

# April 2023 MDT Civil 3D State Kit Survey Tools

RELEASE 2022 V1.24

# TABLE OF CONTENTS

Table of Contents	2
Overview	3
Companion Documentation	3
Disclaimer	3
Survey Tools	4
Miscellaneous Utilities - Survey	4
Convert The MDT SurveyPRO RAW to CIVIL 3D 2020 FBK	4
Enhance Fieldbook	6
3 <sup>rd</sup> Party MDT State Kit Tools for Survey	9
Import Extended Survey Attributes	9

## OVERVIEW

This document provides a user focused overview of the **Survey Tools** available for use with the MDT Civil 3D State Kit (hereafter referred to as "State Kit"). Basic functions for use with the State Kit are described to provide users with the fundamentals for processing survey data.

## COMPANION DOCUMENTATION

MDT Civil 3D State Kit Overview - Release 2022

https://www.mdt.mt.gov/other/webdata/external/ESDC/library/2022StateKit-Gen.pdf

To Convert a RW5 File into an FBK File

https://knowledge.autodesk.com/support/civil-3d/learnexplore/caas/CloudHelp/cloudhelp/2017/ENU/Civil3D-UserGuide/files/GUID-4B3A7744-0C39-4F05-B464-7F3AE1C5798F-htm.html

## DISCLAIMER

The Survey Tools are verified to work on internal MDT workstations and MDT internal networks. The customizations are also verified to work with a standard "out-of-the-box" Civil 3D installation. Every effort is made to make the Survey Tools compatible with any Civil 3D configuration, but in the event, there are conflicts between the Survey Tools and your Civil 3D configuration, please submit an <u>MDT Engineering Systems (CADD)</u> <u>Request</u> for guidance or assistance.

### MDT Engineering Systems (CADD) Request:

https://mt.accessgov.com/mdt/Forms/Page/engineering-division/cadd-support-request/0

## SURVEY TOOLS

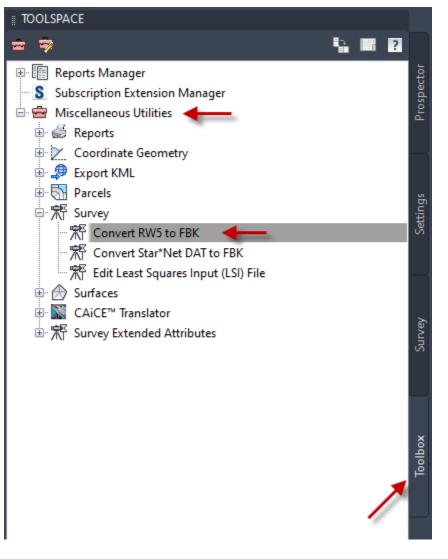
## **MISCELLANEOUS UTILITIES - SURVEY**

Miscellaneous Utilities for Survey are delivered as out-of-the-box utilities with installation of Civil 3D. These tools are useful for MDT to aid in content creation workflows and data processing.

To Convert a RW5 File into an FBK File is available for further information.

#### CONVERT THE MDT SURVEYPRO RAW TO CIVIL 3D 2020 FBK

- 1. Go to the Toolspace > Toolbox > Miscellaneous Utilities.
- 2. Expand Survey and right click and execute Convert RW5 to FBK.



- 3. From the Select RW5 File dialog change the File name filter from RW5 files (\*.rw5) to All files (\*.\*) and path to the RAW files.
- 4. Select RAW files one at a time in the dialog and click Open.

C Select RW5 File				×
	ariter i teres i get i	5 × 1000	Search download	P
Organize 👻 New folder				•
🙃 ) 🕂 ( feadlana d'feadlana)	↑ Name	^	Date modified	Туре
	🧐 троз.	raw 🔶	1/19/2016 11:27 AM	RAW Fil
Herrichtergenzur Ernehlten	🧾 тро4.	raw	1/19/2016 11:27 AM	RAW Fil
· · · · · · · · · · · · · · · · · · ·	/// TP05.	raw	1/19/2016 11:27 AM	RAW Fil
IN CONTRACTOR AND ADDRESS	TP06.	raw	12/29/2018 11:35	RAW Fil
10,000	🥮 трот.	raw	1/19/2016 11:28 AM	RAW Fil
The second se	TP08.	raw	12/31/2018 9:23 AM	RAW Fil
The second se	TP09.	raw	1/19/2016 11:28 AM	RAW Fil
- marine	TP20.	raw	1/19/2016 11:07 AM	RAW Fil 💊
Here / Here	v <			>
File name: TP03.raw		· · · · · · · · · · · · · · · · · · ·	All files (*.*)	$\sim$
			Open Ca	ncel

5. The Save Field Book File dialog will appear saving the file to a FBK format. Click the Save button. The file will be saved and the dialog will close.

C Save Field Book File							×
	imp.	age internet		ڻ <i>ب</i>	Search download		<i>م</i>
Organize 👻 New folder							?
🔒 (Basari Maga)	^	Name	^		Date mo	dified	Туре
Contribution :		TP01.fbk			4/29/202	0 12:32 PM	FBK Fil
- Haffere		TP02.fbk			4/29/202	0 12:32 PM	FBK File
Hereit	- 10	TP03.fbk			4/29/202	0 2:33 PM	FBK File
E at	- 11	TP04.fbk			4/29/202	0 2:34 PM	FBK File
- contract							
- Henrikindi		<					>
_	•						
File name: TP05.fbk							~
Save as type: Field Book files (*.fbk)							~
∧ Hide Folders					Save	Cance	el

### ENHANCE FIELDBOOK

The Enhance Fieldbook tool adds linework codes to fbk files converted from RAW files.

#### ENHANCE THE FIELDBOOK FILE

- 1. Go to the Toolspace > Toolbox > MDT State Kit Tools
- 2. Expand **Survey Extended Attributes** and right click and execute **Enhance Fieldbook**. The Open Field Book dialog will appear.
- 3. In the Open Field Book dialog select the FBK files you want to enhance. You can pick multiple files at once. Then click Open.

C Open Field Book												×
Look in:	download						- 🍡	æ	× 🛼	<u>V</u> iew:	s 🔻 Too <u>l</u> s	•
History History Documents Desktop OneDrive	Name TP01.fbk TP02.fbk TP03.fbk		~				4/29 4/29 4/29	/2020	lified ) 12:32 PM ) 12:32 PM ) 2:33 PM ) 2:34 PM		Type FBK File FBK File FBK File	
Dropbox B BIM 360	<											>
dgn	File name: Files of type:	*.fbk	1.fbk" "	TP01.fbl	«" "TP02	tbk" "Tf	203.fbk			~	<u>O</u> pen Cance	

Note: This routine will overwrite the FBK files adding the point code and line codes to the fieldbook.

#### IMPORT THE ENHANCED FBK FILE

1. Import the FBK using Import Survey Data.

Import Survey Data - Spe	cify Database		$\times$
Import Survey Data - Specify Database     Specify Data Source     Specify Network     Import Options	cify Database Select an existing survey database, or create a new of Survey databases Name Reidbook RAW	ne.	×
	Create New Survey Database	Edit Survey Database Settings	
	Back	Next Cancel Help	

2. Specify the data source type Field Book File and Select the Enhanced FBK file.

C Import Survey Data - S	pecify Data Source	Х
Specify Database	Specify the data source type and select the data.	
Specify Data Source	Data source type:	
Specify Network	Field Book File	/
Import Options	Selected file:	1
	Back Next Cancel Help	

3. In the Specify Network setup Create a new Network.

C Import Survey Data - Spe	ecify Network		×
Specify Database	Select an existing survey network, or crea Survey networks	ate a new one.	
Specify Data Source	Name	Description	
Specify Network	🔀 Survey01 🔶		
Import Options			
		Create New Network	
		Create new network	
	[	Back Next Cano	el Help

4. In the Import Options setup set it to MDT Figure Prefix Database and MDT Linework code set. Toggle YES Insert network object and Insert survey points.

pecify Data Source	Import settings	
pecify Network	Property	Value
nport Options	Field book filename (.FBK)	C:\dgn\_MDT-OR-Training\Survey_Data
	Current equipment database	<b>6</b> ~
	Current equipment	<u>.</u>
		No
	Current figure prefix database	🐉 MDT Figure Prefix Database 🛛 🔶 🗸
	··· Process linework during import	V Yes
	Current linework code set	MDT Linework 🔶 🗸
	- Process linework sequence	By import order 🗸 🗸 🗸
	Import event name	TP01.fbk
	- Import event description	
	- Assign offset to point identifiers	No
	Point identifier offset	
	Insert network object	No
	- Insert figure objects	Ves 🗲
	- Insert survey points	Ves 🔶
	Display tolerance errors in Event Viewer	No

Note: The figure prefix database has both sets of codes in it. For example, "FENCE" and "FN". Fence is used by the CSV file for the point code as well as the figure code. The Fence is used by the FBK for the point code, and FN is used by the fieldbook for the linework. There is a change to the Linework codes to force explicit start and end for the figures. Without this, Fence would be used to create a duplicate set of features that would all be strung together and would shoot between fieldbooks. The figure prefix database has the breakline flag set per the MDT standard.

## **3<sup>RD</sup> PARTY MDT STATE KIT TOOLS FOR SURVEY**

Survey Extended Attributes is a utility that isn't delivered in the State Kit and only expected to be delivered as out-of-the-box with Civil 3D installation in a future release. <u>MDT Civil 3D State Kit Overview - Release 2022</u> is available for further information on installation of 3<sup>rd</sup> Party MDT State Kit Tools.

#### IMPORT EXTENDED SURVEY ATTRIBUTES

The Import Extended Survey Attributes tool adds Property Set data to points and survey figures from fbk or csv files.

ADD THE ATTRIBUTE SET DATA TO THE POINTS AND SURVEY FIGURES

- 1. Go to the Toolspace > Toolbox > MDT State Kit Tools
- 2. Expand **Survey Extended Attributes** and right click and execute **Import Extended Survey Attributes**. The Open Field Book dialog will appear.

Note: This will add the property set data from the first point of a survey figure to the figure itself. It will also read the enhanced fieldbook and add the attributes as property set data.