. The strategy may include:

1. Scarifying compacted areas
2. Adding top soil in areas of extreme erosion
3. Adding about 12 inches of well-rotted leaf compost
4. Adding ground cover using herbaceous vegetation, shrubs, and trees. Use of native species is encouraged.

PLANS AND SPECIFICATIONS

Plans and specifications for tree protection shall be in keeping with this standard and will describe the requirements for applying the practice. At a minimum include the following items:

1. All existing trees by species, location, and diameter at 4 ½ feet above the ground and clearly

indicate the trees and/or branches to be removed.
2. Locations of roadways, storage areas, truck clean-out areas, and parking pads, in relationship to the trees to be protected.
3. Location and type of fencing to be used to protect trees, including the distance for placing the fencing around the CRZ.
4. Types and locations of signs.

All plans shall include the installation, inspection, and maintenance schedules with the responsible party identified.

Standard drawing IL-690 TREE PROTECTION - FENCING may be used as the plan sheet.

OPERATION AND MAINTENANCE

The protective signs and fences will be removed only after all construction work has been finished, including final grading and shaping of the site, and the site has been inspected by a professional forester for damages to the trees.

On active construction sites, it is recommended that trees be inspected every 7 days for compliance.

Inspections shall include a listing of trees with:

1. Damage to trunks
2. Mounding of soil around the trunk
3. Evidence of root damage
4. Evidence of improper pruning

REFERENCES

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Videos

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Trenching and Tunneling: A Video Guide for Excavating Around Trees. The Davey Resource Group. The International Society of Arboriculture and the Utility Arborist Association.

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