Chapter 2– General Drawing Information

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The “General Drawing Information” chapter is a compilation of all the CAD and drafting standards that equally apply to the development of contract plan sheets for all of the GHE disciplines. Information that is discipline specific is provided in the individual discipline chapters.

For an overview of ODOT’s contract plan preparation using MicroStation see the Contract Plans Manual (CPM).

### 2.1 Tasks and Workflows

ODOT’s CAD standards are available in the MicroStation Tasks and Workflows. The tasks provide the correct selection of the most up-to-date notes, text styles, symbols, line styles, line weights, levels, and cells by discipline.

New tools and workflows will appear in the workspace tasks as the GHE disciplines expand their CAD standards. All elements are included in discipline specific cell libraries that are accessed by the tasks and workflows.

An open task & workflow in ODOT’s MicroStation workspace will look similar to the following example (follow the yellow highlighted task tabs from left to right):

![MicroStation Workspace Example](image)

To assist drafting workflow, every discipline task includes a “General” tab that contains the same elements common to most ODOT plan sheets across all disciplines

See the EAST MicroStation V8i SS4 User Guide for more information about tasks and workflows.

Note: It is the user’s responsibility to ensure that the ODOT Workspace Tasks & Workflows are the latest version, before and during design of all projects. ODOT reserves the right to update the workspace and associated cells at any time. ODOT’s workspace is automatically pushed out to all ODOT users on a regular monthly update interval. All users outside ODOT are responsible for updating their own ODOT specific MicroStation workspace on a regular basis. See access to the latest update of ODOT’s workspace.
2.2 File Naming Convention
All files must be named according to the approved conventions found in the CPM and in the ProjectWise User Manual. Standardized naming conventions are provided in the ProjectWise “Naming Tool”. Staff is required to use the naming tool for all new documents. Instructions for using the tool are located in the ProjectWise User Manual.

The generic file name format is shown as follows:

OriginID_ProjectID_Filename_##.ext.

For further explanation on ODOT's file naming convention refer to the ProjectWise User Manual.

2.3 Sheet Numbering and Sequencing
GHE Contract plans are sequenced and numbered in specific order. The typical arrangement and sheet numbering system is described in chapter 2.0 of the CPM. Table 2-1 lays out the sheet order and sheet numbering system for all ODOT disciplines.

The GHE disciplines are listed in the sequence they appear in a set of contract plans and are noted as to what sheet numbering series they fall. The Environmental disciplines are in the “F” sheet numbering series, the Geology\Geotechnical disciplines in the “G” series, and the Hydraulic disciplines in the “H” series. Place plans in the same sequence as shown in Table 2.1 of the CPM.

2.4 Plans Sheet Order
GHE plan sets typically begin with a plan sheet and end with detail sheet(s). Place sheets for notes, tables, and schedules after the plan sheet/s and before the detail sheet/s.

Projects may require a “Layout” sheet that appears first in the plan set. For example, a project containing multiple retaining walls will need a “Layout” sheet showing the location of each wall along the length of the project, including discipline specific elements such as the boring locations.

Plan Sheet
A plan sheet typically shows a plan view and may also contain a profile or elevation view. Place notes, legends and tables on the plan sheet containing the design items they pertain to when space allows.

The project drafter sets up the plan sheets based on the CAD standards provided, using their drafting knowledge and expertise. Consult with the Engineer of Record (EOR) or the designer when uncertainties arise.
Detail Sheets

Detail sheets typically show specific dimensioned elements used in the design. Cross sections, sections, notes and tables may also be added to a detail sheet. Place notes and tables near the detail they pertain to. Place notes and tables apart from the details when they pertain to the project as a whole.

Each discipline specific chapter in this manual is followed by example plans displaying standard sheet layout and sheet order for that discipline. Not all design scenarios are covered in the examples. Drafters and designers must work together to display the design information so it can be accurately constructed.

2.5 Sheet Naming

Sheet names (titles) are determined by the discipline and sheet content. The standard sheet names are provided in models, by discipline, within the “Digital Plan Titleblock”. The names are located on separate levels to be turned on or off according to which sheet name is preferred for that sheet. The Digital Plan Titleblock is accessible in the “General” tab of the ODOT tasks and workflows.

2.6 Standard Text

ODOT’s standard font for contract plans is Lucida Sans Unicode. All of ODOT’s text styles are contained in the workspace.

The standard text styles are available in the text tools located in the “Drawing” tab of the main Tasks dialog within the MicroStation workspace.

Three standard ODOT text styles are used on contract plan sheets:
- ODOT Notes
- ODOT Subtitles
- ODOT Titles
Detail titles are accessed in the “General” task and workflow where styles are set up by primary, secondary and minor titles. All GHE disciplines use the titles without underlines only. All text styles in ODOT’s workspace are based on approved standards for use in contract plans.

![Image of ODOT workspace]

See the [Contract Plans Manual](#) for more information regarding standard text styles and sizes.

### 2.7 Custom Linestyles

ODOT creates custom line types as requested by the CAD standards committee, the discipline leads, and MicroStation users. The GHE workspace includes ODOT custom line types that are specific to GHE disciplines. Line types are accessed using the tasks and workflows for each discipline.

Custom line types can behave differently from the MicroStation default line types (0-7). Drafters may need to “drop element” in some cases (i.e. legend cells) for drawing scales other than 1”=100′, for the custom line types to scale correctly.

Contact EAST if problems arise with line scaling.

### 2.8 Seed and Cache Files

#### Seed Files

ODOT’s seed files are set up with the appropriate ODOT MicroStation preferences and are chosen when a project file is first created. Before naming and saving a new file, browse to the preferred seed file.

Refer to [Chapter 2 section 2.2 of the CPM](#) for information regarding ODOT’s seed files.

The seed files for the GHE disciplines are templates showing the basic layout for the plan sheet, including the elements most commonly used. All elements can be copied, moved, or element matched from the seed. GHE has several seed files available:
• **Seed_OM.dgn** provides a DFI plan sheet template for use in operational plans for “Stormwater Facility Operation and Maintenance” manuals.

• **Seed_TWM.dgn** provides a Temporary Water Management concept plan sheet for contract plans.

• **Seed_GTsub.dgn** provides a Geotechnical Data plan sheet template for use by all disciplines requiring this sheet to accompany the structure/feature plans for that discipline.

**Cache Files**

ODOT’s cache files are chosen through the MicroStation *Reference* dialog and added to the file by the user. Cache files provide the most commonly used elements. Elements can be copied, moved, or element matched by the drafter. Cache files provide quick and convenient access to the necessary elements for the specific plan sheet type.

GHE has several cache files available:

• **ecV8_cache.dgn** provides cached elements used on Erosion and Sediment Control plan sheets.

• **msV8_cache.dgn** provides cached elements used on Material Source plan sheets.

• **RDSideV8_cache.dgn** provides cached elements used on Roadside Development and Wetland plan sheets.

**2.9 Cell Libraries**

ODOT provides discipline specific cell libraries. Some disciplines share a cell library, such as the Geology/Geotechnical disciplines of Material Sources and Geotechnical Data which share the *Geo.cell* library. Cell libraries are linked to the tasks and workflows.

**2.10 Base Map**

GHE design files reference base files including: existing topography, right-of-way, roadway design, and bridge or large culvert design when applicable.

Check lists are provided in each chapter to check items and levels to keep on for each discipline.

All GHE discipline specific CAD design base files are created and owned by the project drafter and used in the development of the contract plan sheets. The drafters CAD base file automatically up-dates as the referenced base files are revised through the course of the project design.

Refer to the [ODOT ProjectWise User Manual](#) for more information on plan sheet assembly and folder locations for base files, design files and plan sheet files.

**2.11 Milestone submissions**

Milestone submissions are dictated by the project schedule and organized in the folder structure within Project Wise.
The ODOT CAD workspace provides individual cells to use for the different milestone states. The status cells are located in the ODOT.cel library and are accessible through the General tab in the workspace tasks & workflows.

Refer to the ProjectWise User Manual and Chapter 4 of the CPM for instructions regarding milestones, final plans and digital signatures.

2.12 ProjectWise
ProjectWise is the content management tool selected for ODOT’s engineering files and associated data. ProjectWise enables collaboration and increased efficiencies within a managed environment for internal and external users.

See Technical Services ProjectWise directive TSB16-01 (D) for information on the use of ProjectWise in ODOT’s highway design process.

See the “Training” folder in ProjectWise for How-to documents and video’s.

Contact the Region ProjectWise Admin Staff or the ProjectWise Support Team with questions. See the ODOT ProjectWise Website for contact information.

2.13 Common Abbreviations
See the Contract Plans Manual for the abbreviations most commonly used across all disciplines.