

Chapter 9 – Design Guides

9.11.1 CIVIL AND SITE GUIDE - DESIGN STANDARDS

A. GENERAL

1. Contract documents shall include a Location Plan indicating the project location within New York State. An additional Plan or Key Plan shall be included for projects located in a facility with multiple buildings indicating the project location on the site.
2. Provide General Notes as well as notes specific to the scope of work, such as Construction Phasing/Sequencing Notes:
 - a. In some cases, specific construction phasing may be required for site access and /or regulatory requirements.
 - b. Construction phasing notes should clearly delineate any sequencing requirements and any restrictions as they apply to the scope of work.
 - c. See below for example notes.
3. Provide a graphic scale on all drawings and any relevant detail.
4. Provide a legend. If more than one legend is used within the contract documents, indicate the drawings the legend refer to.
 - a. OGS D&C has a standard legend.

B. DESIGN STANDARDS

1. Removals:
 - a. Clearly identify removals, including depths/thicknesses. Note if underground items such as fence post footings are to be removed or left in place.
2. Site Grading:
 - a. All proposed contours should be smooth.
 - b. All existing and proposed contours should be clearly labeled.
 - c. Slopes shall be appropriately pitched to minimize erosion with smooth transitions to new and existing grades.
 - d. Spot elevations shall be used on drawings to indicate high and low points to eliminate any inferred scope or confusion.
3. Layout:
 - a. Architectural dimensions should be used for all horizontal measurements.
 - b. Engineering dimensions should be used for Sanitary and Storm sewer profiles and inverts.
4. Road Profiles: All profiles should depict both surface and subsurface utilities.

5. Utilities and Infrastructure:
 - a. Refer to Chapter 9.15 Geotechnical Guide and Section 310000 Earthwork pipe bedding design standards.
 - b. Drinking and fire protection water pipes shall be buried to a depth that complies with AWWA standards for that particular area of the state. Comply with local and municipal regulatory agencies. In some cases that may mean achieving depths greater than 6'. If this depth cannot be achieved – the OGS Project Manager and client agency representative will be informed to discuss contingency options.

6. Plantings:
 - a. Any plants specified shall be appropriate for the geographical location of the facility and function of the area to be used.
 - b. All planting plans shall include a plant list which is to include: scientific and common name, plant quantity, size, caliper, height, etc.
 - c. All plant selections shall be native/adapted and not listed on the NYSDEC Prohibited and Regulated Invasive Species List (6NYCRR Part 575).

7. Erosion and Sediment Controls:
 - a. Any project that disturbs land or soil shall include best management practices, specific to that project, to protect the environment from unnecessary erosion and/or storm water runoff during construction. Refer to the latest edition of NYSDEC Standards and Specification for Erosion and Sediment Control.
 - b. Any project that exceeds one acre in soil disturbance (less in NYC Watershed East of Hudson) shall include a Notice of Intent (NOI) and a Storm Water Pollution Prevention Plan (SWPPP). Additional information concerning NOIs, SWPPPs, and Erosion and Sediment Control Plans can be found under Section 9.11.2.

8. Contract Limit Lines and Grading Limit Lines:
 - a. Use contract limit lines and grading limit lines to define work and contract boundaries respectively. The grading limit line can be the same line as the contract limit line, if they are, that should be denoted on the contract drawings.

C. TYPICAL DRAWING LIST

1. Drawings: Refer to Chapter 5.4 Technical Requirements for Drawings
 - G-001 List of Drawings
 - C-001 Notes and Legend
 - C-101 Existing Conditions and Geotechnical Data
 - C-102 Removals Plan
 - C-103 Site Plan
 - C-104 Grading Plan
 - C-105 Layout Plan
 - C-106 Utility Plan

C-107 SWPPP or Erosion & Sediment Control Plan
C-108 Coordination Plan
C-201 Utility Profiles
C-301 Sections
C-501 Details

D. DRAWING NOTES

1. Provide site related drawing notes as required. OGS has a list of General Notes, Storm Water Pollution Prevention Notes and Erosion & Sediment Control Notes. They shall be edited and incorporated as necessary to suit field conditions, client specific requirements, and the project.

E. SPECIFICATIONS

1. Specifications: The following are common site related specifications. All specifications shall be edited and incorporated in the contract as necessary to suit field conditions, the scope of the project, and any client specific requirements. See master specifications for complete list of specifications:

DIVISION 00 – PROCUREMENT AND CONTRACTING REQUIREMENTS

003132 Geotechnical Data

DIVISION 01 – GENERAL REQUIREMENTS

015720 Temporary Maintenance of Sewer Flows and Sewer Service
015526 Traffic Maintenance and Protection
017123 Field Engineering

DIVISION 02 – EXISTING CONDITIONS

023313 Underground Utility Locator Service

DIVISION 10 – SPECIALTIES

107501 Flagpoles

DIVISION 12 – FURNISHINGS

129344 Recreation Equipment

DIVISION 22 – PLUMBING

220519 Cold Water Meters
221118 Backflow Preventers

221429 Sump Pump, Submersible

DIVISION 31 – EARTHWORK

310000 Earthwork
310101 Site Restoration
311000 Site Clearing
312513 Erosion and Sediment Control

DIVISION 32 – EXTERIOR IMPROVEMENTS

321216 Asphalt Concrete Paving
321300 Concrete Walks
321614 Precast Concrete Curbs
321723 Pavement Markings
323113 Chain Link Fence and Gates
329120 Topsoil
329301 Plants

DIVISION 33 – UTILITIES

330111 Repairing Steel Water Storage Tank
330121 Well Testing
330503 Changing Elevations of Hydrants and Hydrant Laterals
330513 Changing Elevations of Valve Boxes
330514 Changing Elevations of Manholes and Drainage Structures
330524 Trenchless Sewer Rehabilitation
331101 Water Utility Distribution Piping
331102 Plastic Water Pipe and Fittings
331103 Copper Tubing and Fittings (Underground)
331201 Water System Control
331216 Water Utility Distribution Valves
331219 Water Utility Distribution Fire Hydrants
331220 Yard Hydrants
331300 Disinfection of Water Utility Distribution
331310 Ultraviolet Disinfection System
331614 Water Storage Tank Pedestal and Fluted Column Elevated Tank
331615 Prestressed Concrete Water Storage Tank
332001 Submersible Well Pump
332002 Pitless Unit
333103 Drainage Pipe (Sanitary)
333104 Plastic Drainage Pipe (Sanitary)
333201 Sewage Ejectors
333913 Manholes and Drainage Structures with Frames and Covers
333914 Precast Concrete Wastewater Structures
334103 Drainage Pipe
334104 Corrugated Polyethylene Storm Drain Pipe



- 334416 Trench Drain
- 334613 Foundation Drains
- 337119 Manholes

DIVISION 34 – TRANSPORTATION

- 344113 Traffic Signs
- 347114 Box Beam Guide Rail
- 347115 Steel Pipe Bollards

DIVISION 44 – POLLUTION CONTROL EQUIPMENT

- 444239 Grit Chamber Tank
- 444249 Oil-Water Separator

APPENDIX

Contractors Certification Statement

Revision History:

<i>Rev</i>	<i>Date</i>	<i>Description</i>	<i>Reviewed by:</i>	<i>Approved by:</i>
0	10/28/15	New document	D. Miller	C. Parnett