

Configurations For Consultant CADD Managers

**Tennessee Department of Transportation
Roadway Design Division**

Configurations for Consultant CADD Managers

1. Introduction

Information in this document is based on software versions: MicroStation V8i (SELECT Series 2) version 08.11.07.443, Geopak V8i (SELECT Series 2) version 08.11.07.615, Office 2010 and ProjectWise Interplot Organizer V8i version 08.11.07.420 on the Windows 7 operating system.

This document is intended as a guide for consultant CADD managers or IT personnel to use when setting up configurations for their personnel to apply T.D.O.T. Roadway Design Division standard files on their computer systems.

Geopak's Dependency on MicroStation

The T.D.O.T. Roadway Design Division standard files for Geopak will not function correctly when downloaded by themselves. MicroStation standard files must be downloaded as well. Those files contain configurations, programs and other files called by various Geopak standard files.

2. Configuration Files

The Roadway Design Division at T.D.O.T. uses configurations set at a default level. In other words they are always in place by default. Since consultants do project work for various customers this may not work for them. This section describes ways of dealing with this issue and maintaining functionality of the standard files in the software.

Our configuration file for V8i is very comprehensive since all standards now reside outside the product folders. It utilizes variable names for the MicroStation and Geopak standards folders and only has 3 specific folder paths specified.

MicroStation & Geopak - TDOT.cfg

Default settings in TDOT.cfg:

```
#-----#
# TDOT.cfg - TDOT Roadway Design Division Standards Configuration File for MicroStation V8i #
#-----#

#=====#
# This file sets MicroStation configurations          #
# for TDOT Roadway Design Division's Use           #
# Any changes made to this file may prevent access to      #
# TDOT Roadway Design Division standards.           #
#=====#

# _____ MicroStation _____

# TDOT Design Division MicroStation standards folder path
_TDOT_MICROSTATION_STANDARDS = C:/Users/Public/MicroStation Standards/

# Special environment settings

# When compressing DGN files, no options on by default
MS_COMPRESS_OPTIONS = -ALL

# Include full path in Title Bar
MS_FULLPATHINTITLEBAR = 1

# When updating levels do not delete unused levels
MS_UPDATE_KEEP_UNUSED_LIBRARY_LEVELS = 1

# Setting to allow attachment of large digital image files
MS_RASTER_LOADMODE = 3

# Standard folders & files

MS_SYMBRSRC > $_TDOT_MICROSTATION_STANDARDS)symb/*.rsc

MS_SEEDFILES < $_TDOT_MICROSTATION_STANDARDS)seed/
MS_DESIGNMODELSEED < $_TDOT_MICROSTATION_STANDARDS)seed/seed2d.dgn
MS_DESIGNSEED = $_TDOT_MICROSTATION_STANDARDS)seed/seed2d.dgn

MS_CELL < $_TDOT_MICROSTATION_STANDARDS)cell/
MS_CELLLIST < $_TDOT_MICROSTATION_STANDARDS)cell/STDS.CEL
MS_CELL_SEEDFILE < $_TDOT_MICROSTATION_STANDARDS)seed/English2dCell.dgn

MS_PLTCFG_PATH < $_TDOT_MICROSTATION_STANDARDS)pltcfg/
MS_PENTABLE = $_TDOT_MICROSTATION_STANDARDS)pltcfg/
MS_PLOTDLG_DEF_PENTABLE = $_TDOT_MICROSTATION_STANDARDS)pltcfg/TdotPlot.tbl
```

```

MS_PENTABLE_DATE_FORMAT=%c

MS_DATA < $( _TDOT_MICROSTATION_STANDARDS)data/
MS_LEVEL_LIB_DIR < $( _TDOT_MICROSTATION_STANDARDS)data/
MS_REMAP_CSVFILE < $( _TDOT_MICROSTATION_STANDARDS)data/TDOTV8main.csv
MS_V7TOV8_CSVNAME = $( _TDOT_MICROSTATION_STANDARDS)dgnlib/TDOTV8mainOnTheFly.csv
MS_V7_LEVEL_NAME_PREFIX = V7Level

MS_VBASEARCHDIRECTORIES < $( _TDOT_MICROSTATION_STANDARDS)vba/

MS_TDOTDGNLIB_PATH = $( _TDOT_MICROSTATION_STANDARDS)dgnlib/

%lock MS_DESIGNSEED

# _____ Geopak _____

# TDOT Design Division Geopak standards folder path
_TDOT_GEOPAK_STANDARDS = C:/Users/Public/Geopak Standards/

# Geopak resource file folder
GPK_RSCDIR = C:/Users/Public/Geopak Resource Files/

# Force all Geopak configuration variables to supersede RSC file settings
GPK_FORCE_ALLCFGVARS = 1

# Setting to create level if not found
GPK_LEVEL_CREATE_NEW = 0

# Setting to allow Geopak attributes to show with Accusnap
GPK_ACCUSNAP_IDENTIFY_ELEMENTS_AUTOMATICALLY = 1

# Setting to control station ticks on alignments displayed from D&C Manager
GPK_DDB_STA_SMALL_TICKS = 0 # ticks left label left
GPK_DDB_STA_LARGE_TICKS = 2 # ticks both label left

# Suppress warning for shapeless in proposed typical sections
GPK_TYPICAL_SUPPRESS_SHAPELESS_MODE_VALIDATION_PROMPT = 1

# Suppress warning for criteria file overwrite in proposed typical sections
GPK_TYPICAL_SUPPRESS_CRITERIA_FILE_OVERWRITE_PROMPT = 1

# Standard folders & files

# Geopak Databases: D&C Manager DDB, Drainage Library, COGO SMD
GPK_ACBOOK_DDBFILE < $( _TDOT_GEOPAK_STANDARDS)tdot.ddb
GPK_DRGPREF_DEFDRLIB < $( _TDOT_GEOPAK_STANDARDS)TDOTEnglish.dlb
GPK_SURVMNGR_SMDFILE < $( _TDOT_GEOPAK_STANDARDS)TNDOT.smd

# COGO Visualization preferences
GPK_VISUALPREF_SMD < $( _TDOT_GEOPAK_STANDARDS)TNDOT.smd
GPK_VISUALPREF_PLOTSCALE = 50.00000

# Superelevation design control files
GPK_SUPER_PREFDIR < $( _TDOT_GEOPAK_STANDARDS)
GPK_SUPER_EDIR < $( _TDOT_GEOPAK_STANDARDS)
GPK_SUPER_LENGTHDIR < $( _TDOT_GEOPAK_STANDARDS)

# Design control file for vertical curves
GPK_PROFILE_CURVATURE_TABLE = $( _TDOT_GEOPAK_STANDARDS)tdot01.kvl

# 3PC programs location
GPK_DC_3PCDIR < $( _TDOT_GEOPAK_STANDARDS)3PC/

```

```

# XS criteria programs location, typical section controls
GPK_MY_CRITERIADIR      < $( _TDOT_GEOPAK_STANDARDS)criteria/
GPK_TYPICAL             < $( _TDOT_GEOPAK_STANDARDS)criteria/
GPK_TYPICAL_EDITOR     < C:\WINDOWS\system32\write.exe

# Plan & Profile sheet set up library and folder location
GPK_SHEETCLP_SHEET_LIBRARY_NAME = $( _TDOT_GEOPAK_STANDARDS)tdot.psl
GPK_SHEETCLP_SHEET_LIBRARY_DIR  = $( _TDOT_GEOPAK_STANDARDS)

# Geopak Corridor Modeling Databases for Roadway Designer: Template Library and Styles DDB
GPK_RD_Template_Library < $( _TDOT_GEOPAK_STANDARDS)TDOTDefault.itl
GPK_ACBOOK_DDBFILE_STYLES < $( _TDOT_GEOPAK_STANDARDS)TDOT_Styles.ddb

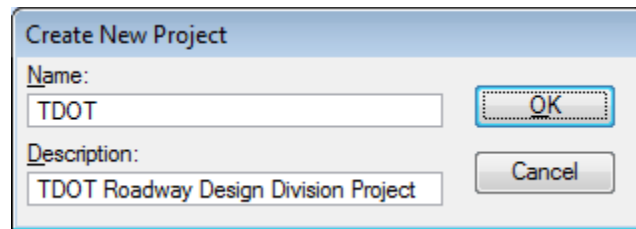
# default drainage cell library used by Geopak
GPK_DRGPREF_DEFCELLLIB < $( _TDOT_MICROSTATION_STANDARDS)cell/STDS.CEL

# Label Style Files
GPK_LABELER_PLANSTYLEFILE = $( _TDOT_GEOPAK_STANDARDS)tdotdef_plan.lsf
GPK_LABELER_XSSTYLEFILE   = $( _TDOT_GEOPAK_STANDARDS)tdotdef_xs.lsf
GPK_LABELER_PROFSTYLEFILE = $( _TDOT_GEOPAK_STANDARDS)tdotdef_prof.lsf
GPK_LABELER_DRGSTYLEFILE  = $( _TDOT_GEOPAK_STANDARDS)tdotdef_drainage.lsf

```

Setting up TDOT.cfg as a project level configuration

Go to MicroStation Manager and in the Project field at the bottom pick **New**. In the **Create New Project** dialog enter the desired project name and description. Click **OK** to set up the project.



When a project is created, a project level configuration file is generated using the project name with a pcf extension. In our example this file would be named TDIOT.pcf and found at C:\ProgramData\Bentley\MicroStation V8i (SELECTseries)\Workspace\Projects

Default settings in TDOT.pcf.

```

#=====
# Project Configuration File - $Revision: 1.2 $
#=====

_USTN_PROJECTDESCR = TDOT Roadway Design Division Project

#-----
# Set search paths.
#-----
MS_DEF           < $( _USTN_PROJECTDATA)dgn/
MS_CELL         < $( _USTN_PROJECTDATA)cell/
MS_CELLOUT     = $( _USTN_PROJECTDATA)cell/
MS_CELLLIST    < $( _USTN_PROJECTDATA)cell/*.cel
MS_CELLSELECTORDIR = $( _USTN_PROJECTDATA)cell/
MS_SEEDFILES   > $( _USTN_PROJECTDATA)seed/
MS_SYMBRSRC    > $( _USTN_PROJECTDATA)symb/*.rsc
MS_SETTINGSDIR < $( _USTN_PROJECTDATA)data/
MS_SETTINGSOUTDIR = $( _USTN_PROJECTDATA)data/
MS_DGNLIBLIST  < $( _USTN_PROJECTDATA)DGNLIB/*.dgnlib

```

```
%lock MS_DESIGNMODELSEED
%lock MS_SHEETMODELSEED
%lock MS_DRAWINGMODELSEED
%lock MS_DWGMODELSEED
%lock MS_DESIGNSEED
```

Open TDOT.cfg, copy its contents and paste them in the project configuration file at the end.

Eliminate duplicate settings from the default project configuration file definitions.

```
MS_CELL < $( _USTN_PROJECTDATA)cell/
MS_CELLLIST < $( _USTN_PROJECTDATA)cell/*.cel
MS_SEEDFILES > $( _USTN_PROJECTDATA)seed/
MS_SYMBRSRC > $( _USTN_PROJECTDATA)symb/*.rsc
%lock MS_DESIGNSEED
```

Delete any you may not need.. MS_DEF is only needed if all MicroStation DGN files are to be kept in a single location. T.D.O.T. Roadway Design Division doesn't use MicroStation settings files or multiple DGNLIB files together. The %lock function locks the current definition and should always be placed at the end of the file but no models other than the default model are used.

```
MS_DEF < $( _USTN_PROJECTDATA)dgn/
MS_CELLOUT = $( _USTN_PROJECTDATA)cell/
MS_CELLSELECTORDIR = $( _USTN_PROJECTDATA)cell/
MS_SETTINGSDIR < $( _USTN_PROJECTDATA)data/
MS_SETTINGSOUTDIR = $( _USTN_PROJECTDATA)data/
MS_DGNLIBLIST < $( _USTN_PROJECTDATA)DGNLIB/
```

```
%lock MS_DESIGNMODELSEED
%lock MS_SHEETMODELSEED
%lock MS_DRAWINGMODELSEED
%lock MS_DWGMODELSEED
```

Add additional configurations as needed. Our configuration file is comprehensive and probably will not need any additional configuration variables.

Reset all paths as needed for your system. Our configuration file only includes the following 3 path settings which would need to be adjusted for use on your system.

```
_TDOT_MICROSTATION_STANDARDS = C:/Users/Public/MicroStation Standards/
_TDOT_GEOPAK_STANDARDS = C:/Users/Public/Geopak Standards/
GPK_RSCDIR = C:/Users/Public/Geopak Resource Files/
```

The configuration variable GPK_RSCDIR is new with V8i and reflects the location on the local hard drive where Geopak RSC files are placed. In the past these went in the Geopak\bin folder where the software resides. These files do get corrupted sometimes and it was always a little dangerous to have users delete them from that location. In addition to that situation and depending on your system set up, Windows 7 can be lot more restrictive on users placing data within the product folders. It needs to be a location that the user has access to and can write files to.

Use the basic guidelines described in the following section to finalize the configuration definitions in the project configuration file. Copy this file to the Projects folder for application at other PC locations.

Basic Editing of Configuration Files (from MicroStation Help)

Configuration variable files are text files that consist of a series of lines. Each line contains a configuration variable name and definition in the following syntax:

```
<VARIABLENAME> <operator> <new_value> # comment
```

VARIABLENAME is the name of the configuration variable defined. Nearly all variable names used by MicroStation begin with “MS_” or “_USTN_.” Variables whose names begin with an underbar (_) are not displayed in the Configuration dialog box.

Available values for operator are as follows:

Operator Meaning

- = Assign new_value to VARIABLENAME. Overrides all previous definitions at or below the current configuration variable level.
- : Assign new_value to VARIABLENAME only if that variable does not already exist.
- + Append new_value to current value of VARIABLENAME. Uses a space as a separator.
- > Append directory or file lists defined by new_value to a variable definition that defines a path. If no current value for VARIABLENAME exists, this is equivalent to the = operator. Otherwise, it appends a path separator character, a semicolon (;), and then new_value.
- < “Prepend” directory or file lists defined by new_value (to the beginning of) a variable definition that defines a path. If no current value for VARIABLENAME exists, this is equivalent to the = operator. Otherwise, it prepends new_value followed by a path separator character, a semicolon (;).
- # Anything after a # on a line is treated as a comment and is ignored.

File path names should be entered using the forward slash (/). Windows converts all forward slashes (/) in new_value to backslashes (\). Also, all directory definitions should end with a trailing forward slash.

This is an example of a valid directory definition:

```
MS_DEF = /network/dgn/
```

When editing a configuration variable file, insert a carriage return at the end of the last line to ensure the entire file will be processed. Press <Enter> to insert a carriage return.

Interplot - Iplot.cfg, Iplotsrv.cfg & ip.cfg

These are software product level configuration files that have been customized for use by T.D.O.T. Roadway Design Division personnel. They are rather large files, so listed below each filename are configurations of particular interest that may need to be reset for your system.

Default Folder Location: **C:\Program Files (x86)\Common Files\InterPlot\IPLOT\config**

Iplot.cfg

```
IPLOT_OUTPUT_DIR = c:\temp  
IPLOT_DLOG_OUTPUT_DIR = c:\temp  
IPLOT_DLOG_SAVE_DIR = c:\temp
```

```
IPLOT_COLOR_TABLE_PATH = "C:\Users\Public\MicroStation Standards\data"  
IPLOT_PEN_TABLE_PATH = "C:\Users\Public\InterPlot Standards\Design Scripts"
```

Iplotsrv.cfg

```
IPLOTSRV_PATTERN_PATH = "C:\Users\Public\InterPlot Standards\resrc"  
IPLOTSRV_LINestyle_PATH = "C:\Users\Public\InterPlot Standards\resrc"
```

Default Folder Location: **C:\Program Files (x86)\ProjectWise InterPlot Organizer\config**

ip.cfg

```
IP_SETTINGS_PATH = "C:\Users\Public\InterPlot Standards\Settings"  
IP_DEFAULT_SETTINGS = iplot.set
```

3. Hard Coded File Paths

Although hard coded file paths are avoided wherever possible some standard files will not function correctly without being set this way. The following section lists the various standard files grouped by software type that have hard coded file paths.

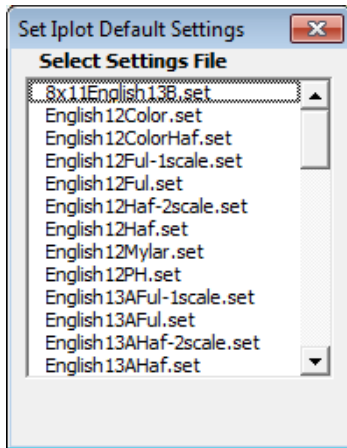
MicroStation & InterPlot

Default Folder Location: C:\Users\Public\MicroStation Standards\vb

IplotSet.mvba (set default Iplot settings file)

This only a concern if you use InterPlot software.

Access the **Set Iplot Default Settings** tool through the TDOT drop down menu option **Iplot – Default Settings** or through Geopak's D&C Manager at **Drafting Standards > Tools> Set Iplot**.



Open the Visual Basic Editor at **Utilities > Macro> Visual Basic Editor**

To edit:

Navigate to module & subroutine or use the Replace function to find locations

Make changes as needed

Click Save icon in Visual Basic Editor

from form code **SelectFiles**

subroutine **IplotSettings_Click**

```
settingsFile = "C:\Users\Public\InterPlot Standards\Settings\" + fileName
```

```
settingsFile = "C:\Users\Public\InterPlot Standards\Settings\" + fileName
```

```
testString = Dir("C:\Users\Public\InterPlot Standards\Settings\iplot.set")
```

```
Kill "C:\Users\Public\InterPlot Standards\Settings\iplot.set"
```

```
FileCopy settingsFile, "C:\Users\Public\InterPlot Standards\Settings\iplot.set"
```

from module **Start**

subroutine **Main**

```
If FileLen("C:\Program Files (x86)\Common Files\InterPlot\IPLLOT\bin\iplot.exe") > 0 Then
```

```
fpath = "C:\Users\Public\InterPlot Standards\Settings"
```

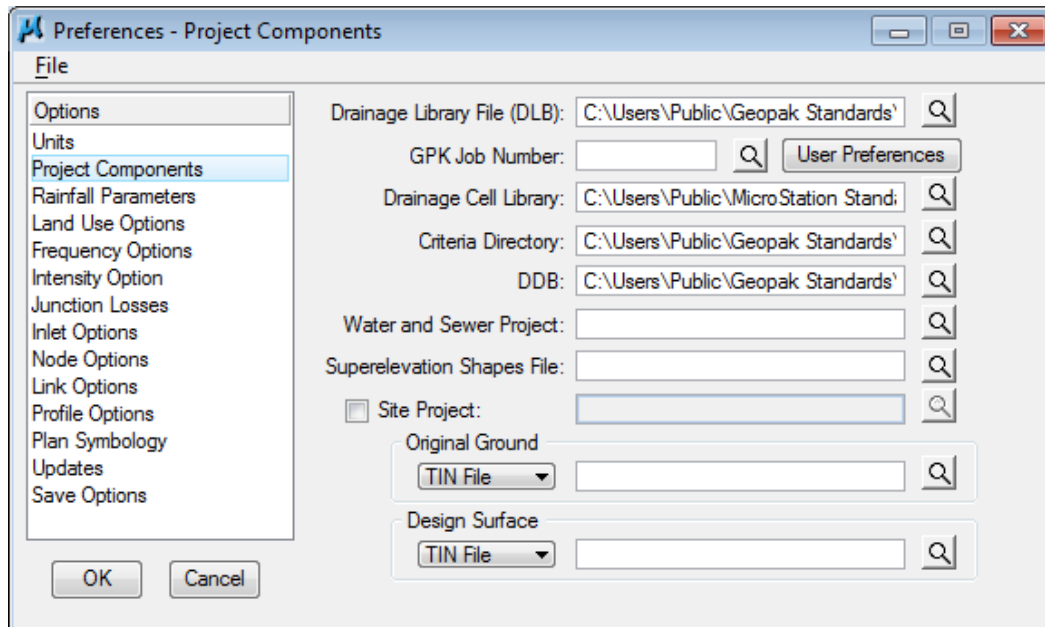
Geopak

Default Folder Location: **C:\Users\Public\Geopak Standards**

DrainageProject.gdf (default drainage project)

TDOTdrainageprefs.dpf (default drainage project preferences)

Preferences: criteria directory, DDB



Note::

The Drainage Library and Drainage Cell Library are now set by configuration variables.

To edit both files:

Start Geopak Drainage

Go to Drainage>Project>Open

Navigate to Geopak Standards folder and open **DrainageProject.gdf**

Go to Drainage>Project>Preferences

Under Project Components make path changes as needed

Go to File > Save As

Navigate to Geopak Standards folder, select file name **TDOTdrainageprefs.dpf** and click Save

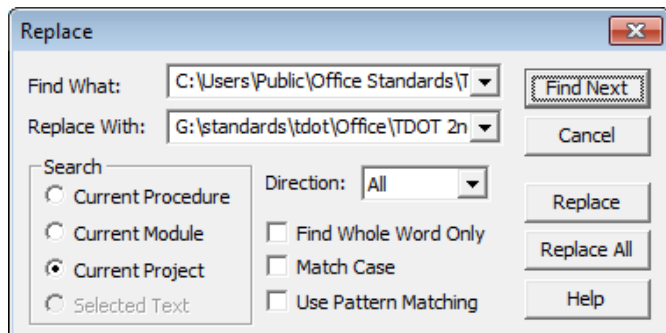
Click OK to close Preferences dialog

Go to Drainage>Project>Save

Office (Excel)

Open the template file and then the Visual Basic Editor at **View > Macros> View Macros> Edit**

Note: Due to the many instances of the same folder path in some templates you should use the Replace function under **Edit>Replace** in the Visual Basic Editor as shown below.



To edit:

Navigate to module & subroutine or use the Replace function to find locations

Make changes as needed

Click Save icon in Visual Basic Editor

Default Folder Location: **C:\Users\Public\Office Standards\TDOT 2nd Sheets**

Convert Excel To V8.xltm (Estimated Roadway Quantities.xltm file path, menu control)

from module **ConvertEstimateToV8**

subroutine **ConvertEstToV8**

Workbooks.Add Template:= _

"C:\Users\Public\Office Standards\TDOT 2nd Sheets\Estimated Roadway Quantities.xltm"

MsgBox "File " + Chr(34) + _

"C:\Users\Public\Office Standards\TDOT 2nd Sheets\Estimated Roadway Quantities.xltm" + _

from module **ConvertMenu**

subroutine **CreateConvertMenu**

.OnAction = "C:\Users\Public\Office Standards\TDOT 2nd Sheets\Convert Excel To V8.xltm!ProcessSelection"

Estimated Roadway Quantities.xltm, (Items.dat file path, auto build calls in Roadway only)

Bridge Quantities.xltm,

Maintenance Quantities.xltm

from form code **SearchForText**

subroutine **UserForm_Initialize**

Open "C:\Users\Public\Office Standards\TDOT 2nd Sheets\Items.dat" For Input Shared As #1

from module **AutoBuildCalls**

subroutine **BuildGRBlock**

Workbooks.Open "C:\Users\Public\Office Standards\TDOT English Tab Quantities\Guardrail Tab Builder.xlsm", , True

subroutine **runcheckitemsGR**

Workbooks.Open "C:\Users\Public\Office Standards\TDOT English Tab Quantities\Guardrail Tab Builder.xlsm", , True

subroutine **BuildStormDrainagePipes**

Workbooks.Open "C:\Users\Public\Office Standards\TDOT English Tab Quantities\Storm Drainage Pipe Tab Builder.xlsm", , True

subroutine **runcheckitemsSS**

Workbooks.Open "C:\Users\Public\Office Standards\TDOT English Tab Quantities\Storm Drainage Pipe Tab Builder.xlsm", , True

subroutine **BuildCatchBasinsBlock**

Workbooks.Open "C:\Users\Public\Office Standards\TDOT English Tab Quantities\Storm Drainage Structure Tab Builder.xlsm", , True

subroutine **runcheckitemsCB**

Workbooks.Open "C:\Users\Public\Office Standards\TDOT English Tab Quantities\Storm Drainage Structure Tab Builder.xlsm", , True

from module **datfilchecks**

subroutine **CheckforDat**

Open "C:\Users\Public\Office Standards\tdot 2nd Sheets\Items.dat" For Input Shared As #1

datdate = FileDateTime("C:\Users\Public\Office Standards\TDOT 2nd Sheets\Items.dat")

subroutine **checkforTxt**

Open "C:\Users\Public\Office Standards\tdot 2nd Sheets\items.dat.txt" For Input Shared As #1

txtdate = FileDateTime("C:\Users\Public\Office Standards\tdot 2nd Sheets\items.dat.txt")

subroutine **dattxt**

FileCopy "C:\Users\Public\Office Standards\tdot 2nd Sheets\items.dat.txt", "C:\Users\Public\Office Standards\tdot 2nd Sheets\Items.dat"

Kill "C:\Users\Public\Office Standards\tdot 2nd Sheets\items.dat.txt"

Kill "C:\Users\Public\Office Standards\tdot 2nd Sheets\items.dat.txt"

subroutine **DateCheck**

datdate = FileDateTime("C:\Program Files\Microsoft Office\Templates\tdot 2nd Sheets\Items.dat")

subroutine **netDownload**

msg2 = "C:\Users\Public\Office Standards\tdot 2nd Sheets"

subroutine **TxtCopy**

FileCopy "C:\Users\Public\Office Standards\tdot 2nd Sheets\items.dat.txt", "C:\Users\Public\Office Standards\tdot 2nd Sheets\Items.dat"

Kill "C:\Users\Public\Office Standards\tdot 2nd Sheets\items.dat.txt"

from module **FillIn_Items**
subroutine **FillinItemNos**

Open "C:\Users\Public\Office Standards\tdot 2nd Sheets\Items.dat" For Input Shared As #1

Default Folder Location: **C:\Users\Public\Office Standards\TDOT English Tab Quantities**

Guardrail Tab Builder.xltn, (Items.dat file path)

from module **ItemNumbersCheck**
subroutine **checkitemsGR**

ItemsPath = "C:\Users\Public\Office Standards\tdot 2nd Sheets\"

Storm Drainage Pipe Tab Builder.xltn, (Items.dat file path)

from module **CheckItemsDat**
subroutine **checkitemsSS**

ItemsPath = "C:\Users\Public\Office Standards\tdot 2nd Sheets\"

Storm Drainage Structure Tab Builder.xltn, (Items.dat file path)

from module **ItemNumbersCheck**
subroutine **checkitemsCB**

ItemsPath = "C:\Users\Public\Office Standards\tdot 2nd Sheets\"

Default Folder Location: **C:\Users\Public\Office Standards\Survey**

Survey_Contact_Acq_Create.xltn (ROWAcqTable.xltn, help & letter template file paths)

from Microsoft Excel Objects code **Sheet1 (Project Info)**
subroutine **cmdAcqTable_Click**

strPath = "C:\Users\Public\Office Standards\Survey\" + "ROWAcqTable.xltn"

subroutine **cmdHelp_Click**

FName = "C:\Users\Public\Office Standards\Survey\Survey Contact Letter and R.O.W. Acquisition Table
Creator.pdf"

from form code **Letter**

subroutine **cmdCreateLetter_Click**

strLetterPath = "C:\Users\Public\Office Standards\Survey\"