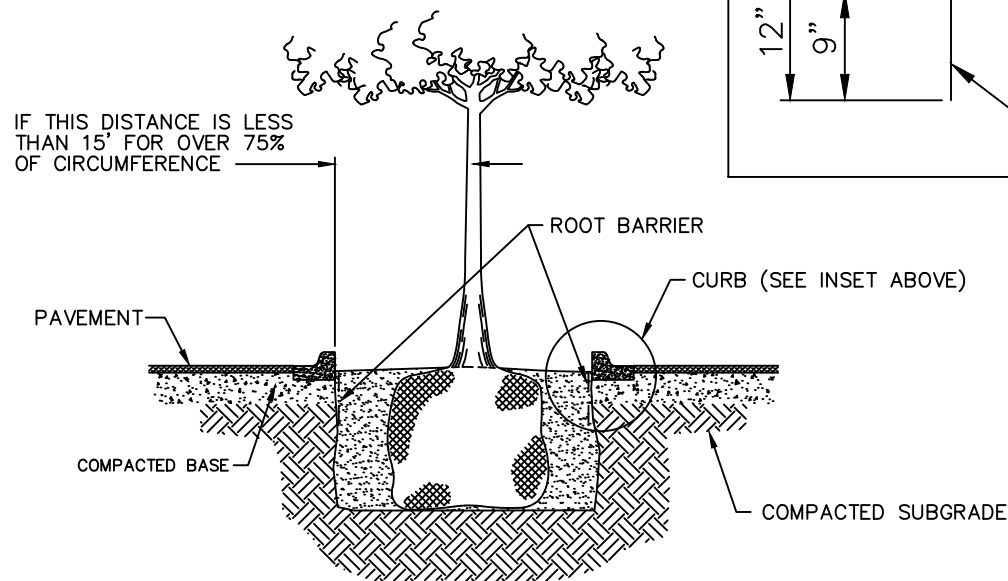
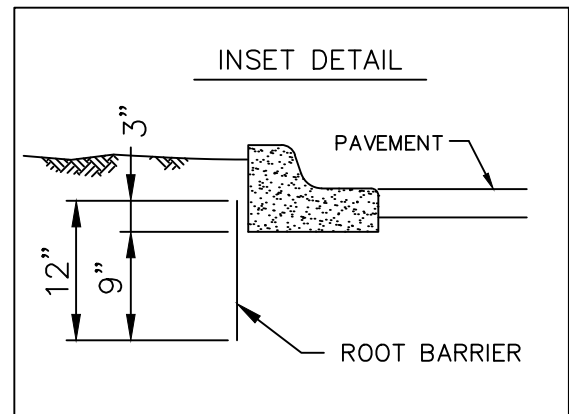


PLAN VIEW



SECTION VIEW



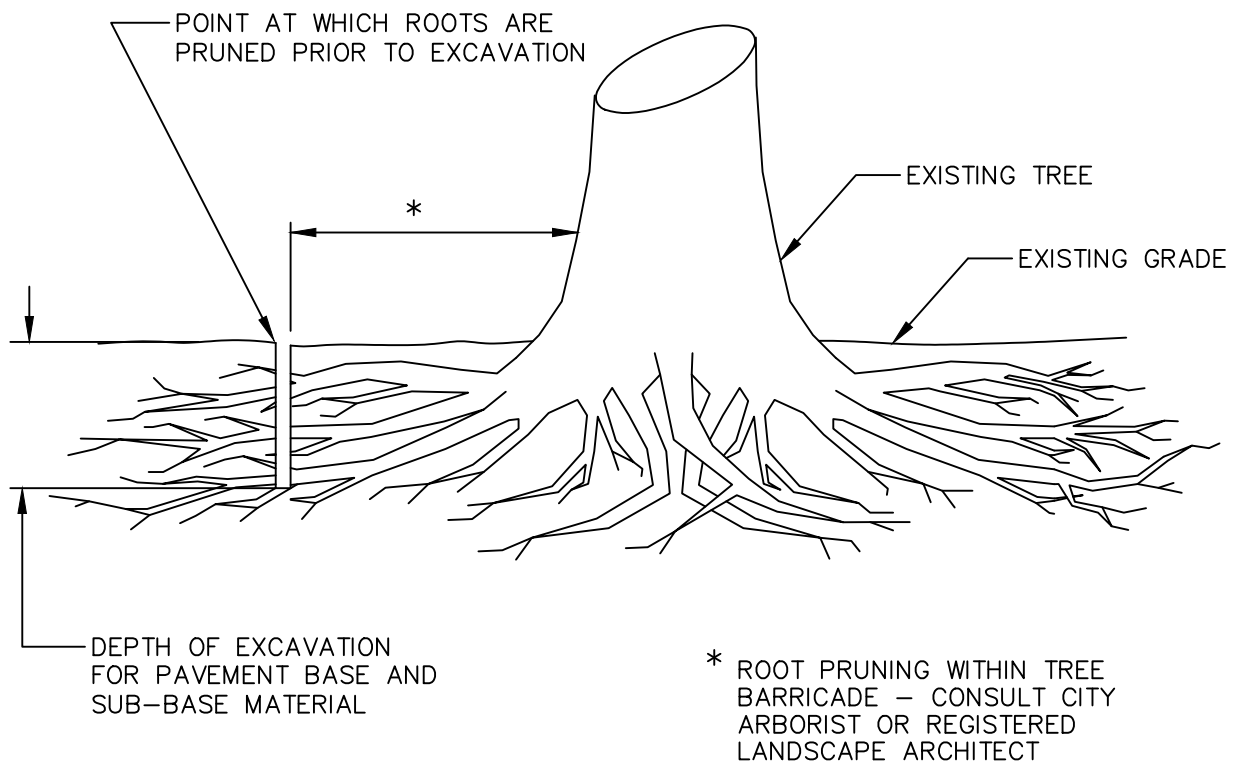
STANDARD CONSTRUCTION DETAIL ROOT BARRIER

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NOTES:

- 1) CUTS ARE TO BE MADE CLEANLY WITH A SHARP ROOT PRUNING TOOL (SUCH AS A DOSCO OR VERMEER ROOT PRUNER).
- 2) INSTALL ORANGE PLASTIC MESH TREE BARRIER, WITH REBAR SUPPORTS, AT POINT OF PRUNING AND CONTINUE COMPLETELY AROUND TREE, PROTECTING THE AREA WITHIN THE DRIP LINE (EXTENT OF OUTER BRANCHES).
- 3) ROOT PRUNING PROCEDURE MUST BE DONE AND INSPECTED PRIOR TO ISSUANCE OF A BUILDING PERMIT OR GRADING AND FILL PERMIT.



STANDARD CONSTRUCTION DETAIL

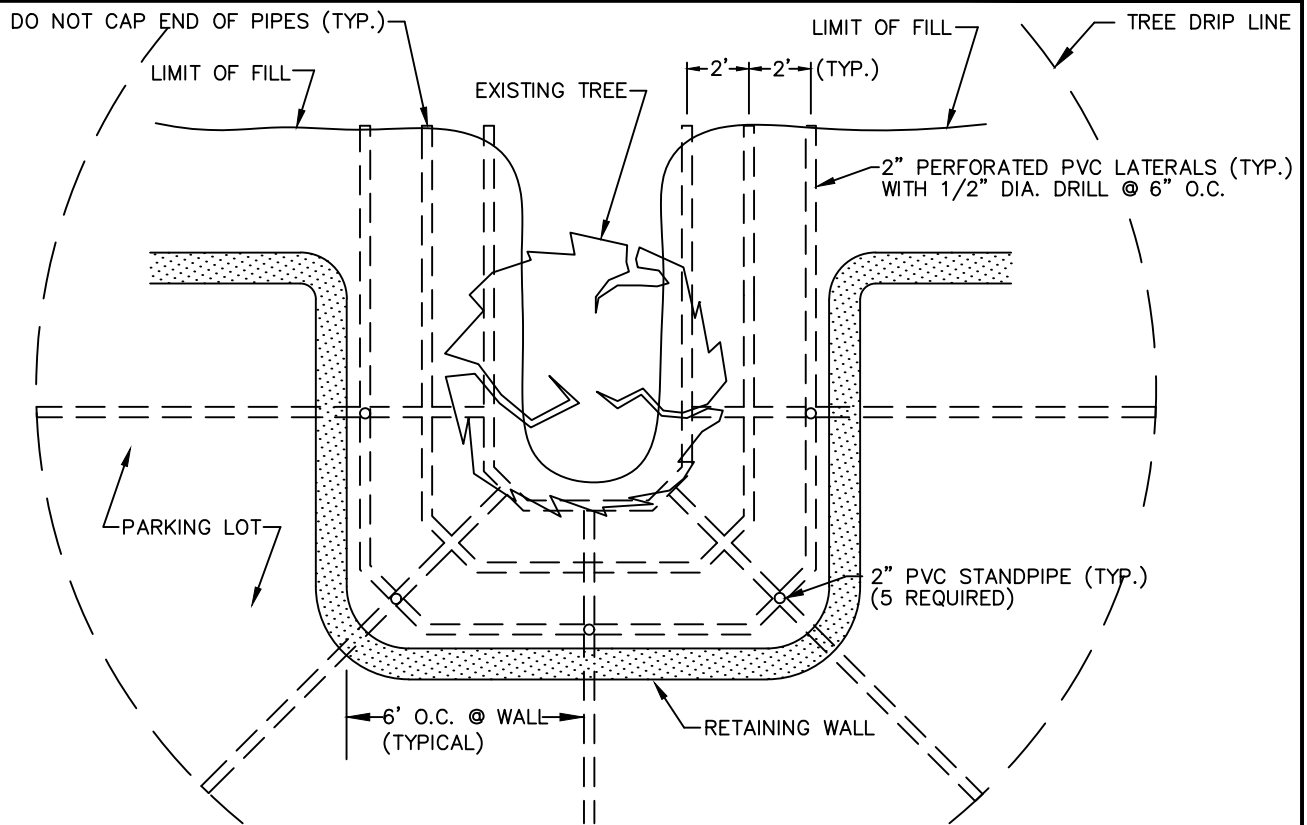
ROOT PRUNING

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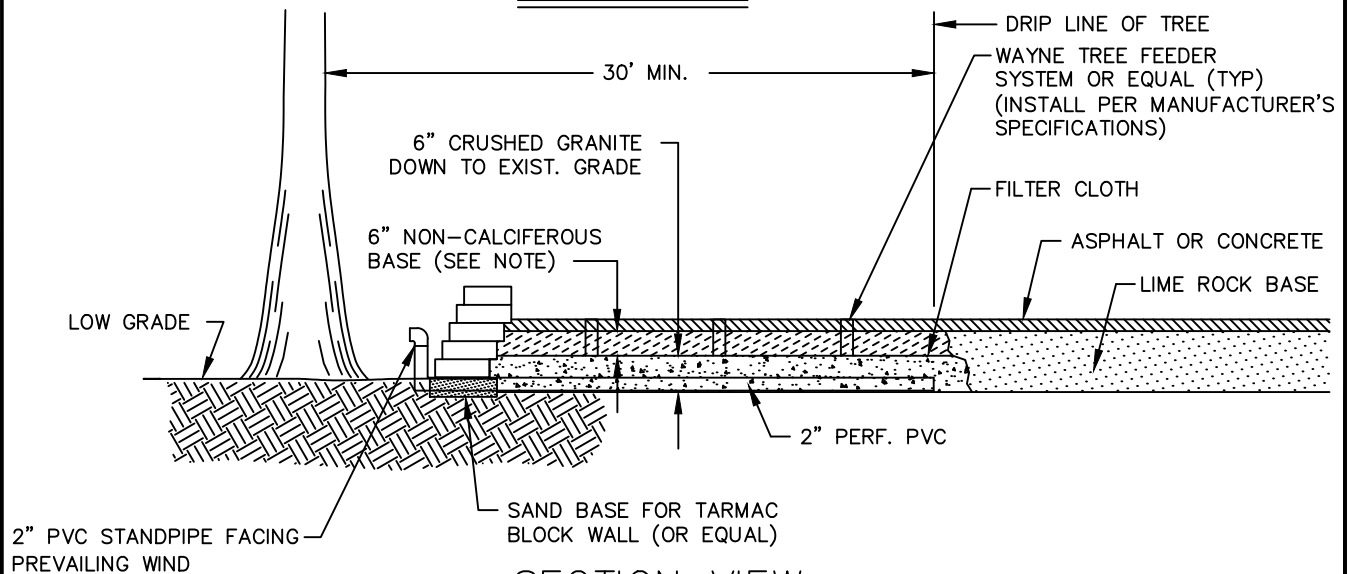
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PLAN VIEW



SECTION VIEW

NOTE: NON-CALCIFEROUS BASE SHALL BE CRUSHED CONCRETE, RECYCLED ASPHALT PAVEMENT (RAP), ASPHALT, OR GRADED AGGREGATE, IN ACCORDANCE WITH FDOT STANDARD SPECIFICATIONS.

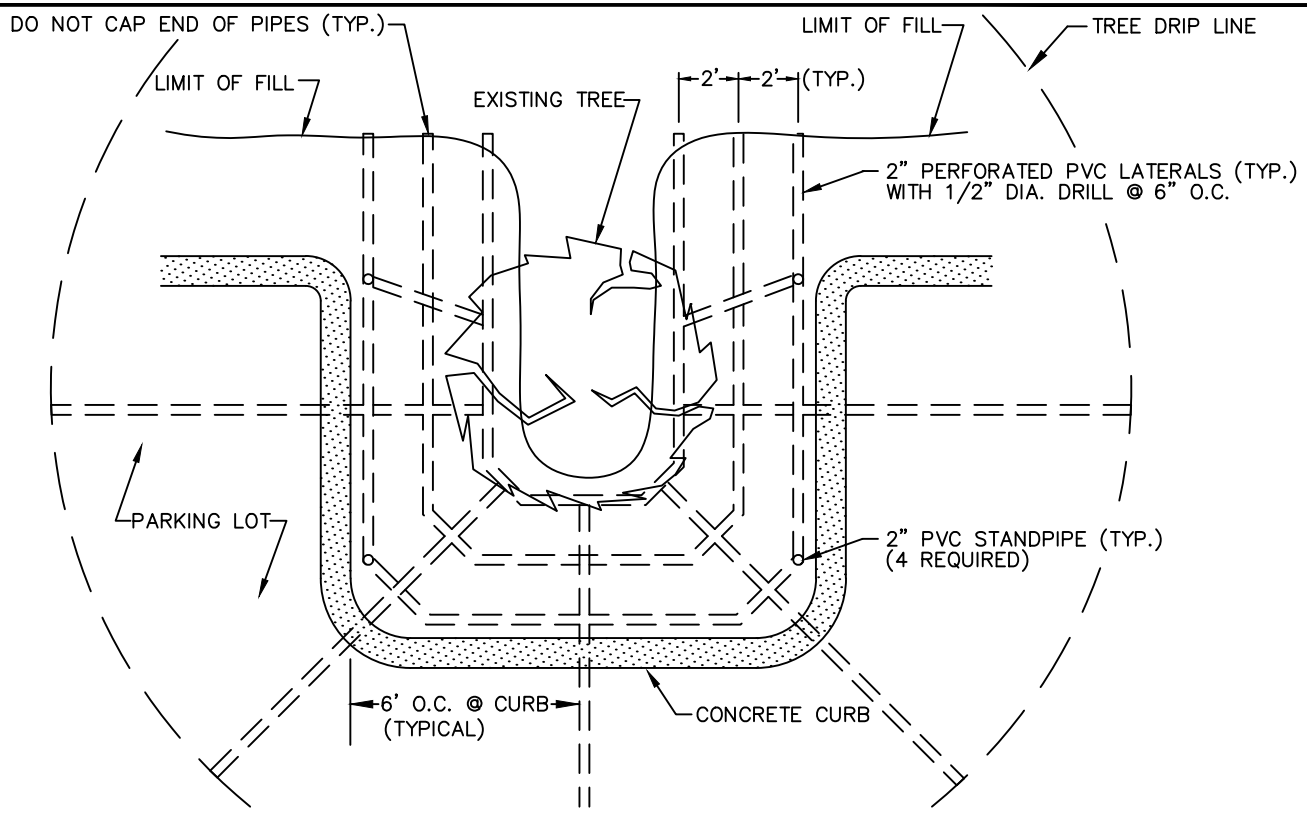


STANDARD CONSTRUCTION DETAIL
 TREE PRESERVATION ON FILLED SITE
 WITH RETAINING WALL
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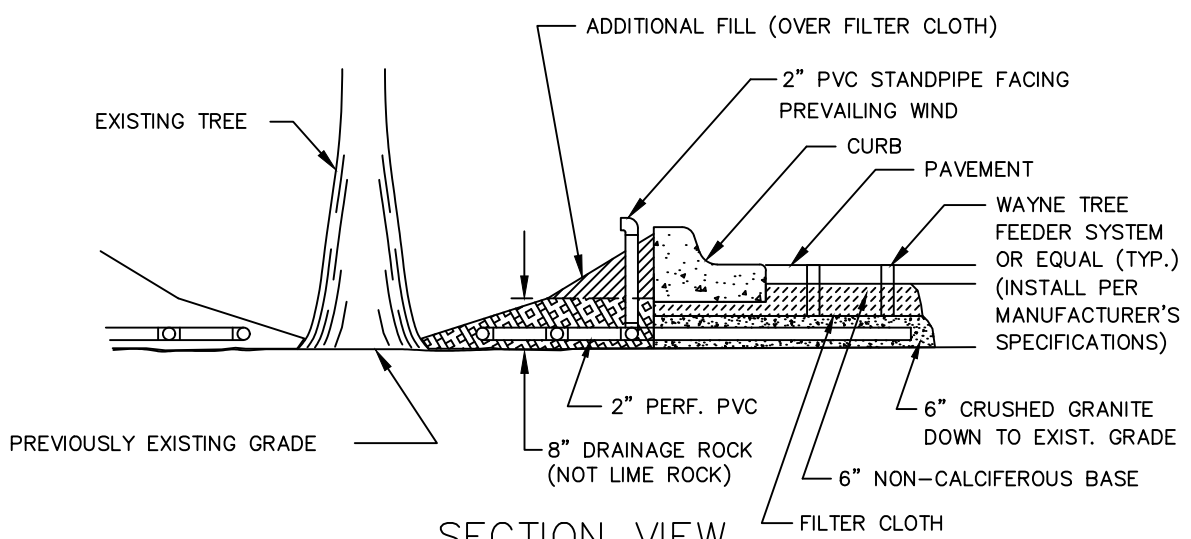
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PLAN VIEW



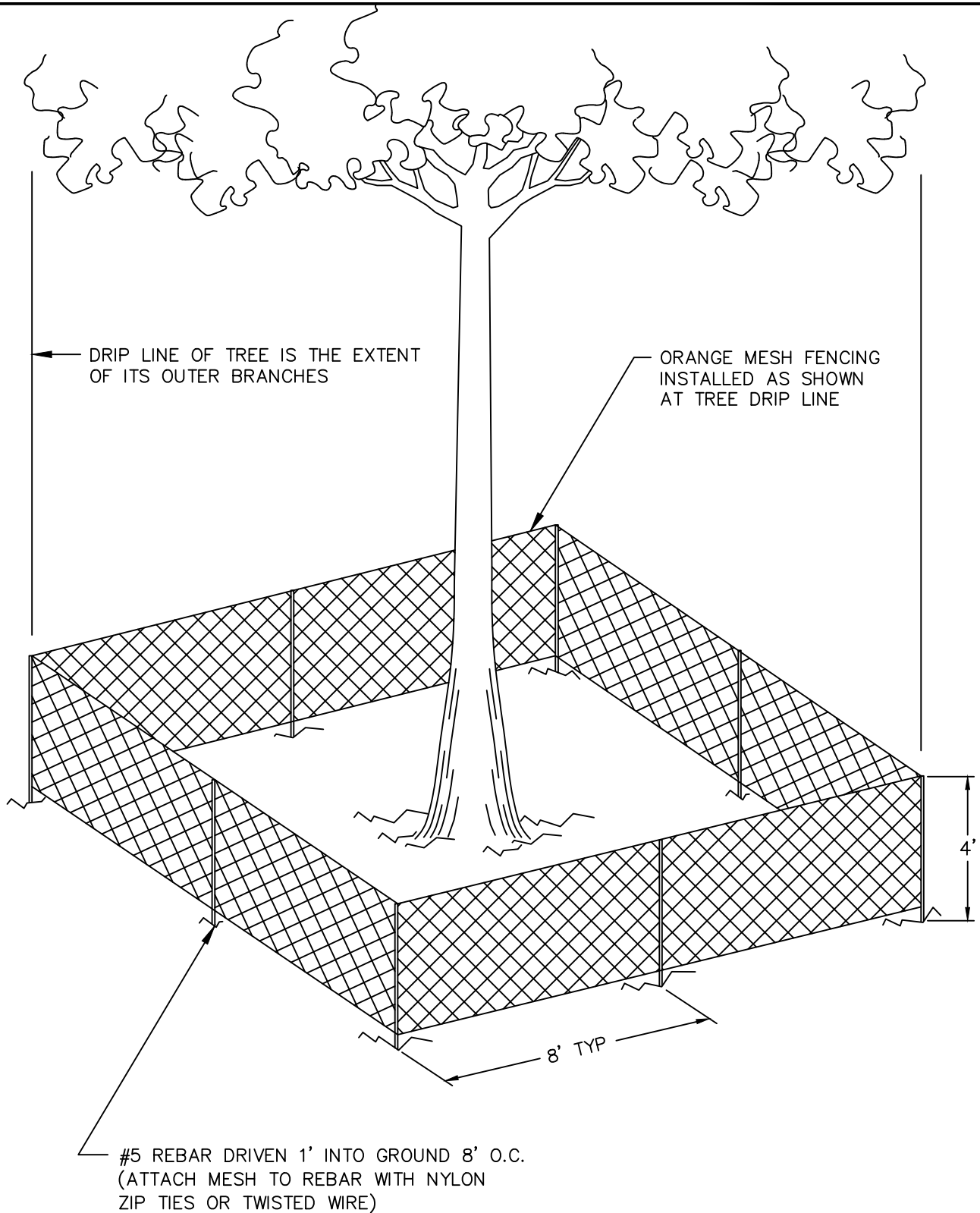
SECTION VIEW

DETAILS SAME FOR BOTH SIDES OF TREE
 NOTE: NON-CALCIFEROUS BASE SHALL BE CRUSHED CONCRETE, RECYCLED ASPHALT PAVEMENT (RAP), ASPHALT, OR GRADED AGGREGATE, IN ACCORDANCE WITH FDOT STANDARD SPECIFICATIONS.



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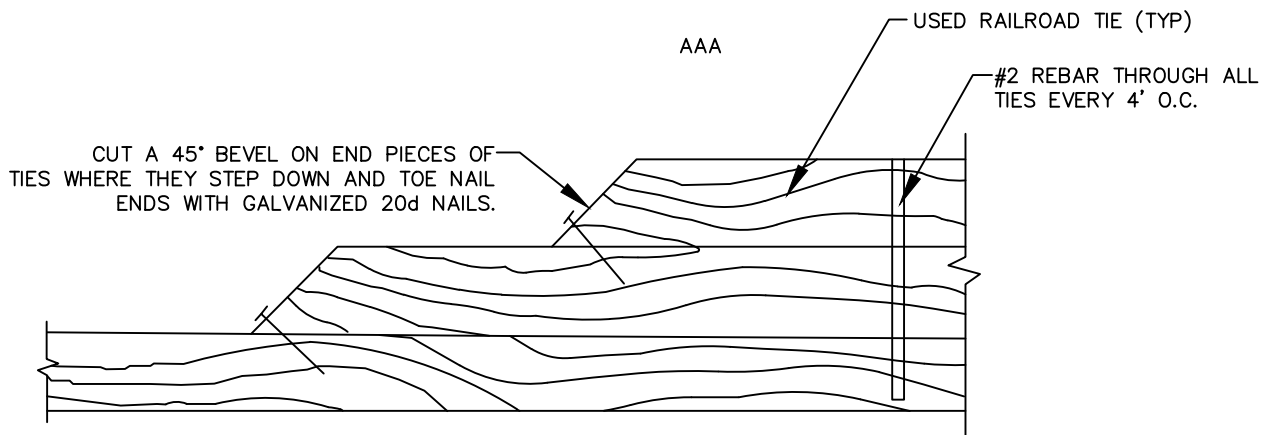
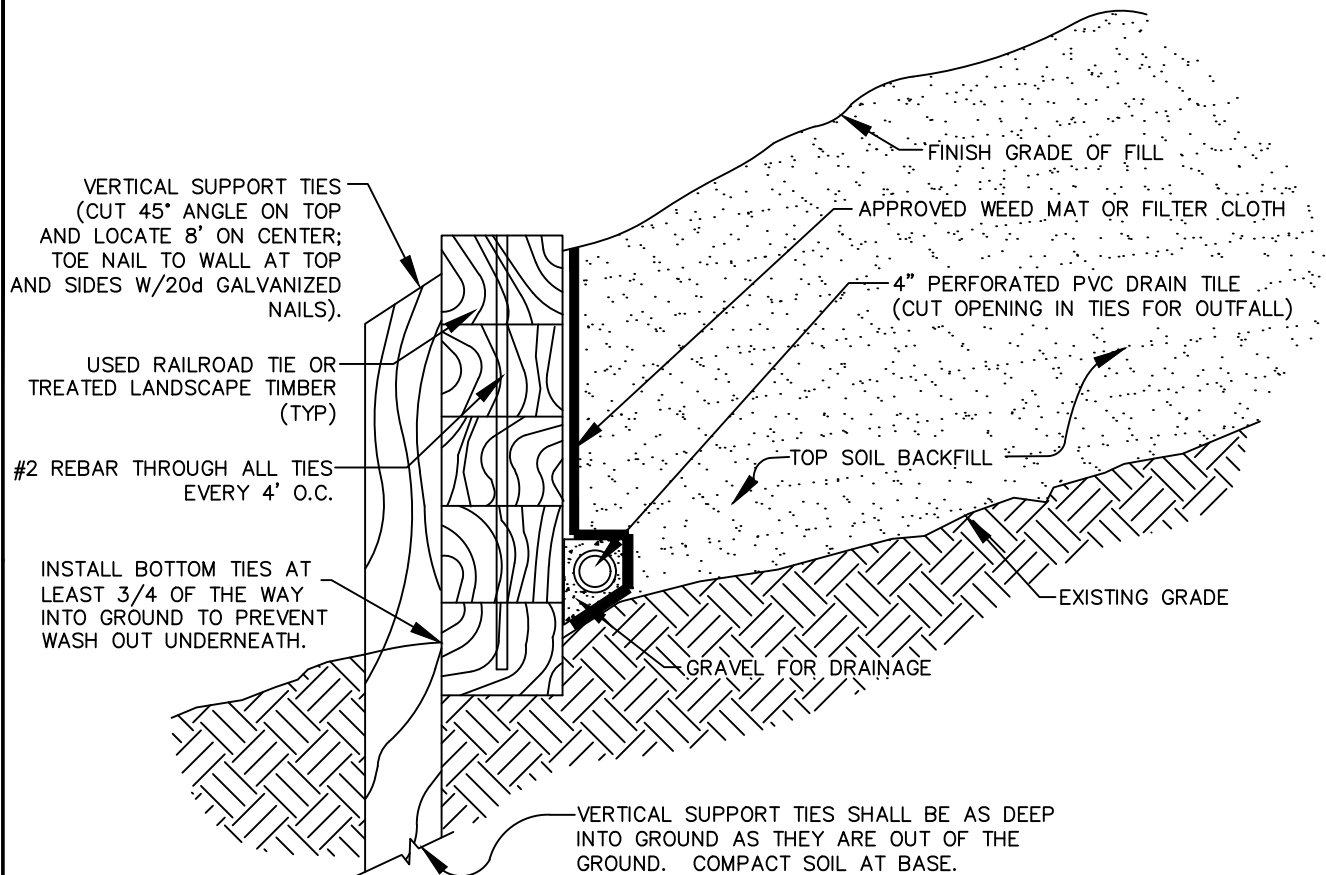


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ADDITIONAL NOTES:

1. WHERE TIES MEET AT CORNERS, OVERLAP EDGES TO PREVENT WALL SEPARATION AND DRILL FOR A #2 REBAR TO LOCK CORNERS IN PLACE.
2. ALL TIES USED SHALL BE STRAIGHT AND FREE FROM ROTTED CENTERS ON SIDES.



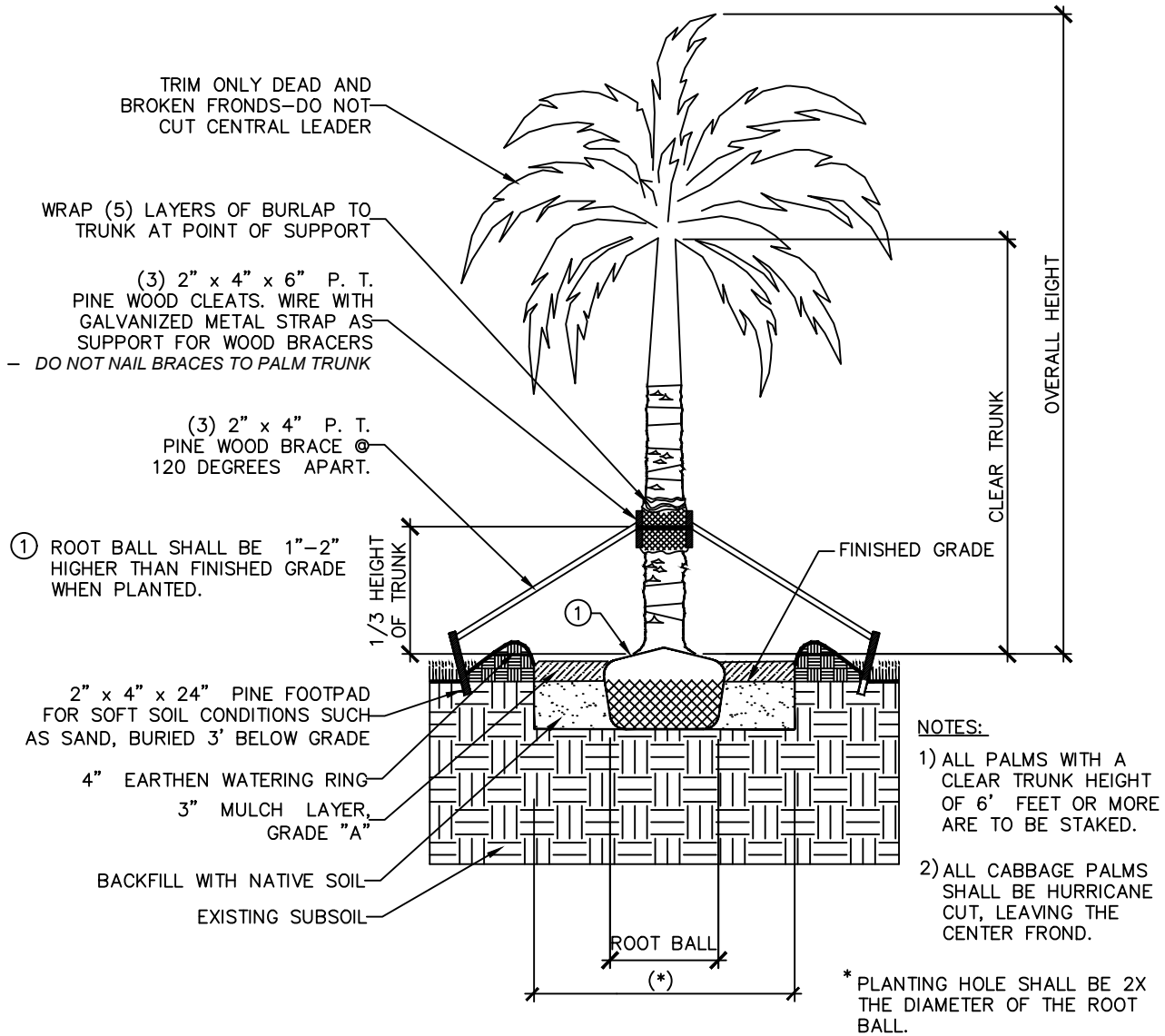
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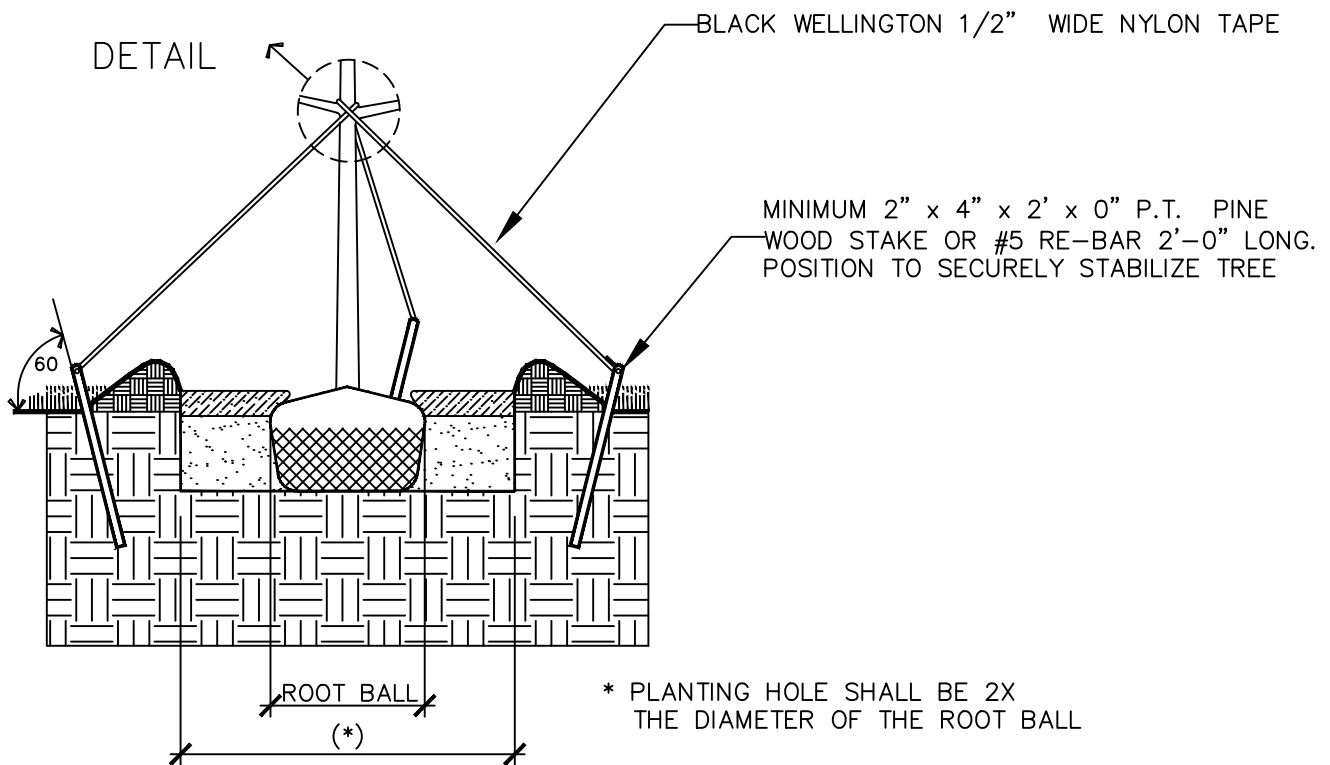
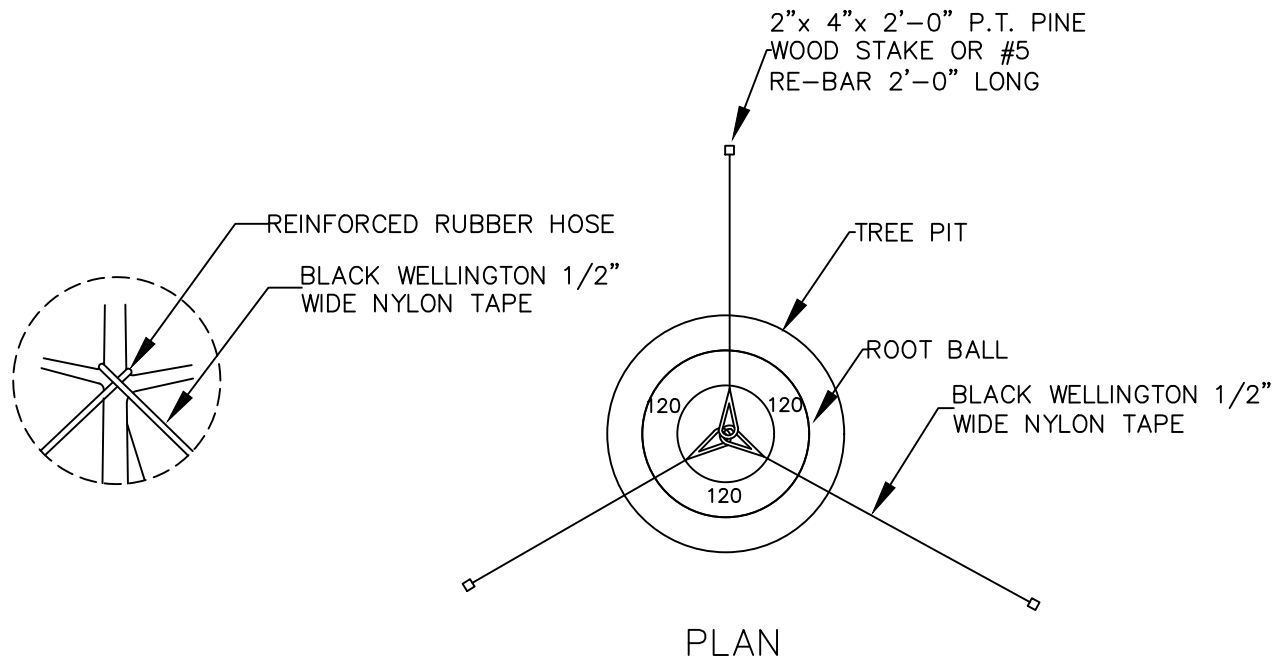
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PLANT MATERIAL SHALL NOT BE PRUNED PRIOR TO INSTALLATION - AFTER PLANT HAVE BEEN INSTALLED, EACH PLANT SHALL BE PRUNED FOR UNIFORMITY

* 3" MULCH LAYER SHALL COVER ONLY THE EDGE OF THE ROOTBALL

LIMIT OF SOD LINE - ALL SOD TO BE LAID AS PER DRAWINGS (SEE LANDSCAPE PLAN)

EXISTING SUBSOIL

BACKFILL WITH NATIVE SOIL

SPACING AS PER PLANS

ROOT BALL SHALL BE 1"-2" HIGHER THAN FINISHED GRADE WHEN PLANTED.

FINISHED GRADE

* NOTE: CYPRESS MULCH IS PROHIBITED

ROOT BALL (*)

* PLANTING HOLE SHALL BE 2X THE DIAMETER OF THE ROOT BALL.



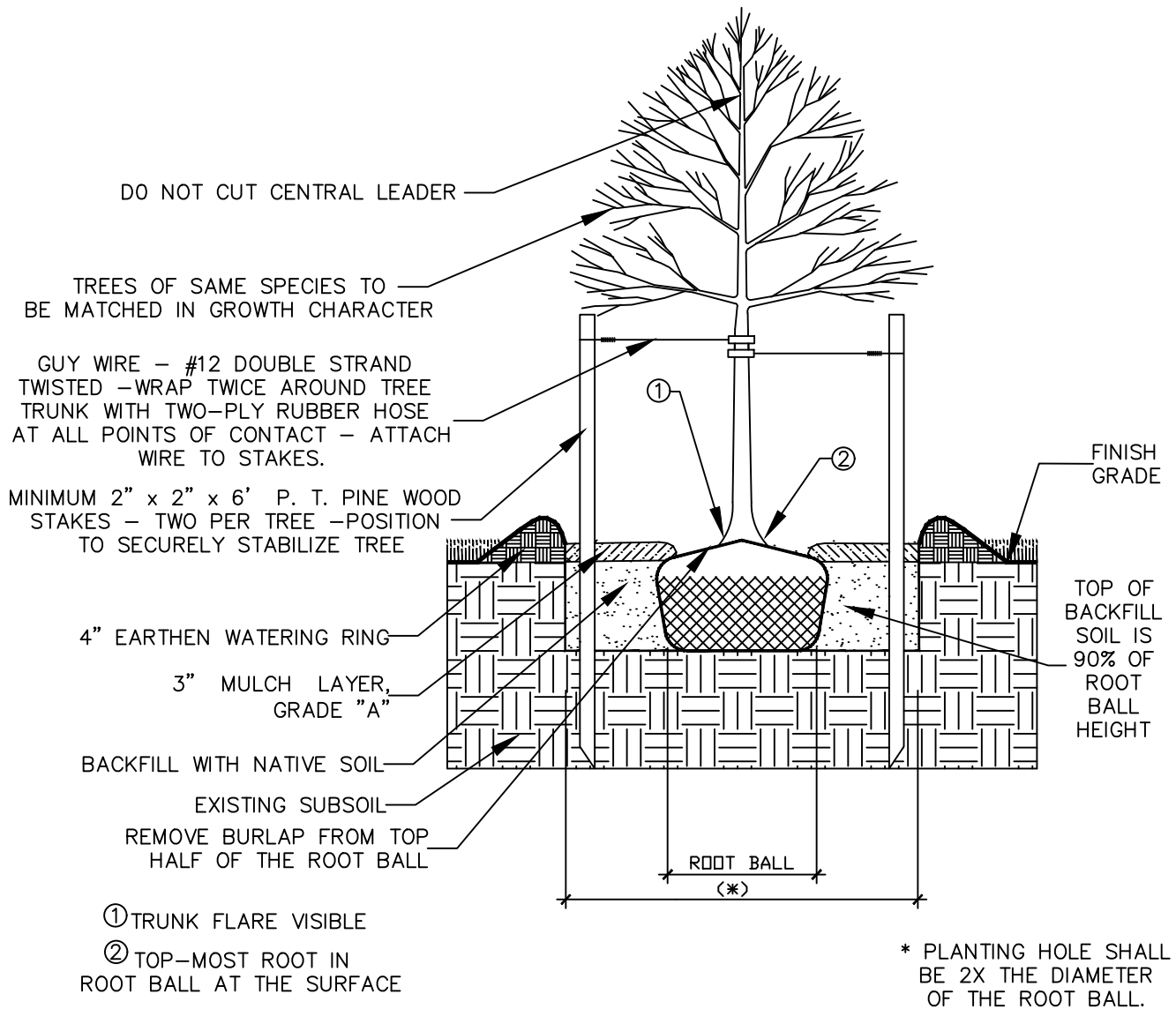
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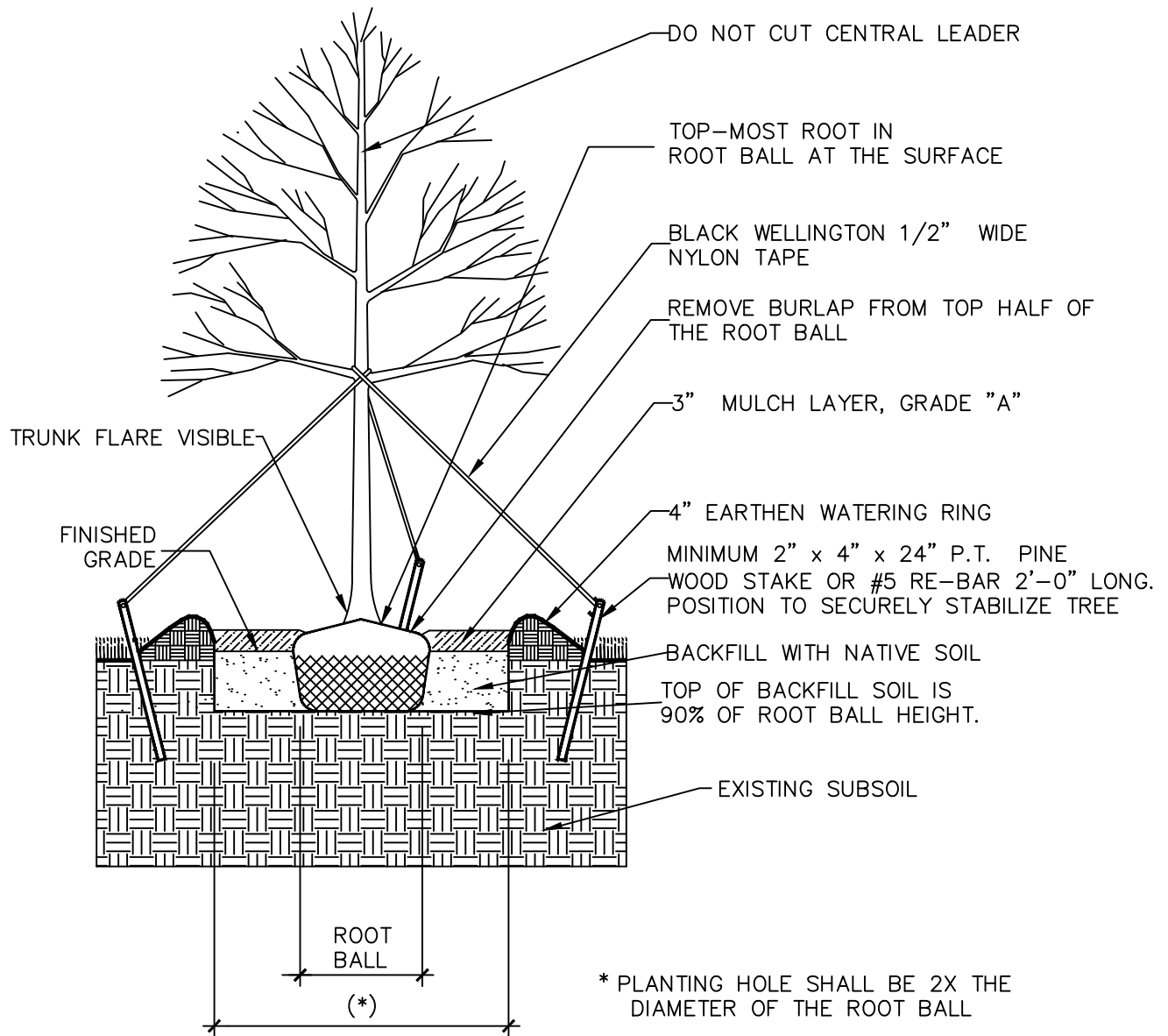


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LARGE TREE PLANTING DETAILS

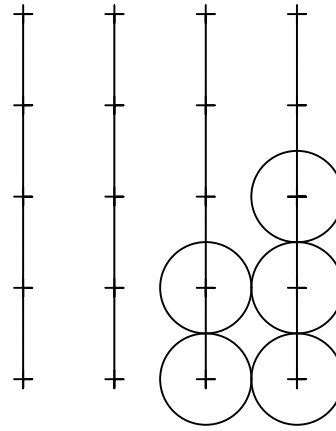
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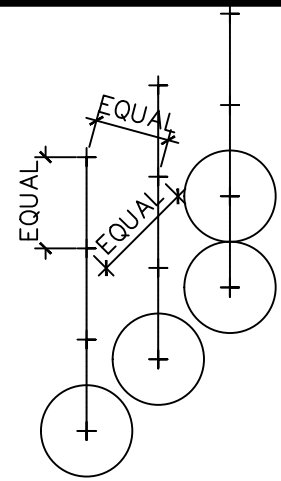
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NOTE: IN MOST CASES, TRIANGULAR SPACING IS PREFERRED. USE SQUARE SPACING ONLY IN SMALL RECTILINEAR AREAS.



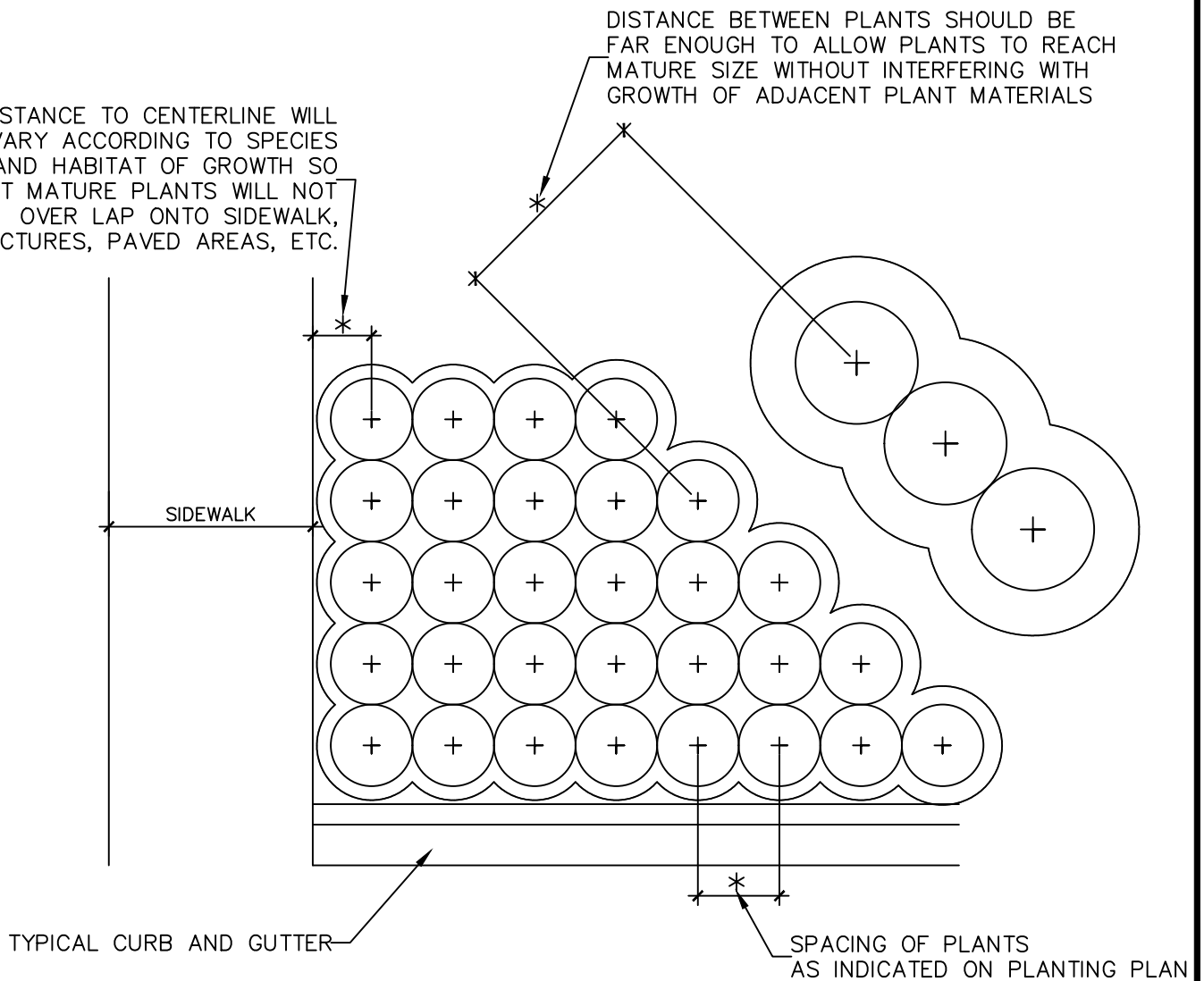
SQUARE SPACING



TRIANGULAR SPACING

DISTANCE TO CENTERLINE WILL VARY ACCORDING TO SPECIES AND HABITAT OF GROWTH SO THAT MATURE PLANTS WILL NOT OVER LAP ONTO SIDEWALK, STRUCTURES, PAVED AREAS, ETC.

DISTANCE BETWEEN PLANTS SHOULD BE FAR ENOUGH TO ALLOW PLANTS TO REACH MATURE SIZE WITHOUT INTERFERING WITH GROWTH OF ADJACENT PLANT MATERIALS



STANDARD CONSTRUCTION DETAIL

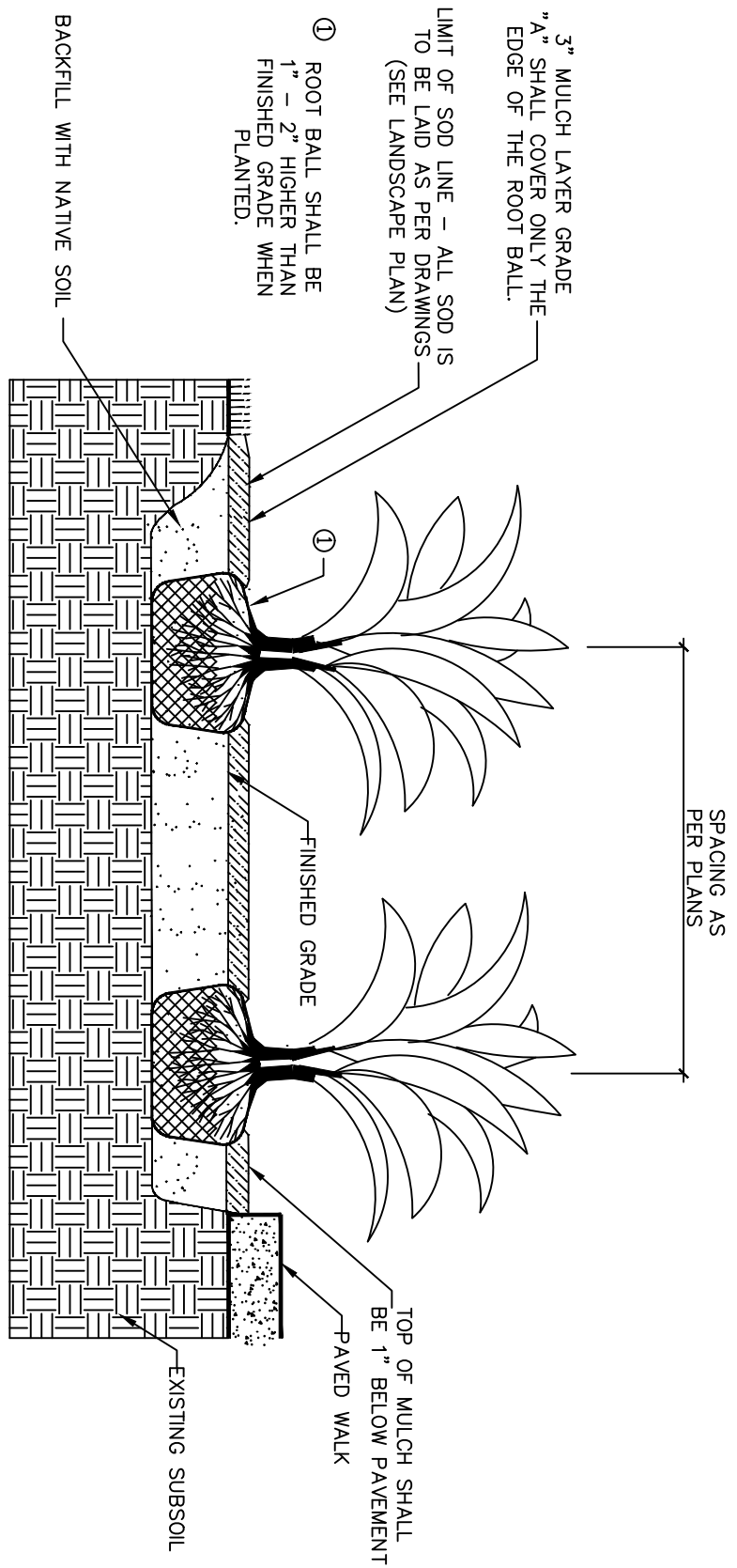
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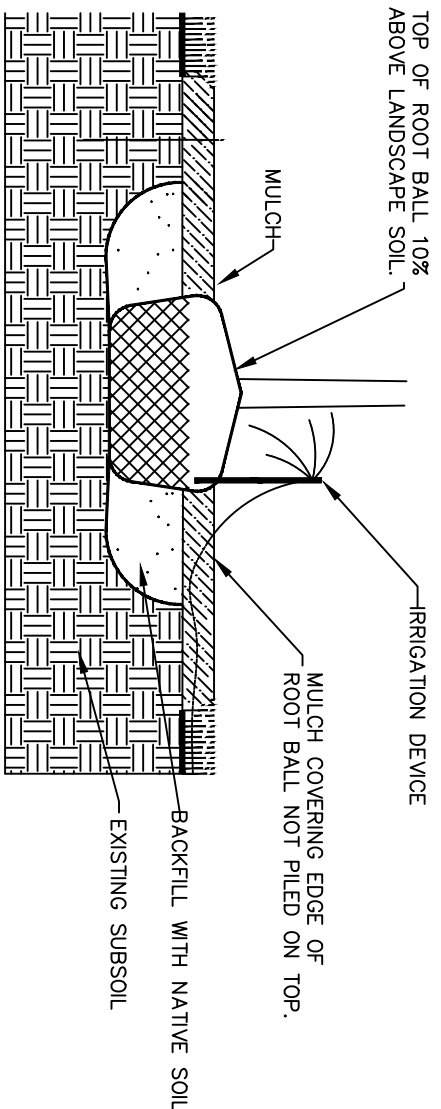
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NEVER PLACE ANY SOIL OVER THE ROOT BALL. THE ROOT BALL SHOULD BE POSITIONED IN THE HOLE SHALLOW ENOUGH SO THE FINISHED GRADE OF THE BACKFILL SOIL DOES NOT REACH THE TOP. IN OTHER WORDS, LEAVE THE TOP FEW INCHES OF THE ROOT BALL SIDES EXPOSED TO THE AIR. MULCH WILL COVER THE REMAINING COUPLE INCHES. THE TOP OF THE ROOT BALL SHOULD BE SEVERAL INCHES HIGHER THAN THE SURROUNDING LANDSCAPE SOIL. BE SURE THAT WHEN YOU ARE FINISHED PLANTING, THERE IS NO SOIL OVER THE ROOT BALL. SOIL (AS WELL AS THICK MULCH LAYERS MORE THAN 3 INCHES DEEP) OVER THE ROOT BALL CAN PREVENT WATER AND AIR FROM ENTERING THE ROOT BALL. YOU SHOULD BE ABLE TO SEE THE TOP-MOST ROOT ORIGINATING FROM THE TRUNK AT THE SOIL SURFACE OR WITHIN THE TOP INCH OF SOIL IN THE ROOT BALL. THE TRUNK FLARE SHOULD BE VISIBLE.

MULCH SHOULD COVER ONLY THE EDGE OF THE ROOT BALL, SINCE THICK LAYERS OVER THE ROOT BALL CAN KEEP THE TRUNK TOO MOIST OR TOO DRY AND CAN CAUSE OTHER PROBLEMS. LOCATE THE IRRIGATION DEVICE SO IT DELIVERS WATER DIRECTLY TO THE ROOT BALL. THERE IS USUALLY NO NEED TO WATER AREAS OUTSIDE THE ROOT BALL. NO AMENDMENTS OF ANY KIND ARE NECESSARY IN THE BACKFILL SOIL, BECAUSE EXTENSIVE RESEARCH CLEARLY SHOWS THAT THEY TYPICALLY DO NOT INCREASE THE SURVIVAL, NOR GROWTH AFTER PLANTING. NO SOIL BERM IS NEEDED IF TREES WILL BE IRRIGATED WITH A LOW-VOLUME DEVICE. PLACE THE BERM AT THE EDGE OF THE ROOT BALL IF THE ROOT BALL IS FINER TEXTURE THAN THE BACKFILL SOIL. THIS WILL HELP INSURE THAT WATER PERCOLATES INTO THE ROOT BALL.

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Permit Requirements

Property owners who wish to install, expand or substantially modify an irrigation system are required, in advance of such work, to obtain an irrigation permit from the Florida Department of Health in Volusia County. Irrigation installation requirements are described in the following county ordinances:

Landscape Irrigation Ordinance (<http://www.volusia.org/services/growth-and-resource-management/environmental-management/pollution-control/waterwise-landscape-irrigation-ordinance/>)

Wells, Pumping Facilities & Irrigation Systems - Section 74-31 to 48 County Ordinance (<http://volusia.floridahealth.gov/programs-and-services/environmental-health/irrigation-construction/irrigation-forms.html>)

We Volusia County Health Department developed an Irrigation Permitting Packet (http://volusia.floridahealth.gov/programs-and-services/environmental-health/irrigation-construction/_documents/irrigation-permit.pdf) in order assist applicants. It includes the application form, a Contractor/Owner Irrigation Self Certification Checklist and a site plan template. Please call our office at 386-274-0694 for more information.

A summary of site specific requirements is as follows:

1. Automatic irrigation controllers, when utilized, shall contain a functional rain sensor device, capable of being set to one minute run times, and battery backup capability to retain programming in the event of a power failure.
2. A rain sensor placed on a stationary structure, free and clear of any overhead obstructions and above the height of the sprinkler coverage.
3. Equipment with check valves used in low-lying areas to prevent low head drainage.
4. Backflow prevention methods and other provisions prescribed in section 74-42.
5. Irrigation design with the appropriate uniformity for the type of plant being grown and for the type of soil.
6. Irrigation system equipment installed as designed.
7. Irrigation zones divided according to: available flow rate, vegetated groupings (i.e., turf, shrubs, native plants, etc.), sprinkler types (i.e., sprinklers with matching precipitation rates) and soil characteristics.
8. Spray heads and rotors not mixed in same zone.
9. Distribution equipment in a given zone having matched precipitation rates.
10. Application rates that avoid runoff and permit uniform water infiltration into the soil, considering land slope, soil hydraulic properties, vegetative ground cover and prevailing winds.
11. A minimum separation of four inches between distribution equipment and pavement.
12. A minimum separation of 12 inches between distribution equipment and buildings and other vertical structures.
13. No direct spray onto walkways, buildings, roadways and drives.



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14. Lawn spray patterns providing head to head coverage.
15. Water conveyance systems with a flow velocity of five feet per second or less.
16. Pipelines designed to provide the system with the appropriate pressure required for maximum irrigation uniformity.
17. Pressure regulating heads.
18. A maintenance checklist provided to the property owner by the irrigation contractor accompanied by a recommended maintenance schedule, proper irrigation system settings according to season, recommendations for checking rain sensor device, filter cleaning recommendations and information on the current water restrictions.

Landscape Requirements

1. A high volume irrigation area shall not exceed 50 percent of the landscaped area. Low or medium volume irrigation areas may be utilized in lieu of any high volume irrigation area.
2. A medium volume irrigation area shall not exceed 25 percent of the landscaped area. However, the landscaped area may contain up to 75 percent medium volume irrigation area, if no high volume irrigation area is utilize on site.
3. A low volume irrigation area may be utilized for an entire landscaped area with the exception of native vegetation areas regulated by section 50-373(b)(4).
4. In the alternative to (1), (2), and (3) above, if 25 percent of the pre-existing native vegetation is retained on site, the remaining 75 percent of the landscaped area may be a high volume irrigation area. For all pre-existing native vegetation retained on a parcel:
 - No supplemental water shall be applied to the native vegetation area.
 - Only hand pruning of native vegetation is allowed.
 - Mechanical mowing or clearing is prohibited.

License Requirements

No person may install or repair an irrigation system in Volusia County unless they possess a valid irrigation certificate of competency from the Department. The following persons are exempted from having to possess a certificate of competency:

- Licensed Florida Water Well Contractors and Florida State Certified Plumbing Contractors.
- Florida State Registered Plumbing Contractors.
- Property owners who personally perform construction, maintenance or repairs on an irrigation system that serves his or her owner-occupied single family residence.



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