

**DEPARTMENT OF MINES, MINERALS AND ENERGY
DIVISION OF MINED LAND RECLAMATION**

GUIDANCE MEMORANDUM¹ No. 27-09

Issue Date: October 1, 2009

Subject: Electronic Permitting – Digital Mapping Guidelines

The Department of Mines, Minerals, and Energy's (DMME) Division of Mined Land Reclamation (DMLR) is implementing the following minimum standards and requirements for submitting digital maps associated with electronic permitting.

Section 1 – General Requirements

1.1 OVERVIEW

These standards pertain to the production and submittal of electronic CAD files and associated Adobe (.pdf) files for electronic permitting, and have been developed to provide direction to operators and consultants submitting coal mining permit applications.

Operators and consultants should contact the DMLR Mapping Section (276: 523-8193) for the most current release of acceptable CAD template files or view information posted to DMLR FTP site (ftp://mail.dmme.virginia.gov/DMLR/downloads/EP/cad_standards/), prior to the development of an electronic permit.

Additional information regarding these standards, including CAD template files and layer descriptions, is available on the DMLR FTP site (ftp://mail.dmme.virginia.gov/DMLR/downloads/EP/cad_standards/).

1.2 FILE FORMAT

AutoCAD .dwg is the preferable format for creating and submitting electronic permit drawings. However, if an applicant wishes to use MicroStation (.dgn file extension) software, you should contact the DMLR Mapping Section prior to the development of an electronic permit application.

All CAD drawings must be accompanied with a complete matching set of Adobe (.pdf) drawings. These .pdf files will be considered a digital hardcopy and will be used for reproduction.

¹ This Memorandum is to be considered guidance issued under the authority of § 45.1-230.A1 of the Code of Virginia which reads:

"In addition to the adoption of regulations under this chapter, the Director may at his discretion issue or distribute to the public interpretative, advisory or procedural bulletins or guidelines pertaining to permit applications or to matters reasonably related thereto without following any of the procedures set forth in the Administrative Process Act (§ 2.2-4000 et seq.). The materials shall be clearly designated as to their nature, shall be solely for purposes of public information and education, and shall not have the force of regulations under this chapter or under any other provision of this Code."

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1.3 FILE ATTACHMENT

All Adobe (.pdf) files should be attached in section 21.2 of the electronic permit application, and all CAD (.dwg) files should be attached in section 21.5.

1.4 DRAWING CONTENT

DMLR has developed AutoCAD template files (.dwt file extension) for all required maps in an electronic permit application. These template files should be used to develop the necessary CAD drawings required in the electronic permit application. Each template file has a corresponding HTML document that describes the required layer names and properties for that layer. The template files and accompanying documentation are available on the DMLR FTP site (ftp://mail.dmme.virginia.gov/DMLR/downloads/EP/cad_standards/). A complete description of each template file is provided in **Section 2**.

1.5 STANDARD COORDINATE SYSTEM and DRAWING UNITS

Any drawing utilizing a coordinate system should correspond to the Virginia State Plane System, North American Datum, 1983 (NAD 83), in US feet (EPSG: 2284).

If the applicant is using the AutoDesk product AutoCAD Map, DMLR prefers the drawings have an Assigned Global Coordinate System of VA83-SF NAD83 Virginia State Plane, South Zone, US Foot. This designation can be accomplished by using the AutoCAD Map Menu pulldown, select Tools and Assign Global Coordinate System.

Please define the drawing units as feet.

1.6 FILE NAMES and DESCRIPTIONS

The file naming conventions for both the CAD drawing files and the Adobe PDF are as follows:

Adobe file – *Application#_MapName_Map.pdf*

Example – 1005456_Geology_Map.pdf

CAD file – *Application#_MapName_Map.dwg*

Example – 1005456_Geology_Map.dwg

The descriptions provided for each file, in sections 21.2 and 21.5 respectively, should correspond identically to the file name.

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1.7 MAP LEGEND

The appropriate map legend (DMLR-PT-017) should be provided in sections 21.2, 21.4, and 21.5 of the electronic permit application. For applications that require at least one of the following maps, the Map Legend is required to be contained in the drawing file (section 21.5) and on the .pdf file (section 21.2), as well as a separate attachment in section 21.4:

Application	Deletion
Anniversary	Relinquishment
Completion	Renewal
Correction	Revision

1.8 TOPOGRAPHIC BASE MAP

DMME has assembled an AutoCAD dwg file, which contains all USGS 7.5' topographic quadrangles for the Southwest Virginia coalfield region. Applicants should use the topographic base drawing file as base map material for all required electronic permit application map submittals. The file (*DMLR_USGS_BASE.dwg*) and its corresponding layer descriptions (*DMLR_USGS_BASE_LAYER_STANDARDS.html*) are available on the DMLR FTP site (ftp://mail.dmme.virginia.gov/DMLR/downloads/EP/cad_standards/).

1.9 POLYGON TOPOLOGY

If you are using the AutoDesk product AutoCAD Map, DMLR prefers polygon topologies be generated for the following features: Permit Boundaries, Hollow fills, and PMU's. The topology creation is only required for the features contained in *DMLR_GIS_Extraction_Map.dwg*. Additional requirements for the file will be addressed in **Section 2**.

1.10 ELECTRONIC SIGNATURES

[Guidance Memorandum No.21-07](#) should be referenced for the use of electronic signatures and seals on documents, digital maps, plans, and drawings.

Section 2 – CAD TEMPLATES AND LAYERING STANDARDS

The intent of the CAD layering standard is to promote consistency between CAD drawings, and maximize the reusability of drawing data. All CAD drawings submitted to DMME should adhere to the following CAD layering guidelines and standards.

Each of the CAD Templates, except for the *DMLR_GIS_Extraction_Map.dwt*, has three layer group filters defined: a layer group for *Basemap_Topography*, a layer group for *Company_Specific_Layers*, and a layer group for the specific map the applicant is developing for the electronic permit application submittal.

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2.1 ANNIVERSARY MAP

Template File Name: DMLR_Anniversary_Map.dwt

Download Location:

ftp://mail.dmme.virginia.gov/DMLR/downloads/EP/cad_standards/CAD_Templates/

Electronic Permit Adobe File Name (section 21.2): *Application#_Anniversary_Map.pdf*

Electronic Permit CAD File Name (section 21.5): *Application#_Anniversary_Map.dwg*

Layer Standards Documentation: DMLR_Anniversary_Map.html

Download Location:

ftp://mail.dmme.virginia.gov/DMLR/downloads/EP/cad_standards/Layer_Description/

2.2 APPLICATION MAP

Template File Name: DMLR_Application_Map.dwt

Download Location:

ftp://mail.dmme.virginia.gov/DMLR/downloads/EP/cad_standards/CAD_Templates/

Electronic Permit Adobe File Name (section 21.2): *Application#_Application_Map.pdf*

Electronic Permit CAD File Name (section 21.5): *Application#_Application_Map.dwg*

Layer Standards Documentation: DMLR_Application_Map.html

Download Location:

ftp://mail.dmme.virginia.gov/DMLR/downloads/EP/cad_standards/Layer_Description/

2.3 BLASTING MAP

Template File Name: DMLR_Blasting_Map.dwt

Download Location:

ftp://mail.dmme.virginia.gov/DMLR/downloads/EP/cad_standards/CAD_Templates/

Electronic Permit Adobe File Name (section 21.2): *Application#_Blasting_Map.pdf*

Electronic Permit CAD File Name (section 21.5): *Application#_Blasting_Map.dwg*

Layer Standards Documentation: DMLR_Blasting_Map.html

Download Location:

ftp://mail.dmme.virginia.gov/DMLR/downloads/EP/cad_standards/Layer_Description/

2.4 COMPLETION MAP

Template File Name: DMLR_Completion_Map.dwt

Download Location:

ftp://mail.dmme.virginia.gov/DMLR/downloads/EP/cad_standards/CAD_Templates/

Electronic Permit Adobe File Name (section 21.2): *Application#_Completion_Map.pdf*

Electronic Permit CAD File Name (section 21.5): *Application#_Completion_Map.dwg*

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Layer Standards Documentation: DMLR_Completion_Map.html

Download Location:

ftp://mail.dmme.virginia.gov/DMLR/downloads/EP/cad_standards/Layer_Description/

2.5 CORRECTION MAP

Template File Name: DMLR_Correction_Map.dwt

Download Location:

ftp://mail.dmme.virginia.gov/DMLR/downloads/EP/cad_standards/CAD_Templates/

Electronic Permit Adobe File Name (section 21.2): *Application#_Correction_Map.pdf*

Electronic Permit CAD File Name (section 21.5): *Application#_Correction_Map.dwg*

Layer Standards Documentation: DMLR_Correction_Map.html

Download Location:

ftp://mail.dmme.virginia.gov/DMLR/downloads/EP/cad_standards/Layer_Description/

2.6 DELETION MAP

Template File Name: DMLR_Deletion_Map.dwt

Download Location:

ftp://mail.dmme.virginia.gov/DMLR/downloads/EP/cad_standards/CAD_Templates/

Electronic Permit Adobe File Name (section 21.2): *Application#_Deletion_Map.pdf*

Electronic Permit CAD File Name (section 21.5): *Application#_Deletion_Map.dwg*

Layer Standards Documentation: DMLR_Deletion_Map.html

Download Location:

ftp://mail.dmme.virginia.gov/DMLR/downloads/EP/cad_standards/Layer_Description/

2.7 GEOLOGY MAP

Template File Name: DMLR_Geology_Map.dwt

Download Location:

ftp://mail.dmme.virginia.gov/DMLR/downloads/EP/cad_standards/CAD_Templates/

Electronic Permit Adobe File Name (section 21.2): *Application#_Geology_Map.pdf*

Electronic Permit CAD File Name (section 21.5): *Application#_Geology_Map.dwg*

Layer Standards Documentation: DMLR_Geology_Map.html

Download Location:

ftp://mail.dmme.virginia.gov/DMLR/downloads/EP/cad_standards/Layer_Description/

2.8 GEOLOGIC CROSS SECTION MAP

Template File Name: DMLR_GeologicXsec_Map.dwt

Download Location:

ftp://mail.dmme.virginia.gov/DMLR/downloads/EP/cad_standards/CAD_Templates/

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Electronic Permit Adobe File Name (section 21.2): *Application#_GeologicXsec_Map.pdf*

Electronic Permit CAD File Name (section 21.5): *Application#_GeologicXsec_Map.dwg*

Layer Standards Documentation: DMLR_GeologicXsec_Map.html

Download Location:

ftp://mail.dmme.virginia.gov/DMLR/downloads/EP/cad_standards/Layer_Description/

2.9 GIS EXTRACTION MAP

Template File Name: DMLR_GIS_Extraction_Map.dwt

Download Location:

ftp://mail.dmme.virginia.gov/DMLR/downloads/EP/cad_standards/CAD_Templates/

Electronic Permit Adobe File Name (section 21.2): *Application#_GIS_Extraction_Map.pdf*

Electronic Permit CAD File Name (section 21.5): *Application#_GIS_Extraction_Map.dwg*

Layer Standards Documentation: DMLR_GIS_Extraction_Map.html

Download Location:

ftp://mail.dmme.virginia.gov/DMLR/downloads/EP/cad_standards/Layer_Description/

2.10 HAULROAD MAP

Template File Name: DMLR_Haulroad_Map.dwt

Download Location:

ftp://mail.dmme.virginia.gov/DMLR/downloads/EP/cad_standards/CAD_Templates/

Electronic Permit Adobe File Name (section 21.2): *Application#_Haulroad_Map.pdf*

Electronic Permit CAD File Name (section 21.5): *Application#_Haulroad_Map.dwg*

Layer Standards Documentation: DMLR_Haulroad_Map.html

Download Location:

ftp://mail.dmme.virginia.gov/DMLR/downloads/EP/cad_standards/Layer_Description/

2.11 HOLLOW FILL MAP

Template File Name: DMLR_Hollow_Fill_Map.dwt

Download Location:

ftp://mail.dmme.virginia.gov/DMLR/downloads/EP/cad_standards/CAD_Templates/

Electronic Permit Adobe File Name (section 21.2): *Application#_Hollow_Fill_Map.pdf*

Electronic Permit CAD File Name (section 21.5): *Application#_Hollow_Fill_Map.dwg*

Layer Standards Documentation: DMLR_Hollow_Fill_Map.html

Download Location:

ftp://mail.dmme.virginia.gov/DMLR/downloads/EP/cad_standards/Layer_Description/

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2.12 INCREMENTAL BONDING MAP

Template File Name: DMLR_Incremental_Bond_Map.dwt

Download Location:

ftp://mail.dmme.virginia.gov/DMLR/downloads/EP/cad_standards/CAD_Templates/

Electronic Permit Adobe File Name (section 21.2): *Application#_Incremental_Bond_Map.pdf*

Electronic Permit CAD File Name (section 21.5): *Application#_Incremental_Bond_Map.dwg*

Layer Standards Documentation: DMLR_Incremental_Bond_Map.html

Download Location:

ftp://mail.dmme.virginia.gov/DMLR/downloads/EP/cad_standards/Layer_Description/

2.13 LAND USE MAP

Template File Name: DMLR_Land_Use_Map.dwt

Download Location:

ftp://mail.dmme.virginia.gov/DMLR/downloads/EP/cad_standards/CAD_Templates/

Electronic Permit Adobe File Name (section 21.2): *Application#_Land_Use_Map.pdf*

Electronic Permit CAD File Name (section 21.5): *Application#_Land_Use_Map.dwg*

Layer Standards Documentation: DMLR_Land_Use_Map.html

Download Location:

ftp://mail.dmme.virginia.gov/DMLR/downloads/EP/cad_standards/Layer_Description/

2.14 MITIGATION MAP

Template File Name: DMLR_Mitigation_Map.dwt

Download Location:

ftp://mail.dmme.virginia.gov/DMLR/downloads/EP/cad_standards/CAD_Templates/

Electronic Permit Adobe File Name (section 21.2): *Application#_Mitigation_Map.pdf*

Electronic Permit CAD File Name (section 21.5): *Application#_Mitigation_Map.dwg*

Layer Standards Documentation: DMLR_Mitigation_Map.html

Download Location:

ftp://mail.dmme.virginia.gov/DMLR/downloads/EP/cad_standards/Layer_Description/

2.15 OPERATIONS MAP

Template File Name: DMLR_Operations_Map.dwt

Download Location:

ftp://mail.dmme.virginia.gov/DMLR/downloads/EP/cad_standards/CAD_Templates/

Electronic Permit Adobe File Name (section 21.2): *Application#_Operations_Map.pdf*

Electronic Permit CAD File Name (section 21.5): *Application#_Operations_Map.dwg*

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Layer Standards Documentation: DMLR_Operations_Map.html

Download Location:

ftp://mail.dmme.virginia.gov/DMLR/downloads/EP/cad_standards/Layer_Description/

2.16 PHASE I BOND RELEASE MAP

Template File Name: DMLR_Phase_I_Map.dwt

Download Location:

ftp://mail.dmme.virginia.gov/DMLR/downloads/EP/cad_standards/CAD_Templates/

Electronic Permit Adobe File Name (section 21.2): *Application#_Phase_I_Map.pdf*

Electronic Permit CAD File Name (section 21.5): *Application#_Phase_I_Map.dwg*

Layer Standards Documentation: DMLR_Phase_I_Map.html

Download Location:

ftp://mail.dmme.virginia.gov/DMLR/downloads/EP/cad_standards/Layer_Description/

2.17 PHASE II BOND RELEASE MAP

Template File Name: DMLR_Phase_II_Map.dwt

Download Location:

ftp://mail.dmme.virginia.gov/DMLR/downloads/EP/cad_standards/CAD_Templates/

Electronic Permit Adobe File Name (section 21.2): *Application#_Phase_II_Map.pdf*

Electronic Permit CAD File Name (section 21.5): *Application#_Phase_II_Map.dwg*

Layer Standards Documentation: DMLR_Phase_II_Map.html

Download Location:

ftp://mail.dmme.virginia.gov/DMLR/downloads/EP/cad_standards/Layer_Description/

2.18 PMLU MAP

Template File Name: DMLR_PMLU_Map.dwt

Download Location:

ftp://mail.dmme.virginia.gov/DMLR/downloads/EP/cad_standards/CAD_Templates/

Electronic Permit Adobe File Name (section 21.2): *Application#_PMLU_Map.pdf*

Electronic Permit CAD File Name (section 21.5): *Application#_PMLU_Map.dwg*

Layer Standards Documentation: DMLR_PMLU_Map.html

Download Location:

ftp://mail.dmme.virginia.gov/DMLR/downloads/EP/cad_standards/Layer_Description/

2.19 PONDS MAP

Template File Name: DMLR_Ponds_Map.dwt

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Download Location:

ftp://mail.dmme.virginia.gov/DMLR/downloads/EP/cad_standards/CAD_Templates/

Electronic Permit Adobe File Name (section 21.2): *Application#_Ponds_Map.pdf*

Electronic Permit CAD File Name (section 21.5): *Application#_Ponds_Map.dwg*

Layer Standards Documentation: DMLR_Ponds_Map.html

Download Location:

ftp://mail.dmme.virginia.gov/DMLR/downloads/EP/cad_standards/Layer_Description/

2.20 PRIOR DISTURBANCE MAP

Template File Name: DMLR_Prior_Disturbance_Map.dwt

Download Location:

ftp://mail.dmme.virginia.gov/DMLR/downloads/EP/cad_standards/CAD_Templates/

Electronic Permit Adobe File Name (section 21.2): *Application#_Prior_Disturb_Map.pdf*

Electronic Permit CAD File Name (section 21.5): *Application#_Prior_Disturb_Map.dwg*

Layer Standards Documentation: DMLR_Prior_Disturb_Map.html

Download Location:

ftp://mail.dmme.virginia.gov/DMLR/downloads/EP/cad_standards/Layer_Description/

2.21 RELINQUISHMENT MAP

Template File Name: DMLR_Relinquishment_Map.dwt

Download Location:

ftp://mail.dmme.virginia.gov/DMLR/downloads/EP/cad_standards/CAD_Templates/

Electronic Permit Adobe File Name (section 21.2): *Application#_Relinquishment_Map.pdf*

Electronic Permit CAD File Name (section 21.5): *Application#_Relinquishment_Map.dwg*

Layer Standards Documentation: DMLR_Relinquishment_Map.html

Download Location:

ftp://mail.dmme.virginia.gov/DMLR/downloads/EP/cad_standards/Layer_Description/

2.22 RENEWAL MAP

Template File Name: DMLR_Renewal.dwt

Download Location:

ftp://mail.dmme.virginia.gov/DMLR/downloads/EP/cad_standards/CAD_Templates/

Electronic Permit Adobe File Name (section 21.2): *Application#_Renewal_Map.pdf*

Electronic Permit CAD File Name (section 21.5): *Application#_Renewal_Map.dwg*

Layer Standards Documentation: DMLR_Renewal_Map.html

Download Location:

ftp://mail.dmme.virginia.gov/DMLR/downloads/EP/cad_standards/Layer_Description/

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2.23 SOILS MAP

Template File Name: DMLR_Soils_Map.dwt

Download Location:

ftp://mail.dmme.virginia.gov/DMLR/downloads/EP/cad_standards/CAD_Templates/

Electronic Permit Adobe File Name (section 21.2): *Application#_Soils_Map.pdf*

Electronic Permit CAD File Name (section 21.5): *Application#_Soils_Map.dwg*

Layer Standards Documentation: DMLR_Soils_Map.html

Download Location:

ftp://mail.dmme.virginia.gov/DMLR/downloads/EP/cad_standards/Layer_Description/

2.24 SURFACE WATER HYDROLOGY MAP

Template File Name: DMLR_SWH_Map.dwt

Download Location:

ftp://mail.dmme.virginia.gov/DMLR/downloads/EP/cad_standards/CAD_Templates/

Electronic Permit Adobe File Name (section 21.2): *Application#_SWH_Map.pdf*

Electronic Permit CAD File Name (section 21.5): *Application#_SWH_Map.dwg*

Layer Standards Documentation: DMLR_SWH_Map.html

Download Location:

ftp://mail.dmme.virginia.gov/DMLR/downloads/EP/cad_standards/Layer_Description/

2.25 TMDL MAP

Template File Name: DMLR_TMDL_Map.dwt

Download Location:

ftp://mail.dmme.virginia.gov/DMLR/downloads/EP/cad_standards/CAD_Templates/

Electronic Permit Adobe File Name (section 21.2): *Application#_TMDL_Map.pdf*

Electronic Permit CAD File Name (section 21.5): *Application#_TMDL_Map.dwg*

Layer Standards Documentation: DMLR_TMDL_Map.html

Download Location:

ftp://mail.dmme.virginia.gov/DMLR/downloads/EP/cad_standards/Layer_Description/

2.26 TYPICAL CROSS SECTION MAP

Template File Name: DMLR_Typical_Xsection.dwt

Download Location:

ftp://mail.dmme.virginia.gov/DMLR/downloads/EP/cad_standards/CAD_Templates/

Electronic Permit Adobe File Name (section 21.2): *Application#_Typical_Xsection_Map.pdf*

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Electronic Permit CAD File Name (section 21.5): *Application#_Typical_Xsection_Map.dwg*

Layer Standards Documentation: DMLR_Typical_Xsection_Map.html

Download Location:

ftp://mail.dmme.virginia.gov/DMLR/downloads/EP/cad_standards/Layer_Description/

2.27 VALID EXISTING RIGHTS MAP

Template File Name: DMLR_Valid_ExistingRights.dwt

Download Location:

ftp://mail.dmme.virginia.gov/DMLR/downloads/EP/cad_standards/CAD_Templates/

Electronic Permit Adobe File Name (section 21.2): *Application#_Valid_ExistRights_Map.pdf*

Electronic Permit CAD File Name (section 21.5): *Application#_Valid_ExistRights_Map.dwg*

Layer Standards Documentation: DMLR_Valid_ExistingRights_Map.html

Download Location:

ftp://mail.dmme.virginia.gov/DMLR/downloads/EP/cad_standards/Layer_Description/