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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
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](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.
1.3.1. **Context Sensitive Help**

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.

Pressing the F1 key in the active field will open the Help window as shown. Click on See Also in the Help window for related topics. Click the close button to close.

![Context sensitive help example](image)

**Figure 1-4, Context sensitive help example**
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.

![MTS Logon dialog box](image)

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.
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.

2.3. Changing your MTS password
Click on Utilities from the MTS main menu. Select and click on Change Password to open the Change Password dialog box.
2.4. User Information - MTS

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

![Current User](image)

Figure 2-4, User Information, MTS
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

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

![Main Menu](image)

Clicking on the arrow in the box will open the drop down selection choices

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

To open a list of tests for a project select Project ID. Input the eight digit ID number in the dialog box and click Return

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 view.

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 Read Only - this test not in user site tab. Note that all the MTSLAN tests are set to Read Only 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.

Activate Test tab to view test data screens.

Figure 3-6, Sample Card view

Figure 3-7, Data sheet sample view
### MATERIALS TRACKING SYSTEM USER GUIDE -
### CHAPTER 3 – VIEWING REPORTS AND TESTS

**3.2. Viewing by Test Prefix and Project ID - MTS**

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 - MTS**, 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**.

---

**Figure 3.8, REPORT VIEW EXAMPLE**

<table>
<thead>
<tr>
<th>Test Number: 100-102-0002-2022</th>
<th>Lab Site: 100</th>
</tr>
</thead>
<tbody>
<tr>
<td>Materials Laboratory Testing System Tests On:</td>
<td>Being Consultants</td>
</tr>
<tr>
<td>Fine &amp; coarse aggregate for concrete</td>
<td>2031 Riverside Drive</td>
</tr>
<tr>
<td>Type: GQ - QUALITY VERIFICATION</td>
<td>Beaverton, OR 55511</td>
</tr>
<tr>
<td>System English</td>
<td></td>
</tr>
</tbody>
</table>

**Main Project ID:** 51884-03-71

- **KINGSFORD ROAD BRIDGE & APPROACHES**
- **TOWN OF ELLENBORO**
- **TOWN ROAD**

**Date Sampled:** 6/27/2022
**Date Received:** 6/28/2022
**Date Tested:** 6/29/2022

**By:** EDGAR TOLD
**By:** H. E. WENTZ
**By:** A. L. ABBOTT

**Source:** *SOURCE NOT AVAILABLE*
**Material:** FGC Shredded - Course
**Mfg:**
**County:**

**Legal Description:**
- Other Associated Projects: 5865-00-71 - BYRN GRAY ROAD BRIDGE & APPROACHES
- 5914-00-71 - BARNEVELD - ELLENBORO ROAD

**Single Gradation**

- **SIEVE ANALYSIS (AASHTO T-41, T-27 & T-28):**
  - **Sieve Size**
  - **Metric (English)**
  - **Proportion (%)**
  - **% passing**

<table>
<thead>
<tr>
<th>Size</th>
<th>% passing</th>
</tr>
</thead>
<tbody>
<tr>
<td>60.0 (2&quot;)</td>
<td>100.0</td>
</tr>
<tr>
<td>37.5 (1 1/2&quot;)</td>
<td>100.0</td>
</tr>
<tr>
<td>25.0 (1&quot;)</td>
<td>95.0</td>
</tr>
<tr>
<td>19.0 (3/4&quot;)</td>
<td>95.0</td>
</tr>
<tr>
<td>12.5 (1/2&quot;)</td>
<td>95.0</td>
</tr>
<tr>
<td>9.5 (9/16&quot;)</td>
<td>94.9</td>
</tr>
<tr>
<td>4.75 (3/8&quot;)</td>
<td>99.9</td>
</tr>
<tr>
<td>2.36 (1/4&quot;)</td>
<td>99.9</td>
</tr>
<tr>
<td>1.18 (3/16&quot;)</td>
<td>79.6</td>
</tr>
</tbody>
</table>

---

7/13/2010
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](http://www.atwoodsystems.com/mrs)
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.
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.
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.
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.
3.4. Viewing Approved Source and List Information

Select and activate **WisDOT Links** 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.
WisDOT Links

Wisconsin Dept. of Transportation
- Home Page
- Lab Qualifications
- Construction Notes
- Bid Letting Information
- Detour and Construction Info
- Approved Product List
- Erosion Control Product Acceptability List

ASTM
- Wisconsin Highway Research Program
- Wisconsin Transportation Builders Assoc.
- Wisconsin Asphalt Pavement Assoc.

AASHTO
- Home Page
- Accredited Lab Listing

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

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:

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](image-url)
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 button to chose the save option, figure 4.2. Changes can be made at any time by clicking on the 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.
The selected address displayed here will be printed on your verified report.

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.

These prefixes are available only on the MTS LAN.
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.

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

**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 the **Projects** tab to open the dialog box for adding projects.

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

Click on **Add a Project** 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.

Click to add the contract after highlighting

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

*Main Project ID: 9999-99-99 - NTS Training and Test Project**

Figure 4-8, MTS project ID field
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:

- **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.

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).

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.

![Sampled By:](image)

Figure 4-11, Sampled by field example-correct

*Tested By:*

![Tested By:](image)

NOT this!

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.

![Date Sampled:](image)

Click here to open a calendar view for date selection. Applies to all the date fields

![Refer to figure 4.11 and 4.12](image)

**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
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](image)

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](image)

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 select screen](image)
**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.
**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.

**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.

**Item Number**: This field is for inputting a bid item number relevant to the tested material.
5. Creating New Tests- Data Entry

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

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

![Figure 5-2, 217 Type of Material selection](image)

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

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

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.

![Figure 5-3, 217 Fractured particles](image)

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

![Figure 5-4, 217 Moisture content](image)

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.
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.

NOTE: A zero(0) weight must be entered for any sieve that has a 100% specification or calculation requirement.

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

The prefix 217 worksheet is also used for entering granular backfill, 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

For Granular Backfills Type of Use must be selected to assign General Requirement specifications.

For example, the specifications for trench backfill require 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.

The total dry sample weigh (Weight of Sample [Dry] [Grams]) must be entered.

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.
5.1.1.2. BREAKER RUN 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.
Select the applicable specification from the list. Backfill materials will require a selection from both the R-4 and P-4 sections.

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.

Once a selection has been made it cannot be reversed.

Data entry screens are set as shown in figure 5.12 or 5.13 below.
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.

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.

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.
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.

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

The below figures illustrate the drop down lists available on the above screen.
When multiple lanes are involved number 1 to x starting at the outside and proceeding to the inside.

Figure 5-16, Prefix 135 drop down lists

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

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.

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 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.

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.

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

Figure 5-18, 155 Test Description field

Figure 5-19 Material Field
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

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.

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 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](image)

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](image)

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.

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

Click on Updates to open to the project updates.

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
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.
Choose a grade then click on the 'Set IA values' or 'Set non IA values' to fill in the comparison correlation values for that grade from the selected IA or non IA test. You must first have selected an IA or non IA test to get the comparison correlation results from.

Figure 5-30, 801 Set test values selection

<table>
<thead>
<tr>
<th>Grade</th>
<th>Base Coarse</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Set IA values
Set non IA values

Figure 5-31, 801 Correlation data screen example

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

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

Follow up required? Y ✔ Follow up report number 801-0033-2007

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.

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

**SAMPLING (AASHTO T-2)**

1. 1 Y Sample large enough based on nominal maximum particle size?
2. 1 X Correct random sample selection methods used (GMP)?

**SAMPLING FROM A STOPPED CONVEYOR (AASHTO T-2)**

2. 1 X Normal flow has been established?

**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.**
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 from the 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.

![Figure 5-38, 802 test data and correlation screen](image)

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)

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 average difference is calculated.

5.8.4. Prefix 804-Asphaltic Concrete Mixtures (IAP)

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

**Sampling Methods**

Select all sampling methods used

- Sampling HMA (CMM 4-15-25)
- Maximum Specific Gravity
- HMA Compaction
- HMA Extraction/ Sieve Analysis

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)

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 - Asphalitic Pavement Nuclear Density - MTS & MIT

The prefix 262 worksheet is provided for electronic database entry of Asphalitic 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](image)

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](image)
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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.

![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.

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

Enter the Region number and save the report to enable the Add tab.
Click the \textbf{Add} tab to activate the \textbf{Add a reference} window.

\begin{figure}[h!]
\centering
\includegraphics[width=\textwidth]{figure5-48.png}
\caption{900 Add – Edit Document Reference entry window}
\end{figure}

\textbf{NOTE:} Assign a unique Document ID for each reference entry.

\begin{figure}[h!]
\centering
\includegraphics[width=\textwidth]{figure5-49.png}
\caption{900 Document Type selection list}
\end{figure}

Drop down list is available for the Document Type.

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.

\begin{figure}[h!]
\centering
\includegraphics[width=\textwidth]{figure5-50.png}
\caption{900 Document Type selection list}
\end{figure}
### MATERIALS TRACKING SYSTEM USER GUIDE - CHAPTER 5 - CREATING NEW TESTS - ENTRY

#### Remarks:
VARIOUS CERTIFICATIONS OF COMPLIANCE, CERTIFIED REPORTS OF TEST, AND SHOP INSPECTION REPORTS FOR BAR STEEL AND STRUCTURAL METAL ITEMS.

<table>
<thead>
<tr>
<th>Doc ID</th>
<th>Material Description</th>
<th>Quantity</th>
<th>Satisfactory</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>D201-10, Certification</td>
<td>Secondary bridge metal frame - Expansion devices, Floor drains, each Steel bearing assemblies</td>
<td>3 Each, 4 Each, 20</td>
<td>Y</td>
<td>Shopping invoice with certification information. From Commercial Fabricators, IL Certified supplier</td>
</tr>
<tr>
<td>D20 - MILL CERTS</td>
<td>BAR STEEL REINFORCEMENT</td>
<td>456786 lbs</td>
<td>Y</td>
<td>North Star Steel, 25 pieces of MIL test information</td>
</tr>
<tr>
<td>D20 - EP</td>
<td>Epoxy Coating for Bar Steel Reinforcement</td>
<td>456786 Lbs</td>
<td>Y</td>
<td>Certified report of test from Senco, 3M epoxy</td>
</tr>
<tr>
<td>D20 - MC</td>
<td>Concrete Masonry Anchors, Type L</td>
<td>25 Each</td>
<td>Y</td>
<td>DuPont FASTLoc Resin Cartridges, dated 3-1-2003, VM183001 2003 Approved Product List</td>
</tr>
<tr>
<td>D20 - SD</td>
<td>Structural Carbon Steel</td>
<td>234567 Lbs</td>
<td></td>
<td>El. 20 report from Bureau of Structures, Metal Fabrication unit</td>
</tr>
</tbody>
</table>

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](image)

Selection of the Direct Transmission radio button activates the Depth button choices.
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

5.12. Prefix 254 – Asphaltic Mix Verification- MTS LAN

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

Select the WisDOT design from the drop down list box. The mix type, NMAS, and design Gmm, Gmb, Gsb and Pb corresponding to the selected mix design are laid into the fields.

The %Va and %VMA are calculated based on the verification test data entered. The target values are based on the mix type and NMAS of the selected design. The program sets PASS/FAIL based on comparison of the verification test data to the specification parameters.

Figure 5-54, Verification test result entry

7/13/2010

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.

Click on the Add 1310 Report tab to open a Contract List dialog box as shown below.
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_.
Check the Exceptions Noted box if deviations are recorded for the contract.

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

Click on to open the entry form as shown below. A separate dialog box is added for each material exception.
Figure 5-57, DT 1310 deviation entry window
6. Saving and Editing Tests

6.1. Saving Tests

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.

Click on **Save** 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.

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

![MTS Verifier dialog box]

The default verifier name information is linked to the system logon user ID. This is the name information input by the system administrator at the time system authorities are assigned.

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

![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

Lab Site and Verification Information...

Step 1) Enter the Verifying Person’s Name: J.V. WHITE

Step 2) Confirm the Lab Site information is correct. [Click here to make changes]

Select your company... then the address
Double Click the row to select the name

TEAM Engineering, Inc.
Teng & Associates, Inc.
Testing and training site
Tetra Tech MPS
Tetra Tech MPS (formerly Maxima)
TETRA TECH: SEYMOUR

Address list for the Site selected
Double Click the row to select the address

1st St.

Save and Continue  Save / Stop Prompting

Testing and training site
1st St.
2nd City, USA 12345 9C
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.

Start Processing Send Data
Configure Email
Cancel

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

![Sender Information Dialog](image1)

![Start Transfer Window for File Send](image2)

---

**Figure 7-6, Sender information dialog**

**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.

Click on the desired protocol to complete the final part of the send process.

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.
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.

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.
Right click in this column opens the filter box for project ID

Figure 8-1, Filtering lists

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

<table>
<thead>
<tr>
<th>Project ID</th>
<th>Pass</th>
<th>Site ID</th>
<th>Year</th>
<th>Test #</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1011-01-74</td>
<td>Y</td>
<td>1</td>
<td>2002</td>
<td>1 - 802 - 0005 - 2002</td>
<td>Portland Cement</td>
<td>Cement Grading Test</td>
</tr>
<tr>
<td>1011-01-74</td>
<td>Y</td>
<td>1</td>
<td>2002</td>
<td>1 - 802 - 0006 - 2002</td>
<td>Portland Cement</td>
<td>Cement Grading Test</td>
</tr>
<tr>
<td>1011-01-74</td>
<td>Y</td>
<td>1</td>
<td>2002</td>
<td>1 - 812 - 0910 - 2002</td>
<td>Portland Cement</td>
<td>Cement Grading Test</td>
</tr>
</tbody>
</table>

Figure 8-2, list filtered by project id

8.2. Copying and Associating Tests

Click on the (MTS) or (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, MTT copy test selection box

Figure 8-4, MTT select project box
NOTE: The MTS uses a different interface to select a project for association.

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.

Figure 8-5, MTS copy select box

Figure 8-6, Report showing Associated Project information
The **New Test... Same Data** 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.

![Select type of copy...](image)

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.

![Data Updates](image)

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

Note: You must have an internet connection open to perform these functions.
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 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 ![Report](image) 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 ![View Report](image) button after entering in the required criteria. A click on the ![Print](image) 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.

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.

**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.

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.

Test 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.

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.

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

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.

<table>
<thead>
<tr>
<th>Date</th>
<th>Tons</th>
<th>QC Test No.</th>
<th>Verification Test No</th>
<th>HMA Diary Page No</th>
</tr>
</thead>
<tbody>
<tr>
<td>5/16/2005</td>
<td>207</td>
<td>1-1</td>
<td>............</td>
<td>4</td>
</tr>
<tr>
<td>6/5/2005</td>
<td>38.75</td>
<td>..</td>
<td>............</td>
<td>7</td>
</tr>
<tr>
<td>6/25/2005</td>
<td>175</td>
<td>2-1</td>
<td>............</td>
<td>8</td>
</tr>
<tr>
<td>8/8/2006</td>
<td>68</td>
<td>..</td>
<td>............</td>
<td>12</td>
</tr>
<tr>
<td>9/16/2005</td>
<td>16</td>
<td>..</td>
<td>............</td>
<td>14</td>
</tr>
<tr>
<td>9/17/2005</td>
<td></td>
<td></td>
<td>............</td>
<td>15</td>
</tr>
<tr>
<td>9/19/2005</td>
<td></td>
<td></td>
<td>............</td>
<td>16</td>
</tr>
</tbody>
</table>

   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.

   Example Only

<table>
<thead>
<tr>
<th>Date</th>
<th>Tons</th>
<th>QC Test No.</th>
<th>Verification Test No</th>
<th>HMA Diary Page No</th>
</tr>
</thead>
<tbody>
<tr>
<td>6/5/2005</td>
<td></td>
<td></td>
<td>Did not test - no GMP pay for 85.75 tons</td>
<td></td>
</tr>
<tr>
<td>9/16/2002</td>
<td></td>
<td></td>
<td>Did not test excess of 1500 tons - no GMP pay for 178.76 tons</td>
<td></td>
</tr>
<tr>
<td>9/19/2005</td>
<td></td>
<td></td>
<td>Did not test - no GMP pay for 63.44 tons</td>
<td></td>
</tr>
</tbody>
</table>

   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 Text (Space Delimited) (*.prn).

![Figure 8-13, Excel save file type](image1)

![Figure 8-14, Excel save file name](image2)

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](image3)
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:

<table>
<thead>
<tr>
<th>Date</th>
<th>Tons</th>
<th>QC Test No.</th>
<th>Test No.</th>
<th>Page No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>5/16/2005</td>
<td>207</td>
<td>1-1</td>
<td>---------</td>
<td>4</td>
</tr>
<tr>
<td>6/5/2005</td>
<td>85.75</td>
<td>--</td>
<td>---------</td>
<td>7</td>
</tr>
<tr>
<td>6/25/2005</td>
<td>175</td>
<td>2-1</td>
<td>---------</td>
<td>8</td>
</tr>
<tr>
<td>8/8/2005</td>
<td>88</td>
<td>3-1</td>
<td>---------</td>
<td>12</td>
</tr>
<tr>
<td>9/16/2005</td>
<td>1678.76</td>
<td>5-1, 2-26</td>
<td>1-804-63-2005</td>
<td>14</td>
</tr>
<tr>
<td>9/17/2005</td>
<td>556</td>
<td>6-1</td>
<td>---------</td>
<td>15</td>
</tr>
<tr>
<td>9/19/2005</td>
<td>93.44</td>
<td>--</td>
<td>---------</td>
<td>16</td>
</tr>
</tbody>
</table>

EXEMPLARY ONLY

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

Figure 8-16, Prefix 155 Test Description example
9. Appendix exhibits

9.1. MTS Prefix List - Number Order

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

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

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

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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