

	MicroStation / Power GEOPAK V8i
2021	(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.

Road Tools Help	X	Traffic <u>H</u> elp		Survey <u>H</u> elp
File Utilities	•	Traffic Macros		A Raw To Text
Survey	•	Electrical Design	•	
Mapping	•	MDL Tools	+	🔅 Point To Cell
Cross Sections	•			
Title Sheet	•			
Control Sheets	•			
Typical Sheets	•			
Summary Sheets	•			
Detail Sheets	•			
Plan Sheets	•			
R/W Tools	•			
MDL Tools	•			
Civil Display Browser				
🤌 Open As Tool Box				

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.

MDT Project Manager		×						
Project File:	: \dgn\MDTPM\8540000RDPRJ001.DAT							
CPB List File:	C:\dgn\8540000RDPRE002Cpb.lst							
AID Designation:	FEDERAL AID PROJECT STPP 78-1(25)5							
Project Information	Design Data/Related Projects Project Settings							
Type of Work:	RECONSTRUCTION	-						
Location:	NW OF RED LODGE - NW	-						
County 1:	CARBON UPN : 8540000							
County 2:	WORK GROUP : RD							
PE NUMBER:	STPP 78-1(24)5 Working Units : ENGLISH							
CE NUMBER:	STPP 78-1(25)5							
R/W & I.C.:	GEOMETRIC DESIGN TABLE							
Project Length:	4.8 Miles	•						
	Help Save & Exit							

Create GPK Project

Used to create project GPK files.

Create Project	Settings Files	\times					
UPN							
Work Group: Series	RD •	·					
GPK File							
Ter	mplate Library						
⊏ xs	XIN File						
🗌 XS Sheet Library							
Create	Help	Exit					

Create DGNs

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

<u>NOTE</u>: This tool will crash if a file is open with a dynamic view open.

Road Design Project Mana	iger				>				
Project Info UPN	9405000	Work	group:	RD	•				
Project Files Fencing/Ero	sion Control Plans								
Map Files (2D) MAP File	🗌 ETR - (3D) E	xisting Terra	in Model						
(3D) CMA File	🗌 EFF - (2D) E	Existing Feat	ures File						
	🗌 ALN - (2D) A	lignment		Serie	s				
	🗌 SUP - (2D) S	uper Elevatio	on File	1					
	CRR - (2D) C	Corridor File							
	🗌 PTR - (3D) D	esign Terrair	n Model						
	🔲 UMA - (2D) l	Jtility Mappin	g File						
Cross Section File	S								
_		Beg Series	# of F	Files					
Working X-Sections		1	1						
Layout X-Sections		1	1		•				
– Plan Files –									
Title Sheet Rural	Ţ		Beg Series	# of Files					
(Select GPS/TRAV)	•		1	1	$ \rightarrow $				
		\rightarrow	1	1	$ \rightarrow $				
Summaries			1	1	$ \rightarrow $				
Details Default	Ŧ		1	1					
(Select)Plan/Profile	-		1	1	$ \rightarrow $				
🔲 (Blank) Plan/Plan		- →	1	1					
🗌 Hydraulic Data Summ	ary	$\dashv \models$	1						
Hydraulic	Hydraulics Data Summary File:								
Select Preliminary Stam	p Preliminary				•				
Designed B	y: u6951								
Γ	Create He	elp	Exit						

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).

Attach Mapping Files 1.1 Units:(ENGLISH)		\times
C:\DGN\9405000RDCRR002.DGN	✓	
Model Default 🗸		
Reference Attachment		0
Attach By Saved View		
Saved View		🚔 DGN
Sheet Placement 👻		🚔 REF
Attach As Master Reference		-
Attachment Options		
Locate Reference Off		
Move Ref Attachment to Ref Directory		
Check/Fix Ref Attach	Attach Help Exit	

Active File Settings

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

MDT Active File Settings		\times
Sheet Settings File Inform	ation	
Current Sheet Confi		
Select Sheet Attachment		
Sheet File Name:		
Sheet Model:		
Sheet Description:		
Place Data Fields	Attach Scaled Sheets Save Sheet Views	
Select Preliminary Stamp		•
Select Title Seal:		-
	~ 	
Sheet Label Setting	s	
Project Info c: \dgr	1/MDTPM\9405000RDPRJ001.DAT	
CPB List File:	۹ (2
	🗖 Label Title Sheet	_
	Apply	
	Help EXIT	

Merge GPK Files

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

Merge GPK Files			×
Source			Target
Job: 405 💌			Job: 100 💌
Points	10 11	▲	Options
Lines	12		Ask Before Redefining
Curves	13 14		Elements
Spirals	15 16		Redefine
Chains	17		C Elements If
Profiles	18 19		They Exist
Parcels	20 21		
Survey Chains	21	-	Merge Elements
		HELP	Exit

Archive GPK Project

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

Archive GEOPM Projects ×	Archive GEOPM Projects X	Archive GEOPM Projects X
Archive Restore Clean up	Archive Restore Clean up	Archive Restore Clean up
Projects	Zip Files	Projects
BIG-MUDDY-EAST	<select file="" zip=""></select>	BIG-MUDDY-EAST
Users	Users	Users
U6564 🗨	U6564 🗸	U6564 🗨
Files to Archive BIG-MUDDY-EAST.000 BIG-MUDDY-EAST.003 BIG-MUDDY-EAST.008 BIG-MUDDY-EAST.000 BIG-MUDDY-EAST.0012 BIG-MUDDY-EAST.012 BIG-MUDDY-EAST.PRJ BIG-MUDDY-EAST.RPT Zip File Name	Warning: The Restore option will replace the existing files.	Files to Delete BIG-MUDDY-EAST.000 BIG-MUDDY-EAST.003 BIG-MUDDY-EAST.008 BIG-MUDDY-EAST.00A BIG-MUDDY-EAST.00C BIG-MUDDY-EAST.012 BIG-MUDDY-EAST.PRJ BIG-MUDDY-EAST.RPT Warning: This will Delete all project
2222001.ZIP	RESTORE	files listed above.
Exit Help	Exit Help	Exit Help

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.

Control Traverse Abstra	ct 2.1				×
Point Number File:			File File	Reset	
Navigator —		Points of			Abstract Text Table Height: 1200 MAX Height = 1600
Point Number	N or Y Coordinate	E or Y Coordinate	Point	t Elevation	Place Table
Description					Diagram Points Scale: 100 Visualize Points X
					Create Cogo Input File Input File Name trav123.ioc
					Create File
					HELP Exit

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	Topog Fe	eatures										×
Job:	100	Chain: CL	•	Feature DGN:	9779000DIMAP00	1.DGN 🔍 T	IN File: 9779000DIDTM001.TIN	Q	Feature Sear	ch EX UTILITY FEATURES	▼ 🛼	۹
600 12 30	<u>نين</u>	🖗 🖉 🖂	CellList.csv	Label Scale	e: 100 🔻			HELP	,	Exit		
Numbe	r	Feature	Station	Offset	North/X	East/Y	Elev/Z					
	1	TLEPHONE PEDASTAL	14+79.89	-47.24	2608538.94	1145034.44	2626.1					
	2	UTILITY POLE	0+50.92	-66.44	2608568.8	1143604.96	2647.3					
	3	UTILITY POLE	4+61.75	-68.25	2608551.69	1144015.44	2639.62					ų
	4	UTILITY POLE	8+60.08	-69.33	2608535.78	1144413.45	2635.48					
	5	UTILITY POLE	12+61.58	-70.09	2608519.59	1144812.62	2627.22					_
	5	UTILITY POLE	14+08.16	-36.78	2608550.93	1144962.95	2625.81					
		UTILITY POLE	17+33.71	39.01	2608619.75	1145290.04	2627.06					
	3	UTILITY POLE			2608608.81	1145646.84	2629.31					
L												
L												
L												
L												

Import Drainage GPK Adhocs

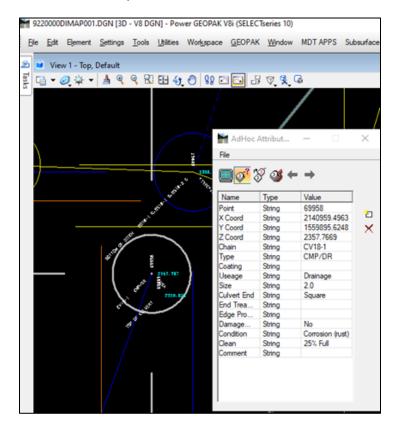
Import Drainage Features > Import Drainage GPK Adhocs. Used to import culvert data from survey. This tool can only be used for Legacy survey files. Please contact MDT Engineering Systems Support if there are any questions when utilizing this tool.

	Vie	w 1 - Top	. Default									
					-0 00 F		9.6					
G	•	e ≁ `	• <u> </u>	3 🕄 🖽 🍕	0 88 6		, X , G					
Im	port	t Drainag	e GPK Adhoc	s								\times
30	ob: F	220	- Chain	HA DSNCL		Drainage Su	rvev:	4AP001_HR.0	2021	Q	Model: Default	
	1	220		- I HA Dance	-	_	922000000	APOUL_NC.	John		Delaur	▼ Load
F		1				Plot Scale:	-	1				
	In	werts		60° .	×. ×.	Plot Scale:	100 -				Break	
	1	Number	Туре	Useage	Size/INCHE	S Chain Name	Station	Offset	Length			
		1	RCP/IRR	DRAINAGE	24	CV17-2	15+96.80		64.7			≦
		0	RCP/IRR	DRAINAGE	24	CV17-1	15+98.80		64.7			
		41	CMP/DR	DRAINAGE	24	CV2-2	130+01.01 R 2		78.4			
		102	RCP/DR	DRAINAGE	30	CV1-2	994+71.98 R 3	-68.23	43.5			
		36	CMP/DR	DRAINAGE	48	CV0-6	1001+30.98 R 3		80.5			I
		37	CMP/DR	DRAINAGE	36	CV0-7	1001+35.98 R 3		79.9			
		32	CMP/DR	DRAINAGE	24	CV1-1	1001+67.98 R 3	-314.1	40.1			
		38	CMP/IRR	DRAINAGE	18	CV0-8	1004+19.98 R 3	970.08	18.4			
		39	CMP/IRR	DRAINAGE	12	CV0-9	1004+35.98 R 3	983.31	17.8			
		35	CMP/DR	DRAINAGE	18	CV1-5	1006+12.98 R 3	30.98	55.8			
		34	CMP/DR	DRAINAGE	18	CV1-4	1007+76.98 R 3	31.86	84.1			
		33	CMP/DR	DRAINAGE	18	CV1-3	1008+68.98 R 3	28.14	31.7			
		40	CMP/DR	DRAINAGE	24	CV2-1	1100+04.98 R 3		62			
		103	CMP/IRR	DRAINAGE	18	CV2-7	1102+20.98 R 3	272.11	33.5			
		100	CMP/IRR	DRAINAGE	36	CV2-6	1119+01.98 R 3		74.3			
		101	CMP/IRR	DRAINAGE	36	CV2-5	1119+07.98 R 3		73.7			
		43	CMP/IRR	DRAINAGE	24	CV3-2	1154+67.98 R 3		68.3			
	Б	42	OTHER	DRAINAGE	24	CV3-1	1154+77.98 R 3	-125.5	60.6			
	Б	44	CMP/IRR	DRAINAGE	18	CV3-3	1154+80.98 R 3	86.57	32.2			
		104	CMP/DR	DRAINAGE	24	CV17-3	1183+03.98 R 3	155.73				
	Ы	2	CMP/DR	DRAINAGE	24	CV17-4	1315+61.98 R 3		66			•
1												_
1						-	1 1	1				
			9999	9000RDCLV001.k	9g	Text File	Help E	dt.				
			9999	9000RDCLV001.c	sv	Excel File						

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:

<u>F</u> ile	<u>E</u> dit	El <u>e</u> ment	<u>S</u> ettings	<u>T</u> ools	<u>U</u> tilities	Wor <u>k</u> space	<u>G</u> EOPAK	<u>Wi</u> ndow	MDT APPS
° –	⊒ - (≜ €	98	🗄 👌	. @ 88 🖻	1 🗆 占	V. K. (a
	- Ma	2 C	//AP 2.0 C:\dan\ref\ :\dan\9220 Convert			R.DGN	Replac	e Cell	×

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.

MDT Existing D)rainage Features	5						\times
	1	Plot Sc	ale: 100	•				
ID	Туре	Useage	Size/INCHES	Chain Name	Station	Offset	Length	
								ų

MAPPING

The Mapping macros are typically used in mapping files.

Draw Alignment Cells

Used to place cells along an alignment chain.

Draw Cells Along Chain $\qquad imes$
Job: 100 💌
Chain: CL 🗨
Station Offset
Begin: 0+00.00
End: 17+64.88
Increment: 25
Rotation: None
Cell Name:
Cell Scale: 1.0
Place Cells
HELP Exit

Break Shapes

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

Break Shapes		\times
	es for processin ment Selection t	
Process	Help	Exit

CROSS SECTIONS

The Cross Sections macros apply to cross sections files.

Place XS Sheet Clips

Used to place sheet clips on cross sections.

Place XS Sheet Clips		\times
Job:	-	
Chain:		1
Profile:	Boundary	
Label Scale:	20 Vpper Clip	
Upper Clip Offset	25	
Lower Clip Offset	25	
Apply	HELP Exit	

XS Movie

Used to move between cross sections in an XSF file.

XS Movie X
Job: 405 💌
XS Chain: HA_DSNCL 🗨
Profile DITCH_1
Station: 119+00.00 💌 🖬
I44 I4 FI FFI
÷ 2 ◀ ▶ ■
HELP Exit

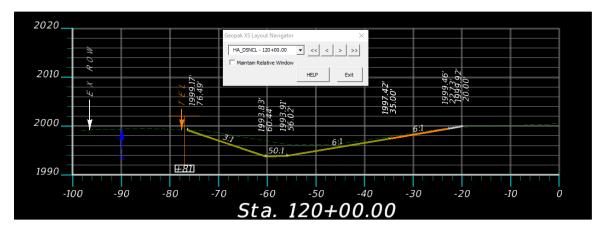
XS Feature Labeling

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 <u>Creating and</u> <u>Annotating Cross Sections</u> guidance for more information about this tool.

Cross Section Labeler		\times
🖻 🖶 日		
<u>General</u> <u>S</u> lope Lab	el El <u>e</u> v/Off Label Sta Label Text Label	_
Job: Chain:		
Begin Station: End Station:		
	10.00	
Undo	Draw Labels	

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.

	Information
Place Project Infor	rmation
Project File:	c:\dgn\MDTPM\9405000RDPRJ001.DAT
Designed By:	
Reviewed By:	
Checked By:	
Preliminary Stamp:	· · · · · · · · · · · · · · · · · · ·
XS Description:	
Update EarthWork Quantity File	ent Options
-	e Logical Prefix (MTRD:) Logicals Correct
	an 100 Scale Not Scaled

XS Sync

Used to sync levels from a source model to a cross section model. Refer to the <u>Creating and</u> <u>Annotating Cross Sections</u> guidance for more information about this tool.

Synchronize XS Graphics - v01.00.10	\times
Source Model: <select></select>	\sim
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.

Align	ment Coord	linate Fr	ame				\times
Tabl	e Heading	CENTE	RLINE	-			
Job:	100	•	Chain: CL	-	Profile:	•	
	Station	Desc	N or Y Coord	E or X Coord	cogo Name	Description	
1 2 3 4 5	0+00.00 12+45.85 13+05.17 13+64.32 17+64.88	PI PT	114356.552 114480.533 114480.653 1144919.904 1145320.378	2608585.7677 2608588.6355	α.1 α.3 α.3 α.3 α.5		
	JTPUT FILE N	AME					
C	ourveCoord.cs	iv			Save	Create 💌	
			[Place Frame	HELI	P Exit	

CONTROL SHEETS

Control Layout

Control Layout is the same macro as Import Survey Control. See the <u>Import Survey Control</u> section for further information.

TYPICAL SHEETS

Typical Generator

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

Typical Section 1.2
😂 🖬 🗣 9405000RDXSF001.txt Samples
Setting Pages Calculation Pages
Typical Settings Cut Fill Settings Drawing Settings Plan Quantities
Typical Calculation Area
Typical Type: Reconstruct
Typical Description: MAINLINE
Driving Lane 12 Feet
Normal Crown 0.02 FT/FT
Shoulder Right Feet
Shoulder Left Feet
Lift 1 PLANT MIX BITUMINOUS SURFACE
Lift 2 CRUSHED AGGREGATE COURSE
Lift 3 CRUSHED BASE COURSE
Lift 4 SPECIAL BORROW
Side Slope 6 :1
Super 0.02 Note: Maximum Super Rate Super 0.03 Supered Typical Super 0.04 Super 0.04 Super 0.05 Profile Rotation Super 0.06 Inside Edge Super 0.08 Vertice Edge
Sub Grade Rounding Option: 0.1
Calculate Reset Dialog
Draw Help 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.

Quantity File Manager 🛛 🗙		
UPN		_
WG		
Series	001	
Create	e HELP Exit	

DETAIL SHEETS

Attach Standard Hydraulic Drawings

Used to reference Standard Hydraulic Drawings into a DGN file.

Attach Hydraulics Standard Drawing		
		_
1		<u> </u>
Apply	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.

MDT GPK Plan Sheets Units:()			\times
Sheet Attachment Options	File	(s) Selec	tion
Plan - Profile		9000RDDET00	
C Plan - Plan (2 Plans Per Sht)		9000RDPLP00	
C Plan - Detail (1 Plan Per Sht)			
Sheet Scales			
100 Scale Sheets			
C 50 Scale Sheets			
C 20 Scale Sheets			
O 10 Scale Sheets			
Sheet scales shown refer to full size plans			
	Apply	Help	Exit

Design Block

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

MDT Design By Block V8i			×
Label	Name	Date	Sheet Placement
DESIGNED BY			Sheet 3
REVIEWED BY -		I	Sheet 2
CHECKED BY -		I	Sheet 1
REVISED BY -	,		C All Sheets
,			C Pave Pres Sheets
REVISED 👻			
REVISED 🔻		L	Apply HELP Exit

CPB Labeler

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

MDT Plans Labeler 2.1				×
Project Files				
Project File: c:\dgn\MD	TPM\9866000RDP	RJ001.DAT		Q
CPB List File:				🔍 🕜
- Sheet Files				
Label Sheets	Page #	DGN Nam	ie Sh	eet #
Label Title Sheet				
Data Fields Off				
Check Ref Att.				
Grey Scale				
	1			
Select Preliminary Stamp:				T
	Apply	Help	Exit	

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.

DP Save				×
Points Preferences Se	earch & Draw Criteria			
r	Job	: 100 • Chair	n: CL	→ Help
E or X	N or Y Z	Station	Offset	Point#
	4073.325815 0.000000	5+17.13	0.026700	
				4
				\mathbf{X}
				*
1				

RW Labeler

Refer to the $\frac{R/W \ Labeler}{Labeler}$ guidance for more information about this tool.

R/W Labeler				\times
GEOPAK User Preferences Job: 100 V Chain: CL V Distance: 99,123456 V Station: 9+99(9),12 V	T Vin	Options dow Center / Permanent	•	
E or X N or Y	Station	Offset	Point# Name	_
				*
File Open Mode: Create	▼ File Format:	MDT Data Collecto	or 🔽 📘	

TRAFFIC

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

TRAFFIC MACROS

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

Geometric:

Traffic Macros - Ver. 09.06.2018 - Enhanced	?	×
General Ref Map to Plan New Files Title Block		
Done		

Electrical:

Traffic Macros - V	/er. 09.06.2018 - Enhanced	?	Х
General Detail Drawings Ref Map to Plan Sign Design	New Files Title Block		
	Done		

Signing:

Traffic Macros - V	/er. 09.06.2018 - Enhanced	?	×
General Ref Map to Plan Sign Design	New Files Title Block		
	Done		

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.

Survey Raw to Text 2.0	×
Culvert Data	Raw File:
Point Number: X Coordinate: Y Coordinate: Z Coordinate: Z Coordinate:	
Chain:	Point XYZ File:
Usage: Size: Culvert End: End Treatment:	
Edge Damaged End: Condition: Clean:	Process Files Add Adhoc Save Saved File 5736002DINEZ001.txt Help Exit
Comment:	

POINT TO TEXT

Places cells at points listed in text file.

Survey Point to Text 2.0		×
Point XYZ file		Select
Number:	<< <	: > >>
N Coord: E Coord: Z Coord:	Cell Settings Cell Name: trav Cell Scale: 1.0	Text Settings Text Size: 5 Text Offset: 10
View Center	Place Current Point	Place All Points
	Help	Exit

POINT TO CELL

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