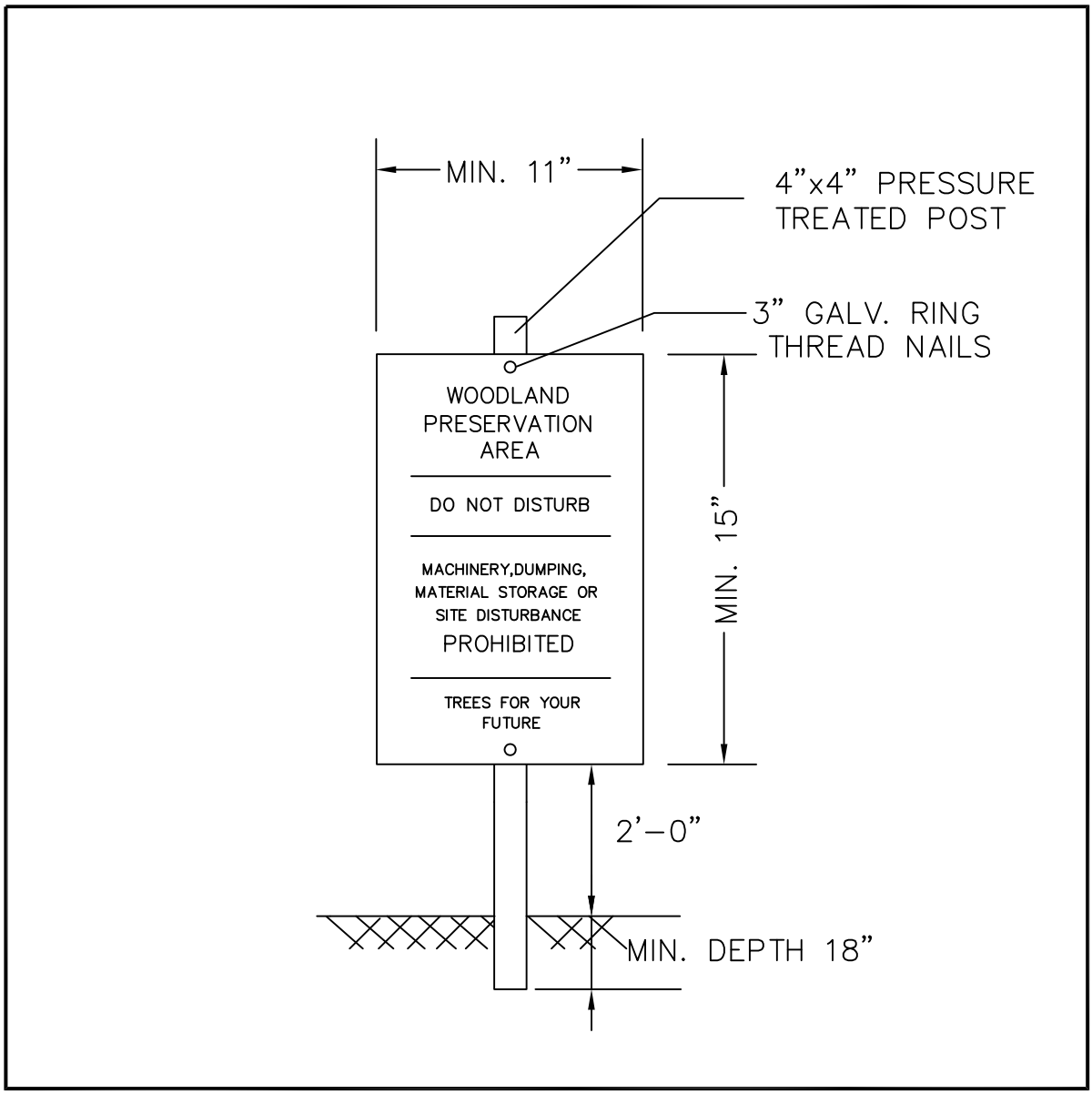
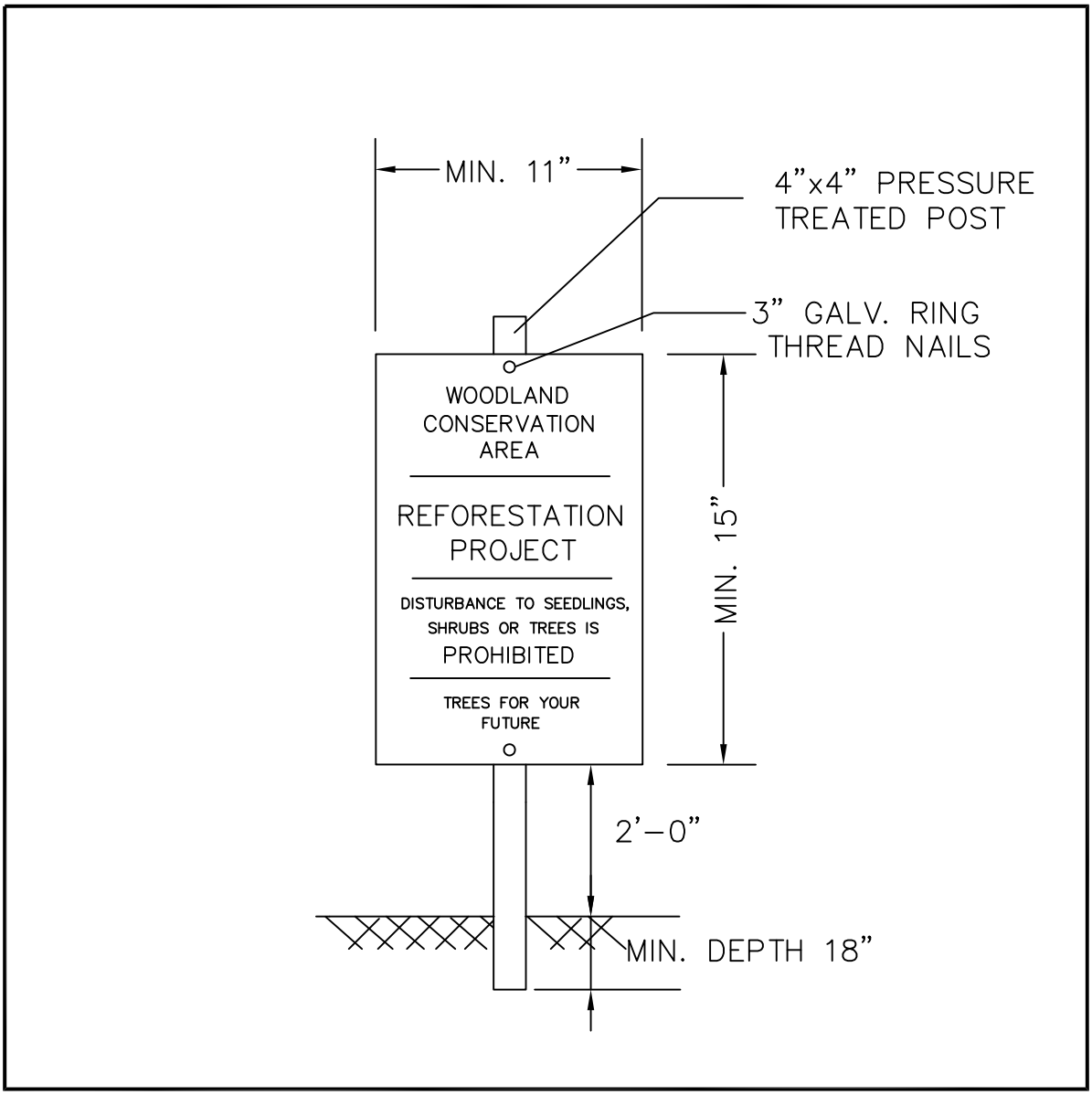


NOTES:

1. ATTACHMENT OF SIGNS TO TREES IS PROHIBITED.
2. SIGNS SHOULD BE PROPERLY MAINTAINED.
3. AVOID INJURY TO ROOTS WHEN PLACING POSTS FOR THE SIGNS.
4. SIGNS SHOULD BE POSTED TO BE VISIBLE TO ALL CONSTRUCTION PERSONNEL FROM ALL DIRECTIONS.
5. SIGNS SHOULD BE INSTALLED AT SAME TIME AS TREE PROTECTION DEVICE.
6. LOCATE SIGNS APPROXIMATELY EVERY 50 FEET ALONG FENCING.
7. SIGNS SHOULD BE IN PLACE IMMEDIATELY FOLLOWING STAKE OUT OF L.O.D., AND REMAIN IN PLACE IN PERPETUITY.

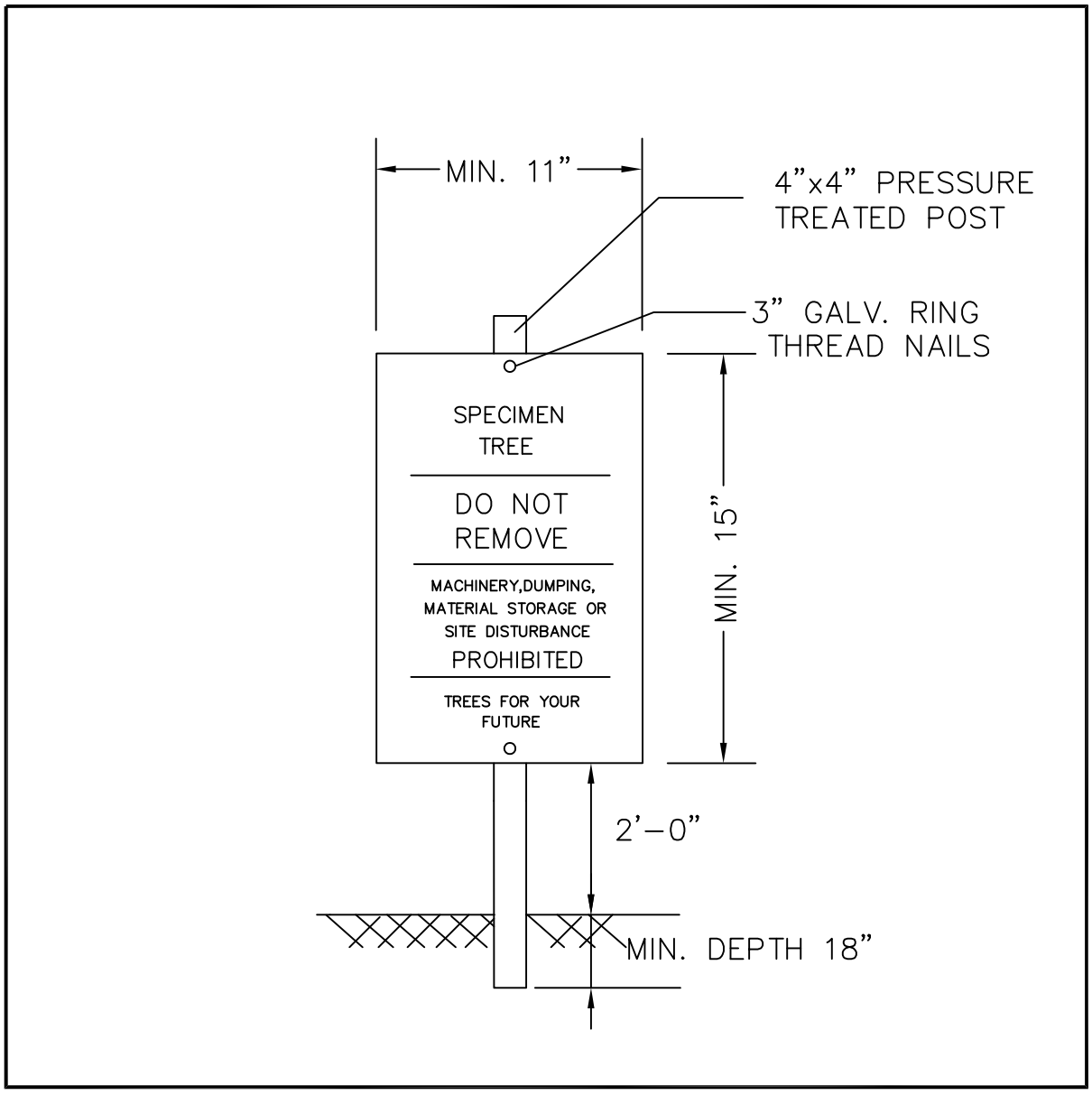
WOODLAND PRESERVATION AREA SIGN



NOTES:

1. ATTACHMENT OF SIGNS TO TREES IS PROHIBITED.
2. SIGNS SHOULD BE PROPERLY MAINTAINED.
3. AVOID INJURY TO ROOTS WHEN PLACING POSTS FOR THE SIGNS.
4. SIGNS SHOULD BE POSTED TO BE VISIBLE TO ALL CONSTRUCTION PERSONNEL FROM ALL DIRECTIONS.
5. SIGNS SHOULD BE INSTALLED AT SAME TIME AS TREE PROTECTION DEVICE.
6. LOCATE SIGNS APPROXIMATELY EVERY 50 FEET ALONG FENCING.
7. SIGNS SHOULD BE IN PLACE IMMEDIATELY FOLLOWING STAKE OUT OF L.O.D., AND REMAIN IN PLACE IN PERPETUITY.

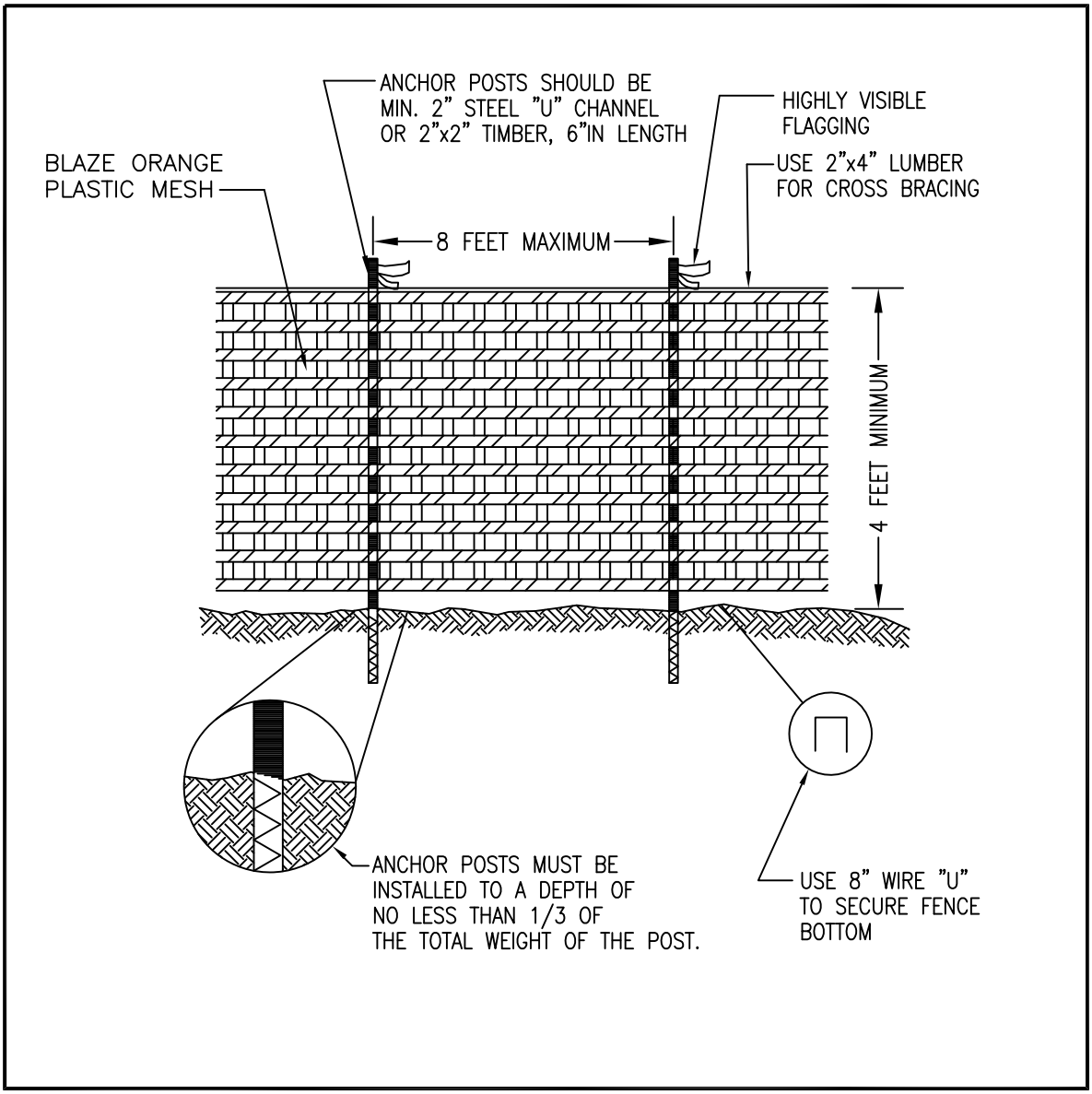
REFORESTATION AREA SIGN



NOTES:

1. ATTACHMENT OF SIGNS TO TREES IS PROHIBITED.
2. SIGNS SHOULD BE PROPERLY MAINTAINED.
3. AVOID INJURY TO ROOTS WHEN PLACING POSTS FOR THE SIGNS.
4. SIGNS SHOULD BE POSTED TO BE VISIBLE TO ALL CONSTRUCTION PERSONNEL FROM ALL DIRECTIONS.
5. SIGNS SHOULD BE INSTALLED AT SAME TIME AS TREE PROTECTION DEVICE.
6. LOCATE SIGNS APPROXIMATELY EVERY 50 FEET ALONG FENCING.
7. SIGNS SHOULD BE IN PLACE IMMEDIATELY FOLLOWING STAKE OUT OF L.O.D., AND REMAIN IN PLACE IN PERPETUITY.

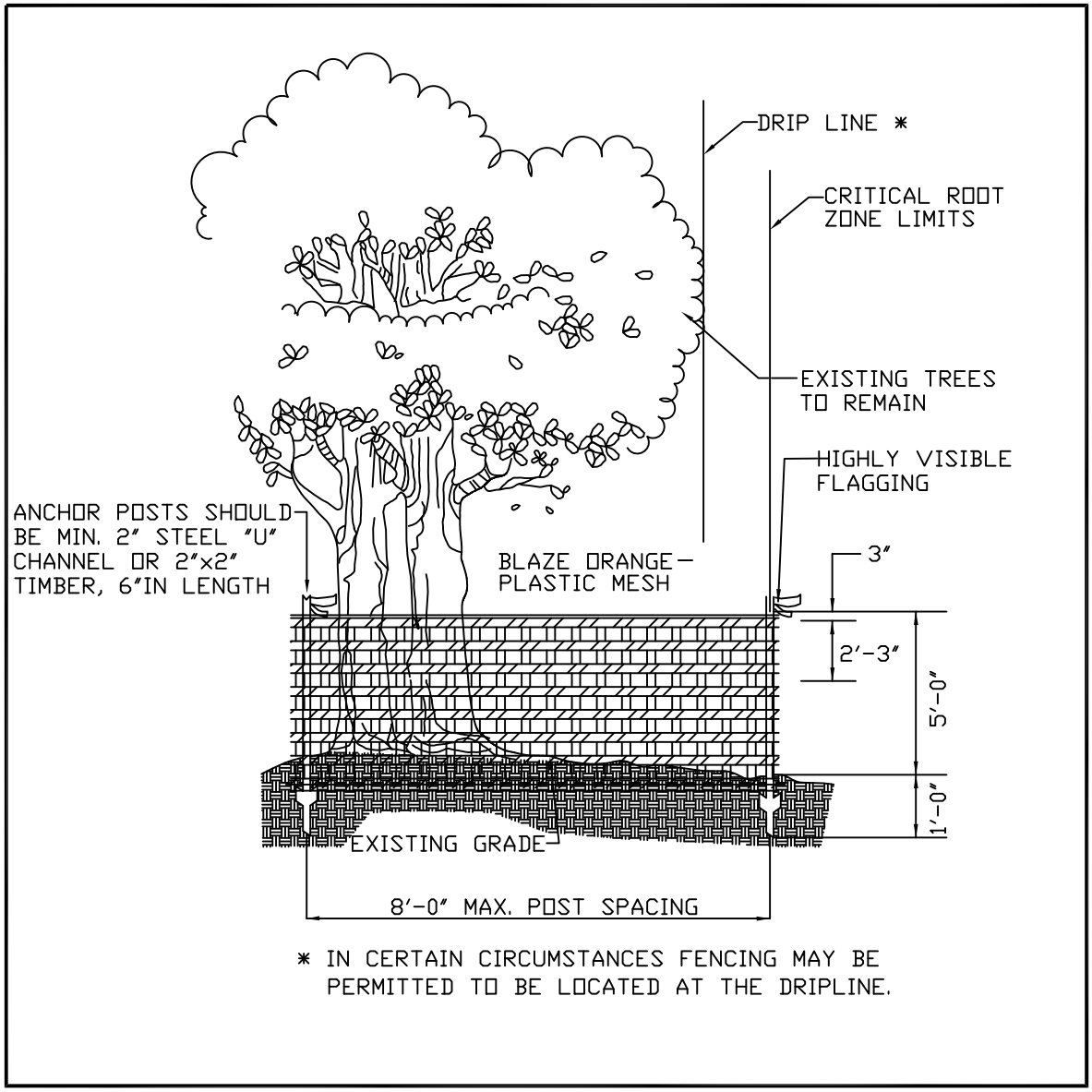
SPECIMEN TREE SIGN



NOTES: (MUST BE INCLUDED WITH DETAIL)

1. FOREST PROTECTION DEVICE ONLY.
2. RETENTION AREA WILL BE SET AS PART OF THE REVIEW PROCESS.
3. BOUNDARIES OF RETENTION AREA SHOULD BE STAKED AND FLAGGED PRIOR TO INSTALLING DEVICES.
4. AVOID ROOT DAMAGE WHEN PLACING ANCHOR POSTS.
5. DEVICE SHOULD BE PROPERLY MAINTAINED DURING CONSTRUCTION
6. PROTECTIVE SIGNAGE IS ALSO REQUIRED.

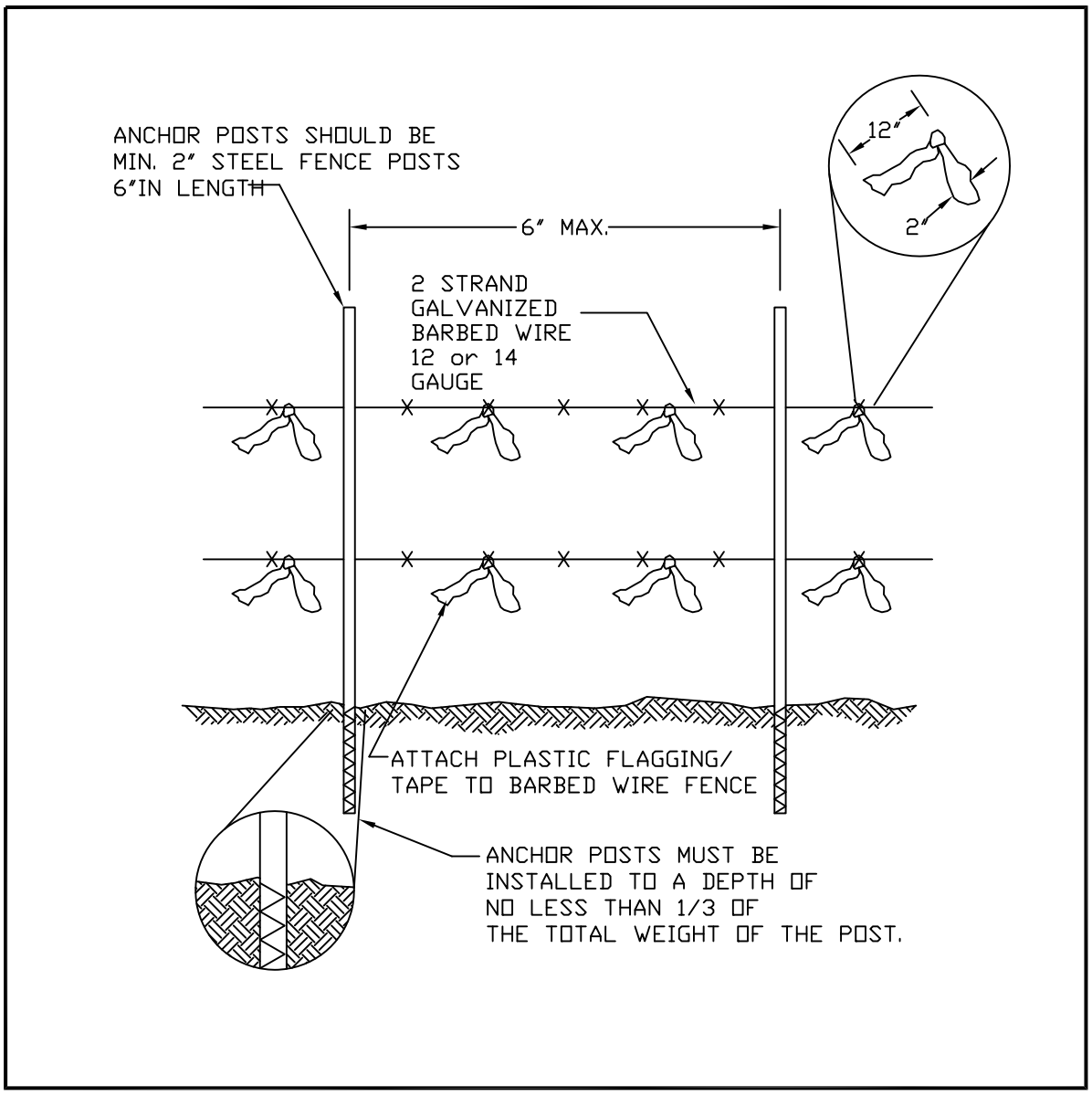
TYPE 1 (TEMPORARY) TREE PROTECTION FENCE DETAIL FOR WOODLAND PRESERVATION AREAS



NOTES: (MUST BE INCLUDED WITH DETAIL)

1. FOREST PROTECTION DEVICE ONLY.
2. RETENTION AREA WILL BE SET AS PART OF THE REVIEW PROCESS.
3. BOUNDARIES OF RETENTION AREA SHOULD BE STAKED AND FLAGGED PRIOR TO INSTALLING DEVICES.
4. AVOID ROOT DAMAGE WHEN PLACING ANCHOR POSTS.
5. DEVICE SHOULD BE PROPERLY MAINTAINED DURING CONSTRUCTION
6. PROTECTIVE SIGNAGE IS ALSO REQUIRED.

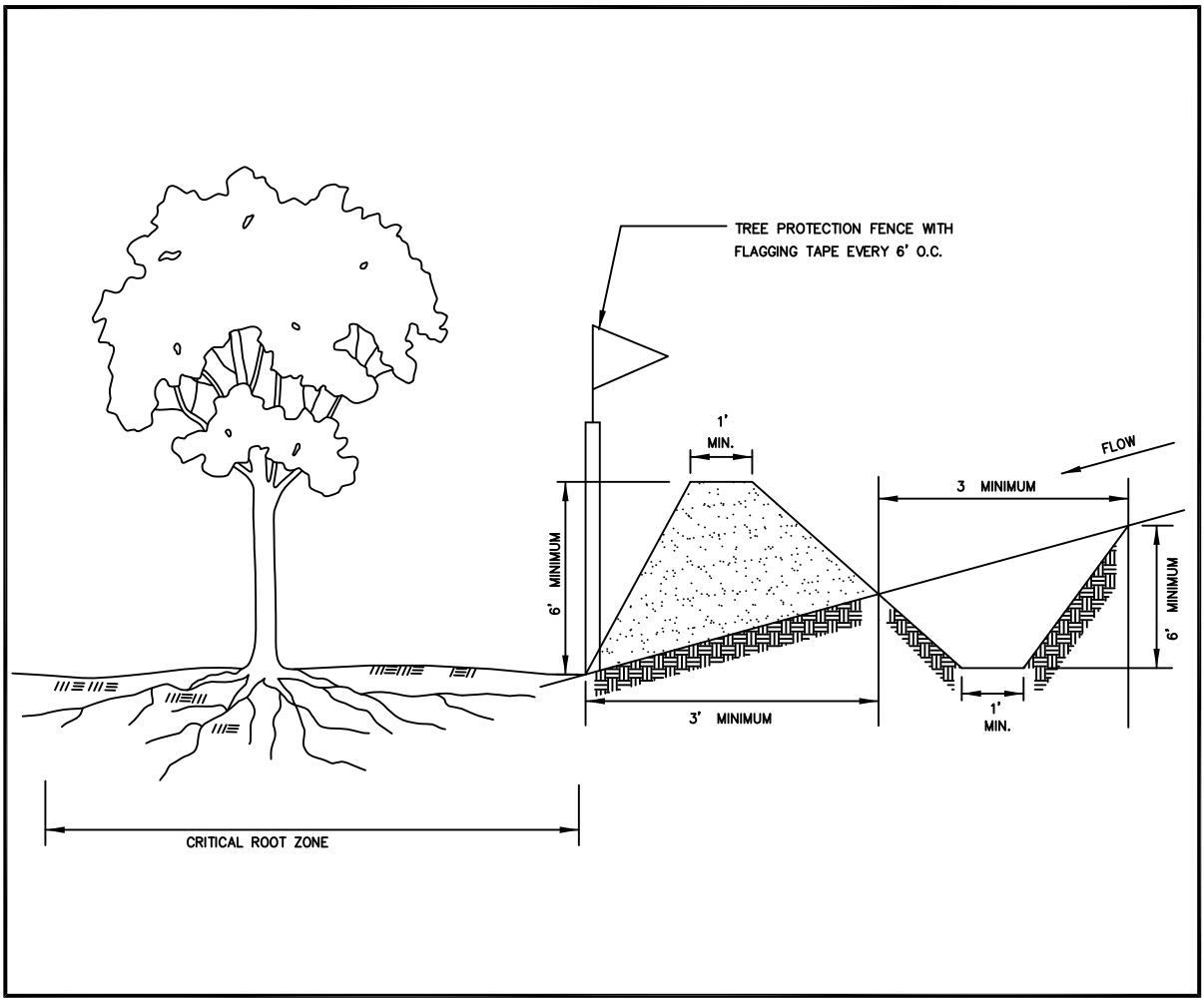
TEMPORARY FENCE PROTECTION DETAIL FOR WOODLAND PRESERVATION AREAS



NOTES: (MUST BE INCLUDED WITH DETAIL)

1. FOREST PROTECTION DEVICE ONLY.
2. RETENTION AREA WILL BE SET AS PART OF THE REVIEW PROCESS.
3. BOUNDARIES OF RETENTION AREA SHOULD BE STAKED AND FLAGGED PRIOR TO INSTALLING DEVICE.
4. AVOID ROOT DAMAGE WHEN PLACING ANCHOR POSTS.
5. BARBED WIRE SHOULD BE SECURELY ATTACHED TO POSTS.
6. DEVICE SHOULD BE PROPERLY MAINTAINED DURING CONSTRUCTION.
7. PROTECTIVE SIGNAGE IS ALSO REQUIRED.

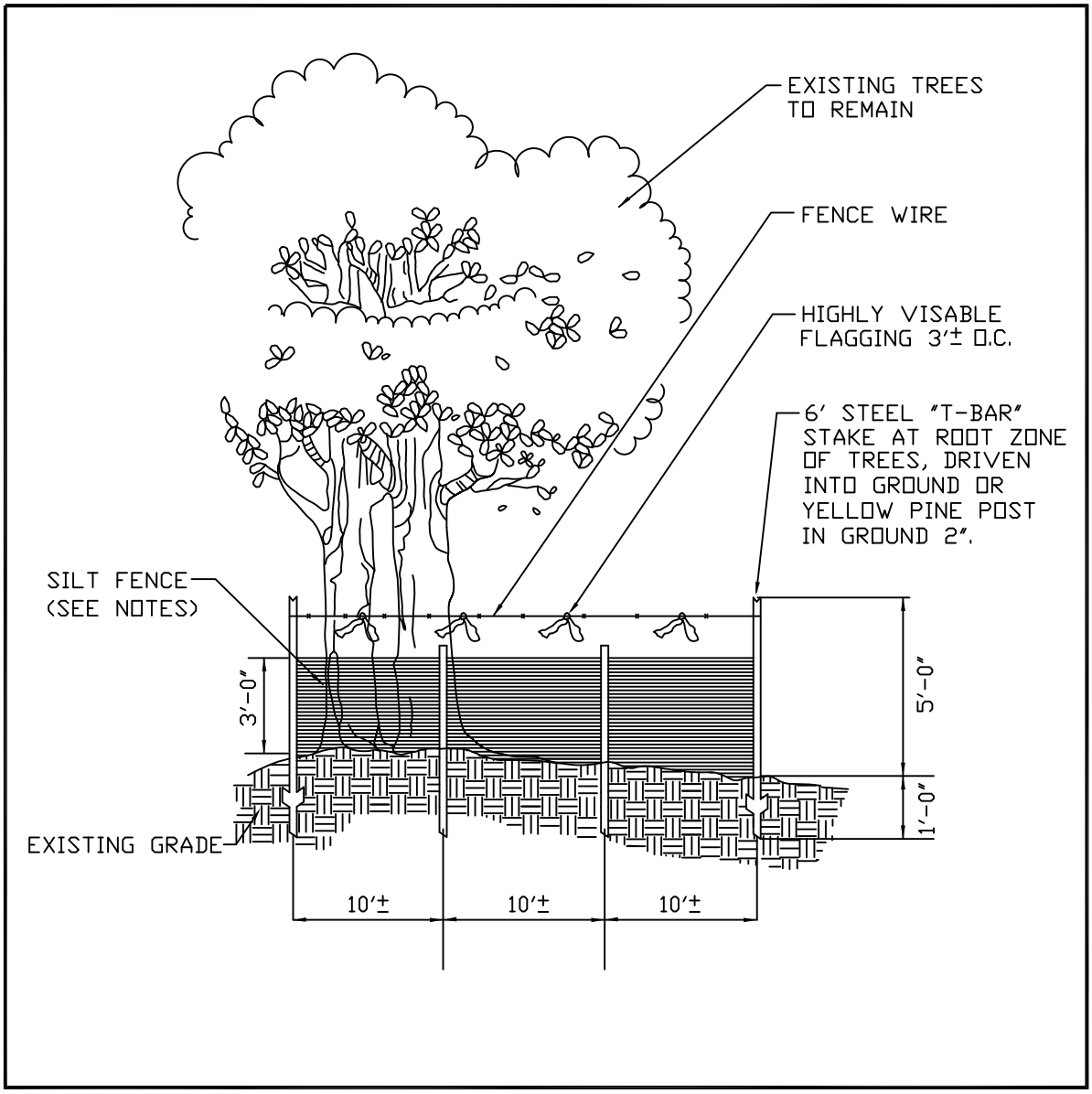
TYPE 2 (TEMPORARY) TREE PROTECTION FENCE FOR REFORESTATION AREAS



NOTES:

1. COMBINATION SEDIMENT CONTROL AND FOREST PROTECTION DEVICE.
2. BOUNDARIES OF THE RETENTION AREA WILL BE SET AS PART OF THE FOREST CONSERVATION PLAN REVIEW PROCESS.
3. BOUNDARIES OF RETENTION AREA SHOULD BE STAKED PRIOR TO INSTALLING PROTECTIVE DEVICE.
4. ROOT DAMAGE SHOULD BE AVOIDED.
5. THE TOE OF SLOPE SHOULD BE OUTSIDE THE CRITICAL ROOT ZONE.
6. EQUIPMENT IS PROHIBITED WITHIN CRITICAL ROOT ZONE OF RETENTION AREA; PLACE DIKE ACCORDINGLY.
7. ALL STANDARD MAINTENANCE FOR EARTHEN DIKES AND SWALES APPLY TO THESE DETAILS.
8. ALL STANDARD RECLAMATION PRACTICES FOR EARTHEN DIKES AND SWALES SHALL APPLY TO THESE DETAILS.

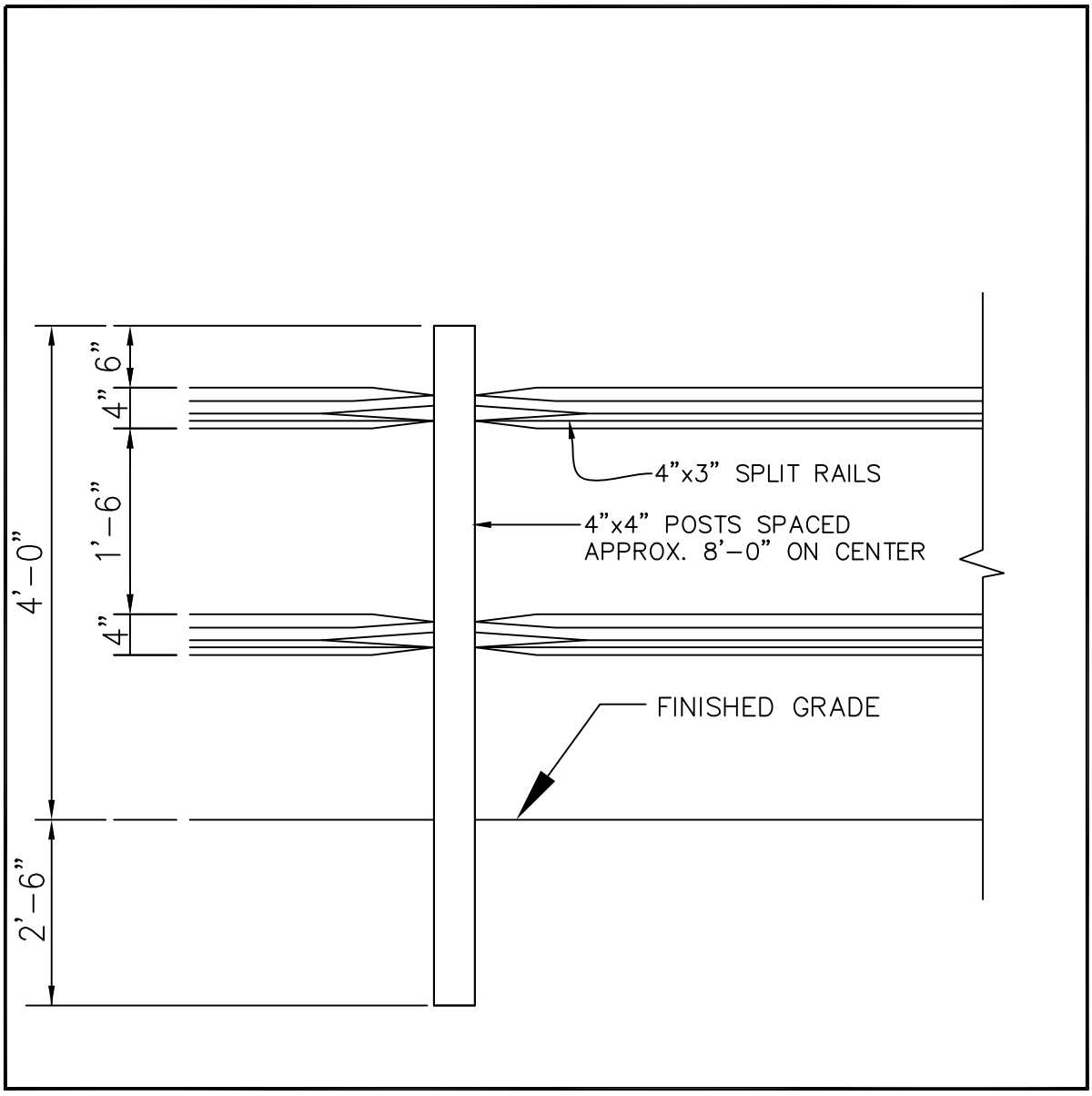
TYPE 3 (TEMPORARY) TREE PROTECTION FENCE
COMBINATION SILT FENCE & TREE PROTECTION



NOTES:

1. SILT FENCE TO BE HEELED INTO SOIL.
2. WIRE, SNOW FENCE, ETC. FOR TREE PROTECTION ONLY.
3. BOUNDARIES OF RETENTION AREA WILL BE ESTABLISHED AS PART OF THE TREE CONSERVATION PLAN REVIEW PROCESS.
4. BOUNDARIES OF RETENTION AREA SHOULD BE STAKED AND FLAGGED PRIOR TO INSTALLING DEVICE.
5. AVOID ROOT DAMAGE WHEN PLACING ANCHOR POSTS.
6. DEVICE SHOULD BE PROPERLY MAINTAINED THROUGHOUT CONSTRUCTION.
7. PROTECTION SIGNS ARE ALSO REQUIRED.
8. LOCATE FENCE OUTSIDE THE CRITICAL ROOT ZONE.

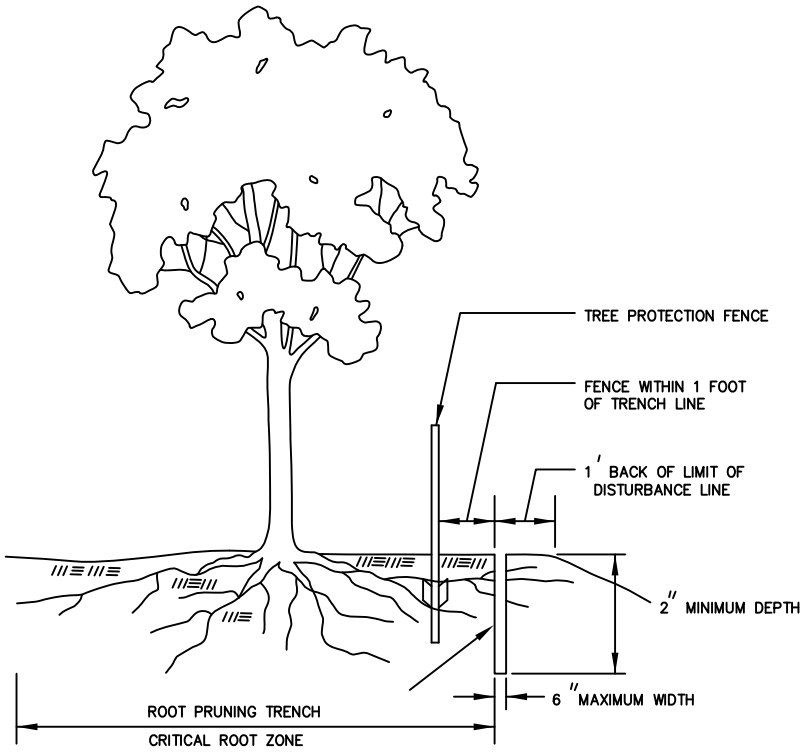
TYPE 4 (TEMPORARY) TREE PROTECTION FENCE
COMBINATION SILT FENCE & TREE PROTECTION



NOTES:

1. POSTS SHALL STAND PLUMB.
2. RAILS SHALL BE HUNG WITH UNIFORM HEIGHT AND SPACING.
3. REFORESTATION SIGNS TO BE ATTACHED TO WOOD POSTS EVERY 50 FEET..
4. TOP OF SIGN TO BE FLUSH WITH TOP OF WOOD POST.
5. SIGNS TO BE ATTACHED USING 2 GALVANIZED WOOD SCREWS EACH WITH A GALVANIZED WASHER.

PERMANENT (SPLIT RAIL)TREE PROTECTION FENCE FOR REFORESTATION AREAS



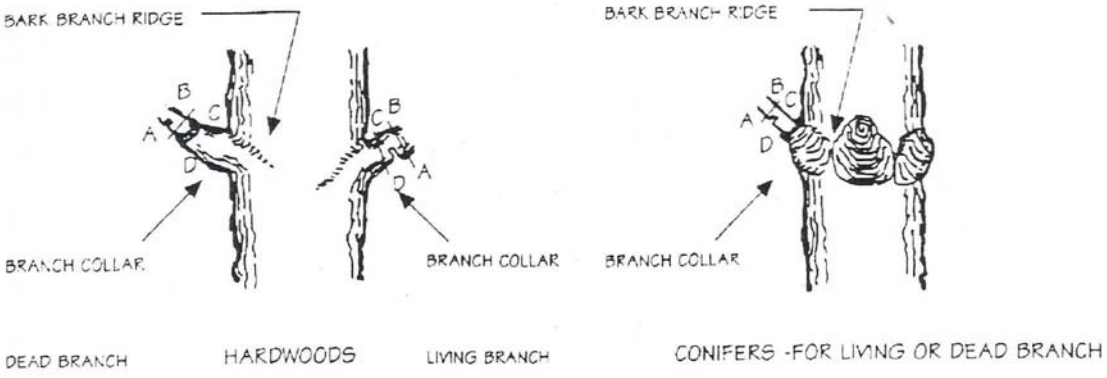
Source: Maryland State Forest Conservation Technical Manual, 3rd Edition – 1997

NOTES:

1. RETENTION AREAS TO BE ESTABLISHED AS PART OF THE FOREST CONSERVATION PLAN REVIEW PROCESS.
2. BOUNDARIES OF RETENTION AREAS SHOULD BE STAKED, FLAGGED AND/OR FENCED PRIOR TO TRENCHING.
3. EXACT LOCATION OF TRENCH SHOULD BE IDENTIFIED.
4. TRENCH SHOULD BE IMMEDIALTEY BACKFILLED WITH SOIL REMOVED OR OTHER HIGH ORGANIC SOIL.
5. ROOTS SHOULD BE CLEANLY CUT USING VIBRATORY KNIFE OR OTHER ACCEPTABLE EQUIPMENT.

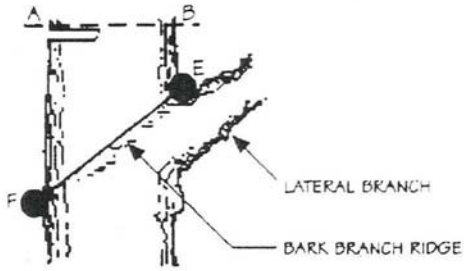
ROOT PRUNING

Pruning a Branch



Notes:
1. Remove branch weight by undercutting at A and remove limb by cutting through at AB.
2. Remove stub at CD (line between branch bark ridge and outer edge of branch collar).
3. If D is difficult to find on hardwoods, angle of CD to trunk should be the reflective angle of the bark branch ridge to the trunk.
4. Only prune at specified times.
5. Remove no more than 30% of crown at one time.

Pruning a Leader to Reduce Size

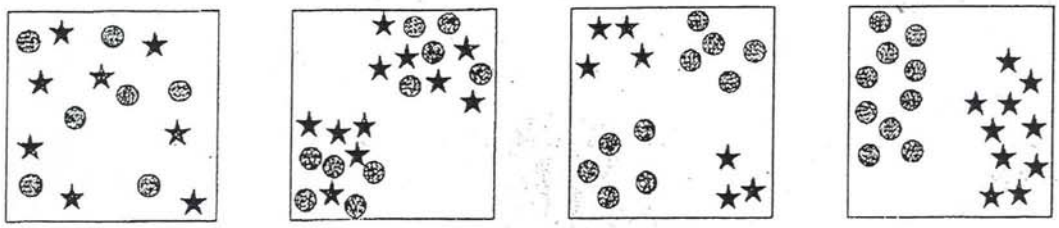


Notes:
1. Remove top weight by undercutting at A and remove limb by cutting through AB.
2. Remove stub at EF parallel to the bark branch ridge.
3. Only prune at specified times.
4. No more than 30% of crown to be removed at one time.
5. Diameter of lateral branch should be no less than 30% of the diameter of the leader.

Source: Fairfax County, Virginia:Vegetation Preservation & Planting, January 1986

Tree Pruning

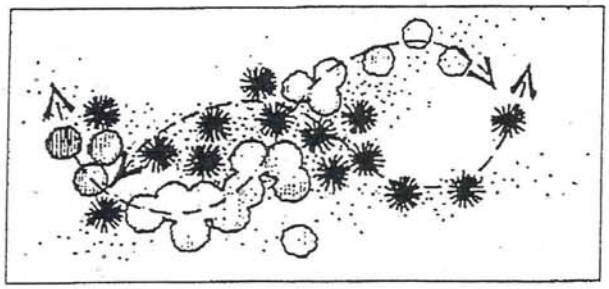
Typical Forest Tree Distribution Patterns



Note:
Naturally occurring populations of trees tend to be found in informal groupings. A cluster of trees is really a mosaic of different species groups. The objective of an afforestation/reforestation plan is to select the appropriate species and distribution pattern for a chose site that mimic natural patterns.

Source: Prince Georges County Woodland Conservation Manual.

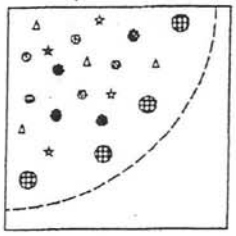
Aggregate Distribution Drift



Note:
When used, plant cluster type groupings that taper or feather out along the edges. Clusters often appear as elongated or tear drop shapes.

Source: EQR, Inc.

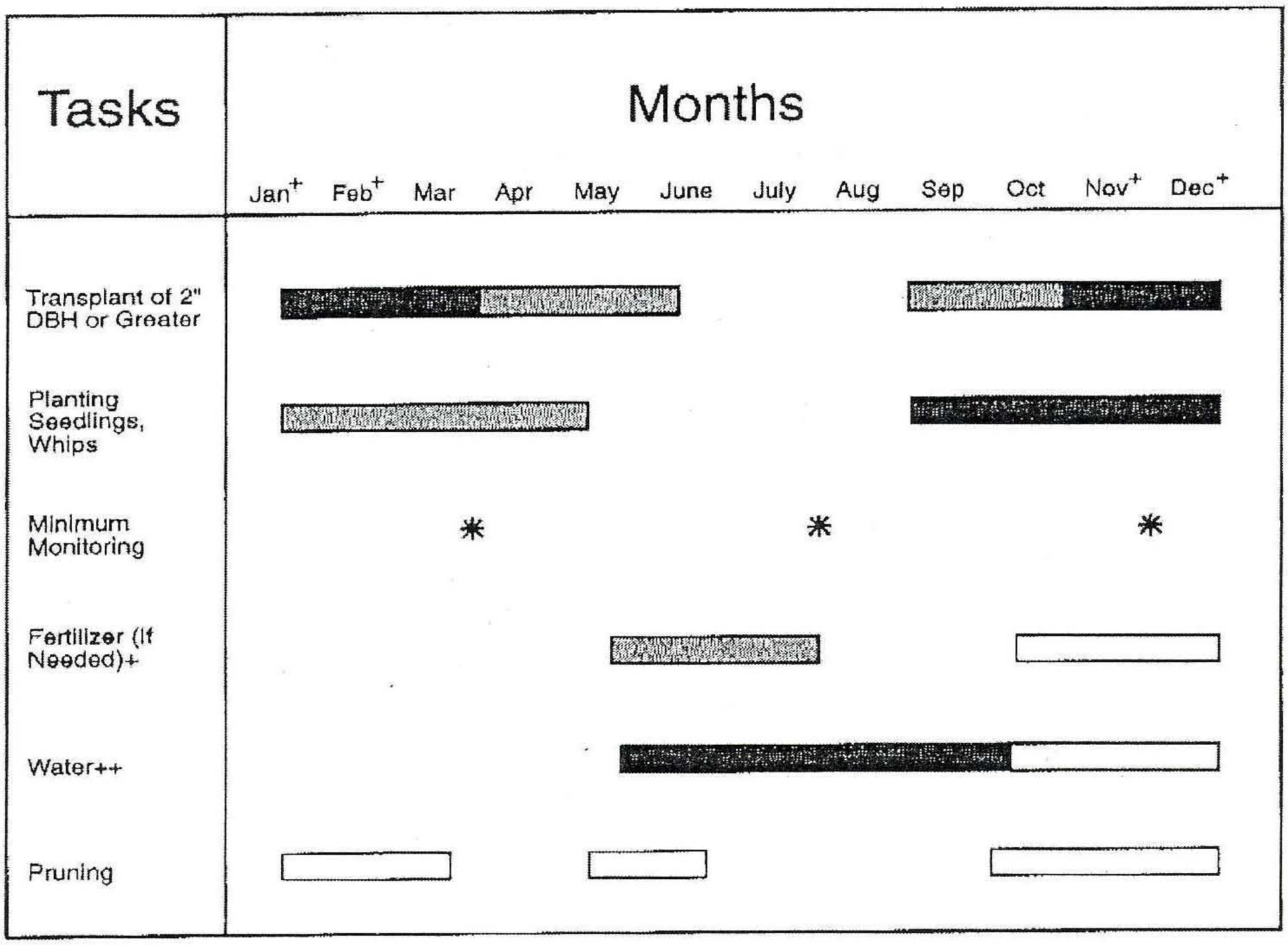
Mixing Transplant Stock



- Locate larger trees (B&B or container grown) or transplant stock at the perimeter of reforestation/afforestation plantings of whips, seedling grown stock.
- ----- Protective Fencing
- Smaller Stock

Source: Adapted from Forest Conservation Manual, 1991

Planting Distribution Patterns



Recommended, Optimal time

Recommended with Additional Care

Recommended

\+ Dependent Upon Site Conditions

++ Dependent Upon Site Conditions: Weekly Watering is Strongly Recommended From May Through October Unless Weekly Rainfall Equals 1"

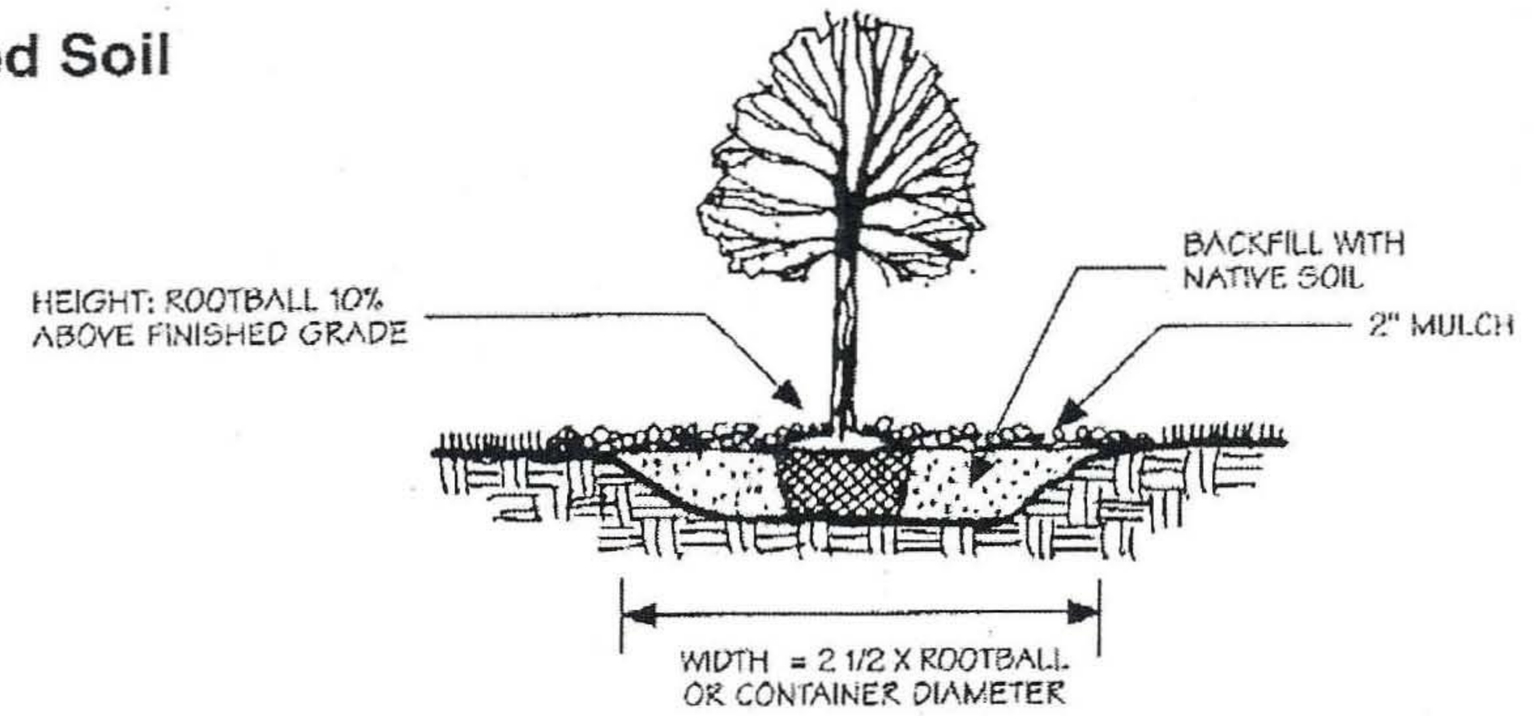
Notes:

1. Activities during November through February depend on ground conditions.
2. No fall planting of oaks and pines.
3. The planting and care of trees is most successful when coordinated with the local conditions. This calendar summarizes some of the recommended time frames for basic reforestation and stress reduction activities.

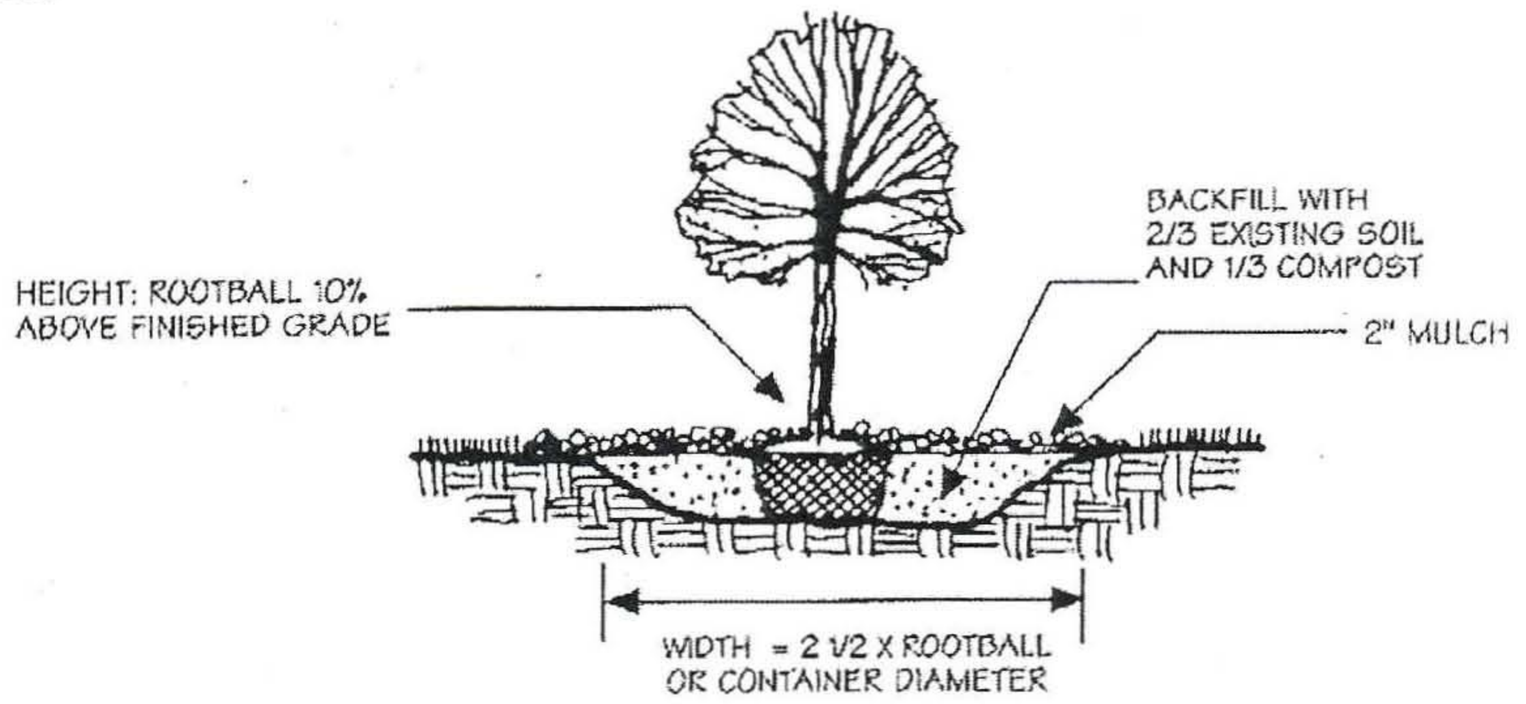
Source: Adapted from Forest Conservation Manual, 1991

Tree Planting and Maintenance Calendar

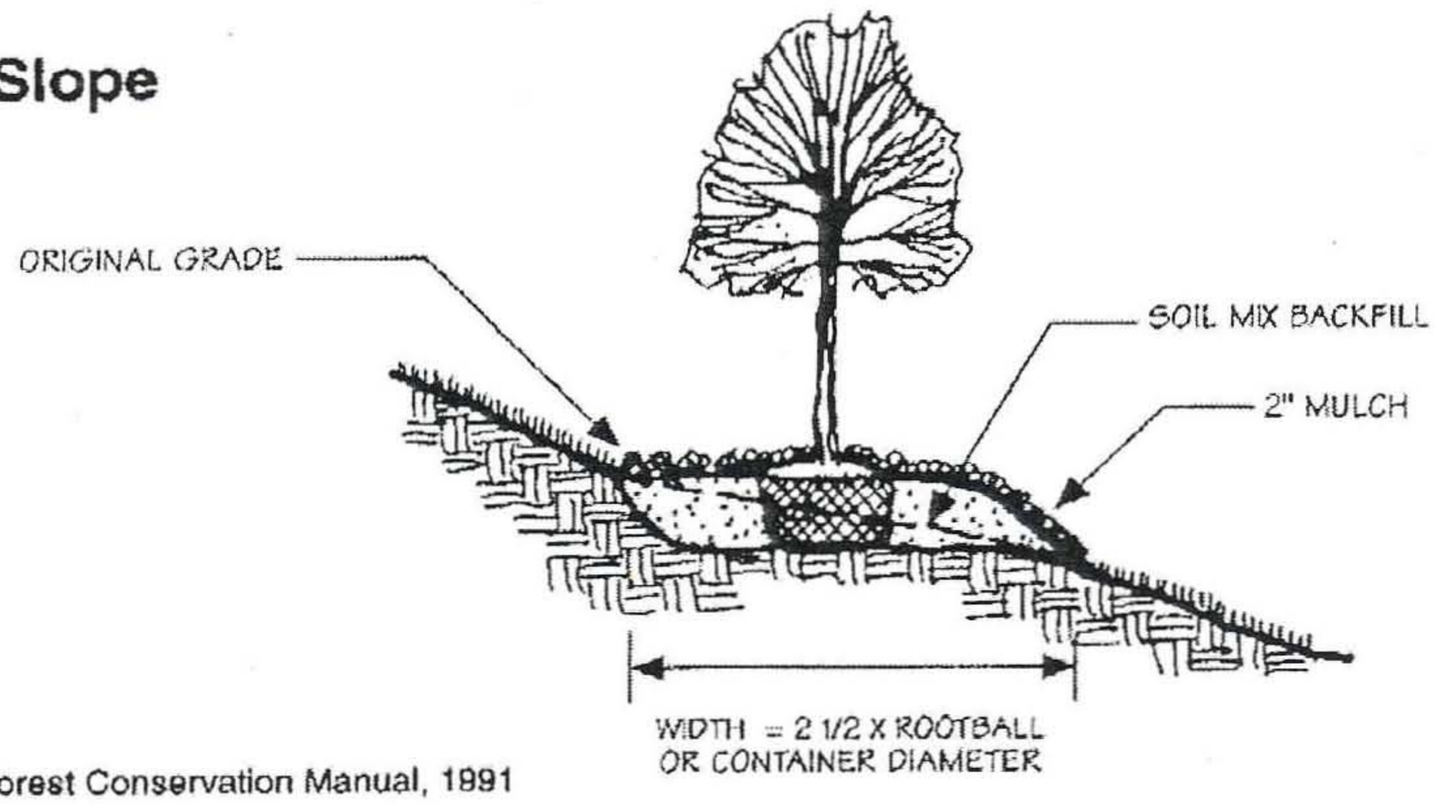
Undisturbed Soil



Disturbed Soil



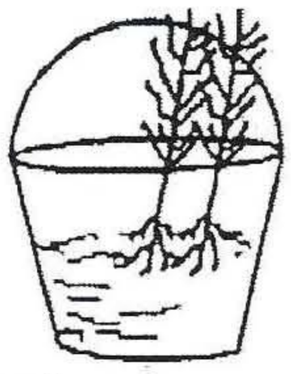
Planting on Slope



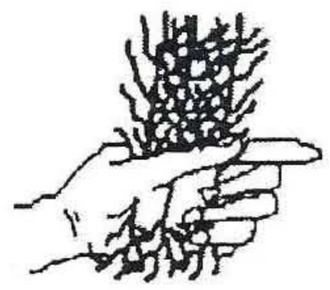
Source:Adapted from Forest Conservation Manual, 1991

Container Grown and B&B Planting Techniques

Handling Seedlings in the Field



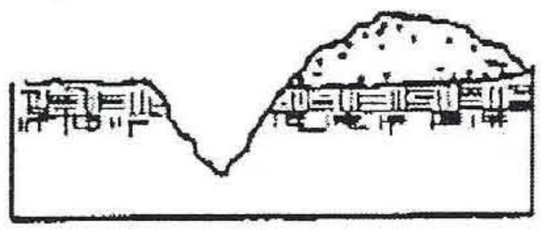
Correct
IN BUCKET WITH SUFFICIENT
WATER TO COVER ROOTS



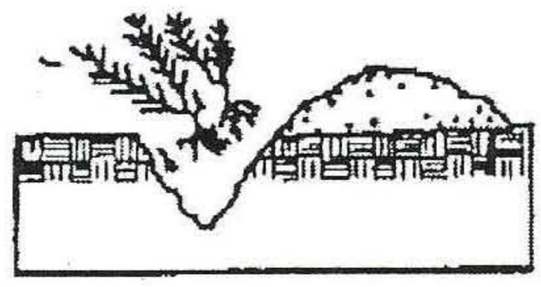
Incorrect
IN HAND:
ROOTS DRY OUT

Note:
1. Bare root seedlings and whip stock should be heeled-in when left unplanted for more than 24 hours.

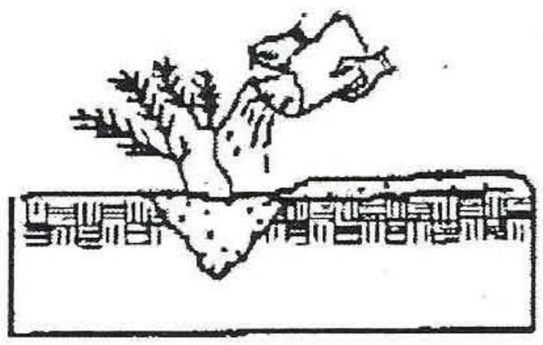
Seedlings and Whips



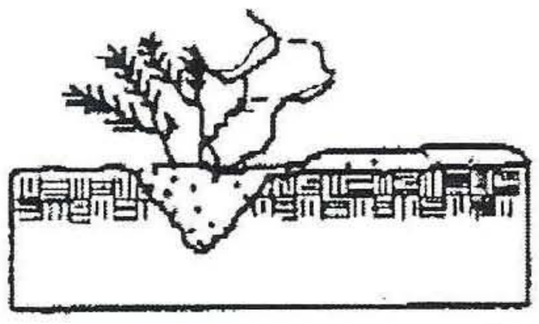
1. DIG V-SHAPED TRENCH
IN MOIST SHADY PLACE



2. BREAK BUNDLES AND
SPREAD OUT EVENLY



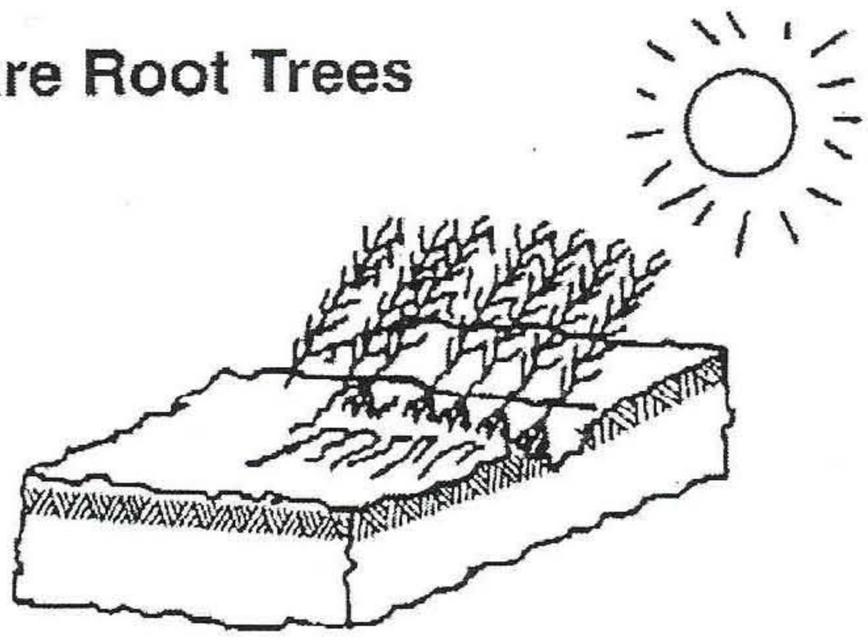
3. FILL IN LOSE SOIL AND
WATER WELL



4. COMPLETE FILLING IN SOIL
AND FIRM WITH FEET

Note:
1. Bare root seedlings and whip stock should be heeled-in when left unplanted for more than 24 hours.

Bare Root Trees



Place trees in an east-west trench with the tops of the trees pointing toward the afternoon sun. Moist soil should be worked around the roots to cover them and minimize air pockets. Pointing the tree tops toward the afternoon sun exposes the least surface to the sun so the buds will be less likely to begin growth.

Note:
1. Bare root trees should be banked-in when they must be left unplanted for longer than a few days

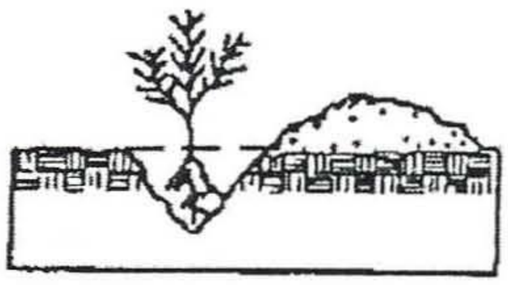
Source: Adapted from Forest Conservation Manual, 1991

Handling Bare Root Stock

Seedling and Whip Planting

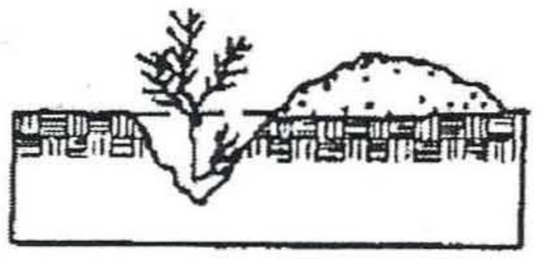
Note:
1. Mulching newly planted seedlings helps the soil retain moisture and protects the seedling from compaction and stem injuries.

Correct and Incorrect Planting Depth

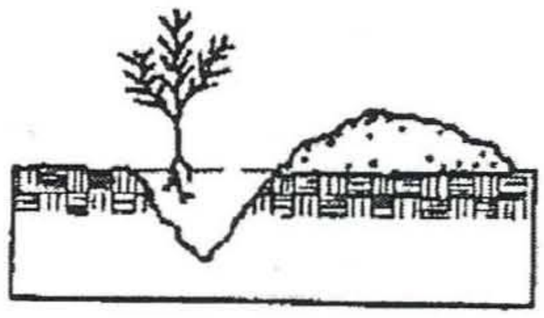


Correct
AT SAME DEPTH

SEEDLING WAS GROWN
IN NURSERY

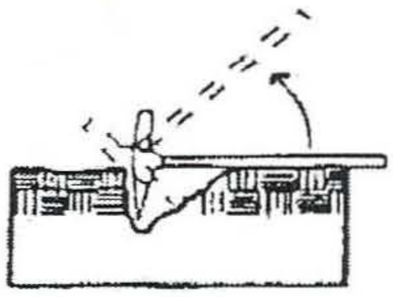


Incorrect
TOO DEEP AND ROOT
BENT



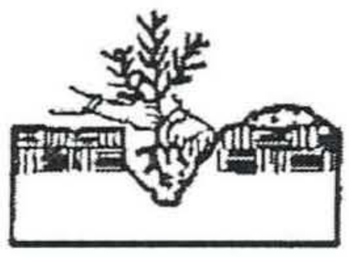
Incorrect
TOO SHALLOW AND ROOTS
EXPOSED

Mattock Planting

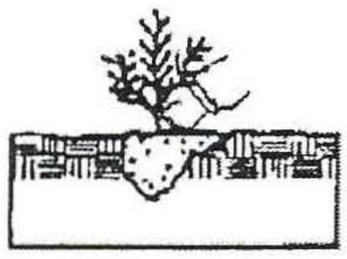


1. Insert mattock; lift handle and pull

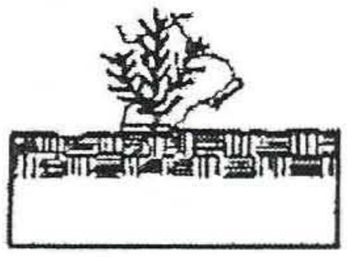
2. Place seedling along straight side at correct depth.



3. Fill in and pack soil to bottom of roots.



5. Firm around seedling with feet.

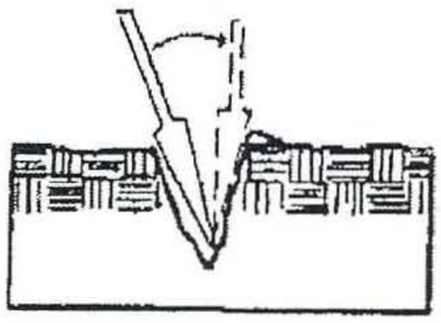


4. Finish filling in soil and firm with heel.

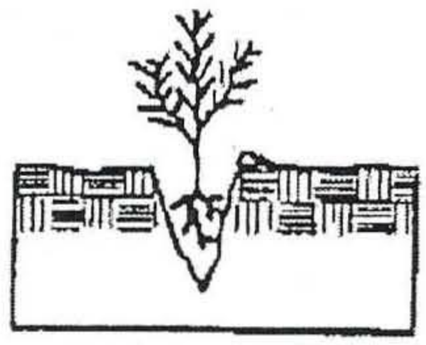
Source: Adapted from Forest Conservation Manual, 1991

Seedling and Whip Planting Techniques

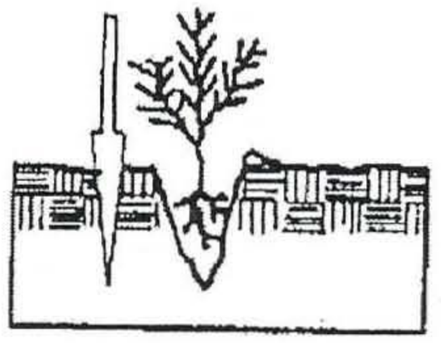
Planting With Dibble Bar



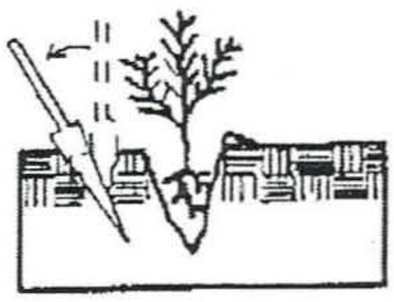
1. INSERT DIBBLE AT ANGLE SHOWN ABOVE AND PUSH FORWARD TO UPRIGHT POSITION



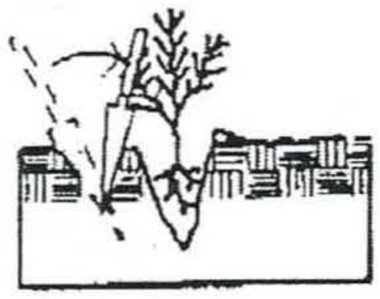
2. REMOVE DIBBLE AND PLACE SEEDLING AT CORRECT DEPTH



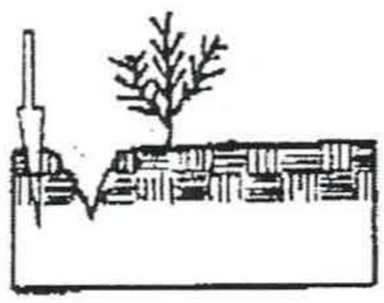
3. INSERT DIBBLE 2 INCHES TOWARD PLANTER FROM SEEDLING



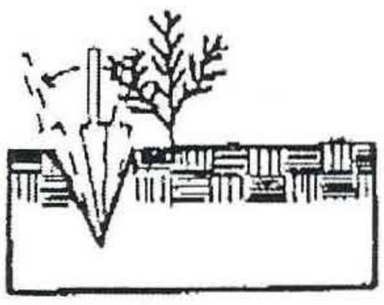
4. PULL HANDLE OF DIBBLE TOWARD PLANTER FIRMING SOIL AT BOTTOM OF ROOTS



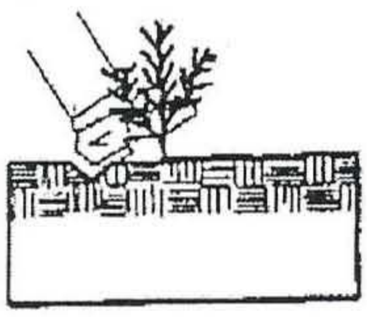
5. PUSH HANDLE OF DIBBLE FORWARD FROM PLANTER FIRMING SOIL AT TOP OF ROOTS



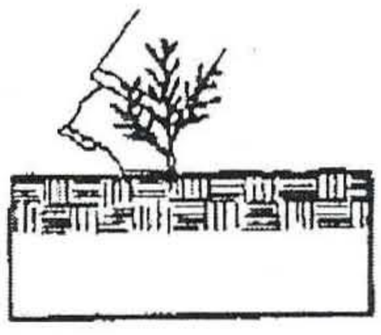
6. INSERT DIBBLE 2 INCHES FROM SEEDLING



7. PULL FORWARD THEN PULL BACKWARD FILLING HOLE



8. FILL LAST HOLE BY STAMPING WITH HEEL

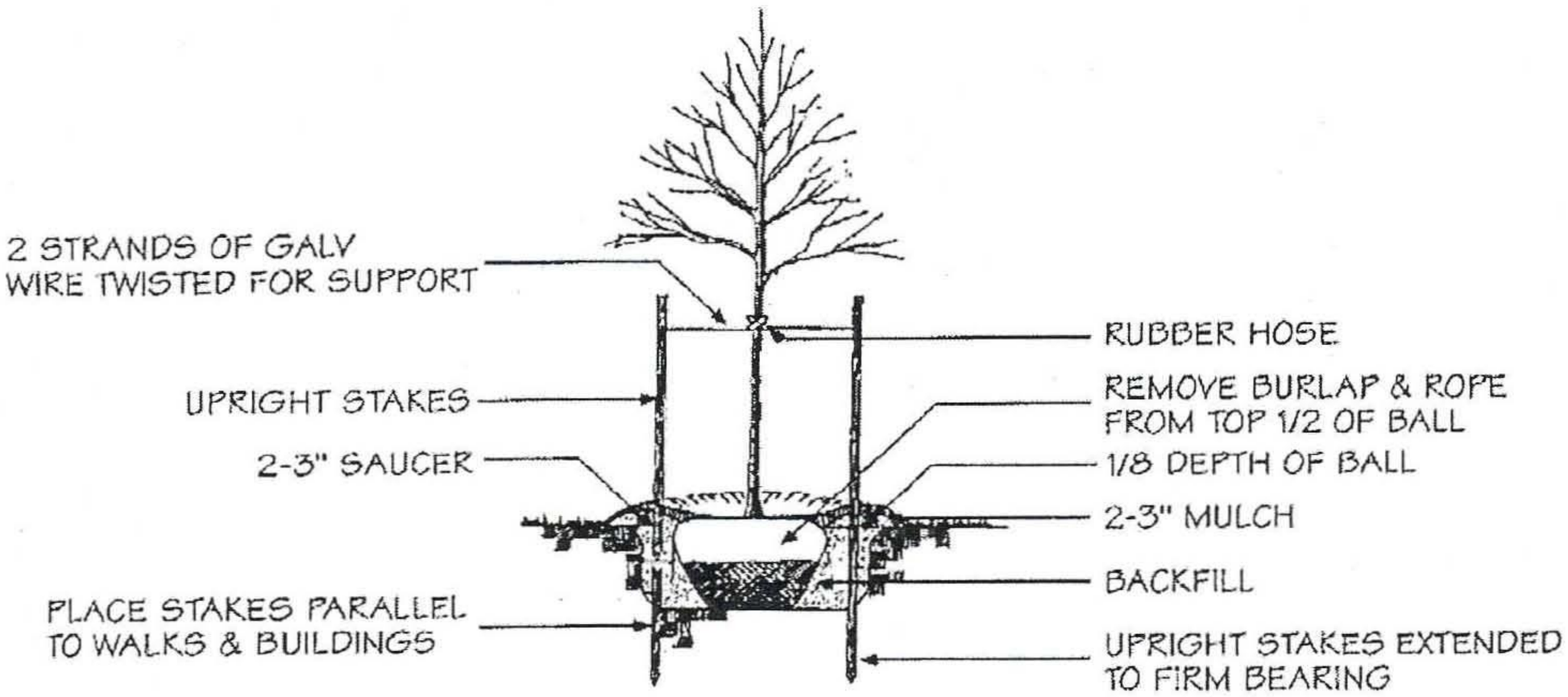


9. FIRM SOIL AROUND SEEDLING WITH FEET

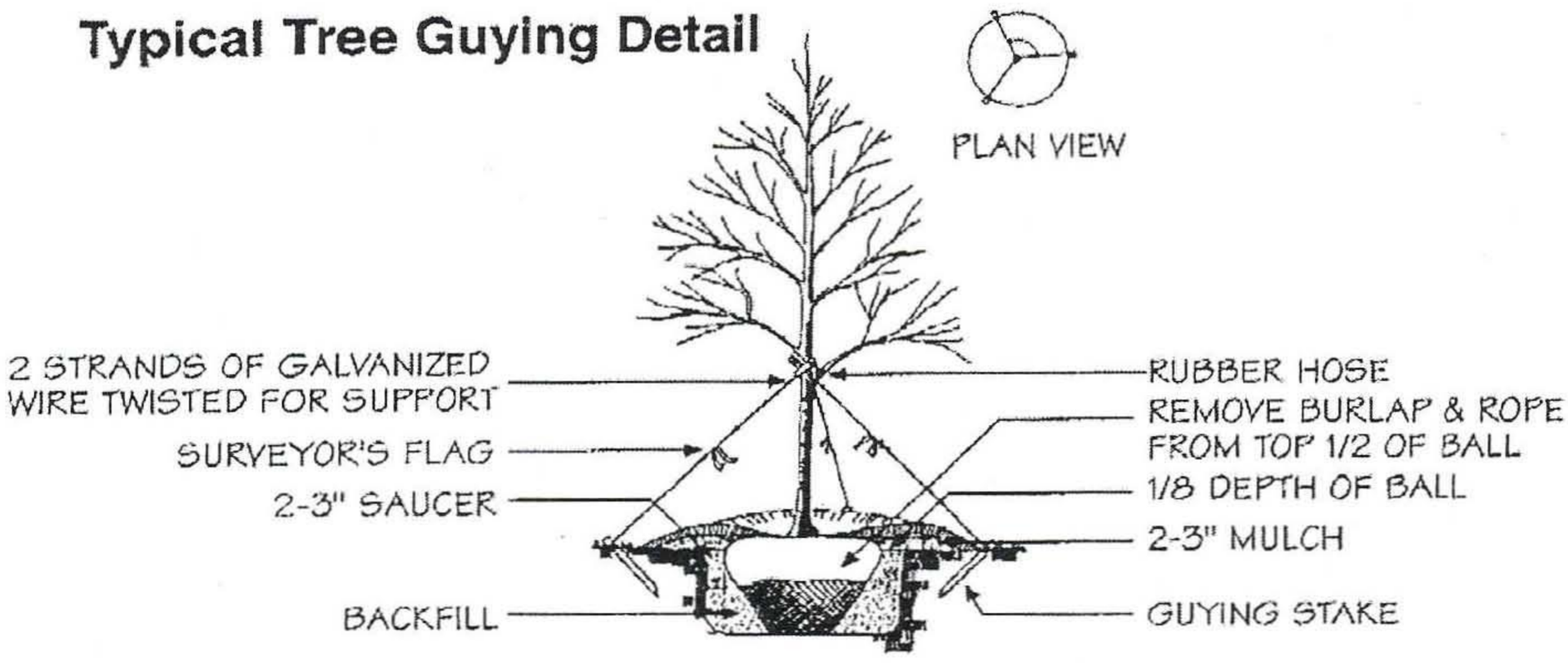
Source: Adapted from Duryea & Dougherty, Forest Regeneration Manual, Kluwer Academic Publishers, Boston, 1991 and Forest Conservation Manual, 1991

Seedling Planting Techniques

Typical Upright Staking Detail



Typical Tree Guying Detail



Tree Size Height	Tree Size Caliper	Stake	#	Wire or Cable	Hose
6-10'	1" to 1-1/2"	5-6' upright	2	14 guage wire	1/2"
10-12'	2" to 2-1/2"	7-8' upright	2	14 guage wire	1/2"
12-14'	2-1/2" to 3"	2" guy	3	12 guage wire	1/2"
14-16'	3-4"	2" guy	3	12 guage wire	3/4"

Source: Adapted from Forest Conservation Manual, 1991

Tree Staking and Guying Specifications

Size	Number Required per Acre	Approximate Spacing feet on center	Survivability Requirement At the end of the second growing season	
Bare Root Seedlings or Whips	700	8 x 8	75%	525
Container Grown Seedling Tubes (Minimum Cavity Width 1.5")	500	10 x 10	75%	375
Container Grown 1, 2, 3 Gallon	400	12 x 12	75%	300
Container Grown 5, 7 Gallon or 1" Caliper B & B	300	15 x 15	85%	255
Container Grown 15, 25 Gallon or 1.5 - 2" Caliper B & B	150	20 x 20	100%	150

Notes:

1. These stocking and survival requirements are the minimum numbers estimated to meet the definition of forest from bare land.
2. In certain circumstances, any combination of the above mentioned stocking options, dry seeding, tree shelters, transplants, and/or natural regeneration may be appropriate strategies to fulfill the requirements of an approved TCP. They will be evaluated on a case-by-case basis by the approving authority.
3. Spacing does not imply that trees or shrubs must be planted in a grid pattern.

Site Stocking

Property Owners Awareness Certificate

I/ We _____ hereby acknowledge that we are aware of this Type 2 Tree Conservation Plan (TCP2) and that we understand the requirements as set forth in this TCP2.

_____

Owner or Owners Representative Date

I/ We _____ hereby acknowledge that we are aware of this Type 2 Tree Conservation Plan (TCP2) and that we understand the requirements as set forth in this TCP2.

_____

Contract Purchaser Date

Figure C:6 MARYLAND DNR – FOREST SERVICE
Planting Quality Check

PROJECT:_____ FCA FILE:_____
ADDRESS:_____ INSPECTOR:_____
_____ REVIEW DATE:_____
JURISDICTION:_____ PLANTING DATE:_____

SAMPLE PLOT LOCATION:_____
PLOT SIZE SELECTED: [ ] 1/10th (=37.2 Radius circle); [ ] 1/20th (=26.4' Radius circle) or [ ] Other:_____

SITE SUMMARY

Size of Planting _____
Species Planted: _____
_____
Spaces (betweenx along Rows) _____
Site Prep: _____
Planting Method: _____

SAMPLING REQUIREMENTS:

Site Size (Acres)	Min # of Plots Taken
1-10	2 Total
10-75	10 Total
75+	1 per 7 acres

Key:
- Correct
A Angled
D Planted Deeply
L Loose
M Multiple
S Shallow

Key:
- Correct
A Angled
D Planted Deeply
J J-Rooted
L Loose
M Multiple
R Roots Pruned (by installer)
S Shallow
T Twisted or Balled Up

Key:
I Compact Soil
II Wet Area
III Heavy Slash
IV Thick Duff
V Brush
VI Rocky
VII Sandy
VIII Thick Grass
IX Steep Slope (mach. Pltd?)

Plot Number	VISUAL INSPECTION: Planted Property	Planted Improperly	Plot Total (Std. #=_____)	DUG SEEDLINGS: 1	2	3	SITE CONDITIONS
1							
2							
3							
4							
5							
6							
7							
8							
9							
10							
TOTAL:				Total # Dug			
%			Per Acre Average:	Total Satisfactory			
Per Acre Standard: (20% +/- range= _____ - min. max.				% Satisfactory Target = 85% Minimum = 70% (<70% = replant)			

COMMENTS:_____

PLANTING QUALITY FORM INSTRUCTIONS

I. Before beginning field checks and sampling determine the following information and add it to the "Planting Quality" form:

a) All site description information (ie: acres, spacing, site prep, planting method, etc.)

b) Determine the plot size you will use when sampling, and thus calculate the radius of plot circle (add this info. To form as requested)

c) Based on the seedling spacing chart, determine the "Per Acre Standard" and the acceptable range (+/-20%), and add info. To the form where requested.

d) Based on the "Per Acre Standard", and your plot size, determine the "Plot Total Standard #: as requested on the form. (For 1/10th acre plot, divide "Per Acre Standard" by 10. Example: for 700 seedling/acre, "Plot Total Standard " = 70.0 seedlings/plot, the goal)

II. Based on the sampling area's size and the sampling requirements (as shown on the form), layout out the number of sampling plots and their locations or a copy of the planting plan. Sampling areas should be determined based on planting layout, such as species and spacing similarities.

III. Supplies/tools needed to perform the sampling include;

a) A small planting shovel or space
b) A loggers tape, measuring tape or a remeasured chain/rope (to make plot radius)
(note: a planting spade with a hole in its handle for attaching the measuring tape is the best approach. A typical wood stake with a whole drilled into top can be used to hold end of tape/rope also.)
c) Planting gloves (as preferred)
d) a clip board for forms/plans, and calculator (if preferred)

IV. Perform "Visual Inspection" and "Dug Seedlings" sampling. Use the Key descriptions to note observations. Visually inspect all seedlings counted within the plot area (thus, quantities of "planted property" and planted improperly" should add up to "plot total"). At least 3 seedlings should be dug and inspected per plot.

Key descriptions are as follows:

A – Angled Seedlings (more than 30 degrees from vertical)
D – Planted Deeply (more than 1 inch of live needles buried)
J – J-Rooted (Over 1" of tap root turned 90degrees or more)
L – Loose (can be removed from hole with easy upward pull)
down)
M – Multiple (more than one seeding in planting hole)
R – Roots Pruned (roots pruned by contractor without approval)
S – Shallow (the root collar is above packed soil)
T – Twisted or Balled (roots aren't straight and extending straight

V. List Site Conditions – Note any site conditions, planting problems or seedling conditions when severe enough to adversely affect survival.

VI. Once all plots are completed, compute the Visual Inspection percentages, and the Total Satisfactory # of dug seedlings to see if they have reached the target and minimums. Request replant if needed. (If all 10 plots will be taken, after completing approximately 5 plots, do informal calculations/totals to see if corrections are needed.)

Visual Inspection results-To determine...

-% planted properly: divide the properly planted total by the total seedlings counted and multiply by 10

-% planted improperly: divide total improperly planted

-per acre average: divide total # of seedlings inspected by # of plots taken, then multiply by 10

Dug Seedlings results – To determine...

-% satisfactory (per dug seedlings):
divide the total satisfactory dug by
the total number of dug seedlings
(total dug = number of plots multiplied by three), then multiply result by 10.

VI. Unusual and unacceptable results should be discussed with the contractor immediately, and corrections must be made.

STANDARD SIGNATURE BLOCKS FOR ENVIRONMENTAL PLANS

For TCP1 Plans:

M-NCPPC
Prince George's County Planning Department
Environmental Planning Section
APPROVAL
TREE CONSERVATION PLAN
TCP1- -

	Approved by	Date
01		
02		
03		
04		
05		

For TCP2 Plans:

M-NCPPC
Prince George's County Planning Department
Environmental Planning Section
APPROVAL
TREE CONSERVATION PLAN
TCP2- -

	Approved by	Date
01		
02		
03		
04		
05		

For Natural Resource Inventories ONLY:

M-NCPPC
Prince George's County Planning Department
Environmental Planning Section
APPROVAL
NATURAL RESOURCES INVENTORY
NRI- -

	Approved by	Date
01		
02		
03		
04		