

## Chapter 5 – Technical Documents

### 5.1 GENERAL INFORMATION

A. The Construction Documents consist of the Drawings, Project Manual (Specifications) and Addenda.



1. OGS D&C projects shall follow the National CAD Standard for project Drawings and the CSI standard for Specifications.

2. The intent of following these well-coordinated standards is to receive more bids, create fewer delays, and have fewer change orders.

B. The documents shall be clear, concise, correct and complete to effectively communicate their intent and instruction to the Contractor.

C. Drawings and Specifications for each prime contract are complementary.

D. Bidders/Contractors are responsible for reviewing the other prime Contractor drawing sets for coordination of the work; however, they are not responsible for reviewing the other prime contract Specifications.

E. Depending on the size and scope of the project, Drawings may be bound within the Specification. Specifications should not be written on the Drawings.

1. An exception to this requirement may be for Emergency Contracts and Job Order Contracts (JOCS).

F. The “lowest responsible bid” award is the predominant delivery mechanism for awarding OGS projects to Contractors. This method at times may reduce the quality of the construction and puts more risk on the State and the Consultant/Designer. Therefore, the Construction Documents need to be complete, logically presented, properly detailed, and conveyed in a clear and concise manner.



G. Terms used on the Drawings to identify materials shall precisely match terms used in the Specifications. **Many times the Consultant/Designer names or labels items that contradict the master specifications. For example: Type A Floor Drain, etc.** Each Consultant/Designer shall be responsible for using consistent terminology in the Drawings and Specifications.

H. Show all products included in Part 2 of the Specification section on the Drawings. When products are not shown this may generate discussion on General Conditions Article 3 Interpretation of Contract Documents. Some examples are noted below:

1. Weep holes and mortar net are not shown in the Drawings but are listed in the Specifications.

2. Floor finishes, painting, and coatings specifications are provided without a finish schedule or finish notes to indicate what materials require these finishes.
3. The Consultant/Designer includes 6 lighting fixture types, which are indicated in the Specifications, yet the drawings only show 3 lighting fixture types.

The Contract Documents are complimentary, and what is called for by one shall be as binding as if called for by all. It is not intended to include work not properly inferable from the Contract Documents. When there is conflict between the Drawings and Specifications, the Drawing takes precedence per the language in Article 3.5 of the General Conditions. To assure clarity of scope of work and to avoid Contractor disputes, it is good practice that the Consultant/Designer includes in the Drawings all relevant materials found in the specification sections by including detailed drawings, notes, schedules, etc.



- I. The word “**new**” shall not be used. Identify work as “**existing**” to differentiate from that which is being provided by the contract. Article 5.1 of the General Conditions notes that all materials, equipment and articles used permanently in the Work which become the property of the State shall be new unless specifically stated otherwise.
- J. The [General Conditions Document 007213](#) contains important information that affects the preparation of the Technical Documents. Reading this document provides familiarity with OGS contract language and terminology thus eliminating some of the common errors in the preparation of the Technical Documents. Some important articles are highlighted below:

General Conditions Excerpts
<p><b>Definitions:</b></p> <p><b>Article 2.9</b> <i>Notes shall not reference the State, Architect, Owner, Engineer, Engineer-in-Charge, Client or Project Representative. The correct term is Director’s Representative and it shall be the only term used.</i></p> <p><b>Article 2.12</b> <i>Terms defining contractor completion and that can be referred to in schedules such as phasing. The term “physical completion” means the date upon which the Director’s Representative certifies that all deficiencies noted on the Final Inspection List have been corrected and is evidenced by issuance of the Physical Completion Report. The term “substantial completion” means that the Work is sufficiently complete so that the Work can be used for the purpose for which it is intended.</i></p> <p><b>Interpretation of Contract Documents:</b></p> <p><b>Article 3.1</b> <i>The Contract Documents are complimentary, and what is called for by one shall be as binding as if called for by all. It is not intended to include work not properly inferable from the Contract Documents.</i></p> <p><b>Article 3.5</b></p>

*In the event of conflicting provisions in the Contract Documents, the drawings will take precedence over the specifications.*

**Article 3.6**

*In the event of conflicting provisions within the drawings, the following order of precedence for resolution of the conflict shall apply: the more specific provision will take precedence over the less specific; if not resolved, the less stringent will take precedence over the more stringent; if not resolved, the less expensive item will take precedence over the more expensive. On all drawings, figures take precedence over scaled dimensions.*

**Article 3.7**

*In the event of conflicting provisions within the specifications, the following order of precedence for resolution of the conflict shall apply: the more specific provision will take precedence over the less specific; if not resolved, the less stringent will take precedence over the more stringent; if not resolved, the less expensive item will take precedence over the more expensive.*

**Materials and Labor:**

**Article 5.3**

*Except where specifically provided otherwise, whenever any product is specified by brand name, i.e., manufacturer's or supplier's name or trade name and catalog or model number or name, the intent is not to limit competition but to establish a standard of quality which the Director has determined is necessary. The words "or equal" shall be deemed inserted in each instance. The Contractor may use any product equal to that named in the Contract Documents which is approved by the Director and which meets the requirements of the Contract Documents providing the Contractor gives timely notice of the Contractor's intent in accordance with the submittal and scheduling requirements of Division 1 - General Requirements.*

**Article 5.4**

*The Contractor shall have the burden of proving at the Contractor's own cost and expense, to the satisfaction of the Director, that the proposed product is equal to the named product. The Director may establish criteria for product approval. The Director shall determine with absolute discretion whether a proposed product is to be approved.*

**Article 5.5:**

*If the Contractor fails to comply with the provisions of this Article, or if the Director determines that the proposed product is not equal to that named, the Contractor shall supply the product named.*

**Article 5.6:**

*The Contractor shall have and make no claim for the extension of time or for damages because the Director requires a reasonable period of time to consider a product proposed by the Contractor or because the Director disapproves such a product.*

**Article 5.7:**

*Where optional materials or methods are specified, or where "or equal" submissions are approved, the Contractor shall make all adjustments to contingent Work, whether the contingent Work be the Work of its contract or the Work of other Contractor's, necessary to accommodate the option or "or equal" product it selects without extra or additional cost.*



**K.** The following definitions are the only meaning for the terms noted below and shall be used accordingly on the Drawings and Specifications:

- 1. Furnish:** The Contractor brings the item to the site for installation by others not in his/her contract.

2. **Install:** The Contractor installs an item not in his/her contract that is brought to the site by a different contract or the owner.
3. **Provide:** Means to furnish and install, i.e. the Contractor brings the item to the site and installs it. See General Conditions Article 2.16.
4. **Remove:** Detach items from existing construction and dispose of them off-site unless indicated to remain the Property of the State. See 017329 Removals, Cutting, And Patching specification and 015000 Construction Facilities & Temporary Controls 1.14 Rubbish Removal section.

L. [Multiple Prime Contracts Guide \(Wicks Law\) Design Guide Chapter 9.3](#)

1. Section 135 of the New York State Finance Law, commonly known as the “Wicks Law”, requires OGS D&C to bid specific separate Multiple Prime Contracts (Construction, HVAC, Electrical and Plumbing) for certain public work projects where the cost of the public work exceeds:
  - a. \$3 million in Bronx, Kings, New York, Queens and Richmond counties
  - b. \$1.5 million in Nassau, Suffolk and Westchester counties
  - c. \$0.5 million in all other counties
2. For projects with costs below the thresholds above, a single contract **shall** be utilized which includes the work of multiple trades. Such contracts are referred to as Wicks Exempt.
3. Refer to Chapter 9.3 for more detailed information.

M. **Inappropriate Terms**

1. Avoid the use of “by others.” This term could easily be considered ambiguous. It is meant to identify work performed by another contract or by the owner. Instead of using the term “by others” clearly identify the specific trade contract such as “by P contractor”. When an item is “furnished by owner,” ensure that the responsibility for storage, installation, rough-in, commissioning, etc. is clear.
2. Do not use phrases with missing objects such as “as allowed” (by whom?), “as appropriate” (according to what?), “as approved” (by whom?), “as directed” (by whom?), “as indicated” (where?), “as required” (according to what or whom?), the last phrase, “as necessary,” may be appropriate if a definition is specified that establishes the criteria for determining the necessity.



- N. Proprietary items, design, or processes shall not be specified or required without formal approval by the OGS Team Leader. If approved, these items are considered not subject to competitive bidding and are therefore included in the contract as an allowance. See Chapter 5.2 Allowance Article for more information.

- O. Generally, the competitive bidding statutes of New York State demand free and open competition among equivalent products. First and foremost, that means the standard in

all public works Specifications should be what is known as the “**or equal**” clause. This clause essentially states that in the technical specifications the words “or equal” may be assumed after each and every list of products. In fact, the term “equal” is a misnomer. The proper term is “equivalent.” The performance of the product is important. The listed products set up a performance standard that must be met. In other words, it is not important that each bolt or internal mechanism be exactly the same as the listed product, only that it performs the same function to the same effectiveness. Article 5.2 in the General Conditions allows for equivalent products that are equal to the standard of quality set forth in the documents to be submitted. Its use is the option of the bidder so as to allow for the maximization of competition and thus better pricing to our Client Agency and the State of New York. Inherently, the Contractor takes a risk that his/her judgment of the product equivalence is proper since the Consultant/Designer approves / disapproves the proposed equivalent, post bid.

- P.** The guideline “**rule of three**” of listing three manufacturers in the Specifications allows bidders to quickly get competitive pricing from acceptable manufacturers meeting the performance requirements required.
1. The Consultant/Designer should make an effort to name three manufacturers for all materials and products. Including manufacturer contact information assists the bidder when bid phase durations are short.
  2. Performance characteristics are recommended when fewer than three manufacturers are named.
  3. When using performance Specifications plus a manufacturer list, the Consultant/Designer should use care in listing a manufacturer and model number that does not conflict with performance requirements set forth in the Specifications.
  4. Listing three manufacturers in the Specification does not prevent the Contractor from submitting a proposed equivalent product for review and approval.
  5. Even though a Consultant/Designer may include the manufacturer’s name and model number, including performance Specifications assists the Contractor and the Consultant/Designer in submitting and evaluating “or equal” products. Performance Specifications should also provide additional descriptions of optional items that the model number may not clearly identify.
- Q.** OGS D&C discourages Consultant/Designers from using manufacturer supplied performance criteria that limits the source of the material to that manufacturer through restrictive material and performance characteristics. Specifications written by outside specifications writers who are employees / distributors of a manufacturer are also discouraged. These specifications are generally written at no cost to the Consultant/Designer because the specification writers have the liberty to tilt the specification towards the company to which they have allegiance. This practice goes against the unrestricted competition clause in the General Conditions.
-  **R.** Avoid the use of abbreviations in the Drawings and Specifications. When absolutely necessary, abbreviations should be based on common engineering and construction

terms and accepted abbreviation symbols. The Consultant/Designer shall provide an abbreviations list and the term description on the Drawings or in the Specification.

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- S. Project complexity, magnitude of the work and risk factors may require the Consultant/Designer to include and specify the level of contractor or sub-contractor qualifications (quality assurance) when editing individual specification sections.
  - T. The Contractor is not mandated to visit the project site prior to bid. Thus, catch-all notes associated with verifying site conditions “prior to bid” are not appropriate.
  - U. For Consultant projects, the Project Manual and other technical reports shall be submitted electronically in a format compatible with Microsoft Office Professional (2013 Edition) software.
  - V. For Consultant projects, the Project Manual and Drawings should NOT include consultant and sub consultant contact information such as phone numbers or email addresses to discourage bidders reaching out directly to Consultants
  - W. Building and Site Rehabilitation Projects
    1. Provide removal drawings separate from work drawings, including plans, sections, elevations, and details.
    2. Provide clear graphic delineation of removals, existing work to remain and construction work.
    3. Identify existing materials as “existing”.
    4. Call out all new work and new materials without the word “new”. Work not called out as “existing” is considered to be “new” work
    5. Provide means of continuous fire protection in buildings which will be occupied during construction.
    6. Use the term “remove”, “removal”, or the like and avoid the use of the word “demolition”, “demolish” or the like unless scope of work is destruction of additions or buildings. See OGS Master Spec 017329 Removals Cutting And Patching.
  - X. Specific allowances take some time to review and approve and should be requested early in the design period. See Chapter 5.2 specification 012100 Allowances for additional information.
  - Y. Be careful using your own General Notes that is used for private work, Many times these notes conflict with the front end documents or the General Conditions.
  - Z. Avoid use of subjective and arbitrary notes, such as those in the following examples:

**Examples of Bad Notes****Example No. 1:**

*"The General Contractor shall be responsible for coordinating the work of all trades and subcontractors."*

*(There are no General Contractors, only Construction Contractors. All Contractors are required to coordinate work amongst themselves and the EIC as described in the General Conditions. Delete reference to shall)*

**Example No. 2:**

*"Repair wall opening to match existing wall. Caulk and seal with a sealant of high quality and long life to prevent infiltration of outside air and water into annex equipment mechanical room."*

*(High quality and long life need to be defined).*

**Example No. 3:**

*"All construction shall conform to the latest edition of all building codes and ordinances. The NYS Uniform Fire Prevention and Building Code, the ADA code, and in case of conflict the most stringent shall govern."*

*(Consultant/Designer is responsible to include all scope relating to codes. Delete references to shall).*

**Example No. 4:**

*"Piping penetrating firewalls shall be fire stopped with a 3M or approved equal system for through penetrations approved for the specific application."*

*(Consultant/Designer needs to show locations and ratings of walls. Delete reference to shall. See Firestopping Guide for additional information.)*

**Example No. 5:**

*"It shall be the responsibility of the Contractor, prior to submitting a bid, to visit the site and inspect the entire area of the work. The Contractor shall be completely familiar with all existing conditions affecting the work. If in the execution of the work, extra work is necessary due to the Contractor's failure to be familiar with existing conditions such extra work shall be furnished and installed by the Contractor at no additional cost to the owner."*

*(Contractors are not required to visit to project site. Delete references to shall. See Bid Phase Guidelines C.5.)*

**Example No. 6:**

*"Include the cost of all small details and incidental work not shown or specified but which is required for a complete and satisfactory system."*

*(All work needs to be indicated in the documents.)*

**Example No. 7:**

*"Lighting levels shall be per IES Standards (35 foot candles average and 20 foot candles minimum) Contractor shall install/remove lighting fixtures based on actual field lighting level measurements."*

*(Scope of work needs to be clearly indicated and is not biddable. Delete reference to shall.)*

**Example No. 8:**

*Do not use words such as "few" and "many" because they are not quantifiable.*

**Example No. 9:**

*Do not use phrases such as "remove as required" or "install as required." Use a phrase such as "install per manufacturer's recommendations."*

**Example No. 10:**

Do not include subjective phrases such as:

- Provide trap and vent “as required”
- Provide condensate pumps “if necessary”
- Provide fire dampers “as needed” at all rated wall penetrations
- Install all work “in an approved manner”

(The EIC and Inspector struggle with the final acceptance of components shown to be installed “in an approved manner.” Referencing specific standards can often mitigate disputes that arise from subjective comments.)

**Example No. 11:**

Do not include the following language in the documents:

- Architect or Project Architect
- Owner
- Project Manager
- Construction Manager
- Engineer
- Inspector
- Facility Representative

All references should be to the Director’s Representative for consistency with the General Conditions.

**Revision History:**

<b>Rev</b>	<b>Date</b>	<b>Description</b>	<b>Reviewed by:</b>	<b>Approved by:</b>
0	06/14/12	Last revised date		
1	12/02/13	Added section U and modified section K.	Parnett	Parnett
2	7/28/14	Added remove definition and other minor revisions	Parnett	Parnett
3	9/16/14	Include Building and Site Rehabilitation Projects – item W	Parnett	Parnett
4	04/13/15	Added items X and Y; and Modified item G	Parnett	Parnett