

Creating Effective Specifications and Performing Good Inspection

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Course Outline

- Clear Build-able Specs
- Bid-able Specs
- Proper Inspection of the Work
- Accountability and Final Payment

**How would you write
the specs for this tree (artificial)?**



Clear Build-able Specs

- Understand what you want
- Have an idea of how to get there
- Draft Specifications
- Ask a respectable Contractor if they can build what you envision
- Make sure the tolerances and limits are within some guidelines or standards

Write the Specs for Bids in Your Favor

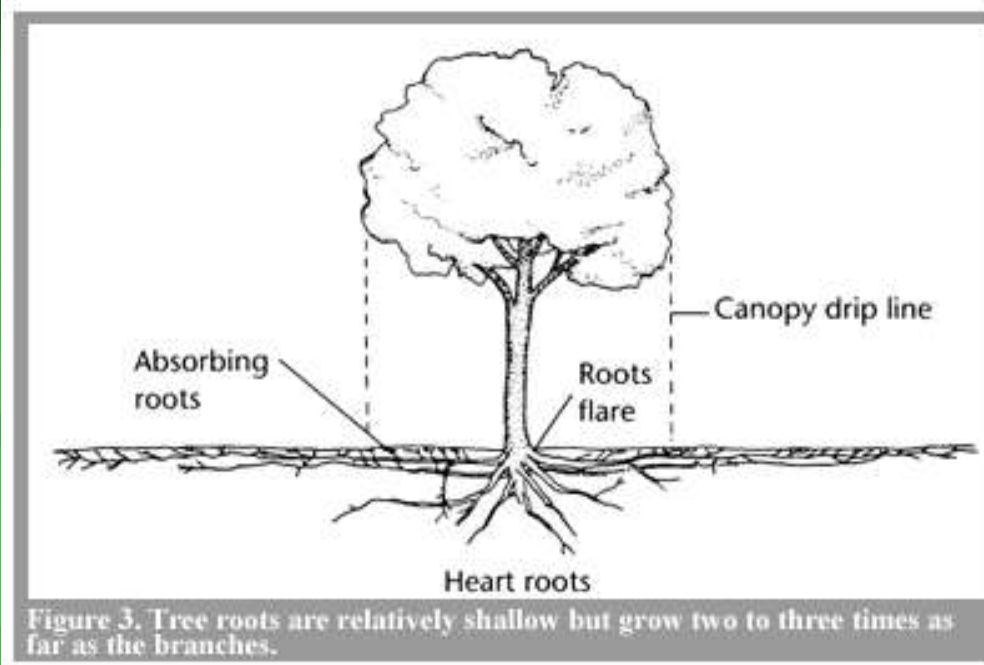
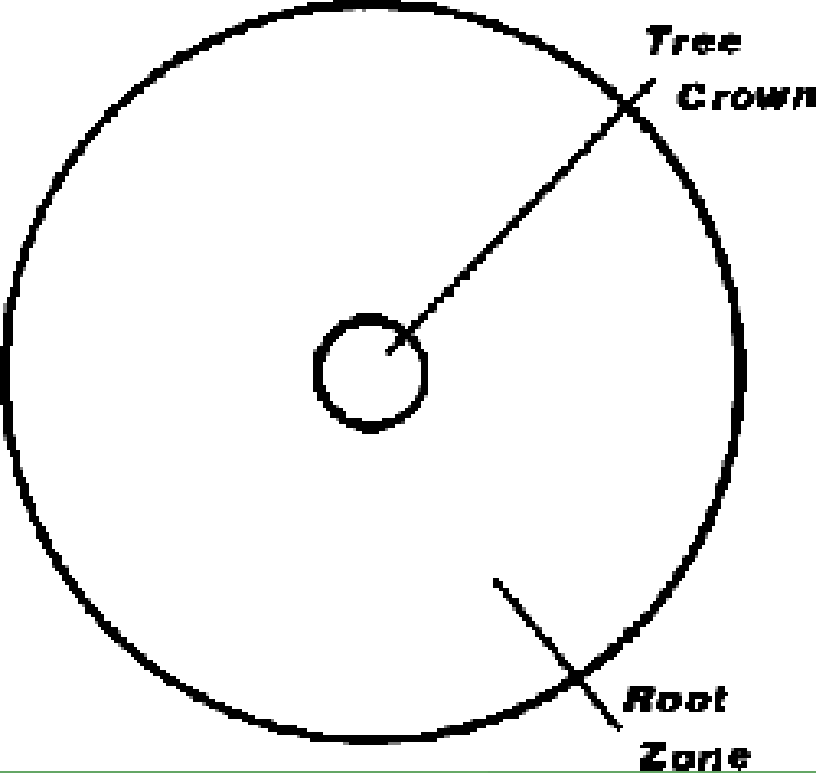
- The clearer the specifications, the less contingency in the bid
- Wasted regulations that cannot be followed will cost you more in the bid process
- Your reputation for holding bidders to a performance on the job will encourage quality contractors – If new, hold pre-bid meeting

The contractor is not responsible to argue with residents

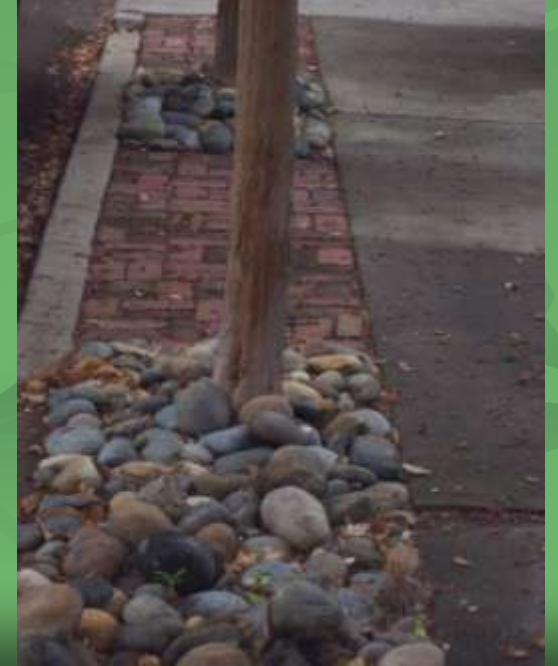
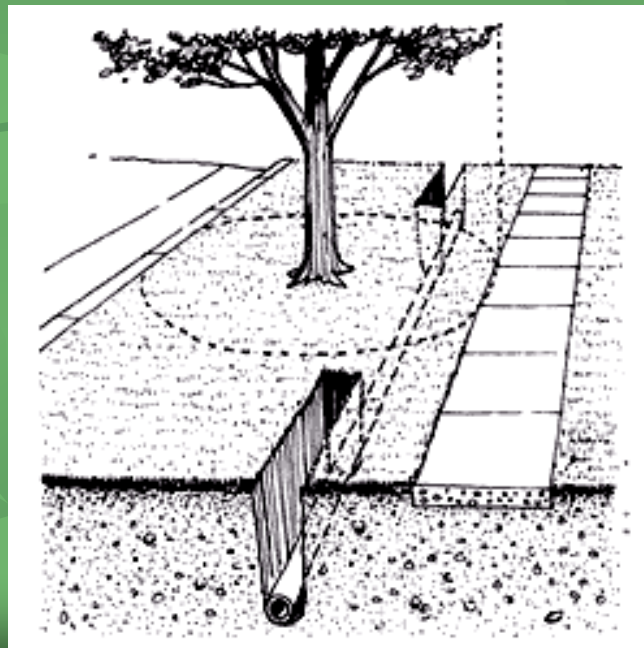
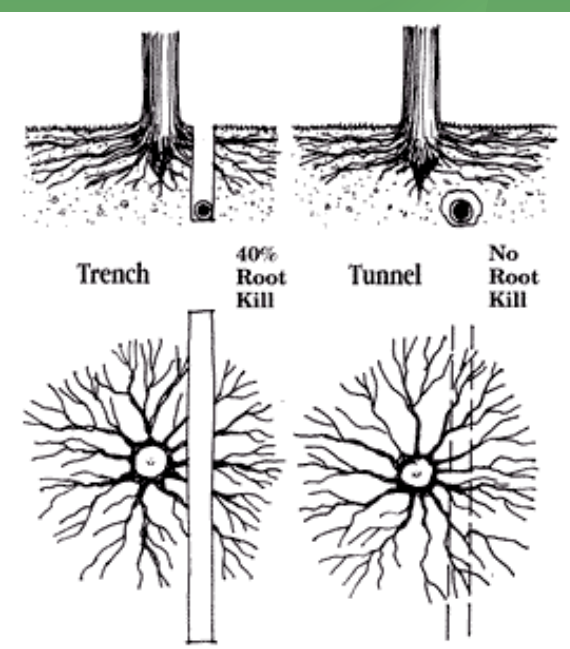


Specifications for better Bids

- The ability for bidders to clearly see the work and know what they are bidding on
- The contractor is our partner; it can be pleasant or tense... we set the tone
- Have clear measurable and payable bid items
- Use accepted industry terminology



How do we define what root area to protect?



Quality Inspection

- Any contractor can be found out of compliance somewhere on a job
- Pick the big issues to be picky about
- Be consistent
- Be fair
- Measure honestly for the work completed
- Coordinate the measurements for easy billing reconciliation

Above ground planter was enlarged with false root wall. Redwood City, CA



Holding Contractor Accountable

- Compliment work performed well
- Verbal and written warnings and notification
- Be consistent
- Consider credits, change orders, and necessary bid items
- Use punch lists to your advantage
- Work with the project superintendent

New Streetscape Redwood City, CA



Testing

- State in the specs when the tests will be performed, who will schedule the tests, and who will pay for tests and re-tests
- Provide results for the contractor to see
- Find a quality testing company that knows they are working for the contracting agency
- Produce written results

How Does This Site Compare to the Specs?



Measurement and Payment

- Clearly describe how the sites will be measured
- Clearly define the payment unit and what is considered complete
- Will there be partial payment?
- How do you schedule when to measure?
- How do you schedule payment invoices?
- Tip – balance the workload

Measurement and Payment



More concrete was removed than put back, Measure accurately!

What is being measured?



Cured sidewalks are more Square Feet in size than straight sidewalks. Measure accurately. Gain the contractor's trust of your integrity to measure and pay on time.



Summary

- Clear specifications help the project get bid for the best prices by the best contractors
- Effective inspection helps bidders understand the process you want in the beginning and sets the tone for the remainder of the work
- Hold the Contractor accountable for the work
- Measure accurately with the contractor and agree on the invoice submittal quantities before it is submitted

Conclusions

- Clear specifications drive the project work
- Schedule the work based on the bid items
- Clear communication with Contractor supports work performed to specifications
- If the contractor isn't performing, document and notify in writing
- Process the invoices promptly, there are other steps after your verification
- Earn a reputation for excellent contract administration

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ANSI A300 Pruning Standards

- Performance Standards, NOT specifications
- Objective **shall** be written
- Specifications **should** be written
- Example of written a pruning specification

Specifications vs. Standards

- Standards list all the possible ways things can be performed to a tree. A300 has both “shall” and “should.” Because trees are a little different than manufactured things or materials, there are some “shoulds” in the standards.
- Specifications are enforceable and have to list all shalls. Specifications refer to the appropriate part of the standards

ANSI A300 Pruning Requirements

The specifications to meet A300 need to include:

- An Objective
- Method of pruning – Clean, Raise, Reduce, Thin
- Location - of place(s) in tree to perform work
- Density – amount of foliage to be removed
- Size - of part(s) to be removed.

Example A300 Specification

Boiler Plate + Objective

- All work shall be completed in compliance with ANSI A300 Standards and the following specifications:
- The objective: Reduce risk and maintain as large a shade canopy as possible.
- *Divergent objective: Reduce the uprooting Oak tree from failure*

Example A300

Description of Pruning

- (Clean) -Remove dead branches **1** inch in diameter or greater; Prune broken branches back to a sufficient lateral $\frac{1}{3}$ the diameter or greater of the branch being removed, or using a heading cut on branches up to **3** inches in diameter, or the parent branch or trunk based on the location of the break; Remove decayed branches **2** inches in diameter or greater; and the most damaged or undesirable branch of a pair or group of branches that rub each other

Example A300

Description of Pruning

- Reduce the length of branches where length and lack of taper or endweights will likely cause the branch to break. Remove branches using thinning cuts or heading cuts in the outer third of the crown to a maximum branch diameter of **3** inches, removing between 15% to 25% of foliage.

Example A300

Additional Instructions

- Attention to Risk Reduction - High risk conditions shall be mitigated using the appropriate pruning practices and recorded on the work order submitted to the City Arborist.
- If a high risk situation cannot be mitigated following the above specifications, the City Arborist shall be notified to approve an alternative mitigation.

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