

Setting Up PCS Axis

PCS Axis modules share a common interface and many similar functions. Information in this section explains how to set up features common to all PCS Axis modules.

If you are unable to access a PCS Axis menu or perform a particular function, check with your system administrator to verify your PCS Axis user account is set up with an appropriate user role in *User Management* (see *Setting Up User Management*).

Topics in this section include those in the following list:

- *Preparing to Set Up PCS Axis* (page 29)
- *Understanding a Typical PCS Axis Workflow* (page 32)
- *Understanding the System Hierarchy* (page 33)
- *Setting the System Hierarchy* (page 34)
- *Setting Up PCS Axis* (page 36)
- *Working with Custom Security Roles* (page 57)
- *Working with Pipeline Series* (page 121)
- *Working with a User Defined Module* (page 128)

Preparing to Set Up PCS Axis

After installing PCS Axis, consider the following questions before you begin setting up PCS Axis for operation. Answers to these questions determine how you set up PCS Axis to fit your company's business needs.

Question: How is your company's pipeline system organized?

Pipeline companies organize their distribution or transmission pipeline system using certain terms to describe how the system is organized. For example, terms such as Right-of-way (ROW), Pipeline Segment, Section, Section Map, District, County, Region, or State may be used.

Setting up PCS Axis for operation requires that you define a pipeline system hierarchy. PCS Axis supports up to five (5) hierarchy levels and can be organized and named in the same manner as your company's pipeline system.

Question: How does your company identify inspection points on a pipeline?

A location name and location format must be set up for inspection points on a pipeline before users begin entering survey data in PCS Axis. Once this information has been established, it is recommended that you do not change it in order to maintain data integrity.

When you first install PCS Axis, default settings for location name and location format are *Milepost* and *Station Number* respectively. However you can change both of these to match your company's method for identifying inspection points on a pipeline.

Question: What is your company's policy for scheduling surveys?

Default settings in PCS Axis for survey schedules and grace periods are based on current regulations. You can however edit these default settings to match your company's survey policies instead.

For example, the grace period for surveying long lines is three months. However your company's policy may be less than three months. When setting up PCS Axis survey schedules, enter your company's grace period to ensure surveys are scheduled correctly.

Question: Does your company want to use PCS Axis security features?

The *User Management* feature in PCS Axis controls system security using a role based method. Each PCS Axis user is assigned a user role. Users with *SysAdmin* security permissions have full control of the hierarchy and all system features. Users with *User* or *Read Only* security permissions have limited control.

For a list of user role permissions assigned to the *User* and *Read Only* user roles, see *System Security*.

Question: Will your company need unique data recorded in PCS Axis?

Although PCS Axis provides many fields for entering data, you can create what is called a *User-Defined Field* (UDF) when a PCS Axis field does not exist. Your company's data collection forms are a good place to gather data for a UDF you may want to create.

For example, if test points are identified by map numbers, create a UDF to be used for data entry of test point map numbers.

Question: Will PCS Axis themes need to be customized to fit your company's business needs?

PCS Axis uses themes for many operations, such as themes for data entry grids, sorting methods, filtering data, and field computer prompts. The PCS Axis software installation includes several installed themes ready for use.

You can modify PCS Axis installed themes and also add new themes to include only those features that fit your business needs. For example, you might want to include specific data fields for entering and viewing a particular type of survey data.

Question: Do you want to set up picklists that allow users to choose from a list of acceptable choices when entering survey data?

When a data entry field is limited to certain data, consider creating a picklist that includes only those items for selection, such as repair codes, priority levels, or status conditions.

For example, you may want to create a picklist with items for selection that identify insulator status as good, missing, and shorted. Picklists are helpful in reducing data entry errors by allowing users to select an item from a list of approved choices instead of entering data manually.

Related Topics

- [Understanding a Typical PCS Axis Workflow](#)
- [Understanding the System Hierarchy](#)
- [Setting the System Hierarchy](#)
- [Setting Options](#)
- [Setting Properties in Field and UDF Customizations](#)
- [Choosing a Printer for PCS Axis](#)

Understanding a Typical PCS Axis Workflow

A typical workflow for working in PCS Axis is shown in Figure 3-1. Some operations are required and only occur once when setting up PCS Axis, such as setting up system *Options* and *Edit ROW Detail* identified in the following figure. Others may occur more often as needed by PCS Axis users with appropriate security permissions, such as adding or moving pipeline segments in the hierarchy; adding survey folders; customizing themes and reports; or creating routes and schedules for facility survey inspections.

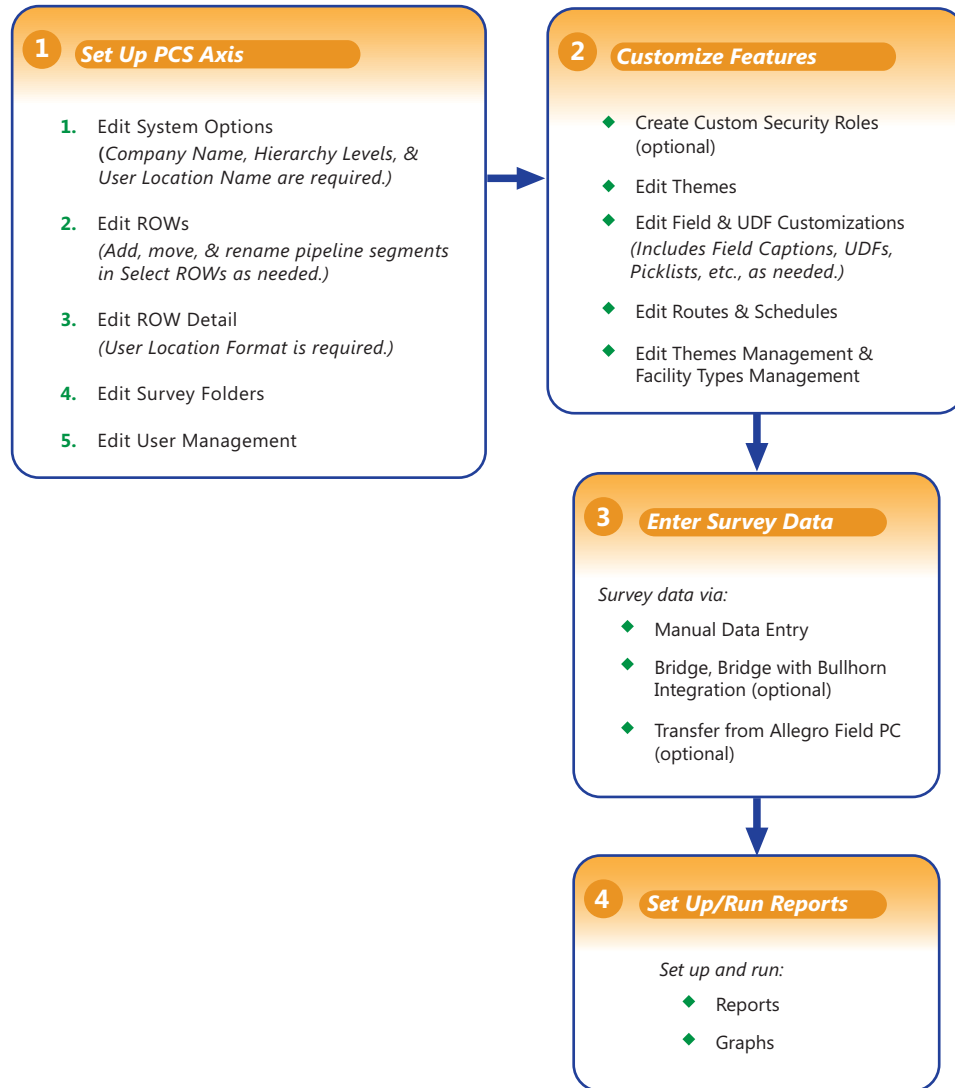


Figure 3-1. Typical PCS Axis Workflow

Understanding the System Hierarchy

Before you begin entering data in PCS Axis, you first need to establish the system hierarchy and enter your company's name. The hierarchy determines how PCS Axis organizes data. The company name displays at the top of all reports and graphs.

You can create a hierarchy that reflects how your company categorizes its pipeline system. For example, you may want to create a hierarchy based on one or more of the following criteria: division, district, county, region, system, right-of-way (ROW), or section map.

PCS Axis supports a hierarchy structure with up to 5 levels. The top hierarchy level includes either your company's name or other type of descriptor. Figure 3-2 shows a hierarchy structure with 3 hierarchy levels. The names of hierarchy folders as well as ROW Code and ROW name support up to 100 characters.

IMPORTANT: It is recommended that you do not change the hierarchy structure after entering data in the database.

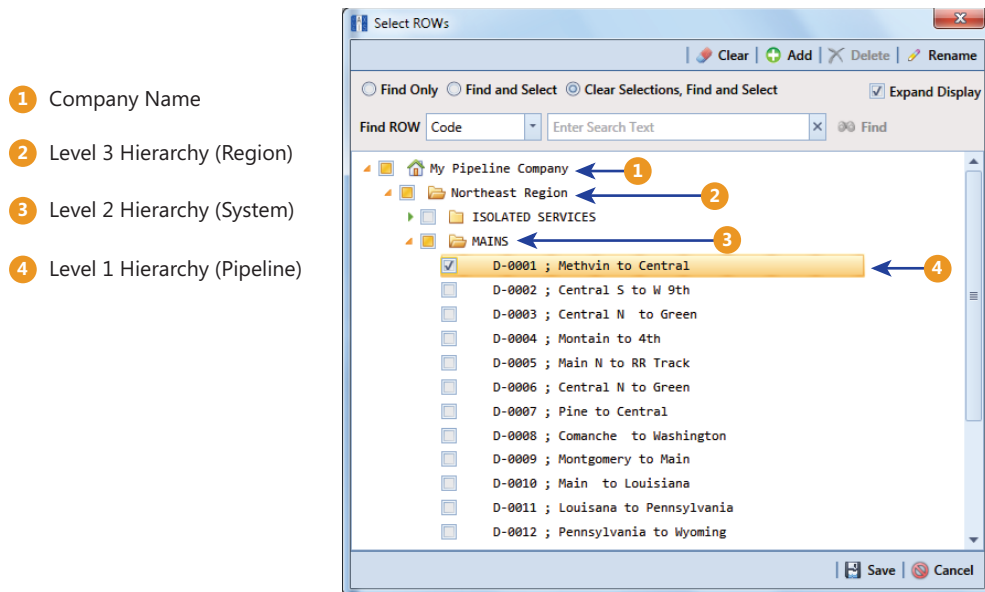


Figure 3-2. Example of Hierarchy Structure

Setting the System Hierarchy

This procedure explains how to set up PCS Axis with the following required system settings: your company's name, the number of levels in the system hierarchy, and a name for inspection points on a pipeline. A *Public* caption in this Options screen indicates the associated property setting applies globally to all users and can only be changed by a SysAdmin.

The required setting *User Location Format* in *Edit ROW Details* will not be completed during the initial system set up. After adding pipeline records in the system hierarchy, the User Location Format can be configured for each pipeline record to identify how inspection points are located on a pipeline. For more information, see *Understanding Default Location Formats* (page 146).

To create the system hierarchy, follow these steps:

- 1 Click **Tools > Options > General** to open the *General* options page (Figure 3-3).
- 2 Type the name of your company in the field **Company Name**.
- 3 Identify how your company refers to inspection points on a pipeline. For example, type *Milepost*, *Station Number*, *Reference Reading*, or other type of descriptor in the field **User Location Name**.

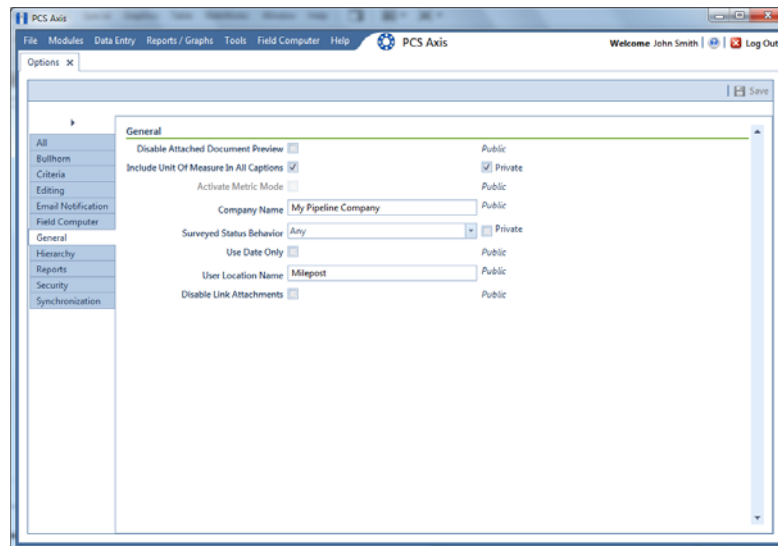



Figure 3-3. Company Name and User Location Name

- 4 Click the **Hierarchy** tab to open hierarchy options page (Figure 3-4).
- 5 Click the check box **Hide Parallel Lines** if you want to hide features in PCS Axis that allow you to create and display parallel lines in the hierarchy.

NOTE: When *Hide Parallel Lines* is enabled, parallel lines are hidden in *Select ROWs* and in the *Add New Node* dialog box. Distribution companies with no parallel lines typically use this setting. PCS Axis identifies parallel lines using the fields *Pipe*, *Pipeline Code*, and *Pipeline Name*. For a description of these fields refer to *System Field Descriptions* on page 811.

- 6 Identify how many levels to include in the hierarchy. Click the down arrow in the **Levels** field and select the number of hierarchy levels in the selection list.
- 7 Identify how pipelines are referred to in the system. For example, type *ROW* or *Segment* in the **Level 1** field.
- 8 Type a description for each additional level in the hierarchy using the fields labeled **Level 2** through **Level 5** as required.
- 9 (SysAdmin only) For property settings accompanied by a *Private* check box, check or uncheck the check box based on your company's requirements. When the *Private* check box is checked, the currently logged in user can change the associated property setting. For more information, see *Understanding Public and Private Property Settings* (page 37).
- 10 Click  **Save** and then continue with the next section *Setting Up PCS Axis* (page 36) to continue setting up PCS Axis for operation.

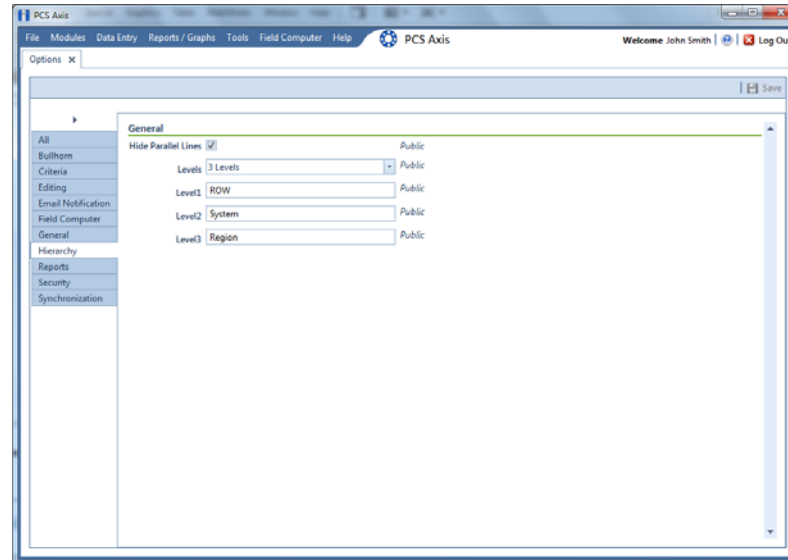


Figure 3-4. Hierarchy Levels

Related Topics

- [Understanding Public and Private Property Settings](#)

Setting Up PCS Axis

PCS Axis provides several property settings that allow you to customize the software according to your company's business needs. Other settings effect the functionality of certain PCS Axis features. Information in this section explains how to set each of these property settings. Topics include those in the following list:

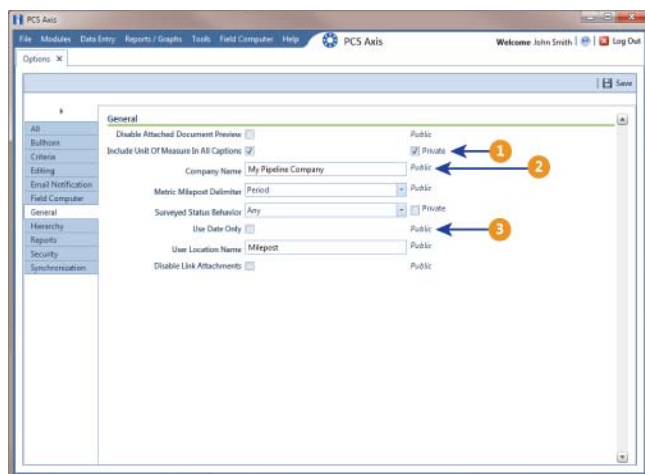
- [Understanding Public and Private Property Settings](#)
- [Setting Options](#) (page 38)
- [Working with Custom Security Roles](#) (page 57)
- [Setting Properties in Field and UDF Customizations](#) (page 68)

- *Using an Application Scheme* (page 120)
- *Choosing a Printer for PCS Axis* (page 120)

Understanding Public and Private Property Settings

Some property settings in Options, once configured, apply to all users, while others can be changed by an individual user for their login. Property settings that include a *Public* caption can only be changed by a SysAdmin, and the setting made by the SysAdmin applies globally to all users. For property settings accompanied by a *Private* check box, the SysAdmin can determine whether or not a general user can modify the property setting. See Figure 3-5.

When the *Private* check box is checked, the currently logged in user can change the associated property setting. Changes are “private” and only apply to the logged in user who makes a change to the setting. If a *Private* check box is unchecked, the associated property setting made by the SysAdmin applies globally to all users and only the SysAdmin can change this value.



- 1 **Enabled Private Check Box:** currently logged in user can change the property setting. Changes are “private” and only apply to the logged in user who makes a change to the setting.
- 2 **Public Caption with Enabled Property Setting:** system-specified property setting that applies globally to all users and can only be changed by the SysAdmin.
- 3 **Disabled Private Check Box:** property setting applies globally to all users and can only be changed by the SysAdmin.

Figure 3-5. Options Public and Private Property Settings

Only a SysAdmin can see *Private* check boxes. For all other users, a *Private* caption appears alongside the “private” and editable property settings. A *Public* caption is displayed for globally-applied settings.

Setting Options

PCS Axis uses property settings in *Options* to perform many functions across all modules, such as arranging data, performing calculations, generating reports, and allowing user-access to certain features. Required settings include *Hierarchy levels*, *Company Name*, *User Location Name*, and *Criteria*. If optional add-ons have been purchased, such as *Bridge* or *Bridge with Bullhorn integration*, setting properties for these features are also required.

Information in this section explains how to set properties in *Options*. Topics in this section include those in the following list:

- *Setting Bullhorn Options (SysAdmins Only)* (page 39)
- *Setting Criteria Options* (page 40)
- *Setting Editing Options* (page 41)
- *Setting Email Notification Options* (page 44)
- *Setting Field Computer Options* (page 47)
- *Setting General Options* (page 48)
- *Setting Hierarchy Options* (page 51)
- *Setting Report Options* (page 51)
- *Setting Security Options* (page 52)
- *Setting Synchronization Options (SysAdmins Only)* (page 54)
- *Disabling Synchronization (SysAdmins Only)* (page 57)

NOTE: A *Public* caption indicates the associated property setting applies globally to all users and can only be changed by a SysAdmin.

(SysAdmin only) For options accompanied by a *Private* check box, check or uncheck the check box based on your company's requirements. When the *Private* check box is checked, the currently logged in user can change the associated property setting. For more information, see *Understanding Public and Private Property Settings* (page 37).

Related Topics

- [Understanding Public and Private Property Settings](#)


Setting Bullhorn Options (SysAdmins Only)

If you plan to use Bridge to transfer data from your account on Bullhorn Asset Tracker (BAT™), ensure the *Bullhorn* options are set first. A *Public* caption in this Options screen indicates the associated property setting applies globally to all users and can only be changed by a SysAdmin.

Complete the following steps to set *Bullhorn* property settings in *Options*:

- 1 Click **Tools** > **Options** > **Bullhorn** tab to open the *Bullhorn* options page (Figure 3-6).

NOTE: You can also display the *Bullhorn* options page by clicking the ► arrow above the navigation panel and then selecting *Bullhorn* in the selection list that opens.

- 2 Type **http://www.bullhornsys.com/BATAPI/BATAPI.svc/extract** in the field *Extract Endpoint Url*.
- 3 Type **http://www.bullhornsys.com/BATAPI/BATAPI.svc/mapping** in the field *Mapping Endpoint Url*.
- 4 Click  **Save** to save changes.

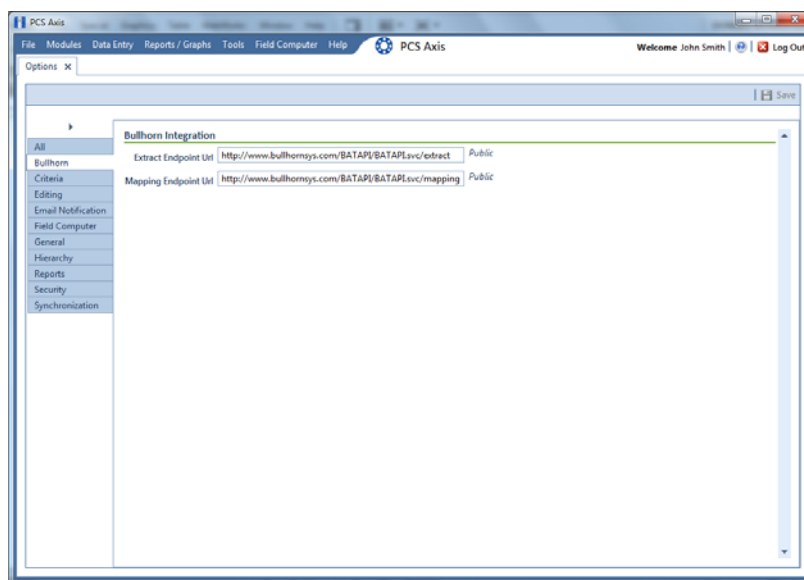


Figure 3-6. Bullhorn Options

Related Topics

- Understanding Public and Private Property Settings

Setting Criteria Options

The *Criteria* options screen sets the following property settings: (if available) Telluric threshold, days between an inspection reading and pipe-to-soil reading, and casing criteria. A *Public* caption in this Options screen indicates the associated property setting applies globally to all users and can only be changed by a SysAdmin.

Complete the following steps to set the *Criteria* options:

- 1 If the *Options* window is not open, click **Tools > Options** to open the window. Then click the **Criteria** tab to open the *Criteria* options page (Figure 3-7 (page 41)).
- 2 If your PCS Axis license includes the optional *Telluric Compensation* feature, the field labeled *Default Telluric Threshold* is present in the *Criteria* page.

The default threshold used to identify telluric effects in an SDL (stationary data logger) data set is 0.010 volts. If you want to change the default threshold, type a value in volts in the field **Default Telluric Threshold**.

PCS Axis calculates a baseline average for survey measurements in an SDL data set. If any survey measurement in the data set is above or below the baseline average by 0.010 volts, this indicates the data set exhibits telluric current effects.


NOTE: For information about how to upgrade a PCS Axis license to include *Telluric Compensation*, contact *Technical Support* (page 25).

- 3 Identify the isolation criteria for casing inspections. Type a value in the field **Casing Criteria Minimum Difference Between P/S and C/S** to set the minimum difference allowed between pipe-to-soil (P/S) and casing pipe-to-soil (C/S) readings before the casing is considered shorted. The default setting is 100 mV.

NOTE: PCS Axis displays a warning message when the minimum difference does not meet the casing criteria for an inspection reading entered in the data entry grid. Similarly, an entry is added in the *Field Computer Log* when inspection readings transferred from the Allegro do not meet casing criteria.

- 4 Identify the number of days after an inspection reading is taken that a native pipe-to-soil (P/S) reading is taken. Type the number of days in the field **Days To Look Forward From Inspection For Native P/S**.

NOTE: The number of days effects the system calculation for the fields *Effective Native P/S* and *Effective Native Date* in data entry grids. Native P/S is a potential reading taken prior to any current placed on the pipeline. It is also referred to as a depolarized or static potential reading.

- 5 (SysAdmin only) For property settings accompanied by a *Private* check box, check or uncheck the check box based on your company's requirements. When the *Private* check box is checked, the currently logged in user can change the associated property setting. For more information, see *Understanding Public and Private Property Settings* (page 37).
- 6 Click  **Save** to save changes.

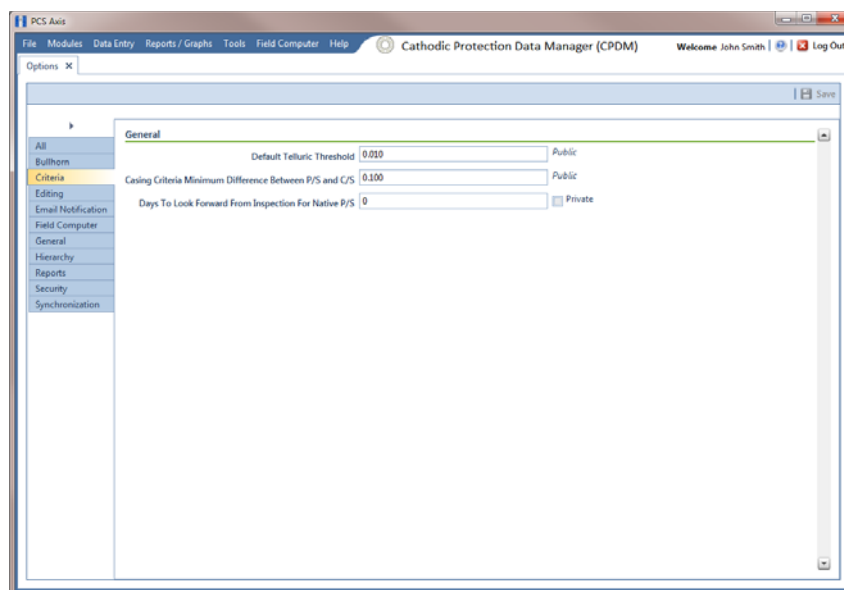


Figure 3-7. Criteria Options

Related Topics

- [Understanding Public and Private Property Settings](#)

Setting Editing Options

Making changes to the *Editing* properties alters the behavior when entering data in data entry grids. A *Public* caption in this Options screen indicates the associated property setting applies globally to all users and can only be changed by a SysAdmin.

Complete the following steps in the *Editing* page of *Options*:

- 1 If the *Options* window is not open, click **Tools** > **Options** to open the window.
- 2 Click the **Editing** tab to open the *Editing* options page (Figure 3-8).

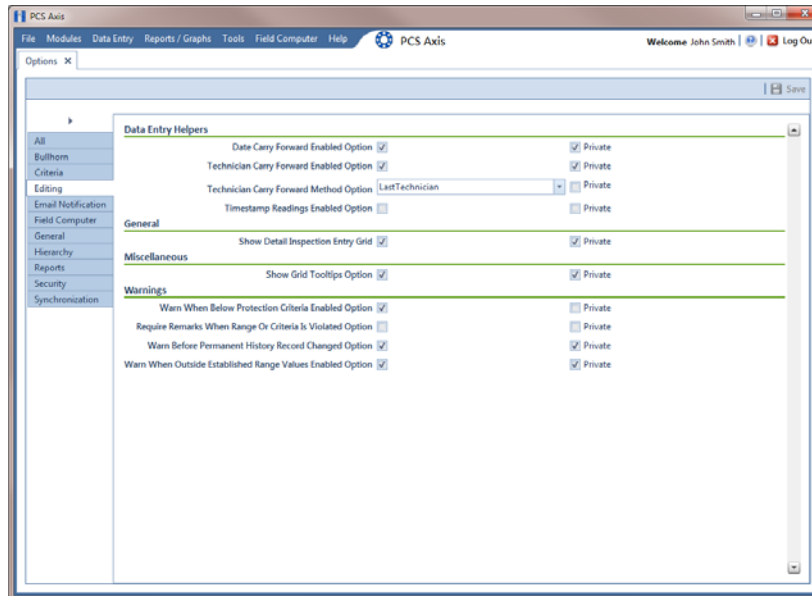


Figure 3-8. Editing Options


- 3 Review the information in Table 3-1 and check or uncheck an option's check box or select from the drop downs as needed.
- 4 (SysAdmin only) For property settings accompanied by a *Private* check box, check or uncheck the check box based on your company's requirements. When the *Private* check box is checked, the currently logged in user can change the associated property setting. For more information, see *Understanding Public and Private Property Settings* (page 37).
- 5 When you finish, click  **Save** to save changes.

Table 3-1. Editing Options

Option	Description
Date Carry Forward Enabled Option	Use the last entered survey date as the survey date for the next record when working in an <i>Inspection</i> grid or form.
Technician Carry Forward Enabled Option Technician Carry Forward Method Option	<p>When entering inspection/maintenance data in either the <i>Inspection</i> or <i>Maintenance</i> grid, automatically enter a person's name in the <i>Technician</i> field (<i>Inspection</i> grid) or <i>Repair Technician</i> (<i>Maintenance</i> grid) using one of the following methods:</p> <ul style="list-style-type: none"> • <i>Last Technician</i>: Use the name of the last person entered in the <i>Technician</i> field. • <i>Security</i>: Use the name of the person currently logged into PCS Axis.
Timestamp Readings Enabled Option	Add today's date as the inspection date when entering readings in the <i>Inspection</i> grid.
Show Detail Inspection Entry Grid	<p>Display the CPDM <i>Test Point Inspection Detail</i> mini-grid. Enabling this option allows you to work with test points that have multiple potential readings, such as a test point with multiple readings for Structure P/S, Casing P/S, or On/Off Pair user defined fields (UDFs).</p> <p>NOTE: This system option is not present when using the optional PCS Axis <i>Telluric Compensation</i> feature. The mini-grid displays by default and cannot be disabled.</p>
Show Grid Tooltips Option	Display a field description when the user hovers the mouse over a data entry field.
Warn When Below Protection Criteria Enabled Option	Display a warning message when a user enters an inspection reading that is below the protection criteria value specified in the <i>Test Point Protection Criteria</i> field of the facility <i>Information</i> grid.
Require Remarks When Range Or Criteria Is Violated Option	Display a message prompting the user to edit the inspection reading or enter a description in the <i>Inspection Remarks</i> field when the entered reading is out of range or does not meet the criteria limit specified in <i>Options</i> (Tools > Options > Criteria).
Warn Before Permanent History Record Changed Option	Display a warning message to the user before changes are made to a permanent history record. AI recommends this option be enabled if your company plans to maintain history records.
Warn When Outside Established Range Values Enabled Option	Display a warning message when a user enters an inspection reading that is out of range or under criteria.

Related Topics

- Understanding Public and Private Property Settings

Setting Email Notification Options

The *Email Notification* options determine how email reports should be sent. A *Public* caption in this Options screen indicates the associated property setting applies globally to all users and can only be changed by a SysAdmin.

Complete the following steps to set *Email Notification* property settings:

- 1 If the *Options* window is not open, click **Tools > Options** to open the window. Then click the **Email Notification** tab (Figure 3-9).

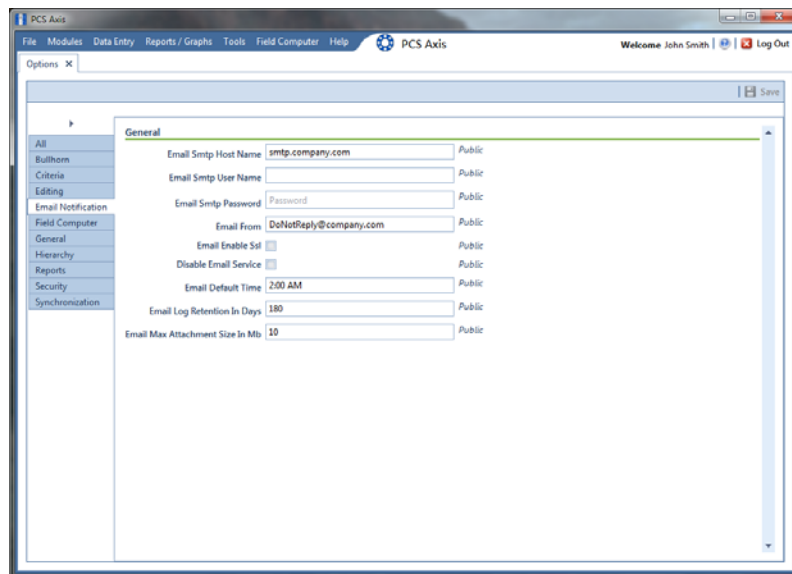


Figure 3-9. Email Notification Options

- 2 Type the host name of the SMTP email server your company uses to send email in the field **Email Smtip Host Name**.

NOTE: SMTP is an acronym for Simple Mail Transfer Protocol. It is a data transmission format used to send email.

- 3 Type a user name in the field **Email Smtip User Name** that is associated with the email address you plan to use for sending email notifications.
- 4 Type a password in the field **Email Smtip Password** that is associated with the user name and email address you plan to use for sending email notifications.

- 5 In the field **Email From**, type the email address you plan to use for sending email notifications.
- 6 If the email server supports SSL protocol, click the check box **Email Enable Ssl** to place a check mark inside the check box.

When an email server supports SSL (secure socket layer) protocol, the email server transmits information in an encrypted form for security purposes. If needed, contact your IT System Administrator to determine if your company's email server supports SSL.

NOTE: When *Email Enable Ssl* is disabled (empty check box) and the email server supports SSL protocol, recipients will not receive PCS Axis email notifications. PCS Axis also adds an entry in the log of Job Service Viewer to identify email notification failures (*Tool > Job Service Viewer > Job History > Log*).

- 7 Use the check box **Disable Email Service** to stop or start sending email notifications to *all* email recipients.

To stop sending email notifications to *all* recipients, click the check box to place a check mark inside the check box. To begin sending email notifications again, clear the check mark by clicking the check box. For more information, refer to *Stopping Delivery of Email Notifications* (page 589).

- 8 Enter a default time to send email notifications in the field **Email Default Time**. Use 12-hour time format to indicate the hour, minute, and AM/PM setting (HH:MM AM/PM). The default time is used when an email report is not set up with a delivery time in the *Email Reports* tab of *Email Notification* (*Tools > Email Notification > Email Reports* tab).

IMPORTANT: When setting a default time to send email notifications, choose a time that does not impact other network services or computer resources.

- 9 In the field **Email Log Retention In Days**, enter the number of days to store a copy of the email log in the database. Entries in the email log are purged from the log after the specified number of days.

IMPORTANT: Storing the email log in the database increases the size of the database. PCS Axis adds an entry in the log each time an email is sent. The log also includes email recipient information; email delivery mode and frequency; hierarchy assignments; and email report attachments in Adobe® PDF format.

10 In the field **Email Max Attachment Size In Mb**, enter a value in megabytes (MB) that identifies the maximum size allowed by the email server for attachments in an email. Because some email servers are set up to process emails no larger than 10 MB in size, it may be necessary to contact your IT department for this information to ensure email recipients receive email notifications.

11 Click  **Save** to save changes.


Related Topics

- [Understanding Public and Private Property Settings](#)

Setting Field Computer Options

The *Field Computer* options provides access to property settings related to the Allegro Field PC. A *Public* caption in this Options screen indicates the associated property setting applies globally to all users and can only be changed by a SysAdmin.

If your company plans to use the Allegro Field PC with PCS Axis, complete the following steps to set up *Field Computer* options:

- 1 If the *Options* window is not open, click **Tools > Options** to open the window. Then click the **Field Computer** tab (Figure 3-10).
- 2 To only use the Allegro digital voltmeter to record voltage readings, enable the option **Require Voltage Readings By Voltmeter**. Enabling this option prevents manual data entry of voltage readings on the Allegro.
- 3 (SysAdmin only) For property settings accompanied by a *Private* check box, check or uncheck the check box based on your company's requirements. When the *Private* check box is checked, the currently logged in user can change the associated property setting. For more information, see *Understanding Public and Private Property Settings* (page 37).
- 4 Click  **Save** to save changes.

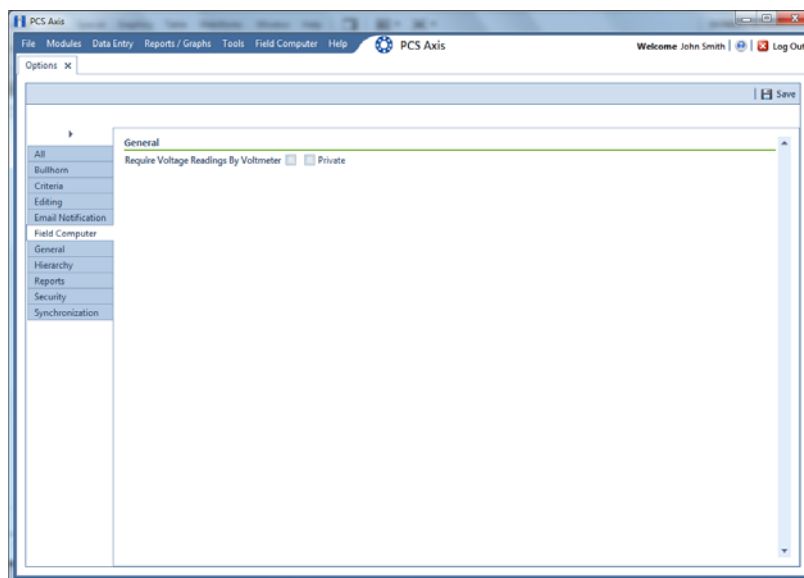


Figure 3-10. Field Computer Options

Related Topics

- Understanding Public and Private Property Settings

Setting General Options

The *General* options set general PCS Axis property settings, such as display settings and general behaviors. A *Public* caption in this Options screen indicates the associated property setting applies globally to all users and can only be changed by a SysAdmin.

To set property settings in the *General* page of *Options*, follow these steps:

- 1 If the *Options* window is not open, click **Tools** > **Options** to open the window.
- 2 Click the **General** tab to open the *General* options page (Figure 3-11).

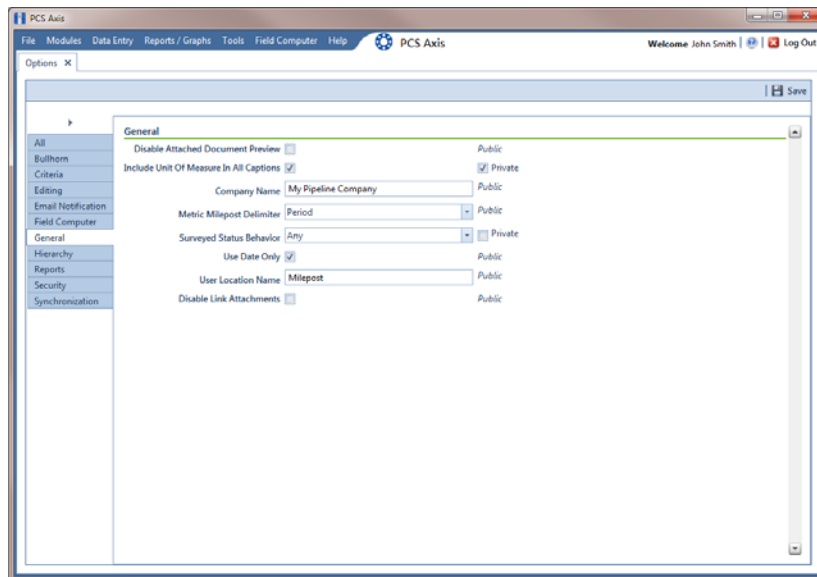


Figure 3-11. General Options


- 3 Review the information in Table 3-2 (page 49) and check the options' check boxes or select from the drop downs as needed.
- 4 (SysAdmin only) For property settings accompanied by a *Private* check box, check or uncheck the check box based on your company's requirements. When the *Private* check box is checked, the currently logged in user can change the associated property setting. For more information, see *Understanding Public and Private Property Settings* (page 37).
- 5 When you finish, click  **Save** to save changes.

Table 3-2. General Options

Option	Description
Disable Attached Document Preview	Applies to documents that have previously been attached to a record in a data grid. When the option is enabled, users are unable to preview an attached document in the <i>Preview Attached Documents</i> window. When the option is disabled, users can open an attached document for editing or viewing purposes if the file type of the attached document is associated with a default software program on their local computer. See <i>Viewing an Attached Document</i> (page 165) for related information.
Include Unit Of Measure In All Captions	Include the unit of measure in the description of column headings and field captions, such as <i>Structure P/S (Volts)</i> .
Company Name	Provide your company's name. It appears at the top level of the PCS Axis system hierarchy and in the header of all reports.
Metric Milepost Delimiter	Choose <i>Period</i> , <i>Comma</i> , or <i>Plus</i> in the selection list to identify the delimiter used in the formatting of metric mileposts, such as 1.234AB (Period), 1,234AB (Comma), or 1+234AB (Plus). Values before the metric delimiter indicate kilometers. Values after the metric delimiter indicate meters. For example, milepost number 1.234AB indicates 1 kilometer (km) and 234 meters (m).

Table 3-2. General Options (continued)

Option	Description
Survey Status Behavior	<p>Selections for <i>Survey Status Behavior</i> effect the inspection field labeled <i>Surveyed</i>, which is a PCS Axis calculated field.</p> <p>The <i>Survey Status Behavior</i> option you select identifies which conditions must be met in order for PCS Axis to determine the facility survey status. When conditions are met, PCS Axis places a check mark in the <i>Surveyed</i> check box to indicate the facility has been inspected and a survey reading has been recorded.</p> <p>Review the following information and then choose an option in the <i>Survey Status Behavior</i> selection list:</p> <p><i>Any</i>: The <i>Inspection</i> grid must include at least one inspection field with a survey reading before PCS Axis considers the facility has been surveyed.</p> <p><i>All</i>: All fields related to the inspection field must be populated before PCS Axis considers the facility has been surveyed. Related fields include the <i>Activate</i> field for the inspection field in the <i>Information</i> grid; a survey reading in the inspection field of the <i>Inspection</i> grid; and <i>Yes</i> in the property setting for the field labeled <i>System-Inspection Surveyed</i> in <i>Field and UDF Customizations</i>.</p>
Use Date Only	<p>Only display the date instead of date and time for date fields such as <i>Inspection Date</i> in the <i>Inspection</i> grid and <i>Repair Found Date</i> in the <i>Maintenance</i> grid.</p>
User Location Name	<p>Identify the name your company uses to refer to inspection points on a pipeline. For example, type <i>Milepost</i>, <i>Station Number</i>, or other type of descriptor in the field <i>User Location Name</i>.</p>

Table 3-2. General Options (continued)

Option	Description
Disable Link Attachments	<p><i>Disable Link Attachments</i> is a system option that applies when attaching a document to a record in a data grid (<i>Tools > Options > General</i>). When the option is enabled, a document can be embedded but not linked to a record. A copy of an embedded document stores in the PCS Axis database and can be accessed by all PCS Axis users. A linked document stores on the local computer of the user who linked the document and can only be accessed by that user.</p> <p>If your company prefers that users embed documents instead of linking to documents, enable the option by clicking the check box. A check mark inside the check box indicates the option is enabled. For more information, refer to <i>Attaching a Document to a Grid Record</i> (page 340).</p>

Related Topics

- Understanding Public and Private Property Settings

Setting Hierarchy Options

Hierarchy options determine how PCS Axis organizes data in the system. For information about how to set up the PCS Axis system hierarchy, refer to the previous sections *Understanding the System Hierarchy* (page 33) and *Setting the System Hierarchy* (page 34).


Related Topics

- Understanding Public and Private Property Settings

Setting Report Options

The *Reports* options determine which signature line caption is used. A *Public* caption in this Options screen indicates the associated property setting applies globally to all users and can only be changed by a SysAdmin.

Complete the following steps in the *Reports* page of *Options* to set property settings:

- 1 If the *Options* window is not open, click **Tools > Options** to open the window.
- 2 Click the **Reports** tab to open the *Reports* option page (Figure 3-12, page 52).
- 3 If you want to change the default setting used as the caption below the signature line in a *Columnar* report (Surveyor), type a name in the field **Signature Line Caption**.
- 4 (SysAdmin only) For property settings accompanied by a *Private* check box, check or uncheck the check box based on your company's requirements. When the *Private* check box is checked, the currently logged in user can change the associated property setting. For more information, see *Understanding Public and Private Property Settings* (page 37).
- 5 Click  **Save** to save changes.

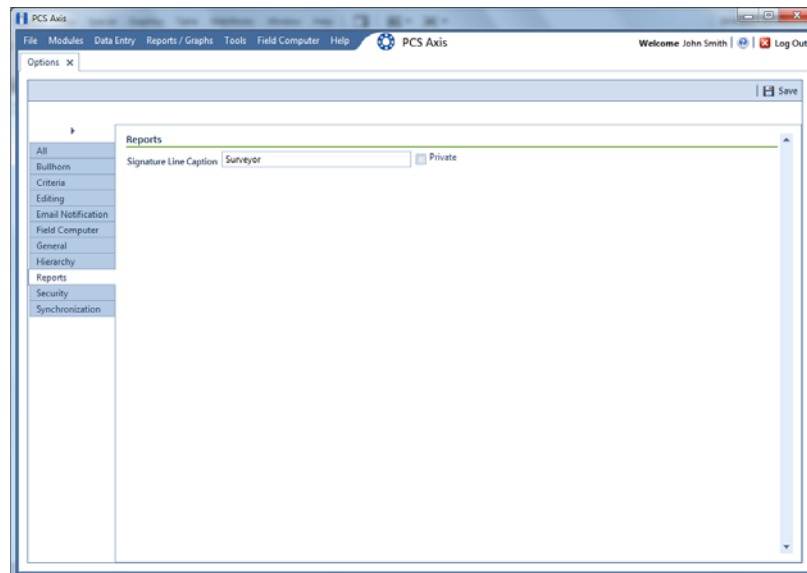


Figure 3-12. Reports

Related Topics

- [Understanding Public and Private Property Settings](#)

Setting Security Options

Security-related property settings can be configured in the *Security* page of *Options*. A *Public* caption in this Options screen indicates the associated property setting applies globally to all users and can only be changed by a SysAdmin.

Complete the following steps in the *Security* page of *Options* to set property settings:

- 1 If the *Options* window is not open, click **Tools > Options** to open the window.
- 2 Click the **Security** tab to open the *Security* options page (Figure 3-13).

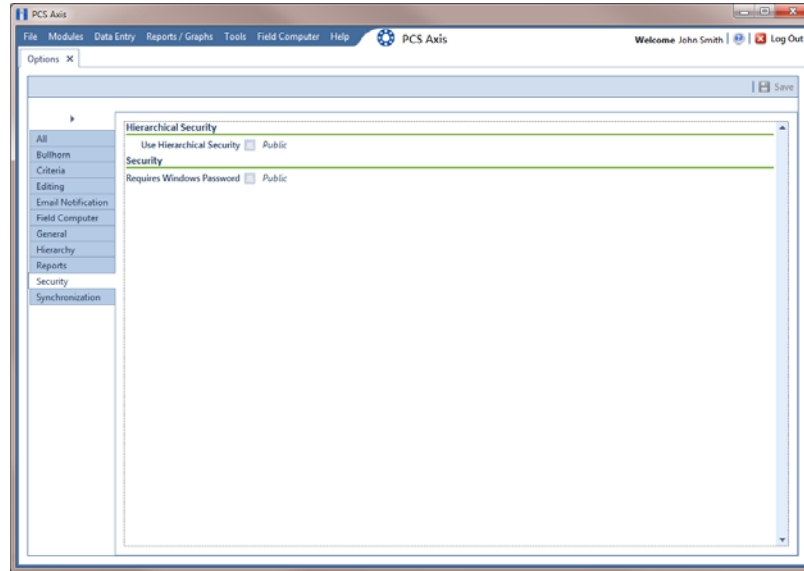


Figure 3-13. Security Options


- 3 Review the information in Table 3-3 (page 53) and check or uncheck an option’s check box or select from the drop downs as needed.
- 4 (SysAdmin only) For property settings accompanied by a *Private* check box, check or uncheck the check box based on your company’s requirements. When the *Private* check box is checked, the currently logged in user can change the associated property setting. For more information, see *Understanding Public and Private Property Settings* (page 37).
- 5 When you finish, click  **Save** to save changes.

Table 3-3. Security Options

Option	Description
Use Hierarchical Security	<p>Enable this option if you plan to set up hierarchy rights in <i>User Management</i> for users with <i>User</i> and <i>Read Only</i> security permissions.</p> <p>Hierarchical security allows you to assign users access rights to certain hierarchy folders in the <i>Select ROWs</i> window. When a user does not have access rights to a hierarchy folder, PCS Axis does not display the folder in the <i>Select ROWs</i> window.</p>

Table 3-3. Security Options (continued)

Option	Description
Requires Windows Password	If you want users to enter their Windows password when logging in to PCS Axis, click the option Requires Windows Password . When this option is disabled, the system automatically logs in users with their Windows login credentials (user name and password combination).

Related Topics

- [Understanding Public and Private Property Settings](#)

Setting Synchronization Options (SysAdmins Only)

The following procedure explains how to set property settings for *Synchronization* in system *Options*. If you want to disable *Synchronization*, see *Disabling Synchronization (SysAdmins Only)* (page 57). A *Public* caption in this Options screen indicates the associated property setting applies globally to all users and can only be changed by a SysAdmin.

Complete the following steps:

- 1 Click **Tools > Options > Synchronization** to open the synchronization property settings window (Figure 3-14).

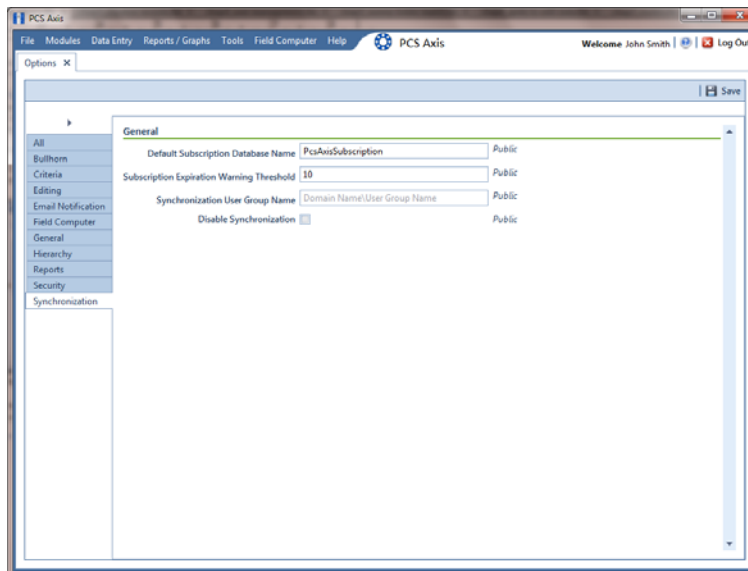



Figure 3-14. Synchronization

- 2 Review the following information and then set options as needed. When you finish, click  **Save** to save changes.
 - **Default Subscription Database Name:** This property setting identifies the default name applied to *all* subscription databases when setting up subscribers in *Configure Subscription (Tools > Configure Subscription)*. If you want to use a different default name, type a name in this field.

NOTE: You also have the option to use a different name than the default when setting up each subscription database. See *Configuring a Subscription* (page 783) for more information if needed.

- **Subscription Expiration Warning Threshold:** This property setting applies to all subscription databases that have not synchronized with the publication database within the publication retention period.

The warning threshold is the number of days before a subscription expires that a warning message displays indicating the subscriber must synchronize their subscription database. The default value is 10 days. To change the default setting, type a value in this field.

IMPORTANT: Publication retention period is also referred to as *subscription expiration period*. A subscription becomes expired (obsolete) when the subscriber does not synchronize their subscription database with the publication database within the publication retention period. An expired subscription *must* be re-initialized at the publisher (network server with publication database).

The publication retention period is set in the field *Subscription expiration* in the *General* page when using SQL Server Management Studio (SSMS). See *Confirming Share Folder Access* (page 778) for more information.

- **Synchronization User Group Name:** This property setting identifies your company's domain name and the name of the local domain user group set up for PCS Axis on the central database server. If needed, contact your company's IT System Administrator for this information. When entering the *Synchronization User Group Name*, format the information as shown in the following example:

Example: Domain Name\User Group Name

- **Disabling Synchronization:** See the section titled Disabling Synchronization.


Related Topics

- Disabling Synchronization (SysAdmins Only)

Disabling Synchronization (SysAdmins Only)

If your company does not plan to use *Synchronization*, you have the option to disable the feature. When disabled, the *Synchronization* menu command is not included in the *Tools* menu, which prevents creating the publication and subscription databases. You can however activate *Synchronization* at anytime if your company decides later to use the feature.

To disable *Synchronization*, follow these steps:

- 1 Click **Tools > Options > Synchronization** to open the synchronization property settings window (Figure 3-15).
- 2 Click the check box **Disable Synchronization** to place a check mark inside the check box. Then click  **Save**.

The *Synchronization* menu command is no longer available in the *Tools* menu. If you decide later to activate *Synchronization*, clear the check mark by clicking the *Disable Synchronization* check box.

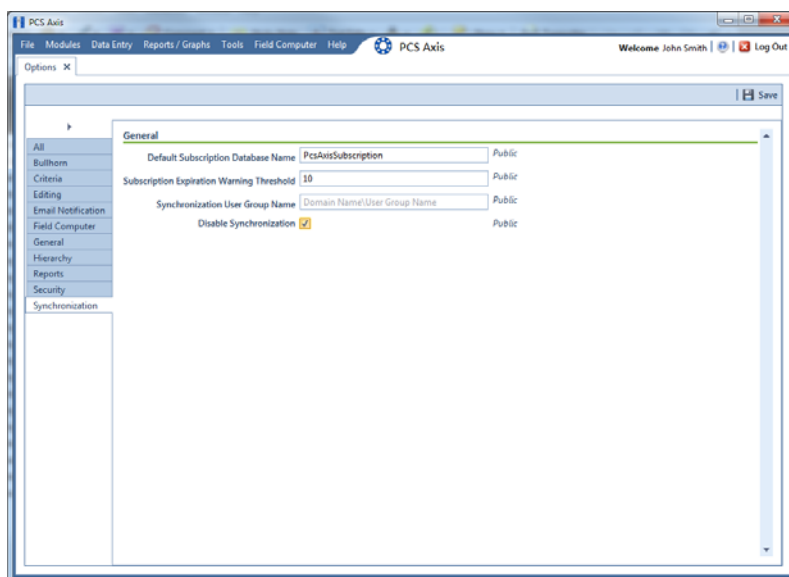


Figure 3-15. Disable Synchronization

Working with Custom Security Roles

Custom security roles are an optional feature in PCS Axis that is setup by the PCS administrator. The security feature allows you to grant or deny user access to PCS Axis menus and menu commands as well as data entry fields.

A custom security role is a named set of permissions based on your company's business requirements. You create a custom security role using a *Parent Role* as a template and then modify permissions in the custom security role as needed. Roles include permissions for menu-level items (*File, Modules, Data Entry, Report/Graphs, Tools, and Field Computer*) as well as field-level items (*Facility Surveys, Continuous Surveys, and ROW and Pipeline*).

A *Parent Role* is a PCS Axis installed security role with predefined permissions that cannot be modified. Parent roles include the *SysAdmin, User, and Read Only* security roles. After creating a custom security role based on a parent role, you can then assign it to a PCS Axis user who was set up in *User Management*.

Information in this section explains how to use *Security Role Management* to add and edit a custom security role. Topics include those in the following list:

- *Adding a Custom Security Role* (page 59)
- *Using Copy to Add a Custom Security Role* (page 60)
- *Editing a Custom Security Role* (page 61)
- *Deleting a Custom Security Role* (page 65)
- *Assigning a Custom Security Role to a User* (page 66)

Adding a Custom Security Role

Complete the following steps to add a custom security role:

- 1 Click **Tools > Security Role Management** to open the *Security Role Management* window (Figure 3-16).

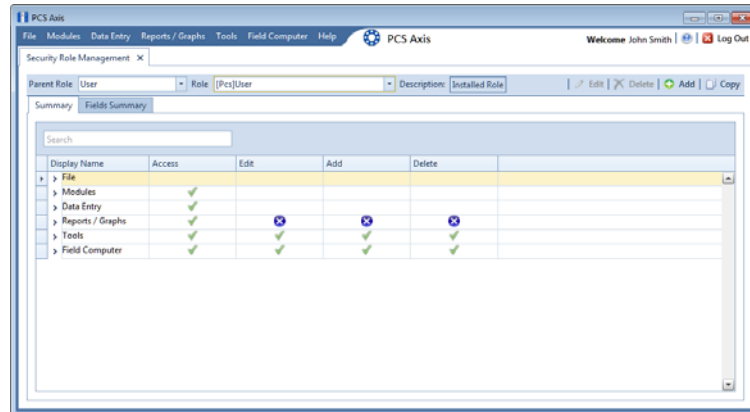


Figure 3-16. Security Role Management

NOTE: The ✗ icon denotes fields that are unavailable for this role.

- 2 Click **+** **Add** to open the *Add Security Role* dialog box (Figure 3-17).

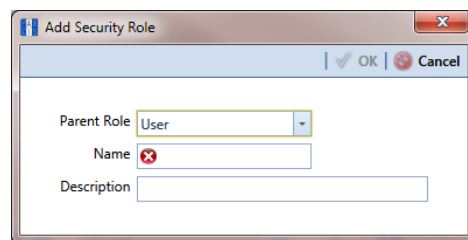



Figure 3-17. Add Security Role

- 3 Select a *Parent Role* to use as a template to create the custom security role. Click the down arrow in the **Parent Role** field and select a PCS Axis installed security role in the selection list, such as *User* or *SysAdmin*.
- 4 Type a name for the custom security role in the **Name** field and a description in the **Description** field. Fields marked with a ✗ icon are required.

- 5 Click  **OK** to save changes and return to *Security Role Management*. Information about the custom security role display in the fields *Parent Role*, *Role*, and *Description*.
- 6 Repeat **step 2** through **step 5** as needed to add additional custom security roles. Then continue with the next section to edit permissions in a custom security role.


Related Topics

- Working with Custom Security Roles
- Using Copy to Add a Custom Security Role
- Editing a Custom Security Role
- Deleting a Custom Security Role
- Assigning a Custom Security Role to a User

Using Copy to Add a Custom Security Role

When you want to add a custom security role with permissions that are slightly different than those in an existing customer security role, use the *Copy* command to copy permissions from the existing custom security role.

To add a custom security role using the *Copy* command, follow these steps:

- 1 If the *Security Role Management* window is not open, click **Tools > Security Role Management** (Figure 3-16, page 59).
- 2 Click  **Copy** to open the *Copy Security Role* dialog box (Figure 3-18).

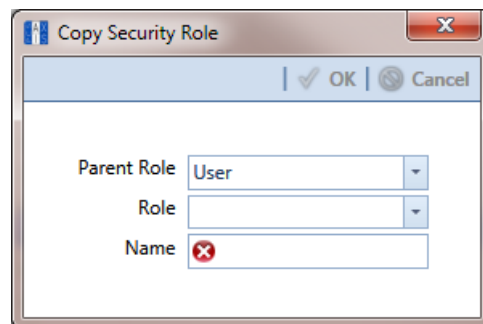





Figure 3-18. Copy Security Role

- 3 Click the down arrow in the **Parent Role** field and select the parent role associated with the existing custom security role.

- 4 Click the down arrow in the **Role** field and select the existing custom security role with permissions you want to copy to the new custom security role.
- 5 Type a name for the new custom security role in the **Name** field. Fields marked with a  icon are required.
- 6 Enter a description for the custom role, if desired, in the **Description** field.
- 7 Click  **OK** to save changes and return to the *Security Role Management* window.
- 8 Repeat **step 2** through **step 7** as needed to add additional custom security roles. Then continue with the next section to edit permissions in a custom security role.

Editing a Custom Security Role

To edit permissions in a custom security role, follow these steps:

- 1 If the *Security Role Management* window is not open, click **Tools > Security Role Management**.
- 2 Click the down arrow in the **Role** field and select a custom security role in the selection list. Then click  **Edit** to begin editing permissions (Figure 3-19).

NOTE: If the custom security role is not visible in the selection list, click the down arrow in the *Parent Role* field and select either *User* or *SysAdmin*, then select the custom security role in the *Role* field.

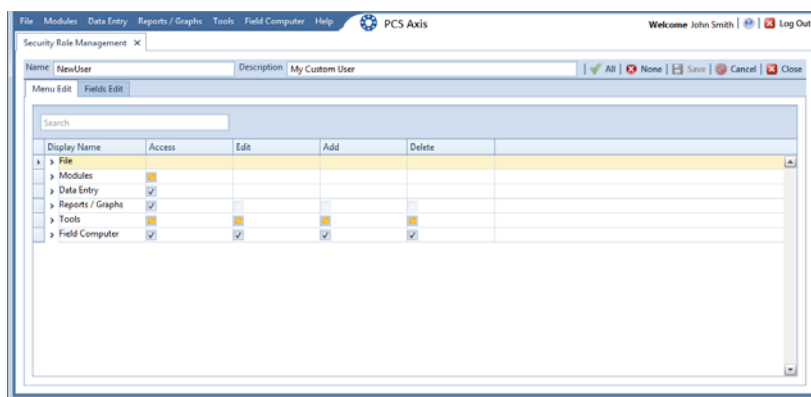




Figure 3-19. Edit Security Role - Menu Edit Tab

- 3 Click the *Menu Edit* tab (**step 4**) or the *Fields Edit* tab (**step 7**) to edit permissions.
- 4 Use the following methods to edit menu permissions for the custom security role:

NOTE: You can toggle permissions on and off for all items in the window. Click  **All** to grant access to all items or  **None** to deny access to all items.

NOTE: Use the Search box located above the *Display Name* column to quickly find a command name.

- a To grant access to an entire menu listed in the *Display Name* column, click the adjacent check box to place a check mark inside the check box .
- b To deny access to an entire menu listed in the *Display Name* column, click the adjacent check box to remove the check mark inside the check box .
- c To grant or deny access to sub-menu commands, click the arrow next to the main menu name to expand the list (Figure 3-20).

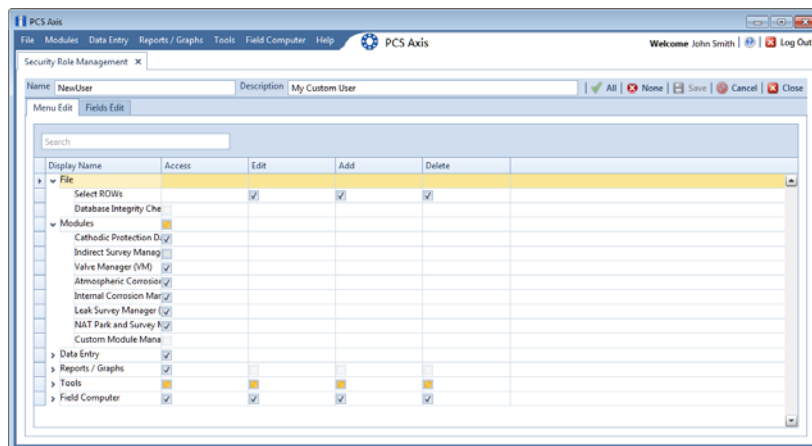




Figure 3-20. Expanded Menu Commands

NOTE: The columns can be expanded by hovering over the dividing line until the cursor changes to  and then clicking and dragging the cursor.

- d To grant access to a sub-menu listed in the *Display Name* column, click the adjacent check box to place a check mark inside the check box .
- e To deny access to a sub-menu listed in the *Display Name* column, click the adjacent check box to remove the check mark inside the check box .

- f Repeat **step 4** as needed for each menu and sub-menu command listed in the *Display Name* column.
- 5 Click  **Save** to save changes.
- 6 Click the *Fields Edit* tab to edit permissions for fields (Figure 3-21).

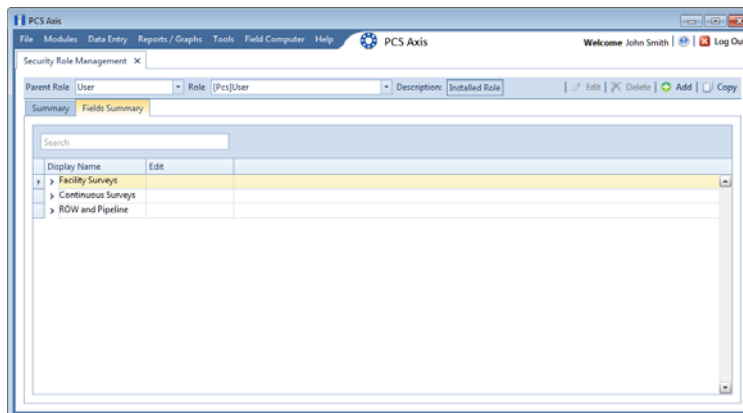




Figure 3-21. Edit Security Role - Fields Edit Tab

- 7 Use the following methods to edit field permissions for the custom security role:

NOTE: You can toggle permissions on and off for all items in the window. Click  **All** to grant access to all items or  **None** to deny access to all items.

NOTE: Use the Search box located above the *Display Name* column to quickly find a field name.

- a To grant access to an entire category listed in the *Display Name* column, click the adjacent check box to place a check mark inside the check box .
- b To deny access to an entire category listed in the *Display Name* column, click the adjacent check box to remove the check mark inside the check box .
- c To grant or deny access to sub-category fields, click the arrow next to the main category name to expand the list (Figure 3-22).

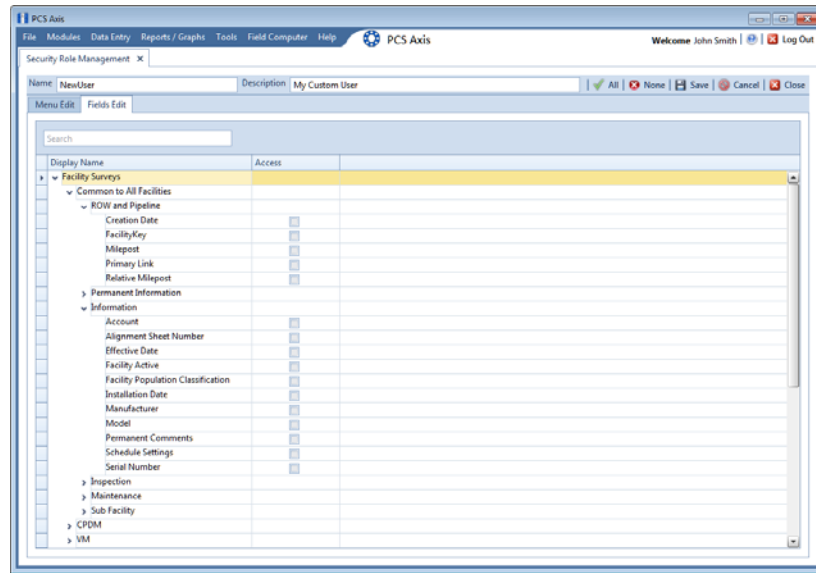




Figure 3-22. Expanded Fields

NOTE: The columns can be expanded by hovering over the dividing line until the cursor changes to  and then clicking and dragging the cursor.

- d** To grant access to a sub-category field listed in the *Display Name* column, click the adjacent check box to place a check mark inside the check box .
 - e** To deny access to a sub-category field listed in the *Display Name* column, click the adjacent check box to remove the check mark inside the check box .
 - f** Repeat **step 7** as needed for each category and sub-category field listed in the *Display Name* column.
- 8** Click  **Save** to save changes.

To assign a custom security role to a user previously set up in *User Management*, see *Assigning a Custom Security Role to a User* (page 66).

Related Topics

- Working with Custom Security Roles
- Using Copy to Add a Custom Security Role
- Editing a Custom Security Role

- Deleting a Custom Security Role
- Assigning a Custom Security Role to a User

Deleting a Custom Security Role

To delete a custom security role, follow these steps:

- 1 If the *Security Role Management* window is not open, click **Tools > Security Role Management** (Figure 3-16, page 59).
- 2 Click the down arrow in the **Parent Role** field and select the parent role associated with the custom security role you want to delete.
- 3 Click the down arrow in the **Role** field and select the custom security role you want to delete.
- 4 Click **✗ Delete**. When the *Confirm Delete* message displays, click **✓ Yes** to delete the custom security role and set users tied to this role to the PCS Axis installed role or **✗ No** to cancel the operation (Figure 3-23).

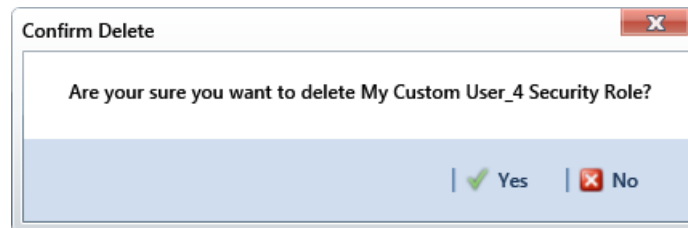


Figure 3-23. Confirm Delete

Related Topics

- Working with Custom Security Roles
- Adding a Custom Security Role
- Using Copy to Add a Custom Security Role
- Editing a Custom Security Role
- Assigning a Custom Security Role to a User

Assigning a Custom Security Role to a User

The following information explains how to assign a custom security role to a user set up in *User Management*. For more information about *User Management*, see *Setting Up User Management* (page 187).

Complete the following steps:

- 1 Click **Tools** > **User Management** to open the *User Management* window (Figure 3-24).

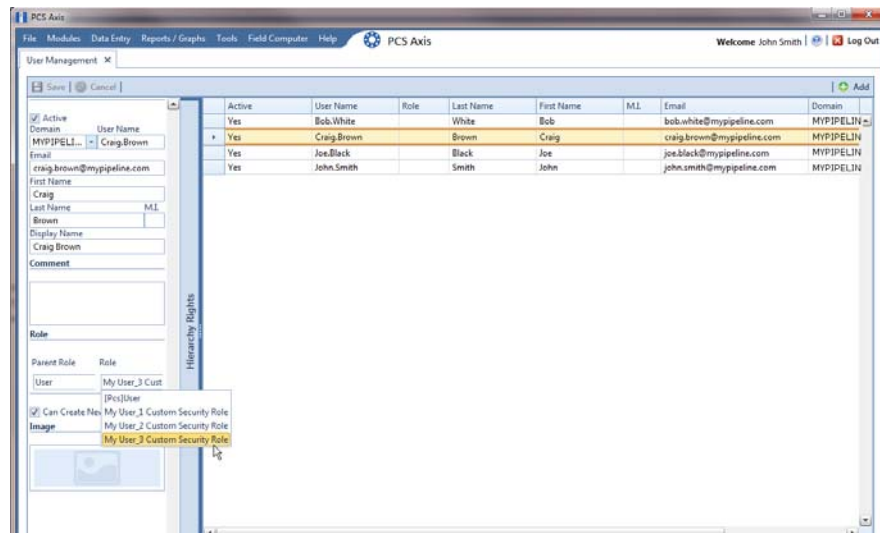


Figure 3-24. User Management

NOTE: If the *Hierarchy Rights* panel is open, click the title bar to collapse it.

- 2 Select a user record in the grid.

- 3 Complete the following steps in the *Role* group box on the left side of the window (Figure 3-25):

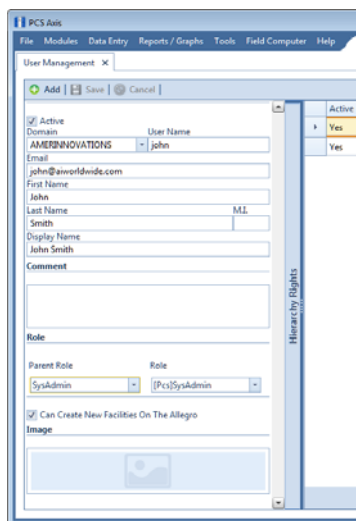



Figure 3-25. Role List

- a Click the **Parent Role** field and select the parent role associated with the custom security role you want to assign to the user record.
 - b Click the **Role** field and select the custom security role you want to assign to the user record.
- 4 Click  **Save** to save changes

Related Topics

- Working with Custom Security Roles
- Adding a Custom Security Role
- Using Copy to Add a Custom Security Role
- Editing a Custom Security Role
- Deleting a Custom Security Role

Setting Properties in Field and UDF Customizations

Use *Field and UDF Customizations* to modify property settings for certain PCS Axis installed fields and add one or more user-defined fields (UDFs) when PCS Axis does not provide a field for data entry.

Information in this section explains how to use the most common features of *Field and UDF Customizations*. Topics include those in the following list:

- *Navigating Field and UDF Customizations*
- *Editing a PCS Axis Installed Layout Theme* (page 69)
- *Adding a Layout Theme Addition* (page 72)
- *Renaming Field Captions* on page 74
- *Setting Up Range Checking for Inspection Fields* on page 77
- *Adding User Defined Fields* on page 79

Navigating Field and UDF Customizations

The selection tree in the *Properties* panel of *Field and UDF Customizations* includes three main categories labeled *Facility Surveys*, *Continuous Surveys*, and *ROW and Pipeline*. Each of these categories includes related items for selection. For example, items for selection in *Facility Surveys* are based on module and data grid. Items for selection in *Continuous Surveys* are based on data grid and the various continuous survey types.

Selecting an item in the selection tree displays a list of related fields and property settings in the adjacent grid. The grid layout includes columns, rows and cells similar to a spreadsheet. Grid columns at top of the grid identify the names of the various properties you can set up for a field. Each grid row contains property settings for a specific field, such as *Casing Status* shown in the following figure (Figure 3-26, page 69). When a property setting is shaded gray or includes the label *N/A* (not applicable), this indicates the setting cannot be modified.

NOTE: Clicking the *Properties* bar collapses the *Properties* panel allowing you to view more of the grid. Clicking the bar again expands the panel.

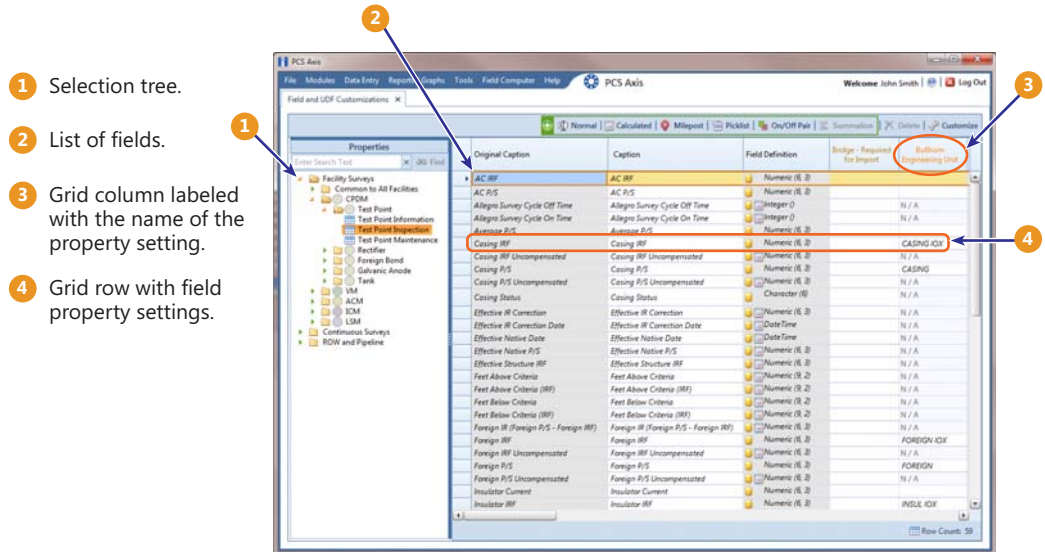


Figure 3-26. Field and UDF Customizations

Editing a PCS Axis Installed Layout Theme

A layout theme is a named set of fields that are present in the grid when working in *Field and UDF Customizations*. Two types of layout themes are available for use. They include *installed* and *addition* layout themes. An installed layout theme is one that has been installed during the PCS Axis software installation, such as [PCS] All Fields. A layout theme addition is one that you create.

The procedure in this section explains how to complete the following tasks to edit a PCS Axis installed layout theme:

- add and remove fields in an installed layout theme
- revert an installed layout theme
- save changes as a new baseline installed layout theme

To edit a PCS Axis installed layout theme, follow these steps:

- 1 Click **Tools > Field and UDF Customizations** to open the *Field and UDF Customizations* window (Figure 3-27).

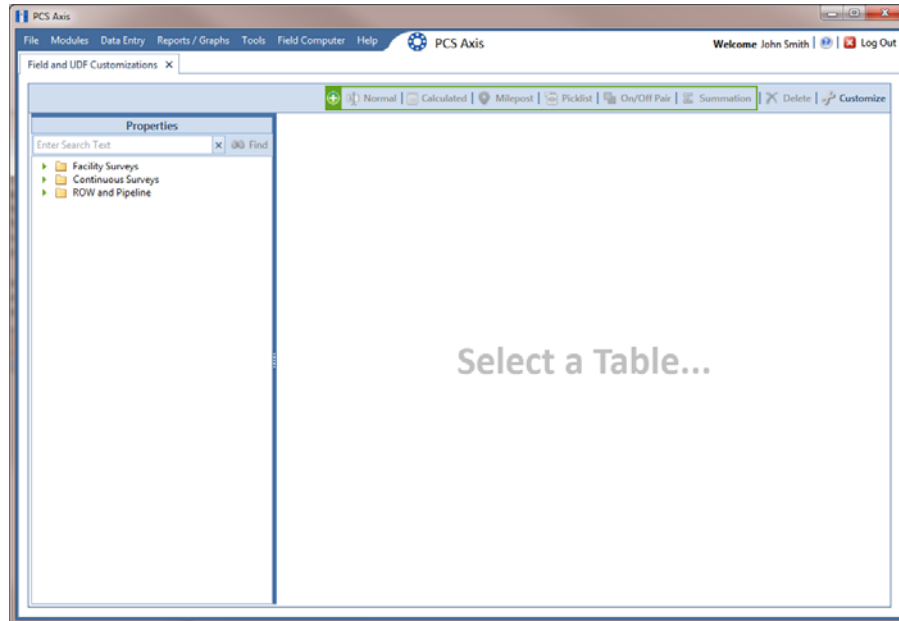







Figure 3-27. Field and UDF Customizations

- 2 Click  **Customize** to open the *Column Selections* dialog box (Figure 3-28).
- 3 Click the down arrow in **Select Layout Theme** and select a theme in the selection list, such as  **[PCS] All Fields**.

NOTE: By default all fields are included in the  *[PCS] All Fields* layout theme. If you want to clear all fields listed in the right pane and subsequently remove them from the layout theme, click  **Toggle Select**. Clicking the button again moves all fields to the right pane and adds them in the layout theme.

- 4 To remove one or more fields in the layout theme, complete one of the following steps (Figure 3-28, page 71):
 - a Select a field in the right pane and then click the bottom arrow button  to move the field to the left pane.
 - b Double-click a field in the right pane to move it to the left pane.

NOTE: The grid layout theme includes all fields listed in the right pane of the *Column Selections* dialog box.

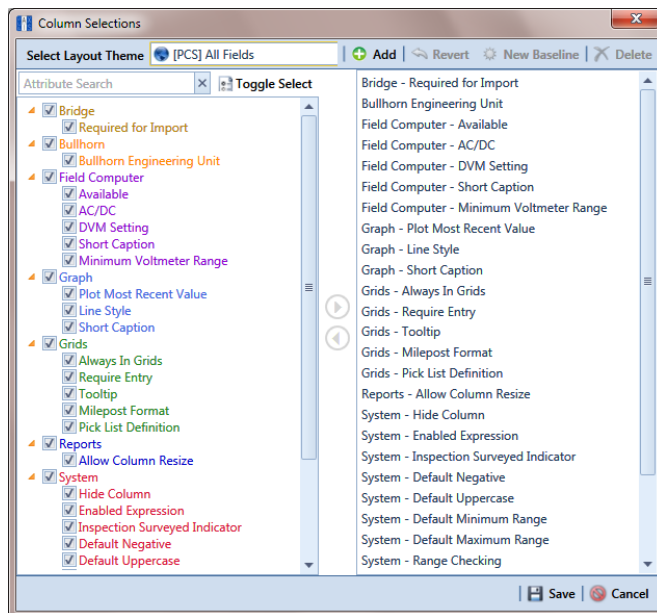





Figure 3-28. Column Selections

- 5 Click  **Save** to save changes.
- 6 To revert an installed theme and restore settings prior to editing:
 - Click  **Revert**, then click **Yes** when the *Confirm Revert* message displays.
- 7 To save current changes as new baseline settings, click  **New Baseline**. When future changes are made and then reverted, PCS Axis restores the theme with baseline settings.

Adding a Layout Theme Addition

Information in this section describes how to add a new grid layout theme in *Field and Customizations*. Adding a layout theme allows you to choose which fields to include in the grid and then save the new layout as a theme for later use.

To add a grid layout theme, follow these steps:

- 1 Click **Tools > Field and UDF Customizations** to open the *Field and UDF Customizations* window (Figure 3-29).

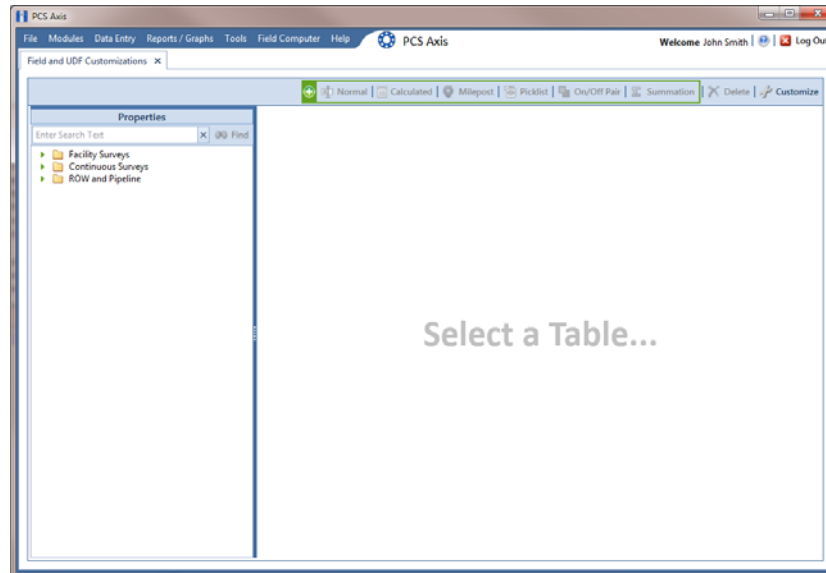



Figure 3-29. Field and UDF Customizations

- 2 Click  **Customize** to open the *Column Selections* dialog box (Figure 3-30).

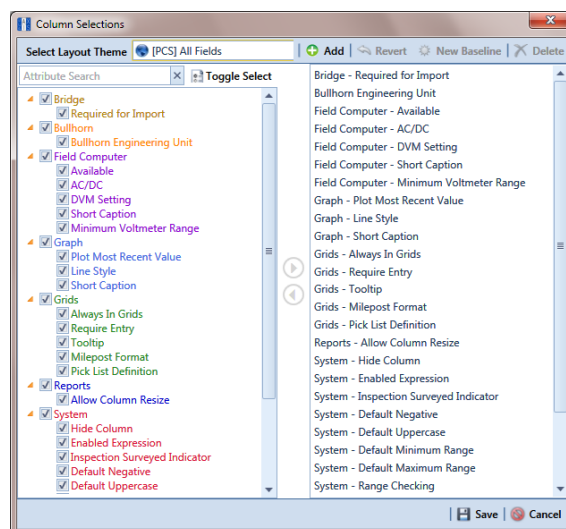


Figure 3-30. Column Selections

- 3 Click  **Add** to open the *New Layout Theme* dialog box (Figure 3-31).

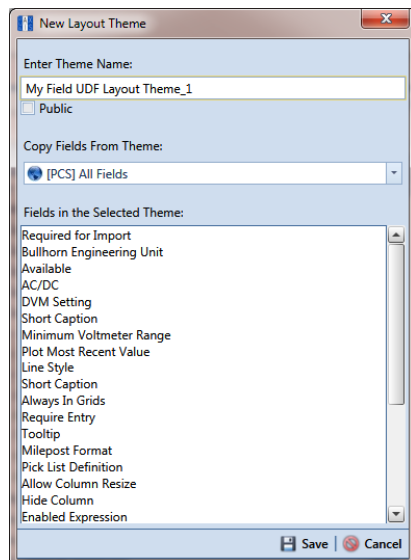







Figure 3-31. New Layout Theme

- 4 Type a name for the layout theme in the field **Enter Theme Name**. If you want to create a *public* theme, click the **Public** check box to place a check mark inside the check box. When the check box is empty, the layout saves as a *private* theme.

NOTE: Themes are either public or private. A public theme is available for use by all PCS Axis users. A private theme is available only to the user who creates it. Also, only public themes will be available for selection for layouts, sorts, or reports.

- 5 Select a layout theme with fields you want to copy to the new layout theme. Click the down arrow in **Copy Fields From Theme** and select a theme in the selection list.
- 6 Click  **Save** to save changes and return to the *Column Selections* dialog box.
- 7 If you want to clear all fields listed in the right pane of the dialog box and subsequently remove them from the grid, click  **Toggle Select**. Clicking the button again moves all fields to the right pane and adds them in the grid.
- 8 Choose which fields to include in the layout theme. Select a field in the left pane and then click the top arrow button  to move the field to the right pane. Repeat this step as needed (Figure 3-32, page 74).
- 9 If you want to remove a field in the layout theme, select a field in the right pane and then click the bottom arrow button  to move the field to the left pane.

NOTE: The grid layout theme includes all fields listed in the right pane of the *Column Selections* dialog box.

- 10 Click  **Save** to save changes and return to the *Field and UDF Customizations* grid.

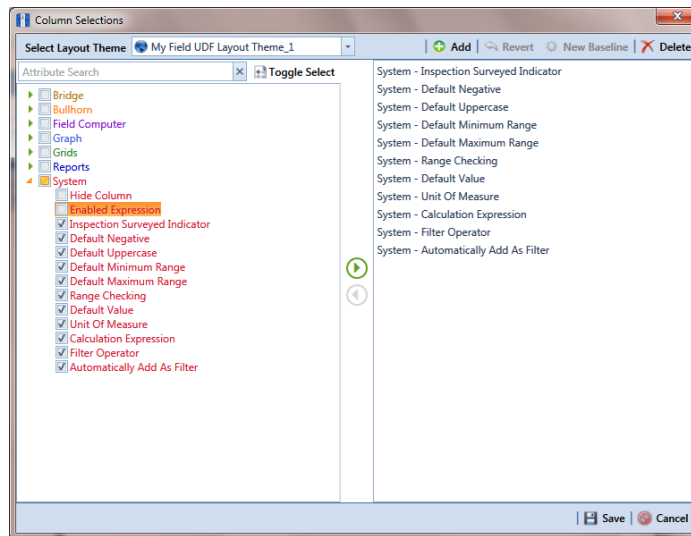




Figure 3-32. Column Selections

Renaming Field Captions

You can rename many of the original PCS Axis field captions with a caption that is more familiar to users in your company. The following procedure explains how to rename field captions. The information is intended for users with *SysAdmin* user permissions.

Complete the following steps:

- 1 Click **Tools > Field and UDF Customizations** to open the *Field and UDF Customizations* window (Figure 3-29, page 72).
- 2 If you want to select a grid layout theme, follow these steps:
 - a Click  **Customize** to open the *Column Selections* dialog box (Figure 3-32, page 74).
 - b Click the down arrow in **Select a Layout Theme** and select a theme in the selection list.
 - c Click  **Save** to close the dialog box and return to the *Field and UDF Customizations* window.

- 3 Select an item in the *Properties* panel to display related fields and property settings in the grid.

For example, double-click **Facility Surveys > Common to All Facilities > ROW and Pipeline**. The grid displays related fields and property settings for *ROW and Pipeline* (Figure 3-33).

NOTE: Clicking the *Properties* bar collapses the *Properties* panel allowing you to view more of the grid. Clicking the bar again expands the panel.

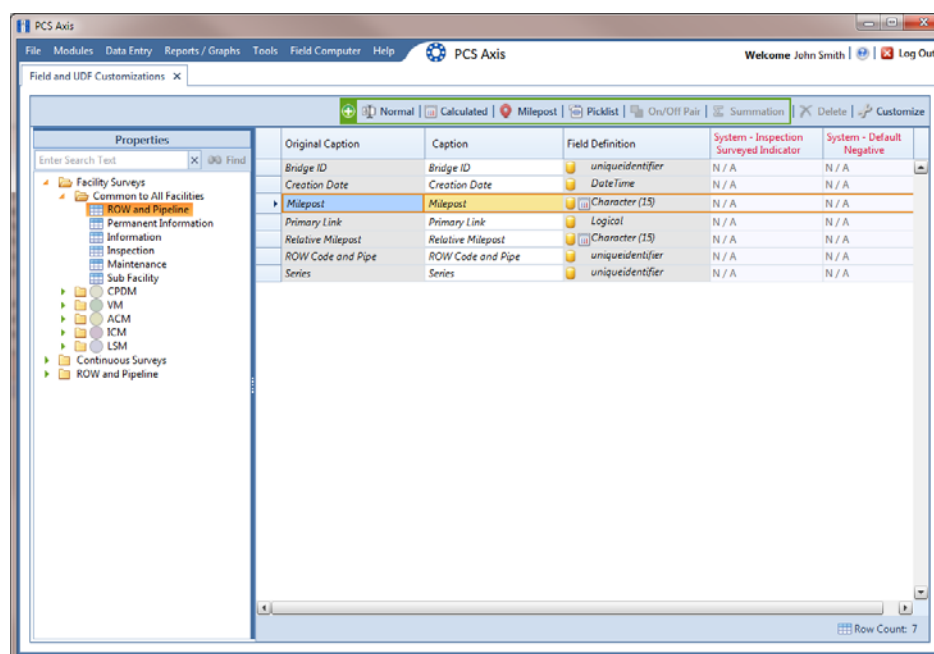


Figure 3-33. Field and UDF Customizations

- 4 To rename an original field caption listed in the *Original Caption* grid column:
 - Type a name in the adjacent field listed in the *Caption* grid column.

For example, to rename *Milepost*, type a new description in the adjacent field, such as *Station*. Bold text indicates a user-modified field as shown in Figure 3-34, page 76.

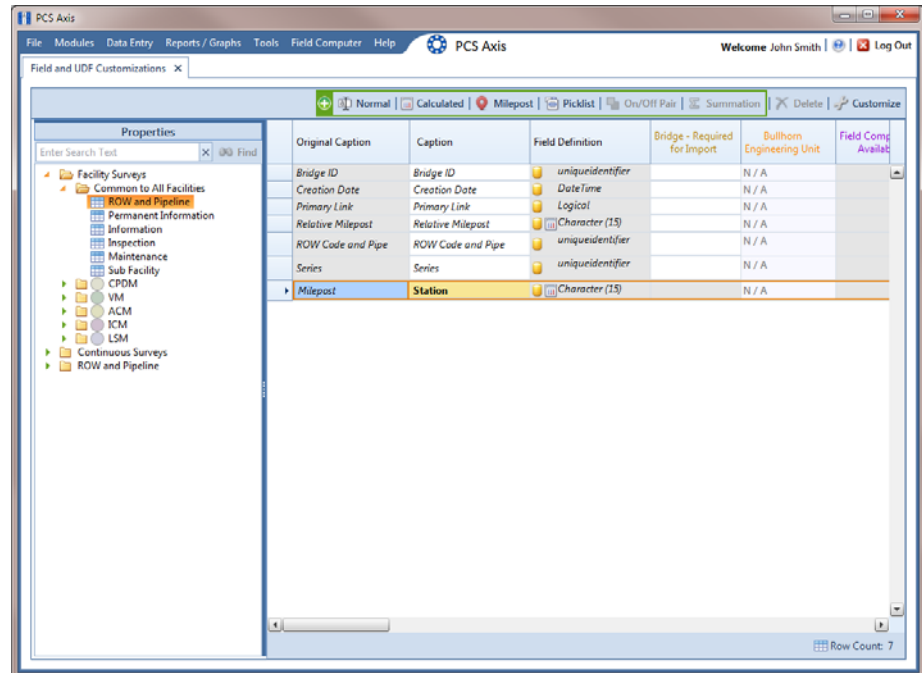


Figure 3-34. Field and UDF Customizations

Returning a Field Caption to its Original Name

To return a field caption to its original name, follow these steps:

- 1 If the *Field and UDF Customizations* window is not open, click **Tools > Field and UDF Customizations** (Figure 3-29, page 72).
- 2 Select an item in the Properties panel with the field caption you want to return to its original name.
- 3 Highlight the name in the *Caption* field and then press the **Delete** key on the computer keyboard.

NOTE: If the cursor is still in the *Caption* field after typing a new name, you can also press **Ctrl+Z** to undo changes and display the original field caption.



Setting Up Range Checking for Inspection Fields

Range checking is the acceptable range of values allowed for data entry in an inspection field.

Setting up range checking allows PCS Axis to alert the user when an incorrect value has been entered in an inspection field. For example, if the acceptable range of values is in a range of -10 to 0 and the user enters a value that is outside this range, a warning message displays allowing the user to correct the invalid entry. Data entry errors are less likely to occur when inspection fields are set up with range checking.

Settings apply system-wide when range checking is set up for an inspection field in *Field and UDF Customizations*. You can also set up range checking at the facility level using the minimum/maximum fields available in the *Information* and *Inspections* data entry grid. Range checking at the facility level overrides range checking at the system level.

Complete the following steps to set up range checking for an inspection field:

- 1 Click **Tools > Field and UDF Customizations** to open the *Field and UDF Customizations* window (Figure 3-29, page 72).
- 2 If you want to select a grid layout theme, follow these steps:
 - a Click  **Customize** to open the *Column Selections* dialog box (Figure 3-32, page 74).
 - b Click the down arrow in **Select a Layout Theme** and select a theme in the selection list.
 - c Click  **Save** to close the dialog box and return to the *Field and UDF Customizations* window.
- 3 Select an item in the *Properties* panel that includes the inspection field you want to set up for range checking.

For example, double-click **Facility Surveys > CPDM > Test Point > Test Point Inspection**. The grid displays related fields and property settings for the *Test Point Inspection* data entry grid (Figure 3-35, page 78).

- 4 Select the inspection field you want to set up for range checking. For example, select *Casing P/S* as shown in the following figure (Figure 3-35, page 78).

NOTE: Clicking the *Properties* bar collapses the *Properties* panel allowing you to view more of the grid. Clicking the bar again expands the panel.

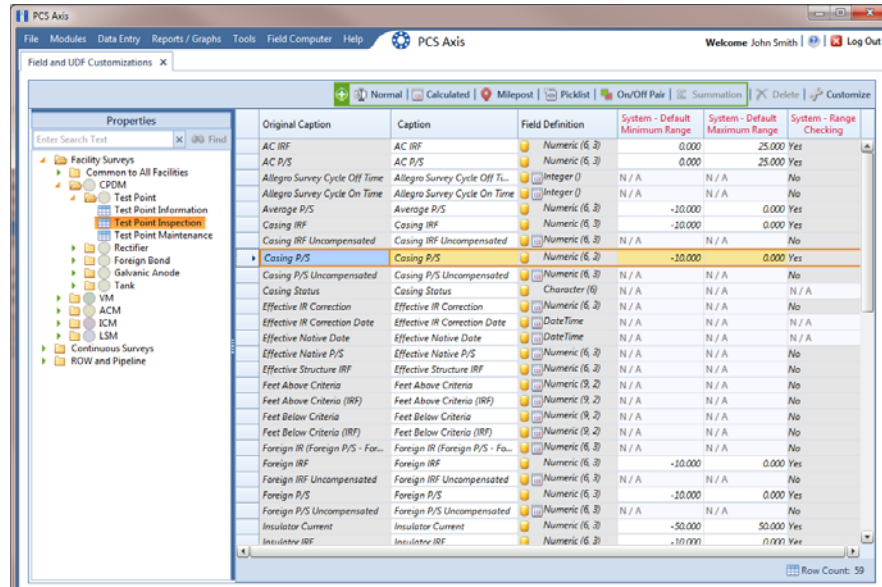


Figure 3-35. Field and UDF Customizations

- 5 Locate the grid columns labeled *System–Default Minimum Range* and *System–Default Maximum Range*.
- 6 Type a minimum range value in the field labeled **System–Default Minimum Range** for the selected inspection field.
- 7 Type a maximum range in the field labeled **System–Default Maximum Range** field for the selected inspection field.
- 8 If you want to set up another inspection field with range checking, repeat **step 3** through **step 7**. When you finish, click the close icon to close the *Field and UDF Customizations* window.

Adding User Defined Fields

A user defined field (UDF) is a field you create when PCS Axis does not provide a field for data entry. The types of UDFs available for use include those in the following list:



- *Normal*: Set up a normal UDF when you want to add any of the following types of fields: character, numeric, date, logical, memo, or date/time field.
- *Calculated*: Set up a calculated UDF when you want PCS Axis to perform calculations based on expressions you set up for the UDF.
- *Milepost*: Set up a milepost UDF when you want to assign a different milepost format to one or more facility types on a pipeline.
- *Standard Picklist*: Set up a *Standard Picklist* UDF when you want to limit data entry to a list of valid choices in a selection list. (A *Standard Picklist* in PCS Axis is similar to a validation table in PCS 7.)
- *Dynamic Picklist*: Set up a *Dynamic Picklist* with a drop-down list of data items that change based on a data item selected in another picklist. This type of picklist uses a cascading parent/child relationship allowing you to set up more than five (5) levels of interdependent picklists.
- *On/Off Pair*: Set up a custom pair of on/off fields when PCS Axis does not provide a pair of installed on/off fields for recording inspection readings in a data grid or form. This UDF is available for both facility and continuous surveys.
- *Summation*: Set up a *Summation* UDF when you want PCS Axis to perform an aggregation for a selected *Information*, *Inspection*, or *Maintenance* field. This UDF type supports aggregation on a user-selected target field using any one of the following operators: *Average*, *Count*, *Latest*, *Maximum*, *Minimum*, and *Sum*. You can also include one or more user-defined filters in the set up of the UDF to further filter the results of aggregated data. *Summation* UDF is a *Permanent Information* field available for use in data grids, forms, reports, and as a filter in scheduling.

Topics in this section include those in the following list:

- *Adding a Normal User Defined Field* (page 80)
- *Adding a Calculated User Defined Field* (page 83)
- *Adding a Milepost User Defined Field* (page 85)
- *Adding a Standard Picklist User Defined Field* (page 87)
- *Setting Up a Data Entry Field as a Standard Picklist* (page 91)
- *Adding a Dynamic Picklist User Defined Field* (page 97)
- *Editing a Picklist (Standard or Dynamic)* (page 107)
- *Adding an On/Off Pair User Defined Field* (page 109)
- *Working with a Summation User Defined Field* (page 113)

Adding a Normal User Defined Field

To add a *Normal* user defined field (UDF), follow these steps:

- 1 Click **Tools > Field and UDF Customizations** to open the *Field and UDF Customizations* window (Figure 3-29, page 72).
- 2 If you want to select a grid layout theme, follow these steps:
 - a Click  **Customize** to open the *Column Selections* dialog box (Figure 3-32, page 74).
 - b Click the down arrow in **Select a Layout Theme** and select a theme in the selection list.
 - c Click  **Save** to close the dialog box and return to the *Field and UDF Customizations* window.
- 3 Select an item in the *Properties* panel that includes the data entry grid you want to add a UDF. For example, double-click **Facility Surveys > CPDM > Test Point > Test Point Inspection** to display a grid with fields and property settings related to the *Test Point Inspection* data entry grid (Figure 3-36).

NOTE: Clicking the *Properties* bar collapses the *Properties* panel allowing you to view more of the grid. Clicking the bar again expands the panel.

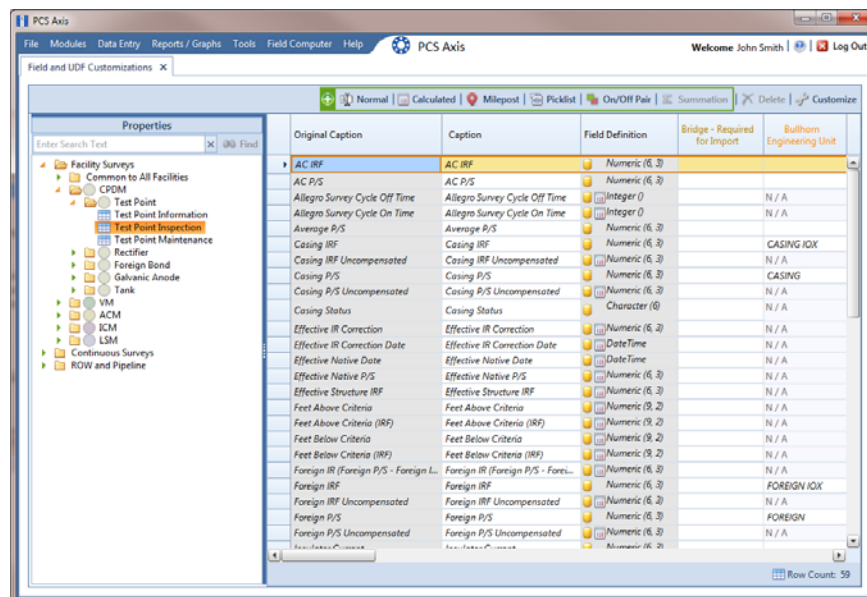



Figure 3-36. Field and UDF Customizations

- 4 Click  **Normal** in the toolbar to open the *Add Normal Field* dialog box (Figure 3-37).
- 5 Type a unique name for the UDF in the **Caption** field.

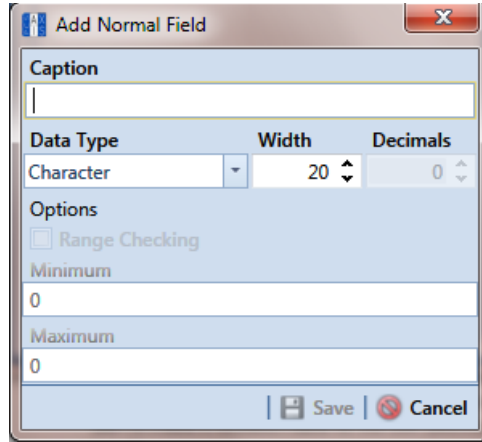



Figure 3-37. Add Normal Field

- 6 Choose the type of field you want to add. Click the down arrow in the **Data Type** field and select one of the following options:
 - *Character*: Supports characters such as A, B, and C. This data type can be used for both character and numeric data. If you plan to use mixed data, such as a number and a character or dash, define the data type as a character. If you plan to create a picklist for the UDF, use the *Character* data type. For more information about picklists, see *Adding a Standard Picklist User Defined Field* (page 87).
 - *Numeric*: Supports values such as 1, 2, and 3 and numeric values using the following format: 999.999 and -99.999.
 - *Date*: Supports a date format using MM/DD/YYYY (month, day, year), such as 11/12/2012.
 - *Logical*: Supports a yes/no selection in the form of a check box to enable or disable an option in the data entry grid.
 - *Memo*: Supports more than 255 characters and carriage returns.
 - *DateTime*: Supports a date and time format using HH:MM:SS (hours, minutes, seconds) and MM/DD/YYYY (month, day, year). Such as 11:15:45, 12/11/2012.
 - *Integer*: Supports a positive or negative whole number, or zero. Such as -2, 4, 123, and 3,245.
- 7 If you selected the *Character* or *Numeric* data type earlier, set the length of the field by typing the number of characters required for the UDF in the **Width** field.

Clicking the up arrow in the *Width* field increases the value; clicking the down arrow decreases the value.
- 8 If you selected the *Numeric* data type earlier, set the number of decimal places required for the UDF by typing a value in the **Decimals** field.
- 9 If you selected the *Numeric* data type earlier and want to set up range checking for the UDF, click the **Range Checking** option and then type a minimum and maximum value in the respective fields.

NOTE: Range checking is the acceptable range of values allowed for data entry in a field. Setting up range checking allows PCS Axis to alert the user when an incorrect value has been entered.

- 10 Click  **Save** to close the dialog box and return to the *Field and UDF Customizations* window.



The UDF is now available for adding in a data entry grid. If needed, see *Working with Themes and Filter Groups* (page 316) for information about how to add fields in a data entry grid.

Adding a Calculated User Defined Field

The procedure in this section includes an example that describes how to define an expression for a user defined field (UDF) labeled *Shorted P/S*. In the example, if *Casing P/S* is below protection criteria (less than or more negative than -0.8495), PCS Axis enables *Shorted P/S* for data entry in the grid. The field is not enabled for data entry when *Casing P/S* meets protection criteria.

NOTE: An expression is a logical statement with specific conditions that must be met before PCS Axis enables the field for data entry. Logical statements are either “true” or “false” based on the conditions defined in the expression for the UDF.

To add a *Calculated* UDF, follow these steps:

- 1 Click **Tools > Field and UDF Customizations** to open the *Field and UDF Customizations* window (Figure 3-29, page 72).
- 2 If you want to select a grid layout theme, follow these steps:
 - a Click  **Customize** to open the *Column Selections* dialog box (Figure 3-32, page 74).
 - b Click the down arrow in **Select a Layout Theme** and select a theme in the selection list.
 - c Click  **Save** to close the dialog box and return to the *Field and UDF Customizations* window.
- 3 Select an item in the *Properties* panel that includes the data entry grid you want to add a UDF. For example, double-click **Facility Surveys > CPDM > Test Point > Test Point Inspection** to display a grid with fields and property settings related to the *Test Point Inspection* data entry grid (Figure 3-38).

NOTE: Clicking the *Properties* bar collapses the *Properties* panel allowing you to view more of the grid. Clicking the bar again expands the panel.

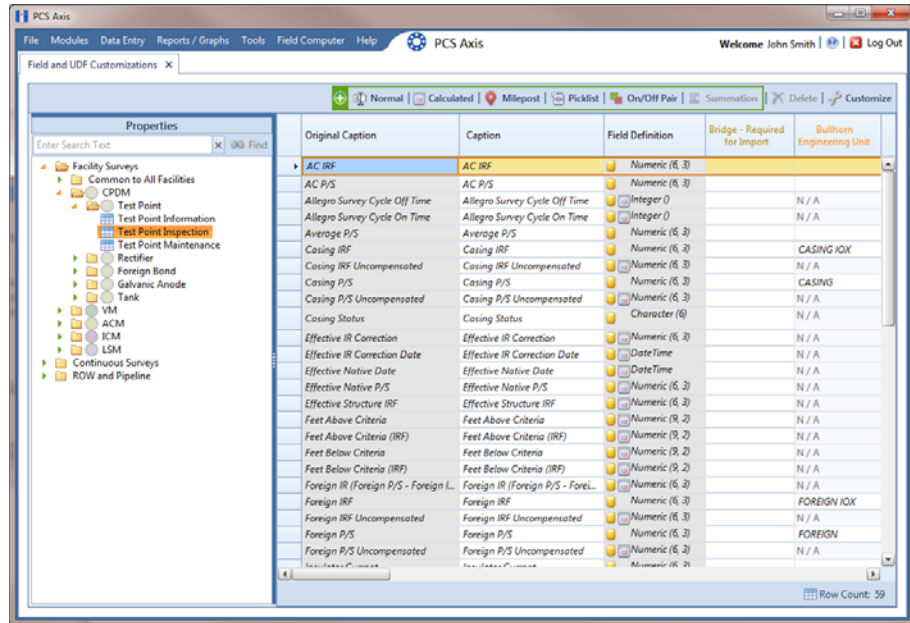




Figure 3-38. Field and UDF Customizations

- Click  **Calculated** in the toolbar to open the *Add Calculated Expression* dialog box. If you want to work with the expression editor in advanced mode, click  **Switch To Advanced Mode** (Figure 3-39).

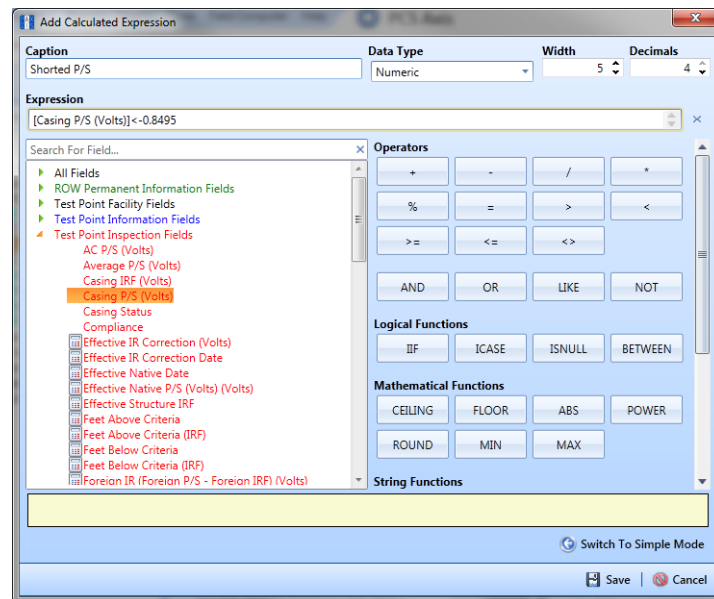




Figure 3-39. Add Calculated Expression (Advanced Mode)

- 5 Type a unique name for the UDF in the **Caption** field. Then click the down arrow in the **Data Type** field and select a data type in the selection list, such as *Numeric*.
- 6 If you selected the *Character* or *Numeric* data type earlier, set the length of the field by typing the number of characters required for the UDF in the **Width** field. Clicking the up arrow in the *Width* field increases the value; clicking the down arrow decreases the value.
- 7 If you selected the *Numeric* data type earlier, set the number of decimal places required for the UDF by typing a value in the **Decimals** field.
- 8 Click a toggle button  to open a field category, such as *Test Point Inspection Fields* shown in Figure 3-38, page 84. Double-click a field in the list of fields to add it in the *Expression* field. Define the UDF using the operator and functions buttons.


NOTE: Hovering the mouse over a function or operation button displays a description below the folder tree.


- 9 Click  **Save** to close the dialog box and return to the *Field and UDF Customizations* window. The UDF is now available for adding in a data entry grid. If needed, see *Working with Themes and Filter Groups* (page 316) for information about how to add fields in a data entry grid.

Adding a Milepost User Defined Field

Set up a *Milepost* user defined field (UDF) when you want to assign a different milepost format to a facility type on a pipeline. For example, if coupons require a different milepost format than other facility types on a pipeline, set up a milepost UDF and then assign the UDF at the facility type level in the *Facility Location ID Formats* mini-grid of *Edit ROW Detail* (Data Entry > Edit ROW Detail).

To add a *Milepost* UDF, follow these steps:

- 1 Click **Tools** > **Field and UDF Customizations** to open the *Field and UDF Customizations* window (Figure 3-29, page 72).
- 2 If you want to select a grid layout theme, follow these steps:
 - a Click  **Customize** to open the *Column Selections* dialog box (Figure 3-32, page 74).

- b Click the down arrow in **Select a Layout Theme** and select a theme in the selection list.
 - c Click  **Save** to close the dialog box and return to the *Field and UDF Customizations* window.
- 3 Select an item in the *Properties* panel that includes the data entry grid you want to add a UDF.

For example, double-click **Facility Surveys > Common to All Facilities > ROW and Pipeline** to display a grid with fields and property settings related to the *Edit ROW Detail* grid (Figure 3-40, page 86).

NOTE: Clicking the *Properties* bar collapses the *Properties* panel allowing you to view more of the grid. Clicking the bar again expands the panel.

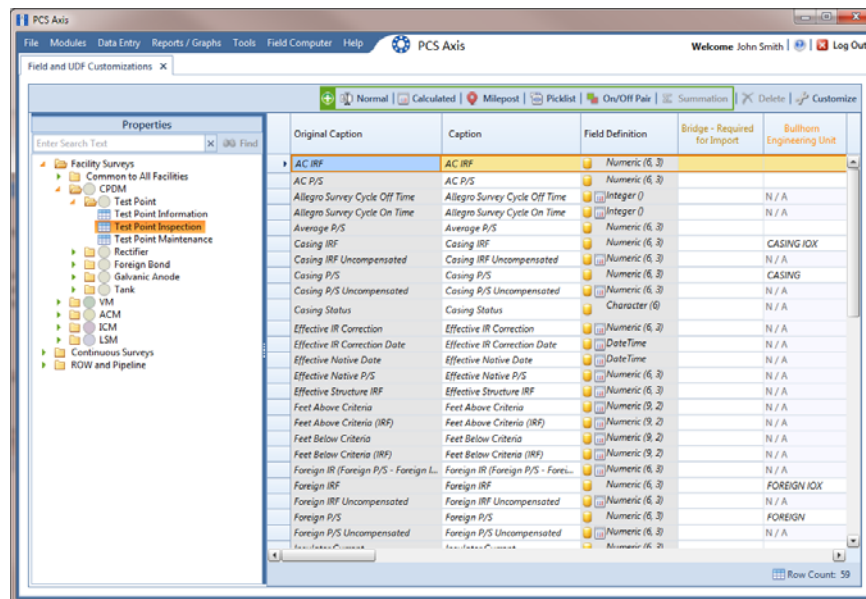




Figure 3-40. Field and UDF Customizations

- 4 Click  **Milepost** in the toolbar to open the *Add Milepost Field* dialog box (Figure 3-41).
- 5 Type a unique name for the UDF in the **Caption** field.
- 6 Click the down arrow in the **Milepost Formats** field and select a milepost format in the selection list.
- 7 Click  **Save** to close the dialog box and return to the *Field and UDF Customizations* window.

The UDF is now available for selection in the *Facility Location ID Formats* mini-grid of *Edit ROW Detail*. If needed, see *Working with Pipeline Records* (page 139) for more information.

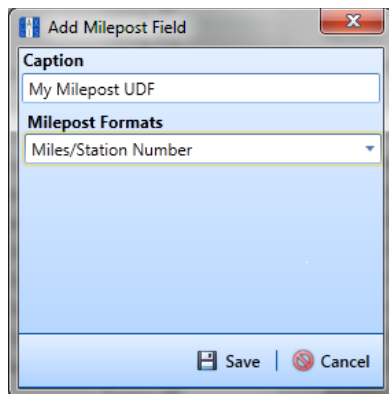


Figure 3-41. Add Milepost Field


Adding a Standard Picklist User Defined Field


A *Standard Picklist* is a list of acceptable choices for a field in a data entry grid that a user selects from when entering data. This feature improves data consistency and accuracy by allowing users to select from a list of predefined choices instead entering data manually.

A *Standard Picklist* contains a list of valid items for selection, a description of each item, and a value assigned to each item that determines the sorting order of items in the list.

NOTE: A *Standard Picklist* in PCS Axis is similar to a validation table in PCS 7.x.

To add a *Standard Picklist* user defined field (UDF), follow these steps:

- 1 Click **Tools** > **Field and UDF Customizations** to open the *Field and UDF Customizations* window (Figure 3-29, page 72).
- 2 If you want to select a grid layout theme, follow these steps:
 - a Click  **Customize** to open the *Column Selections* dialog box (Figure 3-32, page 74).

- b Click the down arrow in **Select a Layout Theme** and select a theme in the selection list.
 - c Click  **Save** to close the dialog box and return to the *Field and UDF Customizations* window.
- 3 Select an item in the *Properties* panel that includes the data entry grid you want to add a UDF.

For example, double-click **Facility Surveys > CPDM > Test Point > Test Point Inspection** to display a grid with fields and property settings related to the *Test Point Inspection* data entry grid (Figure 3-42, page 88).

NOTE: Clicking the *Properties* bar collapses the *Properties* panel allowing you to view more of the grid. Clicking the bar again expands the panel.

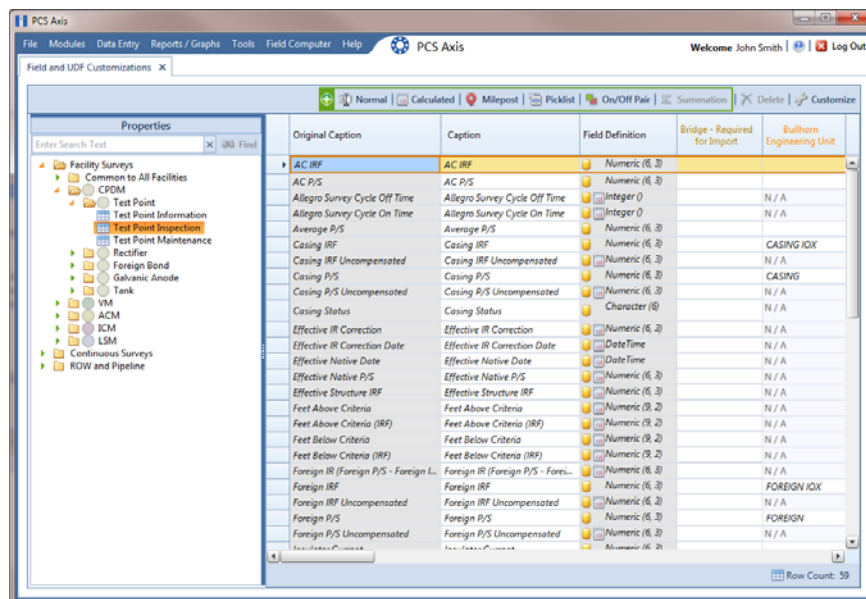




Figure 3-42. Field and UDF Customizations

- 4 Click  **Picklist** in the toolbar to open the *Select Picklist Type* dialog box (Figure 3-43).
- 5 Click **Standard** and then click  **OK** to close the *Select Picklist Type* dialog box.

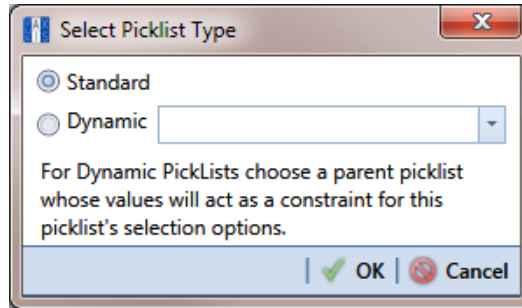


Figure 3-43. Select Picklist Type

- 6 When the *Add Picklist Field* dialog box opens, type a unique name for the UDF in the **Caption** field (Figure 3-44, page 89).
- 7 Set the length of the field by typing the number of characters required for the UDF in the **Width** field.

Clicking the up arrow in the *Width* field increases the value; clicking the down arrow decreases the value.

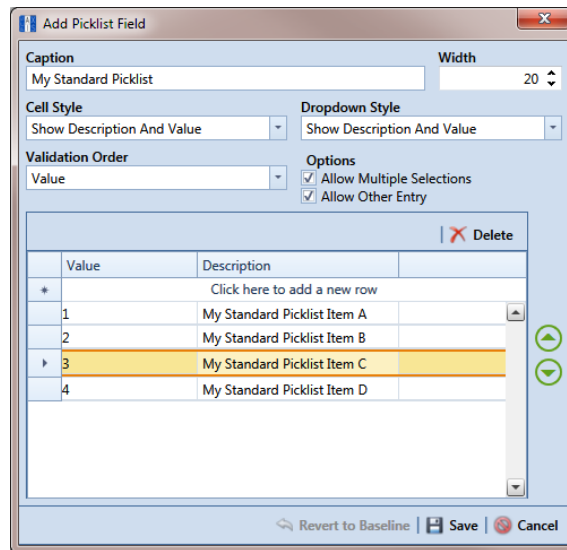



Figure 3-44. Add Picklist Field

- 8 Choose an option for displaying the UDF in data entry grids. Click the down arrow in the field **Cell Style** and select one of the following options in the selection list:

- *Show Value*: Displays the assigned value of the selected item in the picklist.
 - *Show Description*: Displays the description of the selected item in the picklist.
 - *Show Value And Description*: Displays the assigned value and description of the selected item in the picklist.
 - *Show Description And Value*: Displays the description and assigned value of the selected item in the picklist.
- 9** Choose an option for displaying items in the picklist. Click the down arrow in the field **Dropdown Style** and select one of the following options in the selection list:
- *Show Value*: Displays only the assigned value of items in the picklist.
 - *Show Description*: Displays only the description of items in the picklist.
 - *Show Value And Description*: Displays the assigned value and description of items in the picklist.
 - *Show Description And Value*: Displays the description and assigned value of items in the picklist.
- 10** Select an option for sorting items in the picklist. Click the down arrow in the field **Validation Order** and select one of the following options in the selection list:
- *Value*: Sorts items numerically based on values assigned to items in the picklist.
 - *Description*: Sorts items alphanumerically based on the description of items in the picklist.
 - *Defined*: Sorts items based on the order of items listed in the *Customize Picklist* dialog box.
- 11** If you want the UDF to support multiple selections in the picklist, click the check box **Allow Multiple Selections**.
- 12** If you want the UDF to allow data entry of other data in addition to picklist items for selection, click the check box **Allow Other Entry**.
- 13** To add picklist items for selection, follow these steps:
- a** Click the message **Click here to add new row** to add an empty row of fields for data entry (Figure 3-44, page 89).
 - b** Type a value in the **Value** field to associate a code number with the picklist item. They type a description for the picklist item in the **Description** field.

- c** Press **Enter** on the computer keyboard to add another empty row of fields for data entry.
- d** Type a value in the **Value** field and then press the **Tab** key on the computer keyboard to advance the cursor to the **Description** field. Type a description for the picklist item.
- e** Repeat **step 13 c** and **d** as needed until all picklist items have been added. When you finish, click  **Save** to close the dialog box and return to the *Field and UDF Customizations* window.

The UDF is now available for adding in a data entry grid. If needed, see *Working with Themes and Filter Groups* (page 316) for information about how to add fields in a data entry grid.

Setting Up a Data Entry Field as a Standard Picklist


A *Standard Picklist* is a list of acceptable choices for a field in a data entry grid that a user selects from when entering data. This feature improves data consistency and accuracy by allowing users to select from a list of predefined choices instead entering data manually.


For example, setting up a picklist with valid repair codes or status conditions allows users to choose from a list of valid items instead of typing information to describe the repair status or condition of a facility test station or pipeline.

A *Standard Picklist* contains a list of valid items for selection, a description of each item, and a value assigned to each item that determines the sorting order of items in the list.

NOTE: A *Standard Picklist* in PCS Axis is similar to a validation table in PCS.

To set up a data entry field as a *Standard Picklist*, follow these steps:

- 1** Click **Tools > Field and UDF Customizations** to open the *Field and UDF Customizations* window (Figure 3-29, page 72).
- 2** If you want to select a grid layout theme, follow these steps:
 - a** Click  **Customize** to open the *Column Selections* dialog box (Figure 3-32, page 74).

- b Click the down arrow in **Select a Layout Theme** and select a theme in the selection list.
 - c Click  **Save** to close the dialog box and return to the *Field and UDF Customizations* window.
- 3 Select an item in the *Properties* panel that includes the data entry field you want to set up as a *Standard Picklist*.

For example, double-click **Facility Surveys > Common to All Facilities > Maintenance** to display a grid with fields and property settings related to all *Maintenance* data entry grids (Figure 3-45).

NOTE: Clicking the *Properties* bar collapses the *Properties* panel allowing you to view more of the grid. Clicking the bar again expands the panel.

- 4 Using the horizontal scroll bar near the bottom of the grid, display the grid column labeled *Grids–Picklist Definition*. Then select the data entry field you want to set up as a *Standard Picklist*. For example, select *Repair Priority* as shown in the following example.

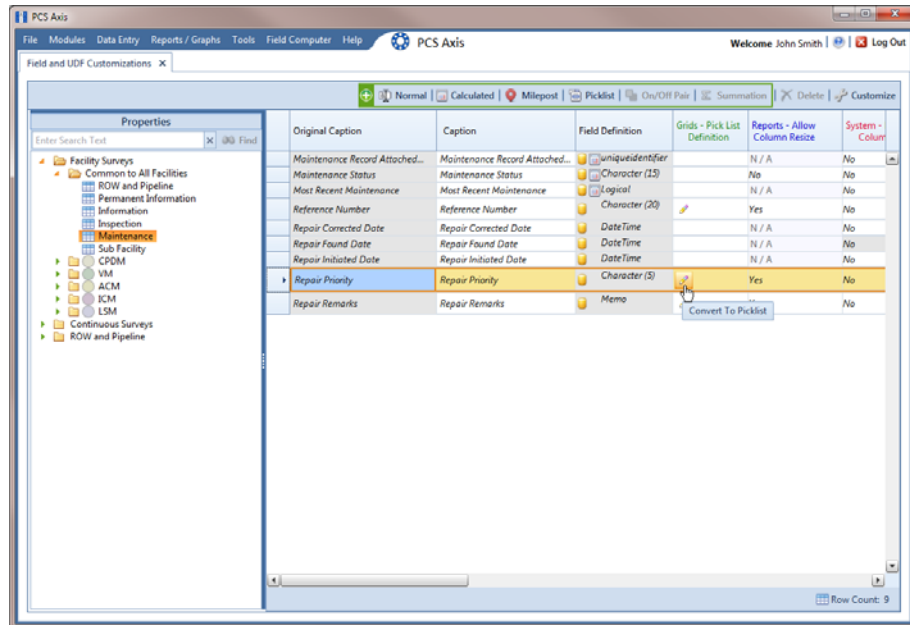





Figure 3-45. Field and UDF Customizations

- Convert the selected data entry field to a *Standard Picklist* field. Click the edit icon  in the *Grids-Picklist Definition* field for the data entry field selected earlier, such as *Repair Priority* (Figure 3-45, page 92).

When a data entry grid includes existing data for the data entry field you convert to a *Standard Picklist*, PCS Axis displays a message to notify you of the number of affected records. You can either click *Yes* in the message to continue converting the field to a *Standard Picklist* or *No* to cancel the operation. Selecting *Yes* allows PCS Axis to use existing data as valid items for selection in the *Standard Picklist*. Using the merge button  allows you to edit these selection items as needed (Figure 3-46).

If you decide later you want to convert the *Standard Picklist* to a normal data entry field, click the revert button  and then click *Yes* when a confirmation message displays. PCS Axis then re-populates affected fields in the data entry grids with unaltered data that was available prior to the field conversion.

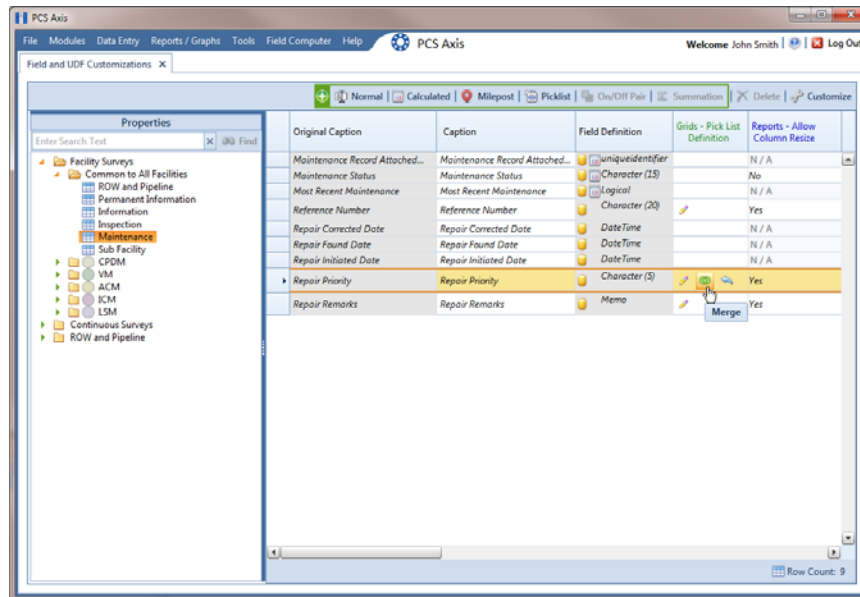



Figure 3-46. Field and UDF Customizations

- 6 Click the edit icon  again for the data entry field converted earlier to a *Standard Picklist* to open the *Edit Picklist Field* dialog box (Figure 3-47).

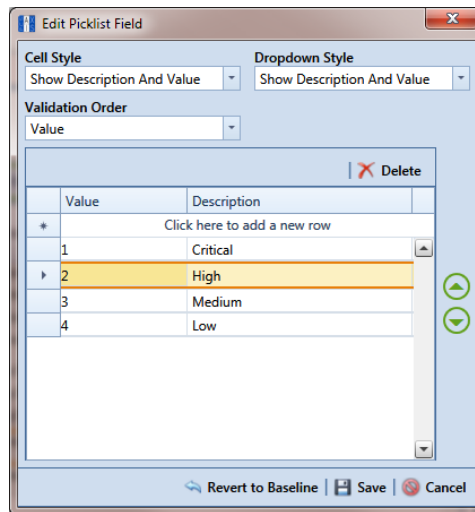



Figure 3-47. Edit Picklist Field

- 7** Choose an option for displaying the UDF in data entry grids. Click the down arrow in the field **Cell Style** and select one of the following options in the selection list:
- *Show Value*: Displays the assigned value of the selected item in the *Standard Picklist*.
 - *Show Description*: Displays the description of the selected item in the *Standard Picklist*.
 - *Show Value And Description*: Displays the assigned value and description of the selected item in the *Standard Picklist*.
 - *Show Description And Value*: Displays the description and assigned value of the selected item in the *Standard Picklist*.
- 8** Choose an option for displaying items in the *Standard Picklist*. Click the down arrow in the field **Dropdown Style** and select one of the following options in the selection list:
- *Show Value*: Displays only the assigned value of items in the *Standard Picklist*.
 - *Show Description*: Displays only the description of items in the *Standard Picklist*.
 - *Show Value And Description*: Displays the assigned value and description of items in the *Standard Picklist*.
 - *Show Description And Value*: Displays the description and assigned value of items in the *Standard Picklist*.
- 9** Select an option for sorting items in the *Standard Picklist*. Click the down arrow in the field **Validation Order** and select one of the following options in the selection list:
- *Value*: Sorts items numerically based on values assigned to items in the *Standard Picklist*.
 - *Description*: Sorts items alphanumerically based on the description of items in the *Standard Picklist*.
 - *Defined*: Sorts items based on the order of items listed in the *Edit Picklist Field* dialog box.
- 10** To add items for selection in the *Standard Picklist*, follow these steps:
- a** Click the message *Click here to add new row* to add an empty row of fields for data entry (Figure 3-47, page 94).

- b** Type a value in the **Value** field to associate a code number with the picklist item. Then type a description for the picklist item in the adjacent **Description** field.
- c** Press **Enter** on the computer keyboard to add another empty row of fields for data entry.
- d** Type a value in the **Value** field and then press the **Tab** key on the computer keyboard to advance the cursor to the **Description** field. Type a description for the picklist item.
- e** Repeat **step 10 c** and **d** as needed until all picklist items have been added. When you finish, click  **Save** to close the dialog box and return to the *Field and UDF Customizations* window.

The UDF is now available for adding in a data entry grid. If needed, see *Working with Themes and Filter Groups* (page 316) for information about how to add fields in a data entry grid.

For information about how to edit a picklist refer to *Editing a Picklist (Standard or Dynamic)* (page 107).

Adding a Dynamic Picklist User Defined Field

Information in this section explains how to add and edit a *Dynamic Picklist* user defined field (UDF). The information is intended for the PCS Axis *SysAdmin* or a user with *SysAdmin* user permissions.

A *Dynamic Picklist* UDF is a dynamic drop-down list with data items that change based on a data item selected in another picklist. This dependency uses a cascading parent/child relationship. For example, selecting a data item in the drop-down list of picklist A (parent) determines which data items are available for selection in the drop-down list of picklist B (child).

Dynamic Picklists are helpful to users when entering data in a data grid or form. It allows for easier and more accurate data entry.

Building a *Dynamic Picklist* allows you to control the data entered in a field by limiting the choices to those in a pre-defined list. For example, instead of a user typing a lengthy description for sub-station locations throughout the country, you might want to build a *Dynamic Picklist* with a parent picklist named *My Sub-Station Type* that includes three associated child picklists labeled *My Sub-Station State*, *My Sub-Station County*, and finally *My Sub-Station City*. Each of these are dependent upon the other and form the *Dynamic Picklist*.

Building a *Dynamic Picklist* is a 2-part process. You begin with creating the initial parent picklist as a *Standard Picklist* and then add and map one or more child *Dynamic Picklists*. Once this process is complete, you can then add the parent and child picklists in data entry grids/forms, reports, and prompts sent to the Allegro Field Computer.



Topics in this section explain how to add and edit a *Dynamic Picklist*. They include those in the following list:

- *Adding the Initial Parent Picklist (page 98)*
- *Adding a Child Picklist and Mapping Data Items (page 102)*

As an example to demonstrate how to build a *Dynamic Picklist*, information in this section uses a 2-level *Dynamic Picklist* with *My Pipeline State* as the initial parent picklist and *My Pipeline County* as the associated child picklist. Although *Dynamic Picklists* support an unlimited number of child picklists, the example uses one for clarity purposes. The process for adding multiple child picklists is the same as adding one child picklist.

Adding the Initial Parent Picklist

Complete the following steps:

- 1 Click **Tools > Field and UDF Customizations** to open the *Field and UDF Customizations* window (Figure 3-48).
- 2 If you want to select a grid layout theme:
 - a Click  **Customize** to open the *Column Selections* dialog box (Figure 3-32, page 74).
 - b Click the down arrow in **Select a Layout Theme** and select a theme in the selection list.
 - c Click  **Save** to close the dialog box and return to the *Field and UDF Customizations* window.
- 3 Select an item in the *Properties* panel that includes the data entry grid you want to add a *Dynamic Picklist* UDF. For example, double-click **Facility Surveys > CPDM > Test Point > Test Point Inspection** to display a grid with fields and property settings related to the *Test Point Inspection* data entry grid (Figure 3-48).

NOTE: Clicking the *Properties* bar collapses the *Properties* panel allowing you to view more of the grid. Clicking the bar again expands the panel.

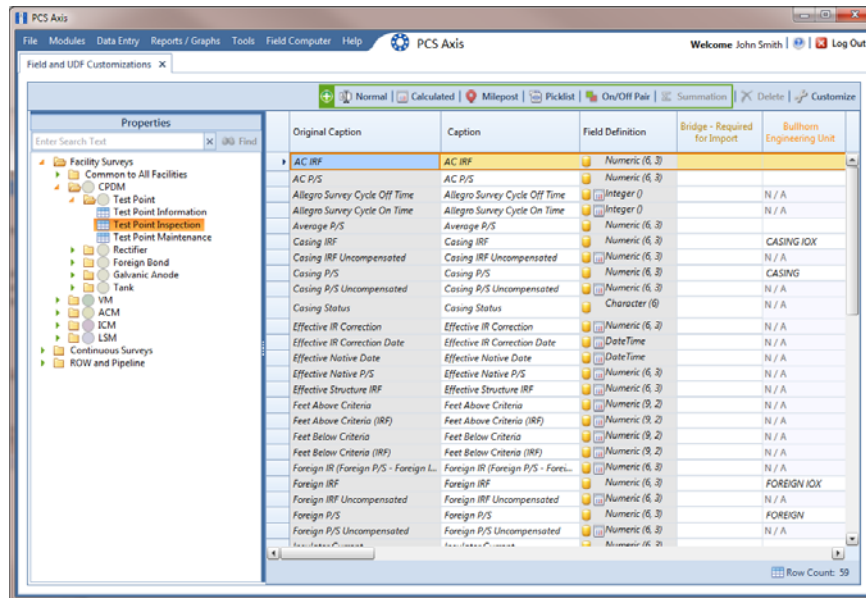




Figure 3-48. Field and UDF Customizations

- 4 Click  **Picklist** in the toolbar of the *Field and UDF Customizations* window to open the *Select Picklist Type* dialog box (Figure 3-49).
- 5 Click **Standard** and then click  **OK** to close the dialog box.

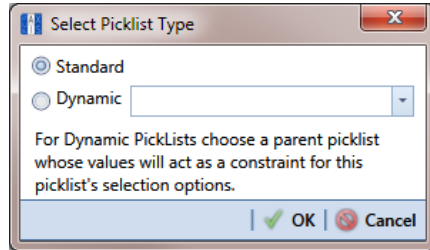


Figure 3-49. Select Picklist Type

- 6 When the dialog box *Add Picklist Field* opens, set properties for the parent picklist in the following manner (Figure 3-50):
 - a Type a unique name for the parent picklist in the **Caption** field.
 - b Indicate the number of characters to allow in the name of the parent picklist. Type a value in the **Width** field or use the up/down arrows to select a value. Clicking the up arrow increases the value; clicking the down arrow decreases the value.

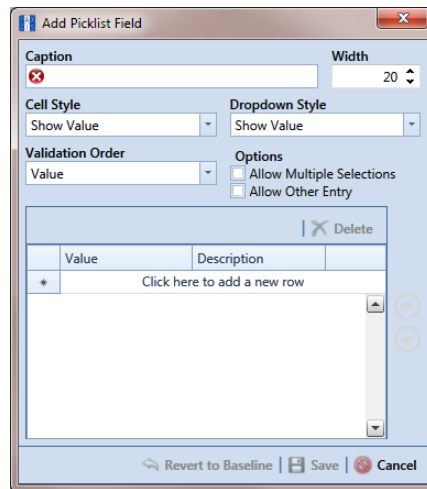


Figure 3-50. Add Picklist Field

- 7 Choose an option for displaying the parent picklist in data entry grids. Click the down arrow in the field **Cell Style** and select one of the following options in the selection list:
 - *Show Value*: Displays the assigned value of the selected item in the picklist.
 - *Show Description*: Displays the description of the selected item in the picklist.
 - *Show Value And Description*: Displays the assigned value and description of the selected item in the picklist.
 - *Show Description And Value*: Displays the description and assigned value of the selected item in the picklist.


- 8 Choose an option for displaying items in the parent picklist. Click the down arrow in the field **Dropdown Style** and select one of the following options in the selection list:
 - *Show Value*: Displays only the assigned value of items in the parent picklist.
 - *Show Description*: Displays only the description of items in the parent picklist.
 - *Show Value And Description*: Displays the assigned value and description of items in the parent picklist.
 - *Show Description And Value*: Displays the description and assigned value of items in the parent picklist.

- 9 Select an option for sorting items in the parent picklist. Click the down arrow in the field **Validation Order** and select one of the following options in the selection list:
 - *Value*: Sorts items numerically based on values assigned to items in the parent picklist.
 - *Description*: Sorts items alphanumerically based on the description of items in the parent picklist.
 - *Defined*: Sorts items based on the order of items listed in the *Customize Picklist* dialog box.

NOTE: Do not enable the options *Allow Multiple Selections* and *Allow Other Entry* for the parent picklist. These options do not apply to *Dynamic Picklists*.

- 10** Complete the following steps to add data items for selection in the drop-down list of the parent picklist.

Figure 3-51 shows an example of two data items labeled *OK-1 Oklahoma* and *TX-1 Texas* as items for selection in the parent picklist *My Pipeline States*. These data items are set up later as child picklists in the section *Adding a Child Picklist and Mapping Data Items* (page 102).

- a** Click the message **Click here to add a new row** to add an empty row of fields for data entry.
- b** Associate a code with the name of the data item (child picklist). Type one or more letters, numbers, or a combination of both in the **Value** field. Then type a description for the data item (child picklist) in the **Description** field.
- c** Press **Enter** on the computer keyboard to add another empty row of fields for data entry.
- d** Type a value in the **Value** field and then press the **Tab** key on the computer keyboard to advance the cursor to the **Description** field. Type a description for another data item (child picklist).
- e** Repeat **step 10 c** and **d** as needed until all data items (child picklists) have been added. When you finish, click  **Save** to close the dialog box and return to the *Field and UDF Customizations* window.

PCS Axis adds the parent picklist in the list of other fields in the *Field and UDF Customizations* window.

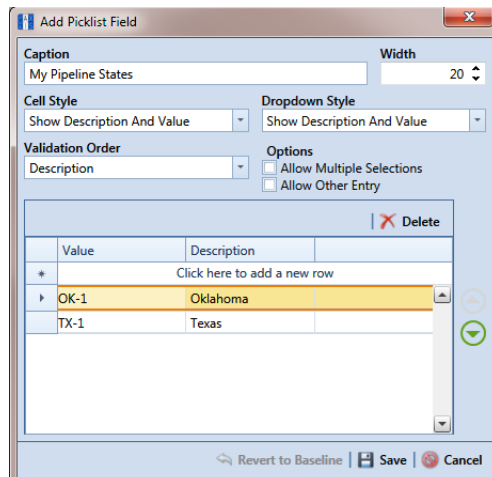


Figure 3-51. Add Picklist Field


- 11** Continue with the next section *Adding a Child Picklist and Mapping Data Items* (page 102).

Adding a Child Picklist and Mapping Data Items

Complete the following steps to add a child picklist and then map data items in the child picklist to data items in a parent picklist:

- 1 If the *Field and UDF Customizations* window is not open, click **Tools > Field and UDF Customizations** to open the window (Figure 3-48, page 98).
- 2 Select an item in the *Properties* panel that includes the initial parent picklist added earlier. (See *Adding the Initial Parent Picklist* on page 98.)

For example, double-click **Facility Surveys > CPDM > Test Point > Test Point Inspection** to display a grid with fields and property settings related to the *Test Point Inspection* data entry grid.

- 3 Click  **Picklist** in the toolbar of the *Field and UDF Customizations* window to open the *Select Picklist Type* dialog box (Figure 3-52).

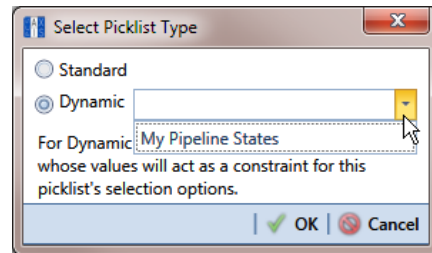



Figure 3-52. Select Picklist Type

- 4 Click **Dynamic** in the *Select Picklist Type* dialog box. Then click the down arrow in the adjacent field and select the parent picklist you want to associate with the child picklist. Click  **OK** to close the dialog box.
- 5 When the dialog box *Add Picklist Field* (Figure 3-53) opens, set properties and add data items for the child picklist in the following manner:
 - a Type a unique name for the child picklist in the **Caption** field.
 - b Indicate the number of characters to allow in the name of the child picklist. Type a value in the **Width** field or use the up/down arrows to select a value. Clicking the up arrow increases the value; clicking the down arrow decreases the value.

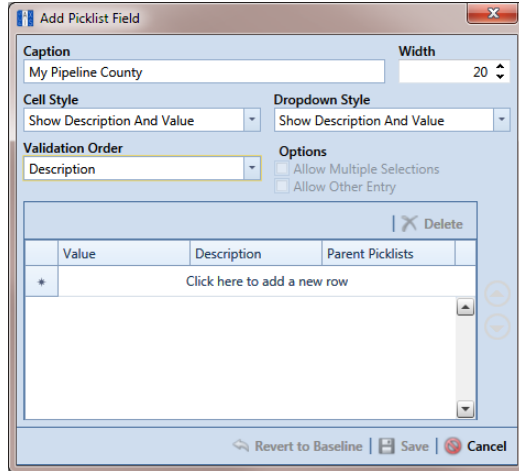


Figure 3-53. Add Picklist Field

- 6 Choose an option for displaying the child picklist in data entry grids. Click the down arrow in the field **Cell Style** and select one of the following options in the selection list:
 - *Show Value*: Displays the assigned value of the selected item in the picklist.
 - *Show Description*: Displays the description of the selected item in the picklist.
 - *Show Value And Description*: Displays the assigned value and description of the selected item in the picklist.
 - *Show Description And Value*: Displays the description and assigned value of the selected item in the picklist.

- 7 Choose an option for displaying data items in the child picklist. Click the down arrow in the field **Dropdown Style** and select one of the following options:
 - *Show Value*: Displays only the assigned value of items in the child picklist.
 - *Show Description*: Displays only the description of items in the child picklist.
 - *Show Value And Description*: Displays the assigned value and description of items in the child picklist.
 - *Show Description And Value*: Displays the description and assigned value of items in the child picklist.

- 8 Select an option for sorting data items in the child picklist. Click the down arrow in the field **Validation Order** and select one of the following options:
 - *Value*: Sorts items numerically based on values assigned to items in the child picklist.
 - *Description*: Sorts items alphanumerically based on the description of items in the child picklist.
 - *Defined*: Sorts items based on the order of items listed in the *Customize Picklist* dialog box.

NOTE: The options *Allow Multiple Selections* and *Allow Other Entry* are unavailable for selection when adding a child picklist.

- 9 Complete the following steps to add data items in the child picklist and then map these data items to data items in the associated parent picklist. Data items you add become selections in the drop-down list of the child picklist.
 - a Click the message **Click here to add a new row** to add an empty row of fields for data entry.
 - b Associate a code with the name of the data item. Type one or more letters, numbers, or a combination of both in the **Value** field. Then type a description for the data item in the **Description** field.

The example below shows a data item labeled *TX-1 Travis* as an item for selection in the child picklist labeled *My Pipeline County* (Figure 3-54).

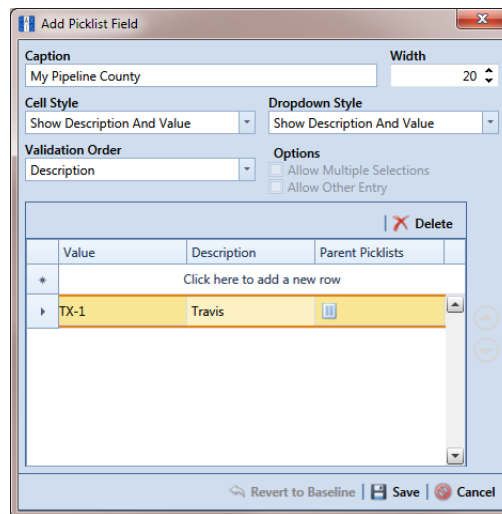



Figure 3-54. Add Picklist Field

- c Click the  parent picklist button to open the dialog box labeled *Select Parent Picklist Values* (Figure 3-55).

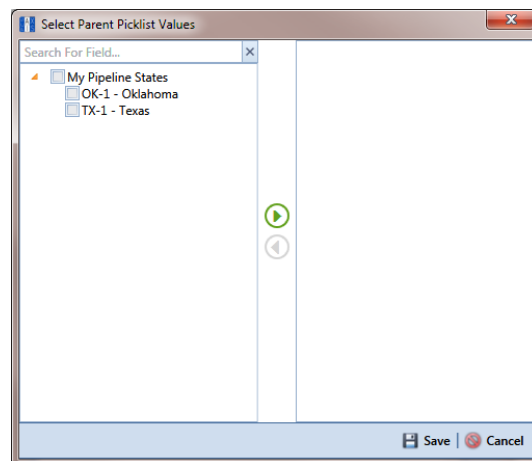





Figure 3-55. Select Parent Picklist Values

- d Map a data item in the parent picklist to the currently selected data item in the child picklist. A list of data items related to the parent picklist display in the left pane of the dialog box (Figure 3-56).

- Double-click a data item in the left pane of the dialog box to move the data item to the right pane.

You can also map data items by clicking a data item's check box and then clicking the  right arrow button. A  check mark beside a data item indicates that data item is mapped.

If you want to unmap a data item, double-click the data item in the right pane of the dialog box to move it back to the left pane. Or, select the data item in the right pane and then click the  left arrow button.

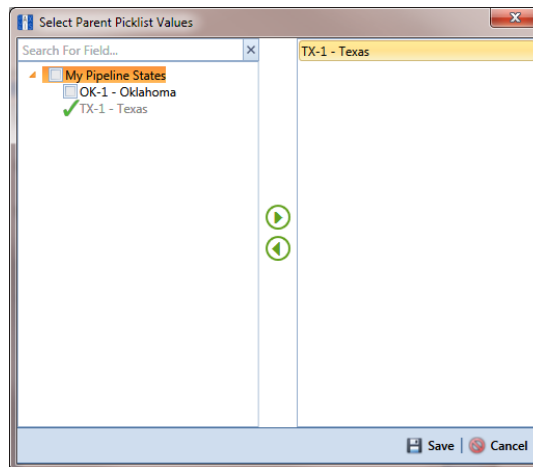


Figure 3-56. Select Parent Picklist Values

- e Click  **Save** to save settings and close the dialog box.

10 To add another data item in the child picklist, follow these steps (Figure 3-57):

- a Press **Enter** on the computer keyboard to add another empty row of fields for data entry in the dialog box *Add Picklist Field*.
- b Associate a code with the name of the data item. Type one or more letters, numbers, or a combination of both in the **Value** field. Then type a description for the data item in the **Description** field.

The example below shows a data item labeled *OK-2 Marshall* as data item for selection in the child picklist labeled *My Pipeline County* (Figure 3-54).

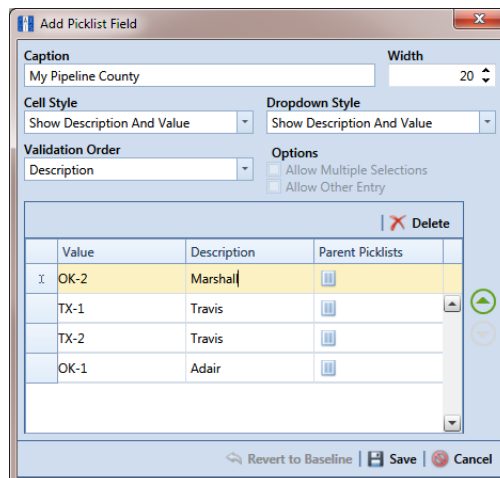





Figure 3-57. Add Picklist Field

- c Click the  parent picklist button to open the dialog box labeled *Select Parent Picklist Values* (Figure 3-55, page 105).
- d Map a data item in the parent picklist to the currently selected data item in the child picklist (Figure 3-56, page 106). Click  **Save** when you finish to save settings and close the dialog box.
- e To add additional data items in the child picklist, repeat **step 10 a** through **d**. When you finish adding and mapping all data items in the child picklist, click  **Save** to close the dialog box and return to the *Field and UDF Customizations* window.

The process for adding a *Dynamic Picklist* UDF is now complete. You can add the *Dynamic Picklist* (parent and child picklist fields) in the layout theme of a data grid, form, or report, as well as in a prompt theme for prompts sent to the Allegro Field Computer. Refer to *Working with Themes and Filter Groups* (page 316) for information. For information about editing a picklist, refer to *Editing a Picklist (Standard or Dynamic)* on page 107.

Editing a Picklist (Standard or Dynamic)

Information in this section explains how to edit or delete a *Standard* or *Dynamic Picklist* user defined field (UDF) in *Field and UDF Customizations*.

Complete the following steps:

- 1 If the *Field and UDF Customizations* window is not open, click **Tools > Field and UDF Customizations** to open the window (Figure 3-48, page 98).

- 2 Select an item in the *Properties* panel that includes the picklist you want to edit or delete.

For example, double-click **Facility Surveys > CPDM > Test Point > Test Point Inspection** to display a grid with fields and property settings related to the *Test Point Inspection* data entry grid.

- 3 Select the picklist UDF you want to work with in the grid of the *Field and UDF Customizations* window.
- 4 If you want to delete the picklist UDF, click **Delete** in the toolbar of the *Field and UDF Customizations* window. Then click **Yes** when the *Confirm Delete* message displays.
- 5 If you want to add or remove data items in a picklist UDF, navigate to the grid column labeled *Grids - Pick List Definition* and click the edit icon to open the *Edit Picklist Field* dialog box (Figure 3-58).

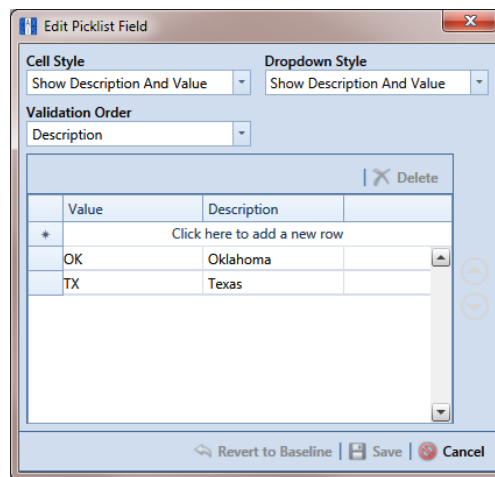







Figure 3-58. Edit Picklist Field

- 6 To delete a data item in the picklist UDF, select the data item and then click **Delete**. When a *Delete* message displays, click **Yes** to delete the data item or **No** to cancel the operation.
- 7 To add a data item in the picklist UDF, follow these steps:
 - a Click the message **Click here to add a new row** to add an empty row of fields for data entry.
 - b Associate a code with the name of the data item. Type one or more letters, numbers, or a combination of both in the **Value** field. Then type a description for the data item in the **Description** field.

- c If you are adding a data item in a child *Dynamic Picklist*, complete the following steps:
- 1) Click the  parent picklist button to open the dialog box *Select Parent Picklist Values* (Figure 3-55, page 105).
 - 2) Map a data item in the associated parent picklist to the new data item in the child picklist in the following manner. A list of data items related to the parent picklist display in the left pane of the dialog box (Figure 3-56, page 106).
 - Double-click a data item in the left pane of the dialog box to move the data item to the right pane.

You can also map data items by clicking a data item's check box and then clicking the  right arrow button. A  check mark beside a data item indicates that data item is mapped.

If you want to unmap a data item, double-click the data item in the right pane of the dialog box to move it back to the left pane. Or, select the data item in the right pane and then click the .
 - d To add another data item, press **Enter** on the computer keyboard and then repeat **step 7 a** through **c**.
- 8 Click  **Save** to save settings and close the dialog box.

Adding an On/Off Pair User Defined Field



PCS Axis provides several pairs of installed on/off fields for recording inspection readings in a data grid or form, such as *AC P/S* and *AC IRF*; *Casing P/S* and *Casing IRF*; *Foreign P/S* and *Foreign IRF*; *Insulator P/S* and *Insulator IRF*; and *Structure P/S* and *Structure IRF*.

If PCS Axis does not provide an installed pair of on/off fields you can use to record inspection readings for a facility or continuous survey, create a custom *On/Off Pair* user defined field (UDF). Information in the following procedure explains how to use *Field and UDF Customizations* to add an *On/Off Pair* UDF.

NOTE: Editing an *On/Off Pair* UDF is not currently supported. This feature will be available in a future release of PCS Axis to allow changing or deleting an *On/Off Pair* UDF.

The current version of PCS Axis does not support editing an *On/Off Pair* user defined field.

Complete the following steps:

- 1 Click **Tools** > **Field and UDF Customizations** to open the *Field and UDF Customizations* window (Figure 3-29, page 72).
- 2 If you want to select a grid layout theme, follow these steps:
 - a Click  **Customize** to open the *Column Selections* dialog box (Figure 3-32, page 74).
 - b Click the down arrow in **Select a Layout Theme** and select a theme in the selection list.
 - c Click  **Save** to close the dialog box and return to the *Field and UDF Customizations* window.
- 3 Double-click **Facility Surveys** or **Continuous Surveys** in the *Properties* panel to open the selected folder. Then select the *Inspection* data grid you want to set up an *On/Off Pair* UDF.

For example, to set up an *On/Off Pair* UDF for the *Test Point Inspection* data grid, double-click **Facility Surveys** > **CPDM** > **Test Point Inspection** (Figure 3-59, page 111). Likewise, to set up an *On/Off Pair* UDF for the *Edit ISM Data* grid, double-click **Continuous Surveys** > **CIS Surveys**. Then click **Surveys**.

NOTE: Clicking the *Properties* bar collapses the *Properties* panel allowing you to view more of the grid. Clicking the bar again expands the panel.

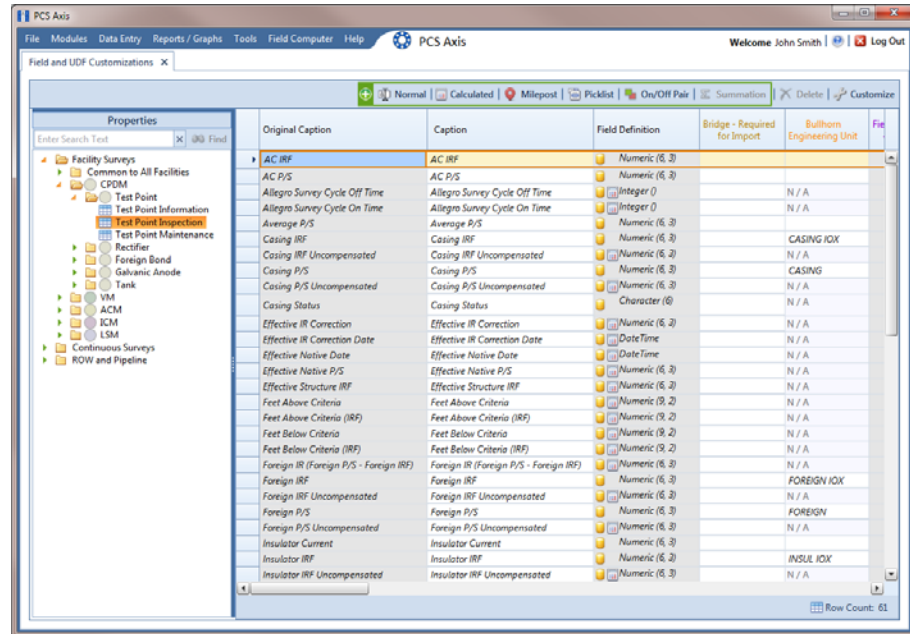



Figure 3-59. Field and UDF Customizations

- 4 Click  **On/Off Pair** in the toolbar to open the *Add On/Off Pair Fields* dialog box (Figure 3-60).

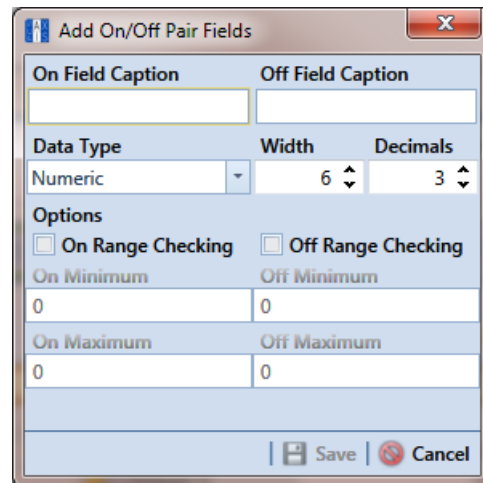


Figure 3-60. Add On/Off Pair Fields

- 5 Type a unique name in the fields **On Field Caption** and **Off Field Caption**.
- 6 Click the down arrow in **Data Type** and select **Numeric** or **Integer**.

A *Numeric* data type is a positive or negative value with decimal precision, such as 1.123 and -1.123. An *Integer* data type is a positive or negative whole number, such as 5 and -5.

- 7 If you selected the *Numeric* data type earlier in **step 6** (page 111), set the length of the field using the **Width** and **Decimal** fields (Figure 3-60, page 111).

Clicking the up arrow in *Width* or *Decimal* fields increases the value; clicking the down arrow decreases the value.

- 8 If you want PCS Axis to apply *Range Checking* to the *On* reading in the *On/Off Pair*, complete the following steps.

NOTE: Range checking is the acceptable range of values allowed for data entry in an inspection field.

Setting up range checking allows PCS Axis to alert the user when an incorrect value has been entered in an inspection field. For example, if the acceptable range of values is in a range of -10 to 0 and the user enters a value that is outside this range, a warning displays allowing the user to correct the invalid entry. Data entry errors are less likely to occur when using *Range Checking*. For more information, see *Setting Up Range Checking for Inspection Fields* (page 77).

- a Click the check box **On Range Checking**.
 - b Type a minimum range value in the **On Minimum** field.
 - c Type a maximum range value in the **On Maximum** field.
- 9 If you want PCS Axis to apply *Range Checking* to the *Off* reading in the *On/Off Pair*, complete the following steps:
 - a Click the check box **Off Range Checking**.
 - b Type a minimum range value in the **Off Minimum** field.
 - c Type a maximum range value in the **Off Maximum** field.
 - 10 The *On/Off Pair* UDF is now available for adding in a data entry grid. If needed, see *Working with Themes and Filter Groups* (page 316) for information about how to add fields in a data grid or form.

Working with a Summation User Defined Field

A *Summation* user defined field (UDF) is a *Permanent Information* field available for use in a data grid, form, report, or as a filter in scheduling. It is a simple yet powerful UDF that provides useful information when analyzing pipeline data.

The function of a *Summation* UDF is to aggregate data for a target field using one of the following operators: *Average*, *Count*, *Latest*, *Maximum*, *Minimum*, and *Sum*. As an option, you can also include one or more filters that run either before or after the data aggregation.



EXAMPLE: Set up a *Summation* UDF using *Structure P/S* as the target field and *Average* as the operator. Include a *Calculated* UDF as a filter in the *Summation* UDF that is set up to find the variance between the actual and average *Structure P/S* reading for test points. The expression for the *Calculated* UDF is **ABS([My Summation Name] - [Structure P/S])**. Add the *Summation* and *Calculated* UDFs in the *Test Point Inspection* data grid to view the results of the data aggregation. For more information about working with a *Calculated* UDF, refer to *Adding a Calculated User Defined Field* (page 83).

Information in this section explains how to work with a *Summation* user defined field. Topics include those in the following list:

- *Adding a Summation User Defined Field*
- *Editing a Summation User Defined Field* (page 118)

Adding a Summation User Defined Field

Complete the following steps to add a *Summation* UDF:

- 1** Click **Tools** > **Field and UDF Customizations** to open the *Field and UDF Customizations* window (Figure 3-29, page 72).
- 2** If you want to select a grid layout theme, follow these steps:
 - a** Click  **Customize** to open the *Column Selections* dialog box (Figure 3-32, page 74).
 - b** Click the down arrow in **Select a Layout Theme** and select a theme in the selection list.
 - c** Click  **Save** to close the dialog box and return to the *Field and UDF Customizations* window.

- 3 Double-click **Facility Surveys > Common to All Facilities** in the *Properties* panel. Then click **Permanent Information** to display a grid with fields and property settings common to all facilities (Figure 3-61).

NOTE: Clicking the *Properties* bar collapses the *Properties* panel allowing you to view more of the grid. Clicking the bar again expands the panel.

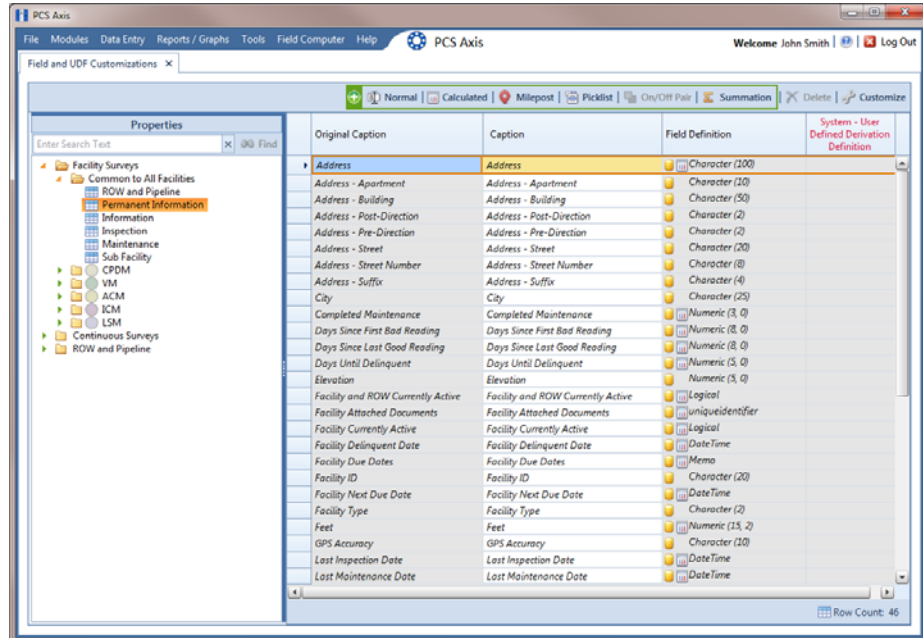



Figure 3-61. Field and UDF Customizations

- 4 Click  **Summation** in the toolbar to open the *Add Summation Field* dialog box (Figure 3-62, page 115).

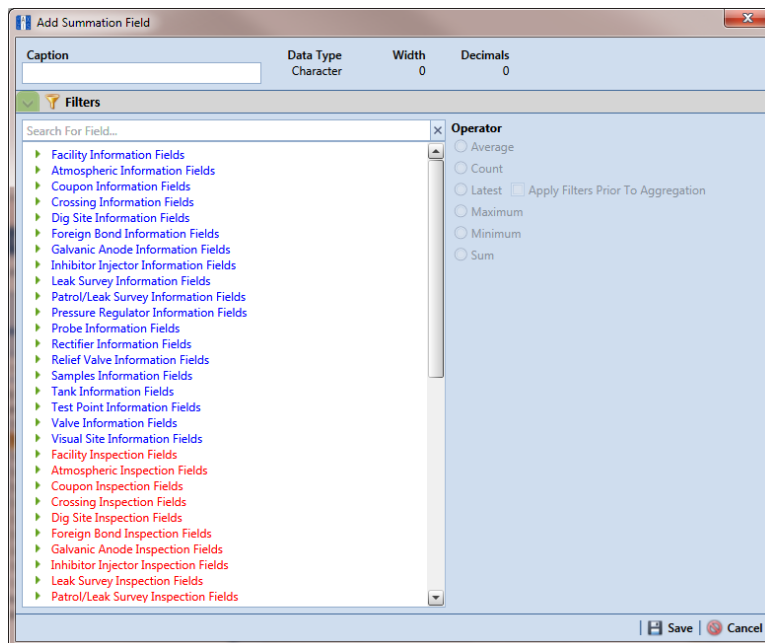



Figure 3-62. Add Summation Field

- 5 Type a unique name for the *Summation* UDF in the **Caption** field.
- 6 Select a target field in the list of fields in the selection panel. For example, click the ► expand arrow for *Test Point Inspection Fields*, then double-click *Structure P/S*. A ✓ green check mark indicates a selection (Figure 3-63, page 116).
- 7 Select an **Operator** option. For example, *Average* is selected in the following figure (Figure 3-63, page 116).

The *Summation* expression displays in the top right-hand corner of the dialog box, such as *Average: Structure P/S* shown in the following example.

- 8 Click  **Save** to save settings.
- 9 If you want to add an optional AND filter group to the *Summation* UDF, continue with **step 10** (page 116). To add an optional OR filter group, continue with **step 11** (page 117). Otherwise, continue with **step 12** (page 118) to close the *Add Summation Field* dialog box.

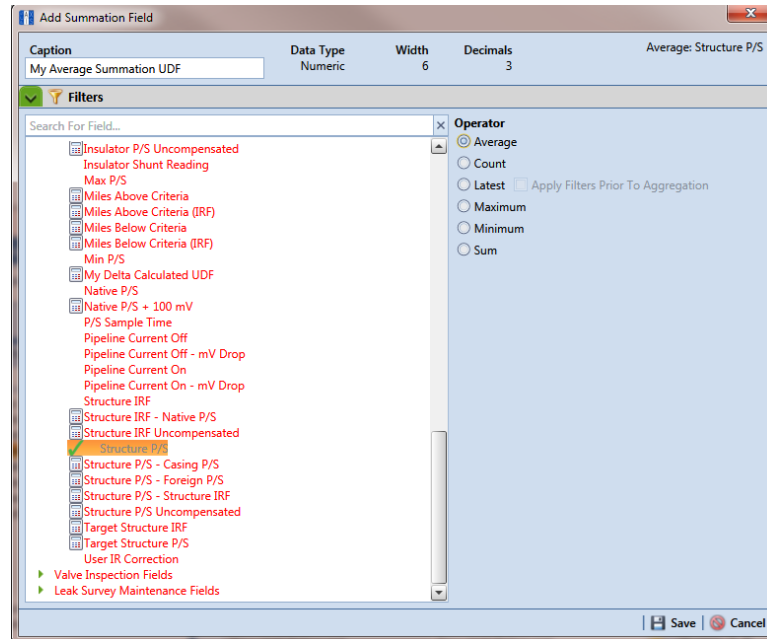






Figure 3-63. Summation Target Field

- 10** If you want to include one or more optional AND filters in the *Summation* UDF, complete the following steps. Data results produce a subset of records that meet *all* filter conditions included in the filter group.
 - a** Click the  **Filters** button to open the *Filters* panel.
 - b** Click  **New 'And' Group** to open the filter properties group box (Figure 3-64, page 117).
 - c** Type a name for the filter group in the field **Filter Group Caption**.
 - d** Use filter selection fields to set up filter criteria. Select a PCS Axis field, operator, and one or more filter conditions.
 - e** If you want to set up additional filter criteria, click  **Add** to display an additional set of filter selection fields. Select a PCS Axis field, operator, and one or more filter conditions to set up filter criteria.
 - f** Repeat **step 10 b** through **e** as needed. When you finish, click the  **Filters** button to close the *Filters* panel. Then continue with **step 12** (page 118).

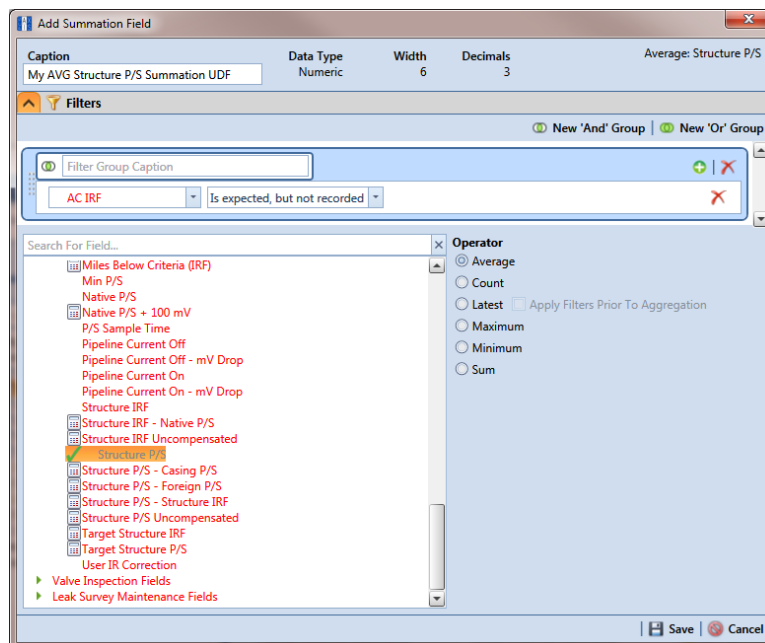






Figure 3-64. New 'And' Filter

- 11** If you want to include one or more optional OR filters in the *Summation* UDF, complete the following steps. Data results produce a subset of records that meet *any* filter condition(s) included in the filter group.
 - a** Click the  **Filters** button to open the *Filters* panel.
 - b** Click  **New 'Or' Group** to open the filter properties group box (Figure 3-65).
 - c** Type a name for the filter group in the field **Include records that match any of these conditions**.
 - d** Use filter selection fields to set up filter criteria. Select a PCS Axis field, operator, and one or more filter conditions.
 - e** If you want to set up additional filter criteria, click  **Add** to display an additional set of filter selection fields. Select a PCS Axis field, operator, and one or more filter conditions to set up filter criteria.
 - f** Repeat **step 11 b** through **e** as needed. When you finish, click the  **Filters** button to close the *Filters* panel. Then continue with **step 12**.

- Click  **Save** and then the close button  to close the *Add Summation Field* dialog box.

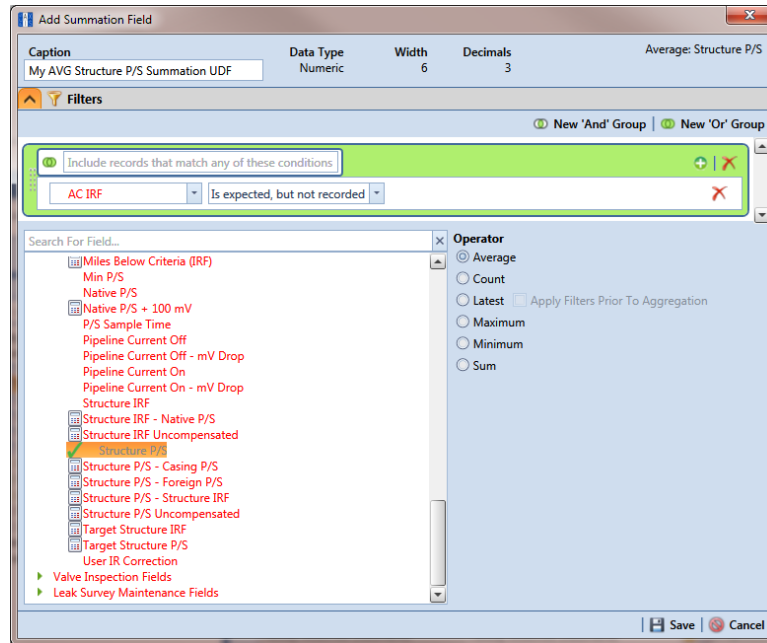


Figure 3-65. New 'Or' Filter

Editing a Summation User Defined Field

When you want to edit a *Summation* UDF previously added in PCS Axis, follow these steps:


- Click **Tools > Field and UDF Customizations** to open the *Field and UDF Customizations* window (Figure 3-29, page 72).
- Double-click **Facility Surveys > Common to All Facilities** in the *Properties* panel. Then click **Permanent Information** to display a grid with fields and property settings common to all facilities (Figure 3-61, page 114).


NOTE: Clicking the *Properties* bar collapses the *Properties* panel allowing you to view more of the grid. Clicking the bar again expands the panel.

- Select the *Summation* UDF you want to edit in the grid of the *Field and UDF Customizations* window. Then navigate to the grid column labeled **System-User Defined Summation Definition** and click the ... ellipsis button (Figure 3-66).

Alt	System - Default Uppercase	System - Default Minimum Range	System - Default Maximum Range	System - Range Checking	System - Default Value	System - Unit Of Measure	System - Calculation Expression	System - Filter Operator	System - Automatically Add As Filter	System - User Defined Summation Definition
	N/A	N/A	N/A	No	N/A		N/A	N/A	No	
	No	N/A	N/A	N/A			N/A	N/A	No	
	N/A	N/A	N/A	N/A	N/A		N/A	N/A	No	
	N/A	N/A	N/A	N/A	N/A		N/A	N/A	No	
	N/A	N/A	N/A	N/A	N/A		N/A	N/A	No	
	N/A	-90.00000000	90.00000000	Yes			N/A	N/A	No	
	No	N/A	N/A	N/A			N/A	N/A	No	
	No	N/A	N/A	N/A			N/A	N/A	No	
	No	N/A	N/A	N/A			N/A	N/A	No	
	N/A	-180.00000000	180.00000000	Yes			N/A	N/A	No	
	N/A	N/A	N/A	No	N/A		N/A	N/A	No	
	N/A	N/A	N/A	No	N/A		N/A	N/A	No	Average: Struct...
	N/A	N/A	N/A	No	N/A		N/A	N/A	No	
	N/A	N/A	N/A	No	N/A		N/A	N/A	No	
	No	N/A	N/A	N/A	N/A		N/A	N/A	No	
	N/A	N/A	N/A	No	N/A		N/A	N/A	No	
	N/A	N/A	N/A	No	N/A		N/A	N/A	No	
	N/A	N/A	N/A	N/A	N/A		N/A	N/A	No	
	No	N/A	N/A	N/A			N/A	N/A	No	
	No	N/A	N/A	N/A	N/A		N/A	N/A	No	
	Yes	N/A	N/A	N/A			N/A	N/A	No	
	No	N/A	N/A	N/A			N/A	N/A	No	

Figure 3-66. System-User Defined Derivation Definition

- 4 When the dialog box *Edit Summation Field* opens, change UDF settings as needed, such as selecting a different *target field* in the list of fields in the selection panel or a different *Operator* option (Figure 3-67).
- 5 If the *Summation* UDF includes filter settings you want to change, click the  **Filters** button to open the *Filters* panel and make changes as needed. Use filter selection fields to set up filter criteria. Select a PCS Axis field, operator, and one or more filter conditions.

- Click  **Save** to save settings and return to the *Field and UDF Customizations* window.

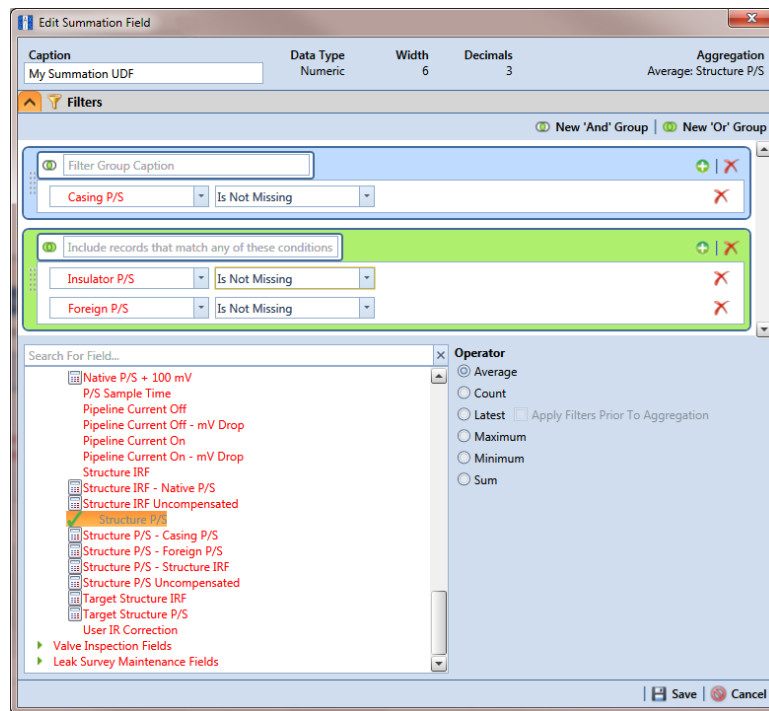


Figure 3-67. Edit Summation

Using an Application Scheme

An application scheme is a group of named property settings that change the overall appearance of the PCS Axis interface. Currently PCS Axis only provides a default application scheme which cannot be customized (*Tools > Application Schemes*). Future software enhancements will allow you to create application schemes for customizing the PCS Axis interface, such as choosing a different color scheme.

Choosing a Printer for PCS Axis

PCS Axis uses your computer's default printer to print reports and graphs. If a color printer is available, you may want to print graphs on a color printer. If you need to add or set up a local or network printer, contact your company's network administrator or IT department for assistance.

Working with Pipeline Series

Information in this section explains how to work with *Pipeline Series*. Topics include those in the following list:

- *About Pipeline Series*
- *Adding and Applying Pipeline Series* (page 122)

About Pipeline Series

When a discontinuity occurs in a pipeline, use *Pipeline Series* to adjust facility numbers on the pipeline. A discontinuity typically occurs when an extension is added to the pipeline; the pipeline is re-routed; or when a company designates two pipelines as parallel lines. Instead of physically renumbering pipeline location numbers on-site, *Pipeline Series* allows you to shift pipeline numbering in PCS Axis using *Relative Milepost* locations.

A *Pipeline Series* is an ordered list of milepost locations with a starting milepost and an ending milepost that serve as connectors to preceding and subsequent *Pipeline Series*. All *Pipeline Series* snapped end to end map the pipeline. Multiple connected *Pipeline Series* form a *Pipeline Series* chain.

Additional characteristics of *Pipeline Series* include those in the following list:

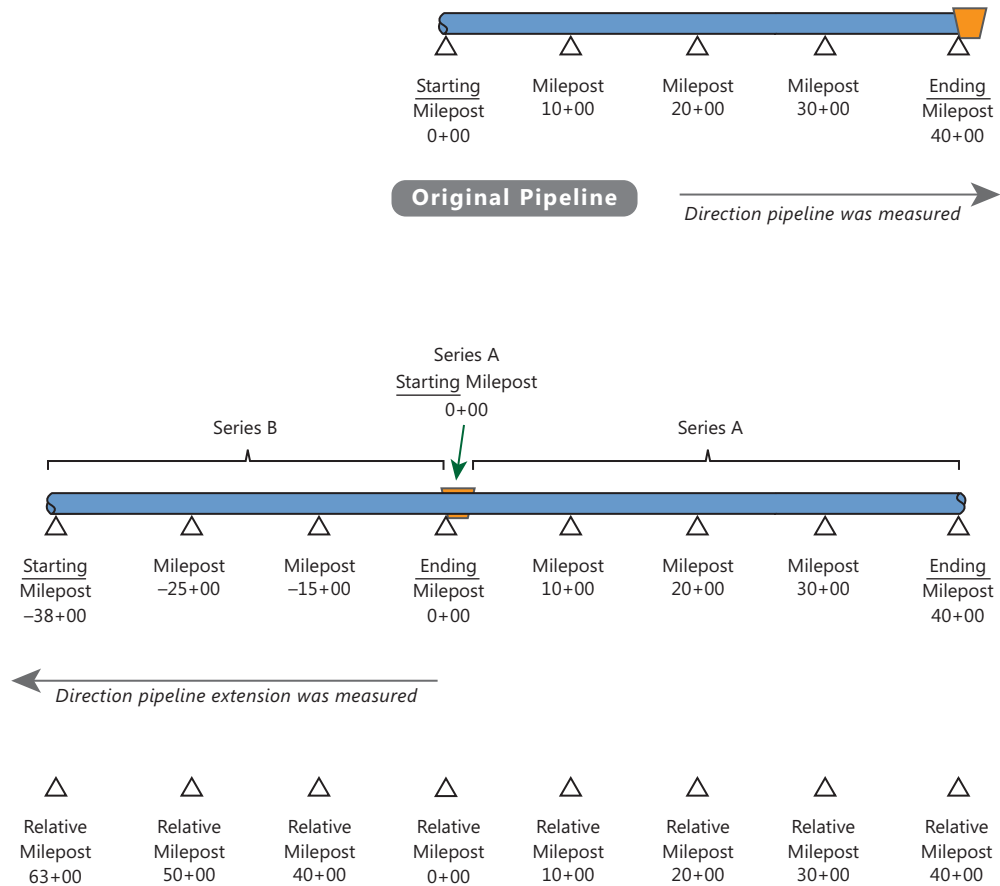
- All facilities on the pipeline must be assigned to a *Pipeline Series* when a *Pipeline Series* is used with a segment of the same pipeline. An entire pipeline can be made up of several *Pipeline Series*.

The starting milepost of a *Pipeline Series* corresponds to the starting milepost for a segment of the pipeline. The ending milepost of the *Pipeline Series* corresponds to the ending milepost for the same segment of pipeline. Each *Pipeline Series* joins together, end-to-end, to make up the entire pipeline. *Pipeline Series* defines each segment and is then used to calculate the *Relative Milepost*.

- A pipeline with several different numbering schemes can be converted into a sequential line using a *Pipeline Series* for each segment of the pipeline. This allows you to graph the entire distance of the pipeline using the *Relative Milepost*.
- *Pipeline Series* supports negative milepost locations. This helps identify milepost locations that are in an opposite direction of other milepost locations in a series.
- Red facility records in a data entry grid identify milepost numbers that require a *Pipeline Series* be applied to the record.

Adding and Applying Pipeline Series



The procedure in this section describes how to add a *Pipeline Series* definition and then apply it to effected milepost numbers in a facility data entry grid. The example in the procedure adds a pipeline extension with negative milepost locations as shown in the following example (Figure 3-68).



NOTE: In the example above, PCS Axis calculates relative milepost 40+00 as the end of Series A and the beginning of Series B.

Figure 3-68. Example of an Extended Pipeline with Mileposts Set in Reverse Order

To add and apply a *Pipeline Series*, follow these steps:

- 1 Click the **Select ROWs** button  to open the *Select ROWs* window (Figure 3-69). Select one or more pipeline segments with facilities you want to work with, then click  **Save** to close the window.

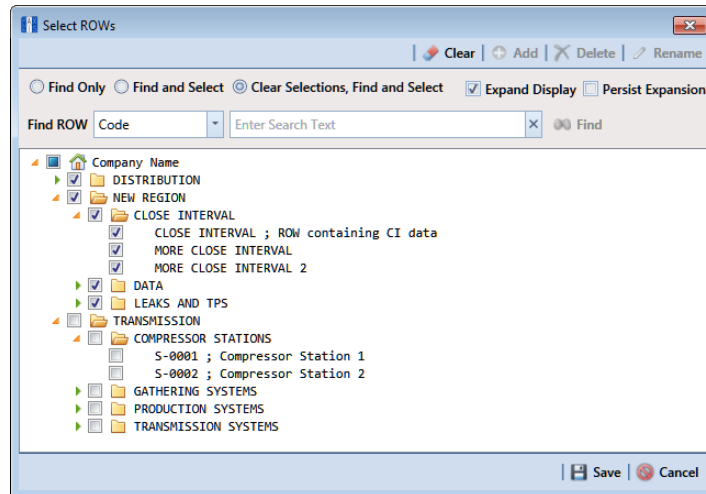


Figure 3-69. Select ROWs

- 2 Select the PCS Axis module you want to work with, such as the CPDM module. Click **Modules > Cathodic Protection Data Manager (CPDM)**.
- 3 Click **Data Entry > Pipeline Series** to open the *Pipeline Series* window (Figure 3-70).

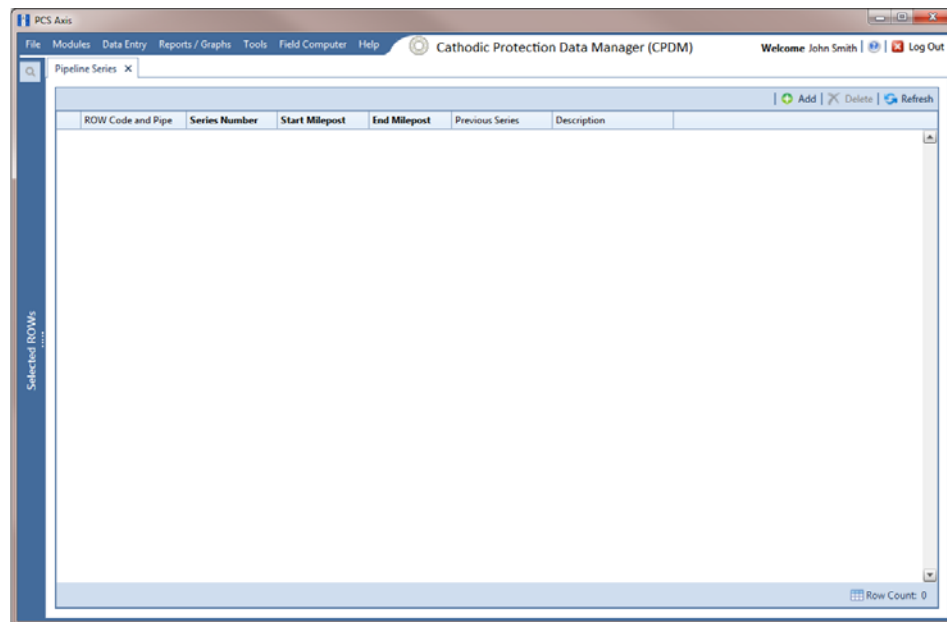


Figure 3-70. Pipeline Series

- 4 Click **+** **Add** and then select the *ROW Code* and *Pipe* you want to work with in the dialog box that opens (Figure 3-71).

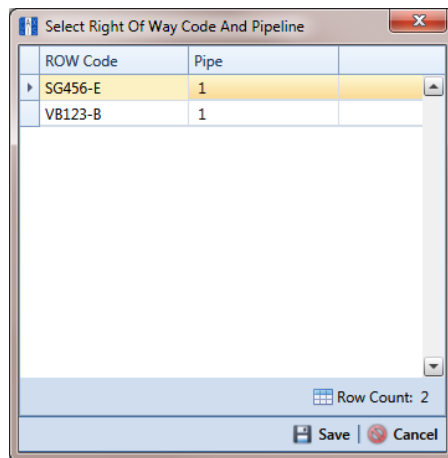


Figure 3-71. Select Right Of Way Code And Pipeline

- 5 Click **Save** to display required field(s) for data entry. Required fields are identified with the **✖** icon, such as *Series Number*, *Start Milepost*, and *End Milepost* in the next figure (Figure 3-72).
- 6 Type a unique identifier for the *Pipeline Series* in the **Series Number** field. This field accepts up to 10 alphanumeric characters including spaces and special characters, such as a hyphen (-) or pound sign (#).
- 7 Set the *Pipeline Series* start and end milepost numbers. Type the starting milepost in the **Start Milepost** field and the ending milepost in the **End Milepost** field.

The starting milepost of the *Pipeline Series* corresponds to the starting milepost for a segment of the pipeline. The ending milepost of the *Pipeline Series* corresponds to the ending milepost for the same segment of pipeline.

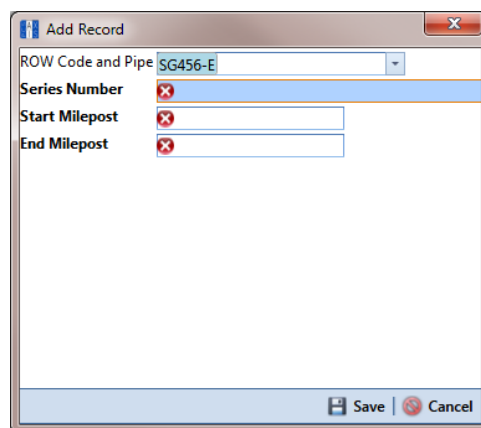



Figure 3-72. Add Record

- 8 Click  **Save** to close the dialog box and add the record in the *Pipeline Series* grid.
- 9 If you want to add a description or other type of information for the Pipeline Series, type the information in the **Description** field. This field supports up to 30 alphanumeric characters.
- 10 If you want to add another *Series*, complete the following steps to create a pipeline *Series* chain (Figure 3-73):
 - a Repeat **step 4** through **step 9** to add another *Series*.
 - b Click the down arrow in the **Previous Series** field and select the *Series* that precedes the currently selected series.
 - c Repeat **step 10** to add additional *Series* in the chain as needed.

NOTE: PCS Axis uses the preceding *Series* of each *Series* in a chain to calculate the *Relative Milepost*. All *Series* in a chain except the first *Series* require that you identify the *Previous Series* (Figure 3-73).

The following example illustrates a pipeline *Series* chain with two *Series* in the chain (Figure 3-73). *Series A* was added for the original pipeline segment with a start and end milepost of 0+00 and 40+00 respectively. *Series B* was added for a pipeline extension. Because the mileposts are in reverse order in *Series B*, the *Pipeline Series* is set up with a start and end milepost of -38+00 and 0+00 respectively. Also see Figure 3-71 (page 124) for an illustration of a pipeline *Series* chain with calculated *Relative Mileposts*.

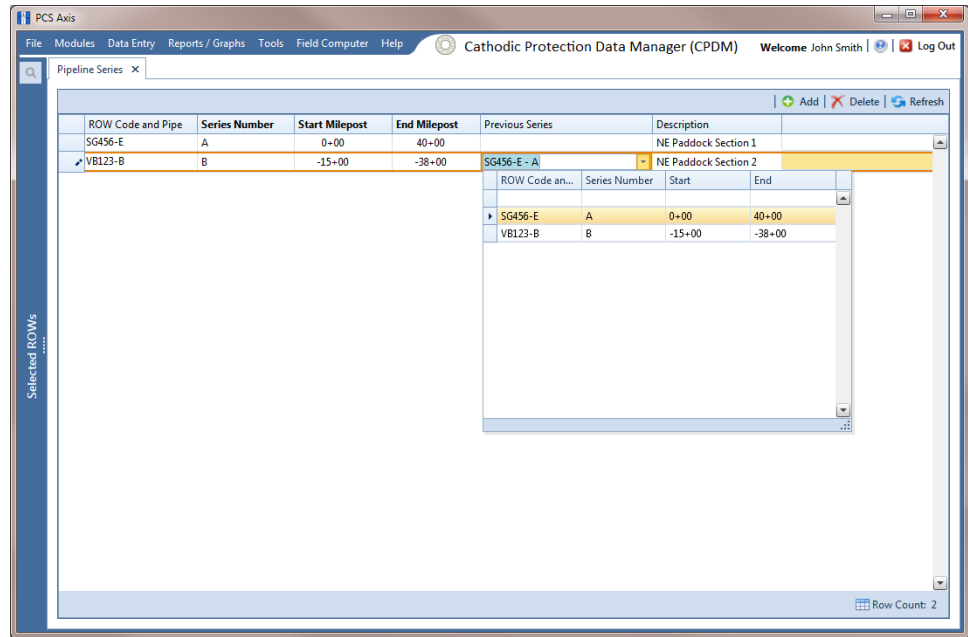


Figure 3-73. Pipeline Series

- 11 Click the close button to close the *Pipeline Series* window.

When a message similar to the following example displays, click **OK** to apply pipeline *Series* to effected mileposts (Figure 3-74).

The following message displays to notify you of the facilities that need to have pipeline *Series* applied in the facility data entry grid. Red facility records in the data entry grid identify milepost numbers that require a pipeline *Series* applied to the record.

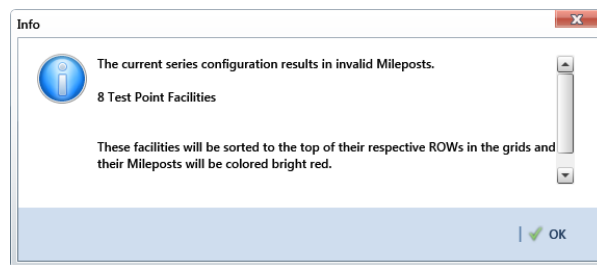


Figure 3-74. Pipeline Series Message

The remaining steps explain how to apply pipeline *Series* to effected mileposts in a data entry grid.

- 12 Open the data entry grid with the mileposts you want to apply pipeline *Series*, such as the *Test Point Inspection* data grid shown in the next example (Figure 3-75, page 127).

NOTE: Red facility records in the data grid identify milepost numbers that require a *Pipeline Series* applied to the record.

- 13 Select the **Series** field for a facility record in the grid to display a drop-down arrow. Click the arrow and select a pipeline *Series* in the selection list. Repeat this step for each effected facility record in the data grid.

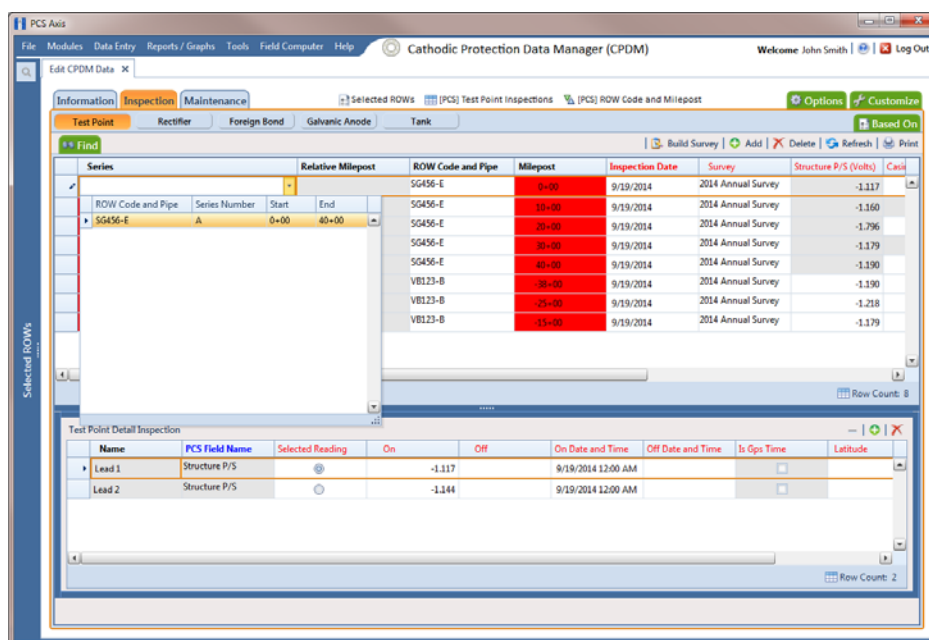


Figure 3-75. Pipeline Series

- 14 Click **Refresh** to update data in the grid.

PCS Axis automatically calculates the *Relative Milepost* for each facility record assigned a pipeline *Series* in the data entry grid. In the following example, PCS Axis calculates relative milepost 40+00 as the end of *Series A* and the beginning of *Series B*. (Figure 3-76).

Series	Relative Milepost	ROW Code and Pipe	Milepost	Inspection Date	Survey	Structure P/S (Volts)	Casing P/S (Volts)	Technician
A	0+00	SG456-E	0+00	9/19/2014	2014 Annual Survey	-1.117	-0.760	jsmith
A	10+00	SG456-E	10+00	9/19/2014	2014 Annual Survey	-1.160		jsmith
A	20+00	SG456-E	20+00	9/19/2014	2014 Annual Survey	-1.796	-0.773	jsmith
A	30+00	SG456-E	30+00	9/19/2014	2014 Annual Survey	-1.179		jsmith
A	40+00	SG456-E	40+00	9/19/2014	2014 Annual Survey	-1.190	-0.685	jsmith
B	63+00	VB123-B	-38+00	9/19/2014	2014 Annual Survey	-1.190		jsmith
B	50+00	VB123-B	-25+00	9/19/2014	2014 Annual Survey	-1.218		jsmith
B	40+00	VB123-B	-15+00	9/19/2014	2014 Annual Survey	-1.179		jsmith

Name	PCS Field Name	Selected Reading	On	Off	On Date and Time	Off Date and Time	Is Gps Time	Latitude
Lead 1	Structure P/S			-1.117	9/19/2014 12:00 AM			
Lead 2	Structure P/S			-1.144	9/19/2014 12:00 AM			

Figure 3-76. Relative Milepost

Working with a User Defined Module

If you need to manage compliance data for facility types not included in PCS Axis, use Custom Module Management (CMM) to add a user defined module. For example, adding a user defined module with user defined facility types allows you to manage compliance data for major components associated with a cathodic protection electrical system or a gas odorization system.

IMPORTANT: PCS Axis supports up to ten (10) user defined modules with each module supporting up to ten (10) user defined facility types.

CMM is an optional add-on feature that requires an activation key for operation. If your company has purchased the CMM module, use the information in this section to set up a user defined module with user defined facility types. Topics in this section include those in the following list:

- *Understanding a User Defined Module* (page 129)
- *Adding a User Defined Module* (page 131)
- *Deleting a User Defined Module* (page 135)

Understanding a User Defined Module

A user defined module (UDM) provides the same features and functions as a system installed module. It is available for use throughout PCS Axis, such as the *Modules*, *Data Entry*, and *Reports/Graphs* menus; *Field and UDF Customizations*, *Bridge*, and *Email Notification*.

Likewise, the following features provided with a system installed module are also provided with a user defined module: *Information*, *Inspection*, and *Maintenance* data entry grids; layout, sorting, and filter themes; reports and graphs; and optional routes, schedules, and scheduling types for user defined facility types.

The process for adding a user defined module includes the following tasks (Figure 3-77):

- Add a user defined module with user defined facility type(s) in Custom Module Management (*Modules > Custom Module Management*).
- Add one or more user defined fields (UDFs) as needed to be used throughout the system, such as data entry grids, reports, and graphs (*Tools > Field and UDF Customizations*).
- Set up data entry grids (*Data Entry > Edit <module> Data*); reports and graphs (*Reports/Graphs*); scheduling (*Data Entry > Edit Schedule Settings* and *Define Schedules*); and routes (*Data Entry > Define Routes*).

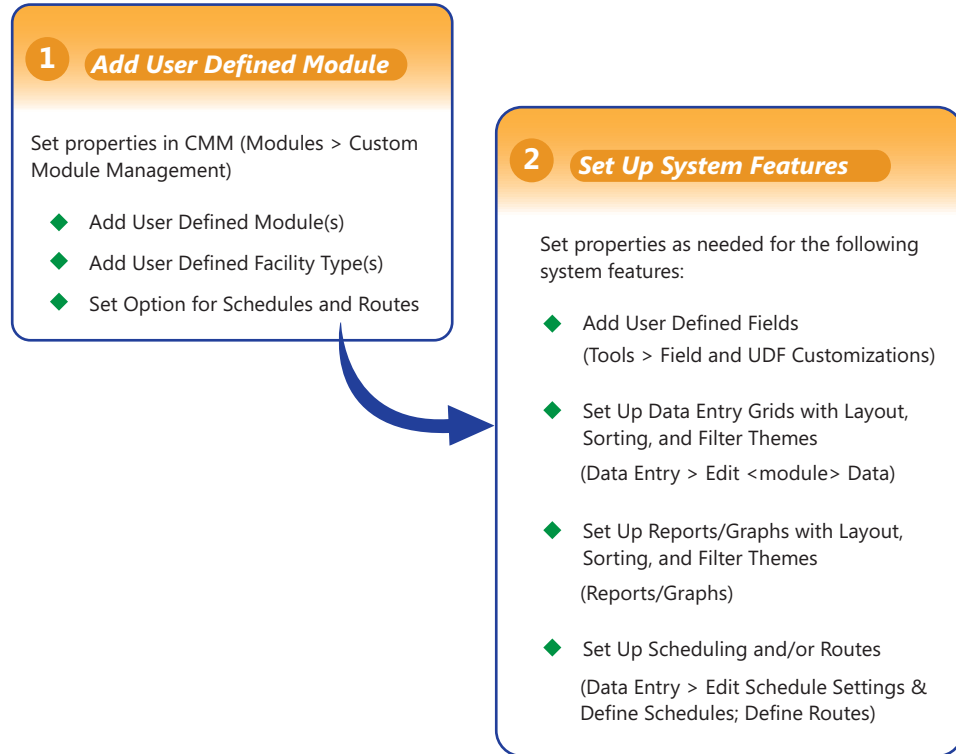



Figure 3-77. Workflow for Adding a User Defined Module

Adding a User Defined Module

Information in this section explains how to add a user defined module with one or more user defined facility types. A user defined module supports up to six (6) user defined facility types.

Complete the following steps:

- 1 Click **File > Select ROWs** to open the *Select ROWs* window (Figure 3-78). Select one or more pipeline segments and then click  **Save** to close the window.

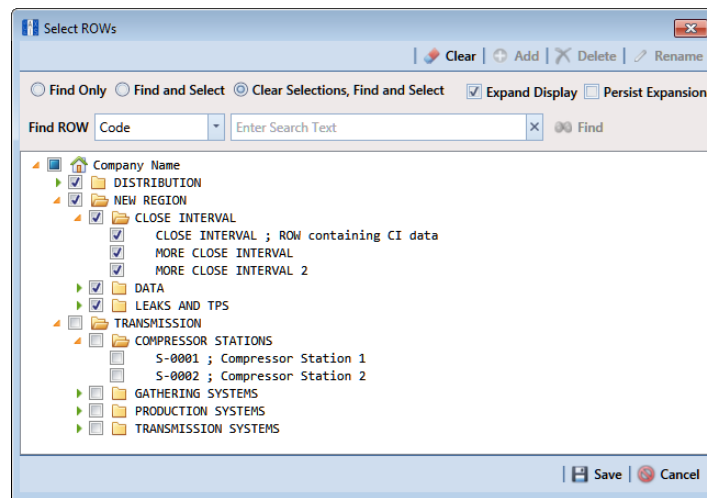




Figure 3-78. Select ROWs

- 2 Open CMM and add a user defined module. Click **Modules > Custom Module Management >  Add Module** (Figure 3-79).

PCS Axis adds a group of fields for the new user defined module. Fields with an error icon  indicate a required data entry field.

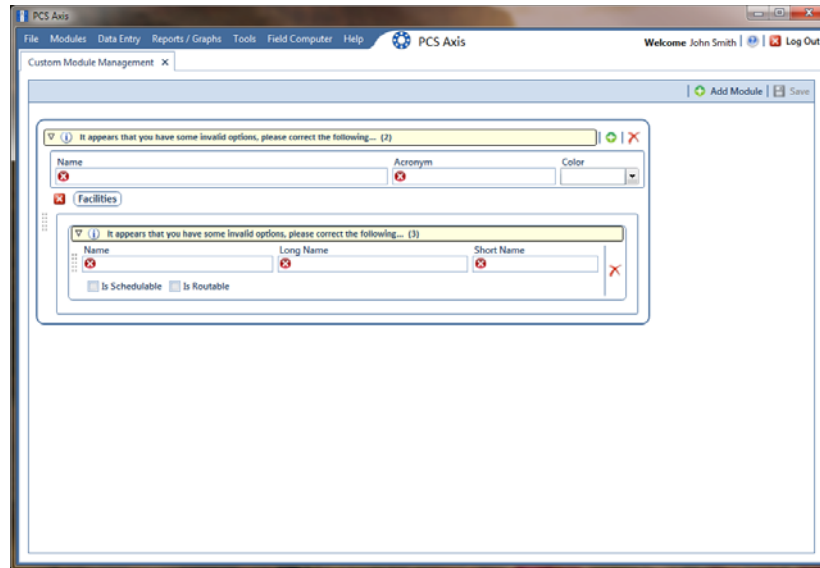




Figure 3-79. Custom Module Management

- 3 To set *Name*, *Acronym*, and *Color* properties for the user defined module, follow these steps (Figure 3-80):
 - a Type a name in the **Name** field. The field accepts up to 50 alphanumeric characters including spaces and special characters.

NOTE: Clicking the  toggle button in the  information bar displays information related to required property settings.

- b Type an acronym in the **Acronym** field. This field accepts up to four (4) alpha characters. It does not support numeric or special characters.
 - c Click the down arrow in the **Color** field and select a color in the color palette.

The following example shows a user defined module with the following property settings: module name is *My CP Electrical System*, module acronym is *MCPE*, and module color is *Aquamarine*.

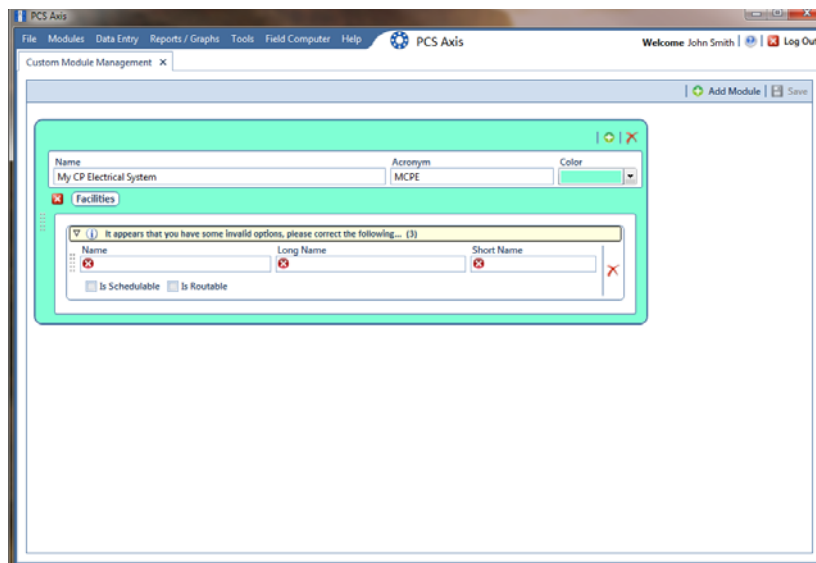


Figure 3-80. Custom Module Management

- 4 To set properties for one or more user defined facility types, complete the following steps (Figure 3-81):
 - a Type a name in the **Name** field. The field accepts up to 30 alphanumeric characters including spaces and special characters. The name you provide appears in data entry grids, reports and graphs, scheduling, routes, and so on.
 - b Type a longer name for the user defined facility in the **Long Name** field. This field accepts up to 40 alphanumeric characters including spaces and special characters.
 - c Type an acronym for the user defined field in the **Short Name** field. The field accepts up to four (4) alpha characters. It does not support numeric or special characters.
 - d If you want the facility type available for selection when setting up a schedule, click the check box **Is Schedulable**. Likewise, click the check box **Is Routable** to have the facility type available for selection when setting up a route.

The following example shows a user defined module with user defined facility types labeled *Electric Meters*, *Transformers*, *Power Poles*, and *Circuit Breakers* (Figure 3-81).

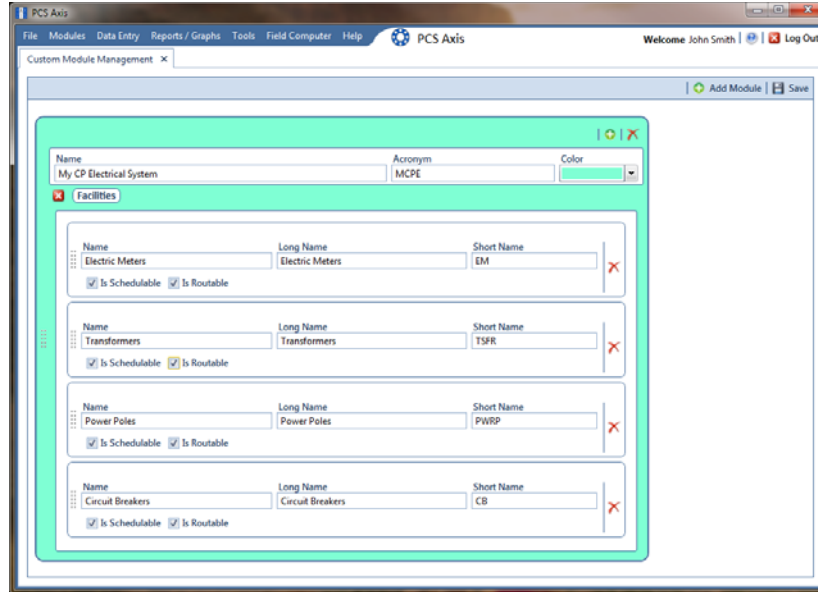






Figure 3-81. Custom Module Management

- e To add another user defined facility type, repeat **step 4 a** through **d**. You can add up to six (6) user-defined facility types for each user defined module.
- f Click  **Save**.


NOTE: Clicking the  close icon in the group box of user defined facility types closes the group box. Use this feature when you only want to view property settings of user defined modules. To re-open the group box, click the  open icon.

- 5 Click  to close the *Custom Module Management* window.
- 6 Set up the following system features as needed:
 - a Add fields related to the user defined module in *Fields and UDF Customizations > Facility Surveys*. Refer to *Setting Properties in Field and UDF Customizations* (page 68).
 - b Set up data entry grid *Layouts, Sorts, and Filters*. Refer to *Working with Themes and Filter Groups* (page 316).
 - c Set up reports and graphs. Refer to *Using Reports and Graphs* (page 709).
 - d Set up scheduling and routes. Refer to *Using a Schedule* (page 453) and *Using a Route* (page 381).

Deleting a User Defined Module

Deleting a user defined module also deletes all user defined facility types, reports, graphs, schedules, routes, and facility data associated with the module.

To delete a user defined module, follow these steps:

- 1 Click **File > Select ROWs** to open the *Select ROWs* window (Figure 3-82). Select one or more pipeline segments and then click  **Save** to close the window.

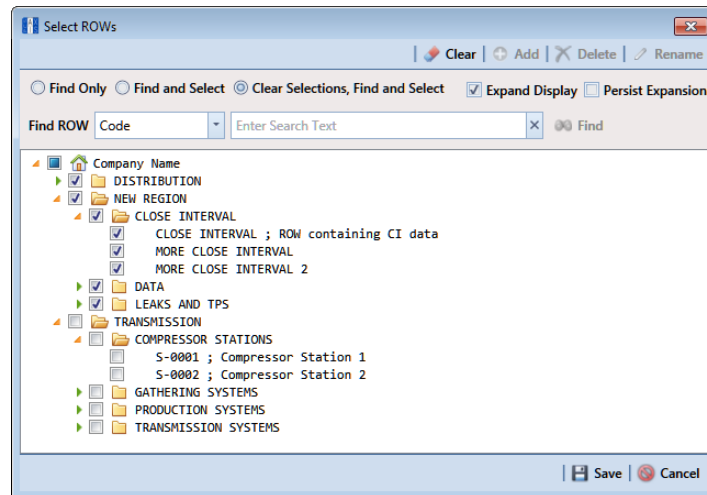



Figure 3-82. Select ROWs

- 2 Open CMM. Click **Modules > Custom Module Management**.
- 3 Click the  delete button for the user defined module you want to delete (Figure 3-83).

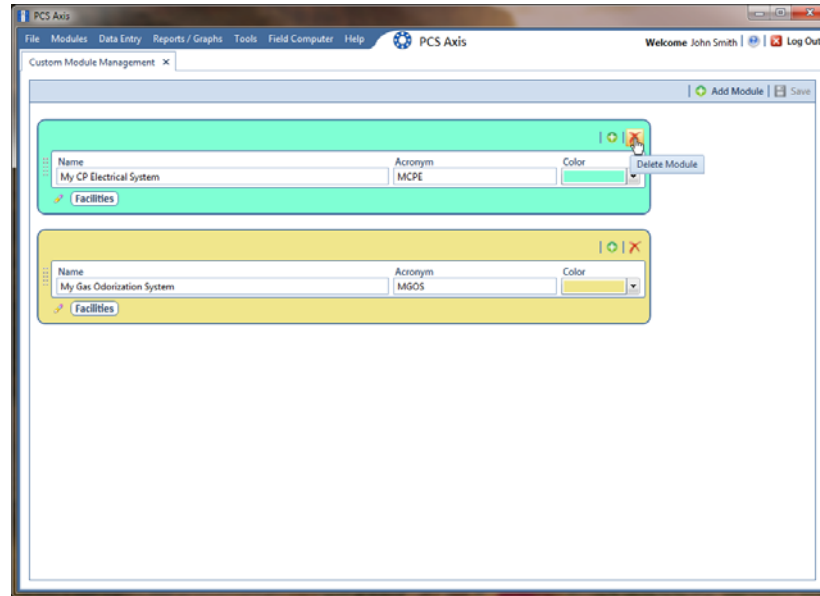


Figure 3-83. Custom Module Management

- 4 When the warning message *Confirm module delete* opens, click **Delete** to delete the module or **Cancel** to cancel the operation.
- 5 Click **X** to close the *Custom Module Management* window.