

Contactor and A/E Check List for  
As-Built Submittals  
7 Nov, 2011

Contents on the CD:

1. The CAD files and PDF files should be neatly organized into separate folders and labeled accordingly.
2. Files for each discipline should be placed in separate subfolders labeled by their respective discipline designator. Refer to the document "CAD Deliverables - Folder Naming Structure, dated 7 Nov, 2011. (*Cad\_Deliverables-Folder\_Structure.pdf*)
3. The individual CAD discipline folder should contain all Model files (i.e. reference files), and Sheet files. All other miscellaneous files that are either attached and/or embedded in the drawing such as image files (*.jpg, .tif*), OLE files (*.xls*), and sheet set files (*.dst*) should be included in the folder.
4. Any additional files needed to reproduce the drawings accurately such as *.shx* (font or shape file), *.ctb* (color dependent plot style file), *.stb* (named plot style file), *.tbl* (pen table file), etc. should be kept in a subfolder labeled "Support" and be placed in the discipline CAD folder that it is applicable to.
5. CAD file names should follow the proper naming nomenclature stated in the A/E/C CAD Standard 4.0. Placeholders should be used in the User Definable fields as required however in lieu of using a capitalized "X", the Technical Integration Branch recommends using a lower case "x" instead.
6. All files delivered on the CD should be unpacked. Do not submit any compress *.zip* or *.rar* files.
7. Non-essential files should not be copied onto the CD. Some examples are: *.bak, .sav, .log, .tmp, .err*.
8. Provide an Excel *.xls* file listing the index of drawings with file names. Also include listing of all reference files and image files with a description. Place the Excel file in the CAD folder.

CAD file issues:

9. Reference files should be attached using "save relative path". Do not use save full path.
10. There should be no missing or unreferenced file attachments indicated in the reference manager dialog box.
11. Extraneous elements residing outside of the drawing border should be deleted.
12. Unused levels should be deleted.
13. Unused models/layouts should be deleted.
14. Cad files should be compressed or purged.
15. Autocad files should pass the *Audit* command without reporting any errors.
16. All Microstation files should have the *USACE\_color.tbl* color table attached. Do not attach the default Microstation color table.

17. When a Sheet file is opened the entire drawing should be appear by default. Likewise when browsing files in the file manager, the preview thumbnail should display the entire drawing. In Microstation use fit view, followed by file save settings.
18. Sheet numbering (i.e. Sheet Identifier) on drawings should follow the A/E/C CAD Standard 4.0, p. 23.
19. Company logos should not be shown on the drawings including the Management Block in the Border.
20. The Border should always be an attached reference file located in a subfolder labeled "General" that is common to all discipline team members so that the same "saved relative path" can be specified. Information that is specific to each firm and the Sheet file should be separated from the Border and placed as either a cell or block on each individual sheet.
21. The Border reference file should not contain any extraneous elements such as the following: Key Plan, A/E's stamp, Legend, General Notes, Key Notes, etc.
22. The cover sheet should have the wording "RECORD DRAWING AS-BUILTS" followed by the name of the Contractor below in lettering at least 3/16" (4.76 mm) high when printed at full size.
23. The Issue Block should have the wording "RECORD DRAWING AS-BUILTS".
24. Revisions that are listed in the Issue Block should start from the bottom line.
25. The screen display of elements on the layer *Defpoints* and any *\*-ANNO-NPLT* level should be turned-off.
26. Level assignment including level name, color, line width, and line style should follow the A/E/C CAD Standard 4.0 assignment tables in Appendix A. Please contact the Technical Integration Branch for clarification issues.
27. Level names should not have a prefix that shows the file name of the reference file. This is a common occurrence with reference files that have been xref bind by bind to the Sheet file in Autocad.
28. Microstation files should be submitted in 2D format rather than 3D format unless specifically requested in the contract.
29. General notes and other paragraphed text should be QC for proper alignment and justification to ensure that no undesired shifting has occurred. This is a common occurrence in cad files converted from Autocad.
30. Special text characters used in the Autocad drawing for degrees, diameter, plus/minus and underline should be QC to ensure that the appearance the Microstation files are correct.
31. Line styles should either be standard Microstation default line styles and/or one that is supported in the *tsaec.rsc* resource file.
32. The cad file should reflect the as-built changes indicated on the marked-up plans with elements re-drawn to scale.
33. Revisions in which new elements are added should match the level assignment of the original line work or be placed on the appropriate discipline level assignment. Level name G-ANNO-REVS should be used only for the revision I.D. symbol and clouding.
34. Clouding from previously issued revisions should be moved to level *G-ANNO-NPLT*. The revision symbol should remain as-is on level *G-ANNO-REVS*.

35. Whenever the as-built changes are significant and impractical to cross out the affected areas the entire drawing sheet should be "X'd" out and labeled "SUPERSEDED". A new drawing should then be inserted and labeled with a lowercase "a" added after the sheet sequence number. Example: *M-101* (superseded); *M-101a* (replacement sheet).
36. If a drawing sheet is marked NIC, the Schedule of Drawings should indicate this.
37. Drawings should be QC to ensure that elements that belong to one discipline classification do not have any parts incorrectly placed on another level.
38. Unreconciled layers in the Autocad file should always be reconciled.
39. Drawing units should be set correctly. For example a metric based Sheet drawing should not be set to architectural units.
40. The typical lettering height should be 1/8" (3.18 mm) including text in scanned images and OLE objects when drawing is printed at full size.
41. There should be no overlapping/crossover of text and dimension elements.
42. Layout tabs in Autocad file should be labeled correctly and extraneous tabs should be removed.
43. The saved sheet plotting layout should align properly with the sheet border.
44. Ensure that Designed By, Drawn By, Checked By, Submitted By, and File Name boxes in the management block of the border are properly filled in.

Civil file issues:

45. The site model should be checked for accurate placement at the correct datum and projection coordinates.
46. Elements should be drawn at the correct bearings with the UCS set at world or with the ACS set unrotated.
47. Bench marks or other monuments with an elevation should be checked to confirm that the "Z" coordinates are accurate.
48. Verify that drawing composition displayed on the screen matches with the printed sheet.

PDF file issues:

49. Paper size should be formatted to match with border.
50. Documents generated should be in monochrome.
51. File names should be same as the CAD Sheet files.
52. Resolution quality should be set to ensure legibility in images and OLE objects.

GIS issues:

53. Ensure survey notes match the projection and datum used in cad file and that it accounts for the correct benchmark references and dates.
54. Metadata is provided.
55. XYZ file is provided.
56. Confirm that projection used is in Hawaii State Plane Coordinate System NAD 83 HARN (1993) Feet. The State Plane Zone is determined by the county that the project is located within.

Document Name: Contractor\_and\_AE\_Check-List\_for\_As-built\_submittals.docx