PETITION FOR ZONING AMENDMENT
MINOR/MAJOR PLANNED DEVELOPMENT
FINAL PHASE

City of Maitland
1776 Independence Lane
Maitland, Florida 32751
407-539-6212

Please indicate Major or Minor PD with check mark in appropriate box.

☐ Minor PD (½ acre to 1½ acres in size)
☐ Major PD (greater than 1½ acres in size)

CONTENTS:

1) General Public Summary Information
2) Petition Form

PLANNED DEVELOPMENT APPROVAL PROCEDURES

General Summary

The following is a guide designed to assist those persons who wish to submit an application for final approval for a planned development in the corporate limits of Maitland. As such, it does not assure any approvals.

1. After having obtained preliminary approval for the proposed Planned Development, the applicant has twelve (12) months from the date of change of zoning to PD to submit application for final approval. The applicant is to submit to the Community Development Department the petition (in triplicate) for Planned Development final approval along with twenty-two (22) copies of all required supplemental information, as specified in the petition. If an area of the PD is to be subdivided, submit as part of the final development plan the final subdivision plat, including engineering plans according to the subdivision regulations (Chapter 16 of the City Code).

2. The formal request and all materials must be submitted no later than noon, at least forty (40) days prior to a Planning and Zoning Commission[1] meeting.

3. A $5,000 review deposit, payable to the City of Maitland must accompany this application, as specified in Article XVI, Chapter 7.5[2] (Section 7.5-143) of the City Code. *[The review deposit shall be utilized by the City to reimburse the City for the actual expenses incurred by the City as a result of the review of the development application. A waiver of this requirement may be acceptable under certain conditions, as specified in Section 7.5-143 (c)]*.

   The application fees are as follows:

   - $750 + $10 per dwelling unit for residential developments.
   - $750 + $50 per acre for nonresidential developments.

   If waiver of the review deposit is approved, a minimum payment of the application fee plus $150 for advertisement costs for Board reviews and postage cost per mailing item must be submitted with the application. If additional fees exceeding $150 are incurred, you will be billed under separate cover.

[1] The Planning and Zoning Commission of the City of Maitland, Florida, also sits as the Local Planning Agency and the Land Development Regulation Commission.
[2] A copy of Ordinance No. 1160 creating Part II, Chapter 7.5, Article XVI, Section 7-5.2 – Pass-Through Fees is located via the internet at www.itsmymaitland.com (On-line Forms – Petition Application Forms).

Application fees must be submitted at the time of application. Submittals without applicable fees will not be reviewed. The application fee is not refundable. Likewise, the applicant will pay for all advertisements of hearings concerning the application.

4. Within five (5) days of submission, the Community Development Department will review the petition for sufficiency and completeness and will accept it or request corrections. If corrections are requested, the applicant has five (5) days to make all requested changes. If all the information is not submitted as required, the application will not be considered complete and will not be accepted. The applicant will forfeit the application fee and the application will not be processed. The balance of the review deposit shall be returned to the applicant as provided for in Article XVI, Chapter 7.5 (Section 7.5-144 Project Account) of the City Code.
5. Once the application is considered complete, the Development Review Committee will hold a meeting to review the final plan for consistency with the preliminary plan. Please attend in person or by representative agent.
6. The Planning and Zoning Commission will review the final plan at a scheduled meeting and send its recommendation to City Council.
7. The City Council will accept, reject or modify the final development plan at a scheduled meeting.
8. No later than once every three hundred and sixty-five (365) days, beginning the effective date of the Planned Development Ordinance, the property owner shall submit a monitoring report to the Zoning Administrator, detailing activity and completion of construction permitted within the Planned Development district. Annual reports shall not be required after a final report, detailing project completion according to the approved Planned Development, is submitted.
9. If construction of the building(s), as determined by the Building Official's application of the Standard Building Code, has not begun within five (5) years after the approval of a final development plan for the first phase of the PD, or the building permit for construction of the building(s) has become void after the five-(5)-year period has expired, the approval of the preliminary and final plans shall lapse. Upon request of the applicant, prior to the lapse of approval, the City Council may waive the above time limitation and grant a time extension for a period of up to one year (365 days) when the City Council deems such action is necessary to prevent injustice or to facilitate the proper development of the City of Maitland. At its discretion, and for good cause, the City Council may extend the period for beginning construction for one additional year. If the approved PD plans lapse under this provision, the Zoning Administrator shall notify the property owner of the lapse of approval for the Preliminary Development Plan and the Final Development Plan and inform the property owner that resubmission under the procedure outlined for this district will be necessary.

Please Note: Once a hearing is scheduled and advertised, the deadline for cancellation is no later than five (5) working days prior to the hearing. There is a $50 fee, in addition to the postage cost for each mailing item, as well as payment for the hearing cancellation notice in the newspaper and for re-advertising the hearing at a later date.

Petition Number _____
(*office use only)*

City of Maitland
1776 Independence Lane
Maitland, Florida 32751

PETITION FOR ZONING AMENDMENT
MINOR/MAJOR PLANNED DEVELOPMENT
FINAL PHASE

Minor Planned Development ½ acre to 1½ acres in size - Major Planned Development Greater than 1½ acres in size.

PART I. APPLICANT INFORMATION (Part I to be submitted in triplicate.)

Please check box to indicate those who should receive all correspondence relating to this petition.

1. APPLICANT'S NAME _____ ☐
   Address _____
   _____
   Telephone No. (_____) _____ Fax No. (_____)_____
   E-mail Address _____
   (*If more than one applicant, please attach list and signatures.*)

2. CURRENT PROPERTY OWNER'S NAME(S) _____ ☐
   Address _____
   _____
   Telephone No. (_____) _____ Fax No. (_____) _____
   E-mail Address _____
   (*Provide for each owner of real property that is subject to petition; please attach list and signatures.*)

3. AGENT'S NAME _____ ☐
   Address _____
   _____
   Telephone No. (_____) _____ Fax No. (_____) _____
   E-mail Address _____
   (*If more than one agent, please attach list.*)

5. ENGINEER'S NAME _____ ☐
   Address _____
   _____
   Telephone No. (_____) _____ Fax No. (_____) _____
   E-mail Address _____
   (*If more than one Engineer, please attach list.*)

6. Gross Acreage _____ Net Acreage _____ Parcel I.D. _____
   Existing Use _____ Proposed Use _____

7. PETITION STATEMENT:
   I (We) _____ of _____ hereby petition the City of Maitland, Florida to amend the OFFICIAL ZONING MAP and change the property bounded and legally described as follows (attach as necessary):
   _____
   _____
   _____
   FROM _____ DISTRICT TO _____ DISTRICT.

8. APPLICATION CERTIFICATION:
   ☐ I certify that, to the best of my knowledge, the submitted information and statements are true and correct.
   ☐ I have received and read the Public Summary Information, which outlines the Minor/Major PD Final Phase procedure.
   (Attach signatures as required)

_____ _____
Applicant's Signature Date

NOTE: Any desire to amend or withdraw application must be submitted in writing to the Community Development Department. If ownership of any part of or all of the real property subject to the petition shall change during the pendency of the petition, the petitioning owner who has conveyed said parcel of real property shall be required to immediately advise the Community Development Department in writing.

PART II. REQUIRED APPLICATION INFORMATION

1. **FEES.** (Payment required upon application submission).
   - A $5,000 review deposit, payable to the City of Maitland, as specified in Article XVI, Chapter 7.5 (Section 7.5-143) of the City Code. *(The review deposit shall be utilized by the City to reimburse the City for the actual expenses incurred by the City as a result of the review of the development application. A waiver of this requirement may be acceptable under certain conditions as specified in Article XVI, Chapter 7.5 [Section 7.5-143 (c)] of the City Code.*
   - The application fees are as follows:
     - Residential: $750 + $10 per dwelling unit.
     - Nonresidential: $750 + $50 per acre.
   - If waiver of the review deposit is approved, a minimum payment of the application fee plus $150 for advertisement costs for Board reviews and postage cost per mailing item must be submitted with the application. If additional fees exceeding $150 are incurred, you will be billed under separate cover.
2. **NOTED CHANGES**. A detailed and itemized written description and explanation of any changes from the approved preliminary development plan.
3. **AUTHORIZATIONS.** If the applicant or agent is other than the property owner, the applicant or agent shall provide a notarized letter of authorization from the property owner.

PART III. REQUIRED SUPPLEMENTAL INFORMATION. Submit two sets of all plans and supplemental materials until application has been deemed sufficient. When sufficient, all supplemental information shall be submitted in sets of twenty-two (22) copies. All plans submitted must be in sets of **12 full-size** and **10 half-sheet** sets.

1. **SITE PLAN**[*] to include:
   a. Boundary survey and the legal description of the property prepared by a surveyor registered by the state of Florida under a surveyor's seal and certified to the City;
   b. Street address (if applicable);
   c. An arrow indicating north and scale;
   d. Existing and proposed easements and rights-of-way;
   e. Required yard and setback information;
   f. Required off-street: parking detail (number and location); (in text format, provide square footage requirement for off-street parking for each individual area as a percentage of total site area);
   g. Loading areas, service and refuse areas;
   h. The layout of bikeways and pedestrian ways;
   i. Locations of ingress/egress to property (existing and proposed);
   j. Open space (provide total for open space);
   k. Recreation areas (if applicable);
   l. Permeable and impermeable surface areas (describe and provide total in text form as well);
   m. Existing and proposed building(s) located on site and indicate structural height and square footage (indicate floor area ratios in text form);
   n. Width, pavement type, and laneage of all adjacent rights-of-way (existing and proposed);
   o. Clearly identify existing and proposed land uses on site;
   p. Indicate handicap parking, including details, location and accessible route to building with elevations;

PART III. REQUIRED SUPPLEMENTAL INFORMATION (Continued)

q. Indicate the total square footage along with the square footage on floor-by-floor basis for the facility;

r. Type of occupancy;

s. Type of construction;

t. Distance to any other structures on site.

u. Access to all new buildings by fire/rescue apparatus shall be as required by applicable sections of the Florida Fire Prevention Code, current edition, and Chapter 6, City Fire Code. Site plan showing fire access shall be to scale, no greater than 1"=60';

v. Turning radii for fire engines shall be 20 inside and 40 outside diameter; turning radii for ladder or aerial trucks shall be 25 inside and 50 outside in accordance with manufacturer's specifications;

w. Roadways shall be designed to sustain the weight of fire apparatus; minimum design weight of 32 tons (64,000 lbs).

The site plan may be submitted in one or more drawings that have a uniform scale.

2. **GRADING/DRAINAGE/UTILITY PLAN*** to include:

a. Proposed contour lines and spot elevations on site and extending 25 feet beyond the property boundary. Existing contour lines screened as background;

b. Location, size and description of drainage, sewage collection and water distribution systems, including location of any proposed or existing fire hydrants;

c. All existing utilities on or adjacent to the site, including connections details;

d. Plan(s) to include footprint of existing and proposed site improvements for evaluating the grading and drainage systems;

e. Finished floor elevation and perimeter.

3. **FIRE FLOW.** To meet gpm requirements for the proposed project, the following information shall be provided to the Fire Marshal prior to submitting application:

a. Type of construction for the proposed facility;

b. Floor-by-floor/and/or total square footage;

c. Type of occupancy or use for the proposed facility;

d. Whether the building is protected with fire sprinklers;

e. Distance from property lines and/or neighboring structures within 150 feet of proposed building. The minimum required fire flow per building shall be provided by the Fire Marshal;

f. Engineered hydraulic calculations shall be accomplished to prove the required fire flow is available. The minimum acceptable design pressure shall not be less than 25 psi for these calculations;

g. The hydraulic calculations shall be submitted to the Fire Marshal for review and acceptance prior to the Development Review Committee meeting.

4. **LANDSCAPE PLAN**

a. The landscape plan shall be drawn at a noted scale of at least 1"=30' and be signed and sealed by a Landscape Architect.

PART III. REQUIRED SUPPLEMENTAL INFORMATION (Continued)

b. The landscape plan shall clearly identify the following:

i) Species of tree, caliper and condition of existing trees greater than 6" DBH;

ii) Proposed landscape areas, including berms and buffers (reference species type, dimensions and character at planting, as well as spot elevations and contours for berms);

iii) Location, height and material for walkways, fences, walls and other manmade landscape features;

iv) Existing vegetation to be preserved (reference species type, dimensions and character);

v) Relocation and/or preservation management process, if applicable;

vi) Irrigation plan (note G.P.D./usage); and

vii) An arrow indicating north.

c. Plan must include screening and buffering (reference, type, dimensions, and character) and interior parking and service areas.

d. Signs and Lighting (existing and proposed locations, elevations and typical sections) if any.

5. **TOPOGRAPHY MAP**[*] indicating existing one-foot contour intervals. The topography map must delineate the mean high water elevations for each water body and the one hundred-year flood elevations throughout the site, if applicable. (Topography Map may be included on Grading/Drainage Plan).

6. **VEGETATION MAP** (for applications with property one (1) acre or larger)[*] showing existing vegetation species, caliper and condition, and including all species that are threatened, endangered or of special concern and all preservable trees 6" DBH or more in diameter.

7. **BUILDING ELEVATIONS** for all sides including structural heights.

8. **EXISTING BUILDING USES** listed for all buildings (if any) and intended use of each building or portion thereof.

9. **LEVEL OF SERVICE DATA AND ANALYSIS** illustrating that all adopted levels of service affecting the property are met or, if any service levels are not met, schedule of improvements which will be provided to ensure that all service levels are met; and, a detailed analysis of parking requirements, including time of use and function, to support request. Data shall include, but not be limited to, traffic, storm water drainage, water, sewer, and parks and be in a format acceptable to the Community Development Director. Include the attached Water/Sewer Level of Service Analysis signed and sealed by an engineer.

10. **SOILS MAP** and detailed soils report based on the findings of a professional soils expert supporting proposed construction activity.

[*]**All plans are to be drawn at a scale of at least 1" = 60'.**

11. **SIGNS AND LIGHTING** (existing and proposed locations, elevations and typical sections) if any, for applicable phase.

12. **DOCUMENTS FOR RECORDING.** Provide information on all covenants, grants of rights-of-way, easements, dedications or other restrictions and legal instruments for the management of common areas and other facilities, to be imposed on the use of the land, buildings, and structures including proposed easements for public and private utilities.

13. **CONSTRUCTION DETAILS.** Typical sections showing street type and width, curb and gutter, sidewalks, storm drainage and designs of any proposed fences, walls and entrance structures to be maintained by property owner.

14. **TABLES.**

    a. Table specifying each residential use by type, acreage, maximum density, height, anticipated number of units and referencing parcel designation as indicated on the site plan.

    b. Table indicating the use, height, size, square footage and location of each proposed nonresidential land use area.

    c. Table showing specific delineation, use location, size and staging of development for each common open space, recreational area, and public or semi-public area. The amount of each space type shall be expressed as a percentage of the total site area.

15. **WILDLIFE INVENTORY/PROTECTION PLAT.** An inventory of wildlife species on site, including species categorized as endangered, threatened or of special concern and a description of techniques and practices proposed to protect them.

16. **ENERGY EFFICIENCIES.** Description of energy-efficient site design techniques and land development practices proposed to reduce long-term energy commitments.

FIRE FLOW CALCULATION ACCEPTANCE

Address of project:

_____

_____

Required Fire Flow per City: _____gpm

Fire Flow available for Project per Engineered Calculations: _____gpm

Accepted by:

_____ _____

Fire Marshal or Designee Date

Copy of Sealed Calculations attached

WATER /SEWER LEVEL OF SERVICE ANALYSIS

Address of project:

_____

_____

water gpd: _____

sewer gpd _____

_____ _____

Engineer's Signature Date

NOTE: Attach demand calculations signed and sealed by Engineer of Record.

ZONING AMENDMENT
MINOR/MAJOR PLANNED DEVELOPMENT
FINAL PHASE

APPLICATION CHECKLIST

The following items must be included with the application before it can be deemed sufficient. If all items on this application are not addressed, the application for Zoning Amendment Minor/Major Planned Development Preliminary Phase **MAY BE DEEMED INSUFFICIENT.** Please check a Yes or No for **each** of the items listed below:

YES	NO		
☐	☐	1.	Signed Fire Flow Calculation Acceptance sheet
☐	☐	2.	Water/Sewer details
☐	☐	3.	Paving and Hardscape details
☐	☐	4.	Dumpster Enclosure detail
☐	☐	5.	SJRWMD Permit Application
☐	☐	6.	Tree Save detail
☐	☐	7.	Signs and lighting detail
☐	☐	8.	Traffic Impact Analysis
☐	☐	9.	Survey signed and sealed Certified to the City of Maitland
☐	☐	10.	L.O.S. analysis attached, signed and sealed by Engineer
☐	☐	11.	Landscape plans signed and sealed by a Landscape Architect
☐	☐	12.	I understand if my application and plans are not complete, the application WILL NOT BE REVIEWED.

CERTIFICATION

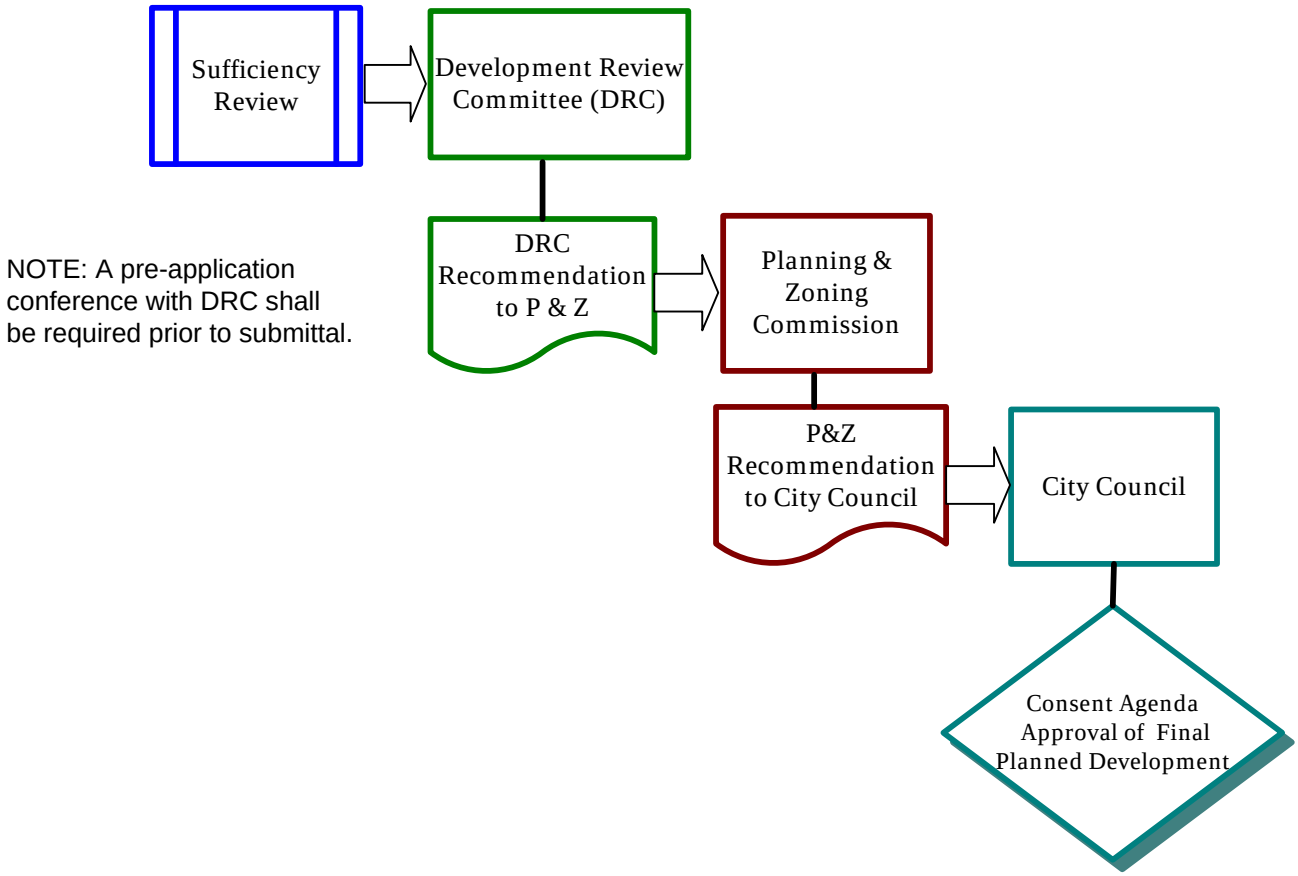
I do hereby certify that I, the undersigned, have read the above information and have full understanding to the best of my knowledge and belief that all information supplied with this application is true and accurate.

Signature _____ Date_____

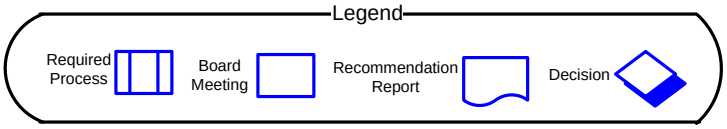
☐Owner ☐Applicant

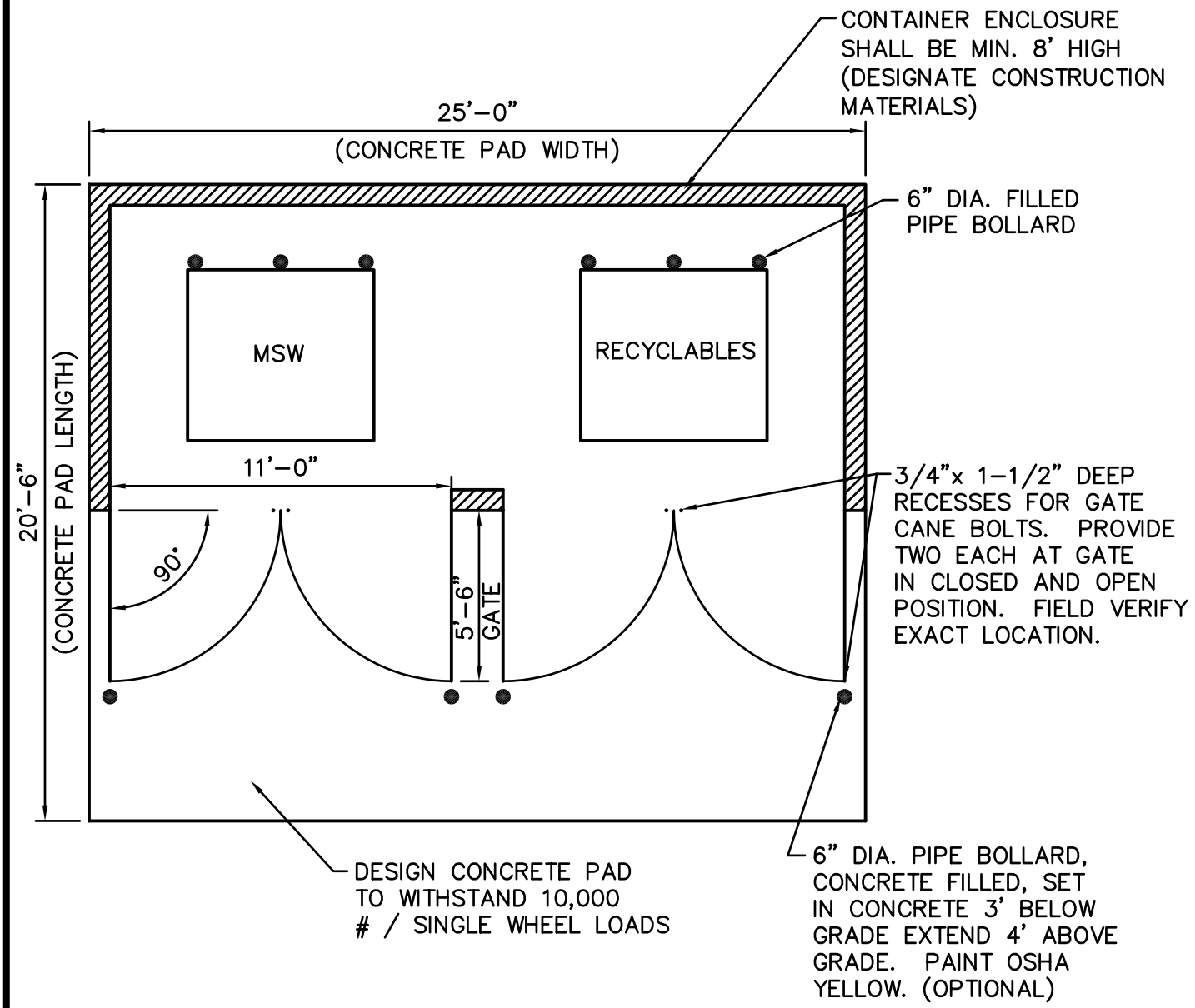
Print Name_____

FINAL PLANNED DEVELOPMENT APPLICATION PROCESS



NOTE: A pre-application conference with DRC shall be required prior to submittal.





City of Maitland
COMMUNITY DEVELOPMENT DEPARTMENT

DATE: FEB. 1999

SCALE: 1"= 5'

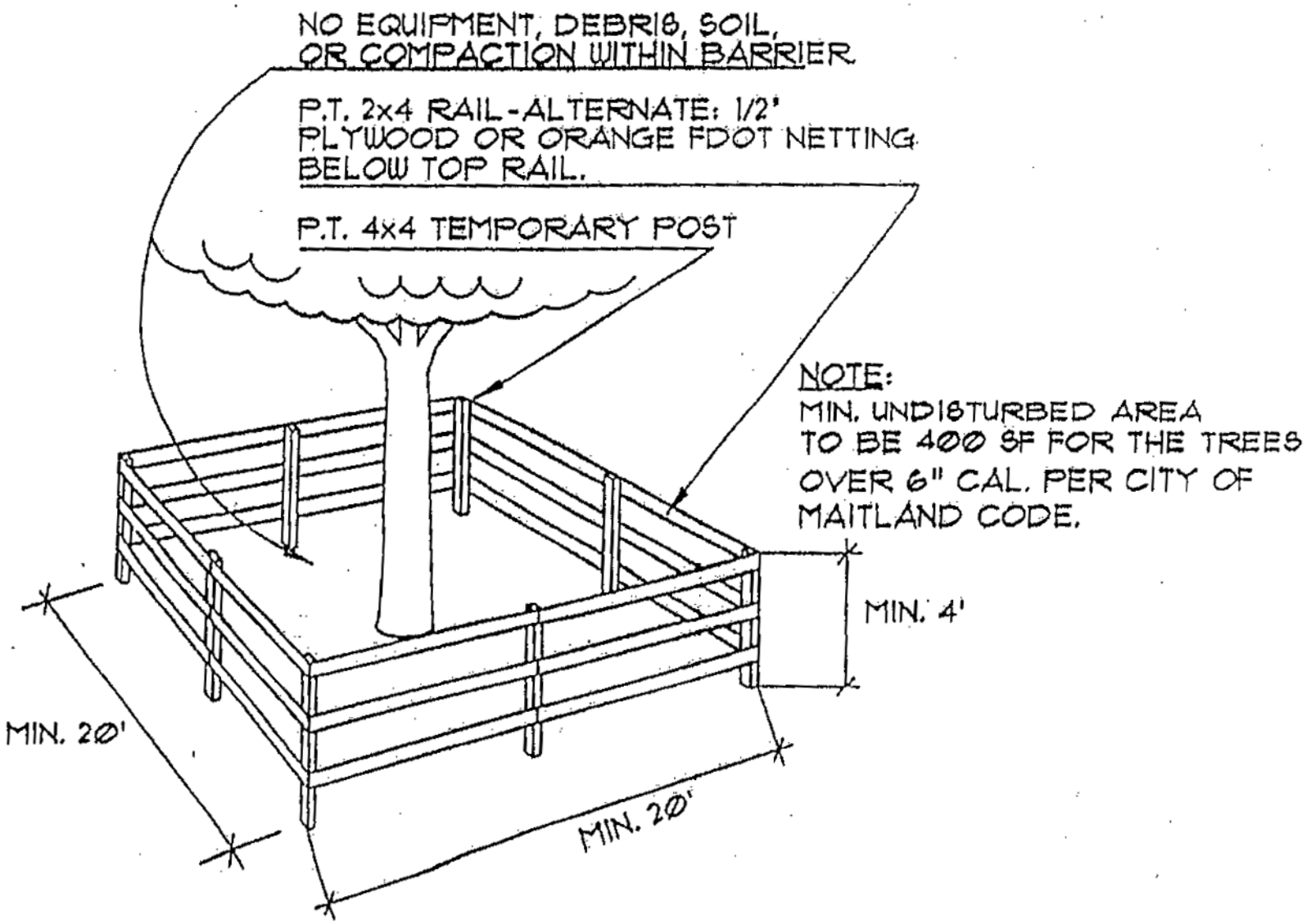
MSW & RECYCLABLES CONTAINER ENCLOSURE PLAN

CONTRACT NO. F991

DRAWING NO F991-1

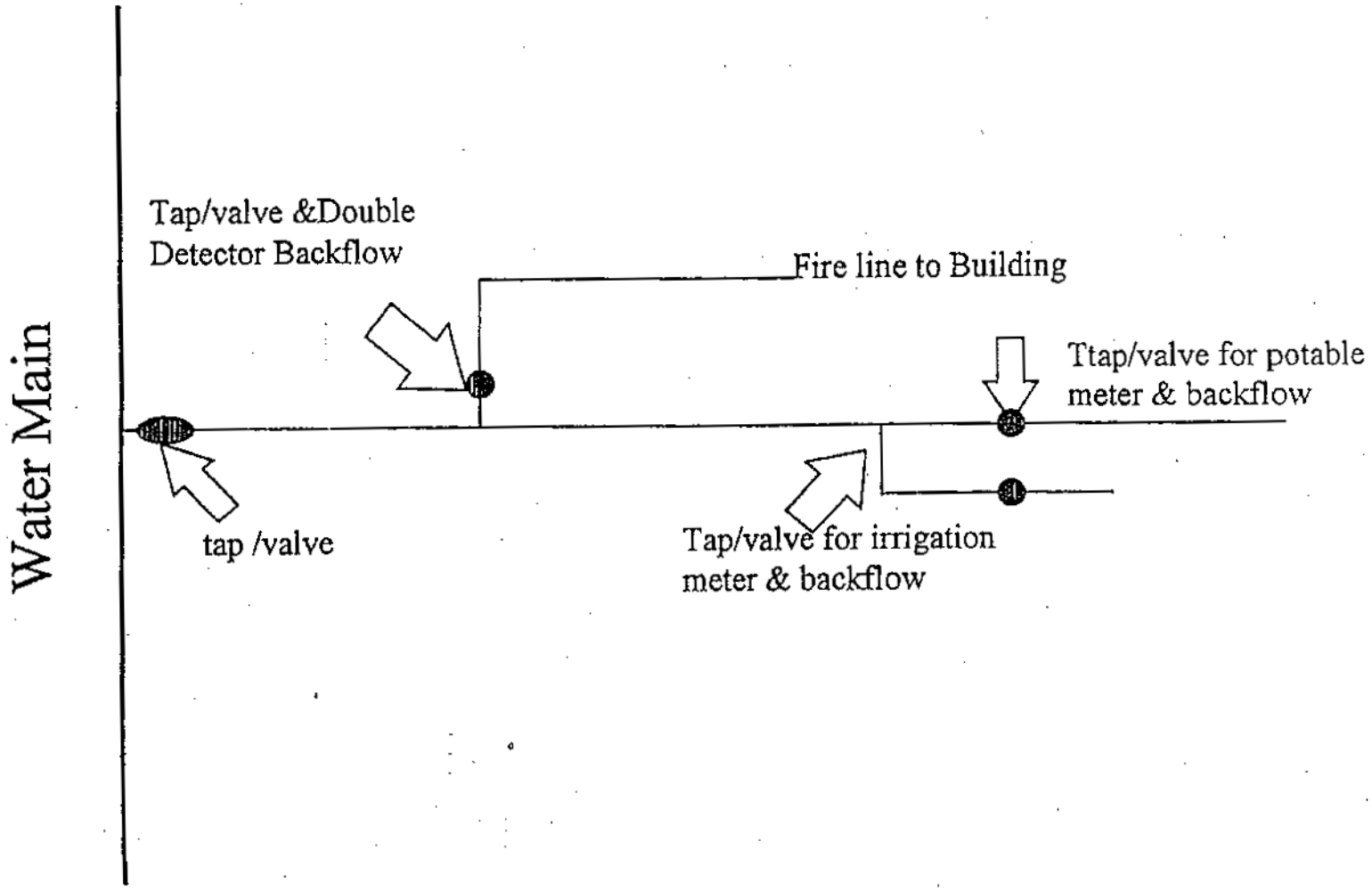
PLOT DATE 2.24.99 8:30AM

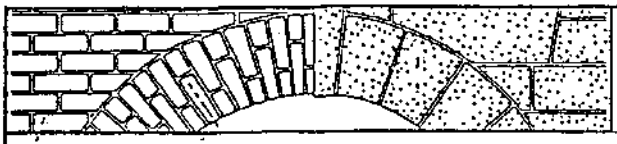
SHEET NO 1 OF 1



TREE SAVE DETAIL

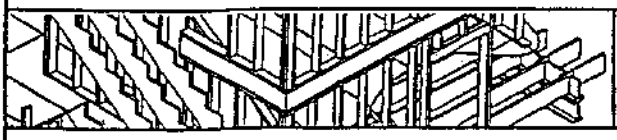
Example of a watermain tap with fire lines and potable domestic/irrigation





RAMSEY/SLEEPER

ARCHITECTURAL GRAPHIC STANDARDS



TENTH EDITION

JOHN RAY HOKE, JR., FAIA
EDITOR IN CHIEF

JOHN WILEY & SONS, INC.
New York • Chichester • Weinheim • Brisbane • Singapore • Toronto

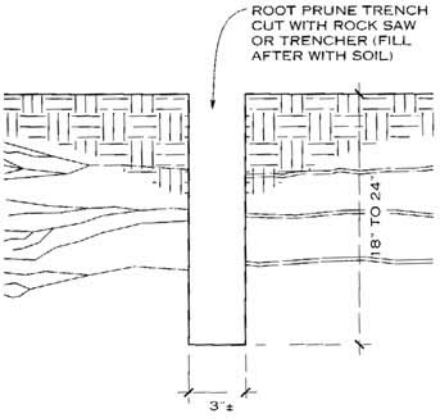
CONSTRUCTION AROUND EXISTING TREES

Great care should be taken not to compact, cut, or fill the earth within the crown area of existing trees. Most tree roots are located in the top 6 to 18 in. of the soil and often spread considerably farther than the drip line of the tree. Compaction can cause severe root damage and reduce the movement of water and air through the soil. To avoid compacting the earth, do not operate equipment or store materials within the crown spread.

Before construction begins, inject the soil within the crown area of nearby mature trees with commercially prepared kelp-based fertilizer and mychorrhiza fungus developed to invigorate tree roots. Prune tree roots at the edge of the root save area, as roots pulled during grading can snap or split well into the root save area. Rot and disease that enters dying roots in compacted or filled areas can move into the tree if root pruning has not been carried out. Install tree protection fencing and silt protection at the limits of construction activity near trees.

During construction, apply additional water in the canopy area to compensate for any root loss beyond the crown spread. Have all mature trees inspected by a certified arborist before construction begins to identify any special problems. Remove all deadwood and treat all trees for existing insect and disease problems. When possible, begin fertilization and problem treatments at least one full growing season before construction.

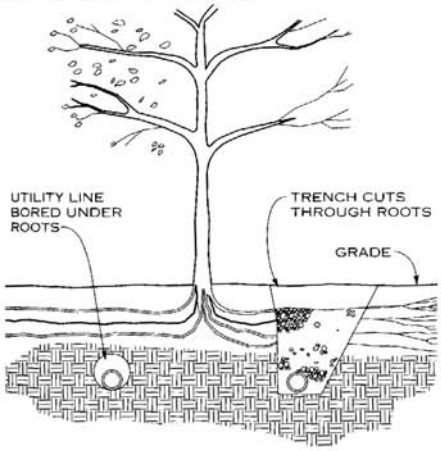
Removal of significant portions of the crown will affect the health of a tree by reducing its ability to photosynthesize in proportion to the mass of its trunk. Younger, healthier trees withstand construction impacts better than older trees.



NOTE

A root prune trench severs roots with a clean cut, protecting remaining roots from cracking, rot, and disease.

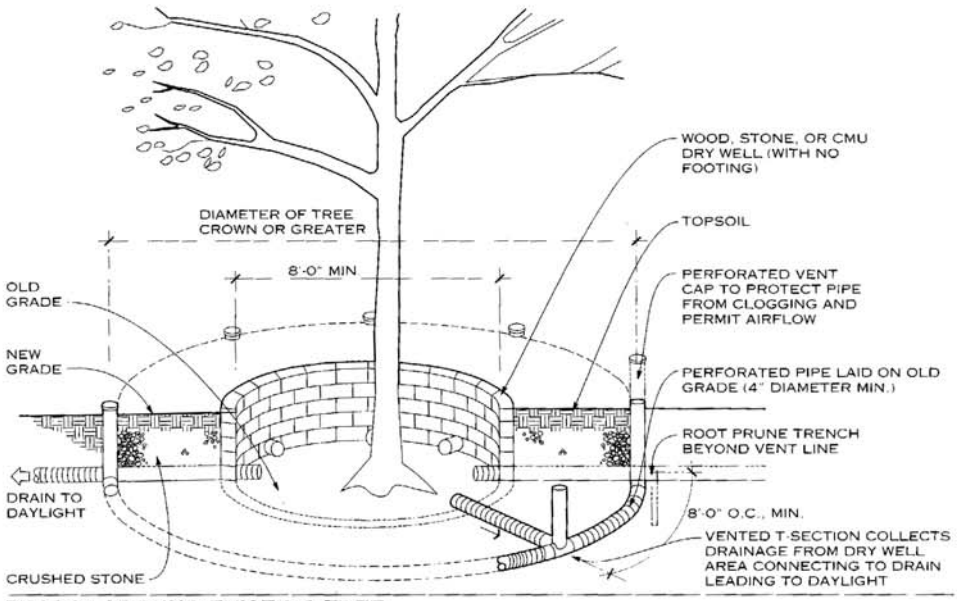
ROOT PRUNE TRENCH



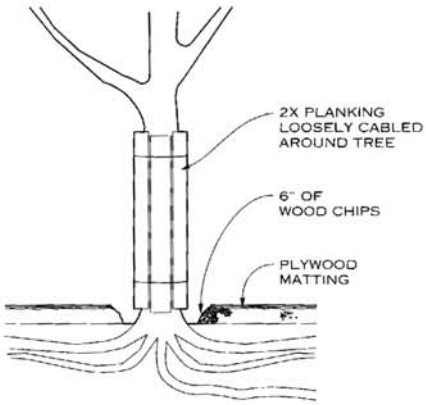
NOTE

Fewer roots are severed by tunneling under a tree than by digging a trench beside it.

UNDERGROUND UTILITY LINE NEAR EXISTING TREES

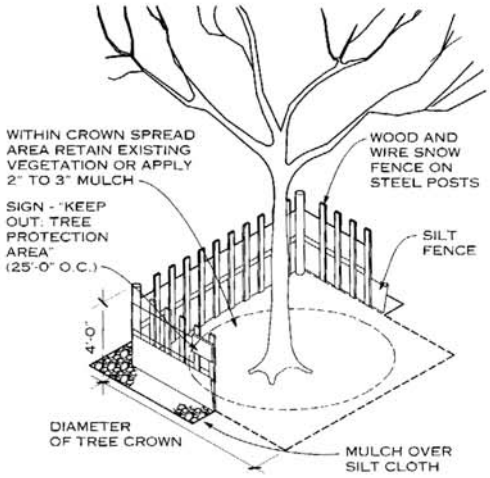


FILLING AROUND EXISTING TREE



NOTE

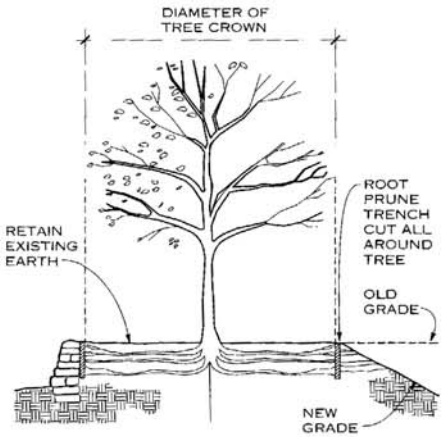
If construction operations must take place within the crown spread area, install 6 in. of wood chips on top of the soil to protect it. Use plywood matting over mulch in areas where equipment must operate. Protect the trunk of the tree with planking loosely cabled around the tree to reduce scarring by equipment. Remove planking, matting, and mulch as soon as operations are finished.



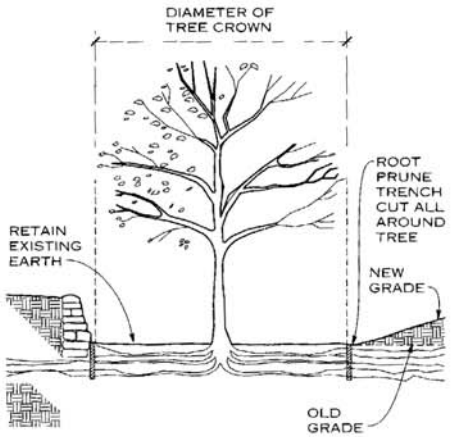
NOTE

A barrier such as that illustrated can keep construction equipment and personnel from compacting the soil around tree roots.

TREE AND ROOT PROTECTION

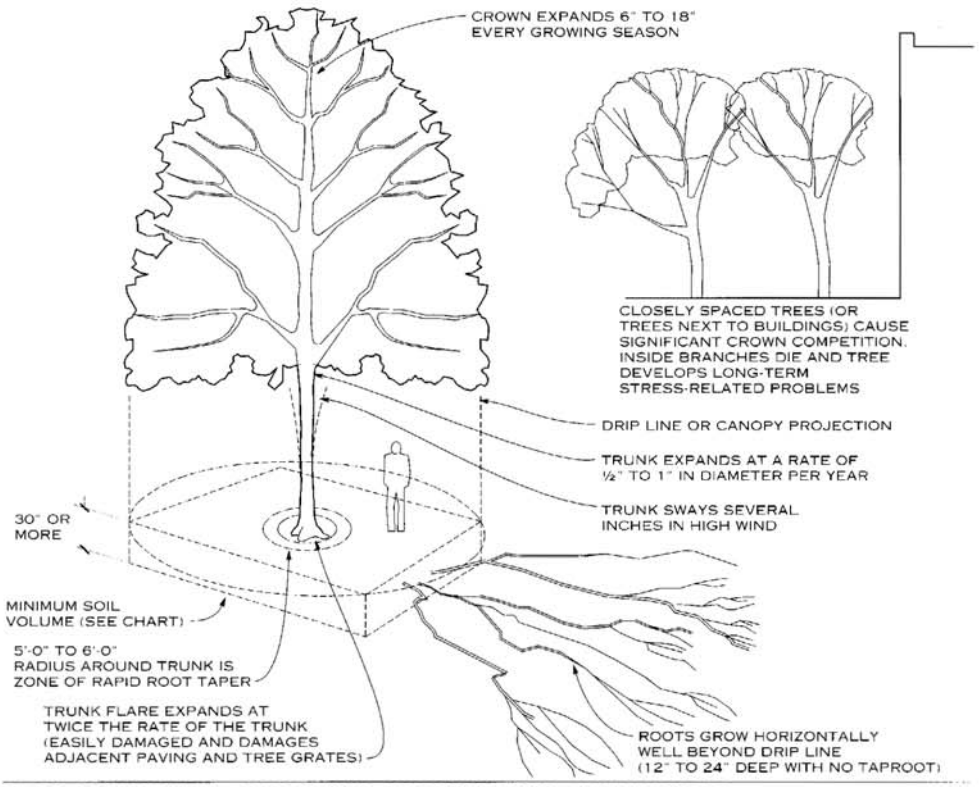


CUTTING GRADE AROUND EXISTING TREE



FILLING GRADE AROUND EXISTING TREE

James Urban, ASLA; James Urban Landscape Architecture; Annapolis, Maryland



TREE STRUCTURE—PARTS AND GROWING CHARACTERISTICS

GENERAL

Areas of dense urban development leave little room for tree roots to develop. Large areas of pavement, competition with foundations and utilities for space below ground, and extensive soil compaction and disruption limit the amount of soil available for trees. When the area of ground around the tree open to the rain and sun is less than 400 to 500 sq ft per tree, the following design guidelines should be followed to encourage the growth of large healthy trees.

Five major parts of the tree structure must be accommodated in the design process:

CROWN GROWTH: The tree crown expands every growing season at a rate of 6 to 18 in. per year. Once the crown reaches a competing object such as a building or another tree canopy, the canopy growth in that area slows and then stops. Eventually the branches on that side of the tree die. As the canopy expansion potential is reduced, the overall growth rate and tree health are also reduced.

TRUNK GROWTH: The tree trunk expands about $^1/_2$ to 1 in. per year. As the tree increases in size, the lower branches die and the trunk lengthens. Tree trunks move considerably in the wind, especially during the early years of development, and are damaged by close objects.

TRUNK FLARE: At the point where the trunk leaves the ground, most tree species develop a pronounced swelling or flare as the tree matures. This flare grows at more than twice the rate of the main trunk diameter and helps the tree remain structurally stable. Any hard object placed in this area, such as a tree grate or confining pavement, will either damage the tree or be moved by the tremendous force of this growth.

ZONE OF RAPID ROOT TAPER: Tree roots begin to form in the trunk flare and divide several times in the immediate area around the trunk. In this area, about 5 to 6 ft away from the trunk, the roots rapidly taper from about 6 in. in diameter to about 2 in. Most damage to adjacent paving occurs in this area immediately around the tree. Keeping the zone of rapid taper free of obstructions is important to long-term tree health. Once a tree is established, the zone of rapid taper is generally less susceptible to compaction damage than the rest of the root zone.

ROOT ZONE: Tree roots grow radially and horizontally from the trunk and occupy only the upper layers (12 to 24 in.) of the soil. Trees in all but the most well-drained soils do not have taproots. A relationship exists between the amount of tree canopy and the volume of root-supporting soil required (see the accompanying chart). This relationship is the most critical factor in determining long-term tree health. Root-supporting soil is generally defined as soil with adequate drainage, low compaction, and sufficient organic and nutrient components to support the tree. The root zone must be protected from compaction both during and after construction. Root zones that are connected from tree to tree generally produce healthier trees than isolated root zones.

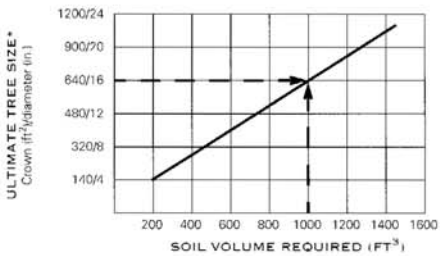
SOIL MODIFICATIONS

Thoroughly till organic matter into the top 6 to 12 in. of most planting soils to improve the soil's ability to retain water and nutrients. (Do not add organic matter to soil more than 12 in. deep.) Use composted bark, recycled yard waste, peat moss, or municipal processed sewage sludge. All products should be composted to a dark color and be free of pieces with identifiable leaf or wood structure. Recycled material should be tested for pH and certified free of toxic material by the supplier. Avoid material with a pH higher than 7.5.

Modify heavy clay or silt soils (more than 40% clay or silt) by adding composted pine bark (up to 30% by volume) and/or gypsum. Coarse sand may be used if enough is added to bring the sand content to more than 60% of the total mix. Improve drainage in heavy soils by planting on raised mounds or beds and including subsurface drainage lines.

Modify extremely sandy soils (more than 85% sand) by adding organic matter and/or dry, shredded clay loam up to 30% of the total mix.

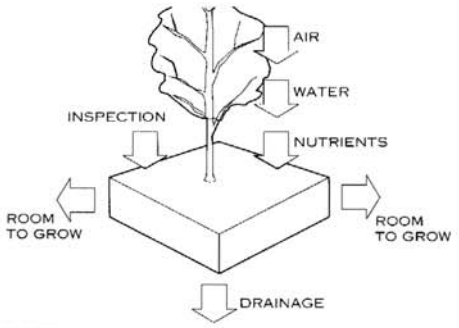
SOIL VOLUME FOR TREES



*The ultimate tree size is defined by the projected size of the crown and the diameter of the tree at breast height.

NOTE

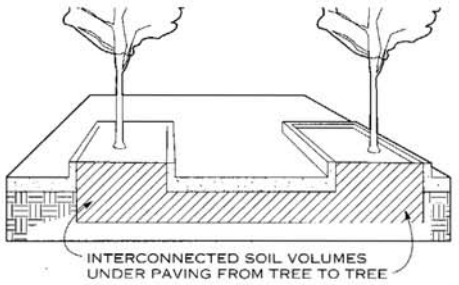
For example, a 16-in. diameter tree requires 1000 cu ft of soil.



NOTE

Soil volume provided for trees in urban areas must be sufficient for long-term maintenance.

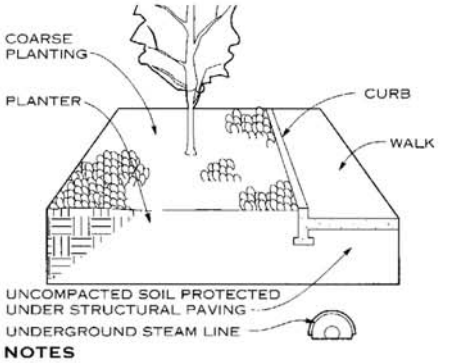
SOIL VOLUME—REQUIREMENTS FOR TREES



NOTE

The interconnection of soil volumes from tree to tree has been observed to improve the health and vigor of trees.

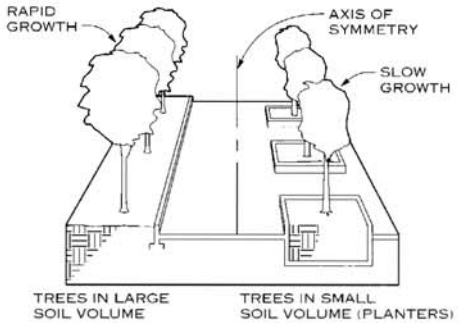
SOIL VOLUME—INTERCONNECTION



NOTES

1. Coarse plantings keep pedestrians out of planters.
2. Curbs protect planters from pedestrians and deicing salts.
3. Underground steam lines must be insulated or vented to protect planter soil.

SOIL PROTECTION FROM COMPACTION AND DEGRADATION



NOTE

If visually symmetrical tree planting is required, symmetrical soil volumes are also required to produce trees of similar crown size.

VISUALLY SYMMETRICAL TREES

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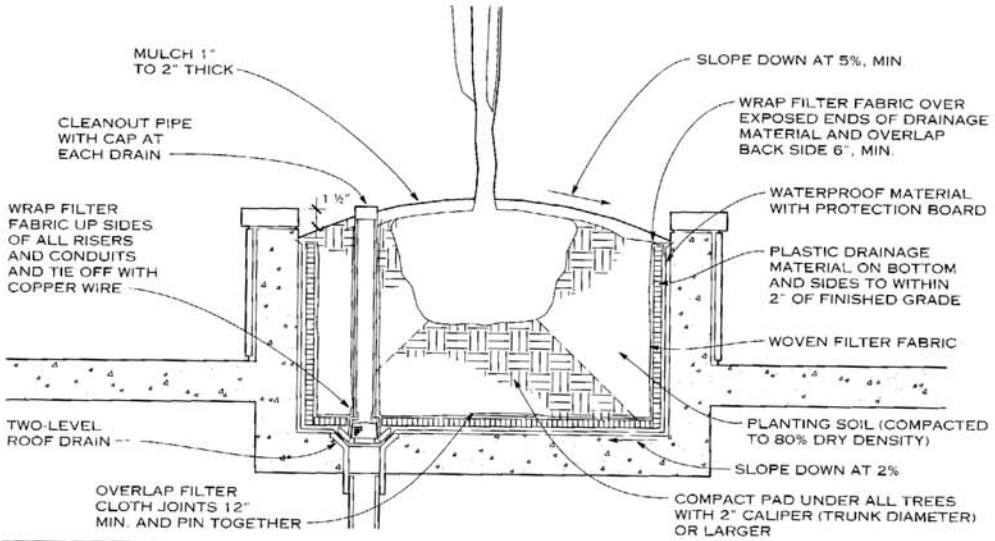


ROOFTOP PLANTER

SELECTING PLANTS FOR ROOFTOP PLANTING

When choosing plants for a rooftop setting, consider the factors outlined below:

WIND TOLERANCE: Higher elevations and exposure to wind can cause defoliation and increase the transpiration rate of plants. High parapet walls with louvers can reduce wind velocity and provide shelter for plants.

HIGH EVAPORATION RATE: The drying effects of wind and sun on the soil in a planter reduce soil moisture rapidly. Irrigation, mulches, and moisture-holding soil additives (diatomaceous earth or organic matter) help reduce this moisture loss.

RAPID SOIL TEMPERATURE FLUCTUATION: The variation in conduction capacity of planter materials results in a broad range of soil temperatures in planters of different materials. Cold or heat can cause severe root damage in certain plant species. Proper drainage helps alleviate this condition.

TOPSOIL: Improve topsoil in planters to provide optimum growing conditions for the plants selected. A general formula calls for adding fertilizer (determined by soil testing) and one part peat moss to five parts sandy loam topsoil. More specific requirements for certain varieties of plants or grasses should be considered.

ROOT CAPACITY: Choose plant species carefully, considering their adaptation to the size of the plant bed. If species with shallow, fibrous roots are used instead of species with a coarse root system, consult with a nursery advisor. Consider the ultimate maturity of the plant species when sizing a planter.

PLANTING DETAILS

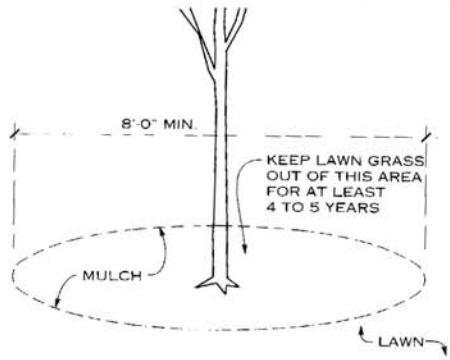
SOIL DEPTH: Minimum soil depth in a planter varies with the plant type: for large trees, the soil should be 36 in. deep or 6 in. deeper than the root ball; for small trees, 30 in. deep; for shrubs, 24 in. deep; and for lawns, 12 in. deep (10 in. if irrigated).

SOIL VOLUME: To determine sufficient soil volume, see chart on Soil Volumes for Trees (on another AGS page in this section).

SOIL WEIGHT: The saturated weight of normal soil mix ranges from 100 to 120 pcf, depending on soil type and compaction rate. Soils can be made lighter by adding expanded shale or perlite. Soils lighter than 80 pcf cannot provide structure adequate to support trees.

DRAINAGE FABRIC: Plastic drainage material should be a minimum of $\frac{1}{2}$ in. thick. Most drainage material comes with a filter fabric attached, but the overlap joints provided are not wide enough for the unconsolidated soils found in planters. A second layer of woven filter fabric, delivered in rolls greater than 10 ft in width, should be installed. Tuck the fabric over the exposed top of the drainage material to keep soil out of the drainage layer.

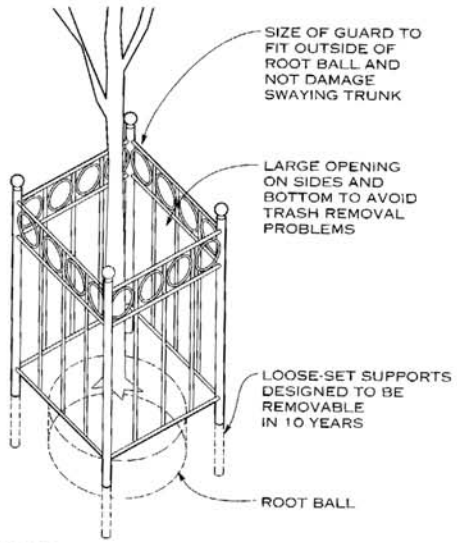
INSULATION: Most planters do not require insulation; however, in colder climates planters with small soil volumes located over heated structures may require insulation. Consult local sources for a list of cold-hardy plants.



NOTE

Young trees planted in lawn areas face substantial competition from the roots of grasses.

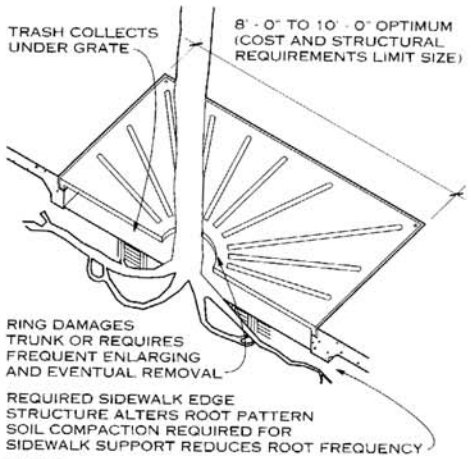
TREES PLANTED IN LAWNS



NOTE

Tree guards can protect young trees from trunk damage caused by bicycles. If made too small, however (less than 30 in. in diameter), they can damage the tree as it grows and are difficult to remove. The high cost and potential harm to trees outweigh the minor protection tree guards afford a trunk. They should only be used in areas with particularly high traffic.

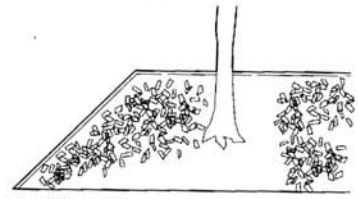
TREE GUARDS



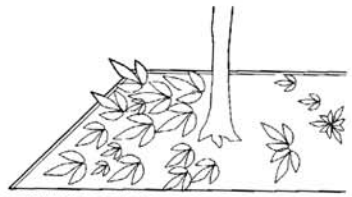
NOTE

Tree grates decorate the base of a tree but provide no significant benefit. Many aspects of tree grates can damage a tree or reduce its potential for growth.

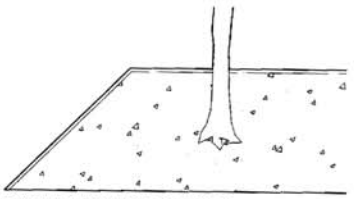
TREE GRATES



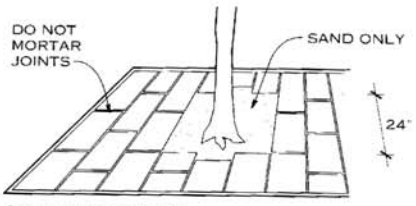
BARK MULCH



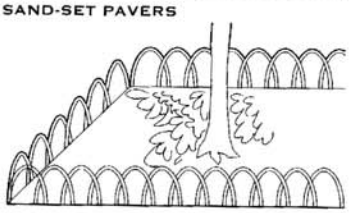
GROUND COVER PLANTS



STONE DUST OR GRAVEL



SAND-SET PAVERS



LOW FENCE AND GROUND COVER

NOTE

Alternatives to tree grates (and guards) include softer, organic coverings that suit the purpose better, are less expensive, and require less maintenance over the life of the tree.

TREE BASE PROTECTION

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