



MONTANA

Department of Transportation

2021

MicroStation / Power GEOPAK V8i
(SELECTseries 10)

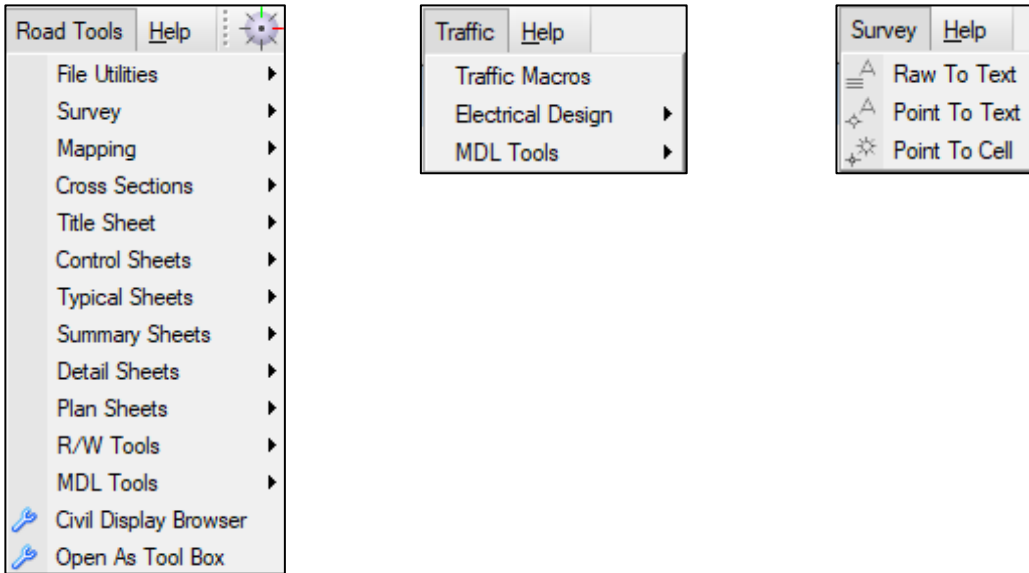
Enhanced Workspace Macro Overview

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OVERVIEW

This document is an overview of the macros that exist within the Road Tools, Traffic, and Survey menus in MicroStation/Power Geopak. Users should utilize the HELP button on a macro for a more in-depth description on how to use it.



REFERENCES

[Enhanced Workspace Overview](#)

This document provides a user focused overview of the MDT Enhanced workspace.

[Creating and Annotating Cross Sections](#)

[R/W Labeler](#)

ROAD TOOLS

FILE UTILITIES

The File Utilities macros are generally used for project setup and file creation and serve as a basis for the rest of the macros within this document.

Project Manager

Used to manage project-related data in DGN files, such as the Title Sheet and sheet borders.

The MDT Project Manager dialog box is shown with the following fields and values:

- Project File: c:\dgn\MDTPM\8540000RDPRJ001.DAT
- CPB List File: C:\dgn\8540000RDPRE002Cpb.lst
- AID Designation: **FEDERAL AID PROJECT STPP 78-1(25)5**
- Project Information tab is active.
- Type of Work: RECONSTRUCTION
- Location: NW OF RED LODGE - NW
- County 1: CARBON
- County 2: (empty)
- PE NUMBER: STPP 78-1(24)5
- CE NUMBER: STPP 78-1(25)5
- R/W & I.C.: (empty)
- Project Length: 4.8 Miles
- UPN: 8540000
- WORK GROUP: RD
- Working Units: ENGLISH
- GEOMETRIC DESIGN TABLE: (empty)

Buttons at the bottom: Help, Save & Exit.

Create GPK Project

Used to create project GPK files.

The Create Project Settings Files dialog box is shown with the following fields and values:

- UPN: (empty)
- Work Group: RD
- Series: 001
- GPK File: 000
- Template Library
- XS XIN File
- XS Sheet Library

Buttons at the bottom: Create, Help, Exit.

Create DGNs

Used to create Road Design, Safety, and Hydraulics project DGN files.

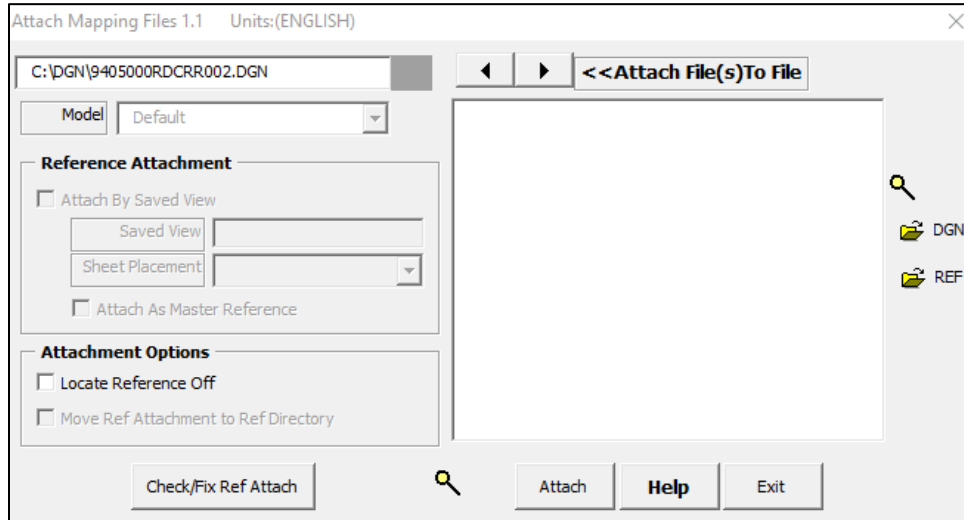
NOTE: This tool will crash if a file is open with a dynamic view open.

The screenshot shows the 'Road Design Project Manager' dialog box. It has a title bar with a close button. The 'Project Info' tab is active, showing 'UPN' as 9405000 and 'Workgroup' as RD. Below this is a 'Project Files' section with a sub-tab for 'Fencing/Erosion Control Plans'. The 'Map Files' section contains several checkboxes: (2D) MAP File, (3D) CMA File, ETR - (3D) Existing Terrain Model, EFF - (2D) Existing Features File, ALN - (2D) Alignment, SUP - (2D) Super Elevation File, CRR - (2D) Corridor File, PTR - (3D) Design Terrain Model, and UMA - (2D) Utility Mapping File. The 'Cross Section Files' section has checkboxes for Working X-Sections and Layout X-Sections, each with a 'Beg Series' and '# of Files' field (both set to 1) and navigation arrows. The 'Plan Files' section has a 'Title Sheet' checkbox with a 'Rural' dropdown, and several other checkboxes with dropdown menus and 'Beg Series'/'# of Files' fields: (Select GPS/TRAV), Typicals, Summaries, Details (Default), (Select)Plan/Profile, (Blank) Plan/Plan, and Hydraulic Data Summary. A 'Hydraulics Data Summary File' field is also present. At the bottom, there is a 'Select Preliminary Stamp' dropdown (set to Preliminary), a 'Designed By' field (u6951), and 'Create', 'Help', and 'Exit' buttons.

File Type	Beg Series	# of Files
(2D) MAP File		
(3D) CMA File		
ETR - (3D) Existing Terrain Model		
EFF - (2D) Existing Features File		
ALN - (2D) Alignment		
SUP - (2D) Super Elevation File	1	
CRR - (2D) Corridor File		
PTR - (3D) Design Terrain Model		
UMA - (2D) Utility Mapping File		
Working X-Sections	1	1
Layout X-Sections	1	1
Title Sheet		
(Select GPS/TRAV)	1	1
Typicals	1	1
Summaries	1	1
Details (Default)	1	1
(Select)Plan/Profile	1	1
(Blank) Plan/Plan	1	1
Hydraulic Data Summary	1	

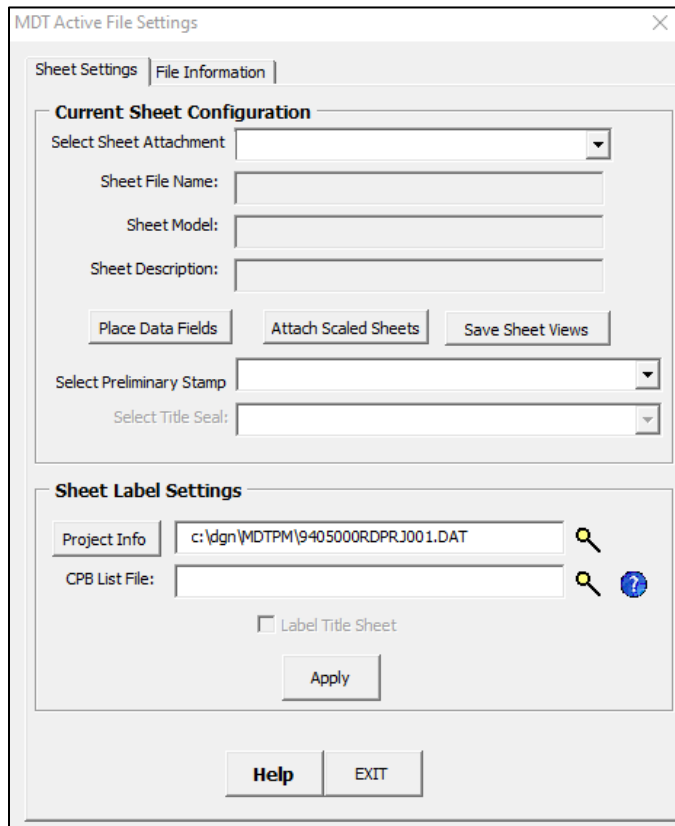
Attach Mapping Files

Used to attach reference files to a project. Check/Fix Ref Attach adds or corrects file name logical prefixes for the references to be correctly processed by MDT's Project Content Management System (PCMS) and plotting solution (Docuplot).



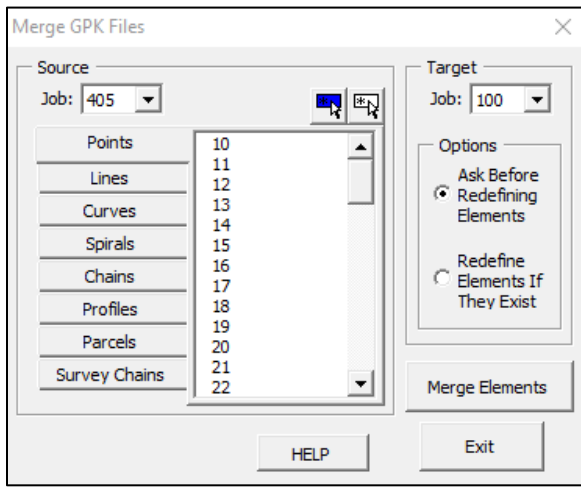
Active File Settings

Used to modify file attachments and settings only within the current active file.



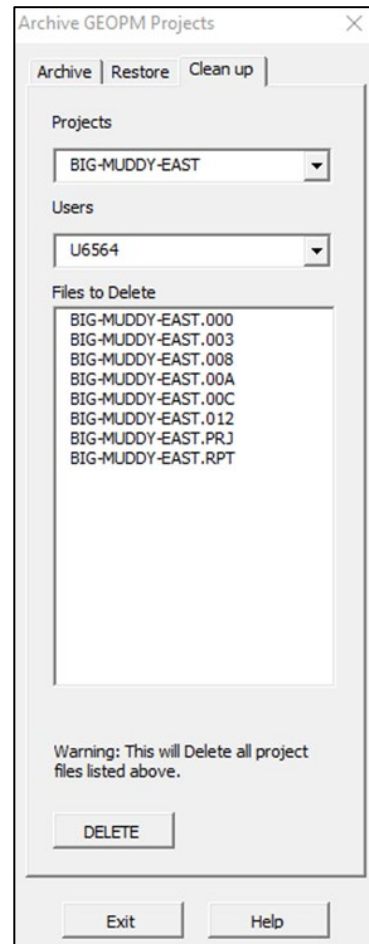
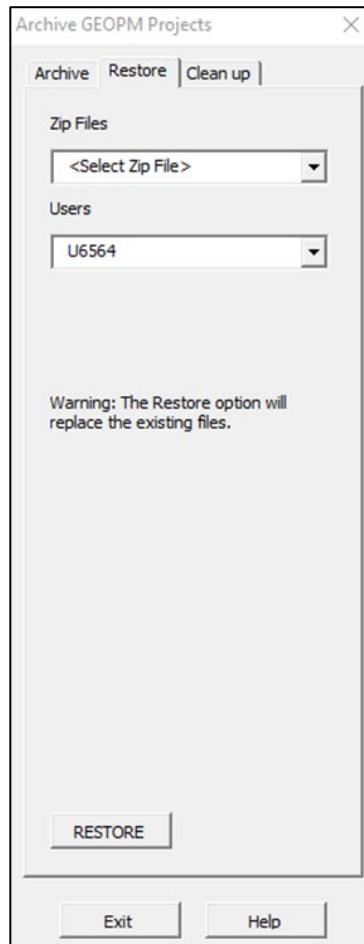
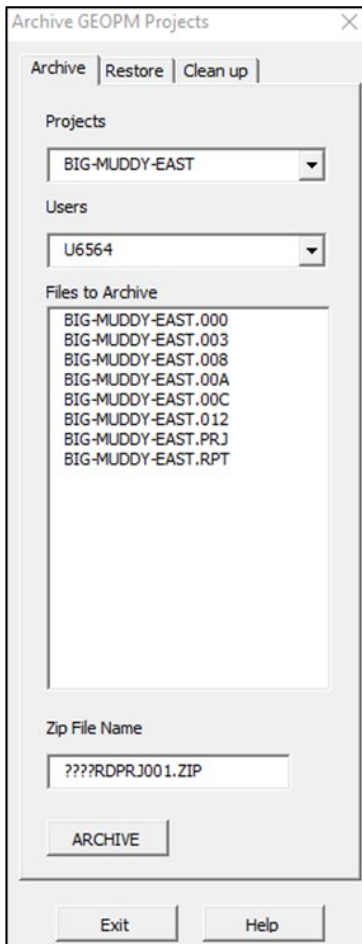
Merge GPK Files

Geopak > Merge GPK Files. Used to merge elements from one GPK file to another.



Archive GPK Project

Geopak > Archive GPK Files. Used to archive GEOPM files to C:\DGN.

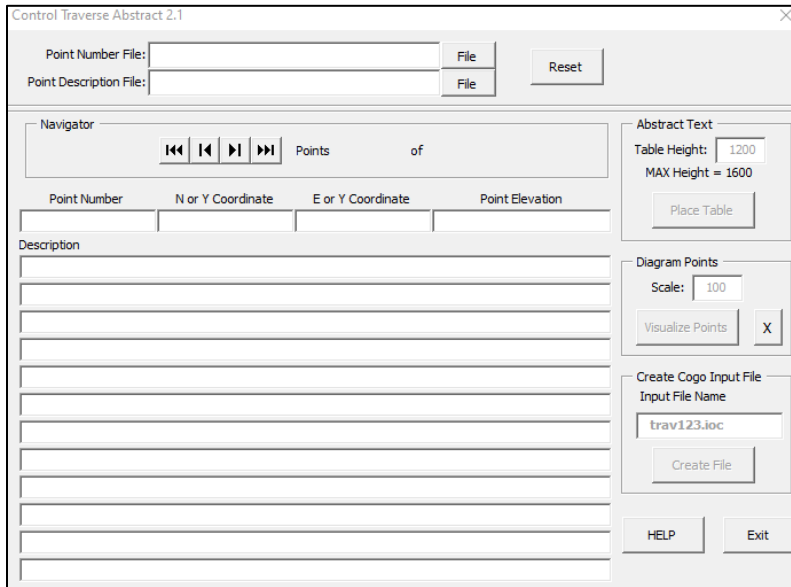


SURVEY

Survey macros use survey data to import tables, cells, and text into the appropriate files.

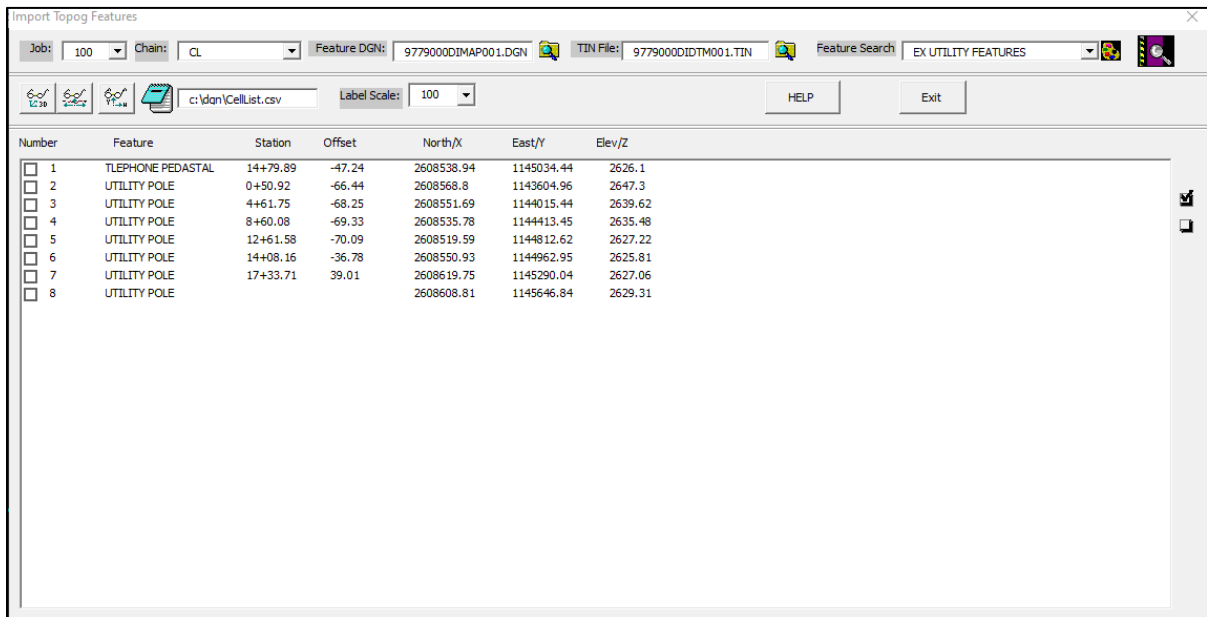
Import Survey Control

Used to import control points and control point description tables into MicroStation from Survey .ITL and .DES files. This macro is typically used in a Traverse (TRV) DGN file.



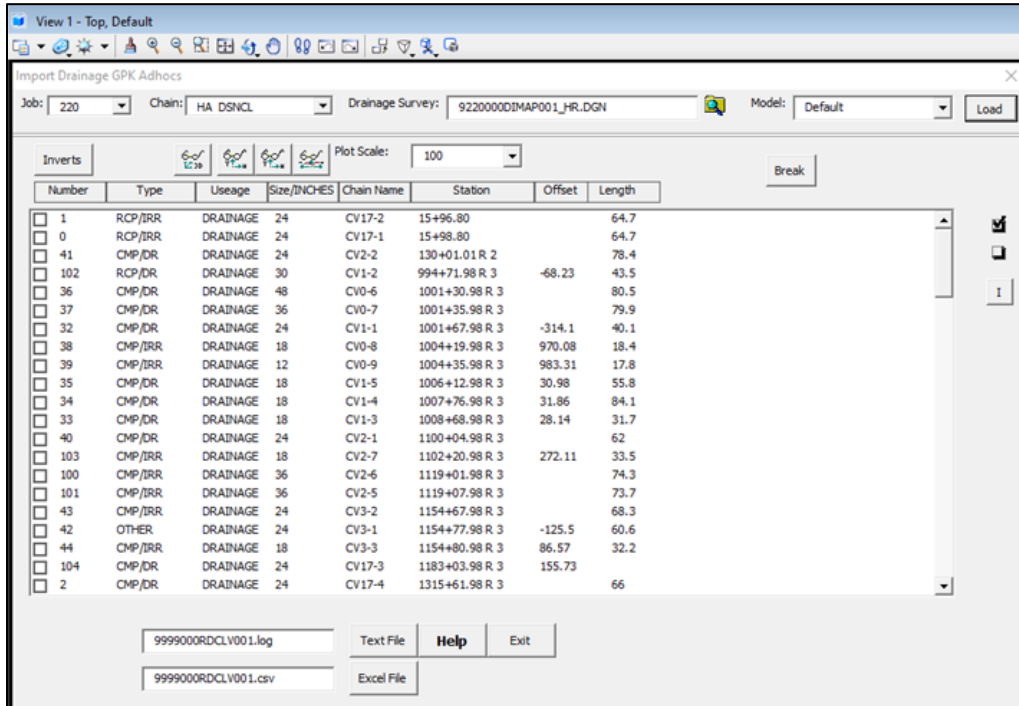
Import Topog Features

Used to import topographic features. These can be placed as 3D cells, features on cross sections, as a text list, or exported as a .CSV (comma-separated values) file.

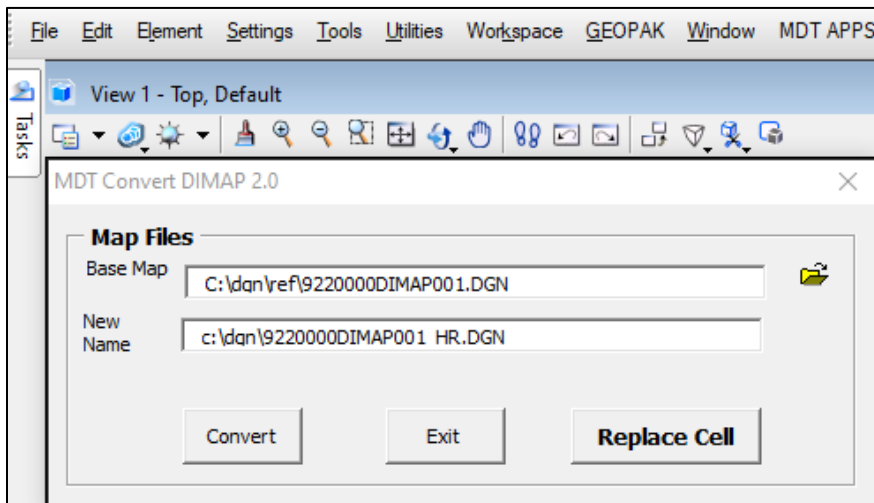


Import Drainage GPK Adhocs

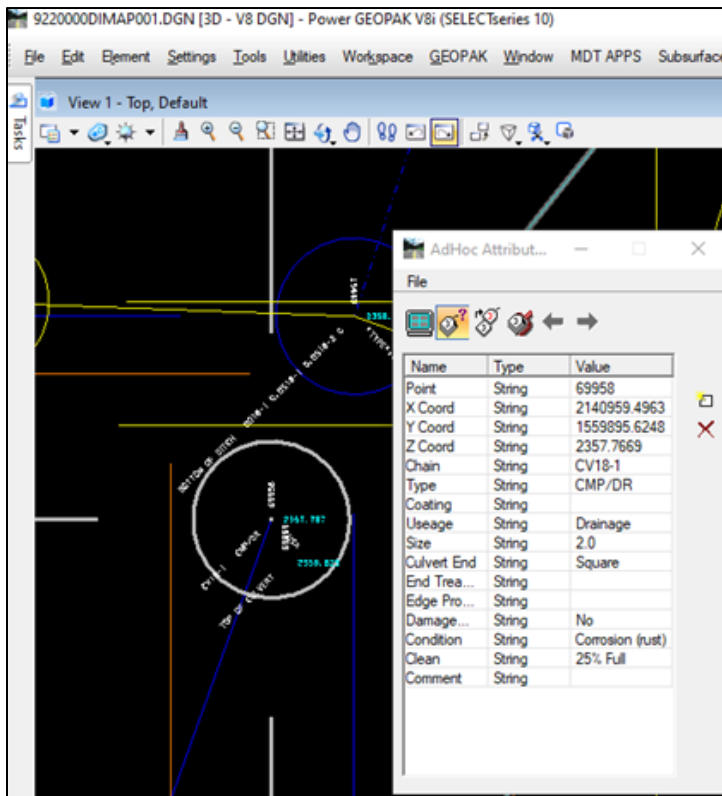
Import Drainage Features > Import Drainage GPK Adhocs. Used to import culvert data from survey. This tool can only be used for Legacy survey files. Please contact MDT Engineering Systems Support if there are any questions when utilizing this tool.



To use Legacy survey in an OpenRoads Enhanced project, it first needs to be converted using MDT APPS > DI Converter. This saves a new version of the DIMAP file for use with this macro:



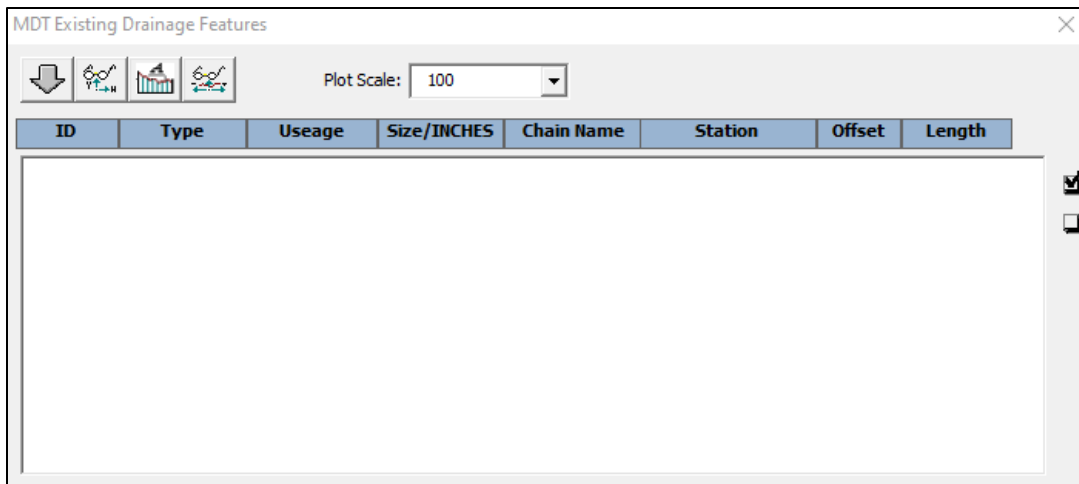
The survey also must be prepared with the attribute data. This can be checked by opening the DIMAP file, using Geopak > Road > 3PC AdHoc Attribute Manager, and double clicking on a culvert end point:



For surveys not prepared with attribute data, it can be manually added to the culvert points using the Inverts button.

Import Drainage Feature Data

Import Drainage Features > Import Drainage Feature Data. Used to import drainage features from survey files. This tool can only be used for Enhanced survey files. This tool can draw features in plan, profile, and XS views. Please contact MDT Engineering Systems Support if there are any questions when utilizing this tool.

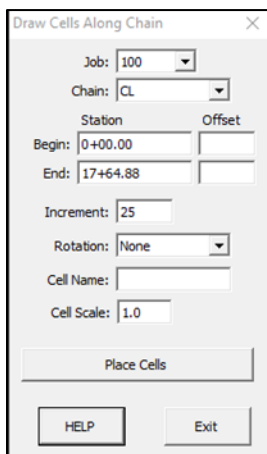


MAPPING

The Mapping macros are typically used in mapping files.

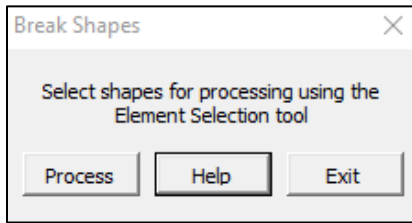
Draw Alignment Cells

Used to place cells along an alignment chain.



Break Shapes

Used to drop closed shape elements to line string elements. Click the Help button for more detail.

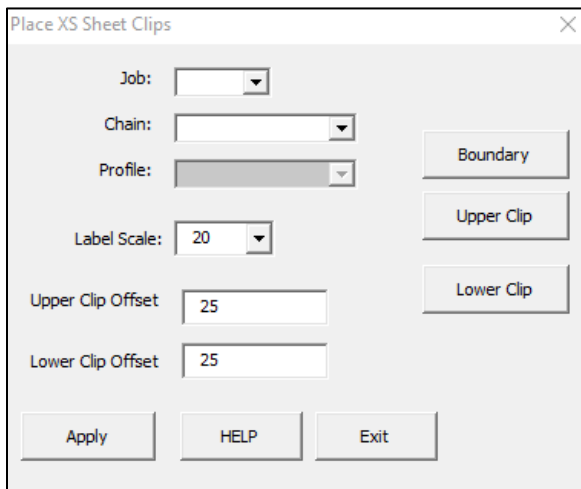


CROSS SECTIONS

The Cross Sections macros apply to cross sections files.

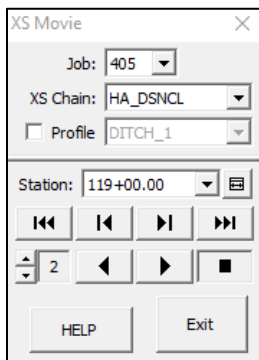
Place XS Sheet Clips

Used to place sheet clips on cross sections.



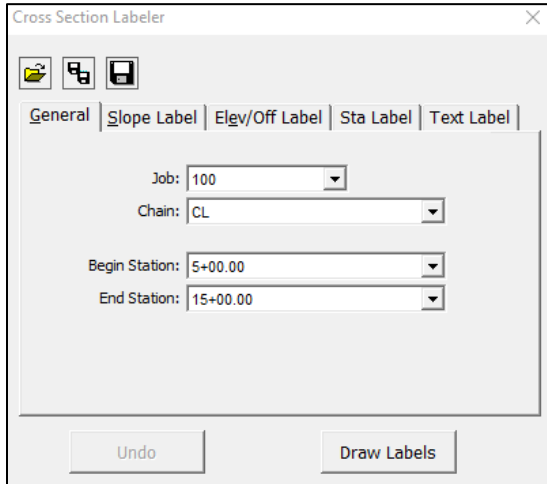
XS Movie

Used to move between cross sections in an XSF file.



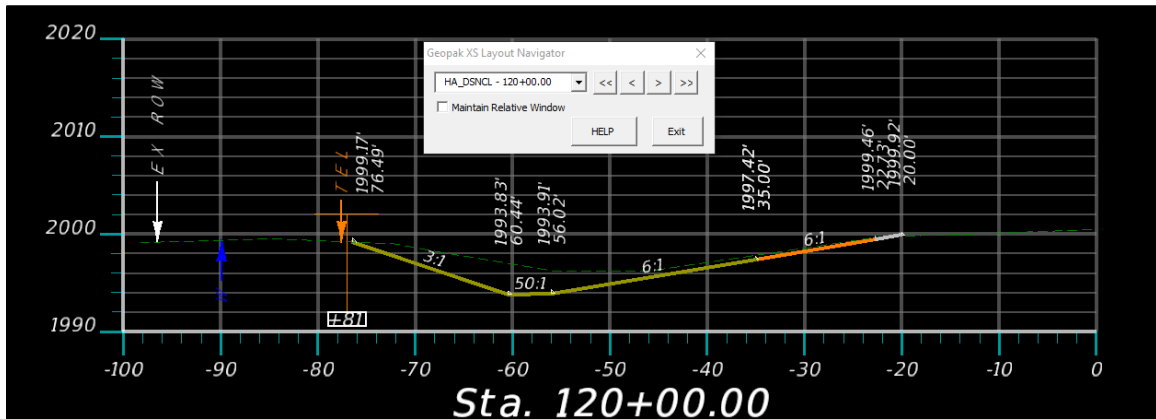
XS Feature Labeling

Used to label cross section features with slope, elevation, offset, etc. This feature label data is saved as an .XLP (Cross Section Labeling Preference) file. Refer to the [Creating and Annotating Cross Sections](#) guidance for more information about this tool.



XS Sheet Navigator

Used to navigate between cross sections by station number. The user must be in a Cross Section Layout (LAY) file for this tool to work.



XS Sheet Labeling

Used to label cross section sheets. The user must be in a Cross Section Layout (LAY) file for this program to work.

Cross Section Layout Sheets 2.0

Project \ Sheet Information

Place Project Information

Project File: c:\dgn\MDTPM\9405000RDP\J001.DAT

Designed By:

Reviewed By:

Checked By:

Preliminary Stamp:

XS Description:

First Sheet #: 1 # of Sheets 13

Update EarthWork Quantity File

Sheet Attachment Options

Fix XS Reference Logical Prefix (MTRD:) **Logicals Correct**

Scale XS for Urban 100 Scale **Not Scaled**

Turn Data Fields Off / Turn Fill On

HELP Apply Exit

XS Sync

Used to sync levels from a source model to a cross section model. Refer to the [Creating and Annotating Cross Sections](#) guidance for more information about this tool.

Synchronize XS Graphics - v01.00.10

Source Model: <Select>

Target Model: TEST

Source Model Levels to Sync:

Expand Search Range

Horizontally:

Vertically:

Process

TITLE SHEET

Alignment Coordinate Forms

Used to draw alignment coordinate tables.

Station	Desc	N or Y Coord	E or X Coord	cogo Name	Description
1	0+00.00	POT	1143556.552	2608637.0908	CL_1
2	12+45.85	PC	1144801.5381	2608590.7015	CL_3
3	13+05.17	PI	1144860.653	2608585.7677	CL_3
4	13+64.32	PT	1144919.904	2608588.6355	CL_3
5	17+64.88	POT	1145320.378	2608580.086	CL_5

CONTROL SHEETS

Control Layout

Control Layout is the same macro as Import Survey Control. See the [Import Survey Control](#) section for further information.

TYPICAL SHEETS

Typical Generator

Used to generate standard typical sections in the typical DGN file.

The image shows a software dialog box titled "Typical Section 1.2". At the top, there are icons for file operations and a text field containing "9405000RDXSF001.txt". To the right is a "Samples" button. Below this is a tabbed interface with "Setting Pages" and "Calculation Pages" tabs. The "Calculation Pages" tab is active, showing sub-tabs for "Typical Settings", "Cut Fill Settings", "Drawing Settings", and "Plan Quantities". The "Typical Settings" sub-tab is selected, displaying the following fields:

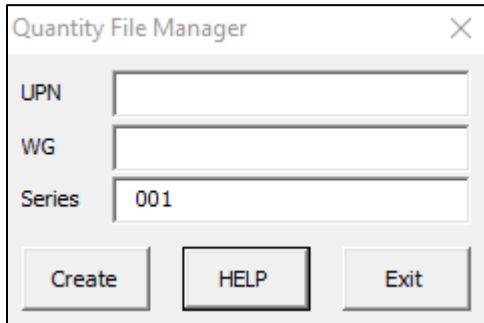
- Typical Calculation Area
 - Typical Type:
 - Typical Description:
- Driving Lane: Feet
- Normal Crown: FT/FT
- Shoulder Right: Feet
- Shoulder Left: Feet
- Lift 1: '
- Lift 2: '
- Lift 3: '
- Lift 4: '
- Side Slope: :1
- Super options: Super 0.02, Super 0.03, Super 0.04, Super 0.05, Super 0.06, Super 0.07, Super 0.08
- Note: Maximum Super Rate will be used to draw Supered Typical
- Profile Rotation:
- Sub Grade Rounding Option:

At the bottom of the dialog are buttons for "Calculate", "Reset Dialog", "Draw", "Help", and "Exit".

SUMMARY SHEETS

Create Excel Quantity File

Used to create an Excel quantity manager file for a project. See the Start and Readme Guide tabs in the Excel spreadsheet for information on creating excel summary frames and referencing the summary frames into MicroStation.

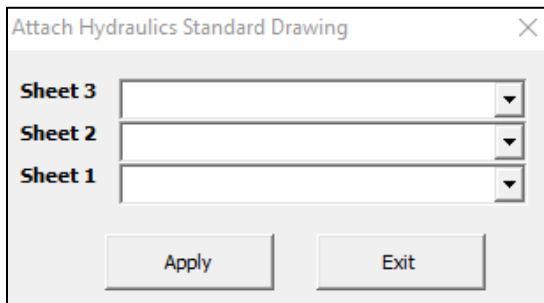


The dialog box titled "Quantity File Manager" contains three input fields: "UPN", "WG", and "Series". The "Series" field is pre-filled with the value "001". Below the input fields are three buttons: "Create", "HELP", and "Exit".

DETAIL SHEETS

Attach Standard Hydraulic Drawings

Used to reference Standard Hydraulic Drawings into a DGN file.



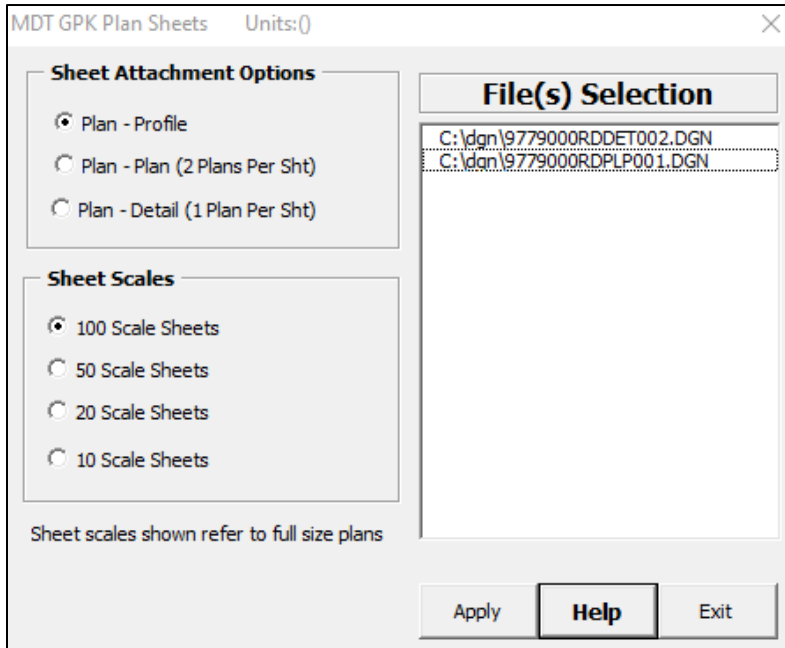
The dialog box titled "Attach Hydraulics Standard Drawing" contains three dropdown menus labeled "Sheet 3", "Sheet 2", and "Sheet 1". Below the dropdown menus are two buttons: "Apply" and "Exit".

PLAN SHEETS

The Plan Sheets macros apply to plan sheet files.

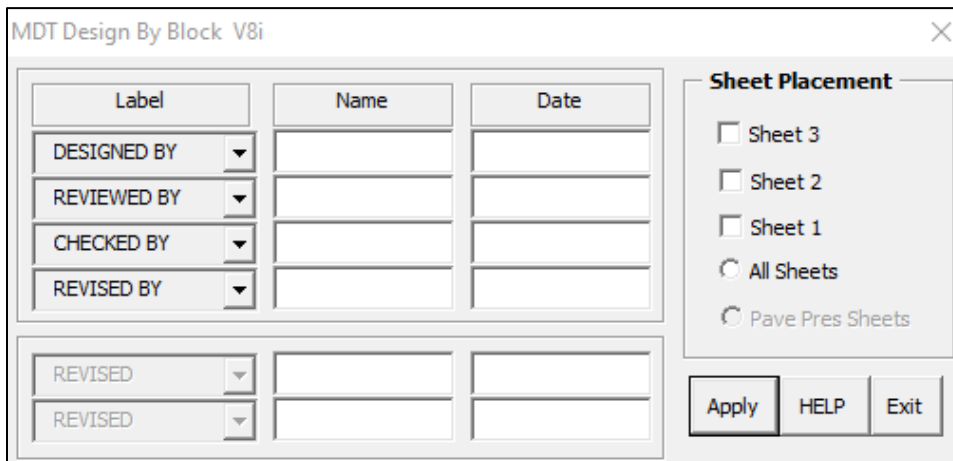
GPK Plan Sheets

Used to attach plan/profile sheet references to a DGN.



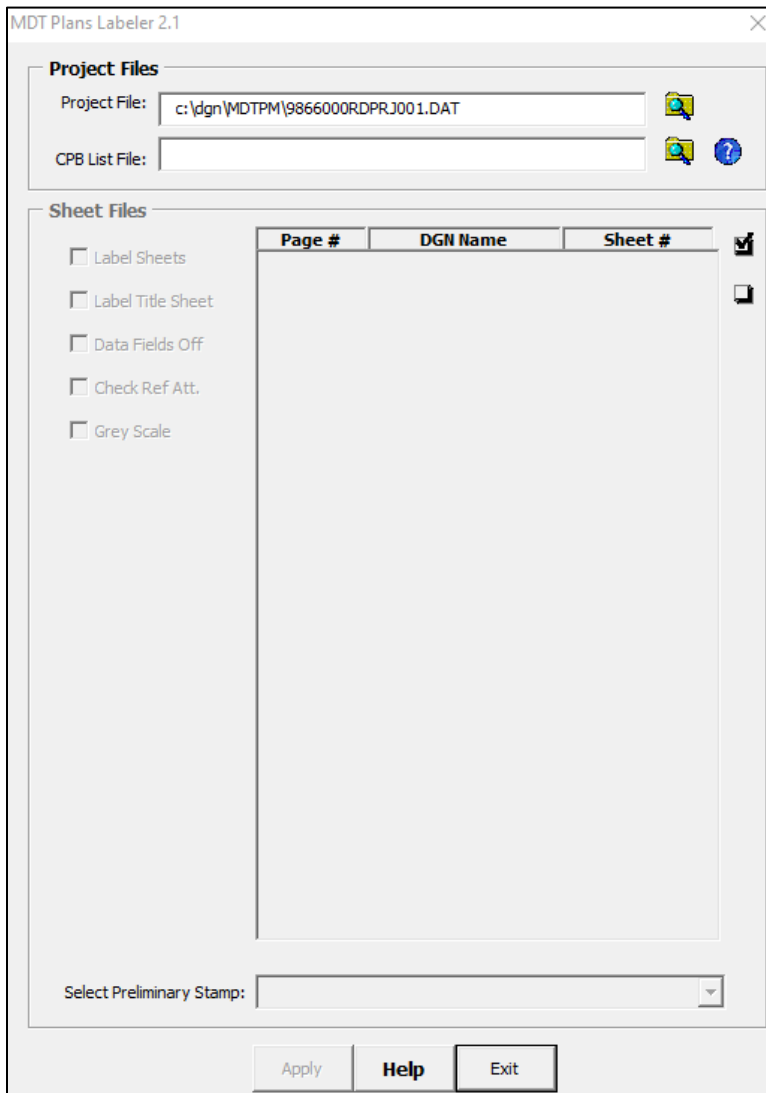
Design Block

Used to fill in the design block in plan sheets. Once a name is filled in, the date will auto-populate with the current date.



CPB Labeler

Used for labeling files referenced in a CPB list (.LST).



R/W TOOLS

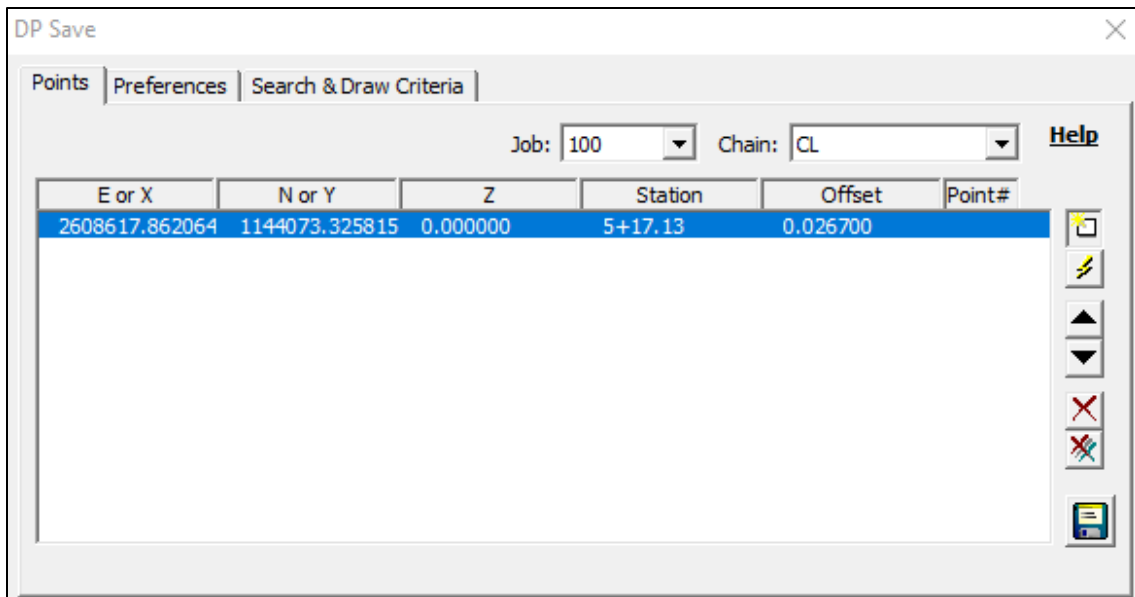
The R/W Tools macros are typically used for right-of-way design.

Save Sheet Views

Used to create a saved view of the sheet that can be accessed at View Attributes > View Setup > Saved Views.

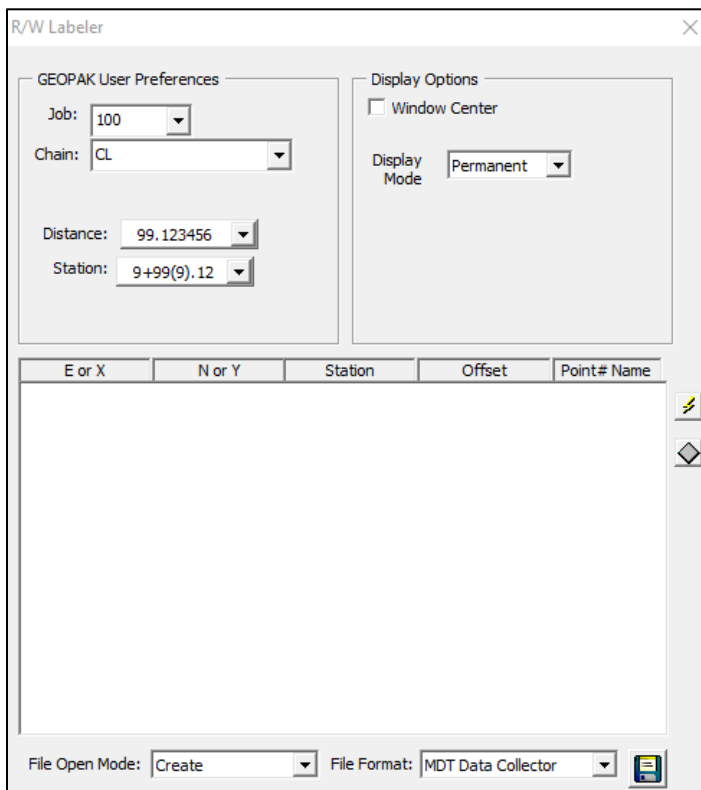
DP Save

Used to calculate and label station and offset data for right-of-way breaks within a design file.



R/W Labeler

Refer to the [R/W Labeler](#) guidance for more information about this tool.



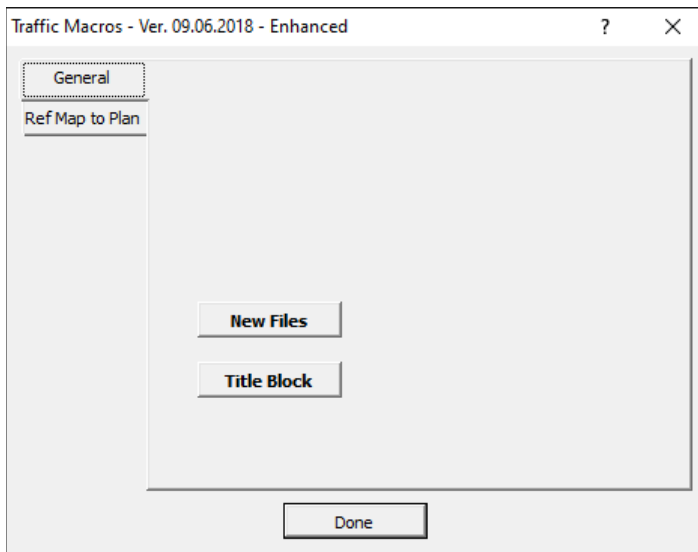
TRAFFIC

Traffic menu items are customized depending on the workgroup project (.pcf file) used when launching MicroStation/Power Geopak.

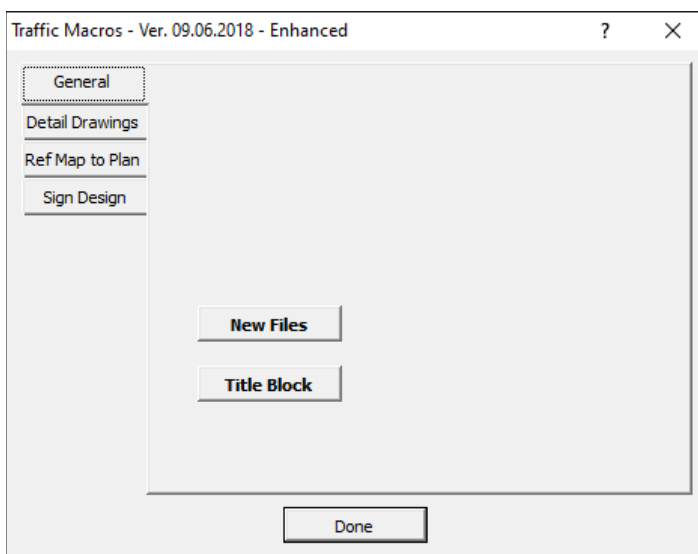
TRAFFIC MACROS

Used to develop Traffic DGN files. Traffic Macro menus and some of their functionality are customized depending on the name of the open file.

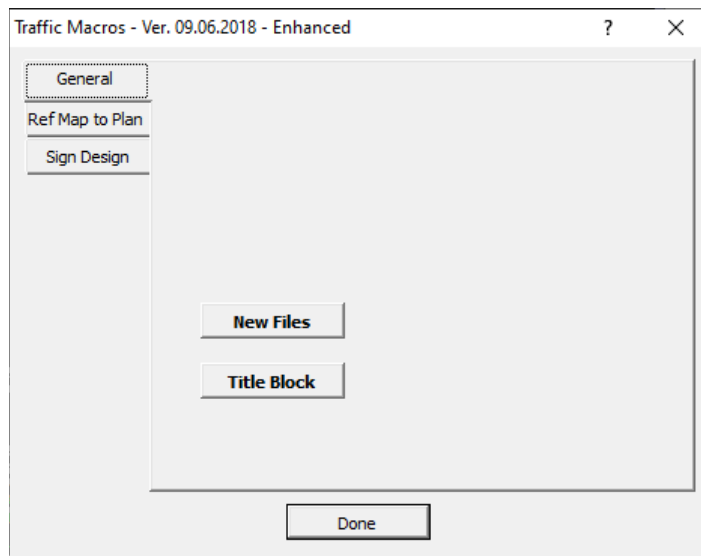
Geometric:



Electrical:



Signing:



GEOMETRICS DESIGN

Includes menus used to load Signing ancillary applications and tools such as AutoTURN and TORUS.

ELECTRICAL DESIGN

Includes menus used to place signing features.

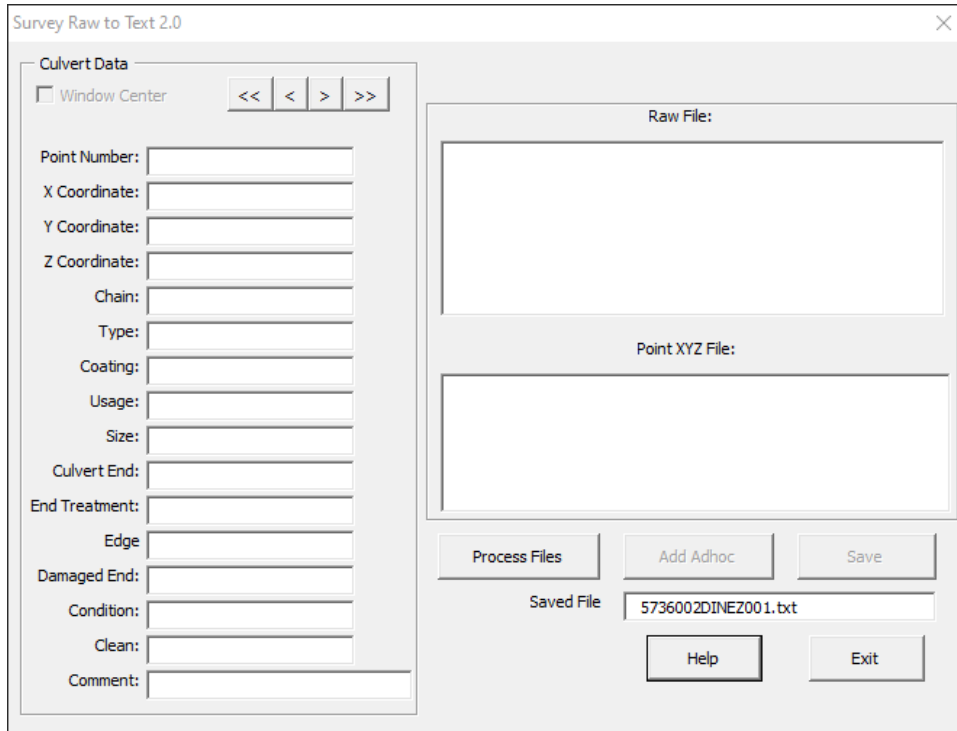
SIGN DESIGN

Includes menus used to load Signing ancillary applications and tools such as GuideSIGN and Excel Spec/Sum spreadsheet.

SURVEY

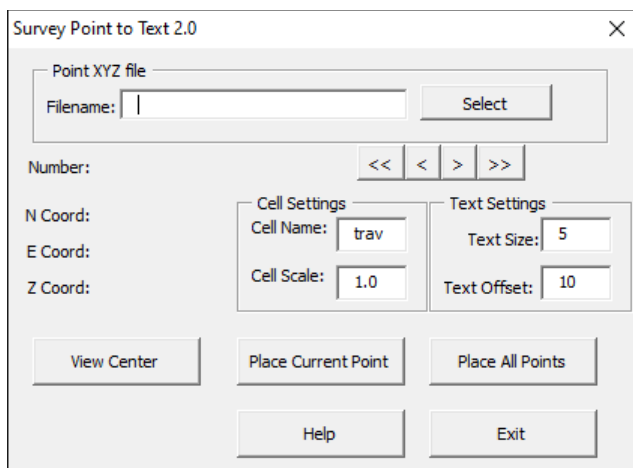
RAW TO TEXT

Processes raw survey files, adds adhoc attribute data for legacy surveys and saves to text file.



POINT TO TEXT

Places cells at points listed in text file.



POINT TO CELL

Scans file and places survey pt1 cell at line end points.