OHDOT_Notes.mvba

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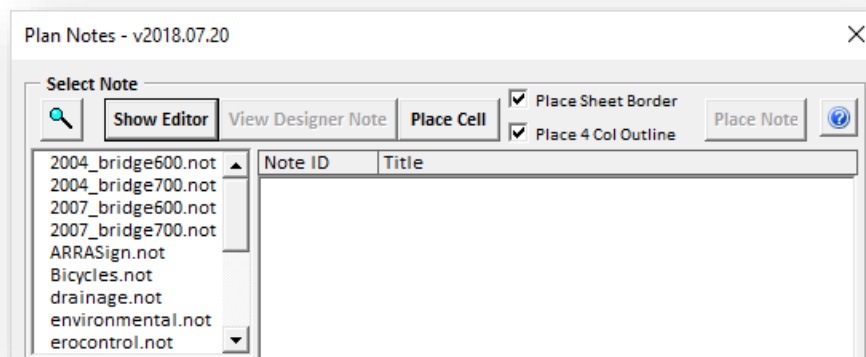
This program is not a WYSIWYG (What You See Is What You Get) editor and consequently does not work or look as expected! Please take the time to read through this documentation.

Loading the application:

The application is loaded in MicroStation Connect Edition or OpenRoads Designer Connect Edition by selecting the **Plan Notes icon** from the Ohio DOT Workflow.

Application Operation:

When the application is accessed, a dialog like the example below is opened.

There are two main sections of this application, the **Select Note** section and **Note Editor** section.

Show Editor/Hide Editor

The **Show Editor** button is selected to display the **Note Editor** portion of the dialog. If the **Note Editor** is currently displayed, the **Hide Editor** function is available.

Select Note Section:

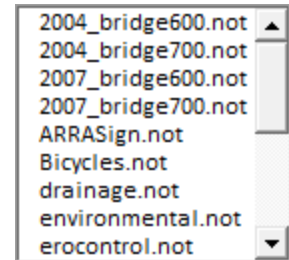This section will allow the user to select and place ODOT standard notes.

Note Files List Box

When the application is initially loaded it populates a list box (imaged below) with all the standard .not files. The note files are read from the ODOT website. This allows ODOT to update the note files as needed, without an update to the standards.

After the .not files are added from ODOT website it will also add any .not files found at the directories specified in the OHDOT_NOTES configuration variable as long as the name does not match any of the notes already loaded into the list box. OHDOT_NOTES is already set within the OHDOT workspace to include the following directory:

> ..\OHDOT\Standards\OHDOT Utilities\Notes\

If there are additional .not files or custom .not files at other locations then append the OHDOT_NOTES variable within a .cfg file in the ..\OHDOT\Local\config\ folder. An example of appending the variable is shown below.
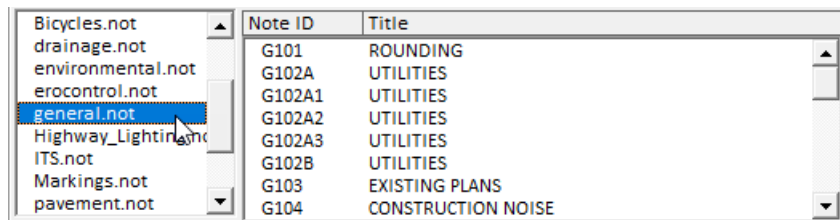
> OHDOT_NOTES > $(_USTN_WORKSPACEROOT)Local\Notes\

Note this variable will work within ProjectWise as well.

The user can also manually select note files by clicking on the magnifying glass button in the top left area of the dialog. 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.
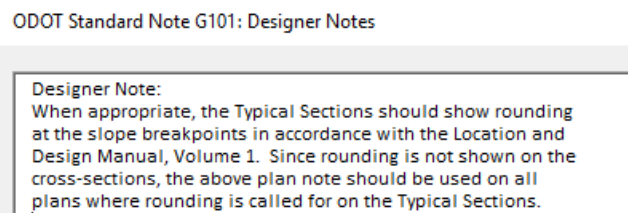
Notes List Box

When a note file is selected from the list, 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** filled out with all the notes found in the general.not file that was selected from the **Notes Files List**. Once a note is selected in the **Notes List** 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.

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 **Place Cell** button is used to place a blank general notes sheet border if **Place Sheet Border** is checked on. A four column outline for the notes is placed if the **Place 4 Col Outline** option is checked on. The graphics are always placed at a scale of 1:1 regardless of the model annotation scale value.
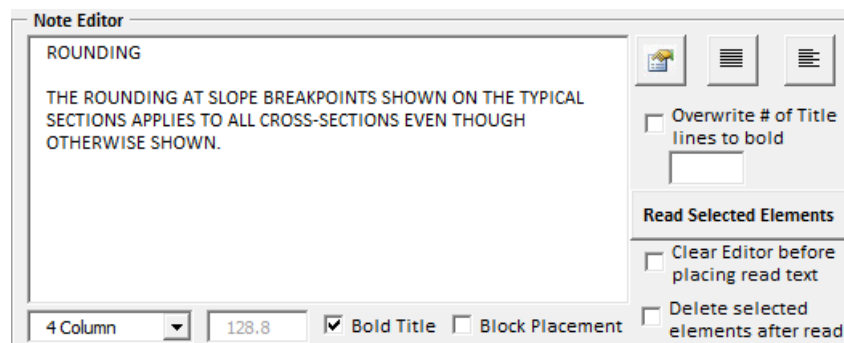
Place Note Button

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 according to ODOT's CADD 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 than what is placed 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, select the Show Editor button, or double click on a note in the **Notes List**.
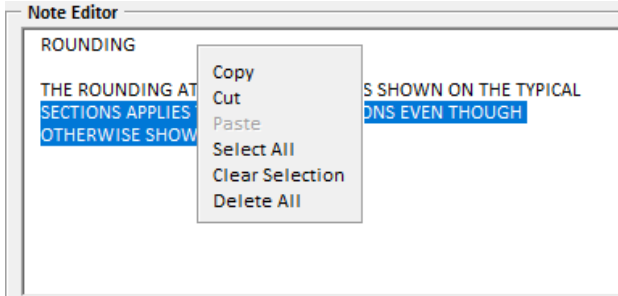

Note Editor Text Box

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 outline. The notes are not by default block justified. Block justification can be achieved, see the **Block Justification** button section below. This text box can be used to edit the selected note or to enter user defined notes.

Note Editor Right-Click Menu

The note text box does directly support cut, copy and paste functions. These functions are available by a menu that is accessed by a right-click within the text box area.

These options work 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.
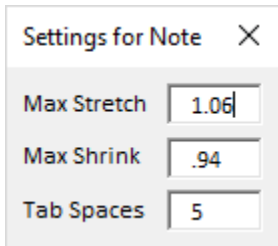
Text Justification

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 achieve full justification upon placement.

The program has default limits for any such shrinking and stretching. The user may change these values as desired. 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 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.
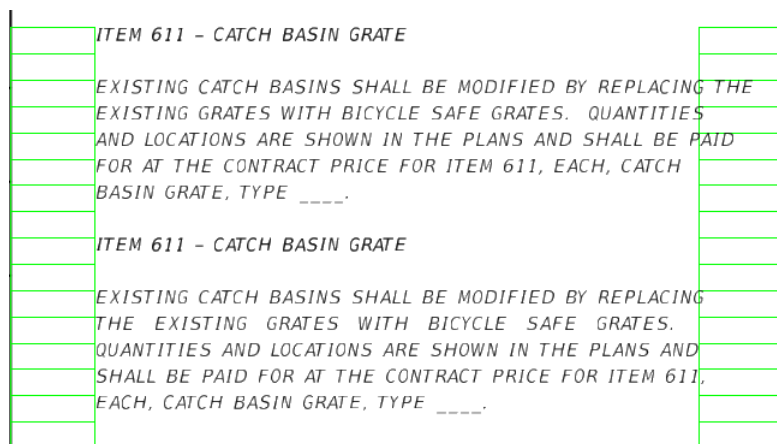
Block Placement Check Box

The check box 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 **Block Justified** 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.
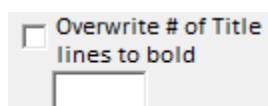
With the 4-column option, the actual width measurement is set by the program and cannot be changed by the user. When the user selects the custom option, however, he/she is expected to enter the desired width. Typically, that should be the distance measured in MicroStation for the column. User-entered 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 bold font. If the option if checked off, all the text is placed in the MicroStation file with a weight value of 1.

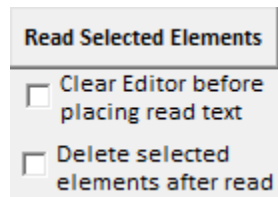## Overwrite # of Title lines to Bold Check Box

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 bold font. This will over write 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 MicroStation 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 ensure 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 check 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 does 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 if 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 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, several 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.
- Hyphens in the standard note files: the existing standard notes files have pre-determined line breaks, and often have hyphenated words 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.

Updates:

Version 2018.07.20

Initial release for MicroStation and OpenRoads Designer Connect Edition

Version 2020.03.25

Updated to use OHDOT_NOTES configuration variable to find what directories to look at to find .not files. Which in return adds support for .not files within ProjectWise.

Version 2021.11.05

Fixed clipboard problem with the justify buttons.
OHDOTCEv02 fix only: corrected setting the text style to use the new text style name.

Contacts

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

https://odot.formstack.com/forms/cadd_servicerequest