

# Plotting: Convert a Master File into a Print File

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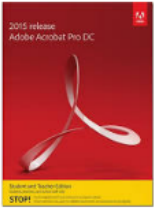
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# Converting From Original Document to PDF

## Create your plotting document in some “original” software program

- Design document in original software to match your desired output size & orientation
- Format your original document properly
  - Do not design for > than 36” width
  - Embed all images
  - In general, rasterize all vectors
  - Flatten the file
- Save a *master copy* and *print copy*
  - Backups in case of problems
- Convert the *print copy* into a PDF
  - PDF will have a smaller size, output is more consistent, and better at preserving original document formatting

# Options for creating a PDF



There are only 3 ways to convert an original file into a PDF file.

- **'Print'** intercepts the printer output from a program to make a PDF file
  - Tends to do a better job with graphics (color separation) and text alignment (in particular if you use "flaky" fonts)
- **'Save As'** is used to save a version of the original document to a different format
- PDF **'export'** tends to do a better job with document structure and file properties
- Review your PDF settings periodically. The settings do not automatically revert to the default settings. Applications and utilities that create PDFs use the last set of PDF settings defined or selected.

**Produce a PDF using 1 of these options:**

- Open the file, click **"Print"** -- select **"Adobe PDF"** as the printer
- Open the file, click **"Save As"** -- **".PDF"** file type
- Open the file, click **"Export"** -- select **"PDF"** as the file type

# From **Illustrator** to PDF

- <https://helpx.adobe.com/illustrator/using/creating-pdf-files.html>
- <https://www.youtube.com/watch?v=iLx7qvzauY>
  - Saving Artboards for Plotting
    - Set artboard to correct size
    - Convert Type to Outlines
    - Flatten all layers
    - Embed all Images
    - Rasterize all Vectors
    - Save as Adobe PDF
      - **Uncheck** *Preserve Editing Capabilities*

# From PhotoShop to PDF

## General Comments

- Save as PDF
  - <https://helpx.adobe.com/photoshop/using/saving-pdf-files.html>
    - Compress text and line art
  - <https://www.youtube.com/watch?v=3u6eMKD2SCE>
    - Save-as process (high quality print, compress)
  - [High Resolution PDF File -- https://www.youtube.com/watch?v=Ga3IDc0VOF0](https://www.youtube.com/watch?v=Ga3IDc0VOF0)
    - Note plotters use CMYK
  - [Plotter Size Output -- https://www.youtube.com/watch?v=n262c9L6T30](https://www.youtube.com/watch?v=n262c9L6T30)
    - Modify image size to up-sample (grows your image larger) for a graphics laden image
    - Do not modify resolution to larger than 250 pixels/inch
  - <https://www.youtube.com/watch?v=Mxvow4d5VMo>

## General Hints

- Plotting from PhotoShop sends all pixels as image data (including white pixels) and may send white space as image data which can reduce the size of line drawings or drawings with significant amounts of white space
- If your job has grayscale content only, change the mode in the Photoshop image menu to "Grayscale" before plotting

# From InDesign to PDF

## InDESIGN

- Check size and orientation of your drawing
- Make sure all your page layouts are complete
  - You can select “overprint preview” to check quality of your file before you convert to PDF
- Flatten your file as small as possible
- Embed all Images
  - If images are already embedded this will not be an option to choose
- Save as PDF
  - Adobe PDF presents...select high quality print
  - Once Export box appears type in *PRINT* file name and select location
  - Export Adobe PDF box and click [Export]
- Plotting from PhotoShop sends all pixels as image data (including white pixels). If you are compositing multiple images and text, InDesign (and PDFs exported from InDesign) are smart enough NOT to send white space as image data. This can reduce the size of line drawings or drawings with significant amounts of white space ENORMOUSLY!
- If your job has grayscale content only, change the mode in the Photoshop image menu to "Grayscale" before plotting.
  
- <http://sbe.arizona.edu/forms/tech/CondensingPlottingPDFindesignCS6.pdf>
- <http://capla.arizona.edu/forms/tech/CondensingPlottingPDFoptionBindesignCS6.pdf>

# From Rhino to PDF

## Printing from Rhino to PDF – General Guidelines

- Open the drawing you want to convert in Rhino
  - Select Vector
  - Raster PDFs will handle images/shaded modes better but **sharpness may be limited**
  - Use Properties-Default Settings and change from “standard” to “press quality”
- Go to the Print command in Rhino and save the file as PDF
- **Do not click on “Print to File” for it will create the wrong file type**
- Select which Printer Output mode you would like to use, Vector or Raster.
  - If vector is greyed out, it means you are trying to print something that cannot be printed vector, for instance a shaded view
  - Most of the PDF converters allow you to set resolution (DPI) of a file. This setting affects both raster and vector printing. In raster printing it controls the overall resolution of the result. In a vector file it controls the accuracy of the file in printing

## How to make the best PDFs from Rhino

- <https://www.youtube.com/watch?v=GjQI76j-2ao>

## Preparing 2D Rhino drawings for printing

- [https://www.youtube.com/watch?v=Dmk\\_pXvpwhA](https://www.youtube.com/watch?v=Dmk_pXvpwhA)



# From AutoCAD to PDF

## Exporting Drawings Files to PDF

- **EXPORT FILES** <https://knowledge.autodesk.com/support/autocad/learn-explore/caas/CloudHelp/cloudhelp/2016/ENU/AutoCAD-Core/files/GUID-EC9C6D47-814E-476D-840F-04104CF72B78-htm.html>
- **MODEL SPACE** <https://knowledge.autodesk.com/support/autocad/learn-explore/caas/CloudHelp/cloudhelp/2016/ENU/AutoCAD-Core/files/GUID-E756123E-50F8-4A70-8347-DB69310DC505-htm.html>
- **SINGLE LAYOUT** <https://knowledge.autodesk.com/support/autocad/learn-explore/caas/CloudHelp/cloudhelp/2016/ENU/AutoCAD-Core/files/GUID-E4AF00FC-E219-4D0D-AA4D-1BF5AC04D806-htm.html>

- **Printing PDF drawings, transparent objects and wipeouts might not print correctly**
  - Adjust transparent objects in Adobe's software
  - Set Transparency Flattening to "Print as Image" or reduce the Raster/Vector Balance in Adobe Acrobat
- **PDF might introduce a loss of precision**
  - PDF stores data in single precision numbers, while DWG stores data as double-precision numbers.
  - This loss of precision can introduce round-off errors on computed locations of objects, such as the locations of tangent points, and arc radiuses and their endpoints
  - Round-off errors on large coordinates such as those found in geolocated drawings
  - Deformities and round-off errors in tiny objects when a drawing contains very large objects as well as tiny objects.

## Converting DWG to PDF

- Tutorial on Prepping AutoCAD format
  - <https://vimeo.com/gener8media/review/168895161/afac737077>
- Tutorials using novaPDF, Autodesk TrueView, and SolidWorks eDrawings
  - <http://www.novapdf.com/kb/convert-dwg-to-pdf-219.html>

# From **ESRI-GIS** to PDF

## ESRI-GIS ArcMap

- <http://desktop.arcgis.com/en/arcmap/10.3/map/map-export-and-print/exporting-to-pdf.htm>
- ArcMaps **Export Map** dialog box controls settings to create a PDF file
  - **Resolution** (dpi): should not be >300dpi unless using CED's Photo-Realistic printers/plotters
  - **Output Image Quality**: resamples raster data to reduce file sizes
  - **PDF Format Options**:
    - Destination Colorspace: CMYK is for printing
    - Compress Vector Graphics
    - Image Compression is for compressing raster
      - Do not use Adaptive mode because it can produce artifacts on the image
      - Use Deflate mode for lossless compression of raster images
  - **Embed All Document Fonts**: includes the fonts with your image and will allow the image to look the same as your design
    - Some fonts do not support being embedded and will not happen even when this box is checked
- You can control layers and what is seen or printed

# End

- If there are any issues missing in this presentation, or if you have better instructions, please let us know by going to the CED helpdesk and putting in a ticket with enough detail we can contact you to find out more
- <http://Ced.Berkeley.edu/cedhelp>