

Tullahoma Utilities Board  
P.O. Box 788  
901 S. Jackson Street  
Tullahoma, TN 37388  
Phone 931-455-4515

Dear potential bidder:

The Tullahoma Utilities Board is currently soliciting bids for our F/Y 2012 tree trimming program. We anticipate 65-100 miles of 7.2/12.47kV primary distribution trimming. This is a unit based right of way program that is planned in advance and audited post-work. We have included our program specifications and a sample contract for your review. If you wish to schedule an on-site visit to review the program, please contact Brian Coate, Electric Department Manager, at 931-455-4515.

Bids should include both unit pricing (section 20.1) and hourly rates (T & M billing Section 20.2) as requested. **All sealed bids must be returned by 10:00 A.M. Tuesday July 12, 2011.** Questions about the process or the bid should be directed to Randall Tucker at 931-455-4515.

OPTION TO RENEW.

THE CONTRACT WILL CONTAIN A PROVISION THAT GIVES TUB THE RIGHT TO EXTEND THE CONTRACT FOR SUCCESSIVE ONE-YEAR PERIODS FOR A MAXIMUM OF TWO (2) ADDITIONAL YEARS UNDER SAME TERMS AND CONDITIONS AS IN THE ORIGINAL CONTRACT WITH A MAXIMUM INCREASE OF TWO PERCENT (2%) IN COMPENSATION PER YEAR.

Bids may be hand delivered, sent by mail or delivery service such as UPS or FedEx and must be addressed as follows:

Tullahoma Utilities Board  
P.O. Box 788  
901 S. Jackson St.  
Tullahoma, TN 37388  
Attn: Randall R. Tucker/Purchasing Agent

And clearly marked:

**“SEALED BID-Right of Way-Clearing/tree trimming”**

The winning bidder must produce required insurance documentation before contract is awarded. The contract will be for our F/Y 2012, period July 1, 2011 Thru June 30, 2012.



**ADDENDUM APPENDIX “A”**

***Distribution Line Clearance Program***

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# Distribution Line Clearance Program

## 1.0 INTRODUCTION

The scope of these specifications is to provide requirements and guide lines for line clearance trimming, removing or reclearing trees, brush, saplings and other vegetation in close proximity to energized distribution power lines located on public and/or private rights-of-way. Additionally, the scope may include performance of new right-of-way (R/W) clearing for extension of electric service.

This contract may be renewed upon the same terms and conditions of the original contract in one year increments up to a total contract time of three years.

## 2.0 PREPLANNING

Brush removals are identified by a painted slash mark on the stem or the boundaries of the brush area will be marked. Units to be trimmed are marked with a blue or other color dot, and trees to be removed are marked with an "x" painted on the tree. The Work Planner will summarize the number of removals, trims, and units of brush on a system line map called the "Line Clearance Plan". The distribution line clearance contractor that is awarded the contract will complete all projects in accordance with Tullahoma Utilities Board's Line Clearance specifications and the Line Clearance Plan.

## 3.0 BID UNITS

Units for the purpose of planning & clearing will be defined as follows:

Primary Trim: A tree with less than 50% of the crown directly under line

Crown Reduction: A tree more than 50% of the crown under the line

Service Trim: Service wire or secondary trim

Removal 4-10"

Removal 10-20"

Removal 20-30"

Brush: Defined as any woody stem plant species of less than four inches (4") DBH. A unit of brush is 500 square feet measured from drip line to drip line. A

tree is defined as any woody stem plant species greater than four inches (4") in DBH.

## **4.0 BIDDER QUALIFICATIONS**

- 4.1 Requested Information** The BIDDER is required to provide complete and detailed responses to all requested information. Failure to comply with this request shall result in BIDDER not being deemed a QUALIFIED BIDDER.
- 4.2** BIDS are preferred from well-established and bonafide CONTRACTOR(S) trained and experienced in power line clearance of trees and brush. No proposal shall be considered from any BIDDER unless he is known to have skilled foremen and employees who have been engaged in work of a character and magnitude similar to that covered by these specifications.
- 4.3** The BIDDER shall show that their plant facilities are sufficient and their work load so arranged as to meet the schedules called for by the contract. In order for TUB to determine the responsibility of any BIDDER, the BIDDER shall furnish evidences, satisfactory to TUB of the BIDDER'S qualifications, experience and familiarity with work of the character specified and his financial ability to properly prosecute the proposed work.
- 4.3.1 The evidence requested without being limited thereto, include the following:
- 4.3.2 List of work performed in power line clearance of trees and brush in the last five years and presently under contract by the BIDDER along with the name of the Company for which the BIDDER performed this work, with the name(s) and telephone number(s) of the person(s) with whom the BIDDER had primary contact.
- 4.4** BIDDER shall furnish detailed information on any contractual penalties, legal proceedings, lawsuits or claims levied against the BIDDER contending breach or noncompliance with contract specifications.
- 4.5** BIDDER(S) shall furnish all pertinent information and/or
- 4.5.1 qualifications, including but not limited to references that will enable TUB to judge the BIDDERS experience, skill, and ability to complete the work. Average pole miles Contractor personnel can complete by crew per week should be completed on Bid Summary A1.
- 4.6** TUB may elect not to accept any BIDS and change specifications and/or rebid.

- 4.7 BIDDER(S) must review the contractual agreement included and agree to ALL terms BEFORE submitting bids.
- 4.8 While pre-BID meeting is not mandatory, lack of attendance does not excuse BIDDER from any obligations in these specifications.

**5.0 SCOPE OF OPERATIONS: TRIMMING, REMOVAL, R/W SIDE TRIMMING, RECLEARING, AND R/W CLEARING**

- 5.1 **Distribution R/W Side Trimming** may include the pruning or removal of all incompatible (tall growing) species of trees within the utility clearing zone as identified by the Work Planner. For all pole lines the desired clearing zone width is 30' (15' on either side of the centerline). The intent is to storm proof the line by removing overhang that could present hazard during ice or heavy wet snow storms. It does not require that the clear zone width be an absolute box 30' wide with everything removed to the sky. However, there should not be any overhang directly over the conductors (Appendix A, Figure 3), with exceptions only as authorized by TUB. Leave Hardwood overhang (oak, beech, hickory, etc.), with greater than 15' vertical clearance.
- 5.2 **Landscape or Individual Trees** will be pruned to provide the clearances in these specifications. Pruning shall include the removal of all dead, dying, or defective limbs which may interfere with or endanger the safe operation and maintenance of the line even though they may be outside the clearance specified. Small trees, saplings 4" to 10" DBH in landscape or developed areas shall be removed with property owner's permission and identified on the Line Clearance Plan.
- 5.3 **Mechanical Reclearing** (At TUB's Discretion) Tullahoma Utilities Board must specifically approve the use of mowers and other similar mechanical means to clear right-of-ways. The mower operator must use care to avoid damaging lilac, juniper and other compatible species.

Where incompatible tree species are present but are situated in areas not accessible by the mower, such as near poles, in hollows, or along the tree line edge, the mower operator shall be responsible for their removal by hand unless otherwise authorized by TUB, the Work Planner or noted in the Line Clearance Plan.

The equipment operator shall be responsible for ensuring that mechanical reclearing equipment is used in a manner that is safe for

and protects the public from flying debris. Such equipment should not be used in close proximity to houses or other dwellings and should be used with caution along highways and roads.

- 5.4 **Manual Reclearing** includes the hand cutting of all incompatible (tall growing) species of trees and brush as specified in Section 4.1. Includes disposition of all debris.
- 5.5 **Danger Trees** All dead, dying, defective or leaning trees which endanger the safe operation and maintenance of the line shall be routinely removed as part of the landscape, individual tree or R/W side trimming procedures. (As identified by Tullahoma Utilities Board).
- 5.6 **Tree Growth Regulators** Tullahoma Utilities Board may elect to target certain trees for tree growth regulation. These trees will be tracked and managed differently, and will have special trimming requirements. No tree that has been treated will be trimmed without the authorization and direction of TUB, the Work Planner, or the Line Clearance Plan.

## 6.0 LINE CLEARANCE TRIMMING STANDARDS

- 6.1 All trees interfering with the safe operation and maintenance of overhead lines shall either be trimmed, removed, recleared or reported in situations where necessary work cannot be performed. All line clearance tree trimming shall conform to the following specifications:
- 6.2 **Primary Open Wire** - Trees shall be trimmed so as to provide a minimum, clearance from primary conductors of three years of growth. The rate of tree regrowth, type of tree, line importance and voltage of conductors should all be considered in determining actual clearance necessary. In no case shall trimmed units have clearances less than those outlined in Appendix C after trimming.

All dead, dying, defective or leaning trees which endanger the safe operation and maintenance of primary wires should be removed as noted in the Line Clearance Plan. Large trees which only endanger service or secondary wires shall not be removed without specific approval by Tullahoma Utilities Board, the Work Planner, or noted in the Line Clearance Plan.

- 6.3 **Secondary and Service Lines** – 2’ of clearance should be obtained when the following is or will occur to the line by trees:
  - Tri-plex - pushing out of sag, rubbing on, leaning on
  - Bi-plex - pushing out of sag, rubbing on, leaning on
  - Open –Notify TUB to change to triplex. Trim appropriately.These trees will be identified by the Work Planner and indicated on the Line Clearance Plan with “ST”. At the property owner’s request,

services shall be trimmed to the same clearances, and the Work Planner notified of the additional work.

- 6.4** **Line Clearance** - Recommended tree/wire clearances for the various conductor classes are indicated in Appendix C. Exceptions will be allowed where this would require the removal of major limbs which would drastically alter the shape of the tree. Such exceptions shall not result in unsafe conditions or interfere with safe operation and maintenance of the line, and shall be noted in the Line Clearance Plan.

All trees should be trimmed using proper Arborcultural techniques to provide maximum clearance (Appendix B)

- 6.5** **Shaping** – Tree will not be rounded over unless specifically authorized by Tullahoma Utilities Board. Excessive trimming will encourage sucker regrowth and tree-wire clearances will not last as long as normal trimming.

- 6.6** **Removal of Debris - Landscape/Developed Areas** - All brush and debris from public and private developed, landscaped property shall be completely removed and disposed of according to section 7.0 of this specification.

Brush or wood should not be allowed to remain on public thoroughfares or on lawns overnight unless arrangements have been made by Tullahoma Utilities Board or the Work Planner or identified in the Line Clearance Plan with property owner, and the brush piles are properly marked for safety.

## **7.0 PRUNING PROCEDURES**

- 7.1** **Drop Crotch or Natural Trimming** - Natural pruning (Appendix B) is the recommended method of controlling tree shape and should be followed whenever trimming. This method will be used for side, under and through trimming also. To convert a tree to this method may require several years to permit proper development. The concept behind this type of trimming is to minimize regrowth and leave the tree looking as natural as possible. This method also eliminates unsightly stubs which either die or produce a cluster of sprouts. Drop Crotching is recognized as the most effective technique of line clearance trimming (Appendix A, Figure 1).
- 7.2** **Directional Trimming** - Directional trimming should be done in conjunction with drop crotch or natural trimming. Cutting the limb off at a point where there is a limb heading away from the conductor will direct and encourage future growth away from the conductor.

**7.3 Use of climbing spurs and spikes** – To protect the appearance and health of trees in suburban and landscaped areas, no climbing spurs may be used in the process of normal trimming (not including removals).

**7.4 Stumps**- Trees and brush growth shall be cut as close to the ground as practical and treated according to section 8.0.

## **8.0 BY-PRODUCT DISPOSAL**

### **Private property**

All line clearing by-products (brush, wood chips, logs, wood, etc.) must either be:

Immediately removed from the property or

Left on the property at Landowner's request or

Neatly stacked close to right of way or property line and left for future pickup.

**In no case will debris be left in excess of 14 days.**

TUB will provide a suitable area for debris disposal, or at the contractor's discretion, he may choose disposal at any other location provided that all permissions and rights have been obtained. If utilizing TUB's property for disposal, brush, chips, and logs must be separated and disposed of in pre-defined areas. Chips and brush shall not cover cut logs.

**Roadway Areas** - Logs and/or wood shall not remain within the limits of any state, county or private roadway overnight. Where the electric line is adjacent to a state, county, or private roadway, all logs shall be placed at the edge of the right-of-way furthest from the road.

**Fence & Trails** - No debris shall be left where it will interfere with use and maintenance of fences or trails.

**Crop or Orchard Areas** - No materials shall be left in field crop areas or productive orchards.

**Burning** - No brush shall be burned.

## **9.0 STUMP SPRAY**

**9.1 Treatment** - Stump treatment involves spraying cut stumps with either an oil-based mixture or a ready-mixed non-oil solution. This type of treatment is prescribed when vegetation is cut to ground line.

Treatment shall incorporate a colored dye to make treated stumps identifiable. Stump spray selection shall be approved by Tullahoma Utilities Board.

All stump herbicide sprays will be used in accordance with manufacturers product label, U.S. Environmental Protection Agency Registration, and all US and State of Tennessee Regulations.

## **10.0 WORK PROCEDURES**

- 10.1 Inspection** - All trees shall be inspected to determine if trimming is needed at this time, or if tree/wire clearances are adequate until the next year trim cycle (at least five years in rural areas and three years in suburban areas). If a tree has greater than 10' and/or or three years regrowth clearance, it should not be trimmed until the next cycle.
- 10.2 Regrowth Rates** - The working crew leader shall be knowledgeable on regrowth rates of common tree species, and practice Arborculturally correct pruning.
- 10.3 Crew Location** - Location of all crews shall be reported weekly to the TUB Line Superintendent. The moving of crews to a new job during the week shall also be reported.

## **11.0 NOTIFICATION TO PROPERTY OWNERS**

All trimming to be performed on private property will be on utility easements or rights-of-way; however, access to these areas will frequently be across private properties. In the interest of public relations, Tullahoma Utilities Board and the Work Planner make every attempt to notify property owners of upcoming utility work, but ultimately it will be the responsibility of the Contractor to advise property owners, if available on site, that they will be encroaching on a customer's property to perform line clearance work. Access to properties are Contractors responsibility.

## **12.0 PUBLIC SAFETY**

Trees should be trimmed so as to discourage climbing by children and others and provide maximum safety against possible wire contact by persons in the tree. Trees burning in the conductor, where the property owner refuses permission to trim or remove, must be reported as soon as possible to the Work Planner.

## **13.0 WORK WEEK**

No work will be allowed on customer's property between the hours 7 p.m. and 6 a.m., Monday through Saturday. The actual work schedule will be determined by

the Contractor in conjunction with Tullahoma Utilities Board. Changes to work schedules shall be by mutual agreement.

## **14.0 QUALITY OF WORK**

All work performed by the Contractor is subject to inspection and approval by Tullahoma Utilities Board. Any work not meeting these specifications will be redone at cost to the Contractor.

## **15.0 REPORTS**

The Contractor shall provide necessary information on weekly and/or daily line clearance report forms indicating the nature and extent of the work performed. These forms may be provided immediately following the work or with the invoice, provided they are delivered within 15 days. The dates of performance of such work together with any other pertinent information needed to properly describe or measure the work performed shall be recorded. On time and material projects, the foreman shall also provide weekly time sheets indicating hours of crew supervision on TUB's system.

## **16.0 PERSONNEL SAFETY AND TRAINING**

The line clearance work included under this agreement will be performed in proximity to energized conductors of TUB's electric distribution system. The Contractor will establish and conform to safe work practices, rules and regulations appropriate for such work. The Contractor will comply with operating procedures established by TUB for such work. All work procedures shall meet all federal OSHA, ANSI Z-133, and State of Tennessee Safety requirements (TOSHA)

It shall be CONTRACTOR'S sole duty and responsibility to notify, inform and see that its employees, servants, agents, or subcontractors are so instructed, skilled, knowledgeable, trained and experienced enough to know and appreciate the danger of energized lines and are careful enough to avoid harm, damage or injury to themselves, their fellow workers, employees of TUB, and the general public while performing under this contract, and to furnish them with competent supervision and safe, sufficient and adequate tools and equipment, for this contract to be performed in a safe manner while the existing electrical equipment of TUB is energized. The CONTRACTOR(S) shall not de-energize any of TUB's system.

## **17.0 EQUIPMENT, TOOLS AND PERSONNEL**

- 17.1 Labor, Tools, Equipment, Transportation, Materials** - All labor, tools, equipment, transportation and materials shall be furnished by

the contractor and they shall be in proper operating condition and adequately maintained. The contractor's employees shall be as neat and presentable as the job conditions permit. Crew members shall wear clothing that is not ragged, overly worn, or distasteful. They shall be expected to conduct themselves in a professional and courteous manner.

**17.2 Contractor Equipment** - The contractor's equipment shall be neat appearing and in good operating condition and maintained at all times. Tallahoma Utilities Board will release crews from its system at its discretion if it is determined that vehicles or equipment/components are not reliable and in safe operating condition. Modern tools shall be provided and kept in good working order. Appropriate first-aid supplies as required by OSHA shall be a part of the standard equipment on all vehicles.

**17.3 Radio Equipment** – TUB may elect to provide for radio communication to contract tree crews. Any radio equipment loaned to contractor shall be kept in good condition and returned upon completion of the contracted work. Lost or damaged equipment will be replaced and or repaired by the contractor.

**17.4 Staffing** – CONTRACTOR(S) shall provide minimum staffing levels necessary to complete the work prescribed in the line clearance plan. All work must be complete by the deadline set in the contract.

## **18.0 POWER EQUIPMENT AND HAND TOOLS**

In addition to the specific equipment listed in the bid proposal, for time and material projects the Contractor shall provide and maintain the following minimum tools with each crew's equipment:

### **BUCKET CREWS**

1/man Safety hats  
1/man Safety glasses  
1/man Hearing protection  
1/man Leg guards/chaps  
First Aid Kit  
As Required Signs (as required by State & Local laws)  
Traffic cones  
Water cooler/cups  
Small chain saws (Max. 3.0. cubic inches) (1-May be Hydraulic)  
Medium chain saw (3.0 - 4.0 cubic inches)  
Hydraulic pruner (Pole)  
Pole pruner (Min. 12' length)  
Hand saw

1/man Climbing rope - 120' x 1/2"  
Lowering ropes (2 ropes 1/2" and 2 larger ropes each 120' min.)  
1/man Saddle  
1/man Climbing spurs- only removals  
Cant hooks  
Sledge  
Wedges  
Broom  
Rake  
Scoop shovel  
Chipper

### **MANUAL CREWS**

1/man Safety hats  
1/man Safety glasses  
1/man Hearing protection  
1/man Leg guards/chaps  
First Aid Kit  
Signs  
Traffic cones  
Water cooler/cups  
Small chain saws (Max. 3.0. cubic inches)  
Medium chain saws (3.0 - 4.0 cubic inches)  
Large chain saw (over 4.0 cubic inches and adaptable to a min. 24" bar).  
Pole pruners (Min. 12' length)  
1/man Hand saw  
1/man Climbing rope - 120' x 1/2"  
Lowering ropes (2 ropes 1/2" and 2 larger ropes each 150' min.)  
Snatch block or equivalent  
1/man Saddle  
1/man Climbing spurs-removals only  
Sledge  
Wedges  
Broom  
Rakes  
Scoop shovel  
Long handles shovel  
Cant hooks

### **MOWING CREWS**

1/man Safety hats  
1/man Safety glasses  
1/man Hearing protection  
1/man Leg guards/chaps

First Aid Kit  
Signs  
Traffic cones  
Water cooler/cups  
Medium chain saws (3.0 - 4.0 cubic inches)  
Broom  
Rake  
Scoop shovel  
Long handled shovel

## **19.0 SYSTEM MAPS**

Tulahoma Utilities Board will provide the Contractor with necessary copies of System Maps to facilitate routing crews. The copy of the System Map will be returned to Tulahoma Utilities Board when the work is completed in that area.

## **20.0 BIDDING, INVOICING, AND TERMS OF PAYMENT**

### **20.1 Billing Units**

Tulahoma Utilities Board's Line Clearance Program is UNIT BASED. The following units are recognized as billable units:  
Brush Unit (500 square feet of woody stems less than 4" in diameter)  
Trim Unit (one unit per individual or multi-stemmed tree)  
Removal (4-10, 10-20, 20-30)

### **20.2 Time and Material Billing**

Unless authorized by Tulahoma Utilities Board, the Work Planner, or the Line Clearance Plan, no work will be performed on an hourly basis. All costs (including fuel, mileage, meals, equipment, etc) shall be incorporated into the unit price.

TUB will authorize T&M work typically in the following cases:  
Trees larger than 24" or unusually difficult to trim  
Some System improvement or New Construction Work Orders  
Storm related work  
Extra work required for customer service (wood removal, etc)

***In no case will Tulahoma Utilities Board pay for T&M work that was not authorized.***

NOTE; THE FOLLOWING DRAWINGS AND DIAGRAMS SHOULD ONLY BE USED AS AN AID AND NOT ABSOLUTE RULE.

## APPENDIX A

### REFERENCE DRAWINGS

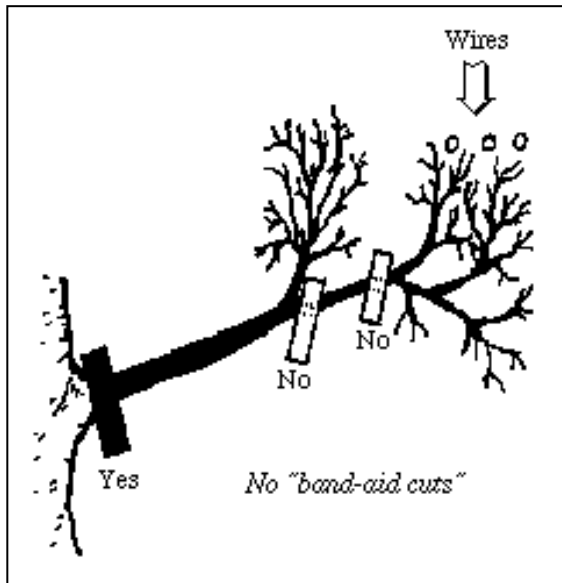


Figure 1. Correct Trimming

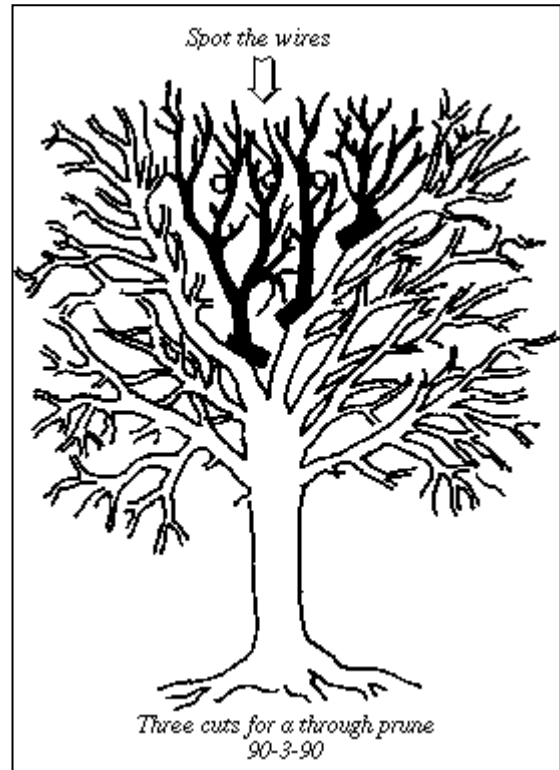


Figure 2 Line Clearance

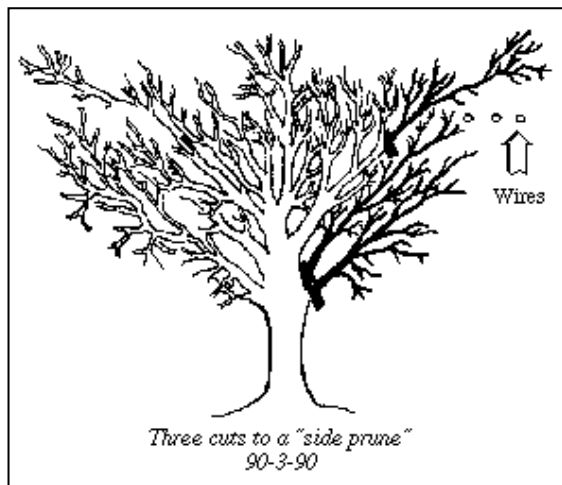


Figure 3. Correct Side Pruning

RECOMMENDED CONDUCTOR CLEARANCES:

Three Phase – 10'

Single Phase – 6'

## APPENDIX B

### DESCRIPTION OF “DROP CROTCH” TRIMMING

The goal of natural trimming or “drop crotch” trimming is to reduce the regrowth and leave the tree looking as natural as possible. This method also eliminates unsightly stubs which either die or produce a cluster of sprouts. Drop Crotching is the recommended line clearance trimming technique based on research of subsequent regrowth rates.

The trimmer should look the tree over before going up in it and get some idea on where he will cut it back to. When up in the tree, the trimmer should only make enough cuts to obtain the desired clearance. Instead of several small or “pruner” cuts, the trimmer should drop below them and make one larger cut. Every saw cut must be made back at a lateral branch or at branch bark collar at the trunk. The small mini-chain saws are very useful in this type of trimming. When cutting back to a lateral, it should be at least one-third of the diameter of the limb that was removed. If there is more than one lateral to cut back to, the trimmer should pick one growing in a direction away from the conductor.

Most of the trees trimmed should not have any cuts made in the sides or bottom. This is to preserve the natural appearance and make a more economical and efficient crew. There are times, however, when some work on the sides will have to be done. These are:

- a. When the property owner insists
- b. When the tree looks flat or way out of proportion
- c. When a few small cuts are made to clear a service wire

Trimming from bucket trucks does not lend itself to drop-crotch pruning and frequently in rounding over the tree results in many clusters of long sprouts. This situation does not lend itself to drop crotch pruning. The situation can be corrected although it may take several years. The trimmer should cut or thin out the sprouts leaving a few of the healthiest looking ones. These, in most cases, will have few lateral branches. The cut should be made just above a lateral branch or bud at the desired height upon the sucker. It is important the trimmer realize he does not have to cut back to where the cluster is every time he re-trims. By trimming in this manner, new leaders can be trained, regrowth will be reduced and a better looking tree will be the result over the span of a few years.

Finally, let us again emphasize the importance of drop crotch trimming. This type of trimming, when done correctly, will give us longer lasting clearance than any other method. It should also be mentioned that crews that trim in this manner can do much better on work units and thus be rewarded for doing a good job. Aesthetically, economically and efficiently, drop crotch trimming is the way to get the job done.

## **Proper Pruning**

“Flush cut” has been the recommended procedure for pruning trees for over a century. Dr. Alex Shigo, Chief Scientist, USDA Forest Service, has demonstrated that practice goes against nature’s design and the tree’s best interest.

“At the base of every branch is a collar”, explains Dr. Shigo, “which contains chemical zone that inhibits the spread of decay into the trunk. When decay develops in a branch, it moves downward until it reaches the protective chemical zone”, he observes. “Decay stops there, and after the branch falls off naturally, new wood forms a callus” (Drawing 4).

“If the branch is pruned so that the collar is cut off or injured”, explains Dr. Shigo, “the chances of infection by decay-and canker-causing microorganisms are greatly increased. “In addition,” he says, “improper cuts sometimes cause internal cracks that can weaken the tree.”

1. When making a cut, place the saw or pruner in front of the branch bark ridge in the branch crotch.
2. Cut from the outer portion of the branch bark ridge down and slightly out, so as not to injure or remove the collar.
3. Use sharp tools.
4. Do not leave a stub

## **APPENDIX C**

### **MINIMUM "AS LEFT" CLEARANCES**