# **CDOT InRoads Feature Filters**



This document guides you through the use of InRoads feature filters.

## **InRoads Feature Filters**

## **Purpose of using Feature Selection Filters**

InRoads utilizes feature based digital terrain models (DTM). Often users find the need to sort, or filter, through the contents of various InRoads dialog boxes that allow the users to display, annotate, or review the contents of a DTM. By creating Feature Selection Filters, the user will more efficiently be able to:

- Identify or view different categories of features found in a DTM
- Create a selection set of specific features

## **Example Feature Filters**

A variety of feature filters have been developed for the CDOT configuration. A user may elect to use the developed feature filters or build and/or refine filters to suit individual needs.

Feature filters have been created based on major categories such as Design, Hydraulics, Topography and pay item number. Additional filters have been developed to allow the filtering of select subsets within the major categories.

For example, the filter:

- T\_\* ...... will display only features beginning with the T-under bar designation (all topography features)
- T\_Gate\* (ALL)...... will display all features that relate to Topo\_Gate. (i.e. T\_Gate Barbed Wire, T\_Gate Combination, T\_Gate Chain Linked etc.)
- Pay Items 403\*..... pay items beginning with the primary number 403

#### **Feature Filter Example #1**

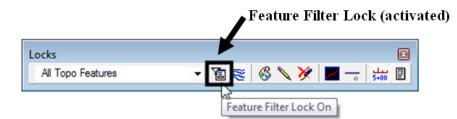
In the *Locks* toolbar shown below, the Feature Filter Lock is off, or *deactivated*, so the selected filter All Topo Features is not active. If the Surface > View Surface > Annotate Feature command is selected, the *Annotate Feature* dialog box would display *all* features located in that particular DTM in the *Features* list.

<u>Note</u>: Features within a Feature Filter can be verified by executing the View Features, Edit Feature, or Annotate Feature commands.

			Feature Filter Lock (	deactivate
Locks				
All Topo Fea	itures	- jā 😹	🚳 🔪 🏏 📕 🖉 🤣 🔕	
		Featu	e Filter Lock Off	
Annotate Feature				
	e Segments Slope Dir	ection		
Surface:	12345 All-Features			
Fence Mode:		•	Filter	
Tonoc Mode.	Ignore	*	Edit Style	
			Help	
Features:				
Name	Style	Description ^	<del>+</del>	
	B_RAIL_Ty-10M			
B_RAIL_Ty-10R	B_RAIL_Ty-10R B_RAIL_Ty-3			
B_RAIL_Ty-3	B_RAIL_Ty-3			
	B_RAIL_Ty-7			
	TB_RAIL_Ty-7_SE			
Breakline	Breakline			
Centerline	Centerline			
Column	T_Bridge			
Curb DTM_Exterior	T_Bridge			
D TM_Extend	DTM_Exterior	*		
Annotate				
V Points	🔽 Line Segments	Slope Direction		
	Apply Pref	erences Close		

#### **Feature Filter Example #2**

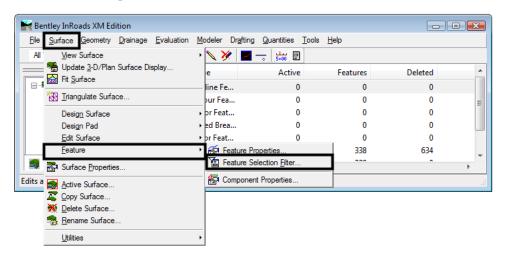
To display the results of the selected Feature Filter, in this case All Topo Features, the Feature Filter Lock is simply toggled on, or activated, and the filter will then sort the assigned features. Notice in the Annotate Feature dialog box shown below, the features are displayed once the filter is activated, when compared to Example #1 when the filter was deactivated.



Main P	oints	Line Segments	Slope Din	ection		
Surface:		12345_All-l	eatures	•		Filter
Fence Mo	ode:	Ignore		-		Edit Style
Features:						Help
Name		Style		Description	•	+
Abutmen	t	T_Bridge			=	
Column		T_Bridge				
Curb		T_Bridge				
Drain		T_Bridge				
Grill		T_Campsi	te			
Headstor	ne	T_Grave				
Marker1		T_Campsi	e			
Parapet		T_Bridge				
Pier		T_Bridge				
Rail1		T_Fence>	Wood		-	
Annotat	e					
Point	s	🔽 Line Seg	ments	Slope Directio	n	

## **Creating a Selection Filter**

1. From the Surface pull down menu Surface>Feature>Feature Selection Filter



In the *Feature Selection Filter* dialog box, create a name in the *Filter Name* field by <D> Save As...

Feature Selection F	ilter	- • ×
Filter Name: <a>Unname</a>	d>	• ОК
Start With:      All     Build Selection     Attribute: Name	None	Cancel Save
Value:		Save As
Mode: <ul> <li>Include</li> </ul>	C Exclude	Delete
Add Ru	Replace Rule	Help
Rules: Include All Features		Move Up Move Down Delete Rule Clear All
Current Results:		
(CIP) (CIP)1 (CIP)11 (CIP)2 (CIP)3 (CIP)4 (CIP)5 (CIP)6		

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3. In the *Save Filter As* dialog box, key-in a *Filter Name* for the filter and <D> OK. The newly created filter name will appear in the *Filter Name* drop-down list in the *Locks* toolbar.

ОК
Cancel
Help

- **Note:** The Feature Filter drop-down list in the Locks toolbar has a limited amount of viewing display capability, so the filter name should be created accordingly.
- 4. The first step in defining any filter is the *Start With* toggle. Toggle either *All* or *None* on. This selection allows the user to build the filter by adding or removing features with subsequent rules.
- 5. Complete the *Build Selection* section of the *Feature Selection Filter* dialog box by keying in an *Attribute* and *Value*, and selecting the appropriate *Mode*.
  - **Note:** A wide variety of Attributes are available as criteria for building filters. These include display properties as defined by the feature style assigned to the features.

Feature :	Selection Filte	r		
Start With:	© Al	None	OK     Cancel	Name Feature Description Parent
Attribute:	Style		▼ Save	Style Pay Item
Value:	H_Inlet*		Save As	Feature Type Exclude from Triangulation
Mode:	Include	Exclude	Delete	Elevation Component Member
	Add Rule	Replace Rule	Help	Component Name Closed Component Member Display Segments in 3-D/Plan
Rules:				Display Points in 3-D/Plan Display Annotation in 3-D/Plan
Exclude All	Features		Move Up	Attach Tag in 3-D/Plan Display Points in Cross Section Display Annotation in Cross Section
			Move Down	Display Projected Segments in Profile Display Projected Points in Profile
			Delete Rule	Display Crossing Points in Profile Display Annotation in Profile
			Clear All	<u>.</u>
Current Resi	ults:			

**Note:** The wild card symbol "\*" is often used in filters created for CDOT. This particular symbol matches any number of characters at and following the location of the symbol.

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6. **<D> Add Rule**. The *Current Results* list box updates as rules are added, deleted, updated, or re-ordered.

Feature	Selection Filter			- • •
Filter Name:	H_Inlets		•	ОК
Start With: Build Sele	O All	None		Cancel
Attribute:	Style		-	Save
Value:	H_Inlet*		•	Save As
Mode:	Include	Exclude		Delete
	Add Rule	Replace Rule		Help
Rules: Exclude All Include Sty	Features le = H_Inlet*			Move Up Move Down Delete Rule Clear All
H_Inlet_Ty H_Inlet_Ty H_Inlet_Ty H_Inlet_Ty H_Inlet_Ty H_Inlet_Ty H_Inlet_Ty	p_13_Dbl_h_5 p_13_Dbl_h10 p_13_h_5		•	

7. Verify that the rule was added in the *Rules* list box.

Feature 🖌	Selection Filter			- • 💌
Filter Name:	H_Inlets		•	ОК
Start With: Build Sele	C All	None		Cancel
Attribute:	Style		-	Save
Value:	H_Inlet*		•	Save As
Mode:	Include	Exclude		Delete
	Add Rule	Replace Rule		Help
Rules:				
Exclude All	Features le = H Inlet*			Move Up
				Move Down
			_ I	Delete Rule
				Clear All
Current Res	ults:			
H_Inlet_Ty H_Inlet_Ty H_Inlet_Ty				
H_Inlet_Ty	p_16_Dbl_h_5 p_16_Dbl_h10 p_16_Dbl_h15		-	

- 8. Verify that the correct Feature(s) were added in the *Current Results* list box.
- 9. **<D> Save**.

Feature	Selection Filter		- • ×
Filter Name:	H_Inlets		• ОК
Start With: Build Sele	All     Ction	None	Cancel
Attribute:	Style	-	Save
Value:	H_Inlet*	•	Save As
Mode:	Include	Exclude	Delete
	Add Rule	Replace Rule	Help
Rules: Exclude All Include Sty	ie = H_Inlet*		Move Up Move Down Delete Rule Clear All
H_Inlet_Ty H_Inlet_Ty H_Inlet_Ty H_Inlet_Ty H_Inlet_Ty H_Inlet_Ty H_Inlet_Ty H_Inlet_Ty	p_13_Dbl_h_5 p_13_Dbl_h10 p_13_h_5	Ĺ	•

**Note:** The previous Feature Filter example was created by the use of only two rules: **Exclude All Features** and **Include Style = H\_Inlet\***. It should be noted that when creating rules, they can include any of the following attributes: style, name, description, parent, pay item, triangulation, etc. Multiple rules can be incorporated to further refine the filtering. The order in which the rules are listed in a filter is important. They are always read from top to bottom and build sequentially based on the Results that passed the previous rule. Also, be aware that when inputting value(s) as rules, the input is case sensitive.

## Using a Feature Selection Filter

1. From the InRoads menu, select Surface>Feature>Feature Properties

File Surface Geometry Drainage Evaluatio	n <u>M</u> odeler Dr <u>a</u> fting	<u>Q</u> uantities <u>T</u> ools	s <u>H</u> elp		
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➡ Update <u>3</u> -D/Plan Surface Display ■ Fit Surface	e	Active	Features	Deleted	
	—— line Fe	0	0	0	
🔛 <u>T</u> riangulate Surface	pur Fea	0	0	0	
Design Surface	<ul> <li>pr Feat</li> </ul>	0	0	0	
Design Pad	ed Brea	0	0	0	
Edit Surface	• pr Feat	0	0	0	
<u>F</u> eature	• 🛜 Feature <u>P</u> r	operties	338	634	
Surface <u>P</u> roperties	E Feature Se	election <u>F</u> liter		•	

2. Verify that the Feature Filter Lock is toggled on

Locks All Topo Features	N
	Feature Filter Lock On

3. In the *Locks* toolbar, use the *Feature Filter* drop-down list to select a Feature Filter.

<u>File</u>	Surface Geometry Drainag	je <u>E</u> va	luation <u>M</u> odeler Dr <u>a</u> fting	<u>Q</u> uantities <u>T</u> ools	: <u>H</u> elp		
	H_Inlets	•	1 🗟 🗞 🏏	Lu E			
	All Traffic Features CDOT v3.0 Refresh	-	Data Type	Active	Features	Deleted	
<u> </u>	CDOT v3.0 Update		♪ Breakline Fe	0	0	0	
0	CELL_Plot-Scale		鯼 Contour Fea	0	0	0	
0	CELL_True-Scale ditch		Exterior Feat	0	0	0	
	H Inlets	=	🕅 Inferred Brea	0	0	0	
	Pay Items 208*		Interior Feat	0	0	0	
	Pay Items 304*		*_* Random Fea	339	338	634	
-	Pay Items 306* Pay Items 307*			^		•	Þ
eady	Pay Items 310* Pay Items 403*						

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4. The selected Features will be displayed in the appropriate dialog boxes.

uface:	12345_All-Featu	ires 🔻			Style					Apply
eature:					Available: B RAIL Ty-10M				_	Close
Name		Style	*	+	B_RAIL_Ty-10F				Â	
H_Inlet_Typ_	13_Dbl_h10	H_Inlet_Typ_13_	Dbl_h10		B_RAIL_Ty-3 B_RAIL_Ty-7					Filter
l_Inlet_Typ_	13_Dbl_h_5	H_Inlet_Typ_13_	Dbl_h_5		B_RAIL_Ty-7_S	ECT-A				List Points
_Inlet_Typ_	13_Tri_h_5	H_Inlet_Typ_13_	Tri_h_5 ≡		Breakline				-	
_Inlet_Typ_	13_h10	H_Inlet_Typ_13_	h10		Primary:					New Style
_Inlet_Typ_		H_Inlet_Typ_13_	h_5		H Inlet Typ 13	Dbl h10			-	Help
_Inlet_Typ_	16_Dbl_Spec	H_Inlet_Typ_16_	Dbl_Spec		Secondary:					
	16_Dbl_h10	H_Inlet_Typ_16_			Secondary.					
_Inlet_Typ_	16_Dbl_h15	H_Inlet_Typ_16_	Dbl_h15							
_Inlet_Typ_	16_Dbl_h_5	H_Inlet_Typ_16_	Dbl_h_5							
_Inlet_Typ_		H_Inlet_Typ_16_								
_Inlet_Typ_	16_Tri_Spec	H_Inlet_Typ_16_	Tri_Spec							
_Inlet_Typ_		H_Inlet_Typ_16_			Pay Items					
_Inlet_Typ_		H_Inlet_Typ_16_			Name	Descr	iption	From Style	<b>£</b>	
_Inlet_Typ_	-	H_Inlet_Typ_16_			604-13510	DATA	BASE NOT OPEN	Yes	*	
_Inlet_Typ_	-	H_Inlet_Typ_16_	-						<u></u>	
_Inlet_Typ_		H_Inlet_Typ_16_								
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lain	Points	Line Segments Slope Direction				
Surface:		12345_All-Fe	12345_All-Features 🔻			Filter
Fence	Mode:	Ignore		~		Edit Style
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-		_Dbl H_Inlet_Typ				
_		_Dbl H_Inlet_Typ				
-		_Dbl H_Inlet_Typ				
-		_Dbl H_Inlet_Typ				
H_Inle	_Typ_16	SpeH_Inlet_Typ	_16		-	
Annot	ate					
V Po		🔽 Line Seam	ents	Slope Di	rection	
		in and degin				



: Remember to disable the Feature Filter Lock when it is no longer needed.