

PC-35 VEGETATION/PLANTING

Refer to: ITD Standard Specifications, Sections 620 and 711.06.

For assistance, contact the Roadside Vegetation Program Coordinator in ITD Headquarters.



BMP Objectives

- Perimeter Control
- Slope Protection
- Borrow and Stockpiles
- Drainage Areas
- Sediment Trapping
- Stream Protection
- Temporary Stabilizing
- Permanent Stabilizing

Definition and Purpose

Planting is the process of using live whole plants, plant parts, or sod for long-term vegetative cover (shrubs, trees, grass, or forbs) on disturbed areas for soil/slope stabilization, erosion control and aesthetic purposes. Plant material can be obtained as container stock, tubelings, bare root stock, cuttings, or cut sod. Plantings can serve to more quickly establish larger plants than by either seeding or through natural colonization of adjacent vegetation onto disturbed sites.

Appropriate Applications for Planting:

- Abandoned or closed roads or source sites
- Aesthetic landscaping projects
- Buffering adjacent natural areas
- Bio-filtration/stormwater swales
- Restoration of streambanks, wetlands, riparian areas or other wildlife habitat
- Rocky slopes
- Screening for noise or undesirable views
- Slopes subject to slide failure
- Sod or mass plantings for rapid erosion control
- Supplementing other erosion control measures such as riprap, gabions, rock mulch
- Supplementing permanently seeded slopes, berms or buffer strips
- Other applications approved by the Engineer.

Limitations

- Plant stock may have higher purchase and installation costs than for seeding.
- Availability of some species may be limited or require contract growing.
- Time of installation may be limited according to species requirements.
- Irrigation may be necessary to ensure planting establishment and survival.
- Plants may be inadequate to stabilize over-steepened, raveling, or unstable slopes.
- Plants may encroach into the roadway clear zone or diminish sight distance.
- Plants may perform as a living snow fence and cause drifting of either snow or dust onto the roadway.
- Plants may shade roadway, causing slick and unsafe conditions in the winter.
- Woody plants may restrict snow removal and storage.
- Roadside plants may harbor wildlife near the drive lane, creating unsafe conditions for both the public and the wildlife.

Guidelines

- All plant material shall conform to the ITD Standard Specifications concerning materials selection, care, quality/condition, identification (species), and inspection.
- Plant material selection and placement shall meet minimum ITD safety requirements, including clear zone and sight distances.
- Soils that support healthy plant growth have a matrix of mineral particles, organic particles, air spaces, water, and living microbes. Protect existing soils from disturbance by limiting clearing and grubbing to only those areas necessary to complete work and by avoiding compaction from equipment or materials staging as much as possible. Native topsoil from project work areas can be retained and reused for revegetation areas.
- Successful plantings require proper site preparation and adequate soils. If the condition or quality of the soil is unknown or has been severely disrupted from construction activities or other disturbances, obtain soil analyses to determine recommendations for soil amendments. Adequately establish soil conditions that can support plant growth.
- Plantings in sensitive areas like wetlands or critical habitat may require specialized plant stock that meets ecological and genetic criteria. In these instances, seek guidance on plant selection, plant material sources and installation from ITD Environmental Section or from state or federal resource agencies.
- Technical assistance regarding plant species selection, planting, and spacing requirements can be obtained by contacting the ITD District Environmental Planner or the ITD Headquarters Roadside Vegetation Program Coordinator.

Additional information can be obtained from:

- *A User's Guide to Description, Propagation and Establishment of Native Shrubs and Trees for Riparian Areas in the Intermountain West* (TN Plant Materials No. 32, USDA–Natural Resource Conservation Service)

- *The Practical Streambank Bioengineering Guide, A User's Guide for Natural Streambank Stabilization Techniques in the Arid and Semi-arid Great Basin and Intermountain West* (USDA–Natural Resources Conservation Service)

ITD Roadside Revegetation Guidebook

<http://itd.idaho.gov/manuals/Manual%20Production/RoadsideReVeg/fullVegetationManual.pdf>

- *University of Idaho Extension* (www.extension.uidaho.edu) plant and soil publications

Planting BMPs

- Voluntary or unskilled labor may be used in planting. However, a supervisor skilled in proper planting techniques should direct the labor.
- Mark the north side of the tree in the nursery as grown and rotate tree to same orientation when planting on site.
- Face any ‘dogleg’ above a trunk graft to the north to reduce winter bark injury.
- Prepare a planting hole appropriate for the plant material type and species.
- Do not allow the root ball to disintegrate; keep the roots and soil as a coherent mass.
- Structural roots and top of root ball should lie just below (within 1 inch of) the soil surface and the trunk flare (trees) or stem collars (shrubs) should stand just above the finish grade.
- Do not heavily prune tree at planting. Prune only cross-over limbs, co-dominant leader, and broken or dead branches. Do not remove terminal buds of dominant leader or branches that extend to the edge of the crown.
- Do not bury construction waste or trash in planting holes or under mulch.
- Provide a 2-3 inch layer of organic or rock mulch to at least 4” beyond the outer diameter of the rootball to protect the root ball and to suppress weed growth.
- Only stake trees if conditions warrant. See “Staking” section and details below.

Balled-and-burlapped (B&B) trees

- Trees or plants with synthetic burlap and twine shall be rejected.
- Place root ball in planting hole to make sure the plant will be at the appropriate horizontal and vertical location. Adjust planting hole as necessary.
- After the plant is placed upright to the correct height for final grade, stabilize the root ball with a soil ring around the lower 1/4 of the root ball.
- Cut and remove all wire, burlap and twine from the top 12 inches or 2/3 of the root ball, whichever is greater.
- Backfill the planting hole by alternating with native soil and water to remove air pockets and settle soil. DO NOT TAMP SOIL.

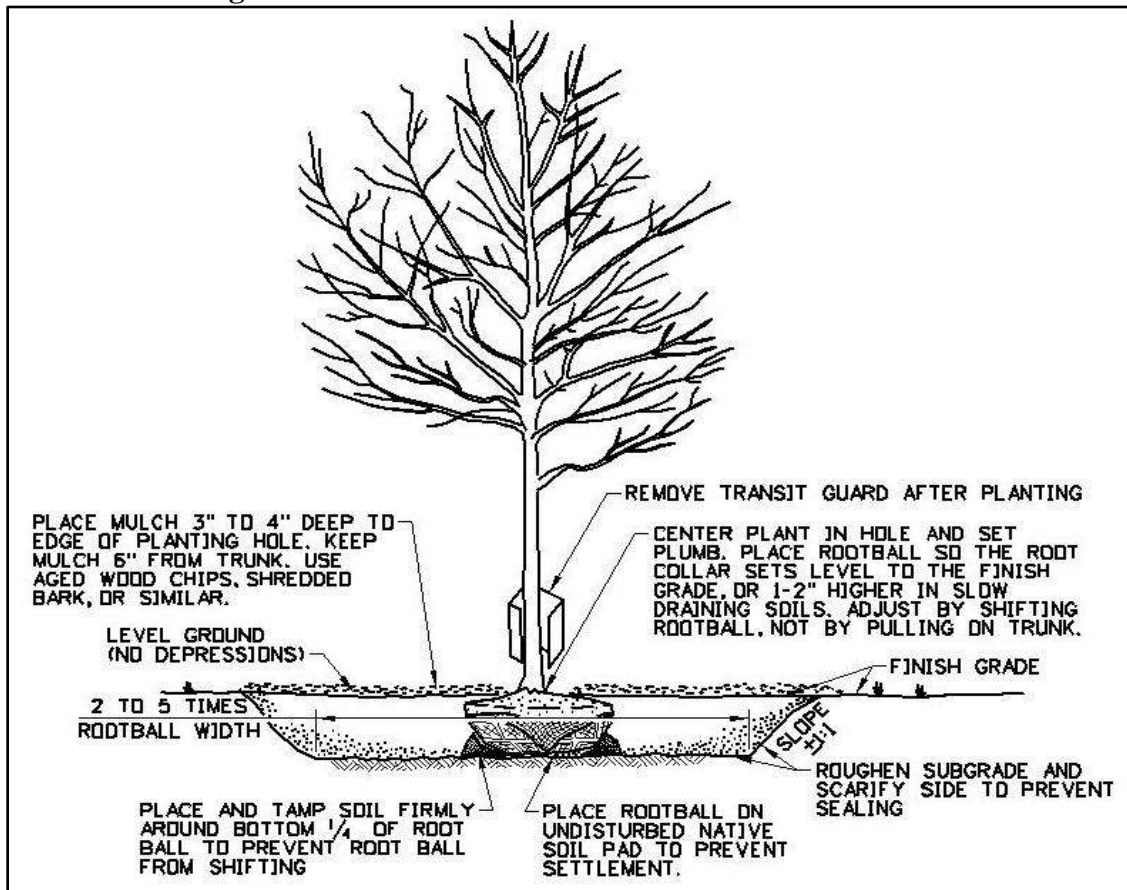
Container plants

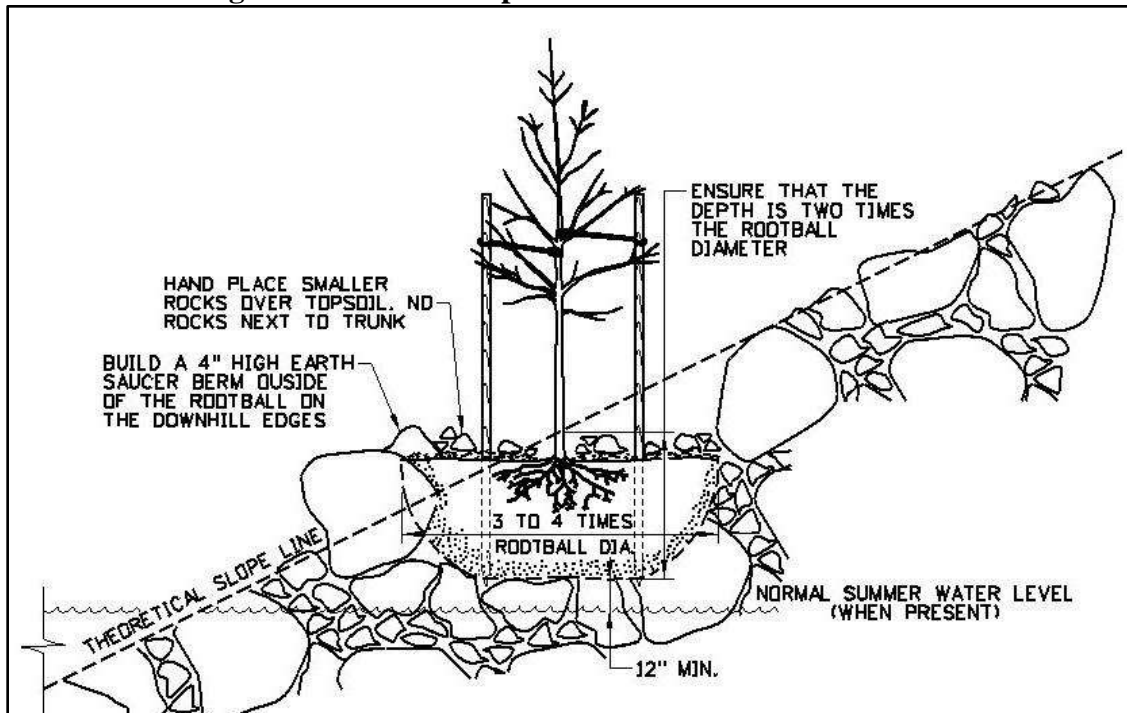
- Tease apart or roughen outer roots to stimulate growth away from the root ball. For stock with severely circled/pot-bound roots, trim the outer 1" of roots off the root ball.
- Place root ball in planting hole to make sure the plant will be at the appropriate horizontal and vertical location. Adjust planting hole as necessary.
- After the plant is placed upright to the correct height for final grade, stabilize the root ball with a soil ring around the lower 1/4 of the root ball.
- Backfill the planting hole by alternating with native soil and water to remove air pockets and settle soil. DO NOT TAMP SOIL.

Bare-root plants

- After placing the plant, backfill the hole two-thirds full by sprinkling soil around the roots and allow the soil to settle between the roots. Periodically water the soil lightly until no air pockets remain. DO NOT TAMP SOIL.
- Fill the remainder of the hole with topsoil and add more water. Ensure that the plant does not settle deeper into the hole.

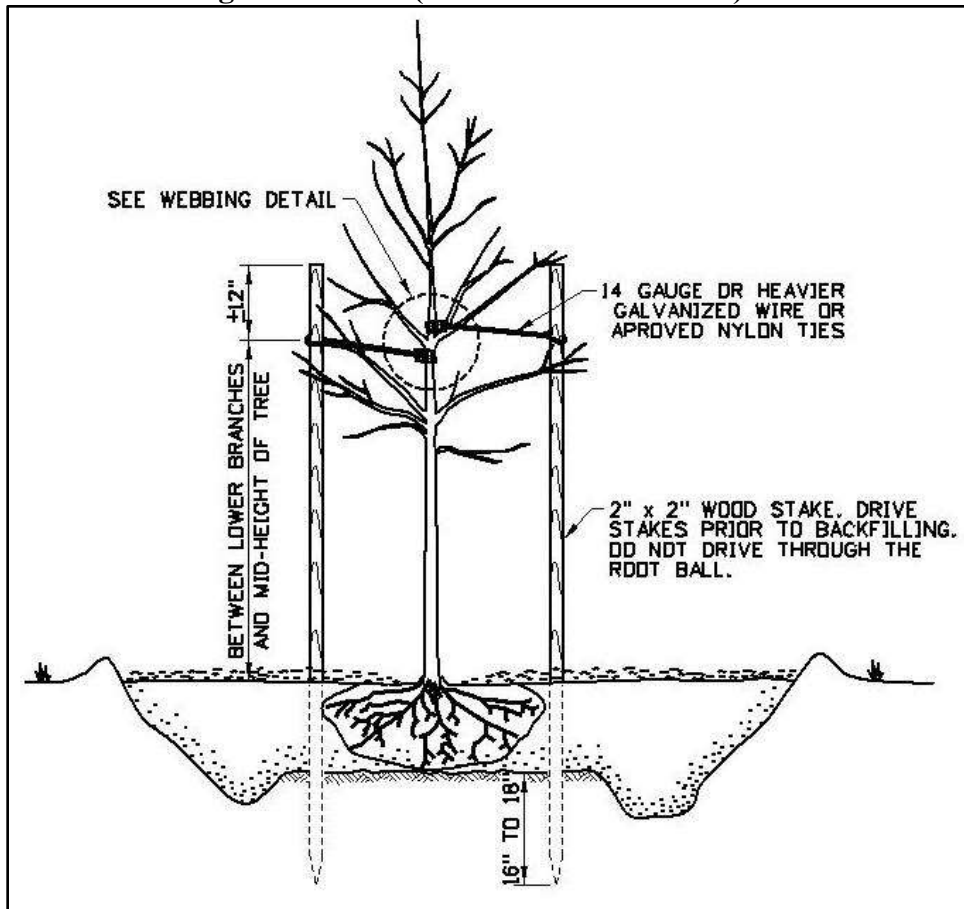
Detail 1: Planting Trees and Shrubs



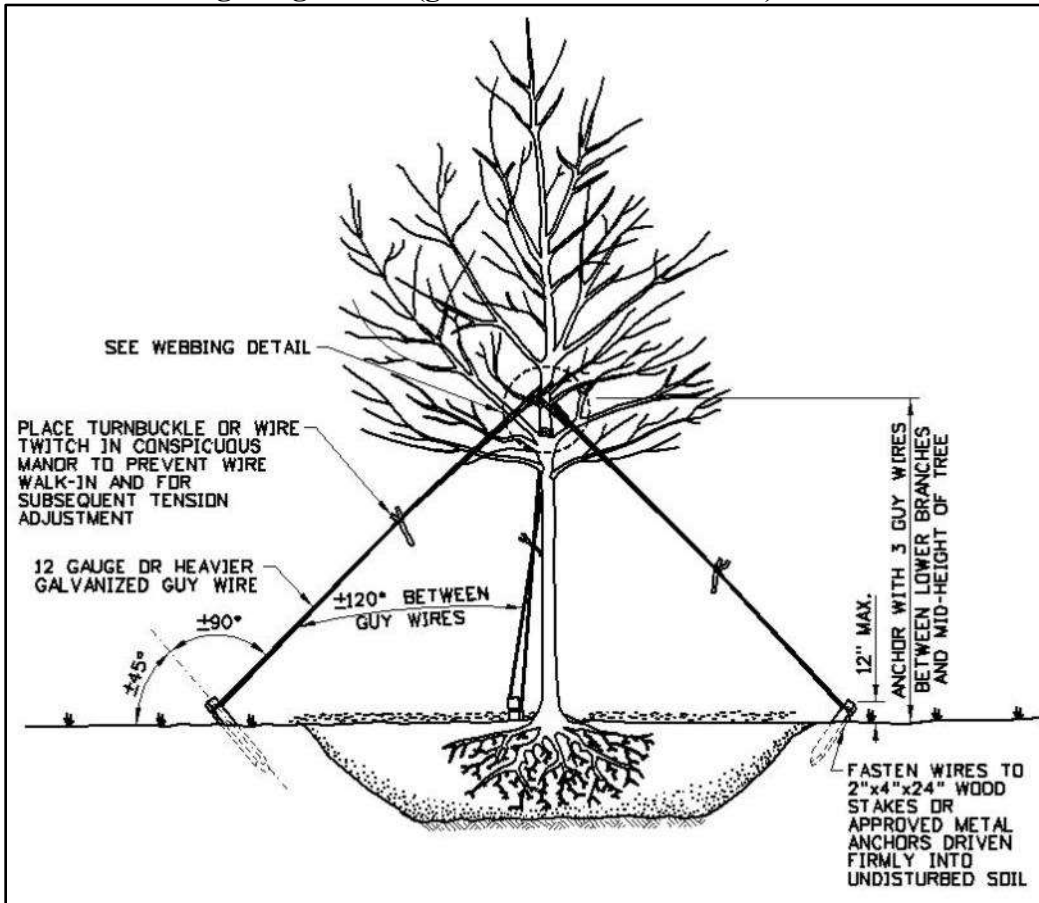
Detail 2: Planting Trees on Rock Slopes**Staking**

- Stake or wrap trunks only if conditions warrant. Consider staking or using guy wires in windy areas, in areas where vandalism is expected, when planting in sandy or wet clayey soil, or when planting bare root trees. Do not stake to compensate for improper planting methods – such plants should be reinstalled correctly.
- If using protective trunk wrapping, use biodegradable materials per manufacturer's installation instructions. Remove wrap when directed by manufacturer's instructions or within 12 months of installation.
- Do not stake plants shorter than 4 feet tall.
- Ensure that guy wires, ties, and webbing securing the trunk are loose to allow for some trunk movement.
- Remove guy wires or ties no later than the end of the first growing season.
- Wood stakes can be rough or planed. Ensure that stakes are made from construction grade lumber and free of knots and checks.

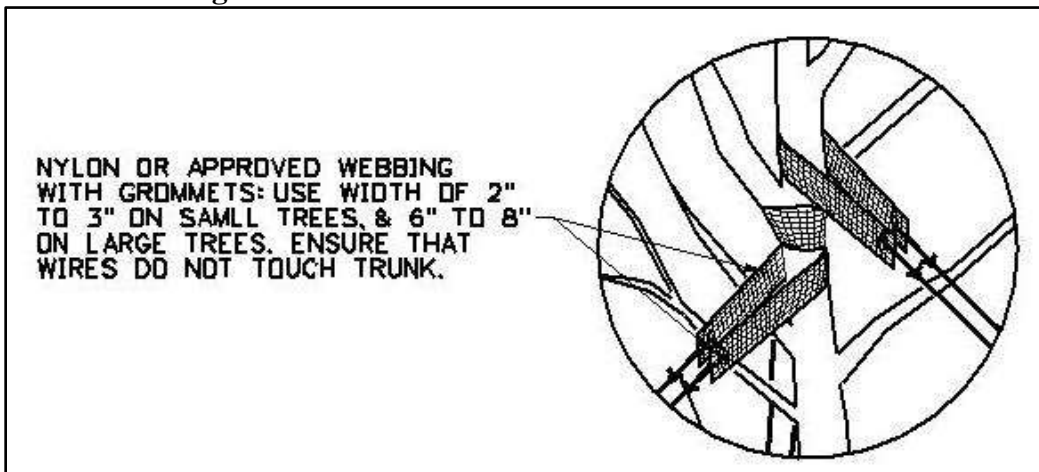
Detail 3: Staking Small Trees (3" diameter or smaller)



Detail 4: Staking Large Trees (greater than 3" diameter)



Detail: Webbing



Maintenance and Inspection

- Conduct inspections and maintenance as required by applicable permits or contract specifications, including weed control and through any post-construction warranty period, until work is approved by the Engineer.
- Irrigation of the plantings during the first 2 years following planting is recommended to increase the survival rate.
- Remove and replace dead plants to meet the original design parameters.