Slide 1

Specifications and Soils
LARC 498c
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Slide 2

The relationship of Owner to Architect and General Contractor. Construction documents are the means of communication between the three parties.

Slide 3

Contract documents include a project manual, which contains the written legal terms, bidding process, technical specifications and any changes to the agreement, as well as the drawings.
Specifications are a written description of the work to be performed. In design, the Architect describes the work. In bidding, the contractor determines a price based on the specifications and drawings. In construction, the specifications guide construction as well as the review process.

In the design phase, architects often begin with drawings and move to specs after the schematic design.

Specifications guide not only what is built, but how a site is managed.
Slide 7

Slide 8

Drawings – Answer where?, how big?, how things fit together?, and how many?
Specifications – What? How good? How?
Specifications legally take precedence over the drawings in disputes between parties.

Slide 9

Specifications are organized based on materials and construction discipline (i.e. electrical, plumbing, etc.). The most common specification organization is from the Construction Specification Institute, called Master Format 2004. Other formats exist. Some government agencies, i.e. WashDOT, have their own specification format.
Master Format was changed in 2004, yet many jurisdictions still use the old 1995 format. In the old format, almost all of the work for landscape architects was contained in Division 2.

There are three types of specifications: Descriptive, which is the standard old-school way of describing the product and methods of installation to the contractor; Performance, which just describes the end result, letting the contractor decide how best to construct; Proprietary, which specifies a particular product or patented system.

Each spec section is has the same three sub-sections – General, Products and Execution.
The language of specifications should be clear, succinct and use the active, imperative voice.

The purpose of soil specifications is to describe the topsoil and mulch in such a way that the contractor will be able to maintain or establish a consistently fertile growing medium that will hold water.

Recall the design and construction process: In design, the landscape architect specifies the desired depth and type of soil after taking into consideration existing soil conditions and the site itself. In bidding, the contractor uses the drawings and specifications to estimate the quantity and quality of soil to offer the owner a price for procurement and installation.
In construction, the contractor submits a soil sample based on the spec requirements to the landscape architect for approval. If approved the soil will be placed according to the drawings and specifications.

When writing a specification, where do you start? There are specification subscription services that generate a menu of content for each section. You edit the Word documents and select the best specification.

The advantages of a service are that they can be comprehensive and save you time. The disadvantage is that it is more difficult to tailor specs for a specific project.
Example of a MasterSpec section on soils... select measurement, quantities and descriptors and you are finished.

Topsoil Source: Import topsoil from off-site sources. Obtain topsoil displaced from naturally well-drained sites where topsoil occurs at least 4 inches (100 mm) deep; do not obtain from bogs or marshes.

Manufactured topsoil to conform to specified characteristics noted in Item 2.6 below. Topsoil shall be free of stones 1 inch (25 mm) or larger in any dimension, weed seed, herbicide residue and other extraneous materials harmful to plant growth.

Texture: Silty loam that meets the following mechanical analysis:

<table>
<thead>
<tr>
<th>Sieve Size</th>
<th>Percentage Passing by Dry Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 inch</td>
<td>100%</td>
</tr>
<tr>
<td>#18</td>
<td>95%</td>
</tr>
<tr>
<td>#60</td>
<td>80%</td>
</tr>
<tr>
<td>#200</td>
<td>70%</td>
</tr>
<tr>
<td>#300</td>
<td>60%</td>
</tr>
</tbody>
</table>

Chemical characteristics: pH range of 5.5 to 7, soluble salt content less than 500 ppm. Organic matter: Maximum of 10% by volume.

Other alternative is to use previously developed specifications, either made available by public agencies or from past projects you have worked on.

Topsoil specifications at a minimum include a description of the source, texture, chemistry, organic matter and physical properties.

The basic designation is a place to start (in this case, soil loam), but is difficult for contractors to procure with the exact percentages.
Slide 25

Soil test data corresponds to spec requirements and tests of the soil submittals.

Slide 26

Specifications must also account for the realities of a construction site, either by designating soil to protect or specifying tillage and a deeper topsoil.

Slide 27