

Chapter 5

Checking an Input File for Errors

Once an HEC-2 input data file has been developed, the data should be checked for format errors and possible input errors. The HEC-2 program provides input data checks; but if there is a fatal error, the program will stop. If there are several fatal data errors, it would require several attempts with HEC-2 before each error is found. Therefore, the input data file should first be checked with the EDIT2 program.

5.1 Purpose of EDIT2 Program

The EDIT2 program will process an entire HEC-2 input data file and provide a list of all the data errors found. Not only does the program identify fatal errors, it also identifies data inconsistencies and possible input errors.

The EDIT2 program will also process free-format data and create a fixed-format file, as described in Section 4.2. The fixed-format data are written to a file (TAPE10), which can be renamed and used for subsequent processing. Generally, it is easier to read and work with the fixed-format file because the data are all in their record fields and line up in columns.

5.2 EDIT2 Program Execution

The EDIT2 program can be conveniently run from MENU2. Move the cursor to "**3. Run HEC2**", press the **<SPACE BAR>** until the line indicates **RUN EDIT2**, and then press **<ENTER>**.

The EDIT2 program uses the HEC-2 input data file as its input; no additional input is required. There are three control variables that can be changed by using the optional ED card (see HEC-2 Input Data Description, Appendix VII). The ED card must be the first card in the data file. With it, you can: (1) suppress the listing of the input data, (2) set the column width of the output to 80 without carriage control (default 132), and (3) change the range of elevation difference (default 150) that is used to check for possible errors in input elevations for cross sections. If the difference in elevation in a cross section exceeds the test value, a message is printed indicating a possible input error. If you have an eighty-character printer, you may want to use the ED card to set the EDIT2 output to eighty.

The HEC-2 input data listing (unless suppressed) and error messages are written to an output file. It is more convenient to direct the output to disk via an output file name; MENU2 will transfer the defined input and output filenames. Then, when EDIT2 is finished, press a key and MENU2 will display the output file using program LIST. If there are error messages, you can print them from LIST by turning on the print option **<P>**. The screen display will be sent to the printer. Press **<X>** or **<ESC>** to exit program LIST and return to MENU2. The entire output file can be sent to the printer from MENU2 by pressing the space bar to toggle to "**4. Display output to printer**" and pressing **<ENTER>**. Also, LIST is useful when reviewing the input file because it will display illegal characters that may be in the file.

To execute the EDIT2 program as a separate program, at the DOS prompt enter:

EDIT2 INPUT="filename" OUTPUT="filename"

where: "filename" = the input and output filenames
e.g., HEC205.DAT for input, and HEC205.OUT for output

use: OUTPUT = CON for screen
PRN for printer

This assumes that the program and data are in the current default drive. Otherwise, also indicate the proper drive for the program and data. If the input and/or output filenames are not given, the program will request the name of the file, in response, enter the filename.

5.3 Types of Data Checks Performed

There are three basic levels of data checks and error messages provided by the EDIT2 program: **ERROR, CAUTION, and NOTE.**

ERROR messages are provided for those errors that are definitely wrong and probably will stop the HEC-2 program or cause erroneous results. **CAUTION** messages are provided when there may be an error because the data are inconsistent with typical applications of the program. These checks cannot be absolute because there may be situations where the input data are correct. **NOTES** are mostly informational to alert the user to some data entry that may be inconsistent or different than expected. Notes do not necessarily mean the data entry is wrong.

5.4 Error Messages Provided

The program provides numerous checks, and the messages are, hopefully, complete enough to focus the user on the source of the problem. There is no separate list of error checks and messages. The user must interpret the information based on the input data. If some messages do not make sense, correct the ones that do and check the data again.

The general format for the messages is: **Section number - Error type - Card identifier - Message.** (e.g., 51925.000 - NOTE - GR RECORD - STA = 260.000 MINIMUM ELEVATION NOT WITHIN CHANNEL) Generally, the minimum elevation of a cross section would be within the channel. For this section, the minimum elevation is at station 260, which is not between the left and right banks. This may be an error or it may be what the user wants. Obviously, only the person developing the data can make the final determination.

Often the message will focus on the variable that appears to be the problem source (e.g., 51500.00 - NOTE - QT RECORD - NUMQ = 8 DOES NOT EQUAL NUMBER OF Q READ = 7). If you are not familiar with the variable, refer to the HEC-2 Input Description. Review the card description, variable definition and input description. Usually the variable description will be sufficient to understand the error message. In the example above, the NUMQ variable defines the number of flow values, which was given as eight. However, the QT card only had seven flow values defined.

5.5 Correcting Input Data Errors

When **CARD OUT OF ORDER** error messages occur, many subsequent error messages may be generated. The **CARD OUT OF ORDER** error messages should be dealt with first. If in doubt about card order, refer to the foldout page at the end of the User's Manual. This Summary of Input Cards shows the cards in their relative order of input. Carefully review your input file, and arrange the card sequence to follow the sequence shown in the summary.

After correcting the input order, recheck the data file with EDIT2. If there are error messages, try to correct the errors. There may be some messages, including **ERRORS**, that are given even when you have the data set the way you want it. Be sure you understand why your data are causing the message. If the data are the way you want them, go ahead and run the data with HEC-2. However, you may want to place a message in your input file, using the comment card, to explain any apparent discrepancy. This would help any reviewer, testing your data set with EDIT2, understand why there were still error messages generated from your input data file.