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1. These standards are becoming increasingly complex. The CADD Standards Checker, MicroStation File Manager, and InRoads Preferences conforming to the CADD Standards are programs that would make these standards usable. Layer matrix and levels naming conventions are part of workspaces and seed sheets. They should be set up Corps wide to facilitate their use. Individuals do not have time for this. Also, the districts will require some software to monitor the drawings for compliance. Without seamless monitoring and workspaces the Corps may as well go back to hand drafting. We have fewer draftsmen and no drafting quality control. A new rulebook does not make for improvement in design.

Response: The Center is developing workspaces to assist sites in implementing the standard. We are also developing a standards "checker" to assist in identifying elements within a design, which do not comply with the standard.

2. Page 2, Table 2. The line weights and color tables will require pen tables for correct plotting. Standard pen tables would require some modification to incorporate raster files that are frequently used. Raster images require the use of pen tables to produce gray tones and to put text on top. This is also a problem that electronic bid sets does not address.

Response: The development of pen tables is beyond the scope of this project, at this time, due to the various hardware configurations of each site. The Center encourages sites to submit recommendations as to the development of pen tables for inclusion into future releases of this standard. Any problems related to electronic bid solicitations should be forwarded to Mr. Elias Arredondo at (601)634-3140 or arredoe@ex1.wes.army.mil.

3. Page 11, Fig 4. There should be a place for the specification number. SPK currently uses a four digit number. Also the file name should be at the bottom so the entire disk path can be indicated. The date should also be at the bottom so the time can also be included.

Response: This figure represents "typical" information found in the management block. Sites can relocate information of less importance, e.g., File name, Plot date, and Plot scale, to the outer limits of the border sheet in order to allow for information they feel is more pertinent.

4. Page 12, Table 7. For site plans we also need to have SI scales for 1"=50', 1"=60', 1"=100', 1"=200', 1"=400', 1"=500', 1"=1000', 1"=2000'.

Response: We will add these scales and their metric equivalents.

5. Page 12. Dimensioning in Metrics is well done but workspaces are a better solution.

Response: The Center is developing workspaces to assist in setting some system variables used for dimensioning. Users will still have to input some settings for dimensions.

6. Page 23. Mention is made of design files set up to use Project Architect but there is no design file setup for InRoads. See comments 7 and 8 for a typical InRoads drawing file setup.

Response: The reference to Project Architect was intended as only an example to suggest how the global origin would be set in another application to meet this standard.

7. Page 23, Table 8. Origin Recommendations for MicroStation and AutoCAD. The design cube for the Civil/Site and Surveys & Mapping is too small and does not have a workable global origin for most civil works projects. With large projects we need a larger design cube. The working units of 1:1000:10 are not practical. Typically we use units of 1:10:100, and a global origin of -4000000,0,2147483.648 for 1983 state plane coordinates in feet. This gives a design cube with a working range of 0.0 to 4,294,967.296 north and 4,000,000.0 to 8,294,967.296 east.

Response: The Center is reevaluating these recommendations based on user responses and will make revisions accordingly.

8. Page 24, Table 9. MicroStation Working Units. The third column in this table, which is not labeled, shows working units of 1:10:100. This works for site drawings in feet. The next column labeled "Meters/Millimeters" uses units of 1:1000:10. This metric setup makes the available design cube about one third the size available in foot drawings.

Response: The third column was intended as working units for feet (ft) and tenths (th) of a foot. This table will be revised.

9. Page 24. The concept of model files and sheet files is good.

Response: Concur.

10. Page 24. We do not plot files 1:1 because it does not work that way with MicroStation. Drawings are full size, real world coordinates, and are then plotted down to scale. This was part of the previous standard for MicroStation in the US Army Corps of Engineers.

Response: True, drawings are drawn full size but the method of plotting depends on the individual's point of view. In one case, the border sheet is scaled up to obtain limits that will enclose a drawing. In another case, a full-size drawing is referenced and scaled down to fit within a border sheet, which is drawn at 1:1. For this standard, the latter method will be presented.

11. The file naming conventions are too long and awkward and the sheet sequence should not be part of the file name. Doing this requires that the file name must change if sheets are added or taken out. Changing the file name means that all information stored in iparm plotting files would be lost, which would greatly increase plotting times for large projects and projects using orthophoto images. File identification is better handled by separating projects with directories. Each project directory could contain an ASCII file that has the file name and corresponding sequence number and drawing title.

Response: Concur with the method of sorting projects with different directories. The file naming methods are being reevaluated based on user comments.

12. Appendix B. There are no level number assignments. Level assignments were worked out in a Tri-Service CADD meeting in New Orleans in April 1997. They should be included, and are listed below:

Response: The Center is in the process of assigning levels. We were waiting for all level/layer assignments to be reviewed before assigning level numbers.