

# **CSAH Needs Application Instructions User Manual**

**Minnesota Department of Transportation**

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# CSAH Needs Study

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## Introduction

Each year every county must submit the necessary information that explains their road, structure, and railroad crossing funding needs to the Commissioner of Transportation via the State Aid System. The County screening board uses this information to make recommendations to the Commissioner regarding the mileages, lane miles, and money needs for each county.

## Purpose of Needs Study

The purpose of the needs study is to provide information for the apportionment of state aid funds. It is used as a measurement of needs, and is not to be used as a literal guide for the actual design or construction of projects.

## County Screening Board

The County Screening Board is made up of members that are appointed by the Commissioner of Transportation. Members include one county engineer from each out state district, two county engineers from the Metro Division, and one county engineer from each urban county (population at least 175,000). They review all the information reported on the CSAH (County State Aid Highway) system, and submit their findings and recommendations to the Commissioner regarding the mileage, lane miles, and money needs for each county.

## User Contacts

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If you need technical assistance accessing the CSAH application through the web, please contact the SALT IR Help Desk at (651) 296-2053 or via e-mail, [saltirhelp@dot.state.mn.us](mailto:saltirhelp@dot.state.mn.us).

If you need assistance using the CSAH application, or have questions about the business requirements please contact one of the following people with the CSAH Needs Unit:

Diane Gould	(651) 296-3147	<a href="mailto:gouldia@dot.state.mn.us">gouldia@dot.state.mn.us</a>
Norman Cordes	(651) 296-3014	<a href="mailto:cordlnor@dot.state.mn.us">cordlnor@dot.state.mn.us</a>
Kim DeLaRosa	(651) 296-2440	<a href="mailto:Dela1Kim@dot.stae.mn.us">Dela1Kim@dot.stae.mn.us</a>

## System Requirements and Configuration

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To run the CSAH application you need the following:

**Hardware:**

- Pentium Class PC Desktop (200 mhz)
- 32 meg RAM required, 64 meg or more recommended
- WWW Connection or Dial-up connection with 56k modem

**Software:**

- Windows 95, 98, NT 4.0, or Windows 2000
- MS Internet Explorer
- Citrix Client Software

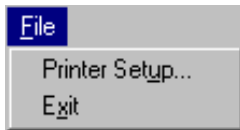
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# CSAH Menu Options

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After logging in to CSAH, you will see the main screen, which has a SALT logo in the center. At this point, you select an option using a pull-down menu. Options that have specific functionality, such as the **Printer Setup** and **Exit** are explained in this chapter. While the **Data Collector** and the different **Reports** options, which have a great deal of functionality, are briefly described here, and reference the chapters that provide detail.

## File menu



**Figure 1** File menu with options displayed

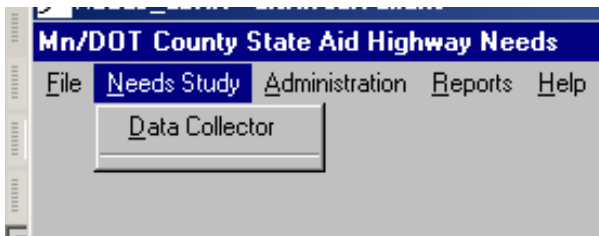
### *Printer Setup*

This option lets you determine which printer to use when printing reports. This is *not* the option you use to print.

### *Exit*

This option closes the application.

## Needs Study menu



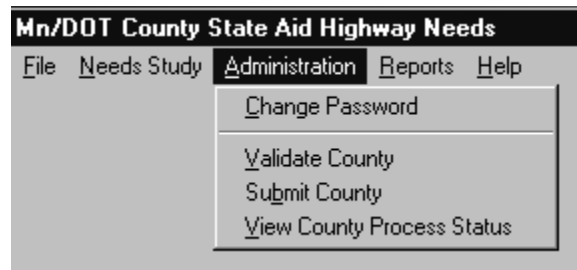
**Figure 2** Needs Study menu with options displayed

### *Data Collector*

This option displays the data collector interface that you use to update road, structure and railroad crossing information for each segment. For a detailed explanation of the data collector's functionality see chapters:

- Data Collector Interface Buttons
- Data Collector Segment Identification
- Roadway Data
- Structure Data
- Railroad Data

## Administration menu



**Figure 3** Administration menu with options displayed

### ***Change Password***

#### **To change your password:**

1. Enter your current password into the **Old Password** field.
2. Enter the password that you want to start using in the **New Password** field.
3. Enter this new password again into the **Verify New Password** field.  
The new password must be at least 5 characters, but no more than 15.
4. To reject your password change, click the **Cancel** button. To accept your password change, click the **OK** button.

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*Note: When you change your password, you cannot use a password that you have previously used.*

*If you enter your password incorrectly three times, you will be locked out of the Needs Study application. You will need to have your password reset by the system administrator.*

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### ***Validate County***

This option displays the Validate County dialog box.

#### **To validate a county:**

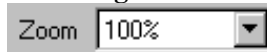
1. Select the county from the list.
2. Click the **Validate** button.
3. If there are no errors a dialog box displays indicating the validation is complete
  - a. Click the **OK** button to close the dialog box.
4. If there are errors the Warning dialog box appears.
  - a. To close the dialog box, click the **No** button.  
To view or print the error report, click the **Yes** button.

#### **To print the report, press the Print button**


The **Print** dialog box displays.

1. In the **Number of copies** field enter, or use the arrow keys to select the number of copies you want to print.
2. Click the **OK** button.

To enlarge or reduce the document on screen, use the **Zoom** pull-down menu.



1. Click the **Zoom** pull-down menu.
2. Select the magnification or reduction size.  
Your file now appears at the selected zoom level.

To save the report as a file, press the **File** button .  
The export dialog box displays.

1. Using the **Save in** pull-down menu, select the location that you want to save your file.
2. Enter the file for the report in the **File name** field.
3. Select the file type using the **Save as type** pull-down menu.
4. If you want to save a range of the file, in the Page Range field, click the Pages radio button, then enter the page range in the **from** and **to** fields.
5. Press the **Save** button to save the file.

### ***Submit County***

This displays the **Submit County** dialog box. Use this dialog box to change the access level and promotion status of county data. Counties promote data to the district level, districts promote data to the Needs Unit.

After a county has been submitted, and therefore promoted, the user no longer has write access. For example, if data is promoted from the county level to the district level, county users can view the data, but they will **not** be able to change the data.

### ***View County Process Status***

This option displays the **County Process Status** dialog box. The **County Process Status** dialog box displays the promotion status of a county. There are 4 options in the **Processing Status** field.

They are:

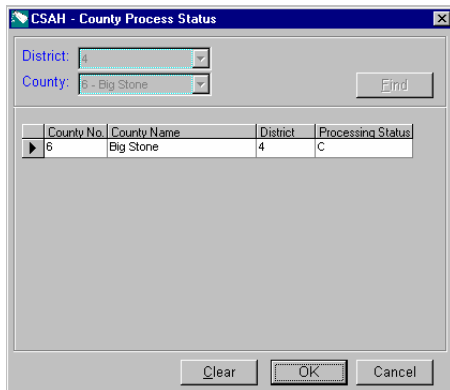
- C – County**—The county is currently processing segment data, so the county can revise data, other groups can only read the data.
- D – District State Aid Engineers (DSAE)**—The DSAE is currently processing segment data, so the DSAE can revise data, other groups can only read the data.
- N – Needs Unit**—The Needs Unit is currently processing segment data, so the Needs Unit can revise data, other groups can only read the data.
- F – Finished**—All groups have finished processing segment data.

County users viewing their status:

1. The county information is displayed in the dialog box.
2. Click the **OK** button to close the dialog box.  
If you click the **Clear** button, the field is cleared. If this happens click the **Find** button, and the data will appear back in the field.

**District users viewing a county status:**

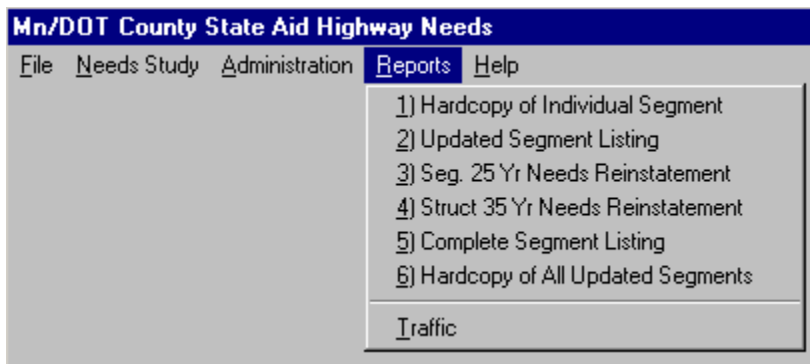
1. Find a county to view
  - a. Use the **District** pull-down menu to select a District.
2. *Or*, enter the County number in the **County** field
  - a. Click the **Find** button.  
The field is populated.
3. To select another county to view:
  - a. Click the **Clear** button to clear the field.
  - b. Repeat Step 1.
4. Click **OK** to close the dialog box.



**Figure 4** County Process dialog box

At the beginning of every year, the Processing Status is set to C, the county level. After county users have updated segment information for their county, the county data is submitted to the DSAE. This sets the Processing Status to D, the District level. After the DSAE is finished with processing the County data, they submit it to the Needs Unit. This sets the Processing Status to N, the Needs Unit level. The Needs Unit then processes the County data. Then the data is run through a computation process in order to determine the monetary needs of the county. This sets the Processing Status to F, Finished.

## Reports menu



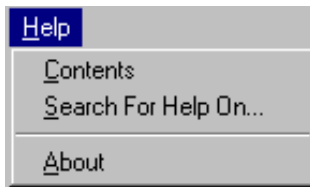
**Figure 5** Reports Menu with options displayed

From this pull-down menu there are 6 different reports that you can preview and print. For instructions on setting up, previewing and printing each report, refer to the Reports chapter.

### *Traffic*

This option displays the Design Group, Present Traffic, Year of Count, Projection Factor, and Projected Traffic for each segment in your county. This option will also show the segments that change design groups when your county traffic is updated.

## Help menu



**Figure 6** Help menu with options displayed

### ***Contents***

**This launches the contents CSAH help system.**

You can also get help and instructions for a specific field or button by placing your pointer in the field or over button and pressing the F1 key.

### ***Search for Help On...***

This launches the index section of the CSAH help system.

### ***About***

This option displays a dialog box with the application's version number and other key information.

Click the **OK** button to return to the CSAH application.

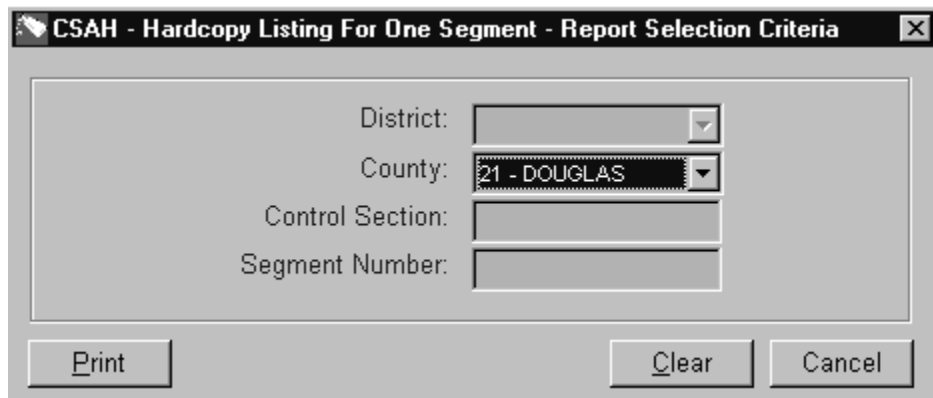
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# Reports

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## 1- Hardcopy Listing For One Segment

This is a detailed report of one segment or all new, updated, and deleted segments, your county, by control section, and segment number. It prints all the details of updated road segments, their original data and revised data, including the revised indicator pointing out what data fields were revised.



**Figure 7** Report 1 dialog box

**County Users** can access the segment listing for the county to which they have access.

**District Users** can select one or more counties within the district to which they have access.

**To select a report:**

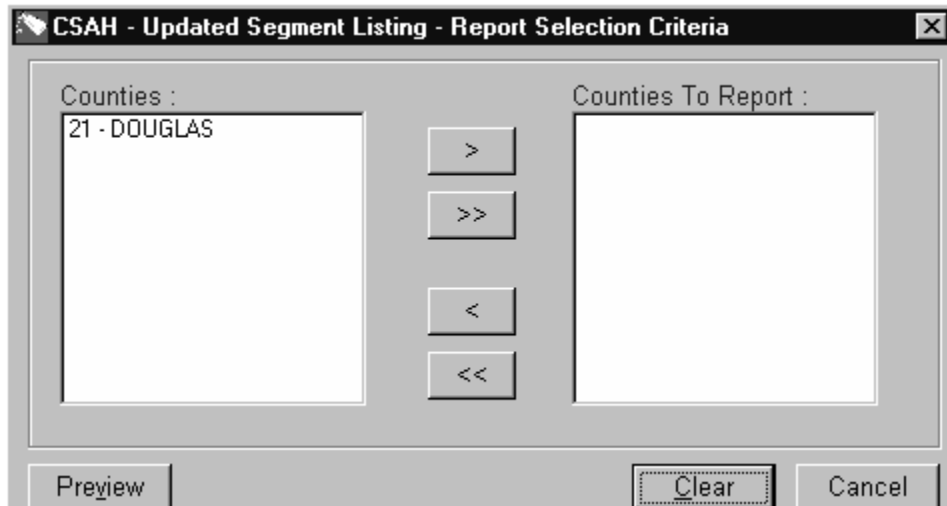
1. Select Reports > 1) Hardcopy Listing For One Segment from the menu bar.
2. If you have access to more than one county, select the County for which you want the report from the drop-down list.
3. Enter the number for the control section and segment number in each field.
4. To print a report with all data, press Print.

## 2 - Updated Segment Listing

This report is a summary of all new, revised, and deleted segments within your county.

**County Users** can access the segment listing for the county to which they have access.

**District Users** can select one or more counties within the district to which they have access.



**Figure 8** Report 2 dialog box

### To select a report:

1. Select Reports > 2) Updated Segment Listing from the menu bar.
2. Click on the county in the Counties column for which you want a report
3. Click on the > single arrow to move the county to the Counties to Report column. If you want the report for all counties listed, click the >> double arrow and all listed counties will move to the Counties to Report column.
4. To view the report on your screen, press Preview. To print the report while in preview mode, click the printer button in the upper left hand corner. Click OK to accept the default printer.

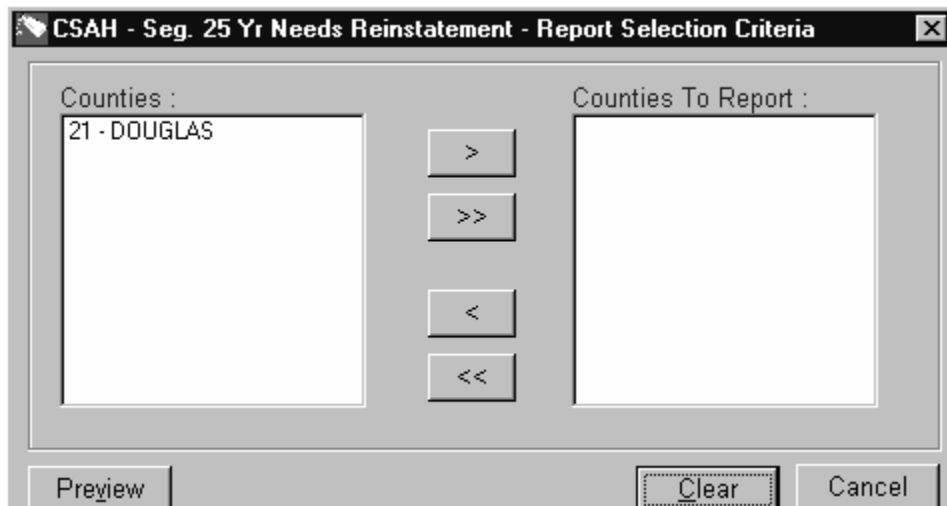
To deselect a county from the **Counties to Report**, click the < single arrow. To deselect all the counties, click the << double arrow.

### 3 - 25Yr Needs Reinstatement Report

This report is a summary of all the segments eligible for 25 Year Needs Reinstatement within the selected county/counties.

**County Users** can access the segment listing for the county to which they have access.

**District Users** can select one or more counties within the district to which they have access.



**Figure 9** Report 3 dialog box

**To select a report:**

1. Select Reports >3) Segment 25Yr Needs Reinstatement from the menu bar.
2. Click on the county in the Counties column for which you want a report
3. Click on the > single arrow to move the county to the Counties to Report column. If you want the report for all counties listed, click the >> double arrow and all listed counties will move to the Counties to Report column.
4. To view the report on your screen, press Preview. To print the report while in preview mode, click the printer button in the upper left hand corner. Click OK to accept the default printer.

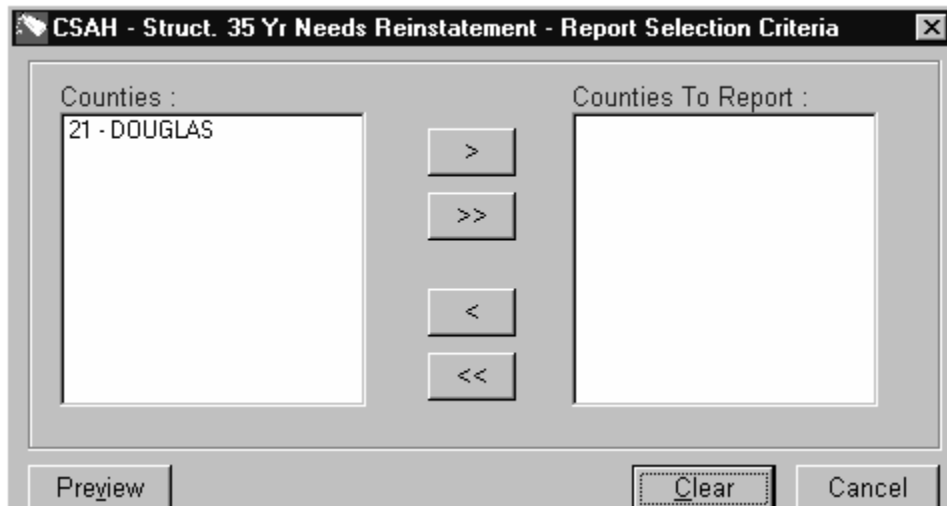
To deselect a county from the **Counties to Report**, click the < single arrow. To deselect all the counties, click the << double arrow.

## 4 - 35Yr Needs Reinstatement Report

This report is a summary of all the Structures eligible for 35 year Needs Reinstatement within the selected county/counties.

**County Users** can access the segment listing for the county to which they have access.

**District Users** can select one or more counties within the district to which they have access.



**Figure 10** Report 4 dialog box

### To select a report:

1. Select Reports > 4) Struct 35Yr Needs Reinstatement from the menu bar.
2. Click on the county in the Counties column for which you want a report
3. Click on the > single arrow to move the county to the Counties to Report column. If you want the report for all counties listed, click the >> double arrow and all listed counties will move to the Counties to Report column.
4. To view the report on your screen, press Preview. To print the report while in preview mode, click the printer button in the upper left corner. Click OK to accept the default printer.

To deselect a county from the **Counties to Report**, click the < single arrow. To deselect all the counties, click the << double arrow.

## 5 - Complete Segment List Report

This report is a complete list of roadway segments in a selected county.

**County Users** can access the county to which they have access.

**District Users** can select a county within the district to which they have access.

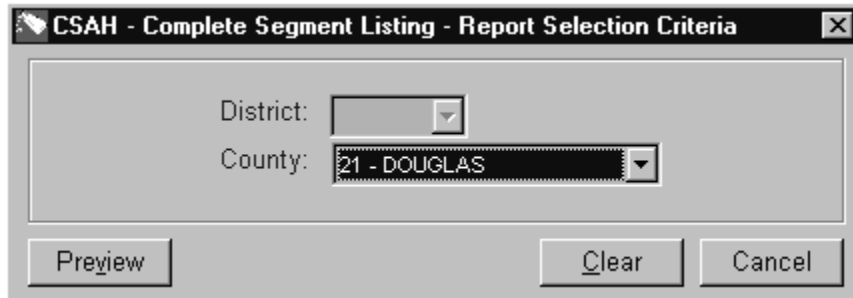


Figure 11 Report 5 dialog box

### To select a report:

1. Select Reports > 5) Complete Segment Listing from the menu bar.
2. If you have access to more than one county, select the county for which you want the report from the drop-down list.
3. To view the report on your screen, press Preview. To print the report while in preview mode, click the printer button in the upper left corner. Click OK to accept the default printer.

## 6 – Hardcopy of All Updated Segments Report

This is a detailed report of all revised segments or all new, updated, and deleted segments in your county by control section, and segment number. It prints all the details of updated road segments, their original data and revised data, including the revised indicator pointing out what data fields were revised.

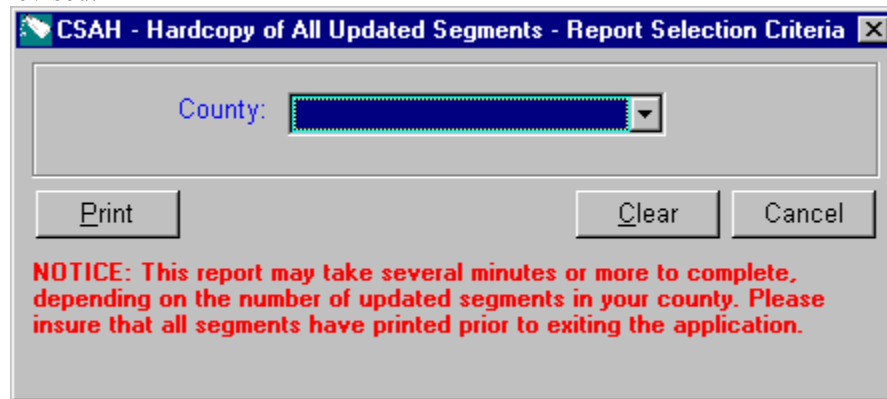


Figure 12 Report 6 dialog box

### To select a report:

1. Select Reports >6) Hardcopy of All Updated Segments from the menu bar.
2. If you have access to more than one county, select the county for which you want the report from the drop-down list.
3. To print all the details of updated road segments, their original data and revised data, including the revised indicator pointing out what data field were revised, click the print button at the left side of the screen.

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## Data Collector Interface Buttons

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Below is an explanation of the Find button, the segment selector, and the navigation buttons. These buttons always remain on the screen, so they are accessible at any time.

### Find

Use the **Find** button to search for county, control section or segment data. Then, use it to populate the Data Collector screens with segment data.

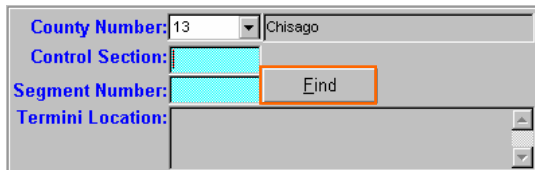


Figure 13 Find Button

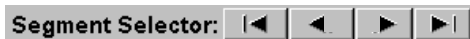
#### You use the Find button in five different ways:

1. To select a Control Section and Segment Number, then populate the Data Collector with segment data:
  - a. If the **County Number** field contains the county name and number, press the **Find** button to view a drop-down list of all segments within that county.
  - b. Select a segment.
    - i. Use the scroll bar to locate the segment.
    - ii. Place your pointer along the line that contains the control section you want to select.
    - iii. Double-click anywhere on the line.  
The drop-down box closes and the Control Number and Segment fields and Data Collector screens are populated with segment data.
2. To select a Control Section, then populate the Data Collector with segment data:
  - a. If you have entered the **County Number** and **Segment Number** in their respective fields, press the **Find** button to view a drop-down list of all Control Section with that segment number that is within that county.
  - b. Select a segment.
    - i. Use the scroll bar to locate the segment.
    - ii. Place your pointer along the line that contains the control section you want to select.
    - iii. Double-click anywhere on the line.  
The drop-down box closes and the Control Number and Segment fields and Data Collector screens are populated with segment data.

3. To select a Segment Number, then populate the Data Collector with segment data:
  - a. If you have entered the **County Number** and **Control Section** in their respective fields, press the **Find** button to view a drop-down list of all segments for the Control Number.
  - b. Select a segment.
    - i. Use the scroll bar to locate the segment.
    - ii. Place your pointer along the line that contains the control section you want to select.
    - iii. Double-click anywhere on the line.  
The drop-down box closes and the Segment field and Data Collector screens are populated with segment data.
4. To populate the Data Collector screens with the segment data:
  - a. Press the **Find** button to populate the Data Collector screens with Segment data if you have entered the **County Number**, **Control Number**, and **Segment Number** in the appropriate fields.
5. After pressing the **Add New** button to create a new record
  - a. After pressing the Add New button, enter the new County Number, Control Section, and Segment Number into the appropriate fields.
  - b. Click the **Find** button.
  - c. The fields are cleared, so that you can begin entering data.
  - d. If the record exists, the error dialog box displays with the message “Duplicate Record, this county, control section and segment number details exist.”

## Segment Selector

Use the segment selector buttons to go to the first, previous, next or last segment within the current Control Section. The segment selector is located on the center right of the Data Collector. Below is a description of each button.



**Figure 14** Segment Selector



This button populates the Data Collector with data of the *first* road segment in a county, which is usually segment 010.



This button populates the Data Collector with data for the *previous* road segment in a county.



This button populates the Data Collector with data for the *next* road segment in a county.



This button populates the Data Collector with segment data for the *last* segment within a control number.

## Navigation Buttons

The following is a description of the navigation buttons located at the bottom of the screen.



**Figure 15 Navigation Buttons**

### ***Save***

The **Save** button saves the data you have entered in the Roadway Data tab, Structure Data tab, or Railroad Data tab, but does not exit the Data Collector.

---

*Note: If you make revisions in one section, such as Roadway Data, you must save those changes before continuing to another section—in this case, Railroad Data and Structure Data. If you do not save your changes to one section and go to another, an error dialog box displays with the message “First save previous data.”*

---

You can also undelete a segment using the **Save** button.

### **To undelete a segment:**

1. Click the **Save** button.  
The segment is undeleted.

### ***Copy***

The **Copy** button copies only the Roadway data within the:

- Roadway Data tab

The copy feature is useful when you are dividing an already existing segment or anytime that a segment’s in county, control section, or segment number change.

### **To copy Roadway Data:**

1. Press the **Copy** button.  
The Control Section and Segment Number fields turn blue, and the data remains on the screen.
2. Enter the Control Section and Segment Number for the new segment.
3. Press the **Save** button to save the new segment and its data.  
The new segment and the data within one of the tabbed sections—Roadway Data is saved. If necessary, you can now modify the data for this newly created road segment.

### ***Validate Segment***

The **Validate Segment** button runs the validate process for the entire segment. The validation process goes through all of the segment data to determine if the data is correct. If there are errors, the application generates a report. When you run the validate process, both the original and revised data are validated.

Only validate segments that have revised data. If you click the **Validate Segment** button to validate a segment that does not have revised data, **Error Message 44275** displays. This error message states: “Validation can only be performed with data that has been revised”.

**To validate a road segment:**

1. Click the **Validate** button.
2. If there are no errors a dialog box displays indicating the validation is complete
3. Click the **OK** button to close the dialog box.

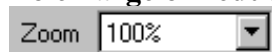
**To validate a structure or railroad crossing segment:**

1. Go to the Choose Structure screen. The screen that you select a structure or railroad segment.
2. Click the **Validate** button.
3. If there are no errors a dialog box displays indicating the validation is complete
4. Click the **OK** button to close the dialog box.

**To print the report, press the Print button** 

1. The **Print** dialog box displays.
2. In the **Number of copies** field enter, or use the arrow keys to select the number of copies you want to print
3. Click the **OK** button.

**To enlarge or reduce the document on screen, use the Zoom pull-down menu.**



1. Click the **Zoom** pull-down menu.
2. Select the magnification or reduction size.  
Your file now appears at the selected zoom level.

**To save the report as a file, press the File button** 

The export dialog box displays.

1. Using the **Save in** pull-down menu, select the location that you want to save your file.
2. Enter the file for the report in the **File name** field.
3. Select the file type using the **Save as type** pull-down menu.
4. If you want to save a range of the file, in the Page Range field, click the Pages radio button, then enter the page range in the **from** and **to** fields.
5. Press the **Save** button to save the file.

**Add New**

The **Add New** button allows you to create a new segment, structure or railroad crossing.

**To add new road segment data:**

1. In the Roadway Data tab press the **Add New** button  
The Control Section and Segment Number fields turn blue.
2. Enter the **Control Section** and **Segment Number** into the appropriate fields.
3. Click the **Find** button.  
The fields are cleared, so that you can begin entering data.  
If the record already exists, the an error dialog box displays with the message “Duplicate Record, this county, control section and segment number details exists.”

**To add new structure data:**

1. In the Structure Data tab, at the Choose Structure screen click the **Add New** button. The **Exist Cond 1** screen displays. This allows you to enter data for the new structure.

**To create new railroad crossing data:**

1. In the Railroad Data tab, at the Choose Railroad screen click the **Add New** button. The **Crossing Data** screen displays. This allows you to enter data for the new railroad crossing.

***Clear***

The **Clear** button clears all the segment information displayed on the screen. Before the information is cleared, a dialog box prompts you to either save or not save the data. It also gives you the option of canceling the **Clear** operation. If you continue with the operation, the first screen of the current section--Roadway Data, Structure Data, or Railroad Data—displays with no data. This allows you to view, revise, create, or delete another segment. You will not exit the application.

***Delete***

The **Delete** button removes the current data for the segment, structure, or railroad crossing. If the segment data was entered and is not yet promoted, it will erase the data. If the segment already exists, it does **not** delete the original record from the database. Instead, the word *deleted* appears next to the record in the database.

***Undelete a Segment***

If you have deleted a segment that was created one year or more prior, you can undelete it.

**To undelete a segment:**

1. Click the **Save** button.  
The segment is undeleted.

***OK***

The **OK** button saves all the changes you entered and exits the application.

***Cancel***

The **Cancel** button exits from the application without saving any of the roadway, structure, or railroad data that has not been saved, but has been entered during the current session.

---

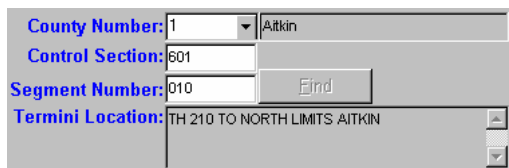
# Data Collector Segment Identification

---

The Segment Identification Information is divided into 3 parts: Identification Information, Segment Includes, and Segment Status.

## Identification Information

*Identification Information* contains the County Number, Control Section, Segment Number and Termini location.



The screenshot shows a software interface for entering identification information. It consists of four rows of input fields and a button. The first row is 'County Number' with a dropdown menu showing '1' and a list box showing 'Aitkin'. The second row is 'Control Section' with a text box containing '601'. The third row is 'Segment Number' with a text box containing '010' and a 'Find' button to its right. The fourth row is 'Termini Location' with a text box containing 'TH 210 TO NORTH LIMITS AITKIN' and a scrollable list box below it.

**Figure 16** Identification Information

### ***County Number***

Enter the assigned county number or use the drop-down list.

### ***Control Section***

The control section number is assigned to the roadway by the Commissioner's Order. CSAH control sections are further identified by adding "600" to the number assigned in the Commissioner's Order.

To find the Control Section number, press **Find**, then select the county from the drop-down list.

### ***Segment Number***

State Aid roadways are divided into smaller units called segments when one of the following occurs:

- The existing surface type or surface width changes
- The nature of the deficiency of the roadway changes
- There is a substantial change in traffic volume (especially when a change would result in a change in construction design)
- The roadway intersects a municipal boundary or urban boundary
- The Federal Functional Classification of the roadway changes

Segment numbers begin with 010 and continue in increments of 10 (020, 030, 040, etc.) and shall run west to east or south to north. If a segment must be divided, then a third digit is used, i.e., 030 becomes 030 and 035. Usually a segment is split because of partial construction of a segment.

### ***Termini Location***

This field displays the segment termini, which is entered in the Termini Location text entry field, located in the **Exist 2** screen under the **Roadway Data** tab. The description of the termini location corresponds to the direction that the segment number is assigned.

## Segment Includes

The *Segment Includes* area displays the number of structures and railroad crossings within the segment that is currently on screen.

SEGMENT INCLUDES:

Structures:

Railroad Crossings:

**Figure 17** Segment Includes Information

### ***Structures***

The number of structures within this segment.

### ***Railroad Crossings***

The number of railroad crossings within this segment.

## Segment Status

The *segment status* area of the screen displays the status and number of revisions for Roadway Data, Structure Data, and Railroad Data. If there are data revisions, the number of revisions appears in the revision number field (see Figure ). This section of the screen also displays the validation status of the segment.

SEGMENT STATUS:

Roadway Data: ORIGINAL 0

Structure Data:

Railroad Data:

Validated:

Segment Status fields

Revision Number fields

**Figure 18** Segment Status

In the Segment Status fields there are five possible statuses for Roadway Data, Structure Data, and Railroad Data; they are:

- **New** – The segment, structure, or railroad crossing data was entered for the first time during this fiscal year.
- **Original** –The data has not been modified during this fiscal year.
- **Revised** – The original data has been updated during this fiscal year. The number of revisions appears in the corresponding Revision Number field.
- **Deleted** – The data is marked as deleted in the CSAH database.
- **Updated** – This status is for the Structure Data and Railroad Data fields only. When there are two or more structures, *or* two or more railroad crossings, and the status of these structures or railroad crossings is different, the segment status is “updated.”

Below is a list of the possible statuses for the Segment Status fields.

### ***Roadway Data***

Segment status for Roadway Data can be one of the following:

- New
- Original
- Revised
- Deleted

### ***Structure Data***

Segment status for Structure Data can be one of the following:

- New
- Original
- Revised
- Deleted
- Updated

### ***Railroad Data***

Segment status for Railroad Data can be one of the following:

- New
- Original
- Revised
- Deleted
- Updated

### ***Validated***

Segment validation status can be one of the following:

- Valid
- Invalid

# Roadway Data

To access roadway data, click the **Roadway Data** tab. There are 10 Roadway Data screens that you use to enter segment roadway data. The following pages contain description of the contents on each of these screens.



Figure 19 Roadway Data Tab

## Exist ID 1 Screen

Figure 20 Exist ID 1 Screen

### ***Municipality***

If the segment is located inside or on the corporate limits of a municipality, enter the name of the municipality or refer to the list of city names on the drop-down list. If the segment is located in an unincorporated area, leave this entry blank.

***Minor System***

If the segment is on a minor system, enter the proper system from the drop-down list.

**The minor system options are:**

- DE** DELETE Existing – this option deletes the existing designation as a minor system
- FD** Nat'l Forest Dev
- FH** Nat'l Forest Hwy
- IS** Indian Service
- MS** Military Service
- NR** National Refuge
- SF** State Forest
- SI** State Inst'l
- SP** State Park
- SR** State Refuge

***FH Number***

Required only if Minor **System** = **FH**. Enter the Forest Highway Number.

***Segment Length***

This is a required field. Record the length of the segment. Sections on or inside municipal boundaries are to be reported to the nearest hundredth of a mile and sections outside municipal boundaries are to be reported to the nearest tenth of a mile.

***Existing Surface Type***

A road with multiple surface types should be identified by the surface type on the predominant traffic lanes. This field is required *unless Bridge Segment Only* is in the **Surface Classification** field (which is located on the **Base, Surface & Shoulders Screen**).

---

*Example: For a road with 24 feet of concrete at the center and 10 feet of bituminous on both sides should be reported as concrete.*

---

Use only the types listed. **Do not** record more than one surface type per segment.

There are **12 surface type** codes:

- B – Unimproved** – A road using the natural surface, and minimally maintained to permit it to remain passable for motor vehicles.
- C – Graded and Drained** – A road of natural earth that is aligned and graded to permit reasonably convenient use by motor vehicles. They are drained by longitudinal and transverse drainage systems (natural or artificial).
- D – Soil Surfaced** - A road of natural soil, the surface of which has been improved to provide more adequate traffic service by the addition of: 1) a course of mixed soil such as sand-clay, soft shale, or topsoil, or 2) an admixture such as bituminous material, Portland cement, calcium chloride, sodium chloride or fine granular material (sand or similar material).
- E – Aggregate Surfaced** – A road surface that consists of gravel, broken stone, slag, chert, caliche, iron ore, shale, chat, disintegrated rock or granite, or other similar fragmental material (coarser than sand).
- F – Surface Treated** – An earth road, a soil-surfaced road, or a gravel or stone road to which has been added, by any process, a bituminous surface course with or without a seal coat, the total compacted thickness of which is less than one inch. Sealcoats include those known as chip seals, drag seals, plant mix seals and rock asphalt seals. Minnesota Specification 2321, Road-Mixed Bituminous Surface, falls into this classification.
- G – Mixed Bituminous** – A road with a surface course that is one inch or more in compacted thickness composed of gravel, stone, sand, or similar material, mixed with bituminous material under partial control as to grading and proportions. Both Minnesota Specifications 2331, 2341, and 2350 Plant Mixed Bituminous Surface, fall into this classification.

---

*Note: A concrete pavement with a bituminous overlay shall be reported as concrete surface.*

---

- I – Bituminous Concrete or Sheet Asphalt** – A road constructed with a surface course one inch or more in compacted thickness consisting of bituminous concrete or sheet asphalt, prepared in accordance with precise specifications controlling gradation, proportions and consistency of composition, or of rock asphalt. The surface course may consist of combinations of two or more layers such as bottom and top course, or a binder and a wearing course. Minnesota Specification 2361, Asphaltic Concrete Surface that is not mentioned in the above description is included in this classification.
- J – Portland Cement Concrete** – A road consisting of portland cement concrete.
- K – Brick** – A road consisting of paving brick.
- L – Block** – A road consisting of stone block, wood block, asphalt block or other form of blocks.
- O – Designated Non-Existent** – A route established on a new location where there is no existing roadway.

---

*Note: If the non-existent category is used, leave all fields blank starting from **Surface Width**, up to and including Existing Traffic Signals. Also, the next field, **Present Condition**, must be 8.*

---

***Existing Surface Width***

Enter surface width to the nearest foot.

---

*Note: Do not include the width of the median or turn lanes when measuring the surface width.*

---

**Design Type:**

**Urban** design—the surface width is measured from face to face of curbs.

**Rural** and **Sub-Urban** design – the surface width measurement **does not** include shoulders.

**Stage Construction Aggregate Surfaced Urban** design – surface width is the total width of the aggregate surface.

***Existing Roadbed Width***

Enter the roadbed width to the nearest foot.

---

*Note: Do not include the width of the median or turn lanes when measuring the roadbed width or the surface width.*

---

**Design Type:**

**Urban** design – the roadbed width is measured from face to face of curbs.

**Rural** and **Sub-Urban** design – the roadbed width is the surface width plus the total shoulder width.

***Existing Right-of-Way Width***

Enter the right-of-way width to the nearest foot. When the right-of-way varies, report the basic width or split the segment.

***Existing Structural Capacity***

Enter the structural capacity to the nearest ton.

The structural capacity can be the result of Benkelman Beam Tests or any other accepted method of capacity measurement. If applicable, this would be the springtime load restriction.

This should only be entered on hard surfaced roadways (surface types G, I, J, K, L, or M) not gravel surfaced roadways.

## Exist 2 Screen

Figure 21 Exist 2 Screen

### *Year Last Graded*

Enter the last year that major grading occurred for the segment.

The Contract Letting Date is considered the construction year for Needs Study data. Do **not** consider routine maintenance jobs when determining the year. Only consider major improvements. If the year is unknown, enter 1900.

### *Year Last Surfaced*

Enter the last year the last major surfacing occurred for the segment.

The Contract Letting Date is considered the construction year for Needs Study data. Do **not** consider routine maintenance jobs, such as seal coats, when determining the year. Only consider major improvements. If the year is unknown, enter "1900."

### *Existing Traffic Lanes*

Enter the number of existing traffic lanes that are available for normal use. Do **not** include turn lanes or lanes that are for peak-hour use only.

### *Existing Parking Lanes*

Do **not** complete this field for rural or suburban segments. For **Urban** design segments enter the number of parking lanes, **including** the number of lanes used for off-peak hour parking.

### *Existing Lane Description*

Enter the appropriate number from the drop-down list to denote whether the roadway is:

- 1 Not Divided
- 2 Divided
- 3 One-Way

***Existing Storm Sewer***

Enter the length of the existing storm sewer to the nearest hundredth of a mile. The length entered cannot exceed the length of the segment.

***Existing Traffic Signals***

Enter the number of intersections that have vehicular traffic control signals. When there are signals at an intersection that is shared with a State Highway or other State Aid Road, report this proportionately to the nearest hundredth of an intersection. When a segment break occurs at an intersection with signals, charge ½ (.5) to each segment.

***Present Condition***

Select the present condition from the drop-down list.

Any reinstated needs segment must indicate some form of deficiency. In other words, reinstated segments cannot be listed as adequate.

Refer to the State Aid Manual, section 5-892.200 to determine which deficiencies to report if the condition is not adequate.

**The present conditions are:**

- 1 Adequate

***Deficiencies:***

- 2 Cross Section
- 3 Design Speed
- 4 Structure
- 5 Cross Section & Design Speed
- 6 Cross Section & Structure
- 7 Design Speed & Structure
- 8 Cross Section, Design Speed & Structure

***Termini Location***

This is a required field.

**Enter this information as clearly as possible. Include trunk highways, other County State Aid Highways, county roads, city streets, etc. The descriptions of the termini locations must correspond to the direction in which the segment numbers are assigned. This information appears in the Termini Field located on the top left of the screen.**

## Traffic Screen

Figure 22 Traffic Screen

### ***Present Traffic***

The present traffic value comes from the latest approved traffic map. The highest ADT (Average Daily Traffic) consistent with adjoining segments is to be used. The traffic counts are updated by the State Aid Group when they are received from the Mn/DOT Traffic Analysis Office.

Leave this item blank when the segment is non-existing.

---

*Note: Do not make any changes to your traffic data when doing your normal update. Traffic counts will be updated by the CSAH Needs Unit if your county was counted in the previous year.*

---

### ***Year of Count***

Enter the year the most recent traffic count was taken.

Leave this item blank when the segment is non-existing.

### ***Projection Factor***

A standard projection factor for each county is listed in the State Aid Manual and also the CSAH virtual web page. If the use of the standard factor does not properly reflect the traffic projection, the projection factor may be revised, but only with the approval of the District State Aid Engineer.

Leave this field blank when the segment is non-existing.

### ***Projected Traffic***

This item is to be reported only if no present traffic figures are available such as in the case of a non-existing road. If a projected figure is necessary, it should reflect the traffic anticipated in 20 years. This projected figure must be approved by the District State Aid Engineer.

## Proposed Screen

ORIGINAL		REVISED	
RURAL/EXISTING RURAL	2	2	RURAL/EXISTING RURAL
Ft	24	24	Ft
Number of	32	32	Number of
Number of	2	2	Number of
Number of	0	0	Number of
NOT DIVIDED	1	1	NOT DIVIDED
130 %	8	8	130 %
ROLLING	2	2	ROLLING

Figure 23 Proposed Screen

### Proposed Design

Four basic classifications, based on the relationship between proposed and existing design are used in the reporting of construction needs on the State Aid Systems. Using the following criteria, indicate the classification of each segment from the drop-down list.

*Note: Non-existing roads are normally limited to a proposed rural or sub-urban design unless a higher design has been approved by the District State Aid Engineer. Also, roads are considered an urban design if they have curb and gutter.*

### Classifications:

- 2 **Rural/Existing Rural**- consists of the existing rural design roadways that will remain rural design if and when they are reconstructed.
- 3 **Sub-Urban** – includes the existing rural design or non-existing roads that are proposed to be upgraded to an urban design, but restraints prohibit the completion to be accomplished by anything more than stage construction. The sub-urban design has been created primarily to establish grade lines and to provide additional widths in areas where future development will take place and will require urban design when it occurs. The sub-urban design allows for an economical placement of storm sewer and utilities.

*Note: Sub-Urban design is a "needs only" design and shouldn't be confused with the actual design, which would be an urban design with stage construction.*

- 4 **Urban-Existing Non-Urban** – used when urban design is proposed and the existing design is rural or sub-urban. The urban design may be used where development is sufficient to warrant its use.
- 5 **Urban/Existing Urban** – provides for the reconstruction of an existing urban design while retaining its urban characteristics.

***Proposed Surface Width***

**Proposed Rural or Sub-Urban Design** – Enter the proposed surface width as listed in the appropriate rural design table consistent with the segment’s projected traffic. If the present condition is “adequate” enter the same value as the existing surface width. This width cannot exceed the design chart specifications.

**Proposed Urban Design** – Enter the proposed surface width listed in the appropriate urban design table consistent with the segment’s projected traffic. If the present condition is “adequate” enter the same value as the existing surface width. This width cannot exceed the design chart specifications.

---

*Note: If the **Present Condition** field does not equal 1) Adequate, maximum width allowed for both rural and urban design is the width shown in the appropriate rural or urban design table that is consistent with the projected traffic volume. The tables are located in the State Aid Manual section 5-892.810. Only in extreme or unusual conditions where right-of-way or topographic limitations prevent construction of the appropriate width found in the design table, should a lesser width be entered in the Needs Study application. All substandard widths must be approved by the State Aid Engineer. If recently constructed widths are less than design table widths, the constructed widths should be entered.*

---

***Proposed Roadbed Width***

**Rural and Sub-Urban Design** – Enter the proposed width of the roadbed from the edge to edge of the shoulders as listed in the appropriate rural design table consistent with the segment’s projected traffic. If the present condition is “adequate” enter the same value as the existing roadbed width. This width cannot exceed the design chart specifications.

**Urban** – Enter the proposed width of the roadbed from the face to face of the curbs. This is the same as the proposed surface width for urban design

---

*Note: The same limitations apply to the roadbed width.*

---

***Proposed Traffic Lanes***

Enter the number of proposed 12 foot traffic lanes.

***Proposed Parking Lanes***

Only enter the number of proposed parking lanes if the proposed road is for an urban design. Include the lanes used for off peak-hour parking in your entry.

Standard width is 10 feet, but 8 feet are allowed with approval from the District State Aid Engineer.

***Proposed Lane Description***

The proposed lane description indicates whether the lanes are to be:

- 1 Not Divided**
- 2 Divided**
- 3 One Way**

---

*Note: A one-way road or street must have a corresponding State Aid road or street that is designated as one-way with the traffic flow going in the opposite direction.*

---

***Subgrade Factor***

Enter the appropriate soil factor from the drop-down list indicating the predominant soil classification for the proposed sub grade. Any change in the soil factor must be approved by the District State Aid Engineer (DSAE).

Subgrade factors can be:

**1—50**

**3—75**

**5—100**

**8—130**

***Terrain***

Enter the specific type of terrain from the drop-down list as it influences the construction of the roadway:

**1 flat**

**2 rolling**

**3 rugged**

## Grading Screen

**CSAH - Needs Study**

County Number: 07 BLUE EARTH  
 Control Section: 601  
 Segment Number: 020  
 Termini Location: TH 30 TO CSAH 18

SEGMENT INCLUDES: Structures: 1 Railroad Crossings: 0

SEGMENT STATUS: Roadway Data: ORIGINAL Structure Data: ORIGINAL Railroad Data: Validated

Roadway Data | Structure Data | Railroad Data | Segment Selector: [Navigation Buttons]

Exist ID 1 | Exist 2 | Traffic | Proposed | Grading | Base | Surface&Shoulders | Misc.Items | Funds | Comments

ORIGINAL		REVISED	
COMPLETE	1	Grade Classification	1
	0	Ft of Widening	0
	39610	Cost per Mile	39610
NONE	0	Storm Sewer	0
Miles	0.00	-Complete	0.00 Miles
Miles	0.00	-Partial	0.00 Miles

Save | Copy | Validate Segment | Add New | Clear | Delete | OK | Cancel

Figure 24 Grading Screen

### Grade Classification

Enter the type of grading necessary for the construction of the road segment from the drop-down list. If the Present Condition field is 1 (Adequate), this field must be 0 (None).

The drop-down menu options are:

- 0 None
- 1 Complete
- 2 Widen
- 3 Minor

### Feet of Widening

If grade widening (2) is entered in the GRADE CLASSIFICATION field, enter the number of feet of widening required to meet standards in this area. Otherwise, leave the field blank.

### Cost per Mile

Enter the grading cost per mile to the nearest dollar. The cost is computed from the "Rural or Urban Grading Cost Estimate Sheet" that is submitted to the District State Aid Engineer.

***Storm Sewer***

**Rural or Sub-Urban design segments** – Storm sewer needs are not eligible.

**Urban design segments** – Enter the code corresponding to the type of storm sewer required from the drop-down list.

**The drop-down menu options are:**

- 0 None**
- 1 Complete** – enter for sections requiring storm sewer where none exists, for sections of existing storm sewer that must be replaced, or for existing combination sanitary and storm sewer that must be replaced. If there is an existing storm sewer, complete storm sewer needs must have DSAE approval.
- 2 Partial** – enter when adjustments (partial) are needed for sections having existing storm sewer that is adequate in size and structure, but due to street widening or construction, the catch basins must be moved and the leads extended. Enter only when the previous years entry in the Storm Sewer field is not blank or 0 (Zero).
- 3 Complete and Partial** – enter when the need for storm sewer construction is a combination of Complete and Partial.

Enter the length of complete and/or partial storm sewer miles to the nearest hundredth of a mile.

---

***Note:*** *Under no condition can the total length of complete storm sewer and/or partial storm sewer exceed the total length of the segment.*

---

## Base Screen

Figure 25 Base Screen

### ***Base Classification***

Indicate the type of base construction needed from the drop-down list. If the present condition is 1 (Adequate) or, on proposed rural segments, the projected traffic is less than 150, than this field is 0 (None).

**Enter the type of base construction needed:**

- 0 None**
- 1 Complete**
- 2 Widen**
- 3 Strengthen**

### ***Feet of Widening***

If the base is to be widened, enter the number of feet to be widened.

### ***Strengthening***

If the base classification is to be 3 (Strengthen), you must enter a value in at least one of the following fields. Indicate the tons per mile of each type of base (Gravel or Bituminous) material that is required from the design table.

#### ***Gravel***

If the base is to be strengthened with gravel, enter the quantity to the nearest ton.

#### ***Bituminous***

If the base is to be strengthened with bituminous, enter the quantity to the nearest ton.

## Surface &amp; Shoulder Screen

Figure 26 Surface and Shoulder Screen

***Surface Classification***

Indicate the type of surfacing required from the drop-down list. Because of the 25 year needs study concept, each segment must have a surfacing need, either initial or additional, regardless of the age or condition of the existing surface. If present condition is 1 (Adequate) than this field must be 2 (Additional).

- 1 **Initial**
- 2 **Additional** – enter the additional surfacing classification if the road is adequate or if only widening needs are required.
- 3 **Bridge Segment Only** – Only enter if the entire segment reported is a bridge where roadway needs items would not apply.

***Surface Widening***

**Urban Design Only** -- Surface widening is limited to existing urban design roadways where the existing surface is in good condition and the only deficiency is the width. This field is used when the existing surface is utilized together with the new widened surface and an additional mat is placed over the old and the widened surface.

Use the drop-down list if the **Proposed Design** field has a value of **4** or **5 (Urban)**. If the **Proposed Design** field has a value of **2** or **3 (Rural)**, then this field must be **2 (No)** from the drop-down list.

- 1 **Yes**
- 2 **No**

***Feet of Widening***

The feet of surface widening is equal to the proposed surface width minus the existing surface width. If you entered **1 (Yes)** in the Surface Widening field, enter the amount of widening to the nearest foot.

***Shoulder Classification***

**Rural or Sub-Urban Only**—Enter the type of shouldering construction required from the drop-down list. If the **Projected Traffic** field is less than 150, this field must be 0.

- 0 None**
- 1 Complete** – enter for a segment that is drawing initial surfacing needs.
- 2 Reshoulder** – enter when additional surfacing is indicated.

## Misc Items Screen

The screenshot shows the 'Misc Items Screen' for a project named 'CSAH - Needs Study'. The interface includes the following elements:

- County Number:** 07 (BLUE EARTH)
- Control Section:** 601
- Segment Number:** 020
- Termini Location:** TH 30 TO CSAH 18
- SEGMENT INCLUDES:** Structures: 1, Railroad Crossings: 0
- SEGMENT STATUS:** Roadway Data: ORIGINAL, Structure Data: ORIGINAL, Railroad Data: , Validated:
- Segment Selector:** Navigation arrows (left, right, first, last)
- Table:**

ORIGINAL		REVISED	
No	2	Rt of Way Needed	2
Ft	100	Prop Rt of Way Width	100 Ft
Linear Ft	0	Curb & Gutter Constr	0 Linear Ft
MAJOR COLLECTOR	5	Federal Func. Class	5 MAJOR COLLECTOR
- Toolbar:** Save, Copy, Validate Segment, Add New, Clear, Delete, OK, Cancel

Figure 27 Misc. Items Screen

### ***Right-of-Way Needed***

Indicate whether or not additional R/W is needed on the segment with a 1 (Yes) or a 2 (No) from the drop-down list. On an adequate segment no additional R/W is allowed.

- 1 **Yes** – enter if additional right-of-way is needed
- 2 **No** - enter if the segment is adequate or there is no additional roadwork needed

### ***Proposed Right-of-Way Width***

Enter the proposed right-of-way width to the nearest foot. If no additional R/W is required or allowed, or the segment is adequate, this width is auto filled from the existing R/W width field.

### ***Curb and Gutter Construction***

**Urban Design Only** – Enter the number of linear feet of concrete curb and gutter to be constructed. If the roadway is undivided the number of feet cannot exceed twice the segment length times 5,280. If the roadway is divided the number of feet cannot exceed four times the segment length times 5,280.

***Federal Functional Class***

This is a required field.

Enter the code for the Federal Functional Classification from the drop-down list. The code is taken from the Federal Functional Classification map.

- 01 Principal Arterial**
- 02 Minor Arterial**
- 05 Major Collector**
- 07 Minor Collector**
- 09 Local**
- 41 Principal Arterial in Urban Boundary**
- 42 Minor arterial in Urban Boundary**
- 45 Collector in Urban Boundary**
- 49 Local in Urban Boundary**

## Funds Screen

Figure 28 Funds Screen

### *Type of Construction Funds*

The **Type of Construction Funds** is a combination of the **State Aid Funds**, **Remaining Needs** and **Local Funds** fields, which are described below. The input in each of these fields makes up the **Type of Construction Funds** code. For example, in Figure the **Type of Construction Funds** code is 420. The first 4 is from the **State Aid Funds** field, the second 2 is from the **Remaining Need** field, and the 0 is from the **Local Funds** field.

### *State Aid Funds*

The first digit corresponds to state aid. Select the code for State Aid funds from the drop-down list. If construction was prior to 1965, leave this field blank.

- 0 None
- 1 Complete Construction with State Aid Funds
- 2 Graded with State Aid Funds
- 3 Base Constructed with State Aid Funds
- 4 Surface Construction with State Aid Funds
- 5 Grading and Base with State Aid Funds
- 6 Grading and Surface with State Aid Funds
- 7 Base and Surface with State Aid Funds

***Remaining Needs***

The second digit corresponds to "remaining needs." Select the code for from the drop-down list. If construction was prior to 1965, leave this field blank.

- 0 None
- 1 Resurfacing Needs Only
- 2 Remaining Needs Approved
- 3 No Grading Needs
- 4 No Base Needs
- 5 No Grading or Base Needs

***Local Funds***

The third digit corresponds to local funds. Select the code for Local Funds from the drop-down list. If construction was prior to 1965, leave this field blank.

- 0 None
- 1 Complete Construction with Local Funds
- 2 Graded with Local Funds
- 3 Base Constructed with Local Funds
- 4 Surface Constructed with Local Funds
- 5 Grading and Base with Local Funds
- 6 Grading and Surface with Local Funds
- 7 Base and Surface with Local Funds

***Latest Year State Aid Funds***

Only enter if an entry was made in **State Aid Funds**. Enter the most recent year (four digits) in which state aid funds were used on this segment.

***Special Messages***

Special messages describe needs restrictions. Enter the appropriate code from the drop-down list.

- 1 **THTB** – Miles only. No Needs. Eligible for 100% Turnback Funds
- 3 **THTB** – Reconstructed with Turnback Funds
- 4 **THTB** – Constructed with T.H. Funds before release. Approved Needs only
- 5 **THTB** – Not eligible for Turnback Funds

## Comments Screen

CSAH - Needs Study

County Number: 07 BLUE EARTH

Control Section: 601

Segment Number: 020 End

Termini Location: TH 30 TO CSAH 18

SEGMENT INCLUDES: Structures: 1 Railroad Crossings: 0

SEGMENT STATUS: Roadway Data: ORIGINAL 0 Structure Data: ORIGINAL Railroad Data: Validated:

Roadway Data Structure Data Railroad Data Segment Selector: |< < > >|

Exist ID 1 | Exist 2 | Traffic | Proposed | Grading | Base | Surface&Shoulders | Misc.Items | Funds | Comments

ORIGINAL REVISED

Comments

Save Copy Validate Segment Add New Clear Delete OK Cancel

Figure 29 Comments Screen

### Comments

Enter any comments you have regarding the Roadway Data funding, project numbers, whether a roadway is shared, etc. The comments you enter will also be printed out on the Hardcopy Segment Report.

# Structure Data

## Structure Reporting Limitations

Only structures with an existing and/or proposed span length of 10 feet or more are to be reported in the Structure Data section of the application. Smaller structures are considered special drainage and should be reported as part of the grading cost of the road segment.

When revising a structure, the Major Structure Data screens may be accessed at any time by clicking on the tab for the specified structure type. Major Structure Data includes the geometric dimension of the structures and the associated data that is used to calculate structure costs.

When entering a new structure, the Exist Cond 1, Exist Cond2, and Prop Constr screens must be completed before you can access the Bridge, Box Culvert, or Structural Plate Arch screens. If the present condition of the structure has been rated as adequate, you will **not** be able to access Bridge, Box Culvert, or Structural Plate Arch screens.

To access structure data, click the Structure Data tab.



Figure 30 Structure Data Tab

## Choose Structure Screen

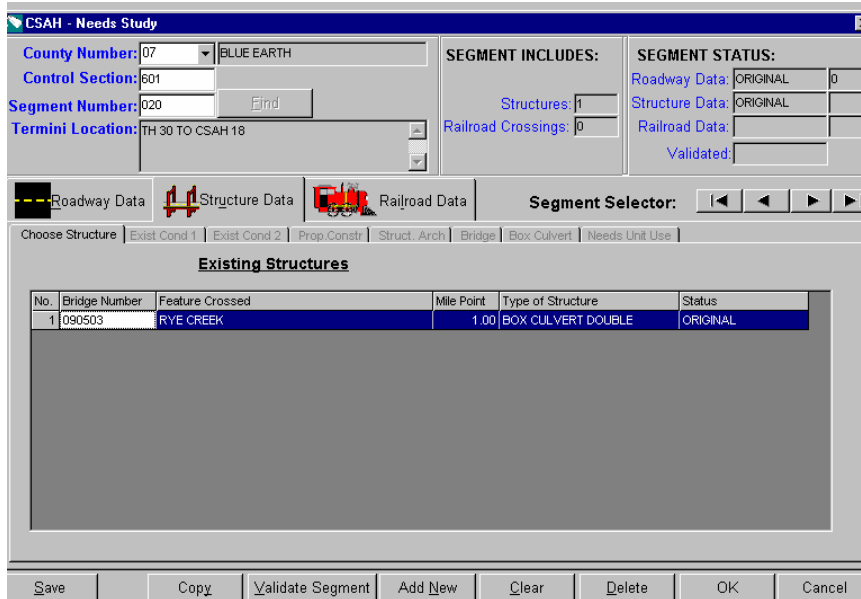


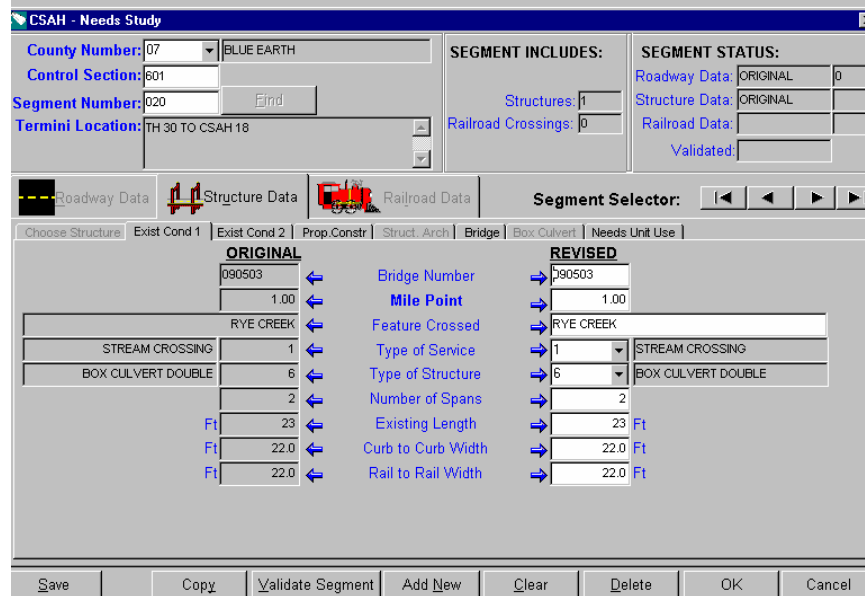
Figure 31 Choose Structure Screen

**Choose Structure**

A list of all the structures within the segment are displayed on the Choose Structure tab with the bridge number, feature crossed, mile point, type of structure, and status. Click on a structure in order to select it to view, revise or remove its data. Click the Add New button located at the bottom of the Data Collector screen to add a new structure

After selecting a structure by single-clicking, the **Exist Cond 1** screen displays.

**Exist Cond 1 Screen**



**Figure 32** Exist Cond 1 Screen

**Bridge Number**

Enter the bridge number in the space provided. Leave this item blank if you are not certain of the number.

**Mile Point**

This is a required field.

Enter the distance measured in hundredths of a mile from the beginning of the segment to the structure. The mile point distance must NOT exceed the segment length.

**Feature Crossed**

This is a required field.

Enter the name of the stream, road, or railroad that the structure crosses.

***Type of Service***

Enter the type of service the existing structure provides from the drop-down list.

- 1 Stream Crossing
- 2 Highway over Railroad
- 3 Railroad over Highway
- 4 Highway Separation
- 5 Highway Interchange
- 6 Railroad Grade Crossing
- 7 Highway Grade Crossing
- 8 Other

***Type of Structure***

Enter the type of existing structure from the drop-down list.

- 1 Bridge
- 3 Structure Plate Arch
- 4 Other
- 5 Box Culvert Single
- 6 Box Culvert Double
- 7 Box Culvert Triple
- 8 Box Culvert Quad

***Number of Spans***

Enter the number of existing spans. This field must be completed, except when the **Bridge Number** field is 0 or left blank.

***Existing Length***

Enter the length of the existing structure to the nearest foot. If the structure is a bridge, the length is measured from backside to backside of abutments. If the structure is a box culvert or an arch, the length is measured as the length of the barrel to the nearest foot.

***Curb to Curb Width***

If the structure is a bridge, the width is measured from face of curb to face of curb, to the nearest tenth of a foot. If the structure is a box culvert, an arch culvert or a pipe culvert and curb width does not apply, report the shoulder-to-shoulder width of the roadway.

***Rail to Rail Width***

The rail to rail width must be greater than or equal to the curb to curb width. If the structure is a bridge enter the distance from inside face of railing to inside face of railing to the nearest tenth of a foot. If the structure is a box culvert, an arch culvert or a pipe culvert and railing width does not apply, report the shoulder-to-shoulder width of the roadway.

## Exist Cond 2 Screen

Figure 33 Exist Cond 2 Screen

***Sidewalks***

Enter the number of sidewalks from the drop-down list:

- 1 If there is a sidewalk on only one side
- 2 If there is a sidewalk on both sides.

***Sidewalk Width***

Enter the total width of the sidewalk on the bridge to the nearest foot.

***Traffic Lanes***

Enter the code for number and type of traffic lanes from the drop-down list.

- 1 2 Lanes – Single Bridge
- 2 2 Lanes – One of Twin Bridges
- 3 4 Lanes – Not Divided
- 4 4 Lanes – Divided
- 5 Other – If you select Other, enter a description in the Comments field on the Prop Constr tab

***Vertical Clearance***

Enter the vertical clearance for vehicles to the nearest tenth of a foot. Leave this field blank if there are no overhead restrictions.

***Year Built***

Enter the year the structure was built (letting date of project). If unknown, enter 1900.

***Placement***

Enter the placement for the structure from the drop-down list:

- 1 **Square** – If the structure location is square (e.g. perpendicular to the centerline).
- 2 **Skew** – If the structure location is skewed to the centerline of the road

***Legal Load***

Enter the legal load requirements from the drop-down list:

- 1 **Yes** – if the structure meets current legal load requirements
- 2 **No** – if the structure does not meet current legal load requirements

***Tons Posted***

If the structure's load capacity is restricted enter the tons posted for a single axle vehicle..

***Present Condition***

Enter the code that describes the condition of the existing structure from the drop-down list. If this field is 1, 19, 20, 21, or 22 you will **not** be able to access the Prop Constr, Bridge, Box Culvert, or Struc Plate Arch screens. To select a deficient condition (codes 2-17), it must be 35 years or more since the YEAR BUILT entry. Select the type of deficiency that closest describes the deficiency and move on to the Proposed Construction Screen.

1 Adequate

***Deficiencies:***

2 Deficient in Width

3 Deficient in Structure

4 Deficient in Vertical Clearance

5 Deficient in Waterway Area

6 Deficient in Width, Structure

7 Deficient in Width, Structure, Vertical Clearance

8 Deficient in Width, Structure, Vertical Clearance, Waterway Area

9 Deficient in Width, Structure, Waterway Area

10 Deficient in Width, Vertical Clearance, Waterway Area

11 Deficient in Width, Waterway Area

12 Deficient in Width, Vertical Clearance

13 Deficient in Structure, Vertical Clearance

14 Deficient in Structure, Vertical Clearance, Waterway Area

15 Deficient in Structure, Waterway Area

16 Deficient in Vertical Clearance, Waterway Area

17 No Existing Structure

19 No Needs – Eliminated by Construction

20 No Needs – Exception to Study

21 Inadequate but Not Eligible

22 THTB – Not Eligible for Needs

## Proposed Construction Screen

Figure 34 Proposed Construction Screen

### ***Placement***

This is a required field.

Enter the placement for the structure from the drop-down list:

- 1 **Square** – If the structure location is to be placed square to the centerline of the road.
- 2 **Skew** – If the structure location is to be skewed to the centerline of the road

### ***Service Type***

This is a required field.

Enter the type of service that the proposed structure will provide from the drop-down list.

- 1 Stream Crossing
- 2 Highway over Railroad
- 3 Railroad over Highway
- 4 Highway Separation
- 5 Highway Interchange
- 6 Railroad Grade Crossing
- 7 Highway Grade Crossing
- 8 Other

***Structure Type***

This is a required field.

Enter the code for the type of structure to be constructed from the drop-down list.

- 1 Bridge
- 3 Structural Plate Arch
- 4 Other – If you select this option, enter a description of the structure in the Comments field.
- 5 Box Culvert Single
- 6 Box Culvert Double
- 7 Box Culvert Triple
- 8 Box Culvert Quad

***Traffic Lanes***

This is a required field.

Enter the code for number and type of traffic lanes from the drop-down list.

- 1 2 Lanes – Single Bridge
- 2 2 Lanes – One of Twin Bridges
- 3 4 Lanes – Not Divided
- 4 4 Lanes – Divided
- 5 Other – If you select this option, enter a description of the traffic lanes in the Comments field.

***Type of Work***

This is a required field.

Enter the code for the type of work proposed from the drop-down list.

- 1 Replace, Same Site
- 2 Replace, New Site
- 3 New Structure
- 4 Major Recondition – If you select this option, enter a description of the work details in the **Comments** field.

***Bridge Widening Only***

Enter the number of feet to the nearest tenth of a foot that the bridge is to be widened. Leave this field blank if the bridge is not to be widened. The needs unit will calculate the bridge widening cost and enter it in the appropriate area.

***Comments***

Enter any comments relating to any structure data in this field

## Structural Plate Arch Screen

Figure 35 Structural Plate Arch Screen

### ***Feet***

Enter the arch span in feet.

### ***Inches***

Enter the number of remaining inches in the span.

### ***Number of Arches***

Enter the number of arches in the proposed construction.

### ***"Y" Depth***

For rural design, enter the distance from the finished roadbed to the floor of the arch. For proposed urban design, leave this field blank.

### ***Existing Length***

If the existing structure is to be lengthened, enter the existing barrel length of the structure.

### ***Proposed Length***

For urban design, enter the length of the new, proposed structure. For proposed rural design, leave this field blank.

### ***Length of Extension***

If the existing structure is to be lengthened, enter the length of the extension to be constructed.

### ***Finished Roadbed Width***

This is auto filled from the Proposed Roadbed Width on the Roadway Data Screen. This value can be entered manually.

### ***Calculate Structural Plate Arch Cost***

The needs unit will enter any necessary data needed to calculate the structural plate arch cost. The values used to calculate the structural plate arch costs are:

$X$  = the value entered the **Proposed Roadbed Width** field (in Roadway Data)

$Y$  = the value entered in the “**Y**” **Depth** field

*Number of Arches* = the value entered in the **Number of Arches(1)** field

*Cost per Linear foot* = the value entered in the **Cost/Lin Ft(3)** field, which is the cost per linear foot for the construction

For the Data Collector to automatically calculate the structural plate arch cost:

- 1 Enter a value in the **Number of Arches(1)** field.
- 2 Enter a value in the “**Y**” **Depth** field.
- 3 The system automatically enters  $X$  in the **Finished Roadbed Width (X)** field.  $X$  equals the width in feet of the channel, railroad tracks or roadbed under the proposed structure. This value can be overridden and entered manually.
- 4 Enter a value in the **Cost/Lin Ft(3)** field.

The formulas used to determine the total cost are:

For rural segments **Length** =  $X + 8Y$

For urban segments **Length** = Proposed length for urban segments

An extension to an already existing structure

**Length** = Length of Extension if existing structure is to be lengthened

**Number of Arches x Length x Cost per Linear Foot = Structure Plate Arch Cost**

## Bridge Screen

Figure 36 Bridge Screen

### *X - Width of Feature Crossed*

Enter the width, to the nearest foot, of the channel, railroad tracks, or roadway under the proposed structure. This field must be completed if the proposed length is not entered.

---

*Note: The proposed length will be computed automatically if the "X" and "Y" figures are entered. If "X" or "Y" is not known, enter the proposed length to the nearest foot in the **Proposed Value** field.*

---

### *Y - Low Steel of Feature Crossed*

Enter the distance in feet from the point of the low steel to one of the following:

- bed of the stream
- top of the railroad rail – 22 feet minimum
- finished surface of roadway – 16 feet minimum

---

*Note: The proposed length will be computed automatically if you have input values into the "X" and "Y" fields. If you do not know the value of "X" or "Y", enter the proposed length to the nearest foot in the **Proposed Value** field. If you enter the length in the **Proposed Value** field also enter an explanation in the Comments field located in the **Prop Const** screen*

---



---

*The State Aid Manual reference table for "X" and "Y" distances (Fig. B 5-892-820) may be of some assistance to you when these figures are reported.*

---

### *Length X+4(Y-2)+10*

**Length** =  $X + 4Y + 2$  is the formula used to calculate the length of the bridge.

**X** = the width of the feature crossed

**Y** = the low steel to the feature crossed.

This field is automatically calculated by the CSAH application.

### ***Sidewalks Urban Design***

For Urban designs only, if sidewalks are proposed, select the number of sidewalks from the drop-down list.

- 1 One Sidewalk
- 2 Both Sidewalks

### ***Number of Tracks***

If the proposed bridge is to be a railroad over a highway structure, enter the number of railroad tracks.

### ***Proposed Length***

If the fields X-Width of Feature Crossed and Y-Low Steel of Feature Crossed are left blank, enter the proposed length for the bridge in this field. If you enter proposed length, enter an explanation in the Comments field on the Prop Constr tab.

### ***Minimum Bridge Width***

If the Proposed Design field has a value of 2 or 3 (Rural), then:

$$\text{Bridge Width} = \text{Proposed Roadbed Width} + 6$$

If the Proposed Design field has a value of 4 or 5 (Urban), then:

$$\text{Bridge Width} = \text{Proposed Roadbed Width} + 2$$

### ***Calculate Bridge Cost***

The Needs Unit will enter any necessary data needed to calculate the bridge cost. The calculation for the cost of the bridge uses values entered in other fields, and the cost per square foot, which is entered by the needs unit. So, the fields in this area of the screen contain values, and are automatically calculated.

Below is a description of the values and formulas used to calculate the bridge costs:

#### **Sidewalks**

If the Proposed Design field (located under the Roadway Data tab) has a value of 2 (Rural/Existing Rural) or 3 (Sub-urban), the value of the **Sidewalks** field is automatically set to 0.

The value of Sidewalks is also dependent on the value of the Sidewalks Urban Design field:

If the value of the **Sidewalks Urban Design** Field is 1 (one side)

$$\text{Sidewalks} = 5\text{ft.}$$

If the value of the **Sidewalks Urban Design** Field is 2 (both sides)

$$\text{Sidewalks} = 10\text{ft.}$$

If the Sidewalk Urban Design field is left blank

$$\text{Sidewalks} = 0$$

#### **Based on Projected ADT**

This field is auto filled with the value entered in the Projected Average Daily Traffic field located under the Roadway Data tab.

#### **Total Width Between Railings for (Computation)**

This is auto filled using the following formula:

$$\text{Total Width between railings for computation} = \text{Minimum Bridge Width} + \text{Sidewalks}$$

#### **Length**

This field is auto filled with the value of the Length  $X+4(2Y-2)+10$  field.

**Width**

This field is auto filled with the value of the Total Width between Railings for (Computation) field.

**Cost/Sq. Ft.**

The Needs Unit will update the unit price from the current screen board resolution.

**Bridge Cost**

This field is auto filled using the following formula:

$$\text{Length} \times \text{Width} \times \text{Cost/Sq. Ft.}$$

**RR Over Highway: Length**

If the value of the **Proposed Type of Service** field is 3) *Railroad Over Highway*, the value of this field is equivalent to the **Length** field.

**Cost/Linear Ft.**

Enter the unit price, which is located in the current Screen Board resolutions.

***Calculate Underpass Cost***

The calculation for the cost of a railroad over highway underpass is:

$$\text{Length} \times \text{Cost/Linear Foot.}$$

## Box Culvert Screen

Figure 37 Box Culvert Screen

### ***Height(H)***

Enter the height of the culvert barrel to the nearest foot.

### ***Width***

Enter the width of the culvert barrel to the nearest foot.

### ***"Y" Depth***

Enter the depth of the culvert, which is the distance from the finished roadbed to the floor of the culvert, to the nearest foot.

### ***Existing Length***

If requesting box culvert extension needs, enter the existing length of the culvert to the nearest foot.

### ***Proposed Length***

For urban design only, due to varying side slopes, enter the proposed length of the culvert to the nearest foot.

### ***Length of Extension***

For urban design only, due to varying side slopes enter the proposed length of the extension of the culvert to the nearest foot.

### ***Finished Roadbed Width(X)***

This field is auto filled from the Proposed Roadbed Width under the Roadway Data Screen. It can also be entered manually.

***Calculate the Box Culvert Cost***

The needs unit will enter any necessary data needed to calculate the box culvert cost.

For rural design only -- The needs unit enters the necessary data needed to calculate the box culvert costs. See below for a description of the values and formulas used to determine these costs.

Box culvert cost calculations use the following values:

***X*** = The number of feet of the existing roadbed width, located in the Roadway Data on the *ID Exist 1* screen.

***H*** = Culvert Height, the input in the Height(H) field on the current screen.

***Y*** = Y depth, the input in the “Y” Depth field on the current screen. This is the distance from the finished roadbed to the floor of the culvert

These values are used in the following formulas:

First, the length is automatically calculated with the following formula:

$$X + 8(Y - (H + 2))$$

Second, the Barrel Cost is automatically calculated with the formula:

$$\text{Length} \times \text{Cost/Linear Foot}$$

Last, the Box Culvert Cost is automatically calculated:

$$\text{Barrel Cost} + \text{End Section Costs}$$

This is based on the projected average daily traffic (ADT).

The CSAH Needs Unit enters the Cost/Ln. Ft. and Cost of End Sections field values.

## Needs Unit Use Screen

Figure 38 Needs Unit Use Screen

### *Needs Unit Use*

For a new or revised bridge, length and structure width will be filled in by the system from their corresponding fields entered on other screens.

The width, length, and total costs will be computed automatically when the cost per square foot is entered. The cost information comes from the Screening Board Resolution.

### *Structure Length*

Enter the length of the bridge to the nearest foot.

### *Structure Width*

Enter the width of the bridge to the nearest foot.

### *Bridge Widening Only*

The value in this field is auto filled from a corresponding field entered on another screen.

### *Bridge Widening Unit Cost*

The value in this field is entered by the Needs Unit from the current Screening Board Resolution.

### *Bridge Widening Only Cost*

This value in this field is auto filled using the following formula:

$$\text{Bridge Widening Width} \times \text{Structure Length} \times \text{Unit Cost}$$

***Cost ID***

From the drop-down list, select:

- 1 Complete – The total cost of the structure is the responsibility of this county.
- 2 Divided – The total cost is shared with another county.

***Percentage of Cost***

From the drop-down list, select the cost racial.

***Total Cost***

This cost is auto filled by calculation.

***Apportionment Cost***

This cost is auto filled by calculation.

***Override Cost***

---

# Railroad Data

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To access Railroad Data, click the Railroad Data tab.

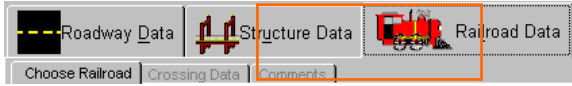


Figure 39 Railroad Data Tab

## Choose Railroad Structure Screen

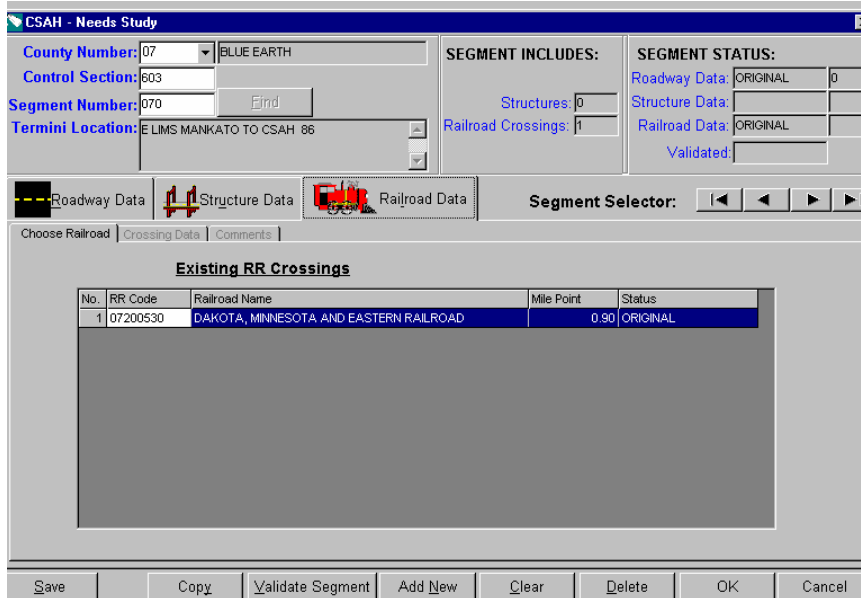


Figure 40 Choose Railroad Screen

A list of all the railroad crossings within the segment are displayed in a list on the Choose Structure tab with the number, railroad code, railroad name, mile point, and status. To select a railroad crossing, click anywhere on the railroad description. This allows you to view or revise or remove its data. You can also add a new structure on this screen by clicking the Add New button located at the bottom of the Data Collector screen.

## Crossing Data Screen

Figure 41 Crossing Data Screen

### ***Railroad Grade Crossing***

Select the railroad crossing number assigned by the Mn/DOT’s Office of Freight, Railroad and Waterways, or enter the name of the intersecting railroad from the drop-down list.

If unknown, leave this field blank. The first two digits are the county number, the next two digits are for the code assigned to the railroad company, and the last four digits are assigned by the Mn/DOT’s Office of Freight, Railroad and Waterways, but the last digit must be changed to 1, 2, or 3 respectively if the last digit is A, B, or C.

### ***Located at Mile Point***

This is a required field.

Enter the distance, in hundredths of a mile, from the beginning of the segment to the railroad crossing. The mile point distance cannot exceed the segment length.

### ***Mainline Tracks***

Enter the number of mainline tracks intersecting the roadway at the crossing.

### ***Other Tracks***

Enter the number of branch line, spur, or other tracks intersecting the roadway at the crossing, but **not** mainline tracks.

***Existing Protection***

Select the code for the type of existing protection that is currently located at this crossing from the drop-down list.

- 0 None
- 1 Signs Only
- 2 Signals Only
- 4 Signals and Gates

***Proposed Improvement***

Select the type of proposed improvement necessary at this crossing from the drop-down list. All proposed improvements include reflectorized pavement markings.

- 0 None
- 1 Signs Only
- 2 Signals Only
- 4 Signals and Gates

***Cost ID***

From the drop-down list, select:

- 1 **Divided** – cost is divided
- 2 **Complete** – cost is not divided

***Percentage of Cost***

Select the percentage of cost from the drop-down list.

***Total Cost***

The total cost for the railroad crossing is calculated to the nearest dollar.

***Apportionment Cost***

The apportionment cost for the railroad crossing is calculated to the nearest dollar.

## Comments Screen

CSAH - Needs Study

County Number: 07 BLUE EARTH

Control Section: 603

Segment Number: 070 Find

Termini Location: E LIMS MANKATO TO CSAH 86

SEGMENT INCLUDES: Structures: 0 Railroad Crossings: 1

SEGMENT STATUS: Roadway Data: ORIGINAL 0 Structure Data: Railroad Data: ORIGINAL Validated:

Roadway Data Structure Data Railroad Data Segment Selector: |< < > >|

Choose Railroad Crossing Data Comments

ORIGINAL COMMENTS REVISED

REVIEW OF CROSSINGS SHOWED THAT THIS ONE WAS NOT THE NEEDS SYSTEM

REVIEW OF CROSSINGS SHOWED THAT THIS ONE WAS NOT THE NEEDS SYSTEM

Save Copy Validate Segment Add New Clear Delete OK Cancel

Figure 42 Comments Screen

### *Railroad Data Comments*

Enter any comments regarding the railroad data. For example, you can enter comments about funds used for construction or special messages.

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# How Do I...?

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## Access Segment Data

1. Select **Needs Study > Data Collector** from the menu bar.
2. From the drop-down list, double click on the **County** you want.
3. Enter the **Control Section** number, or click **Find** and double click on the segment you want.  
If you enter the control section number, you can enter the Segment Number or click Find and double click on the segment you want.

## Add New Segment

1. Select Needs Study > Data Collector from the menu.
2. From the drop-down list, double click on the County you want.
3. Enter the Control Section number.
4. Enter the Segment Number.
5. Click **Find** to see if the record exists. If the record exists, the fields will be populated with the existing data. If the record does not exist, you will receive an error message. Click **OK**.
6. Click the **Add New** button to add a new record.
7. Once you have the record for the segment you want, proceed to enter the data in the appropriate fields.

## Add a New Structure

1. Select **Needs Study > Data Collector** from the menu bar.
2. Select the **County Number** from the drop-down list
3. Select the **Control Section** and **Segment Number** from the drop-down lists or from the list displayed when you press **Find**.
4. Select the **Structure Data** tab
5. Click **Add New**
6. Enter the **Mile Point** on the **Exist Cond 1** tab
7. Enter the **Feature Crossed** on the **Exist Cond 1** tab
8. Enter the **Present Condition** on the **Exist Cond 2** tab. The present condition must **not be 1-adequate**
9. Select the **Prop Constr** tab.
10. Enter the data in the appropriate fields for the new structure. When you enter the **Structure Type**, the label on the tab for that type of structure turns black, and allows you to access it.
11. Click the structure type tab you are adding.
12. Enter the appropriate data in the corresponding fields for that structure type.
13. When you have finished, press **Save** for save your data.
14. To validate the segment data, press **Validate Segment**.

## Change Password

1. Select **Administration > Change Password** from the menu bar.
2. Enter your current password in the **Old Password** field
3. Enter your **New Password**. The new password must be at least 5 characters, but no more than 15.
4. Enter your new password again in the **Verify New Password** field.
5. Click **OK** to save your new password.

---

***Note:** When you change your password, you cannot use a password that you have previously used.*

*If you enter your password incorrectly three times, you will be locked out of the Needs Study application. You will need to have your password reset by the system administrator.*

---

## Get Help and Information for a Field or Button

### To get help and information for a specific field:

1. Click the mouse over the field.  
The cursor flashes in the field you have selected.
2. Press the **F1** key.  
The help system launches and the help file for the field displays.
3. Press the **close** button on the help file system to close it.

### To get help and information for a specific button:

1. Place the pointer over the button.
2. Press the **F1** key.  
The help system launches and the help file for the field displays.
3. Press the **close** button on the help file system to close it.

## Revise Segment Data

1. Select **Needs Study > Data Collector** from the menu bar. The Data Collector screen displays.
2. From the drop-down menu, double click on the **County** you want.
3. Enter the **Control Section** and **Segment Number**, or click **Find** and double click on the segment you want.
4. Enter the revised data in the appropriate fields.
5. When you are finished entering the data for the segment, click **Validate Segment** to ensure that all the data entered meets all the requirements for submission.

## Submit County Data

After you have entered all the SALT Needs data for the county, you must submit the data to change the status so the next level can enter data.

### To submit the data:

1. Select **Administration > Submit County** from the menu bar.
2. Click on the county you want to submit to highlight it.
3. Click **Submit**.

## Undelete a Segment

If you have deleted a segment that was created one year or more prior, you can undelete it.

### To undelete a segment:

1. Click the **Save** button.  
The segment is undeleted.

## Use of Bolded Fields

Bolded field names are for fields that must contain data. In other words, they are required fields. If any of these fields are left blank, you will not be able to save your data. If you do try to save your data and a required field does not contain a value, an error message will display.

## Use Drop-Down Lists

The drop-down lists provide a list from which you can make a selection.

1. To select a line item, double click on the line.
2. To close a list without making a selection, press the **Esc** key.

## Validate County Data

After you have entered all the SALT Needs data for the county, it is recommended you validate all the county data one last time before submitting it.

### To validate the data:

1. Select Administration > Validate County from the menu bar.
2. Click on the county you want to validate to highlight it.
3. Click Validate.

## View County Processing Status

Use this screen to view the status of your area's SALT Needs entry. The status indicates where in the cycle the request is located.

For district and county users, the **District** field is set to the district to which you have access and locked. For county users, the **County** field is set to the county to which you have access and locked.

### To view county processing status:


1. Select Administration > View County Process Status from the menu bar.
2. View the Processing Status for the county.

The codes are:

- C* – City/County
- D* – DSAE (District State Aid Engineer)
- N* – Needs Unit
- F* – Finished

3. Click Cancel when you are finished viewing the status.

## View Revised Data

Data that has an "R" next to it is data that is revised. This is the revised indicator: 

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