Appendix G

Public Involvement Displays

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Appendix G

## G.1   Public Involvement Displays

G.1.1   Introduction

Public hearing displays provide a vital communication tool to convey proposed roadway and trail designs to the public. This portion of the CADD Manual will establish electronic and branding procedures to facilitate the creation of displays to be shown to the public.

Public hearing displays typically consist of plan views, typicals and in certain situations photographs of the existing and proposed design. The general public is not familiar with reviewing highway plans, therefore the plan view displays should provide an intuitive picture to allow for broader communication. This goal will be accomplished through the use of aerials that will be overlaid with proposed design elements. These elements are shaded using transparency options and framed by standardized borders to provide consistency across the state. Typicals will show only the idealized view and will generally convey the roadway or trail using isometric view and shading.

G.1.2   Falcon Directory Set up for Public Hearing

- **The Designer** or **Project Manager** will request the creation of a PH (public hearing) folder under the project UPC # using **SARA**. If a consultant is providing design services, the request can be made by completing a Falcon Access Request Form (LD-894).
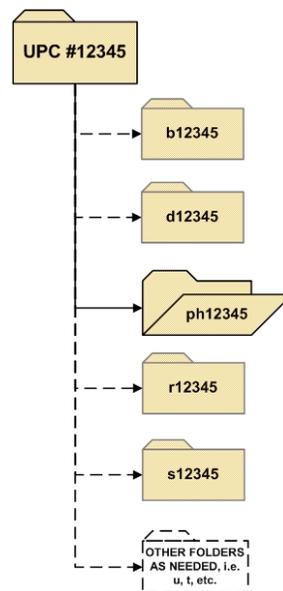
G.1.3   Creating Plan View Displays

- **Aerial Images**

  o Plan view displays will require aerial photography; these photographic images are known as .hmr files (VGIN Imagery) and can be obtained from Central Office Survey or as part of the aerial photo compilation process. VGIN (hmr file) should **NOT** be placed in Falcon, see Chapter 1 Section 1.3 of this manual for special handling instructions.

- **Public Hearing Display Files**

  o The Public Hearing display file will be created using the Public Hearing .dgn seed file. This will ensure that certain information i.e., color table, fonts, scales, working units, etc. are set. This file will be used to reference design, survey, patterns/shading and aerial photography. This file will contain the Public Hearing Border.
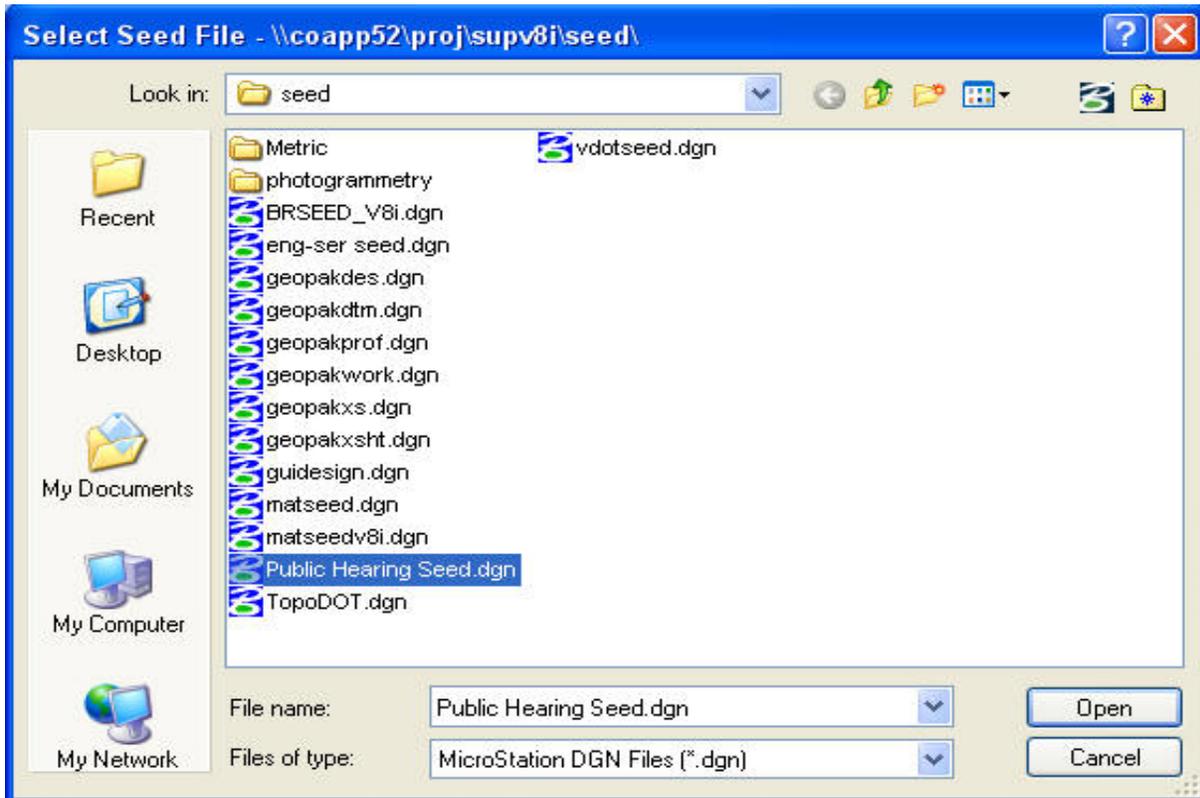
The name for the public hearing Display file should be ph-UPC#display #.dgn

G.1.3.1 Public Hearing DGN Files

After the PH folder has been created in Falcon and your Public Hearing display sheet has been created, you will then attach or copy the following files:

- HMR file (Aerial photographs of region affected) Save on hard drive to be referenced. DO NOT put in Falcon

- Survey files (all existing items)

- Design file (all proposed items)

- Pattern/Shape files.

- Drainage files

Note: It can be extremely helpful to copy files, especially the property owners because the text always needs to be scaled up and the names usually need to be moved. Sometimes on the survey file there are items that need to remain and others that do not but they are on the same level so if the file is copied you can delete vs. turning off levels. If you do not expect a lot of changes to the design before your presentation, you can reference files.

Files to Reside in Public Hearing Folder in Falcon	
Example: File naming Convention if copied	**File Function**
ph-upc#display#.dgn	Public Hearing Display File
ph-dupc#des.dgn	Roadway Design File
ph-hupc#des.dgn	Drainage Design File
ph-supc#.dgn	Survey Files – Basic survey, property owners, utilities, etc.
ph-upc#shapes.dgn	Contains shapes, patterns and fill
ph-upc#rw.dgn	Right of Way design files

Once the aforementioned files have been copied or referenced, adjust the level structure by turning on or off levels as needed per the list of items shown on After you have all the levels on that you need, you will then change the symbology (level, line weights, colors, etc) for display clarity. **Level symbology** can be used to change items in reference file. If files were copied, elements can be changed in actual file with **change element attribute.**

G.1.3.2   Hierarchy List

- **Survey** (all existing items)
    - Existing right of way
    - Property lines
    - Existing easements
    - Houses
- **Survey Property Owners**
    - Names
- **Right of Way**
    - Proposed right of way
    - Proposed easements, including construction and utility easements
- **Drainage** (major items)
    - Storm water management basins
    - Big boxes
    - Cross pipes
- **Design** (all proposed items)
    - Proposed edges of pavement
    - Entrances
    - Sidewalks
    - Curb and gutter
    - Shared use paths
    - Construction limits
    - Pavement markings
    - Begin/end of project information
- **Bridge**
    - Proposed bridge design if applicable (usually already in design file)

To avoid clutter and increase clarity, all text should be turned off except for property owner names, **necessary** notes and labels. The displays will rely on shading and standardized key to enhance readability.

The public hearing display may also include white shapes for text and other items to make them more readable if masking is not sufficient to create a clean display.

G.1.3.3   Public Hearing Shapes Files

File may contain the following proposed shapes:

- Pavement shapes

- Paved entrances

- Edge of pavement outlines

- Bridges

- Sidewalk

- Grass behind sidewalks

- Grass Median

Note: Key Shapes should be placed in Pattern File. This includes hatching and transparencies. Transparencies are preferable to hatching because you can control what is seen beneath the shading. To make shading color transparent, go to *Change Attributes* in MicroStation select shape and click on Transparency, then select the percentage between 20 and 90. Your best selection is made by trial and error.
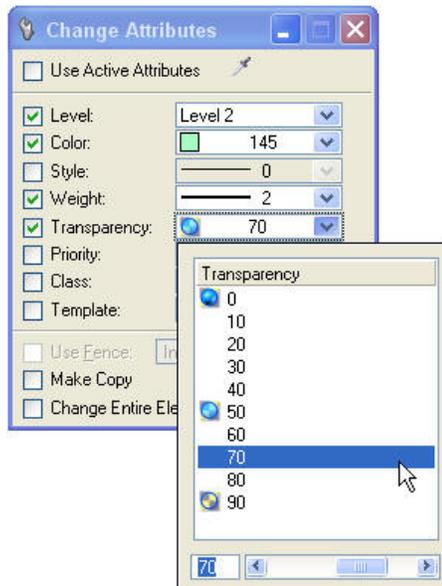
The PH_Shape file can be sequenced to plot first, any shape placed in this file can serve as a backdrop for text in the PH_Display file.

Example of a Public Hearing Shape File
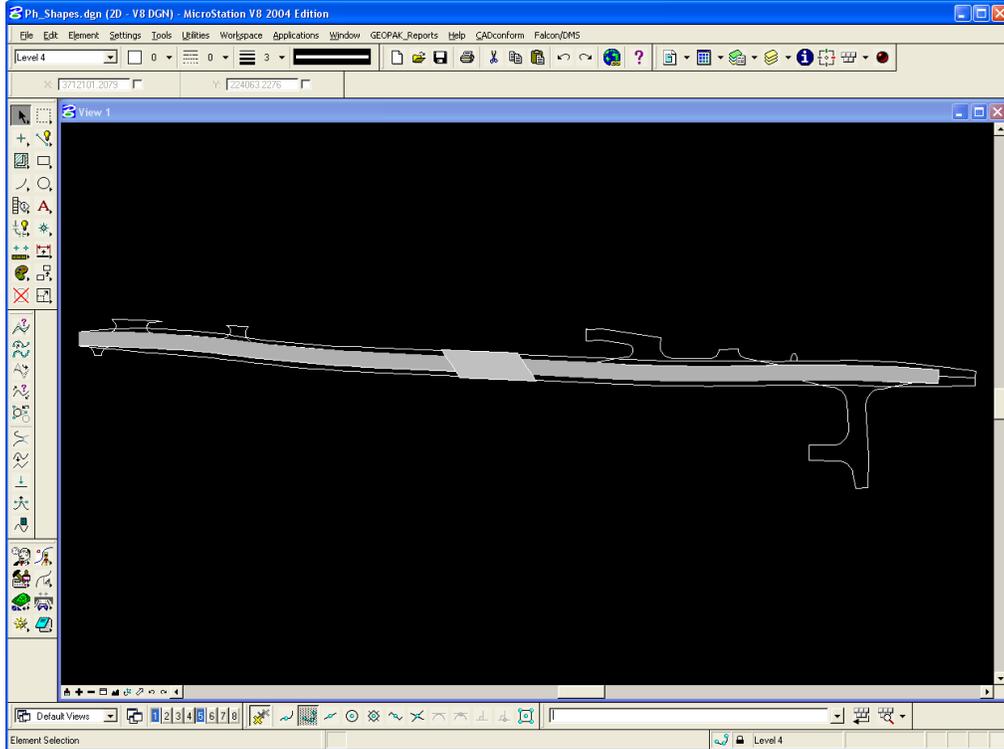
G.1.3.4   Colors and Text

Suggested use of colors – Shading of the HMR reference file varies from project to project. The following is a list of base colors. You may use a different shade of the base color depending upon how they show up on your HMR file and how they vary when used with like colors (especially blue, green, and grey).

- Please note that Colors are sometimes **dependent** on the plotter.

- Color 4 (yellow) and color 6 (orange) will standout well against various dark backgrounds as compared to 1 (blue) which can be hard to distinguish against dark backgrounds.

- Readable text size will vary based on the scale. For example at 25 scale, using font 23 your text height and width would be 6 with a weight of 7 in order to be legible at a distance. 50 scale would be double 25 and 100 scale is double 50 scale. **Be mindful that citizens will need to be able to read these labels at a reasonable distance. Size and weight your text accordingly.**

- Use the **Arial Font** for all other text added to the display itself; font size is dependent on scale and visibility.

G.1.3.5   Symbology

Note: All files should retain the level structure and symbology used for design.

Color	Description	Level No.
White:	Proposed design features Construction limits Pavement Markings/directional arrows *Medians* – White shape outline (shapes shaded grey for concrete, green for grass)	Level 2-20 Level 22 Level 12 Level 12
Grey	*Proposed pavement* (dark) *Proposed entrances* (dark) *Proposed bridge* (light) *Proposed sidewalk* (light	Level 3 Level 3 Level 2 Level 7
Black	Proposed alignment	Level 1
Blue	Cross pipes Big boxes	Level 1 & 2 Level 3
Green	*Storm water management basins* *Grass behind sidewalks* *Grass median* Permanent easements (label drainage or utility)	Level 22-26 Level 7 Level 5 Level 23
Yellow	Property owner names(Arial font, bold) Optional { Outline of homes/businesses Existing edges of pavement Wells(water) Wells(monitoring))	Level 54 Level 8 Level 3 Level 21 Level 28
Red	Proposed right of way	Level 23
Orange	Temporary easements	Level 23
Stippling or Shading	Shared use paths	Level 7

*(Bold Italicized text denotes colored shapes)

Do not use the default level for information you want shown it does not print.

G.1.3.6 Setting up Public Hearing Displays

All design files and survey files will be referenced to the ph-upc#display#.dgn file. The options to be used for the borders, i.e. w/Legend on Right/Left/Bottom or w/o Legend can be found in the following section.

G.1.3.7 Creating Public Hearing Sheet

The sheet cells noted in the following instructions can be found by attaching the **VDOT MicroStation Cell Library phsheet** found in \\coapp52\proj\supV8i\cells\design\phsheet

According to what you want to show and the size of the project, pick a sheet size appropriate for the design file information you wish to display.

Always place note of the insertion scale of cell, drawing scale and plot scale on sheet outside plot area. See G.1.8.2 for example.

The following cells represent the sheet sizes and orientations available for use:

Public Hearing Sheet Cells

Small 18x24 (intended for typical sections, photos and supplemental info)
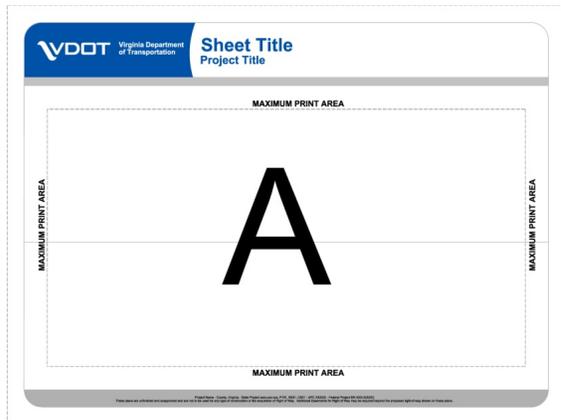
PH 18x24A land w/o legend
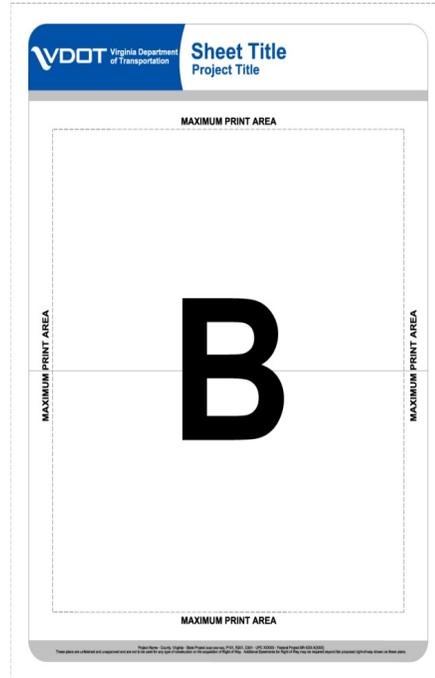
PH 18x24B port w/o legend

Medium 24x36 (intended for design drawings, typical sections and supplemental info)
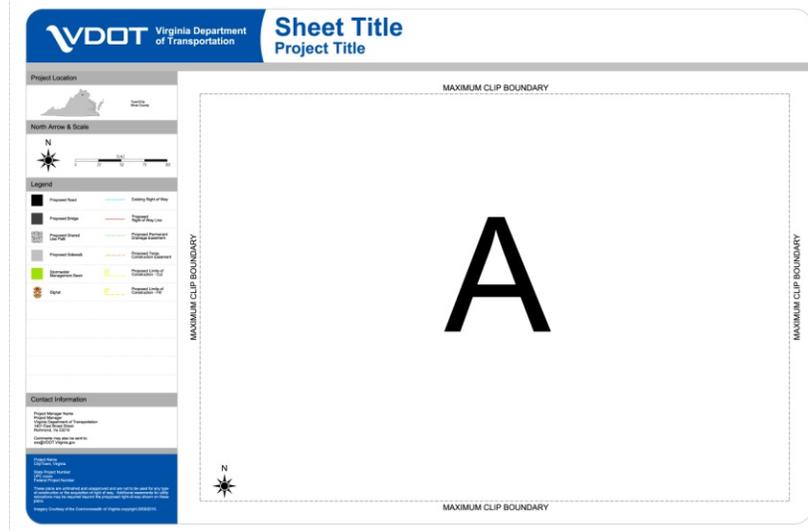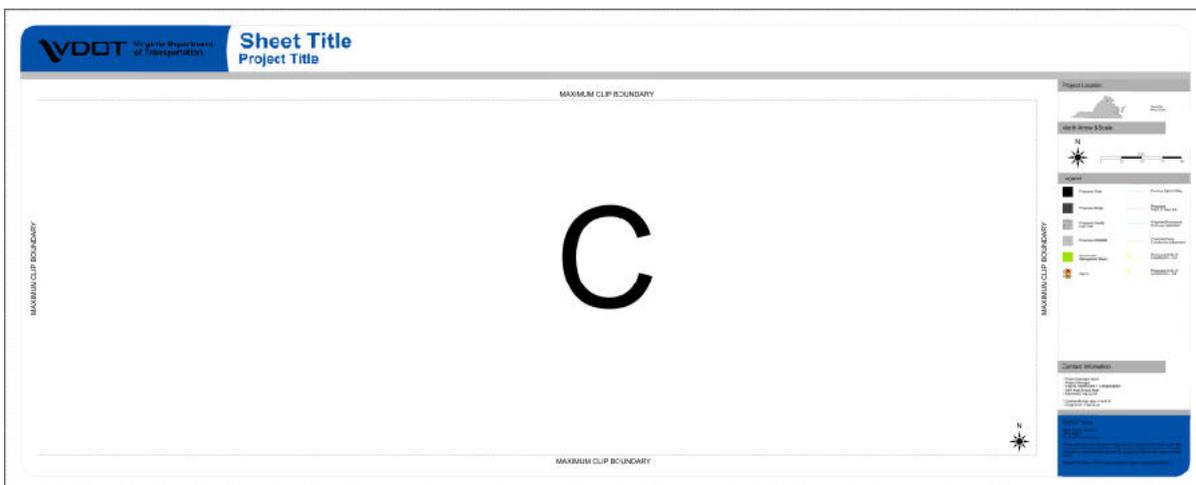

PH 24x36A land w/ L legend
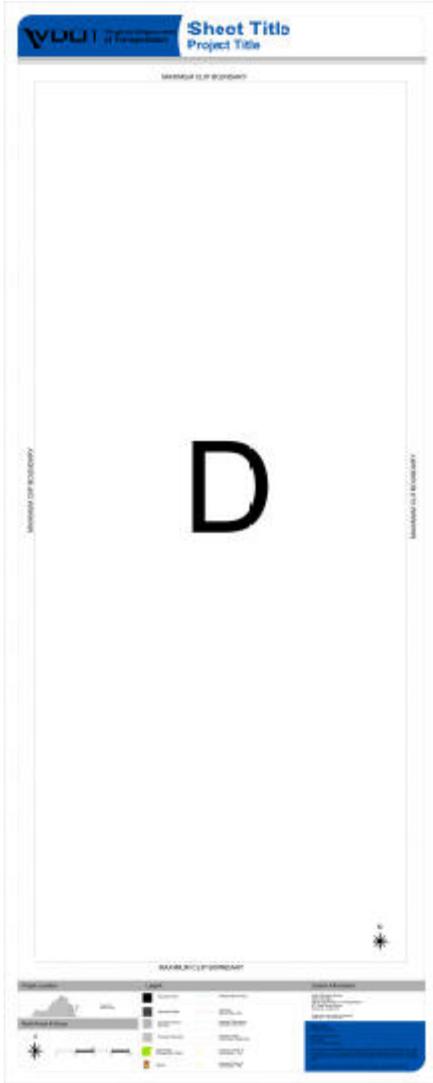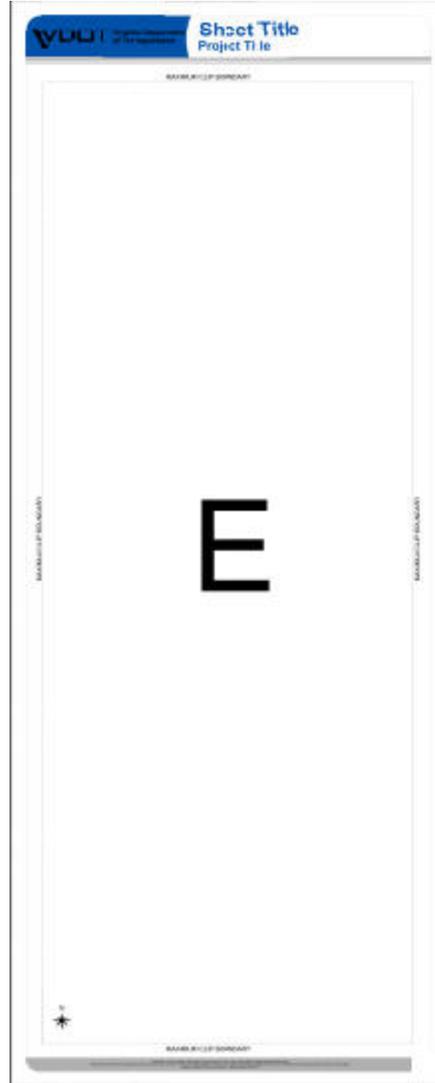

Public Hearing Sheet Cells
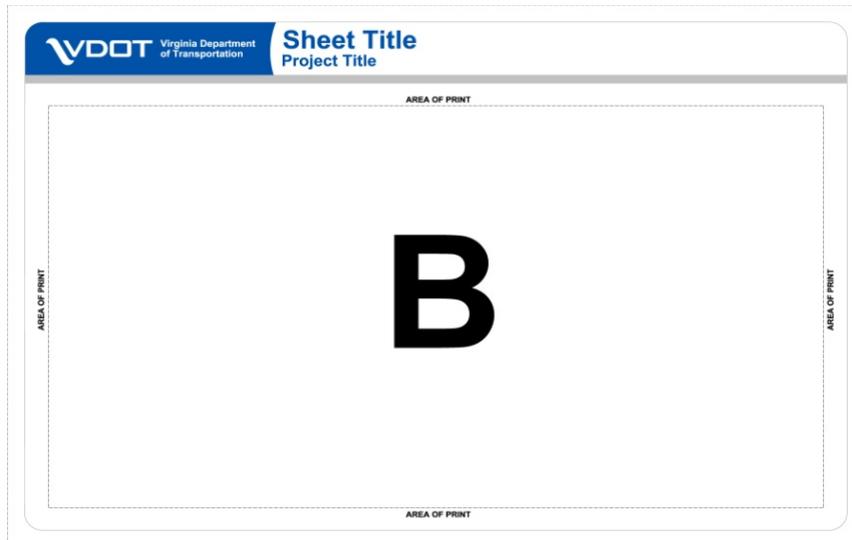
PH 24x36B land w/o legend
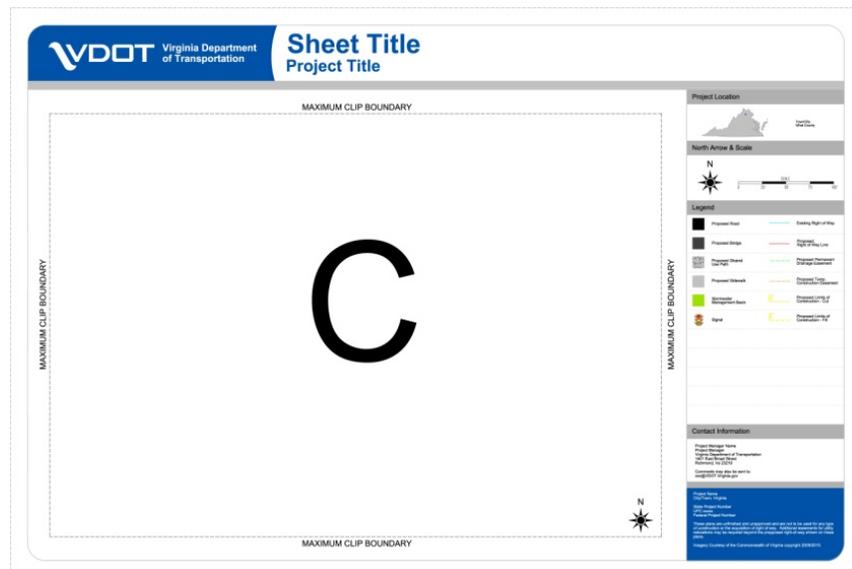
PH 24x36C land w/ R legend

Public Hearing Sheet Cells
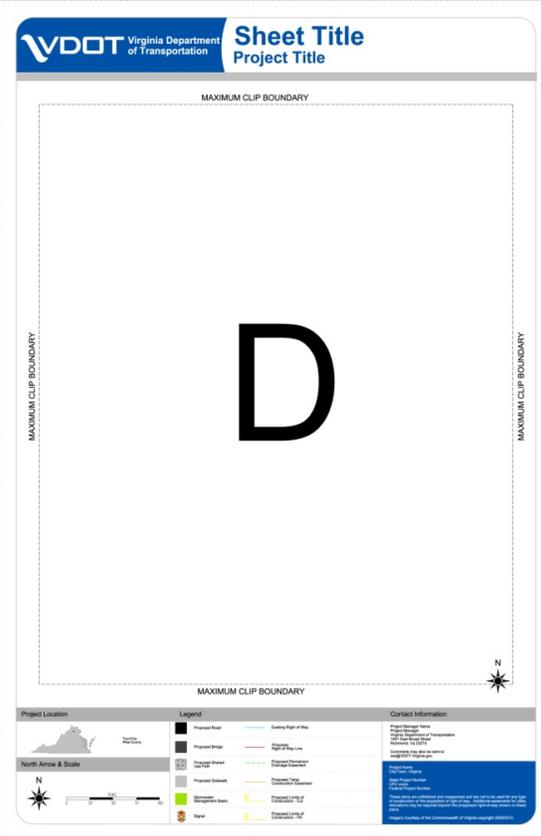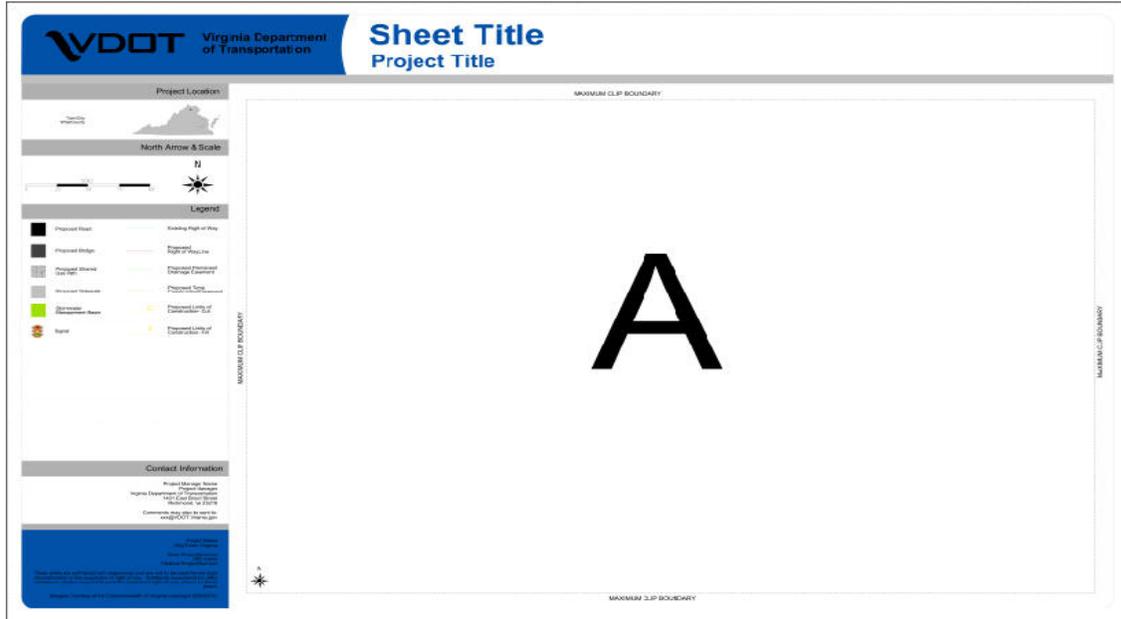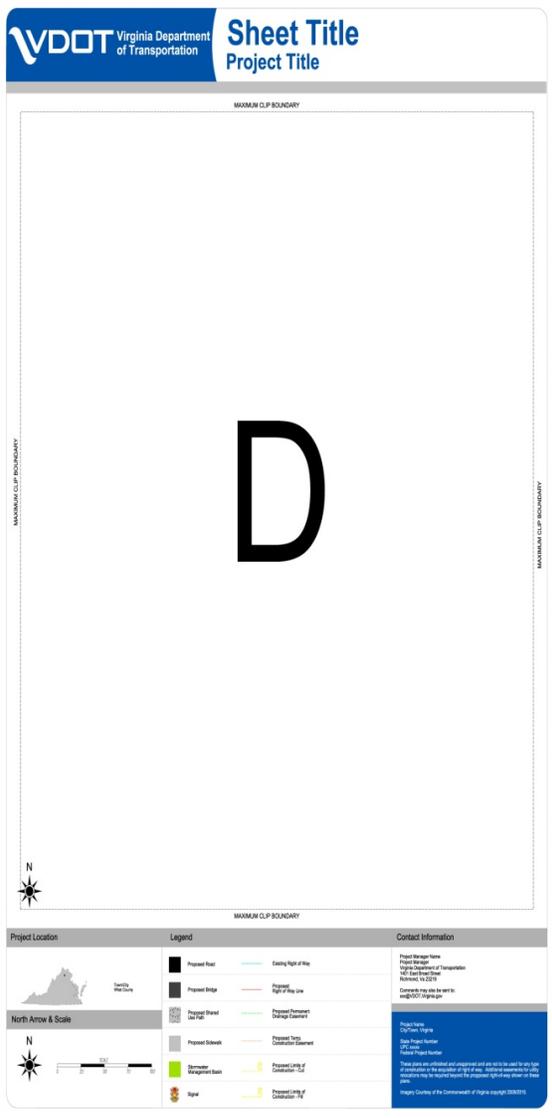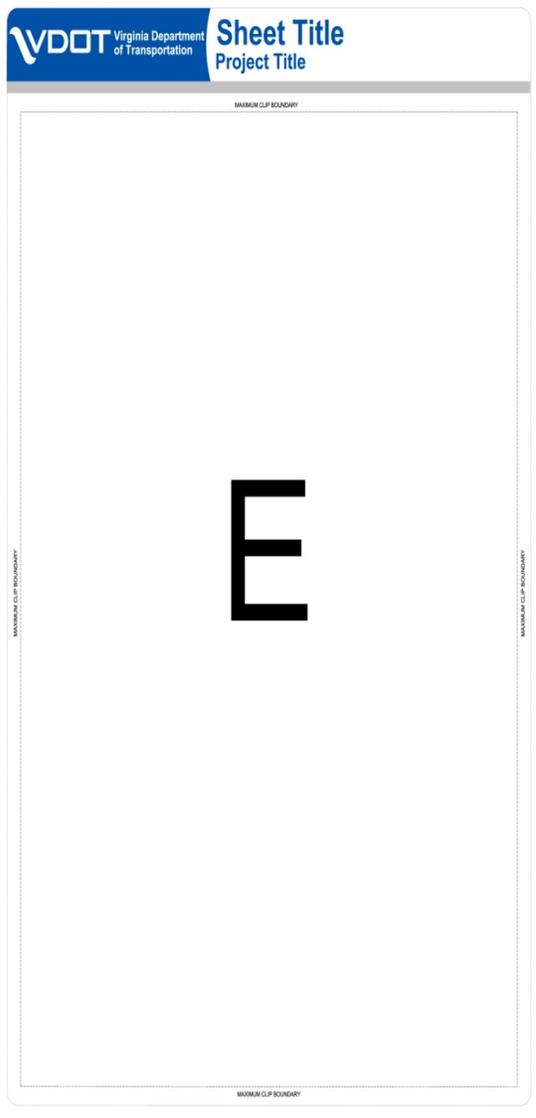

PH 24x36D port w/ Bottom legend
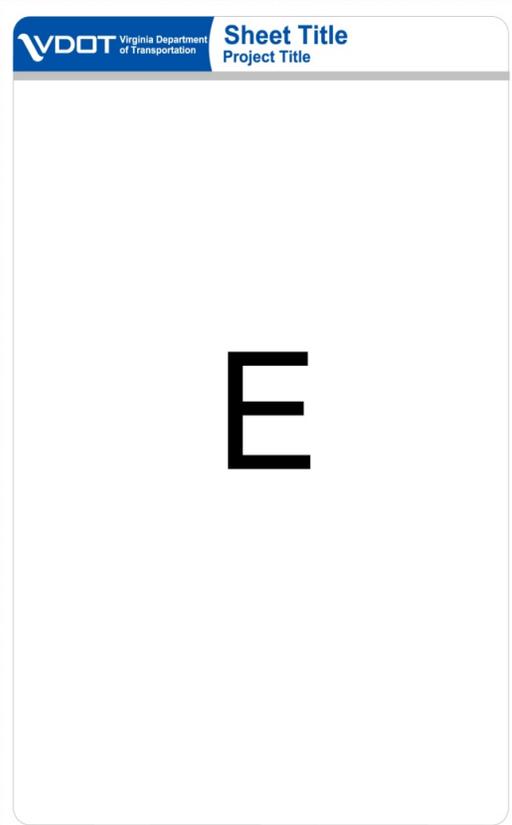
PH 24x36E port w/o legend

Special 24x60 (intended for bike paths, trails, etc.)
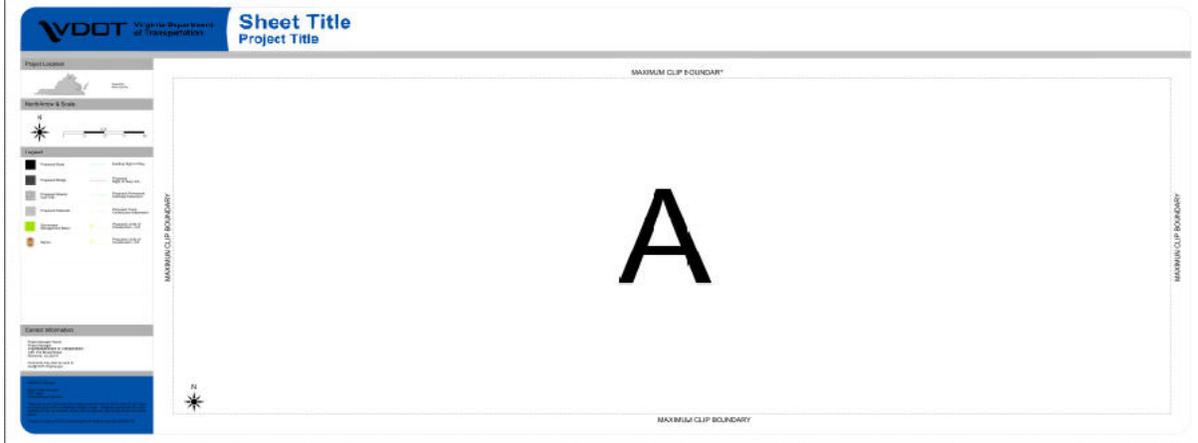
PH 24x60A land w/ L legend

Public Hearing Sheet Cells
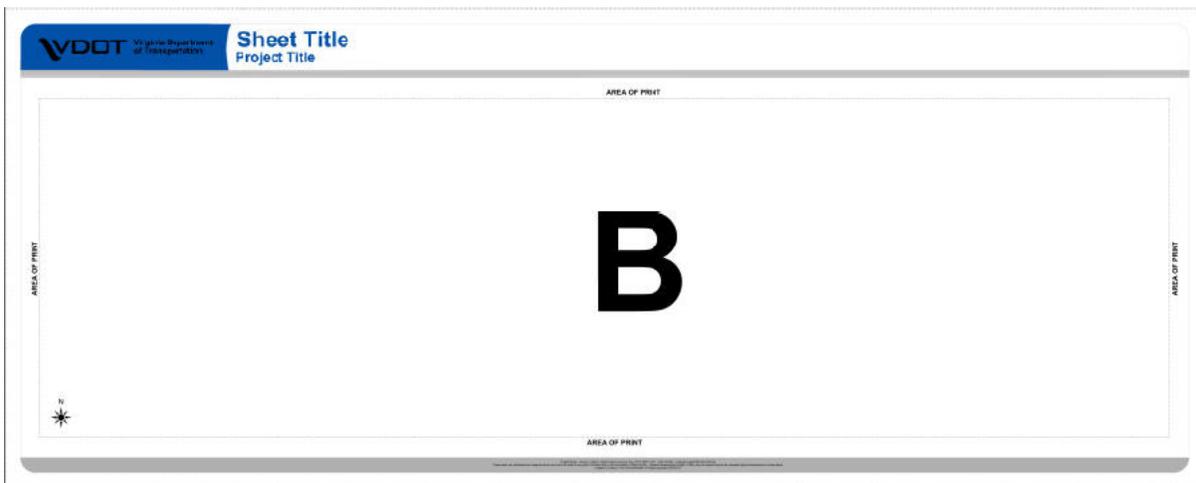
PH 24x60B land w/o legend

PH 24x60C land w/ R legend

Public Hearing Sheet Cells

PH 24x60D port w/ Bottom legend

PH 24x60E port w/o legend

Public Hearing Sheet Cells

Large 40x60 (intended for design drawings)

PH 40x60A land w/ L legend
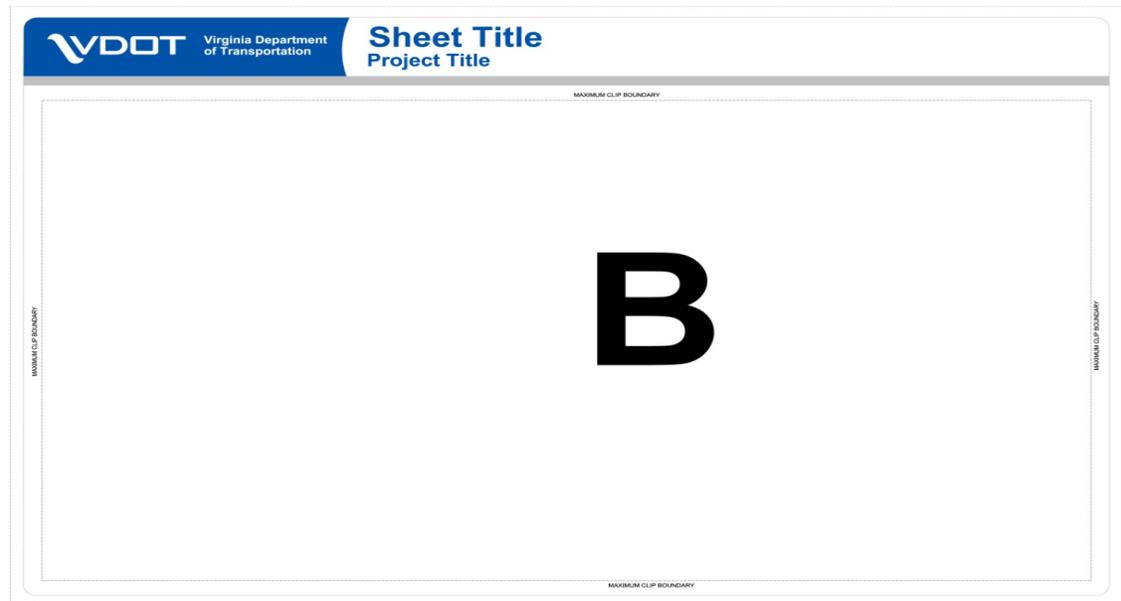
PH 40x60B land w/o legend

Public Hearing Sheet Cells

PH 40x60C land w/ R legend

Public Hearing Sheet Cells

PH 40x60D port w/Bottom legend

PH 40x60E port w/o legend

Presentation Tips:

When selecting your sheet sizes for the presentation make them as uniform as possible.

If area of project is too long for a 40x60 or 24x60 board use two boards with a cut line. Longer boards are hard to manage and display.

If you are showing more than one Typical section board make them the same size.

G.1.4   Public Hearing Sheet Template Information

Tip 1: The sheet height is limited to the width of the plotter paper which is 40", when sheet is plotted and rotated 90°. The sheet length can vary based on need and the sheet template. For presentation and readability it is best to leave a 1" border of white space around all plan displays. A clip boundary has been added to the sheet for your convenience. This is a white area, do not fill with information and make sure the clip level is turned off before you print.
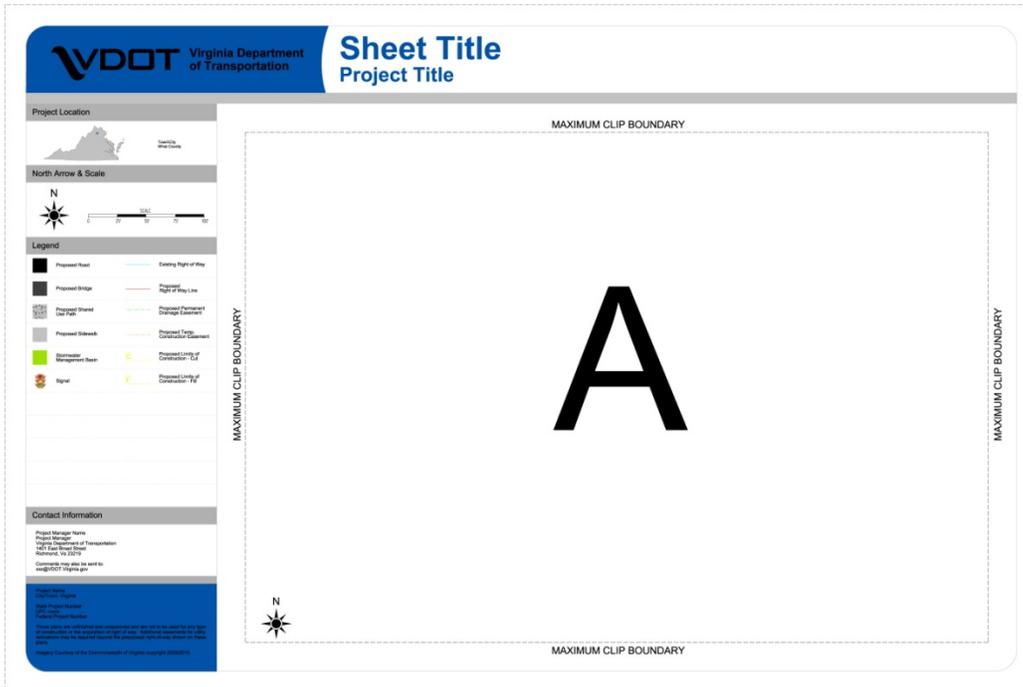
Tip 2: Make sure you rotate the North Arrow to match the Survey North Arrow once Survey file is referenced in.
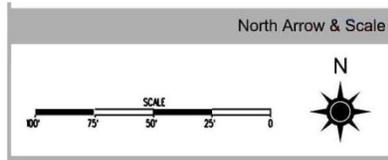
Tip 3: Make sure you move the dot near the region where project is located. It does not have to be exact. Replace the text under **Project Location** heading with the name of the Town or City and the County.
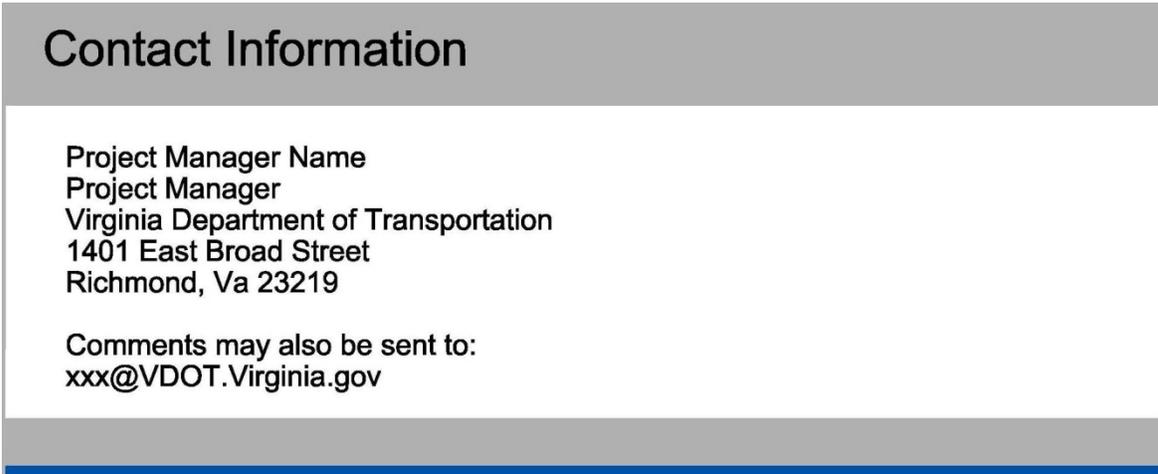

Tip 4: Sheet and Project Title is left justified or aligned.

Tip 5: All items in the Legend are included in a cell. Edit the cell and delete the ones that are not used in your project.

Tip 6: Contact information may be included on project, edit cell accordingly.

Contact Information

Project Manager Name
Project Manager
Virginia Department of Transportation
1401 East Broad Street
Richmond, Va 23219

Comments may also be sent to:
xxx@VDOT.Virginia.gov

Tip 7: Project information should be included on project.
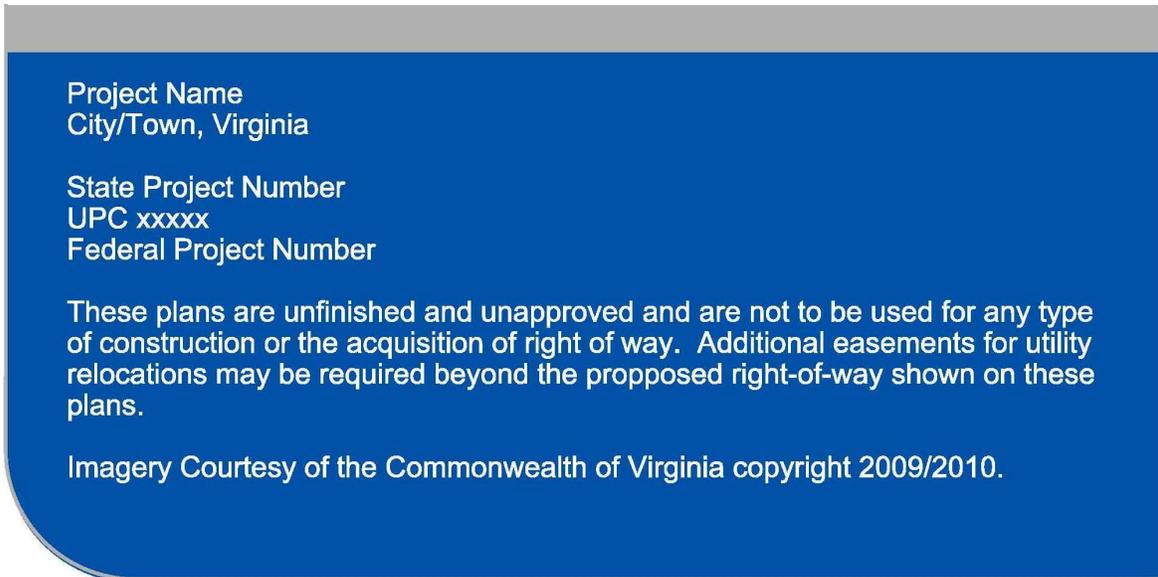
Project Name
City/Town, Virginia

State Project Number
UPC xxxxx
Federal Project Number

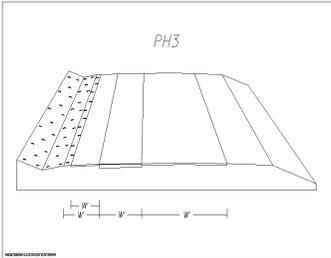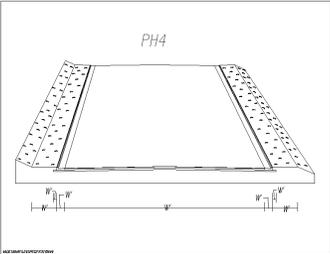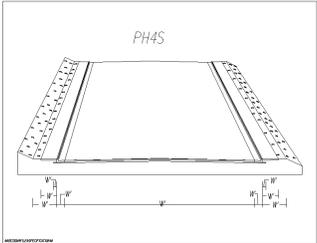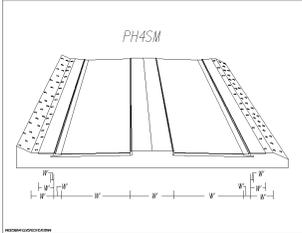These plans are unfinished and unapproved and are not to be used for any type of construction or the acquisition of right of way. Additional easements for utility relocations may be required beyond the propposed right-of-way shown on these plans.

Imagery Courtesy of the Commonwealth of Virginia copyright 2009/2010.

G.1.5   Public Hearing Typical Cross Sections

Cross sections used in displays are either a 3-dimensional or isometric representation of how the project will look when completed along with the dimensions and foundation materials. They show roadways, curbs, medians, sidewalks, bike paths, etc. Photos of pavement markings and structural cross sections for bridges or overpasses may also be included. These boards do not include project location map, north arrow, scale, legend and contact information.
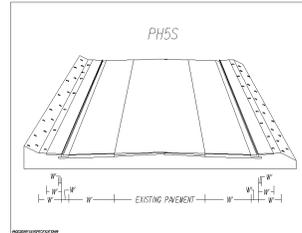
G.1.5.1   Cross section cells

It is up to the designer to determine the colors that will be used on their presentation, but they should be as realistic as possible. When you go to Cells in MicroStation attach Public Hearing cells from \\coapp52\proj\supv8i\cells\design\phtyp.cel
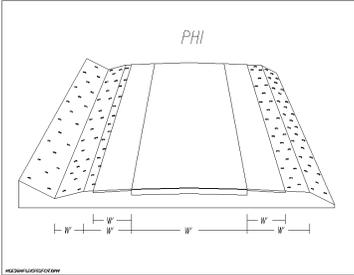
Public Hearing Typicals	
PH1 Rural Single Lane	**PH2** Rural Divided Lanes
PH3 Rural Widening one side	**PH4** Urban no sidewalk
PH4S Urban with sidewalk	**PH4SM** Urban sidewalk median
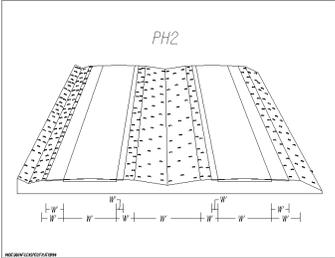
Public Hearing Typicals
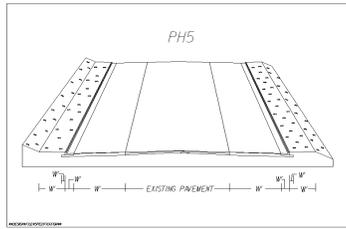
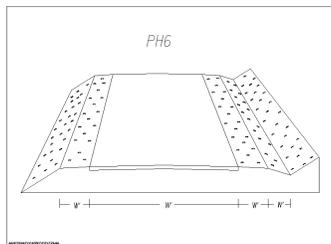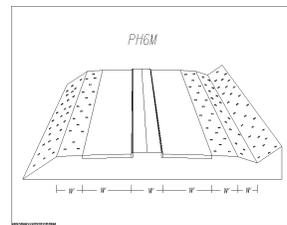|	
PH5 Urban widening both sides	**PH5S** Urban widening sidewalk
PH6 Ramp loop typical	**PH6M** Rural raised median

Fill colors or hatching should reflect the project items i.e. pavement, grass, etc.

Minor modifications can be made if cells shown do not accurately represent your project.

If you have the time and knowledge you may create your own 3D cell to give a more realistic representation. See section G.1.8

G.1.6   Setting up Public Hearing Plot

Make sure the following files are included: (in the applicable dgn file.)

- hmr file (aerial photo)
- PH_Sheet
- PH_shapes
- Appropriate design, survey, property owners, utilities, drainage, and right of way files, etc. as needed.

Modify the reference update sequence:

- From the reference dialog box> settings> update sequence
- Modify the update sequence as follows:
  1. PH_Shapes
  2. Survey
  3. Any other survey files (property owners, utilities, etc.)
  4. Roadway design/Ph_Design (**Copy or reference** design features into PH_Sheet)
  5. Drainage design
  6. PH_Sheet (to be used as plot file)

Note: Files plot in order from the top to bottom of the list, i.e. the Ph_shapes file will plot on top of the aerial photo and the survey will plot on top of shapes, etc.
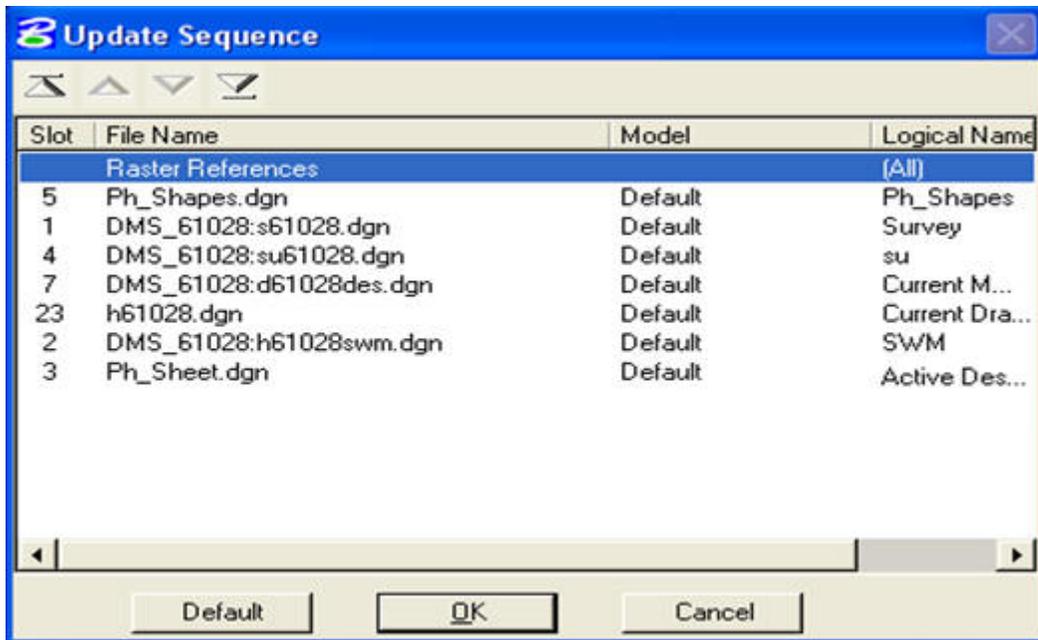
- Save MicroStation settings. The update sequence will be lost if settings are not saved.

Create a PDF in MicroStation as described below and then double check or have someone else back check all information at this time.


G.1.7   Plotting Public Hearing Displays

Place a *Fence* around your sheet to print the file, after all the information is complete and you have checked to make sure that the *Clip Level* (shown dashed) and all levels that you do not want displayed are off. Make sure that the *printer icon* is checked in MicroStation *Level Manager* on all levels you want shown and that no file or information that you want printed is on the *default level.*
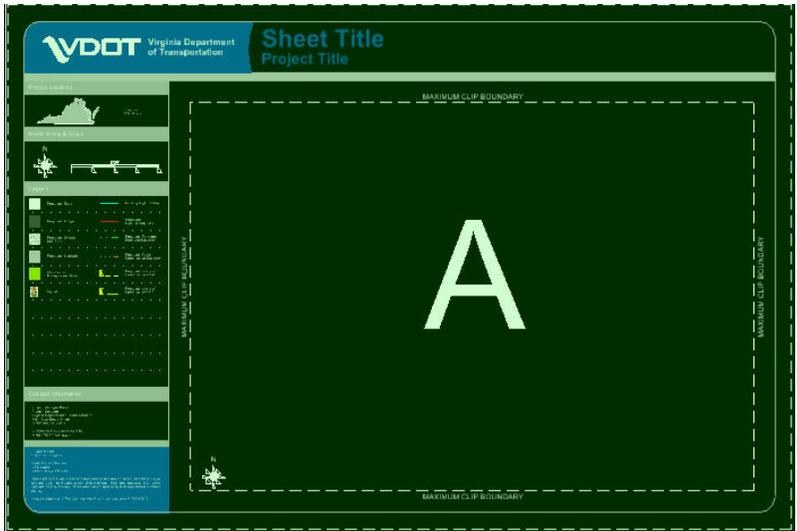
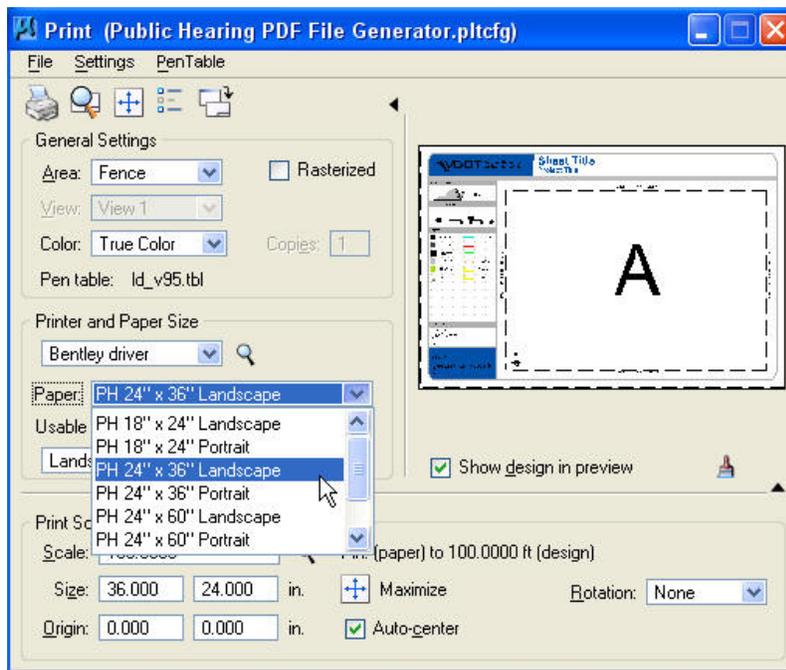Click on *file* then *print* the following window will appear. If you have an hmr file attached, check *Rasterized*.
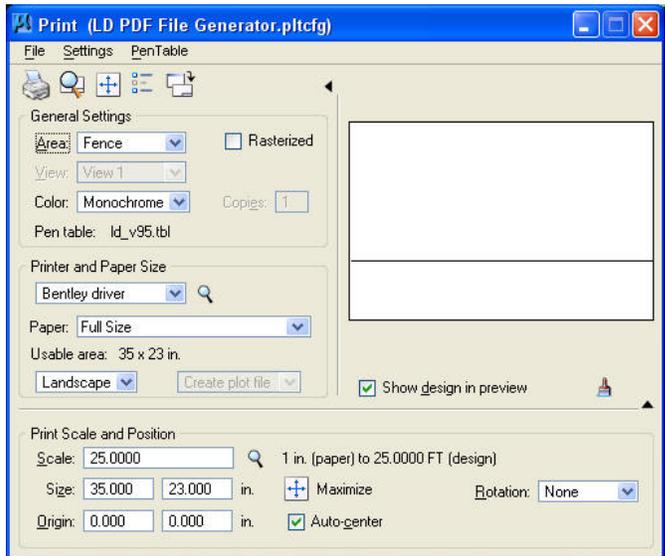
Pick the **Public Hearing PDF File Generator**:
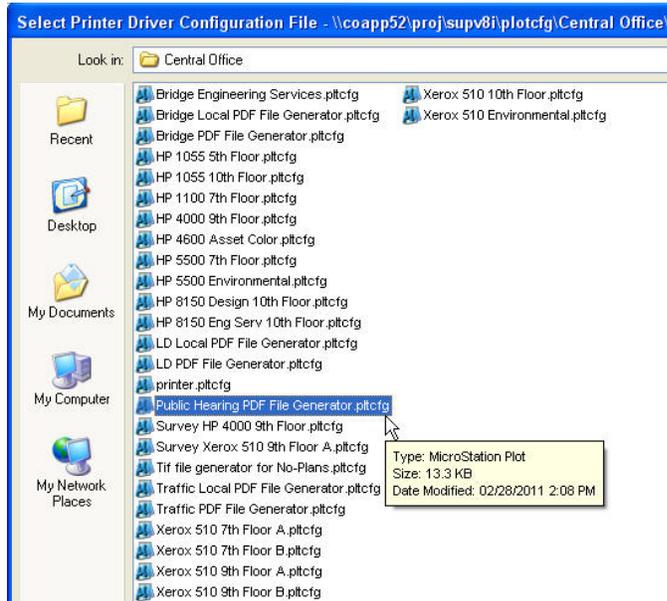
Go to *Paper* and select the *sheet size*, if the display does not fill the preview box click on *Maximize* at the bottom of the dialogue box. The print scale should reflect your design scale, i.e. 25, 50, 100, etc.

Go to *print*, once your PDF is created you may save it to your desktop or //coapp52/proj/pdf directory and then copy it to your PH-UPC folder. You may then **Plot this file or prepare it to be sent to a commercial print company.**

G.1.8   Examples of acceptable Public Hearing Displays
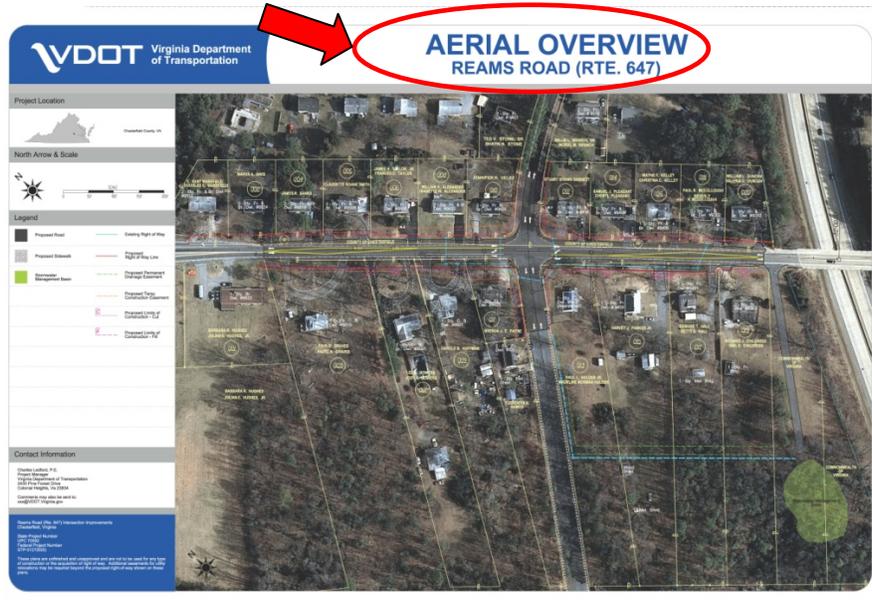
Photographs

Bridges

Isometrics

G.1.8.1   Don'ts

Do not center text in Heading it should be Left Justified.

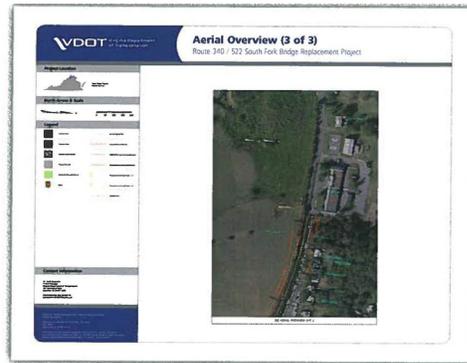*Do not* cover entire board from border to border, White space should surround display

Do not outline houses unless they cannot be seen clearly in photo.

Do not use different text colors. Do make sure white space is outside of clip boundary.
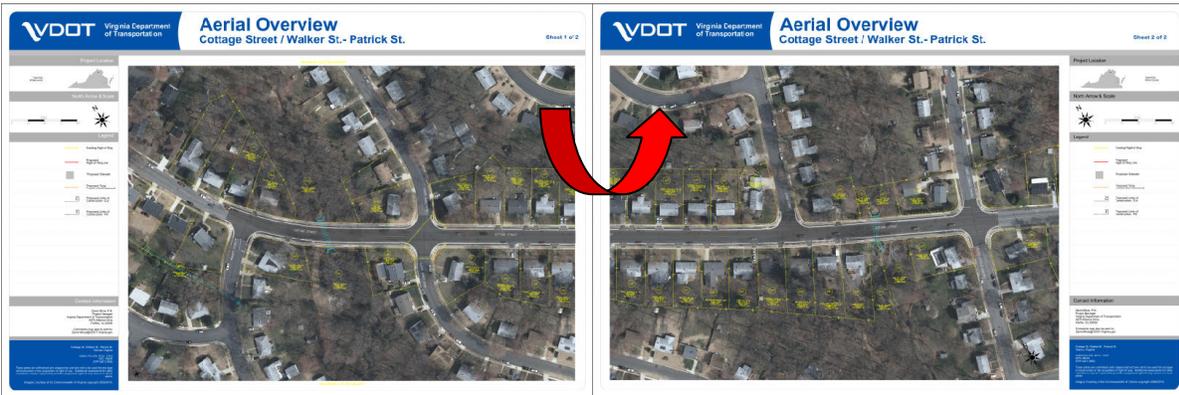
Do not use too much white space resulting in too many boards

Do not use old Public Hearing Display Layout.

G.1.8.2   Do's

Do line up matchline when using multiple boards or use larger board for entire site.

Do use one long board if space allows, but more vertical information will be lost.

Do show cell insertion scale and drawing scale on dgn file outside of print area.

Do use these types of images at Public Hearings.