



Name:	ODOT_Notes.mvba
Tested MicroStation Version:	PowerGEOPAK v8i (Select Series 4)

Description

The ODOT_Notes.mvba is a Visual Basic Application developed to assist in creating General Note sheets. It is primarily intended to place ODOT standard plan notes using the ODOT provided standard note files (*.not). Additionally, the application will allow placing notes with text entered by the user or copied from the Windows clipboard.

This program is not a WYSIWYG (What You See Is What You Get) editor and consequently does not work or look as expected! Please take the time to read through this documentation.

The file can be found in the following place:

ODOTcadd Standards: ODOTcadd/Standards/vba

The main purpose of this documentation is to explain how to use this application.

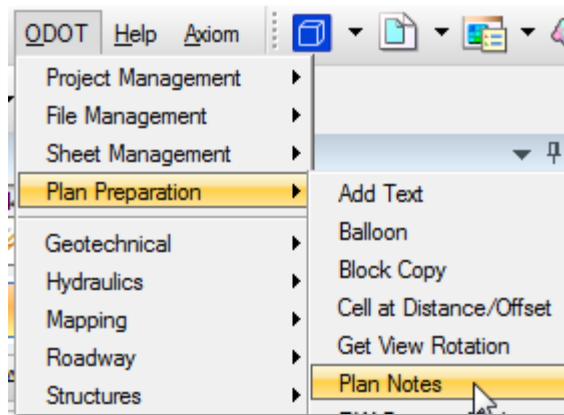
Loading the Application:

To load the ODOT_Notes.mvba open MicroStation and select it from the ODOT pull-down menu.

ODOT > Plan Preparation > Plan Notes

Or by entering the following keyin command.

vba load ODOT_Notes.mvba; vba run runNotes

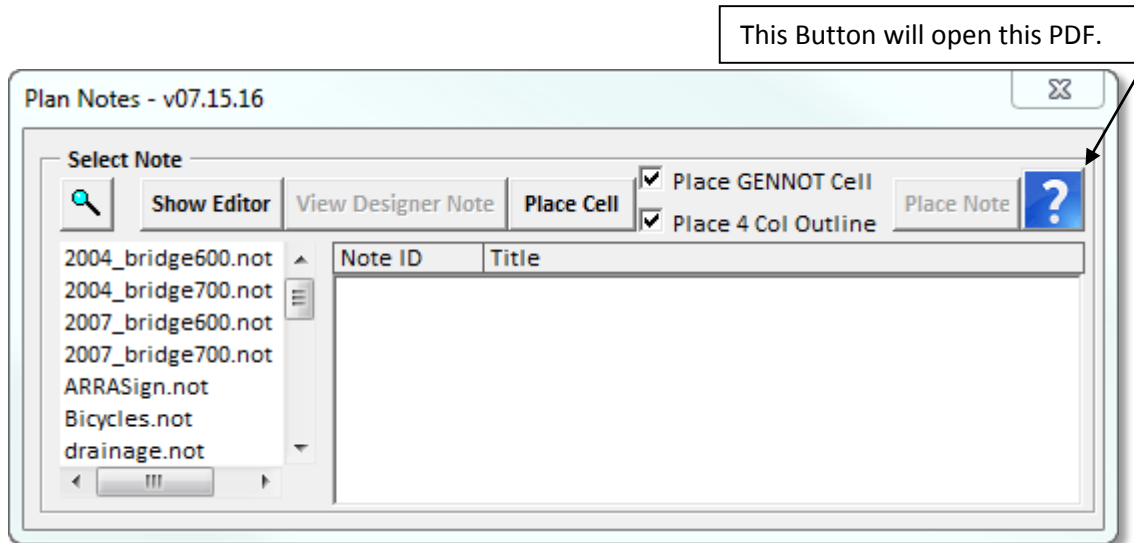


The active model must be a 2D sheet model in order for the application to launch.



Application Operation

When loaded the dialog shown below will appear.



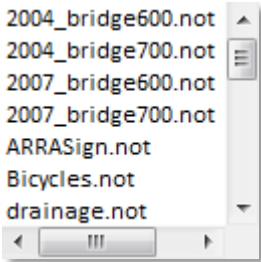
There are two main sections of this application, the [Select Note Section](#) and [Note Editor Section](#). The following sections will describe all the features and functions of this application.

Select Note Section:


This section will allow the user to select and place ODOT standard notes.

Note Files List Box

When the application is initially loaded it populates a list box (imaged below) with all the standard .not files. These files are read from a website. This was done to allow the note files to be updated without having to post an update to the standards. If the user does not have internet access the application will



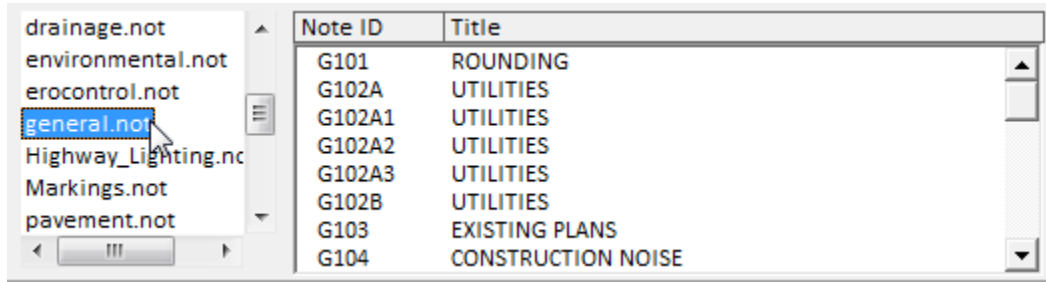
load the not files found in the ODOTcadd standards at this location, *ODOTcadd\Standards\ODOT\Notes*. As well as any .not files found in the local folder at this location, *ODOTcadd\Local\Notes*. If a .not file is not at one of the two directories mentioned above the user can add note files by clicking on

the magnifying glass button  in the top left area of the dialog. This will open a file browser where the user can select additional note files to load. The selected note file will only be added to the list box if the file extension is .not and the file has not already been previously loaded into the list box. This list

box supports scroll wheel functionality.

Notes List Box

When a note file is selected from the [Note Files List Box](#) all the notes in the file are listed in the Note list box. The Note List Box has two columns. The Note ID column and the Title column. An example is imaged below.

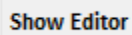


The image above shows the Notes List Box filled out with all the notes found in the general.not file that was selected from the [Notes Files List Box](#). Once a note is selected in the Notes List Box the [Place Note Button](#) will be enabled. To view and edit the selected note the user can select the [Show Editor Button](#) or double click on the note to show the [Note Editor Section](#).

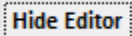
This list box supports scroll wheel functionality.

Show/Hide Editor Button

This button will toggle between Show Editor and Hide Editor. When the Note Editor Section is hidden the user will see the button displayed as imaged below. This is the default when the application is initially loaded.

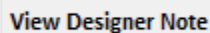


When selecting this button the dialog will resize to display the [Note Editor Section](#). When the [Note Editor Section](#) is displayed this button will change as imaged below.



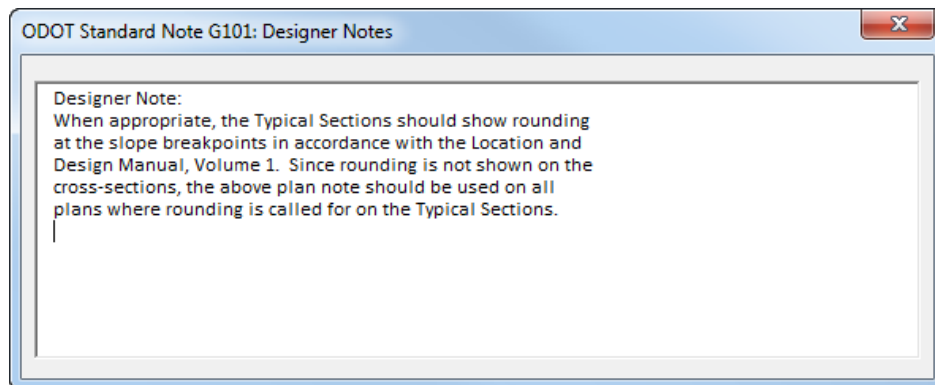
When selecting this button the dialog will resize to hide the [Note Editor Section](#). After selected this button and the [Note Editor Section](#) is hidden, the button will toggle to say Show Editor as imaged above.

View Designer Note Button



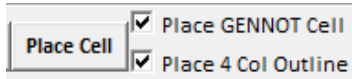
The View Designer Note Button will only be enabled if a note is selected in the [Notes List Box](#) and that note has a designer note. When selected the Designer Note dialog will open and populate with the designer note for the selected note.

This dialog is imaged below. The dialog's title is populated with the note ID for the selected note and the text box is populated with the designer note for the selected note.



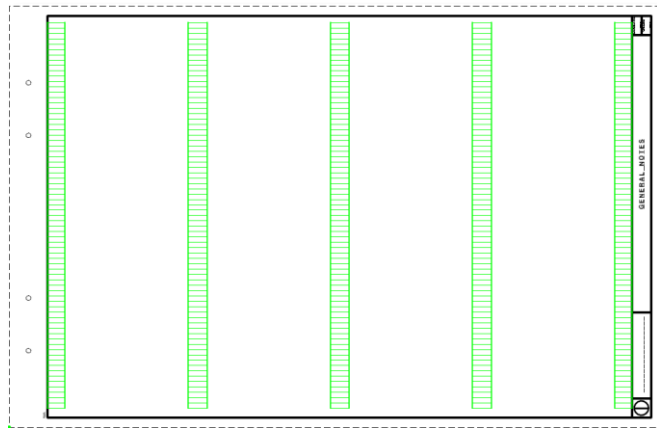


Place Cell Button

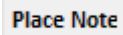


The button is only enabled if at least one of the two checkboxes immediately to the right of this button are checked on. These two checkboxes are the Place GENNOT Cell and Place 4 Col Outline.

The Place Cell button will place a blank General Notes sheet cell if the Place GENNOT Cell check box is checked on as well as the four column outline if the Place 4 Col Outline check box is checked on, as imaged below. The graphics are always placed at a scale of 1:1 regardless of the model annotation scale value.



Place Note Button

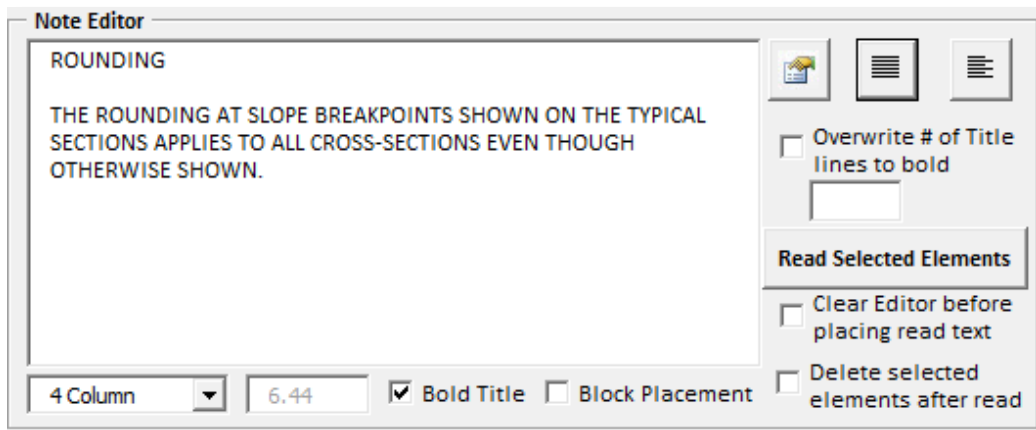


The Place Note Button is only enabled when the [Note Editor Section](#) is not blank. When this button is selected, the highlighted text in the Note Editor will be sent to MicroStation and follow the user's cursor. The highlighted text is sent to MicroStation as single line text elements with a line spacing that follows ODOTcadd standards (0.28 times the model annotation scale value). The text elements are placed on the SH_TEXT level with annotation scale enabled. If nothing is highlighted in the Note Editor then all the text in the note editor is sent to MicroStation. The User should issue a data point to place the text elements in the file. The User should snap to the 4COL outline to place the text elements appropriately.

*The text in the Note Editor may look different from what is actually place in MicroStation. This editor is not WYSIWYG. Please read the [Note Editor Section](#) and [Tips and Cautions](#) for more details.

Note Editor Section

To display this section, use the [Show Editor Button](#), or double click on a note in the [Notes List Box](#).

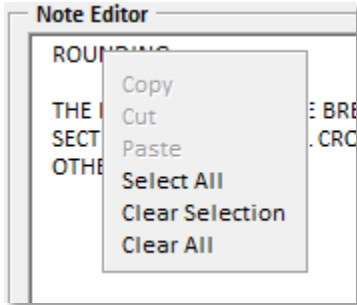




Note Editor Text Box

When a note is selected the Note Editor Text Box is populated with the text that makes up that note. The note files have been set up so that each line of the note does not exceed the width of the standard 4 column. They are not by default block justified. Block justification can be achieved, see the [Block Justification Button](#). This text box can be used to edit the selected note or to enter user defined notes.

This text box does support copy and paste functions. There is a simple right click menu as imaged below.



Cut, Copy and Paste

These options work exactly the same as in a typical word processor application, with the exception that paste only applies to text content. The program ignores attempts to paste other formats, such as graphics, from the clipboard. The cut and copy options are only available when text is selected; they are grayed out otherwise.

Select All, and Clear All

These two selections work very much as expected. The former highlights all the text in the editor and the latter deletes it all.

Clear Selection

This option is used to clear the selection area. The text is retained in the editor and is no longer selected.

Text Justification

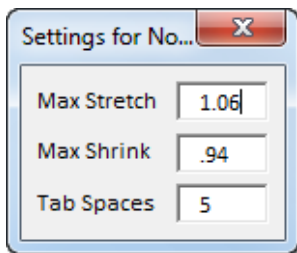
There are two options for justification, Full (block) or Left justification.

Both methods start by breaking the selected text into paragraphs, with all intervening carriage return-line feeds removed (hence, the requirement for a blank line between paragraphs within the selected text). At this point, each paragraph is represented, internally, as a single continuous line of text. For each such line, the program removes any extraneous spaces within the line, and then breaks it into multiple lines, each line fitting within the defined [column width](#) (plus a little, if necessary, as defined by the shrink or stretch limit). For full justification, the program does the extra step of adding “padding” spaces to these lines as necessary. Lastly, the selected text in the editor is replaced with the justified lines.

Settings Button



A line of MicroStation text cannot be manipulated, at least not by VBA or mdl, at letter-by-letter level for the width adjustments are necessary for the type of block justification that is provided by a word processor application. Therefore, once a paragraph of text is broken (and “padded”, if necessary) into lines of text that are a “best fit” to the desired width, they may need an amount of stretching or shrinking once they are converted to MicroStation text to actually achieve full justification upon placement.



The program has default limits for any such shrinking and stretching. The user may change these values as desired. Merely click on the Settings icon to access the Settings dialog, which is shown here with the default values displayed.

The user may also note that there is a setting for the number of spaces a tab character is to represent. By and large, the user is cautioned to avoid using tabs if at all possible.



Block Justification Button



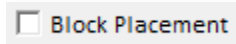
When this button is selected, the highlighted text in the [Note Editor Text Box](#) will be processed for block justification. This will format the highlighted text and add line breaks where needed then add spaces to achieve a block placement. Note that it may not appear block justified in the text box, when in fact it will be at the time of placement. This effect can also be achieved with the [Block Placement Check Box](#). Note that a blank line is used to indicate a new paragraph.

Left Justification Button



When this button is selected, the highlighted text in the [Note Editor Text Box](#) will be processed for left justification. This will format the highlighted text and add line breaks where needed to be within the set [column width](#). Note that a blank line is used to indicate a new paragraph.

Block Placement Check Box

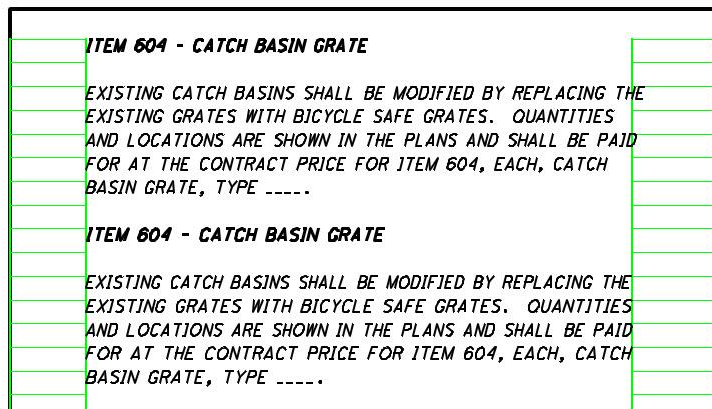


The check box merely turns the stretch/shrink processing for a line of text's font width ON or OFF. The limits set in the [Settings menu](#) determines the largest stretch factor and the lowest shrink factor allowed.

For example, consider a line of text, as "best" broken for justification that has a MicroStation text element width less than the desired column width. If the option is checked ON, the text element's width will be enlarged by the factor (desired width ÷ element length) provided the computed factor is less than the maximum stretch factor that was set. If the computed factor exceeds the limit, then the maximum stretch value will be applied instead.

With the block placement option OFF, the selected text is converted to MicroStation text without any changes in the text element's width.

In the example below, the second note was placed with **Block Placement** toggled on.



Column Width

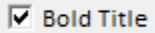


The Column Width control is a drop-down that allows the user two choices: the ODOT standard 4-column note sheet width (6.44 master units (mu) in a 1:1 scale sheet) and; "User Defined", which is used to indicate a user-defined width.



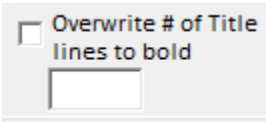
With the 4-column option, the actual width measurement is set by the program and cannot be changed by the user. When the user selects the custom option, however, he/she is expected to enter the desired width. Typically, that should be the distance measured in MicroStation for the column. User-entered widths are to be within a certain range; for a 1:1 scale, the limits are 5.0 mu to 28.7 mu. These values represent (about) a 5 column up to a 1 column arrange on a standard ODOT sheet.

Bold Title Check Box



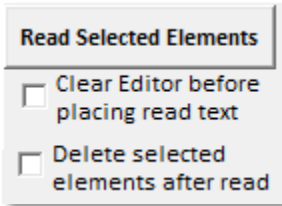
With this check box checked on, the Title lines will be placed with a weight value of 2. If the option is checked off, all the text is placed in the MicroStation file with a weight value of 1. This option is useful for “bolding” the title of a note. The number of lines to bold is set when a note is selected. For user defined notes see [Overwrite # of Title lines to Bold Check Box](#) to set the number of lines to bold.

Overwrite # of Title lines to Bold Check Box



When checked on the value placed in the text box (shown to the left) will be used to set the number of lines to place with a weight value of 2. This will overwrite the value set when the note was selected. This is mainly intended for user defined notes with the number of title lines is not known. The text box shown to the left will only accept whole numbers as values.

Read Selected Elements Button



This button can be used to read selected text elements into the [Note Editor Text Box](#). Only text elements or text node elements will be read into the text box. The selected elements are first sorted from lowest Y value to Highest Y value to insure that the text placed into the text box in the correct order. Each line of selected text is placed on a new line in the text box. The code will also add blank lines when the Y values between two elements differ more than 0.28 times the annotation scale. The selected text is read into the text

box at the current selected location in the text box.

If the Clear Editor before placing read text check box is checked that the [Note Editor Text Box](#) will be cleared.

If the Delete selected elements after read check box is checked then the selected MicroStation elements will be deleted after being read into the [Note Editor Text Box](#).

Tips and Cautions

Tips for Justification

The user do not have to justify all the text at once, or any text at all for that matter. The user doesn't even need blank lines between the paragraphs as long as he/she does the justification one paragraph at a time.

Consider the following example: A user has two paragraphs that are not separated by a blank line, then some column text, then two paragraphs that are separated by a blank line.

If the user tried to justify the first two paragraphs in the same text selection, the program is going to think it is only one paragraph – not good. Instead, select the first paragraph, justify it, then select the second paragraph and justify it.



The user really doesn't want to justify his/her column text – the program will take out all carriage returns and extra spaces and otherwise treat it as a single paragraph.

Select the last two paragraphs and justify them.

The algorithm that breaks a paragraph into lines considers both spaces and hyphens to be allowable break points.

Tips for Text Entry and Editing

When entering custom notes, generally the user can use all printable characters, the spacebar, and the Enter key. The user may use the keyboard's editing and arrow keys. The Backspace key will delete the last character entered and any highlighted text can be deleted with the Delete key. Although the Tab key can be used for text entry/editing, there is no way to control the number of spaces that the editor allows for a tab, regardless of the tab spaces setting. In other words, the amount of space the editor shows for a tab is *not* what the user will get in MicroStation. Therefore, it is advised that the user's use spaces rather than tabs.

For text that is entering manually, the user does not have to include carriage return-line feed except to define the end of a paragraph, much as typical word processor would. The justification routines will take care of entering the line breaks for a best-fit for column size and the justification choice. The user should, however, provide a blank line between paragraphs.

Column information should be entered with spaces rather than tabs, but there still is no guarantee that the results, as translated to MicroStation text elements, will be exactly what the user thought it would be, especially if the user accidentally includes the column text with paragraphs that are to be placed with block justification on.

Tips for Text Placement

- The user does not have to place all the text from the editor at once. The user may pick and choose how to group placement selections – and whether or not to use blocking – as best serves the purpose at hand.
- Column text and left justified text should never be placed with **Block Placement** toggled on.
- Consider a hypothetical note whose first paragraph has block justified, followed by some column text, which, of course, was not justified, and a following paragraph which has also been block justified. The user would select the first paragraph, place it with blocking on, select the column text, place it with blocking off, then select the last paragraph and place it with blocking turned back on.

The user can copy in text from just about anywhere. In fact, to edit some existing MicroStation text, merely select the text in MicroStation, use the MicroStation menu commands Edit>Copy to put the selected text in the clipboard, then go into the notes editor, right click, and select paste from the pop-up menu.

Cautions

There are, of course, a number of things about which the user should be cautious:



- The use of tabs: as stated elsewhere in the document, there is no way to control the number of spaces that a tab takes up within the notes editor. Even though the user may specify the number of spaces a tab takes up in MicroStation, the discrepancy between what is shown in the editor and what is shown in MicroStation can be considerable. It is advised that tabs be used, if at all, merely for the left-most indent for column text.
- Copying from PDF text: depending upon the software with which the file was created, and the font used in the original text document, the copy may not appear in the notes editor as anything resembling text. Text copied from PDF documents made in Adobe Acrobat has no problems, however, a PDF file created via the PDF995 printer from a Word document that is done in Tahoma font will not be “readable” as recognizable characters. If the original Word file is in, say, Arial font, though, the text in the resulting PDF works just fine.
- Hyphens in the standard note files: the existing standard notes files have pre-determined line breaks, and often have hyphenated words in order to make better line length fits. If the user re-justifies the text in the notes editor, the hyphens may not remain at the end of the line due to the difference in the two programs’ justification algorithms. The user should, ideally, remove all such hyphens from the text before the initial justification and then insert any the user feels will improve the “fit” after a trial placement. Also, please be aware that the standard notes generally contain a space after a hyphen; that should not be done with this editor.
- Fractions: if the user has stackable fractions in their text (ODOT font 31 and font 30 will stack halves, quarters, eighths, sixteenths and thirty-seconds when the decimal value of the fraction is less than 1), an extra space is needed ahead of the fraction for it to stack properly in MicroStation without becoming one with the preceding word. The justification algorithms typically add this additional space. The user must manually add the leading additional space when the fraction (including its units symbol, if any) is not followed by a space or when justification is not applied.
- Edited MicroStation Text: Copying in a paragraph of MicroStation text where one or more lines have been edited since initial creation will typically result in the lines being out of order in the editor. Even though everything looks OK when viewing the clipboard, items that were originally MicroStation elements come out of it in the order in which they were created/edited. There is no means by which this can be changed programmatically. When the user experiences such problems, the user will have to cut and paste to get the lines of text into their correct order.

Contacts

For any questions, suggestions, or problem with this application please contact the ODOT Office of CADD and Mapping Services by use of the following form on the ODOT website:

<http://www.dot.state.oh.us/Divisions/Engineering/CaddMapping/CADD/Pages/Suggestions.aspx>