FormSprint Quick Start

Welcome to *FormSprint!*

The ICS ***FormSprint*** software will enable you to take data from any spool file on the iSeries and print it to any PCL laser printer in any format you need, or send it as a fax, email it or convert it to a PDF or TIFF file. Briefly, the way ***FormSprint*** works is that you re-direct your spool file to a special output queue created within the program. By means of a unique FORMTYPE on your spool file, ***FormSprint*** recognizes what form is to be processed and then follows the unique form layout instructions and mapping of the data as defined for the particular form being processed. This Quick Start chapter will take you through the creation of the output queue, the definition of a simple form, and the mapping of a spool file and printing of the form.

Let's start at the very beginning – is your software loaded on your iSeries yet? If not, please turn to the loading instructions at the beginning of this book. You may also have been sent a separate sheet with Loading Instructions. If you are doing a demonstration of ***FormSprint***, you will need temporary access codes from ICS to activate the software. These codes may be found on your loading instructions sheet, or just give us a call at ICS (860) 657-3339, and we'll be glad to get you going with your demo.

Setting –up the ICS Subsystem

To begin working with FormSprint, enter the command CALL ICSPROG/ICSMENU and hit ENTER. The screen show in Figure QS-1 will be displayed. From the Menu select Option 3 for the Job Controller and hit ENTER. The screen shown in Figure QS-2 will be

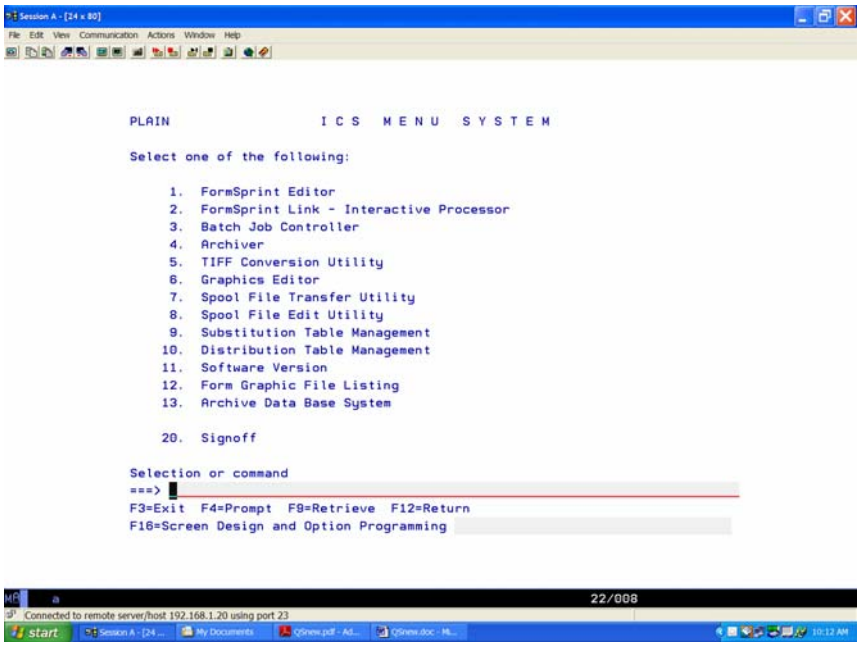

Figure QS-1 – The ***FormSprint*** Main Menu.

shown. If your subsystem has already been established and you have virtual input queues active on your system, you will need to check with your system administrator before changing or creating new virtual input queues.

To create your first virtual input queue or a new virtual queue, the ICS subsystem must be inactive. To inactivate the subsystem, always use F13-End Jobs to end any existing virtual queues, then F18 to End the Subsystem. The next step is to select F6-New Job. The screen shown in Figure QS-3 will be displayed. Enter the name TESTQ for your first virtual input queue. Enter the output queue name for the laser printer you will be using for testing and change the library if it is not QUSRSYS. Keep or Delete input spool files should be set to K to keep for our demo. When FormSprint processes your spool file, it will create a USERASCII spool file with the imbedded PCL commands; it is this file that actually gets sent to the laser printer. For this reason, we generally Keep the INPUT spool file after processing, if we might need to re-print a page range (the iSeries would not be able to start at a particular page in the USERASCII spool file).

The next parameter to change is “Start Writer with Subsystem” - change this to Y for yes, leave all of the other parameters as they default, then, press ENTER. Let’s set up one more virtual input queue. Select F6 a second time. Enter another name perhaps in the format PRT01V with the output printer queue being PRT01. Leave all of the defaults for now and press ENTER. This step automatically creates the output queue, the data queue, job class, priority, and routing entry.

The next step is to start your subsystem – select Function Key 15. You may need to refresh your screen, but the status of the subsystem in the upper right corner of your screen should now display “Active”. Notice that the first virtual input queue (TESTQ) becomes Active while the second (PRT01V) does not. This is because for TESTQ we changed the Start Writer with

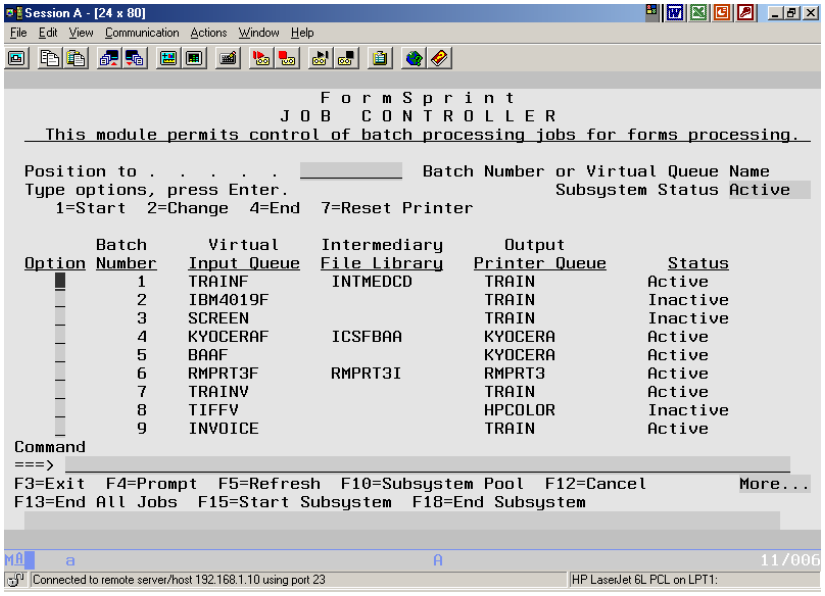

Figure QS-2 – The Job Controller screen

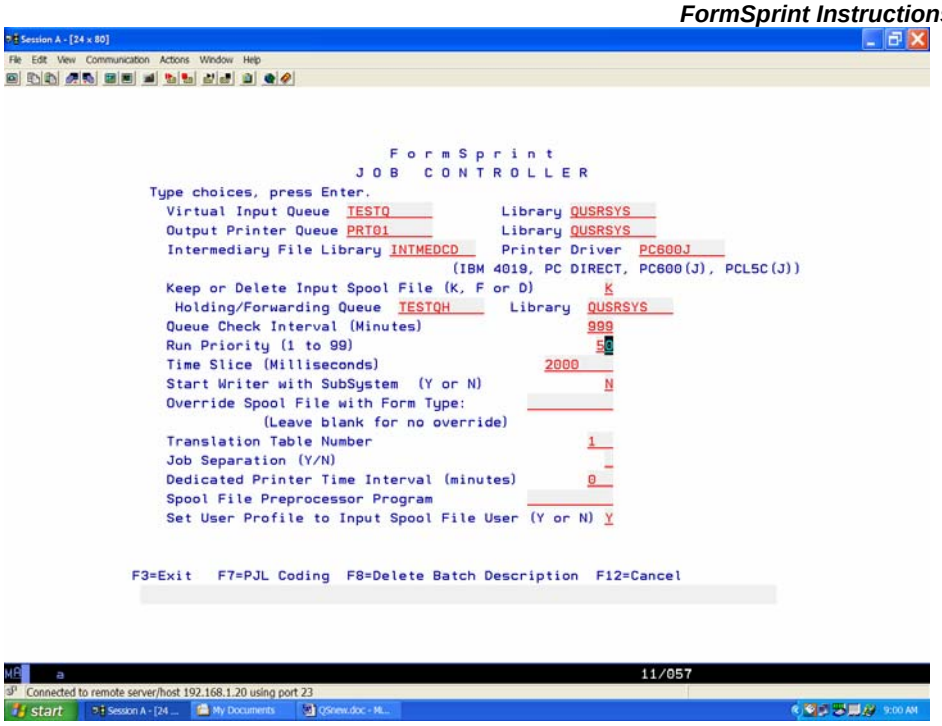

Figure QS-3 – The Batch Job Parameters screen.

Subsystem parameter to Y. If you do a WRKACTJOB command, you will now see that the subsystem ICSFMST is active on your system with one job (TESTQ) active within the subsystem. Let's return at this point to the ICSMENU (F12 from the Job Controller).

Creating the Form

Select Option 1 from the ICSMENU for the ***FormSprint*** Editor. Select Function Key 4 to Create a Form. The screen shown in Figure QS-4 will be displayed. Enter the form name DEMOINV on the line provided and press ENTER. This is the name that will be the link to the FORMTYPE parameter on our spool file when we are ready to merge data with our form. The name of the form does not need to be all caps, but the FORMTYPE parameter is case sensitive and most spool files do have a FORMTYPE that uses upper case letters.

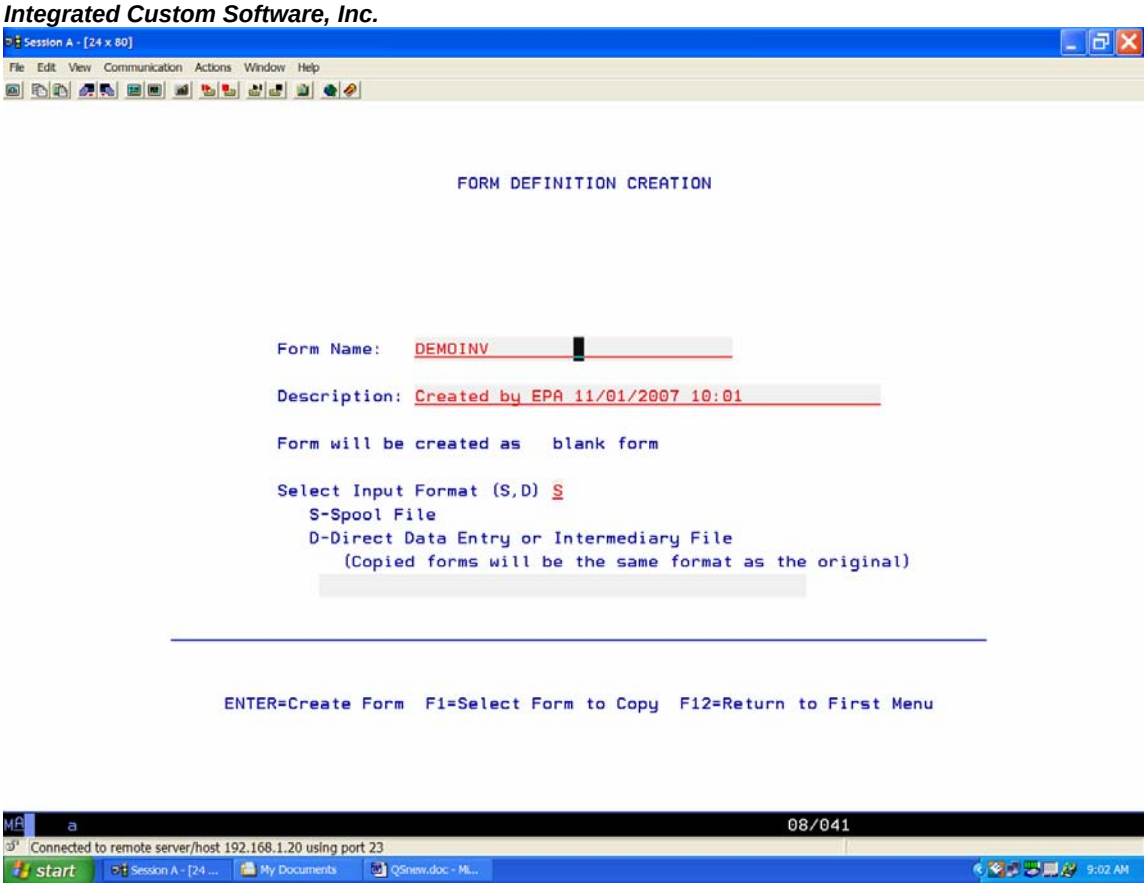

Figure QS-4 – The Form Creation screen

On the next screen (Figure QS-5), the Printout Default Values, enter the output queue name of your printer (not the name of your virtual input queue) where you will be testing your form, press ENTER. You are now on the Spool Mapper screen where we position the spool file data on the form, we'll be coming back here, but for now, press Function Key 1 for the Flash definition (the fixed part of your form). The screen shown in Figure QS-6 will be displayed. Usually, but not always we begin the form design process in the Flash definition.

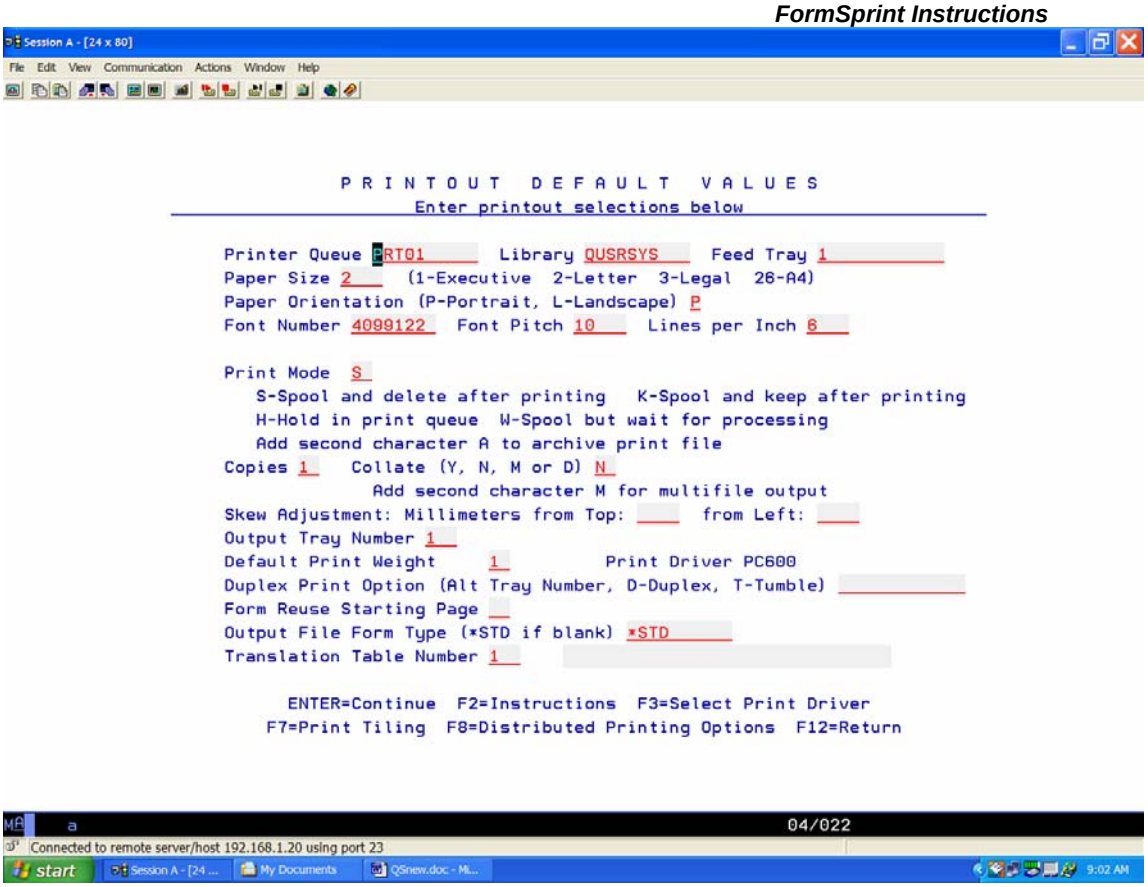

Figure QS-5 – The Printout Default Values screen.

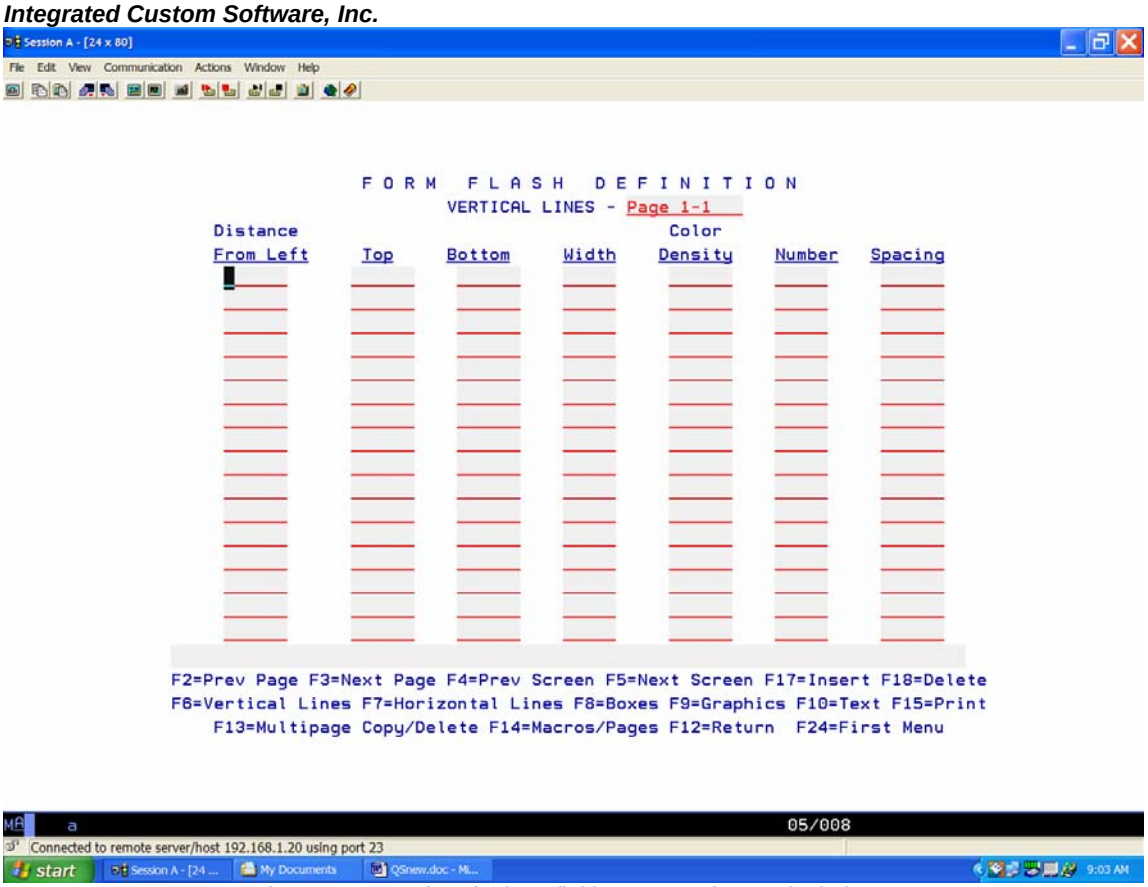

Figure QS-6 – The Flash Definition screen for Vertical Lines.

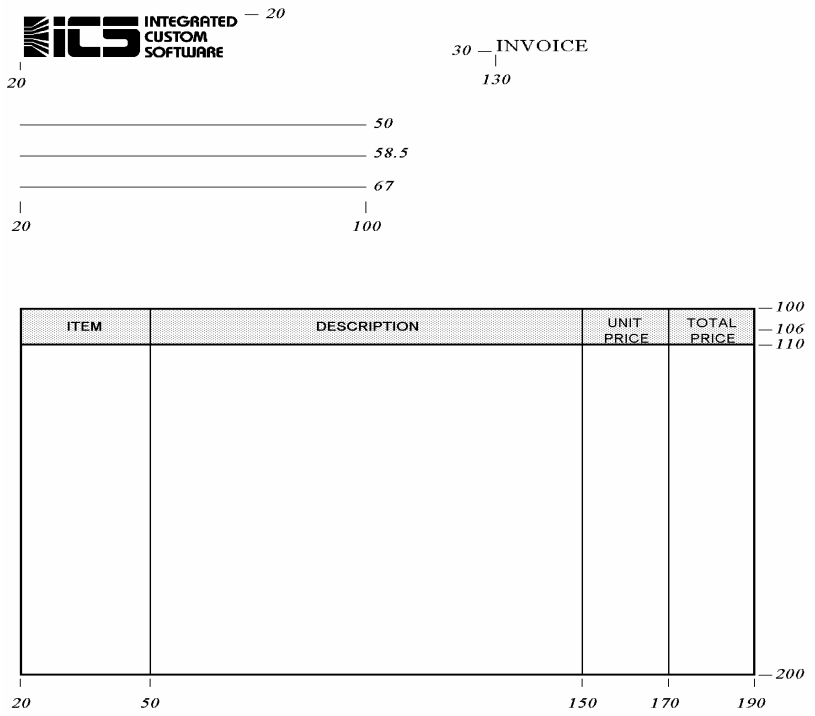

Figure QS-7 – A sample invoice form.

Let's stop for a moment to see how we move around within the form. All selections within the ***FormSprint*** Editor are made with Function Keys. Note that at the top of your screen ***FormSprint*** displays the form element you are in (you should be in Vertical Lines at this point), and the location in the format Page 1-1. The first 1 represents the form page number and the second 1 represents the screen number. For example, if the screen said Vertical Lines, Page 3-2, you would be working on Page 3 of the form on the second screen of the vertical line definitions. There are several ways to move from page to page and screen to screen. You can simply type the page and screen destination at the top of the screen and press ENTER, or you can scroll using function keys, or if you wanted to move from one screen to another, use the Page Up and Page Down keys. Press Function Key 3 (next page) and you will see that you are now on Page 2-1. Press Function Key 5 (next screen) and you will be on Page 2-2 (screen 2 on the second page of the form). Function Keys 2 and 3 will scroll from Page to Page and Function Keys 4 and 5 will scroll from screen to screen (or use Page Up and Page Down). Another level within your form definition is the Macro. Press F14 and you will see that you are now in Macro 1 screen 1. Macros work just like pages, so to get to Macro 2 you would press F3 and to get back to Macro 1 you would press F2.To get out of Macros, press F14 and you will be back on Page 1-1 of Vertical Lines.

The form we are going to build is pictured in Figure QS-7. Note that the form has numbers printed on the tops, bottoms, left and right of each of the form elements. The form design process is simplified when you measure these parameters first and write them on your form. Let's begin with boxes – press F8 – Boxes. Enter the numbers just as they are pictured in Figure QS-8. On the first line enter Left Edge 20 (this is 20mm from the left edge of the page), Right Edge 190 (190mm, still measured from the left edge of the page), Top 100 (100mm from the top edge of the page), Bottom 200 (200mm again measuring from the top edge of the page down), Width of 3 (this is the width of the line around the outside of the box), and Density 100 (the outline is 100% black). The fill density would be used if we wanted our box to be shaded inside, the number and spacing are used for creating more than one box, for example, 2 for the number and horizontal spacing of 10 would create two identical boxes spaced 10mm apart from start to start.

Figure QS-8 – The Flash Definition Box screen.

On the next line of boxes for left edge enter 20, for right edge enter 190, for top enter 100, for bottom enter 110, for width enter 3, for density enter 100, and for fill density, enter 10. This entry will create the shaded heading box on our form. Let's print to see how the boxes look. Press F15 to Print to display the flash printout screen (Figure QS-9), then press ENTER.

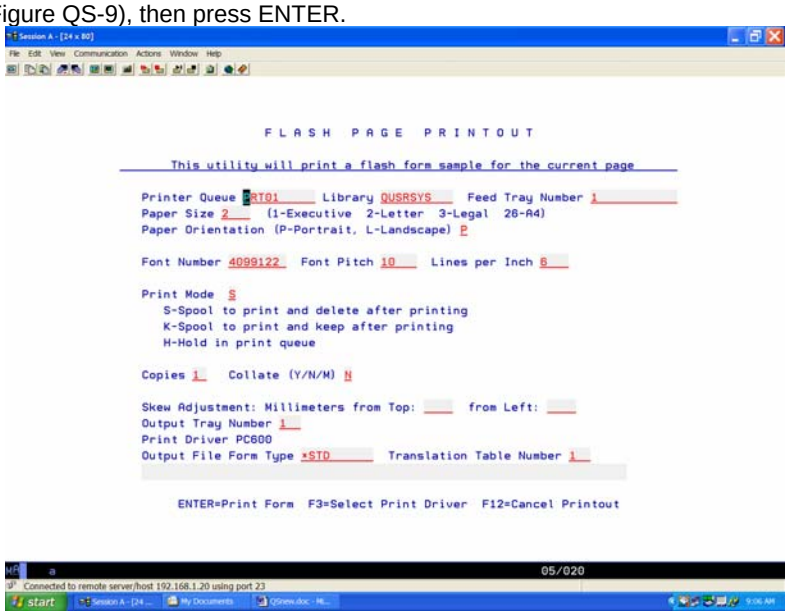

Figure QS-9 – The Flash Printout screen.

Now we'll put in our Vertical Lines – press F6. Make your entries just like those on the screen shown in Figure QS-10. On the first line enter From left of 50 (50mm from the left edge of the page), top 100 (the line

begins 100mm down from the top edge of the page), bottom 200 (the bottom of the line is at 200mm from the top edge of the page), enter a width of 3, and Density of 100 (100% black). Enter the rest of the lines in a similar fashion; From left 150, top 100, bottom 200, width of 3, Density of 100 (no need to enter number and spacing unless you are replicating lines). The third entry should read From left 170, top 100, bottom 200, Width of 3, Density of 100. Let's print again – select F15 to print then press ENTER. With two box entries and three line entries, most of the form is built!

Press F7 now to go to Horizontal lines. Our form has three horizontal lines spaced 8.5 mm apart. The screen shown in Figure QS-11 shows the entries you should make. On the first line enter From top 50, left of 20, right 100, width of 3, density 100, for Number enter a 3, and for Spacing enter 8.5 – all three lines with one line of entry! Press F15 again followed by ENTER to see what your form looks like. Next go on to Graphics, F9.

Press F9 with your cursor on the first line of the Graphic screen (Figure QS-12). You will see the list of graphic files on your system. Bring your cursor down to ICSLOGO to select this graphic. Now enter positioning of 20mm Vertical and 20mm Horizontal with a Color/Scaling of 1. No need to enter anything for number and spacing as this is only for repeating the graphic.

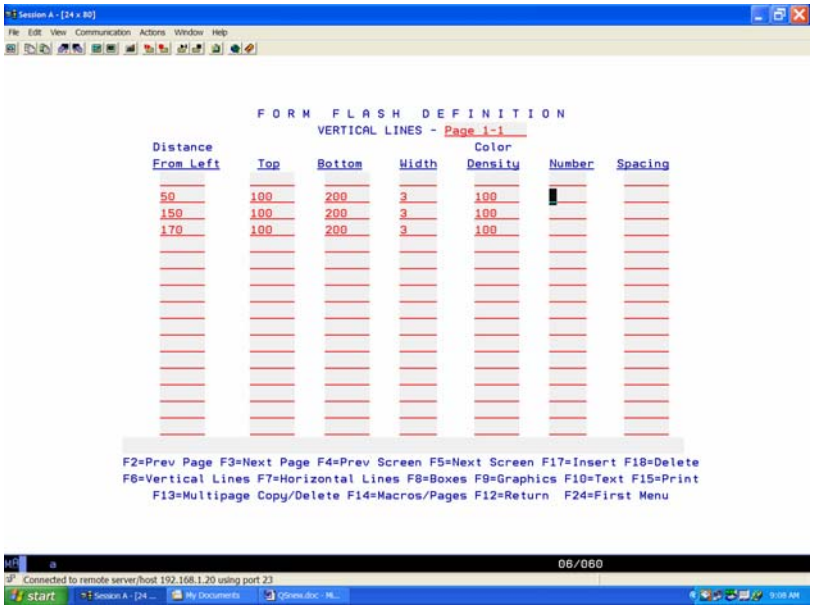

Figure QS-10 – The Flash Definition Vertical Lines screen.

Figure QS-11 – The Flash Definition Horizontal Lines screen.

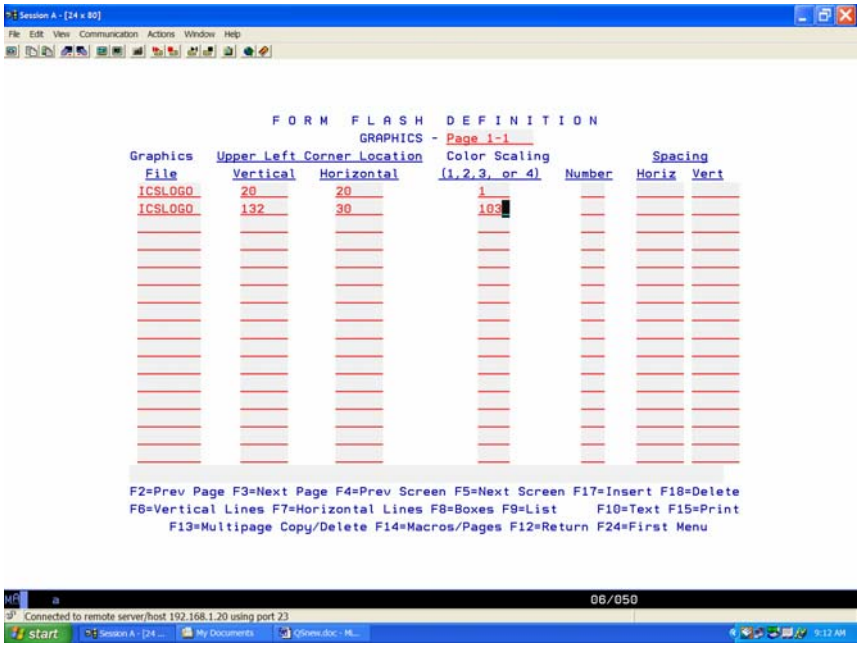

Figure QS-12 – The Flash Definition Graphics screen.

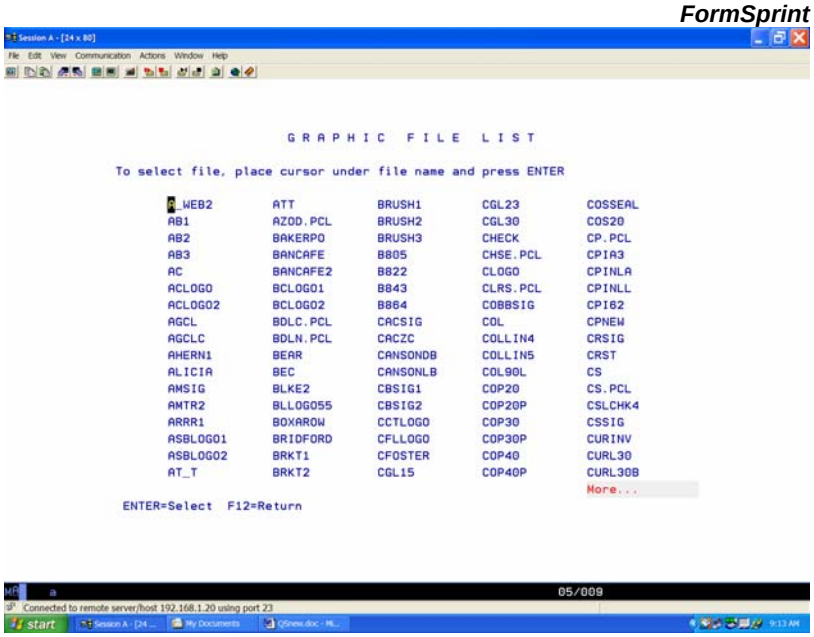

Figure QS-12a – The Graphic File Listing screen.

The Color/Scaling parameter gives you the ability to increase the size of the graphic and to shade or invert the image. You might want to try making a second entry of ICSLOGO at 132mm vertical and 30mm horizontal with a Color/Scaling of 103. Press F15 followed by ENTER to print your demo form.

We've included three graphics (ICSLOGO, ICSLOGOS, and FLAG) for you to play with on your demo form. You can easily incorporate your own graphics by scanning as black and white line art, saving as TIFF files and uploading to your AS/400 via Client Access and shared folders (please refer to the chapter on graphic files).

The last thing we need to add to our form is text, press F10 for Text. The screen shown in Figure QS-13 shows the entries we will be making. On the first line enter the word INVOICE at 30mm from the top, 130mm from the left with a font of 4148142, and a weight of 4. Text is always positioned to the BOTTOM of the letter and the default justification is Left Justified. The font we have selected is Univers and is a good choice for the fixed part of any or all of your forms. The first four numbers of our font (4148) selected Univers, the 14 selected the point size (how tall is the letter) and the 2 at the end selects the upright Roman-8 symbol set. A weight of 4 makes the font bold.

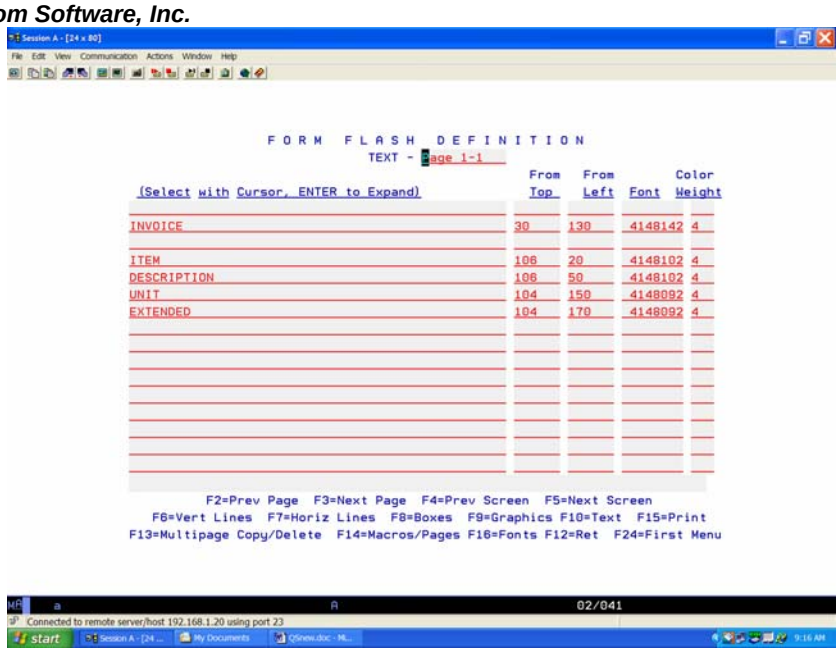

Figure QS-13 – The Flash Definition Text screen.

Now enter the word ITEM. Place ITEM at 106mm from the top, 20mm from the left, a font of 4148102 and a weight of 4. Now, you can see that we don't really want the word to be at 20mm from the left because it would be right on the left side of the box. What we really want is for the word to be centered over the column. To center the text, press ENTER and enter the right edge of 50 and tab to the format and make that C for centered (as shown in Figure QS-14). Press ENTER to return to the Text screen. ***FormSprint*** does a perfect job of centering when you tell the program the left and right of the area where you want the text centered.

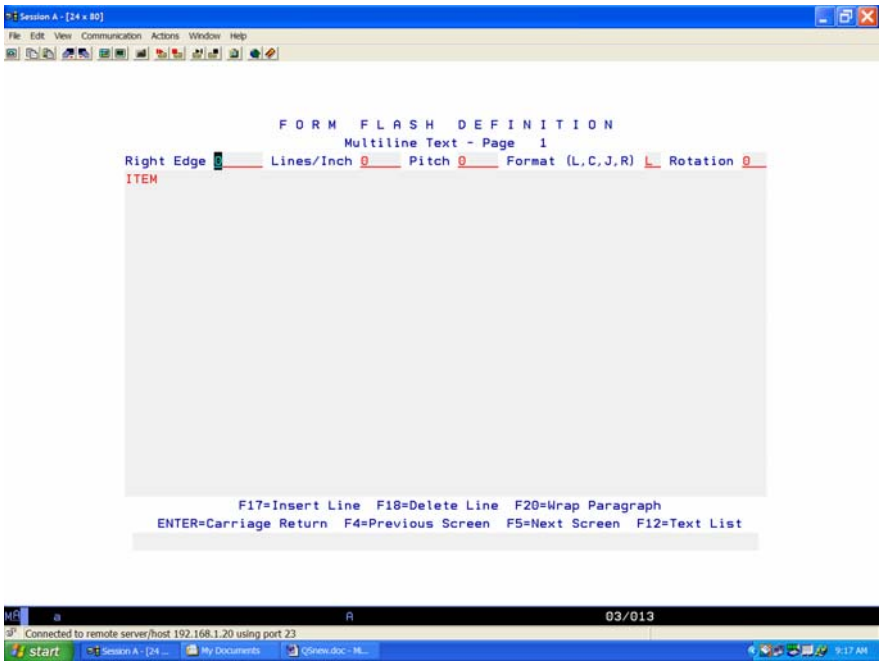

Figure QS-14 – The Expanded Text screen is used for centering.

Now enter 'DESCRIPTION' at From top 106, From left 50, font 4148102, weight 4, press ENTER and make the Right edge 150, put a C for format. For Unit Price and Total Price we are going to make a two line text entry. Enter UNIT at From top 105, Left edge 150, font 4148102, weight 4, press ENTER and make the Right edge 170, enter 6 for the lines per inch and enter CN for the format. An entry of CN tells ***FormSprint*** to center and no wrapping of text, so our two lines will stay as two separate lines. Then TAB down below the word UNIT and type PRICE, then press ENTER. Finally, enter TOTAL at From top 105, Left 170, font 4148102, weight 4, press ENTER and make the Right edge 190, 6 lines per inch and CN for format. Again, TAB down below TOTAL and type PRICE then press ENTER. This text entry is shown in Figure QS-15. Let's print the completed form – press F15 and ENTER. Congratulations – yes, it's a simple form but most forms are just a variation on this simple invoice – a few more boxes, a few more lines and bit more text, but a variation on the simple invoice!

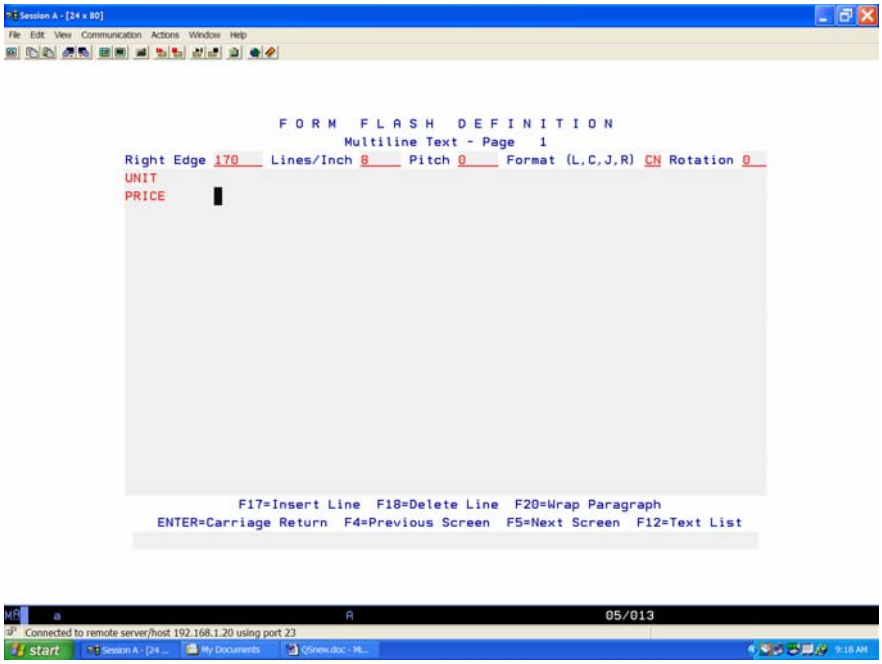

Figure QS-15 – Adding the letter "N" to the format, turns word wrapping off.

Mapping the Data to the Form

Of course our form isn't really done – there's no data! Let's create a simple spool file and merge it with our newly completed form. Press F24 to cancel the ***FormSprint*** Editor program – YES we save everything, no need to press ENTER at every screen change. Press F24 again once you are on the ***FormSprint*** Editor menu. From the ICSMENU, select Option 8, the Spool File Utility program. Select the Demo Invoice Sample with an Option 2 to Edit. The screen shown in Figure QS-16 will be displayed. From the spool file screen, press F15 to print. The screen shown in Figure QS-17 will be displayed.

The first thing we are going to print is what we refer to as a SPOOL GRID. The SPOOL GRID is a form, that gives us a layout of our spool file to tell us where the data is positioned. Now, just as you will be doing once you are using ***FormSprint*** in production, the output queue you enter on this screen is the ***FormSprint***

Virtual Input Queue we created in the Job Controller. Enter TESTQ in the output queue field, QUSRSYS for the library, SPOOL GRID (yes, all upper case and do leave a space in the middle) for the FORMTYPE. The FORMTYPE parameter is used by ***FormSprint*** to determine what form to print (in this case, the SPOOL GRID form). Set the status to "P" to put the spool file in RDY status. Because we have already started your subsystem, your SPOOL GRID should be printing right now. The GRID form will become a tool that allows you to "view" the spool file in terms of the lines and columns where data prints. You will be using this form

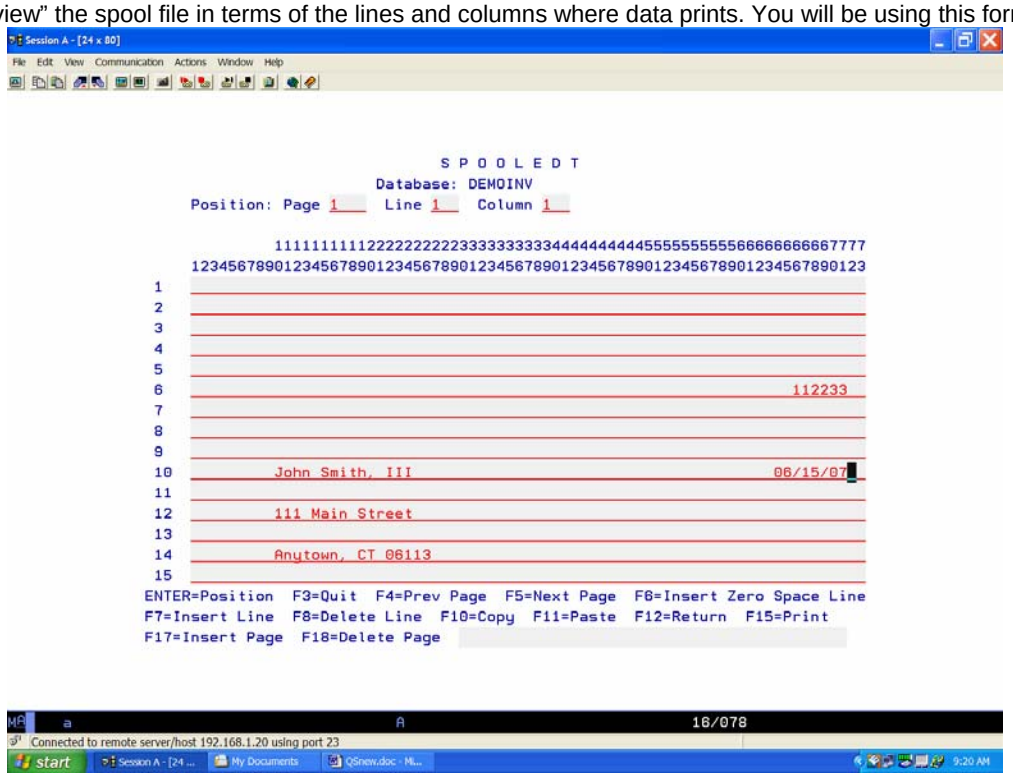

Figure QS-16 – The SPOOLEDT program (Option 8 from the ICSMENU) is used to generate a sample spool file.

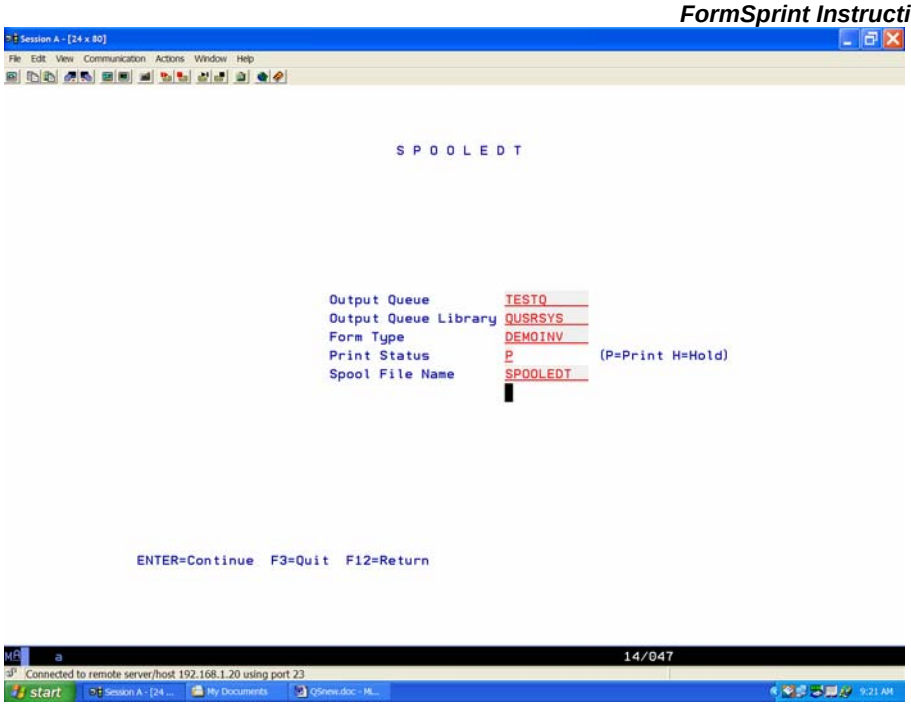

Figure QS-17 – Press F15 to submit the file to TESTQ with the FORMTYPE for SPOOL GRID.
as you begin to map the data to your new invoice form. The SPOOL GRID can be seen in Figure QS-18.

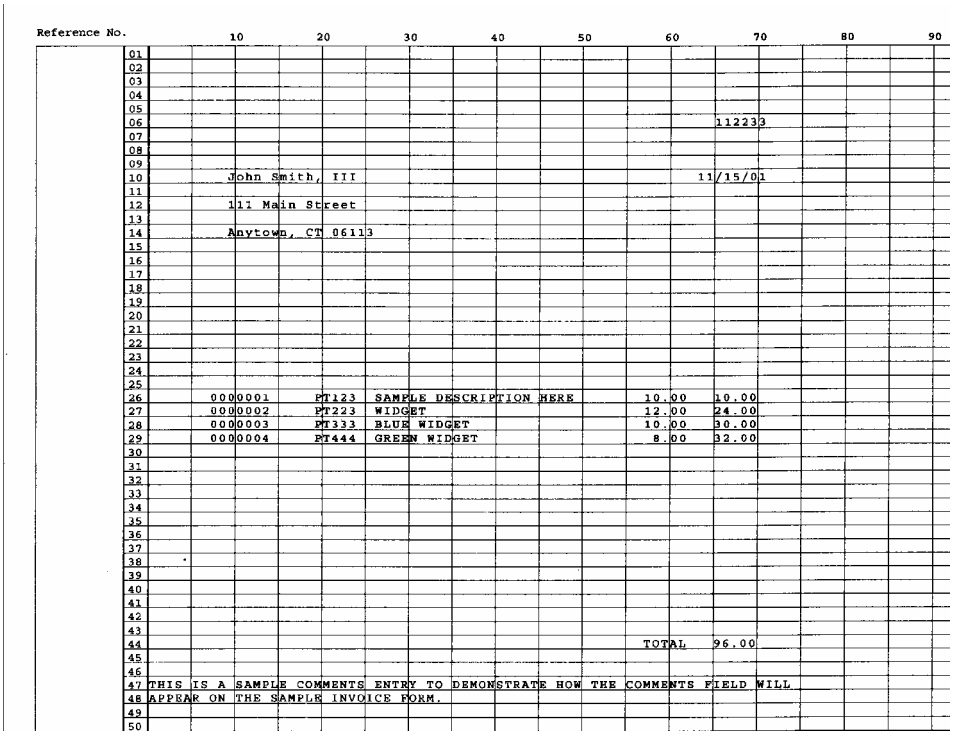

Figure QS-18 – The SPOOL GRID form is used to locate the positions of data within the spool file.

Press F12 to cancel out of the Spool File Utility program and return to the ICSMENU. Take Option 1 for the ***FormSprint*** Editor. Now select Function Key 3 to Edit Form Definition. Place your cursor on the DEMOINV form and press ENTER. You should now be on the Spool Mapper screen for your demo form. Make entries as shown in Figure QS-19. The entry you make in the Description field is simply documentation for you – it does not print. The entry you make here should be in some way descriptive of what the step is accomplishing – for example, Place Inv Number, or Check No Top, etc. In our example we are saying DATA because all data will be placed by this one entry. The next five columns refer to your spool file – page (or record) start line and end line and then start column and end column. In our example, because we are placing all data in one step, we simply include all lines (1-66) and all columns (1-85).

The four columns on the right of the screen refer to your output page. "Page" refers to the actual physical page to print on (Original might be page 1, a File Copy might be page 2). The "From Top", "From Left", and "Right Edge" are millimeter measurements of the exact placement of data on the page. By selecting all lines and columns of data from our spool file, we have simply given ***FormSprint*** a starting place by saying 10 mm from the top and left of

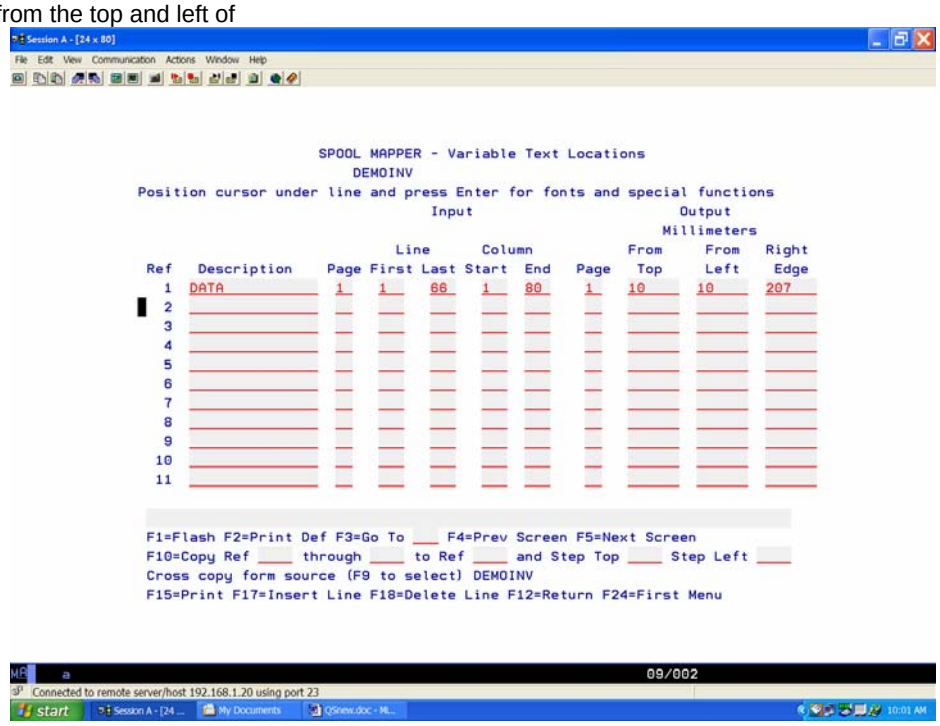

Figure QS-19 – The first Spool Mapper screen for the DEMOINV form.

our form. The entry of 207 on the right simply tells ***FormSprint*** to use the whole printable area. Now its time to see how our completed form will look. Press F24 to cancel out of the ***FormSprint*** Editor. On your command line, enter WRKOUTQ TESTQ and press ENTER. You will see the spool file with the SPOOL GRID formtype now back on HOLD in the output queue. You are going to change the formtype to the name of your new invoice form – DEMOINV. Select option 2 to change your spool file. Go to the Formtype parameter field and type in the name of your DEMOINV and press ENTER to make the change (Figure QS-20). Now simply release your spool file (type option 6, and press ENTER). Because you've changed the formtype to your DEMOINV, ***FormSprint*** will use your new form and should be printing it right now - on your form!

Changing a Font with the Spool Mapper.

Now let's use ***FormSprint***'s re-mapping ability to change the appearance of our form. We are going to take the Invoice Number and change the font and line it up just a little better. Using your SPOOL GRID, notice

that the invoice number is on line 6 of the spool file and begins in column 66 and ends in column 71. We need to consider the possible full length of this field, however. Make the entries shown in Figure QS-21. The first line now positions the Invoice Number only – but note that we have allowed for a larger field in case the number exceeds its present length. Note that the Output locations will now position the number exactly in line with the word "INVOICE". With your cursor anywhere on this first line, press ENTER. You

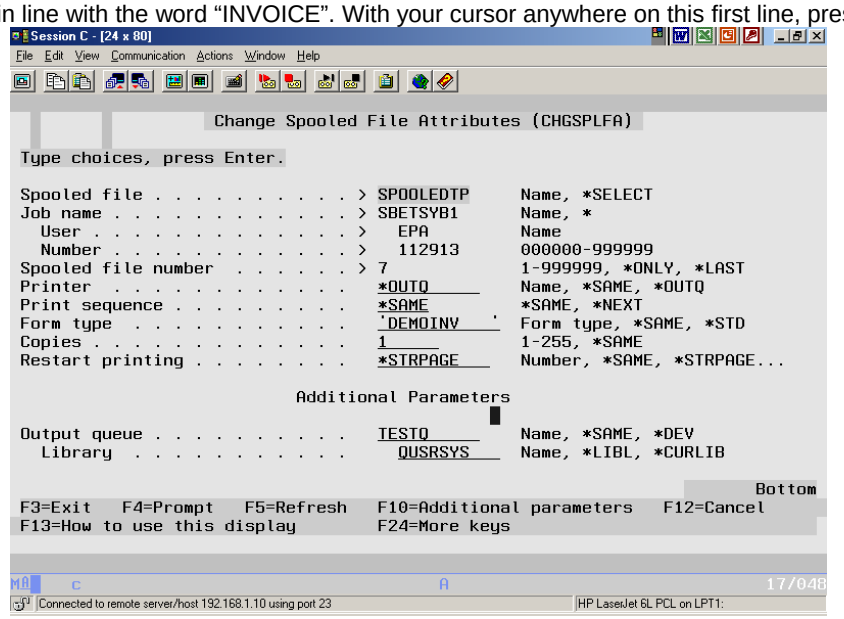

Figure QS-20 – Use the Change Spool file Attributes command to change the FORMTYPE to DEMOINV.

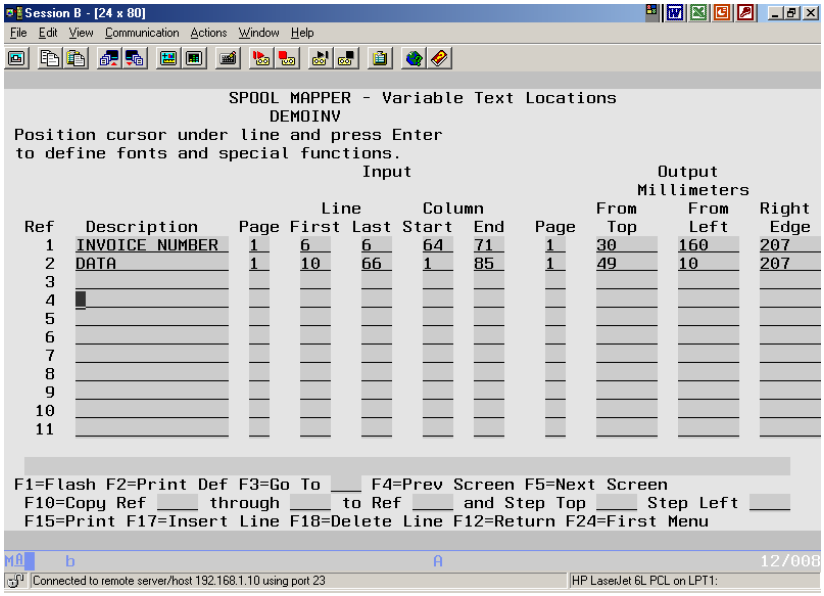

Figure QS-21 – Make changes to the Spool Mapper to align and change the font of the Invoice Number.

are now on the Fonts and Functions screen (Figure QS-22). This screen is used for changing fonts in terms of typeface, boldness, lines per inch, pitch, format, or rotation. Also, you could choose any type of bar code, you can enter a special function or use ***FormSprint***'s buffers (please refer to Chapter 4 for a discussion of

bar codes and buffers). Make the entries as shown in Figure QS-22 on the Fonts and Functions screen. Press ENTER to return to the Spool Mapper screen. Enter the second line on the Spool Mapper to position the rest of the data.

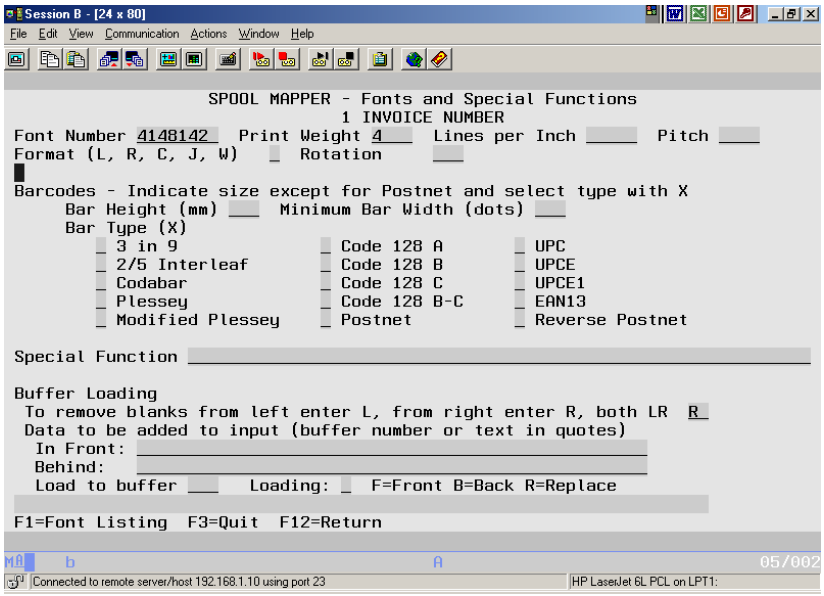

Figure QS-22 – Press ENTER on the Spool Mapper entry line to access the Fonts and Functions screen.

Please note that when you begin to map separate fields on a form, you run the risk of not printing certain data. The SPOOL GRID shows us a sampling of data – there may be times when data prints at a location not shown in our sample. Notice that in our example the address prints on lines 12 and 14. Address lines are often formatted to leave a blank line if an optional address line is not used. Therefore, when printing name and address fields, you may want to include blank lines (like our line 13 in the example). Another common example would be the use of “REPRINT” which might only appear at the top of a form if the reprint option was selected when printing from the application program. It is important, therefore, to know your spool file and plan ahead for possibilities.

Press F24 now to exit your form and the ***FormSprint*** Editor. Again, enter the WRKOUTQ command for TESTQ (Figure QS-23). Simply release your spool file as it already has the correct FORMTYPE (DEMOINV). Your new form should be printing with the Invoice Number now lined up properly and font changed.

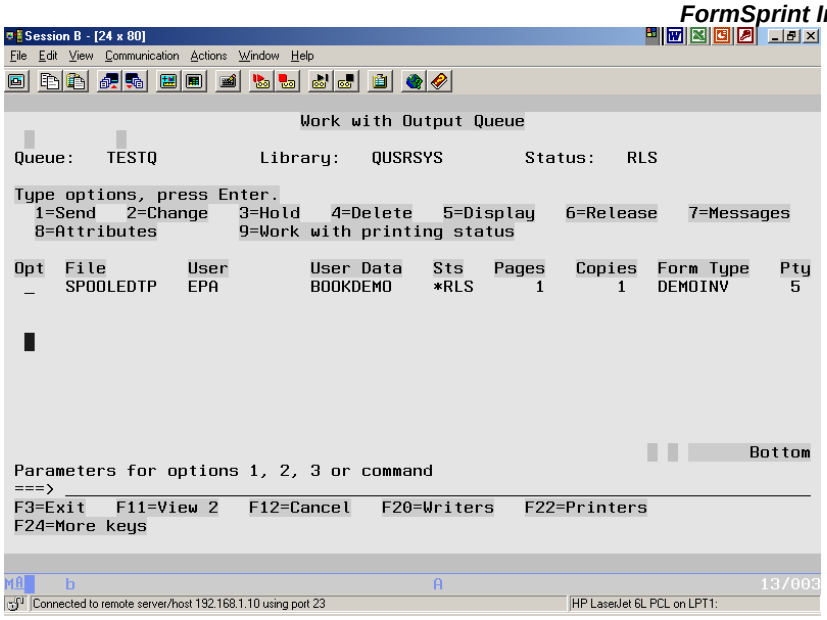

Figure QS-23 – Use the WRKOUTQ command for the Virtual Queue and release the sample spool file to test your changes.

Adding a Bar Code

Adding a bar code using ***FormSprint*** is as simple as 1-2-3! (1.) Simply select the INPUT data to be bar coded (in our example we are going to bar code the invoice number – line 6, columns 64 to 71). (2.) Enter the OUTPUT location (bottom of the bar) where the bar code will be printed (20mm from the top, 140mm from left, 207mm on the right) and (3.) press ENTER on the Spool Mapper line and enter the bar code height and width (7mm high, 3 dots wide) and select the bar code type. Follow the example shown in Figure QS-24 to implement the Code 39 bar code.

Now let's add the postal code as well. Begin by selecting the INPUT (line 14 – no need to select the columns ***FormSprint*** will pick out the numeric field from the City, State and Zip line). Next, enter the OUTPUT location in millimeters where the code will appear – the Post Office prefers the coding to be above the name and address. Finally, press ENTER and simply put an X by postal code. The height of this bar code is not scalable and must be according to Postal specifications so there is no need to enter a height or

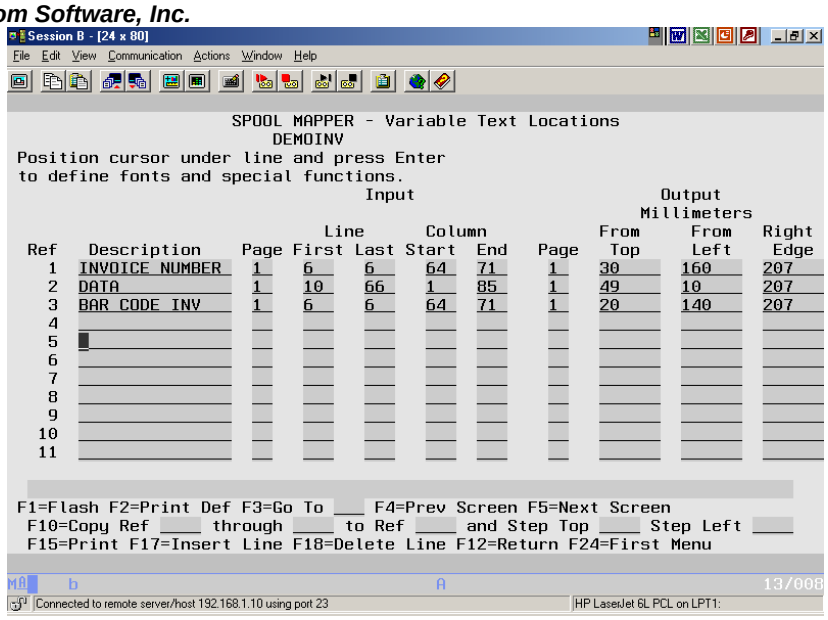

Figure QS-24a – Add a bar code for the invoice number.

width. Follow the example in Figure QS-25 for the coding of the postal bar code. Test your bar codes by exiting the Editor (press F24 twice), type the WRKOUTQ command, and release your spool file again.

Word Wrapping Variable Text

Notice how the comments are printing on our DEMOINV. The left and right sides of the comments hang out on both sides of the detail box. Wouldn't the appearance of this form be improved if the comments lined up properly with the sides of the box? No need to re-write your program, ***FormSprint*** can re-wrap this text so it is properly aligned. Begin by changing the last line of the detail data entry so that its last line is line 46 and not 66. Now make a new entry called COMMENTS and select lines 47 to 66 (we don't really know how long the comments could be and sometimes they may go for more lines than we have in the example). Next enter the OUTPUT location as follows: 207 from the Top, 20 from the Left (to line up with the left side of the box) and 190 on the Right (to line up with the right edge of the box). Now, press ENTER to go to the Fonts and Functions screen and select 'J' for the format. A format of Justify will align both the left and right edges of your text, a format of Wrap will align the left edge and leave the right edge ragged but it will not extend beyond 190 (the right edge). Follow the example in Figure QS-26 for this example.

Try some different mapping with your DEMOINV. Perhaps you could create a remittance stub for the bottom of the form to be returned with payment.

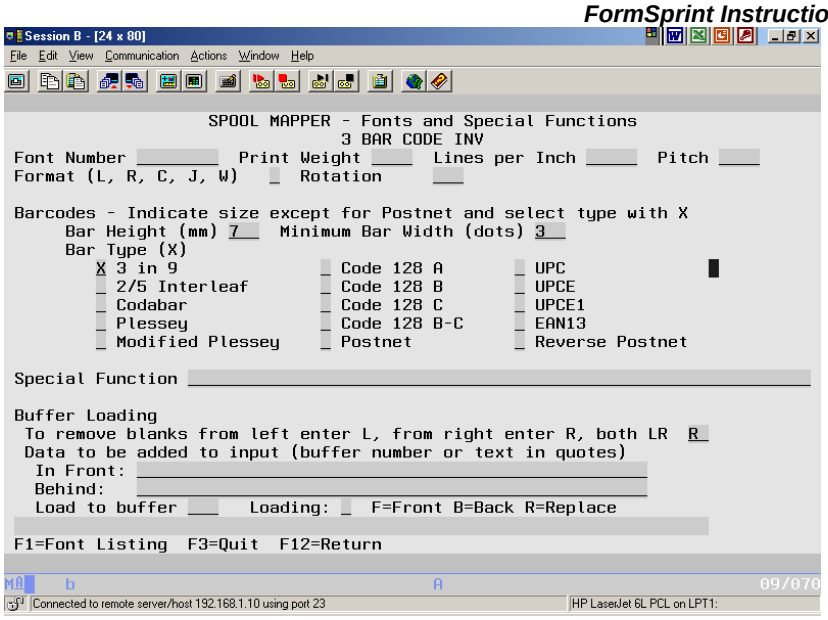

Figure QS-24b – Press ENTER on the Spool Mapper reference line – enter a height and bar width and mark the symbology desired with an “X”.

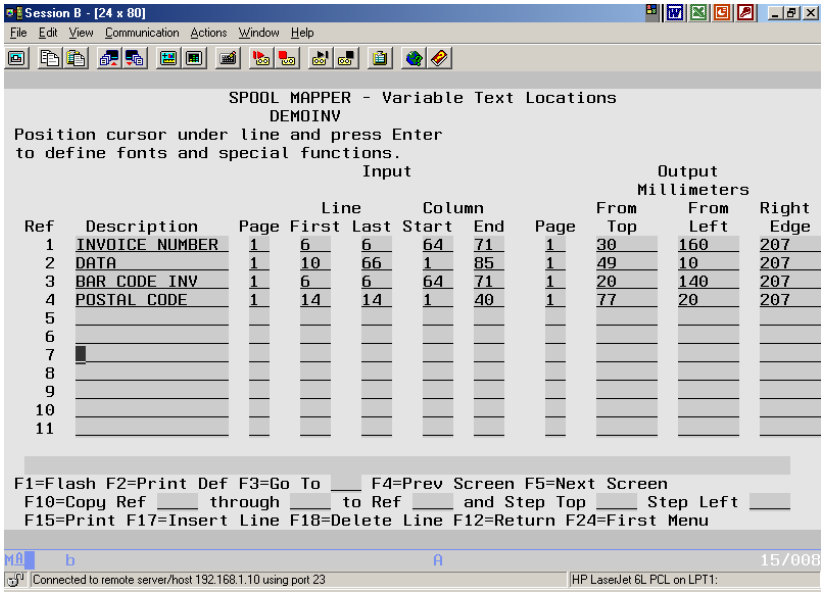

Figure QS-25a – Add the Postnet bar code.

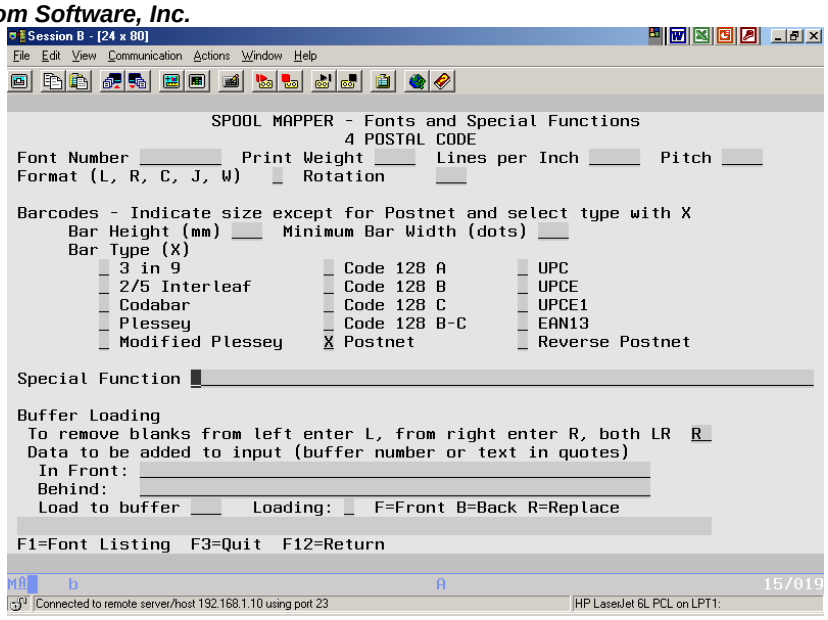

Figure QS-25b – Press ENTER on the reference line and mark Postnet with an “X”. No need to give a height or bar width.

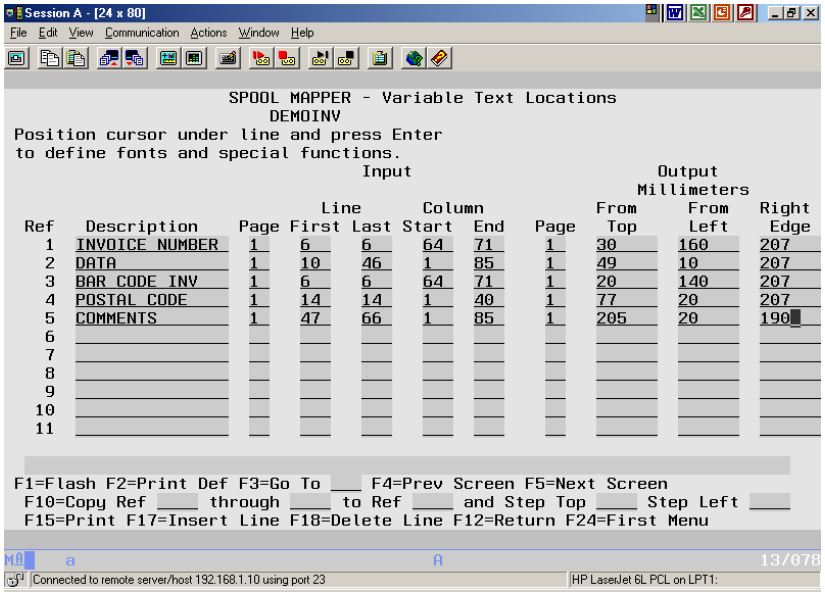

Figure QS-26a – Next, align the comments below the invoice box.

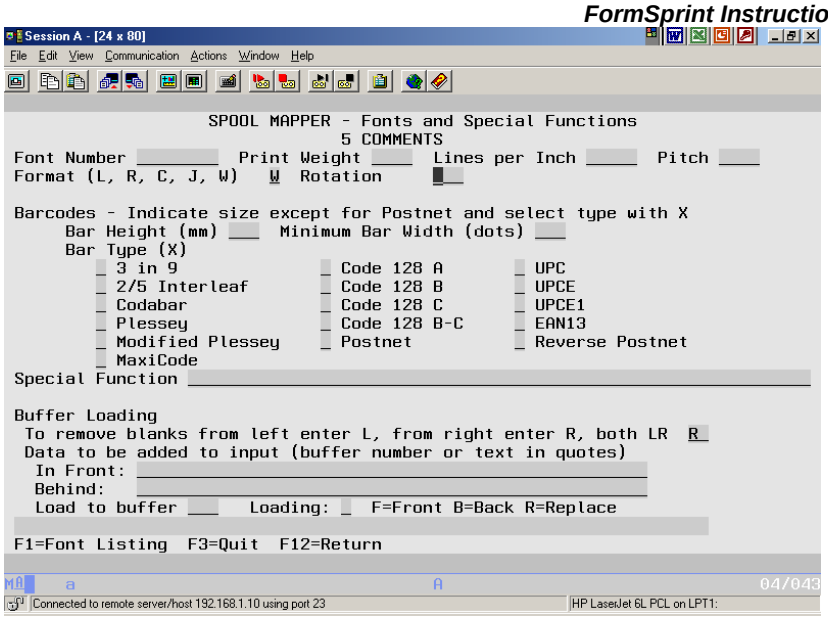

Figure QS-26b – Press ENTER to go to the Fonts and Functions screen and select either “J-Justify” or “W-Wrap” to enable FormSprint to re-wrap the comments text according to the Left and Right you have specified on the Spool Mapper.

Follow the example shown in Figure QS-27 to create the stub at the bottom of your form. Simply select each of the fields (Inv. No., Inv. Date, Name & Address, Amt. Due) from the spool file and position them at the bottom of the form along with any fixed text or boxes to create a return stub.

Making Your Form a Two Part Invoice

When you’ve made all of your modifications to the Spool Mapper, the next exercise is to make the form a two-part form. Begin by pressing F1-Flash from the Spool Mapper screen. Press F10 to go to the text screen. Make the new entry on the text screen as shown in Figures QS-28 and QS-29). These entries put the word Original centered on the bottom of the first page of the Invoice.

Now select F13-Multipage Copy/Delete and make the entries as shown in Figure QS-30. This screen allows you to copy all of a flash page or macro to another page or macro – in our example, we are copying all of page one to page two, press ENTER. Now select F3-Next page to go to Page two of the form (see Figure QS-31). Simply overstrike the word Original with File Copy

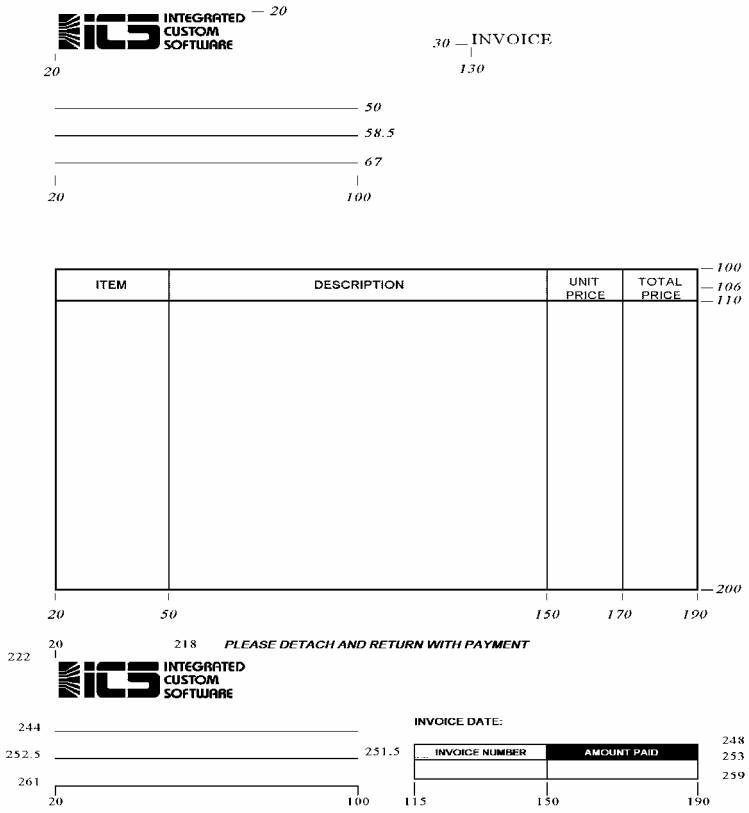

Figure QS-27 – Following these specifications, try creating a remittance stub for the bottom of your invoice.

(the positioning and centering are already done!). Your form is now a two-part invoice form. One step remains – you need to copy the data from page one to page two as well.

Press F12 to return to the Spool Mapper screen. Note that at the bottom of the screen you have a Copy option. Enter the first reference to be copied, the last reference to be copied and the reference number where you want the new references to appear. Figure QS-32 shows the copy parameters filled in. In our example, we are simply copying reference 1 through 5 and placing the new references at reference line 6. Press F10 to COPY the references. Now change the OUTPUT page number to 2 (page 2 is our File Copy) as shown in Figure QS-33.

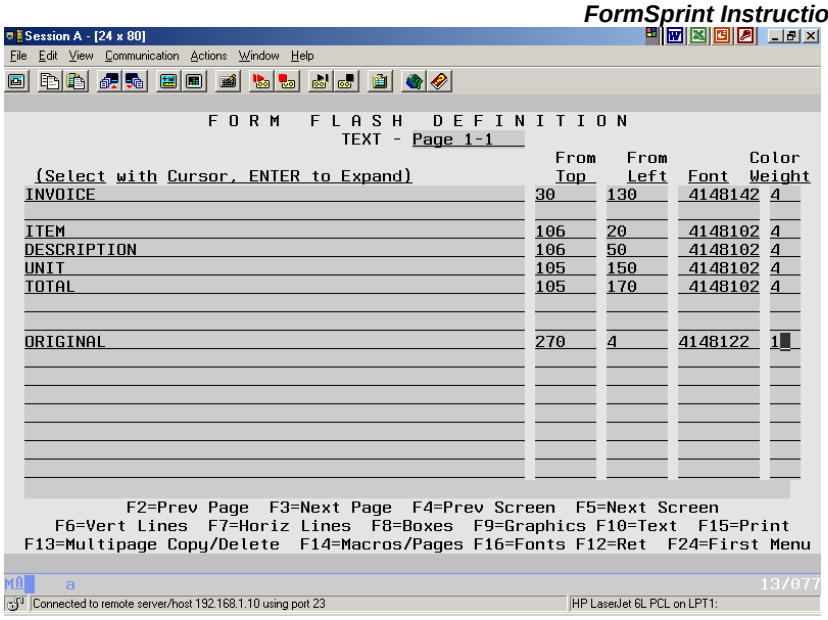

Figure QS-28 – Add the word “ORIGINAL” to the bottom of the sample form.

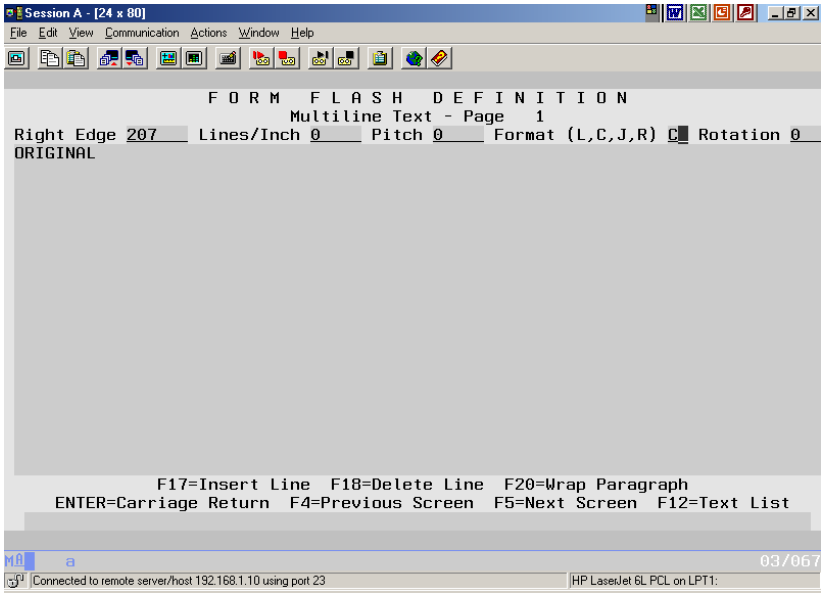

Figure QS-29 – Make sure to press ENTER and center the text.

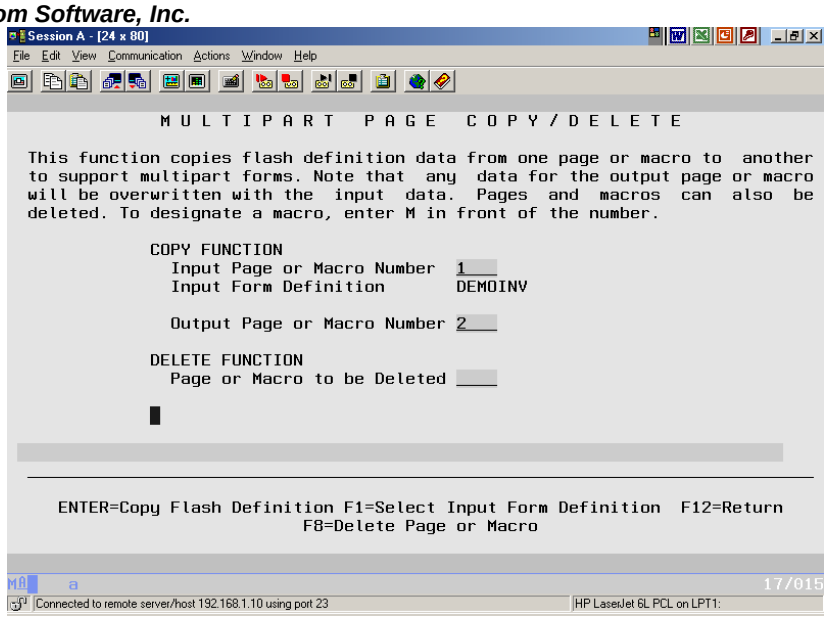

Figure QS-30 – To create your second page, press F13 – Multi-page Copy/Delete and enter Input page 1 and Output page 2.

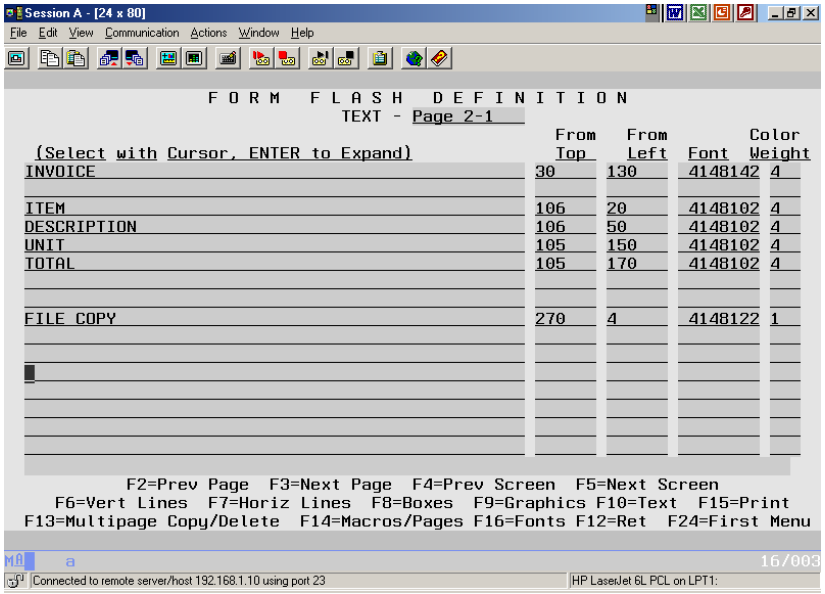

Figure QS-31 – Use F3 to go to Page 2 and modify the text.

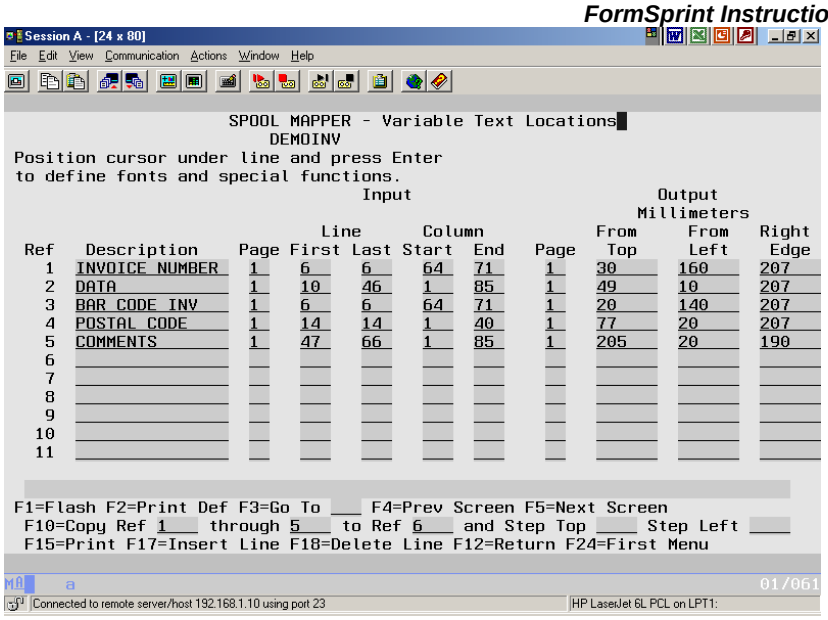

Figure QS-32 – Use the Copy Ref field at the bottom of the screen to copy the references for Page 1 to Page 2. Press F10.

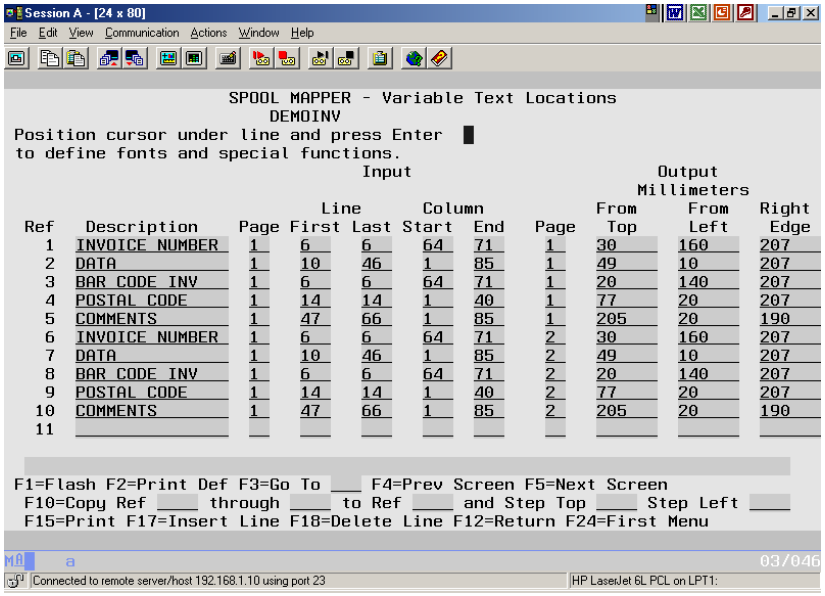

Figure QS-33 – Change the Output page numbers to Page 2.

Separating The Form Pages Using Distribution

The DEMOINV now has two pages (an Original and File Copy) and data has been mapped to both pages. The final step might be to separate your pages so that all of the originals print together followed by all of the copies together. Press F2 from the Spool Mapper for the Printout Default Values screen. You first entered this screen when you began your new form. You can return here whenever there is a change to any of the

default values. We are going to change the Collate option. The default for Collate is N for No. Change this option to D for Distribution as shown in Figure QS-34. Now press F8 to access the Distributed Print Selections screen and make the entries as shown in Figure QS-35.

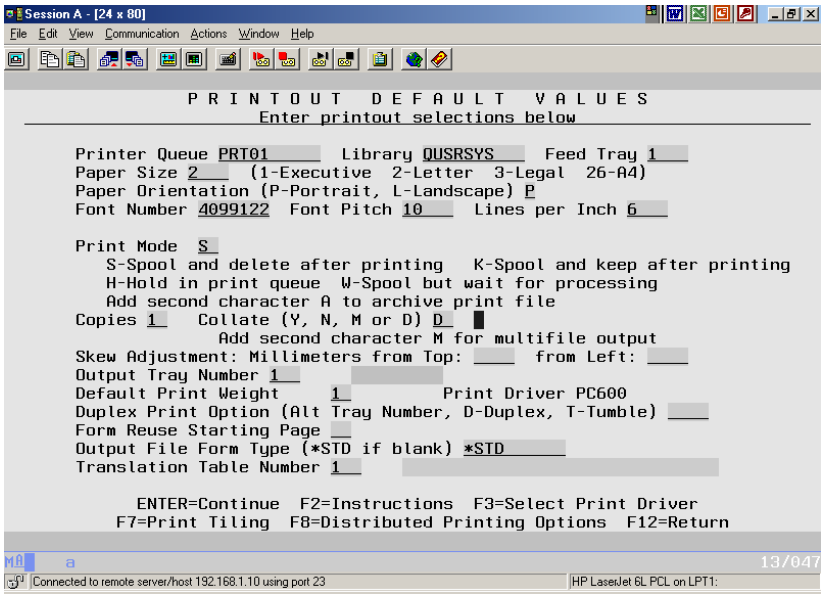

Figure QS-34 – Turn on Distribution by changing the Collate option on the Printout Default Values screen. Change the default option (N-no collation) to D-Distribution)

When using distribution, an entry of *QUEUE for your printer queue tells ***FormSprint*** to print this page at the laser printer attached to the Virtual Input Queue as established in the Job Controller (go back to page QS-3 to see the Batch Job Parameters screen). Alternatively, you could enter an actual printer output queue in this field (NOT the Virtual, but the ACTUAL printer output queue). Enter the library (*LIB if using *QUEUE, or enter the actual library), enter the number of copies and then put an X under the page (page 1 is the Original, page 2 is the File Copy) to include. Press F12 to Return when you are done and then ENTER to return from the Printout Default

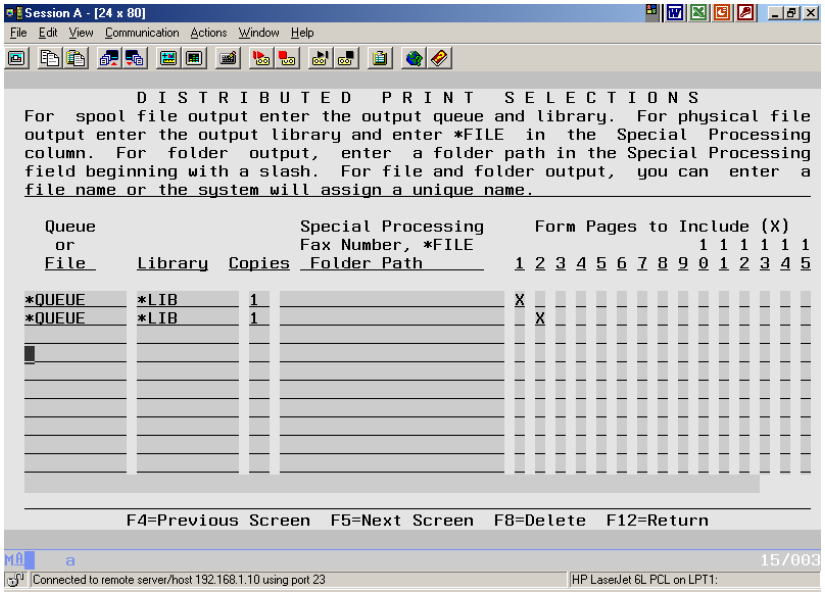

Figure QS-35 – The Distributed Printing Options screen can be used to separate the Original pages from the File copies.

Values screen. The Distribution selections we've made will occur every time this form processes. If you have a need to print a particular page of a form based on something in the data itself, please read Chapter 6 – Distributed Printing which explains how to use Variable Distributed Printing.

When you are all done with your form, press F24 to cancel out of the ***FormSprint*** Editor once again. Enter the WRKOUTQ command for TESTQ and release your spool file once more. You now have a two-part invoice with Original and File Copy! Have fun with your DEMOINV and please do read up on the Functions available to you with ***FormSprint***. The Functions provide a powerful "programming" language, which permits extensive manipulation of the spool file.

If you have a particular form challenge, please feel free to call ICS for advice. ICS has a staff of people who build forms all the time and they will be happy to help you or we can arrange to custom build your forms for you.