FEMA

QC Toolbars: PLTS GIS Data ReViewer and DFIRM QC Assistance User Guide
FEMA DFIRM Production Tools
Version 4.0

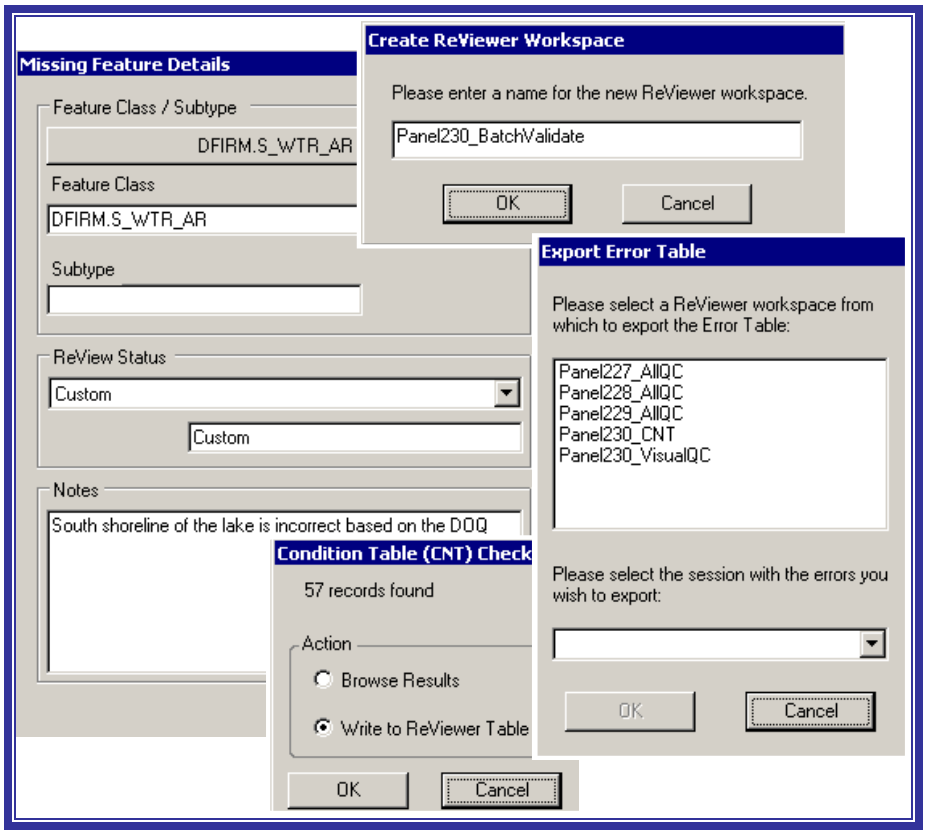


Table of Contents:

What are the QC Toolbars?

The **PLTS GIS Data ReViewer** toolbar and the **DFIRM QC Assistance** toolbar are part of the suite of Quality Control (QC) tools within the DFIRM Tools environment. These two toolbars work in conjunction with each other.

PLTS GIS Data ReViewer

PLTS GIS Data ReViewer is an ESRI extension that enables you to QC your tabular data, spatial data, and map layouts onscreen. Attribution, geometry, and topology errors can be discovered through automated validation processes which you setup and configure. Additionally, you can mark-up the map layouts onscreen and record comments about the error in an Error Table. Notes about all stages of the QC process (i.e., discovery, correction, verification) are recorded for each individual error, whether spatially-based or tabular-based. These comments and digital markings are stored in a personal geodatabase that can be transferred and accessed by the appropriate individuals working on your study.

PLTS GIS Data ReViewer toolbar

DFIRM QC Assistance

DFIRM QC Assistance is a set of tools that assist you with interacting with the **PLTS GIS Data ReViewer** toolbar. You are able to create ReViewer workspaces that are configured specifically to be used with **PLTS GIS Data ReViewer**. Additionally, you can export specific records from the Error Table and then open the exported file from within ArcMap, without having to navigate through the MIP directory structure. To aid with visual QC, you can load the Notepad features classes into your Table of Contents from a ReViewer workspace that you are passing between the Mapping Analysts, Engineers, and QC staff associated with your project.

DFIRM QC Assistance toolbar

Quick Reference Guide

The following is a quick reference guide to all of the components on the **PLTS GIS Data ReViewer** and **DFIRM QC Assistance** toolbars.

PLTS GIS Data ReViewer

	ReViewer Session Manager	Enables you to start a ReViewer session and set configurations specific to the session.
	ReViewer Table	Opens the Error Table.

	ReViewer Table Importer / Exporter	Imports and/or exports a PLTS 9.2 Error Table.
	Import Topology Errors	Imports topology errors from validated feature classes into the Error Table.
	Commit to ReViewer Table	Commits an error to the Error Table for an existing SDE feature.
	Flag Missing Feature	Places a point feature to identify a missing SDE feature and commits the error to the Error Table.
	Browse Features	Visually browses through selected features in the map and allows you to commit errors to the Error Table.
	Select Named Features	Queries for features within a feature class based on a specific attribute and allows you to commit errors to the Error Table.
	Select and Identify Features	Recalls the attributes for a selected feature(s).
	ReViewer Batch Job Manager	Creates a batch job with customized data checks for your job version.
	Select Data Check	Enables you to select and configure a particular data check to run.
	Run Data Check	Runs the check selected and configured via the *Select Data Check* dropdown list.
	ReViewer Batch Validate	Loads and executes a batch job(s) to validate specified features and/or tables.
	Sampling	This tool is not applicable to DFIRM production.
	Total Feature Count	This tool is not applicable to DFIRM production.
	Frequency	This tool is not applicable to DFIRM production.
	Create Polygon Grid Wizard	This tool is not applicable to DFIRM production.
	ReViewer OverView Window	This tool is not applicable to DFIRM production.

DFIRM QC Assistance

 Create ReViewer Workspace	Creates a configured personal geodatabase to be used as a ReViewer workspace.
 Export Error Table	Exports all of the CNT errors from the Error Table to a TXT file.
 Open Error Log	Opens the TXT file containing the session's CNT errors.
 Load Notepad Feature Classes	Loads the Notepad feature classes for the ReViewer workspace into the Table of Contents.

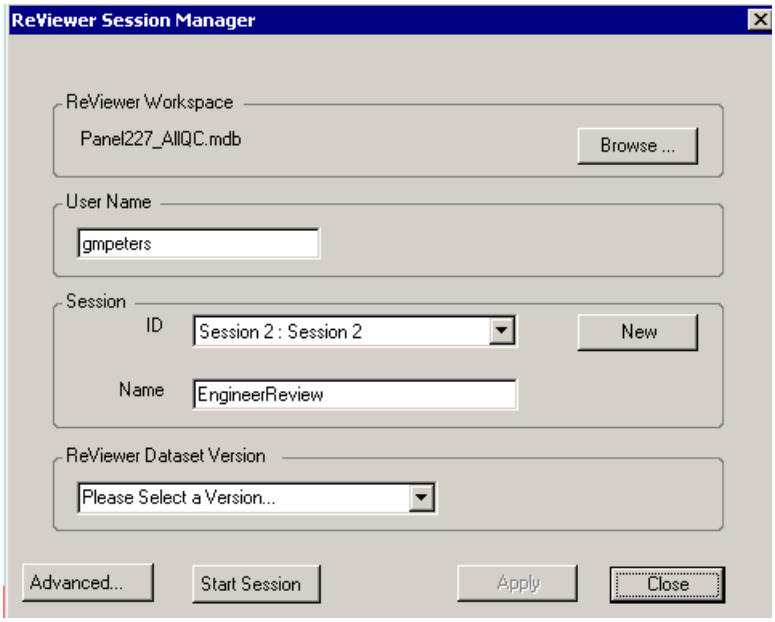
Tool Controls

This section describes the functionality of each of the tools available on the **PLTS GIS Data ReViewer** and **DFIRM QC Assistance** toolbars and provides instructions for their use.

ReViewer Session Manager

The **ReViewer Session Manager** tool enables you to open an existing ReViewer workspace in which you will be committing QC comments and/or evaluating the QC comments for editing. Within the same ReViewer workspace you create and recall multiple sessions to help organize the data errors in the Error Table. Additionally, you can configure how the errors are recorded in the Error Table.

1. Click the **ReViewer Session Manager** tool.
2. The ***ReViewer Session Manager*** dialog opens.



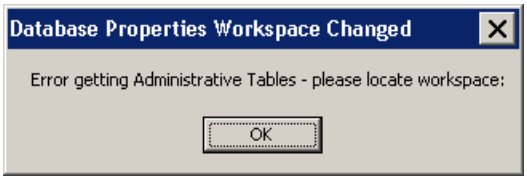
ReViewer Session Manager dialog

3. Browse through the MIP directory structure to the ReViewer workspace created via the Create ReViewer Workspace tool, and select the ReViewer workspace.

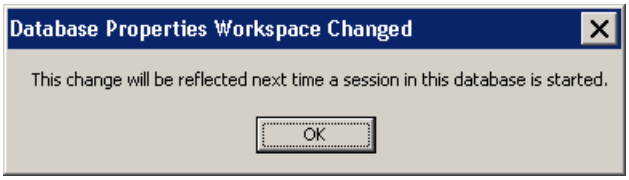
The ReViewer workspace(s) are stored at J:\FEMA\<region>\<state>\<county>\<county or community>\<FEMA Case Number>\Mapping\QC.

Note: When the ***ReViewer Session Manager*** dialog opens, the ReViewer workspace that you last used will be identified, even if you have launched a different job in **JTX** since you last used the **PLTS GIS Data ReViewe**r tools. Please make sure that this is the ReViewer workspace you want for the particular job in which you are working, prior to starting your session. You can click the *Browse* button to see where this ReViewer workspace is stored in the MIP directory structure to ensure that this is the correct workspace for your current job.

4. If this is a new ReViewer workspace that has not been used yet, the following error message is generated. *All of step 4 is due to an ESRI bug; a defect has already been submitted to ESRI.*



Click *OK*. The ***Browse*** dialog will open again. Browse to the same ReViewer workspace that you just selected and click *OK*. The following error message will be generated.



Click *OK*. The error message closes, and you can continue in the ***ReViewer Session Manager*** dialog. This bug does not affect you working within the ReViewer workspace; rather it is an issue with the workspace location and user name not being dynamic properties within the ReViewer workspace. These properties are reset once you click through the error messages.

5. Select an existing session ID from the dropdown menu or click the *New* button to create a new session within the ReViewer workspace.

6. The name of the session will be populated in the *Name* window in the dialog. By default the session name is "Session <#>", where # is the number for the session in the session *ID* dropdown list. In other words, if the session ID is "Session 2: Session 2" the default name for the session will be "Session 2".

Note: The session name can be edited once the session has started. Select the session for the ReViewer workspace and click the *Start Session* button. Once the session has started (e.g., the *Start Session* button changes to *End Session*), type a new name for the session into the *Name* window and click *Apply*. Changing the default names of the sessions promotes better organization within the ReViewer workspace.

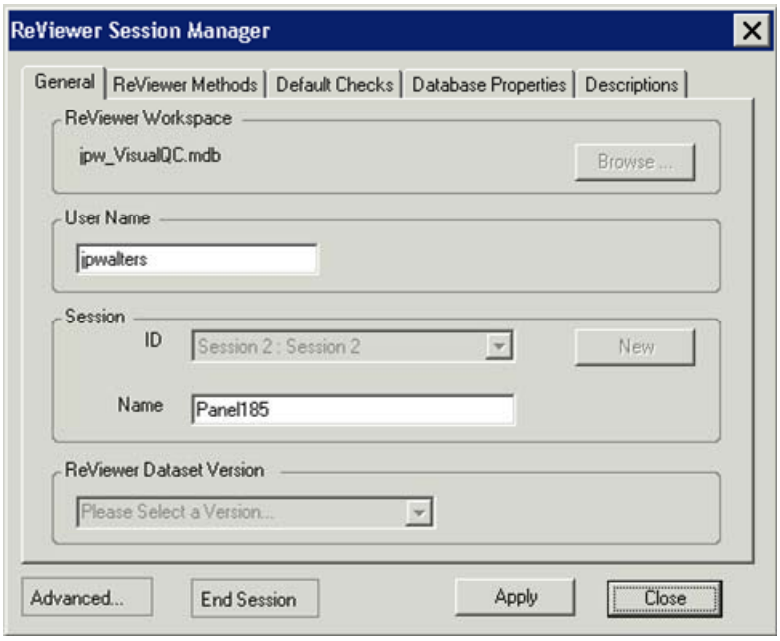
Note: The session *ID* value is the unique identifier for the ReViewer session. Whereas, the session *Name* is a descriptive title that helps you organize your sessions within your ReViewer workspace. The session name does not have to be unique. Be aware that you can have "Session 2: QC" and "Session 3: QC".

7. Leave the *ReViewer Dataset Version* dropdown value as is; nothing will be selected from this dropdown list. The ReViewer workspaces within the DFIRM Tools environment are personal geodatabases, not enterprise-level geodatabase; therefore, the ReViewer workspaces will never contain versioned datasets.

8. Click the *Start Session* button. The button will become the *End Session* button, and the *Apply* button will become active.

9. Click the *Advanced* button. The ***ReViewer Session Manager*** dialog changes to display five tabs at the top.

The *General* tab is the dialog's default tab. To select another session and/or ReViewer workspace you have to stop the current session first, and then remap to the ReViewer workspace you want or select a different session within your current ReViewer workspace.



General tab in the ***ReViewer Session Manager*** dialog

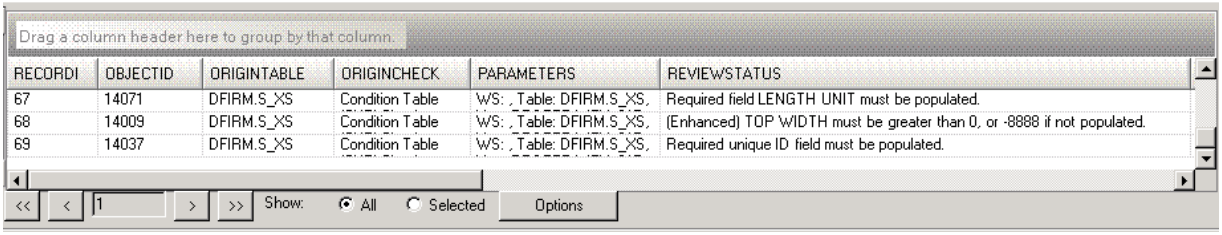
Note: Whenever a ReViewer session is created, the *User Name* value defaults to the creator of the ReViewer Workspace template. You will need to change it to ensure that your login is recorded for any QC work you do. Once you start the ReViewer session, edit the *User Name* value to be your login and click *Apply*. Likewise, whenever you start a ReViewer session that another user previously worked in, make sure to update the *User Name* value, as it will be the previous user's login. Otherwise, all changes you make to the Error Table will be recorded under the wrong login, and therefore, will be useless for tracking purposes.

10. Under the *ReViewer Methods* tab, check the following options:

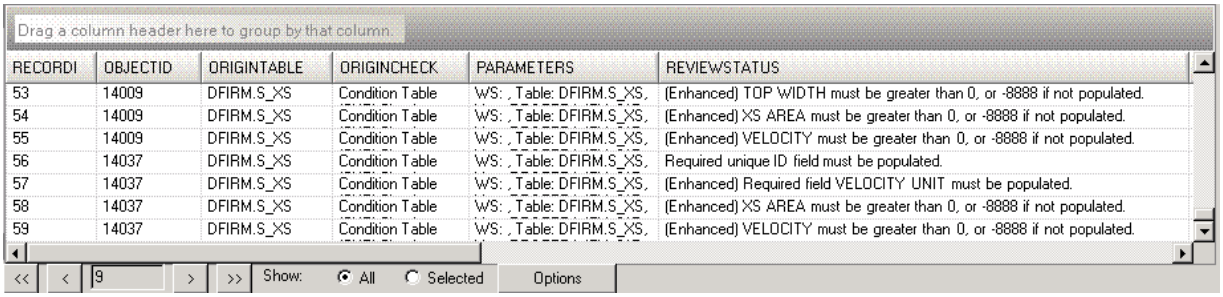
- *Continue Batch Processing if Default Checks return error*
  If errors are discovered in your data by any of the checks listed under the *Default Checks* tab in the ***ReViewer Session Manager*** dialog, the batch error checking can still be performed prior to resolving the other errors.

- *Continue Batch Processing if check fails to finish*
  If any checks in a batch job fail, the remaining checks are still run; otherwise, if one check fails to run, the entire process is terminated. The check(s) that fails to run will be reported in a window after the process is complete.

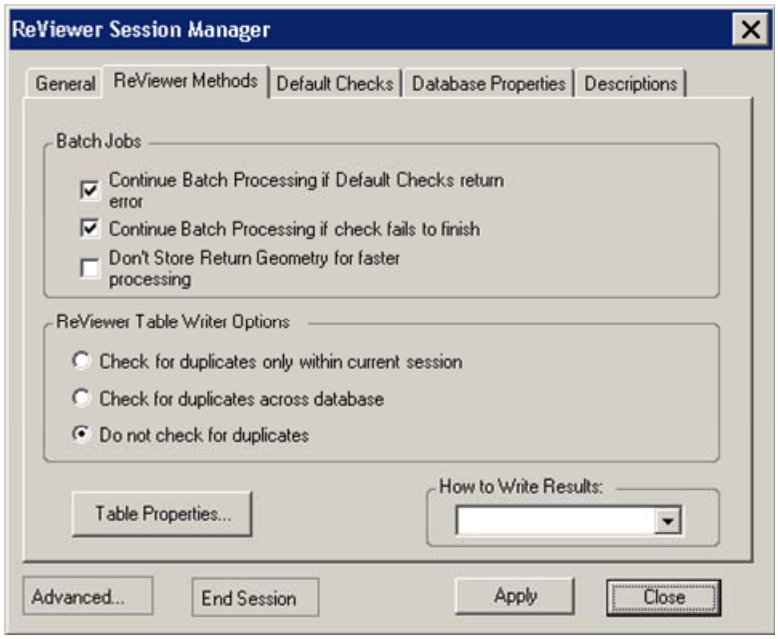
- *Do not check for duplicates*
  PLTS GIS Data ReViewer does not evaluate the error description for duplicates based on the feature's ObjectID; rather only the ObjectID value is considered for duplicates. Therefore, if you do not check this option and there are five errors that the CNT check finds for one feature (e.g., five different fields are not populated correctly), only the first error found for this feature will be written to the Error Table. All other errors will be discarded as duplicates, even though the error descriptions are different.



Example of errors from the Cross Section CNT check when the *Check for duplicates only within current session* option (default option) is checked on the *ReViewer Methods* tab. There is only one error reported for ObjectIDs 14009 and 14037 each. The first error reported is written the Error Table, and all other errors are discarded.



Example of errors from the Cross Section CNT check when the *Do not check for duplicates* option is checked on the *ReViewer Methods* tab. There are three errors reported for ObjectID 14009 and four errors reported for ObjectID 14037. All errors discovered by the check are written to the Error Table.



ReViewer Methods tab in the ***ReViewer Session Manager*** dialog

11. Under the *Default Checks* tab, check the following options:

- *Invalid Geometry Check*

The features involved in the batch jobs are investigated for empty geometry and/or non-simple geometry.

- *Multipart Line Check*

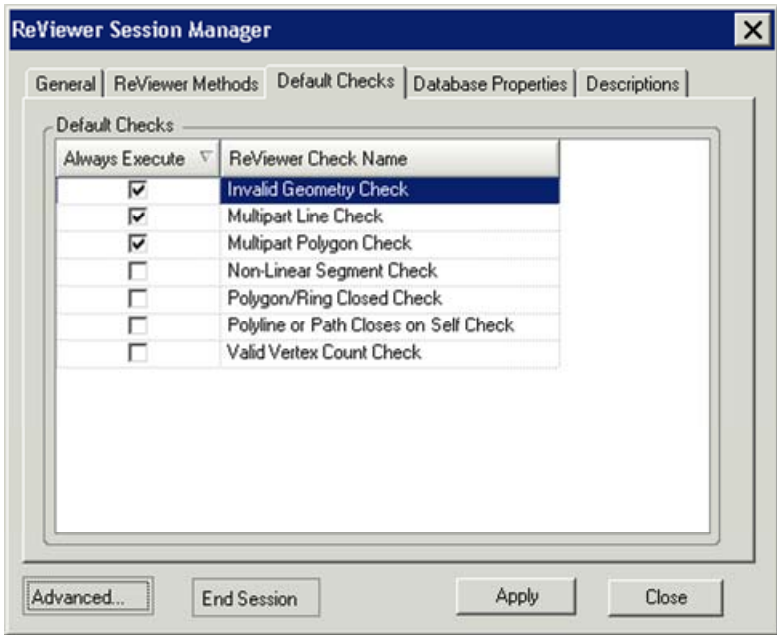
The features involved in the batch jobs cannot have multi-part line features.

- *Multipart Polygon Check*

The features involves in the batch jobs cannot have multi-part polygon features.

Note: Multi-part features are not acceptable within the DFIRM database submissions to FEMA.

Note: The Default Checks are run prior to the checks via the ***ReViewer Batch Validate*** tools on the feature classes involved in the batch checks. If any errors are found by the Default Checks, the errors are written to the Error Table and the batch checks continue as long as the *Continue Batch Processing if Default Checks return error* option is checked in the *ReViewer Methods* tab of the ***ReViewer Session Manager*** dialog. The Default Checks are not run when any individual check is selected from the ***Select Data Check*** tool dropdown list.



Default Checks tab in the ***ReViewer Session Manager*** dialog

Note: The Default Checks can also be individually selected in the Select Data Check dropdown list from the *Default Check* list and run via the Run Data Check tool.

Note: The configurations on the *ReViewer Methods* and *Default Checks* tabs are specific to the current session within the ReViewer workspace. The configurations on the *Database Properties* and *Description* tabs are specific to the ReViewer workspace, and these configurations will be reflected in all sessions within the ReViewer workspace. For additional information regarding the Advanced tabs and other configurations that you can set in the ***ReViewer Session Manager*** dialog, within ArcMap go to Help > PLTS Help > ReViewer session > advanced properties.

12. Click *Apply* to commit the configurations.

13. Click *Close* to exit the ***ReViewer Session Manager*** dialog and work with the **PLTS GIS Data ReViewer** tools.

ReViewer Table

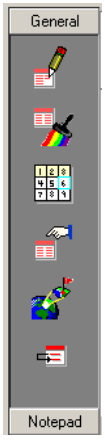
The **ReViewer Table** tool opens the Error Table associated with the ReViewer workspace in which you are working. (Note that the ReViewer Table will be referred to as the Error Table in this document.) The Error Table contains records for every record reported via the Data Checks and committed by all users via the Import Topology Errors tool, Commit to ReViewer Table tool, Flag Missing Feature tool, and the Notepad tools.

The QC process is cyclic. The Engineering and QC staffs identify the errors in your data and/or map layout via the tools on the **PLTS GIS Data ReViewer** toolbar. The job is then passed back to you (i.e., GIS Analyst) to correct the errors and enter the correction information into the Error Table. Once the errors have been corrected, the job is passed back to the Engineering and QC staff to verify that the errors have been corrected appropriately. The staff will populate the verification information into the Error Table accordingly. This process continues until all errors have been resolved as necessary and no new errors have been found. Refer to the Populating ReViewer Table Fields section of this user guide for further information as to populating the fields pertinent at each step of the QC cycle.

Note: The Error Table is a dockable window within ArcMap.

General Tab

The *General* tab contains six tools that allow you to interact with the records in the Error Table. This tab is located in the left-hand frame in the Error Table.



General tab in the Error Table

Toggle Table Edit Mode

The **Toggle Table Edit Mode** tool enables you to delete and/or edit the existing records in the Error Table. If a Condition Table (CNT) error is written to the Error Table that is a false positive, you can turn on the edit mode and delete the record to help keep your Error Table clean. An example of a false positive would be any errors that are related to an Enhanced DFIRM database when you are contracted to submit a Standard DFIRM database. Additionally, if you erroneously commit an error to the Error Table that contains a typo, you can turn on the edit mode in the Error Table and correct the mistake. In other words, a BFE feature was committed to the table with the description being that the elevation value should be 102. The actual value should be 120. You can use the **Toggle Table Edit Mode** tool to edit the typo, instead of deleting the current error and re-committing the error to the Table with the correct description.

Click the **Toggle Table Edit Mode** tool to engage editing in the Error Table. When the table is in edit mode, the field headings will be yellow; the field headings are normally light gray. Click the **Toggle Table Edit Mode** tool again to cease editing. You will be prompted to save or discard your edits.

Note: The Error Table does not store any history of the edits. In other words, if Peter commits an error to the Error Table but Kelly edits the description, the record will still cite Peter as the individual who committed the record. Therefore, you should be careful in editing the Error Table via the **Toggle Table Edit Mode** tool, as you can jeopardize knowing who to consult for further information about the error.

Be careful deleting a record for a missing feature or a Notepad feature. The record will be removed from the Error Table, but the spatial feature in ReViewer Dataset (i.e., REVTABLEPOINT, REVTABLELINE, and REVTABLEPOLY feature classes) will remain. Therefore, you will have a QC markup feature in the *Data* view that is not associated with any records in the Error Table.

Note: For additional information regarding editing within the Error Table, within ArcMap go to Help > PLTS Help > Toggle Table Edit Mode > using.

Symbolize ReViewer Feature Records

The **Symbolize ReViewer Feature Records** tool allows you to symbolize the spatial errors in the Error Table based on their status. When you click the **Symbolize ReViewer Feature Records** tool, the feature classes in the ReViewer Dataset (i.e., Notepad features, spatially-linked errors) are loaded into the Table of Contents. The features are then symbolized based on the error status in the Error Table.

- Red indicates that the error has been the committed to the Error Table (i.e., *REVIEWSTATUS* field).
- Yellow signifies that a correction status has been assigned (i.e., *CORRECTIONSTATUS* field).
- Green means that a verification status has been entered (i.e., *VERIFICATIONSTATUS* field).

Note: For additional information regarding symbolizing the spatially-related errors in the Error Table, within ArcMap go to Help > PLTS Help > Symbolize ReViewer Feature Records tool > using.

Grid Selection Tool

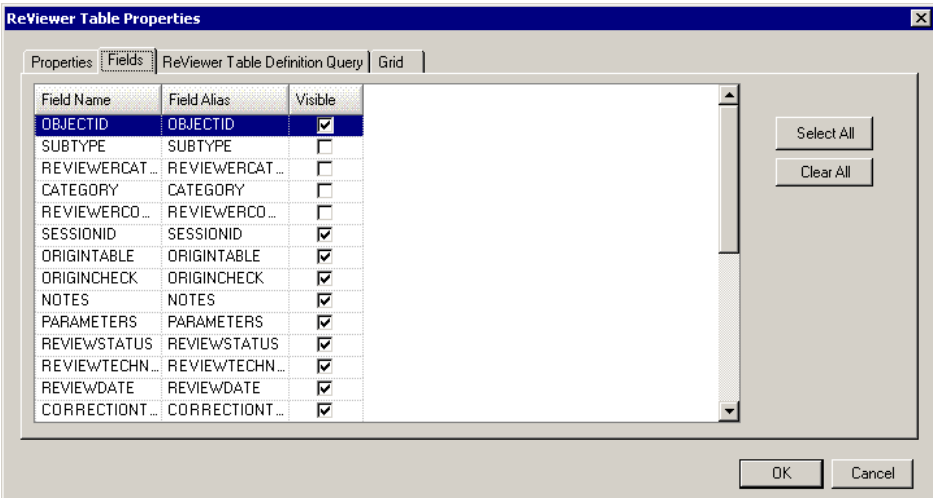
The **Grid Selection Tool** tool is not available for use within the DFIRM Tools environment. You are unable to create a polygon grid via the Create Polygon Grid Wizard tool.

ReViewer Table Property Page

The **ReViewer Table Property Page** tool opens the ***ReViewer Table Properties*** dialog. In the dialog you can customize the display properties within the Error Table in the current ReViewer workspace.

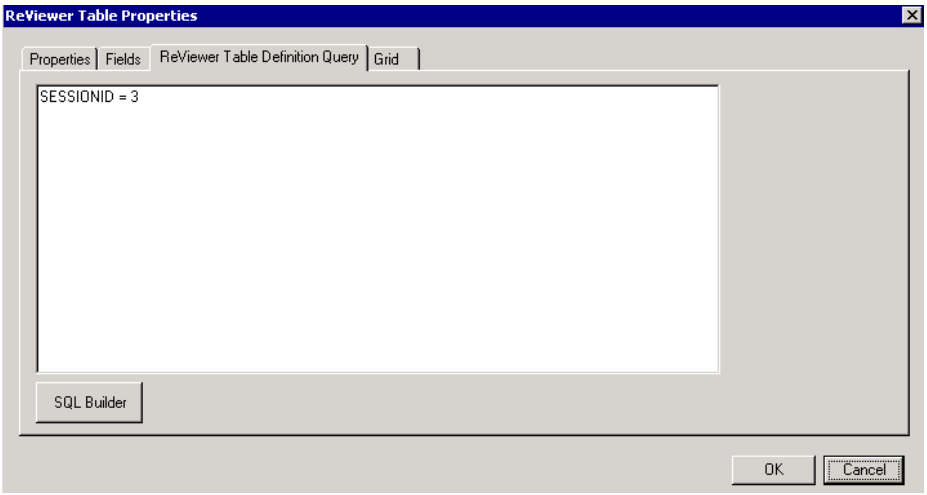
The *Fields* tab and the *ReViewer Table Definition Query* tab within the ***ReViewer Table Properties*** dialog are the most likely tabs to be used within the DFIRM Tools environment.

The *Fields* tab enables you to uncheck fields that you do not wish to display within the Error Table. These fields will still be populated, just not visible.



Fields tab in the ***ReViewer Table Properties*** dialog

The *ReViewer Table Definition Query* tab allows you to create a definition query for the Error Table. Only records that meet this criterion will be displayed in the Error Table. However, you can still populate the table with records that do not meet the criteria; those records will just not be displayed once they are committed to the table. By default the definition query is set to display the records associated with the session name in which you are in currently. Below is an example of a default definition query.



ReViewer Table Definition Query tab in the ***ReViewer Table Properties*** dialog

Note: The *Grid* tab is not applicable within the DFIRM Tools environment. However, for additional information regarding the applicable tabs within the ***ReViewer Table Properties*** dialog, within ArcMap go to the following help files:

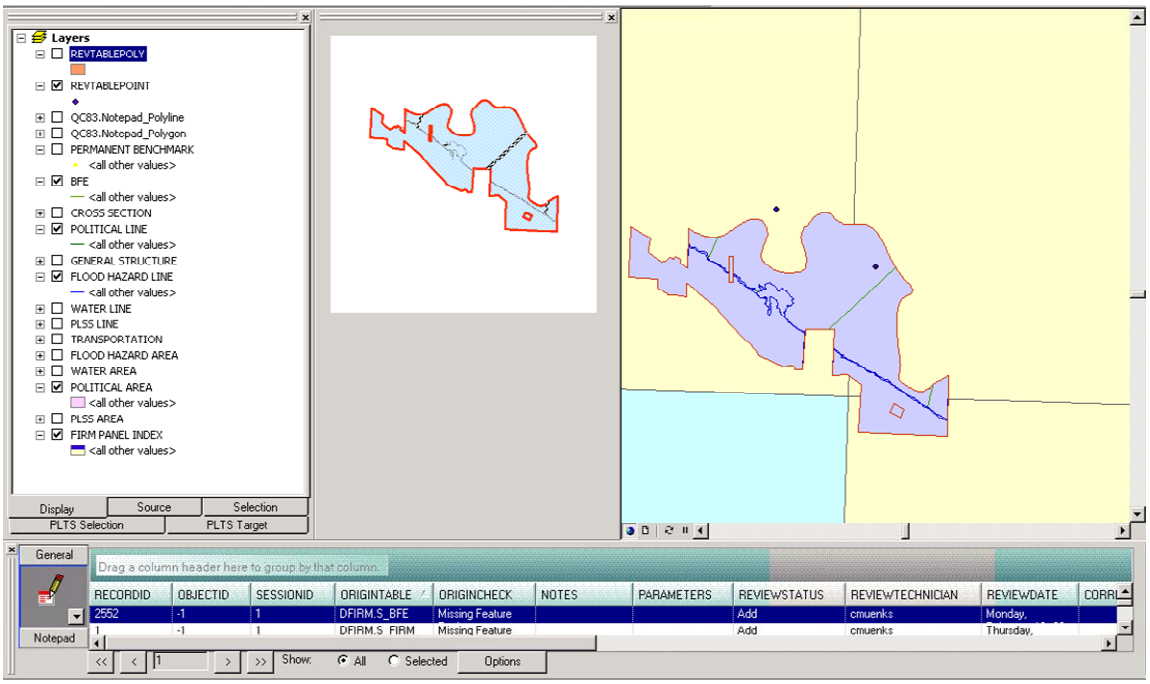
Properties tab - Help > PLTS Help > ReViewer Table Property Page tool > using

Fields tab – Help > PLTS Help > ReViewer table > toggling column display

ReViewer Table Definition Query tab – Help > PLTS Help > ReViewer table > creating a definition query

Show Record Bitmap

The **Show Record Bitmap** tool allows you to see exactly what the QC person had in his/her *Data* view when he/she committed the missing feature error. When the error is committed to the Error Table via the Flag Missing Feature tool, a snapshot of the user's *Data* view is taken. If you highlight a "Missing Feature" error in the table and click the **Show Record Bitmap** tool, a snapshot of what the user's screen looked like will open. This way you can see if the QC person was examining imagery, had additional reference data loaded, and/or had key feature classes turned off/on in the *Data* view; having this knowledge will aid in resolving the error appropriately.



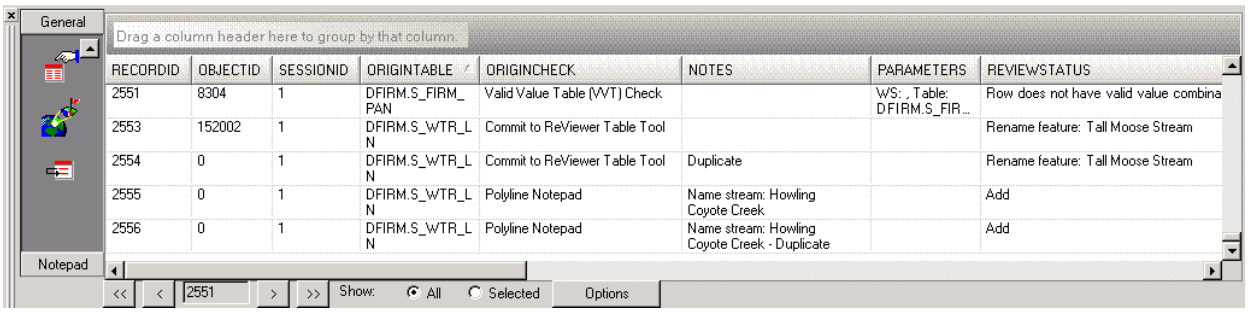
Example of a record bitmap (i.e., middle dockable window) for *RECORDID* 2552 when opened via the **Show Record Bitmap** tool. This snapshot was taken of the QC person's *Data* view when he/she committed the error to the Error Table.

Note: You will not see the contents of the QC person's Table of Contents in the snapshot. Therefore, if the user's symbology is odd, as in the example above, you will not be able to identify the feature class(es) from the symbology. Likewise, you will not be able to determine the name of any reference data from the snapshot, unless the QC person labeled it in the *Data* view.

Note: For additional information regarding how to use the **Show Record Bitmap** tool with the missing feature records in the Error Table, within ArcMap go to Help > PLTS Help > Show Record Bitmap tool > using.

Repeat Existing Record

The **Repeat Existing Record** tool enables you to select a record in the Error Table and create a new error containing the same feature class and error information as the selected record. This allows you to create different spatial features without having to repeatedly populate the same error information for the identical causes for error. The duplicate records will be identified as "Duplicate" in the *Notes* field in the Error Table.



Examples of duplicate records created via the Repeat Existing Record tool. RECORDID 2554 is a duplicate of record 2553, and RECORDID 2556 is a duplicate of record 2555.

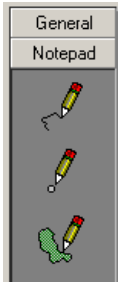
1. Commit an error to the Error Table.
2. Highlight that record, and click the **Repeat Existing Record** tool.
3. You will be prompted with a sketching cursor in the *Data* view. Draw the second feature.
4. Upon finishing the sketch, the feature will be committed to the Error Table and the error information will be populated to match the selected record.

Note: You can only use the **Repeat Existing Record** tool on errors that are feature-related, and the geometry of the duplicate record will match the geometry of the selected record.

Note: For additional information regarding how to duplicate existing records in the Error Table, within ArcMap go to Help > PLTS Help > Repeat Existing Record tool > using

Notepad Tab

The *Notepad* tab contains three tools that allow you to digitally mark-up the map layouts with QC comments. This tab is located in the left-hand frame in the Error Table.



Notepad tab in the Error Table

Note: The Notepad tools do not edit your data in the DFIRM Tools ArcSDE geodatabase; rather these features are stored in the ReViewer workspace as references to errors. However, you can copy the Notepad feature to a data layer in SDE if you want the exact feature created with Notepad tools.

Line Notepad

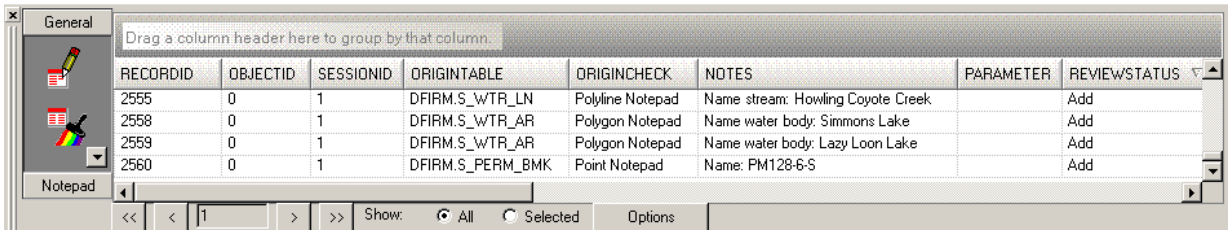
The **Line Notepad** tool enables you to draw line features in the map layout as QC marks. These features are stored in the REVTABLELINE feature class in the ReViewer Dataset.

Point Notepad

The **Point Notepad** tool enables you to draw point features in the map layout as QC marks. These features are stored in the REVTABLEPOINT feature class in the ReViewer Dataset.

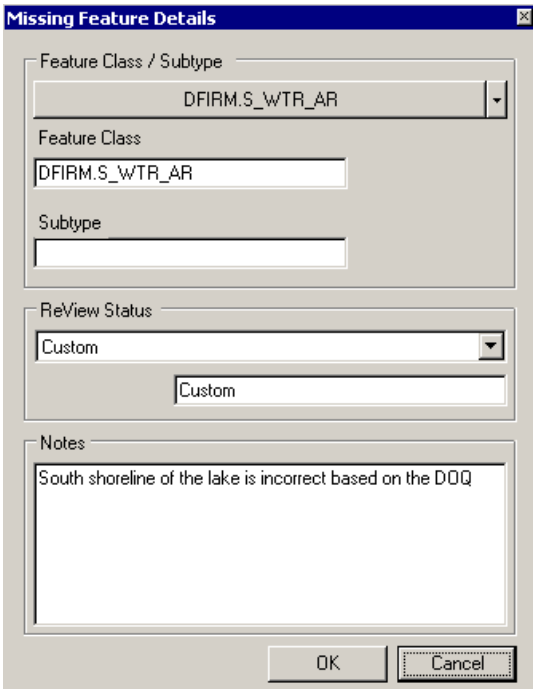
Polygon Notepad

The **Polygon Notepad** tool enables you to draw polygon features in the map layout as QC marks. These features are stored in the REVTABLEPOLY feature class in the ReViewer Dataset.



Example of the errors committed to the Error Table via the Notepad tools.

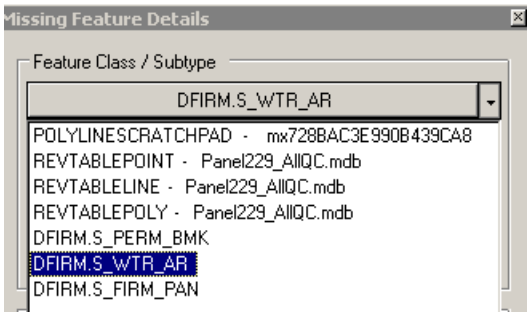
1. Click the Notepad tool for the feature geometry you wish to draw.
2. You will be prompted with a sketching cursor in the *Data* view. Draw the feature, and double-click to end the sketch.
3. The ***Missing Feature Details*** dialog opens.



Example of the ***Missing Feature Details*** dialog populated.

4. From the *Feature Class/Subtype* dropdown menu, select the SDE feature class this error relates to and/or from which it is missing. The selected feature class name will be populated in the *Feature Class* window.

The dropdown menu lists any layer that is visible in the Table of Contents when the dialog opens. Do not select the scratch feature classes or the ReViewer Dataset-related feature classes. None of these feature classes are where the QC error was found, which is what you are selecting from the dropdown menu.



Example of data layers listed in the *Feature Class / Subtype* dropdown menu. The first layer is a scratch feature class, and the next three layers are feature classes in the ReViewer Dataset.

5. Leave the *Subtype* text box blank. None of the SDE feature classes have subtypes; the *FC_SUBTYPE* value for all features is zero.

6. Select a status from the *ReView Status* dropdown menu.

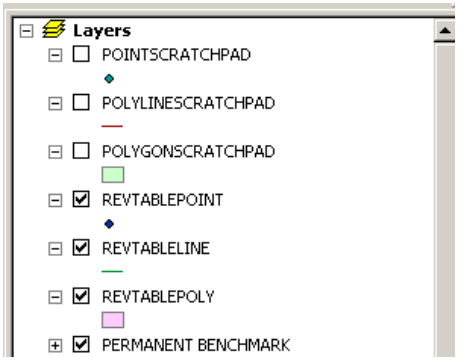
Note: The status values "Add" and "Custom" are the default values for *Review Status*. For information on adding other status values to the dropdown menu, within ArcMap go to Help > PLTS Help > ReViewer session > advanced properties.

7. Enter any additional comments into the *Notes* text box.

8. Click *OK*. You will receive confirmation that the record has been added to the Error Table.

As a workaround to a bug in the application, ESRI coded the Notepad features to initially write via temporary feature classes within a personal geodatabase saved in your Citrix profile. These temporary scratch feature classes are named POINTSCRATCHPAD, POLYLINESCRATCHPAD, and POLYGONSCRATCHPAD. The associated scratch feature class will be loaded into the Table of Contents when you click a Notepad tool. When you finish feature sketch, the feature will be automatically saved to the feature classes within the ReViewer Dataset (i.e., REVTABLEPOINT, REVTABLELINE, and REVTABLEPOLY). Essentially, just be aware that the scratch feature classes will be added to your Table of Contents when you use the Notepad tools, but you should not actually interact with the scratch feature classes, as your QC comments will not be stored permanently as scratch features. In fact, the scratch feature classes cannot be remapped if accidentally saved in your ArcMap session.

Note: The scratch features do not always appear in the view; this is an ESRI bug. We recommend loading the ReViewer Dataset-related feature classes via the Load Notepad Feature Classes tool. Since the Notepad features are written immediately to the ReViewer Dataset upon finishing the feature sketch, you can turn off the scratch feature classes in the Table of Contents. This will not affect you using the Notepad tools. Your QC features will be displayed when the REVTABLEPOINT, REVTABLELINE, and/or REVTABLEPOLY are turned on.



Example of the scratch feature classes and the ReViewer Dataset-related feature classes loaded into the Table of Contents

Be careful deleting a feature in the ReViewer Dataset-related feature classes. The spatial feature will be deleted, but the record in the Error Table will remain. Therefore, you will have a record in the Error Table that is not associated with any spatial feature in the *Data* view. If you click that record, you will receive an error since the associated spatial feature cannot be found.

Error message generated when a record in the Error Table is no longer associated with a spatial feature in the ReViewer Dataset

Populating ReViewer Table Fields

There are three different occasions when the records in the Error Table are altered – when the error is added to the Error Table, when the error has been corrected and is recorded as such, and when the correction has been verified and recorded as such.

When an error is committed to the Error Table, all of the error identification and description information, as well as, the information regarding who found the error are written to the Error Table.

RECORDID	OBJECTID	SUBTYPE	REVIEWERCATEGORY	CATEGORY	REVIEWERCOD	SESSIONID	ORIGINTABLE
2551	8304	DFIRM.S_FIRM_PAN	1	Feature Record	228	1	DFIRM.S_FIRM_PAN
2552	-1		4	Location Record	998	1	DFIRM.S_BFE
2553	152002	DFIRM.S_WTR_LN	1	Feature Record	998	1	DFIRM.S_WTR_LN
2555	0		1	Feature Record	996	1	DFIRM.S_WTR_LN

Example of the first eight fields populated in the Error Table

The first eight fields in the Error Table are primarily clerical in nature. The information in these fields identify which feature the error is related to (e.g., *OBJECTID*, *ORIGINTABLE*) and how the error was found (e.g, *REVIEWERCATEGORY*, *REVIEWERCODE*). Almost all of the fields are automatically populated by the GIS Data ReViewer tools; however the fields *SUBTYPE* and *ORIGINTABLE* are populated by you if the error is added to the Error Table via the Flag Missing Feature tool or any of the Notepad tools.

Of the first eight fields in the Error Table, the important fields that you are likely to interact with are as follows:

- *OBJECTID* – If an error is committed to the Error Table for an existing spatial feature or look-up table record (e.g., S_Wtr_Ln, L_Source_Cit), the spatial feature's or record's *OBJECTID* value will be identified in this field. That way there is a direct link between the record in the Error Table and the actual spatial feature or look-up table record to which it relates.

- *SUBTYPE* – You can populate the *SUBTYPE* field in the ***Missing Feature Details*** dialog whenever you commit an error to the Error Table via the **Flag Missing Feature** tool or any of the Notepad tools. However, there are no subtypes within the SDE feature classes; therefore, you should not enter any value when prompted. For other errors (e.g., VVT, Commit to ReViewer Table) the GIS Data ReViewer tools will populate the *SUBTYPE* value with the feature class name; in these instances the *SUBTYPE* and the *ORIGINTABLE* values will be the same.

- *SESSIONID* – This field designates in which ReViewer session the error was found. When the Error Table opens, the records are queried based on the ReViewer session in which you are currently working. However, if you remove the definition query on the Error Table, you will see all records recorded in all sessions within the ReViewer workspace. This may be appropriate depending on how you have organized your QC processes.

- *ORIGINTABLE* – This field identifies the feature class or look-up table where the error was found. If you commit an error to the Error Table via the **Flag Missing Feature** tool or any of the Notepad tools, you will be prompted to identify the feature class associated with the error. Otherwise, the feature class or look-up table will be populated for you by the GIS Data ReViewer tools.

Note: You can turn on and off the visibility of each field within the Error Table via the *Fields* tab within the ***ReViewer Table Properties*** dialog. This dialog can be accessed via the ReViewer Table Properties Page tool within the Error Table.

Note: For additional information regarding the fields within the Error Table, within ArcMap go to Help > PLTS Help > ReViewer Table > fields.

The next sequential fields in the Error Table describe how the error was found, the parameters for the error check that was used, and any additional information for correcting the error.

ORIGINCHECK	NOTES	PARAMETERS
Valid Value Table (VVT) Check		WS: , Table: DFIRM.S_FIRM_PAN...
Missing Feature Tool		
Commit to ReViewer Table Tool		
Polyline Notepad	Name stream: Howling Coyote Creek	

Example of the next sequential fields populated in the Error Table

You likely will be interacting with all three of these fields.

- *ORIGINCHECK* – This field identifies through which means the error was captured (e.g., CNT, Notepad tool). This information is automatically committed to the Error Table.

Note: If a feature class or look-up table is identified in this field, the error was found via a SQL check that the user wrote against the data. The actual SQL check will be part of the information in the *PARAMETERS* field.

- *NOTES* – Any additional information to describe the error and/or how to correct it will be listed in this field. You are prompted to provide the information in this field when you commit an error to the Error Table via the Notepad tools or the **Flag Missing Feature** tool. This information is entered in the *Notes* text box in the ***Missing Feature Details*** dialog.

- *PARAMETERS* – The configurations for the check which found the error are defined in the *PARAMETERS* field. For the CNT and Valid Value Table (VVT) checks, this field will not be helpful, and this field is left blank for any errors committed to the Error Table via the **Flag Missing Features** tool, the Commit to ReViewer Table tool, or the Notepad tools. However, if you run any check in which you enter an SQL statement, the SQL statement will be recorded in the *PARAMETERS* field, as shown in the following example.

ORIGINCHECK	NOTES	PARAMETERS	REVIEWSTATUS
Commit to ReViewer Table Tool			Delete Feature
DFIRM.L_SOURCE_CIT		WS: , Table: DFIRM.L_SOURCE_CIT, Vsn: TESTER1.JTX_31725, WC: DFIRM_ID = '270779' AND SOURCE_DSC = <Null>	Row matches SQL statement
Condition Table (CNT) Check	Standard Error	WS: , Table: DFIRM.S_FIRM_PAN, Vsn: TESTER1.JTX_31725, WC: , CNT: S_FIRM_PAN_CNT_CHECK : s_firm_pan/firm_id/st_fips/pcomm/panel/suffix/firm_pan/scale/nw...	Printed PANEL TYPEs cannot have a PANEL NOT PRINTED REASON.

Highlighted record shows a SQL statement in the *PARAMETERS* field (i.e., DFIRM_ID = '270779' AND SOURCE_DSC = <Null>)

The next sequential fields are the Review fields. These fields describe what the error is, who committed the error to the Error Table, and the timestamp for when this occurred.

REVIEWSTATUS	REVIEWTECHNICIAN	REVIEWDATE
Row does not have valid value combination in its valid value table (VVT).	clee	Thursday, January 31, 2008 14:10:29
Add	clee	Monday, February 18, 2008 17:34:11
Rename feature: Tall Moose Stream	clee	Monday, February 18, 2008 18:26:55

Example of the Review fields populated

- *REVIEWSTATUS* – This field describes the actual error. If the error is recorded via the **Flag Missing Feature** tool or any of the Notepad tools, this value is taken from the *ReView Status* dropdown menu in the ***Missing Feature Details*** dialog. If the error is recorded via the **Commit to ReViewer Table** tool, the value in the *REVIEWSTATUS* field is the value entered into the *Description* text box in the ***Commit to ReViewer Table*** dialog. The customized error message (e.g., FLOOD ZONE is a required field that must be populated) for a CNT check will be displayed in the *REVIEWSTATUS* field.

Note: A Valid Value Table (VVT) error will only be identified in the *REVIEWSTATUS* field; you will not be told which fields within the feature class participate in the symbology. Refer to Appendix A in the *PLTS Symbology and QA & PLTS Dangle and Pseudo Renderer Toolbars User Guide* for information as to which fields the error could be related.

- *REVIEWTECHNICIAN* – This field identifies the Citrix/DFIRM Tools login for who committed the error to the Error Table. This information is automatically written to the Error Table.

- *REVIEWDATE* – This field contains the timestamp for when the error was committed to the Error Table. This information is automatically written to the Error Table.

The next sequential fields are the Correction fields. These fields describe how and if the error was corrected, who resolved the error, and the timestamp for when this occurred.

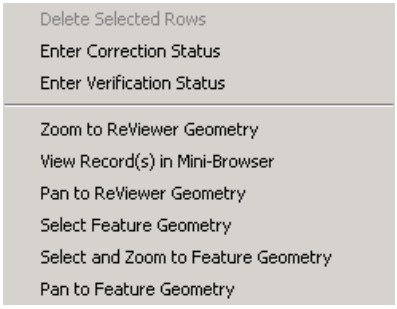
CORRECTIONTECHNICIAN	CORRECTIONDATE	CORRECTIONSTATUS
hgreggs	Thursday, February 19, 2008 13:42:55	Resolved - Per Guidance
hgreggs	Thursday, February 19, 2008 13:43:29	Unresolved - Not added
hgreggs	Thursday, February 19, 2008 13:43:56	Resolved - Per Guidance

Example of the Correction fields populated

- *CORRECTIONTECHNICIAN* – This field identifies the Citrix/DFIRM Tools login for who corrected the error. This information is automatically written to the Error Table.
- *CORRECTIONDATE* – This field contains the timestamp for when the error was resolved. This information is automatically written to the Error Table.
- *CORRECTIONSTATUS* – Whether or not the error was resolved and the explanation is listed in the *CORRECTIONSTATUS* field.

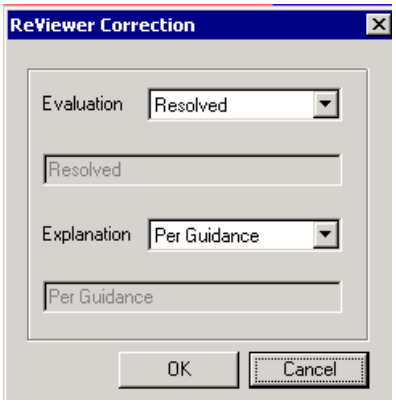
The following steps guide you through the process of populating the Correction fields:

1. Select the record in the Error Table and right-click.
2. The following popup menu will open. Select the *Enter Correction Status* option.



Popup menu when you right-click within the Error Table

3. The *ReViewer Correction* dialog opens.



Example of the ***ReViewer Correction*** dialog populated

4. Select from the *Evaluation* dropdown menu the appropriate status for the error correction. Selecting "Custom" enables you to type your own evaluation in the text box.
5. Select from the *Explanation* dropdown menu the appropriate explanation for how the error was corrected or why it was not resolved. Selecting "Custom" enables you to type your own evaluation in the text box.
6. Click *OK*. All three Correction fields are populated.

Note: For information on adding other Correction Evaluation values and/or Correction Explanation values to the dropdown menus, within ArcMap go to Help > PLTS Help > ReViewer session > advanced properties.

The next sequential fields are the Verification fields. These fields indicate whether the error was corrected when it was examined again, who verified that the error was resolved, and the timestamp for when this occurred.

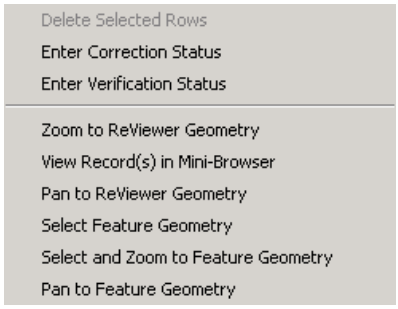
VERIFICATIONTECHNICIAN	VERIFICATIONDATE	VERIFICATIONSTATUS
sfwalters	Thursday, February 22, 2008 18:15:33	Symbology is correct, but attributed incorrectly
sfwalters	Thursday, February 22, 2008 18:18:41	Acceptable

Example of the Verification fields populated

- *VERIFICATIONTECHNICIAN* – This field identifies the Citrix/DFIRM Tools login for who verified that the error had been resolved. This information is automatically written to the Error Table.
- *VERIFICATIONDATE* – This field contains the timestamp for when the error was re-examined. This information is automatically written to the Error Table.
- *VERIFICATIONSTATUS* – This field indicates whether or not the error was appropriately resolved.

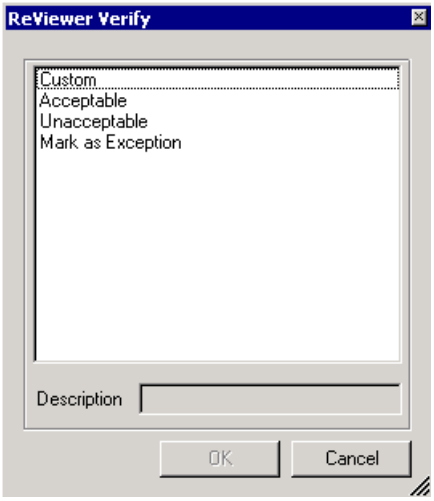
The following steps outline the process of populating the Verification fields:

1. Select the record in the Error Table and right-click.
2. The following popup menu will open. Select the *Enter Verification Status* option.



Popup menu when you right-click within the Error Table

3. The *ReViewer Verify* dialog opens.



Example of the ***ReViewer Verify*** dialog

4. Select the *Description* value that appropriately explains if the error has been satisfactorily corrected. Selecting "Custom" enables you to type your own description in the text box.

5. Click *OK*. All three Verification fields are populated.

Note: For information on adding other Verification Evaluation values to the dropdown menus, within ArcMap go to Help > PLTS Help > ReViewer session > advanced properties.

Note: You can batch populate the Correction fields or the Verification fields for multiple records. Select the records that would all be populated the same and right-click in the Error Table. Then, continue to populate the Correction or Verification fields as you normally would.

The final field in the Error Table is *QC_GRID*. This field is used for the Create Polygon Grid Wizard tool and the ReViewer Overview Window tool. Since these tools cannot be used within the DFIRM Tools environment, this field will remain empty.

ReViewer Table Importer / Exporter

The **ReViewer Table Importer / Exporter** tool allows you to import records from another PLTS 9.2 ReViewer workspace into your current workspace or to export records from your current PLTS 9.2 ReViewer workspace to another workspace.

All records in all of the sessions are transferred by default. If you only want to import or export a select set of records, you can input a SQL query into the ***ReViewer Table Importer / Exporter*** dialog.

Note: For additional information regarding the **ReViewer Table Importer / Exporter** tool, within ArcMap go to Help > PLTS Help > ReViewer Table Importer / Exporter tool > using.

Import Topology Errors

The **Import Topology Errors** tool enables you to commit topology errors to the Error Table, after you have discovered the topology errors by validating the features with the tools on the **Topology** toolbar.

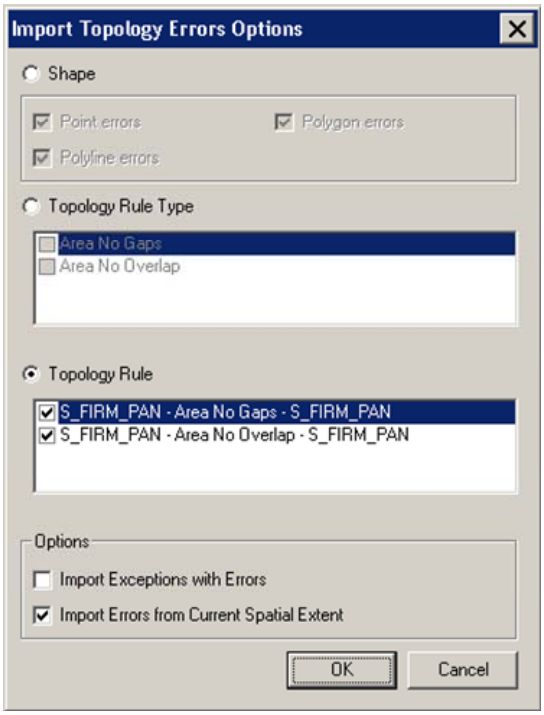
1. Add the Topology Rules via the **SDE Data Layer Loader** tool on the **DFIRM Layer Loader** toolbar into the Table of Contents.

2. Start an Editing session.

3. Validate the topology for the desired feature class(es).

4. Click the **Import Topology Errors** tool.

5. The ***Import Topology Errors Options*** dialog opens.



Example of the ***Import Topology Errors Options*** dialog

6. Choose the query method for the topology errors you wish to import into the Error Table.

Selecting the *Shape* option imports all of the topology errors for validated feature classes with that geometry type. The *Topology Rule Type* option imports the errors found in all of the validated feature classes that violate that rule type(s) (e.g., Area No Ovelaps). In other words, in your validation you may have found *Flood Hazard Area* (S_Fld_Haz_Ar) features and *FIRM Panel Index* (S_FIRM_Pan) features that exhibit overlaps. The *Topology Rule* option allows you to import topology errors that violate specific topology rules established in the SDE schema.

Note: The *Topology Rule* option will only display the topology rules associated with the topology rule group selected on the **Topology** toolbar. If you want to import errors in multiple feature classes that violate specific topology rules, you will have to import one feature class's errors at a time.

7. If appropriate, check off the additional options for importing the topology errors.

8. Click *OK*. The topology errors that meet the criteria that you selected in the ***Import Topology Errors Options*** dialog are recorded in the Error Table.

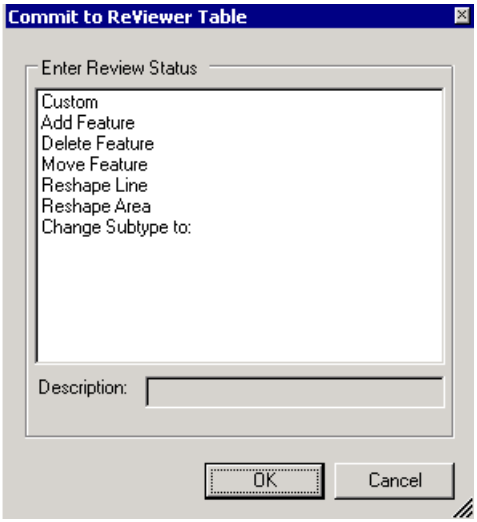
Commit to ReViewer Table

The **Commit to ReViewer Table** tool allows you to select a specific feature and record an error in the Error Table, referenced to that specific feature.

1. Select one feature in the *Data* view that has an error.

2. Click the **Commit to ReViewer Table** tool.

3. The ***Commit to ReViewer Table*** dialog opens.



Example of the ***Commit to ReViewer Table*** dialog

4. Select the appropriate status in the window. Selecting "Custom" enables you to type your own description in the text box.

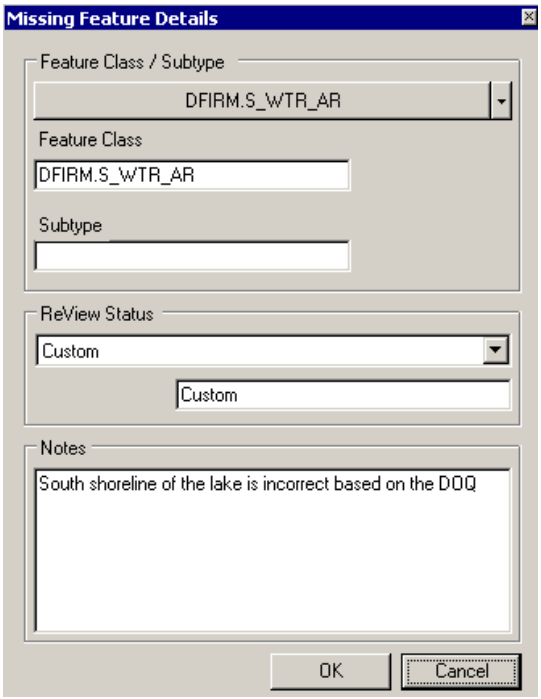
5. Click *OK*. The error is committed to the Error Table, referencing the feature class and the feature's *OBJECTID* value.

Flag Missing Feature

The **Flag Missing Feature** tool enables you to mark the location of a missing feature with a point and add the error to the Error Table. The point is stored in the REVTABLEPOINT feature class in the ReViewer Dataset.

Note: The location of the missing feature will be identified with a point, despite the geometry type of the feature class that the error is referencing. This tool may be inappropriate for large polygons or long linear features; using the Polygon Notepad or Line Notepad tool may be more useful for these situations, as you will be able to enter the same information into the Error Table but draw a more representative and encompassing shape.

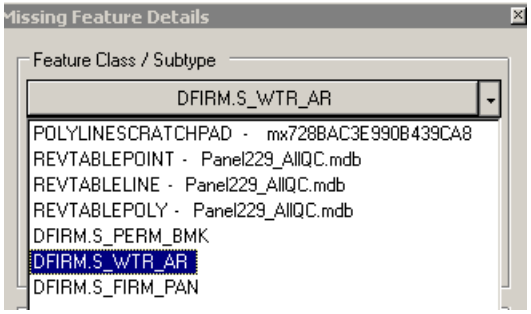
1. Click the **Flag Missing Feature** tool.
2. Click the location of the missing feature in the view.
3. The ***Missing Feature Details*** dialog opens.



Example of the ***Missing Feature Details*** dialog populated.

4. From the *Feature Class/Subtype* dropdown menu, select the SDE feature class where the feature is missing. The selected feature class name will be populated in the *Feature Class* window.

The dropdown menu lists any layer that is visible in the Table of Contents when the dialog opens. Do not select the scratch feature classes or the ReViewer Dataset-related feature classes. None of these feature classes are where the QC error was found, which is what you are selecting from the dropdown menu.



Example of data layers listed in the *Feature Class / Subtype* dropdown menu. The first layer is a scratch feature class, and the next three layers are feature classes in the ReViewer Dataset.

5. Leave the *Subtype* text box blank. None of the SDE feature classes have subtypes; the *FC_SUBTYPE* value for all features is zero.

6. Select a status from the *ReView Status* dropdown.

Note: The status values "Add" and "Custom" are the default values for *Review Status*. For information on adding other status values to the dropdown menu, within ArcMap go to Help > PLTS Help > ReViewer session > advanced properties.

7. Enter any additional comments into the *Notes* text box.

8. Click *OK*. You will receive confirmation that the record has been added to the Error Table.

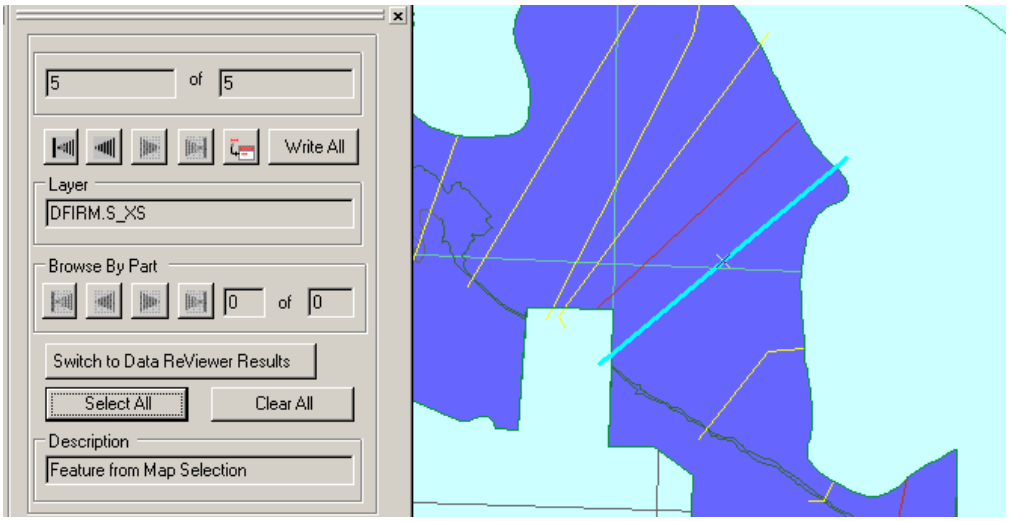
Browse Features

The **Browse Features** tool allows you to select multiple features in different feature classes and cycle through viewing the features. The features highlight in the *Data* view, and the feature class is identified in the ***Mini-Browser*** dialog. You can commit individual errors to the Error Table for each feature, or you can batch commit them all to the Error Table if the same error occurs in all of the selected features (e.g., Delete feature).

1. Select features within the *Data* view.

2. Click the **Browse Features** tool.

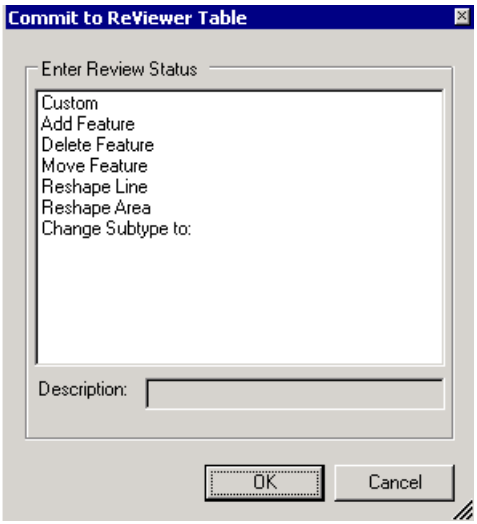
3. The ***Mini-Browser*** dialog opens.



Example of browsed features cycling through the ***Mini-Browser*** dialog. The current feature is selected and zoomed in to in the view.

The first selected feature is highlighted and zoomed to, and its feature class is identified in the ***Mini-Browser*** dialog. You can browse forward and backwards in this dialog through the features that you have selected.

You can commit the individual feature to the Error Table via the *Commit to ReViewer Table* button  within the ***Mini-Browser*** dialog. The ***Commit to ReViewer Table*** dialog will open.



Example of the ***Commit to ReViewer Table*** dialog

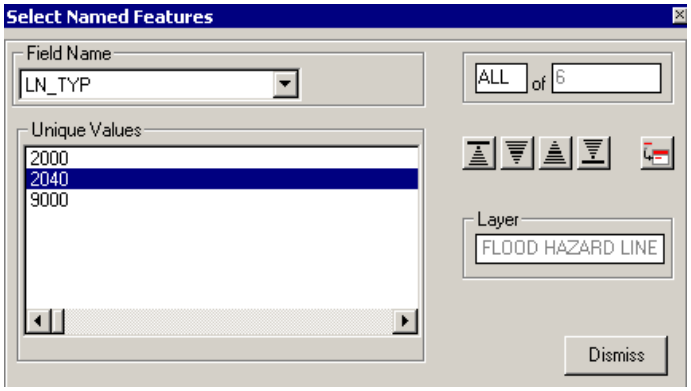
All of the initially selected features can be batch recorded in the Error Table by clicking the *Write All* button. The review status chosen in the ***Commit to ReViewer Table*** dialog will be assigned to all of the browsed features.

Note: The *Switch to Data ReViewer* button in the ***Mini-Browser*** dialog does not have any function when the ***Mini-Browser*** dialog is open via the **Browse Features** tool.

Select Named Features

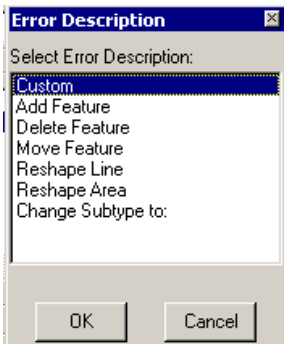
The **Select Named Features** tool allows you to query features in a feature class based on one specific value in a field. These features can then be individually committed to the Error Table, or you can batch record all of the records. For instance, if the road "Grassy Noll Lane" is consistently named incorrectly, you can query all road features where the *FEAT_NM1* value is "Grassy Noll Lane". You can then batch commit these features to the Error Table with the custom description "Change *FEAT_NM1* value to "Grassy Knoll Lane".

1. Turn on the desired feature class and set it to be selectable.
2. Highlight that feature class in the Table of Contents.
3. Click the **Select Named Features** tool.
4. The ***Select Named Features*** dialog opens.



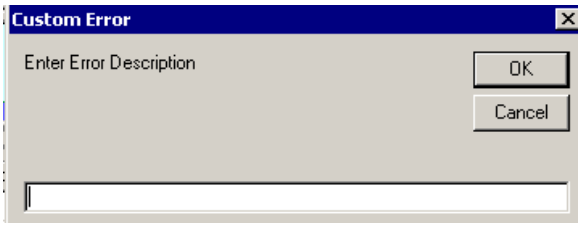
Example of the ***Select Named Features*** dialog populated

5. Select the desired field name from the *Field Name* dropdown list.
6. Select the unique value that you wish to query from the field in the *Unique Values* window. The number of features that meet this criteria will be indicated in the *X of Y* window in the upper right corner of the dialog.
7. You can browse through these features and individually commit them to the Error Table via the *Commit to ReViewer Table* button in the ***Select Named Features*** dialog. The features will highlight in the view as you browse the queried features. Otherwise, you can commit all of the features meeting this criteria to the Error Table at once.
8. The ***Error Description*** dialog opens.



Example of the ***Error Description*** dialog

9. Select the status in the dialog and click *OK*. If you select "Custom", the ***Custom Error*** dialog will open so you can enter a customized status.



Custom Error dialog

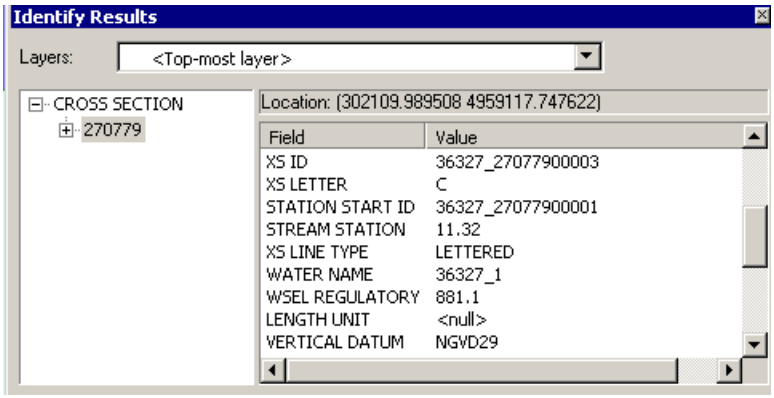
10. Click *OK*.

Note: The *Unique Values* for the domain fields will be listed as the domain code not the domain description in the ***Select Named Features*** dialog.

Select and Identify Features

The **Select and Identify Features** tool displays the attributes for a feature(s) that you click in the view. This tool functions the same as the ***Identify*** tool on the **Tools** toolbar.

1. Click the **Select and Identify Features** tool.
2. With the cursor click a feature in the view.
3. The ***Identify Results*** dialog opens. All of the features in the map space you clicked are listed in the dialog.



Example of the ***Identify Results*** dialog populated

4. Highlight a feature name in the ***Identify Results*** dialog to display the associated attributes.

ReViewer Batch Job Manager

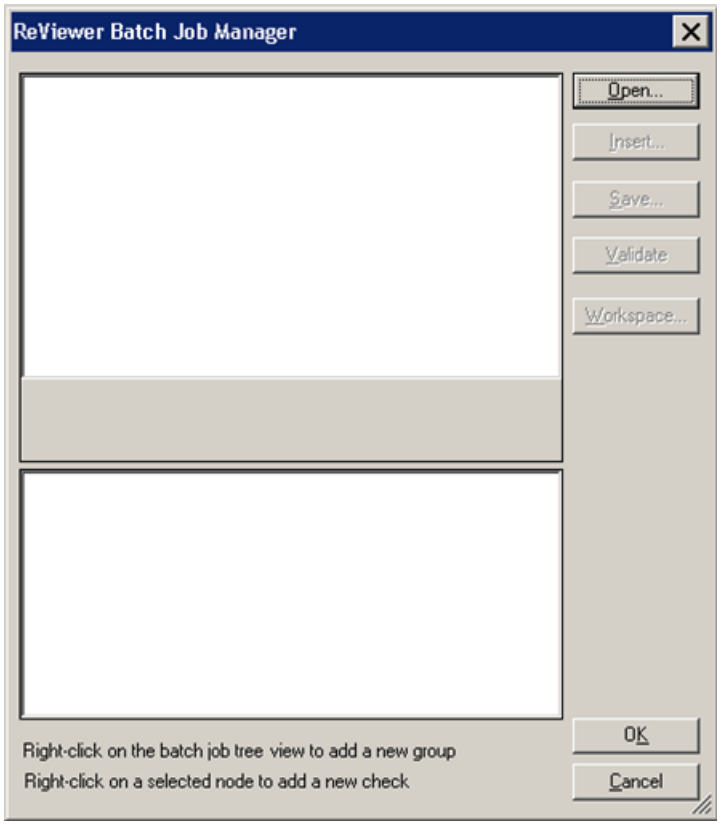
The **ReViewer Batch Job Manager** tool allows you to load multiple data checks into a batch job. This batch job can be saved and used through the life of your job version. The batch job can be run at anytime via the ReViewer Batch Validate tool.

Note: Batch jobs cannot be shared between job versions. Each job version has to create its own batch job(s). In other words, if job 4445 (Centre County, PA) creates a batch job, that batch job can only be used within job 4445. Other job versions for Centre County, PA will not be able to run that batch job.

1. Load into the Table of Contents all feature classes and/or look-up tables that you want to validate. Turn on all of the pertinent spatial data layers.

2. Click the **ReViewer Batch Job Manager** tool.

3. The ***ReViewer Batch Job Manager*** dialog opens.



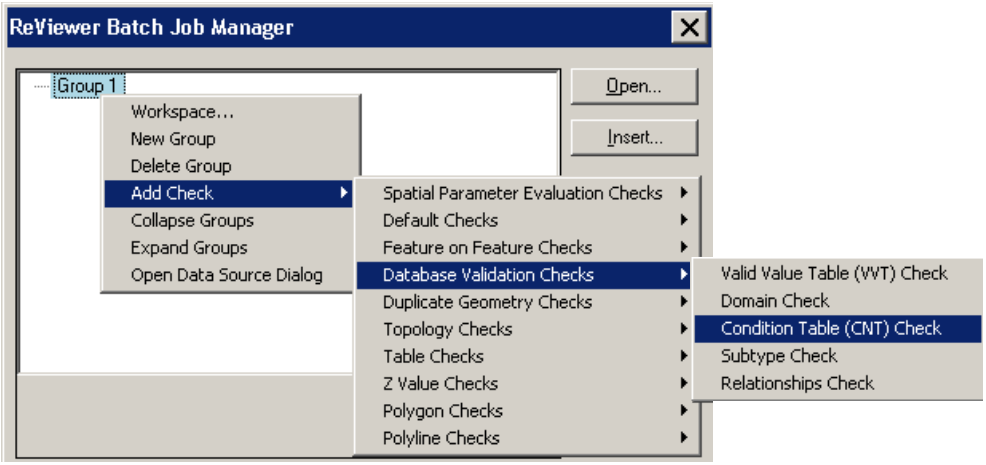
ReViewer Batch Job Manager dialog

4. Right-click in the top window, and select the *New Group* option.

5. Right-click on "Group 1", and select the *Add Check* option.

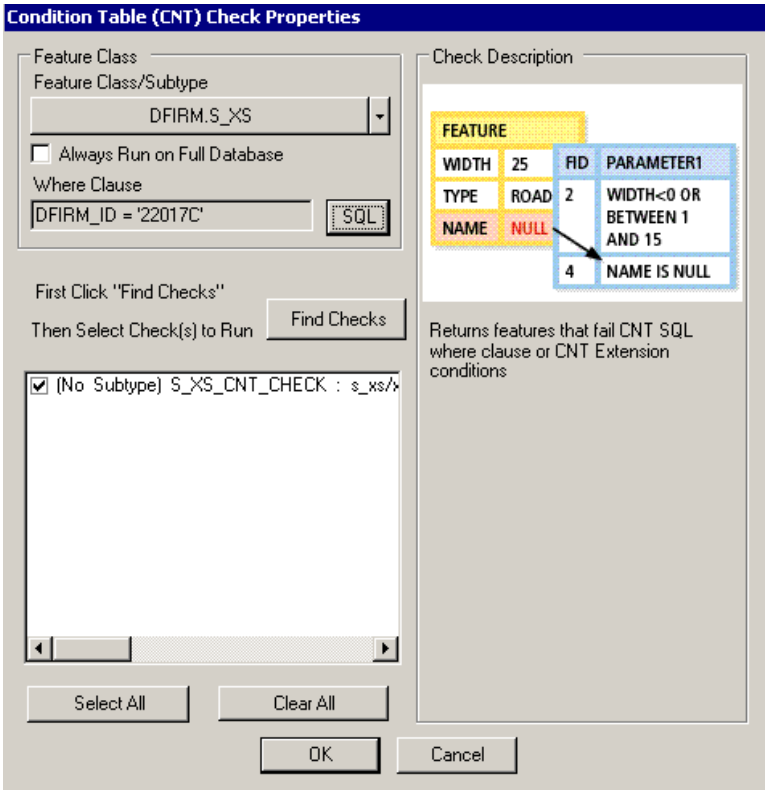
Options from right-clicking "Group 1"

6. Select the type of data check.



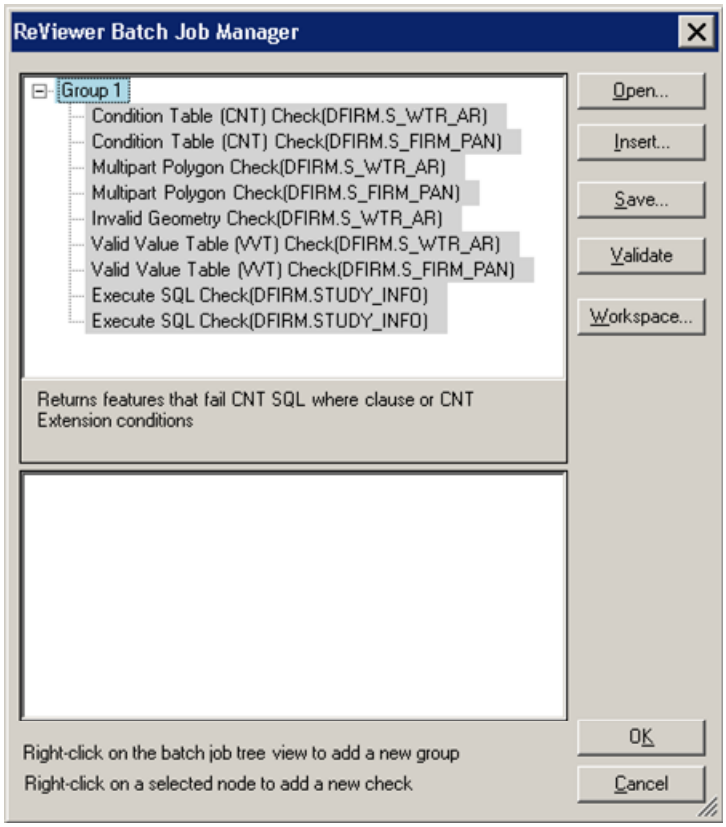
Example of navigating to the data check choices

7. Populate the data check dialog associated with the data check you selected.



Example of the ***Condition Table (CNT) Check Properties*** dialog populated

8. Repeat steps 5-8 until all of the checks you want to run at once have been selected and added to the batch job.



Example of data checks populated in the ***ReViewer Batch Job Manager*** dialog. The *Execute SQL Check* for Study_Info is listed twice because two different SQL queries will be run against the table.

9. Click *Save*. In the ***Save As*** dialog, navigate to the QC folder for your project and enter a name for the batch job you just created.

   The path to your QC folder is J:\FEMA\<region>\<state>\<county>\<county or community>\<FEMA Case Number>\Mapping\QC.

Note: Since batch jobs cannot be shared between job versions, we recommend that you enter the JTX Job ID as part of the batch job name. Additionally, you can enter the batch job name(s) into the *Notes* tab in JTX or add it as a Comment into the *History* tab in JTX.

10. Click *OK*.

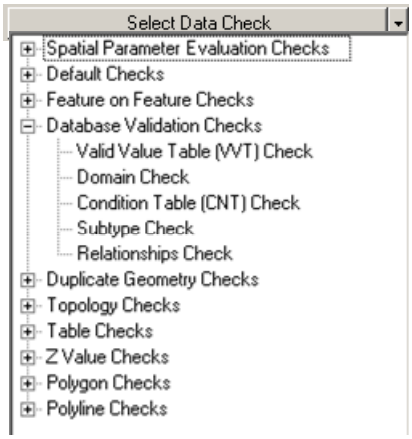
Note: You can add, delete, and/or edit the data checks within a batch job by clicking the *Open...* button, within the ***ReViewer Batch Job Manager*** dialog, to access the batch job file.

Note: For additional information regarding customizing the data check groups within the ***ReViewer Batch Job Manager*** dialog, within ArcMap go to Help > PLTS Help > batch jobs > adding groups.

For additional information about editing the configurations of the data checks within the batch job, within ArcMap go to Help > PLTS Help > batch jobs > editing checks.

Select Data Check

The **Select Data Check** tool allows you to select a specific type of data check and configure the properties.



Categories of data checks in the *Select Data Check* dropdown list.

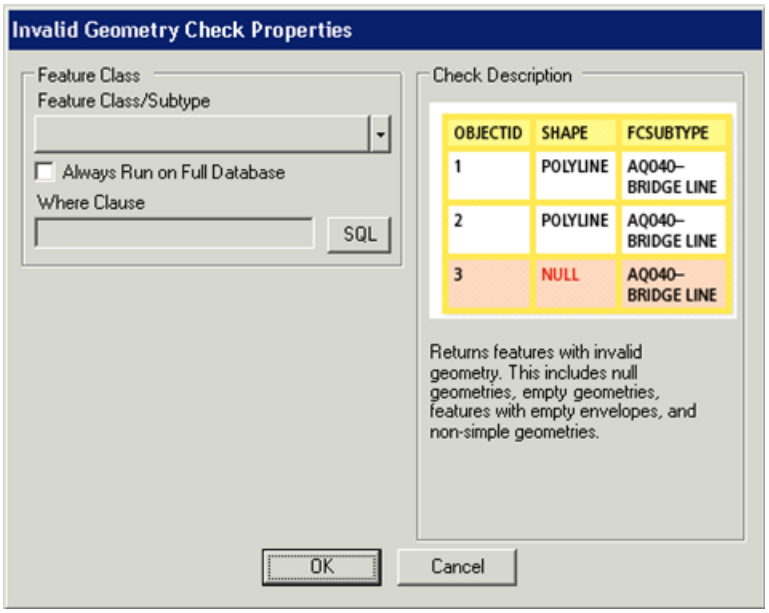
When an individual data check has been selected and configured, the title on the **Select Data Check** button will change to reflect the data check and the configured feature class or table. This check then can be run via the Run Data Check tool. This approach permits you to run one configured data check for a one feature class or table at a time. If you want to execute multiple configured data checks at once, you will need to setup a batch job via the ReViewer Batch Job Manager tool.

Example of the **Select Data Check** toolbar changing to reflect the current configured data check

The most common data checks that you will use are as follows:

- *Default Checks > Invalid Geometry Check* – This check examines the feature class for empty geometry (i.e., Area = 0 and/or Length = 0).

Note: You can set the *Where Clause* to equal your project's DFIRM ID value, so that only your county/community features are evaluated.



Invalid Geometry Check Properties dialog

1. Select a feature class from the *Feature Class/Subtype* dropdown list.

2. Do not check the *Always Run on Full Database* option. The data extents for SDE span the entire United States and its territories. Checking this option means that all data in your version, including all of the effective DFIRM data, will be included in your data validation check.

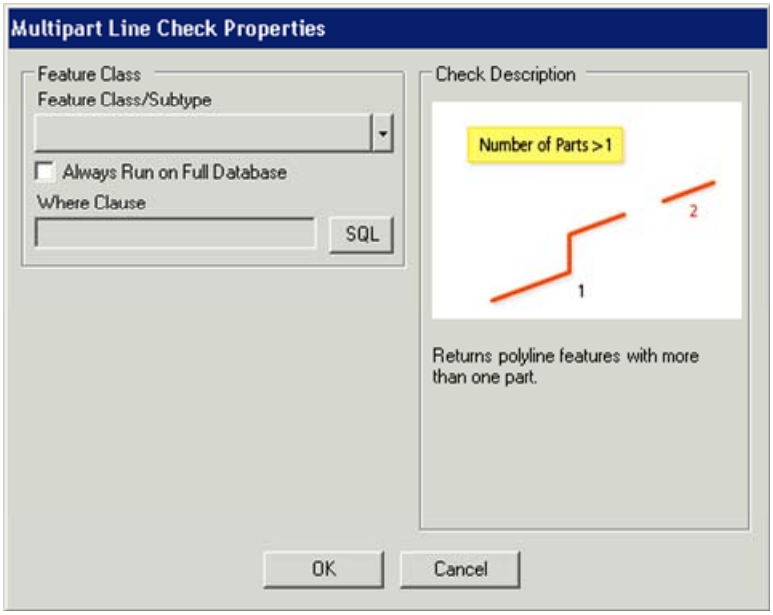
3. Populate the *Where Clause*, if necessary. You can enter your DFIRM ID into a SQL statement to ensure that only your project data is validated.

4. Click *OK*. The configuration for this Invalid Geometry data check has been setup.

OBJECTID	ORIGINTABLE	ORIGINCHECK	NOTES	PARAMETERS	REVIEWSTATUS
618597	DFIRM.S_WTR_AR	Invalid Geometry Check		WS: , FC: DFIRM.S_WTR_AR, Vsn: CMUENKS1.JTX_1615, WC:	Invalid Geometry: NotSimple

Example of an Empty Geometry entry in the Error Table

- *Default Checks > Multipart Line Check* – This check examines a line feature class for multi-part features. Multi-part features do not adhere to FEMA's specifications.



Multipart Line Check Properties dialog

1. Select a feature class from the *Feature Class/Subtype* dropdown list.

2. Do not check the *Always Run on Full Database* option. The data extents for SDE span the entire United States and its territories. Checking this option means that all data in your version, including all of the effective DFIRM data, will be included in your data validation check.

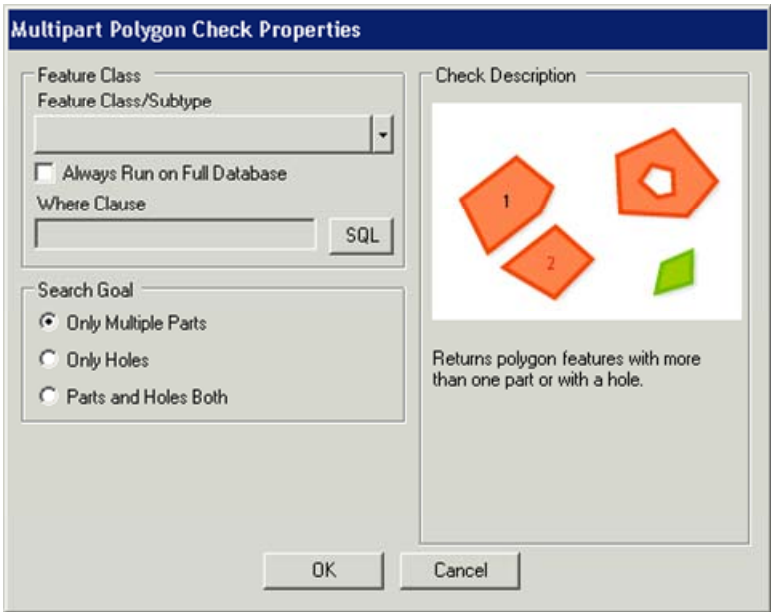
3. Populate the *Where Clause*, if necessary. You can enter your DFIRM ID into a SQL statement to ensure that only your project data is validated.

4. Click *OK*. The configuration for this Multipart Line data check has been setup.

OBJECTID	ORIGINTABLE	ORIGINCHECK	NOTES	PARAMETERS	REVIEWSTATUS
393269	DFIRM.S_GEN_STRUCT	Multipart Line Check		WS: , FC: DFIRM.S_GEN_STRUCT, Vsn: CMUENKS1.JTX_1615, WC:	Multipart Polyline

Example of a Multi-part Line entry in the Error Table

- *Default Checks > Multipart Polygon Check* – This check examines a polygon feature class for multi-part features. Multi-part features do not adhere to FEMA's specifications.



Multipart Polygon Check Properties dialog

1. Select a feature class from the *Feature Class/Subtype* dropdown list.

2. Do not check the *Always Run on Full Database* option. The data extents for SDE span the entire United States and its territories. Checking this option means that all data in your version, including all of the effective DFIRM data, will be included in your data validation check.

3. Populate the *Where Clause*, if necessary. You can enter your DFIRM ID into a SQL statement to ensure that only your project data is validated.

4. Choose a *Search Goal* option.

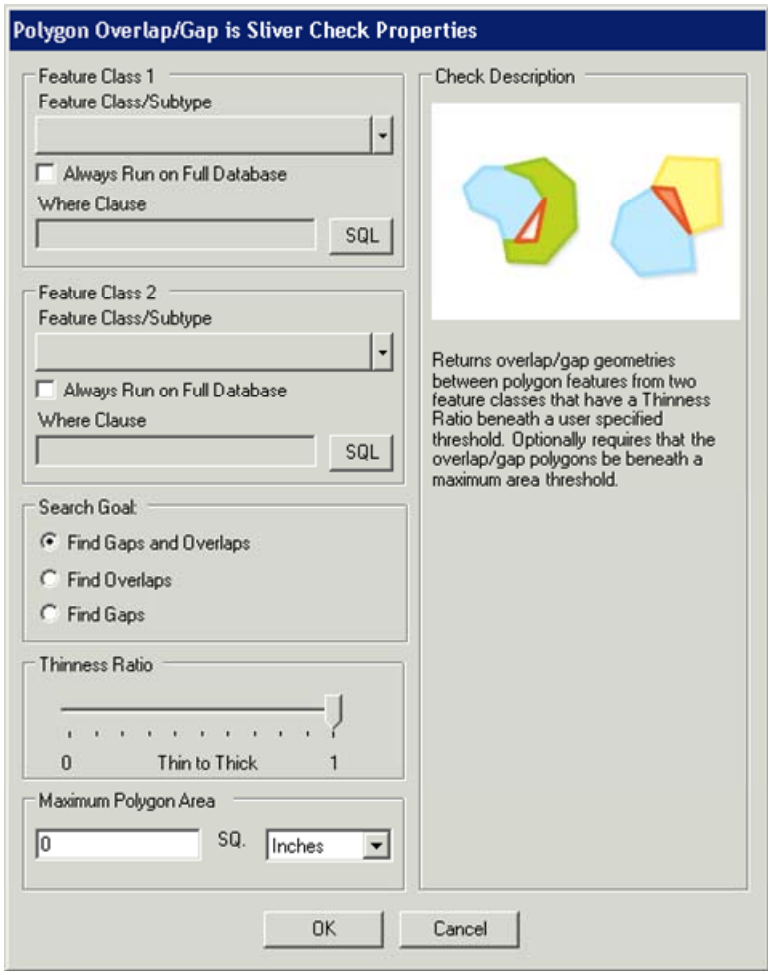
5. Click *OK*. The configuration for this Multipart Polygon data check has been setup.

OBJECTID	ORIGINTABLE	ORIGINCHECK	NOTES	PARAMETERS	REVIEWSTATUS
618599	DFIRM.S_WTR_AR	Multipart Polygon Check		WS: , FC: DFIRM.S_WTR_AR, Vsn: CMUENKS1.JTX_1615, WC: , Search for Multiple Part Features: true, Search for Holes: false	Multipart Polygon

Example of a Multi-part Polygon entry in the Error Table

- *Feature on Feature Checks > Polygon Overlap/Gap is Sliver Check Properties* – This check allows you to identify any areas in your data where polygons overlap each other. Additionally, sliver polygons are identified.

Note: You can check for sliver polygons within a single feature class (e.g., Flood Hazard Area) by selecting the same feature class from the *Feature Class 1* dropdown list and from the *Feature Class 2* dropdown list.



Polygon Overlap/Gap is Sliver Check Properties dialog

1. Select a feature class from the *Feature Class/Subtype 1* dropdown list.

2. Do not check the *Always Run on Full Database* option. The data extents for SDE span the entire United States and its territories. Checking this option means that all data in your version, including all of the effective DFIRM data, will be included in your data validation check.

3. Populate the *Where Clause*, if necessary. You can enter your DFIRM ID into a SQL statement to ensure that only your project data is validated.

4. Select a feature class from the *Feature Class/Subtype 2* dropdown list.

5. Do not check the *Always Run on Full Database* option.

6. Populate the *Where Clause*, if necessary. You can enter your DFIRM ID into a SQL statement to ensure that only your project data is validated.

7. Choose a *Search Goal*.

8. Select a *Thinness Ratio*, if necessary. We recommend that the slider is moved to the far left to ensure that the thinnest polygons are captured. The farther the slider moves to the right, the thicker the polygon must be to be captured as a sliver.

9. Enter a *Maximum Polygon Area* value and unit value, if necessary. This allows you to define what the largest maximum area should be for a polygon for it to be deemed a sliver polygon.

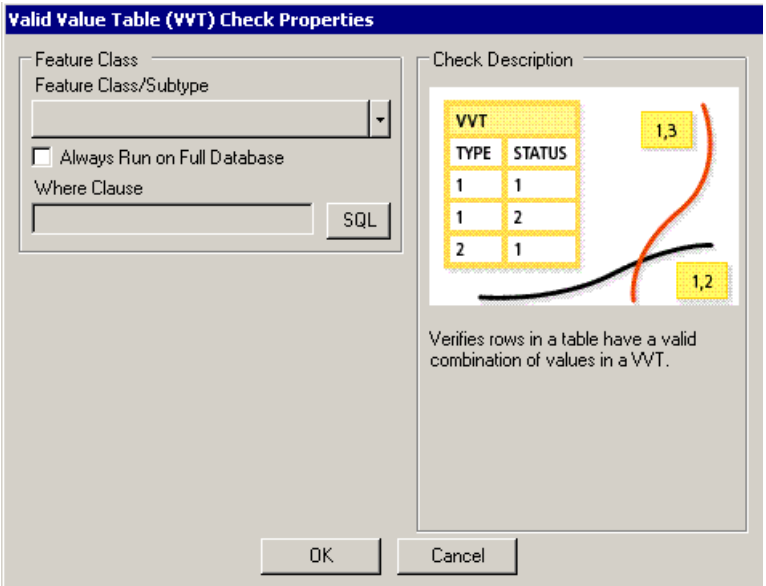
10. Click *OK*. The configuration for this Polygon Overlap/Gap is Sliver data check has been setup.

OBJECTID	ORIGINTABLE	ORIGINCHECK	NOTES	PARAMETERS	REVIEWSTATUS
1415	DFIRM.S_POL_AR	Polygon Overlap/Gap is Sliver Check		WS 1: , FC 1: DFIRM.S_POL_AR, Vsn...	Sliver found between two polygon feature

Example of a Sliver Polygon entry in the Error Table

Note: You can also use the *Polygon Checks > Polygon Sliver Check* to find sliver polygons within your feature class. The Polygon Sliver Check only evaluates one feature class for slivers, which is the same as you entering the same feature class twice in the ***Polygon Overlap/Gap is Sliver Check Properties*** dialog.

- *Database Validation Checks > Valid Value Table (VVT) Check* – These checks compare the selected feature class's attribute values against the valid value tables (VVTs) within SDE. Multiple fields within a feature class participate in the symbology of the features; therefore, these checks will flag a record where the attribute combination is not valid. The feature will not be symbolized correctly if the attribute combination does not exist within the associated valid value table.



Valid Value Table (VVT) Check Properties dialog

1. Select a feature class from the *Feature Class/Subtype* dropdown list.

2. Do not check the *Always Run on Full Database* option. The data extents for SDE span the entire United States and its territories. Checking this option means that all data in your version, including all of the effective DFIRM data, will be included in your data validation check.

3. Populate the *Where Clause*, if necessary. You can enter your DFIRM ID into a SQL statement to ensure that only your project data is validated.

4. Click *OK*. The configuration for this VVT data check has been setup.

Note: If this is the last single data check that you setup and you save your ArcMap session, then this configuration will be saved. Also, if you add this data check to a batch job and save the batch job, the configuration will be preserved. Otherwise, the VVT configuration will be discarded when you close your ArcMap session.

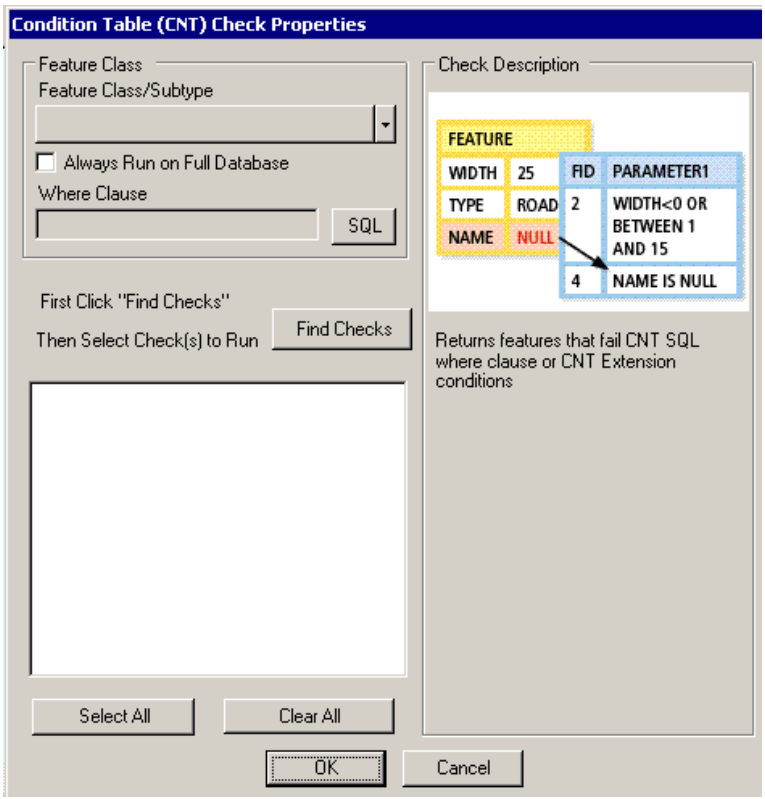
In the Error Table the *ORIGINCHECK* field will identify "Valid Value Table (VVT) Check" and the *REVIEWSTATUS* field will simply state "Row does not have valid value combination in its valid value table (VVT)". The source of the error will not be in the *NOTES*, *PARAMETERS*, or *REVIEWSTATUS* fields in the Error Table when a feature is committed to the Error Table for violating a VVT check. You will have to refer to Appendix A within the *PLTS Symbology and QA & PLTS Dangle and Pseudo Renderer Toolbars User Guide* for information as to which fields participate in the feature symbology, to determine which fields might contain the error.

OBJECTID	ORIGINTABLE	ORIGINCHECK	NOTES	PARAMETERS	REVIEWSTATUS
8170	DFIRM.S_FIRM_PAN	Valid Value Table (VVT) Check		WS: , Table: DFIRM.S_FIRM_PAN, Vs...	Row does not have valid value combination in its valid value table (VVT).

Example of a VVT entry in the Error Table

- *Database Validation Checks > Condition Table (CNT) Check* – These checks review the spatial feature classes' attribute tables to ensure that the values entered are valid and logical given the entries in other fields. The CNT checks have been customized to test the validity of your field values, based on the specifications in the Federal Emergency Management Agency's (FEMA) *Guidelines and Specifications for Flood Hazard Mapping Partners Appendix L: Guidelines and Specifications for Flood Hazard Partners* (herein referred to as *Appendix L*).

Note: There are no CNT checks for look-up tables in **PLTS GIS Data ReViewer** 9.2. This is no longer an available function; it has been removed by ESRI. CNT checks are now only functional for spatial data layers.



Condition Table (CNT) Check Properties dialog

1. Select a feature class from the *Feature Class/Subtype* dropdown list.

2. Do not check the *Always Run on Full Database* option. The data extents for SDE span the entire United States and its territories. Checking this option means that all data in your version, including all of the effective DFIRM data, will be included in your data validation check.

3. Populate the *Where Clause*, if necessary. You can enter your DFIRM ID into a SQL statement to ensure that only your project data is validated.

4. Click *Find Checks*.

5. Check off the associated CNT check that is populated in the window.

6. Click *OK*. The configuration for this CNT data check has been setup.

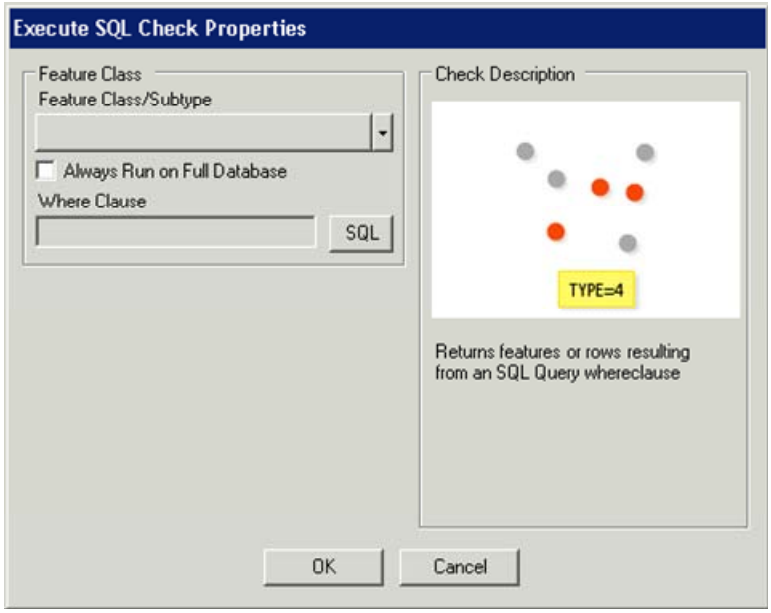
Note: If this is the last single data check that you setup and you save your ArcMap session, then this configuration will be saved. Also, if you add this data check to a batch job and save the batch job, the configuration will be preserved. Otherwise, the CNT configuration will be discarded when you close your ArcMap session.

In the Error Table the *ORIGIN TABLE* field will list the feature class that the error was found in, the *ORIGINCHECK* field will identify "Condition Table (CNT) Check", and the *REVIEWSTATUS* field will explain the error (e.g., Printed PANEL TYPEs cannot have a PANEL NOT PRINTED REASON.).

OBJECTID	ORIGINTABLE	ORIGINCHECK	PARAMETERS	REVIEWSTATUS
14071	DFIRM.S_XS	Condition Table	WS: , Table: DFIRM.S_XS,	Required field LENGTH UNIT must be populated.

Example a CNT entry in the Error Table

- *Table Checks > Execute SQL Check* – This check will enable you to validate the attribute table, spatial or look-up, against SQL statements that you write. Since the look-up tables can no longer be validated via the CNT checks, this is the only option for verifying that your look-up tables meet *Appendix L* specifications prior to sending your study for Independent QC Review.



Execute SQL Check Properties dialog

1. Select a feature class or look-up table from the *Feature Class/Subtype* dropdown list.

2. Do not check the *Always Run on Full Database* option. The data extents for SDE span the entire United States and its territories. Checking this option means that all data in your version, including all of the effective DFIRM data, will be included in your data validation check.

3. Populate the *Where Clause*, via the ***Select Feature Using a Query*** dialog, with the SQL statement for the attribute error you are validating in the look-up table.

Note: Since look-up tables cannot be validated based on current extents or a selection set, you need to include your DFIRM ID in all of the SQL statements, so that only the records for your project are validated.

4. Click *OK*. The configuration for this Execute SQL data check has been setup.

In the Error Table the *ORIGIN TABLE* field and *ORIGINCHECK* field will list the look-up table that the error was found in, the *PARAMETERS* field will identify the SQL statement that was validated against (e.g., DFIRM_ID = '16001C' AND FLOODPRONE = <Null>), and the *REVIEWSTATUS* field will state "Row matches SQL statement".

Note: In the SQL statements the domain codes are used not the domain text descriptions (e.g., 1000 from D_Zone instead of Zone AR); therefore, you may have to refer to *Appendix L* for a list of the domain code and description values in order to write the SQL queries. Additionally, since domain values can be added at user request, you can request a current listing of domains from MIPHelp.

OBJECTID	ORIGINTABLE	ORIGINCHECK	NOTES	PARAMETERS	REVIEWSTATUS
2242	DFIRM.L_SOURCE_CIT	DFIRM.L_SOURCE_CIT		WS: , Table: DFIRM.L_SOURCE_CIT, Vsn: TESTER1.JTX_31725, WC: DFIRM_ID = '270779' AND SOURCE_DSC = <Null>	Row matches SQL statement

Example a SQL table check entry in the Error Table

The following are examples of SQL statements executed against the Study_Info table for the Upper Sioux Community, MN project (DFIRM ID 270779). The first line is the condition that you want to verify does not exist within your dataset. The second line is the SQL statement used to test for this condition. These SQL statements are entered as the *Where Clause* in the ***Execute SQL Check Properties*** dialog.

- Required field *COUNTY NAME* must be populated.
  DFIRM_ID = '270779' AND (CNTY_NM = 'NSPNULL' OR CNTY_NM IS NULL)
- Required if applicable field *STUDY PREFIX* must not populated with “NP”.
  DFIRM_ID = '270779' AND STUDY_PRE = 'NP'
- *JURISDICTION TYPE* must be populated if the study is not single jurisdiction.
  DFIRM_ID = '270779' AND (JURIS_TYP = 'NSPNULL' OR JURIS_TYP IS NULL) AND CW_TF = '1000'
- *PROJECTION ZONE* must be populated when *PROJECTION* is not equal to "NP".
  DFIRM_ID = '270779' AND (PROJ_ZONE = 'NSPNULL' OR PROJ_ZONE IS NULL) AND PROJECTION <> 'NP'

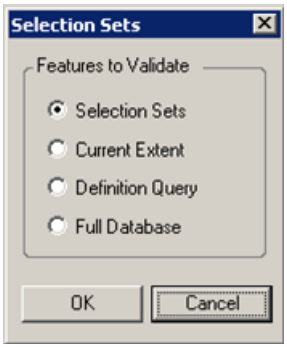
Note: Once an SQL statement is entered in the ***Select Feature Using a Query*** dialog, if you put the cursor at a point in the statement and click a field (e.g., CNTY_NM), function (e.g., <>, AND), or value (e.g., ‘Yellow Medicine County’), whatever you click is appended to the end of the statement rather than inserted at the cursor point. If you want add/edit anything to your SQL statement, you have to manually type it at the cursor point. *This is an ESRI bug.*

Note: For additional information regarding any of the possible data checks listed under the **Select Data Check** tool, within ArcMap go to Help > PLTS Help > checks.

Run Data Check

The **Run Data Check** tool executes the data check that you have selected and configured via the Select Data Check tool.

1. Click the **Run Data Check** tool.
2. The ***Selection Sets*** dialog will open.



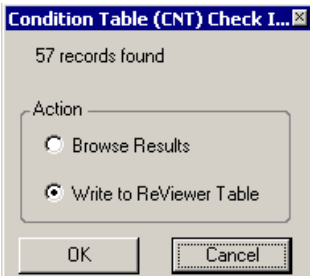
Example of the ***Selection Sets*** dialog

3. Select the subset type of the features you wish to validate.

Note: Do not select the *Full Database* option. The data extents for SDE span the entire United States and its territories. If you select the *Full Database* option, then all data in your version, including all of the effective DFIRM data, will be included in your data validation check.

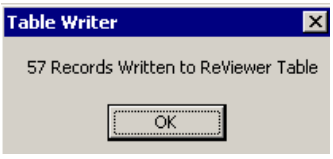
4. Click *OK*.

5. The check will be executed, and you will be prompted with the option to browse the results individually or to commit all of the records to the Error Table.



Example of the ***Selection Sets*** dialog

If you choose the *Browse Results* option, the ***Mini-Browser*** dialog will open and you can inspect each error and commit them to the Error Table individually. On the other hand, if you choose the *Write to ReViewer Table* option, all of the discovered errors will automatically be committed to the Error Table. Then, one of two different ***Table Writer*** message boxes will open.



Message informing that all records have been written to the Error Table

Message informing that only a subset of the records were written to the Error Table because the duplicates were removed

If the option *Do not check for duplicates* is checked on the *ReViewer Methods* tab in the ***ReViewer Session Manager*** dialog, then all errors that are discovered will be written to the Error Table. The message box above on the left will be displayed in this case. Conversely, if the *Do not check for*

duplicates option is not checked, only a subset of the errors discovered may be written to the Error Table. This means that if multiple errors are found for the same *OBJECTID* within a particular feature class, then only one of those errors will be written to the Error Table. This is because only one record (e.g., error) is kept per *OBJECTID* value, and the rest are discarded. The message box above on the right will be displayed if this is the case.

ReViewer Batch Validate

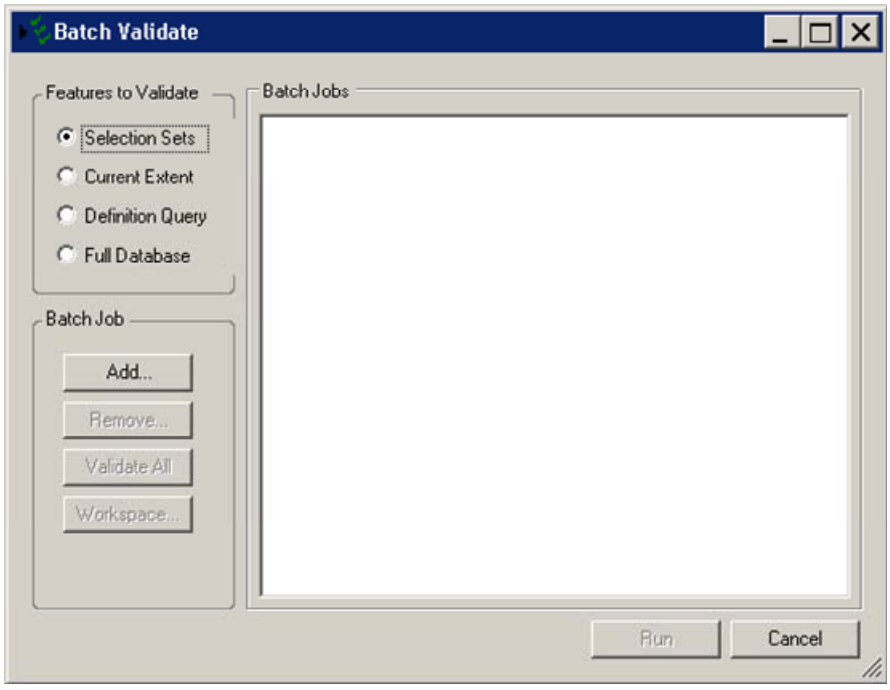
The **ReViewer Batch Validate** tool enables you to recall and execute a batch job(s) for your job version, which you previously created via the ReViewer Batch Job Manager tool.

1. Load into the Table of Contents all feature classes that you will validate via the batch job. Turn on all of the pertinent spatial data layers.

Note: Since the look-up tables are not associated with a spatial extent, you do not have to load the tables in the batch job into the Table of Contents.

2. Click the **ReViewer Batch Validate** tool.

3. The ***Batch Validate*** dialog opens.

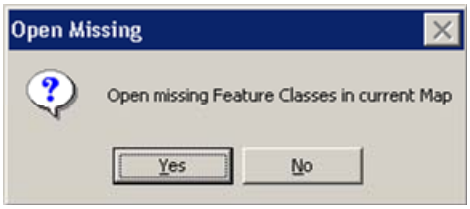


Batch Validate dialog

4. Click *Add...*. The ***Select Batch Job File*** dialog opens.

5. Navigate to the QC folder for your project and select a batch job created for the job version in which you are currently working. Click *OK*.

6. If there are feature classes that are not loaded into the Table of Contents that are in the batch job, the ***Open Missing*** dialog will be generated.

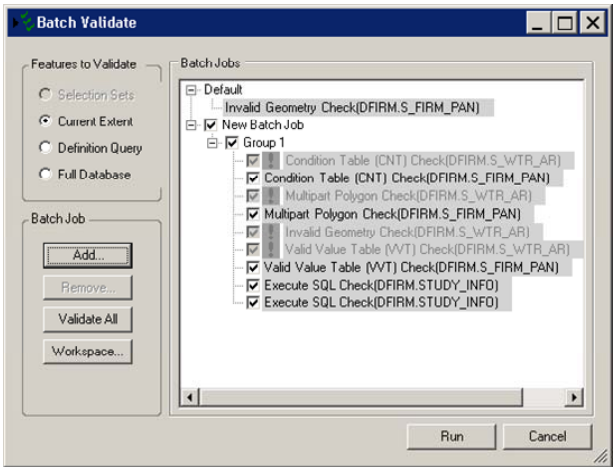


Open Missing dialog

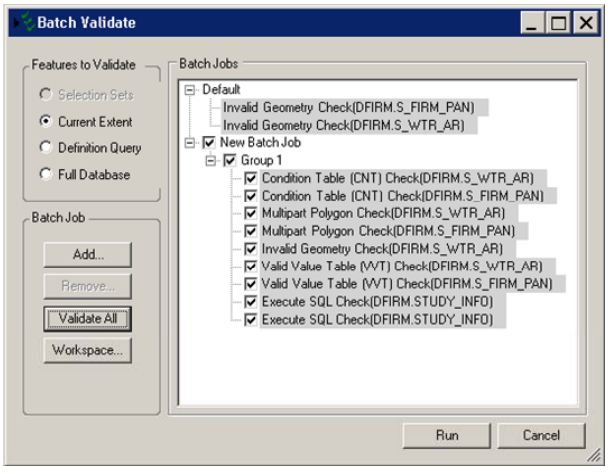
Clicking *Yes* will add the missing SDE data layers into the Table of Contents. Whereas, clicking *No* will advance the process to the ***Batch Validate*** dialog and no missing data will be loaded into the Table of Contents. Data checks for the missing data will not be executed, and they each will be marked with an exclamation mark.

Note: The ***Open Missing*** dialog will open if all of the data layers participating in the batch job are loaded but not turned on in the Table of Contents. However, clicking *Yes* in the ***Open Missing*** dialog will not turn on the data layers nor will it load duplicate data layers. The exclamation marks will not be resolved. You will have to cancel the ***Batch Validate*** dialog and manually turn on the pertinent data layers.

Note: If you chose to add the missing data layers into the Table of Contents and you are validating "Current Extent", you will have to click the *Validate All* button in the dialog to refresh the batch job and activate the associated checks.



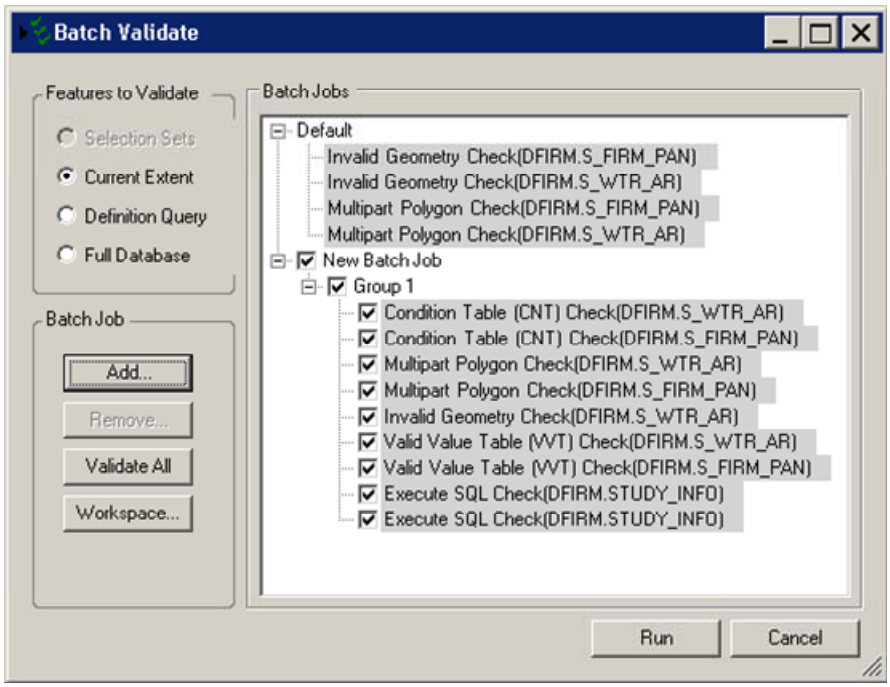
Batch job with exclamation marks because Water Area (S_Wtr_Ar) is not loaded into the Table of Contents



Same batch job after opting to load missing features and clicking the *Validate All* button to refresh the ***Batch Validate*** dialog

Note: If data layers are missing in the Table of Contents that are in the batch job and you opt to add them, the data layer(s) will be set to selectable when loaded. So, if you have chosen to validate "Selection Sets", the exclamation marks will disappear. However, there are no features selected at that time in the data layers, so though the data check will run, you are not actually validating any features in the data layers.

7. The batch job data checks are populated in the ***Batch Validate*** dialog, as well as, any *Default* checks for the visible layers within the feature subset chosen. These *Default* checks are set in the ReViewer Session Manager dialog for the session.

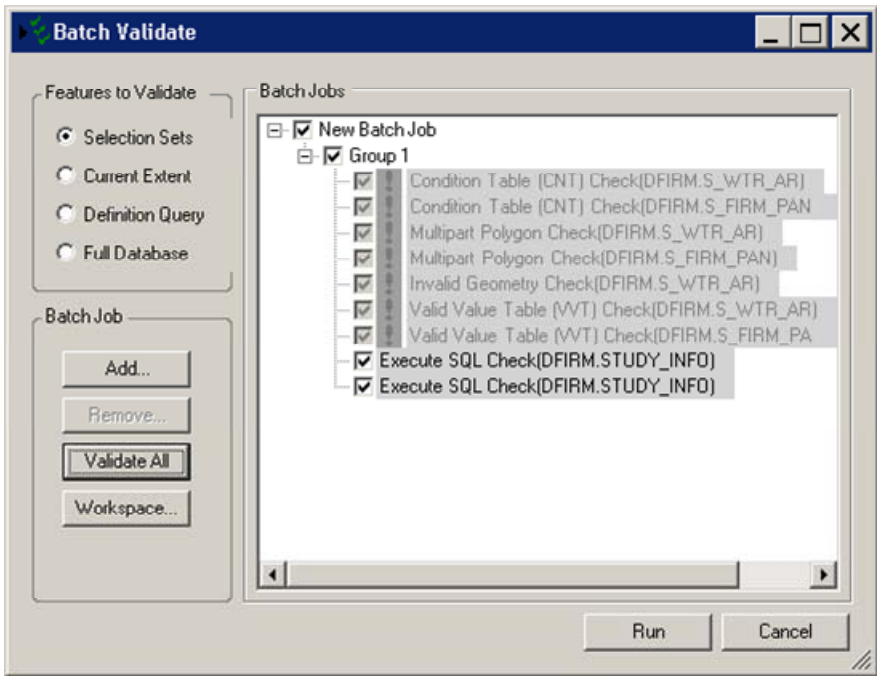


Batch Validate dialog populated

Note: Do not select to validate the "Definition Query" if you have not defined your DFIRM ID value in the *Where Clause* in each of the data checks. This validation set does not refer to the definition queries set within each of the data layers; rather it refers to the SQL statements entered in each of the data check dialogs in the *Where Clause* option. If this has not been previously set in each of your data checks, all data in your job version will be validated; this includes your project data and all of the effective data in your job version.

If there are any errors with the batch job data checks and the accessibility of the features you have specified to validate, exclamation marks will be to the left of the data check and the data check will be grayed out.

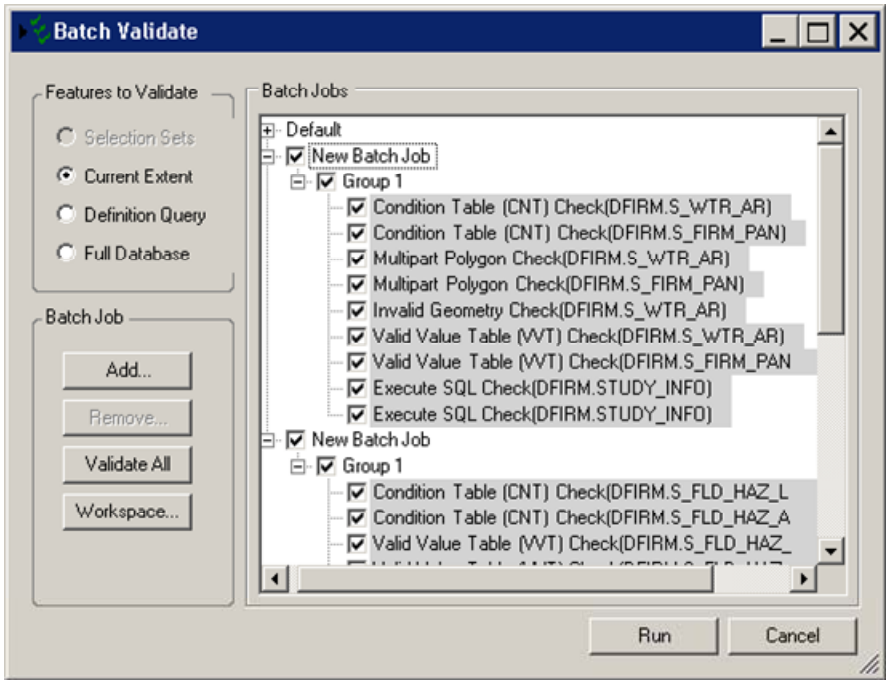
In the following example, the features in the *FIRM Panel Index* (S_FIRM_Pan) data layer were selected thus the "Selection Sets" validation option is active. However, neither the *Water Area* (S_Wtr_Ar) data layer nor the *FIRM Panel Index* (S_FIRM_Pan) data layer was turned on in the Table of Contents. Therefore, some of the data checks could not be run, and the affected data checks were grayed out and marked with an exclamation mark. The data checks for the Study_Info table though were unaffected, as shown in the example. If none of the data checks in the batch job could be executed, the *Run* button would be inactive.



Batch Validate dialog, displaying errors with the data checks in the batch job

Note: If you try to share a batch job across versions, all of the data layers and tables will be marked with exclamation marks and the *Run* button will remain inactive.

8. If desired, you can click the *Add...* button again to load another batch job associated with your job version. Repeat steps 5-7 for as many batch jobs that you want to execute in one validation process.



Batch Validate dialog with two batch jobs loaded

Note: You can uncheck any data check(s) that you do not wish to execute in the validation process. This is an easy way to temporarily omit data checks instead of having to permanently edit the batch job.

9. Click *Run*.

10. The batch job will be executed, and the ***Table Writer*** message will be generated, stating the results.

Message informing that all records have been written to the Error Table

Note: The *Default* checks chosen in the ***ReViewer Session Manager*** dialog will be run as part of each batch job. If you add the same *Default* checks as part of your batch job, the check will be run twice – once at the beginning of the batch job and once as one of the batch job checks you configured. In this situation, if a feature fails the check, two identical errors (i.e., same OBJECTID and same error) will be written to the Error Table.

Sampling

The **Sampling** tool enables you to take a random sampling of all features in a feature class(es) that will be recorded in a sample table. However, the sampling is independent of the definition queries in the data layers, so you are sampling all data within your job version. This tool is inappropriate since you cannot obtain a sample of only your study's features, and it does take a gross amount of time. That aside, sampling features is not an appropriate QC method for DFIRM map production. All data in each FIRM map panel should be examined for accuracy and correctness.

Total Feature Count

The **Total Feature Count** tool allows you to obtain the total number of features per feature class within your job version. This function should not be used, as it will report the feature totals for your project and all effective data within your job version; it operates independently of the definition queries in the feature classes.

Frequency

The **Frequency** tool has been disabled, as this tool functions independently of the definition queries within your data layers. Therefore, the number of features within a feature class that have a specific value within a specific field would be assessed for your project and all effective data within your job version. This is useless to your project, and it would take a gross amount of time to run this operation.

Create Polygon Grid Wizard

The **Create Polygon Grid Wizard** tool requires you to use an ArcInfo license in order to create a polygon grid to use as the basis for the ReViewer Overview Window tool. Therefore, you will not be able to use the **Create Polygon Grid Wizard** tool.

Note: The **Create Polygon Grid Wizard** tool will allow you to go through all three configuration dialogs, before you are informed that you are not using an ArcInfo license and the process fails to complete.

ReViewer OverView Window

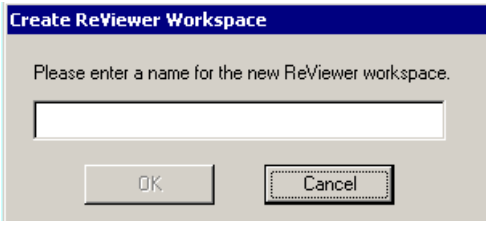
The **ReViewer OverView Window** tool cannot be used, since you cannot create a polygon grid via the Create Polygon Grid Wizard tool.

Create ReViewer Workspace

The **Create ReViewer Workspace** tool creates a personal geodatabase to be used as your ReViewer workspace for your Data ReViewer sessions. This geodatabase is automatically configured according to the workspace requirements set forth by the **PLTS GIS Data ReViewer** extension.

There is no limit as to how many ReViewer workspaces you create to help manage your QC work. However, you will not be able to overwrite an existing ReViewer workspace. This helps preserve the integrity of your QC reviews and correction logs.

1. Click the **Create ReViewer Workspace** tool.
2. The ***Create ReViewer Workspace*** dialog opens.



Create ReViewer Workspace dialog

3. Enter a valid name for the personal geodatabase and click *OK*.

4. If the ReViewer workspace name already exists for your project, you will be notified and prompted to enter a different name; otherwise, the ReViewer workspace will be created immediately.

The ReViewer workspaces will be stored at J:\FEMA\<region>\<state>\<county>\<county or community>\<FEMA Case Number>\Mapping\QC in the MIP directory structure.

Note: The personal geodatabase created with the **Create ReViewer Workspace** tool has been configured to be used with the **PLTS GIS Data ReViewer** extension. The internal tables and data layers have already been created, and the necessary datum projection has been set. Using a pre-existing personal geodatabase that you have created will not function properly with **PLTS GIS Data ReViewer** tools, nor should you use the **Create ReViewer Workspace** tool to create a new personal geodatabase for purposes other than interacting with the **PLTS GIS Data ReViewer** extension.

Export Error Table

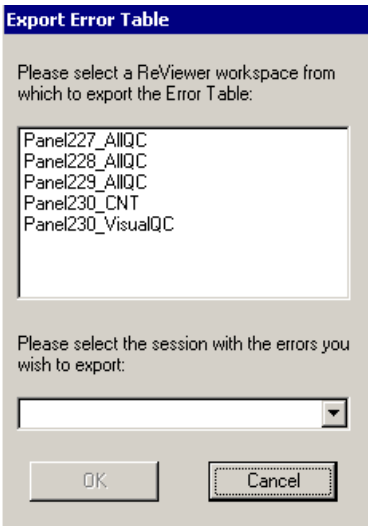
The **Export Error Table** tool exports the Condition Table (CNT) checks from the Error Table to a TXT file for a single session in the ReViewer workspace. The TXT file is tab-delimited, and only the three fields pertinent to CNT errors are retained in the TXT file - *OBJECTID*, *PARAMETERS*, and *REVIEWSTATUS*. This allows you to more easily refer to the individual errors in the Error Table, import the TXT file into MS Excel for easier dissemination, and/or print out a hardcopy of the errors.

After you have run CNT checks and written the errors to the Error Table, you can export the Error Table to a TXT file.

Note: You do not have to be in a ReViewer session to use the **Export Error Table** tool. Also, you can be working in a ReViewer session different than the session from which you want to export the Error Table.

1. Click the **Export Error Table** tool.

2. The ***Export Error Table*** dialog opens.

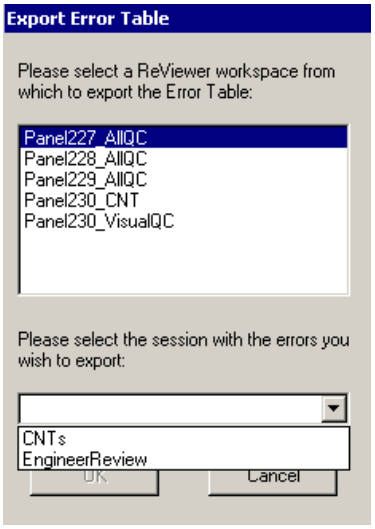


Example of the ***Export Error Table*** dialog

3. Select a ReViewer workspace from the window.

Note: All MDB files in your project's QC folder in the MIP directory structure will be listed in the ***Export Error Table*** dialog as a ReViewer workspace that can be selected. Therefore, if a personal geodatabase or MS Access file is placed in the QC folder, the file will be listed in the ***Export Error Table*** dialog. However, you will not be able to export records from a non-ReViewer workspace using the **Export Error Table** tool.

4. Select a ReViewer session within the selected ReViewer workspace from the dropdown list.



The sessions in the selected ReViewer workspace are populated in the dropdown list.

Note: The sessions will be listed in the ***Export Error Table*** dialog by the names you assigned them, not the session number.

5. Click *OK*. The TXT file will be created and populated with the appropriate records that meet the criteria.

Note: If there are no records in the Reviewer session that refer to CNT errors, you will be prompted with an error message stating that the session does not contain any records. This applies solely to records associated with CNT errors, and it doesn't indicate that the other records (e.g., VVT errors, flag missing feature) in the Error Table are missing or corrupt.

The TXT files will be stored at J:\FEMA\<region>\<state>\<county>\<county or community>\<FEMA Case Number>\Mapping\QC in the MIP directory structure.

The TXT file will be named "ErrTab_<workspace>_S<session number>_<mmddyyyy_hhmm>.txt".

- The value <workspace> will be the name of the ReViewer workspace that you select in the ***Export Error Table*** dialog.

- The <session number> value is the number that corresponds to the session name that you select in the ***Export Error Table*** dialog. For instance, if the session ID is "2" and the session name is "kdg_DraftQC", then you would select "kdg_DraftQC" from the session dropdown list in the ***Export Error Table*** dialog, but the TXT file would identify session "2" in the filename. Refer to the ReViewer Session Manager section of this user guide for more information regarding naming sessions.

SESSIONID	USERNAME	SESSIONNAME
1	jjkelley	EngineerReview
2	wglick	QCReview1
3	cbenn	QCReview2

In this example of the internal ReViewer session table, *SESSIONID* "3" corresponds to the *SESSIONNAME* "QCReview2". This internal table is populated via the ***ReViewer Session Manager*** dialog when you start a new session or edit the session properties.

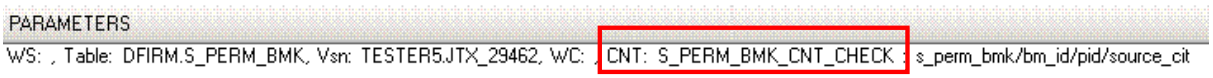
- The timestamp information includes the date and time when the Error Table contents were exported to the TXT file. The time is reported in military time.

The following are the three fields in the TXT file, with the description of the alterations performed via the export process. These alterations provide better clarity for where the errors are occurring in the data.

- *OBJECTID* – This field in the TXT file identifies the OBJECTID of the feature where the CNT error was found. The field name is maintained in the TXT file (i.e., OJBJECTID), and value is included in its entirety. In other words, the value "456" in the field "OBJECTID" in the Error Table will be listed as "456" under the heading "OBJECTID" in the TXT file.

- *CNT CHECK* – This field in the TXT file identifies the CNT check that was run to find the error. The check should help identify the data layer which contains the error. For example, if the CNT CHECK value is "S_FIRM_PAN_CNT_CHECK", then the error was found in the *FIRM Panel Index* (S_FIRM_PAN) data layer. The values in the CNT CHECK field are parsed from the *PARAMETERS* field in the Error Table. The value is extracted from the portion that begins "CNT:" and ends at the next colon. For example, if the value is in the *PARAMETERS* field below, the value that would be in the CNT CHECK field is "S_PERM_BMK_CNT_CHECK".

Example of a value in the *PARAMETERS* field in the Error Table

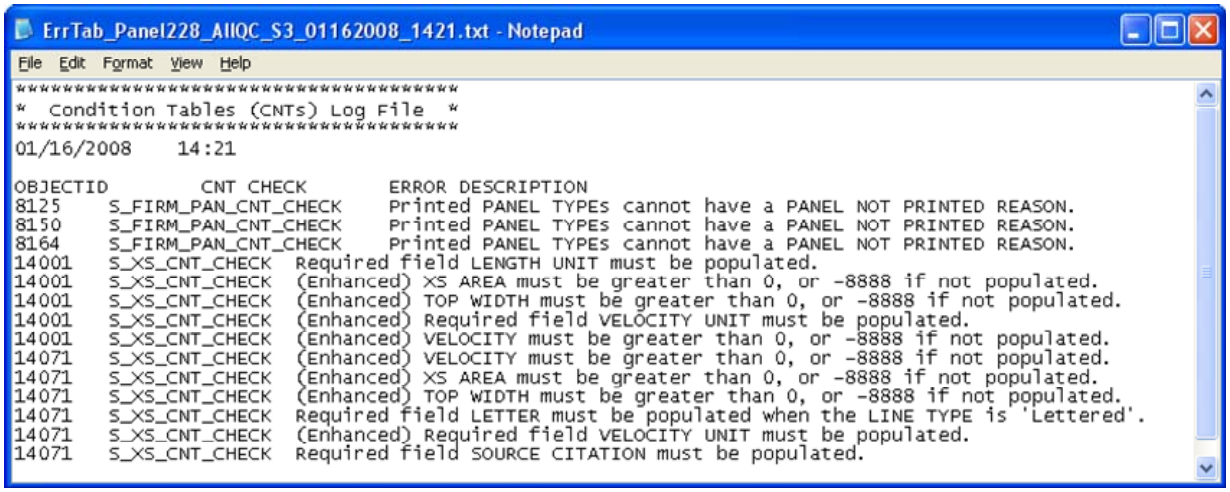


The portion of the *PARAMETERS* field value that will be extracted for the CNT CHECK field in the TXT file

Note: The **Export Error Table** tool is designed to only export errors that were discovered via the CNT checks. All other errors are only reviewable within ArcMap using the **PLTS GIS Data ReViewer** tools.

- *ERROR DESCRIPTION* – This field in the TXT file lists the description of the error that was found. This value specifies how the data attributes violate *Appendix L* specifications. The values in this field are an exact copy of the values in the *REVIEWSTATUS* field in the Error Table. In other words, if the value in the *REVIEWSTATUS* field in the Error Table is "Required field SOURCE CITATION must be populated", then the value in the *ERROR DESCRIPTION* field in the TXT file will be "Required field SOURCE CITATION must be populated".

The records in the TXT file will be sorted first by the *CNT CHECK* value and then by the *OBJECTID* value in ascending order. Additionally, the date and time information when the records were exported from the Error Table is populated within the TXT file.



Example of the contents within the TXT file.
Based on the filename these CNT errors were exported from Session 3 within the "Panel230_AllQC" ReViewer workspace on January 16, 2008 at 2:21pm.

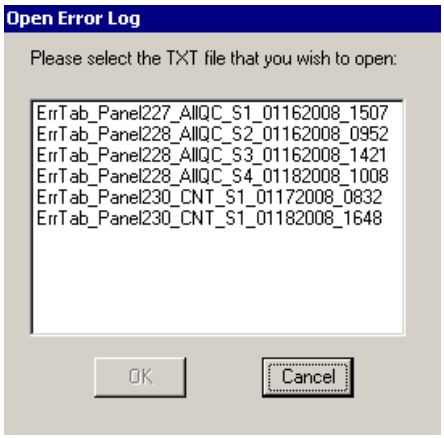
Note: After you run a CNT check, you will be prompted to either browse the results or write to the ReViewer Table. The errors must be written to the ReViewer Table (Error Table), in order for them to be exported to a TXT file via the **Export Error Table** tool. Therefore, you can either choose to write all of the errors immediately to the ReViewer Table or to browse the results error by error and write individual records to the Error Table.

Open Error Log

The **Open Error Log** tool retrieves the TXT file, containing the CNT errors, from the MIP directory structure and opens it in Windows Notepad. Refer to the Export Error Table section for information regarding the contents of the TXT file. The **Open Error Log** tool eliminates the need to navigate through the MIP directory structure whenever you want to review the exported CNT errors for your project.

Note: You do not have to be in a ReViewer session to use the **Open Error Log** tool. Also, you can be working in a ReViewer session different than the session associated with the TXT file you want to open.

1. Click the **Open Error Log** tool.
2. The ***Open Error Log*** dialog opens.



Example of the ***Open Error Log*** dialog populated.

3. Select a TXT file listed in the window and click *OK*. The TXT will open in Windows Notepad.

Note: All TXT files in your project's QC folder in the MIP directory structure will be listed in the ***Open Error Log*** dialog as CNT Error Logs that can be selected. Therefore, if a TXT file is placed in the QC folder, the file will be listed in the ***Open Error Log*** dialog. The tool will open any TXT file you select in the dialog.

Note: The Citrix environment does not have MS Excel software. You will have to copy or save the TXT file to your local drive and use MS Excel on your local computer if you want to view the errors in tabular format. Similarly, there are no printer drivers installed in Citrix; you will have to move the file to your local drive and use your local printers to generate a hardcopy of the errors.

Load Notepad Feature Classes

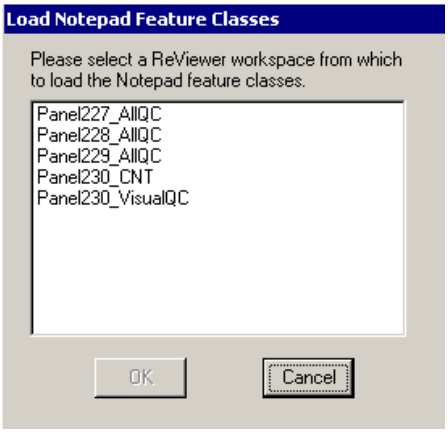
The **Load Notepad Feature Classes** tool loads the populated ReViewer Dataset-related feature classes into the Table of Contents. The ReViewer Dataset-related feature classes are the polygon, line, and point features stored with your ReViewer workspace; these include the Notepad features and any other errors that can be linked to a spatial feature (e.g., flag missing feature, CNTs).

The Notepad features are used to mark the errors visually in the maps, so that the data errors in SDE can be found later in the map layouts and corrected appropriately. Creating Notepad features does not affect your data in SDE. Refer to the Notepad Tab section in this user guide for information regarding creating and using Notepad features for visual QC. The ReViewer Dataset-related feature classes are: REVTABLEPOINT (point features), REVTABLELINE (line features), and REVTABLEPOLY (polygon features). Only the populated feature classes in the ReViewer Dataset will be added to the Table of Contents when the **Load Notepad Feature Classes** tool is used.

Note: You will not be able to open the PLTS 8.3 Notepad feature classes with the **Load Notepad Feature Classes** tool. Refer to the Using 8.3 ReViewer Workspaces with PLTS 9.2 section of this user guide for details as to how to retrieve and use the QC comments from your 8.3 ReViewer workspaces in ArcMap 9.2.

Note: You do not have to be in a ReViewer session to use the **Load Notepad Feature Classes** tool. Also, you can be working in a ReViewer workspace different than the workspace containing the Notepad feature classes you want to load into the Table of Contents.

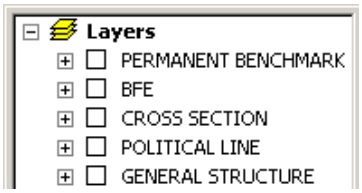
1. The ***Load Notepad Feature Classes*** dialog opens.



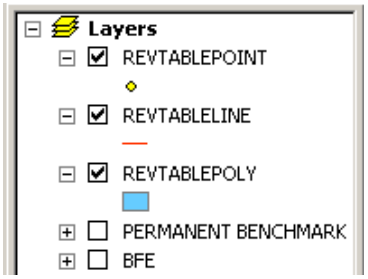
Example of the ***Load Notepad Feature Classes*** dialog populated.

2. Select the ReViewer workspace from within the window that contains the ReViewer Dataset-related feature classes that you wish to load into the Table of Contents.

3. Click *OK*. If there are populated Notepad feature classes and/or spatial errors in the ReViewer workspace, those layers will be added into the Table of Contents; otherwise, you will be presented with an error message stating that none of the three feature classes are populated.



Example of the Table of Contents prior to using the Load Notepad Feature Classes tool.



Example of the Table of Contents after using the Load Notepad Feature Classes tool, where all three layers contain features.

Note: The populated ReViewer Dataset-related feature classes are loaded into the Table of Contents every time the **Load Notepad Feature Classes** tool is clicked, despite whether or not the layer has already been added. In other words, if REVTABLELINE is populated and the **Load Notepad Feature Classes** tool is clicked four times, there will be four instances of REVTABLELINE in the Table of Contents.

Using 8.3 ReViewer Workspaces with PLTS 9.2

ReViewer workspaces that were created and populated with **PLTS GIS Data ReViewer** 8.3 cannot be used with **PLTS GIS Data ReViewer** 9.2. You will need to create a new ReViewer workspace(s), via the Create ReViewer Workspace tool, to use in ArcMap 9.2.

Outside of **PLTS GIS Data ReViewer** 8.3, the records in the ReViewer table are not automatically joined to the Notepad features in the *Data* view. Therefore, if you click on a record in the ReViewer table, it will not flash the spatial feature in the *Data* view. If you want to access the information in a ReViewer workspace that you were using ArcMap 8.3 within ArcMap 9.2, you will have to use the personal geodatabase as reference data in your ArcMap session, investigating the tables to determine the error reported in 8.3.

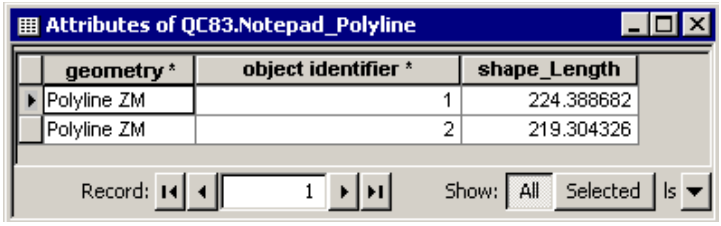
You have two options as to how you can do this – you can join and calculate fields in a local version of ArcMap or you can load contents of the personal geodatabase into your 9.2 ArcMap session and compare individual records. The first option takes more effort outside of the DFIRM Tools environment, but it will be easier to work with, especially with large amounts of records. The second option though might be more appropriate for a few records. Instructions for both options are as follows.

To join and calculate the tables outside of DFIRM Tools:

1. Copy the 8.3 personal geodatabase to your local drive.

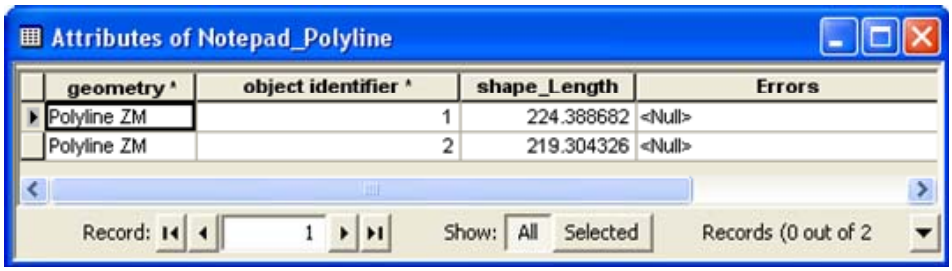
2. Load the contents of the personal geodatabase into your local ArcMap.

3. Open one of the Notepad feature class tables. (These instructions will use the Notepad polyline feature class for an example.)



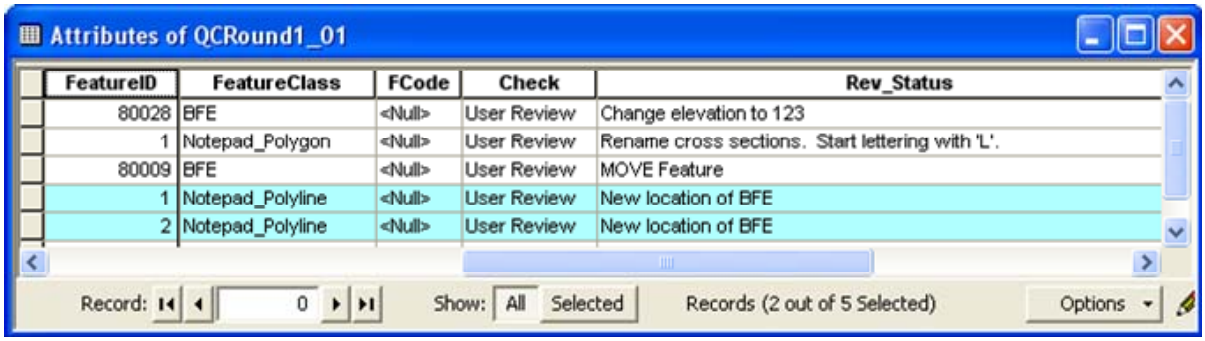
Example of the attribute table for the Notepad polyline feature class

4. Add a new text field to the attribute table. The field length should be 250. (The field is named "Errors" for this example.)



Example of a new field ("Errors") added to the Notepad feature class attribute table

5. Open the Error Table, and select the records where the *FeatureClass* field value equals the Notepad feature class to which you just added the new field. (e.g., [FeatureClass] = 'Notepad_Polyline')

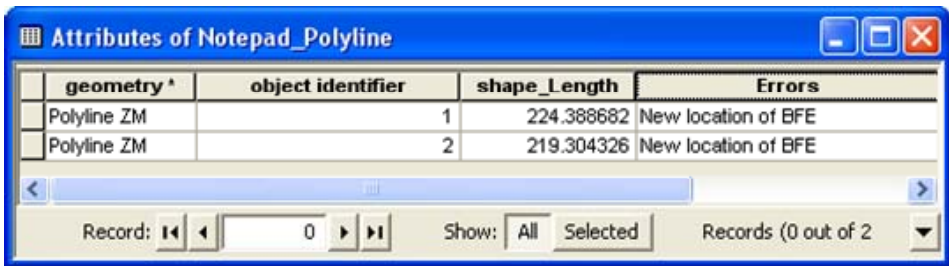


Example of the selected records in the Error Table which are associated with the Notepad_Polyline feature class

6. Export the selected records to a new table.

7. Join the field *object identifier* in the new table to the field *FeatureID* in the Notepad feature class attribute table.

8. Calculate the newly added field (e.g., *Errors* field) to equal the value in the *Rev_Status* field in the Error Table. Remove the table join.



Example of the new field ("Errors") to equal the value in the *Rev_Status* field in the Error Table for the Notepad Polyline features.

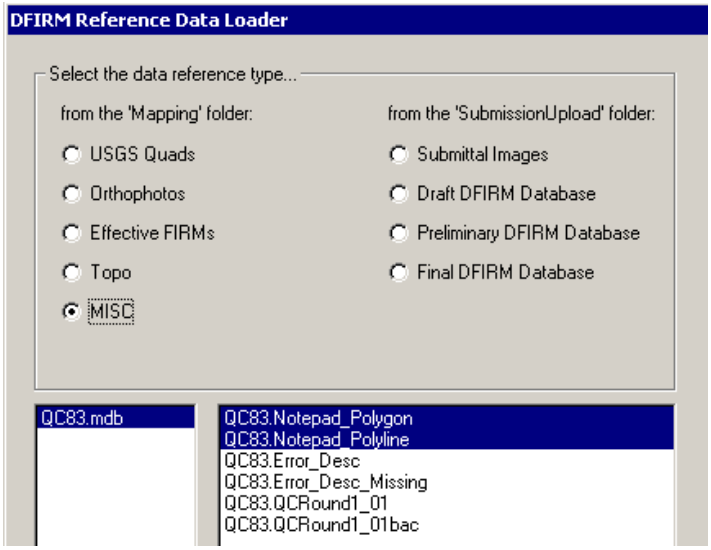
9. Repeat this process for the other populated Notepad feature classes.

10. Move the 8.3 personal geodatabase into the MISC folder for your study.

11. In ArcMap click the ***DFIRM Reference Data Loader*** tool on the **DFIRM Layer Loader** toolbar.

12. In the ***DFIRM Reference Data Loader*** dialog, select the *MISC* radio button and select *Yes* when asked if your data is in personal geodatabase format.

13. Double-click the personal geodatabase, select the Notepad feature classes to load into your Table of Contents, and click *OK*.



Example of the Notepad feature classes selected in the ***DFIRM Reference Data Loader*** dialog.

14. The Notepad feature classes are loaded into the Table of Contents. You can now use these features to find the errors identified within your data because the error description is included in the Notepad feature's attributes.

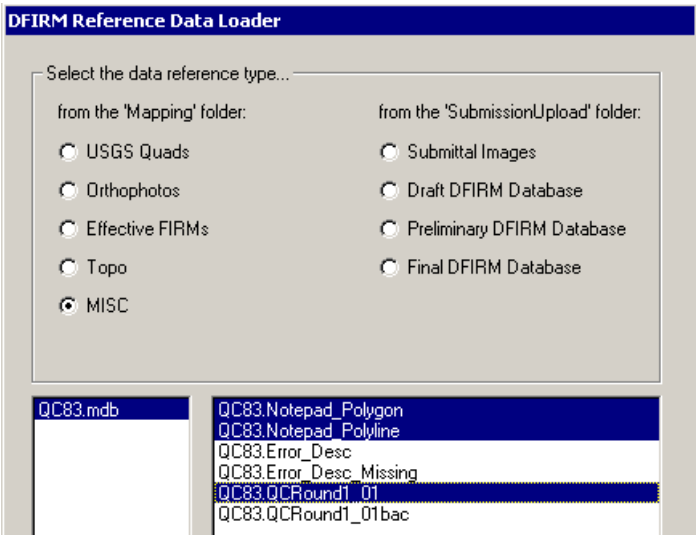
To manually compare the tables within DFIRM Tools:

1. Move the 8.3 personal geodatabase into the MISC folder for your study.

2. In ArcMap click the ***DFIRM Reference Data Loader*** tool on the **DFIRM Layer Loader** toolbar.

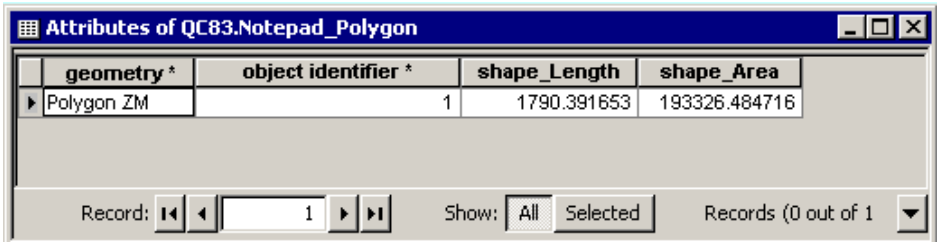
3. In the ***DFIRM Reference Data Loader*** dialog, select the *MISC* radio button and select *Yes* when asked if your data is in personal geodatabase format.

4. Double-click the personal geodatabase, and select the Notepad feature classes and the ReViewer table(s) (Error Table) to load into your Table of Contents.

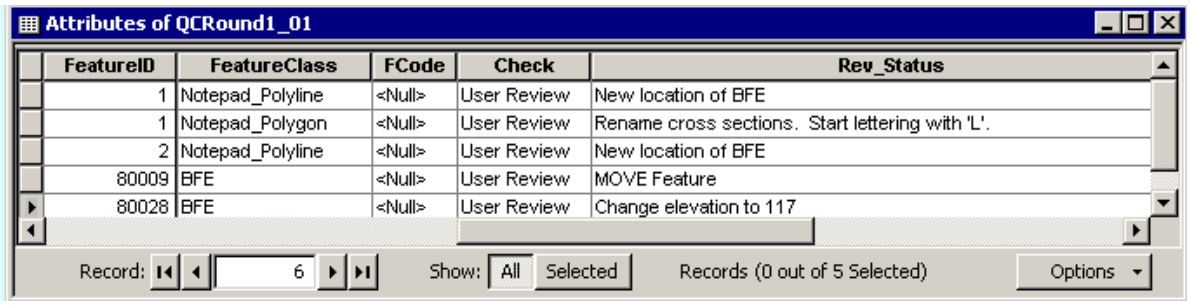


Example of the Notepad feature classes and the ReViewer table selected in the ***DFIRM Reference Data Loader*** dialog.

5. Open the ReViewer table and the Notepad feature class tables.

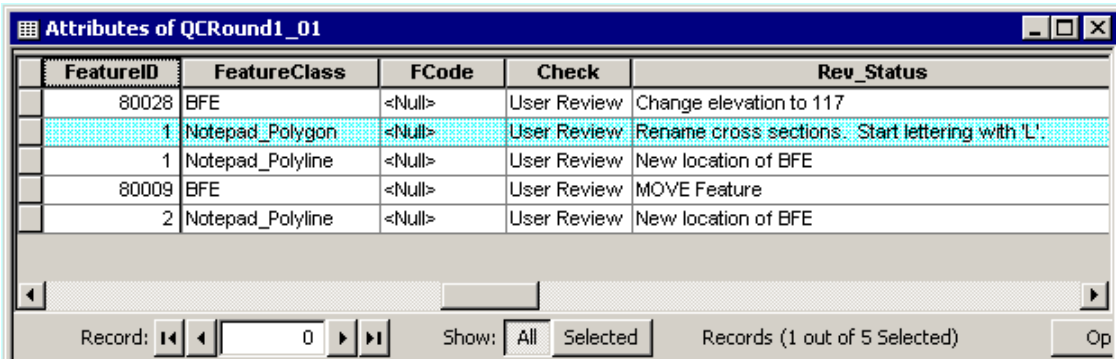


Example of the Notepad Polygon attribute table



Example of the ReViewer table (i.e., Error Table)

6. When you find a Notepad feature that you wish to investigate, note the *object identifier* value of the feature (e.g., 1 in the QC83.Notepad_Polygon table). Query the Error Table for the feature's *object identifier* value in the *FeatureID* field and the Notepad feature class in the *FeatureClass* field (i.e., [FeatureID] = 1 AND [FeatureClass] = 'Notepad_Polygon').



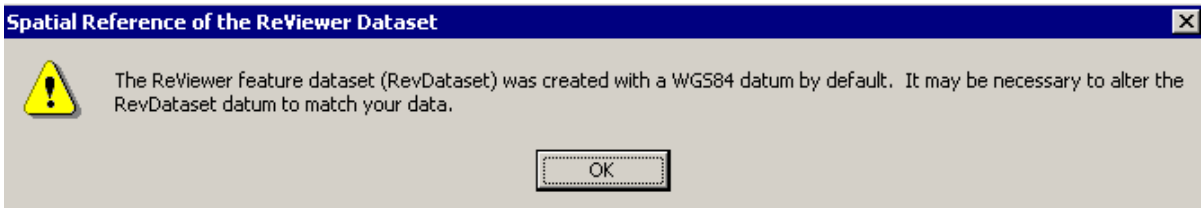
Example of the selected record in the Error Table which are associated with the Notepad Polygon feature

Troubleshooting

Problem: This error message was generated when I tried to start my ReViewer session.

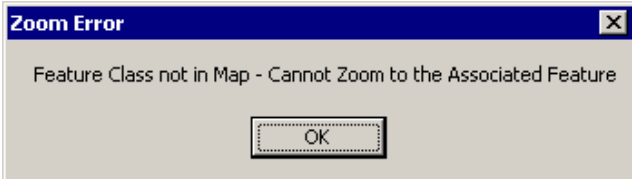
Solution: The personal geodatabase you have selected as your ReViewer workspace is not a ArcGIS 9.2 personal geodatabase. You cannot use the ReViewer sessions from **PLTS GIS Data ReViewer** 8.3 in ArcMap 9.2. Refer to the Using 8.3 ReViewer Workspaces with PLTS 9.2 section of this user guide for information about accessing the information in your 8.3 ReViewer workspace.

Problem: This error message was generated when I tried to start my ReViewer session.



Solution: The personal geodatabase you have selected as your ReViewer workspace has not been configured properly. Use the Create ReViewer Workspace on the **DFIRM QC Assistance** toolbar to create any ReViewer workspaces. ReViewer workspaces created with this tool will already have all of the necessary configurations established.

Problem: This error message was generated when double-clicking an error within my Error Table.



Solution: The error was generated because the Notepad feature class or the SDE data layer is not loaded into the Table of Contents. Therefore, the data frame cannot be zoomed into the associated spatial feature. Add the necessary SDE data layer(s) into the Table of Contents via the **DFIRM SDE Layer Loader** tool or add the Notepad feature class(es) via the Load Notepad Feature Classes tool.

Appendix A – Condition Table (CNT) Data Checks

The following CNT checks can be run, either individually with the Select Data Check and Run Data Check tools or in a batch job via the ReViewer Batch Validate tool, to validate the attribute values entered in each attribute table for the corresponding feature class.

Base Index (S_BASE_INDEX_CNT_CHECK)

The following fields are required and must be populated: *Unique ID* (BASE_ID), Base Date (BASE_DATE), Base Filename (FILENAME), and Source Citation (SOURCE_CIT).

Base Flood Elevation (BFE) (S_BFE_CNT_CHECK)

The following fields are required and must be populated: *Unique ID* (BFE_LN_ID), *Elevation* (ELEV), *Length Units* (LEN_UNIT), *Source Citation* (SOURCE_CIT), and *Vertical Datum* (V_DATUM). The *Elevation* (ELEV) values must be greater than or equal to zero.

Coastal Barrier Resources System (CBRS) (S_CBRS_CNT_CHECK)

The following fields are required and must be populated: *Unique ID* (CBRS_ID), *CBRS true/false* (CBRS_TF), and *Source Citation* (SOURCE_CIT). The fields *CBRS Type* (CBRS_TYP) and *CBRS Date* (CBRS_DATE) are only required and should only be populated when the value for *CBRS true/false* (CBRS_TF) is "T". However, "NP" is an invalid value for *CBRS Type* (CBRS_TYP), and "88880808" is an invalid value for *CBRS Date* (CBRS_DATE).

Coastal Transect (S_CST_TSCT_LN_CNT_CHECK)

The following fields are required and must be populated: *Unique ID* (TRAN_LN_ID), *Length Unit* (LEN_UNIT), *Source Citation* (SOURCE_CIT), and T*ransect Number* (TRAN_NO). For Enhanced databases all of the above fields are required and must be populated, as well as, the following additional fields: *Effective Study* (EFF_TF), *Left Range Direction* (L_DIRECT), *Left Range* (L_RANGE), *Location Description* (LOC_DESC), *Source Method* (METHOD), *Right Range Direction* (R_DIRCT), *Right Range* (R_RANGE), *Shoreline Roughness* (SHR_ROUGH), *Time Unit* (TIME_UNIT), *Vertical Datum* (V_DATUM), *VZone Extent* (VZONE_EXT), *X-Coordinate* (XCOORD), and *Y-Coordinate* (YCOORD). Additionally, when the fields *Coastal Model ID* (CST_MDL_ID) or *Erosion Methodology* (EROS_METH) are applicable, and therefore required, "NP" is an invalid value. The field *Shown on FIRM* (SHOWN_FIRM) must be populated with a domain value. All of the values for the following fields must be greater than or equal to 0, and -8888 is an invalid value: *Controlling Wave Height* (CON_HT), *Controlling Wave Period* (CON_PD), *Mean Wave Height* (MEAN_HT), *Mean Wave Period* (MEAN_PD), *Wave Setup Depth* (SETUP_DEPTH), *Significant Wave Height* (SIG_HT), *Significant Wave Period* (SIG_PD), and *Transect Number* (TRAN_NO). Moreover, the values for the *Left Range Direction* (L_DIRECT) and *Right Range Direction* (R_DIRECT) must be between -359 degrees and 359 degrees.

Coastal Gage (S_CST_GAGE_CNT_CHECK)

For Enhanced databases the following fields are required and must be populated: *Unique ID* (GAGE_ID), *Agency* (AGENCY), *Gage End Recording Date* (END_PD), *Gage Name* (GAGE_NM), *Gage Type* (GAGE_TYPE), *Source Citation* (SOURCE_CIT), *Gage Recording Start Date* (START_PD), *Wind Direction* (WDDIR_TF), *Wind Speed* (WDSPD_TF), and *Wave Direction* (WVDIR_TF). The fields *Recording Interval* (REC_INTVL) and *Time Unit* (TIME_UNIT) are only required and should only be populated when the value for *Gage Type* (GAGE_TYPE) is "Fixed Interval". Additionally, when the following fields are applicable, and therefore required, "NP" is an invalid value: *Coastal Model ID* (CST_MD_ID), *Recording Interval* (REC_INTVL), and *Time Unit* (TIME_UNIT). Also, the values for both *Wind Direction* (WDDIR_TF) and *Wind Speed* (WDSPD_TF) must be "T" when the value for *Gage Type* (GAGE_TYPE) is either "Wind Direction" or "Wind Speed & Direction".

Cross Section (S_XS_CNT_CHECK)

The following fields are required and must be populated: *Unique ID* (XS_LN_ID), *Length Units* (LEN_UNIT), *Source Citation* (SOURCE_CIT), *Station Start ID* (START_ID), *Stream Station* (STREAM_STN), *Vertical Datum* (V_DATUM), *Regulatory Water Surface Elevation* (WSEL_REG), *Water Name* (WTR_NM), and C*ross Section Line Type* (XS_LN_TYP). For Enhanced databases, all of the above fields are required and must be populated, as well as, the following additional fields: *Area Unit* (AREA_UNIT), *Bed Elevation* (BED_ELEV), *Top Width* (TOP_WIDTH), *Velocity Unit* (VEL_UNIT), *Velocity* (VELOCITY), and C*ross Section Area* (XS_AREA). The field *Cross Section Letter* (XS_LTR) is only required when the value for *Cross Section Line Type* (XS_LN_TYP) is "Lettered". However, "NP" is an invalid value for *Cross Section Letter* (XS_LTR). Additionally, the values for the following fields must be greater than zero, or -8888 should be used for not populated records: *Top Width* (TOP_WIDTH), *Velocity* (VELOCITY), and *Cross Section Area* (XS_AREA). The values for the fields *Bed Elevation* (BED_ELEV) and *Regulatory Water Surface Elevation* (WSEL_REG) must be greater than or equal to zero, or -8888 should be used for not populated records.

FIRM Panel Index (S_FIRM_PAN_CNT_CHECK)

The following required fields must be populated: *Unique ID* (FIRM_ID), *FIRM Panel Number* (FIRM_PAN), *Panel Number* (PANEL), *Panel Type* (PANEL_TYP), *Panel Scale* (SCALE), *Panel Suffix* (SUFFIX), *NW Latitude* (NW_LAT), *NW Longitude* (NW_LON), *SE Latitude* (SE_LAT), *SE Longitude* (SE_LON), *Community or County Identification Number* (PCOMM), *State FIPS* (ST_FIPS), and *Source Citation* (SOURCE_CIT).

If applicable, the *Panel Not Printed Reason* (PNP_REASON) and the *Effective Date* (EFF_DATE) must be populated. Printed *Panel Types* (PANEL_TYP) cannot have a Panel Not Printed Reason. Finally, a check is made to ensure that the *FIRM Panel Number* (FIRM_PAN) is composed of the State FIPS, Community or County Identification Number, Panel Number, and Panel Suffix.

Flood Hazard Area (S_FLD_HAZ_AR_CNT_CHECK)

The following required fields must be populated: *Unique ID* (FLD_AR_ID), *Flood Zone* (FLD_ZONE), *Special Flood Hazard Area* (SFHA_TF), and *Source Citation* (SOURCE_CIT). If applicable, the following fields cannot be populated with the placeholder "NP": *Length Unit* (LEN_UNIT), *Velocity Unit* (VEL_UNIT), and *Vertical Datum* (V_DATUM) in standard databases and *Coastal Model ID* (CST_MDL_ID) and *Hydrologic Model* (HYDRO_ID) in enhanced databases.

Only AR zones can have entries made for *AR Revert Zone* (AR_REVERT). If the AR zone is coded as AE, AH, or VE, an *AR Revert BFE* (BFE_REVERT) can be entered. If the AR zone is coded as AO, an *AR Revert Depth* (DEP_REVERT) can be entered. Several checks are made to make sure that no entries are made in these fields if the *Flood Zone* (FLD_ZONE) is not of an 'AR' type. Checks are run to confirm that entries are not populated with placeholders and have the correct value (-9999) entered if the true number is less than zero.

Length Unit (LEN_UNIT) values can be entered for zones AE, AH, VE, and AO that are identified in the *AR Revert BFE* (BFE_REVERT), *AR Revert Depth* (DEP_REVERT), or *Flood Zone* (FLD_ZONE) fields. For zones other than AO, a Static BFE or an AR Revert BFE must be listed in order to populate the length unit field.

Additional checks ensure that a *Vertical Datum* (V_DATUM) is entered when the *Flood Zone* (FLD_ZONE) or *AR Revert Zone* (AR_REVERT) is AE, AH, or VE and that no zones other than these are associated with a Static BFE.

Depth (DEPTH) and *Velocity* (VELOCITY) fields can only be populated for AO zones. Standard *Floodways* (FLOODWAY) can only be populated for AE zones.

There are also checks to make sure that if a zone is a 1% annual chance flood hazard, the SFHA value is "true" and vice versa.

Flood Hazard Line (S_FLD_HAZ_LN_CNT_CHECK)
The *Unique ID* (FLD_LN_ID) and *Line Type* (LN_TYP) fields are required and must be populated.

General Structure (S_GEN_STRUCT_CNT_CHECK)
The following fields are required and must be populated: *Unique ID* (STRUCT_ID), *Source Citation* (SOURCE_CIT), *Structure Type* (STRUCT_TYP), and *Water Name* (WTR_NM). Additionally, when the field *Structure Name* (STRUCT_NM) is applicable, and therefore required, “NP” is an invalid value for that field.

Label Leader (S_LABEL_LD_CNT_CHECK)
The required fields *Unique ID* (LEADER_ID) and L*abel Type* (LABEL_TYPE) must be populated.

Note: *Label Leader* (S_Label_Ld) are automatically created by the **DFIRM Database Exporter** during the export process. You should not populate this feature class within DFIRM Tools.

Label Points (S_LABEL_PT_CNT_CHECK)
The following required fields must be populated: *Unique ID* (LABEL_ID), *Degrees* (DEGREES), *Label* (LABEL), and *Label Type* (LABEL_TYPE).

Note: *Label Points* (S_Label_Pt) are automatically created by the **DFIRM Database Exporter** during the export process. You should not populate this feature class within DFIRM Tools.

LOMR (S_LOMR_CNT_CHECK)
The following required fields must be populated: *Unique ID* (LOMR_ID), *Case Number* (CASE_NO), *Effective Date* (EFF_DATE), *LOMR Scale* (SCALE), and *Source Citation* (SOURCE_CIT). The field *Shown on FIRM* (SHOWN_FIRM) must be populated with a domain value. For enhanced databases, the required field *LOMR Status* (STATUS) must be populated with "effective", "incorporated", or "superseded".

LOMR Line (S_LOMR_LN_CNT_CHECK)
The required field *Unique ID* (LOMR_LN_ID) must be populated, and the field *Shown on LOMR* (SHOWN_LOMR) must be populated with a domain value.

Nodes (S_NODES_CNT_CHECK)
For enhanced databases, the required fields *Unique ID* (NODE_ID) and *Source Citation* (SOURCE_CIT) must be populated.

Overbank Line (S_OVRBNKLN_CNT_CHECK)
For enhanced databases, the following required fields must be populated: *Unique ID* (OVRBNK_ID), *Overbank Side* (OBNK_SIDE), *Water Name* (WTR_NM), and *Source Citation* (SOURCE_CIT).

Permanent Benchmark (S_PERM_BMK_CNT_CHECK)
The following fields are required and must be populated: *Unique ID* (BM_ID), *Permanent ID* (PID), and *Source Citation* (SOURCE_CIT).

PLSS Area (S_PLSS_AR_CNT_CHECK)

The following required fields must be populated: *Unique ID* (PLSS_AR_ID), *Section Number* (SECT_NO), and *Source Citation* (SOURCE_CIT). If applicable, the fields *Range* (RANGE) and *Township* (TWP) are required. Additional checks are done to ensure that, if there is a value for *Section Number* (SECT_NO), the number is within the valid range and the fields *Township* (TWP) and *Range* (RANGE) are populated. Additionally, the *Shown on FIRM* (SHOWN_FIRM) field must be populated with a domain value.

PLSS Line (S_PLSS_LN_CNT_CHECK)

The required fields *Unique ID* (PLSS_LN_ID) and *Source Citation* (SOURCE_CIT) must be populated. If applicable, the fields *West Range* (W_RANGE), *East Range* (E_RANGE), *North Township* (N_TWP), and *South Township* (S_TWP) cannot be populated with the placeholder "NP". The *Line Type* (LN_TYP) field is checked to ensure that the type entered is appropriate for PLSS lines.

Political Line (S_POL_LN_CNT_CHECK)

The following required fields must be populated: *Unique ID* (POL_LN_ID), *Line Type* (LN_TYP), and *Source Citation* (SOURCE_CIT). A check is also made to ensure that the *Line Type* (LN_TYP) entered is valid for a political line.

Political Area (S_POL_AR_CNT_CHECK)

The following required fields must be populated: *Unique ID* (POL_AR_ID), *Primary Political Area Name* (POL_NAME1), *State FIPS* (ST_FIPS), *County FIPS* (CO_FIPS), *Community Number* (COMM_NO), *Community ID* (CID), and *Area Not Included* (ANI_TF). If applicable, the fields *Community Info ID* (COM_NFO_ID) and *Secondary Political Area Name* (POL_NAME2) cannot be populated with the placeholder "NP". Checks are done to ensure that the *Community Number* (COMM_NO), *County FIPS* (CO_FIPS), and *Community ID* (CID) each have the correct number of characters. The *Community ID* (CID) is also checked to ensure that it is comprised of the *State FIPS* (ST_FIPS) and the C*ommunity Number* (COMM_NO) values. Additionally, a check confirms that the *Community Info ID* (COM_NFO_ID) is populated if the community has a *Community ID* (CID).

Precipitation Gage (S_PRECIP_GAGE_CNT_CHECK)

For enhanced databases, the following required fields must be populated: *Unique ID* (PRECIP_ID), *Agency* (AGENCY), *Case Number* (CASE_NO), *End Date* (END_PD), *Precipitation Gage ID* (GAGE_ID), *Gage Type* (GAGE_TYPE), *Start Period* (START_PD), and *Source Citation* (SOURCE_CIT). If applicable, the required field *Time Unit* (TIME_UNIT) must not be populated with a placeholder ("NP"). For Enhanced databases, the *Recording Interval* (REC_INTVL) and the *Time Unit* (TIME_UNIT) fields must be populated for “Fixed Interval” gages. If the Gage Type is not “Fixed Interval”, then the Recording Interval value and the Time Unit value must be “Null”.

Primary Frontal Dune (PFD) (S_PFD_LN_CNT_CHECK)

For enhanced databases, the required fields *Unique ID* (PFD_ID) and *Source Citation* (SOURCE_CIT) must be populated.

Profile Baseline (S_PROFIL_BASLN_CNT_CHECK)

The *Profile Baseline* (S_PROFIL_BASLN) table is populated for enhanced databases. The following required fields must be populated: *Unique ID* (BASELN_ID), *Water Type* (WTR_TYP), *Water Name* (WTR_NM), and *Source Citation* (SOURCE_CIT). If applicable, the values for *Downstream Node* (DN_NODE) and *Upstream Node* (UP_NODE) must not be populated with "NP", and the values must be appropriate given the entries in the *Water Type* (WTR_TYP) field. Also, if applicable, the *Hydrologic Routing Method* (ROUTE_METH) must not be populated with the placeholder "NP". Additionally, the field *Shown on FIRM* (SHOWN_FIRM) must be populated with a domain value.

Quad Index (S_QUAD_INDEX_CNT_CHECK)
The following required fields must be populated: *Unique ID* (QUAD_ID), *Quad Name* (QUAD_NM), *Quad Number* (QUAD_NO), and *Source Citation* (SOURCE_CIT). The *Quad Number* (QUAD_NO) must be eight digits in length.

River Distance Mark (S_RIV_MRK_CNT_CHECK)
The following required fields must be populated: *Unique ID* (RIV_MRK_ID), *River Mark Number* (RIV_MRK_NO), *Station Start ID* (START_ID), and *Source Citation* (SOURCE_CIT).

Shoreline (S_SHORE_LN_CNT_CHECK)
The *Shore Line* (S_SHORE_LN) feature class table is populated for enhanced databases. The following required fields must be populated: *Unique ID* (SHR_LN_ID), *Shoreline Type* (SHRLN_TYP), *Vertical Datum* (V_DATUM), and *Source Citation* (SOURCE_CIT).

Station Start Point (S_STN_START_CNT_CHECK)
For enhanced databases, the following required fields must be populated: *Unique ID* (STRT_PT_ID), *Station Start ID* (START_ID), and *Source Citation* (SOURCE_CIT).

Subbasins (S_SUBBASINS_CNT_CHECK)
For enhanced databases, the following required fields must be populated: *Unique ID* (SUBBAS_ID), *Node ID* (NODE_ID), *Subbasin Name* (SUBBAS_NM), and *Source Citation* (SOURCE_CIT).

Transportation (S_TRNSPORT_LN_CNT_CHECK)
The following required fields must be populated: *Unique ID* (TRANS_ID), *Transportation Type* (TRANS_TYP), *Primary Feature Name* (FEAT_NM1), *Name Type* (NM_TYP), *Road Status* (RD_STAT), and *Source Citation* (SOURCE_CIT). Also, if applicable, the following required fields must be populated: *Secondary Feature Name* (FEAT_NM2), *Tertiary Feature Name* (FEAT_NM3), *Prefix* (PREFIX), and *Suffix* (SUFFIX). The fields *Shown on FIRM* (SHOWN_FIRM) and *Shown on INDEX* (SHOWN_INDEX) must be populated with domain values. Additionally, a check is made to ensure that only valid road transportation types have the *Name Type* (NM_TYP) and *Road Status* (RD_STAT) fields populated.

Water Area (S_WTR_AR_CNT_CHECK)
The following required fields must be populated: *Unique ID* (WTR_AR_ID), *Water Type* (WATER_TYP), *Water Name* (WTR_NM), and *Source Citation* (SOURCE_CIT). A check is also done to ensure that the *Water Type* (WATER_TYP) entered is valid for a water area.

Water Gage (S_WATER_GAGE_CNT_CHECK)
For enhanced databases, the following required fields must be populated: *Unique ID* (GAG_WTR_ID), *Agency* (AGENCY), *Case Number* (CASE_NO), *End Period* (END_PD), *Precipitation Gage ID* (GAGE_ID), *Gage Type* (GAGE_TYPE), *Source Citation* (SOURCE_CIT), *Start Period* (START_PD), *Recording Interval* (REC_INTVL), and *Time Unit* (TIME_UNIT).

Water Line (S_WTR_LN_CNT_CHECK)
The following required fields must be populated: *Unique ID* (WTR_LN_ID), *Water Type* (WATER_TYP), *Water Name* (WTR_NM), *Channel Representation* (CHAN_REP), and *Source Citation* (SOURCE_CIT). A check is also done to ensure that if the *Water Type* (WATER_TYP) field is not populated ("NP"), then the field *Channel Representation* (CHAN_REP) is also not populated ("NP").