

8-3

# Field Inspection Reports:

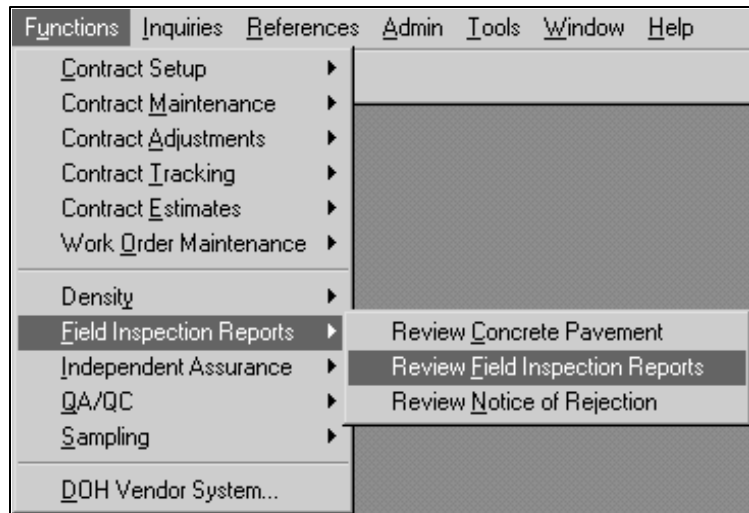
## Review Corrugated Metal Pipe

### **Objective**

Review Corrugated Metal Pipe Reports  
Corrugated Metal Pipe sub-module

# Access To Review Corrugated Metal Pipe

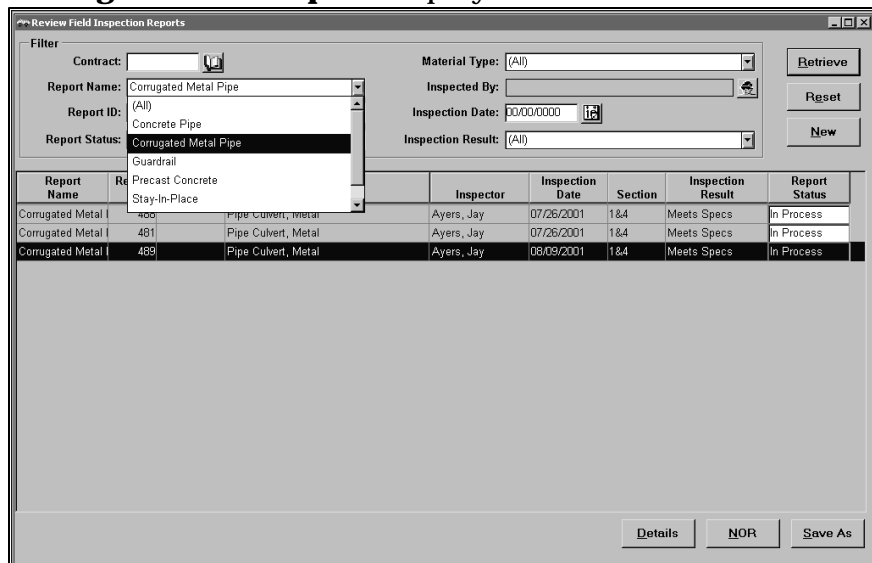
**Step 1:** Choose **Field Inspection Reports** from the **Functions** menu in HiCAMS.



**Figure 1 - Access to Review Field Inspection Reports**

**Step 2:** To access a NEW Corrugated Metal Pipe Report, click the *Report Name* field and select Corrugated Metal Pipe.

**Step 3:** Click the **New** button, and the following initial screen for **Corrugated Metal Pipe** is displayed:



The screenshot shows the 'Review Field Inspection Reports' window. It has a filter section with fields for Contract, Report Name (set to Corrugated Metal Pipe), Report ID, Report Status, Material Type, Inspected By, Inspection Date, and Inspection Result. There are buttons for Retrieve, Reset, and New. Below the filter is a table with columns: Report Name, Report ID, Material Type, Inspector, Inspection Date, Section, Inspection Result, and Report Status.

Report Name	Report ID	Material Type	Inspector	Inspection Date	Section	Inspection Result	Report Status
Corrugated Metal	480	Pipe Culvert, metal	Ayers, Jay	07/26/2001	1&4	Meets Specs	In Process
Corrugated Metal	481	Pipe Culvert, Metal	Ayers, Jay	07/26/2001	1&4	Meets Specs	In Process
Corrugated Metal	489	Pipe Culvert, Metal	Ayers, Jay	08/09/2001	1&4	Meets Specs	In Process

Buttons at the bottom: Details, NOR, Save As

The screenshot shows a software window titled "Review Corrugated Metal Pipe (New)". At the top, there are fields for "Report Name: Corrugated Metal Pipe", "Report ID:", and "Report Status: In Process". Below this is a "Material Type:" dropdown menu. A tabbed interface includes "General", "Results", "Alt IDs", "Report", and "History". The "General" tab is active, displaying several input fields: "Sample From:" (Project), "Test Category:" (Acceptance), "Contract:", "Work Order:", "County:", "Contractor:", "Station:" (with a "+" sign), "Location:", "PD:", "BOL:", "Maint Supervisor:", "Maint Yard:", "Fabricator:", "Search by Plant ID:", "Section:", "Producer:", "Inspector:", "Inspection Date:" (00/00/0000), "Inspection Result:", "Notice of Rejection:", and "Comment:". Many fields are empty or contain placeholder text.

**Figure 2 - Review Corrugated Metal Pipe Window**

**Step 4:** To access an existing Corrugated Metal Pipe Report, follow Step 1 above and Double-click the desired report from the list displayed. It is also possible to click the **Details** button after highlighting the desired report.

The **Corrugated Metal Pipe** report details window is displayed as shown in the example below:

This screenshot shows the same software window as Figure 2, but with the form populated with specific data. The "Material Type:" is "Pipe Culvert, Metal, Accessories - Both". The "County:" is "Alamance". The "Station:" is "212 + 22" and "Location:" is "TEST Location". The "PD:" is "12123" and "BOL:" is "23213". The "Maint Supervisor:" is "Joe Bostick" and "Maint Yard:" is "Carolina Maintenance Yard". The "Fabricator:" is "Carolina Fabrications". The "Section:" is "5" and "Producer:" is "Smith Setzer & Sons, Smith Setzer & Sons - C.M. Pipe - MP6". The "Inspector:" is "Garbee II, William C" and "Inspection Date:" is "05/01/2001". The "Inspection Result:" is "Meets Specs" and the "Comment:" is "TEST Comment".

### Figure 3 - Initial Review Corrugated Metal Pipe Details (General Tab Window)

**Note:** To further aid in the retrieval of an EXISTING report, there are filtering functions available in HiCAMS. These filter functions are especially helpful when choosing from a very large listing of reports. See *Field Inspection Reports: Overview - Retrieval Tips* for all Field Inspection Reports for details using these functions.

#### General Tab - Review Corrugated Metal Pipe

The valid Material Types available for **Corrugated Metal Pipe** are:

- ◆ Pipe Culvert Metal (English, Metric)
- ◆ Accessories (Both)
- ◆ Pipe Outlets & Drains Metal (English, Metric)
- ◆ Pipe Outlets & Drains, Metal, Accessories (Both)

**Note:** The available material types are derived from the Minimum Sampling Guide that is maintained by the Materials Operations Engineer. To view the Minimum Sampling Guide, select References<sup>o</sup>Minimum Sampling Guide from the HiCAMS toolbar.

The window allows only one Material Type per Report with one or more corresponding Materials.

The upper portion of the window displays the *Report Name*, *Report ID*, *Report Status*, and *Material Type*:

The screenshot shows a software window titled "Review Corrugated Metal Pipe (New)". At the top, there are fields for "Report Name: Corrugated Metal Pipe", "Report ID:", and "Report Status: In Process". Below this is a "Material Type:" dropdown menu. A tabbed interface is visible with "General" selected, and other tabs include "Results", "Alt IDs", "Report", and "History". The "General" tab contains several fields: "Sample From:" (dropdown, set to "Project"), "Test Category:" (dropdown, set to "Acceptance"), "Contract:", "Work Order:", "County:" (dropdown), "Contractor:", "Station:" (with a "+" button), "Location:" (with a search icon), "PO:", "BOL:", "Maint Supervisor:", "Maint Yard:", "Fabricator:" (with a search icon), "Search by Plant ID:", "Section:" (dropdown), "Producer:", "Inspection Results" section containing "Inspector:" (with a search icon), "Inspection Result:" (dropdown), "Inspection Date:" (set to "00/00/0000" with a calendar icon), and "Notice of Rejection:" (with a search icon). A "Comment:" text area is at the bottom.

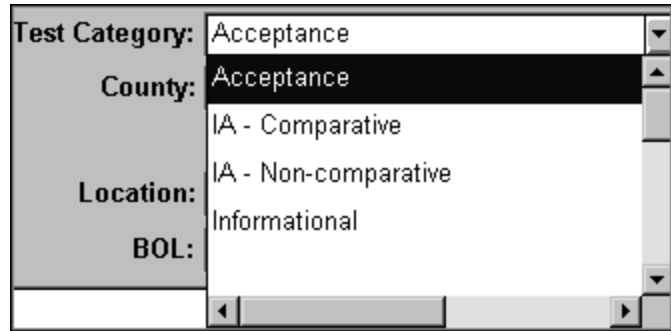
**Figure 4 - Corrugated Metal Pipe General Tab Window Fields**

**Note:** The Sample From field is a required field and defaults to "Project" but still allows other choices:

This is a close-up of the "Sample From:" dropdown menu. The menu is open, showing a list of options: "Project", "Belt", "Borrow Pit", "Centrifuge", "Plant", "Project" (highlighted), and "Railcar". The "General" tab is visible in the background.

**Figure 5 - Corrugated Metal Pipe Sample from Field**

The Testing Category field for Corrugated Metal Pipe reports is *required* and defaults to "Acceptance":



**Figure 6 - Corrugated Metal Pipe Test Category Drop-Down Menu**

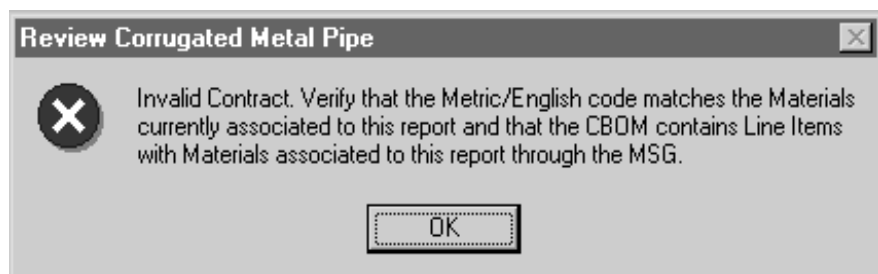
When the Contract Number is *not* entered, the following fields are required:

- ◆ Purchaser Order (PO) number
- ◆ Maintenance Supervisor
- ◆ The Maintenance Yard

When the Contract Number *is* entered, the Contractor Name, Contract Status, Contract Description, and primary Work Order number (Project Number) fields are populated with default values. The following fields are required:

- ◆ Station
- ◆ Location

**Tip:** *The following message may appear as a result of a Unit of Measurement mismatch between the Contract Number and Material Type on the General Tab. For example: If a English measurement Contract is selected along with a Metric Material Type, the system will advise of this discrepancy by displaying the following message:*



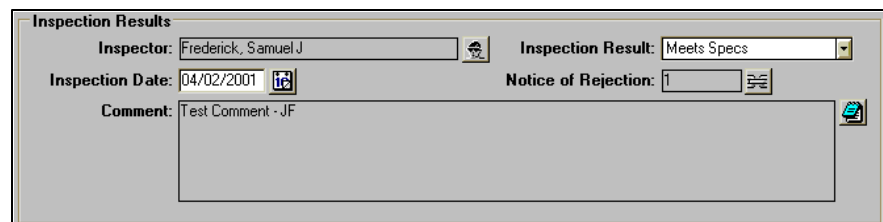
**Figure 7 - Error Message, Unit of Measurement Mismatch**


The Fabricator is the Company that assembles the material. This is a text entry field rather than a menu, which is similar to how the Stay-In-Place report works.

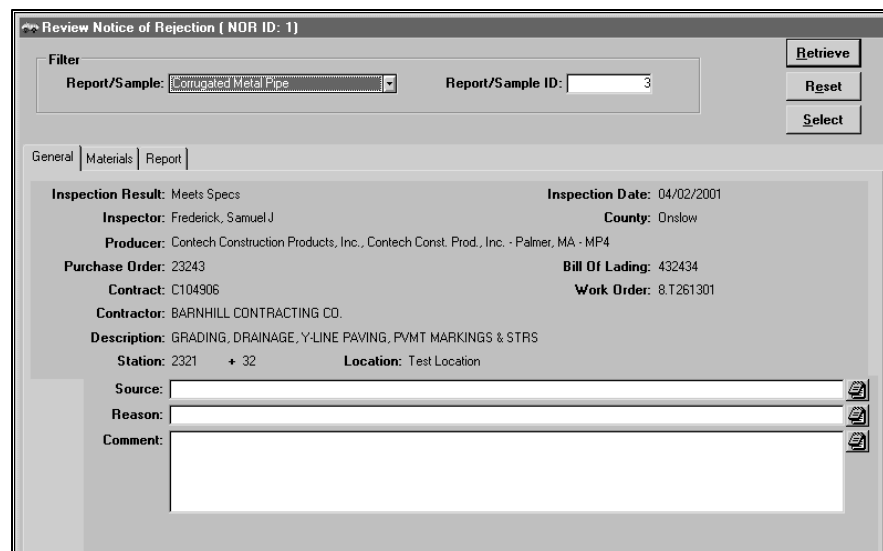


**Figure 8 - Fabricator Field**

The Inspection Result drop down menu is selected as the result of a rejected amount. The *Notice of Rejection* field is activated when any rejected amounts are recorded on the **Results** Tab Window.



When the **Notice of Rejection** button  is clicked, the following window appears for the material:



**Figure 9 - Notice of Rejection location on General Tab**

## Results Tab - Review Corrugated Metal Pipe Report (New)

The Upper **Results Tab** Window contains all test results data fields for the individual Material: *Gage, Metal Thickness, Corrugation, Perforated, Weld, Band, Accepted and Rejected* quantities.

The Lower portion of the tab window displays the following data fields: *First and Second Reading, with Coating Type(s), Avg Reading, Coating, Line Item, and Asphalt Coating Type* fields.

**Step 1:** To insert a new test results row into this tab window, click the **Insert** button and enter the result data.

To delete a result row, click the **Erase** button on the row to delete and the data entry row is deleted. *This must be done BEFORE the record is saved.* If the record has been saved, the row cannot be deleted. See example below:

**Figure 10 - Corrugated Metal Pipe Results Tab Window**

**Step 2:** To select the material click the *Material* field and all applicable selections are displayed. Double-click on the desired Material listed in the drop-down menu.



**Step 3:** To set the **Gage** code, select the field and choose from the drop-down menu. Double-click on the desired gage number.

The Gage code list includes the numbers 8 through 22 inclusively. Each Gage number will have a specific minimum, maximum, and tolerance range value based on the unit of measure.

**Step 4:** To enter the **Metal Thickness**, select the field and enter the measurement.

**Note:** *The minimum and maximum specification range on the Gage code table will be used to determine the validity of the Metal Thickness entered for a Gage number. If the Metal Thickness is not within the valid range, an asterisk will appear to the right of the data.*

**Step 5:** To select **Corrugation, Perforated, Weld, and Band** data, select the field and select from each drop-down menu.

**Note:** *For consistency, the Corrugation data must be selected from a predefined list consisting of the following entries. The selection will be limited to either English or Metric based on the unit of measure for the selected material:*

Corrugation	Metric/English
1 1/2 x 1/4	English
2 2/3 x 1/2	English
3 x 1	English
5 x 1	English
125 X 25	Metric
38 X 6.5	Metric
68 X 12	Metric
75 X 25	Metric

**Figure 11 - Corrugation code Table**

To review the most up to date values HiCAMS, perform the following:

- 1 Select the **Admin ≡ Codes Tables** menu. A list of codes tables used in HiCAMS displays.

Scroll through the list and select “**FIR Corrug for Metal Pipe**” from the list. The list of minimum/maximums for either single or triple spot tests for both English and Metric is listed:

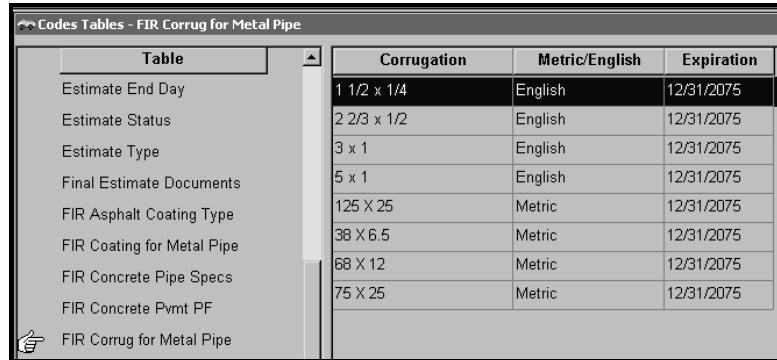


Table	Corrugation	Metric/English	Expiration
Estimate End Day	1 1/2 x 1/4	English	12/31/2075
Estimate Status	2 2/3 x 1/2	English	12/31/2075
Estimate Type	3 x 1	English	12/31/2075
Final Estimate Documents	5 x 1	English	12/31/2075
FIR Asphalt Coating Type	125 X 25	Metric	12/31/2075
FIR Coating for Metal Pipe	38 X 6.5	Metric	12/31/2075
FIR Concrete Pipe Specs	68 X 12	Metric	12/31/2075
FIR Concrete Pvrnt PF	75 X 25	Metric	12/31/2075
FIR Corrug for Metal Pipe			

The Perforated, Weld, and Band drop-down menus all function the same and all contain Pass, Fail, and N/A for your selection.

**Step 6:** To select **Accept and Rejected** quantities, select the field and enter the appropriate amount.

When a number greater than zero is entered in the Quantity Rejected field, a **Notice of Rejection** will automatically be generated by the system - regardless of the overall status of the report.

**Step 7:** To enter data into the First and Second Reading areas, click the *Coating Type(s)* field and select from *Aluminized, Asphalt, Polymer, or Zinc* in the drop-down menu(s).

Review Corrugated Metal Pipe ( Report ID: 508)

Report Name: Corrugated Metal Pipe      Report ID: 508      Report Status: In Process

General | Results | Alt IDs | Report | History

Material Type	Material	Gage	Metal Thickness	Corrugation	Perforated	Weld	Band	Accepted	Rejected
Pipe Culvert, Metal - En	Bituminous Coated Corrug	8 - English	1.000*	1 1/2 x 1/4	Pass	Pass	Pass	1.000	.000

Line Item:

First Reading:       Second Reading:

Coating Type:       Coating Type:

Avg Reading:       Avg Reading:

Coating:       Coating:

Disposition

Accepted: .000      Pay Adjusted: .000

Removed: .000      Test ID: 407

Comment:

Asphalt Coating Type:

**Figure 12 - Corrugated Metal Pipe Results Tab Window**

**Step 8:** To enter data into *Avg Reading* field(s), click the field(s) and enter the Avg Reading data.

The Coating field is calculated in the HiCAMS system between Coating Type, English/Metric contract multiplication/division relationships, and other business rule considerations.

**Step 9:** To enter Asphalt Coating Type, select the field and choose from the list. The *Asphalt Coating Type* field has these default considerations:

When a Coating Type of Zinc is selected for an English Contract, the Zinc Coating (ounces per square foot) will be calculated by dividing the Average Zinc Reading by 1.7. The Coating must be 2.00 or greater to be considered within a valid range. If it does not meet this requirement, an asterisk will be displayed in the field.

When a Coating Type of Zinc is selected for a Metric Contract, the Zinc Coating (ounces per square foot) will be calculated by multiplying the Average Zinc Reading by

179.706. The Coating must be 611 (grams per meters squared) or greater to be considered within a valid range. If it does not meet this requirement, an asterisk will be displayed in the field.

**Note:** *If the Zinc Coating for either the Single Spot Test or the Triple Spot Test is not within the acceptable specification range, the rejected quantity must be greater than zero and an asterisk will be placed to the right of the data in the Coating field.*

When a Coating Type of Aluminized is selected for an English Contract, the Aluminum Coating will be calculated by dividing the Average Reading by 1.9. The Coating must be 1 (ounces per square foot) or greater to be considered within a valid range. If it does not meet this requirement, an asterisk will be displayed in the field.

When a Coating Type of Aluminized is selected for a Metric Contract, the Aluminum Coating will be calculated by dividing the Average Reading by 1.9 and multiplying the result by 305.2 to obtain grams per meter squared. The Coating must be 305.2 (grams per meter squared) or greater to be considered within a valid range. If it does not meet this requirement, an asterisk will be displayed in the field.

When a Coating Type of Polymer is selected, the Coating field will not be calculated by the system due to the one-to-one correspondence between the Average Reading and the Coating. Therefore, the Coating field will be populated with the same data that was entered into the Reading field.

When a Coating Type of *Asphalt* is selected, the *Coating* field will not be calculated by the system due to the one-to-one correspondence between the Average Reading and the Coating. Therefore, the Coating field will be populated with the same data that was entered into the Average Reading field.

Additionally, one of the following selection criteria must be chosen to further clarify the Coating Type:

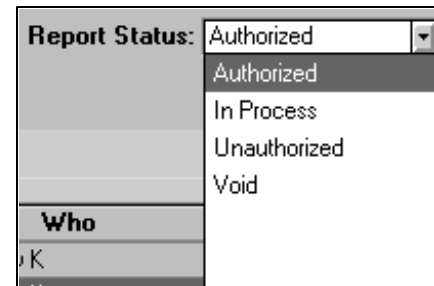
- ◆ A – Fully Bituminous Coated
- ◆ B1 – Half Bituminous Coated, Partially Paved – 25%

- ◆ B2 – Half Bituminous Coated, Partially Paved – 40%
- ◆ C1 – Fully Bituminous Coated, Partially Paved – 25%
- ◆ C2 – Fully Bituminous Coated, Partially Paved – 40%
- ◆ D – Fully Bituminous Coated, Fully Paved

**Step 10:** The available materials are determined by the contract and material selected. If only one material exists, it will display in the field. If more than one, select the drop down arrow to select the material.

**Step 11:** Save the record, click the **Save** button.

The saved record captures all data that has been entered and the fields in all tab windows become uneditable. The fields become editable for data entry after the Report's status is changed and the record is re-saved by an authorized user.



**Figure 13 - Report Status Drop-Down menu**

**Note:** Saving a record can be performed at any point. If the record save is interrupted at any point, it is usually as a result of incomplete data entry. There are various messages that the system may display based upon what is required to be entered in order to save the record. The following is one such example message.



**Figure 14 - Typical Advisory Message, Required Information**

To rectify the Save error, click the **OK** button, enter the required data mentioned in the message, and click the **Save** button.

## Disposition - Reviewing and Processing Failed Field Inspection Reports

In some cases the MOE may review FIR results and authorize the FIR with a status of “Does Not Meet Specs – Pay Adjustment” or “Does Not Meet Specs – Rejected”.

The System will automatically update the Disposition Accepted Quantity when the Material Accepted Quantity is greater than zero and the Rejected Quantity is equal to zero. If the user decides to modify the accepted quantity and the record has not been authorized, the disposition-accepted quantity will get updated to reflect the change.

The MOE and the Resident Engineer will be able to enter Disposition quantities for Corrugated Metal Pipe. The Accepted and Pay Adjustment Recommendation (PAR) Quantities will be totaled and added to the Contract Materials Accepted quantity.

**Note:** *A Disposition history record will be created any time the Disposition fields are modified.*

The Disposition fields will be available for update for those users with proper security level access when the Corrugated Metal Pipe Report has been authorized. A Reset button has been provided to allow the user to clear out the Disposition fields. The Disposition fields will not automatically be cleared when the Report is Unauthorized.

The sum of the Disposition quantities must equal the sum of the Accepted and Rejected quantities for the Corrugated Metal Pipe Material.

**Note:** *A Disposition Comment is required when the overall Inspection Result for the Report has been set to either "Pay Adjustment - Does Not Meet Specs" or "Rejected - Does Not Meet Specs" and the Disposition Accepted Quantity is greater than zero.*

*Pay Adjustment Recommendations initiated from Field Inspection Reports are generated by the Section Materials Specialists and reviewed by the Materials Operations Engineer. These recommendations are based on the original tests and can be used by the Resident Engineer on the project to determine how much (if any) to reduce the payment to a contractor for the flawed material.*

At the time the Section Material Specialist enters the report data and saves in HiCAMS, a notification is sent to the MOE for review and authorization. Once authorized, a notification is sent to the Resident Engineer to review the authorized FIR. If the report was authorized with a status of "Does Not Meet Specs – Pay Adjustment", a pay adjustment recommendation has been processed by the MOE.

The Resident Engineer then has the option of creating a Pay Factor, either paying for the material for the full or reduced price, using the pay adjustment recommendation made by the MOE.

**Step 12:** To enter a Pay Factor from an approved Pay Adjustment Recommendation, click the link icon next to the Pay Adjusted field in the Results tab.

**Note:** *For further instructions on processing a pay adjustment recommendation and a subsequent pay factor, see Chapter 5*

(Contract Tracking), Section 7 (Pay Adjustment Recommendations) of the user manual.

## Alt IDs Tab - Review Corrugated Metal Pipe Report (New)

One or more Alternate IDs may be entered for the material being tested.

**Step 1:** To insert a new Alt ID row into this tab window, click the **Insert** button and enter the data.

**Step 2:** To delete an Alt ID row, click the **Erase** button on the row to delete and the data entry row is deleted. See example below:

Alternate Type	Alternate Id	Status
Heat	MPI-080901-	Available

**Figure 15 - Corrugated Metal Pipe Alt IDs Tab Window Insert/Delete Row**

**Step 3:** To select an **Alternate Type**, select the field and select from the drop-down menu list. Choices include the following: *Heat, Lot, Batch, Tag, Piece, Girder, and Skid.*

**Figure 16 - Corrugated Metal Pipe Alternate Type Drop-Down Menu**



The type for Corrugated Metal Pipe will default to “Heat” when first inserting an Alternate ID row into this window. An error message could also appear in the case of duplicate Alternate IDs.

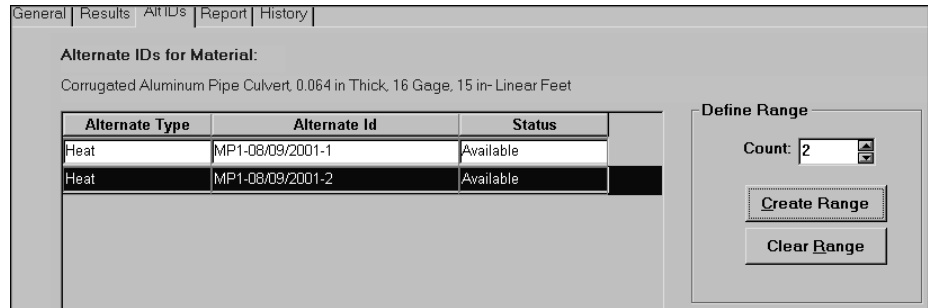
- Step 4:** To enter an **Alternate ID** number, select the field and enter an appropriate ID number for Corrugated Metal Pipe.
- Step 5:** To change the **Status** from the default of “Available”, click the drop-down menu and choose a listed status as shown in the example below:



**Figure 17 - Corrugated Metal Pipe Status Drop-Down/Define Range**

Under the Define Range area, it is possible to **Create** or **Clear** a Range for Alternate Types/Alternate IDs.

- Step 6:** To create a range, select the *Alternate ID* field to the right of the Alternate ID number and add a numeric suffix to start the range specified by the count that you specify.
- Step 7:** To specify the **Count** for the range, click on the up/down arrows or enter the amount and click the **Create Range** button. The Range is then created as shown in the example below:



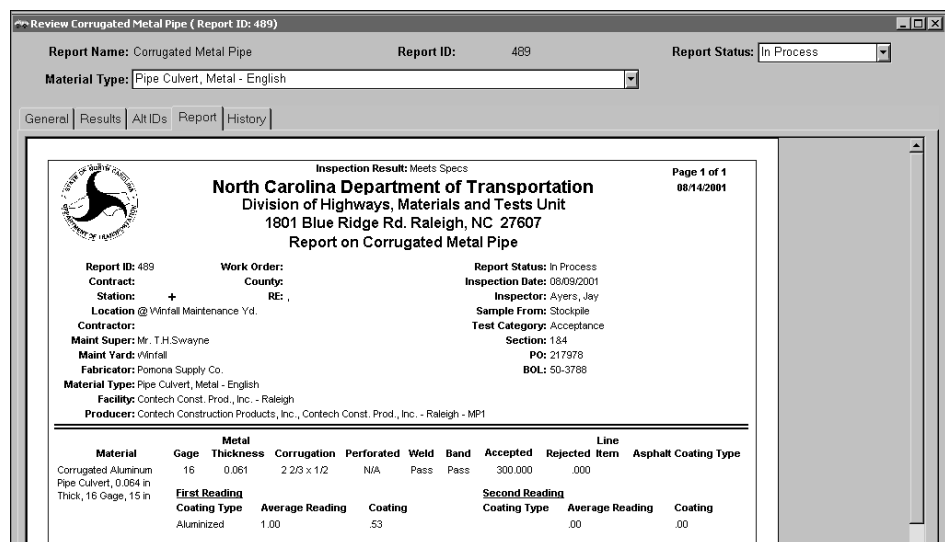
**Figure 18 - Corrugated Metal Pipe Create/Clear Range**

**Step 8:** To clear the range, click the **Clear Range** button. This will delete the range. This must be done BEFORE the record is saved. After the record is saved, the Range cannot be cleared.

### Report Tab - Review Corrugated Metal Pipe Report

The Report for Corrugated Metal Pipe is under the **Report** tab.

**Step 1:** To view the entire report, use the scroll bars or use **Print Preview**.



**Figure 19 - Corrugated Metal Pipe Report Tab Window**

Each material from the **Results** tab will be displayed on the report.

**Step 2:** To print the report, click the **Print** icon on the toolbar. HiCAMS will generate a printable version of the report. The Report on Corrugated Metal Pipe window will display:

Inspection Result: Meets Specs

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08/14/2001

**North Carolina Department of Transportation**  
Division of Highways, Materials and Tests Unit  
1801 Blue Ridge Rd. Raleigh, NC 27607  
Report on Corrugated Metal Pipe

Report ID: 488      Work Order:      Report Status: In Process  
Contract:      County:      Inspection Date: 08/09/2001  
Station: +      RE:      Inspector: Ayers, Jay  
Location @ Winfall Maintenance Yd.      Sample From: Stockpile  
Contractor:      Test Category: Acceptance  
Maint Super: Mr. T.H.Swayne      Section: 184  
Maint Yard: Winfall      PO: 217978  
Fabricator: Pomona Supply Co.      BOL: 50-3788  
Material Type: Pipe Culvert, Metal - English  
Facility: Contech Const. Prod., Inc. - Raleigh  
Producer: Contech Construction Products, Inc., Contech Const. Prod., Inc. - Raleigh - NP1

Material	Gage	Thickness	Corrugation	Perforated	Weld	Band	Accepted	Rejected Item	Line	Asphalt Coating Type
Corrugated Aluminum Pipe Culvert, 0.064 in Thick, 16 Gage, 15 in	16	0.061	2.2/3 x 1/2	N/A	Pass	Pass	300.000	.000		

**First Reading**

Coating Type	Average Reading	Coating
Aluminized	1.00	.53

**Second Reading**

Coating Type	Average Reading	Coating
	.00	.00

**Alternate Type**

Alternate ID	Status
MP1-08/09/2001-1	Available
MP1-08/09/2001-2	Available

Zoom: 100%      Page 1 of 1

**Figure Figure 20 - Report on Metal Pipe**

**Step 3:** Click the print icon once again to print the report. The Print setup window will display. Click the **Print** button to print the report:

## History Tab - Review Corrugated Metal Pipe Report

Actions that have been performed for an individual report are listed located under the **History** tab. The history includes the *Action*, *Action Date/Time*, *Status*, and *Who* performed the action. This area also contains any comments that may have been entered when the action was taken.

To view the individual comments for each action, click the action to view the comment:

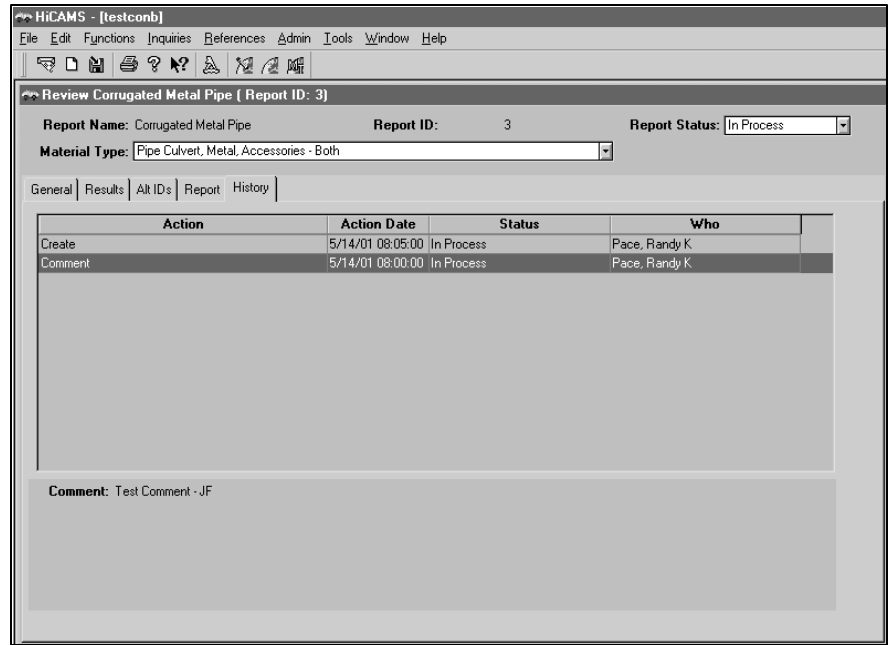


Figure 21 - Corrugated Metal Pipe History Tab Window