Voids03

User's Guide

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Voids03

Voids03 is CDOT's the new computer program used for calculation Incentive/Disincentive Payments (I/DP's) on projects containing Hot Bituminous Pavements which utilize voids acceptance as the testing criteria and have paving specification, Revision to Sections 105 & 106, dated 12/20/02 or later. The program's calculations follow CP 71 and the Standard Special Provisions. Don Flynt, a former tester in Region 4, has agreed to work with the Pavement Management and Design Unit to create this new, easier to use, and better working program.

OVERVIEW

These instructions are intended to be a guide to all areas of the program. They will walk the user through inputting a new project, new mix design, and adding test data into the program. Additional information about the program is also provided.

User's Guide Updates

Future revisions to this guide will be maintained on CDOT's web site. Voids03 contains a link to the website. To get to the link, go to "User's Guide" under "Help" on the menu bar for the program. The User's Guide is also available from CDOT's External web site at the following address: www.dot.state.co.us\ECSU\Documents.asp Check the User's Guide from time to time for any updates.

SPECIFICATIONS

This program is based on the following specifications. Please review the specifications for details on the setup of the program.

Revisions of Sections 105 & 106, Quality of Hot Bituminous pavement
Revision of Section 401, Compaction Test Section
Revision of Section 401, Plant Mix Pavements - General

BEFORE YOU BEGIN!!!

SYSTEM REQUIREMENTS

Please be sure your computer meets these minimum hardware/software requirements prior to installing Voids03.

Processor	Pentium
Operating System	Windows 2000, Windows NT 4.0, or Windows 95
RAM	64 MB
Hard Drive *	15 MB (25 MB required for installation)

* Reduce hard drive requirements by 10 MB if Voids03 is currently installed on your computer.

SCREEN RESOLUTION/FORT SIZE COMBINATIONS

The following chart indicates what Screen Resolution/Fort Size combinations can be used for Voids03.

Resolution	Font Size	
	Small	Large
640 x 480	No	No
800 x 600	Yes	No
1024 x 768	Yes	Yes
1152 x 864	Yes	Yes
1280 x 1024	Yes	Yes
1600 x 1200	Yes	Yes

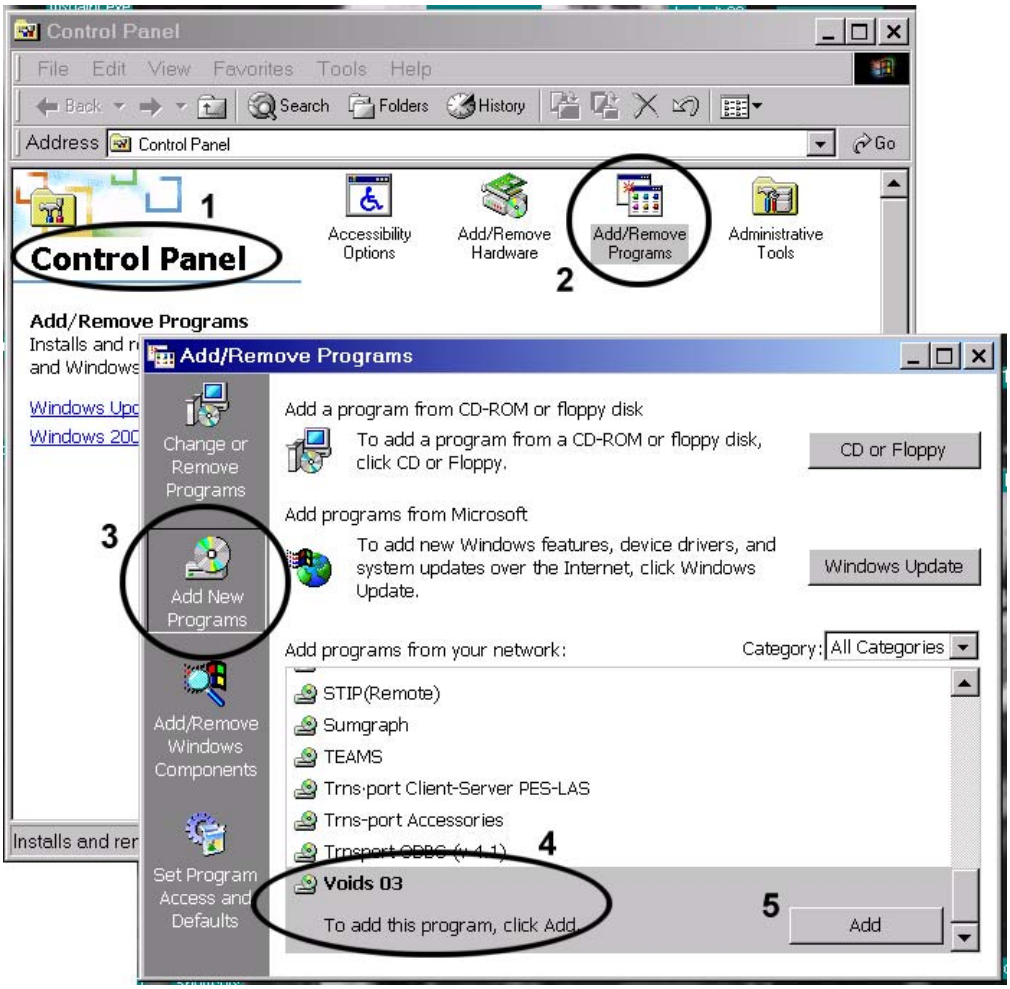
To check or change these settings, right click the Windows desktop, click *Properties*, and select the *Settings* tab.

DOWNLOADING AND INSTALLING THE PROGRAM

CDOT Computer:

Click on **Start --> *Settings* --> *Control Panels* --> *Add/Remove Programs***.

Click on ***Add New Programs*** in the gray bar on the left (the default is *Change or Remove Programs*).



Steps Required to Download the Program

In a relatively short time, all programs ready for installation are displayed. Select Voids03 from the listing and click on the **A*dd*** button. If the button displays the word *Install* rather than *Add*, you have previously installed the program.

If you have problems with the install contact the Help Desk at 303 757-9317.

Non CDOT Computer:

Voids03 can be downloaded at the following web site: Http://www.dot.state.co.us/ECSU/Download.asp

To get there from CDOT's home page, http://www.dot.state.co.us/ , do the following steps, Go to: Planning & Construction → Planning & Construction Main → Design & Construction Project Support, ● Software → Software, ● Engineering Customer Support Unit (ECSU) → Download Area.

Follow the instructions on the download page to complete the installation.

If you have problems with the install contact the Help Desk at 303 757-9317.

Note: Windows 95, 98, and ME users. Microsoft Installer 1.1 or better MUST be installed prior to installation of Voids03. CDOT's program download site listed above contains a link to Microsoft Installer. Microsoft Installer for Windows 95, 98, and ME can also be downloaded by clicking on the following http://www.microsoft.com/downloads/release.asp?releaseid=32831

GENERAL INFORMATION - COMPUTER

Blocking or Highlighting – Selecting text, numbers, or the entire contents of a box by clicking and dragging the cursor over the desired selection. Useful in Voids03 for replacing the entire contents of a box without having to use the delete or backspace keys. Highlight the entire contents of the box then replace it by typing the new data.

Button – A little clickable box on the computer screen that is a shortcut for a command. Clicking on the Buttons in Voids03 brings up the various entry screens.

Click (pressing the left button on the mouse) – Clicking is used to place the cursor, select an object on the screen, or a menu option. Use the mouse to move around within the program. Clicking places the cursor at a desired location on the screen, runs macros associated with a button, or is used to select an object from a list.

Close Button – The button in the upper right of each windows screen which looks like a square with and "X" in it, (☒). Clicking on the close button exits the program, sub program, or screen that is running.

Drop Down Arrow – The solid black triangle at the end of an entry box which points down, (▼). Clicking on a drop down arrow displays the selection list for that item. Select an object from the list by clicking on it.

Tab (pressing the tab key) – Pressing the tab key moves the cursor to the next entry box. Use the tab key after entering information to move to the next entry box. Pressing the tab key cycles through the entry boxes. Useful for entering information in Voids03.

Folder Tab
(those depicted like a file folder tabs on the screen)
Works like a button. Used as an easy way of switching between screens in the program.

STARTING THE PROGRAM

Using the Menus.

Click on the Windows *Start* button
Highlight *Programs*
Highlight *CDOT Applications*
Highlight *Voids03*
Click on the file *Voids03.*

Creating a Short Cut to the Program

Click on → Start → Programs → CDOT Applications → Voids 03 → Right Click on Voids 03
Click on → Send To → Desktop (Create Shortcut)

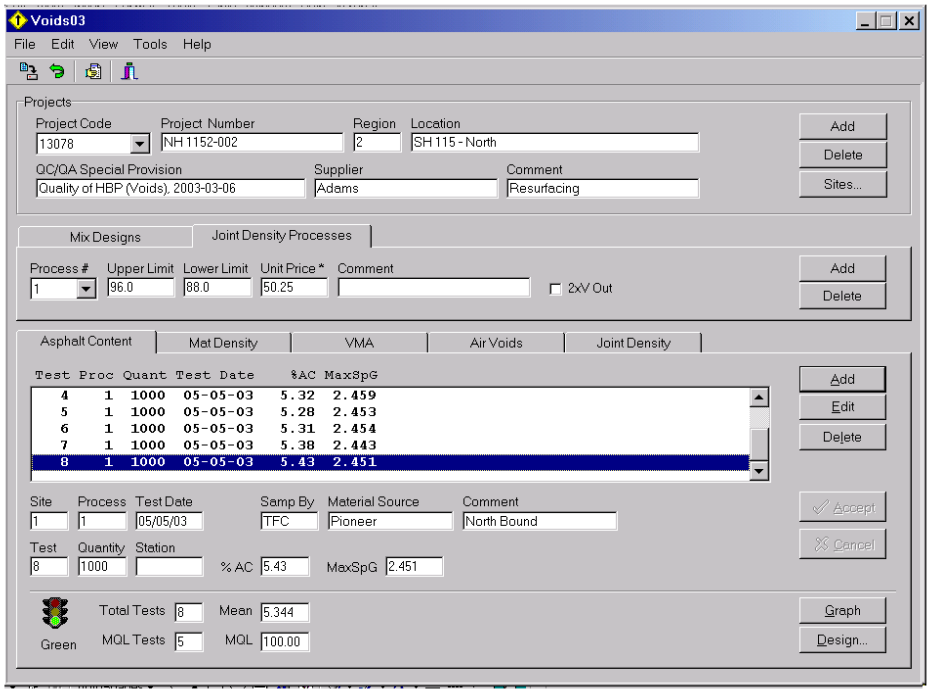
Program Shortcut.

VOIDS03 – MAIN SCREEN

Projects

Mix Designs, Joint Density Processes

Test Elements, Testing Information



VOIDS03 MENU BAR

The following describes each of the options associated with the menu bar

File	*Save Changes*	Saves all changes made since the last Save was made.
	Backup Data	Creates a computer file that contains all the program's data.
	Restore Data	Loads a computer file created using the Backup Data feature.
	Exit	Stops the program form running.
Edit	*Undo Changes*	Will undo all changes back to the last time you Saved information.
	Edit Project	Allows you to edit a Project Code without reentering all of the project's data.
	Edit Mix Design	Allows you to edit the mix design # or unit prices without reentering all of the project's test data.
	Joint Density Process	Allows you to edit the Joint Density Process information without reentering all of the Joint Density tests.
	Recalculate MQLs	Recalculates the MQLs for the selected element.
	Calculate Ref. Point	Will calculate the reference point for given stationing information.
	Calculate All Ref. Points	Recalculates all station or reference points based on information for an edited control station.
View	√ *English Sieve Sizes*	Toggles between English and Metric sieve sizes in the Gradation element.
	Show Reference Point	Toggles the test display between Stationing or Reference point. This can also be achieved by double clicking in the station (Reference Point) box from within any test.
	Report	Brings up the "Report Options" screen.
	Find Mix Design ►	Lists all mix designs in the program. A √ appears next to the opened mix design. Clicking on one of the mix designs will call up that mix design and the project that contains that mix design.
Tools	*PF Voids*	Starts a subprogram that will calculates a Quality Level & Pay Factor based on input information.
	Quality Level	Starts a subprogram that will calculate a Quality Level based on input information.
	Convert Station	Starts a subprogram that allows you to calculate a station or reference point based on a known station and reference point.
	Price Reduction	Starts the price reduction program "Price Reduction USA 3_03" used for calculating price reductions according to the Standard Special Provision, revision to sections 105.03.
	Random Schedule	Starts a generic random number generating program used for generating random number schedules.
	Joint Density Calculator	Starts a Excel program that does calculations that are used in the Joint Density testing element.
	Archive/Extract Data	Currently not operational.
Help	*User's Guide*	Contains a link to the program's User's Guide.
	About	Displays the program version number and design information.

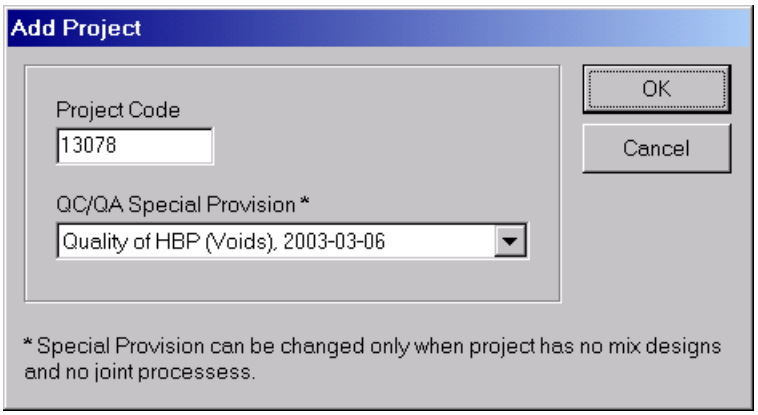
PROGRAM ICONS

Save – Saves all changes made since the last Save was made.
Undo – Will undo all changes back to the last time you saved information.
Reports – Brings up the Reports Screen.
Exit – Exits the program.

ENTERING PROJECT INFORMATION

Adding A New Project

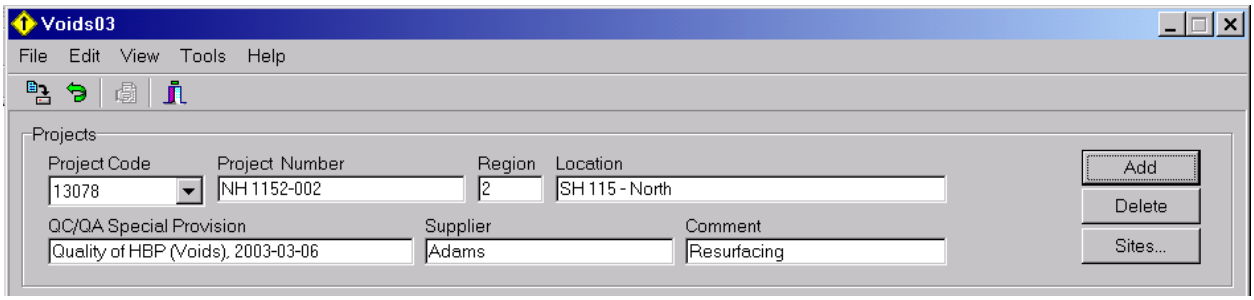
Click on the "Add" button on the right side of the "Projects" box.
In the "Project Code" box, type in the project code (subaccount) for the project.
Click the drop down arrow at the "QC/QA Special Provisions" box to reveal the list of Special Provisions.
Click on the specification that is applicable to the project.
Click "OK" when finished.



Adding a New Project

Enter the Remaining Project Information for the New Project

Add the remaining information for the project:
From the program's Main Screen.
Place the cursor in the box and type in the Project Number, Region, Location, Supplier, and any Comments you would like to enter.

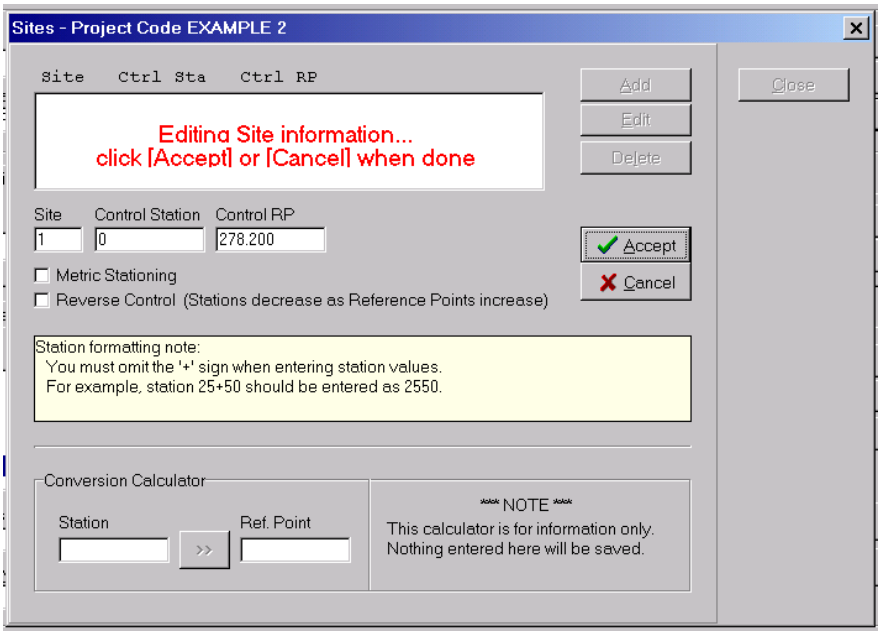


Display of Project Information

SITES (Stations), Optional

Stations can automatically be tied to Reference Points (mileposts). To do so:

Click on the "Sites…" button to the right of the "Projects" box on the Main Screen.
Site 1 will be highlighted.
Click on the "Edit" button.
Type in a known control station. Tab
Type in a known, correlating reference point (milepost).
Click on the box to use Metric Stationing, if applicable.
Click on the box if Reverse Control stationing is used, if applicable.
Click on the "Accept" button when done entering information
Click on "OK".
Click the "Close" button.



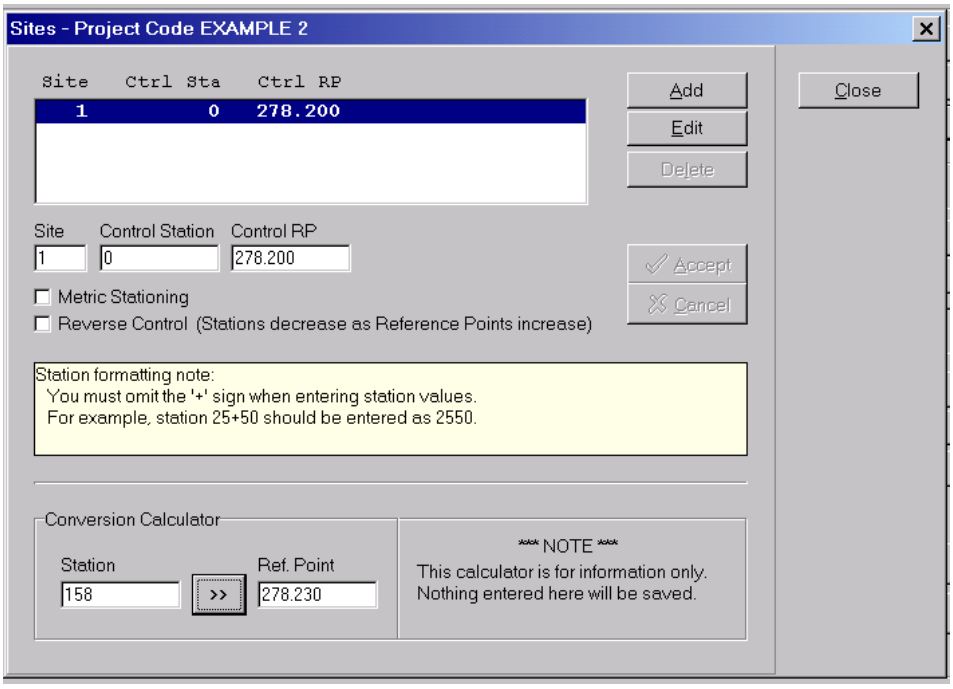
Adding Stationing Information

Now, whenever stations or reference points are entered, the corresponding station or reference point will be automatically calculated.

Add additional Sites in the same process as needed.

Using the Conversion Calculator

The Conversion Calculator can be used to quickly calculate a Reference Point by entering Station information, or vise versa. The calculations are based on previously entered stationing information.



Using the Conversion Calculator

Recalculating Stations or Reference Points

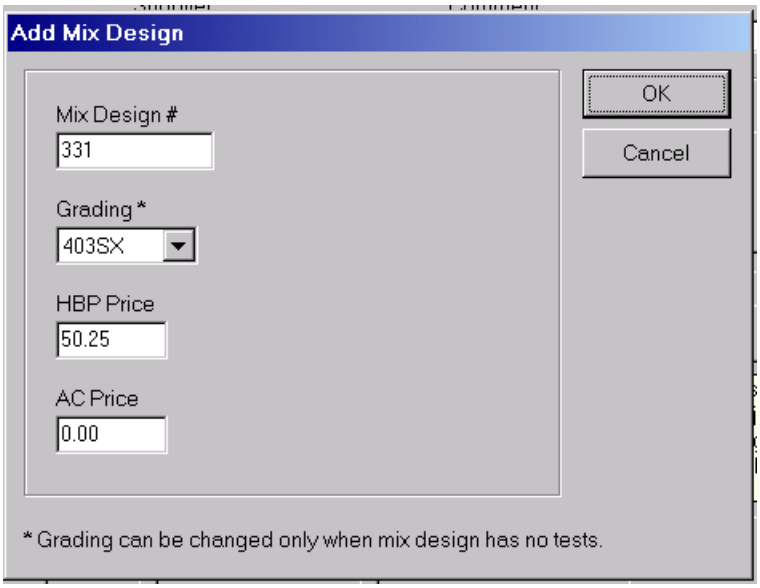
If the Control Station or Reference Point is changed all of the calculated Reference Points will need to be recalculated based on the new information.

How To:

Edit the Control Station or Reference Point as needed.
A warning message telling you to Recalculate the Reference Points will be displayed. Click OK.
Click on the “Close” button to close the Sites screen.
Click on “Edit” in the Menu Bar.
Highlight “Calculate All Reference Points” and then select the amount of recalculating that needs to be done.
All of the Reference Points will be recalculated based on the new Control Station or Reference Point.

ADDING A NEW MIX DESIGN

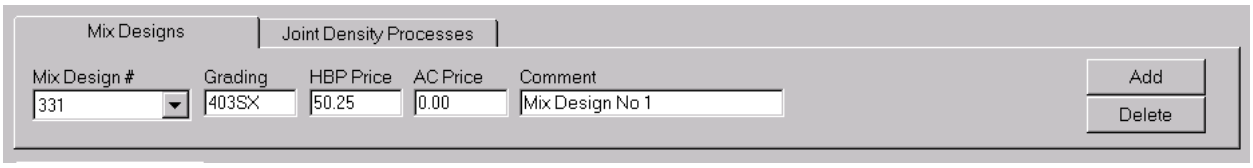
Click on the “Add” button to the right of the “Mix Designs” box.
Click “OK” after reading the warning message, if displayed.
Type in the *Mix Design #*.
Click on the drop down arrow to display the list of *Gradings.*
Click on the grading for the design mix.
Enter the Unit Price for HBP.
Enter the Unit Price for AC, if paid for separately.
Click on “OK” to accept the new Mix Design.



Adding a New Mix Design

Add a Comment for the Mix Design

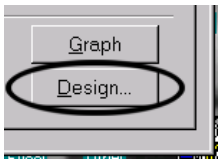
From the Main Screen, click into the “Comments” box for a Mix Design.
Add any comments you would like for the Mix Design.



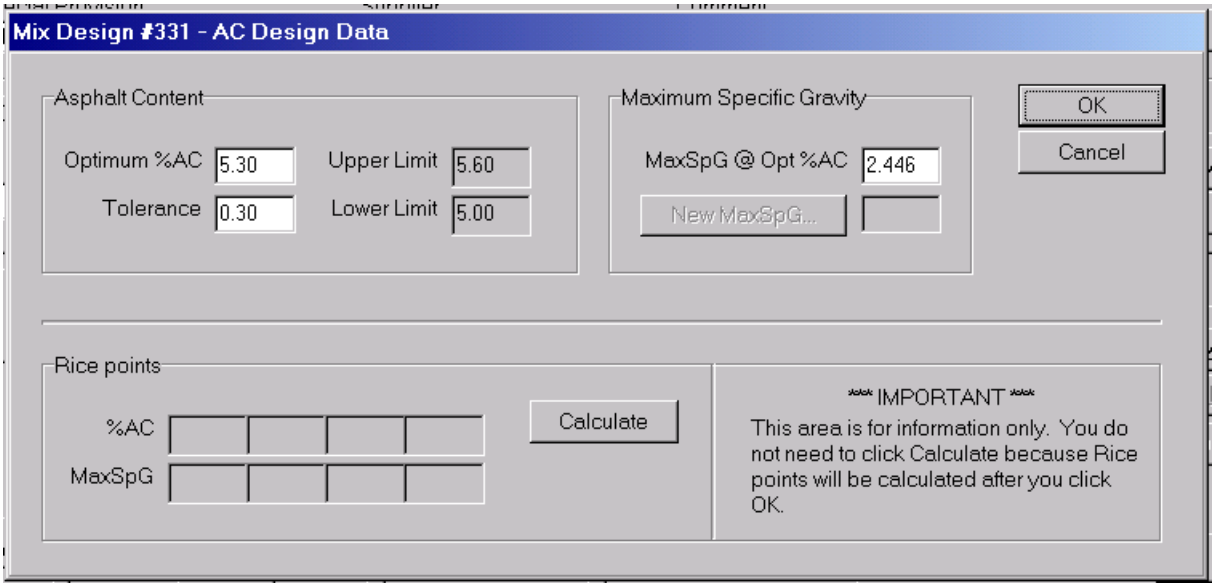
Display of Mix Design Information

ASPHALT CONTENT TESTS

Add the Asphalt Content Specification for the Mix Design



Select the folder tab for “Asphalt Content”.
Click on the “Design” button on the lower right of the Main Screen.
Click “OK” after reading the warning message, if displayed.
The “AC Design Data” screen will be displayed.
Enter the “Optimum % AC”. Tab
Enter the MaxSpG @ Opt %AC (found on the Form 43).
Click “OK” when finished.



Adding the Asphalt Content Specifications for a Mix Design

Tracking Maximum Specific Gravity Tests

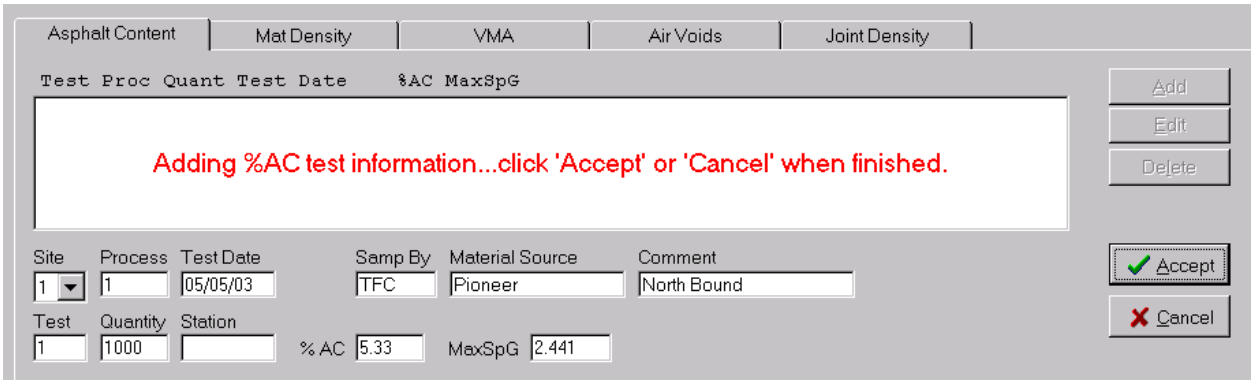
Voids03 automatically calculates the tolerance bands for the Maximum Specific Gravities tests when a new Percent Asphalt specification is entered into the program. To view the points that the band is calculated upon click on the “Calculate” button after adding the Percent Asphalt specification. Voids03 uses the equations contained in CP-56 to calculate these points.

Voids03 can track Maximum Specific Gravity test results, graph the information, and calculate a new Maximum Specific Gravity. See the section “Tracking the Target Specific Gravity for Compaction Compliance (CP-56)” that appears later in this guide for a more detailed description.

Adding Asphalt Content Tests

Select the folder tab for “Asphalt Content”.
Click on the “Add” button to the right of the test element tabs.
Click “OK” after reading the Warning message, if displayed.
Enter the %AC found through testing. Tab
Enter the MaxSpG found through testing (optional).
Add the remaining test information as needed. Place the cursor in the box and type in any test information (sampled by, etc.) that you wish to track.
Enter Stationing information if desired. The Station box can be changed to a Reference Point box by double clicking on it.
Click on the “Accept” button when all test information has been entered.

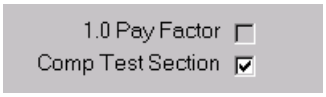
To add additional tests click on the “Add” button and repeat the above process.



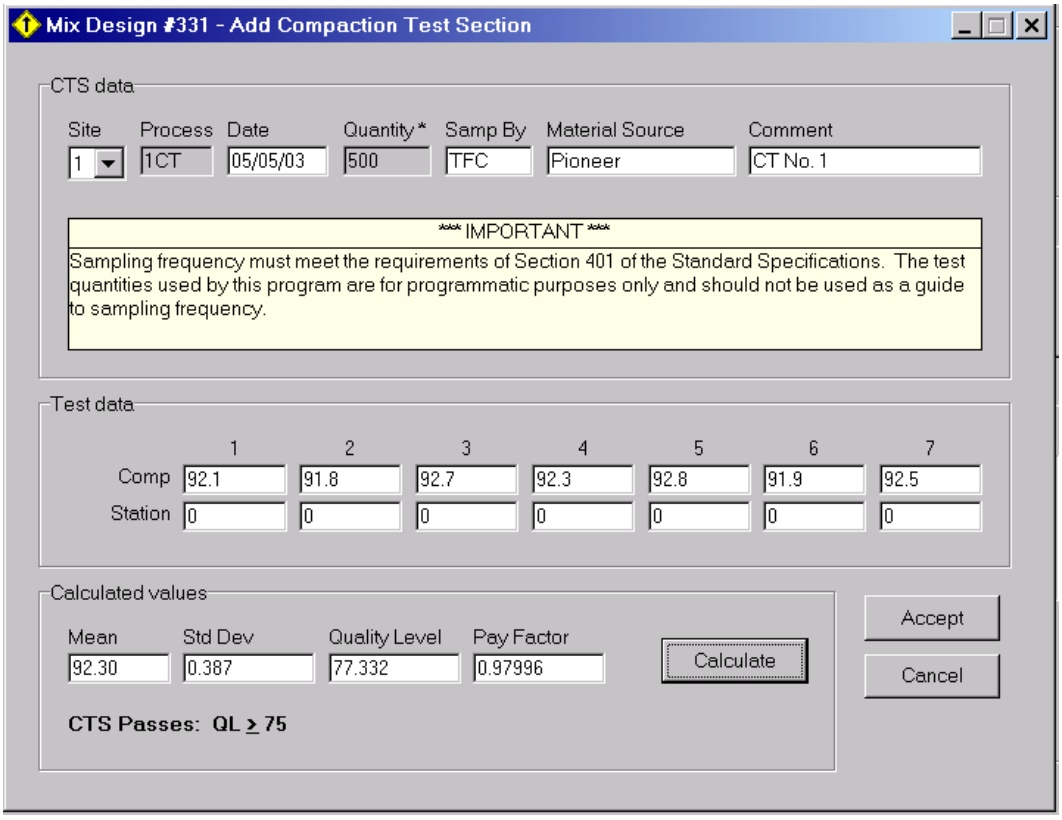
Adding an Asphalt Content Test Result

MAT DENSITY TESTS

Adding A Compaction Test Section (CTS)



Select the folder tab for “Mat Density”.
Click on the “Add” button to the right of the test elements folder tabs.
Click “OK” after reading the Warning message, if displayed.
Click the check box for “Compaction Test Section” on the Mat Density screen.
Click “OK” to accept the creation of the Compaction Test Section.
The “Add Compaction Test Section” screen will then be displayed.
Add the density results of the seven cores taken in the Compaction Test Section.
Add any other tracking information as needed.
Click on the “Calculate” button to calculate the Quality Level of the Compaction Test Section.
A message telling you if the CTS Passes or Fails will be displayed.
Click on the Accept button to add the results of the CTS to the program.



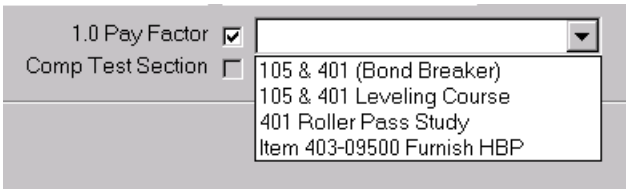
Adding a Compaction Test Section

Editing The Compaction Test Section

The tests in the Compaction Test Section can be edited either before adding them to the data base (clicking the “Accept” button) or by highlighting any one of the tests that is included in the Compaction Test Section from the display of tests on the “Mat Density” screen and clicking the “Edit” button.

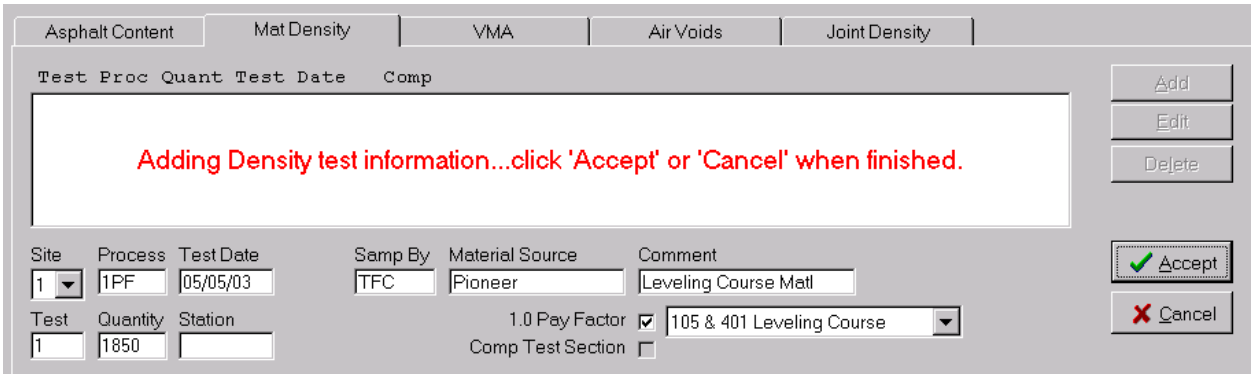
Setting The Pay Factor To 1.0 For A Process In The Mat Density Element

Select the folder tab for “Mat Density”.
Click on the “Add” button to the right of the test elements folder tabs.
Click “OK” after reading the Warning message, if displayed.
Click the check box for “1.0 Pay Factor” on the Mat Density screen.
Click on the drop down arrow when displayed and select the appropriate specification or item.



Select the Specification or Item to use

Enter the total quantity amount to be set to a 1.0 Pay Factor.
Add any other tracking information as needed.
Click on the “Accept” button to add the data to the program.

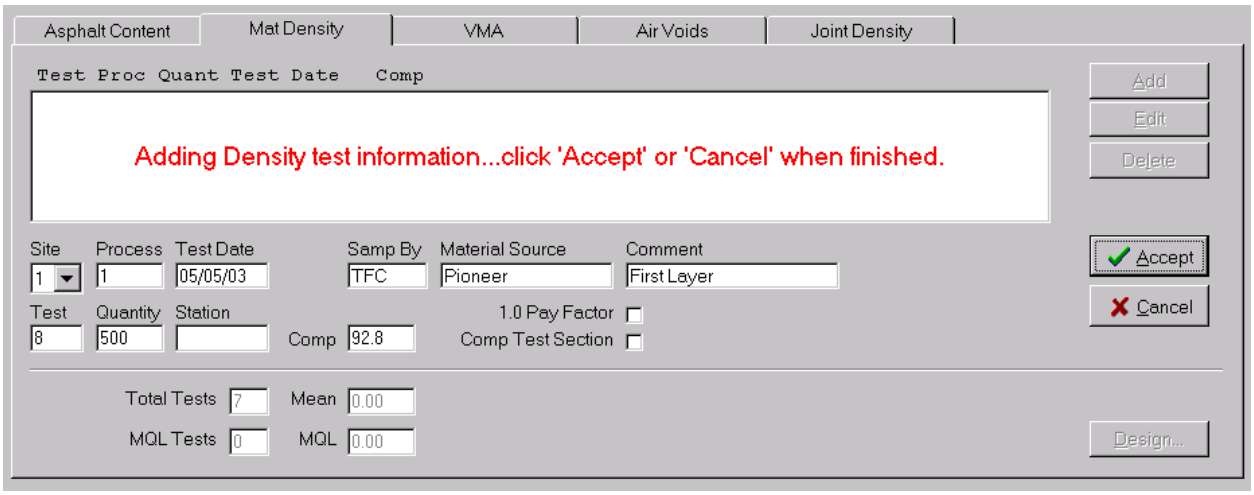


Setting the Process Pay Factor to 1.0

Adding Mat Density Tests

Select the folder tab for “Mat Density”.
Click on the “Add” button to the right of the folder tabs area.
Click “OK” after reading the Warning message, if displayed.
Enter the Percent Compaction (Comp) found through testing.
Add additional test information in the remaining boxes that you wish to track.
Click on the “Accept” button when finished.

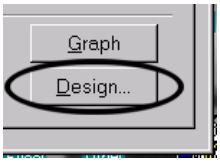
To add additional tests click on the “Add” button and repeat the above process.



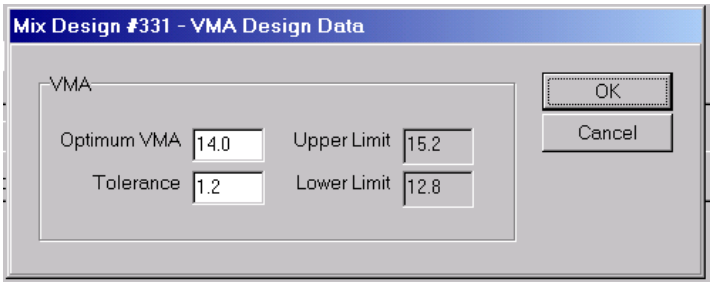
Adding a Density Test Result

VOIDS IN MINERAL AGGREGATE (VMA) TESTS

Add The VMA Specification For The Mix Design



Select the folder tab for “VMA”.
Click on the “Design” button on the lower right of the Main Screen.
Click “OK” after reading the warning message, if displayed.
The “VMA Design Data” screen will then be displayed.
Enter the Optimum VMA. Tab.
The Upper and Lower Limits will automatically be calculated.
Click “OK” when correct.

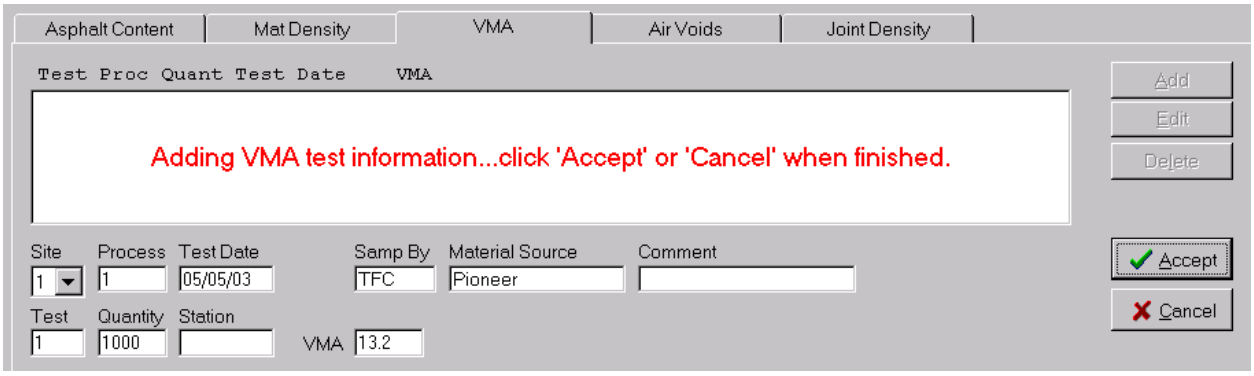


Entering the VMA Specification

Adding VMA Tests

Select the folder tab for “VMA”.
Click on the “Add” button to the right of the element folder tabs.
Enter the VMA found through testing.
Add additional test information in the remaining boxes that you with to track.
Click on the “Accept” button when finished.

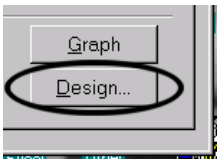
To add additional tests click on the “Add” button and repeat the above process.



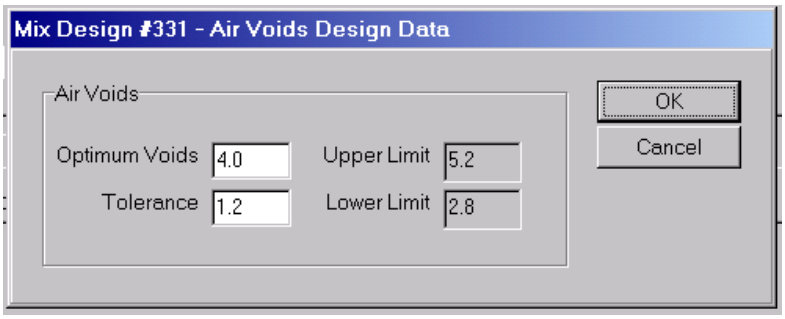
Entering a VMA Test Result

AIR VOIDS

Add The Air Voids Specification For The Mix Design



Select the folder tab for “Air Voids”.
Click on the “Design” button on the lower right of the Main Screen.
Click “OK” after reading the warning message, if displayed.
The “Air Voids Design Data” screen will be displayed.
Enter the “Optimum Voids” for the mix design. Tab.
The Upper and Lower Limits will be calculated automatically.
Click “OK” when the data is correct.

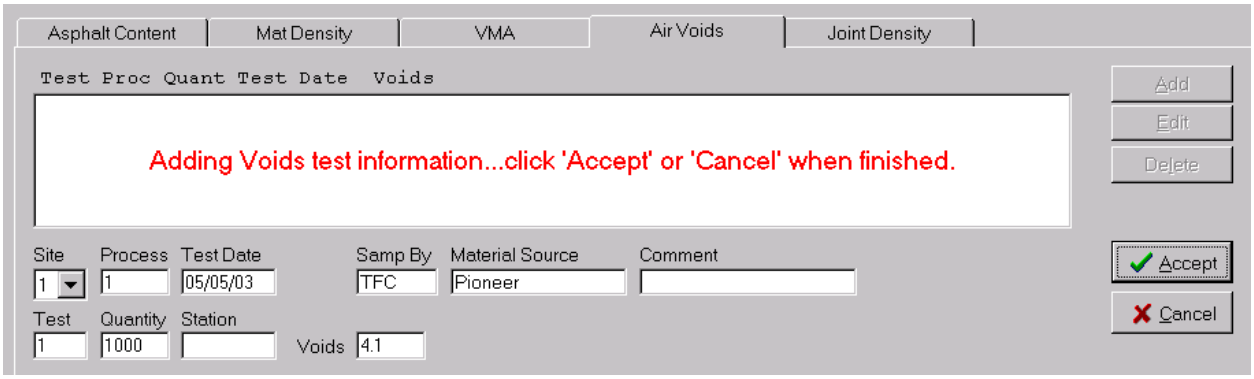


Entering the Air Voids Specification

Adding Air Voids Tests

Select the folder tab for “Air Voids”.
Click on the “Add” button to the right of the element folder tabs.
Enter the Voids found through testing.
Add additional test information in the remaining boxes that you with to track.
Click on the “Accept” button when finished.

To add additional tests click on the “Add” button and repeat the above process.



Adding an Air Voids Test

JOINT DENSITY TESTS

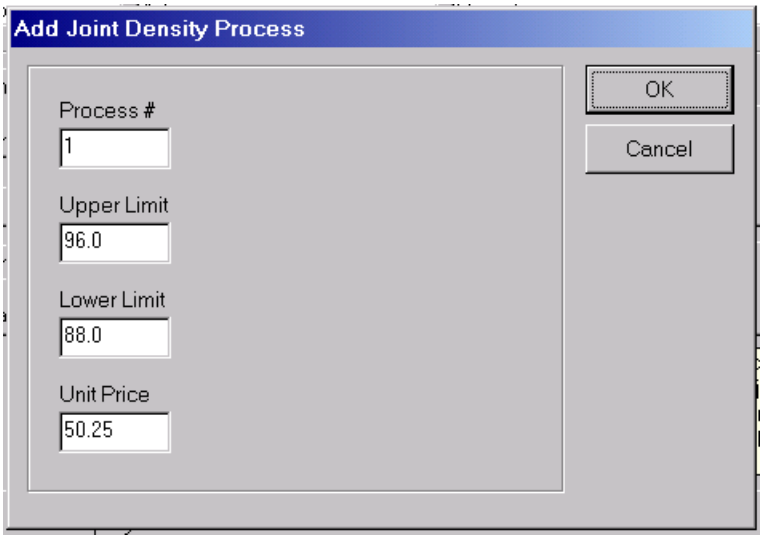
Adding a Joint Density Process

Click on the Folder Tab for Joint Density Processes

Click the “Add” button to the right of the Mix Designs/Joint Density Processes area.
Click “OK” after reading the Warning message, if displayed.
The “Add Joint Density Process” screen will be displayed.
The default values for: Process #, Upper Limit, & Lower Limit should be correct as displayed.
Add the “Unit Price” for the Joint Density process.

Note: The Unit Price used must meet the requirements of revision 105.03 (g).
The Joint Density Calculator under the menu item Tools can help you calculate Unit Price when AC is paid for separately.

Click the “OK” button when done.



Adding a Joint Density Process

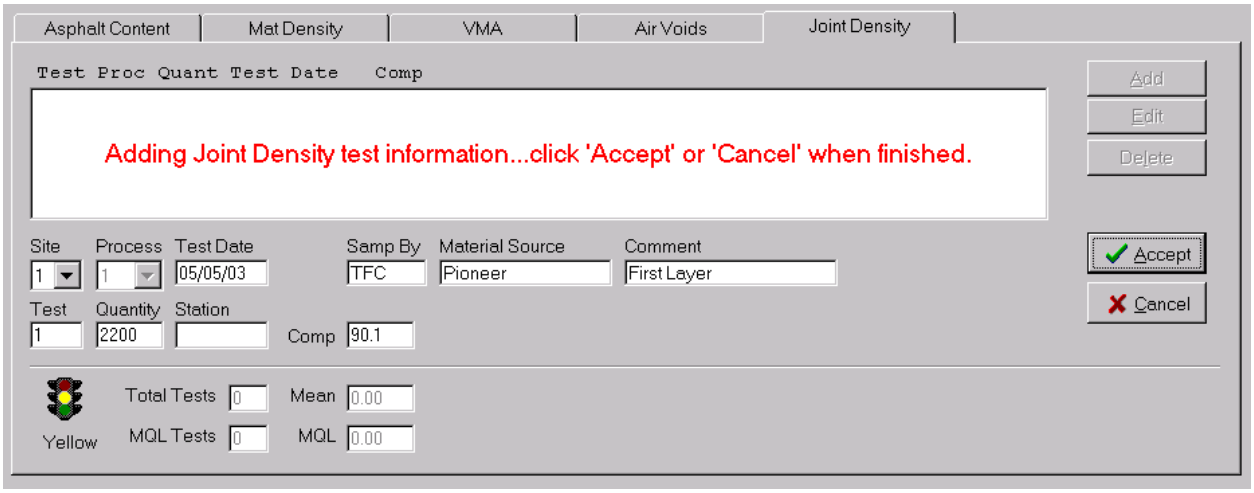
Adding Joint Density Tests

Select the folder tab for “Joint Density”.
Click on the “Add” button to the right of the test element tabs.
Click “OK” after reading the Warning message, if displayed.
Enter the Percent Compaction (Comp) found through testing.
Add the Quantity represented by the test.

Note: The test quantity for each test must meet the requirements of revision to section 401. The Joint Density Calculator under the menu item Tools can assist you in calculating the test quantity.

Add additional test information in the remaining boxes that you wish to track.
Click on the “Accept” button when finished.

To add additional tests click on the “Add” button and repeat the above process.



Adding a Joint Density Test

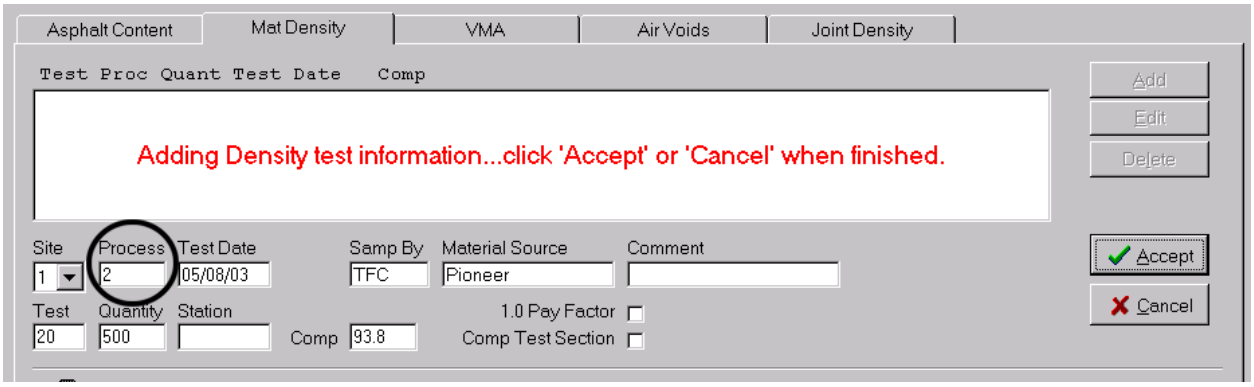
ADDING ADDITIONAL PROCESSES TO A TESTING ELEMENT

Adding additional processes to a testing element is similar for all of the elements with the exception of the Joint Density testing element. To add an additional Joint Density process see below.

How To

Select the folder tab for element you want to add a process to.
Click the “Add” button to add the next test.
Change the Process number to the next highest number.
Add the test result and the remaining testing information as needed.
Click the “Accept” button when done.

All new tests entered will be added to the new process.



Adding a New Process to an Element

Adding a New Joint Density Process

Click on the Folder Tab for Joint Density Processes

Click the “Add” button to the right of the Mix Designs/Joint Density Processes area.
The “Add Joint Density Process” screen will be displayed.
The next available process # will be displayed.
Add the “Unit Price” for the Joint Density process.
Click on the “OK” button when done.

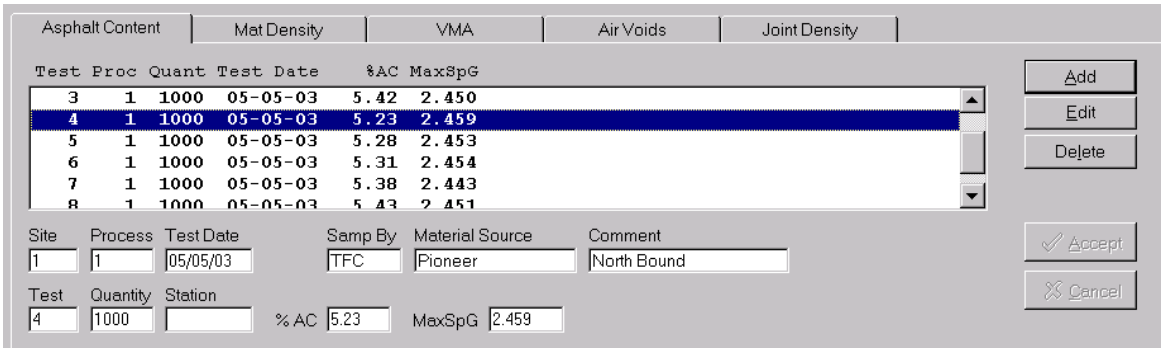
EDITING

Test Information

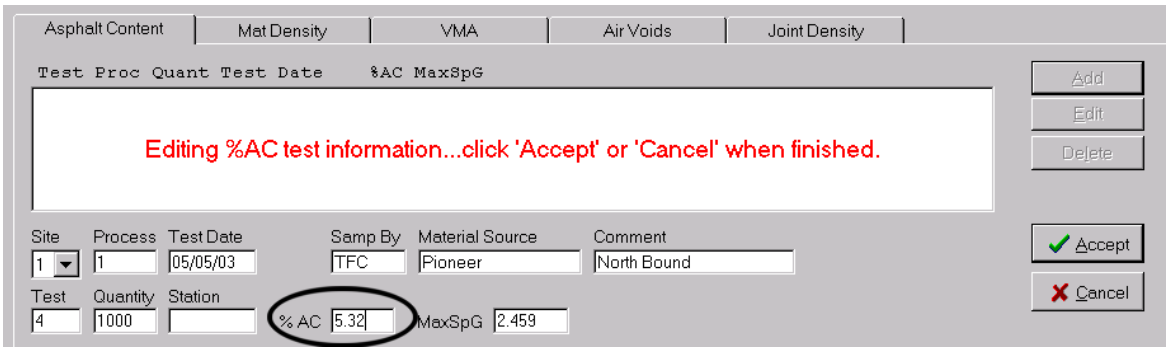
Note: Editing test information is similar in all of the testing elements.

How To:

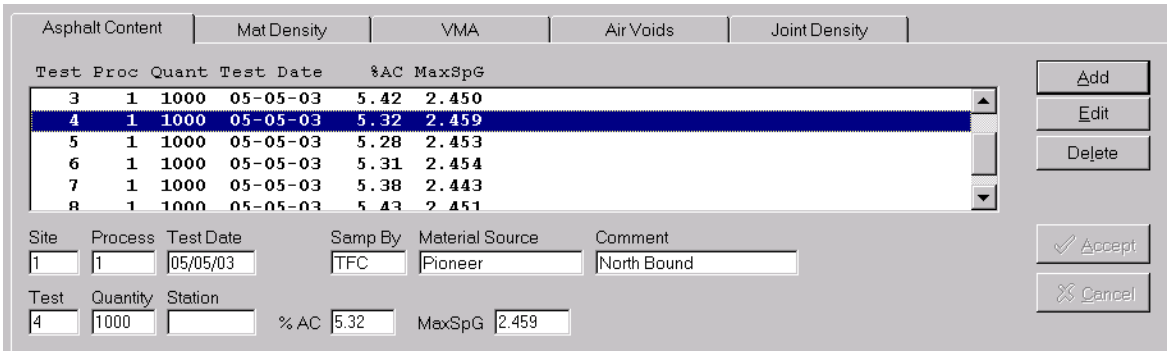
Click on the folder tab for the element that contains the test you want to edit.
Scroll through the listing of tests and highlight the test you want to edit. Then click on the “Edit” button.
Or, Scroll through the listing of tests and double click on the test you want to edit.



All of the selected test’s information will be displayed on the screen.



Move to any of the input boxes and edit the information as necessary.



Click on the “Accept” button when finished editing.
The changes will entered into the database.

Editing A Project Code

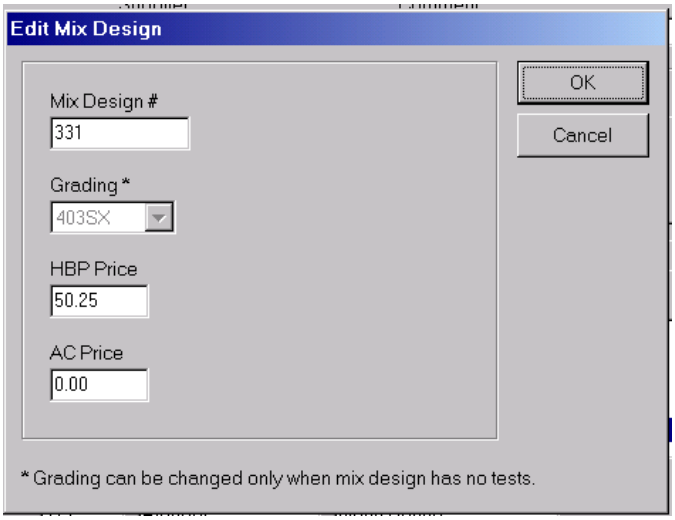
Edit Project allows you to edit the Project Code or specification without reentering all of the project's data.

Click on "File" in the menu bar.
Click on "Edit Project"
The "Edit Project" screen will be displayed.
Edit the Project Code or specification as needed.
Click the "OK" button when finished.

Editing A Mix Design (Mix Design #, HBP Price, & AC Price)

Edit Mix Design allows you to edit the Mix Design #, HBP Price, & AC Price without reentering all of the test data.

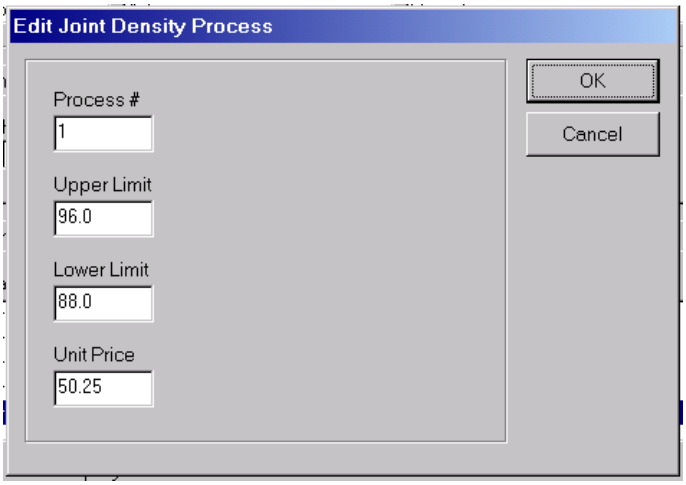
Click on "File" in the menu bar.
Click on "Edit Mix Design"
The "Edit Mix Design" screen will be displayed.
Edit the Mix Design as needed.
Click the "OK" button when finished.



Editing The Joint Density Process Information

Joint Density Process allows you to edit the Joint Density Process information, Process #, Upper Limit, Lower Limit, & Unit Price without reentering all of the Joint Density tests.

Click on "File" in the menu bar.
Click on "Joint Density Process"
The "Edit Joint Density Process" screen will be displayed.
Edit the information as needed.
Click the "OK" button when finished.



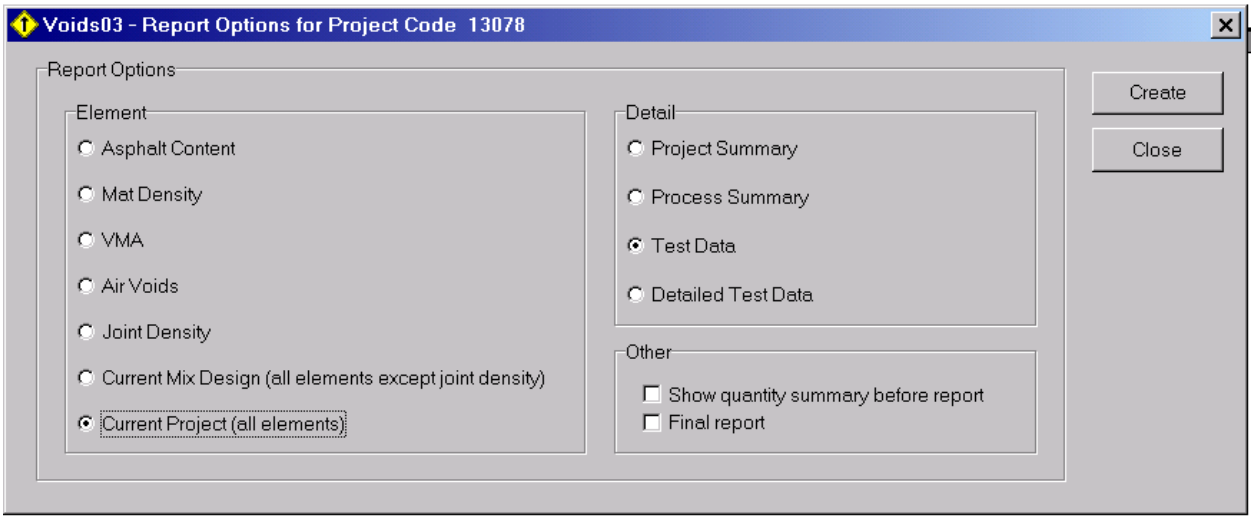
REPORTS

Voids03 can create numerous types of reports. A report can be generated for any of the testing elements, a single mix design, or for the current project. The amount of detail contained in the report can also be adjusted by selecting from the various check boxes. A review of the element and project quantities can also be displayed through the reports screen. This is a useful tracking mechanism to ensure that the project's quantities meet the requirements of Revision to Sections 105 & 106. To generate a Final report for the project, click on the "Final Report" check box on the Reports screen.

Reports - How To:

Click on the "Reports" icon. 

Select the test "Element" for the report.
Select the desired amount of "Detail" for the report.
Select "Show quantity summary before report", if desired.
Select "Final Report", if desired.
Click on the "Create" button to preview the report or go to the Quantity Review screens.



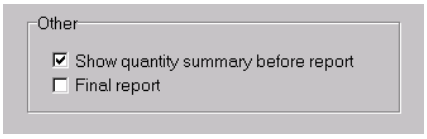
Reports Screen

QUANTITY SUMMARY REVIEW SCREENS

The Quantity Summary Review Screens display the element quantities for a project or for a mix design. These screens are useful for tracking a project's quantities to ensure that they meet the requirements of Revision to Sections 105 & 106.

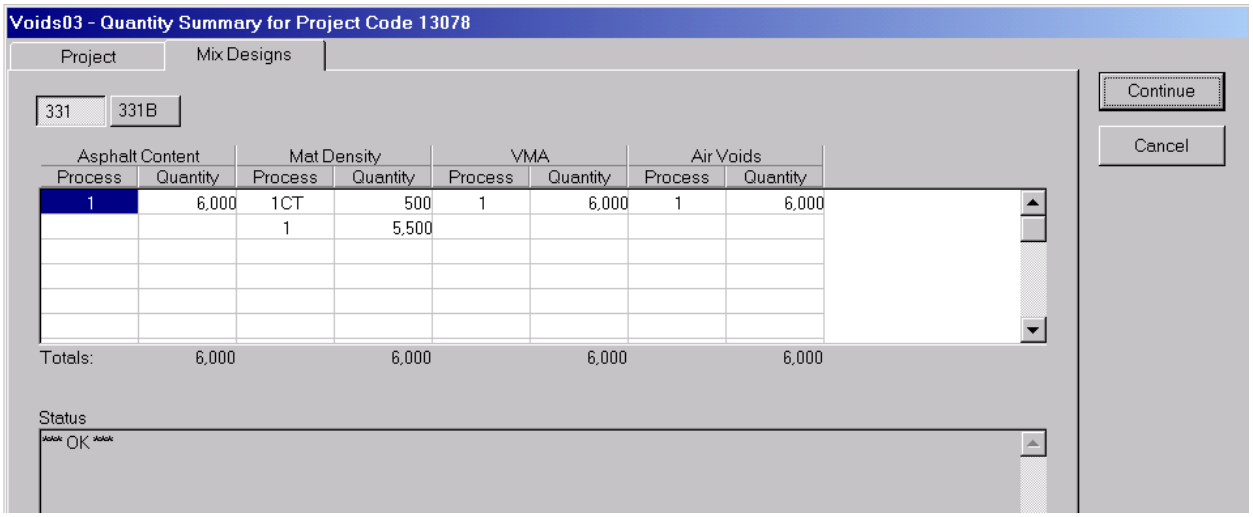
How To:

Click on the "Reports" icon to display the Reports screen.
Select a test "Element", to see that element's quantity.
Or, Select Mix Design or Project to see multiple elements.
Select a "Detail" amount.
Click on the "Show quantity summary before report" button.
Click on the "Create" button to display the Quantity Review screens.



Quantity Review - Mix Design

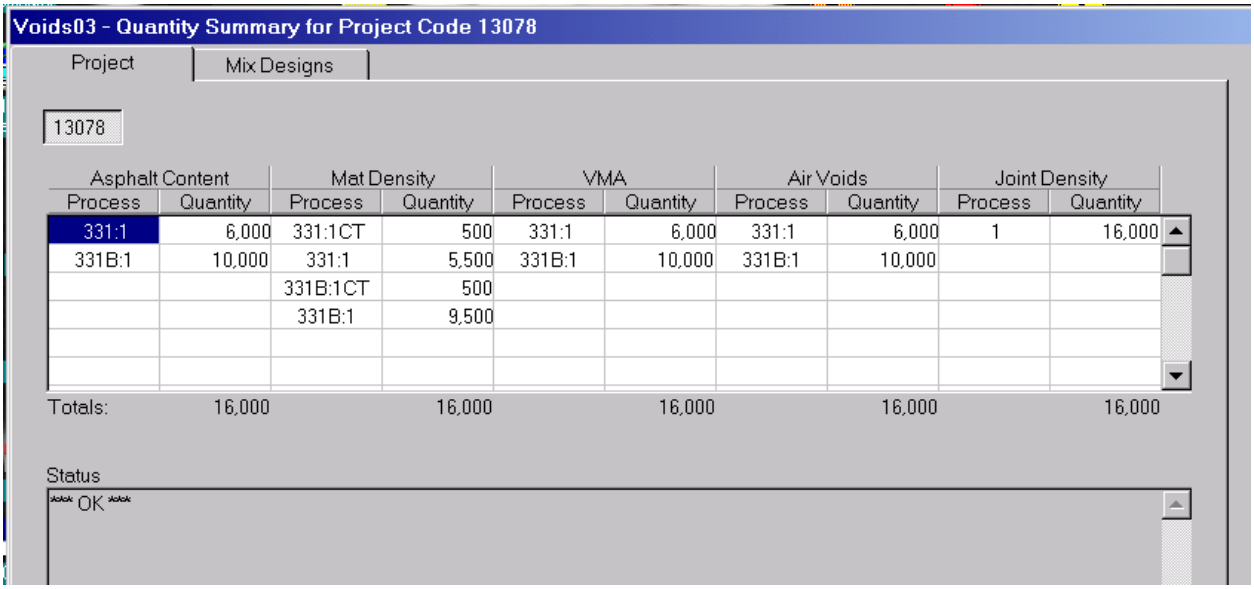
Go to the Quantity Summary screen as detailed above.
Select the folder tab for "Mix Designs".
The program will display buttons for all of the Mix Designs associated with the project.
Click on the button for the Mix Design you wish to review.
The element quantities will be displayed along with any warning messages.



Display of Element Quantities for the selected Mix Design.

Quantity Review - Project

Go to the Quantity Summary screen as detailed previously.
Select the folder tab for “Project”.
The program will display the quantities for all of the processes in each of the testing elements.
Any warning messages for the project will also be displayed.



Display of Quantities for the Project, all Processes.

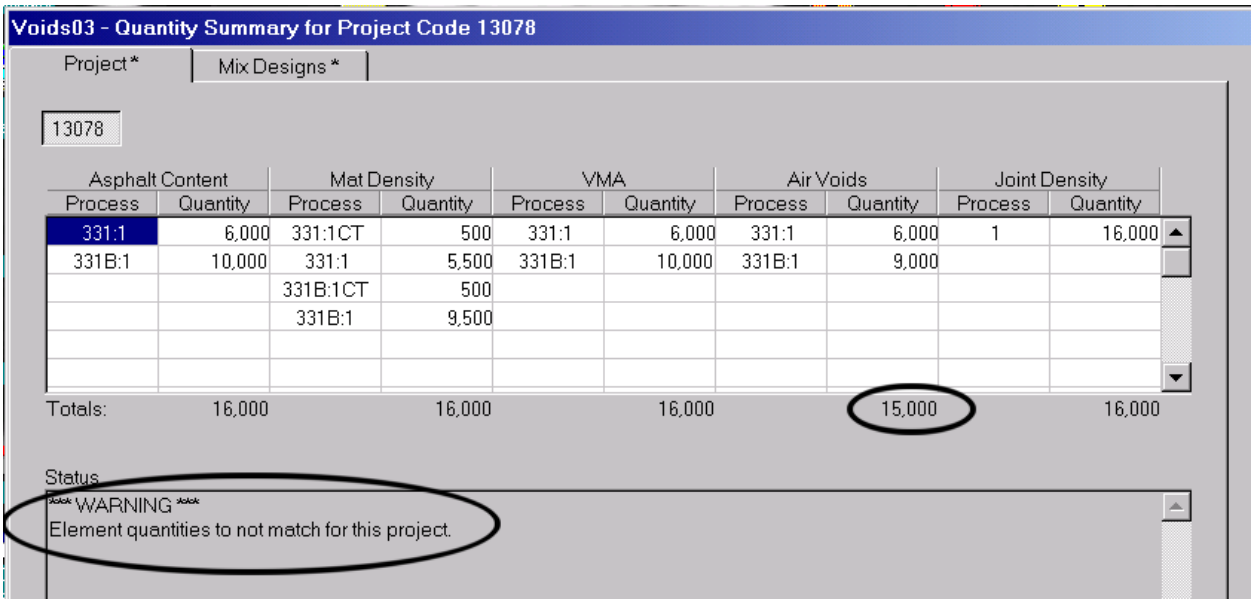
WARNING MESSAGES – Quantity Summary Reviews

Warning Messages will be displayed whenever the program's review checks Do Not pass. They are intended to help the user identify quantities that are not in compliance with Specification 105 & 106. The quantity checks Must pass in order to generate a "Final" report for the project.

Warning Message for a Project

At the end of a project, the sum of all process quantities in each of the testing element must be equal to meet the requirements of the Specification 105 & 106. A warning message will be displayed whenever the sums are not equal in all of the testing elements.

In the following example shows, the total quantity in the Gradation element is less than in the other elements.

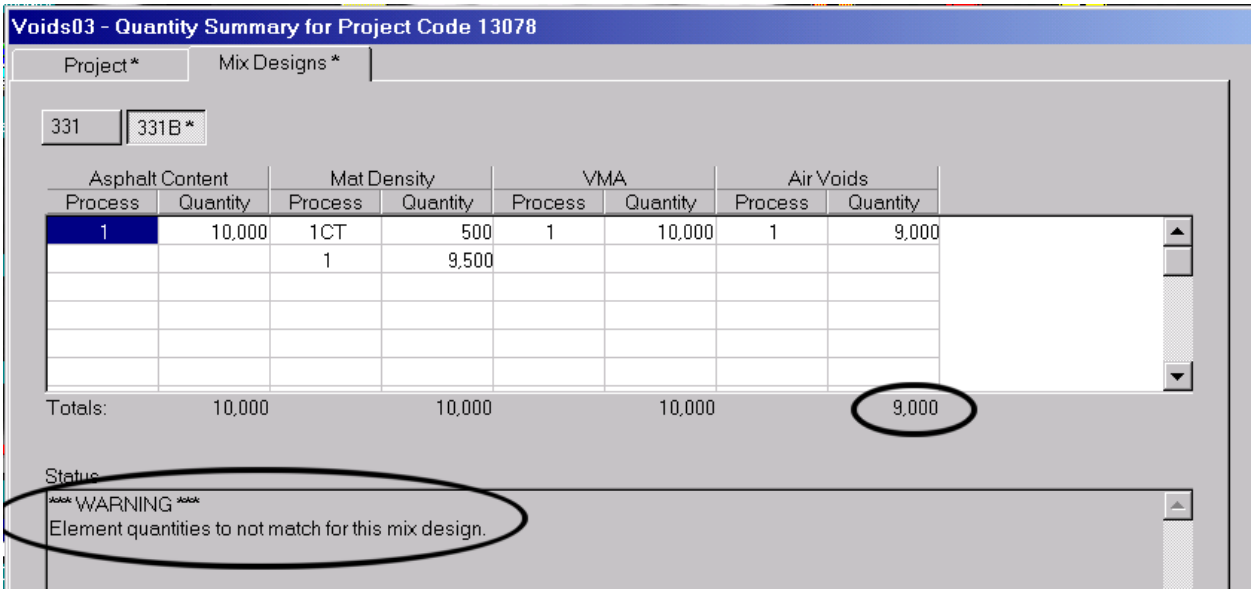


Element Quantities Do Not Match for the Project

Warning Message for a Mix Design

At the end of a project, the sum of the process quantities associated with each Mix Design must be equal to meet the requirements of Revision to Sections 105 & 106.

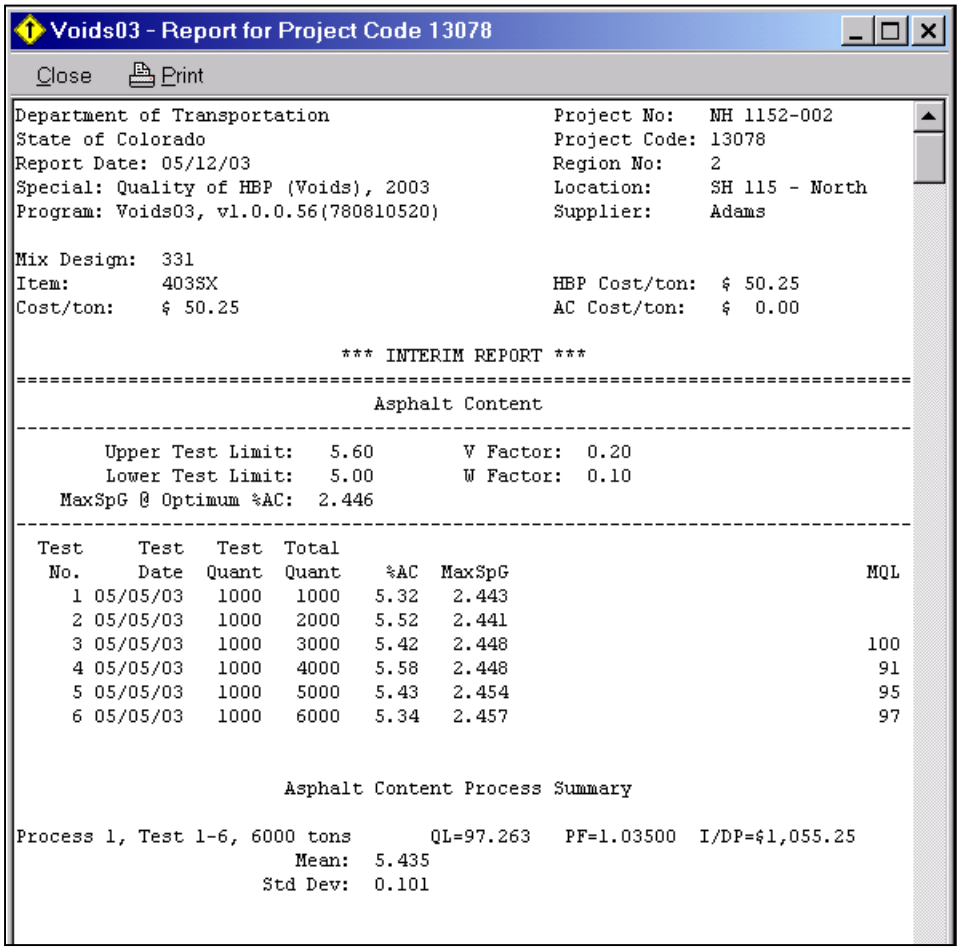
In the following example shows, the total quantity in the Gradation element is less than in the other elements for the displayed Mix Design.



Element Quantities Do Not Match for the Mix Design

Previewing a Report

Click on the “Reports” icon.
Select the test “Element” for the report.
Select the desired amount of “Detail” for the report.
Select “Show quantity summary before report”, if desired.
Click on the “Create” button from the Reports screen.
Or, Click on the “Continue” button from the Quantity Summary review screen.
The report will be generated.



Preview of a Report

Close the Reports by clicking on the “Close” button at the top of the screen or click on the close icon in the upper right of the screen.

Printing a Report

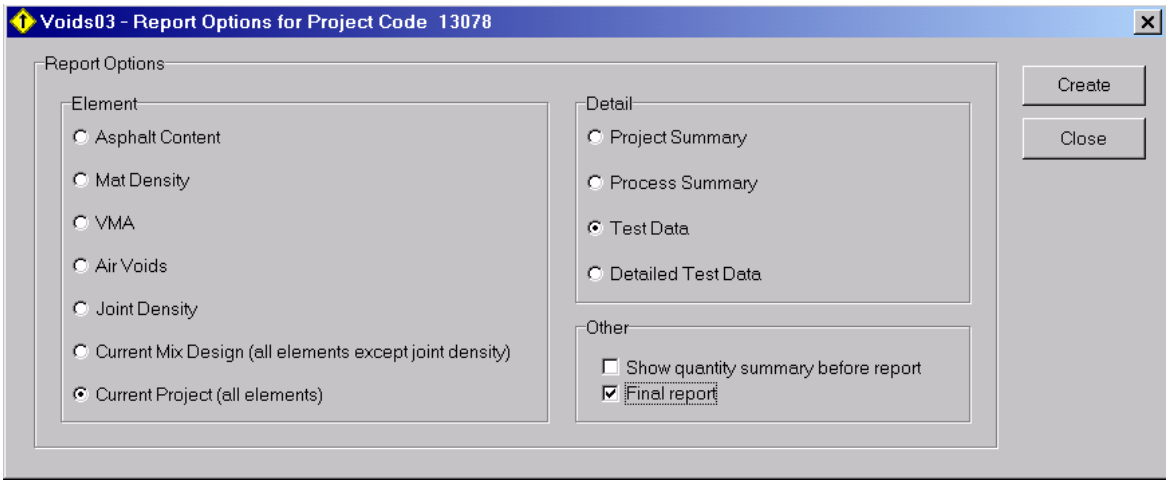
Click on the Reports icon.
Select the desired Element and report Detail.
Click on the “Show Quantity Summary” or “Final Report” if desired.
Click on the “Create” button to generate the report.
Click on the “Print” button while in the preview screen to print the report.

Generating A Final Report

At the end of a project, the sum of all process quantities in each of the testing element must be equal to meet the requirements of the Specification 105 & 106. In order to generate a Final Report all of the quantity summary checks must pass, see *Quantity Summary Review* section previous in this guide. Warning messages will be displayed whenever the quantity checks do not pass. A Final Report can not be generated if the quantity checks do not pass.

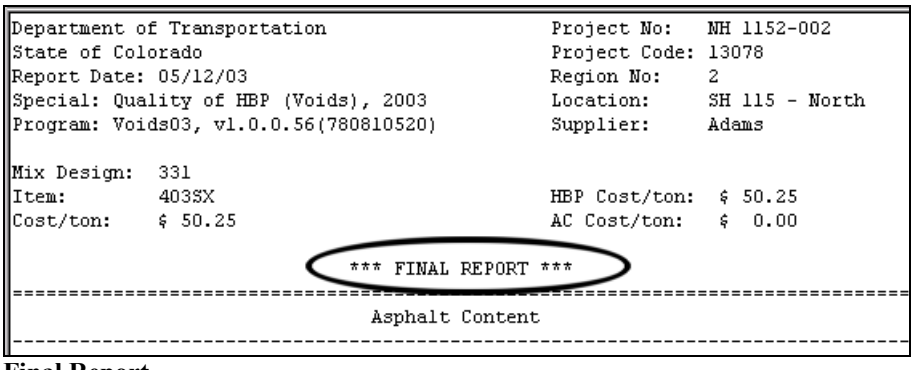
How To:

Click on the Reports icon.
Select Current Project (all elements).
Select "Final Report".



Generating a Final Report

Click on the "Create" button to generate the report.
If all the quantity check pass a Final Report will be generated.
Note that the report header is titled "Final Report".



Final Report

Click on the "Print" button while in the preview screen to print the report.

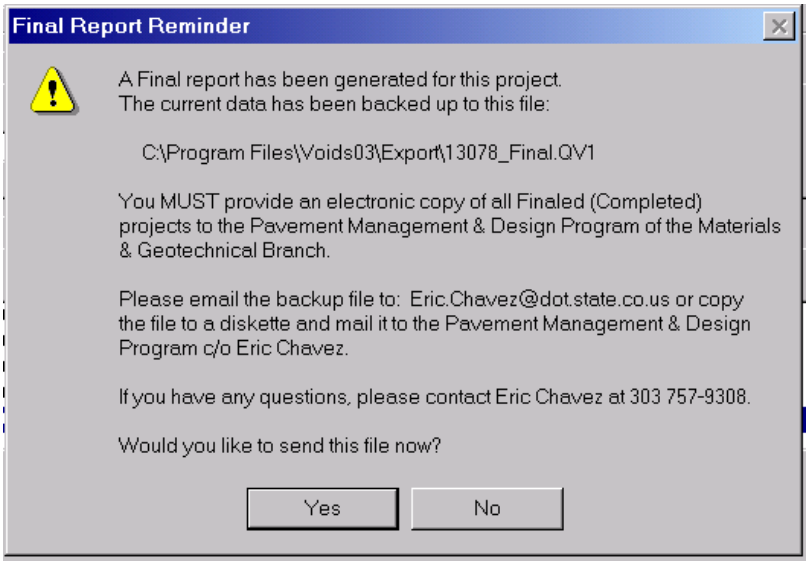
Note: Please see the section *Transferring Final Data to the Pavement Management & Design Program* that appears next in this guide for details on this subject.

Transferring Final Data to the *Pavement Management & Design Program*

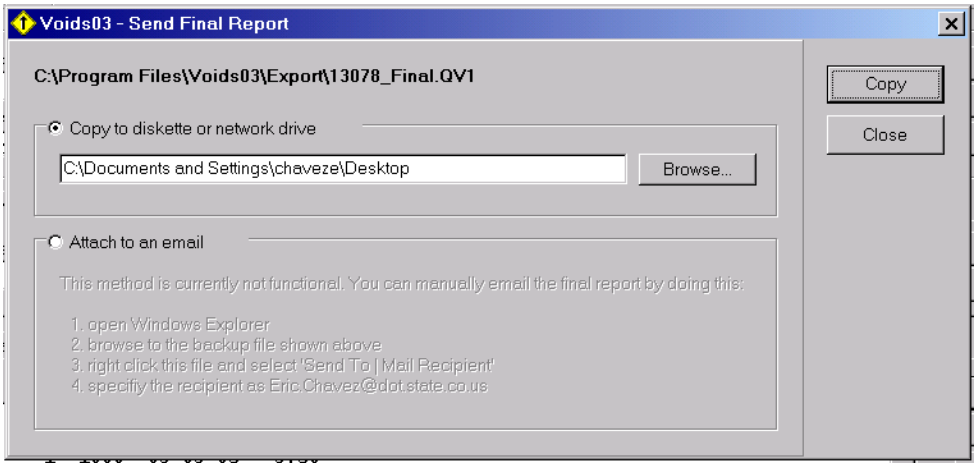
The Pavement Management & Design Program (PM&DP) of the Materials & Geotechnical Branch is to receive an electronic copy of the data for all Finaled projects. This data will be compiled into one data base and used for review purposes. Please send the PM&DP an electronic copy of the project's data after it has completed its review in the region. The PM&DP will not be reviewing individual projects but merely gathering the data for all CDOT projects.

How To:

After a Final Report has been generated the following message will be displayed reminding you to transfer the project's data to the PM&DP.



Click "No" if the project has not been Finaled by the region and to exit this screen.
Click "Yes" if the project has completed its review and to create a data file.
The following message will then be displayed.
Click "Browse" and select a location to save the file to.
Click on the "Copy" button to create the data file.
Click "OK" after the file has been copied.
Click "Close" to exit the "Send Final Report" screen when done.



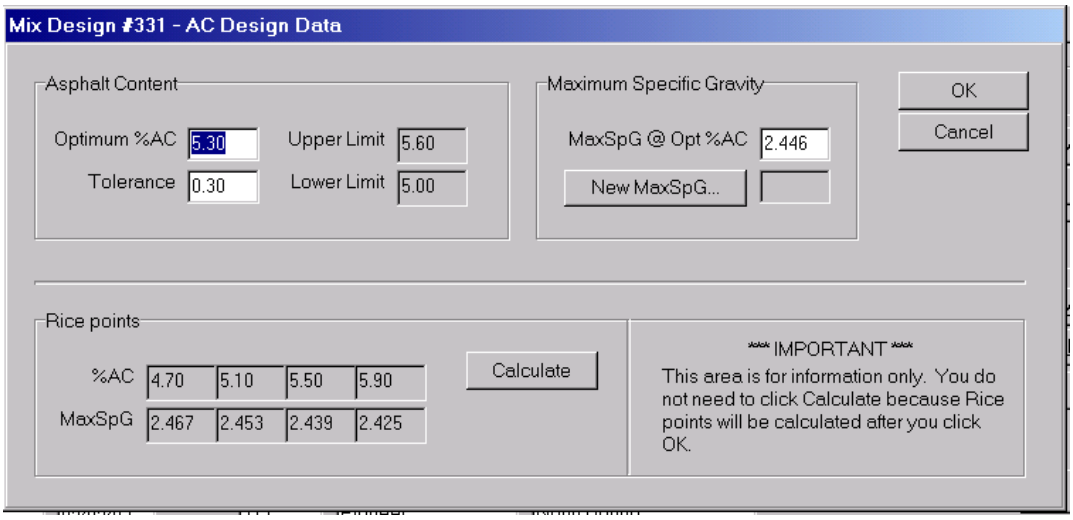
A data file will be created and copied to the location selected above.
E-Mail the file to Eric Chavez at the following: Eric.Chavez@dot.state.co.us
Or, copied the file to diskette and mailed to CDOT's PM&DP c/o Eric Chavez.

Note: The "Attach to an email" option on the Send Final Report screen is currently not working.

TRACKING THE TARGET SPECIFIC GRAVITY FOR COMPACTION COMPLIANCE WITH COLOLRADO PROCEDURE 56 (CP-56)

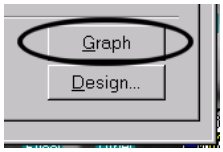
During the production of Hot Bituminous Pavement, changes may occur in the maximum specific gravity of the mix. This change may be detected, and the target specific gravity corrected, by measuring the maximum specific gravity of the project-produced material. Voids03 can track the Maximum Specific Gravities, generate a graph of the Maximum Specific Gravities, and is capable of calculating a new target maximum specific gravity and the new tolerance bands when needed.

Voids03 automatically calculates the tolerance bands for the Maximum Specific Gravities tests when a new Percent Asphalt specification is entered into the program. Voids03 uses the equations contained in CP-56 to calculate these points. See Colorado Procedure 56 for details.



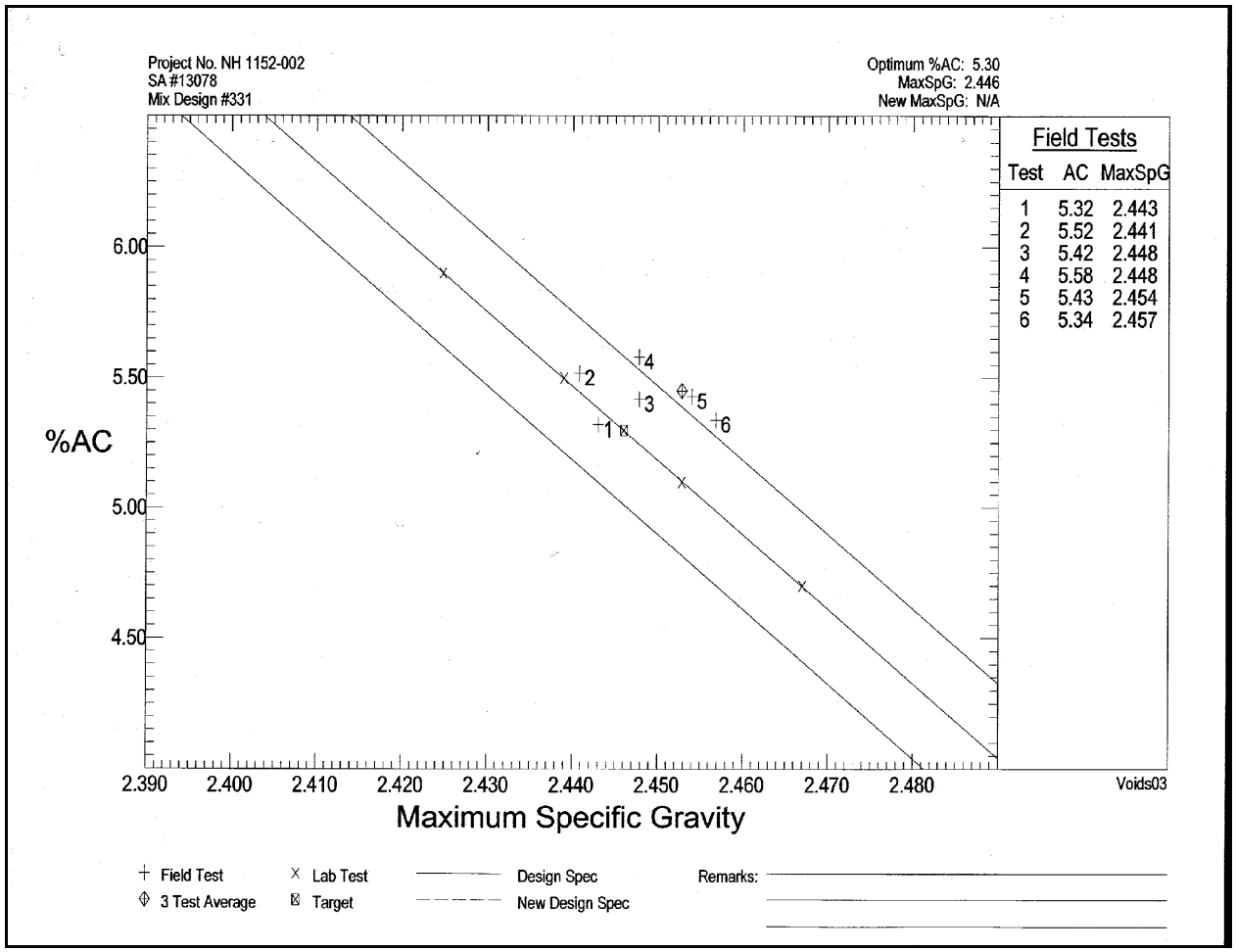
Mix Design Showing the Calculated Rice Points

Viewing The Maximum Specific Gravity Graph



Select the "% AC" folder tab
Click on the "Graph" button on the bottom right of the screen.
Check to see if the MaxSpGs are within the test bands.

A new maximum specific gravity must be calculated whenever the test results are not in compliance with Colorado Procedure 56.



Maximum Specific Gravity Graph

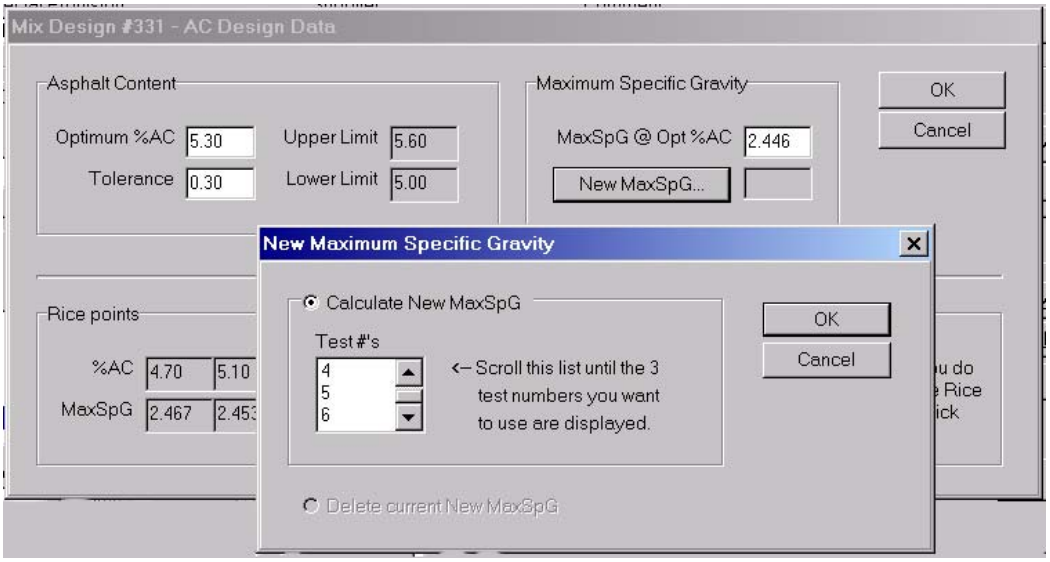
Close the graph by clicking on the "close button".

Calculating A New Maximum Specific Gravity

Voids03 can calculate a new Maximum Specific Gravity based on entered tests.

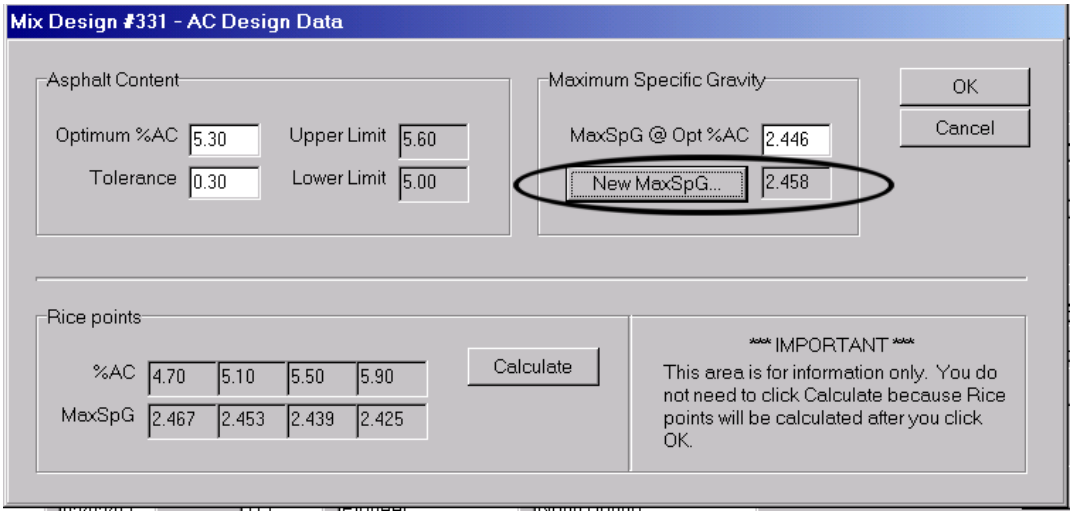
How To:

Select the "% AC" folder tab.
Click on the "Design" button, in the lower right of the screen.
Click on the "New MaxSpG…" button.
Scroll through the list of tests until the three test #s you want to use in the calculation are displayed.
Click on the "OK" button.



Select Three Tests to Calculate a New Maximum Specific Gravity

The new MaxSpG, based on the field-produced material, will be calculated and displayed.



New Maximum Specific Gravity is Calculated

FILE MAINTANENCE

CREATING A BACKUP DATA FILE

The following details how to create a data file that contains all of the program's data. This file can be copied to a diskette, e-mailed, and/or transferred to another computer using Voids03 and restored.

How to:

Click on "File" on the menu bar.
Click on "Backup Data"
The "Confirm" screen will be displayed.
Note the file name that the program will give the file.
Click "OK" to create the file.
The file will be placed in the "Export" directory for the program.
Default directory is: C:\Program File\Voids03\Export.

Note - The project's data will remain in the program. To delete the data see "Deleting a Project".

USING RESTORE DATA

The following details how to restore a data file back into the Voids03 program. The restored data can then be reviewed or used as needed.

IMPORTANT!!! – Before using the Restore Data option run the Backup Data option to save any information that is currently in the program. The Restore Data operation Overwrites ALL THE DATA that is currently in the program's database. The information that is currently in the program WILL BE LOST if it is not saved first.

Note: A data file must have been created using the Backup Data option in Voids03 in order to be restored.

How to:

Click on "File" in the menu bar.
Click on "Restore Data".
Navigate to the directory that contains the data file to be restored.
Highlight the data file to be Restored.
Click on the "Open" button.
Click "Yes" on the "Confirm Restore" screen.
Click on "OK" to verify the restore.

The restored data can now be used or reviewed as needed.

DELETEING A PROJECT

Click on the drop down arrow in the "Project Code" box and select the project you would like to delete.
Click on the "Delete" button to the right of the "Projects" boxes.
Click on "OK".

Warning! This will also delete any mix designs associated with this project along with deleting all test values and sites.

DELETEING A MIX DESIGN

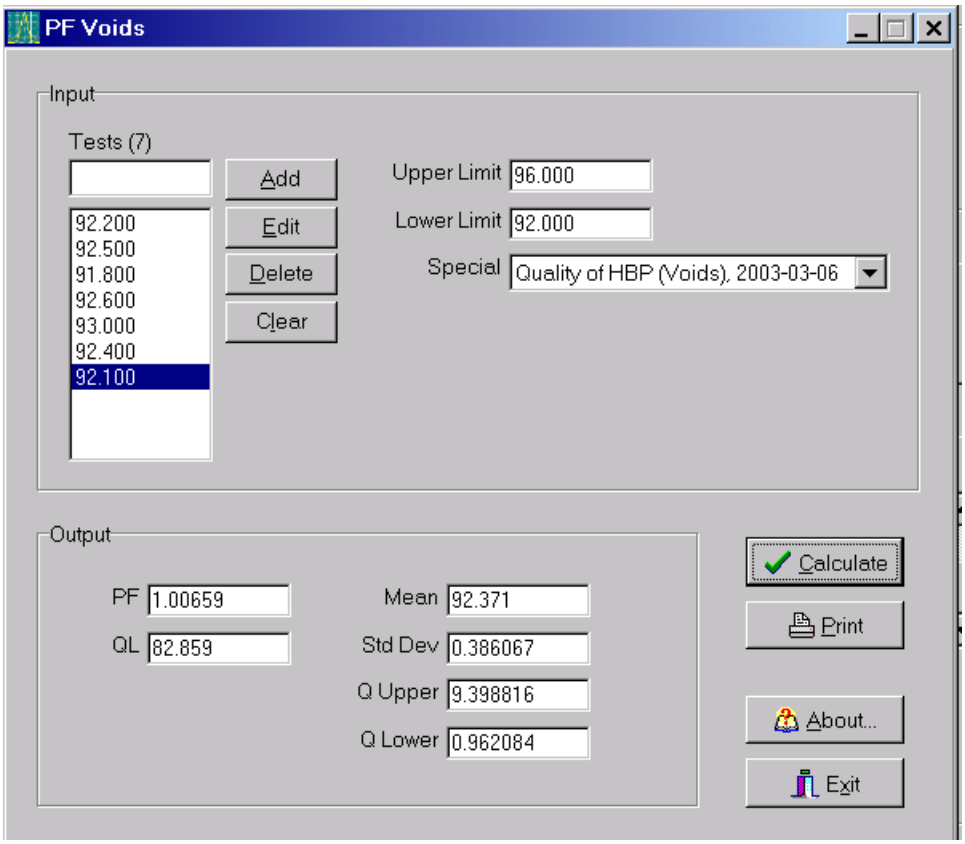
Click on the drop down arrow in the “Project Code” box and select the project that is using the mix design you would like to delete.
Click on the drop down arrow in the “Mix Design #” box and select the mix design you would like to delete.
Click on the “Delete” button located within the “Mix Designs” box.
Warning! All testing information associated with Mix Design will also be deleted.
Click “OK” to confirm deletion.

VOIDS03 SUB-PROGRAMS

The following programs are found under “Tools” on the “Main Menu”.

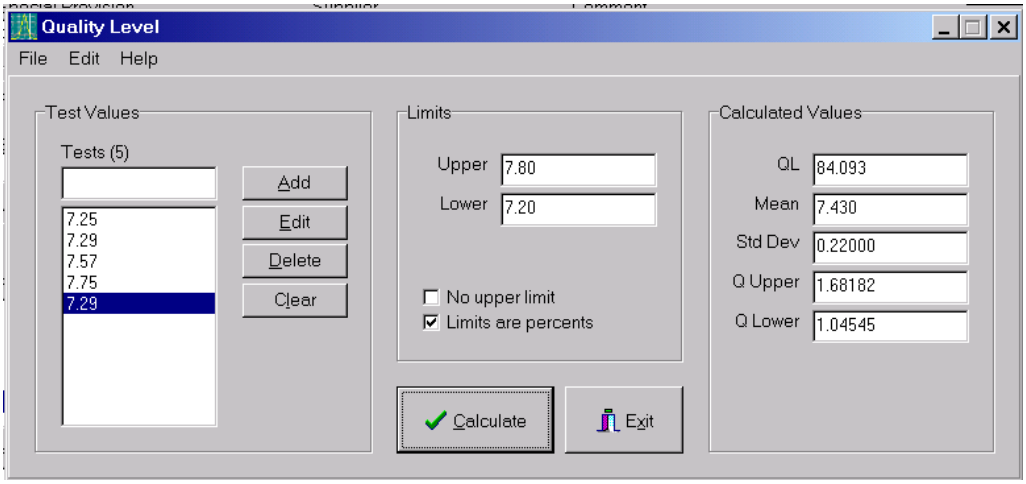
PF Voids

Calculates a Pay Factor and Quality Level for a set of tests based on the Standard Special Provisions, Revisions to Sections 105 & 106, dated 12/20/02 or 3/6/03.



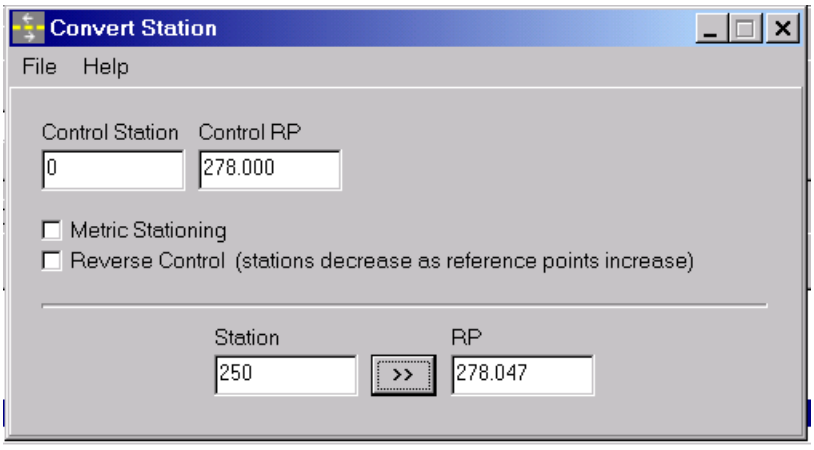
Quality Level

Calculates a Quality Level for a set of values based on an Upper and Lower limits. This is a generic Quality Level calculator which can be used for any data set.



Convert Station

Used to convert a Control Station to a Reference Point, or vise versa, based on a known Control Station and Reference Point.

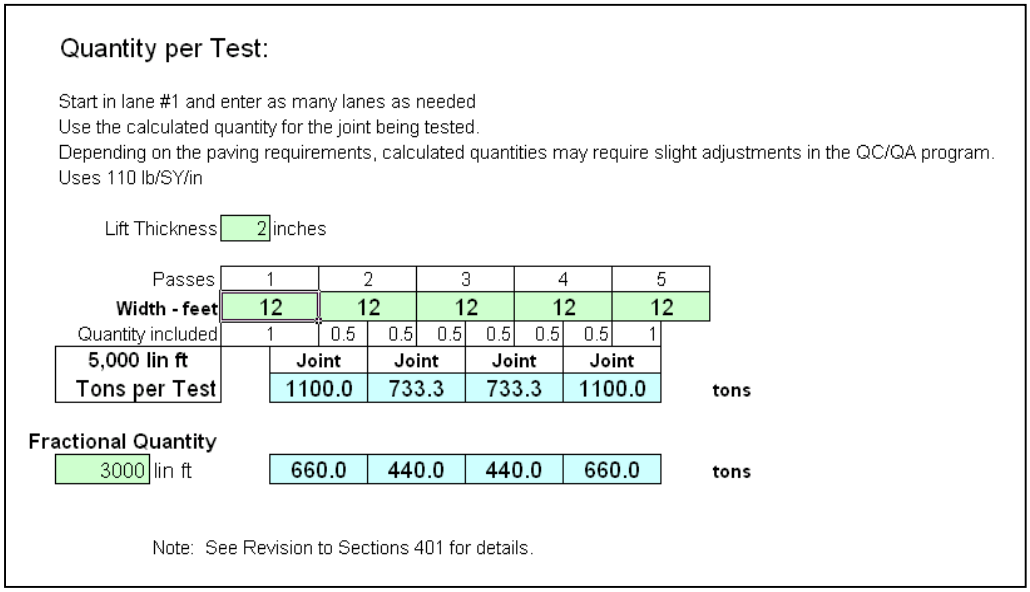


Price Reduction

Starts the price reduction program “Price Reduction USA 3_03” used for calculating price reductions according to the Standard Special Provision, revision to sections 105.03.

Joint Density Calculator

Is an Excel program that does calculations that are used in the Joint Density testing element. Converts the linear feet testing frequency into a tons quantity. Also can be used to calculates the Unit Price for the joint density testing element. Calculations are based on the Standard Special Provision, Revision to Sections 401, Plant Mix Pavements – General. Please see this specification for more details.



Quantity per Test:

Start in lane #1 and enter as many lanes as needed
Use the calculated quantity for the joint being tested.
Depending on the paving requirements, calculated quantities may require slight adjustments in the QC/QA program.
Uses 110 lb/SY/in

Lift Thickness 2 inches

Passes	1	2	3	4	5
Width - feet	12	12	12	12	12
Quantity included	1	0.5	0.5	0.5	0.5	0.5	0.5	1

5,000 lin ft	Joint	Joint	Joint	Joint	
Tons per Test	1100.0	733.3	733.3	1100.0	tons

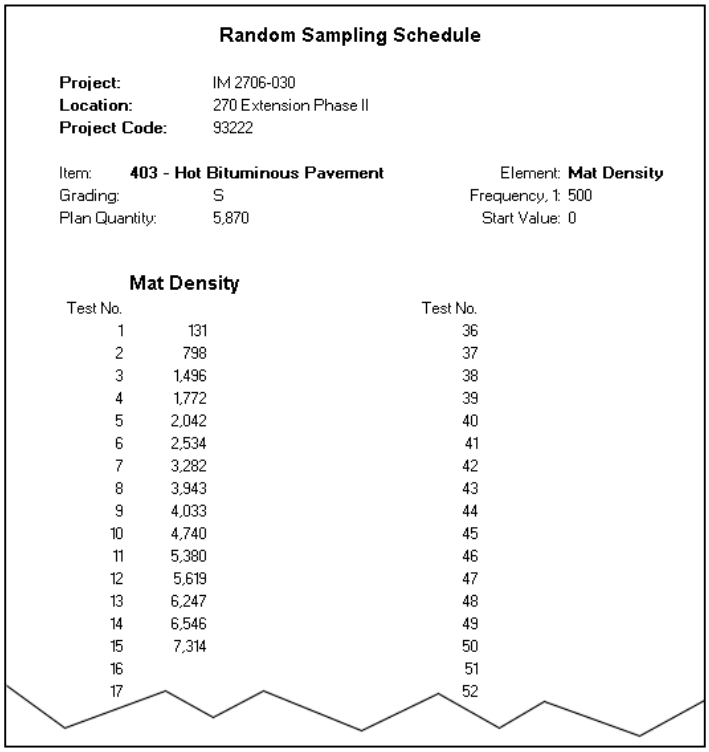
Fractional Quantity

3000 lin ft	660.0	440.0	440.0	660.0	tons

Note: See Revision to Sections 401 for details.

Random Number

Generic random number generator that can be used for any test element. Reports can be printed.



Random Sampling Schedule

Project: IM 2706-030
Location: 270 Extension Phase II
Project Code: 93222

Item: **403 - Hot Bituminous Pavement** Element: **Mat Density**
Grading: S Frequency, 1: 500
Plan Quantity: 5,870 Start Value: 0

Mat Density

Test No.		Test No.
1	131	36
2	798	37
3	1,496	38
4	1,772	39
5	2,042	40
6	2,534	41
7	3,282	42
8	3,943	43
9	4,033	44
10	4,740	45
11	5,380	46
12	5,619	47
13	6,247	48
14	6,546	49
15	7,314	50
16		51
17		52

CALCULATIONS

Quality Levels are calculated according to CP-71.

Pay Factor and Incentive/Disincentive Payments are calculated according to section 105.03 of the Standard Special, Revision of Sections 105 and 106 for the project.

CONTACT

If you have problems or concerns with this program contact Eric Chavez at (303) 757-9308, Email: Eric.Chavez@dot.state.co.us