

# WILSON CONSULTING GROUP, PC

## PROFESSIONAL ENGINEERING

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BRIDGE ENGINEERING - STRUCTURAL DESIGN - CONSTRUCTION SERVICES - PROJECT MANAGEMENT

**To: All survey sub-consultants**

**RE: Survey Base Plan CADD Standards**

The look (symbology, lineweights and linestyles) of all survey base plans prepared for our office shall conform to PADOT DM-3. The intent of this document is to specify the electronic format used to create the "look" DM-3 specifies. If you have any questions please contact Wayne Klingler at the above address, by phone at 717-591-3070 ext. 13, or email at [waynek@wcg-pc.com](mailto:waynek@wcg-pc.com).

### CADD version

- All files provided are to be AutoCAD 2006 compatible. Files converted from other versions of AutoCAD or other CADD software packages shall be checked to insure their integrity, before the file is delivered to our office.

### Layers

- All layers shall be named, numbers are not allowed.
- The name of the layer should be a short description of what resides on that layer (standard abbreviations are allowed – see DM-3 for a list of standard abbreviations).
- When possible, the number of layers should be kept to minimum. Dissimilar features (i.e. utility poles and stream lines) shall not reside on the same layer. All text may reside on the same layer.

### Plan Objects

- All objects shall inherit their properties (color, linetype, and lineweight) from the layer they reside on.
- All object shall be flat (Z coordinate of "0")
- All objects shall have its entity linetype scale set to "1.0".
- Plines shall be used to define long linear features (edge of pavement, treelines, and fences). Duplicate vertices are not allowed.
- All plines created shall have their linetype generation variable turned "on" (set "PLINEGEN" variable set to "1").
- A linetype shall be used to symbolize all fences, treelines, guiderails, ECT. Do not create separate entities to simulate a linetype (arcs for treelines, separate line segment for fences). If a complex linetype does not exist for a particular feature assign it a "CONTINUOUS" linetype. Use the linetypes defined in "DM3.lin" (provided on our web site). Please note "DM3.lin" uses "DM3.shx", both files should reside in an AutoCAD support folder.
- Plines must be created in the correct direction so non-symmetrical complex linetypes (tree lines) display properly.
- The "LTSCALE" variable shall be set to the drawing scale (1"=50' ~ LTSCALE = 50).
- Linetypes and symbols shall be in accordance with PENNDOT DM-3 Fig 11.1.

### DTM Objects

- All points, breaklines, 3D TIN lines, and surface boundary lines shall be provided in a separate file than the plan objects (discussed above). Different data types shall be separated onto different layers. Unlike "Plan Objects" these objects shall be three-dimensional.
- Points shall be AutoCAD points objects or LDD survey point objects, not blocks, or zero length lines. The "PDMODE" variable shall be set to "3".
- Breaklines shall be 3D plines. Duplicate vertices are not allowed.
- 3D TIN lines shall be AutoCAD 3D lines not 3D faces.
- The surface boundary shall be a closed 3D pline. Duplicate vertices are not allowed.
- If using LDD 2006 please provide our office with your project files.

### Survey Info

- Survey points shall be represented by LDD survey point objects in the CADD file. If your office does not utilize LDD please provide an ASCII formatted text file that contains point information (number, northing, easting, elevation, description).
- If using LDD 2006 please provide our office with your project files.
- Please provide a copy of any field book information that may have been collected.
- Provide documentation stating the survey horizontal and vertical datum.
- Provide benchmarks and reference circle information.

### Blocks

- Blocks shall be used to depict all drawing symbols. Circles or polygons shall not be used.
- The block name shall be a short description of the object it depicts.
- Blocks shall not contain text.
- The insertion point for all blocks shall be the center of the object.
- Multiple lines or circles shall not be used to simulate a filled area. Blocks that need to be filled shall contain solids. The drawings "FILL" variable shall be turned "ON".
- All blocks shall be created on layer "0" and its properties (color, lineweight, and linetype) shall be set to "BYBLOCK".
- All blocks shall be insert on the same layer as any line work associated with it.
- All blocks shall be scaled to the drawing scale when they are insert. (If mapping is provided at 1"=50' all blocks will have a scale factor of 50. If mapping is 1"=100' blocks will have a scale factor of 100.)
- Linetypes and symbols shall be in accordance with PENNDOT DM-3 Fig 11.1.
- When possible, please use the blocks provided on our web site. Any block required that was not provided shall be created in accordance with the standards outlined above.

### Supplemental Data

- When submitting survey data that supplements/revises a previously submitted base plan, please place this additional data in a separate CADD file. This will allow us to more easily update the design drawings and make it clear what data on the base plan has changed.

Files provided to our office that do not conform to the standards outlined herein may be rejected until deemed compliant by our office.