WISCONSIN DEPARTMENT OF TRANSPORTATION

Materials Tracking System

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MTS & MIT USER GUIDE

MATERIALS TRACKING SYSTEM AND MATERIALS INFORMATION TRACKING SYSTEM

User Guide

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Chapter 1

1. MTS & MIT- Introduction

1.1. Background

The Materials Tracking System (MTS) is a computerized filing and reporting system for construction materials tests. All construction materials tested and inspected for WisDOT projects are reported on the MTS. The MTS operates in a Microsoft Windows environment and is programmed in a database format. The overall MTS has three basic components, the MTS (LAN/WAN attached), Materials Information Tracking System (MIT) and the System Information Browser Web site. Region and Central Office Laboratory personnel can enter data directly into the Oracle database via a Local Area Network (LAN) attachment provided through the MTS.

The MIT is used for entering tests from the field. Data is entered into the MIT on a standalone PC platform and subsequently uploaded for replication to the MTS Oracle database. Authorized project personnel using the MIT can enter test data into worksheets for Base Course, PCC Concrete, Granular Backfill, and Breaker Run Stone Aggregate sieve analyses. Worksheets are also available for entering Concrete Cylinder test data, Asphaltic Mixture and Density test data, General Field Inspection Reports and Reference Reports. Reports for the entered tests are automatically generated when saved, and can be viewed and printed on completion of test data entry.

The System Information Browser Web site provides the means for field and remote users to view reports of all verified tests associated with a project, including those tests done at the Central Office Truax Center and Region Laboratories. Anyone with Internet access can register to view test reports. WisDOT approved product, certified supplier and source lists links, and Material Reporting System (MRS) data are also available on the Web site.

> **Note**
>
> Permission for authority to enter, edit and/or verify tests must be submitted to the system administrator and approved by your Region contact person.

The purpose of this document is to familiarize the Region user with all components of the MTS and provide guidance about the function and use of the system.

1.2. Objectives

By the end of this document, you should be familiar with:

- Logging into the MTS or MIT
- Changing your password
- Viewing tests and test reports
- Viewing Approved List, Approved Source and Source Test information
- Setting up a new report
- Adding worksheets for various material types
- Updating MIT reference data
- Editing existing test worksheets and reports
- Verifying tests and reports
- Using MTSLAN report queries

1.3. Contacts and Help

To add or change system authorities and for help on business issues contact the below listed Bureau of Technical Services (BTS) personnel:

Phone: (608) 246-5391, Joseph V. White

E-mail: joseph.white@dot.wi.gov

Or

Phone: (608) 246-7934, Thomas Brokaw

E-mail: thomas.brokaw@dot.wi.gov

Click on the help links icon on the MTS or MIT menu to open the Atwood Systems Support links. Refer to figure 1.2

To report system and program problems:

Phone: toll free 877-518-1920 or (608) 848- 6085, Atwood Systems, Inc. – Support line

E-mail: support@atwoodsystems.com

Web: http://www.atwoodsystems.com/mrs

This user guide can be opened in the MTS or MIT by clicking on Help from the main file menu. The online user manual provides information specific to the individual MTS or MIT program.

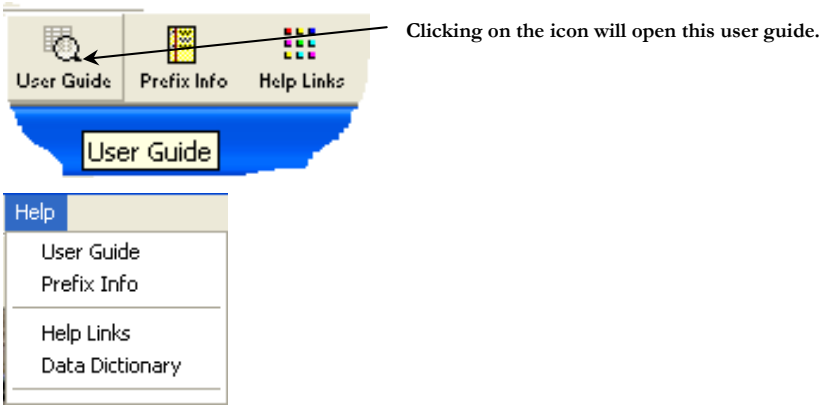


Figure 1-1, Help menu choices

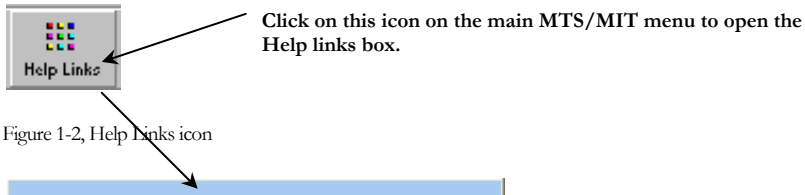


Figure 1-2, Help Links icon

Figure 1-3, Help links window

1.3.1. Context Sensitive Help

Refer to *Chapter 8 Special Features-Updates* for instructions on available updates.

On screen context sensitive help is available for the *Sample Card, prefix 130-Cylinders, prefix 217-Aggregates, prefix 155-Miscellaneous, and prefix 900 – Reference report.* Simply place the cursor in any field of the noted prefixes and press the F1 function key. If help text is available for that field it will be shown in the help window. MIT users can download updated help files through the Data Updates facility. Refer to the below examples.

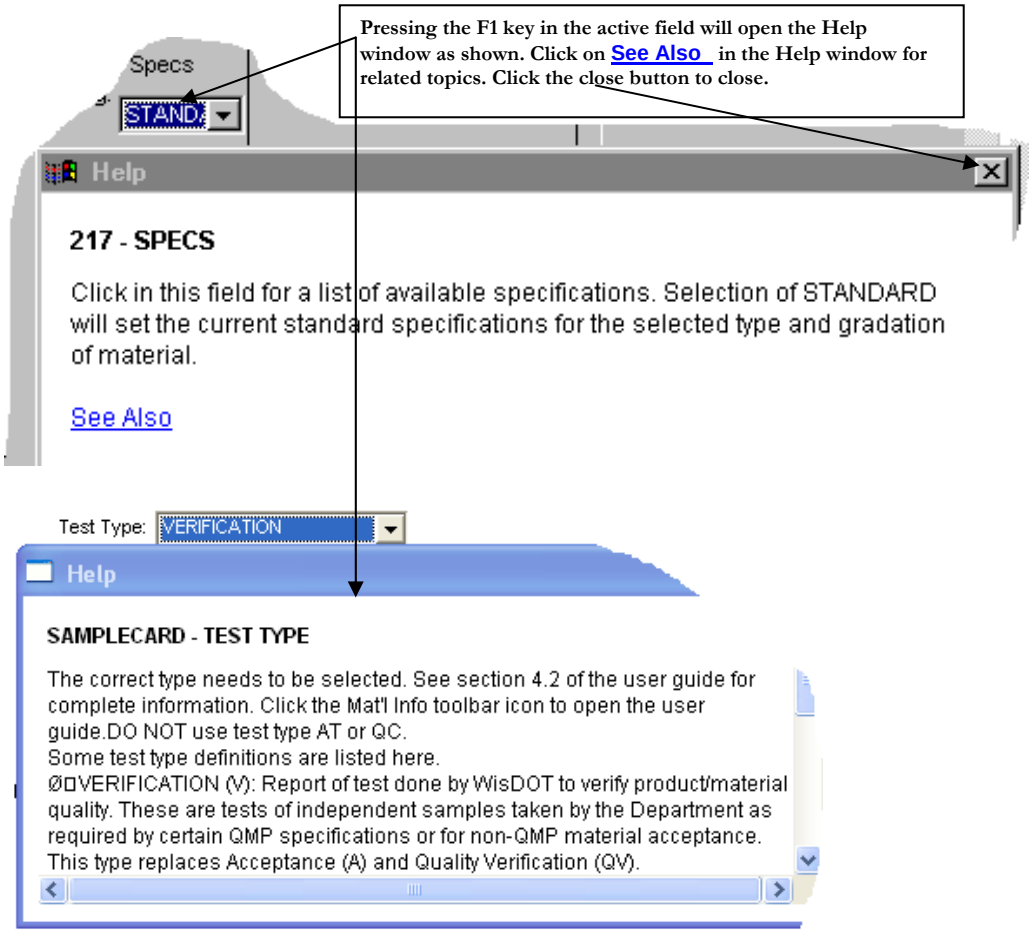


Figure 1-4, Context sensitive help example

Chapter 2

2. Log on and Password- MTS & MIT

2.1. Opening the MTS and MIT

On opening the MTS, the password dialog box, figure 2.1, will open.

Figure 2-1, MTS Logon dialog box

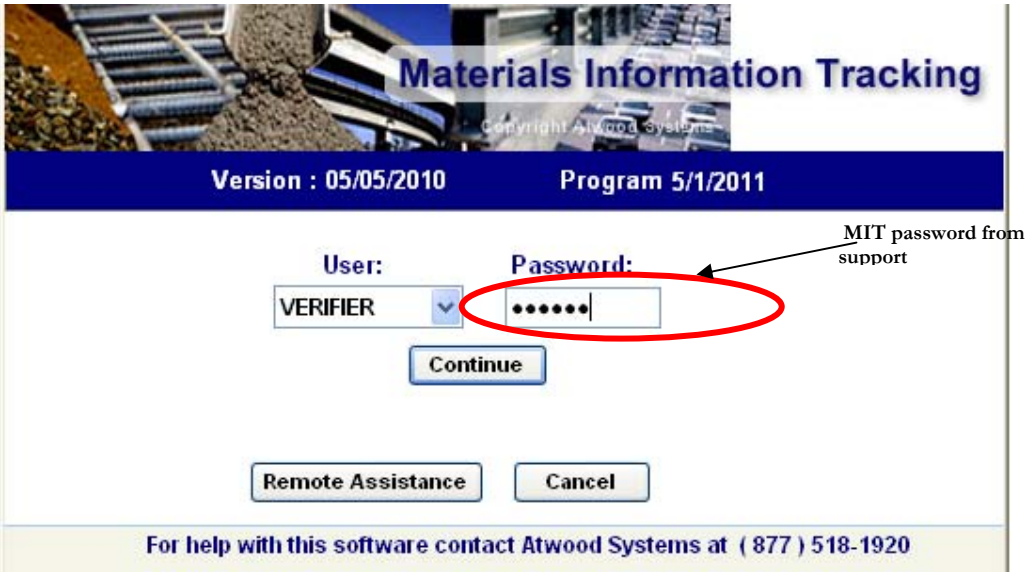
2.2. Sign-on

☞ **Refer to figure 2.1**

MTS: Type your authorized User ID and password into the boxes provided. The password is encrypted so it will not show as you type it.

☞ **Refer to figure 2.2**

MIT: Select the User ID from choices on the drop down list. The choices are based on the authority given to you by the Region.



🗁 **The MTS authority and password are set by BTS based on request from the Region contact person. MIT passwords can be obtained from the Region.**

Figure 2-2, MIT Logon dialog box

2.3. Changing your MTS password

☞ **Refer to figure 2.3**

Click on Utilities from the MTS main menu. Select and click on Change Password to open the Change Password dialog box.

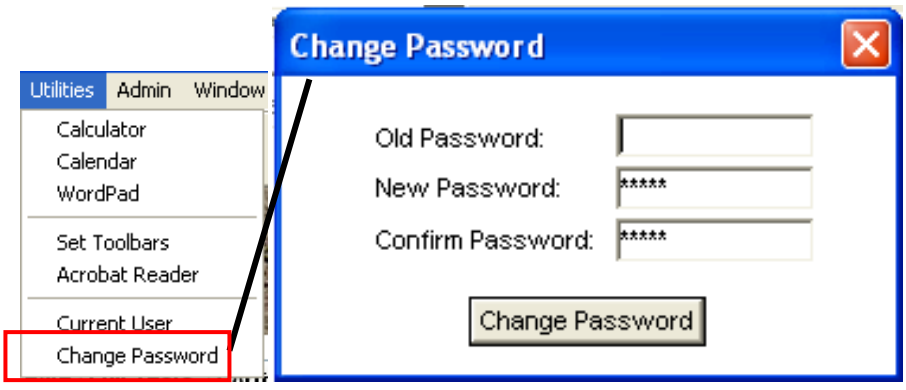


Figure 2-3, Change password

2.4. User information- MTS

☞ **Refer to figure 2.4**

Information on current user ID, site, and access type can be displayed by clicking on Current User from the MTS Utilities menu.

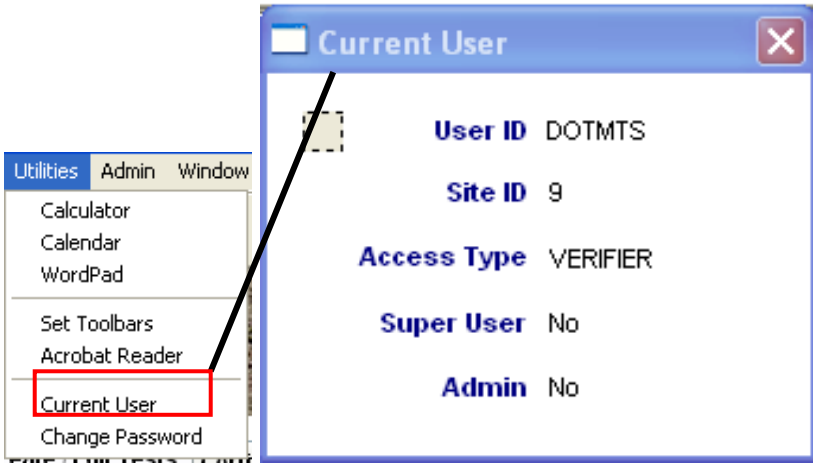


Figure 2-4, User information, MTS

Chapter 3

3. Viewing Reports and Tests

Test reports can be viewed on the MTS or the Materials Tracking Web site. Worksheets and the underlying test data can only be viewed with the MTS. Because the MIT is a standalone PC environment only those tests created on the MIT PC can be viewed while in the MIT. The steps to view a test or report are detailed below:

3.1. Viewing by Test Prefix and Project ID - MIT

☞ **Refer to figure 2.2**

1. Sign on to the MIT. The Main Menu as shown below in figure 3.1 will open.

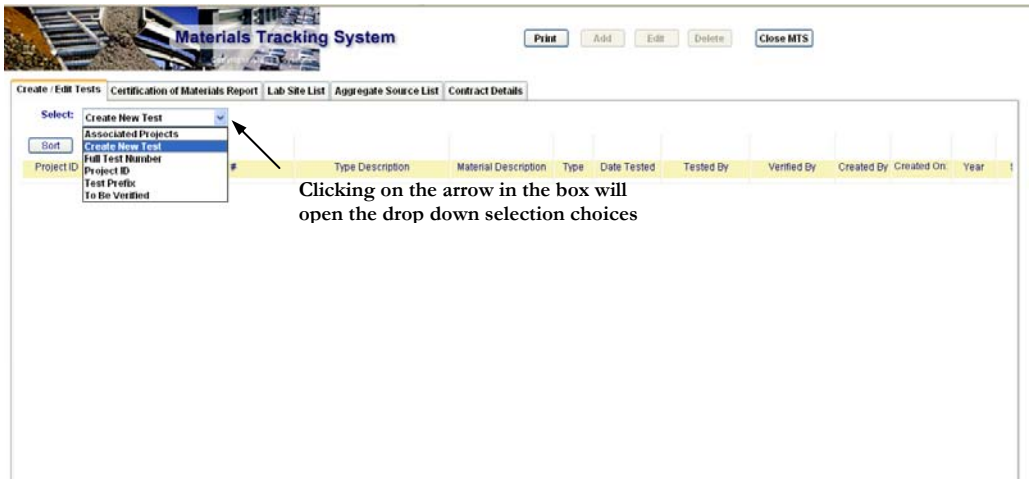


Figure 3-1, Main screen

2. Select and highlight Test Prefix from the list as shown in figure 3.1 above and click on Test Prefix. This opens a Select Test dialog box. To view by Test Prefix move to

the prefix number to highlight and click to continue. A list of all tests for that prefix will open.

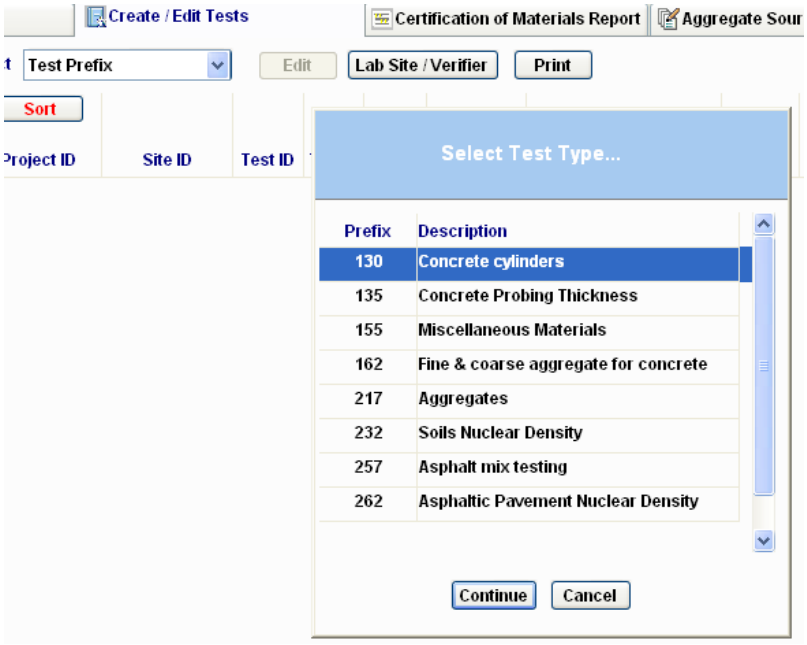


Figure 3-2, Test Prefix selection dialog box

Include the dashes when inputting the project ID

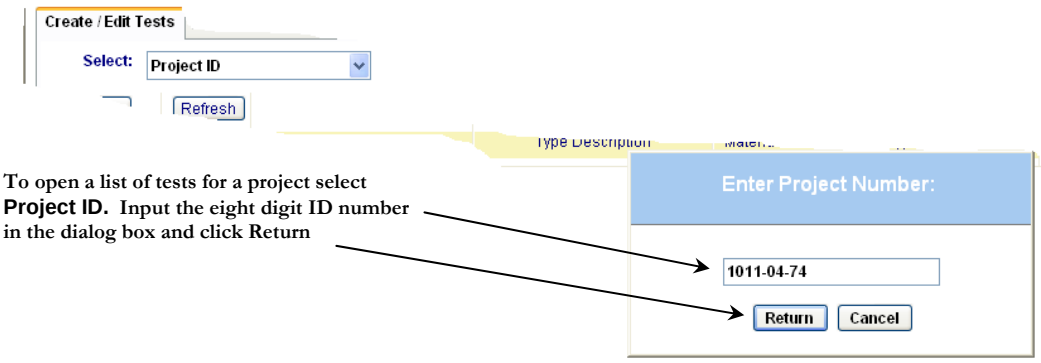


Figure 3-3, Project ID selection dialog box

A list of all the test reports for the selected project will open. Highlight a test from the list and double click it to open.

🗁 **Double click on the highlighted test selected to .**

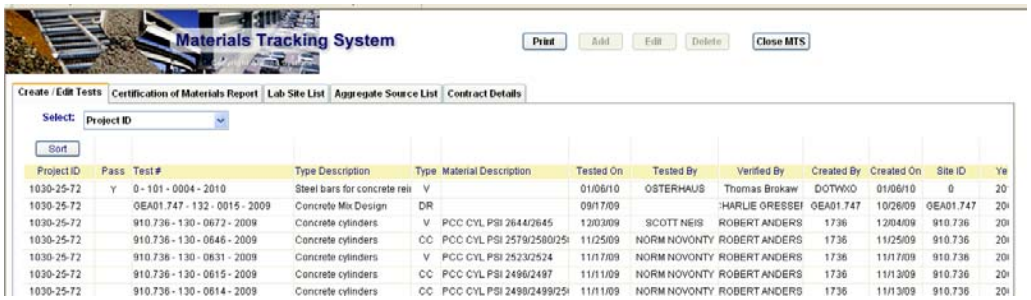
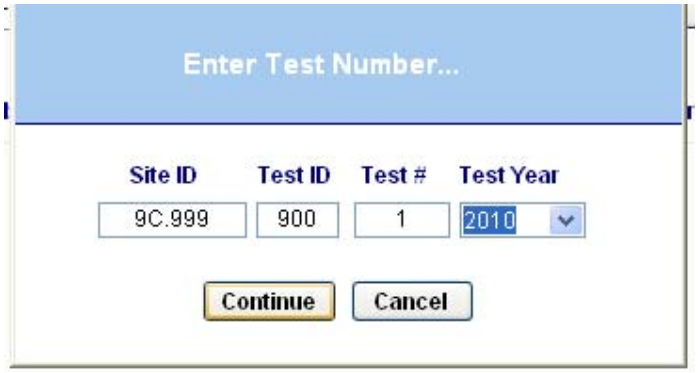


Figure 3-4, Example Project ID test list



An individual test can also be located and opened by selecting Full Test Number and inputting the complete information in the boxes.

Figure 3-5, Individual test location dialog box

Highlight a test from the list and double click it to open.

☞ **Refer to figure 3.6and figure 3.7**

3. The test will open to the Sample Card view. Click on the Test Data tab to view the test data. The report can be viewed by clicking on the Print tab. Note that all the MTSLAN tests are set to *Read Only - this test not in user site* if created outside the area of your authority, i.e. Central Office Lab or other Region test. Refer to figure 3.8 for a report view sample. The test number of each report is broken into four criteria, the site, the test prefix, the test sequence number, and the year. The default order of sort is in ascending order by site then prefix, test number and year. The Sort button can be used to open a box that permits the user to set custom sort criteria and order. Details on this feature can be found in **Chapter 8, Special Features**.

- Click the **Print** tab to view and print a copy of the test report.
- Place insert bar/cursor in a field and click **Print Data** to print data fields

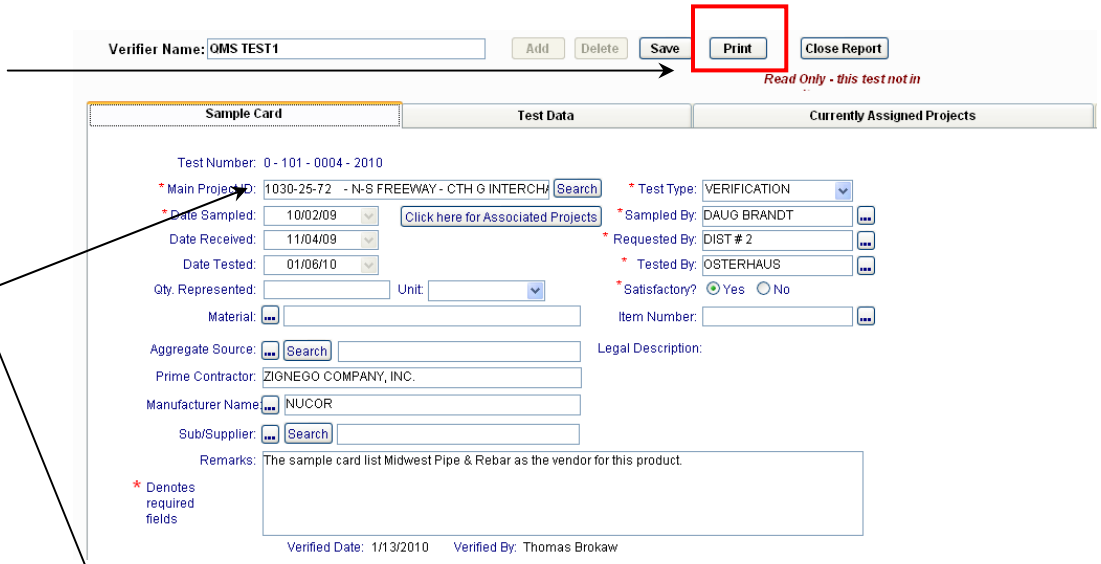


Figure 3-6, Sample Card view

Activate Test tab to view test data screens.

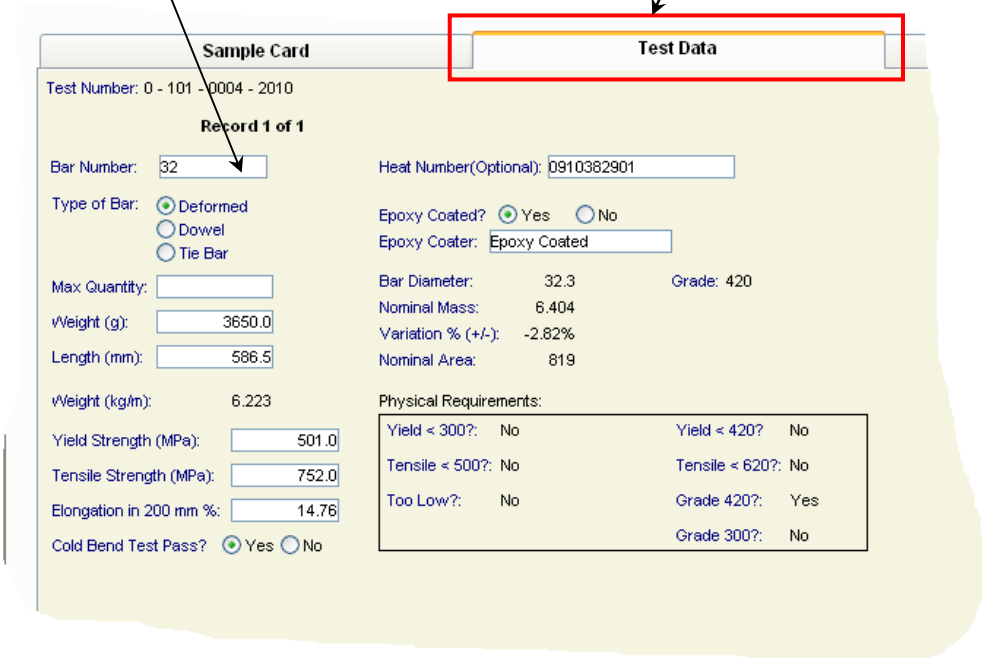
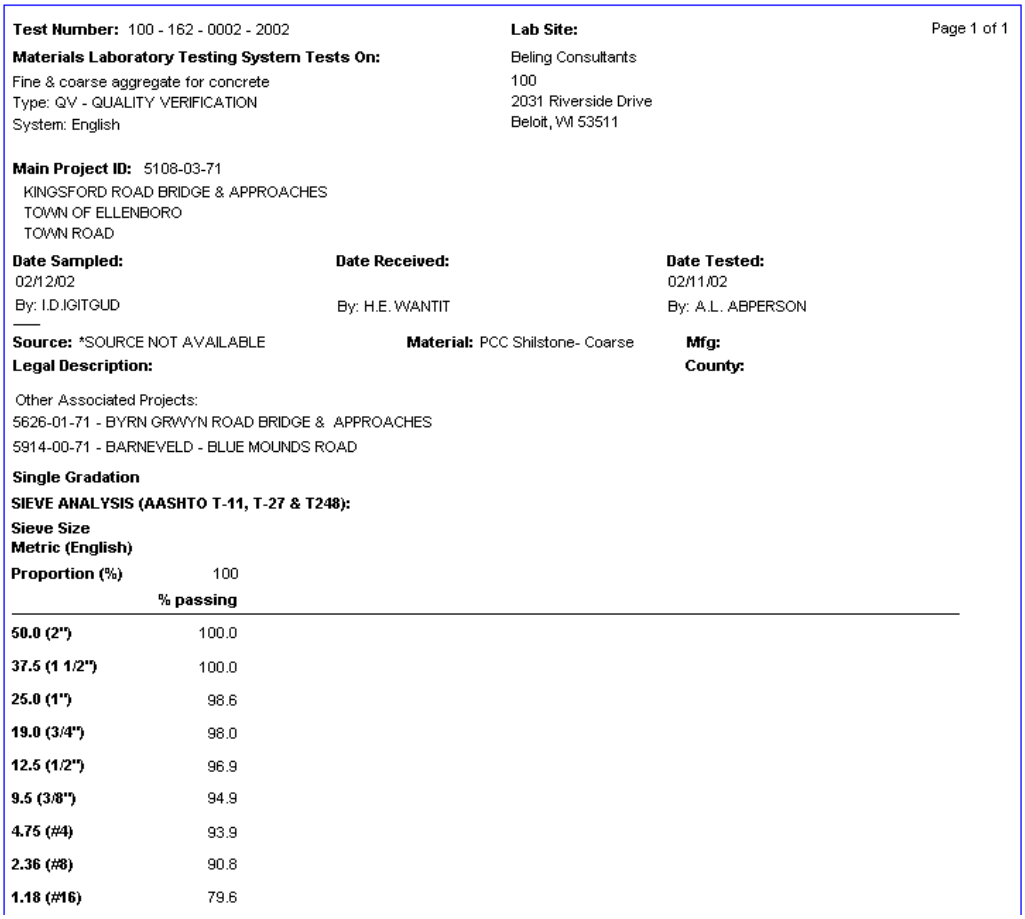


Figure 3-7, Data sheet sample view



Test Number: 100 - 162 - 0002 - 2002

Lab Site:

Page 1 of 1

Materials Laboratory Testing System Tests On:
Fine & coarse aggregate for concrete
Type: QV - QUALITY VERIFICATION
System: English

Beling Consultants
100
2031 Riverside Drive
Beloit, WI 53511

Main Project ID: 5108-03-71
KINGSFORD ROAD BRIDGE & APPROACHES
TOWN OF ELLENBORO
TOWN ROAD

Date Sampled: 02/12/02
By: I.D.IGITGUD

Date Received:
By: H.E. WANTIT

Date Tested: 02/11/02
By: A.L. ABPERSON

Source: *SOURCE NOT AVAILABLE
Material: PCC Shilstone- Coarse
Mfg:
Legal Description:
County:

Other Associated Projects:
5626-01-71 - BYRN GRWYN ROAD BRIDGE & APPROACHES
5914-00-71 - BARNEVELD - BLUE MOUNDS ROAD

Single Gradation

SIEVE ANALYSIS (AASHTO T-11, T-27 & T248):

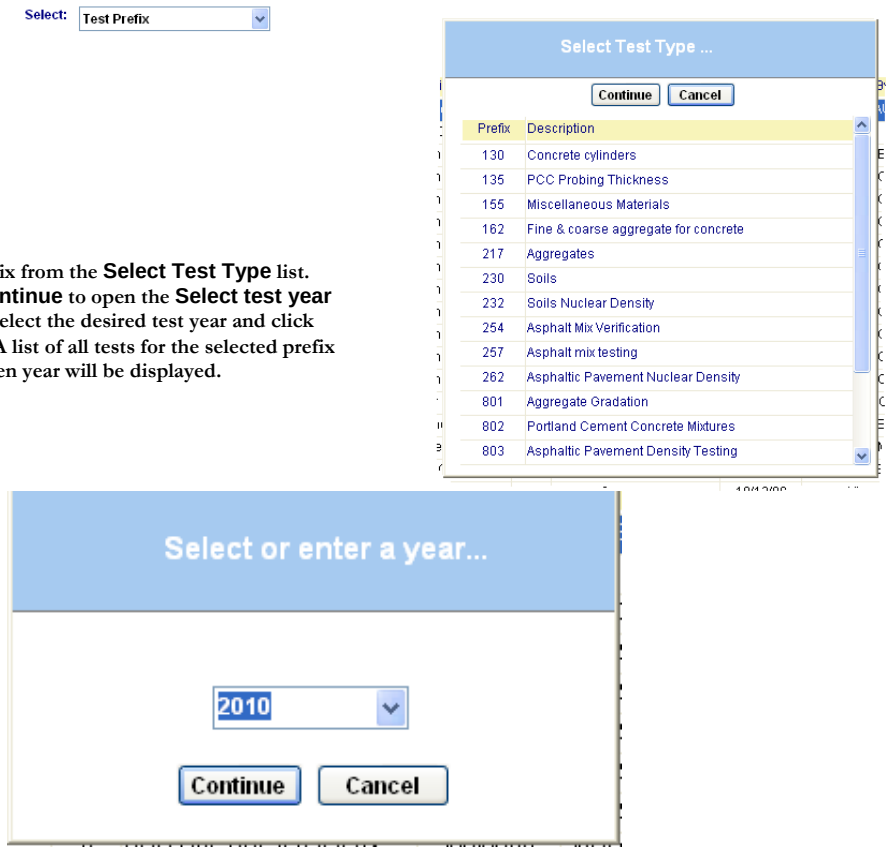
Sieve Size Metric (English)	**Proportion (%) 100 % passing**
50.0 (2")	100.0
37.5 (1 1/2")	100.0
25.0 (1")	98.6
19.0 (3/4")	98.0
12.5 (1/2")	96.9
9.5 (3/8")	94.9
4.75 (#4)	93.9
2.36 (#8)	90.8
1.18 (#16)	79.6

Figure 3-8, REPORT VIEW EXAMPLE

3.2. Viewing by Test Prefix and Project ID - MTS

☞ **Refer to figure 3.1**

To view a test by Project ID, Full Test Number and Test Type Description follow the steps described in section 3.1 Viewing By Test Prefix and Project ID - MITS, figures 3.3, 3.4, 3.5, 3.6,and 3.7. Viewing and opening by **Test Prefix** in the MTS is slightly different due to the large number of tests accessible on the Oracle database. The steps are illustrated in figure 3.9. Lists of the available tests by prefix and description can be found in the Appendix, section 9



Select a prefix from the Select Test Type list. Click on Continue to open the Select test year box. Enter select the desired test year and click Continue. A list of all tests for the selected prefix for the chosen year will be displayed.

Figure 3-9, Test list by Prefix -MTS

3.3. Viewing Reports on the Web site

Users in the field and those that are not authorized to use the LAN or do not have access to the MTS can view reports for verified tests via the Internet. The steps to view reports via the Web site are as described in this section.

1. Open and logon to your Internet browser.

2. Go to Internet site http://www.atwoodsystems.com/mrs

☞ **Refer to figure 3.10**

3. Logon on to the **System Information Browser.** If you are not a registered user click on the link on the bottom of the screen to sign up as a new user. You will be sent e-mail with the password to the e-mail address you specified in the New User Signup page form.

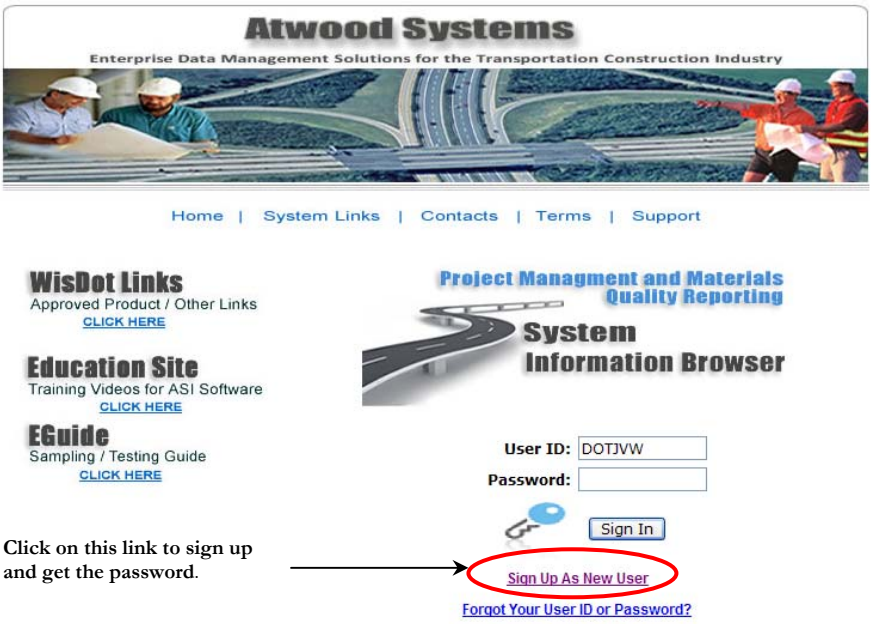


Figure 3-10, SYSTEM INFORMATION BROWSER entry portal

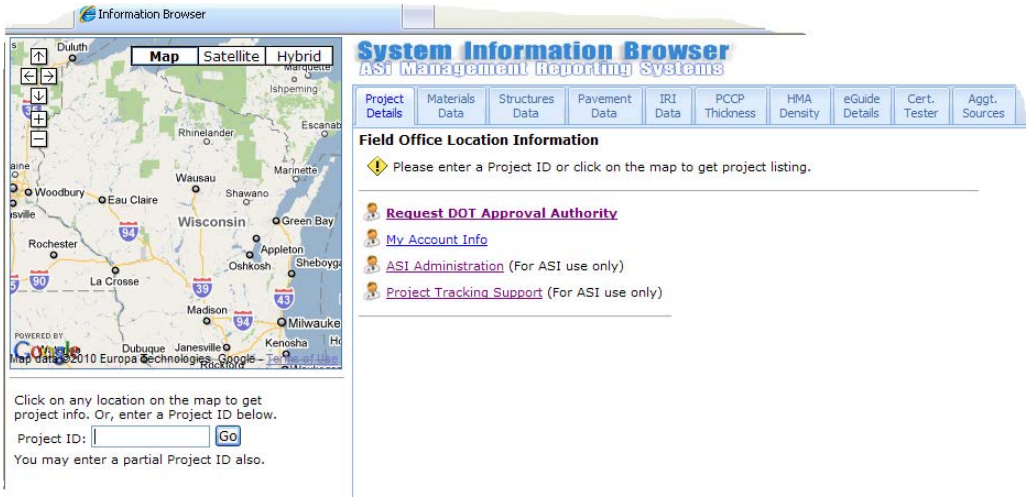


Figure 3-11 System Information Browser main page

☞ **Refer to figure 3.10**

4. Enter the project ID or mouse over the map and click to get a list of projects for a specific region. Click on the selected project.

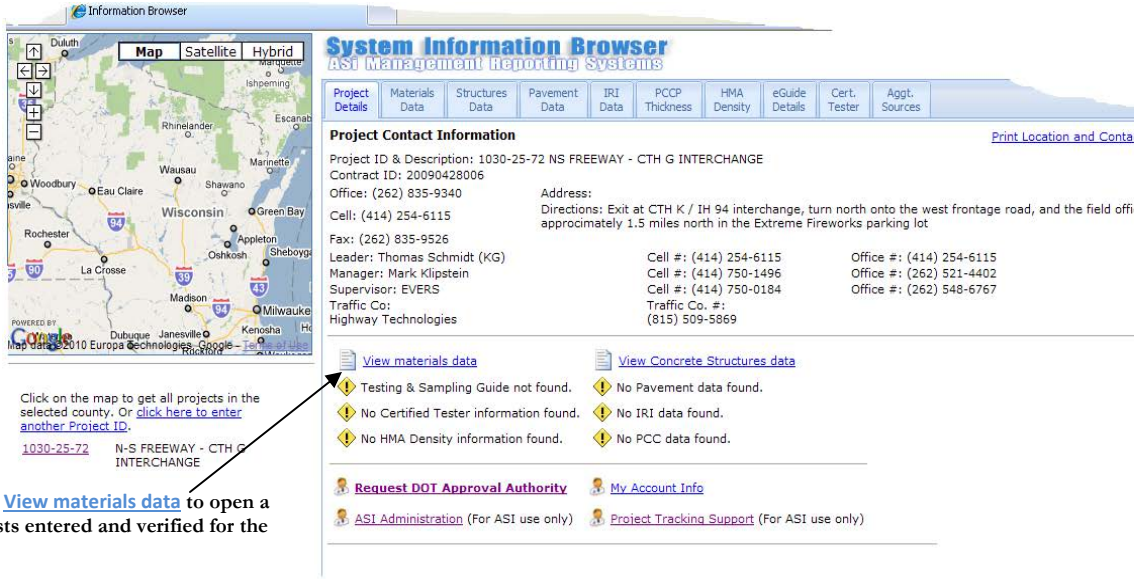


Figure 3-12, Project Browser page

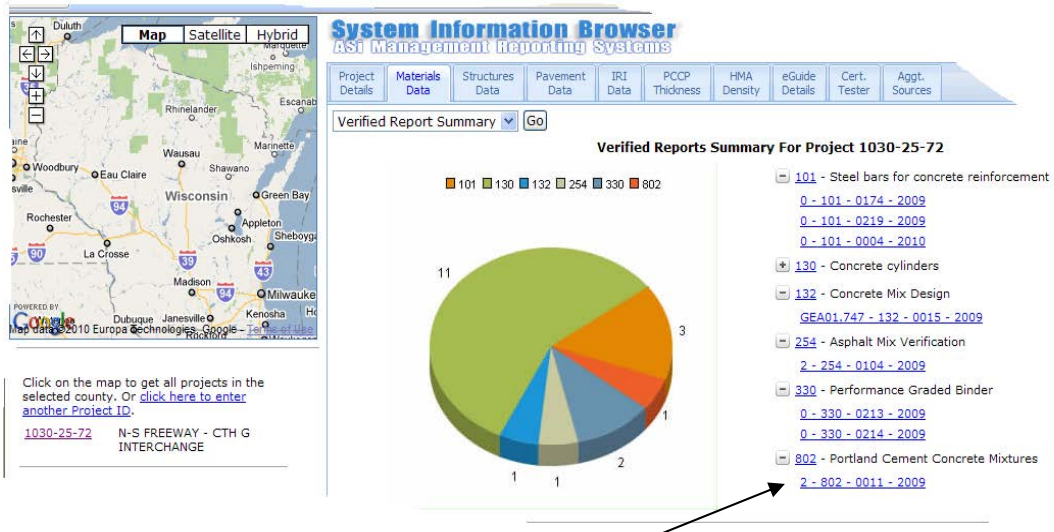


Figure 3-13, Verified Reports Project Summary

Note that only verified reports can be viewed on the Web. The MTS must be used to view the underlying test data located on the Oracle database.

Test Number: 2 - 802 - 0011 - 2009

Materials Laboratory Testing System Tests On:
Portland Cement Concrete Mixtures
Type: IA - INDEPENDENT ASSURANCE

Main Project ID: 1030-25-72
N-S FREEWAY - CTH G INTERCHANGE
CTH G/BRIDGE/CROSS ROAD/RAMPS
IH 94

Labsite:
2-SE Region
WisDOT SE Region Lab (LAN ONLY)
141 NW Barstow Street
Waukesha, WI 53187

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Quantity:
50 CUBIC YARDS

Date Sampled:	Date Received:	Date Tested:
08/03/09	08/03/09	08/03/09
By: NATE WHEELER	By: SE REGION - 94NS	By: NATE WHEELER

Source: **Legal Description:** , , Section: , T: N, R: , **County:**

Material: PCC BRIDGES - SUBSTRUCTURE
HTCP Certified Tester NATHANIEL WHEELER **HTCP Tester ID / Company** 103184 : GILES ENGINEERING
Tester Affiliation Giles Engineering **Reviewed By** Tony Straseske **Reviewed Date** 08/03/09
Sampling Method Truck discharge - Ready Mix **Observed Test Type** QC **Air Meter ID**
Sampling Location Truck **Placement Location** East Abutment **Air Meter**
Comments **Follow Up Required** Yes **Follow Up Full Test #** **Calibration Date**

Good sampling and testing procedures were observed. Minor deviations are noted in this report and were discussed with Nate on site. I will perform a follow-up inspection to determine that corrections are adhered to.

Equipment deficiencies:
1.) slump cone has dried concrete on upper 2/3 of the inside.
2.) no sample cover

Y = Acceptable N = Exception X or Nothing = Not Applicable

SAMPLING (CMM 8.70, AASHTO T-141)

1 . 1	Y	Sample obtained correctly per CMM 8.70 / If QMP was proper random selection made (4-15-12
1 . 2	Y	Time to obtain total composite sample no more than 15 minutes ?
1 . 3	N	Sample protected / covered ?
1 . 4	Y	Minimum size is 1 cubic foot when cylinders are cast ?
1 . 5	Y	Individual samples combined and re-mixed ?
1 . 6	Y	Sampling &mixing receptacle, clean, non-absorbent, large enough ?
1 . 7	Y	Excess of composite sample or mix used for air/slump discarded ?

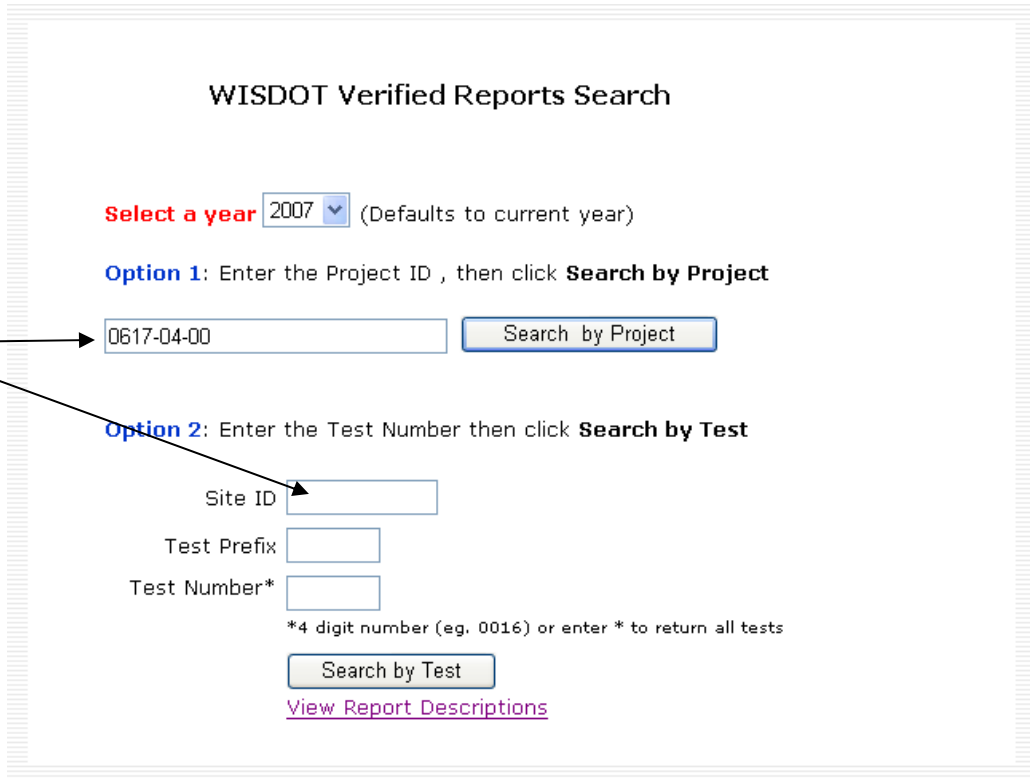
SLUMP (CMM 8.70, AASHTO T-119)

2 . 1	N	Apparatus and tools meet requirements ?
2 . 2	N	Cone clean and damp, on damp, rigid, level non-absorbing surface ?
2 . 3	Y	Test started within 5 minutes of final sampling ?
2 . 4	Y	Cone held firmly in place ?
2 . 5	Y	Filled in three layers of equal volume ?

Figure 3-14, Test Report example

Click a tab to open a choice list. As an alternate means to view test reports select Search Verified Reports. Refer to figure 3.16

Figure 3-15, Selection using System Information Browser tabs



Enter the full project ID or the complete test number information view a test. Click on the Search By box that applies

Figure 3-16, Verified Reports Search page

3.4. Viewing Approved Source and List Information

Select and activate WisDOT Links Go on the Materials Data tab to get links to lists of WisDOT approved suppliers, qualified products, and certified sources. Click on **Approved Products** to get a list of files to open or download. Refer to figure 3-17. In addition to the Approved Lists, lists of approved Steel Plate Beam Guard shipments, Approved Nuclear Density Gauges, Summaries of WisDOT tests and batch numbers for White Pigmented Curing Compounds and Glass Beads, and Aggregate source information are also included. Refer to the Appendix, section 9.4 for a listing of Approved products and sources.

Figure 3-17, System Information Browser, WisDOT links page

Chapter 4

4. Creating New Tests-Fundamentals

IMPORTANT: Chapters 4 & 5 are instructions for entering new tests. *Refer to Chapter 6 Saving and Editing Tests*

Some basic information is required to be entered when each new test is entered. This information is entered on the. Sample Card All tests except the prefix 900 (refer to Section 5.10. Prefix 900 Reference Report) have in common a similarly formatted Sample Card. The steps to set up a new report to begin test entry are described in this section.

4.1. Setup - opening the Sample Card

To open the card to enter set up information:

Refer to figure 3.1

1. From the Select drop down box highlight and click on **Create New Test**. Highlight and select the test prefix choice from the list. The 254 and 800 series prefixes are also available to the Region and MTS LAN users. The larger list of prefixes shown in the Appendix, section 9 is only available to the Central Office Laboratory.

2. Click on prefix choice to select a test to begin entry

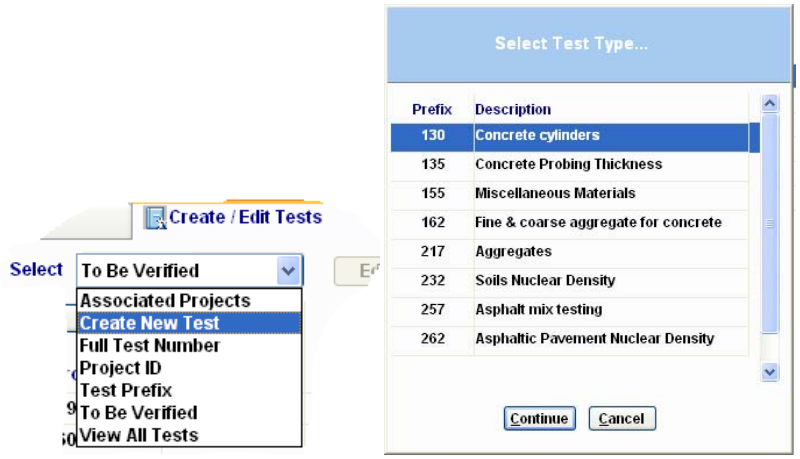


Figure 4-1, Create New Test -MIT

IMPORTANT for MIT: Verify that the lab site selected is the correct one before proceeding. The lab site ID will become the first part of the unique test number.

3. When a test is first created in the MIT the **Lab Site and Verification Name Information** dialog box opens. Enter verifier person name into the box provided. Select from the alpha list to find your company name. Find and select your company or Region name from the list. Chose and select your physical address location. This is only necessary for the MIT. When finished click either/or Save and Continue Save / Stop Prompting button to chose the save option, figure 4.2. Changes can be made at any time by clicking on the Lab Site / Verifier button to open the dialog box shown below, figure 4-2.

4. If your site is not available contact BTS, for help see section 1.3, page 3 of this guide. Refer to **Chapter 8, Special Features** for instructions on updating the Lab site list to the MIT.

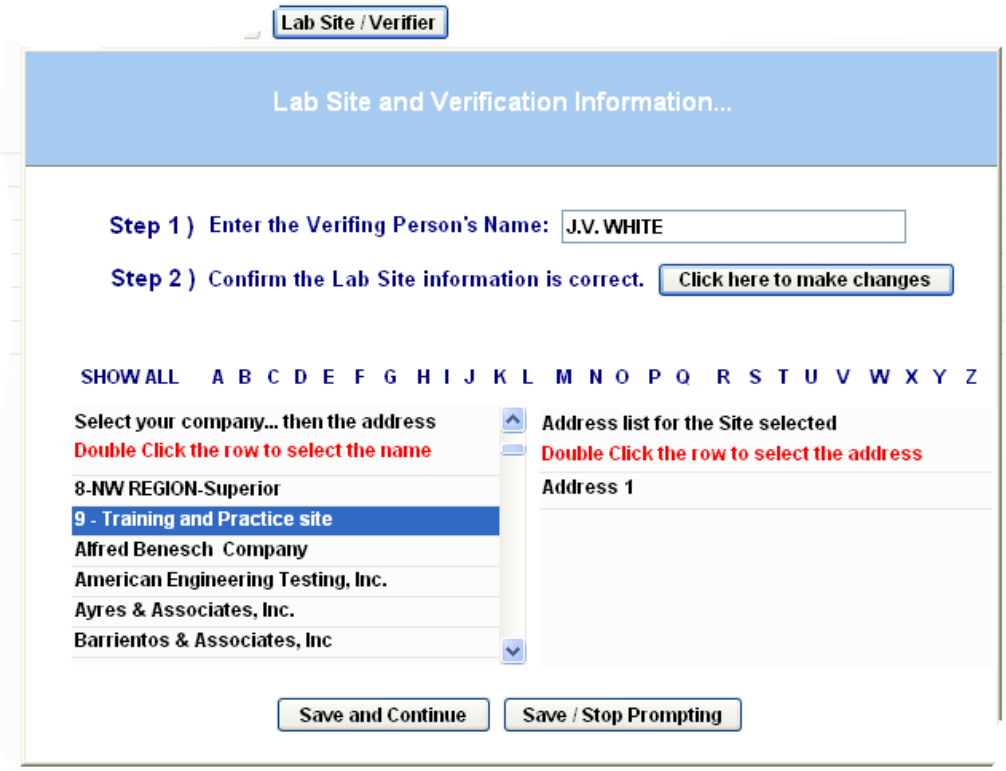


Figure 4-2, MIT Lab Site selection and Verifier name box

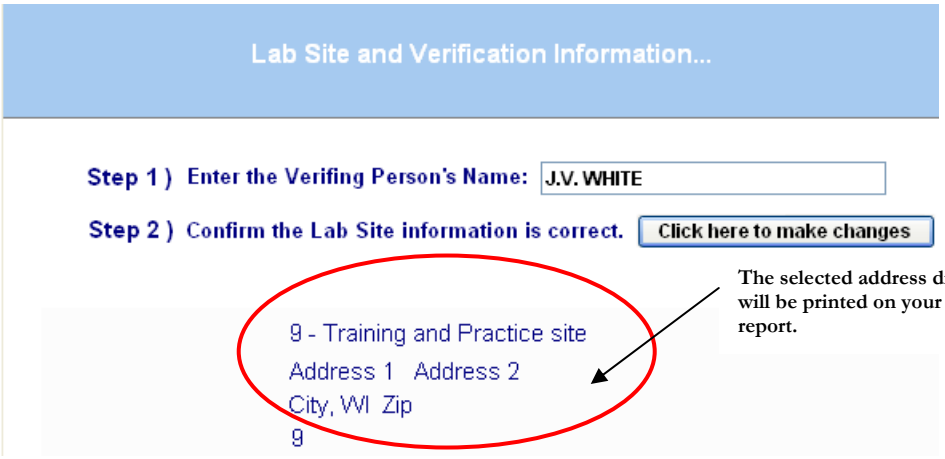


Figure 4-3, Lab Site selection address example

Only users that have been given DATAENTRY or VERIFIER access authority can enter create and edit tests. Refer to section 1.3 page 3 regarding change of authorities contacts.

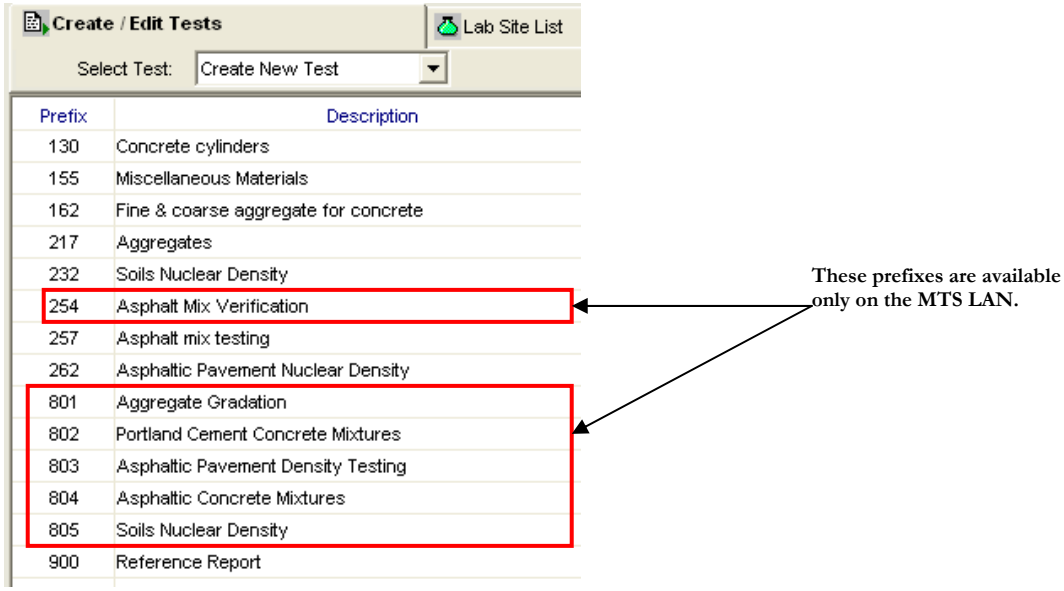


Figure 4-4, Create New Test - MTS

The sample card as shown in figure 4.4 is now open for entry.

Click on the box next to the field name to display a list of previous entries for selection.

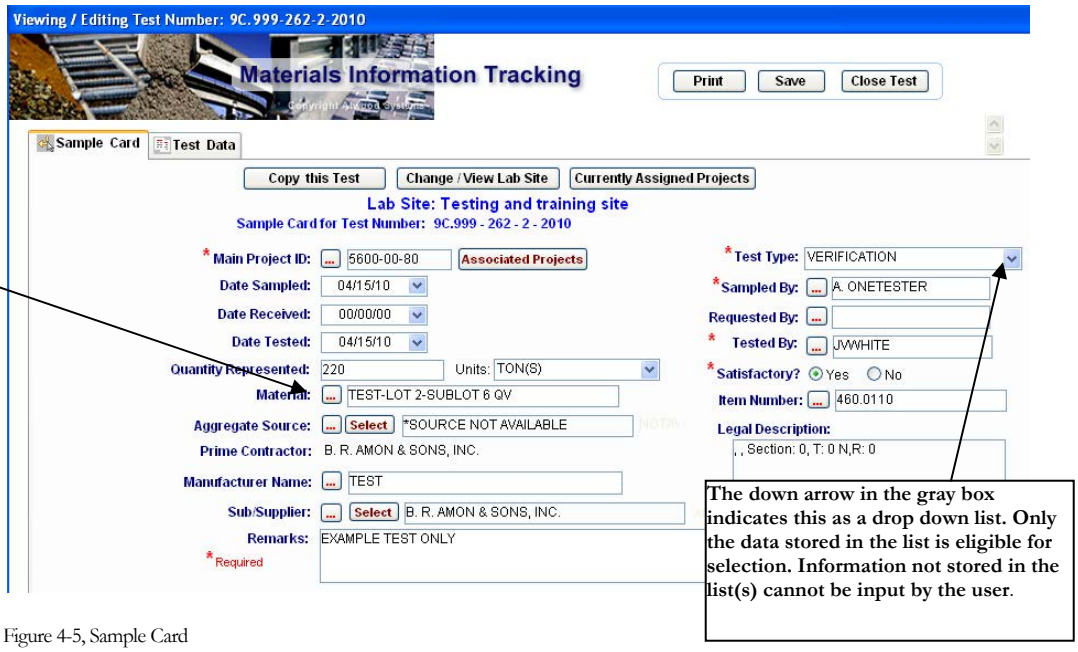


Figure 4-5, Sample Card

The Enter or Tab keys can be used to move between fields to enter data. Sample card fields marked with a red asterisk (*), such as **Main Project ID** and **Test Type** entries are required to save a test to assign a test number.

4.2. Functions and description of the Sample Card screen

Input the first few digits of the ID to quickly find the correct ID on the list.

Main Project ID: The project to which the test is assigned. This is mandatory information and is required before saving a test. The Main Project ID is selected from the list. **MIT users select** **tab to open the dialog box for adding projects**

Figure 4-6, Contract- Projects selection dialog box

Click on to open the list for contracts, see below Figure 4-7.

To make a contract inactive highlight (by selection) a contract/project and click on the Stop Showing Project tab. This only makes a contract inactive and does not remove it.

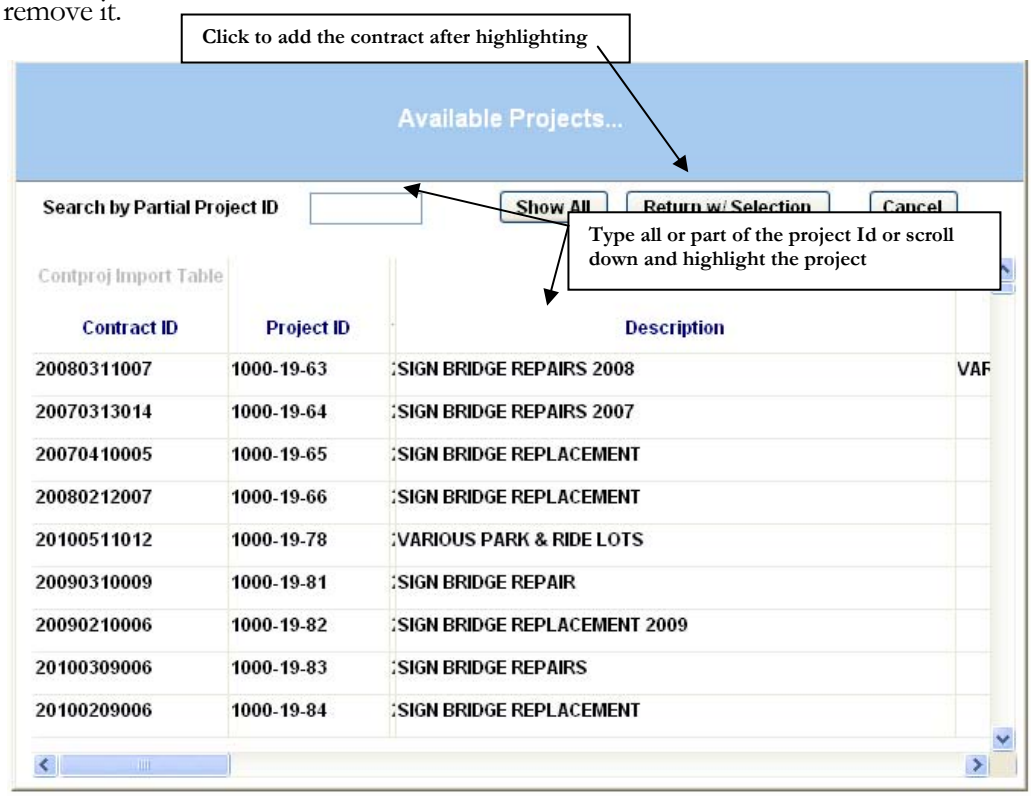


Figure 4-7, MIT Contract/project selection

Click on the Main Project ID Search to open the Projects List search screen in the **MTS LAN** version. Enter all or part of the project ID to locate the project. Then select the project to lay it into the Main Project ID field. Non-Let contracts added to the system cannot be found on the complete (All) or Region lists. For Non-Let projects added to the system select the Non-Let Projects tab for a selection list. Contact the Bureau of Technical Services if you need to have an LFA or other non-let contract type added. Refer to Contacts and Help Section 1.3

☞ **Refer to figure 4.9**

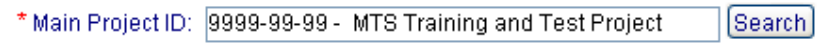


Figure 4-8, MTS project ID field

Figure 4-9, Project ID selection, MTS LAN

No Test Type entry is needed for the Prefix 900 Reference Report

Test Type: Identifies the basis of the test or use of a test report. This information is required before a test can be saved. Correct Test Type needs to be selected. The available choices vary dependent on the test prefix. Definitions for each test type are listed below:

Please carefully note the test types designated as *RESERVED.* DO NOT select these types unless you have been authorized.

- ACCEPTANCE (A): Report on testing done by WisDOT when Quality Management Program (QMP) testing is not required. ***This designation was only used prior to year 2003. Verification (V) replaces this type.***
- ANALYTICAL TEST (AT): ***RESERVED*** for use by Central Office Laboratory personnel only. Typical AT test report would be design test data or test research information.
- CERTIFICATION VERIFICATION PROGRAM (CVP): Report done for the WisDOT CVP. ***RESERVED*** for use by the Region IA Specialist or approved persons. Prefix 155 only.
- CERTIFICATIONS ON FILE (CF): Report used for referencing external Certification of Compliance and Certified Report of Test and Analysis documents. Prefix 155 only.
- COMPANION CYLINDERS (CC): Cylinders made by the contractor QC for Department testing. Prefix 130 only.
- CONTRACTOR DATA ENTRY(CDE): ***RESERVED*** for use by Central Office Laboratory personnel only. Used with the entry of prefix 225 aggregate quality test data provided to the department by the contractor
- INDEPENDENT ASSURANCE (IA): Report of test and observation done for the Independent Assurance Program. ***RESERVED*** for use by approved Independent Assurance personnel

- QUALITY CONTROL (QC): Report of test done by the contractor as required under QMP specifications. Not commonly input at this time. Electronic entry of QC test is optional for MTS.

- QUALITY VERIFICATION (QV): Report of test done by WisDOT to verify product/material quality. ***This designation was only used prior to year 2003. Verification (V) replaces this type.*** Commonly these are tests of independent samples taken by the Department as required by certain QMP specifications. Formerly used interchangeably with Acceptance (A). Department QV and A tests are done to verify material quality.

-

- VERIFICATION (V): Report of test done by WisDOT to verify product/material quality. These are tests of independent samples taken by the Department as required by certain QMP specifications or for non-QMP material acceptance. This type replaces Acceptance (A) and Quality Verification (QV).

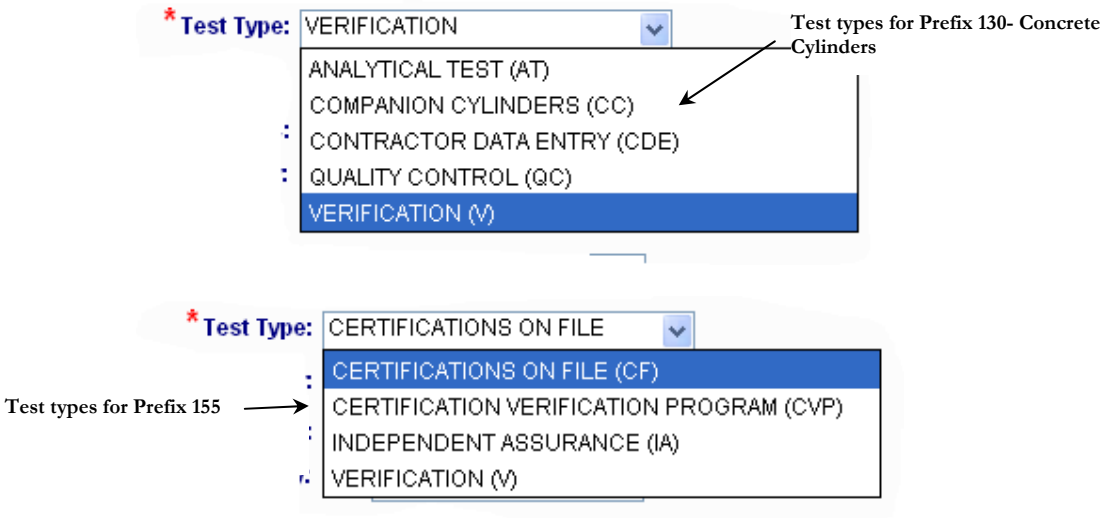


Figure 4-10 Test Types

The Prefix 801, 802, 803, and 804 **Test Type** choices include only IA and V. These #800 prefix reports were specifically designed for Independent Assurance Program reporting of split sample tests and IA observations. Some Prefixes have **Test Type** selection of ANALYTICAL TEST (AT). This test type is ***RESERVED*** for Central Office Laboratory use.

Date Sampled: The date the sample was taken.

Sampled By: The name of the person who sampled the material- ***Complete names are required – first initial last name minimum***. Avoid company names or initials.

Denote either the qualified sampler or qualified person who observed sampling by another when so allowed.

Figure 4-11, Sampled by field example-correct

Figure 4-12, Tested By field- incorrect

Date Received (requested): If applicable, the date the sample was received at the lab. Used for tracking turnaround time on samples sent to another lab, such as a Region or C.O. lab.

Requested By: This field is used to denote who is requesting the test, for example SW Region would be noted when cylinder testing by C.O. lab is requested by the Region

Date Tested: This field defaults to the current date. The actual date tested should be input if other than the current date.

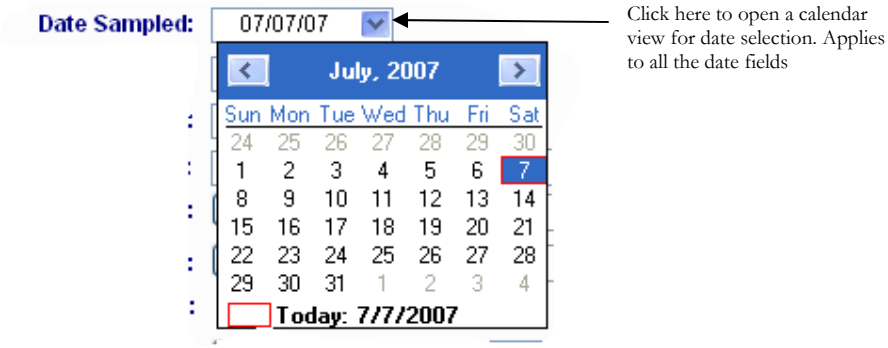


Figure 4-13, date calendar view

☞ **Refer to figure 4.11 and 4.12**

Tested By: The name of the person doing the testing- The same convention as described for Sampled By applies to the Tested By field. **Entered By** replaces this field on the prefix 155 and 900

Utilize these fields to the maximum extent possible. This important information is used to track and validate compliance to test frequency requirements.

Quantity Represented and Units: These fields are provided to record the amount of material that is represented by the test report. The **Units** field is a drop down selection list of standard units of quantity measure. Data should be entered in these fields when applicable.

Figure 4-14, Quantity fields

Material: Additional descriptive information about a test type should be input in this field- Used to expand on the basic description of a test type. For example, the basic description for prefix 155 is Miscellaneous Materials. To fully describe the material tested under this prefix, add text to more fully describe the material reported, e.g. O.G.B.C. #2 Permeability Tests. This will be included as a second descriptor on the list of tests, e.g. O.G.B.C. #2 Permeability Tests – Miscellaneous Materials. This field should similarly be used to expand on the descriptions of other basic test types as needed.

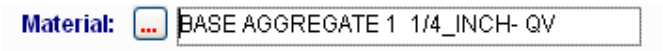


Figure 4-15, Material description field

Source: Used when entering aggregate tests. The source is selected from a list of approved aggregate source pits and quarries that have current satisfactory quality tests (wear/soundness, freeze-thaw) recorded by the C.O. Lab. This field should always be included when entering aggregate test data.

Click on the Select button to open the Aggregate source list selct screen

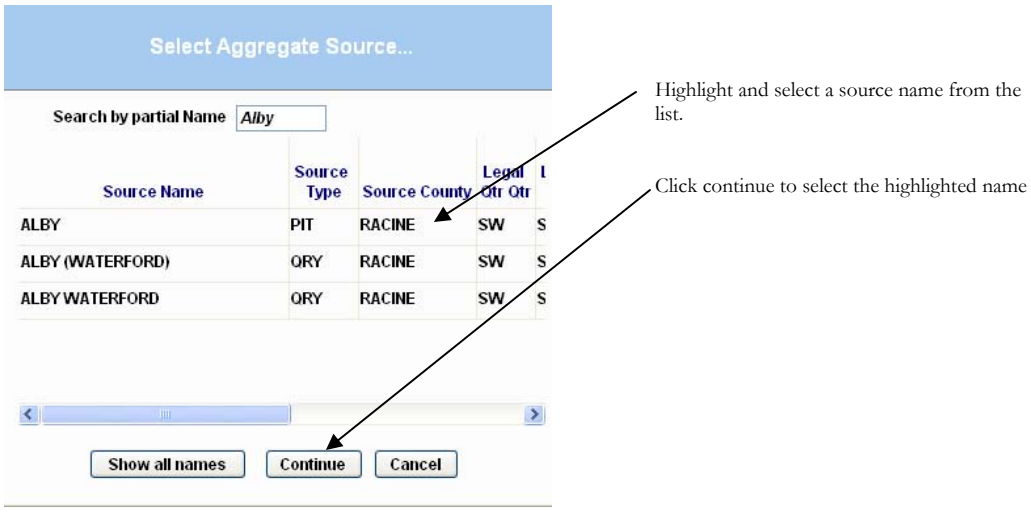


Figure 4-16, Aggregate source selection window

Prime Contractor: The prime contractor name associated with the project is automatically filled in this field when the project ID is selected.

Manufacturer Name: This field can be used to enter optional information for a manufacturer or vendor.

Sub/Supplier: This field is used to indicate the material subcontractor or supplier. The Sub/Supplier is searched and selected from a Sub Supplier List in the same manner as the Aggregate Source.

Refer to figure 4-17 on page 30.

Figure 4-17, Sub Supplier selection window

Remarks: An entry area for brief remarks about the test. Limit the use of this field to the physical limits of the entry box, about 3 lines.

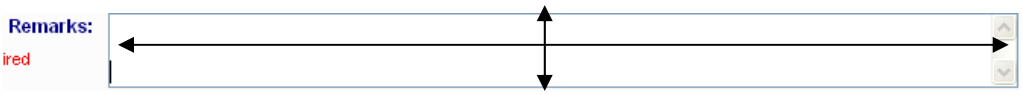


Figure 4-18, Sample card remarks

Satisfactory? : The tester must examine the test result for conformance to the specified requirements and select accordingly. This is required for most test prefixes. A remark is required if the test is marked unsatisfactory

Figure 4-19, Satisfactory/Unsatisfactory select buttons

Item Number: This field is for inputting a bid item number relevant to the tested material.

Figure 4-20, Item number field

Chapter 5

5. Creating New Tests- Data Entry

IMPORTANT: For instructions on saving and editing tests *Refer to Chapter 6 Saving and Editing Tests*

The sections that follow discuss and illustrate test data entry for the basic field (MIT) and Region (MTS) tests. These tests are the prefix 217 Aggregates, prefix 162 Fine & coarse concrete aggregates, prefix 135 Concrete Probing Thickness, prefix 155 Miscellaneous Materials, prefix 254 Asphaltic Mix Verification, prefix 257 Asphalt mix testing, prefix 262 Asphaltic Pavement Nuclear Density, prefix 232 Soils Nuclear Density, and prefix 900 Reference Report. Prefix 130 Concrete Cylinders is included as information to those that need to enter cylinder information. After completing the applicable sample card information (refer to *Chapter 4 - Creating New Tests – Fundamentals*), click on the Test Data tab to open the data entry worksheet(s) for the test prefix selected.

5.1. Prefix 217 - Aggregates – MTS & MIT

HELP: Context sensitive help is available for this prefix. Press the F1 key in any active field to open a Help window for that topic.

This worksheet is used for entering Base Course, Granular Backfill, and Breaker Run Stone field aggregate tests.

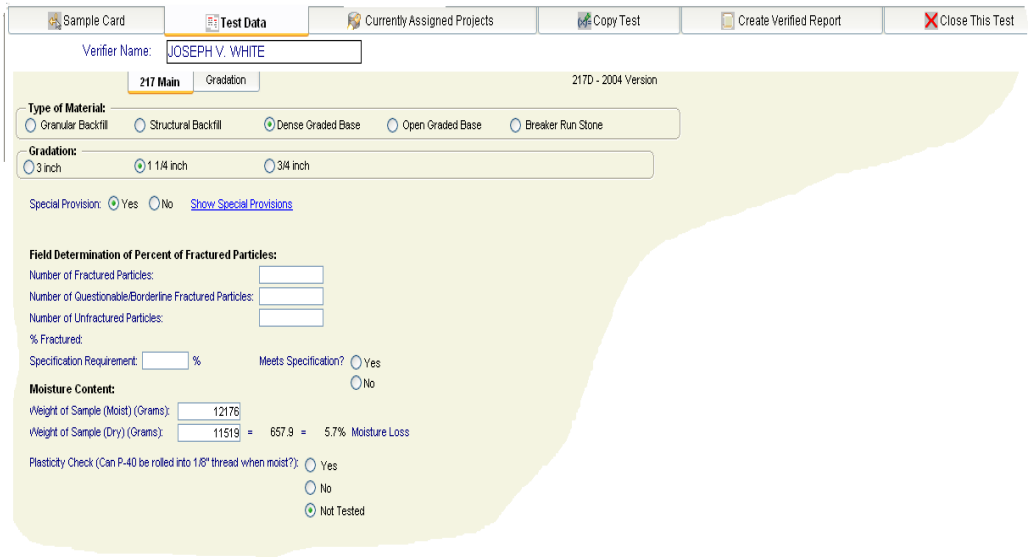


Figure 5-1, 217 Main test data screen

Important ! Once a Type of Material and Gradation choice is selected it cannot be changed.

Select the **Type of Material** by clicking on the appropriate radio button (217 Main tab). This will cause the **Gradation** choice buttons to activate for the applicable material type selection.

Example: Dense Graded Base Course, 3-inch is tested then click buttons to select

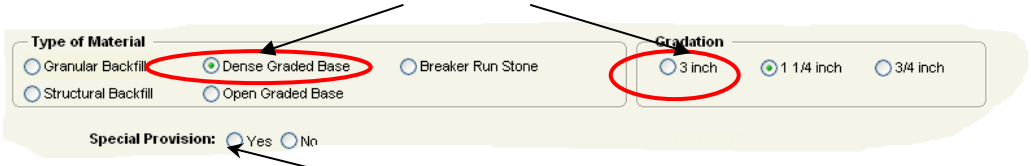


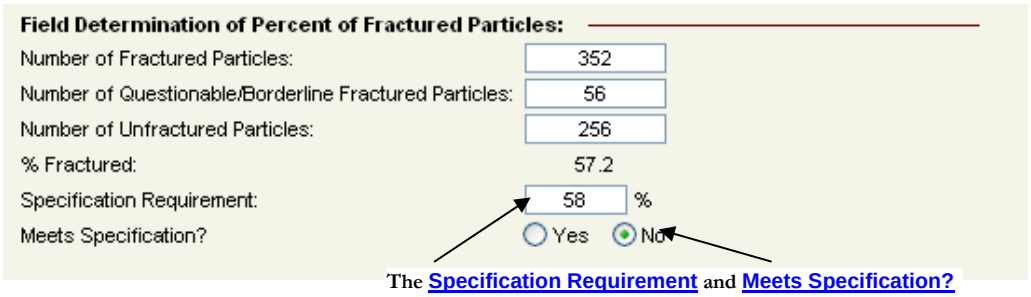
Figure 5-2, 217 Type of Material selection

No specifications will be displayed if Yes.

Selecting the **Type of Material** and **Gradation** sets the specifications onto the test and determines the basis for the test calculations. For example if selecting Base Course or Open Grade -Grade 2 calculations will be done by proportional combination of R-4/P-4 gradations. The program completes all calculations.

The **Field Determination of Percent of Fractured Particles** test if required can be entered in the area provided on the 217 Main screen. The % Fractured will be calculated. This screen currently only applies to one face fracture tests.

A number must be entered into the Number of Questionable… field. If none enter a zero.



The Specification Requirement and Meets Specification? choice are to be entered by the tester.

Figure 5-3, 217 Fractured particles

For all material types the fields on the **Moisture Content** area must be completed. If the material is dry as received record the same weight (mass) for moist and dry

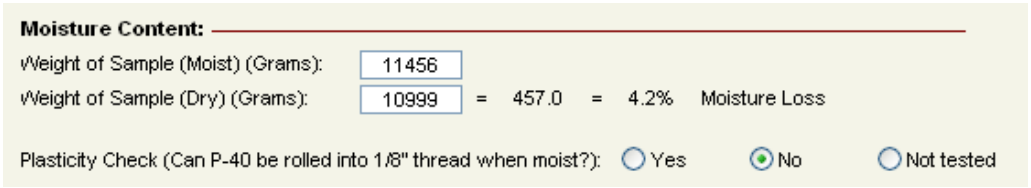


Figure 5-4, 217 Moisture content

☞ **Refer to figure 5.1, page 32**

After entering the required data on the 217 Main portion of the test worksheet, click on the **Gradation** tab to open the sieve analysis data entry section.

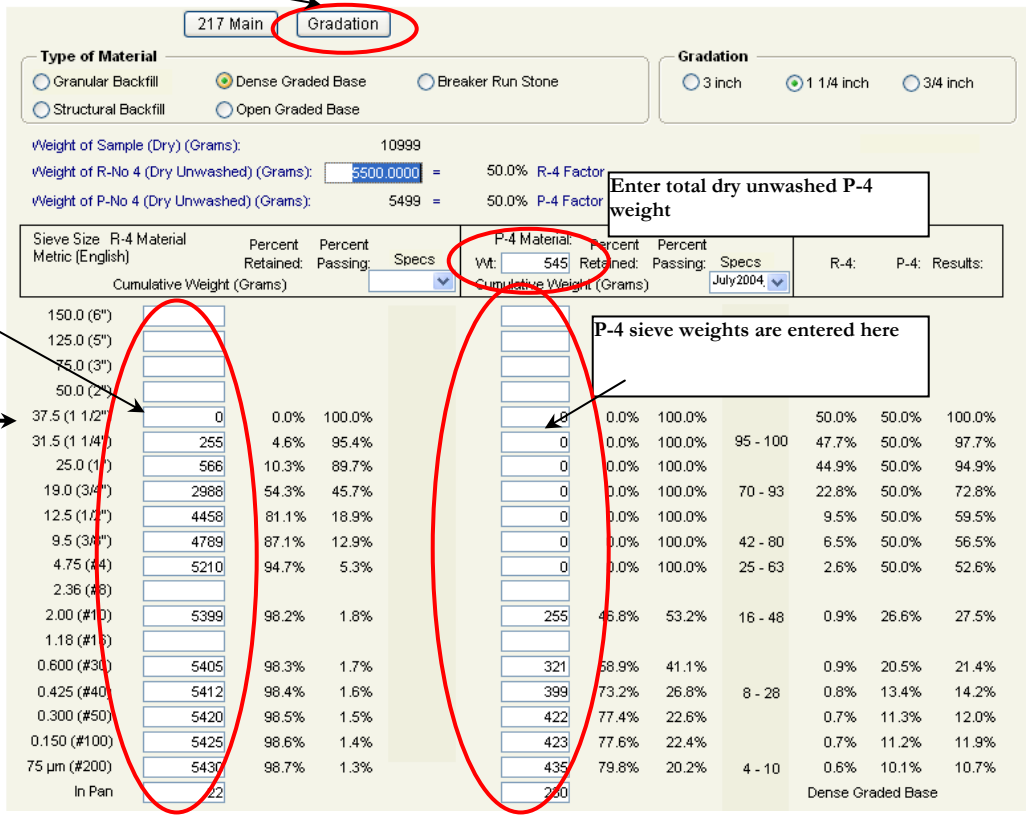


Figure 5-5, Sample Base Course Gradation Worksheet

5.1.1. Granular Backfill, Structural Backfill, and Breaker Run Stone

The prefix 217 worksheet is also be used for entering granular back fill, breaker run stone and other special aggregate sieve analysis tests. Granular or Structural Backfill samples that are 100% P- No. 4 as received and tested require a zero to be entered into the R-No. 4 field. The entry of the test data is done in the same manner as that for the dense graded base courses. The major distinctions are:

1. The R-4 side of the worksheet is calculated separately based on the total dry unwashed weight of the sample.

2. The P-4 side is calculated separately.

3. The R-4 and P-4 sieve analyses stand-alone and are not proportionally recombined.

5.1.1.1. GRANULAR AND STRUCTURAL BACKFILL

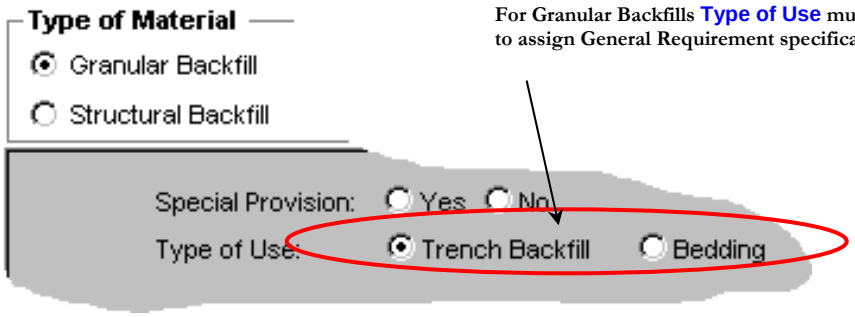


Figure 5-6, 217 Backfill type selection

. For example the specifications for trench backfill requires that 100% pass a 150 mm (6") sieve, not less than 85% passes a 75 mm (3") sieve and not less than 25% passes a 4.75 mm (#4) sieve. These totals are based on the total sample mass. The remainder of the specification is based on the material passing the 4.75 mm (#4) sieve.

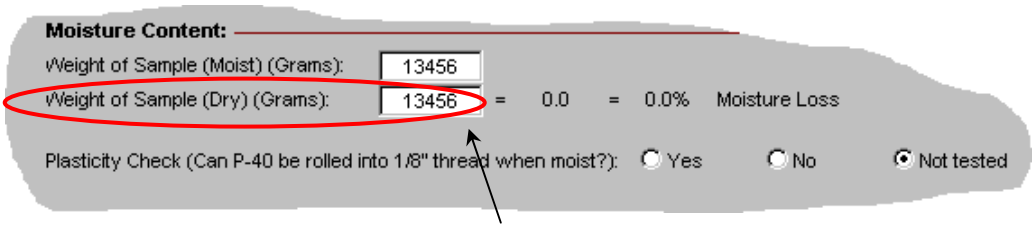


Figure 5-7, moisture content

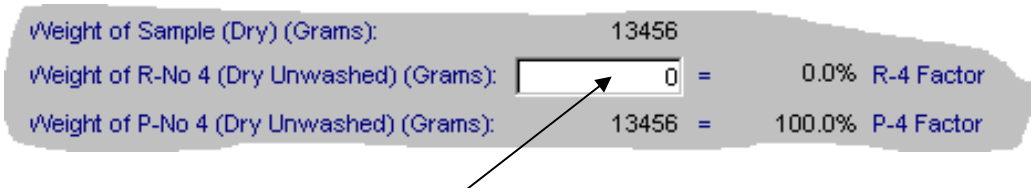


Figure 5-8, Prefix 217 R-No 4 entry

Note in the figure 5.10 below that the values for the 150 mm, 75 mm and 25 mm have been input on the R4 side of the worksheet. The percents passing are calculated on the total dry unwashed sample weight (figure 5.7). The P4 percent passing weights are calculated based on the P4 weight input on the worksheet. The percent passing values shown for the R4 side and the P4 side are the numbers used for comparison to the specification and are those shown on the report. Refer back to figure 5.5 and note the base course test final values.

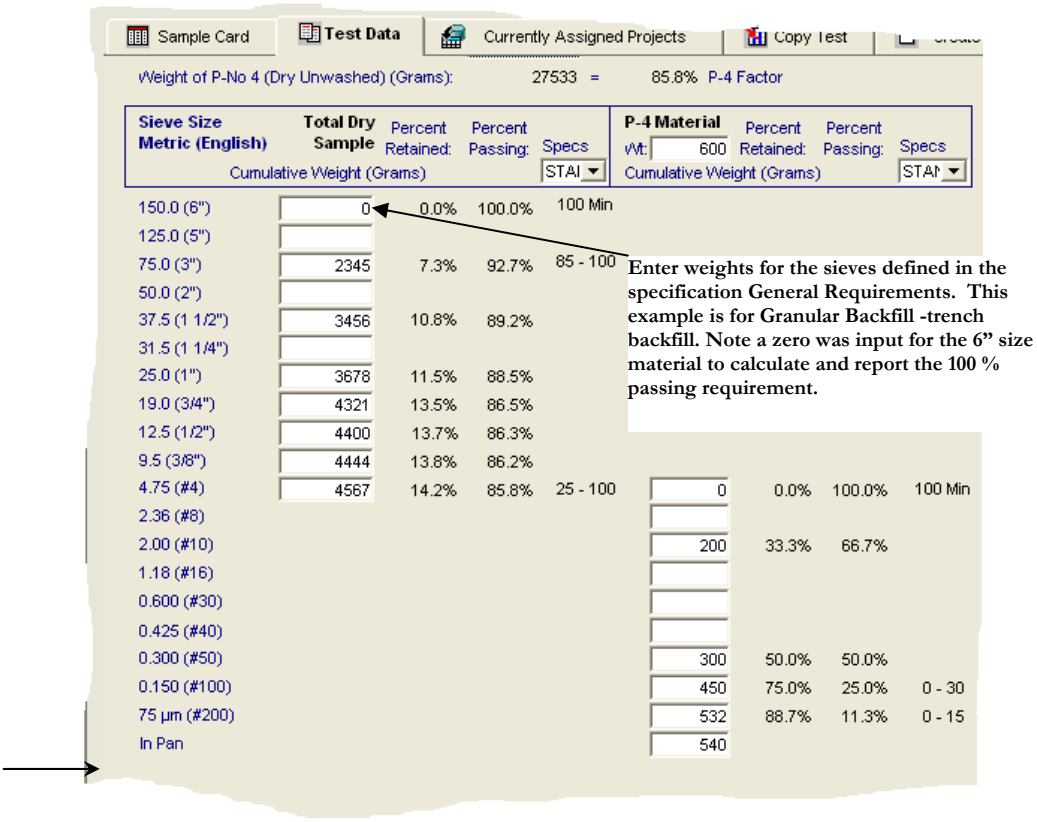


Figure 5-9, Granular Backfill Gradation Worksheet

5.1.1.2. BREAKERRUN STONE

To enter a breaker run stone test under the 2003 and prior specification a value would be entered for the 125 mm (5") and the 37 mm (1 1/2") on the R4 side of the granular backfill worksheet. Percent passing for the breaker run stone is computed based on the total dry sample weight. No values would be entered in the P-4 column.

5.2. Prefix 217 - Specifications

Click on the drop down Specs box list to select and apply the appropriate specifications. Special provision or changed gradation specifications will appear on the list if available, through download of Specifications via the Data Updates menu feature.

For instrucions on downloading new or special provison specifications refer to ***Chapter 8 Special Features- Updates***

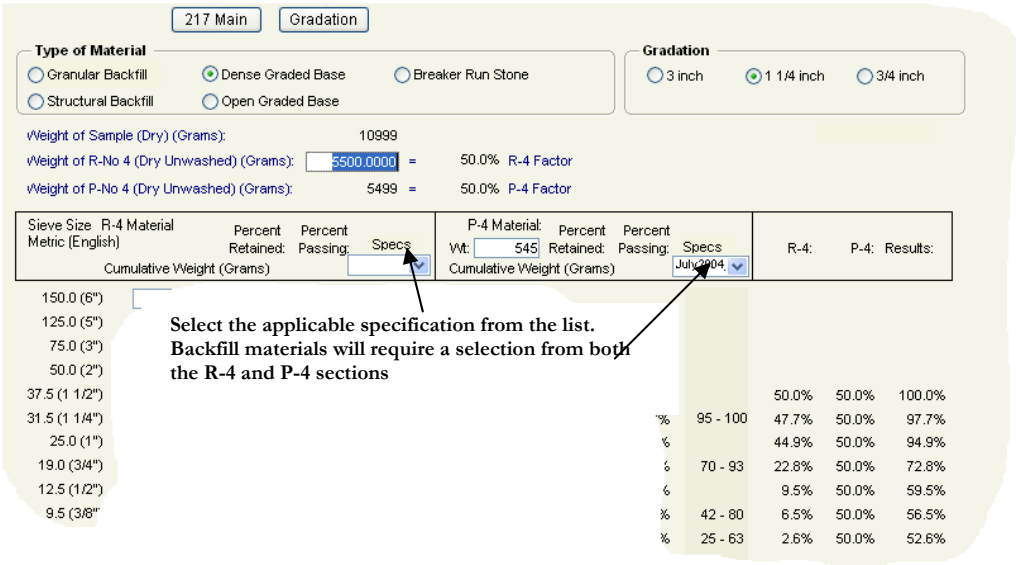


Figure 5-10, MIT 217 Main screen, Specification selection

5.3. Prefix 162- Fine and coarse concrete aggregates - MTS & MIT

The 162 prefix is used for recording concrete aggregate moisture and sieve analysis test information. Two worksheet options are available for this selection. The first has the typical fine, size #1 coarse and size #2 coarse worksheet areas. The second option is used for entering special single size coarse aggregate gradations, such as "shilstone " type, one-size coarse paving aggregates. Selection to Create New Test for prefix 162 will open a box that can be checked for this selection. Refer to figure 5.11. Examples of the entry screens for the two options are shown in figures 5.12 and 5.13

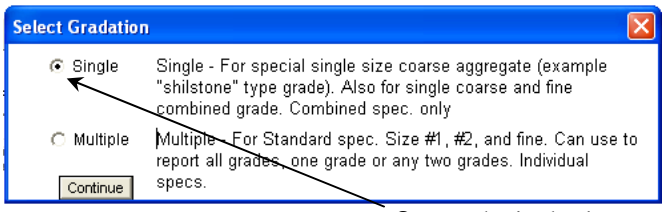


Figure 5-11, PCC Aggregate type selection

- The Prefix 162 also provides for selection of a special provision or different specification. Select the name of the applicable spec. from the list box. Refer to **Chapter 8 Special Features- Updates** for instruction on downloading specifications.

Default for Multiple grade specs. Is STANDARD

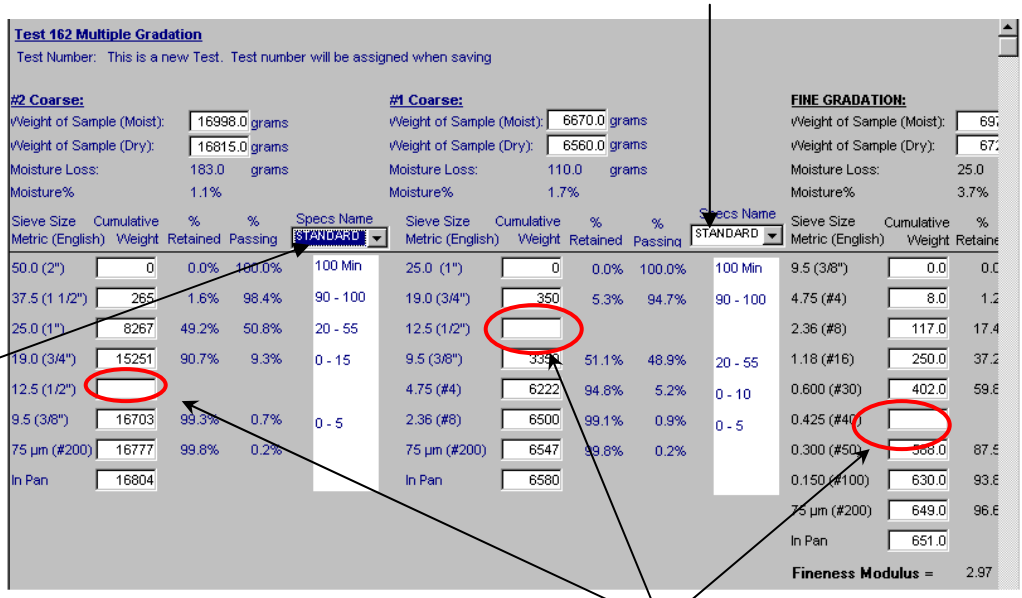


Figure 5-12, Example Prefix 162- Multiple Gradation Worksheet

Fields have been provided for entering non- specification sieve weights, i.e. 1/2-inch and #40 sieves used as intermediate or scalper sieves to prevent sieve overloading.

- The **162 Single Gradation** test provides for a single size coarse gradation and a fine gradation. A combined gradation is calculated when both sizes are input

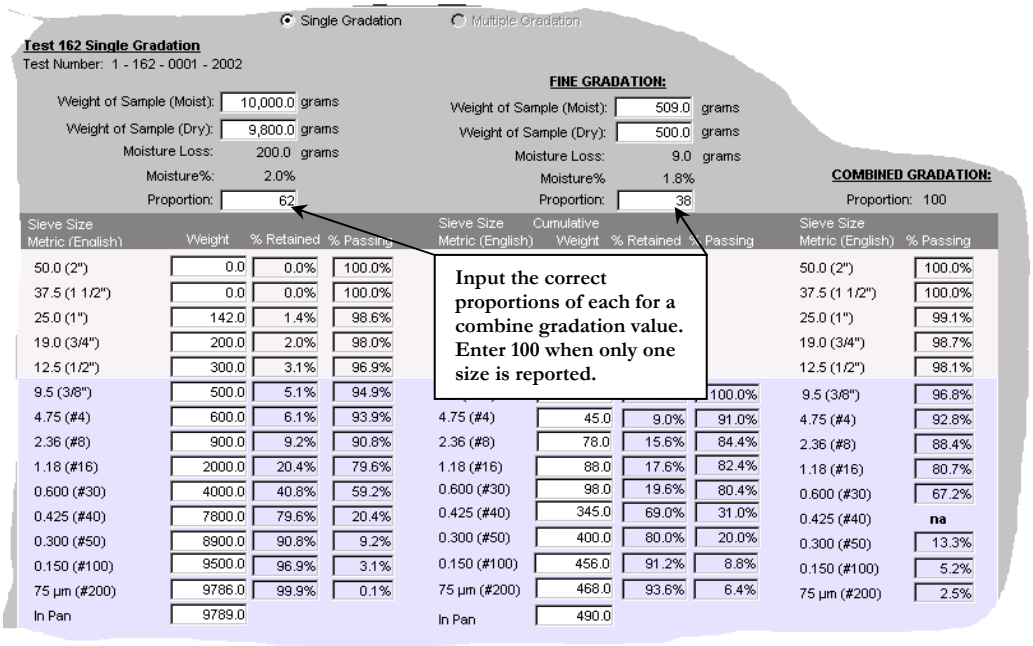


Figure 5-13, Example Prefix 162- Single Gradation Worksheet

5.4. Prefix 135 Concrete Thickness Probing

Changes to the specification require that the department physically do concrete pavement thickness probing verification. This prefix is provided for entry of the verification probe data.

Due to the nature of the report the basic sample card data required for the prefix 135 report is much abbreviated. Enter information in the fields provided as shown in the below figure 5.14

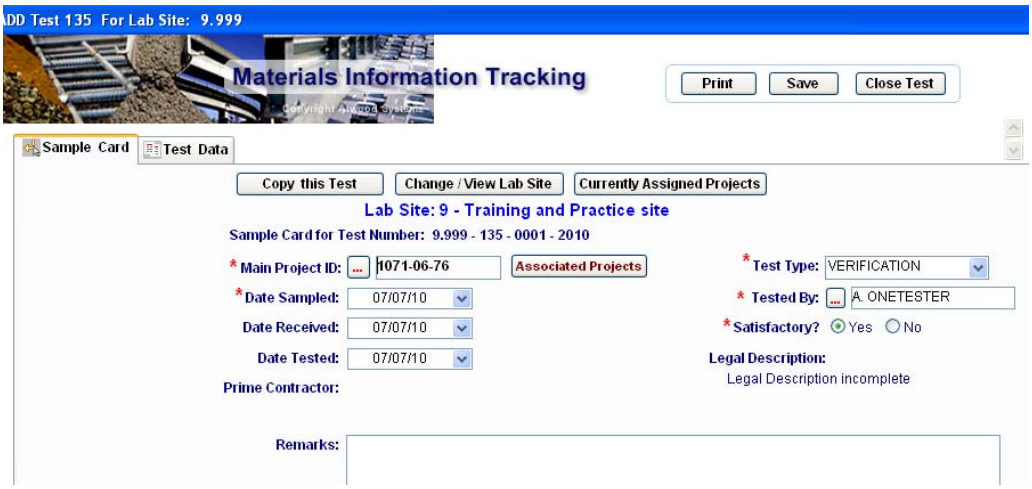
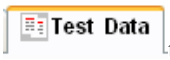


Figure 5-14, Prefix 135 sample card

Click on the 

to open the summary data entry screen.(figure 5-15 below)

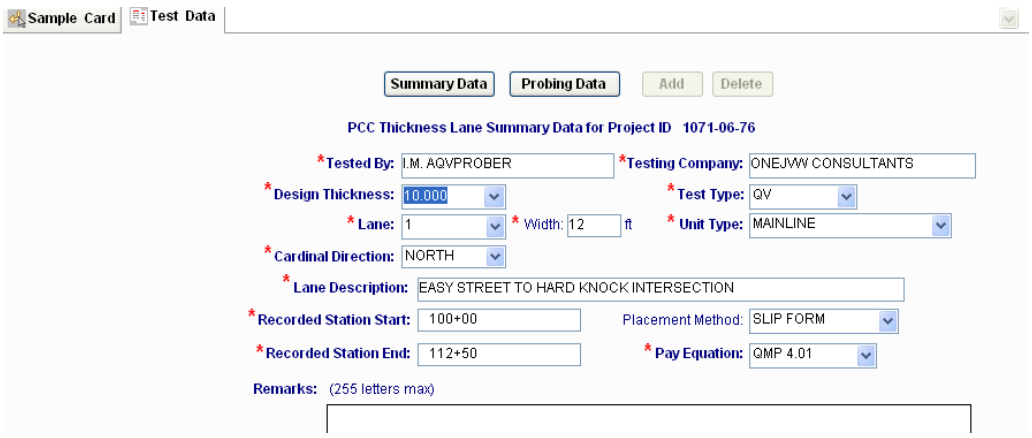


Figure 5-15, Summary Data entry screen

The below figures illustrate the drop down lists available on the above screen.

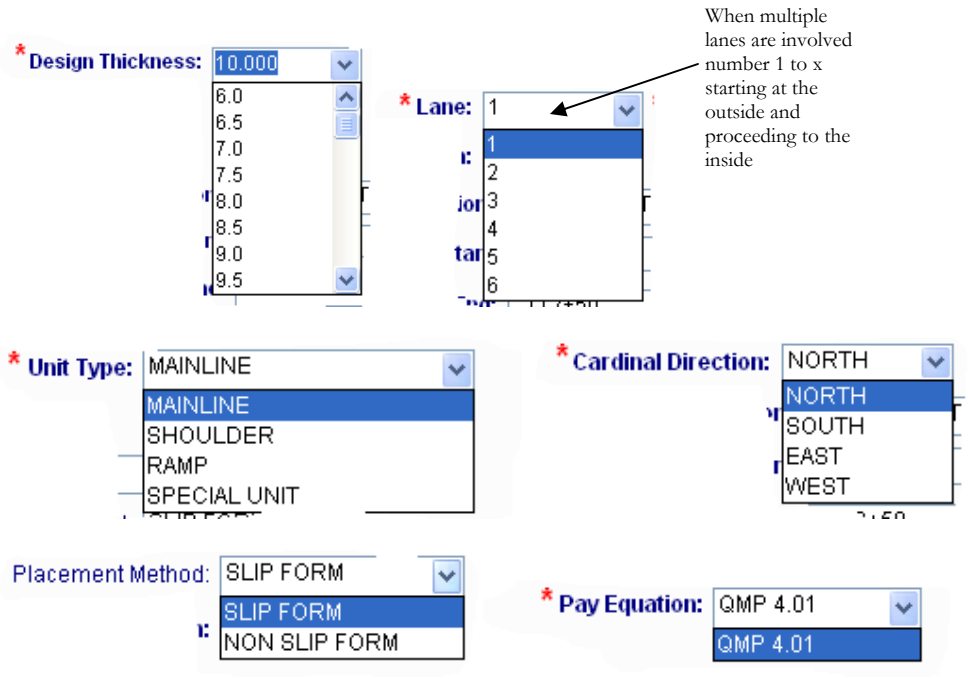


Figure 5-16, Prefix 135 drop down lists

Click on the Probing Data box to open the probe data entry sheet. Figure 5.17 below

Summary Data | Probing Data | Add | Delete

PCC Lane Probing Details

Paving Date	Begin Station	Probe Station	End Station	Unit Length	Left Probe (in)	Right Probe (in)	Avg (in)	Unit Sq Yds	Status
07/07/10	100+00	101+33	102+50	250	9.750	9.750	9.750	333	NC
07/07/10	102+50	103+99	105+00	250	9.500	9.500	9.500	333	NC
07/07/10	105+00	105+75	107+50	250	9.250	9.250	9.250	333	NC
07/07/10	107+50	108+14	110+00	250	9.875	9.875	9.875	333	C
06/30/10	110+00	111+77	112+50	250	10.750	10.750	10.750	333	C

Figure 5-17, Probe data entry screen

5.5. Prefix 155 - Miscellaneous Materials

The Miscellaneous Materials screen is used for inputting special tests or customized formats. This report is the electronic General Report of Inspection format. Information can be typed directly into the **Test Description** field or copied from a word processing program such as WordPad and pasted into the field. Only unformatted text will be preserved when a copy and paste operation is done. Stay within the limit of the entry box. When editing use the space key and avoid using the tab or arrow keys. The report only has space for about ¾ of a page of data, about 44 lines. Preview the report (after saving) to view the final appearance of the report. Click back to the test entry screen to make changes. If an extensive narrative would require multiple pages it is suggested that the information be summarized on the report and a reference made to an external document.

The prefix 155 is useful for reporting and listing external references such as Certifications of Compliance, Certified Reports of Test and Analysis. Narratives and reports regarding material deviations and exception can also be reported on the 155. The screen is also suited to inputting specialized test and other custom applications.

Data from Excel spreadsheets can be copied into the prefix 155 using the techniques described in *Chapter 8 Special Features-Special Excel Copy and Paste*

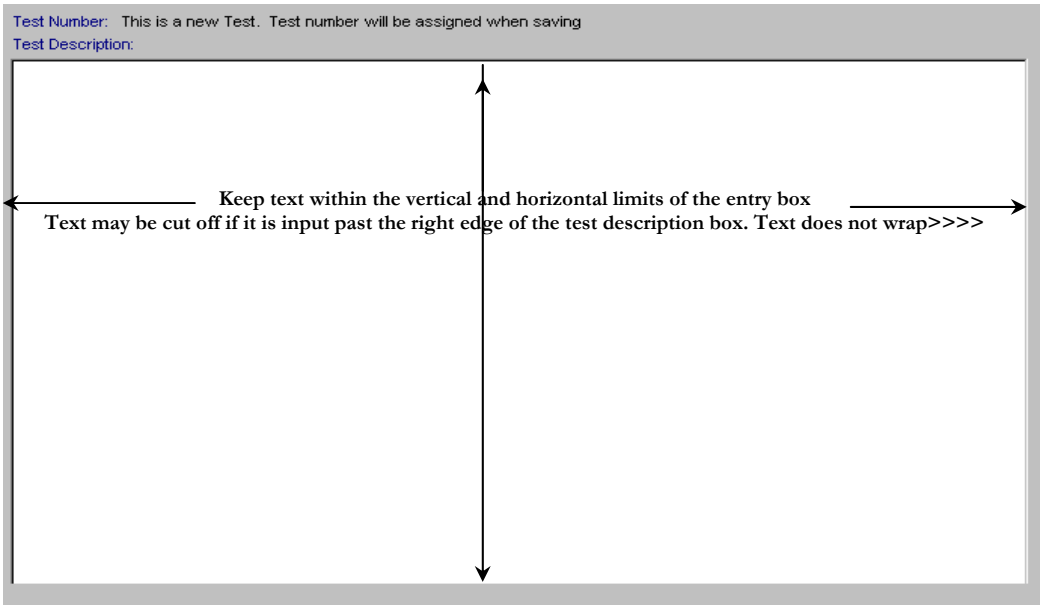


Figure 5-18, 155 Test Description field

NOTE: **Try to always identify the report by filling in the Material field.**

Figure 5-19 Material Field

Use this **Sample Card** field for as complete a description of the material reported as possible. This will place a second column of description on the summary lists. This list for this example would read: **Deviation Explanation-PCC Aggrs. #1-162-1000-2001| Miscellaneous Materials**

5.6. Prefix 257 - Asphalt Mix Testing

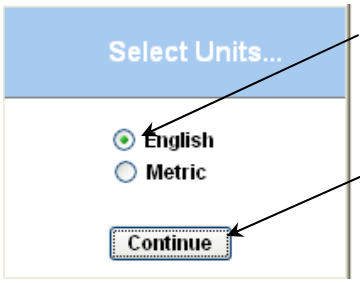
The 257 prefix is used for entering field and Region asphalt mix test results. The data entry screen for the 257 differs from the other test screens in that only the derived data results are recorded. The sieve analysis gradation results, Gmm (Rice max density), Gmb (bulk density) values etc. are calculated elsewhere and input by the user on the 257. The percent of air voids will be calculated when Gmm and Gmb are input.

The prefix 257-test entry screen was derived from the prefix 250 mix design screen. Some fields on the 257 screens may not be relevant to a field test. Items such as TSR and Aggregate Angularity (Fines) are usually not done in most field labs. As with other input screens entry is only needed in the fields that apply.

5.7. Prefix 130 - Concrete Cylinders

HELP: Context sensitive help is available for this prefix. Press the F1 key in any active field to open a Help window for that topic.

This prefix is used to input test data for concrete cylinder strength tests. Multiple sets of related concrete cylinder strength tests can be input. The present test entry form is designed for input in English or S.I. Metric units. This is the only test that has the unit selection option

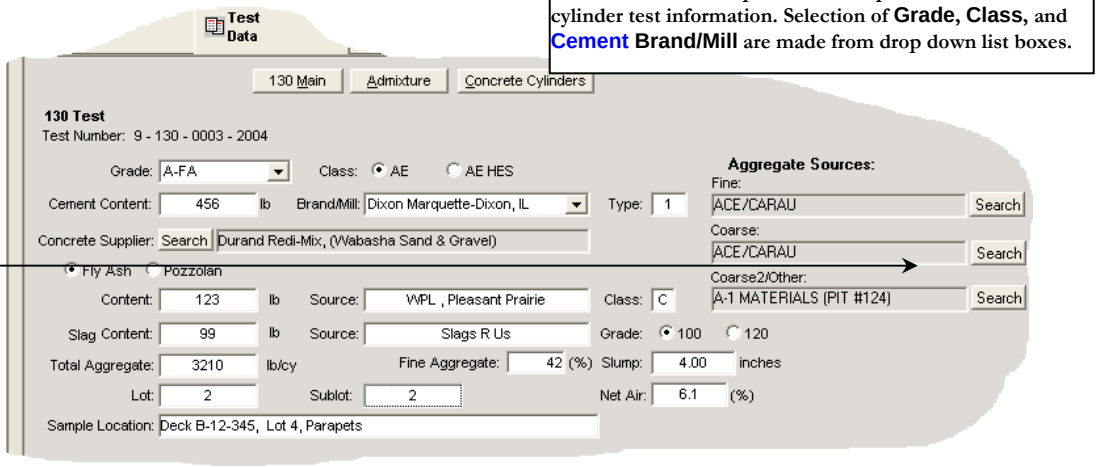


Click on the radio button to select the system of measurement. A click on continue will confirm and *lock* the choice.

Figure 5-20, 130 unit selection

There are three test data screens for the Prefix 130 test. Click on the respective tabs to move from the 130 Main to Admixture to Concrete Cylinder data screens.

The 130 Main screen provides the input area for basic cylinder test information. Selection of Grade, Class, and Cement Brand/Mill are made from drop down list boxes.



Click on the Search button to open the Aggregate source list search screen

Click on the Admixture tab to enter admixture information. The screen defaults to two rows, but additional rows can be added as needed. The first two fields are restricted to choices from lists that are enabled by clicking on the search buttons.

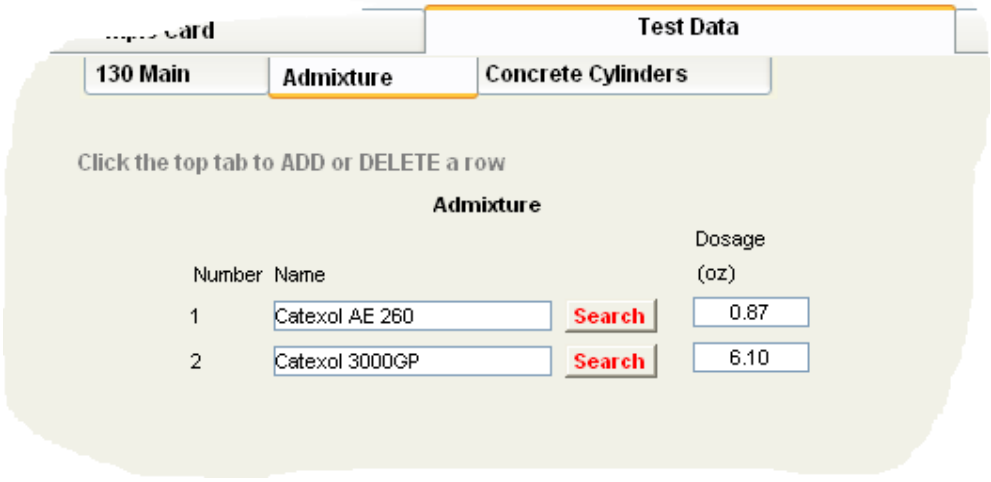


Figure 5-21, 130 Admixture input

Click on the **Concrete Cylinders** tab to move to the cylinder test entry screen. Cross sectional area and compressive strength are calculated based on the input of measured diameter and test load data. As noted on the screen, rows can be added as needed.

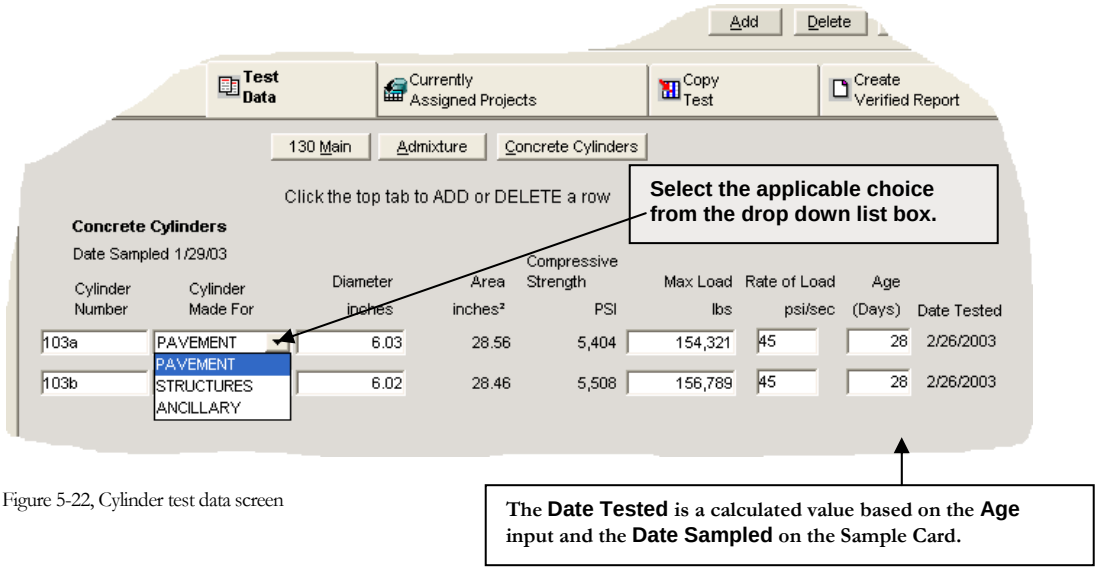


Figure 5-22, Cylinder test data screen

The cement Brand/Mill, Concrete Supplier, and Admixture drop down and search lists can be updated through the Updates menu. All the information is downloaded and update with a single file. The update is only necessary for the MIT (field) version.

Refer to *Chapter 8 Special Features- Updates* for instructions on available updates.

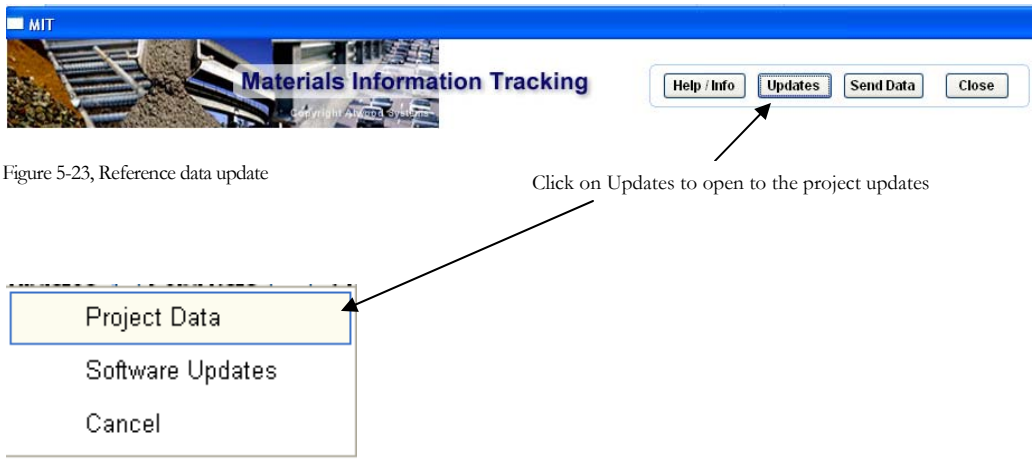


Figure 5-23, Reference data update

Click on Project data to open the download dialog box window.

Figure 5-24, Download project and reference data

Click on yes to begin reference data download. An active internet connection is required.

5.8. Prefix 800 Series Independent Assurance Program Reports

Specialized reports have been designed for use in inputting Independent Assurance Program observations and split sample tests. There are currently five Prefixes assigned for reporting these tests: 801-Aggregates, 802-Portland Cement Concrete Mixtures, 803-Asphaltic Pavement Density Testing, 804-Asphaltic Concrete Mixtures and 805 Soils. Entry for each of the Prefix 800 tests is discussed and illustrated in the subsections that follow. These reports are only available on the MTS.

5.8.1. Prefix 801 - Aggregates (IAP)

This prefix is used for reporting Independent Assurance Program observations and tests for base courses and concrete aggregates. There are 2 screens for test data entry forms, the **801 Main** and the **801 Detail** form. The **801 Main** opens on click of the Test tab. Switch between the **801 Main** and **801 Detail** by clicking on the appropriate tab. See the below example of the **801 Main**.

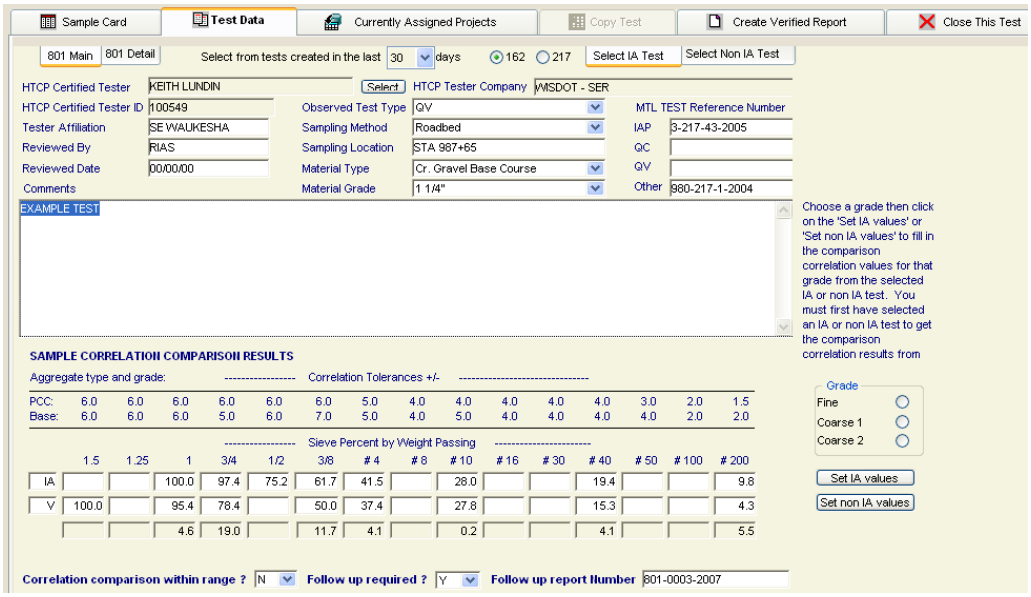


Figure 5-25, Sample 801 Main test entry form

Select the name of the sampler/tester reviewed from the search list. The name and company will be filled in

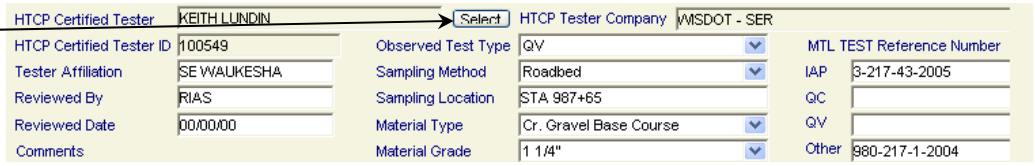


Figure 5-26, 801 Basic info dialog

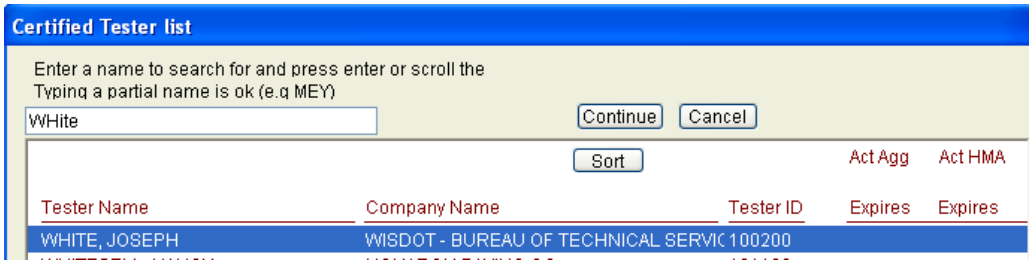


Figure 5-27 HTCP Certified tester selection

Scroll to the right of the tester name to view the areas of qualification and the expiration date

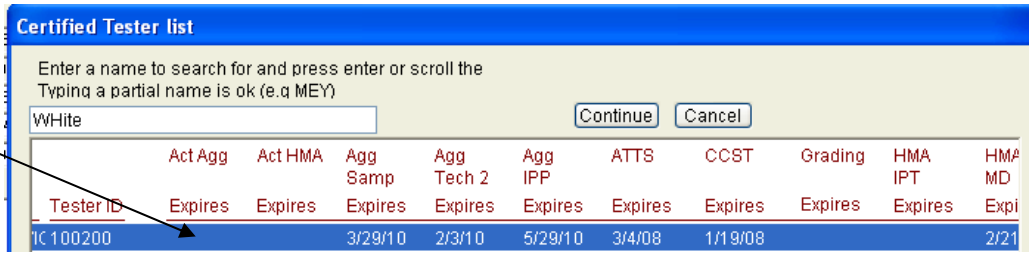


Figure 5-28, HTCP Certified tester list, view of certified areas

Sampling Method refers to the methods discussed in the Construction and Materials Manual, 8.60 or approved alternate method, i.e. stopped conveyor belt, belt discharge, end loader (stockpile alternate 1), hand methods (stockpile alternate 2), roadbed, hopper or holding bin, etc. Test procedure detail checklists are also included here.

Sampling Location refers to the specific location of sampling, i.e. plant stockpile, production belt, plant belt, quarry/pit stockpile, roadway station, etc.

Observed Test Type refers to the specific type/use of test that was observed. Choices would be acceptance, QC, QA, and QV.

Test selection fields

Selection of a test will place the test number in the correct field. A window of the report will also open allowing preview of the test report .

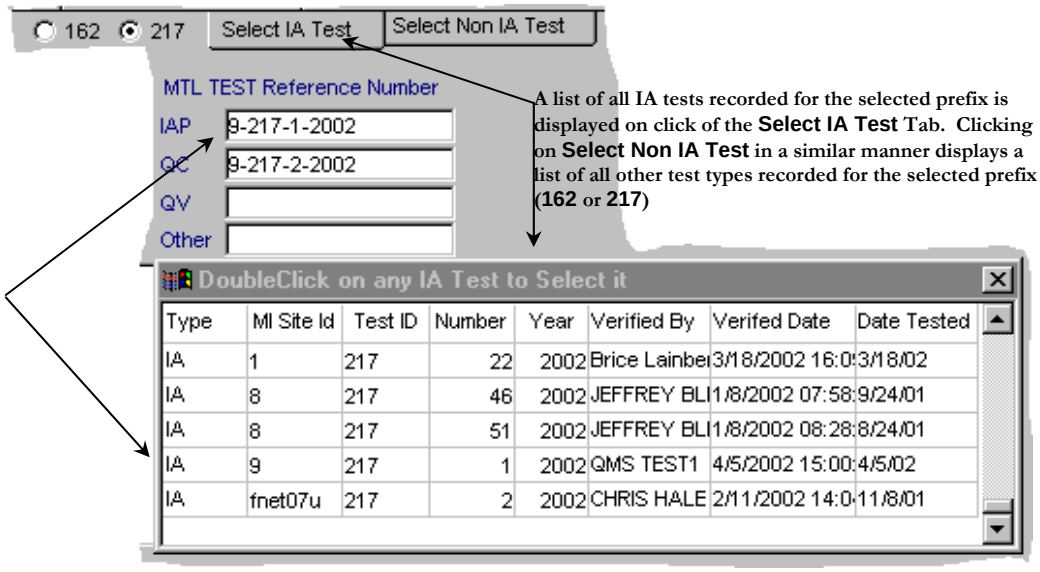


Figure 5-29, 801 Test selection dialog

Comments: Keep input to this field within physical limit of the box. A maximum limit of ten lines of text and data is suggested.

Input area for split sample results. The program calculates absolute differences between split samples. The user must visually compare the calculated split sample comparison difference and select Y (yes) or N (no) in the "**Correlation comparison within range?**"box. If the desired IA test and matching non-IA (project) test are selected as shown in figure 5.30 the test values can be set into the fields using the correct button selection.

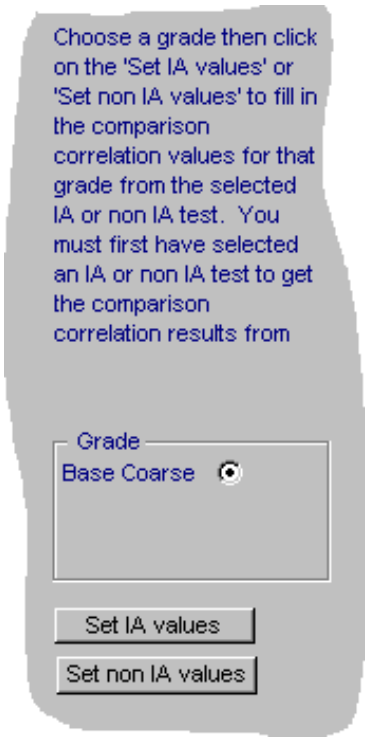


Figure 5-30, 801 Set test values selection

NOTE: Always list the IA result first. If used for QA/QC split sample comparison list the QA first.

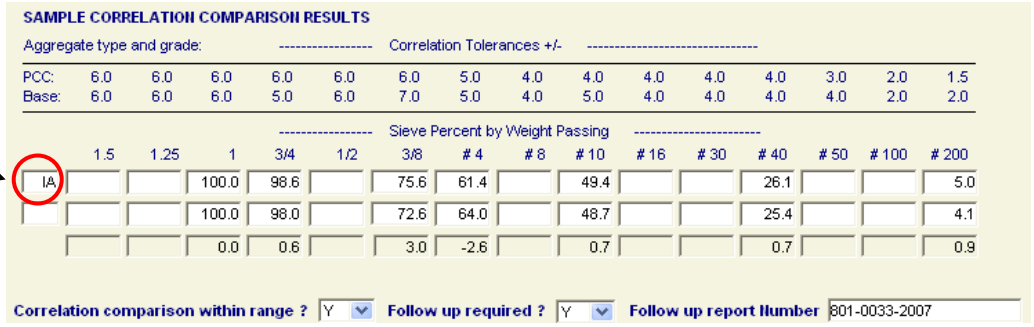


Figure 5-31, 801 Correlation data screen example

If follow up is required select yes (Y) and include the follow up test number when it is available.

Figure 5-32, Follow up mark and Test Number

All the 800 prefix reports include a check box for follow up and a field for the follow up test number.

The second part of the Test entry form is the 801 Detail form. This data form consists of checklists that are marked to show if the observed IA sampling and testing complies with the defined procedures. Click on the applicable radio button choice to mark a selection. **If no selection is made the report will display an empty space and the procedure(s) is considered not applicable.**

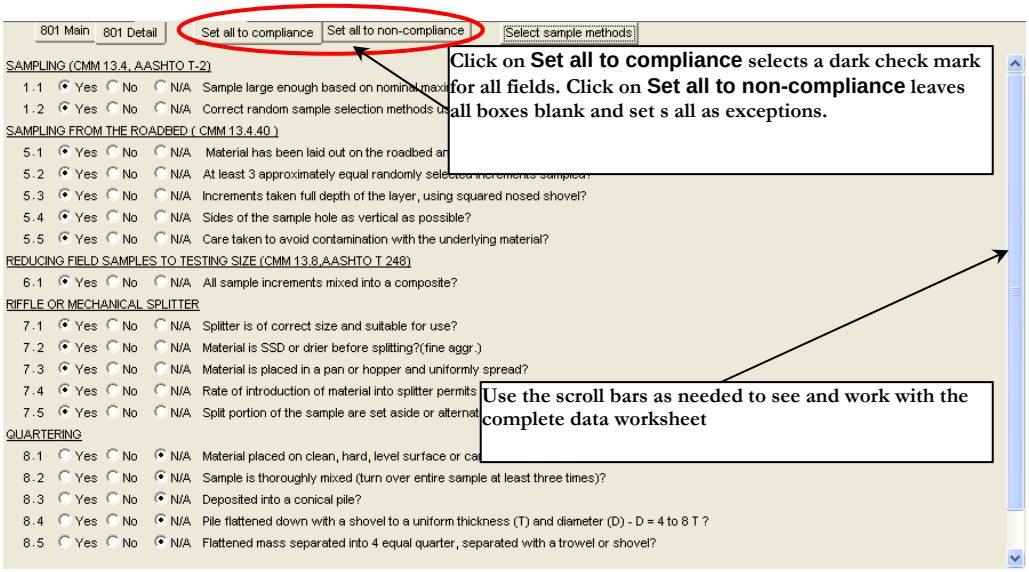


Figure 5-33, 800 series Detail checklist example

The selections as noted will yield the following on the report.

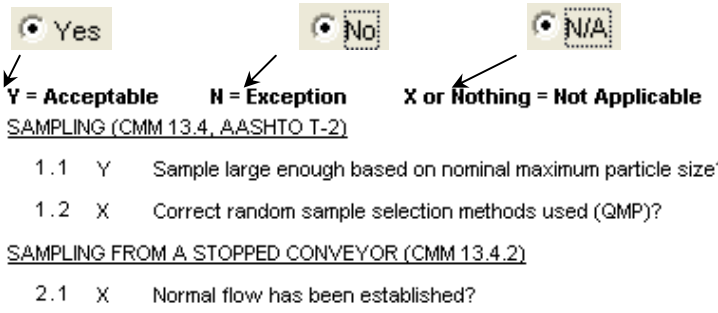


Figure 5-34, 800 series report detail example

If no selection is made for a box, the space where the **Y**, **N**, or **X** is displayed will be blank on the report as shown below and considered as **Not Applicable**.

Y = Acceptable N = Exception X or Nothing = Not Applicable

Sampling (CMM 13.5 QMP Guide/Procedure Manual Section 5)

1 . 1 Sample is large enough based on the nominal maximum particle size ?

1 . 2 Correct random sample selection methods used ?

Figure 5-35, 800 series report detail example

Only the sampling and procedure detail checklists needed and selected for the prefix 801 are displayed. The select sample method selection window opens when creating a new test. The window can also be opened by clicking on Select sample methods from the 801 Detail screen.

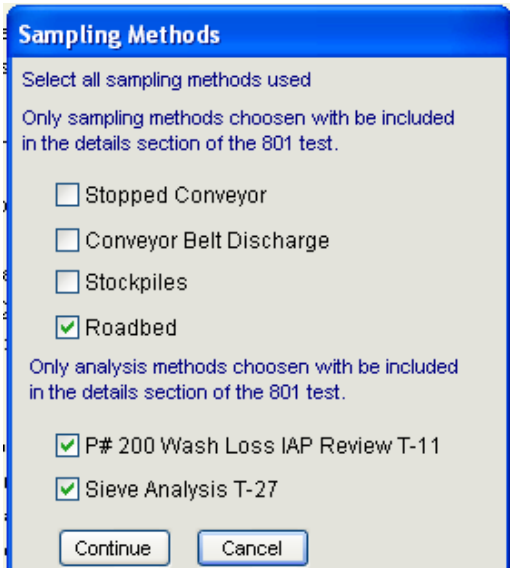


Figure 5-36, 801 Sample and test method selection window

5.8.2. Prefix 802 - Portland Cement Concrete Mixtures (IAP)

The Prefix 802 is used for reporting Independent Assurance Program observations and tests of fresh concrete mixtures. The Test screen elements are the same as the Prefix 801. The same format is followed for all the Prefix 800 series.

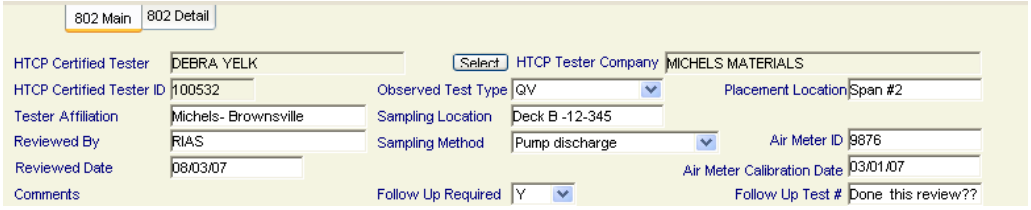


Figure 5-37, 802 Main data entry section

Observed Test Type refers to the specific type/use of test that was observed. Choices would be acceptance, QC, QA, and QV.

Placement location refers to the point of deposit of the concrete mixture. Pavement grades, Deck-span #1, B-12-345 Pier #1, and Curb & Gutter etc. are some examples.

Sampling Method refers to the methods discussed in the Construction and Materials Manual, 8.70.4.3 or approved alternate method, i.e. sampling from a stationary mixer, subgrade/pavement grade, ready-mix truck (discharge chute or transfer bucket), pump discharge etc.

Sampling Location refers to the specific location of sampling, i.e. Pavement station location, Truck chute, pump discharge on deck, transfer bucket etc.

Air Meter ID refers to the unique number or identifier of the air meter unit.

Air Meter Calibration date is the date of calibration of the air meter unit recorded on or with the instrument.

The prefix 802 Main test worksheet has an area to input observed and IA correlation comparison test results. Note this form calculates differences between test results and equipment calibration check measurements. The IA user must visually compare the data to determine conformance to allowable tolerance or calibration limits.

Enter IA Cal-can value in this row

Enter the value of the air meter checked with the Cal-can.

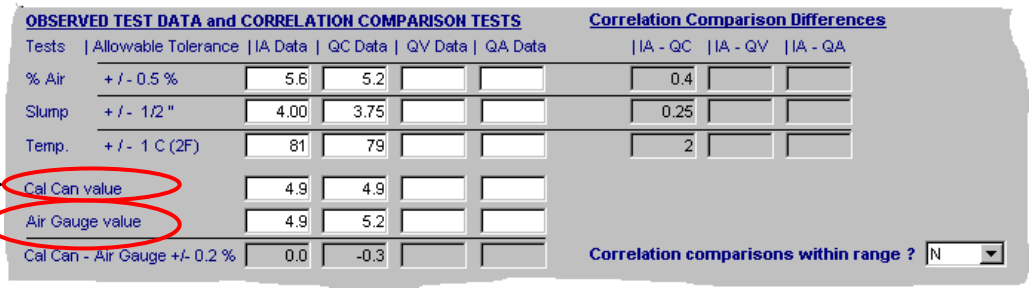


Figure 5-38, 802 test data and correlation screen

☞ **Refer** to 5.8.1 Prefix 801-Aggregates

The 802 Detail form and the detail forms for all the Prefix 800 reports function in the same way as described for the 801. The 802 Detail form spans several pages. Use the scroll bar to move up and down on the form.

5.8.3. Prefix 803-Asphaltic Pavement Density Testing (IAP)

☞ **Refer to** 5.8.1 Prefix 801-Aggregates

The Prefix 803 is used for reporting Independent Assurance Program observations and correlation comparison tests for Asphaltic Pavement Density Testing. An example of the 803 Main entry form is shown on figure 5.39 that follows. The 803 Detail entry form is done as previously described for the 801.

The PCF averages are calculated by the program . If comparison testing is done the avverage difference is calculated

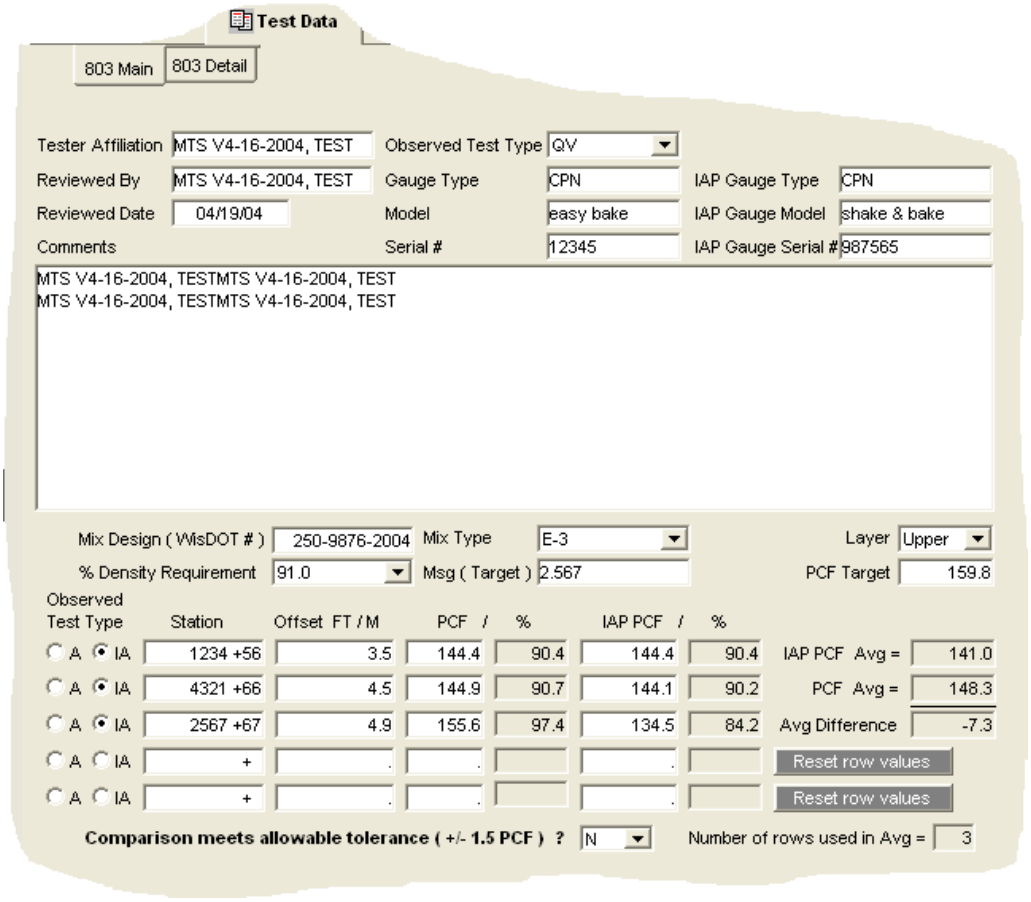


Figure 5-39, 803 Main test entry form example

5.8.4. Prefix 804-Asphaltic Concrete Mixtures (IAP)

Refer to 5.8.1 Prefix 801-Aggregates for instruction on basic entry form functions

This prefix is used for reporting Independent Assurance Program observations and split sample tests for Asphaltic Concrete paving mixtures. The program calculates absolute differences between split samples. The user must visually compare the calculated split sample comparison difference and select **Y** (yes) or **N** (no) in the "**Correlation meets allowable tolerances?**"box.

NOTE: Always list the IA result first.

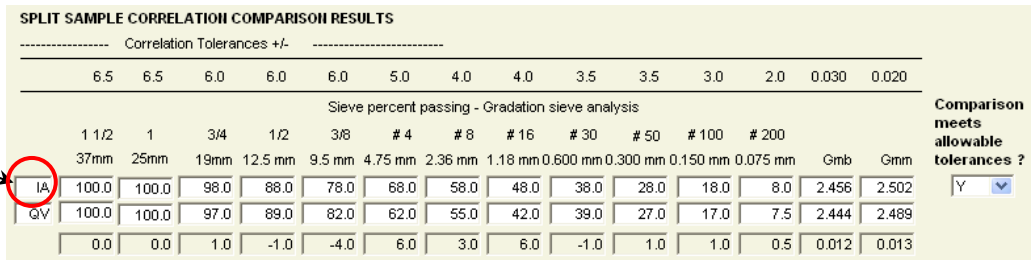


Figure 5-40, 804 correlation test data entry example

Figure 5.41 below is an example of a portion of an entry form used for reporting Independent Assurance split sample test results.

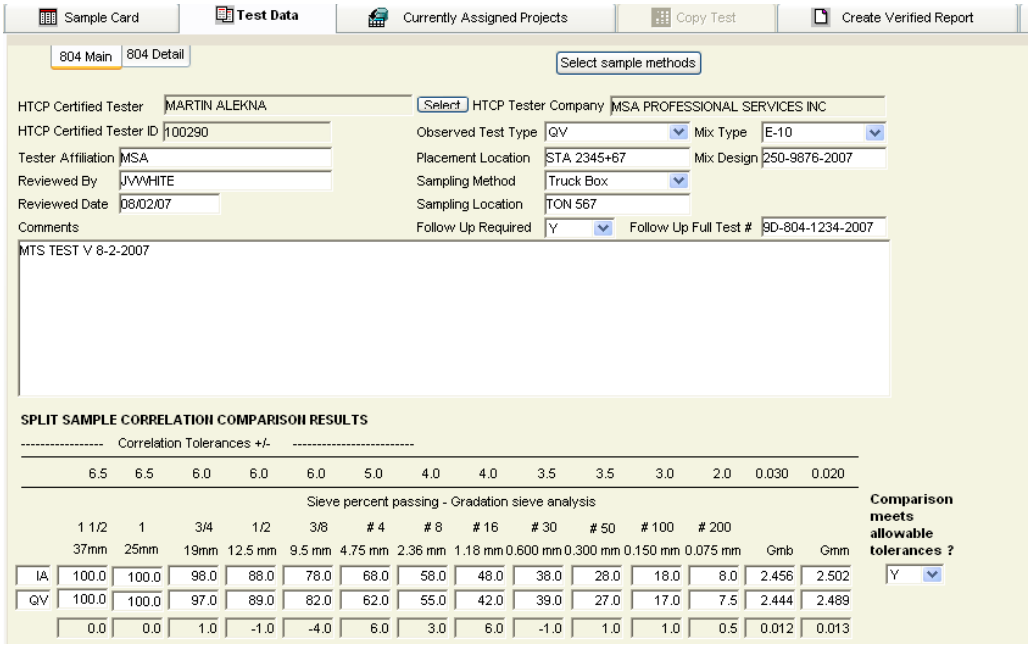


Figure 5-41, Prefix 804 Main entry screen example

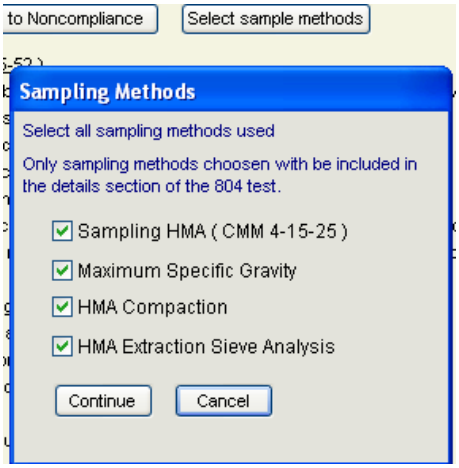


Figure 5-42, Selection of detail checklist for HMA sampling and tests

Detailed checklists are available for each of the standard HMA field tests. Selected lists are displayed as a checkmark in the box. The 804 Detail entry form is done as previously described for the 801.

5.8.5. Prefix 805 IAP Soils Nuclear Density (IAP)

☞ **Refer to** 5.8.1 Prefix 801-Aggregates

This prefix is used for reporting Independent Assurance Program observations and split sample tests for Soils Nuclear Density testing. . An example of the 805 Main entry form is shown on figure 5.43 that follows. The 805 Detail entry form is done as previously described for the 801. Drop down list choices have been included as a common feature of this worksheet to facilitate entry. Up to five IAP observed or correlation comparison tests can be input. The individual and average IAP to acceptance correlation density and moisture tests is computed by the worksheet. . An Observed Test Type button choice is provided in the test data entry area to mark if the observed or comparison tests were done for acceptance test locations or for the purpose of IAP observation or comparison only.

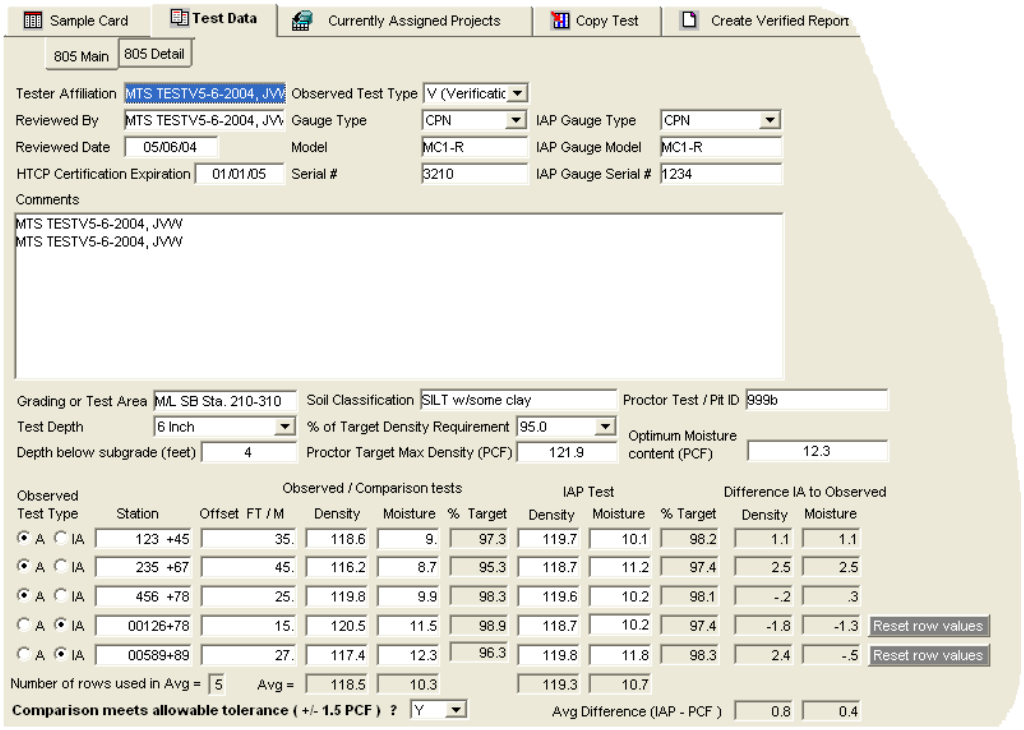
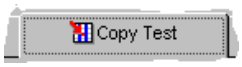
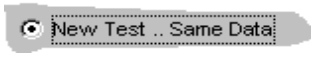


Figure 5-43, Prefix 805 Test Data entry screen example

5.9. Prefix 262 - Asphaltic Pavement Nuclear Density - MTS & MIT

The prefix 262 worksheet is provided for electronic database entry of Asphaltic Pavement Nuclear Density tests. Drop down list choices have been included as a common feature of this worksheet to facilitate entry. The copy feature of this worksheet is also enabled, which allows the user to enter additional tests that have the same information in common. Refer to section 8.2. Copying and Associating Tests.

The upper part of the entry window with the sample card contains the elements of the worksheet that can be copied. The fields circled in red below will be copied when 

tab is clicked and 

is selected. Figure 5-44 below is an example of the main portion of the entry screen.

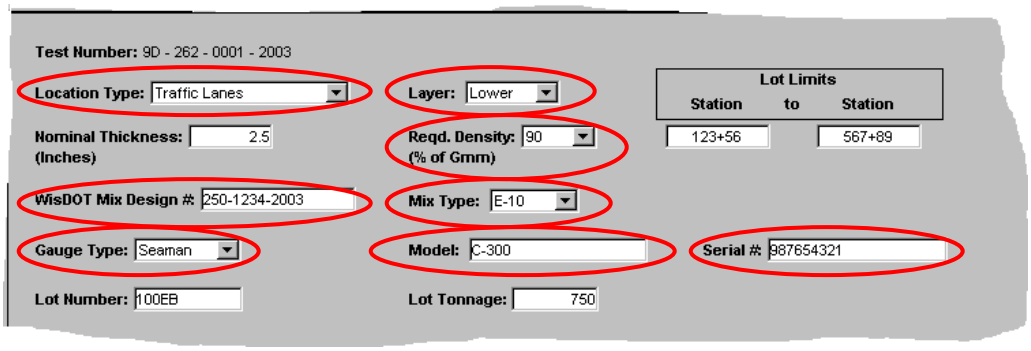


Figure 5-44, Prefix 262 Main data entry screen

The below figures illustrate some of the drop down list choices available on the above.

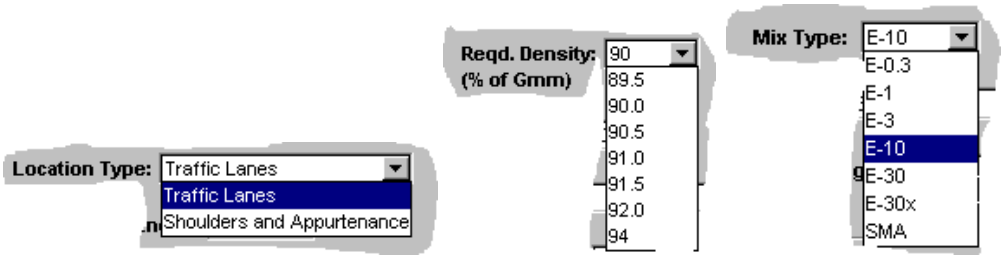
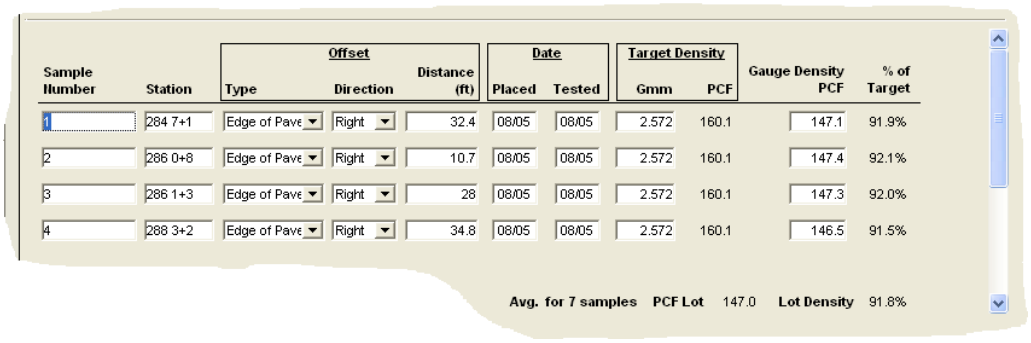


Figure 5-45, Prefix 262 Main data entry, drop down lists

NOTE: Click on the Add button on the top of the screen to activate new rows for test entry.

The location and results of the individual tests are input in the bottom portion of the screen. The **Target Density** (**Gmm**) maximum is also input. The worksheet calculates the **PCF** target density from the Gmm and calculates the **% Target** density of the actual **Gauge Density PCF** number input. Up to 14 tests may be entered. The average **Lot Density** is calculated based on the number of tests entered. Figure 5.46 below is an example of the test input portion of the worksheet.

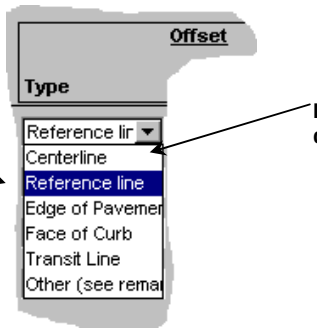


Sample Number	Station	Offset Type	Offset Direction	Offset Distance (ft)	Date Placed	Date Tested	Target Density Gmm	Target Density PCF	Gauge Density PCF	% of Target
1	284 7+1	Edge of Pave	Right	32.4	08/05	08/05	2.572	160.1	147.1	91.9%
2	286 0+8	Edge of Pave	Right	10.7	08/05	08/05	2.572	160.1	147.4	92.1%
3	286 1+3	Edge of Pave	Right	28	08/05	08/05	2.572	160.1	147.3	92.0%
4	288 3+2	Edge of Pave	Right	34.8	08/05	08/05	2.572	160.1	146.5	91.5%

Avg. for 7 samples PCF Lot 147.0 Lot Density 91.8%

Figure 5-46, Prefix 262 Test data input screen

NOTE: Quickly move to a drop down list choice by typing the first letter(s) of the choice.



Drop down lists are provided for Offset type and direction.

5.10.Prefix 900 – Reference Report

HELP: Context sensitive help is available for this prefix. Press the F1 key in any active field to open a Help window for that topic.

The prefix 900 – Reference Report is used for listing references to external hard copy documents and electronic test reports entered for another project. Certifications of Compliance, Certified Reports of Test and Analysis, catalog cut sheets etc. that are on file in the project records should be listed using this report. Materials sampled and tested which may be applicable to several contracts, but are reported under another project ID should be listed using this report. Entry of the Prefix 900 report is discussed and illustrated in the subsections that follow. This prefix is available in the MTS and MIT versions.

The basic sample card information required for the prefix 900-sample card is much more abbreviated because of the nature of the report. This is the only report that does not require a Test Type entry. Enter information in the fields provided as shown below in figure 5.47.

☞ **NOTE: A Test Type entry is not required for the prefix 900 sample card.**

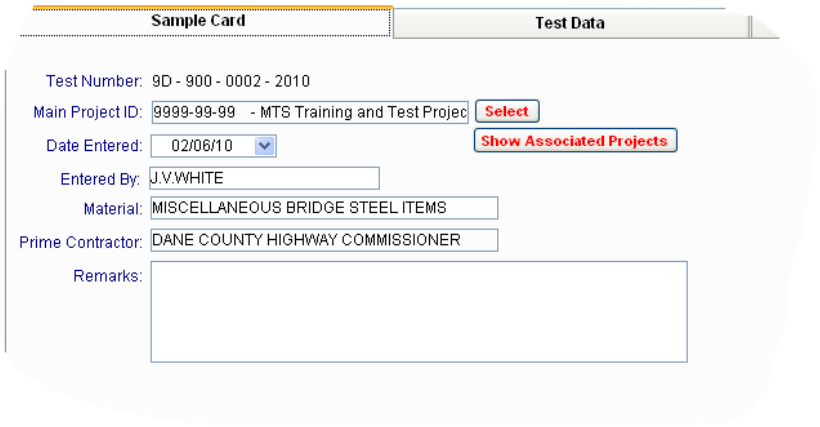
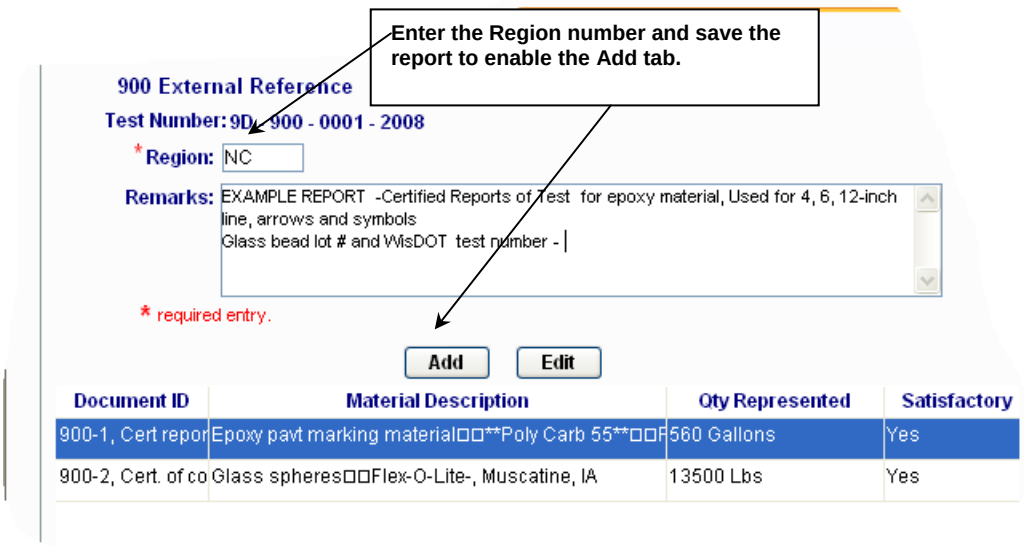


Figure 5-47, Prefix 900 sample card

Click on the

tab to open the document reference entry screen (figure 5.48).



Click the Add tab to activate the Add a reference window.

☞ **NOTE: Assign a unique Document ID for each reference entry.**

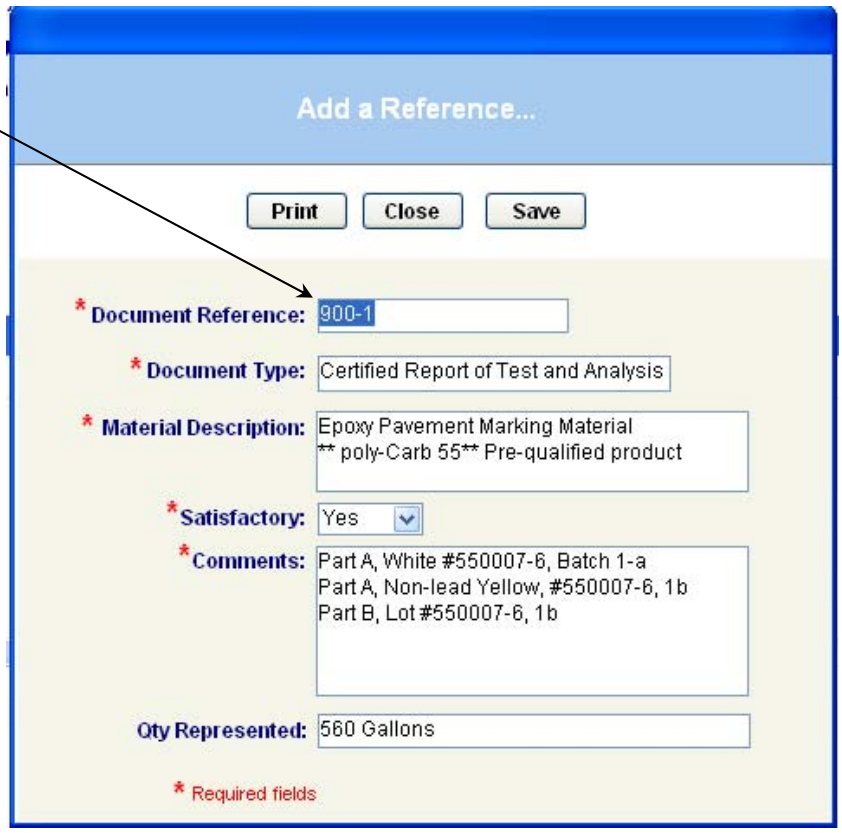


Figure 5-48, 900 Add – Edit Document Reference entry window

Drop down list is available for the **Document Type**.

Figure 5-49, 900 Document Type selection list

.The report provides for the entry of numerous reference entries. The data input in all fields will wrap and display in multiple lines on the report. Figure 5.50 is an example of the reference lists on a prefix 900 report. Preview and Print Report

District: 9

Material: BAR STEEL REINF. & STRUCTURE METAL ITEMS

Remarks:

VARIOUS CERTIFICATIONS OF COMPLIANCE, CERTIFIED REPORTS OF TEST, AND SHOP INSPECTION REPORTS FOR BAR STEEL AND STRUCTURE METAL ITEMS.

Doc ID	Material Description	Quantity	Satisfactory	Comments
900-1D, Certification	Secondary bridge metal items- Expansion devices, Floor drains, Steel bearing assemblies	3 Each, 4 Each, 20 each	Y	Shipping invoice with certification information . From Commericial Fabricators, IL- Certified supplier
900-2A, MILL CERTS	BAR STEEL REINFORCEMENT	456789 lbs	Y	North Star Steel, 25 pages of Mill test information.
900-2B, Certification of Test	Epoxy Coating for Bar Steel Reinforcement	456789 Lbs	Y	Certified reports of test from Simcote, 3M epoxy
900-2C, Certification of Compliance	Concrete Masonry Anchors, Type L	25 Each	Y	Dupont FASLOC Resin Cartridges, dated 3-1-2003, On WisDOT 2003 Approved Product List
900-2D, Shop Inspection Report	Structural Carbon Steel	234567 Lbs.		EL 20 report from Bureau of Structures, Metal Fabrication unit

Figure 5-50, Prefix 900 example report Preview & Print

5.11.Prefix 232 – Soils Nuclear Density - MTS & MIT

The prefix 232 worksheet is provided for electronic database entry of Soils Nuclear Density tests. Additional tests can be entered up to a maximum of seven samples. The % of Maximum Density is calculated relative to the Max Density of Proctor input. Also calculated is the % of Moisture.

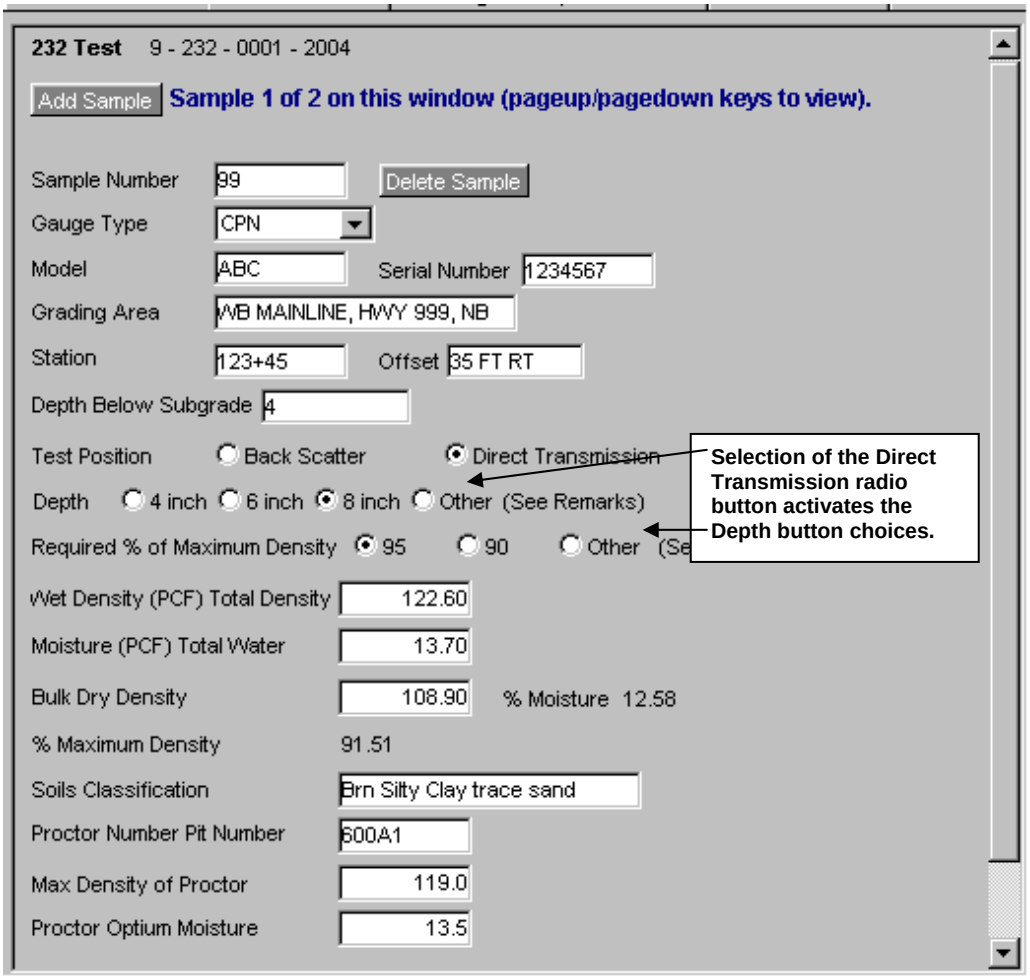


Figure 5-51, Prefix 232 Sample data entry screen

5.12. Prefix 254 – Asphaltic Mix Verification- MTS LAN

NOTE: Report queries that summarize tests done for a specific mix design are available from the reports menu. Refer to Chapter 8 Special Features section 8.5 MTS Reports

The prefix 254 data worksheet is to be used by the Region laboratories for reporting design mix verification. Fields are available in this report for entry of dispute resolution data if needed.

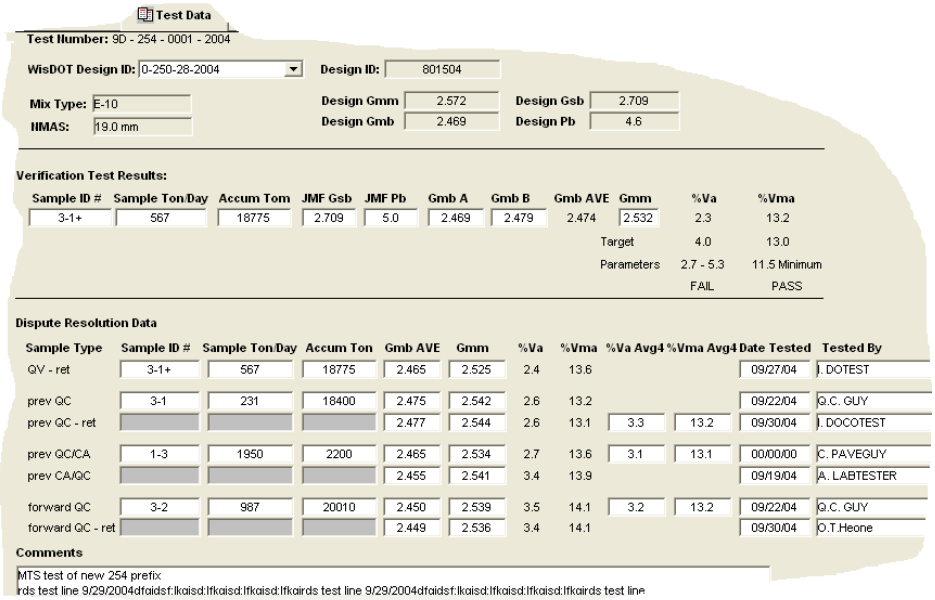


Figure 5-52, Sample prefix 254 data entry screen

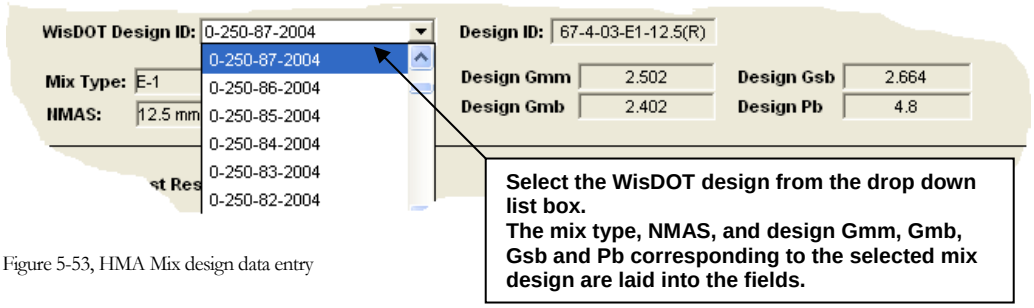


Figure 5-53, HMA Mix design data entry

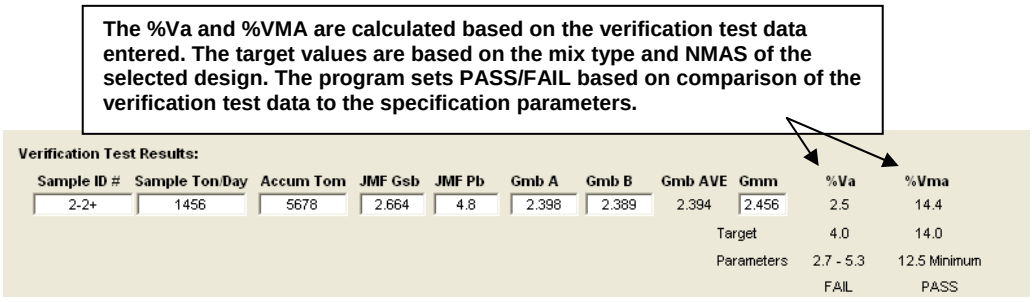


Figure 5-54, Verification test result entry

5.13. Materials Reports-Region Certification of Materials- form DT-1310

This feature provides for the electronic entry of the contract Certification of Materials Used on Highway Projects (form DT 1310). The user should print out a copy of the report including deviations to sign and file in the contract records.

To open the form for entry or editing click on the Certification of Materials Reports tab on the Main Menu screen

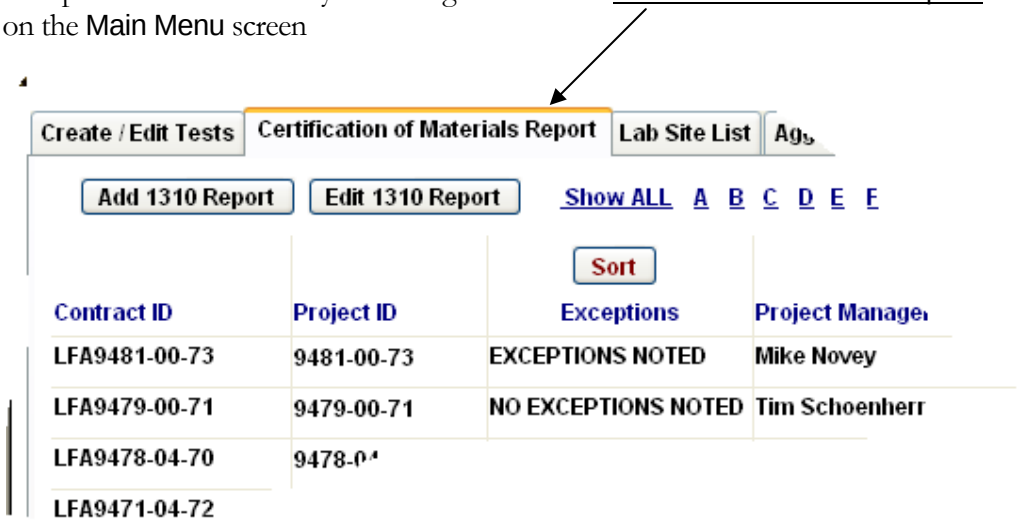


Figure 5-55 DT 1310 Selection screen

Click on the Add 1310 Report tab to open a Contract List dialog box as shown below.

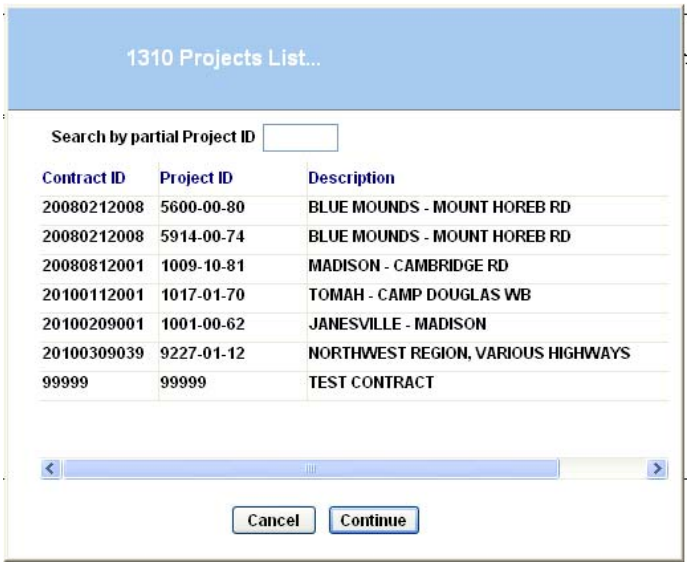
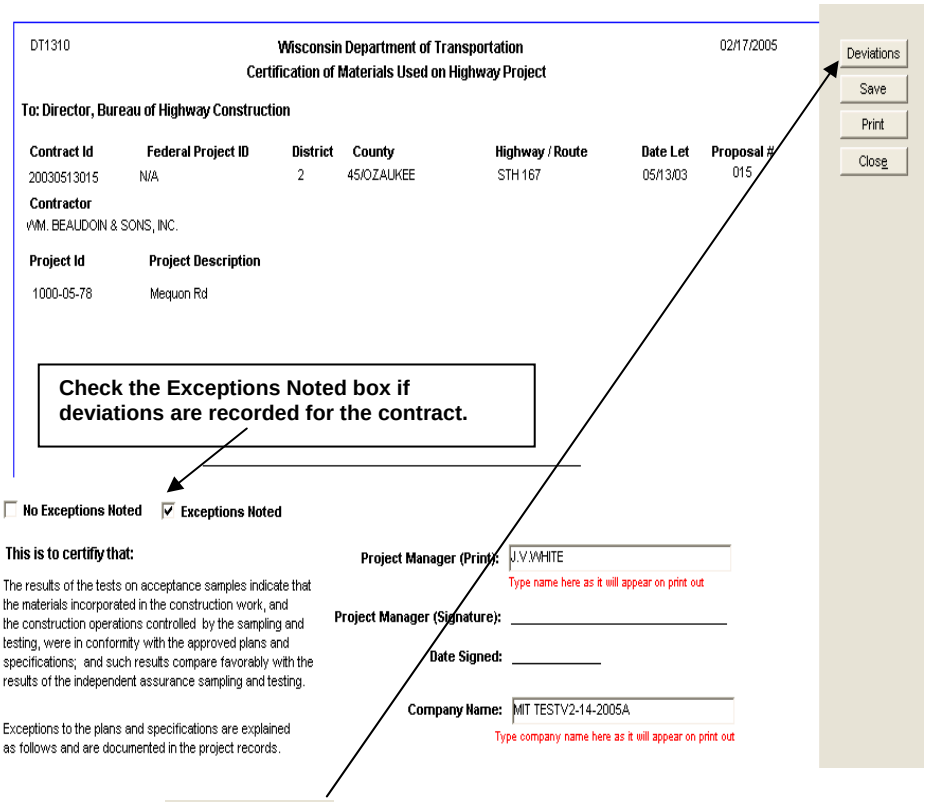


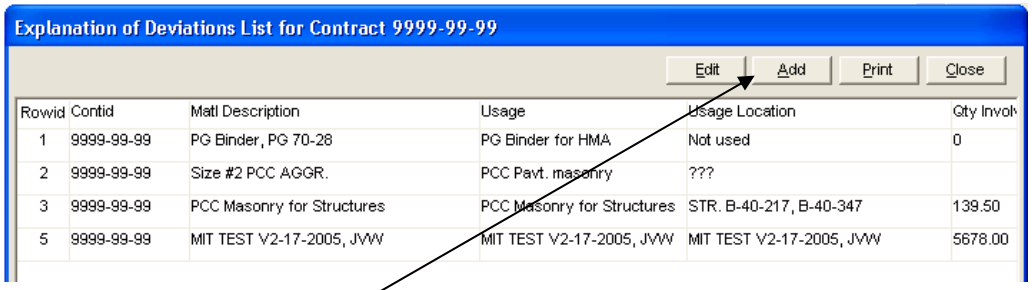
Figure 5-56, DT 1310 MIT Project selection list

Highlight and select the contract from the list and click the Continue box to proceed. The project data is placed on the form as shown in the example that follows:

Note that the selection is slightly different for the MTS LAN and the MIT versions. The MTS LAN lists all the contracts in the database. The MIT lists only those projects added to the in use list by the user. Refer to Section 4.2. Functions and description of the Sample Card screen



Click on the Deviations tab on the right side of the report to add materials exception information.



Click on Add to open the Explanation of Deviation - Add / Edit / View entry form as shown below. A separate dialog box is added for each material exception.

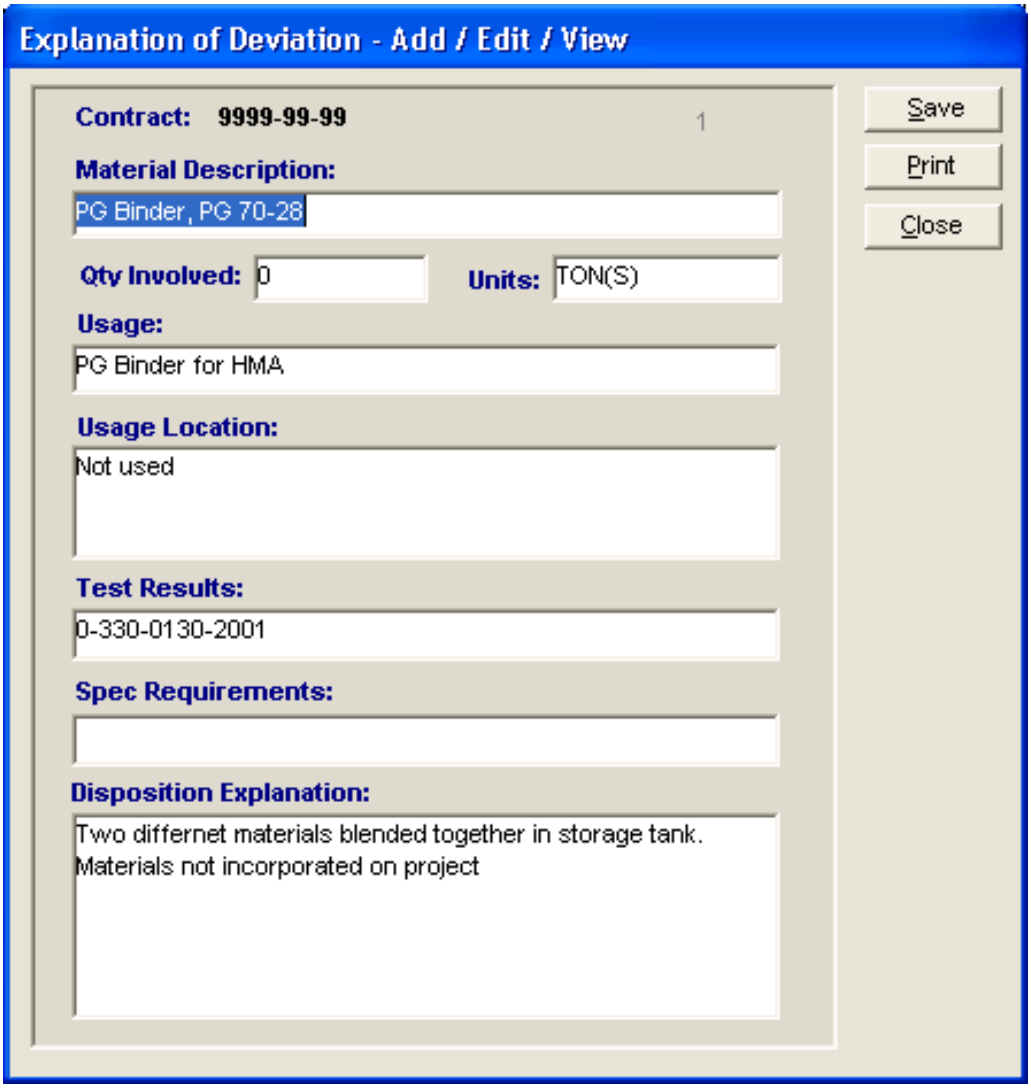


Figure 5-57, DT 1310 deviation entry window

Chapter 6

6. Saving and Editing Tests

6.1. Saving Tests

Required fields are marked with a red asterisk *

A test can be saved at any time by clicking on the **Save** tab. A test can be saved when the required Sample Card fields are completed. The test number for a new test is assigned when the test is saved. Click on **Save** also resets a previously verified test to unverified.

Figure 6-1, Saving Tests

Click on

opens a choice list as shown in the below figure. Refer to Chapter 7 for instructions on verifying tests.

Click Save and Close will require later Save as Verified and Close.

6.2. Editing Tests

A test or report can be edited at any time by making changes to the data input screen or sample card. Authorized verifiers can make changes as part of the verification process.

To edit a test or report

1. The steps for opening a test for editing are identical to **3.1 Viewing By Test Prefix and Project ID - MIT**, and **3.2 Viewing By Test Prefix and Project ID - MTS**.

☞ Refer to Chapter 5

2. Enter and make changes to the sample card or test data worksheets by editing the necessary fields in the same manner as entering new data is done.

3. Click on Save after entry is complete to update the test. The test will be reset to the verify queue. Refer to **Chapter 7- Verify and Send Reports**.

7. Verify and Send Reports

7.1. Verifying Reports-MTS

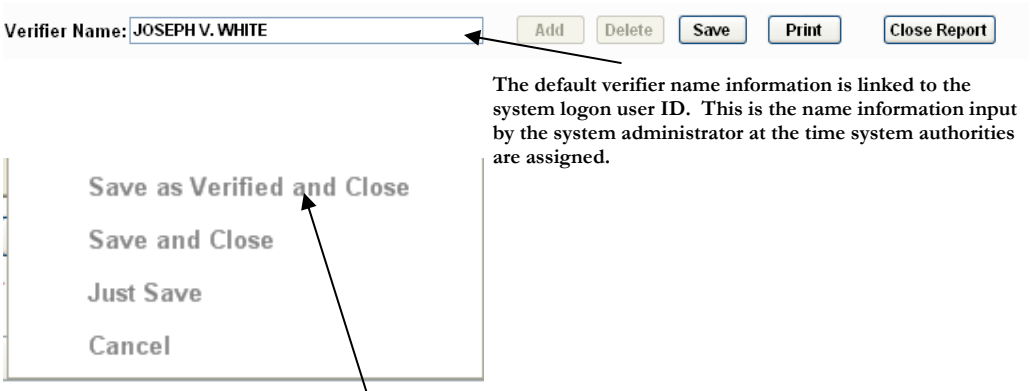


Figure 7-1, MTS Verifier dialog box

Click on Save as Verified and Close as noted above to verify a previously saved test or to simultaneously save and verify a test.

The verifier name as shown in the box will be set unto the report as the verifier name as shown on figure 7.2 below.

Verified Date: 05/29/2001 **Verified By:** Joseph V. WHITE

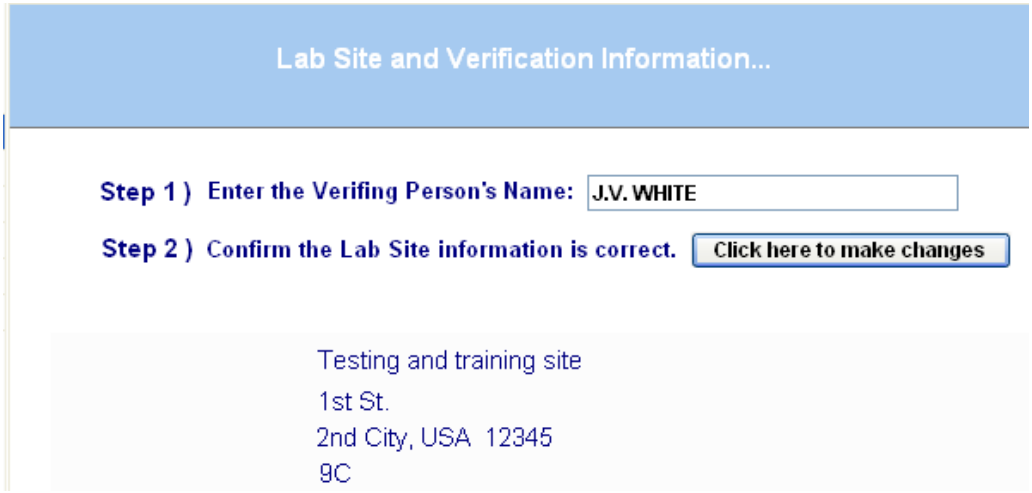
Figure 7-2, Sample verifier info on report

7.2. Verifying Reports-MIT

Verifying reports on the MIT is similar to the MTS. A major distinction is with the **Lab Site and Verifier Name Information** dialog box. On first time click of Create New Test the dialog box will open. The MIT **Verifier Name Information** dialog box includes an additional field for selection of **Lab Site.** The lab site selected will generally default to the site assigned on setup of the MIT on your PC. When testing is done, the lab site should always represent the qualified laboratory where the test was done. The address information on the report is based on the lab site selection. If a lab site is not available on the list contact your Region MIT administrator.

☞ **Refer to Section** [4.1. Setup- opening the Sample Card](),

Figure 7-3, MIT Lab Site selection and Verifier dialog



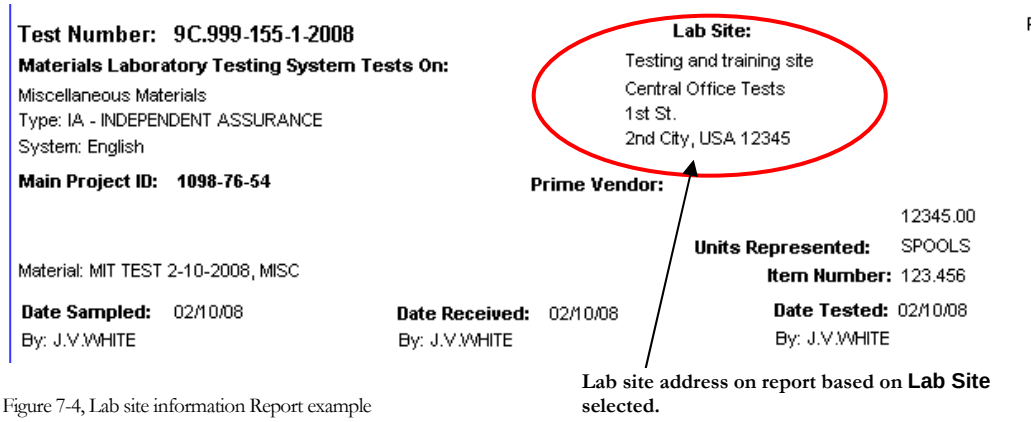
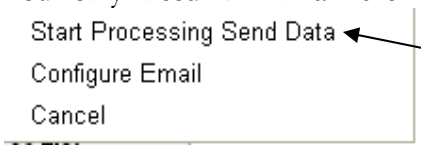


Figure 7-4, Lab site information Report example

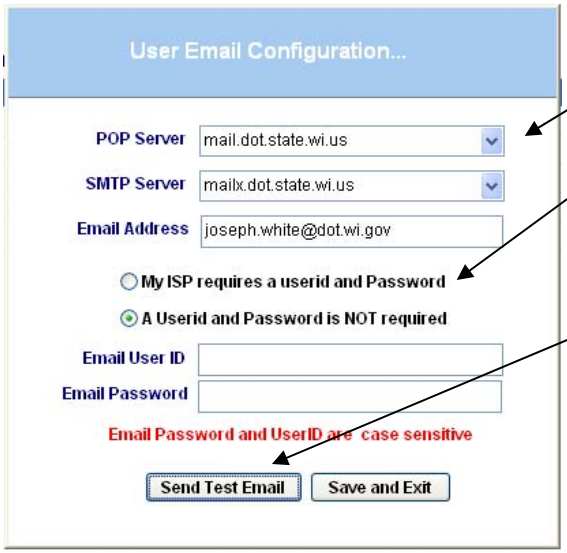
7.3. Sending Reports - MITS

1. If the reports are found to be satisfactory dial up and connect. Click on the **Send Data** button to begin the send process. The below dialog box will open. You only need fill in all the required fields the first time it opens.



Click here to open the Sender Information screen, figure 7-6

2. If you are a WisDOT user or need to send via e-mail protocol you will need to open **Configure Email**.



The POP and SMTP Server information will be as required by your Email account settings

If you ISP requires a userid and password select that choice and input the appropriate information.

Send a test email to check your settings. Contact Atwood Systems to confirm.

Figure 7-5, Email configuration for MIT

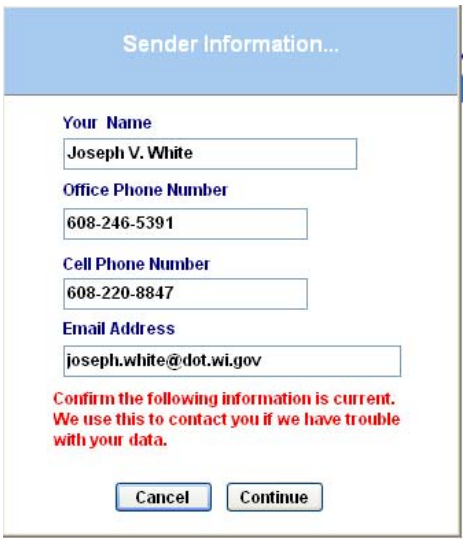


Figure 7-6, Sender information dialog

3. Click on **Continue**, and then click here to **Start Processing.** A process message will flash.

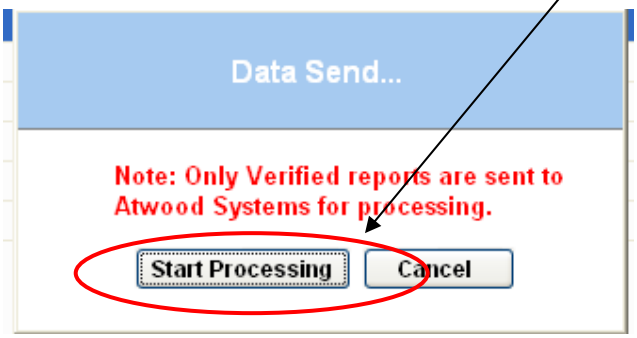
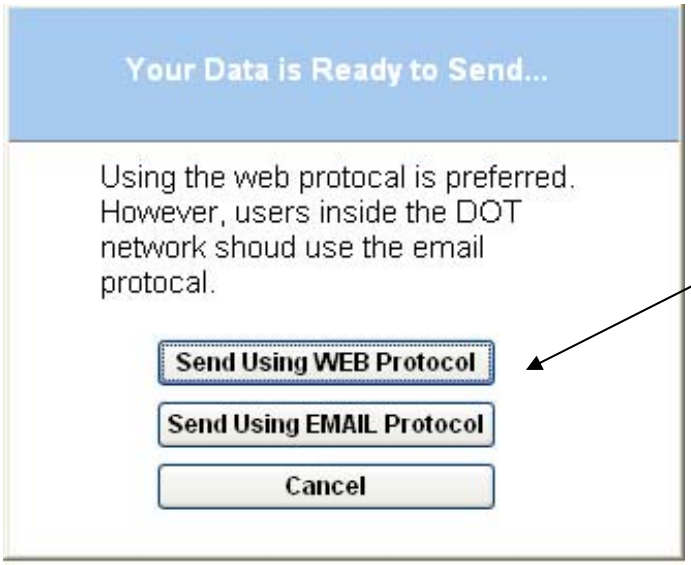


Figure 7-7, Start Transfer window for file send

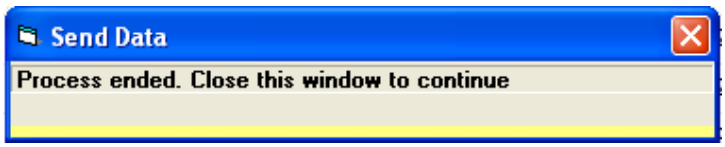
NOTE: It is good practice to check the Web site to verify that the MIT reports been properly received. Refer to 3.3 Viewing Reports on the Web site



NOTE: Whenever changes are made to a test the test must be re-verified and re-sent.

Figure 7-8, File send ready notice

A message should appear indicating completion of the process.



The reports sent are replicated to the Oracle database and will usually be posted onto the Web site after noon of the next workday.

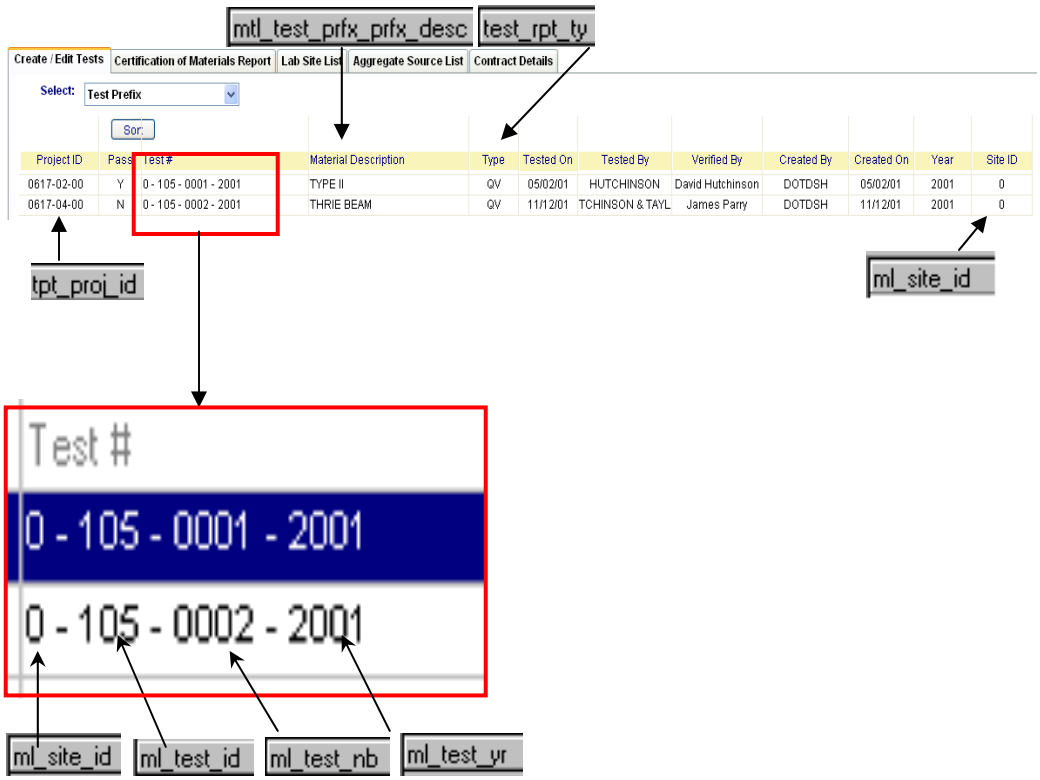
Chapter 8

8. Special Features

8.1. Sorting and Filtering Lists

Project and prefix test lists can be sorted in a variety of ways. Click on the **SORT** button on the top of the list to open the **Specify Sort Columns** window. Follow the instructions to select the sort criteria. Generally, only primary and secondary sort criteria can be applied successfully.

Some of the more salient source data labels are matched here to the column or data fields represented.



A portion of any list can be filtered and displayed based on the selection of any of the specific header criteria. Place the cursor on the column of the criteria to be selected and click the right mouse button. Enter the information for the desired selection in the filter box that opens. In the below example the prefix 802 tests for project id 1011-01-74 will be listed.

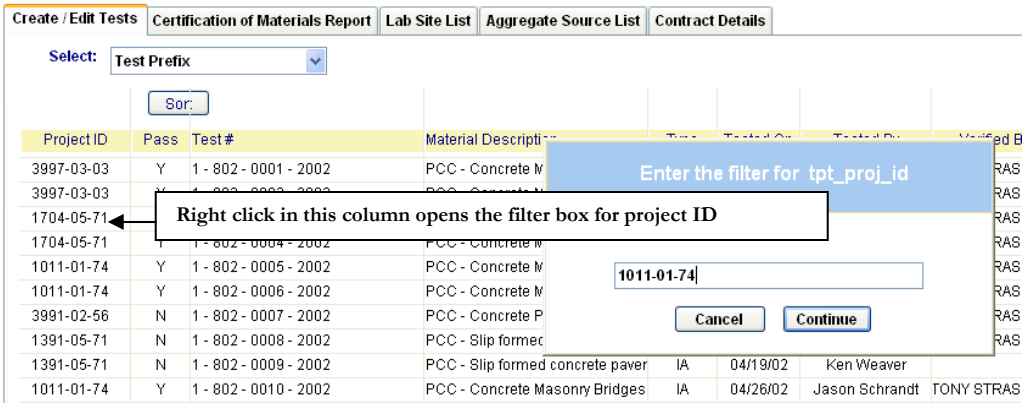


Figure 8-1, Filtering lists

Entering the project id as above will then display of list of 802 prefixes for only that project id, as shown below.

Project ID	Pass	Site ID	Year	Test #	Type Description
1011-01-74	Y	1	2002	1 - 802 - 0005 - 2002	Portland Cement Con
1011-01-74	Y	1	2002	1 - 802 - 0006 - 2002	Portland Cement Con
1011-01-74	Y	1	2002	1 - 802 - 0010 - 2002	Portland Cement Con

Figure 8-2, list filtered by project id

8.2. Copying and Associating Tests

Click on the Copy Test (MTS)or Copy this Test (MIT) tab to invoke the copy test window. The copy options vary depending on the test prefix. The feature is disabled for some prefixes. As an example the **Copy Test** feature can be used to associate a Prefix 162 concrete aggregate gradation test from a commercial ready mix plant when concrete is being concurrently shipped from the plant to numerous small non-QMP projects.

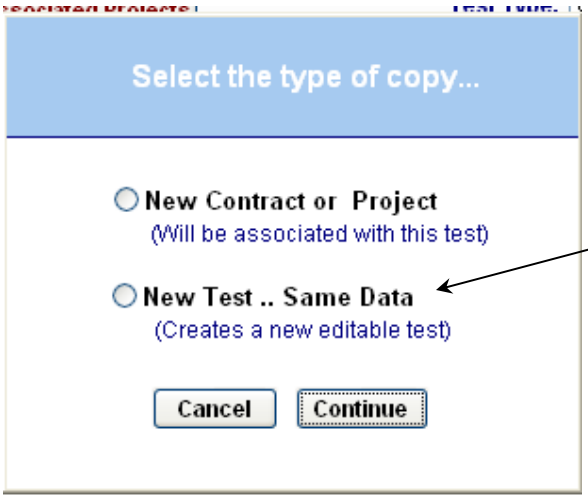
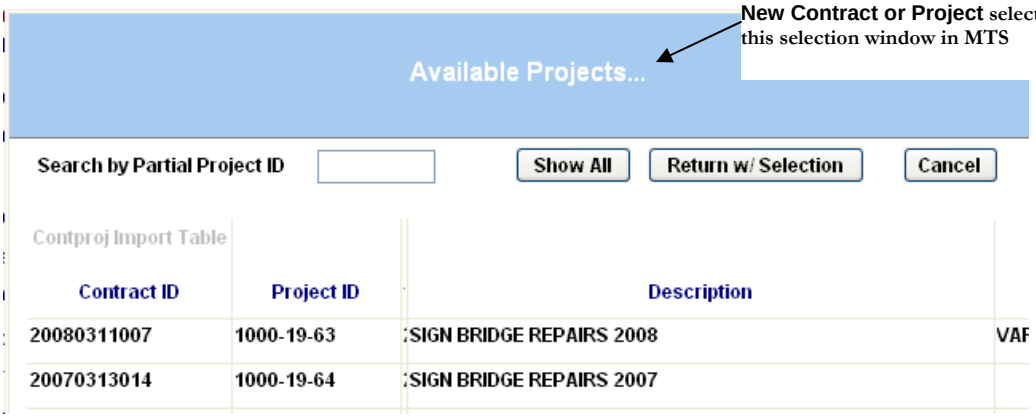


Figure 8-3, MIT copy test selection box



.

Figure 8-4, MIT select project box

NOTE: The MTS uses a different interface to select a project for association

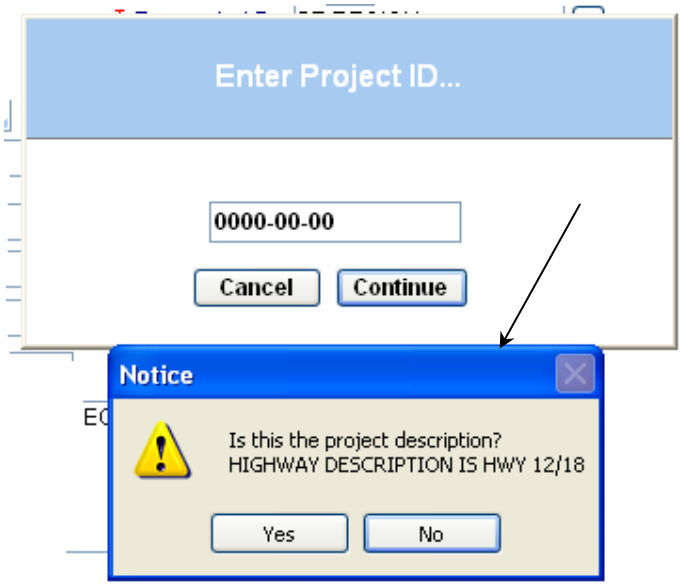


Figure 8-5, MTS copy select box

NOTE: Assignment of another project to an existing verified test requires the test be *re-verified* and resent

A test that is copied to a new contract or project is associated or assigned to the original test. The assigned project id numbers are displayed on the test report under the heading of **Other Associated Projects**. Click on the

tab for a list of projects assigned to a test.

Test Number: 1 - 162 - 0001 - 2002

Materials Laboratory Testing System Tests On:
Fine & coarse aggregate for concrete
Type: A - ACCEPTANCE
System: English

Lab Site:
1
WisDOT District 1 Lab (LAN ONLY)
2101 Wright Street
Madison, WI 53704

Main Project ID: 5626-01-71
BYRN GRWYN ROAD BRIDGE & APPROACHES
TOWN OF BRIGHAM
TOWN ROAD

Date Sampled: 02/08/02
By: T.H.Sampler

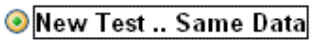
Date Received:
By: ME

Date Tested: 02/08/02
By: A. Tester

Source: A-1 MATERIALS (DRESSEL-GRAHAM) **Material:** PCC Size #1 & Fine **Mfg:**
Legal Description: SE, NE, Section 3, T 28 N, R 7 W **County:** CHIPPEWA

Other Associated Projects:
1700-04-72 - MONROE - BRODHEAD ROAD
5108-03-71 - KINGSFORD ROAD BRIDGE & APPROACHES
5914-00-71 - BARNEVELD - BLUE MOUNDS ROAD

Figure 8-6, Report showing Associated Project information

The  in the MIT or the MTS LAN will create a new editable test. The main information from the test copied is automatically copied into the new test to save input time when information is common to both tests. For example: grade, cement brand, sources, etc. from the prefix 130 Concrete Cylinder Main screen will be copied to the new test.

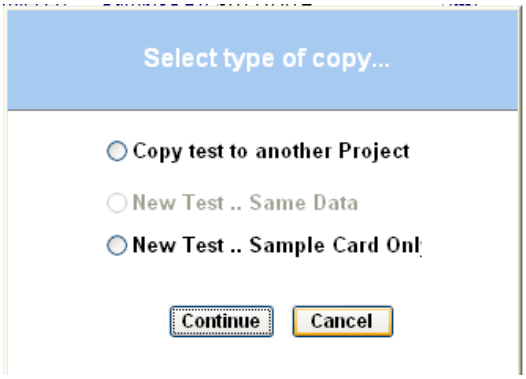
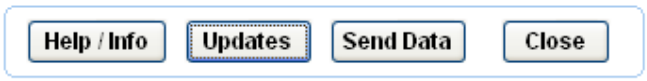


Figure 8-7, MTS Copy prefix 162 and 217 sample card

The **New Test… Sample Card Only** copy feature is useful when entering multiple gradations for the same project. This is only available for prefix 162 and 217 in the MTS.

8.3. Updates -MIT

The Updates menu choice opens a links to Reference Data download file. All the renewable lists are packaged in this file. All the information is downloaded and updated with a single file. The update is only necessary for the MIT (field) version.



Note: You must have an internet connection open to perform these functions.

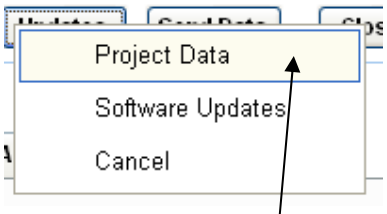


Figure 8-8, Data Updates

Clicking on Project Data will begin the process of downloading and updating all the reference data files.

The following lists and files are included in the downloaded **referencedata.zip** file:

Ag Source- Aggregate Source List

Concrete Supplier- list of concrete suppliers that can be selected on the prefix 130

Cement/Admix – Approved cement Brand/Mill and Admixture selection lists- prefix 130

Lab Site – MIT lab site selection list

Specifications – Special provision, changed, and new specifications for prefix 217 Aggregates and Prefix 162 Concrete Aggregates

Help Note: To access context sensitive help press the F1 key when the cursor is in any field of the noted prefixes.

Help Files – Context sensitive help files for Sample Card, prefix 217, prefix 155, prefix 130 and prefix 900

Test Types – Sample card test type choice lists

Contract and Project Data – files to add contracts and project information- This would include Local Force Account (LFA) non-let contracts.

8.4. MTS Reports

Specialized reports providing list or data summaries are available as a special feature in the MTS LAN. Click on the

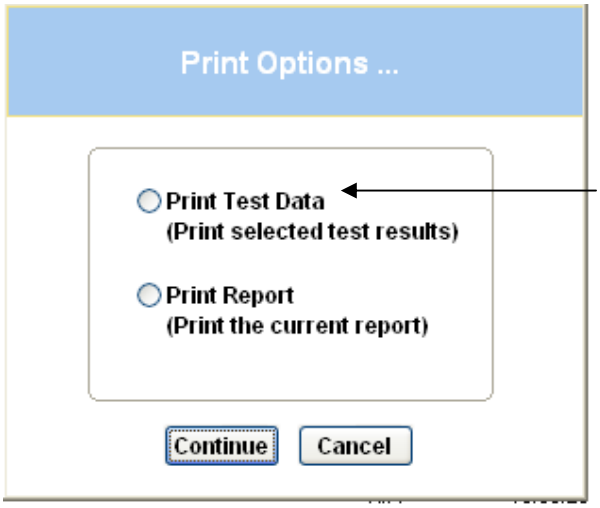
icon on the MTS LAN toolbar to open the summary reports window. Highlight and click on an available report from the **Select Report** drop down list box to open a report.

Each report will have specific fields to be filled in or selections made from drop down list boxes. A report is generated by click on the

button after entering in the required criteria. A click on the

button will open the print dialog box. Some of the report lists provide the option to print the report list as shown on the view or a copy of the test report or reports.

Note: Individual reports can be selected for printing by selecting the **Pages** radio button and listing the # (s) of the reports. Refer to Figure 8.10, Print dialog box.



Select this option to print all or a portion of the test reports from a list where available

Figure 8-9, Print Options box

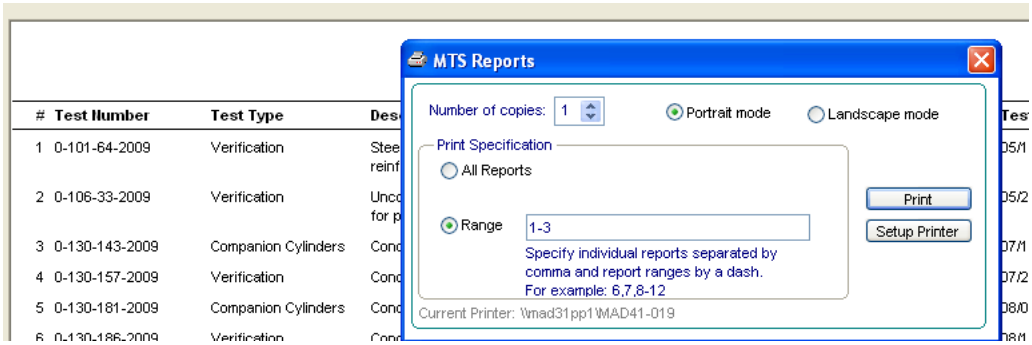


Figure 8-10, Print Dialog box

The reports available are as follows:

Test Listing by Region (with Status) - A list report of all verified tests of all projects associated with a Region within a specified date range. Status choices are for Satisfactory or Unsatisfactory marked tests.

Test Listing by Project (with Status) - A list report of all verified tests for a project within a specified date range- Status choices are for Satisfactory or Unsatisfactory marked tests

Print Test Data feature is active

Test listing by Project – This report gives a list of all the verified tests for a project. The report is the **Test Report Record** list for the project.

Prefix 217 Listing Report – This is a list of the prefix 217 aggregate tests recorded for a project based on site id, grade and type of material.

Cylinder Report Listing by Project - The Cylinder Report is a summary listing of concrete cylinder results for a project.

Aggr. Source Listing by Source Name, **Aggr. Source Listing by County Name**, **Aggr. Source Listing by Test Number** – The various aggregate source reports listed yield summary lists of the Central Office lab quality tests results for pit and quarry aggregate sources.

☞ Print Test Data feature is active

Testing Prefix Listing by Site ID – This is a list report of all the tests created and verified from a specific lab site for a specified date range and test prefix.

☞ Print Test Data feature is active

T**est Listing by Site ID (All Prefixes)** - This report is the identical to the Test Prefix Listing by Site ID except that all the reports are listed for the selected site.

Aggr. Summary Report – The report summarizes the sieve analysis data from the MTS tests based on selection criteria of project id, test id (217 or 162), grade or type of aggregate.

Curing Compound Tested and Approved Lots - A summary list of the approved batches of white membrane curing compound with the corresponding WisDOT test numbers is produced with this report.

Summary of Glass Beads Tests – This report lists the batch number and corresponding satisfactory WisDOT test number for each of the glass bead manufacturers. Criteria selection is the year.

☞ Print Test Data feature is active

Independent Assurance Test Reports – Summary lists of Independent Assurance Program prefix 800 reports for a selected Region, prefix and date range.

HMA Design Verification - This is a list report of design mix verification tests. All prefix 254-design mix verification tests will be listed if the selection criterion is left blank. The list can be refined to selection for Pass - Fail %Va or % VMA or Yes/No for dispute data.

HMA Design Verification by Design ID (250) - Similar to above HMA Design Verification report but generates a data summary of prefix 254 tests specific to a selected WisDOT prefix 250 mix design. Additional selection criteria include Pass - Fail %Va or % VMA.

☞ Print Test Data feature is active

Independence Assurance Reports for Follow Up – Lists of Independent Assurance Program reports that are marked for follow up. The selection criteria are as shown in the figure below. Prefix is a required criterion.

Note : Click on the **Select button to open a searchable list for tester or company .Refer to** [Prefix 801 - Aggregates (IAP)](), **figure 5-22, 5-23, 5-24**

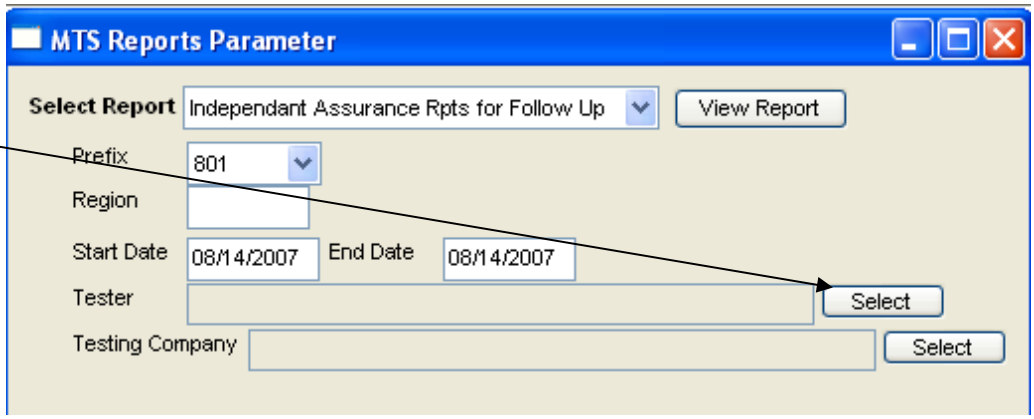


Figure 8-11, IAP Report parameter selection box

Print Test Data feature is active

HTCP Certified Tester By IA Prefix - This report lists testers that have been reviewed by the IA Program. Selection criteria are similar to the **IA Reports for Follow Up.** Prefix is a required criterion.

8.5. Special Excel Copy and Paste to Prefix 155

An Excel worksheet can be used to enter data that can be copied into the Test Description field on the Prefix 155. The steps to do this are described as follows:

1. Create an Excel worksheet containing the data you want to use. The below is an example.

QMP HMA SUMMARY REPORT				
C.O. Verification No.= 0-250-0323-2005		QC Design No.= B-1-12.5		Mix Type E-1.0, 12.5mm
Date	Tons	QC Test No.	Verification Test No	HMA Diary Page No.
5/16/2005	207	1-1	--------	4
6/5/2005	85.75	--	--------	7
6/25/2005	175	2-1	--------	8
8/8/2005	68	3-1	--------	12
9/16/2005	16			14
9/17/2005				15
9/19/2005				16
	EXAMPLE ONLY			
Exception to include on deviations				
6/5/2005	Did not test - no QMP pay for 85.75 tons			
9/16/2002	Did not test excess of 1500 tons- no QMP pay for 178.76 tons			
9/19/2005	Did not test- no QMP pay for 93.44 tons			

Leave an empty column between each data column to create a better format on the Prefix 155. Leave enough column space to allow for full data display.

Figure 8-12, Example Excel worksheet

2. It is suggested that the worksheet first be saved in a conventional Excel format. This will make it easier to open to make future edit changes. Then save the Excel worksheet as Formatted Test (Space Delimited)(*.prn).

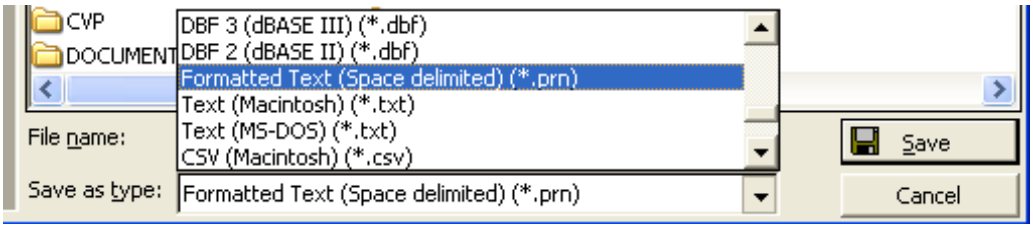


Figure 8-13, Excel save file type

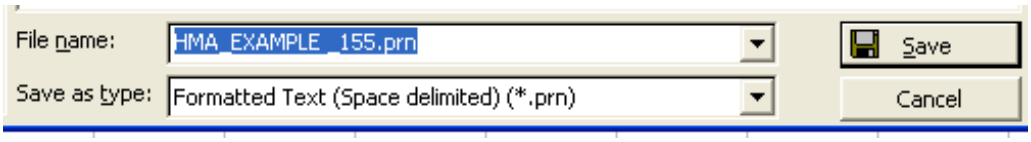


Figure 8-14, Excel save file name

3. Open the saved *.prn file in Note Pad or

on the MIT/MTS icon menu list. Select All Documents (*. *) to locate the *.prn file to open.

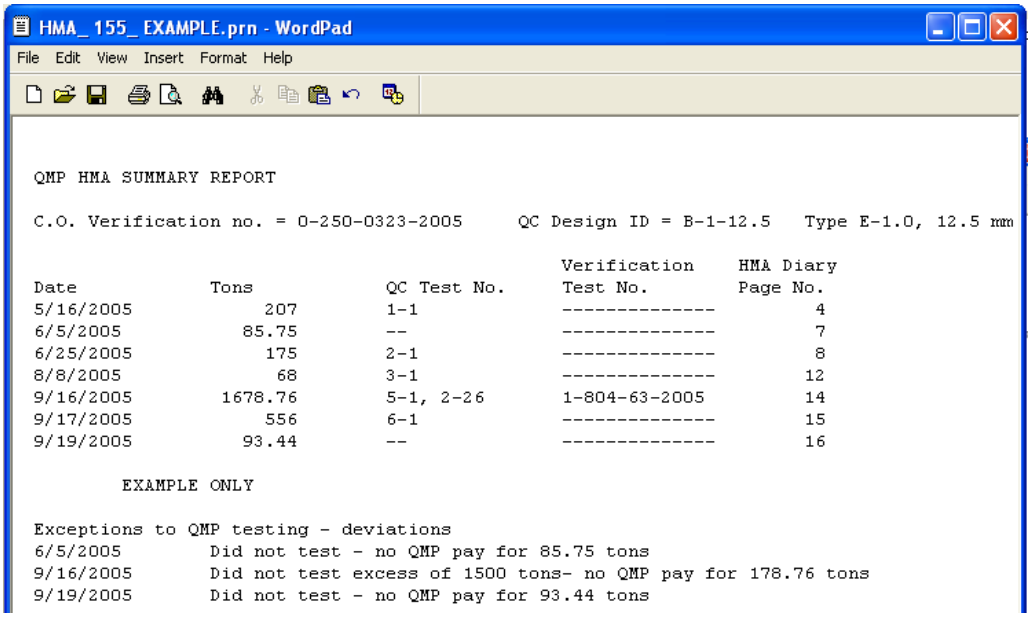
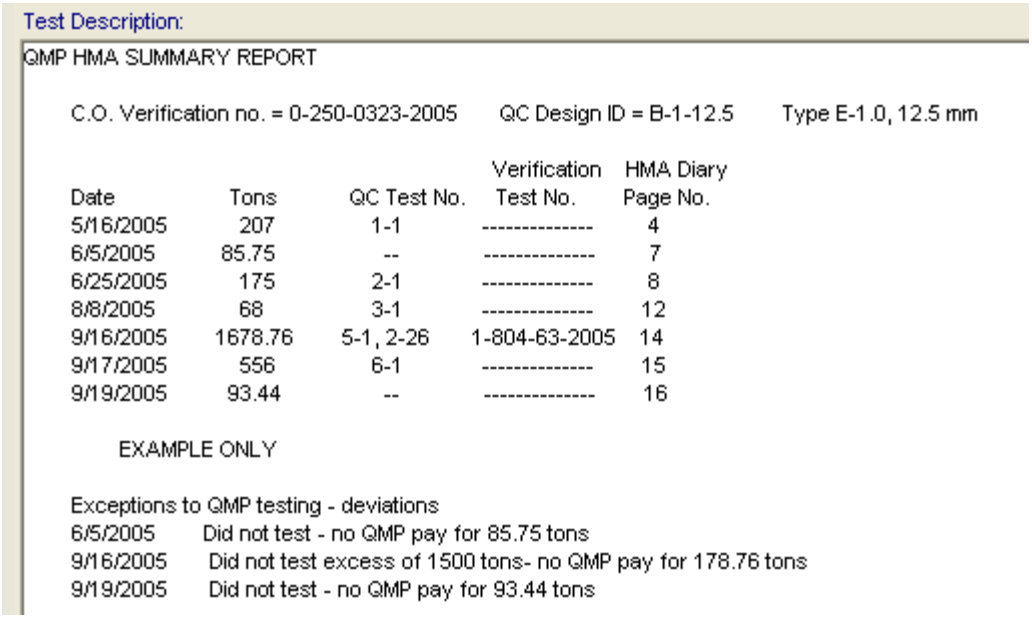


Figure 8-15, Example open *. prn document in WordPad.

4. Highlight or select all on the WordPad document and copy.

5. Paste the copied data into the Test Description field on the Prefix 155. If some of the data was truncated or disarranged simply edit in the 155 using only the space bar or keyboard characters to align data. Slight misalignments are usually due to not providing enough space between columns or data on the Excel worksheet. With minor editing the report will look like the following figure 8-21:



Test Description:

QMP HMA SUMMARY REPORT

C.O. Verification no. = 0-250-0323-2005 QC Design ID = B-1-12.5 Type E-1.0, 12.5 mm

Date	Tons	QC Test No.	Verification Test No.	HMA Diary Page No.
5/16/2005	207	1-1	----------	4
6/5/2005	85.75	--	----------	7
6/25/2005	175	2-1	----------	8
8/8/2005	68	3-1	----------	12
9/16/2005	1678.76	5-1, 2-26	1-804-63-2005	14
9/17/2005	556	6-1	----------	15
9/19/2005	93.44	--	----------	16

EXAMPLE ONLY

Exceptions to QMP testing - deviations
6/5/2005 Did not test - no QMP pay for 85.75 tons
9/16/2005 Did not test excess of 1500 tons- no QMP pay for 178.76 tons
9/19/2005 Did not test - no QMP pay for 93.44 tons

Figure 8-16, Prefix 155 Test Description example

9. Appendix exhibits

9.1. MTS Prefix List - Number Order

Prefix	Description
101	Steel bars for concrete reinforcement
103	Steel wire and mesh for concrete reinforcement
105	Steel plate beam guard
106	Uncoated steel strands for prestressed concrete
112	Steel sheets for culverts
115	High strength bolts, nuts, and washers
120	Chain link fence fabric
121	Rolled formed sections for chain link fence
122	Pipe for chain link fence
123	Tension wire for chain link fence
126	Woven wire fence fabric
127	Barbed wire- 2 strands
128	Smooth wire for woven fence fabric
130	Concrete cylinders
131	Water for concrete
135	Concrete Thickness Probing
140	Concrete curing compound
150	Portland cement
151	Ground granulated blast furnace slag
152	Fly ash
155	Miscellaneous materials
162	Fine & coarse aggregates for concrete
170	Geotextiles
172	Geogrid
177	Corrugated polyethylene drainage pipe
180	Concrete brick, block, and pipe
217	Aggregates
225	Aggregate Quality
230	Soils
232	Soils Nuclear Density
250	Asphalt mix design
254	Asphaltic Mix Verification
257	Asphalt mix testing
259	Asphalt Mix Field changes
262	Asphaltic Pavement Nuclear Density
310	Glass beads
321	Pavement marking paint- White, Water based
330	Performance Graded Binder
332	Emulsified Asphalt
334	Asphalt Cement
801	Aggregate Gradation
802	Portland Cement Concrete Mixtures
803	Asphaltic Pavement Density Testing
804	Asphaltic Concrete Mixtures
805	IAP Soils Nuclear Density
900	Reference Report

9.2. MTS Prefix List- Alphabetical Order

Prefix	Description
801	Aggregate Gradation
217	Aggregates
225	Aggregate Quality
334	Asphalt Cement
250	Asphalt mix design
259	Asphalt Mix Field changes
257	Asphalt mix testing
804	Asphaltic Concrete Mixtures
254	Asphaltic Mix Verification
803	Asphaltic Pavement Density Testing
262	Asphaltic Pavement Nuclear Density
127	Barbed wire- 2 strands
120	Chain link fence fabric
180	Concrete brick, block, and pipe
140	Concrete curing compound
130	Concrete cylinders
135	Concrete Thickness Probing
177	Corrugated polyethylene drainage pipe
332	Emulsified Asphalt
162	Fine & coarse aggregates for concrete
152	Fly ash
172	Geogrid
170	Geotextiles
310	Glass beads
151	Ground granulated blast furnace slag
115	High strength bolts, nuts, and washers
805	IAP Soils Nuclear Density
155	Miscellaneous materials
321	Pavement marking paint- White, Water based
330	Performance Graded Binder
122	Pipe for chain link fence
150	Portland cement
802	Portland Cement Concrete Mixtures
900	Reference Report
121	Rolled formed sections for chain link fence
128	Smooth wire for woven fence fabric
230	Soils
232	Soils Nuclear Density
101	Steel bars for concrete reinforcement
105	Steel plate beam guard
112	Steel sheets for culverts
103	Steel wire and mesh for concrete reinforcement
123	Tension wire for chain link fence
106	Uncoated steel strands for prestressed concrete
131	Water for concrete
126	Woven wire fence fabric

9.3. Available Approved Lists

The following lists are located on the Internet at http://www.dot.wisconsin.gov/business/engrserv/approvedprod.htm (refer to **3.4 Viewing Approved Source and List Information**)

- **AASHTO-M194 Type A Water Reducers**
- **Air Entraining Admixtures**
- **Approved Fabricators, Bridge Metal Secondary Items**
- **Asphalt Cement - Certified Suppliers**
- **Bicycle Racks Asphalt or Concrete Mounted**
- **Block and Brick**
- **Castings, Gray Iron**
- **Concrete Admixtures**
- **Concrete Masonry Anchors, Type L**
- **Concrete Pipe Products**
- **Concrete Protective Surface Treatment**
- **Corrugated Metal Pipe Products**
- **Corrugated Polyethylene Culvert Pipe**
- **Corrugated Polyethylene Drainage Pipe**
- **Crash Attenuator - Sand Barrel Systems**
- **Crash Cushions**
- **Curb Ramp Detectable Warning Field**
- **Cure and Seal Compounds for Non-Trafficked Surfaces on Structural Masonry**
- **Electrical- Qualified Products List**
- **Energy Absorbing Terminals for Beam Guard**
- **Epoxy Coating, Bar Steel Reinforcement**
- **Epoxy Pavement Marking Materials, Qualified Products**
- **Flexible Delineator Posts- Permanent**
- **Flexible Tubular Marker - Surface Mounted**
- **Low Viscosity Crack Sealers for Bridge Decks**
- **M194 Type D Water Reducing Set Retard**
- **Manhole, Inlet, Catch Basin Adjustment Products**
- **Noise Barrier Systems**
- **Non-Shrink Commercial Grout**
- **Overhead Sign Support Brackets**
- **Paint Systems-New Structural Steel**
- **Paint Systems – Structure Maintenance Painting**
- **Pavement Marking- Qualified Products Lists**
- **Pile Points**
- **Pipe Liners, Culvert – Manning's Coefficient Certification**
- **Portland Cement Manufacturers- Certified Suppliers**
- **Plastic Guardrail Block outs**
- **Precast Catch Basins, Inlets, Manholes**
- **Prefabricated Steel Truss Pedestrian Bridges**
- **Preformed Thermoplastic Marking Material**
- **Prestressed Concrete Members**
- **Raised Pavement Marker Casting**
- **Raised Pavement Marker Reflectors**
- **Rapid Setting Concrete Patch Material**
- **Release Agents, Asphaltic Mixtures**
- **Rubberized Membrane Waterproofing**
- **Solvent borne Paint**
- **Temporary Pavement Marking, Removable Tape**
- **Temporary Raised Pavement Markers**
- **Wall Systems**
- **Waterborne Paint**

Erosion Control Product Acceptability Lists (PAL) for Erosion Mats, Soil Stabilizers, Tackifiers, inlet protection and temporary ditch checks are also located on the dotnet and Internet -
http://www.dot.wisconsin.gov/business/engrserv/pal.htm

9.4. Source Inspected and Pre-tested Materials

Concrete Curing Agents

Refer to 3.4 Viewing Approved Source and List Information

A list of tested and approved batches of White Pigmented Curing Compounds is also maintained on the Web site. Batch numbers can easily be crosschecked to WisDOT Prefix 140 test numbers.

Glass Beads

A summary list of WisDOT Central Laboratory Tested Glass Beads for Pavement marking is available on the Web site. Batch numbers can easily be crosschecked to WisDOT Prefix 310 test numbers.

Steel Plate Beam Guard, Approved Shipments

Lists of pre-qualified inventories and approved shipments of Steel Plate Beam Guard are maintained on the Web site. WisDOT inspected approved inventories are arranged by vendor and manufacturer.

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